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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC3898

Sampling Date: 03/31/23



Report to:

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Total number of pages in report: 648



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: FC3898

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC3898-1	03/31/23	10:35 TM	04/01/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2303W4
FC3898-2	03/31/23	09:35 TM	04/01/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2303W4
FC3898-3	03/31/23	12:20 TM	04/01/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2303W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC3898

Site: N6274223F0104 RH Fire Suppression System

Report Date: 4/10/2023 8:34:05 PM

On 04/01/2023, 2 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 3.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC3898 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: OP96279

Sample(s) FC3898-1MS, FC3898-3DUP, FC3898-1MS were used as the QC samples indicated.

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

Sample(s) FC3898-1 have surrogates outside control limits.

FC3898-1 for Perfluorobutanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FC3898-1 for 7:3 Fluorotelomer carboxylate: Associated Low Level CCV outside of control limits high, sample was ND.

FC3898-1 for 13C4-PFBA: Outside control limits.

FC3898-2 for 7:3 Fluorotelomer carboxylate: Associated Low Level CCV outside of control limits high, sample was ND.

FC3898-3 for 7:3 Fluorotelomer carboxylate: Associated Low Level CCV outside of control limits high, sample was ND.

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: FC3898
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/31/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC3898-1 AF-RHMW17D-WGN01LF-2303W4

No hits reported in this sample.

FC3898-2 AF-RHMW17D-WQFB01-2303W4

No hits reported in this sample.

FC3898-3 AF-RHMW17-WGN01LF-2303W4

Perfluorobutanoic acid	2.8 J	19	3.7	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid	7.0 J	9.3	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	3.9 J	4.6	0.93	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	1.0 J	4.6	0.93	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	4.7 J	19	7.4	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW17D-WGN01LF-2303W4		
Lab Sample ID:	FC3898-1	Date Sampled:	03/31/23
Matrix:	AQ - Ground Water	Date Received:	04/01/23
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	6Q16323.D	1	04/07/23 21:30	MV	04/06/23 10:00	OP96279	S6Q243
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 ^a	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	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	7.0 U	18	7.0	3.0	ng/l	
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	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EtFOSA	1.8 U	4.4	1.8	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-RHMW17D-WGN01LF-2303W4		
Lab Sample ID:	FC3898-1	Date Sampled:	03/31/23
Matrix:	AQ - Ground Water	Date Received:	04/01/23
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

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	8.8 U	44	8.8	3.8	ng/l
1691-99-2	EtFOSE	18 U	44	18	6.5	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.5 U	18	3.5	0.88	ng/l
919005-14-4	ADONA	3.5 U	18	3.5	1.6	ng/l
377-73-1	PFMPA	1.8 U	8.8	1.8	0.88	ng/l
863090-89-5	PFMBA	3.5 U	8.8	3.5	1.0	ng/l
151772-58-6	NFDHA	3.5 U	8.8	3.5	1.1	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.68	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	22	8.8	4.0	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.7	ng/l
812-70-4	7:3 Fluorotelomer carboxylat ^b	18 U	110	18	6.9	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	4% ^c		20-150%
13C5-PFPeA	26%		20-150%
13C5-PFHxA	106%		20-150%
13C4-PFHpA	113%		20-150%
13C8-PFOA	117%		20-150%
13C9-PFNA	109%		20-150%
13C6-PFDA	122%		20-150%
13C7-PFUnDA	109%		20-150%
13C2-PFDoDA	94%		20-150%
13C2-PFTeDA	72%		20-150%
13C3-PFBS	92%		20-150%
13C3-PFHxS	101%		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-RHMW17D-WGN01LF-2303W4		
Lab Sample ID:	FC3898-1	Date Sampled:	03/31/23
Matrix:	AQ - Ground Water	Date Received:	04/01/23
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	95%		20-150%
	13C8-FOSA	84%		20-150%
	d3-MeFOSA	89%		20-150%
	d5-EtFOSA	94%		20-150%
	d3-MeFOSAA	137%		20-150%
	d5-EtFOSAA	146%		20-150%
	d7-MeFOSE	56%		20-150%
	d9-EtFOSE	66%		20-150%
	13C2-4:2FTS	112%		20-150%
	13C2-6:2FTS	116%		20-150%
	13C2-8:2FTS	108%		20-150%
	13C3-HFPO-DA	96%		20-150%

- (a) Associated ID Standard outside control limits, Confirmed by batch QC.
- (b) Associated Low Level CCV outside of control limits high, sample was ND.
- (c) Outside control limits.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW17D-WQFB01-2303W4		
Lab Sample ID:	FC3898-2	Date Sampled:	03/31/23
Matrix:	AQ - Field Blank Water	Date Received:	04/01/23
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	6Q16325.D	1	04/07/23 21:58	MV	04/06/23 10:00	OP96279	S6Q243
Run #2							

Run #	Initial Volume	Final Volume
Run #1	550 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	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	9.1	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.91 U	4.5	0.91	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.91 U	4.5	0.91	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	4.5	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.91 U	4.5	0.91	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.58	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	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.61	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.91	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.91	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-WQFB01-2303W4	
Lab Sample ID:	FC3898-2	Date Sampled: 03/31/23
Matrix:	AQ - Field Blank Water	Date Received: 04/01/23
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	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.1 U	45	9.1	4.0	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.91	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	9.1	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	9.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	9.1	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	18	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	18	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	9.1	1.8	0.71	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	23	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylat ^a	18 U	110	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	108%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	109%		20-150%
	13C4-PFHpA	105%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	97%		20-150%
	13C6-PFDA	97%		20-150%
	13C7-PFUnDA	84%		20-150%
	13C2-PFDoDA	78%		20-150%
	13C2-PFTeDA	60%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	107%		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-RHMW17D-WQFB01-2303W4		Date Sampled:	03/31/23
Lab Sample ID:	FC3898-2		Date Received:	04/01/23
Matrix:	AQ - Field Blank 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	106%		20-150%
	13C8-FOSA	69%		20-150%
	d3-MeFOSA	77%		20-150%
	d5-EtFOSA	79%		20-150%
	d3-MeFOSAA	104%		20-150%
	d5-EtFOSAA	103%		20-150%
	d7-MeFOSE	61%		20-150%
	d9-EtFOSE	73%		20-150%
	13C2-4:2FTS	137%		20-150%
	13C2-6:2FTS	129%		20-150%
	13C2-8:2FTS	127%		20-150%
	13C3-HFPO-DA	101%		20-150%

(a) Associated Low Level CCV outside of control limits high, sample was ND.

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW17-WGN01LF-2303W4		
Lab Sample ID:	FC3898-3	Date Sampled:	03/31/23
Matrix:	AQ - Ground Water	Date Received:	04/01/23
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	6Q16326.D	1	04/07/23 22:12	MV	04/06/23 10:00	OP96279	S6Q243
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	2.8	19	3.7	1.8	ng/l	J
2706-90-3	Perfluoropentanoic acid	7.0	9.3	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	3.9	4.6	0.93	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.0	4.6	0.93	0.46	ng/l	J
335-67-1	Perfluorooctanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.6	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.6	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.6	0.93	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.6	0.93	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	4.6	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.6	0.93	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.6	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.6	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.6	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	4.7	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	4.6	1.9	0.62	ng/l	
31506-32-8	MeFOSA	1.9 U	4.6	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.6	1.9	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-RHMW17-WGN01LF-2303W4		
Lab Sample ID:	FC3898-3	Date Sampled:	03/31/23
Matrix:	AQ - Ground Water	Date Received:	04/01/23
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
---------	----------	--------	-----	-----	----	-------	---

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	9.3 U	46	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	46	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylat ^a	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	104%		20-150%
	13C5-PFPeA	108%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	109%		20-150%
	13C8-PFOA	100%		20-150%
	13C9-PFNA	111%		20-150%
	13C6-PFDA	85%		20-150%
	13C7-PFUnDA	68%		20-150%
	13C2-PFDoDA	50%		20-150%
	13C2-PFTeDA	45%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	98%		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-RHMW17-WGN01LF-2303W4	Date Sampled: 03/31/23
Lab Sample ID: FC3898-3	Date Received: 04/01/23
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	70%		20-150%
	13C8-FOSA	75%		20-150%
	d3-MeFOSA	67%		20-150%
	d5-EtFOSA	63%		20-150%
	d3-MeFOSAA	81%		20-150%
	d5-EtFOSAA	88%		20-150%
	d7-MeFOSE	47%		20-150%
	d9-EtFOSE	58%		20-150%
	13C2-4:2FTS	124%		20-150%
	13C2-6:2FTS	121%		20-150%
	13C2-8:2FTS	85%		20-150%
	13C3-HFPO-DA	105%		20-150%

(a) Associated Low Level CCV outside of control limits high, sample was ND.

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



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Chain of Custody

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FC3898
SGS - ORLANDO JOB # :

COC #: 2303W4AFSG11

PAGE 1 OF 1

Client / Reporting Information			Project Information			SGS - ORLANDO Quote #		SKIFF #											
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System																
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 #																	
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #																	
Sampler(s) Name(s) (Printed)																			
Sampler 1:		Sampler 2:																	
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										PFAS EPA Draft 1633	LAB USE ONLY			
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	H2O2	NaOH-ZnAc			DI WATER	MESH	
1	AF-RHMW17D-WGN01LF-2303W4		1035	TM	GW	3	X												
2	AF-RHMW17D-WQFB01-2303W4		0935	TM	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) <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 awb: 010-27706486												
7 Day																			
5 Day																			
3 Day RUSH																			
2 Day RUSH																			
1 Day RUSH																			
Other																			
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:	Received By/Affiliation											
1 Tessa MVR-PW/AECOM	8/31/23 1326	2 Kayla Vega	9.31.23 1326	3	3-31-23	4	9/1/23	5/1/23											
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Date Time:	Received By/Affiliation											
5		6		7		8													
Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.0 IR#12																			
http://www.sgs.com/en/terms-and-conditions																			

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 SGS - ORLANDO JOB #:

COC #: 2303W4AFSG11

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Client / Reporting Information		Project Information										SGS - ORLANDO Quote #	SKIFF #			
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System														
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 #														
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #														
Sampler(s) Name(s) (Printed)		Sampler 1:														
Sampler 2:																
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										PFAS EPA Draft: 1633	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SD - Soil SL - Sludge OL - Oil LO - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	ICI	NH3	PHOS	PERC	NADPH-ZNAC	DI W/ATER		
1	AF-RHWW17D-WGN01LF-2303W4	3/31/23	1035	TM	GW	3		X								
2	AF-RHWW17D-WQFB01-2303W4	3/31/23 9:46	0935	TM	GW	3		X								
		3/31/23 5:44/23														
INITIAL ASSESSMENT																
LABEL VERIFICATION																
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 awb: 010-27706486				
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/Affiliation 1 Tessa Murphy/AECOM	Date Time: 3/31/23 1326	Received By/Affiliation 2 Kay Vega	Date Time: 3-31-23 1326	Relinquished By/Affiliation 3	Date Time: 1400 3-31-23	Received By/Affiliation 4	Date Time: 3-31-23	Relinquished By/Affiliation 5	Date Time:	Received By/Affiliation 6	Date Time:	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8		
Lab Use Only: Cooler Temperature (s) Celsius (corrected): 4.0		IRTEC										http://www.sgs.com/en/terms-and-conditions				

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FC3898: Chain of Custody

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FC3898

COC #: 2303W4AFSG10

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information		Project Information		SGS - ORLANDO Quote #												SKIFF #	Matrix Codes		
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">PFAS EPA Draft 1633</div> <div style="border: 1px solid black; padding: 5px; font-size: 2em; font-weight: bold; transform: rotate(-45deg);">TM 3/3/23</div> </div>													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 #																	
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #																	
Sampler(s) Name(s) (Printed)		Sampler 1:		Sampler 2:															
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION												LAB USE ONLY		
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NACH	HNDS	PECO4	NACH-ZNAC	DI WATER	MECH				
3	AF-RHMW17-WGN01LF-2303W4	3/3/23	1220	TM, AY	GW	3		X											
												PFAS EPA Draft 1633							
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks											
10 Day (Business)		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 awb: 016-27706486											
7 Day																			
5 Day																			
3 Day RUSH																			
2 Day RUSH																			
1 Day RUSH																			
Other																			
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							
1 Tessa Murphy/AECOM		3/3/23 1326		2 Yana Vega		3/3/23 1326		3 [Signature]		3/3/23 1400		4 [Signature]							
5				6				7				8							
Lab Use Only : Cooler Temperature (s) Celsius (corrected): 40 IRTEL																			

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FC3898: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC3898

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/1/2023 3:15:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-27706486

Therm ID: IR 1;	Therm CF: -0.1;	# of Coolers: 1
Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);		
Cooler Temps (Corrected) °C: Cooler 1: (3.9);		

<u>Cooler Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>Sample Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>	1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>	2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Cooler temp verification	<u>IR Gun</u>			4. Condition of sample	<u>Intact</u>			
5. Cooler media	<u>Ice (Bag)</u>			5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
<u>Trip Blank Information</u>				6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
1. Trip Blank present / cooler	<input type="checkbox"/>		<input type="checkbox"/>	7. VOCs have headspace	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input type="checkbox"/>	8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
	<u>W or S</u>			9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<u>N/A</u>			11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>		<input checked="" type="checkbox"/>	12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Misc. Information</u>			
Number of Encores: 25-Gram _____	5-Gram _____	Number of 5035 Field Kits: _____	Number of Lab Filtered Metals: _____
Test Strip Lot #s: pH 0-3 <u>230320</u>		pH 10-12 <u>25BDH07</u>	Other: (Specify) pH 1.0 - 12.0 <u>222221</u>
Residual Chlorine Test Strip Lot #: _____			

Comments Sampling Dates missing for samples:
 AF-RHMW17D-WGN01LF-2303W4
 AF-RHMW17D-WQFB01-2303W4

Technician: PhilipD

Date: 4/1/2023 3:15:00 PM

Reviewer: CD

Date: 4/10/2023

SM001
 Rev. Date 05/24/17

FC3898: Chain of Custody

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CSR: Elvin Kumar

Response Date: 04/04/23

Response: revised COC received with sampling dates. Appended to the original COC

SM001
Rev. Date 05/24/17

FC3898: Chain of Custody
Page 5 of 5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC3898
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/31/23

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 FC3898

5.2
5

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: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q243-IBLK	6Q16317.D	1	04/07/23	MV	n/a	n/a	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q243-IBLK	6Q16317.D	1	04/07/23	MV	n/a	n/a	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	107% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	107% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	97% 20-150%
	13C3-PFHxS	97% 20-150%
	13C8-PFOS	95% 20-150%
	13C8-FOSA	88% 20-150%
	d3-MeFOSAA	112% 20-150%
	d5-EtFOSAA	104% 20-150%
	13C2-4:2FTS	110% 20-150%
	13C2-6:2FTS	122% 20-150%
	13C2-8:2FTS	105% 20-150%

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Method Blank Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-MB	6Q16322.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-MB	6Q16322.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	110% 20-150%
	13C5-PFPeA	111% 20-150%
	13C5-PFHxA	114% 20-150%
	13C4-PFHpA	113% 20-150%
	13C8-PFOA	106% 20-150%
	13C9-PFNA	106% 20-150%
	13C6-PFDA	117% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	95% 20-150%
	13C8-PFOS	113% 20-150%
	13C8-FOSA	74% 20-150%
	d3-MeFOSA	77% 20-150%
	d5-EtFOSA	85% 20-150%
	d3-MeFOSAA	114% 20-150%
	d5-EtFOSAA	107% 20-150%
	d7-MeFOSE	64% 20-150%
	d9-EtFOSE	74% 20-150%
	13C2-4:2FTS	115% 20-150%
	13C2-6:2FTS	120% 20-150%
	13C2-8:2FTS	105% 20-150%
	13C3-HFPO-DA	106% 20-150%

6.12
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Blank Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-LLBS	6Q16321.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0375	94	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0193	97	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0098	98	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0096	96	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0087	87	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0091	91	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0093	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0085	85	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0094	94	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0096	96	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0093	93	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0087	98	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0089	95	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0088	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0085	89	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0085	92	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0086	89	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0094	97	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0082	85	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0352	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0365	96	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0366	95	40-150
754-91-6	PFOSA	0.01	0.0096	96	40-150
31506-32-8	MeFOSA	0.01	0.0097	97	40-150
4151-50-2	EtFOSA	0.01	0.0105	105	40-150
2355-31-9	MeFOSAA	0.01	0.010	100	40-150
2991-50-6	EtFOSAA	0.01	0.0098	98	40-150
24448-09-7	MeFOSE	0.1	0.103	103	40-150
1691-99-2	EtFOSE	0.1	0.0979	98	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0362	91	40-150
919005-14-4	ADONA	0.0378	0.0357	94	40-150
377-73-1	PFMPA	0.02	0.0189	95	40-150
863090-89-5	PFMBA	0.02	0.0178	89	40-150
151772-58-6	NFDHA	0.02	0.0164	82	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0359	96	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0328	87	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-LLBS	6Q16321.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0163	92	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0322	64	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.187	75	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.205	82	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	110%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	124%	20-150%
	13C4-PFHpA	118%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	117%	20-150%
	13C6-PFDA	115%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	98%	20-150%
	13C2-PFTeDA	95%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	104%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	71%	20-150%
	d3-MeFOSA	77%	20-150%
	d5-EtFOSA	79%	20-150%
	d3-MeFOSAA	121%	20-150%
	d5-EtFOSAA	114%	20-150%
	d7-MeFOSE	54%	20-150%
	d9-EtFOSE	63%	20-150%
	13C2-4:2FTS	137%	20-150%
	13C2-6:2FTS	130%	20-150%
	13C2-8:2FTS	128%	20-150%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-BS	6Q16320.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0949	95	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0488	98	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0252	101	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0244	98	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0262	105	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0229	92	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0228	91	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0257	103	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0230	92	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0230	92	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0235	94	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0234	106	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0210	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0203	89	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0223	94	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0198	85	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0220	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0227	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0215	89	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0916	98	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0868	91	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0994	104	40-150
754-91-6	PFOSA	0.025	0.0235	94	40-150
31506-32-8	MeFOSA	0.025	0.0265	106	40-150
4151-50-2	EtFOSA	0.025	0.0261	104	40-150
2355-31-9	MeFOSAA	0.025	0.0244	98	40-150
2991-50-6	EtFOSAA	0.025	0.0268	107	40-150
24448-09-7	MeFOSE	0.25	0.256	102	40-150
1691-99-2	EtFOSE	0.25	0.242	97	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0960	96	40-150
919005-14-4	ADONA	0.0945	0.0951	101	40-150
377-73-1	PFMPA	0.05	0.0292	58	40-150
863090-89-5	PFMBA	0.05	0.0466	93	40-150
151772-58-6	NFDHA	0.05	0.0478	96	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0941	101	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0869	92	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-BS	6Q16320.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0445	100	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0524	42	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.552	88	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.573	92	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	35%	20-150%
	13C5-PFPeA	108%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	112%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	116%	20-150%
	13C6-PFDA	112%	20-150%
	13C7-PFUnDA	107%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	96%	20-150%
	13C3-PFBS	111%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	115%	20-150%
	13C8-FOSA	79%	20-150%
	d3-MeFOSA	83%	20-150%
	d5-EtFOSA	85%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	60%	20-150%
	d9-EtFOSE	70%	20-150%
	13C2-4:2FTS	135%	20-150%
	13C2-6:2FTS	136%	20-150%
	13C2-8:2FTS	127%	20-150%
	13C3-HFPO-DA	105%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-MS	6Q16324.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243
FC3898-1	6Q16323.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	FC3898-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018 U	0.0909	0.0781	86	40-150
2706-90-3	Perfluoropentanoic acid	0.0088 U	0.0455	0.0471	104	40-150
307-24-4	Perfluorohexanoic acid	0.0044 U	0.0227	0.0243	107	40-150
375-85-9	Perfluoroheptanoic acid	0.0044 U	0.0227	0.0229	101	40-150
335-67-1	Perfluorooctanoic acid	0.0044 U	0.0227	0.0245	108	40-150
375-95-1	Perfluorononanoic acid	0.0044 U	0.0227	0.0252	111	40-150
335-76-2	Perfluorodecanoic acid	0.0044 U	0.0227	0.0246	108	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044 U	0.0227	0.0244	107	40-150
307-55-1	Perfluorododecanoic acid	0.0044 U	0.0227	0.0242	106	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044 U	0.0227	0.0217	95	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044 U	0.0227	0.0242	106	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044 U	0.0202	0.0215	107	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U	0.0214	0.0253	118	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044 U	0.0208	0.0231	111	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044 U	0.0217	0.0198	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044 U	0.0211	0.0263	125	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044 U	0.0219	0.0260	119	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044 U	0.0219	0.0224	102	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044 U	0.022	0.0183	83	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	0.0852	0.0910	107	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	0.0864	0.0859	99	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	0.0873	0.116	133	40-150
754-91-6	PFOSA	0.0044 U	0.0227	0.0250	110	40-150
31506-32-8	MeFOSA	0.0044 U	0.0227	0.0231	102	40-150
4151-50-2	EtFOSA	0.0044 U	0.0227	0.0244	107	40-150
2355-31-9	MeFOSAA	0.0044 U	0.0227	0.0237	104	40-150
2991-50-6	EtFOSAA	0.0044 U	0.0227	0.0242	106	40-150
24448-09-7	MeFOSE	0.044 U	0.227	0.241	106	40-150
1691-99-2	EtFOSE	0.044 U	0.227	0.225	99	40-150
13252-13-6	HFPO-DA (GenX)	0.018 U	0.0909	0.0920	101	40-150
919005-14-4	ADONA	0.018 U	0.0859	0.111	129	40-150
377-73-1	PFMPA	0.0088 U	0.0455	0.0123	27*	40-150
863090-89-5	PFMBA	0.0088 U	0.0455	0.0707	156*	40-150
151772-58-6	NFDHA	0.0088 U	0.0455	0.0382	84	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U	0.085	0.101	119	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U	0.0859	0.0864	101	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-MS	6Q16324.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243
FC3898-1	6Q16323.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	FC3898-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088 U	0.0405	0.0494	122	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	0.114	0.0307	27*	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	0.568	0.589	104	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	0.568	0.639	112	40-150

CAS No.	ID Standard Recoveries	MS	FC3898-1	Limits
	13C4-PFBA	4%* a	4%* a	20-150%
	13C5-PFPeA	24%	26%	20-150%
	13C5-PFHxA	94%	106%	20-150%
	13C4-PFHpA	110%	113%	20-150%
	13C8-PFOA	108%	117%	20-150%
	13C9-PFNA	100%	109%	20-150%
	13C6-PFDA	103%	122%	20-150%
	13C7-PFUnDA	104%	109%	20-150%
	13C2-PFDoDA	94%	94%	20-150%
	13C2-PFTeDA	72%	72%	20-150%
	13C3-PFBS	94%	92%	20-150%
	13C3-PFHxS	92%	101%	20-150%
	13C8-PFOS	94%	95%	20-150%
	13C8-FOSA	83%	84%	20-150%
	d3-MeFOSA	95%	89%	20-150%
	d5-EtFOSA	95%	94%	20-150%
	d3-MeFOSAA	137%	137%	20-150%
	d5-EtFOSAA	144%	146%	20-150%
	d7-MeFOSE	65%	56%	20-150%
	d9-EtFOSE	72%	66%	20-150%
	13C2-4:2FTS	107%	112%	20-150%
	13C2-6:2FTS	125%	116%	20-150%
	13C2-8:2FTS	94%	108%	20-150%
	13C3-HFPO-DA	87%	96%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-DUP	6Q16327.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243
FC3898-3	6Q16326.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	FC3898-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0028	J	0.0034	J	19	30
2706-90-3	Perfluoropentanoic acid	0.0070	J	0.0068	J	3	30
307-24-4	Perfluorohexanoic acid	0.0039	J	0.0040	J	3	30
375-85-9	Perfluoroheptanoic acid	0.0010	J	0.00097	J	3	30
335-67-1	Perfluorooctanoic acid	0.0046	U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0046	U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0046	U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0046	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0046	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0046	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0046	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0046	U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0046	U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0046	U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0046	U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0046	U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0046	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0046	U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0046	U	ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.019	U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0047	J	0.0050	J	6	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	ND		nc	30
754-91-6	PFOSA	0.0046	U	ND		nc	30
31506-32-8	MeFOSA	0.0046	U	ND		nc	30
4151-50-2	EtFOSA	0.0046	U	ND		nc	30
2355-31-9	MeFOSAA	0.0046	U	ND		nc	30
2991-50-6	EtFOSAA	0.0046	U	ND		nc	30
24448-09-7	MeFOSE	0.046	U	ND		nc	30
1691-99-2	EtFOSE	0.046	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.019	U	ND		nc	30
919005-14-4	ADONA	0.019	U	ND		nc	30
377-73-1	PFMPA	0.0093	U	ND		nc	30
863090-89-5	PFMBA	0.0093	U	ND		nc	30
151772-58-6	NFDHA	0.0093	U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.019	U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.019	U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96279-DUP	6Q16327.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243
FC3898-3	6Q16326.D	1	04/07/23	MV	04/06/23	OP96279	S6Q243

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3898-1, FC3898-2, FC3898-3

CAS No.	Compound	FC3898-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0093	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.023	U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.12	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.12	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC3898-3	Limits
	13C4-PFBA	103%	104%	20-150%
	13C5-PFPeA	107%	108%	20-150%
	13C5-PFHxA	107%	107%	20-150%
	13C4-PFHpA	106%	109%	20-150%
	13C8-PFOA	103%	100%	20-150%
	13C9-PFNA	90%	111%	20-150%
	13C6-PFDA	93%	85%	20-150%
	13C7-PFUnDA	63%	68%	20-150%
	13C2-PFDoDA	50%	50%	20-150%
	13C2-PFTeDA	40%	45%	20-150%
	13C3-PFBS	94%	107%	20-150%
	13C3-PFHxS	88%	98%	20-150%
	13C8-PFOS	85%	70%	20-150%
	13C8-FOSA	80%	75%	20-150%
	d3-MeFOSA	69%	67%	20-150%
	d5-EtFOSA	65%	63%	20-150%
	d3-MeFOSAA	84%	81%	20-150%
	d5-EtFOSAA	92%	88%	20-150%
	d7-MeFOSE	51%	47%	20-150%
	d9-EtFOSE	59%	58%	20-150%
	13C2-4:2FTS	115%	124%	20-150%
	13C2-6:2FTS	125%	121%	20-150%
	13C2-8:2FTS	68%	85%	20-150%
	13C3-HFPO-DA	102%	105%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q243-CC239	Injection Date:	04/07/23
Lab File ID:	6Q16318.D	Injection Time:	20:20
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	37121	2.90	33738	5.53	68034	7.11	18199	7.64	19568	8.12
Check Std ^c	34240	2.90	31261	5.52	63399	7.11	18067	7.64	19550	8.12
Upper Limit ^d	74242	3.30	67476	5.92	136068	7.51	36398	8.04	39136	8.52
Lower Limit ^e	11136	2.50	10121	5.12	20410	6.71	5460	7.24	5870	7.72

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
OP96279-BS	27853	2.94	24561	5.53	50066	7.11	14064	7.63	14501	8.11	1
OP96279-LLBS	28269	2.94	23240	5.53	52260	7.11	13487	7.64	14732	8.12	1
OP96279-MB	27953	2.94	23689	5.53	51707	7.11	14355	7.64	14016	8.12	1
FC3898-1	27853	2.94	24878	5.52	51153	7.11	13708	7.64	14278	8.11	1
OP96279-MS	27623	2.94	24226	5.53	49095	7.11	13285	7.63	13456	8.11	1
FC3898-2	27709	2.94	24145	5.53	50181	7.11	14886	7.64	15298	8.11	1
FC3898-3	28163	2.94	24414	5.53	51977	7.11	13528	7.64	15224	8.12	1
OP96279-DUP	26570	2.94	23660	5.53	48382	7.11	13712	7.64	14033	8.12	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: S6Q239-ICC239 6Q16009.D 04/04/23 14:57. 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.

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Injection Standard Area Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q243-CC239	Injection Date:	04/07/23
Lab File ID:	6Q16318.D	Injection Time:	20:20
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	6097	7.23	8885	8.29
Check Std ^c	6061	7.23	8510	8.27
Upper Limit ^d	12194	7.63	17770	8.67
Lower Limit ^e	1829	6.83	2666	7.87

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP96279-BS	4518	7.23	6785	8.27	1
OP96279-LLBS	4571	7.23	6767	8.27	1
OP96279-MB	5049	7.23	6681	8.27	1
FC3898-1	5033	7.23	6866	8.27	1
OP96279-MS	4548	7.23	6382	8.27	1
FC3898-2	4313	7.23	6380	8.27	1
FC3898-3	4785	7.23	7112	8.29	1
OP96279-DUP	4752	7.23	6433	8.27	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q239-ICC239 6Q16009.D 04/04/23 14:57. 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.

TDCA Retention Time Check

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q239-RT	Injection Date:	04/04/23
Lab File ID:	6Q16003.D	Injection Time:	13:10
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.286	--	--
TDCA	6.822	1.464	1.000
TCDCA	6.674	1.612	1.000
TUDCA	5.822	2.464	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
S6Q239-IC239	6Q16005.D	04/04/23	13:38	00:28	Mass Calibration Verification
S6Q239-IC239	6Q16006.D	04/04/23	14:15	01:05	Initial cal 1
S6Q239-IC239	6Q16007.D	04/04/23	14:29	01:19	Initial cal 2
S6Q239-IC239	6Q16008.D	04/04/23	14:43	01:33	Initial cal 3
S6Q239-ICC239	6Q16009.D	04/04/23	14:57	01:47	Initial cal 4
S6Q239-IC239	6Q16010.D	04/04/23	15:11	02:01	Initial cal 5
S6Q239-IC239	6Q16011.D	04/04/23	15:25	02:15	Initial cal 6
S6Q239-IC239	6Q16012.D	04/04/23	15:39	02:29	Initial cal 7
S6Q239-IC239	6Q16013.D	04/04/23	15:53	02:43	Initial cal 8
S6Q239-IBLK	6Q16014.D	04/04/23	16:07	02:57	Instrument Blank
S6Q239-IBLK	6Q16014.D	04/04/23	16:07	02:57	Instrument Blank
S6Q239-ICV239	6Q16015.D	04/04/23	16:21	03:11	Initial cal verification 4
S6Q239-ICV239	6Q16016.D	04/04/23	16:35	03:25	Initial cal verification 20
S6Q239-CC239	6Q16017.D	04/04/23	16:49	03:39	Continuing cal 4
S6Q239-CC239	6Q16018.D	04/04/23	17:03	03:53	Continuing cal 1.0LL
OP96208-BS	6Q16019.D	04/04/23	17:17	04:07	Blank Spike
OP96208-LLBS	6Q16020.D	04/04/23	17:31	04:21	Blank Spike
OP96208-MB	6Q16021.D	04/04/23	17:45	04:35	Method Blank
ZZZZZZ	6Q16022.D	04/04/23	17:59	04:49	(unrelated sample)
S6Q239-CC239	6Q16023.D	04/04/23	18:13	05:03	Continuing cal 4
S6Q239-ICCB	6Q16024.D	04/04/23	18:27	05:17	Continuing Calibration Blank
OP96209-BS	6Q16025.D	04/04/23	18:41	05:31	Blank Spike
OP96209-LLBS	6Q16026.D	04/04/23	18:55	05:45	Blank Spike
OP96209-MB	6Q16027.D	04/04/23	19:09	05:59	Method Blank
FC3853-1	6Q16028.D	04/04/23	19:23	06:13	(used for QC only; not part of job FC3898)
OP96209-MS	6Q16029.D	04/04/23	19:37	06:27	Matrix Spike
FC3853-2	6Q16030.D	04/04/23	19:51	06:41	(used for QC only; not part of job FC3898)
OP96209-DUP	6Q16031.D	04/04/23	20:05	06:55	Duplicate
ZZZZZZ	6Q16032.D	04/04/23	20:19	07:09	(unrelated sample)
ZZZZZZ	6Q16033.D	04/04/23	20:33	07:23	(unrelated sample)
S6Q239-CC239	6Q16034.D	04/04/23	20:47	07:37	Continuing cal 4
S6Q239-ICCB	6Q16035.D	04/04/23	21:01	07:51	Continuing Calibration Blank
OP96190-BS	6Q16036.D	04/04/23	21:15	08:05	Blank Spike
OP96190-LLBS	6Q16037.D	04/04/23	21:29	08:19	Blank Spike

TDCA Retention Time Check

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q239-RT	Injection Date:	04/04/23
Lab File ID:	6Q16003.D	Injection Time:	13:10
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP96190-MB	6Q16038.D	04/04/23	21:43	08:33	Method Blank
ZZZZZZ	6Q16039.D	04/04/23	21:57	08:47	(unrelated sample)
ZZZZZZ	6Q16040.D	04/04/23	22:11	09:01	(unrelated sample)
ZZZZZZ	6Q16041.D	04/04/23	22:25	09:15	(unrelated sample)
JD62588-4	6Q16043.D	04/04/23	22:53	09:43	(used for QC only; not part of job FC3898)
OP96190-MS	6Q16044.D	04/04/23	23:07	09:57	Matrix Spike
ZZZZZZ	6Q16045.D	04/04/23	23:21	10:11	(unrelated sample)
S6Q239-CC239	6Q16046.D	04/04/23	23:35	10:25	Continuing cal 4
S6Q239-ICCB	6Q16047.D	04/04/23	23:49	10:39	Continuing Calibration Blank
ZZZZZZ	6Q16048.D	04/05/23	00:03	10:53	(unrelated sample)
ZZZZZZ	6Q16049.D	04/05/23	00:17	11:07	(unrelated sample)
ZZZZZZ	6Q16050.D	04/05/23	00:31	11:21	(unrelated sample)
ZZZZZZ	6Q16051.D	04/05/23	00:45	11:35	(unrelated sample)
ZZZZZZ	6Q16052.D	04/05/23	00:59	11:49	(unrelated sample)
ZZZZZZ	6Q16053.D	04/05/23	01:13	12:03	(unrelated sample)
ZZZZZZ	6Q16054.D	04/05/23	01:27	12:17	(unrelated sample)
ZZZZZZ	6Q16055.D	04/05/23	01:41	12:31	(unrelated sample)
ZZZZZZ	6Q16056.D	04/05/23	01:55	12:45	(unrelated sample)
ZZZZZZ	6Q16057.D	04/05/23	02:08	12:58	(unrelated sample)
S6Q239-CC239	6Q16058.D	04/05/23	02:22	13:12	Continuing cal 4
S6Q239-CC239	6Q16059.D	04/05/23	02:36	13:26	Continuing cal 1.0LL
S6Q239-ICCB	6Q16060.D	04/05/23	02:50	13:40	Continuing Calibration Blank
JD62588-12A	6Q16061.D	04/05/23	03:04	13:54	(used for QC only; not part of job FC3898)
OP96190-DUP	6Q16062.D	04/05/23	03:18	14:08	Duplicate
ZZZZZZ	6Q16063.D	04/05/23	03:32	14:22	(unrelated sample)
OP96192-BS	6Q16064.D	04/05/23	03:46	14:36	Blank Spike
OP96192-LLBS	6Q16065.D	04/05/23	04:00	14:50	Blank Spike
OP96192-MB	6Q16066.D	04/05/23	04:14	15:04	Method Blank
ZZZZZZ	6Q16067.D	04/05/23	04:28	15:18	(unrelated sample)
ZZZZZZ	6Q16068.D	04/05/23	04:42	15:32	(unrelated sample)
ZZZZZZ	6Q16069.D	04/05/23	04:56	15:46	(unrelated sample)
ZZZZZZ	6Q16070.D	04/05/23	05:10	16:00	(unrelated sample)
S6Q239-CC239	6Q16071.D	04/05/23	05:24	16:14	Continuing cal 4
S6Q239-ICCB	6Q16072.D	04/05/23	05:38	16:28	Continuing Calibration Blank
JD62631-4A	6Q16073.D	04/05/23	05:52	16:42	(used for QC only; not part of job FC3898)
OP96192-MS	6Q16074.D	04/05/23	06:06	16:56	Matrix Spike
OP96192-MSD	6Q16075.D	04/05/23	06:20	17:10	Matrix Spike Duplicate
ZZZZZZ	6Q16076.D	04/05/23	06:34	17:24	(unrelated sample)
ZZZZZZ	6Q16078.D	04/05/23	07:02	17:52	(unrelated sample)
ZZZZZZ	6Q16079.D	04/05/23	07:16	18:06	(unrelated sample)
ZZZZZZ	6Q16080.D	04/05/23	07:30	18:20	(unrelated sample)
ZZZZZZ	6Q16081.D	04/05/23	07:44	18:34	(unrelated sample)
S6Q239-CC239	6Q16083.D	04/05/23	08:12	19:02	Continuing cal 4
S6Q239-ICCB	6Q16084.D	04/05/23	08:26	19:16	Continuing Calibration Blank

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TDCA Retention Time Check

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q239-RT	Injection Date:	04/04/23
Lab File ID:	6Q16003.D	Injection Time:	13:10
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q16085.D	04/05/23	08:40	19:30	(unrelated sample)
ZZZZZZ	6Q16086.D	04/05/23	08:54	19:44	(unrelated sample)
ZZZZZZ	6Q16087.D	04/05/23	09:08	19:58	(unrelated sample)
ZZZZZZ	6Q16088.D	04/05/23	09:22	20:12	(unrelated sample)
ZZZZZZ	6Q16089.D	04/05/23	09:36	20:26	(unrelated sample)
ZZZZZZ	6Q16090.D	04/05/23	09:50	20:40	(unrelated sample)
ZZZZZZ	6Q16091.D	04/05/23	10:04	20:54	(unrelated sample)
S6Q239-CC239	6Q16092.D	04/05/23	10:18	21:08	Continuing cal 4
S6Q239-ICCB	6Q16093.D	04/05/23	10:32	21:22	Continuing Calibration Blank
ZZZZZZ	6Q16095.D	04/05/23	11:38	22:28	(unrelated sample)
ZZZZZZ	6Q16096.D	04/05/23	11:52	22:42	(unrelated sample)
ZZZZZZ	6Q16097.D	04/05/23	12:06	22:56	(unrelated sample)
ZZZZZZ	6Q16098.D	04/05/23	12:19	23:09	(unrelated sample)
ZZZZZZ	6Q16099.D	04/05/23	12:33	23:23	(unrelated sample)
S6Q239-ECC239	6Q16100.D	04/05/23	12:47	23:37	Ending cal 4
S6Q239-ICCB	6Q16101.D	04/05/23	13:01	23:51	Continuing Calibration Blank

6.6.1
6

TDCA Retention Time Check

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q243-RT	Injection Date:	04/07/23
Lab File ID:	6Q16314.D	Injection Time:	19:24
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.273	--	--
TDCA	6.822	1.451	1.000
TCDCA	6.661	1.612	1.000
TUDCA	5.822	2.451	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
S6Q243-IBLK	6Q16317.D	04/07/23	20:06	00:42	Instrument Blank
S6Q243-IBLK	6Q16317.D	04/07/23	20:06	00:42	Instrument Blank
S6Q243-CC239	6Q16318.D	04/07/23	20:20	00:56	Continuing cal 4
S6Q243-CC239	6Q16319.D	04/07/23	20:34	01:10	Continuing cal 1.0LL
OP96279-BS	6Q16320.D	04/07/23	20:48	01:24	Blank Spike
OP96279-LLBS	6Q16321.D	04/07/23	21:02	01:38	Blank Spike
OP96279-MB	6Q16322.D	04/07/23	21:16	01:52	Method Blank
FC3898-1	6Q16323.D	04/07/23	21:30	02:06	AF-RHMW17D-WGN01LF-2303W4
OP96279-MS	6Q16324.D	04/07/23	21:44	02:20	Matrix Spike
FC3898-2	6Q16325.D	04/07/23	21:58	02:34	AF-RHMW17D-WQFB01-2303W4
FC3898-3	6Q16326.D	04/07/23	22:12	02:48	AF-RHMW17-WGN01LF-2303W4
OP96279-DUP	6Q16327.D	04/07/23	22:26	03:02	Duplicate
S6Q243-CC239	6Q16328.D	04/07/23	22:40	03:16	Continuing cal 4
S6Q243-ICCB	6Q16329.D	04/07/23	22:54	03:30	Continuing Calibration Blank
OP96278-BS	6Q16330.D	04/07/23	23:08	03:44	Blank Spike
OP96278-LLBS	6Q16331.D	04/07/23	23:22	03:58	Blank Spike
OP96278-MB	6Q16332.D	04/07/23	23:36	04:12	Method Blank
ZZZZZZ	6Q16333.D	04/07/23	23:50	04:26	(unrelated sample)
ZZZZZZ	6Q16334.D	04/08/23	00:04	04:40	(unrelated sample)
ZZZZZZ	6Q16335.D	04/08/23	00:18	04:54	(unrelated sample)
ZZZZZZ	6Q16336.D	04/08/23	00:32	05:08	(unrelated sample)
ZZZZZZ	6Q16337.D	04/08/23	00:46	05:22	(unrelated sample)
ZZZZZZ	6Q16338.D	04/08/23	01:00	05:36	(unrelated sample)
S6Q243-CC239	6Q16339.D	04/08/23	01:14	05:50	Continuing cal 4
S6Q243-ICCB	6Q16340.D	04/08/23	01:28	06:04	Continuing Calibration Blank
OP96276-BS	6Q16341.D	04/08/23	01:42	06:18	Blank Spike
OP96276-LLBS	6Q16342.D	04/08/23	01:56	06:32	Blank Spike
OP96276-MB	6Q16343.D	04/08/23	02:10	06:46	Method Blank
FC3751-1	6Q16344.D	04/08/23	02:24	07:00	(used for QC only; not part of job FC3898)
OP96276-MS	6Q16345.D	04/08/23	02:38	07:14	Matrix Spike
FC3751-2	6Q16346.D	04/08/23	02:52	07:28	(used for QC only; not part of job FC3898)
OP96276-DUP	6Q16347.D	04/08/23	03:06	07:42	Duplicate
ZZZZZZ	6Q16348.D	04/08/23	03:20	07:56	(unrelated sample)
ZZZZZZ	6Q16349.D	04/08/23	03:34	08:10	(unrelated sample)

TDCA Retention Time Check

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q243-RT	Injection Date:	04/07/23
Lab File ID:	6Q16314.D	Injection Time:	19:24
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q16350.D	04/08/23	03:48	08:24	(unrelated sample)
S6Q243-CC239	6Q16351.D	04/08/23	04:02	08:38	Continuing cal 4
S6Q243-ICCB	6Q16352.D	04/08/23	04:16	08:52	Continuing Calibration Blank
ZZZZZZ	6Q16353.D	04/08/23	04:30	09:06	(unrelated sample)
ZZZZZZ	6Q16354.D	04/08/23	04:44	09:20	(unrelated sample)
ZZZZZZ	6Q16355.D	04/08/23	04:58	09:34	(unrelated sample)
ZZZZZZ	6Q16356.D	04/08/23	05:12	09:48	(unrelated sample)
ZZZZZZ	6Q16357.D	04/08/23	05:26	10:02	(unrelated sample)
ZZZZZZ	6Q16358.D	04/08/23	05:40	10:16	(unrelated sample)
ZZZZZZ	6Q16359.D	04/08/23	05:53	10:29	(unrelated sample)
ZZZZZZ	6Q16360.D	04/08/23	06:07	10:43	(unrelated sample)
ZZZZZZ	6Q16361.D	04/08/23	06:21	10:57	(unrelated sample)
ZZZZZZ	6Q16362.D	04/08/23	06:35	11:11	(unrelated sample)
S6Q243-CC239	6Q16363.D	04/08/23	06:49	11:25	Continuing cal 4
S6Q243-CC239	6Q16364.D	04/08/23	07:03	11:39	Continuing cal 1.0LL
S6Q243-ICCB	6Q16365.D	04/08/23	07:17	11:53	Continuing Calibration Blank
ZZZZZZ	6Q16366.D	04/08/23	07:31	12:07	(unrelated sample)
ZZZZZZ	6Q16367.D	04/08/23	07:45	12:21	(unrelated sample)
OP96277-BS	6Q16368.D	04/08/23	07:59	12:35	Blank Spike
OP96277-LLBS	6Q16369.D	04/08/23	08:13	12:49	Blank Spike
OP96277-MB	6Q16370.D	04/08/23	08:27	13:03	Method Blank
ZZZZZZ	6Q16371.D	04/08/23	08:41	13:17	(unrelated sample)
FC3756-2	6Q16372.D	04/08/23	08:55	13:31	(used for QC only; not part of job FC3898)
OP96277-MS	6Q16373.D	04/08/23	09:09	13:45	Matrix Spike
OP96277-MSD	6Q16374.D	04/08/23	09:23	13:59	Matrix Spike Duplicate
ZZZZZZ	6Q16375.D	04/08/23	09:37	14:13	(unrelated sample)
S6Q243-CC239	6Q16376.D	04/08/23	09:51	14:27	Continuing cal 4
S6Q243-ICCB	6Q16377.D	04/08/23	10:05	14:41	Continuing Calibration Blank
ZZZZZZ	6Q16378.D	04/08/23	10:19	14:55	(unrelated sample)
ZZZZZZ	6Q16379.D	04/08/23	10:33	15:09	(unrelated sample)
ZZZZZZ	6Q16380.D	04/08/23	10:47	15:23	(unrelated sample)
ZZZZZZ	6Q16381.D	04/08/23	11:01	15:37	(unrelated sample)
ZZZZZZ	6Q16382.D	04/08/23	11:15	15:51	(unrelated sample)
ZZZZZZ	6Q16383.D	04/08/23	11:29	16:05	(unrelated sample)
ZZZZZZ	6Q16384.D	04/08/23	11:43	16:19	(unrelated sample)
ZZZZZZ	6Q16385.D	04/08/23	11:57	16:33	(unrelated sample)
ZZZZZZ	6Q16386.D	04/08/23	12:11	16:47	(unrelated sample)
ZZZZZZ	6Q16387.D	04/08/23	12:25	17:01	(unrelated sample)
S6Q243-CC239	6Q16388.D	04/08/23	12:39	17:15	Continuing cal 4
S6Q243-ICCB	6Q16389.D	04/08/23	12:53	17:29	Continuing Calibration Blank
ZZZZZZ	6Q16390.D	04/08/23	13:07	17:43	(unrelated sample)
ZZZZZZ	6Q16391.D	04/08/23	13:21	17:57	(unrelated sample)
ZZZZZZ	6Q16392.D	04/08/23	13:35	18:11	(unrelated sample)
ZZZZZZ	6Q16393.D	04/08/23	13:49	18:25	(unrelated sample)

TDCA Retention Time Check

Job Number: FC3898
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-RT	Injection Date: 04/07/23
Lab File ID: 6Q16314.D	Injection Time: 19:24
Instrument ID: GCMS6Q	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q243-ECC239	6Q16394.D	04/08/23	14:03	18:39	Ending cal 4
S6Q243-ICCB	6Q16395.D	04/08/23	14:17	18:53	Continuing Calibration Blank

6.6.2
6

Ion Ratio Summary

Job Number: FC3898
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q243 Method: EPA DRAFT 1633

Lab Sample ID	Lab File ID	Ion Ratios				6:2FTS
		PFBA	PFPeA	PFHxA	PFHpA	
S6Q239-ICC239	6Q16009.D	0	0	4	13.9	21.8
FC3898-1	6Q16323.D					
FC3898-2	6Q16325.D					
FC3898-3	6Q16326.D	0	0	4.3	11.7	20

6.7.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC3898
 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
FC3898-1	6Q16323.D	4* a	26	106	113	117	109	122	109
FC3898-2	6Q16325.D	108	109	109	105	105	97	97	84
FC3898-3	6Q16326.D	104	108	107	109	100	111	85	68
OP96279-BS	6Q16320.D	35	108	111	112	107	116	112	107
OP96279-DUP	6Q16327.D	103	107	107	106	103	90	93	63
OP96279-LLBS	6Q16321.D	110	115	124	118	110	117	115	112
OP96279-MB	6Q16322.D	110	111	114	113	106	106	117	109
OP96279-MS	6Q16324.D	4* a	24	94	110	108	100	103	104
S6Q243-IBLK	6Q16317.D	102	100	107	102	97	96	106	106

Isotope Dilution Standards	Recovery Limits
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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.

6.8.1
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Isotope Dilution Standard Recovery Summary

Job Number: FC3898
 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
FC3898-1	6Q16323.D	94	72	92	101	95	84	89	94
FC3898-2	6Q16325.D	78	60	109	107	106	69	77	79
FC3898-3	6Q16326.D	50	45	107	98	70	75	67	63
OP96279-BS	6Q16320.D	105	96	111	118	115	79	83	85
OP96279-DUP	6Q16327.D	50	40	94	88	85	80	69	65
OP96279-LLBS	6Q16321.D	98	95	109	104	108	71	77	79
OP96279-MB	6Q16322.D	99	99	100	95	113	74	77	85
OP96279-MS	6Q16324.D	94	72	94	92	94	83	95	95
S6Q243-IBLK	6Q16317.D	107	102	97	97	95	88		

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%

6.8.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC3898
 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
FC3898-1	6Q16323.D	137	146	56	66	112	116	108	96
FC3898-2	6Q16325.D	104	103	61	73	137	129	127	101
FC3898-3	6Q16326.D	81	88	47	58	124	121	85	105
OP96279-BS	6Q16320.D	115	106	60	70	135	136	127	105
OP96279-DUP	6Q16327.D	84	92	51	59	115	125	68	102
OP96279-LLBS	6Q16321.D	121	114	54	63	137	130	128	116
OP96279-MB	6Q16322.D	114	107	64	74	115	120	105	106
OP96279-MS	6Q16324.D	137	144	65	72	107	125	94	87
S6Q243-IBLK	6Q16317.D	112	104			110	122	105	

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

6.8.1

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Initial Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICC239
 Lab FileID: 6Q16009.D

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Level Name	1	2	3	4	5	6	7	8	Avg RF	%RSD
D:\MassHunter\Methods	1633_040423_S6Q239.quantmethod.xml	D:\MassHunter\Data\040423_1633_S6Q239	4/4/2023 7:38:08 PM	D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d	1	0.2429	0.2733	0.2499	0.2260	0.2398	0.2628	0.2682	0.2591	0.2527	6.326
D:\MassHunter\Data\040423_1633_S6Q239	6Q16007.d	D:\MassHunter\Data\040423_1633_S6Q239	6Q16008.d	D:\MassHunter\Data\040423_1633_S6Q239	2	0.0614	0.0614	0.0571	0.0513	0.0550	0.0604	0.0602	0.0628	0.3189	6.627
D:\MassHunter>Data\040423_1633_S6Q239	6Q16009.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16010.d	D:\MassHunter>Data\040423_1633_S6Q239	3	1.1003	1.1324	1.0330	0.9592	1.0037	1.0560	1.0833	1.0709	1.0548	5.242
D:\MassHunter>Data\040423_1633_S6Q239	6Q16011.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	4	0.3670	0.3757	0.3417	0.3098	0.3313	0.3503	0.3590	0.3612	0.3495	6.111
D:\MassHunter>Data\040423_1633_S6Q239	6Q16013.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	5	0.0643	0.0722	0.0578	0.0556	0.0573	0.0597	0.0562	0.0556	0.0598	9.673
D:\MassHunter>Data\040423_1633_S6Q239	6Q16013.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6	0.9455	1.0279	0.9063	0.8258	0.9133	0.9701	0.8947	0.8997	0.9229	6.463
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	7	1.3073	1.5314	1.2894	1.2028	1.2229	1.2945	1.3205	1.2892	1.3073	7.610
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	8	0.2275	0.2229	0.1976	0.1864	0.1927	0.2047	0.2020	0.1980	0.2040	6.997
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	0.1000	0.1188	0.1026	0.0952	0.0988	0.1053	0.1004	0.1050	0.1033	6.883
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	1.4670	1.5013	1.3601	1.2121	1.4405	1.3774	1.4381	1.4500	1.4058	6.446
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	1.1838	1.2567	1.0643	0.9848	1.0511	1.1363	1.2061	1.1716	1.1318	8.050
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	0.8635	0.8132	0.7737	0.7283	0.6809	0.8482	0.8575	0.9496	0.8144	10.438
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	1.4959	1.4478	1.3741	1.3649	1.4015	1.4976	1.5672	1.4945	1.4554	4.873
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD	1.0286	0.9342	1.0470	0.8849	0.9223	1.0722	1.0584	1.0574	1.0006	7.417
D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	6Q16012.d	D:\MassHunter>Data\040423_1633_S6Q239	ISTD										

Generated at 7:39 PM on 4/4/2023

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Initial Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICC239
 Lab FileID: 6Q16009.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0654	0.9805	0.8854	0.7773	0.8953	0.9858	0.9636	0.8965	0.9312	9.323
T PFTfDA	Avg RF	0.9375	0.9525	0.8844	0.7724	0.8153	0.9517	0.9231	0.7925	0.8787	8.494
I M2-PFTeDA	Avg RF	1.3891	1.2826	1.4127	1.1817	1.3226	1.3327	1.3078	1.3356	1.3206	5.314
T PFTeDA	Avg RF										
I M8-FOSA	Avg RF	0.9990	1.0991	0.8906	0.7827	0.8651	0.9063	0.9423	0.9041	0.9237	10.179
T FOSA	Avg RF										
I M3-PFBS	Avg RF	0.9681	1.1064	0.9603	0.8887	0.9705	0.9356	1.0140	1.0022	0.9807	6.511
T PFBS	Avg RF										
I M3-PFHxS	Avg RF	1.4020	1.5103	1.3575	1.2087	1.2206	1.3245	1.3088	1.2642	1.3246	7.533
T PFPeS	Avg RF	1.1610	1.2176	1.1393	1.0170	1.0308	1.0814	1.1201	1.0292	1.0995	6.571
T PFHxS	Avg RF										
I M8-PFOS	Avg RF	1.1246	1.1865	1.0382	0.9019	1.0363	1.0878	1.0084	1.1661	1.0687	8.685
T PFHpS	Avg RF	1.0561	1.1896	1.0454	1.0510	1.0380	1.1751	1.0595	1.1826	1.0997	6.272
T PFOs	Avg RF	1.0064	1.1662	0.9928	0.9455	1.1010	1.1054	1.0737	1.1021	1.0616	6.890
T PFNS	Avg RF	0.7026	0.8558	0.7510	0.6519	0.7057	0.7739	0.7442	0.7932	0.7473	8.378
T PFDS	Avg RF	0.4487	0.4837	0.4182	0.3958	0.4185	0.4323	0.4231	0.4532	0.4342	6.236
T PFDoDS	Avg RF										
I M2-4:2FTS	Avg RF	10.10	10.30	10.33	9.0420	9.7419	10.22	10.04	8.5757	9.7941	6.611
T 4:2FTS	Avg RF										
I M2-6:2FTS	Avg RF	7.2339	6.8366	7.2932	5.8455	6.1576	7.5843	6.4638	6.1551	6.6962	9.470
T 6:2FTS	Avg RF										
I M2-8:2FTS	Avg RF	3.5563	4.1708	3.7129	3.2830	3.5681	3.3393	3.5076	3.4414	3.5474	8.107
T 8:2FTS	Avg RF										
I M3-MeFOSAA	Avg RF	0.9965	1.0987	0.8587	0.8302	0.8948	0.9403	0.9880	0.8912	0.9373	9.347
T MeFOSAA	Avg RF										
I M3-HFO-DA	Avg RF	0.8233	1.0479	0.9108	0.8667	0.8705	0.8930	0.9332	0.8868	0.9040	7.367
T HFO-DA	Avg RF	19.60	21.42	21.33	19.32	19.89	20.35	20.92	19.27	20.26	4.329
T ADONA	Avg RF	9.8278	11.47	11.11	9.4814	10.22	10.13	10.40	9.4914	10.27	6.993
T 9Cl-PF3ONS	Avg RF	5.5321	5.6554	5.6173	4.9550	5.1447	5.3529	5.4426	5.3073	5.3759	4.452
T 11Cl-PF3OUds	Avg RF										
I M5-EFOSAA	Avg RF	0.7544	0.8801	0.7199	0.7445	0.7152	0.7790	0.8382	0.7019	0.7667	8.225
T EFOSAA	Avg RF										
I M7-MeFOSE	Avg RF	1.0357	0.9915	0.9052	0.8548	0.8996	0.9787	0.9292	0.9442	0.9423	6.149
T MeFOSE	Avg RF										
I M9-EFOSE	Avg RF	1.0047	1.0260	0.8951	0.8875	0.9452	1.0035	1.0277	1.0540	0.9805	6.453
T EFOSE	Avg RF										

Generated at 7:39 PM on 4/4/2023

Page 2 of 4

Initial Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICC239
 Lab FileID: 6Q16009.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	1.0169	1.1604	1.1770	0.9858	1.0110	1.1407	1.1446	0.9965	1.0791	7.700
I M3-MeFOSA											
T MeFOSA	Avg RF	1.0809	1.1323	1.0625	0.9148	1.0043	1.0259	1.1329	1.0597	1.0517	6.798
I 13C4-PFOS											
S d3-MeFOSAA	Linear	1.0994	1.3991	1.2457	1.2018	1.1460	1.1730	1.2046	1.2065	1.2095	7.318
S 13C8-PFOS	Linear	0.8264	0.8846	0.8587	0.8070	0.7547	0.7901	0.8380	0.7590	0.8148	5.659
S d5-EFOSAA	Linear	0.9666	1.1169	1.1083	1.0182	1.0311	1.0818	1.0520	1.0046	1.0474	5.002
S 13C8-FOSA	Linear	1.8682	2.0062	1.8552	1.8416	1.8215	1.8055	1.8930	1.7929	1.8605	3.626
S d7-MeFOSE	Linear	0.2621	0.2823	0.2682	0.2508	0.2528	0.2373	0.2552	0.2267	0.2544	6.810
S d3-MeFOSA	Linear	0.6204	0.7325	0.6606	0.6862	0.6544	0.6866	0.6476	0.6753	0.6705	4.967
S d9-EFOSE	Linear	0.1766	0.1943	0.1782	0.1636	0.1641	0.1636	0.1677	0.1448	0.1691	8.527
S d5-EFOSA	Linear	0.7192	0.7570	0.6856	0.7269	0.7175	0.7012	0.7000	0.7737	0.7227	4.114
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1663	1.1727	1.1597	1.1570	1.1653	1.1854	1.1769	1.1690	1.1690	0.788
I 18O2-PFHxS											
S 13C2-4:2FTS	Linear	0.2041	0.1689	0.1675	0.1754	0.1672	0.1583	0.1572	0.1468	0.1682	10.092
S 13C3-PFBS	Linear	2.5003	2.0859	2.1838	2.2943	2.1483	2.2940	2.2326	2.0475	2.2233	6.448
S 13C2-6:2FTS	Linear	0.2338	0.2095	0.1973	0.2225	0.2209	0.1905	0.2022	0.1743	0.2064	9.367
S 13C3-PFHxS	Linear	1.5841	1.3323	1.3636	1.4140	1.4145	1.4394	1.4947	1.4073	1.4312	5.475
S 13C2-8:2FTS	Linear	0.2288	0.1893	0.1945	0.2100	0.1946	0.2078	0.1957	0.1702	0.1989	8.631
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8153	0.8394	0.8451	0.8917	0.8606	0.8181	0.7636	0.8468	0.8351	4.502
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.7693	0.6452	0.7722	0.7555	0.7541	0.7664	0.6990	0.7250	0.7358	6.031
S 13C7-PFUnDA	Linear	0.9031	0.8691	0.8248	0.9334	0.8975	0.8423	0.7830	0.7831	0.8545	6.542
S 13C2-PFDODA	Linear	1.0196	0.8863	0.9682	1.0793	1.0079	0.9924	0.9464	1.0038	0.9880	5.735
S 13C2-PFTeDA	Linear	0.6109	0.5548	0.5519	0.6473	0.5955	0.6078	0.5743	0.5989	0.5927	5.345
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.9089	0.9562	0.9018	0.9067	1.0400	0.9296	0.9028	0.8518	0.9247	5.953
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.5634	0.5939	0.5930	0.5759	0.5909	0.5971	0.5841	0.5664	0.5831	2.238
S 13C5-PFHxA	Linear	1.0505	0.9949	1.0427	1.0087	1.0369	1.0345	1.0759	1.0325	1.0346	2.393
S 13C3-HPOD-A	Linear	0.1048	0.1079	0.1088	0.1056	0.1097	0.1121	0.1117	0.1115	0.1090	2.559
S 13C4-PFHpA	Linear	0.9644	1.0324	1.0199	1.0453	1.0117	1.0247	1.0238	0.9750	1.0121	2.775

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

Initial Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICC239
 Lab FileID: 6Q16009.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PBBA	Linear	$y = 1.169040 * x$	
S 13C5-PFPeA	Linear	$y = 0.583071 * x$	
S 13C2-4:2FTS	Linear	$y = 0.168171 * x$	
S 13C3-PFBS	Linear	$y = 2.223329 * x$	
S 13C5-PFHxA	Linear	$y = 1.034575 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.109021 * x$	
S 13C4-PFHpA	Linear	$y = 1.012136 * x$	
S 13C2-6:2FTS	Linear	$y = 0.206356 * x$	
S 13C8-PFOA	Linear	$y = 0.835070 * x$	
S 13C3-PFHxS	Linear	$y = 1.431243 * x$	
S 13C9-PFNA	Linear	$y = 0.924723 * x$	
S 13C2-8:2FTS	Linear	$y = 0.198861 * x$	
S 13C6-PEDA	Linear	$y = 0.735836 * x$	
S d3-MeFOSAA	Linear	$y = 1.209514 * x$	
S 13C8-PFOS	Linear	$y = 0.814810 * x$	
S d5-EFOSAA	Linear	$y = 1.047425 * x$	
S 13C7-PFUInDA	Linear	$y = 0.854541 * x$	
S 13C2-PFDODA	Linear	$y = 0.987977 * x$	
S 13C8-FOSA	Linear	$y = 1.860513 * x$	
S 13C2-PFTeDA	Linear	$y = 0.592660 * x$	
S d7-MeFOSE	Linear	$y = 0.254426 * x$	
S d3-MeFOSA	Linear	$y = 0.670458 * x$	
S d9-EFOSE	Linear	$y = 0.169114 * x$	
S d5-EFOSA	Linear	$y = 0.722657 * x$	

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

Initial Calibration Verification

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICV239
 Lab FileID: 6Q16015.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040423_1633_S6Q239\s6q239.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16015
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.180	3.6	103.6
13C2-6:2FTS	5.000	5.094	1.9	101.9
13C2-8:2FTS	5.000	5.046	0.9	100.9
13C2-PFDoDA	1.250	1.140	-8.8	91.2
13C2-PFTeDA	1.250	1.059	-15.3	84.7
13C3-PFBS	2.500	2.478	-0.9	99.1
13C3-PFHxS	2.500	2.453	-1.9	98.1
13C4-PFBA	10.000	10.063	0.6	100.6
13C4-PFHpA	2.500	2.562	2.5	102.5
13C5-PFHxA	2.500	2.518	0.7	100.7
13C5-PFPeA	5.000	4.933	-1.3	98.7
13C6-PFDA	1.250	1.285	2.8	102.8
13C7-PFUnDA	1.250	1.192	-4.6	95.4
13C8-FOSA	2.500	2.359	-5.6	94.4
13C8-PFOA	2.500	2.367	-5.3	94.7
13C8-PFOS	2.500	2.503	0.1	100.1
13C9-PFNA	1.250	1.314	5.1	105.1
4:2FTS	9.375	9.339	-0.4	99.6
6:2FTS	9.500	9.553	0.6	100.6
8:2FTS	9.600	10.302	7.3	107.3
d3-MeFOSAA	5.000	4.780	-4.4	95.6
EtFOSAA	2.500	2.530	1.2	101.2
FOSA	2.500	2.588	3.5	103.5
MeFOSAA	2.500	2.438	-2.5	97.5
PFBA	10.000	9.510	-4.9	95.1
PFBS	2.218	2.116	-4.6	95.4
PFDA	2.500	2.169	-13.3	86.7
PFDoDA	2.500	2.525	1.0	101.0
PFDS	2.413	2.301	-4.6	95.4
PFHpA	2.500	2.320	-7.2	92.8
PFHpS	2.383	2.107	-11.6	88.4
PFHxA	2.500	2.389	-4.4	95.6
PFHxS	2.285	2.334	2.1	102.1
PFNA	2.500	2.207	-11.7	88.3
PFNS	2.405	2.146	-10.8	89.2
PFOA	2.500	2.488	-0.5	99.5
PFOS	2.320	2.043	-12.0	88.0

Initial Calibration Verification

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICV239
 Lab FileID: 6Q16015.D

PFPeA	5.000	4.853	-2.9	97.1
PFPeS	2.353	2.310	-1.8	98.2
PFTeDA	2.500	2.659	6.4	106.4
PFTTrDA	2.500	2.529	1.2	101.2
PFUnDA	2.500	2.469	-1.3	98.7
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	9.450	9.109	-3.6	96.4
13C3-HFPO-DA	10.000	9.991	-0.1	99.9
9C1-PF3ONS	9.350	8.853	-5.3	94.7
ADONA	9.450	9.462	0.1	100.1
HFPO-DA	10.000	9.561	-4.4	95.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.882	-4.8	95.2
5:3FTCA	62.400	58.543	-6.2	93.8
7:3FTCA	62.400	59.487	-4.7	95.3
d3-MeFOSA	2.500	2.327	-6.9	93.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.424	-3.0	97.0
EtFOSE	25.000	24.248	-3.0	97.0
MeFOSA	2.500	2.559	2.4	102.4
MeFOSE	25.000	24.755	-1.0	99.0
PFDoDS	2.425	2.243	-7.5	92.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.613	-7.7	92.3
d7-MeFOSE	25.000	22.660	-9.4	90.6
d9-EtFOSE	25.000	23.618	-5.5	94.5
d5-EtFOSA	2.500	2.339	-6.4	93.6
NFDHA	5.000	4.849	-3.0	97.0
PFMBA	5.000	4.793	-4.1	95.9
PFMPA	5.000	4.821	-3.6	96.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.224	-5.1	94.9

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICV239
 Lab FileID: 6Q16016.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040423_1633_S6Q239\s6q239.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16016
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.316	6.3	106.3
13C2-6:2FTS	5.000	5.665	13.3	113.3
13C2-8:2FTS	5.000	5.645	12.9	112.9
13C2-PFDoDA	1.250	1.232	-1.4	98.6
13C2-PFTeDA	1.250	1.206	-3.5	96.5
13C3-PFBS	2.500	2.560	2.4	102.4
13C3-PFHxS	2.500	2.645	5.8	105.8
13C4-PFBA	10.000	10.086	0.9	100.9
13C4-PFHpA	2.500	2.496	-0.1	99.9
13C5-PFHxA	2.500	2.424	-3.1	96.9
13C5-PFPeA	5.000	4.896	-2.1	97.9
13C6-PFDA	1.250	1.265	1.2	101.2
13C7-PFUnDA	1.250	1.295	3.6	103.6
13C8-FOSA	2.500	2.269	-9.2	90.8
13C8-PFOA	2.500	2.377	-4.9	95.1
13C8-PFOS	2.500	2.671	6.8	106.8
13C9-PFNA	1.250	1.287	2.9	102.9
4:2FTS	20.000	21.941	9.7	109.7
6:2FTS	20.000	20.726	3.6	103.6
8:2FTS	20.000	20.396	2.0	102.0
d3-MeFOSAA	5.000	4.821	-3.6	96.4
EtFOSAA	20.000	22.157	10.8	110.8
FOSA	20.000	22.439	12.2	112.2
MeFOSAA	20.000	20.313	1.6	101.6
PFBA	20.000	19.508	-2.5	97.5
PFBS	20.000	21.807	9.0	109.0
PFDA	20.000	20.446	2.2	102.2
PFDoDA	20.000	18.665	-6.7	93.3
PFDS	20.000	17.715	-11.4	88.6
PFHpA	20.000	20.921	4.6	104.6
PFHpS	20.000	18.879	-5.6	94.4
PFHxA	20.000	21.490	7.5	107.5
PFHxS	20.000	20.922	4.6	104.6
PFNA	20.000	20.794	4.0	104.0
PFNS	20.000	18.242	-8.8	91.2
PFOA	20.000	21.431	7.2	107.2
PFOS	20.000	16.346	-18.3	81.7

Initial Calibration Verification

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q239-ICV239
 Lab FileID: 6Q16016.D

PFPeA	20.000	22.071	10.4	110.4
PFPeS	20.000	20.419	2.1	102.1
PFTeDA	20.000	21.140	5.7	105.7
PFTTrDA	20.000	18.440	-7.8	92.2
PFUnDA	20.000	18.479	-7.6	92.4
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	21.989	9.9	109.9
13C3-HFPO-DA	10.000	9.948	-0.5	99.5
9C1-PF3ONS	20.000	20.166	0.8	100.8
ADONA	20.000	20.870	4.4	104.4
HFPO-DA	20.000	20.033	0.2	100.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.277	-3.6	96.4
5:3FTCA	20.000	19.856	-0.7	99.3
7:3FTCA	20.000	19.938	-0.3	99.7
d3-MeFOSA	2.500	2.389	-4.4	95.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	21.178	5.9	105.9
EtFOSE	100.000	89.017	-11.0	89.0
MeFOSA	20.000	19.792	-1.0	99.0
MeFOSE	100.000	87.634	-12.4	87.6
PFDoDS	20.000	16.000	-20.0	80.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.624	-7.5	92.5
d7-MeFOSE	25.000	23.283	-6.9	93.1
d9-EtFOSE	25.000	23.610	-5.6	94.4
d5-EtFOSA	2.500	2.304	-7.9	92.1
NFDHA	20.000	19.224	-3.9	96.1
PFMBA	20.000	19.717	-1.4	98.6
PFMPA	20.000	20.737	3.7	103.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.262	-8.7	91.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q242-CC239
 Lab FileID: 6Q16298.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040623_1633_S6Q241\s6q242.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16298
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.428	28.6	128.6
13C2-6:2FTS	5.000	6.624	# 32.5	132.5
13C2-8:2FTS	5.000	5.418	8.4	108.4
13C2-PFDoDA	1.250	1.117	-10.6	89.4
13C2-PFTeDA	1.250	1.047	-16.3	83.7
13C3-PFBS	2.500	2.573	2.9	102.9
13C3-PFHxS	2.500	2.444	-2.3	97.7
13C4-PFBA	10.000	9.967	-0.3	99.7
13C4-PFHpA	2.500	2.530	1.2	101.2
13C5-PFHxA	2.500	2.560	2.4	102.4
13C5-PFPeA	5.000	4.917	-1.7	98.3
13C6-PFDA	1.250	1.214	-2.9	97.1
13C7-PFUnDA	1.250	1.227	-1.9	98.1
13C8-FOSA	2.500	2.350	-6.0	94.0
13C8-PFOA	2.500	2.639	5.6	105.6
13C8-PFOS	2.500	2.409	-3.6	96.4
13C9-PFNA	1.250	1.265	1.2	101.2
4:2FTS	0.750	0.787	5.0	105.0
6:2FTS	0.760	0.764	0.5	100.5
8:2FTS	0.768	0.845	10.1	110.1
d3-MeFOSAA	5.000	5.121	2.4	102.4
EtFOSAA	0.200	0.201	0.7	100.7
FOSA	0.200	0.197	-1.7	98.3
MeFOSAA	0.200	0.229	14.6	114.6
PFBA	0.800	0.759	-5.1	94.9
PFBS	0.177	0.154	-12.8	87.2
PFDA	0.200	0.206	2.8	102.8
PFDoDA	0.200	0.223	11.5	111.5
PFDS	0.193	0.225	16.3	116.3
PFHpA	0.200	0.211	5.6	105.6
PFHpS	0.191	0.199	3.9	103.9
PFHxA	0.200	0.209	4.4	104.4
PFHxS	0.183	0.214	16.7	116.7
PFNA	0.200	0.199	-0.7	99.3
PFNS	0.192	0.223	16.2	116.2
PFOA	0.200	0.186	-7.2	92.8
PFOS	0.186	0.222	19.4	119.4

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q242-CC239
 Lab FileID: 6Q16298.D

PFPeA	0.400	0.432	7.9	107.9
PFPeS	0.188	0.188	0.1	100.1
PFTeDA	0.200	0.250	24.8	124.8
PFTTrDA	0.200	0.250	25.1	125.1
PFUnDA	0.200	0.223	11.3	111.3
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	0.756	0.853	12.8	112.8
13C3-HFPO-DA	10.000	9.279	-7.2	92.8
9C1-PF3ONS	0.748	0.836	11.8	111.8
ADONA	0.756	0.860	13.8	113.8
HFPO-DA	0.800	0.757	-5.4	94.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.914	-8.5	91.5
5:3FTCA	4.992	5.484	9.9	109.9
7:3FTCA	4.992	6.572	# 31.6	131.6
d3-MeFOSA	2.500	2.342	-6.3	93.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.255	27.3	127.3
EtFOSE	2.000	2.271	13.5	113.5
MeFOSA	0.200	0.206	3.1	103.1
MeFOSE	2.000	2.275	13.7	113.7
PFDoDS	0.194	0.222	14.6	114.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.099	2.0	102.0
d7-MeFOSE	25.000	21.184	-15.3	84.7
d9-EtFOSE	25.000	20.445	-18.2	81.8
d5-EtFOSA	2.500	2.237	-10.5	89.5
NFDHA	0.400	0.422	5.4	105.4
PFMBA	0.400	0.375	-6.3	93.7
PFMPA	0.400	0.384	-4.0	96.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.360	1.0	101.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q242-ECC239
 Lab FileID: 6Q16310.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040623_1633_S6Q241\s6q242.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16310
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.580	11.6	111.6
13C2-6:2FTS	5.000	5.923	18.5	118.5
13C2-8:2FTS	5.000	5.785	15.7	115.7
13C2-PFDoDA	1.250	1.217	-2.6	97.4
13C2-PFTeDA	1.250	1.229	-1.7	98.3
13C3-PFBS	2.500	2.475	-1.0	99.0
13C3-PFHxS	2.500	2.384	-4.6	95.4
13C4-PFBA	10.000	9.958	-0.4	99.6
13C4-PFHpA	2.500	2.582	3.3	103.3
13C5-PFHxA	2.500	2.575	3.0	103.0
13C5-PFPeA	5.000	5.175	3.5	103.5
13C6-PFDA	1.250	1.350	8.0	108.0
13C7-PFUnDA	1.250	1.221	-2.3	97.7
13C8-FOSA	2.500	2.305	-7.8	92.2
13C8-PFOA	2.500	2.765	10.6	110.6
13C8-PFOS	2.500	2.405	-3.8	96.2
13C9-PFNA	1.250	1.225	-2.0	98.0
4:2FTS	9.375	9.908	5.7	105.7
6:2FTS	9.500	8.930	-6.0	94.0
8:2FTS	9.600	9.206	-4.1	95.9
d3-MeFOSAA	5.000	5.767	15.3	115.3
EtFOSAA	2.500	2.373	-5.1	94.9
FOSA	2.500	2.435	-2.6	97.4
MeFOSAA	2.500	2.084	-16.6	83.4
PFBA	10.000	9.532	-4.7	95.3
PFBS	2.218	2.146	-3.2	96.8
PFDA	2.500	2.260	-9.6	90.4
PFDoDA	2.500	2.391	-4.3	95.7
PFDS	2.413	2.550	5.7	105.7
PFHpA	2.500	2.479	-0.8	99.2
PFHpS	2.383	2.102	-11.8	88.2
PFHxA	2.500	2.374	-5.0	95.0
PFHxS	2.285	2.373	3.8	103.8
PFNA	2.500	2.347	-6.1	93.9
PFNS	2.405	2.363	-1.8	98.2
PFOA	2.500	2.340	-6.4	93.6
PFOS	2.320	2.225	-4.1	95.9

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q242-ECC239
 Lab FileID: 6Q16310.D

PFPeA	5.000	4.851	-3.0	97.0
PFPeS	2.353	2.278	-3.2	96.8
PFTeDA	2.500	2.316	-7.4	92.6
PFTTrDA	2.500	2.606	4.2	104.2
PFUnDA	2.500	2.428	-2.9	97.1
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	9.450	9.504	0.6	100.6
13C3-HFPO-DA	10.000	10.212	2.1	102.1
9C1-PF3ONS	9.350	9.831	5.1	105.1
ADONA	9.450	10.193	7.9	107.9
HFPO-DA	10.000	10.001	0.0	100.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.888	-12.8	87.2
5:3FTCA	62.400	59.302	-5.0	95.0
7:3FTCA	62.400	63.004	1.0	101.0
d3-MeFOSA	2.500	2.324	-7.0	93.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.618	4.7	104.7
EtFOSE	25.000	23.151	-7.4	92.6
MeFOSA	2.500	2.511	0.4	100.4
MeFOSE	25.000	22.960	-8.2	91.8
PFDoDS	2.425	2.353	-3.0	97.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.513	10.3	110.3
d7-MeFOSE	25.000	22.821	-8.7	91.3
d9-EtFOSE	25.000	21.717	-13.1	86.9
d5-EtFOSA	2.500	2.273	-9.1	90.9
NFDHA	5.000	4.698	-6.0	94.0
PFMBA	5.000	4.499	-10.0	90.0
PFMPA	5.000	4.609	-7.8	92.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.399	-1.1	98.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16318.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040623_1633_S6Q241\S6Q243.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16318
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.554	11.1	111.1
13C2-6:2FTS	5.000	6.038	20.8	120.8
13C2-8:2FTS	5.000	5.171	3.4	103.4
13C2-PFDoDA	1.250	1.134	-9.2	90.8
13C2-PFTeDA	1.250	1.101	-11.9	88.1
13C3-PFBS	2.500	2.336	-6.6	93.4
13C3-PFHxS	2.500	2.427	-2.9	97.1
13C4-PFBA	10.000	9.994	-0.1	99.9
13C4-PFHpA	2.500	2.499	-0.1	99.9
13C5-PFHxA	2.500	2.499	0.0	100.0
13C5-PFPeA	5.000	4.940	-1.2	98.8
13C6-PFDA	1.250	1.204	-3.7	96.3
13C7-PFUnDA	1.250	1.158	-7.3	92.7
13C8-FOSA	2.500	2.338	-6.5	93.5
13C8-PFOA	2.500	2.635	5.4	105.4
13C8-PFOS	2.500	2.412	-3.5	96.5
13C9-PFNA	1.250	1.178	-5.8	94.2
4:2FTS	9.375	9.245	-1.4	98.6
6:2FTS	9.500	8.916	-6.2	93.8
8:2FTS	9.600	9.886	3.0	103.0
d3-MeFOSAA	5.000	5.120	2.4	102.4
EtFOSAA	2.500	2.548	1.9	101.9
FOSA	2.500	2.380	-4.8	95.2
MeFOSAA	2.500	2.292	-8.3	91.7
PFBA	10.000	9.585	-4.1	95.9
PFBS	2.218	2.192	-1.2	98.8
PFDA	2.500	2.422	-3.1	96.9
PFDoDA	2.500	2.483	-0.7	99.3
PFDS	2.413	2.430	0.7	100.7
PFHpA	2.500	2.471	-1.2	98.8
PFHpS	2.383	2.461	3.3	103.3
PFHxA	2.500	2.458	-1.7	98.3
PFHxS	2.285	2.124	-7.1	92.9
PFNA	2.500	2.494	-0.3	99.7
PFNS	2.405	2.528	5.1	105.1
PFOA	2.500	2.304	-7.8	92.2
PFOS	2.320	2.372	2.2	102.2

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16318.D

PFPeA	5.000	4.794	-4.1	95.9
PFPeS	2.353	2.229	-5.3	94.7
PFTeDA	2.500	2.395	-4.2	95.8
PFTTrDA	2.500	2.574	3.0	103.0
PFUnDA	2.500	2.572	2.9	102.9
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	9.450	9.600	1.6	101.6
13C3-HFPO-DA	10.000	9.785	-2.2	97.8
9C1-PF3ONS	9.350	9.448	1.0	101.0
ADONA	9.450	9.931	5.1	105.1
HFPO-DA	10.000	10.041	0.4	100.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.060	-11.4	88.6
5:3FTCA	62.400	58.732	-5.9	94.1
7:3FTCA	62.400	59.579	-4.5	95.5
d3-MeFOSA	2.500	2.347	-6.1	93.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.478	-0.9	99.1
EtFOSE	25.000	23.706	-5.2	94.8
MeFOSA	2.500	2.675	7.0	107.0
MeFOSE	25.000	22.573	-9.7	90.3
PFDoDS	2.425	2.319	-4.4	95.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.284	5.7	105.7
d7-MeFOSE	25.000	22.241	-11.0	89.0
d9-EtFOSE	25.000	22.210	-11.2	88.8
d5-EtFOSA	2.500	2.402	-3.9	96.1
NFDHA	5.000	4.784	-4.3	95.7
PFMBA	5.000	4.466	-10.7	89.3
PFMPA	5.000	4.697	-6.1	93.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.626	4.0	104.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16319.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040623_1633_S6Q241\S6Q243.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16319
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.741	14.8	114.8
13C2-6:2FTS	5.000	6.297	25.9	125.9
13C2-8:2FTS	5.000	5.015	0.3	100.3
13C2-PFDoDA	1.250	1.080	-13.6	86.4
13C2-PFTeDA	1.250	1.103	-11.8	88.2
13C3-PFBS	2.500	2.490	-0.4	99.6
13C3-PFHxS	2.500	2.375	-5.0	95.0
13C4-PFBA	10.000	9.946	-0.5	99.5
13C4-PFHpA	2.500	2.414	-3.5	96.5
13C5-PFHxA	2.500	2.379	-4.8	95.2
13C5-PFPeA	5.000	4.934	-1.3	98.7
13C6-PFDA	1.250	1.361	8.9	108.9
13C7-PFUnDA	1.250	1.251	0.1	100.1
13C8-FOSA	2.500	2.320	-7.2	92.8
13C8-PFOA	2.500	2.423	-3.1	96.9
13C8-PFOS	2.500	2.425	-3.0	97.0
13C9-PFNA	1.250	1.183	-5.3	94.7
4:2FTS	0.750	0.838	11.7	111.7
6:2FTS	0.760	0.739	-2.8	97.2
8:2FTS	0.768	0.928	20.8	120.8
d3-MeFOSAA	5.000	5.337	6.7	106.7
EtFOSAA	0.200	0.190	-5.1	94.9
FOSA	0.200	0.227	13.5	113.5
MeFOSAA	0.200	0.184	-7.8	92.2
PFBA	0.800	0.763	-4.6	95.4
PFBS	0.177	0.166	-6.4	93.6
PFDA	0.200	0.198	-1.0	99.0
PFDoDA	0.200	0.220	10.1	110.1
PFDS	0.193	0.180	-6.7	93.3
PFHpA	0.200	0.202	1.0	101.0
PFHpS	0.191	0.194	1.7	101.7
PFHxA	0.200	0.215	7.3	107.3
PFHxS	0.183	0.211	15.1	115.1
PFNA	0.200	0.223	11.3	111.3
PFNS	0.192	0.228	18.7	118.7
PFOA	0.200	0.203	1.5	101.5
PFOS	0.186	0.172	-7.4	92.6

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16319.D

PFPeA	0.400	0.424	6.1	106.1
PFPeS	0.188	0.192	2.3	102.3
PFTeDA	0.200	0.226	12.9	112.9
PFTTrDA	0.200	0.247	23.7	123.7
PFUnDA	0.200	0.207	3.7	103.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.756	0.789	4.4	104.4
13C3-HFPO-DA	10.000	9.107	-8.9	91.1
9C1-PF3ONS	0.748	0.804	7.5	107.5
ADONA	0.756	0.863	14.1	114.1
HFPO-DA	0.800	0.799	-0.1	99.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.865	-13.4	86.6
5:3FTCA	4.992	5.422	8.6	108.6
7:3FTCA	4.992	6.632	# 32.8	132.8
d3-MeFOSA	2.500	2.247	-10.1	89.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.213	6.5	106.5
EtFOSE	2.000	2.158	7.9	107.9
MeFOSA	0.200	0.227	13.3	113.3
MeFOSE	2.000	2.301	15.0	115.0
PFDoDS	0.194	0.232	19.8	119.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.235	4.7	104.7
d7-MeFOSE	25.000	20.871	-16.5	83.5
d9-EtFOSE	25.000	20.584	-17.7	82.3
d5-EtFOSA	2.500	2.401	-4.0	96.0
NFDHA	0.400	0.411	2.8	102.8
PFMBA	0.400	0.377	-5.9	94.1
PFMPA	0.400	0.390	-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	0.356	0.400	12.4	112.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16328.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\040623_1633_S6Q241\S6Q243.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\040423_1633_S6Q239\6Q16006.d
 2:D:\MassHunter\Data\040423_1633_S6Q239\6Q16007.d
 3:D:\MassHunter\Data\040423_1633_S6Q239\6Q16008.d
 4:D:\MassHunter\Data\040423_1633_S6Q239\6Q16009.d
 5:D:\MassHunter\Data\040423_1633_S6Q239\6Q16010.d
 6:D:\MassHunter\Data\040423_1633_S6Q239\6Q16011.d
 7:D:\MassHunter\Data\040423_1633_S6Q239\6Q16012.d
 8:D:\MassHunter\Data\040423_1633_S6Q239\6Q16013.d

Data File: 6Q16328
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.935	18.7	118.7
13C2-6:2FTS	5.000	6.195	23.9	123.9
13C2-8:2FTS	5.000	5.710	14.2	114.2
13C2-PFDoDA	1.250	1.173	-6.1	93.9
13C2-PFTeDA	1.250	1.142	-8.6	91.4
13C3-PFBS	2.500	2.452	-1.9	98.1
13C3-PFHxS	2.500	2.476	-1.0	99.0
13C4-PFBA	10.000	10.063	0.6	100.6
13C4-PFHpA	2.500	2.585	3.4	103.4
13C5-PFHxA	2.500	2.622	4.9	104.9
13C5-PFPeA	5.000	5.127	2.5	102.5
13C6-PFDA	1.250	1.261	0.9	100.9
13C7-PFUnDA	1.250	1.309	4.7	104.7
13C8-FOSA	2.500	2.368	-5.3	94.7
13C8-PFOA	2.500	2.591	3.6	103.6
13C8-PFOS	2.500	2.385	-4.6	95.4
13C9-PFNA	1.250	1.351	8.1	108.1
4:2FTS	9.375	9.075	-3.2	96.8
6:2FTS	9.500	8.618	-9.3	90.7
8:2FTS	9.600	9.633	0.3	100.3
d3-MeFOSAA	5.000	5.536	10.7	110.7
EtFOSAA	2.500	2.757	10.3	110.3
FOSA	2.500	2.347	-6.1	93.9
MeFOSAA	2.500	2.370	-5.2	94.8
PFBA	10.000	9.568	-4.3	95.7
PFBS	2.218	2.150	-3.1	96.9
PFDA	2.500	2.273	-9.1	90.9
PFDoDA	2.500	2.389	-4.4	95.6
PFDS	2.413	2.277	-5.6	94.4
PFHpA	2.500	2.413	-3.5	96.5
PFHpS	2.383	2.279	-4.4	95.6
PFHxA	2.500	2.341	-6.4	93.6
PFHxS	2.285	2.277	-0.4	99.6
PFNA	2.500	2.389	-4.4	95.6
PFNS	2.405	2.439	1.4	101.4
PFOA	2.500	2.410	-3.6	96.4
PFOS	2.320	2.226	-4.1	95.9

Continuing Calibration Summary

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q243-CC239
 Lab FileID: 6Q16328.D

PFPeA	5.000	4.902	-2.0	98.0
PFPeS	2.353	2.167	-7.9	92.1
PFTeDA	2.500	2.547	1.9	101.9
PFTTrDA	2.500	2.448	-2.1	97.9
PFUnDA	2.500	2.164	-13.4	86.6
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	9.450	9.260	-2.0	98.0
13C3-HFPO-DA	10.000	9.907	-0.9	99.1
9C1-PF3ONS	9.350	10.336	10.5	110.5
ADONA	9.450	9.887	4.6	104.6
HFPO-DA	10.000	10.164	1.6	101.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.182	-10.4	89.6
5:3FTCA	62.400	56.862	-8.9	91.1
7:3FTCA	62.400	58.430	-6.4	93.6
d3-MeFOSA	2.500	2.295	-8.2	91.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.402	-3.9	96.1
EtFOSE	25.000	23.001	-8.0	92.0
MeFOSA	2.500	2.520	0.8	100.8
MeFOSE	25.000	25.074	0.3	100.3
PFDoDS	2.425	2.288	-5.7	94.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.129	2.6	102.6
d7-MeFOSE	25.000	21.062	-15.8	84.2
d9-EtFOSE	25.000	21.168	-15.3	84.7
d5-EtFOSA	2.500	2.357	-5.7	94.3
NFDHA	5.000	4.718	-5.6	94.4
PFMBA	5.000	4.512	-9.8	90.2
PFMPA	5.000	4.675	-6.5	93.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.277	-3.9	96.1

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q239	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q239-RT	6Q16003.D	04/04/23 13:10	n/a	Retention Time Marker
S6Q239-RT	6Q16004.D	04/04/23 13:24	n/a	Retention Time Marker
S6Q239-IC239	6Q16005.D	04/04/23 13:38	n/a	Mass Calibration Verification
S6Q239-IC239	6Q16006.D	04/04/23 14:15	n/a	Initial cal 1
S6Q239-IC239	6Q16007.D	04/04/23 14:29	n/a	Initial cal 2
S6Q239-IC239	6Q16008.D	04/04/23 14:43	n/a	Initial cal 3
S6Q239-ICC239	6Q16009.D	04/04/23 14:57	n/a	Initial cal 4
S6Q239-IC239	6Q16010.D	04/04/23 15:11	n/a	Initial cal 5
S6Q239-IC239	6Q16011.D	04/04/23 15:25	n/a	Initial cal 6
S6Q239-IC239	6Q16012.D	04/04/23 15:39	n/a	Initial cal 7
S6Q239-IC239	6Q16013.D	04/04/23 15:53	n/a	Initial cal 8
S6Q239-IBLK	6Q16014.D	04/04/23 16:07	n/a	Instrument Blank
S6Q239-IBLK	6Q16014.D	04/04/23 16:07	n/a	Instrument Blank
S6Q239-ICV239	6Q16015.D	04/04/23 16:21	n/a	Initial cal verification 4
S6Q239-ICV239	6Q16016.D	04/04/23 16:35	n/a	Initial cal verification 20
S6Q239-CC239	6Q16017.D	04/04/23 16:49	n/a	Continuing cal 4
S6Q239-CC239	6Q16018.D	04/04/23 17:03	n/a	Continuing cal 1.0LL
OP96208-BS	6Q16019.D	04/04/23 17:17	OP96208	Blank Spike
OP96208-LLBS	6Q16020.D	04/04/23 17:31	OP96208	Blank Spike
OP96208-MB	6Q16021.D	04/04/23 17:45	OP96208	Method Blank
ZZZZZZ	6Q16022.D	04/04/23 17:59	OP96208	(unrelated sample)
S6Q239-CC239	6Q16023.D	04/04/23 18:13	n/a	Continuing cal 4
S6Q239-ICCB	6Q16024.D	04/04/23 18:27	n/a	Continuing Calibration Blank
OP96209-BS	6Q16025.D	04/04/23 18:41	OP96209	Blank Spike
OP96209-LLBS	6Q16026.D	04/04/23 18:55	OP96209	Blank Spike
OP96209-MB	6Q16027.D	04/04/23 19:09	OP96209	Method Blank
FC3853-1	6Q16028.D	04/04/23 19:23	OP96209	(used for QC only; not part of job FC3898)
OP96209-MS	6Q16029.D	04/04/23 19:37	OP96209	Matrix Spike
FC3853-2	6Q16030.D	04/04/23 19:51	OP96209	(used for QC only; not part of job FC3898)
OP96209-DUP	6Q16031.D	04/04/23 20:05	OP96209	Duplicate
ZZZZZZ	6Q16032.D	04/04/23 20:19	OP96209	(unrelated sample)
ZZZZZZ	6Q16033.D	04/04/23 20:33	OP96209	(unrelated sample)
S6Q239-CC239	6Q16034.D	04/04/23 20:47	n/a	Continuing cal 4
S6Q239-ICCB	6Q16035.D	04/04/23 21:01	n/a	Continuing Calibration Blank
OP96190-BS	6Q16036.D	04/04/23 21:15	OP96190	Blank Spike
OP96190-LLBS	6Q16037.D	04/04/23 21:29	OP96190	Blank Spike
OP96190-MB	6Q16038.D	04/04/23 21:43	OP96190	Method Blank
ZZZZZZ	6Q16039.D	04/04/23 21:57	OP96190	(unrelated sample)
ZZZZZZ	6Q16040.D	04/04/23 22:11	OP96190	(unrelated sample)
ZZZZZZ	6Q16041.D	04/04/23 22:25	OP96190	(unrelated sample)
JD62588-4	6Q16043.D	04/04/23 22:53	OP96190	(used for QC only; not part of job FC3898)
OP96190-MS	6Q16044.D	04/04/23 23:07	OP96190	Matrix Spike
ZZZZZZ	6Q16045.D	04/04/23 23:21	OP96190	(unrelated sample)
S6Q239-CC239	6Q16046.D	04/04/23 23:35	n/a	Continuing cal 4
S6Q239-ICCB	6Q16047.D	04/04/23 23:49	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16048.D	04/05/23 00:03	OP96190	(unrelated sample)

Run Sequence Report

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q239	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	6Q16049.D	04/05/23 00:17	OP96190	(unrelated sample)
ZZZZZZ	6Q16050.D	04/05/23 00:31	OP96190	(unrelated sample)
ZZZZZZ	6Q16051.D	04/05/23 00:45	OP96190	(unrelated sample)
ZZZZZZ	6Q16052.D	04/05/23 00:59	OP96190	(unrelated sample)
ZZZZZZ	6Q16053.D	04/05/23 01:13	OP96190	(unrelated sample)
ZZZZZZ	6Q16054.D	04/05/23 01:27	OP96190	(unrelated sample)
ZZZZZZ	6Q16055.D	04/05/23 01:41	OP96190	(unrelated sample)
ZZZZZZ	6Q16056.D	04/05/23 01:55	OP96190	(unrelated sample)
ZZZZZZ	6Q16057.D	04/05/23 02:08	OP96190	(unrelated sample)
S6Q239-CC239	6Q16058.D	04/05/23 02:22	n/a	Continuing cal 4
S6Q239-CC239	6Q16059.D	04/05/23 02:36	n/a	Continuing cal 1.0LL
S6Q239-ICCB	6Q16060.D	04/05/23 02:50	n/a	Continuing Calibration Blank
JD62588-12A	6Q16061.D	04/05/23 03:04	OP96190	(used for QC only; not part of job FC3898)
OP96190-DUP	6Q16062.D	04/05/23 03:18	OP96190	Duplicate
ZZZZZZ	6Q16063.D	04/05/23 03:32	OP96190	(unrelated sample)
OP96192-BS	6Q16064.D	04/05/23 03:46	OP96192	Blank Spike
OP96192-LLBS	6Q16065.D	04/05/23 04:00	OP96192	Blank Spike
OP96192-MB	6Q16066.D	04/05/23 04:14	OP96192	Method Blank
ZZZZZZ	6Q16067.D	04/05/23 04:28	OP96192	(unrelated sample)
ZZZZZZ	6Q16068.D	04/05/23 04:42	OP96192	(unrelated sample)
ZZZZZZ	6Q16069.D	04/05/23 04:56	OP96192	(unrelated sample)
ZZZZZZ	6Q16070.D	04/05/23 05:10	OP96192	(unrelated sample)
S6Q239-CC239	6Q16071.D	04/05/23 05:24	n/a	Continuing cal 4
S6Q239-ICCB	6Q16072.D	04/05/23 05:38	n/a	Continuing Calibration Blank
JD62631-4A	6Q16073.D	04/05/23 05:52	OP96192	(used for QC only; not part of job FC3898)
OP96192-MS	6Q16074.D	04/05/23 06:06	OP96192	Matrix Spike
OP96192-MSD	6Q16075.D	04/05/23 06:20	OP96192	Matrix Spike Duplicate
ZZZZZZ	6Q16076.D	04/05/23 06:34	OP96192	(unrelated sample)
ZZZZZZ	6Q16078.D	04/05/23 07:02	OP96192	(unrelated sample)
ZZZZZZ	6Q16079.D	04/05/23 07:16	OP96192	(unrelated sample)
ZZZZZZ	6Q16080.D	04/05/23 07:30	OP96192	(unrelated sample)
ZZZZZZ	6Q16081.D	04/05/23 07:44	OP96192	(unrelated sample)
S6Q239-CC239	6Q16083.D	04/05/23 08:12	n/a	Continuing cal 4
S6Q239-ICCB	6Q16084.D	04/05/23 08:26	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16085.D	04/05/23 08:40	OP96192	(unrelated sample)
ZZZZZZ	6Q16086.D	04/05/23 08:54	OP96192	(unrelated sample)
ZZZZZZ	6Q16087.D	04/05/23 09:08	OP96192	(unrelated sample)
ZZZZZZ	6Q16088.D	04/05/23 09:22	OP96192	(unrelated sample)
ZZZZZZ	6Q16089.D	04/05/23 09:36	OP96192	(unrelated sample)
ZZZZZZ	6Q16090.D	04/05/23 09:50	OP96192	(unrelated sample)
ZZZZZZ	6Q16091.D	04/05/23 10:04	OP96192	(unrelated sample)
S6Q239-CC239	6Q16092.D	04/05/23 10:18	n/a	Continuing cal 4
S6Q239-ICCB	6Q16093.D	04/05/23 10:32	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16095.D	04/05/23 11:38	OP96190	(unrelated sample)
ZZZZZZ	6Q16096.D	04/05/23 11:52	OP96208	(unrelated sample)
ZZZZZZ	6Q16097.D	04/05/23 12:06	OP96190	(unrelated sample)

6-10-1

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Run Sequence Report

Job Number: FC3898
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q239	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	6Q16098.D	04/05/23 12:19	OP96190	(unrelated sample)
ZZZZZZ	6Q16099.D	04/05/23 12:33	OP96190	(unrelated sample)
S6Q239-ECC239	6Q16100.D	04/05/23 12:47	n/a	Ending cal 4
S6Q239-ICCB	6Q16101.D	04/05/23 13:01	n/a	Continuing Calibration Blank

6.10.1

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Run Sequence Report

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q242	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
S6Q242-RT	6Q16265.D	04/07/23 07:52	n/a	Retention Time Marker
S6Q242-RT	6Q16266.D	04/07/23 08:06	n/a	Retention Time Marker
S6Q242-IBLK	6Q16268.D	04/07/23 08:34	n/a	Instrument Blank
S6Q242-CC239	6Q16269.D	04/07/23 08:48	n/a	Continuing cal 4
S6Q242-CC239	6Q16270.D	04/07/23 09:02	n/a	Continuing cal 1.0LL
OP96232-BS	6Q16271.D	04/07/23 09:16	OP96232	Blank Spike
OP96232-LLBS	6Q16272.D	04/07/23 09:30	OP96232	Blank Spike
OP96232-MB	6Q16273.D	04/07/23 09:44	OP96232	Method Blank
ZZZZZZ	6Q16274.D	04/07/23 09:58	OP96232	(unrelated sample)
ZZZZZZ	6Q16275.D	04/07/23 10:12	OP96232	(unrelated sample)
ZZZZZZ	6Q16276.D	04/07/23 10:26	OP96232	(unrelated sample)
ZZZZZZ	6Q16277.D	04/07/23 10:40	OP96232	(unrelated sample)
ZZZZZZ	6Q16278.D	04/07/23 10:54	OP96232	(unrelated sample)
ZZZZZZ	6Q16279.D	04/07/23 11:15	OP96232	(unrelated sample)
S6Q242-CC239	6Q16280.D	04/07/23 11:29	n/a	Continuing cal 4
S6Q242-ICCB	6Q16281.D	04/07/23 11:43	n/a	Continuing Calibration Blank
FC3748-7	6Q16282.D	04/07/23 11:57	OP96232	(used for QC only; not part of job FC3898)
OP96232-MS	6Q16283.D	04/07/23 12:11	OP96232	Matrix Spike
OP96232-MSD	6Q16284.D	04/07/23 12:25	OP96232	Matrix Spike Duplicate
ZZZZZZ	6Q16285.D	04/07/23 12:39	OP96232	(unrelated sample)
ZZZZZZ	6Q16286.D	04/07/23 12:53	OP96232	(unrelated sample)
ZZZZZZ	6Q16287.D	04/07/23 13:07	OP96232	(unrelated sample)
ZZZZZZ	6Q16288.D	04/07/23 13:21	OP96232	(unrelated sample)
ZZZZZZ	6Q16289.D	04/07/23 13:35	OP96232	(unrelated sample)
ZZZZZZ	6Q16290.D	04/07/23 13:49	OP96232	(unrelated sample)
ZZZZZZ	6Q16291.D	04/07/23 14:03	OP96232	(unrelated sample)
S6Q242-CC239	6Q16292.D	04/07/23 14:17	n/a	Continuing cal 4
S6Q242-ICCB	6Q16293.D	04/07/23 14:31	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16294.D	04/07/23 14:45	OP96232	(unrelated sample)
ZZZZZZ	6Q16295.D	04/07/23 14:59	OP96232	(unrelated sample)
ZZZZZZ	6Q16296.D	04/07/23 15:13	OP96232	(unrelated sample)
S6Q242-CC239	6Q16297.D	04/07/23 15:27	n/a	Continuing cal 4
S6Q242-CC239	6Q16298.D	04/07/23 15:41	n/a	Continuing cal 1.0LL
S6Q242-ICCB	6Q16299.D	04/07/23 15:55	n/a	Continuing Calibration Blank
S6Q242-ECC239	6Q16310.D	04/07/23 18:28	n/a	Ending cal 4
S6Q242-ICCB	6Q16311.D	04/07/23 18:42	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q243	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q243-RT	6Q16314.D	04/07/23 19:24	n/a	Retention Time Marker
S6Q243-RT	6Q16315.D	04/07/23 19:38	n/a	Retention Time Marker
S6Q243-IBLK	6Q16317.D	04/07/23 20:06	n/a	Instrument Blank
S6Q243-IBLK	6Q16317.D	04/07/23 20:06	n/a	Instrument Blank
S6Q243-CC239	6Q16318.D	04/07/23 20:20	n/a	Continuing cal 4
S6Q243-CC239	6Q16319.D	04/07/23 20:34	n/a	Continuing cal 1.0LL
OP96279-BS	6Q16320.D	04/07/23 20:48	OP96279	Blank Spike
OP96279-LLBS	6Q16321.D	04/07/23 21:02	OP96279	Blank Spike
OP96279-MB	6Q16322.D	04/07/23 21:16	OP96279	Method Blank
FC3898-1	6Q16323.D	04/07/23 21:30	OP96279	AF-RHMW17D-WGN01LF-2303W4
OP96279-MS	6Q16324.D	04/07/23 21:44	OP96279	Matrix Spike
FC3898-2	6Q16325.D	04/07/23 21:58	OP96279	AF-RHMW17D-WQFB01-2303W4
FC3898-3	6Q16326.D	04/07/23 22:12	OP96279	AF-RHMW17-WGN01LF-2303W4
OP96279-DUP	6Q16327.D	04/07/23 22:26	OP96279	Duplicate
S6Q243-CC239	6Q16328.D	04/07/23 22:40	n/a	Continuing cal 4
S6Q243-ICCB	6Q16329.D	04/07/23 22:54	n/a	Continuing Calibration Blank
OP96278-BS	6Q16330.D	04/07/23 23:08	OP96278	Blank Spike
OP96278-LLBS	6Q16331.D	04/07/23 23:22	OP96278	Blank Spike
OP96278-MB	6Q16332.D	04/07/23 23:36	OP96278	Method Blank
ZZZZZZ	6Q16333.D	04/07/23 23:50	OP96278	(unrelated sample)
ZZZZZZ	6Q16334.D	04/08/23 00:04	OP96278	(unrelated sample)
ZZZZZZ	6Q16335.D	04/08/23 00:18	OP96278	(unrelated sample)
ZZZZZZ	6Q16336.D	04/08/23 00:32	OP96278	(unrelated sample)
ZZZZZZ	6Q16337.D	04/08/23 00:46	OP96278	(unrelated sample)
ZZZZZZ	6Q16338.D	04/08/23 01:00	OP96278	(unrelated sample)
S6Q243-CC239	6Q16339.D	04/08/23 01:14	n/a	Continuing cal 4
S6Q243-ICCB	6Q16340.D	04/08/23 01:28	n/a	Continuing Calibration Blank
OP96276-BS	6Q16341.D	04/08/23 01:42	OP96276	Blank Spike
OP96276-LLBS	6Q16342.D	04/08/23 01:56	OP96276	Blank Spike
OP96276-MB	6Q16343.D	04/08/23 02:10	OP96276	Method Blank
FC3751-1	6Q16344.D	04/08/23 02:24	OP96276	(used for QC only; not part of job FC3898)
OP96276-MS	6Q16345.D	04/08/23 02:38	OP96276	Matrix Spike
FC3751-2	6Q16346.D	04/08/23 02:52	OP96276	(used for QC only; not part of job FC3898)
OP96276-DUP	6Q16347.D	04/08/23 03:06	OP96276	Duplicate
ZZZZZZ	6Q16348.D	04/08/23 03:20	OP96276	(unrelated sample)
ZZZZZZ	6Q16349.D	04/08/23 03:34	OP96276	(unrelated sample)
ZZZZZZ	6Q16350.D	04/08/23 03:48	OP96276	(unrelated sample)
S6Q243-CC239	6Q16351.D	04/08/23 04:02	n/a	Continuing cal 4
S6Q243-ICCB	6Q16352.D	04/08/23 04:16	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16353.D	04/08/23 04:30	OP96276	(unrelated sample)
ZZZZZZ	6Q16354.D	04/08/23 04:44	OP96276	(unrelated sample)
ZZZZZZ	6Q16355.D	04/08/23 04:58	OP96276	(unrelated sample)
ZZZZZZ	6Q16356.D	04/08/23 05:12	OP96276	(unrelated sample)
ZZZZZZ	6Q16357.D	04/08/23 05:26	OP96276	(unrelated sample)
ZZZZZZ	6Q16358.D	04/08/23 05:40	OP96276	(unrelated sample)
ZZZZZZ	6Q16359.D	04/08/23 05:53	OP96276	(unrelated sample)

Run Sequence Report

Job Number: FC3898
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q243	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	6Q16360.D	04/08/23 06:07	OP96276	(unrelated sample)
ZZZZZZ	6Q16361.D	04/08/23 06:21	OP96276	(unrelated sample)
ZZZZZZ	6Q16362.D	04/08/23 06:35	OP96276	(unrelated sample)
S6Q243-CC239	6Q16363.D	04/08/23 06:49	n/a	Continuing cal 4
S6Q243-CC239	6Q16364.D	04/08/23 07:03	n/a	Continuing cal 1.0LL
S6Q243-ICCB	6Q16365.D	04/08/23 07:17	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16366.D	04/08/23 07:31	OP96276	(unrelated sample)
ZZZZZZ	6Q16367.D	04/08/23 07:45	OP96276	(unrelated sample)
OP96277-BS	6Q16368.D	04/08/23 07:59	OP96277	Blank Spike
OP96277-LLBS	6Q16369.D	04/08/23 08:13	OP96277	Blank Spike
OP96277-MB	6Q16370.D	04/08/23 08:27	OP96277	Method Blank
ZZZZZZ	6Q16371.D	04/08/23 08:41	OP96277	(unrelated sample)
FC3756-2	6Q16372.D	04/08/23 08:55	OP96277	(used for QC only; not part of job FC3898)
OP96277-MS	6Q16373.D	04/08/23 09:09	OP96277	Matrix Spike
OP96277-MSD	6Q16374.D	04/08/23 09:23	OP96277	Matrix Spike Duplicate
ZZZZZZ	6Q16375.D	04/08/23 09:37	OP96277	(unrelated sample)
S6Q243-CC239	6Q16376.D	04/08/23 09:51	n/a	Continuing cal 4
S6Q243-ICCB	6Q16377.D	04/08/23 10:05	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16378.D	04/08/23 10:19	OP96277	(unrelated sample)
ZZZZZZ	6Q16379.D	04/08/23 10:33	OP96277	(unrelated sample)
ZZZZZZ	6Q16380.D	04/08/23 10:47	OP96277	(unrelated sample)
ZZZZZZ	6Q16381.D	04/08/23 11:01	OP96277	(unrelated sample)
ZZZZZZ	6Q16382.D	04/08/23 11:15	OP96277	(unrelated sample)
ZZZZZZ	6Q16383.D	04/08/23 11:29	OP96277	(unrelated sample)
ZZZZZZ	6Q16384.D	04/08/23 11:43	OP96277	(unrelated sample)
ZZZZZZ	6Q16385.D	04/08/23 11:57	OP96277	(unrelated sample)
ZZZZZZ	6Q16386.D	04/08/23 12:11	OP96277	(unrelated sample)
ZZZZZZ	6Q16387.D	04/08/23 12:25	OP96277	(unrelated sample)
S6Q243-CC239	6Q16388.D	04/08/23 12:39	n/a	Continuing cal 4
S6Q243-ICCB	6Q16389.D	04/08/23 12:53	n/a	Continuing Calibration Blank
ZZZZZZ	6Q16390.D	04/08/23 13:07	OP96277	(unrelated sample)
ZZZZZZ	6Q16391.D	04/08/23 13:21	OP96277	(unrelated sample)
ZZZZZZ	6Q16392.D	04/08/23 13:35	OP96277	(unrelated sample)
ZZZZZZ	6Q16393.D	04/08/23 13:49	OP96277	(unrelated sample)
S6Q243-ECC239	6Q16394.D	04/08/23 14:03	n/a	Ending cal 4
S6Q243-ICCB	6Q16395.D	04/08/23 14:17	n/a	Continuing Calibration Blank

6.10.3

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MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16323.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 9:30:36 PM
 Sample Name : fc3898-1
 Vial : P6-D4
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,570,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	2500	10.00 µg/L	0.041
M5-PFPeA	4.322	268.3 -> 223.0	7472	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	27228	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	28413	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	50021	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	13859	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	12806	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	13257	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	13266	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	6121	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	10668	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	10331	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	7264	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	5324	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	1893	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2408	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2165	5.00 µg/L	0.000
M3-MeFOSAA	8.155	573.2 -> 419.0	22692	5.00 µg/L	-0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	10403	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	20963	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	9715	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	7715	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4685	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	4098	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6866	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	27853	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	5033	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	51153	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	14278	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	13708	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	24878	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	1893	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.8%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2408	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.9%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2165	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-PFDoDA	8.994	615.1 -> 570.0	13266	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-PFTeDA	9.721	715.2 -> 670.0	6121	0.90 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 72.3%		
13C3-PFBS	5.459	302.1 -> 79.9	10331	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C3-PFHxS	7.228	402.1 -> 79.9	7264	2.52 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 = 100.8%		
13C4-PFBA	2.938	216.8 -> 171.9	2500	0.38 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 3.8%		
13C4-PFHpA	6.468	367.1 -> 322.0	28413	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C5-PFHxA	5.516	318.0 -> 273.0	27228	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C5-PFPeA	4.322	268.3 -> 223.0	7472	1.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 25.8%		
13C6-PFDA	8.110	519.1 -> 474.1	12806	1.52 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 121.9%		
13C7-PFUnDA	8.564	570.0 -> 525.1	13257	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C8-FOSA	9.631	506.1 -> 77.8	10668	2.09 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.5%		
13C8-PFOA	7.112	421.1 -> 376.0	50021	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C8-PFOS	8.272	507.1 -> 79.9	5324	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C9-PFNA	7.643	472.1 -> 427.0	13859	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.3%		
d3-MeFOSAA	8.155	573.2 -> 419.0	22692	6.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.6%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	10403	9.59 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 95.9%		
d3-MeFOSA	10.733	515.0 -> 219.0	4098	2.23 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.0%		
d5-EtFOSAA	8.363	589.2 -> 419.0	20963	7.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 145.8%		
d7-MeFOSE	10.653	623.2 -> 58.9	9715	13.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 55.6%		
d9-EtFOSE	10.888	639.2 -> 58.9	7715	16.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 66.4%		
d5-EtFOSA	10.965	531.1 -> 219.0	4685	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.4%		

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	9.120	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	7.756	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	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	8.201	463.0 -> 419.0	0	µg/L	m	1
		463.0 -> 219.0	0			
PFNS	9.110	548.8 -> 79.9	0	µg/L	m	1
		548.8 -> 98.9				
PFOA	7.126	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	7.965	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	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	8.071	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



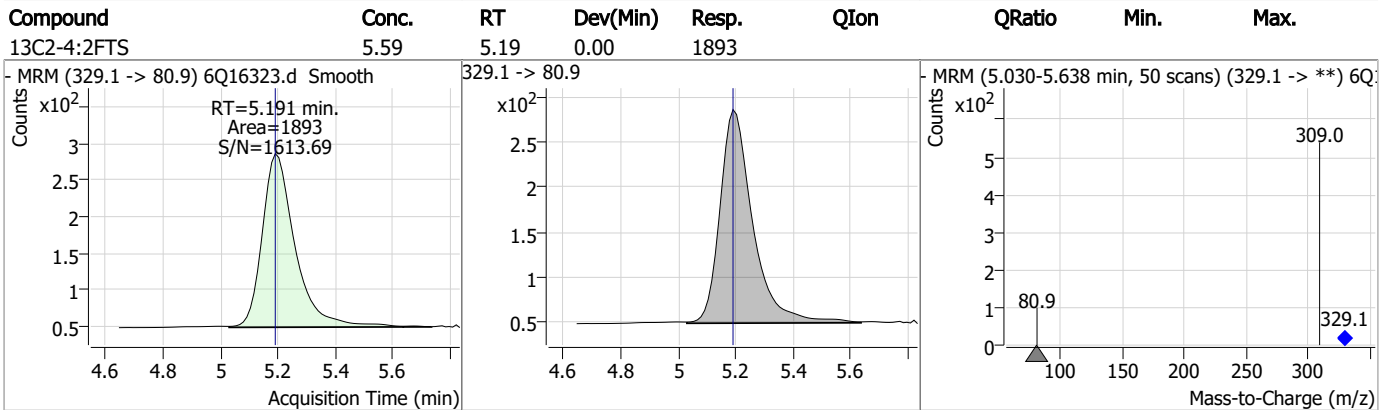
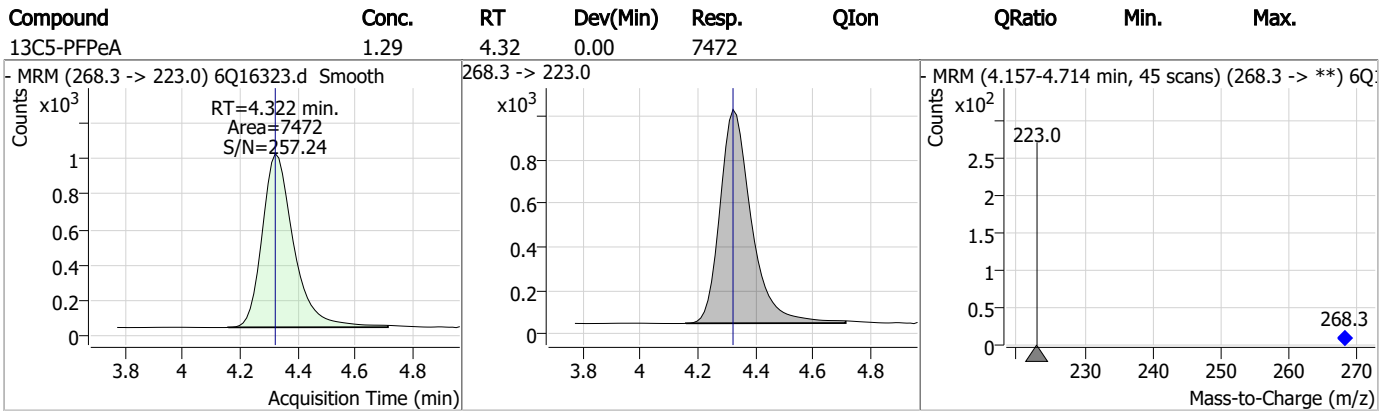
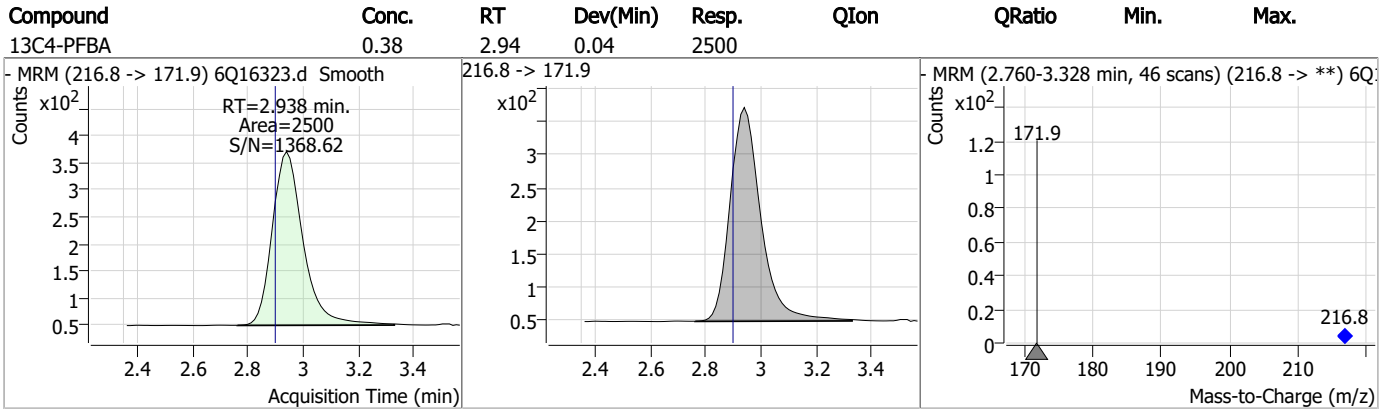
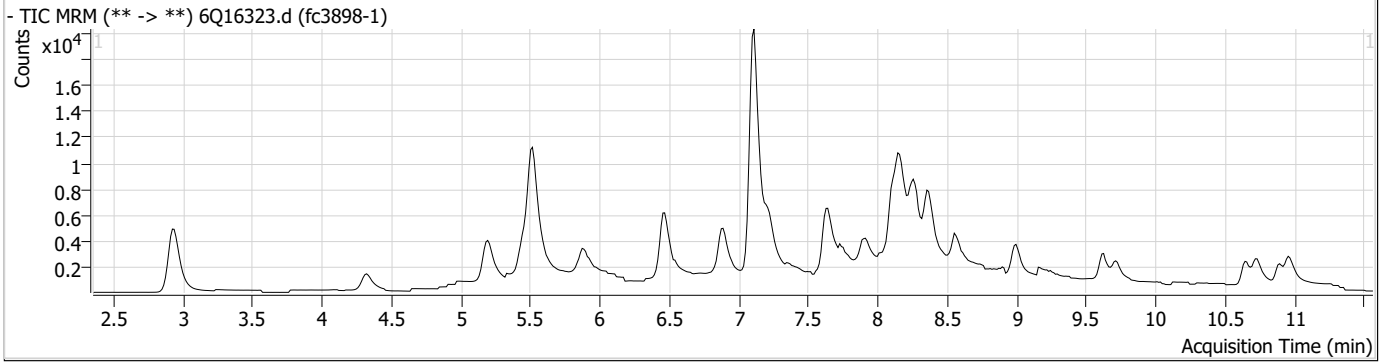
7.1.1
7

Perfluorinated Compounds by LC/MS/MS

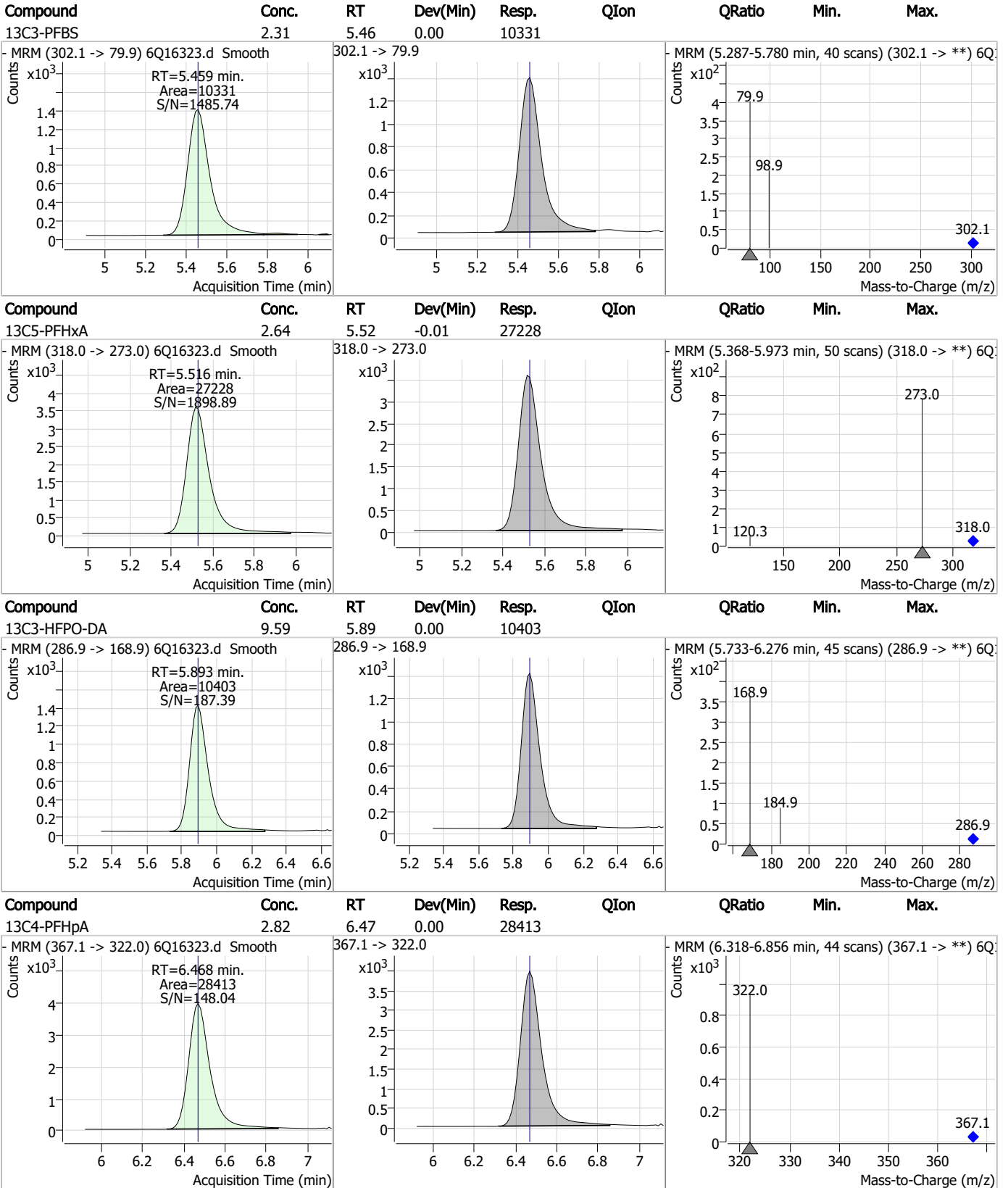
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.1
7

Perfluorinated Compounds by LC/MS/MS



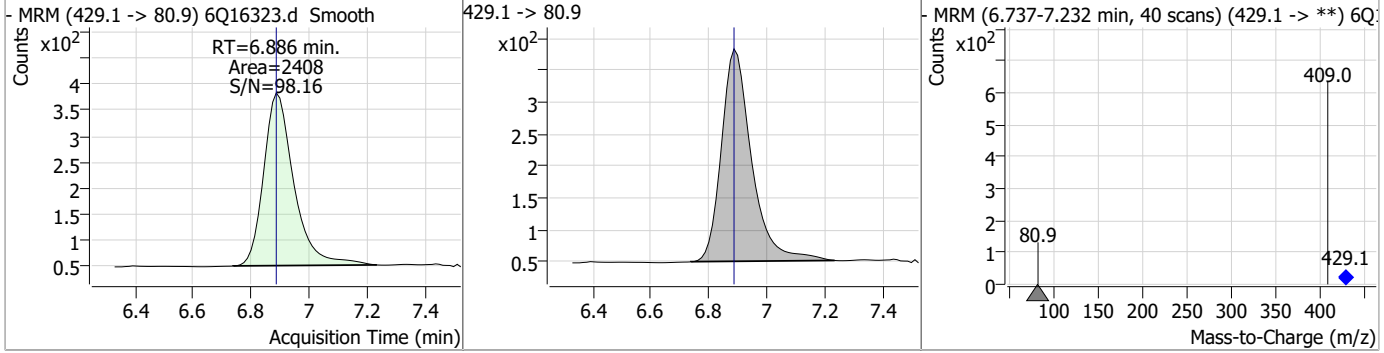
Perfluorinated Compounds by LC/MS/MS



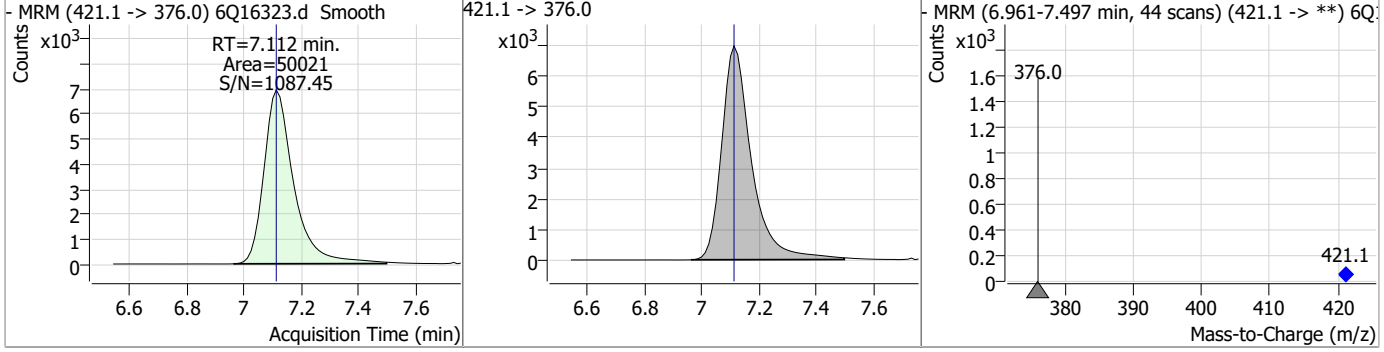
7.1.1
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Perfluorinated Compounds by LC/MS/MS

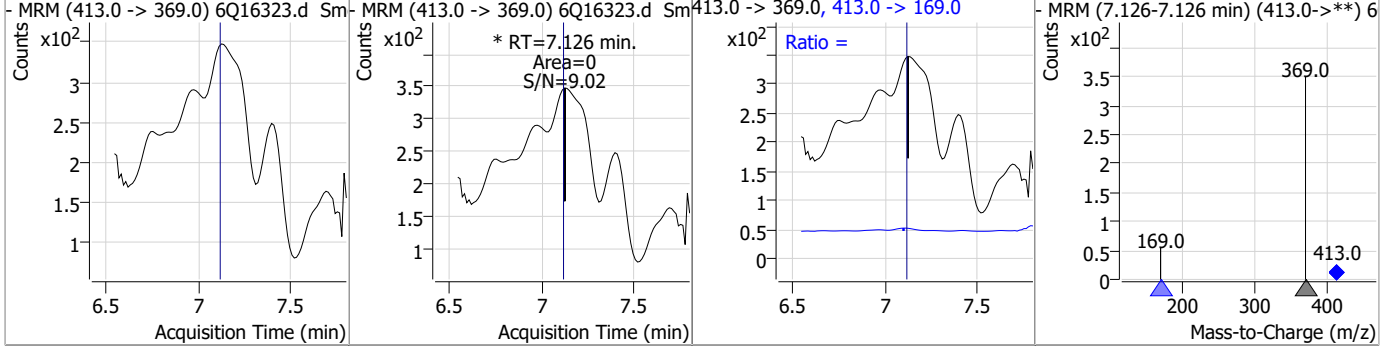
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.80	6.89	0.00	2408				



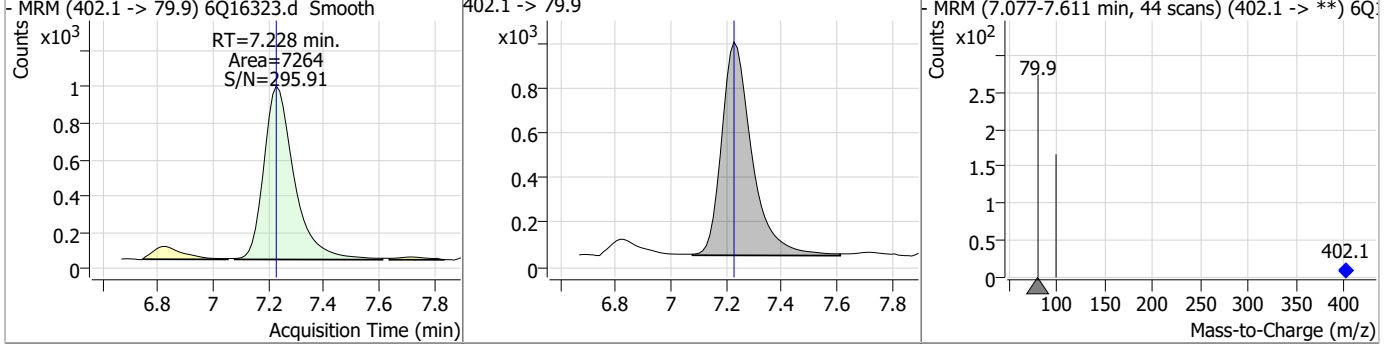
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.93	7.11	0.00	50021				



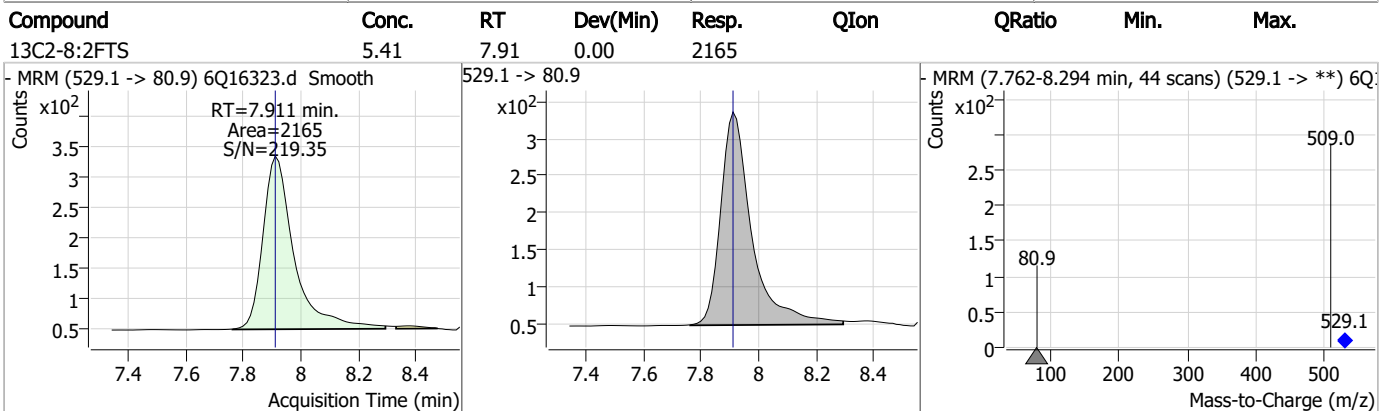
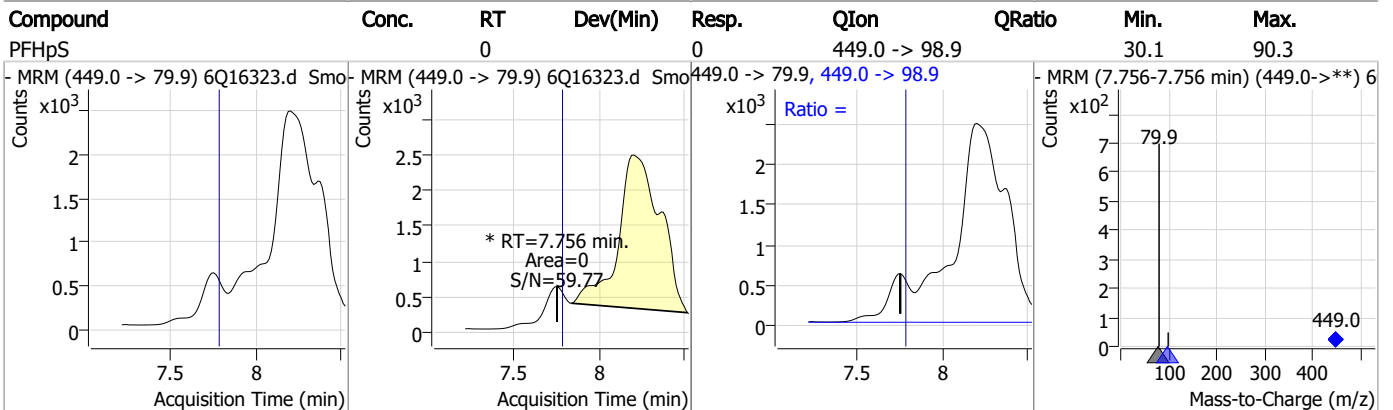
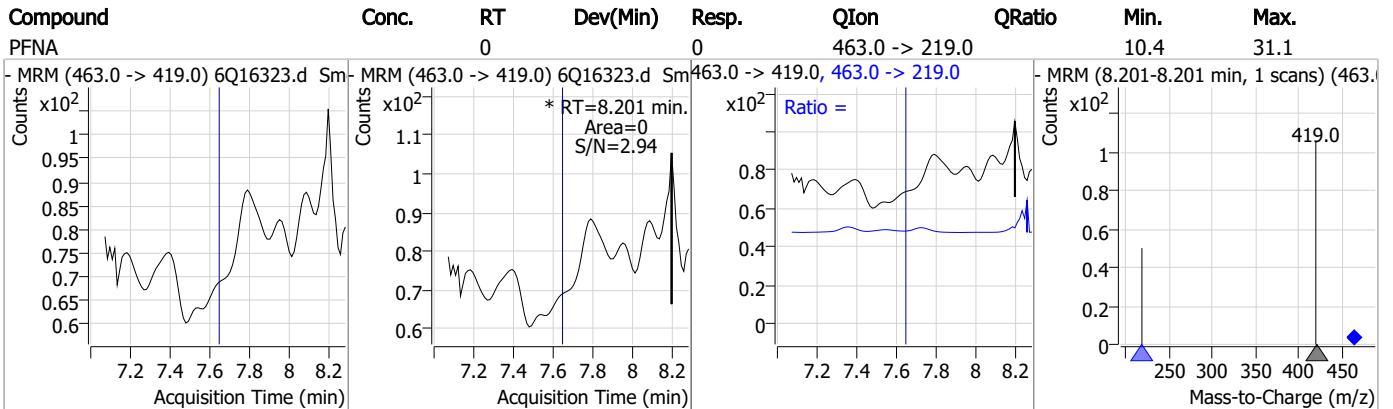
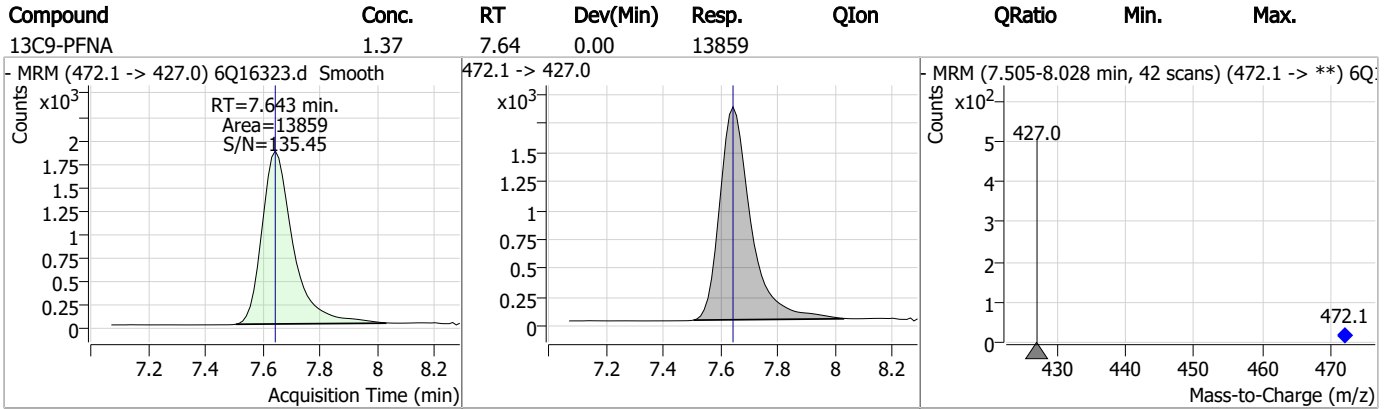
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0	0	0	0	413.0 -> 169.0		6.7	20.1



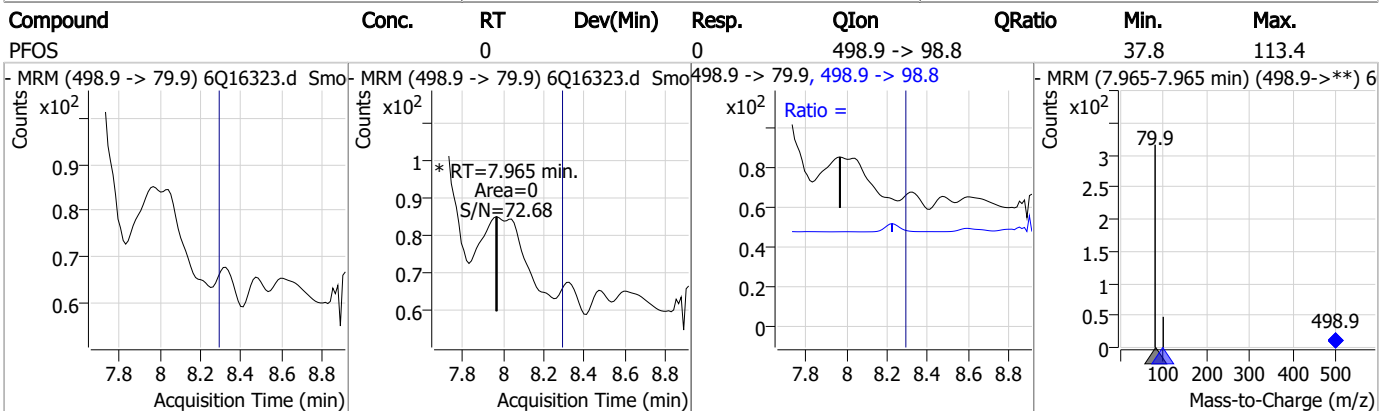
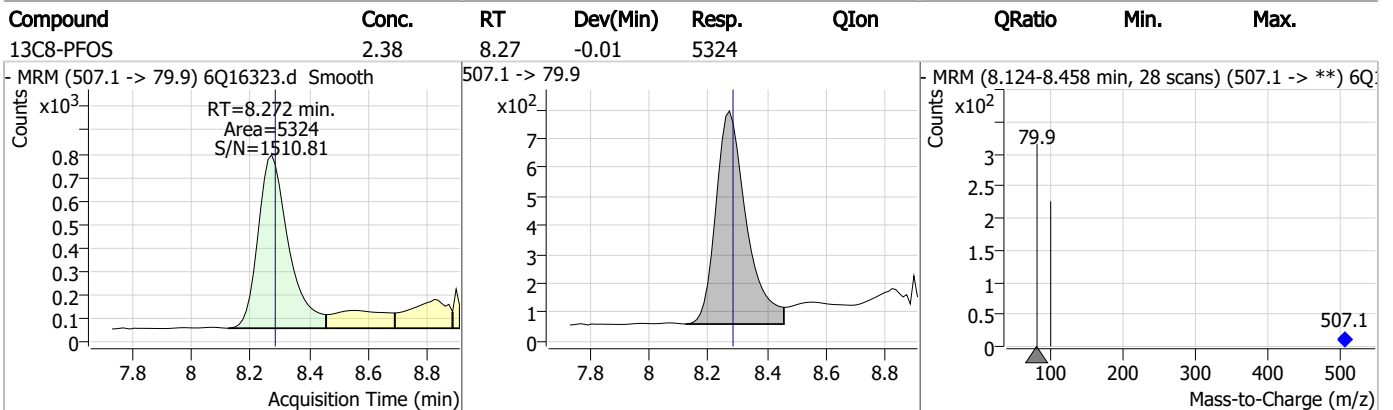
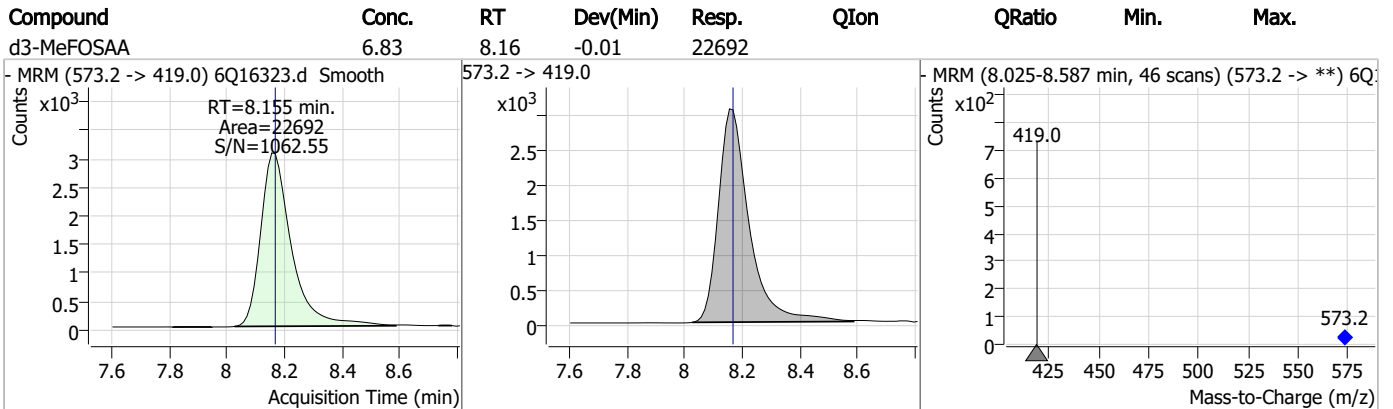
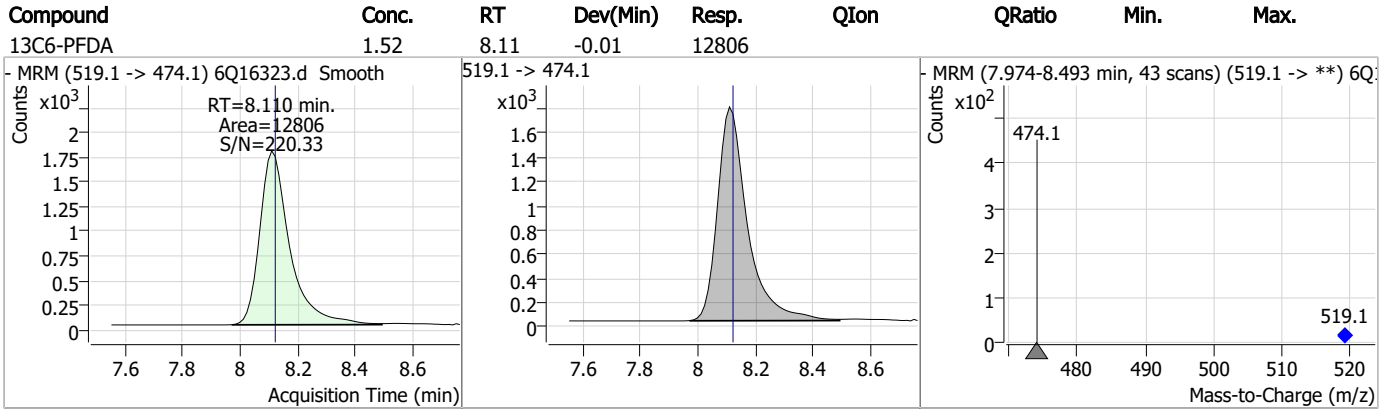
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.52	7.23	0.00	7264				



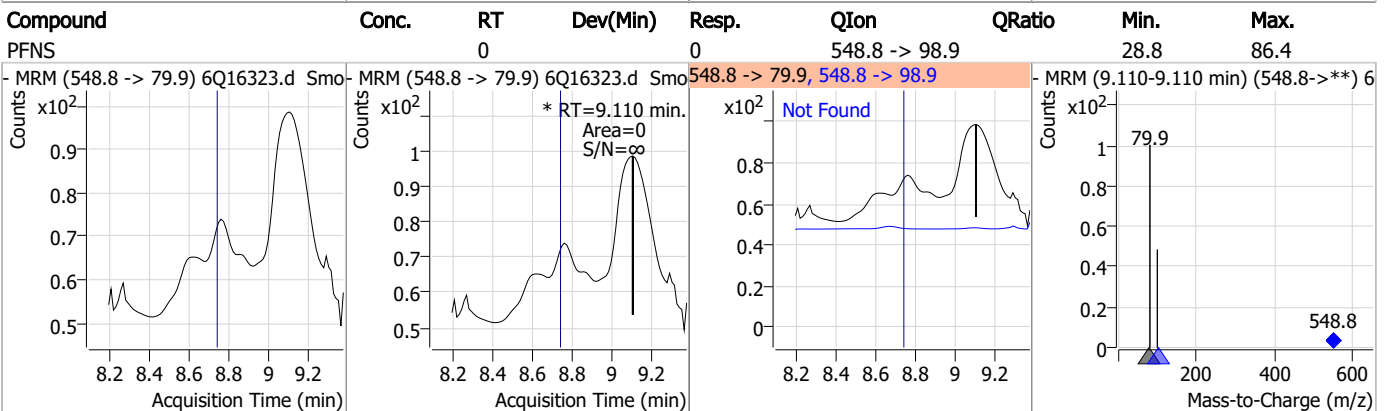
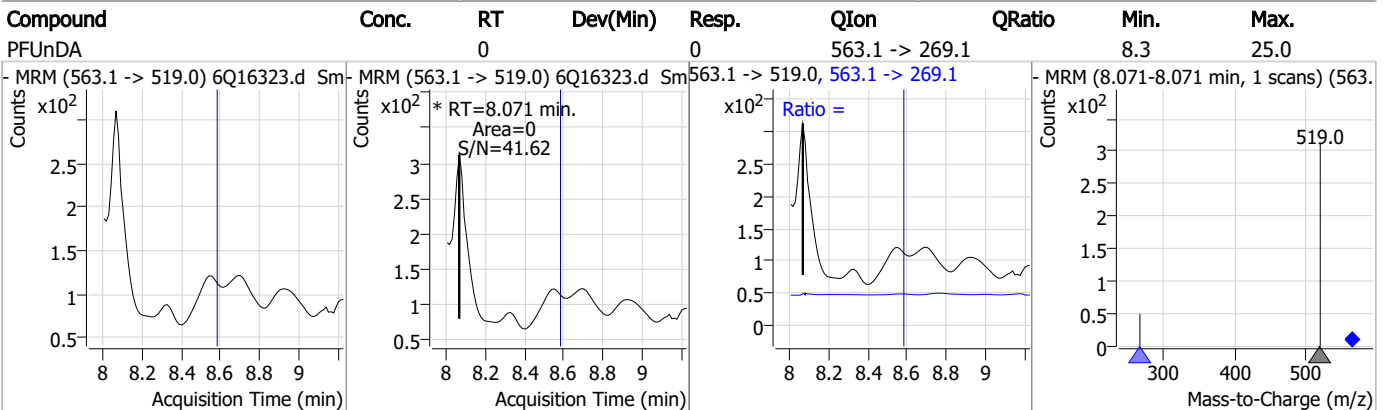
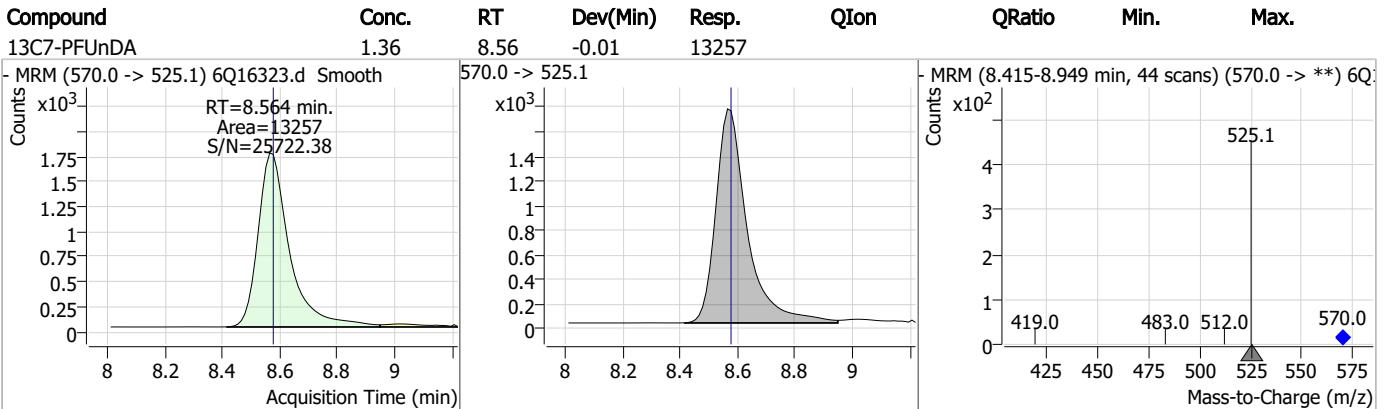
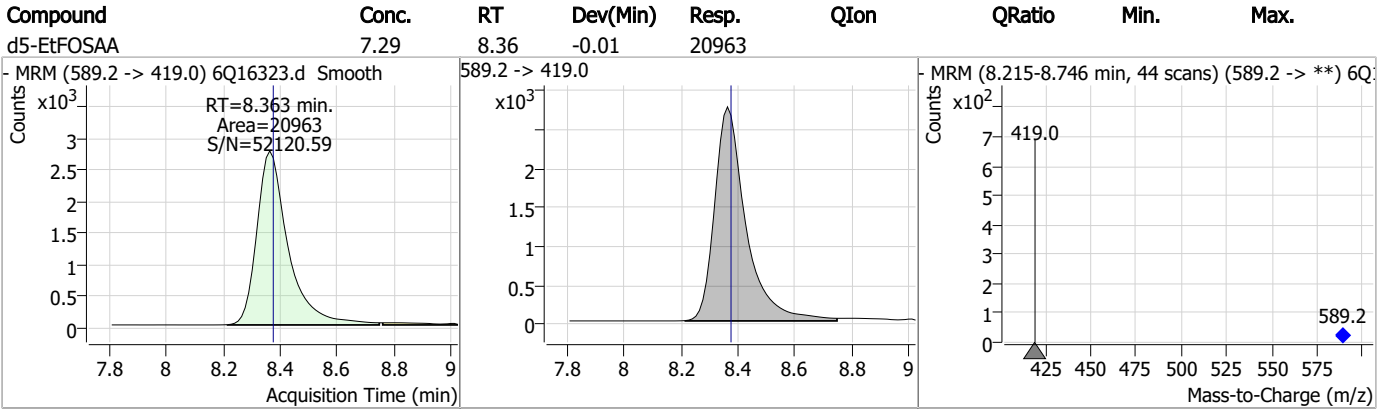
Perfluorinated Compounds by LC/MS/MS



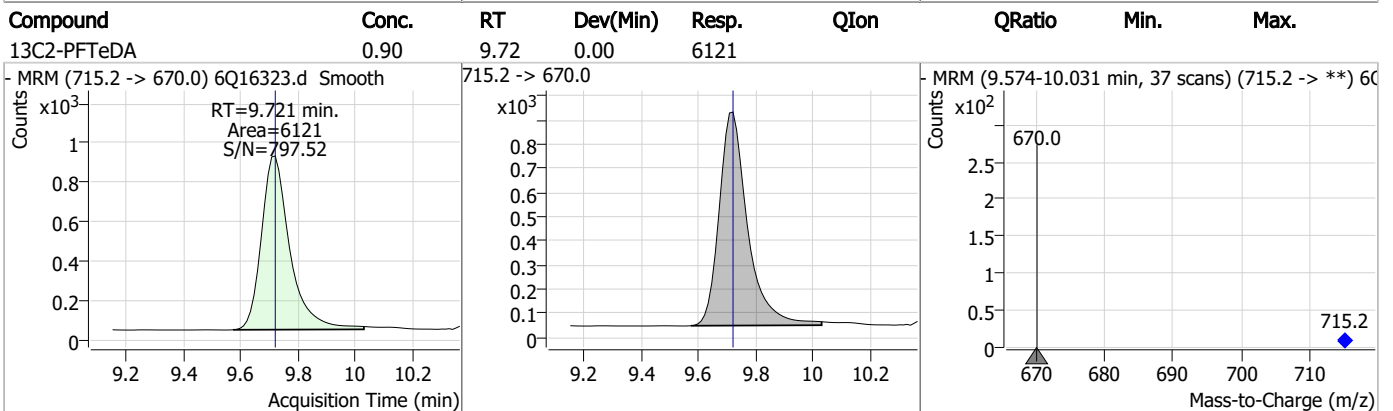
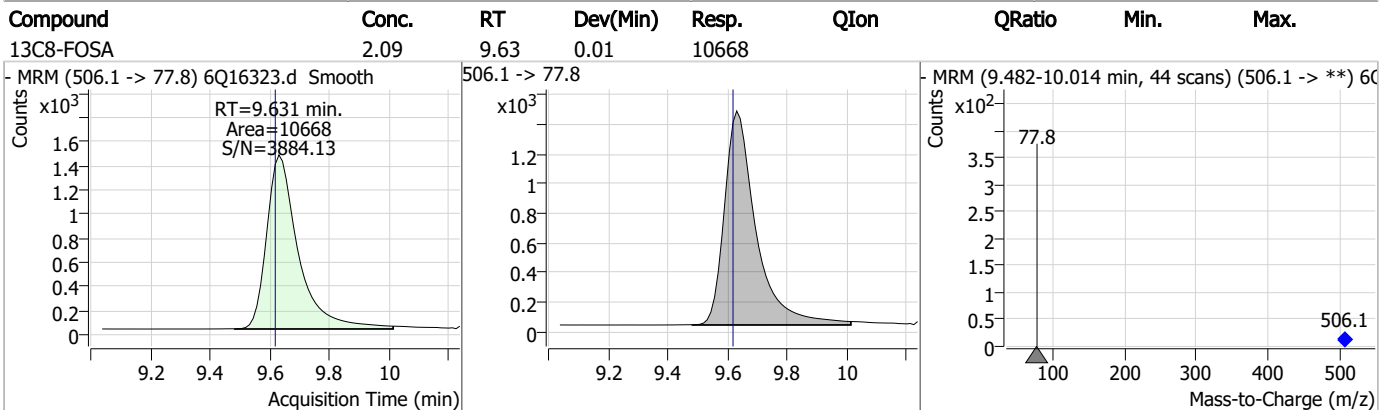
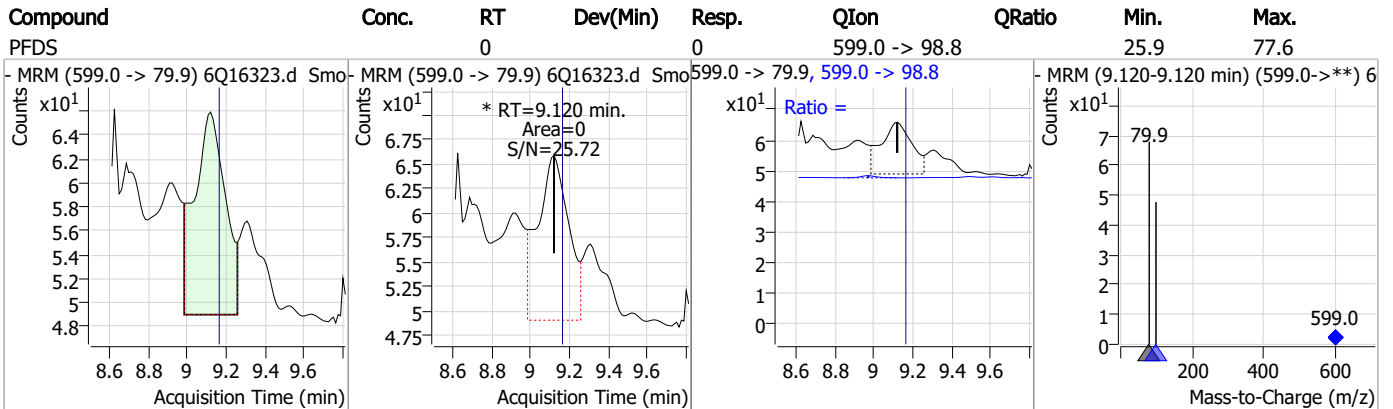
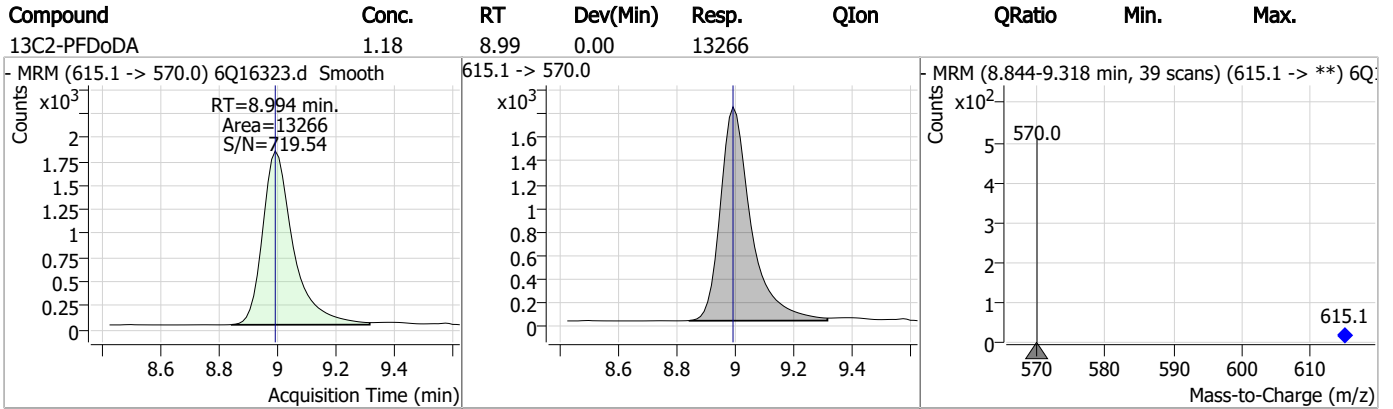
Perfluorinated Compounds by LC/MS/MS



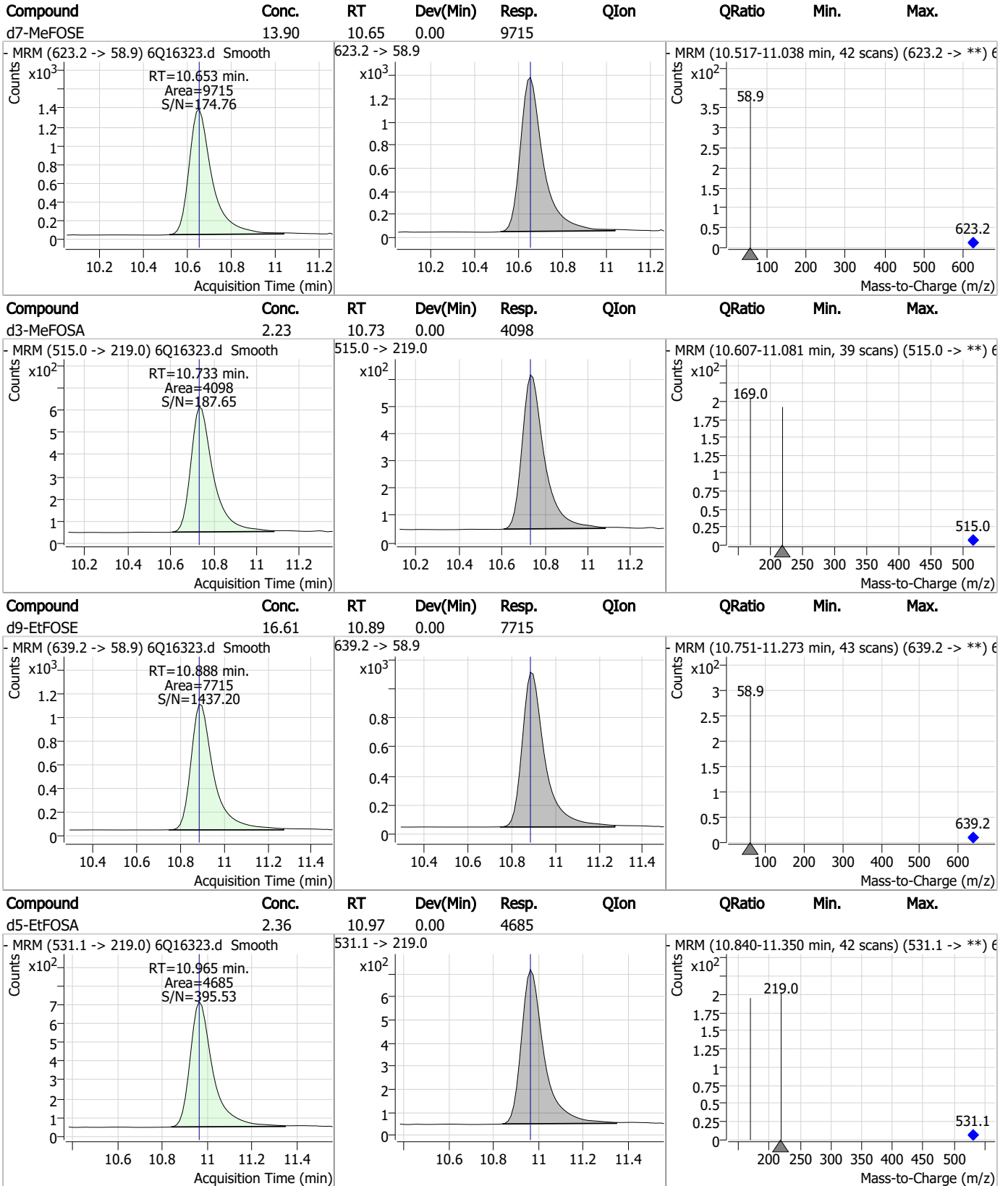
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16325.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 9:58:36 PM
 Sample Name : fc3898-2
 Vial : P6-D6
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	69918	10.00 µg/L	0.041
M5-PFPeA	4.334	268.3 -> 223.0	30700	5.00 µg/L	0.012
M5-PFHxA	5.528	318.0 -> 273.0	27334	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	25621	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	44178	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	13336	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	10972	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	10960	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	11738	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	5470	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	8228	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	10498	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	6624	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	5520	2.50 µg/L	-0.012
M2-4:2FTS	5.204	329.1 -> 80.9	1993	5.00 µg/L	0.012
M2-6:2FTS	6.886	429.1 -> 80.9	2298	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2175	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	16087	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	10593	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	13772	5.00 µg/L	-0.012
M7-MeFOSE	10.641	623.2 -> 58.9	9947	25.00 µg/L	-0.012
M9-EtFOSE	10.888	639.2 -> 58.9	7901	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	3659	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	3286	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6380	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	27709	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4313	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	50181	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	15298	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	14886	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	24145	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	1993	6.87 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.4%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2298	6.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.1%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2175	6.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.8%		
13C2-PFDoDA	8.994	615.1 -> 570.0	11738	0.97 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.7%		
13C2-PFTeDA	9.709	715.2 -> 670.0	5470	0.75 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 60.3%		
13C3-PFBS	5.459	302.1 -> 79.9	10498	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C3-PFHxS	7.228	402.1 -> 79.9	6624	2.68 µg/L	0.000

7.12
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 = 107.3%	
13C4-PFBA	2.938	216.8 -> 171.9	69918	10.79 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C4-PFHpA	6.468	367.1 -> 322.0	25621	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C5-PFHxA	5.528	318.0 -> 273.0	27334	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C5-PFPeA	4.334	268.3 -> 223.0	30700	5.45 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C6-PFDA	8.110	519.1 -> 474.1	10972	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C7-PFUnDA	8.564	570.0 -> 525.1	10960	1.05 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C8-FOSA	9.631	506.1 -> 77.8	8228	1.73 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 69.3%	
13C8-PFOA	7.112	421.1 -> 376.0	44178	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.272	507.1 -> 79.9	5520	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C9-PFNA	7.643	472.1 -> 427.0	13336	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.9%	
d3-MeFOSAA	8.167	573.2 -> 419.0	16087	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	10593	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.733	515.0 -> 219.0	3286	1.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.8%	
d5-EtFOSAA	8.363	589.2 -> 419.0	13772	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d7-MeFOSE	10.641	623.2 -> 58.9	9947	15.32 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 61.3%	
d9-EtFOSE	10.888	639.2 -> 58.9	7901	18.31 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.2%	
d5-EtFOSA	10.965	531.1 -> 219.0	3659	1.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.3%	

7.12
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	7.362	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

7.12
7

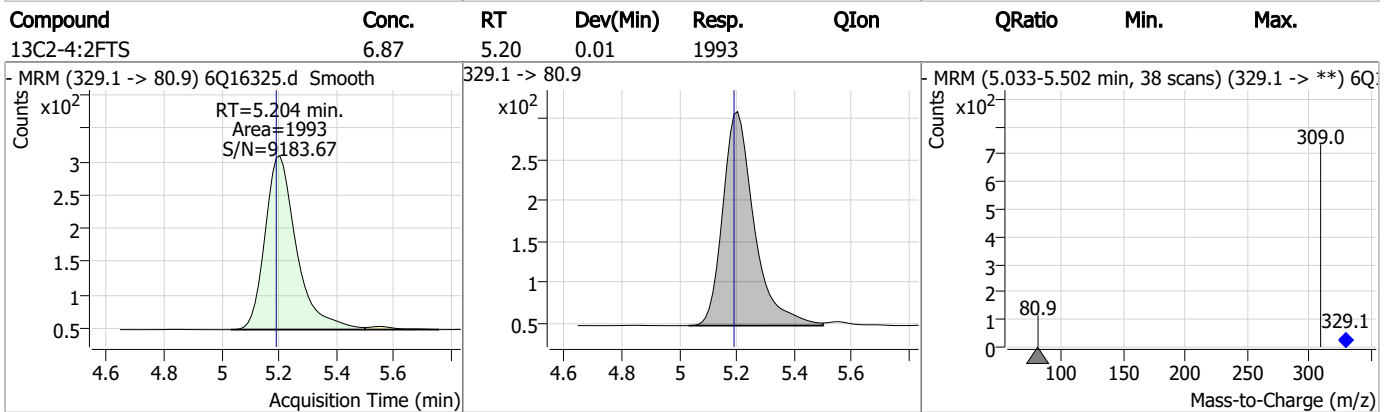
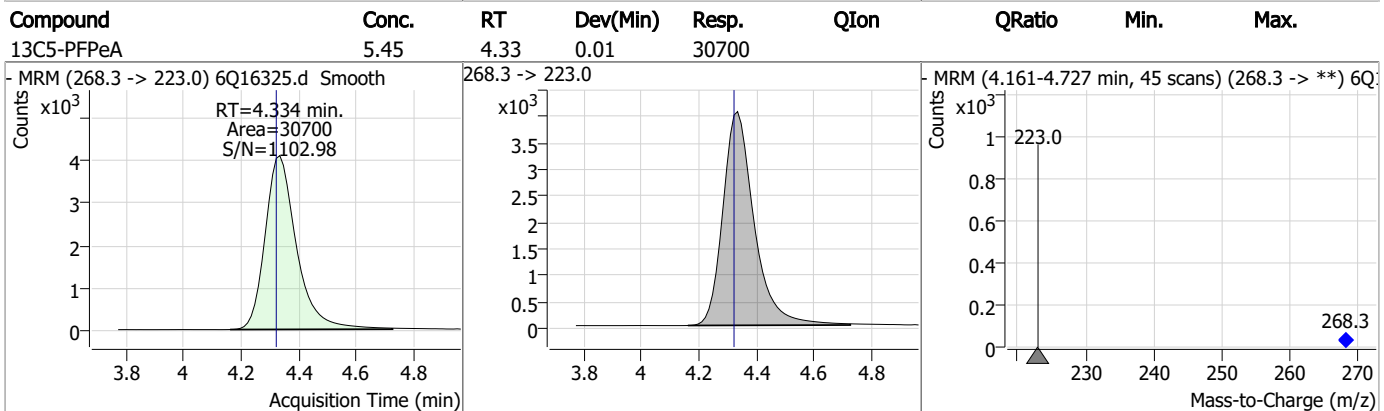
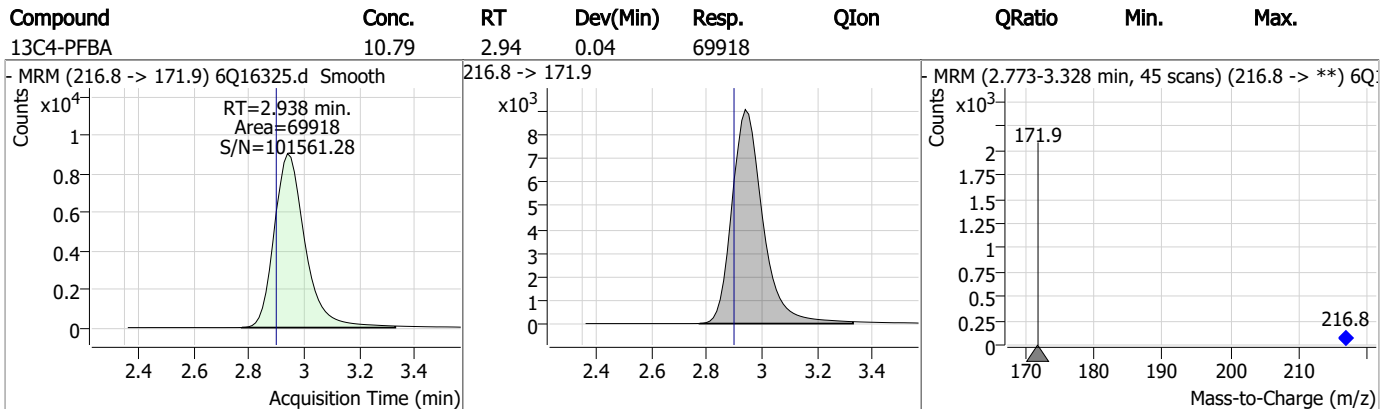
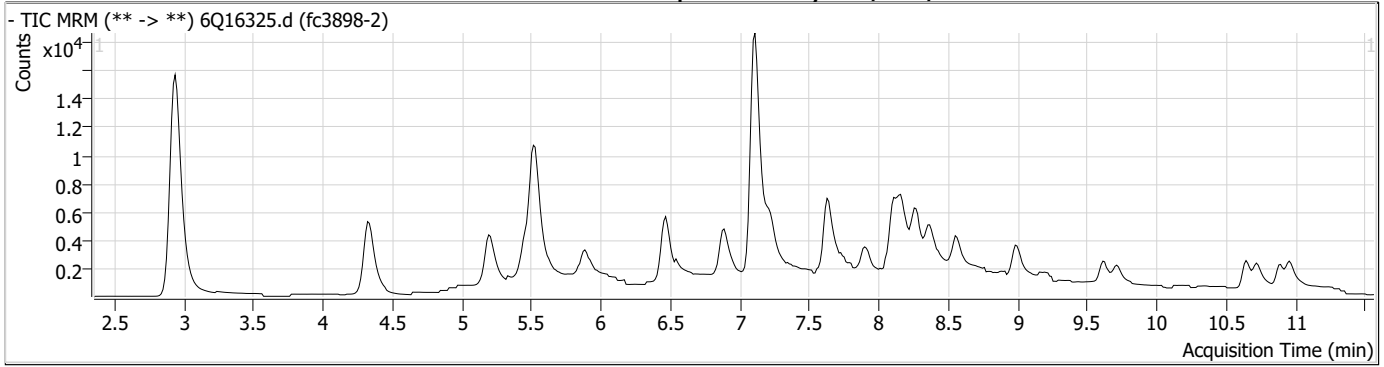
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.1.2
7



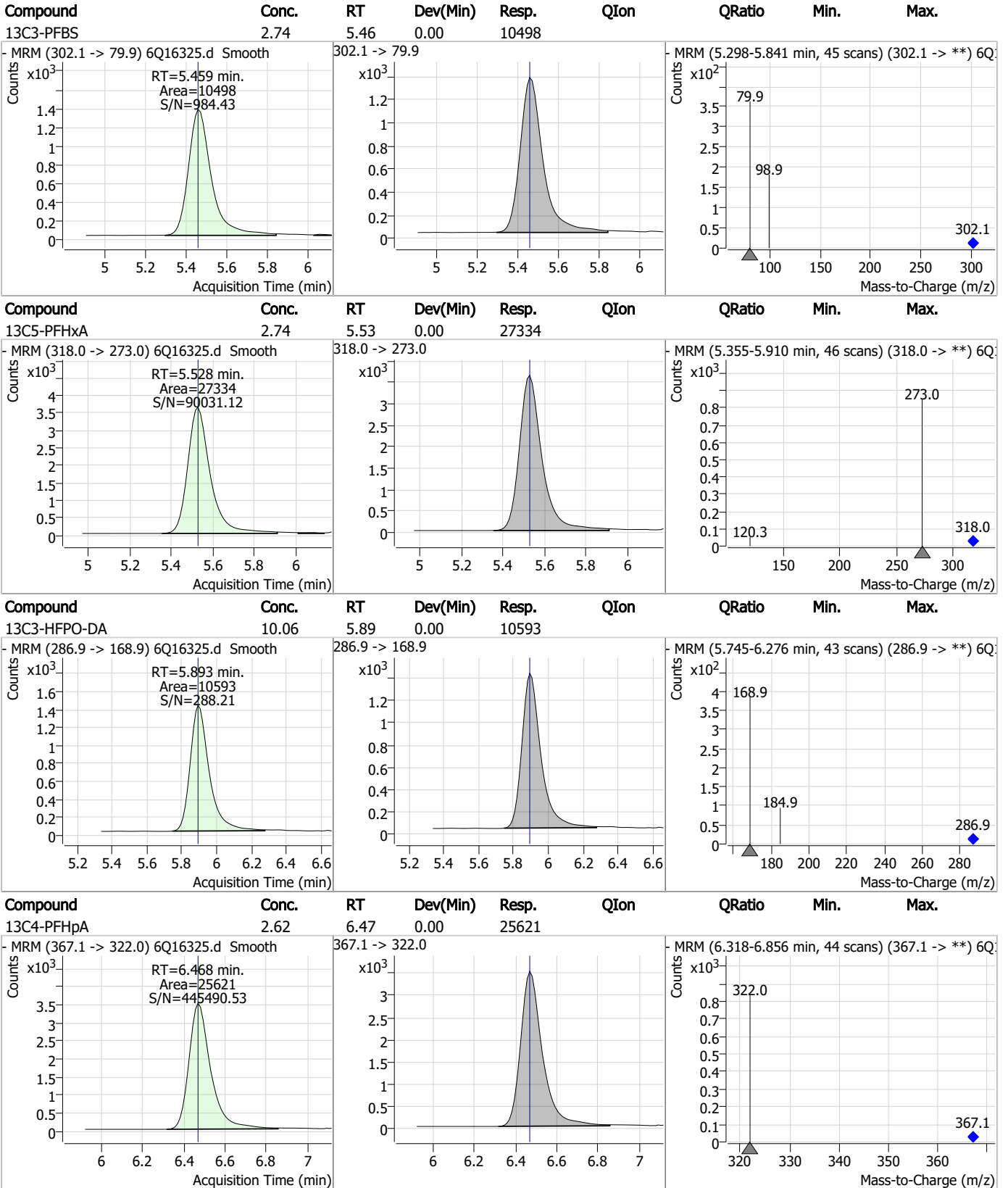
Perfluorinated Compounds by LC/MS/MS



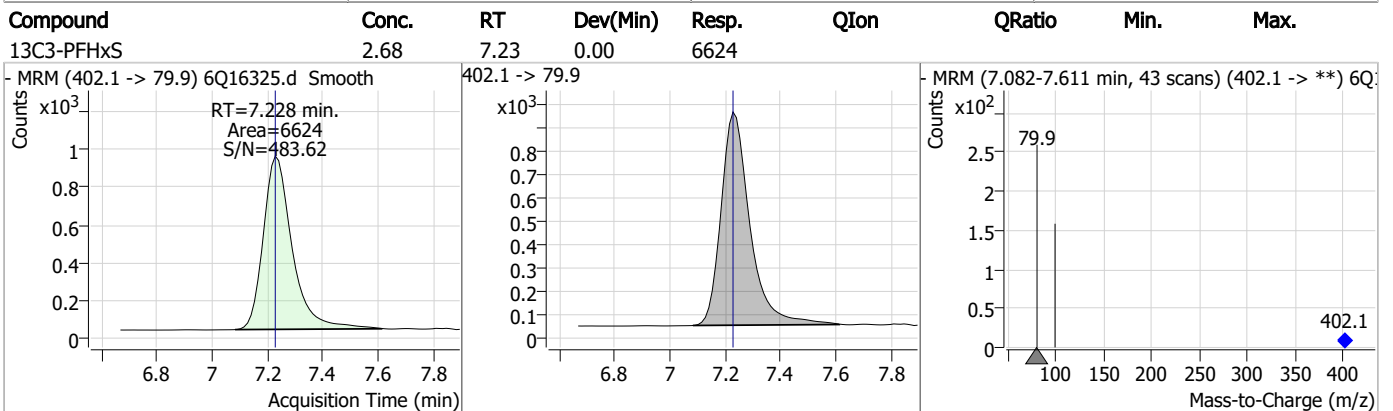
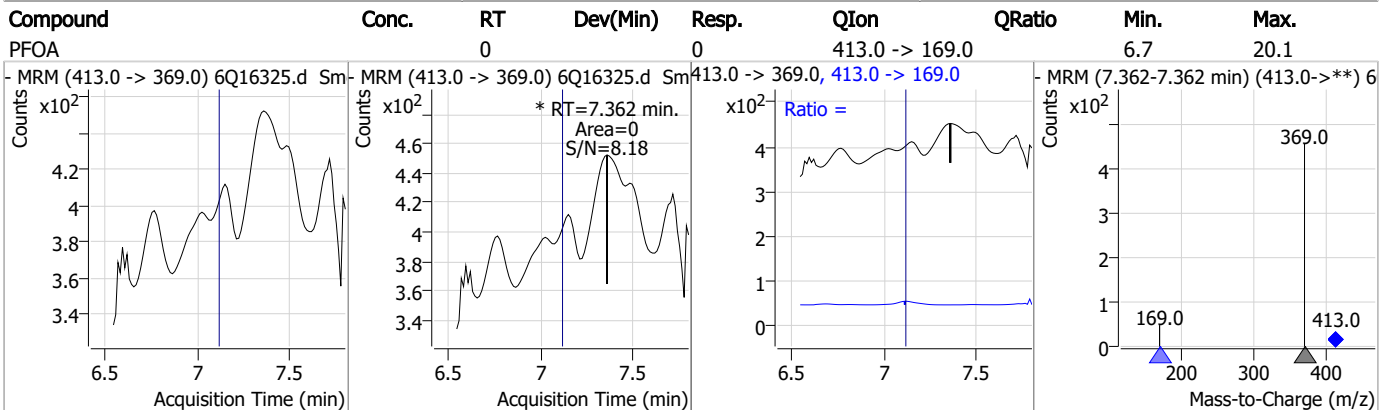
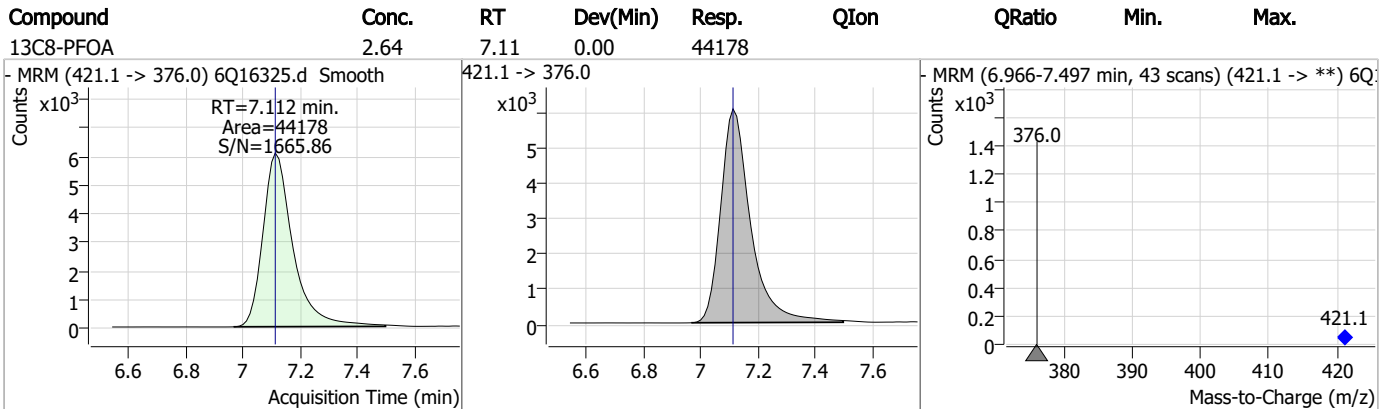
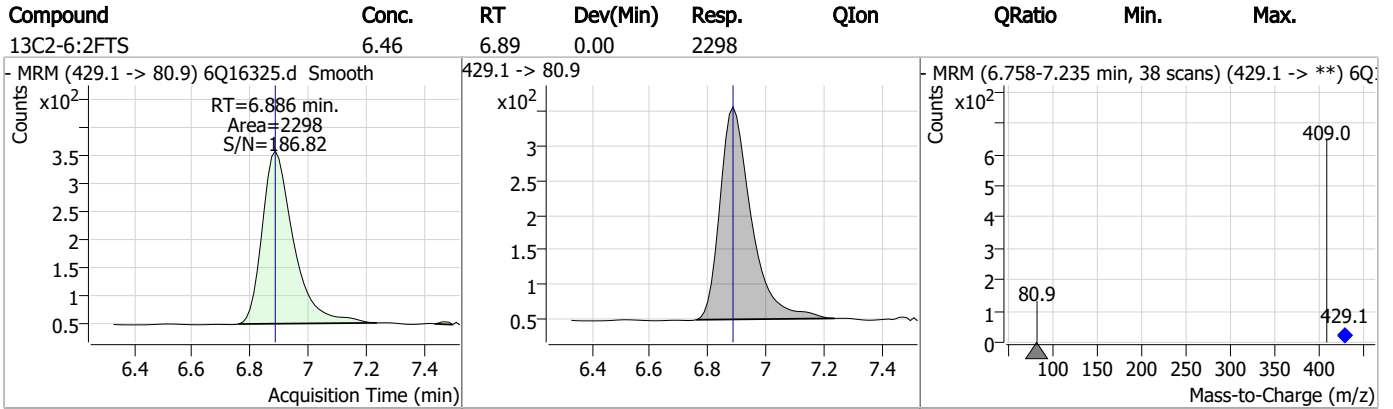
7.1.2
7



Perfluorinated Compounds by LC/MS/MS



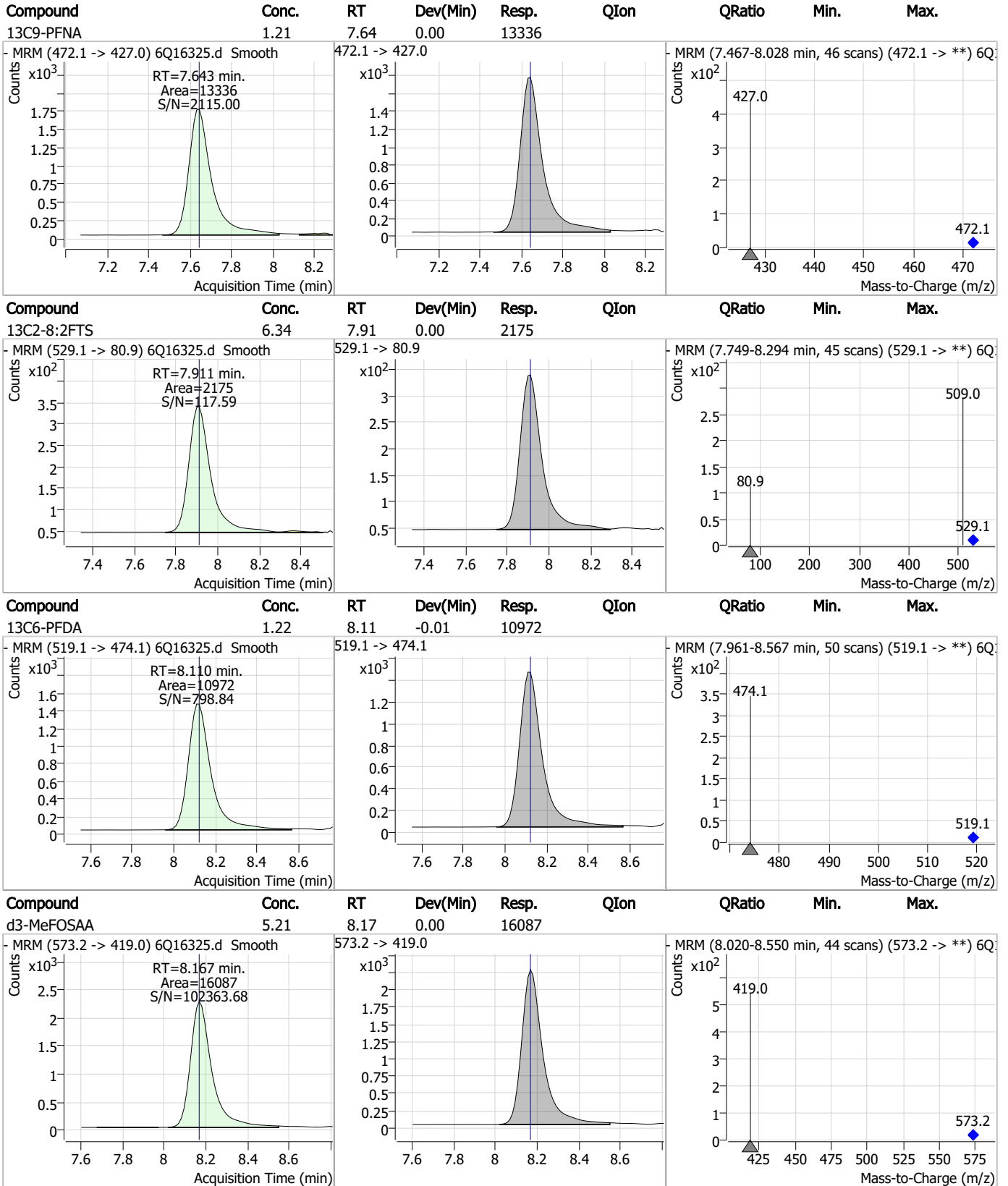
Perfluorinated Compounds by LC/MS/MS



7.1.2

7

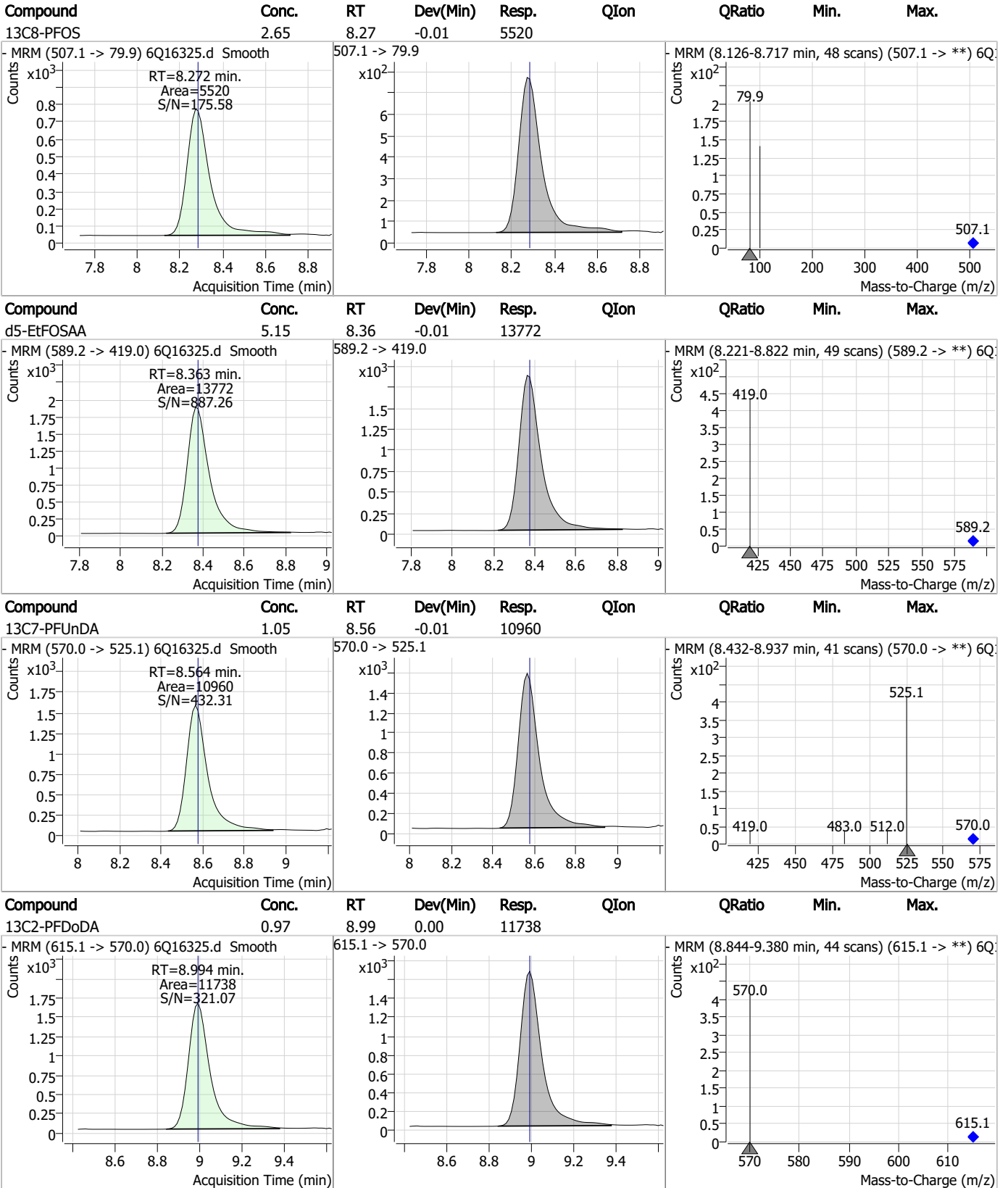
Perfluorinated Compounds by LC/MS/MS



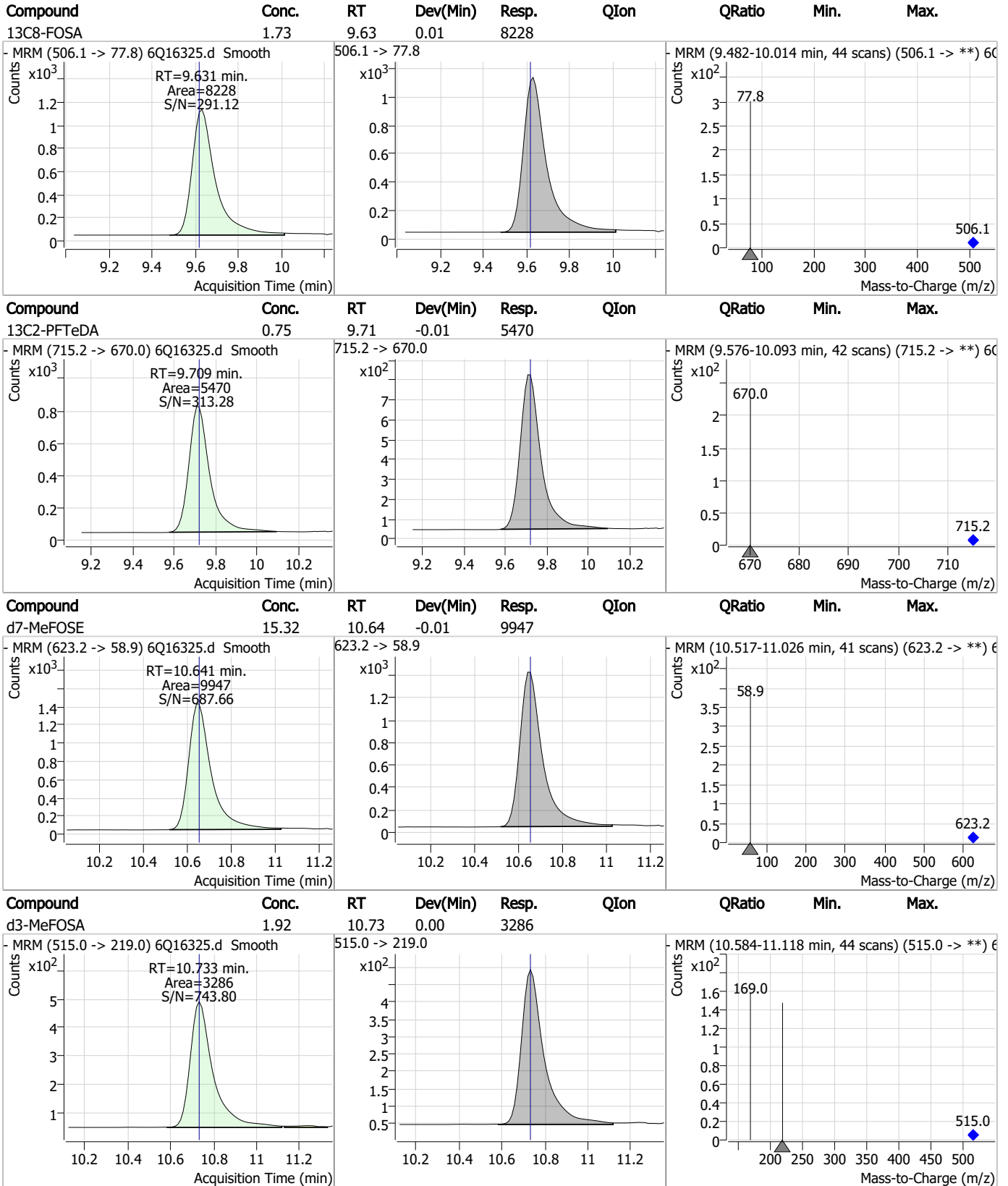
7.1.2

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Perfluorinated Compounds by LC/MS/MS

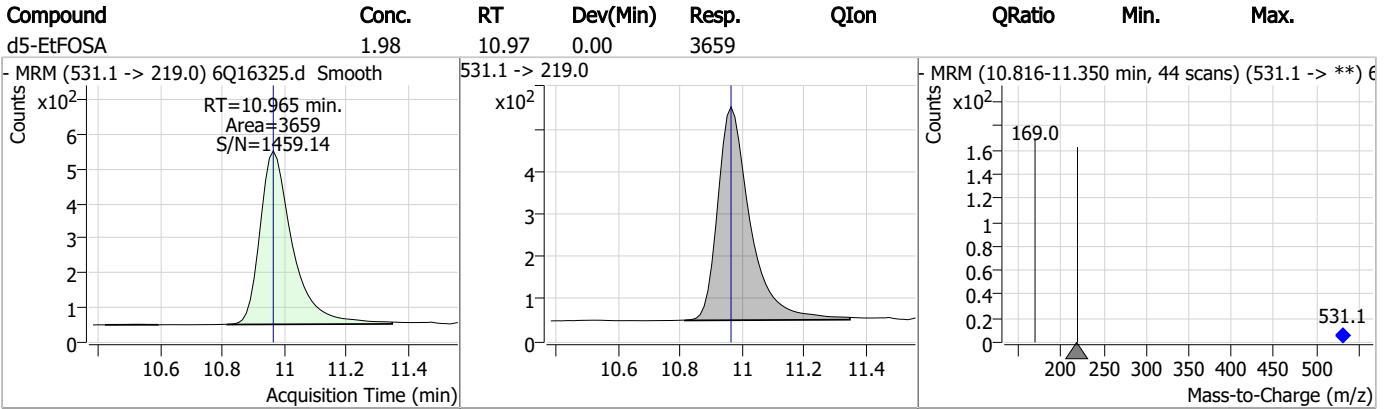
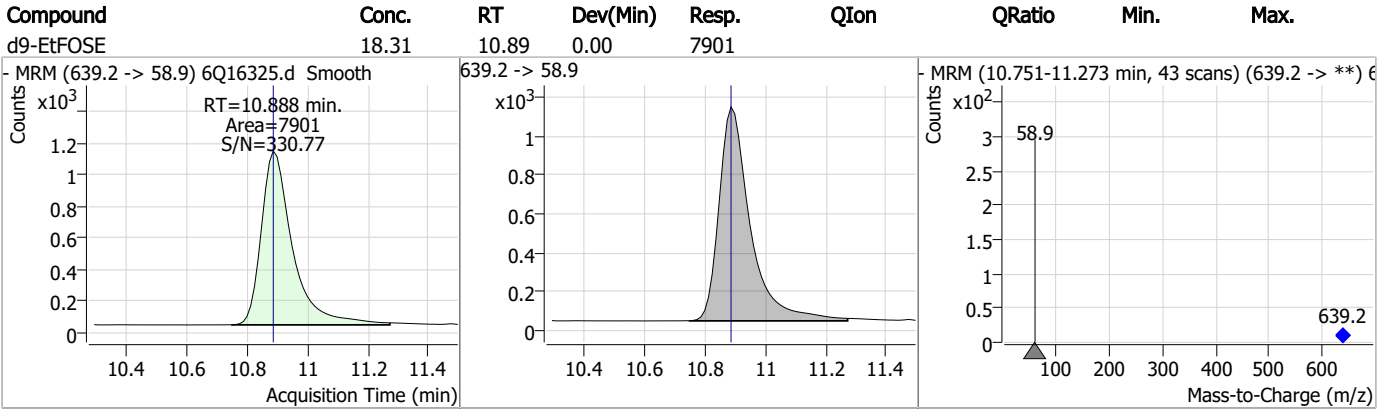


Perfluorinated Compounds by LC/MS/MS



7.1.2
7

Perfluorinated Compounds by LC/MS/MS



7.1.2
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16326.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 10:12:36 PM
 Sample Name : fc3898-3
 Vial : P6-D7
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	68537	10.00 µg/L	0.041
M5-PFPeA	4.334	268.3 -> 223.0	30678	5.00 µg/L	0.012
M5-PFHxA	5.528	318.0 -> 273.0	27068	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	26994	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	43596	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	13890	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	9562	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	8869	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	7542	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	4031	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	9886	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	11428	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	6723	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	4052	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	1992	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2392	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	1626	5.00 µg/L	0.000
M3-MeFOSAA	8.180	573.2 -> 419.0	13951	5.00 µg/L	0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	11197	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	13104	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	8456	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	7020	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	3230	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	3183	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	7112	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	28163	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4785	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	51977	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	15224	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	13528	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	24414	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	1992	6.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.8%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2392	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.1%		
13C2-8:2FTS	7.911	529.1 -> 80.9	1626	4.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.5%		
13C2-PFDoDA	8.994	615.1 -> 570.0	7542	0.63 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 50.1%		
13C2-PFTeDA	9.721	715.2 -> 670.0	4031	0.56 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 44.7%		
13C3-PFBS	5.459	302.1 -> 79.9	11428	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C3-PFHxS	7.228	402.1 -> 79.9	6723	2.45 µg/L	0.000

7.1.3
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 = 98.2%	
13C4-PFBA	2.938	216.8 -> 171.9	68537	10.41 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C4-PFHpA	6.468	367.1 -> 322.0	26994	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C5-PFHxA	5.528	318.0 -> 273.0	27068	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C5-PFPeA	4.334	268.3 -> 223.0	30678	5.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C6-PFDA	8.122	519.1 -> 474.1	9562	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 85.4%	
13C7-PFUnDA	8.564	570.0 -> 525.1	8869	0.85 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 68.2%	
13C8-FOSA	9.631	506.1 -> 77.8	9886	1.87 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.7%	
13C8-PFOA	7.125	421.1 -> 376.0	43596	2.51 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOS	8.284	507.1 -> 79.9	4052	1.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 69.9%	
13C9-PFNA	7.643	472.1 -> 427.0	13890	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.0%	
d3-MeFOSAA	8.180	573.2 -> 419.0	13951	4.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 81.1%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	11197	10.52 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
d3-MeFOSA	10.733	515.0 -> 219.0	3183	1.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 66.8%	
d5-EtFOSAA	8.375	589.2 -> 419.0	13104	4.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.0%	
d7-MeFOSE	10.653	623.2 -> 58.9	8456	11.68 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 46.7%	
d9-EtFOSE	10.888	639.2 -> 58.9	7020	14.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 58.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	3230	1.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 62.8%	

Target Compounds

Compound	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.886	427.1 -> 407.0 427.1 -> 80.9	1623 325	0.51 µg/L	96
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	2.944	212.8 -> 168.9	530	0.31 µg/L	100
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.	



7.1.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8			
PFHpA	6.469	363.1 -> 319.0	1668	0.11 µg/L	95
		363.1 -> 169.0	196		
PFHpS	-	449.0 -> 79.9	-	N.D.	
		449.0 -> 98.9			
PFHxA	5.531	313.0 -> 269.0	4202	0.42 µg/L	99
		313.0 -> 118.9	179		
PFHxS	-	398.7 -> 79.9	-	N.D.	
		398.7 -> 98.9			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	548.8 -> 79.9	-	N.D.	
		548.8 -> 98.9			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	498.9 -> 79.9	-	N.D.	
		498.9 -> 98.8			
PFPeA	4.336	263.0 -> 219.0	4902	0.76 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			
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



7.1.3
7

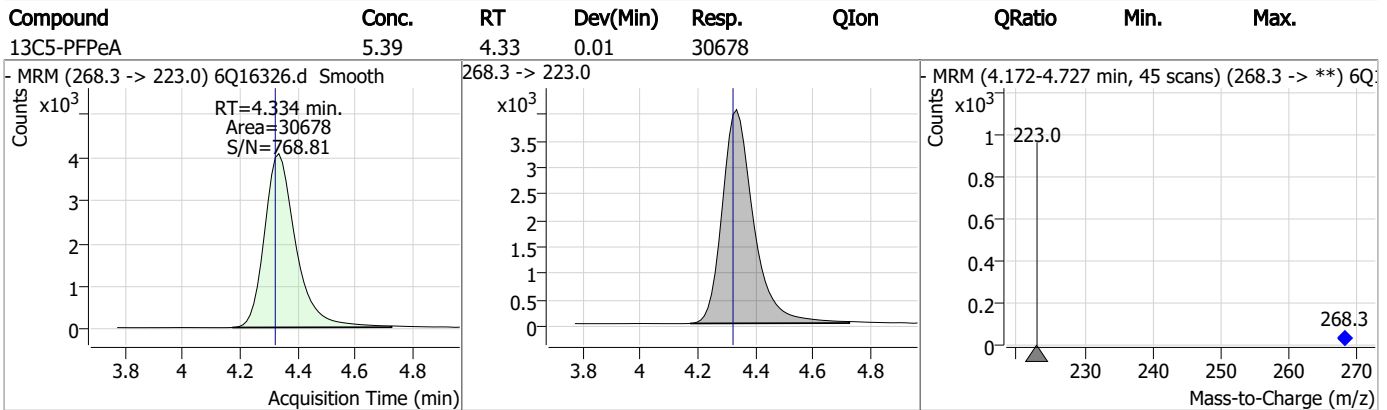
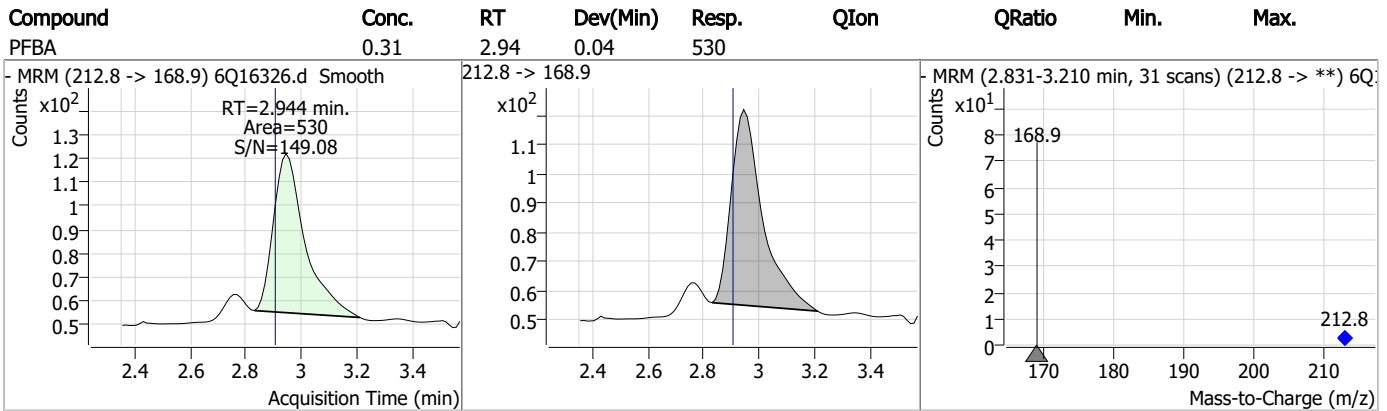
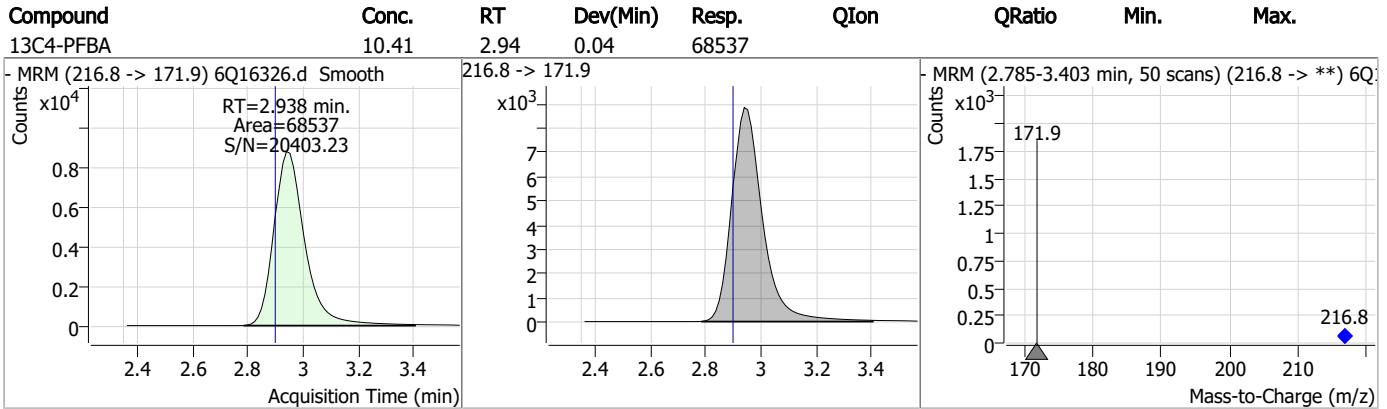
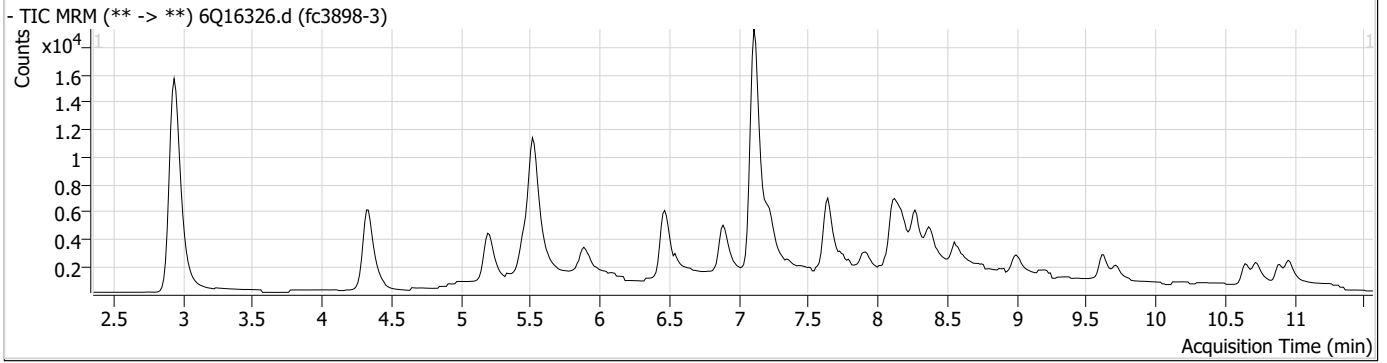
Perfluorinated Compounds by LC/MS/MS

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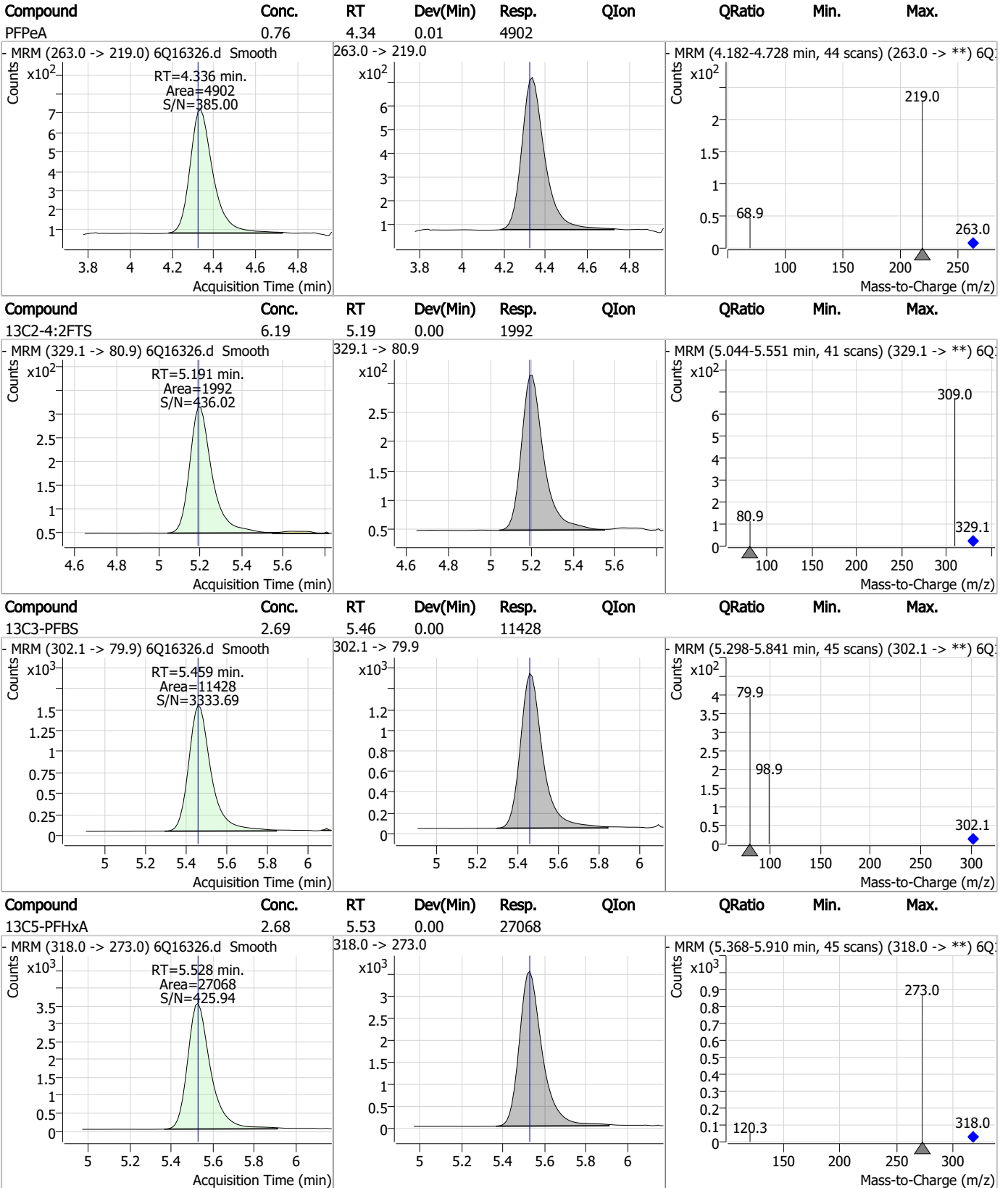
7.1.3
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Perfluorinated Compounds by LC/MS/MS

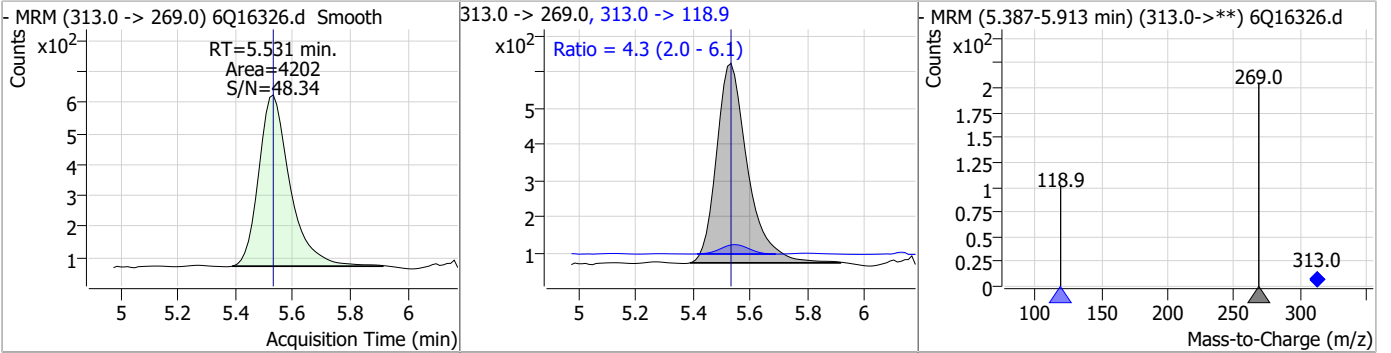


Perfluorinated Compounds by LC/MS/MS

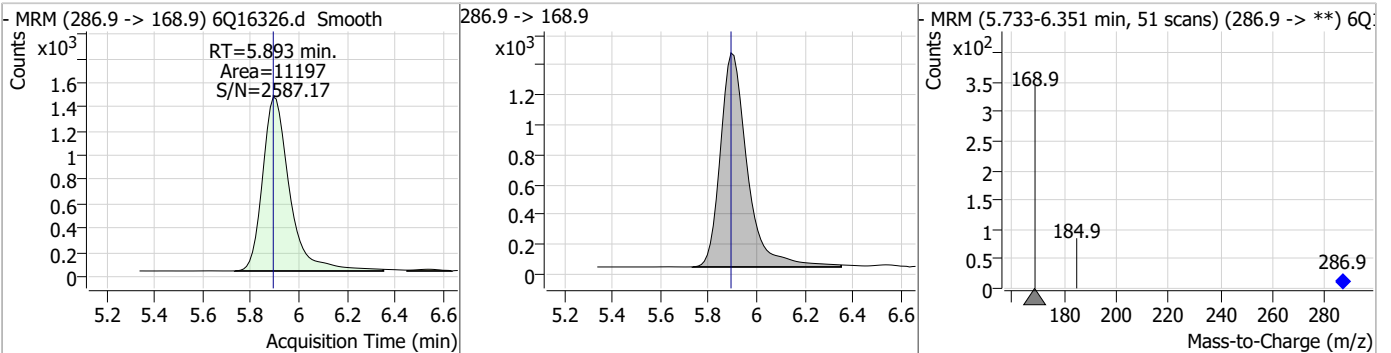


Perfluorinated Compounds by LC/MS/MS

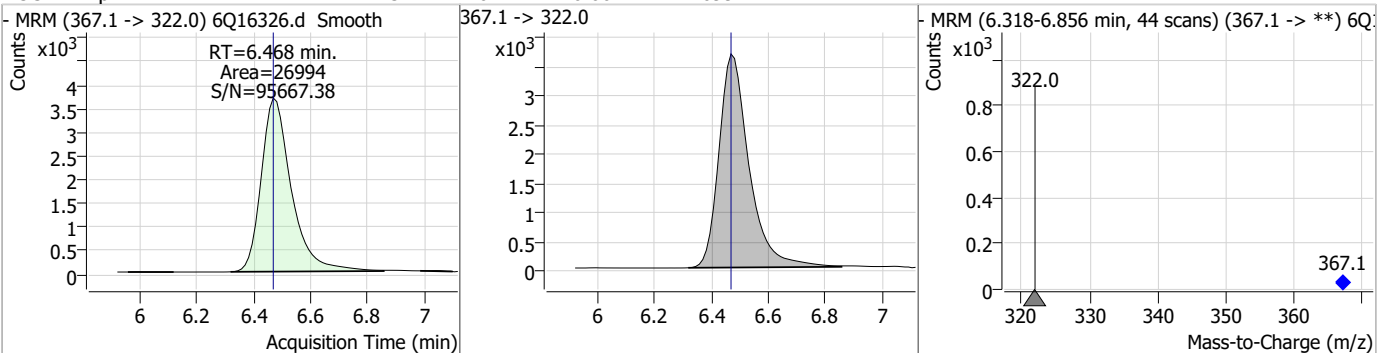
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.42	5.53	0.00	4202	313.0 -> 118.9	4.3	2.0	6.1



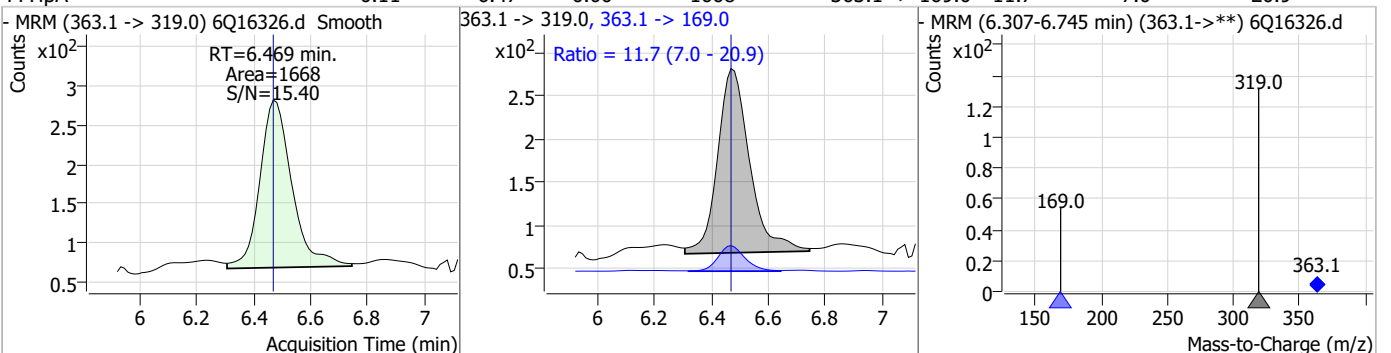
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.52	5.89	0.00	11197				



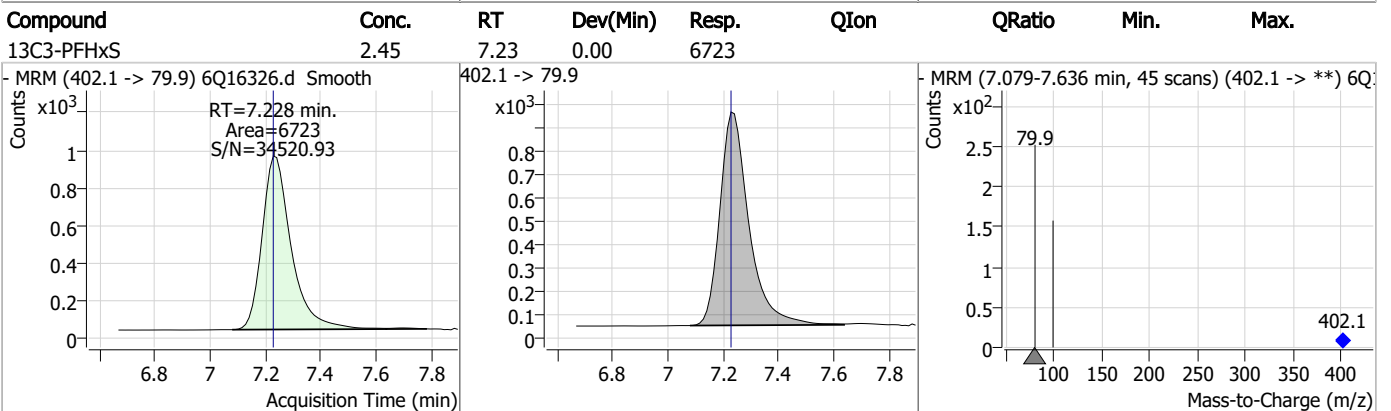
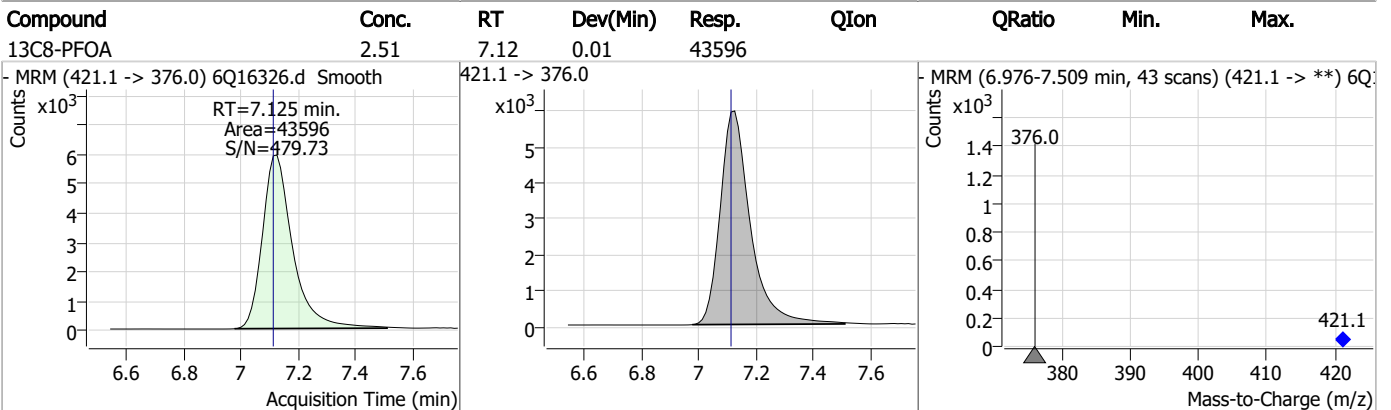
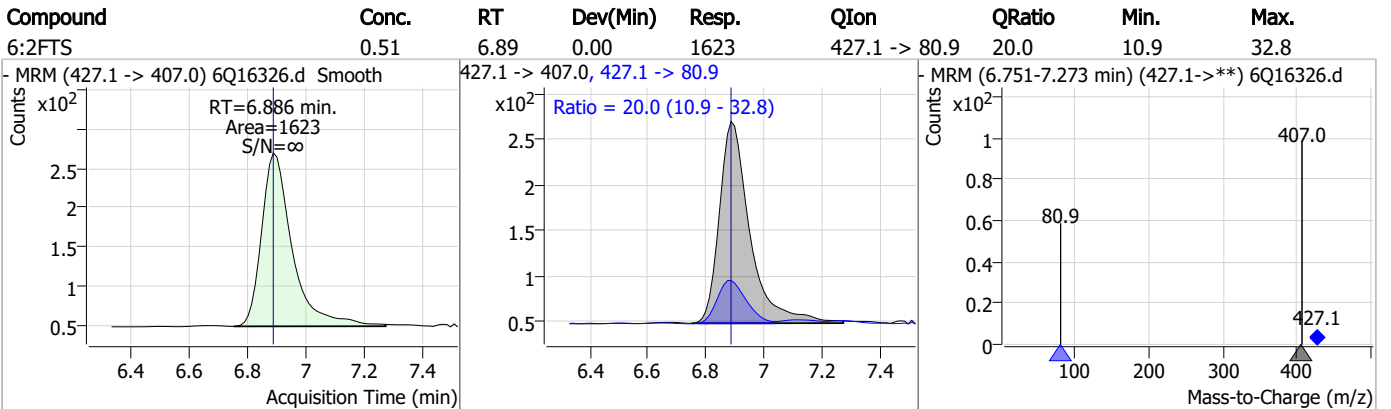
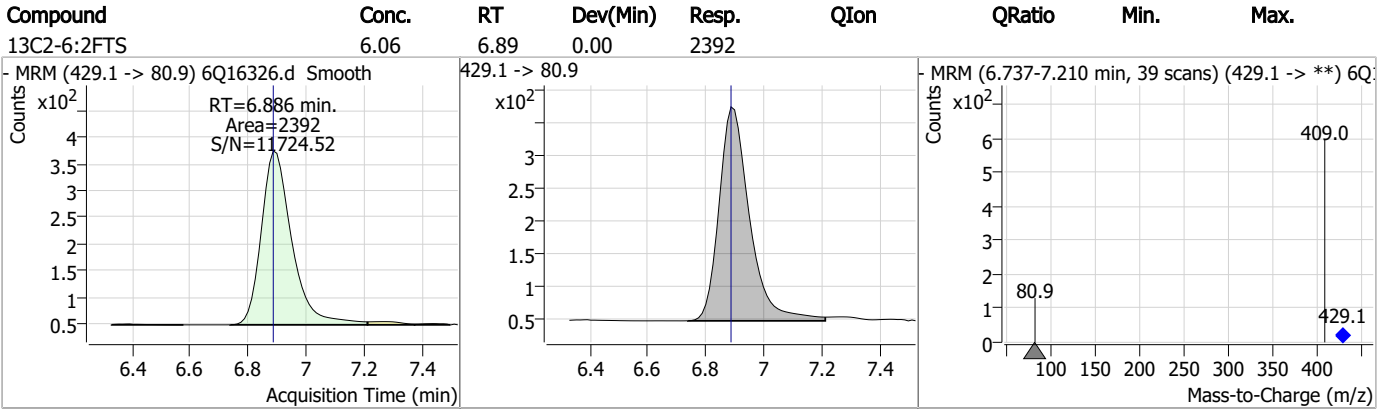
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.73	6.47	0.00	26994				



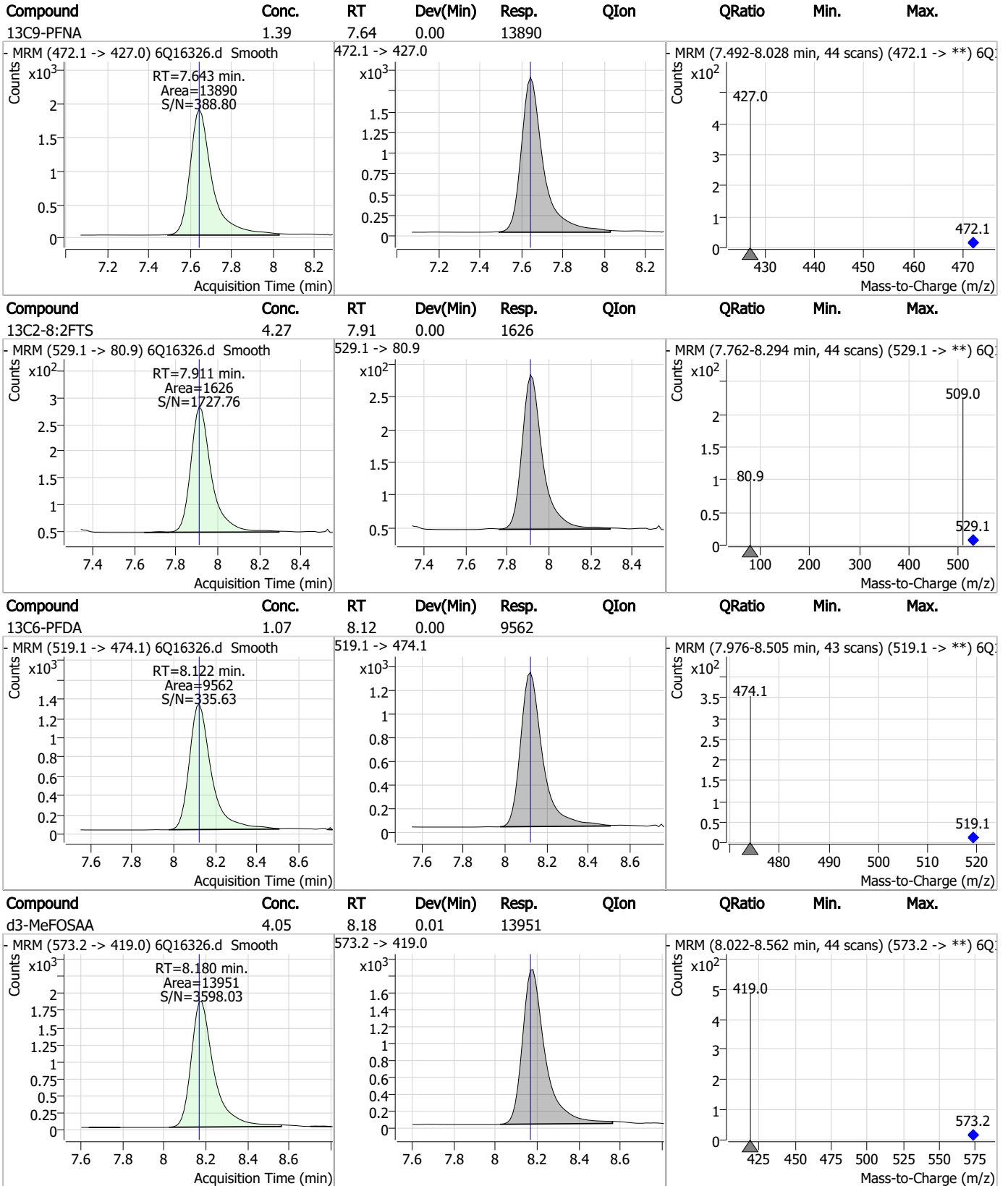
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.11	6.47	0.00	1668	363.1 -> 169.0	11.7	7.0	20.9



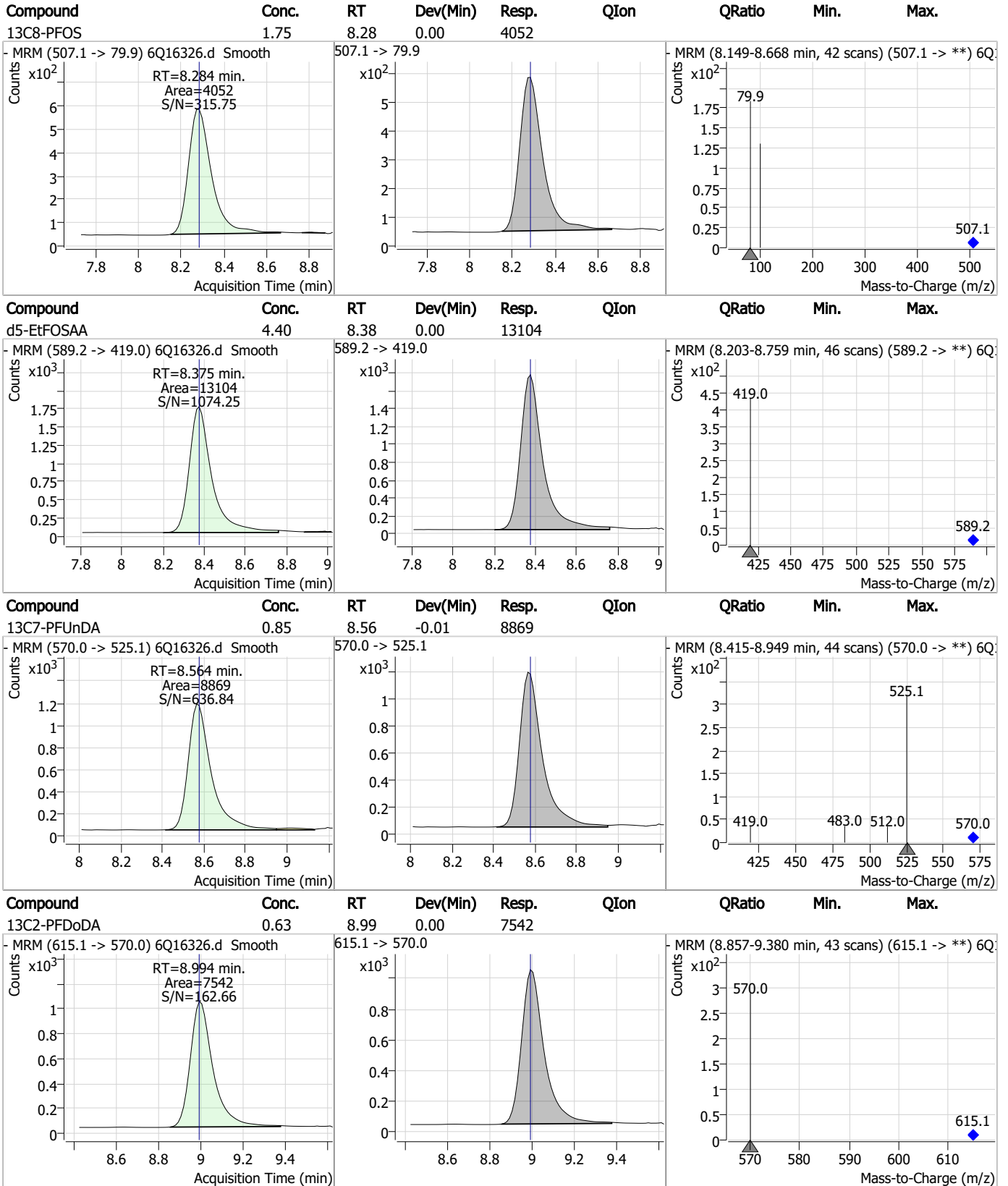
Perfluorinated Compounds by LC/MS/MS



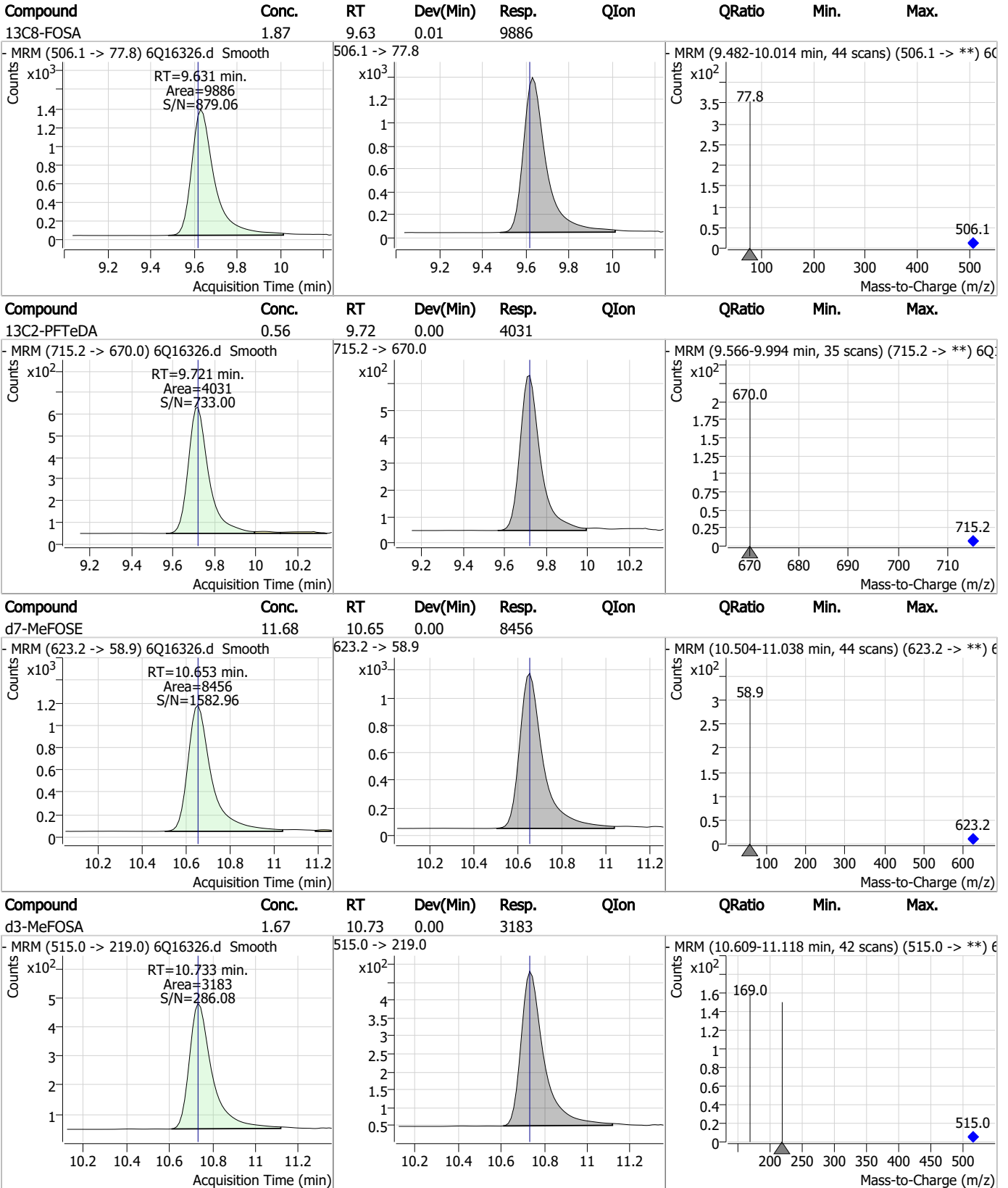
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

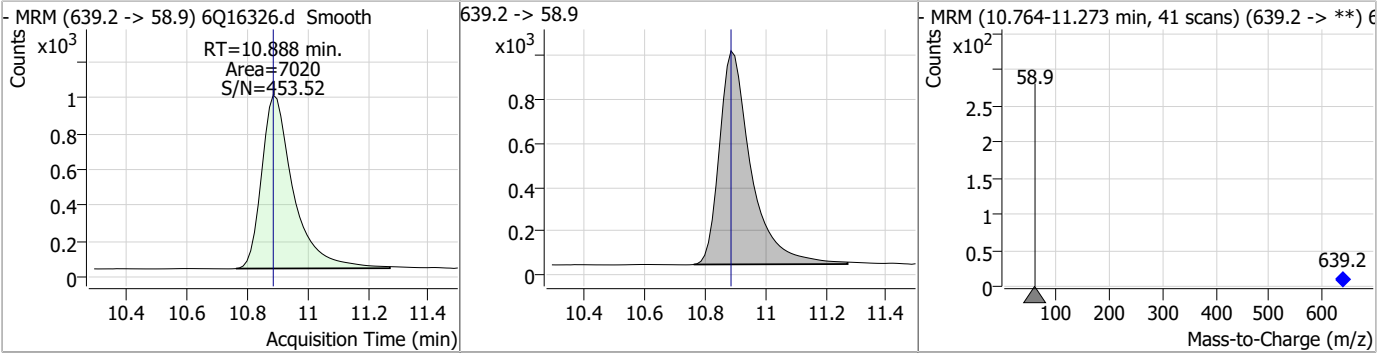


7.1.3

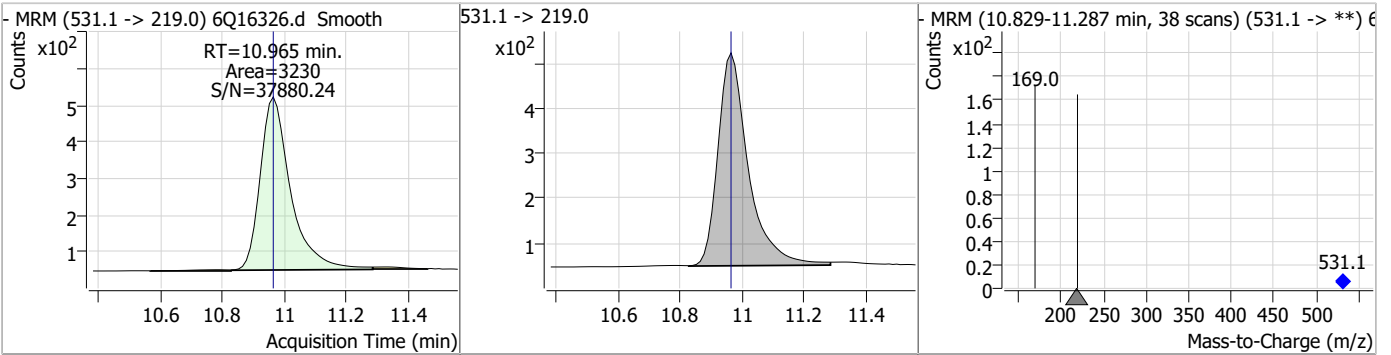
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	14.59	10.89	0.00	7020				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	1.57	10.97	0.00	3230				



7.1.3

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16322.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 9:16:37 PM
 Sample Name : op96279-mb
 Vial : P6-D3
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	71686	10.00 µg/L	0.041
M5-PFPeA	4.334	268.3 -> 223.0	30779	5.00 µg/L	0.012
M5-PFHxA	5.528	318.0 -> 273.0	27877	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	27205	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	45808	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	14107	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	12075	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	13064	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	13710	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	8223	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	9187	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	11249	2.50 µg/L	0.000
M3-PFHxS	7.240	402.1 -> 79.9	6889	2.50 µg/L	0.012
M8-PFOS	8.284	507.1 -> 79.9	6124	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	1951	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2499	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2107	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	18450	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	10961	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	14951	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	10807	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	8322	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4090	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	3454	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6681	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	27953	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	5049	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	51707	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	14016	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	14355	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	23689	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	1951	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.9%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2499	6.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.9%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2107	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-PFDoDA	8.994	615.1 -> 570.0	13710	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C2-PFTeDA	9.721	715.2 -> 670.0	8223	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFBS	5.459	302.1 -> 79.9	11249	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C3-PFHxS	7.240	402.1 -> 79.9	6889	2.38 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 = 95.3%	
13C4-PFBA	2.938	216.8 -> 171.9	71686	10.97 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C4-PFHpA	6.468	367.1 -> 322.0	27205	2.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.5%	
13C5-PFHxA	5.528	318.0 -> 273.0	27877	2.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C5-PFPeA	4.334	268.3 -> 223.0	30779	5.57 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C6-PFDA	8.122	519.1 -> 474.1	12075	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C7-PFUnDA	8.564	570.0 -> 525.1	13064	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C8-FOSA	9.631	506.1 -> 77.8	9187	1.85 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.9%	
13C8-PFOA	7.125	421.1 -> 376.0	45808	2.65 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C8-PFOS	8.284	507.1 -> 79.9	6124	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.5%	
13C9-PFNA	7.643	472.1 -> 427.0	14107	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.3%	
d3-MeFOSAA	8.167	573.2 -> 419.0	18450	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.2%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	10961	10.61 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
d3-MeFOSA	10.733	515.0 -> 219.0	3454	1.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.1%	
d5-EtFOSAA	8.363	589.2 -> 419.0	14951	5.34 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d7-MeFOSE	10.653	623.2 -> 58.9	10807	15.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 63.6%	
d9-EtFOSE	10.888	639.2 -> 58.9	8322	18.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.7%	
d5-EtFOSA	10.965	531.1 -> 219.0	4090	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.7%	

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.	



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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



7.2.1
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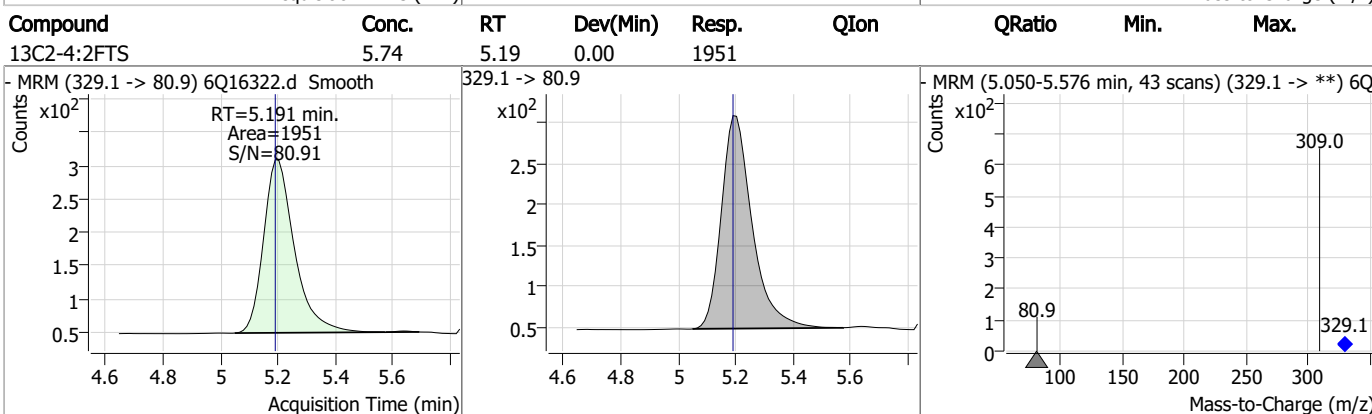
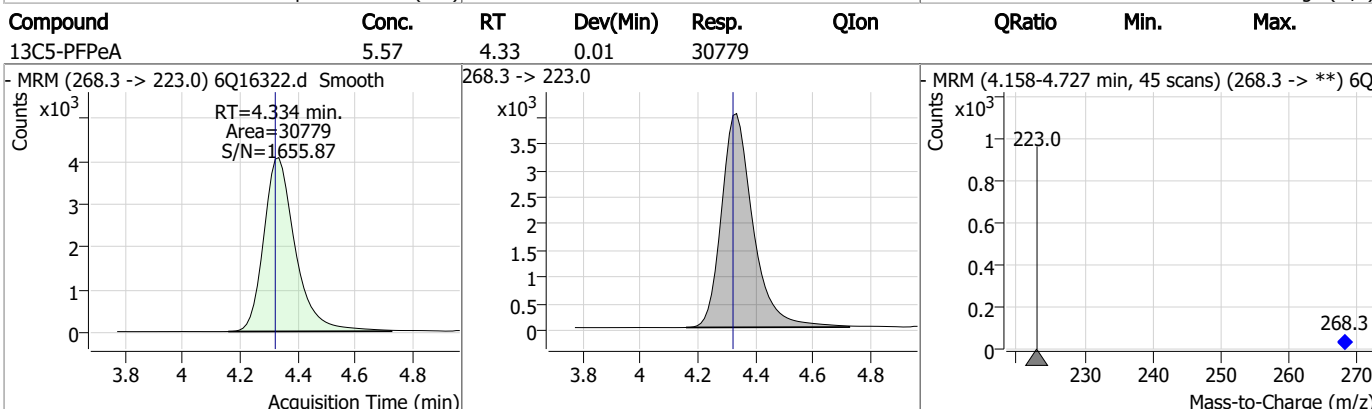
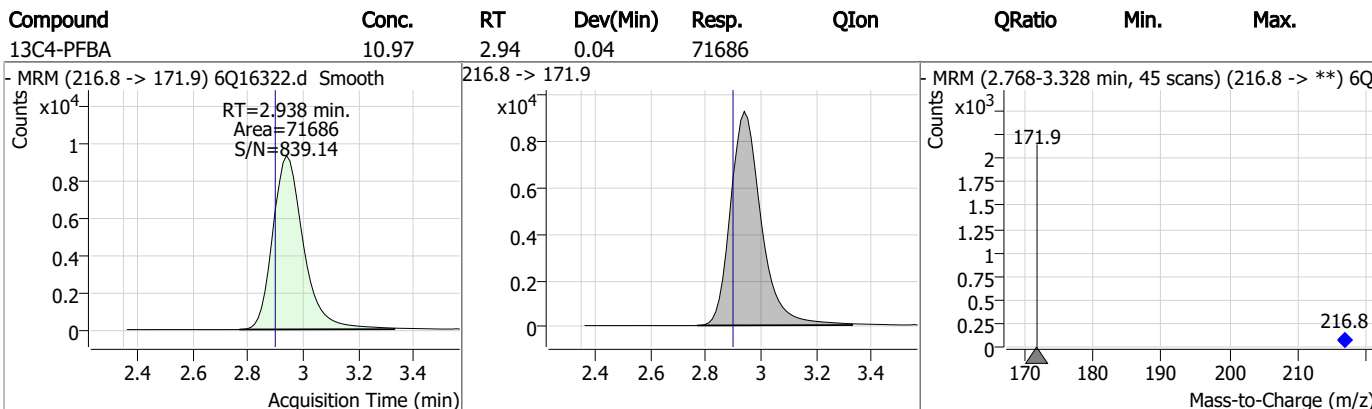
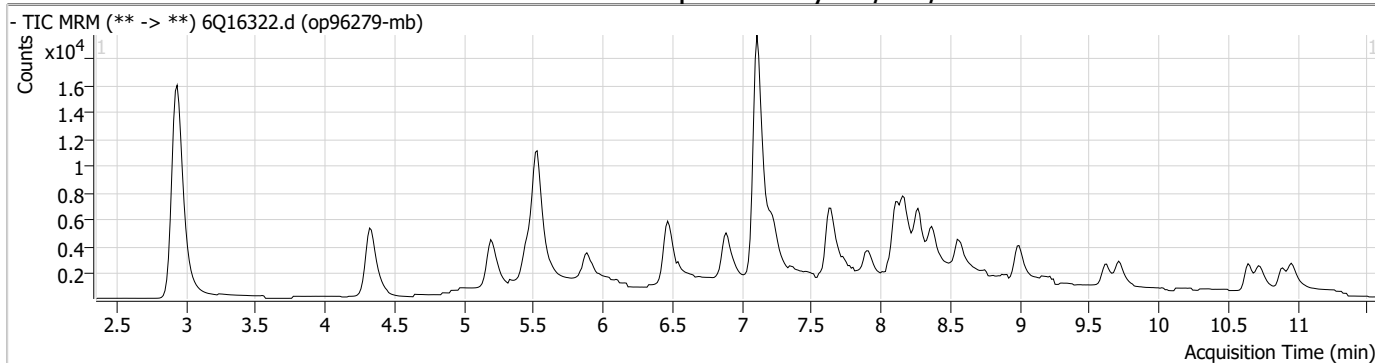
Perfluorinated Compounds by LC/MS/MS

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



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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.46	0.00	11249				
13C5-PFHxA	2.84	5.53	0.00	27877				
13C3-HFPO-DA	10.61	5.89	0.00	10961				
13C4-PFHpA	2.84	6.47	0.00	27205				

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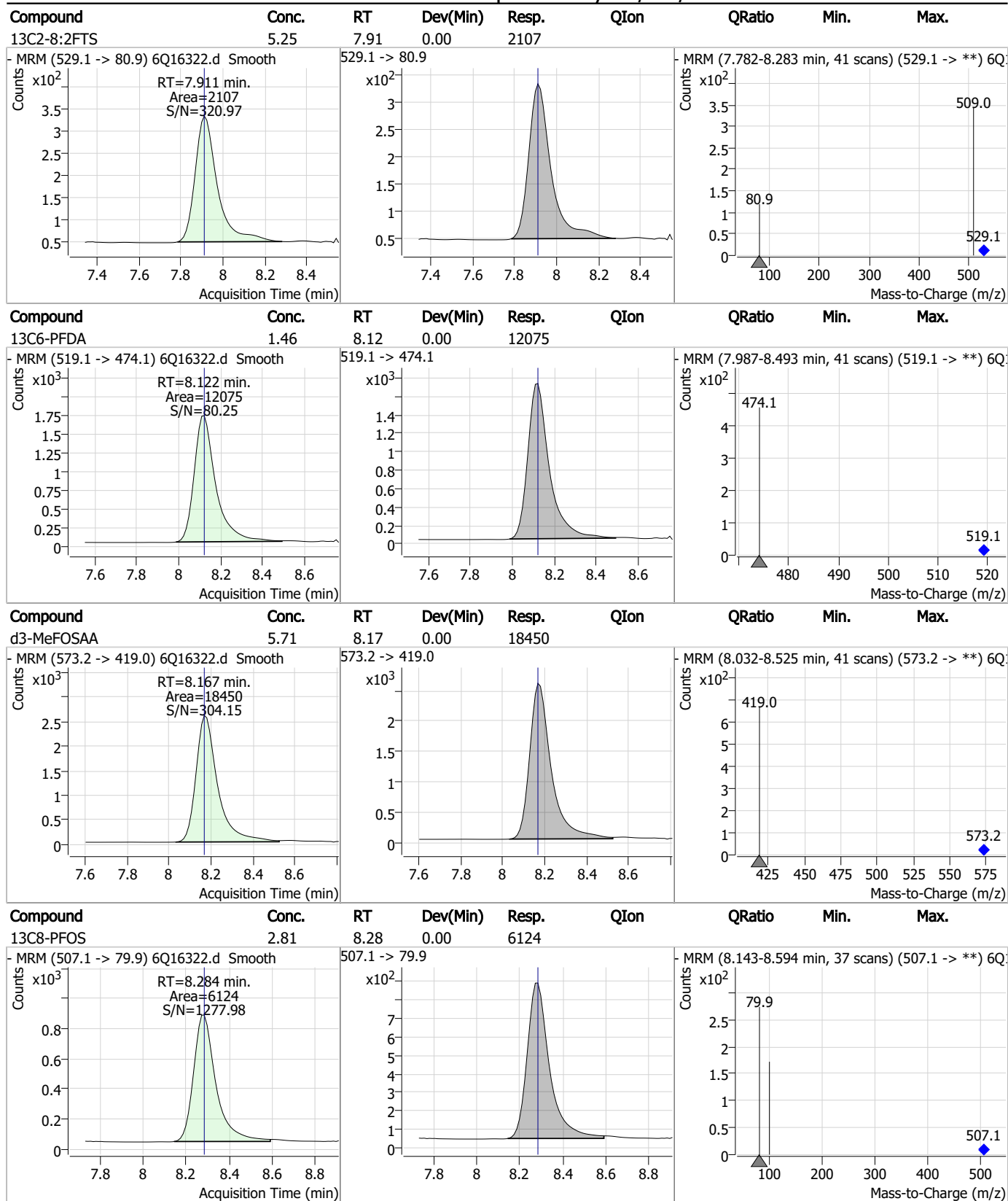
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.00	6.89	0.00	2499				
13C8-PFOA	2.65	7.12	0.01	45808				
13C3-PFHxS	2.38	7.24	0.01	6889				
13C9-PFNA	1.33	7.64	0.00	14107				

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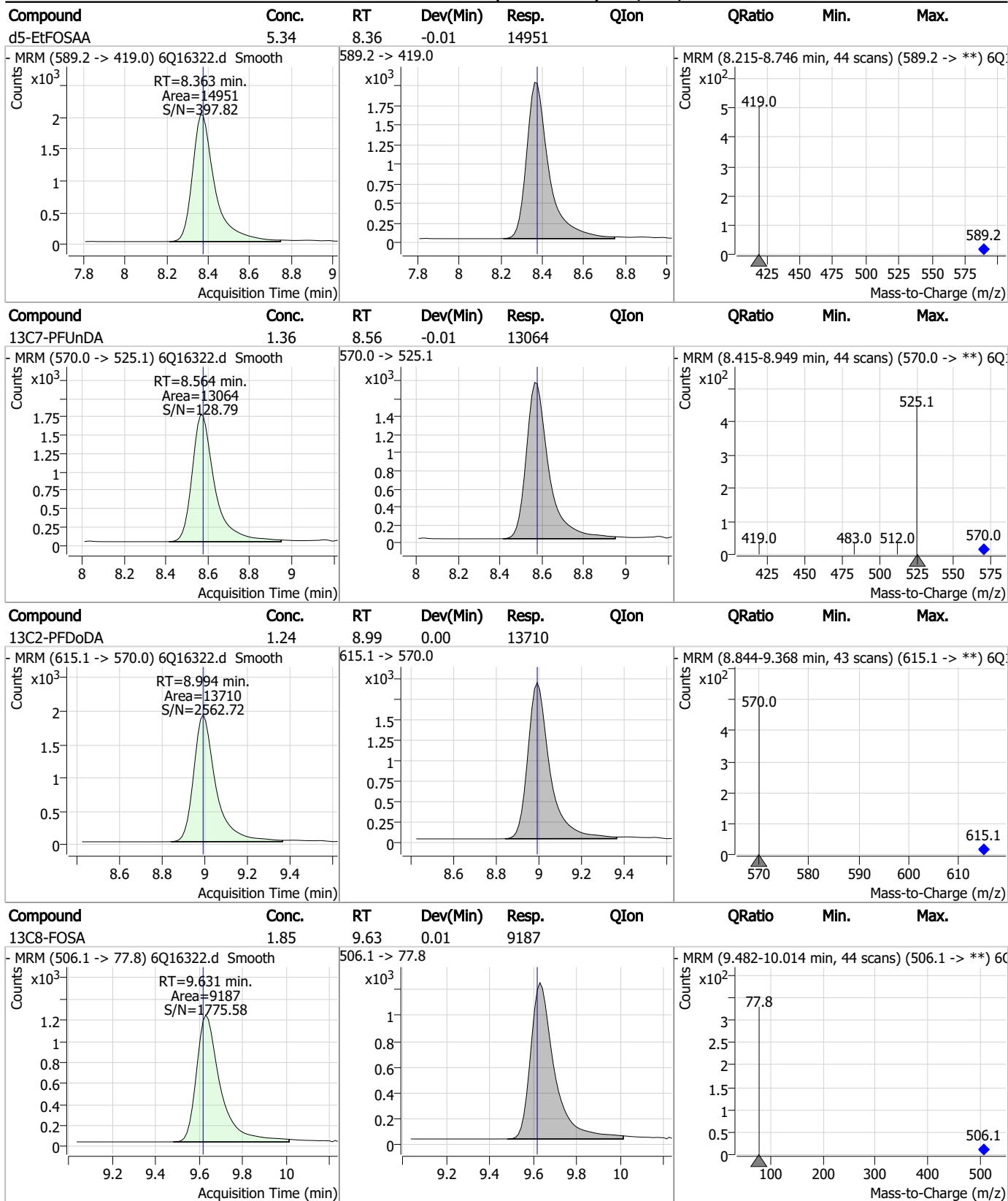
Perfluorinated Compounds by LC/MS/MS



7.2.1
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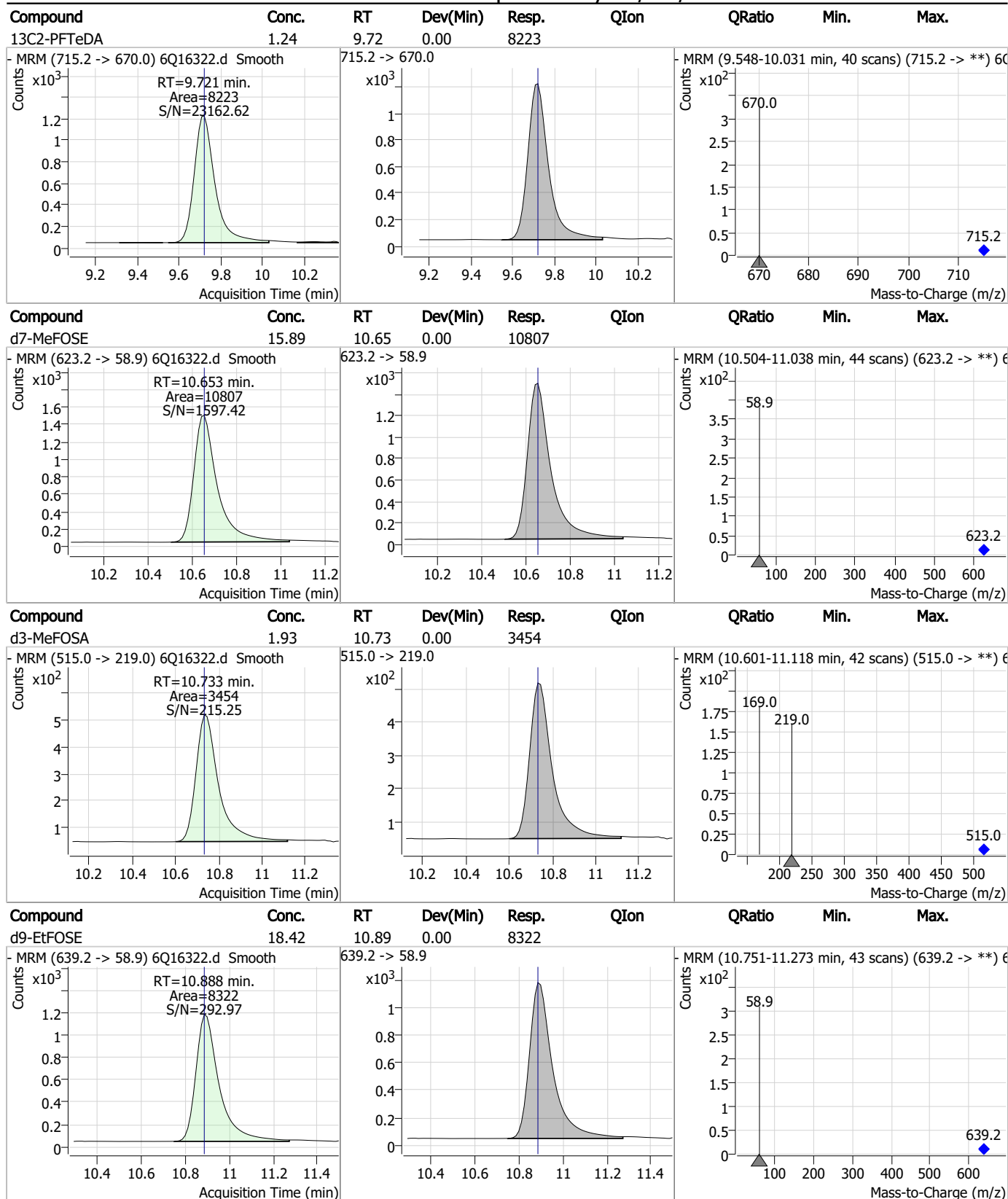


Perfluorinated Compounds by LC/MS/MS



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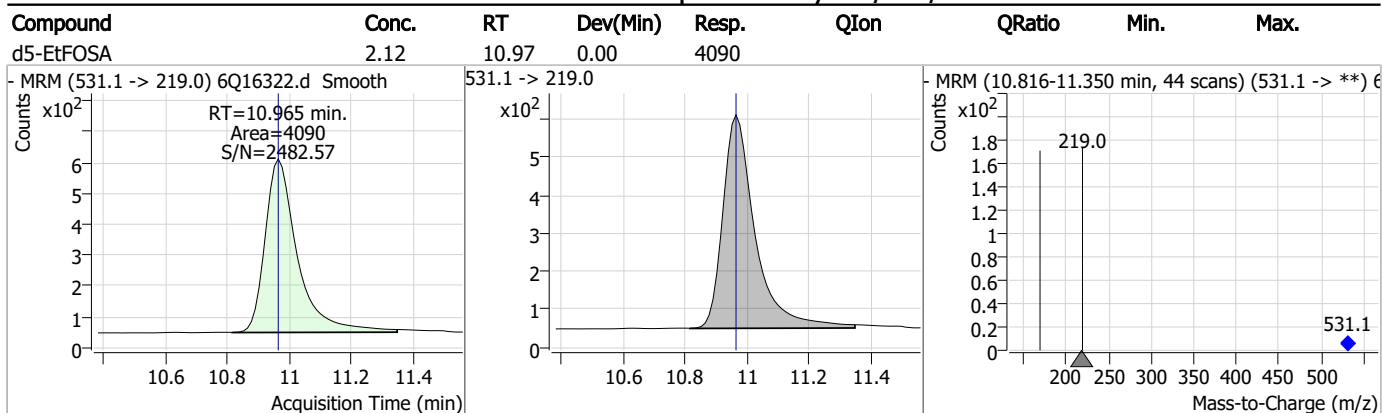
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 8:06:46 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96171,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	77909	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	34673	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	32888	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	30509	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	51370	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	15361	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	13198	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	15335	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17860	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	10161	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	14430	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	12208	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	7836	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6787	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2086	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2836	5.00 µg/L	0.000
M2-8:2FTS	7.898	529.1 -> 80.9	2353	5.00 µg/L	-0.012
M3-MeFOSAA	8.167	573.2 -> 419.0	23740	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	12774	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	19142	5.00 µg/L	-0.012
M7-MeFOSE	10.641	623.2 -> 58.9	19227	25.00 µg/L	-0.012
M9-EtFOSE	10.888	639.2 -> 58.9	12390	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5429	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5074	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8791	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	32692	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	5654	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	63201	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	16863	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	17306	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	29676	2.50 µg/L	-0.012

System Monitoring Compounds

13C2-4:2FTS	5.191	329.1 -> 80.9	2086	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2836	6.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.5%		
13C2-8:2FTS	7.898	529.1 -> 80.9	2353	5.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17860	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-PFTeDA	9.709	715.2 -> 670.0	10161	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-PFBS	5.446	302.1 -> 79.9	12208	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C3-PFHxS	7.228	402.1 -> 79.9	7836	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 = 96.8%	
13C4-PFBA	2.897	216.8 -> 171.9	77909	10.19 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFHpA	6.468	367.1 -> 322.0	30509	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFHxA	5.516	318.0 -> 273.0	32888	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C5-PFPeA	4.322	268.3 -> 223.0	34673	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.110	519.1 -> 474.1	13198	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C7-PFUnDA	8.564	570.0 -> 525.1	15335	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C8-FOSA	9.631	506.1 -> 77.8	14430	2.21 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C8-PFOA	7.112	421.1 -> 376.0	51370	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.272	507.1 -> 79.9	6787	2.37 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C9-PFNA	7.643	472.1 -> 427.0	15361	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSAA	8.167	573.2 -> 419.0	23740	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	12774	9.87 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSA	10.733	515.0 -> 219.0	5074	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.1%	
d5-EtFOSAA	8.363	589.2 -> 419.0	19142	5.20 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d7-MeFOSE	10.641	623.2 -> 58.9	19227	21.49 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.0%	
d9-EtFOSE	10.888	639.2 -> 58.9	12390	20.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.3%	
d5-EtFOSA	10.965	531.1 -> 219.0	5429	2.14 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.5%	

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	8.339	584.2 -> 419.1	97	0.03 µg/L	m 88
		584.2 -> 526.0	52		
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.	

7.2.2
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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

7.2.2
7

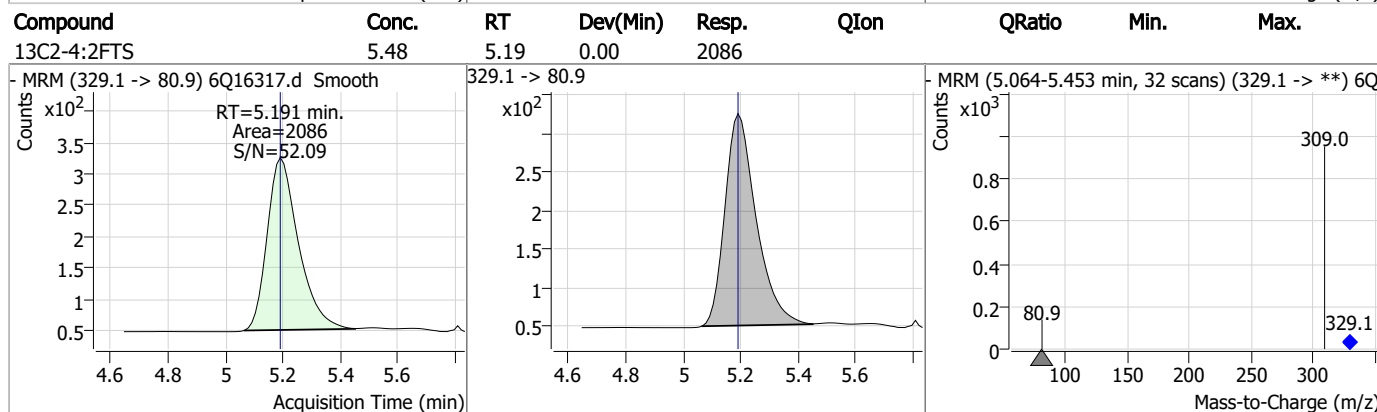
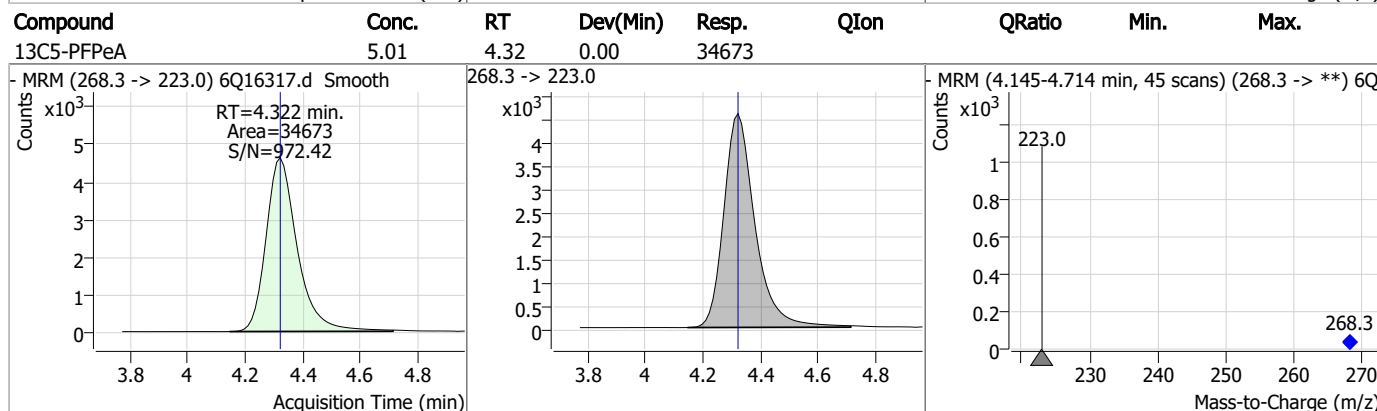
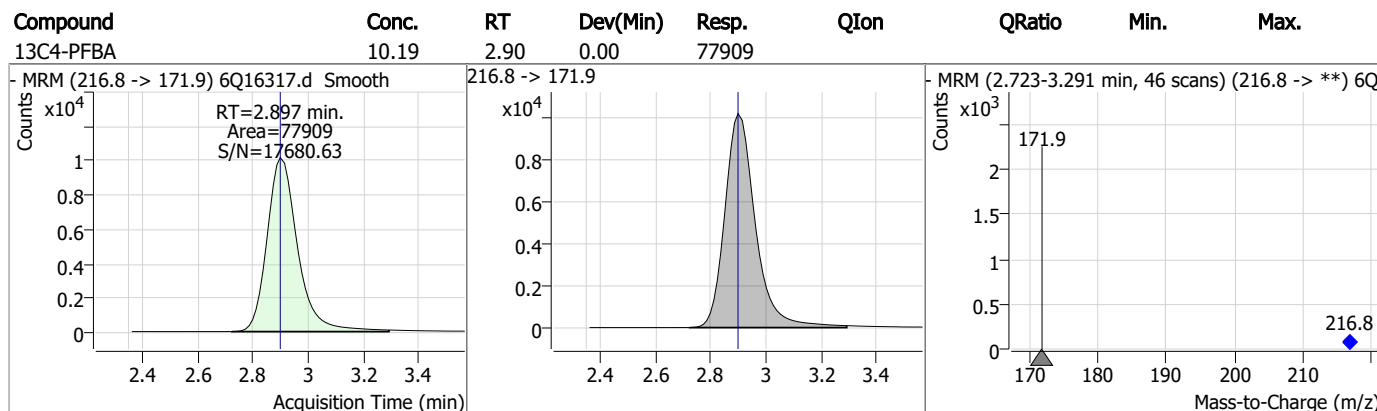
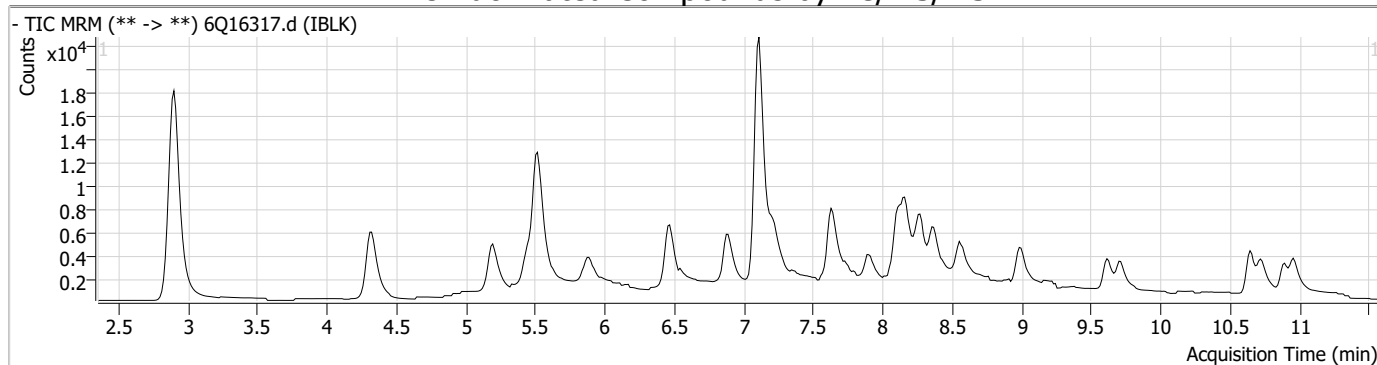
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

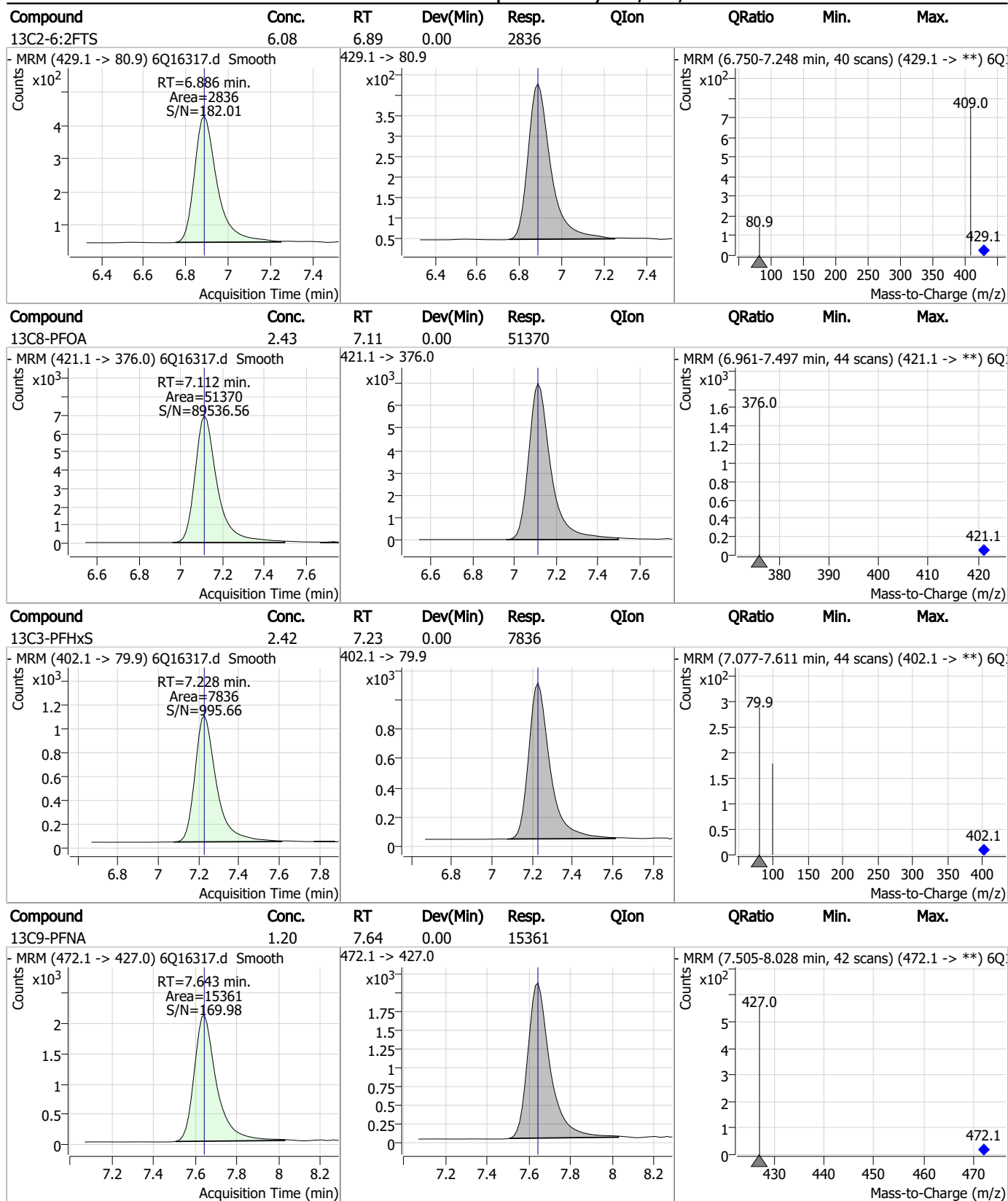
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.43	5.45	-0.01	12208				
13C5-PFHxA	2.68	5.52	-0.01	32888				
13C3-HFPO-DA	9.87	5.89	0.00	12774				
13C4-PFHpA	2.54	6.47	0.00	30509				

7.2.2
7



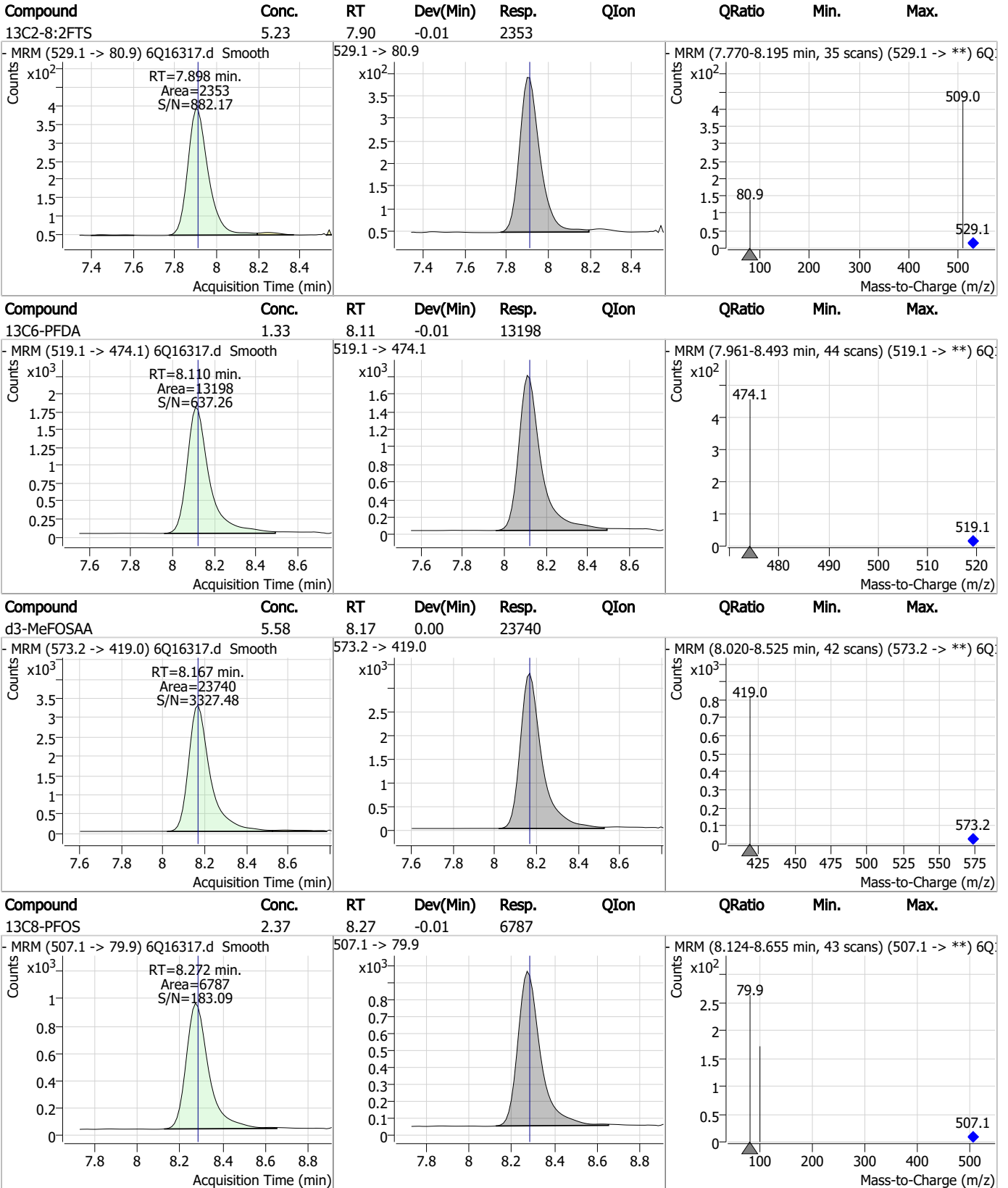
Perfluorinated Compounds by LC/MS/MS



7.2.2
7



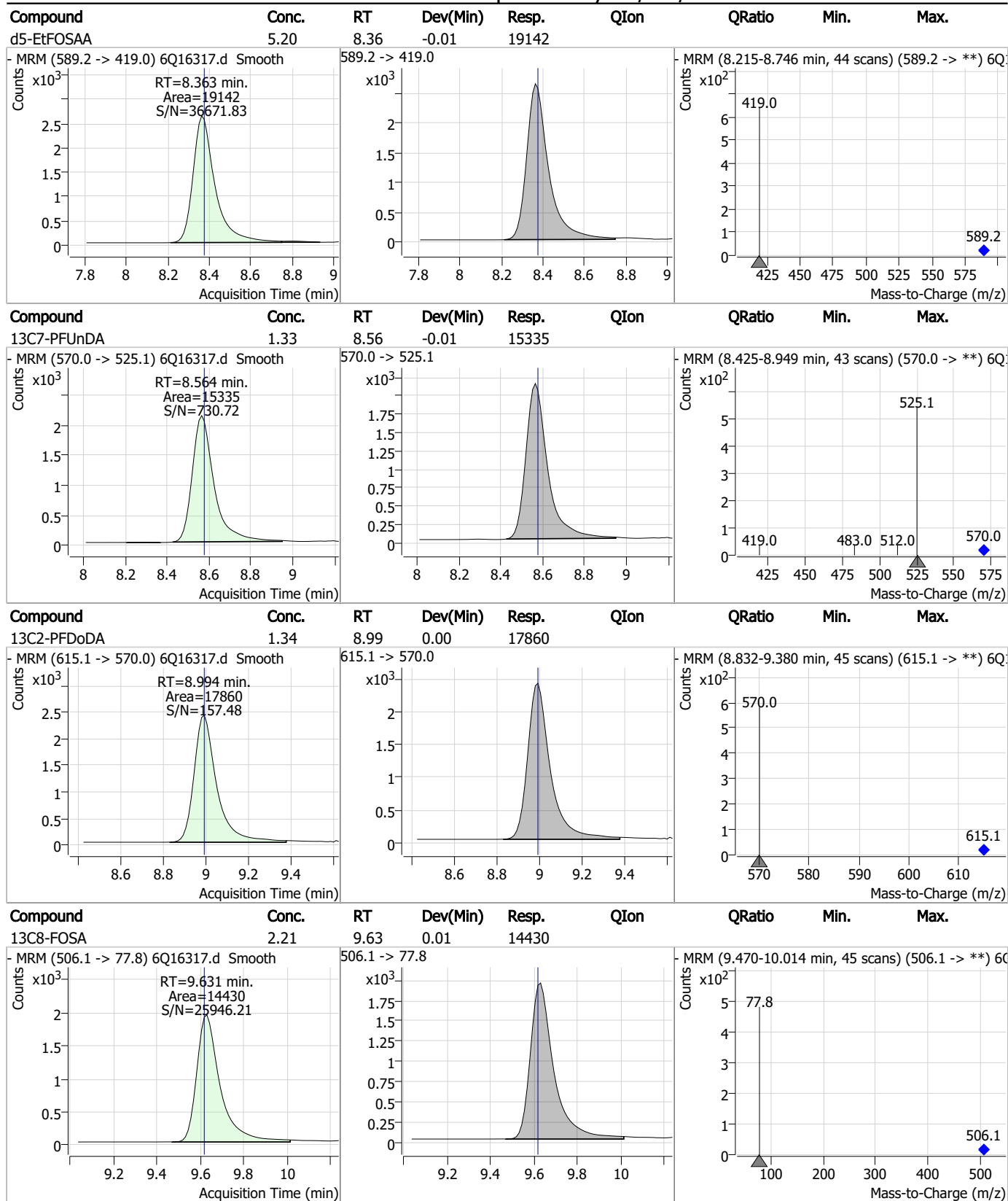
Perfluorinated Compounds by LC/MS/MS



7.22

7

Perfluorinated Compounds by LC/MS/MS



7.22
7

Perfluorinated Compounds by LC/MS/MS

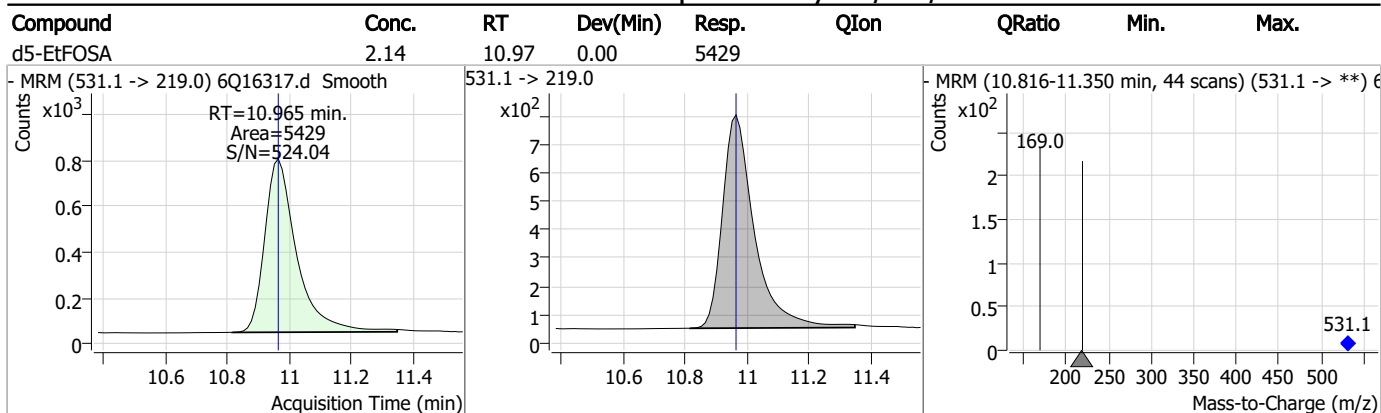
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.71	-0.01	10161				
d7-MeFOSE	21.49	10.64	-0.01	19227				
d3-MeFOSA	2.15	10.73	0.00	5074				
d9-EtFOSE	20.84	10.89	0.00	12390				

7.2.2

7



Perfluorinated Compounds by LC/MS/MS



7.22
7

Manual Integration Approval Summary

Sample Number: S6Q243-IBLK Method: EPA DRAFT 1633
Lab FileID: 6Q16317.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 20:06 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
EiFOSAA	2991-50-6		8.34	Split peak

7.2.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16320.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 8:48:41 PM
 Sample Name : op96279-bs
 Vial : P6-D1
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	23022	10.00 µg/L	0.041
M5-PFPeA	4.322	268.3 -> 223.0	30912	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	28311	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	27943	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	44876	2.50 µg/L	0.000
M9-PFNA	7.630	472.1 -> 427.0	15127	1.25 µg/L	-0.012
M6-PFDA	8.110	519.1 -> 474.1	11953	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	13205	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	15101	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	8239	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	9931	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	11104	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	7606	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6337	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2054	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2532	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2279	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	18888	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	11221	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	15036	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	10407	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	8057	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4166	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	3784	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6785	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	27853	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4518	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	50066	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	14501	1.25 µg/L	-0.012
13C5-PFNA	7.631	468.0 -> 423.0	14064	1.25 µg/L	-0.012
13C2-PFHxA	5.529	315.1 -> 270.0	24561	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2054	6.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 135.2%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2532	6.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 135.8%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2279	6.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.8%		
13C2-PFDoDA	8.994	615.1 -> 570.0	15101	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-PFTeDA	9.709	715.2 -> 670.0	8239	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C3-PFBS	5.459	302.1 -> 79.9	11104	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C3-PFHxS	7.228	402.1 -> 79.9	7606	2.94 µg/L	0.000

7.3.1
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 = 117.6%		
13C4-PFBA	2.938	216.8 -> 171.9	23022	3.54 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 35.4%		
13C4-PFHpA	6.468	367.1 -> 322.0	27943	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.4%		
13C5-PFHxA	5.516	318.0 -> 273.0	28311	2.79 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C5-PFPeA	4.322	268.3 -> 223.0	30912	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C6-PFDA	8.110	519.1 -> 474.1	11953	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.0%		
13C7-PFUnDA	8.564	570.0 -> 525.1	13205	1.33 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C8-FOSA	9.631	506.1 -> 77.8	9931	1.97 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 78.7%		
13C8-PFOA	7.112	421.1 -> 376.0	44876	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C8-PFOS	8.272	507.1 -> 79.9	6337	2.87 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.6%		
13C9-PFNA	7.630	472.1 -> 427.0	15127	1.45 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 116.3%		
d3-MeFOSAA	8.167	573.2 -> 419.0	18888	5.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	11221	10.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
d3-MeFOSA	10.733	515.0 -> 219.0	3784	2.08 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.2%		
d5-EtFOSAA	8.363	589.2 -> 419.0	15036	5.29 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
d7-MeFOSE	10.653	623.2 -> 58.9	10407	15.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 60.3%		
d9-EtFOSE	10.888	639.2 -> 58.9	8057	17.55 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 70.2%		
d5-EtFOSA	10.965	531.1 -> 219.0	4166	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 85.0%		
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	36865	9.16 µg/L	98
		327.1 -> 80.9	8293		
6:2FTS	6.886	427.1 -> 407.0	29454	8.68 µg/L	97
		427.1 -> 80.9	6868		
8:2FTS	7.911	527.1 -> 507.0	16066	9.94 µg/L	98
		527.1 -> 80.8	3828		
EtFOSAA	8.376	584.2 -> 419.1	6181	2.68 µg/L	m 86
		584.2 -> 526.0	3414		
FOSA	9.634	498.1 -> 77.9	8605	2.35 µg/L	100
		498.1 -> 478.0	301		
MeFOSAA	8.168	570.1 -> 419.0	8651	2.44 µg/L	96
		570.1 -> 483.0	1484		
PFBA	2.944	212.8 -> 168.9	5521	9.49 µg/L	100
PFBS	5.460	298.7 -> 79.9	10204	2.34 µg/L	93
		298.7 -> 98.8	4221		
PFDA	8.111	512.9 -> 469.0	31753	2.28 µg/L	99
		512.9 -> 219.0	4699		
PFDoDA	8.994	613.1 -> 569.0	25895	2.30 µg/L	97
		613.1 -> 319.0	3185		
PFDS	9.158	599.0 -> 79.9	4292	2.27 µg/L	96

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.469	599.0 -> 98.8	2339	2.44	µg/L	98
		363.1 -> 319.0	38387			
PFHpS	7.781	363.1 -> 169.0	5593	2.23	µg/L	99
		449.0 -> 79.9	6052			
PFHxA	5.519	449.0 -> 98.9	3617	2.52	µg/L	99
		313.0 -> 269.0	26333			
PFHxS	7.228	313.0 -> 118.9	984	2.03	µg/L	95
		398.7 -> 79.9	6795			
PFNA	7.643	398.7 -> 98.9	4198	2.29	µg/L	95
		463.0 -> 419.0	22577			
PFNS	8.738	463.0 -> 219.0	4191	2.20	µg/L	95
		548.8 -> 79.9	5927			
PFOA	7.113	548.8 -> 98.9	3177	2.62	µg/L	99
		413.0 -> 369.0	53165			
PFOS	8.273	413.0 -> 169.0	6842	1.98	µg/L	94
		498.9 -> 79.9	5514			
PFPeA	4.324	498.9 -> 98.8	3868	4.88	µg/L	100
		263.0 -> 219.0	31812			
PFPeS	6.520	349.1 -> 79.9	8450	2.10	µg/L	99
		349.1 -> 98.9	4338			
PFTeDA	9.709	713.1 -> 669.0	20412	2.35	µg/L	98
		713.1 -> 168.9	1392			
PFTrDA	9.378	663.0 -> 619.0	24408	2.30	µg/L	98
		663.0 -> 168.9	2175			
PFUnDA	8.564	563.1 -> 519.0	27170	2.57	µg/L	96
		563.1 -> 269.1	4003			
11CI-PF3OUdS	9.430	630.9 -> 450.9	52447	8.69	µg/L	97
		632.9 -> 452.9	17061			
9CI-PF3ONS	8.603	530.8 -> 351.0	108352	9.41	µg/L	96
		532.8 -> 353.0	33549			
ADONA	6.719	376.9 -> 250.9	216146	9.51	µg/L	99
		376.9 -> 84.8	50795			
HFPO-DA	5.894	284.9 -> 168.9	9743	9.60	µg/L	95
		284.9 -> 184.9	1402			
3:3FTCA	3.827	241.0 -> 177.0	1896	5.24	µg/L	100
		241.0 -> 117.0	289			
5:3FTCA	6.198	341.0 -> 237.1	127559	55.22	µg/L	97
		341.0 -> 217.0	107247			
7:3FTCA	7.608	441.0 -> 316.9	66990	57.29	µg/L	94
		441.0 -> 336.9	124584			
EtFOSA	10.967	526.0 -> 219.0	4686	2.61	µg/L	98
		526.0 -> 169.0	4612			
EtFOSE	10.913	630.0 -> 58.9	7639	24.18	µg/L	100
		511.9 -> 219.0	4212			
MeFOSA	10.734	511.9 -> 169.0	4271	2.65	µg/L	96
		616.1 -> 58.9	10027			
MeFOSE	10.666	699.1 -> 79.9	2370	25.56	µg/L	100
		699.1 -> 98.8	1357			
PFDoDS	9.848	295.0 -> 201.0	3236	2.15	µg/L	93
		295.0 -> 84.9	1544			
NFDHA	5.410	279.0 -> 85.1	10063	4.78	µg/L	94
		229.0 -> 84.9	5755			
PFMBA	4.737	314.8 -> 134.9	65885	4.66	µg/L	100
		314.8 -> 82.9	1602			
PFMPA	3.488			2.92	µg/L	100
PFEESA	5.999			4.45	µg/L	100

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

7.3.1
7

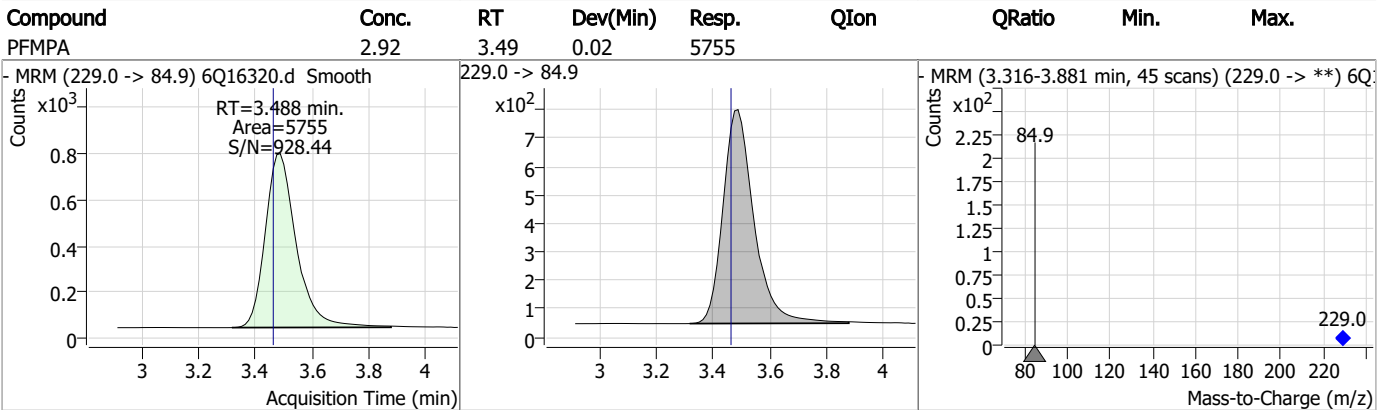
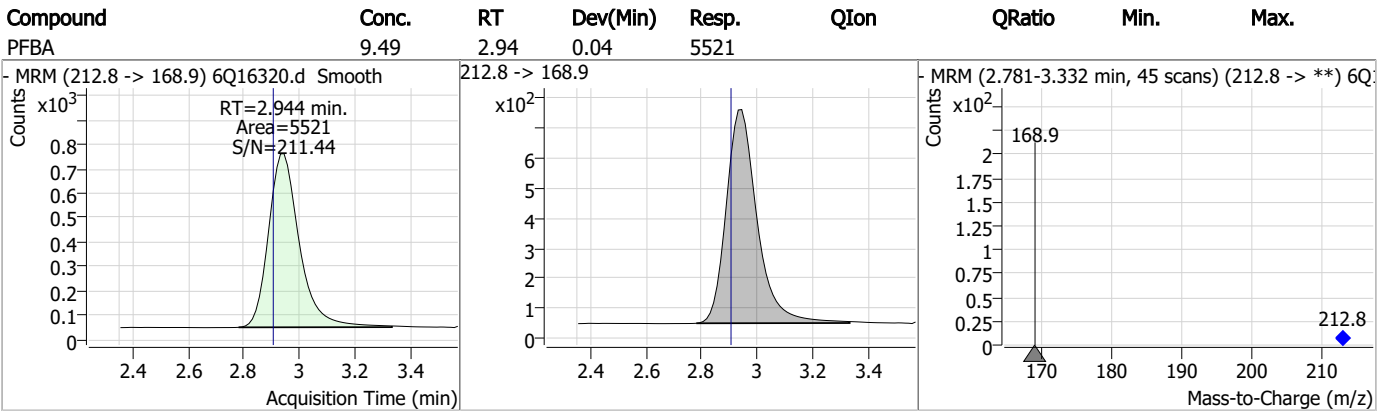
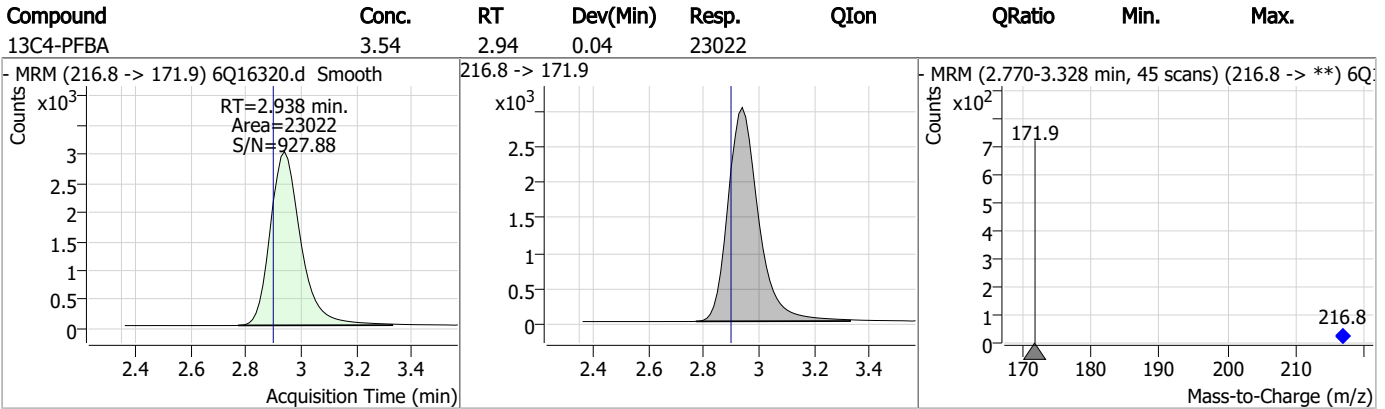
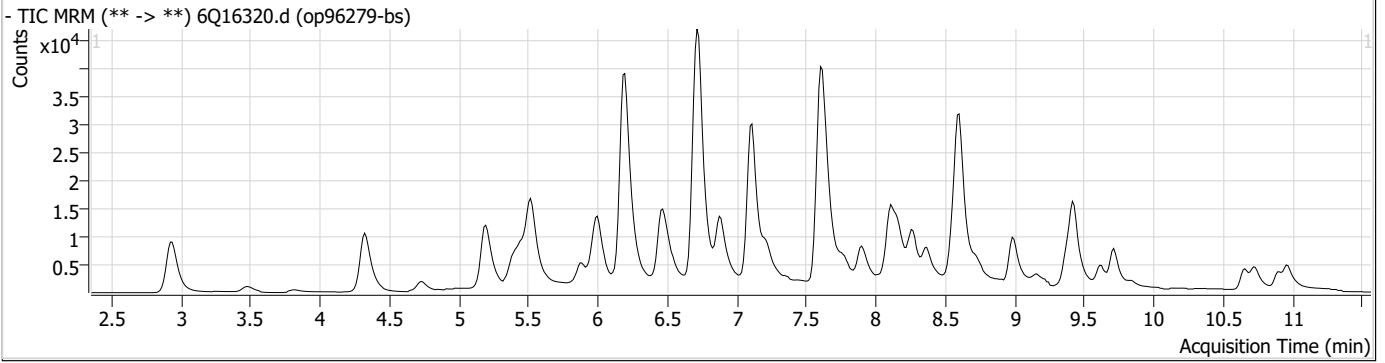
Perfluorinated Compounds by LC/MS/MS

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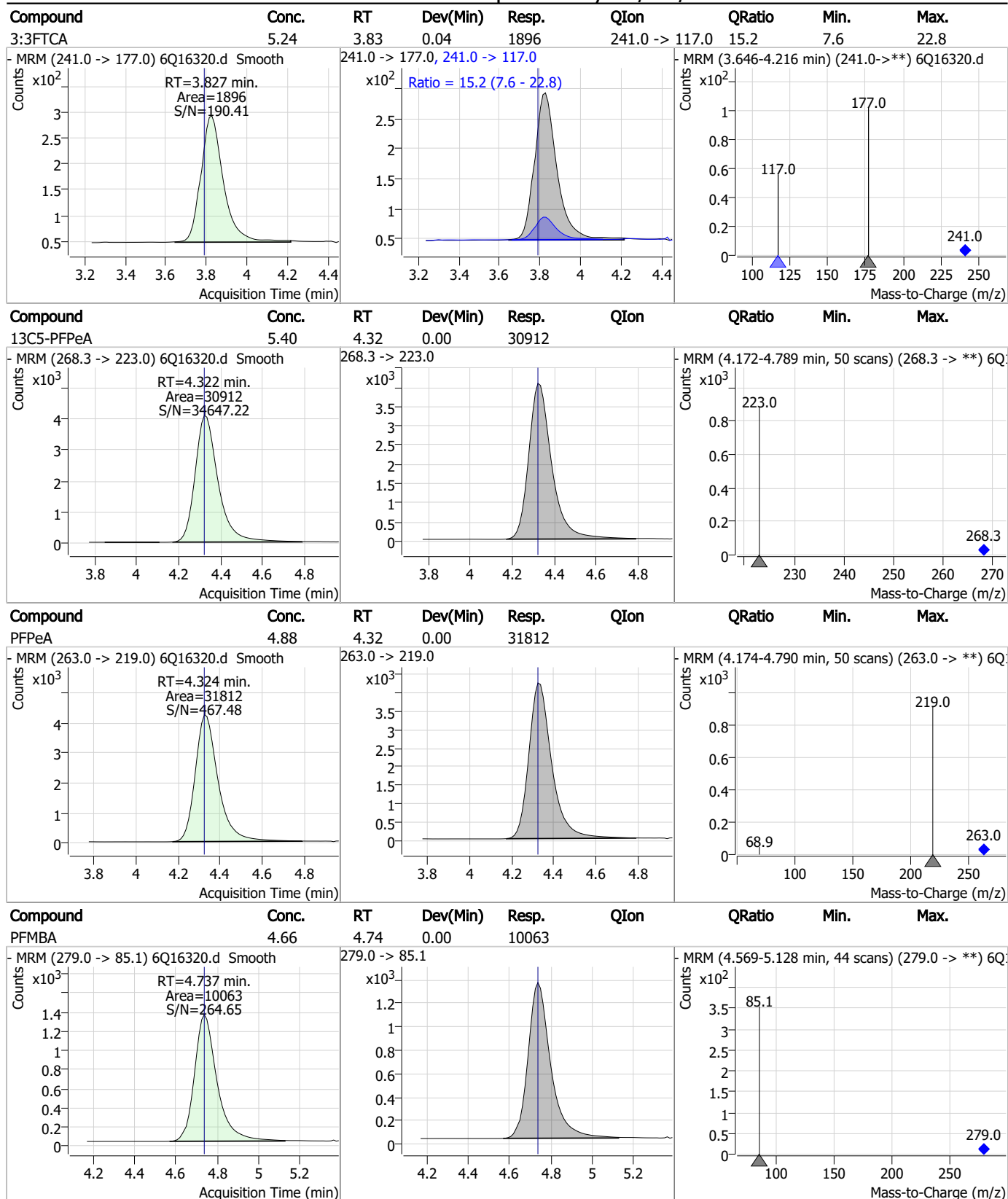
7.3.1

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Perfluorinated Compounds by LC/MS/MS

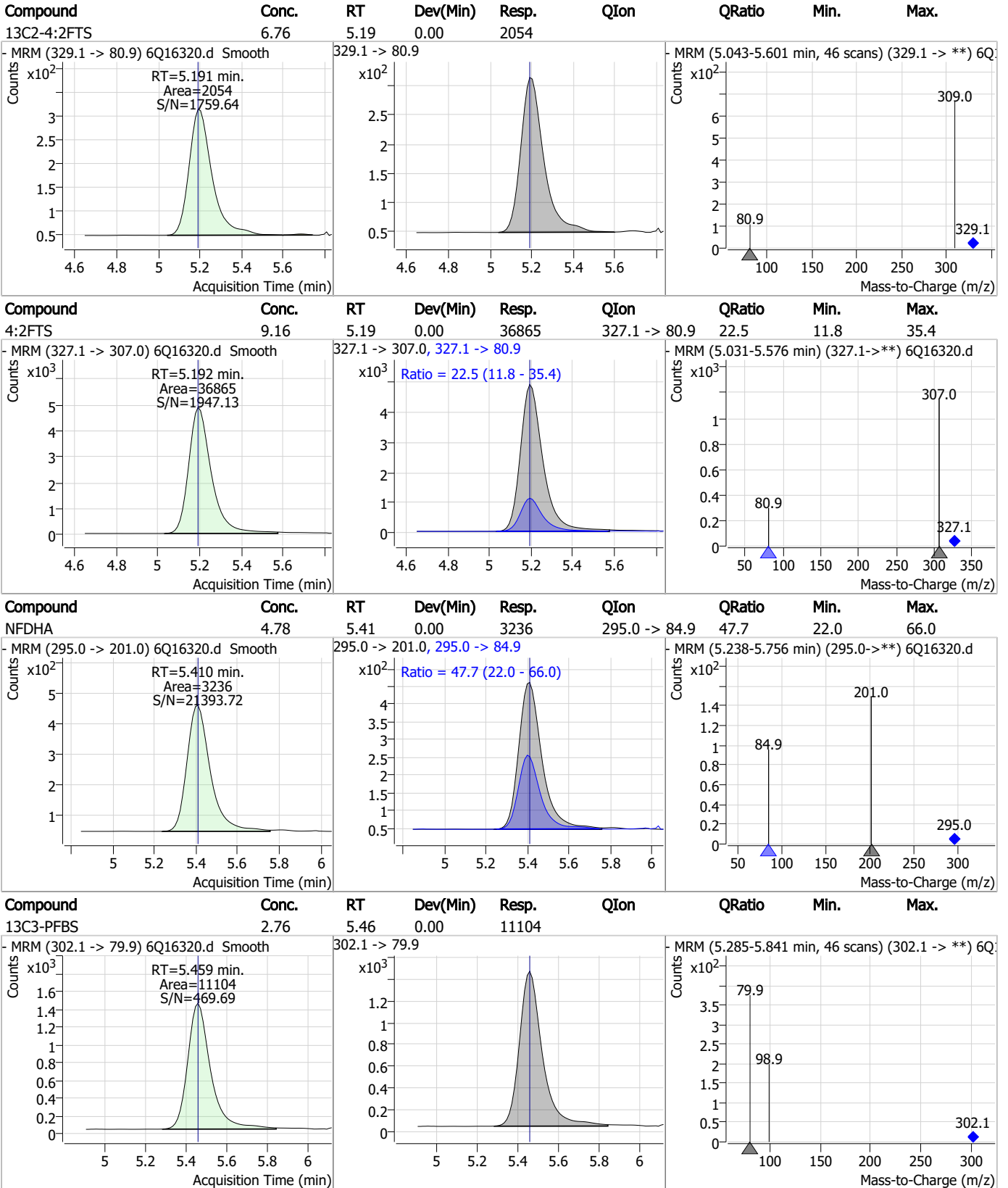


Perfluorinated Compounds by LC/MS/MS



7.3.1
7

Perfluorinated Compounds by LC/MS/MS

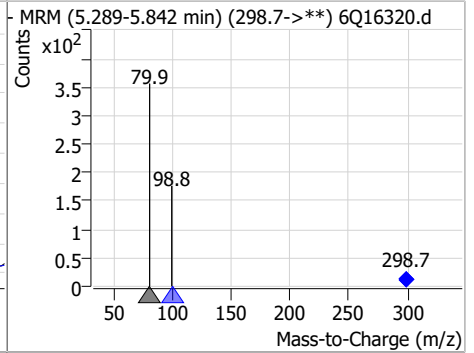
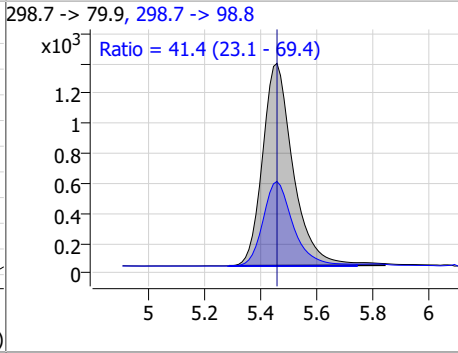
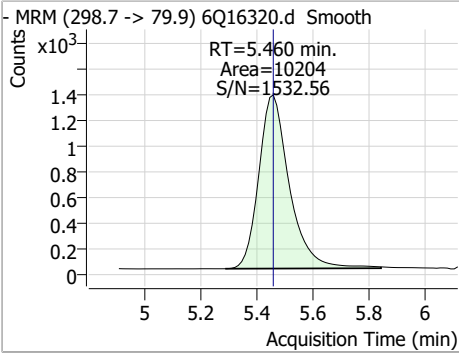


7.3.1

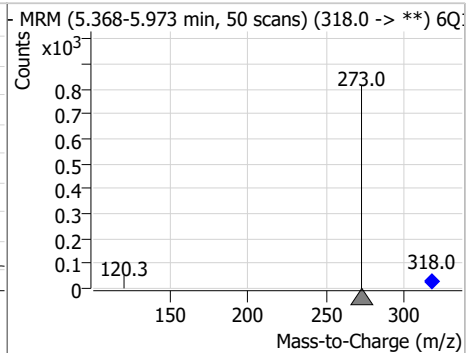
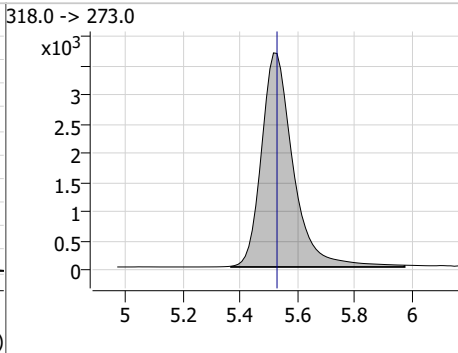
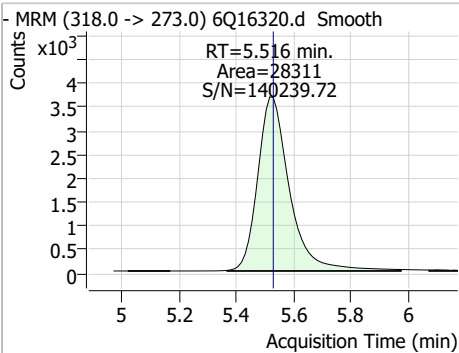
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Perfluorinated Compounds by LC/MS/MS

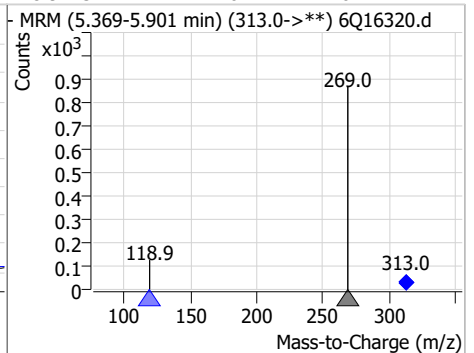
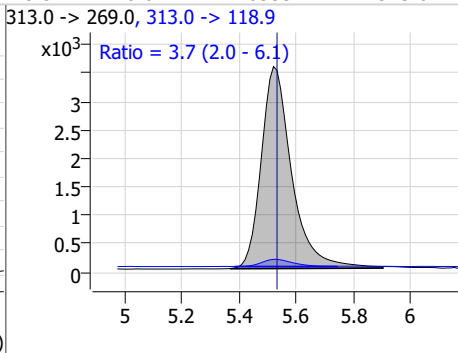
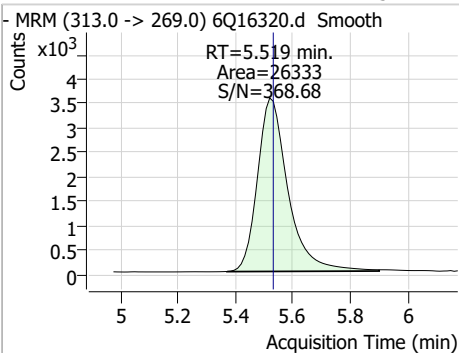
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.34	5.46	0.00	10204	298.7 -> 98.8	41.4	23.1	69.4



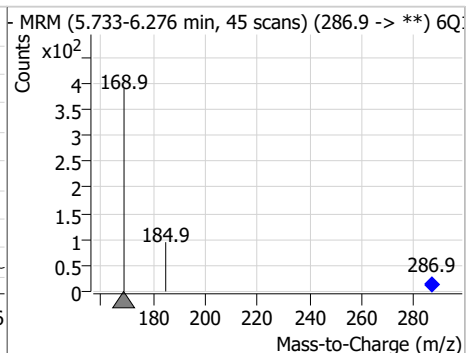
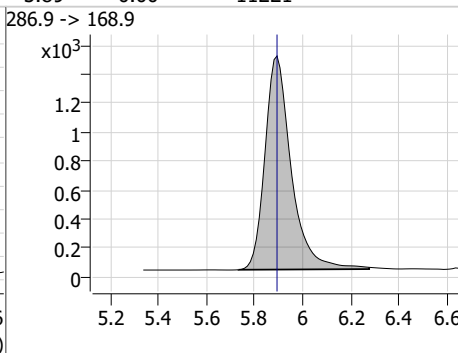
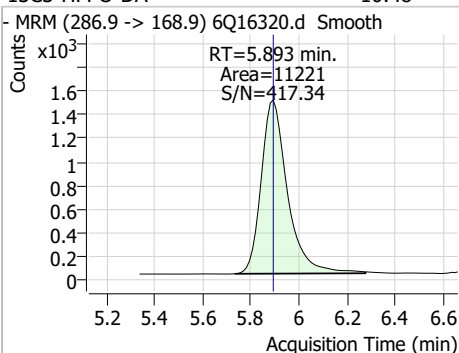
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.79	5.52	-0.01	28311	318.0 -> 273.0	3.7	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.52	5.52	-0.01	26333	313.0 -> 118.9	3.7	2.0	6.1

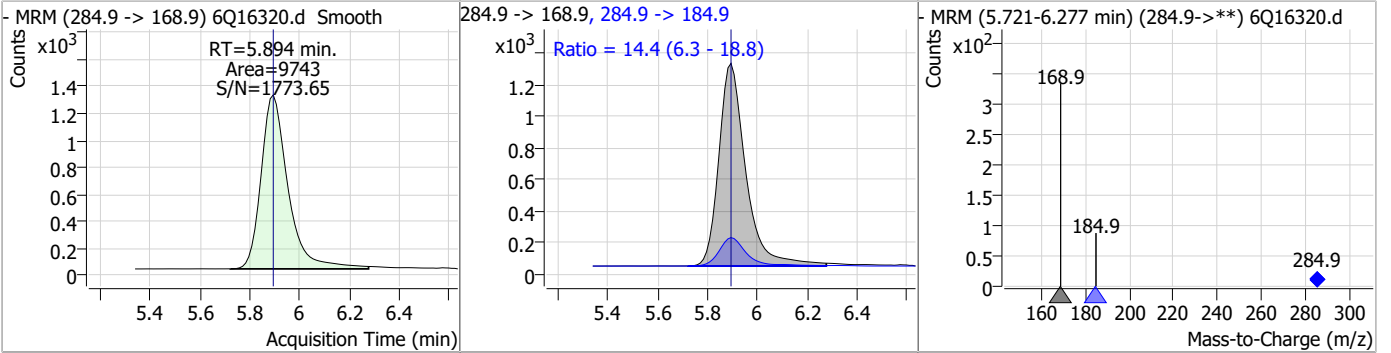


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.48	5.89	0.00	11221	286.9 -> 168.9	3.7	2.0	6.1

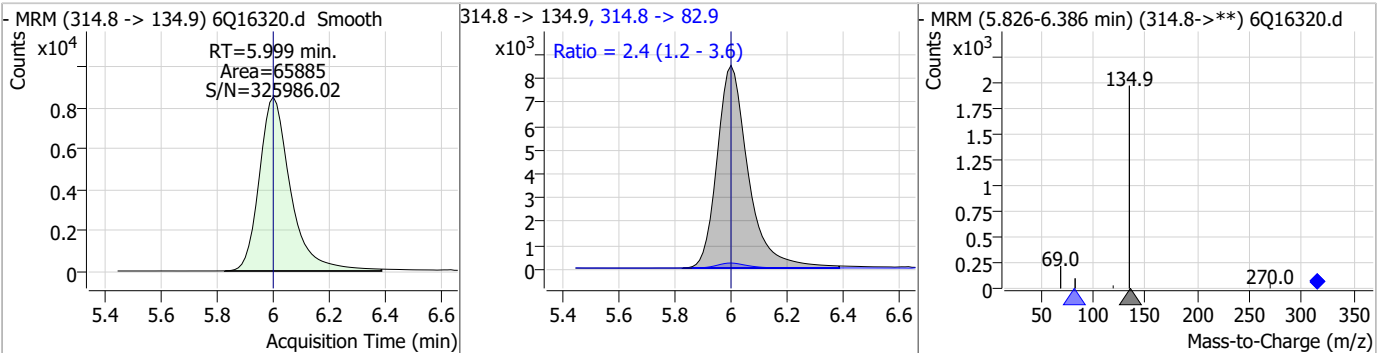


Perfluorinated Compounds by LC/MS/MS

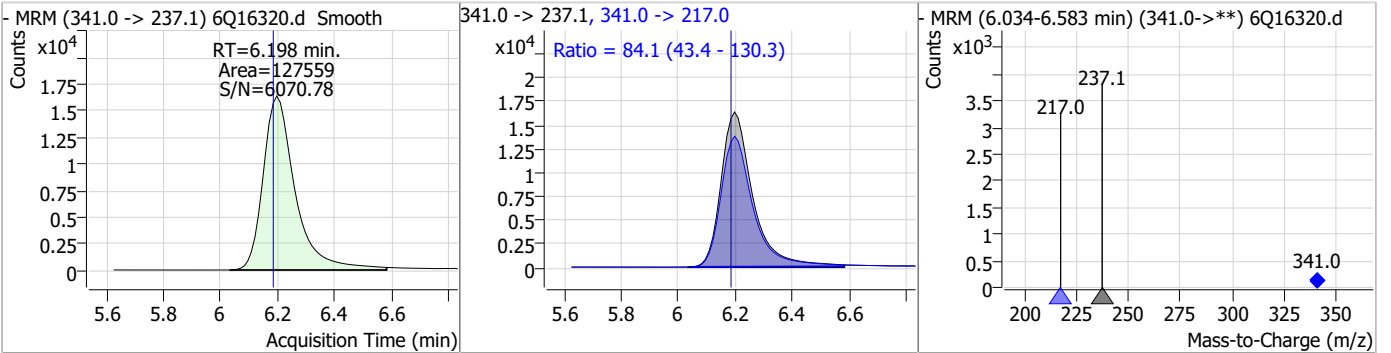
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.60	5.89	0.00	9743	284.9 -> 184.9	14.4	6.3	18.8



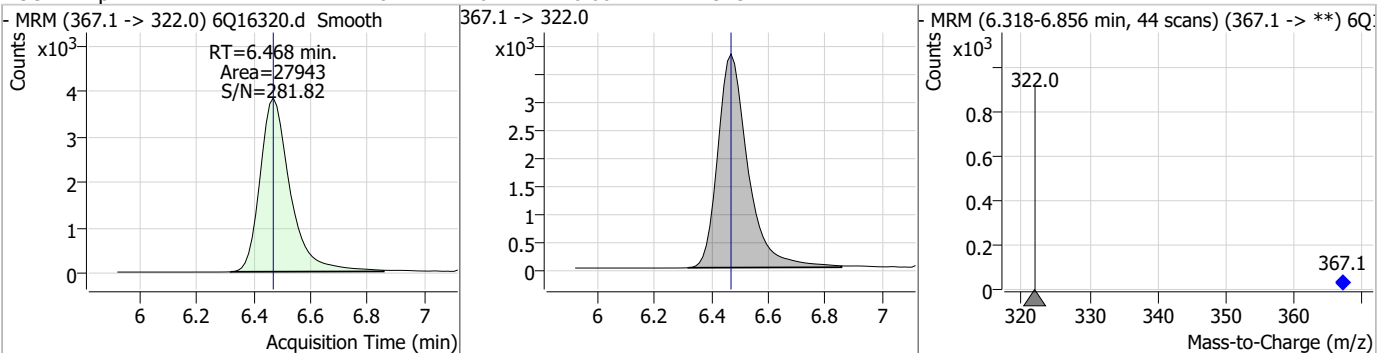
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.45	6.00	0.00	65885	314.8 -> 82.9	2.4	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	55.22	6.20	0.01	127559	341.0 -> 217.0	84.1	43.4	130.3

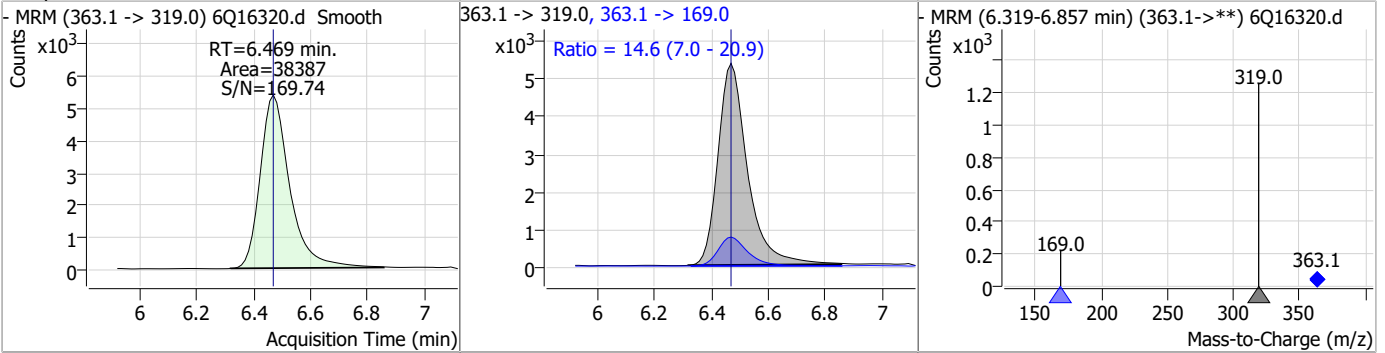


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.81	6.47	0.00	27943	367.1 -> 322.0	-	-	-

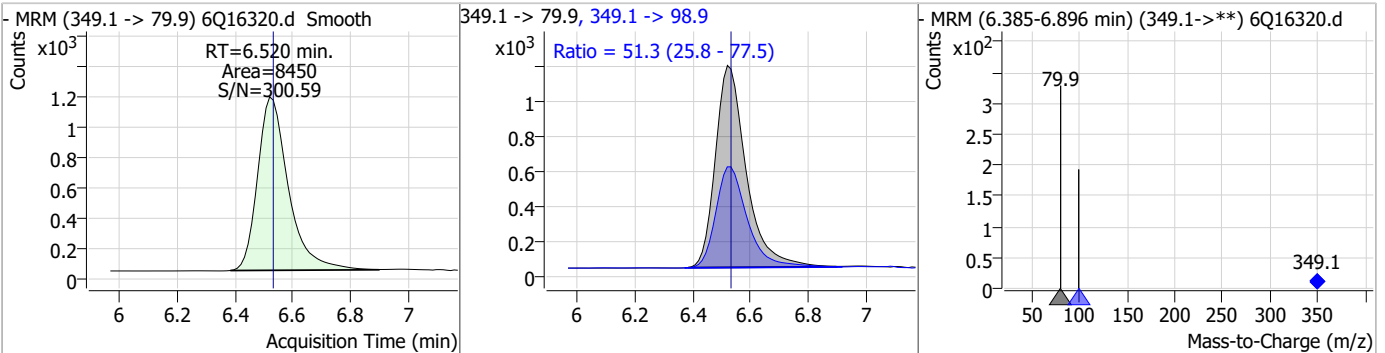


Perfluorinated Compounds by LC/MS/MS

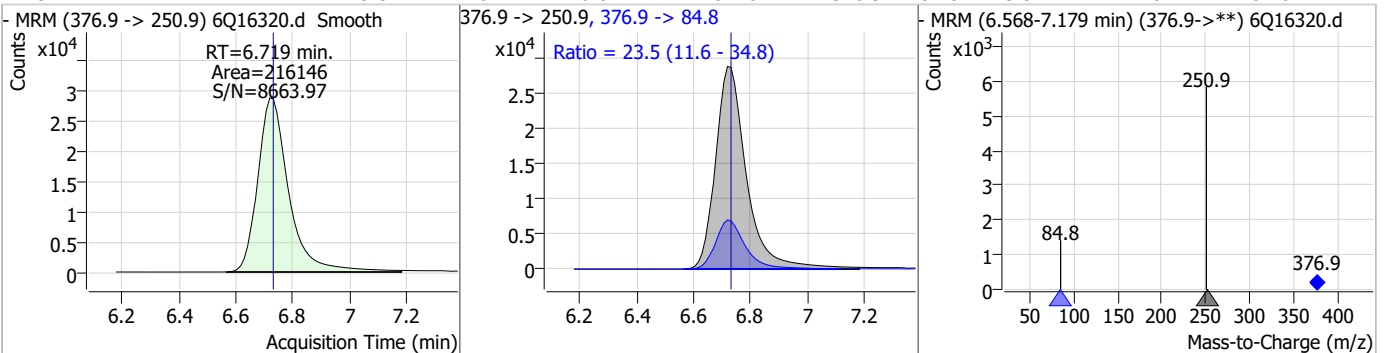
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.44	6.47	0.00	38387	363.1 -> 169.0	14.6	7.0	20.9



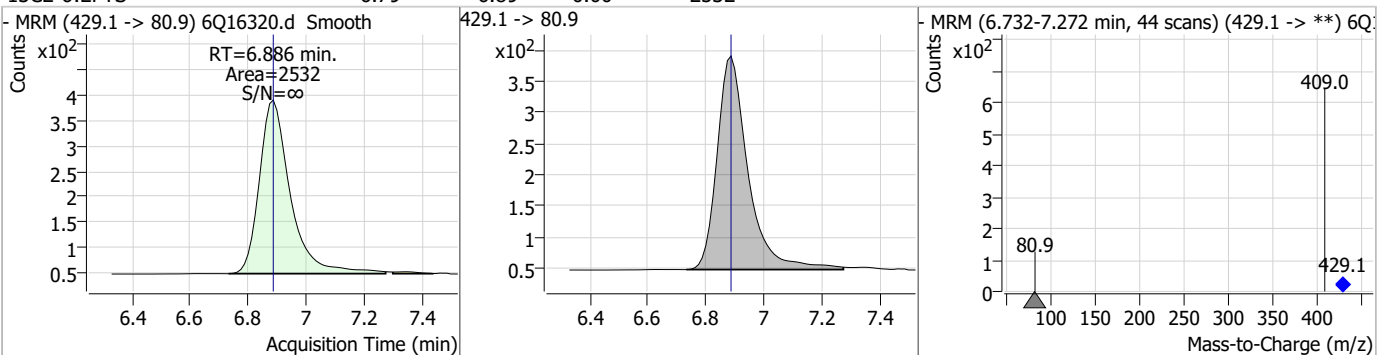
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.10	6.52	-0.01	8450	349.1 -> 98.9	51.3	25.8	77.5



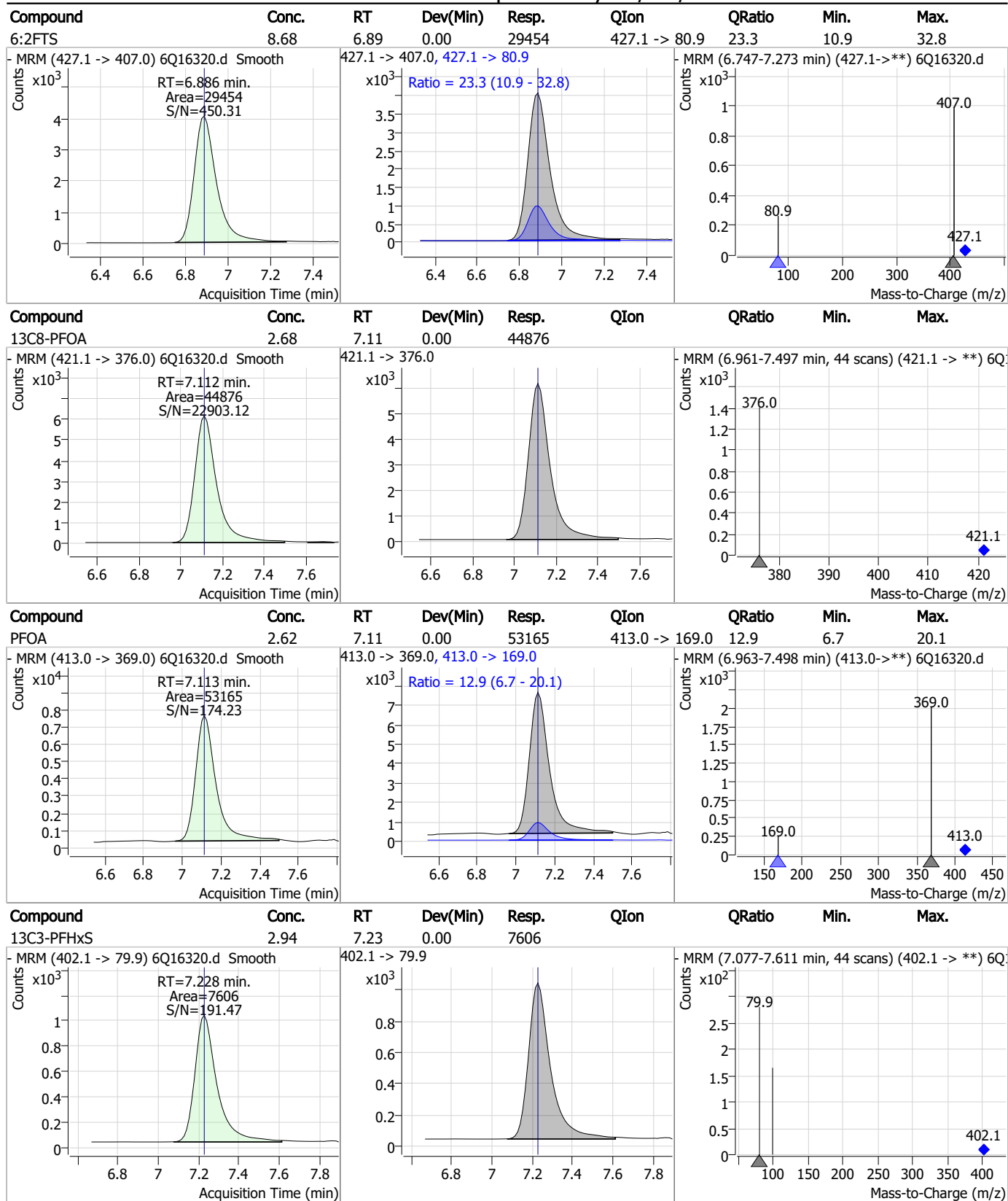
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.51	6.72	-0.01	216146	376.9 -> 84.8	23.5	11.6	34.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.79	6.89	0.00	2532	429.1 -> 80.9			

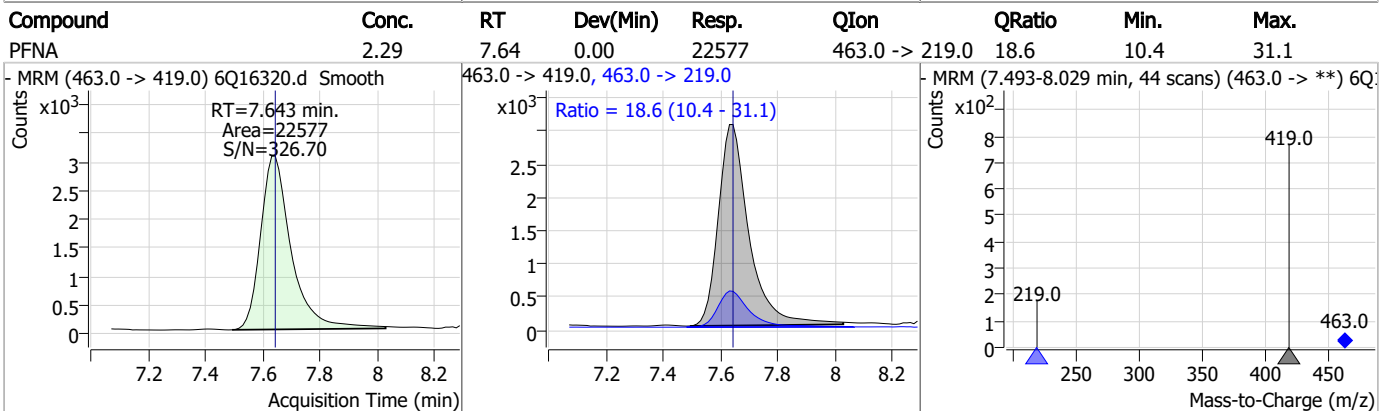
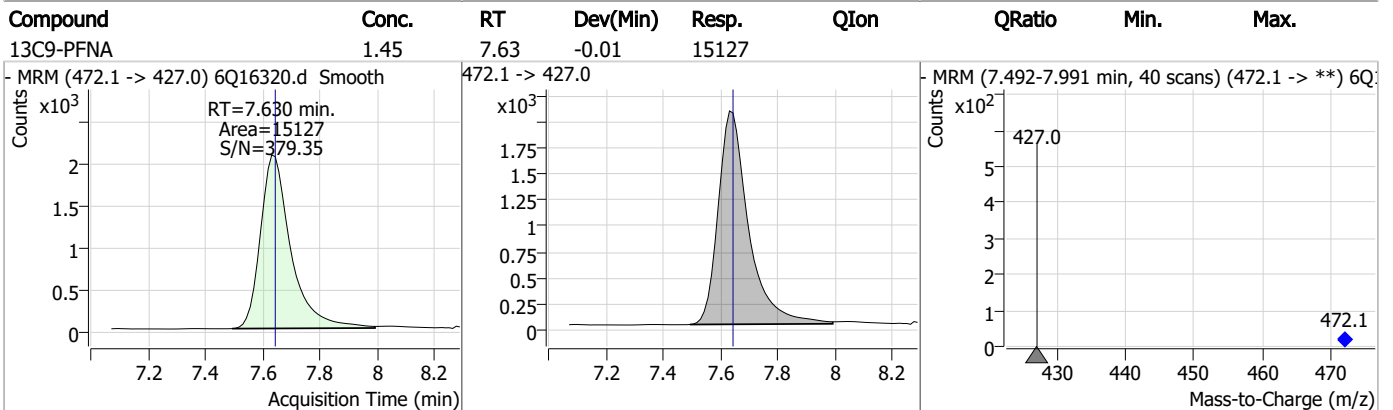
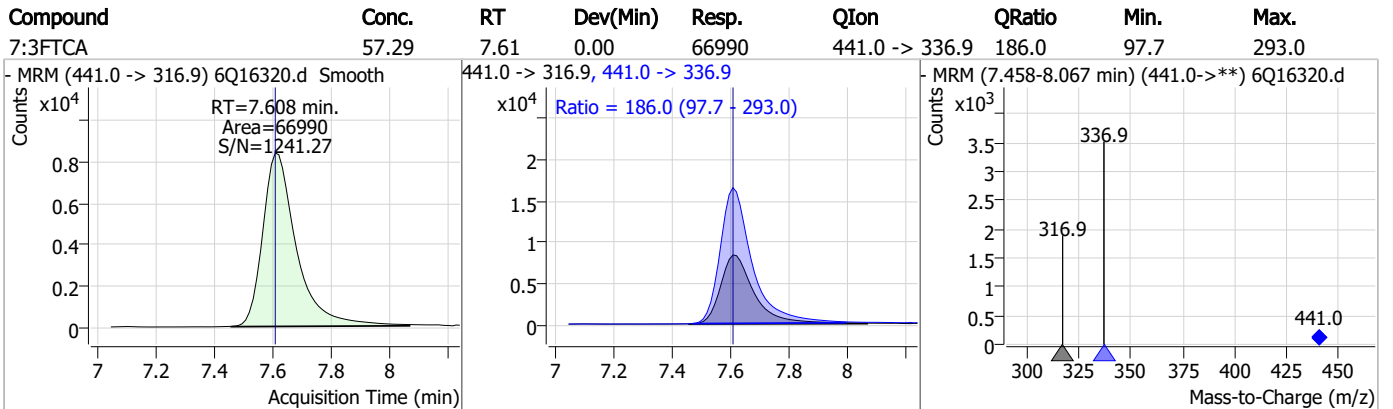
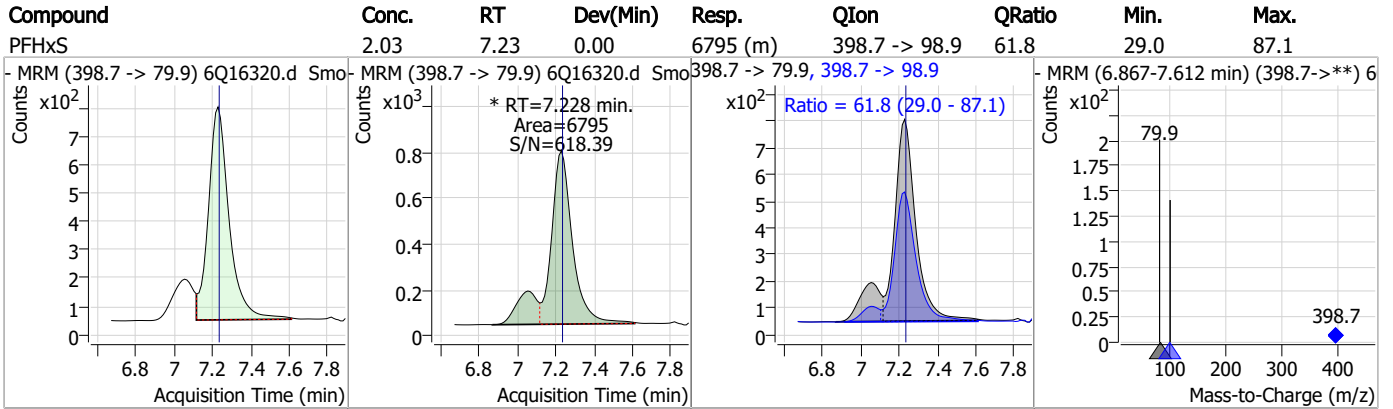


Perfluorinated Compounds by LC/MS/MS



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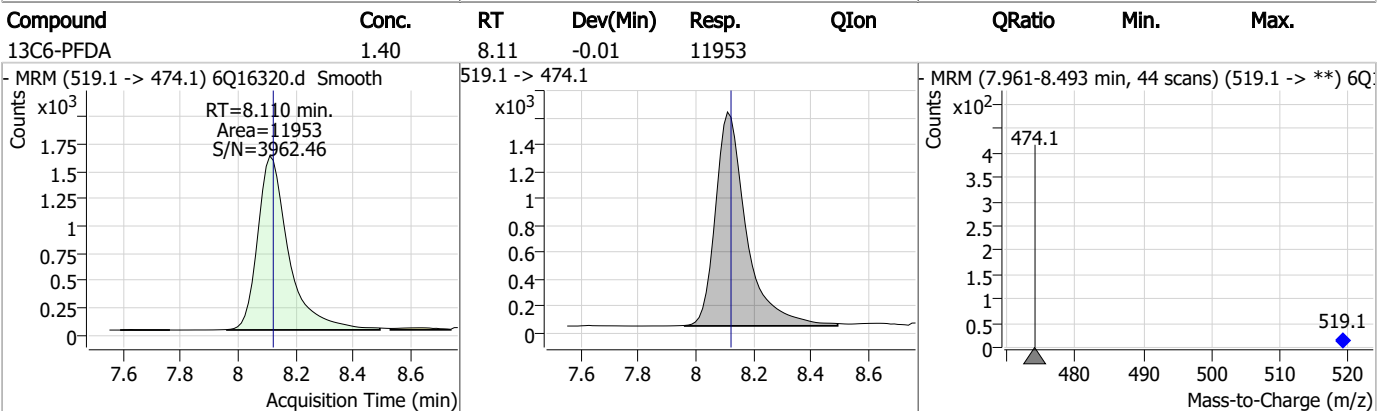
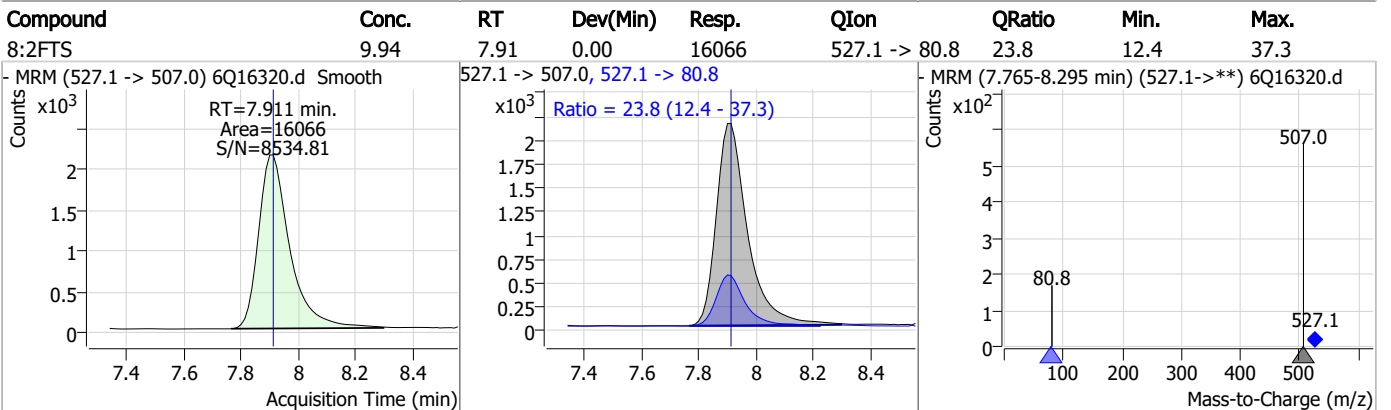
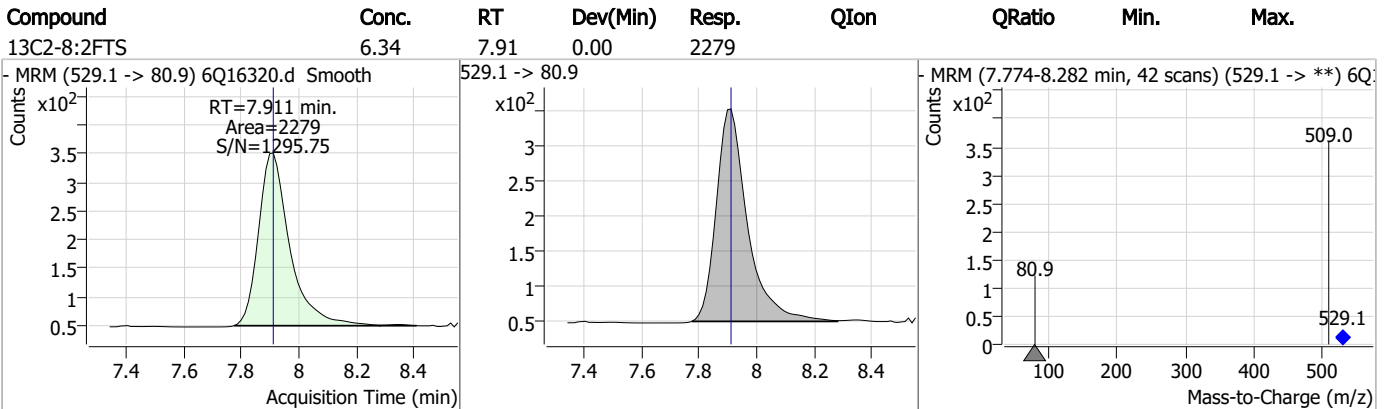
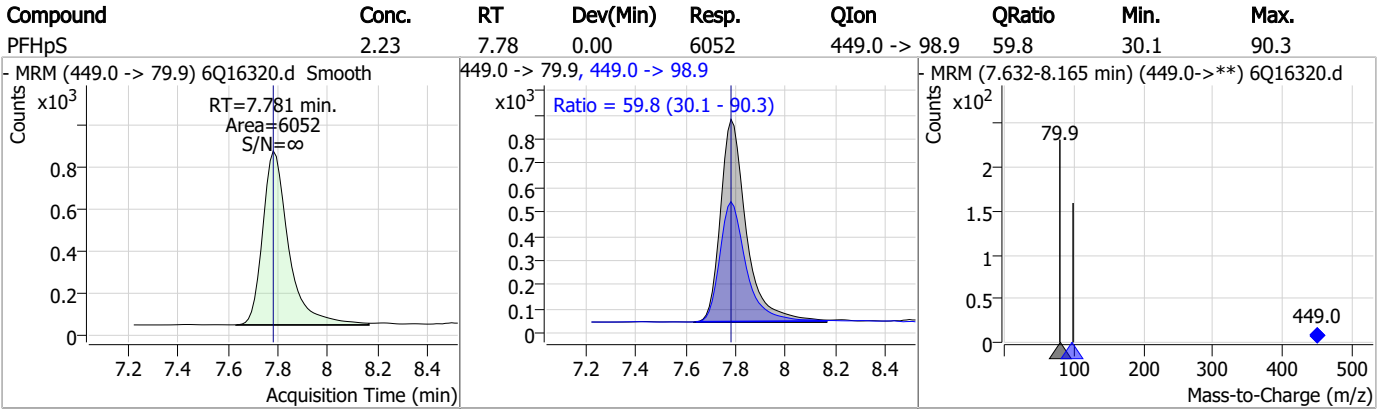
Perfluorinated Compounds by LC/MS/MS



7.3.1

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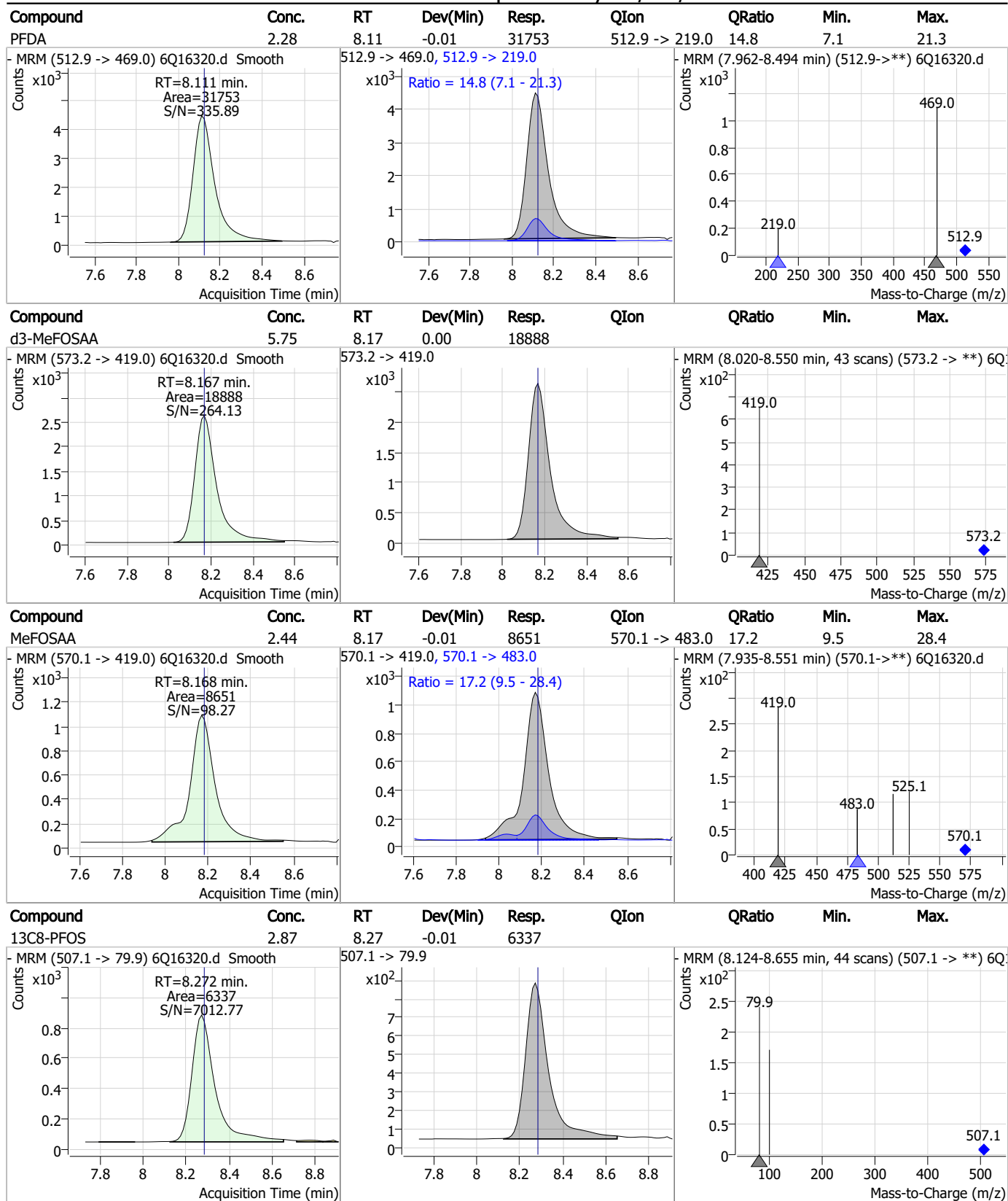
Perfluorinated Compounds by LC/MS/MS



7.3.1

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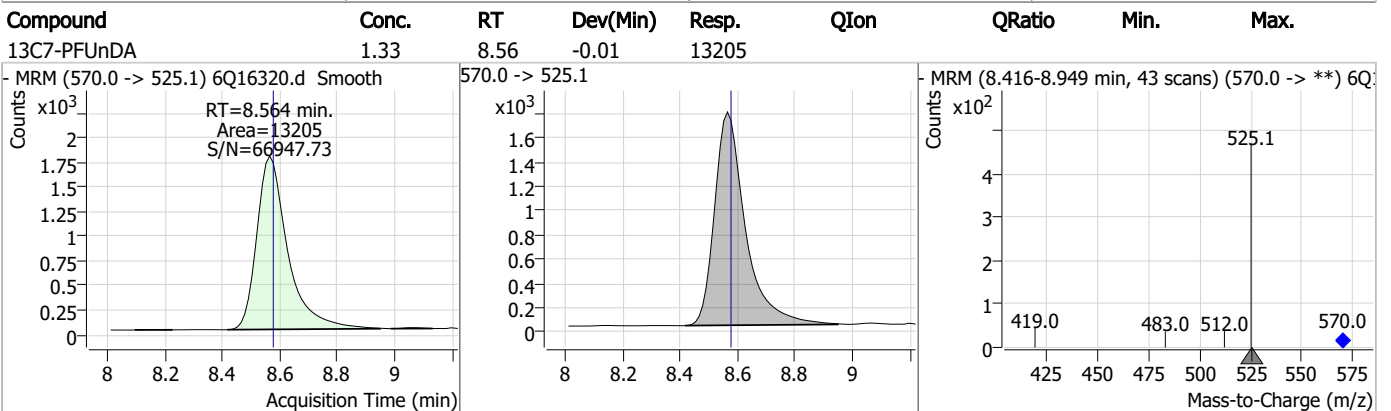
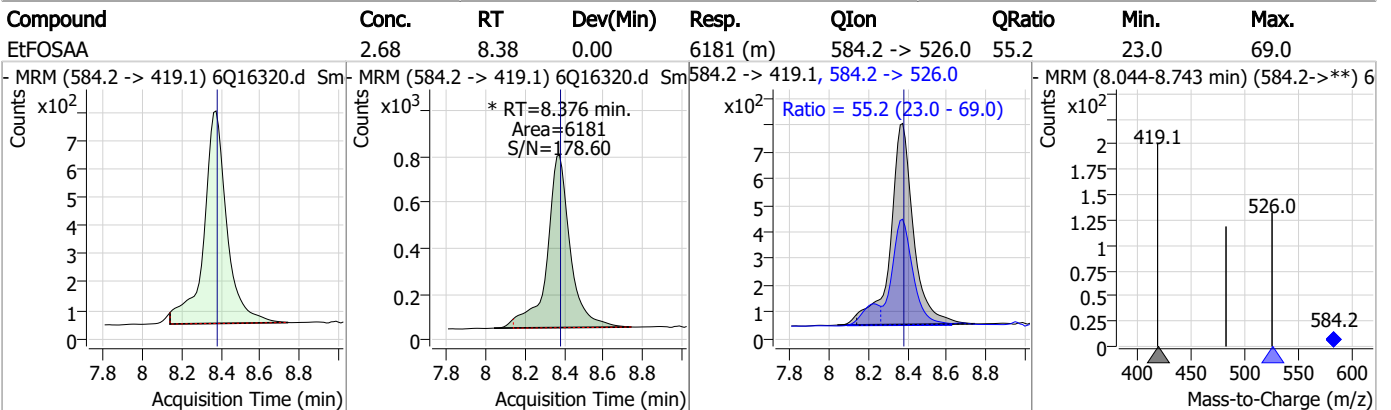
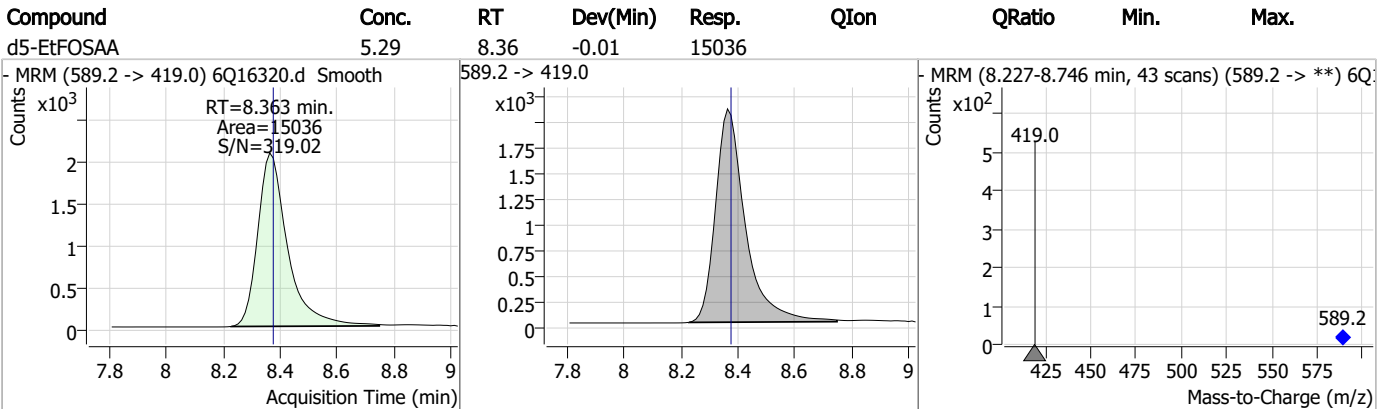
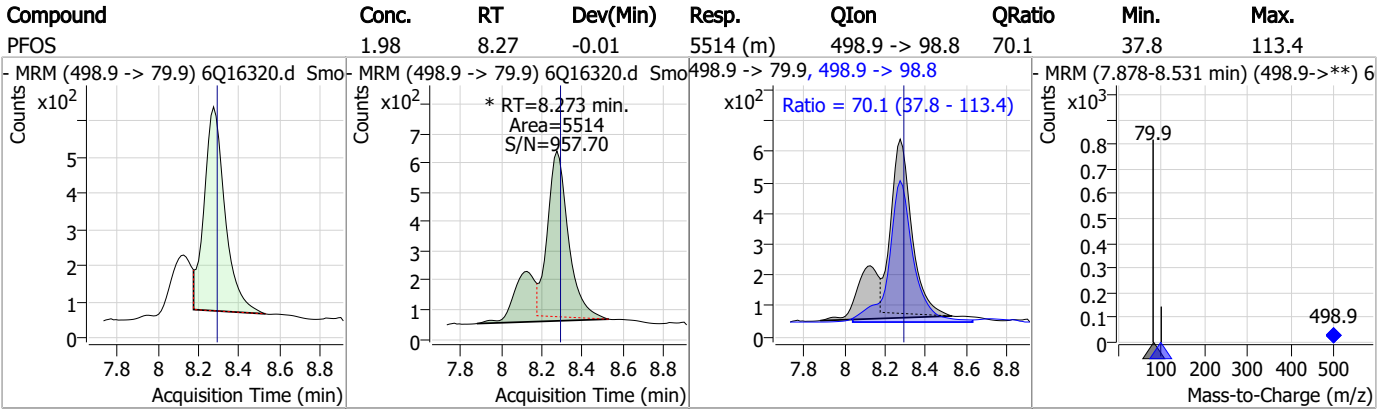
Perfluorinated Compounds by LC/MS/MS



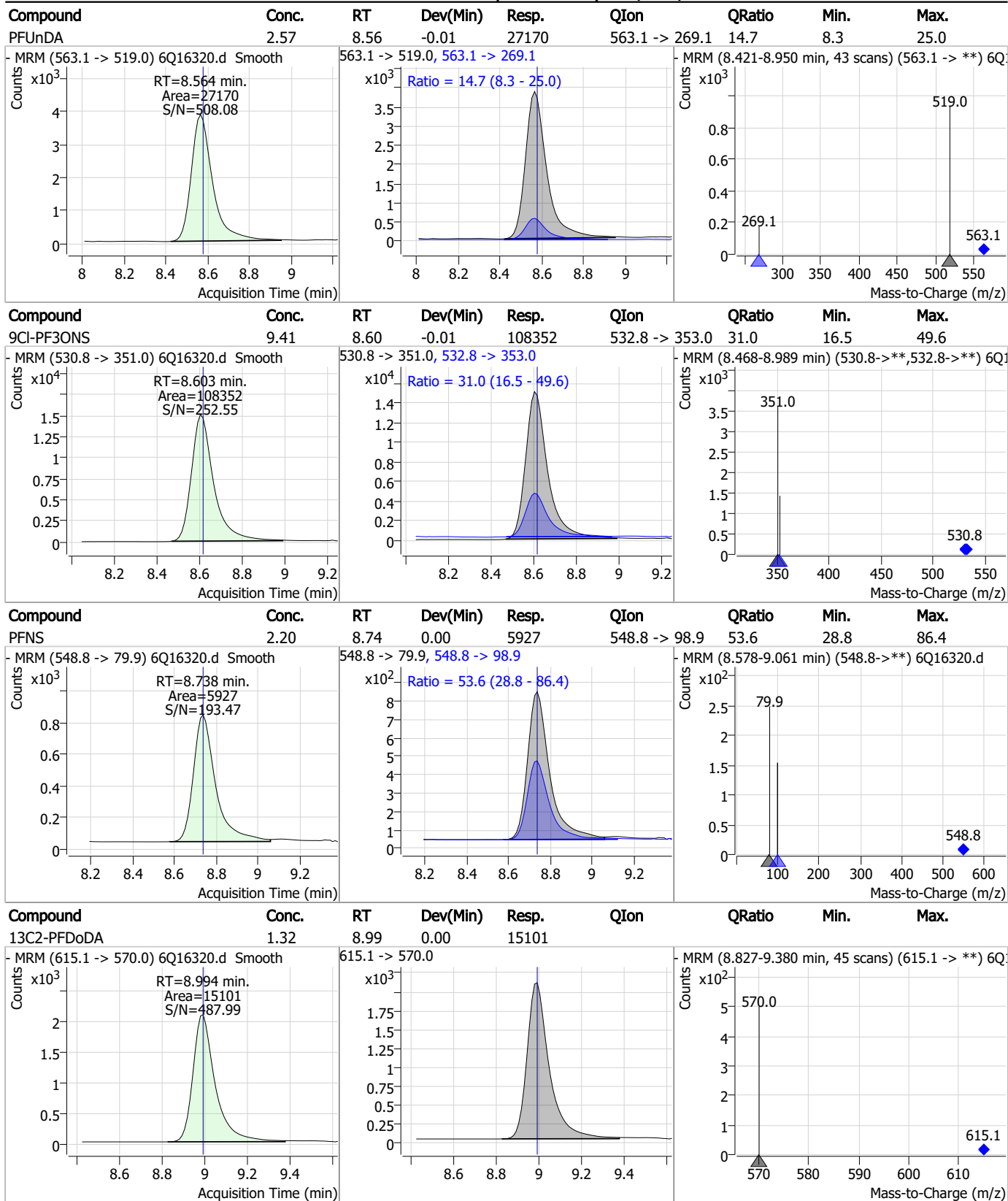
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Perfluorinated Compounds by LC/MS/MS

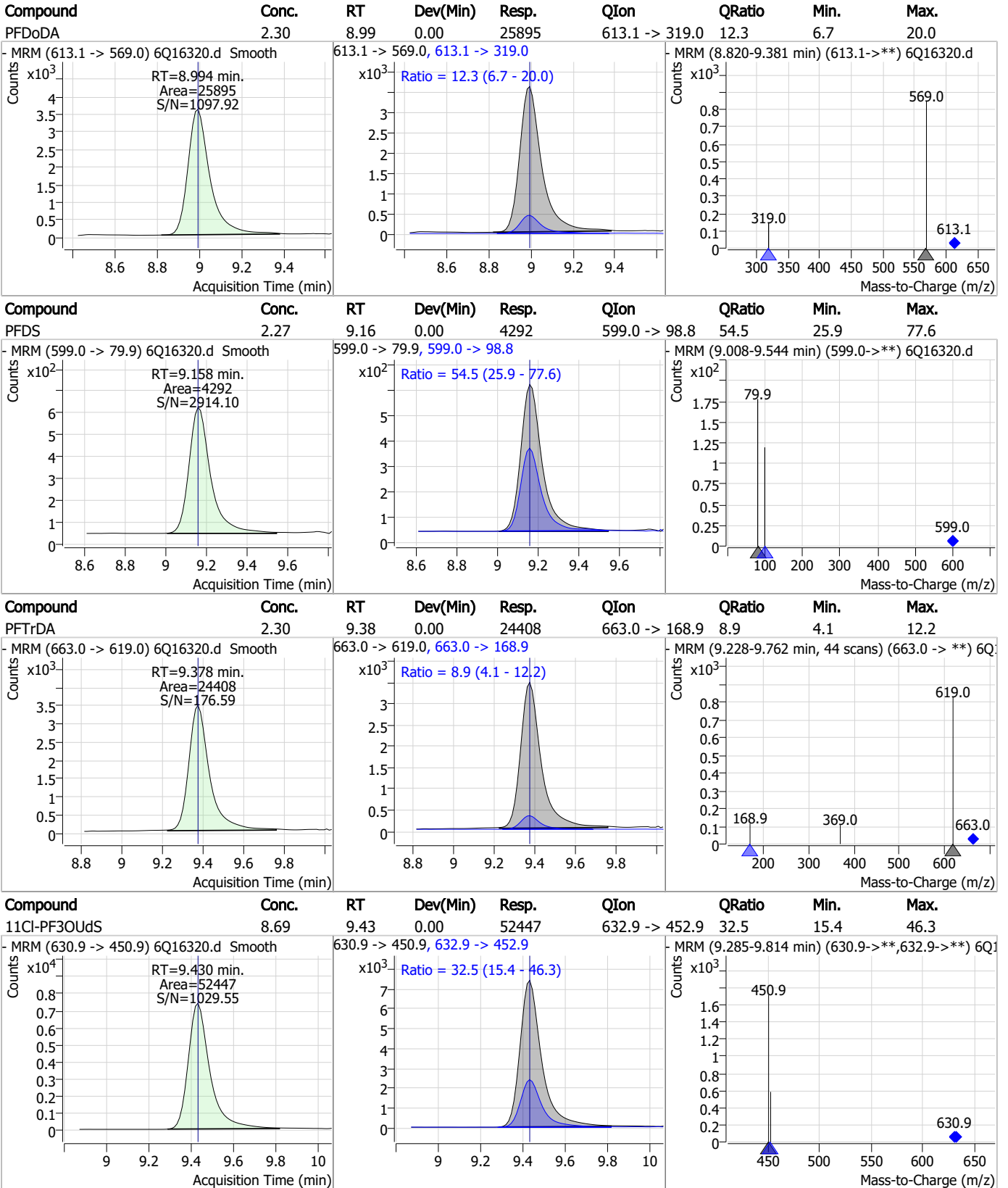


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

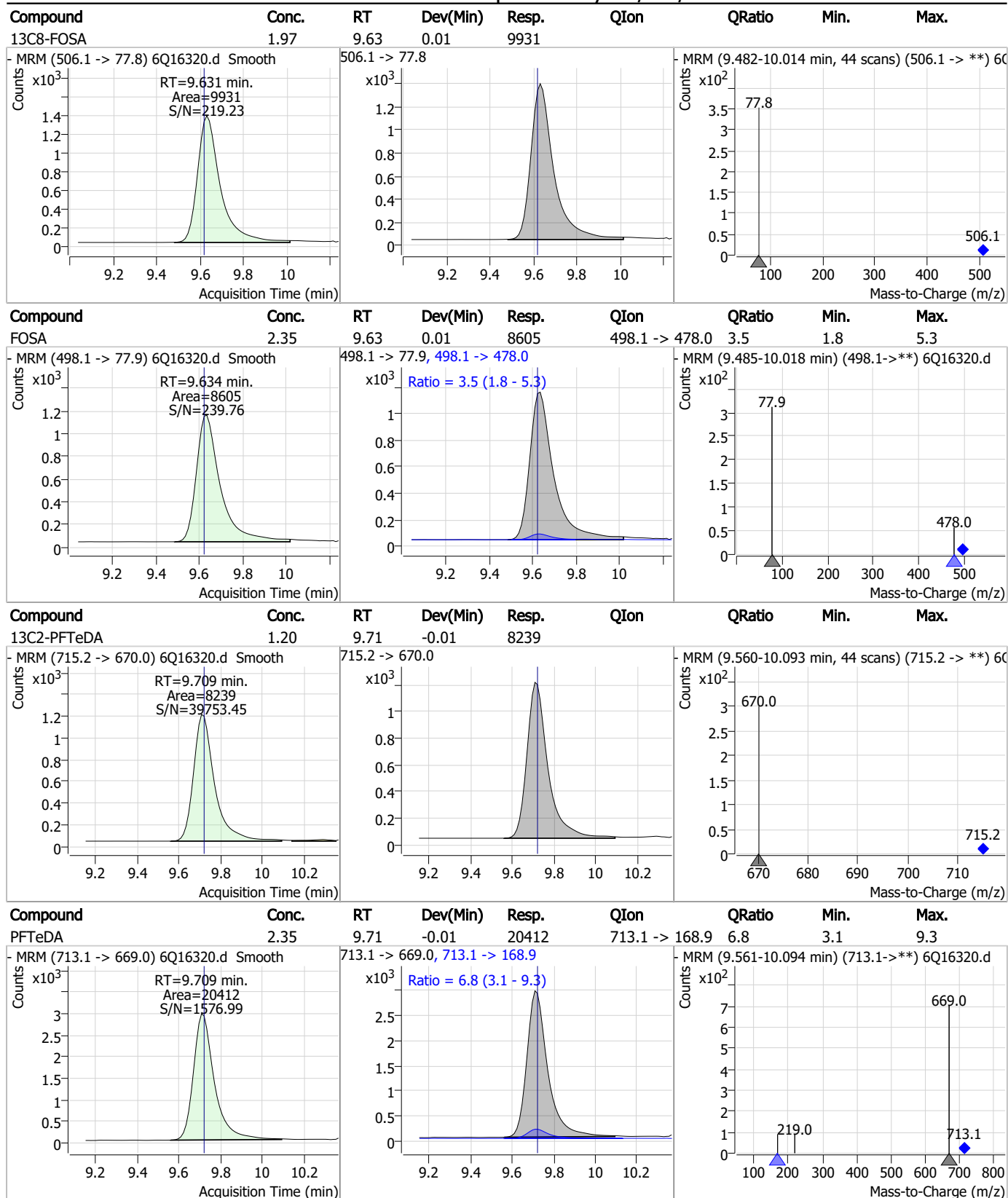


7.3.1

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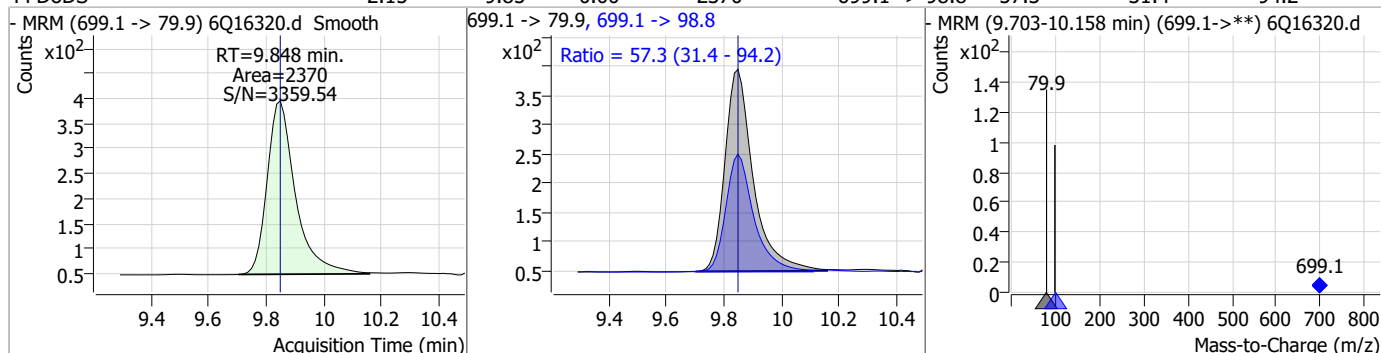
Perfluorinated Compounds by LC/MS/MS



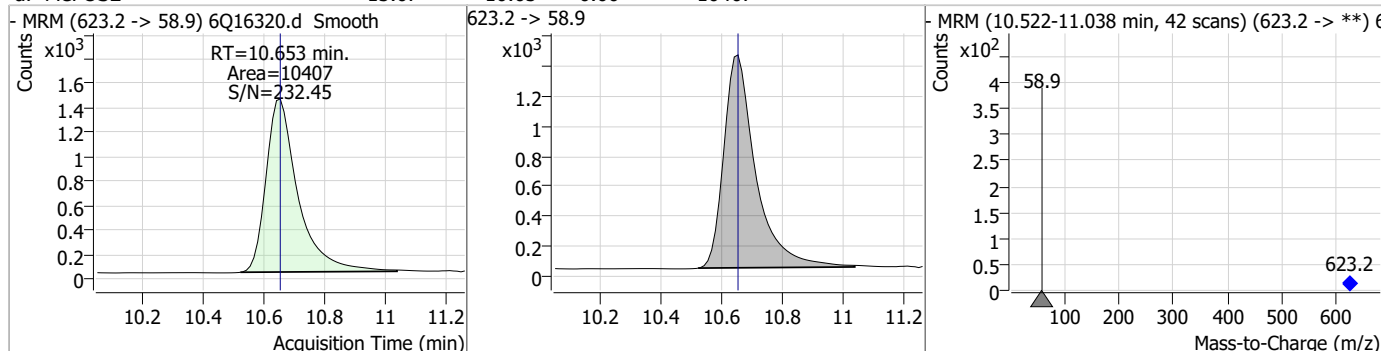
7.3.1
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Perfluorinated Compounds by LC/MS/MS

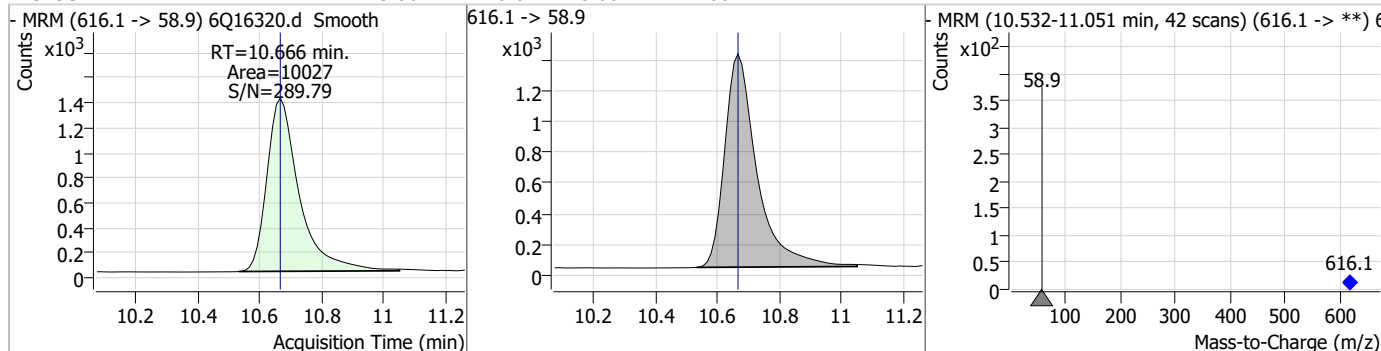
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	2.15	9.85	0.00	2370	699.1 -> 98.8	57.3	31.4	94.2



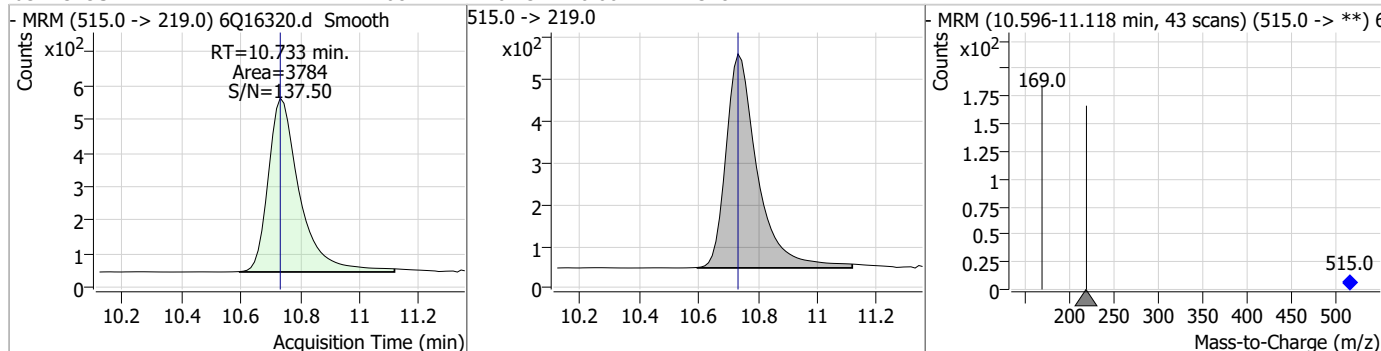
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	15.07	10.65	0.00	10407				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	25.56	10.67	0.00	10027				

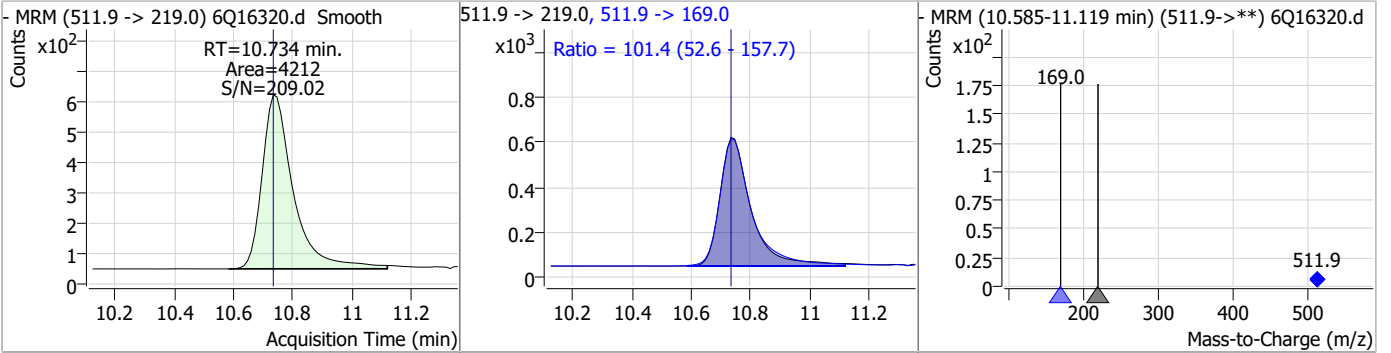


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.08	10.73	0.00	3784				

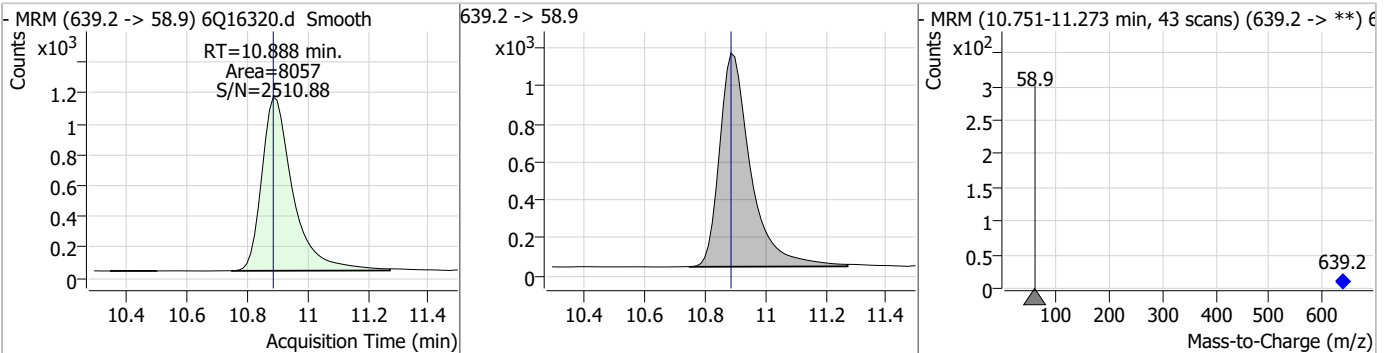


Perfluorinated Compounds by LC/MS/MS

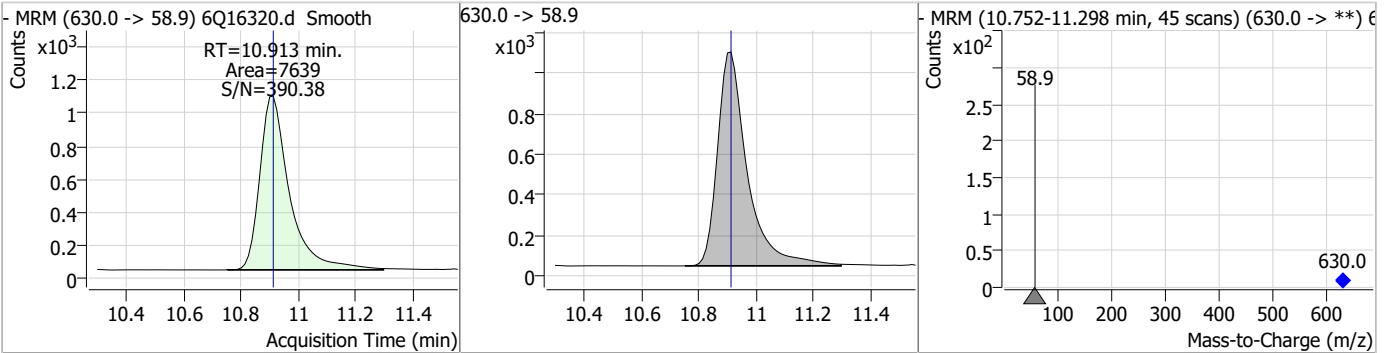
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	2.65	10.73	0.00	4212	511.9 -> 169.0	101.4	52.6	157.7



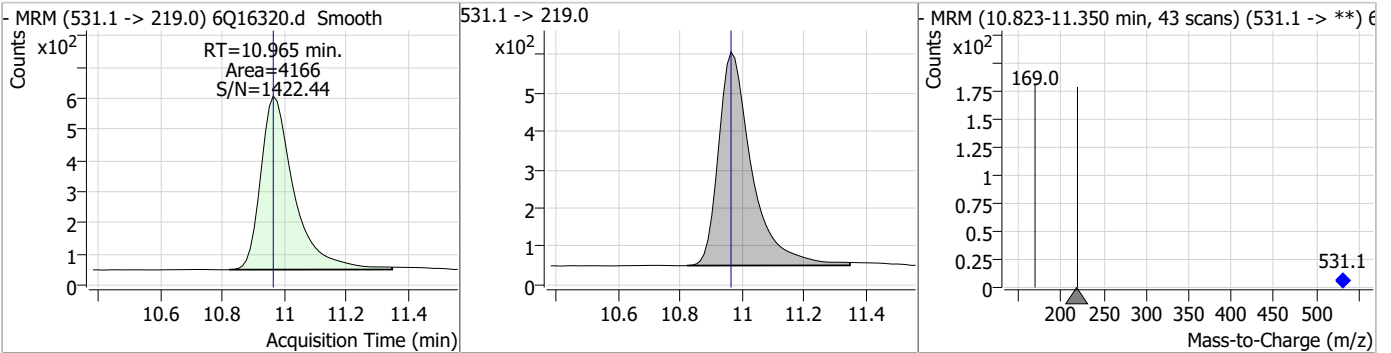
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.55	10.89	0.00	8057				



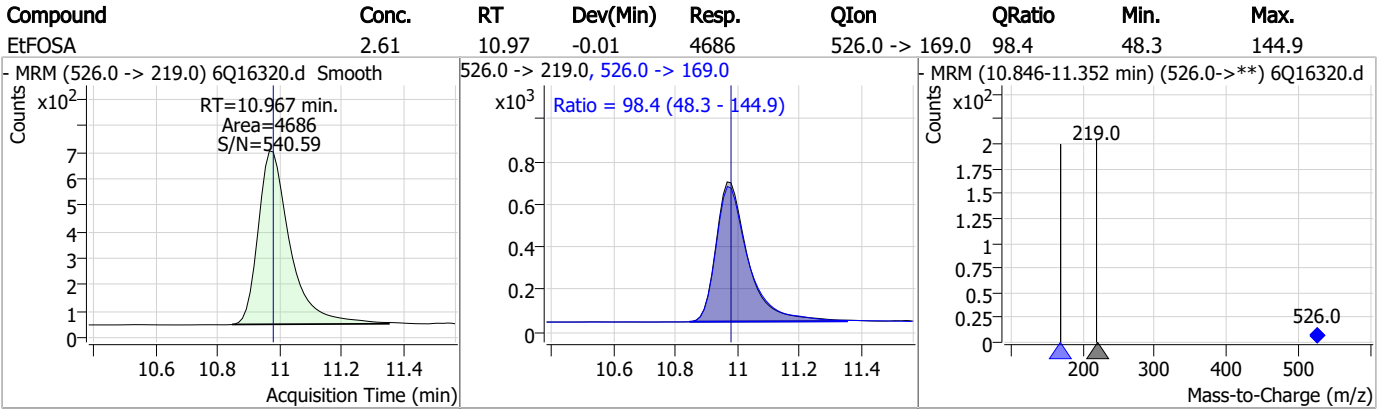
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.18	10.91	0.00	7639				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.12	10.97	0.00	4166				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: OP96279-BS Method: EPA DRAFT 1633
Lab FileID: 6Q16320.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 20:48 Supervisor approved: 04/10/23 18:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16321.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 9:02:39 PM
 Sample Name : op96279-llbs:3
 Vial : P6-D2
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	72566	10.00 µg/L	0.041
M5-PFPeA	4.334	268.3 -> 223.0	31054	5.00 µg/L	0.012
M5-PFHxA	5.528	318.0 -> 273.0	29737	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	27786	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	47808	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	14588	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	12422	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	14139	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	14268	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	8269	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	8979	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	11082	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	6825	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	5980	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2109	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2447	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2332	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	19879	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	11764	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	16146	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	9327	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	7177	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	3843	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	3513	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6767	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	28269	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4571	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	52260	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	14732	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	13487	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	23240	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2109	6.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.1%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2447	6.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.7%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2332	6.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.3%		
13C2-PFDoDA	8.994	615.1 -> 570.0	14268	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	9.709	715.2 -> 670.0	8269	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C3-PFBS	5.459	302.1 -> 79.9	11082	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C3-PFHxS	7.228	402.1 -> 79.9	6825	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	2.938	216.8 -> 171.9	72566	10.98 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C4-PFHpA	6.468	367.1 -> 322.0	27786	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.1%	
13C5-PFHxA	5.528	318.0 -> 273.0	29737	3.09 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.7%	
13C5-PFPeA	4.334	268.3 -> 223.0	31054	5.73 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C6-PFDA	8.122	519.1 -> 474.1	12422	1.43 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C7-PFUnDA	8.564	570.0 -> 525.1	14139	1.40 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.3%	
13C8-FOSA	9.631	506.1 -> 77.8	8979	1.78 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.3%	
13C8-PFOA	7.112	421.1 -> 376.0	47808	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C8-PFOS	8.272	507.1 -> 79.9	5980	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C9-PFNA	7.643	472.1 -> 427.0	14588	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.0%	
d3-MeFOSAA	8.167	573.2 -> 419.0	19879	6.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	11764	11.61 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.1%	
d3-MeFOSA	10.733	515.0 -> 219.0	3513	1.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.4%	
d5-EtFOSAA	8.363	589.2 -> 419.0	16146	5.69 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.9%	
d7-MeFOSE	10.653	623.2 -> 58.9	9327	13.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 54.2%	
d9-EtFOSE	10.888	639.2 -> 58.9	7177	15.68 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 62.7%	
d5-EtFOSA	10.965	531.1 -> 219.0	3843	1.96 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.6%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	14528	3.52 µg/L	99
		327.1 -> 80.9	3338		
6:2FTS	6.886	427.1 -> 407.0	11975	3.65 µg/L	98
		427.1 -> 80.9	2721		
8:2FTS	7.911	527.1 -> 507.0	6050	3.66 µg/L	96
		527.1 -> 80.8	1613		
EtFOSAA	8.376	584.2 -> 419.1	2421	0.98 µg/L	m 88
		584.2 -> 526.0	1313		
FOSA	9.621	498.1 -> 77.9	3183	0.96 µg/L	95
		498.1 -> 478.0	159		
MeFOSAA	8.168	570.1 -> 419.0	3715	1.00 µg/L	m 95
		570.1 -> 483.0	622		
PFBA	2.944	212.8 -> 168.9	6873	3.75 µg/L	100
PFBS	5.460	298.7 -> 79.9	3783	0.87 µg/L	92
		298.7 -> 98.8	1555		
PFDA	8.111	512.9 -> 469.0	13492	0.93 µg/L	96
		512.9 -> 219.0	1680		
PFDODA	8.994	613.1 -> 569.0	9950	0.94 µg/L	99
		613.1 -> 319.0	1284		
PFDS	9.158	599.0 -> 79.9	1675	0.94 µg/L	88

7.3.2
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.469	599.0 -> 98.8	726	0.96	µg/L	100
		363.1 -> 319.0	15075			
PFHpS	7.781	363.1 -> 169.0	2118	0.85	µg/L	96
		449.0 -> 79.9	2163			
PFHxA	5.531	449.0 -> 98.9	1363	0.98	µg/L	100
		313.0 -> 269.0	10786			
PFHxS	7.228	313.0 -> 118.9	426	0.88	µg/L	95
		398.7 -> 79.9	2633			
PFNA	7.643	398.7 -> 98.9	1634	0.91	µg/L	100
		463.0 -> 419.0	8663			
PFNS	8.738	463.0 -> 219.0	1794	0.86	µg/L	95
		548.8 -> 79.9	2191			
PFOA	7.113	548.8 -> 98.9	1343	0.87	µg/L	100
		413.0 -> 369.0	18927			
PFOS	8.273	413.0 -> 169.0	2530	0.85	µg/L	91
		498.9 -> 79.9	2247			
PFPeA	4.324	498.9 -> 98.8	1520	1.93	µg/L	100
		263.0 -> 219.0	12656			
PFPeS	6.533	349.1 -> 79.9	3231	0.89	µg/L	92
		349.1 -> 98.9	1843			
PFTeDA	9.709	713.1 -> 669.0	8150	0.93	µg/L	96
		713.1 -> 168.9	605			
PFTrDA	9.378	663.0 -> 619.0	9625	0.96	µg/L	100
		663.0 -> 168.9	783			
PFUnDA	8.564	563.1 -> 519.0	9623	0.85	µg/L	100
		563.1 -> 269.1	1604			
11CI-PF3OUdS	9.430	630.9 -> 450.9	20721	3.28	µg/L	98
		632.9 -> 452.9	6195			
9CI-PF3ONS	8.603	530.8 -> 351.0	43297	3.59	µg/L	95
		532.8 -> 353.0	13228			
ADONA	6.731	376.9 -> 250.9	85179	3.57	µg/L	97
		376.9 -> 84.8	18554			
HFPO-DA	5.894	284.9 -> 168.9	3848	3.62	µg/L	97
		284.9 -> 184.9	520			
3:3FTCA	3.827	241.0 -> 177.0	1172	3.22	µg/L	99
		241.0 -> 117.0	181			
5:3FTCA	6.210	341.0 -> 237.1	45427	18.72	µg/L	97
		341.0 -> 217.0	40620			
7:3FTCA	7.608	441.0 -> 316.9	25165	20.49	µg/L	88
		441.0 -> 336.9	44619			
EtFOSA	10.967	526.0 -> 219.0	1746	1.05	µg/L	93
		526.0 -> 169.0	1564			
EtFOSE	10.901	630.0 -> 58.9	2755	9.79	µg/L	100
		511.9 -> 219.0	1439			
MeFOSA	10.734	511.9 -> 169.0	1480	0.97	µg/L	98
		616.1 -> 58.9	3628			
MeFOSE	10.666	699.1 -> 79.9	850	10.32	µg/L	100
		699.1 -> 98.8	458			
PFDoDS	9.848	295.0 -> 201.0	1165	0.82	µg/L	88
		295.0 -> 84.9	563			
NFDHA	5.410	279.0 -> 85.1	3866	1.64	µg/L	93
		229.0 -> 84.9	3745			
PFMBA	4.737	314.8 -> 134.9	25309	1.78	µg/L	100
		314.8 -> 82.9	626			
PFMPA	3.488			1.89	µg/L	100
PFEESA	5.999			1.63	µg/L	100

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

7.3.2
7

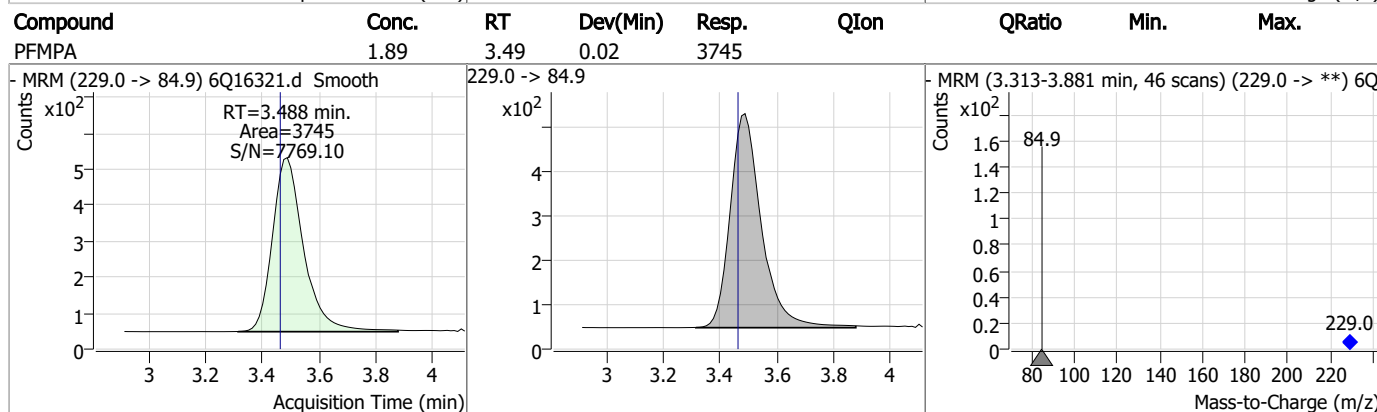
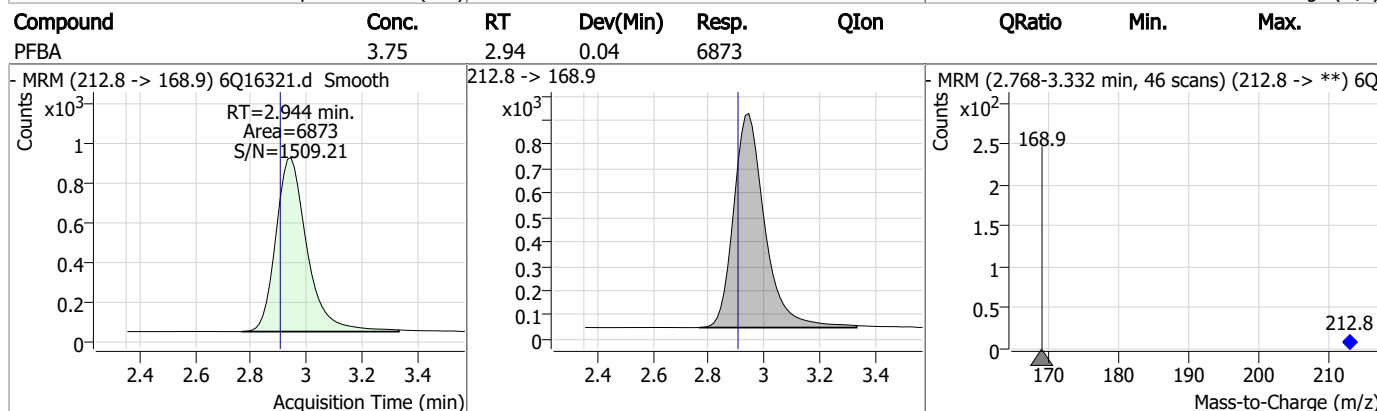
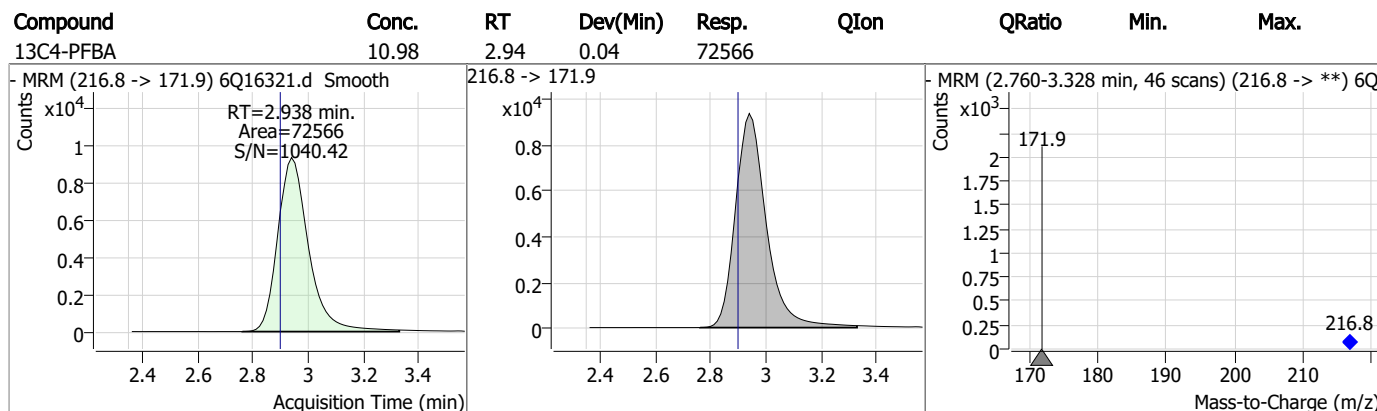
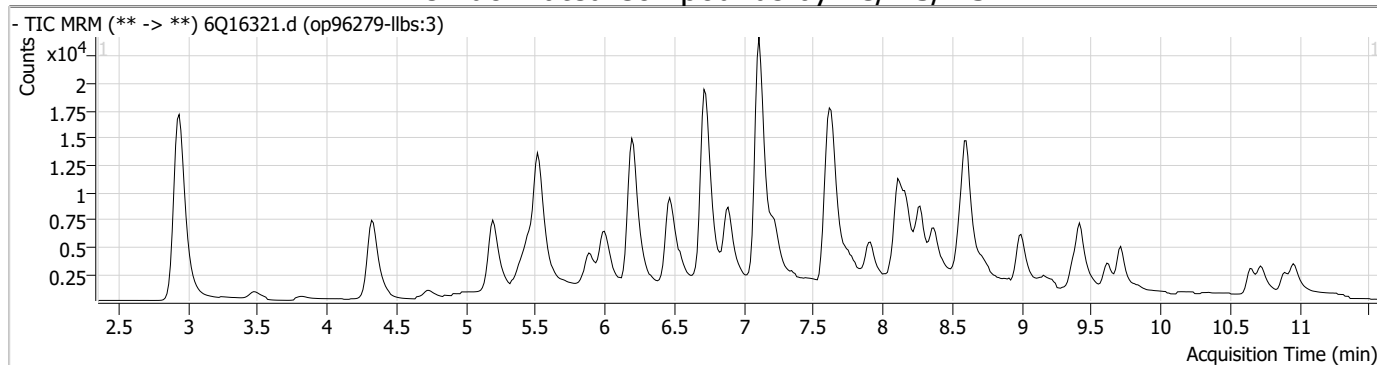
Perfluorinated Compounds by LC/MS/MS

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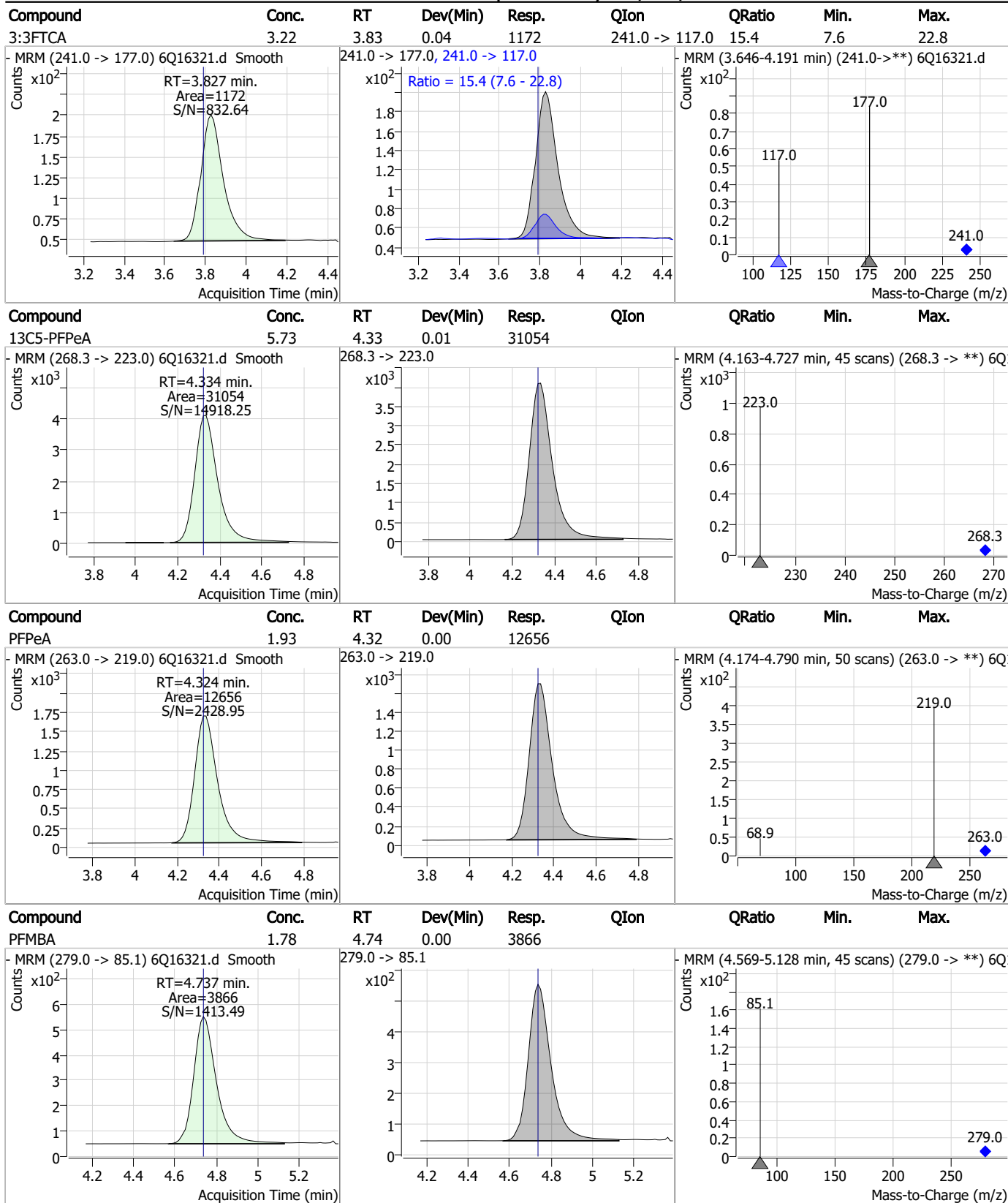
7.3.2

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Perfluorinated Compounds by LC/MS/MS

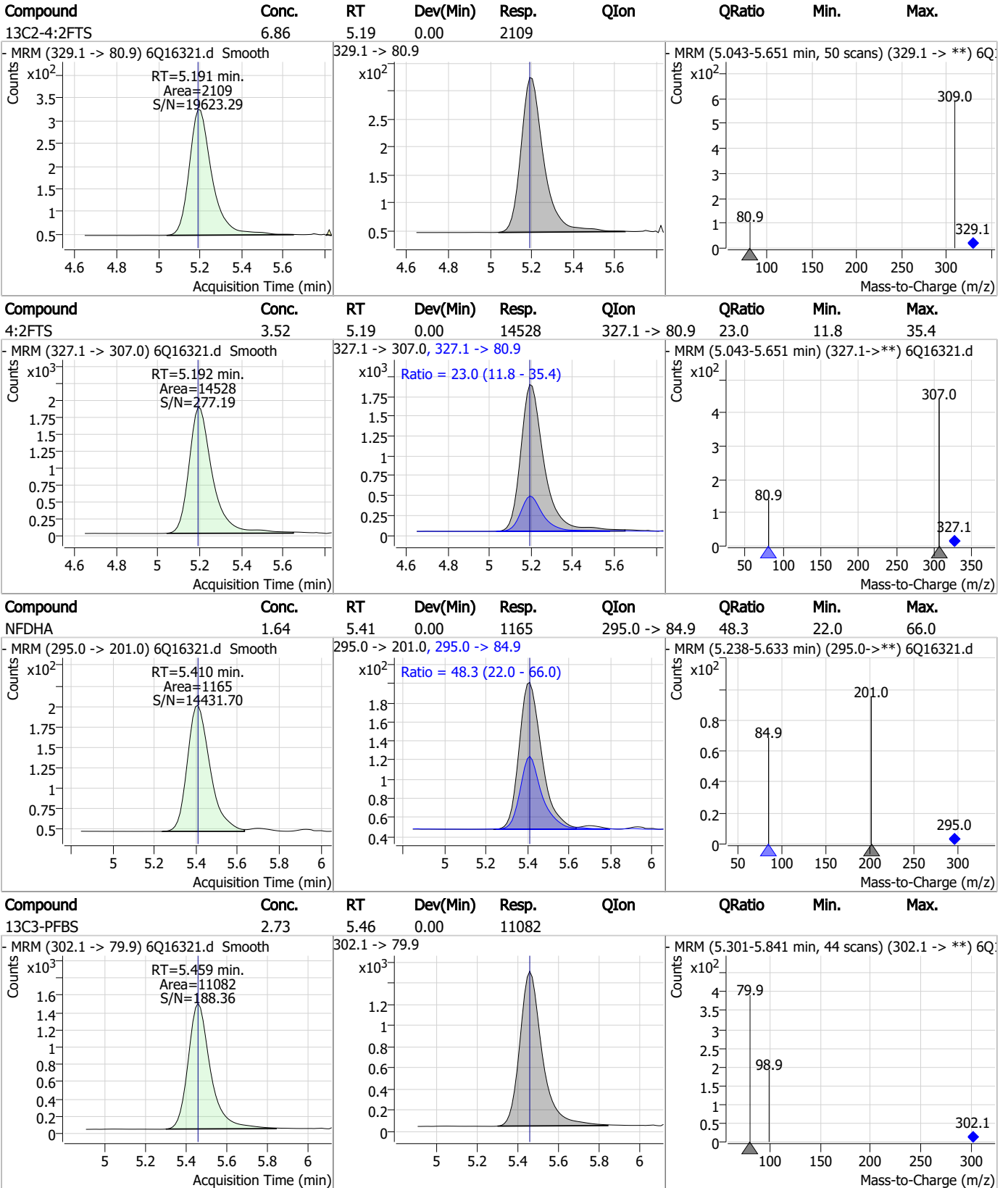


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

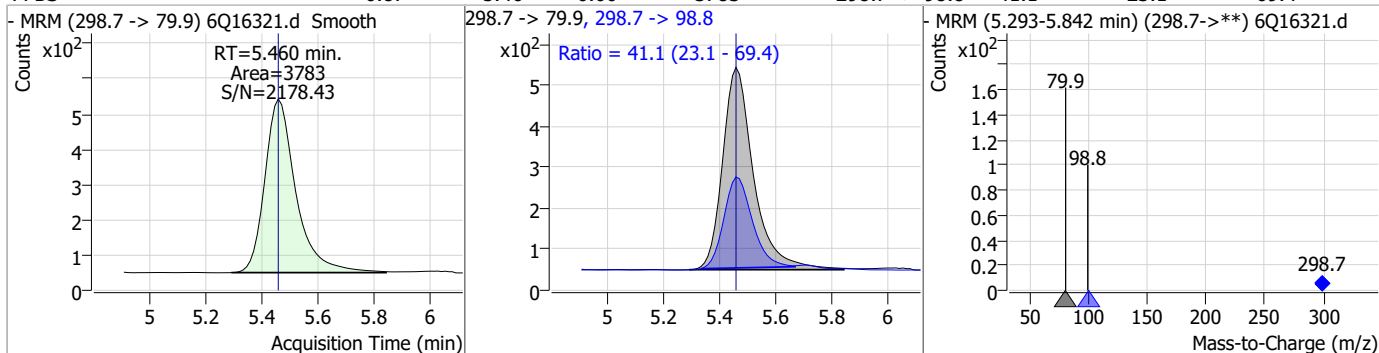


7.3.2

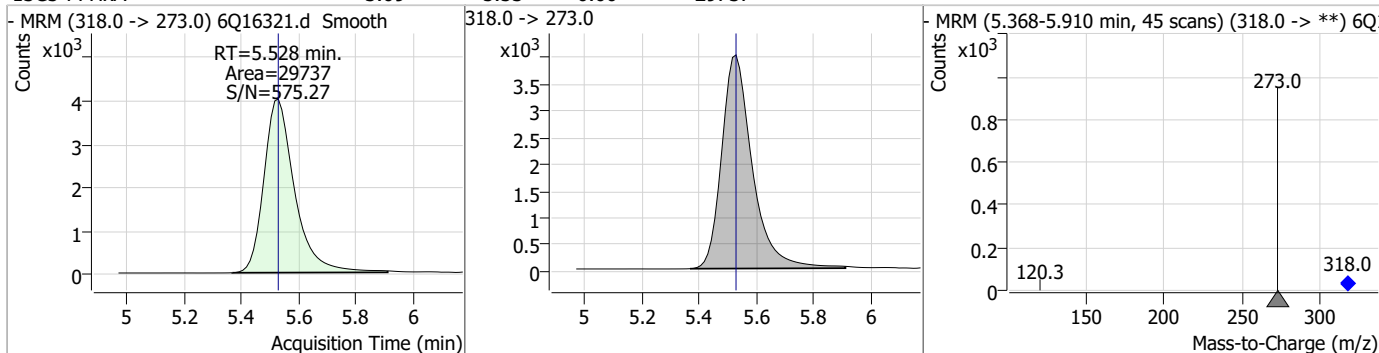
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Perfluorinated Compounds by LC/MS/MS

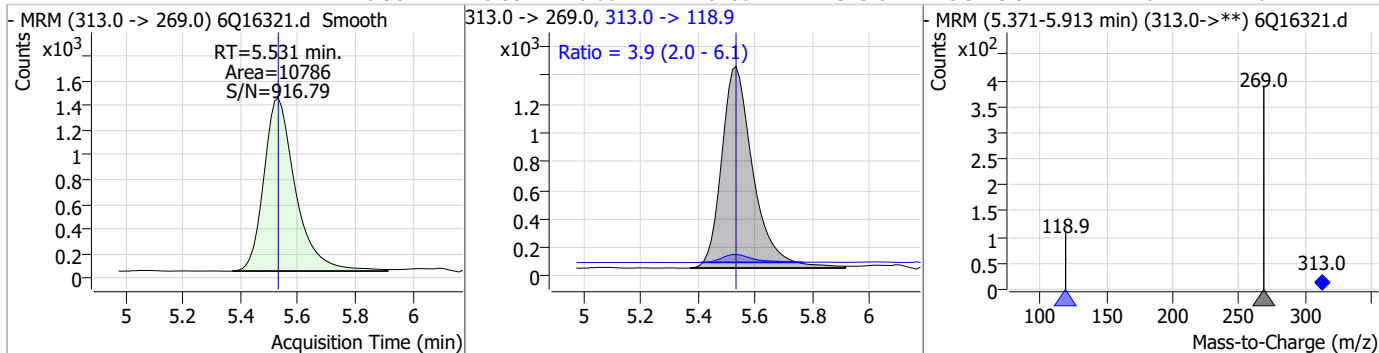
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.87	5.46	0.00	3783	298.7 -> 98.8	41.1	23.1	69.4



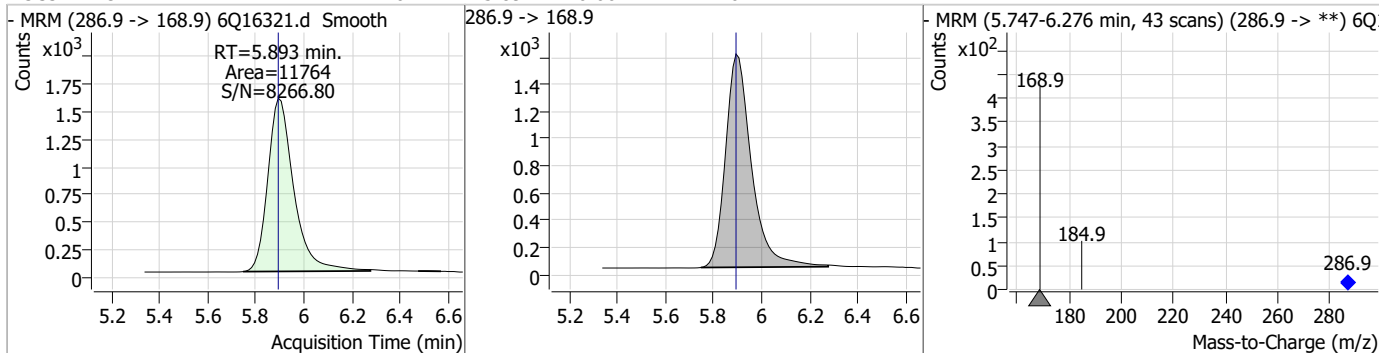
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.09	5.53	0.00	29737	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.98	5.53	0.00	10786	313.0 -> 118.9	3.9	2.0	6.1

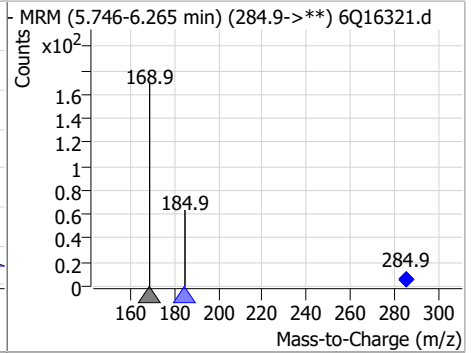
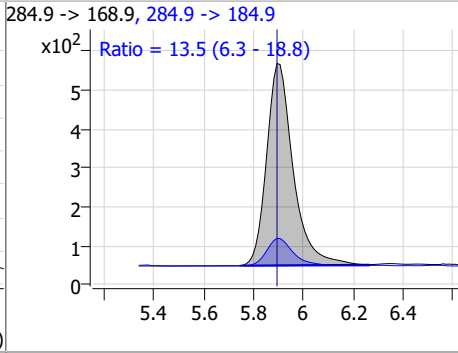
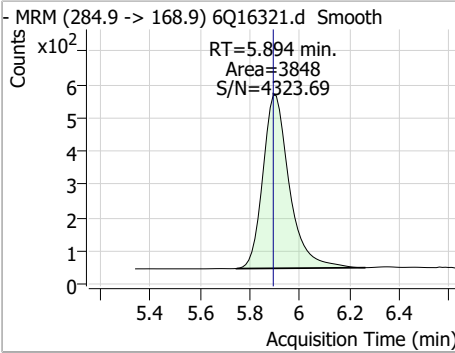


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.61	5.89	0.00	11764	286.9 -> 168.9			

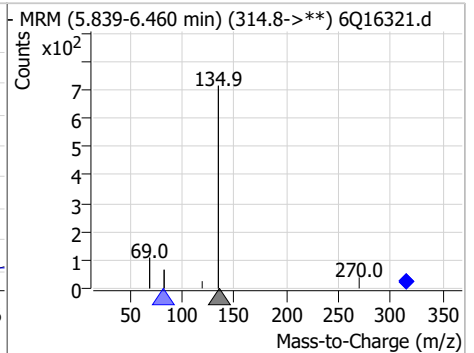
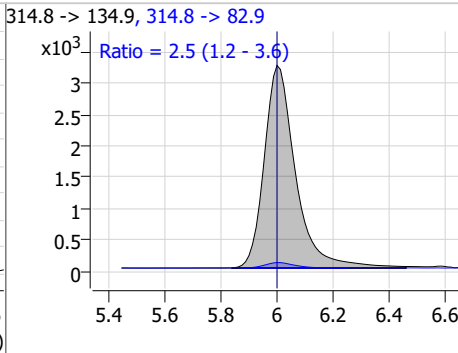
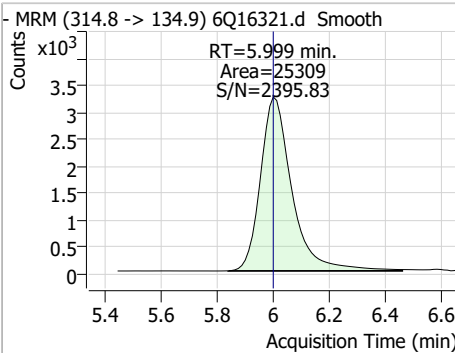


Perfluorinated Compounds by LC/MS/MS

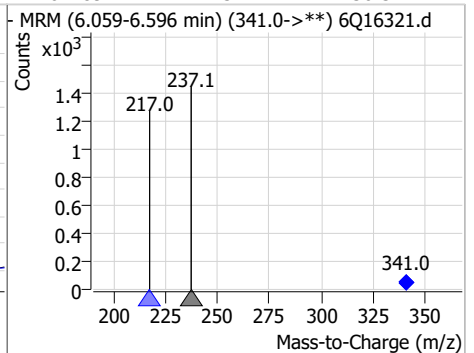
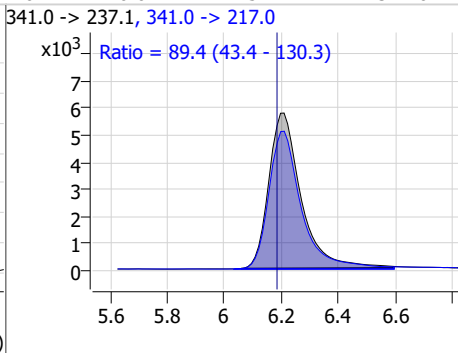
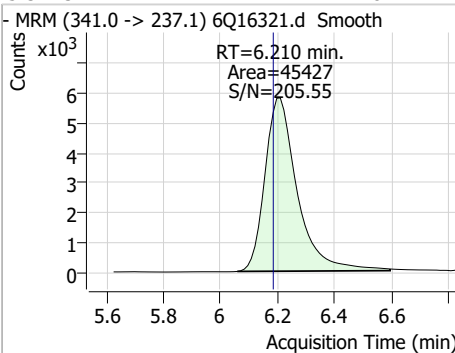
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	3.62	5.89	0.00	3848	284.9 -> 184.9	13.5	6.3	18.8



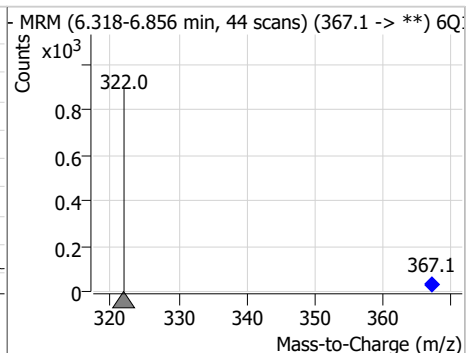
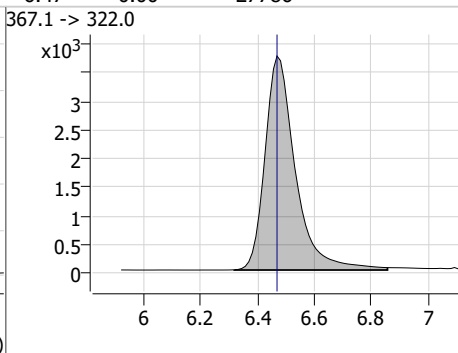
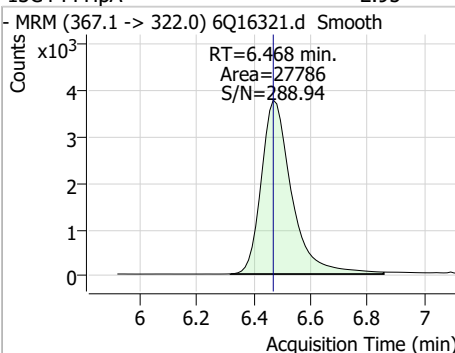
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.63	6.00	0.00	25309	314.8 -> 82.9	2.5	1.2	3.6



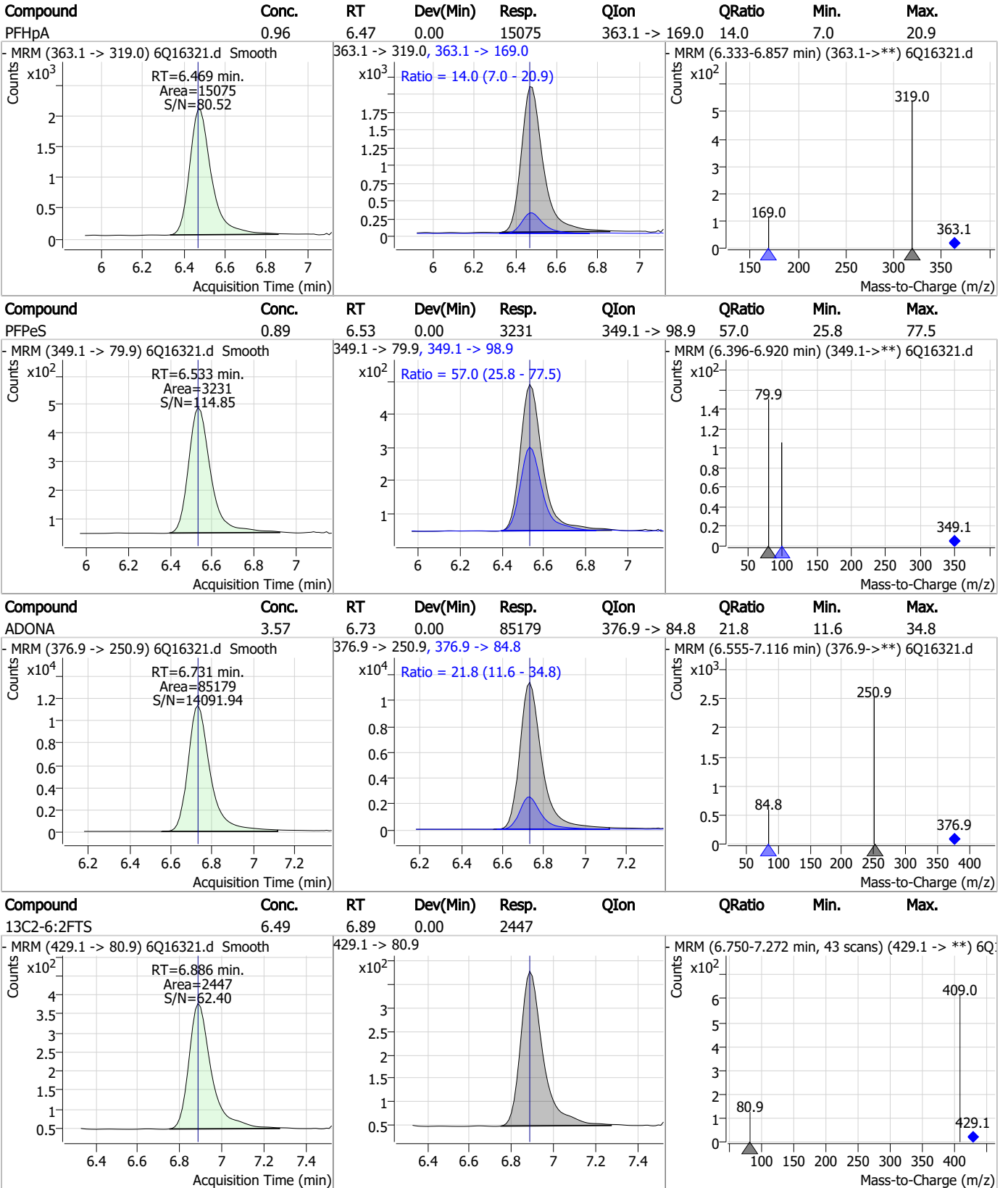
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	18.72	6.21	0.02	45427	341.0 -> 217.0	89.4	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.95	6.47	0.00	27786	367.1 -> 322.0			



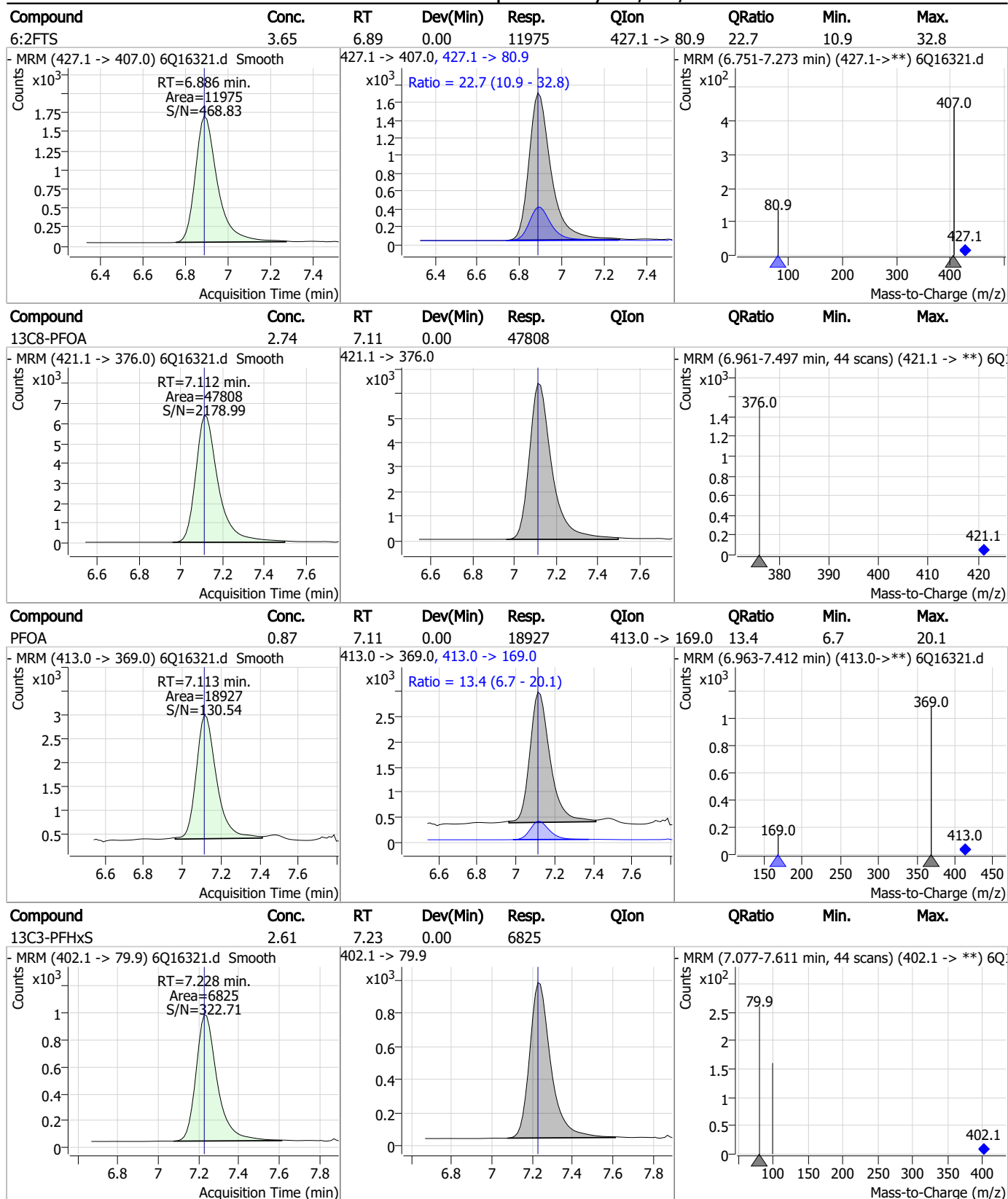
Perfluorinated Compounds by LC/MS/MS



7.3.2
7

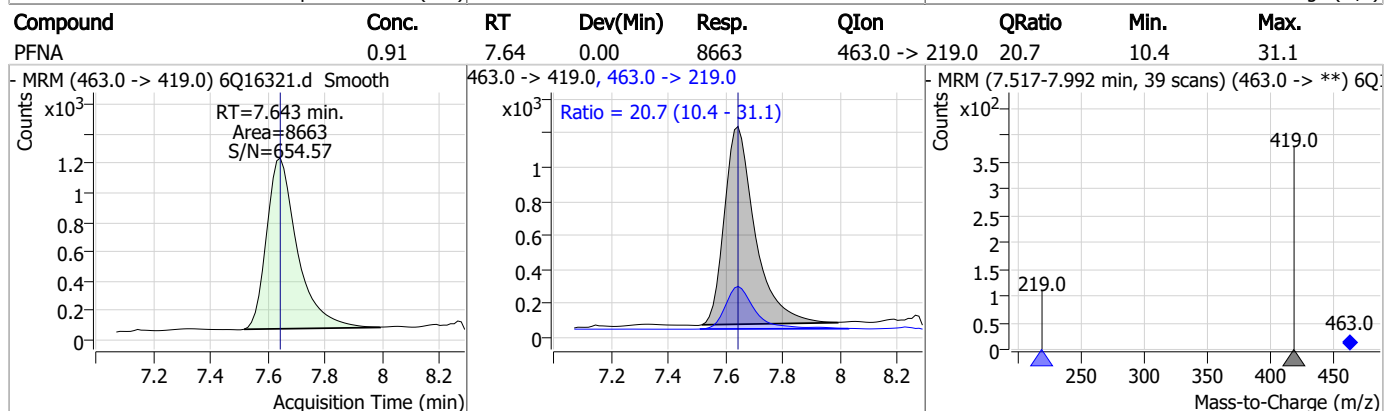
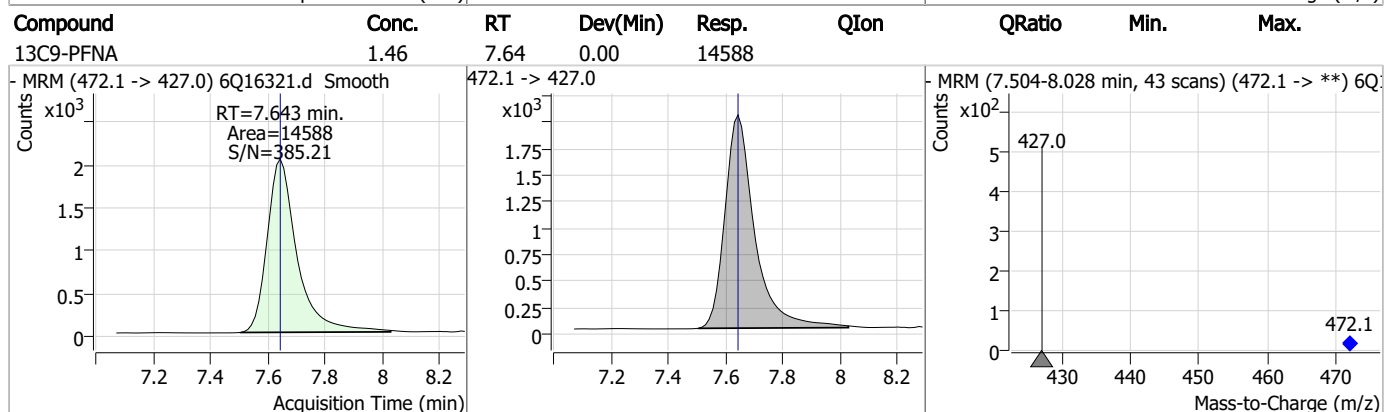
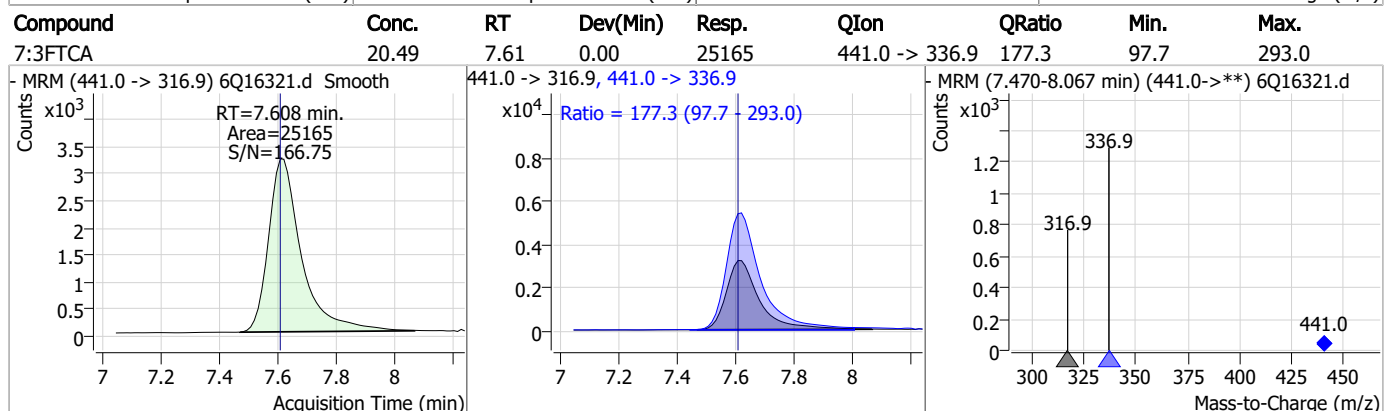
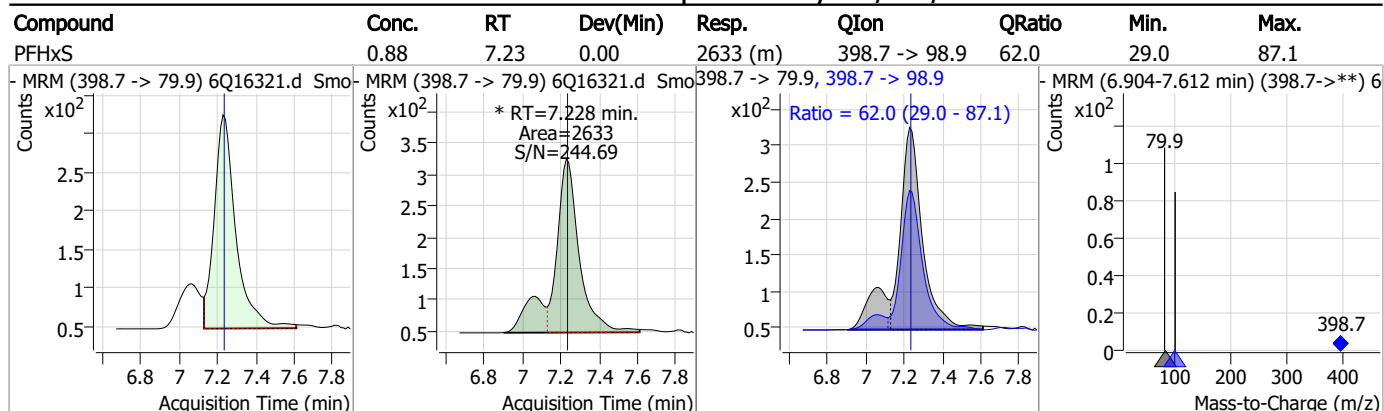


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

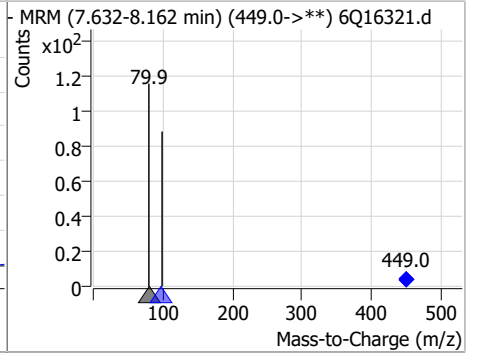
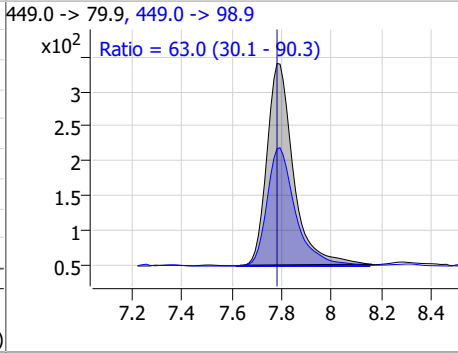
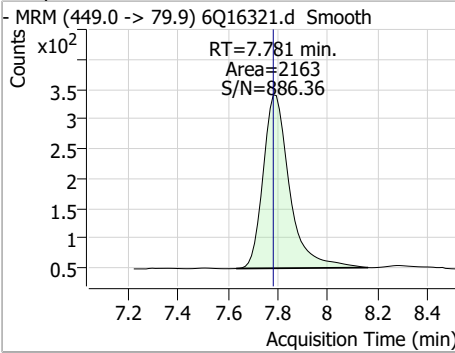
Perfluorinated Compounds by LC/MS/MS



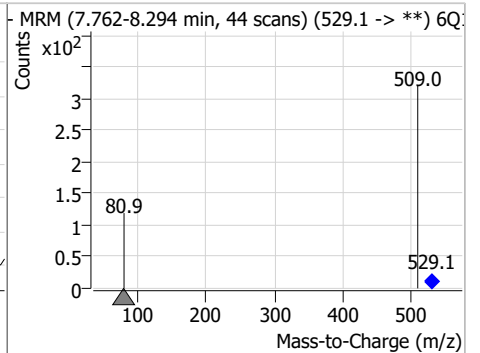
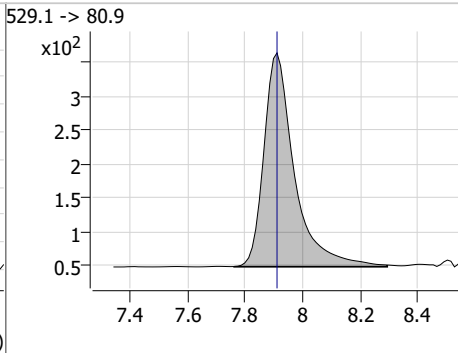
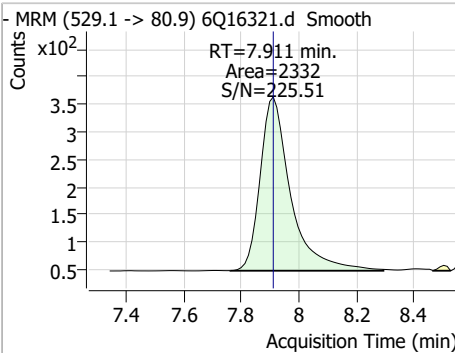
7.3.2
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Perfluorinated Compounds by LC/MS/MS

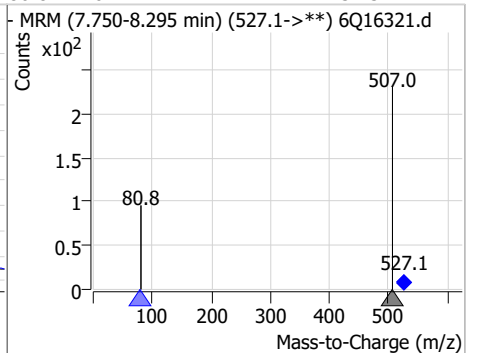
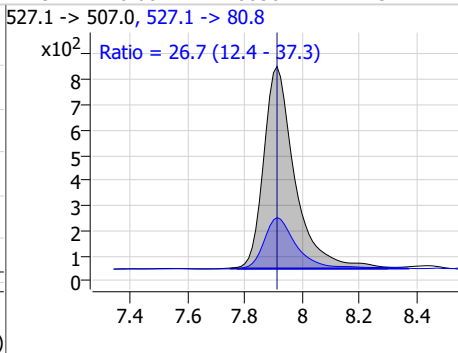
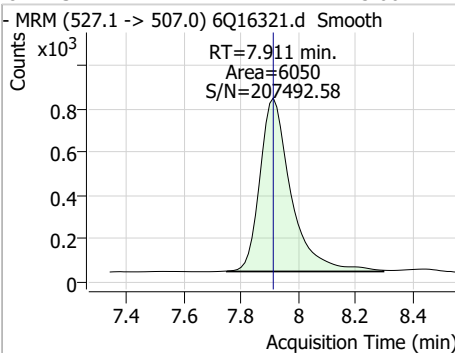
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.85	7.78	0.00	2163	449.0 -> 98.9	63.0	30.1	90.3



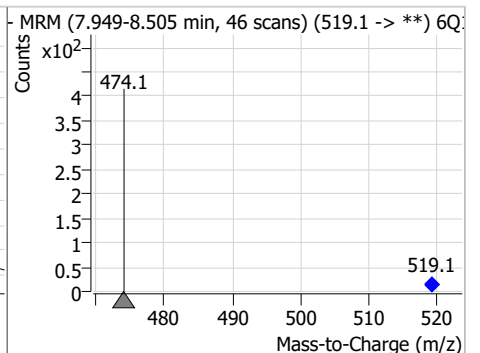
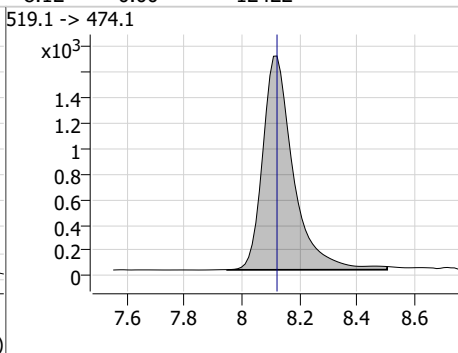
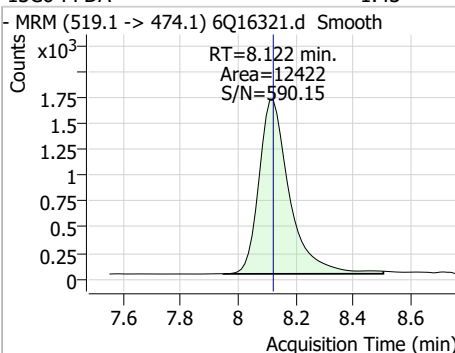
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.41	7.91	0.00	2332	529.1 -> 80.9			



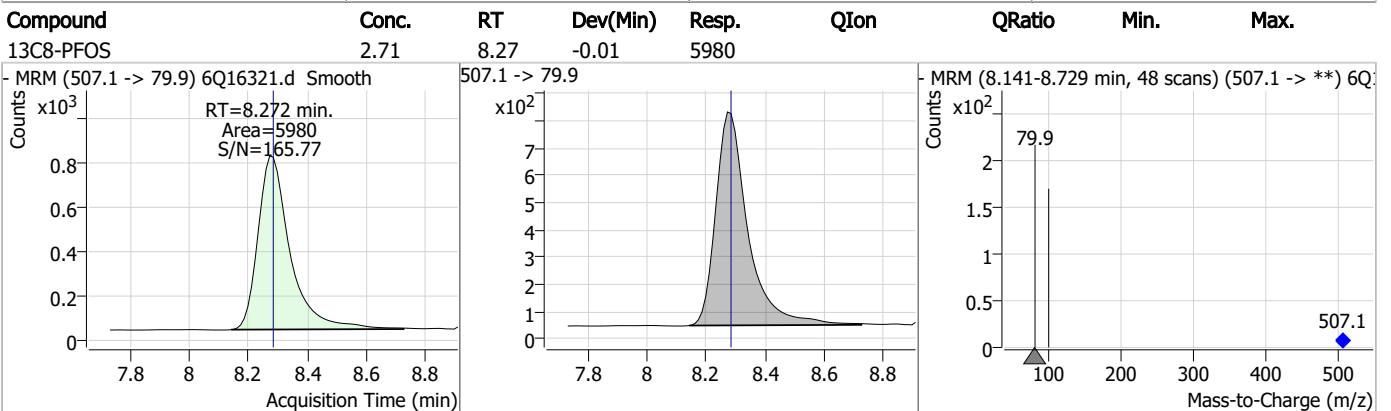
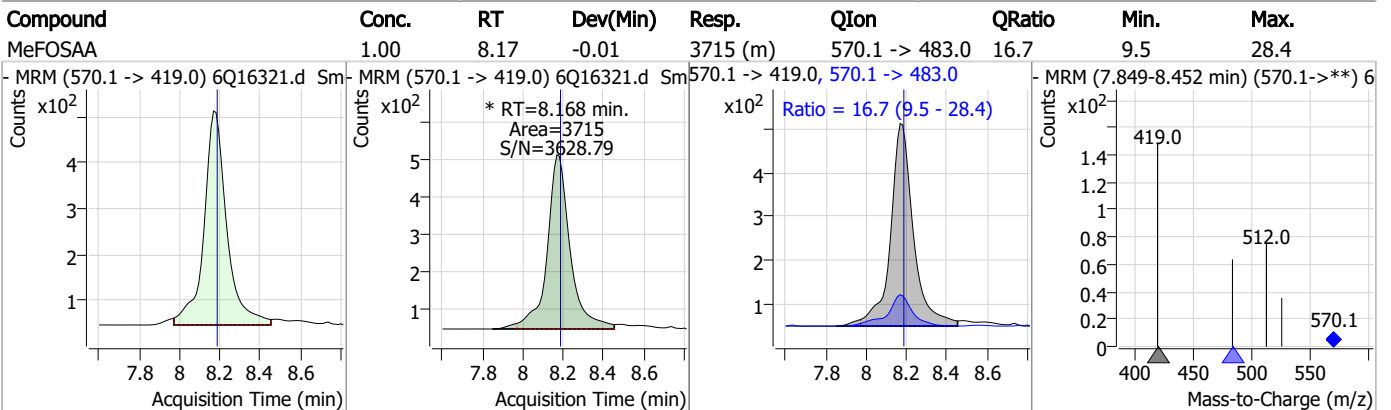
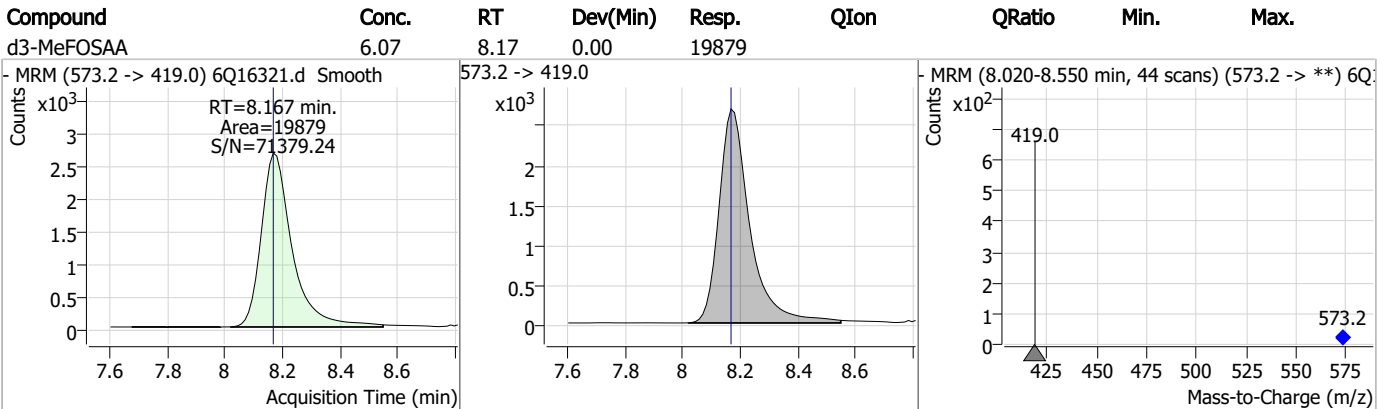
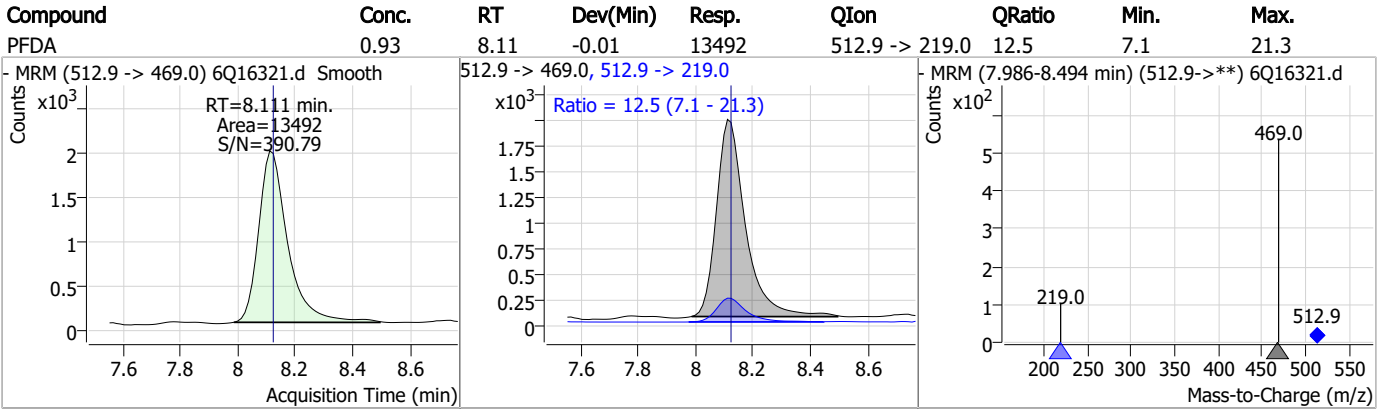
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	3.66	7.91	0.00	6050	527.1 -> 80.8	26.7	12.4	37.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.43	8.12	0.00	12422	519.1 -> 474.1			



Perfluorinated Compounds by LC/MS/MS

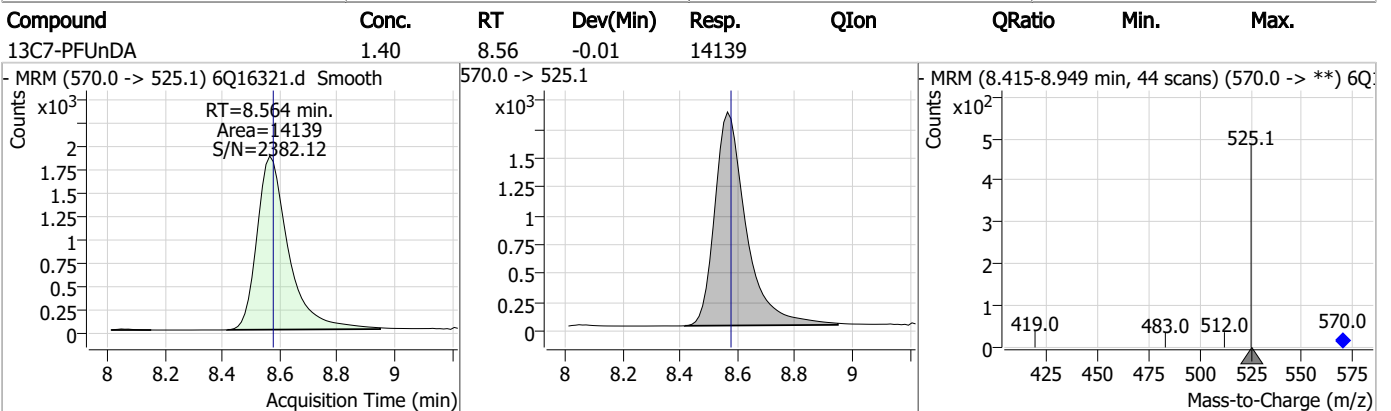
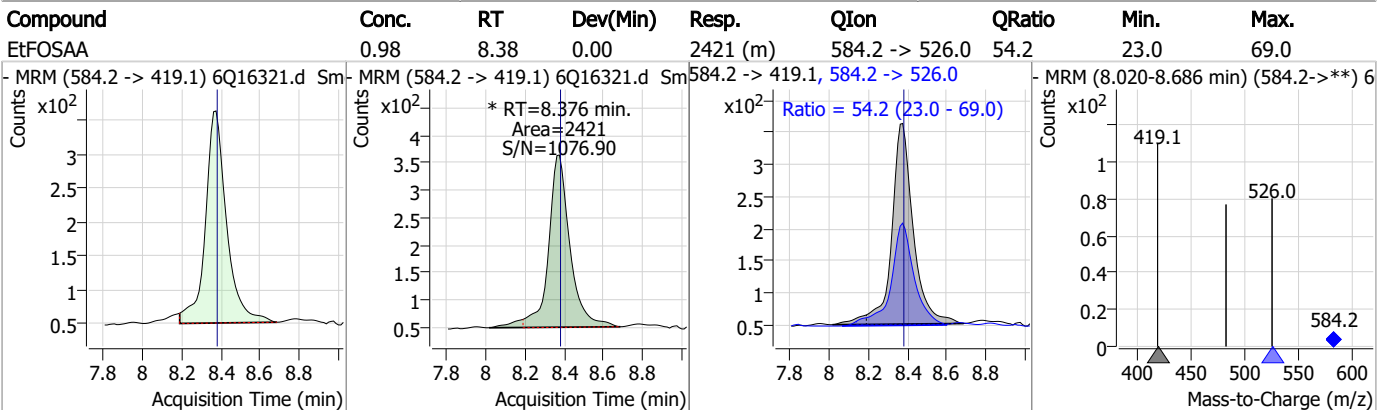
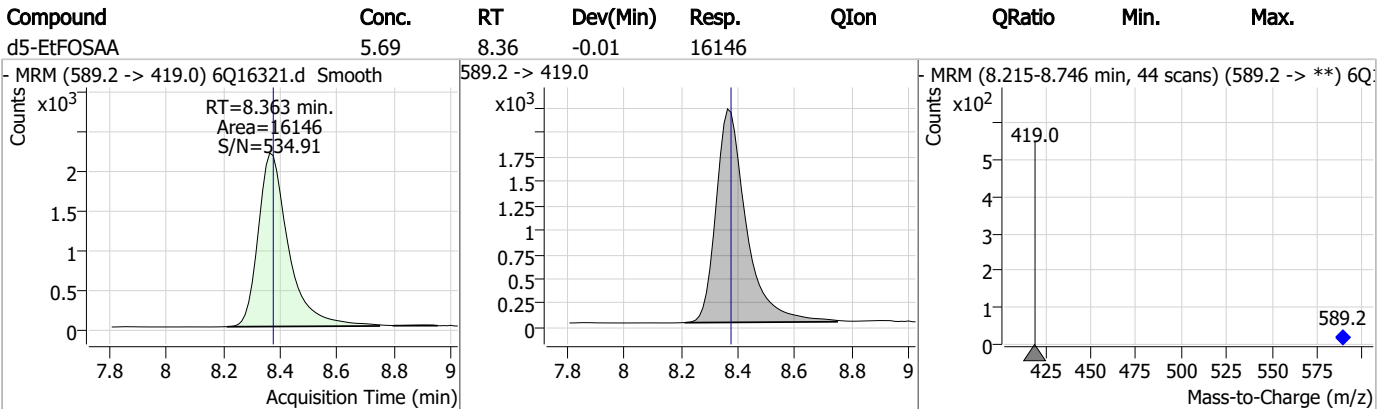
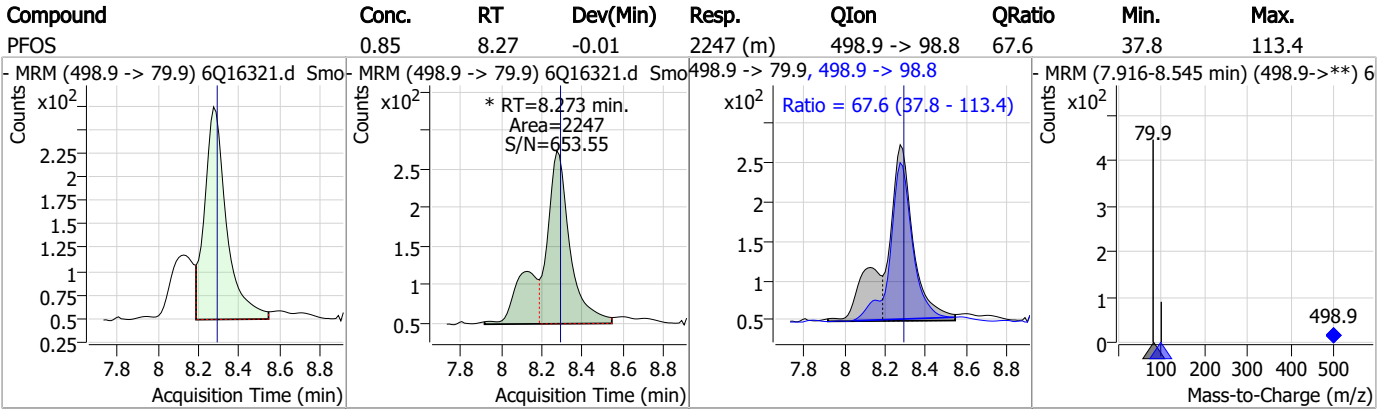


7.3.2

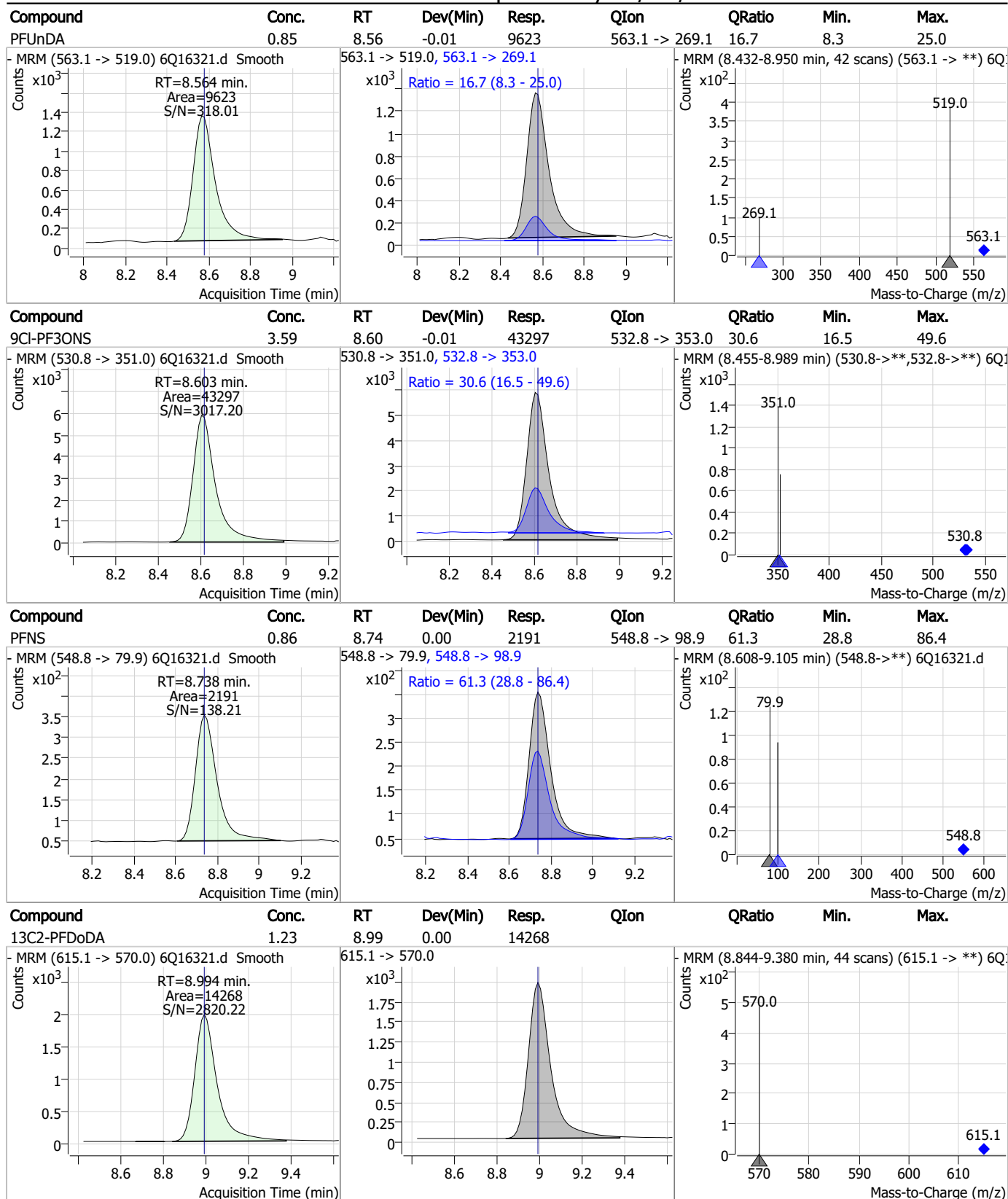
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Perfluorinated Compounds by LC/MS/MS

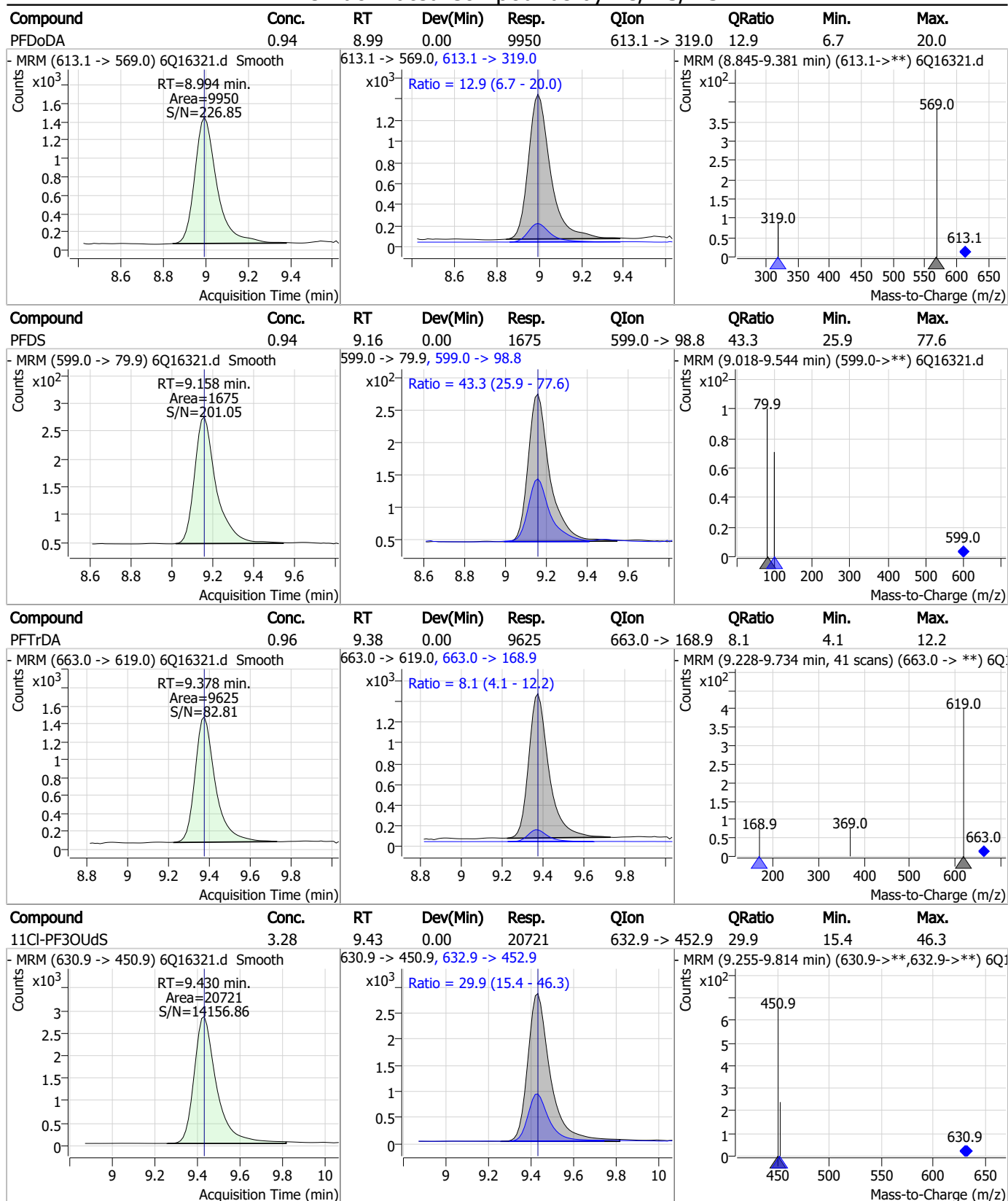


Perfluorinated Compounds by LC/MS/MS



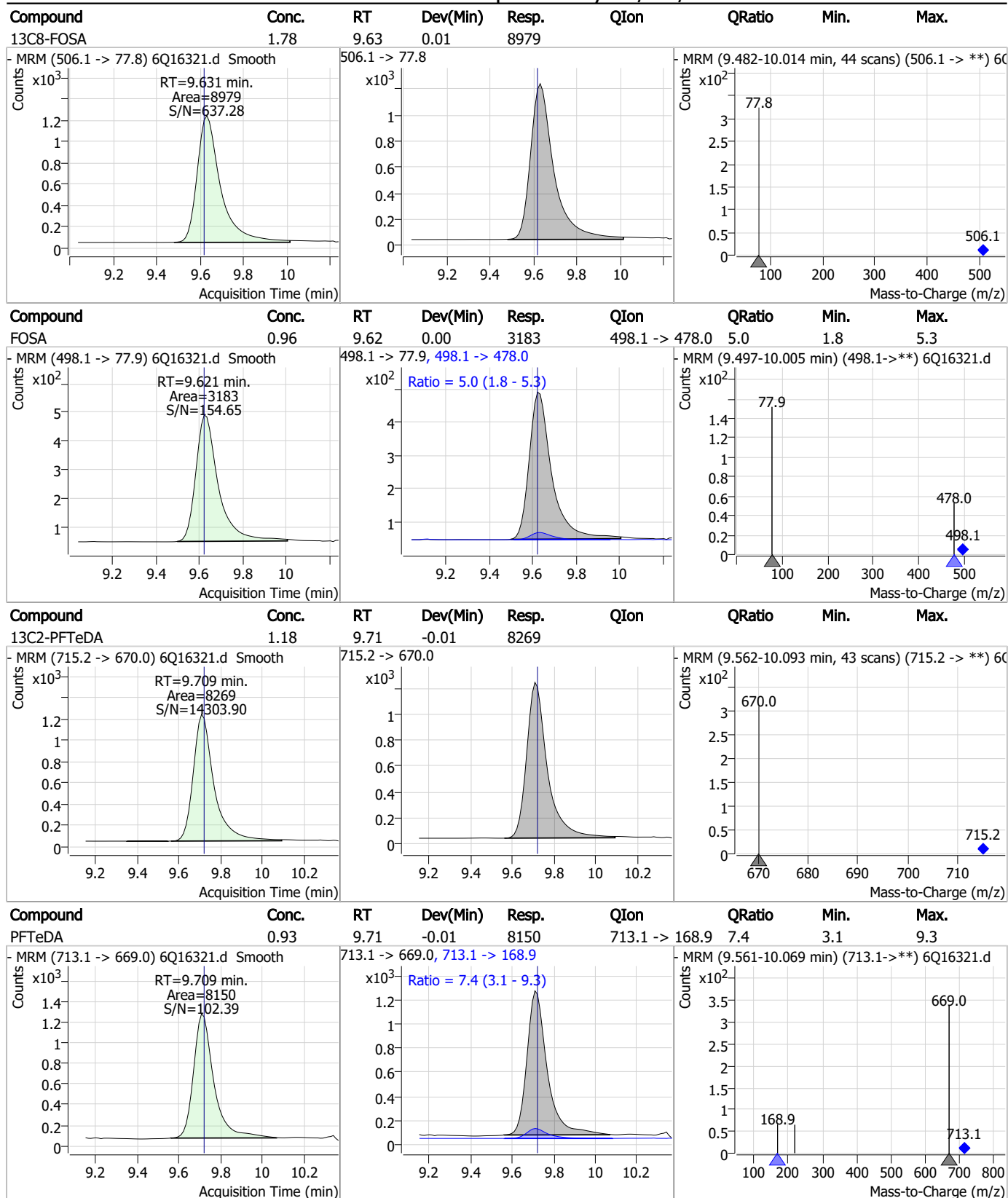
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

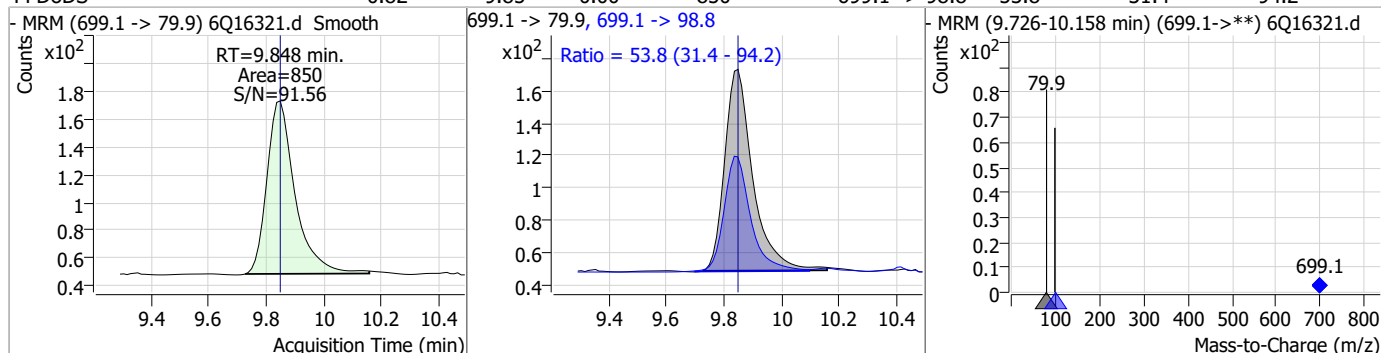


7.3.2
7

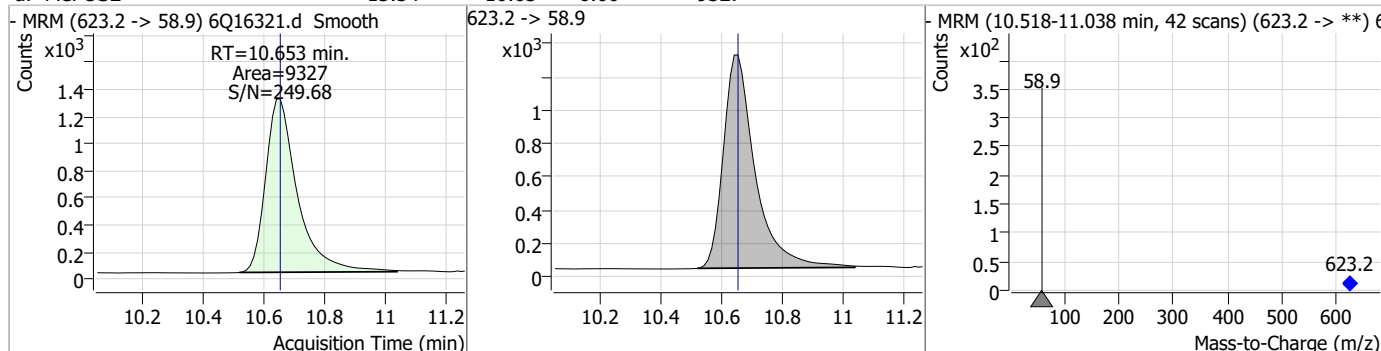


Perfluorinated Compounds by LC/MS/MS

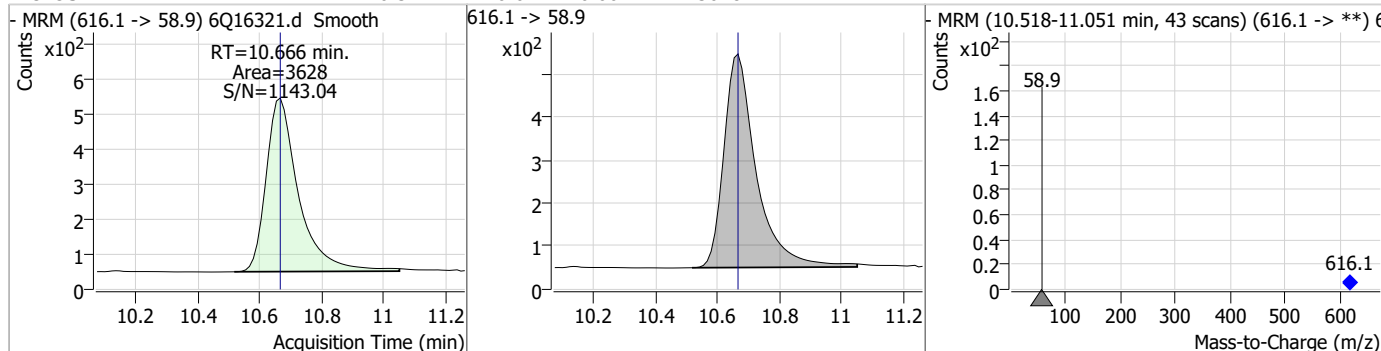
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.82	9.85	0.00	850	699.1 -> 98.8	53.8	31.4	94.2



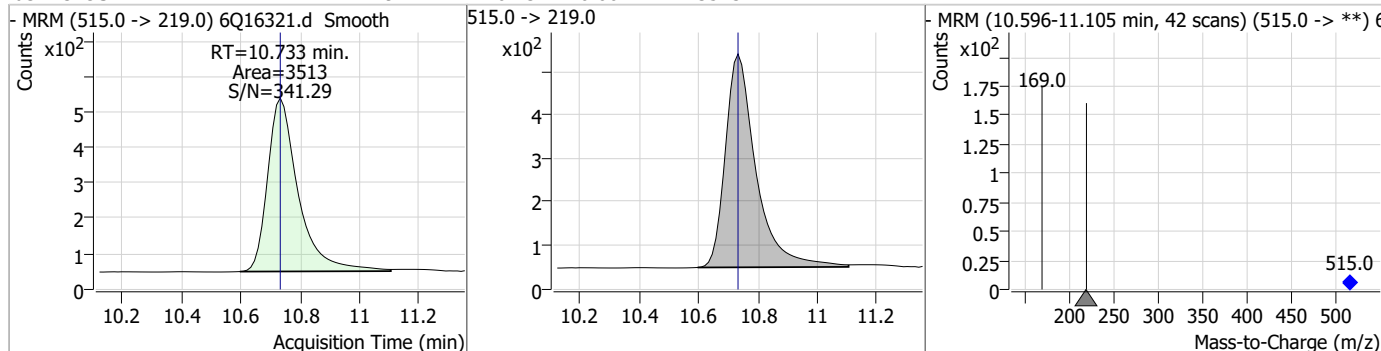
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	13.54	10.65	0.00	9327				



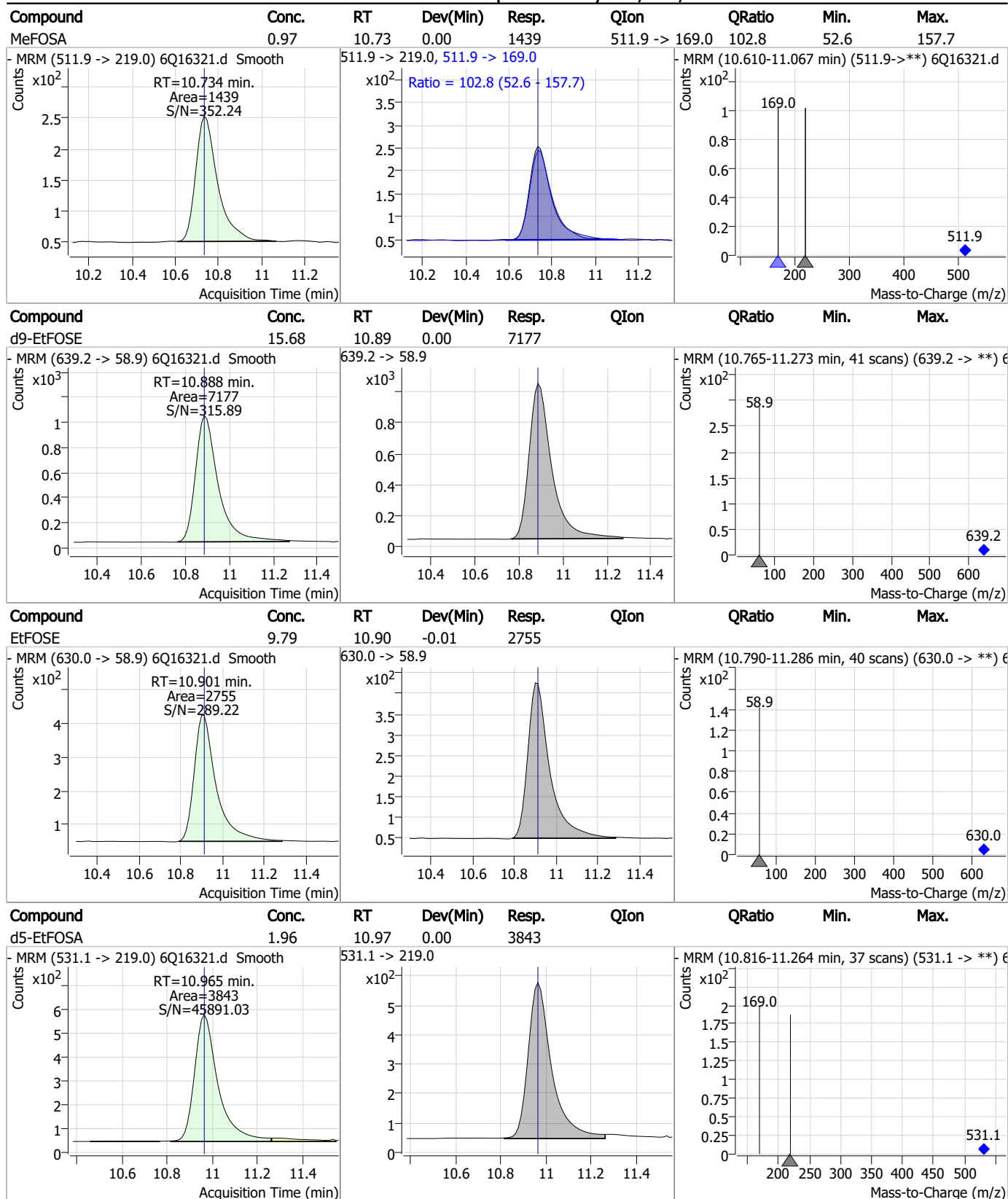
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	10.32	10.67	0.00	3628				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.94	10.73	0.00	3513				



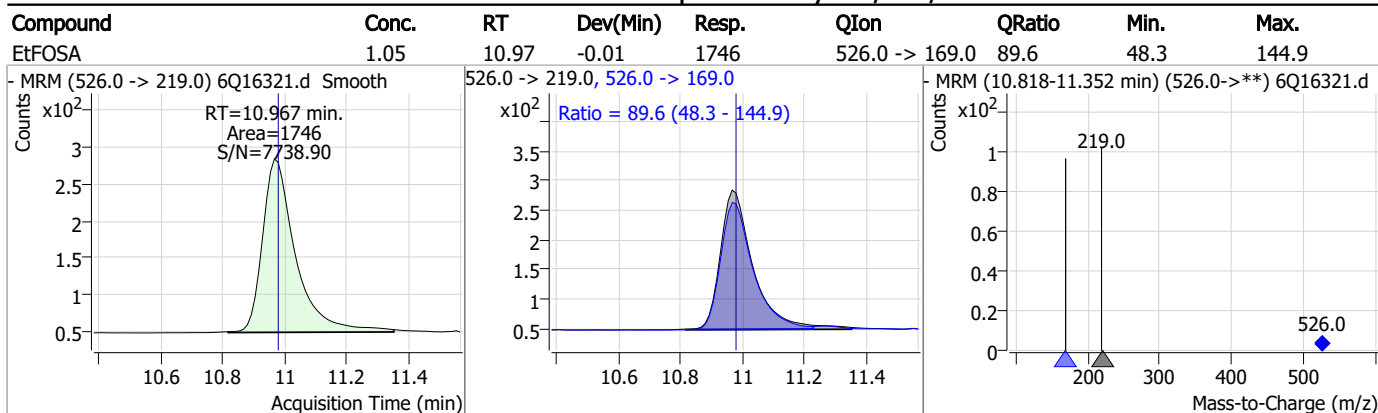
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Manual Integration Approval Summary

Sample Number: OP96279-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q16321.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 21:02 Supervisor approved: 04/10/23 18:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
MeFOSAA	2355-31-9		8.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16324.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 9:44:37 PM
 Sample Name : op96279-ms
 Vial : P6-D5
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	2345	10.00 µg/L	0.041
M5-PFPeA	4.334	268.3 -> 223.0	6787	5.00 µg/L	0.012
M5-PFHxA	5.528	318.0 -> 273.0	23555	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	26955	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	44295	2.50 µg/L	0.000
M9-PFNA	7.630	472.1 -> 427.0	12232	1.25 µg/L	-0.012
M6-PFDA	8.110	519.1 -> 474.1	10216	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	12005	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	12531	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	5748	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	9881	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	9542	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	6006	2.50 µg/L	0.000
M8-PFOS	8.260	507.1 -> 79.9	4899	2.50 µg/L	-0.025
M2-4:2FTS	5.191	329.1 -> 80.9	1634	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2340	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	1706	5.00 µg/L	0.000
M3-MeFOSAA	8.155	573.2 -> 419.0	21107	5.00 µg/L	-0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	9153	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	19192	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	10609	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	7744	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4370	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	4062	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6382	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	27623	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4548	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	49095	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	13456	1.25 µg/L	-0.012
13C5-PFNA	7.631	468.0 -> 423.0	13285	1.25 µg/L	-0.012
13C2-PFHxA	5.529	315.1 -> 270.0	24226	2.50 µg/L	0.000

System Monitoring Compounds

13C2-4:2FTS	5.191	329.1 -> 80.9	1634	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2340	6.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.7%		
13C2-8:2FTS	7.911	529.1 -> 80.9	1706	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-PFDoDA	8.994	615.1 -> 570.0	12531	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.3%		
13C2-PFTeDA	9.721	715.2 -> 670.0	5748	0.90 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 72.1%		
13C3-PFBS	5.459	302.1 -> 79.9	9542	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C3-PFHxS	7.228	402.1 -> 79.9	6006	2.31 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 = 92.3%		
13C4-PFBA	2.938	216.8 -> 171.9	2345	0.36 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 3.6%		
13C4-PFHpA	6.468	367.1 -> 322.0	26955	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C5-PFHxA	5.528	318.0 -> 273.0	23555	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C5-PFPeA	4.334	268.3 -> 223.0	6787	1.20 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 24.0%		
13C6-PFDA	8.110	519.1 -> 474.1	10216	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C7-PFUnDA	8.564	570.0 -> 525.1	12005	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C8-FOSA	9.631	506.1 -> 77.8	9881	2.08 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.2%		
13C8-PFOA	7.112	421.1 -> 376.0	44295	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C8-PFOS	8.260	507.1 -> 79.9	4899	2.36 µg/L	-0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C9-PFNA	7.630	472.1 -> 427.0	12232	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
d3-MeFOSAA	8.155	573.2 -> 419.0	21107	6.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.7%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	9153	8.66 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 86.6%		
d3-MeFOSA	10.733	515.0 -> 219.0	4062	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.9%		
d5-EtFOSAA	8.363	589.2 -> 419.0	19192	7.18 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 143.6%		
d7-MeFOSE	10.653	623.2 -> 58.9	10609	16.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 65.3%		
d9-EtFOSE	10.888	639.2 -> 58.9	7744	17.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 71.7%		
d5-EtFOSA	10.965	531.1 -> 219.0	4370	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0	32033	10.01 µg/L	99
		327.1 -> 80.9	7670		
6:2FTS	6.886	427.1 -> 407.0	29630	9.45 µg/L	97
		427.1 -> 80.9	6062		
8:2FTS	7.899	527.1 -> 507.0	15377	12.71 µg/L	98
		527.1 -> 80.8	3637		
EtFOSAA	8.364	584.2 -> 419.1	7830	2.66 µg/L	84
		584.2 -> 526.0	4424		
FOSA	9.634	498.1 -> 77.9	10045	2.75 µg/L	98
		498.1 -> 478.0	294		
MeFOSAA	8.168	570.1 -> 419.0	10315	2.61 µg/L	95
		570.1 -> 483.0	1713		
PFBA	2.944	212.8 -> 168.9	509	8.59 µg/L	100
PFBS	5.460	298.7 -> 79.9	8850	2.36 µg/L	96
		298.7 -> 98.8	4301		
PFDA	8.111	512.9 -> 469.0	32175	2.71 µg/L	96
		512.9 -> 219.0	5134		
PFDODA	8.994	613.1 -> 569.0	24838	2.66 µg/L	99
		613.1 -> 319.0	3157		
PFDS	9.158	599.0 -> 79.9	3611	2.47 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	1939			
PFHpA	6.469	363.1 -> 319.0	38175	2.52	µg/L	99
		363.1 -> 169.0	5405			
PFHpS	7.769	449.0 -> 79.9	4550	2.17	µg/L	77
		449.0 -> 98.9	3527			
PFHxA	5.519	313.0 -> 269.0	23200	2.67	µg/L	99
		313.0 -> 118.9	874			
PFHxS	7.228	398.7 -> 79.9	6699	2.54	µg/L	m 90
		398.7 -> 98.9	4378			
PFNA	7.643	463.0 -> 419.0	22062	2.77	µg/L	96
		463.0 -> 219.0	4106			
PFNS	8.738	548.8 -> 79.9	5953	2.86	µg/L	95
		548.8 -> 98.9	3204			
PFOA	7.113	413.0 -> 369.0	54027	2.69	µg/L	98
		413.0 -> 169.0	6852			
PFOS	8.261	498.9 -> 79.9	6233	2.89	µg/L	m 76
		498.9 -> 98.8	3452			
PFPeA	4.336	263.0 -> 219.0	7418	5.18	µg/L	100
PFPeS	6.520	349.1 -> 79.9	8874	2.79	µg/L	99
		349.1 -> 98.9	4642			
PFTeDA	9.709	713.1 -> 669.0	16166	2.66	µg/L	99
		713.1 -> 168.9	1030			
PFTrDA	9.378	663.0 -> 619.0	20985	2.38	µg/L	98
		663.0 -> 168.9	1578			
PFUnDA	8.564	563.1 -> 519.0	25818	2.69	µg/L	97
		563.1 -> 269.1	4005			
11CI-PF3OUdS	9.430	630.9 -> 450.9	46743	9.50	µg/L	100
		632.9 -> 452.9	14357			
9CI-PF3ONS	8.603	530.8 -> 351.0	104802	11.15	µg/L	100
		532.8 -> 353.0	34782			
ADONA	6.719	376.9 -> 250.9	226316	12.20	µg/L	97
		376.9 -> 84.8	48714			
HFPO-DA	5.894	284.9 -> 168.9	8377	10.12	µg/L	95
		284.9 -> 184.9	1196			
3:3FTCA	3.827	241.0 -> 177.0	268	3.37	µg/L	86
		241.0 -> 117.0	25			
5:3FTCA	6.198	341.0 -> 237.1	124607	64.84	µg/L	95
		341.0 -> 217.0	113978			
7:3FTCA	7.608	441.0 -> 316.9	68416	70.32	µg/L	92
		441.0 -> 336.9	125879			
EtFOSA	10.967	526.0 -> 219.0	5071	2.69	µg/L	97
		526.0 -> 169.0	4729			
EtFOSE	10.913	630.0 -> 58.9	7526	24.78	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	4345	2.54	µg/L	95
		511.9 -> 169.0	4334			
MeFOSE	10.666	616.1 -> 58.9	10592	26.49	µg/L	100
PFDoS	9.848	699.1 -> 79.9	1710	2.01	µg/L	91
		699.1 -> 98.8	955			
NFDHA	5.410	295.0 -> 201.0	2369	4.20	µg/L	90
		295.0 -> 84.9	1193			
PFMBA	4.737	279.0 -> 85.1	3689	7.78	µg/L	100
PFMPA	3.476	229.0 -> 84.9	586	1.35	µg/L	100
PFEESA	5.999	314.8 -> 134.9	66929	5.43	µg/L	100
		314.8 -> 82.9	1610			

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

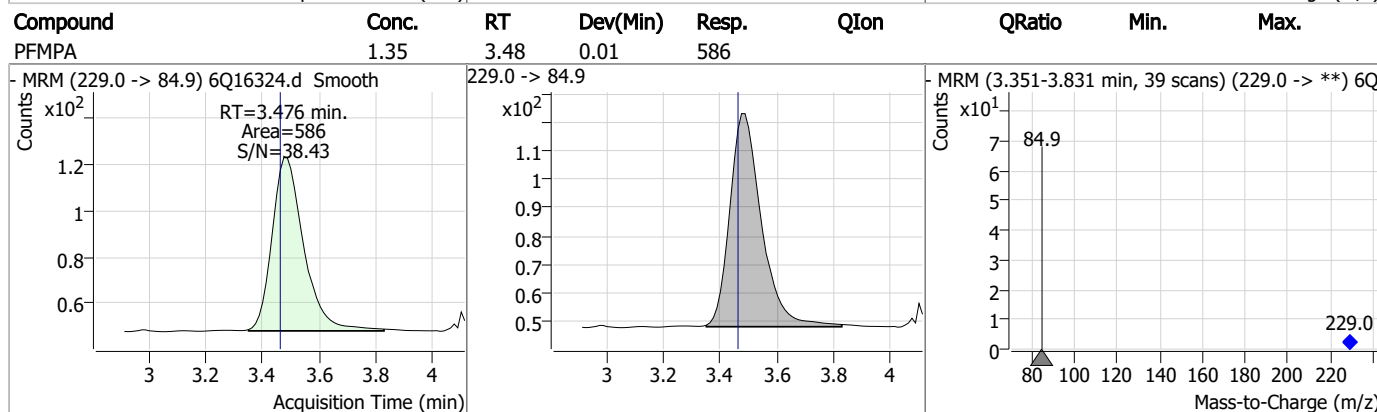
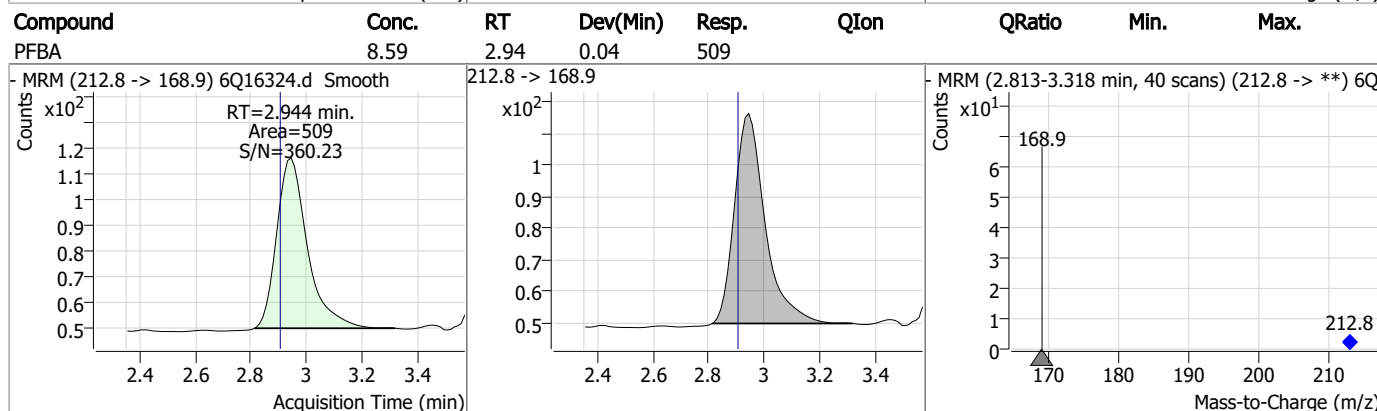
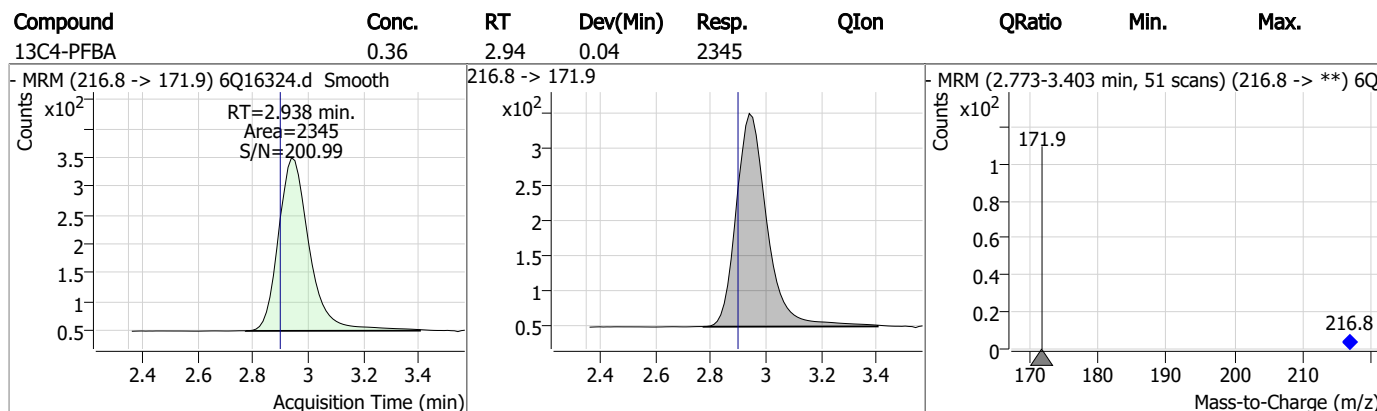
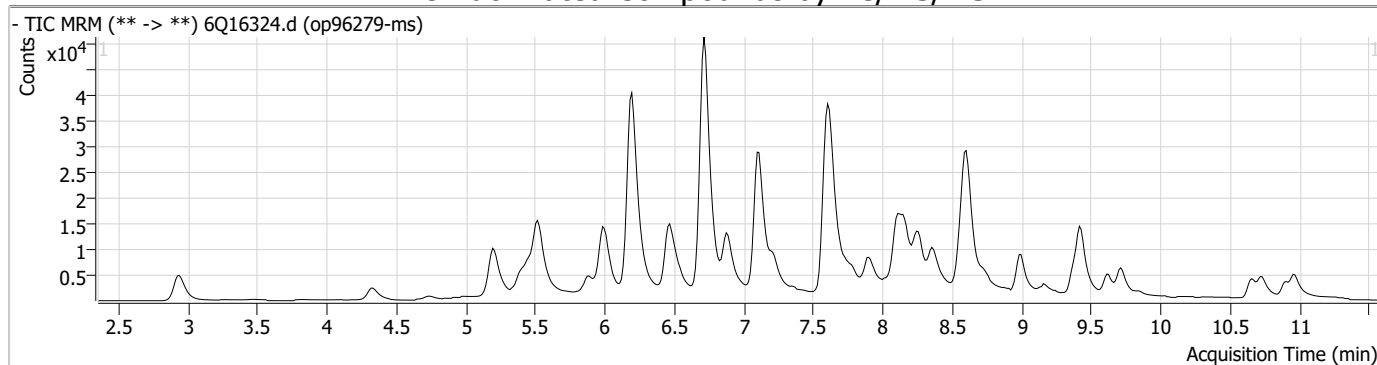
Perfluorinated Compounds by LC/MS/MS

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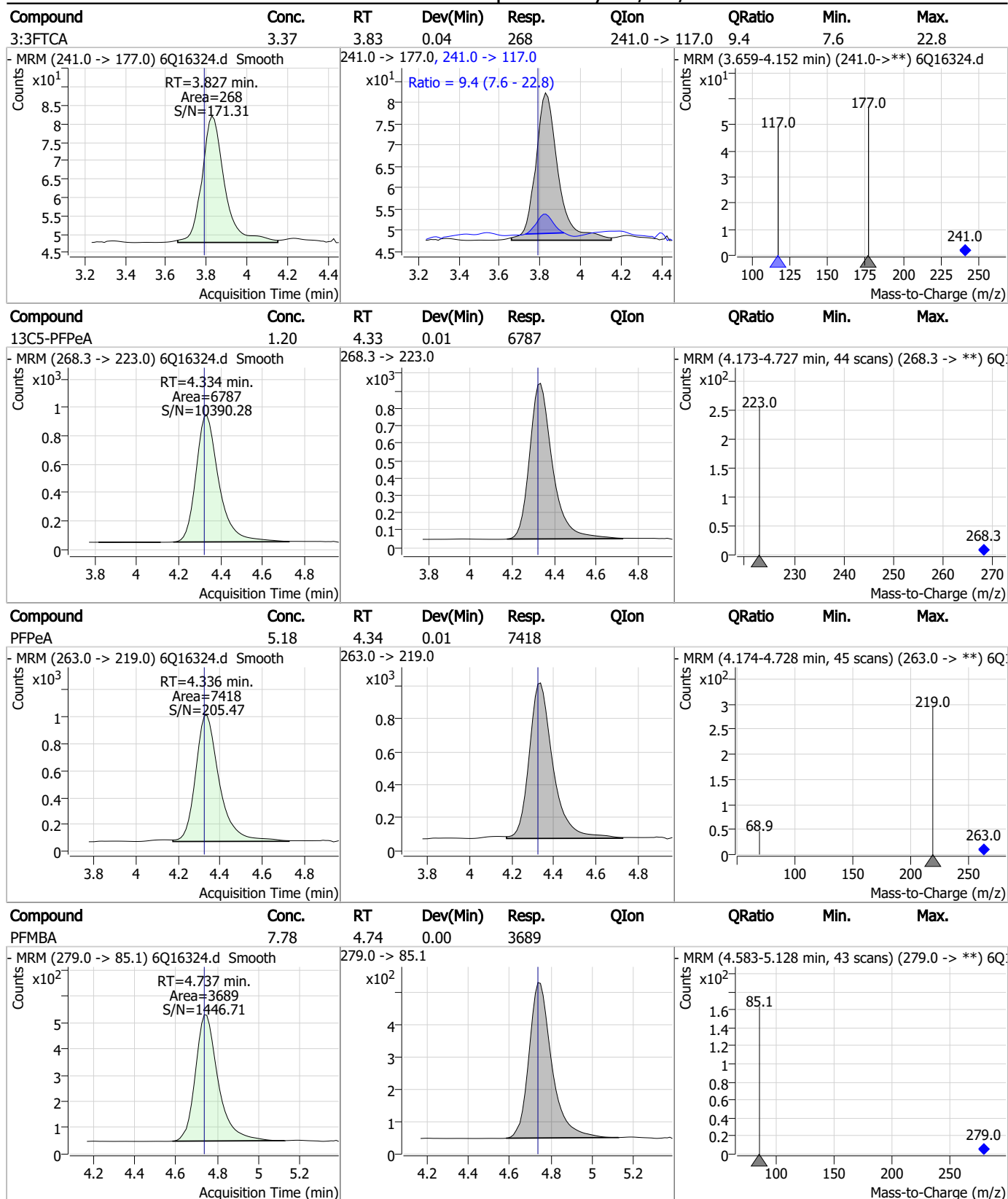
7.4.1

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Perfluorinated Compounds by LC/MS/MS



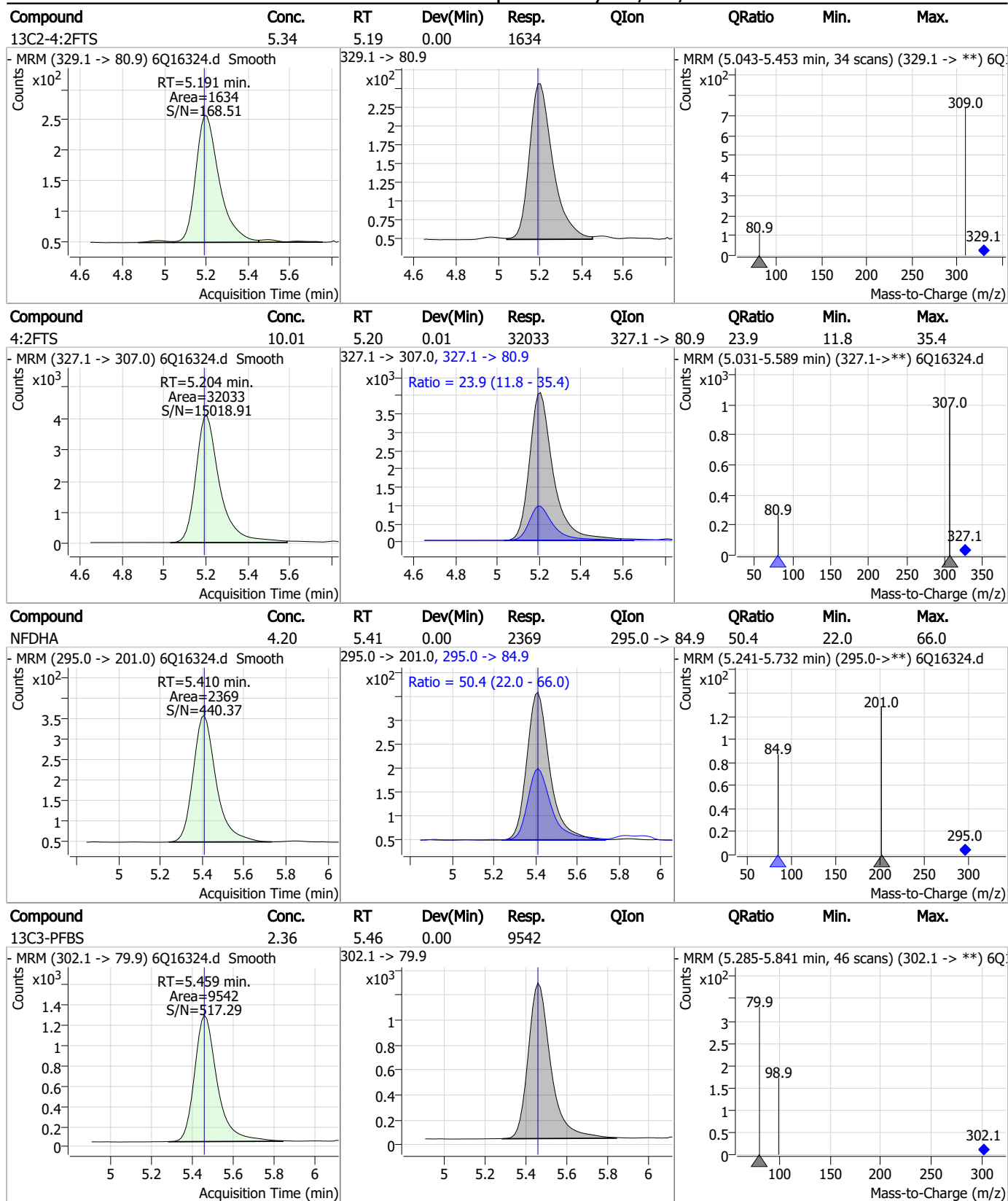
Perfluorinated Compounds by LC/MS/MS



7.4.1
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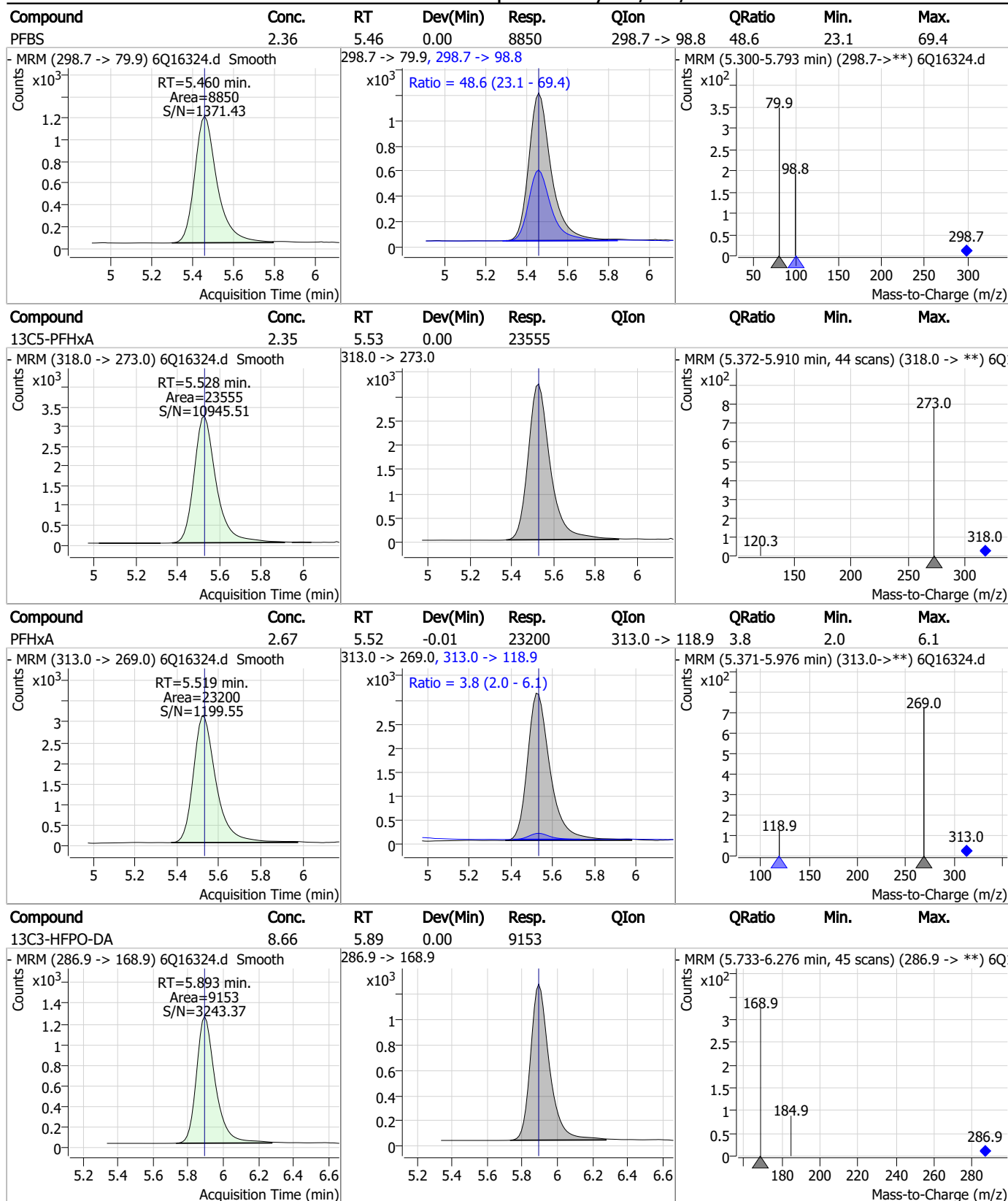


Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

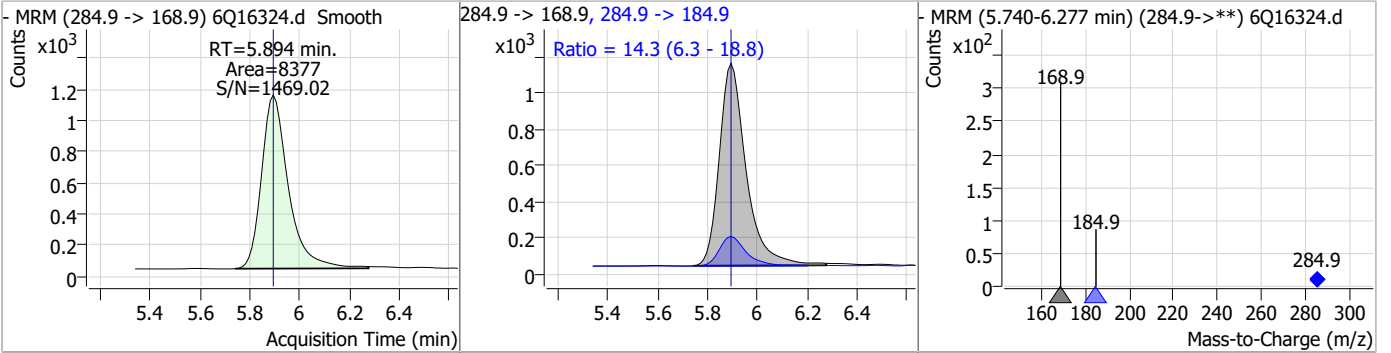


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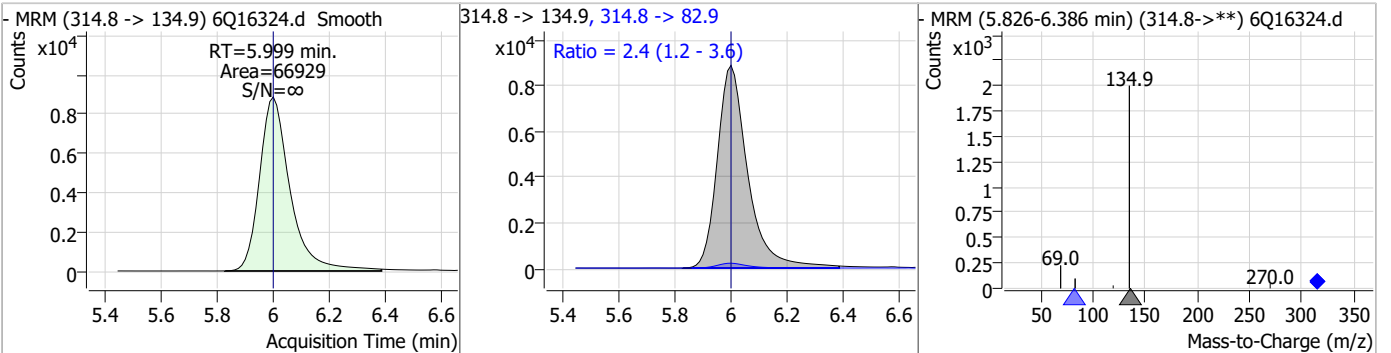


Perfluorinated Compounds by LC/MS/MS

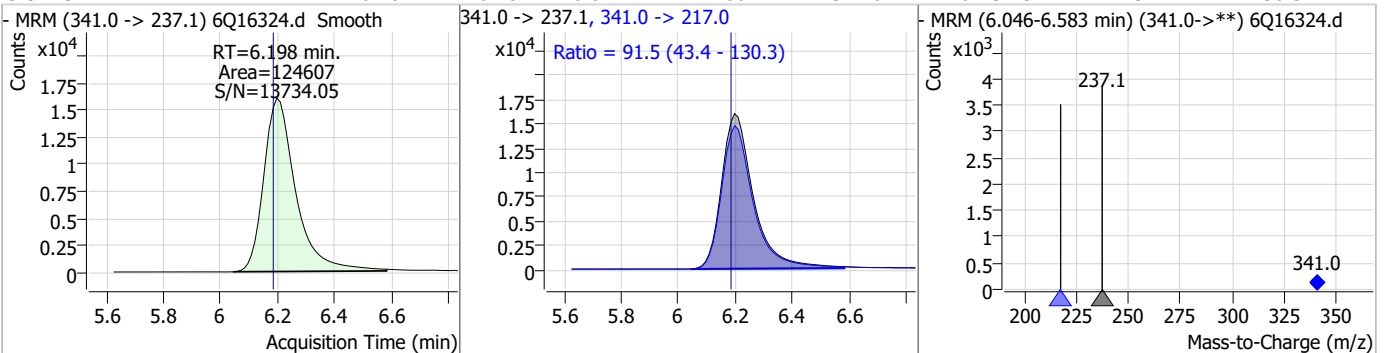
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.12	5.89	0.00	8377	284.9 -> 184.9	14.3	6.3	18.8



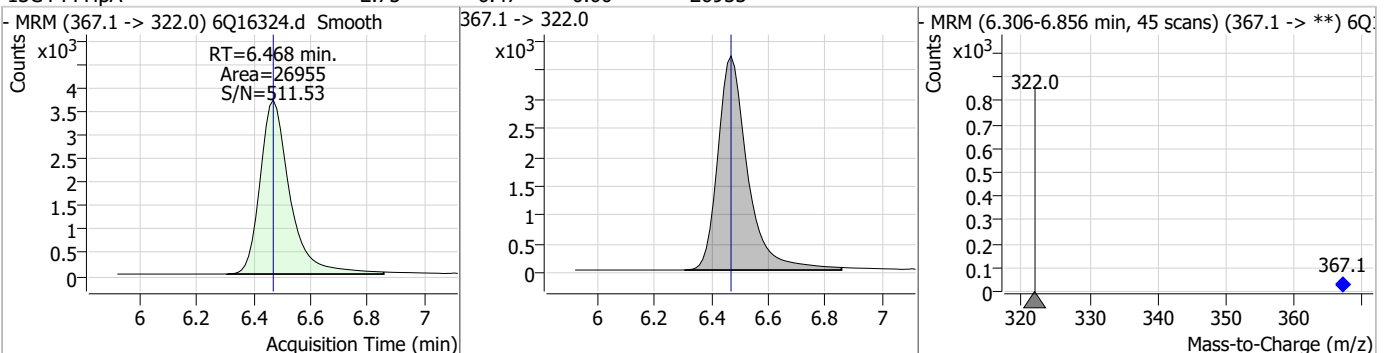
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	5.43	6.00	0.00	66929	314.8 -> 82.9	2.4	1.2	3.6



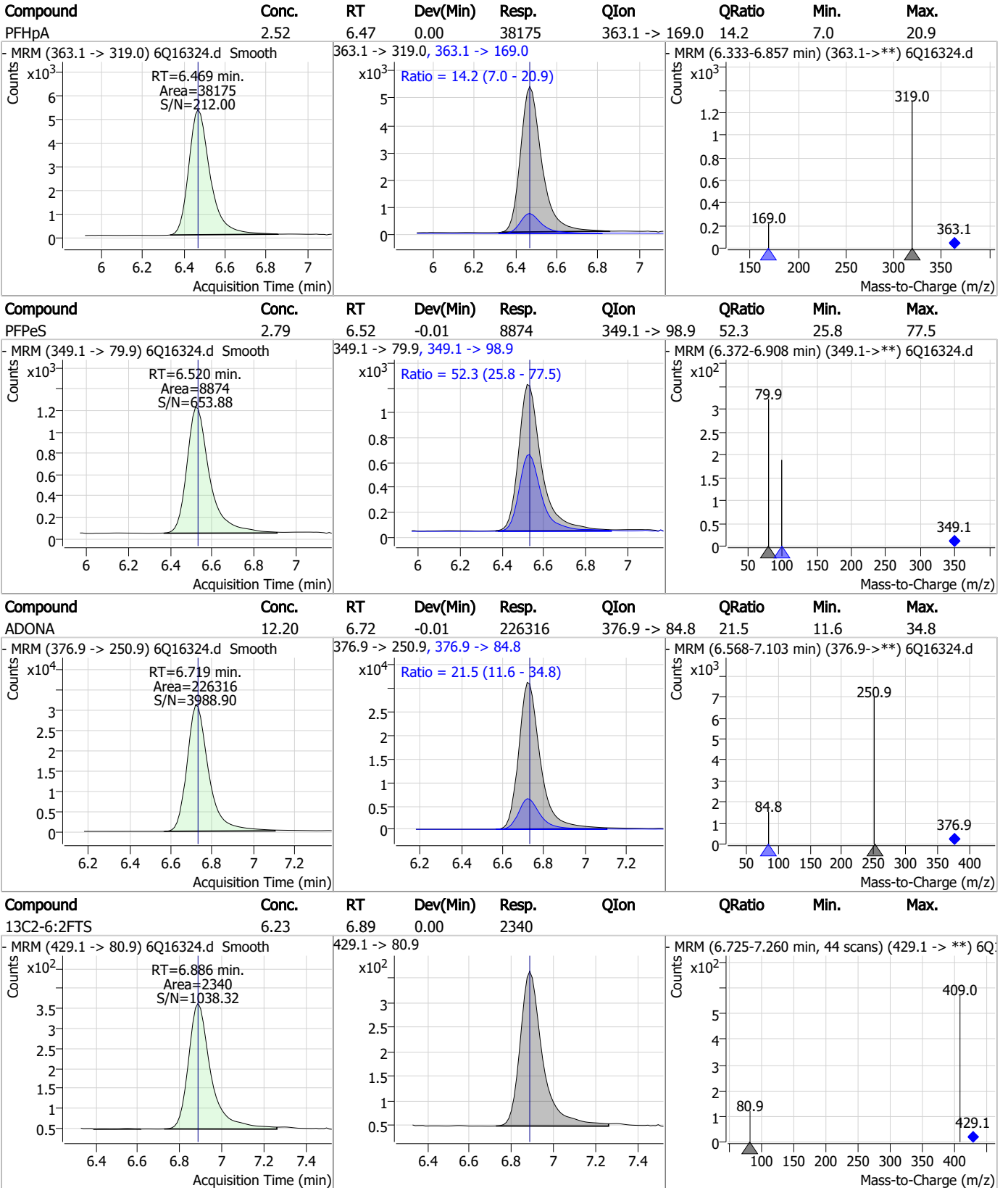
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	64.84	6.20	0.01	124607	341.0 -> 217.0	91.5	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.75	6.47	0.00	26955	367.1 -> 322.0			



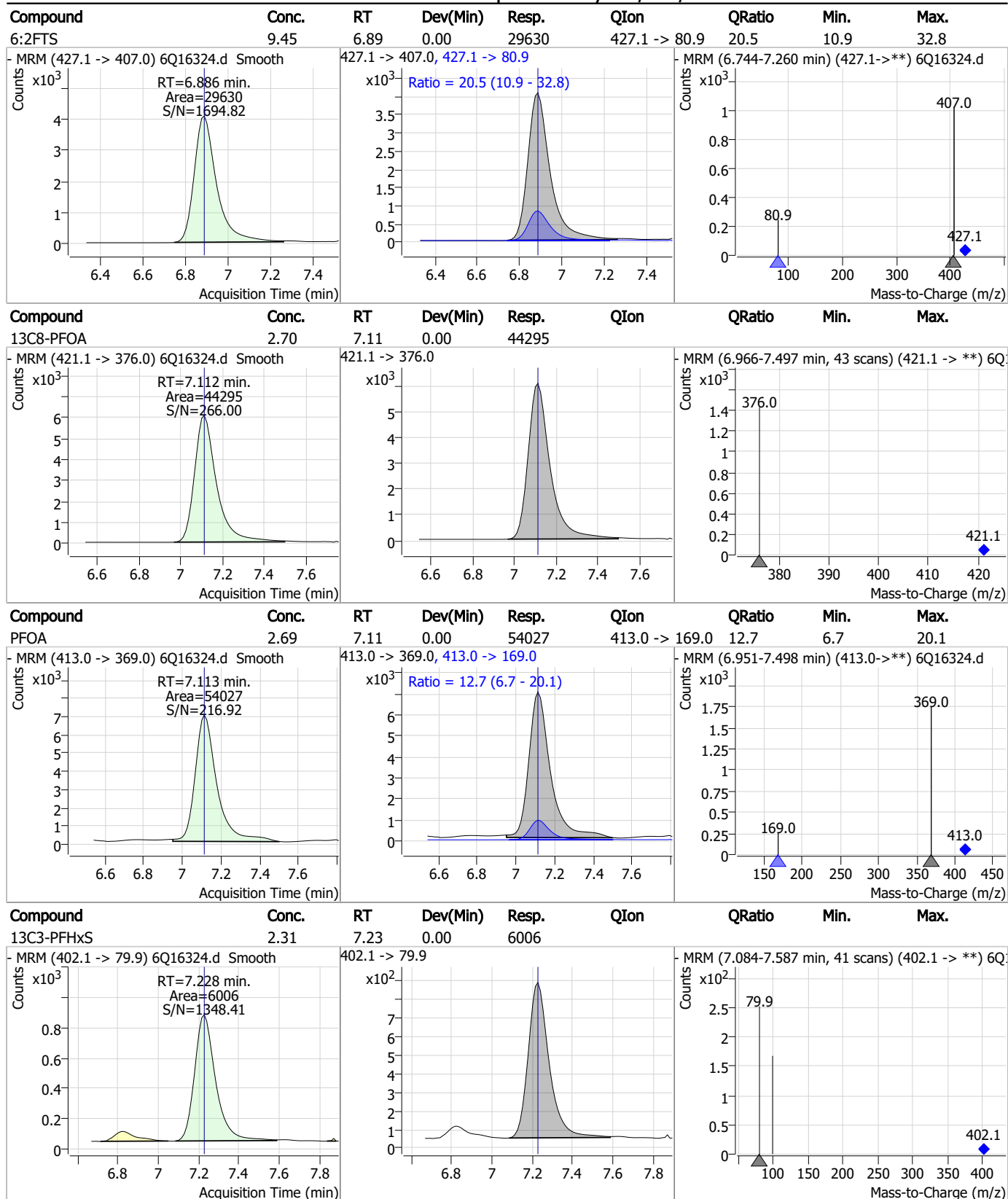
Perfluorinated Compounds by LC/MS/MS



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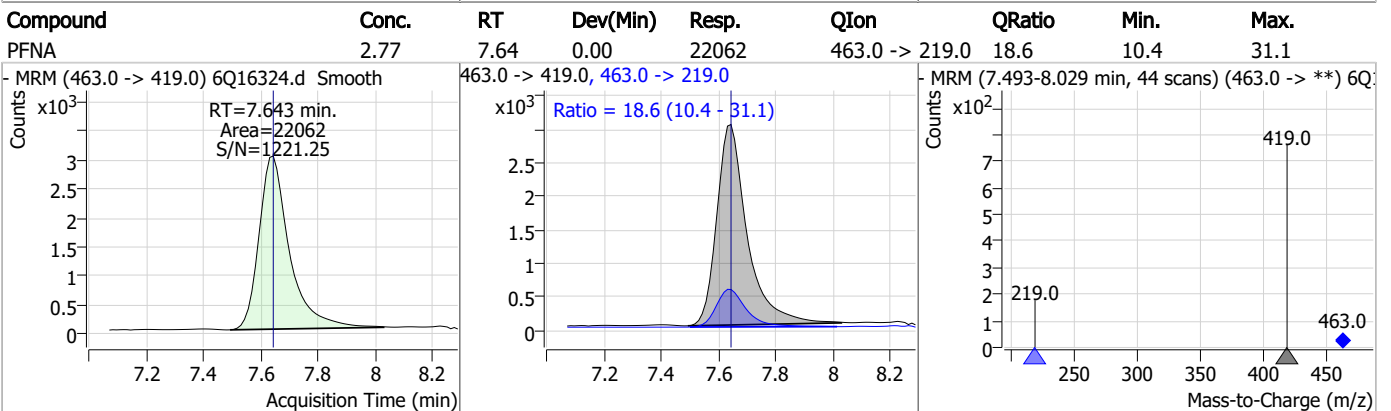
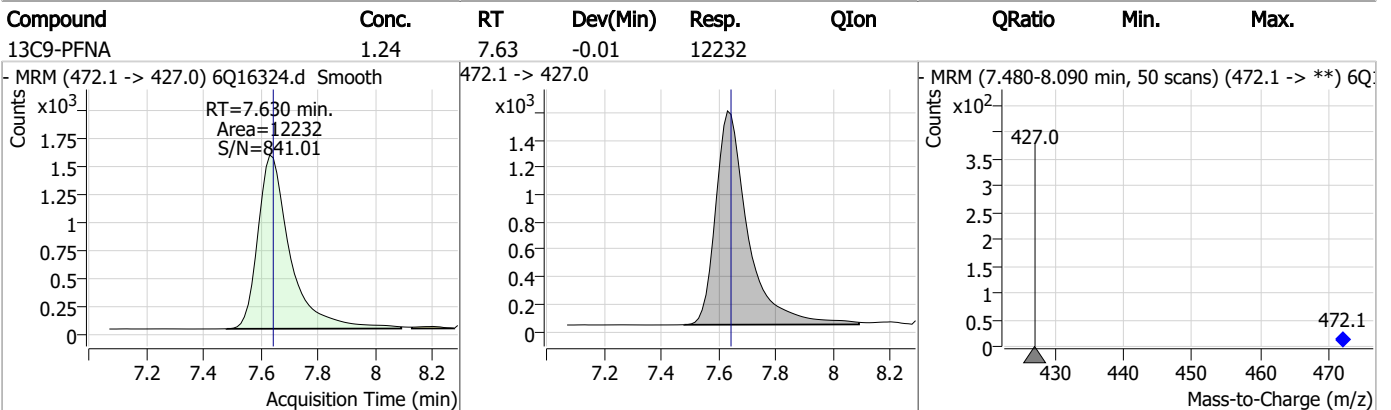
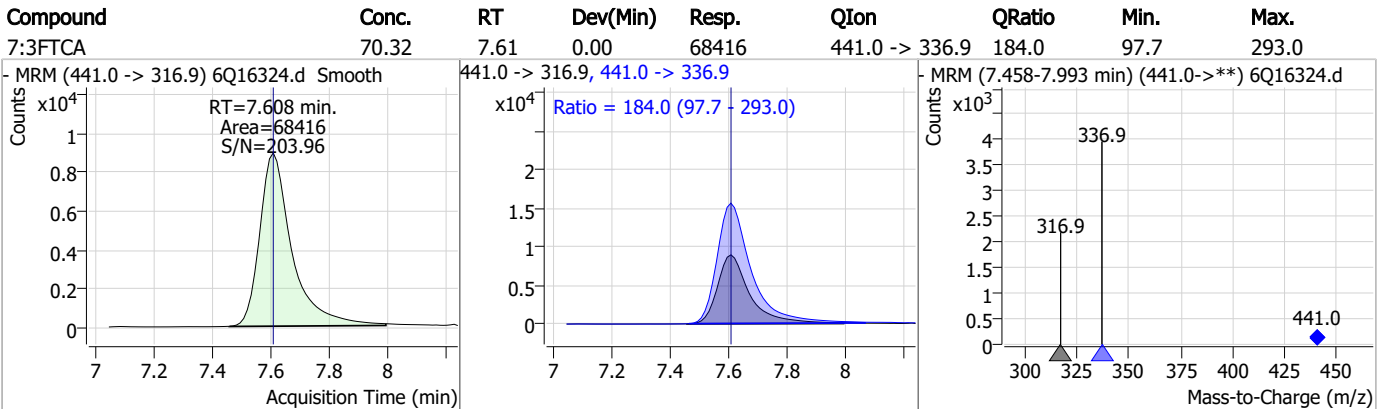
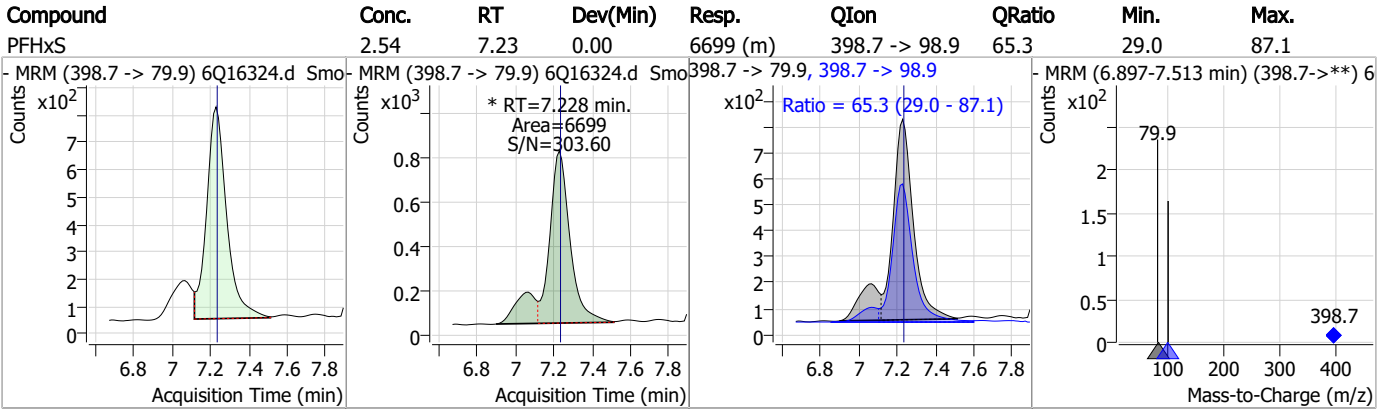
Perfluorinated Compounds by LC/MS/MS



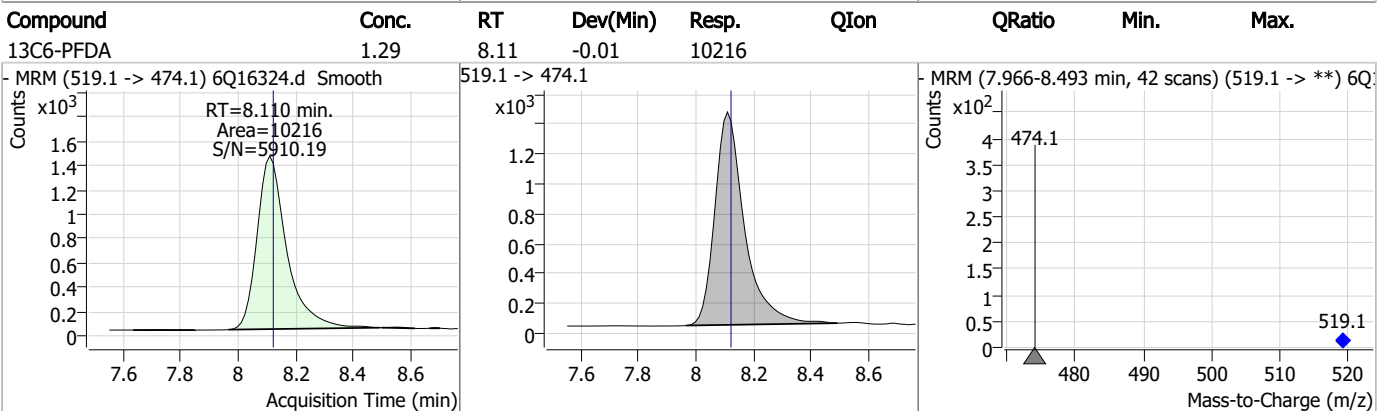
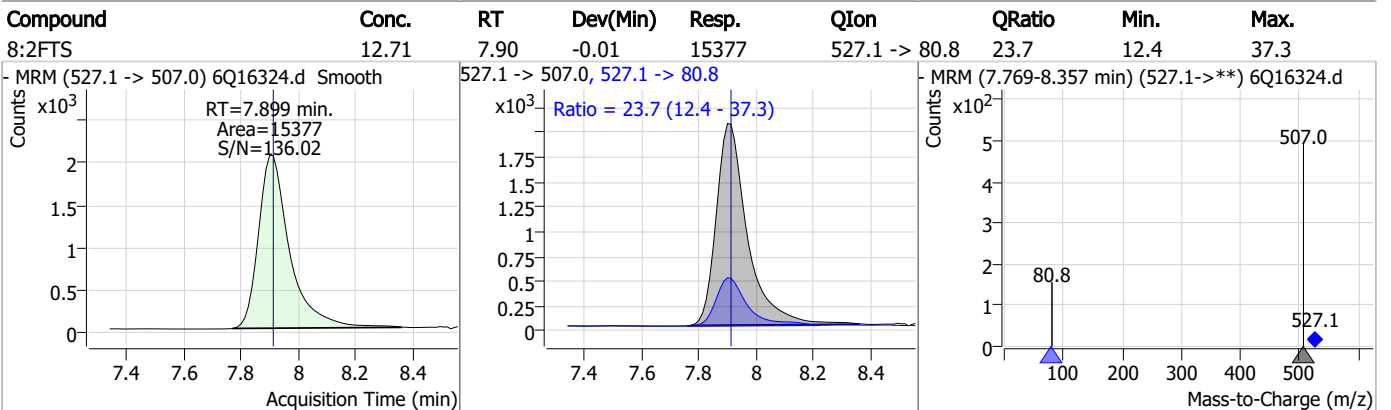
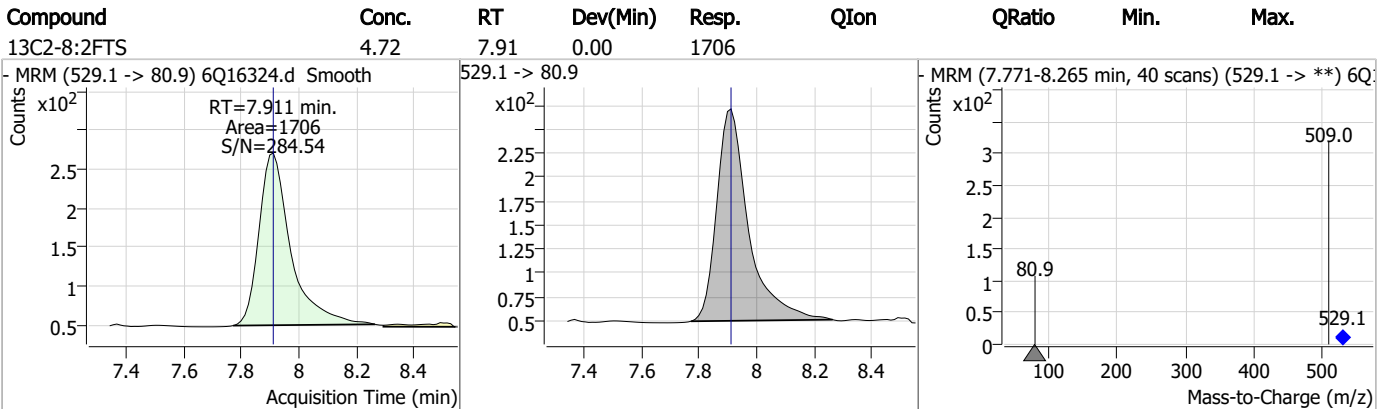
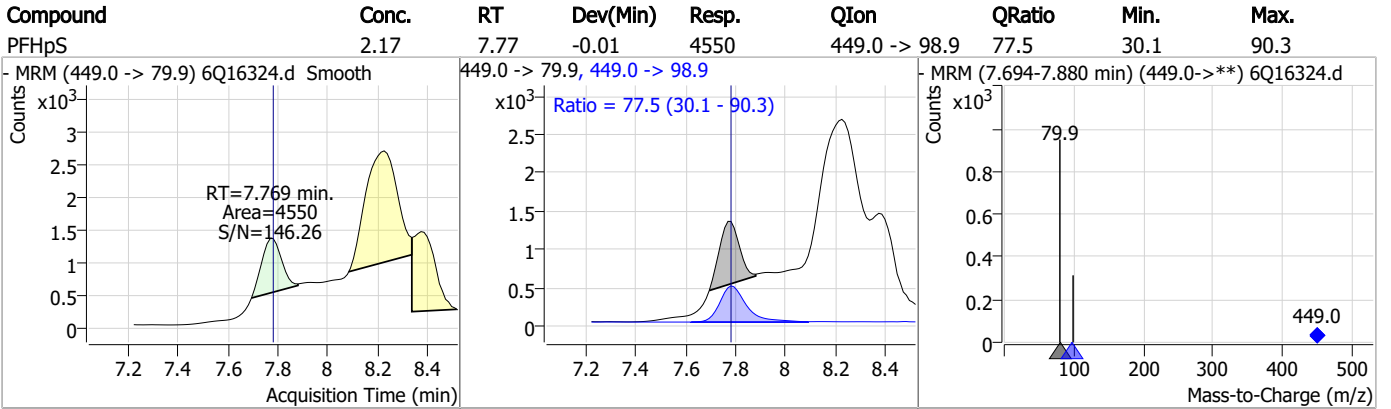
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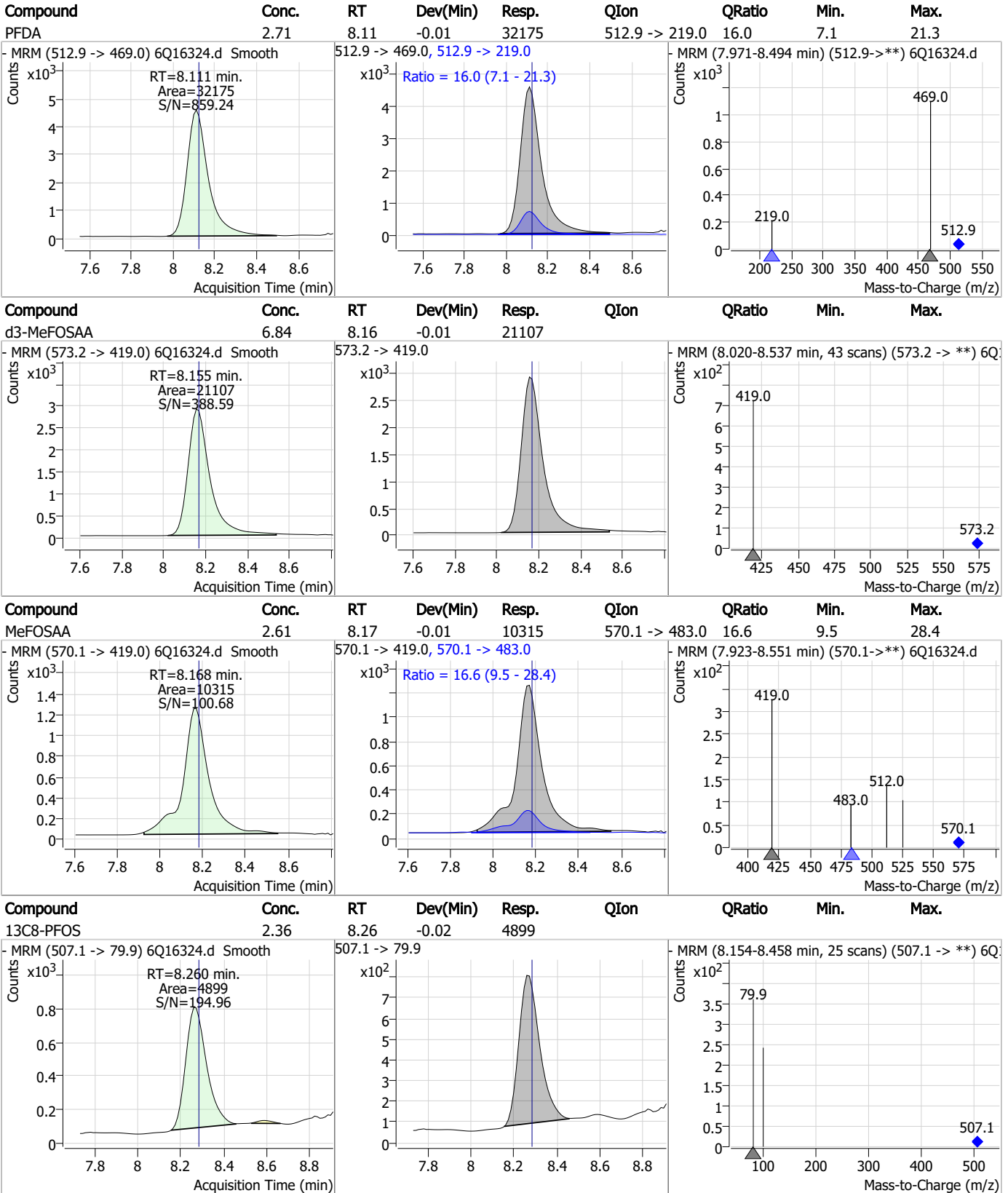
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



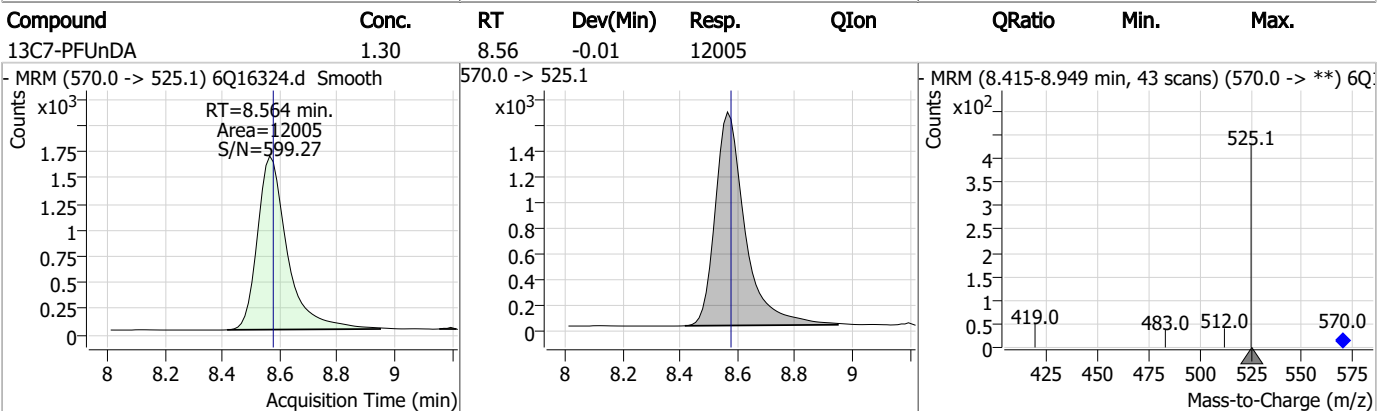
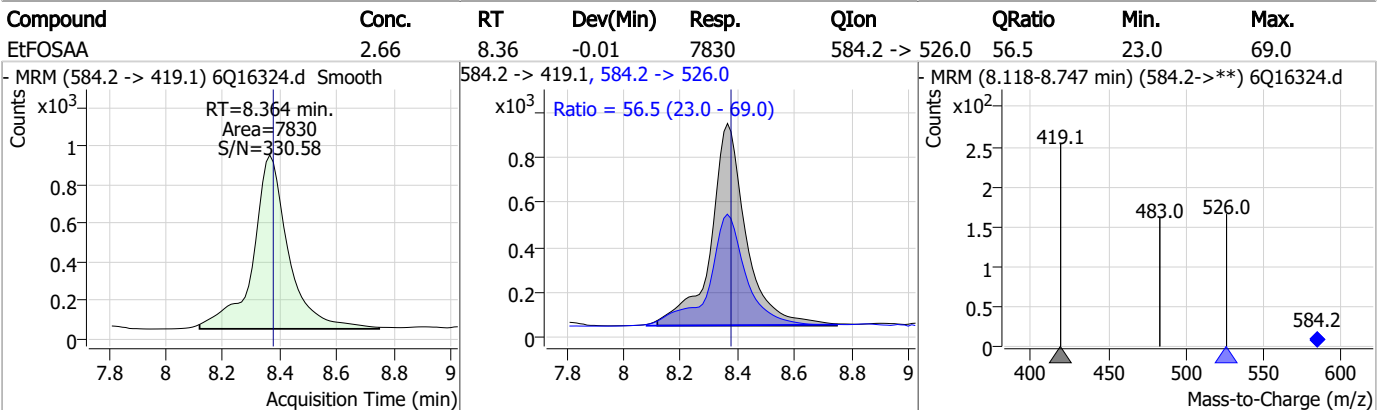
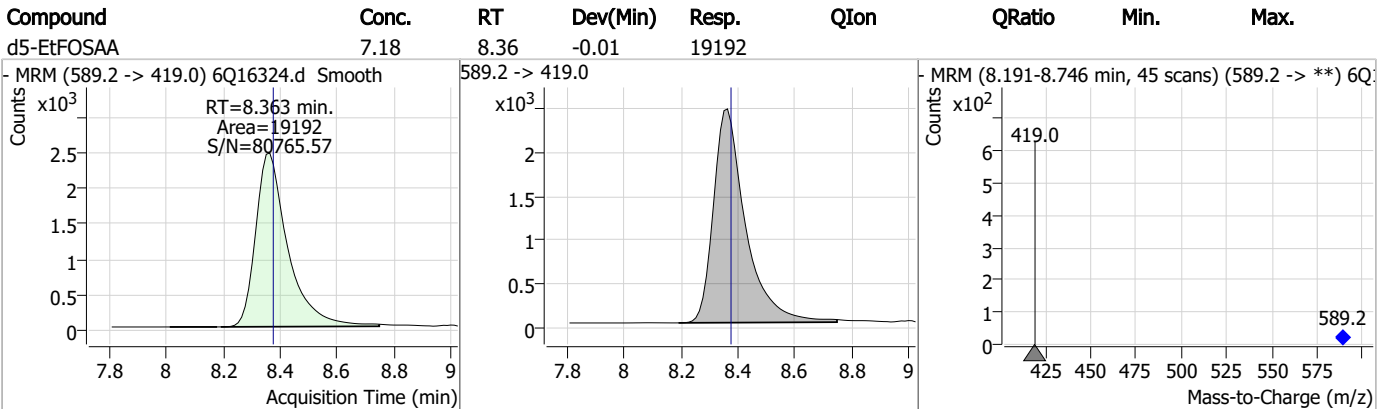
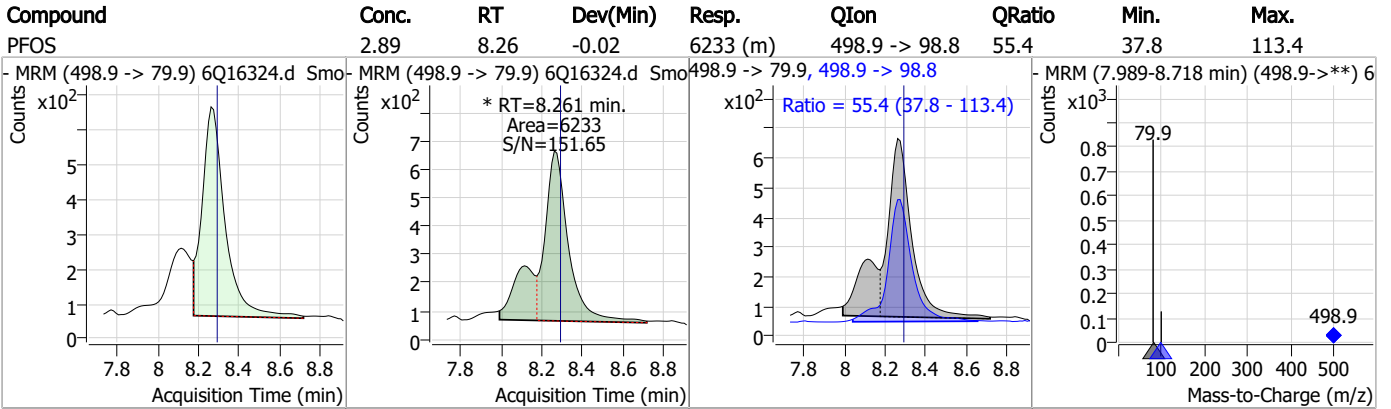
Perfluorinated Compounds by LC/MS/MS



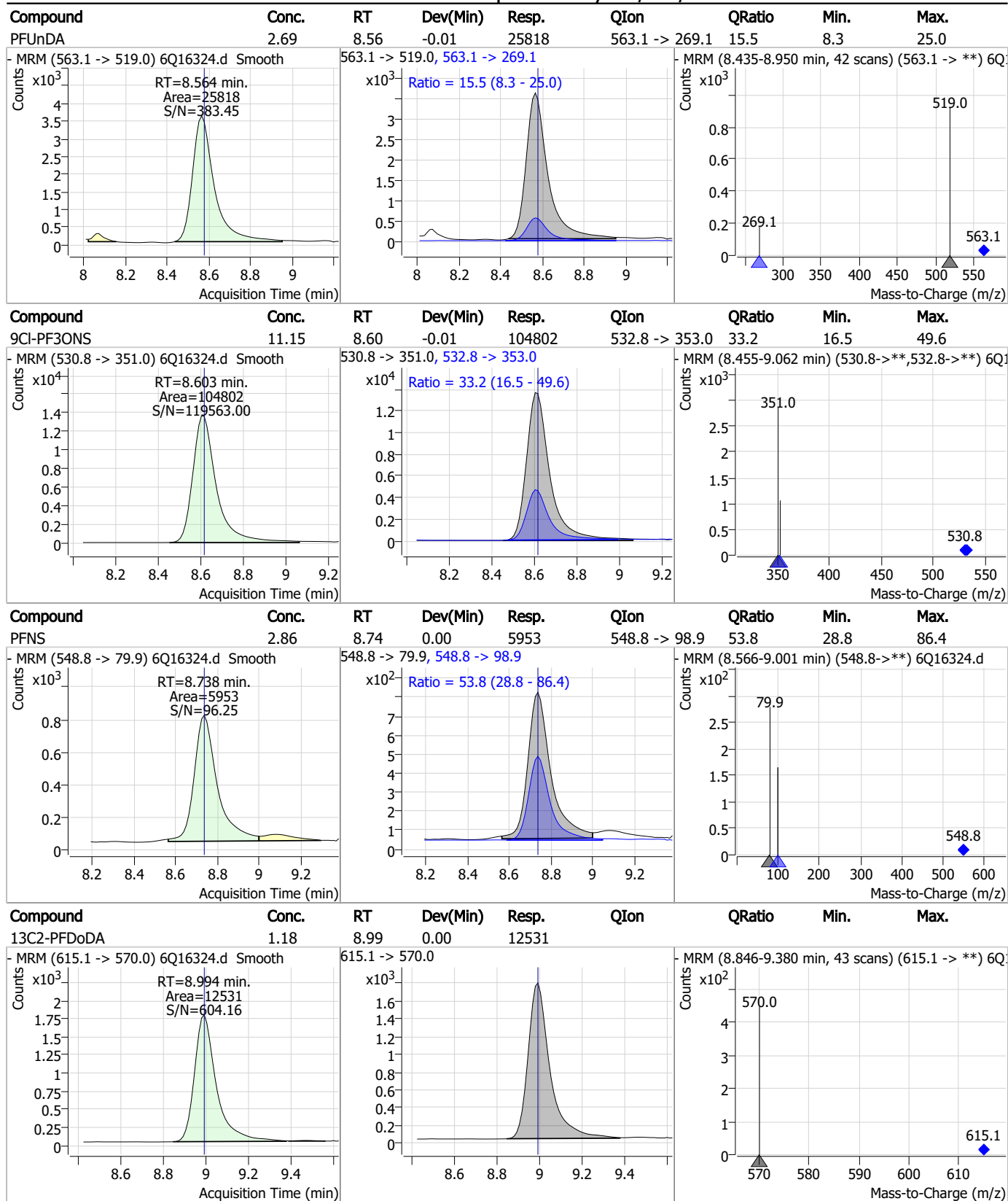
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Perfluorinated Compounds by LC/MS/MS

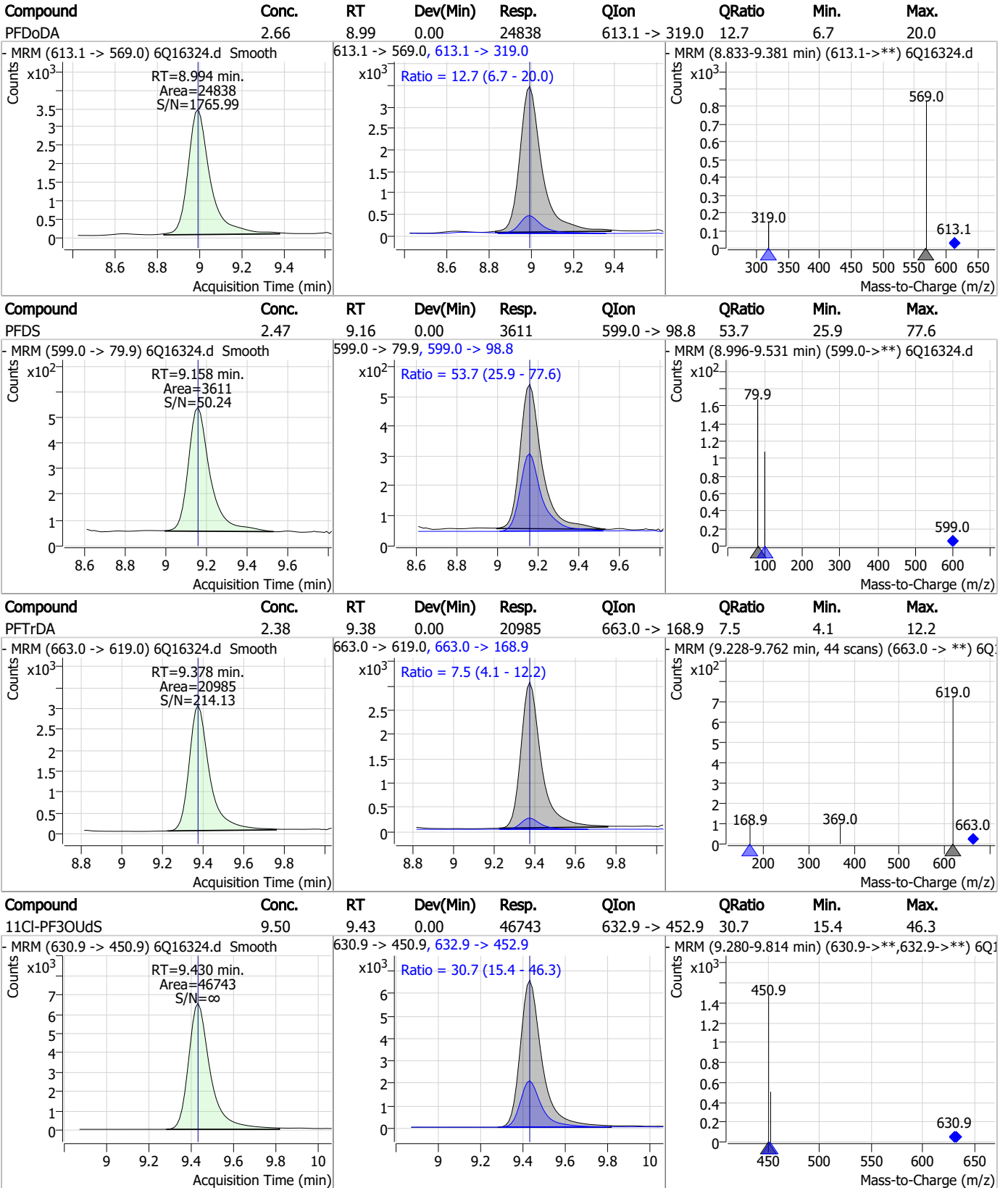


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

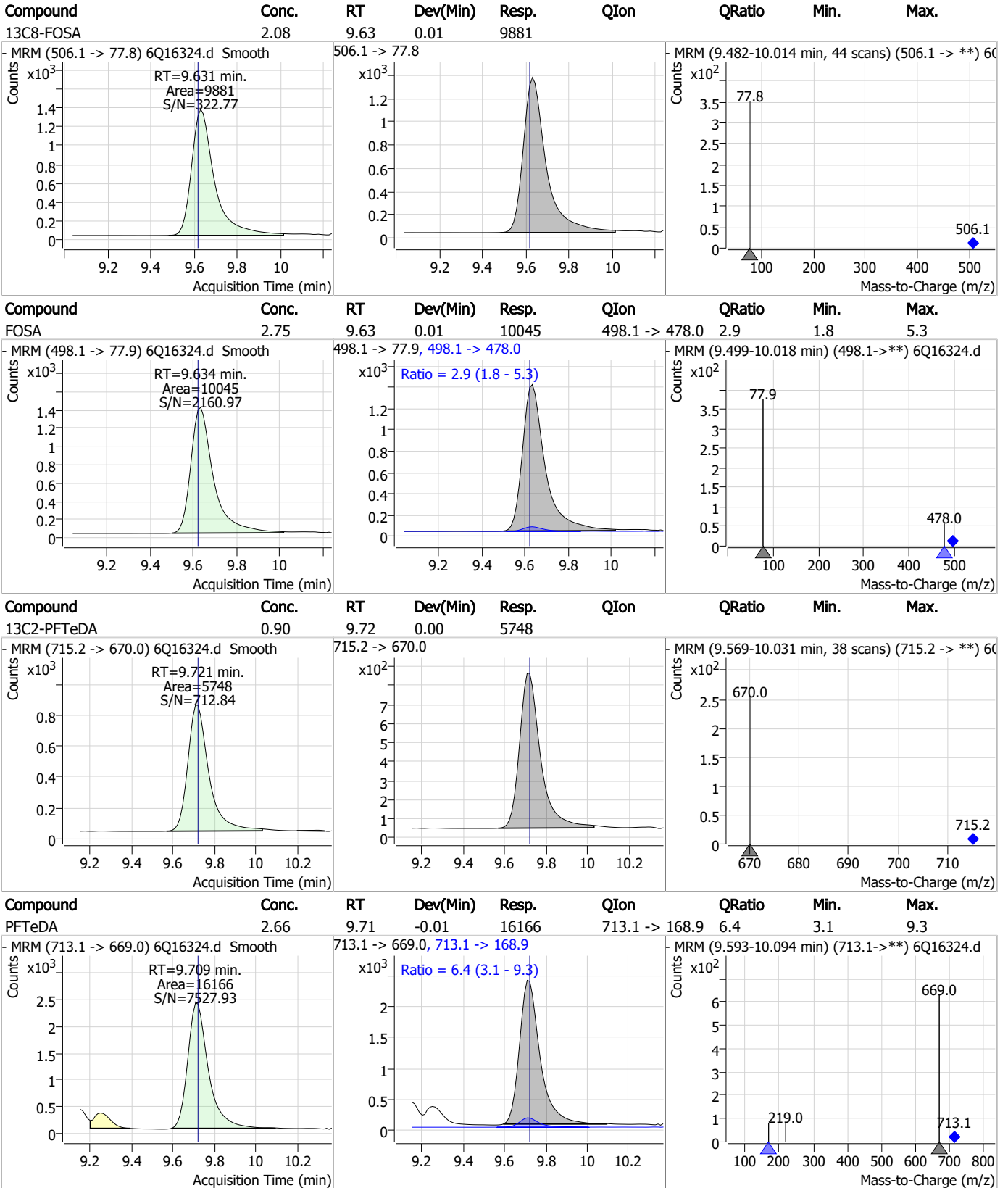


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Perfluorinated Compounds by LC/MS/MS

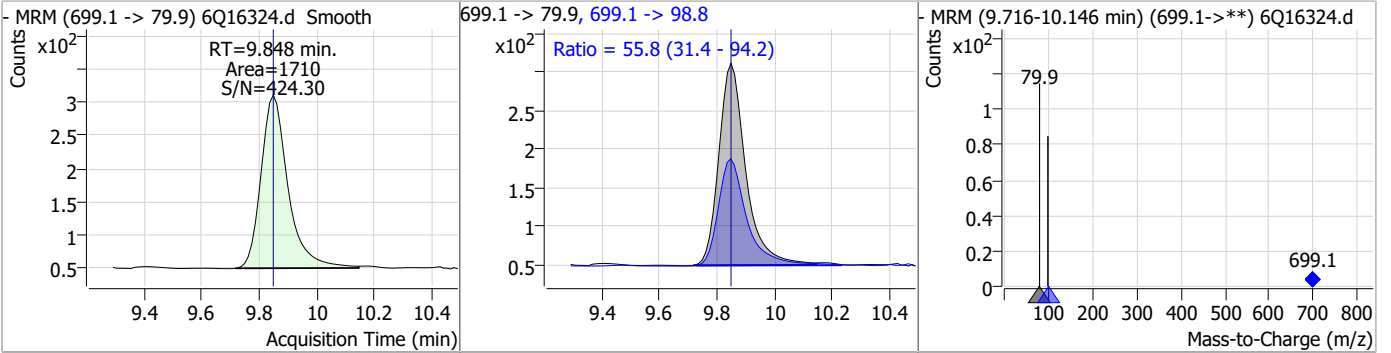


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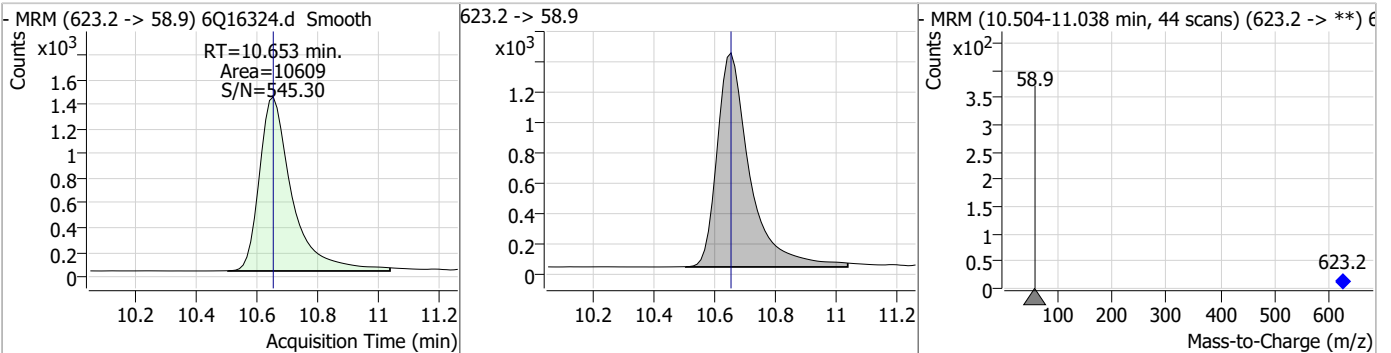
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Perfluorinated Compounds by LC/MS/MS

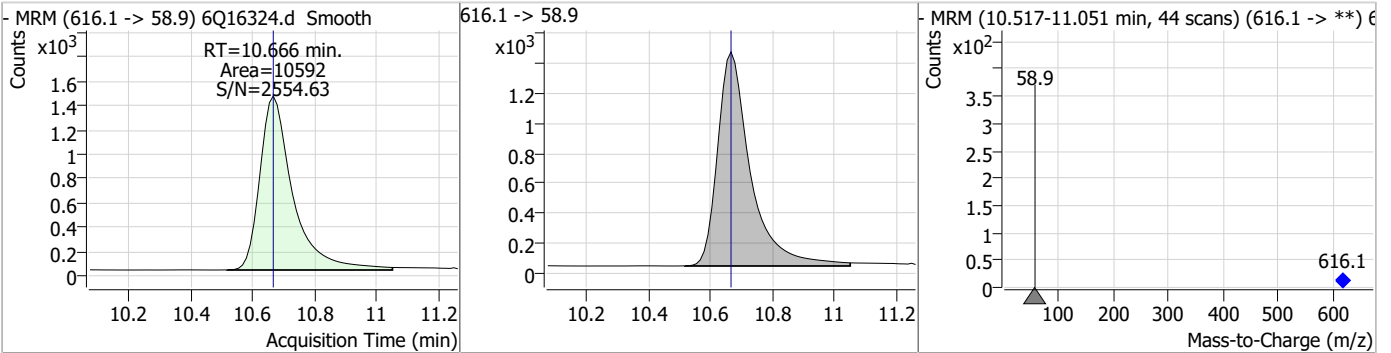
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.01	9.85	0.00	1710	699.1 -> 98.8	55.8	31.4	94.2



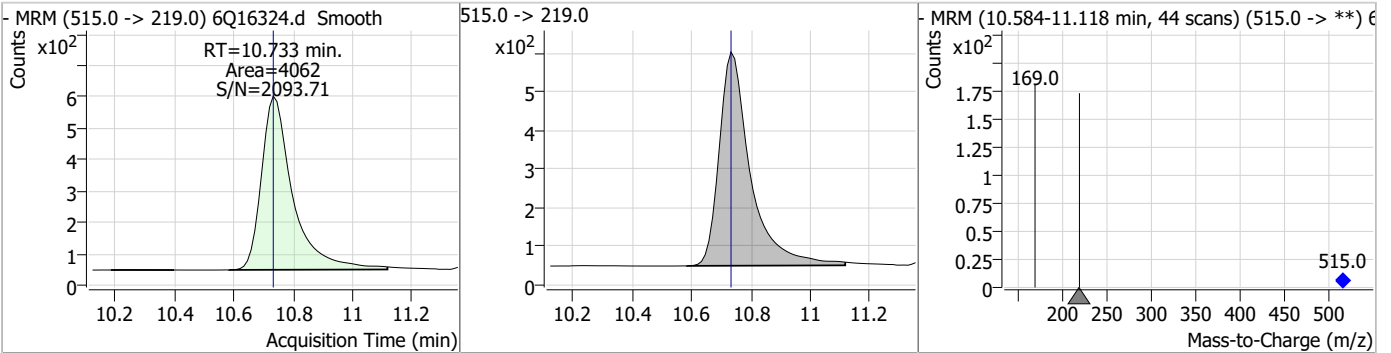
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	16.33	10.65	0.00	10609				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	26.49	10.67	0.00	10592				

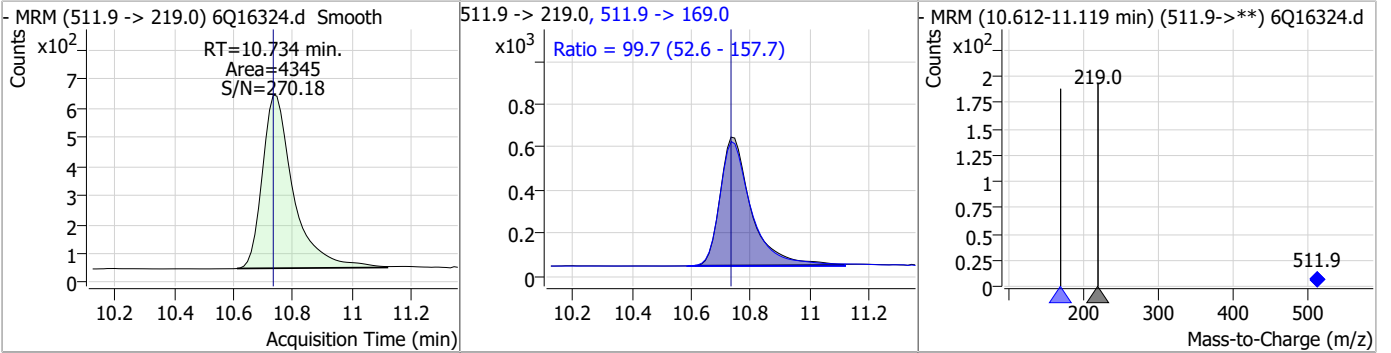


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.37	10.73	0.00	4062				

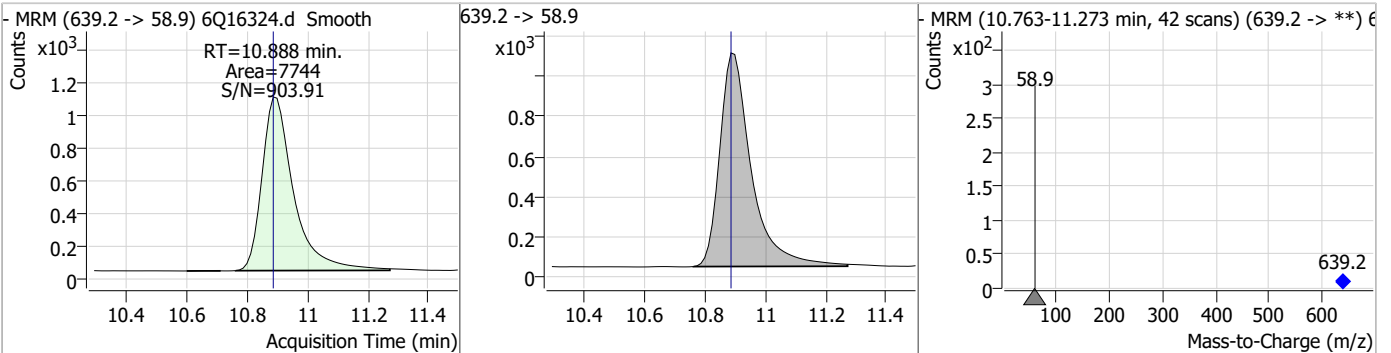


Perfluorinated Compounds by LC/MS/MS

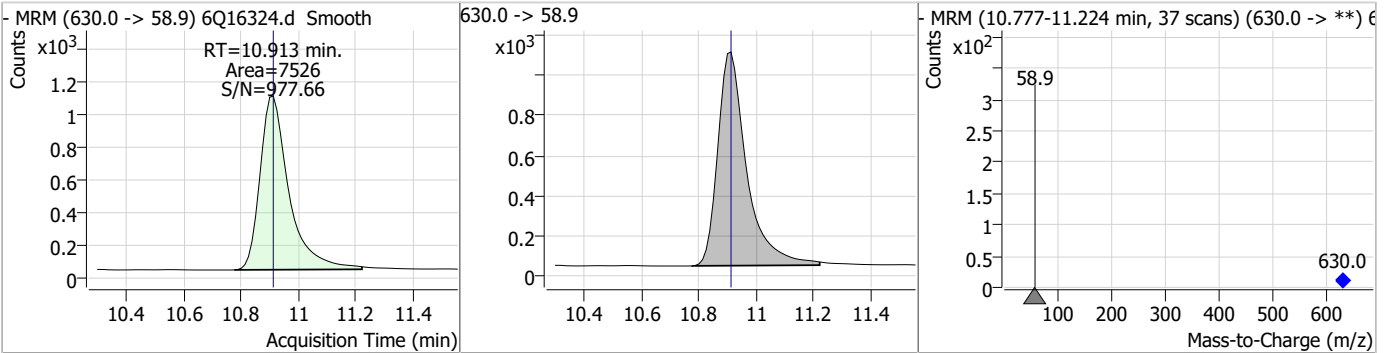
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.54	10.73	0.00	4345	511.9 -> 169.0	99.7	52.6	157.7



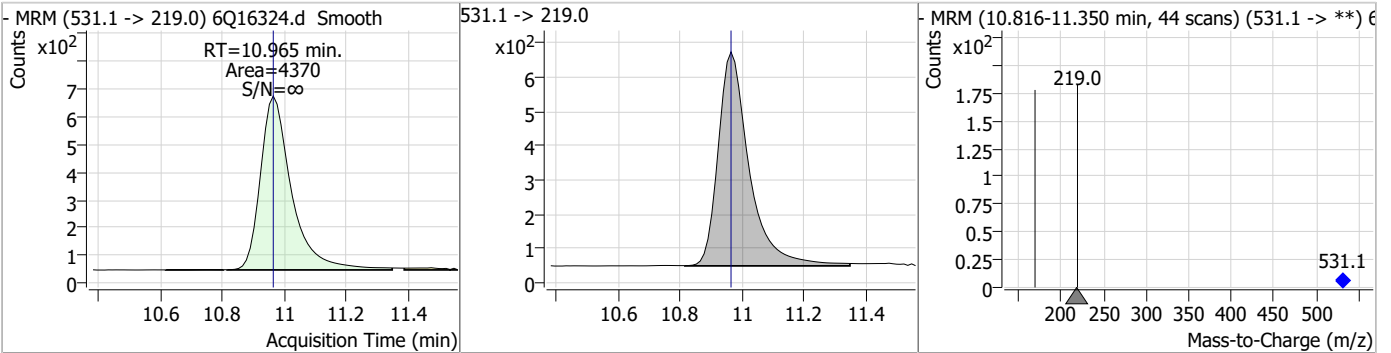
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.94	10.89	0.00	7744				



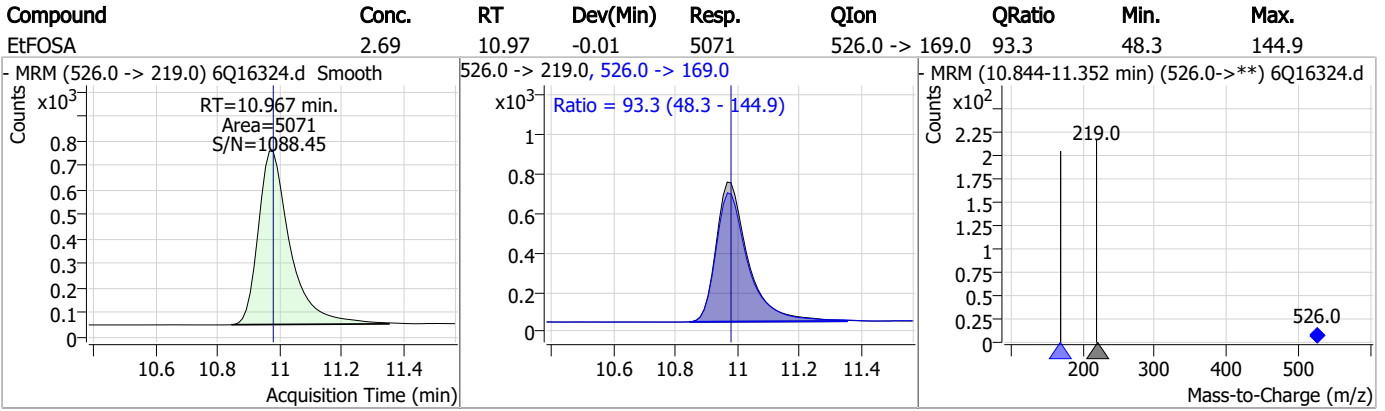
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.78	10.91	0.00	7526				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.37	10.97	0.00	4370				



Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP96279-MS Method: EPA DRAFT 1633
Lab FileID: 6Q16324.D Analyst approved: 04/10/23 14:41 Martha Valls
Injection Time: 04/07/23 21:44 Supervisor approved: 04/10/23 18:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.26	Split peak

7.4.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16327.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 10:26:34 PM
 Sample Name : op96279-dup
 Vial : P6-D8
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96279,S6Q243,540,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	64248	10.00 µg/L	0.041
M5-PFPeA	4.322	268.3 -> 223.0	29465	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	26249	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	25291	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	41494	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	11406	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	9608	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	7586	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	6883	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	3292	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	9579	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	9912	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	5995	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	4448	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	1839	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2444	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	1289	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	13052	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	10502	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	12346	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	8288	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	6466	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	3025	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	2972	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	6433	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	26570	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	4752	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	48382	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	14033	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	13712	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	23660	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	1839	5.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2444	6.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.6%		
13C2-8:2FTS	7.911	529.1 -> 80.9	1289	3.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 68.2%		
13C2-PFDoDA	8.994	615.1 -> 570.0	6883	0.62 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 49.6%		
13C2-PFTeDA	9.721	715.2 -> 670.0	3292	0.49 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 39.6%		
13C3-PFBS	5.459	302.1 -> 79.9	9912	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C3-PFHxS	7.228	402.1 -> 79.9	5995	2.20 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 = 88.2%	
13C4-PFBA	2.938	216.8 -> 171.9	64248	10.34 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFHpA	6.468	367.1 -> 322.0	25291	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C5-PFHxA	5.528	318.0 -> 273.0	26249	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C5-PFPeA	4.322	268.3 -> 223.0	29465	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C6-PFDA	8.122	519.1 -> 474.1	9608	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.0%	
13C7-PFUnDA	8.564	570.0 -> 525.1	7586	0.79 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 63.3%	
13C8-FOSA	9.631	506.1 -> 77.8	9579	2.00 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.0%	
13C8-PFOA	7.112	421.1 -> 376.0	41494	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-PFOS	8.284	507.1 -> 79.9	4448	2.12 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.9%	
13C9-PFNA	7.643	472.1 -> 427.0	11406	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.0%	
d3-MeFOSAA	8.167	573.2 -> 419.0	13052	4.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	10502	10.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.733	515.0 -> 219.0	2972	1.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 68.9%	
d5-EtFOSAA	8.363	589.2 -> 419.0	12346	4.58 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
d7-MeFOSE	10.653	623.2 -> 58.9	8288	12.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 50.6%	
d9-EtFOSE	10.888	639.2 -> 58.9	6466	14.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 59.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	3025	1.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.1%	

7.5.1
7

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.886	427.1 -> 407.0 427.1 -> 80.9	1757 331	0.54 µg/L	94
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	2.944	212.8 -> 168.9	601	0.37 µg/L	100
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	6.469	599.0 -> 98.8				
		363.1 -> 319.0	1495	0.11	µg/L	94
PFHpS	-	363.1 -> 169.0	245			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.531	449.0 -> 98.9				
		313.0 -> 269.0	4202	0.43	µg/L	99
PFHxS	-	313.0 -> 118.9	155			
		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	4.324	498.9 -> 98.8				
		263.0 -> 219.0	4563	0.73	µg/L	100
PFPeS	-	349.1 -> 79.9	-	N.D.	m	
		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

7.5.1
7

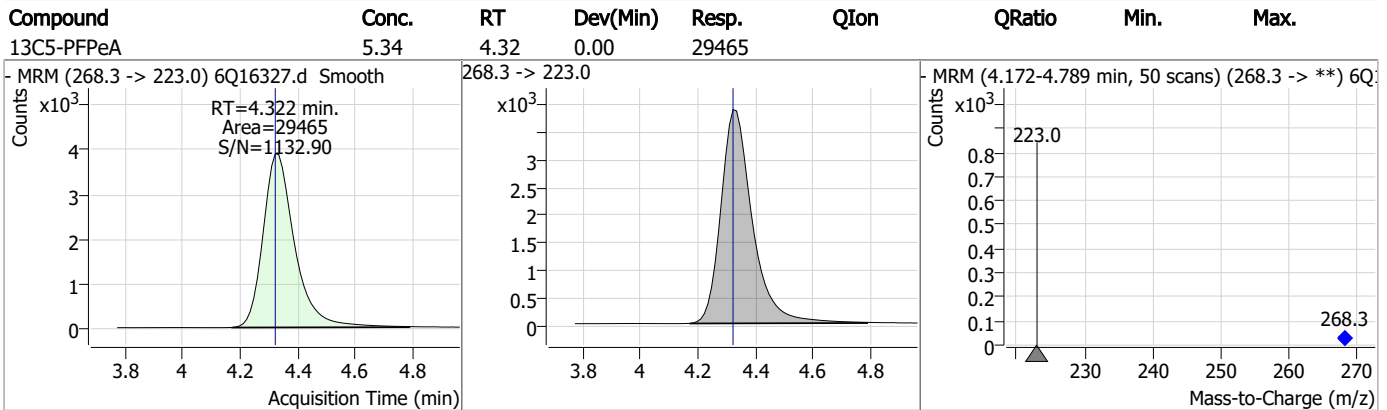
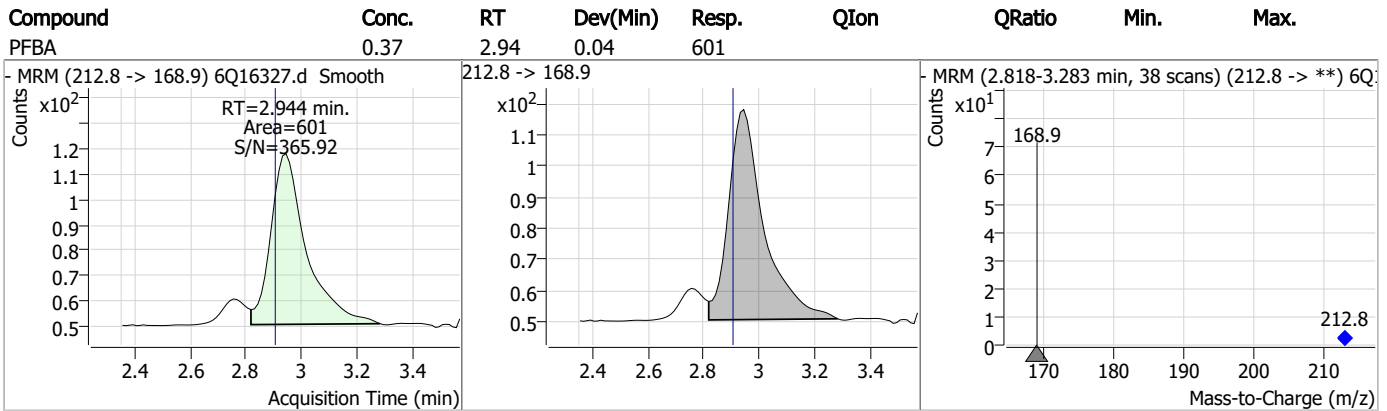
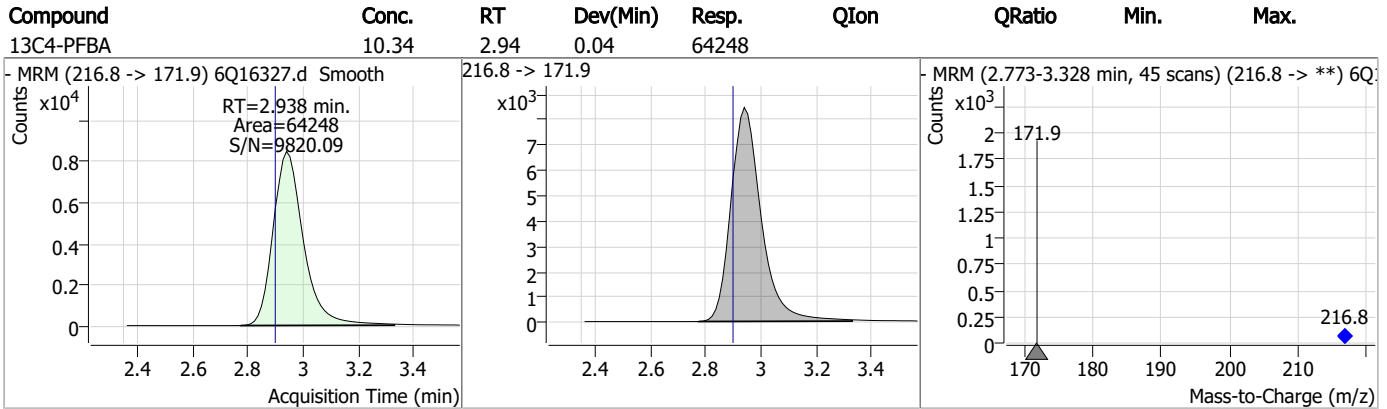
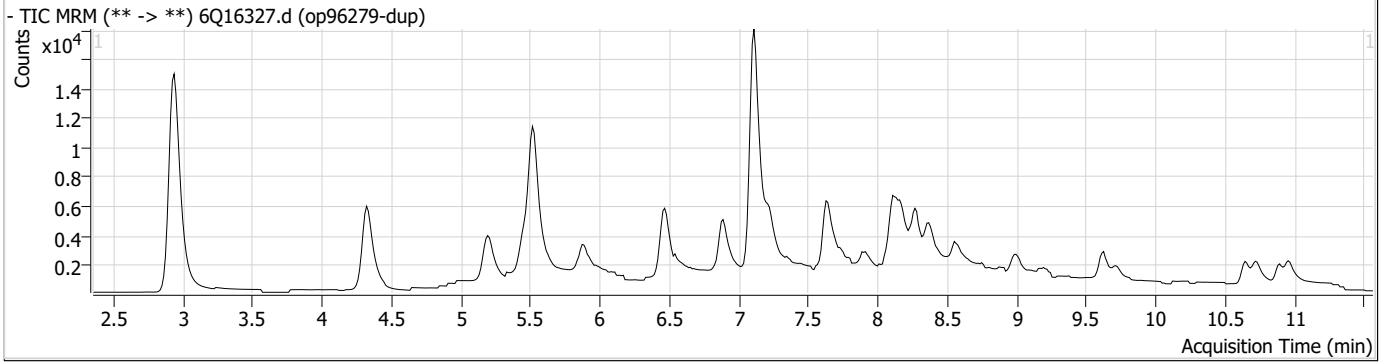
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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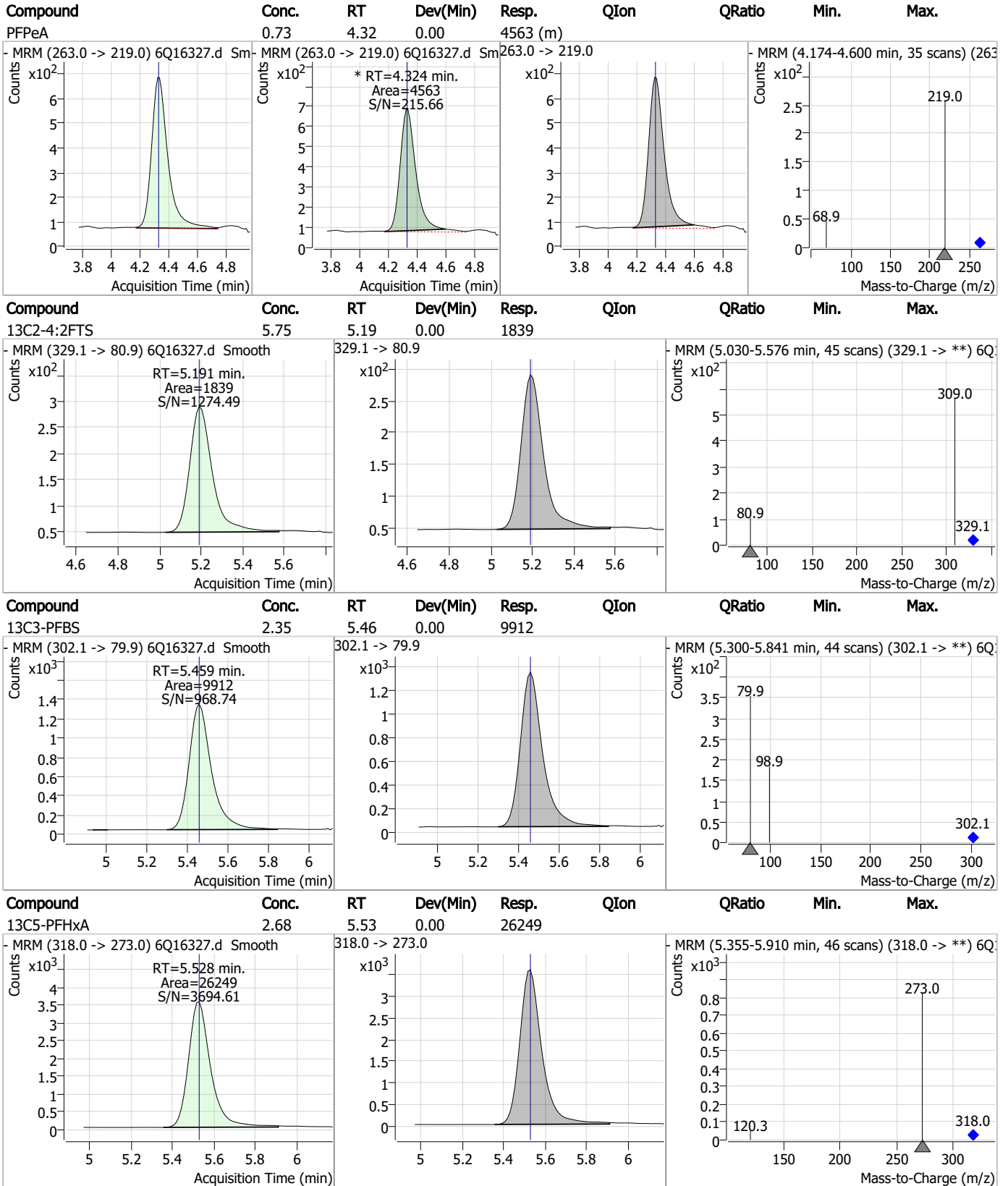
7.5.1

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

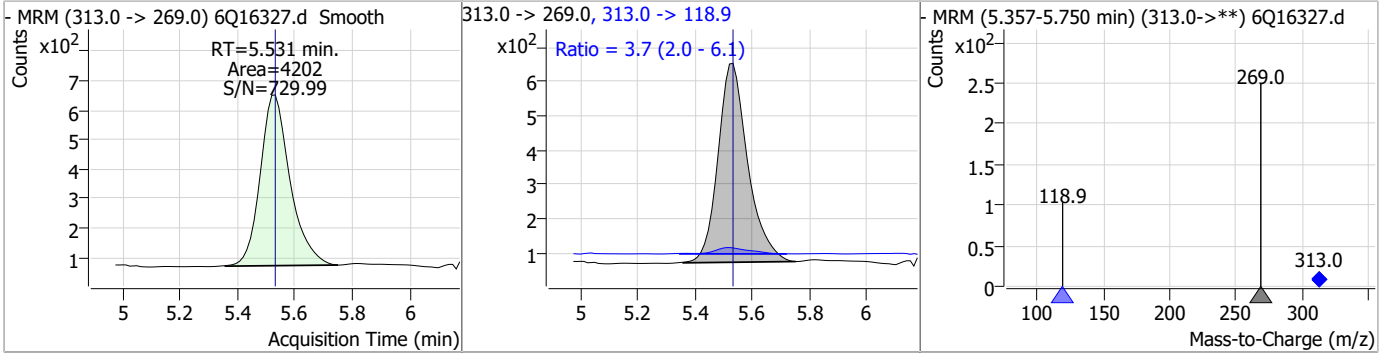


7.5.1

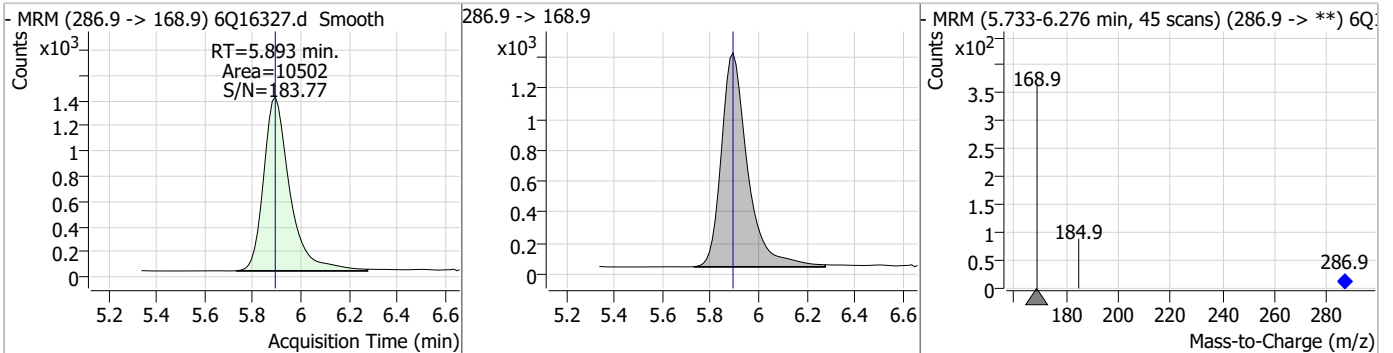
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Perfluorinated Compounds by LC/MS/MS

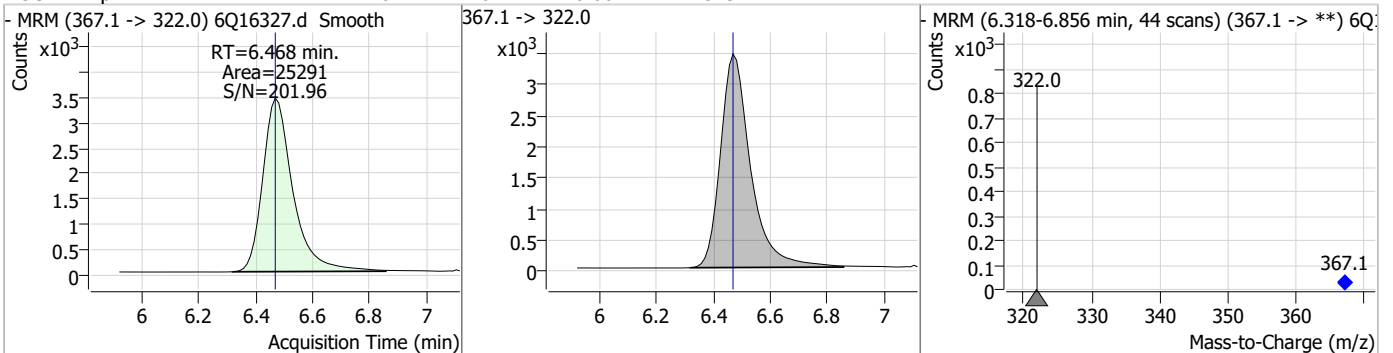
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.43	5.53	0.00	4202	313.0 -> 118.9	3.7	2.0	6.1



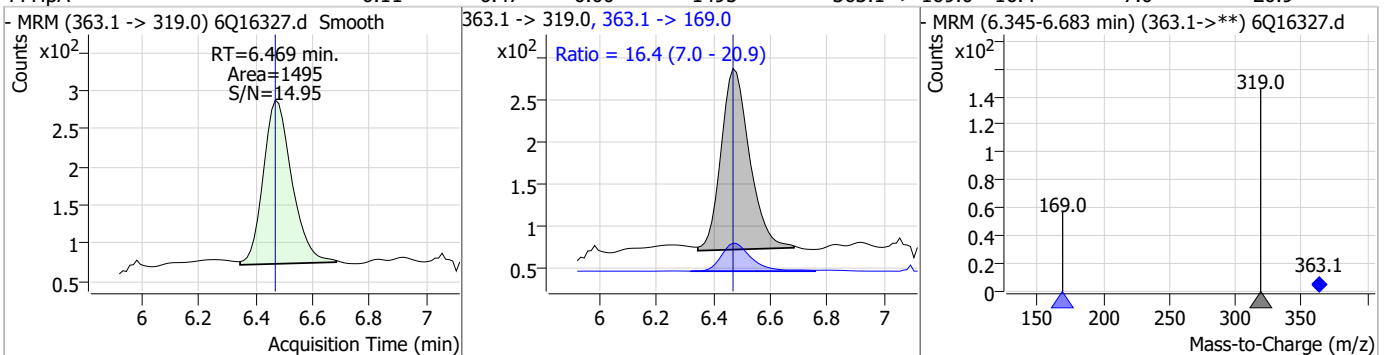
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.18	5.89	0.00	10502				



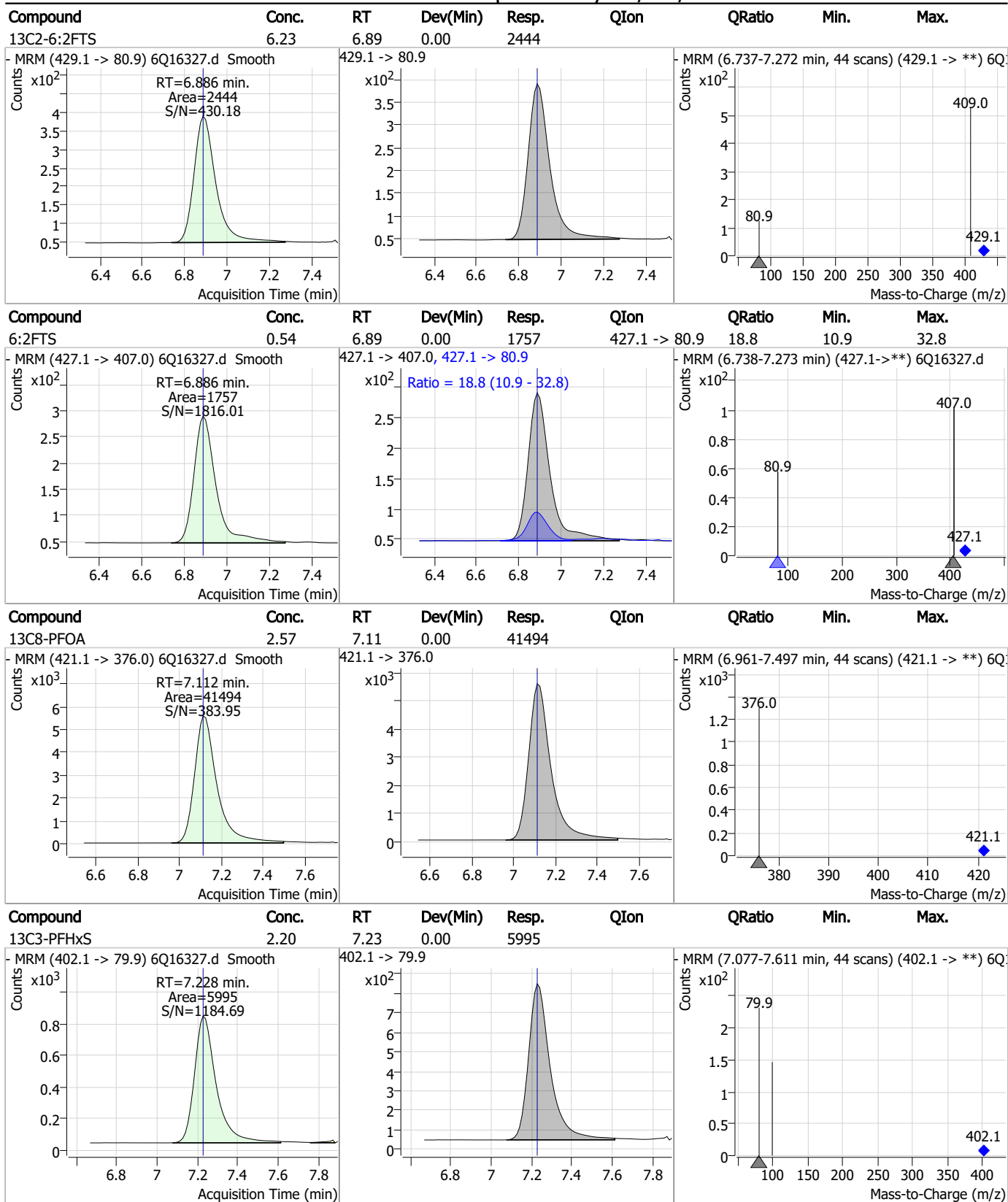
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.64	6.47	0.00	25291				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.11	6.47	0.00	1495	363.1 -> 169.0	16.4	7.0	20.9



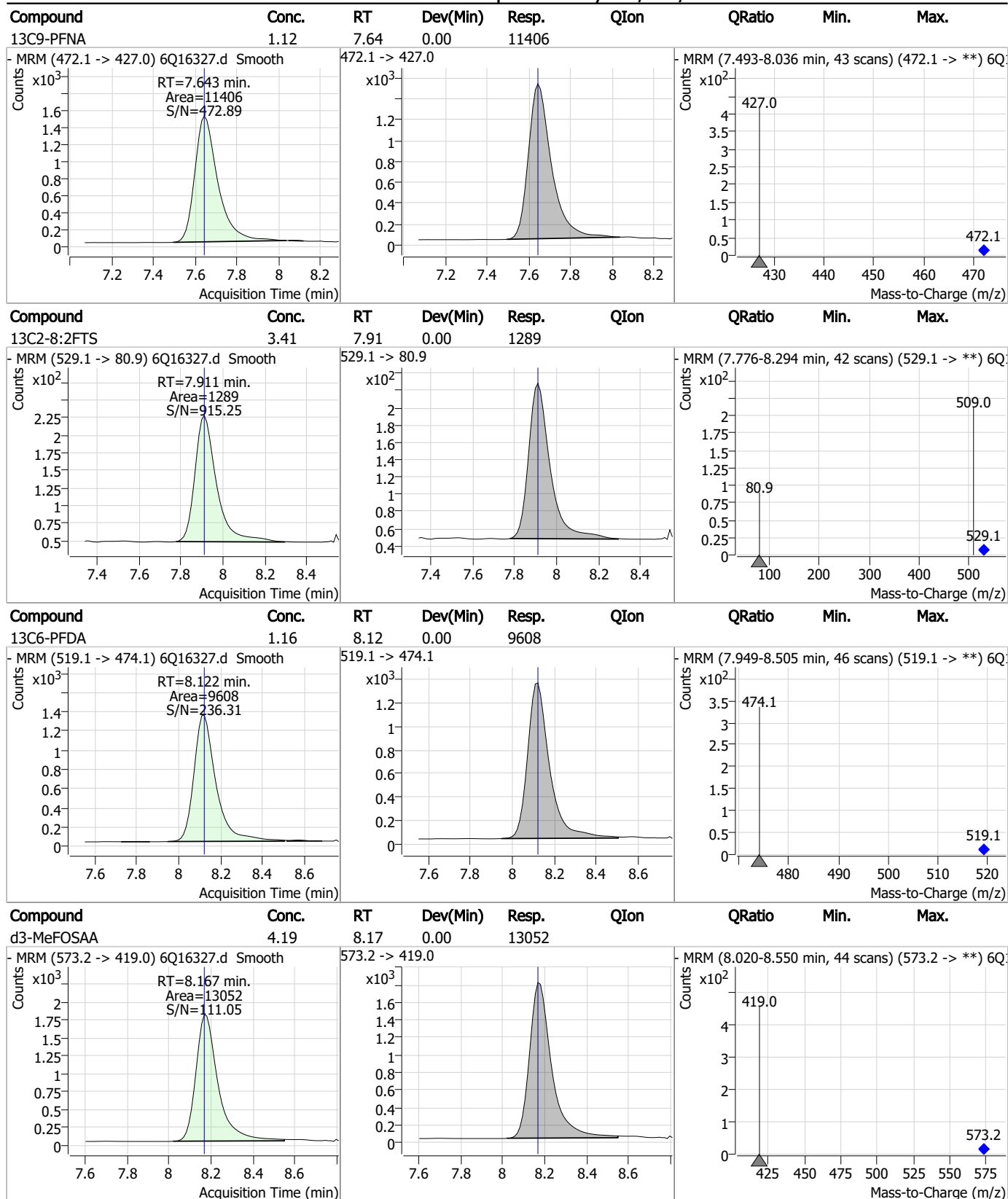
Perfluorinated Compounds by LC/MS/MS



7.5.1

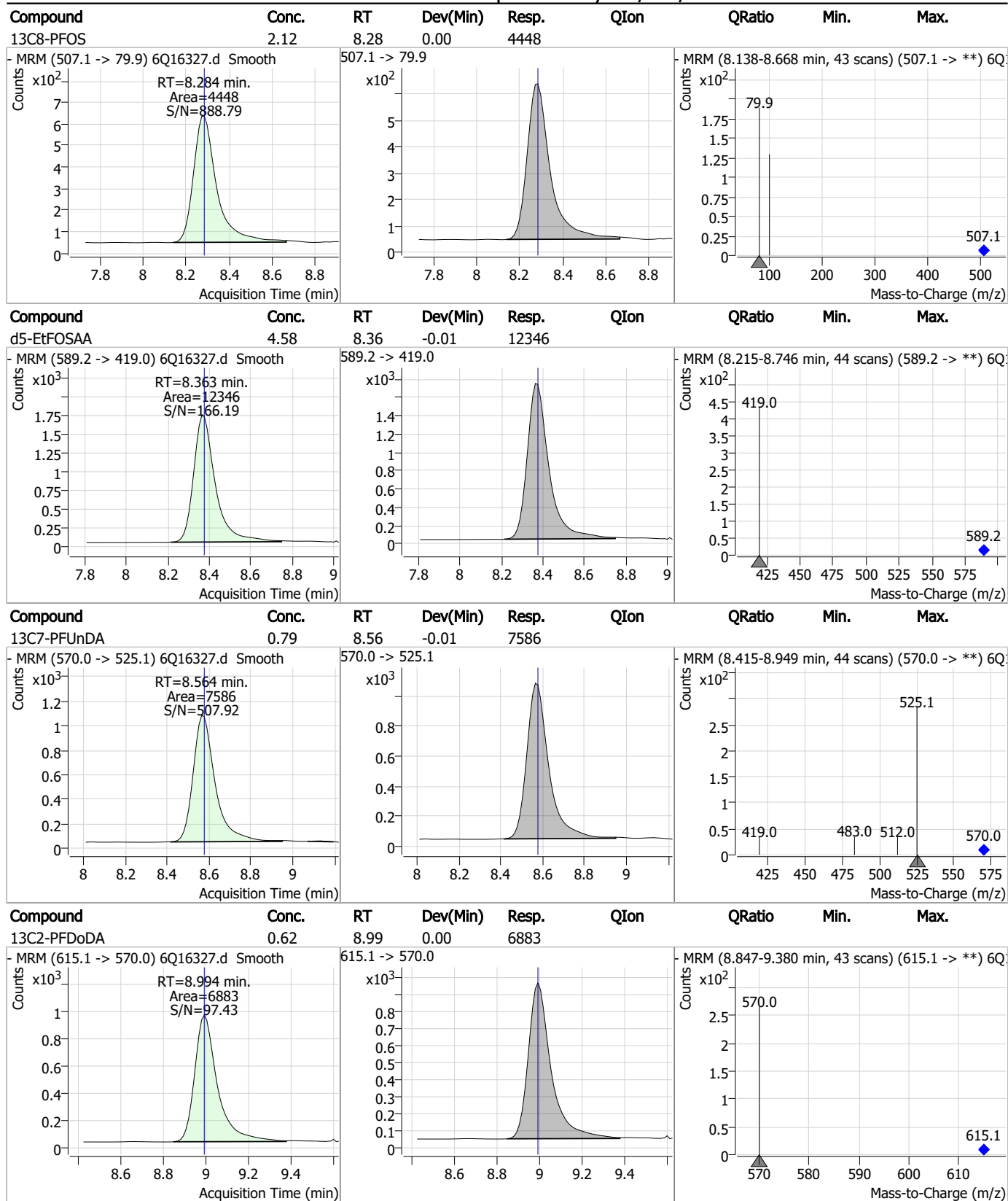
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Perfluorinated Compounds by LC/MS/MS



7.5.1
7

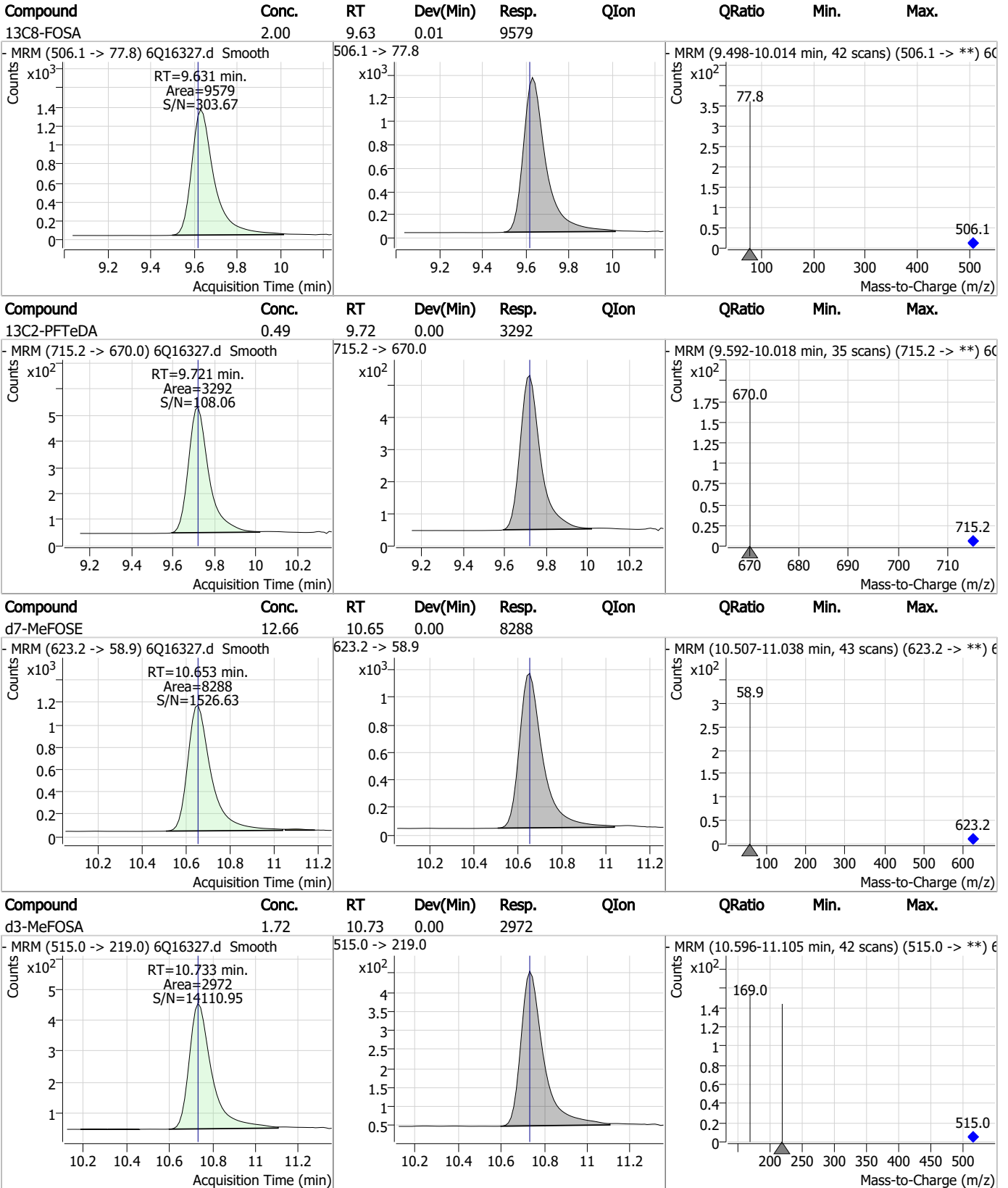
Perfluorinated Compounds by LC/MS/MS



7.5.1
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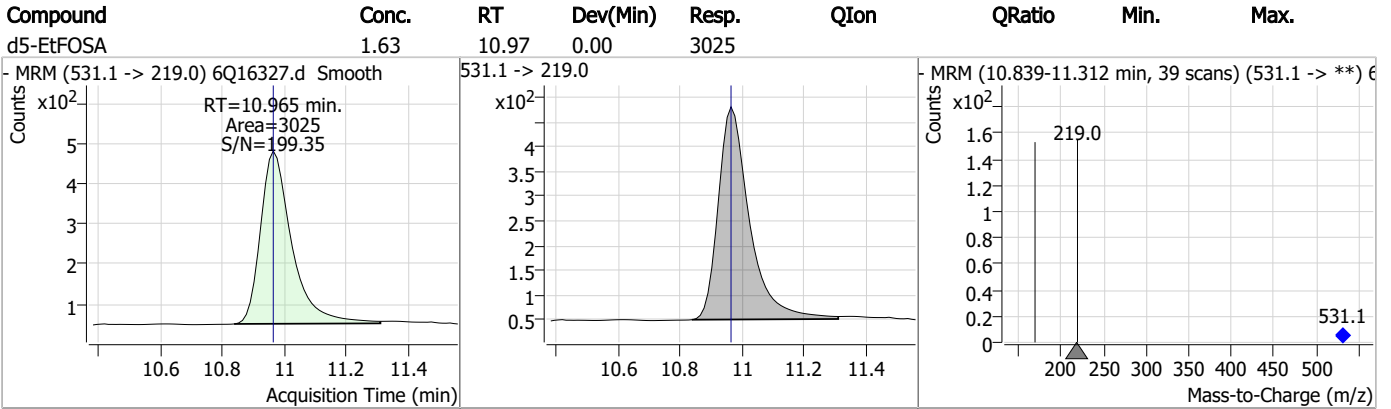
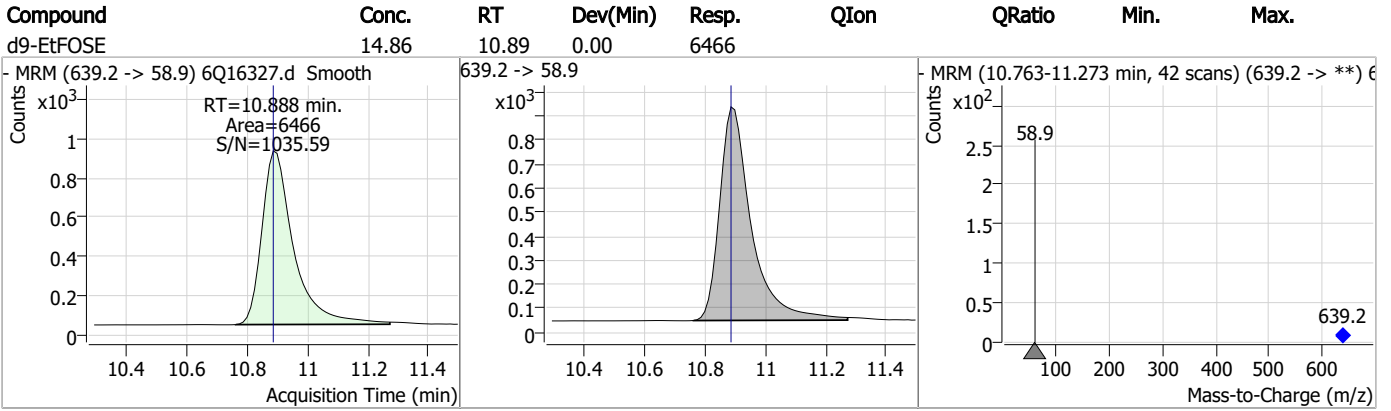
Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Manual Integration Approval Summary

Sample Number: OP96279-DUP Method: EPA DRAFT 1633
Lab FileID: 6Q16327.D Analyst approved: 04/10/23 14:41 Martha Valls
Injection Time: 04/07/23 22:26 Supervisor approved: 04/10/23 18:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.32	Poorly defined baseline

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16003.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 1:10:07 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q239 TDCA.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

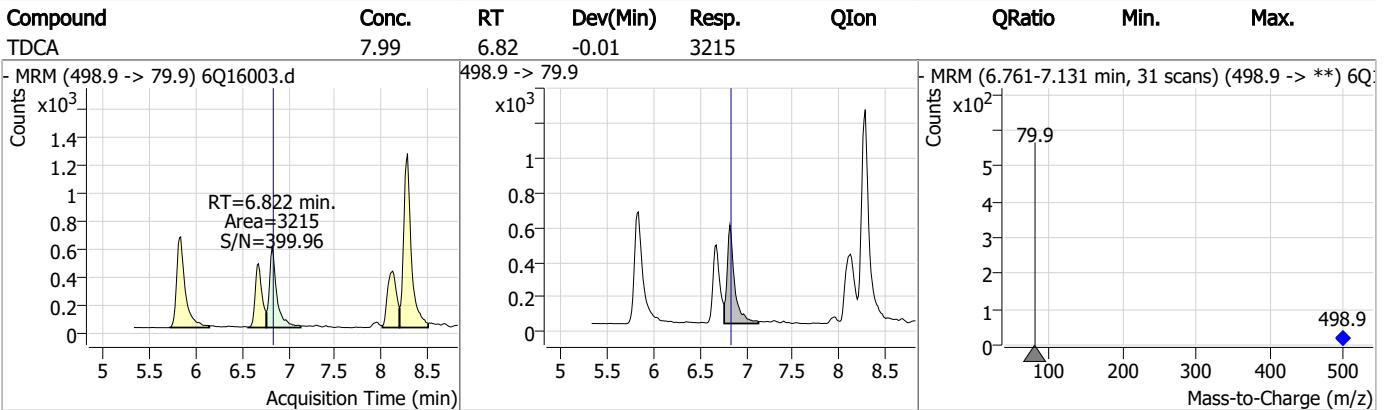
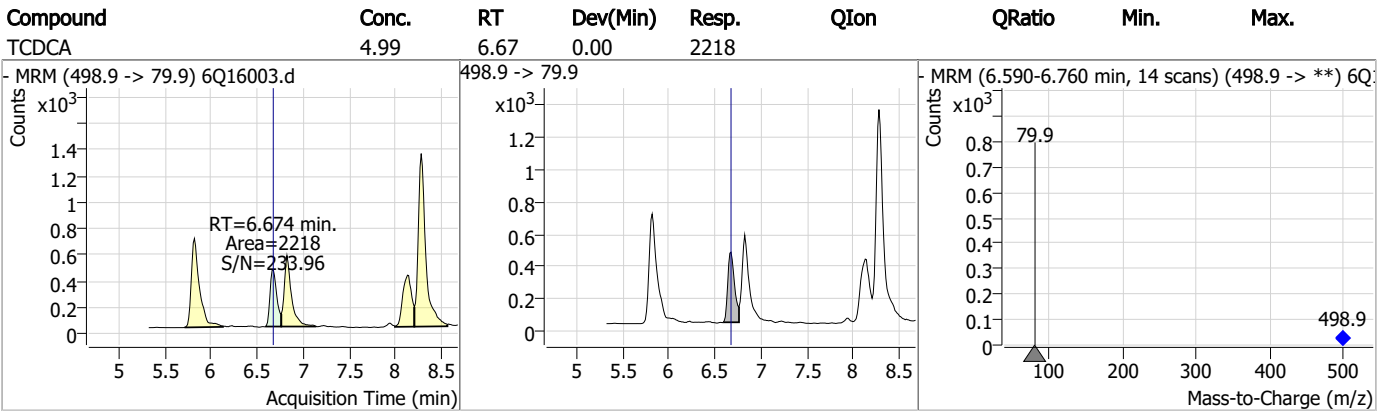
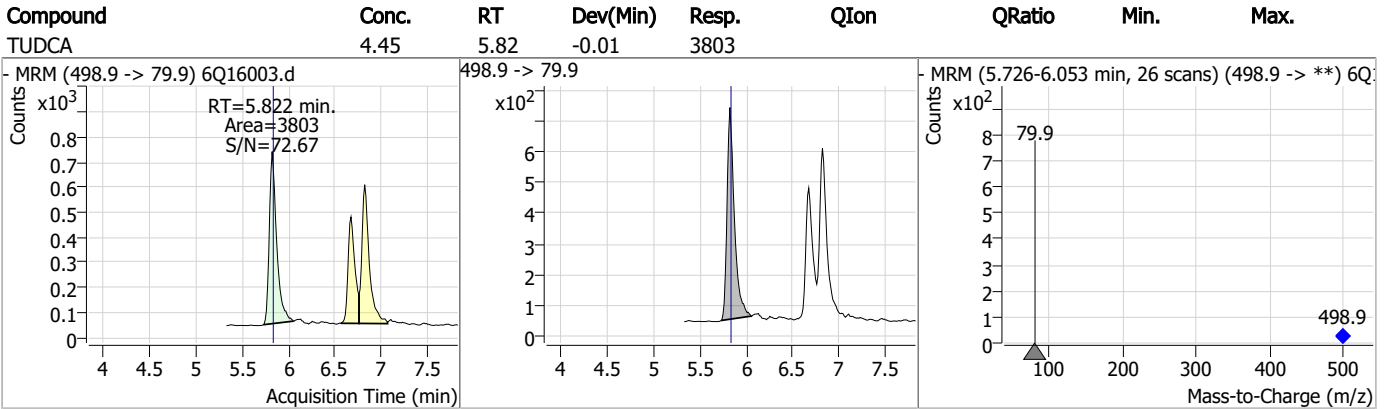
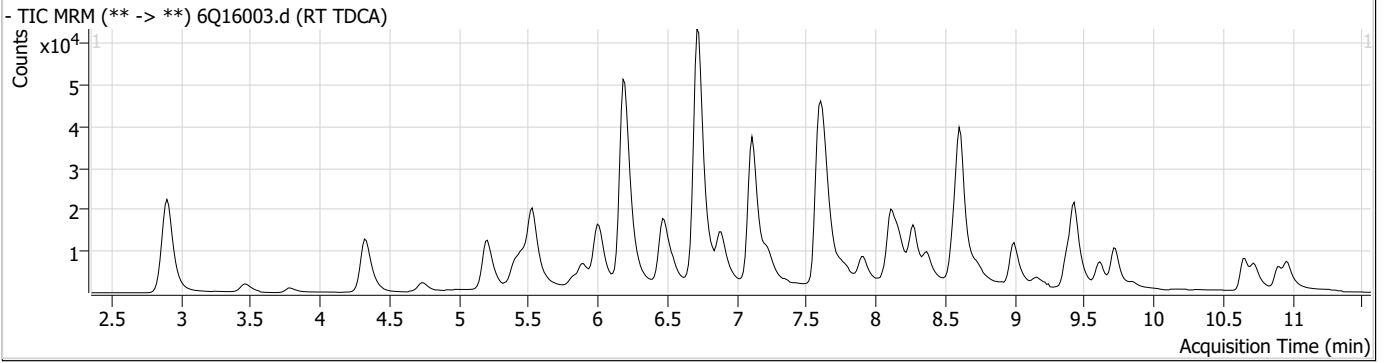
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.284	507.1 -> 79.9	9629	2.50	µg/L	-0.013	
13C4-PFOS	8.273	502.8 -> 79.9	12339	2.50	µg/L	-0.026	
System Monitoring Compounds							
13C8-PFOS	8.284	507.1 -> 79.9	9629	1.98	µg/L	-0.013	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 79.2%				
Target Compounds							
PFOS	8.286	498.9 -> 79.9 498.9 -> 98.8	9832 5600	2.99	µg/L m		77
TCDCa	6.674	498.9 -> 79.9	2218	4.99	ng/ml		100
TDCA	6.822	498.9 -> 79.9	3215	7.99	ng/ml		100
TUDCA	5.822	498.9 -> 79.9	3803	4.45	ng/ml		100

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

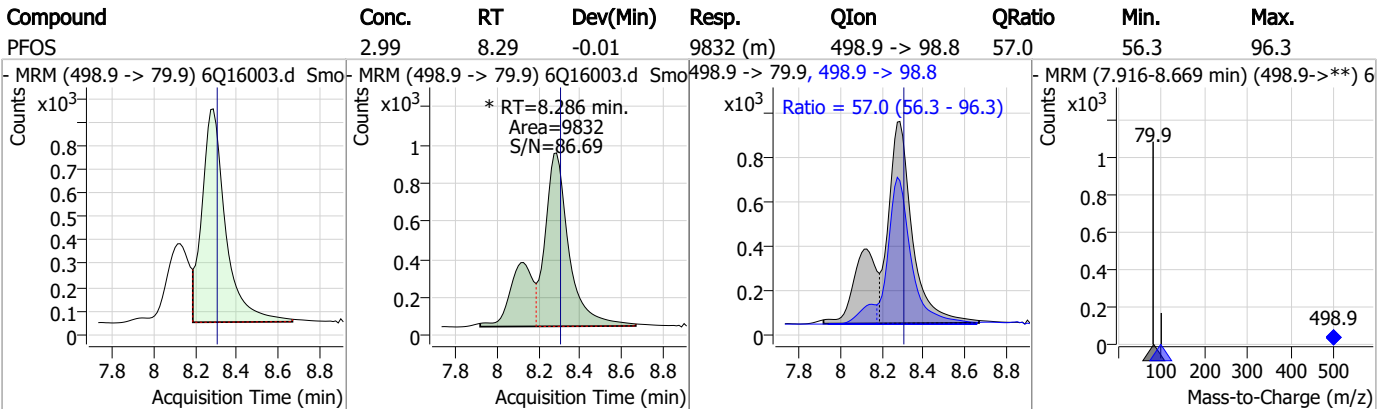
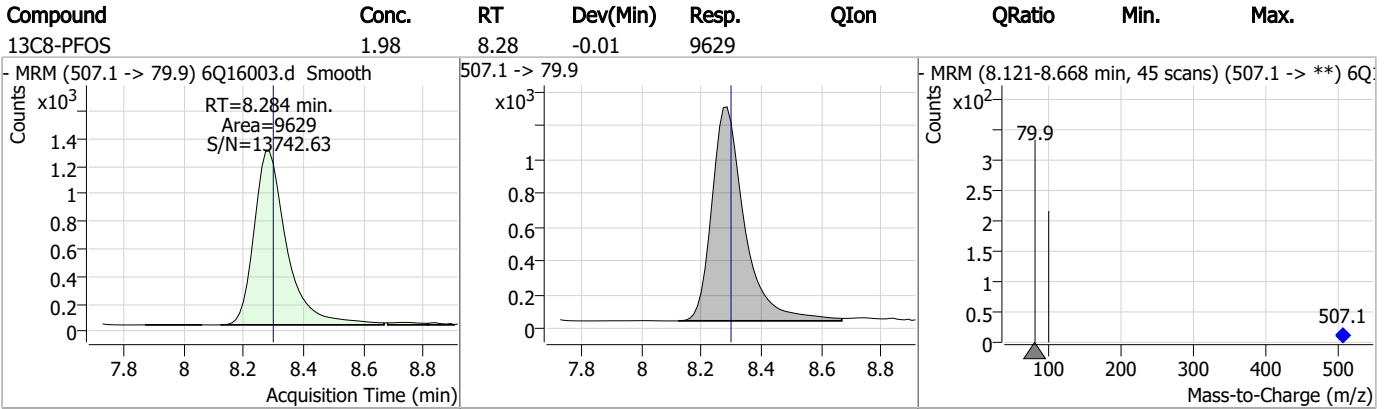
7.6.1

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1

7

Manual Integration Approval Summary

Sample Number: S6Q239-RT Method: EPA DRAFT 1633
Lab FileID: 6Q16003.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 13:10 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16004.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 1:24:05 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	79340	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	36670	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	31771	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	30780	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	51522	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	16560	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	14015	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	14611	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17267	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	10927	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15286	2.50 µg/L	0.012
M3-PFBS	5.471	302.1 -> 79.9	11778	2.50 µg/L	0.012
M3-PFHxS	7.228	402.1 -> 79.9	8039	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	6954	2.50 µg/L	0.000
M2-4:2FTS	5.204	329.1 -> 80.9	1827	5.00 µg/L	0.012
M2-6:2FTS	6.886	429.1 -> 80.9	2190	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2203	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	19668	5.00 µg/L	0.000
M3-HFPO-DA	5.905	286.9 -> 168.9	13042	10.00 µg/L	0.012
M5-EtFOSAA	8.363	589.2 -> 419.0	17264	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	20320	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	12907	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5828	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5512	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8156	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	33984	5.00 µg/L	0.000
18O2-PFHxS	7.239	403.0 -> 83.9	5599	2.50 µg/L	0.012
13C4-PFOA	7.125	417.1 -> 372.0	63115	2.50 µg/L	0.013
13C2-PFDA	8.123	515.1 -> 470.1	18604	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	16084	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	30863	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	1827	4.85 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2190	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2203	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17267	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFTeDA	9.721	715.2 -> 670.0	10927	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C3-PFBS	5.471	302.1 -> 79.9	11778	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C3-PFHxS	7.228	402.1 -> 79.9	8039	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	2.897	216.8 -> 171.9	79340	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.468	367.1 -> 322.0	30780	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFHxA	5.528	318.0 -> 273.0	31771	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	4.322	268.3 -> 223.0	36670	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C6-PFDA	8.122	519.1 -> 474.1	14015	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.564	570.0 -> 525.1	14611	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C8-FOSA	9.631	506.1 -> 77.8	15286	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOA	7.112	421.1 -> 376.0	51522	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.284	507.1 -> 79.9	6954	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C9-PFNA	7.643	472.1 -> 427.0	16560	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.3%	
d3-MeFOSAA	8.167	573.2 -> 419.0	19668	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.905	286.9 -> 168.9	13042	9.69 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d3-MeFOSA	10.733	515.0 -> 219.0	5512	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
d5-EtFOSAA	8.363	589.2 -> 419.0	17264	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d7-MeFOSE	10.653	623.2 -> 58.9	20320	24.48 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d9-EtFOSE	10.888	639.2 -> 58.9	12907	23.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
d5-EtFOSA	10.965	531.1 -> 219.0	5828	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0	175132	48.94 µg/L	98
		327.1 -> 80.9	43160		
6:2FTS	6.886	427.1 -> 407.0	158479	54.04 µg/L	97
		427.1 -> 80.9	32234		
8:2FTS	7.911	527.1 -> 507.0	85729	54.86 µg/L	99
		527.1 -> 80.8	21036		
EtFOSAA	8.376	584.2 -> 419.1	35927	13.57 µg/L	m 87
		584.2 -> 526.0	19621		
FOSA	9.621	498.1 -> 77.9	177828	31.49 µg/L	m 100
		498.1 -> 478.0	6358		
MeFOSAA	8.168	570.1 -> 419.0	46426	12.59 µg/L	96
		570.1 -> 483.0	7851		
PFBA	2.906	212.8 -> 168.9	107464	53.59 µg/L	100
PFBS	5.460	298.7 -> 79.9	56640	12.26 µg/L	96
		298.7 -> 98.8	24797		
PFDA	8.123	512.9 -> 469.0	206513	12.66 µg/L	99
		512.9 -> 219.0	30373		
PFDoDA	8.994	613.1 -> 569.0	173093	13.46 µg/L	100
		613.1 -> 319.0	23324		
PFDS	9.158	599.0 -> 79.9	23128	11.13 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	12833			
PFHpA	6.469	363.1 -> 319.0	249914	14.44	µg/L	98
		363.1 -> 169.0	32928			
PFHpS	7.794	449.0 -> 79.9	33686	11.33	µg/L	96
		449.0 -> 98.9	19136			
PFHxA	5.531	313.0 -> 269.0	148862	12.69	µg/L	99
		313.0 -> 118.9	6442			
PFHxS	7.228	398.7 -> 79.9	41193	11.65	µg/L	m 98
		398.7 -> 98.9	23399			
PFNA	7.505	463.0 -> 419.0	326134	30.23	µg/L	m 100
		463.0 -> 219.0	66937			
PFNS	8.738	548.8 -> 79.9	37468	12.69	µg/L	94
		548.8 -> 98.9	19841			
PFOA	7.126	413.0 -> 369.0	667552	28.62	µg/L	m 99
		413.0 -> 169.0	86729			
PFOS	8.286	498.9 -> 79.9	33959	11.10	µg/L	m 94
		498.9 -> 98.8	23940			
PFPeA	4.324	263.0 -> 219.0	200380	25.90	µg/L	100
PFPeS	6.533	349.1 -> 79.9	51701	12.14	µg/L	97
		349.1 -> 98.9	27797			
PFTeDA	9.722	713.1 -> 669.0	152873	13.24	µg/L	100
		713.1 -> 168.9	9591			
PFTrDA	9.378	663.0 -> 619.0	168170	13.86	µg/L	100
		663.0 -> 168.9	13453			
PFUnDA	8.564	563.1 -> 519.0	166646	14.25	µg/L	94
		563.1 -> 269.1	23275			
11CI-PF3OUdS	9.430	630.9 -> 450.9	360296	51.39	µg/L	97
		632.9 -> 452.9	116755			
9CI-PF3ONS	8.616	530.8 -> 351.0	677244	50.59	µg/L	98
		532.8 -> 353.0	215374			
ADONA	6.731	376.9 -> 250.9	1371274	51.89	µg/L	100
		376.9 -> 84.8	315747			
HFPO-DA	5.906	284.9 -> 168.9	62907	53.36	µg/L	96
		284.9 -> 184.9	8946			
3:3FTCA	3.790	241.0 -> 177.0	26989	62.87	µg/L	99
		241.0 -> 117.0	3986			
5:3FTCA	6.198	341.0 -> 237.1	833454	321.51	µg/L	100
		341.0 -> 217.0	726627			
7:3FTCA	7.608	441.0 -> 316.9	420084	320.12	µg/L	100
		441.0 -> 336.9	822215			
EtFOSA	10.967	526.0 -> 219.0	91198	36.25	µg/L	88
		526.0 -> 169.0	98814			
EtFOSE	10.913	630.0 -> 58.9	77682	153.47	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	74796	32.26	µg/L	88
		511.9 -> 169.0	87750			
MeFOSE	10.666	616.1 -> 58.9	112482	146.86	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	14434	11.95	µg/L	99
		699.1 -> 98.8	9200			
NFDHA	5.410	295.0 -> 201.0	19865	26.13	µg/L	97
		295.0 -> 84.9	9068			
PFMBA	4.737	279.0 -> 85.1	65492	25.55	µg/L	100
PFMPA	3.463	229.0 -> 84.9	61025	26.09	µg/L	100
PFEESA	6.012	314.8 -> 134.9	395789	23.82	µg/L	100
		314.8 -> 82.9	9703			

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

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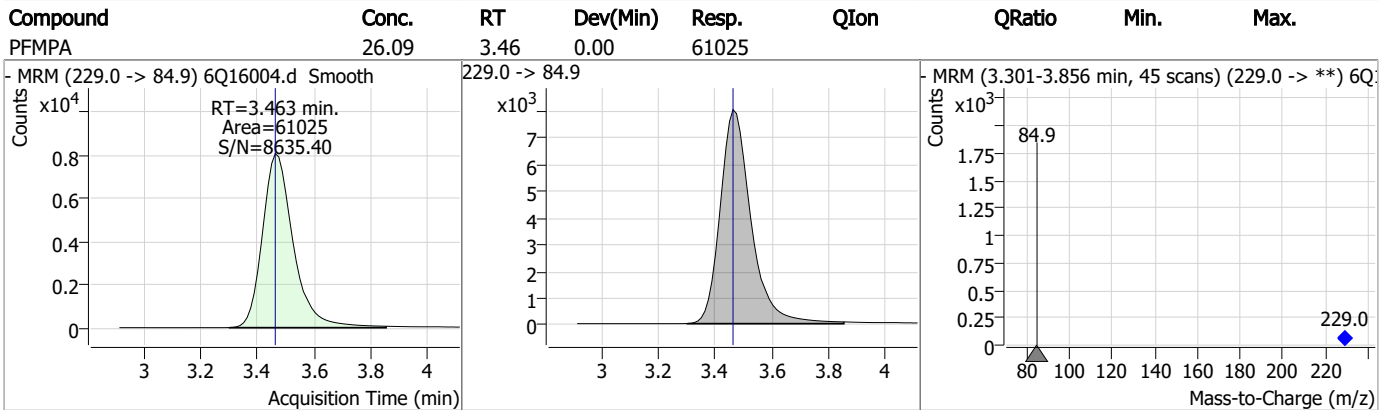
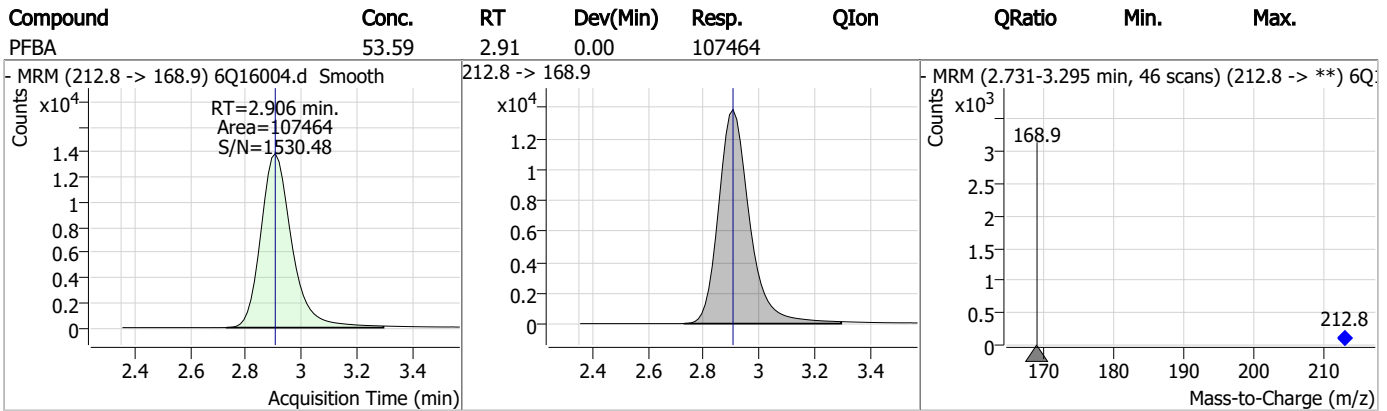
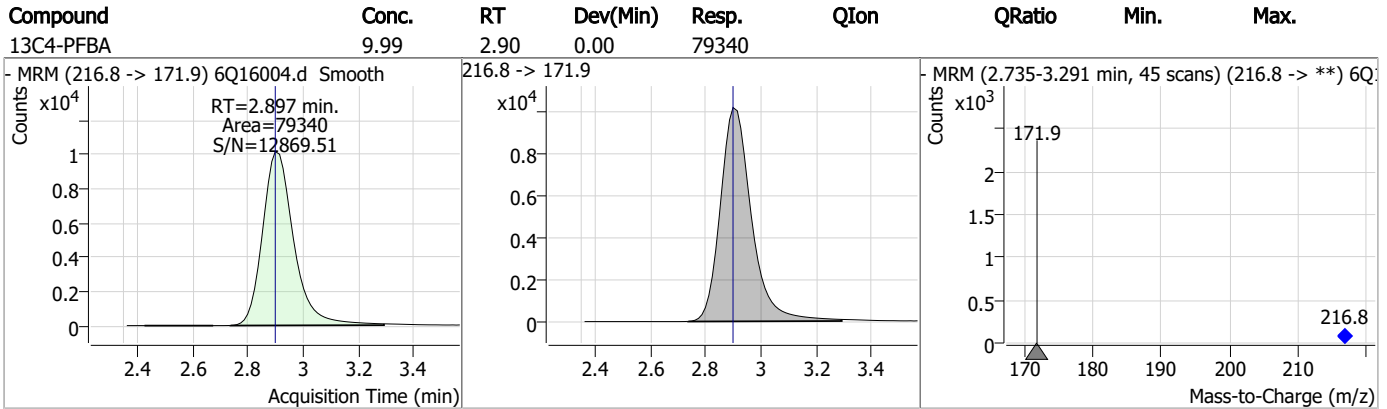
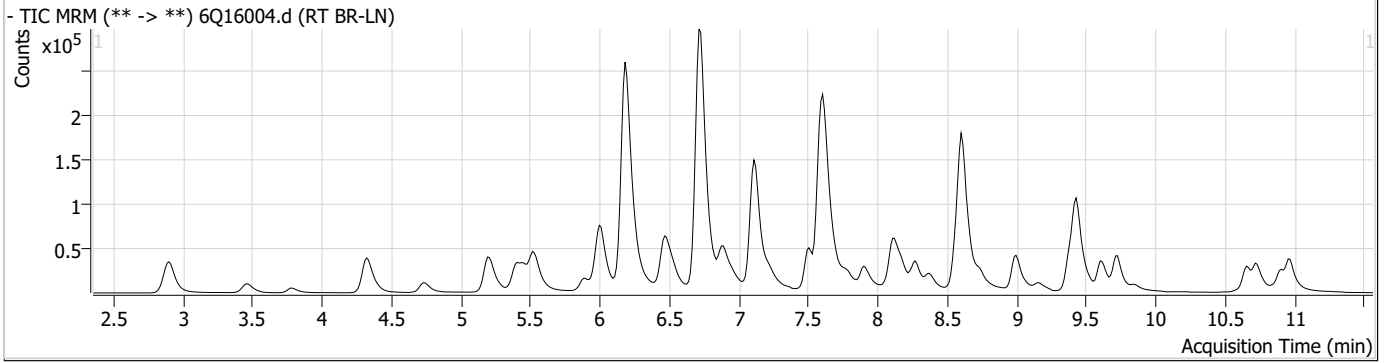
Perfluorinated Compounds by LC/MS/MS

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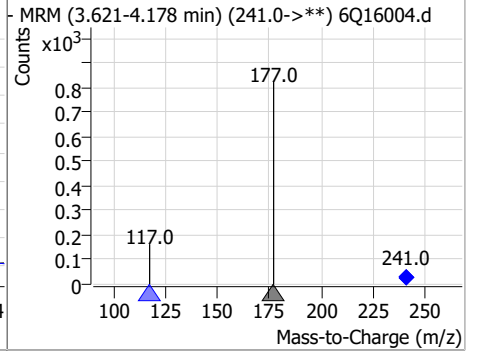
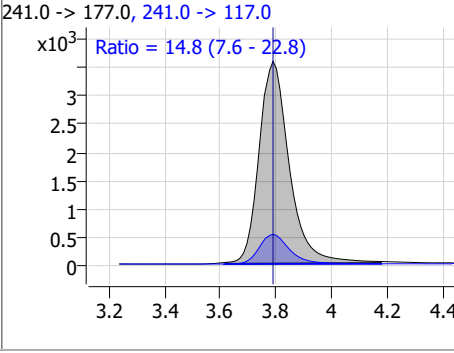
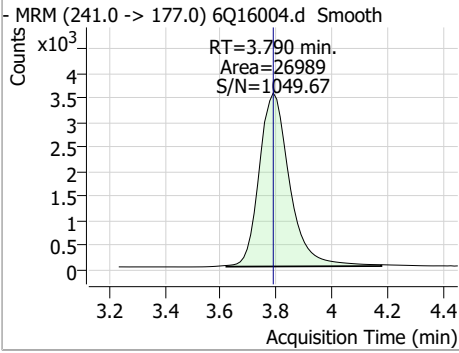
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Perfluorinated Compounds by LC/MS/MS

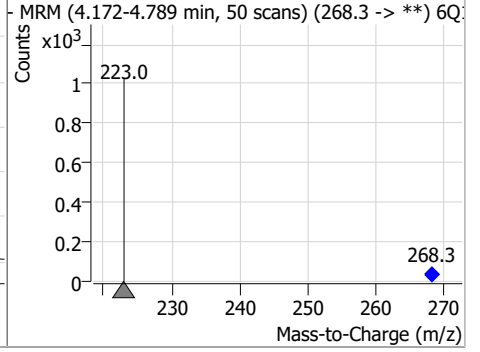
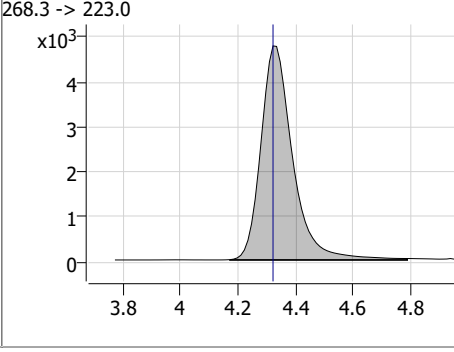
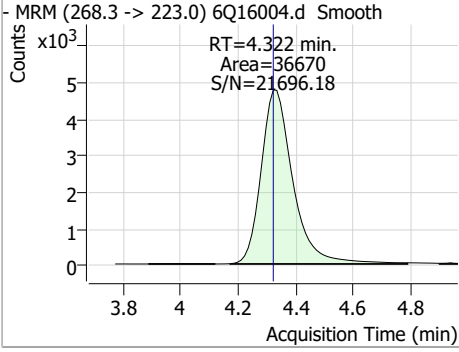


Perfluorinated Compounds by LC/MS/MS

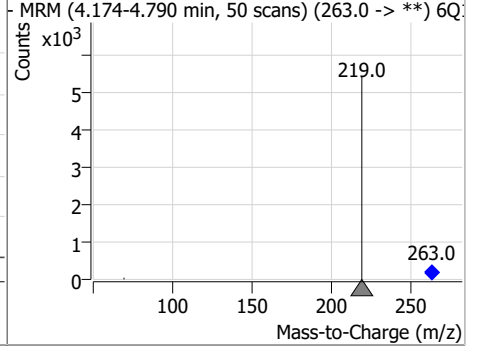
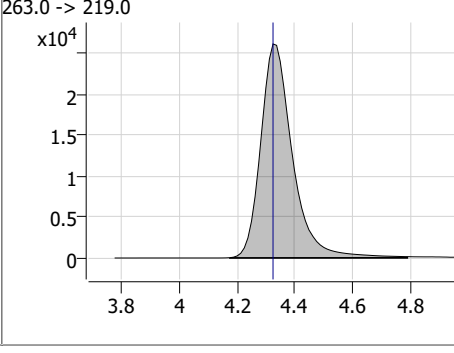
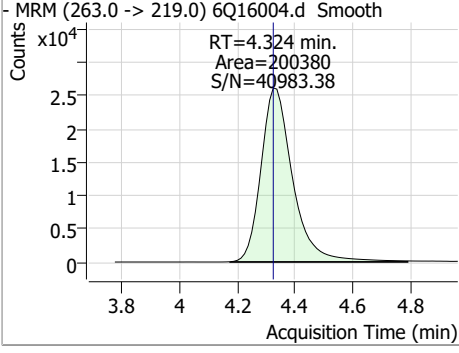
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	62.87	3.79	0.00	26989	241.0 -> 117.0	14.8	7.6	22.8



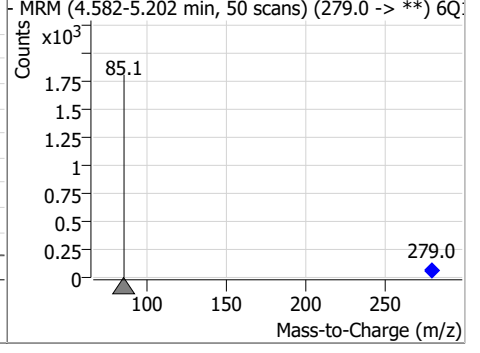
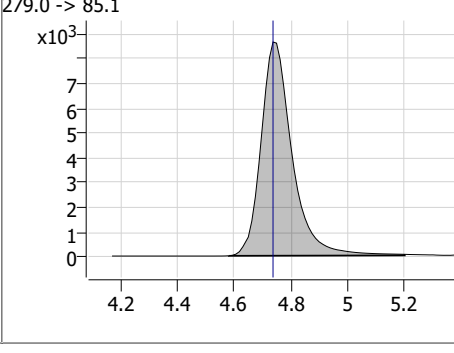
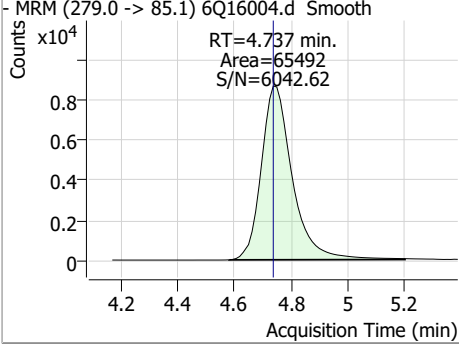
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.09	4.32	0.00	36670				



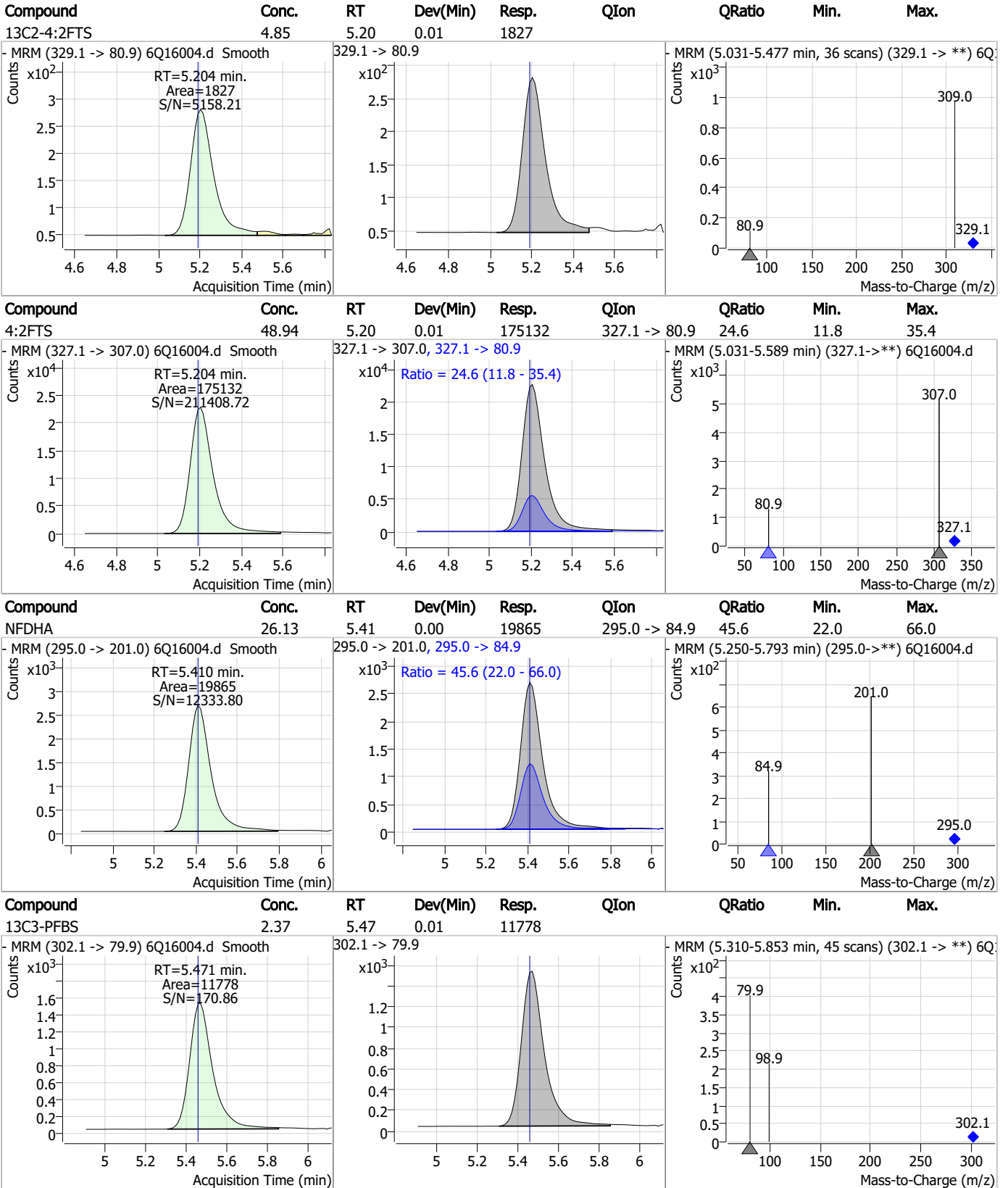
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.90	4.32	0.00	200380				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.55	4.74	0.00	65492				



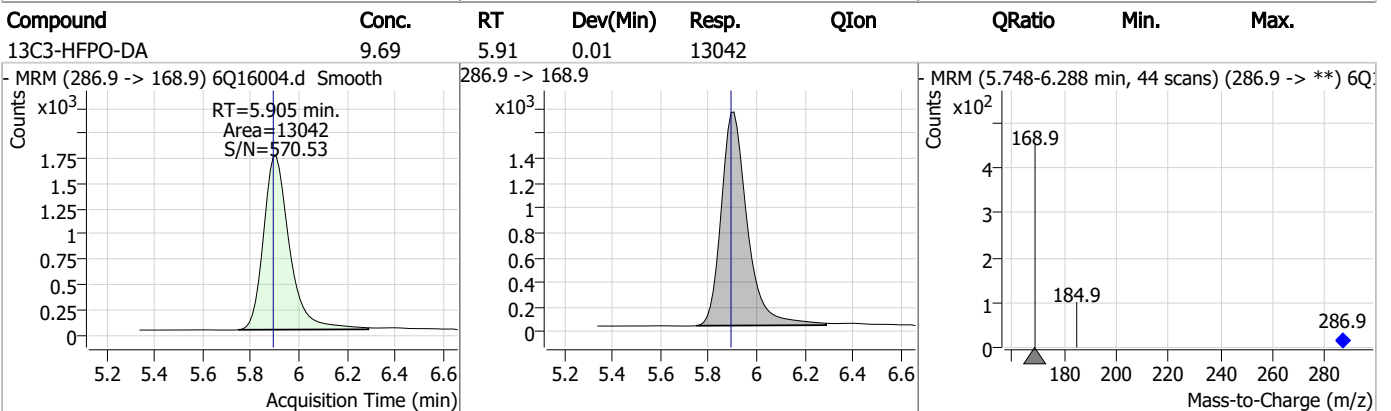
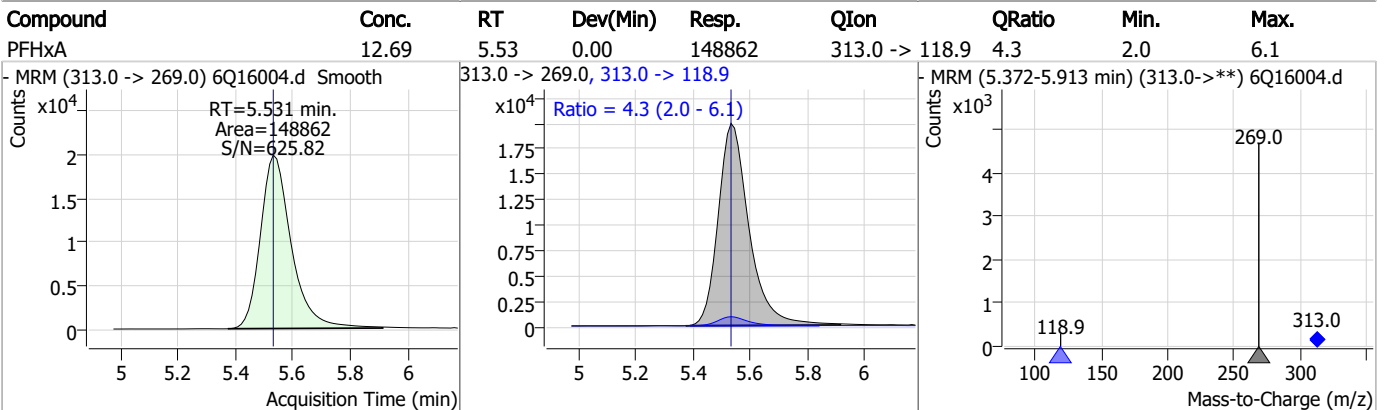
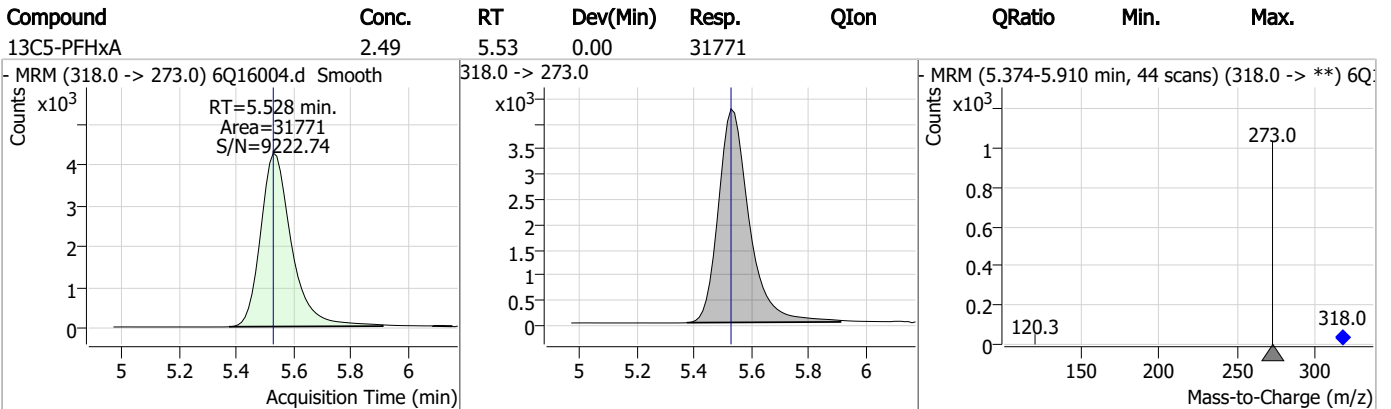
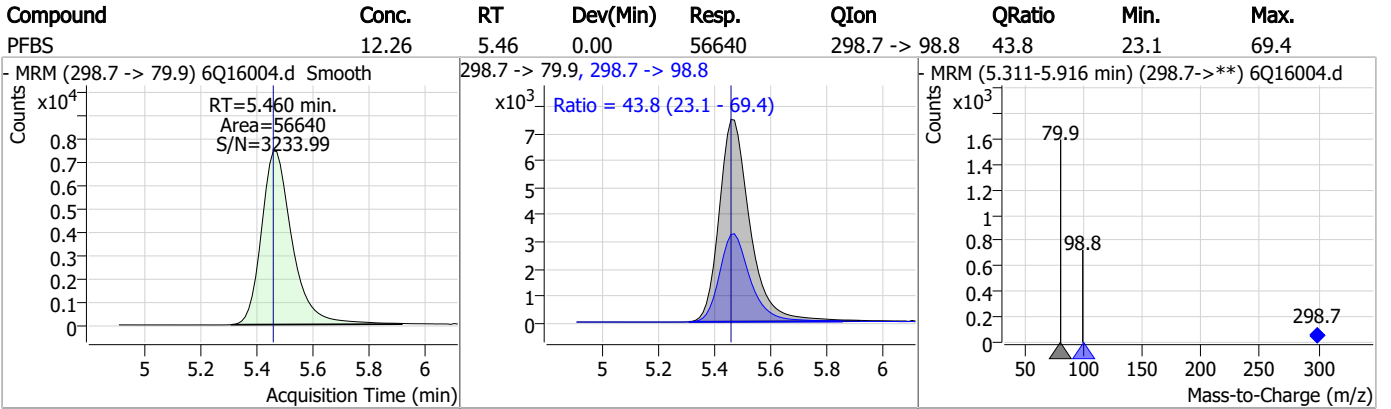
Perfluorinated Compounds by LC/MS/MS



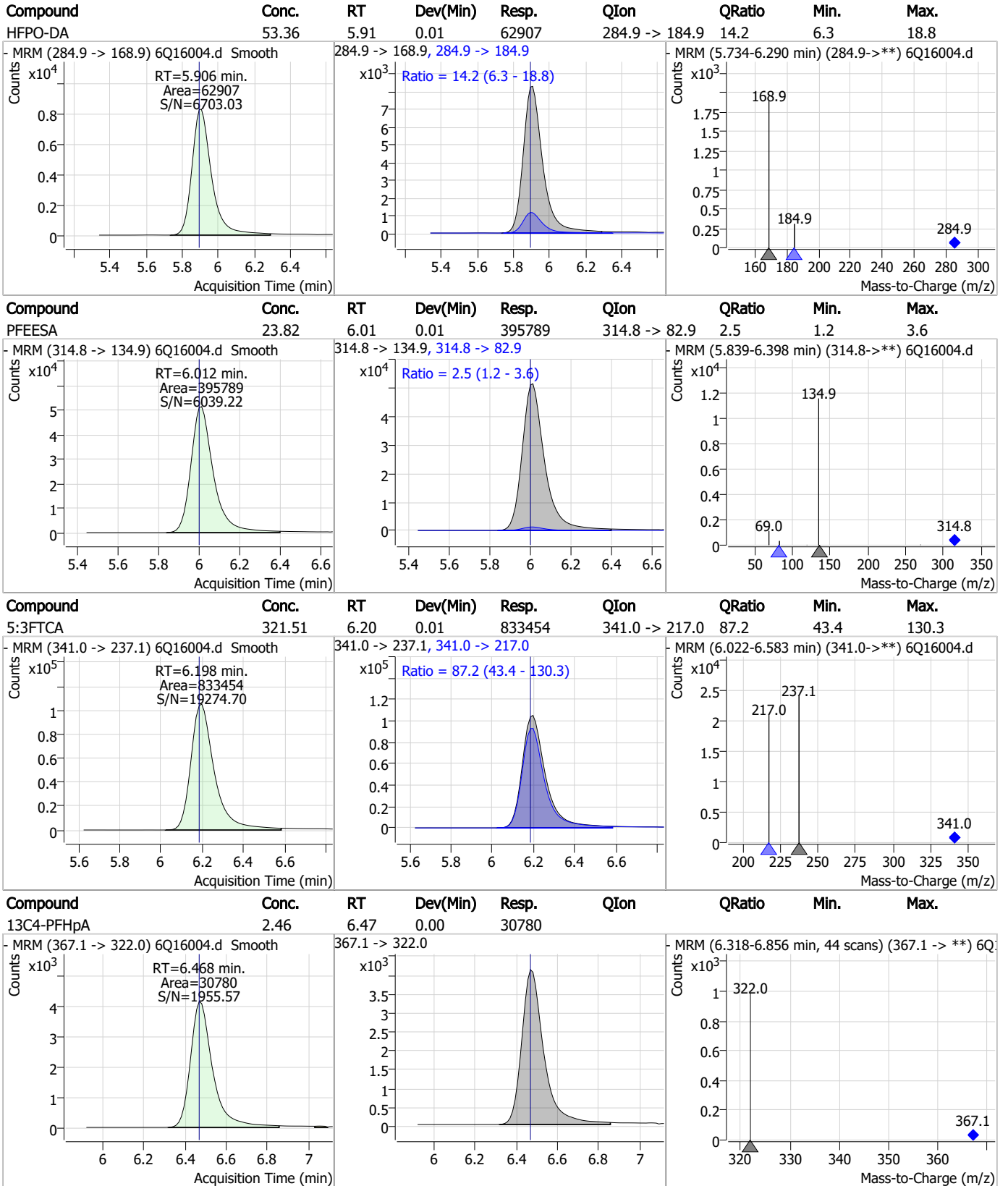
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

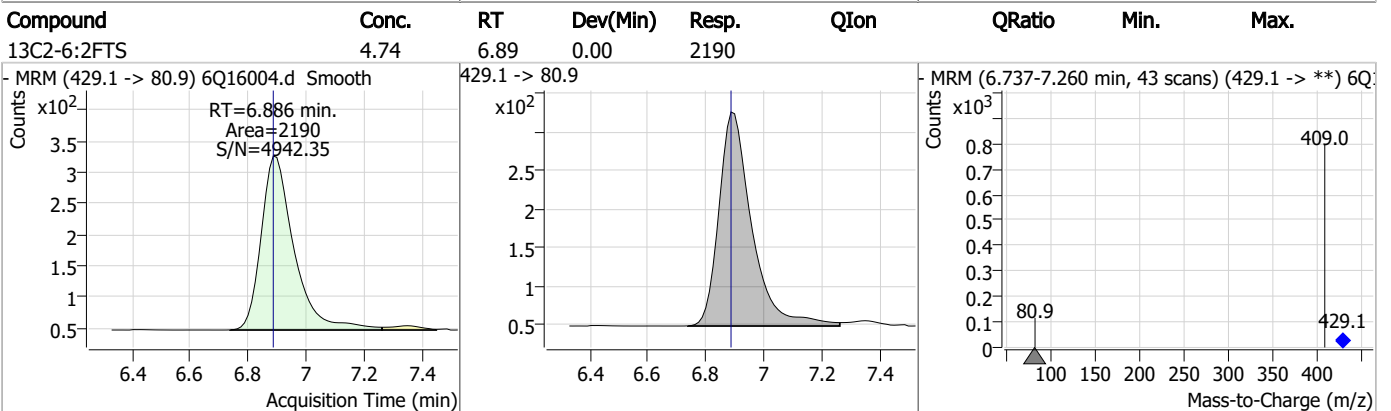
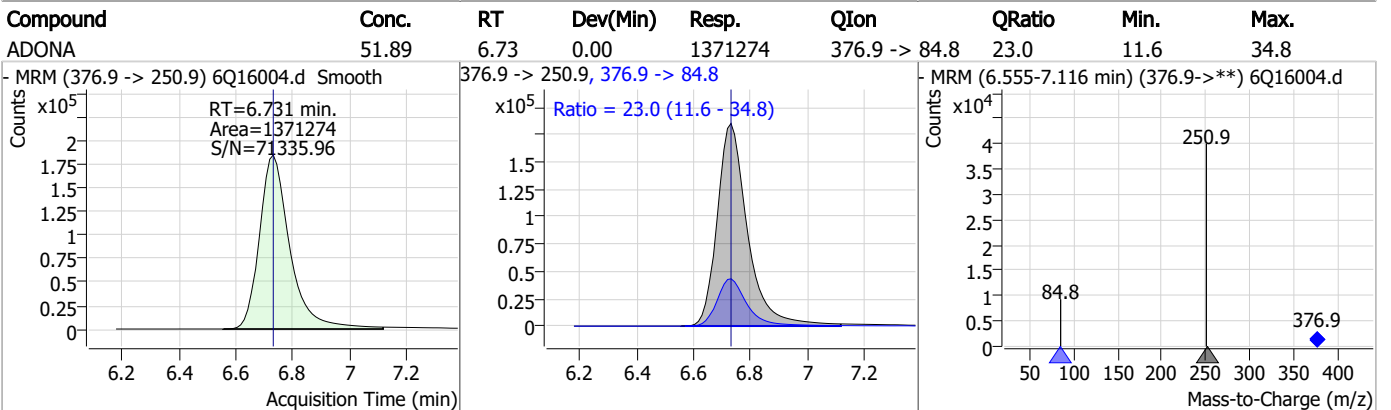
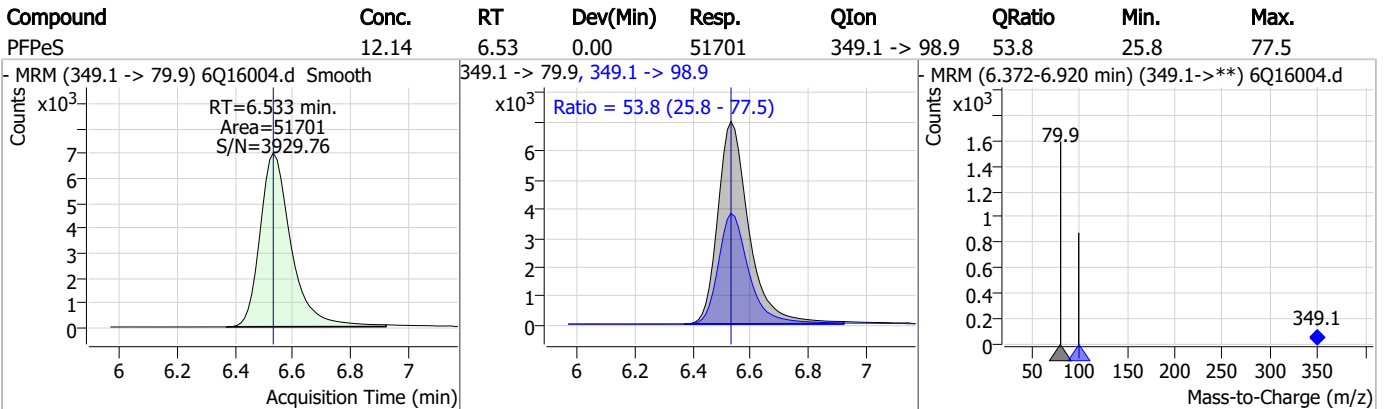
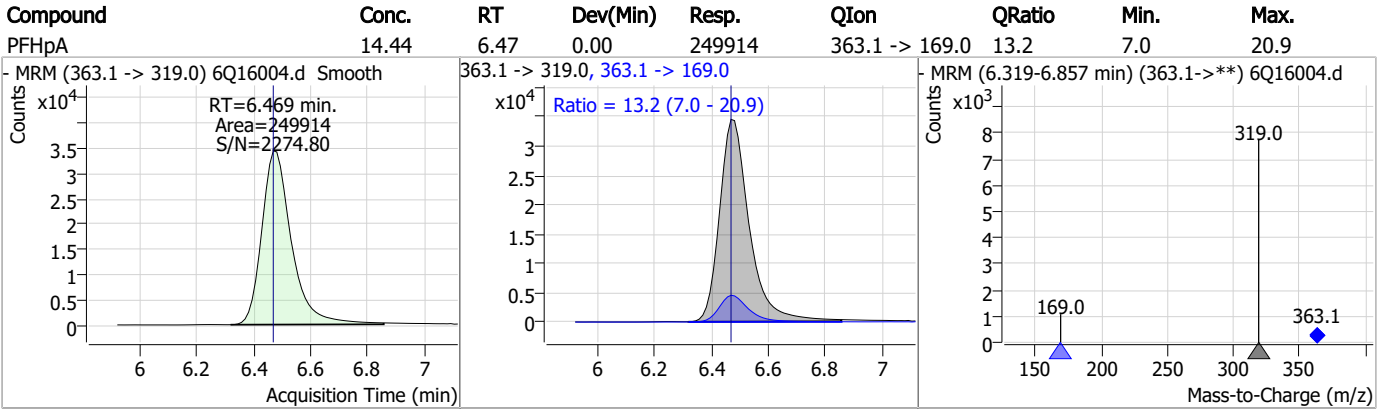


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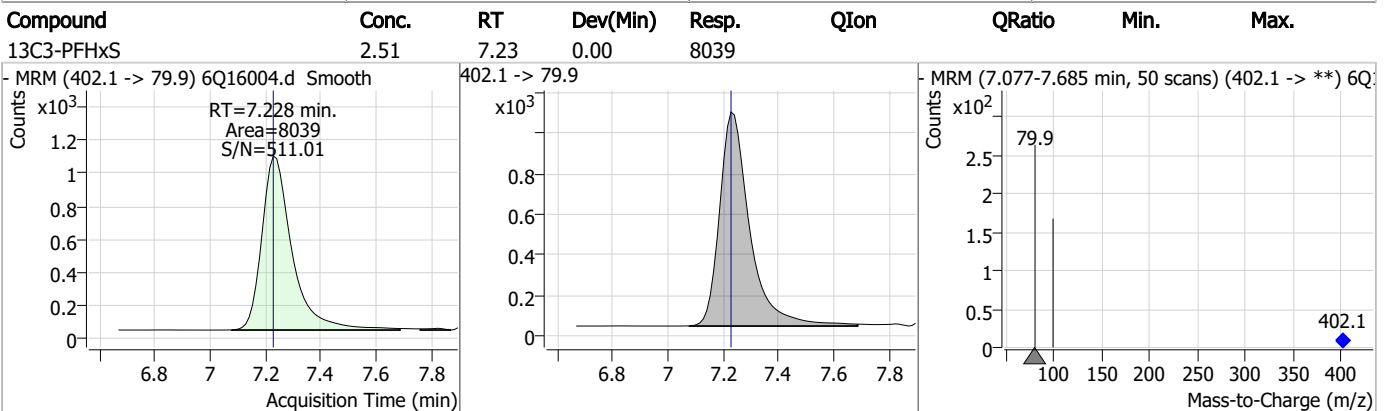
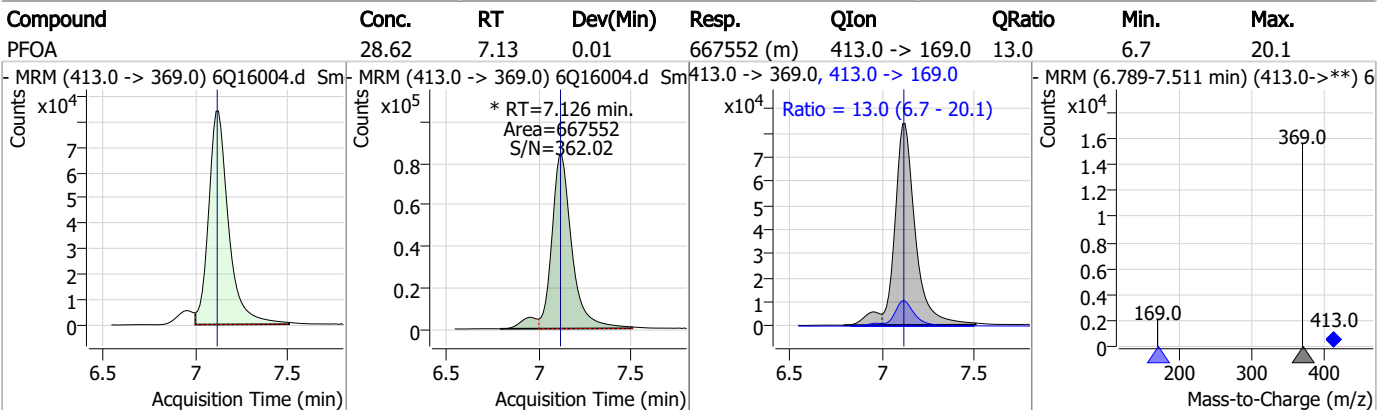
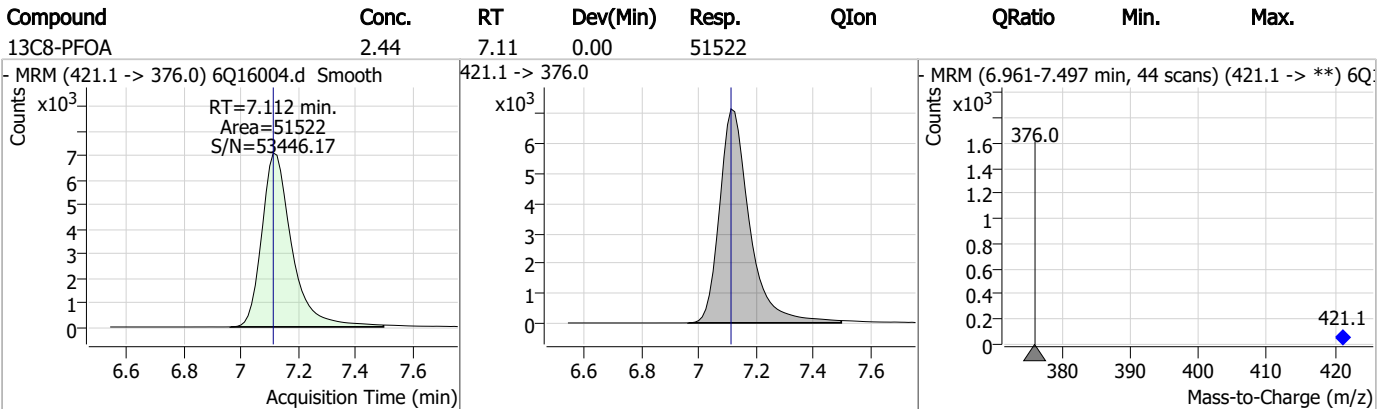
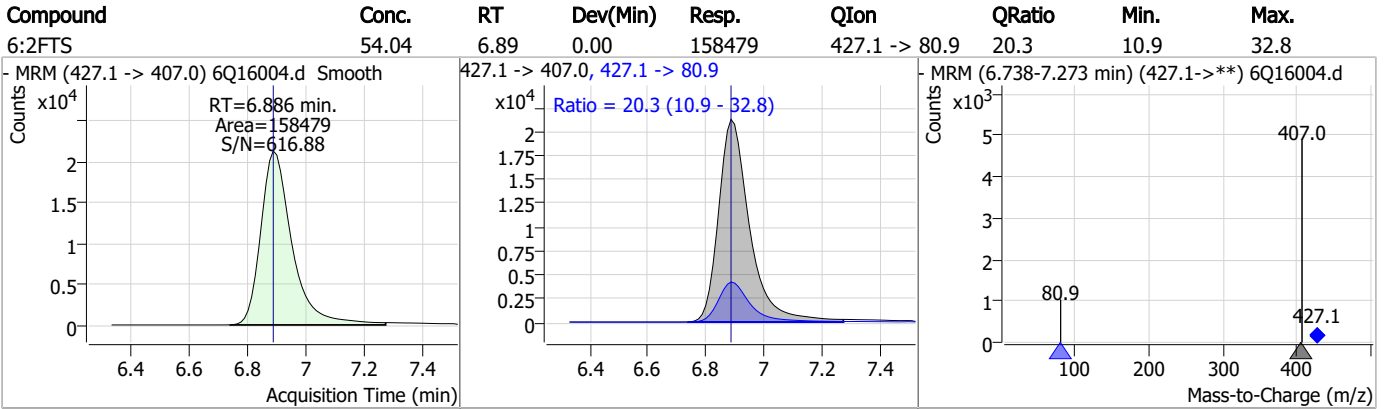


Perfluorinated Compounds by LC/MS/MS

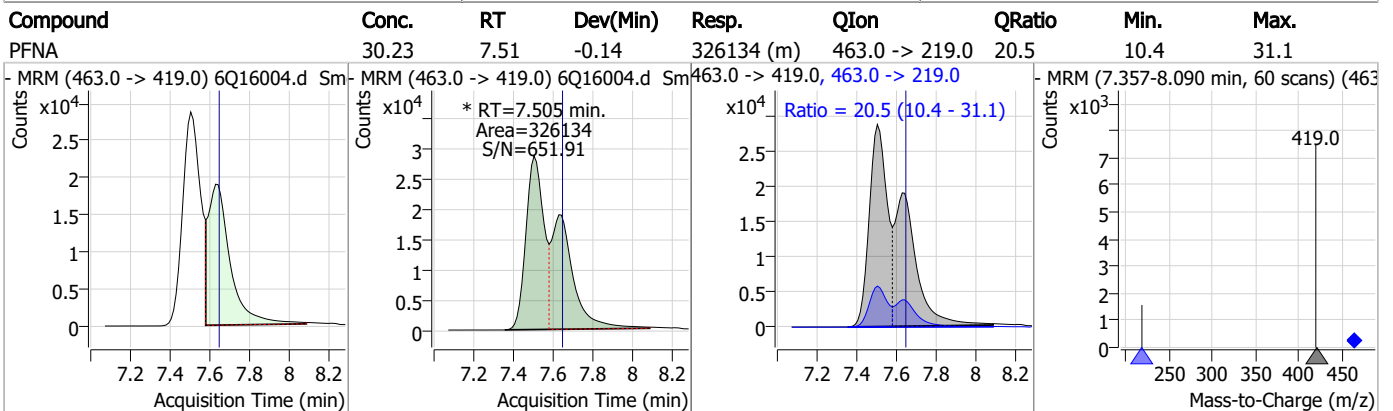
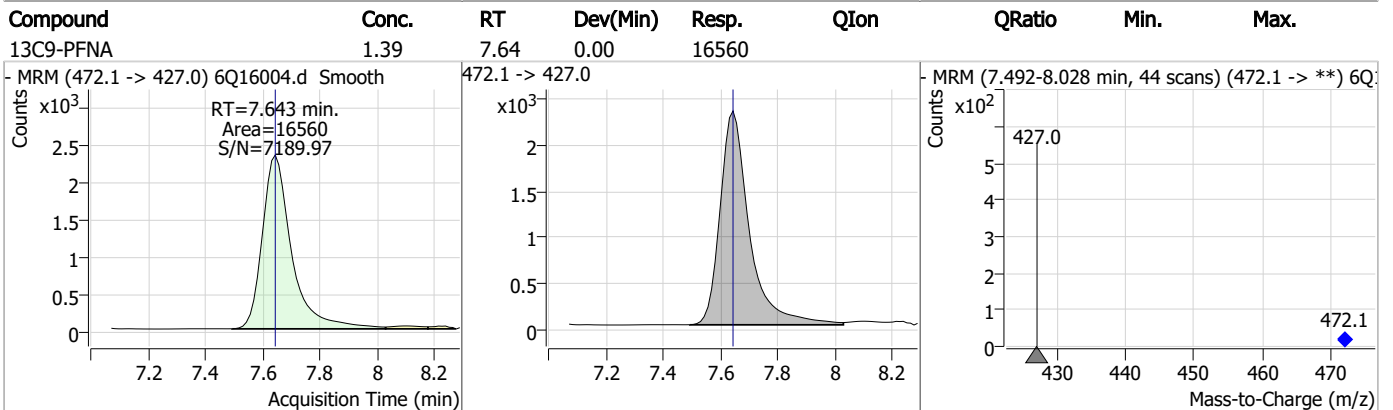
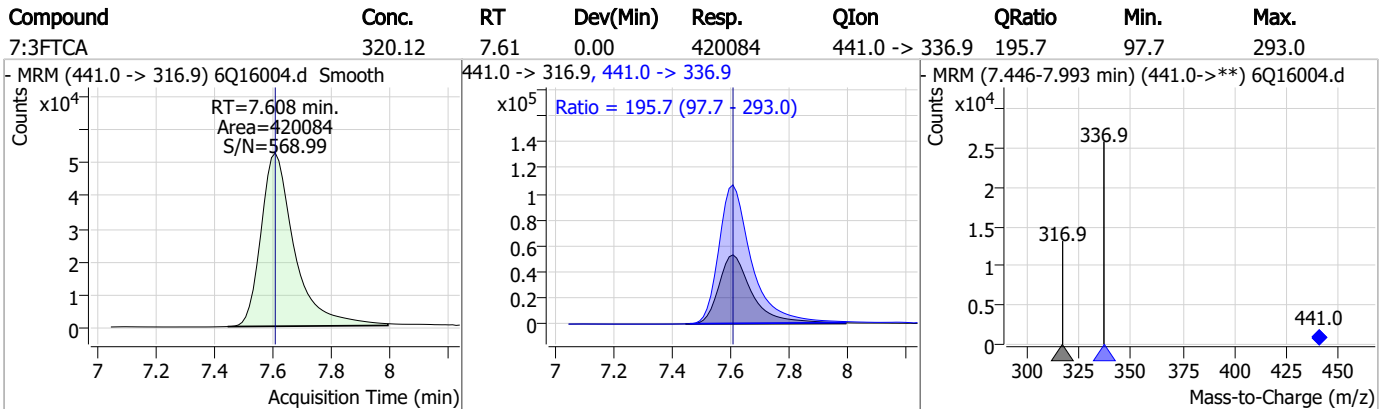
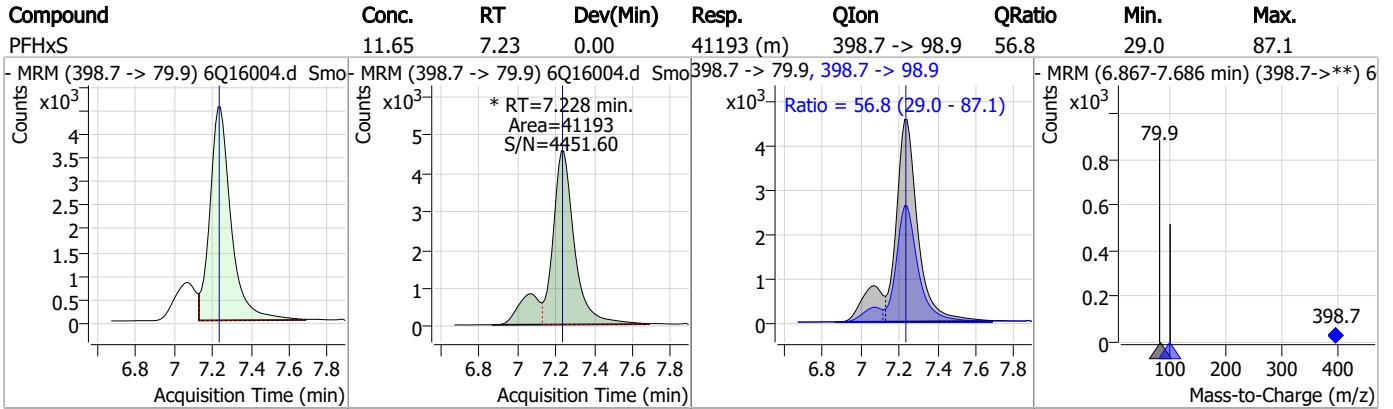


7.6.2
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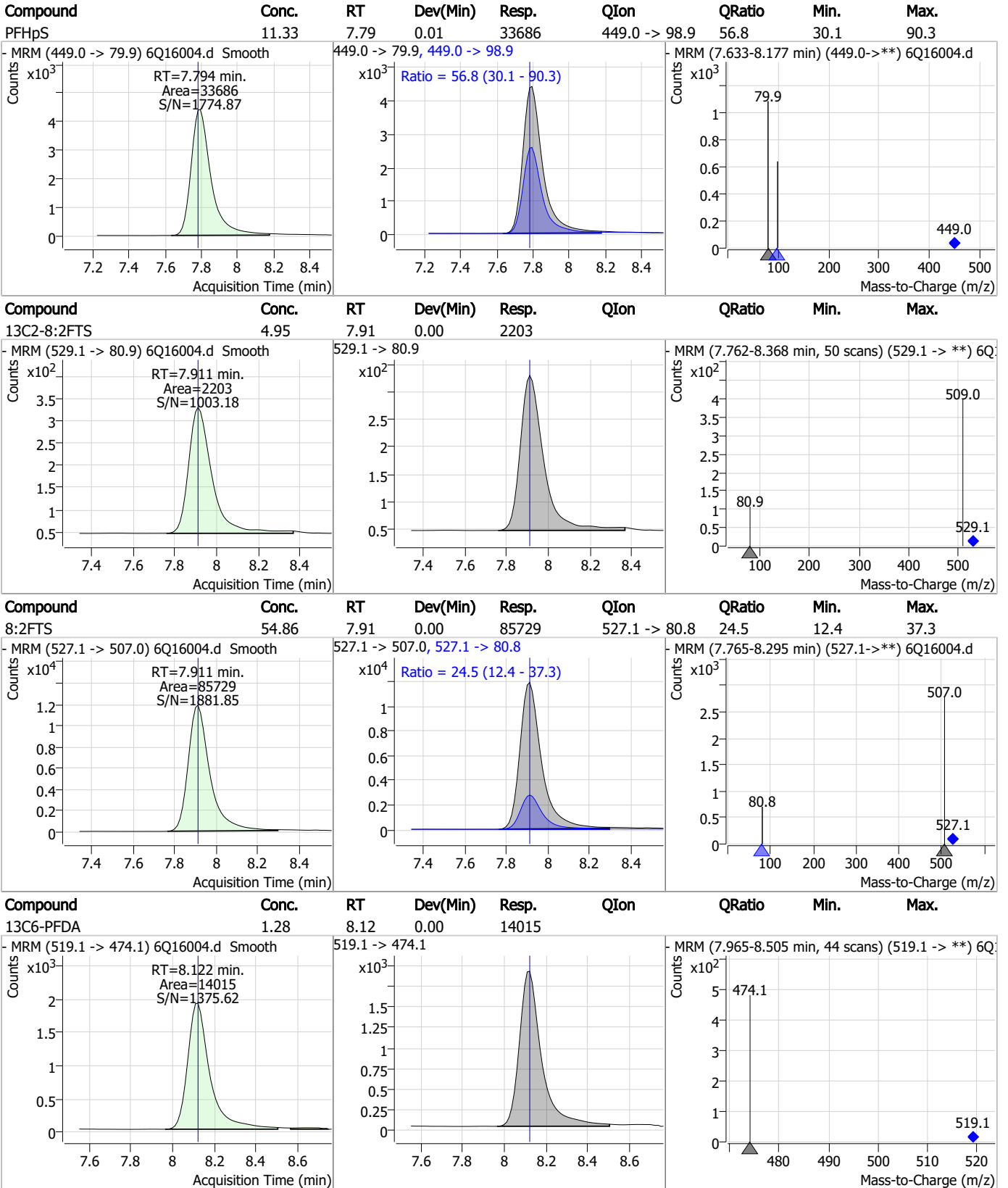
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



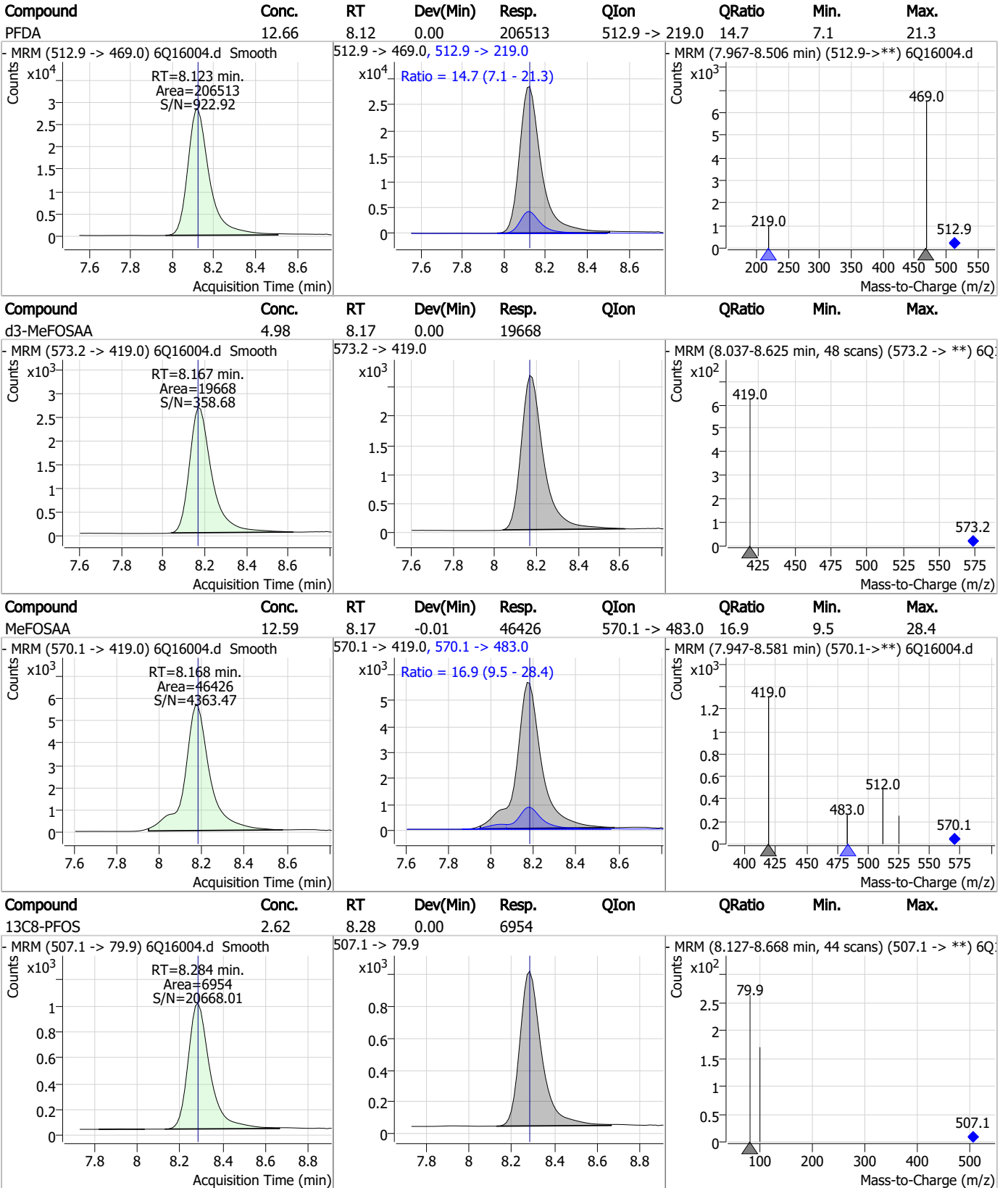
Perfluorinated Compounds by LC/MS/MS



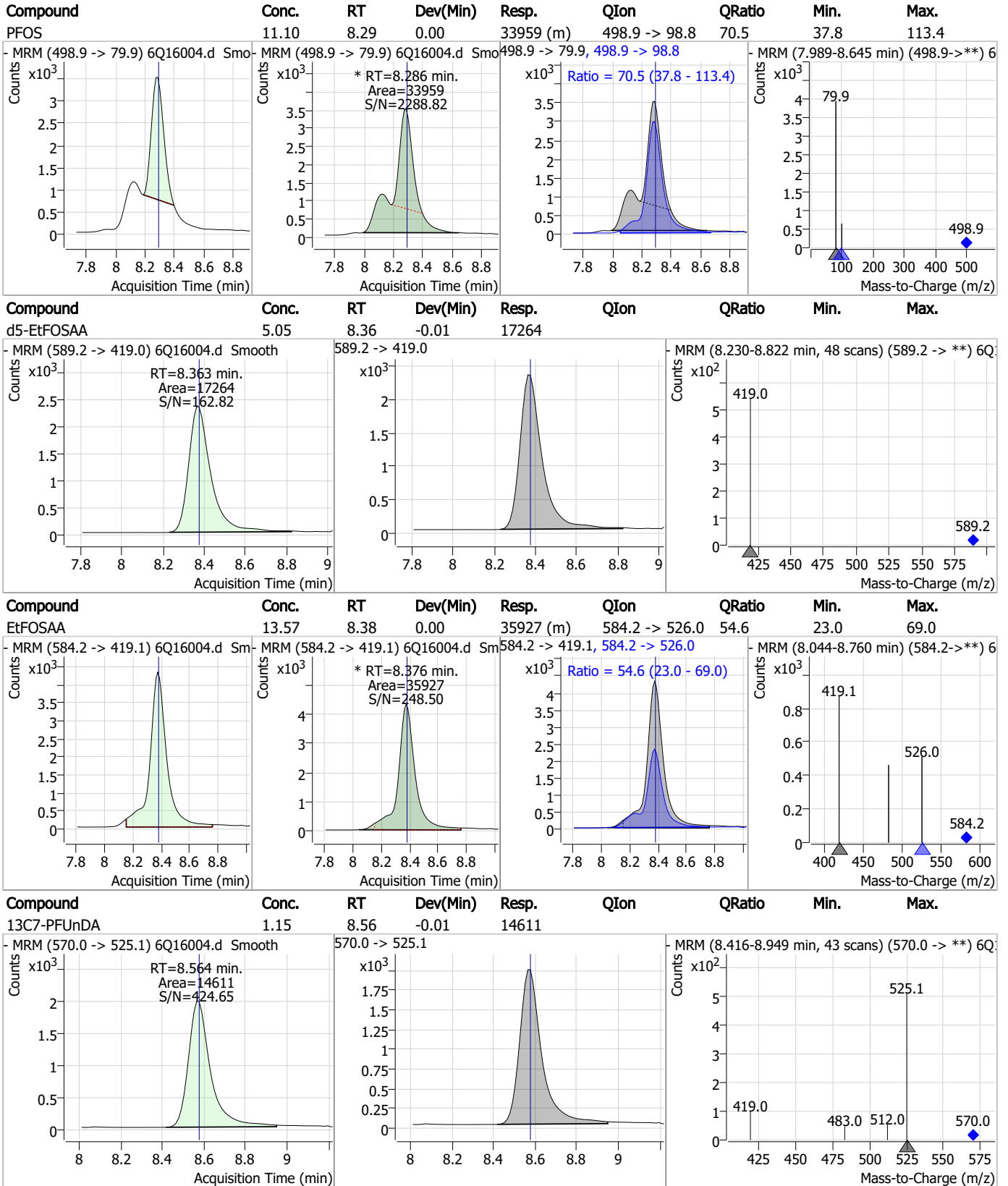
7.6.2

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Perfluorinated Compounds by LC/MS/MS

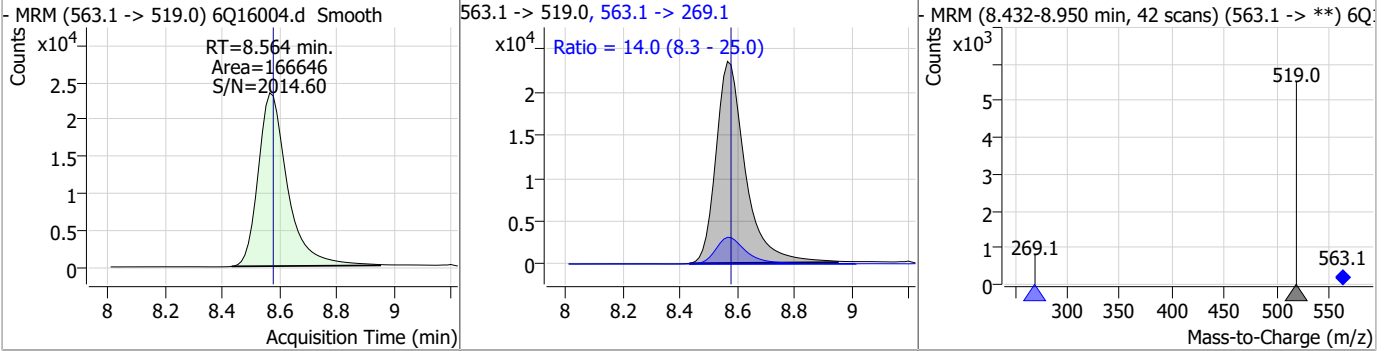


Perfluorinated Compounds by LC/MS/MS

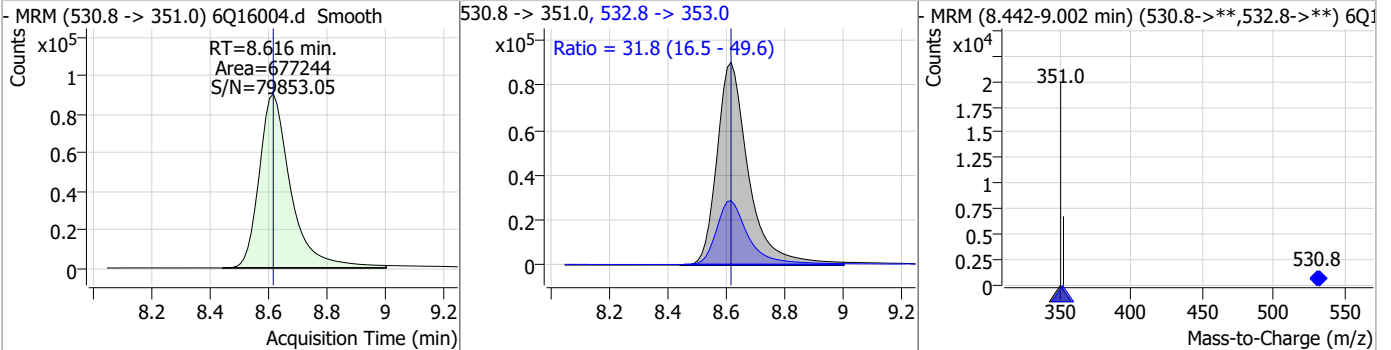


Perfluorinated Compounds by LC/MS/MS

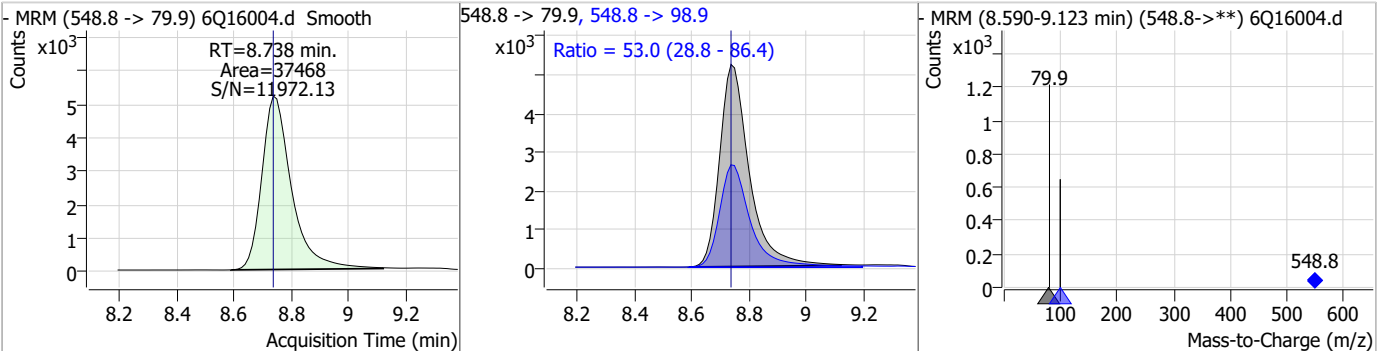
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	14.25	8.56	-0.01	166646	563.1 -> 269.1	14.0	8.3	25.0



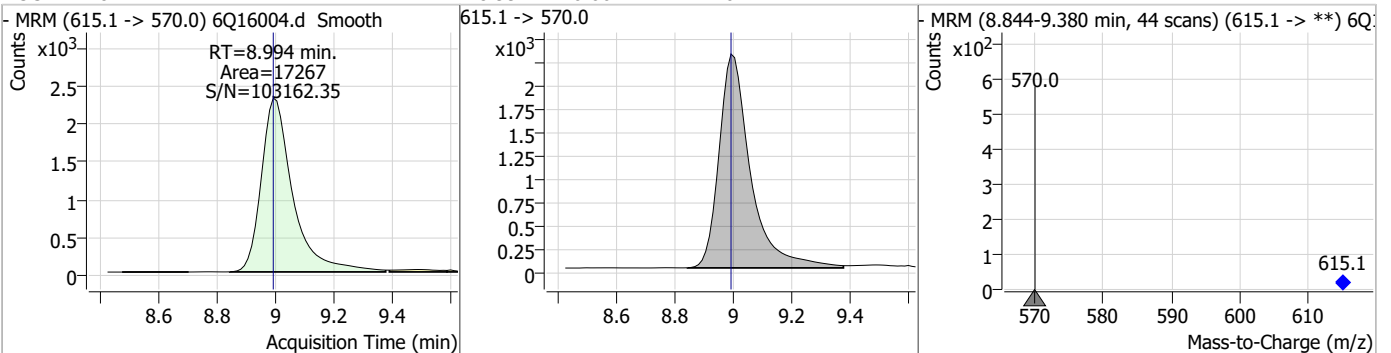
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	50.59	8.62	0.00	677244	532.8 -> 353.0	31.8	16.5	49.6



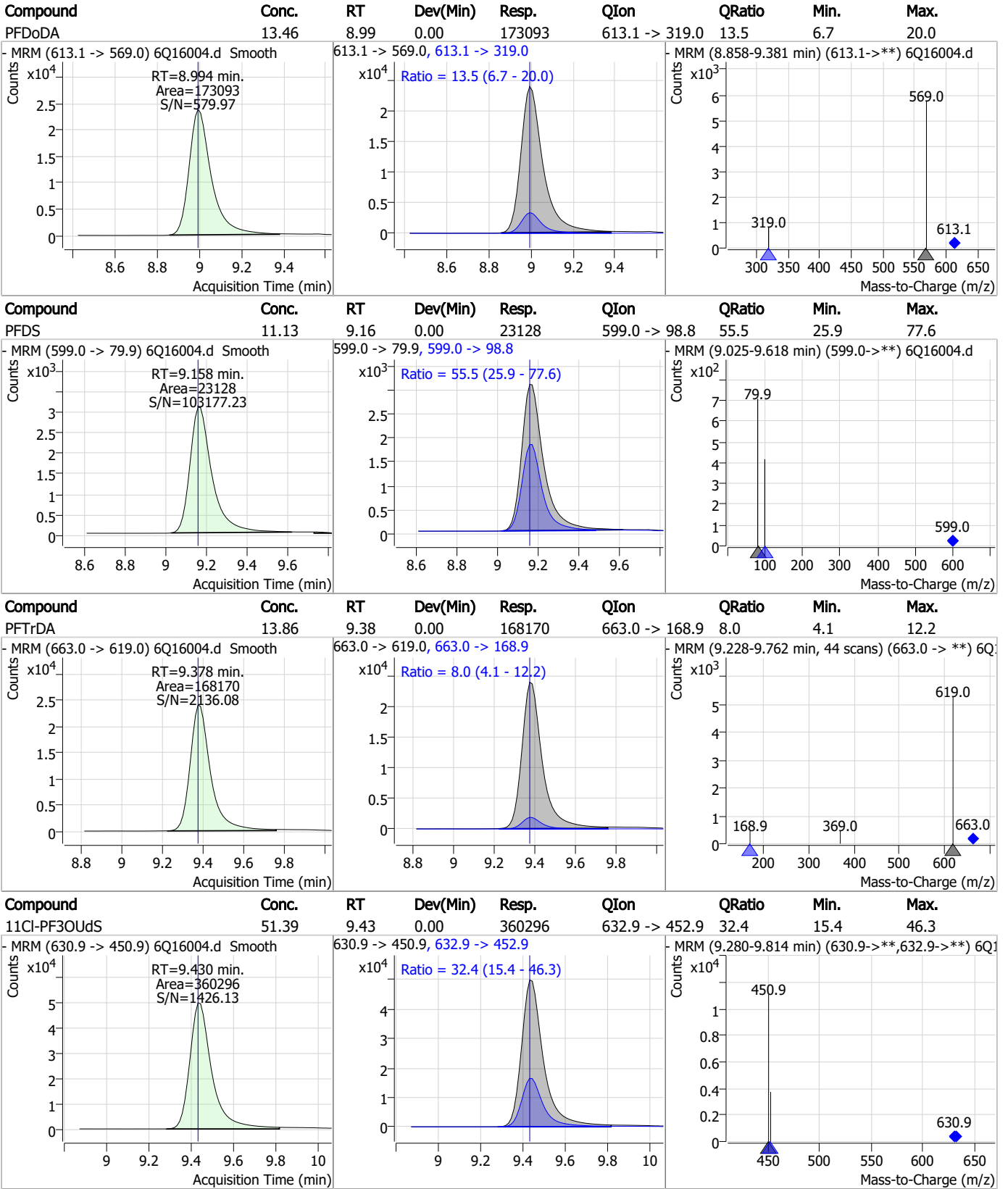
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.69	8.74	0.00	37468	548.8 -> 98.9	53.0	28.8	86.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.17	8.99	0.00	17267	615.1 -> 570.0			



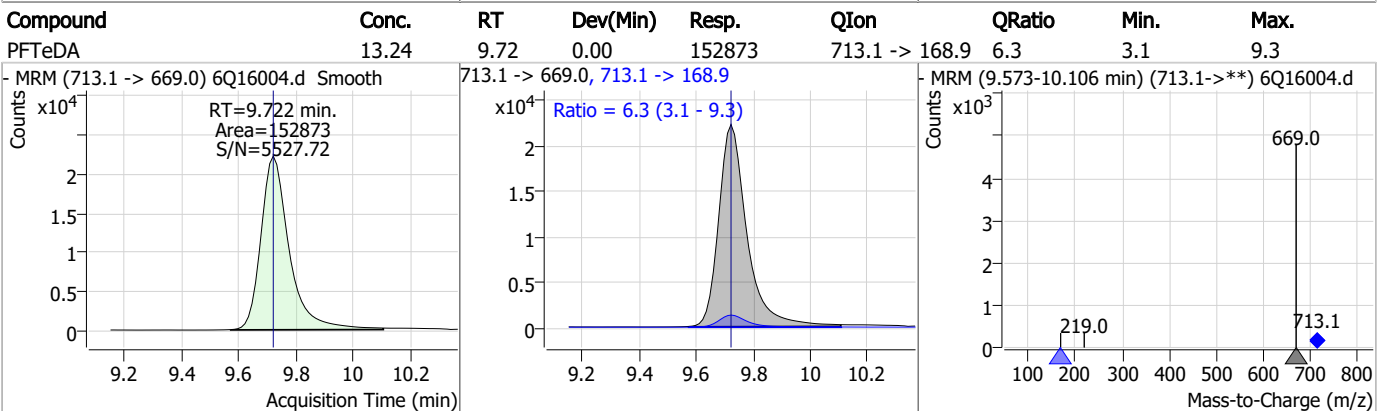
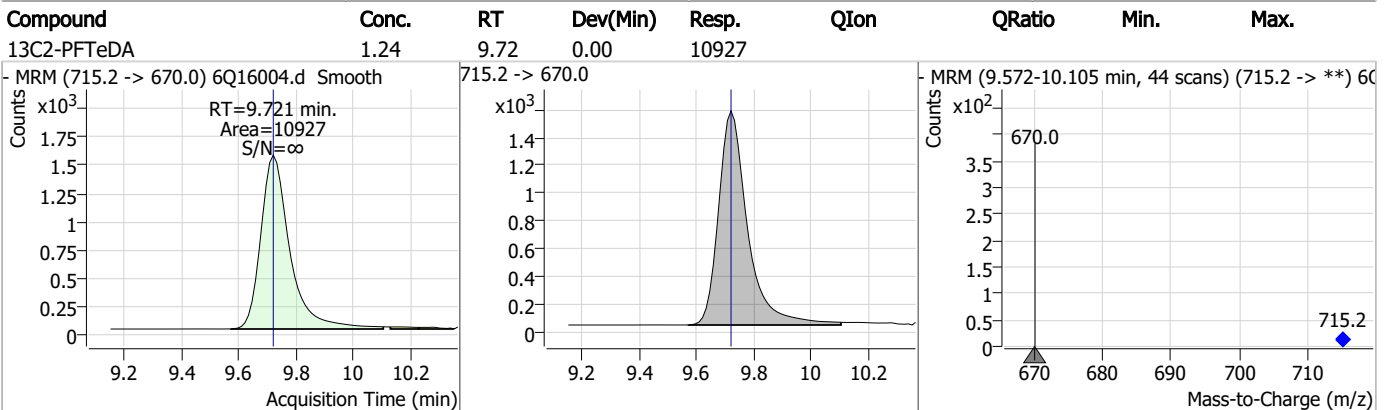
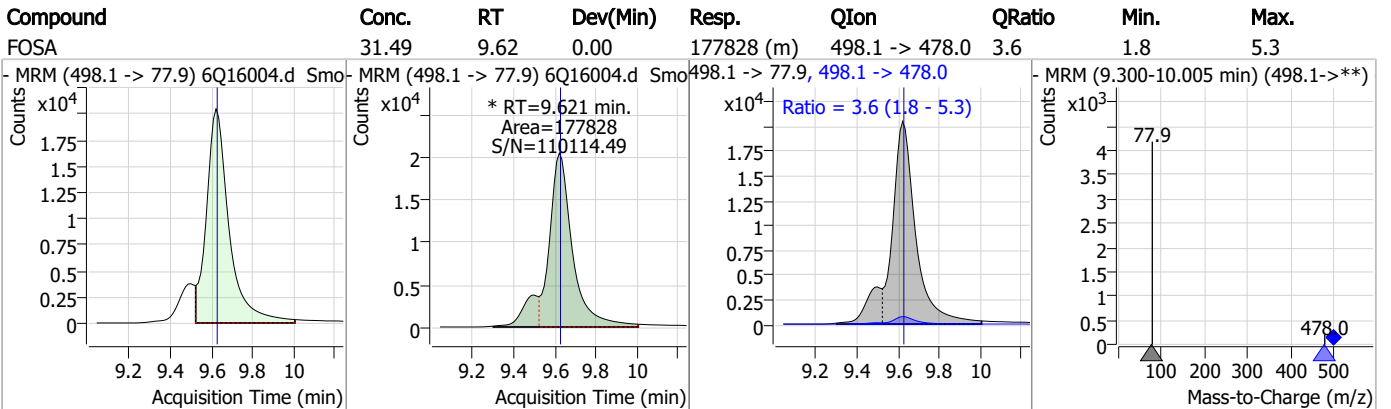
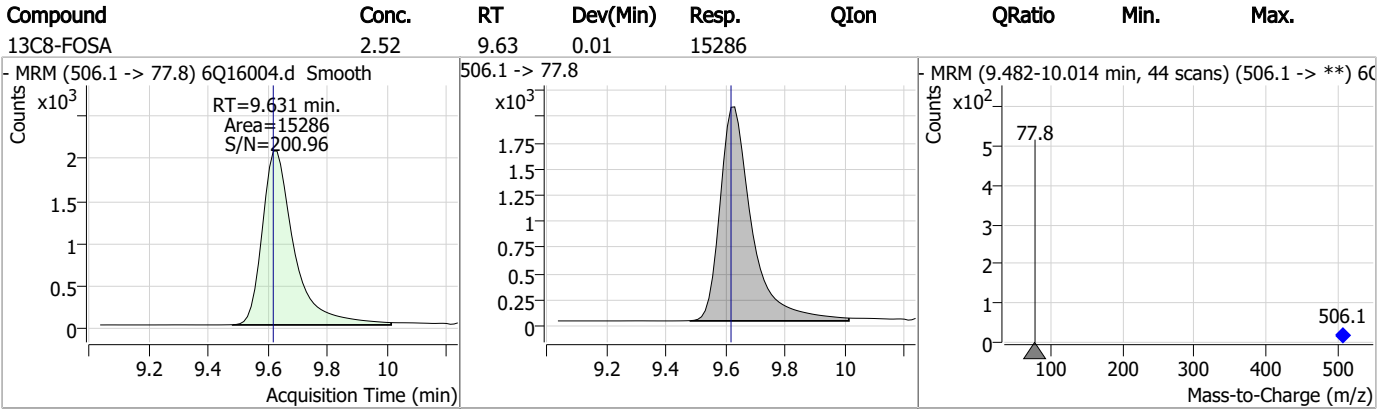
Perfluorinated Compounds by LC/MS/MS



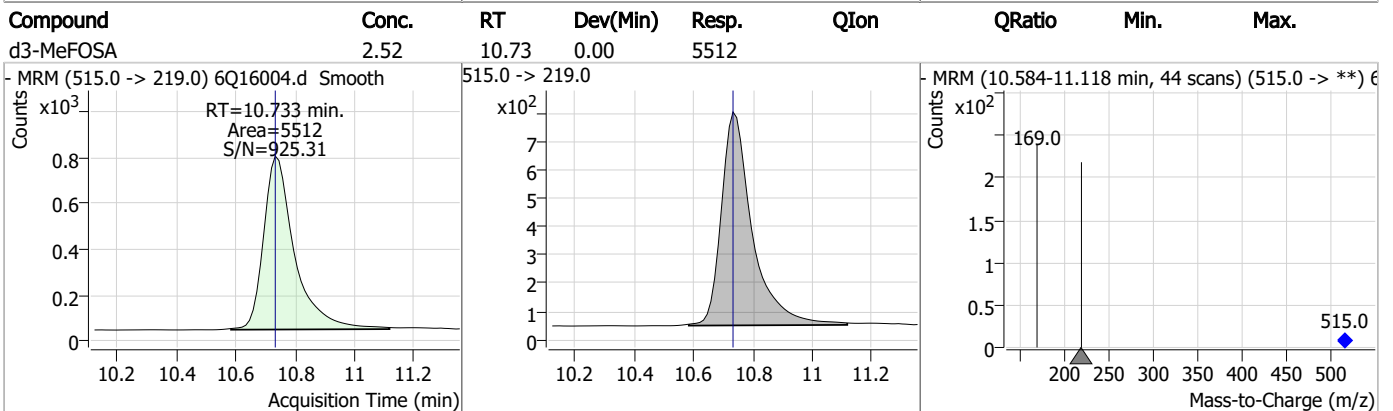
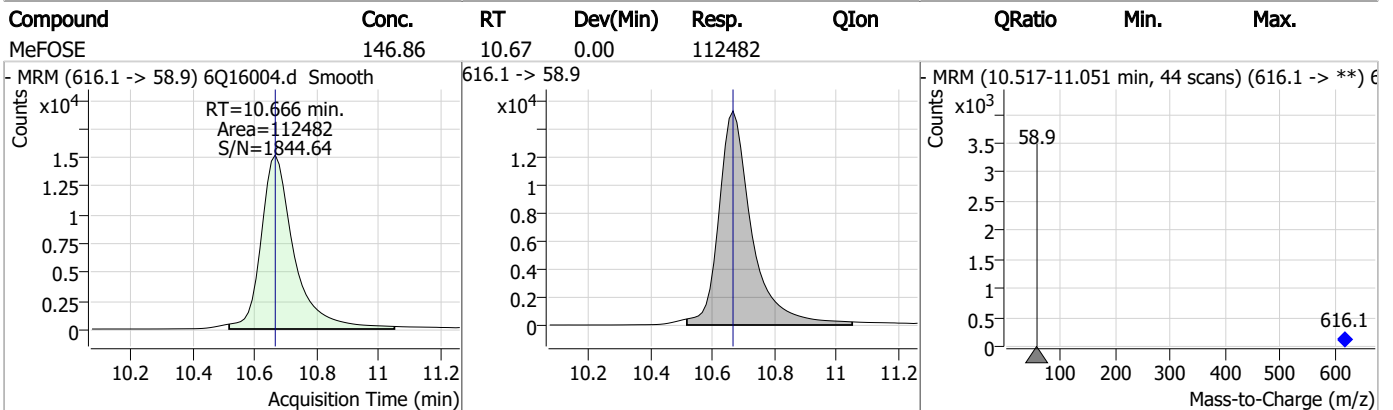
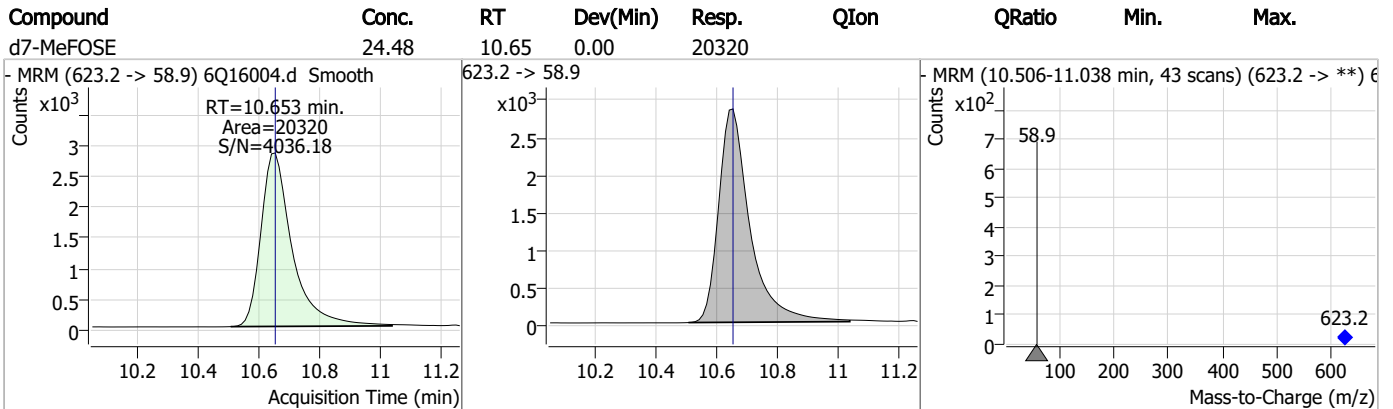
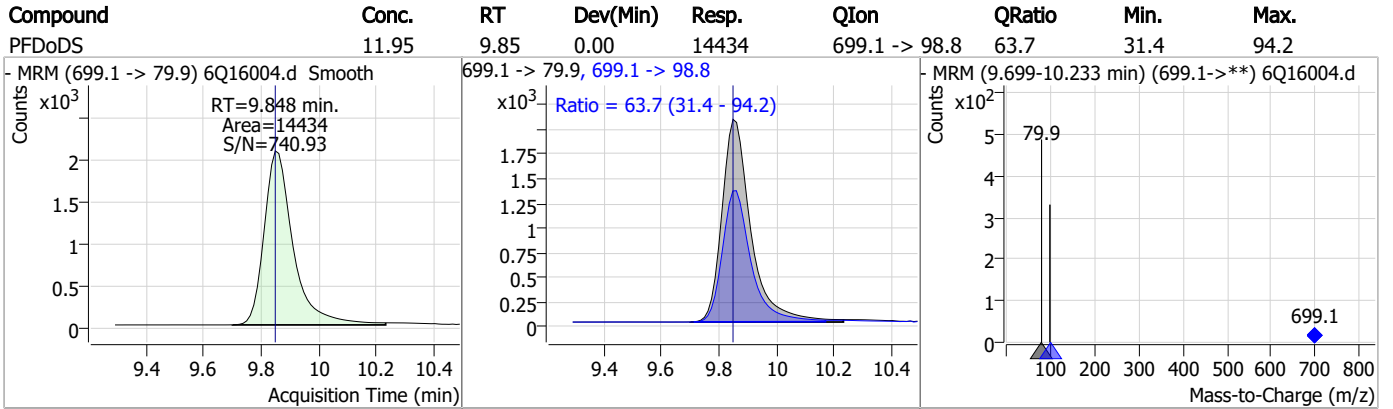
7.6.2

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Perfluorinated Compounds by LC/MS/MS

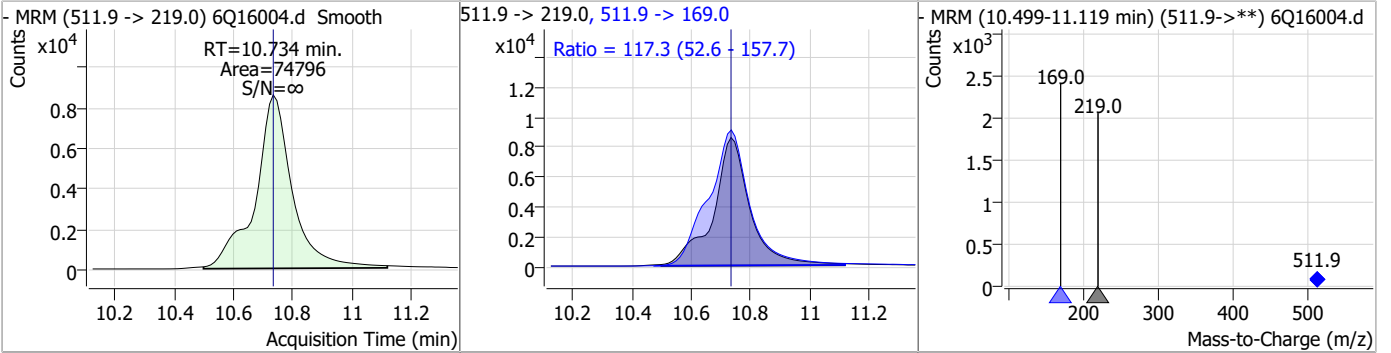


Perfluorinated Compounds by LC/MS/MS

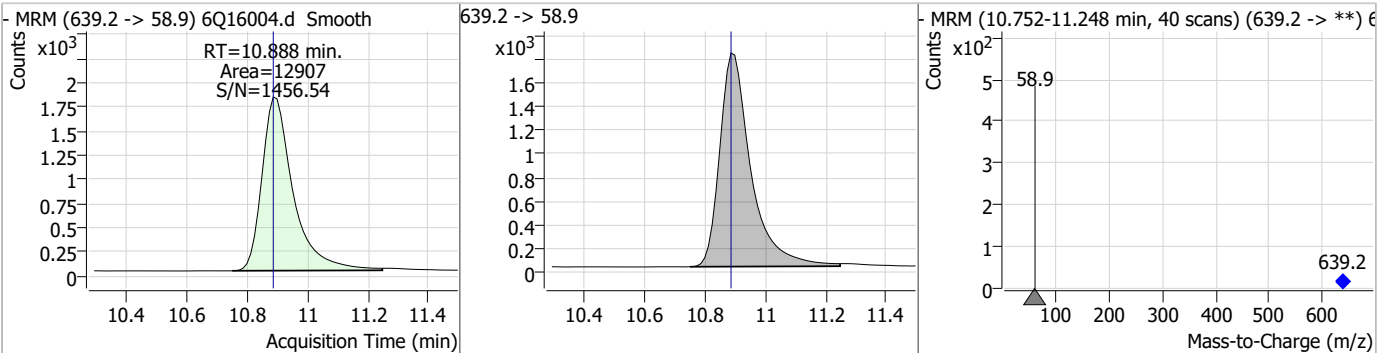


Perfluorinated Compounds by LC/MS/MS

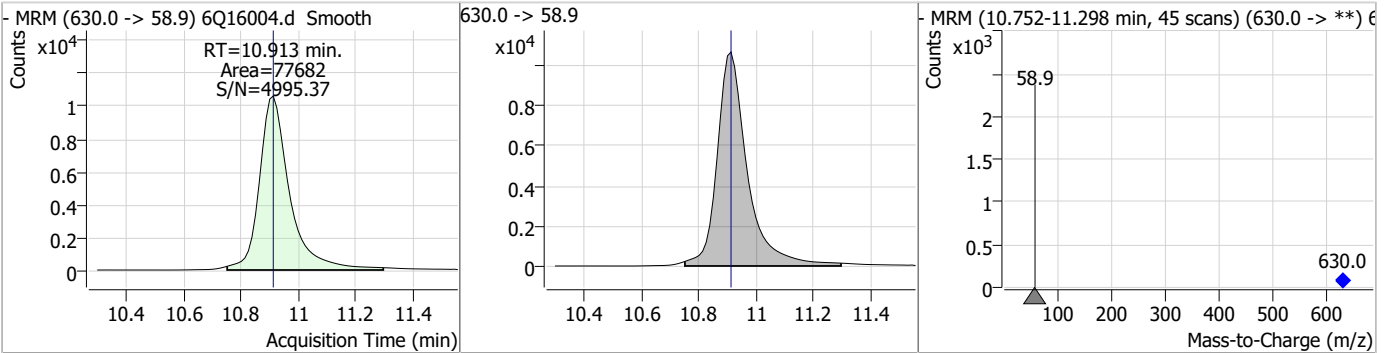
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	32.26	10.73	0.00	74796	511.9 -> 169.0	117.3	52.6	157.7



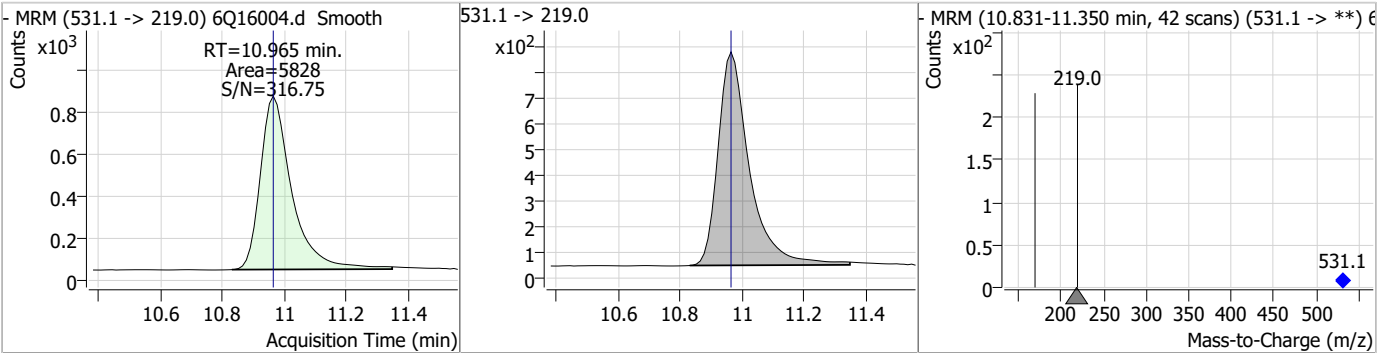
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.39	10.89	0.00	12907				



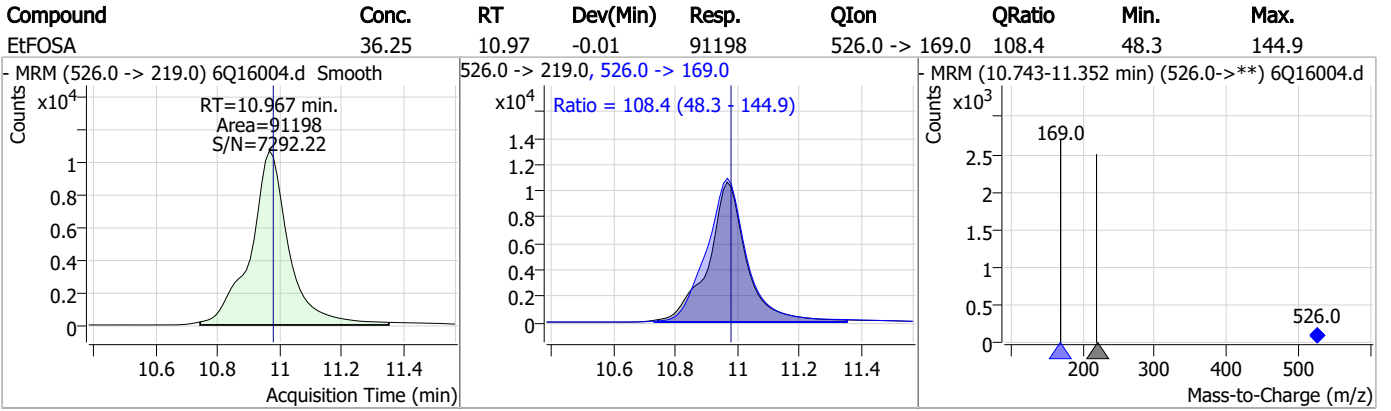
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	153.47	10.91	0.00	77682				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	10.97	0.00	5828				



Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q239-RT Method: EPA DRAFT 1633
Lab FileID: 6Q16004.D Analyst approved: 04/05/23 16:40 Martha Valls
Injection Time: 04/04/23 13:24 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.13	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorononanoic acid	375-95-1		7.50	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak
PFOSA	754-91-6		9.62	Split peak

7.6.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16314.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 7:24:49 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q243 TDCA.batch.bin
 Sample Information : OP96171,S6Q243,500,,,5.0,1,water

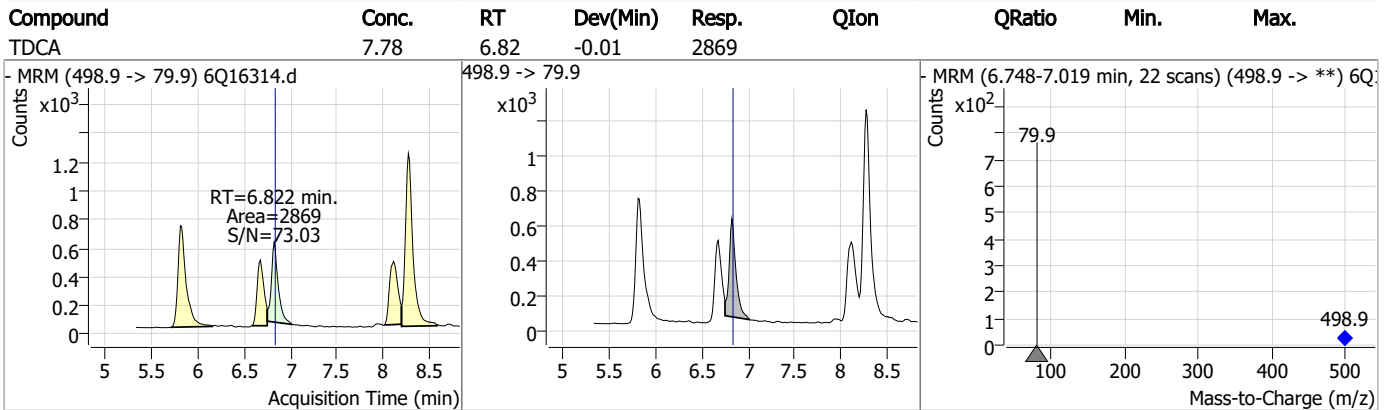
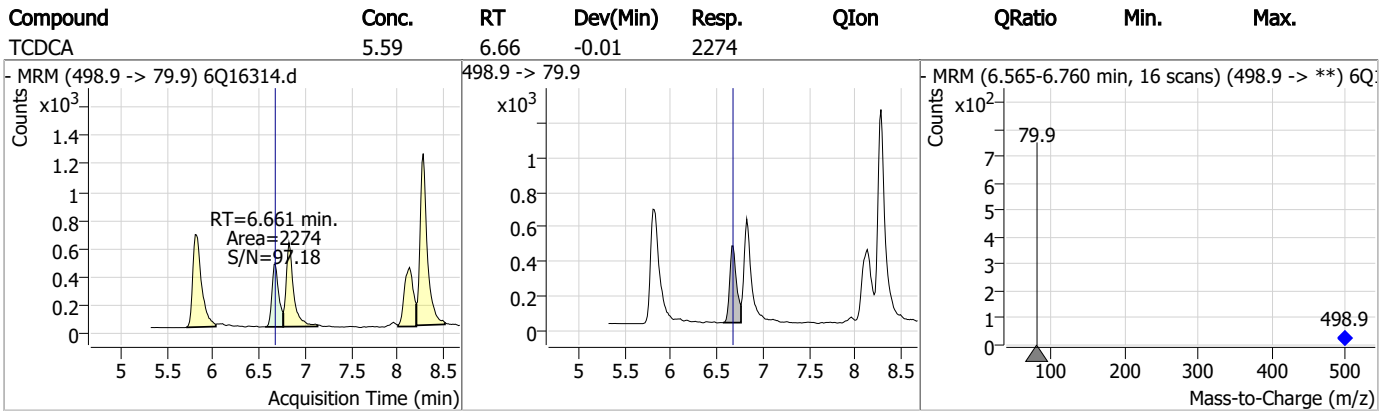
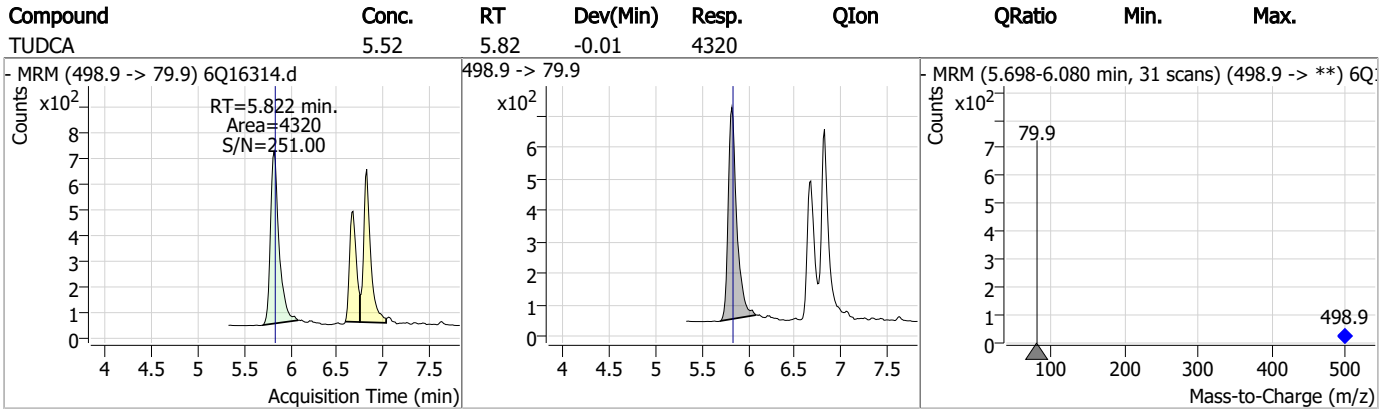
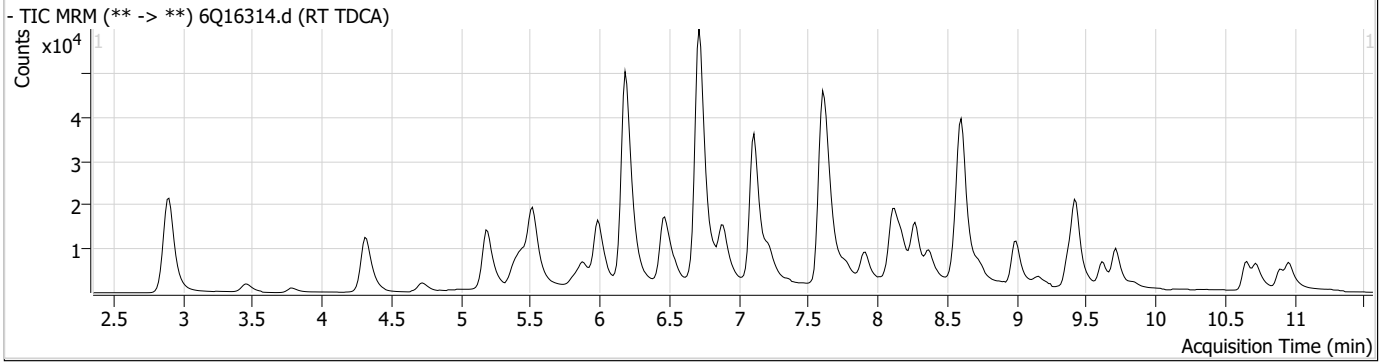
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.272	507.1 -> 79.9	8824	2.50	µg/L	-0.026	
13C4-PFOS	8.273	502.8 -> 79.9	11936	2.50	µg/L	-0.026	
System Monitoring Compounds							
13C8-PFOS	8.272	507.1 -> 79.9	8824	1.88	µg/L	-0.026	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 75.0%				
Target Compounds							
PFOS	8.273	498.9 -> 79.9 498.9 -> 98.8	10211 5697	3.39	µg/L	#m	76
TCDCa	6.661	498.9 -> 79.9	2274	5.59	ng/ml		100
TDCA	6.822	498.9 -> 79.9	2869	7.78	ng/ml		100
TUDCA	5.822	498.9 -> 79.9	4320	5.52	ng/ml		100

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

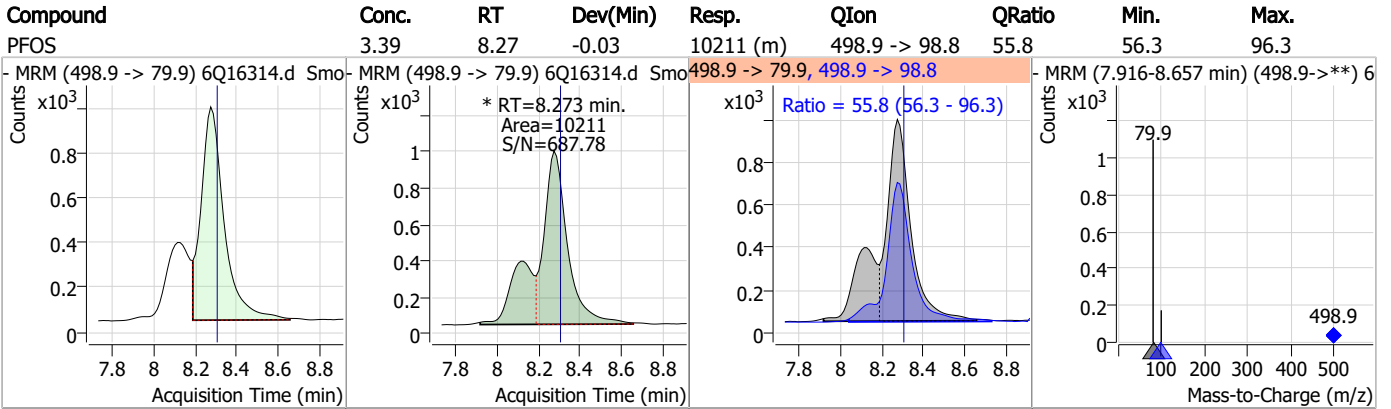
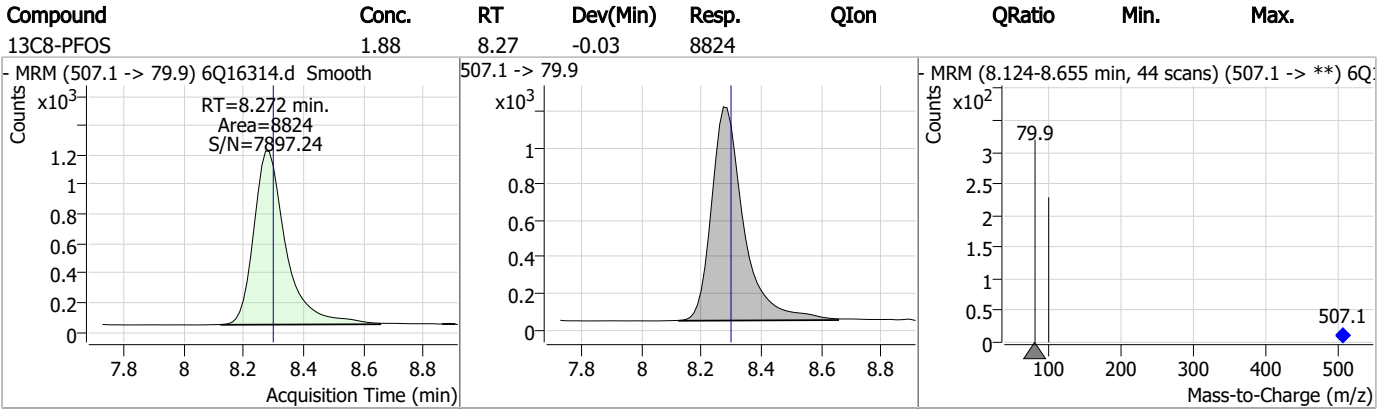
7.6.3

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.3

7



Manual Integration Approval Summary

Sample Number: S6Q243-RT Method: EPA DRAFT 1633
Lab FileID: 6Q16314.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 19:24 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16315.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 7:38:47 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96171,S6Q243,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	74188	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	33177	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	29532	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	27571	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	48706	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	14800	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	12751	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	14234	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	16605	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	9773	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	13862	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	12490	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	7229	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6393	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	1899	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2298	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2187	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	20807	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	12401	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	17292	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	17593	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	11050	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5206	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5166	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	7745	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	31387	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	5700	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	60152	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	15947	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	17234	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	28768	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	1899	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2298	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2187	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C2-PFDoDA	8.994	615.1 -> 570.0	16605	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-PFTeDA	9.709	715.2 -> 670.0	9773	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C3-PFBS	5.446	302.1 -> 79.9	12490	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFHxS	7.228	402.1 -> 79.9	7229	2.22 µg/L	0.000

7.6.4
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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 = 88.6%	
13C4-PFBA	2.897	216.8 -> 171.9	74188	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.468	367.1 -> 322.0	27571	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C5-PFHxA	5.516	318.0 -> 273.0	29532	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFPeA	4.322	268.3 -> 223.0	33177	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C6-PFDA	8.110	519.1 -> 474.1	12751	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C7-PFUnDA	8.564	570.0 -> 525.1	14234	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C8-FOSA	9.631	506.1 -> 77.8	13862	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	7.112	421.1 -> 376.0	48706	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOS	8.272	507.1 -> 79.9	6393	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C9-PFNA	7.643	472.1 -> 427.0	14800	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%	
d3-MeFOSAA	8.167	573.2 -> 419.0	20807	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	12401	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSA	10.733	515.0 -> 219.0	5166	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSAA	8.363	589.2 -> 419.0	17292	5.33 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d7-MeFOSE	10.653	623.2 -> 58.9	17593	22.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
d9-EtFOSE	10.888	639.2 -> 58.9	11050	21.09 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	5206	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	191530	51.49 µg/L	100
		327.1 -> 80.9	44966		
6:2FTS	6.886	427.1 -> 407.0	163375	53.09 µg/L	96
		427.1 -> 80.9	32160		
8:2FTS	7.911	527.1 -> 507.0	82737	53.32 µg/L	100
		527.1 -> 80.8	20503		
EtFOSAA	8.376	584.2 -> 419.1	35860	13.52 µg/L	m 87
		584.2 -> 526.0	19551		
FOSA	9.634	498.1 -> 77.9	156771	30.61 µg/L	100
		498.1 -> 478.0	5718		
MeFOSAA	8.168	570.1 -> 419.0	51889	13.30 µg/L	94
		570.1 -> 483.0	8384		
PFBA	2.893	212.8 -> 168.9	99933	53.30 µg/L	100
PFBS	5.460	298.7 -> 79.9	54808	11.19 µg/L	98
		298.7 -> 98.8	24430		
PFDA	8.123	512.9 -> 469.0	188863	12.72 µg/L	98
		512.9 -> 219.0	28581		
PFDoDA	8.994	613.1 -> 569.0	162997	13.18 µg/L	95
		613.1 -> 319.0	18536		
PFDS	9.158	599.0 -> 79.9	23833	12.47 µg/L	96

7.6.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	13013			
PFHpA	6.469	363.1 -> 319.0	234091	15.10	µg/L	98
		363.1 -> 169.0	30915			
PFHpS	7.781	449.0 -> 79.9	34443	12.60	µg/L	97
		449.0 -> 98.9	19928			
PFHxA	5.519	313.0 -> 269.0	148358	13.61	µg/L	99
		313.0 -> 118.9	6225			
PFHxS	7.228	398.7 -> 79.9	40543	12.75	µg/L	m 98
		398.7 -> 98.9	22845			
PFNA	7.505	463.0 -> 419.0	312069	32.37	µg/L	m 100
		463.0 -> 219.0	64009			
PFNS	8.738	548.8 -> 79.9	33768	12.44	µg/L	98
		548.8 -> 98.9	19941			
PFOA	7.113	413.0 -> 369.0	632734	28.69	µg/L	m 98
		413.0 -> 169.0	88623			
PFOS	8.273	498.9 -> 79.9	33675	11.98	µg/L	m 87
		498.9 -> 98.8	21612			
PFPeA	4.324	263.0 -> 219.0	189256	27.04	µg/L	100
PFPeS	6.520	349.1 -> 79.9	48709	12.72	µg/L	99
		349.1 -> 98.9	25564			
PFTeDA	9.722	713.1 -> 669.0	132484	12.83	µg/L	100
		713.1 -> 168.9	8323			
PFTrDA	9.378	663.0 -> 619.0	155270	13.30	µg/L	99
		663.0 -> 168.9	12167			
PFUnDA	8.564	563.1 -> 519.0	151907	13.33	µg/L	96
		563.1 -> 269.1	22510			
11CI-PF3OUdS	9.430	630.9 -> 450.9	349284	52.39	µg/L	97
		632.9 -> 452.9	102731			
9CI-PF3ONS	8.603	530.8 -> 351.0	695503	54.63	µg/L	96
		532.8 -> 353.0	216232			
ADONA	6.719	376.9 -> 250.9	1347295	53.62	µg/L	96
		376.9 -> 84.8	288303			
HFPO-DA	5.894	284.9 -> 168.9	59517	53.09	µg/L	94
		284.9 -> 184.9	8757			
3:3FTCA	3.790	241.0 -> 177.0	24045	61.91	µg/L	100
		241.0 -> 117.0	3661			
5:3FTCA	6.185	341.0 -> 237.1	771604	320.22	µg/L	96
		341.0 -> 217.0	698598			
7:3FTCA	7.608	441.0 -> 316.9	400225	328.10	µg/L	93
		441.0 -> 336.9	741358			
EtFOSA	10.967	526.0 -> 219.0	80724	35.92	µg/L	82
		526.0 -> 169.0	91844			
EtFOSE	10.913	630.0 -> 58.9	66283	152.95	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	69775	32.11	µg/L	85
		511.9 -> 169.0	83866			
MeFOSE	10.666	616.1 -> 58.9	96179	145.04	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	13297	11.98	µg/L	97
		699.1 -> 98.8	8615			
NFDHA	5.398	295.0 -> 201.0	17838	25.24	µg/L	96
		295.0 -> 84.9	8267			
PFMBA	4.725	279.0 -> 85.1	56737	24.47	µg/L	100
PFMPA	3.463	229.0 -> 84.9	54473	25.74	µg/L	100
PFEESA	5.999	314.8 -> 134.9	385766	24.98	µg/L	100
		314.8 -> 82.9	9595			

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

7.6.4
7

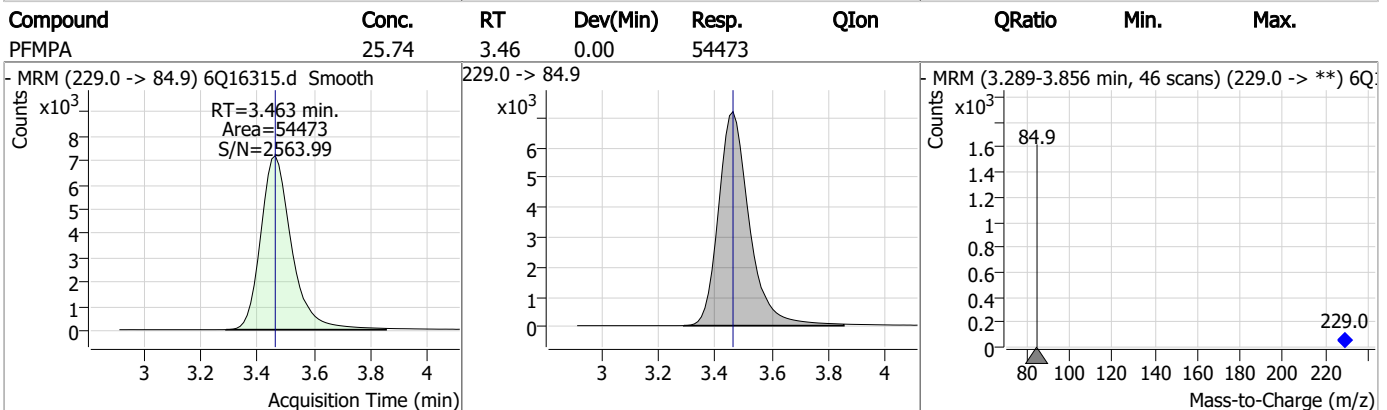
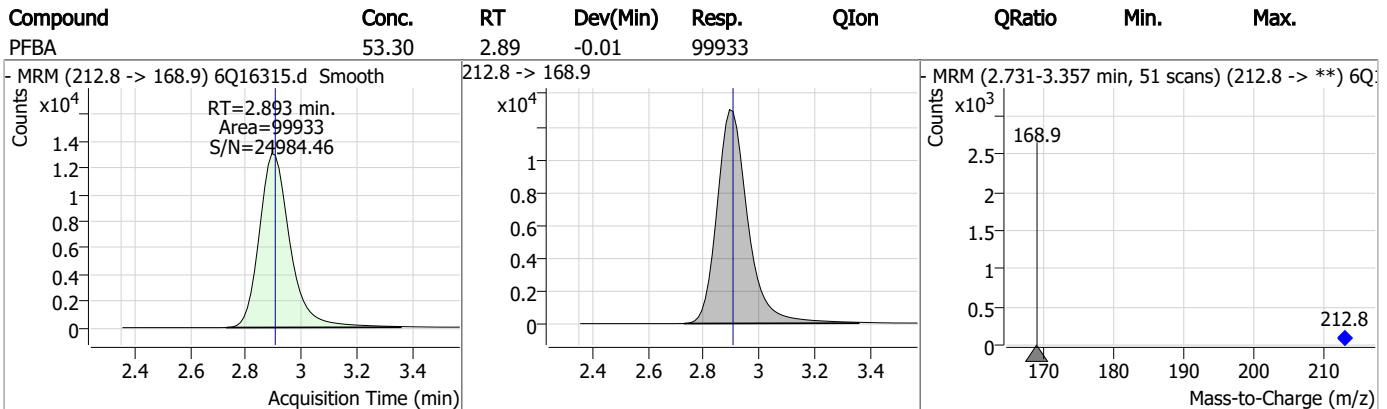
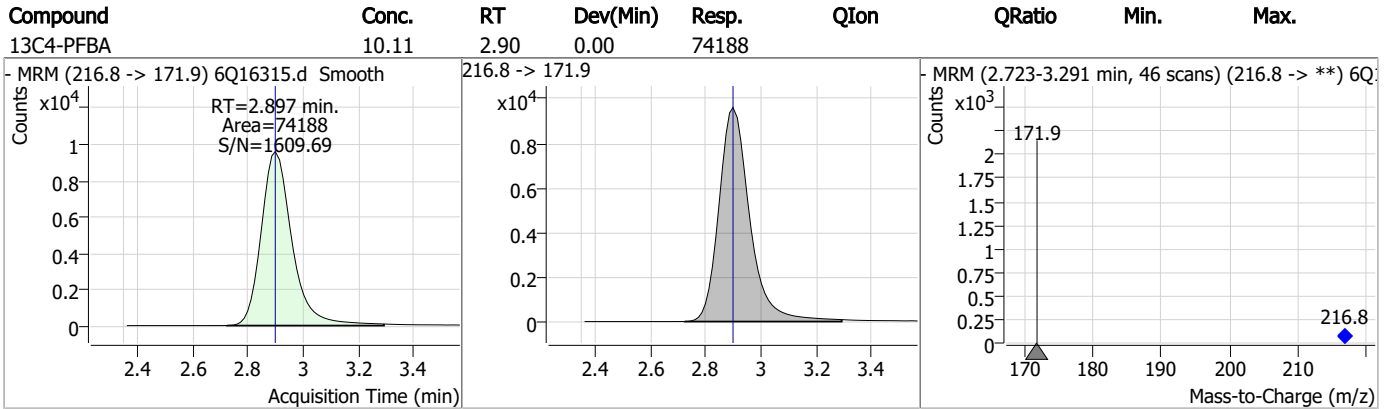
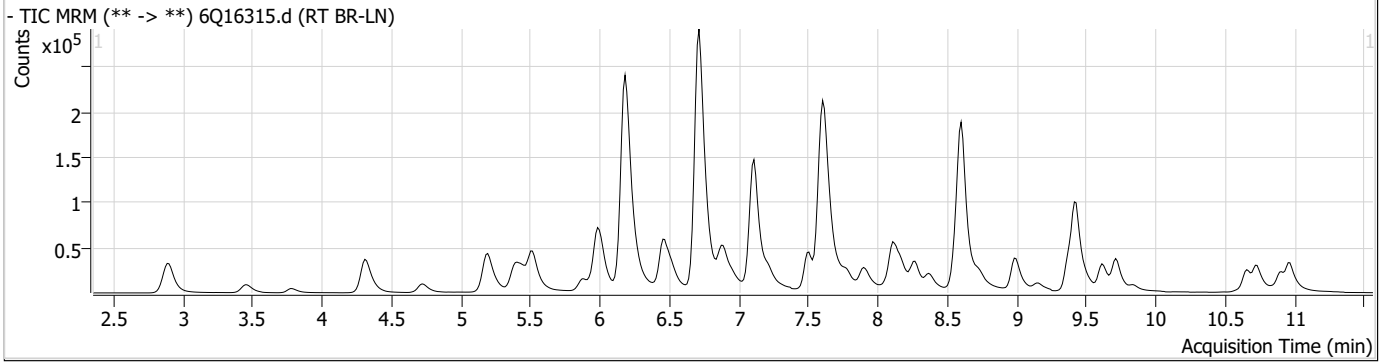
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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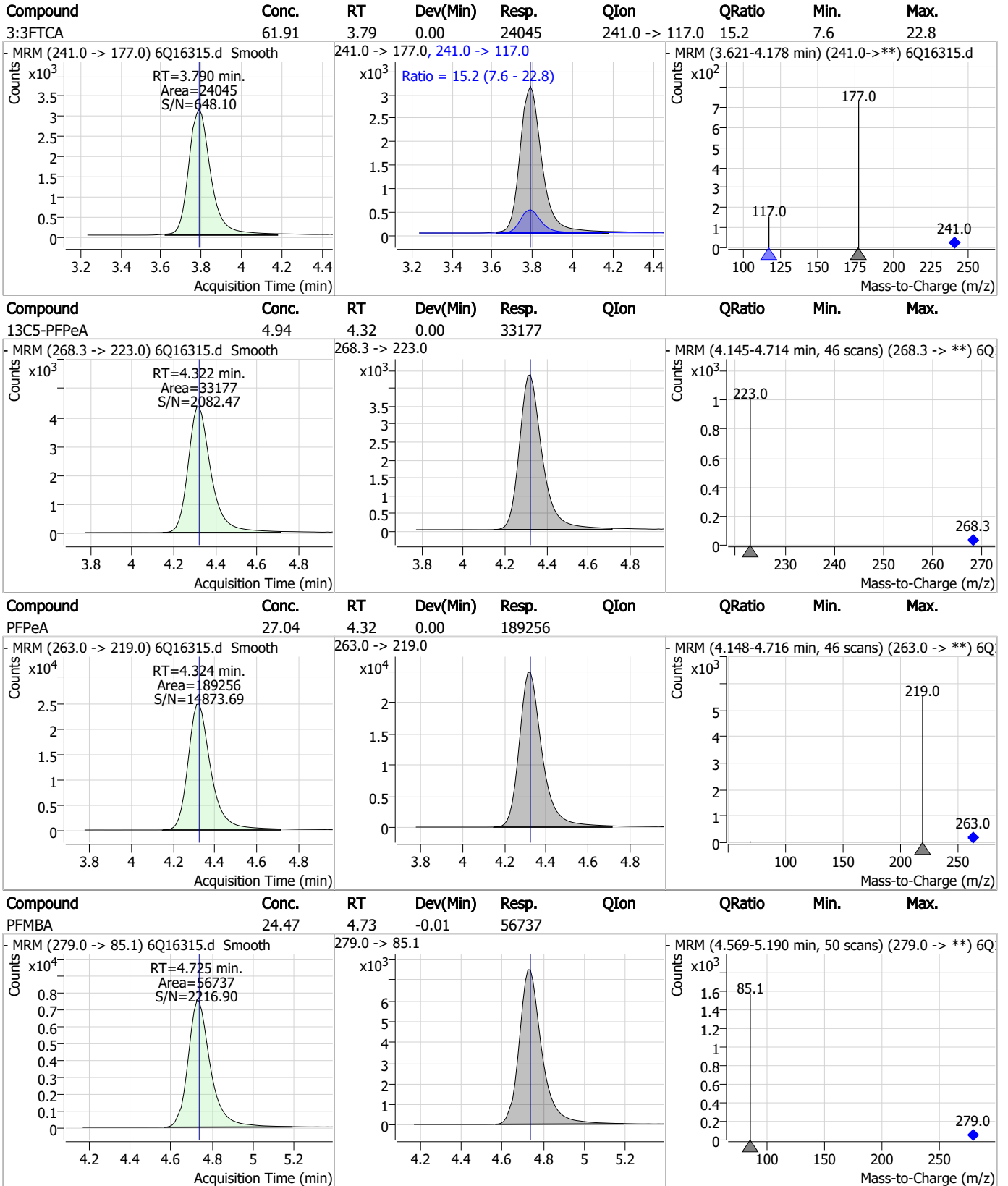
7.6.4

7

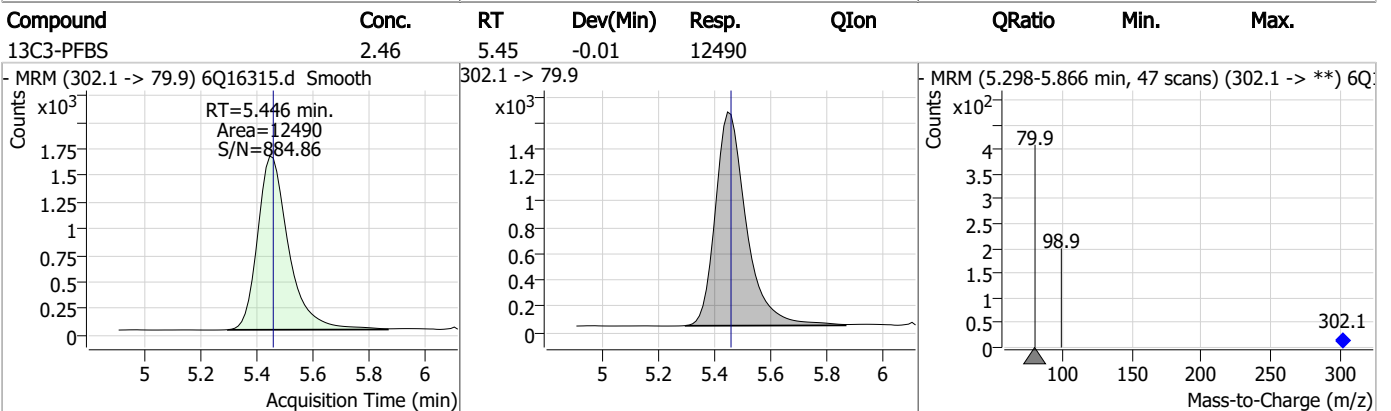
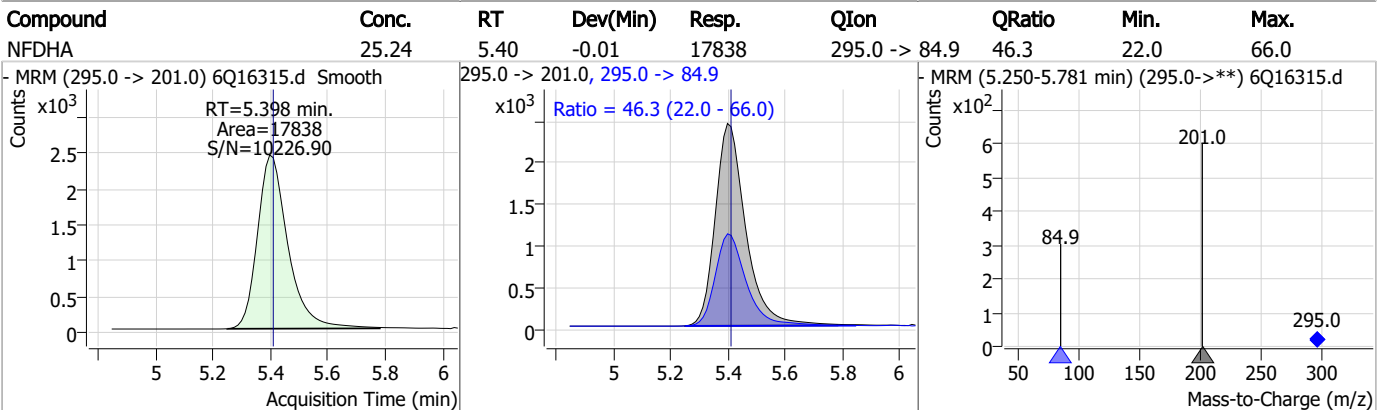
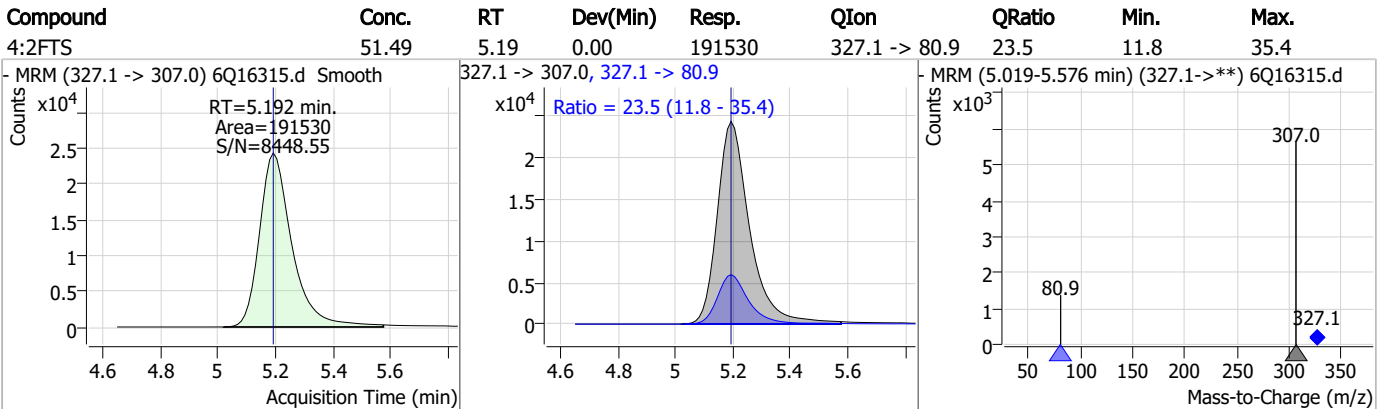
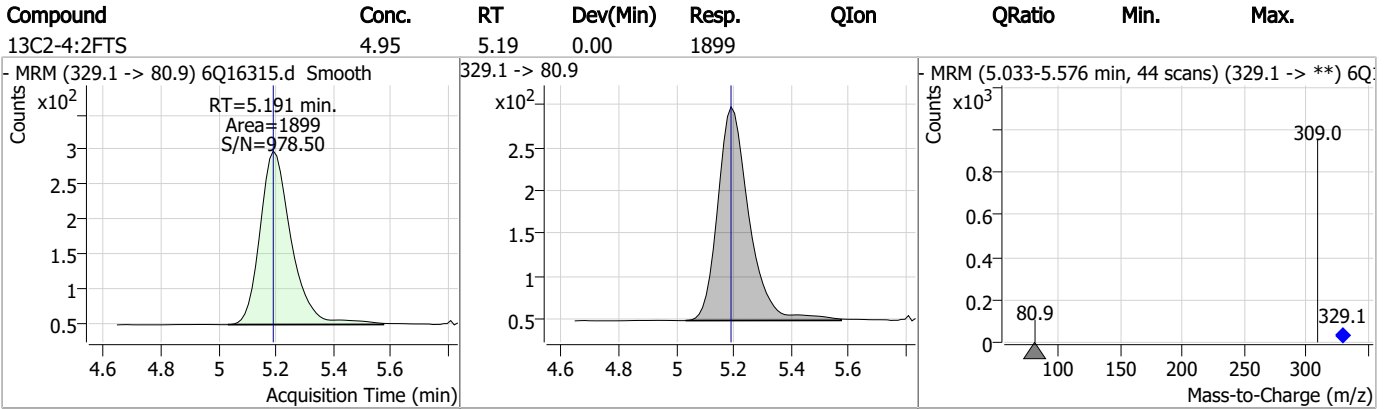
Perfluorinated Compounds by LC/MS/MS



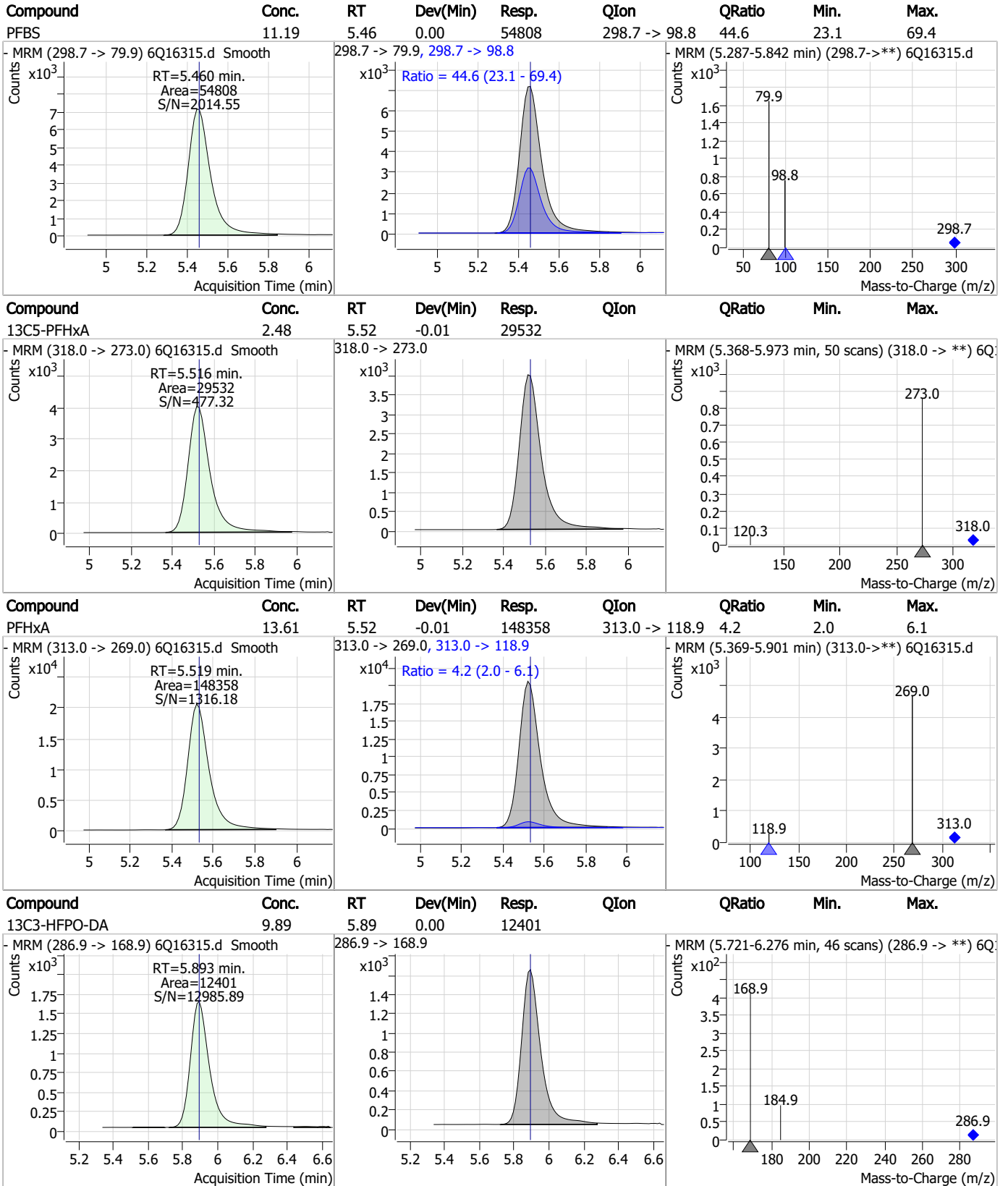
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



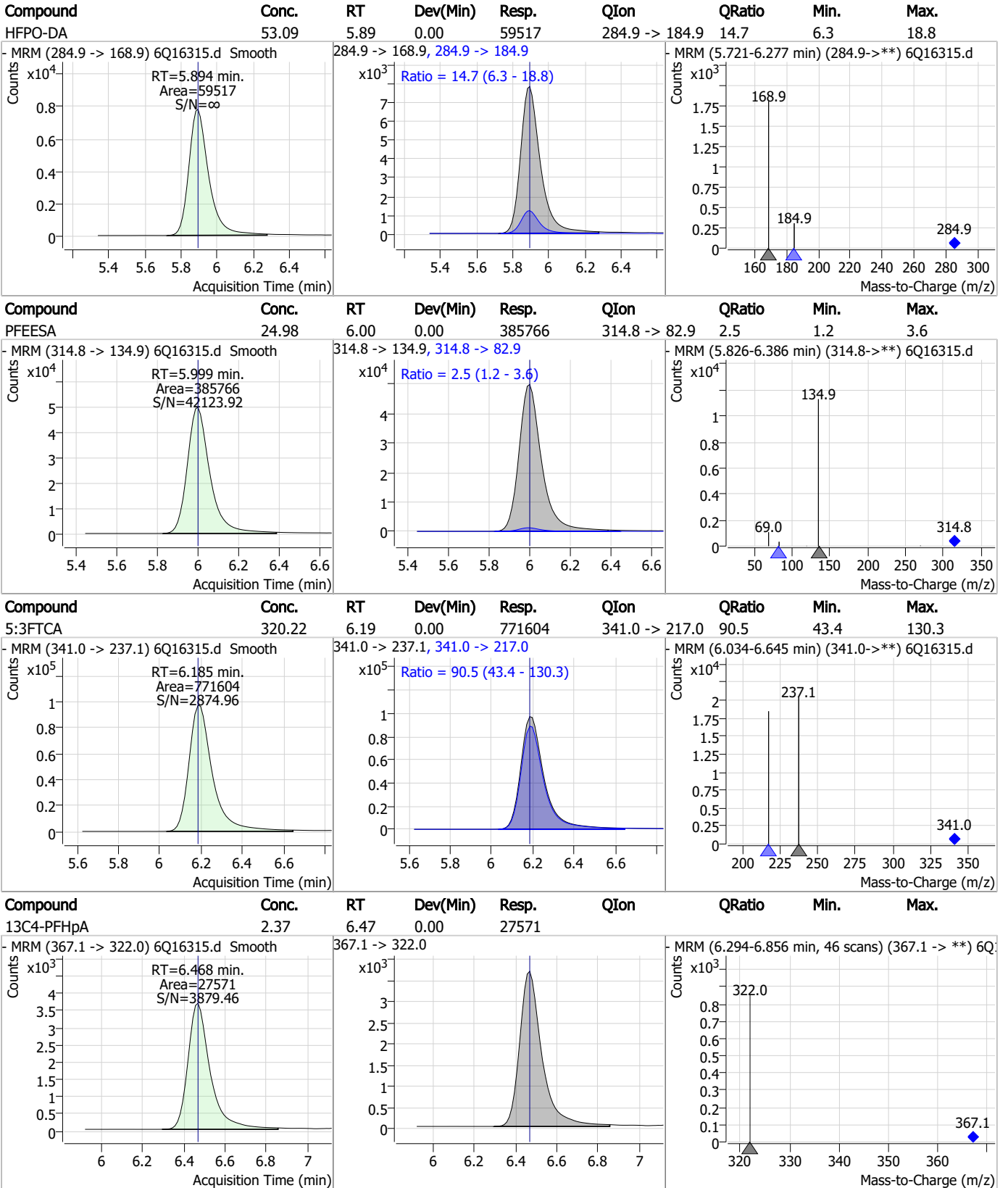
Perfluorinated Compounds by LC/MS/MS



7.6.4

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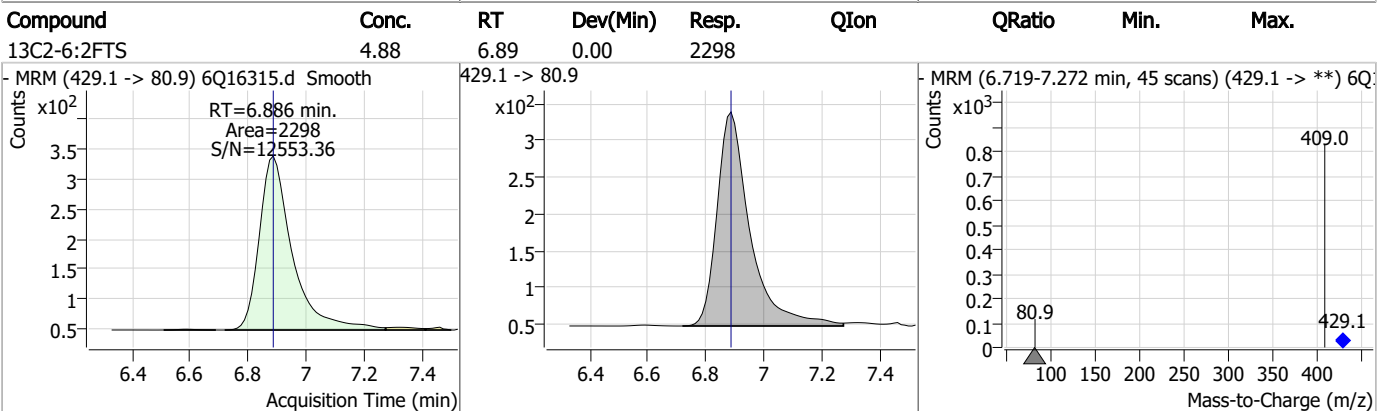
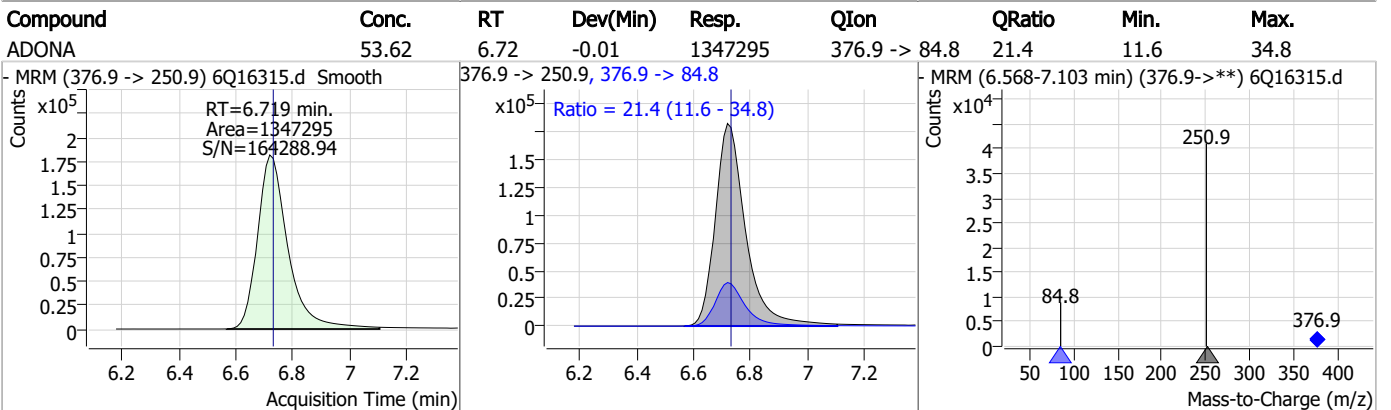
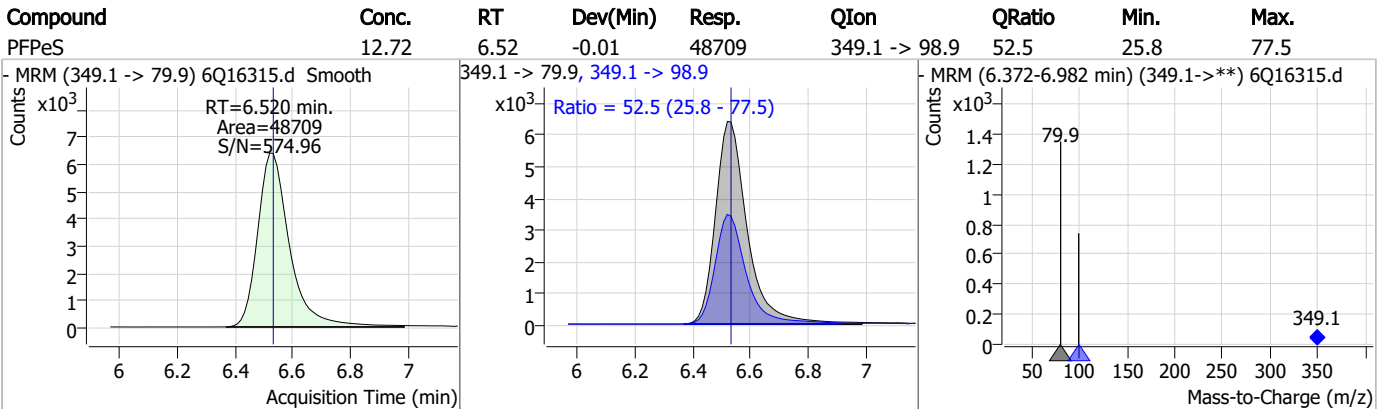
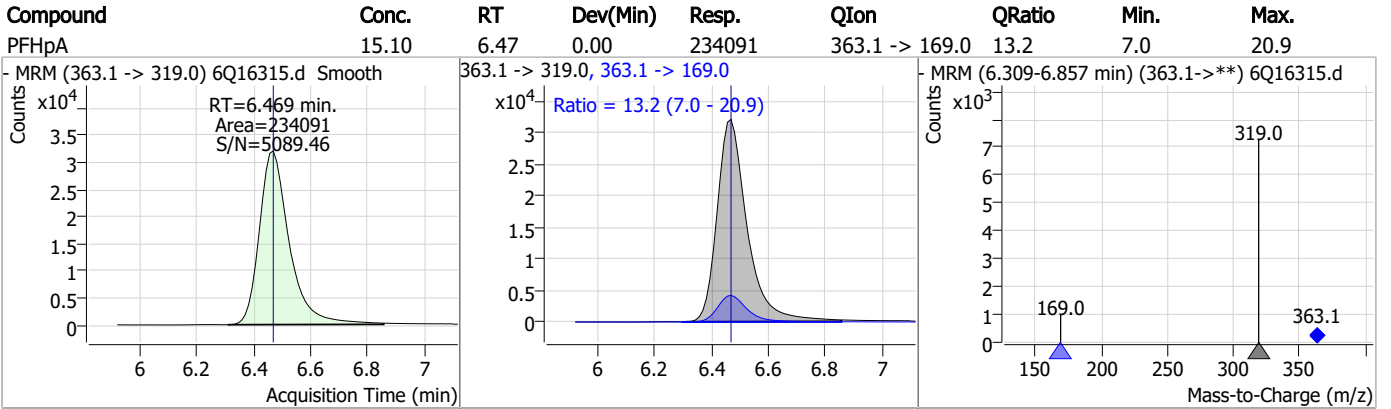
Perfluorinated Compounds by LC/MS/MS



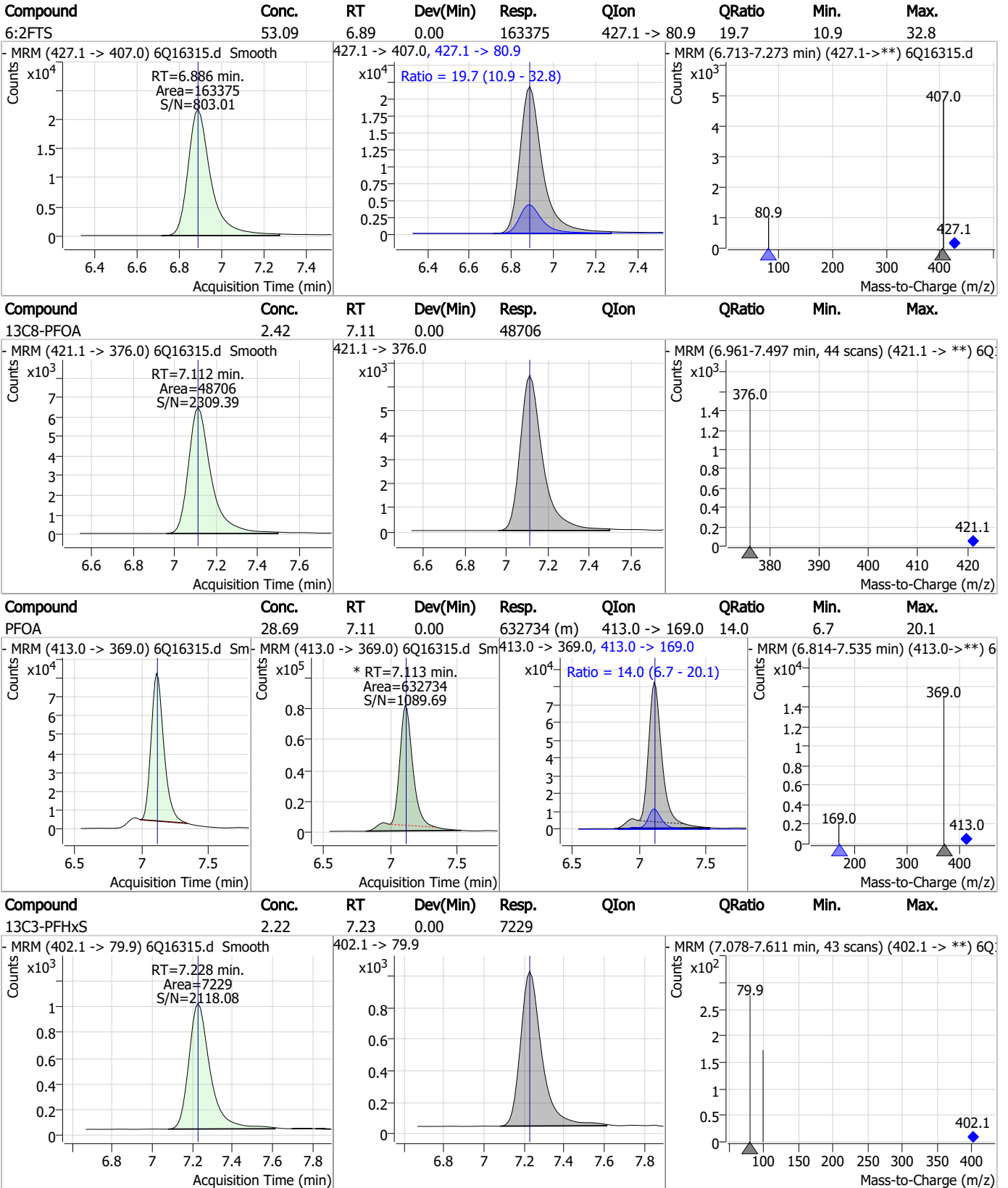
7.6.4

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

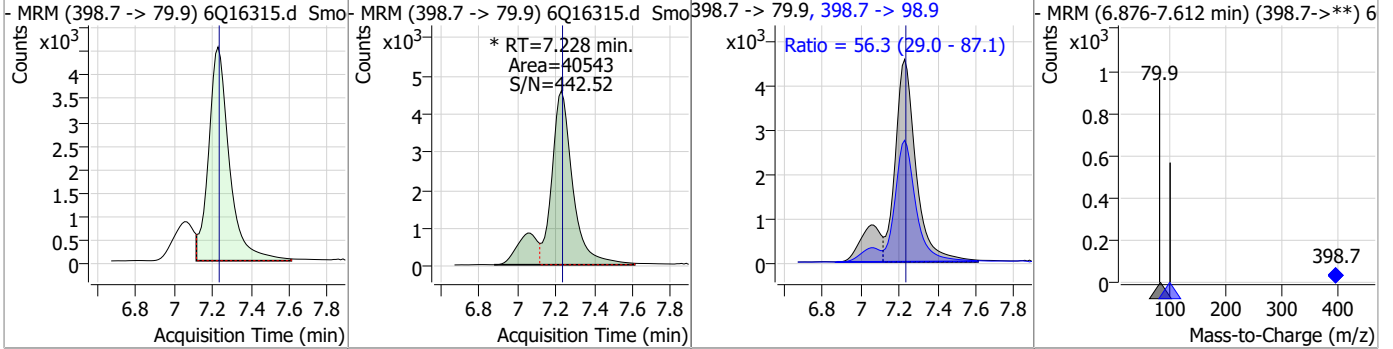


7.6.4

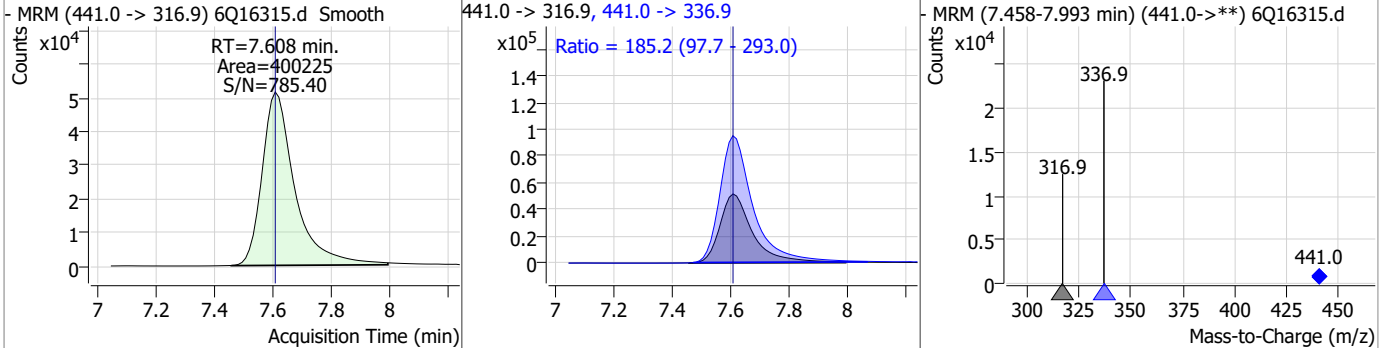
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Perfluorinated Compounds by LC/MS/MS

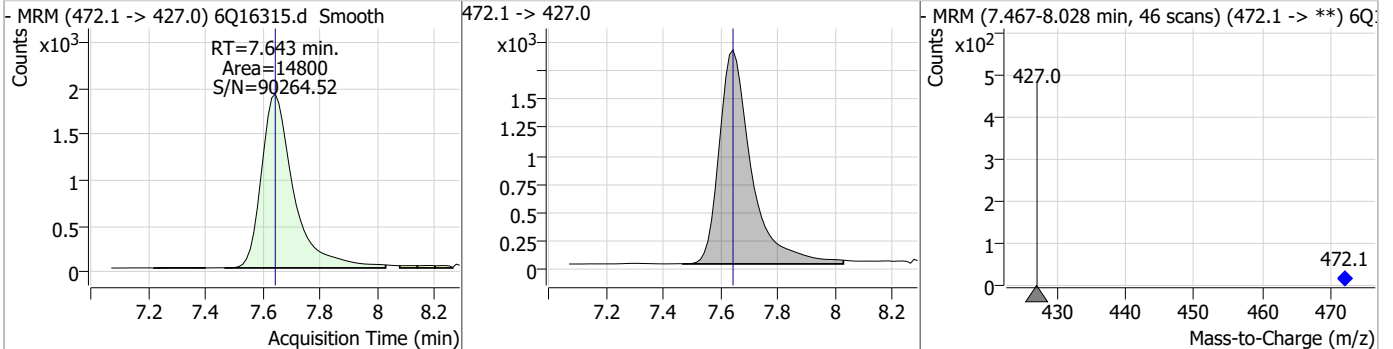
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	12.75	7.23	0.00	40543 (m)	398.7 -> 98.9	56.3	29.0	87.1



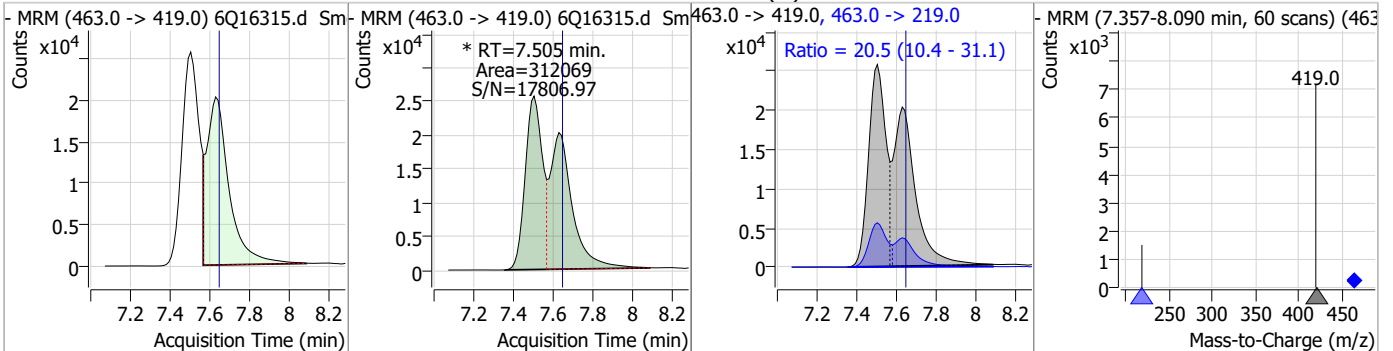
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	328.10	7.61	0.00	400225	441.0 -> 336.9	185.2	97.7	293.0



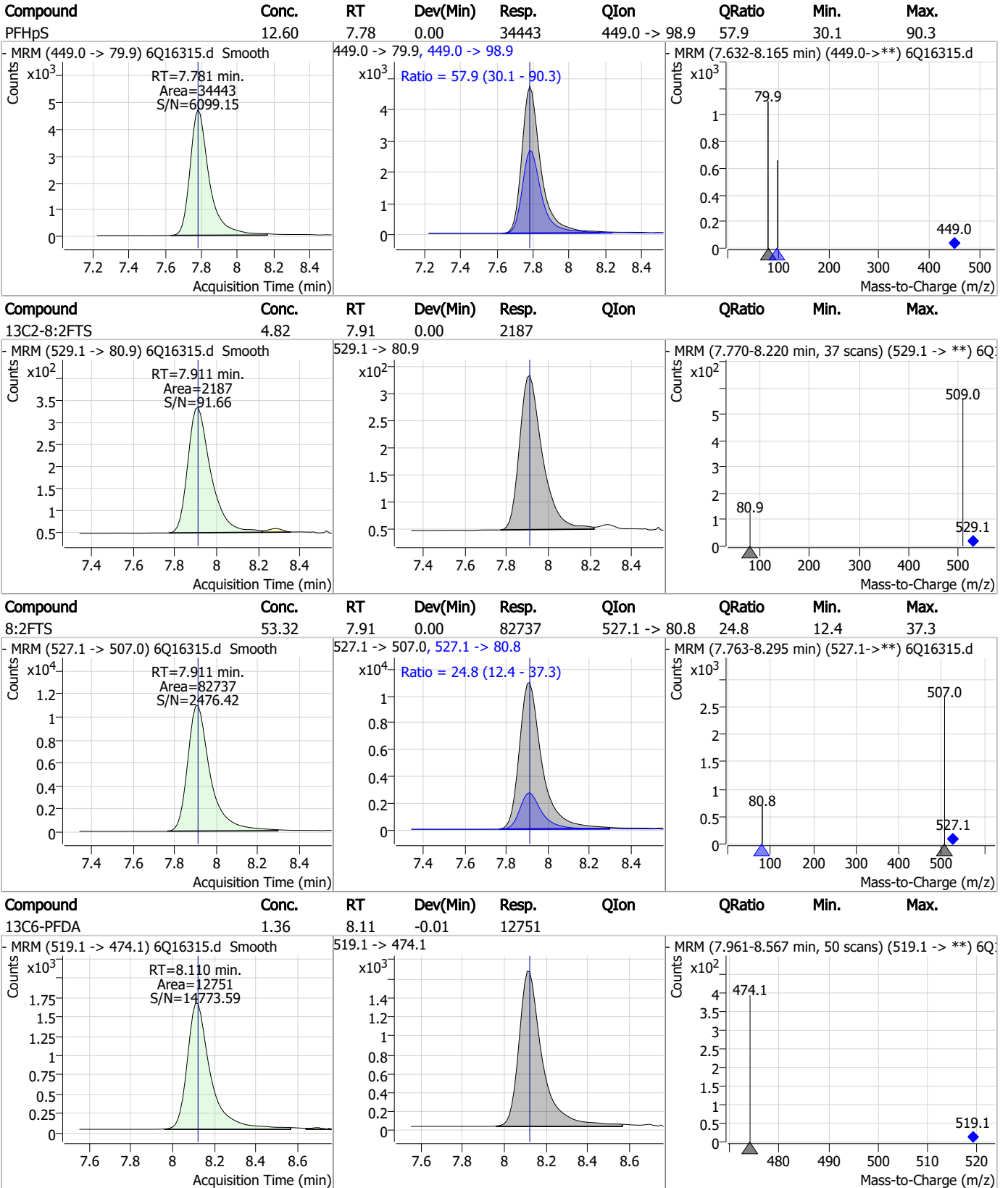
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.16	7.64	0.00	14800	472.1 -> 427.0	46	427.1	472.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	32.37	7.51	-0.14	312069 (m)	463.0 -> 219.0	20.5	10.4	31.1



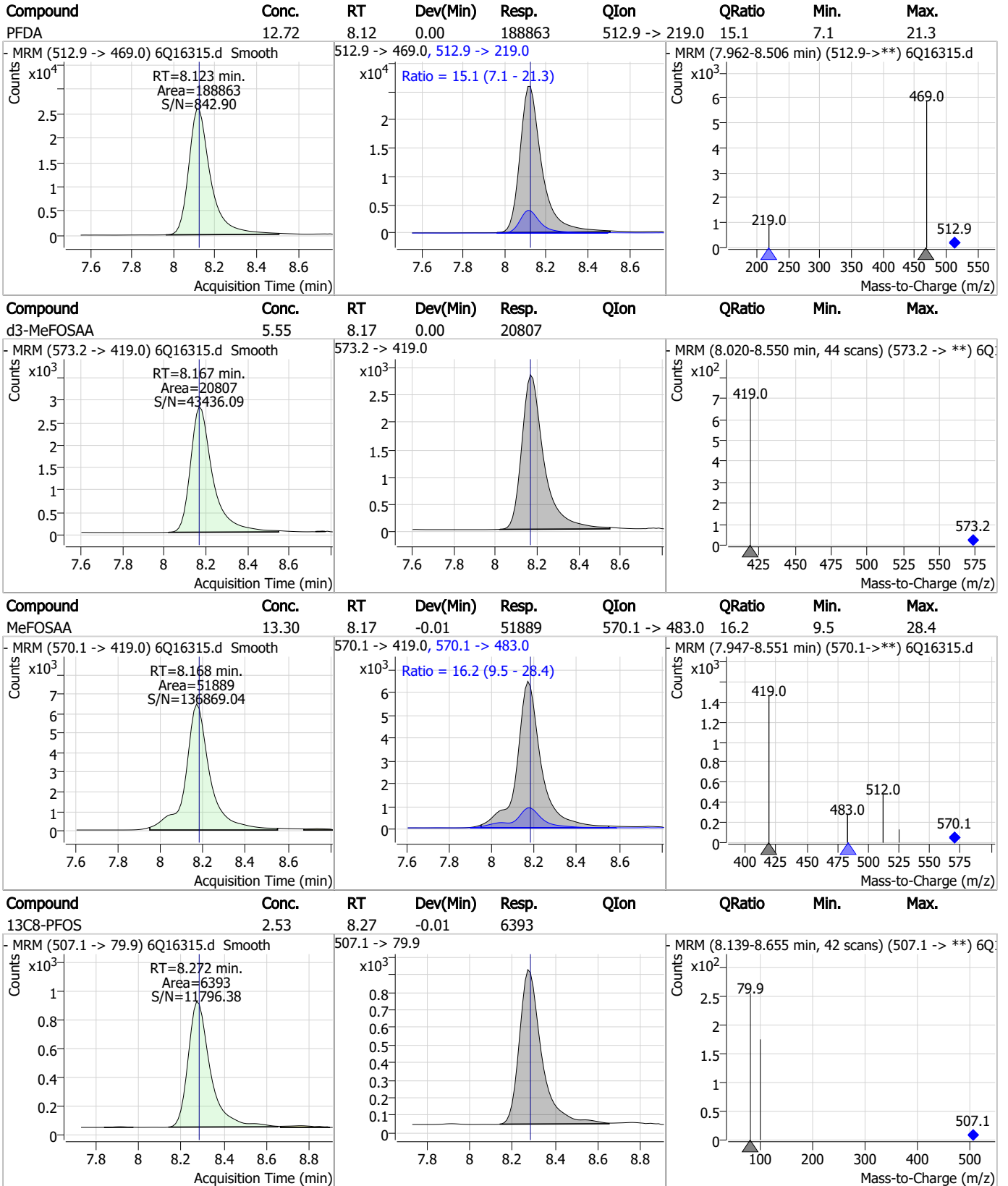
Perfluorinated Compounds by LC/MS/MS



7.6.4

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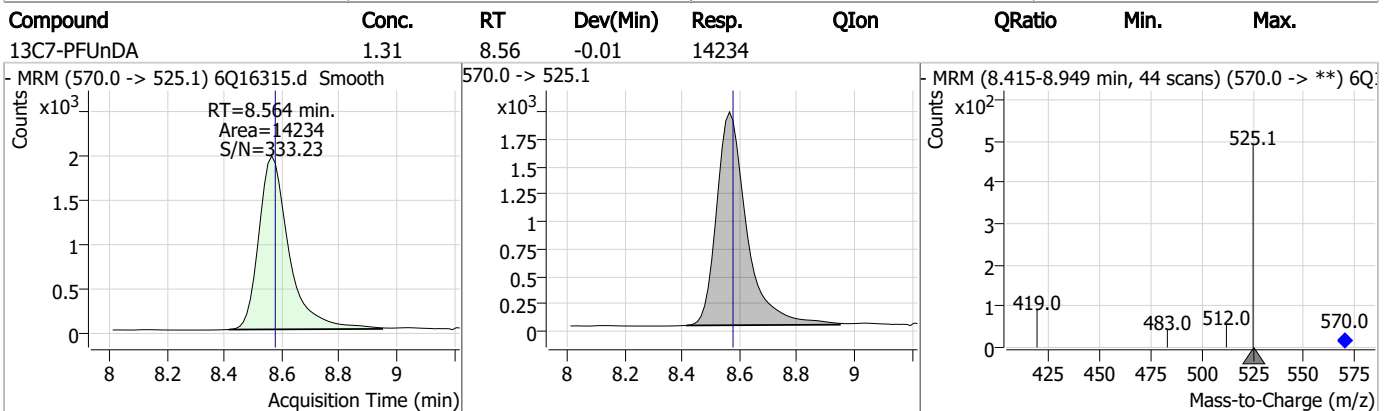
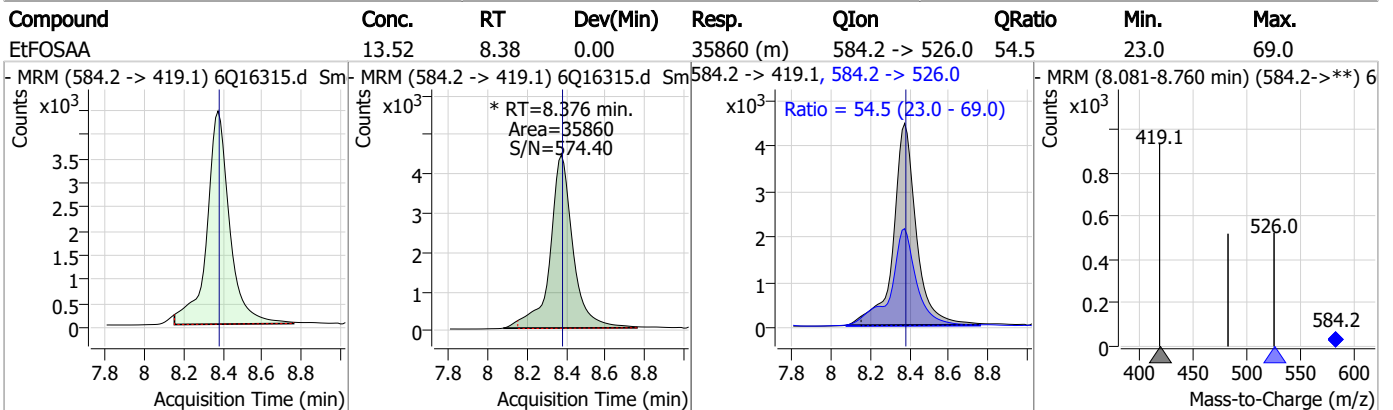
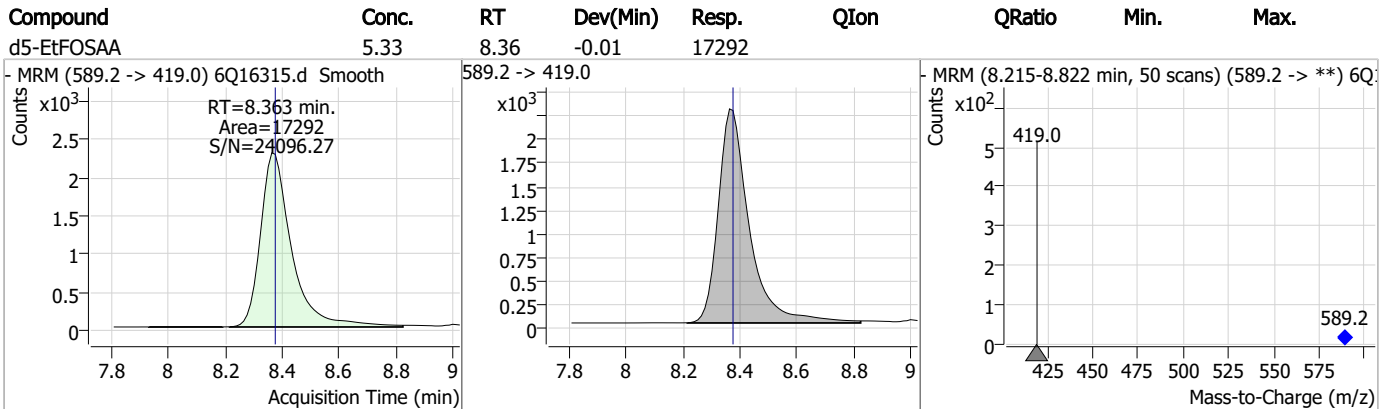
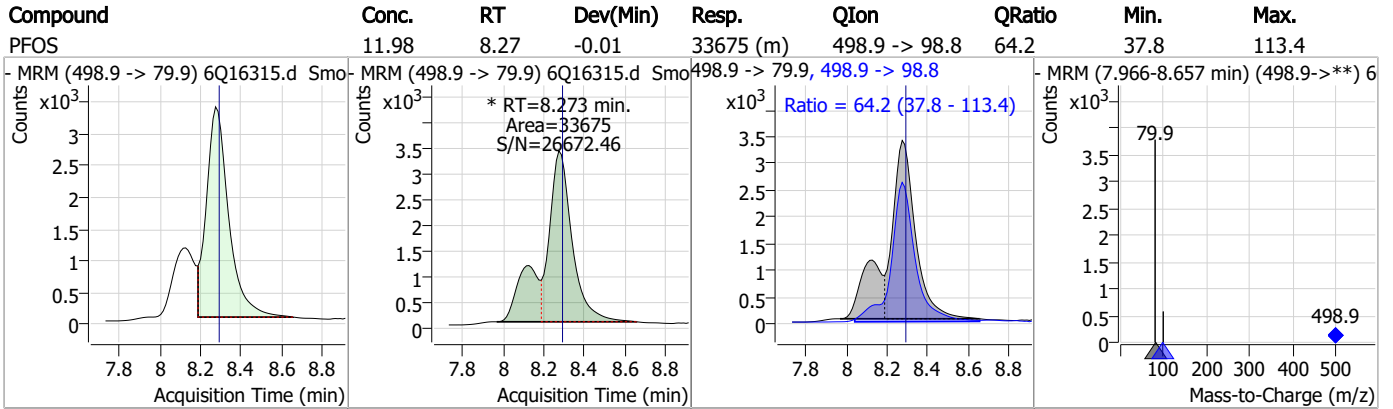
Perfluorinated Compounds by LC/MS/MS



7.6.4

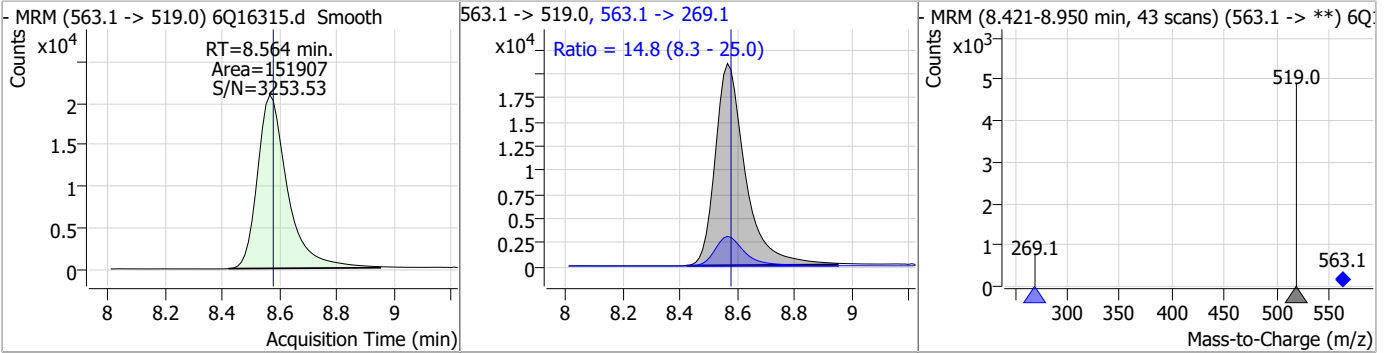
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Perfluorinated Compounds by LC/MS/MS

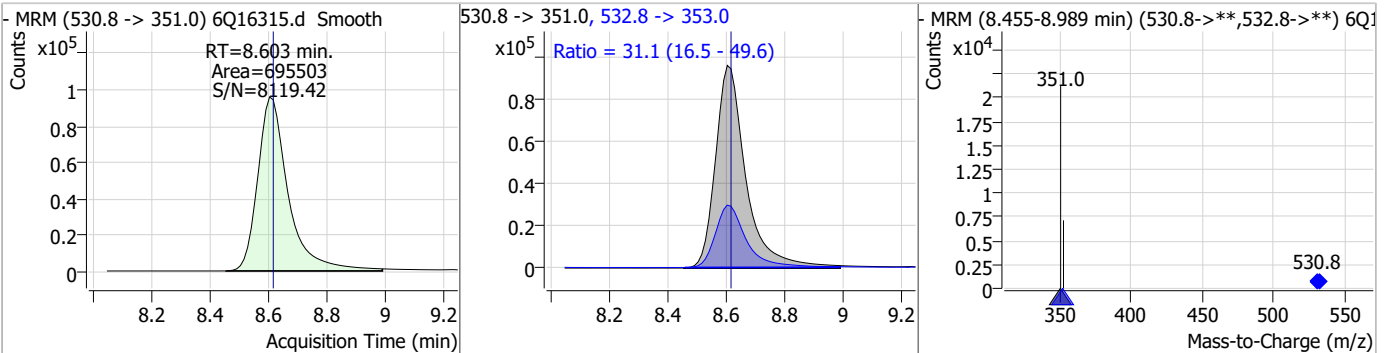


Perfluorinated Compounds by LC/MS/MS

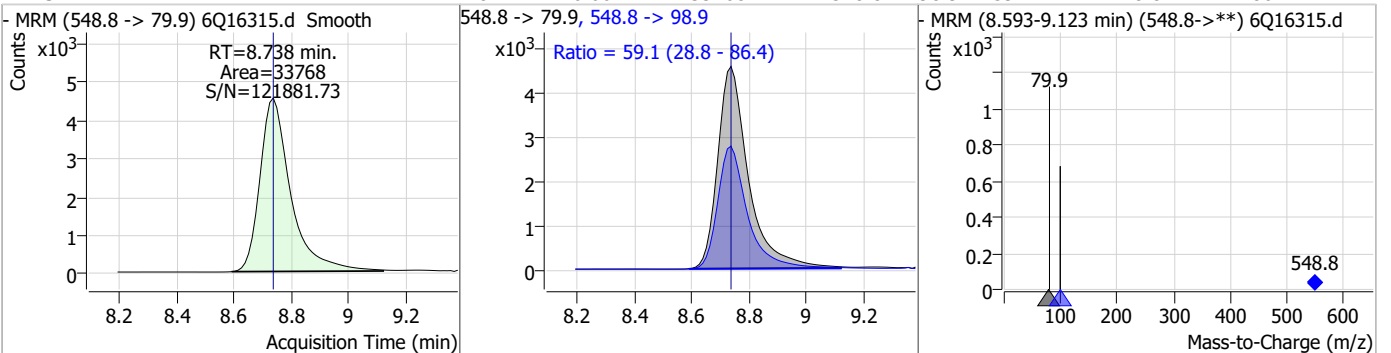
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.33	8.56	-0.01	151907	563.1 -> 269.1	14.8	8.3	25.0



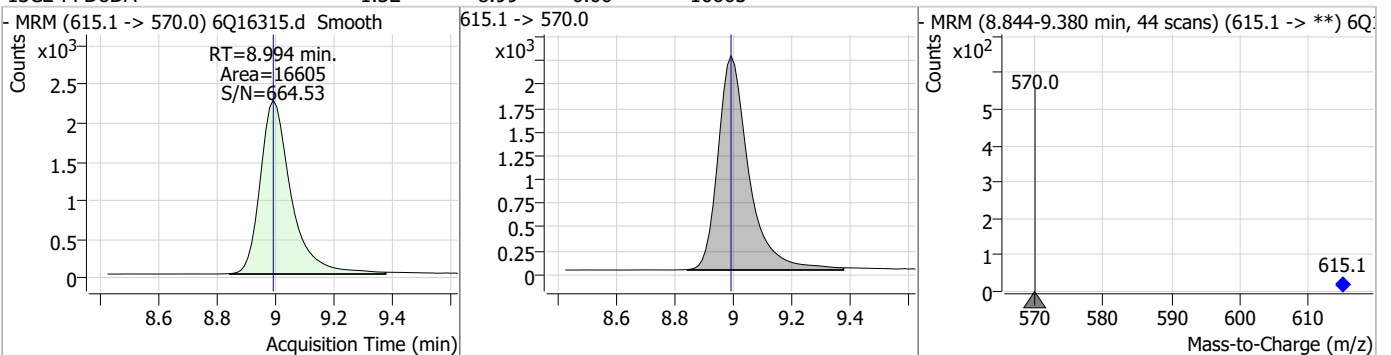
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	54.63	8.60	-0.01	695503	532.8 -> 353.0	31.1	16.5	49.6



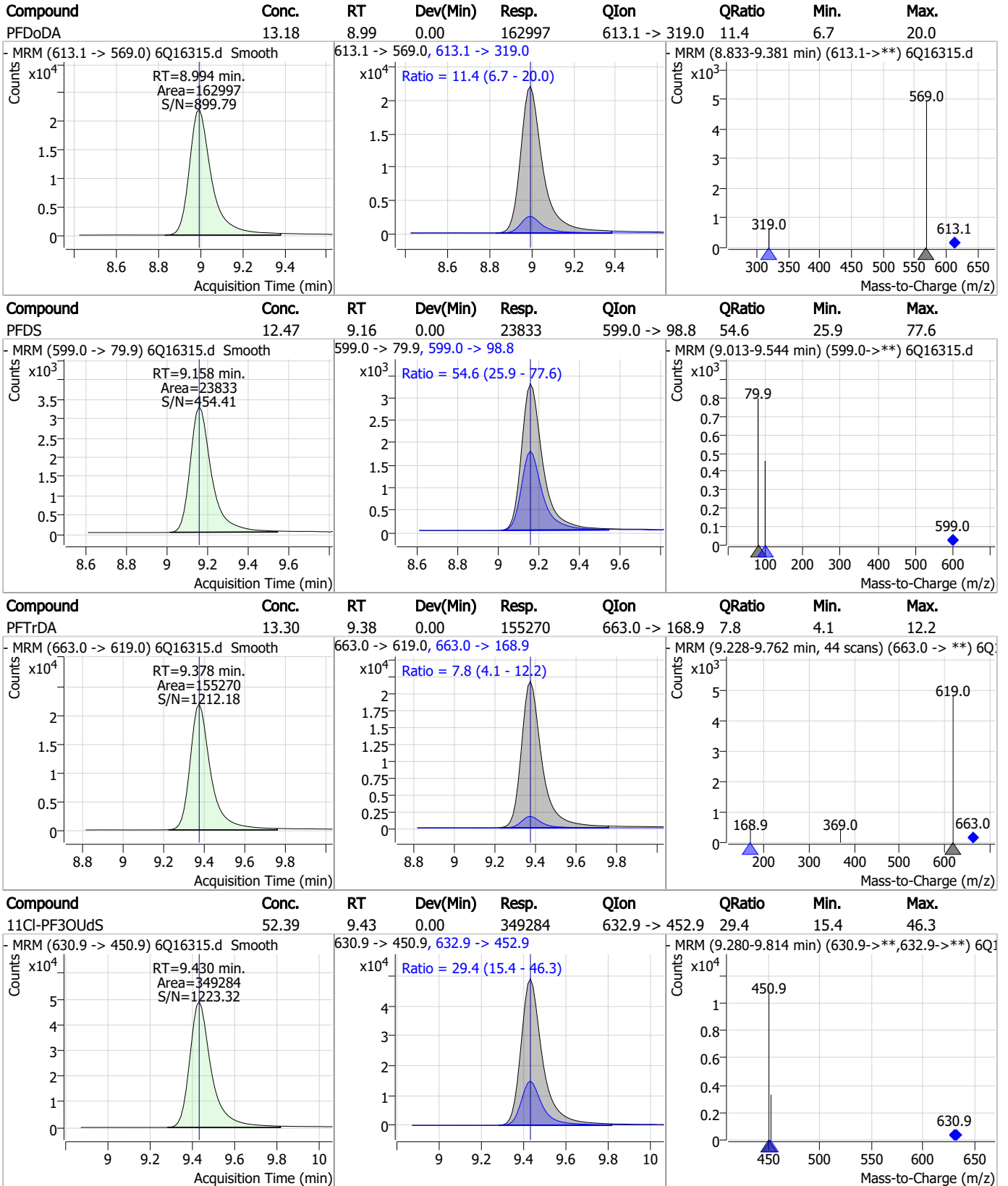
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.44	8.74	0.00	33768	548.8 -> 98.9	59.1	28.8	86.4



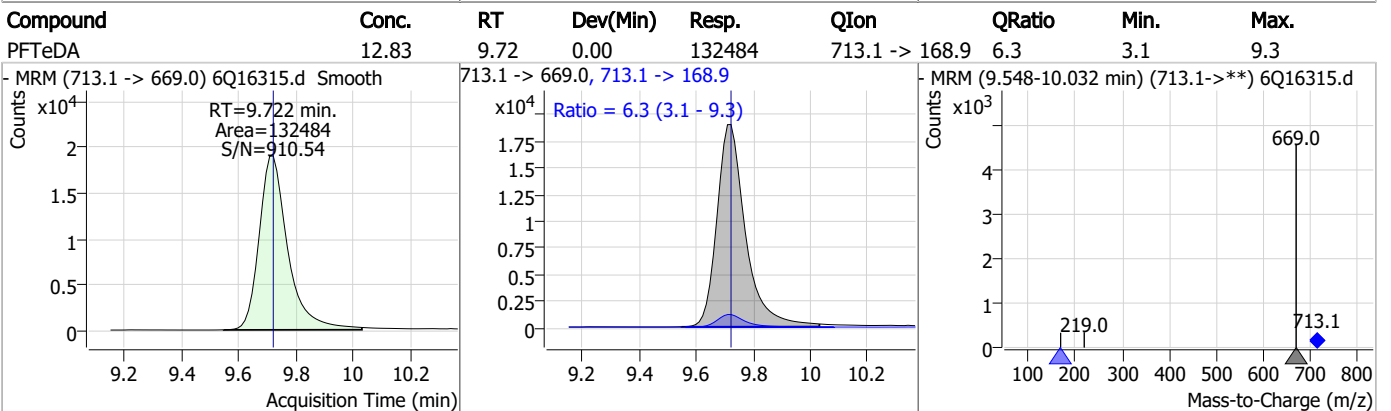
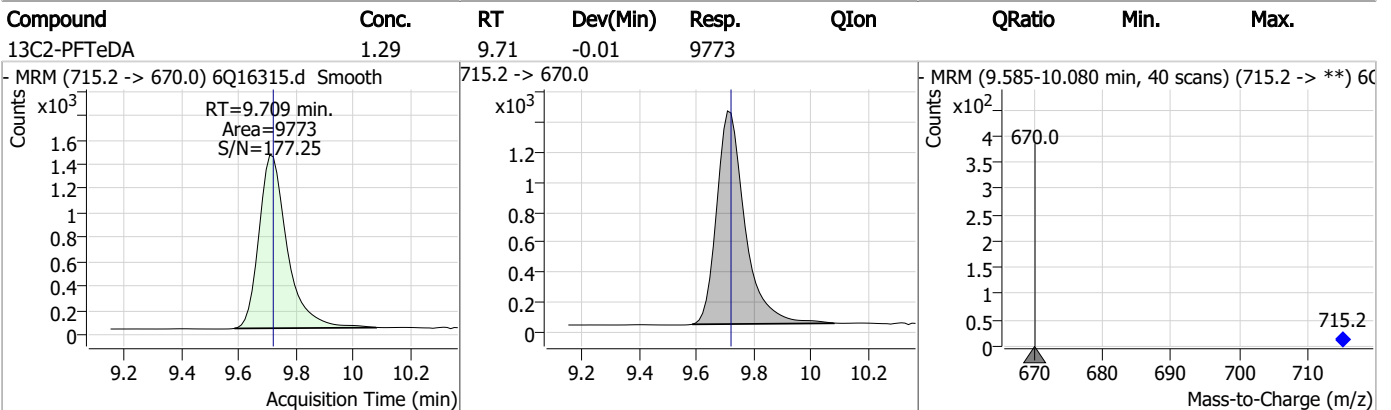
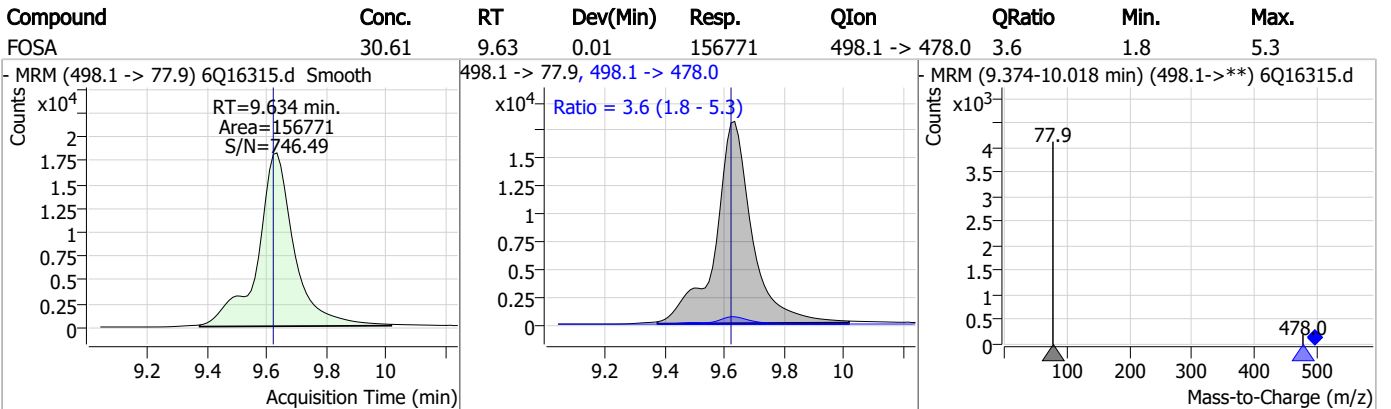
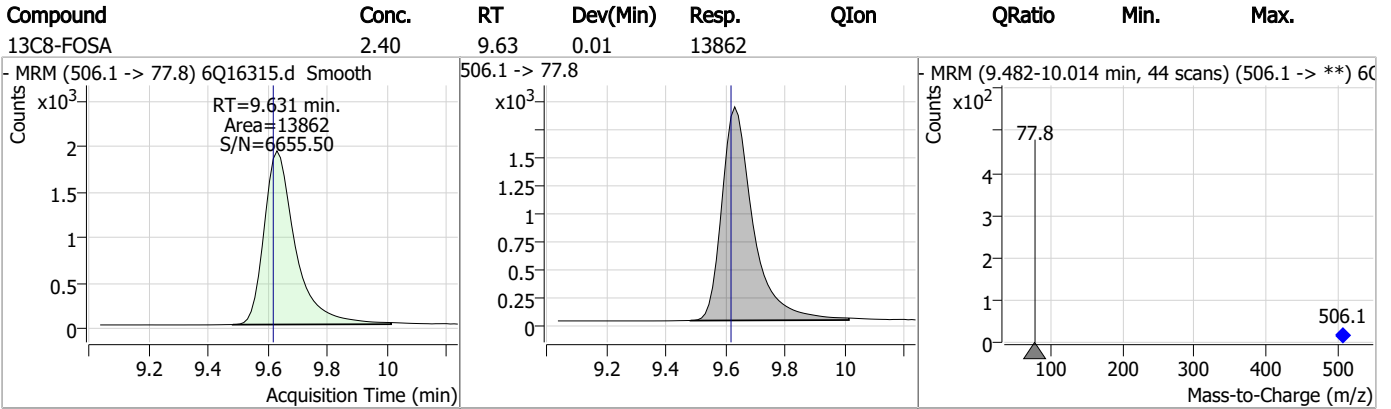
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.32	8.99	0.00	16605	615.1 -> 570.0			



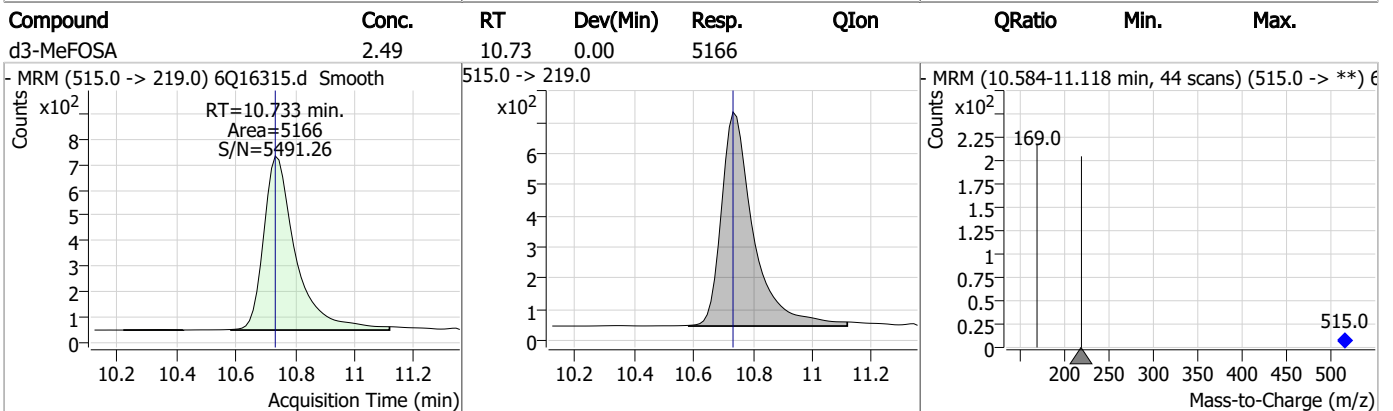
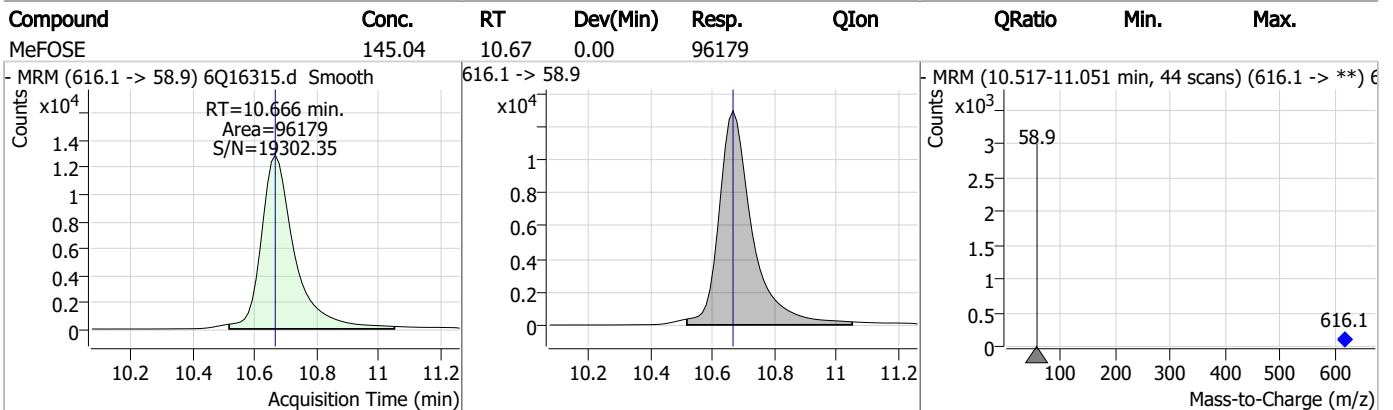
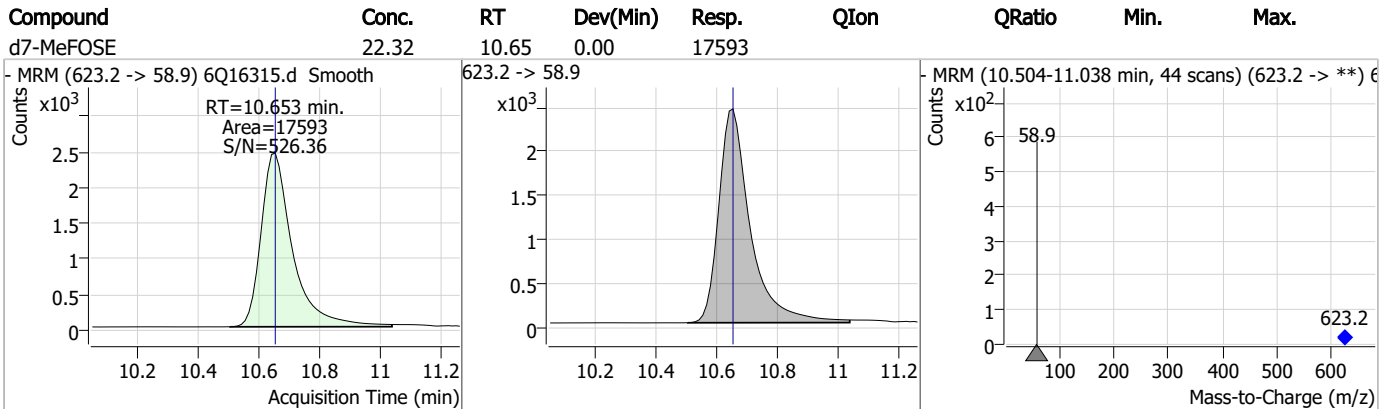
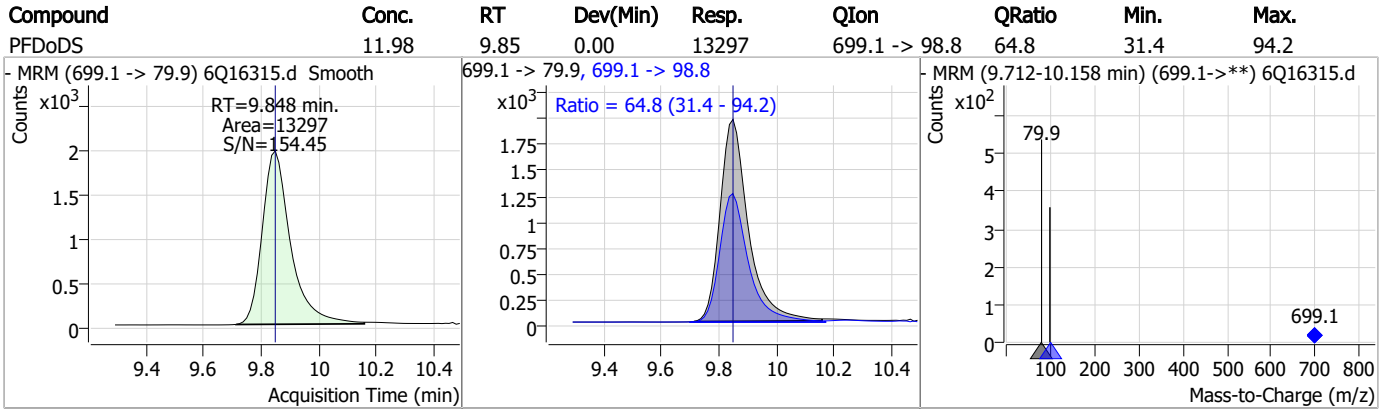
Perfluorinated Compounds by LC/MS/MS



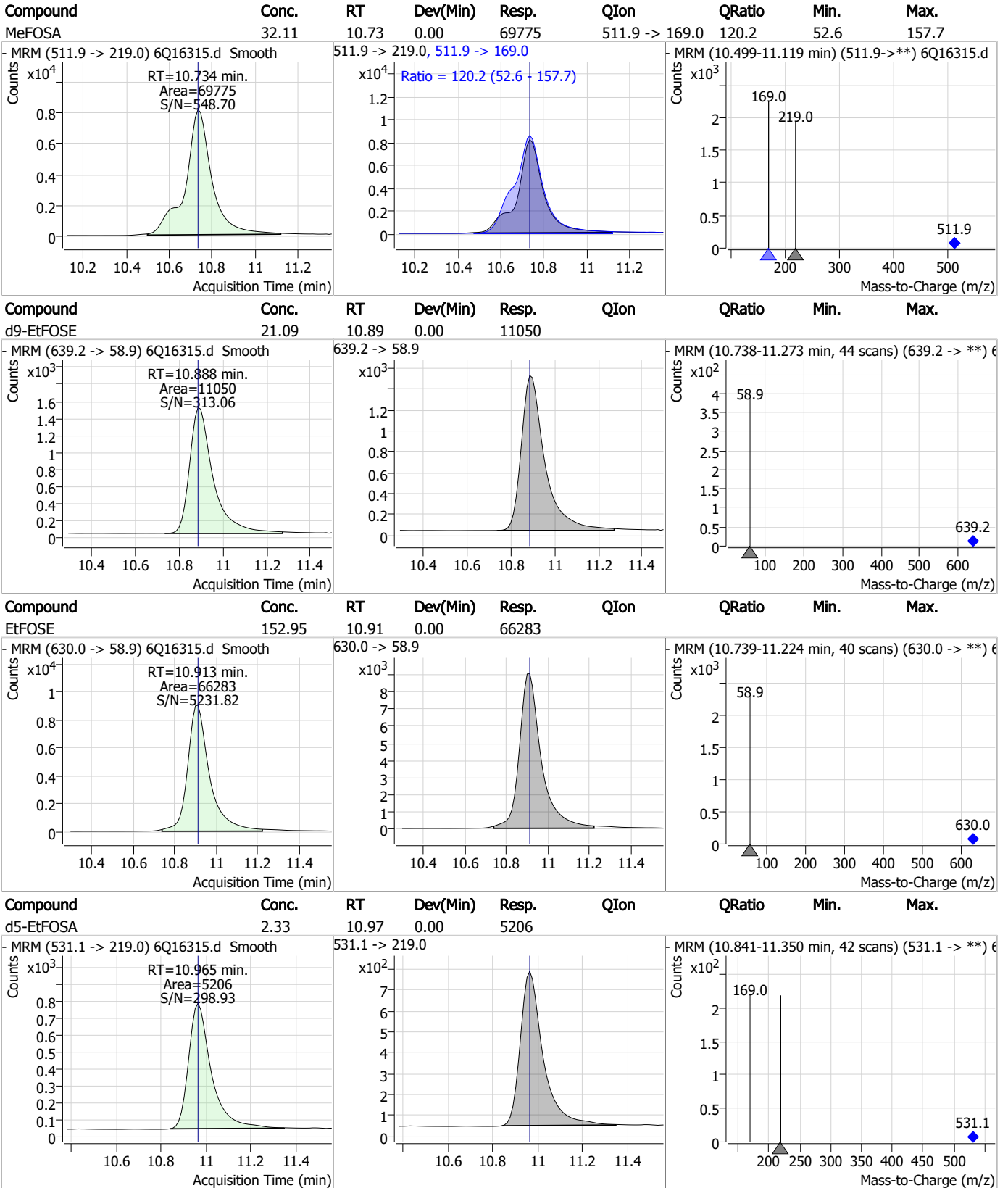
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

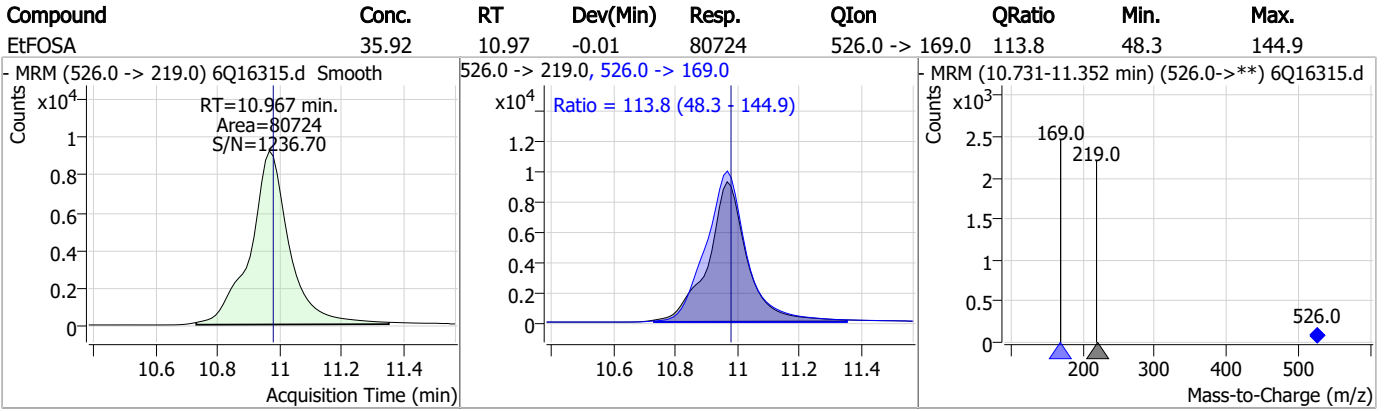


7.6.4

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Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S6Q243-RT Method: EPA DRAFT 1633
Lab FileID: 6Q16315.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 19:38 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.11	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorononanoic acid	375-95-1		7.50	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.6.4.1
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 03 April 2023 12:35:24
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.82E+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

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	112.94	-0.05	Pass	0.70	0.74	0.04	Pass	94755
302.00	301.99	-0.01	Pass	0.70	0.76	0.06	Pass	652046
601.98	601.97	-0.01	Pass	0.70	0.75	0.05	Pass	2058869
1033.99	1033.90	-0.09	Pass	0.70	0.75	0.05	Pass	773820
1633.95	1633.92	-0.03	Pass	0.70	0.78	0.08	Pass	535408
2233.91	2233.92	0.01	Pass	0.70	0.74	0.04	Pass	132385

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	0.70	0.62	-0.08	Pass	62999
112.99	112.99	0.00	Pass	0.70	0.65	-0.05	Pass	138351
302.00	302.02	0.02	Pass	0.70	0.72	0.02	Pass	473508
601.98	602.00	0.02	Pass	0.70	0.70	0.00	Pass	1544048
1033.99	1034.02	0.03	Pass	0.70	0.68	-0.02	Pass	988178
1633.95	1634.00	0.05	Pass	0.70	0.68	-0.02	Pass	821225
2233.91	2233.93	0.02	Pass	0.70	0.70	0.00	Pass	200397

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	1.42	0.22	Pass	119401
302.00	301.98	-0.02	Pass	1.20	1.56	0.36	Pass	826851
601.98	601.91	-0.07	Pass	1.20	1.62	0.42	Pass	3599870
1033.99	1033.86	-0.13	Pass	1.20	1.57	0.37	Pass	1050188
1633.95	1633.86	-0.09	Pass	1.20	1.44	0.24	Pass	827562
2233.91	2233.88	-0.03	Pass	1.20	1.37	0.17	Pass	218678

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	1.20	1.07	-0.13	Pass	99801
112.99	112.95	-0.04	Pass	1.20	1.19	-0.01	Pass	187684
302.00	302.03	0.03	Pass	1.20	1.19	-0.01	Pass	773267
601.98	602.00	0.02	Pass	1.20	1.28	0.08	Pass	3119306
1033.99	1034.06	0.07	Pass	1.20	1.36	0.16	Pass	2493384
1633.95	1633.94	-0.01	Pass	1.20	1.37	0.17	Pass	2222221
2233.91	2233.97	0.06	Pass	1.20	1.29	0.09	Pass	629603

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	2.67	0.17	Pass	142150
302.00	301.89	-0.11	Pass	2.50	2.91	0.41	Pass	1049767
601.98	601.78	-0.20	Pass	2.50	2.93	0.43	Pass	4562055
1033.99	1033.82	-0.17	Pass	2.50	2.78	0.28	Pass	1864258
1633.95	1633.81	-0.14	Pass	2.50	2.63	0.13	Pass	1775305
2233.91	2233.65	-0.26	Pass	2.50	2.40	-0.10	Pass	651928

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	2.50	2.53	0.03	Pass	117017
112.99	113.02	0.03	Pass	2.50	2.57	0.07	Pass	247076
302.00	301.99	-0.01	Pass	2.50	2.69	0.19	Pass	1128857
601.98	602.06	0.08	Pass	2.50	2.69	0.19	Pass	4396384
1033.99	1034.00	0.01	Pass	2.50	2.82	0.32	Pass	4296185
1633.95	1634.08	0.13	Pass	2.50	2.63	0.13	Pass	4243899
2233.91	2233.81	-0.10	Pass	2.50	2.59	0.09	Pass	1610620

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16006.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 2:15:43 PM
 Sample Name : ic239-1
 Vial : P1-A2
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	80182	10.00 µg/L	0.041
M5-PFPeA	4.347	268.3 -> 223.0	36902	5.00 µg/L	0.025
M5-PFHxA	5.528	318.0 -> 273.0	34405	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	31583	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	51797	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	12231	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	13363	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	15687	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17710	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	10611	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	15648	2.50 µg/L	0.000
M3-PFBS	5.471	302.1 -> 79.9	12984	2.50 µg/L	0.012
M3-PFHxS	7.228	402.1 -> 79.9	8227	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6922	2.50 µg/L	-0.012
M2-4:2FTS	5.204	329.1 -> 80.9	2119	5.00 µg/L	0.012
M2-6:2FTS	6.886	429.1 -> 80.9	2428	5.00 µg/L	0.000
M2-8:2FTS	7.898	529.1 -> 80.9	2376	5.00 µg/L	-0.012
M3-MeFOSAA	8.167	573.2 -> 419.0	18417	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	13727	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	16192	5.00 µg/L	-0.012
M7-MeFOSE	10.641	623.2 -> 58.9	21957	25.00 µg/L	-0.012
M9-EtFOSE	10.888	639.2 -> 58.9	14795	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6024	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5197	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8376	2.50 µg/L	-0.012
13C3-PFBA	2.941	216.0 -> 172.0	34374	5.00 µg/L	0.040
18O2-PFHxS	7.227	403.0 -> 83.9	5193	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	63529	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	17370	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	13457	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	32751	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	2119	6.07 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.3%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2428	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-8:2FTS	7.898	529.1 -> 80.9	2376	5.75 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.1%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17710	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C2-PFTeDA	9.721	715.2 -> 670.0	10611	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFBS	5.471	302.1 -> 79.9	12984	2.81 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C3-PFHxS	7.228	402.1 -> 79.9	8227	2.77 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 = 110.7%		
13C4-PFBA	2.938	216.8 -> 171.9	80182	9.98 µg/L	0.041
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C4-PFHpA	6.468	367.1 -> 322.0	31583	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C5-PFHxA	5.528	318.0 -> 273.0	34405	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C5-PFPeA	4.347	268.3 -> 223.0	36902	4.83 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C6-PFDA	8.110	519.1 -> 474.1	13363	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C7-PFUnDA	8.564	570.0 -> 525.1	15687	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.7%		
13C8-FOSA	9.619	506.1 -> 77.8	15648	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C8-PFOA	7.112	421.1 -> 376.0	51797	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C8-PFOS	8.272	507.1 -> 79.9	6922	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C9-PFNA	7.643	472.1 -> 427.0	12231	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
d3-MeFOSAA	8.167	573.2 -> 419.0	18417	4.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.9%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	13727	9.61 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 96.1%		
d3-MeFOSA	10.733	515.0 -> 219.0	5197	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.5%		
d5-EtFOSAA	8.363	589.2 -> 419.0	16192	4.61 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.3%		
d7-MeFOSE	10.641	623.2 -> 58.9	21957	25.76 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
d9-EtFOSE	10.888	639.2 -> 58.9	14795	26.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
d5-EtFOSA	10.965	531.1 -> 219.0	6024	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0	3210	0.77 µg/L	96
		327.1 -> 80.9	695		
6:2FTS	6.886	427.1 -> 407.0	2670	0.82 µg/L	98
		427.1 -> 80.9	559		
8:2FTS	7.911	527.1 -> 507.0	1225	0.73 µg/L	85
		527.1 -> 80.8	397		
EtFOSAA	8.376	584.2 -> 419.1	489	0.20 µg/L	m 78
		584.2 -> 526.0	297		
FOSA	9.621	498.1 -> 77.9	1251	0.22 µg/L	100
		498.1 -> 478.0	43		
MeFOSAA	8.168	570.1 -> 419.0	734	0.21 µg/L	m 87
		570.1 -> 483.0	182		
PFBA	2.944	212.8 -> 168.9	1558	0.77 µg/L	100
PFBS	5.472	298.7 -> 79.9	890	0.17 µg/L	99
		298.7 -> 98.8	407		
PFDA	8.111	512.9 -> 469.0	3198	0.21 µg/L	100
		512.9 -> 219.0	449		
PFDODA	8.994	613.1 -> 569.0	3019	0.23 µg/L	93
		613.1 -> 319.0	311		
PFDS	9.170	599.0 -> 79.9	375	0.18 µg/L	91

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	217			
PFHpA	6.469	363.1 -> 319.0	3707	0.21	µg/L	95
		363.1 -> 169.0	589			
PFHpS	7.781	449.0 -> 79.9	595	0.20	µg/L	97
		449.0 -> 98.9	345			
PFHxA	5.531	313.0 -> 269.0	2602	0.20	µg/L	95
		313.0 -> 118.9	147			
PFHxS	7.228	398.7 -> 79.9	699	0.19	µg/L	m 94
		398.7 -> 98.9	376			
PFNA	7.631	463.0 -> 419.0	1690	0.21	µg/L	95
		463.0 -> 219.0	307			
PFNS	8.738	548.8 -> 79.9	535	0.18	µg/L	92
		548.8 -> 98.9	341			
PFOA	7.113	413.0 -> 369.0	4905	0.21	µg/L	m 93
		413.0 -> 169.0	787			
PFOS	8.273	498.9 -> 79.9	544	0.18	µg/L	m 97
		498.9 -> 98.8	398			
PFPeA	4.349	263.0 -> 219.0	3248	0.42	µg/L	100
PFPeS	6.533	349.1 -> 79.9	867	0.20	µg/L	100
		349.1 -> 98.9	451			
PFTeDA	9.722	713.1 -> 669.0	2358	0.21	µg/L	99
		713.1 -> 168.9	156			
PFTrDA	9.378	663.0 -> 619.0	2657	0.21	µg/L	100
		663.0 -> 168.9	220			
PFUnDA	8.564	563.1 -> 519.0	2582	0.21	µg/L	96
		563.1 -> 269.1	388			
11CI-PF3OUdS	9.430	630.9 -> 450.9	5741	0.78	µg/L	97
		632.9 -> 452.9	1665			
9CI-PF3ONS	8.603	530.8 -> 351.0	10091	0.72	µg/L	94
		532.8 -> 353.0	3702			
ADONA	6.719	376.9 -> 250.9	20337	0.73	µg/L	96
		376.9 -> 84.8	5110			
HFPO-DA	5.906	284.9 -> 168.9	904	0.73	µg/L	87
		284.9 -> 184.9	159			
3:3FTCA	3.827	241.0 -> 177.0	443	1.03	µg/L	96
		241.0 -> 117.0	60			
5:3FTCA	6.198	341.0 -> 237.1	15627	5.57	µg/L	93
		341.0 -> 217.0	12630			
7:3FTCA	7.608	441.0 -> 316.9	6869	4.83	µg/L	88
		441.0 -> 336.9	12184			
EtFOSA	10.979	526.0 -> 219.0	490	0.19	µg/L	66
		526.0 -> 169.0	639			
EtFOSE	10.901	630.0 -> 58.9	1189	2.05	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	449	0.21	µg/L	92
		511.9 -> 169.0	508			
MeFOSE	10.666	616.1 -> 58.9	1819	2.20	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	241	0.20	µg/L	99
		699.1 -> 98.8	150			
NFDHA	5.410	295.0 -> 201.0	354	0.43	µg/L	90
		295.0 -> 84.9	178			
PFMBA	4.750	279.0 -> 85.1	1084	0.42	µg/L	100
PFMPA	3.488	229.0 -> 84.9	881	0.37	µg/L	100
PFEESA	6.012	314.8 -> 134.9	6405	0.36	µg/L	98
		314.8 -> 82.9	192			

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

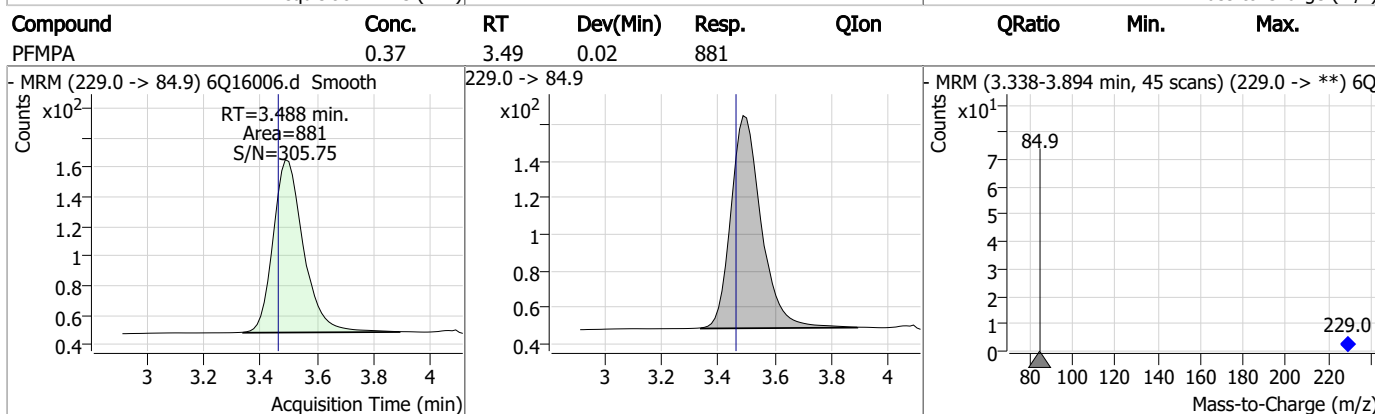
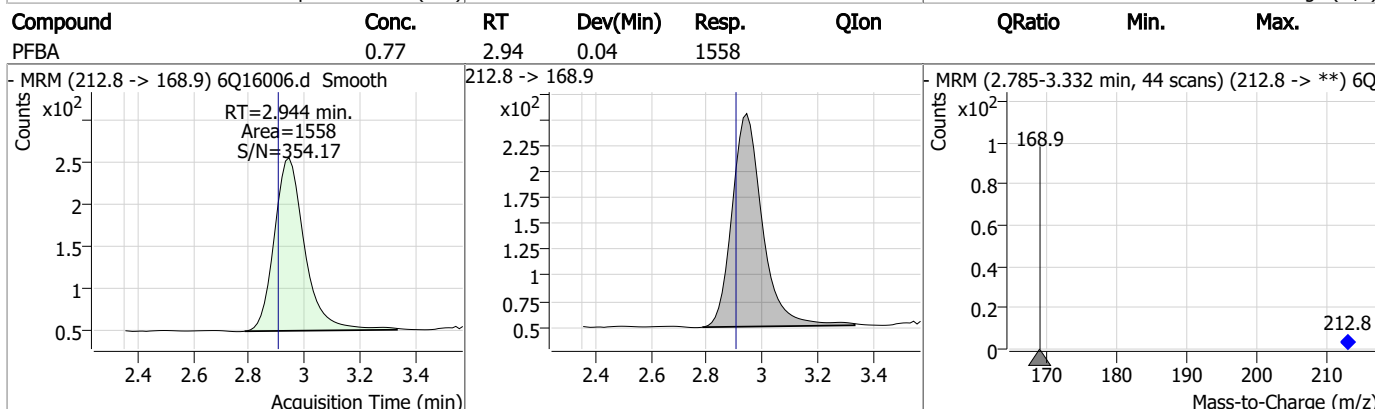
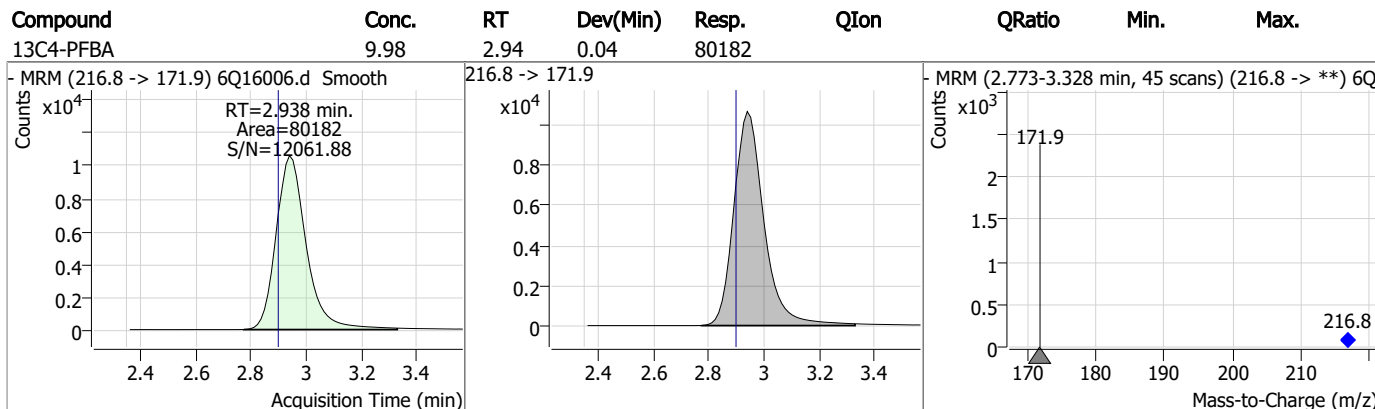
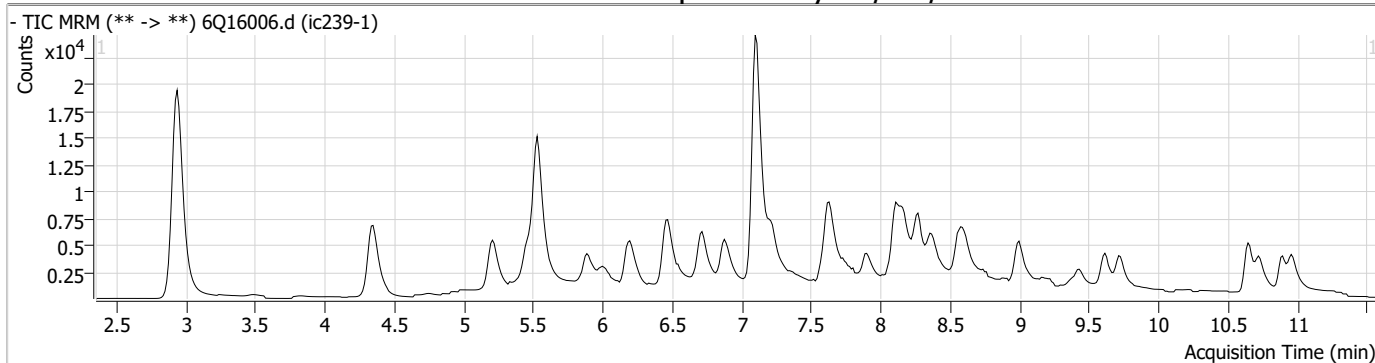
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.2
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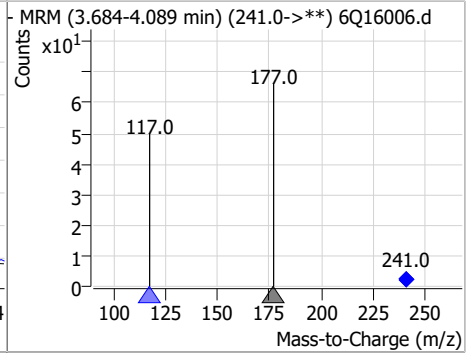
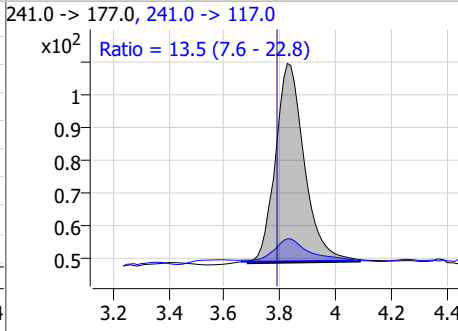
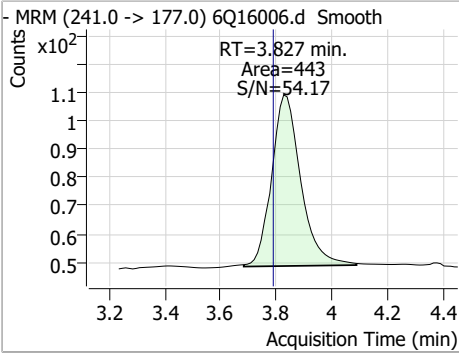


Perfluorinated Compounds by LC/MS/MS

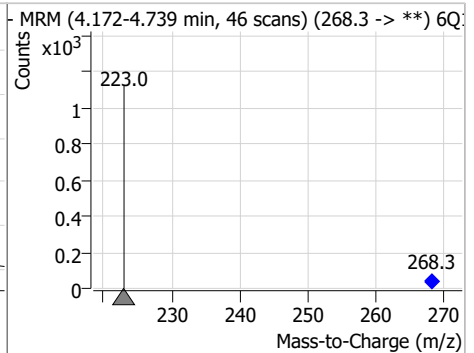
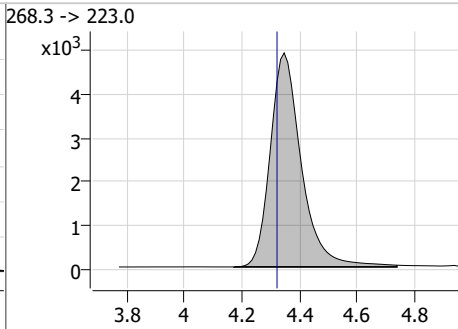
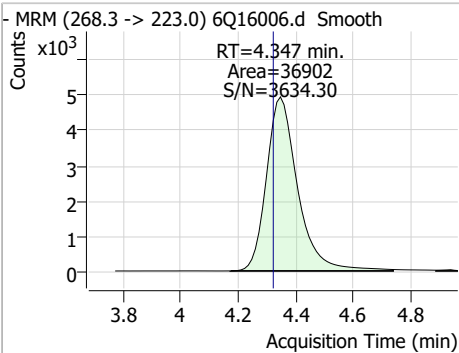


Perfluorinated Compounds by LC/MS/MS

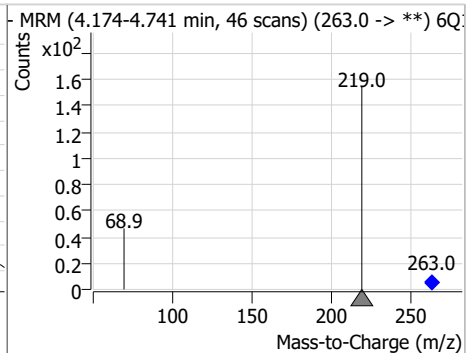
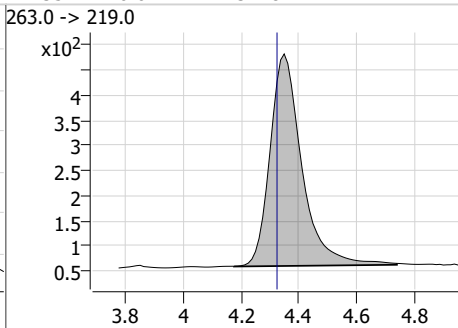
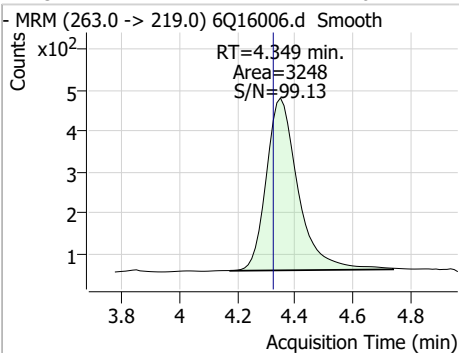
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.03	3.83	0.04	443	241.0 -> 117.0	13.5	7.6	22.8



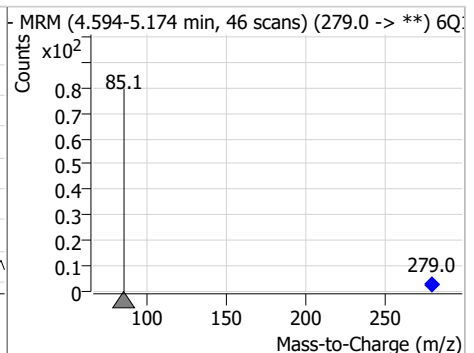
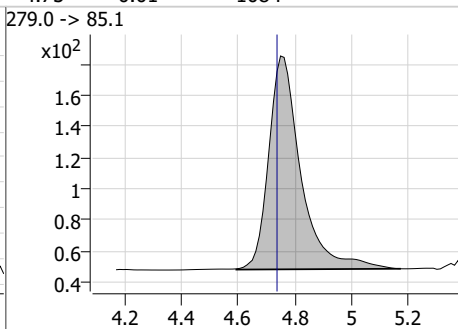
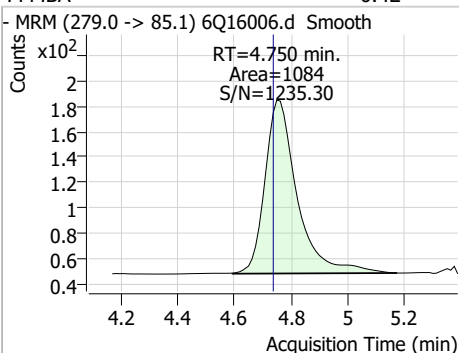
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.83	4.35	0.02	36902				



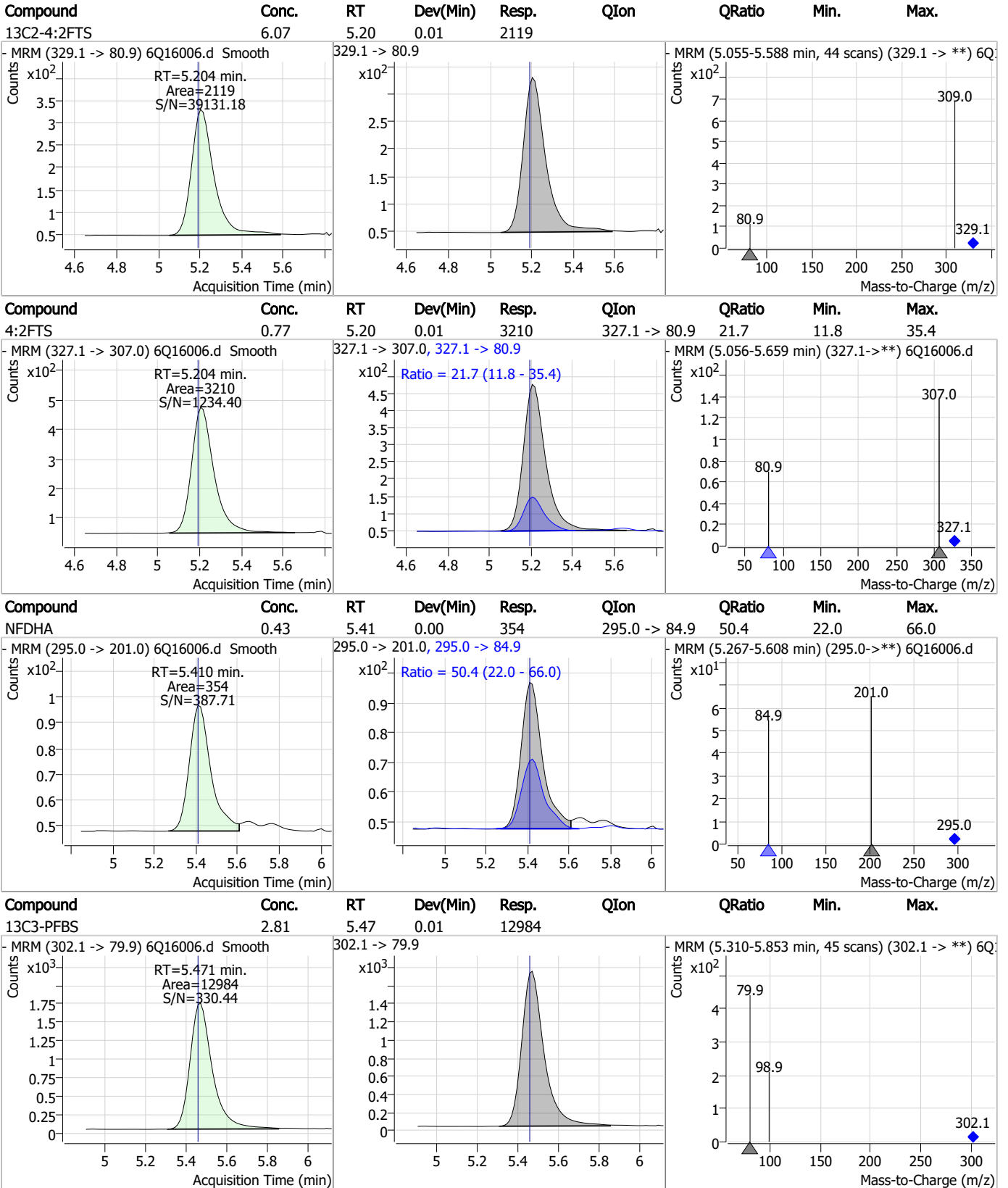
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.42	4.35	0.02	3248				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.42	4.75	0.01	1084				



Perfluorinated Compounds by LC/MS/MS

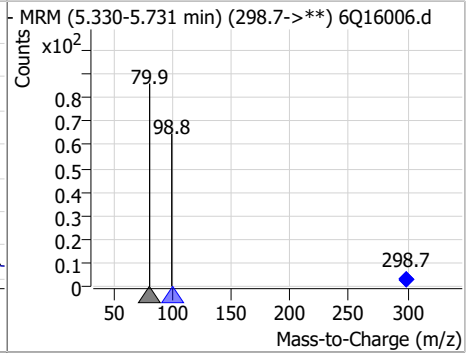
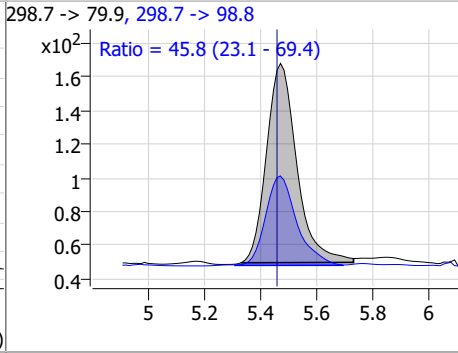
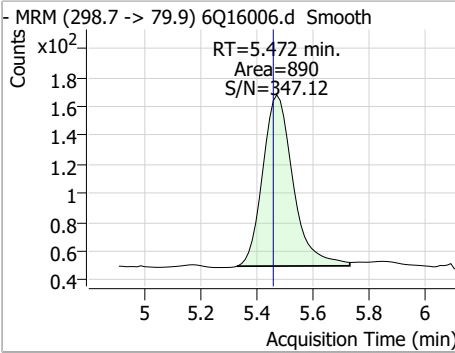


7.7.2

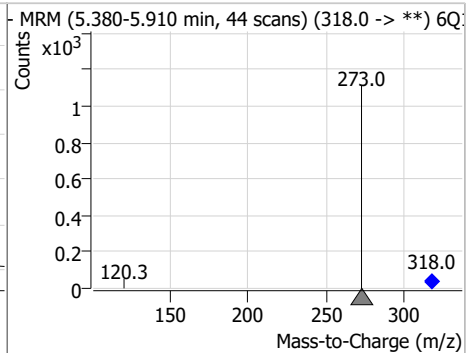
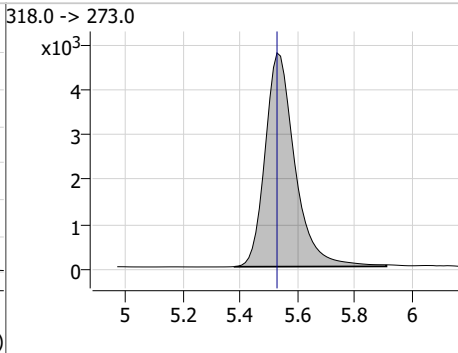
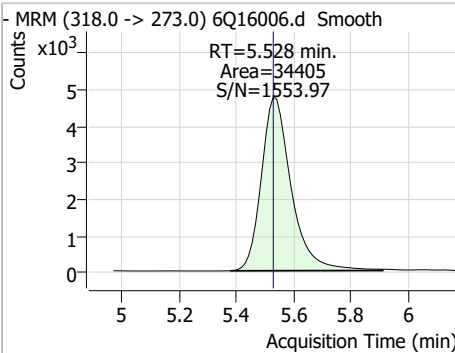
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Perfluorinated Compounds by LC/MS/MS

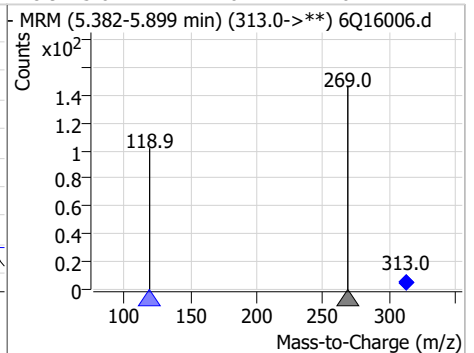
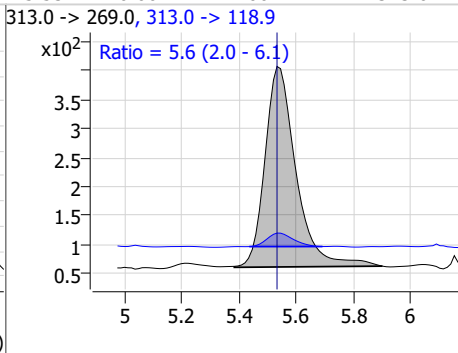
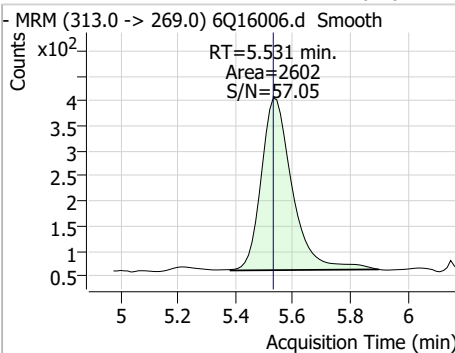
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.47	0.01	890	298.7 -> 98.8	45.8	23.1	69.4



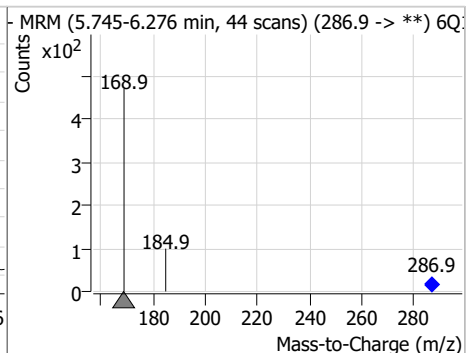
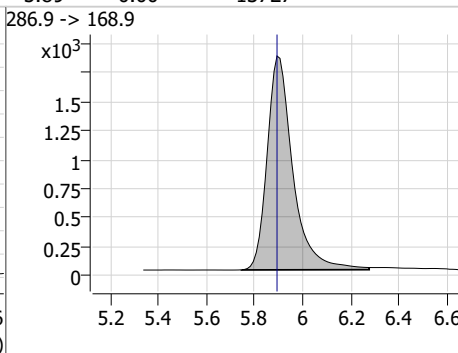
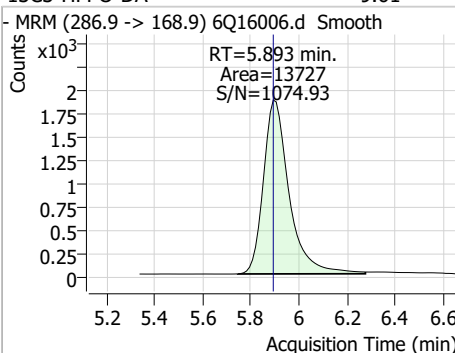
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.53	0.00	34405				



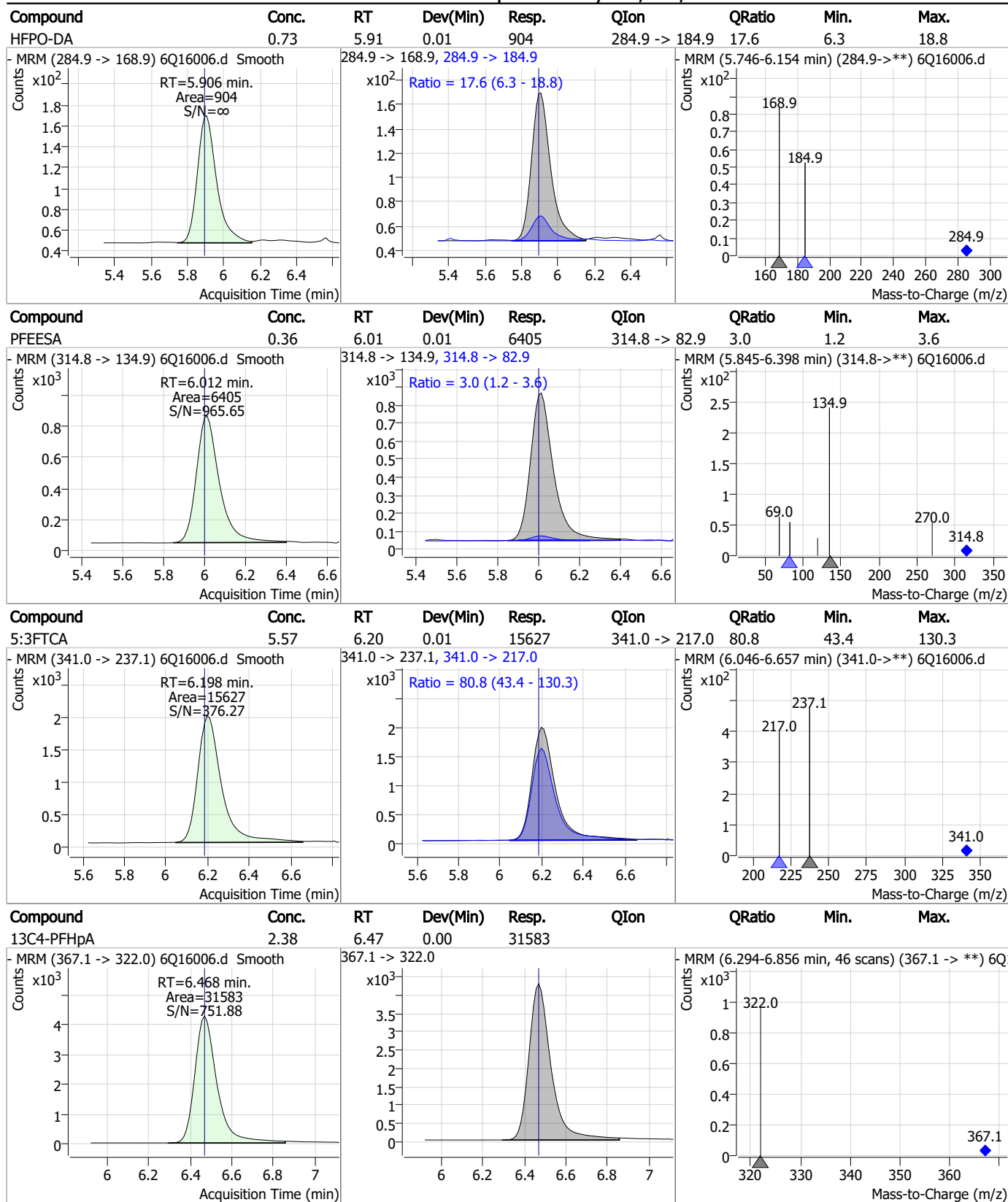
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.20	5.53	0.00	2602	313.0 -> 118.9	5.6	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.61	5.89	0.00	13727				

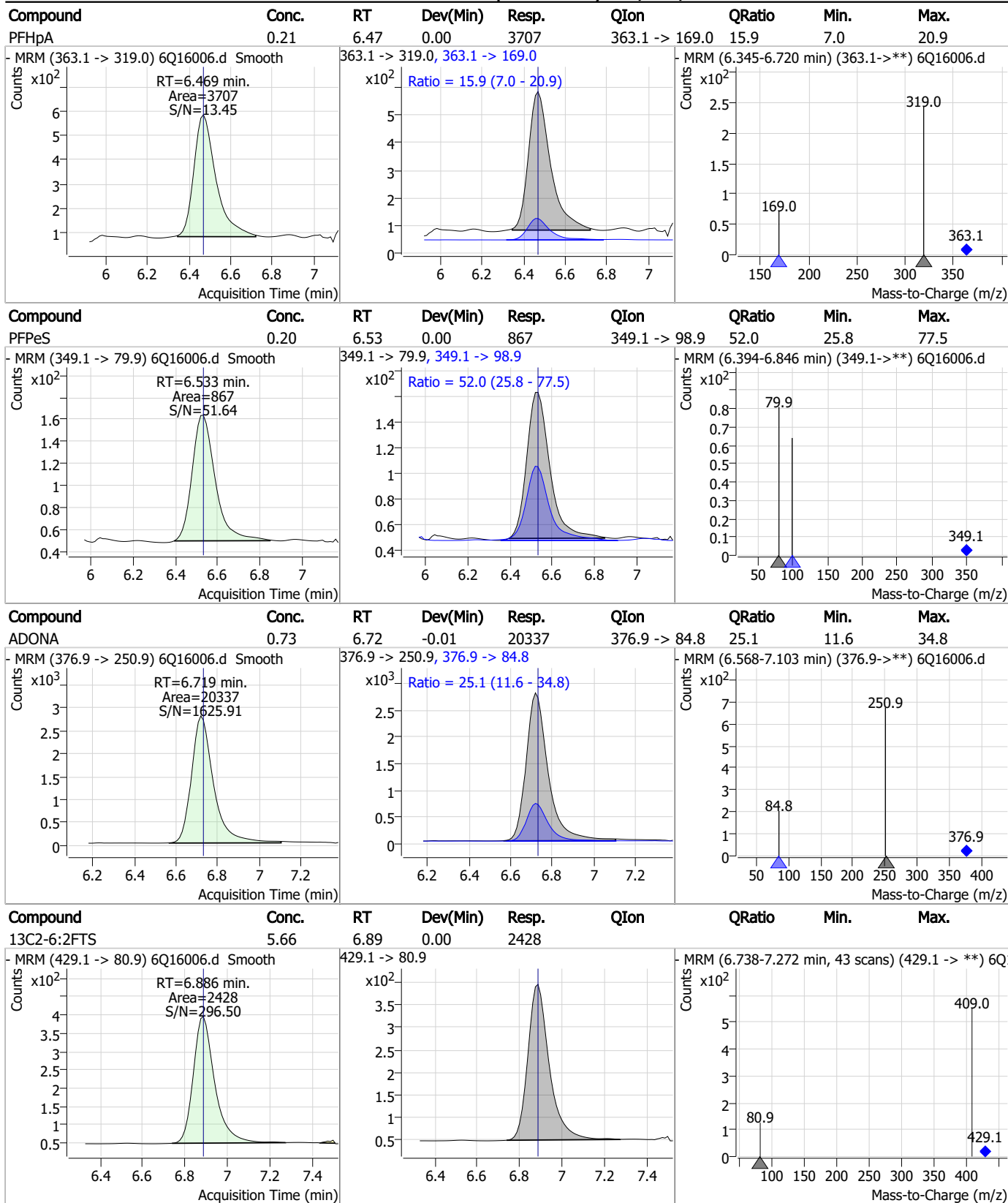


Perfluorinated Compounds by LC/MS/MS



7.7.2
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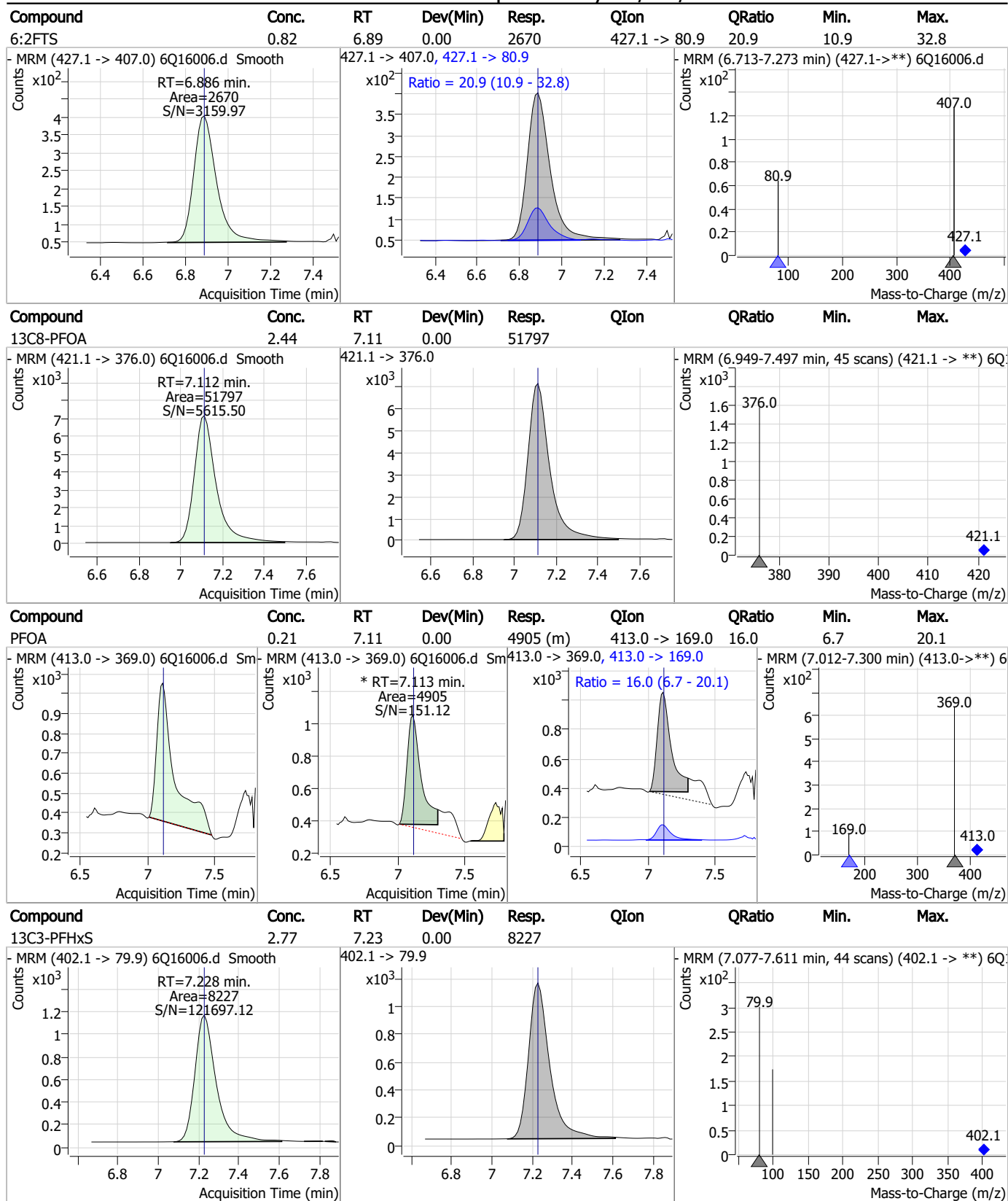
Perfluorinated Compounds by LC/MS/MS



7.7.2
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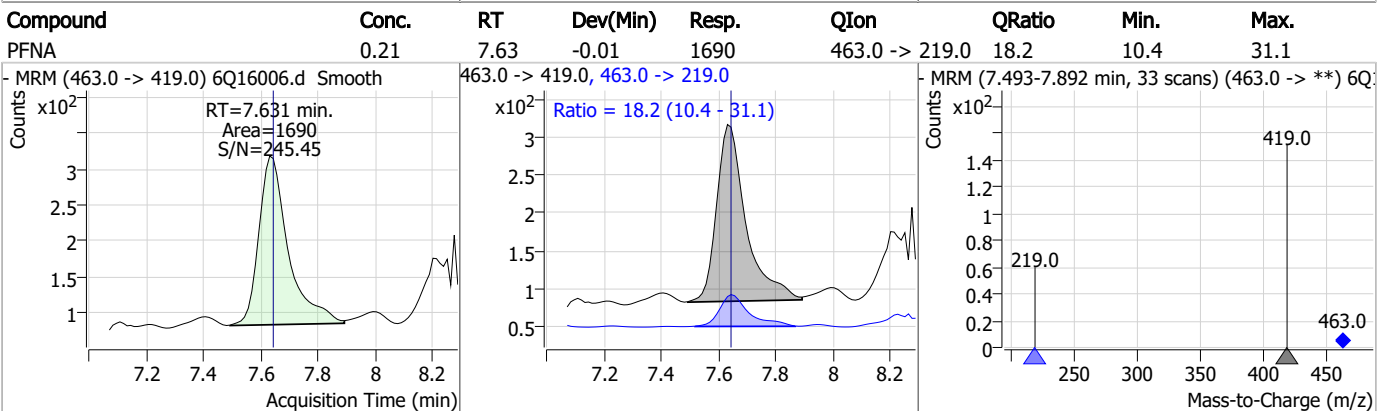
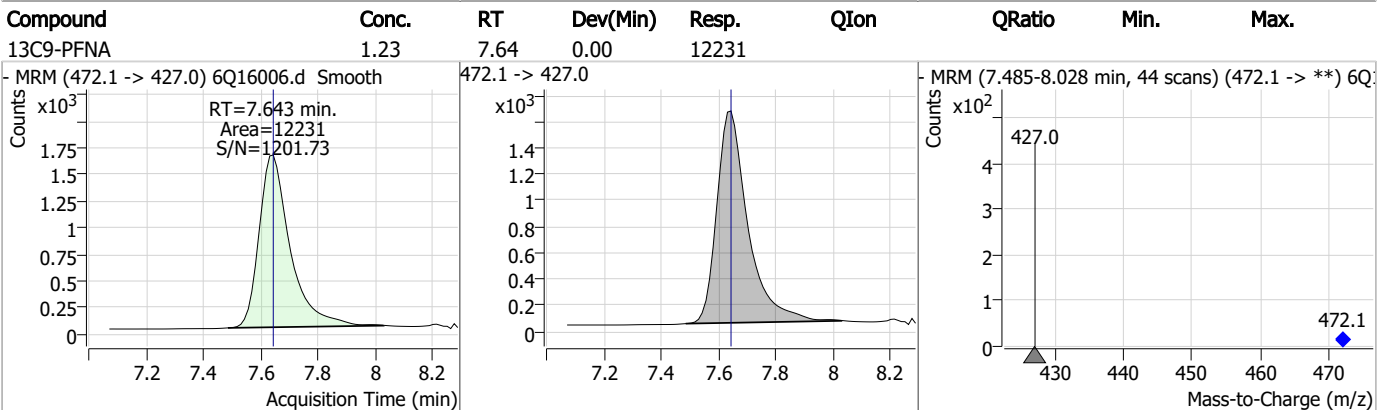
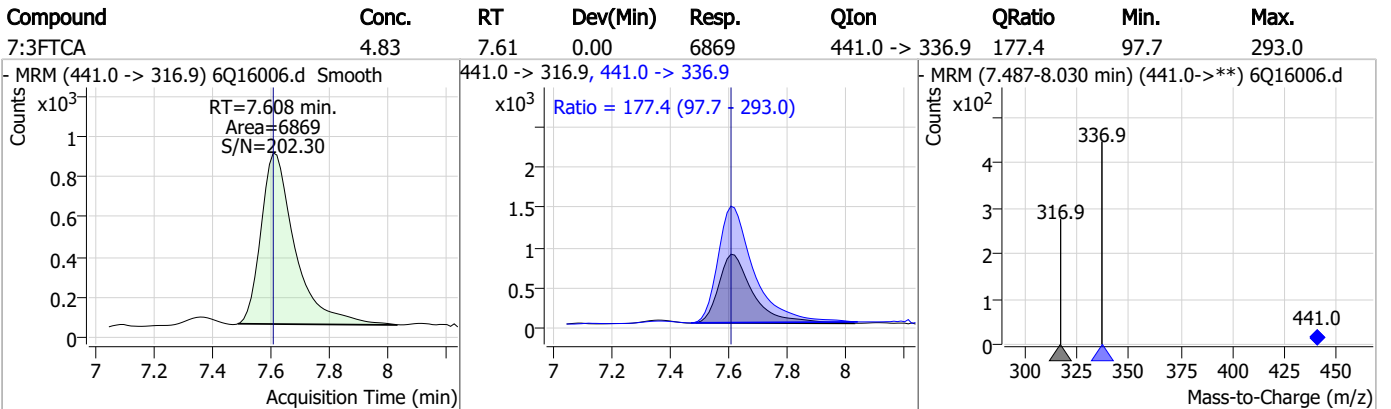
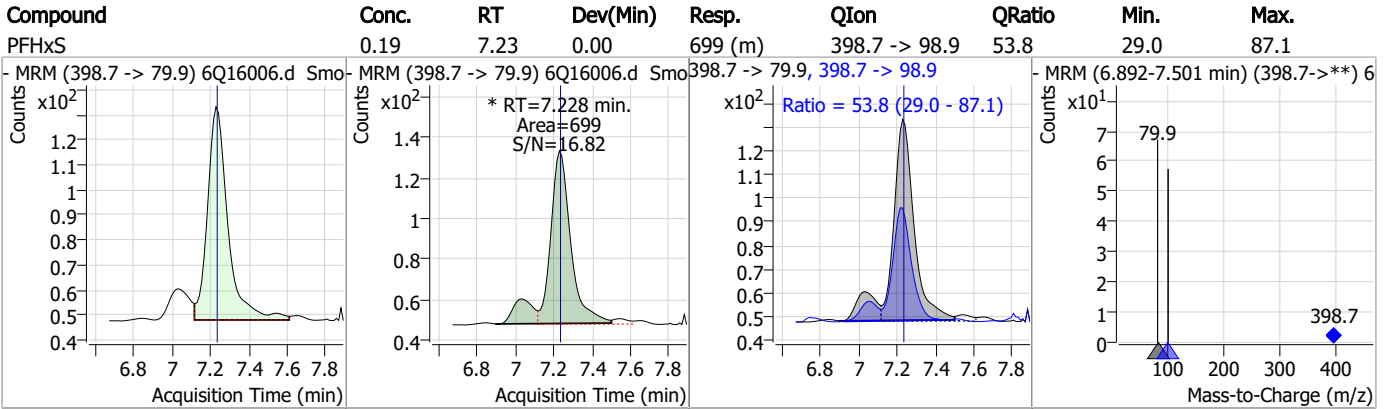


Perfluorinated Compounds by LC/MS/MS



7.7.2
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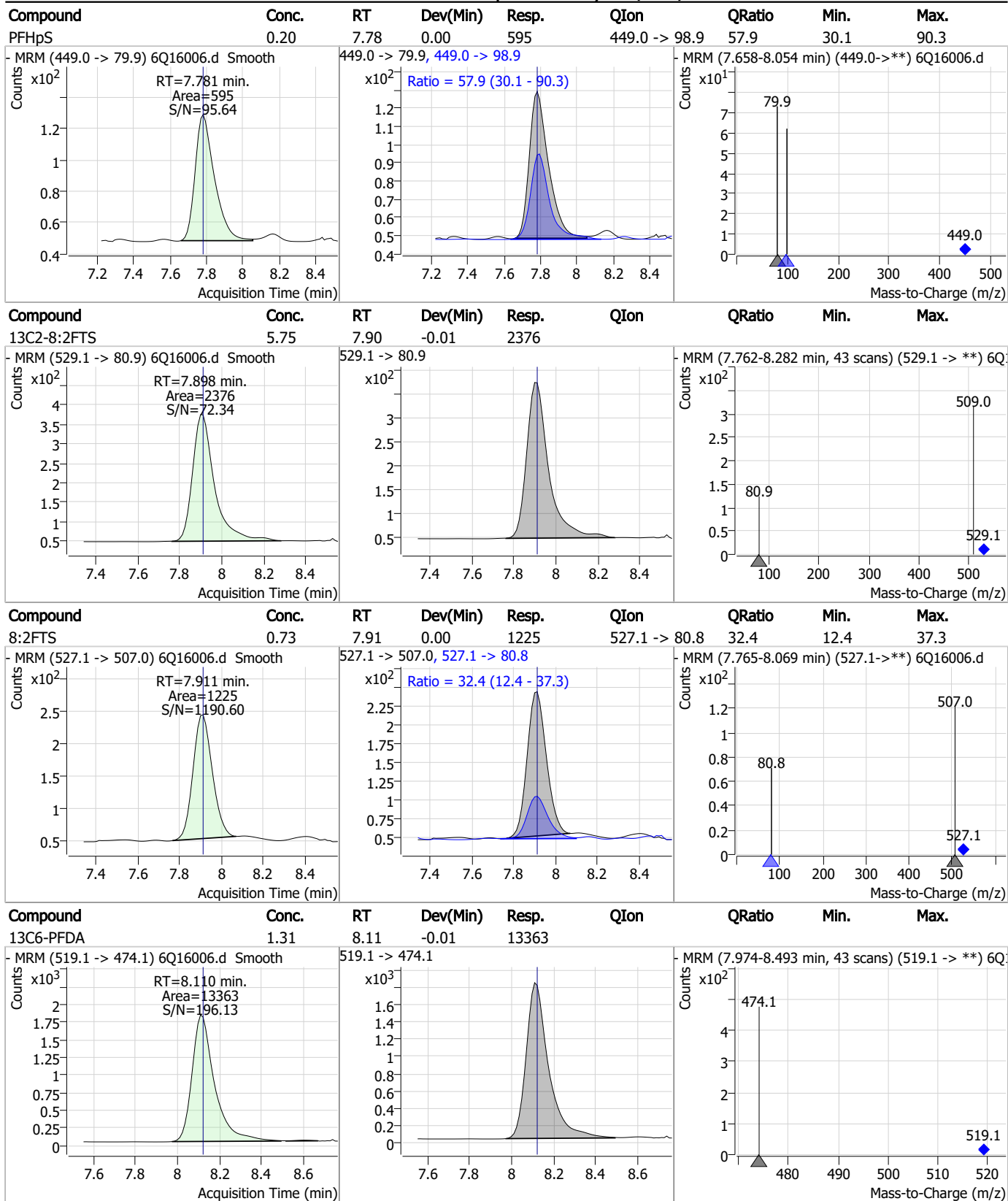
Perfluorinated Compounds by LC/MS/MS



7.7.2

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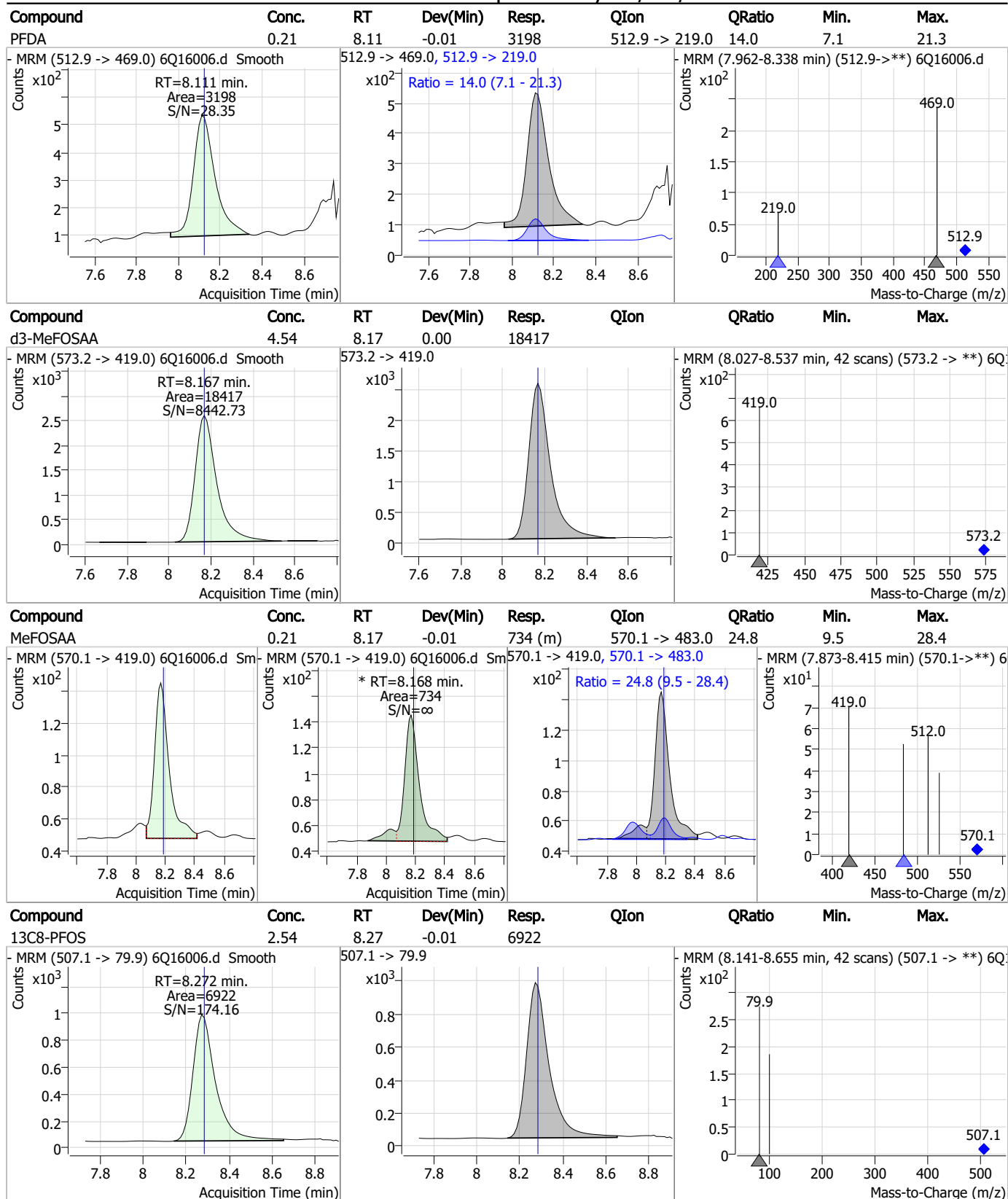
Perfluorinated Compounds by LC/MS/MS



7.7.2
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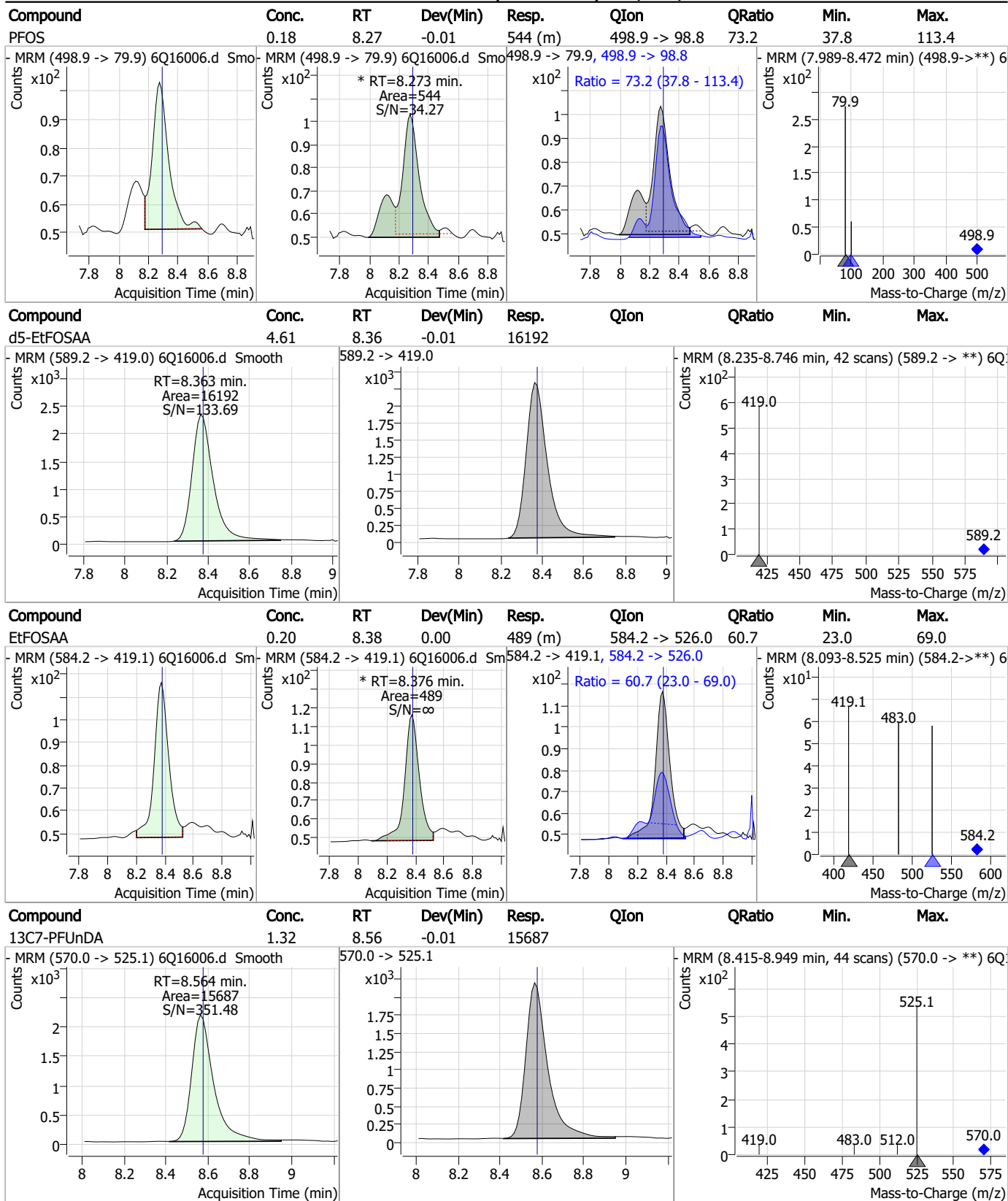


Perfluorinated Compounds by LC/MS/MS



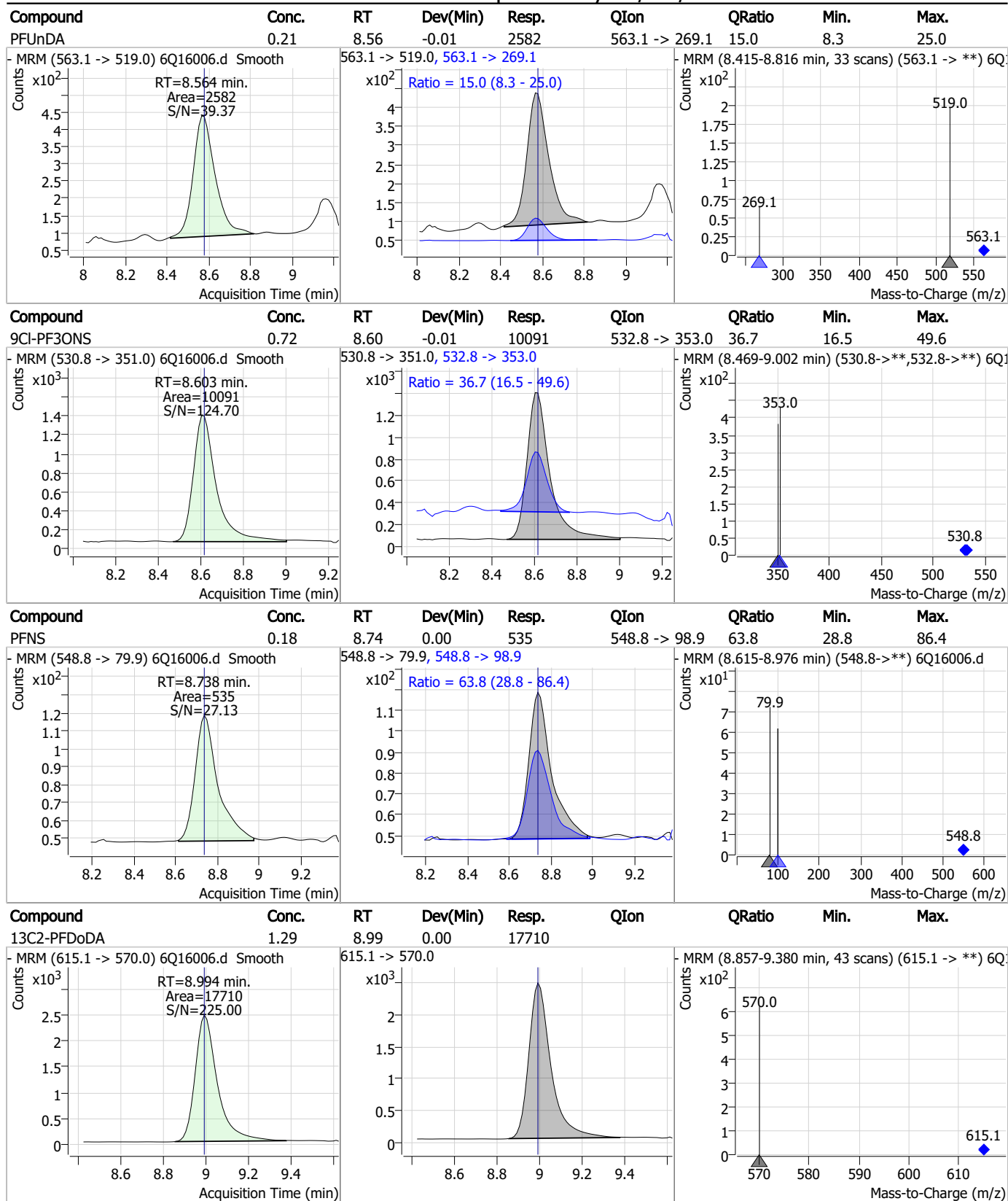
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Perfluorinated Compounds by LC/MS/MS



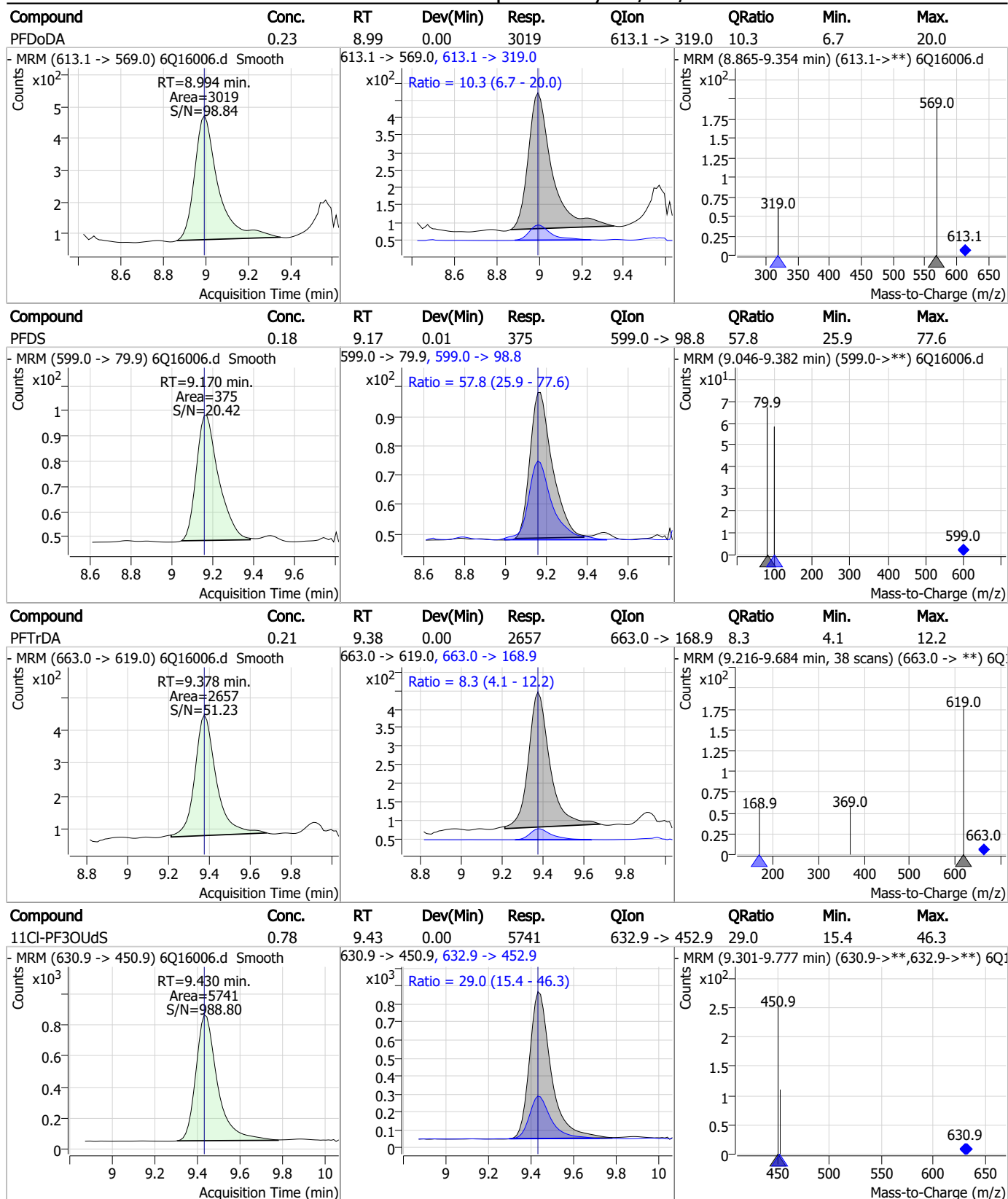
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Perfluorinated Compounds by LC/MS/MS



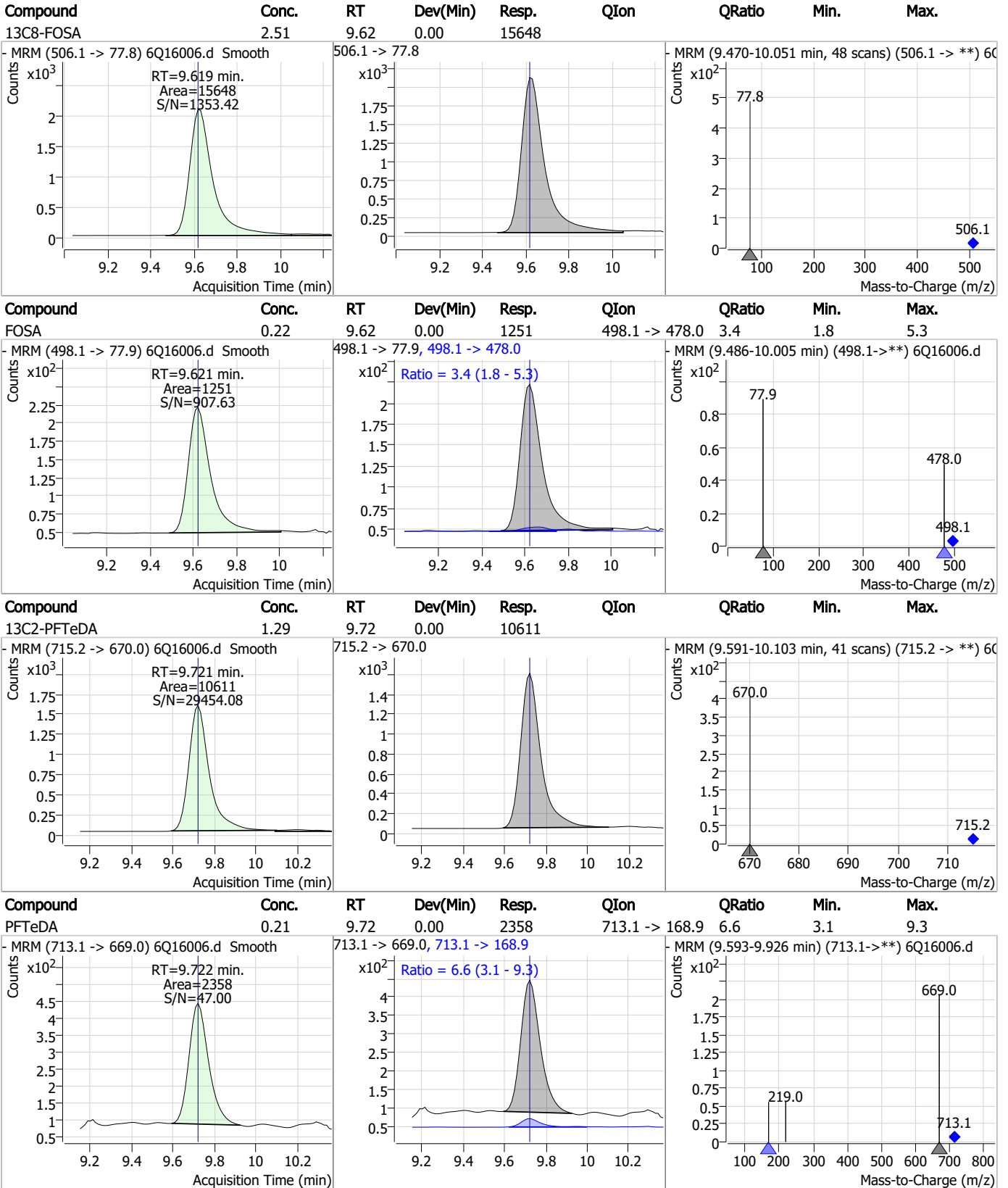
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

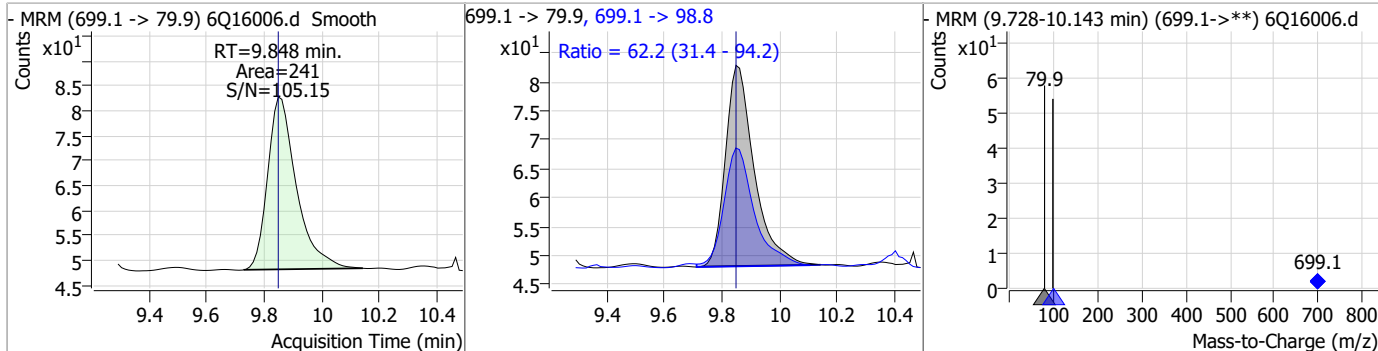


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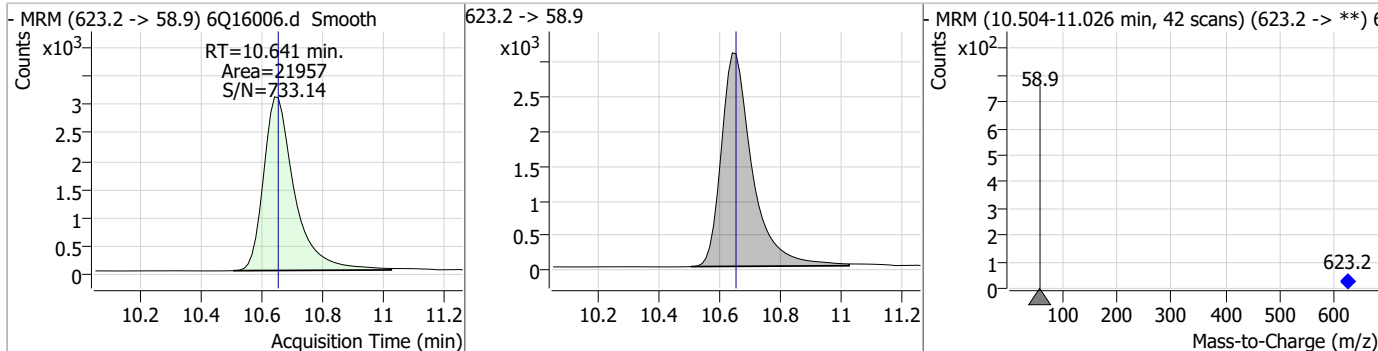
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Perfluorinated Compounds by LC/MS/MS

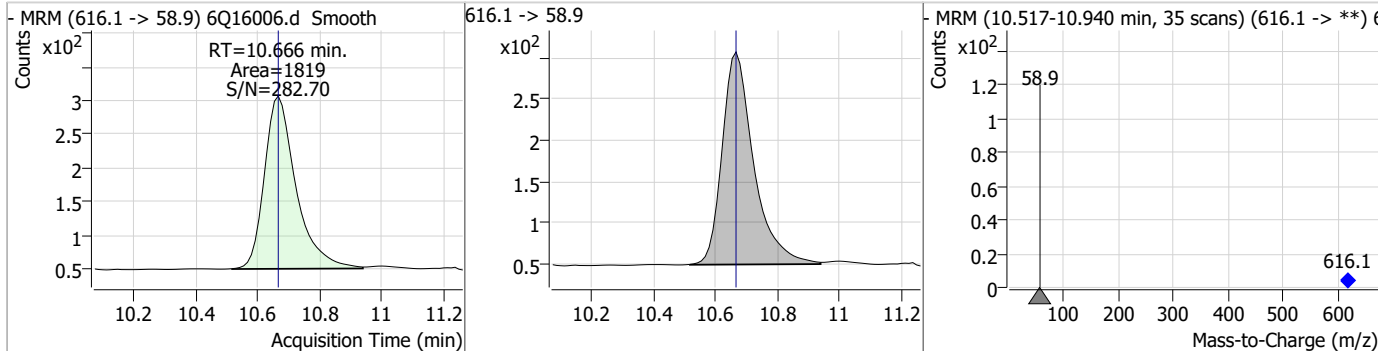
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.20	9.85	0.00	241	699.1 -> 98.8	62.2	31.4	94.2



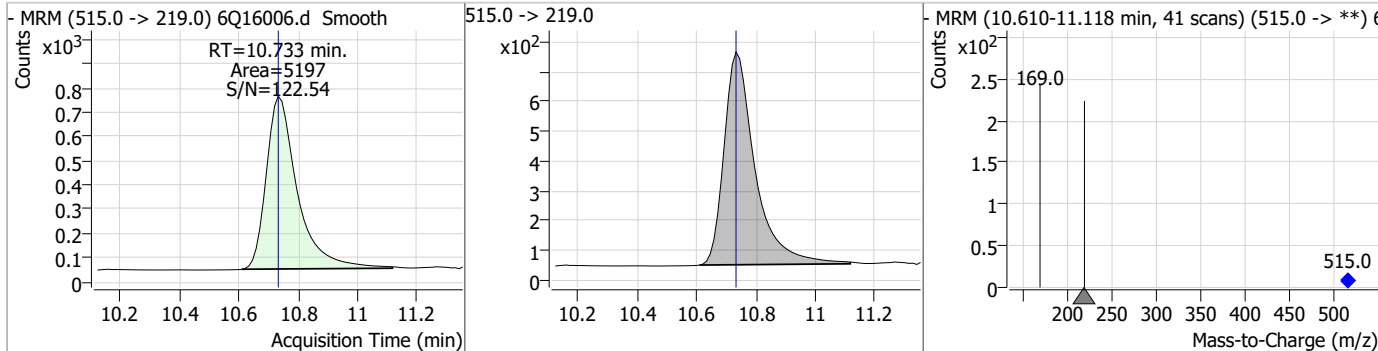
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.76	10.64	-0.01	21957				



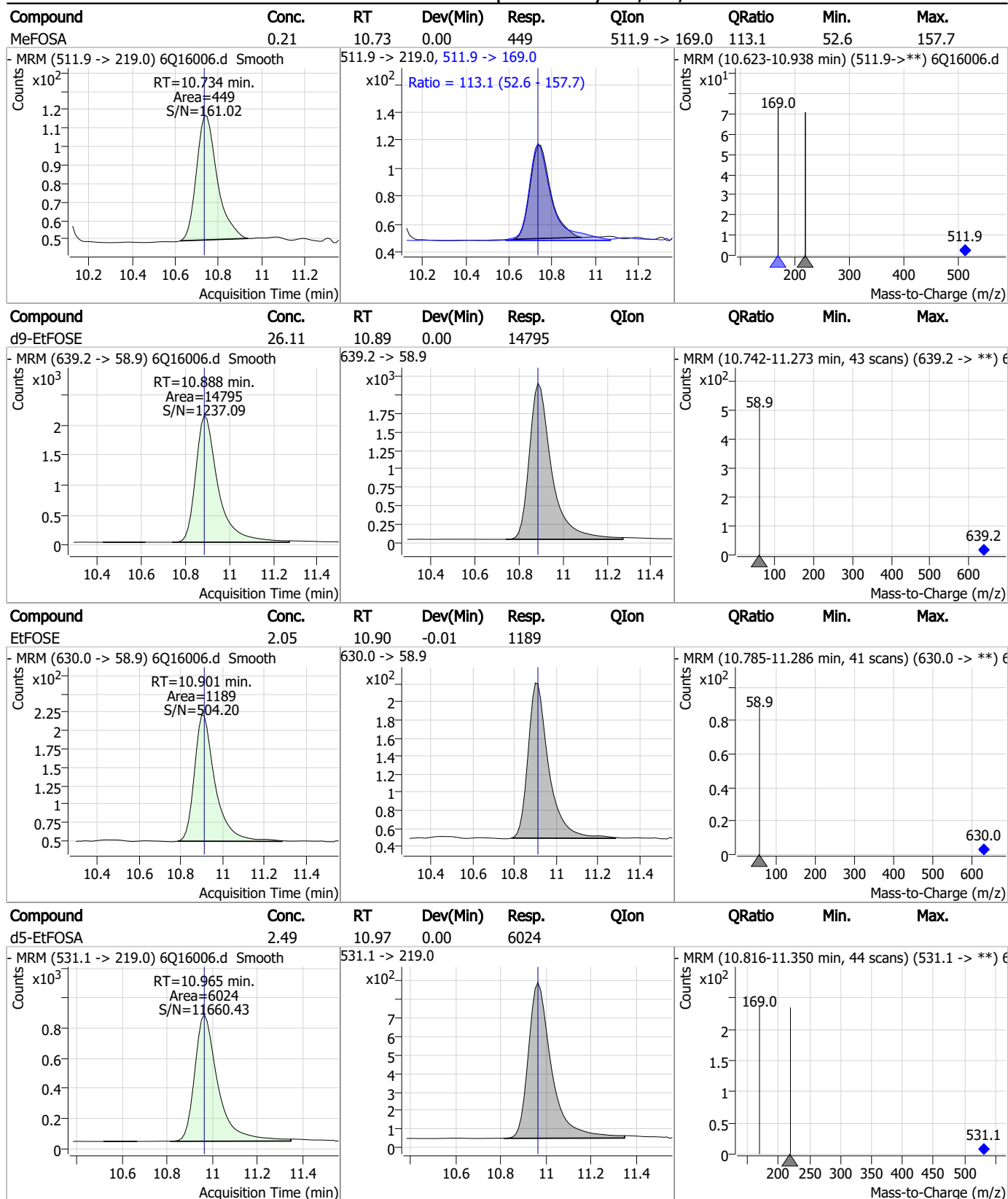
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.20	10.67	0.00	1819				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	10.73	0.00	5197				

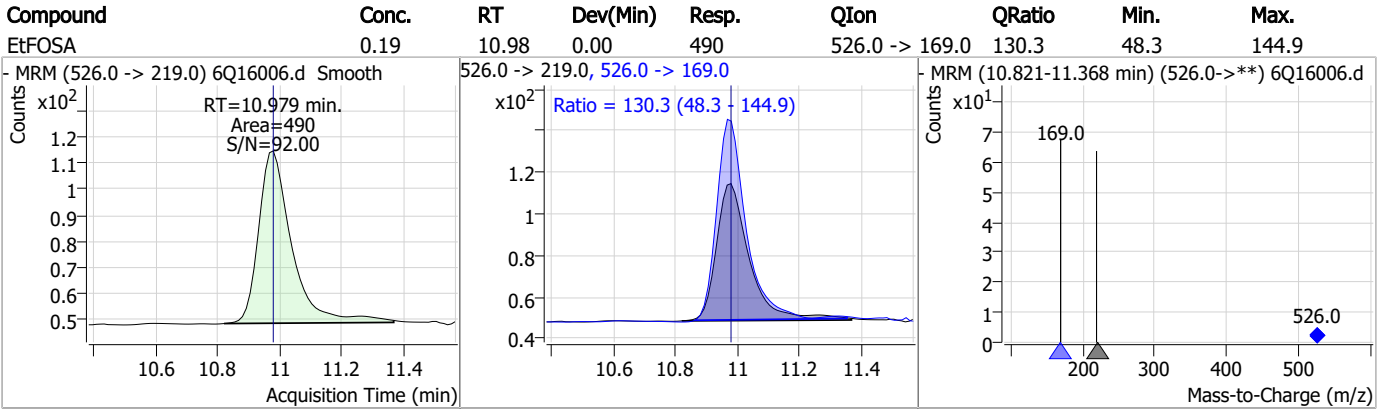


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16006.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 14:15 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.11	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
MeFOSAA	2355-31-9		8.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16007.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 2:29:41 PM
 Sample Name : ic239-2
 Vial : P1-A3
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	89975	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	40855	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	34221	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	35510	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	59211	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	18259	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	14331	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	19304	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	19685	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	12323	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	16724	2.50 µg/L	0.000
M3-PFBS	5.459	302.1 -> 79.9	13892	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8873	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	7374	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2250	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2791	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2521	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	23326	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	14846	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	18620	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	23529	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	16200	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6311	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	6106	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8336	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	38362	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	6660	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	70540	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	22212	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	19095	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	34397	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2250	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2791	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2521	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C2-PFDoDA	8.994	615.1 -> 570.0	19685	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.7%		
13C2-PFTeDA	9.721	715.2 -> 670.0	12323	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.6%		
13C3-PFBS	5.459	302.1 -> 79.9	13892	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C3-PFHxS	7.228	402.1 -> 79.9	8873	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	2.897	216.8 -> 171.9	89975	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.468	367.1 -> 322.0	35510	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	5.528	318.0 -> 273.0	34221	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C5-PFPeA	4.322	268.3 -> 223.0	40855	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C6-PFDA	8.122	519.1 -> 474.1	14331	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.7%	
13C7-PFUnDA	8.564	570.0 -> 525.1	19304	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-FOSA	9.619	506.1 -> 77.8	16724	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C8-PFOA	7.112	421.1 -> 376.0	59211	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOS	8.284	507.1 -> 79.9	7374	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C9-PFNA	7.643	472.1 -> 427.0	18259	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.4%	
d3-MeFOSAA	8.167	573.2 -> 419.0	23326	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.7%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	14846	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSA	10.733	515.0 -> 219.0	6106	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
d5-EtFOSAA	8.375	589.2 -> 419.0	18620	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
d7-MeFOSE	10.653	623.2 -> 58.9	23529	27.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
d9-EtFOSE	10.888	639.2 -> 58.9	16200	28.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
d5-EtFOSA	10.965	531.1 -> 219.0	6311	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	8687	1.97 µg/L	94
		327.1 -> 80.9	2327		
6:2FTS	6.886	427.1 -> 407.0	7250	1.94 µg/L	94
		427.1 -> 80.9	1801		
8:2FTS	7.911	527.1 -> 507.0	4038	2.26 µg/L	97
		527.1 -> 80.8	934		
EtFOSAA	8.376	584.2 -> 419.1	1639	0.57 µg/L	85
		584.2 -> 526.0	920		
FOSA	9.621	498.1 -> 77.9	3676	0.59 µg/L	95
		498.1 -> 478.0	186		
MeFOSAA	8.168	570.1 -> 419.0	2563	0.59 µg/L	93
		570.1 -> 483.0	399		
PFBA	2.906	212.8 -> 168.9	4918	2.16 µg/L	100
PFBS	5.460	298.7 -> 79.9	2730	0.50 µg/L	99
		298.7 -> 98.8	1276		
PFDA	8.123	512.9 -> 469.0	8299	0.50 µg/L	96
		512.9 -> 219.0	1311		
PFDODA	8.994	613.1 -> 569.0	7721	0.53 µg/L	99
		613.1 -> 319.0	1065		
PFDS	9.170	599.0 -> 79.9	1219	0.55 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	679			
PFHpA	6.469	363.1 -> 319.0	10662	0.53	µg/L	98
		363.1 -> 169.0	1567			
PFHpS	7.794	449.0 -> 79.9	1669	0.53	µg/L	99
		449.0 -> 98.9	1020			
PFHxA	5.531	313.0 -> 269.0	7035	0.56	µg/L	98
		313.0 -> 118.9	320			
PFHxS	7.228	398.7 -> 79.9	1975	0.51	µg/L	m 95
		398.7 -> 98.9	1070			
PFNA	7.643	463.0 -> 419.0	5940	0.50	µg/L	96
		463.0 -> 219.0	1335			
PFNS	8.738	548.8 -> 79.9	1655	0.53	µg/L	99
		548.8 -> 98.9	965			
PFOA	7.113	413.0 -> 369.0	14882	0.56	µg/L	98
		413.0 -> 169.0	1860			
PFOS	8.286	498.9 -> 79.9	1628	0.50	µg/L	m 90
		498.9 -> 98.8	1094			
PFPeA	4.324	263.0 -> 219.0	9253	1.07	µg/L	100
PFPeS	6.533	349.1 -> 79.9	2525	0.54	µg/L	100
		349.1 -> 98.9	1313			
PFTeDA	9.722	713.1 -> 669.0	6322	0.49	µg/L	92
		713.1 -> 168.9	564			
PFTrDA	9.378	663.0 -> 619.0	7500	0.54	µg/L	100
		663.0 -> 168.9	604			
PFUnDA	8.564	563.1 -> 519.0	7214	0.47	µg/L	93
		563.1 -> 269.1	992			
11CI-PF3OUdS	9.430	630.9 -> 450.9	15869	1.99	µg/L	95
		632.9 -> 452.9	5296			
9CI-PF3ONS	8.616	530.8 -> 351.0	31848	2.09	µg/L	100
		532.8 -> 353.0	10596			
ADONA	6.731	376.9 -> 250.9	60102	2.00	µg/L	97
		376.9 -> 84.8	14866			
HFPO-DA	5.894	284.9 -> 168.9	3112	2.32	µg/L	98
		284.9 -> 184.9	412			
3:3FTCA	3.790	241.0 -> 177.0	1252	2.62	µg/L	98
		241.0 -> 117.0	182			
5:3FTCA	6.185	341.0 -> 237.1	38081	13.64	µg/L	89
		341.0 -> 217.0	36944			
7:3FTCA	7.608	441.0 -> 316.9	20297	14.36	µg/L	88
		441.0 -> 336.9	36120			
EtFOSA	10.967	526.0 -> 219.0	1465	0.54	µg/L	83
		526.0 -> 169.0	1655			
EtFOSE	10.913	630.0 -> 58.9	3324	5.23	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	1383	0.54	µg/L	99
		511.9 -> 169.0	1439			
MeFOSE	10.666	616.1 -> 58.9	4666	5.26	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	692	0.54	µg/L	99
		699.1 -> 98.8	428			
NFDHA	5.398	295.0 -> 201.0	989	1.21	µg/L	99
		295.0 -> 84.9	431			
PFMBA	4.737	279.0 -> 85.1	3070	1.08	µg/L	100
PFMPA	3.463	229.0 -> 84.9	2841	1.09	µg/L	100
PFEESA	5.999	314.8 -> 134.9	18657	1.04	µg/L	99
		314.8 -> 82.9	486			

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

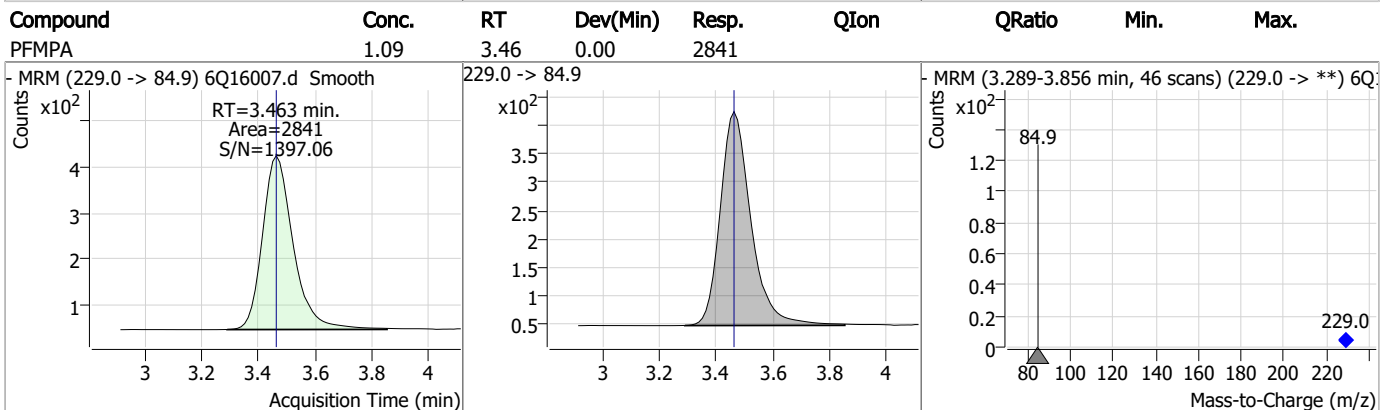
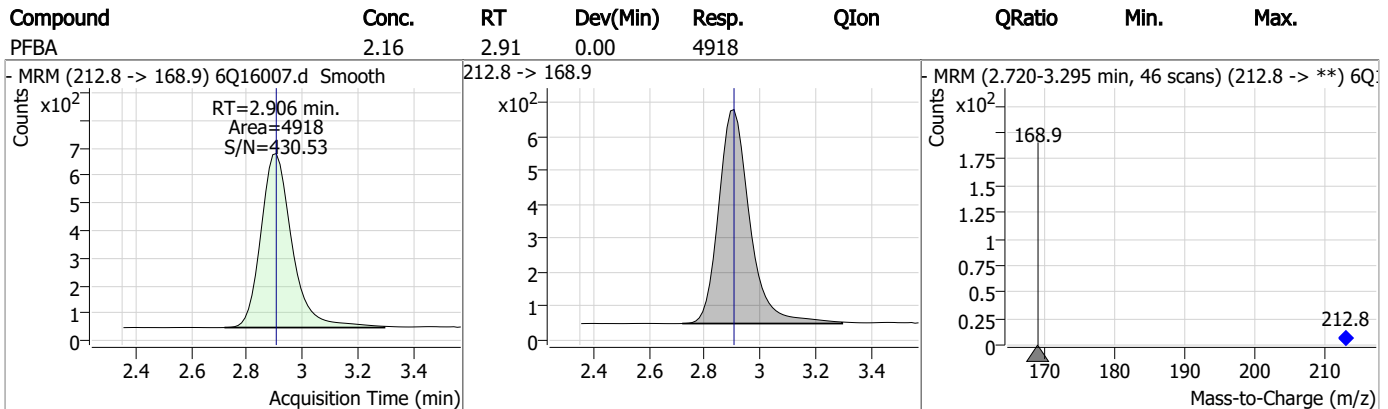
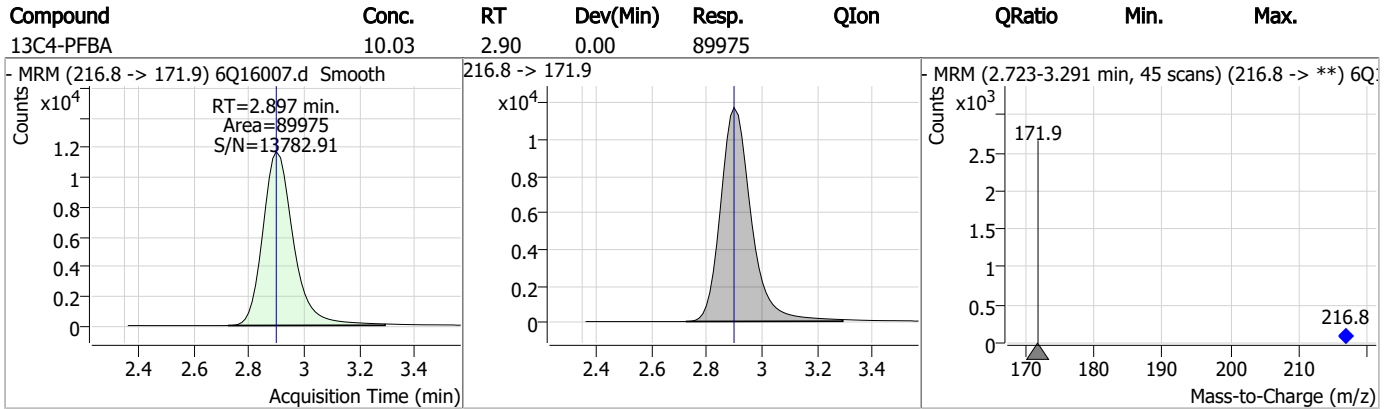
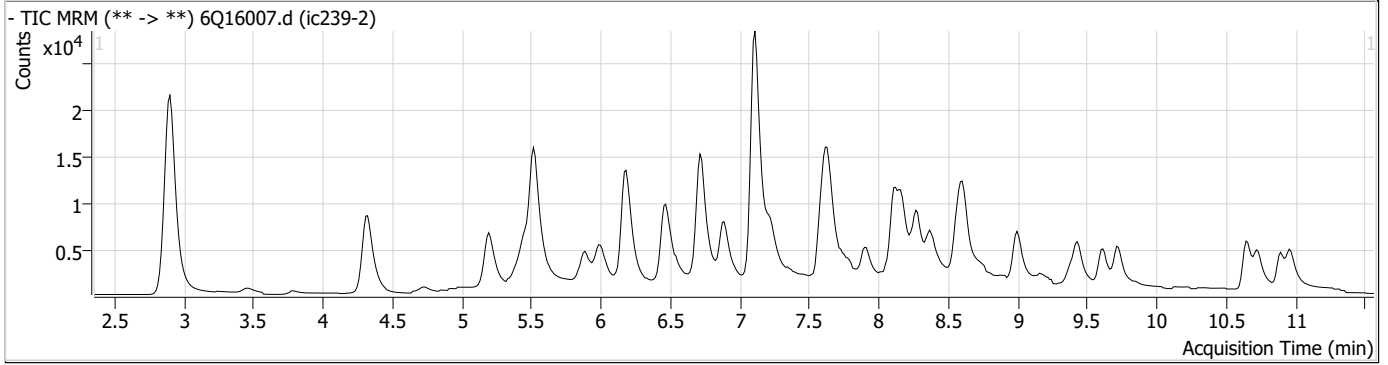
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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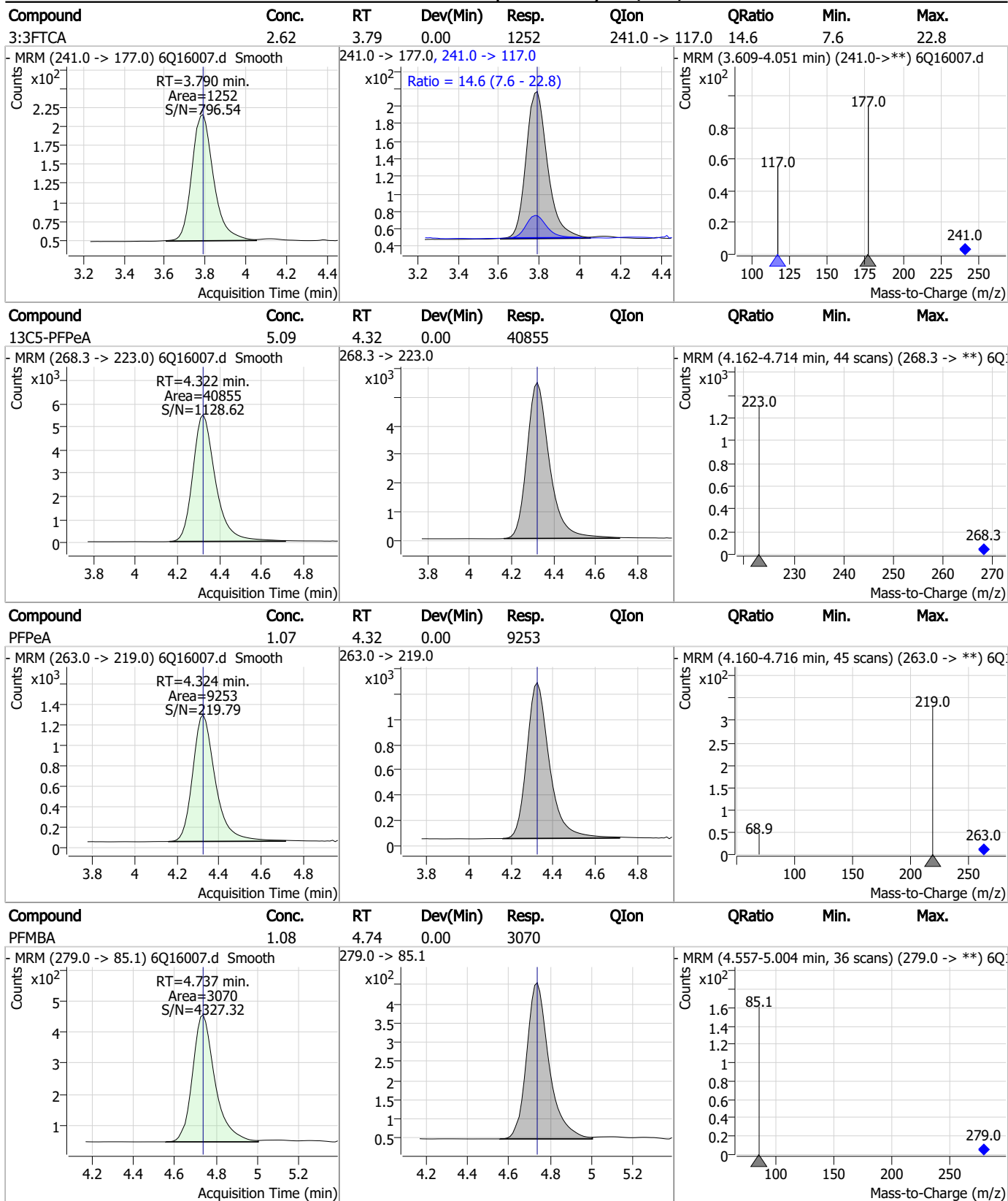
7.7.3

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Perfluorinated Compounds by LC/MS/MS



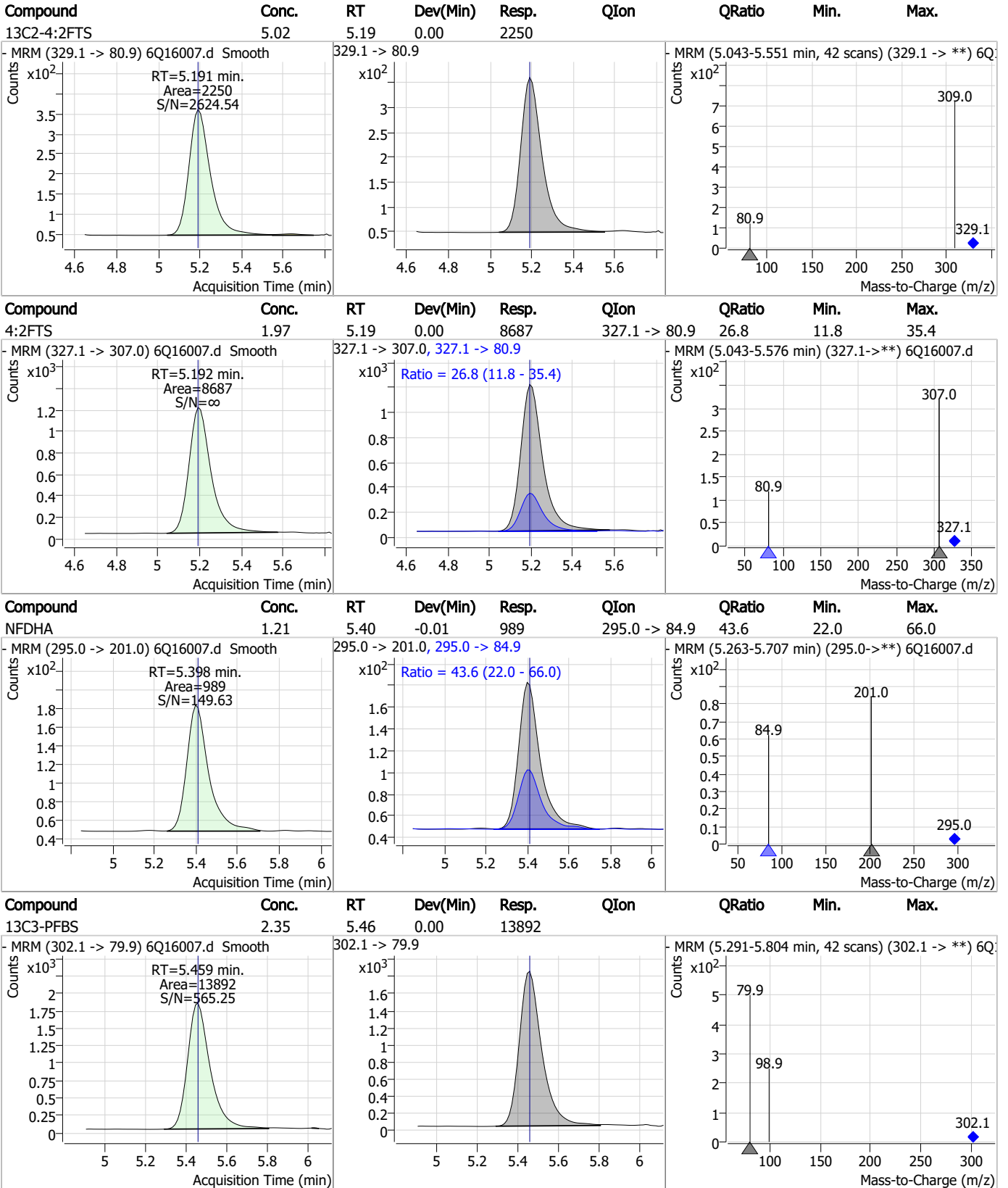
Perfluorinated Compounds by LC/MS/MS



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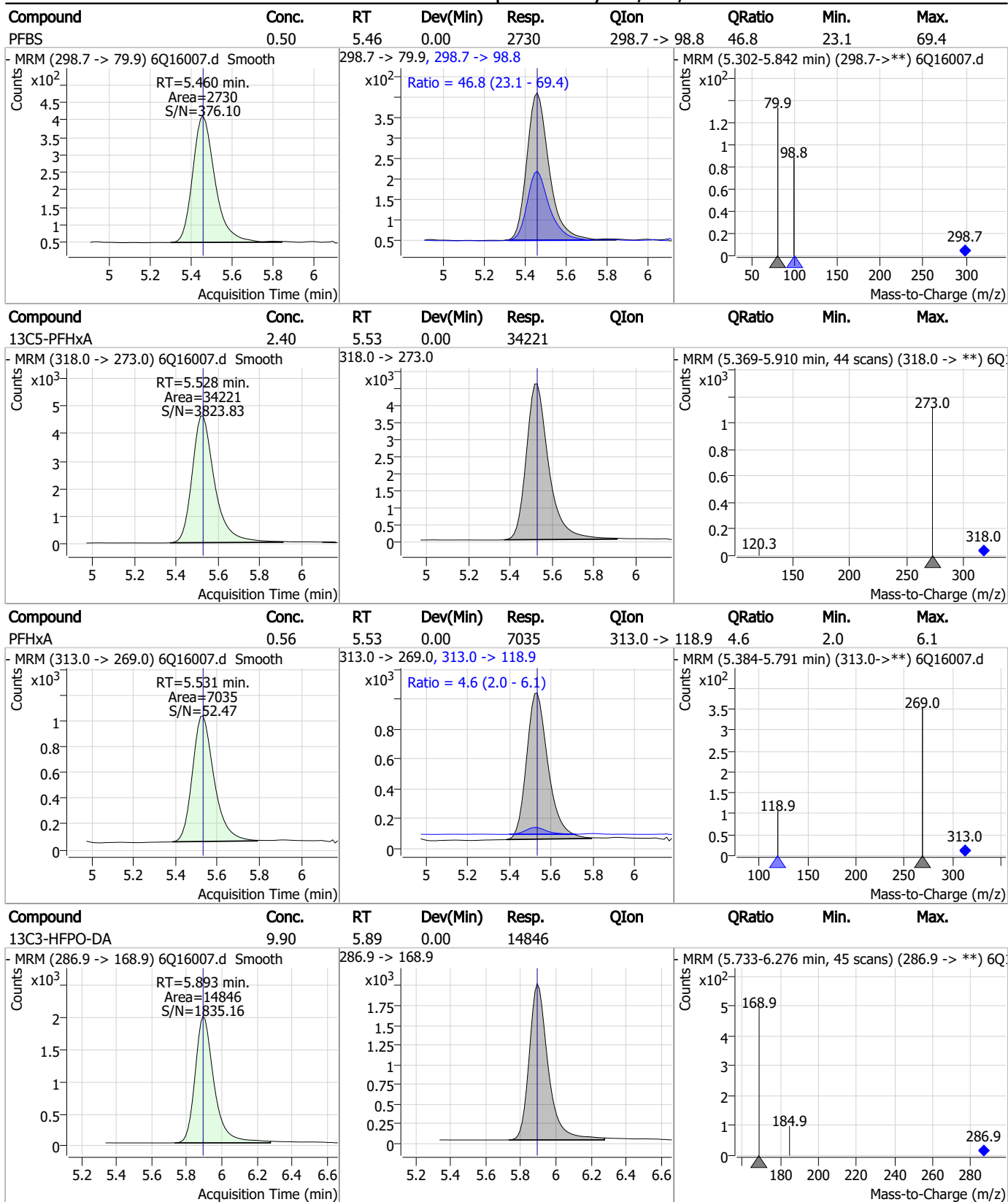
Perfluorinated Compounds by LC/MS/MS



7.7.3

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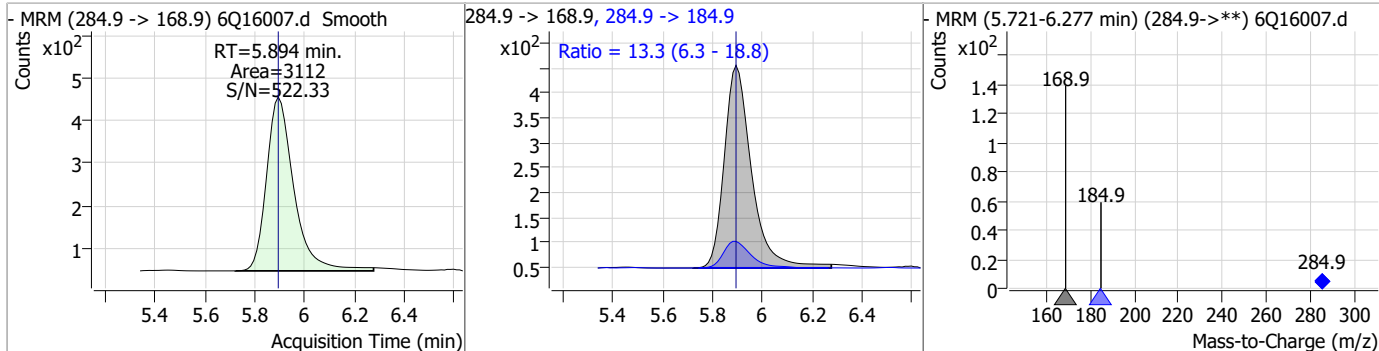
Perfluorinated Compounds by LC/MS/MS



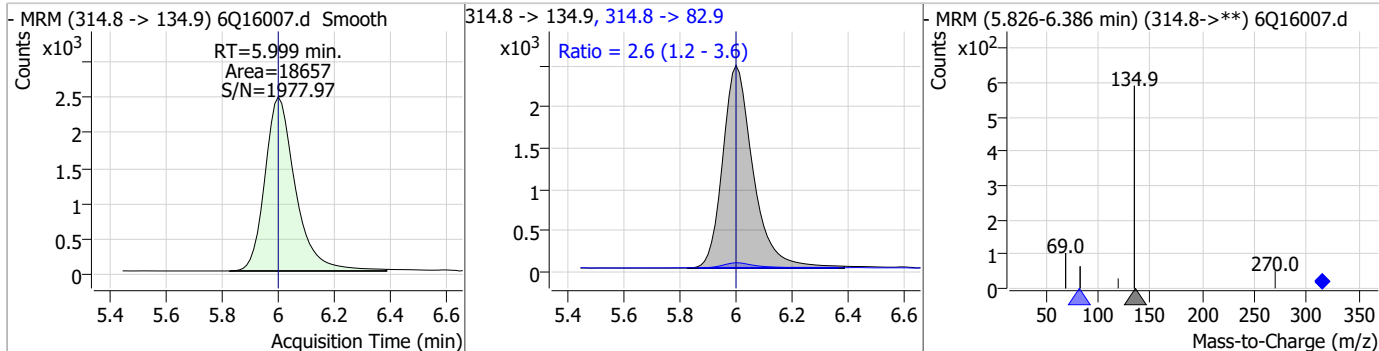
7.7.3
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Perfluorinated Compounds by LC/MS/MS

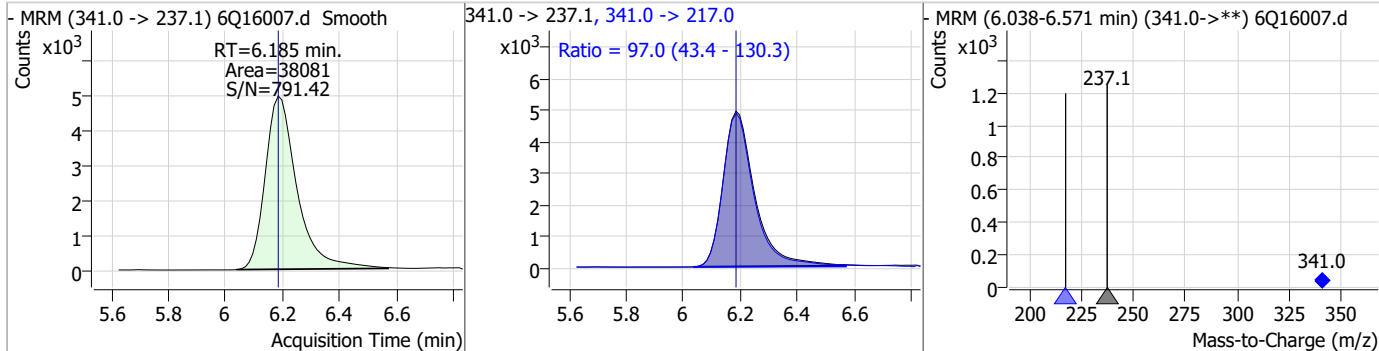
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.32	5.89	0.00	3112	284.9 -> 184.9	13.3	6.3	18.8



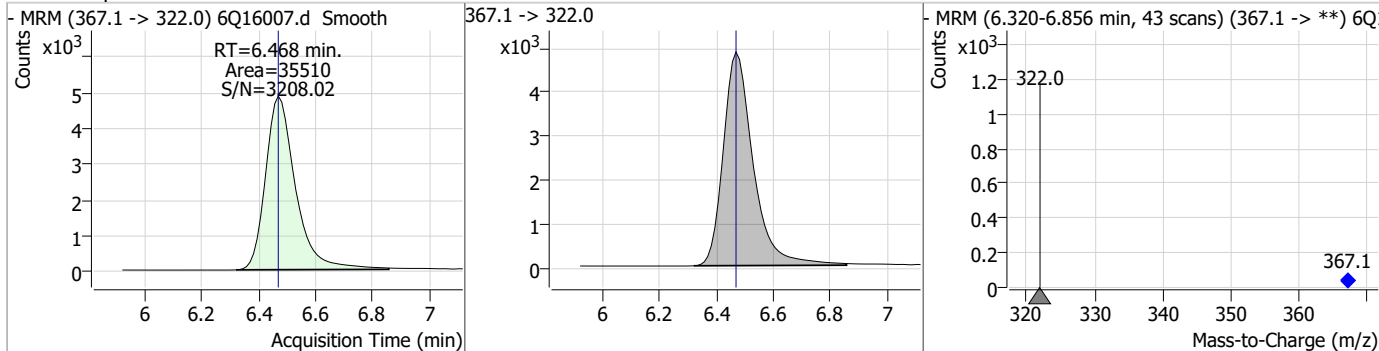
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.04	6.00	0.00	18657	314.8 -> 82.9	2.6	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	13.64	6.19	0.00	38081	341.0 -> 217.0	97.0	43.4	130.3



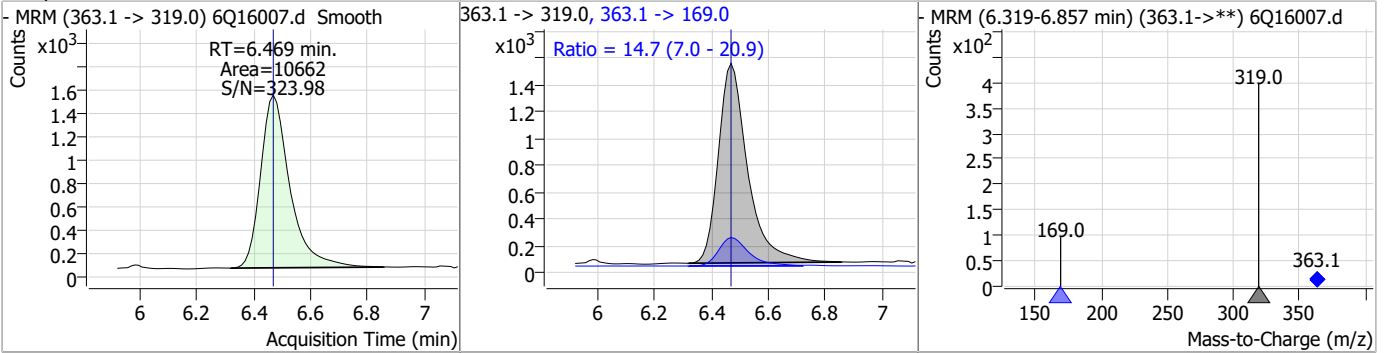
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.47	0.00	35510	367.1 -> 322.0			



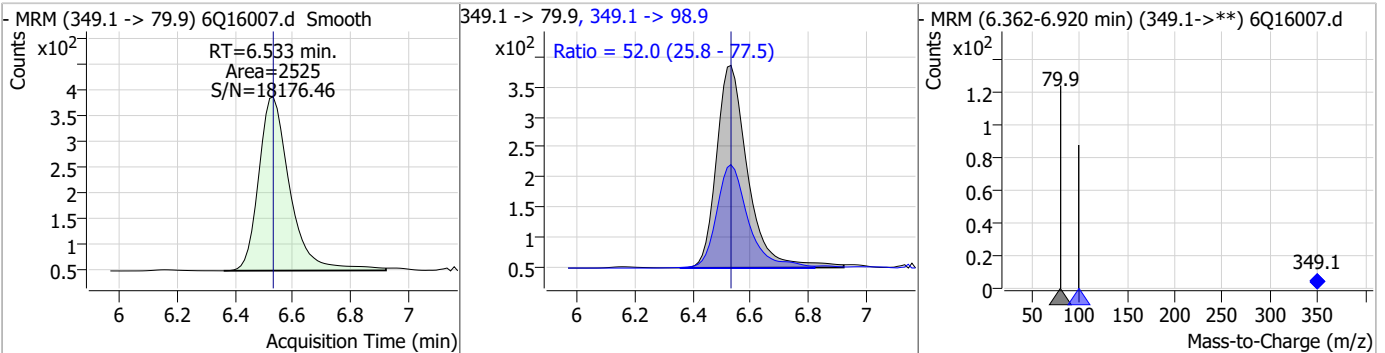
7.7.3
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Perfluorinated Compounds by LC/MS/MS

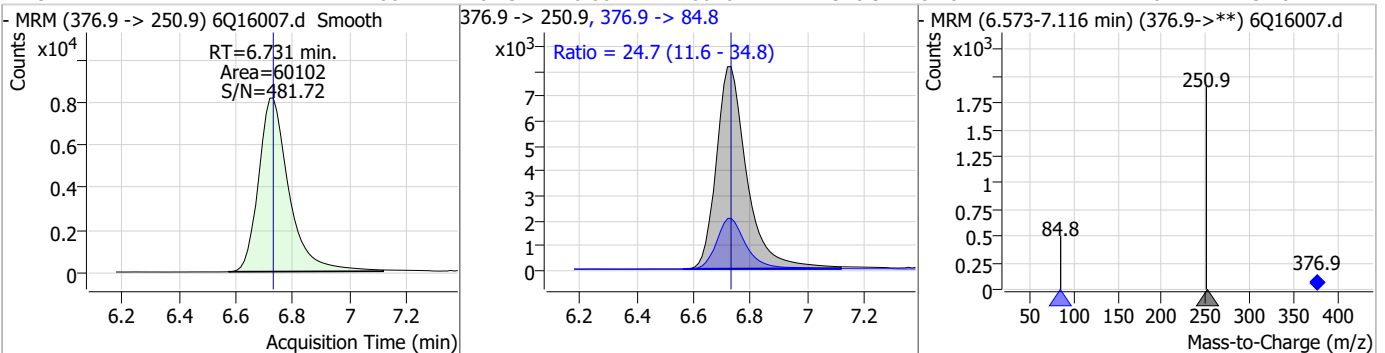
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.53	6.47	0.00	10662	363.1 -> 169.0	14.7	7.0	20.9



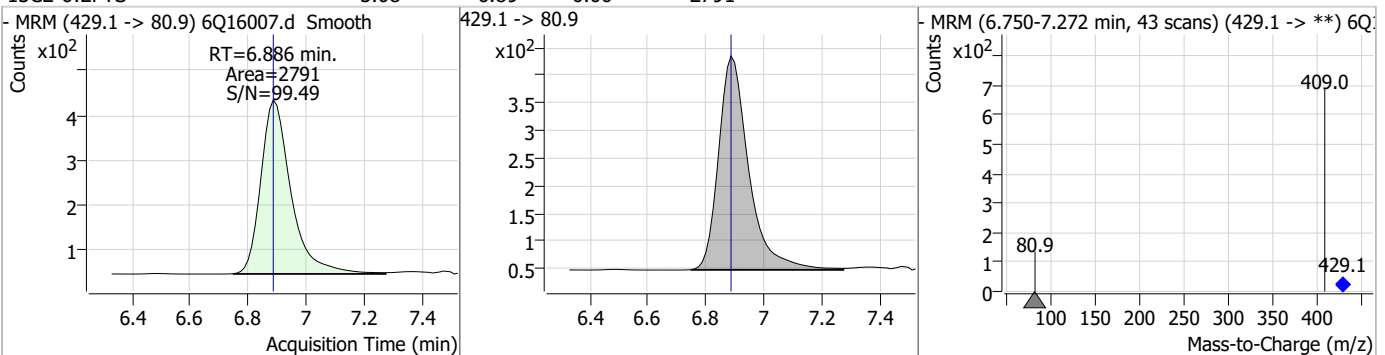
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.54	6.53	0.00	2525	349.1 -> 98.9	52.0	25.8	77.5



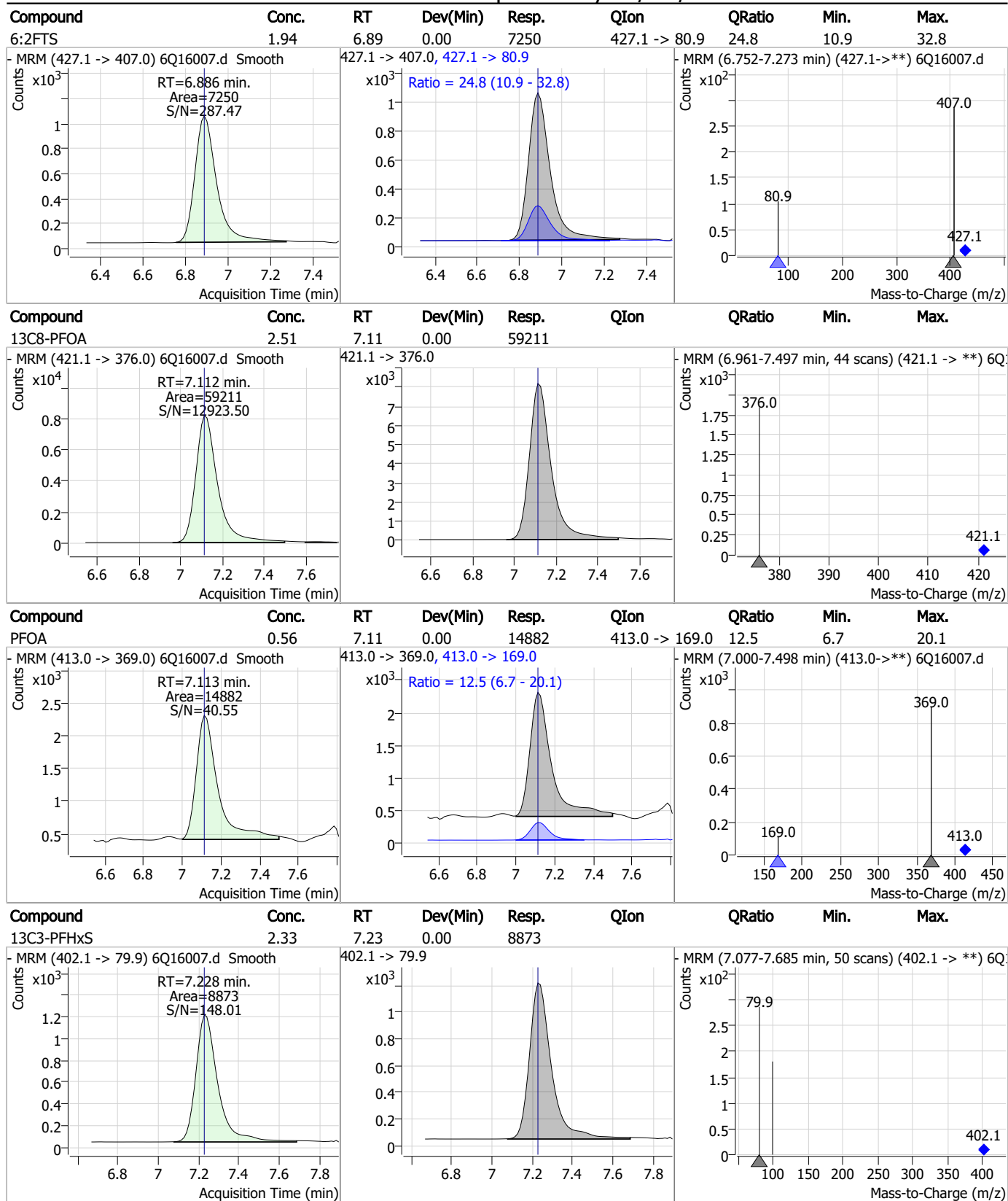
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	2.00	6.73	0.00	60102	376.9 -> 84.8	24.7	11.6	34.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.08	6.89	0.00	2791	429.1 -> 80.9			



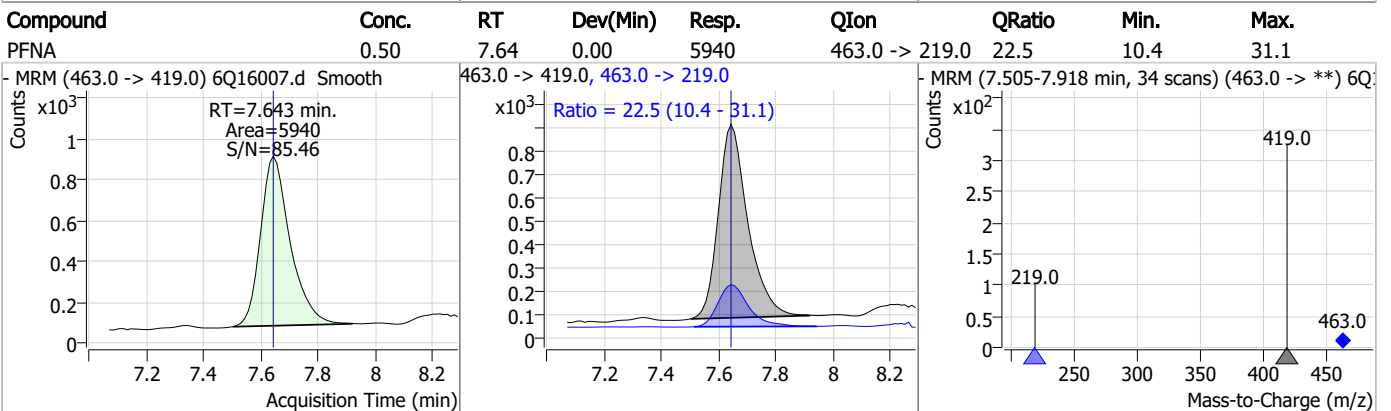
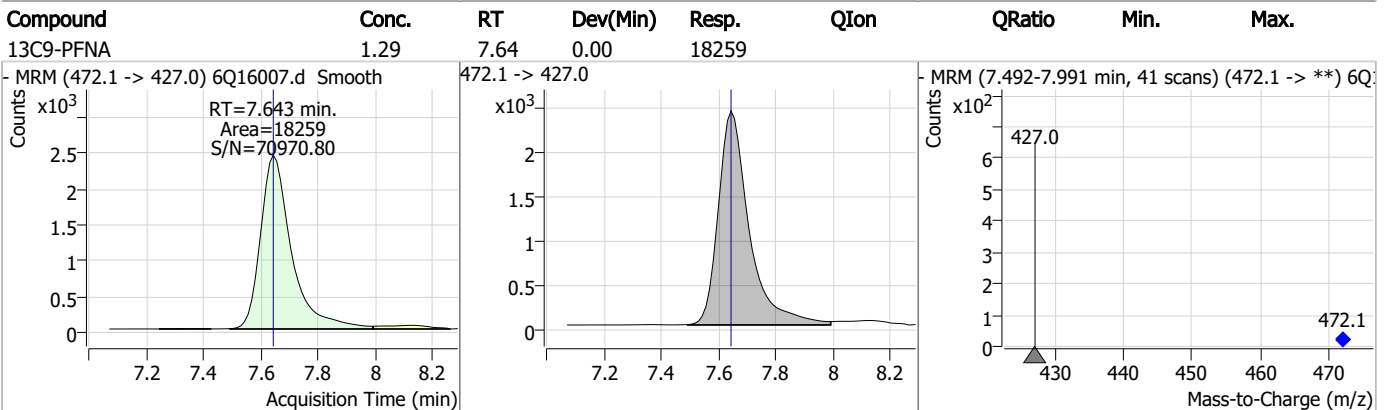
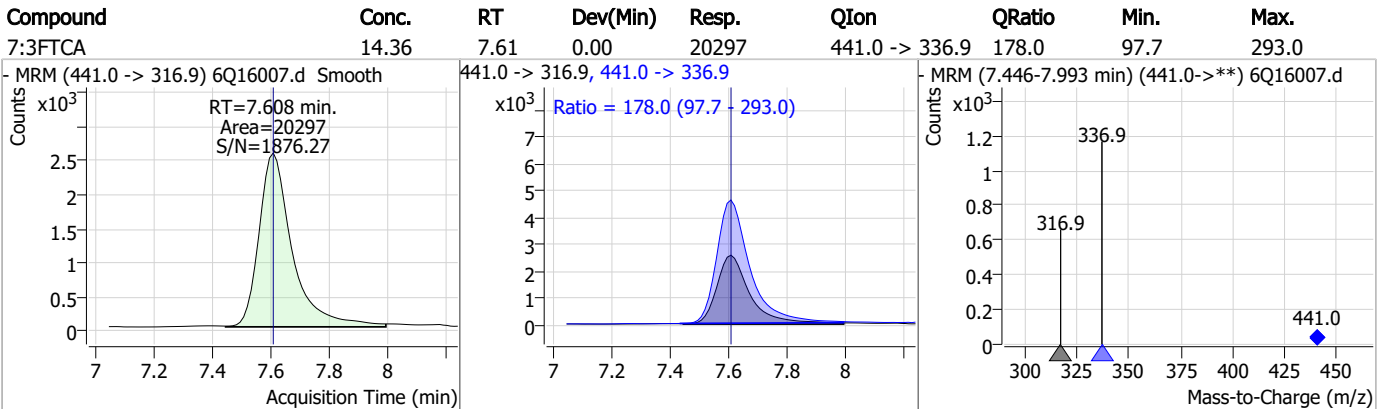
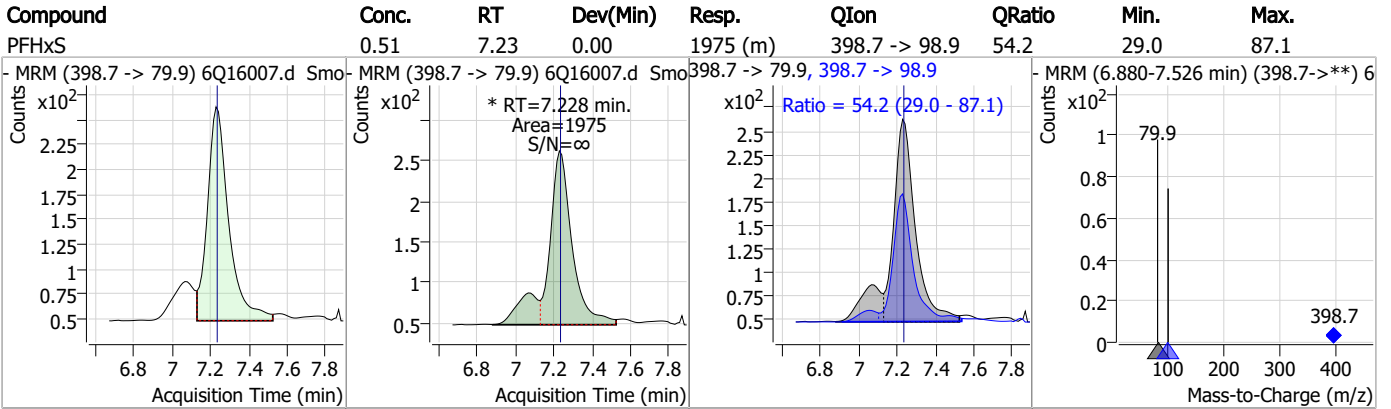
Perfluorinated Compounds by LC/MS/MS



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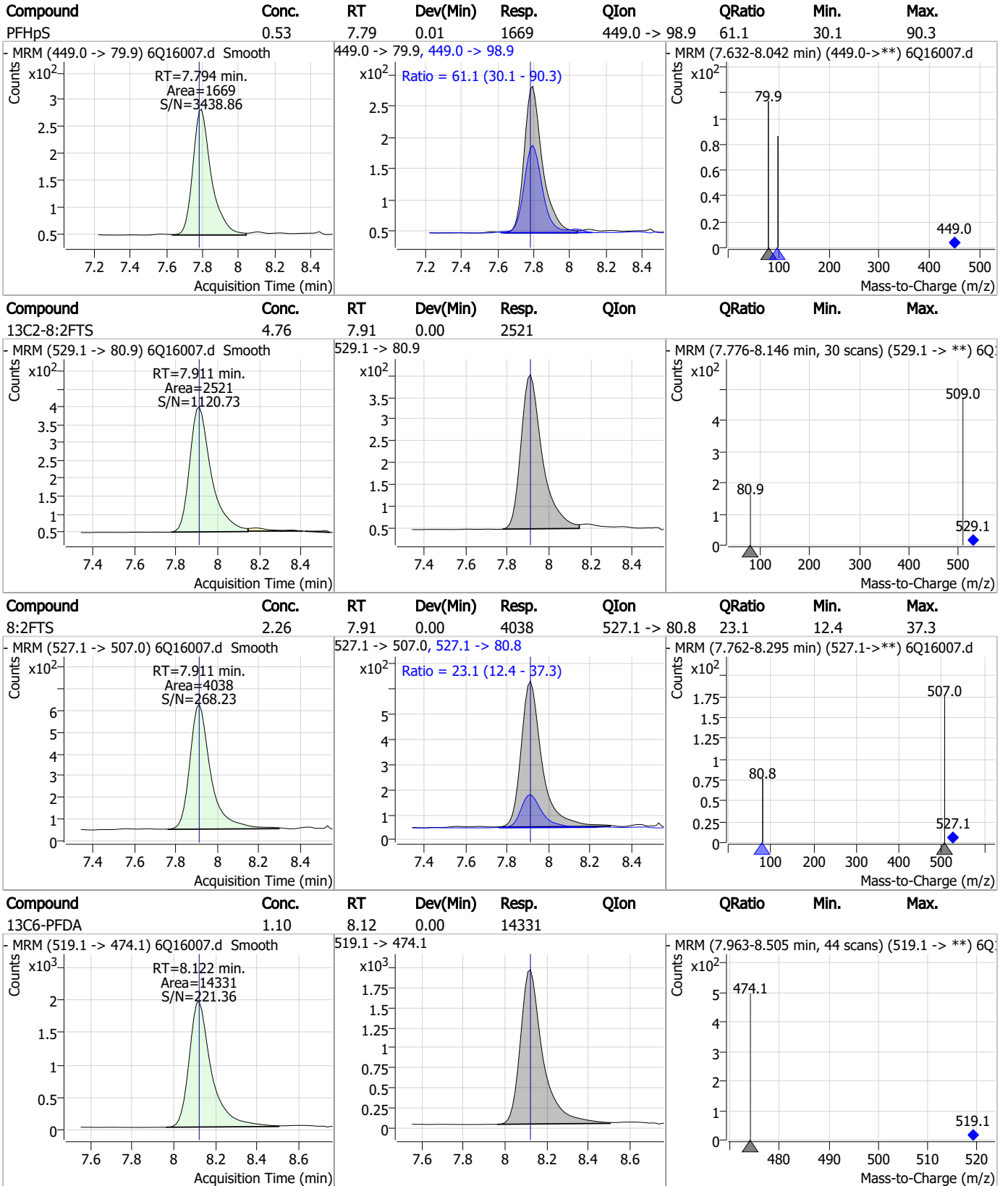
Perfluorinated Compounds by LC/MS/MS



7.7.3

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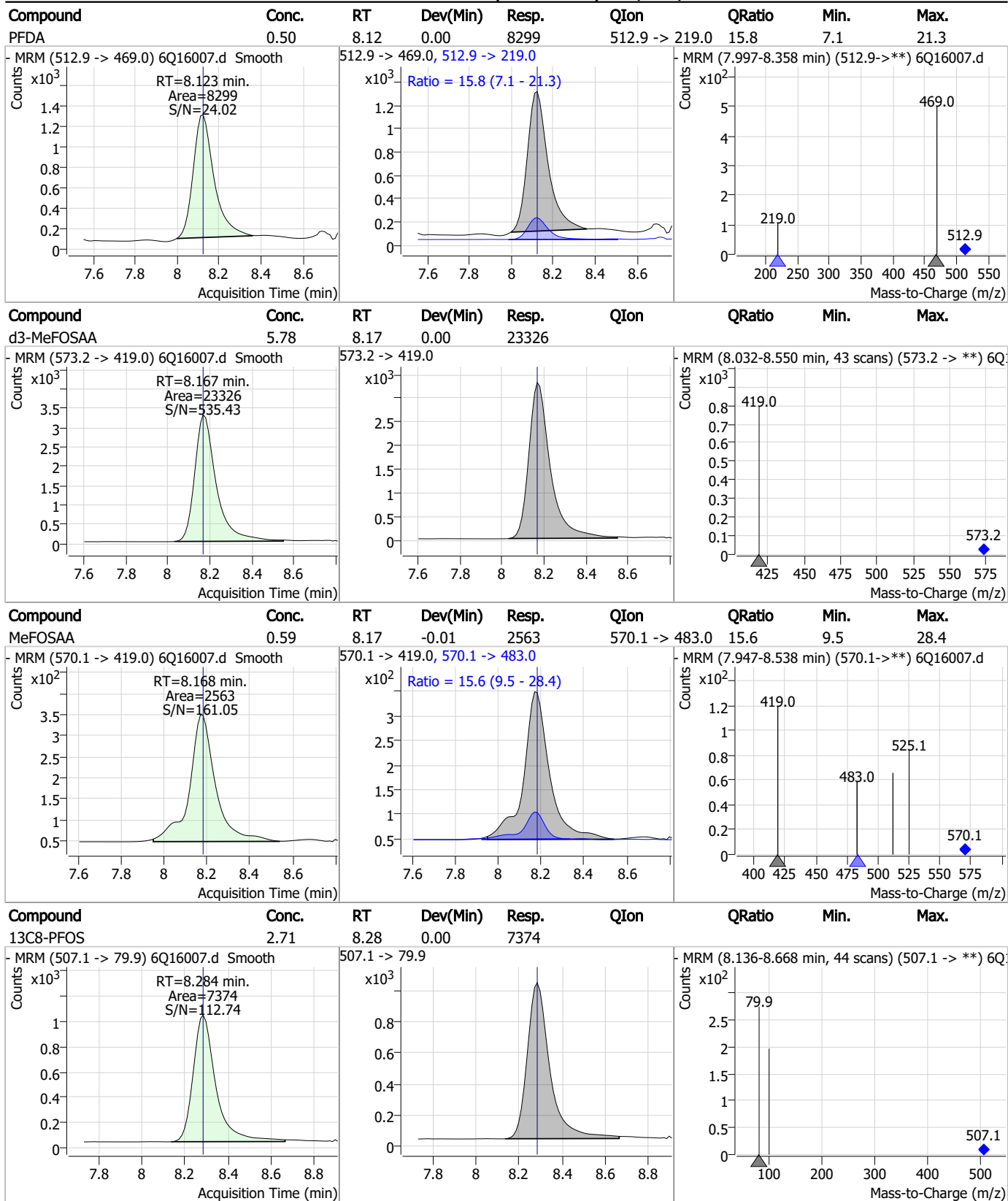
Perfluorinated Compounds by LC/MS/MS



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7

Perfluorinated Compounds by LC/MS/MS

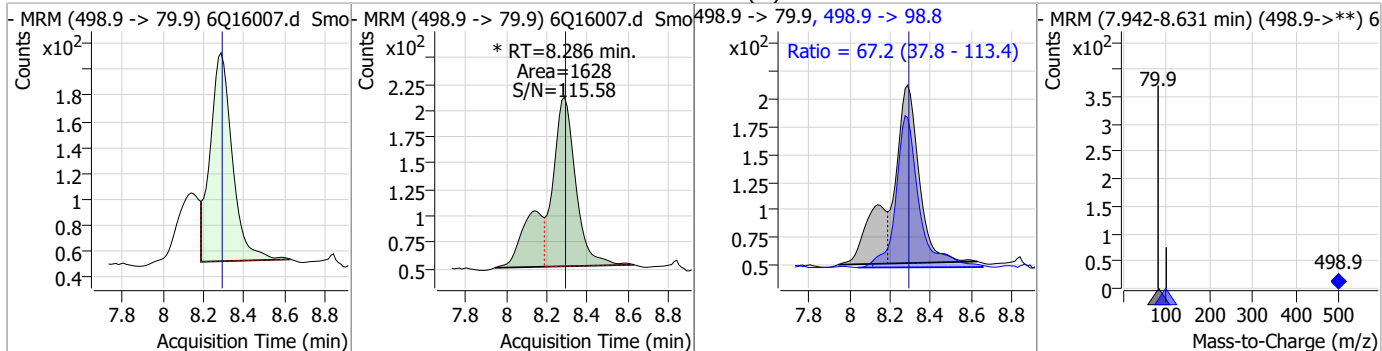


7.7.3

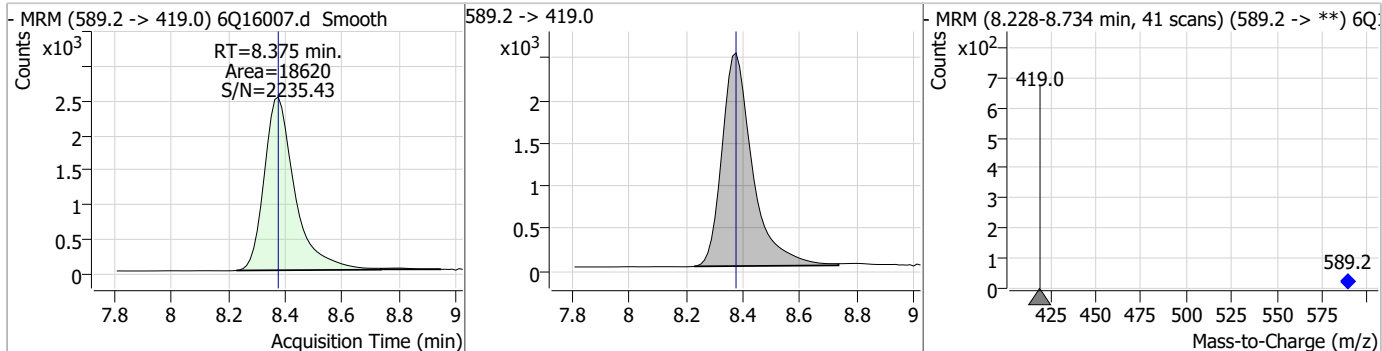
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Perfluorinated Compounds by LC/MS/MS

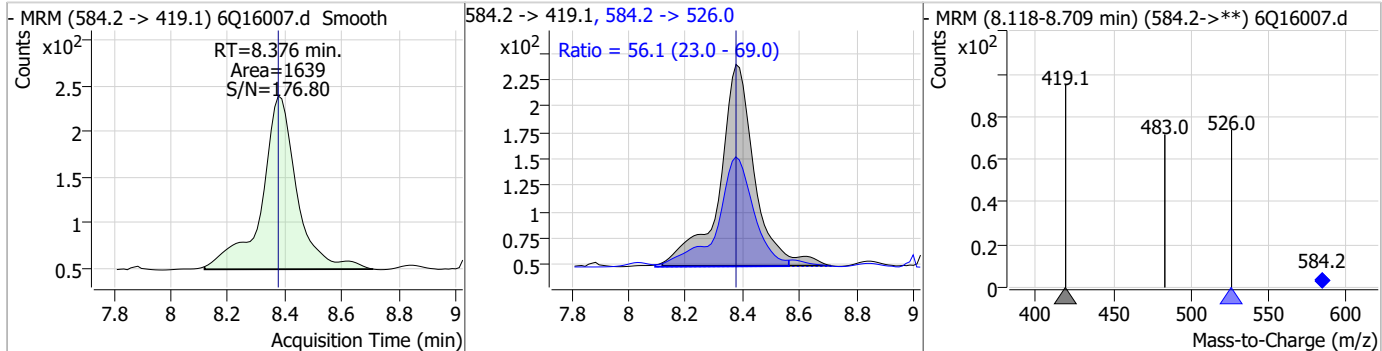
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.50	8.29	0.00	1628 (m)	498.9 -> 98.8	67.2	37.8	113.4



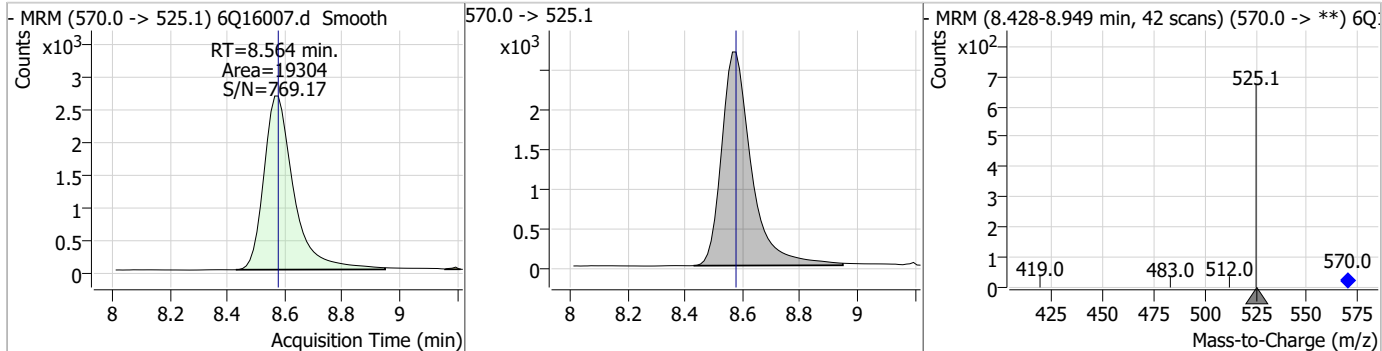
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.33	8.38	0.00	18620				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.57	8.38	0.00	1639	584.2 -> 526.0	56.1	23.0	69.0

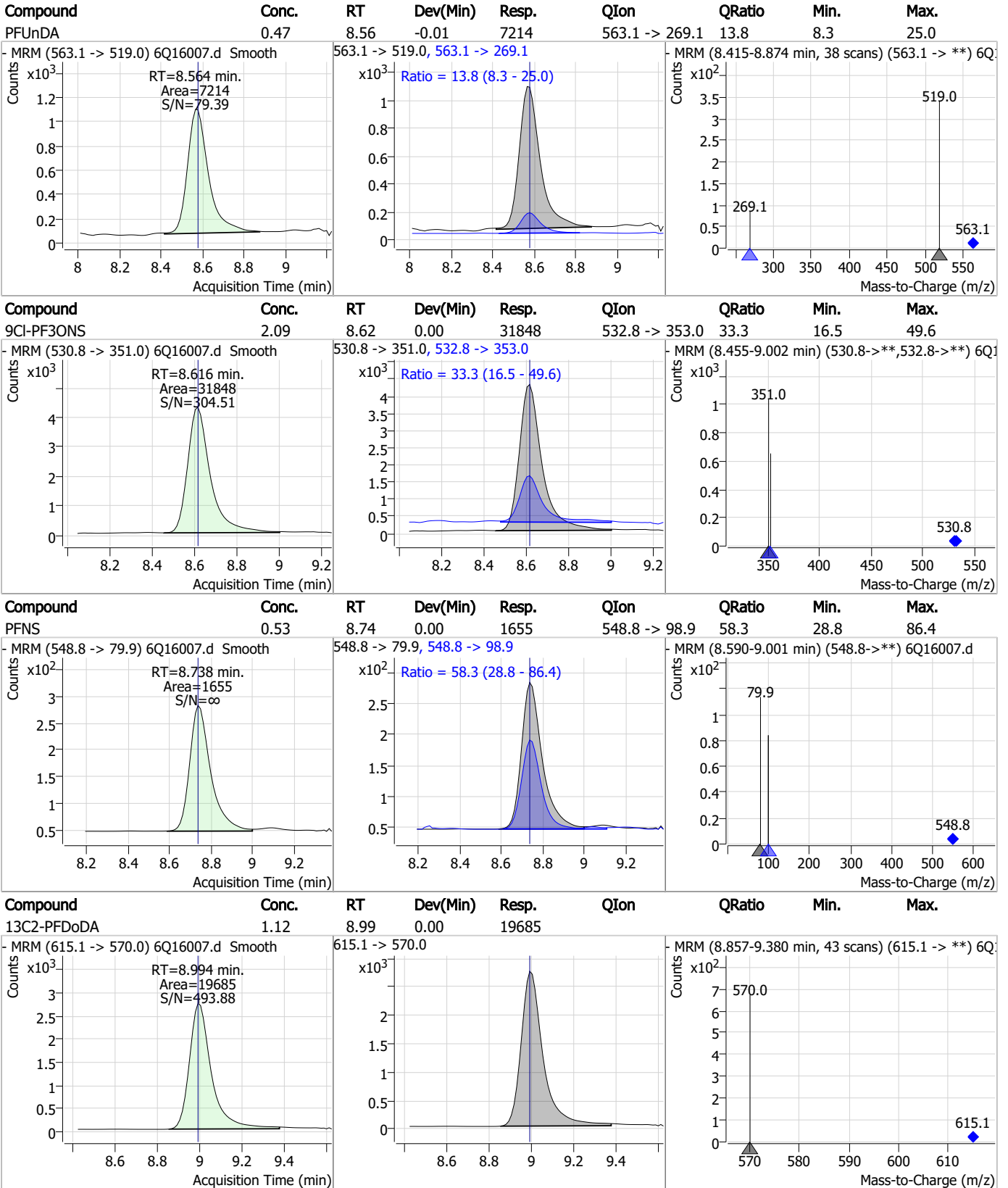


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.56	-0.01	19304				



7.7.3
7

Perfluorinated Compounds by LC/MS/MS

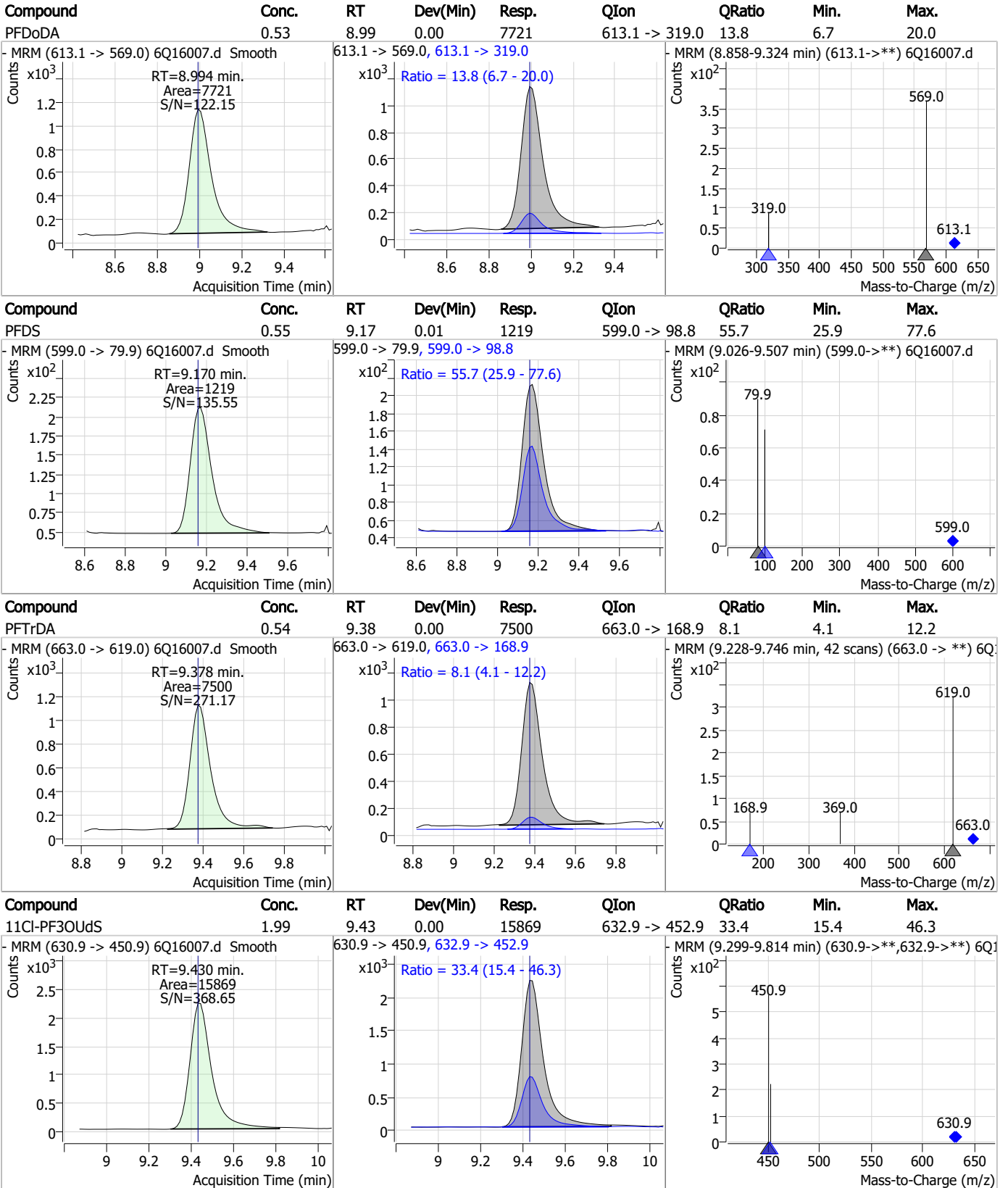


7.7.3

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Perfluorinated Compounds by LC/MS/MS

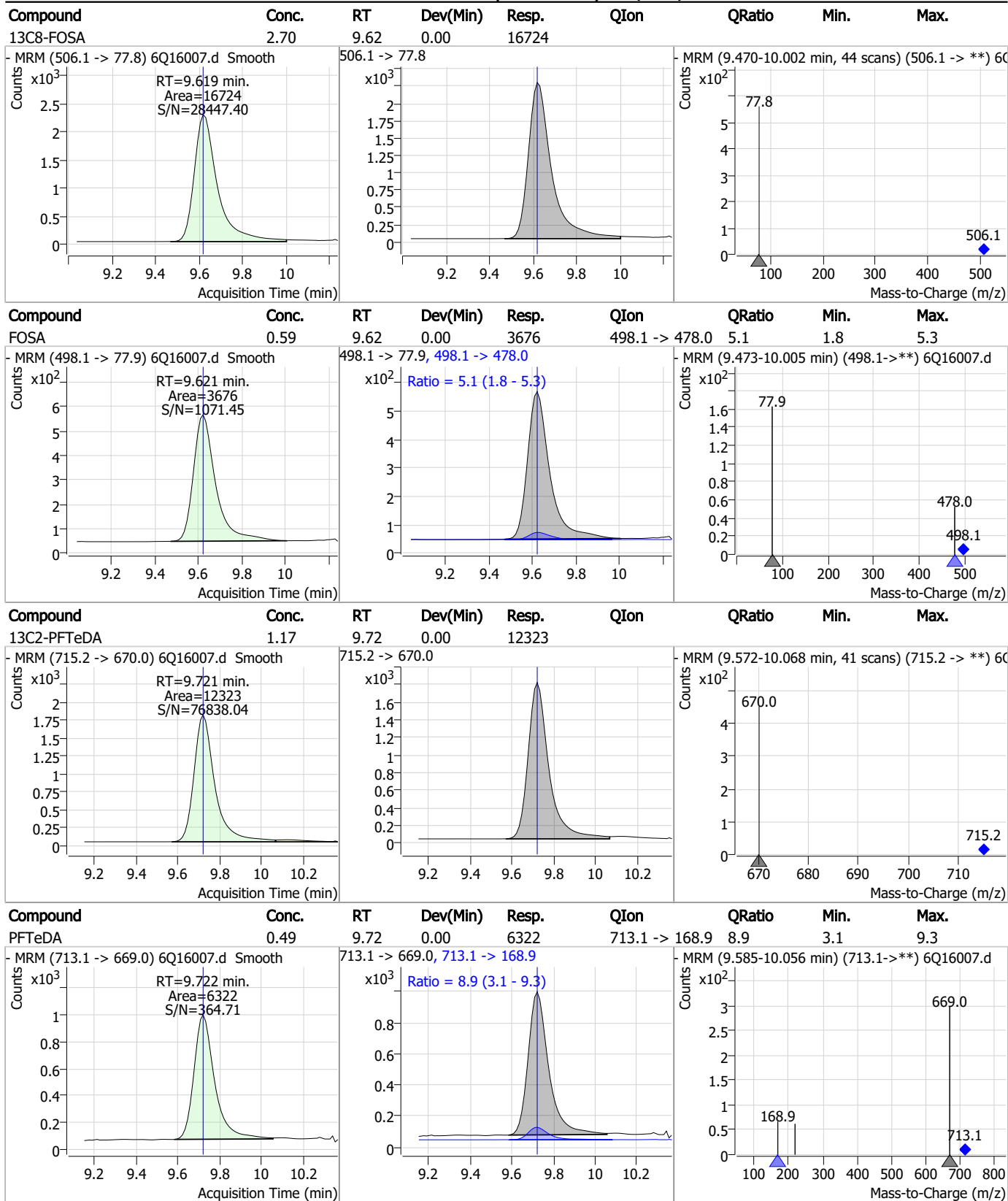


7.7.3

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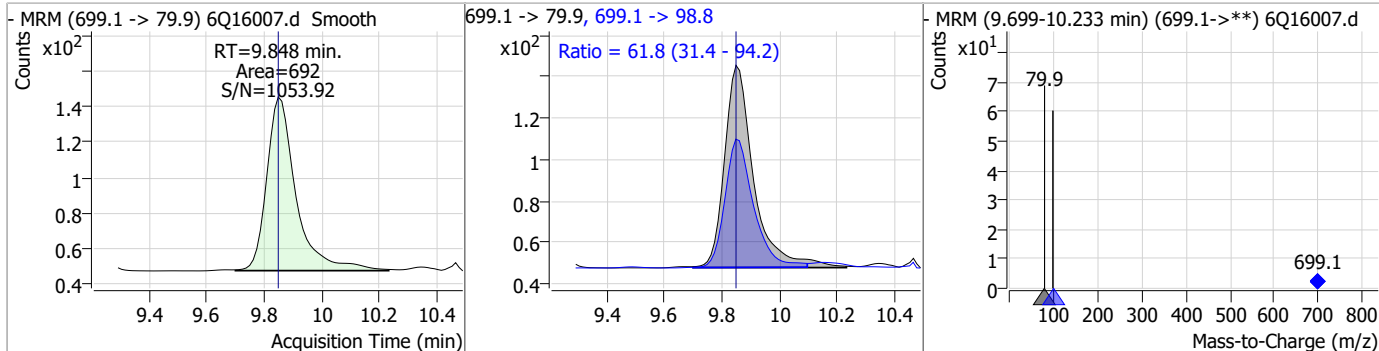
Perfluorinated Compounds by LC/MS/MS



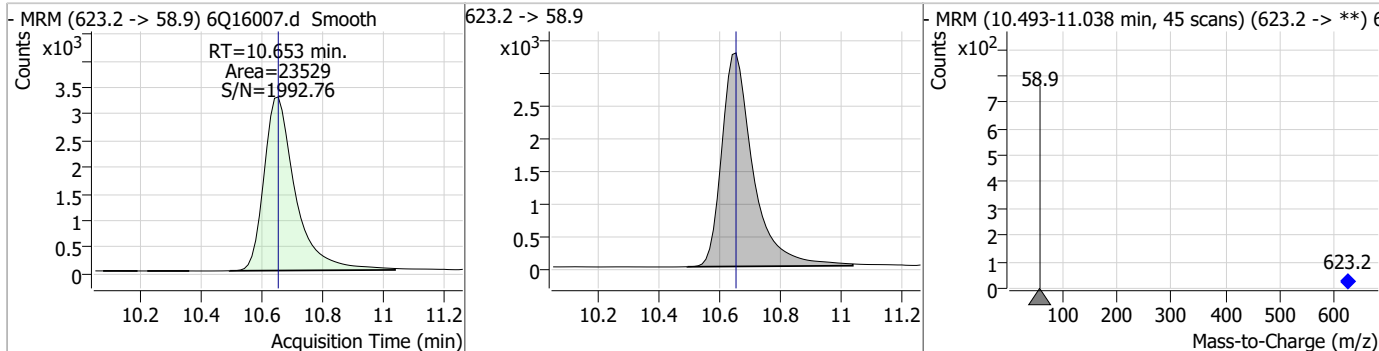
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Perfluorinated Compounds by LC/MS/MS

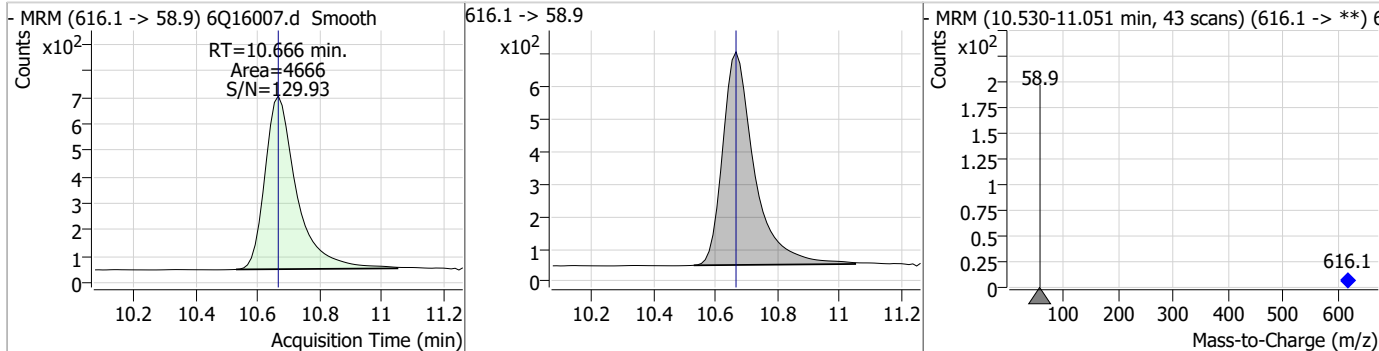
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.54	9.85	0.00	692	699.1 -> 98.8	61.8	31.4	94.2



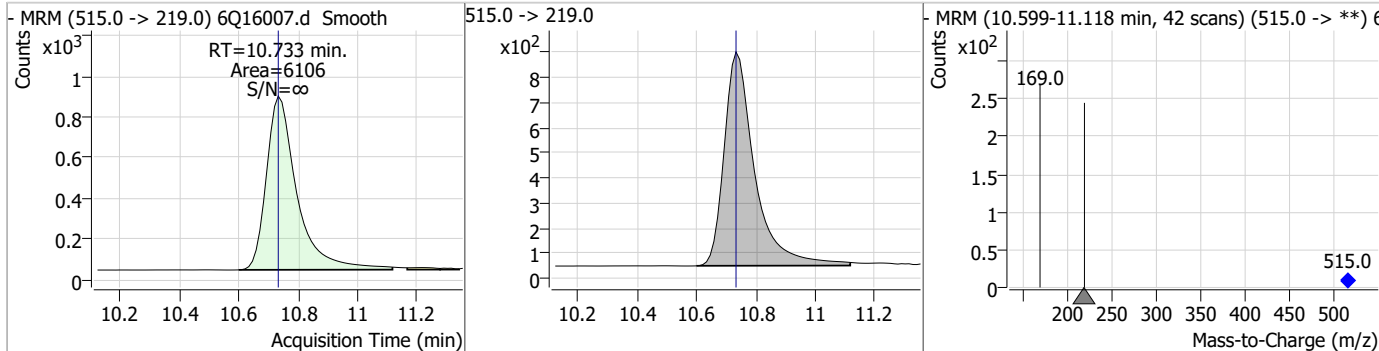
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.73	10.65	0.00	23529				



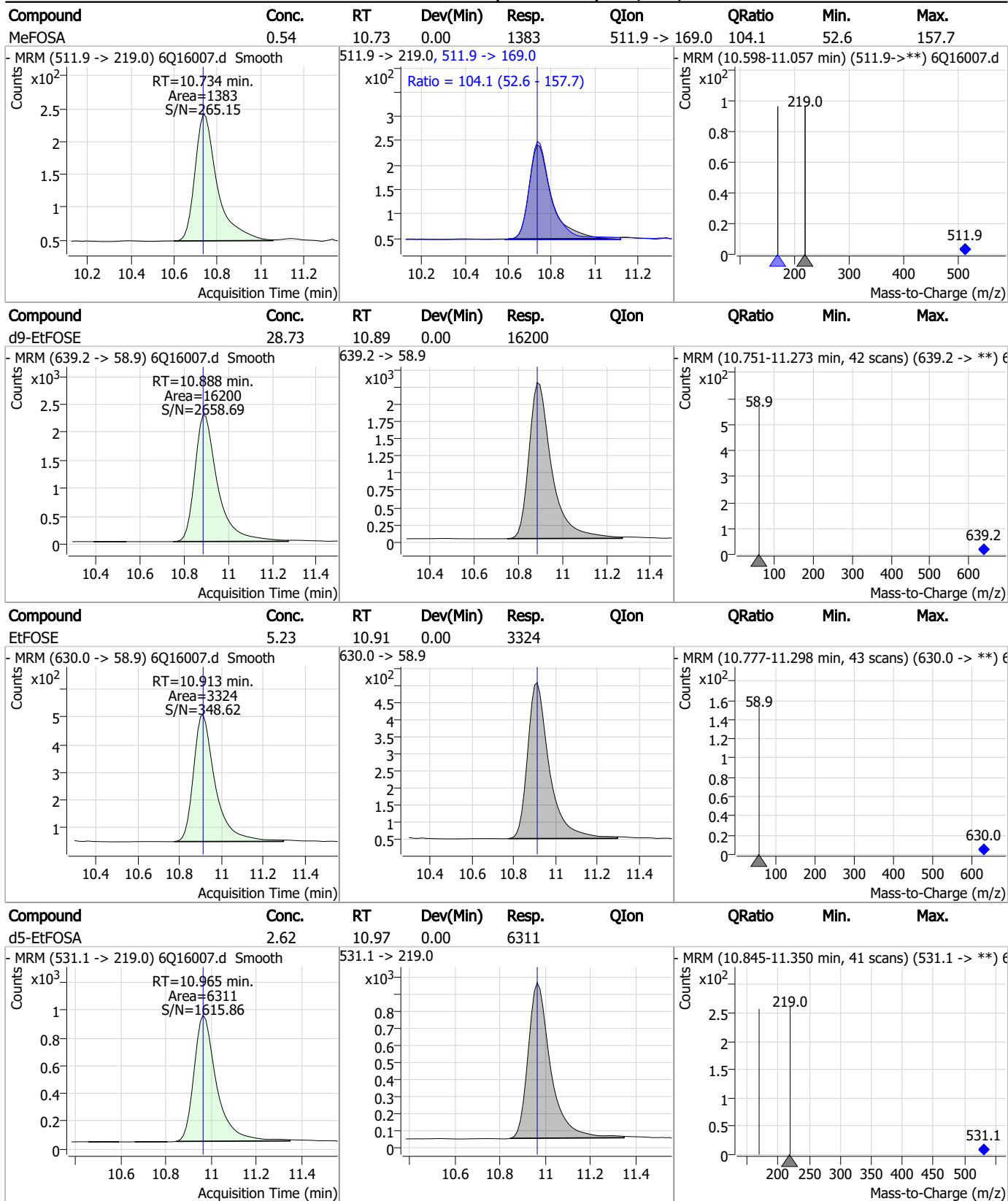
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	5.26	10.67	0.00	4666				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.73	10.73	0.00	6106				

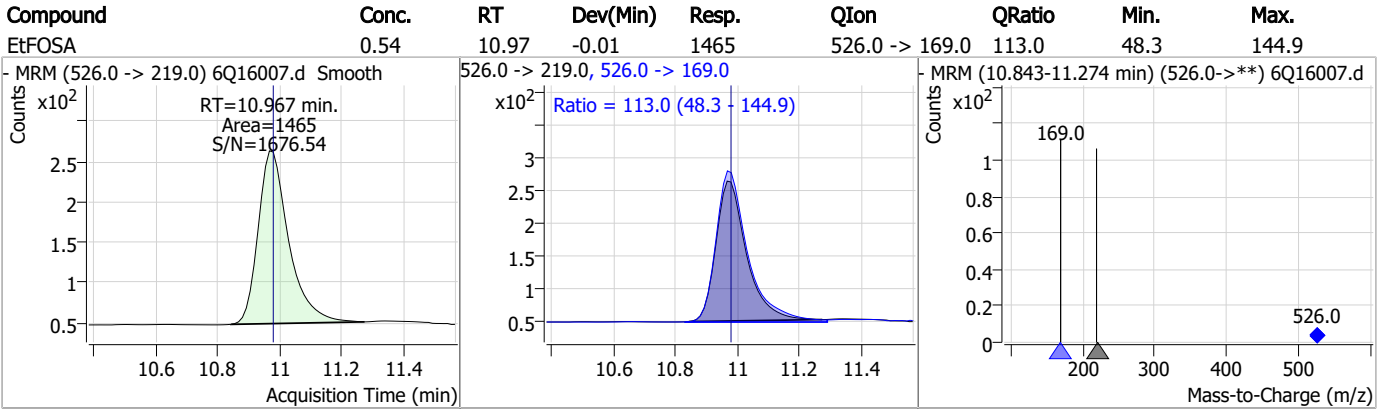


Perfluorinated Compounds by LC/MS/MS



7.7.3
7

Perfluorinated Compounds by LC/MS/MS



7.7.3

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Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16007.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 14:29 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16008.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 2:43:40 PM
 Sample Name : ic239-3
 Vial : P1-A4
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	89281	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	40581	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	35678	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	34898	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	58510	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	17497	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	15635	1.25 µg/L	0.000
M7-PFUnDA	8.576	570.0 -> 525.1	16702	1.25 µg/L	0.000
M2-PFDoDA	8.994	615.1 -> 570.0	19606	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	11175	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	16633	2.50 µg/L	0.000
M3-PFBS	5.459	302.1 -> 79.9	13841	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8643	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	7699	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2123	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2501	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2466	5.00 µg/L	0.000
M3-MeFOSAA	8.180	573.2 -> 419.0	22337	5.00 µg/L	0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	14893	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	19874	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	24049	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	15974	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6147	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5922	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8966	2.50 µg/L	0.000
13C3-PFBA	2.889	216.0 -> 172.0	38492	5.00 µg/L	-0.012
18O2-PFHxS	7.227	403.0 -> 83.9	6338	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	69236	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	20249	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	19403	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	34215	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2123	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2501	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2466	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFDoDA	8.994	615.1 -> 570.0	19606	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	9.721	715.2 -> 670.0	11175	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.1%		
13C3-PFBS	5.459	302.1 -> 79.9	13841	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C3-PFHxS	7.228	402.1 -> 79.9	8643	2.38 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C4-PFBA	2.897	216.8 -> 171.9	89281	9.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C4-PFHpA	6.468	367.1 -> 322.0	34898	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C5-PFHxA	5.528	318.0 -> 273.0	35678	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C5-PFPeA	4.322	268.3 -> 223.0	40581	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C6-PFDA	8.122	519.1 -> 474.1	15635	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C7-PFUnDA	8.576	570.0 -> 525.1	16702	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C8-FOSA	9.619	506.1 -> 77.8	16633	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C8-PFOA	7.112	421.1 -> 376.0	58510	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C8-PFOS	8.284	507.1 -> 79.9	7699	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C9-PFNA	7.643	472.1 -> 427.0	17497	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
d3-MeFOSAA	8.180	573.2 -> 419.0	22337	5.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	14893	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
d3-MeFOSA	10.733	515.0 -> 219.0	5922	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
d5-EtFOSAA	8.375	589.2 -> 419.0	19874	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
d7-MeFOSE	10.653	623.2 -> 58.9	24049	26.36 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
d9-EtFOSE	10.888	639.2 -> 58.9	15974	26.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
d5-EtFOSA	10.965	531.1 -> 219.0	6147	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.9%		
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	20567	4.95 µg/L	99
		327.1 -> 80.9	4966		
6:2FTS	6.886	427.1 -> 407.0	17326	5.17 µg/L	98
		427.1 -> 80.9	3583		
8:2FTS	7.911	527.1 -> 507.0	8790	5.02 µg/L	98
		527.1 -> 80.8	2289		
EtFOSAA	8.376	584.2 -> 419.1	3577	1.17 µg/L	m 83
		584.2 -> 526.0	2057		
FOSA	9.621	498.1 -> 77.9	7407	1.21 µg/L	99
		498.1 -> 478.0	284		
MeFOSAA	8.181	570.1 -> 419.0	4795	1.15 µg/L	92
		570.1 -> 483.0	727		
PFBA	2.893	212.8 -> 168.9	11157	4.94 µg/L	100
PFBS	5.460	298.7 -> 79.9	5896	1.09 µg/L	97
		298.7 -> 98.8	2589		
PFDA	8.123	512.9 -> 469.0	21484	1.18 µg/L	98
		512.9 -> 219.0	2852		
PFDoDA	8.994	613.1 -> 569.0	17359	1.19 µg/L	100
		613.1 -> 319.0	2291		
PFDS	9.170	599.0 -> 79.9	2789	1.21 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1440			
PFHpA	6.469	363.1 -> 319.0	23733	1.21	µg/L	98
		363.1 -> 169.0	3491			
PFHpS	7.794	449.0 -> 79.9	3808	1.16	µg/L	99
		449.0 -> 98.9	2319			
PFHxA	5.519	313.0 -> 269.0	16168	1.23	µg/L	100
		313.0 -> 118.9	620			
PFHxS	7.228	398.7 -> 79.9	4502	1.18	µg/L	m 91
		398.7 -> 98.9	2302			
PFNA	7.643	463.0 -> 419.0	13537	1.19	µg/L	99
		463.0 -> 219.0	2736			
PFNS	8.738	548.8 -> 79.9	3678	1.13	µg/L	94
		548.8 -> 98.9	1968			
PFOA	7.113	413.0 -> 369.0	31135	1.18	µg/L	m 98
		413.0 -> 169.0	4470			
PFOS	8.286	498.9 -> 79.9	3735	1.10	µg/L	m 79
		498.9 -> 98.8	2154			
PFPeA	4.324	263.0 -> 219.0	20960	2.45	µg/L	100
PFPeS	6.520	349.1 -> 79.9	5519	1.21	µg/L	98
		349.1 -> 98.9	2931			
PFTeDA	9.722	713.1 -> 669.0	15787	1.34	µg/L	99
		713.1 -> 168.9	1040			
PFTrDA	9.390	663.0 -> 619.0	17339	1.26	µg/L	98
		663.0 -> 168.9	1557			
PFUnDA	8.577	563.1 -> 519.0	17487	1.31	µg/L	94
		563.1 -> 269.1	2431			
11CI-PF3OUdS	9.430	630.9 -> 450.9	39529	4.94	µg/L	98
		632.9 -> 452.9	11752			
9CI-PF3ONS	8.616	530.8 -> 351.0	77330	5.06	µg/L	92
		532.8 -> 353.0	22181			
ADONA	6.719	376.9 -> 250.9	150128	4.97	µg/L	99
		376.9 -> 84.8	35451			
HFPO-DA	5.894	284.9 -> 168.9	6782	5.04	µg/L	99
		284.9 -> 184.9	827			
3:3FTCA	3.777	241.0 -> 177.0	2892	6.09	µg/L	100
		241.0 -> 117.0	439			
5:3FTCA	6.185	341.0 -> 237.1	87962	30.22	µg/L	97
		341.0 -> 217.0	79039			
7:3FTCA	7.608	441.0 -> 316.9	45679	31.00	µg/L	87
		441.0 -> 336.9	80210			
EtFOSA	10.967	526.0 -> 219.0	3618	1.36	µg/L	98
		526.0 -> 169.0	3582			
EtFOSE	10.913	630.0 -> 58.9	7149	11.41	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	3146	1.26	µg/L	96
		511.9 -> 169.0	3180			
MeFOSE	10.666	616.1 -> 58.9	10885	12.01	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	1562	1.17	µg/L	94
		699.1 -> 98.8	907			
NFDHA	5.398	295.0 -> 201.0	2060	2.41	µg/L	97
		295.0 -> 84.9	873			
PFMBA	4.737	279.0 -> 85.1	6933	2.44	µg/L	100
PFMPA	3.463	229.0 -> 84.9	6445	2.49	µg/L	100
PFEESA	5.999	314.8 -> 134.9	40942	2.19	µg/L	99
		314.8 -> 82.9	1109			

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

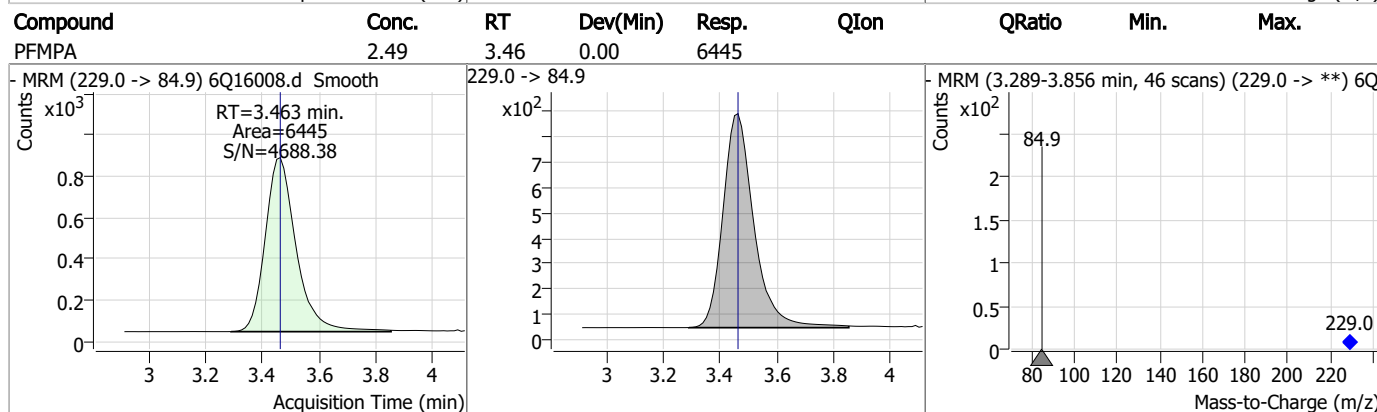
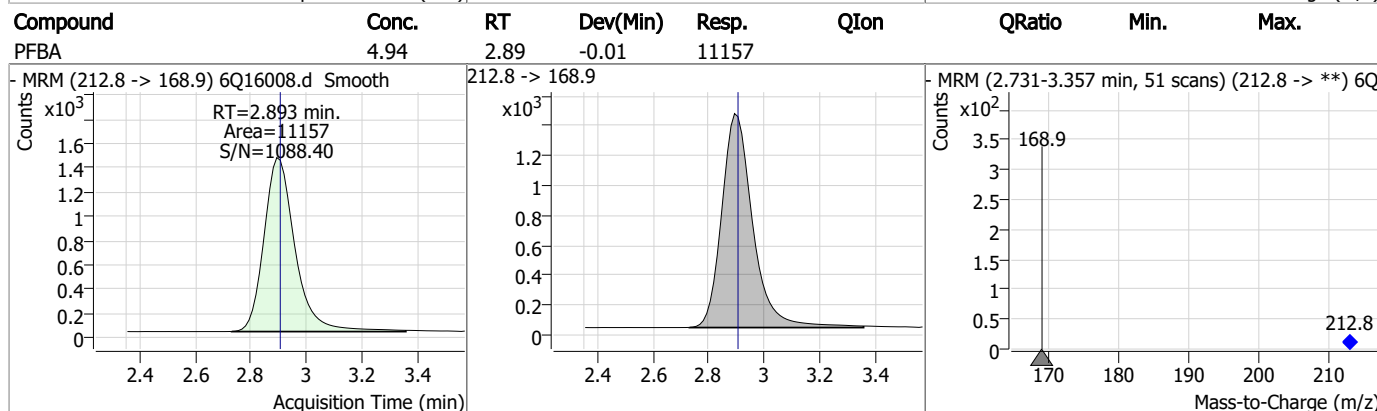
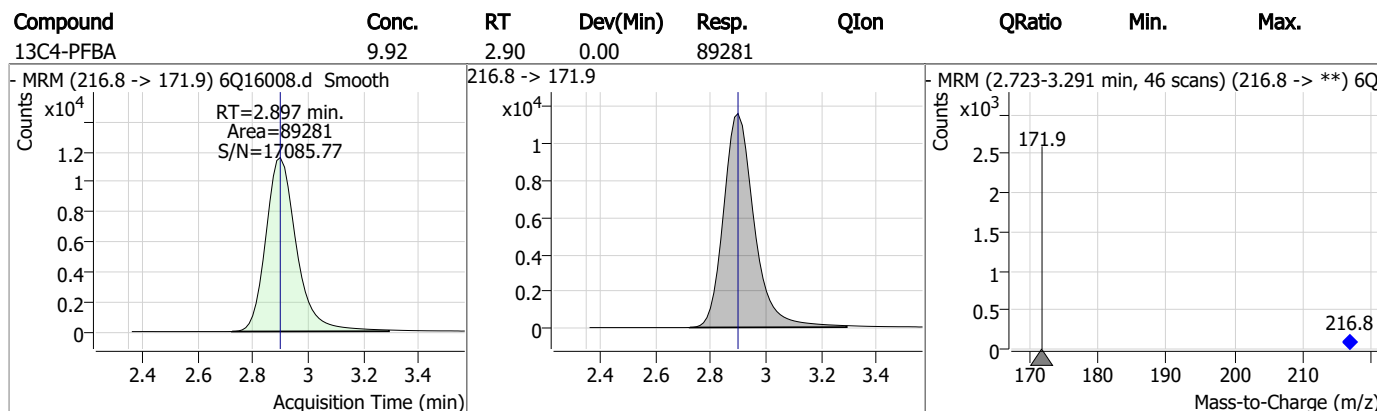
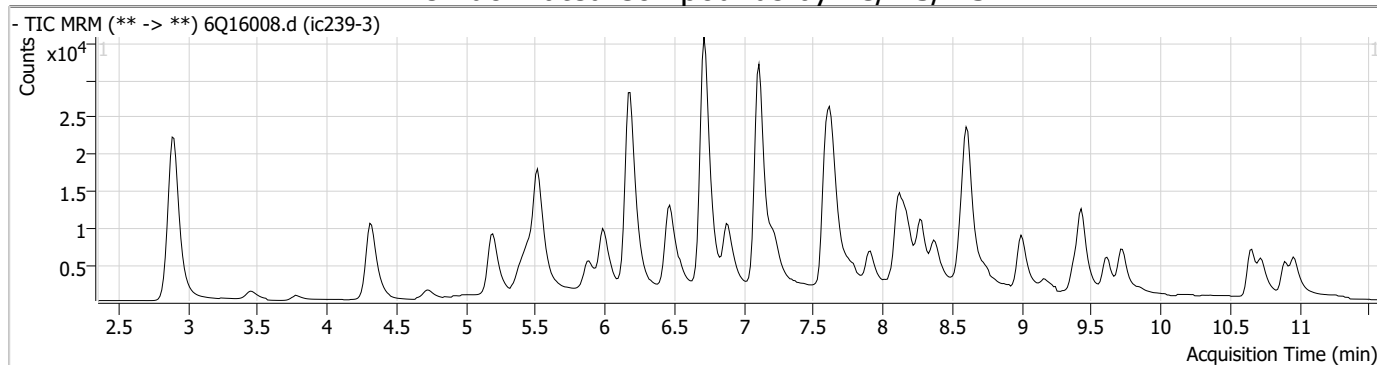
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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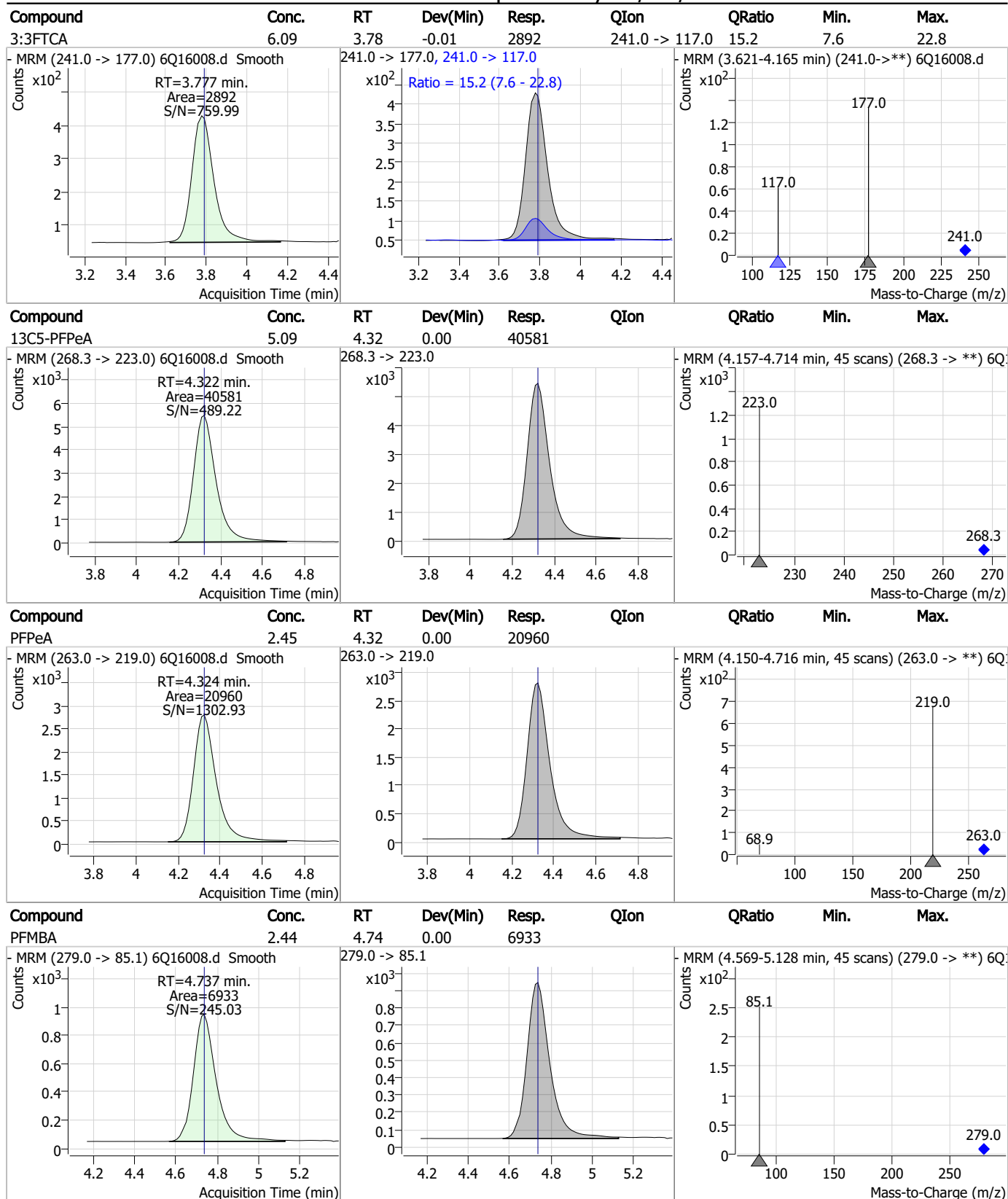
7.7.4

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Perfluorinated Compounds by LC/MS/MS

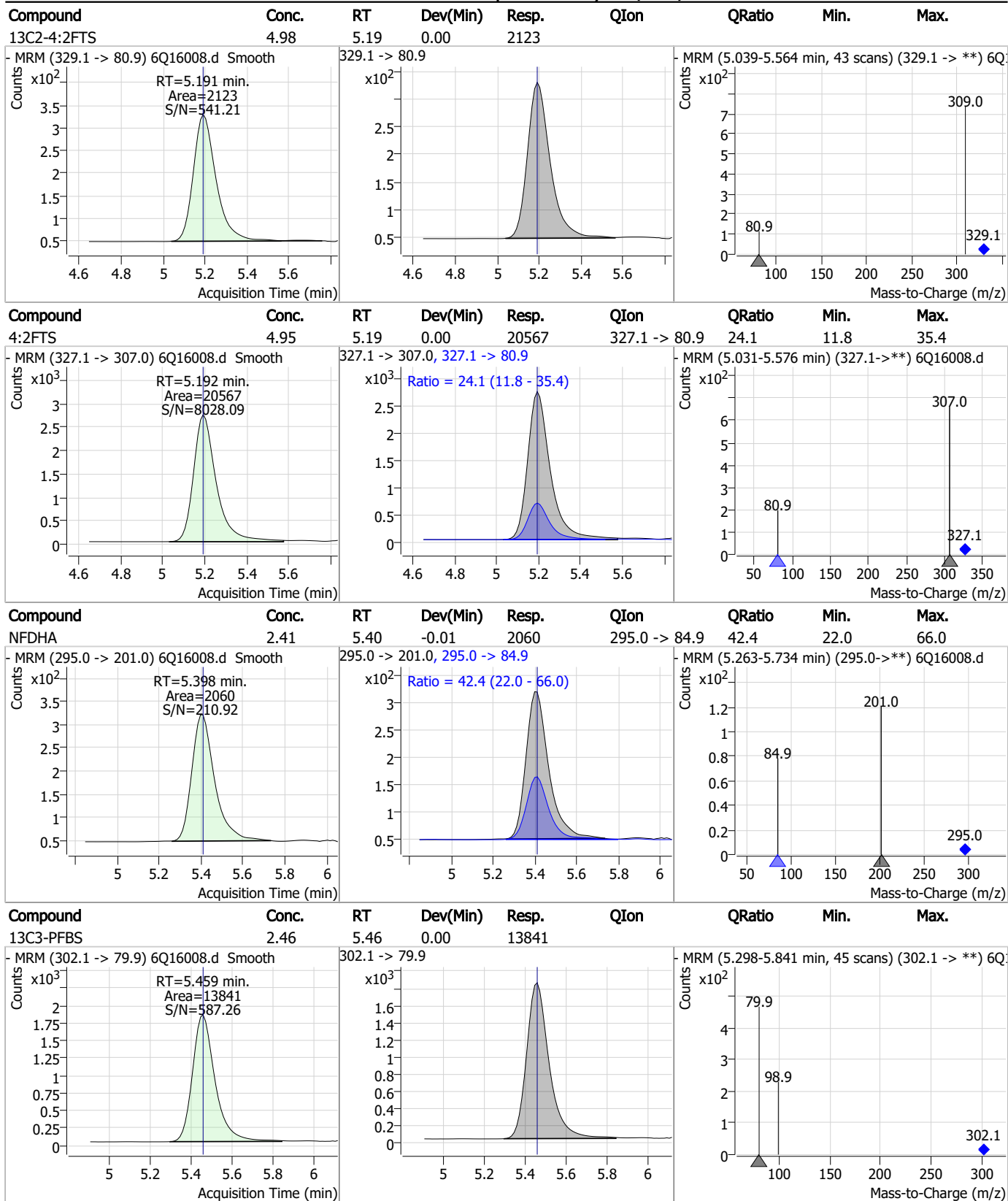


Perfluorinated Compounds by LC/MS/MS



7.7.4
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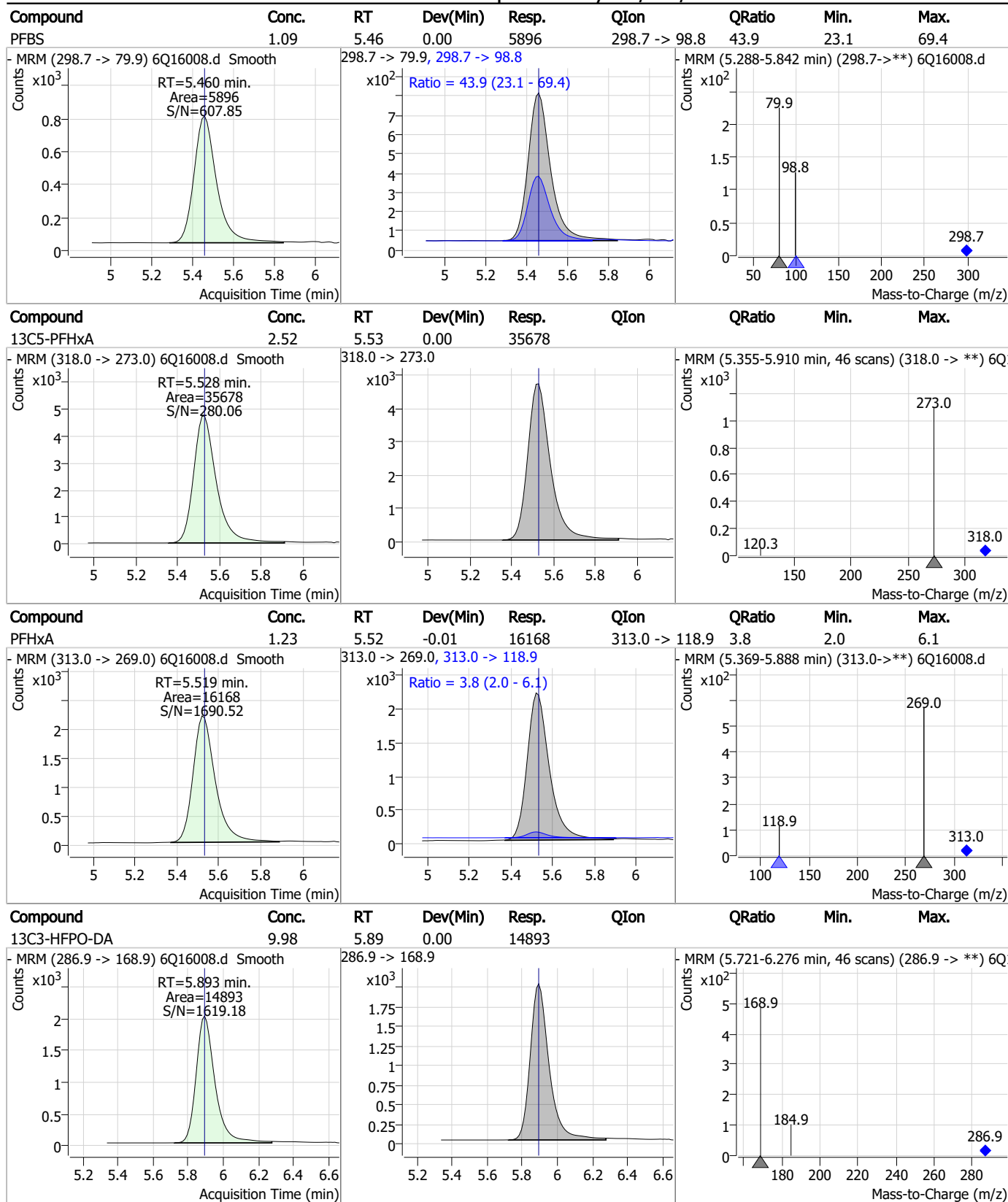
Perfluorinated Compounds by LC/MS/MS



7.7.4
7



Perfluorinated Compounds by LC/MS/MS

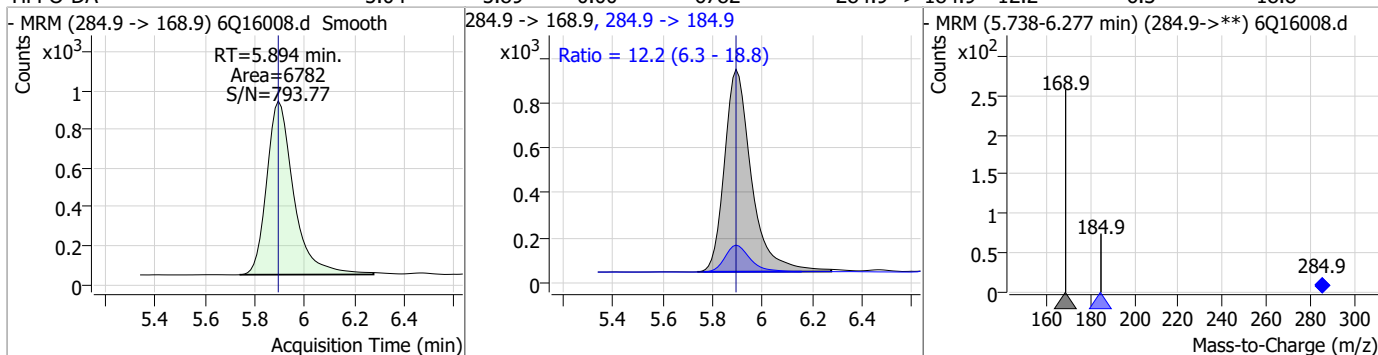


7.7.4

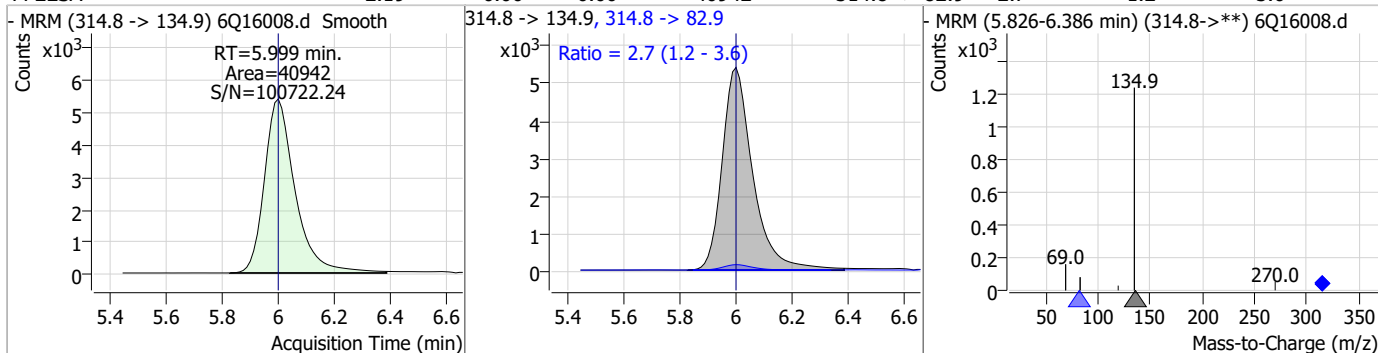
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Perfluorinated Compounds by LC/MS/MS

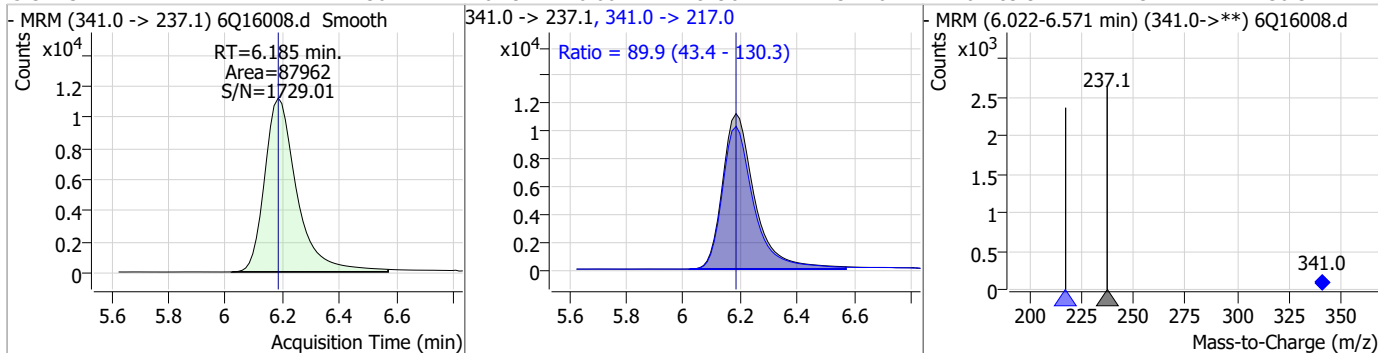
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.04	5.89	0.00	6782	284.9 -> 184.9	12.2	6.3	18.8



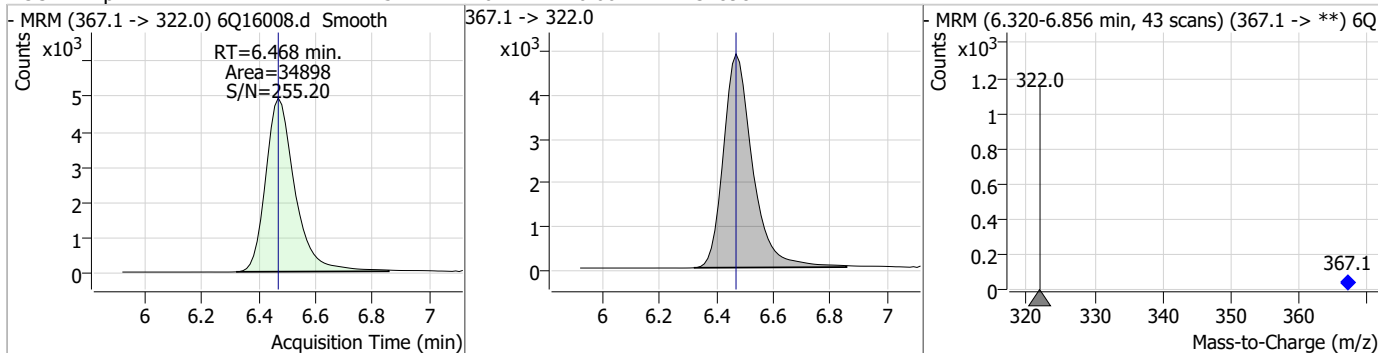
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.19	6.00	0.00	40942	314.8 -> 82.9	2.7	1.2	3.6



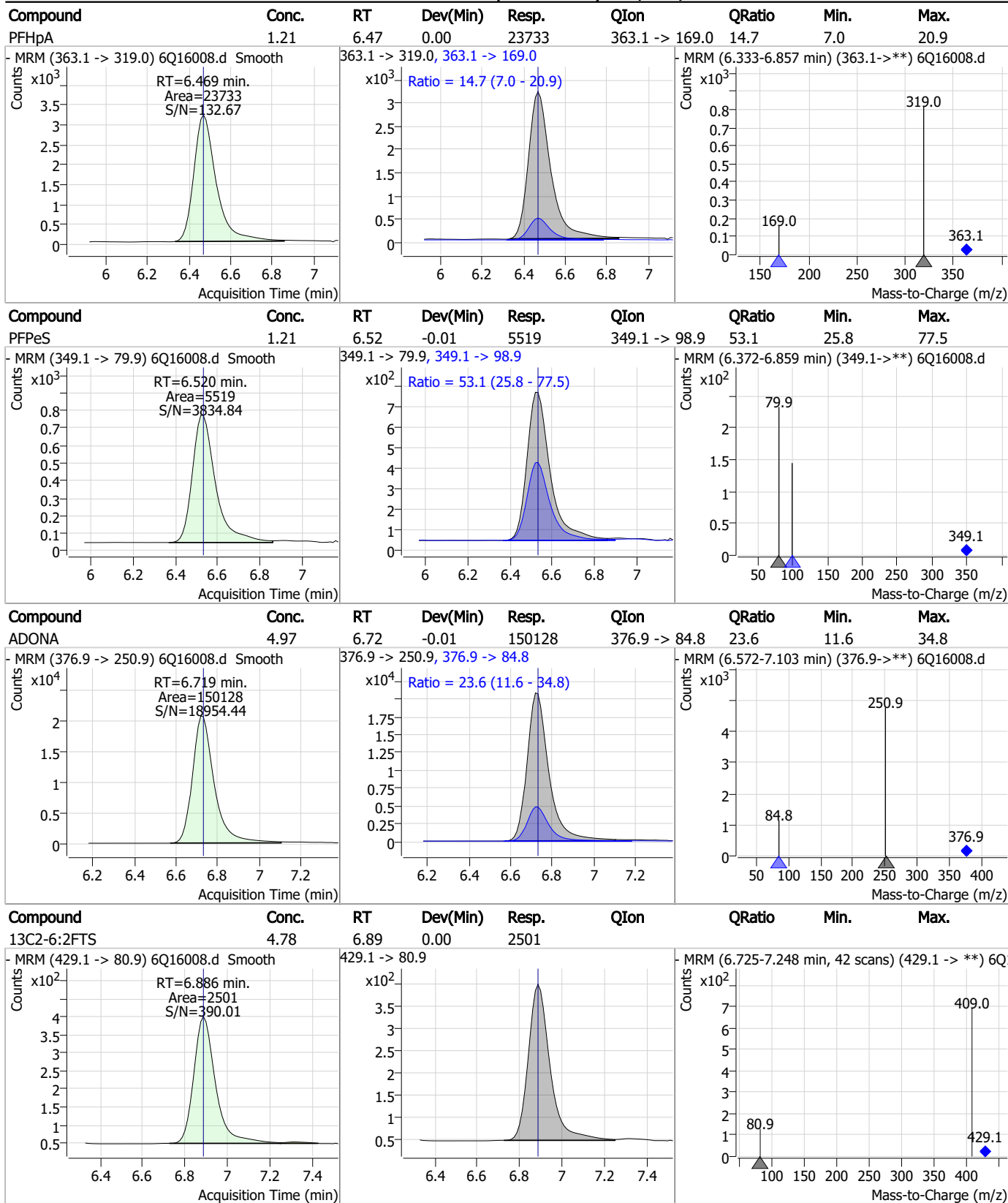
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	30.22	6.19	0.00	87962	341.0 -> 217.0	89.9	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.47	0.00	34898	367.1 -> 322.0			

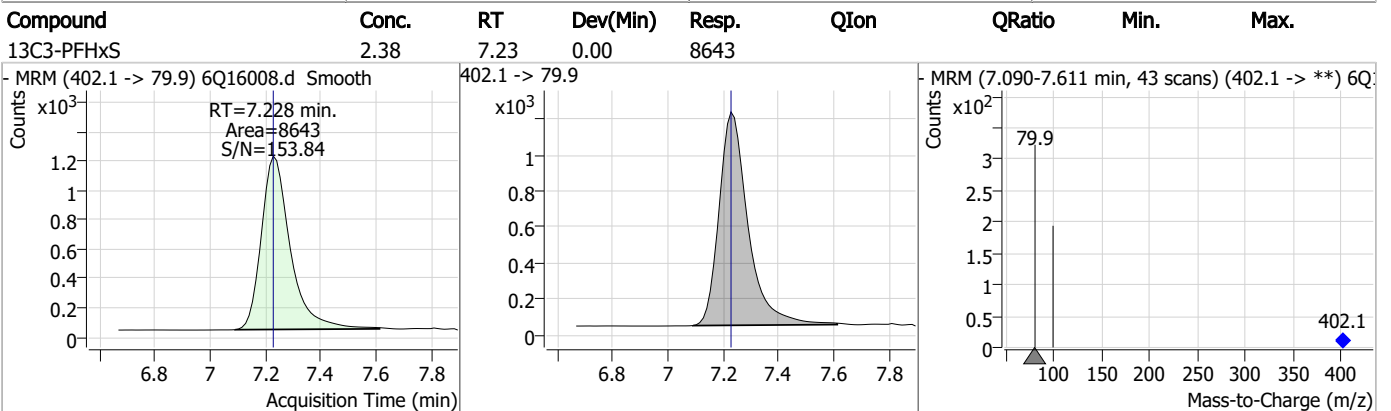
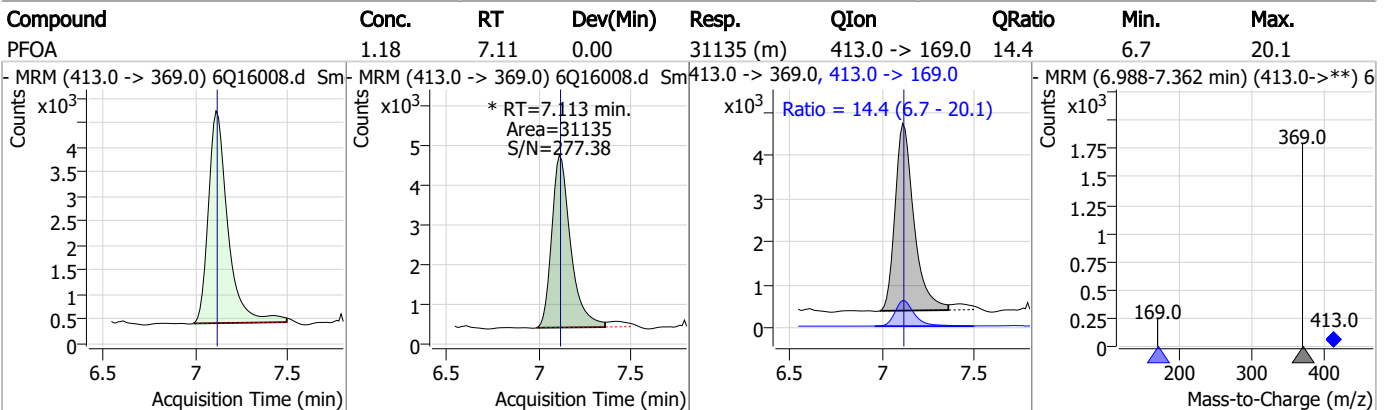
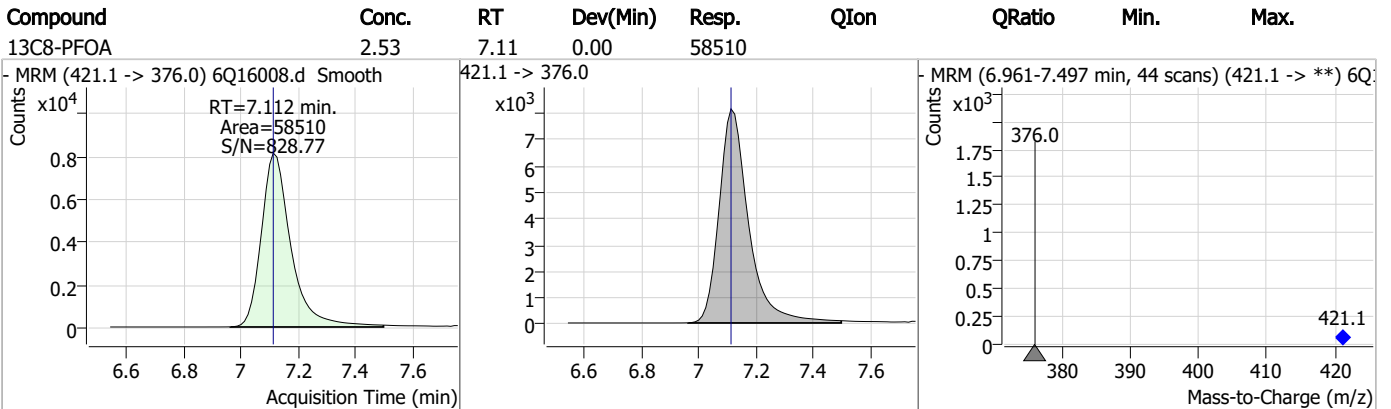
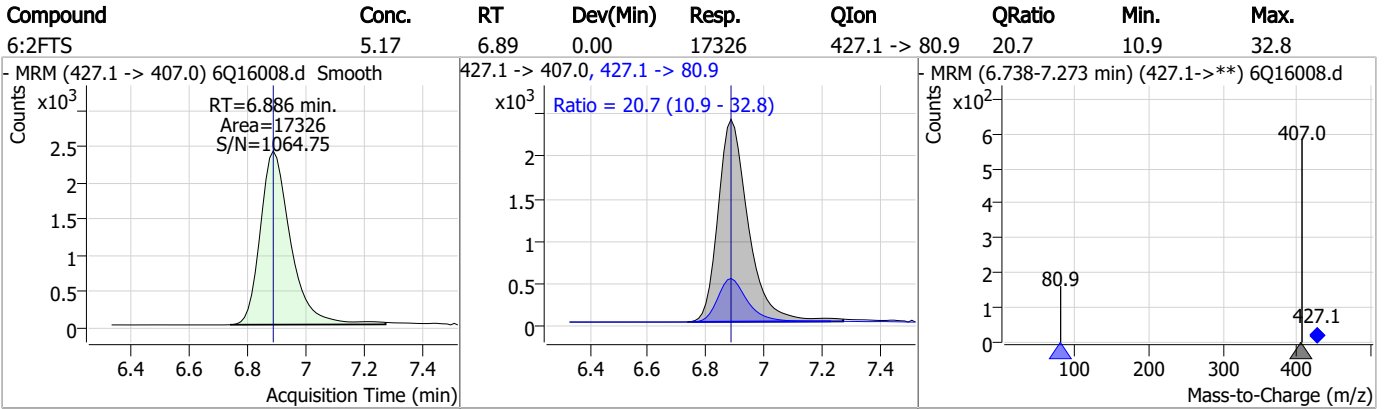


Perfluorinated Compounds by LC/MS/MS



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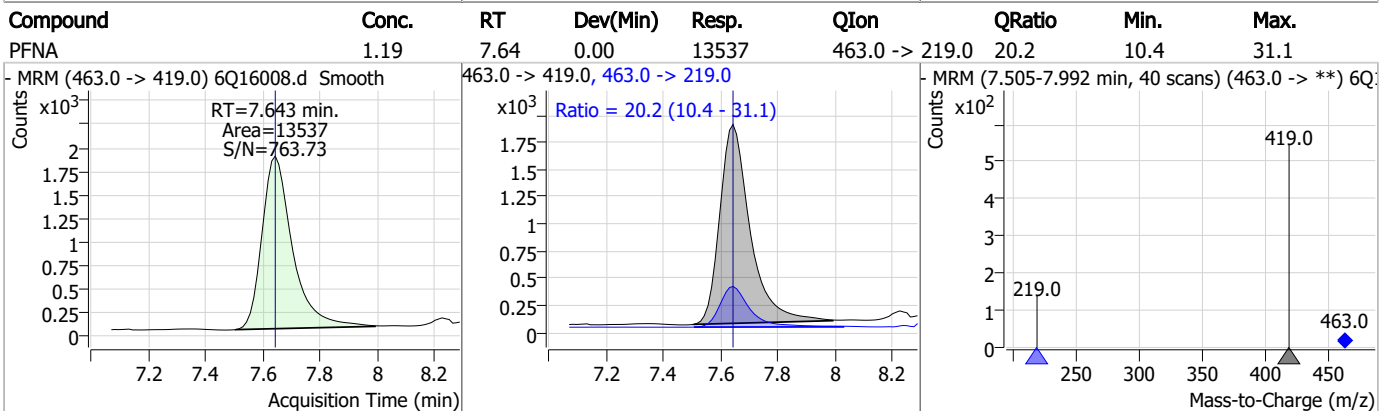
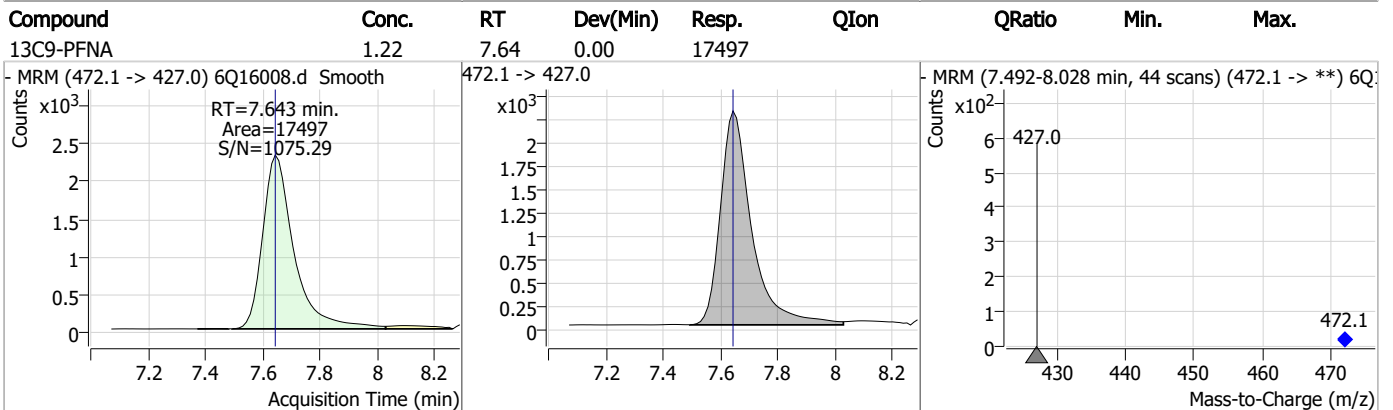
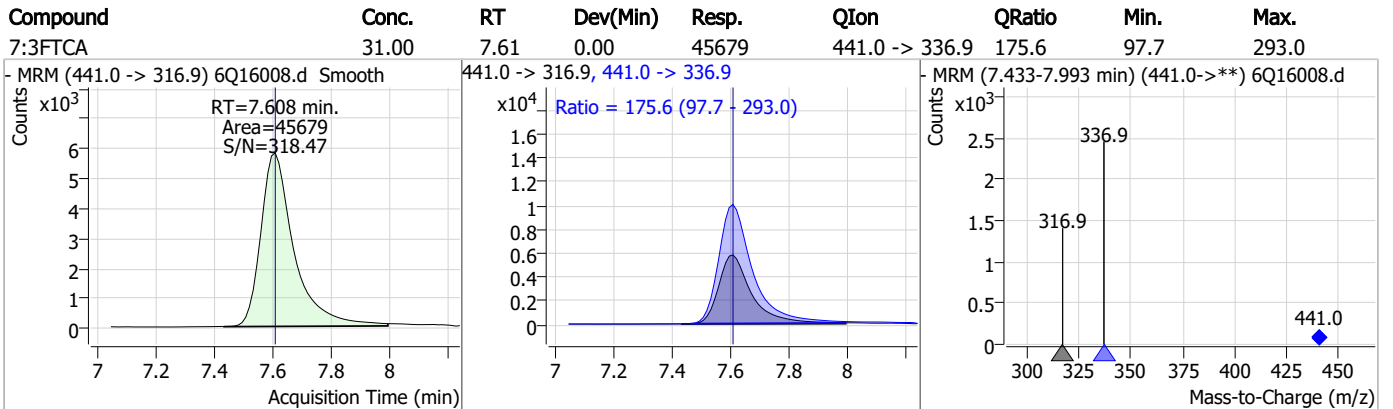
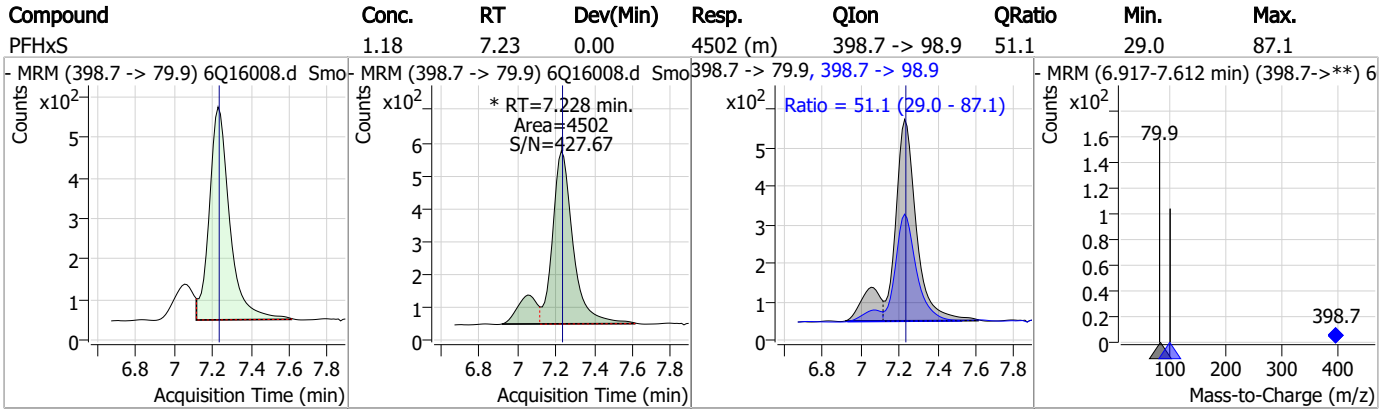
Perfluorinated Compounds by LC/MS/MS



7.7.4

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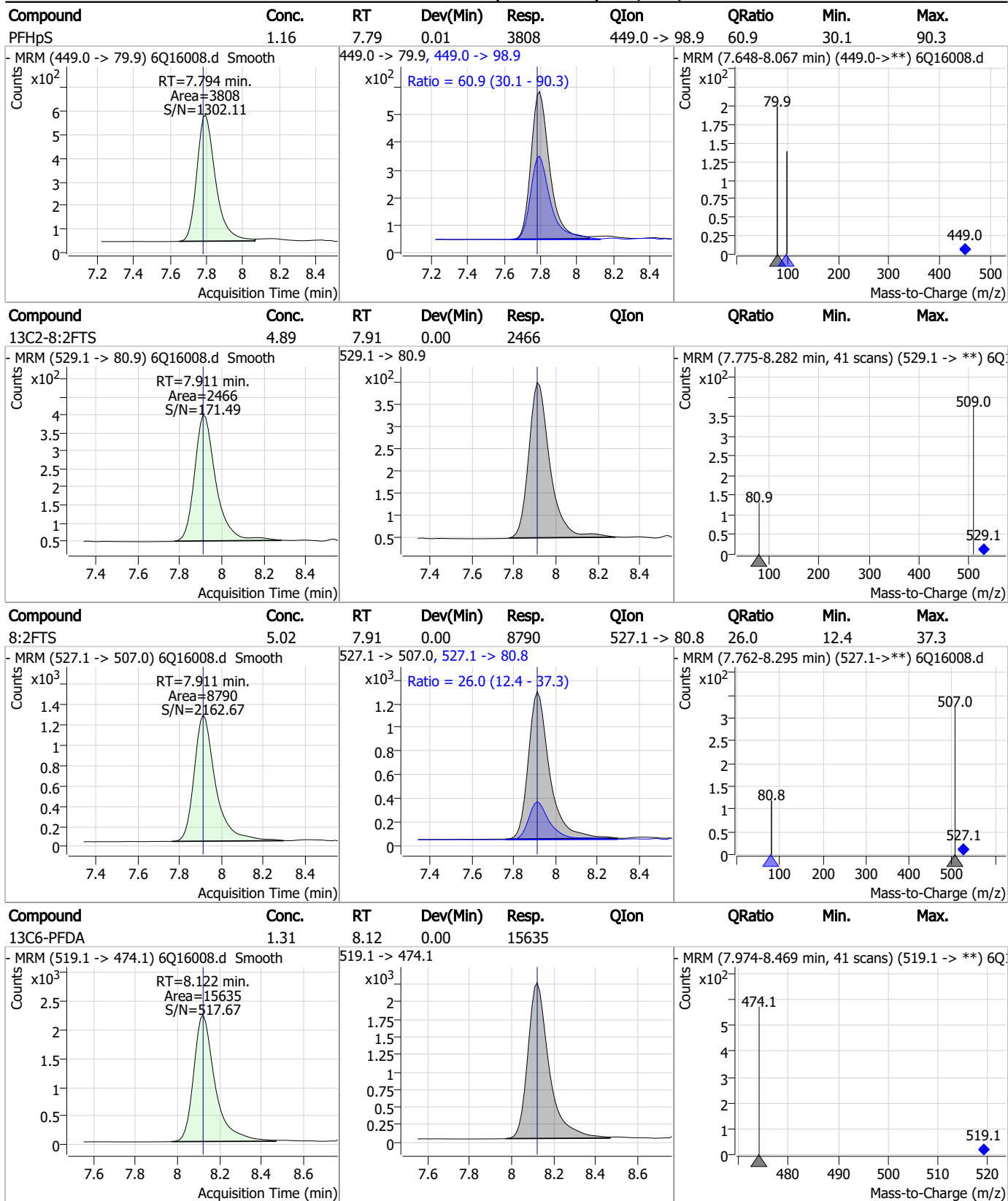
Perfluorinated Compounds by LC/MS/MS



7.7.4

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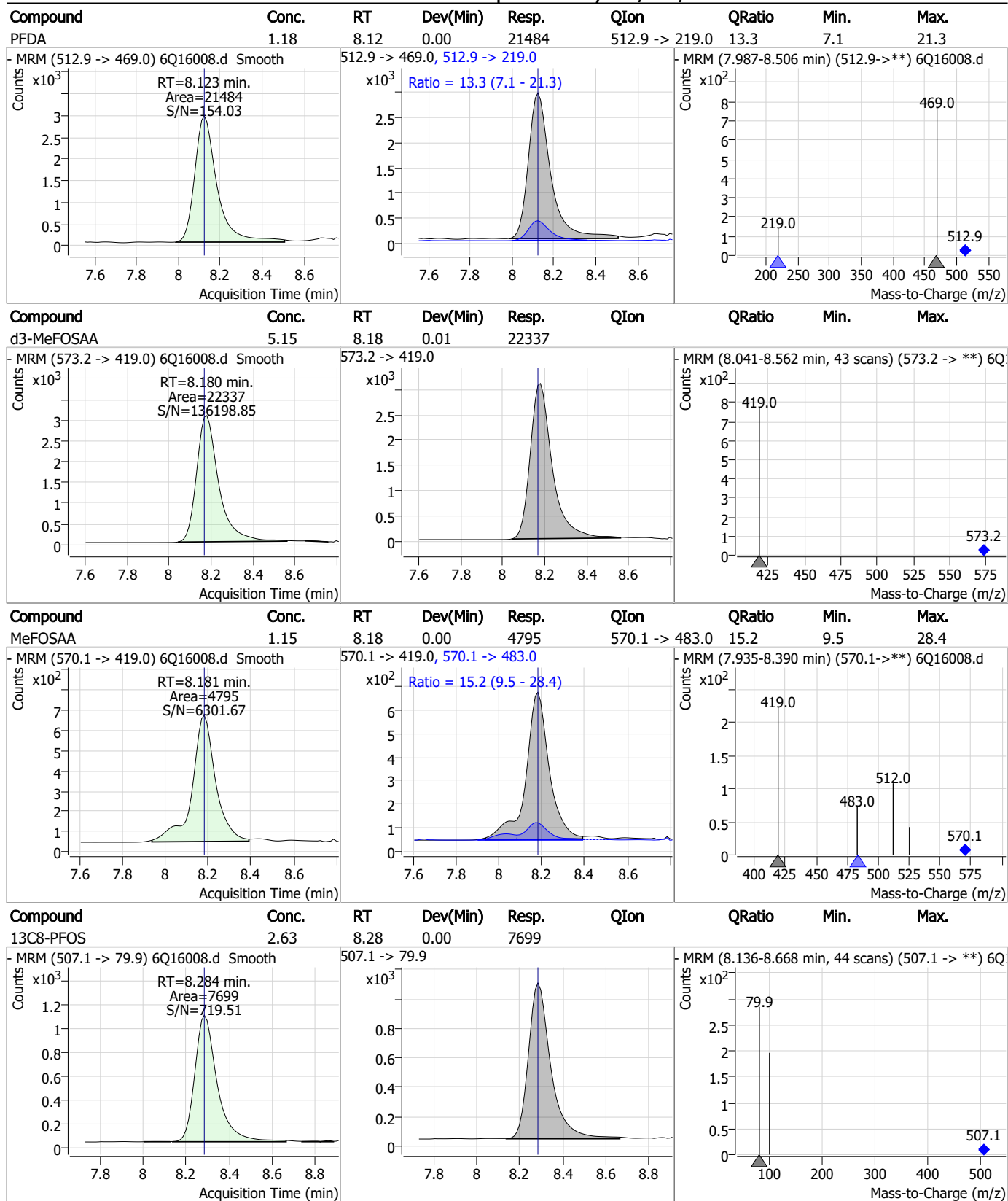
Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS

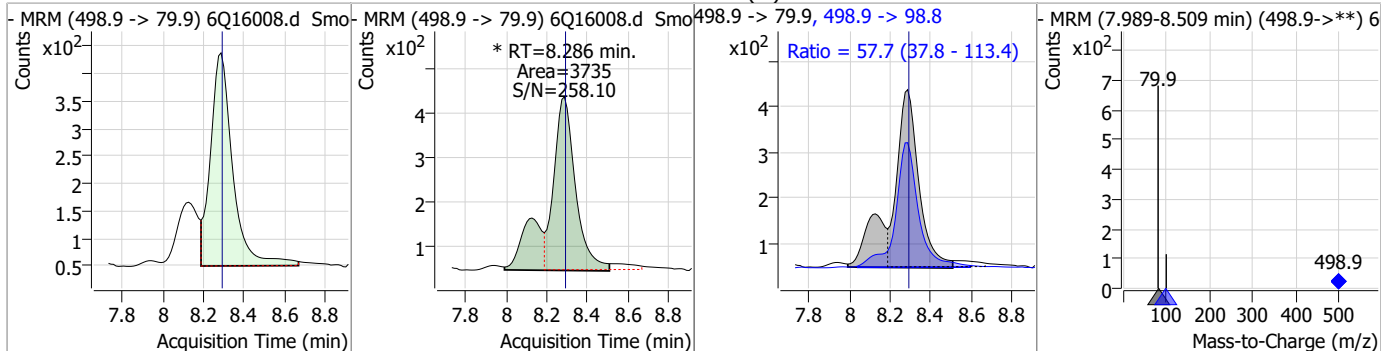


7.7.4

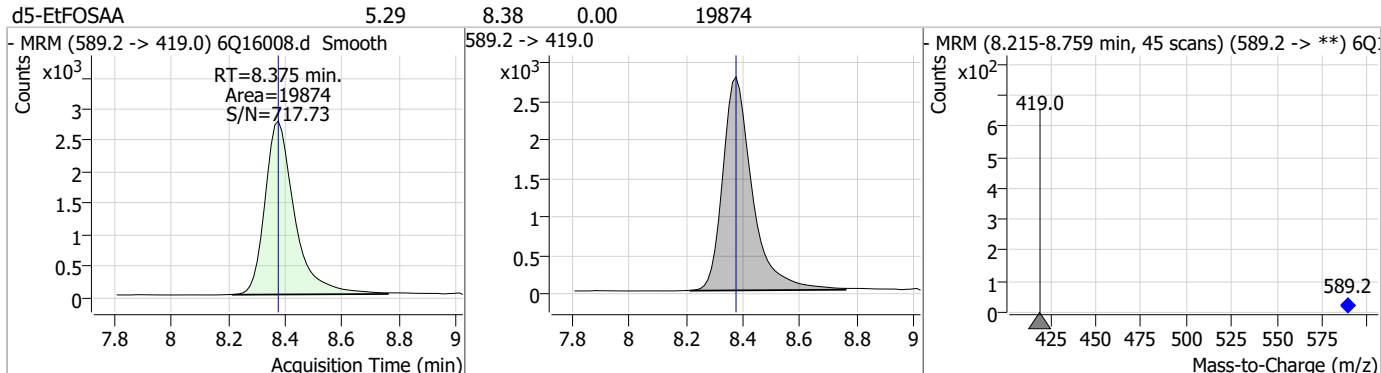
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Perfluorinated Compounds by LC/MS/MS

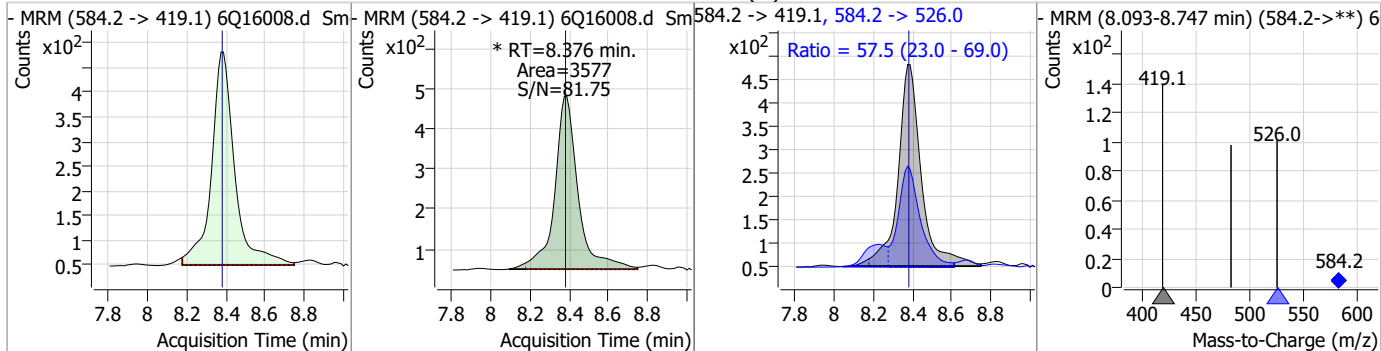
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.10	8.29	0.00	3735 (m)	498.9 -> 98.8	57.7	37.8	113.4



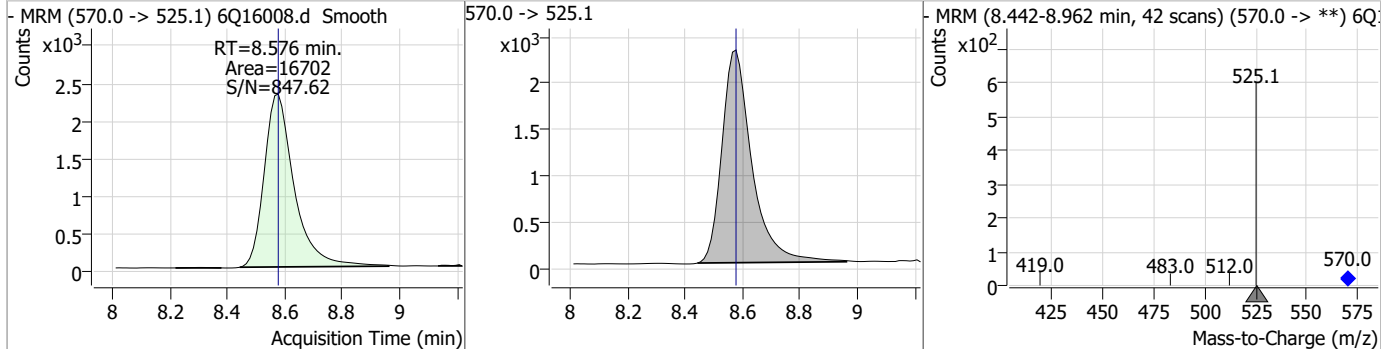
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.29	8.38	0.00	19874				



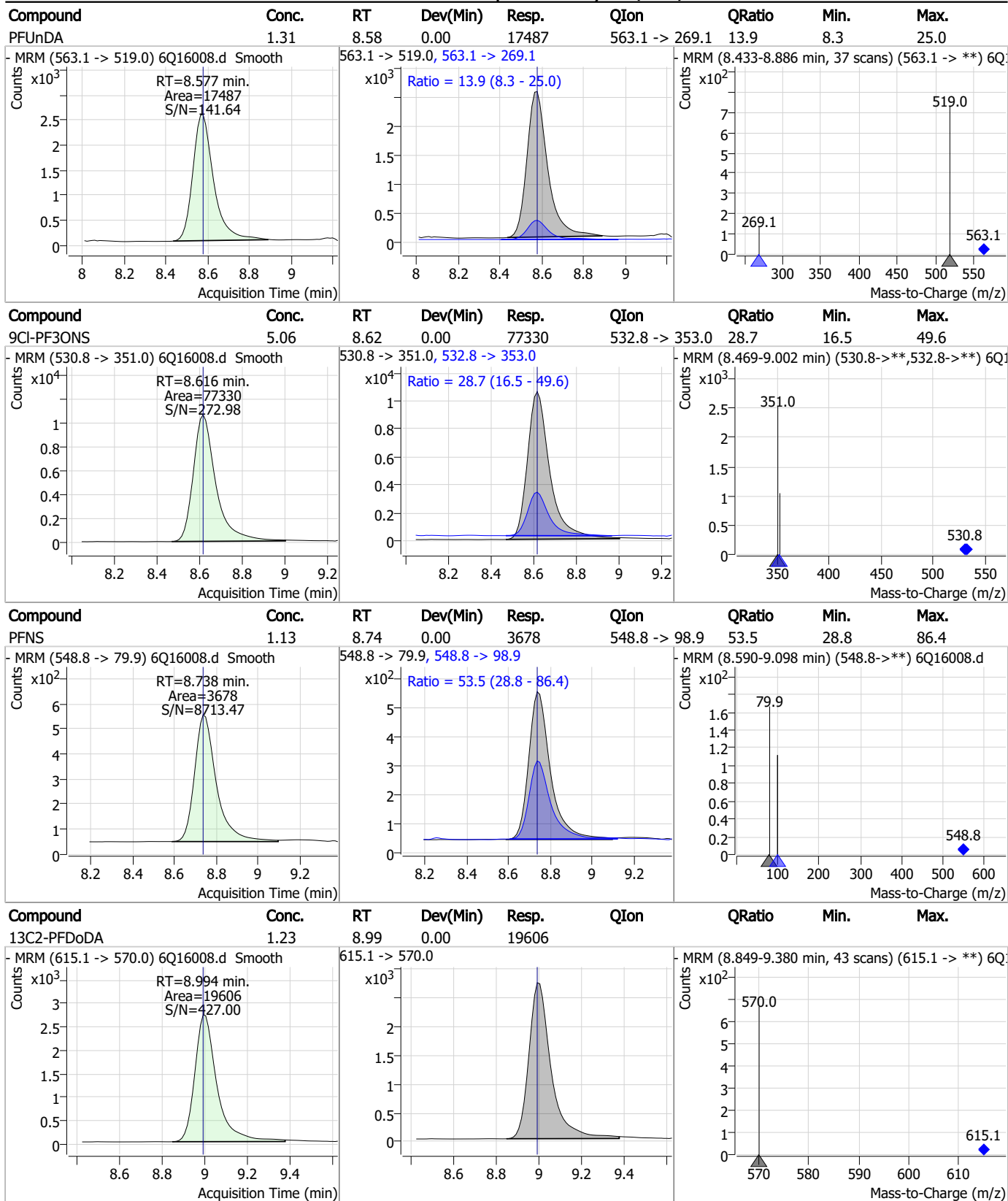
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.17	8.38	0.00	3577 (m)	584.2 -> 526.0	57.5	23.0	69.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.21	8.58	0.00	16702				

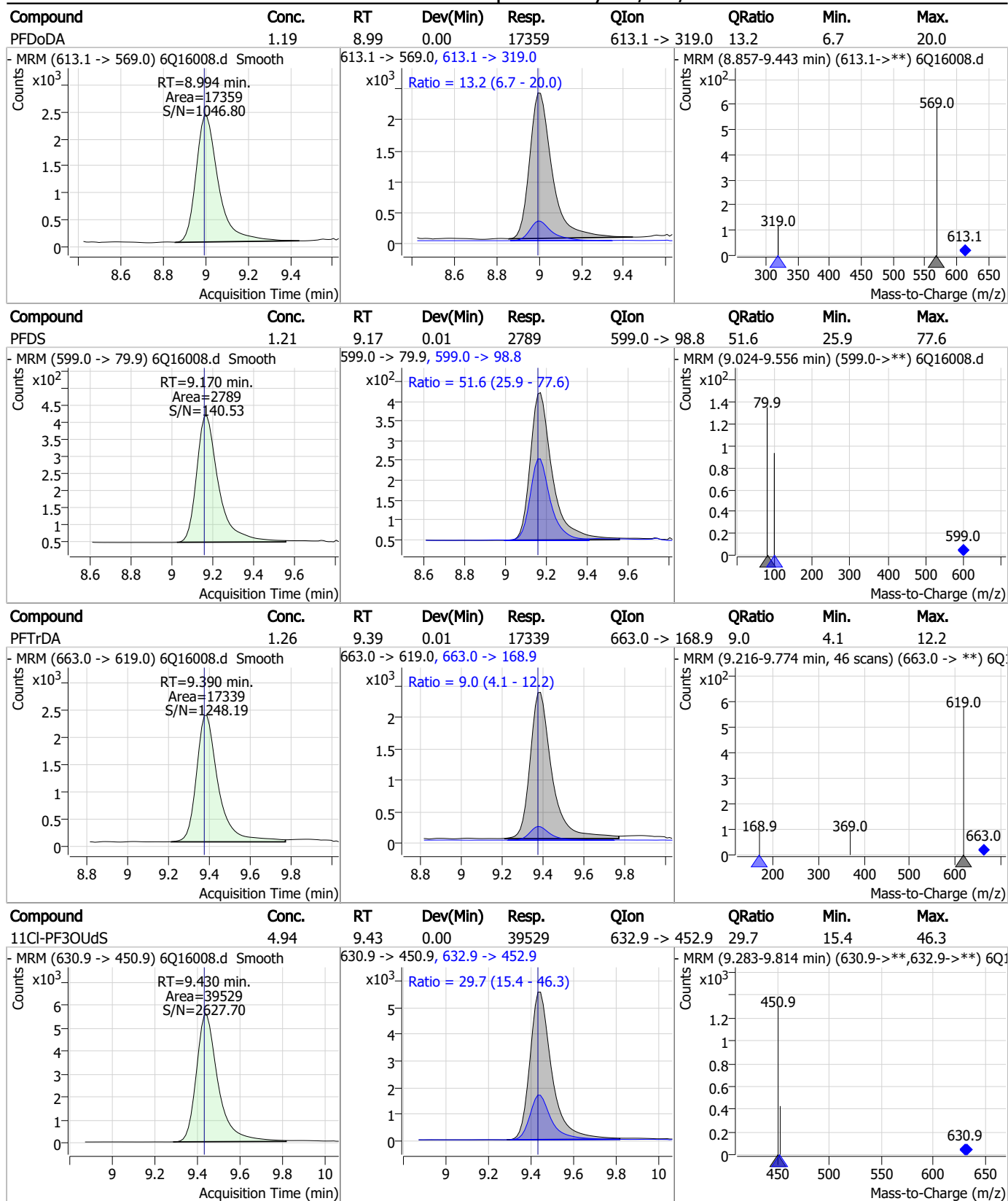


Perfluorinated Compounds by LC/MS/MS



7.7.4
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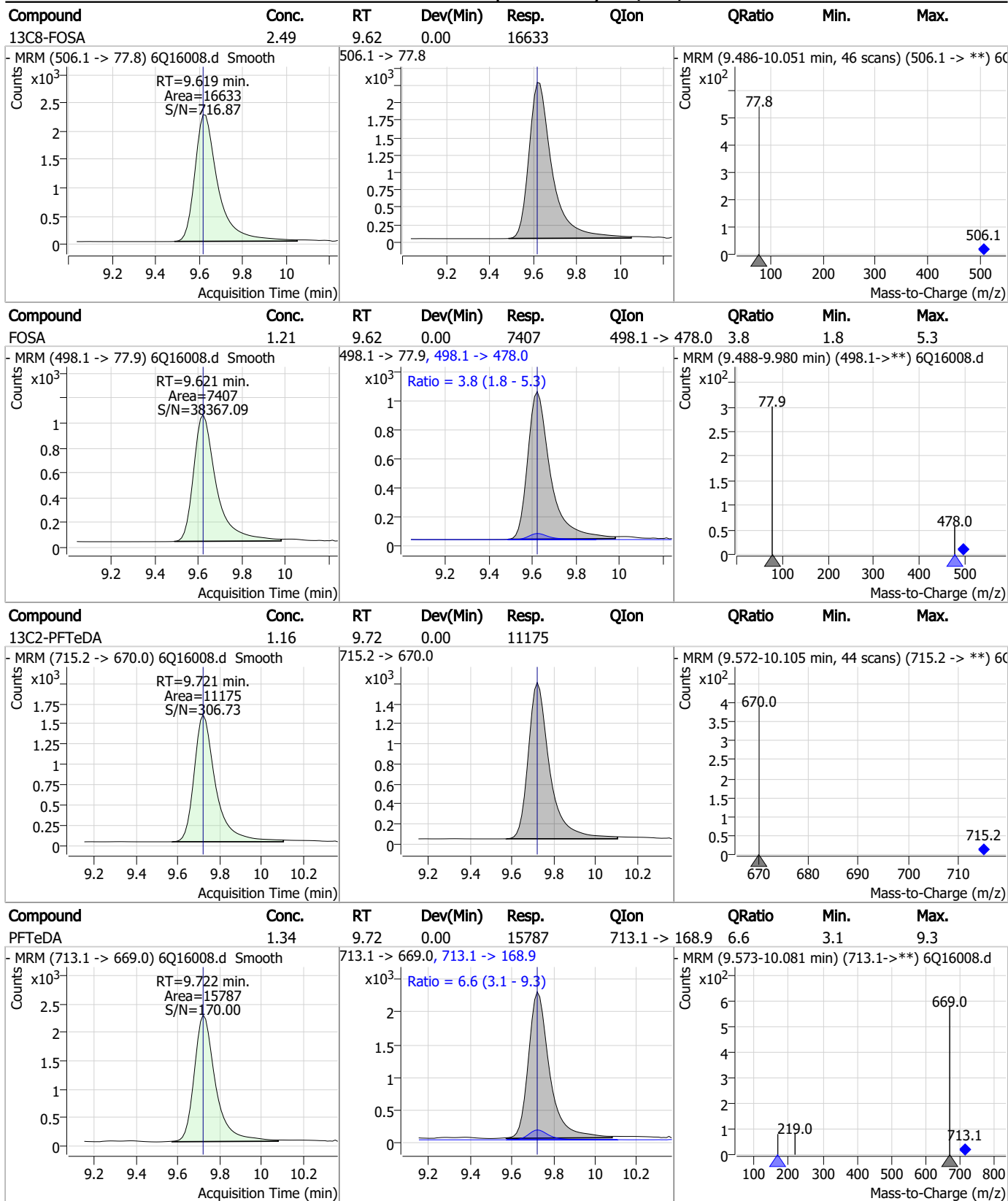
Perfluorinated Compounds by LC/MS/MS



7.7.4

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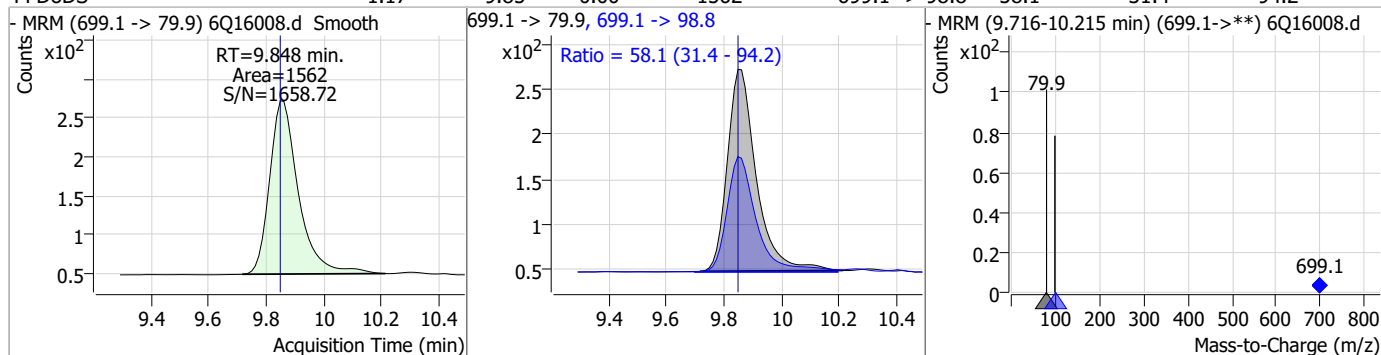
Perfluorinated Compounds by LC/MS/MS



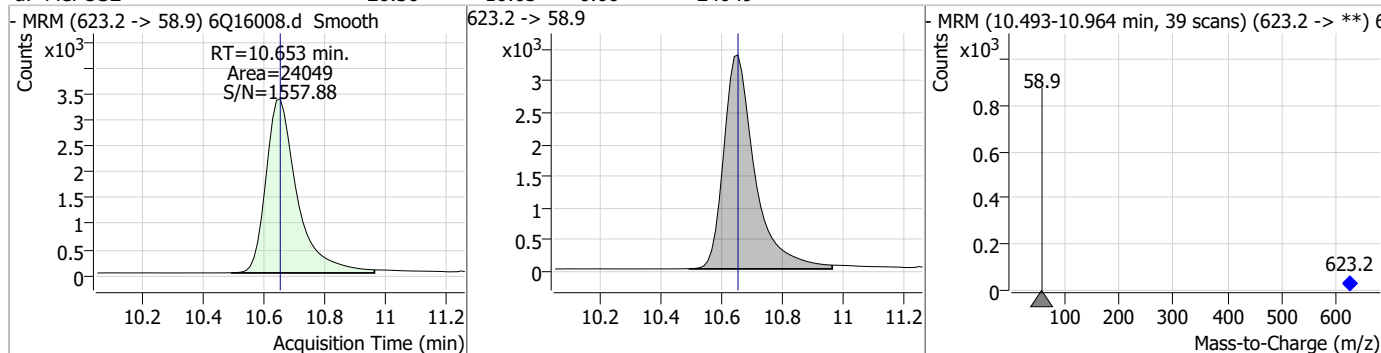
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Perfluorinated Compounds by LC/MS/MS

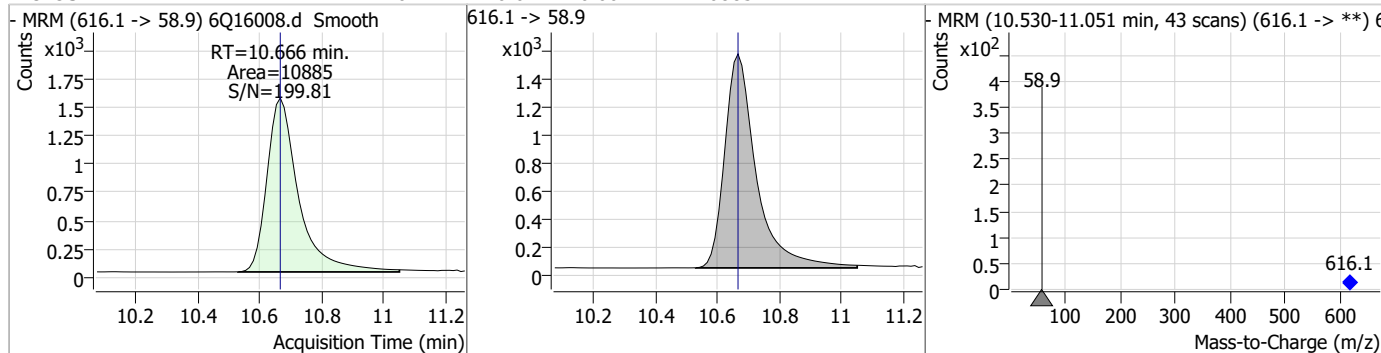
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.17	9.85	0.00	1562	699.1 -> 98.8	58.1	31.4	94.2



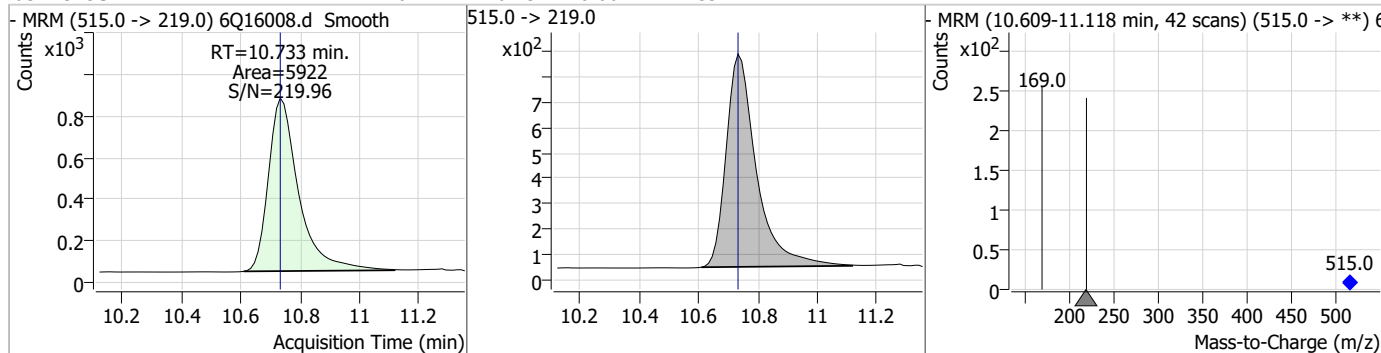
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.36	10.65	0.00	24049				



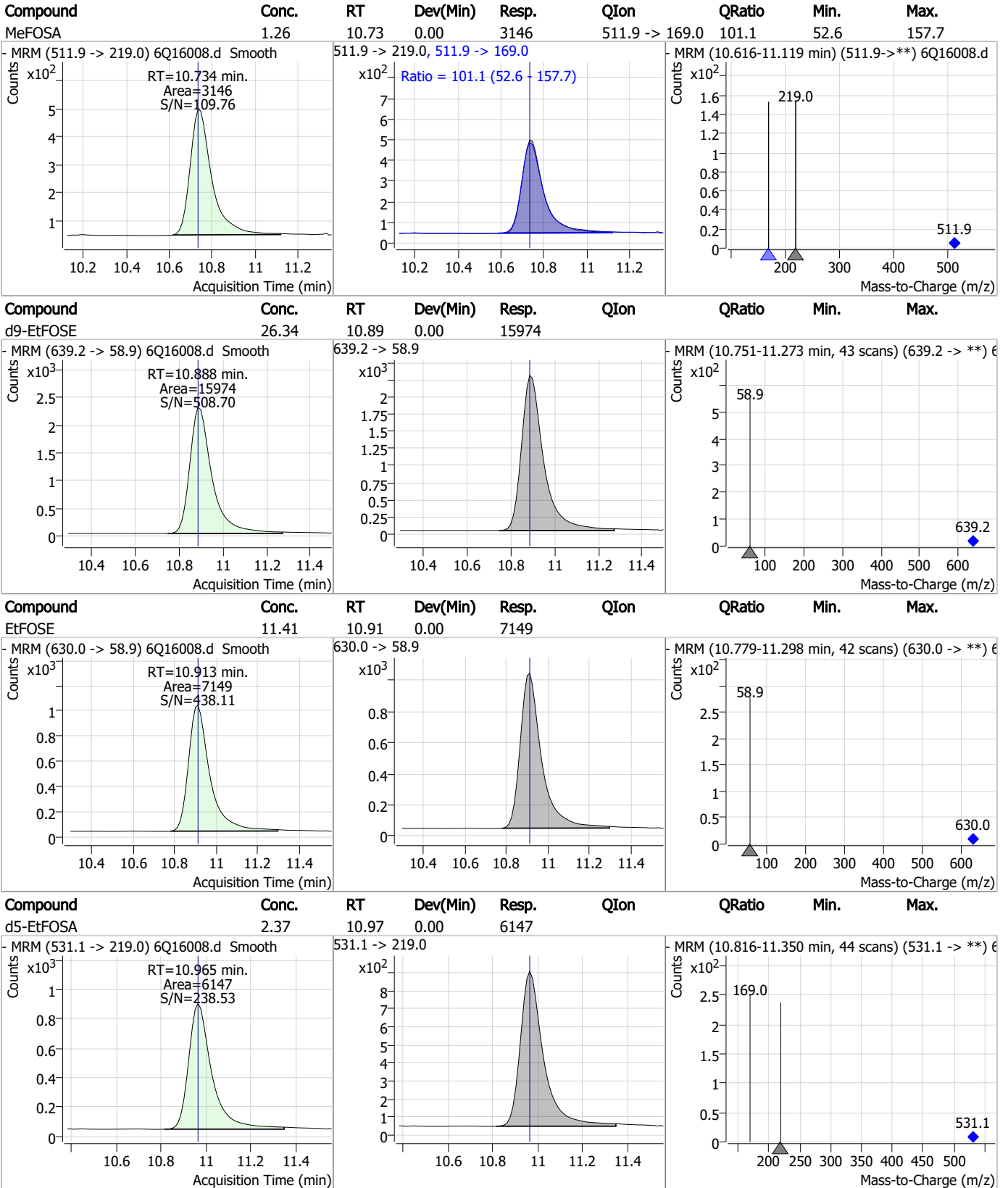
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.01	10.67	0.00	10885				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.73	0.00	5922				



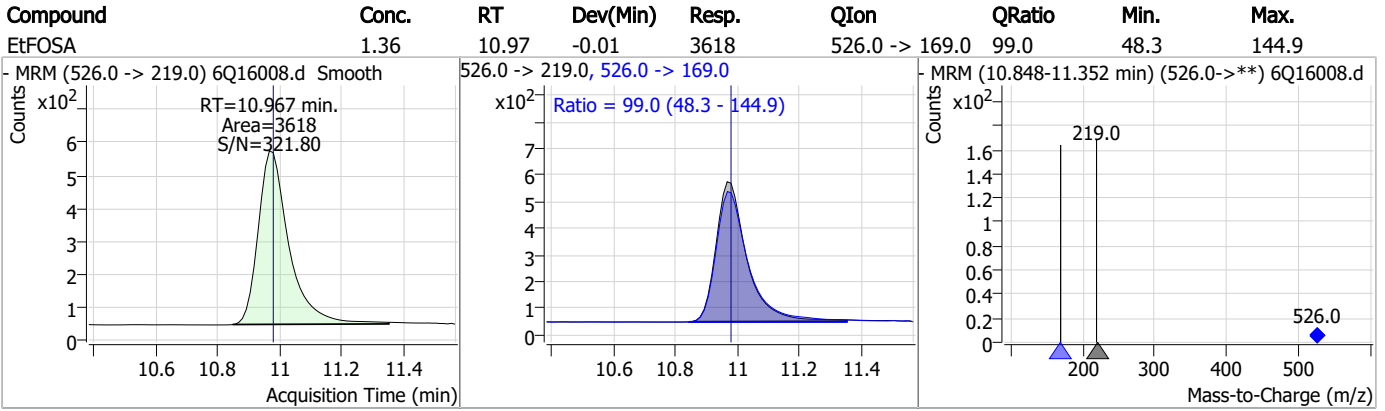
Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS



7.7.4

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Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16008.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 14:43 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.11	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16009.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 2:57:40 PM
 Sample Name : icc239-4
 Vial : P1-A5
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	88430	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	39684	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	34753	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	36016	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	59600	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	17098	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	13872	1.25 µg/L	0.000
M7-PFUnDA	8.576	570.0 -> 525.1	17139	1.25 µg/L	0.000
M2-PFDoDA	8.994	615.1 -> 570.0	19818	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	11885	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	16560	2.50 µg/L	0.000
M3-PFBS	5.459	302.1 -> 79.9	13976	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8613	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	7256	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2137	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2710	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2558	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	21613	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	14554	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	18311	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	22549	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	14714	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6536	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	6170	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8992	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	38214	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	6092	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	66841	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	18362	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	18857	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	34455	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2137	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2710	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2558	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-PFDoDA	8.994	615.1 -> 570.0	19818	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-PFTeDA	9.721	715.2 -> 670.0	11885	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C3-PFBS	5.459	302.1 -> 79.9	13976	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.228	402.1 -> 79.9	8613	2.47 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFBA	2.897	216.8 -> 171.9	88430	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.468	367.1 -> 322.0	36016	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.528	318.0 -> 273.0	34753	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C5-PFPeA	4.322	268.3 -> 223.0	39684	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.122	519.1 -> 474.1	13872	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C7-PFUnDA	8.576	570.0 -> 525.1	17139	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C8-FOSA	9.619	506.1 -> 77.8	16560	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOA	7.112	421.1 -> 376.0	59600	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-PFOS	8.284	507.1 -> 79.9	7256	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C9-PFNA	7.643	472.1 -> 427.0	17098	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSAA	8.167	573.2 -> 419.0	21613	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	14554	9.69 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d3-MeFOSA	10.733	515.0 -> 219.0	6170	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
d5-EtFOSAA	8.375	589.2 -> 419.0	18311	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d7-MeFOSE	10.653	623.2 -> 58.9	22549	24.64 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d9-EtFOSE	10.888	639.2 -> 58.9	14714	24.19 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d5-EtFOSA	10.965	531.1 -> 219.0	6536	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	36234	8.66 µg/L	100
		327.1 -> 80.9	8562		
6:2FTS	6.886	427.1 -> 407.0	30102	8.29 µg/L	100
		427.1 -> 80.9	6573		
8:2FTS	7.911	527.1 -> 507.0	16126	8.88 µg/L	100
		527.1 -> 80.8	4005		
EtFOSAA	8.376	584.2 -> 419.1	6816	2.43 µg/L	m 88
		584.2 -> 526.0	3680		
FOSA	9.621	498.1 -> 77.9	12962	2.12 µg/L	100
		498.1 -> 478.0	460		
MeFOSAA	8.181	570.1 -> 419.0	8971	2.21 µg/L	100
		570.1 -> 483.0	1696		
PFBA	2.906	212.8 -> 168.9	19984	8.94 µg/L	100
PFBS	5.460	298.7 -> 79.9	11019	2.01 µg/L	100
		298.7 -> 98.8	5095		
PFDA	8.123	512.9 -> 469.0	37868	2.34 µg/L	100
		512.9 -> 219.0	5372		
PFDODA	8.994	613.1 -> 569.0	30808	2.09 µg/L	100
		613.1 -> 319.0	4110		
PFDS	9.158	599.0 -> 79.9	4566	2.11 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2362			
PFHpA	6.469	363.1 -> 319.0	43654	2.16	µg/L	100
		363.1 -> 169.0	6086			
PFHpS	7.781	449.0 -> 79.9	6238	2.01	µg/L	100
		449.0 -> 98.9	3756			
PFHxA	5.531	313.0 -> 269.0	28698	2.24	µg/L	100
		313.0 -> 118.9	1158			
PFHxS	7.228	398.7 -> 79.9	8007	2.11	µg/L	m 95
		398.7 -> 98.9	4354			
PFNA	7.643	463.0 -> 419.0	24904	2.24	µg/L	100
		463.0 -> 219.0	5156			
PFNS	8.738	548.8 -> 79.9	6600	2.14	µg/L	100
		548.8 -> 98.9	3802			
PFOA	7.113	413.0 -> 369.0	58696	2.18	µg/L	100
		413.0 -> 169.0	7875			
PFOS	8.286	498.9 -> 79.9	7077	2.22	µg/L	m 87
		498.9 -> 98.8	4559			
PFPeA	4.324	263.0 -> 219.0	38064	4.55	µg/L	100
PFPeS	6.533	349.1 -> 79.9	9799	2.15	µg/L	100
		349.1 -> 98.9	5061			
PFTeDA	9.722	713.1 -> 669.0	28088	2.24	µg/L	100
		713.1 -> 168.9	1738			
PFTrDA	9.378	663.0 -> 619.0	30616	2.20	µg/L	100
		663.0 -> 168.9	2493			
PFUnDA	8.577	563.1 -> 519.0	30331	2.21	µg/L	100
		563.1 -> 269.1	5045			
11CI-PF3OUdS	9.430	630.9 -> 450.9	68149	8.71	µg/L	100
		632.9 -> 452.9	21018			
9CI-PF3ONS	8.616	530.8 -> 351.0	129023	8.64	µg/L	100
		532.8 -> 353.0	42692			
ADONA	6.731	376.9 -> 250.9	265713	9.01	µg/L	100
		376.9 -> 84.8	61707			
HFPO-DA	5.894	284.9 -> 168.9	12613	9.59	µg/L	100
		284.9 -> 184.9	1581			
3:3FTCA	3.790	241.0 -> 177.0	5078	10.93	µg/L	100
		241.0 -> 117.0	772			
5:3FTCA	6.185	341.0 -> 237.1	161726	57.03	µg/L	100
		341.0 -> 217.0	140539			
7:3FTCA	7.608	441.0 -> 316.9	82583	57.53	µg/L	100
		441.0 -> 336.9	161312			
EtFOSA	10.979	526.0 -> 219.0	6443	2.28	µg/L	100
		526.0 -> 169.0	6222			
EtFOSE	10.913	630.0 -> 58.9	13059	22.63	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	5644	2.17	µg/L	100
		511.9 -> 169.0	5936			
MeFOSE	10.666	616.1 -> 58.9	19274	22.68	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	2785	2.21	µg/L	100
		699.1 -> 98.8	1749			
NFDHA	5.410	295.0 -> 201.0	3864	4.65	µg/L	100
		295.0 -> 84.9	1701			
PFMBA	4.737	279.0 -> 85.1	12292	4.43	µg/L	100
PFMPA	3.463	229.0 -> 84.9	11375	4.49	µg/L	100
PFEESA	5.999	314.8 -> 134.9	74404	4.09	µg/L	100
		314.8 -> 82.9	1783			

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

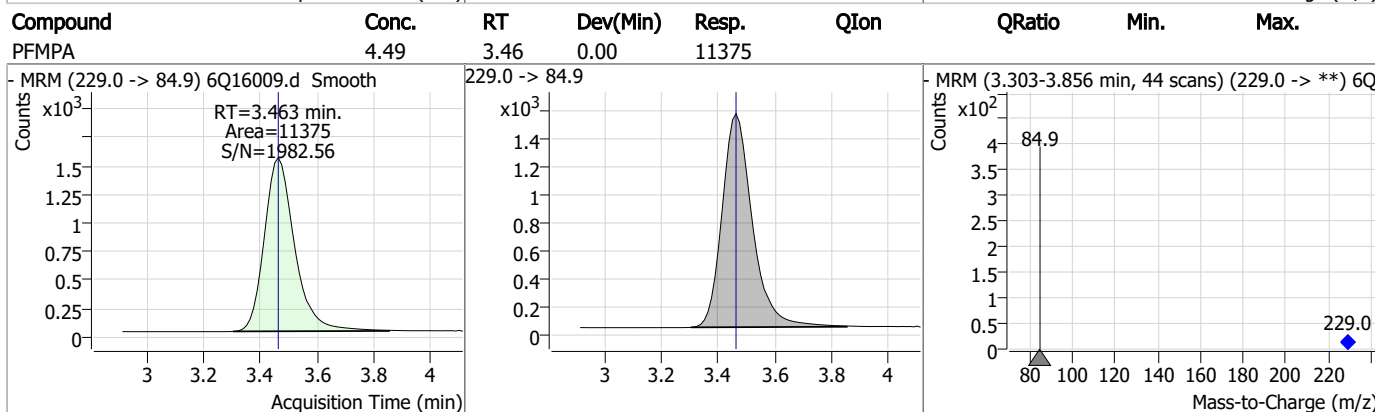
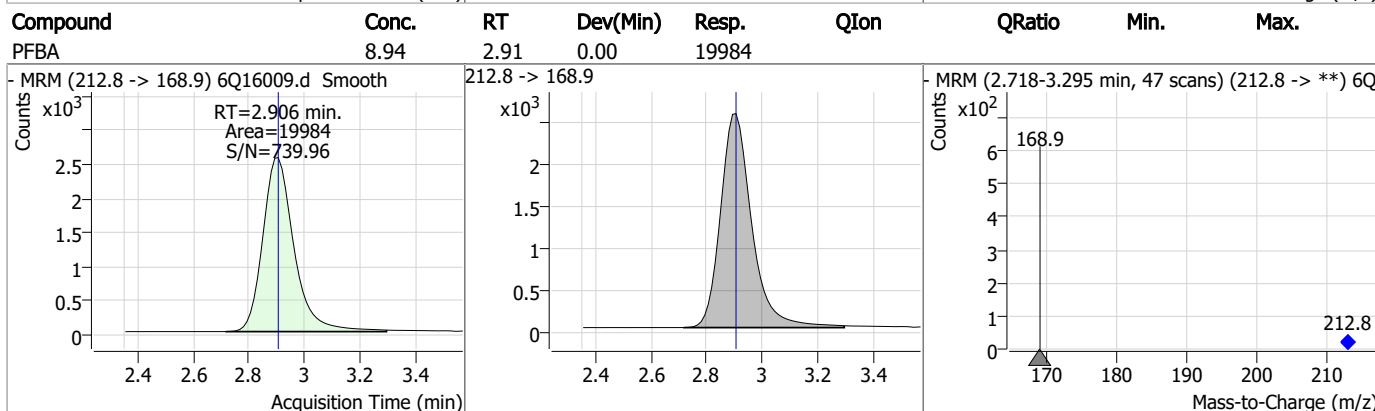
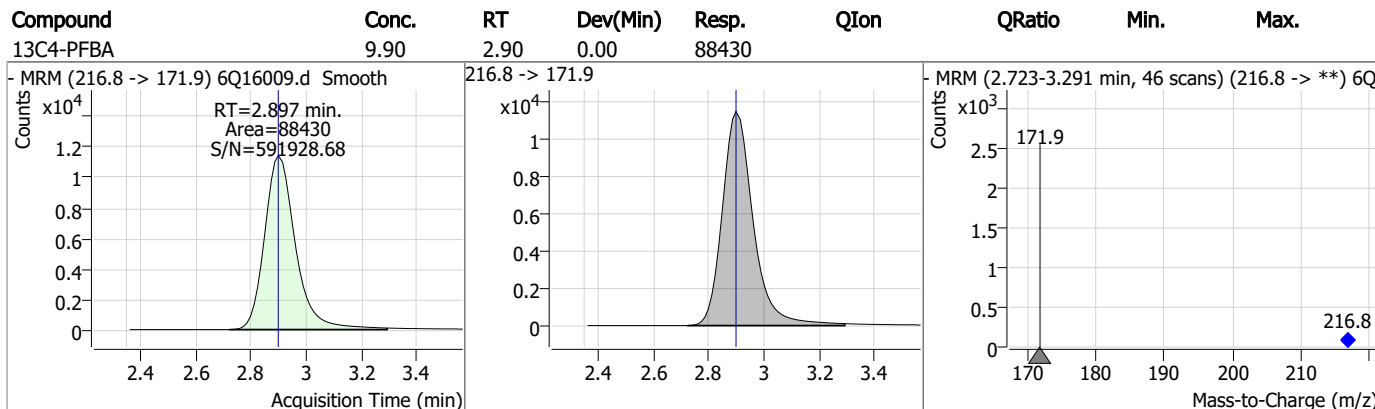
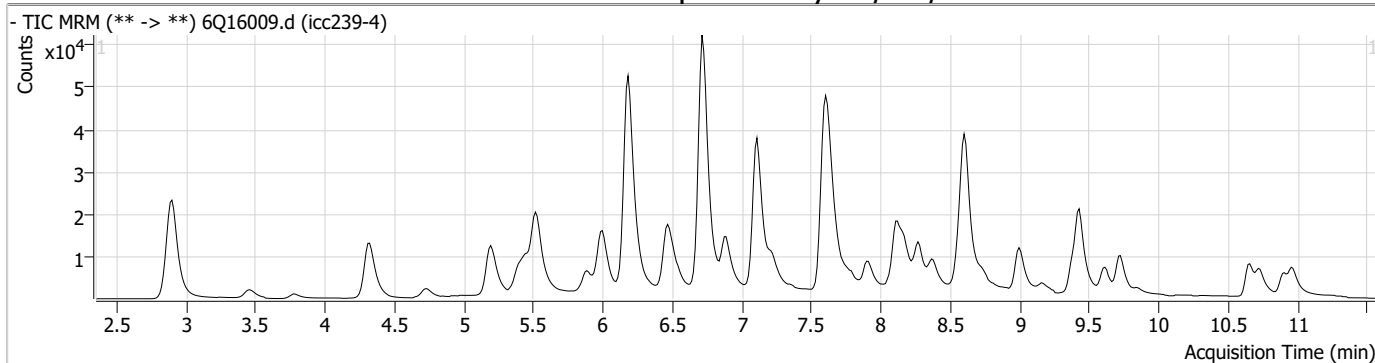
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.5
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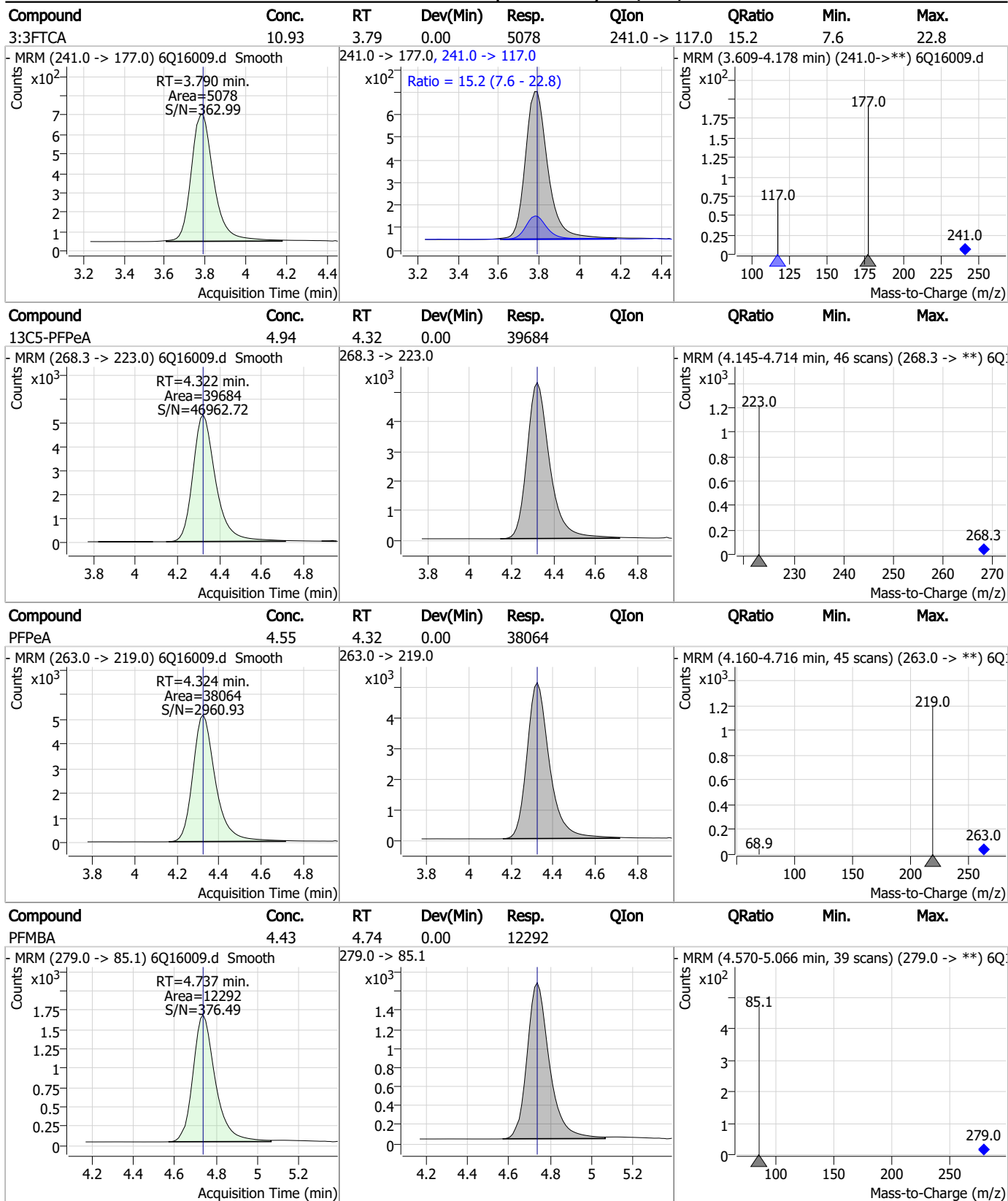


Perfluorinated Compounds by LC/MS/MS



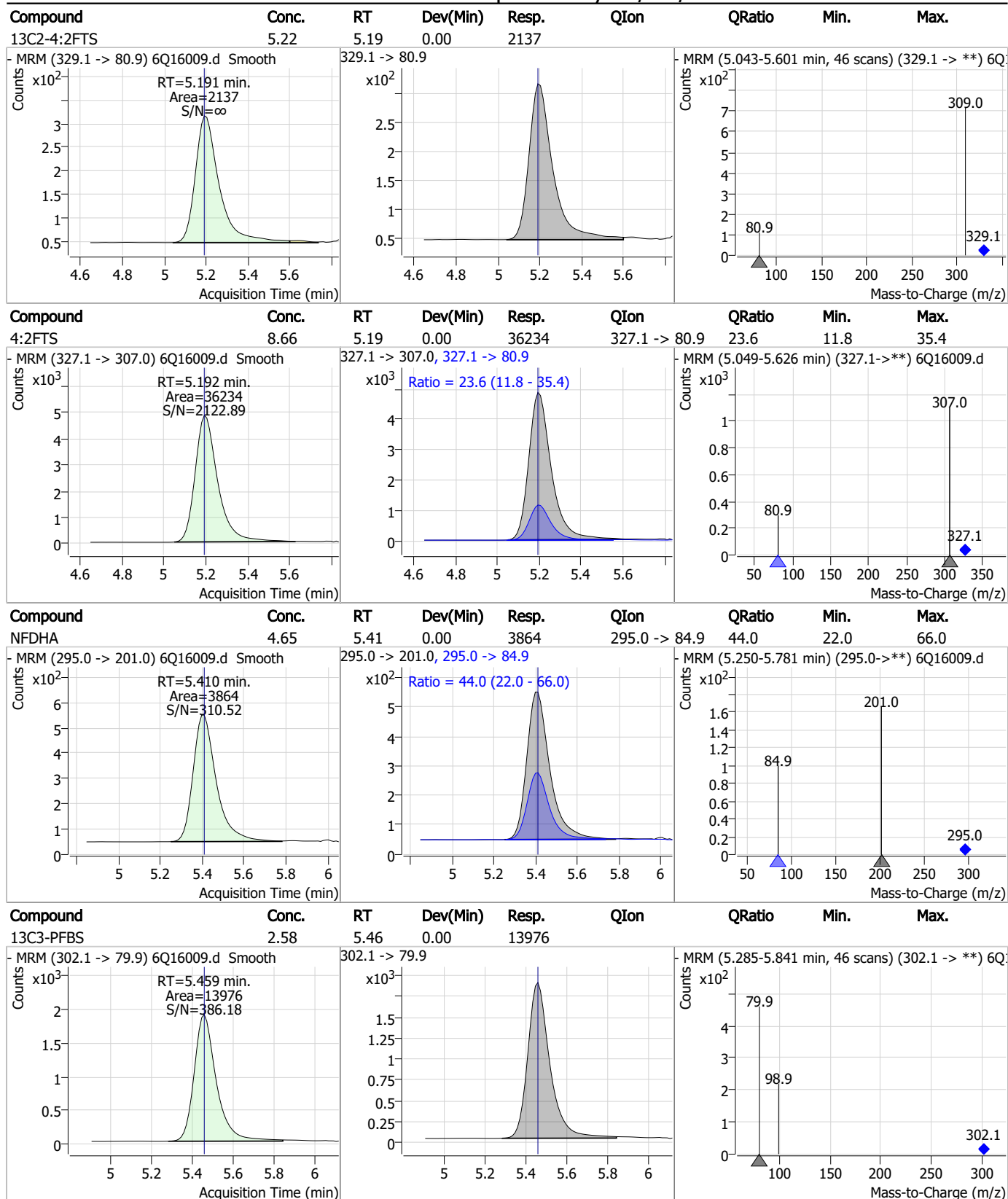
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS

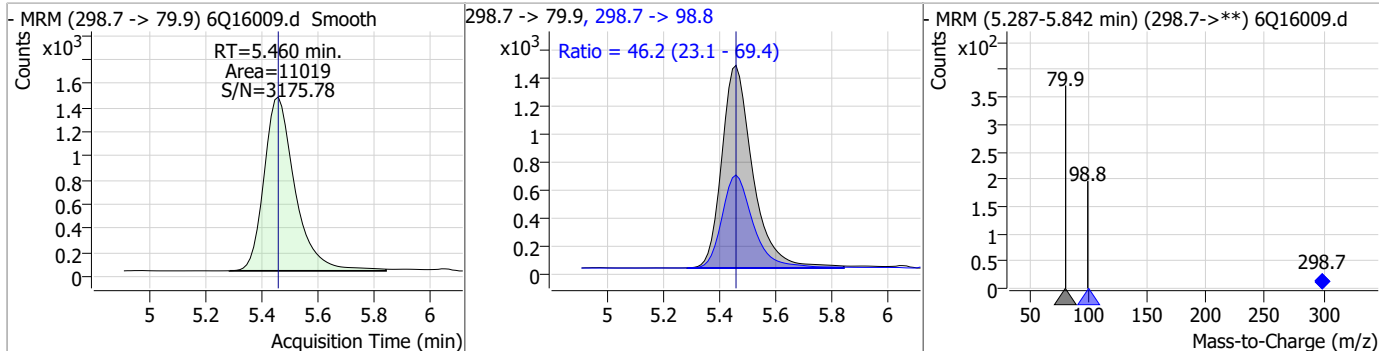


7.7.5

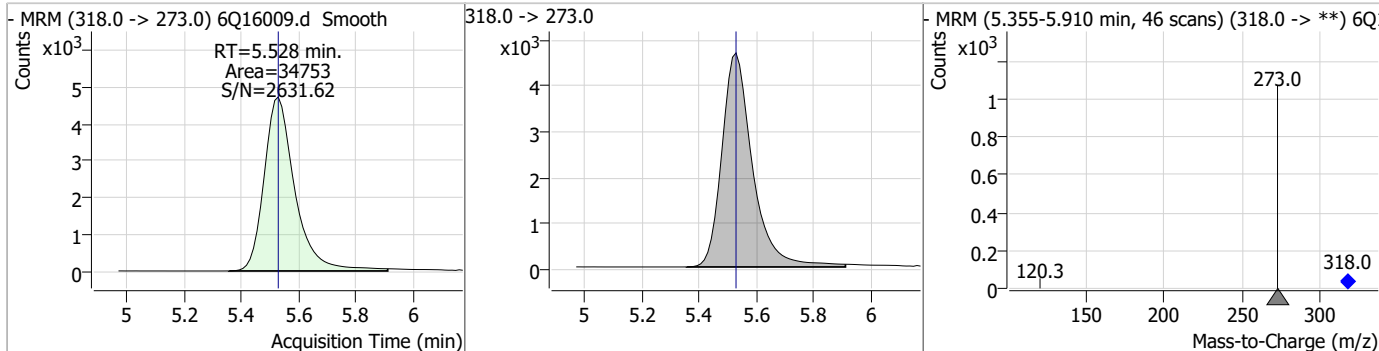
7

Perfluorinated Compounds by LC/MS/MS

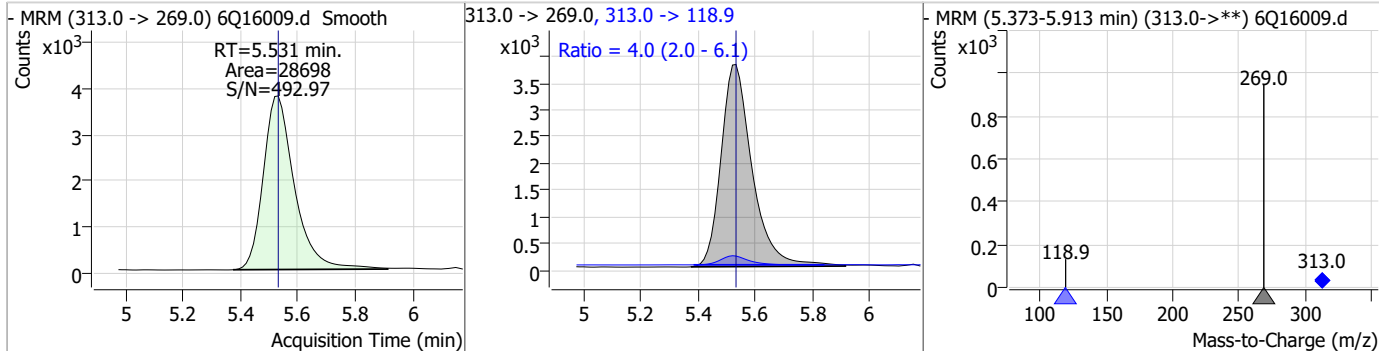
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	5.46	0.00	11019	298.7 -> 98.8	46.2	23.1	69.4



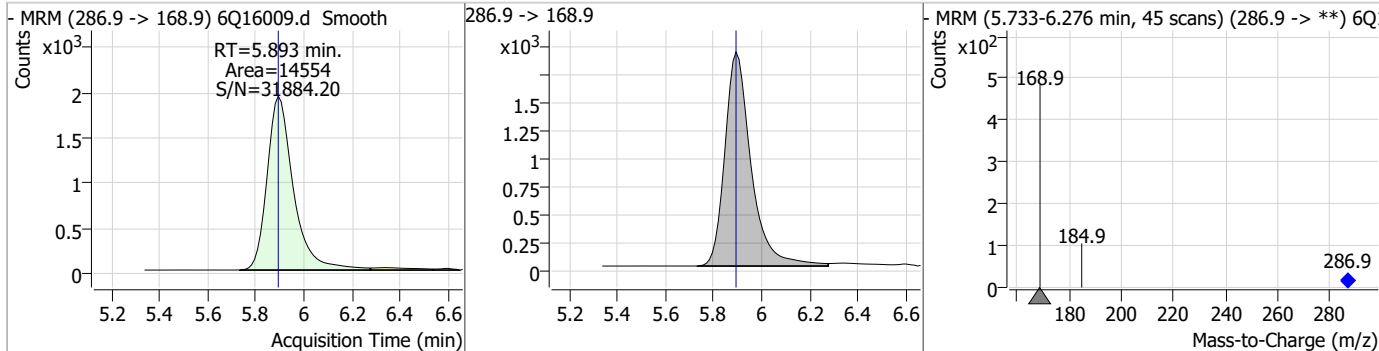
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.44	5.53	0.00	34753				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.24	5.53	0.00	28698	313.0 -> 118.9	4.0	2.0	6.1

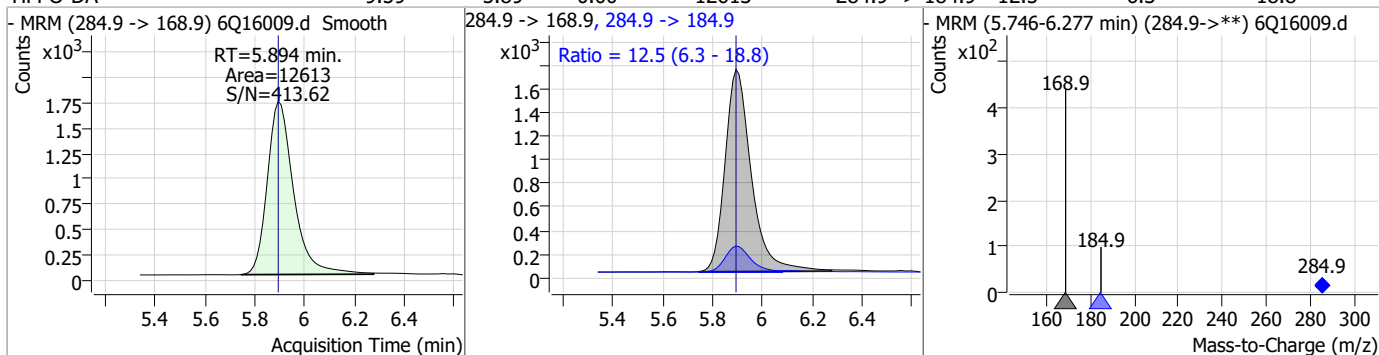


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.69	5.89	0.00	14554				

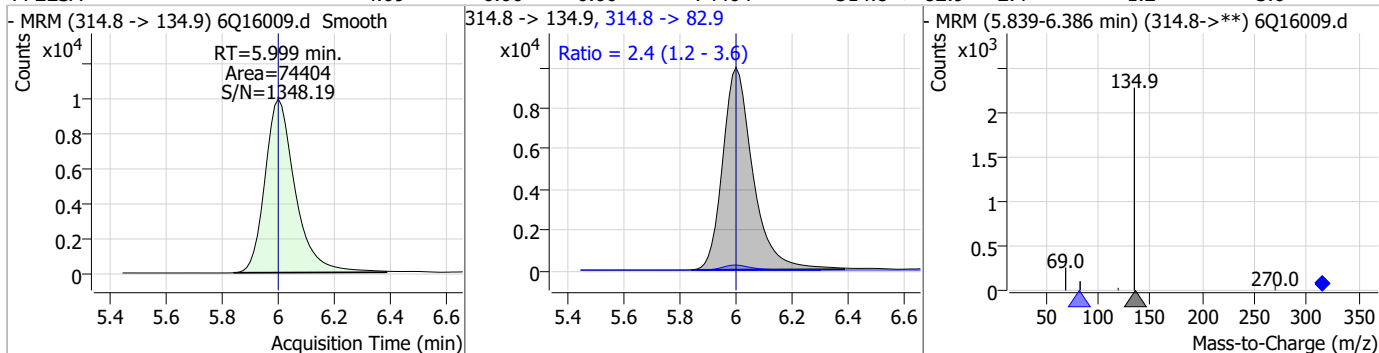


Perfluorinated Compounds by LC/MS/MS

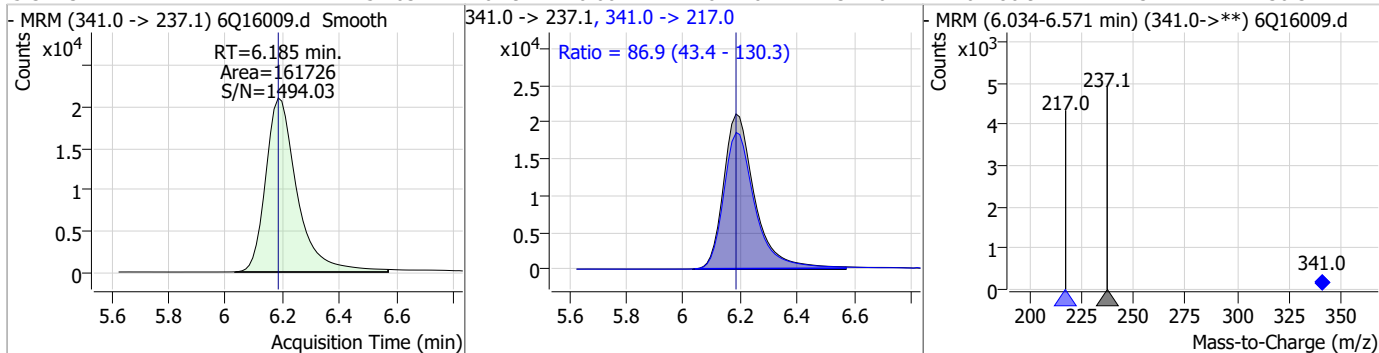
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.59	5.89	0.00	12613	284.9 -> 184.9	12.5	6.3	18.8



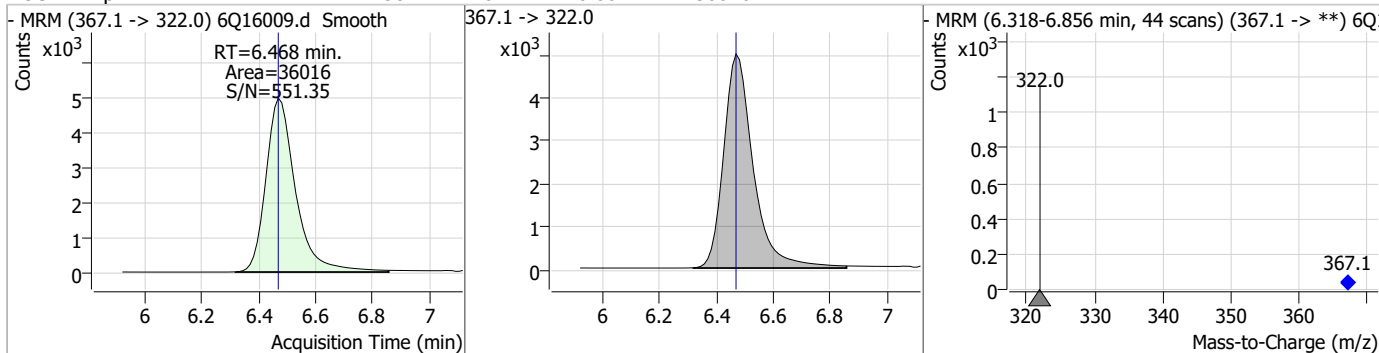
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.09	6.00	0.00	74404	314.8 -> 82.9	2.4	1.2	3.6



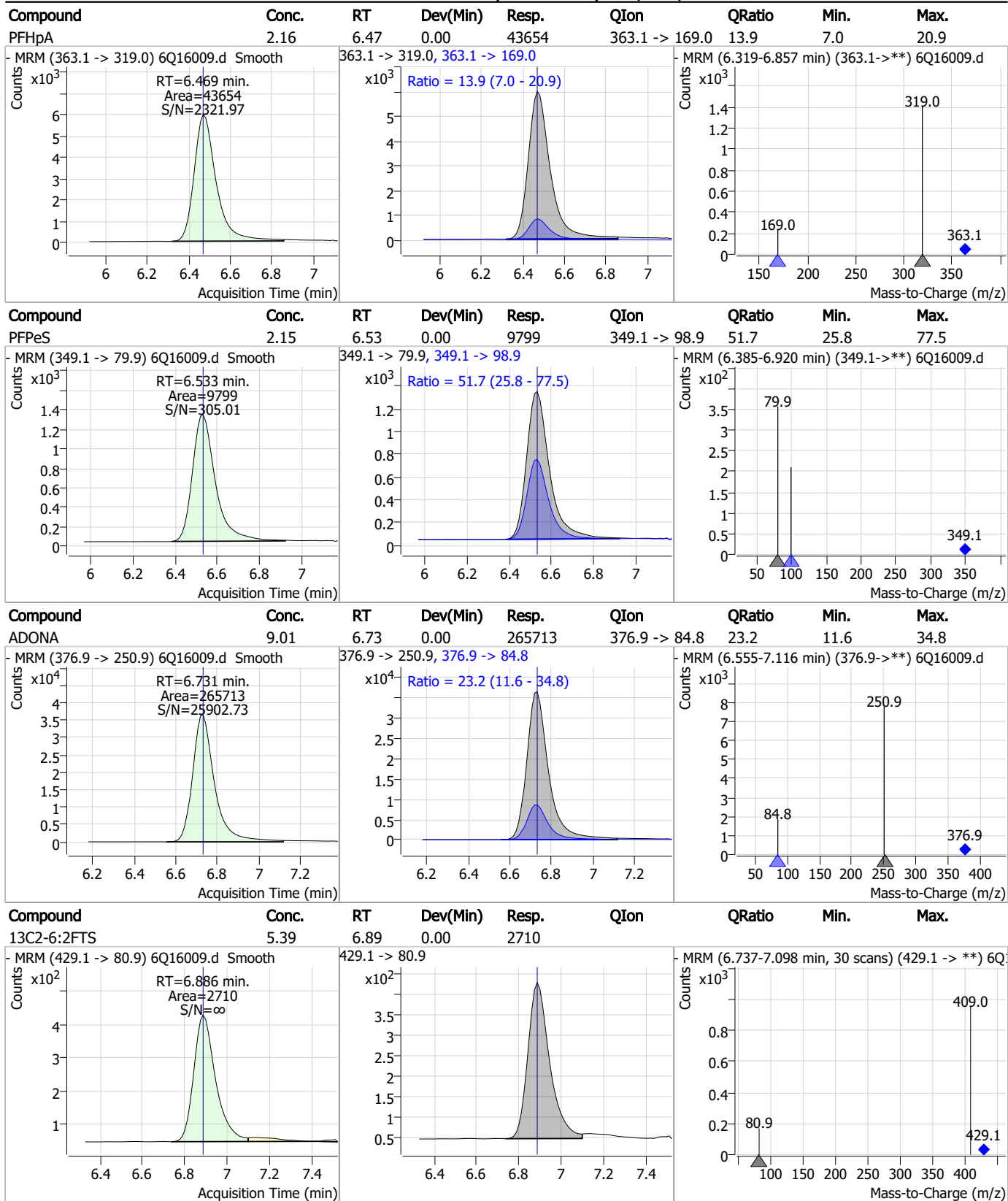
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.03	6.19	0.00	161726	341.0 -> 217.0	86.9	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.47	0.00	36016	367.1 -> 322.0			

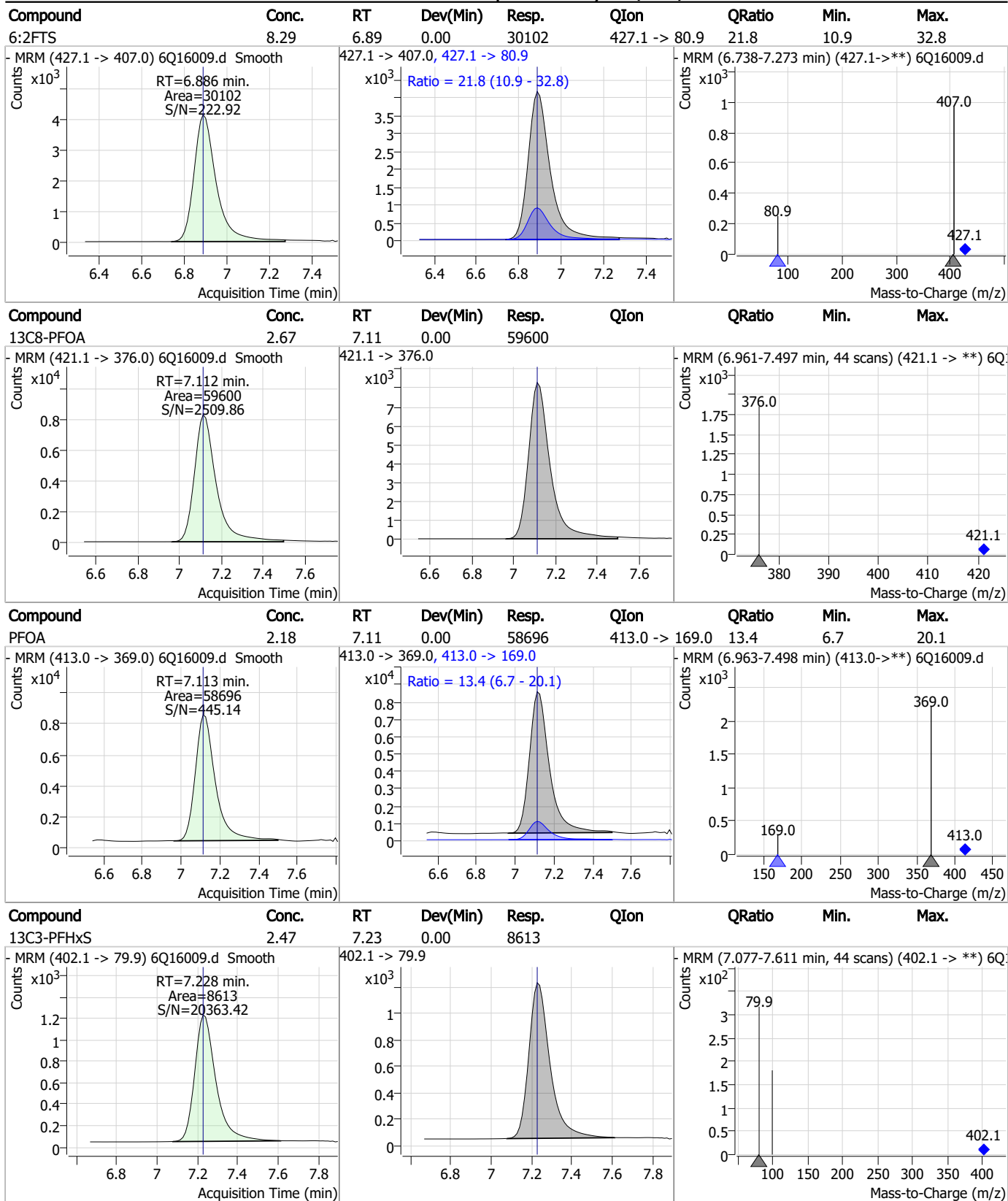


Perfluorinated Compounds by LC/MS/MS



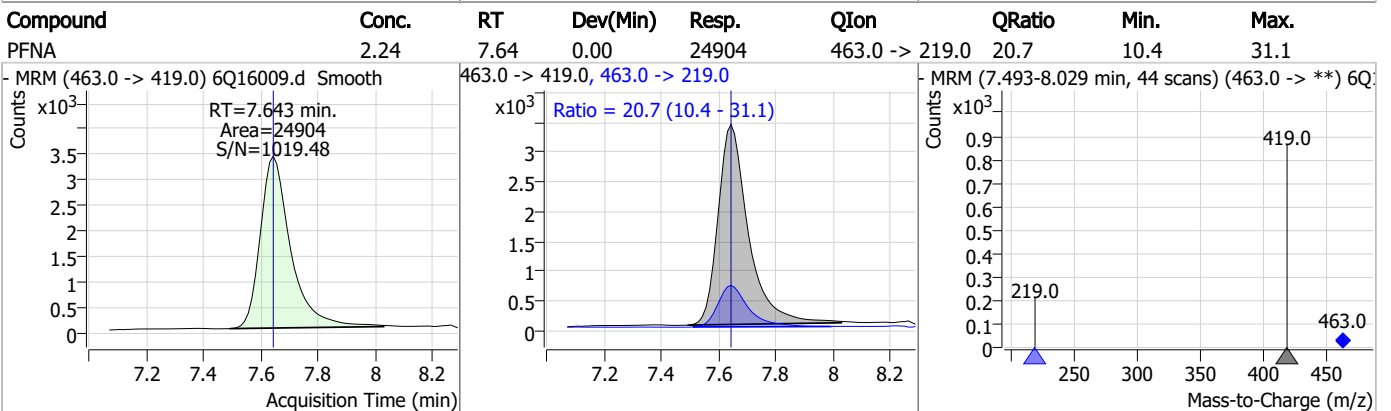
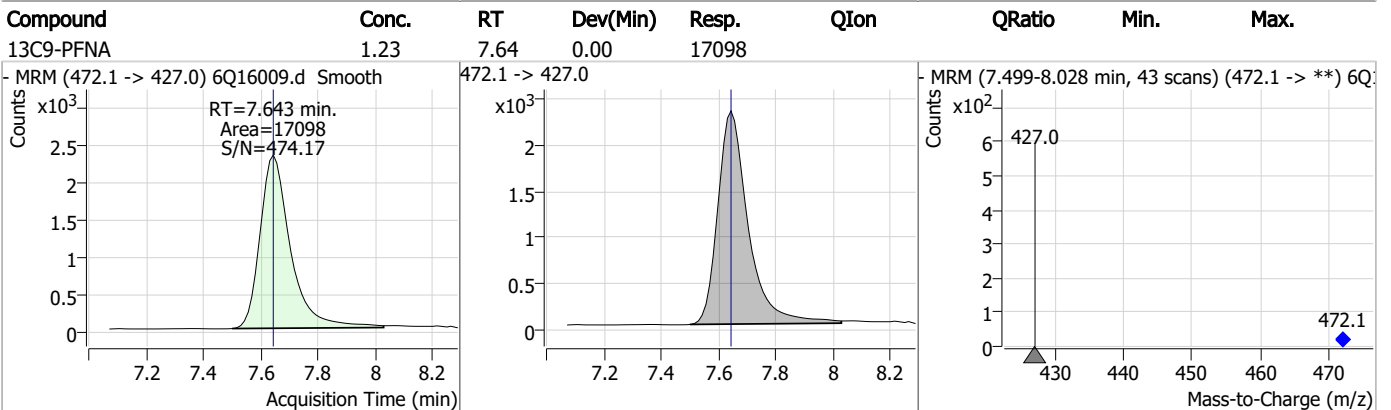
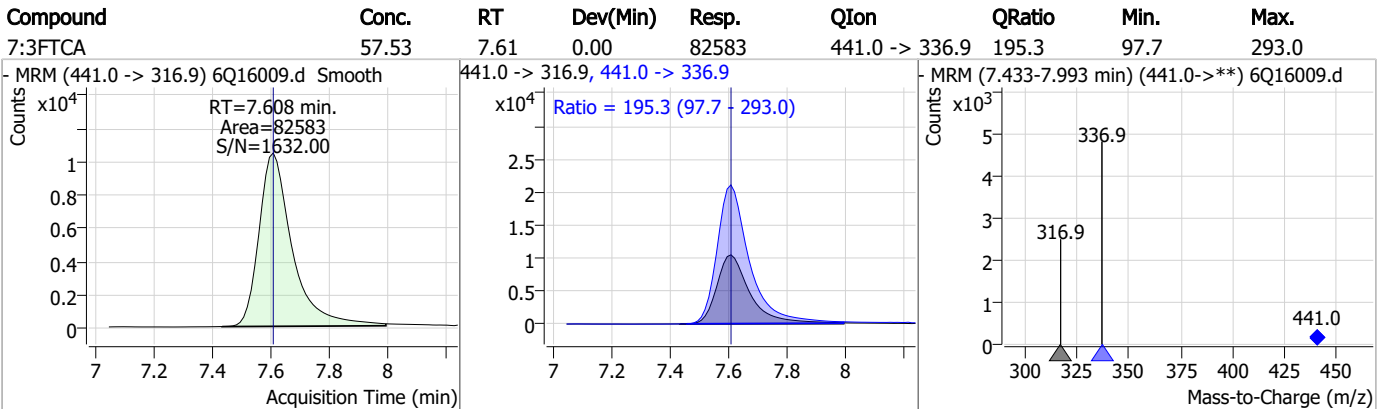
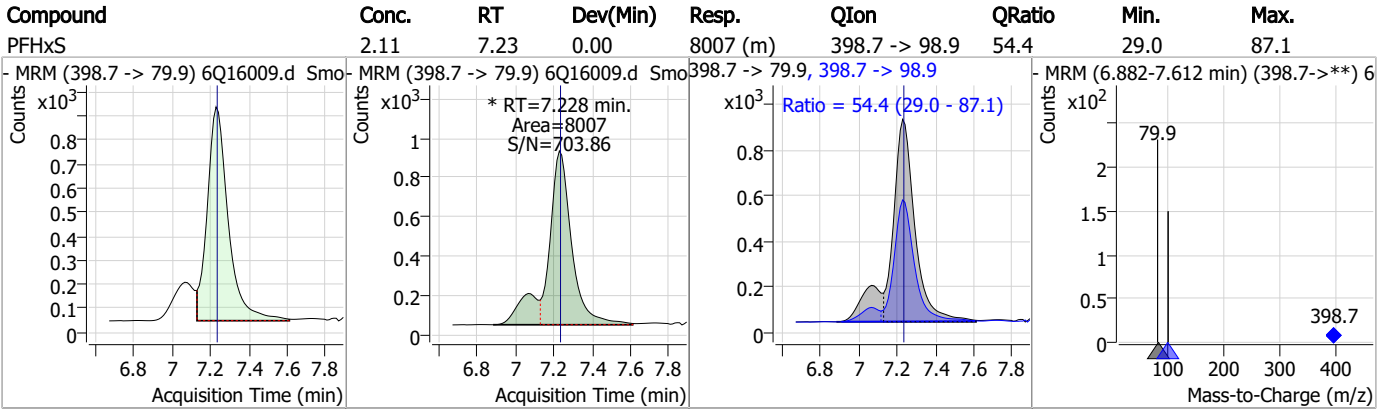
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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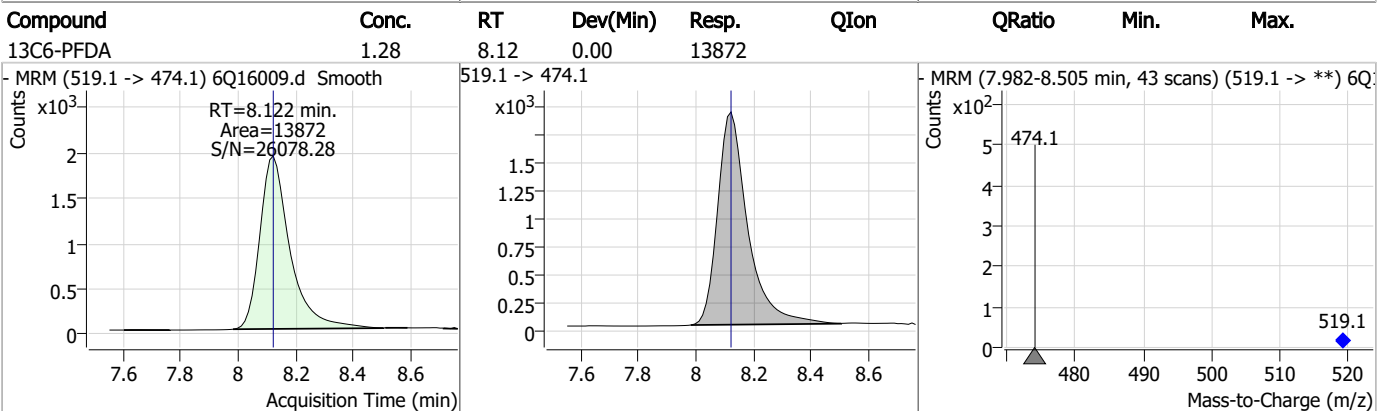
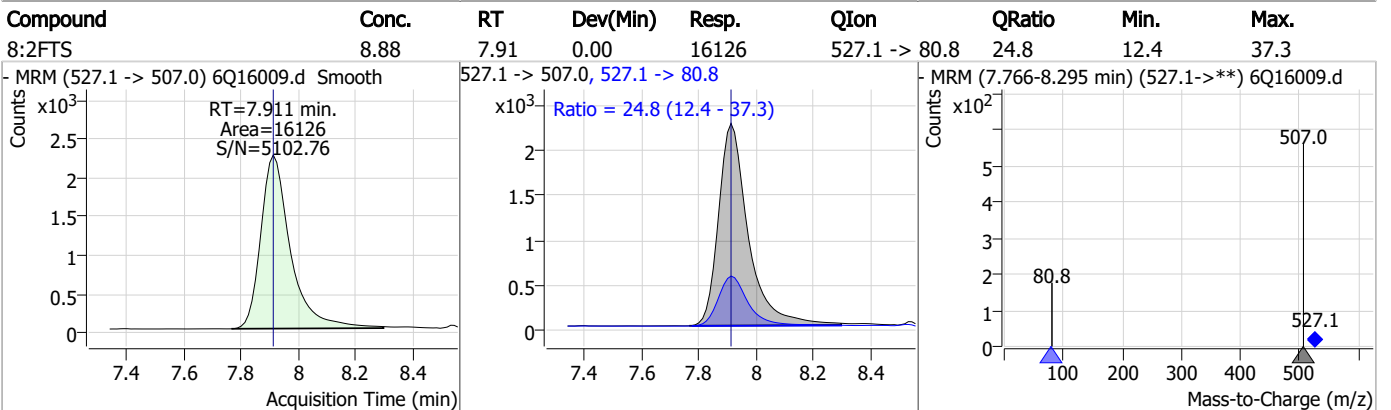
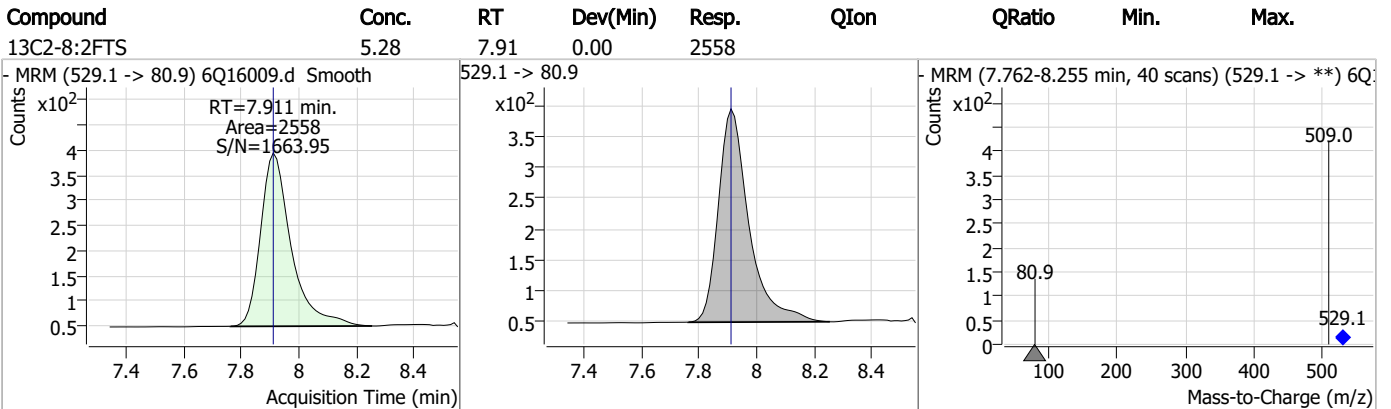
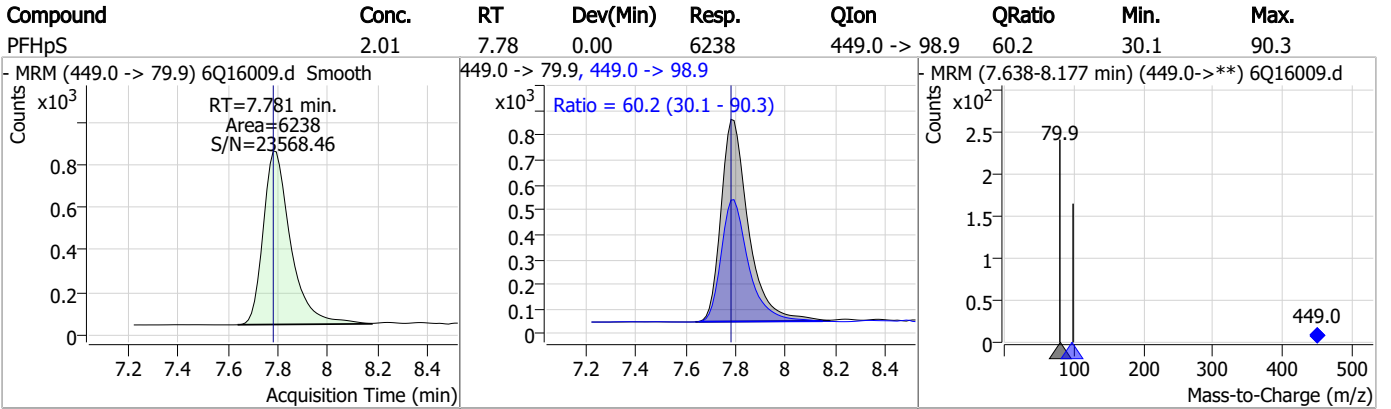
Perfluorinated Compounds by LC/MS/MS



7.7.5

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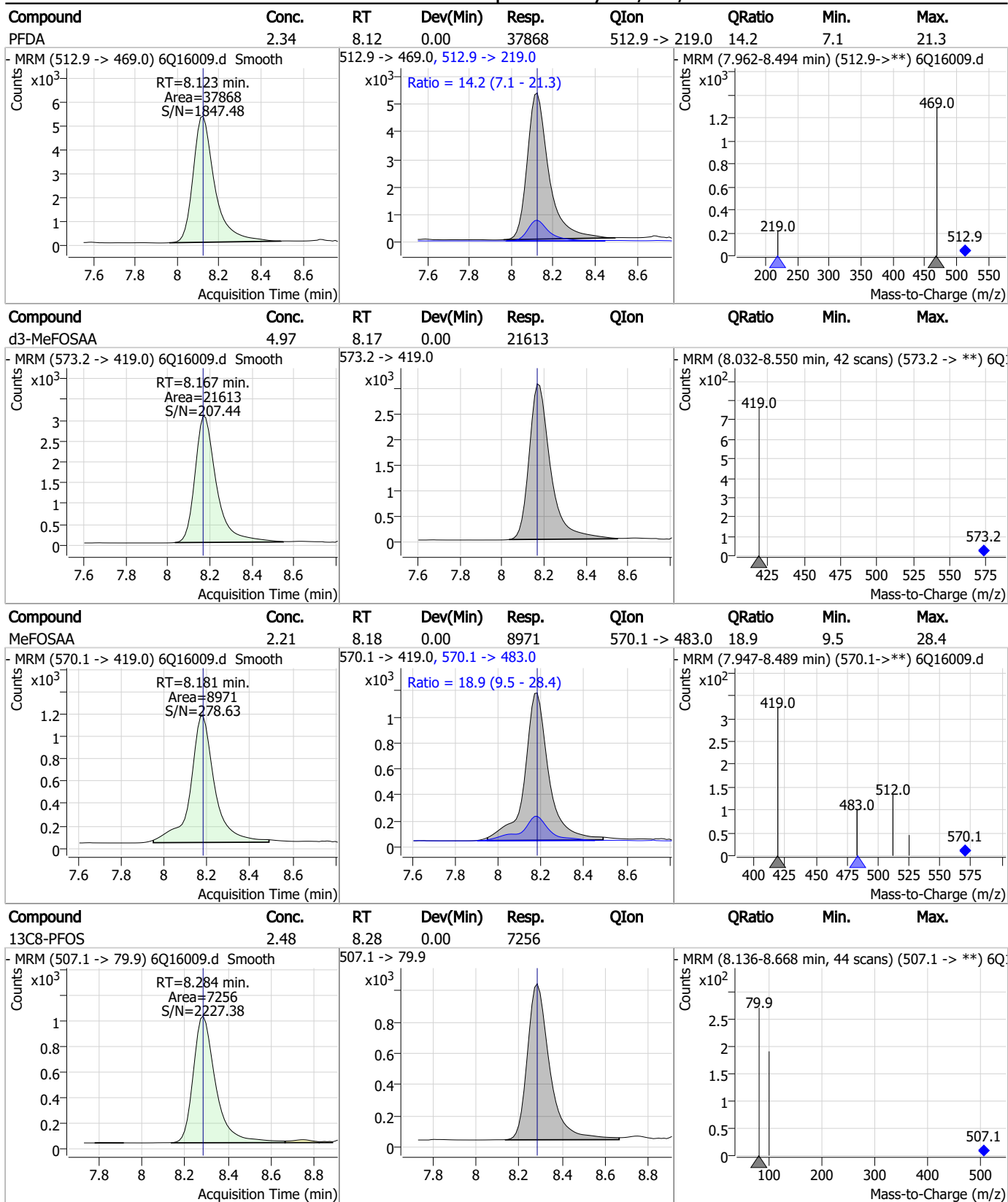
Perfluorinated Compounds by LC/MS/MS



7.7.5

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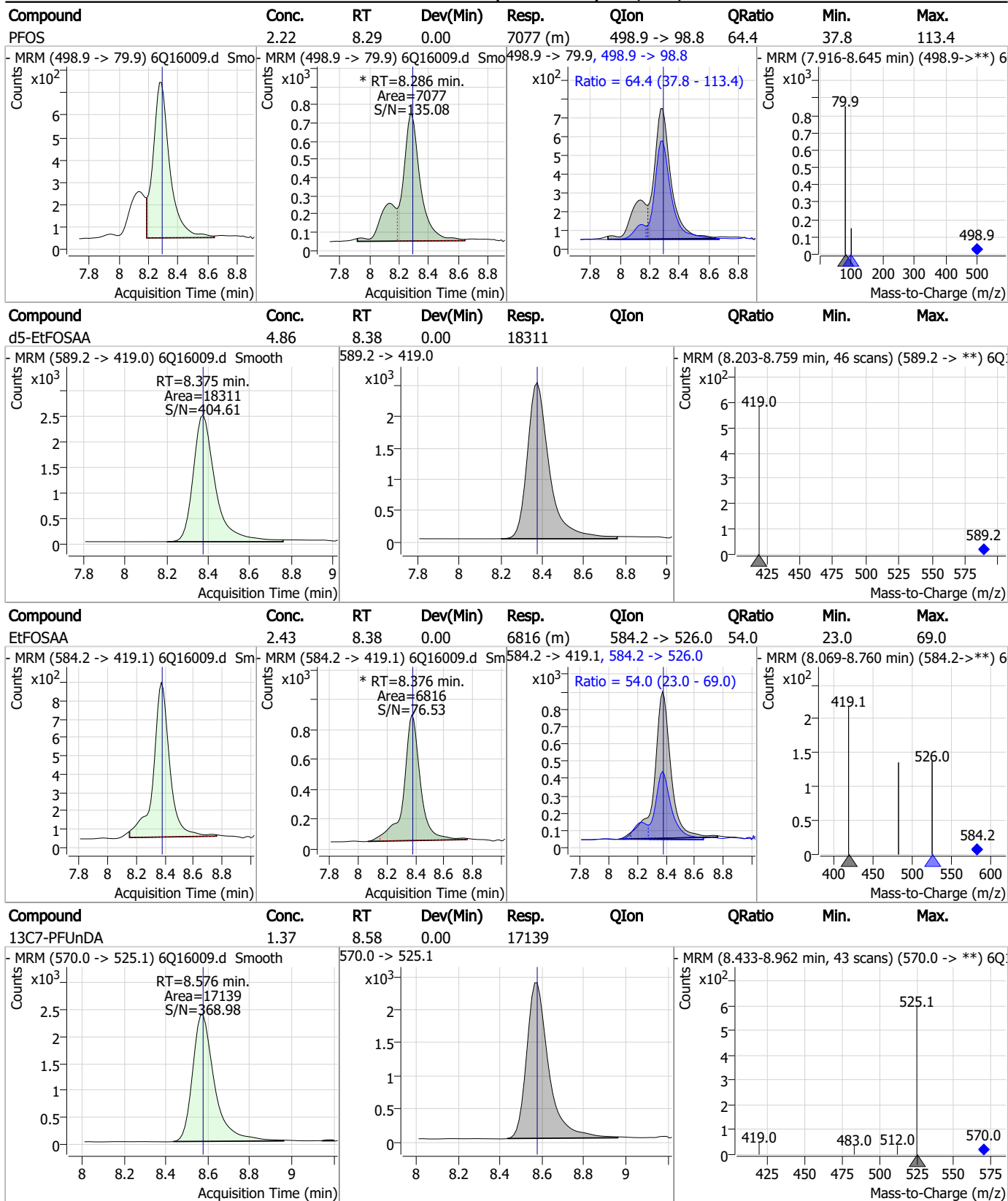
Perfluorinated Compounds by LC/MS/MS



7.7.5

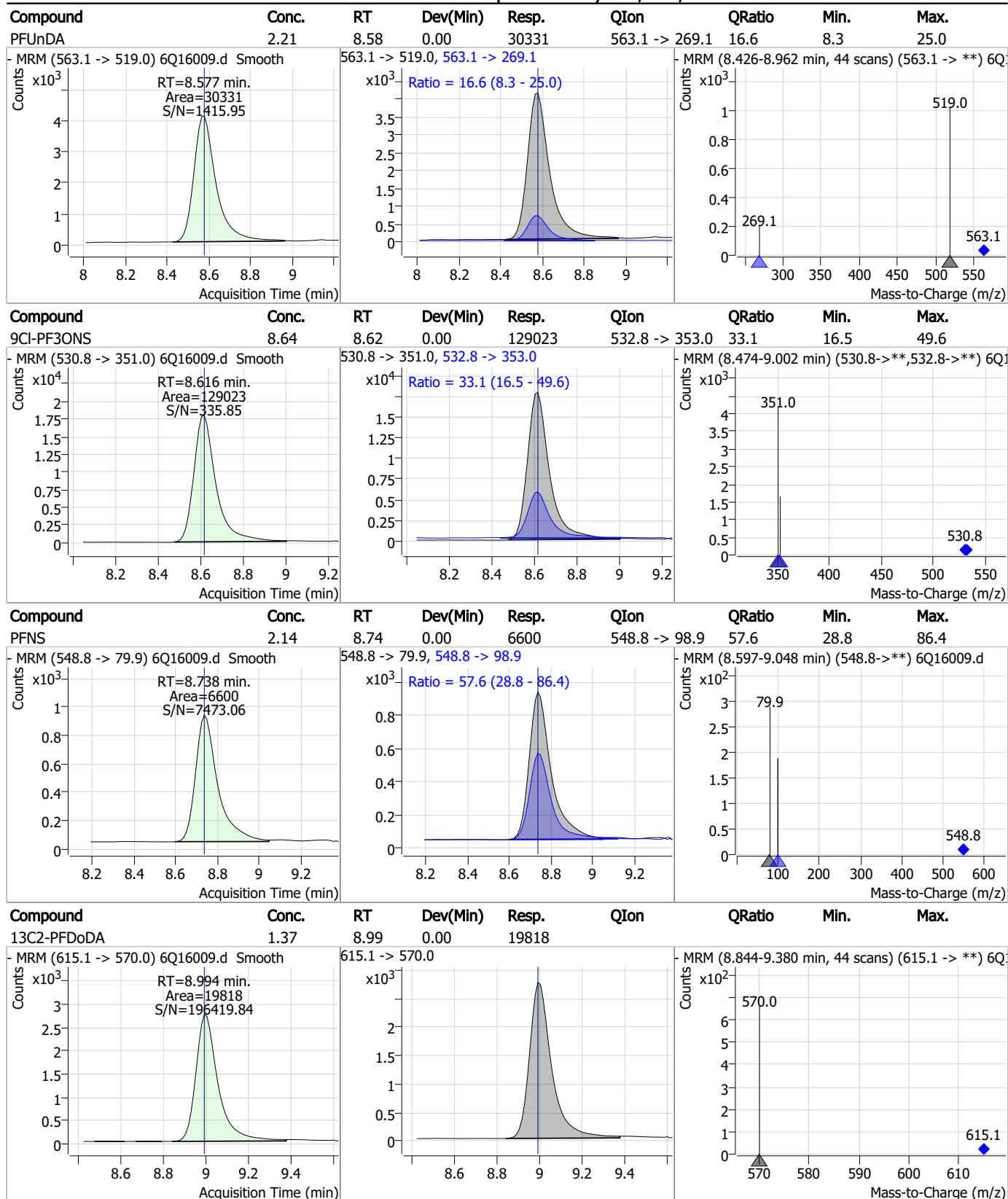
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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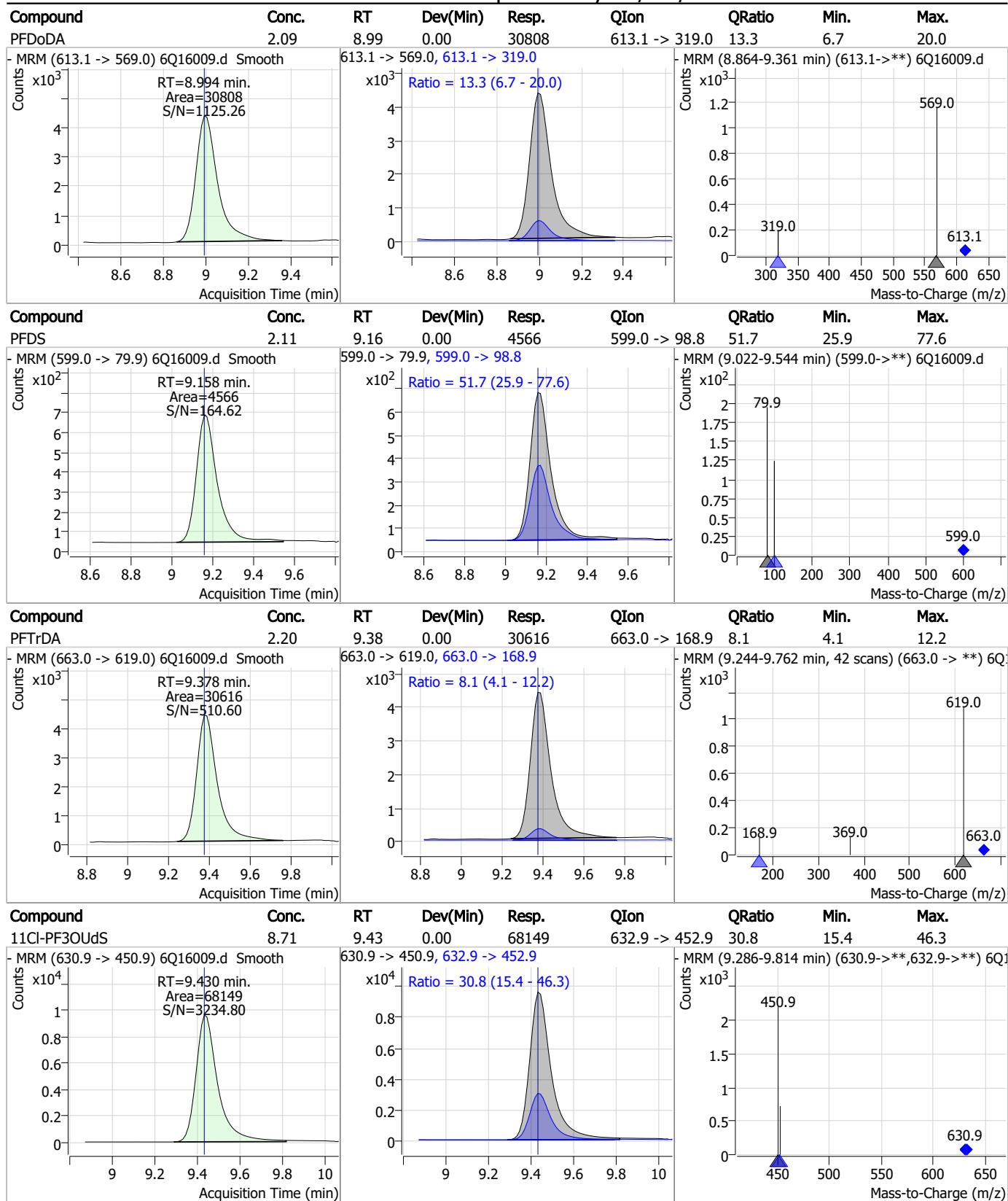
Perfluorinated Compounds by LC/MS/MS



7.7.5

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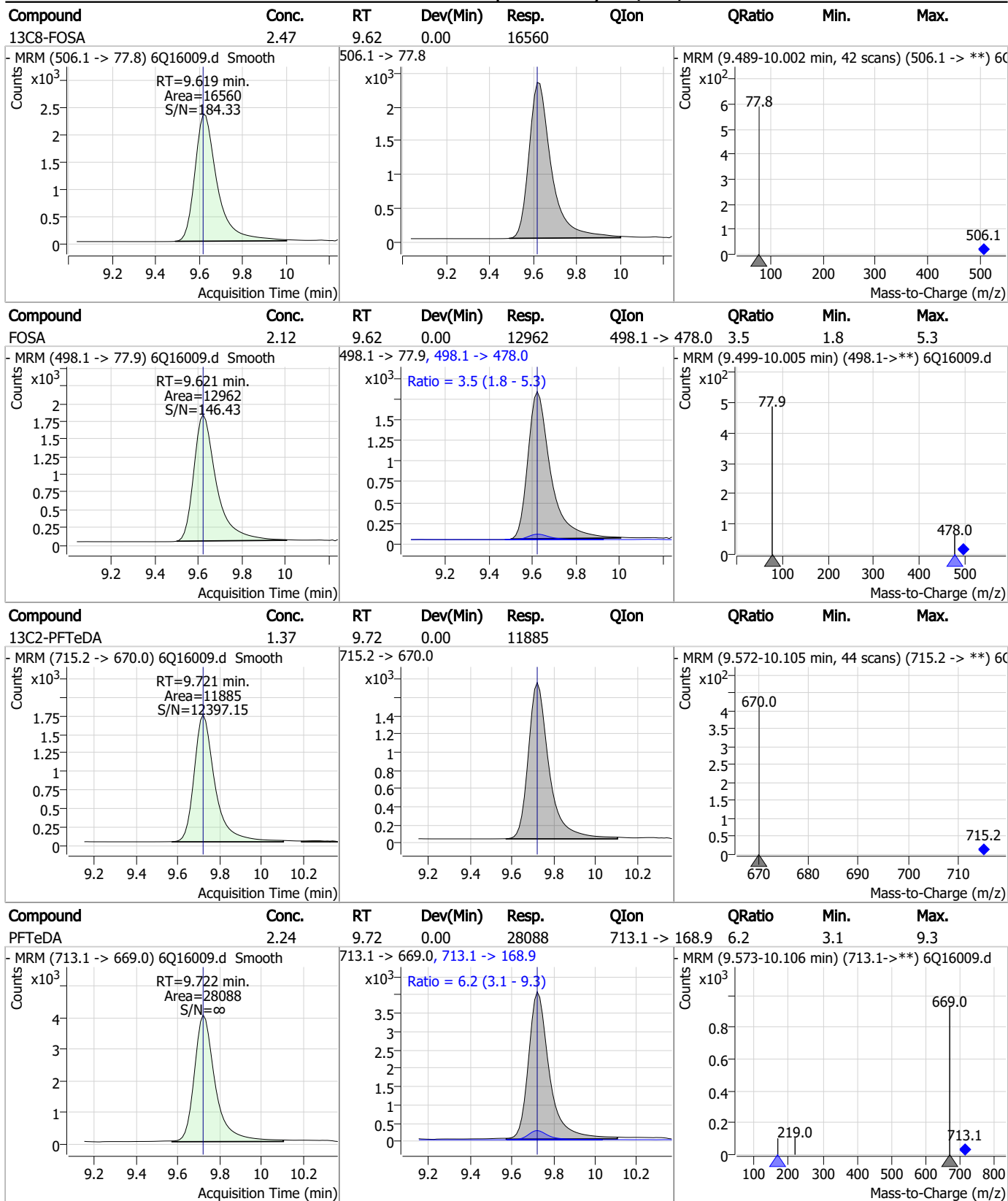
Perfluorinated Compounds by LC/MS/MS



7.7.5

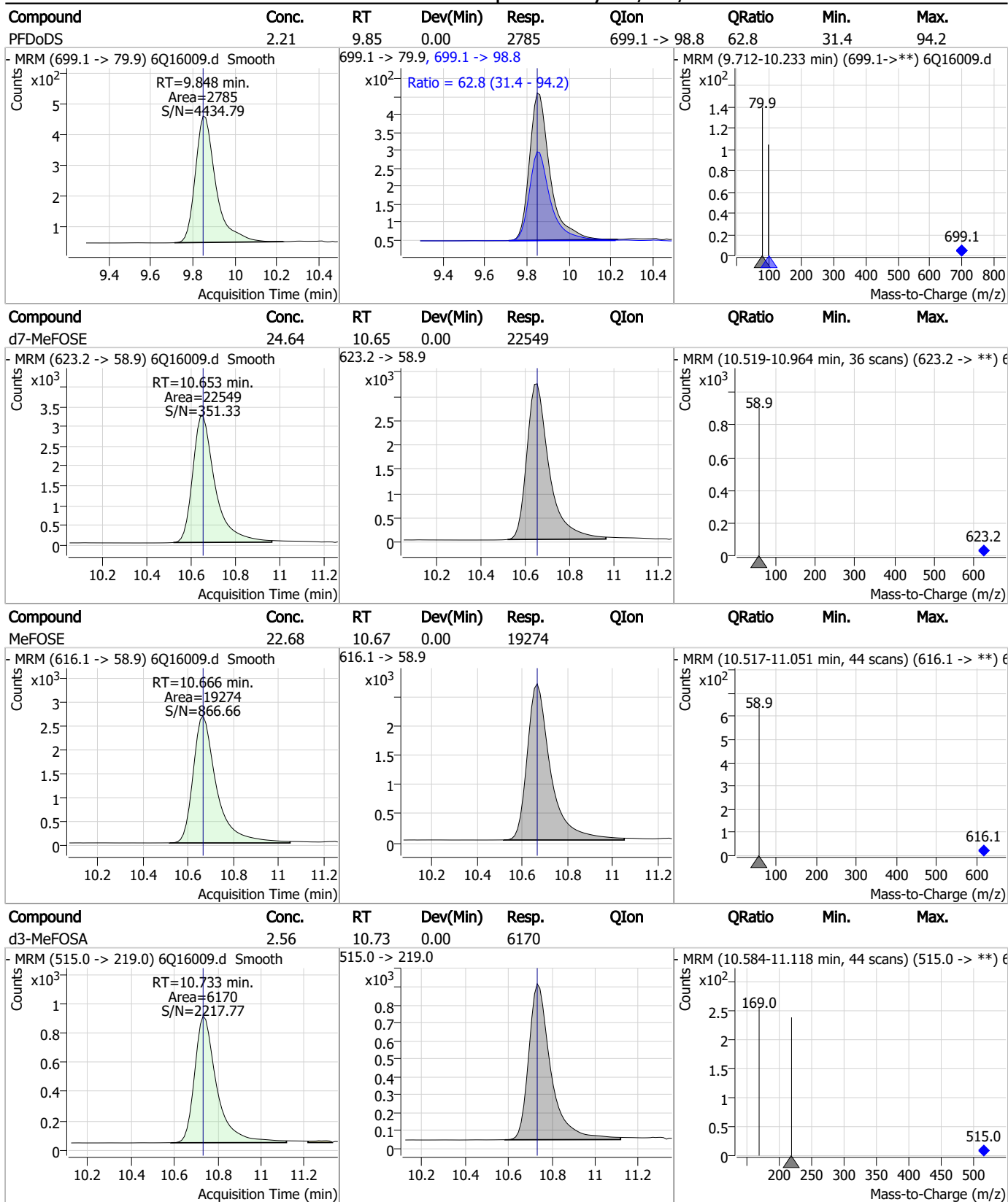
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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

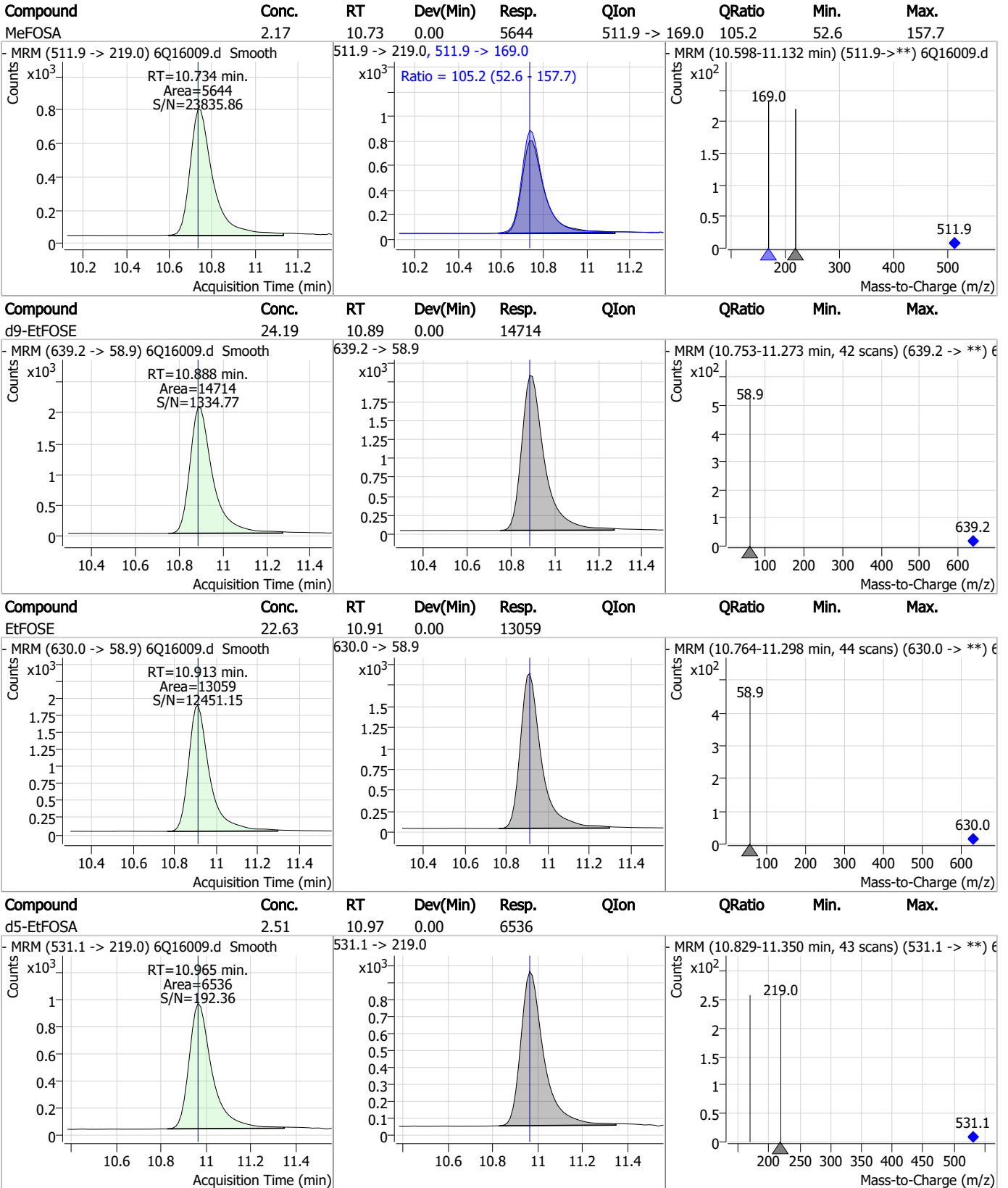
Perfluorinated Compounds by LC/MS/MS



7.7.5

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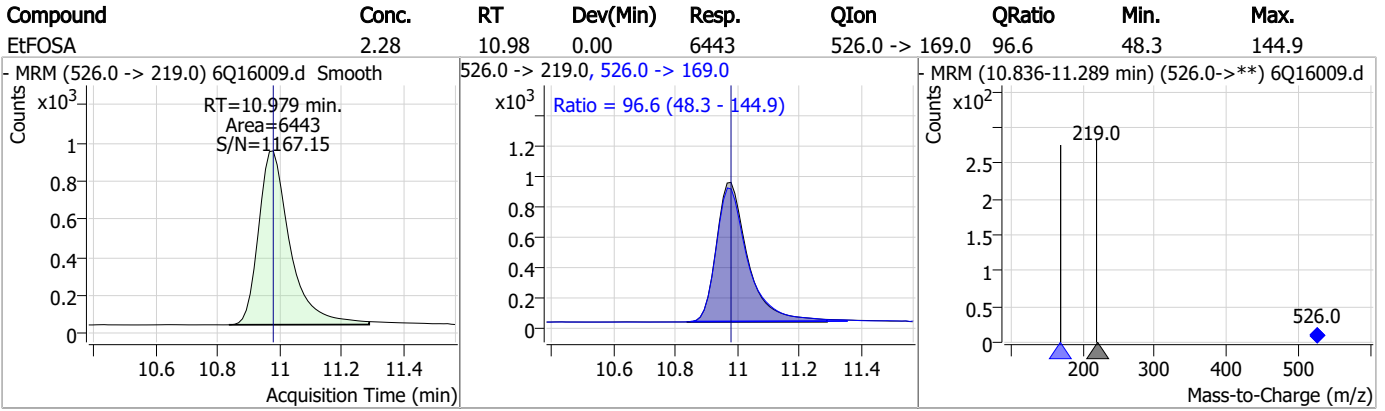
Perfluorinated Compounds by LC/MS/MS



7.7.5

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Perfluorinated Compounds by LC/MS/MS



7.7.5

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Manual Integration Approval Summary

Sample Number: S6Q239-ICC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16009.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 14:57 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.7.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16010.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 3:11:39 PM
 Sample Name : ic239-5
 Vial : P1-A6
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	87317	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	38489	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	33773	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	32950	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	56688	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	18523	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	14099	1.25 µg/L	0.000
M7-PFUnDA	8.576	570.0 -> 525.1	16779	1.25 µg/L	0.000
M2-PFDoDA	9.006	615.1 -> 570.0	18843	1.25 µg/L	0.012
M2-PFTeDA	9.721	715.2 -> 670.0	11134	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	16532	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	12949	2.50 µg/L	0.000
M3-PFHxS	7.240	402.1 -> 79.9	8526	2.50 µg/L	0.012
M8-PFOS	8.284	507.1 -> 79.9	6849	2.50 µg/L	0.000
M2-4:2FTS	5.204	329.1 -> 80.9	2016	5.00 µg/L	0.012
M2-6:2FTS	6.886	429.1 -> 80.9	2663	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2346	5.00 µg/L	0.000
M3-MeFOSAA	8.180	573.2 -> 419.0	20802	5.00 µg/L	0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	14293	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	18716	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	22944	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	14894	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6512	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5939	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	9076	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	37465	5.00 µg/L	0.000
18O2-PFHxS	7.239	403.0 -> 83.9	6028	2.50 µg/L	0.012
13C4-PFOA	7.125	417.1 -> 372.0	65870	2.50 µg/L	0.013
13C2-PFDA	8.123	515.1 -> 470.1	18696	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	17810	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	32571	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	2016	4.97 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2663	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2346	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFDoDA	9.006	615.1 -> 570.0	18843	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.721	715.2 -> 670.0	11134	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C3-PFBS	5.459	302.1 -> 79.9	12949	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFHxS	7.240	402.1 -> 79.9	8526	2.47 µg/L	0.012

7.7.6
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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 = 98.8%	
13C4-PFBA	2.897	216.8 -> 171.9	87317	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.468	367.1 -> 322.0	32950	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFHxA	5.528	318.0 -> 273.0	33773	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.322	268.3 -> 223.0	38489	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C6-PFDA	8.122	519.1 -> 474.1	14099	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C7-PFUnDA	8.576	570.0 -> 525.1	16779	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C8-FOSA	9.631	506.1 -> 77.8	16532	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOA	7.125	421.1 -> 376.0	56688	2.58 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-PFOS	8.284	507.1 -> 79.9	6849	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C9-PFNA	7.643	472.1 -> 427.0	18523	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.5%	
d3-MeFOSAA	8.180	573.2 -> 419.0	20802	4.74 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	14293	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d3-MeFOSA	10.733	515.0 -> 219.0	5939	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
d5-EtFOSAA	8.375	589.2 -> 419.0	18716	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d7-MeFOSE	10.653	623.2 -> 58.9	22944	24.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d9-EtFOSE	10.888	639.2 -> 58.9	14894	24.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d5-EtFOSA	10.965	531.1 -> 219.0	6512	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	73642	18.65 µg/L	98
		327.1 -> 80.9	18190		
6:2FTS	6.899	427.1 -> 407.0	62321	17.47 µg/L	99
		427.1 -> 80.9	13303		
8:2FTS	7.911	527.1 -> 507.0	32138	19.31 µg/L	93
		527.1 -> 80.8	9085		
EtFOSAA	8.376	584.2 -> 419.1	13385	4.66 µg/L	77
		584.2 -> 526.0	8194		
FOSA	9.621	498.1 -> 77.9	28603	4.68 µg/L	99
		498.1 -> 478.0	1064		
MeFOSAA	8.181	570.1 -> 419.0	18614	4.77 µg/L	97
		570.1 -> 483.0	3273		
PFBA	2.906	212.8 -> 168.9	41877	18.98 µg/L	100
PFBS	5.460	298.7 -> 79.9	22294	4.39 µg/L	98
		298.7 -> 98.8	10016		
PFDA	8.123	512.9 -> 469.0	79040	4.81 µg/L	99
		512.9 -> 219.0	11051		
PFDODA	9.007	613.1 -> 569.0	67485	4.81 µg/L	99
		613.1 -> 319.0	8825		
PFDS	9.170	599.0 -> 79.9	9329	4.56 µg/L	93

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	5310			
PFHpA	6.481	363.1 -> 319.0	94933	5.12	µg/L	99
		363.1 -> 169.0	12707			
PFHpS	7.794	449.0 -> 79.9	13529	4.62	µg/L	98
		449.0 -> 98.9	7957			
PFHxA	5.531	313.0 -> 269.0	61691	4.95	µg/L	100
		313.0 -> 118.9	2560			
PFHxS	7.241	398.7 -> 79.9	16066	4.28	µg/L	m 99
		398.7 -> 98.9	9224			
PFNA	7.643	463.0 -> 419.0	50450	4.18	µg/L	98
		463.0 -> 219.0	10004			
PFNS	8.751	548.8 -> 79.9	14509	4.99	µg/L	94
		548.8 -> 98.9	7692			
PFOA	7.126	413.0 -> 369.0	119165	4.64	µg/L	99
		413.0 -> 169.0	16379			
PFOS	8.286	498.9 -> 79.9	13196	4.38	µg/L	m 90
		498.9 -> 98.8	8807			
PFPeA	4.324	263.0 -> 219.0	77264	9.52	µg/L	100
PFPeS	6.533	349.1 -> 79.9	19586	4.34	µg/L	100
		349.1 -> 98.9	10154			
PFTeDA	9.722	713.1 -> 669.0	58906	5.01	µg/L	98
		713.1 -> 168.9	4135			
PFTrDA	9.390	663.0 -> 619.0	61449	4.64	µg/L	99
		663.0 -> 168.9	5227			
PFUnDA	8.577	563.1 -> 519.0	61902	4.61	µg/L	97
		563.1 -> 269.1	9471			
11CI-PF3OUdS	9.442	630.9 -> 450.9	138978	18.09	µg/L	96
		632.9 -> 452.9	45749			
9CI-PF3ONS	8.616	530.8 -> 351.0	273042	18.61	µg/L	95
		532.8 -> 353.0	82512			
ADONA	6.731	376.9 -> 250.9	537206	18.55	µg/L	99
		376.9 -> 84.8	121973			
HFPO-DA	5.906	284.9 -> 168.9	24885	19.26	µg/L	97
		284.9 -> 184.9	3427			
3:3FTCA	3.777	241.0 -> 177.0	10564	23.44	µg/L	99
		241.0 -> 117.0	1564			
5:3FTCA	6.198	341.0 -> 237.1	324926	117.91	µg/L	100
		341.0 -> 217.0	282559			
7:3FTCA	7.608	441.0 -> 316.9	166526	119.38	µg/L	95
		441.0 -> 336.9	336813			
EtFOSA	10.967	526.0 -> 219.0	13167	4.68	µg/L	91
		526.0 -> 169.0	13863			
EtFOSE	10.913	630.0 -> 58.9	28156	48.20	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	11930	4.77	µg/L	97
		511.9 -> 169.0	12127			
MeFOSE	10.666	616.1 -> 58.9	41280	47.73	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	5561	4.67	µg/L	96
		699.1 -> 98.8	3646			
NFDHA	5.410	295.0 -> 201.0	7735	9.57	µg/L	98
		295.0 -> 84.9	3292			
PFMBA	4.737	279.0 -> 85.1	25505	9.48	µg/L	100
PFMPA	3.463	229.0 -> 84.9	23430	9.54	µg/L	100
PFEESA	5.999	314.8 -> 134.9	147031	8.33	µg/L	100
		314.8 -> 82.9	3629			

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

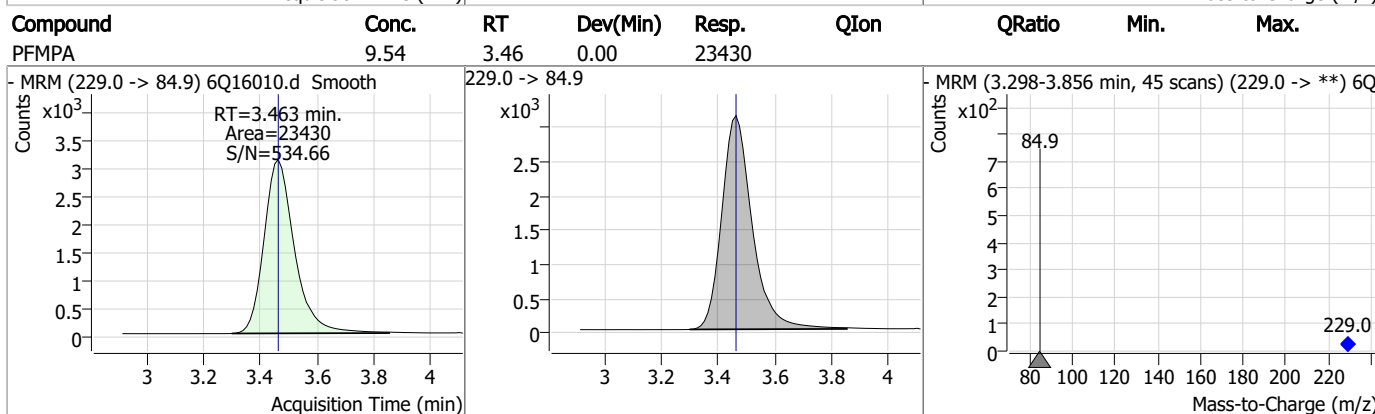
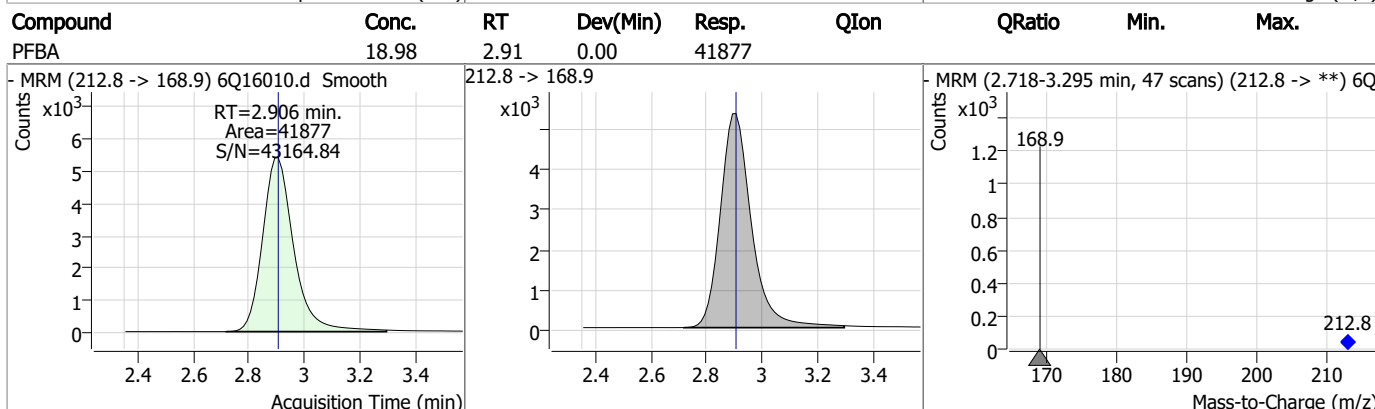
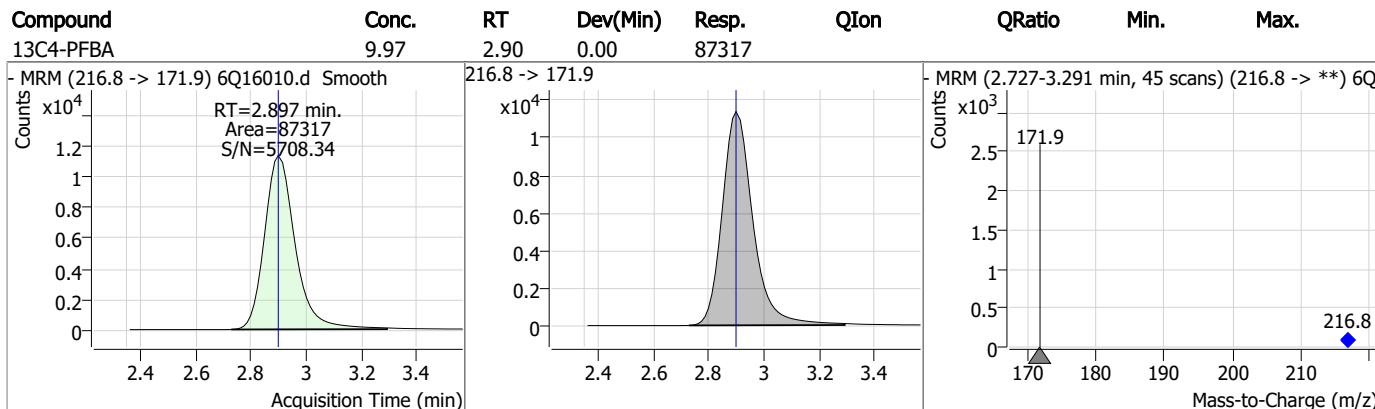
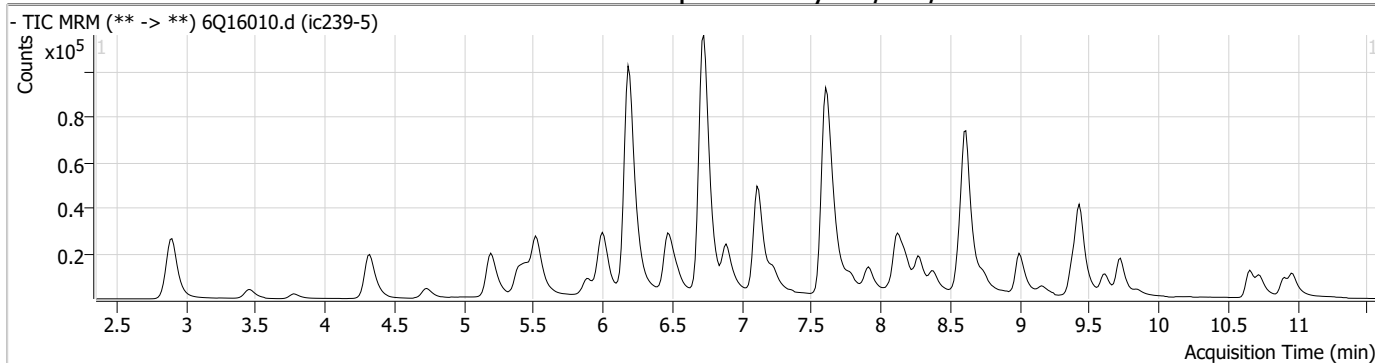
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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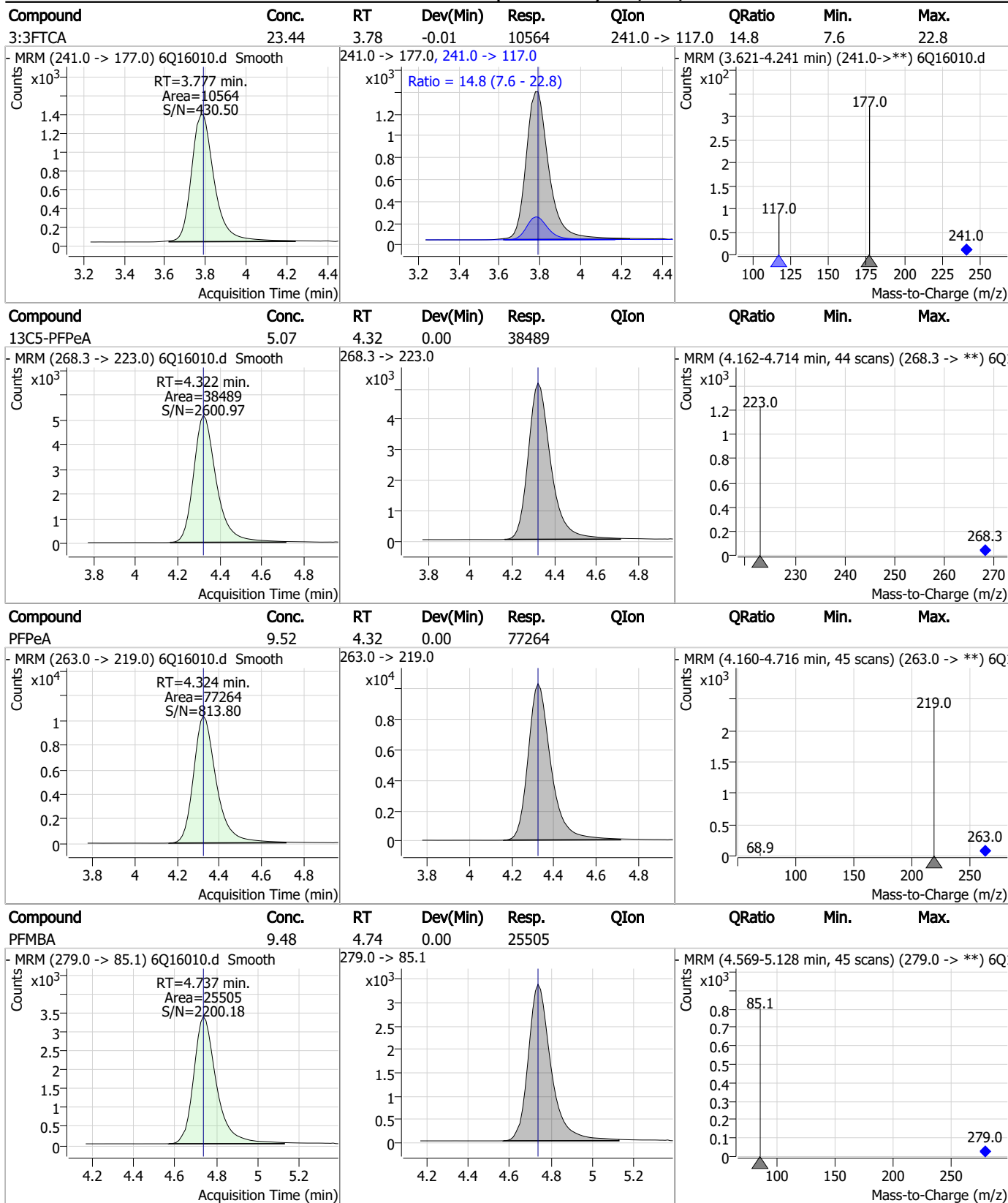
7.7.6
7



Perfluorinated Compounds by LC/MS/MS

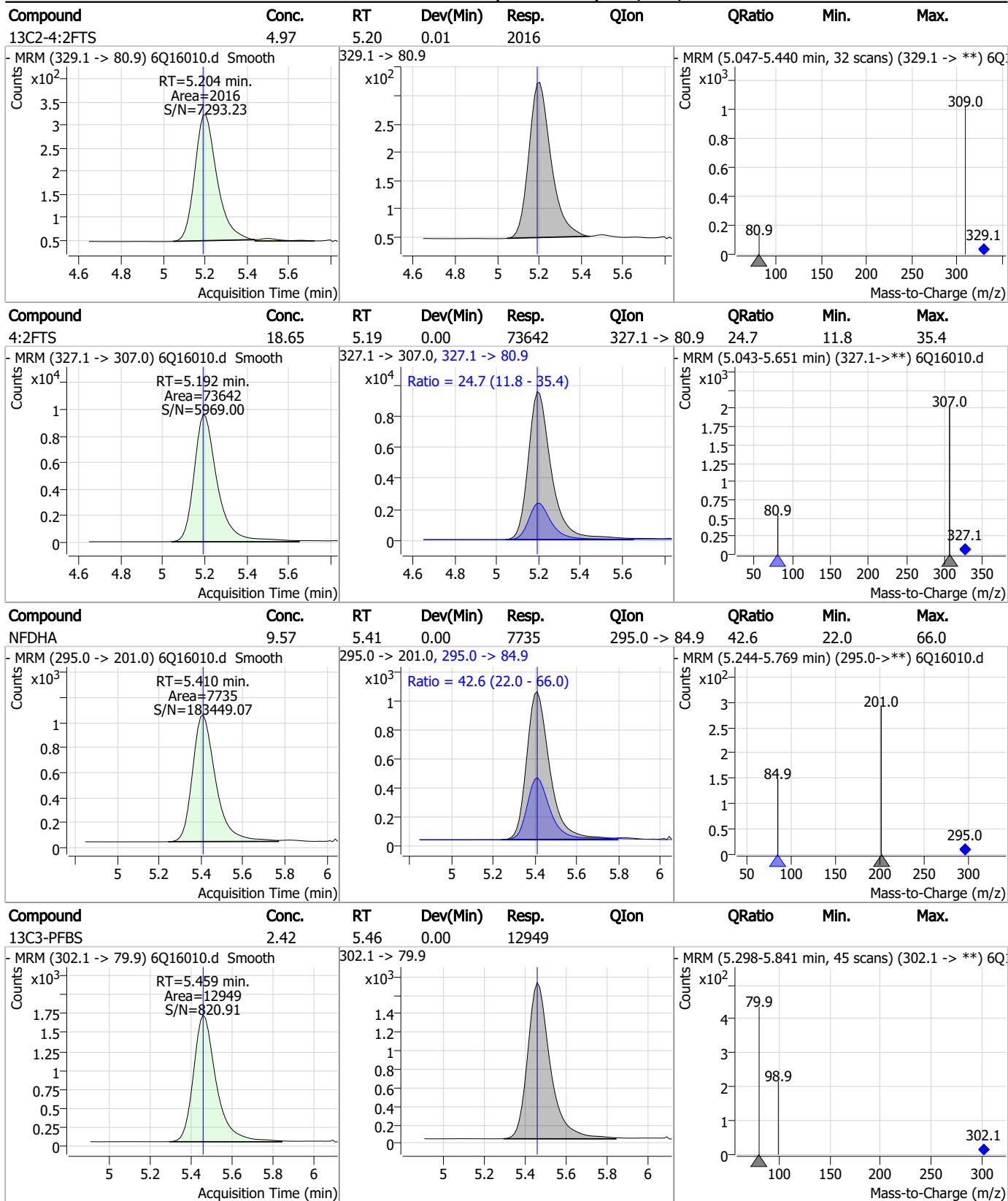


Perfluorinated Compounds by LC/MS/MS



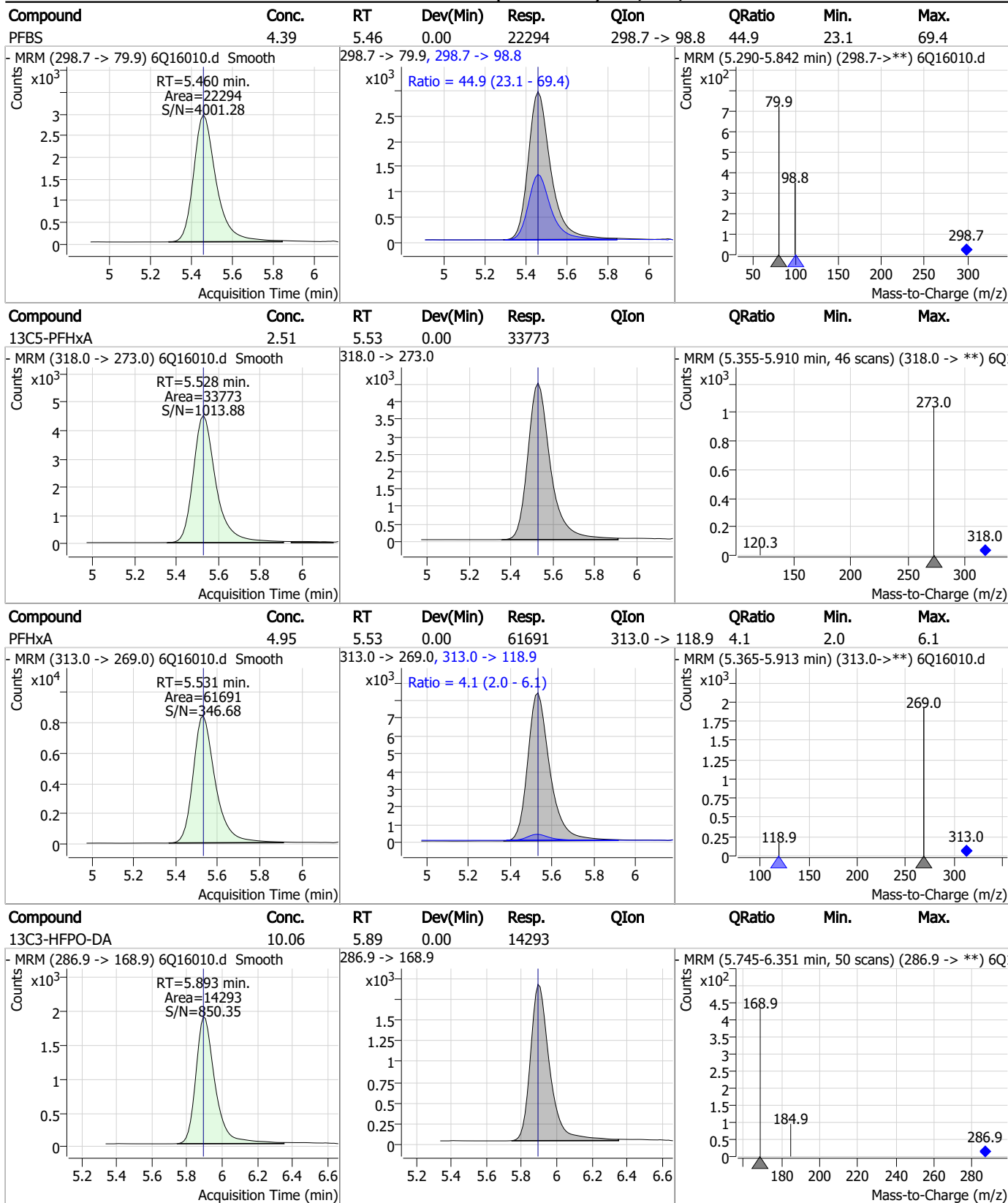
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

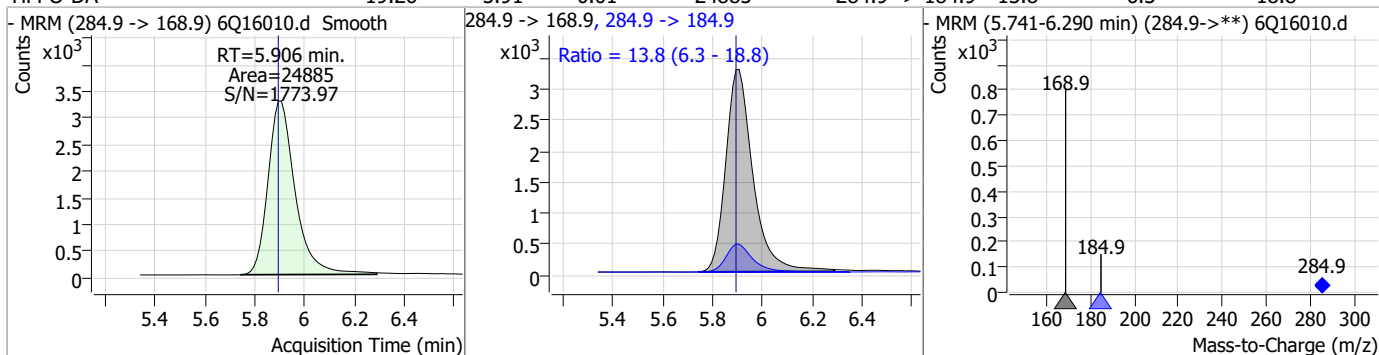
Perfluorinated Compounds by LC/MS/MS



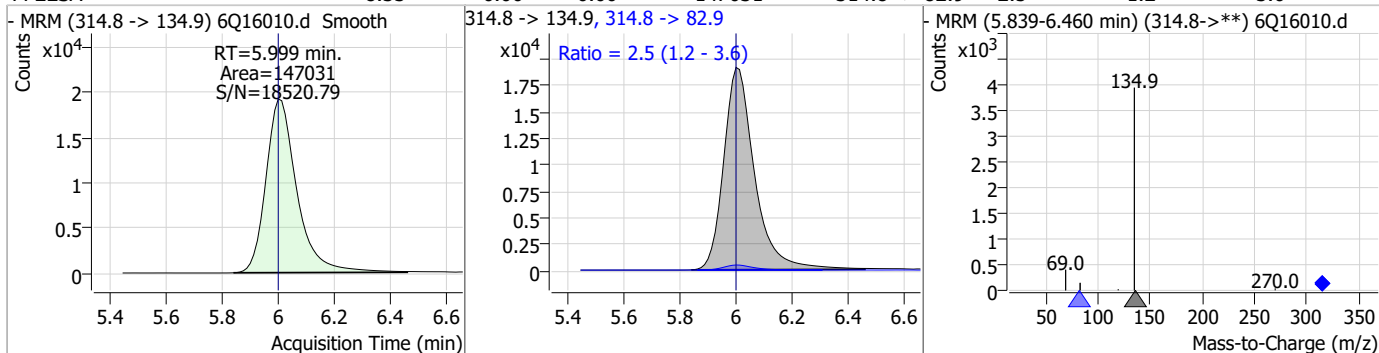
7.7.6
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Perfluorinated Compounds by LC/MS/MS

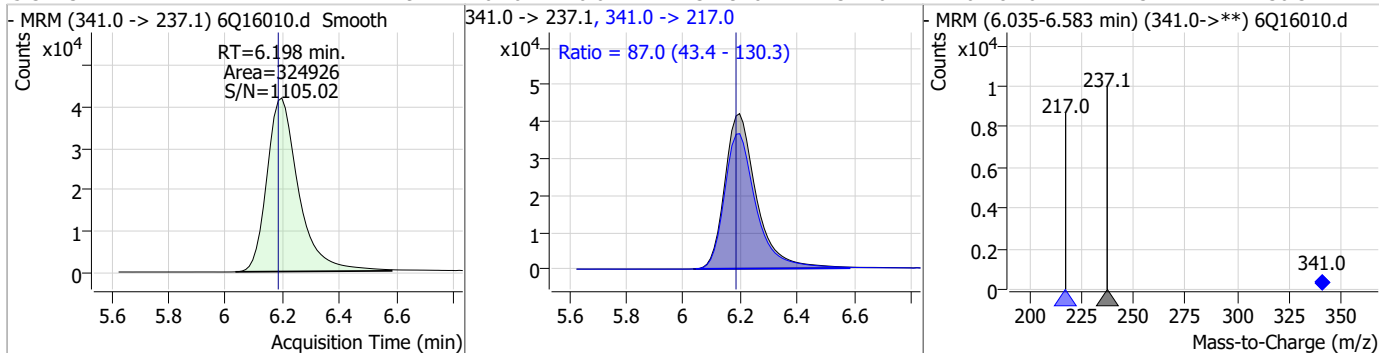
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.26	5.91	0.01	24885	284.9 -> 184.9	13.8	6.3	18.8



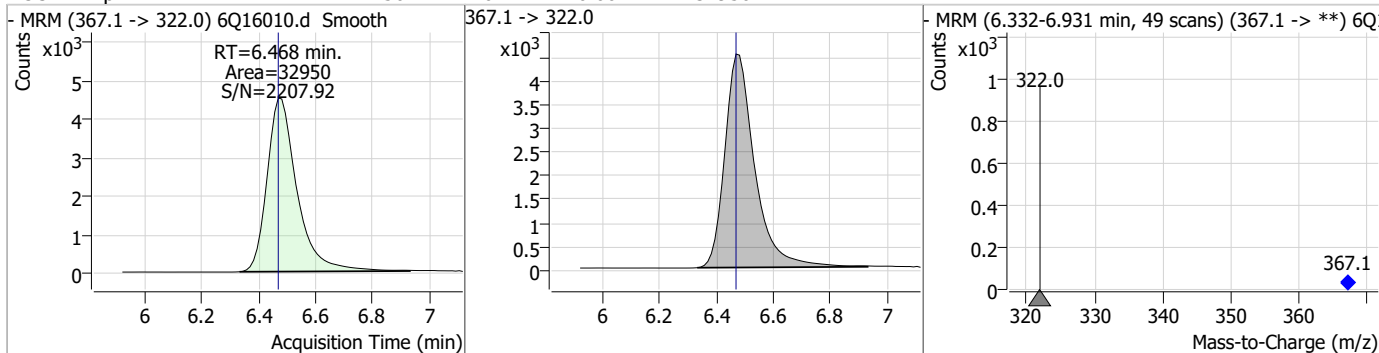
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	8.33	6.00	0.00	147031	314.8 -> 82.9	2.5	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	117.91	6.20	0.01	324926	341.0 -> 217.0	87.0	43.4	130.3

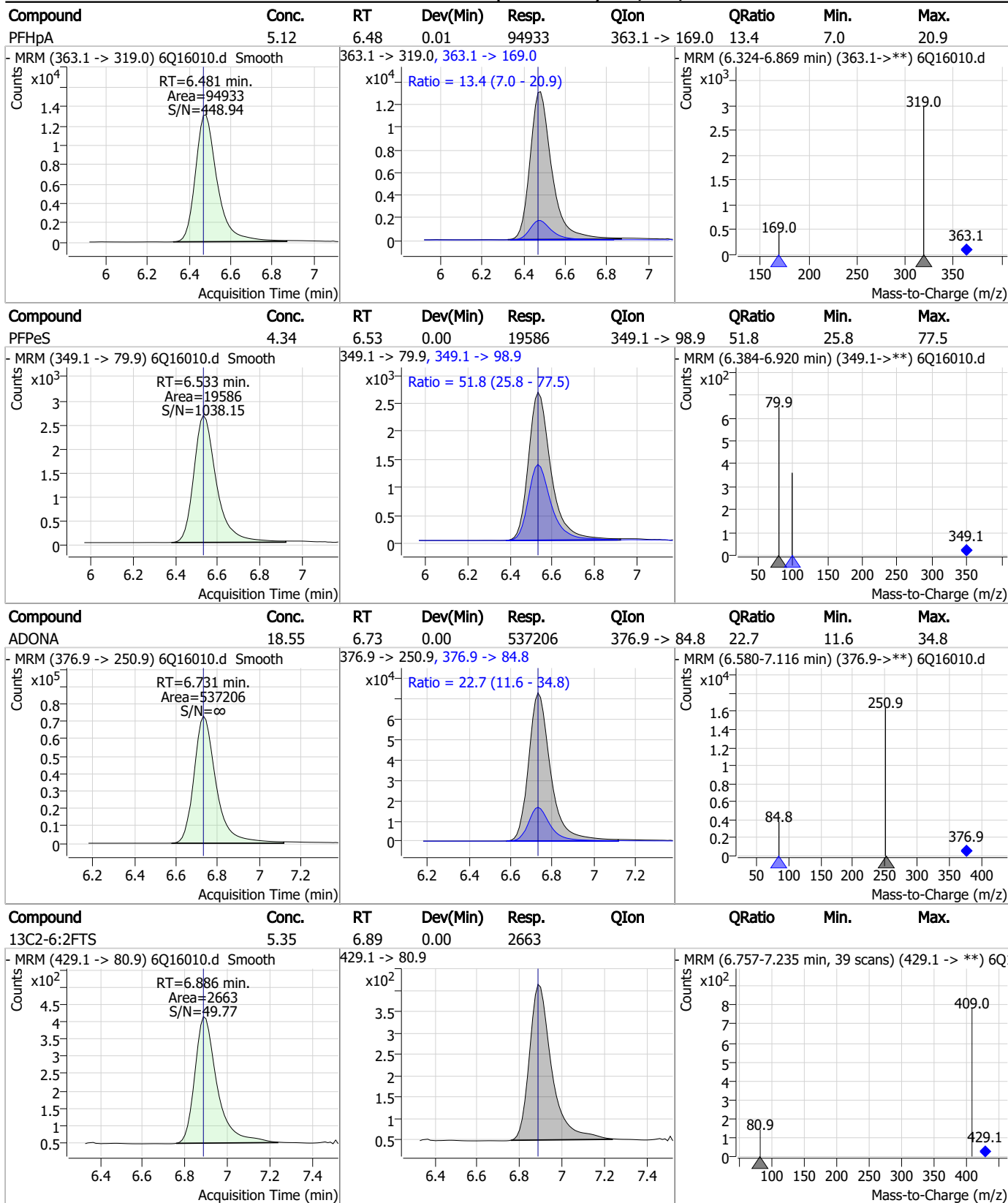


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.50	6.47	0.00	32950	367.1 -> 322.0			



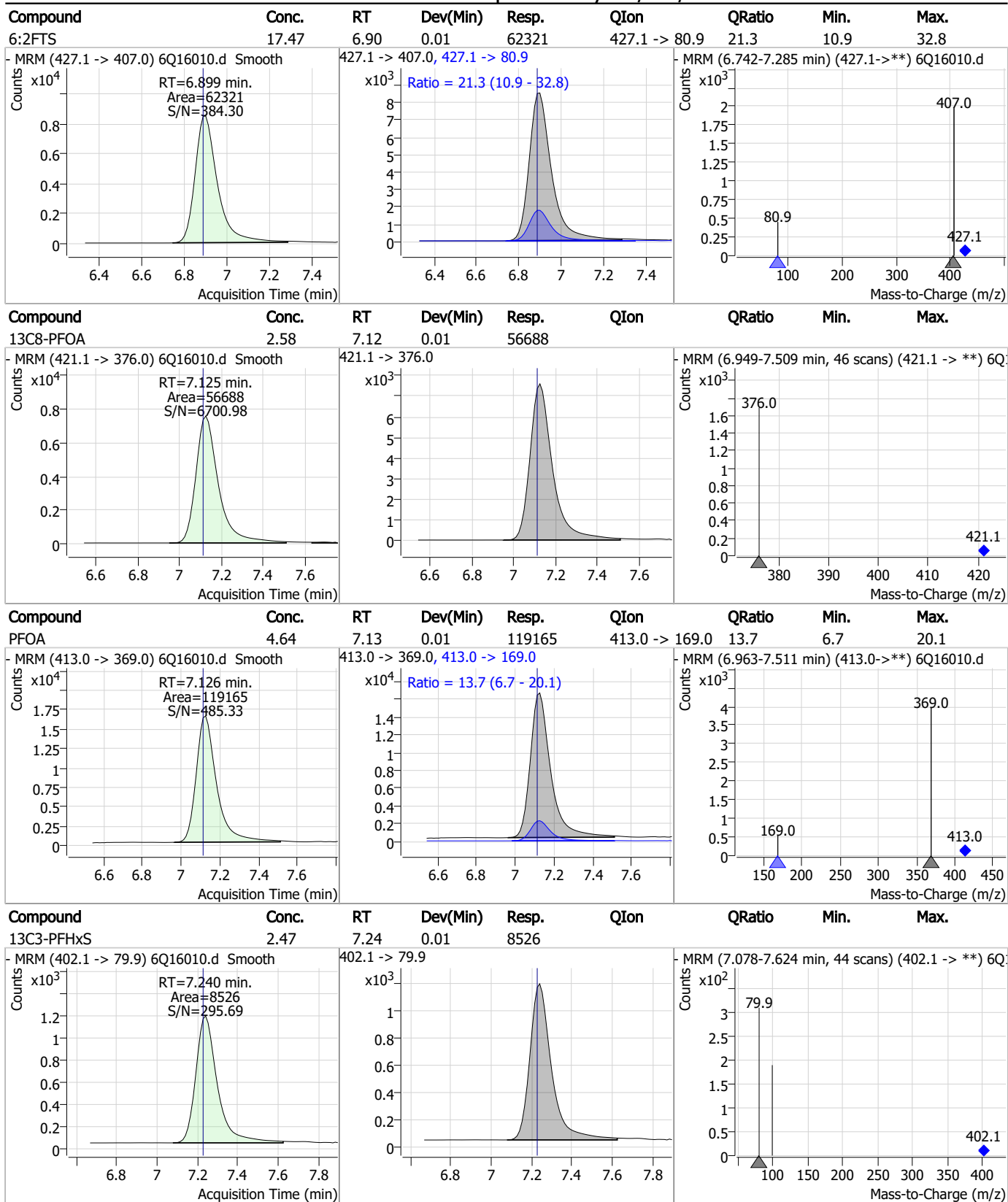
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

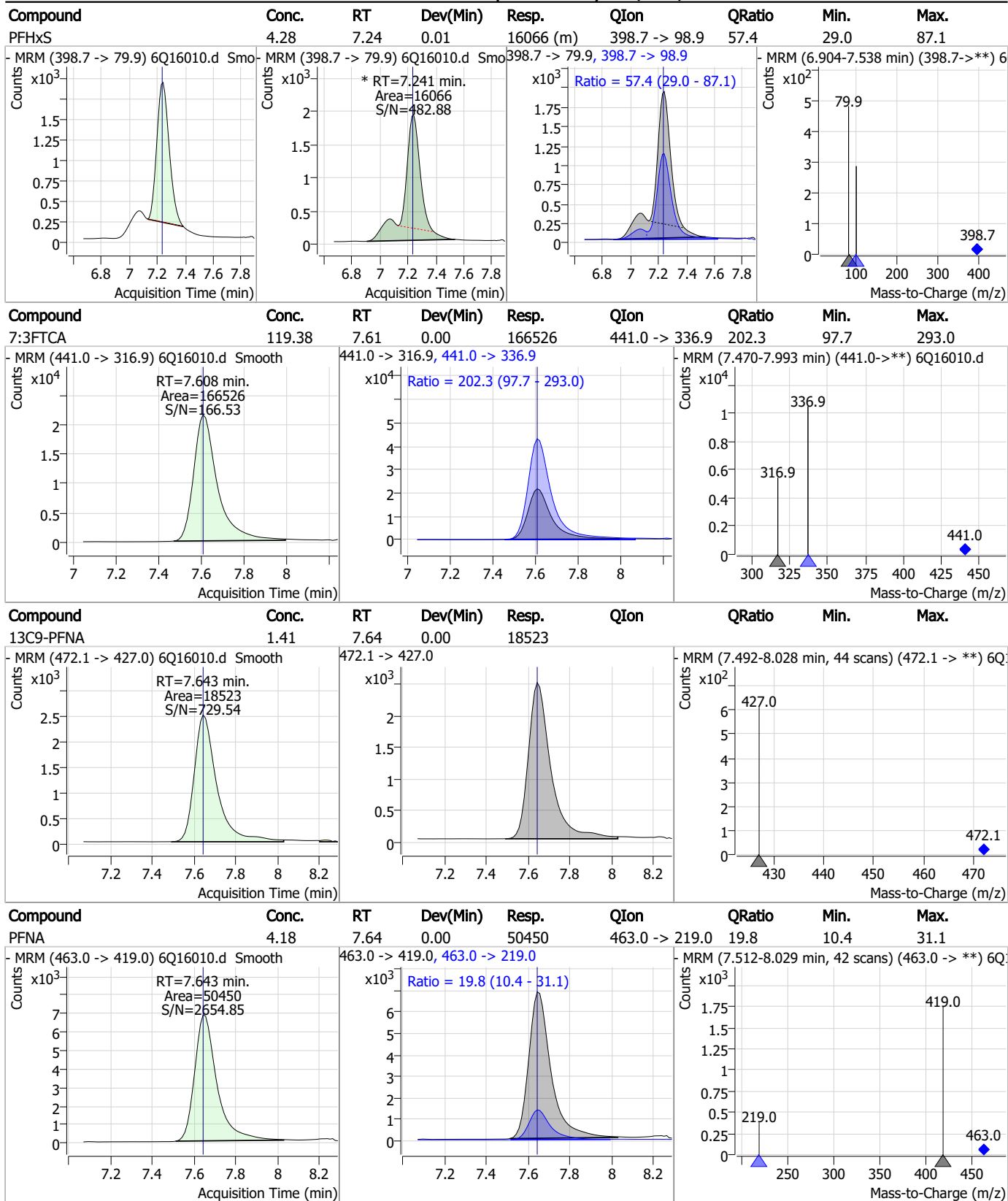
Perfluorinated Compounds by LC/MS/MS



7.7.6

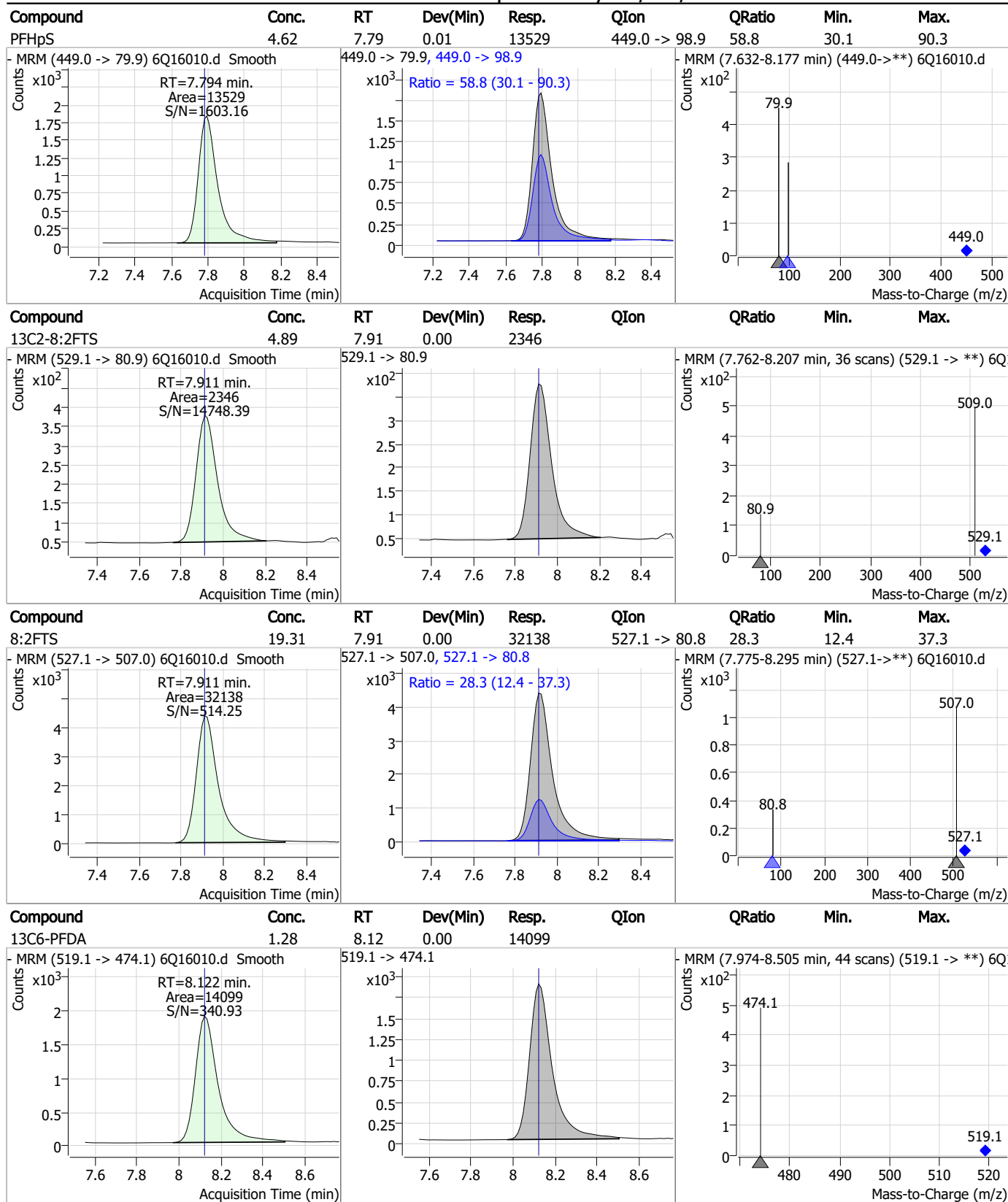
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Perfluorinated Compounds by LC/MS/MS



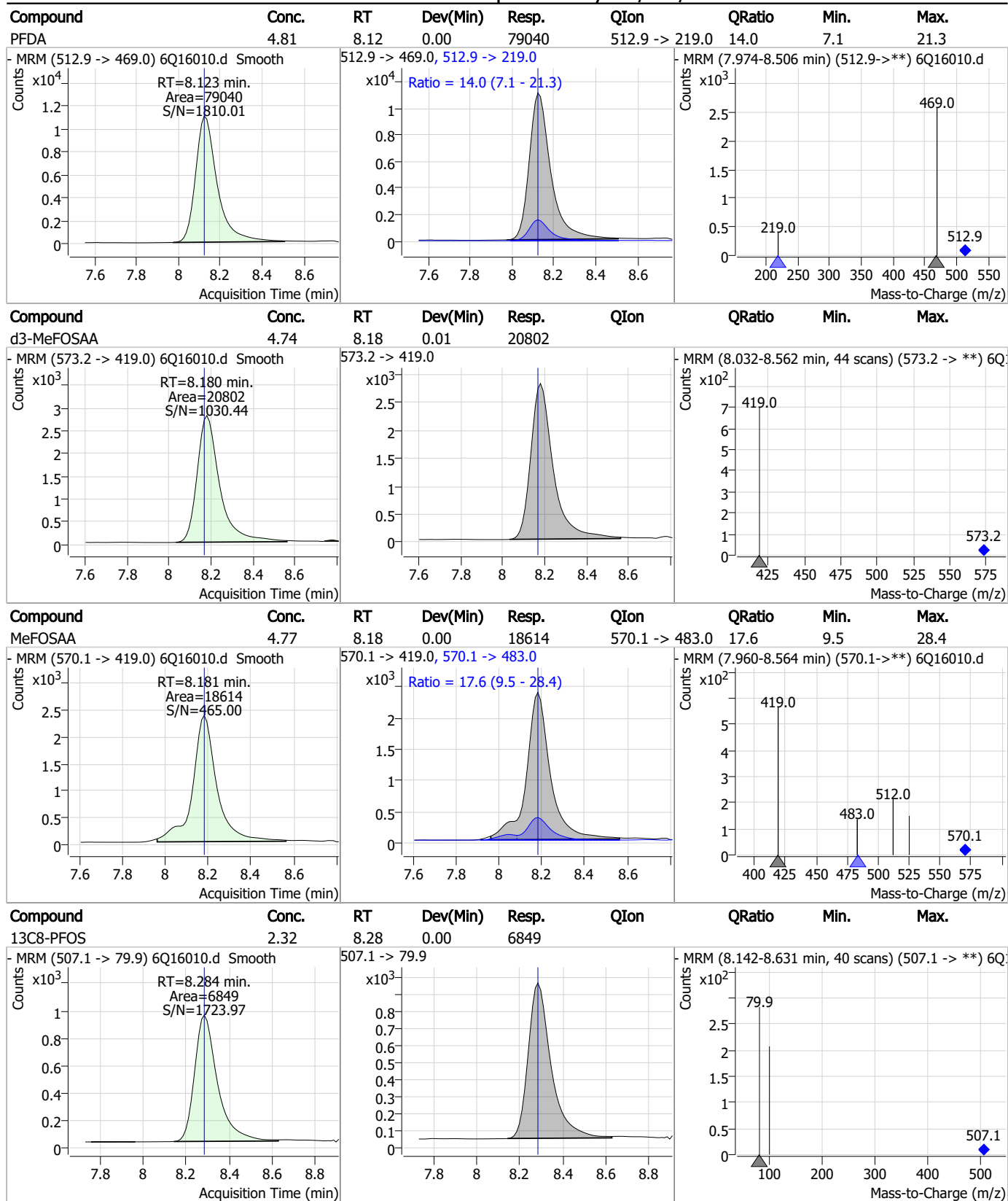
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS

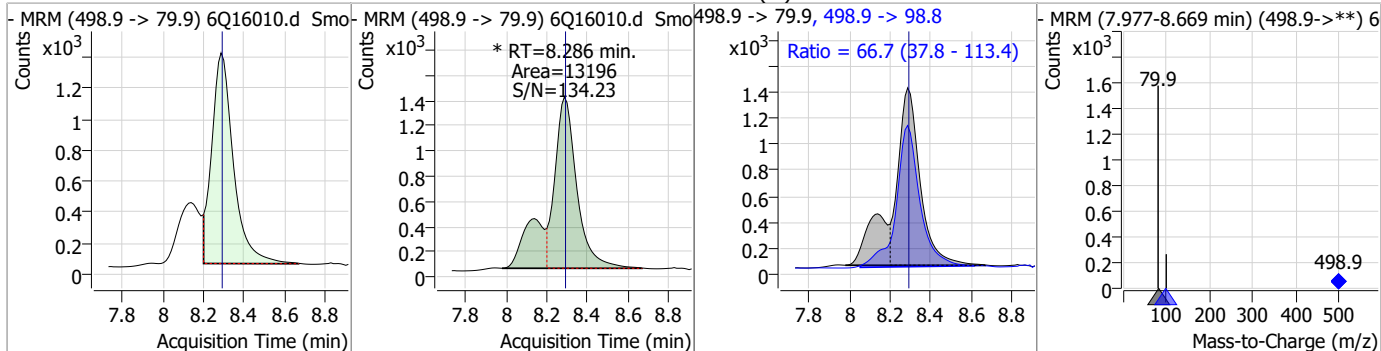


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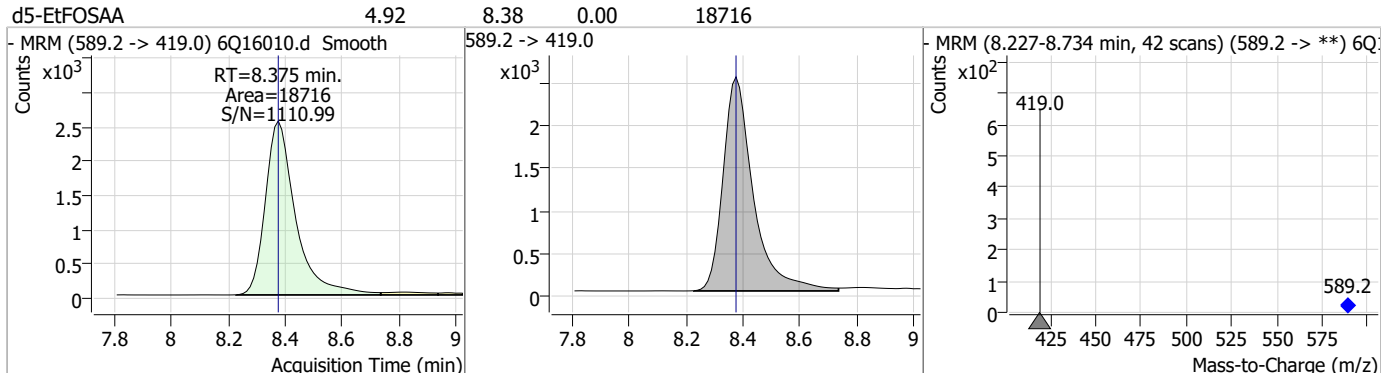
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Perfluorinated Compounds by LC/MS/MS

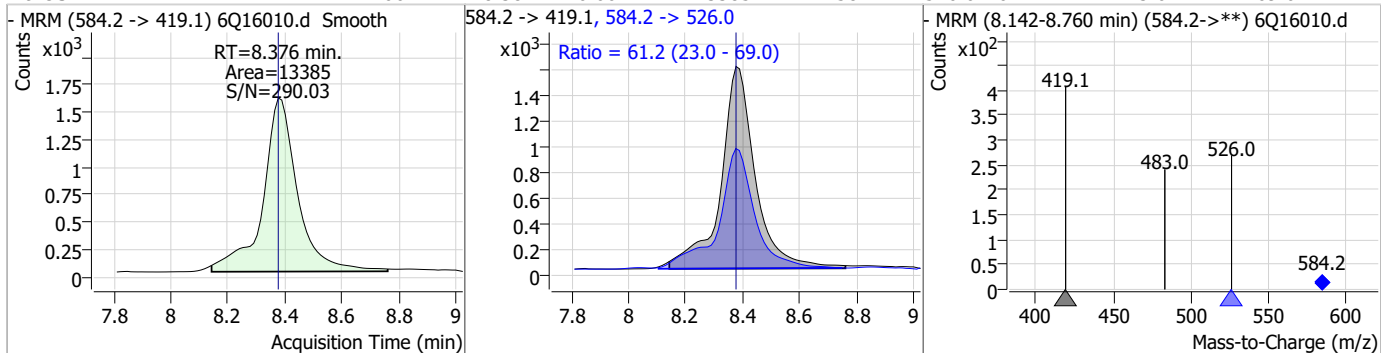
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.38	8.29	0.00	13196 (m)	498.9 -> 98.8	66.7	37.8	113.4



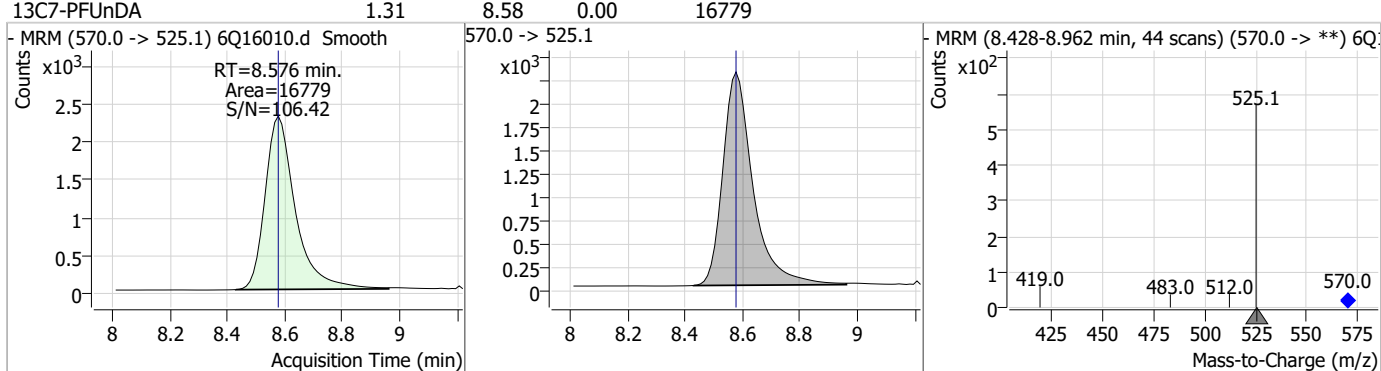
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.92	8.38	0.00	18716				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.66	8.38	0.00	13385	584.2 -> 526.0	61.2	23.0	69.0

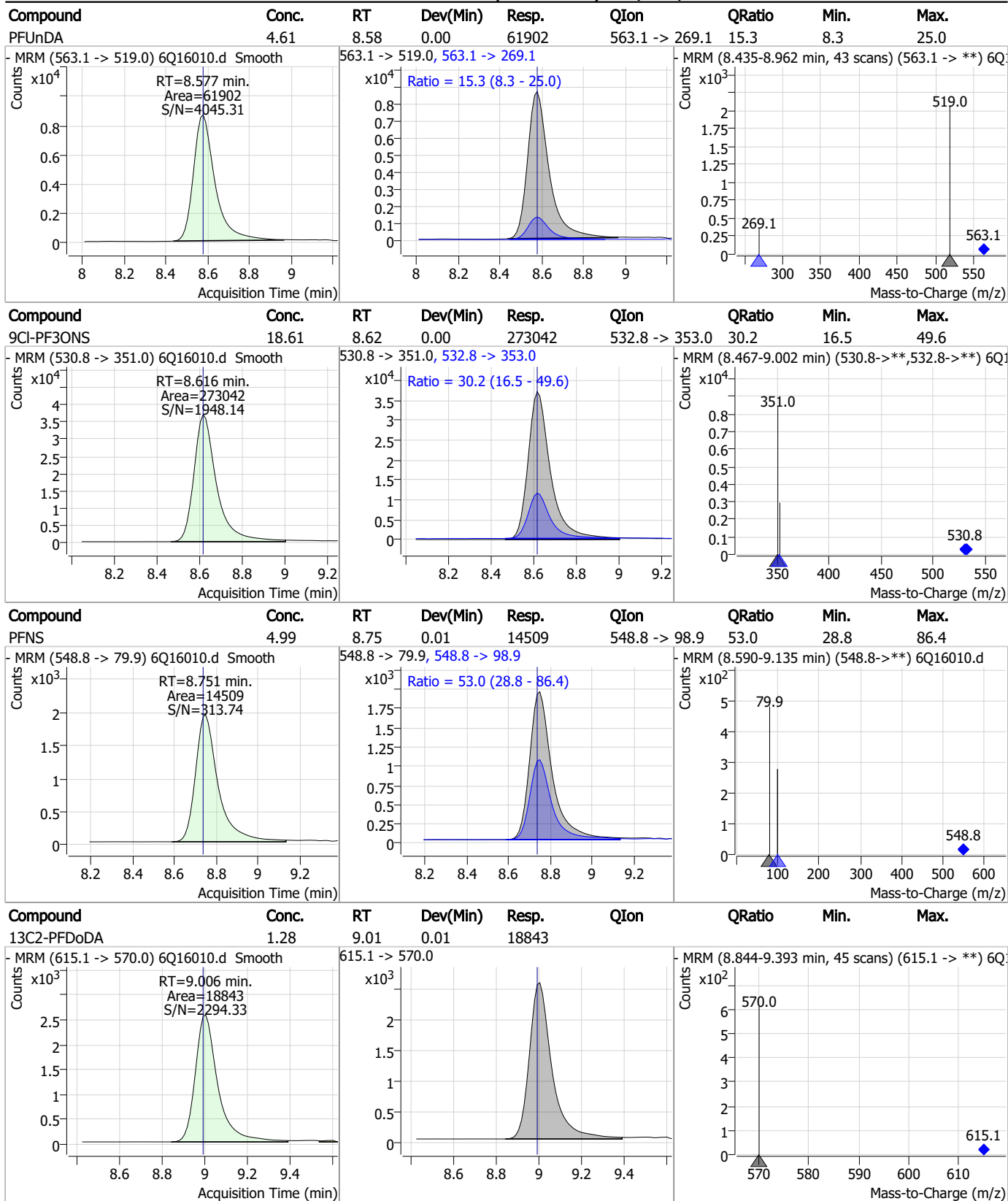


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.58	0.00	16779				



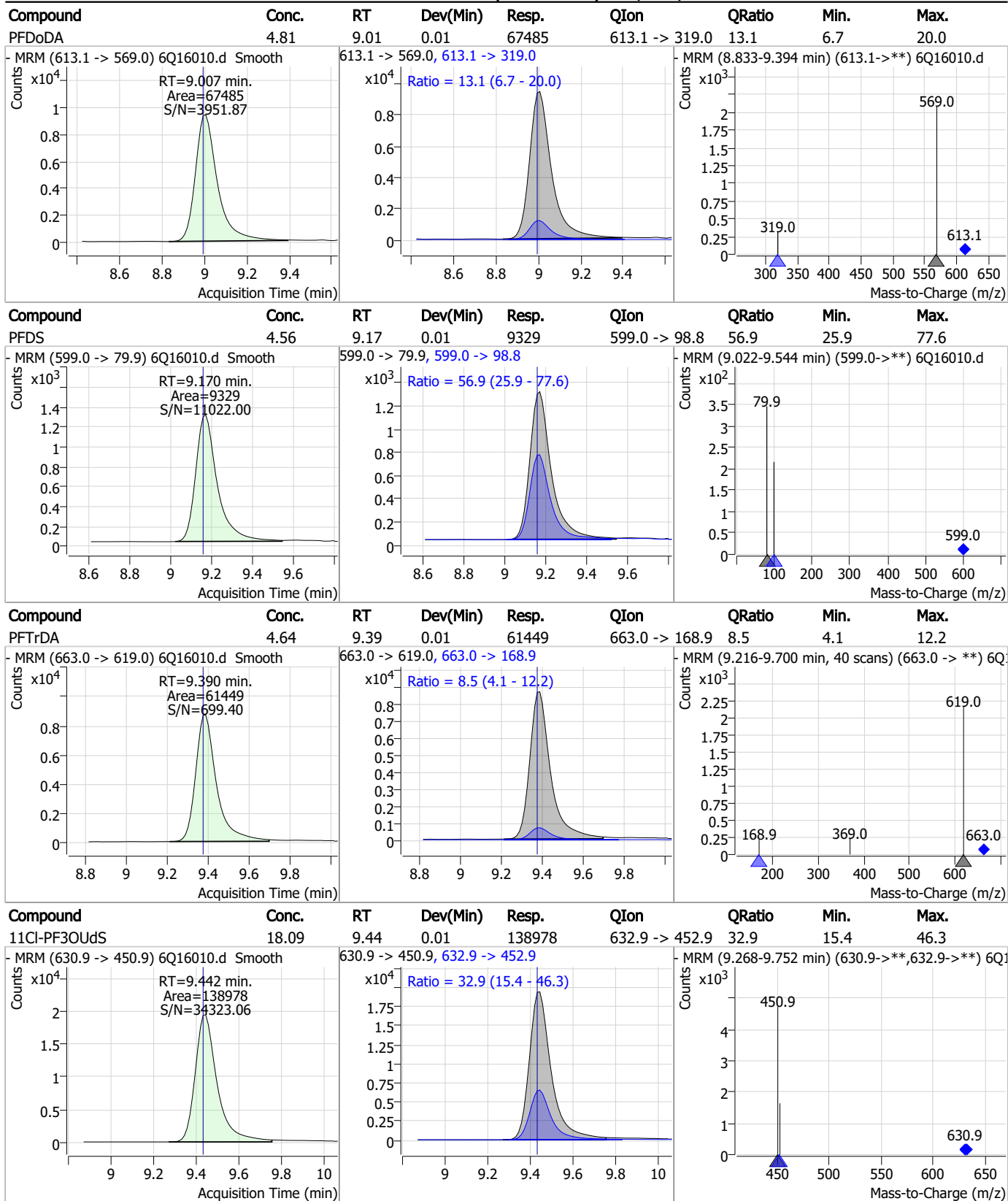
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Perfluorinated Compounds by LC/MS/MS



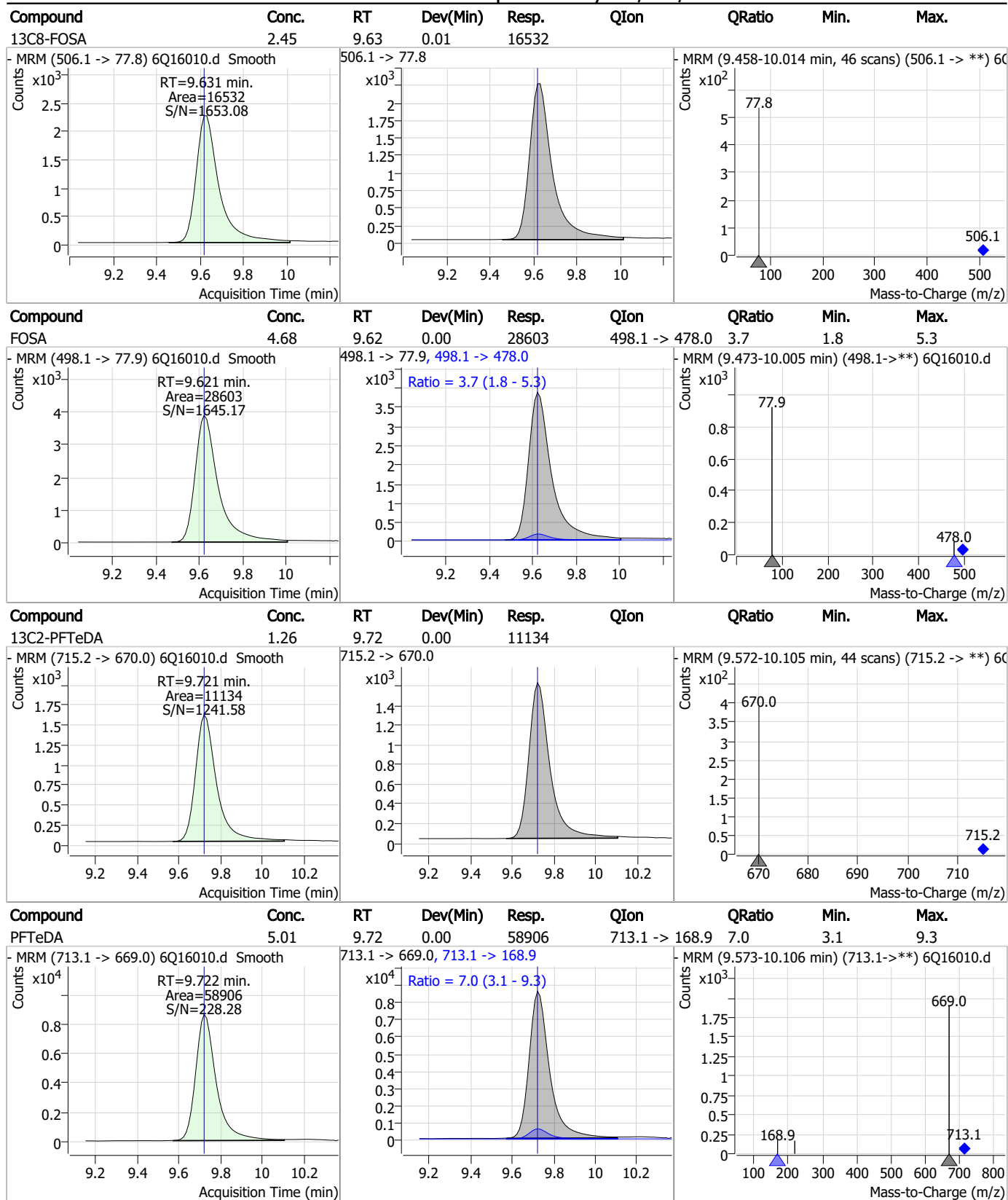
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Perfluorinated Compounds by LC/MS/MS



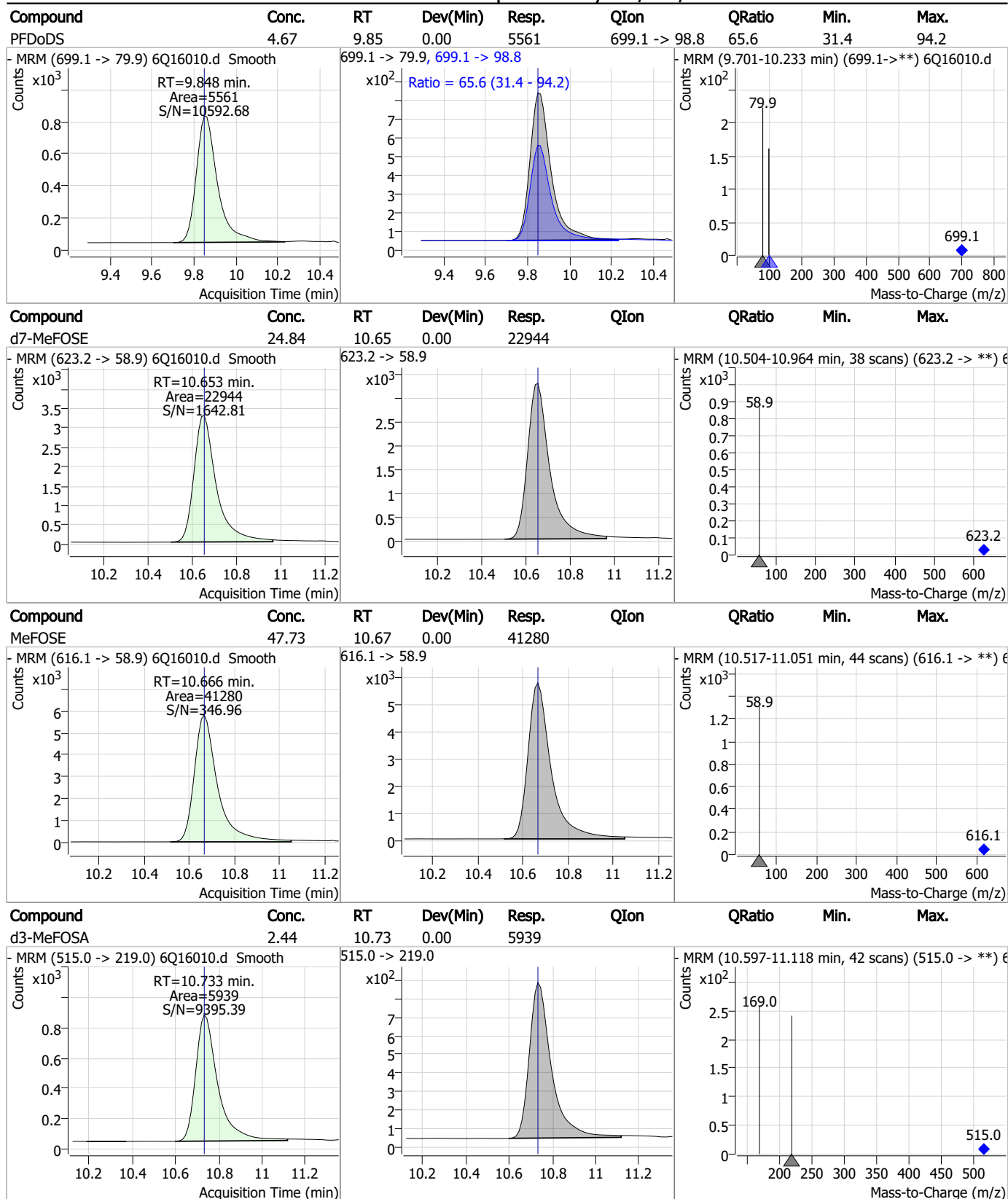
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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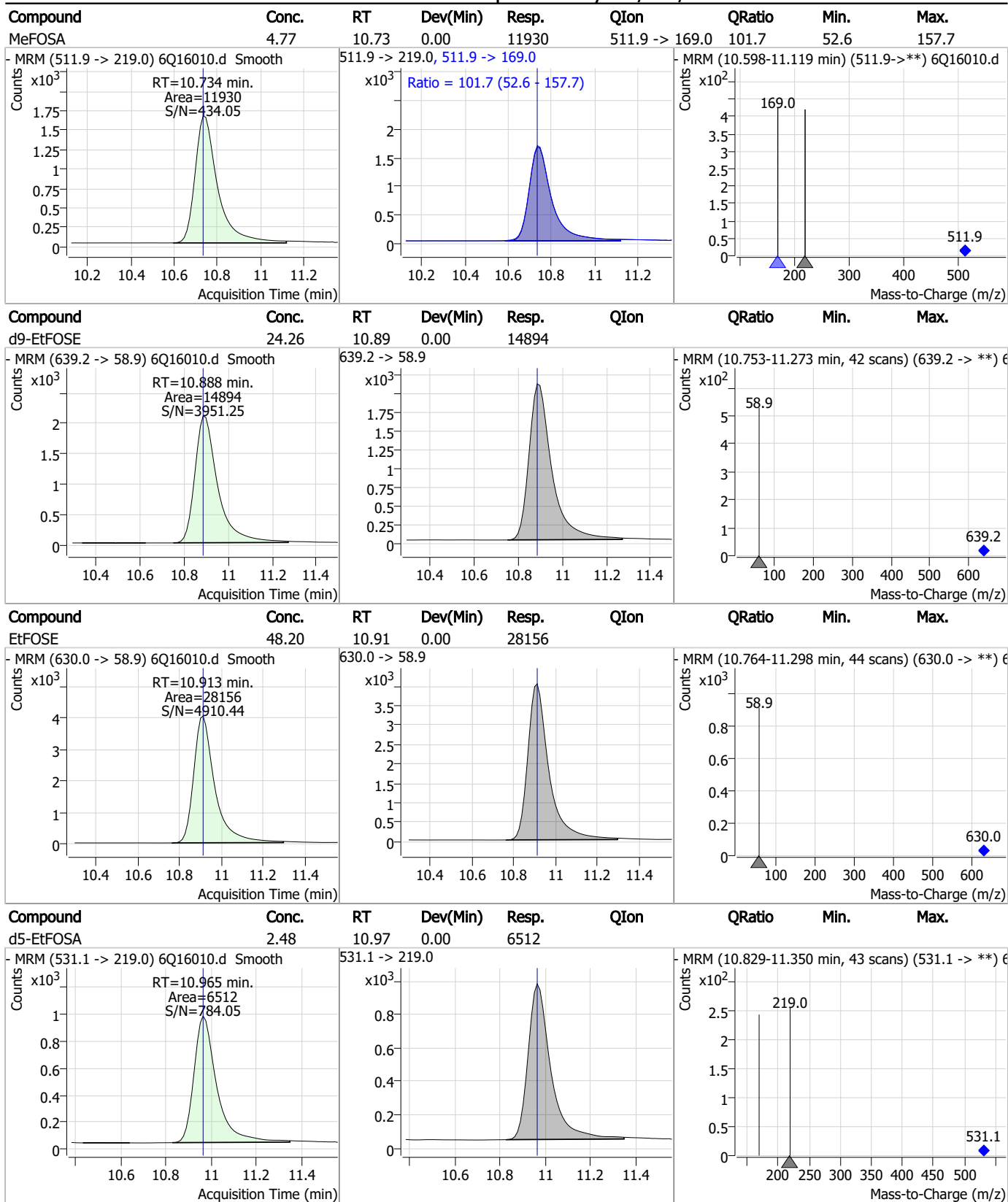
Perfluorinated Compounds by LC/MS/MS



7.7.6

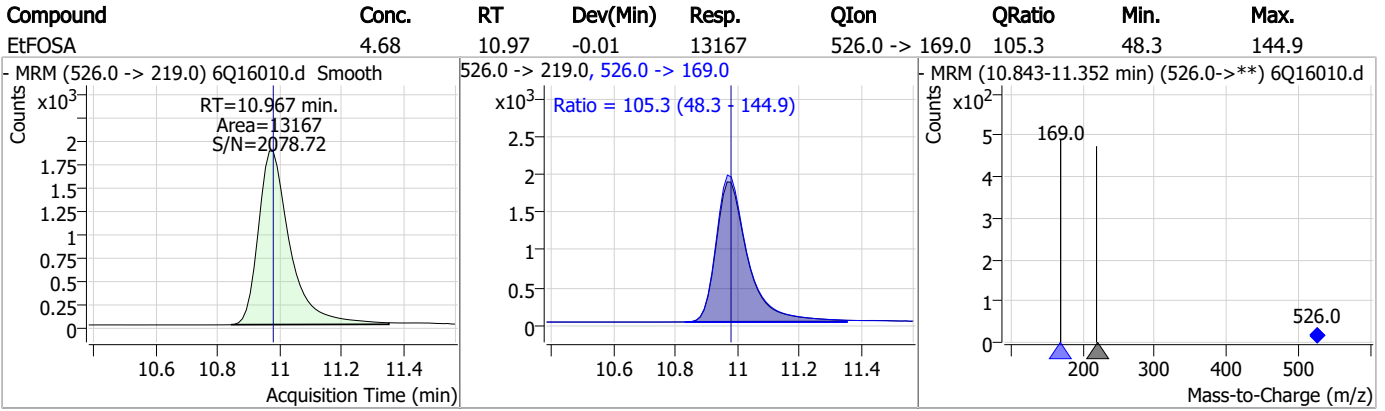
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16010.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 15:11 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak

7.7.6.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16011.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 3:25:38 PM
 Sample Name : ic239-6
 Vial : P1-A7
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	106111	10.00 µg/L	0.028
M5-PFPeA	4.322	268.3 -> 223.0	47291	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	40970	2.50 µg/L	0.000
M4-PFHpA	6.481	367.1 -> 322.0	40581	2.50 µg/L	0.012
M8-PFOA	7.125	421.1 -> 376.0	67035	2.50 µg/L	0.013
M9-PFNA	7.655	472.1 -> 427.0	20346	1.25 µg/L	0.012
M6-PFDA	8.122	519.1 -> 474.1	17364	1.25 µg/L	0.000
M7-PFUnDA	8.576	570.0 -> 525.1	19084	1.25 µg/L	0.000
M2-PFDoDA	9.006	615.1 -> 570.0	22484	1.25 µg/L	0.012
M2-PFTeDA	9.721	715.2 -> 670.0	13770	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	19396	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	16360	2.50 µg/L	0.000
M3-PFHxS	7.240	402.1 -> 79.9	10265	2.50 µg/L	0.012
M8-PFOS	8.284	507.1 -> 79.9	8488	2.50 µg/L	0.000
M2-4:2FTS	5.204	329.1 -> 80.9	2257	5.00 µg/L	0.012
M2-6:2FTS	6.898	429.1 -> 80.9	2717	5.00 µg/L	0.012
M2-8:2FTS	7.911	529.1 -> 80.9	2964	5.00 µg/L	0.000
M3-MeFOSAA	8.180	573.2 -> 419.0	25203	5.00 µg/L	0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	17762	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	23243	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25493	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	17573	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	7533	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	7376	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	10743	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	44758	5.00 µg/L	0.015
18O2-PFHxS	7.239	403.0 -> 83.9	7131	2.50 µg/L	0.012
13C4-PFOA	7.125	417.1 -> 372.0	81940	2.50 µg/L	0.013
13C2-PFDA	8.123	515.1 -> 470.1	22657	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	21887	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	39603	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	2257	4.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C2-6:2FTS	6.898	429.1 -> 80.9	2717	4.62 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.3%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2964	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-PFDoDA	9.006	615.1 -> 570.0	22484	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-PFTeDA	9.721	715.2 -> 670.0	13770	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFBS	5.459	302.1 -> 79.9	16360	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.240	402.1 -> 79.9	10265	2.51 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFBA	2.926	216.8 -> 171.9	106111	10.14 µg/L	0.028
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFHpA	6.481	367.1 -> 322.0	40581	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	5.528	318.0 -> 273.0	40970	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFPeA	4.322	268.3 -> 223.0	47291	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C6-PFDA	8.122	519.1 -> 474.1	17364	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C7-PFUnDA	8.576	570.0 -> 525.1	19084	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C8-FOSA	9.631	506.1 -> 77.8	19396	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C8-PFOA	7.125	421.1 -> 376.0	67035	2.45 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-PFOS	8.284	507.1 -> 79.9	8488	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C9-PFNA	7.655	472.1 -> 427.0	20346	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSAA	8.180	573.2 -> 419.0	25203	4.85 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	17762	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d3-MeFOSA	10.733	515.0 -> 219.0	7376	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
d5-EtFOSAA	8.375	589.2 -> 419.0	23243	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d7-MeFOSE	10.653	623.2 -> 58.9	25493	23.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d9-EtFOSE	10.888	639.2 -> 58.9	17573	24.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d5-EtFOSA	10.965	531.1 -> 219.0	7533	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	216393	48.94 µg/L	98
		327.1 -> 80.9	52871		
6:2FTS	6.899	427.1 -> 407.0	195751	53.80 µg/L	93
		427.1 -> 80.9	36554		
8:2FTS	7.911	527.1 -> 507.0	95026	45.18 µg/L	96
		527.1 -> 80.8	25492		
EtFOSAA	8.376	584.2 -> 419.1	45268	12.70 µg/L	m 89
		584.2 -> 526.0	24068		
FOSA	9.621	498.1 -> 77.9	87897	12.27 µg/L	99
		498.1 -> 478.0	3377		
MeFOSAA	8.181	570.1 -> 419.0	59245	12.54 µg/L	97
		570.1 -> 483.0	10276		
PFBA	2.919	212.8 -> 168.9	139405	51.98 µg/L	100
PFBS	5.460	298.7 -> 79.9	67886	10.58 µg/L	98
		298.7 -> 98.8	32120		
PFDA	8.123	512.9 -> 469.0	260045	12.86 µg/L	97
		512.9 -> 219.0	33437		
PFDoDA	9.007	613.1 -> 569.0	221645	13.23 µg/L	97
		613.1 -> 319.0	27055		
PFDS	9.170	599.0 -> 79.9	31696	12.49 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	15756			
PFHpA	6.481	363.1 -> 319.0	279481	12.25	µg/L	97
		363.1 -> 169.0	42432			
PFHpS	7.794	449.0 -> 79.9	43999	12.13	µg/L	95
		449.0 -> 98.9	24689			
PFHxA	5.531	313.0 -> 269.0	198723	13.14	µg/L	100
		313.0 -> 118.9	8016			
PFHxS	7.241	398.7 -> 79.9	50729	11.24	µg/L	m 99
		398.7 -> 98.9	29192			
PFNA	7.643	463.0 -> 419.0	172579	13.02	µg/L	95
		463.0 -> 219.0	32061			
PFNS	8.751	548.8 -> 79.9	45133	12.52	µg/L	95
		548.8 -> 98.9	24229			
PFOA	7.126	413.0 -> 369.0	380854	12.55	µg/L	99
		413.0 -> 169.0	52236			
PFOS	8.286	498.9 -> 79.9	46283	12.40	µg/L	m 82
		498.9 -> 98.8	27735			
PFPeA	4.324	263.0 -> 219.0	249707	25.03	µg/L	100
PFPeS	6.533	349.1 -> 79.9	63969	11.76	µg/L	99
		349.1 -> 98.9	33557			
PFTeDA	9.722	713.1 -> 669.0	183514	12.61	µg/L	100
		713.1 -> 168.9	11607			
PFTrDA	9.390	663.0 -> 619.0	213971	13.54	µg/L	99
		663.0 -> 168.9	16679			
PFUnDA	8.577	563.1 -> 519.0	204612	13.39	µg/L	95
		563.1 -> 269.1	29757			
11CI-PF3OUdS	9.442	630.9 -> 450.9	449237	47.05	µg/L	97
		632.9 -> 452.9	146126			
9CI-PF3ONS	8.616	530.8 -> 351.0	841100	46.13	µg/L	98
		532.8 -> 353.0	271136			
ADONA	6.731	376.9 -> 250.9	1707853	47.46	µg/L	99
		376.9 -> 84.8	387290			
HFPO-DA	5.906	284.9 -> 168.9	79308	49.39	µg/L	98
		284.9 -> 184.9	10516			
3:3FTCA	3.802	241.0 -> 177.0	35642	64.38	µg/L	98
		241.0 -> 117.0	5058			
5:3FTCA	6.198	341.0 -> 237.1	1046822	313.15	µg/L	99
		341.0 -> 217.0	919322			
7:3FTCA	7.621	441.0 -> 316.9	538637	318.30	µg/L	100
		441.0 -> 336.9	1049535			
EtFOSA	10.979	526.0 -> 219.0	42966	13.21	µg/L	100
		526.0 -> 169.0	41444			
EtFOSE	10.913	630.0 -> 58.9	88173	127.94	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	37836	12.19	µg/L	94
		511.9 -> 169.0	37322			
MeFOSE	10.666	616.1 -> 58.9	124749	129.82	µg/L	100
PFDoS	9.861	699.1 -> 79.9	17797	12.07	µg/L	100
		699.1 -> 98.8	11127			
NFDHA	5.410	295.0 -> 201.0	24443	24.93	µg/L	99
		295.0 -> 84.9	10610			
PFMBA	4.737	279.0 -> 85.1	82836	25.06	µg/L	100
PFMPA	3.476	229.0 -> 84.9	76744	25.44	µg/L	100
PFEESA	5.999	314.8 -> 134.9	472024	22.03	µg/L	99
		314.8 -> 82.9	12546			

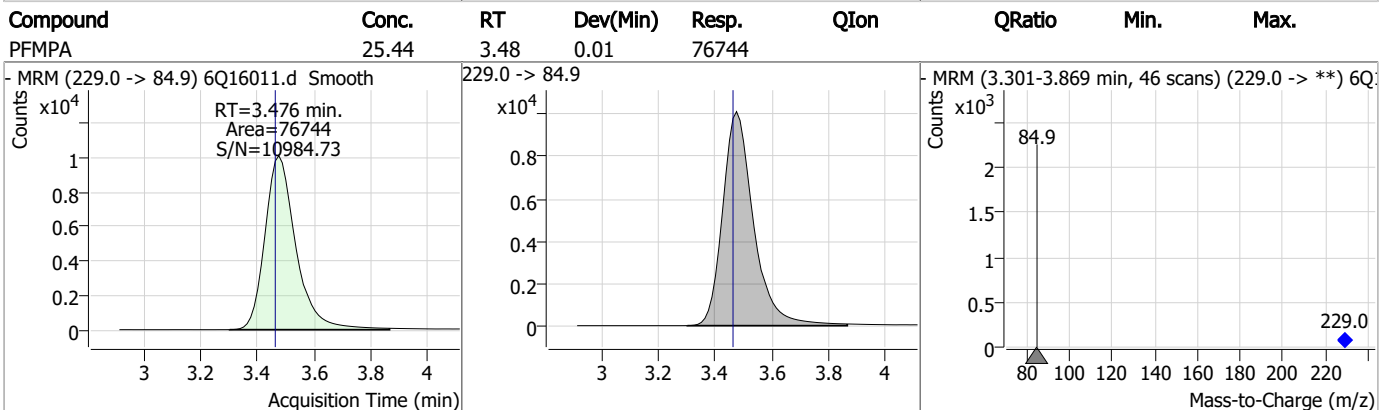
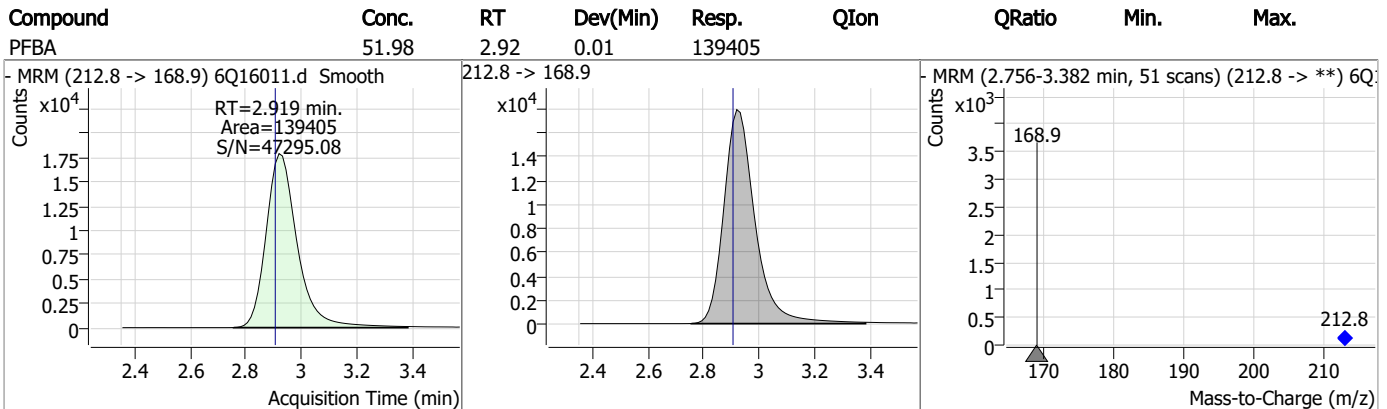
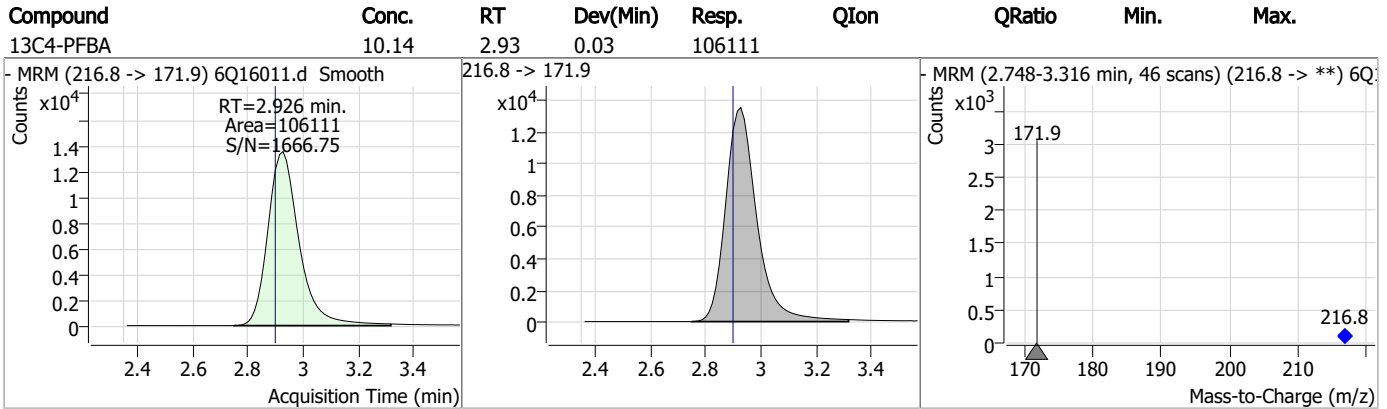
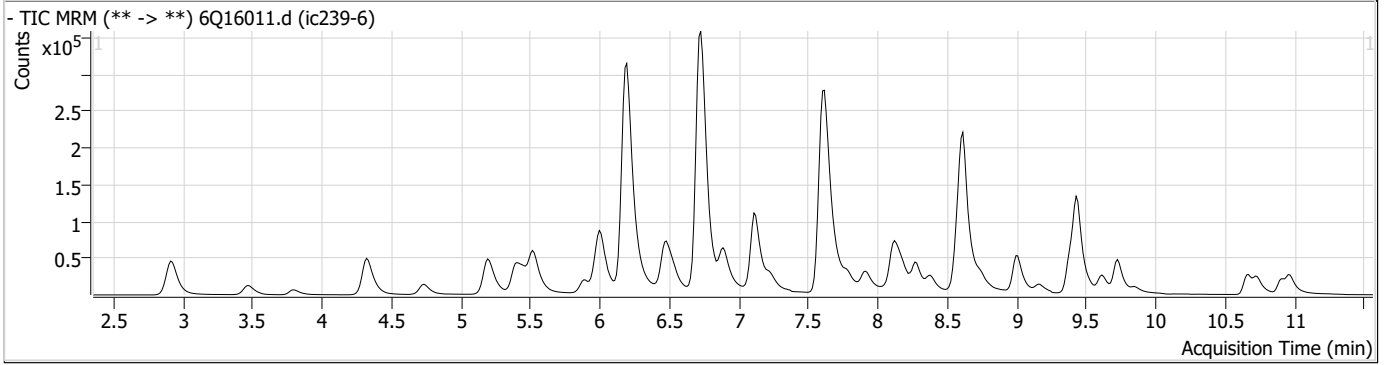
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

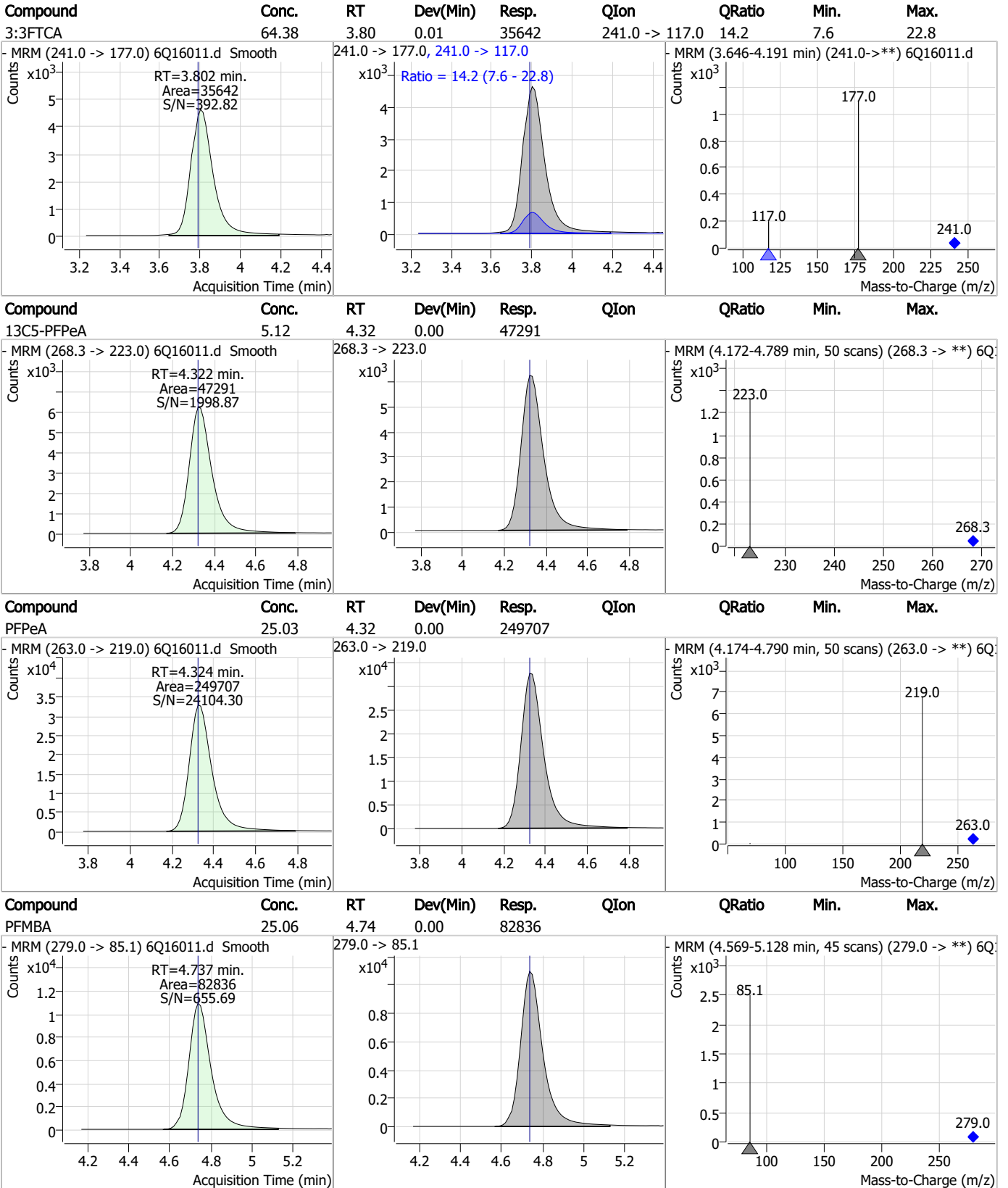
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7
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Perfluorinated Compounds by LC/MS/MS

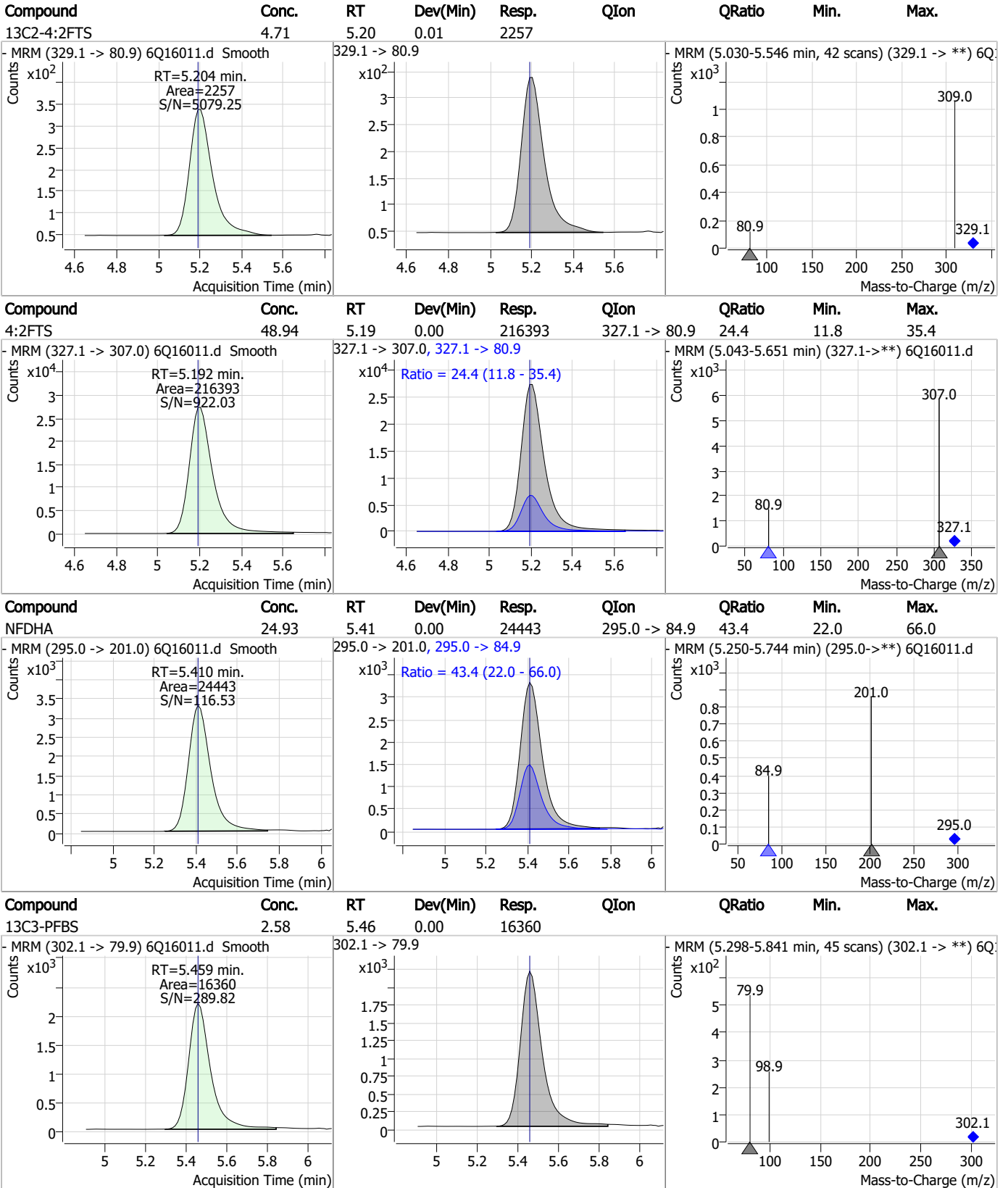


Perfluorinated Compounds by LC/MS/MS



7.7.7

Perfluorinated Compounds by LC/MS/MS

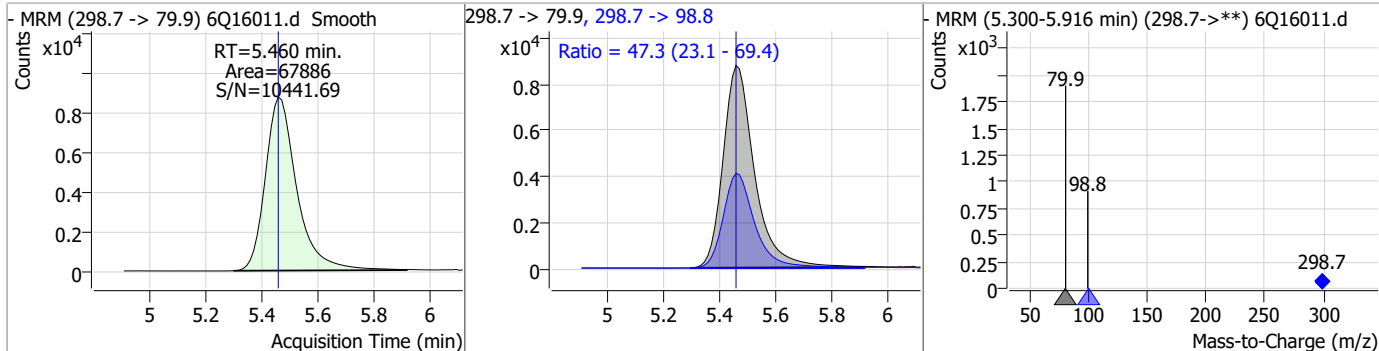


7.7.7

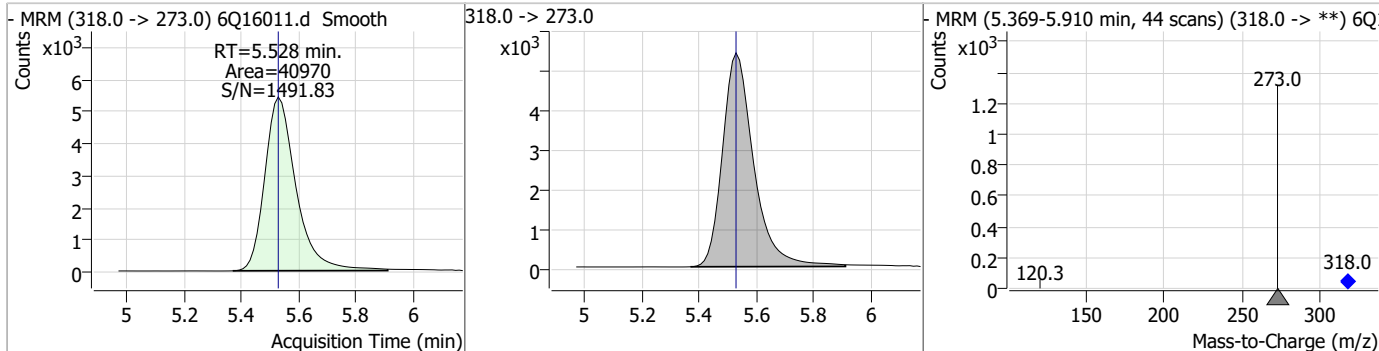
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Perfluorinated Compounds by LC/MS/MS

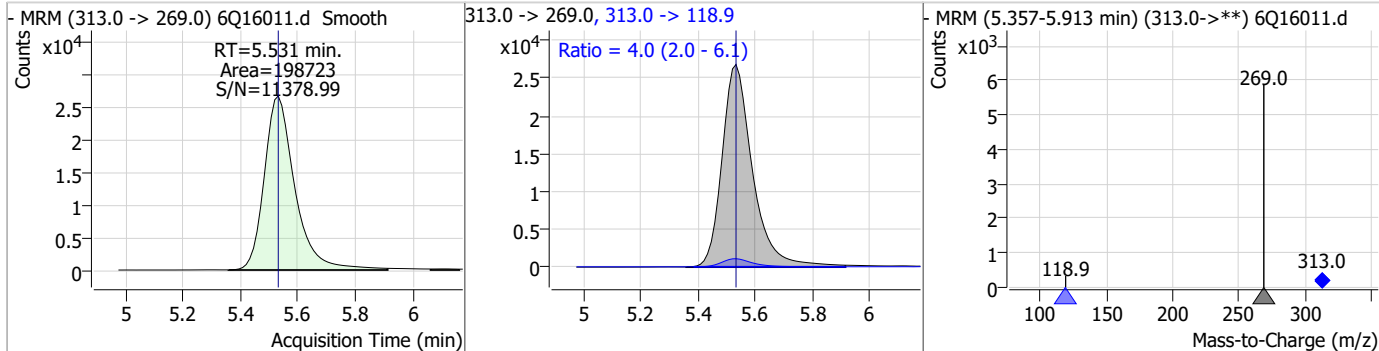
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.58	5.46	0.00	67886	298.7 -> 98.8	47.3	23.1	69.4



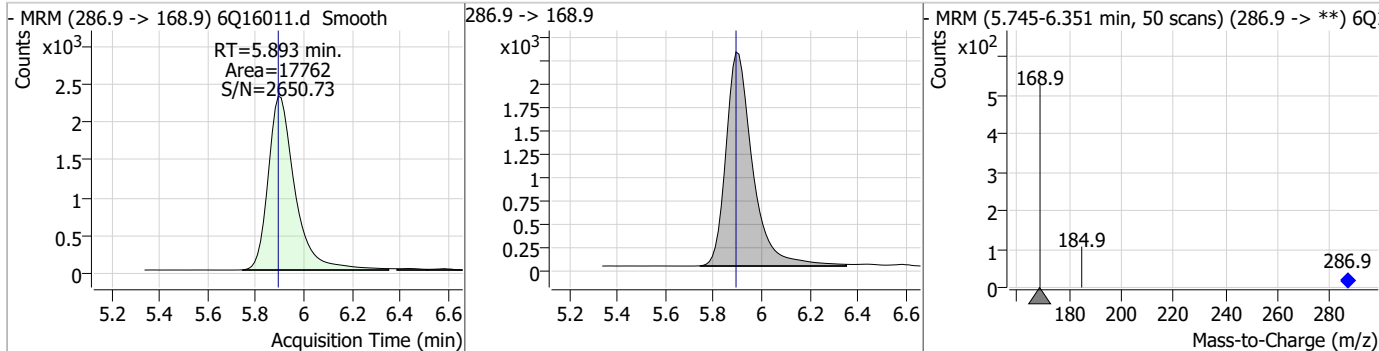
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.53	0.00	40970				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.14	5.53	0.00	198723	313.0 -> 118.9	4.0	2.0	6.1

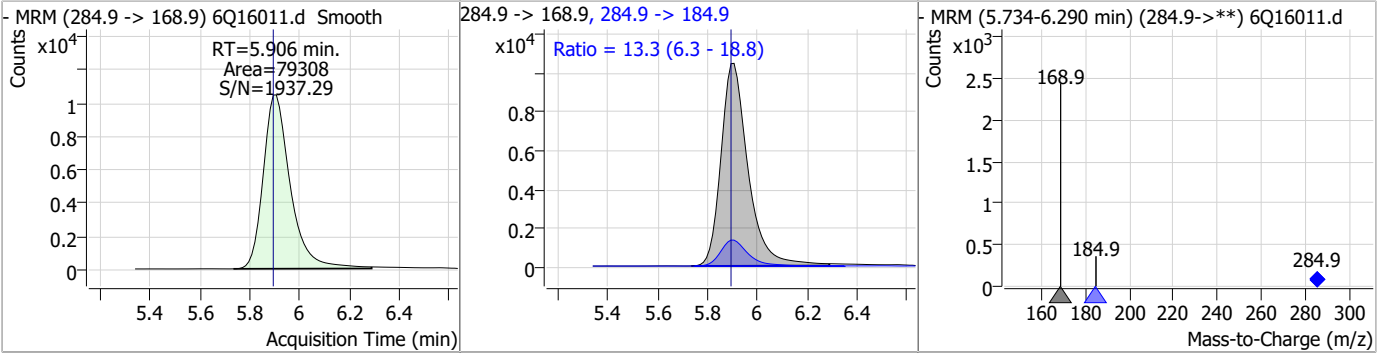


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.28	5.89	0.00	17762				

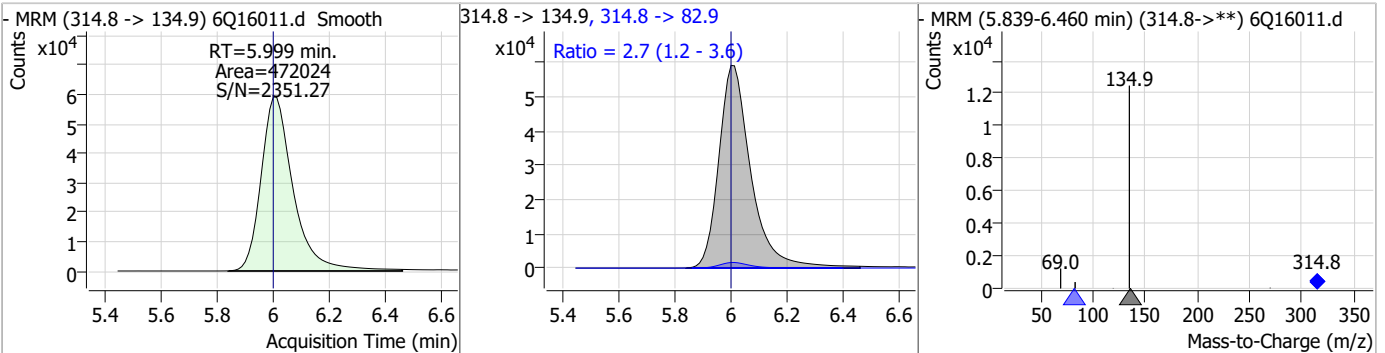


Perfluorinated Compounds by LC/MS/MS

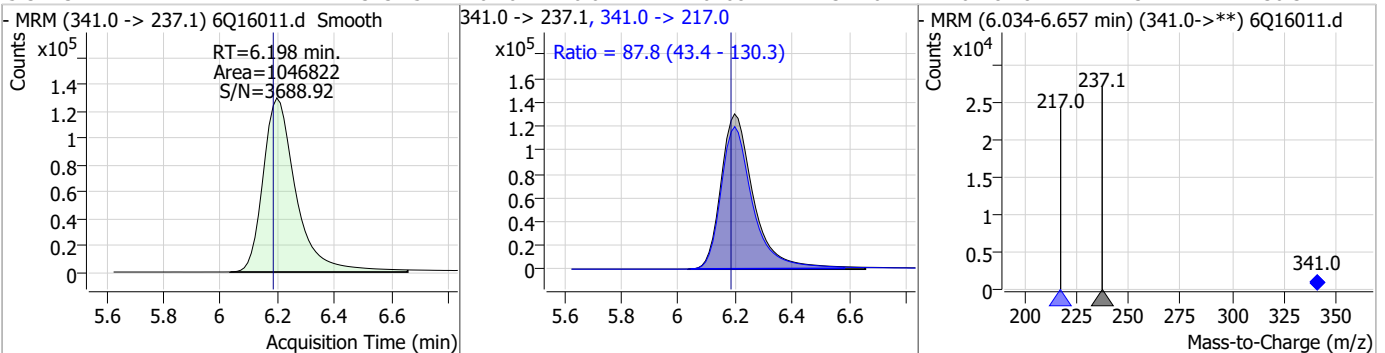
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	49.39	5.91	0.01	79308	284.9 -> 184.9	13.3	6.3	18.8



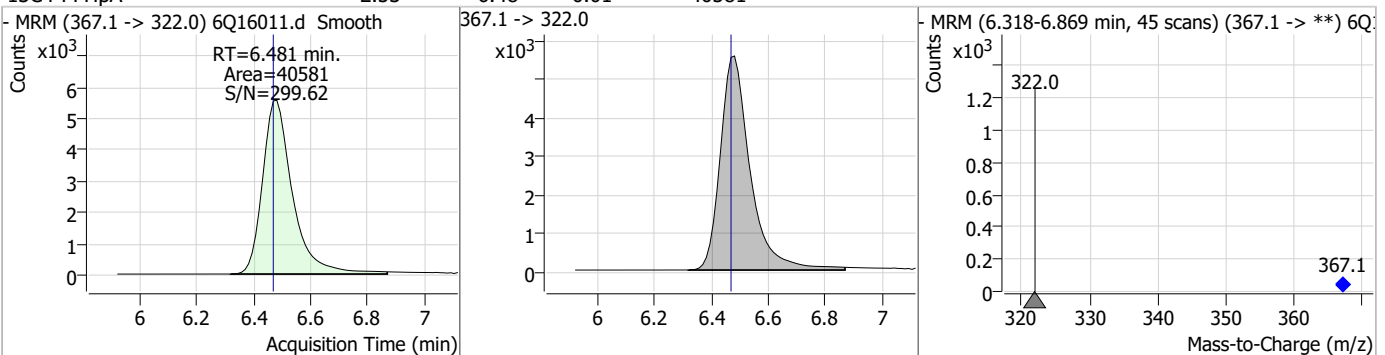
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	22.03	6.00	0.00	472024	314.8 -> 82.9	2.7	1.2	3.6



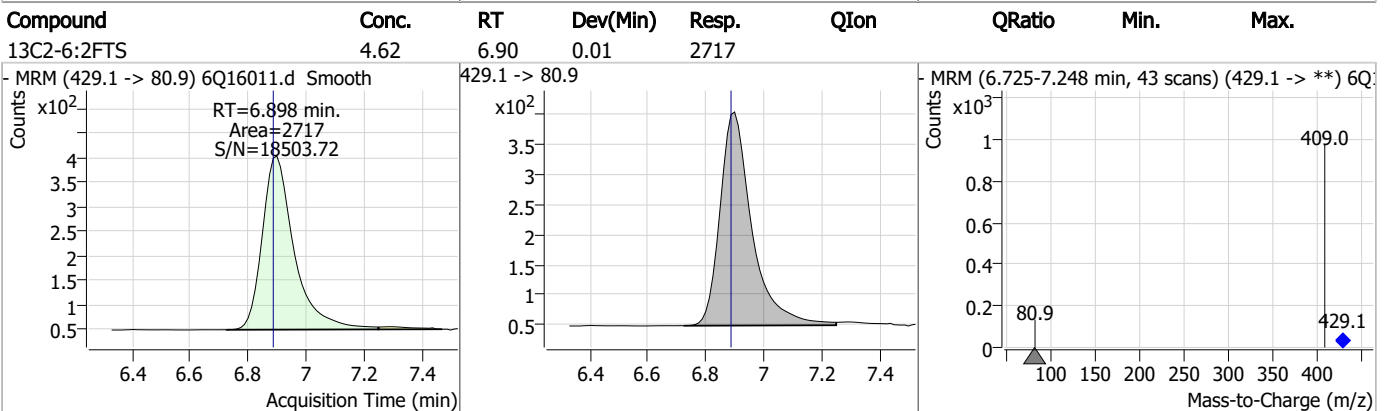
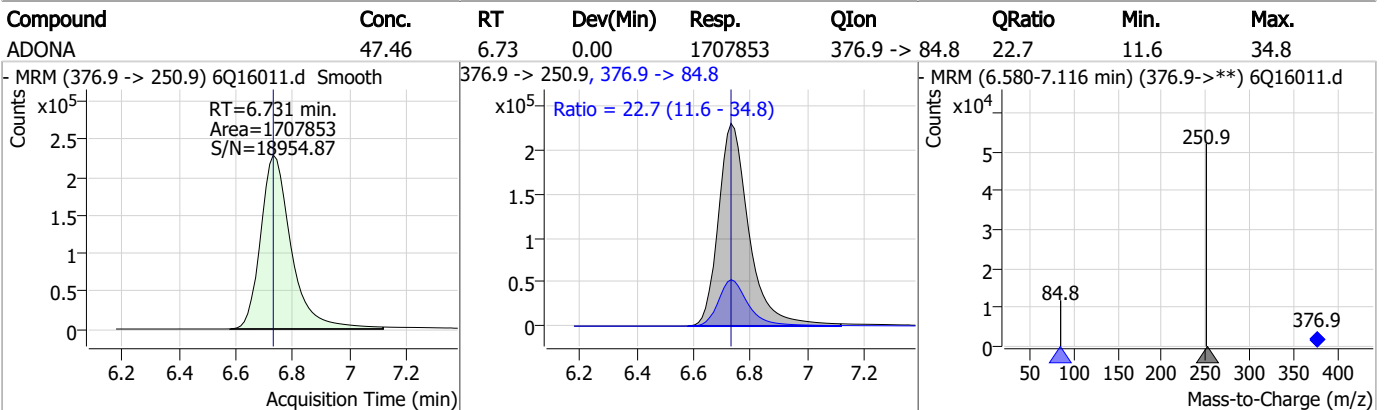
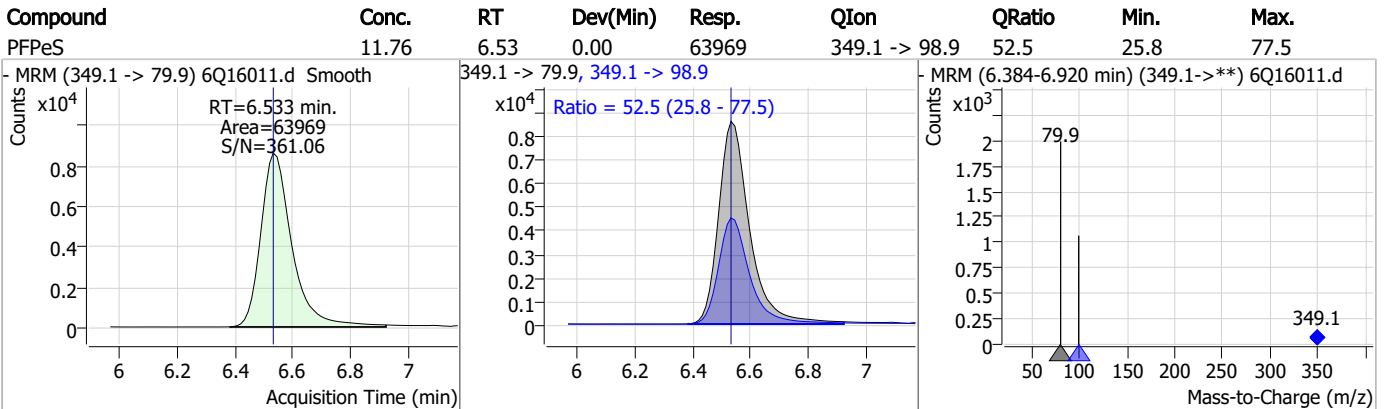
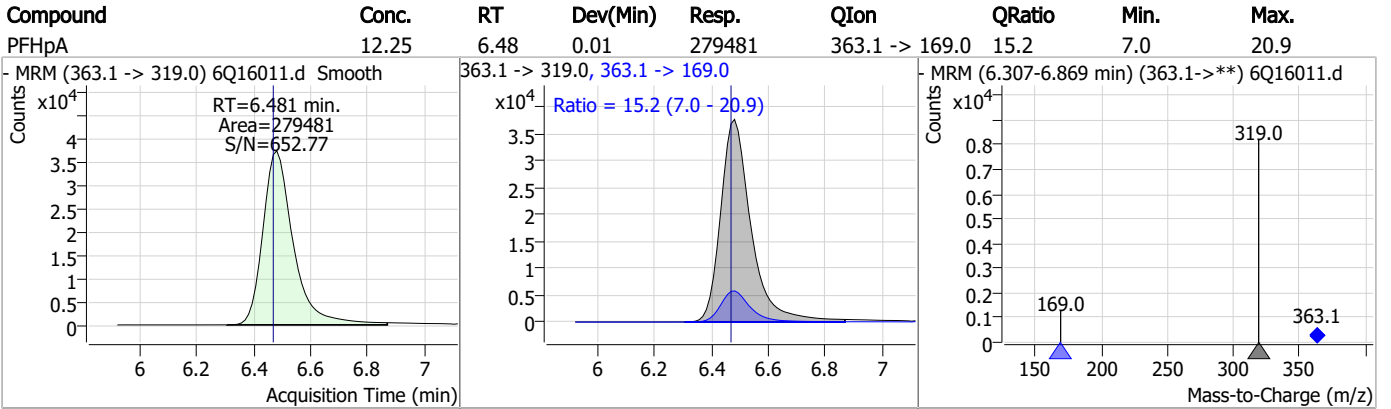
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	313.15	6.20	0.01	1046822	341.0 -> 217.0	87.8	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.48	0.01	40581	367.1 -> 322.0			



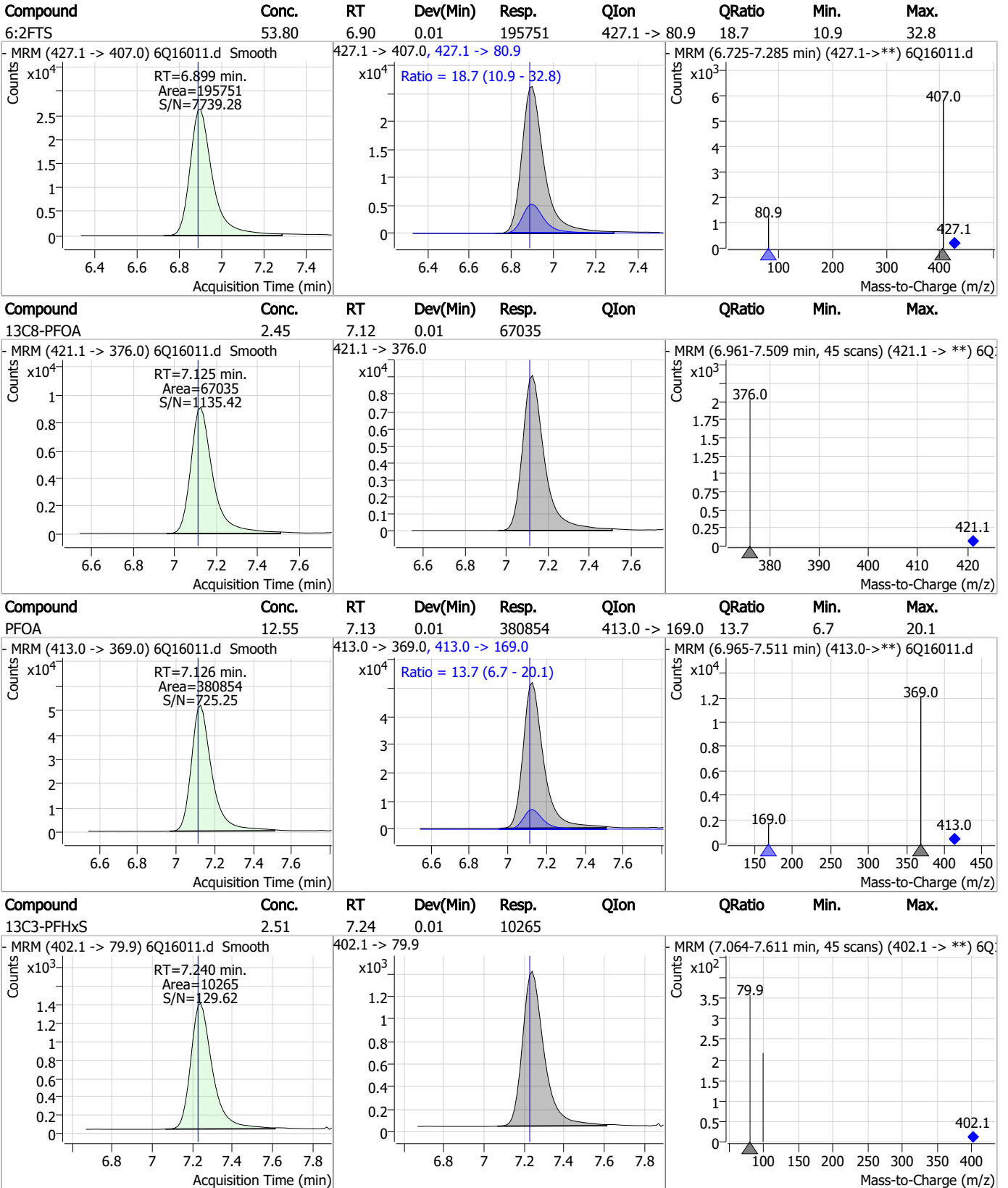
Perfluorinated Compounds by LC/MS/MS



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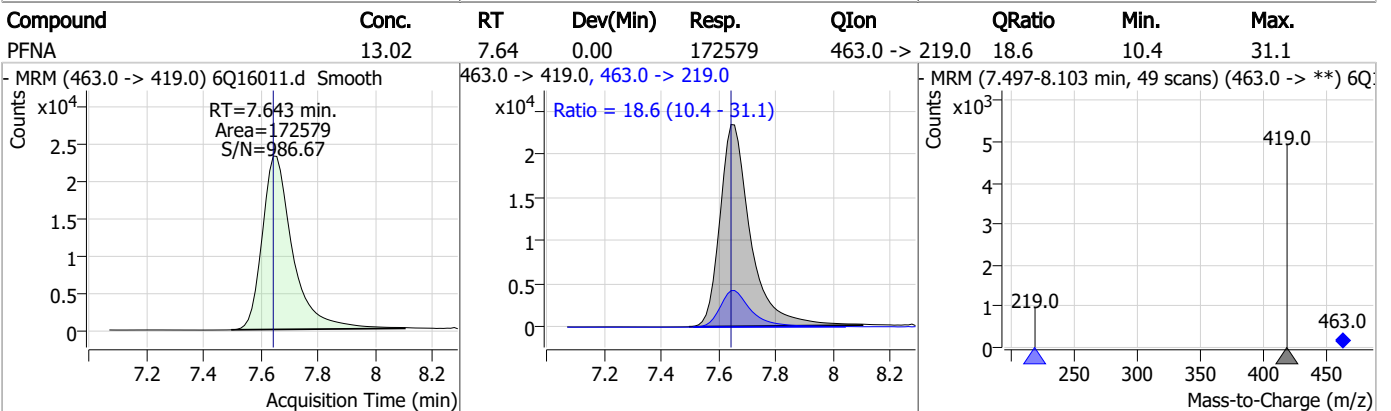
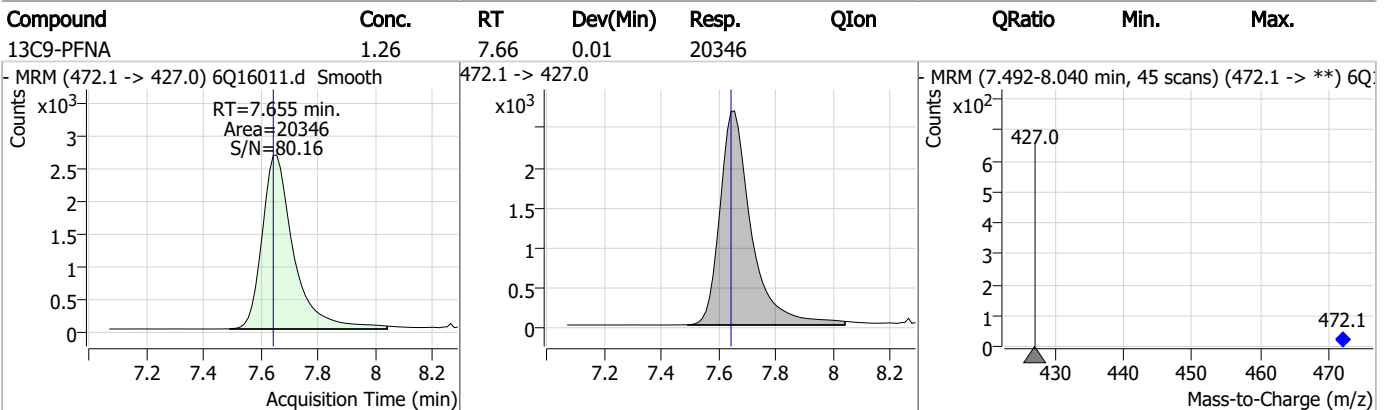
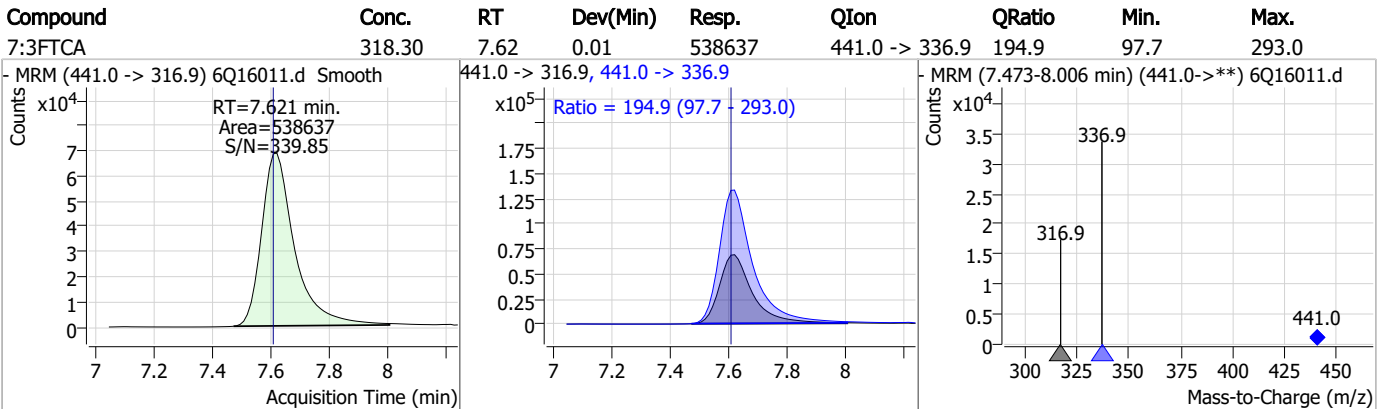
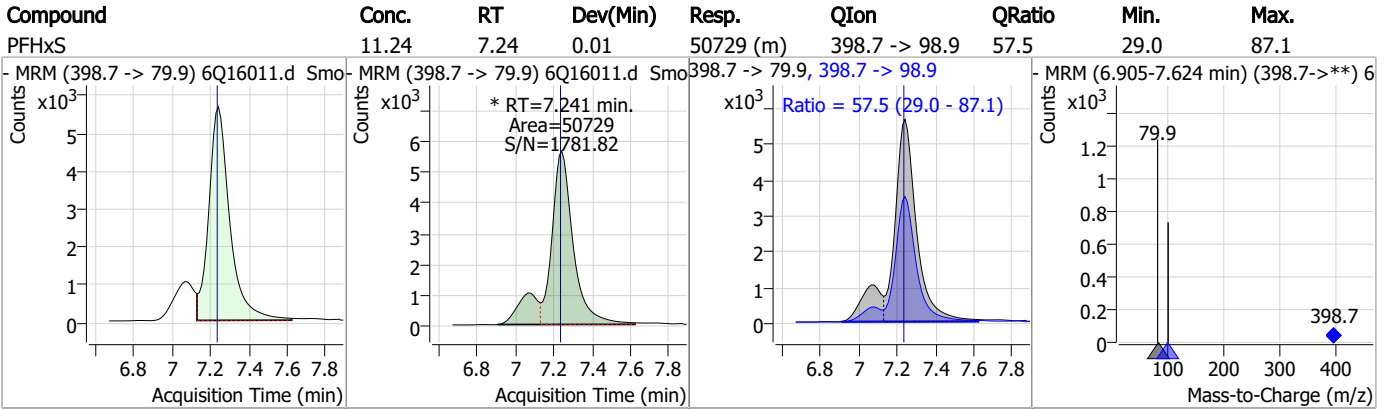
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Perfluorinated Compounds by LC/MS/MS

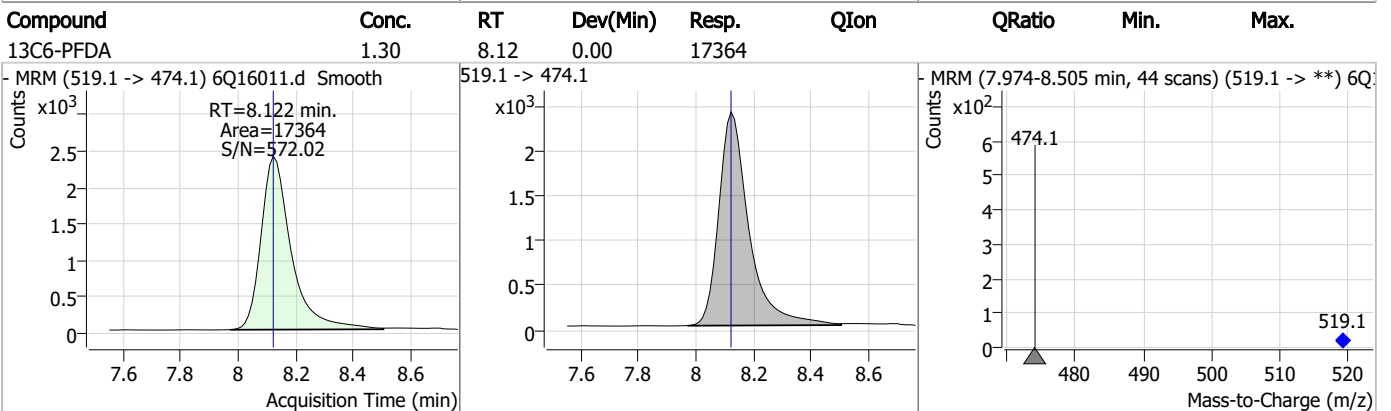
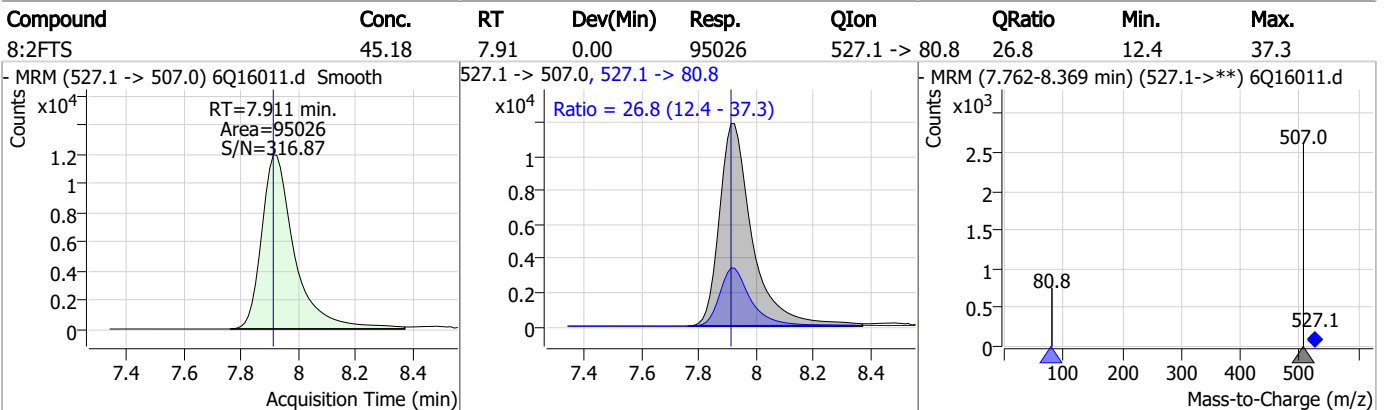
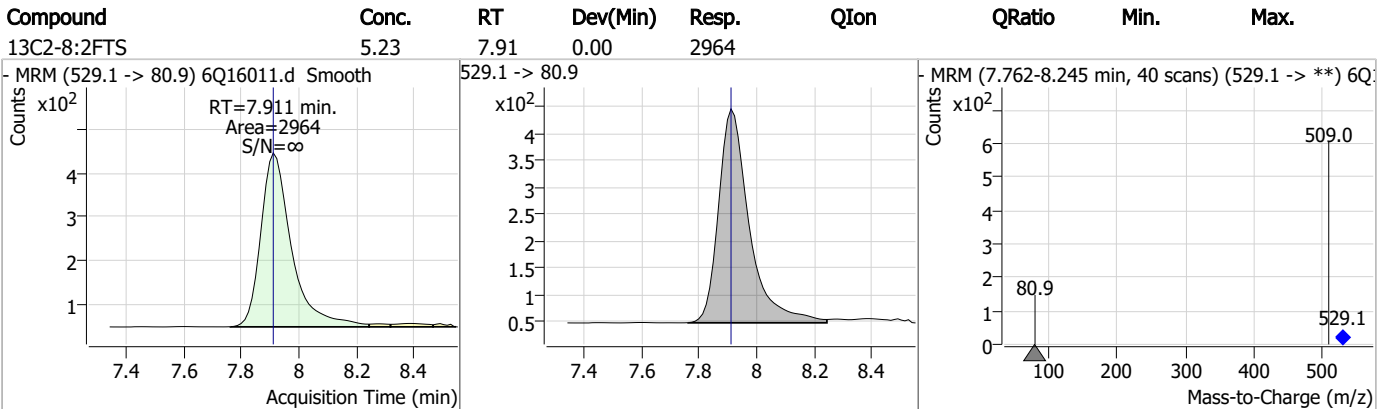
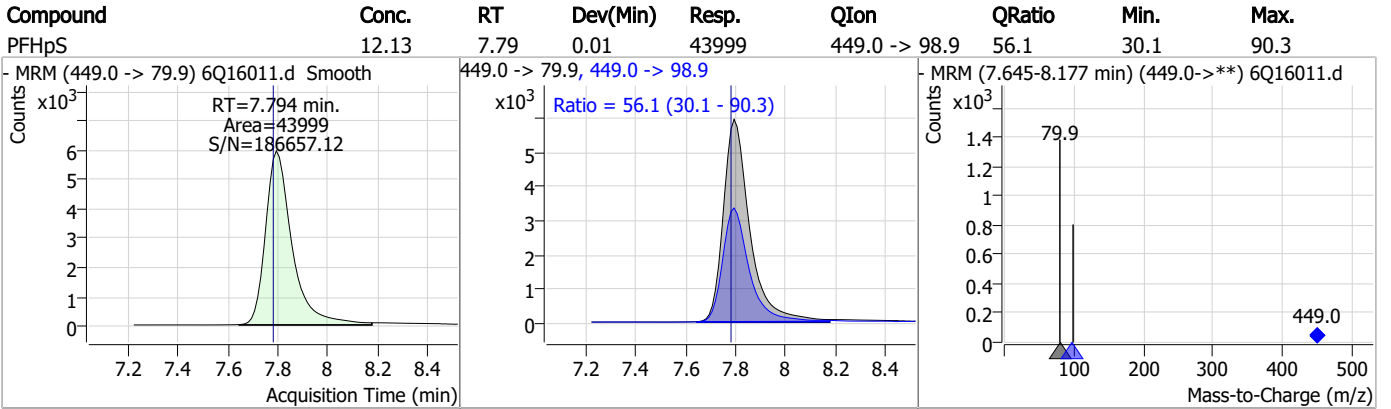


7.7.7

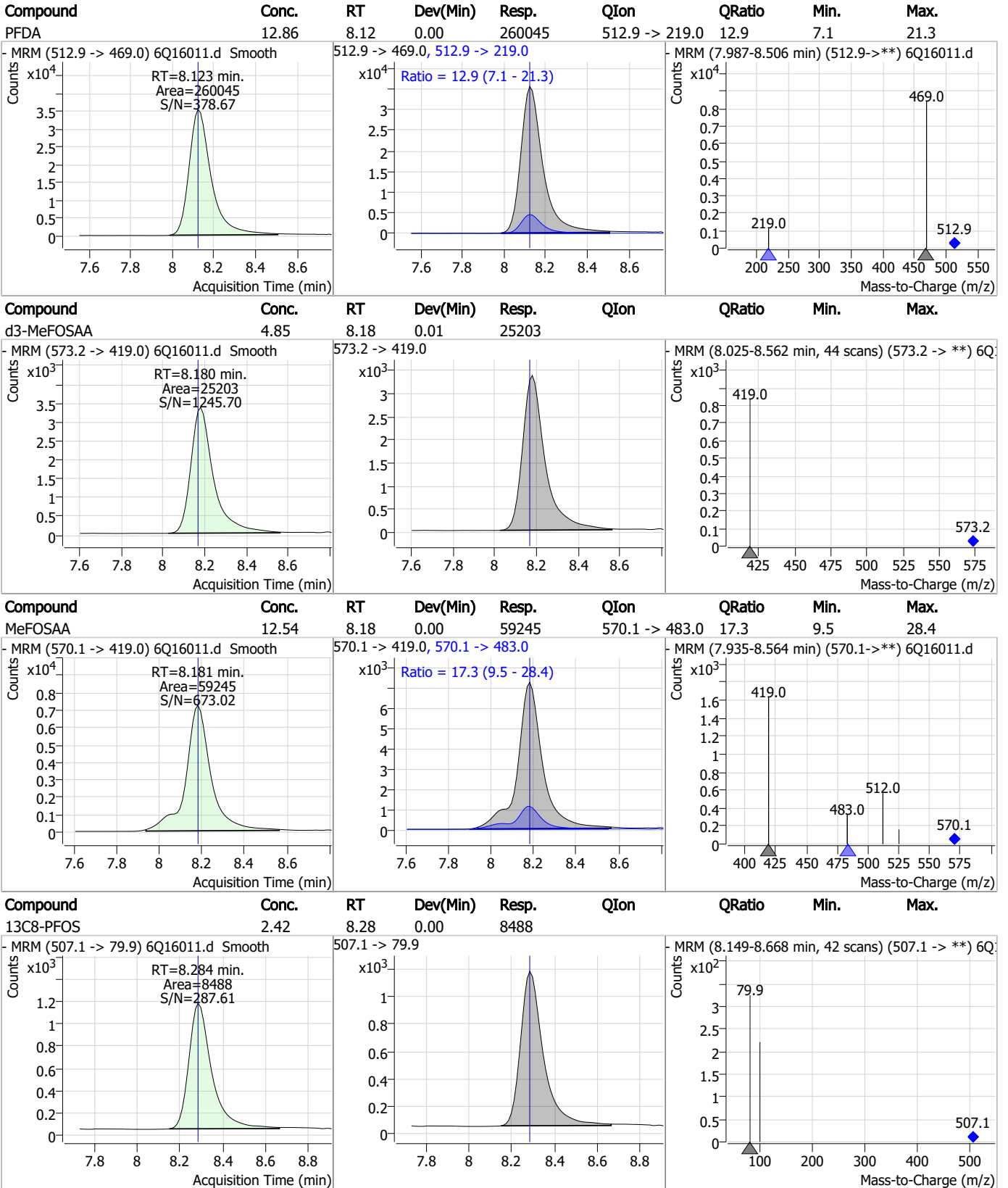
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



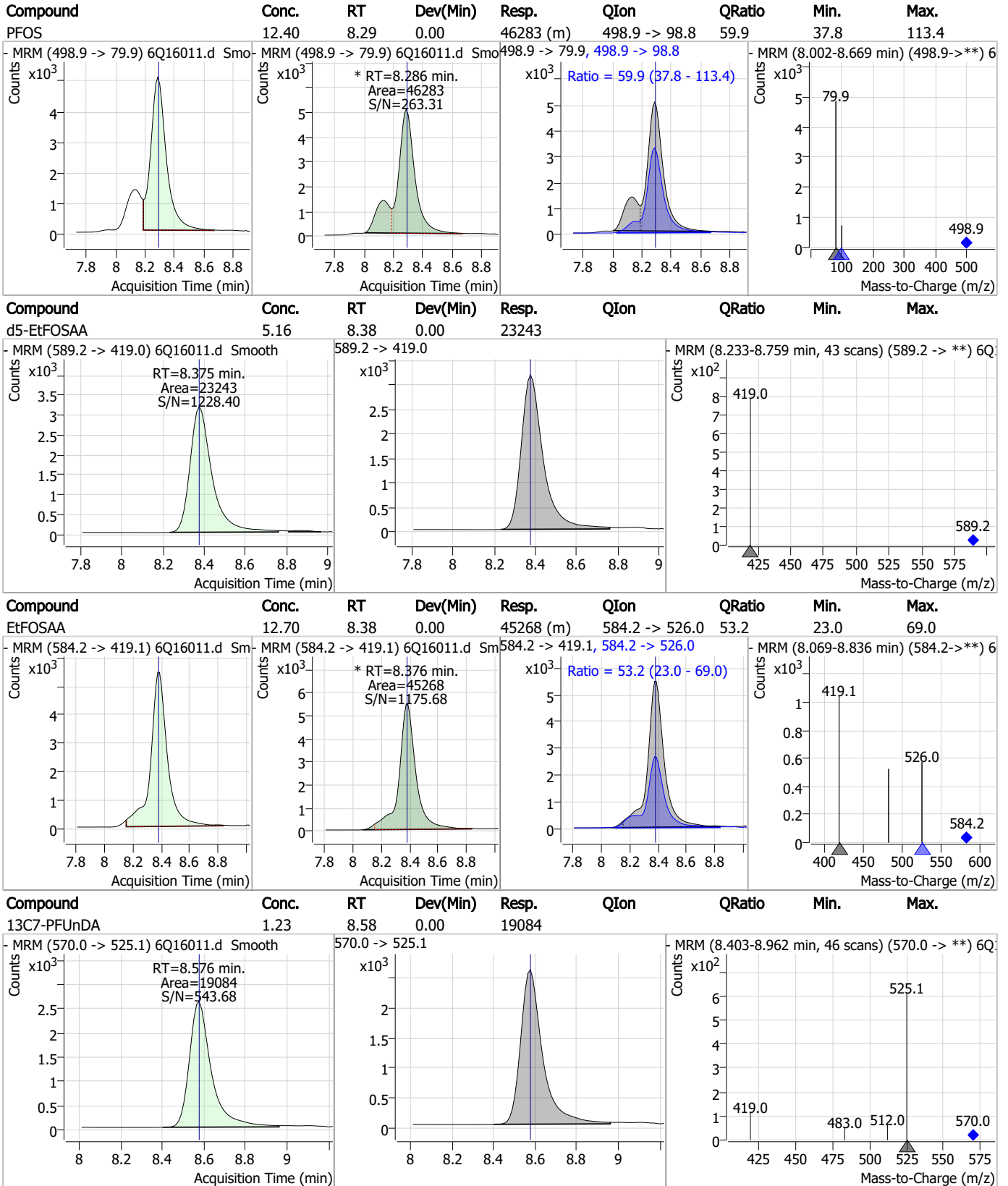
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

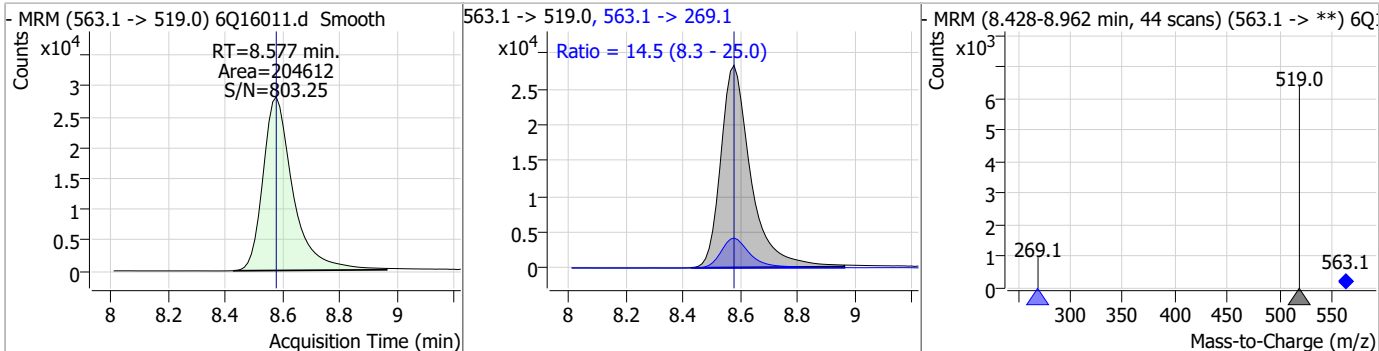


7.7.7

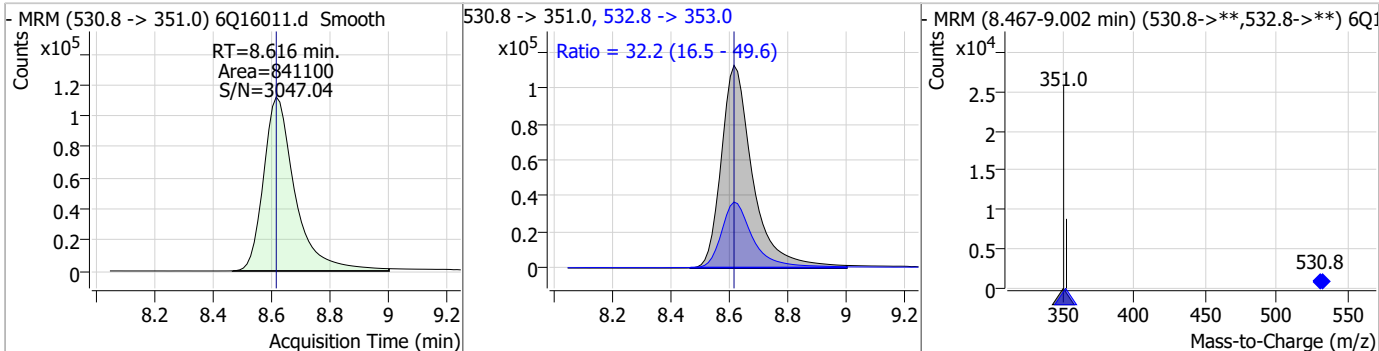
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Perfluorinated Compounds by LC/MS/MS

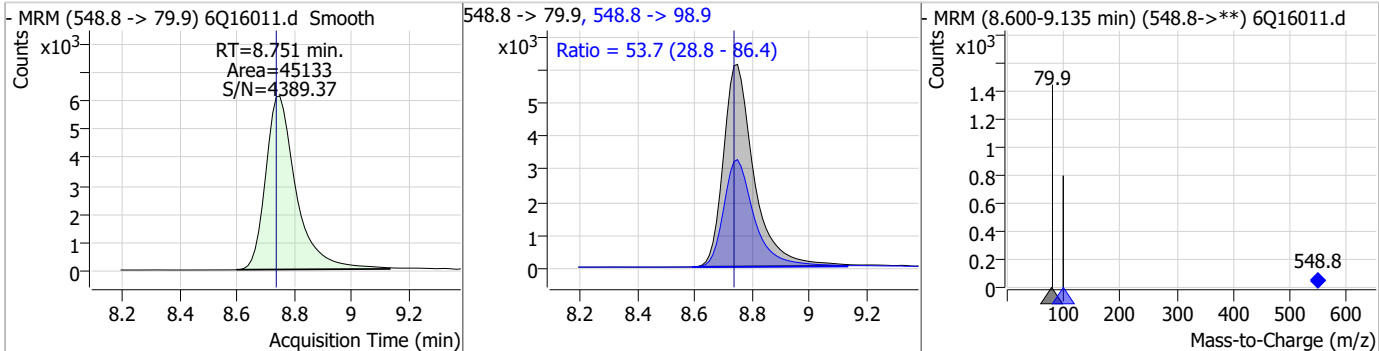
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.39	8.58	0.00	204612	563.1 -> 269.1	14.5	8.3	25.0



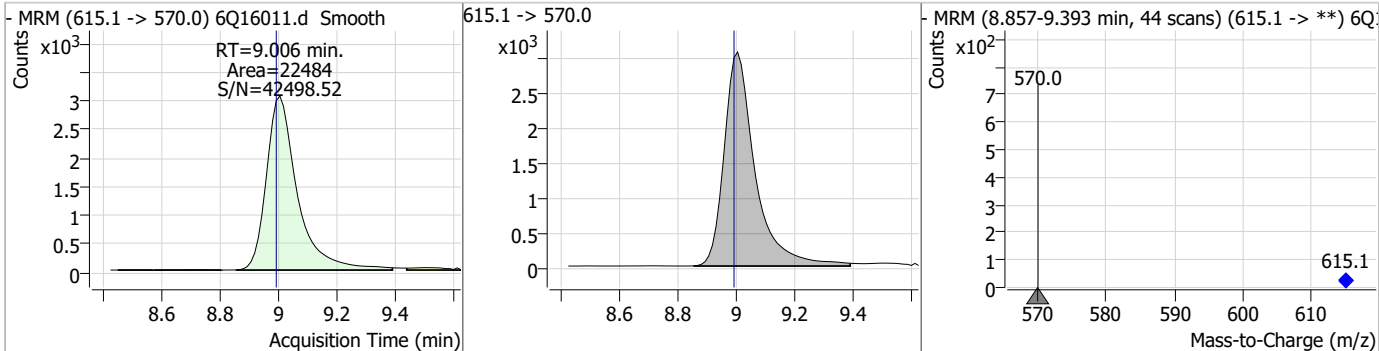
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	46.13	8.62	0.00	841100	532.8 -> 353.0	32.2	16.5	49.6



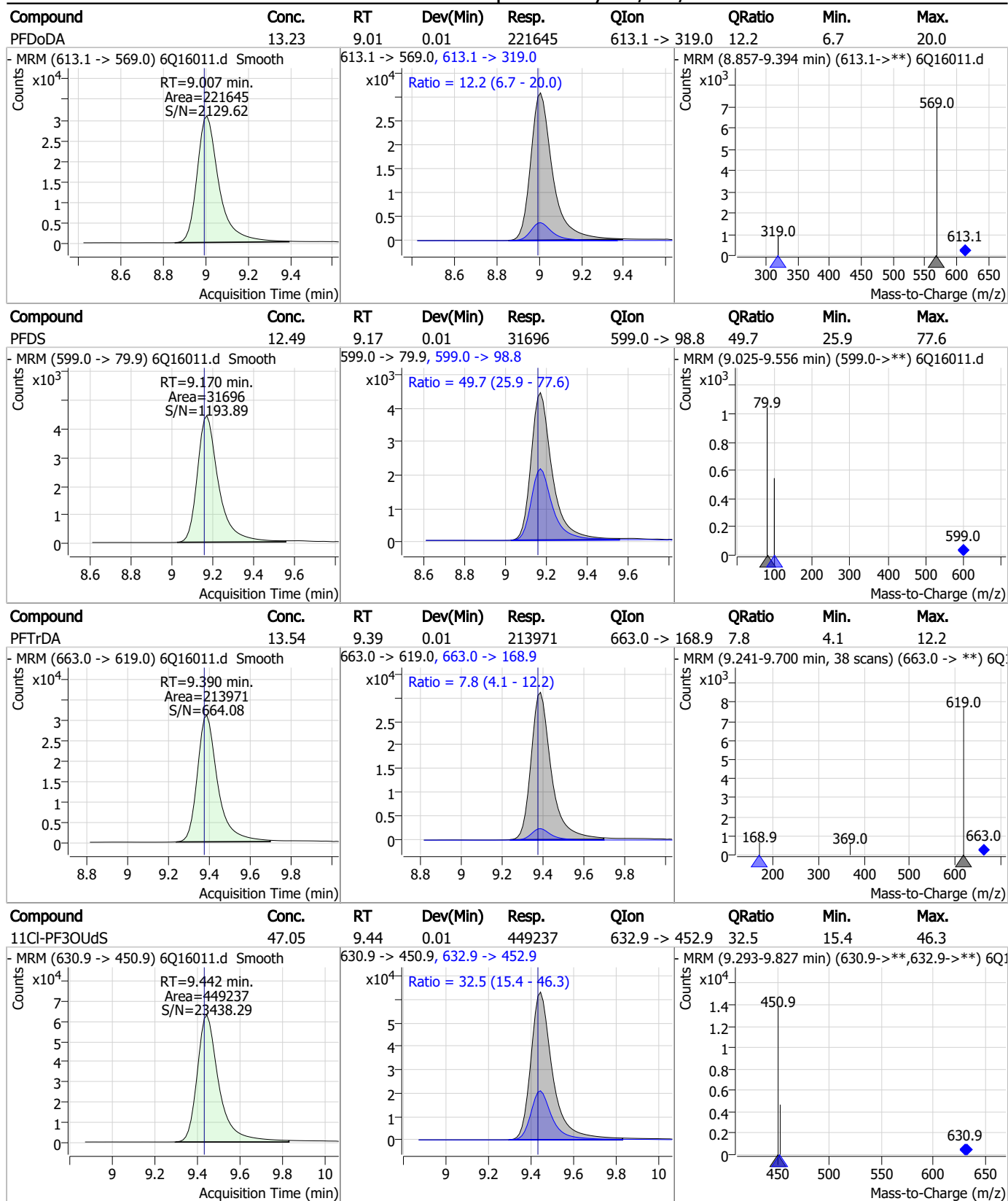
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.52	8.75	0.01	45133	548.8 -> 98.9	53.7	28.8	86.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	9.01	0.01	22484	615.1 -> 570.0			

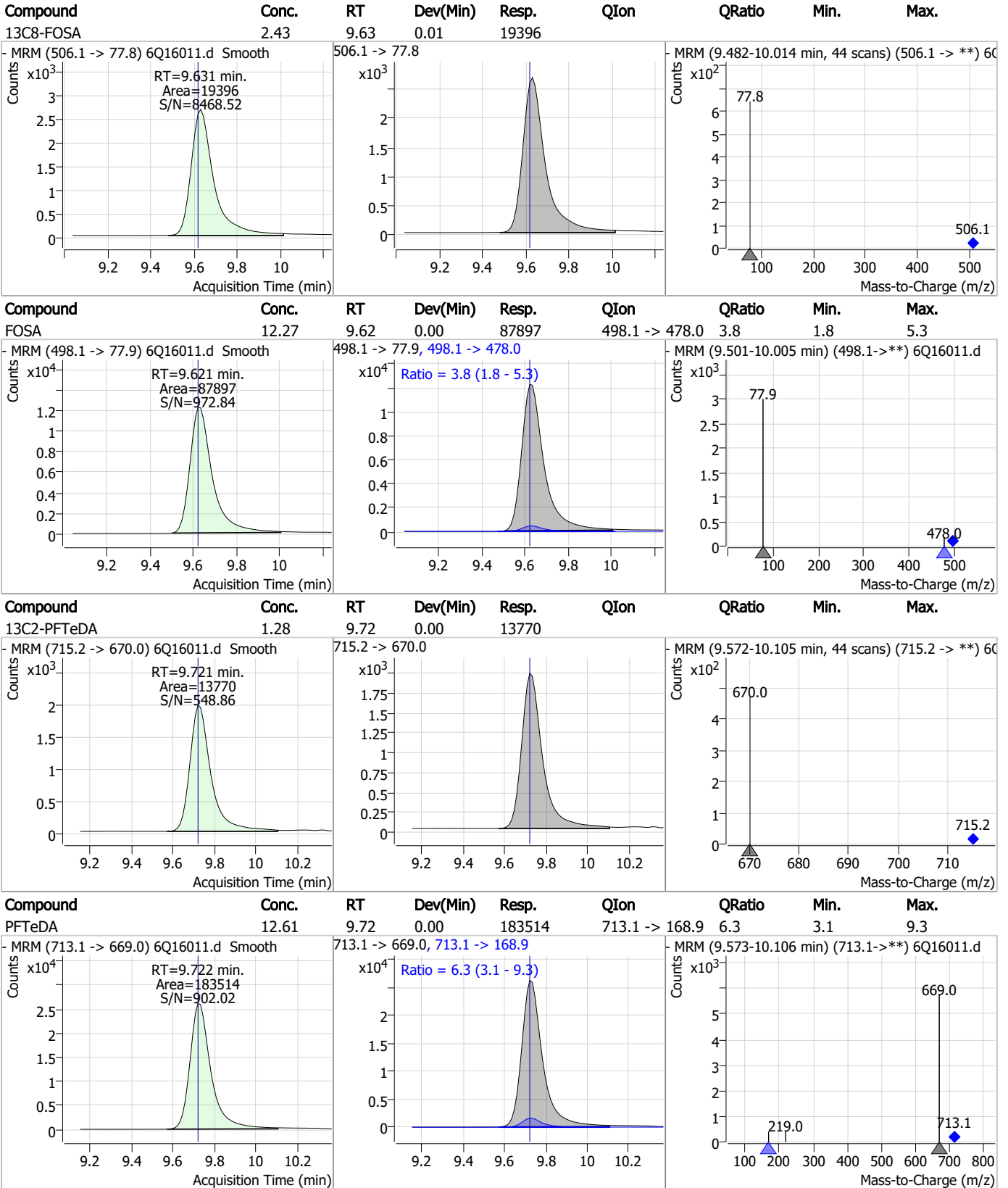


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

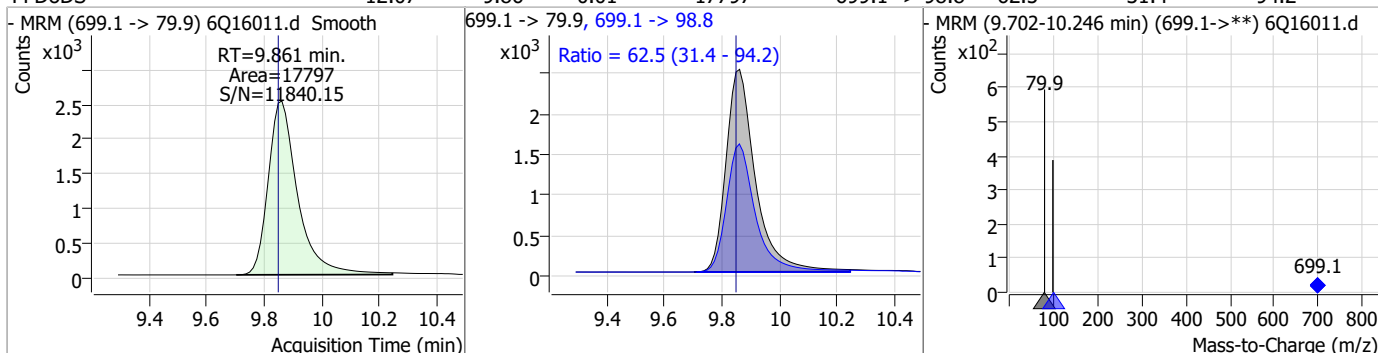


7.7.7

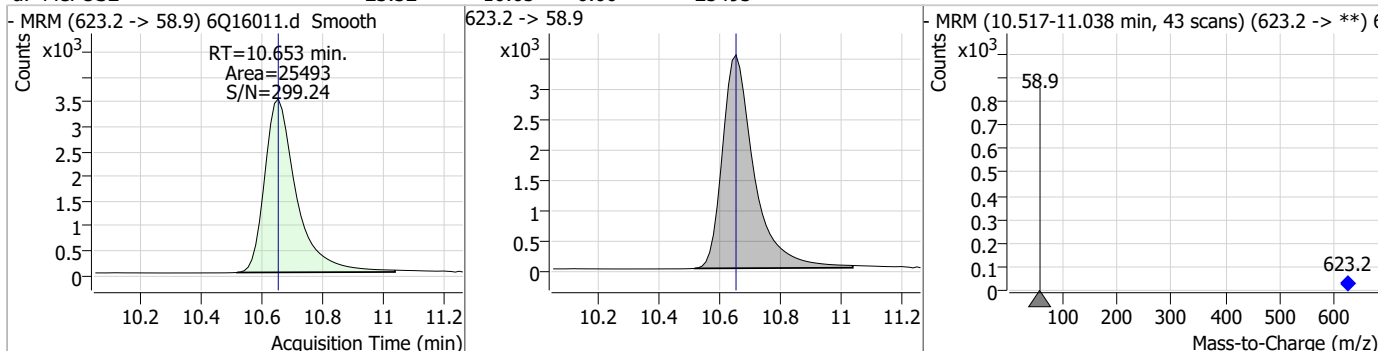
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Perfluorinated Compounds by LC/MS/MS

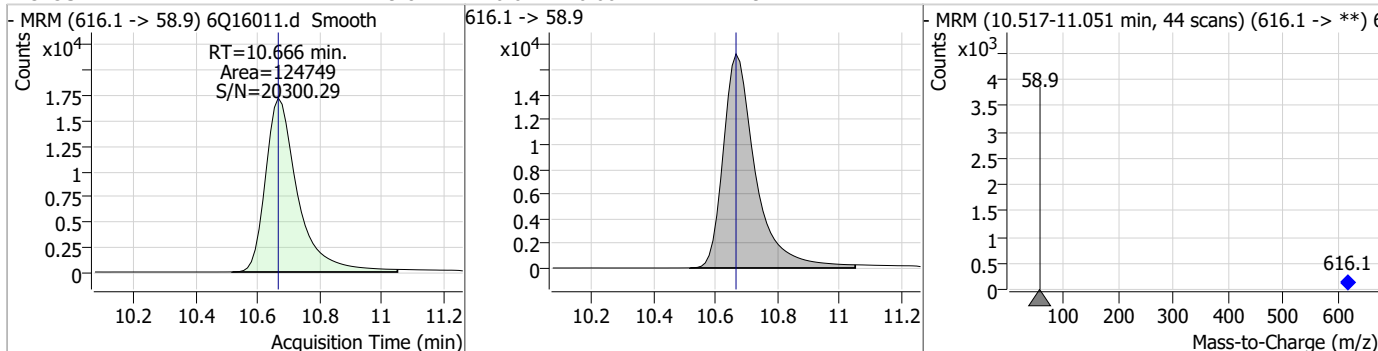
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	12.07	9.86	0.01	17797	699.1 -> 98.8	62.5	31.4	94.2



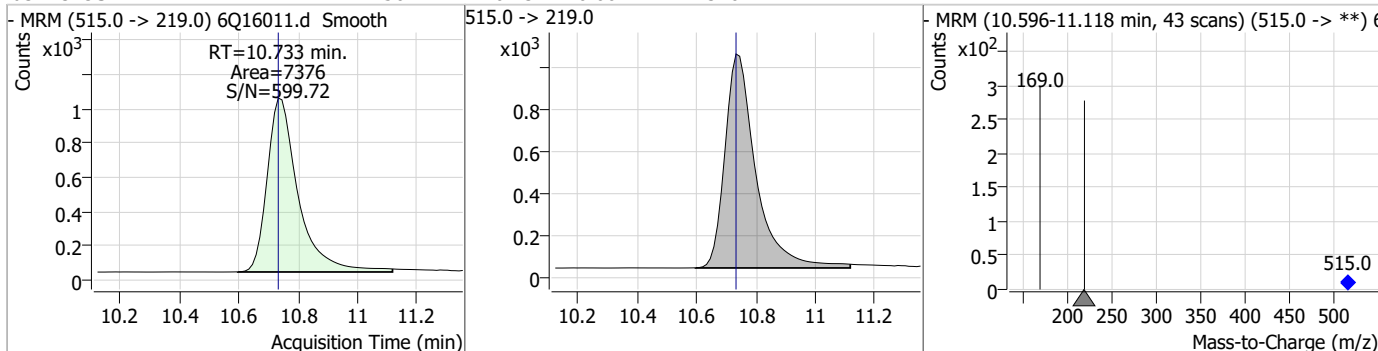
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.32	10.65	0.00	25493				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	129.82	10.67	0.00	124749				

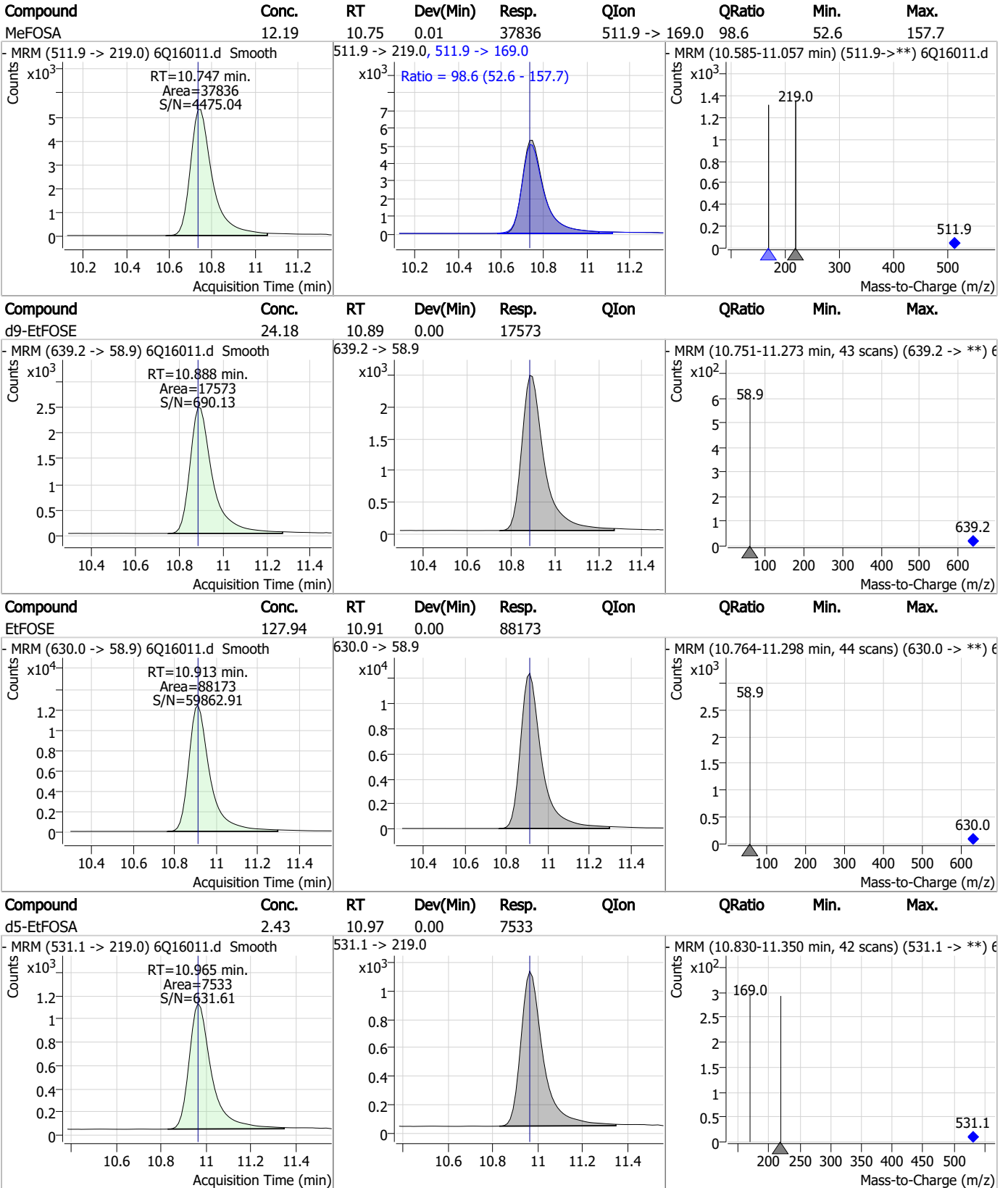


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	10.73	0.00	7376				



7.7.7

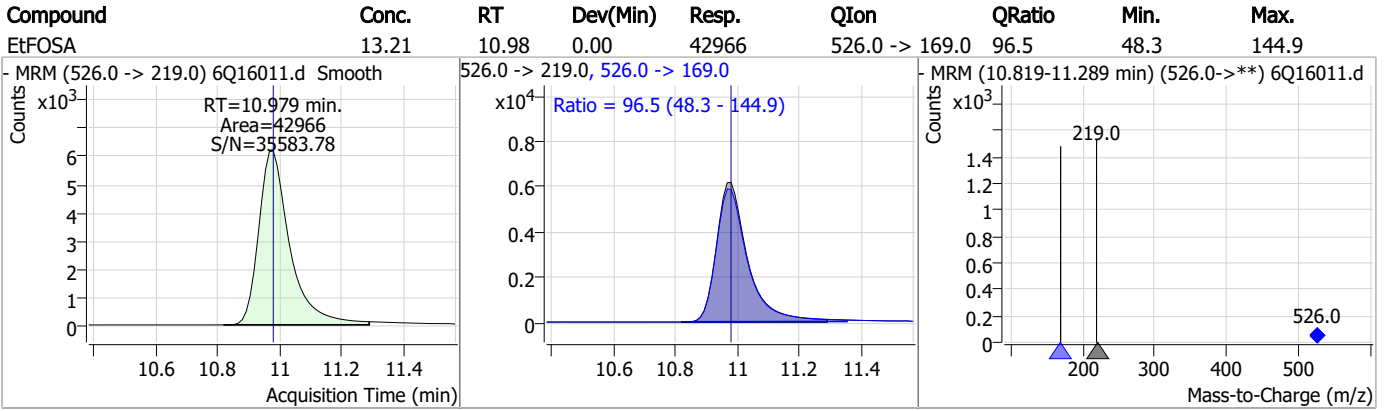
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16011.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 15:25 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtie
 04/05/23 17:23

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16012.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 3:39:38 PM
 Sample Name : ic239-7
 Vial : P1-A8
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	79450	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	36656	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	33761	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	32124	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	49671	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	15872	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	13395	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	15005	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	18136	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	11005	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	15765	2.50 µg/L	0.000
M3-PFBS	5.459	302.1 -> 79.9	12580	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8422	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	6979	2.50 µg/L	0.000
M2-4:2FTS	5.204	329.1 -> 80.9	1772	5.00 µg/L	0.012
M2-6:2FTS	6.898	429.1 -> 80.9	2278	5.00 µg/L	0.012
M2-8:2FTS	7.911	529.1 -> 80.9	2206	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	20064	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	14021	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	17522	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	21250	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	13964	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5830	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5393	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8328	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	33755	5.00 µg/L	0.000
18O2-PFHxS	7.239	403.0 -> 83.9	5635	2.50 µg/L	0.012
13C4-PFOA	7.112	417.1 -> 372.0	65045	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	19163	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	17582	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	31379	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	1772	4.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C2-6:2FTS	6.898	429.1 -> 80.9	2278	4.90 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2206	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-PFDoDA	8.994	615.1 -> 570.0	18136	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.8%		
13C2-PFTeDA	9.721	715.2 -> 670.0	11005	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.459	302.1 -> 79.9	12580	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.228	402.1 -> 79.9	8422	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 = 104.4%		
13C4-PFBA	2.897	216.8 -> 171.9	79450	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C4-PFHpA	6.468	367.1 -> 322.0	32124	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C5-PFHxA	5.528	318.0 -> 273.0	33761	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C5-PFPeA	4.322	268.3 -> 223.0	36656	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C6-PFDA	8.122	519.1 -> 474.1	13395	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C7-PFUnDA	8.564	570.0 -> 525.1	15005	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.6%		
13C8-FOSA	9.619	506.1 -> 77.8	15765	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C8-PFOA	7.125	421.1 -> 376.0	49671	2.29 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.4%		
13C8-PFOS	8.284	507.1 -> 79.9	6979	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C9-PFNA	7.643	472.1 -> 427.0	15872	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.6%		
d3-MeFOSAA	8.167	573.2 -> 419.0	20064	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	14021	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
d3-MeFOSA	10.733	515.0 -> 219.0	5393	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.6%		
d5-EtFOSAA	8.375	589.2 -> 419.0	17522	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
d7-MeFOSE	10.653	623.2 -> 58.9	21250	25.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
d9-EtFOSE	10.888	639.2 -> 58.9	13964	24.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
d5-EtFOSA	10.965	531.1 -> 219.0	5830	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.9%		
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0	333585	96.12 µg/L	98
		327.1 -> 80.9	81434		
6:2FTS	6.886	427.1 -> 407.0	279776	91.70 µg/L	98
		427.1 -> 80.9	58011		
8:2FTS	7.911	527.1 -> 507.0	148535	94.92 µg/L	95
		527.1 -> 80.8	40534		
EtFOSAA	8.376	584.2 -> 419.1	73436	27.33 µg/L	m 89
		584.2 -> 526.0	39360		
FOSA	9.621	498.1 -> 77.9	148552	25.50 µg/L	100
		498.1 -> 478.0	5224		
MeFOSAA	8.168	570.1 -> 419.0	99115	26.35 µg/L	94
		570.1 -> 483.0	15945		
PFBA	2.906	212.8 -> 168.9	213076	106.11 µg/L	100
PFBS	5.460	298.7 -> 79.9	113145	22.93 µg/L	98
		298.7 -> 98.8	51124		
PFDA	8.123	512.9 -> 469.0	419853	26.92 µg/L	97
		512.9 -> 219.0	54498		
PFDoDA	8.994	613.1 -> 569.0	349511	25.87 µg/L	98
		613.1 -> 319.0	44185		
PFDS	9.158	599.0 -> 79.9	50119	24.02 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	25778			
PFHpA	6.469	363.1 -> 319.0	461965	25.57	µg/L	99
		363.1 -> 169.0	66515			
PFHpS	7.794	449.0 -> 79.9	67072	22.48	µg/L	99
		449.0 -> 98.9	40947			
PFHxA	5.531	313.0 -> 269.0	302055	24.24	µg/L	100
		313.0 -> 118.9	11985			
PFHxS	7.228	398.7 -> 79.9	86219	23.28	µg/L	m 93
		398.7 -> 98.9	45837			
PFNA	7.643	463.0 -> 419.0	272195	26.32	µg/L	96
		463.0 -> 219.0	50784			
PFNS	8.738	548.8 -> 79.9	72089	24.32	µg/L	99
		548.8 -> 98.9	41161			
PFOA	7.126	413.0 -> 369.0	599091	26.64	µg/L	97
		413.0 -> 169.0	86604			
PFOS	8.273	498.9 -> 79.9	68617	22.35	µg/L	m 92
		498.9 -> 98.8	47083			
PFPeA	4.324	263.0 -> 219.0	397078	51.35	µg/L	100
PFPeS	6.533	349.1 -> 79.9	103721	23.25	µg/L	99
		349.1 -> 98.9	52534			
PFTeDA	9.722	713.1 -> 669.0	287848	24.76	µg/L	97
		713.1 -> 168.9	20296			
PFTrDA	9.378	663.0 -> 619.0	334826	26.26	µg/L	99
		663.0 -> 168.9	25751			
PFUnDA	8.564	563.1 -> 519.0	317626	26.44	µg/L	97
		563.1 -> 269.1	48097			
11Cl-PF3OUdS	9.442	630.9 -> 450.9	721146	95.67	µg/L	99
		632.9 -> 452.9	225796			
9Cl-PF3ONS	8.616	530.8 -> 351.0	1363478	94.73	µg/L	94
		532.8 -> 353.0	403639			
ADONA	6.731	376.9 -> 250.9	2771971	97.57	µg/L	95
		376.9 -> 84.8	574448			
HFPO-DA	5.894	284.9 -> 168.9	130842	103.22	µg/L	99
		284.9 -> 184.9	16916			
3:3FTCA	3.790	241.0 -> 177.0	55102	128.40	µg/L	98
		241.0 -> 117.0	7917			
5:3FTCA	6.198	341.0 -> 237.1	1702041	617.87	µg/L	97
		341.0 -> 217.0	1435326			
7:3FTCA	7.608	441.0 -> 316.9	846014	606.68	µg/L	94
		441.0 -> 336.9	1580773			
EtFOSA	10.967	526.0 -> 219.0	66730	26.52	µg/L	96
		526.0 -> 169.0	66784			
EtFOSE	10.913	630.0 -> 58.9	143516	262.05	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	61101	26.93	µg/L	99
		511.9 -> 169.0	63924			
MeFOSE	10.666	616.1 -> 58.9	197452	246.51	µg/L	100
PFDoDS	9.861	699.1 -> 79.9	28641	23.63	µg/L	100
		699.1 -> 98.8	17960			
NFDHA	5.410	295.0 -> 201.0	37914	46.93	µg/L	96
		295.0 -> 84.9	17586			
PFMBA	4.737	279.0 -> 85.1	131584	51.36	µg/L	100
PFMPA	3.463	229.0 -> 84.9	123066	52.64	µg/L	100
PFEESA	5.999	314.8 -> 134.9	793564	44.95	µg/L	100
		314.8 -> 82.9	19215			

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

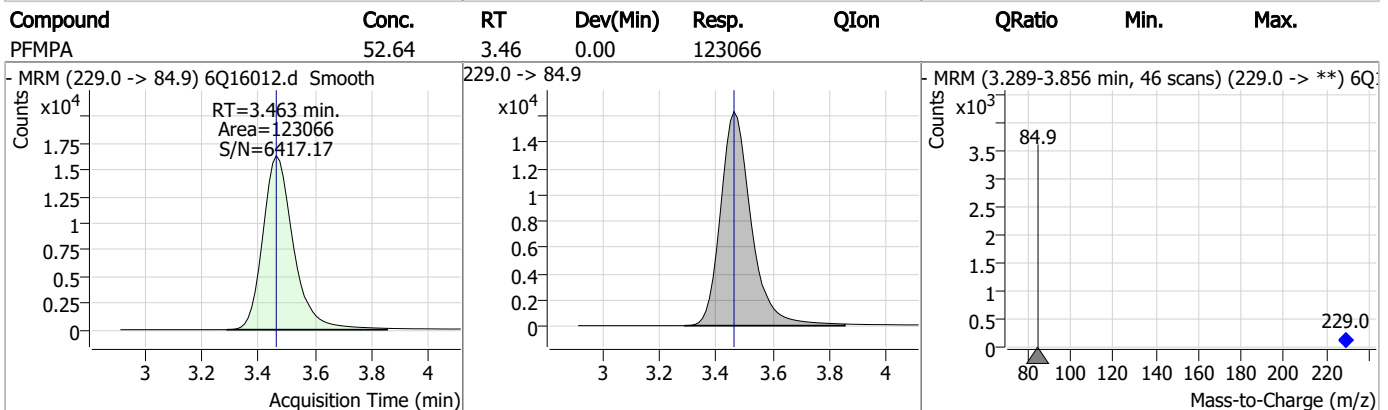
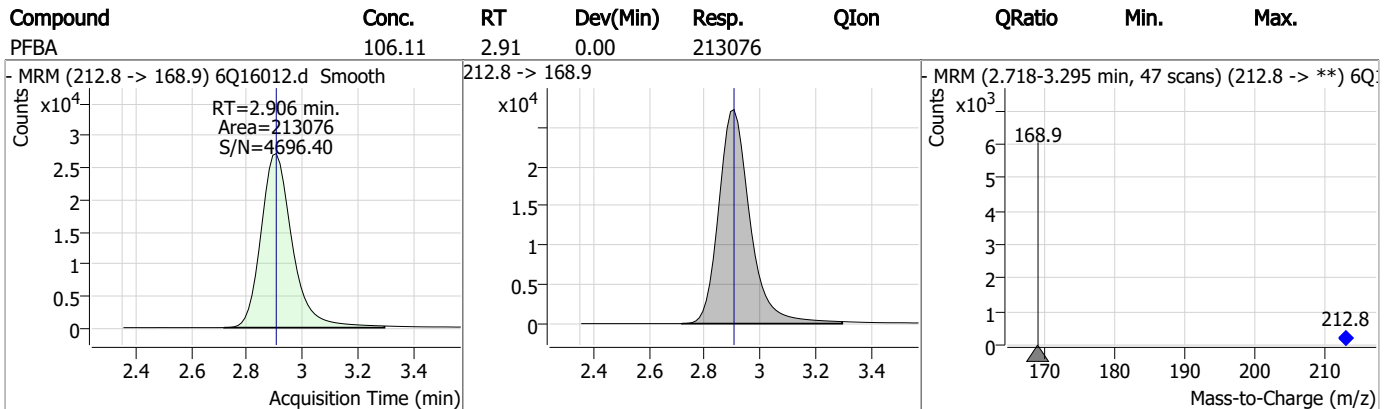
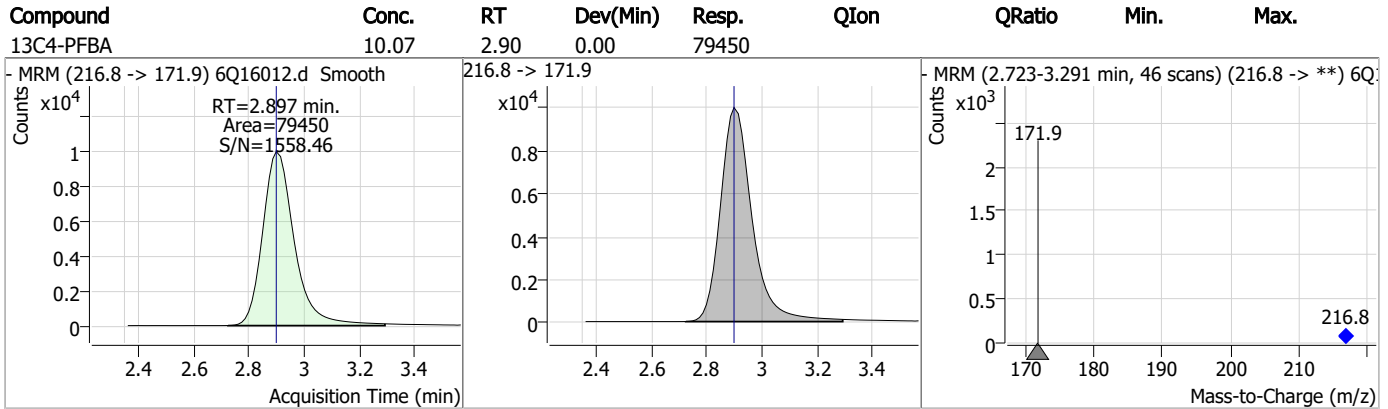
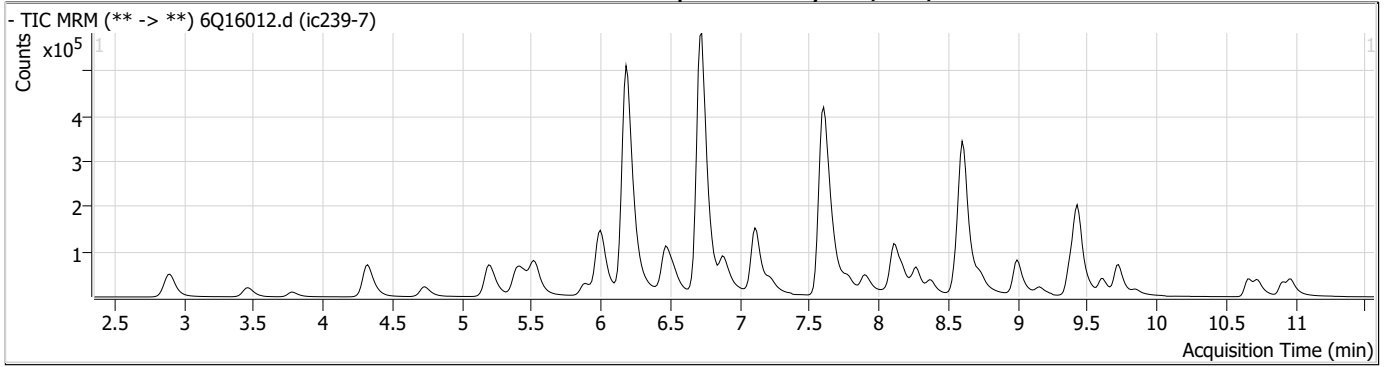
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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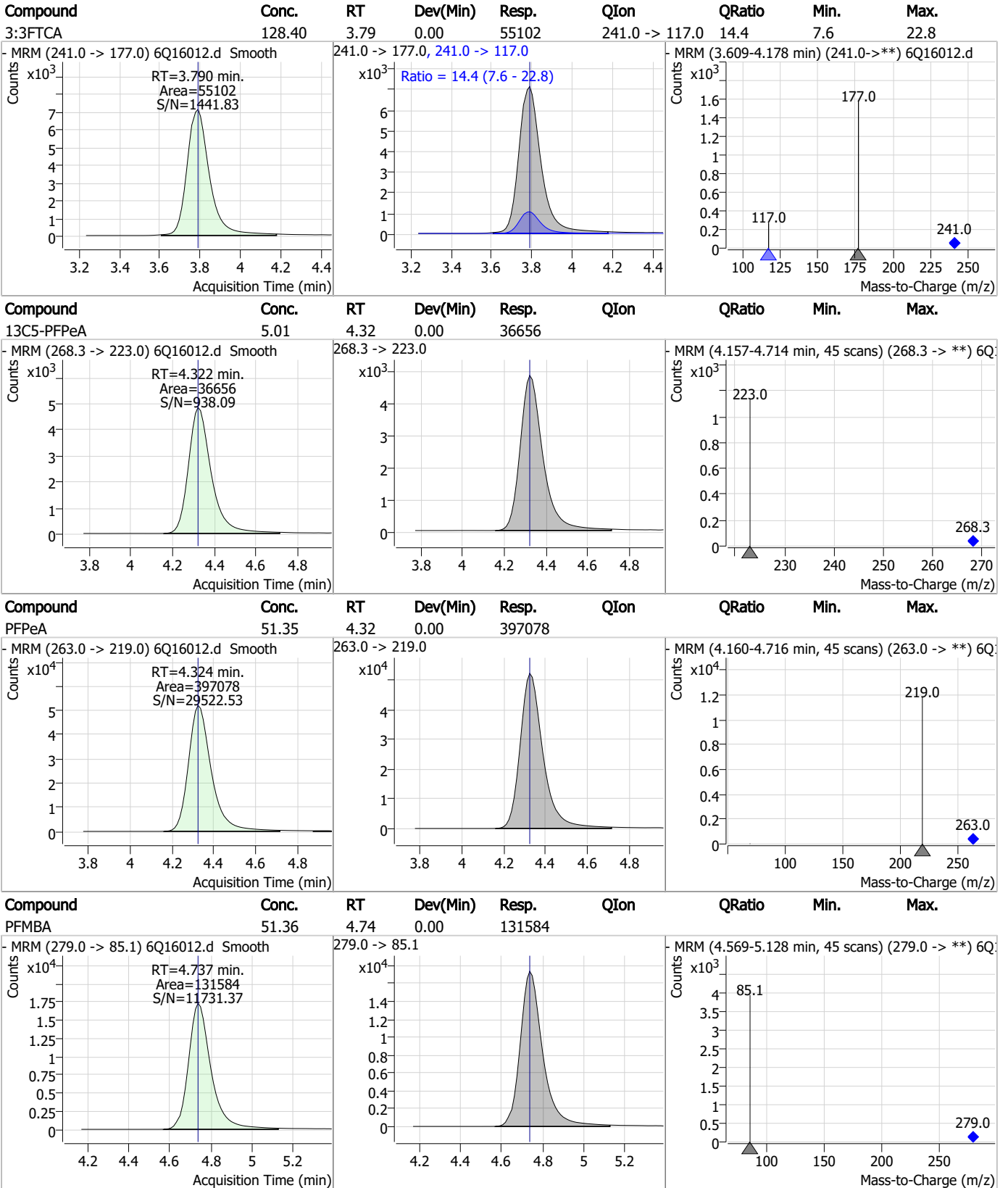


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

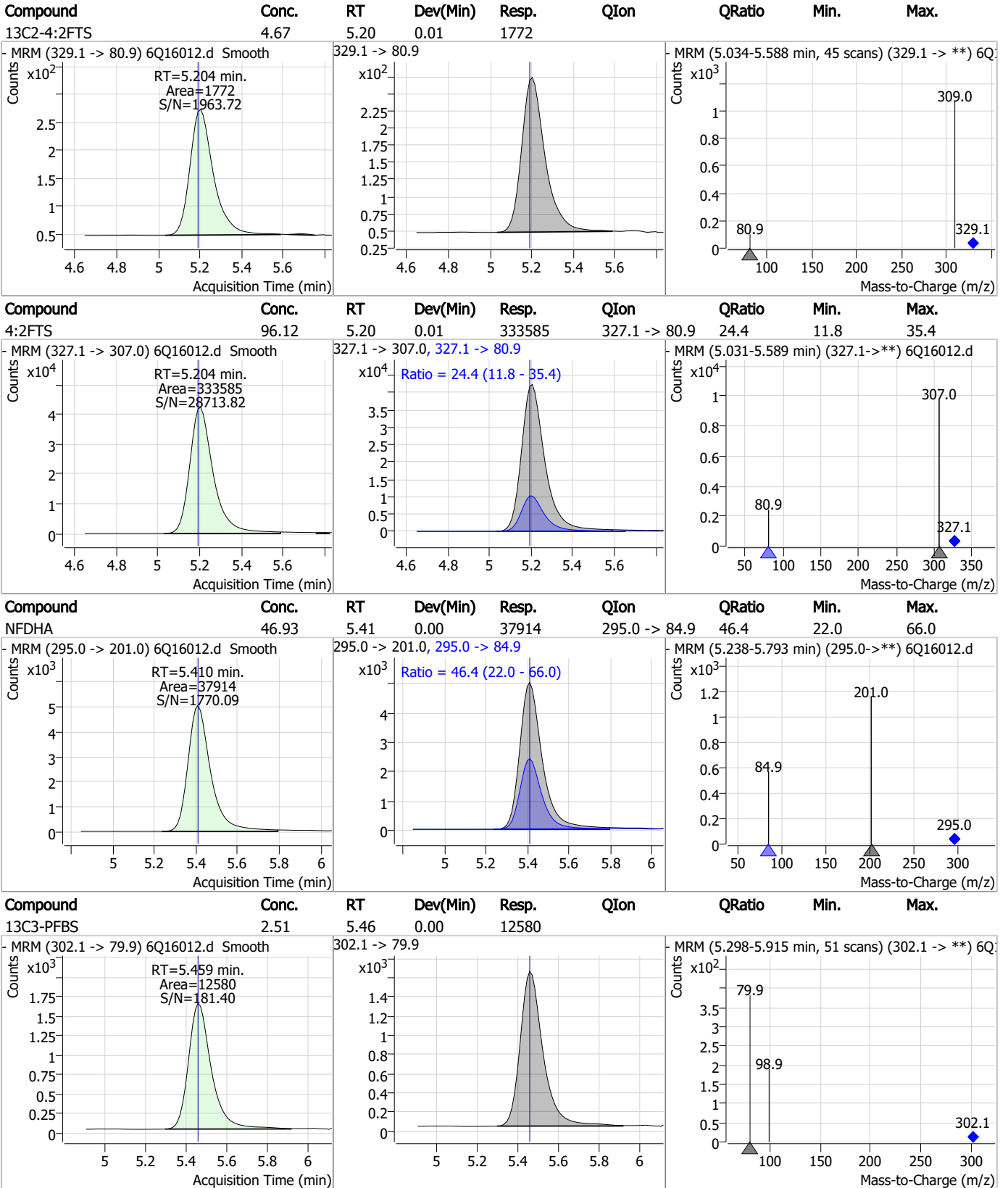


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Perfluorinated Compounds by LC/MS/MS

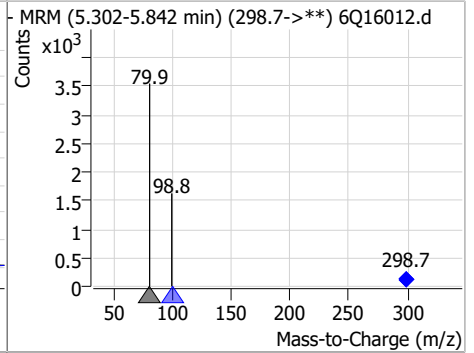
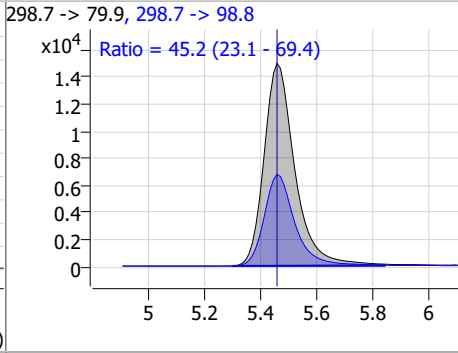
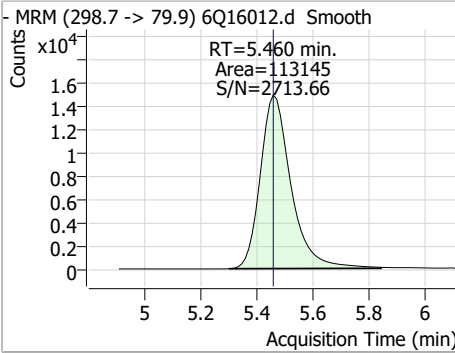


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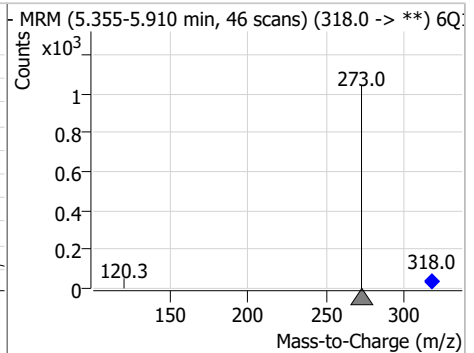
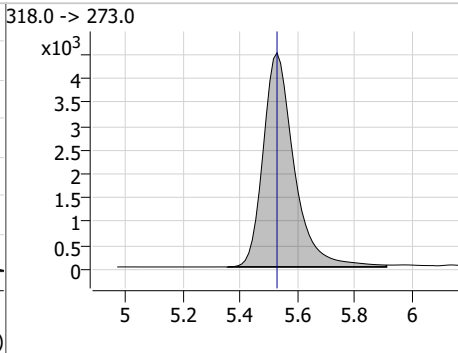
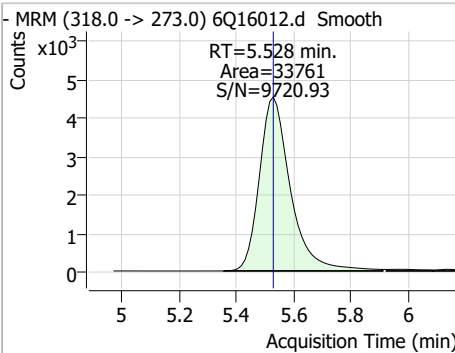
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Perfluorinated Compounds by LC/MS/MS

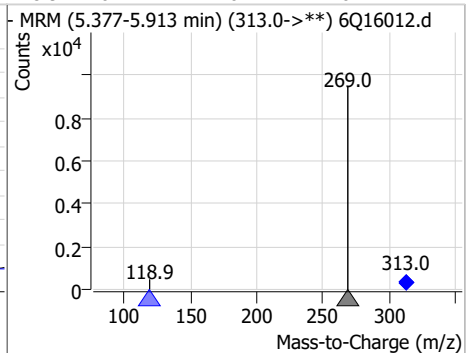
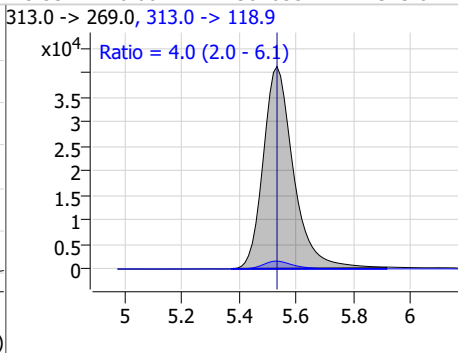
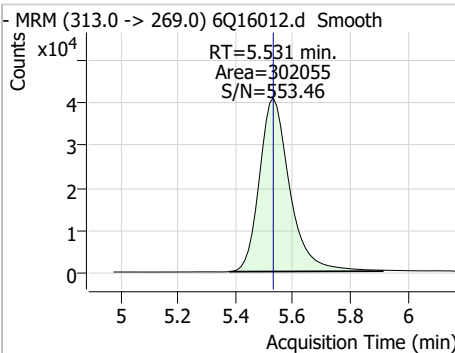
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.93	5.46	0.00	113145	298.7 -> 98.8	45.2	23.1	69.4



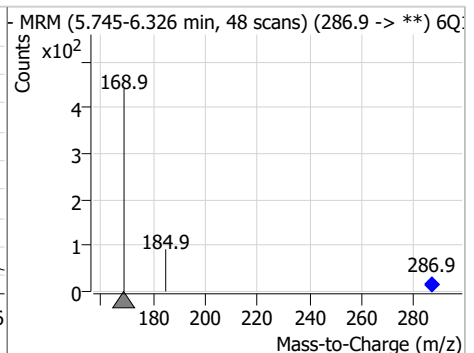
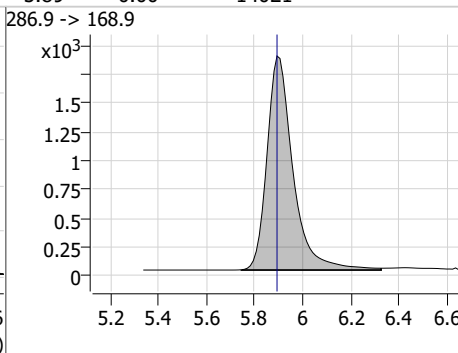
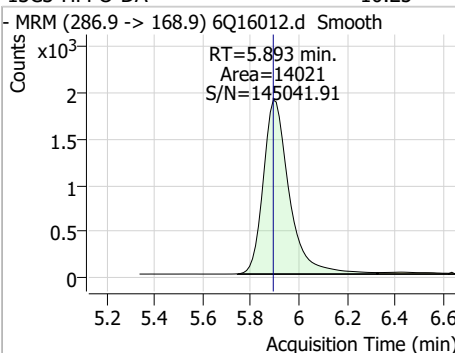
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.60	5.53	0.00	33761				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	24.24	5.53	0.00	302055	313.0 -> 118.9	4.0	2.0	6.1

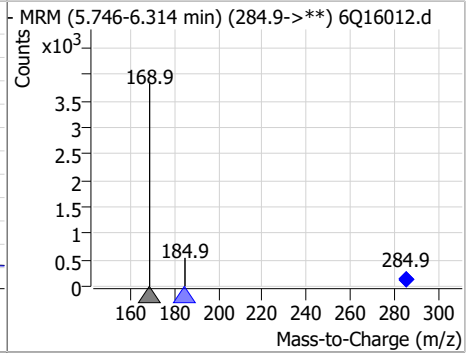
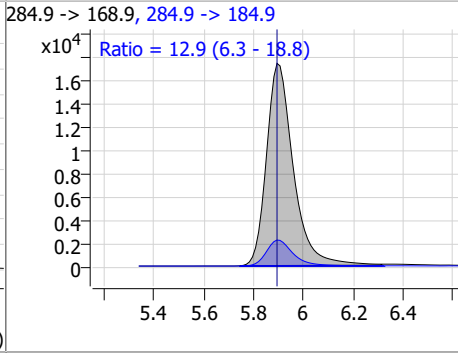
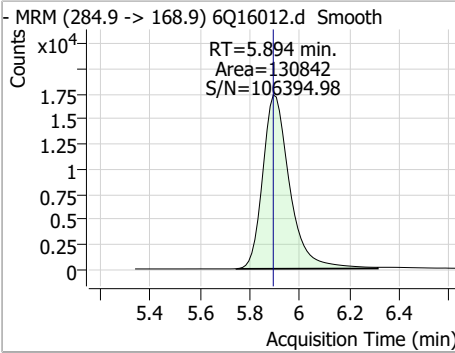


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.25	5.89	0.00	14021				

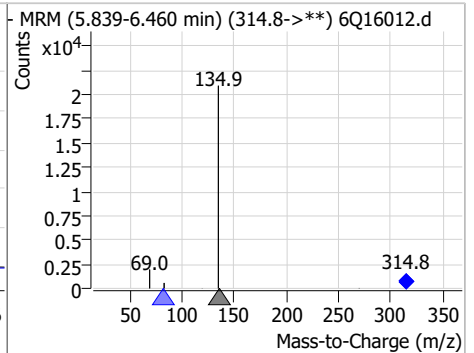
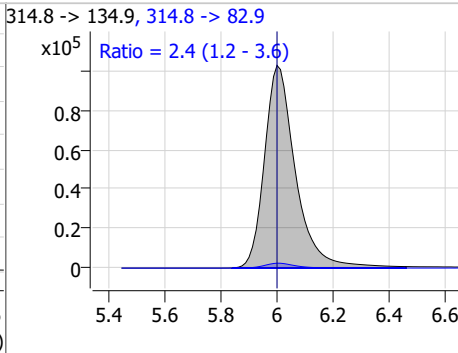
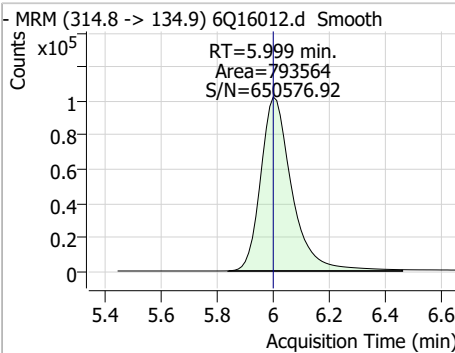


Perfluorinated Compounds by LC/MS/MS

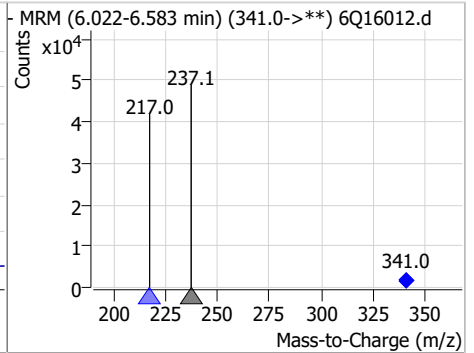
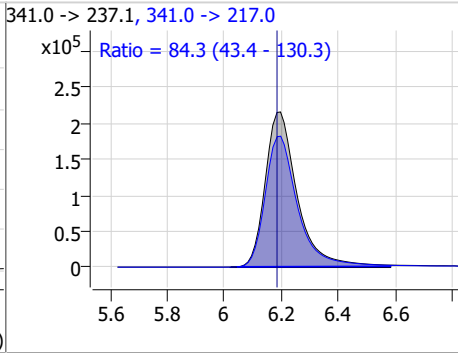
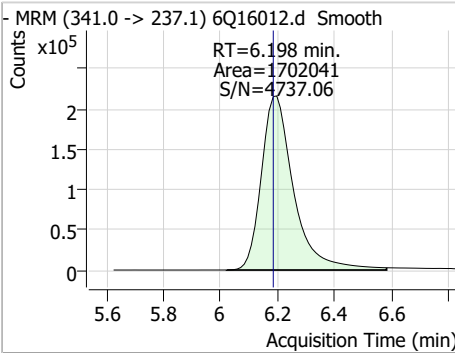
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	103.22	5.89	0.00	130842	284.9 -> 184.9	12.9	6.3	18.8



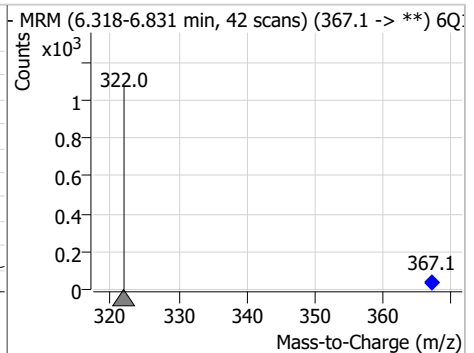
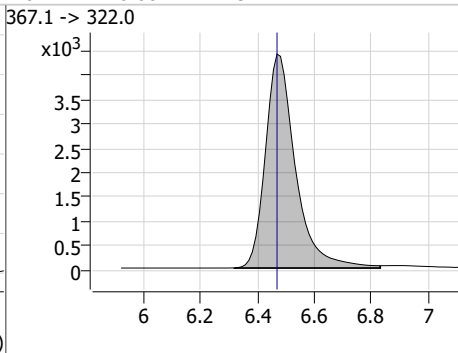
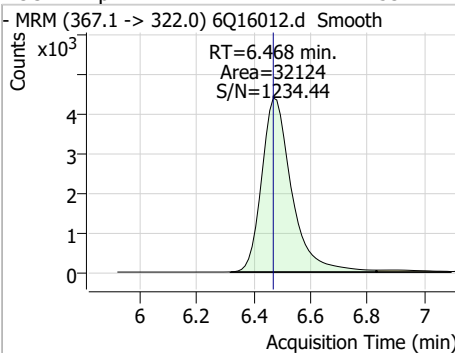
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	44.95	6.00	0.00	793564	314.8 -> 82.9	2.4	1.2	3.6



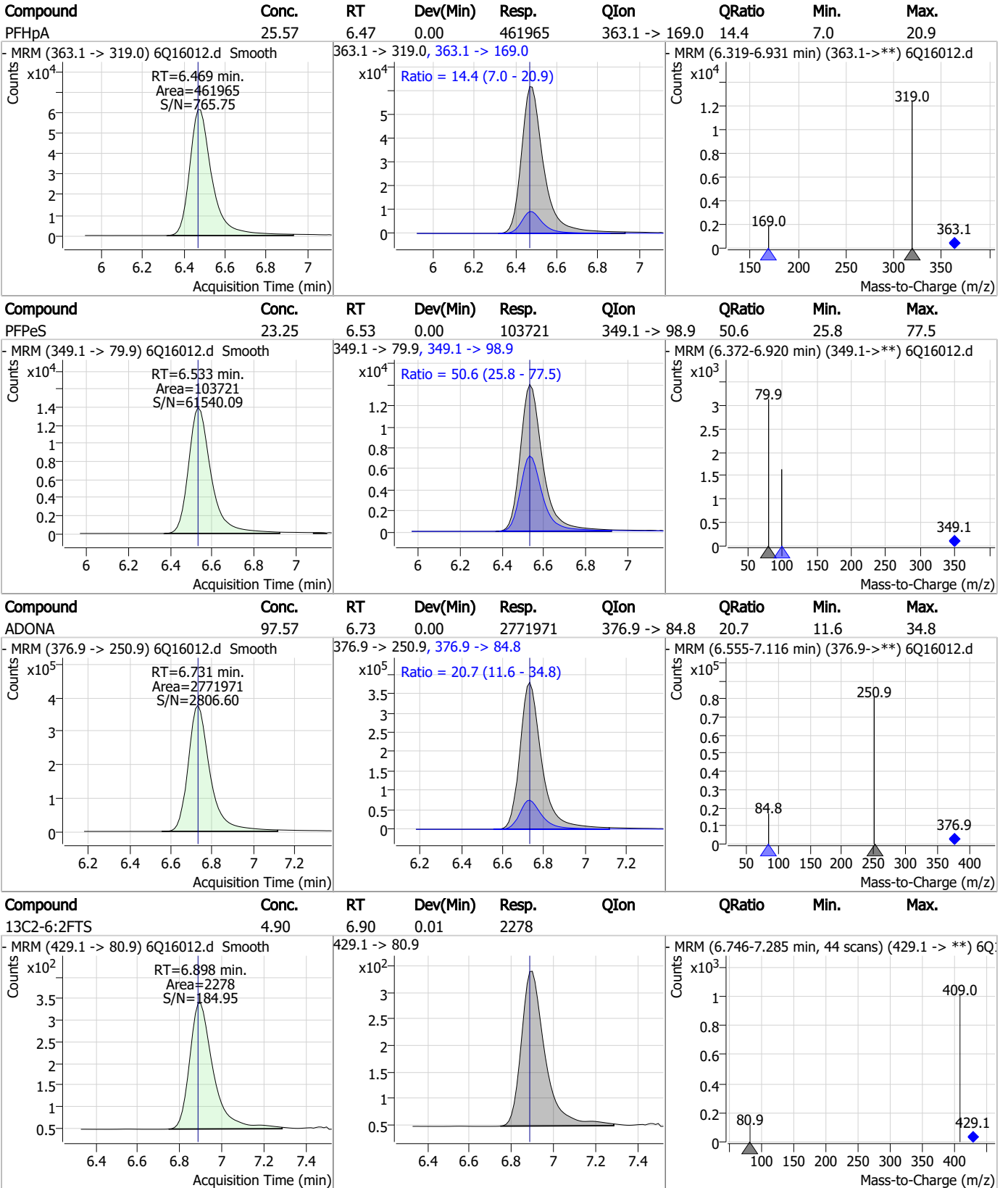
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	617.87	6.20	0.01	1702041	341.0 -> 217.0	84.3	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.47	0.00	32124	367.1 -> 322.0			



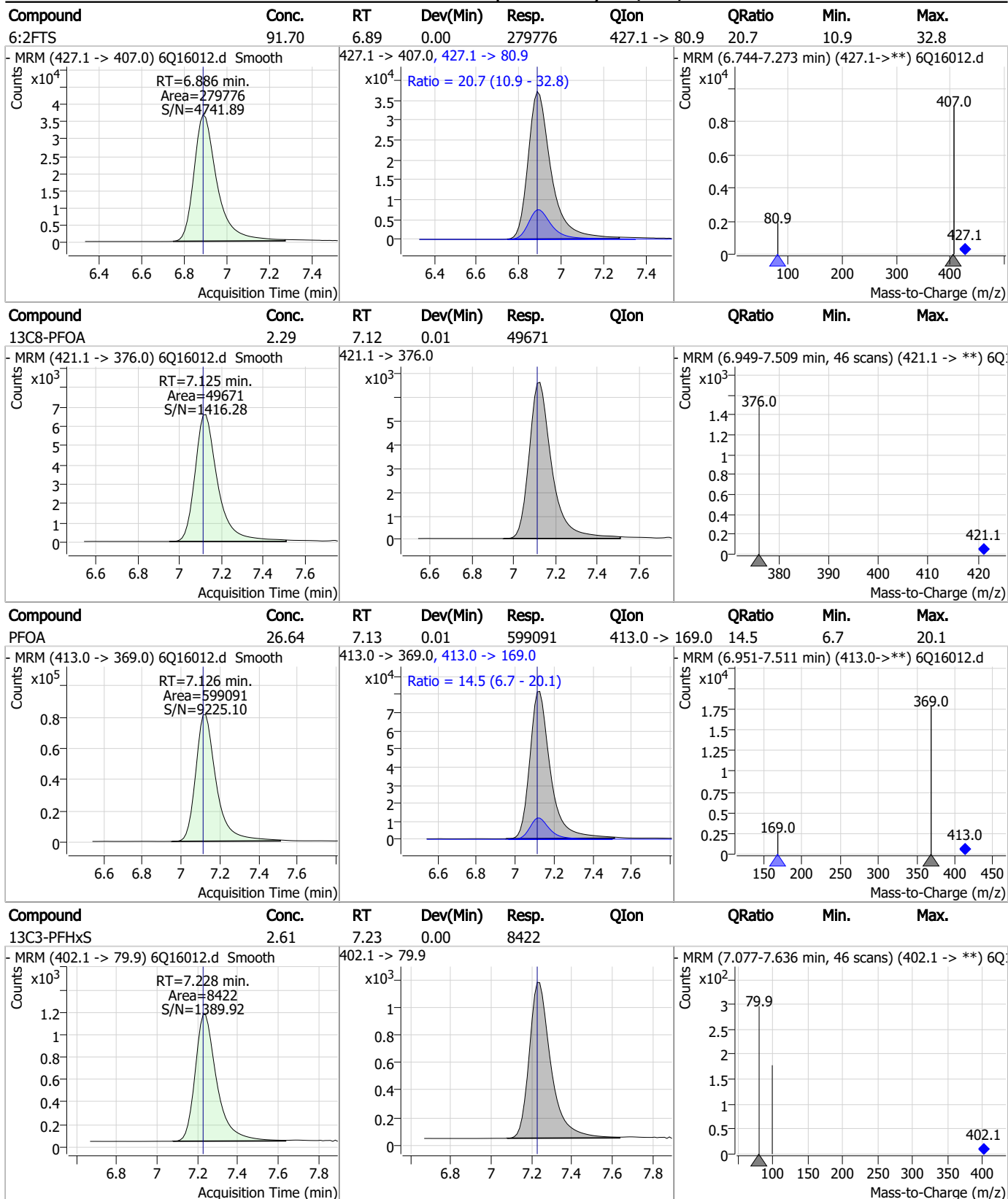
Perfluorinated Compounds by LC/MS/MS



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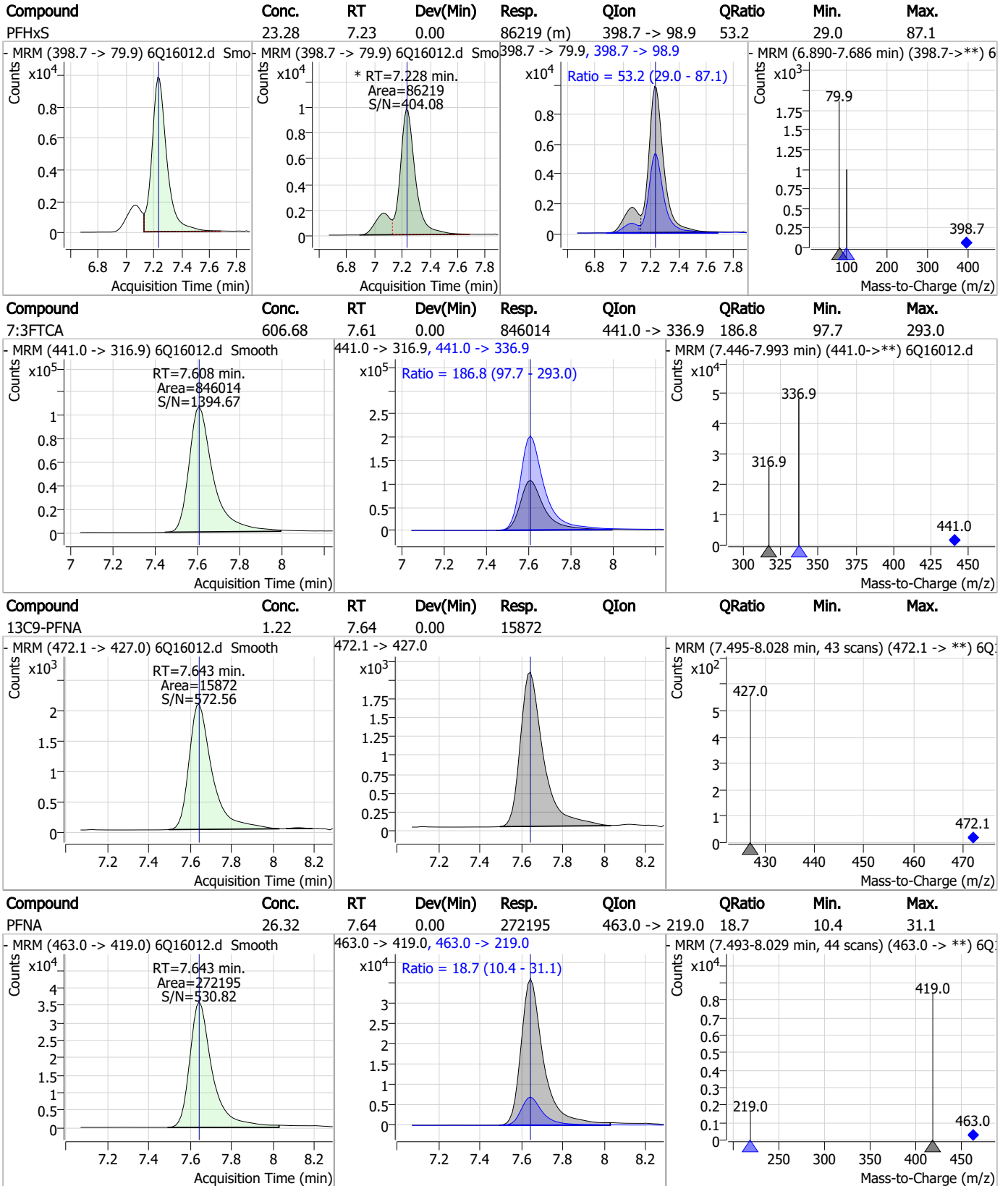
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Perfluorinated Compounds by LC/MS/MS



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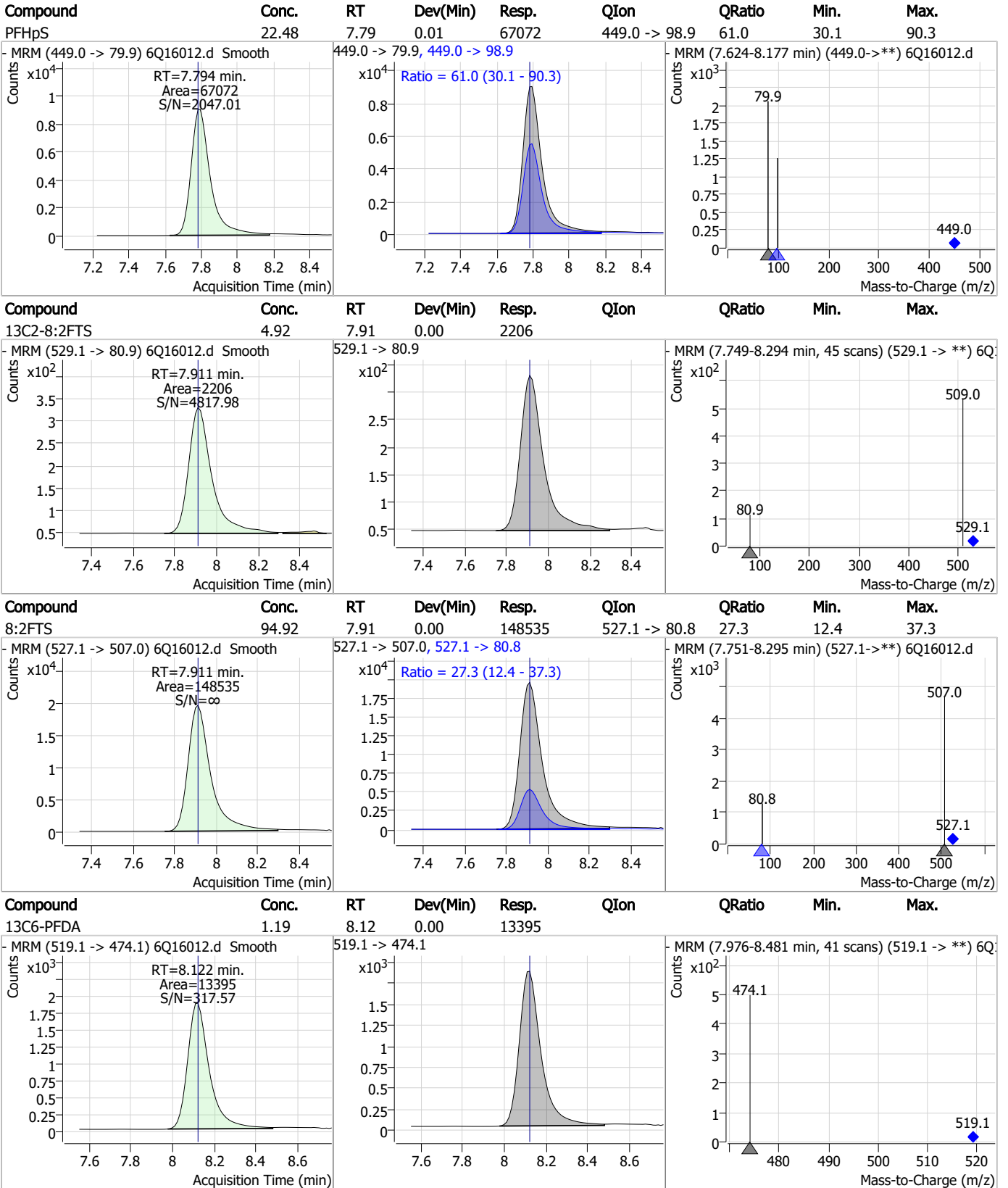
Perfluorinated Compounds by LC/MS/MS



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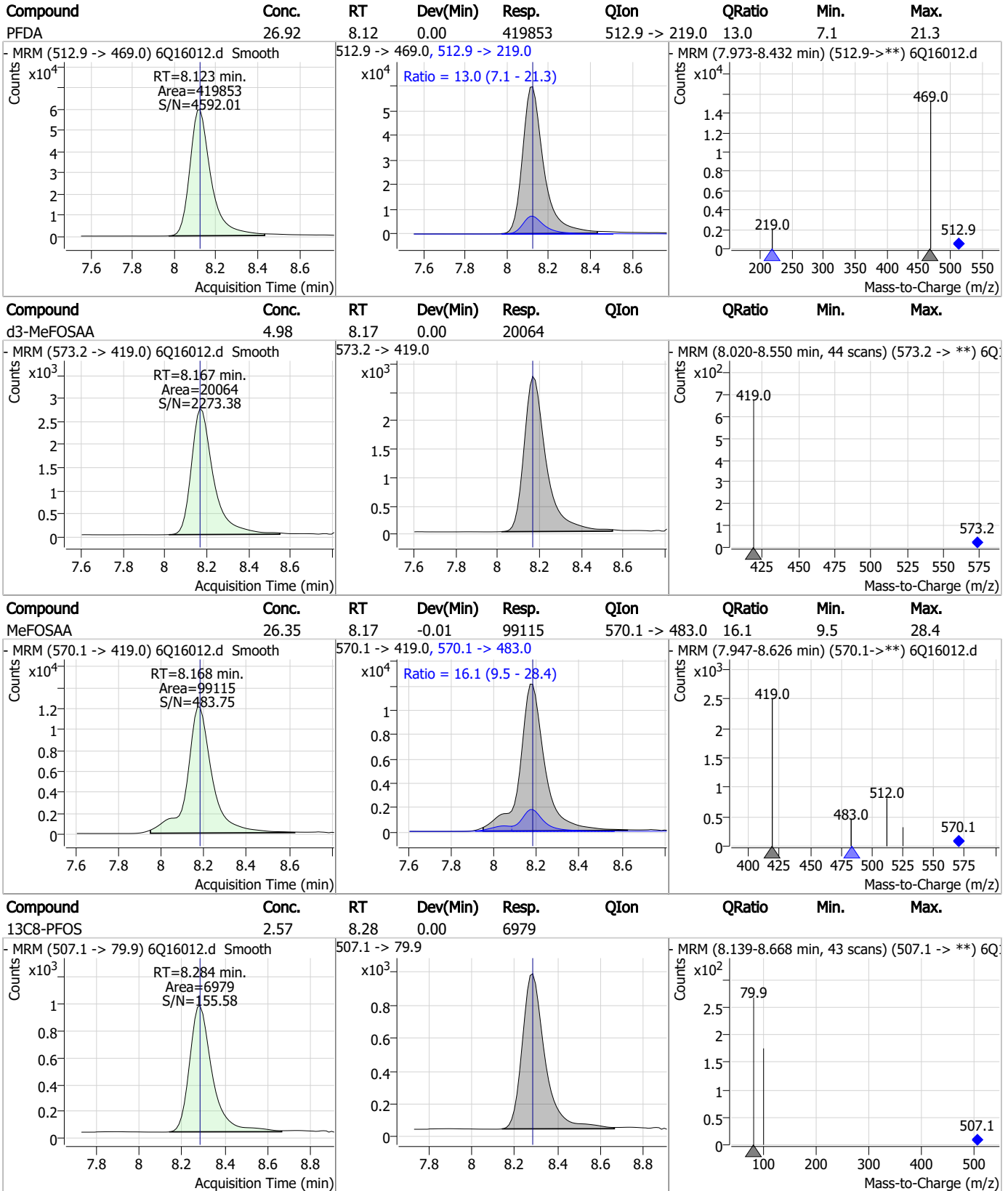
Perfluorinated Compounds by LC/MS/MS



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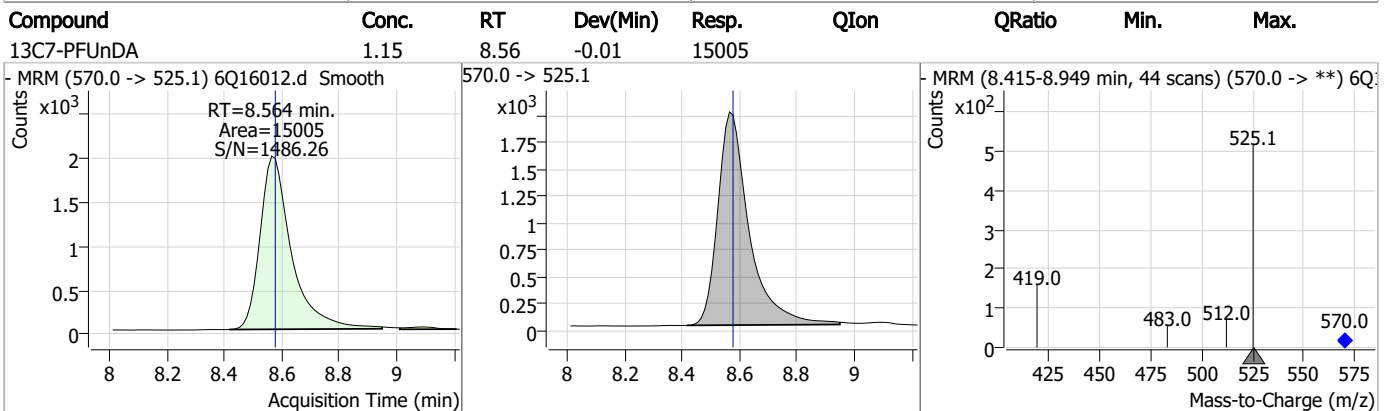
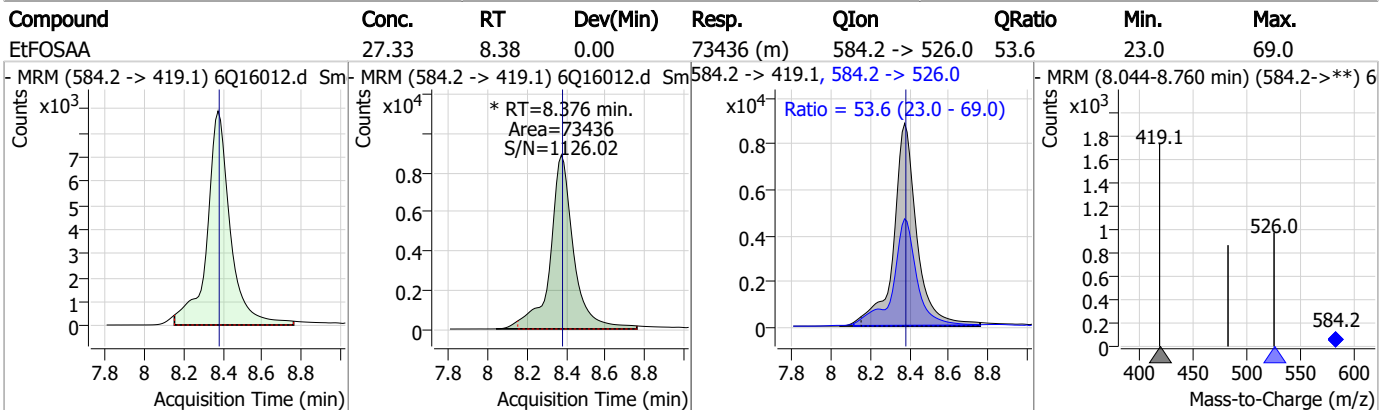
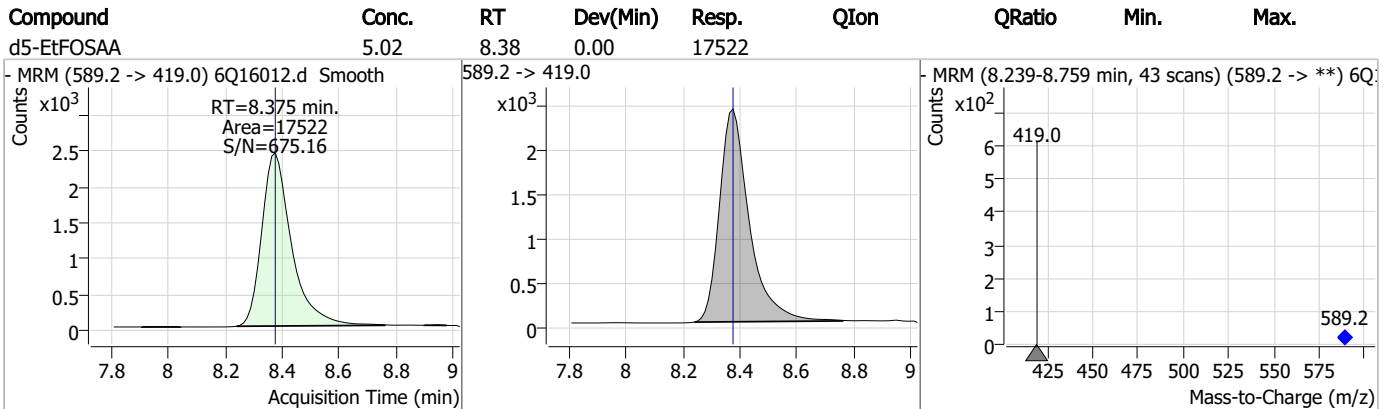
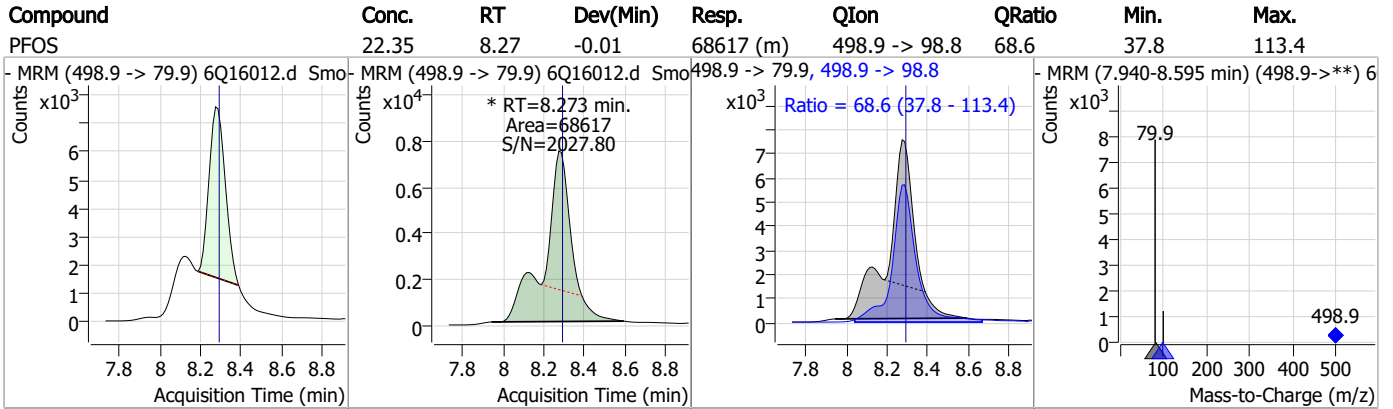
Perfluorinated Compounds by LC/MS/MS



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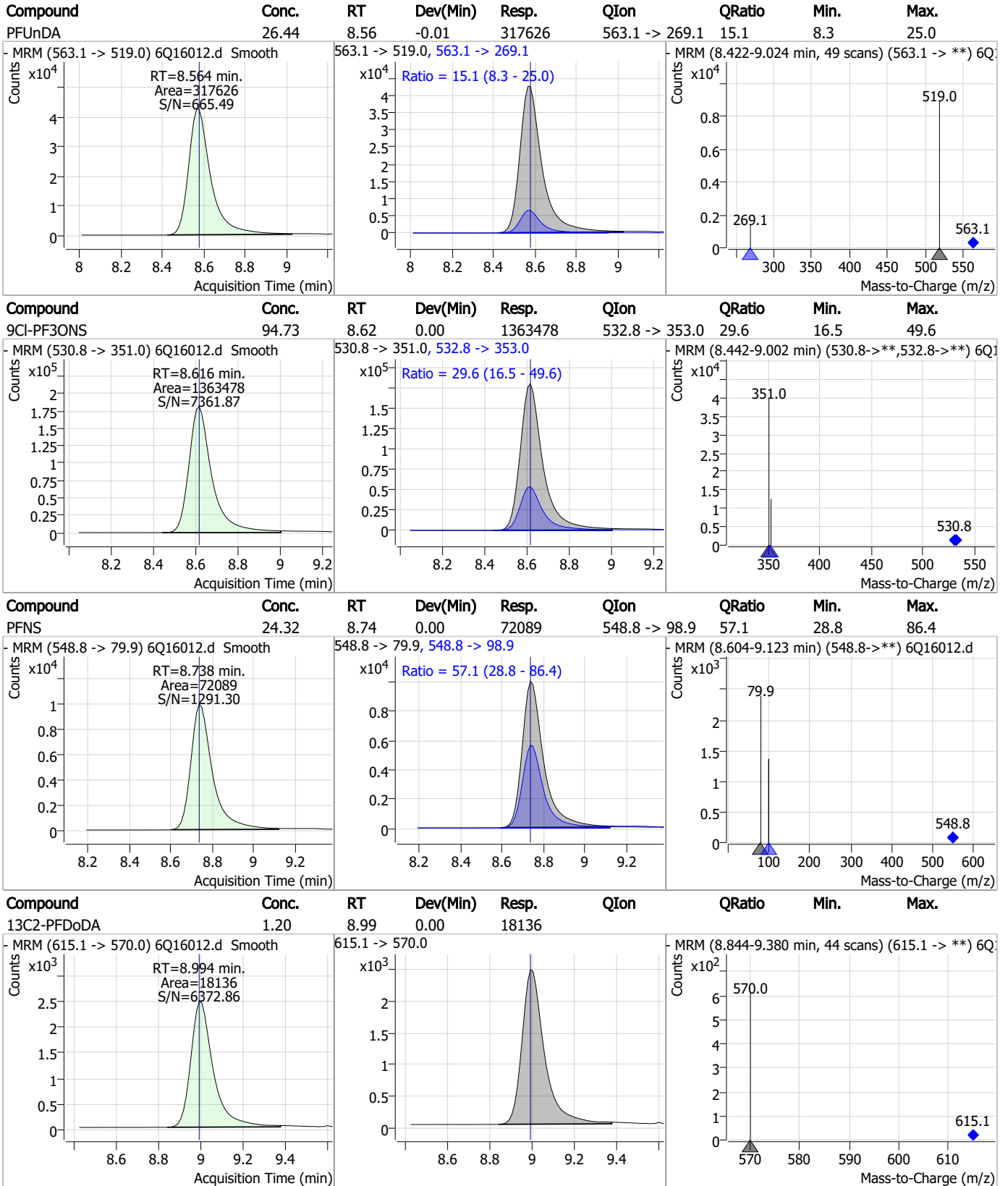
Perfluorinated Compounds by LC/MS/MS



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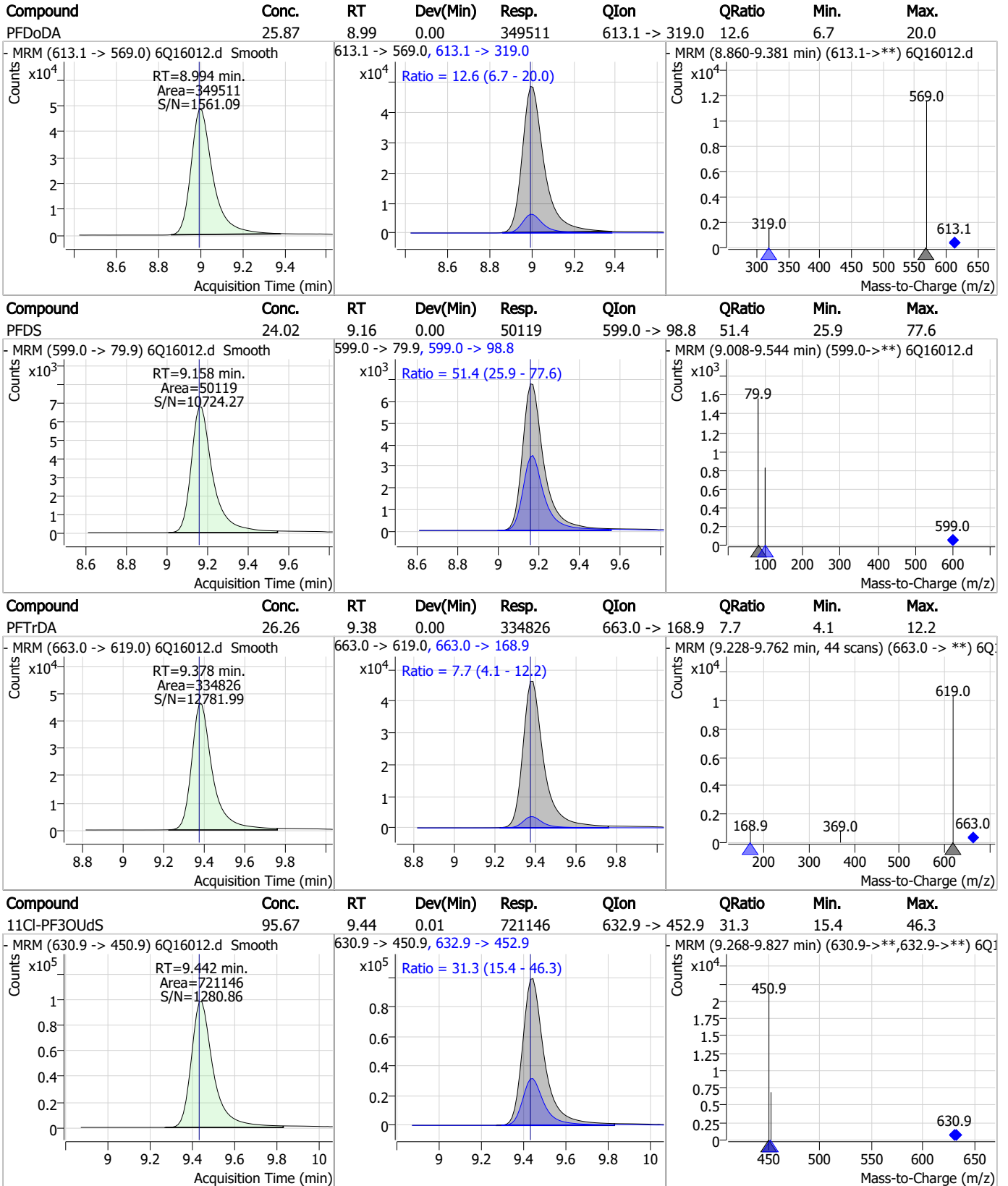
Perfluorinated Compounds by LC/MS/MS



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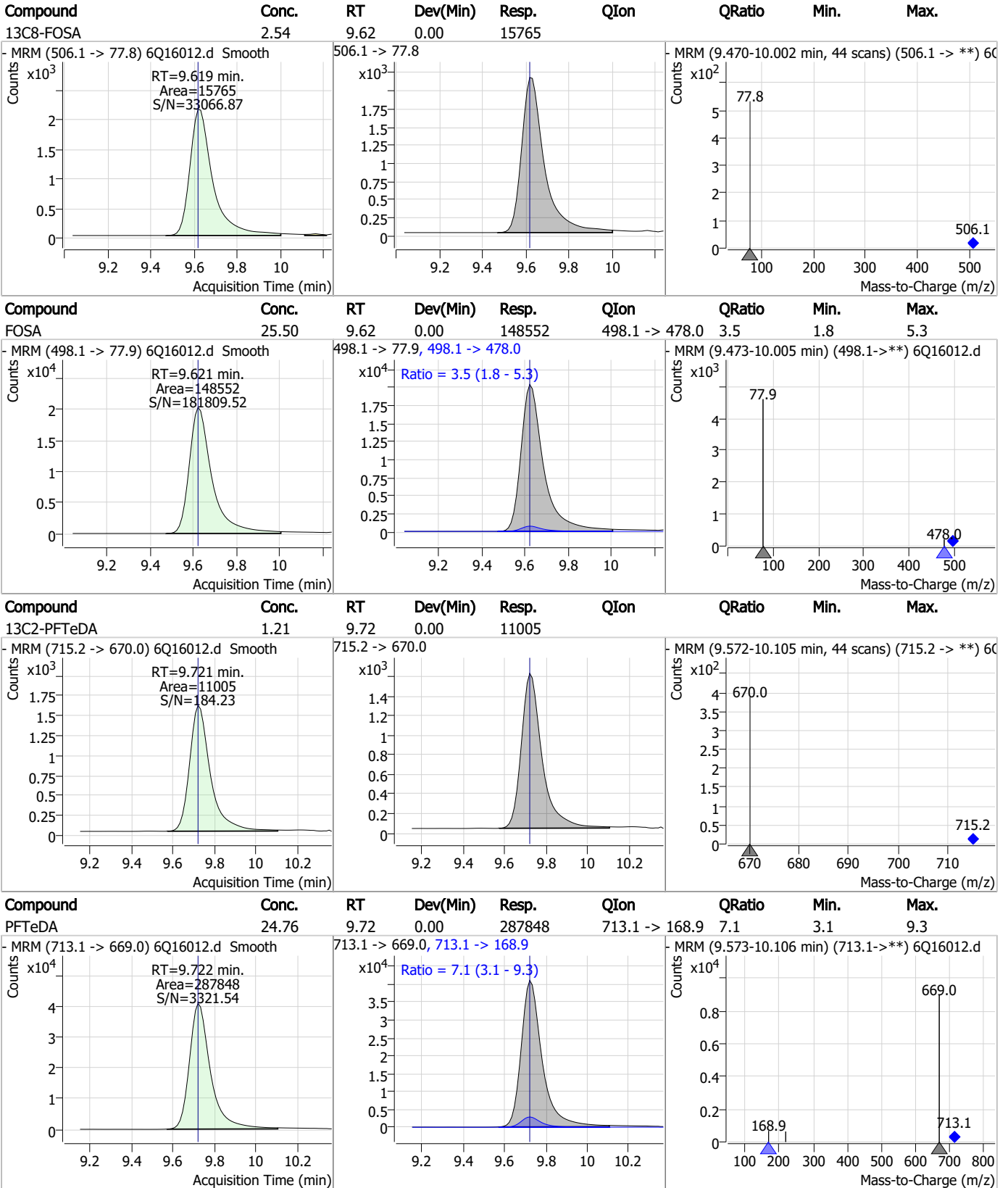
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



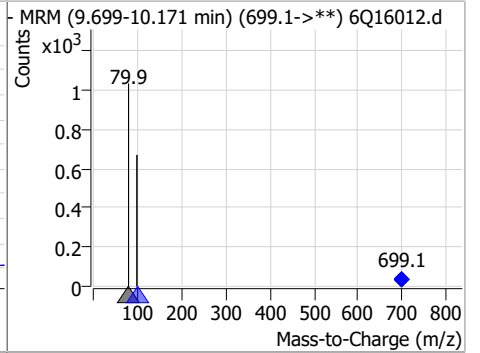
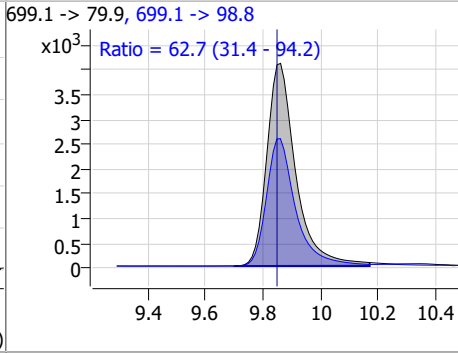
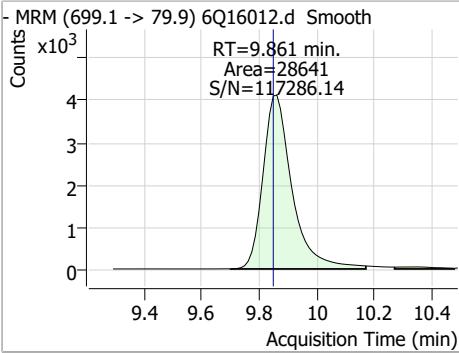
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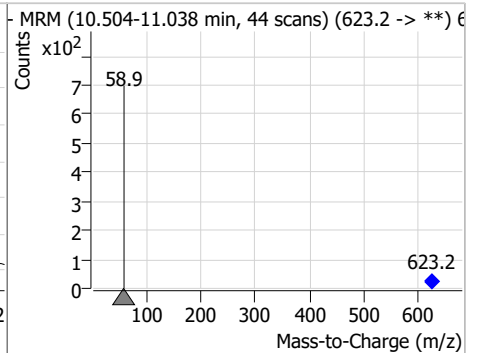
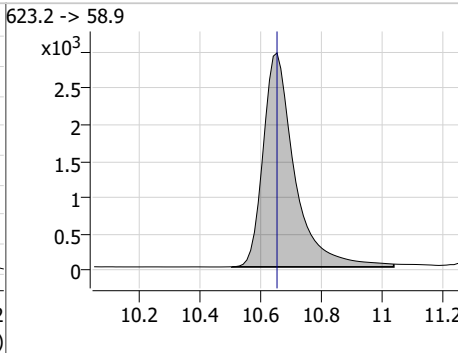
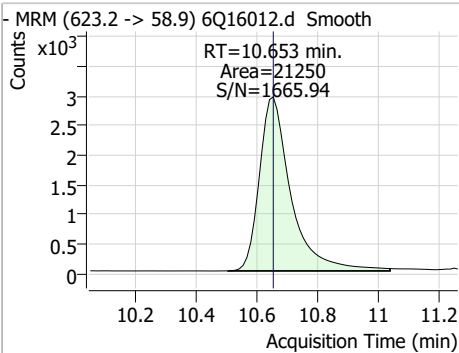


Perfluorinated Compounds by LC/MS/MS

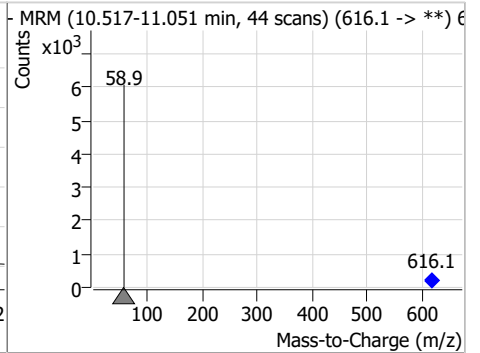
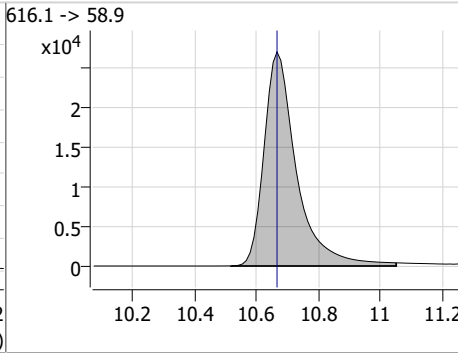
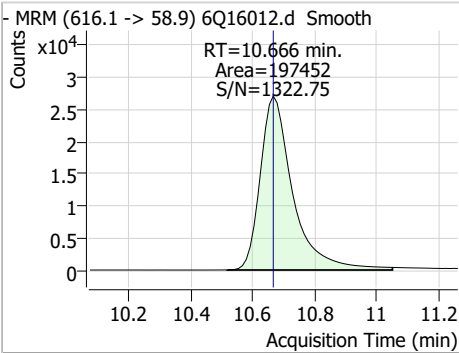
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	23.63	9.86	0.01	28641	699.1 -> 98.8	62.7	31.4	94.2



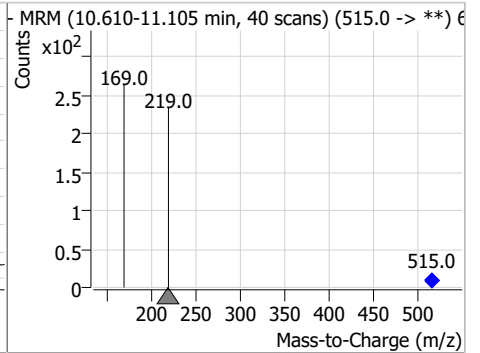
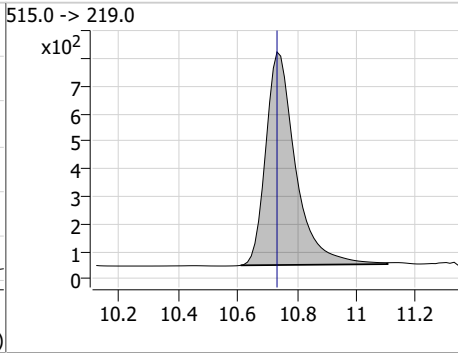
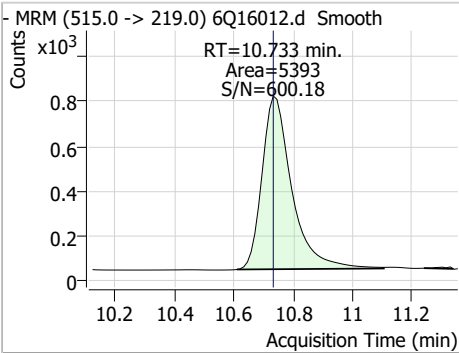
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.07	10.65	0.00	21250				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	246.51	10.67	0.00	197452				

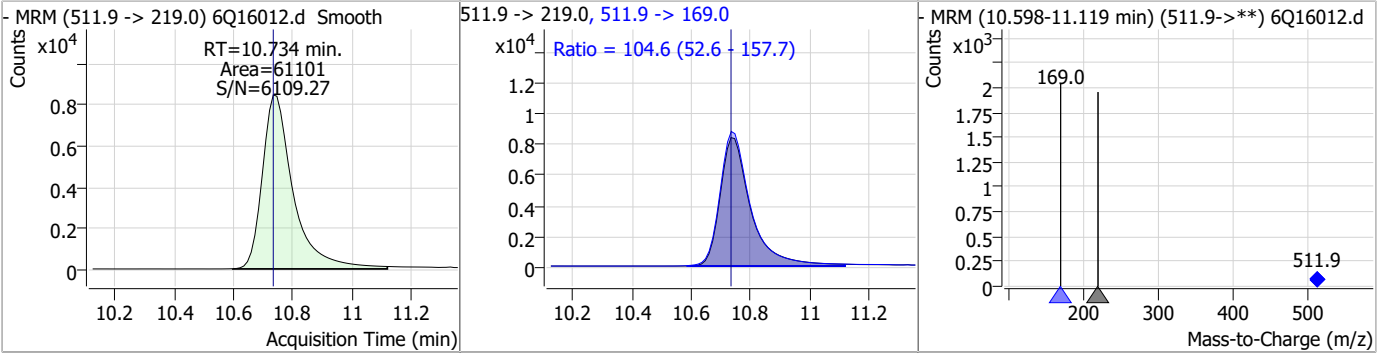


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.41	10.73	0.00	5393				

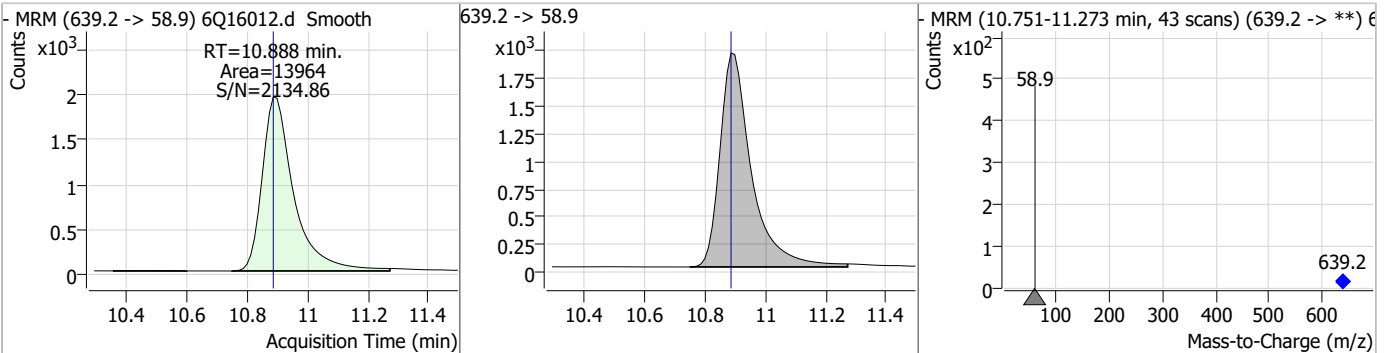


Perfluorinated Compounds by LC/MS/MS

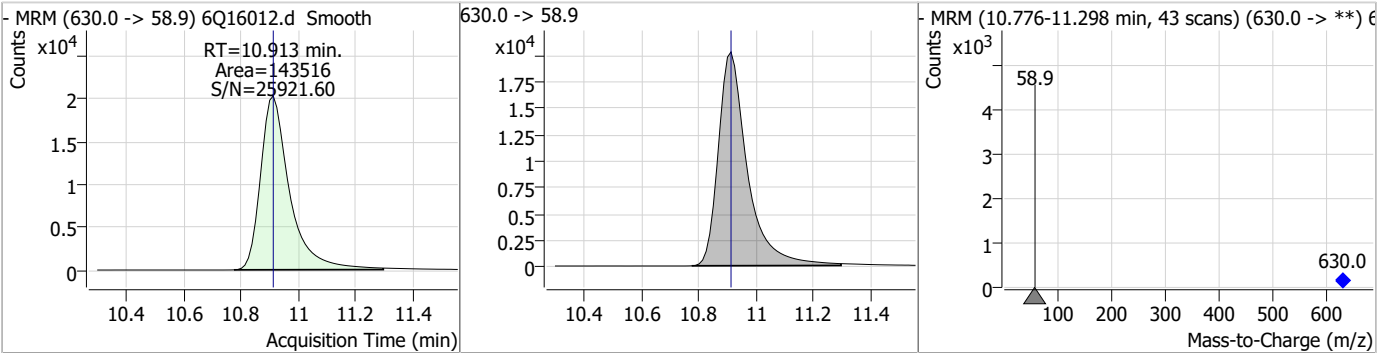
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	26.93	10.73	0.00	61101	511.9 -> 169.0	104.6	52.6	157.7



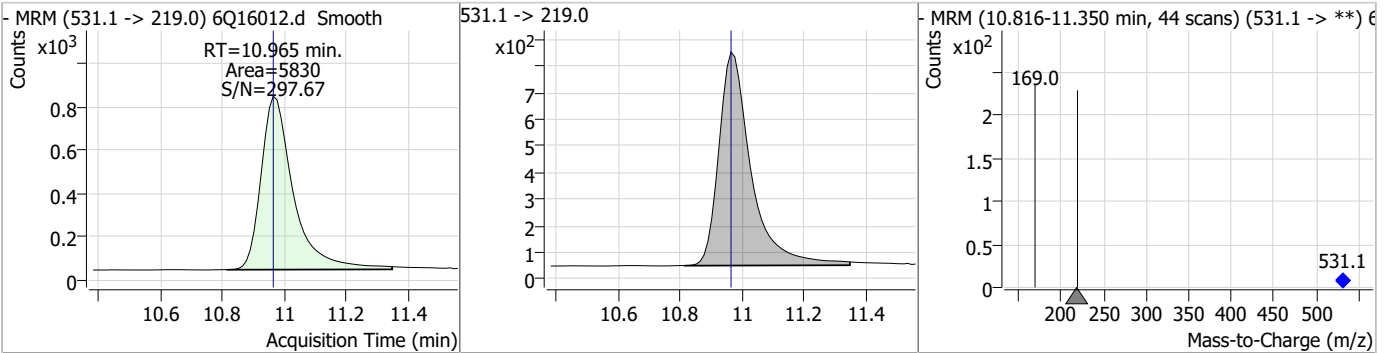
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.79	10.89	0.00	13964				



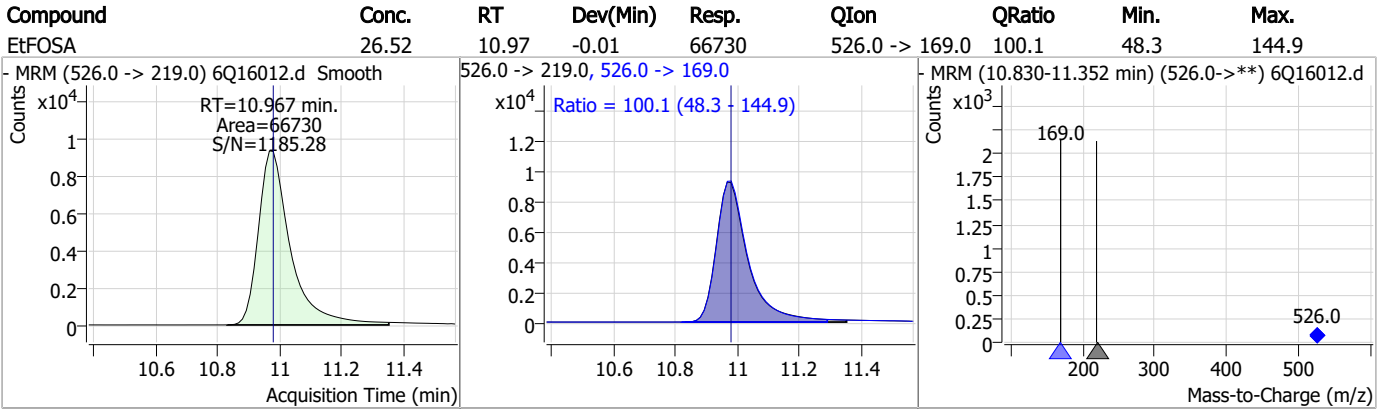
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	262.05	10.91	0.00	143516				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	10.97	0.00	5830				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16012.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 15:39 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16013.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 3:53:41 PM
 Sample Name : ic239-8
 Vial : P1-A9
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	73755	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	34587	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	31525	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	29771	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	51884	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	14904	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	12928	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	13965	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17899	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	10680	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	14816	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	11668	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8020	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	6272	2.50 µg/L	0.000
M2-4:2FTS	5.204	329.1 -> 80.9	1673	5.00 µg/L	0.012
M2-6:2FTS	6.886	429.1 -> 80.9	1986	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	1940	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	19940	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	13620	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	16604	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	18737	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	11963	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6394	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5581	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8264	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	31547	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	5699	2.50 µg/L	0.000
13C4-PFOA	7.125	417.1 -> 372.0	61273	2.50 µg/L	0.013
13C2-PFDA	8.123	515.1 -> 470.1	17832	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	17497	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	30533	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.204	329.1 -> 80.9	1673	4.37 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.3%		
13C2-6:2FTS	6.886	429.1 -> 80.9	1986	4.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.4%		
13C2-8:2FTS	7.911	529.1 -> 80.9	1940	4.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.6%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17899	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C2-PFTeDA	9.721	715.2 -> 670.0	10680	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C3-PFBS	5.459	302.1 -> 79.9	11668	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.1%		
13C3-PFHxS	7.228	402.1 -> 79.9	8020	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	2.897	216.8 -> 171.9	73755	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.468	367.1 -> 322.0	29771	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C5-PFHxA	5.528	318.0 -> 273.0	31525	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFPeA	4.322	268.3 -> 223.0	34587	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C6-PFDA	8.122	519.1 -> 474.1	12928	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C7-PFUnDA	8.564	570.0 -> 525.1	13965	1.15 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C8-FOSA	9.631	506.1 -> 77.8	14816	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOA	7.112	421.1 -> 376.0	51884	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C8-PFOS	8.284	507.1 -> 79.9	6272	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C9-PFNA	7.643	472.1 -> 427.0	14904	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.1%	
d3-MeFOSAA	8.167	573.2 -> 419.0	19940	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	13620	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d3-MeFOSA	10.733	515.0 -> 219.0	5581	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
d5-EtFOSAA	8.375	589.2 -> 419.0	16604	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
d7-MeFOSE	10.653	623.2 -> 58.9	18737	22.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
d9-EtFOSE	10.888	639.2 -> 58.9	11963	21.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.6%	
d5-EtFOSA	10.965	531.1 -> 219.0	6394	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0 327.1 -> 80.9	672716 159894	205.22 µg/L	100
6:2FTS	6.886	427.1 -> 407.0 427.1 -> 80.9	580682 124119	218.31 µg/L	99
8:2FTS	7.911	527.1 -> 507.0 527.1 -> 80.8	320384 77870	232.83 µg/L	99
EtFOSAA	8.376	584.2 -> 419.1 584.2 -> 526.0	145670 90501	57.22 µg/L	76
FOSA	9.621	498.1 -> 77.9 498.1 -> 478.0	334878 12376	61.18 µg/L	99
MeFOSAA	8.181	570.1 -> 419.0 570.1 -> 483.0	222145 36466	59.43 µg/L	94
PFBA	2.906	212.8 -> 168.9	477764	256.30 µg/L	100
PFBS	5.460	298.7 -> 79.9 298.7 -> 98.8	259301 120789	56.65 µg/L	99
PFDA	8.123	512.9 -> 469.0 512.9 -> 219.0	966060 131099	64.18 µg/L	98
PFDoDA	8.994	613.1 -> 569.0 613.1 -> 319.0	802292 101275	60.17 µg/L	98
PFDS	9.170	599.0 -> 79.9	120014	64.02 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	64094			
PFHpA	6.469	363.1 -> 319.0	1079200	64.46	µg/L	100
		363.1 -> 169.0	151426			
PFHpS	7.781	449.0 -> 79.9	174252	64.99	µg/L	91
		449.0 -> 98.9	92383			
PFHxA	5.531	313.0 -> 269.0	709033	60.93	µg/L	100
		313.0 -> 118.9	28422			
PFHxS	7.241	398.7 -> 79.9	188613	53.47	µg/L	m 99
		398.7 -> 98.9	108818			
PFNA	7.643	463.0 -> 419.0	707653	72.88	µg/L	91
		463.0 -> 219.0	115473			
PFNS	8.738	548.8 -> 79.9	166248	62.42	µg/L	98
		548.8 -> 98.9	98534			
PFOA	7.113	413.0 -> 369.0	1519641	64.69	µg/L	98
		413.0 -> 169.0	192176			
PFOS	8.286	498.9 -> 79.9	172075	62.37	µg/L	m 84
		498.9 -> 98.8	106451			
PFPeA	4.324	263.0 -> 219.0	926011	126.91	µg/L	100
PFPeS	6.533	349.1 -> 79.9	238532	56.13	µg/L	98
		349.1 -> 98.9	126053			
PFTeDA	9.722	713.1 -> 669.0	713171	63.21	µg/L	100
		713.1 -> 168.9	44380			
PFTrDA	9.390	663.0 -> 619.0	709232	56.37	µg/L	98
		663.0 -> 168.9	62162			
PFUnDA	8.577	563.1 -> 519.0	738309	66.05	µg/L	95
		563.1 -> 269.1	107257			
11Cl-PF3OUdS	9.442	630.9 -> 450.9	1707726	233.24	µg/L	99
		632.9 -> 452.9	516208			
9Cl-PF3ONS	8.616	530.8 -> 351.0	3021681	216.12	µg/L	98
		532.8 -> 353.0	965497			
ADONA	6.731	376.9 -> 250.9	6200510	224.69	µg/L	97
		376.9 -> 84.8	1362392			
HFPO-DA	5.894	284.9 -> 168.9	301952	245.24	µg/L	98
		284.9 -> 184.9	39837			
3:3FTCA	3.790	241.0 -> 177.0	135498	334.63	µg/L	98
		241.0 -> 117.0	19406			
5:3FTCA	6.185	341.0 -> 237.1	3895664	1514.53	µg/L	96
		341.0 -> 217.0	3249360			
7:3FTCA	7.608	441.0 -> 316.9	2064983	1585.89	µg/L	92
		441.0 -> 336.9	3787434			
EtFOSA	10.979	526.0 -> 219.0	159296	57.72	µg/L	99
		526.0 -> 169.0	155532			
EtFOSE	10.913	630.0 -> 58.9	315224	671.87	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	147845	62.98	µg/L	98
		511.9 -> 169.0	152763			
MeFOSE	10.666	616.1 -> 58.9	442283	626.22	µg/L	100
PFDoDS	9.861	699.1 -> 79.9	68927	63.28	µg/L	99
		699.1 -> 98.8	44062			
NFDHA	5.410	295.0 -> 201.0	87672	116.22	µg/L	100
		295.0 -> 84.9	38402			
PFMBA	4.737	279.0 -> 85.1	312290	129.17	µg/L	100
PFMPA	3.463	229.0 -> 84.9	290887	131.85	µg/L	100
PFEESA	5.999	314.8 -> 134.9	1808502	109.71	µg/L	100
		314.8 -> 82.9	46070			

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

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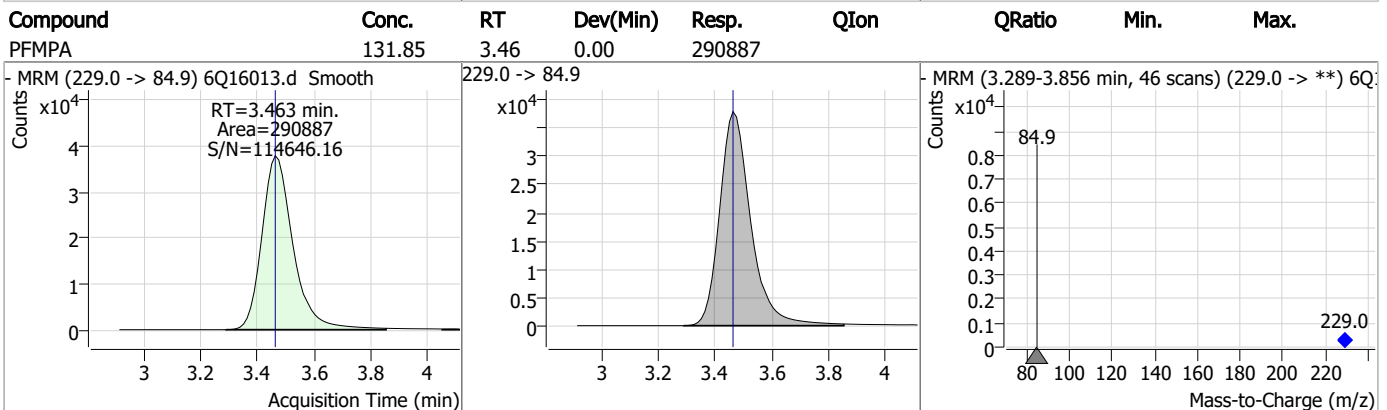
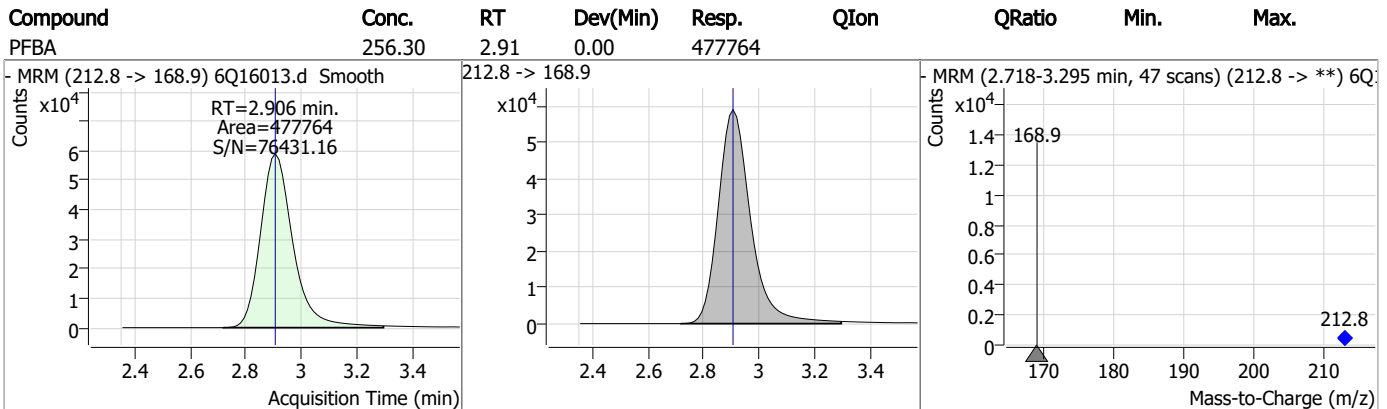
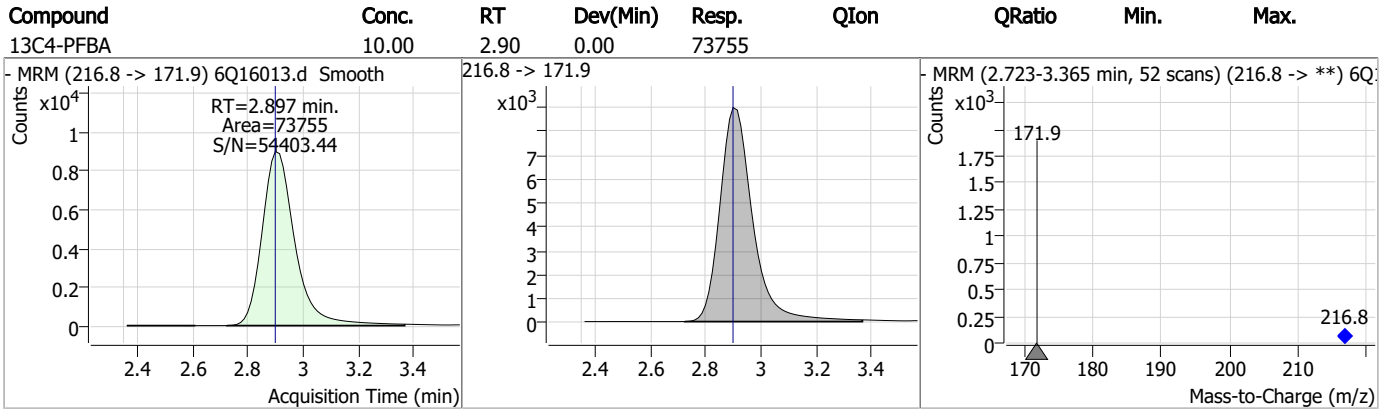
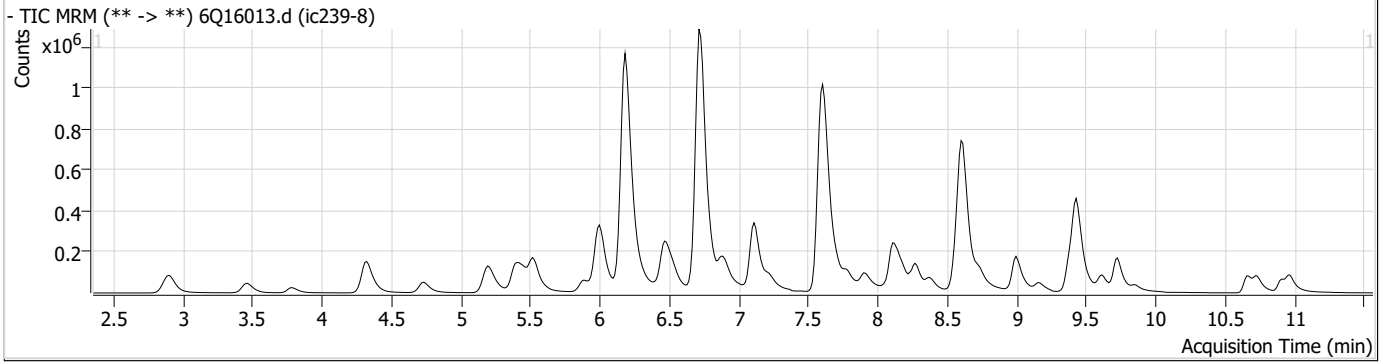
Perfluorinated Compounds by LC/MS/MS

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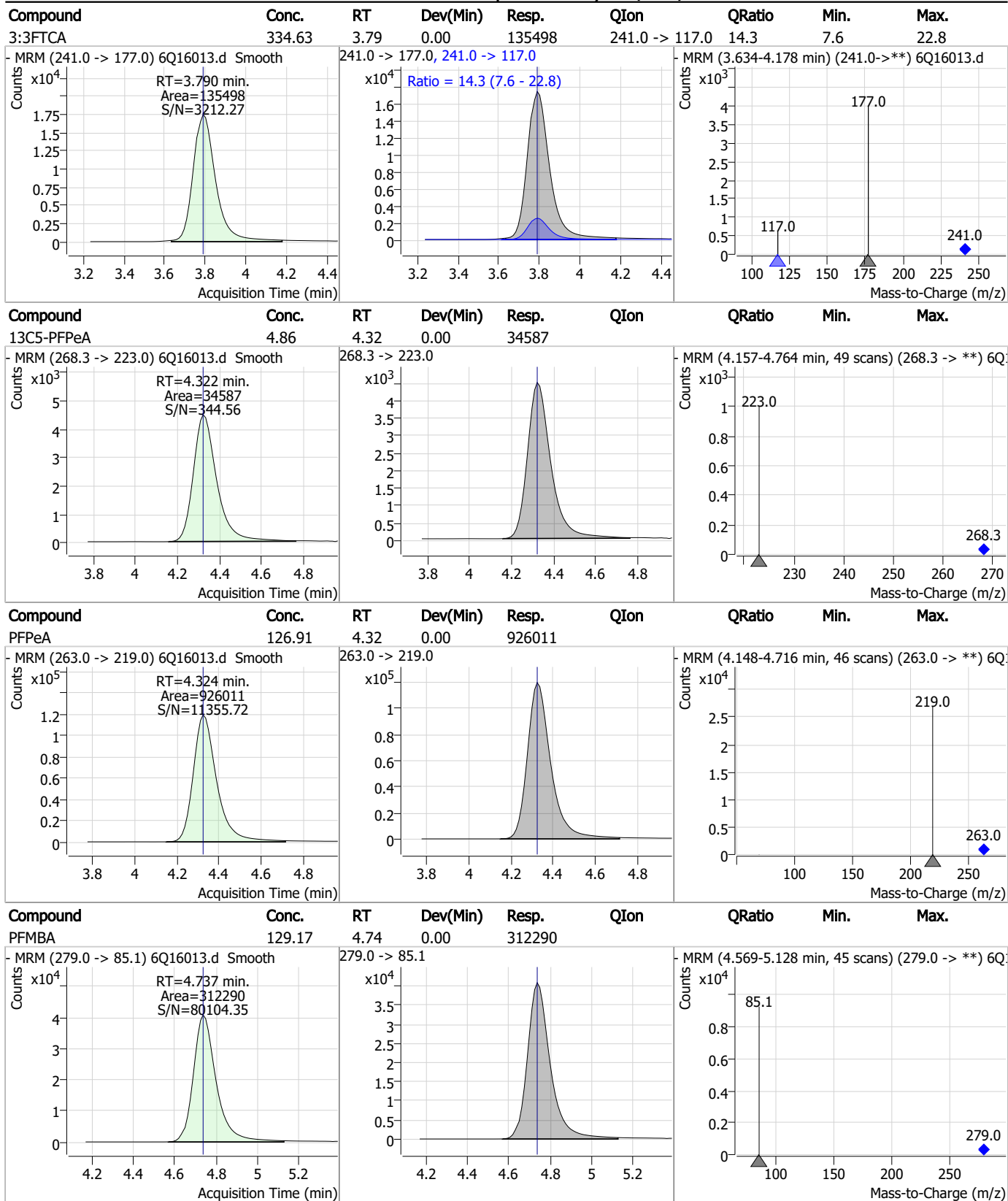
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Perfluorinated Compounds by LC/MS/MS



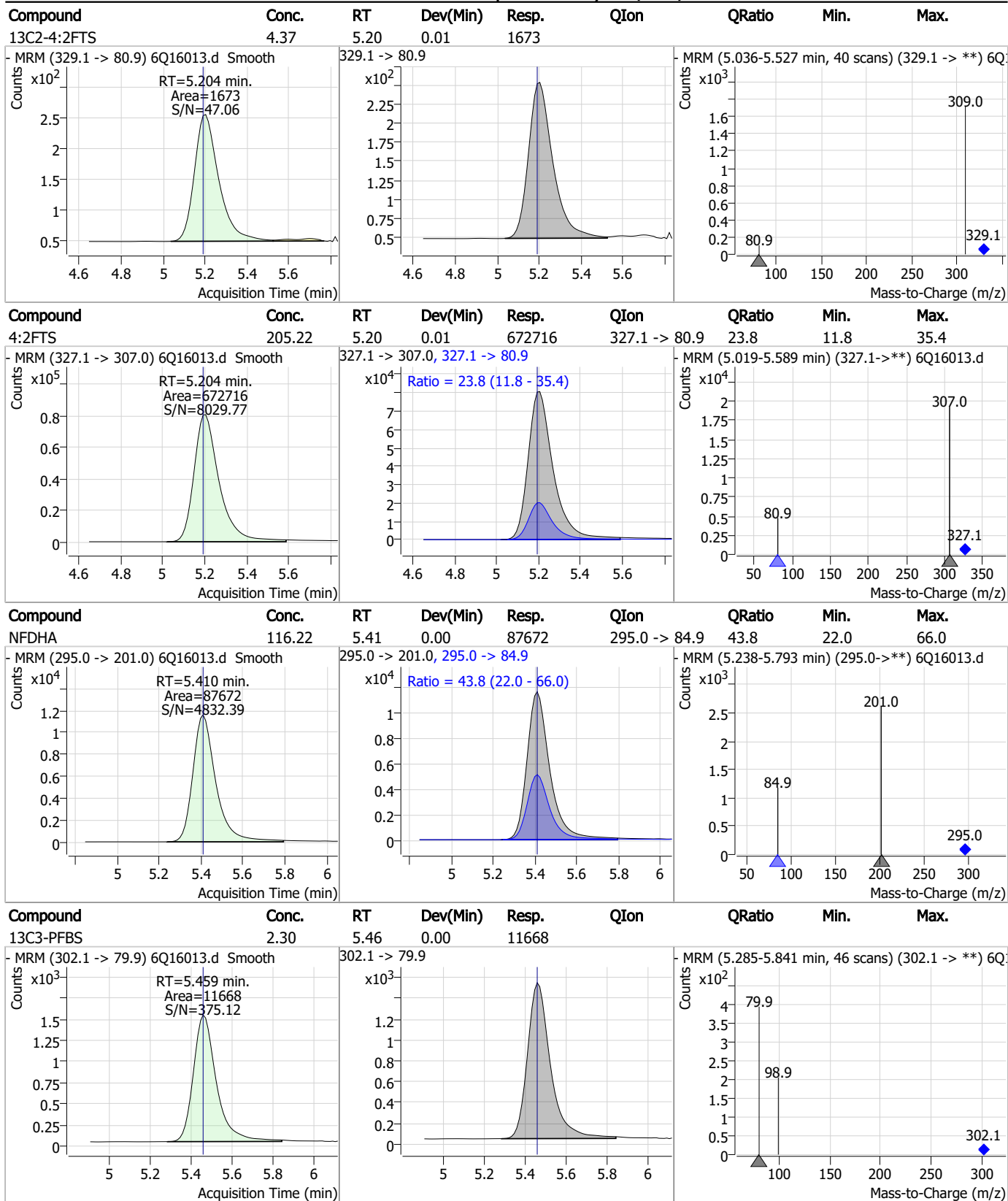
Perfluorinated Compounds by LC/MS/MS



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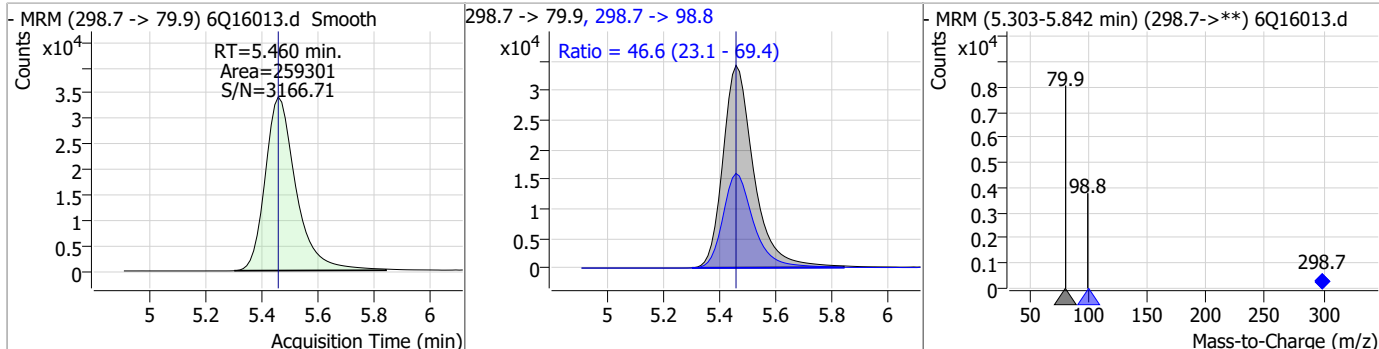
Perfluorinated Compounds by LC/MS/MS



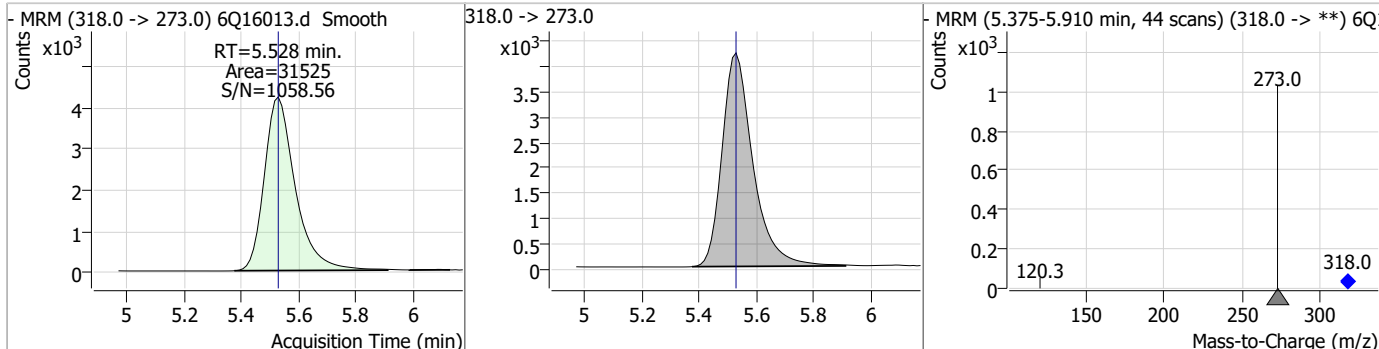
7.7.9
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Perfluorinated Compounds by LC/MS/MS

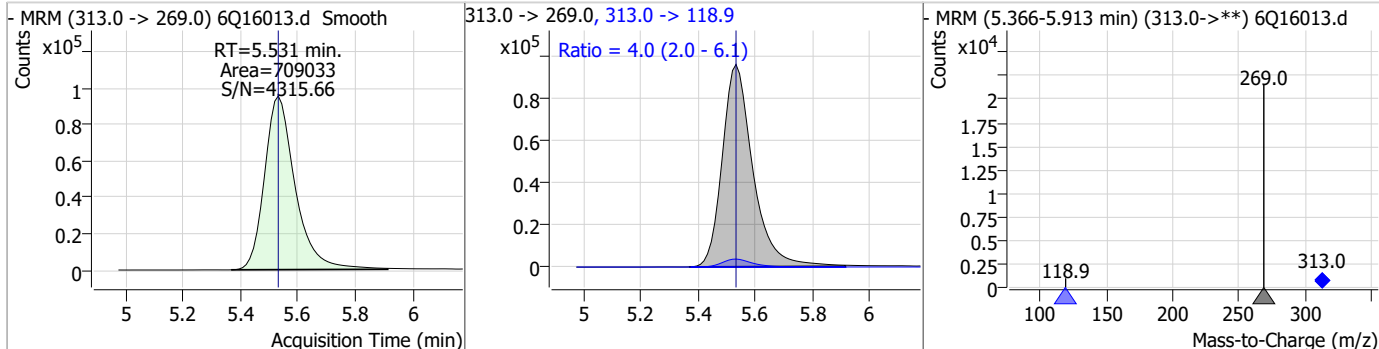
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	56.65	5.46	0.00	259301	298.7 -> 98.8	46.6	23.1	69.4



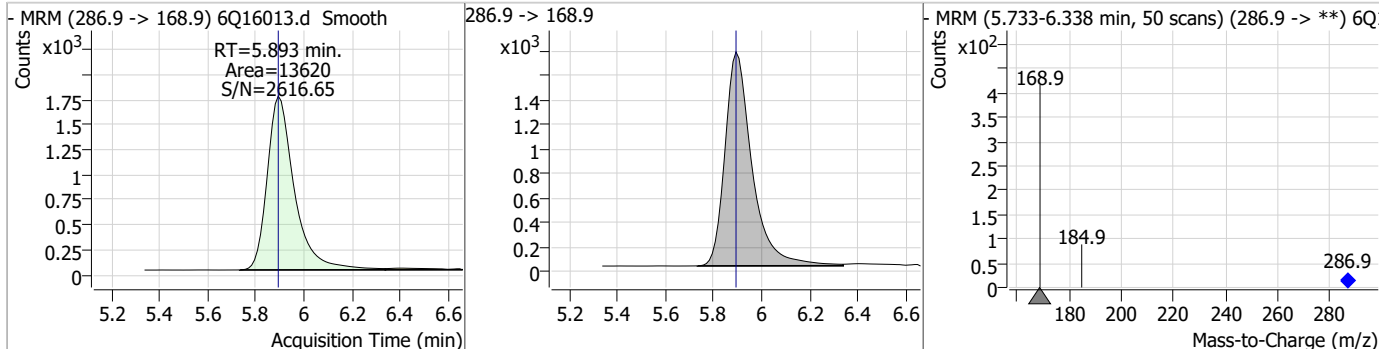
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.53	0.00	31525				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	60.93	5.53	0.00	709033	313.0 -> 118.9	4.0	2.0	6.1

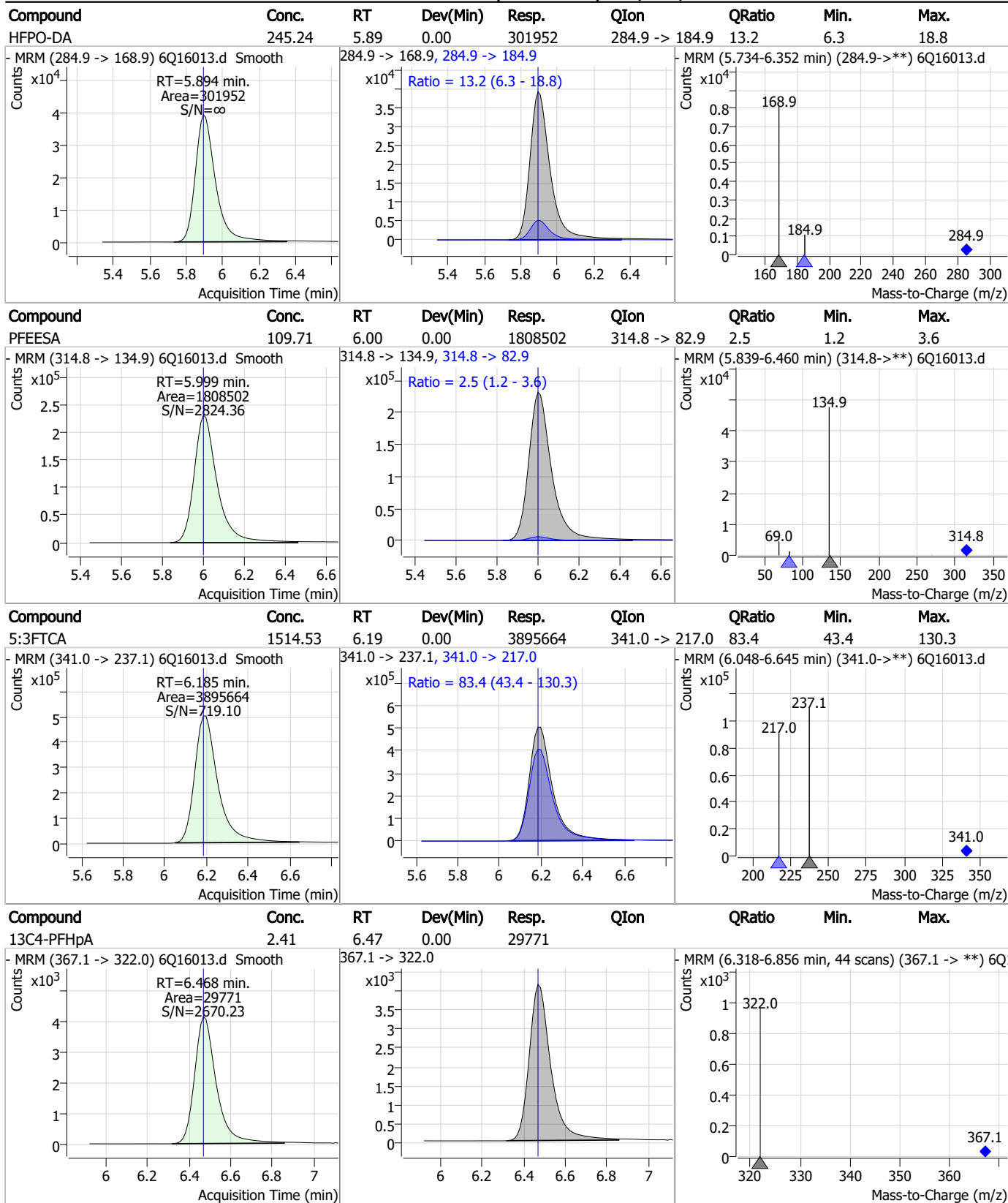


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.23	5.89	0.00	13620				



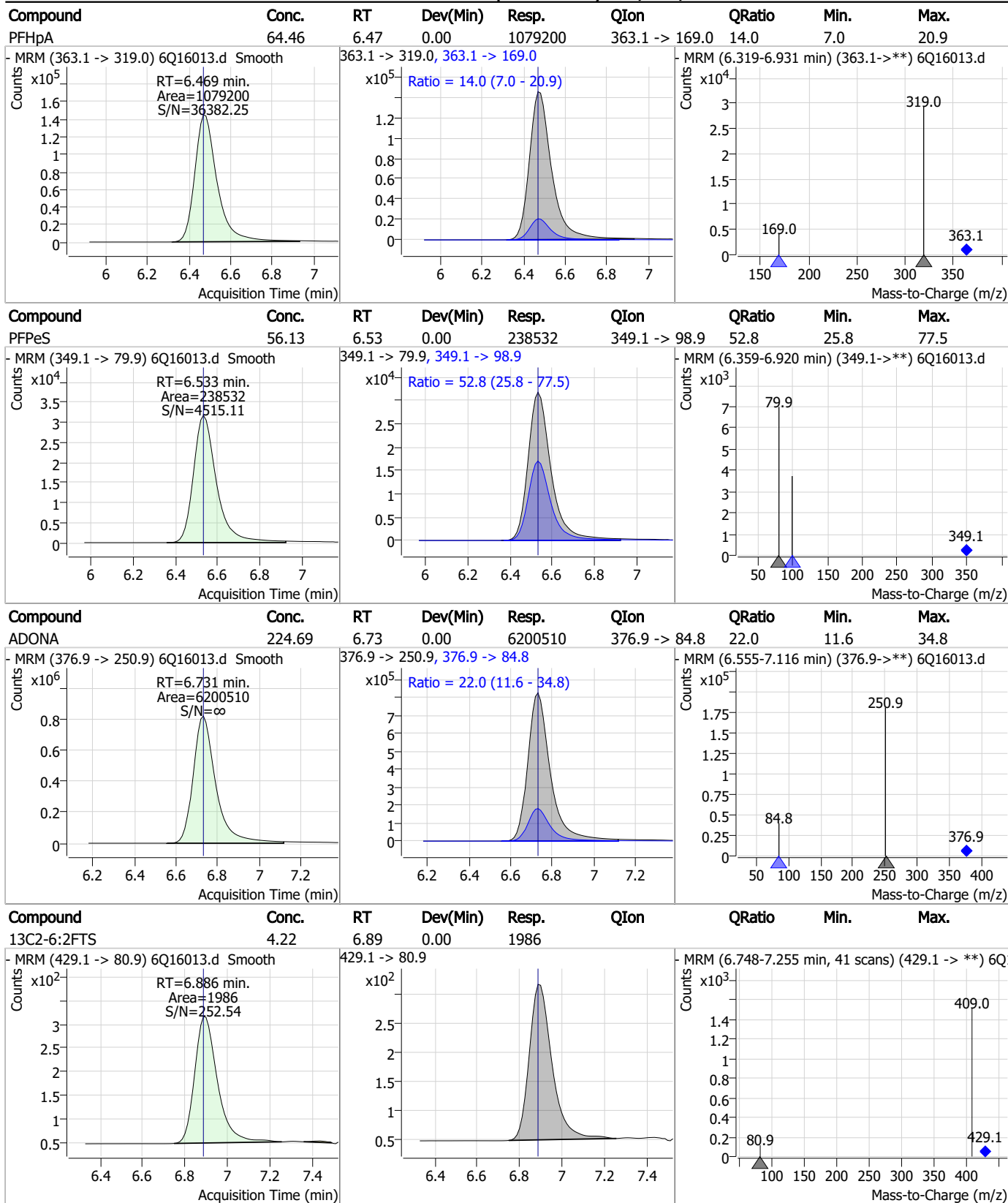
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Perfluorinated Compounds by LC/MS/MS



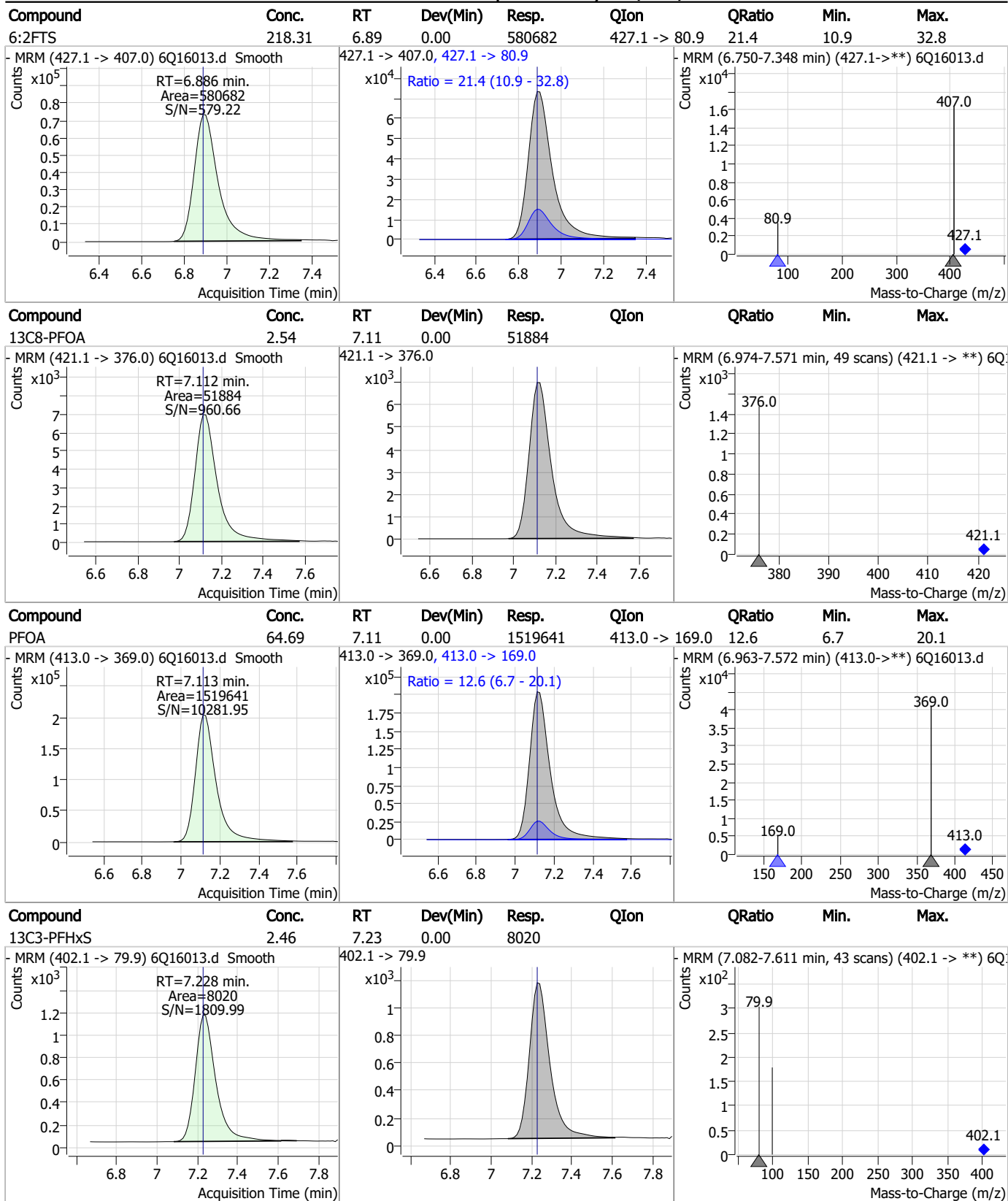
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Perfluorinated Compounds by LC/MS/MS



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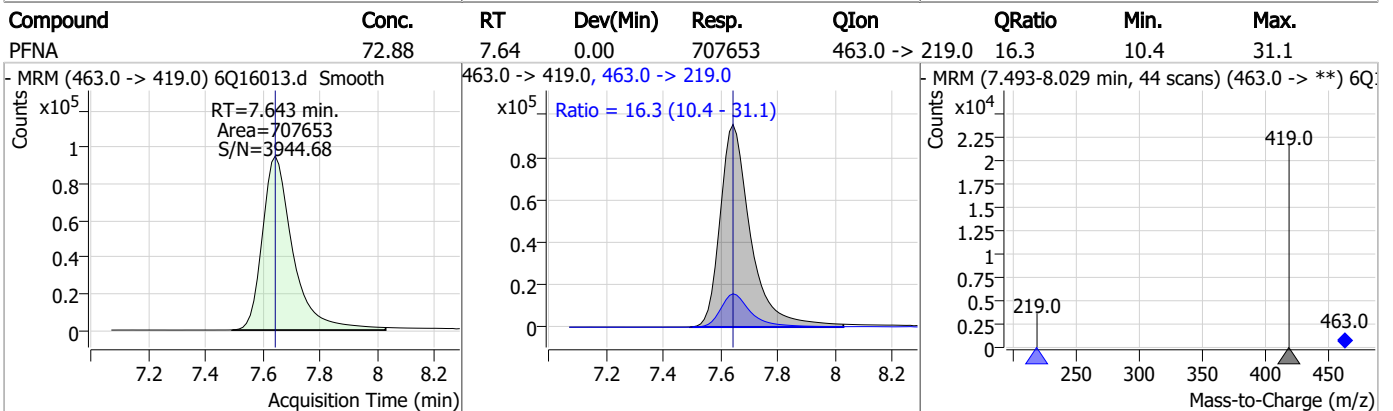
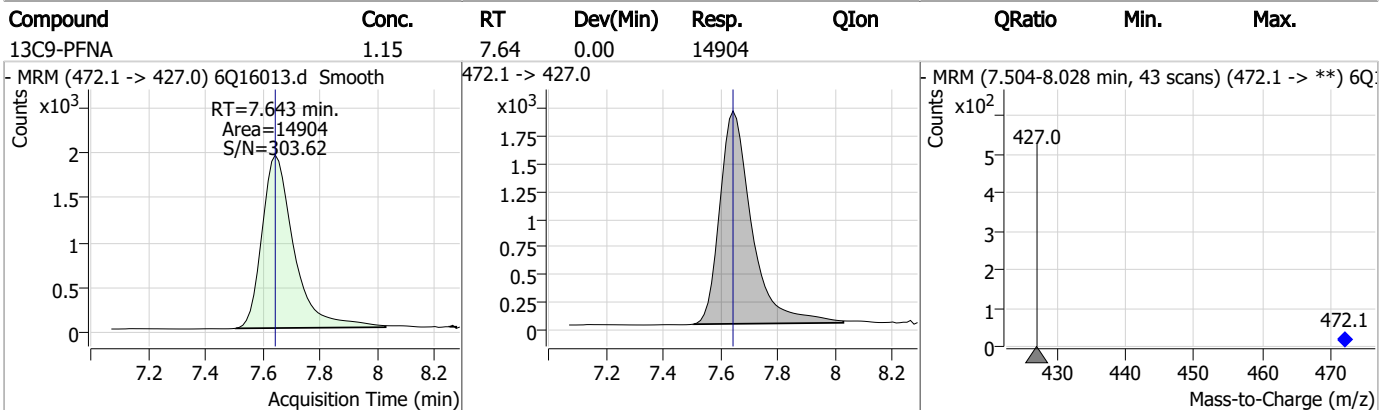
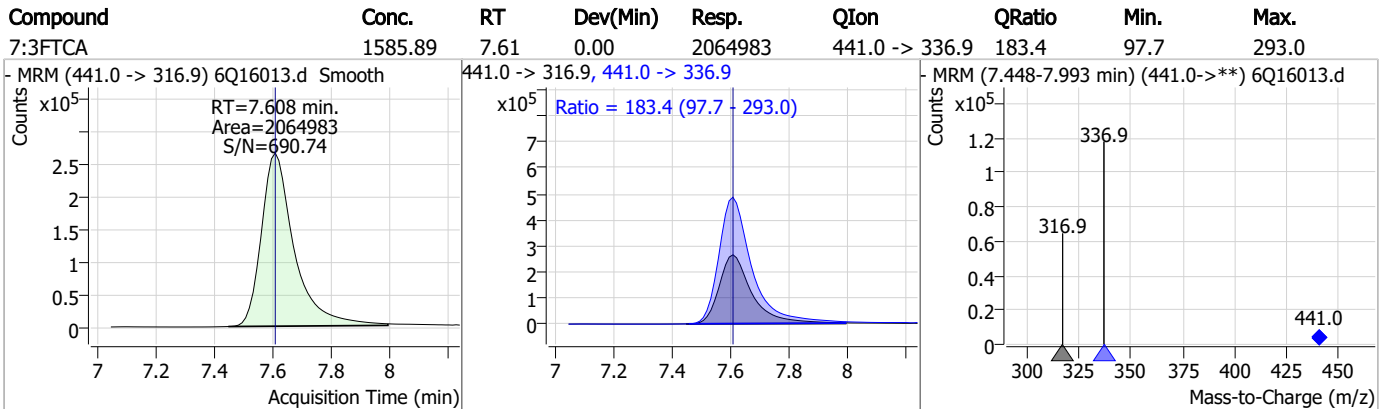
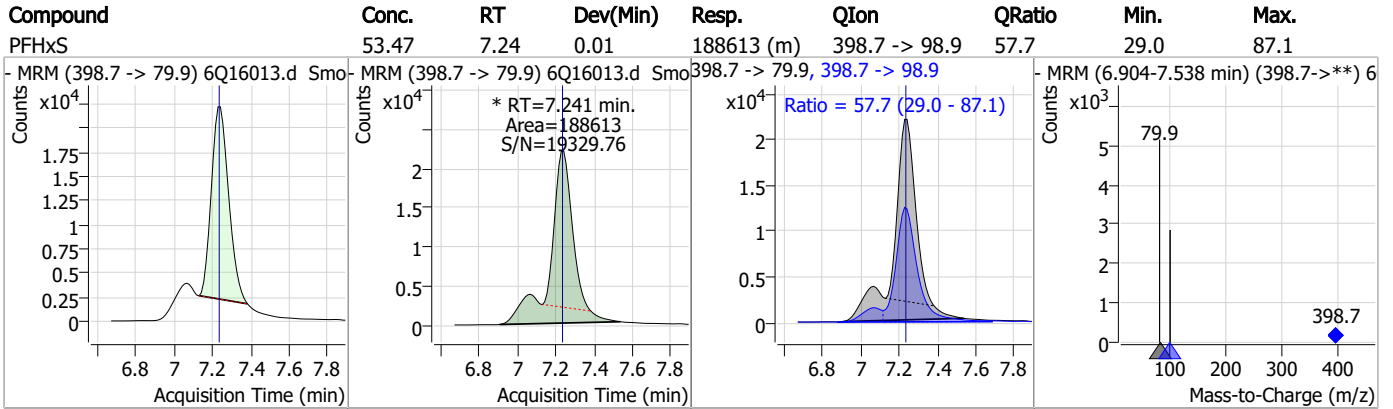
Perfluorinated Compounds by LC/MS/MS



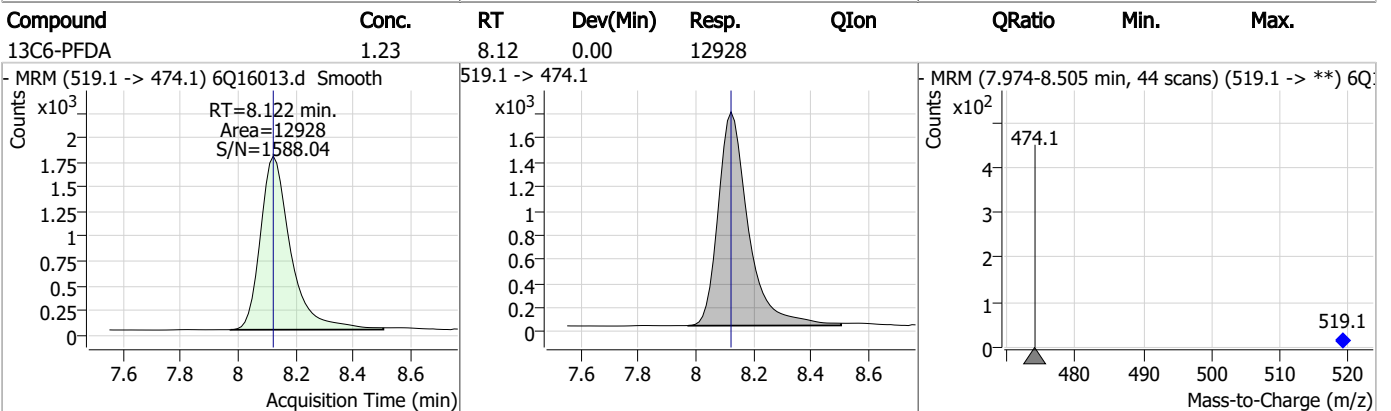
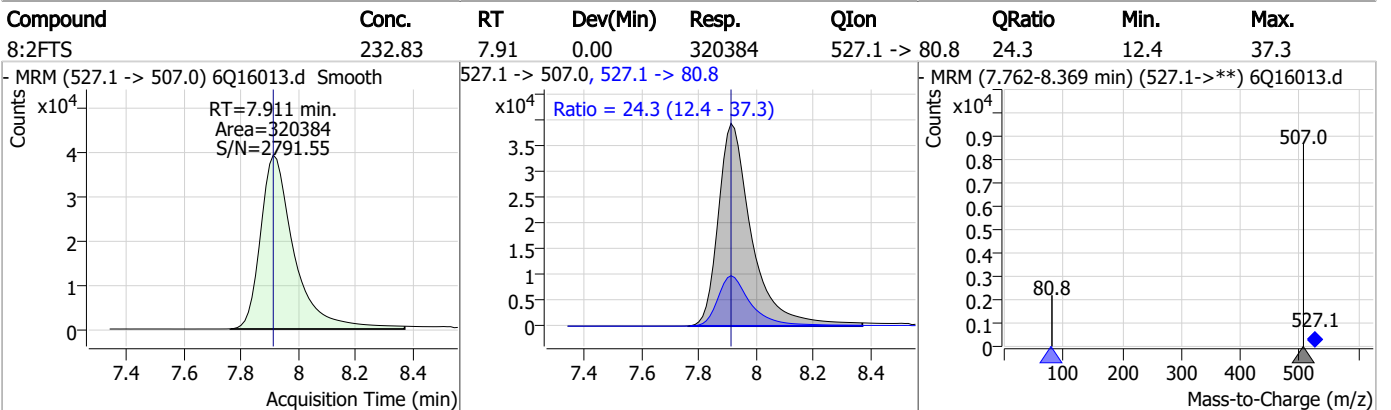
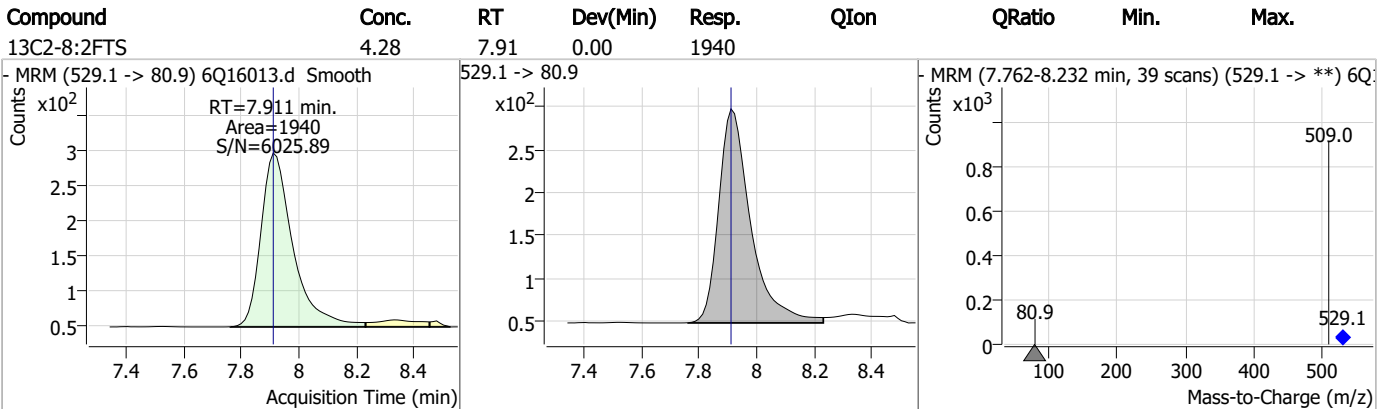
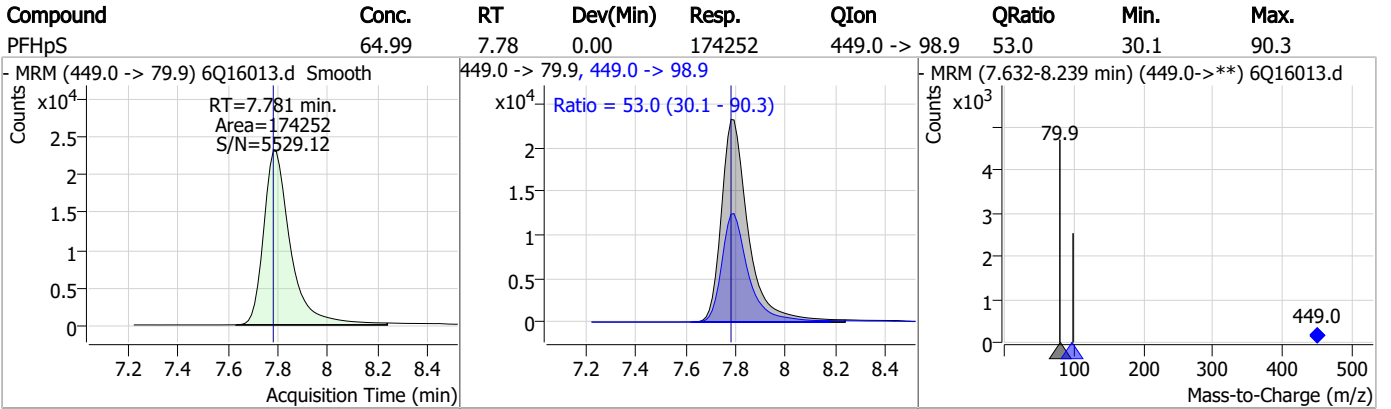
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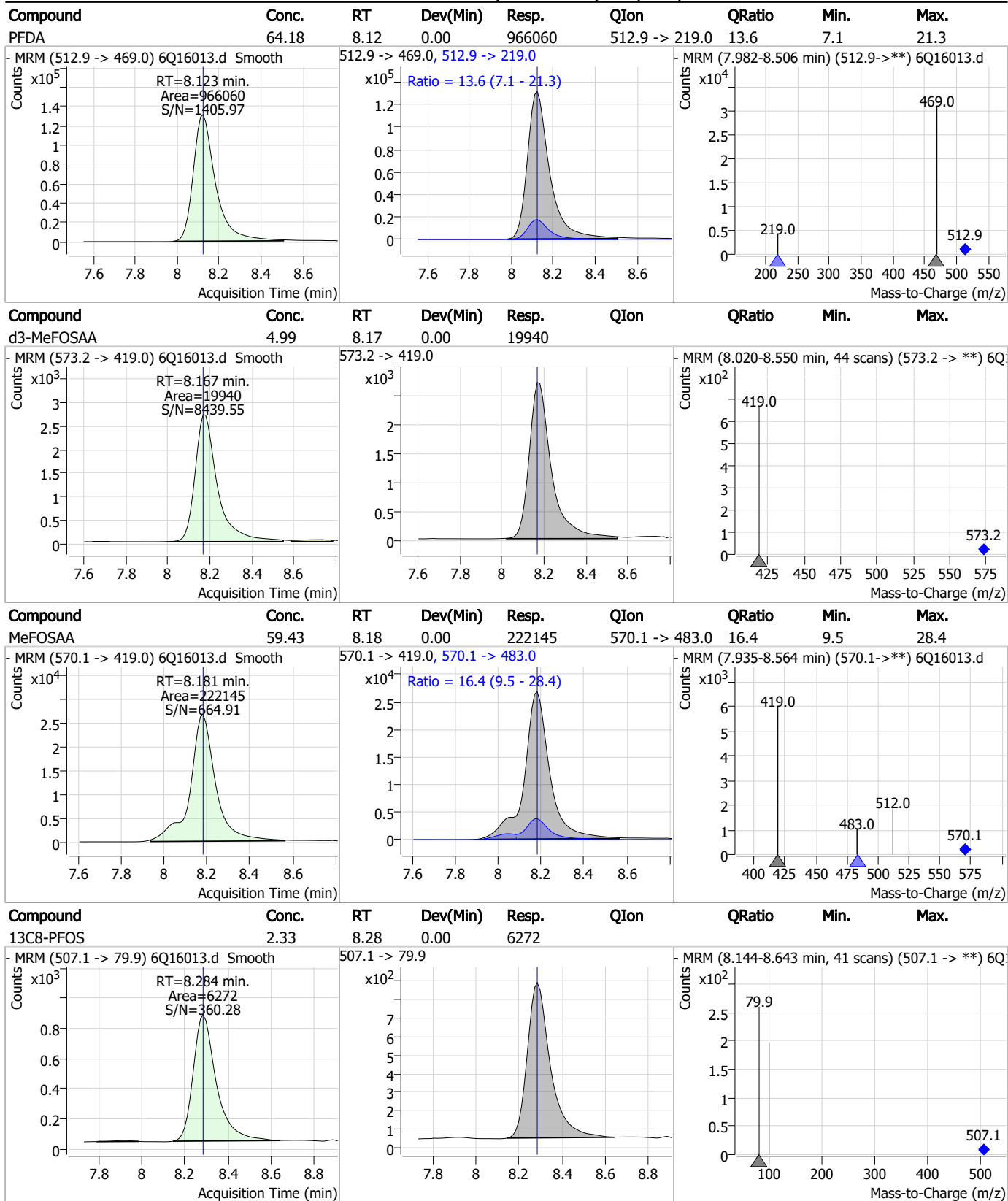
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



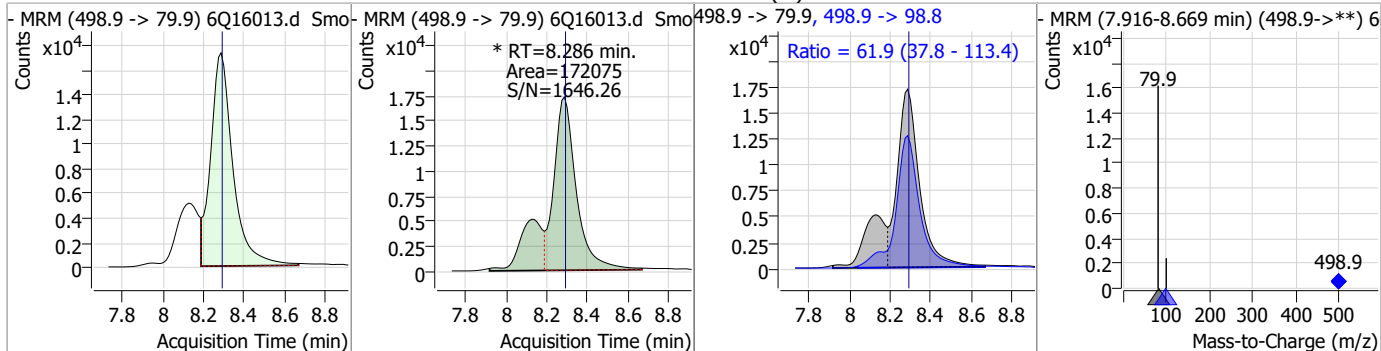
Perfluorinated Compounds by LC/MS/MS



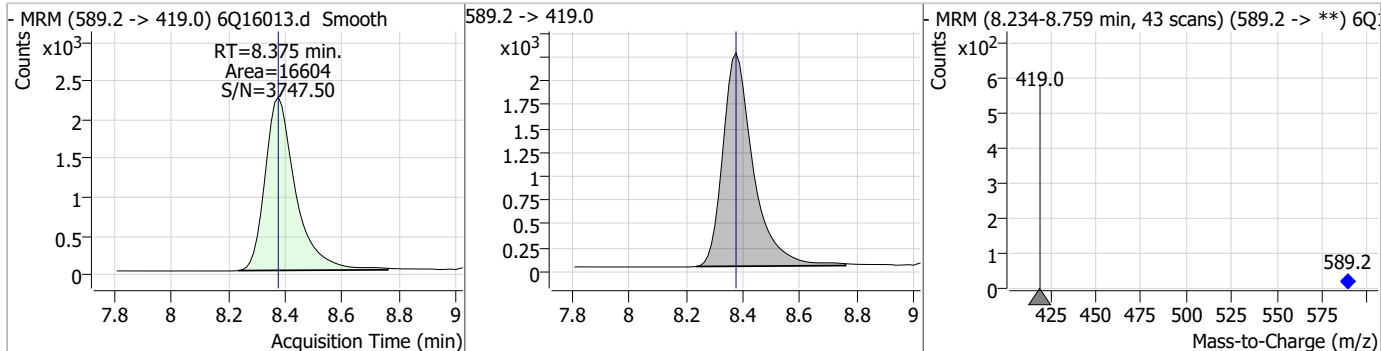
7.7.9
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Perfluorinated Compounds by LC/MS/MS

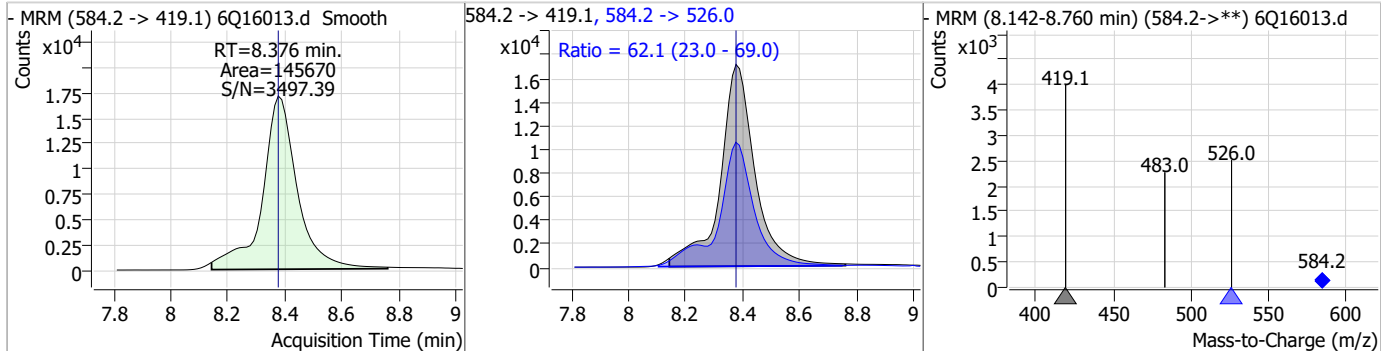
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	62.37	8.29	0.00	172075 (m)	498.9 -> 98.8	61.9	37.8	113.4



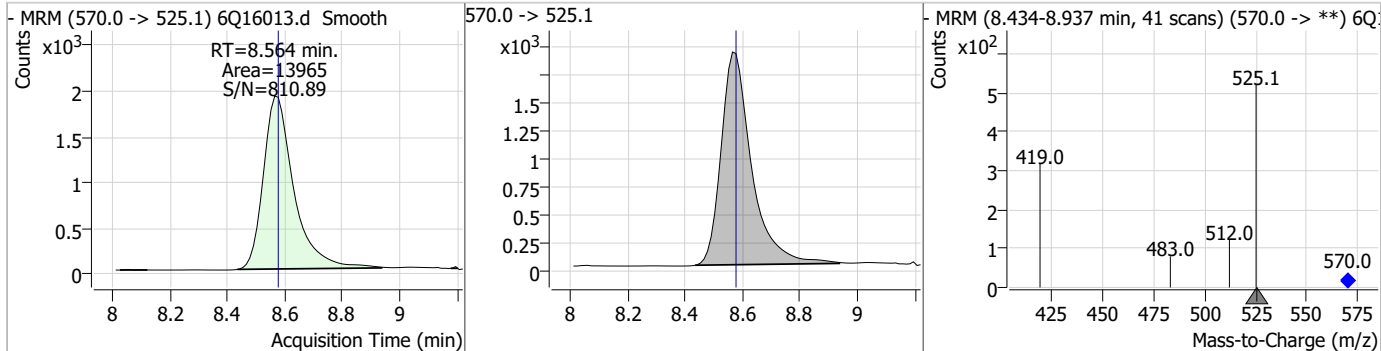
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.80	8.38	0.00	16604				



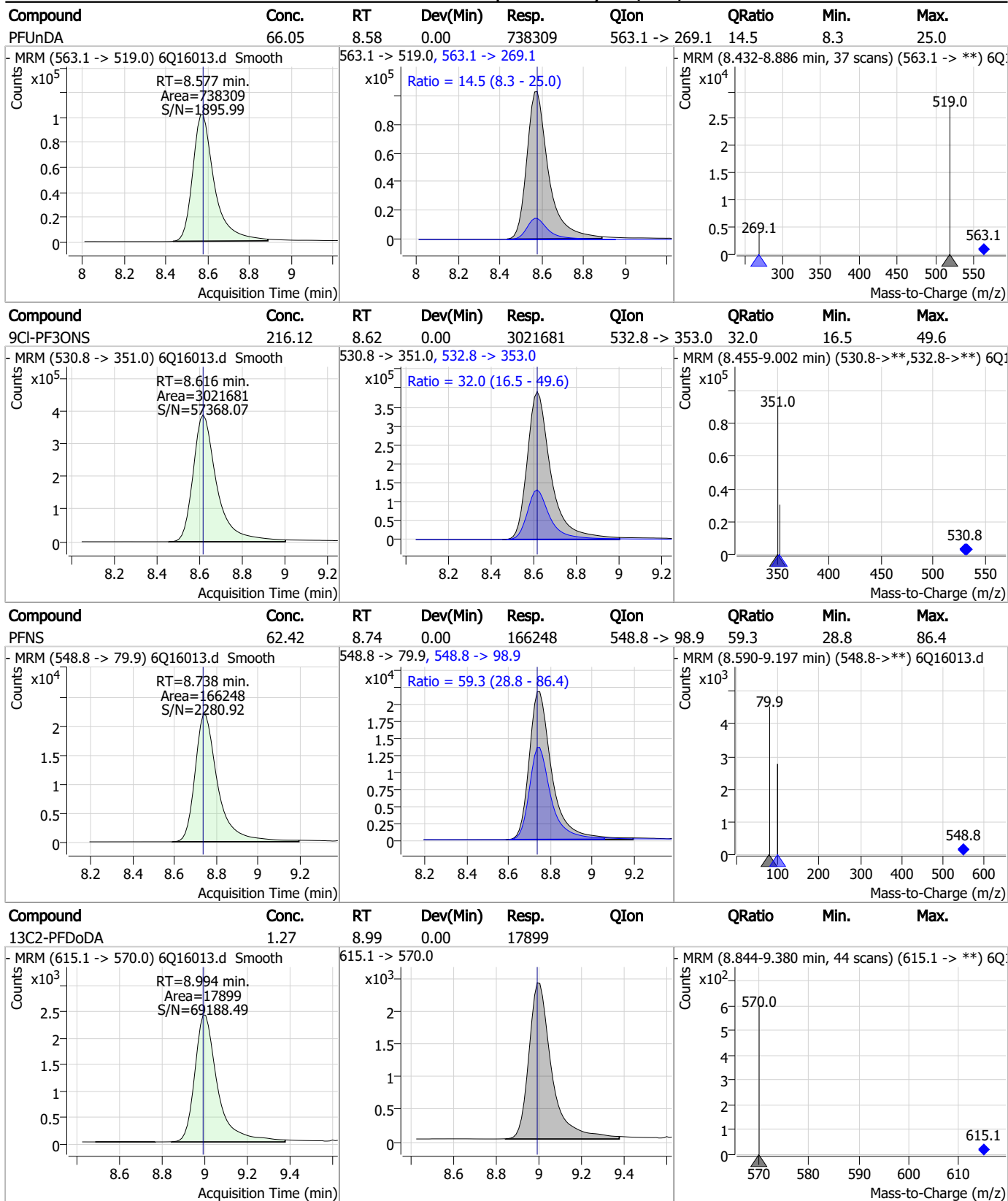
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	57.22	8.38	0.00	145670	584.2 -> 526.0	62.1	23.0	69.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.15	8.56	-0.01	13965				

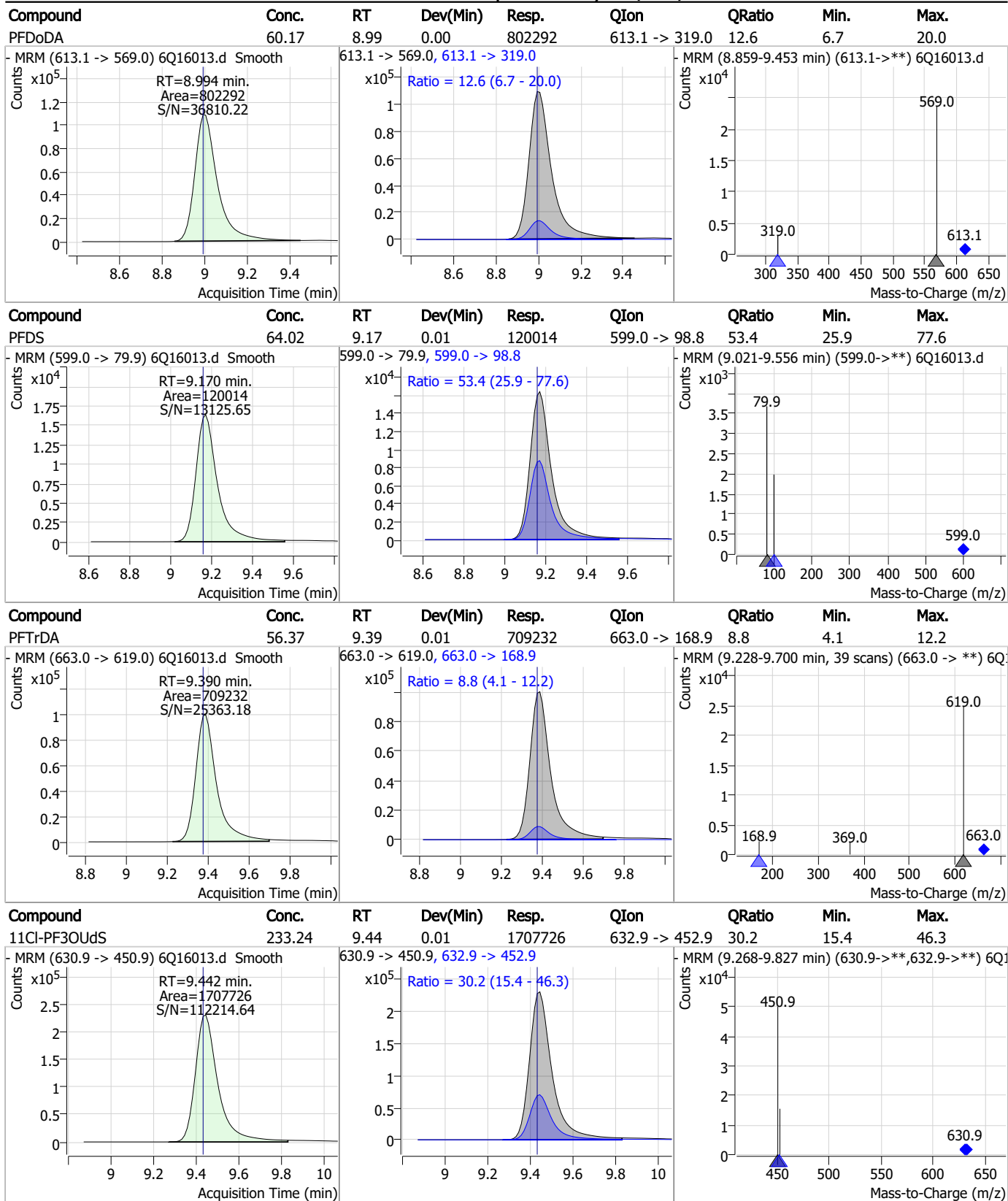


Perfluorinated Compounds by LC/MS/MS



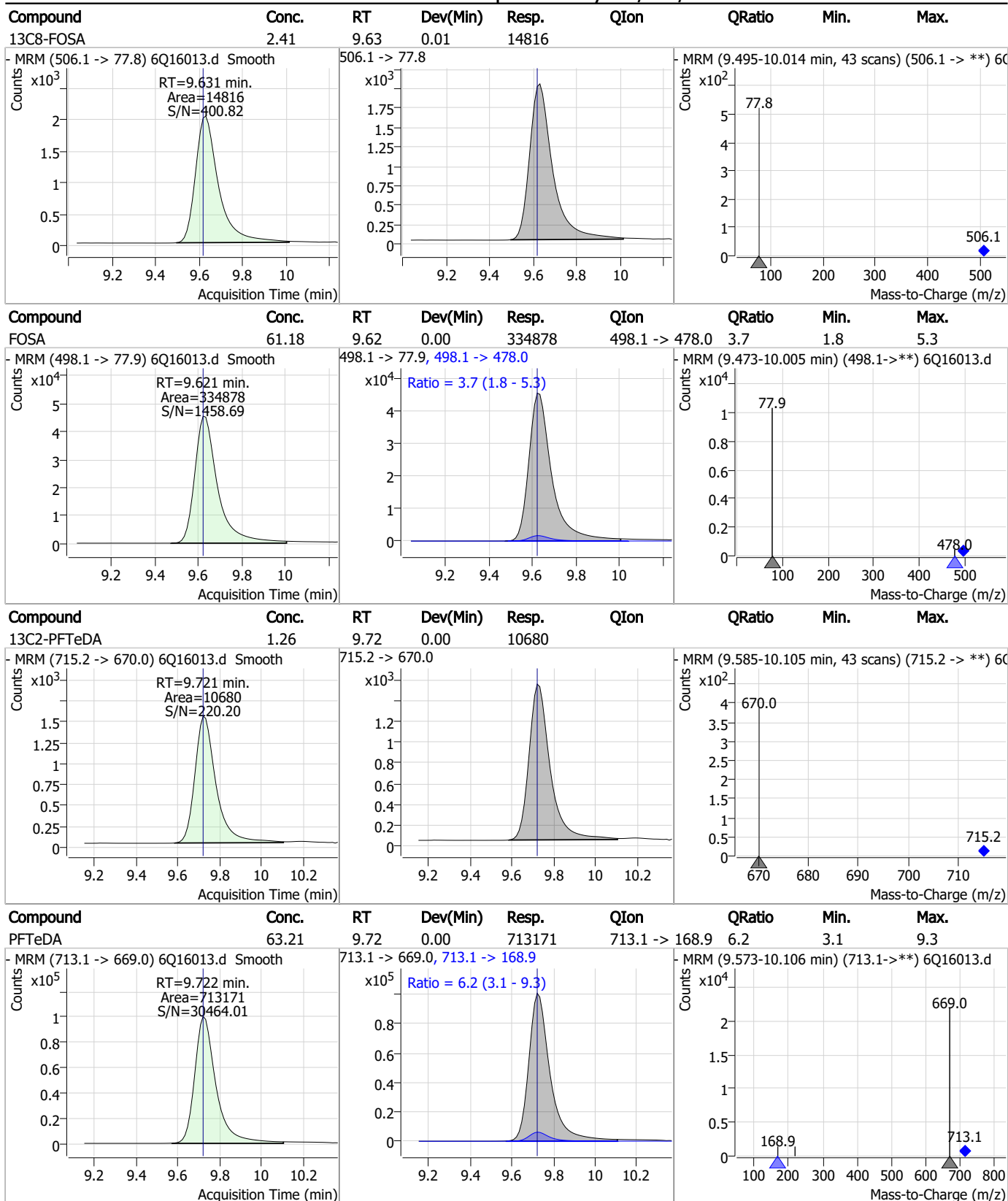
7.7.9
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

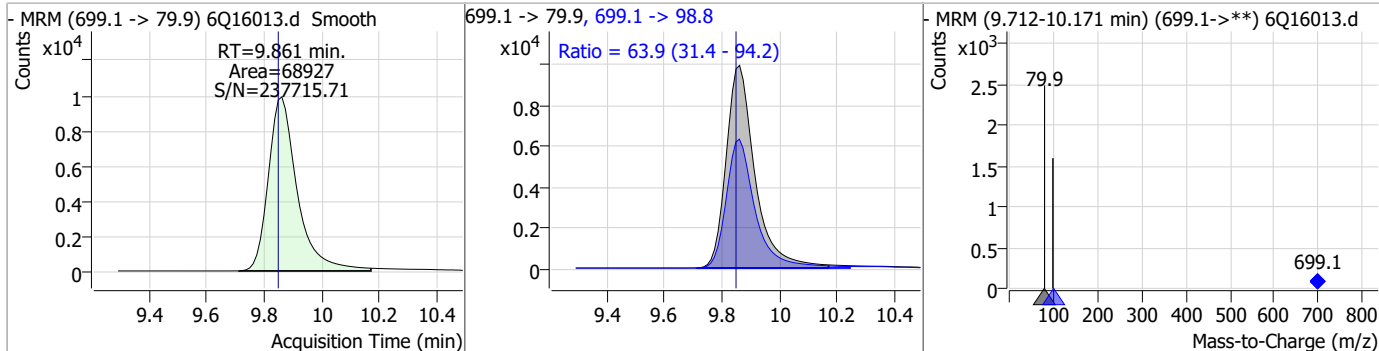


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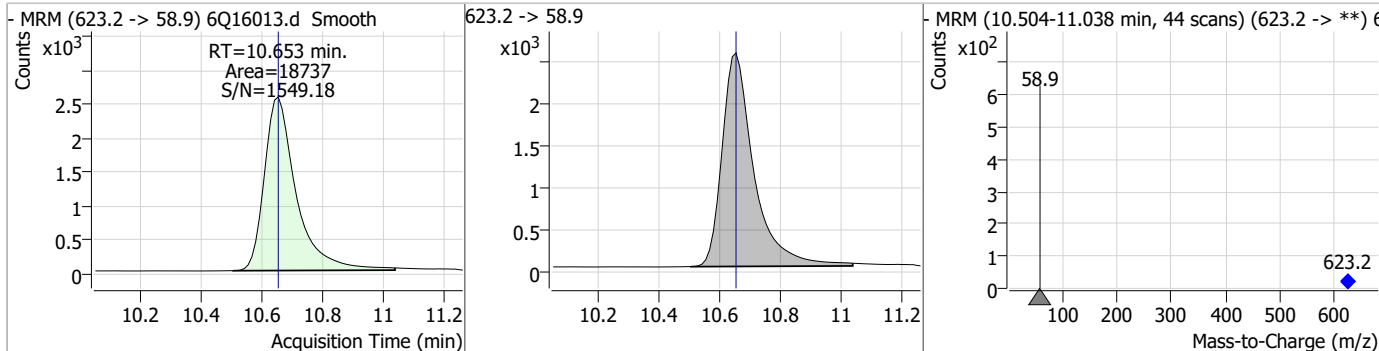
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Perfluorinated Compounds by LC/MS/MS

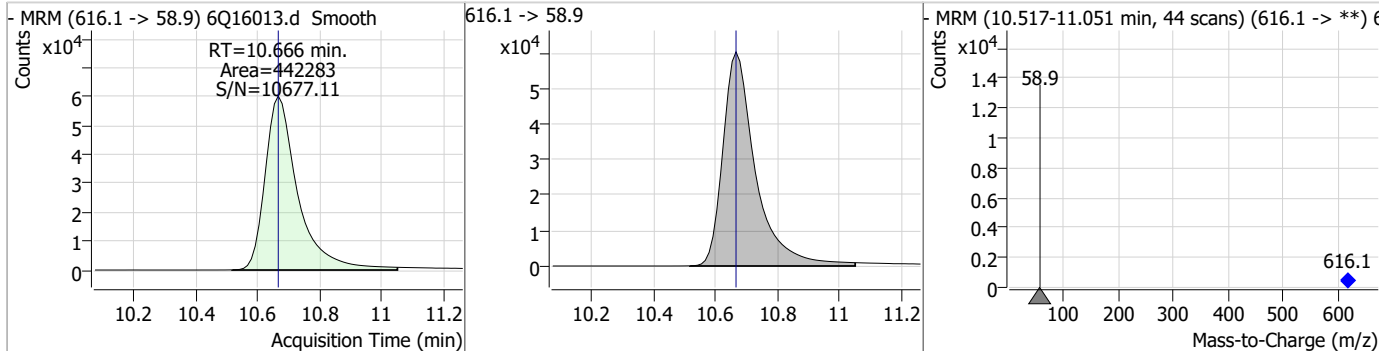
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	63.28	9.86	0.01	68927	699.1 -> 98.8	63.9	31.4	94.2



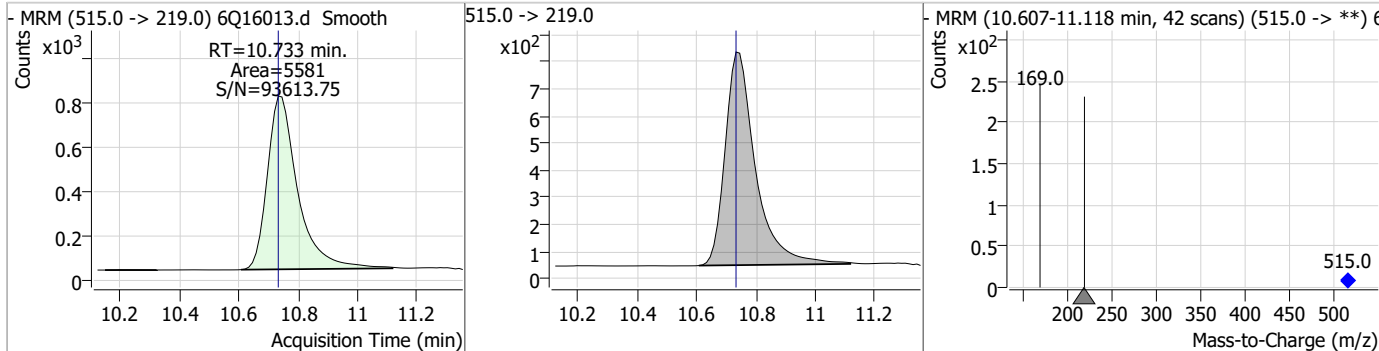
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.28	10.65	0.00	18737				



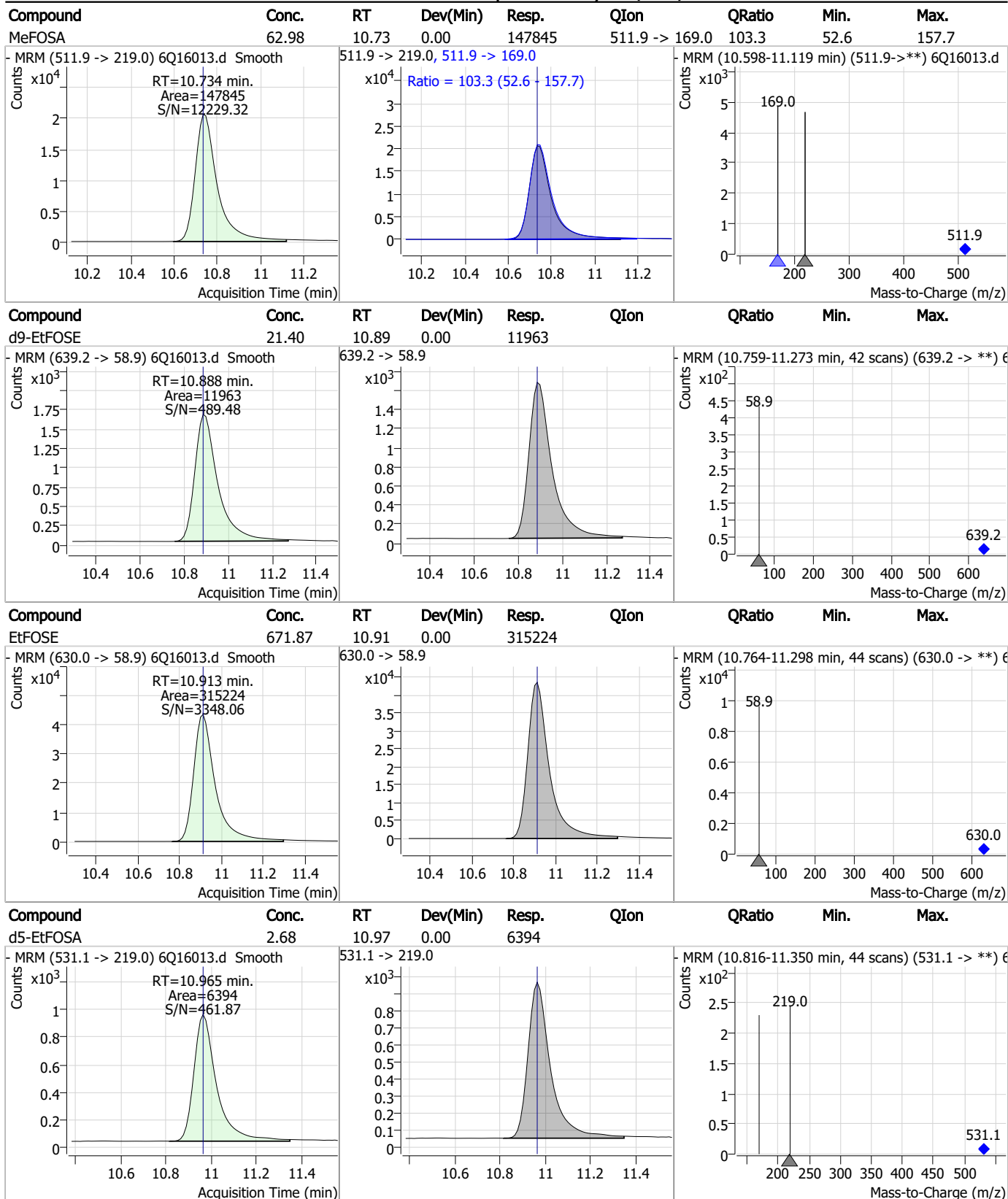
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	626.22	10.67	0.00	442283				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.52	10.73	0.00	5581				

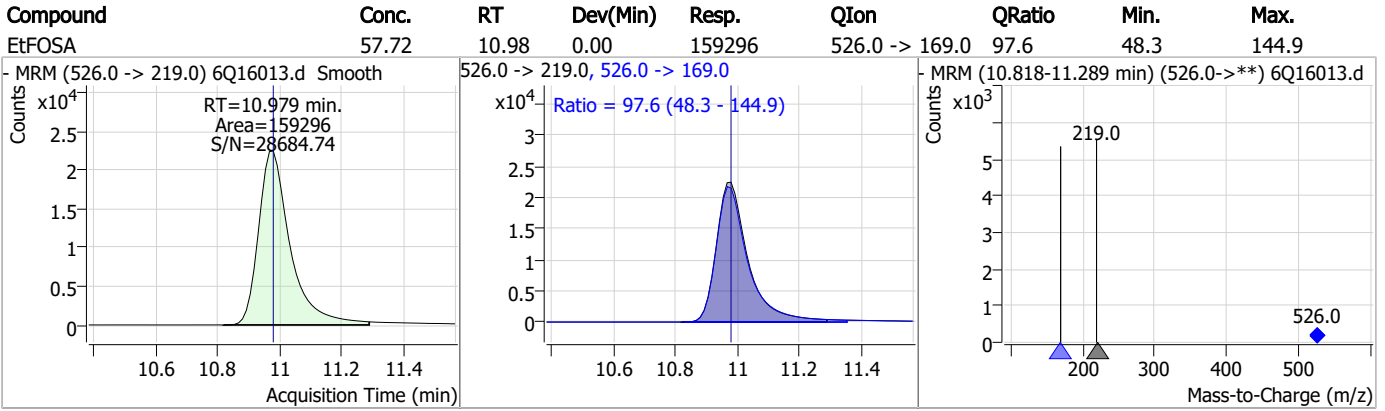


Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q239-IC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16013.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 15:53 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16015.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 4:21:39 PM
 Sample Name : icv239-4
 Vial : P1-B1
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	86565	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	38317	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	34701	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	34544	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	54026	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	17280	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	15331	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	16521	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	18253	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	10175	1.25 µg/L	0.000
M8-FOSA	9.619	506.1 -> 77.8	16082	2.50 µg/L	0.000
M3-PFBS	5.459	302.1 -> 79.9	13348	2.50 µg/L	0.000
M3-PFHxS	7.228	402.1 -> 79.9	8505	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	7472	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2111	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2547	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2432	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	21182	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	14511	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	17702	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	21122	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	14633	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6193	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5717	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	9159	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	36792	5.00 µg/L	0.000
18O2-PFHxS	7.239	403.0 -> 83.9	6058	2.50 µg/L	0.012
13C4-PFOA	7.125	417.1 -> 372.0	68332	2.50 µg/L	0.013
13C2-PFDA	8.123	515.1 -> 470.1	20266	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	17774	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	33307	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2111	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2547	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2432	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFDoDA	8.994	615.1 -> 570.0	18253	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.2%		
13C2-PFTeDA	9.721	715.2 -> 670.0	10175	1.06 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.7%		
13C3-PFBS	5.459	302.1 -> 79.9	13348	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C3-PFHxS	7.228	402.1 -> 79.9	8505	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 = 98.1%		
13C4-PFBA	2.897	216.8 -> 171.9	86565	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C4-PFHpA	6.468	367.1 -> 322.0	34544	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C5-PFHxA	5.528	318.0 -> 273.0	34701	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C5-PFPeA	4.322	268.3 -> 223.0	38317	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C6-PFDA	8.122	519.1 -> 474.1	15331	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C7-PFUnDA	8.564	570.0 -> 525.1	16521	1.19 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C8-FOSA	9.619	506.1 -> 77.8	16082	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C8-PFOA	7.125	421.1 -> 376.0	54026	2.37 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C8-PFOS	8.284	507.1 -> 79.9	7472	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C9-PFNA	7.643	472.1 -> 427.0	17280	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.1%		
d3-MeFOSAA	8.167	573.2 -> 419.0	21182	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	14511	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
d3-MeFOSA	10.733	515.0 -> 219.0	5717	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.1%		
d5-EtFOSAA	8.375	589.2 -> 419.0	17702	4.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.3%		
d7-MeFOSE	10.653	623.2 -> 58.9	21122	22.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 90.6%		
d9-EtFOSE	10.888	639.2 -> 58.9	14633	23.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.5%		
d5-EtFOSA	10.965	531.1 -> 219.0	6193	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.6%		
Target Compounds					QValue
4:2FTS	5.204	327.1 -> 307.0	38616	9.34 µg/L	100
		327.1 -> 80.9	9173		
6:2FTS	6.886	427.1 -> 407.0	32585	9.55 µg/L	98
		427.1 -> 80.9	7396		
8:2FTS	7.911	527.1 -> 507.0	17773	10.30 µg/L	99
		527.1 -> 80.8	4484		
EtFOSAA	8.376	584.2 -> 419.1	6868	2.53 µg/L	m 81
		584.2 -> 526.0	4007		
FOSA	9.621	498.1 -> 77.9	15378	2.59 µg/L	100
		498.1 -> 478.0	522		
MeFOSAA	8.181	570.1 -> 419.0	9681	2.44 µg/L	93
		570.1 -> 483.0	1536		
PFBA	2.893	212.8 -> 168.9	20807	9.51 µg/L	100
PFBS	5.460	298.7 -> 79.9	11080	2.12 µg/L	97
		298.7 -> 98.8	4914		
PFDA	8.123	512.9 -> 469.0	38710	2.17 µg/L	99
		512.9 -> 219.0	5299		
PFDoDA	8.994	613.1 -> 569.0	34329	2.52 µg/L	98
		613.1 -> 319.0	4348		
PFDS	9.158	599.0 -> 79.9	5139	2.30 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2630			
PFHpA	6.481	363.1 -> 319.0	45066	2.32	µg/L	98
		363.1 -> 169.0	6702			
PFHpS	7.781	449.0 -> 79.9	6729	2.11	µg/L	99
		449.0 -> 98.9	4110			
PFHxA	5.531	313.0 -> 269.0	30604	2.39	µg/L	99
		313.0 -> 118.9	1170			
PFHxS	7.228	398.7 -> 79.9	8731	2.33	µg/L	m 97
		398.7 -> 98.9	4859			
PFNA	7.643	463.0 -> 419.0	24847	2.21	µg/L	100
		463.0 -> 219.0	5188			
PFNS	8.738	548.8 -> 79.9	6811	2.15	µg/L	97
		548.8 -> 98.9	4056			
PFOA	7.126	413.0 -> 369.0	60848	2.49	µg/L	99
		413.0 -> 169.0	8295			
PFOS	8.286	498.9 -> 79.9	6713	2.04	µg/L	m 92
		498.9 -> 98.8	4640			
PFPeA	4.324	263.0 -> 219.0	39233	4.85	µg/L	100
PFPeS	6.533	349.1 -> 79.9	10411	2.31	µg/L	96
		349.1 -> 98.9	5126			
PFTeDA	9.722	713.1 -> 669.0	28588	2.66	µg/L	97
		713.1 -> 168.9	2084			
PFTrDA	9.378	663.0 -> 619.0	32450	2.53	µg/L	100
		663.0 -> 168.9	2602			
PFUnDA	8.577	563.1 -> 519.0	32648	2.47	µg/L	97
		563.1 -> 269.1	5016			
11CI-PF3OUdS	9.430	630.9 -> 450.9	71059	9.11	µg/L	100
		632.9 -> 452.9	21727			
9CI-PF3ONS	8.616	530.8 -> 351.0	131874	8.85	µg/L	99
		532.8 -> 353.0	43013			
ADONA	6.731	376.9 -> 250.9	278194	9.46	µg/L	98
		376.9 -> 84.8	61939			
HFPO-DA	5.894	284.9 -> 168.9	12542	9.56	µg/L	96
		284.9 -> 184.9	1774			
3:3FTCA	3.790	241.0 -> 177.0	5330	11.88	µg/L	99
		241.0 -> 117.0	780			
5:3FTCA	6.198	341.0 -> 237.1	165757	58.54	µg/L	100
		341.0 -> 217.0	143696			
7:3FTCA	7.608	441.0 -> 316.9	85263	59.49	µg/L	91
		441.0 -> 336.9	154848			
EtFOSA	10.967	526.0 -> 219.0	6480	2.42	µg/L	91
		526.0 -> 169.0	6831			
EtFOSE	10.913	630.0 -> 58.9	13916	24.25	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	6155	2.56	µg/L	93
		511.9 -> 169.0	6016			
MeFOSE	10.666	616.1 -> 58.9	19709	24.76	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	2911	2.24	µg/L	100
		699.1 -> 98.8	1836			
NFDHA	5.410	295.0 -> 201.0	4027	4.85	µg/L	95
		295.0 -> 84.9	1648			
PFMBA	4.737	279.0 -> 85.1	12838	4.79	µg/L	100
PFMPA	3.463	229.0 -> 84.9	11783	4.82	µg/L	100
PFEESA	5.999	314.8 -> 134.9	76642	4.22	µg/L	99
		314.8 -> 82.9	2133			

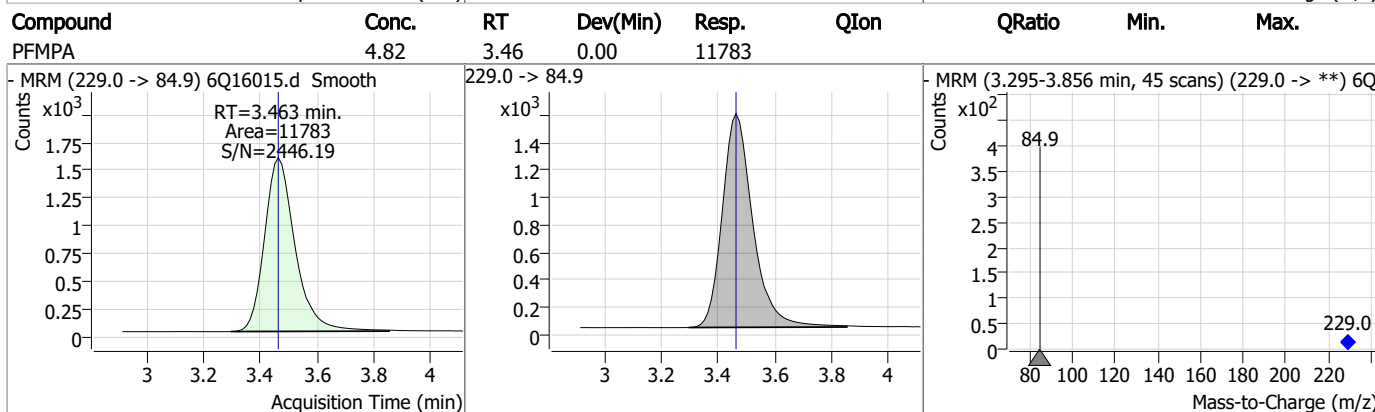
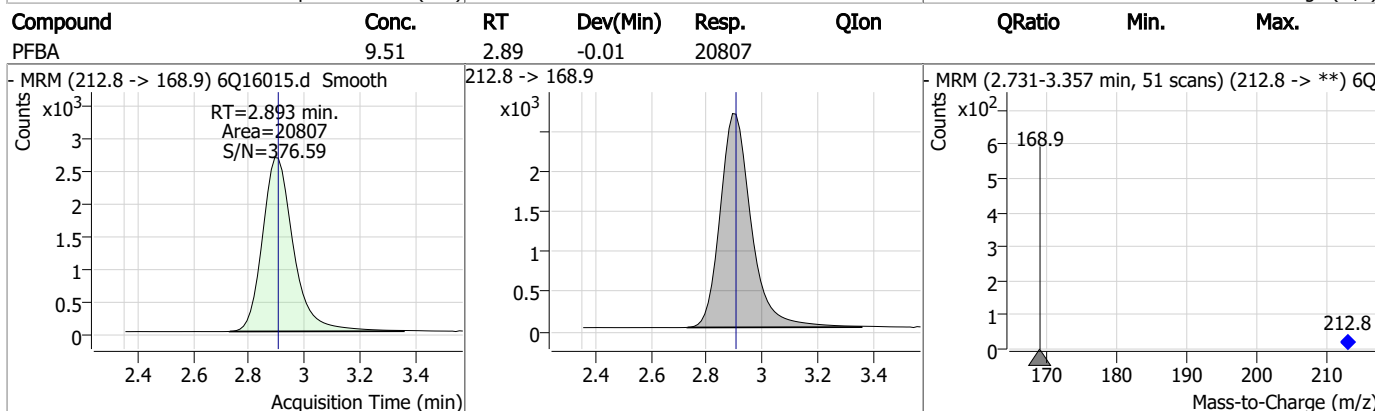
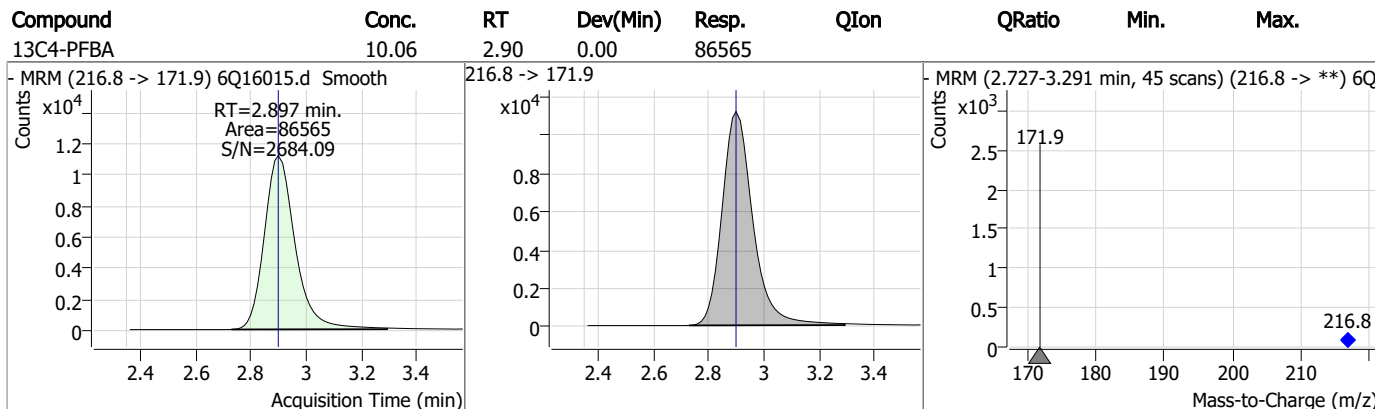
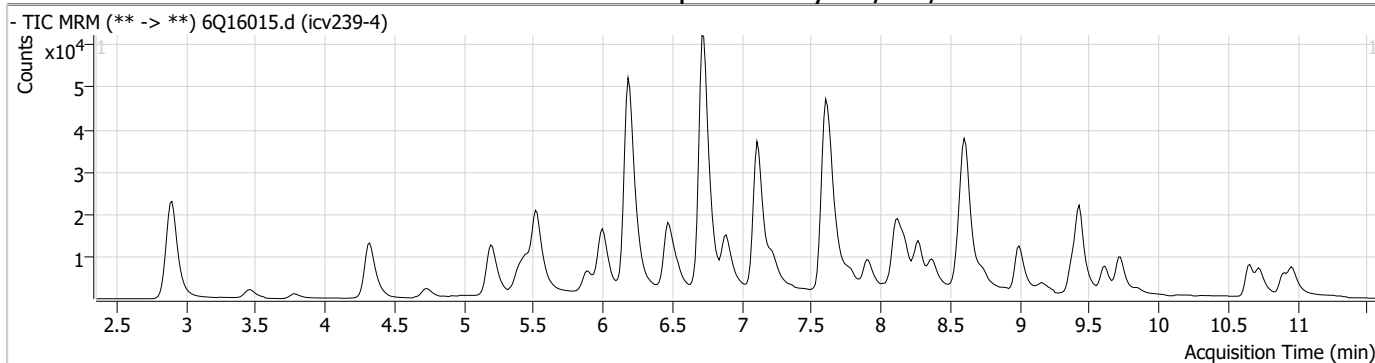
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

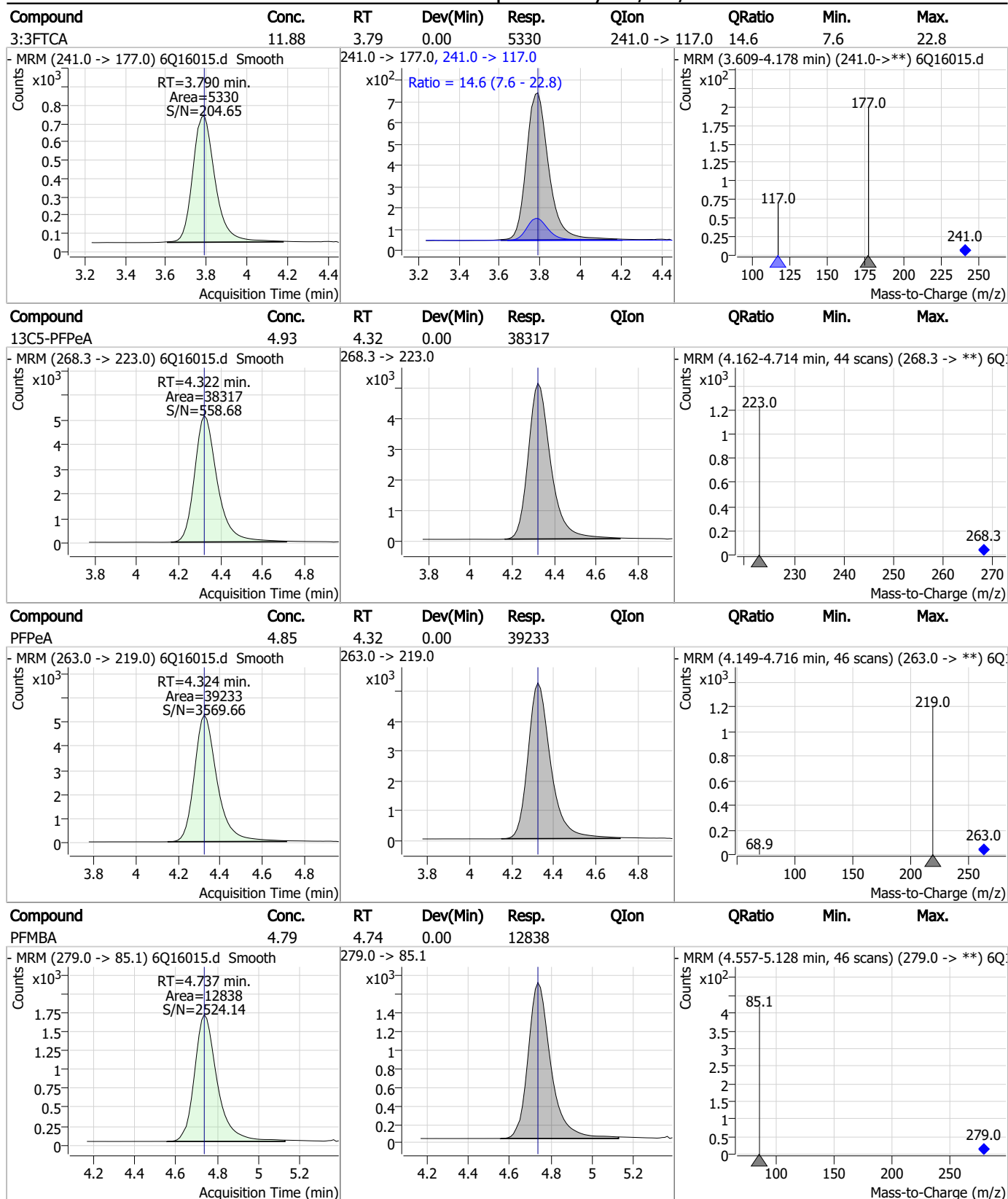
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.10
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Perfluorinated Compounds by LC/MS/MS



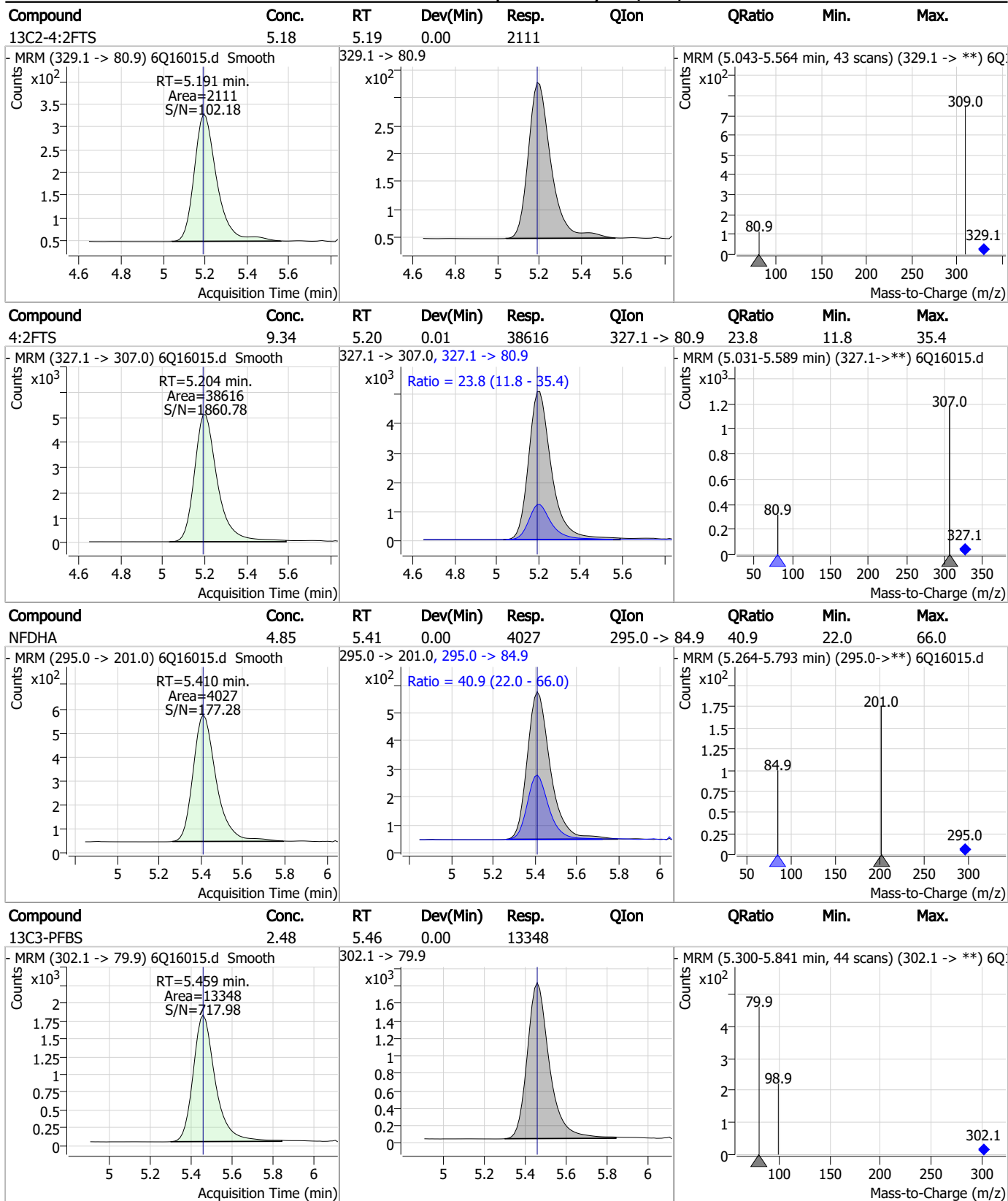
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



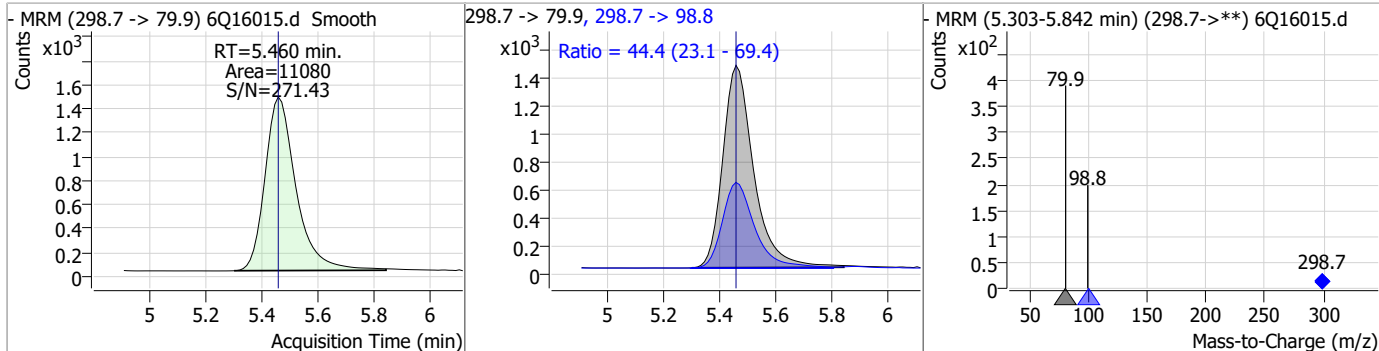
Perfluorinated Compounds by LC/MS/MS



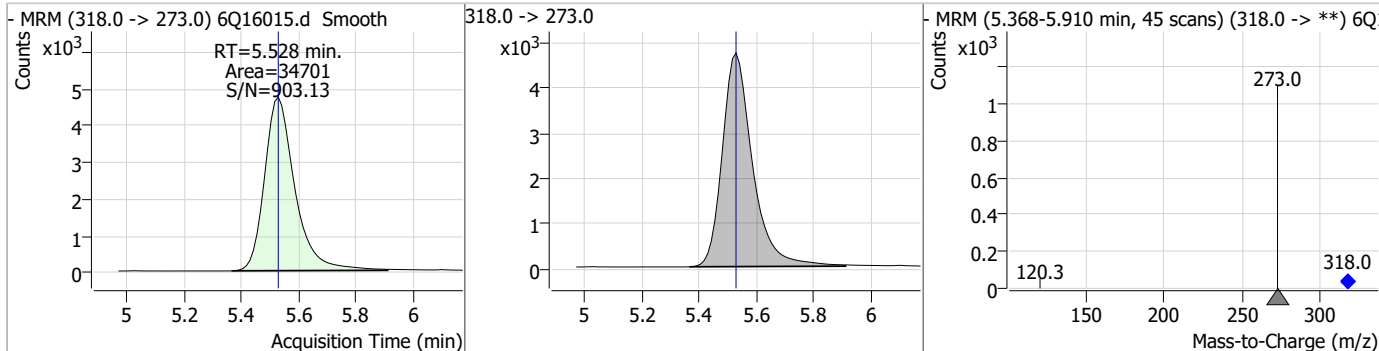
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

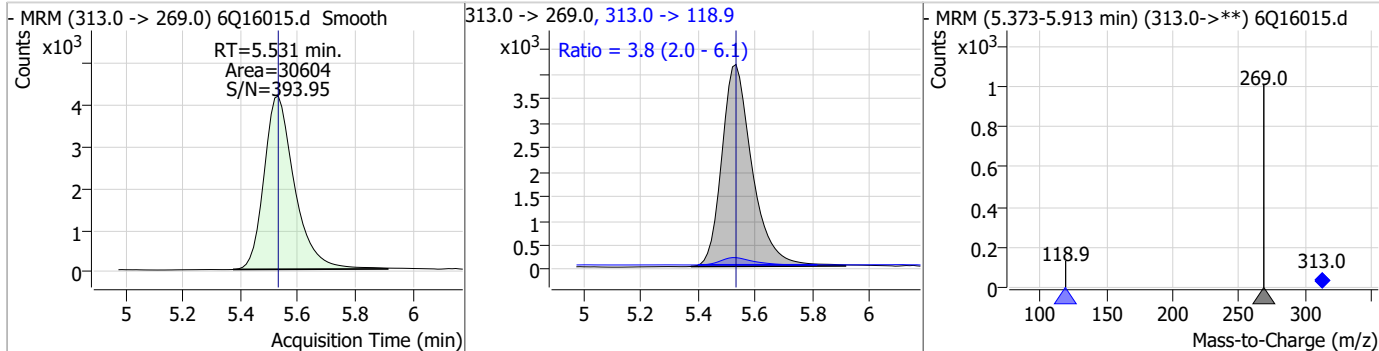
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.12	5.46	0.00	11080	298.7 -> 98.8	44.4	23.1	69.4



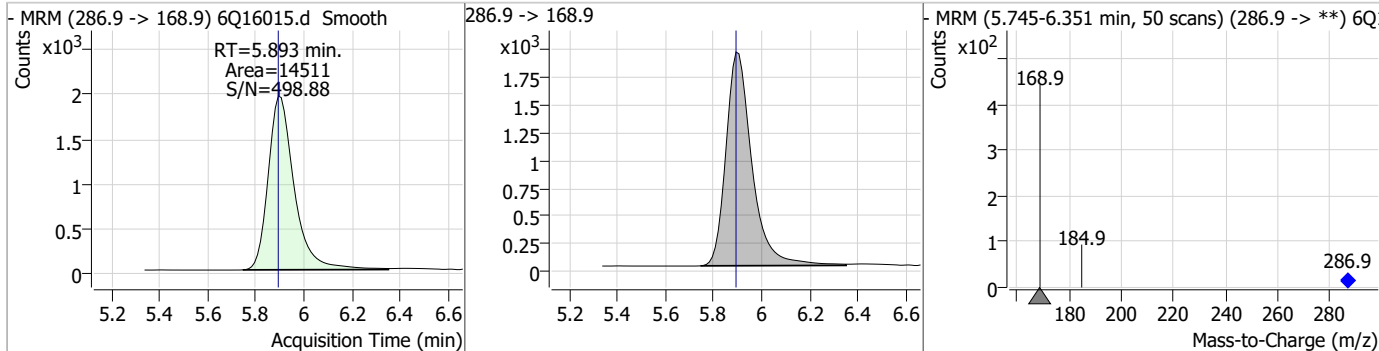
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.53	0.00	34701				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.39	5.53	0.00	30604	313.0 -> 118.9	3.8	2.0	6.1

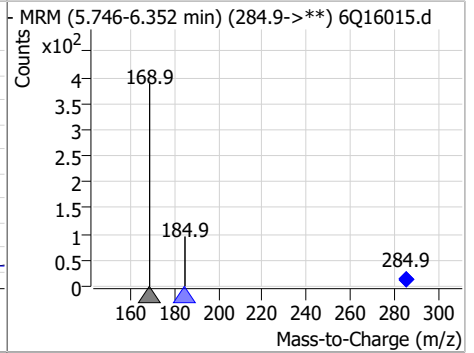
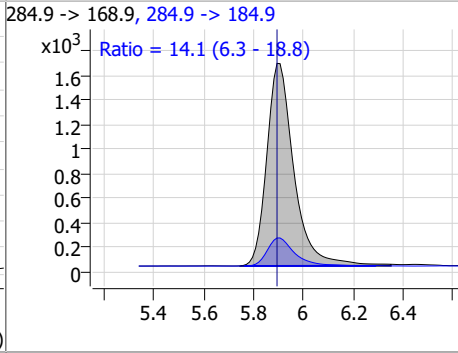
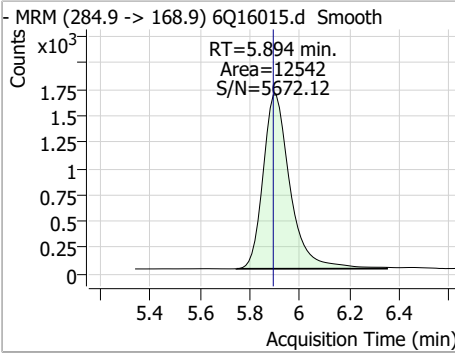


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.99	5.89	0.00	14511				

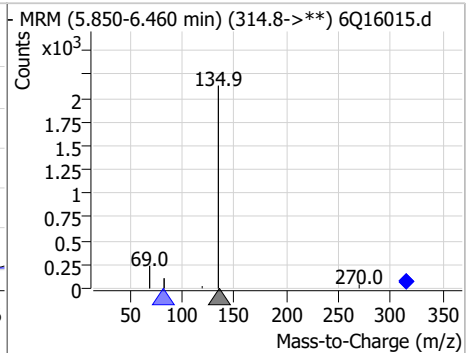
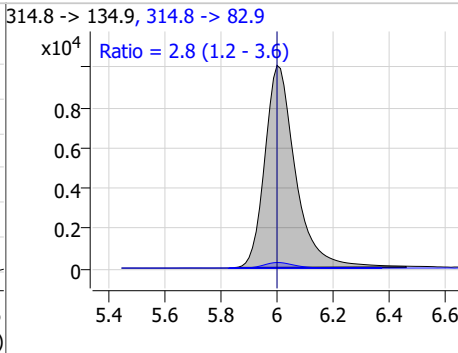
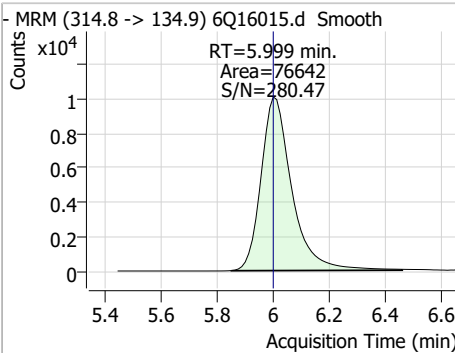


Perfluorinated Compounds by LC/MS/MS

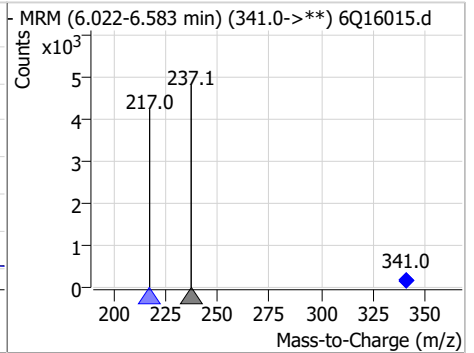
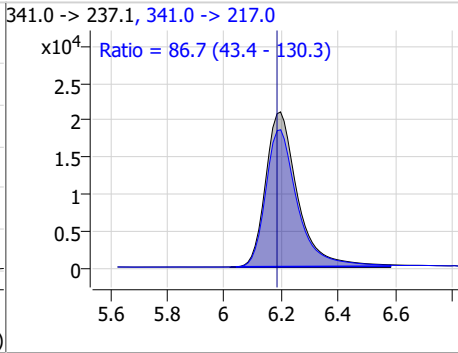
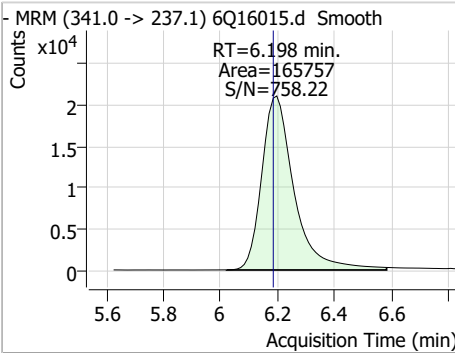
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.56	5.89	0.00	12542	284.9 -> 184.9	14.1	6.3	18.8



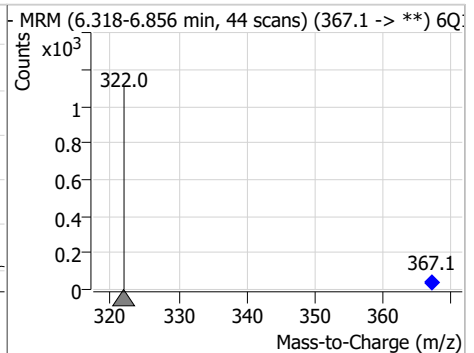
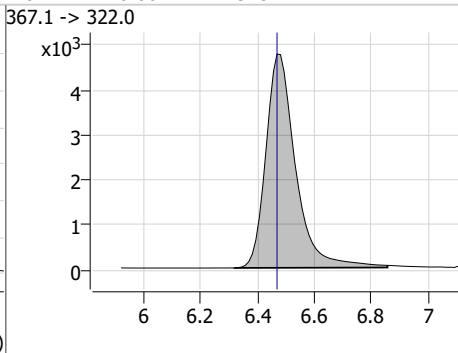
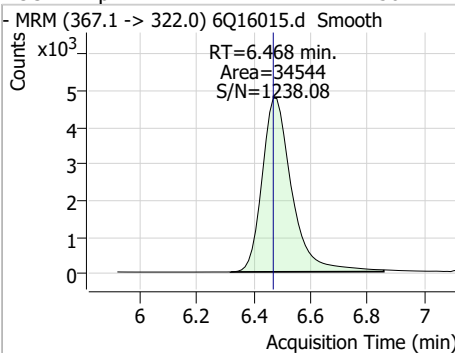
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.22	6.00	0.00	76642	314.8 -> 82.9	2.8	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.54	6.20	0.01	165757	341.0 -> 217.0	86.7	43.4	130.3

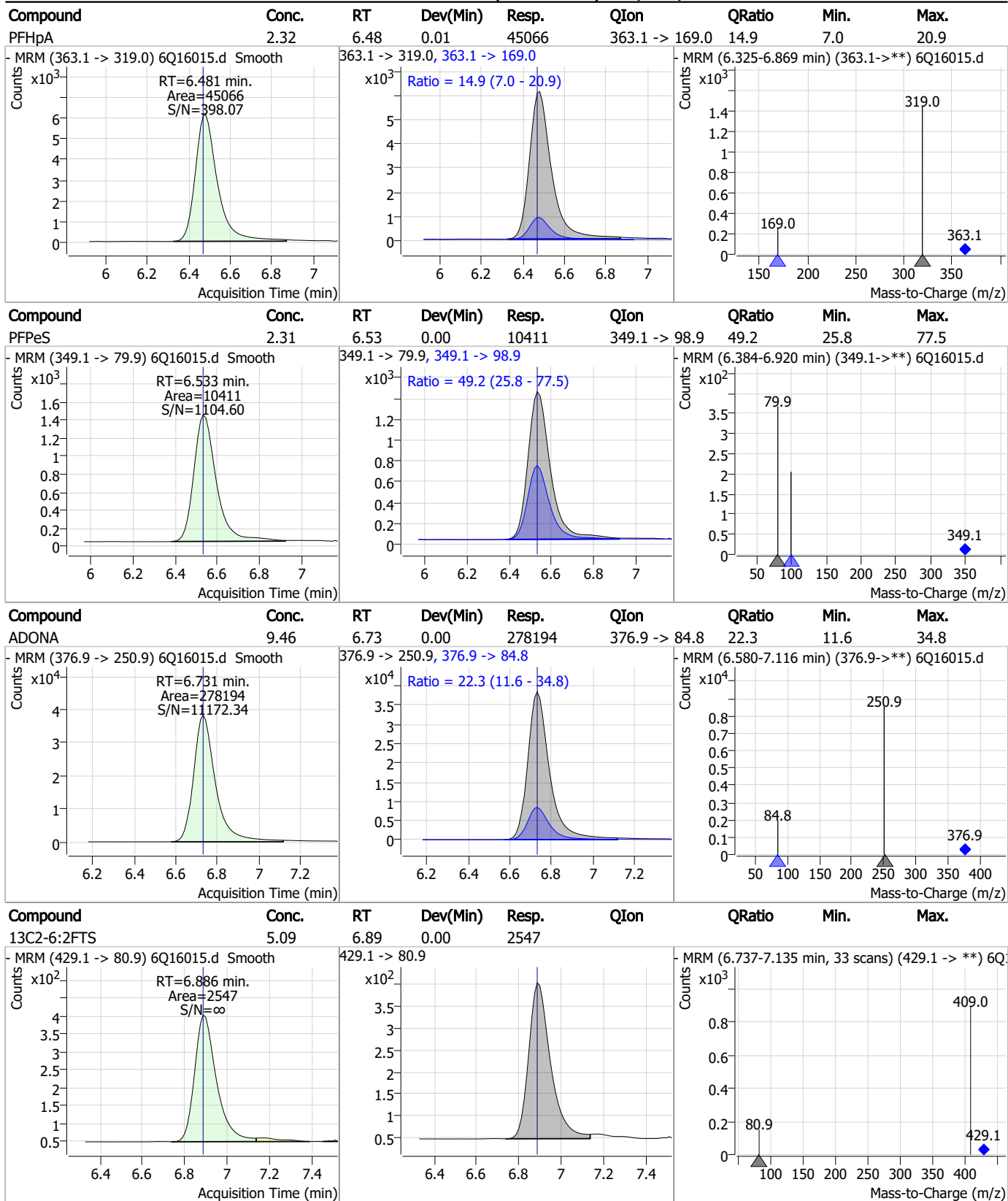


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.47	0.00	34544	367.1 -> 322.0			



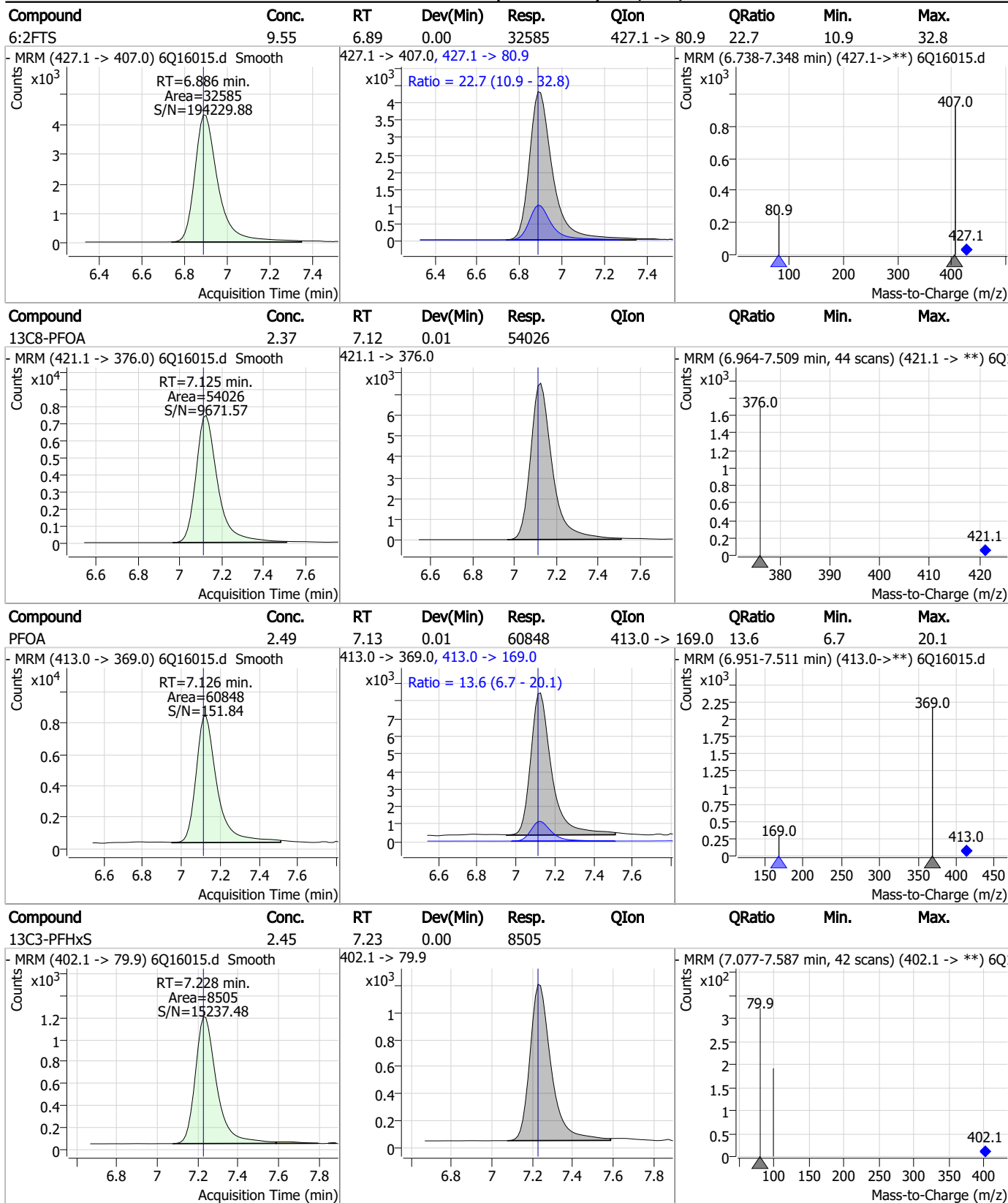
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



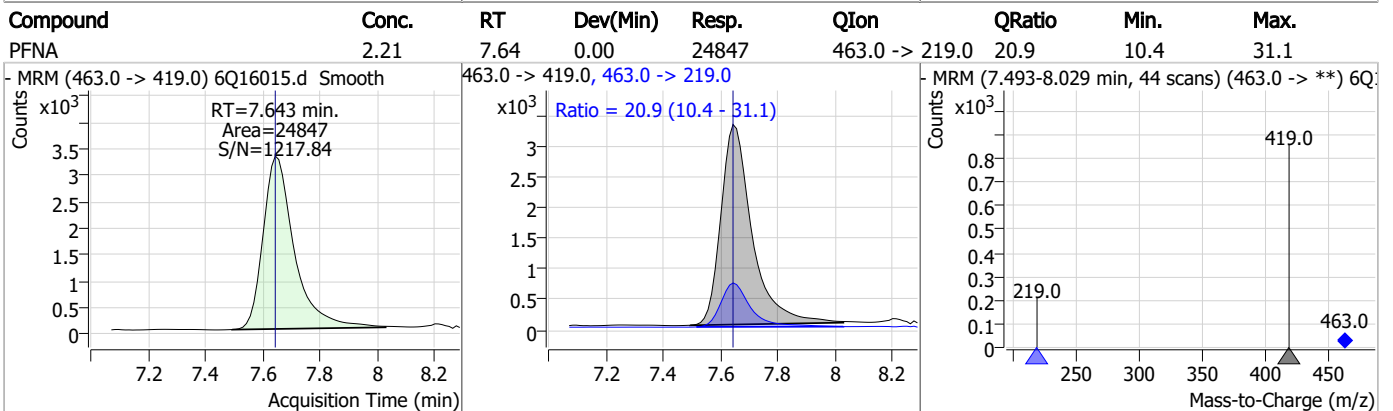
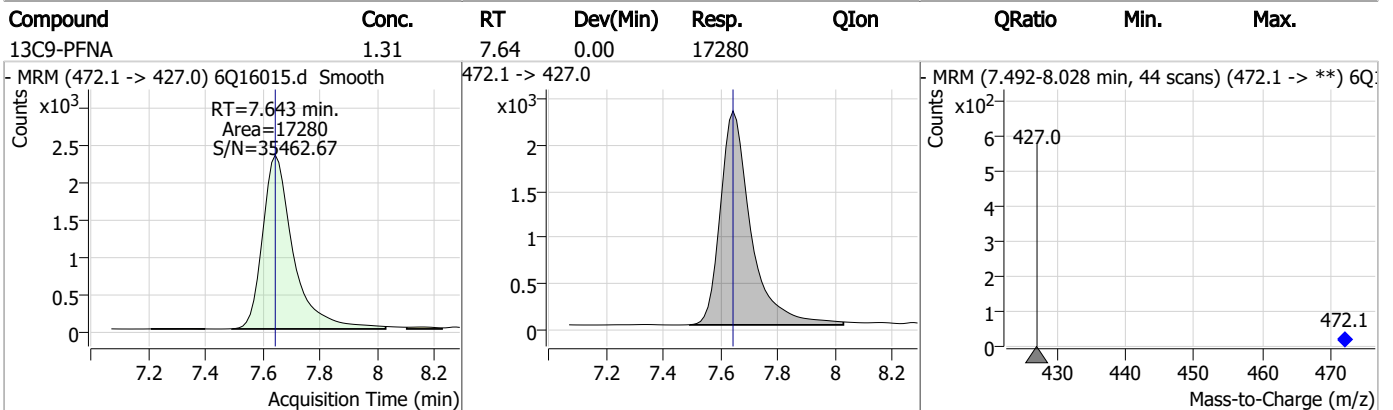
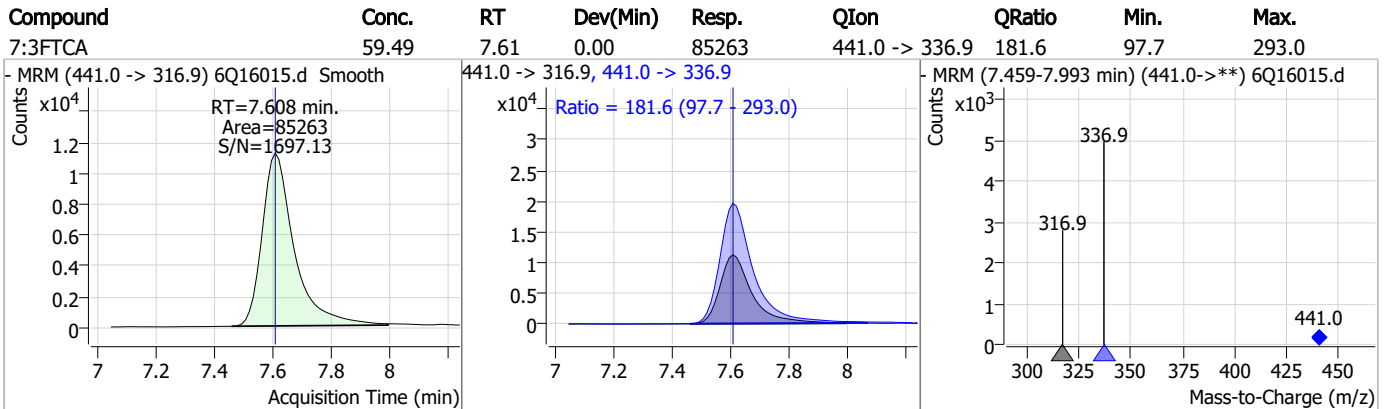
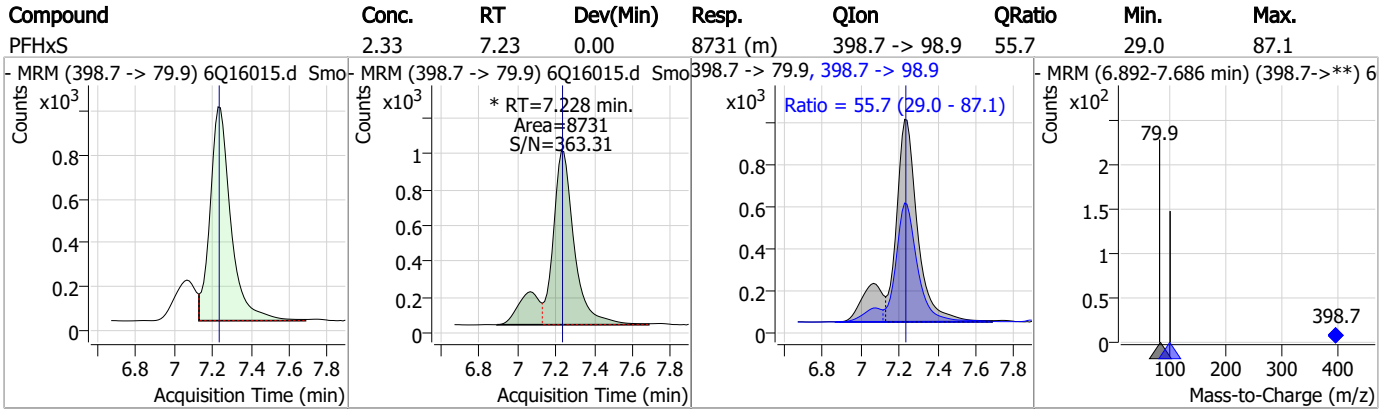
7.7.10
7

Perfluorinated Compounds by LC/MS/MS



7.7.10
7

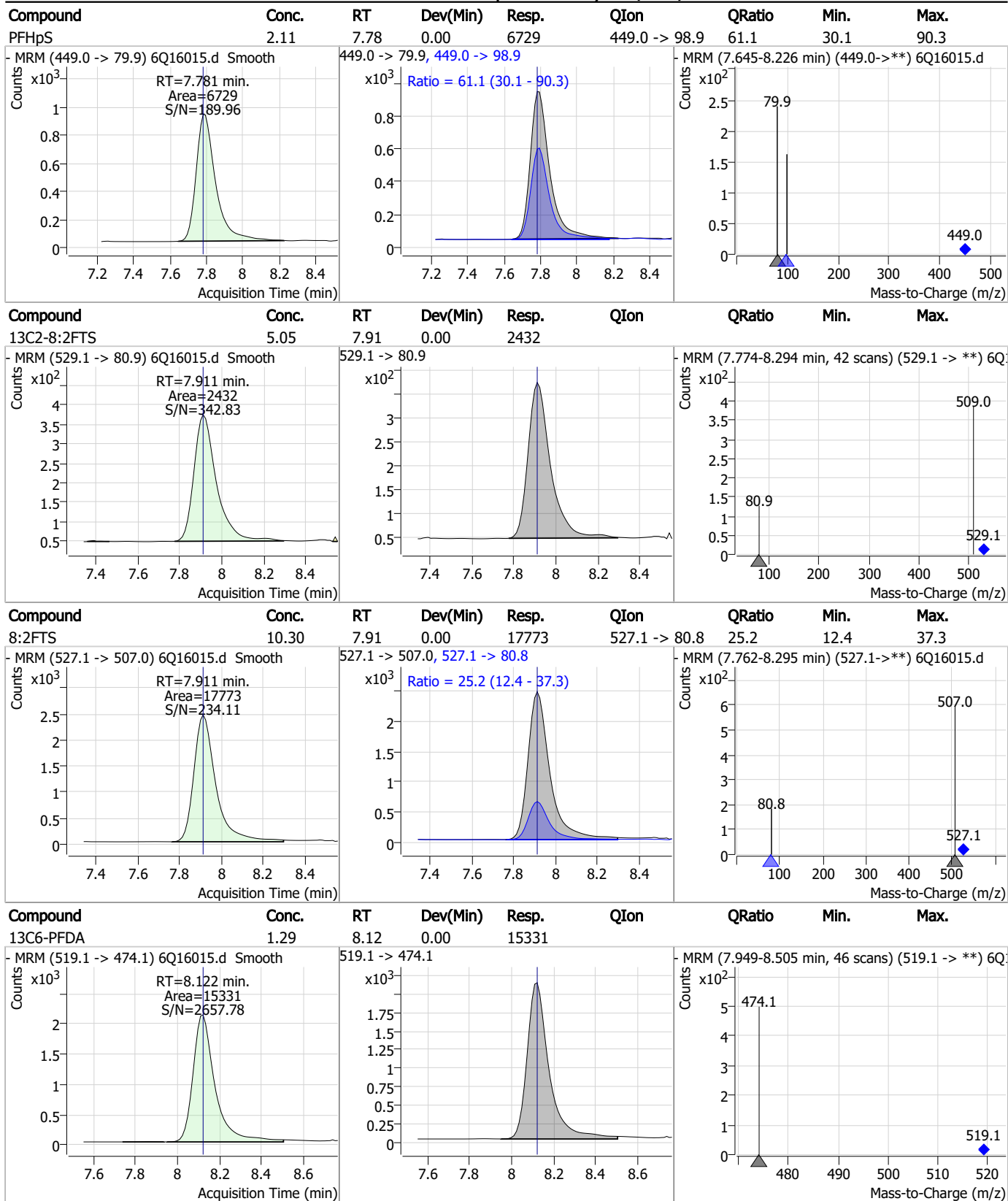
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



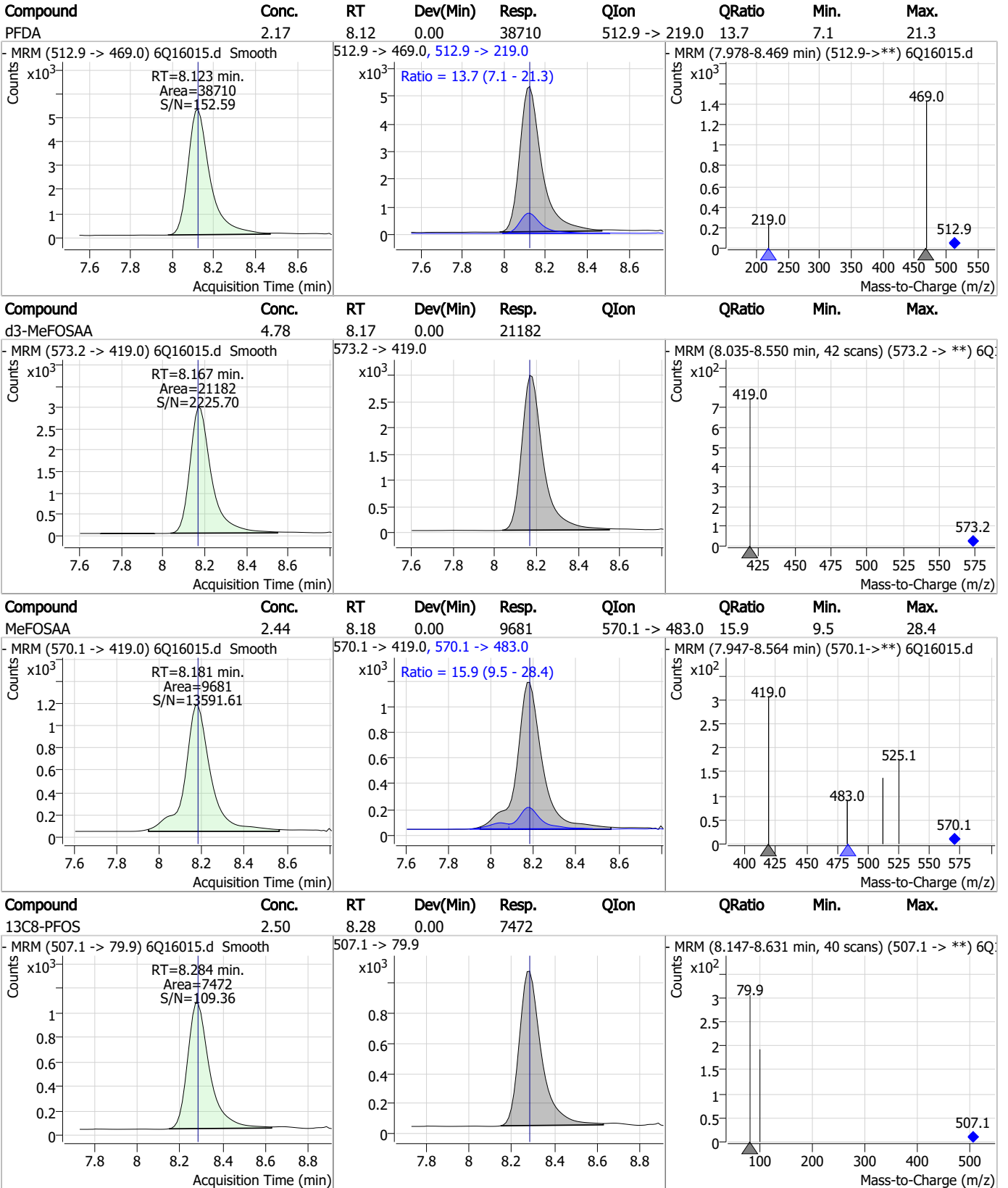
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



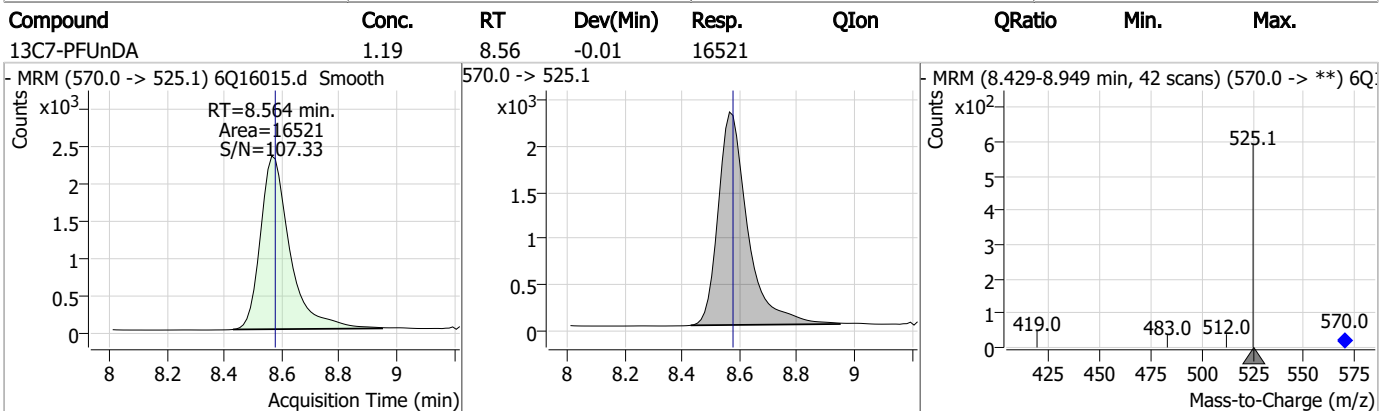
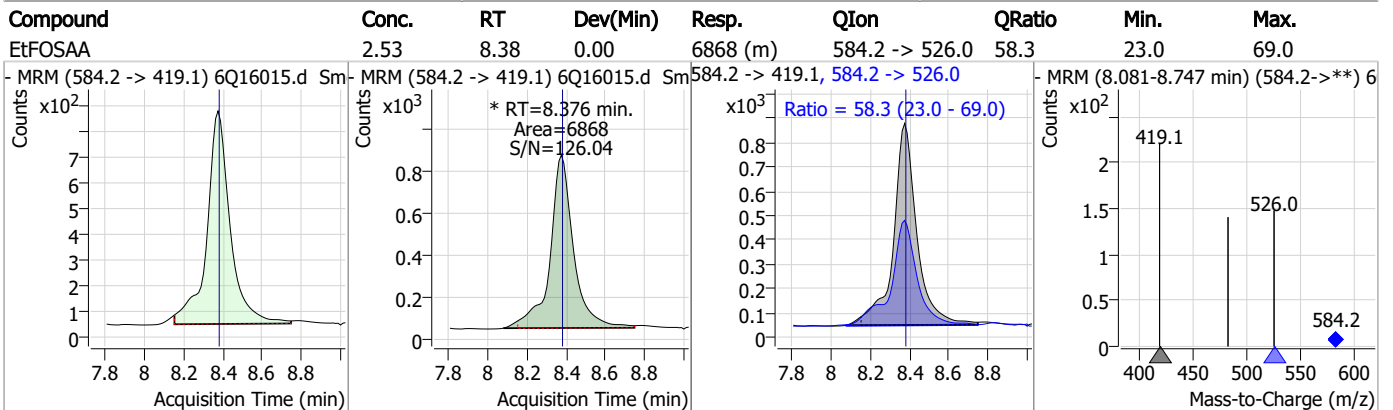
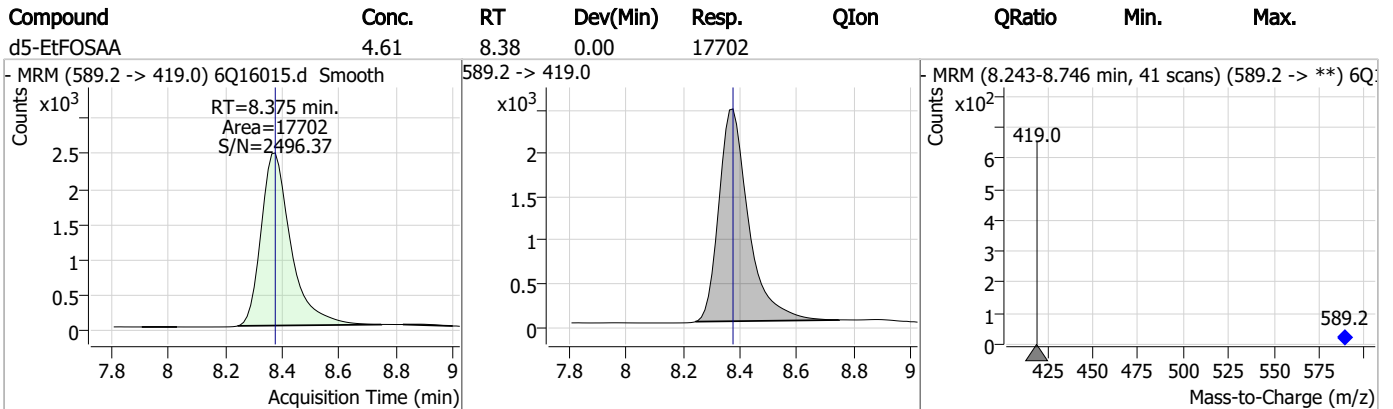
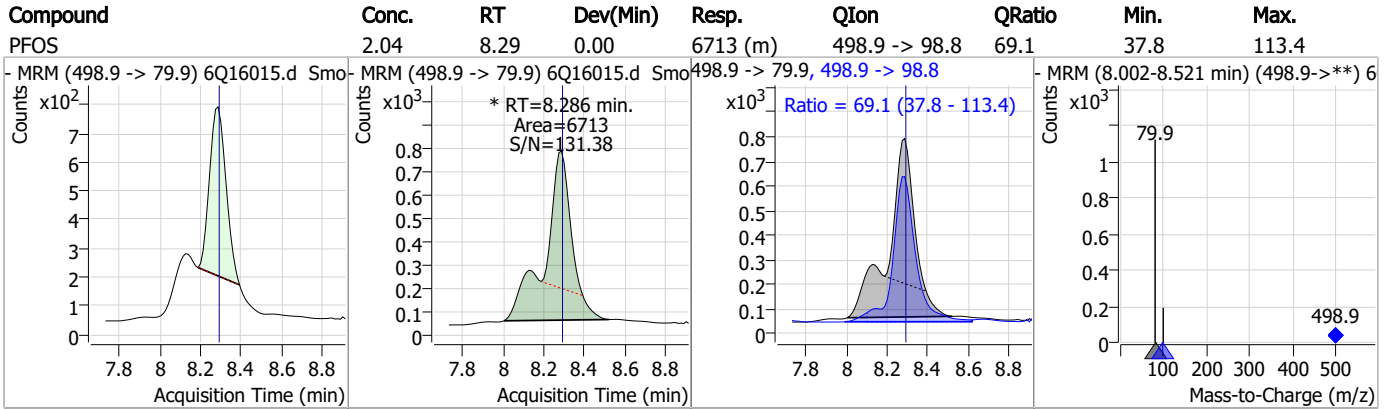
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



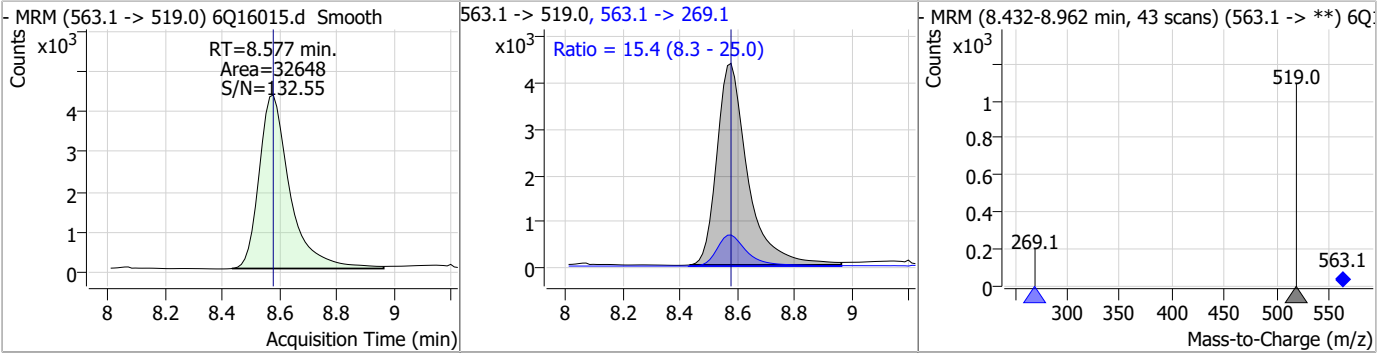
Perfluorinated Compounds by LC/MS/MS



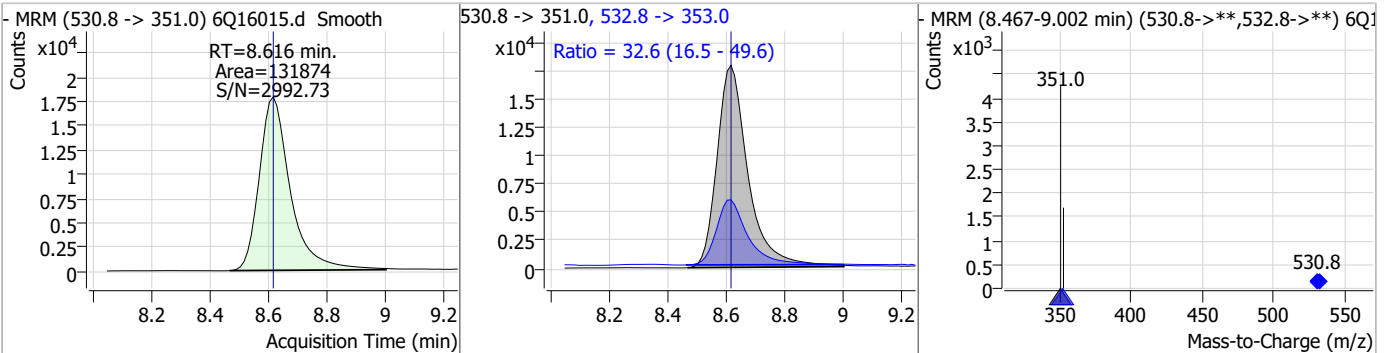
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

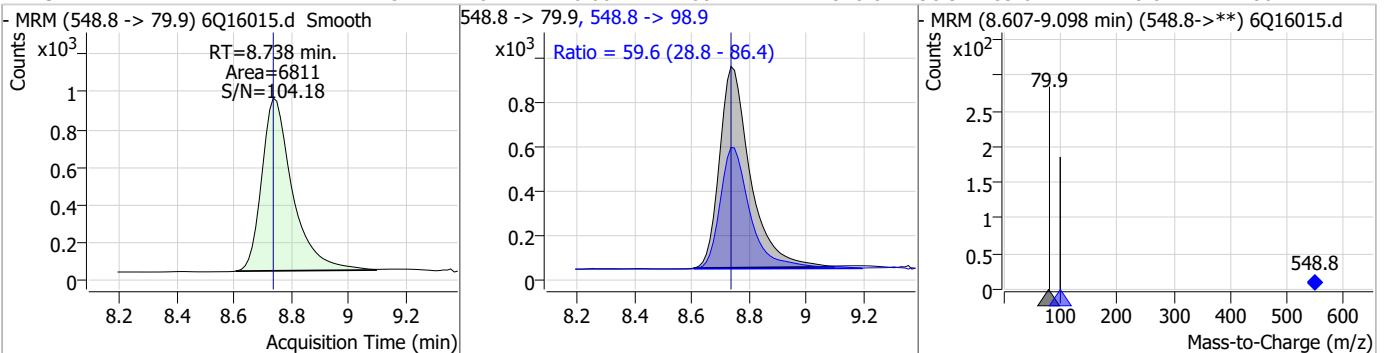
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.47	8.58	0.00	32648	563.1 -> 269.1	15.4	8.3	25.0



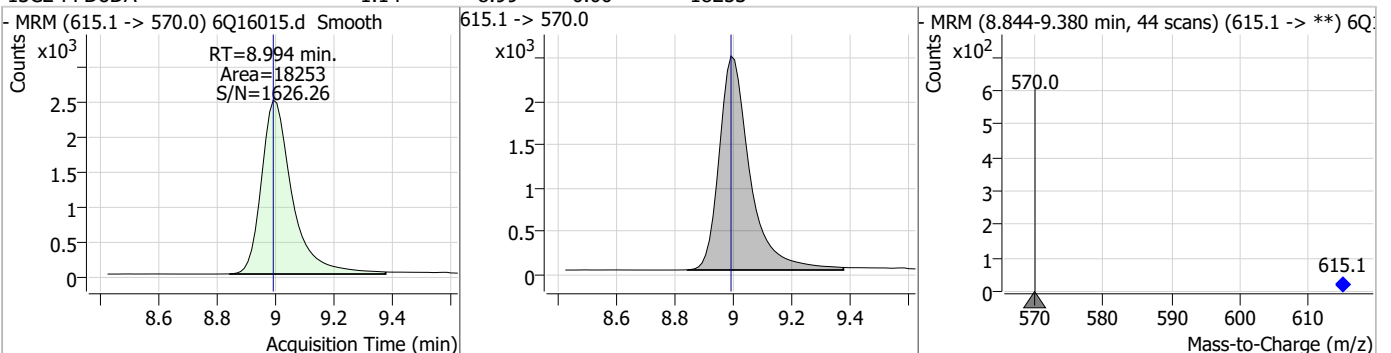
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	8.85	8.62	0.00	131874	532.8 -> 353.0	32.6	16.5	49.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.15	8.74	0.00	6811	548.8 -> 98.9	59.6	28.8	86.4

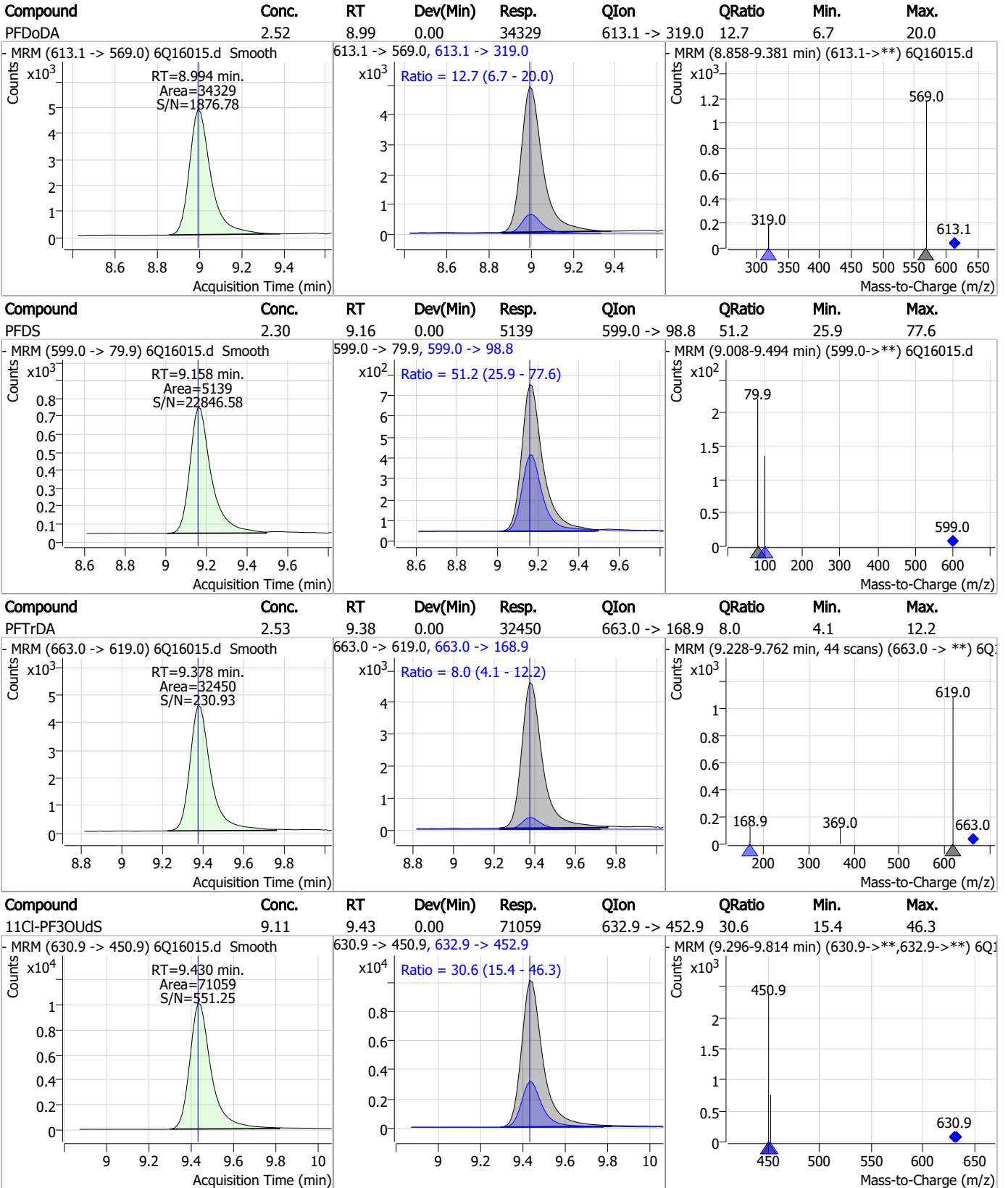


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.14	8.99	0.00	18253	615.1 -> 570.0	-	-	-



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Perfluorinated Compounds by LC/MS/MS

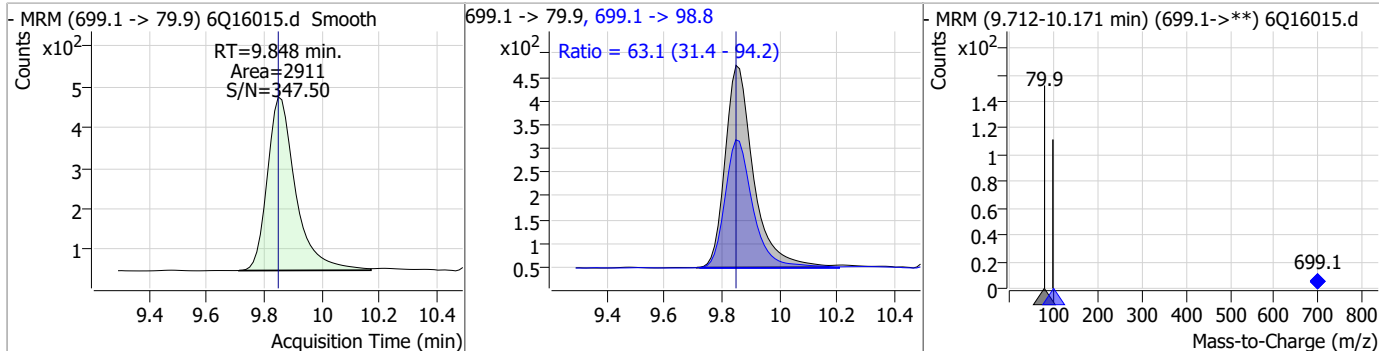
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.36	9.62	0.00	16082				
FOSA	2.59	9.62	0.00	15378	498.1 -> 478.0	3.4	1.8	5.3
13C2-PFTeDA	1.06	9.72	0.00	10175				
PFTeDA	2.66	9.72	0.00	28588	713.1 -> 168.9	7.3	3.1	9.3

7.7.10
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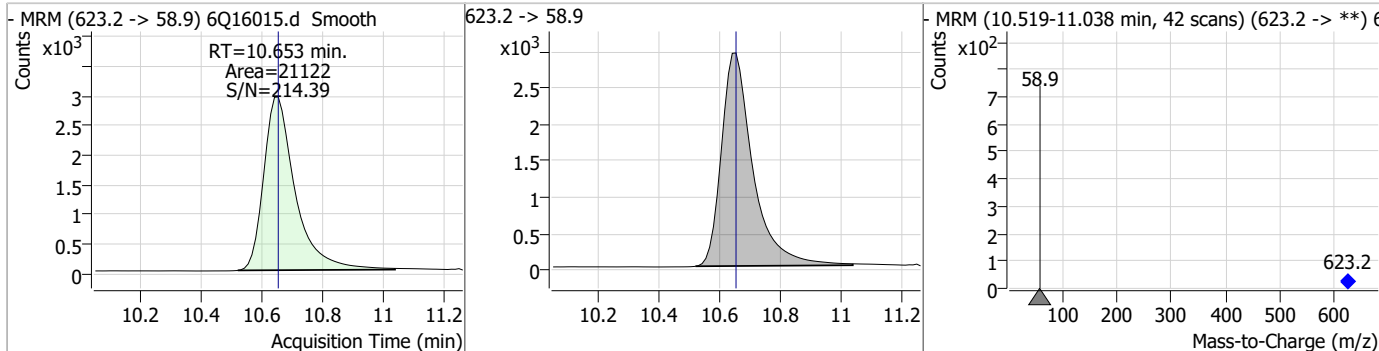


Perfluorinated Compounds by LC/MS/MS

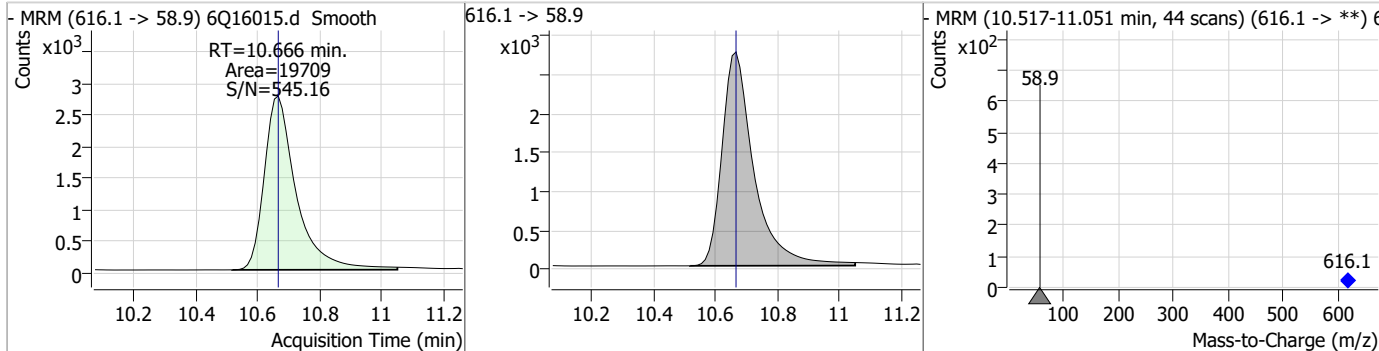
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.24	9.85	0.00	2911	699.1 -> 98.8	63.1	31.4	94.2



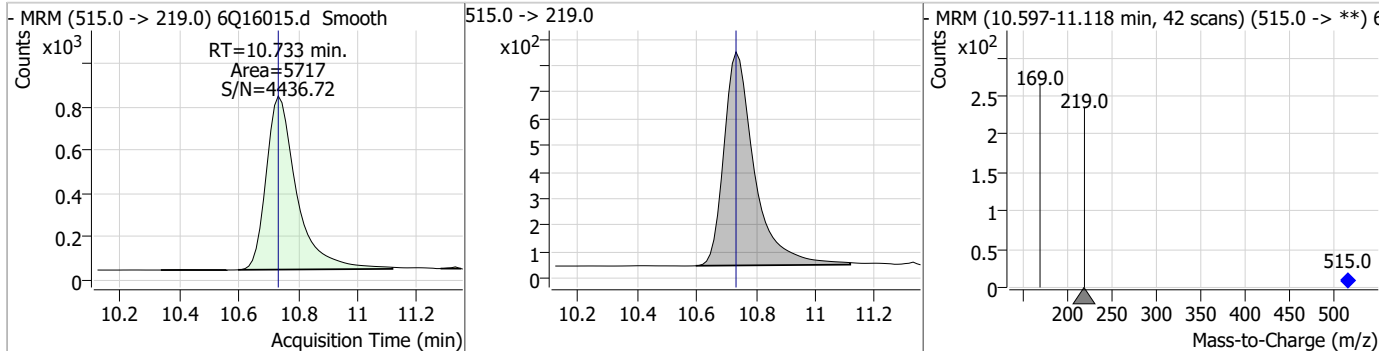
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.66	10.65	0.00	21122				



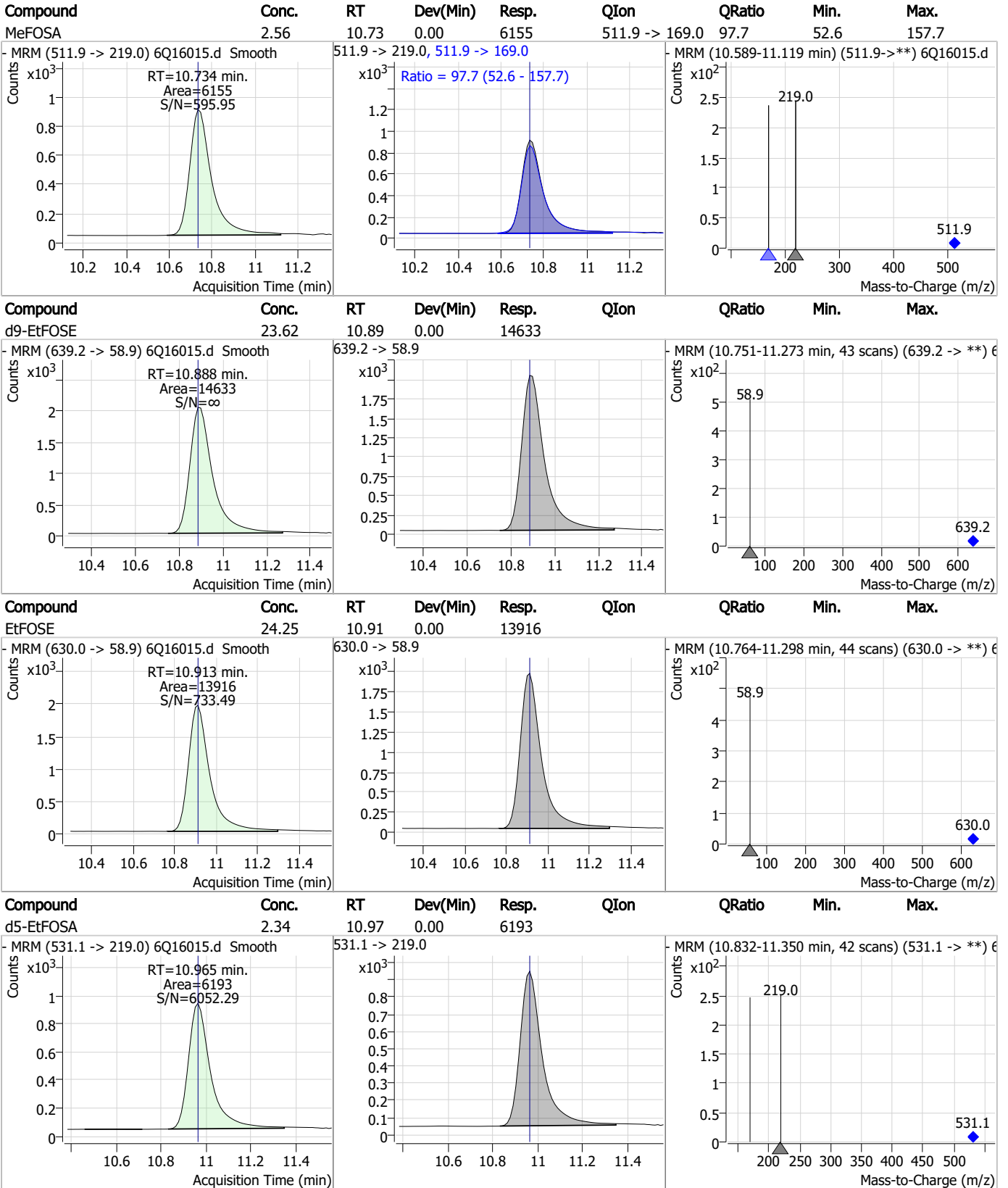
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.76	10.67	0.00	19709				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	10.73	0.00	5717				



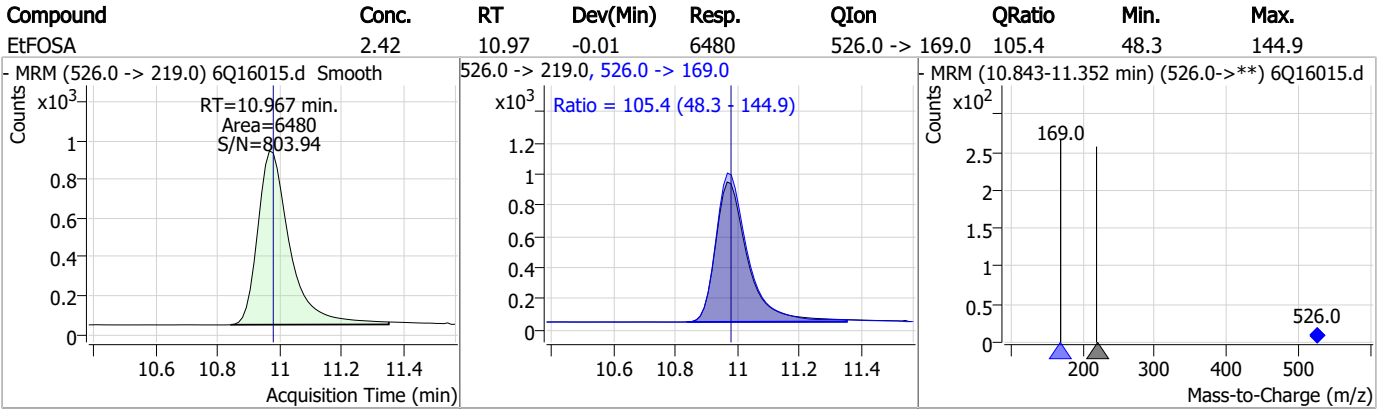
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Perfluorinated Compounds by LC/MS/MS



7.7.10
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Manual Integration Approval Summary

Sample Number: S6Q239-ICV239 Method: EPA DRAFT 1633
Lab FileID: 6Q16015.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 16:21 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.7.10.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16016.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/4/2023 4:35:38 PM
 Sample Name : icv239-20
 Vial : P1-B2
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q239.batch.bin
 Sample Information : OP96085,S6Q239,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	87999	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	38550	5.00 µg/L	0.000
M5-PFHxA	5.528	318.0 -> 273.0	33860	2.50 µg/L	0.000
M4-PFHpA	6.468	367.1 -> 322.0	34121	2.50 µg/L	0.000
M8-PFOA	7.125	421.1 -> 376.0	54089	2.50 µg/L	0.013
M9-PFNA	7.643	472.1 -> 427.0	17763	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	14965	1.25 µg/L	0.000
M7-PFUnDA	8.576	570.0 -> 525.1	17787	1.25 µg/L	0.000
M2-PFDoDA	9.006	615.1 -> 570.0	19563	1.25 µg/L	0.012
M2-PFTeDA	9.721	715.2 -> 670.0	11485	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15575	2.50 µg/L	0.012
M3-PFBS	5.459	302.1 -> 79.9	13248	2.50 µg/L	0.000
M3-PFHxS	7.240	402.1 -> 79.9	8811	2.50 µg/L	0.012
M8-PFOS	8.284	507.1 -> 79.9	8029	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2081	5.00 µg/L	0.000
M2-6:2FTS	6.898	429.1 -> 80.9	2722	5.00 µg/L	0.012
M2-8:2FTS	7.911	529.1 -> 80.9	2613	5.00 µg/L	0.000
M3-MeFOSAA	8.180	573.2 -> 419.0	21514	5.00 µg/L	0.012
M3-HFPO-DA	5.893	286.9 -> 168.9	14645	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	17872	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	21858	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	14733	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6143	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5910	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	9225	2.50 µg/L	0.000
13C3-PFBA	2.902	216.0 -> 172.0	37317	5.00 µg/L	0.000
18O2-PFHxS	7.239	403.0 -> 83.9	5820	2.50 µg/L	0.012
13C4-PFOA	7.112	417.1 -> 372.0	68114	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	20090	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	18660	1.25 µg/L	0.000
13C2-PFHxA	5.529	315.1 -> 270.0	33760	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2081	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-6:2FTS	6.898	429.1 -> 80.9	2722	5.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.3%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2613	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C2-PFDoDA	9.006	615.1 -> 570.0	19563	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-PFTeDA	9.721	715.2 -> 670.0	11485	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C3-PFBS	5.459	302.1 -> 79.9	13248	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-PFHxS	7.240	402.1 -> 79.9	8811	2.64 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 = 105.8%	
13C4-PFBA	2.897	216.8 -> 171.9	87999	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFHpA	6.468	367.1 -> 322.0	34121	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C5-PFHxA	5.528	318.0 -> 273.0	33860	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFPeA	4.322	268.3 -> 223.0	38550	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.122	519.1 -> 474.1	14965	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C7-PFUnDA	8.576	570.0 -> 525.1	17787	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-FOSA	9.631	506.1 -> 77.8	15575	2.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.8%	
13C8-PFOA	7.125	421.1 -> 376.0	54089	2.38 µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C8-PFOS	8.284	507.1 -> 79.9	8029	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C9-PFNA	7.643	472.1 -> 427.0	17763	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
d3-MeFOSAA	8.180	573.2 -> 419.0	21514	4.82 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	14645	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSA	10.733	515.0 -> 219.0	5910	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
d5-EtFOSAA	8.375	589.2 -> 419.0	17872	4.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.5%	
d7-MeFOSE	10.653	623.2 -> 58.9	21858	23.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
d9-EtFOSE	10.888	639.2 -> 58.9	14733	23.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	6143	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	89453	21.94 µg/L	100
		327.1 -> 80.9	21057		
6:2FTS	6.886	427.1 -> 407.0	75543	20.73 µg/L	96
		427.1 -> 80.9	15006		
8:2FTS	7.911	527.1 -> 507.0	37816	20.40 µg/L	97
		527.1 -> 80.8	9852		
EtFOSAA	8.376	584.2 -> 419.1	60720	22.16 µg/L	m 86
		584.2 -> 526.0	33448		
FOSA	9.621	498.1 -> 77.9	129122	22.44 µg/L	100
		498.1 -> 478.0	4570		
MeFOSAA	8.168	570.1 -> 419.0	81923	20.31 µg/L	92
		570.1 -> 483.0	12626		
PFBA	2.906	212.8 -> 168.9	43389	19.51 µg/L	100
PFBS	5.460	298.7 -> 79.9	113329	21.81 µg/L	97
		298.7 -> 98.8	50105		
PFDA	8.123	512.9 -> 469.0	356263	20.45 µg/L	97
		512.9 -> 219.0	45814		
PFDoDA	9.007	613.1 -> 569.0	272022	18.67 µg/L	96
		613.1 -> 319.0	31769		
PFDS	9.170	599.0 -> 79.9	42516	17.71 µg/L	93

7.7.11
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	24149			
PFHpA	6.469	363.1 -> 319.0	401410	20.92	µg/L	99
		363.1 -> 169.0	56916			
PFHpS	7.794	449.0 -> 79.9	64801	18.88	µg/L	92
		449.0 -> 98.9	35251			
PFHxA	5.531	313.0 -> 269.0	268629	21.49	µg/L	100
		313.0 -> 118.9	10696			
PFHxS	7.241	398.7 -> 79.9	81083	20.92	µg/L	m 95
		398.7 -> 98.9	44011			
PFNA	7.643	463.0 -> 419.0	240639	20.79	µg/L	98
		463.0 -> 219.0	47877			
PFNS	8.751	548.8 -> 79.9	62198	18.24	µg/L	95
		548.8 -> 98.9	38116			
PFOA	7.126	413.0 -> 369.0	524798	21.43	µg/L	100
		413.0 -> 169.0	69861			
PFOS	8.286	498.9 -> 79.9	57728	16.35	µg/L	m 80
		498.9 -> 98.8	33613			
PFPeA	4.324	263.0 -> 219.0	179502	22.07	µg/L	100
PFPeS	6.533	349.1 -> 79.9	95327	20.42	µg/L	99
		349.1 -> 98.9	50084			
PFTeDA	9.722	713.1 -> 669.0	256505	21.14	µg/L	98
		713.1 -> 168.9	17690			
PFTrDA	9.390	663.0 -> 619.0	253567	18.44	µg/L	99
		663.0 -> 168.9	19892			
PFUnDA	8.577	563.1 -> 519.0	263100	18.48	µg/L	95
		563.1 -> 269.1	37492			
11Cl-PF3OUdS	9.442	630.9 -> 450.9	173122	21.99	µg/L	99
		632.9 -> 452.9	52269			
9Cl-PF3ONS	8.616	530.8 -> 351.0	303183	20.17	µg/L	98
		532.8 -> 353.0	96221			
ADONA	6.731	376.9 -> 250.9	619320	20.87	µg/L	99
		376.9 -> 84.8	139775			
HFPO-DA	5.894	284.9 -> 168.9	26524	20.03	µg/L	99
		284.9 -> 184.9	3175			
3:3FTCA	3.790	241.0 -> 177.0	8700	19.28	µg/L	100
		241.0 -> 117.0	1332			
5:3FTCA	6.198	341.0 -> 237.1	54857	19.86	µg/L	100
		341.0 -> 217.0	47519			
7:3FTCA	7.608	441.0 -> 316.9	27884	19.94	µg/L	95
		441.0 -> 336.9	52496			
EtFOSA	10.967	526.0 -> 219.0	56153	21.18	µg/L	95
		526.0 -> 169.0	51744			
EtFOSE	10.913	630.0 -> 58.9	51434	89.02	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	49209	19.79	µg/L	95
		511.9 -> 169.0	49191			
MeFOSE	10.666	616.1 -> 58.9	72203	87.63	µg/L	100
PFDoDS	9.861	699.1 -> 79.9	22311	16.00	µg/L	100
		699.1 -> 98.8	13929			
NFDHA	5.410	295.0 -> 201.0	15576	19.22	µg/L	94
		295.0 -> 84.9	7434			
PFMBA	4.737	279.0 -> 85.1	53131	19.72	µg/L	100
PFMPA	3.463	229.0 -> 84.9	50990	20.74	µg/L	100
PFEESA	5.999	314.8 -> 134.9	323328	18.26	µg/L	100
		314.8 -> 82.9	8023			

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

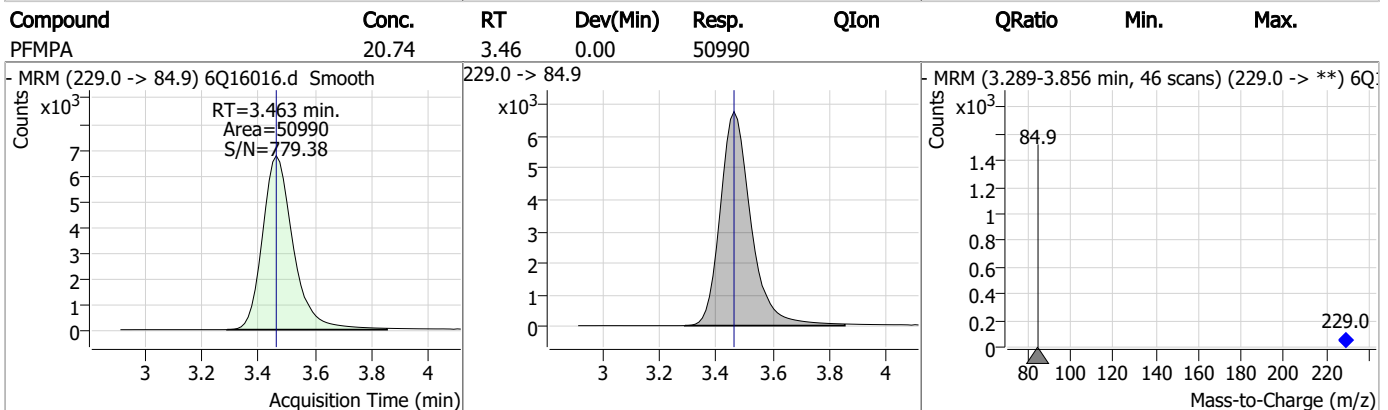
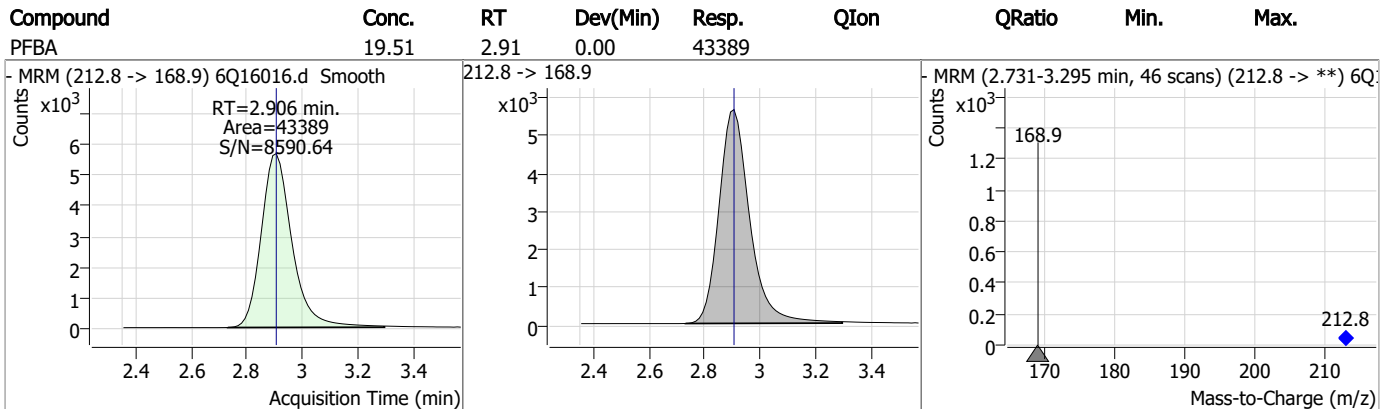
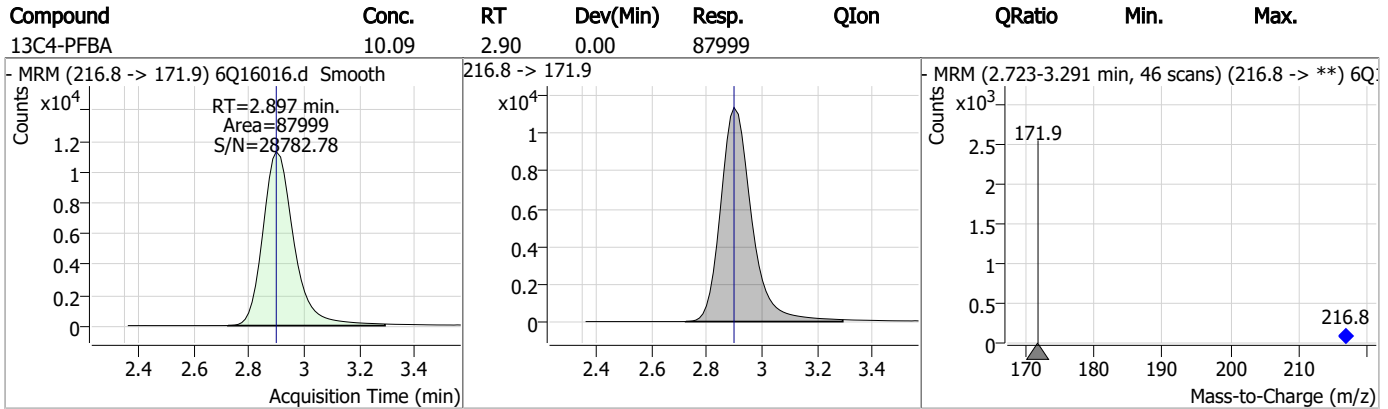
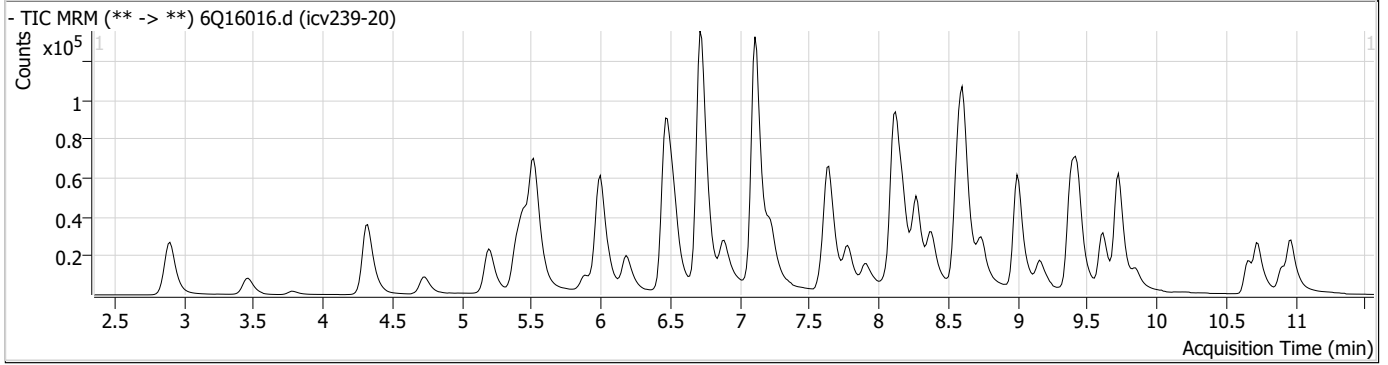
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.11

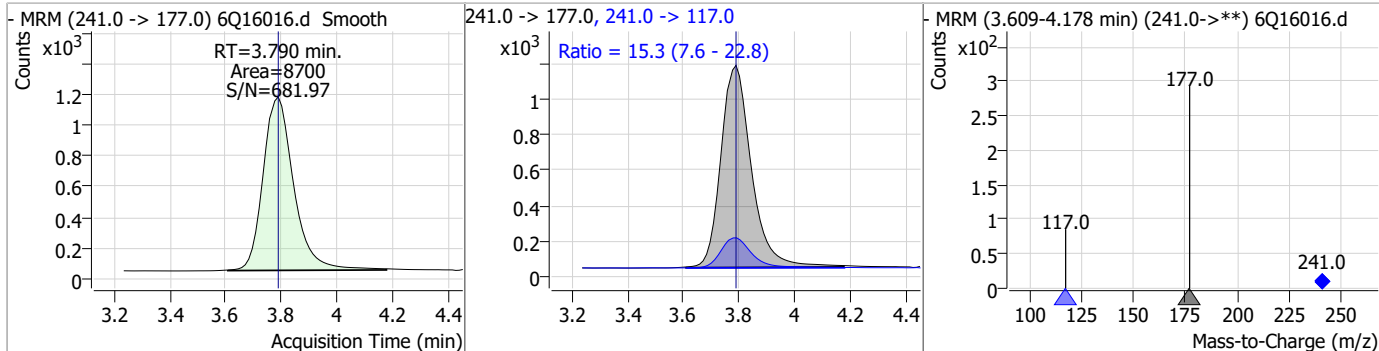
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Perfluorinated Compounds by LC/MS/MS

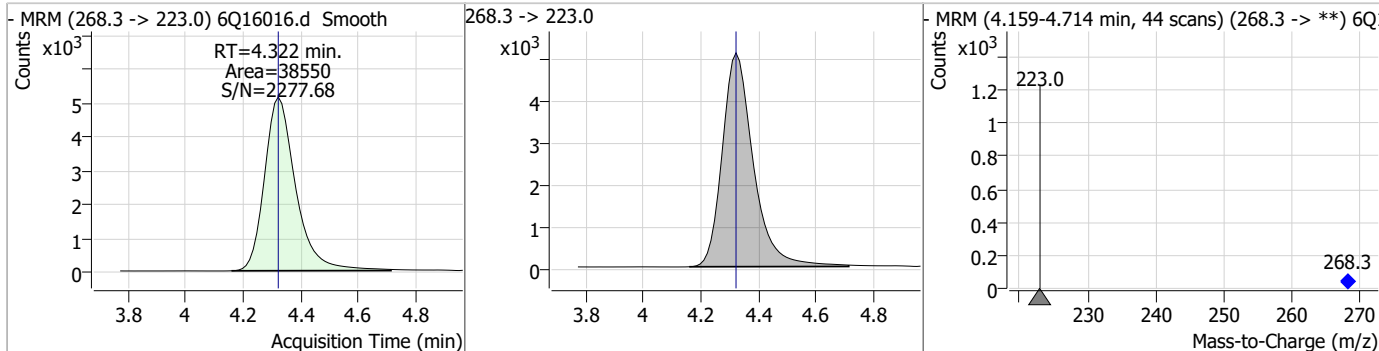


Perfluorinated Compounds by LC/MS/MS

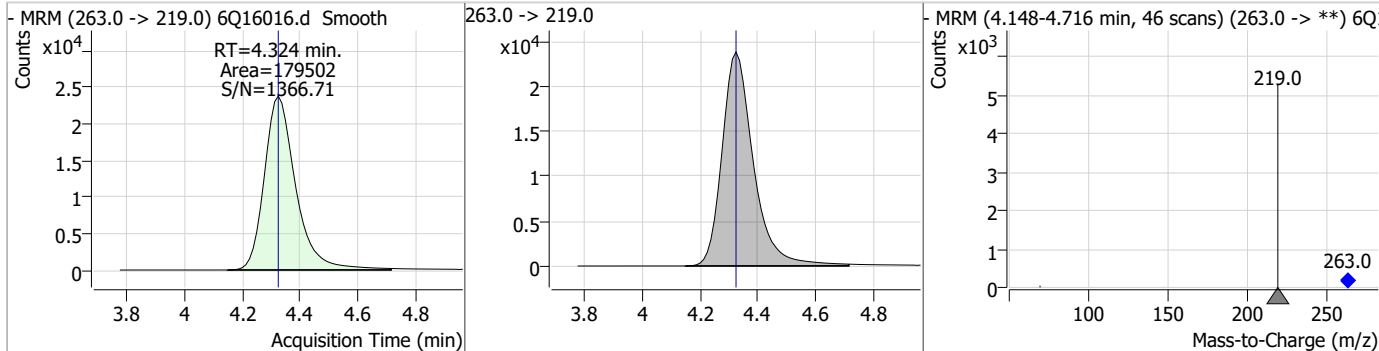
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.28	3.79	0.00	8700	241.0 -> 117.0	15.3	7.6	22.8



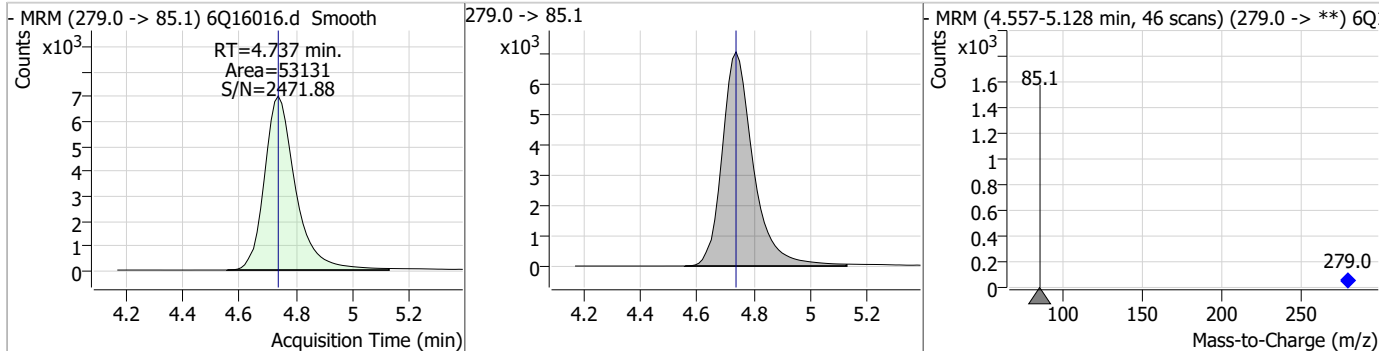
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.90	4.32	0.00	38550				



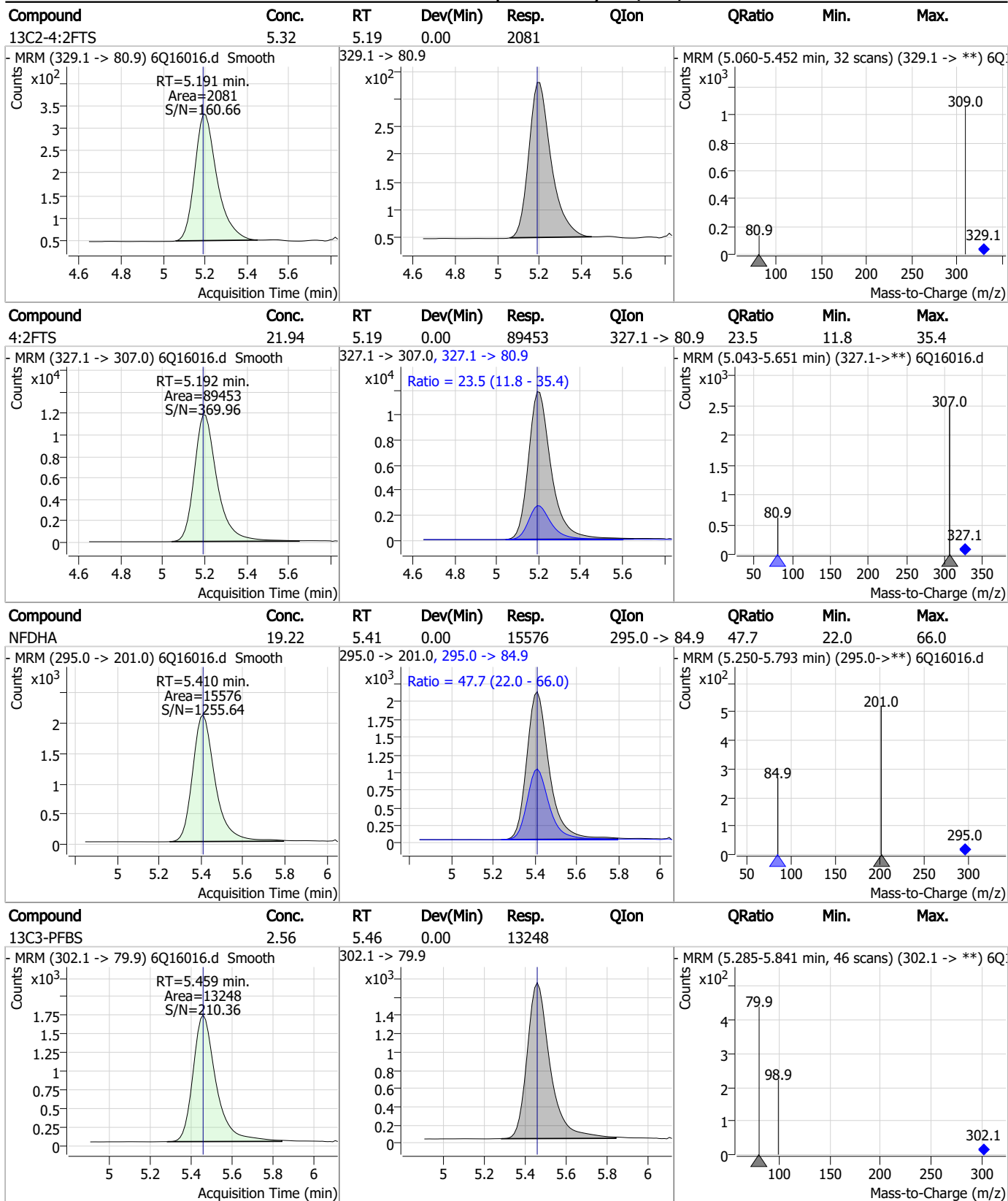
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.07	4.32	0.00	179502				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.72	4.74	0.00	53131				



Perfluorinated Compounds by LC/MS/MS

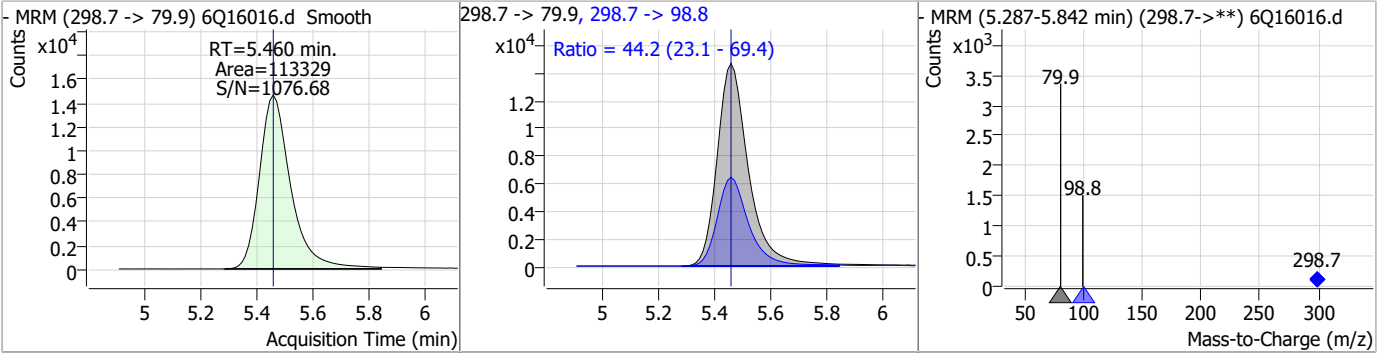


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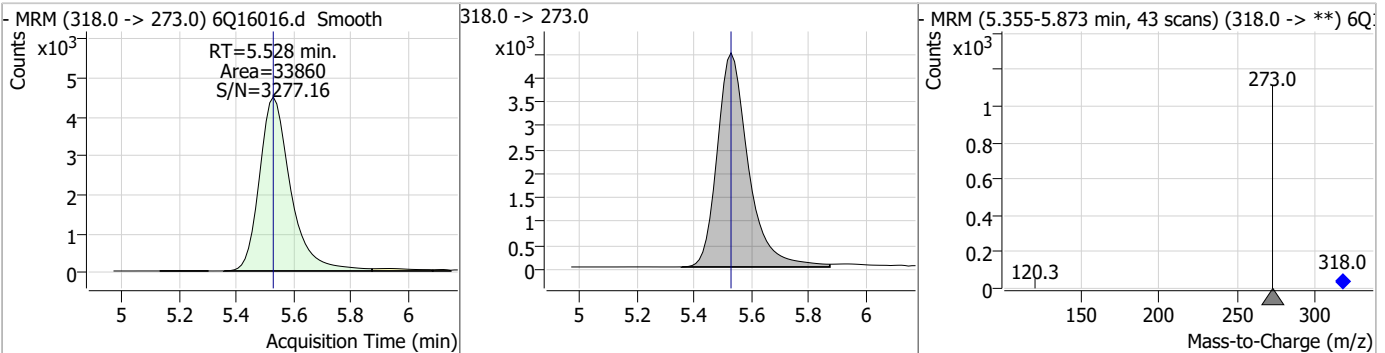


Perfluorinated Compounds by LC/MS/MS

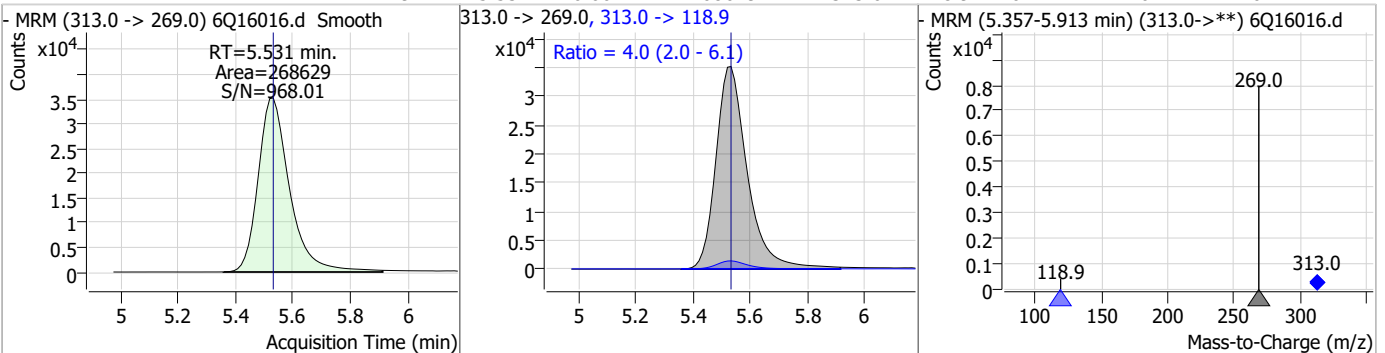
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.81	5.46	0.00	113329	298.7 -> 98.8	44.2	23.1	69.4



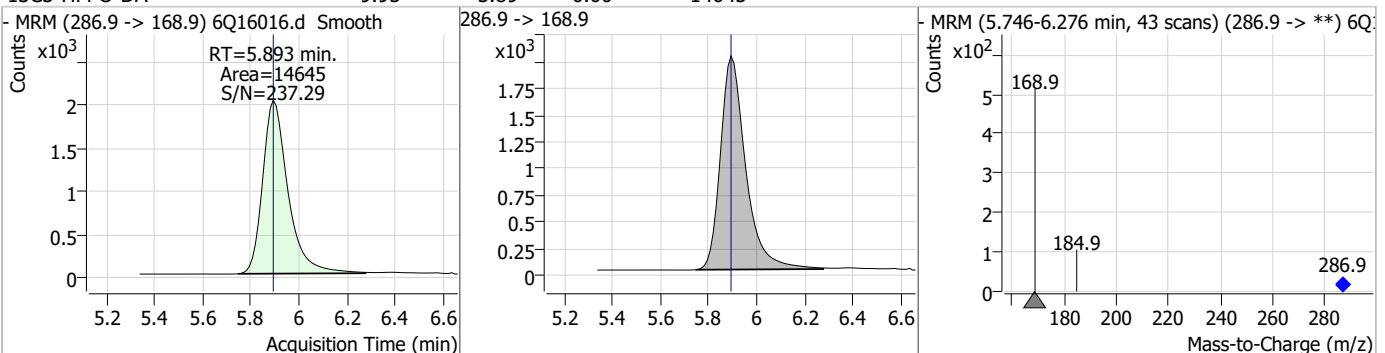
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.53	0.00	33860				



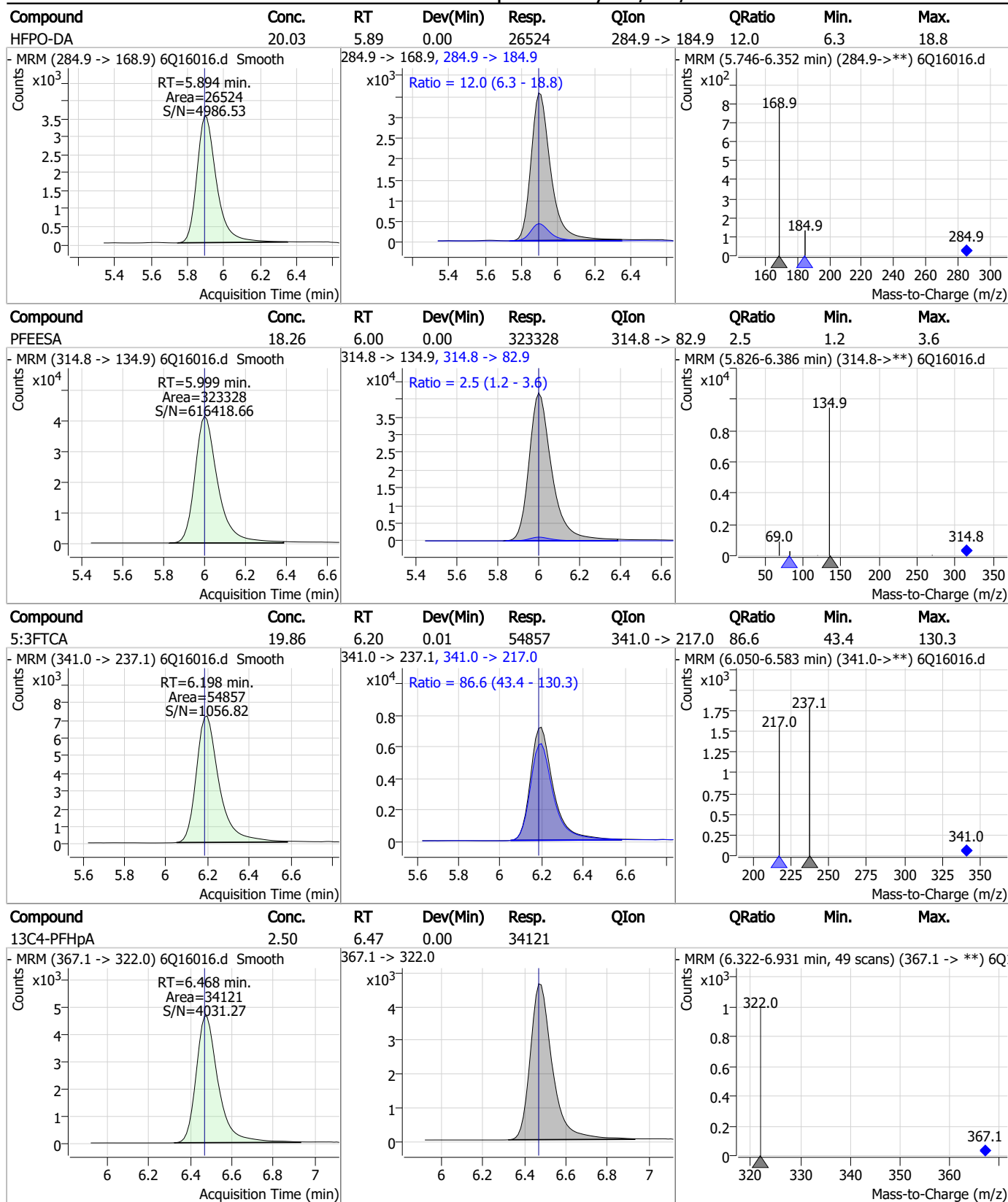
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.49	5.53	0.00	268629	313.0 -> 118.9	4.0	2.0	6.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.95	5.89	0.00	14645				

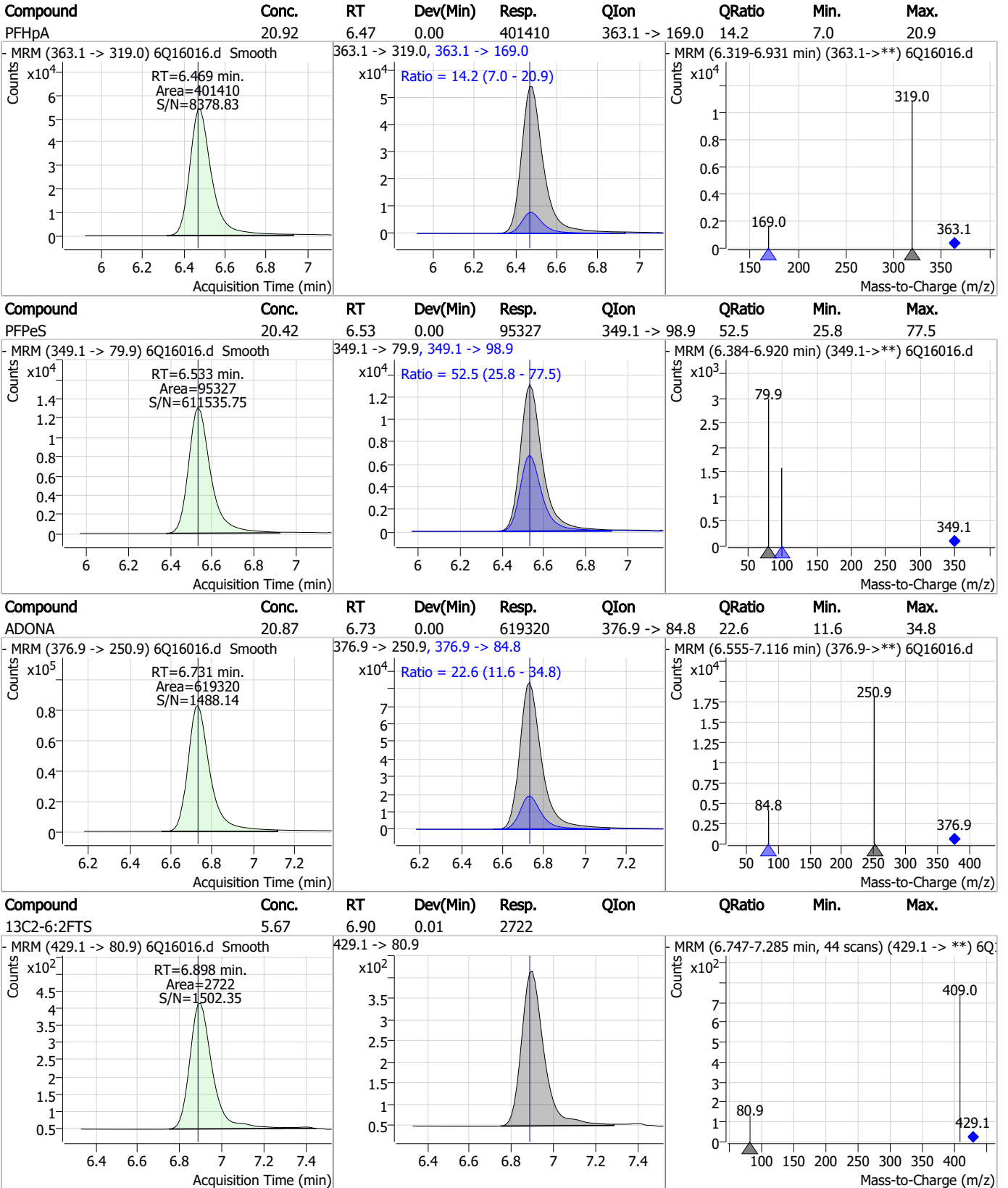


Perfluorinated Compounds by LC/MS/MS



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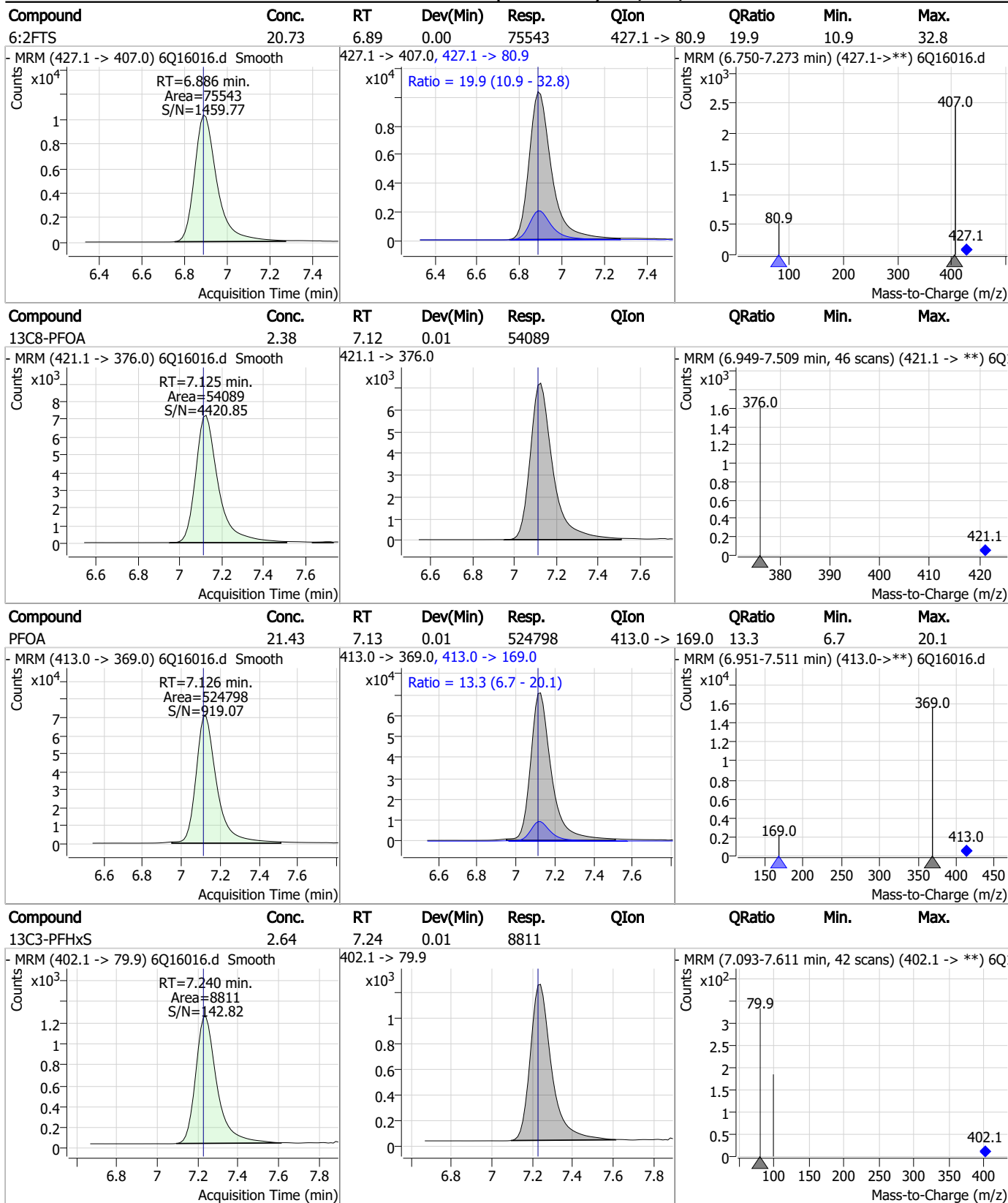
Perfluorinated Compounds by LC/MS/MS



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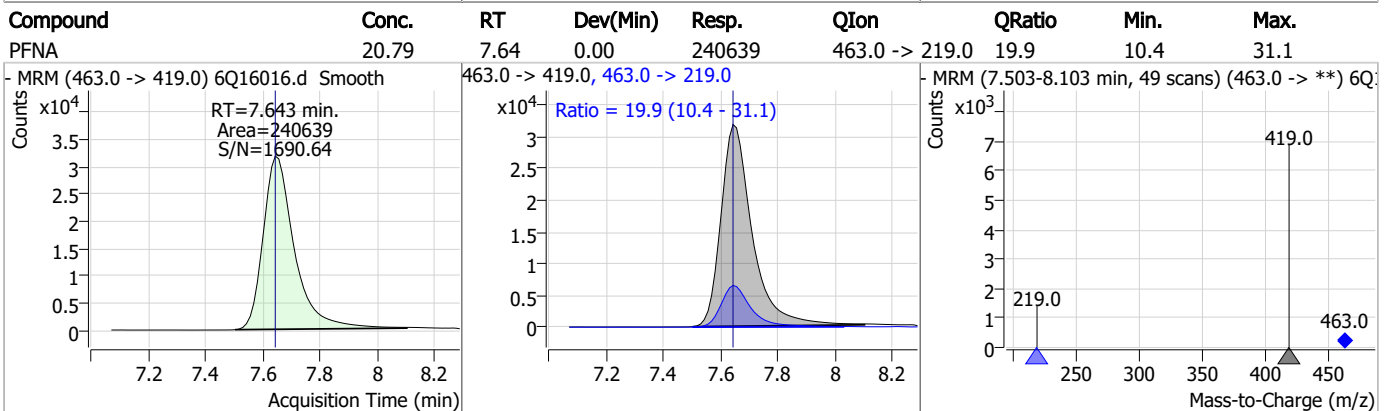
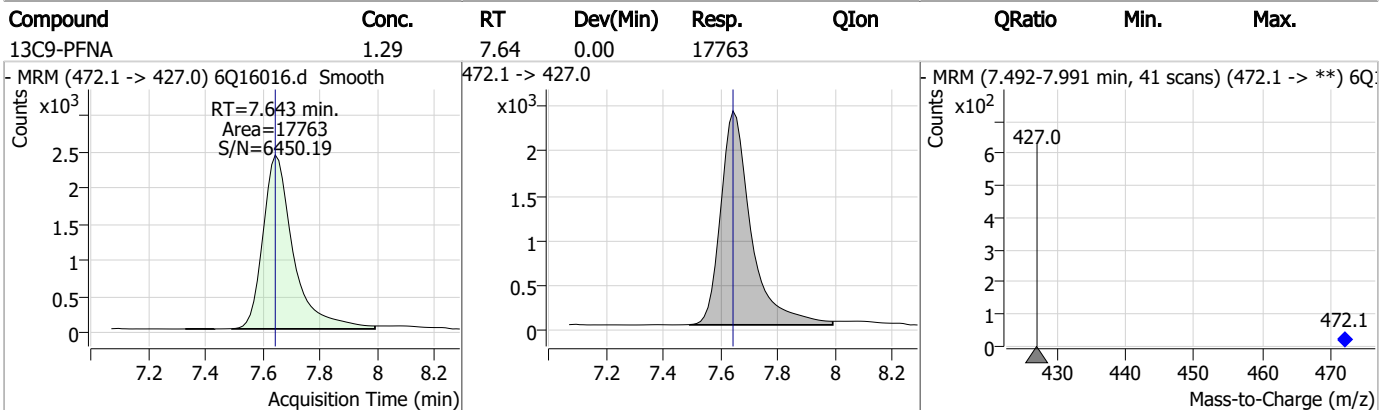
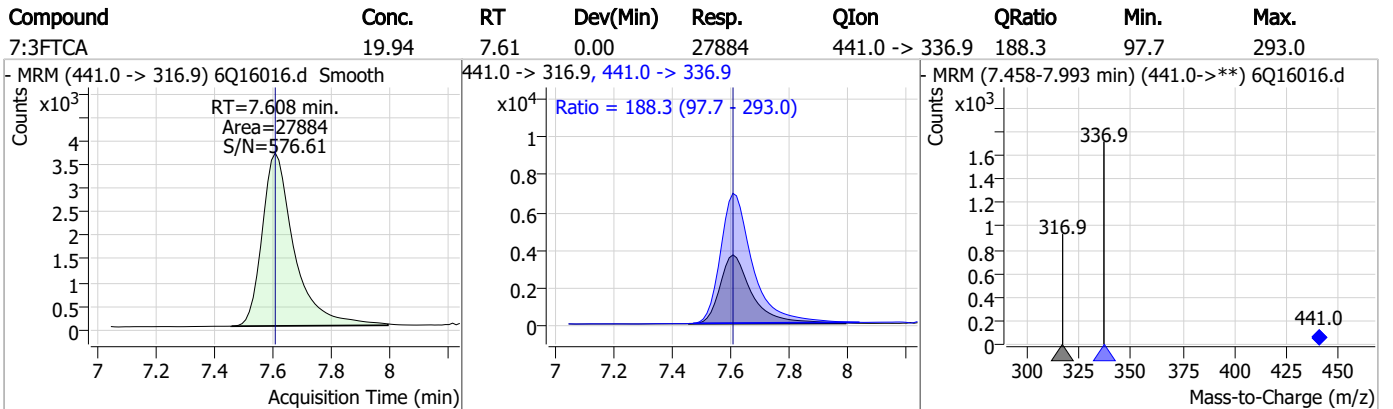
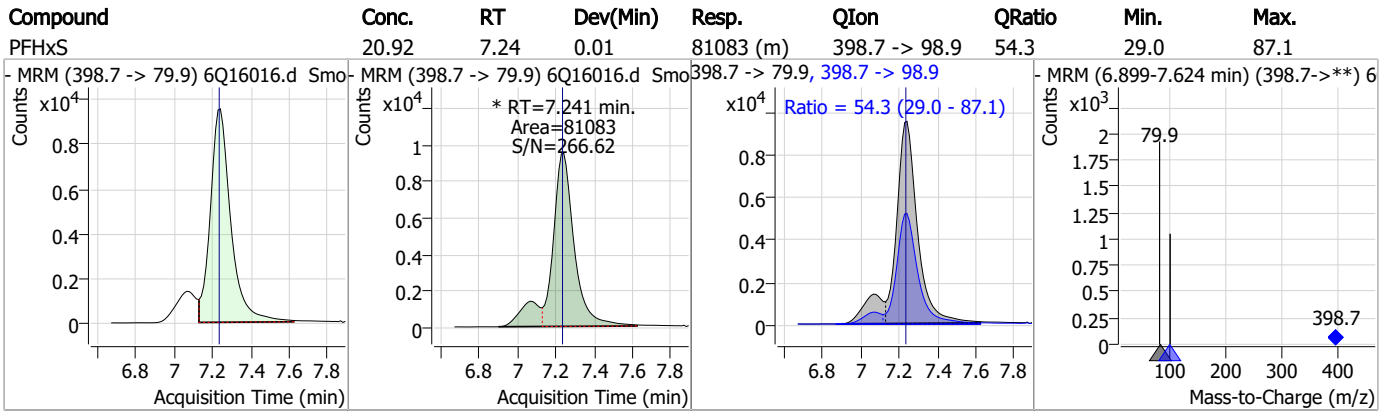


Perfluorinated Compounds by LC/MS/MS

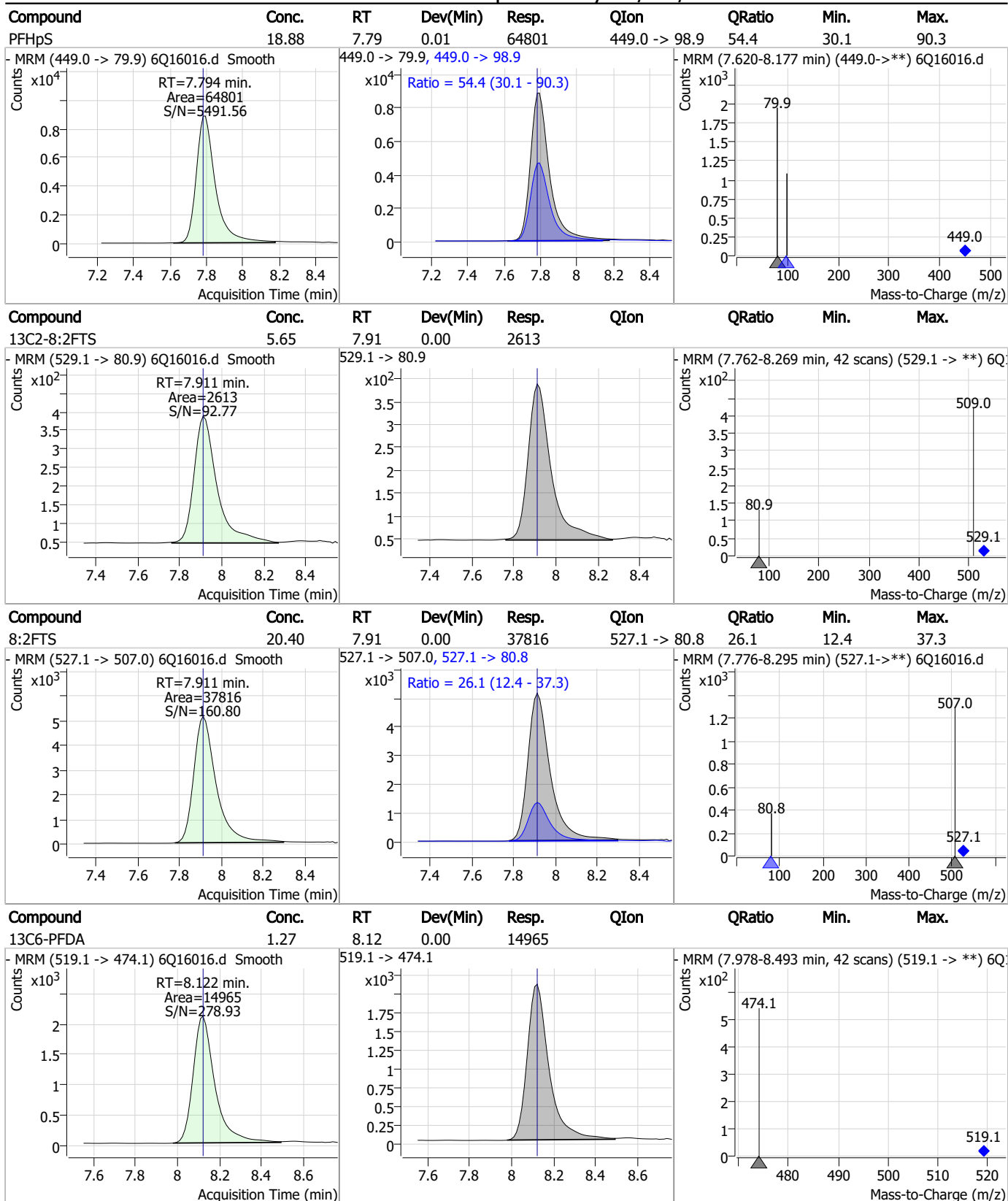


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Perfluorinated Compounds by LC/MS/MS

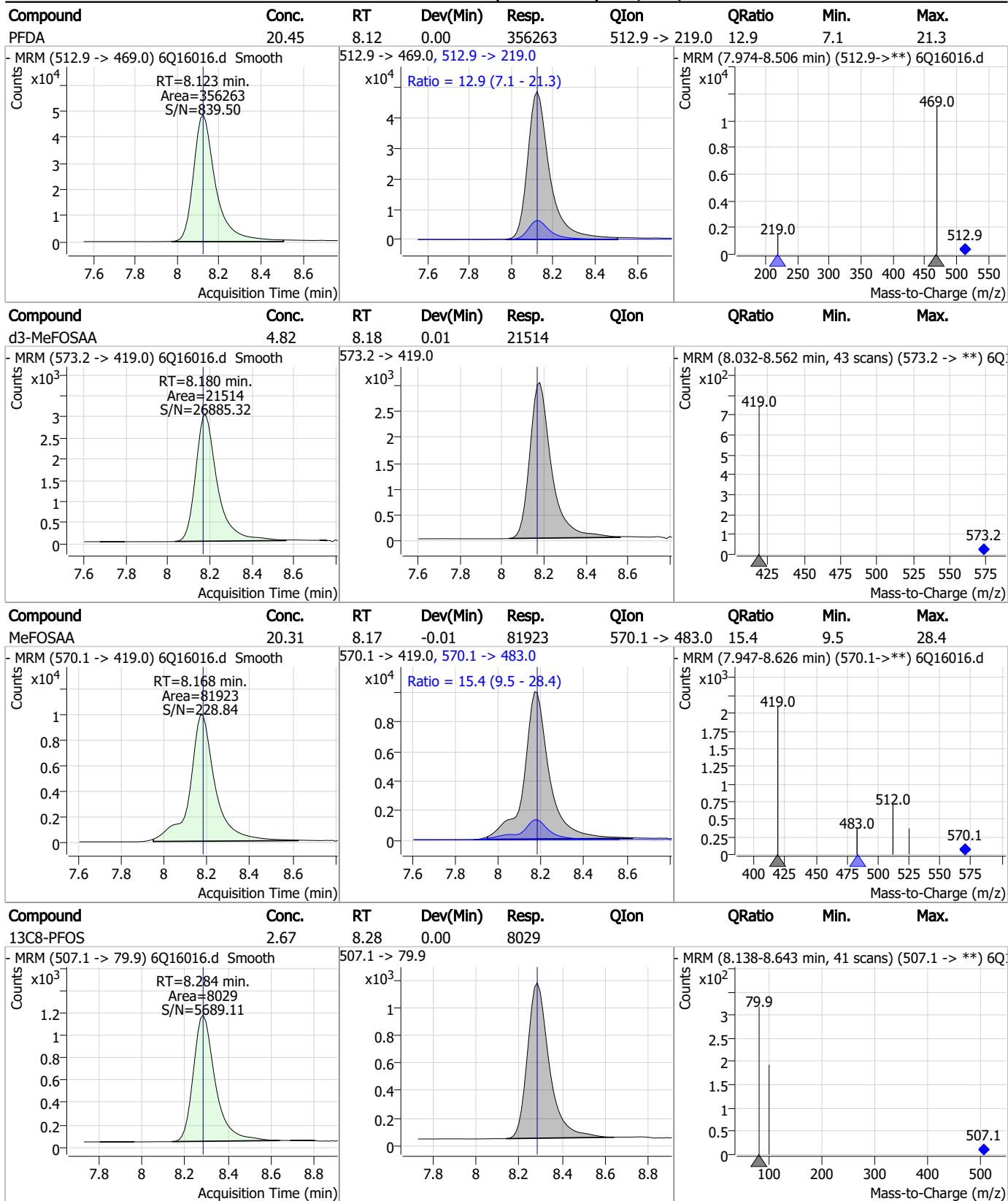


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

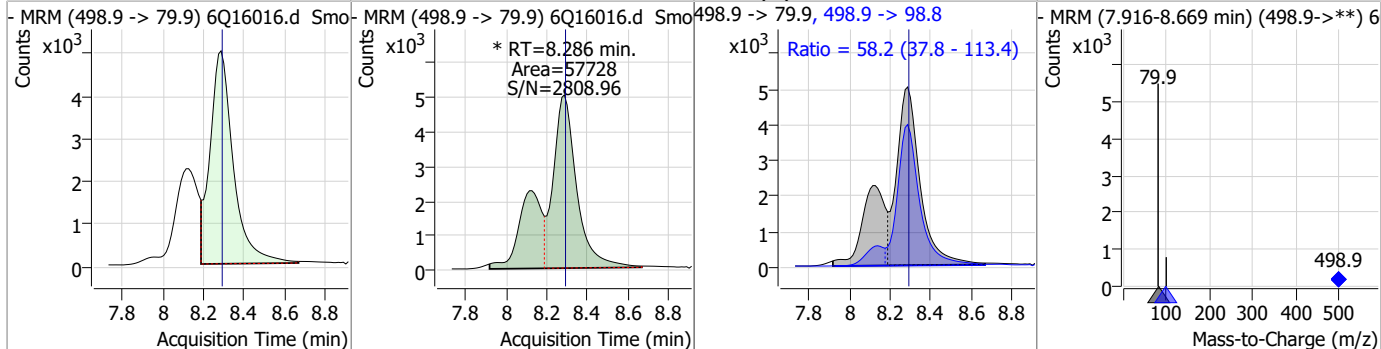


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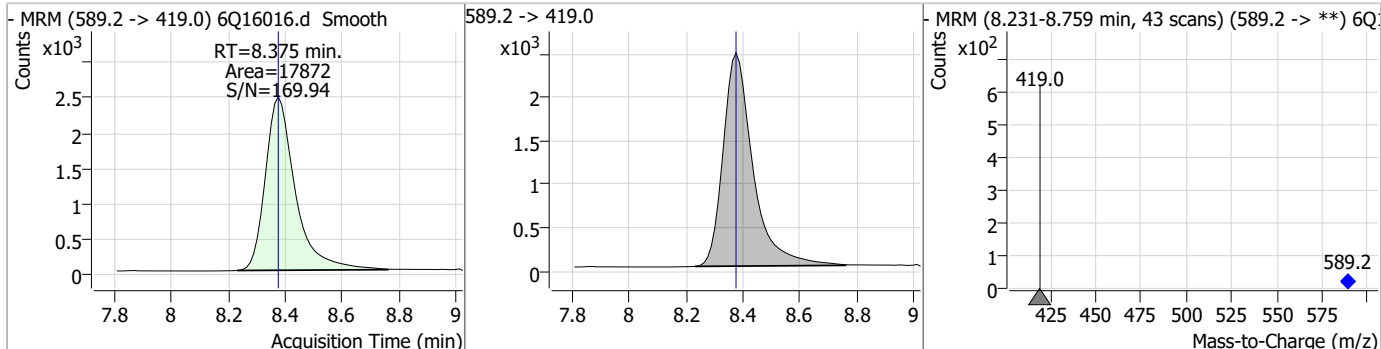
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Perfluorinated Compounds by LC/MS/MS

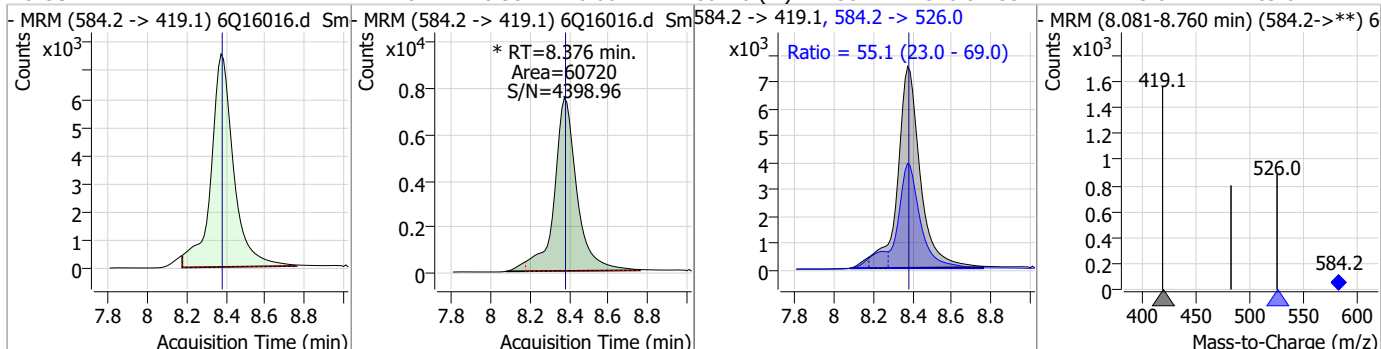
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.35	8.29	0.00	57728 (m)	498.9 -> 98.8	58.2	37.8	113.4



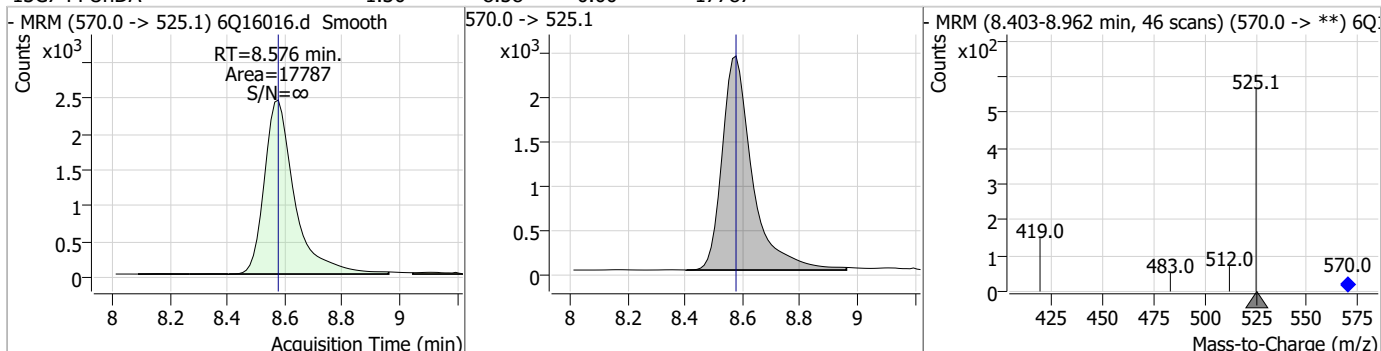
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.62	8.38	0.00	17872				



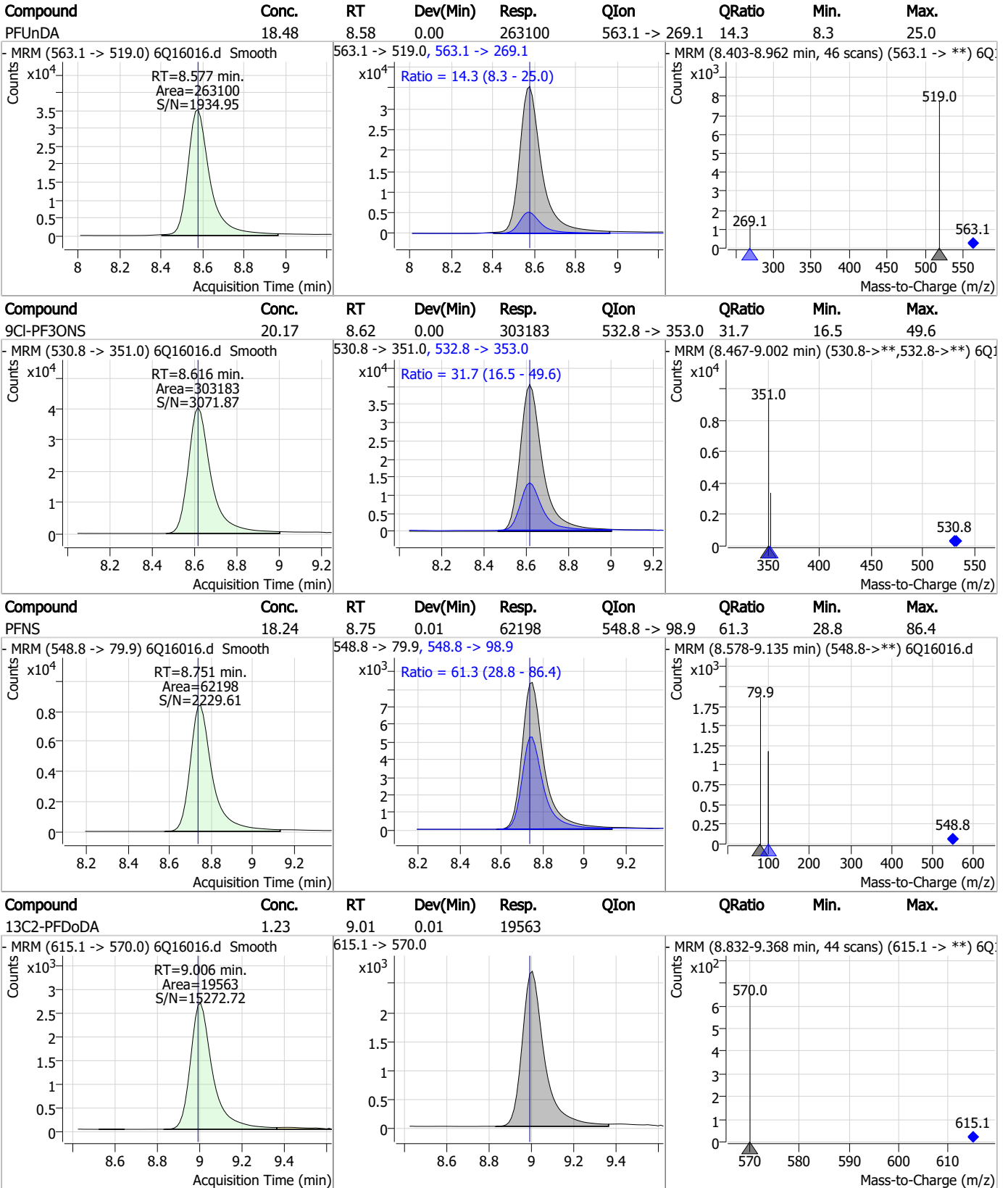
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.16	8.38	0.00	60720 (m)	584.2 -> 526.0	55.1	23.0	69.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.58	0.00	17787				



Perfluorinated Compounds by LC/MS/MS

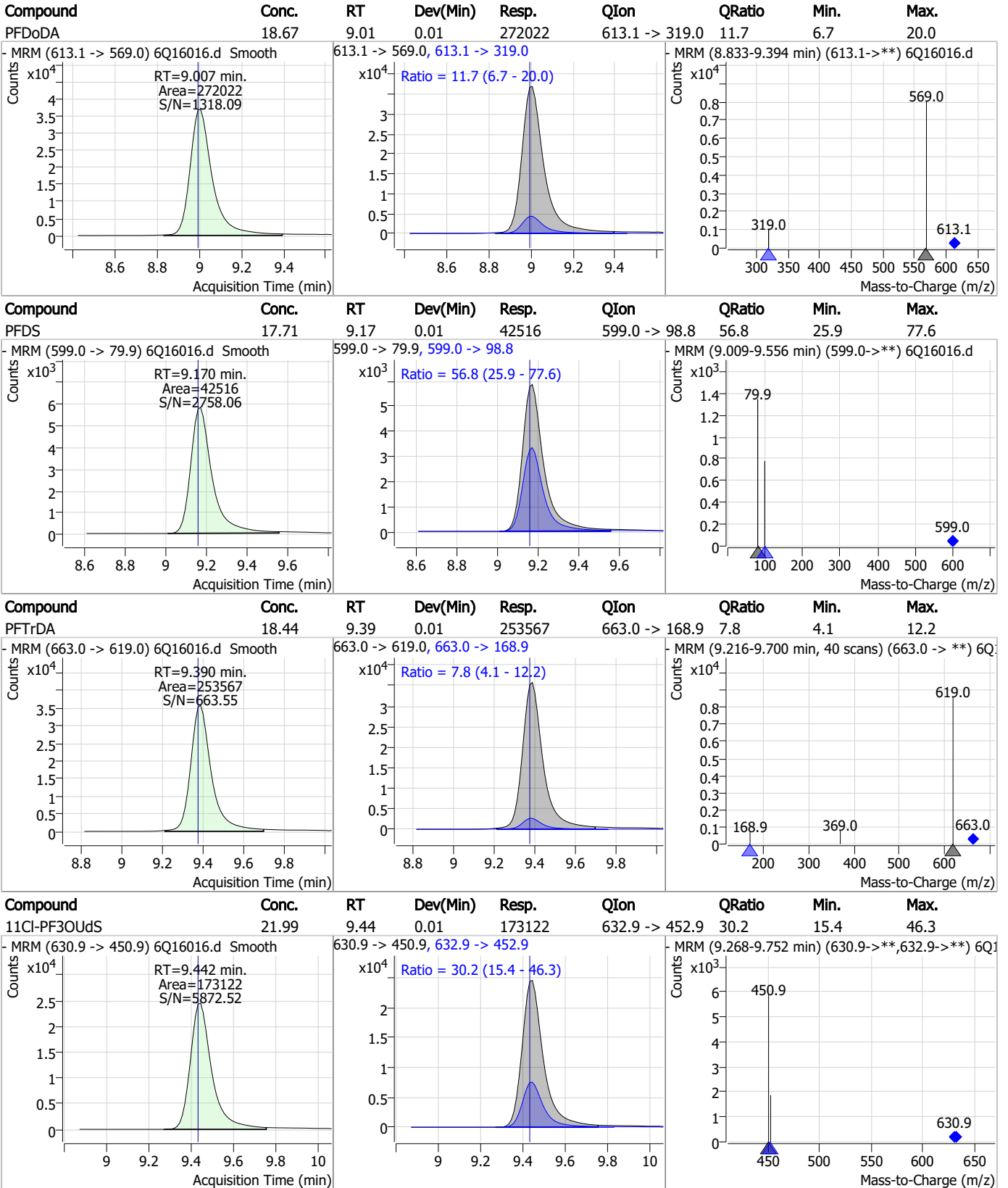


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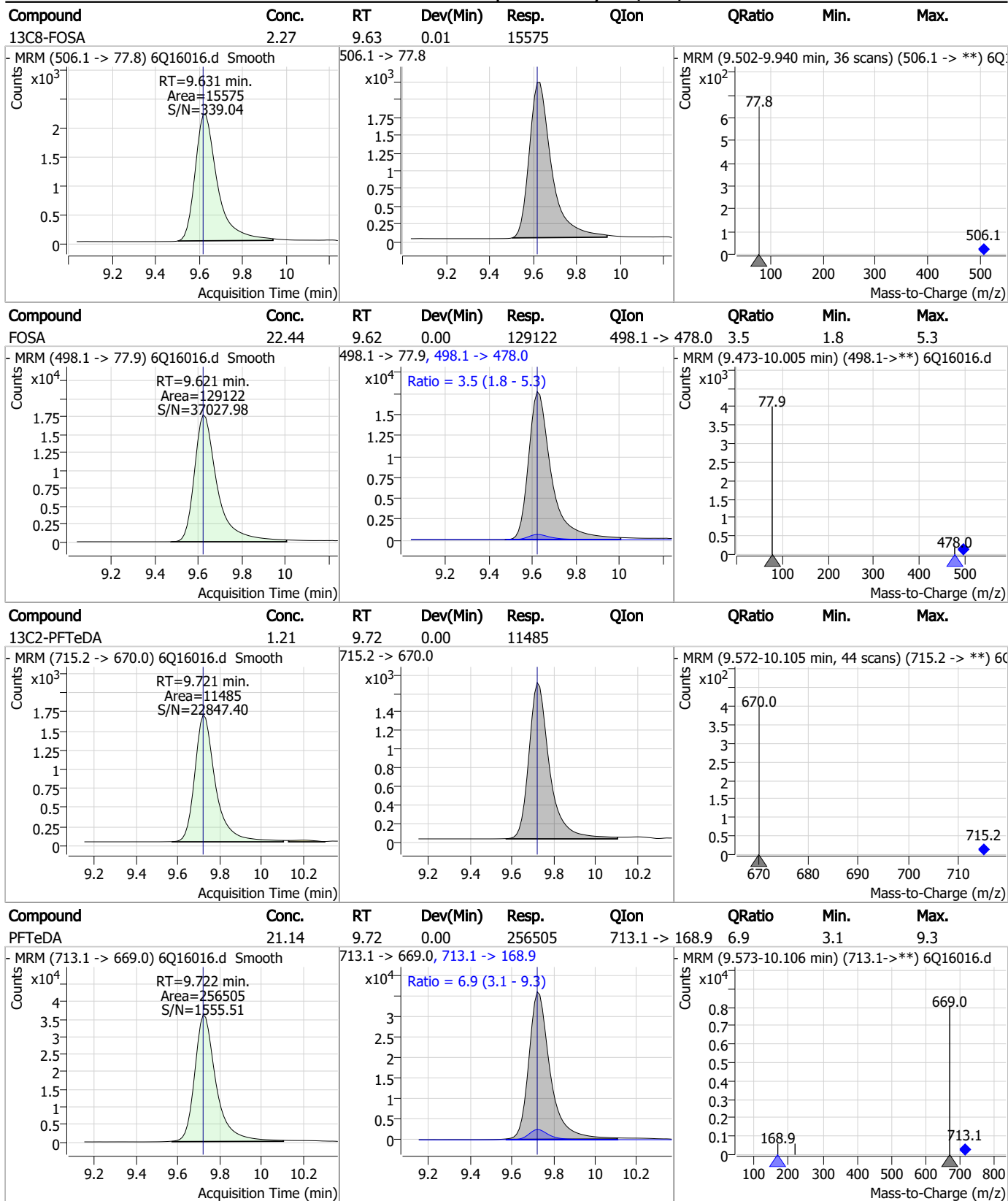
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

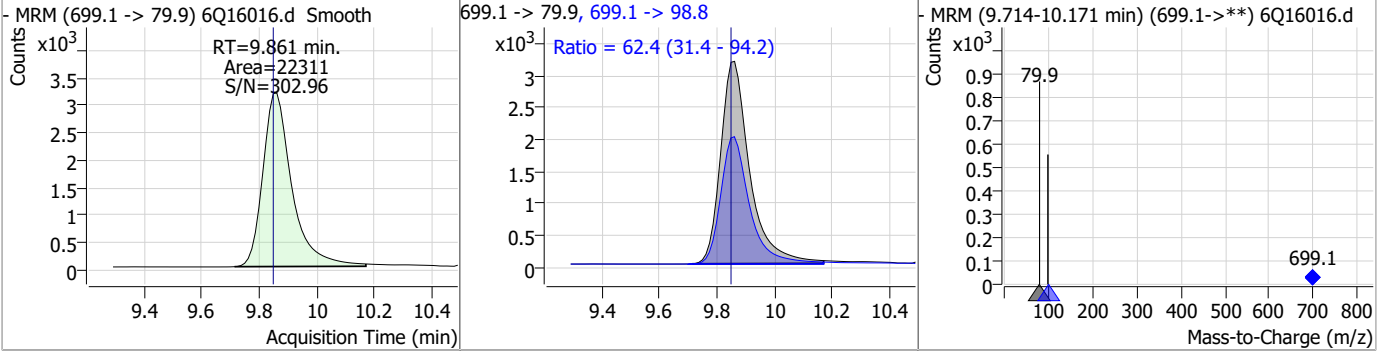


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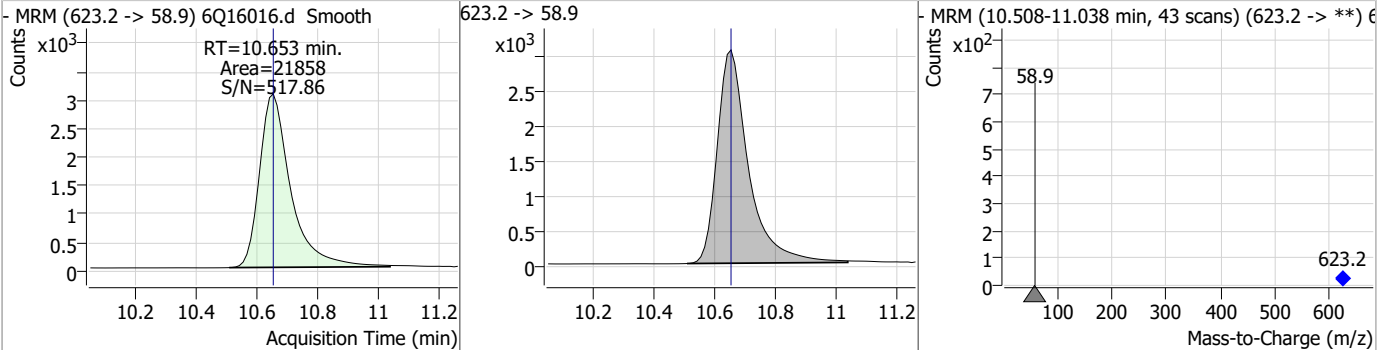


Perfluorinated Compounds by LC/MS/MS

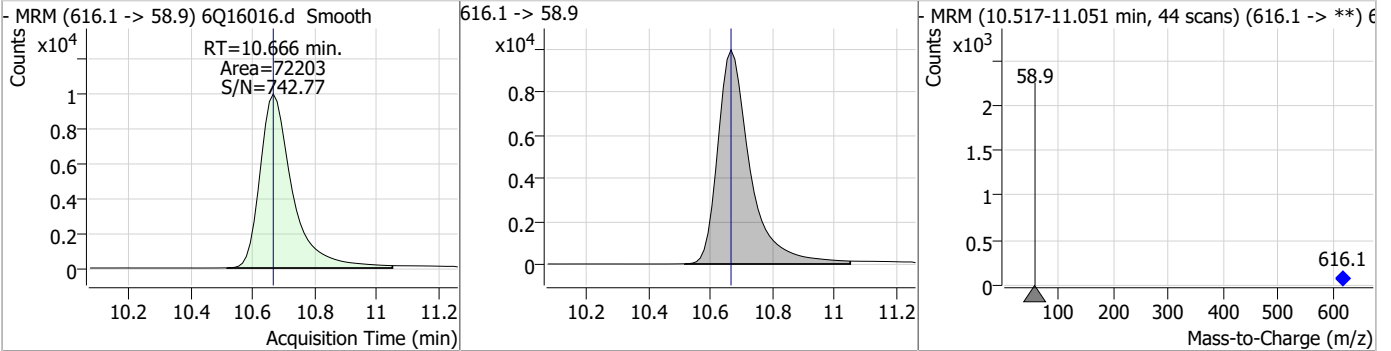
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	16.00	9.86	0.01	22311	699.1 -> 98.8	62.4	31.4	94.2



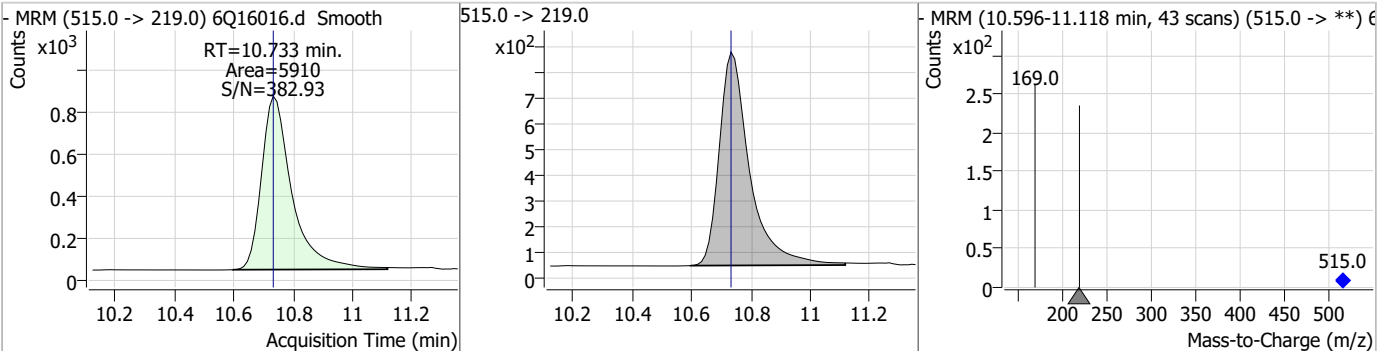
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.28	10.65	0.00	21858				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	87.63	10.67	0.00	72203				

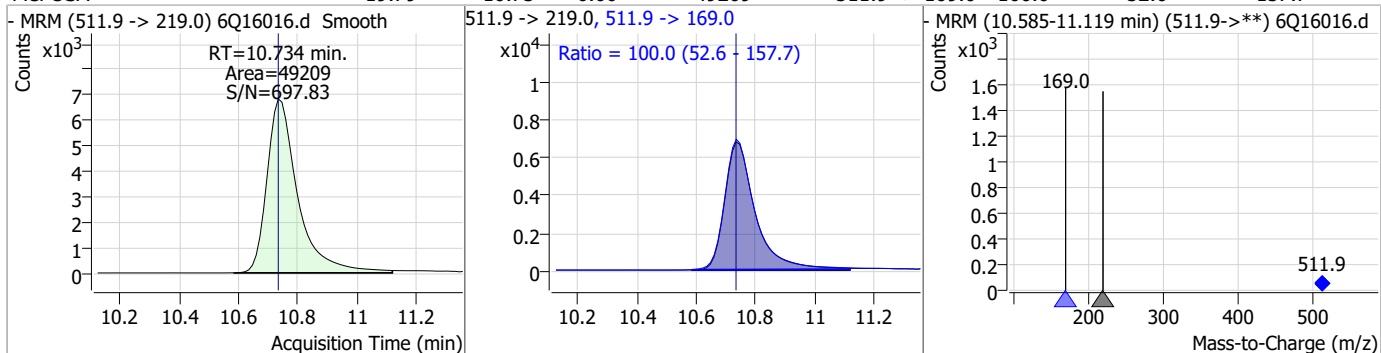


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	10.73	0.00	5910				

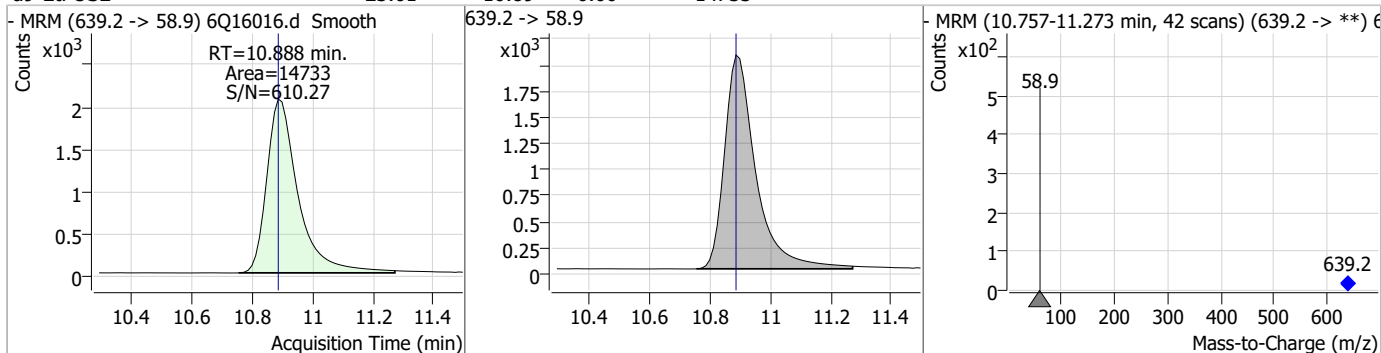


Perfluorinated Compounds by LC/MS/MS

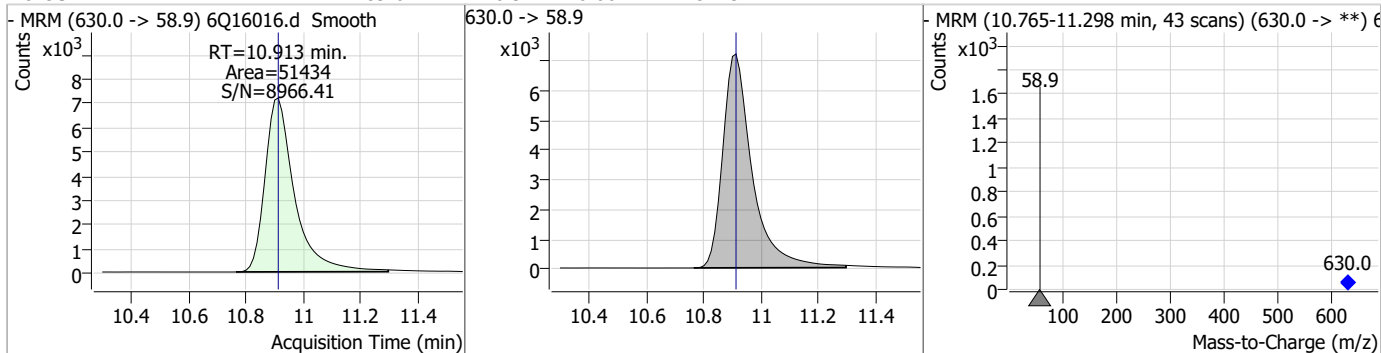
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.79	10.73	0.00	49209	511.9 -> 169.0	100.0	52.6	157.7



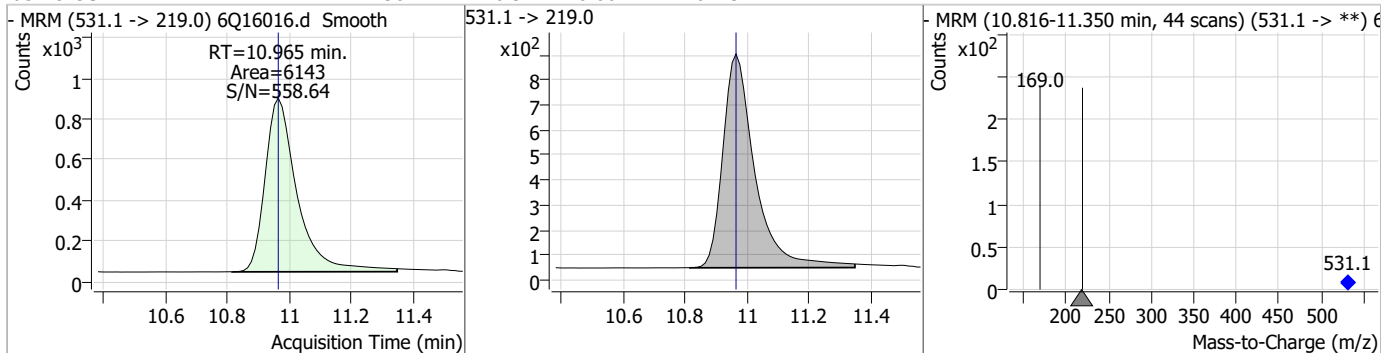
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.61	10.89	0.00	14733				



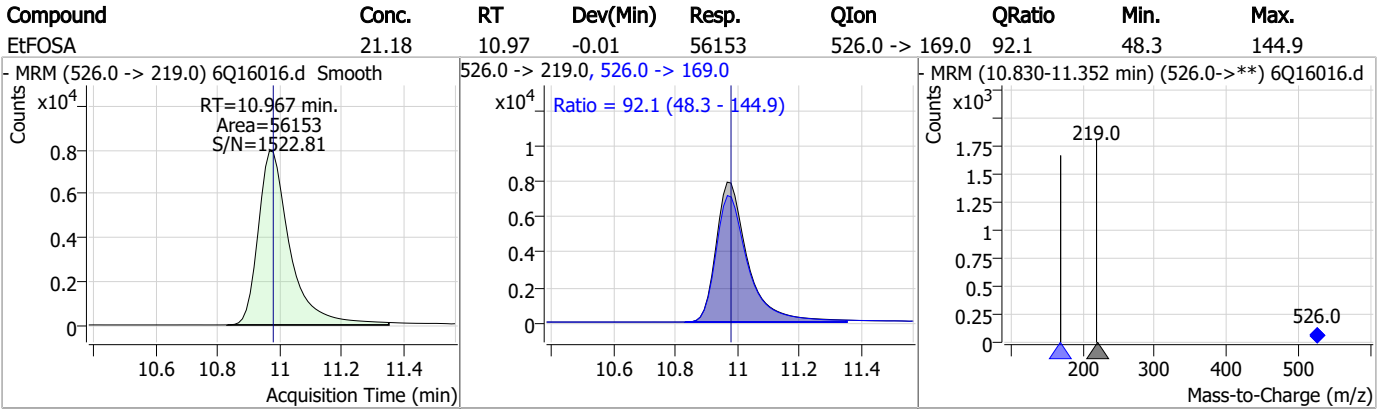
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	89.02	10.91	0.00	51434				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.30	10.97	0.00	6143				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q239-ICV239 Method: EPA DRAFT 1633
Lab FileID: 6Q16016.D Analyst approved: 04/05/23 11:17 Martha Valls
Injection Time: 04/04/23 16:35 Supervisor approved: 04/05/23 17:23 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.29	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16298.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 3:41:03 PM
 Sample Name : cc239-1.0LL
 Vial : P1-A2
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q242.batch.bin
 Sample Information : OP96171,S6Q242,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	74102	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	33180	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	30644	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	29628	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	51483	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	15757	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	12768	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	14981	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	15768	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	8865	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	14427	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	11884	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	7266	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6478	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2246	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2840	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2239	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	20439	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	11706	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	17623	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	17784	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	11409	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5334	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5182	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8249	2.50 µg/L	-0.012
13C3-PFBA	2.889	216.0 -> 172.0	31800	5.00 µg/L	-0.012
18O2-PFHxS	7.227	403.0 -> 83.9	5194	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	58397	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	17862	1.25 µg/L	-0.012
13C5-PFNA	7.643	468.0 -> 423.0	16844	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	28931	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2246	6.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.6%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2840	6.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.5%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2239	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C2-PFDoDA	8.994	615.1 -> 570.0	15768	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.4%		
13C2-PFTeDA	9.721	715.2 -> 670.0	8865	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.7%		
13C3-PFBS	5.446	302.1 -> 79.9	11884	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C3-PFHxS	7.228	402.1 -> 79.9	7266	2.44 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 = 97.7%	
13C4-PFBA	2.897	216.8 -> 171.9	74102	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.468	367.1 -> 322.0	29628	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	5.516	318.0 -> 273.0	30644	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.322	268.3 -> 223.0	33180	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C6-PFDA	8.122	519.1 -> 474.1	12768	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C7-PFUnDA	8.564	570.0 -> 525.1	14981	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-FOSA	9.631	506.1 -> 77.8	14427	2.35 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C8-PFOA	7.112	421.1 -> 376.0	51483	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C8-PFOS	8.272	507.1 -> 79.9	6478	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C9-PFNA	7.643	472.1 -> 427.0	15757	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSAA	8.167	573.2 -> 419.0	20439	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	11706	9.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
d3-MeFOSA	10.733	515.0 -> 219.0	5182	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
d5-EtFOSAA	8.363	589.2 -> 419.0	17623	5.10 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
d7-MeFOSE	10.653	623.2 -> 58.9	17784	21.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.7%	
d9-EtFOSE	10.888	639.2 -> 58.9	11409	20.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.8%	
d5-EtFOSA	10.965	531.1 -> 219.0	5334	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.5%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	3464	0.79 µg/L	99
		327.1 -> 80.9	840		
6:2FTS	6.886	427.1 -> 407.0	2905	0.76 µg/L	97
		427.1 -> 80.9	591		
8:2FTS	7.911	527.1 -> 507.0	1342	0.85 µg/L	88
		527.1 -> 80.8	414		
EtFOSAA	8.376	584.2 -> 419.1	544	0.20 µg/L	m 79
		584.2 -> 526.0	328		
FOSA	9.621	498.1 -> 77.9	1048	0.20 µg/L	100
		498.1 -> 478.0	36		
MeFOSAA	8.168	570.1 -> 419.0	878	0.23 µg/L	90
		570.1 -> 483.0	125		
PFBA	2.893	212.8 -> 168.9	1422	0.76 µg/L	100
PFBS	5.447	298.7 -> 79.9	720	0.15 µg/L	80
		298.7 -> 98.8	430		
PFDA	8.111	512.9 -> 469.0	3057	0.21 µg/L	98
		512.9 -> 219.0	461		
PFDODA	8.994	613.1 -> 569.0	2619	0.22 µg/L	100
		613.1 -> 319.0	349		
PFDS	9.158	599.0 -> 79.9	435	0.22 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	208			
PFHpA	6.469	363.1 -> 319.0	3519	0.21	µg/L	98
		363.1 -> 169.0	456			
PFHpS	7.781	449.0 -> 79.9	550	0.20	µg/L	100
		449.0 -> 98.9	330			
PFHxA	5.519	313.0 -> 269.0	2362	0.21	µg/L	96
		313.0 -> 118.9	127			
PFHxS	7.228	398.7 -> 79.9	682	0.21	µg/L	m 89
		398.7 -> 98.9	455			
PFNA	7.643	463.0 -> 419.0	2038	0.20	µg/L	99
		463.0 -> 219.0	432			
PFNS	8.738	548.8 -> 79.9	614	0.22	µg/L	87
		548.8 -> 98.9	414			
PFOA	7.113	413.0 -> 369.0	4326	0.19	µg/L	97
		413.0 -> 169.0	636			
PFOS	8.273	498.9 -> 79.9	633	0.22	µg/L	m 90
		498.9 -> 98.8	424			
PFPeA	4.324	263.0 -> 219.0	3021	0.43	µg/L	100
PFPeS	6.533	349.1 -> 79.9	725	0.19	µg/L	93
		349.1 -> 98.9	408			
PFTeDA	9.709	713.1 -> 669.0	2337	0.25	µg/L	98
		713.1 -> 168.9	125			
PFTrDA	9.378	663.0 -> 619.0	2773	0.25	µg/L	93
		663.0 -> 168.9	152			
PFUnDA	8.564	563.1 -> 519.0	2669	0.22	µg/L	99
		563.1 -> 269.1	427			
11Cl-PF3OUdS	9.430	630.9 -> 450.9	5366	0.85	µg/L	97
		632.9 -> 452.9	1574			
9Cl-PF3ONS	8.603	530.8 -> 351.0	10049	0.84	µg/L	94
		532.8 -> 353.0	2966			
ADONA	6.719	376.9 -> 250.9	20405	0.86	µg/L	97
		376.9 -> 84.8	4445			
HFPO-DA	5.894	284.9 -> 168.9	801	0.76	µg/L	97
		284.9 -> 184.9	110			
3:3FTCA	3.790	241.0 -> 177.0	355	0.91	µg/L	98
		241.0 -> 117.0	52			
5:3FTCA	6.185	341.0 -> 237.1	13711	5.48	µg/L	94
		341.0 -> 217.0	11191			
7:3FTCA	7.608	441.0 -> 316.9	8318	6.57	µg/L	78
		441.0 -> 336.9	13529			
EtFOSA	10.967	526.0 -> 219.0	586	0.25	µg/L	94
		526.0 -> 169.0	529			
EtFOSE	10.913	630.0 -> 58.9	1016	2.27	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	450	0.21	µg/L	92
		511.9 -> 169.0	435			
MeFOSE	10.666	616.1 -> 58.9	1525	2.27	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	250	0.22	µg/L	94
		699.1 -> 98.8	146			
NFDHA	5.385	295.0 -> 201.0	309	0.42	µg/L	85
		295.0 -> 84.9	107			
PFMBA	4.725	279.0 -> 85.1	869	0.37	µg/L	100
PFMPA	3.463	229.0 -> 84.9	812	0.38	µg/L	100
PFEESA	5.999	314.8 -> 134.9	5762	0.36	µg/L	97
		314.8 -> 82.9	199			

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

7.7.12
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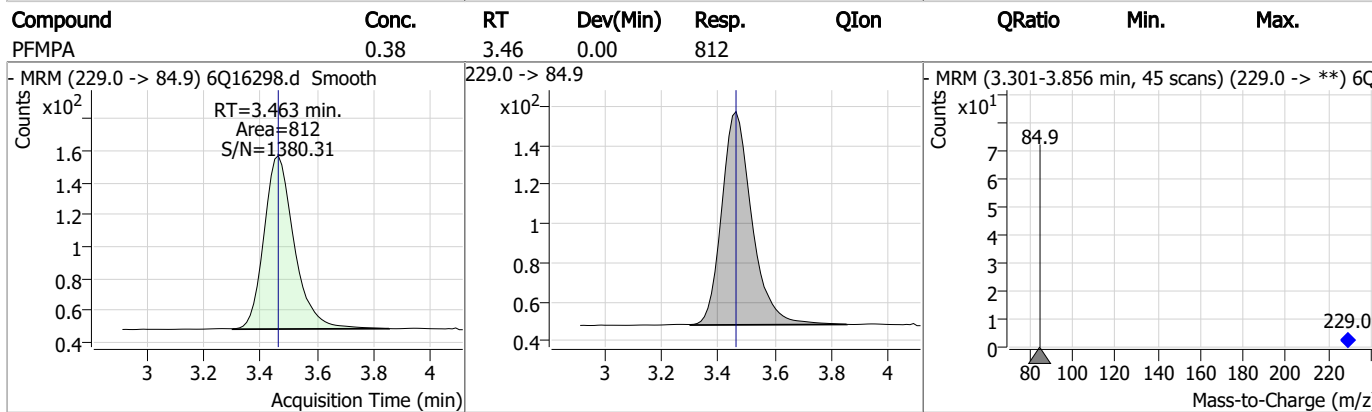
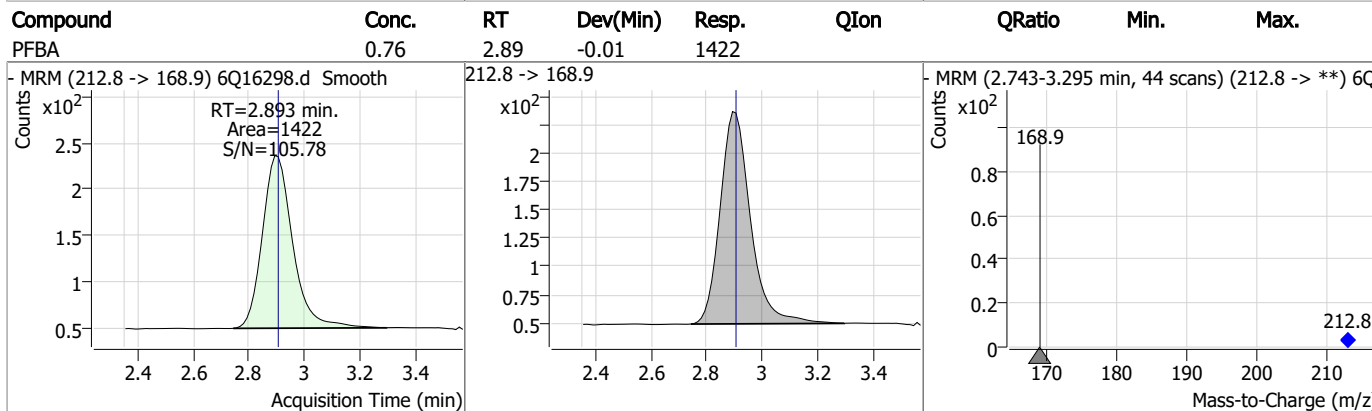
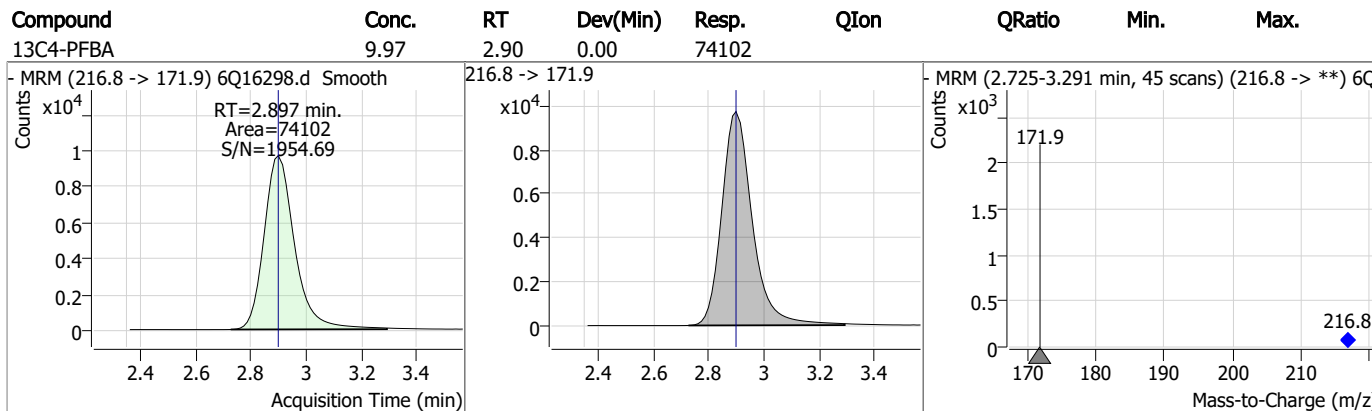
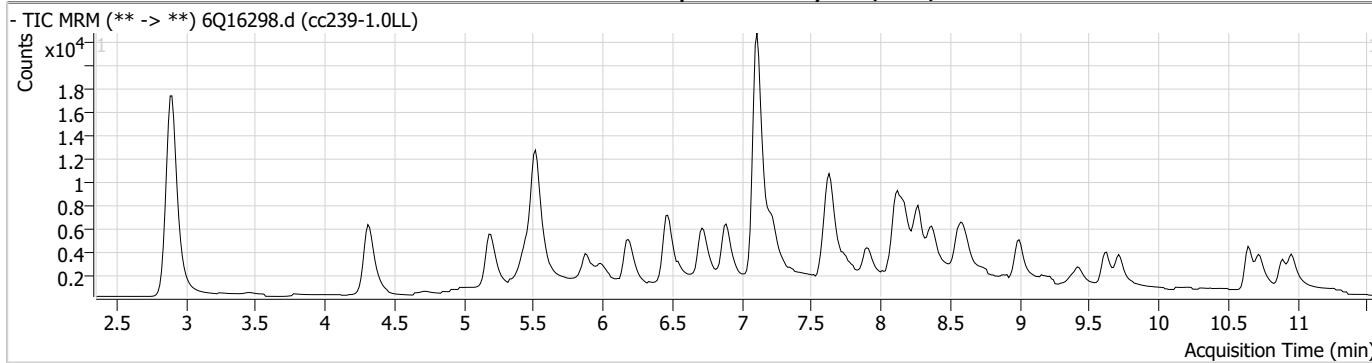
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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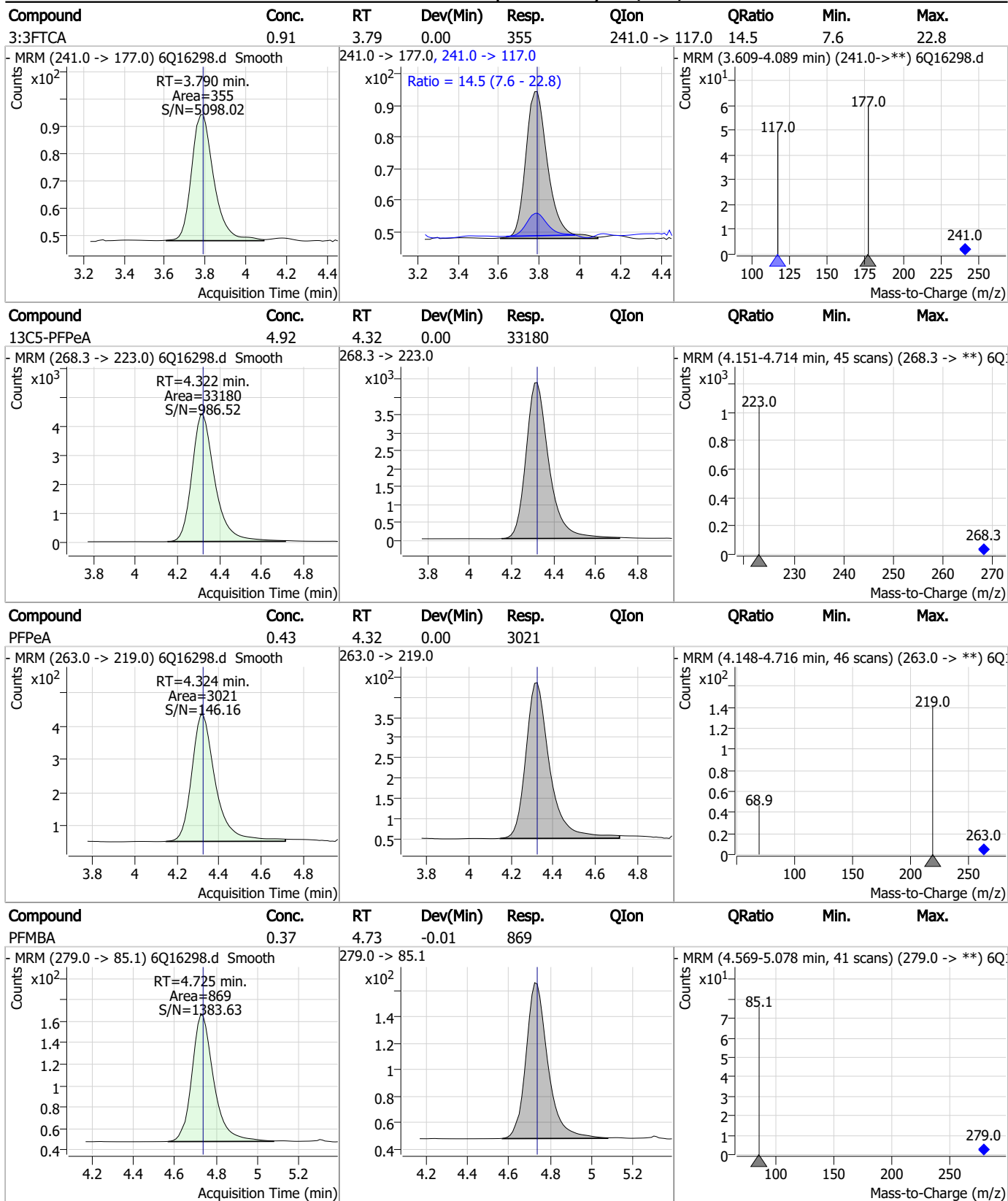
7.7.12

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Perfluorinated Compounds by LC/MS/MS

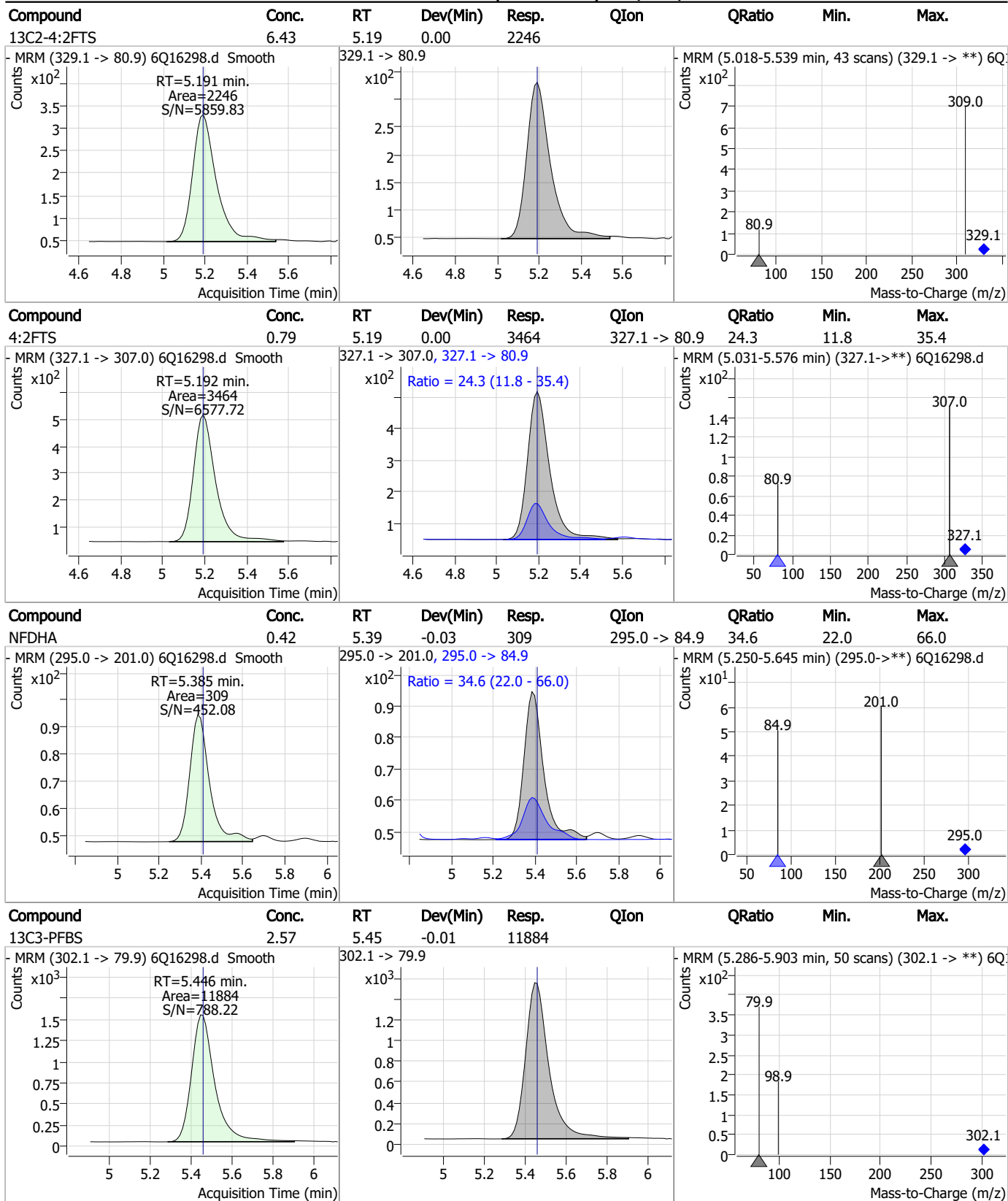


Perfluorinated Compounds by LC/MS/MS



7.7.12

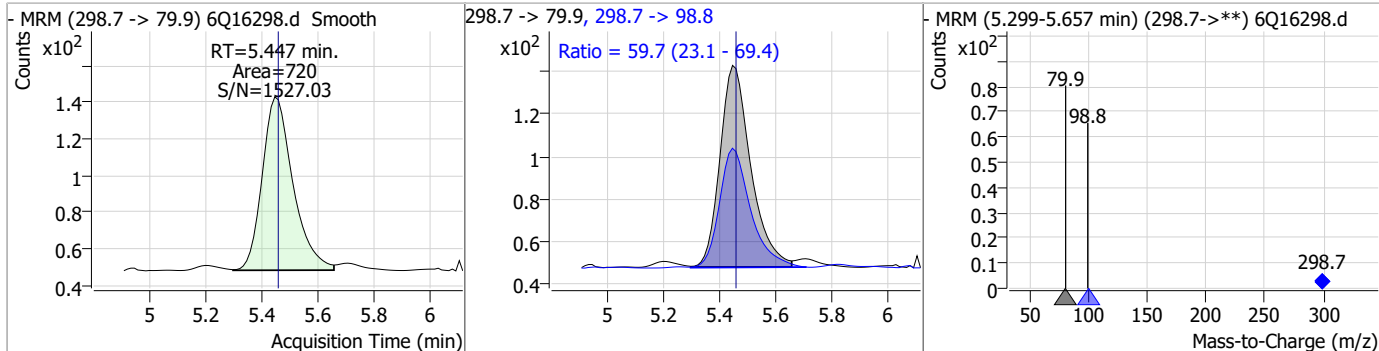
Perfluorinated Compounds by LC/MS/MS



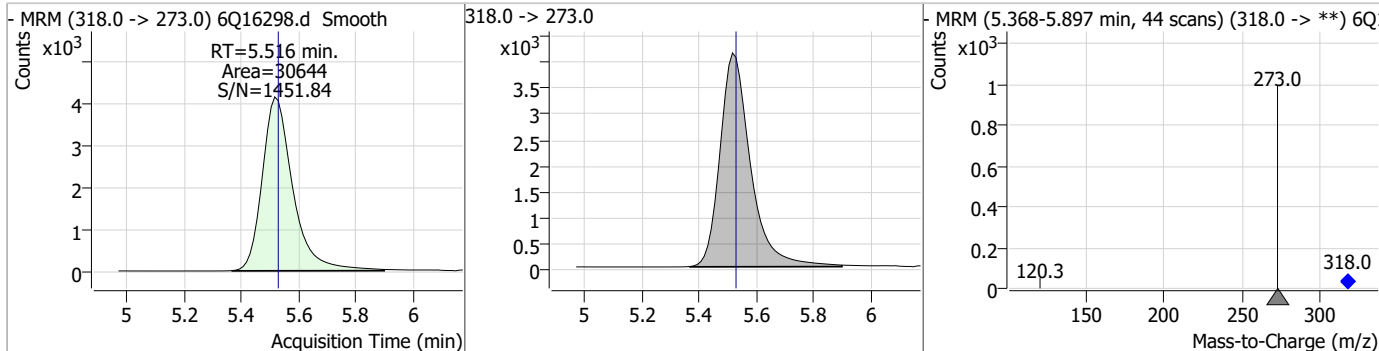
7.7.12
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Perfluorinated Compounds by LC/MS/MS

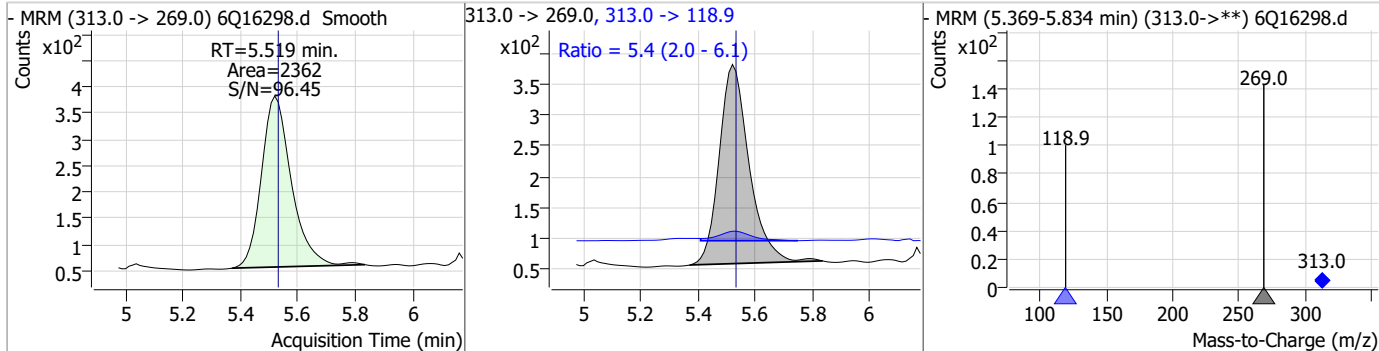
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.15	5.45	-0.01	720	298.7 -> 98.8	59.7	23.1	69.4



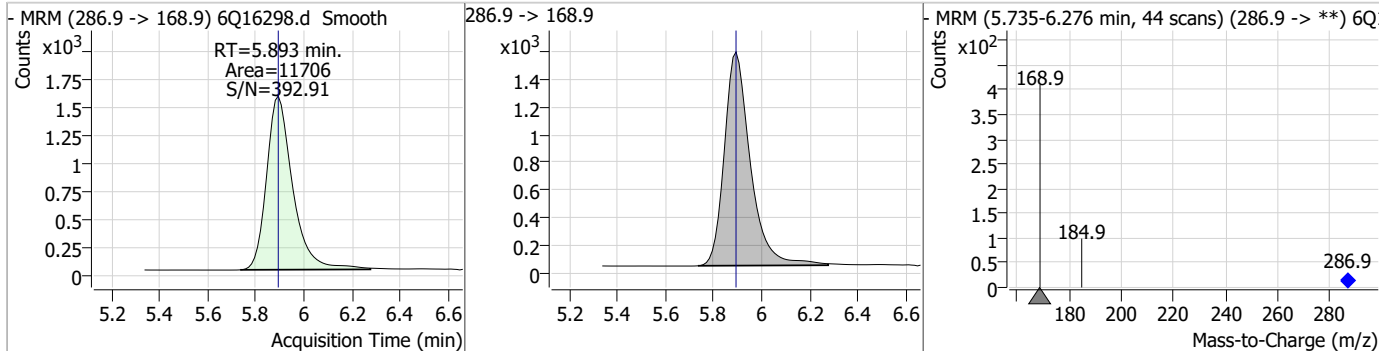
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.52	-0.01	30644				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.52	-0.01	2362	313.0 -> 118.9	5.4	2.0	6.1

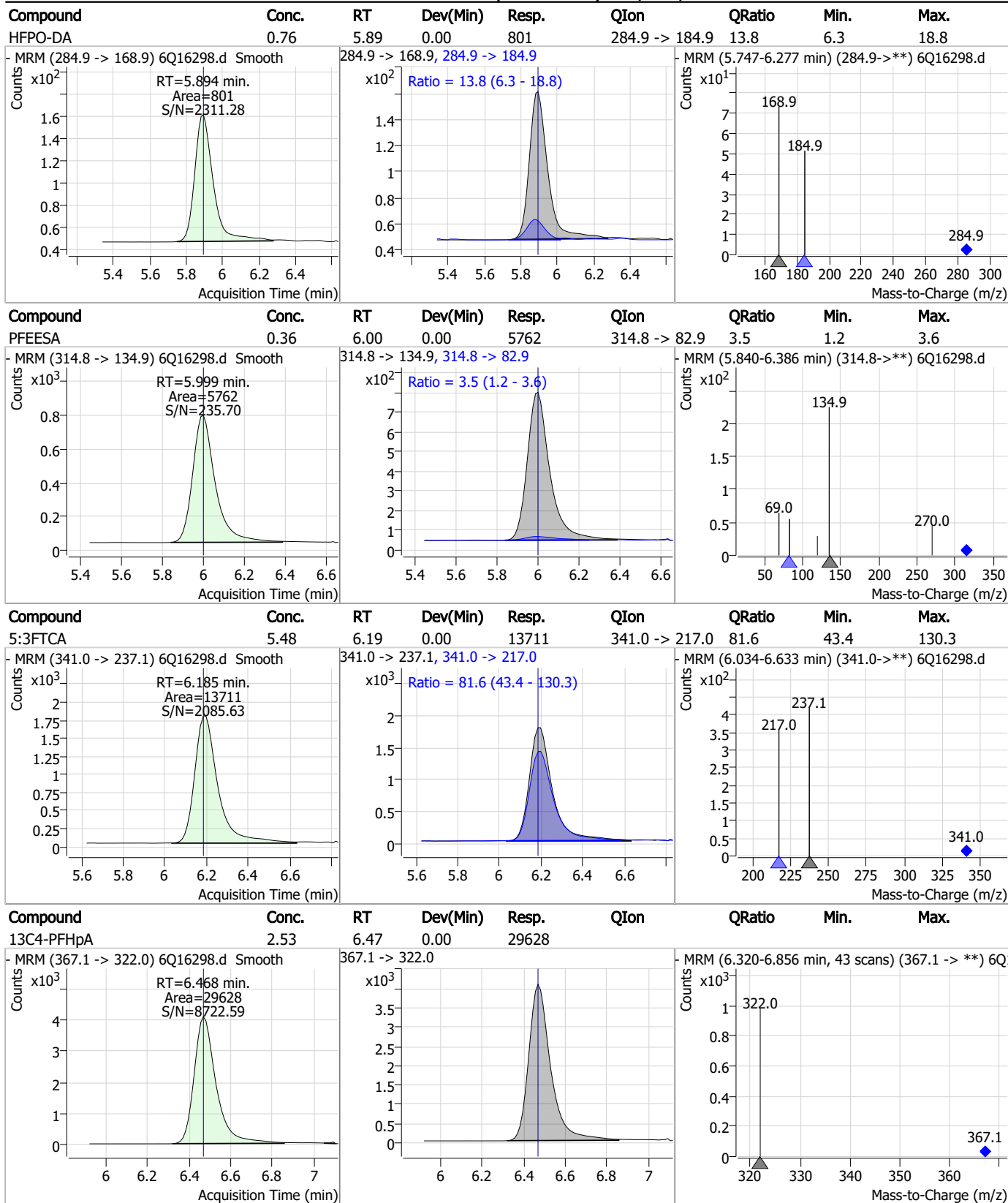


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.28	5.89	0.00	11706				



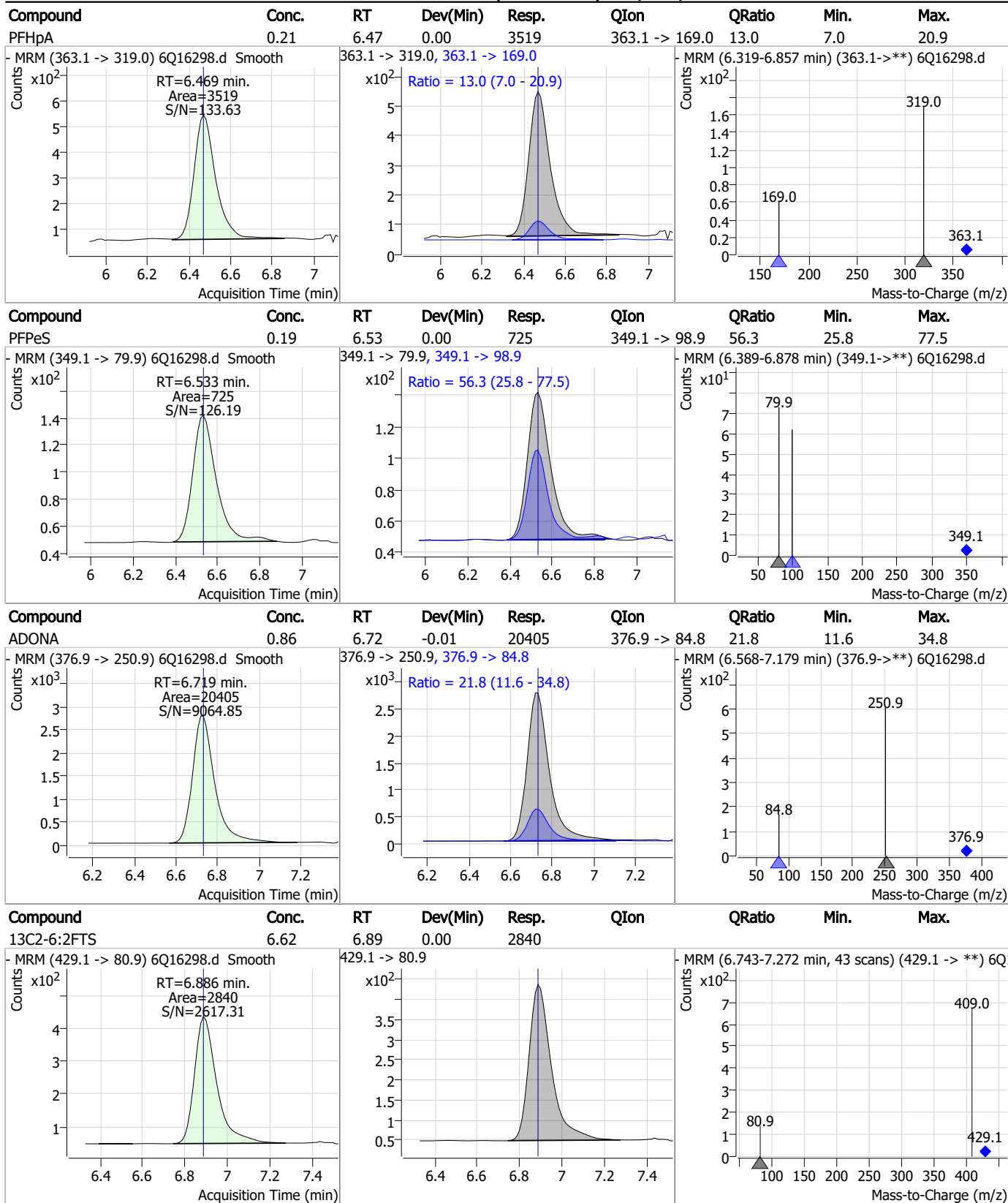
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Perfluorinated Compounds by LC/MS/MS



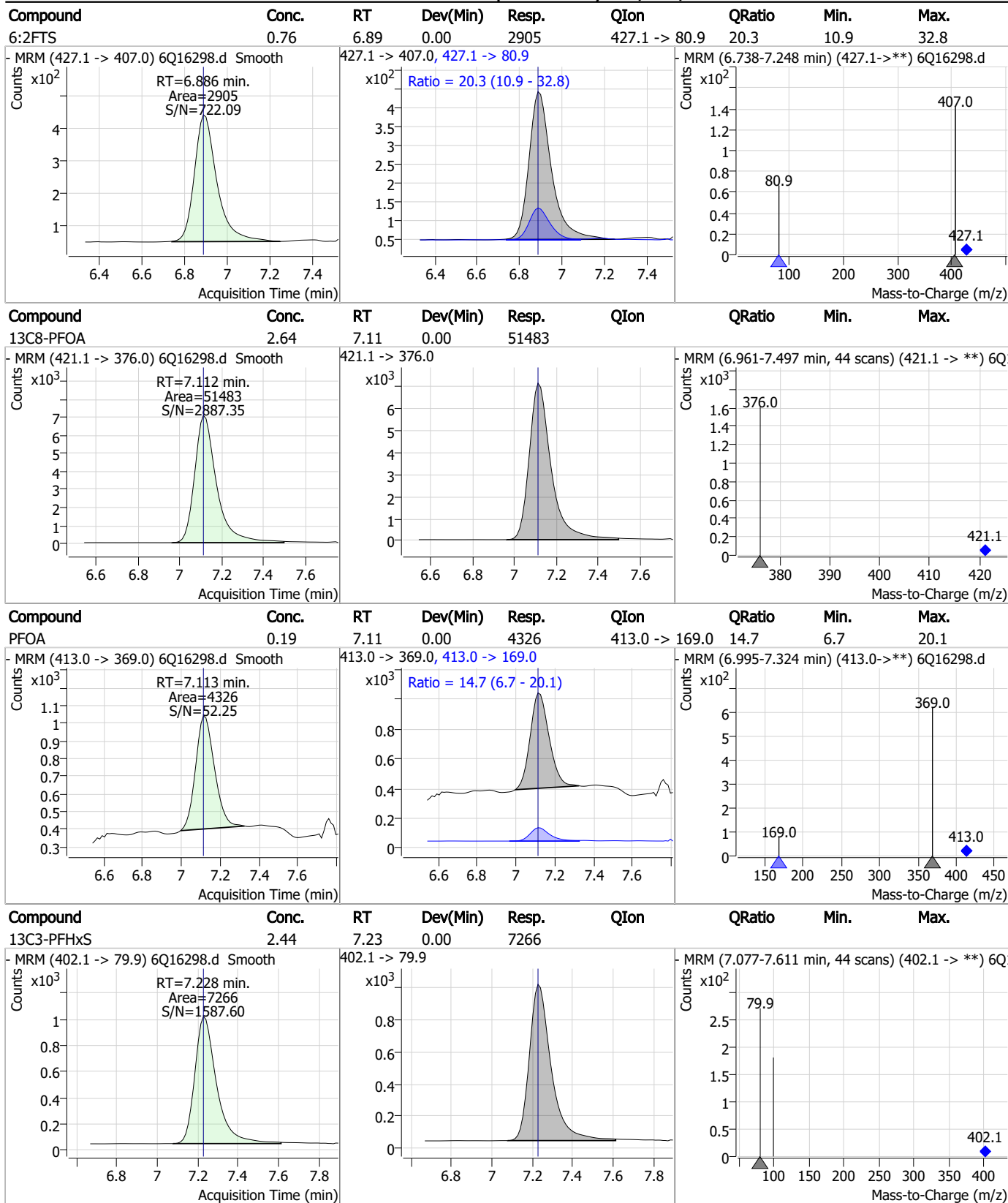
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Perfluorinated Compounds by LC/MS/MS



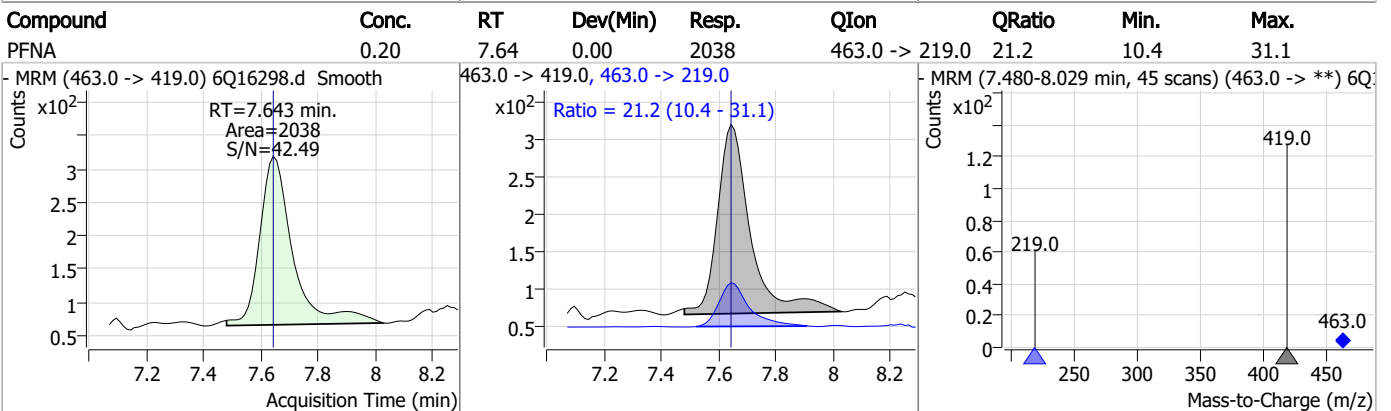
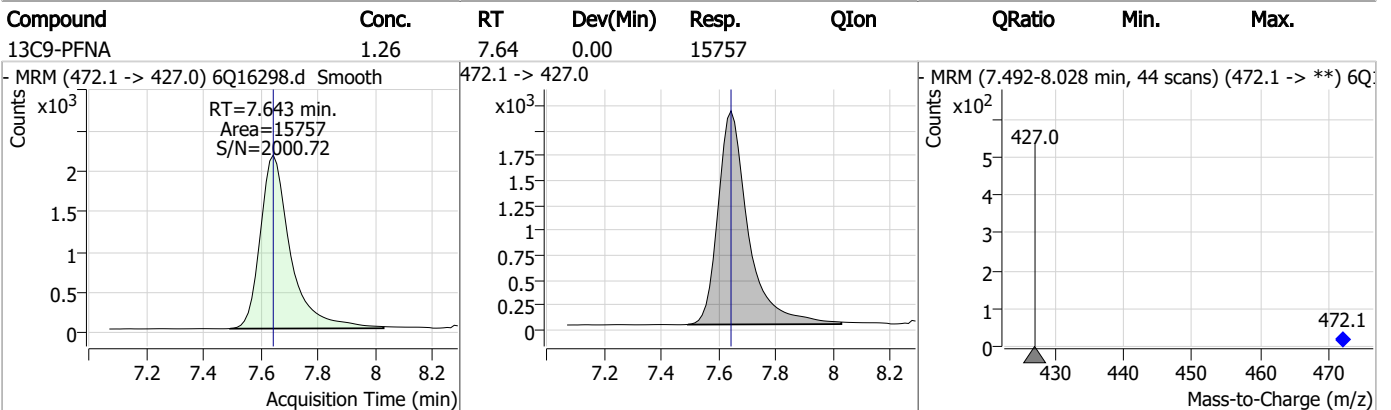
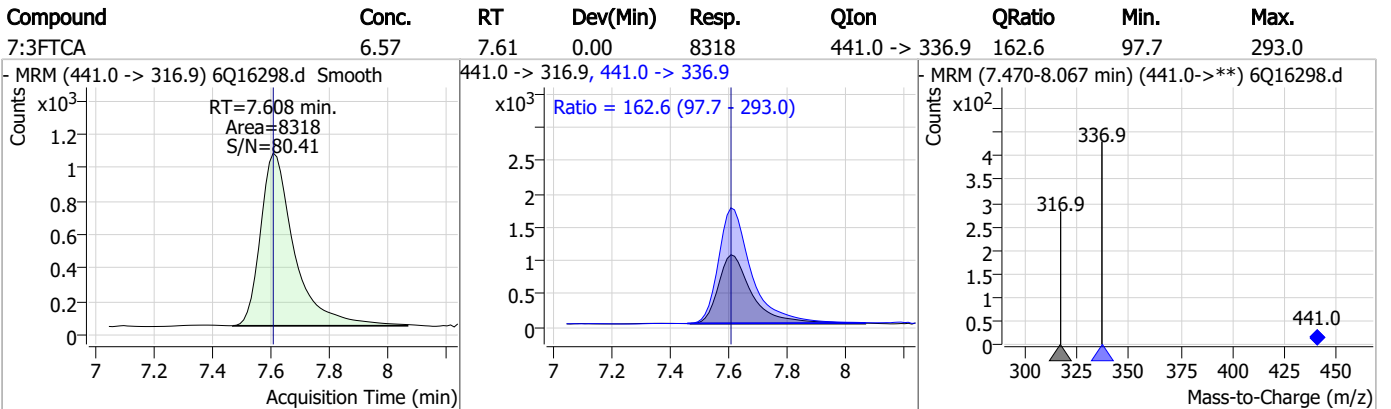
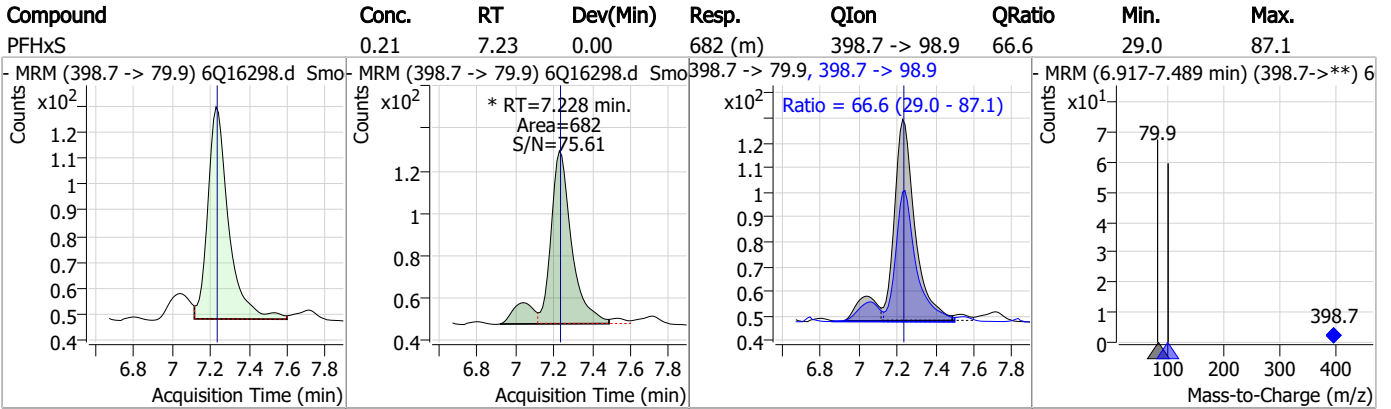
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Perfluorinated Compounds by LC/MS/MS



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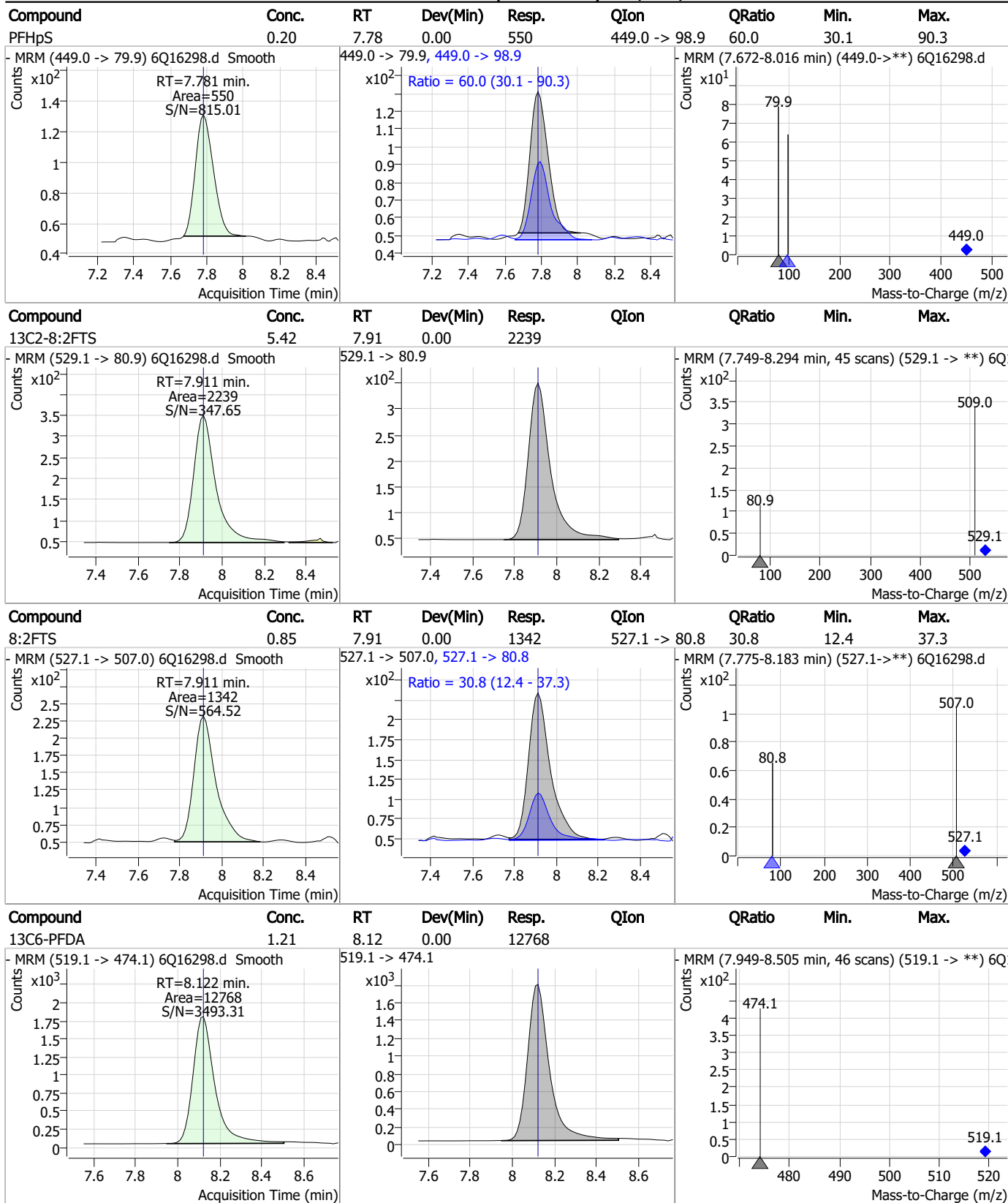
Perfluorinated Compounds by LC/MS/MS



7.7.12

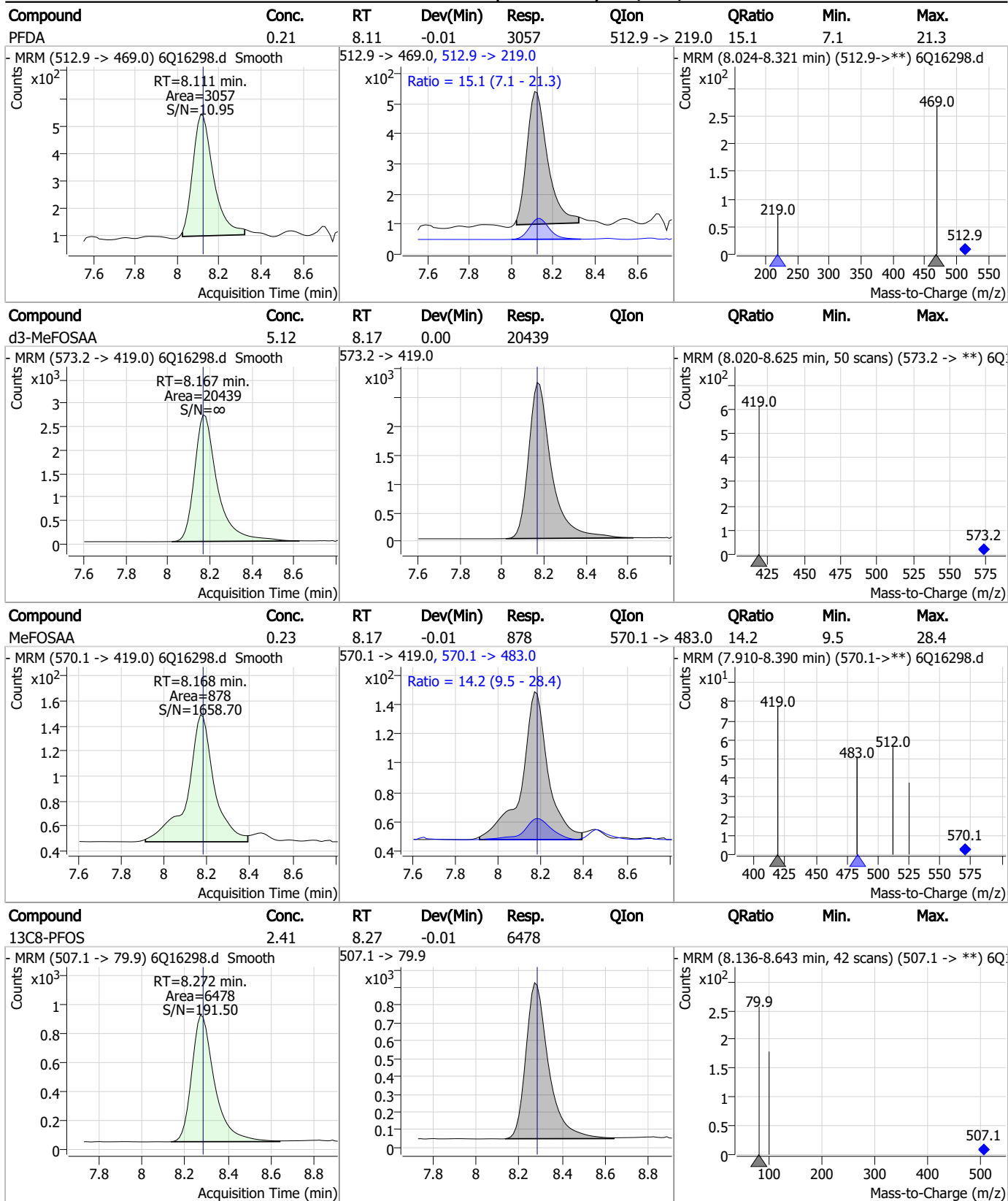


Perfluorinated Compounds by LC/MS/MS



7.7.12

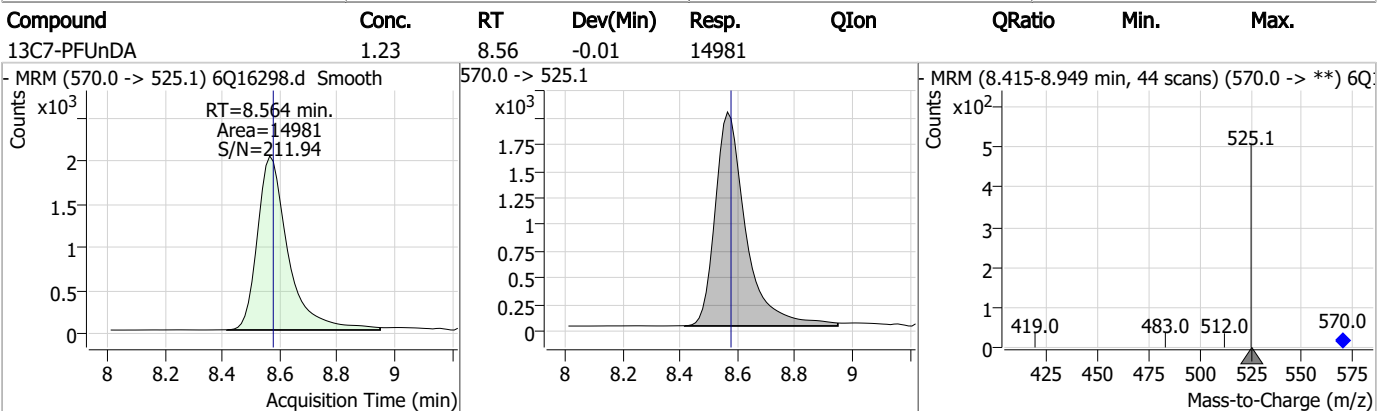
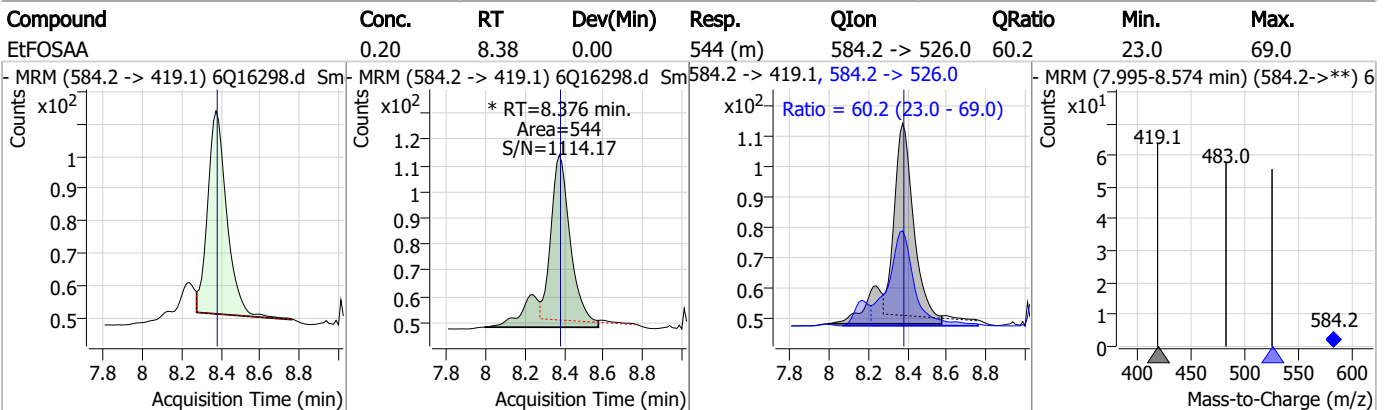
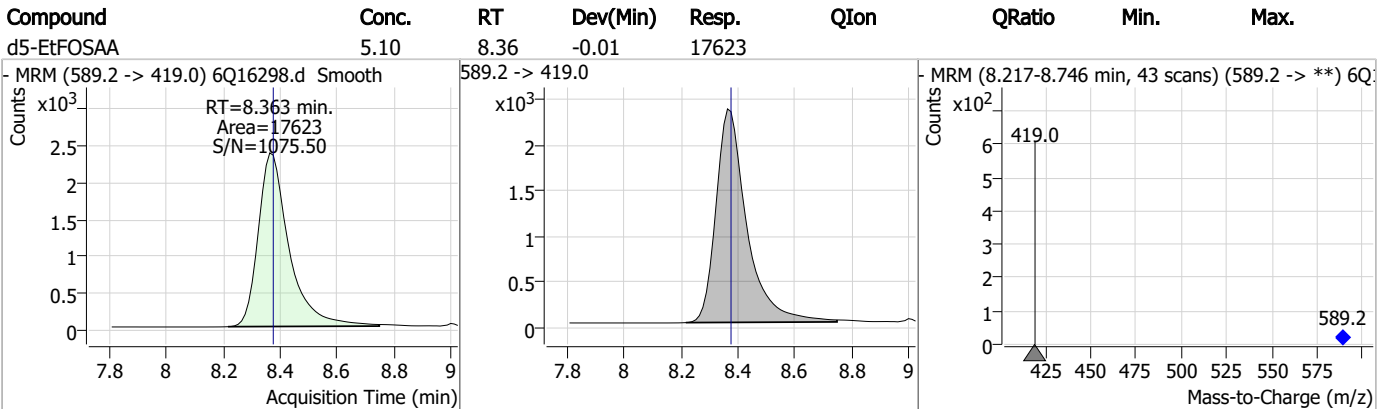
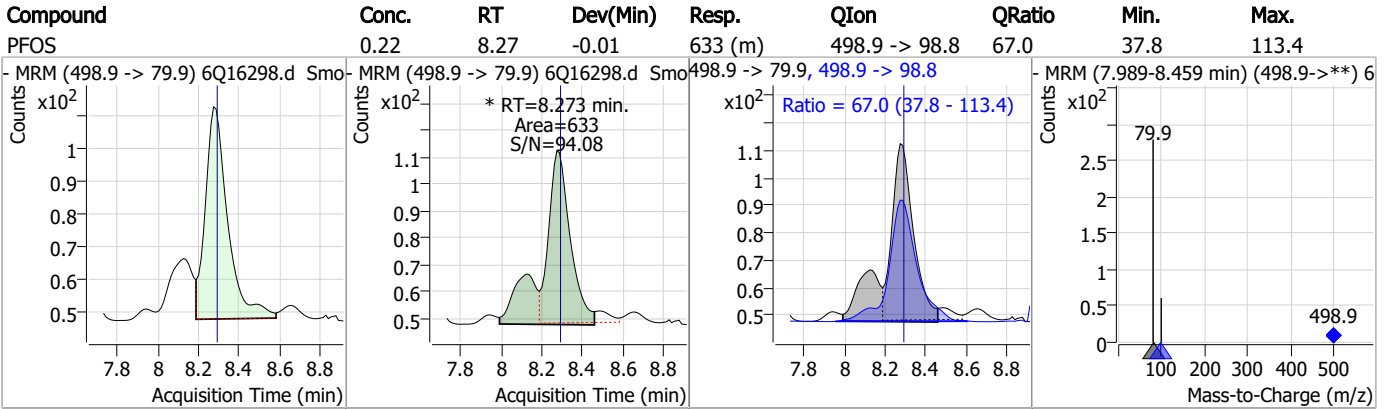
Perfluorinated Compounds by LC/MS/MS



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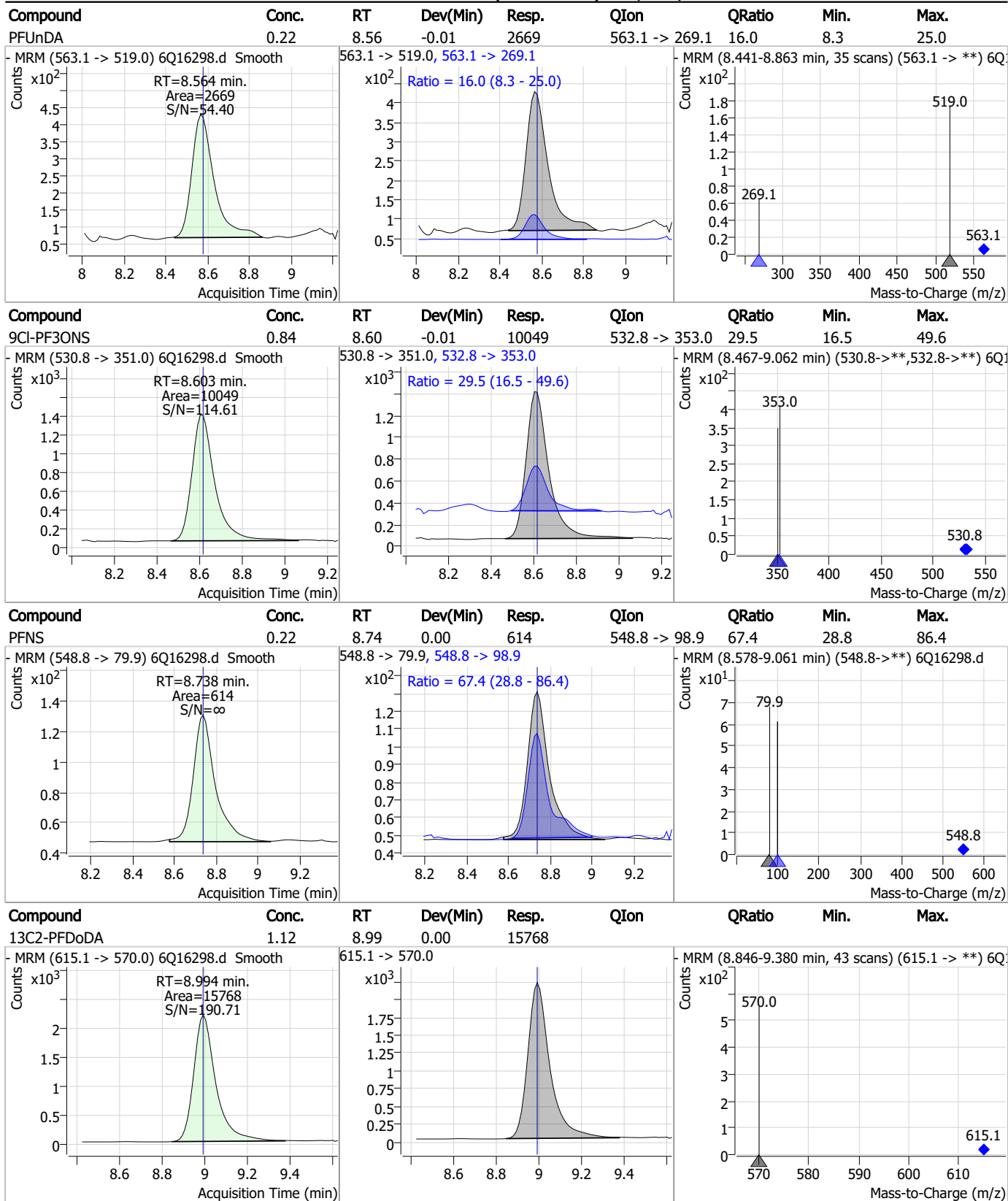
Perfluorinated Compounds by LC/MS/MS



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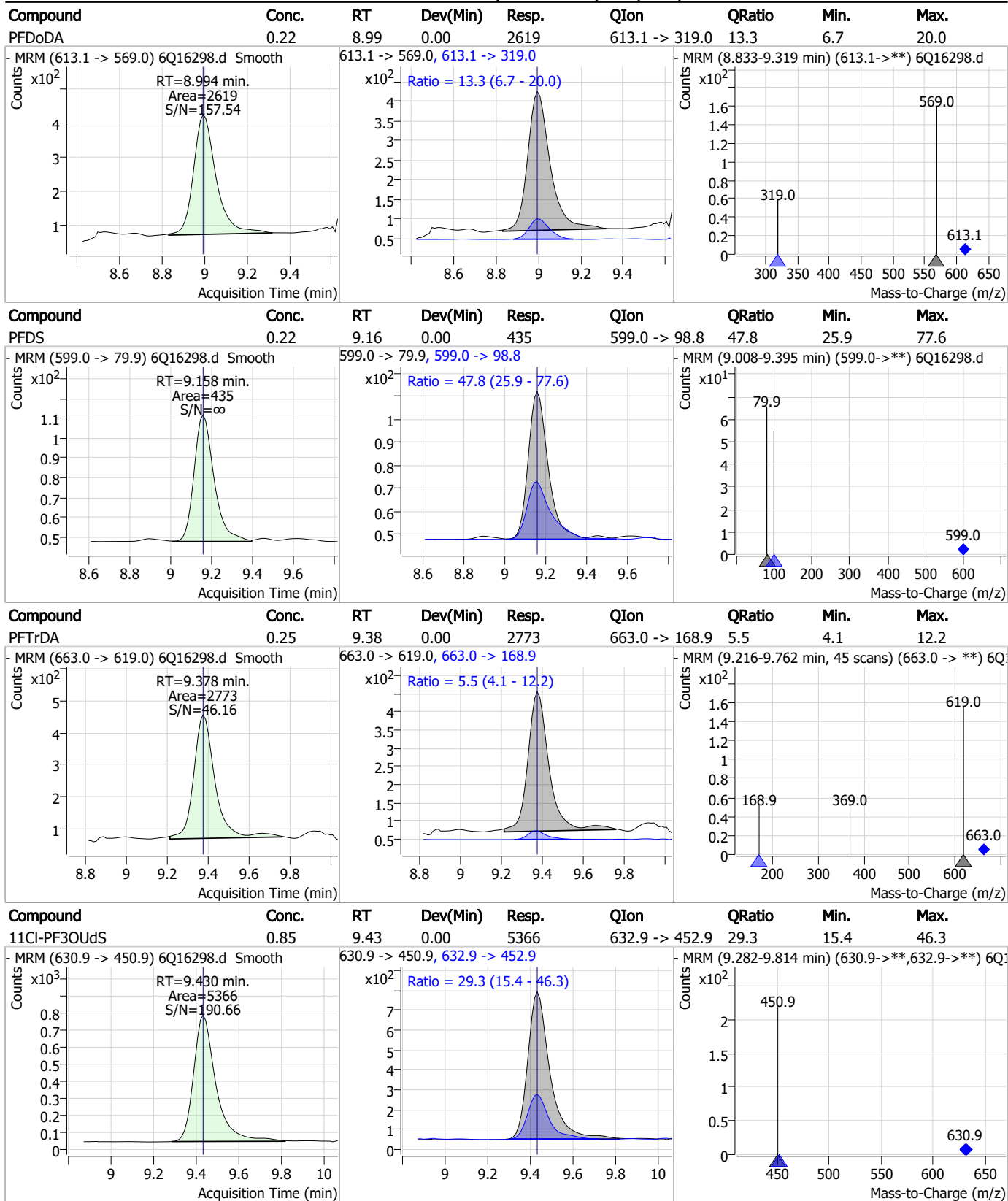
Perfluorinated Compounds by LC/MS/MS



7.7.12
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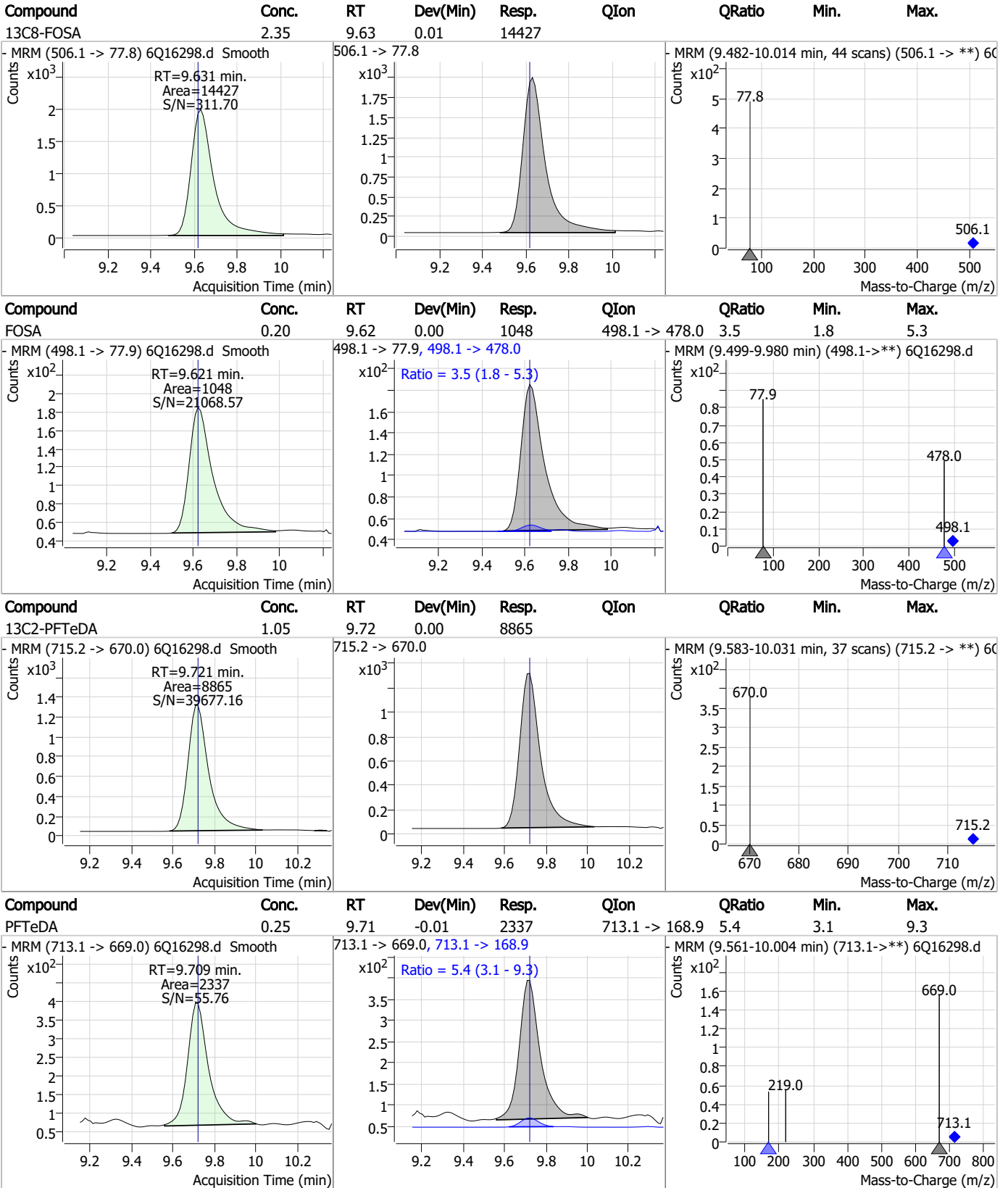


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

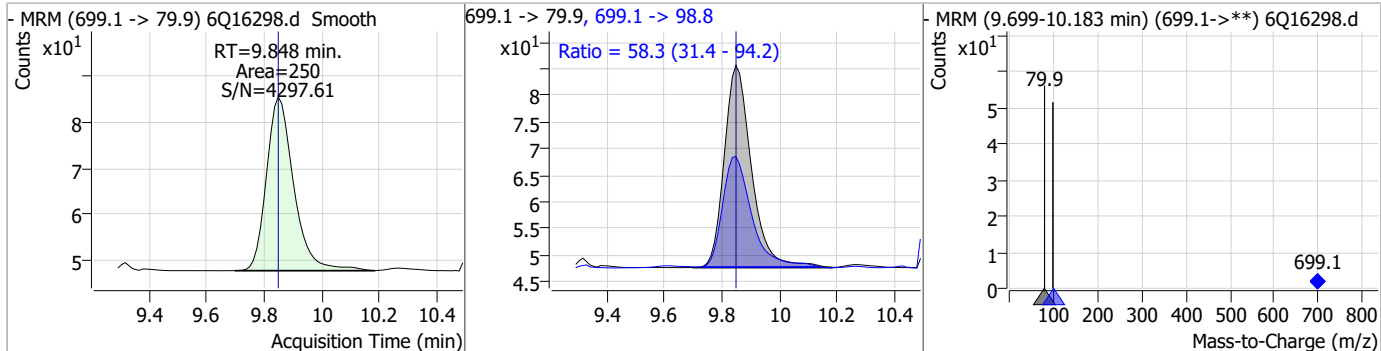


7.7.12 7

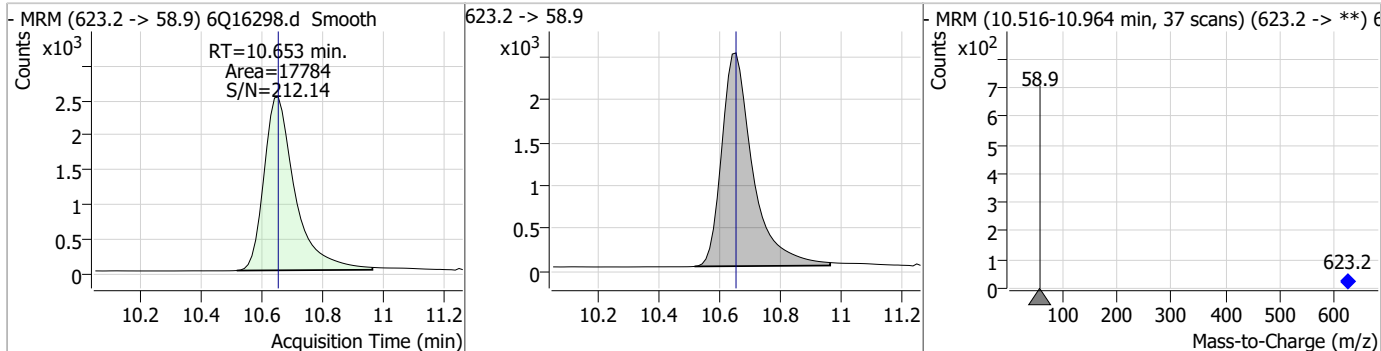


Perfluorinated Compounds by LC/MS/MS

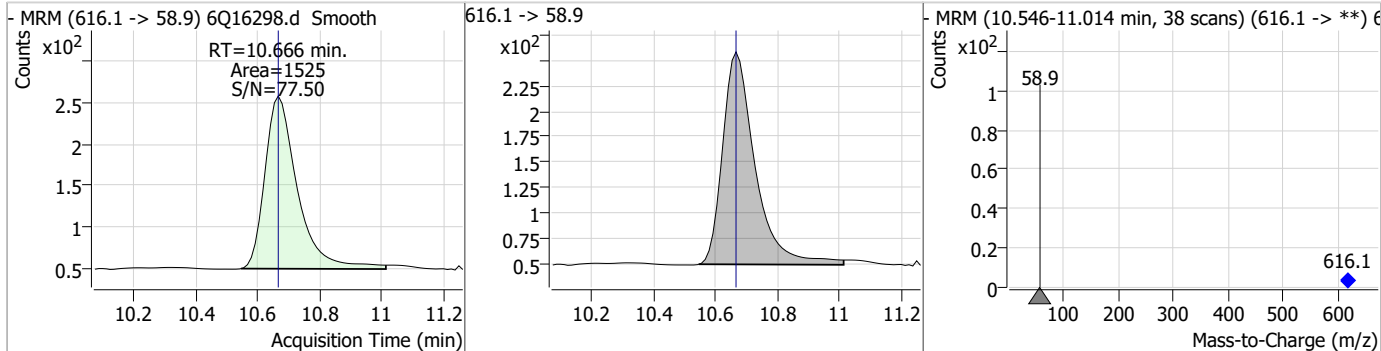
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.22	9.85	0.00	250	699.1 -> 98.8	58.3	31.4	94.2



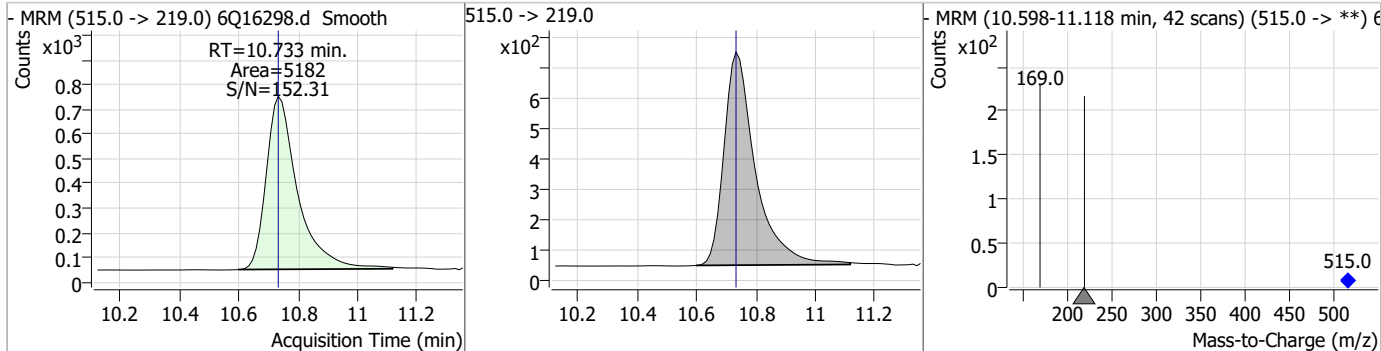
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.18	10.65	0.00	17784				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.27	10.67	0.00	1525				

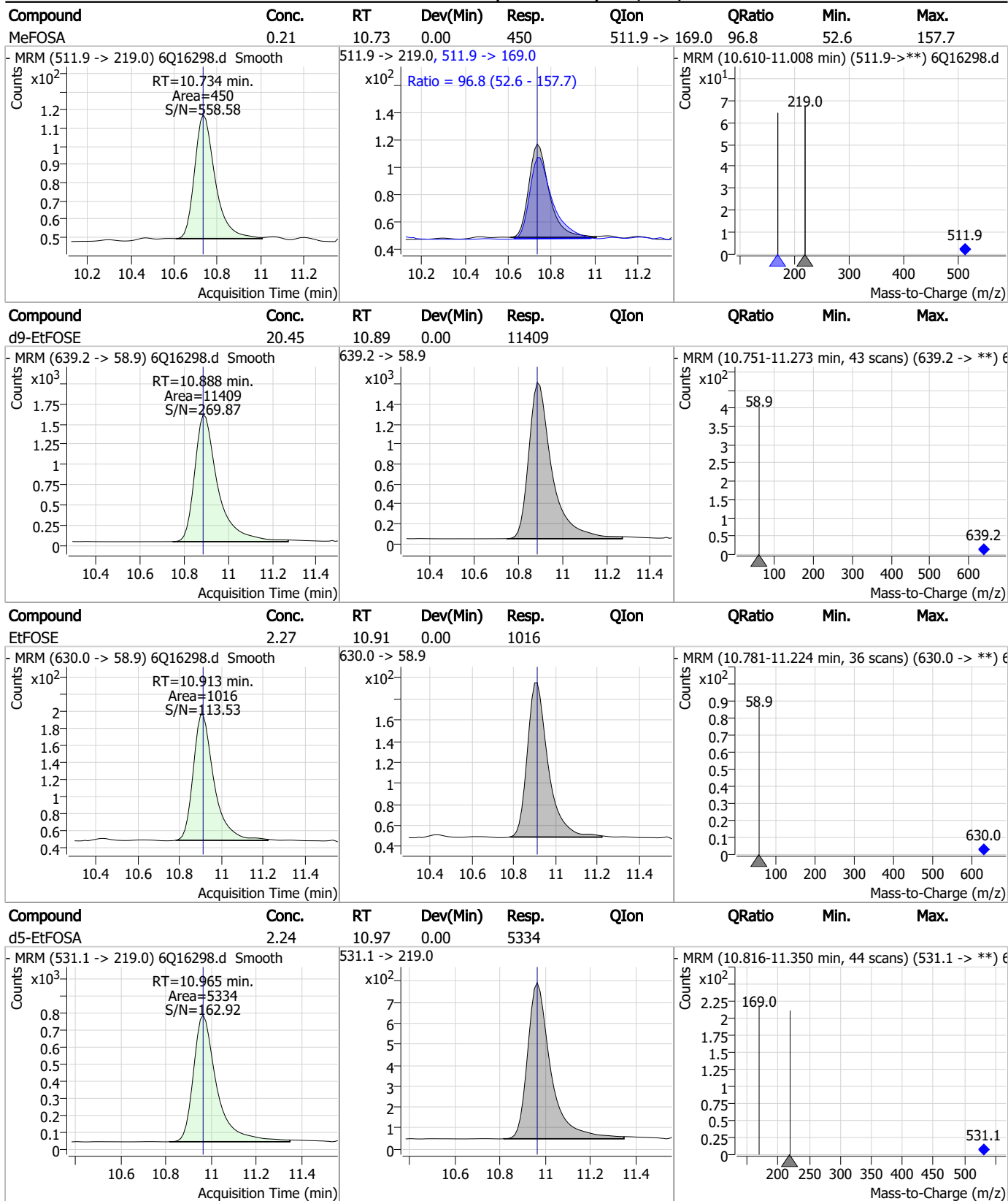


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.34	10.73	0.00	5182				



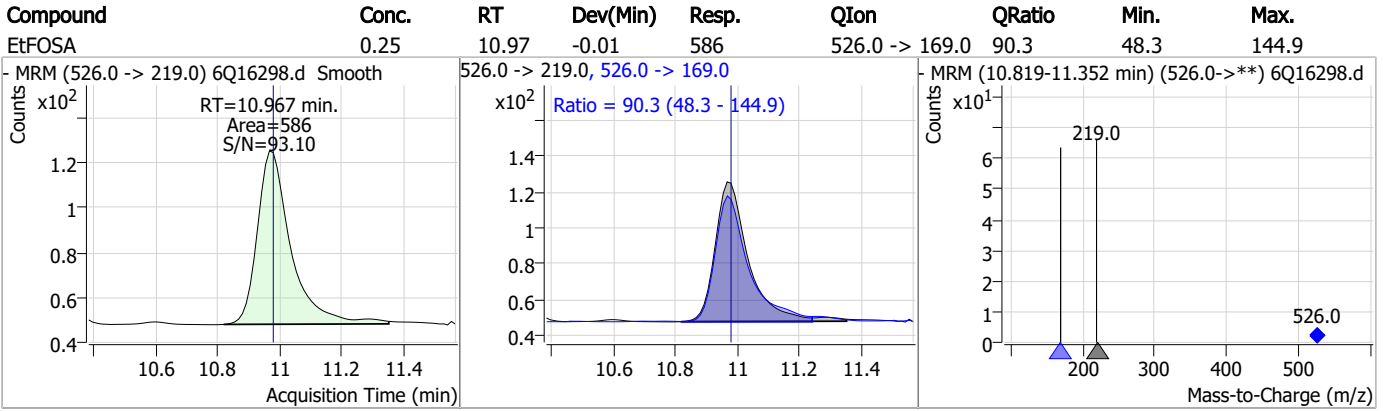
7.7.12
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.12
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Manual Integration Approval Summary

Sample Number: S6Q242-CC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16298.D Analyst approved: 04/10/23 13:50 Martha Valls
Injection Time: 04/07/23 15:41 Supervisor approved: 04/10/23 17:48 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16310.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 6:28:49 PM
 Sample Name : Ecc239-4
 Vial : P1-A5
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : s6q242.batch.bin
 Sample Information : OP96171,S6Q242,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	79847	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	36736	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	32432	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	31817	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	56733	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	16256	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	14572	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	15298	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17636	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	10681	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	15152	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	13080	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	8111	2.50 µg/L	0.000
M8-PFOS	8.284	507.1 -> 79.9	6926	2.50 µg/L	0.000
M2-4:2FTS	5.191	329.1 -> 80.9	2231	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	2905	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2735	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	24650	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	13555	10.00 µg/L	0.000
M5-EtFOSAA	8.363	589.2 -> 419.0	20406	5.00 µg/L	-0.012
M7-MeFOSE	10.641	623.2 -> 58.9	20519	25.00 µg/L	-0.012
M9-EtFOSE	10.888	639.2 -> 58.9	12979	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5805	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5507	2.50 µg/L	0.000
13C4-PFOS	8.285	502.8 -> 79.9	8835	2.50 µg/L	0.000
13C3-PFBA	2.889	216.0 -> 172.0	34296	5.00 µg/L	-0.012
18O2-PFHxS	7.227	403.0 -> 83.9	5943	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	61425	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	18331	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	17944	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	30437	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2231	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.6%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2905	5.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2735	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.7%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17636	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFTeDA	9.709	715.2 -> 670.0	10681	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFBS	5.446	302.1 -> 79.9	13080	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFHxS	7.228	402.1 -> 79.9	8111	2.38 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 = 95.4%	
13C4-PFBA	2.897	216.8 -> 171.9	79847	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.468	367.1 -> 322.0	31817	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.516	318.0 -> 273.0	32432	2.57 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFPeA	4.322	268.3 -> 223.0	36736	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	8.122	519.1 -> 474.1	14572	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C7-PFUnDA	8.564	570.0 -> 525.1	15298	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-FOSA	9.631	506.1 -> 77.8	15152	2.90 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C8-PFOA	7.112	421.1 -> 376.0	56733	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C8-PFOS	8.284	507.1 -> 79.9	6926	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C9-PFNA	7.643	472.1 -> 427.0	16256	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSAA	8.167	573.2 -> 419.0	24650	5.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.3%	
13C3-HFPO-DA	5.893	286.9 -> 168.9	13555	10.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSA	10.733	515.0 -> 219.0	5507	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
d5-EtFOSAA	8.363	589.2 -> 419.0	20406	5.51 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
d7-MeFOSE	10.641	623.2 -> 58.9	20519	22.82 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
d9-EtFOSE	10.888	639.2 -> 58.9	12979	21.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.9%	
d5-EtFOSA	10.965	531.1 -> 219.0	5805	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.9%	
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	43292	9.91 µg/L	98
		327.1 -> 80.9	9731		
6:2FTS	6.886	427.1 -> 407.0	34746	8.93 µg/L	98
		427.1 -> 80.9	7216		
8:2FTS	7.911	527.1 -> 507.0	17860	9.21 µg/L	99
		527.1 -> 80.8	4341		
EtFOSAA	8.376	584.2 -> 419.1	7424	2.37 µg/L	86
		584.2 -> 526.0	4105		
FOSA	9.621	498.1 -> 77.9	13631	2.43 µg/L	99
		498.1 -> 478.0	525		
MeFOSAA	8.168	570.1 -> 419.0	9630	2.08 µg/L	98
		570.1 -> 483.0	1732		
PFBA	2.893	212.8 -> 168.9	19235	9.53 µg/L	100
PFBS	5.460	298.7 -> 79.9	11011	2.15 µg/L	99
		298.7 -> 98.8	5153		
PFDA	8.123	512.9 -> 469.0	38338	2.26 µg/L	98
		512.9 -> 219.0	5102		
PFDoDA	8.994	613.1 -> 569.0	31419	2.39 µg/L	99
		613.1 -> 319.0	4316		
PFDS	9.158	599.0 -> 79.9	5280	2.55 µg/L	94

7.7.13
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2509			
PFHpA	6.469	363.1 -> 319.0	44352	2.48	µg/L	99
		363.1 -> 169.0	6433			
PFHpS	7.781	449.0 -> 79.9	6223	2.10	µg/L	99
		449.0 -> 98.9	3678			
PFHxA	5.519	313.0 -> 269.0	28429	2.37	µg/L	99
		313.0 -> 118.9	1210			
PFHxS	7.228	398.7 -> 79.9	8465	2.37	µg/L	m 95
		398.7 -> 98.9	4604			
PFNA	7.643	463.0 -> 419.0	24855	2.35	µg/L	99
		463.0 -> 219.0	5049			
PFNS	8.738	548.8 -> 79.9	6949	2.36	µg/L	93
		548.8 -> 98.9	3664			
PFOA	7.113	413.0 -> 369.0	60113	2.34	µg/L	100
		413.0 -> 169.0	7938			
PFOS	8.273	498.9 -> 79.9	6779	2.22	µg/L	m 93
		498.9 -> 98.8	4711			
PFPeA	4.324	263.0 -> 219.0	37599	4.85	µg/L	100
PFPeS	6.533	349.1 -> 79.9	9791	2.28	µg/L	99
		349.1 -> 98.9	4995			
PFTeDA	9.709	713.1 -> 669.0	26133	2.32	µg/L	98
		713.1 -> 168.9	1838			
PFTrDA	9.378	663.0 -> 619.0	32303	2.61	µg/L	98
		663.0 -> 168.9	2794			
PFUnDA	8.564	563.1 -> 519.0	29734	2.43	µg/L	98
		563.1 -> 269.1	4662			
11CI-PF3OUdS	9.430	630.9 -> 450.9	69254	9.50	µg/L	96
		632.9 -> 452.9	19991			
9CI-PF3ONS	8.603	530.8 -> 351.0	136791	9.83	µg/L	96
		532.8 -> 353.0	42177			
ADONA	6.731	376.9 -> 250.9	279953	10.19	µg/L	95
		376.9 -> 84.8	58464			
HFPO-DA	5.894	284.9 -> 168.9	12256	10.00	µg/L	98
		284.9 -> 184.9	1643			
3:3FTCA	3.790	241.0 -> 177.0	4683	10.89	µg/L	100
		241.0 -> 117.0	719			
5:3FTCA	6.185	341.0 -> 237.1	156926	59.30	µg/L	98
		341.0 -> 217.0	139957			
7:3FTCA	7.608	441.0 -> 316.9	84398	63.00	µg/L	85
		441.0 -> 336.9	145590			
EtFOSA	10.967	526.0 -> 219.0	6559	2.62	µg/L	99
		526.0 -> 169.0	6405			
EtFOSE	10.913	630.0 -> 58.9	11784	23.15	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	5817	2.51	µg/L	97
		511.9 -> 169.0	5956			
MeFOSE	10.666	616.1 -> 58.9	17758	22.96	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	2831	2.35	µg/L	95
		699.1 -> 98.8	1896			
NFDHA	5.398	295.0 -> 201.0	3646	4.70	µg/L	93
		295.0 -> 84.9	1780			
PFMBA	4.737	279.0 -> 85.1	11553	4.50	µg/L	100
PFMPA	3.463	229.0 -> 84.9	10799	4.61	µg/L	100
PFEESA	5.999	314.8 -> 134.9	74608	4.40	µg/L	100
		314.8 -> 82.9	1913			

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

7.7.13
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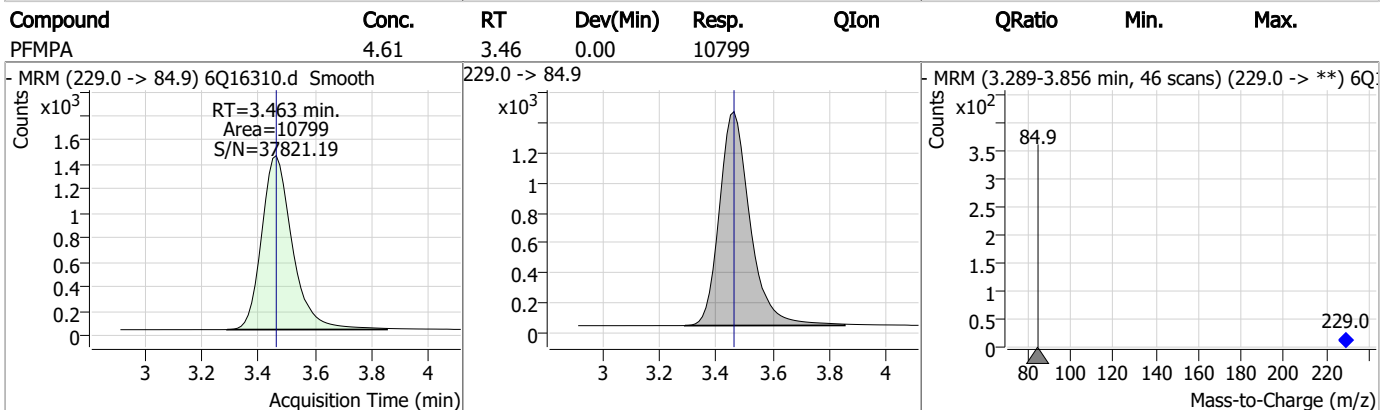
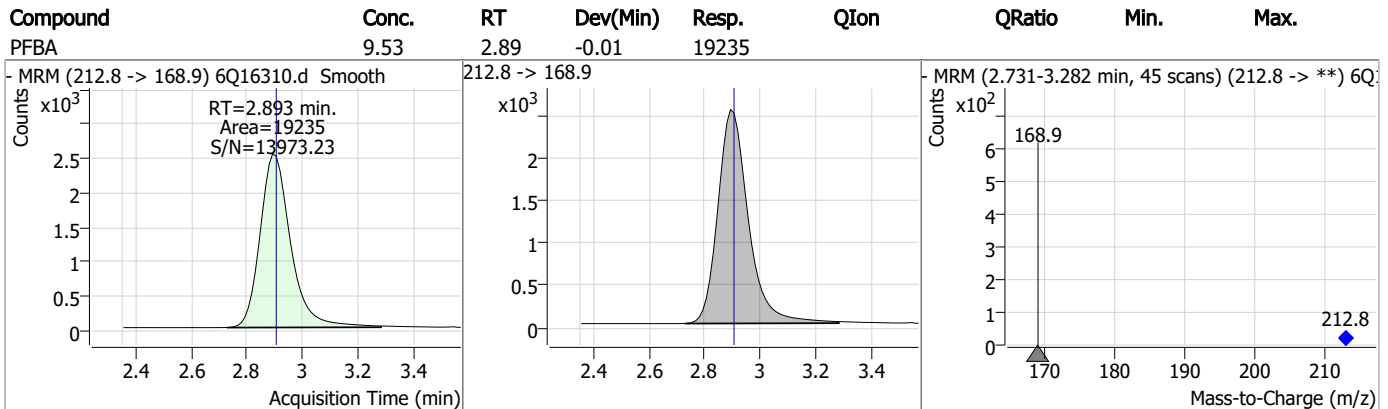
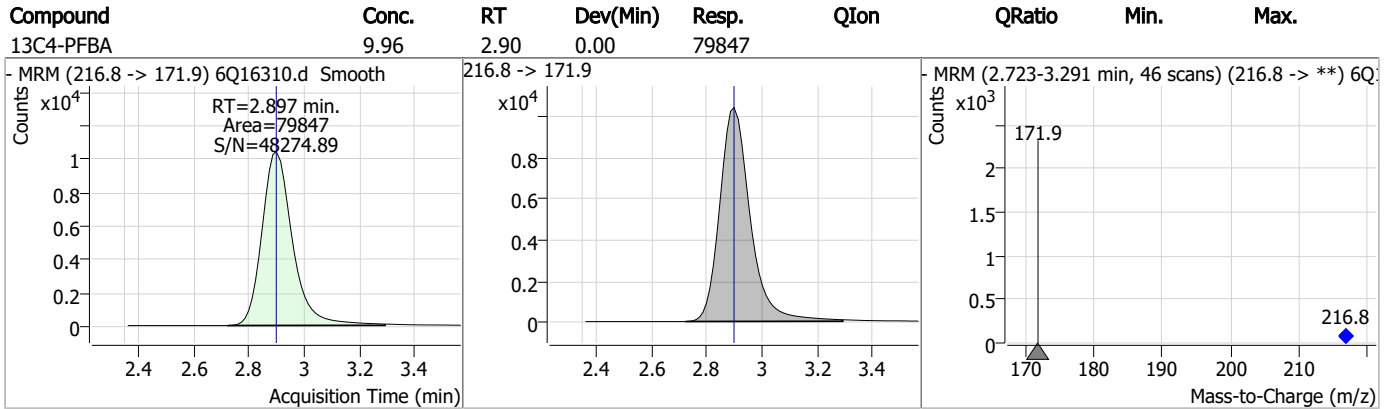
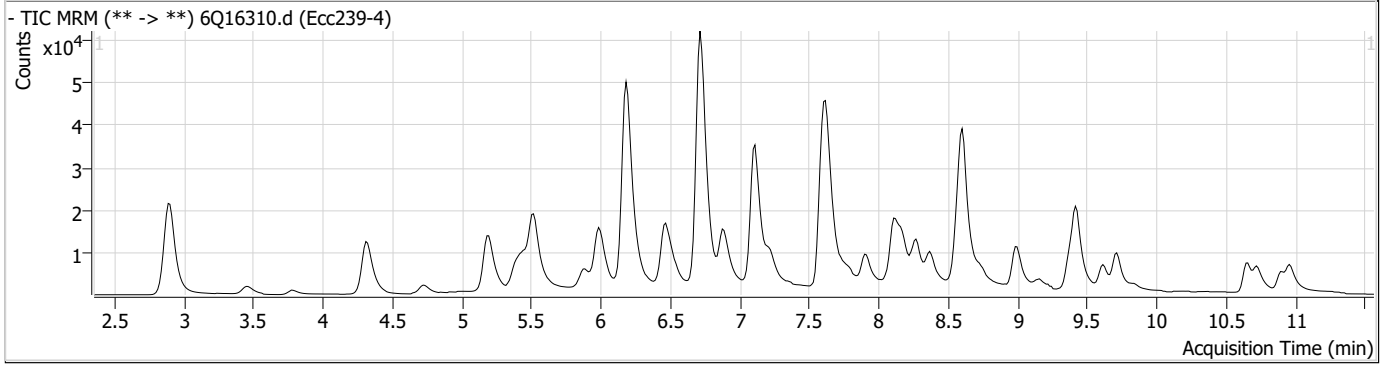
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.13

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Perfluorinated Compounds by LC/MS/MS

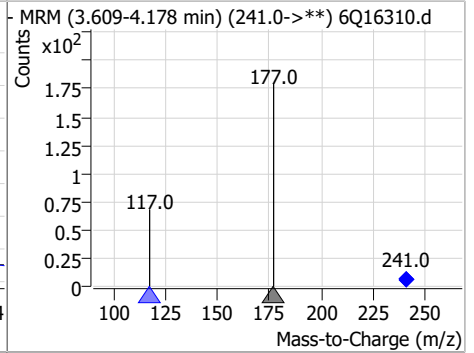
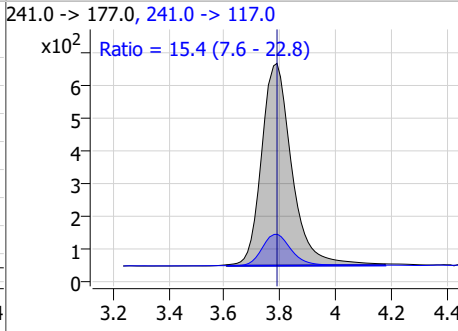
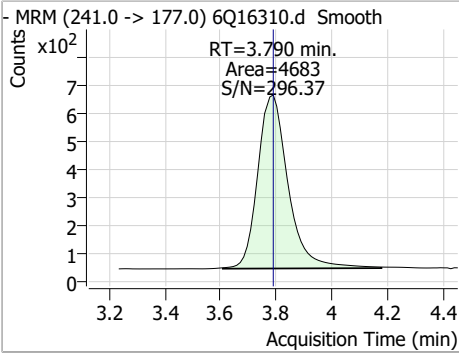


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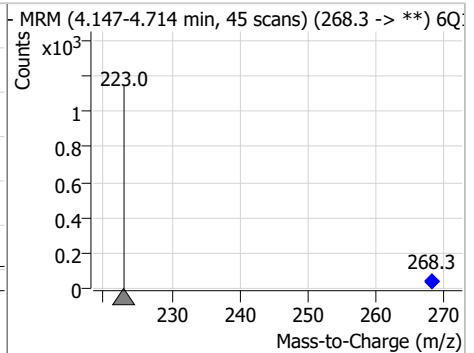
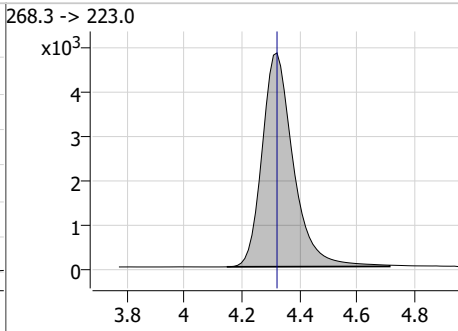
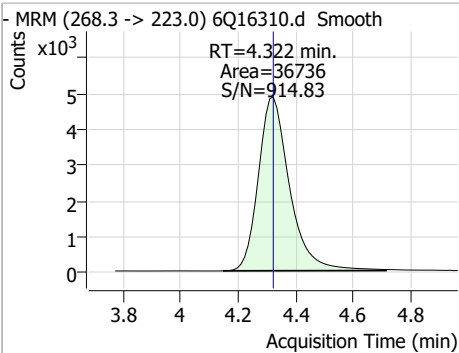


Perfluorinated Compounds by LC/MS/MS

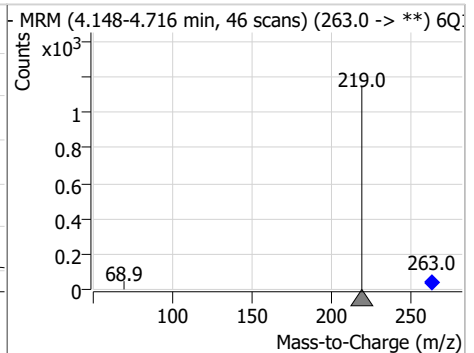
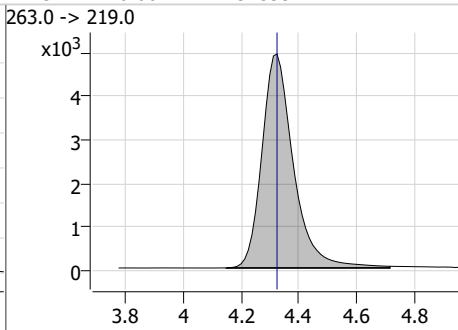
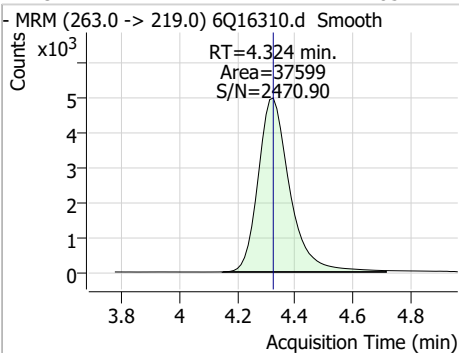
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.89	3.79	0.00	4683	241.0 -> 117.0	15.4	7.6	22.8



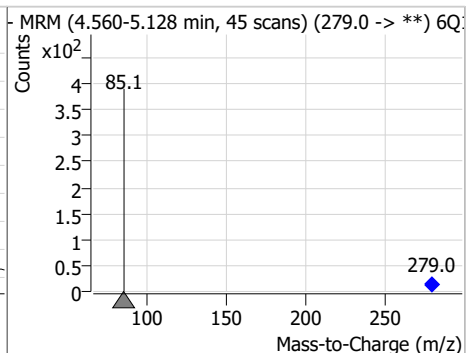
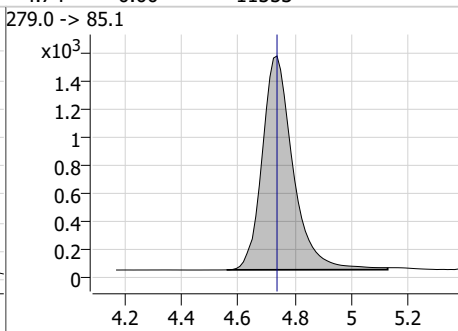
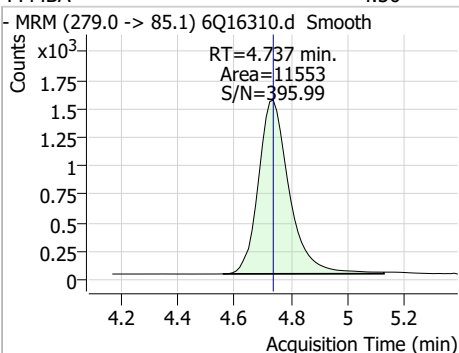
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.17	4.32	0.00	36736				



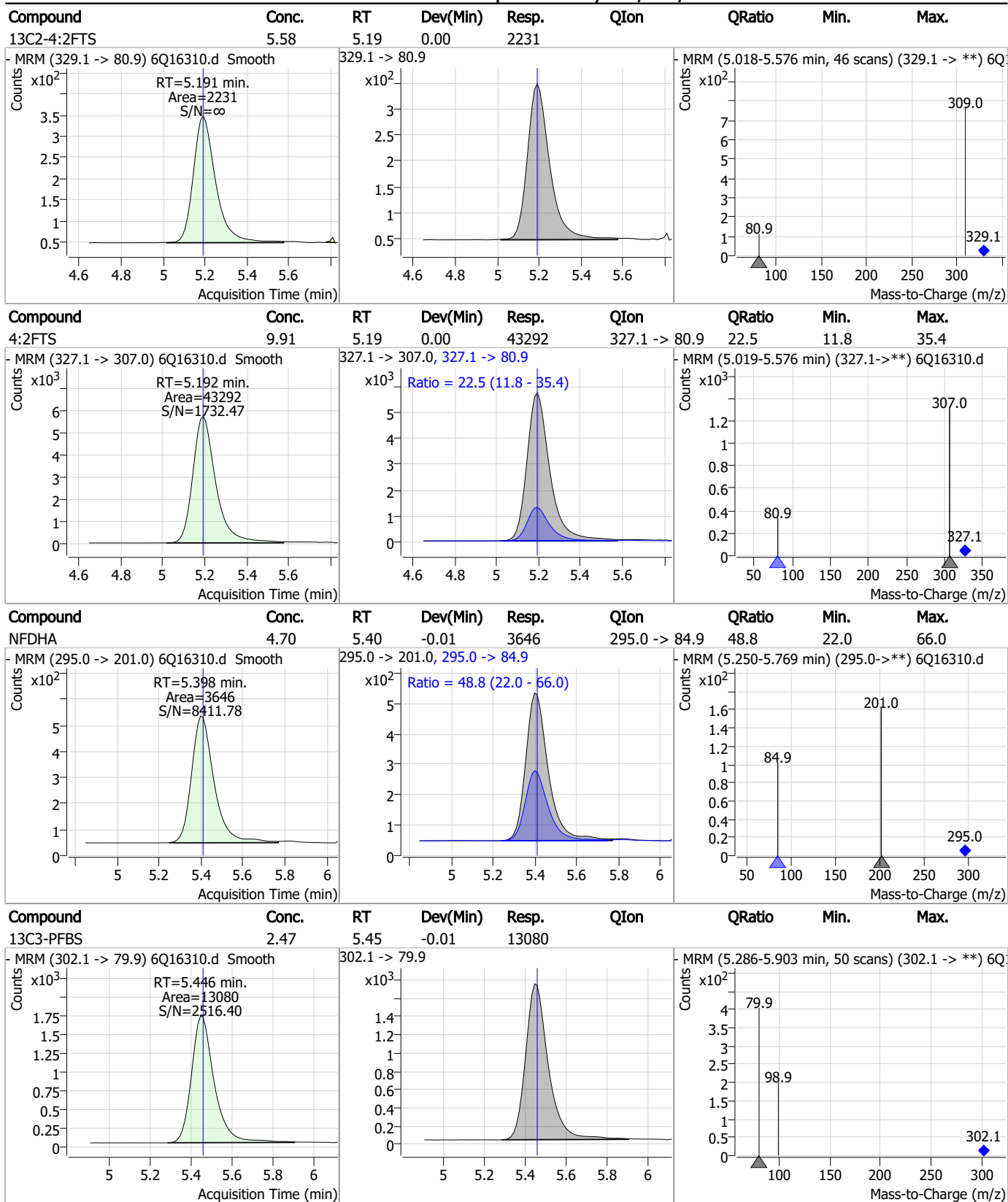
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.85	4.32	0.00	37599				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.50	4.74	0.00	11553				



Perfluorinated Compounds by LC/MS/MS

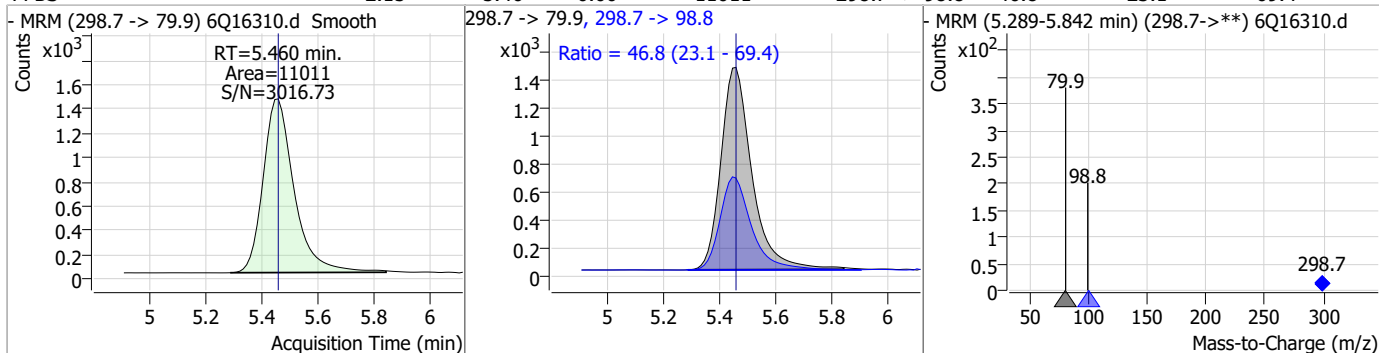


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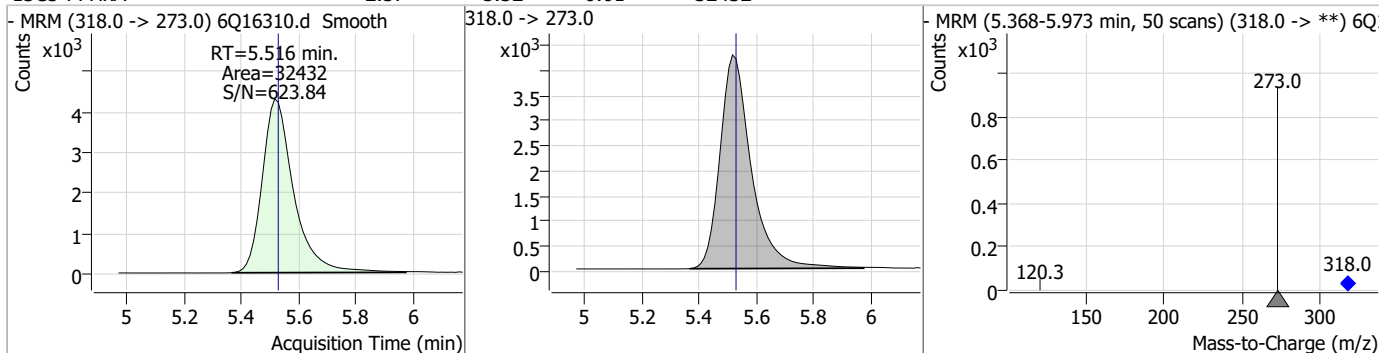
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Perfluorinated Compounds by LC/MS/MS

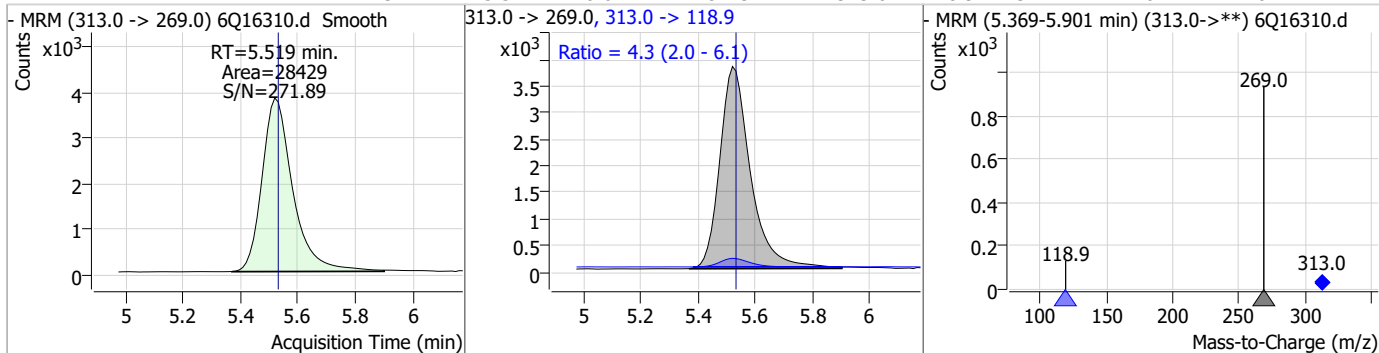
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.15	5.46	0.00	11011	298.7 -> 98.8	46.8	23.1	69.4



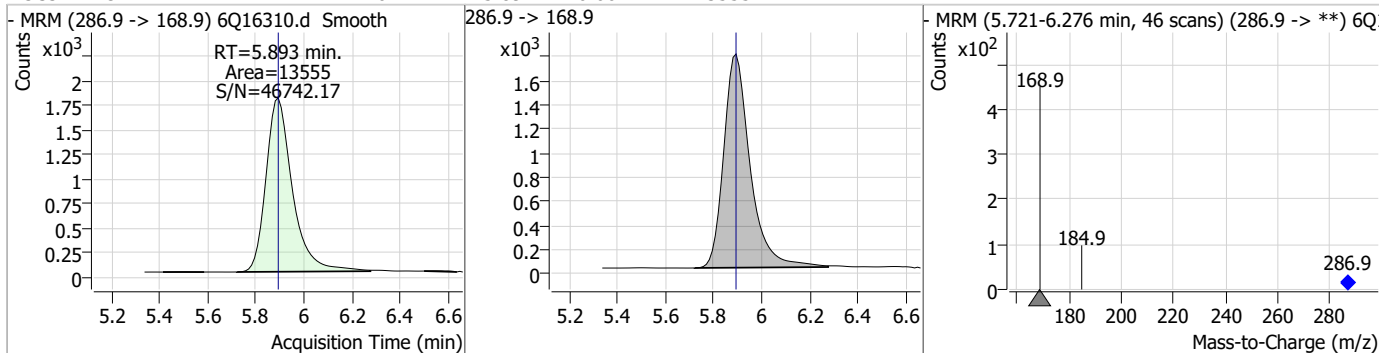
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.52	-0.01	32432	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.37	5.52	-0.01	28429	313.0 -> 118.9	4.3	2.0	6.1

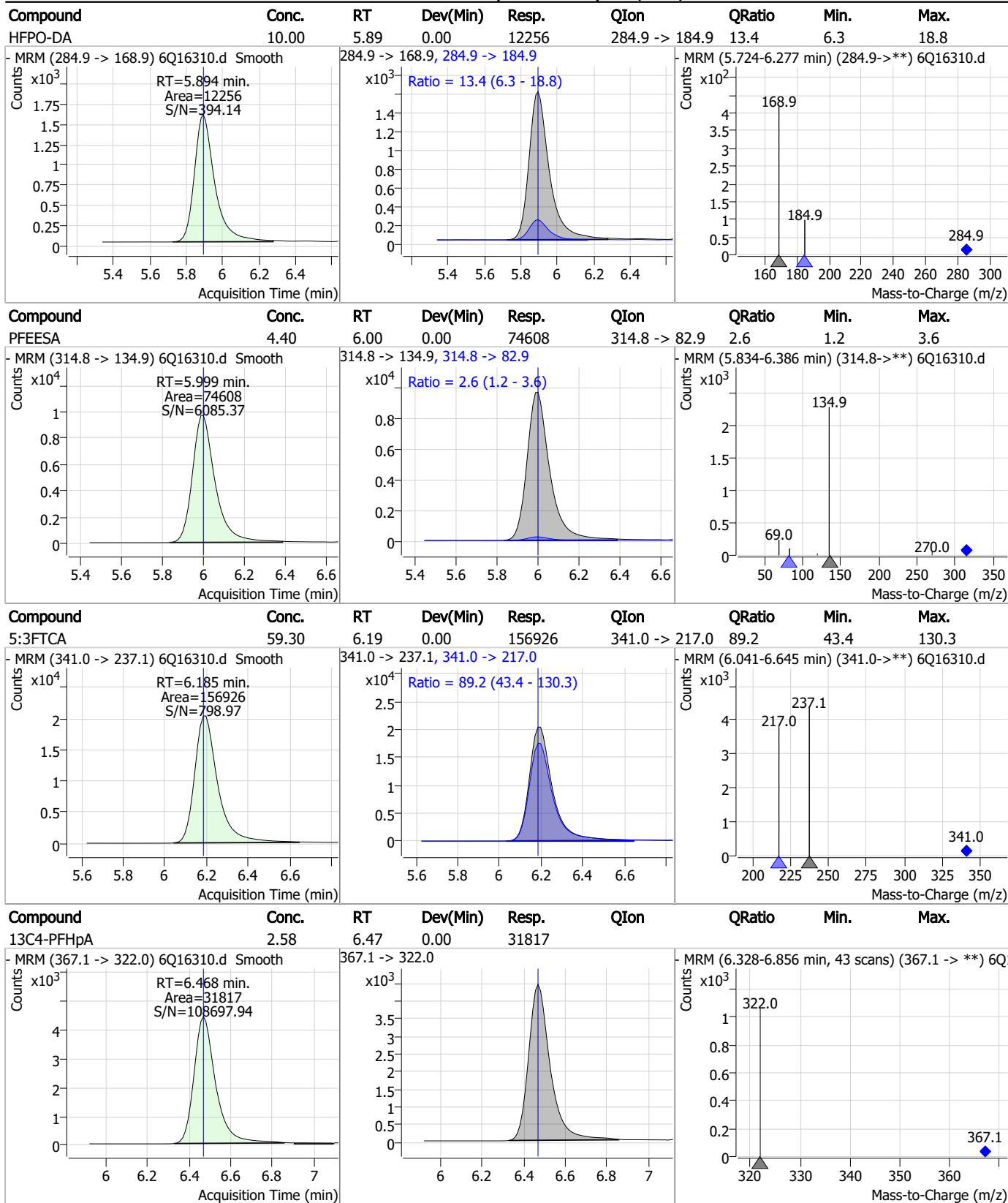


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.21	5.89	0.00	13555	286.9 -> 168.9			



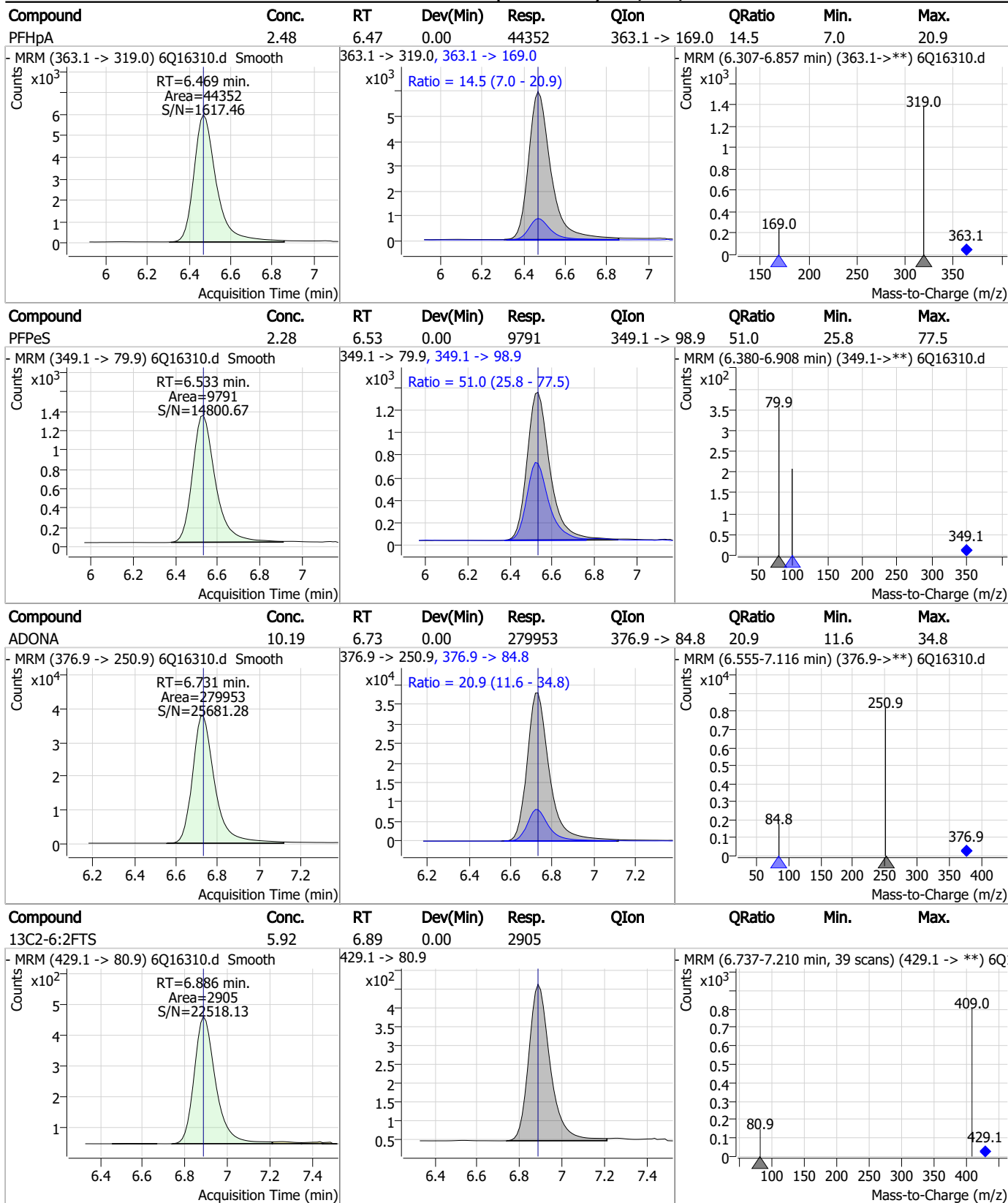
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Perfluorinated Compounds by LC/MS/MS



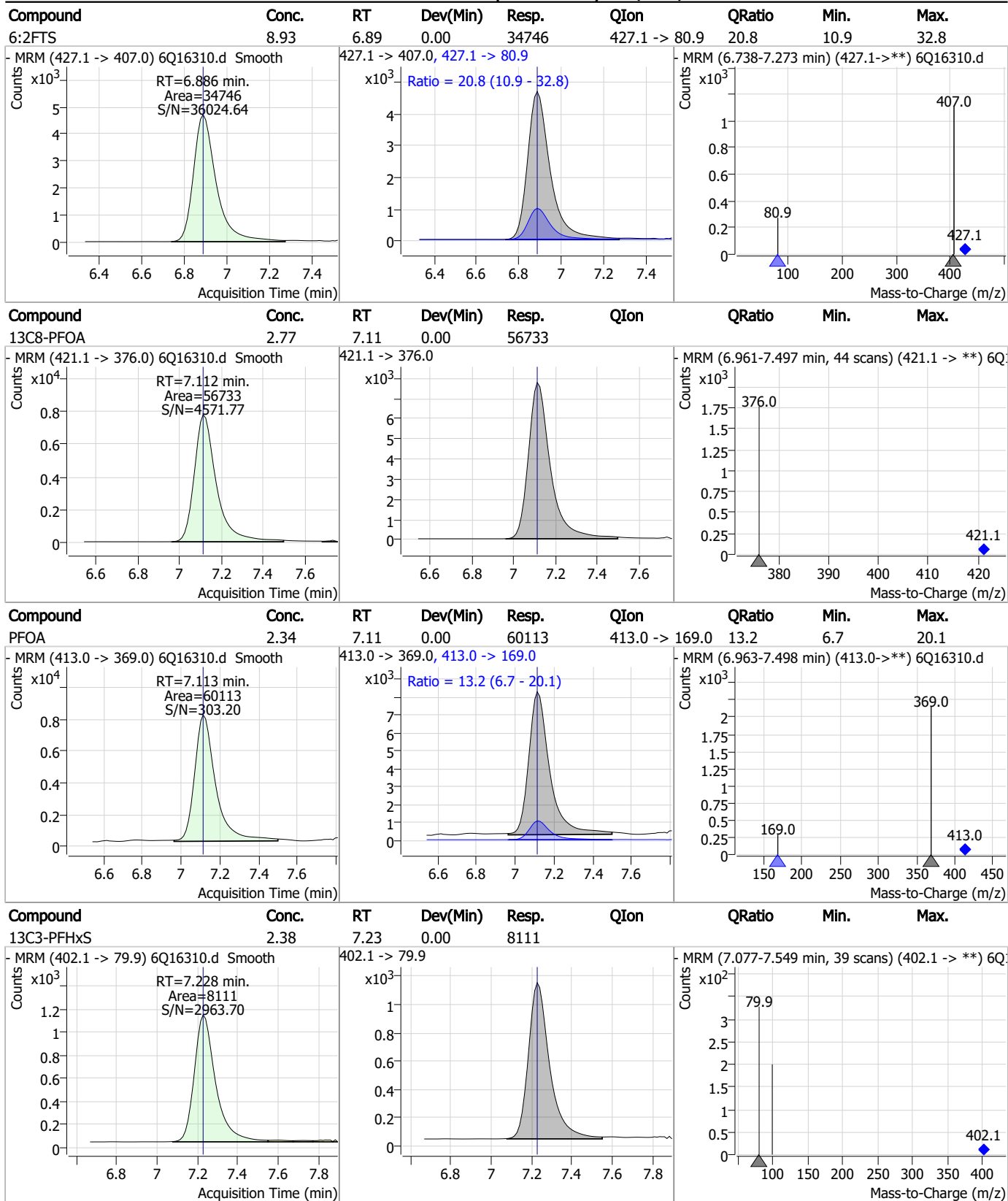
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Perfluorinated Compounds by LC/MS/MS



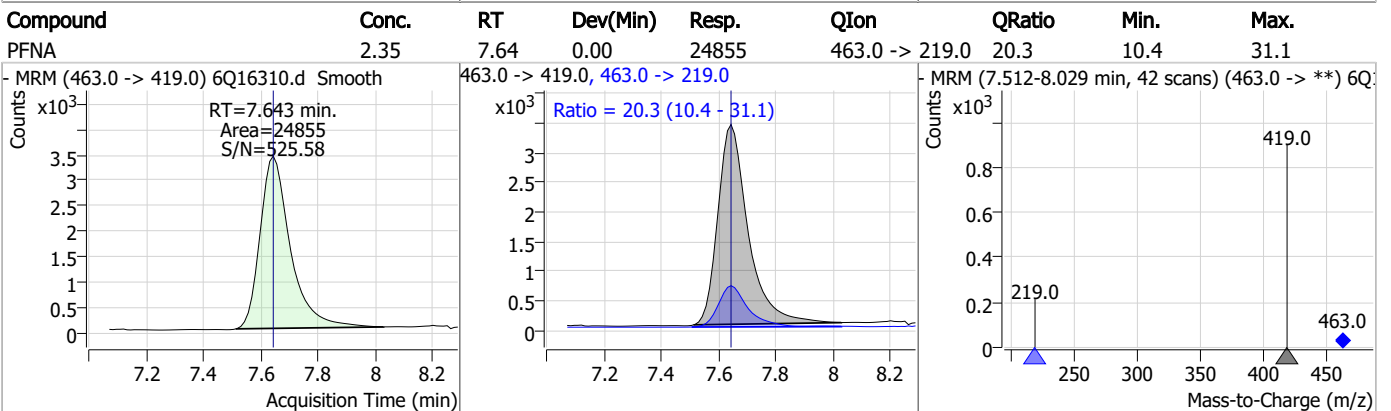
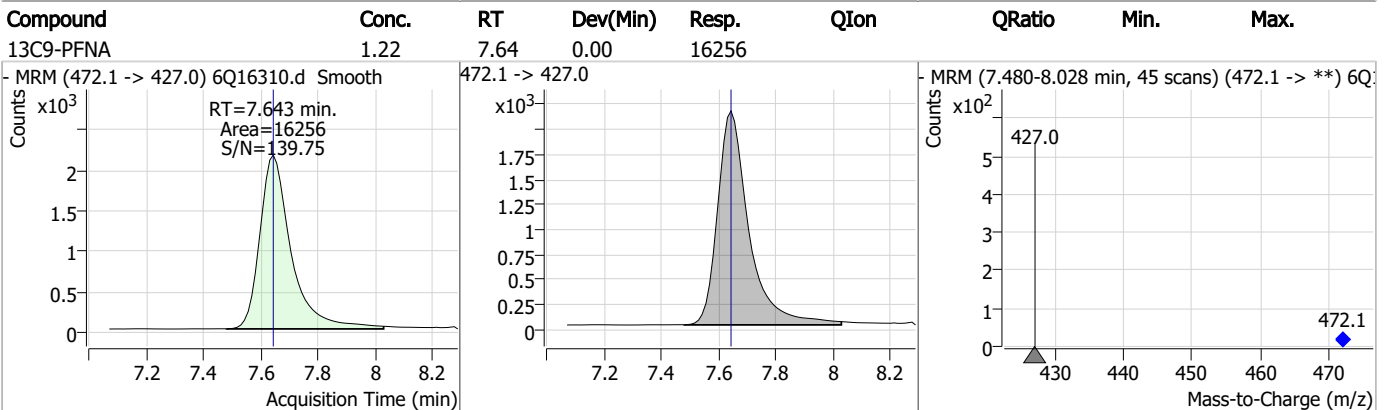
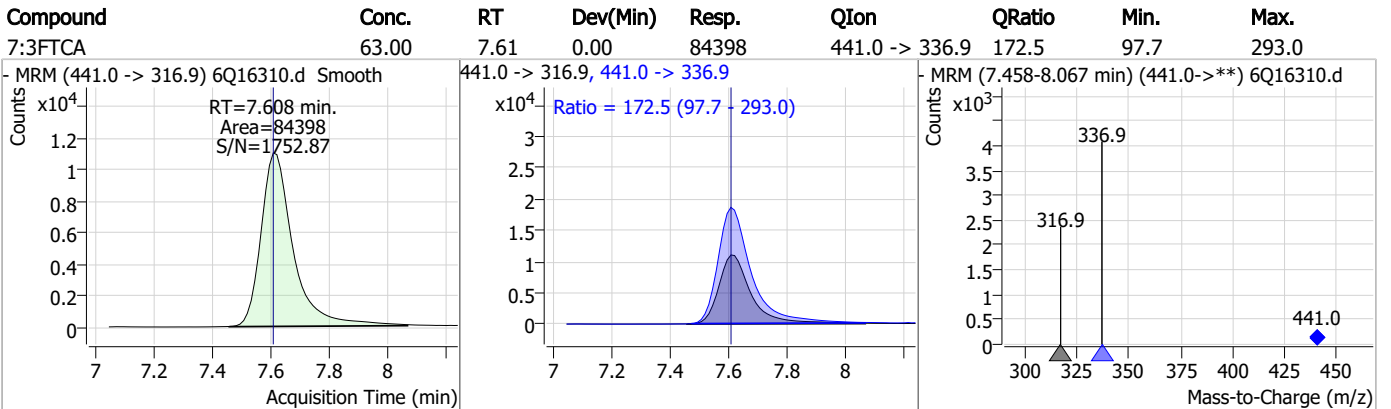
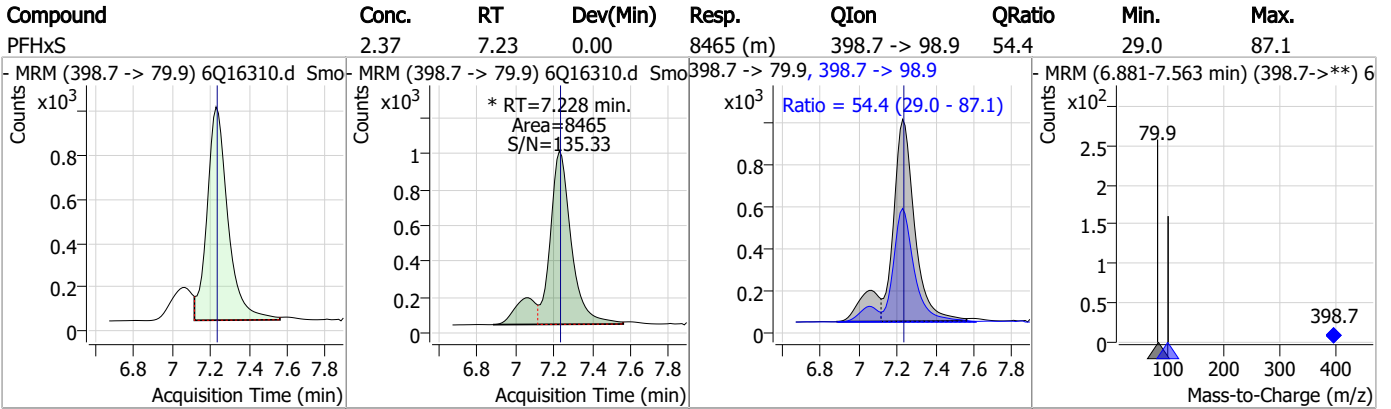
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Perfluorinated Compounds by LC/MS/MS



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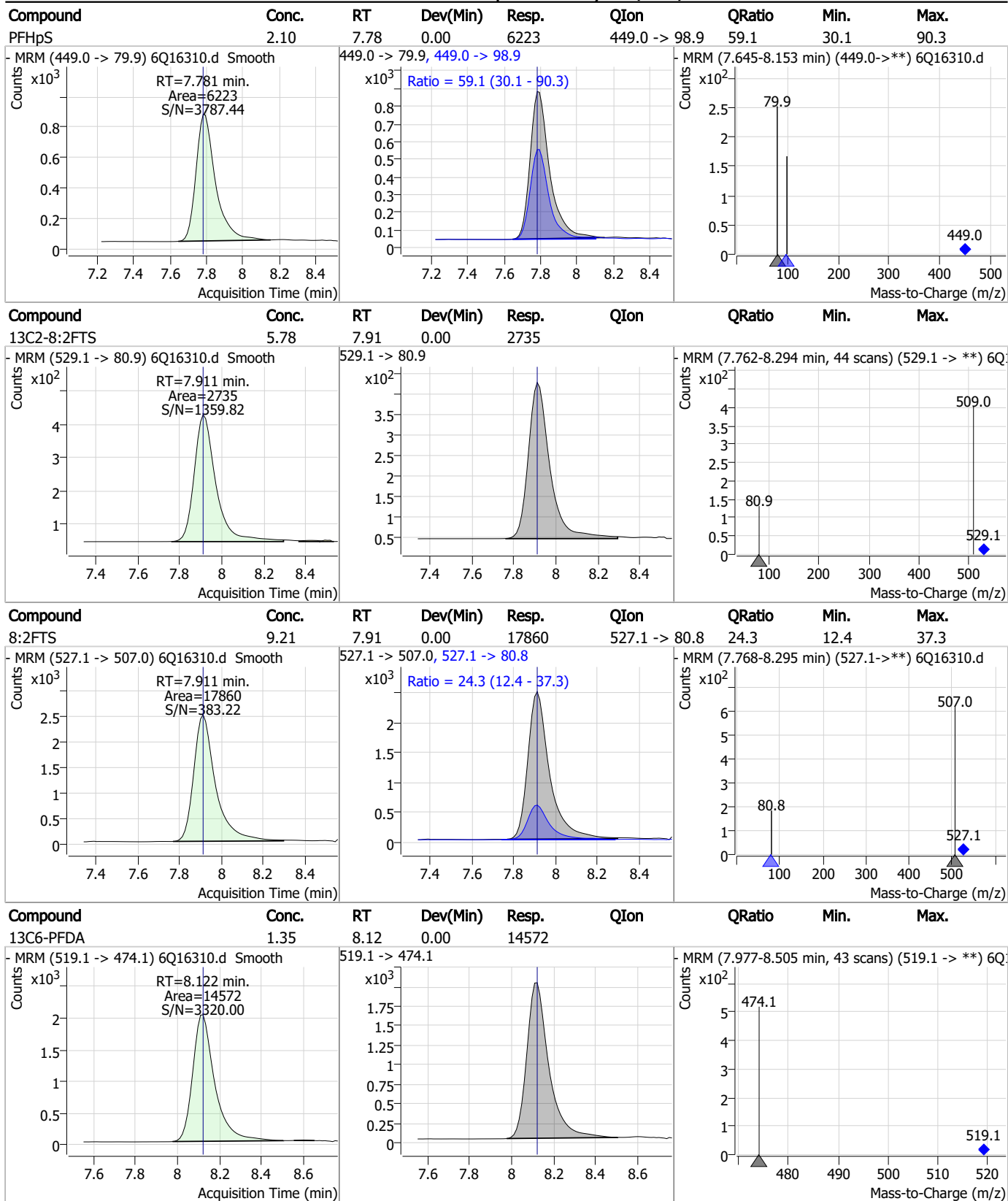
Perfluorinated Compounds by LC/MS/MS



7.7.13
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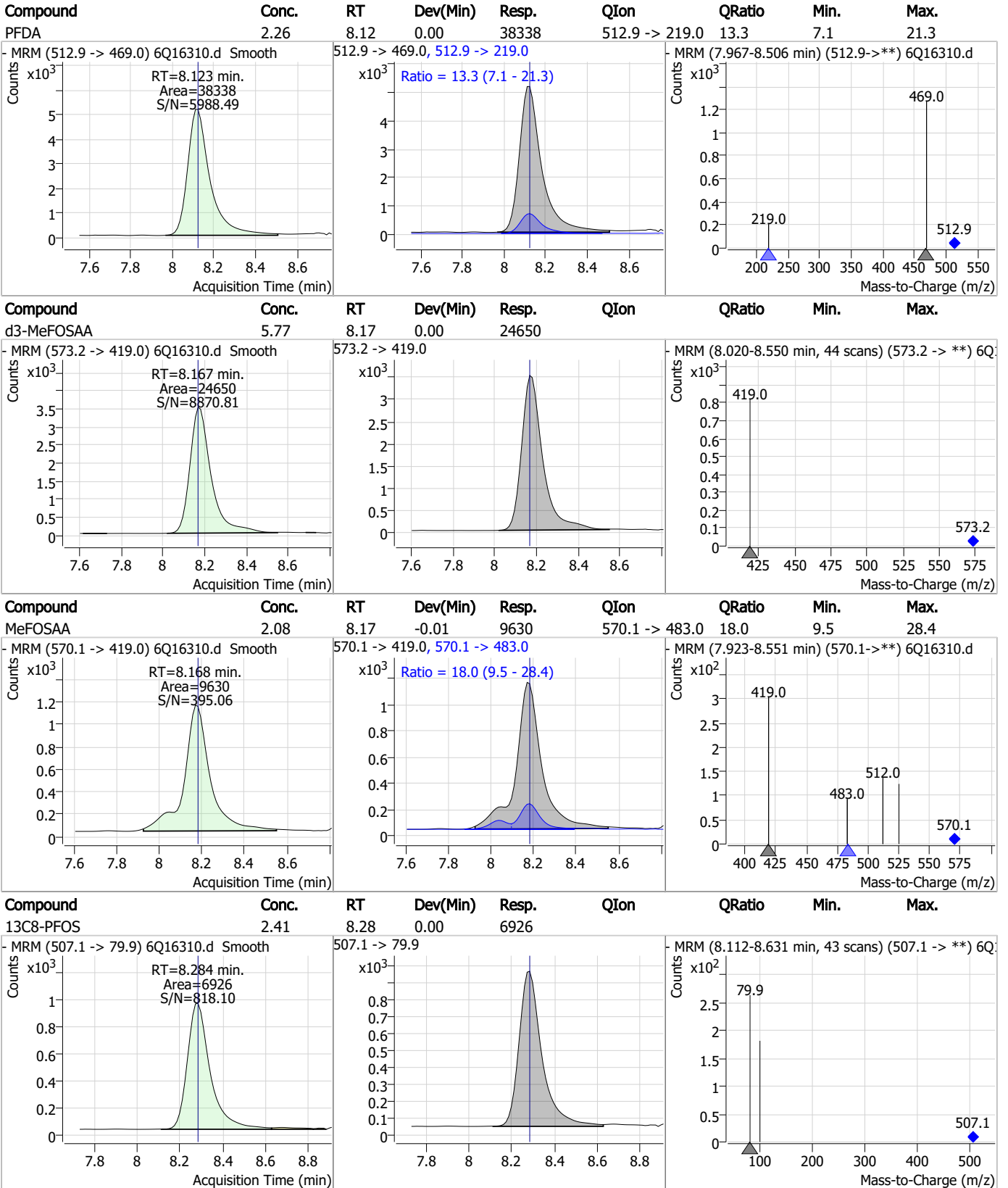
Perfluorinated Compounds by LC/MS/MS



7.7.13

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Perfluorinated Compounds by LC/MS/MS

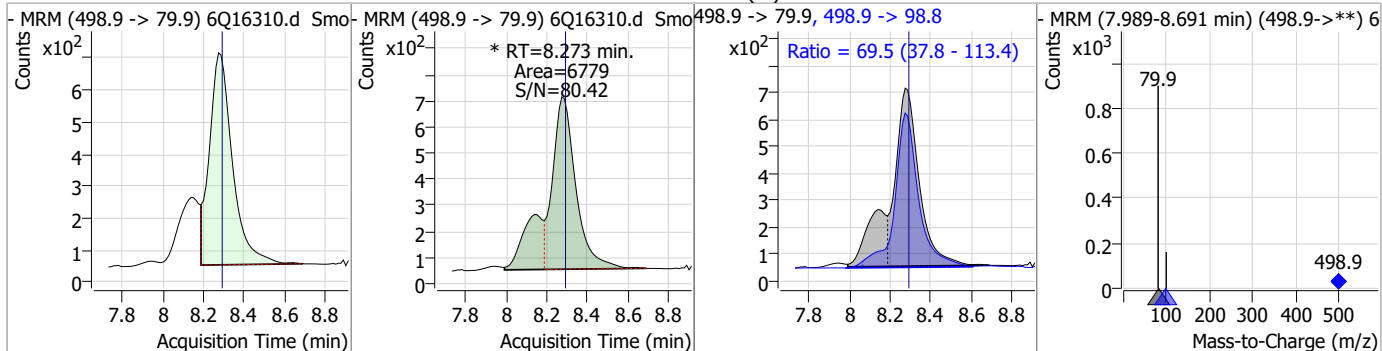


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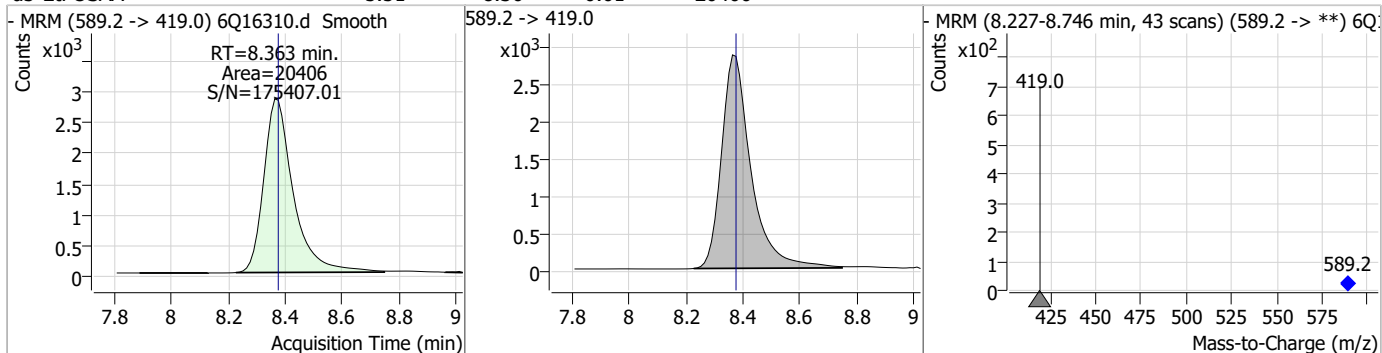


Perfluorinated Compounds by LC/MS/MS

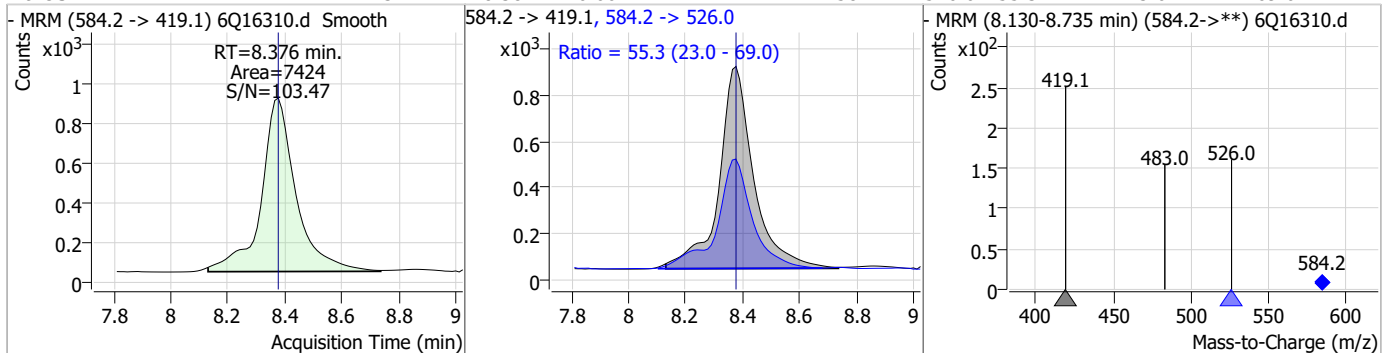
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.22	8.27	-0.01	6779 (m)	498.9 -> 98.8	69.5	37.8	113.4



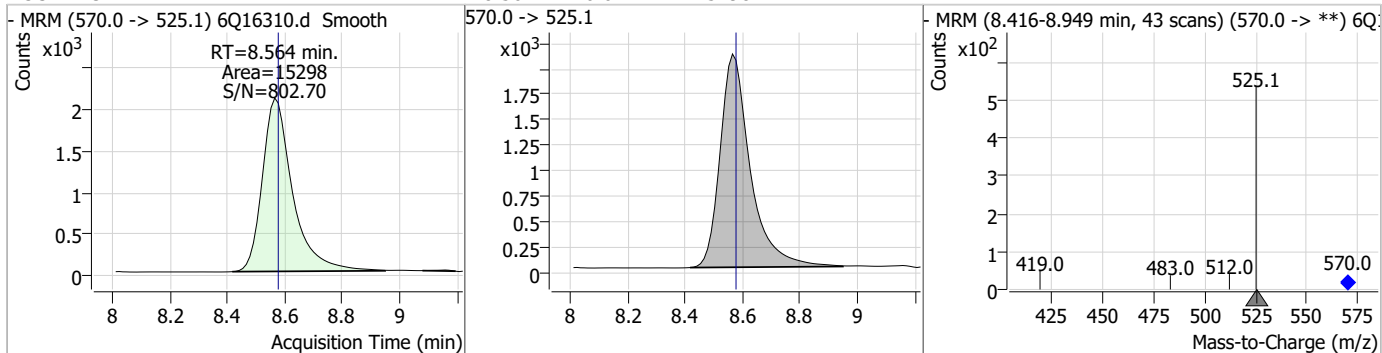
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.51	8.36	-0.01	20406				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.37	8.38	0.00	7424	584.2 -> 526.0	55.3	23.0	69.0

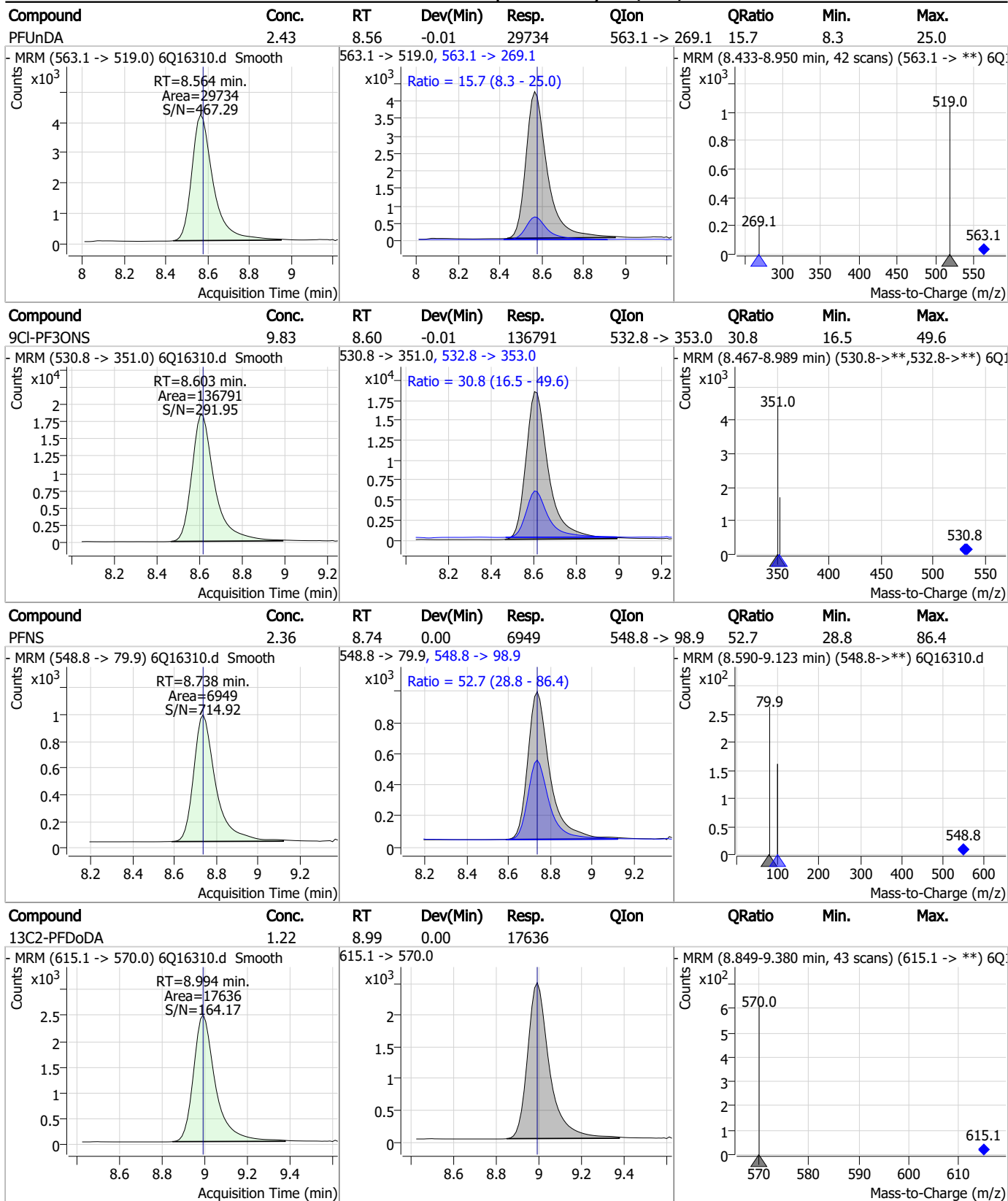


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.56	-0.01	15298				



7.7.13
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Perfluorinated Compounds by LC/MS/MS

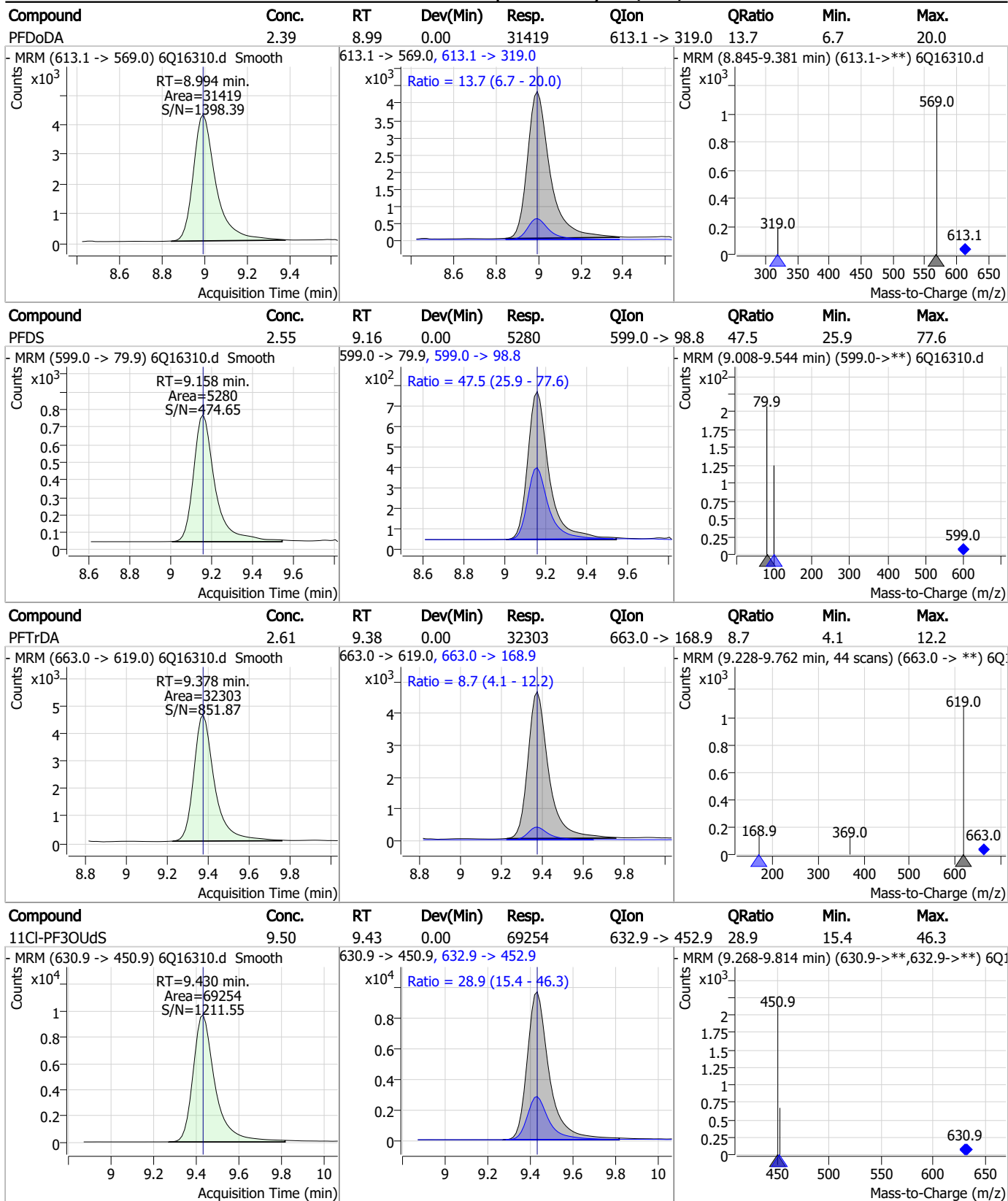


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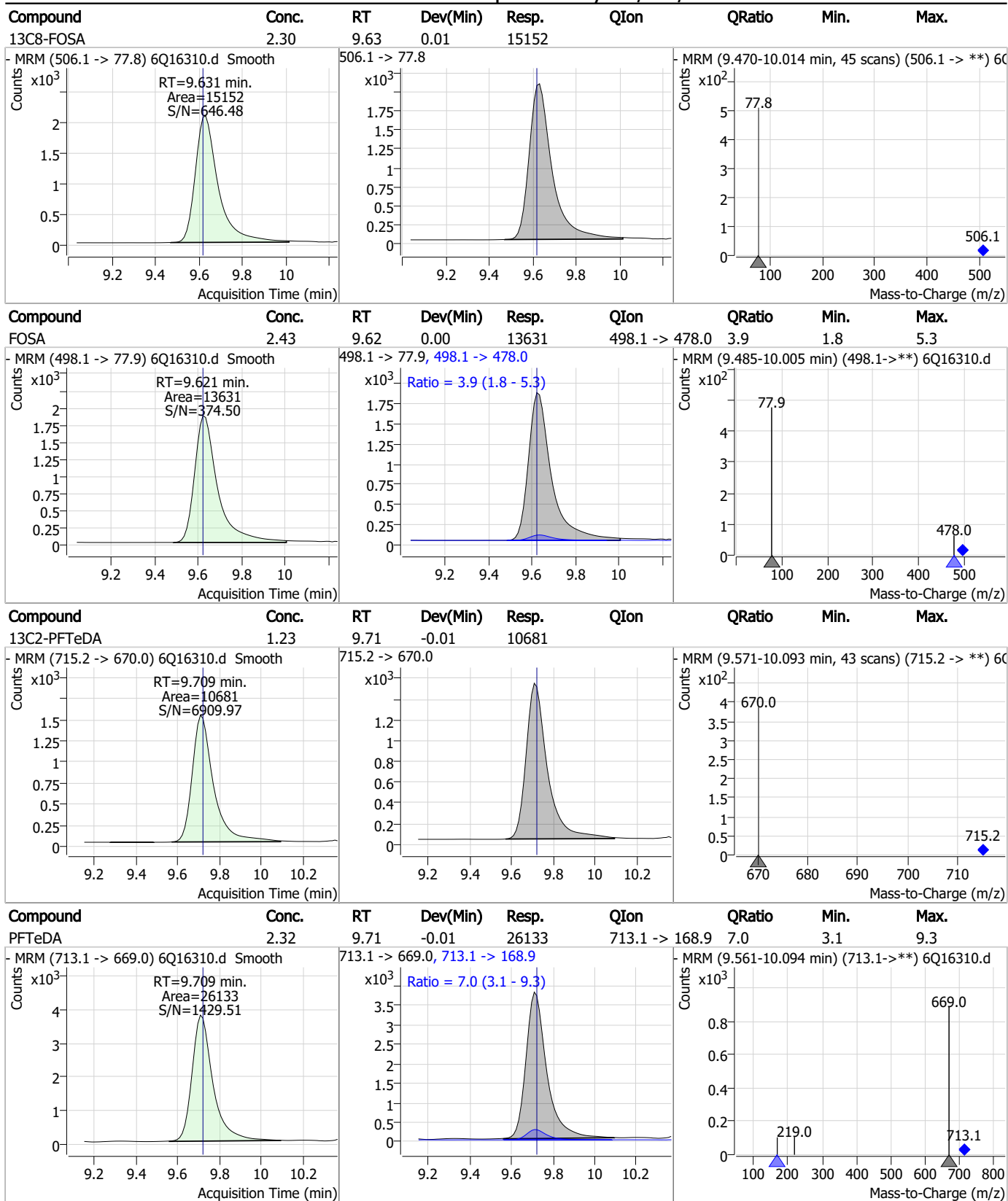
Perfluorinated Compounds by LC/MS/MS



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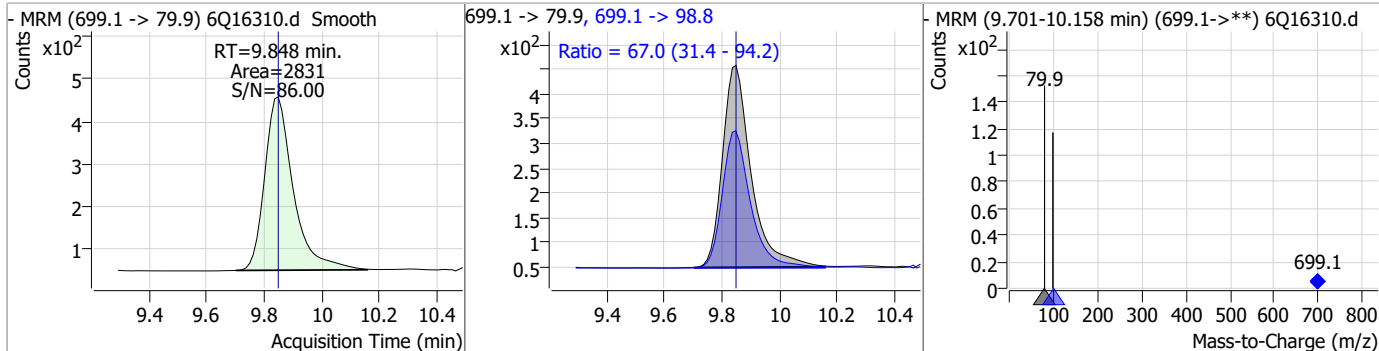
Perfluorinated Compounds by LC/MS/MS



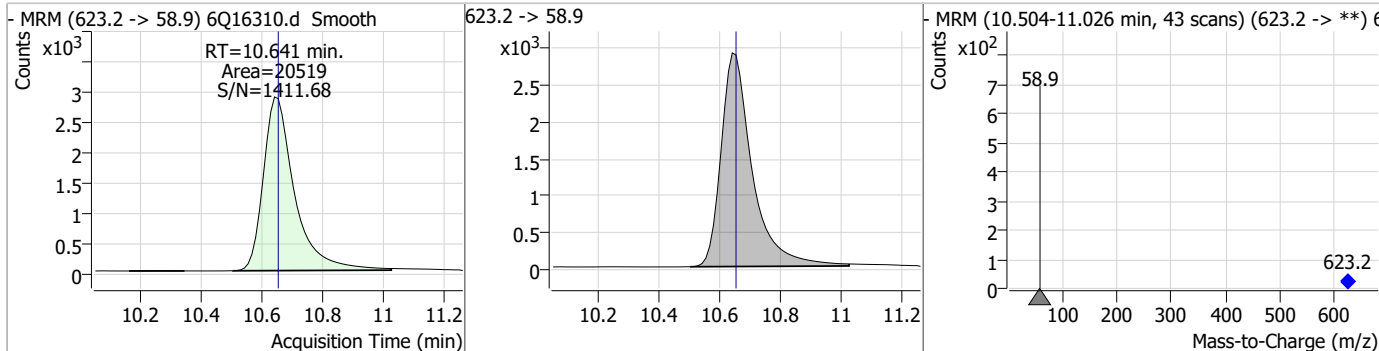
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Perfluorinated Compounds by LC/MS/MS

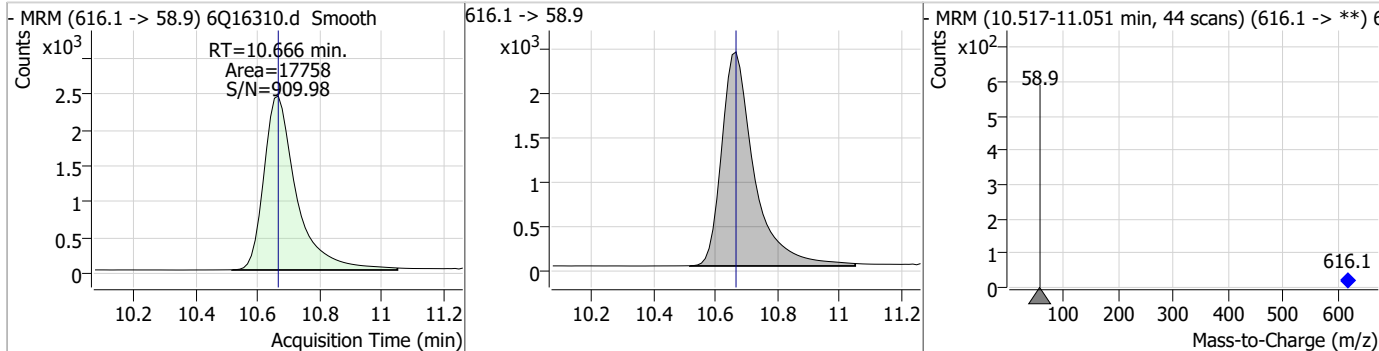
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.35	9.85	0.00	2831	699.1 -> 98.8	67.0	31.4	94.2



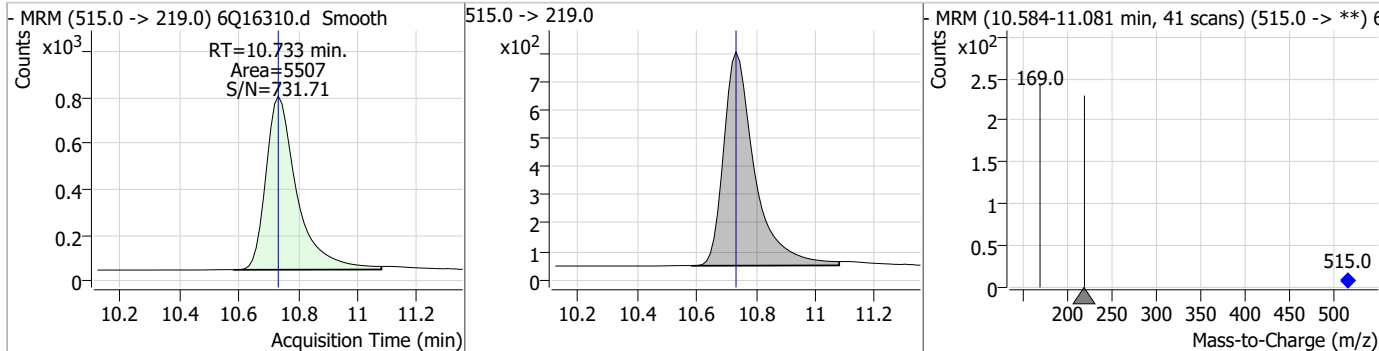
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.82	10.64	-0.01	20519				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.96	10.67	0.00	17758				

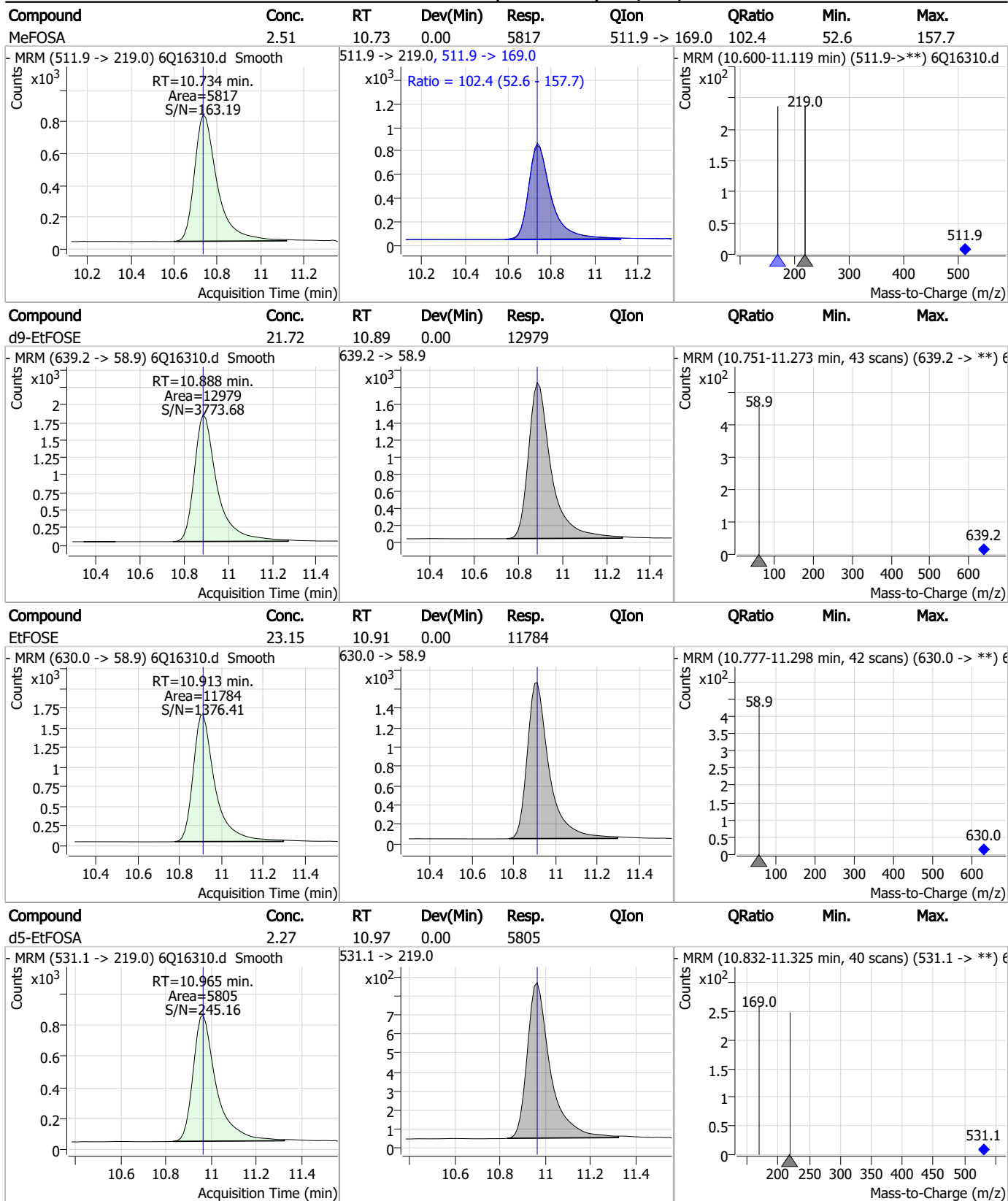


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.32	10.73	0.00	5507				



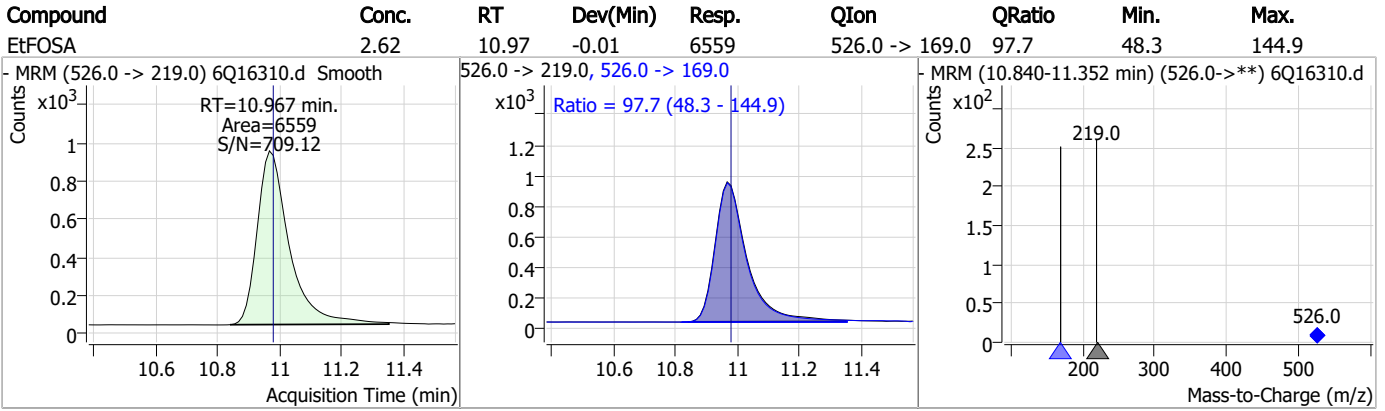
7.7.13
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.13

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Manual Integration Approval Summary

Sample Number: S6Q242-ECC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16310.D Analyst approved: 04/10/23 13:50 Martha Valls
Injection Time: 04/07/23 18:28 Supervisor approved: 04/10/23 17:48 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak

7.7.13.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16318.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 8:20:44 PM
 Sample Name : cc239-4
 Vial : P1-A5
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96171,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	80008	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	36019	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	32329	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	31624	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	55811	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	15743	1.25 µg/L	0.000
M6-PFDA	8.122	519.1 -> 474.1	13854	1.25 µg/L	0.000
M7-PFUnDA	8.564	570.0 -> 525.1	15482	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17529	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	10208	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	14810	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	12589	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	8422	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6689	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2264	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	3021	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2493	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	21080	5.00 µg/L	0.000
M3-HFPO-DA	5.893	286.9 -> 168.9	13339	10.00 µg/L	0.000
M5-EtFOSAA	8.375	589.2 -> 419.0	18839	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	19263	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	12786	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5908	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5356	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8510	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	34240	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	6061	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	63399	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	19550	1.25 µg/L	0.000
13C5-PFNA	7.643	468.0 -> 423.0	18067	1.25 µg/L	0.000
13C2-PFHxA	5.516	315.1 -> 270.0	31261	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.191	329.1 -> 80.9	2264	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C2-6:2FTS	6.886	429.1 -> 80.9	3021	6.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.8%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2493	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17529	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.8%		
13C2-PFTeDA	9.709	715.2 -> 670.0	10208	1.10 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.1%		
13C3-PFBS	5.446	302.1 -> 79.9	12589	2.34 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C3-PFHxS	7.228	402.1 -> 79.9	8422	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 = 97.1%		
13C4-PFBA	2.897	216.8 -> 171.9	80008	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C4-PFHpA	6.468	367.1 -> 322.0	31624	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C5-PFHxA	5.516	318.0 -> 273.0	32329	2.50 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C5-PFPeA	4.322	268.3 -> 223.0	36019	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C6-PFDA	8.122	519.1 -> 474.1	13854	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C7-PFUnDA	8.564	570.0 -> 525.1	15482	1.16 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.7%		
13C8-FOSA	9.631	506.1 -> 77.8	14810	2.34 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C8-PFOA	7.112	421.1 -> 376.0	55811	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C8-PFOS	8.272	507.1 -> 79.9	6689	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C9-PFNA	7.643	472.1 -> 427.0	15743	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.2%		
d3-MeFOSAA	8.167	573.2 -> 419.0	21080	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-HFPO-DA	5.893	286.9 -> 168.9	13339	9.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
d3-MeFOSA	10.733	515.0 -> 219.0	5356	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.9%		
d5-EtFOSAA	8.375	589.2 -> 419.0	18839	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	19263	22.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 89.0%		
d9-EtFOSE	10.888	639.2 -> 58.9	12786	22.21 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 88.8%		
d5-EtFOSA	10.965	531.1 -> 219.0	5908	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	41001	9.24 µg/L	100
		327.1 -> 80.9	9689		
6:2FTS	6.886	427.1 -> 407.0	36068	8.92 µg/L	95
		427.1 -> 80.9	7008		
8:2FTS	7.911	527.1 -> 507.0	17487	9.89 µg/L	99
		527.1 -> 80.8	4447		
EtFOSAA	8.376	584.2 -> 419.1	7361	2.55 µg/L	84
		584.2 -> 526.0	4149		
FOSA	9.634	498.1 -> 77.9	13024	2.38 µg/L	100
		498.1 -> 478.0	437		
MeFOSAA	8.181	570.1 -> 419.0	9057	2.29 µg/L	99
		570.1 -> 483.0	1652		
PFBA	2.893	212.8 -> 168.9	19382	9.59 µg/L	100
PFBS	5.447	298.7 -> 79.9	10823	2.19 µg/L	100
		298.7 -> 98.8	5013		
PFDA	8.123	512.9 -> 469.0	39068	2.42 µg/L	98
		512.9 -> 219.0	5191		
PFDoDA	8.994	613.1 -> 569.0	32430	2.48 µg/L	97
		613.1 -> 319.0	3887		
PFDS	9.158	599.0 -> 79.9	4859	2.43 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.469	599.0 -> 98.8	2686	2.47	µg/L	100
		363.1 -> 319.0	43934			
PFHpS	7.781	363.1 -> 169.0	6121	2.46	µg/L	96
		449.0 -> 79.9	7038			
PFHxA	5.519	449.0 -> 98.9	4005	2.46	µg/L	100
		313.0 -> 269.0	29335			
PFHxS	7.228	313.0 -> 118.9	1174	2.12	µg/L	m
		398.7 -> 79.9	7866			
PFNA	7.643	398.7 -> 98.9	4752	2.49	µg/L	97
		463.0 -> 419.0	25575			
PFNS	8.738	463.0 -> 219.0	4953	2.53	µg/L	95
		548.8 -> 79.9	7182			
PFOA	7.113	548.8 -> 98.9	4378	2.30	µg/L	100
		413.0 -> 369.0	58225			
PFOS	8.273	413.0 -> 169.0	7730	2.37	µg/L	m
		498.9 -> 79.9	6979			
PFPeA	4.324	498.9 -> 98.8	4502	4.79	µg/L	100
		263.0 -> 219.0	36427			
PFPeS	6.533	349.1 -> 79.9	9947	2.23	µg/L	100
		349.1 -> 98.9	5141			
PFTeDA	9.709	713.1 -> 669.0	25825	2.39	µg/L	98
		713.1 -> 168.9	1753			
PFTrDA	9.378	663.0 -> 619.0	31714	2.57	µg/L	100
		663.0 -> 168.9	2526			
PFUnDA	8.564	563.1 -> 519.0	31879	2.57	µg/L	95
		563.1 -> 269.1	4539			
11CI-PF3OUdS	9.430	630.9 -> 450.9	68842	9.60	µg/L	96
		632.9 -> 452.9	19865			
9CI-PF3ONS	8.616	530.8 -> 351.0	129371	9.45	µg/L	99
		532.8 -> 353.0	43508			
ADONA	6.731	376.9 -> 250.9	268415	9.93	µg/L	96
		376.9 -> 84.8	56407			
HFPO-DA	5.894	284.9 -> 168.9	12109	10.04	µg/L	97
		284.9 -> 184.9	1641			
3:3FTCA	3.790	241.0 -> 177.0	4664	11.06	µg/L	99
		241.0 -> 117.0	694			
5:3FTCA	6.198	341.0 -> 237.1	154925	58.73	µg/L	99
		341.0 -> 217.0	132967			
7:3FTCA	7.608	441.0 -> 316.9	79558	59.58	µg/L	94
		441.0 -> 336.9	148566			
EtFOSA	10.967	526.0 -> 219.0	6320	2.48	µg/L	99
		526.0 -> 169.0	6026			
EtFOSE	10.913	630.0 -> 58.9	11887	23.71	µg/L	100
		511.9 -> 219.0	6026			
MeFOSA	10.734	511.9 -> 169.0	5807	2.67	µg/L	91
		616.1 -> 58.9	16390			
MeFOSE	10.666	699.1 -> 79.9	2695	22.57	µg/L	100
		699.1 -> 98.8	1725			
PFDoDS	9.848	295.0 -> 201.0	3701	2.32	µg/L	98
		295.0 -> 84.9	1712			
NFDHA	5.398	279.0 -> 85.1	11244	4.78	µg/L	97
		229.0 -> 84.9	10791			
PFMBA	4.737	279.0 -> 85.1	11244	4.47	µg/L	100
PFMPA	3.463	229.0 -> 84.9	10791	4.70	µg/L	100
PFEESA	5.999	314.8 -> 134.9	78211	4.63	µg/L	100
		314.8 -> 82.9	1914			

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

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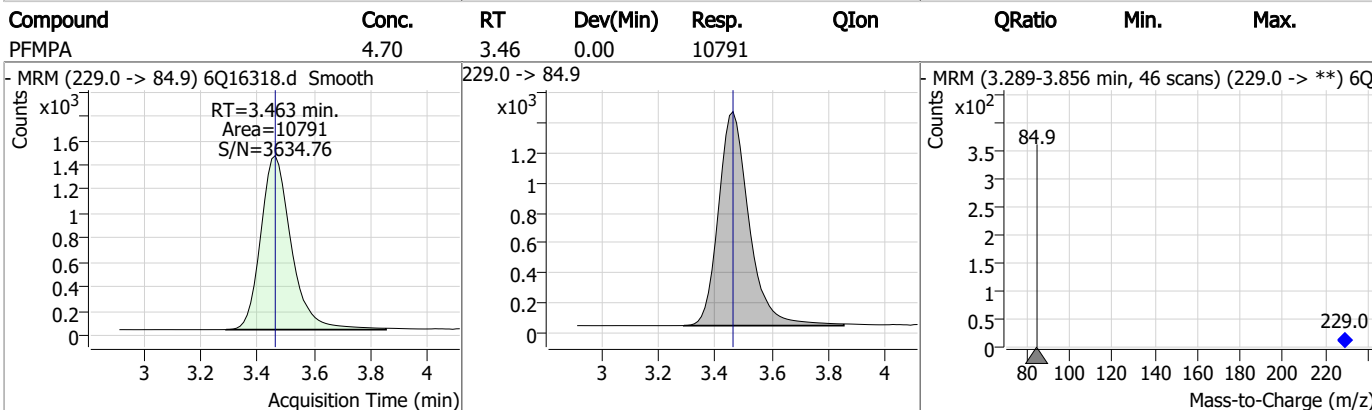
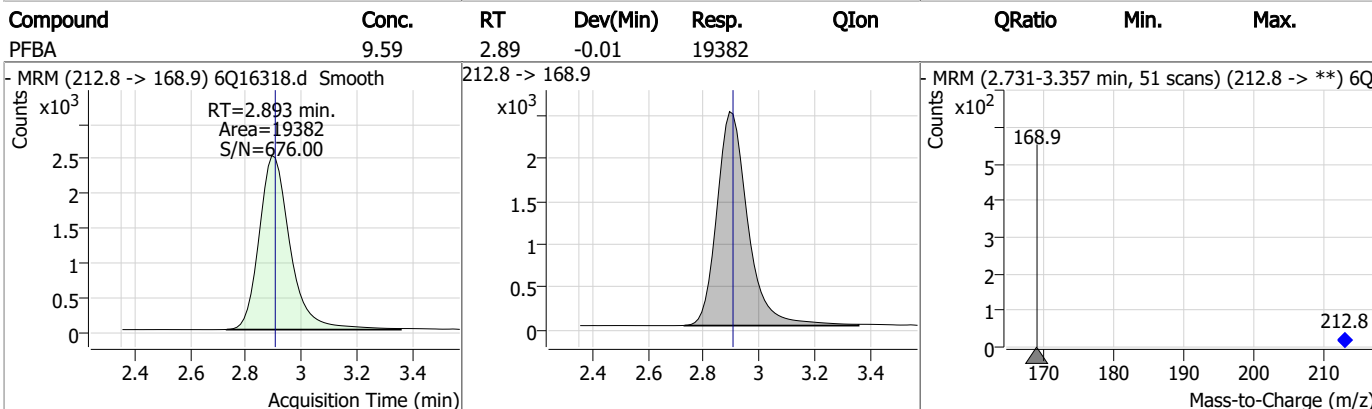
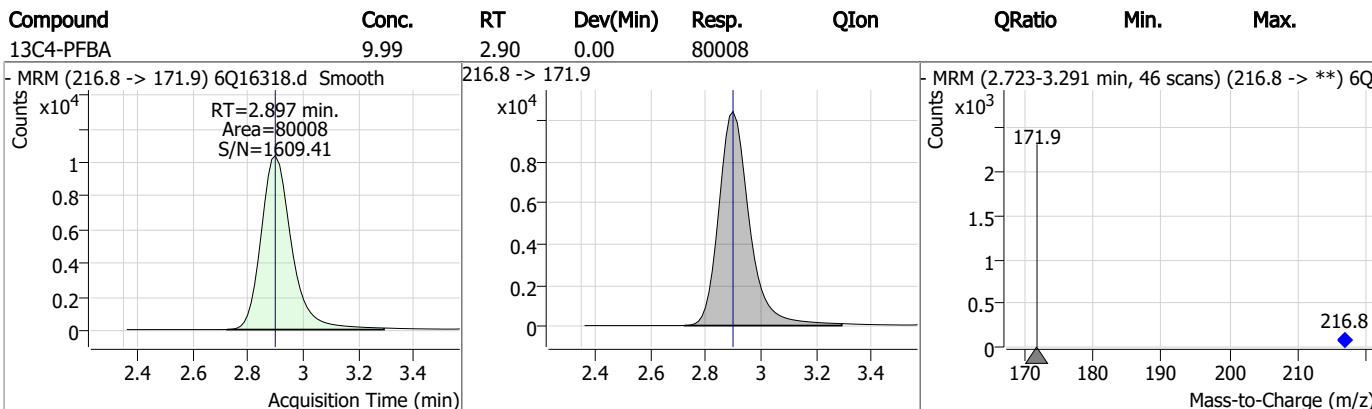
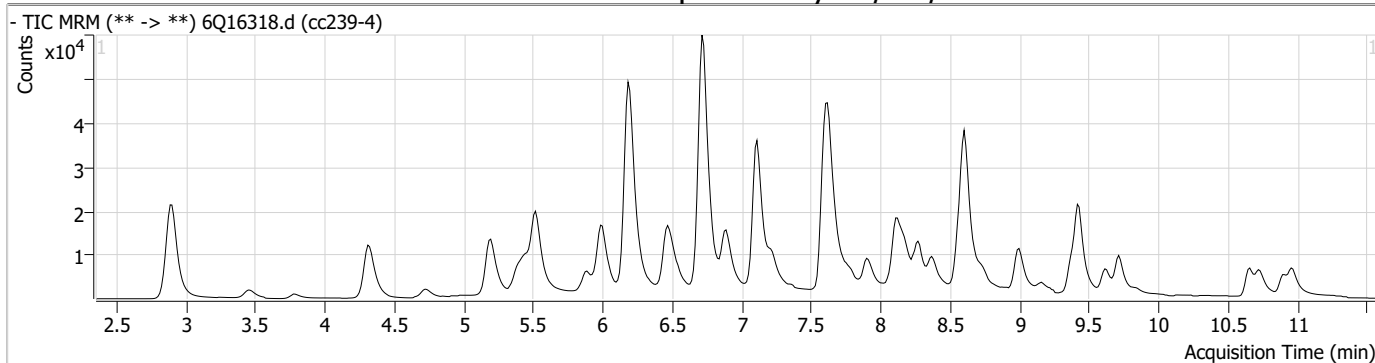
Perfluorinated Compounds by LC/MS/MS

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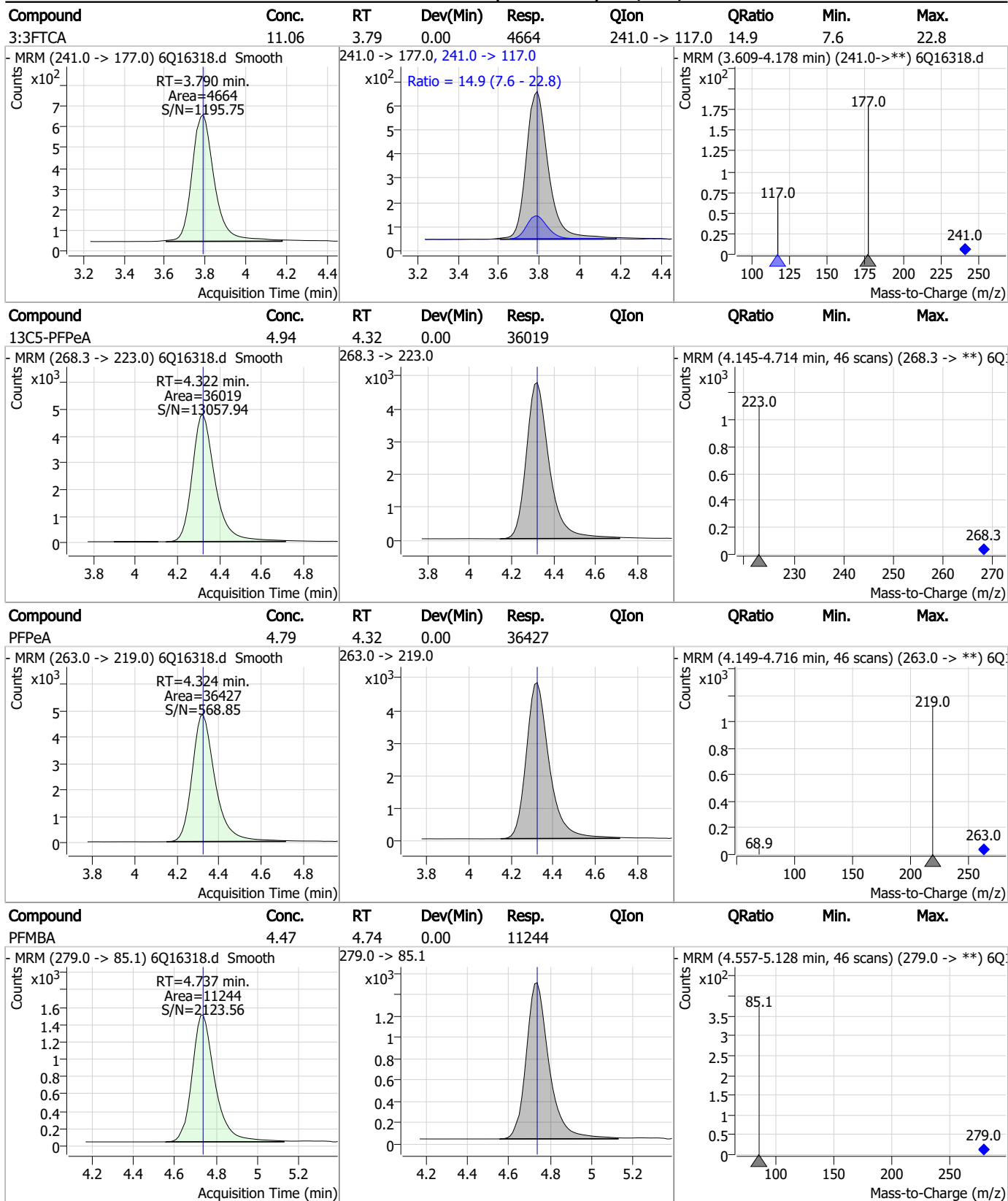
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Perfluorinated Compounds by LC/MS/MS



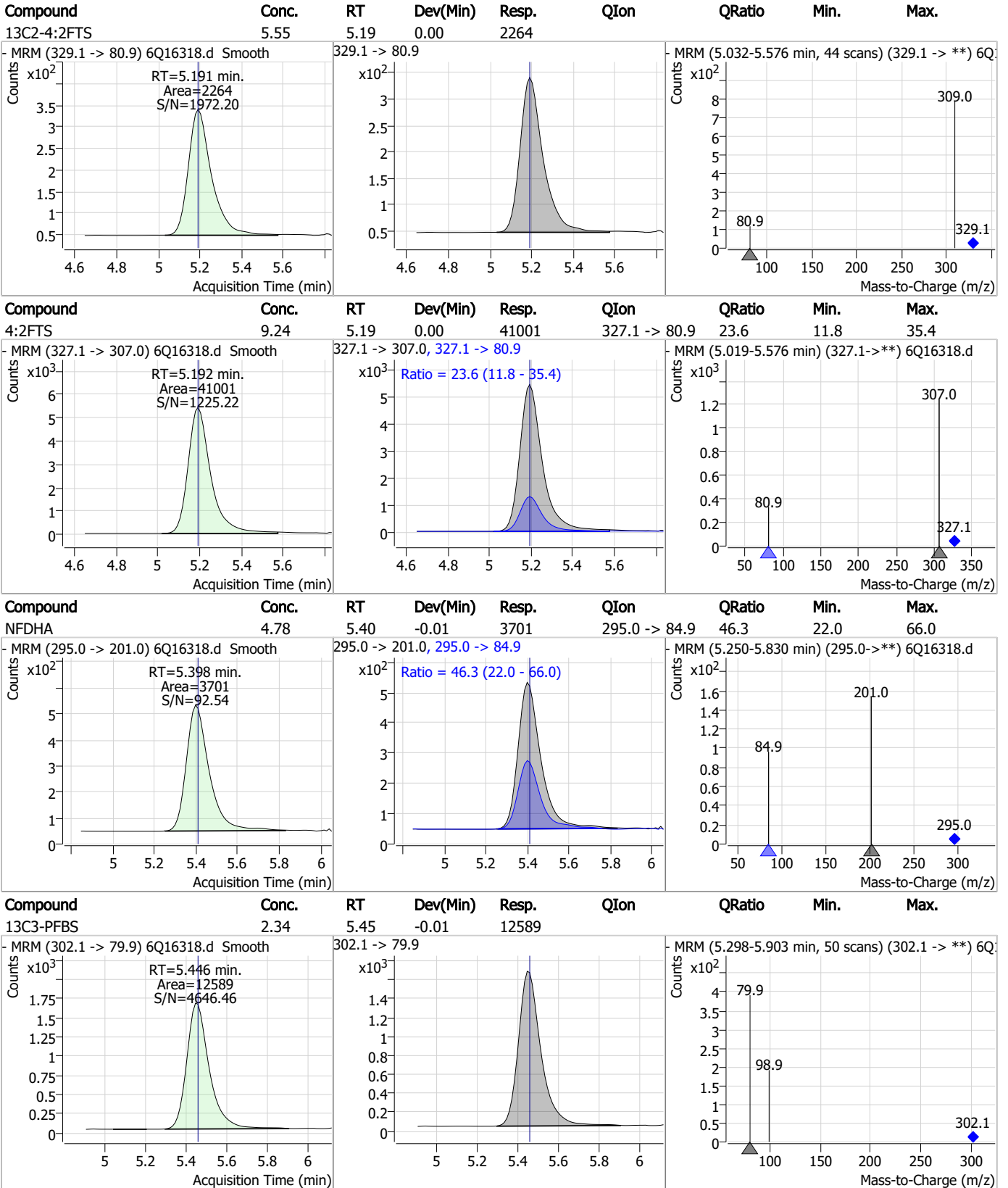
7.7.14
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

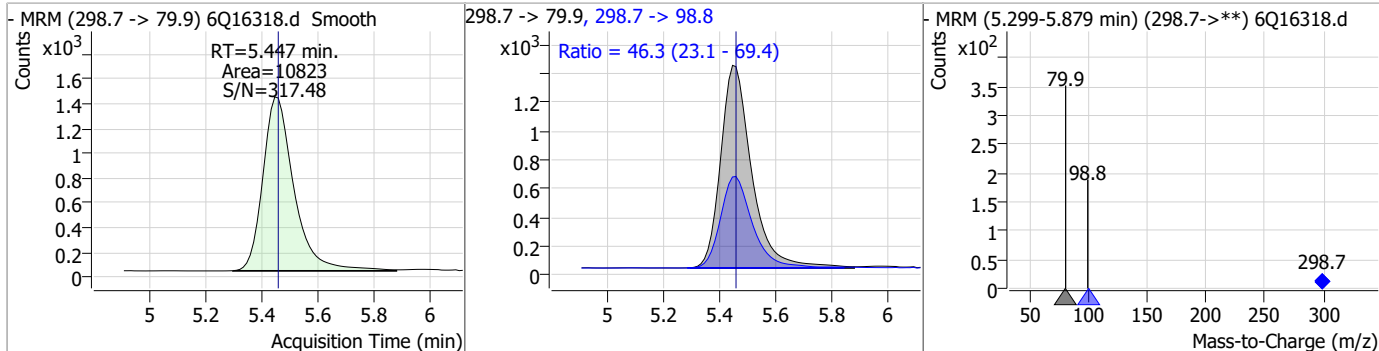


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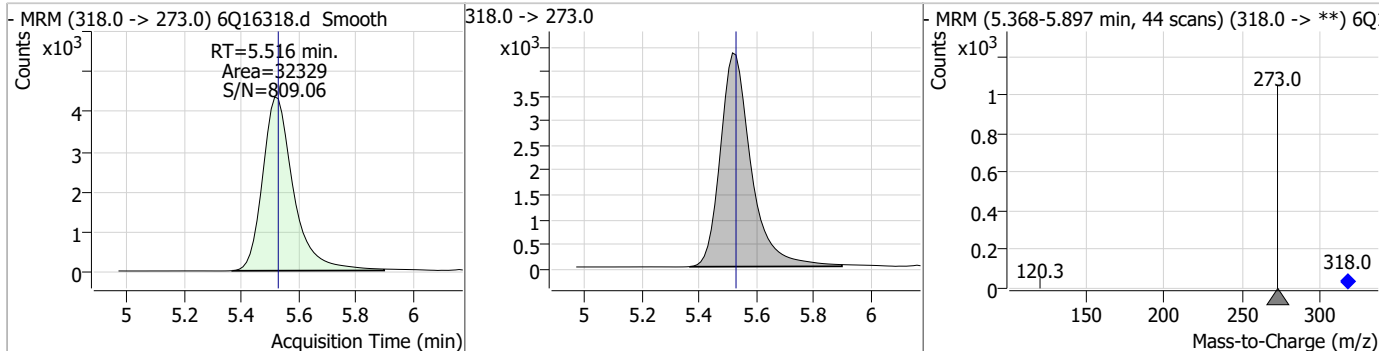


Perfluorinated Compounds by LC/MS/MS

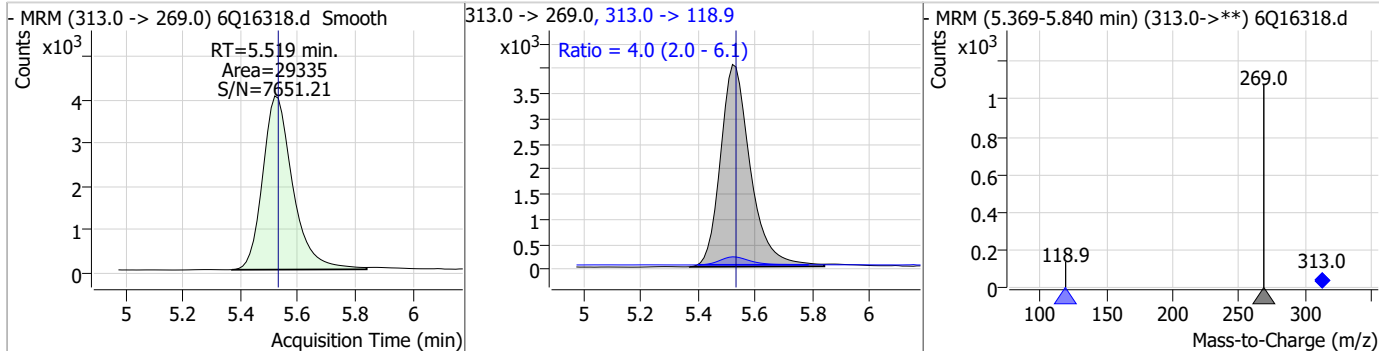
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.19	5.45	-0.01	10823	298.7 -> 98.8	46.3	23.1	69.4



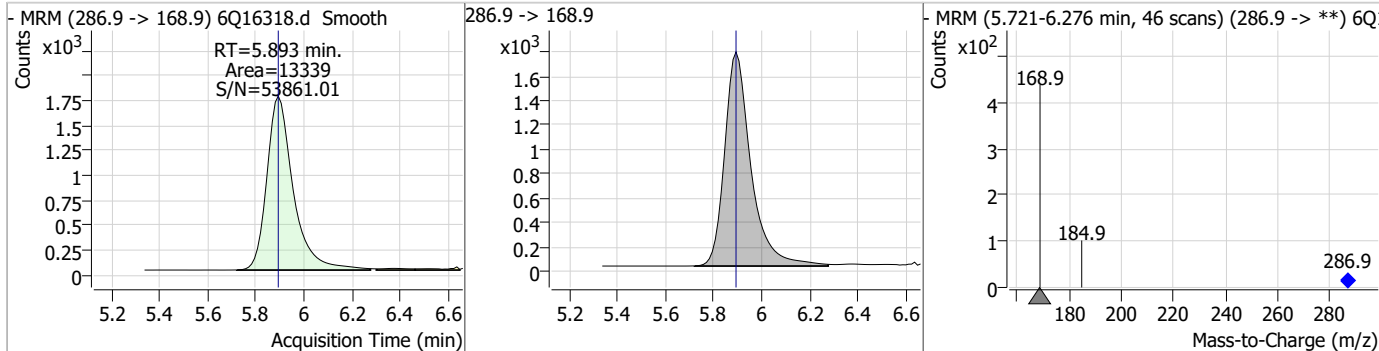
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.52	-0.01	32329				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.46	5.52	-0.01	29335	313.0 -> 118.9	4.0	2.0	6.1

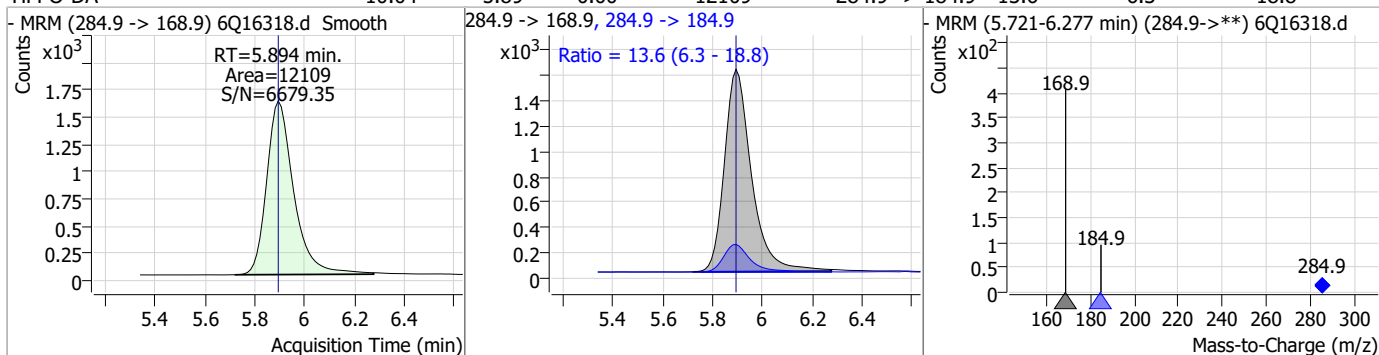


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.78	5.89	0.00	13339				

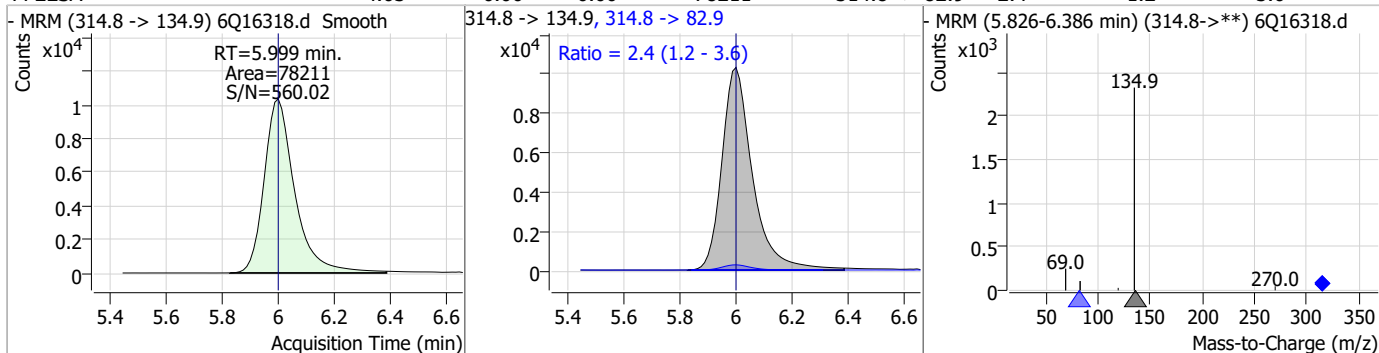


Perfluorinated Compounds by LC/MS/MS

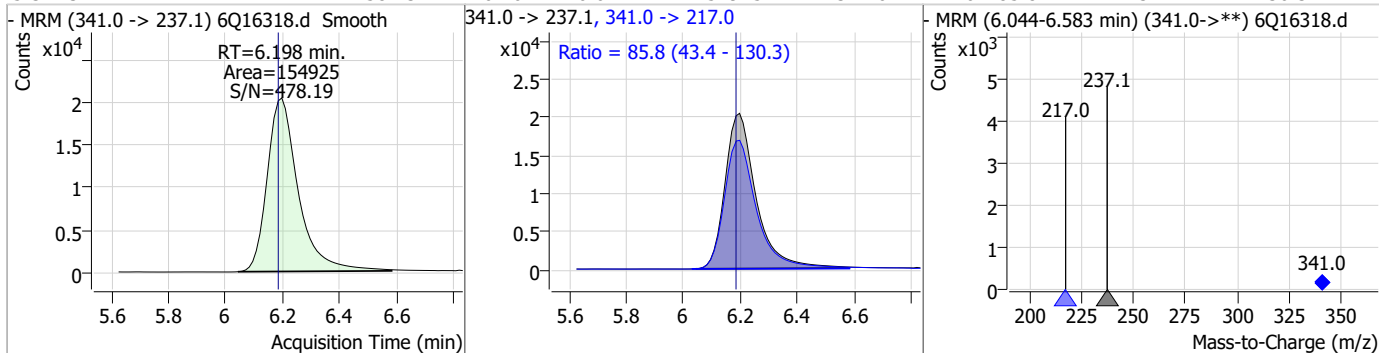
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.04	5.89	0.00	12109	284.9 -> 184.9	13.6	6.3	18.8



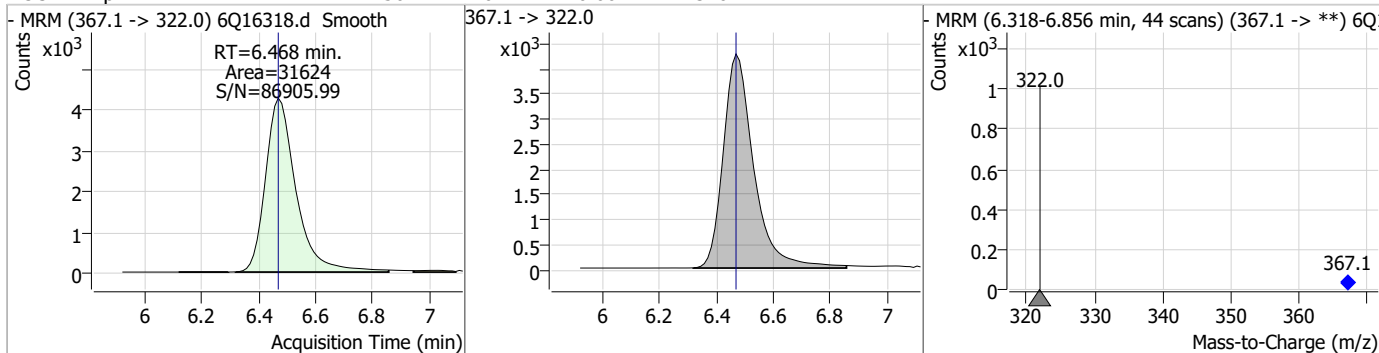
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.63	6.00	0.00	78211	314.8 -> 82.9	2.4	1.2	3.6



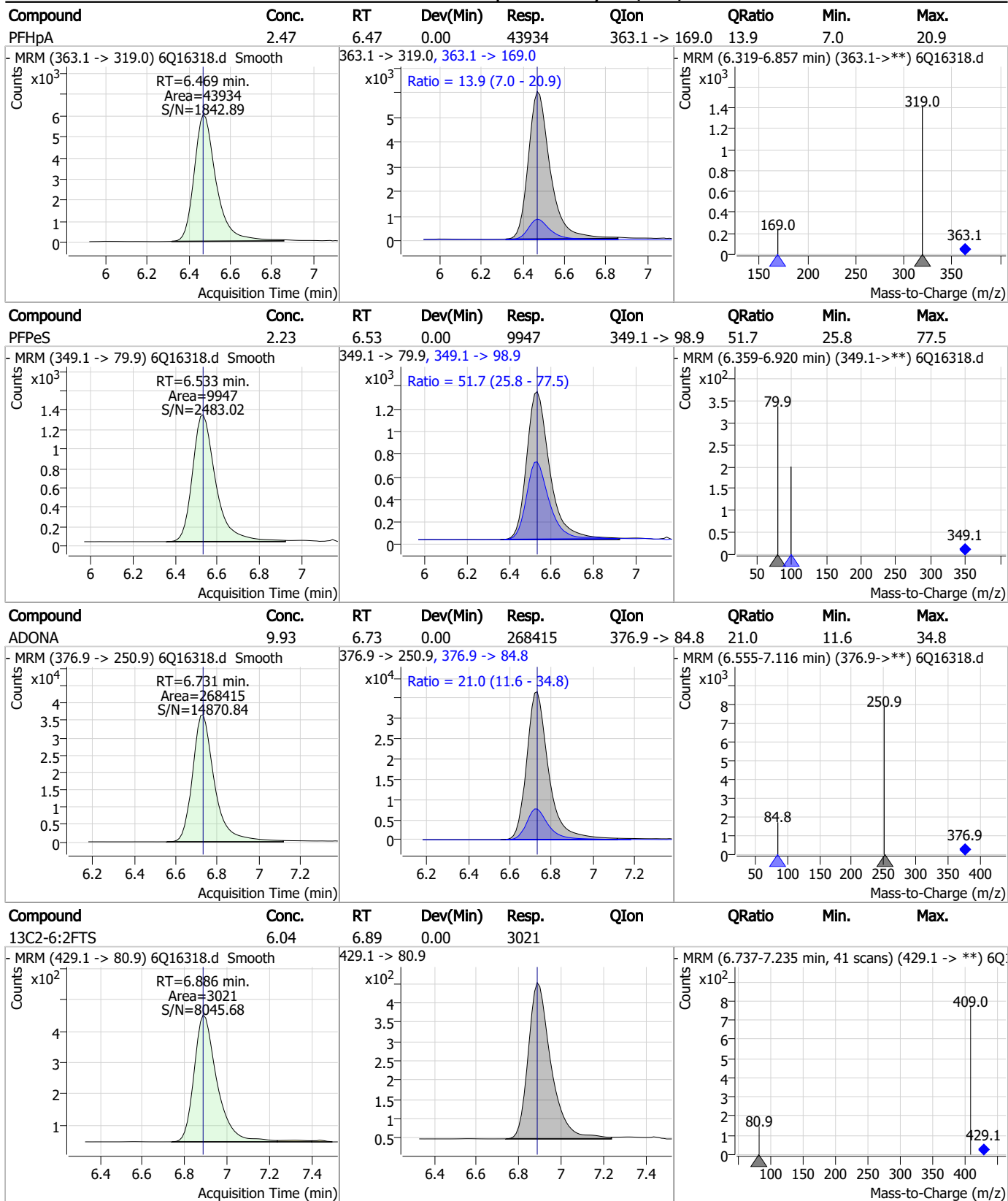
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.73	6.20	0.01	154925	341.0 -> 217.0	85.8	43.4	130.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.47	0.00	31624	367.1 -> 322.0			



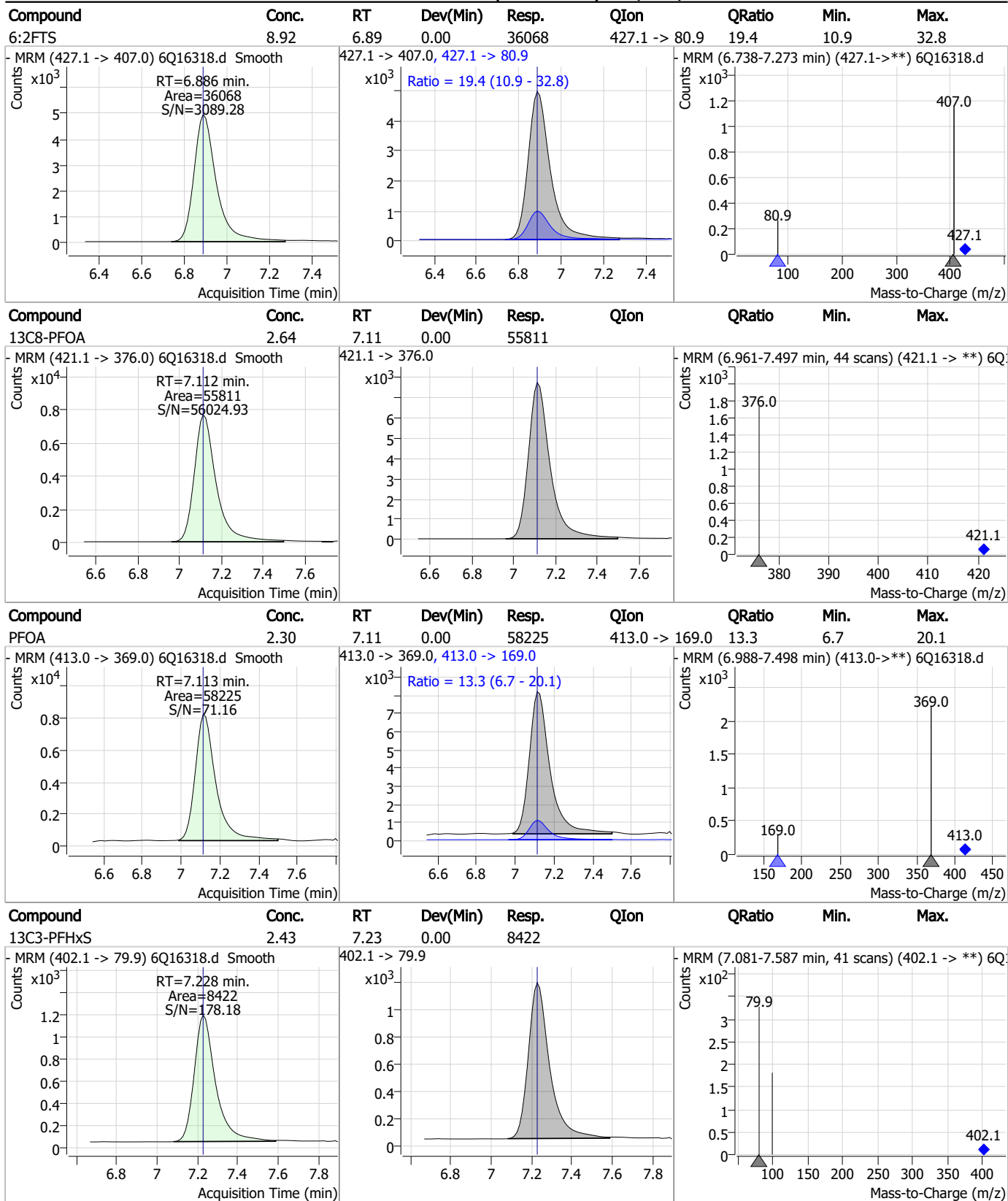
Perfluorinated Compounds by LC/MS/MS



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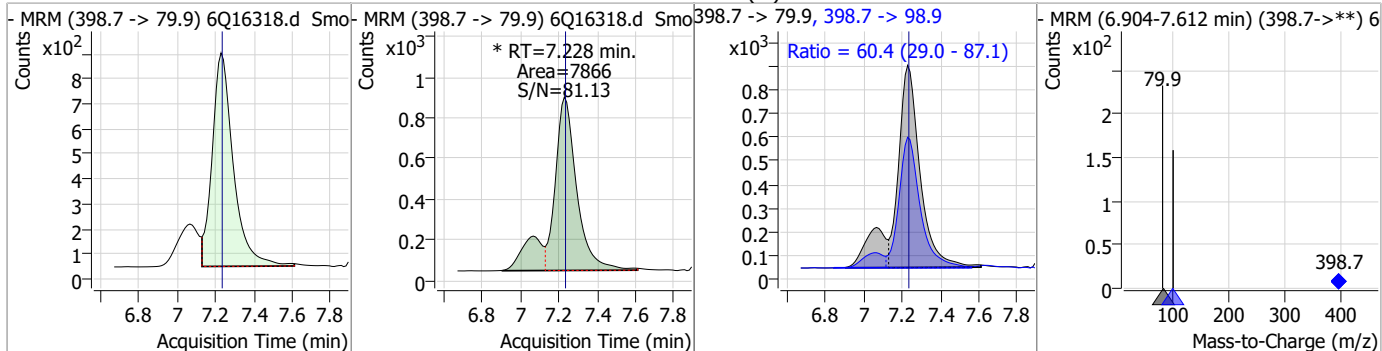
Perfluorinated Compounds by LC/MS/MS



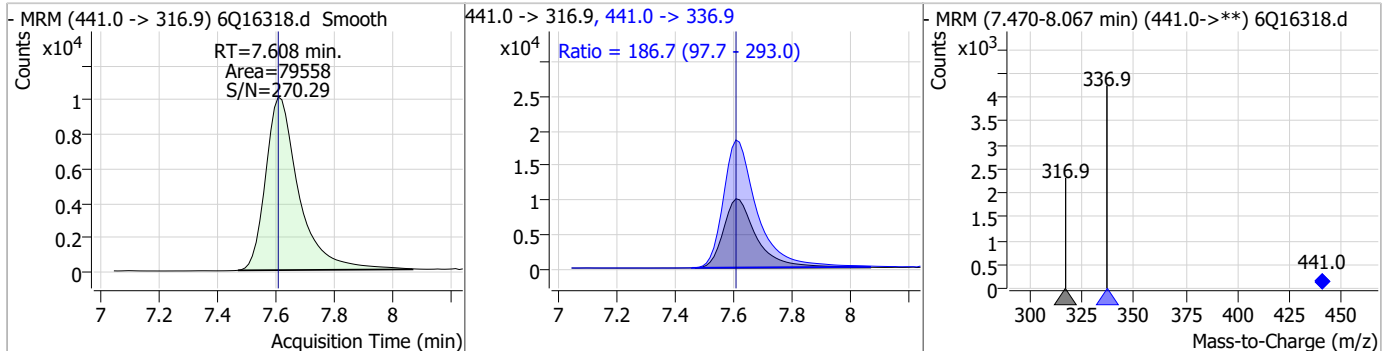
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Perfluorinated Compounds by LC/MS/MS

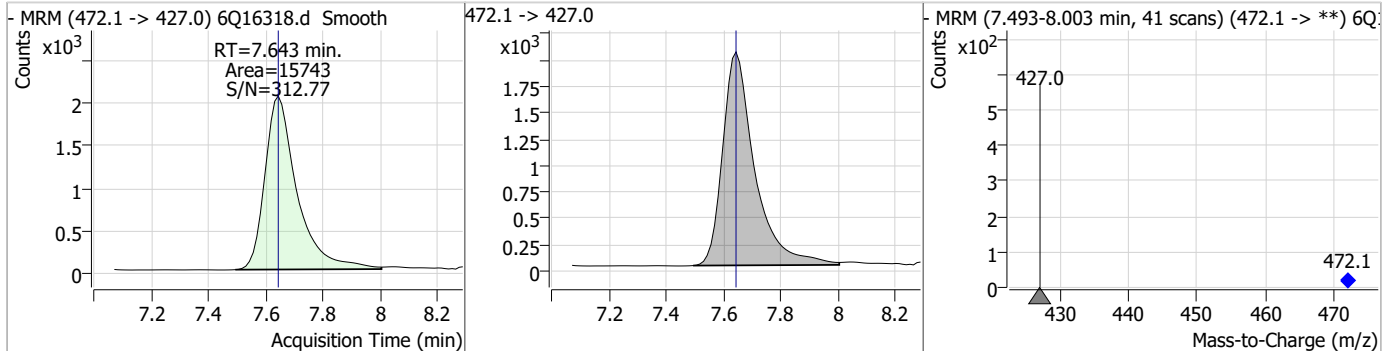
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.12	7.23	0.00	7866 (m)	398.7 -> 98.9	60.4	29.0	87.1



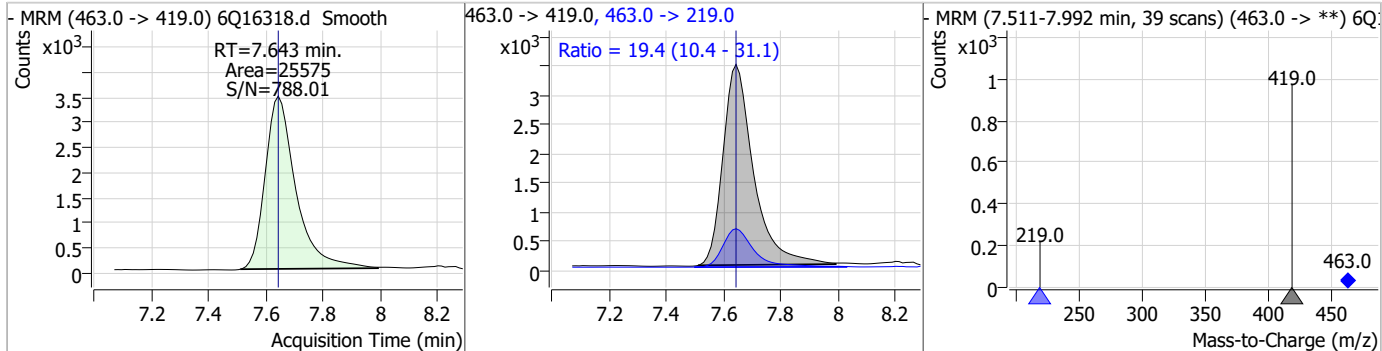
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	59.58	7.61	0.00	79558	441.0 -> 336.9	186.7	97.7	293.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.64	0.00	15743	472.1 -> 427.0			

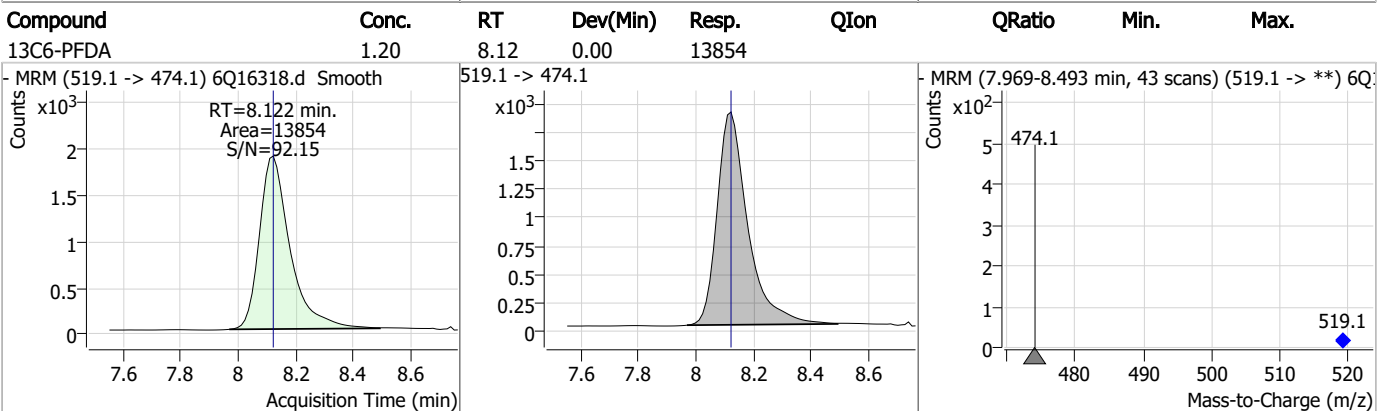
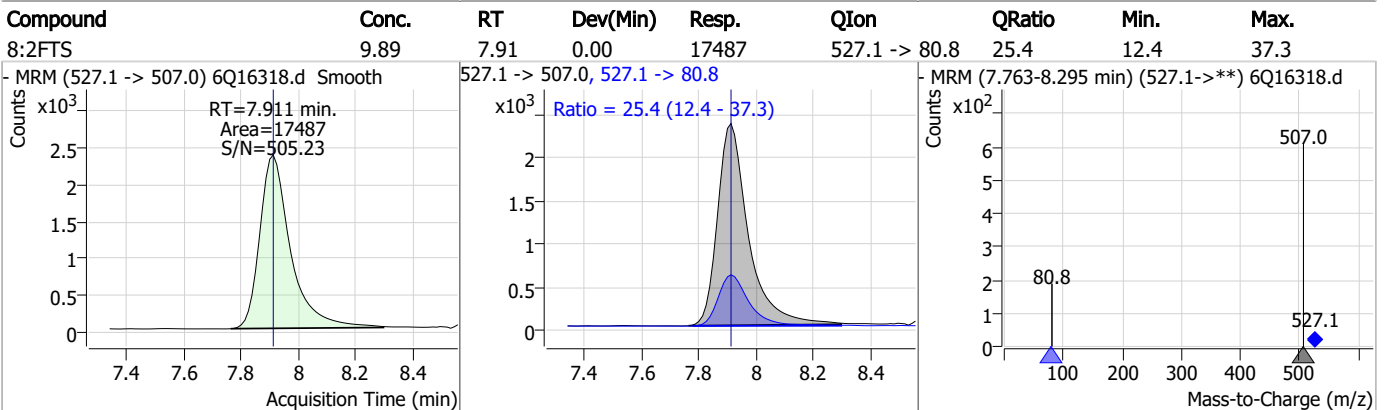
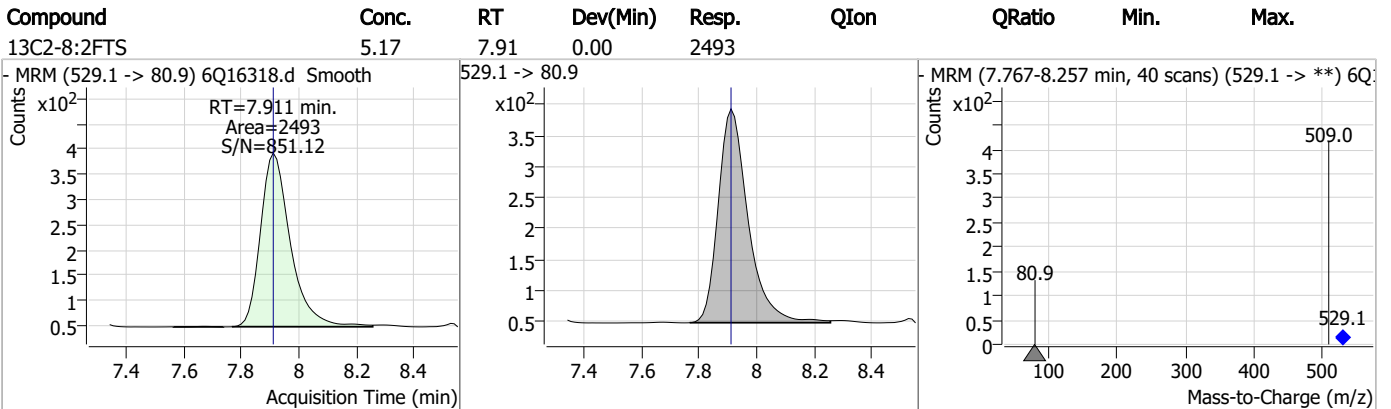
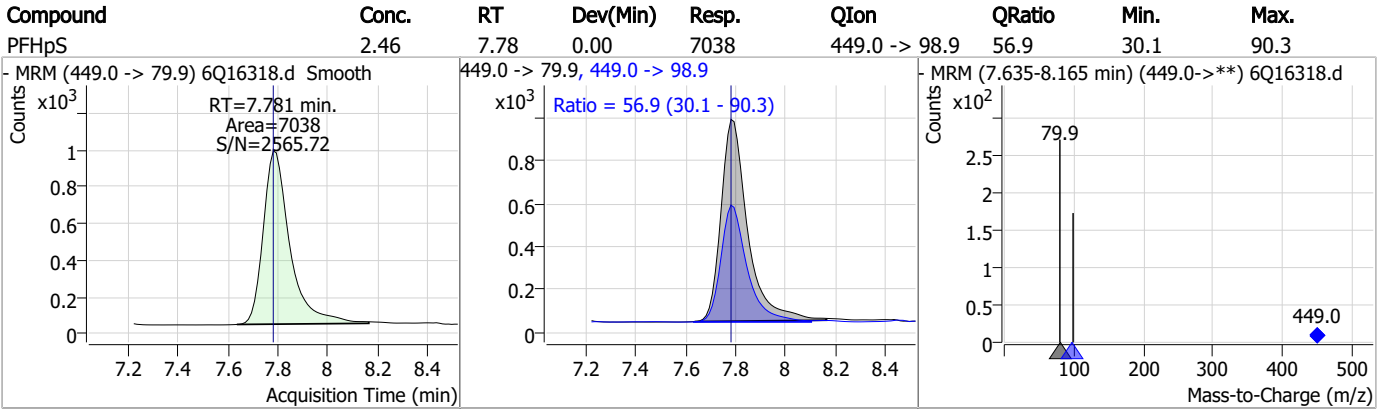


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.49	7.64	0.00	25575	463.0 -> 219.0	19.4	10.4	31.1

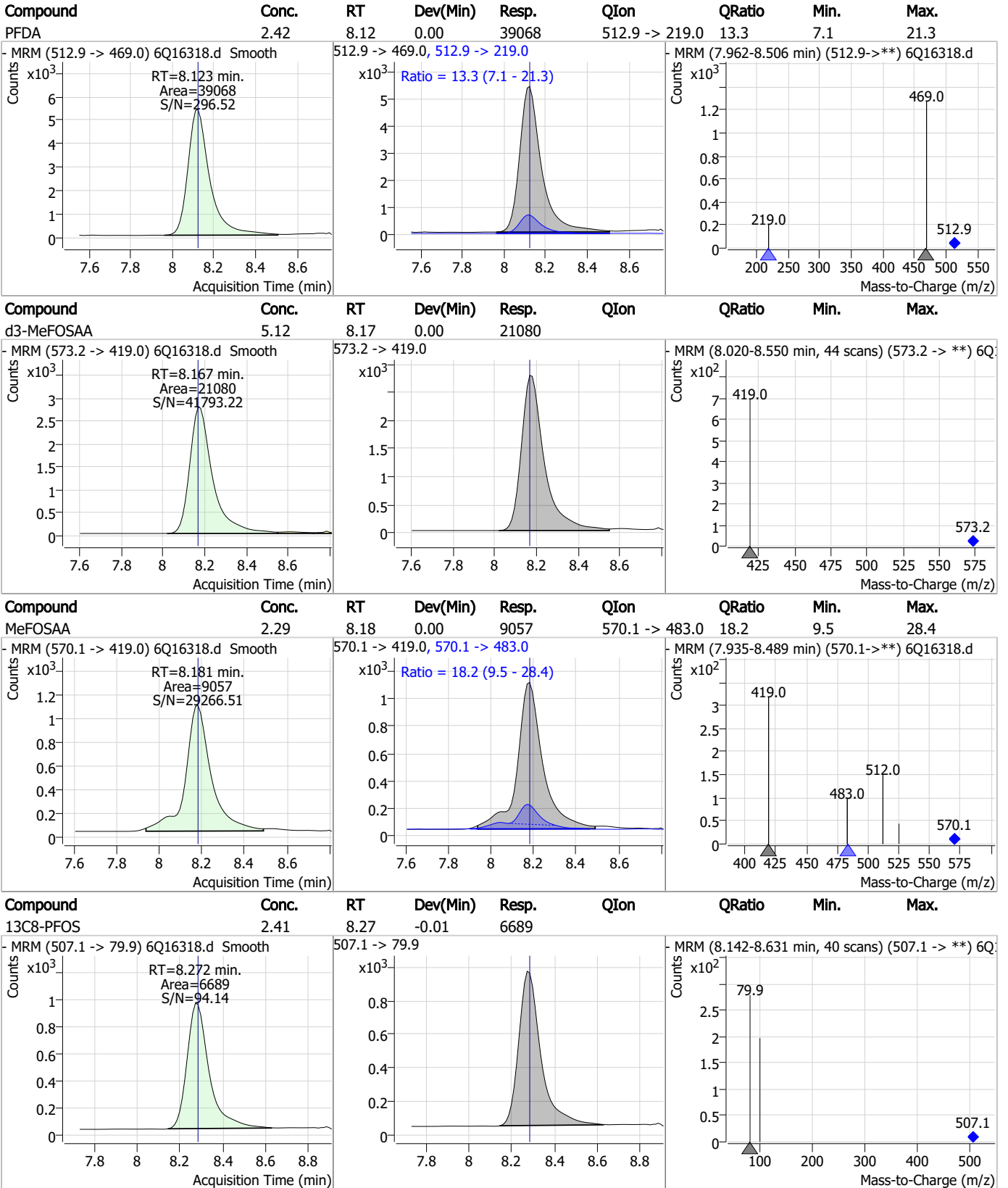


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

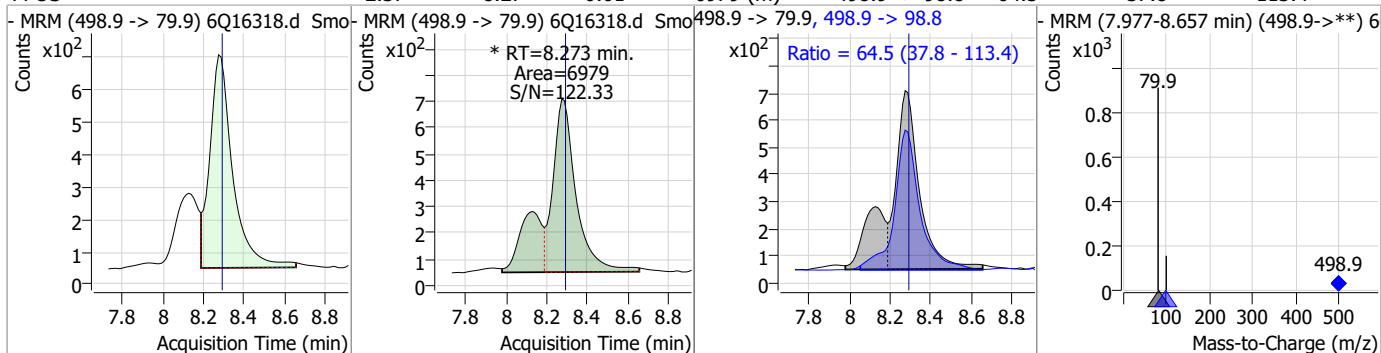


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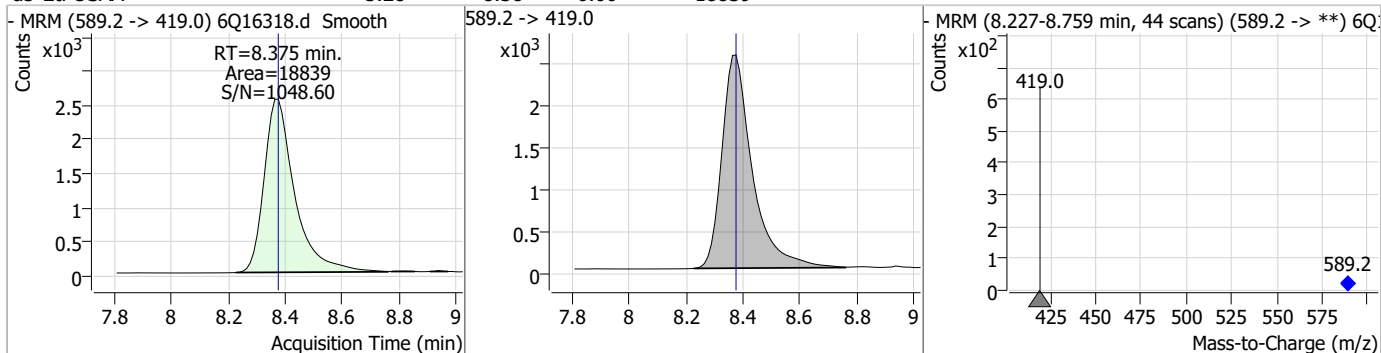


Perfluorinated Compounds by LC/MS/MS

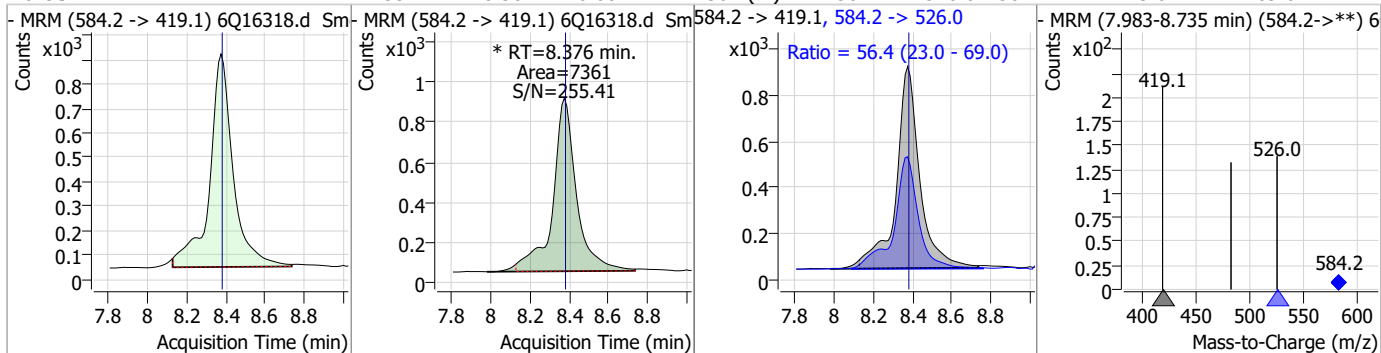
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.37	8.27	-0.01	6979 (m)	498.9 -> 98.8	64.5	37.8	113.4



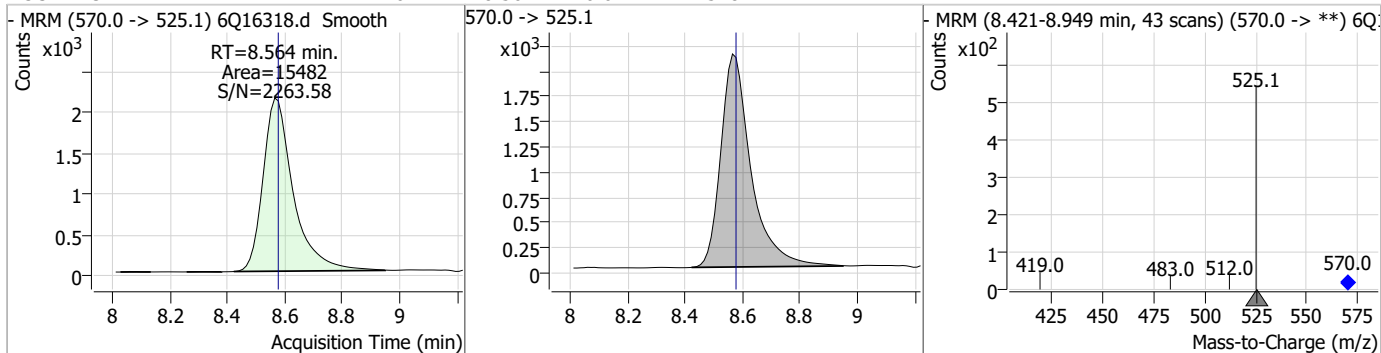
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.28	8.38	0.00	18839				



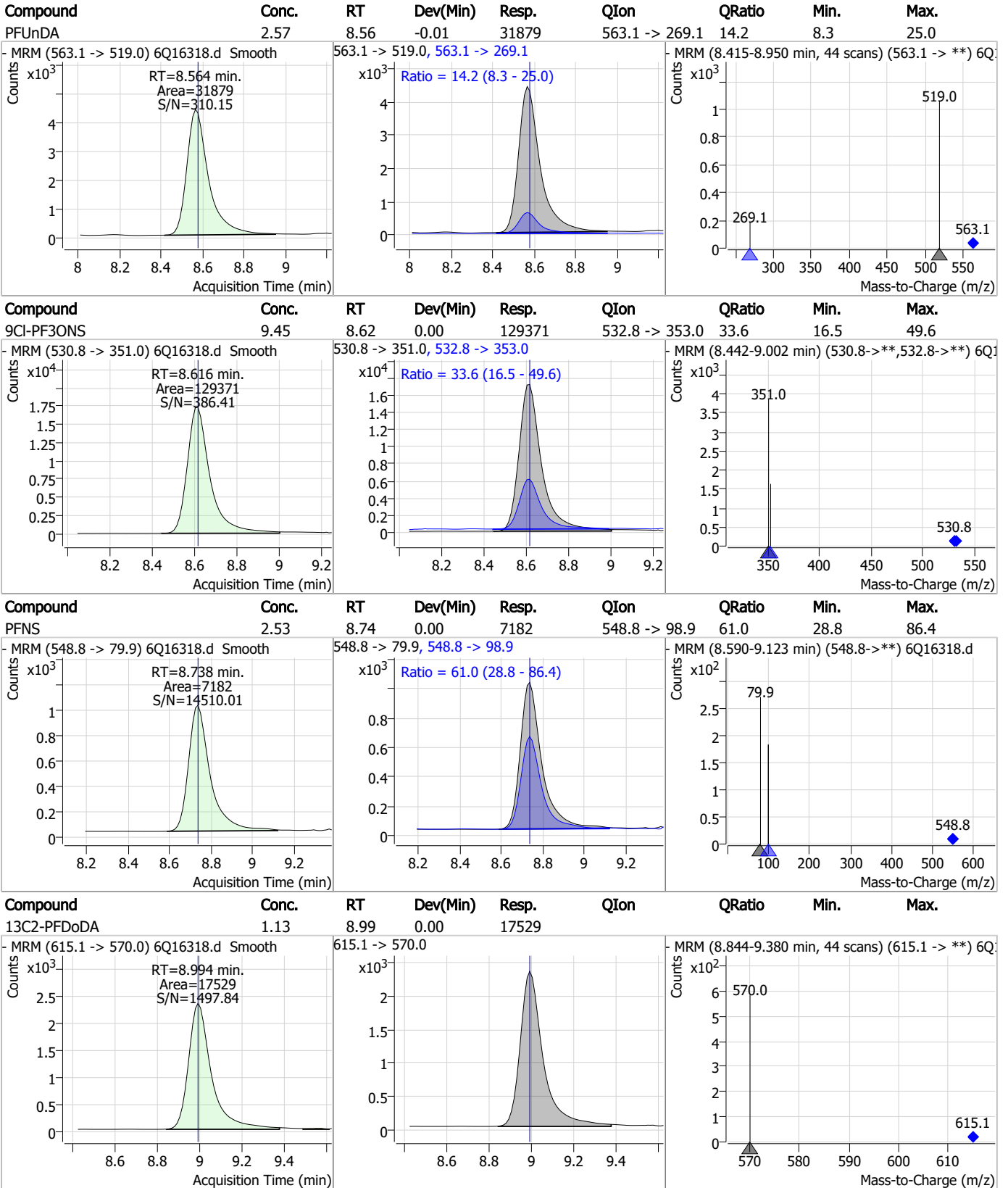
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.55	8.38	0.00	7361 (m)	584.2 -> 526.0	56.4	23.0	69.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.16	8.56	-0.01	15482				



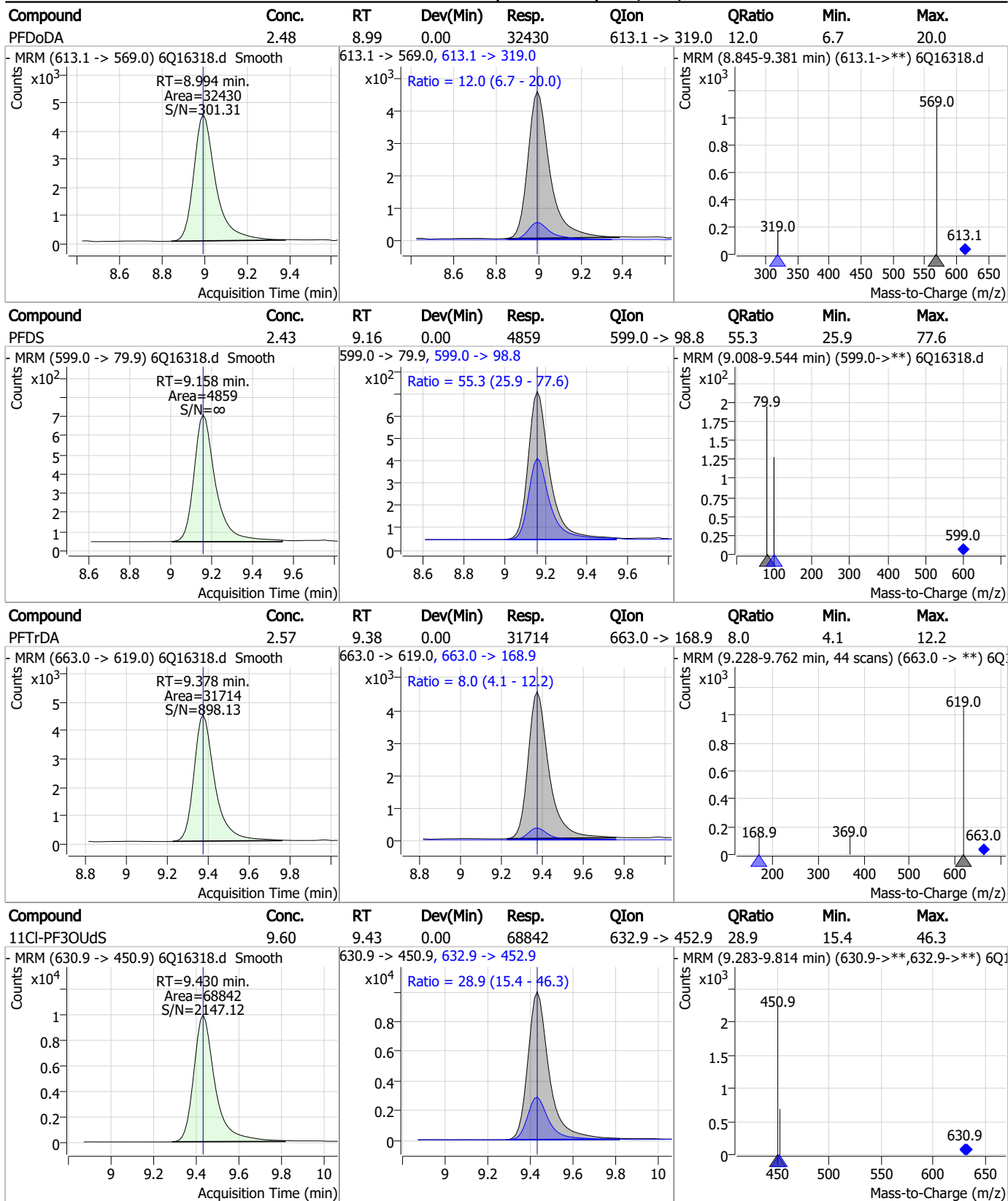
Perfluorinated Compounds by LC/MS/MS



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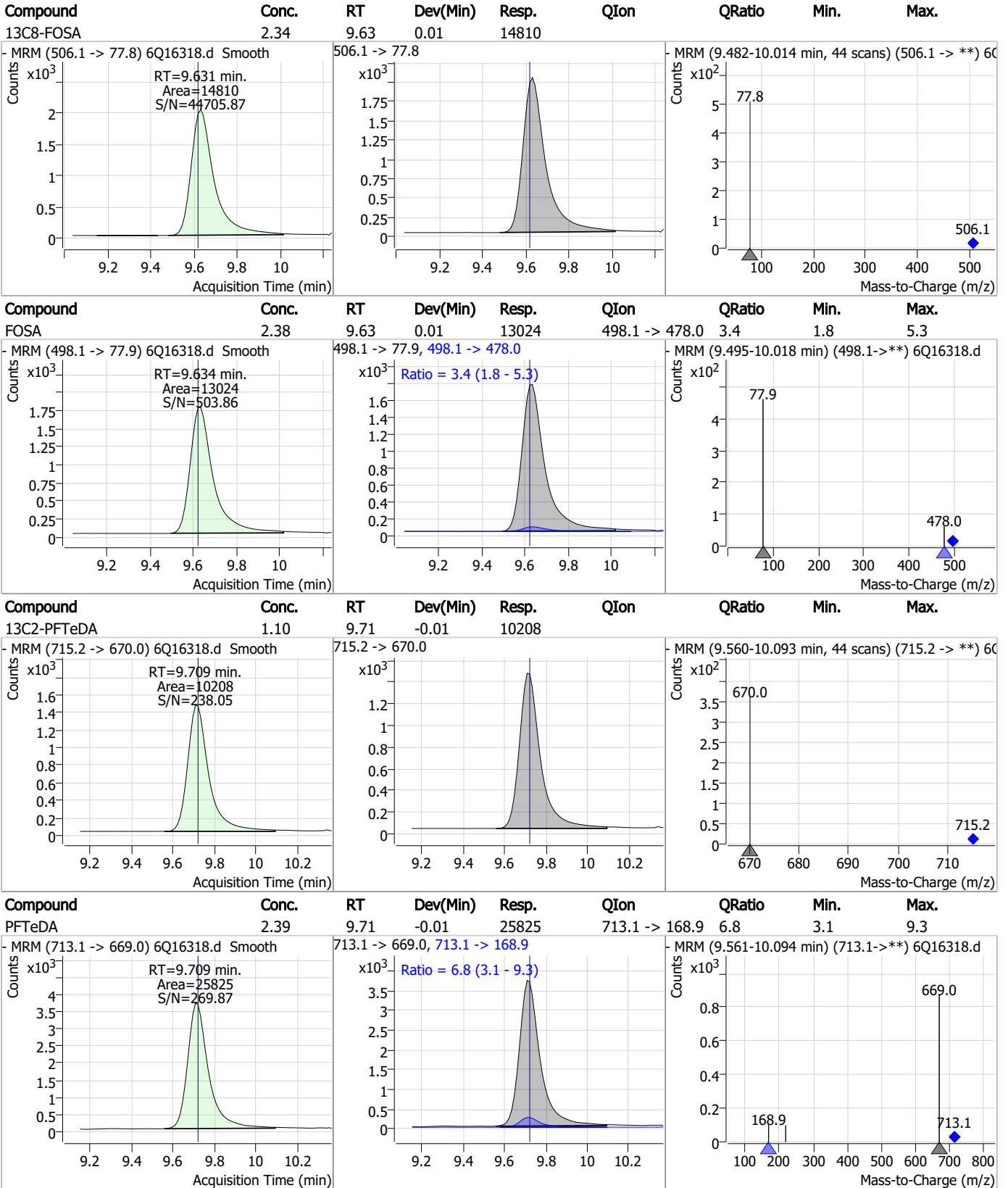
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

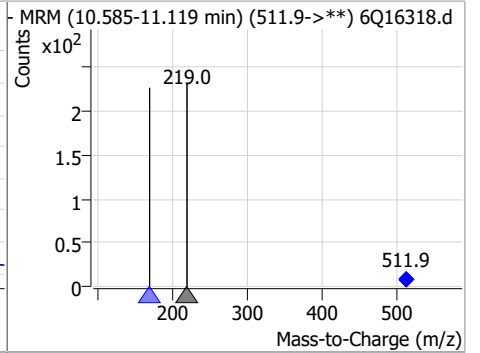
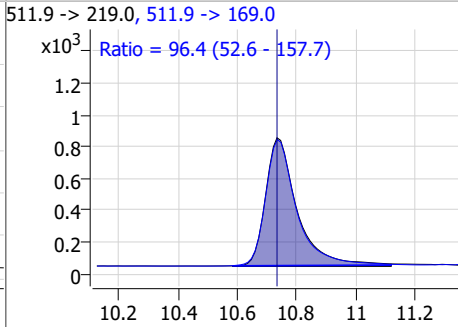
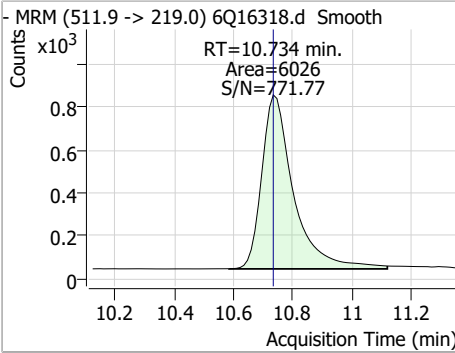
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.32	9.85	0.00	2695	699.1 -> 98.8	64.0	31.4	94.2
d7-MeFOSE	22.24	10.65	0.00	19263				
MeFOSE	22.57	10.67	0.00	16390				
d3-MeFOSA	2.35	10.73	0.00	5356				

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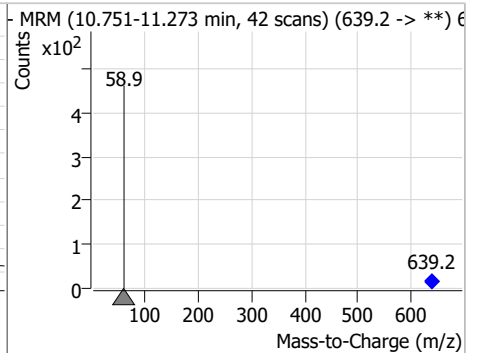
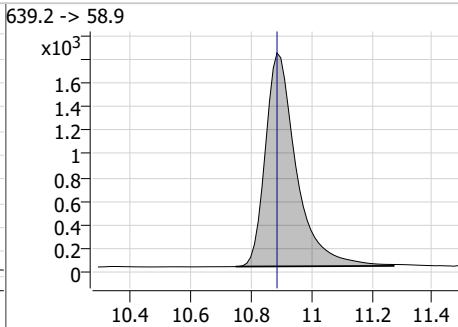
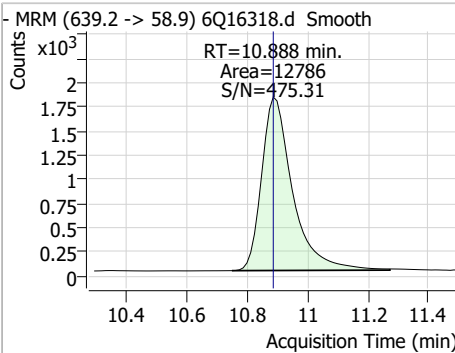


Perfluorinated Compounds by LC/MS/MS

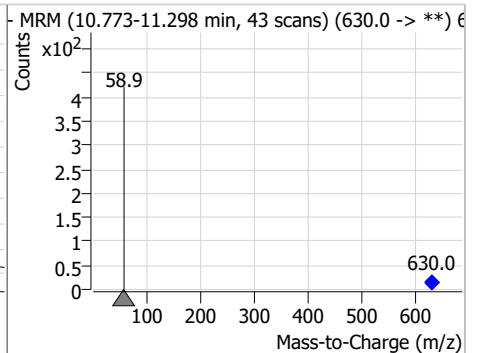
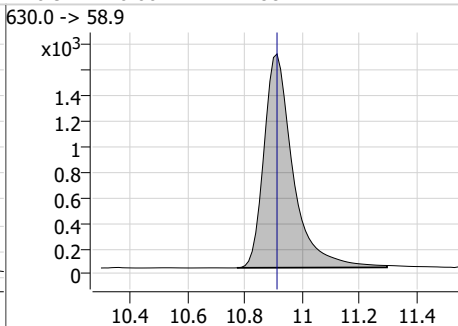
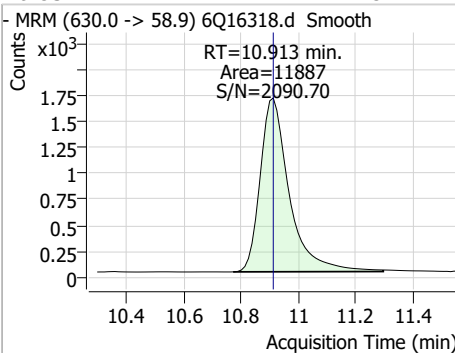
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.67	10.73	0.00	6026	511.9 -> 169.0	96.4	52.6	157.7



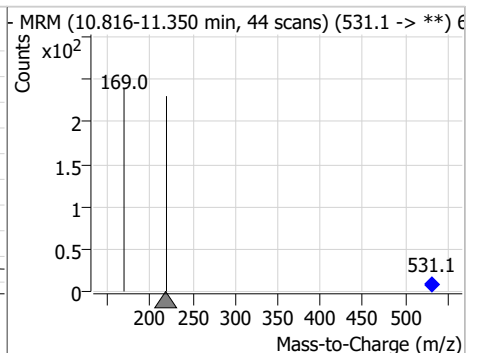
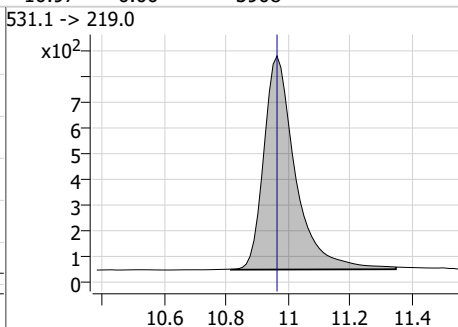
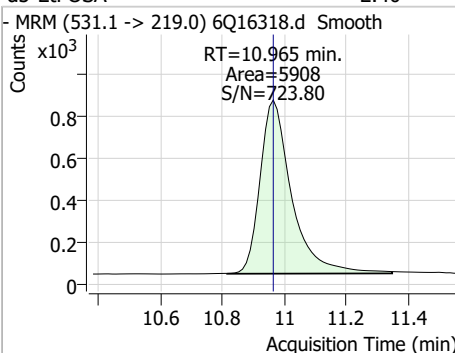
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.21	10.89	0.00	12786				



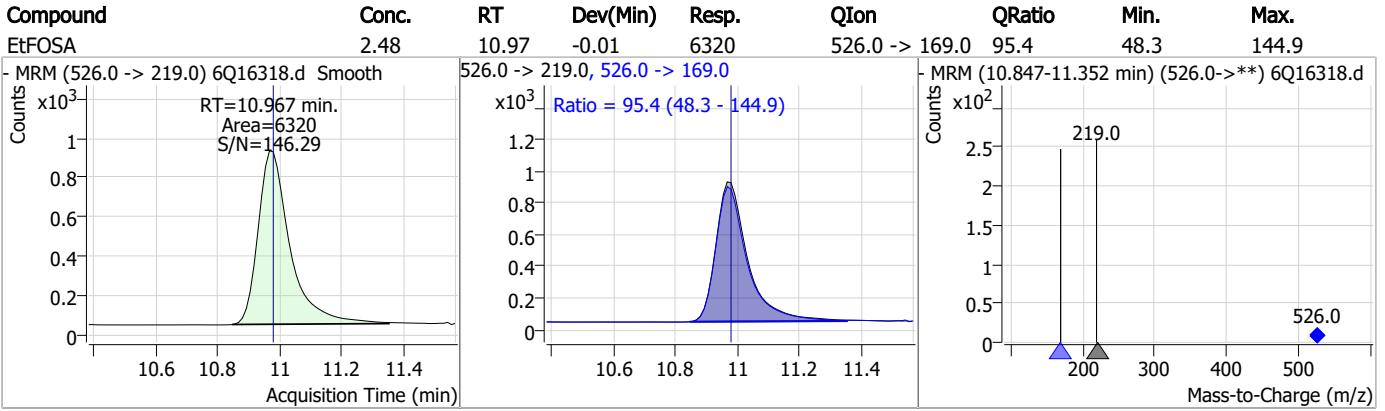
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	23.71	10.91	0.00	11887				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.40	10.97	0.00	5908				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q243-CC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16318.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 20:20 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

7.7.14.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16319.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 8:34:42 PM
 Sample Name : cc239-1.0LL
 Vial : P1-A2
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96171,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	73812	10.00 µg/L	0.000
M5-PFPeA	4.309	268.3 -> 223.0	33797	5.00 µg/L	-0.012
M5-PFHxA	5.516	318.0 -> 273.0	28910	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	28697	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	50318	2.50 µg/L	0.000
M9-PFNA	7.643	472.1 -> 427.0	15709	1.25 µg/L	0.000
M6-PFDA	8.110	519.1 -> 474.1	14039	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	14980	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	14956	1.25 µg/L	0.000
M2-PFTeDA	9.709	715.2 -> 670.0	9161	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	14582	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	12036	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	7390	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6676	2.50 µg/L	-0.012
M2-4:2FTS	5.179	329.1 -> 80.9	2099	5.00 µg/L	-0.012
M2-6:2FTS	6.886	429.1 -> 80.9	2825	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2168	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	21812	5.00 µg/L	0.000
M3-HFPO-DA	5.881	286.9 -> 168.9	11663	10.00 µg/L	-0.012
M5-EtFOSAA	8.363	589.2 -> 419.0	18526	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	17941	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	11761	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5862	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5089	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8447	2.50 µg/L	-0.012
13C3-PFBA	2.889	216.0 -> 172.0	31740	5.00 µg/L	-0.012
18O2-PFHxS	7.227	403.0 -> 83.9	5434	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	62172	2.50 µg/L	0.000
13C2-PFDA	8.123	515.1 -> 470.1	17517	1.25 µg/L	0.000
13C5-PFNA	7.631	468.0 -> 423.0	17947	1.25 µg/L	-0.012
13C2-PFHxA	5.516	315.1 -> 270.0	29367	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.179	329.1 -> 80.9	2099	5.74 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C2-6:2FTS	6.886	429.1 -> 80.9	2825	6.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.9%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2168	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFDoDA	8.994	615.1 -> 570.0	14956	1.08 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.4%		
13C2-PFTeDA	9.709	715.2 -> 670.0	9161	1.10 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.2%		
13C3-PFBS	5.446	302.1 -> 79.9	12036	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFHxS	7.228	402.1 -> 79.9	7390	2.38 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 = 95.0%		
13C4-PFBA	2.897	216.8 -> 171.9	73812	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C4-PFHpA	6.468	367.1 -> 322.0	28697	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C5-PFHxA	5.516	318.0 -> 273.0	28910	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C5-PFPeA	4.309	268.3 -> 223.0	33797	4.93 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C6-PFDA	8.110	519.1 -> 474.1	14039	1.36 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C7-PFUnDA	8.564	570.0 -> 525.1	14980	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C8-FOSA	9.631	506.1 -> 77.8	14582	2.32 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.8%		
13C8-PFOA	7.112	421.1 -> 376.0	50318	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C8-PFOS	8.272	507.1 -> 79.9	6676	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C9-PFNA	7.643	472.1 -> 427.0	15709	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.7%		
d3-MeFOSAA	8.167	573.2 -> 419.0	21812	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C3-HFPO-DA	5.881	286.9 -> 168.9	11663	9.11 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 91.1%		
d3-MeFOSA	10.733	515.0 -> 219.0	5089	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.9%		
d5-EtFOSAA	8.363	589.2 -> 419.0	18526	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	17941	20.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 83.5%		
d9-EtFOSE	10.888	639.2 -> 58.9	11761	20.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 82.3%		
d5-EtFOSA	10.965	531.1 -> 219.0	5862	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.0%		
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	3445	0.84 µg/L	99
		327.1 -> 80.9	793		
6:2FTS	6.886	427.1 -> 407.0	2795	0.74 µg/L	100
		427.1 -> 80.9	603		
8:2FTS	7.911	527.1 -> 507.0	1427	0.93 µg/L	m 96
		527.1 -> 80.8	383		
EtFOSAA	8.376	584.2 -> 419.1	539	0.19 µg/L	#m 63
		584.2 -> 526.0	381		
FOSA	9.634	498.1 -> 77.9	1223	0.23 µg/L	96
		498.1 -> 478.0	60		
MeFOSAA	8.168	570.1 -> 419.0	754	0.18 µg/L	92
		570.1 -> 483.0	170		
PFBA	2.893	212.8 -> 168.9	1424	0.76 µg/L	100
PFBS	5.447	298.7 -> 79.9	783	0.17 µg/L	93
		298.7 -> 98.8	397		
PFDA	8.111	512.9 -> 469.0	3238	0.20 µg/L	95
		512.9 -> 219.0	522		
PFDODA	8.994	613.1 -> 569.0	2453	0.22 µg/L	93
		613.1 -> 319.0	259		
PFDS	9.158	599.0 -> 79.9	359	0.18 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	170			
PFHpA	6.469	363.1 -> 319.0	3260	0.20	µg/L	97
		363.1 -> 169.0	492			
PFHpS	7.794	449.0 -> 79.9	555	0.19	µg/L	86
		449.0 -> 98.9	274			
PFHxA	5.519	313.0 -> 269.0	2289	0.21	µg/L	# 90
		313.0 -> 118.9	164			
PFHxS	7.228	398.7 -> 79.9	685	0.21	µg/L	m 99
		398.7 -> 98.9	394			
PFNA	7.643	463.0 -> 419.0	2277	0.22	µg/L	92
		463.0 -> 219.0	387			
PFNS	8.738	548.8 -> 79.9	646	0.23	µg/L	98
		548.8 -> 98.9	362			
PFOA	7.113	413.0 -> 369.0	4626	0.20	µg/L	98
		413.0 -> 169.0	664			
PFOS	8.273	498.9 -> 79.9	506	0.17	µg/L	95
		498.9 -> 98.8	360			
PFPeA	4.311	263.0 -> 219.0	3026	0.42	µg/L	100
PFPeS	6.520	349.1 -> 79.9	753	0.19	µg/L	94
		349.1 -> 98.9	423			
PFTeDA	9.722	713.1 -> 669.0	2185	0.23	µg/L	91
		713.1 -> 168.9	200			
PFTrDA	9.378	663.0 -> 619.0	2601	0.25	µg/L	97
		663.0 -> 168.9	242			
PFUnDA	8.564	563.1 -> 519.0	2487	0.21	µg/L	97
		563.1 -> 269.1	381			
11CI-PF3OUdS	9.430	630.9 -> 450.9	4950	0.79	µg/L	95
		632.9 -> 452.9	1384			
9CI-PF3ONS	8.603	530.8 -> 351.0	9631	0.80	µg/L	86
		532.8 -> 353.0	3934			
ADONA	6.719	376.9 -> 250.9	20390	0.86	µg/L	98
		376.9 -> 84.8	4526			
HFPO-DA	5.882	284.9 -> 168.9	843	0.80	µg/L	88
		284.9 -> 184.9	144			
3:3FTCA	3.777	241.0 -> 177.0	342	0.86	µg/L	99
		241.0 -> 117.0	54			
5:3FTCA	6.185	341.0 -> 237.1	12789	5.42	µg/L	94
		341.0 -> 217.0	11800			
7:3FTCA	7.608	441.0 -> 316.9	7919	6.63	µg/L	86
		441.0 -> 336.9	13796			
EtFOSA	10.979	526.0 -> 219.0	539	0.21	µg/L	98
		526.0 -> 169.0	534			
EtFOSE	10.901	630.0 -> 58.9	995	2.16	µg/L	100
MeFOSA	10.734	511.9 -> 219.0	485	0.23	µg/L	94
		511.9 -> 169.0	483			
MeFOSE	10.666	616.1 -> 58.9	1556	2.30	µg/L	100
PFDoDS	9.848	699.1 -> 79.9	270	0.23	µg/L	82
		699.1 -> 98.8	132			
NFDHA	5.385	295.0 -> 201.0	284	0.41	µg/L	88
		295.0 -> 84.9	102			
PFMBA	4.725	279.0 -> 85.1	890	0.38	µg/L	100
PFMPA	3.463	229.0 -> 84.9	841	0.39	µg/L	100
PFEESA	5.987	314.8 -> 134.9	6048	0.40	µg/L	99
		314.8 -> 82.9	124			

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

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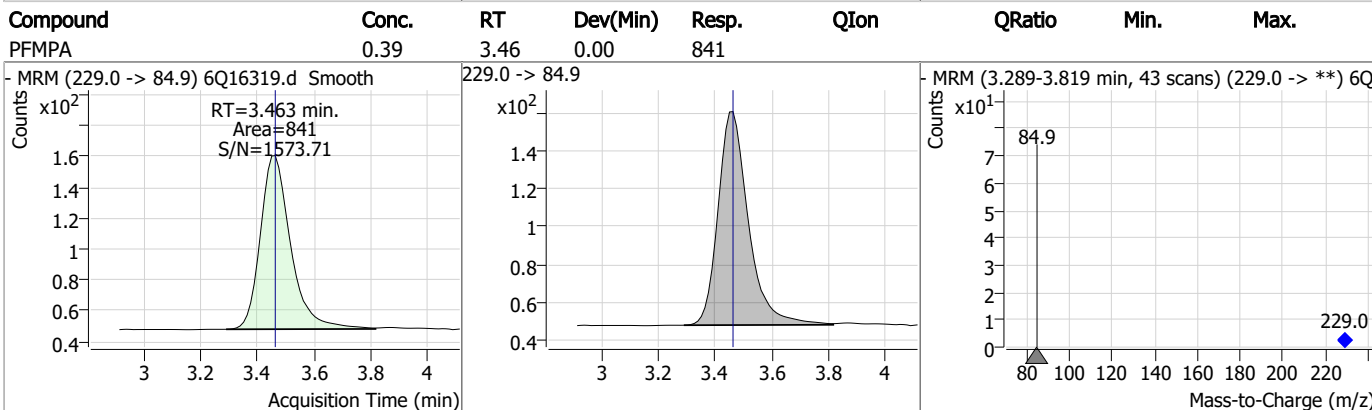
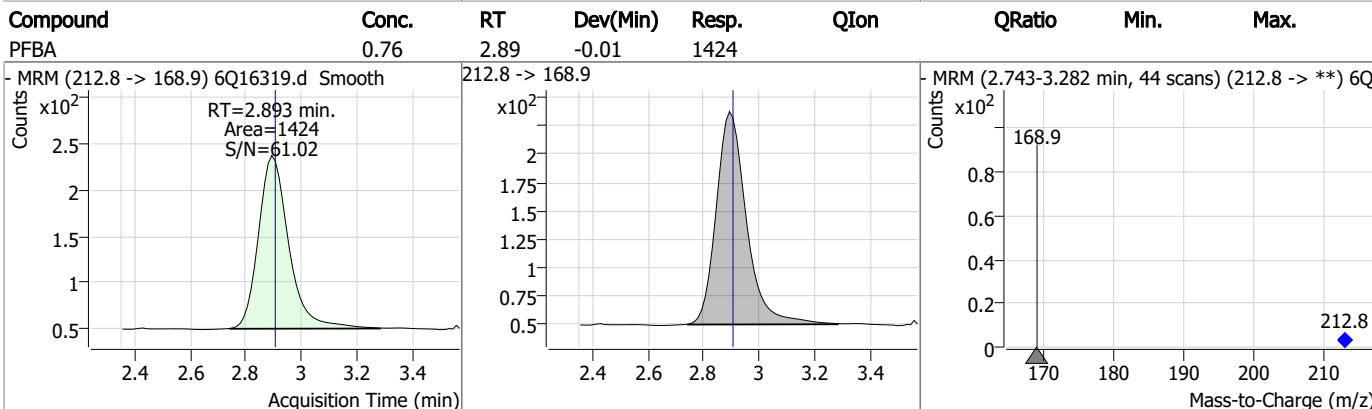
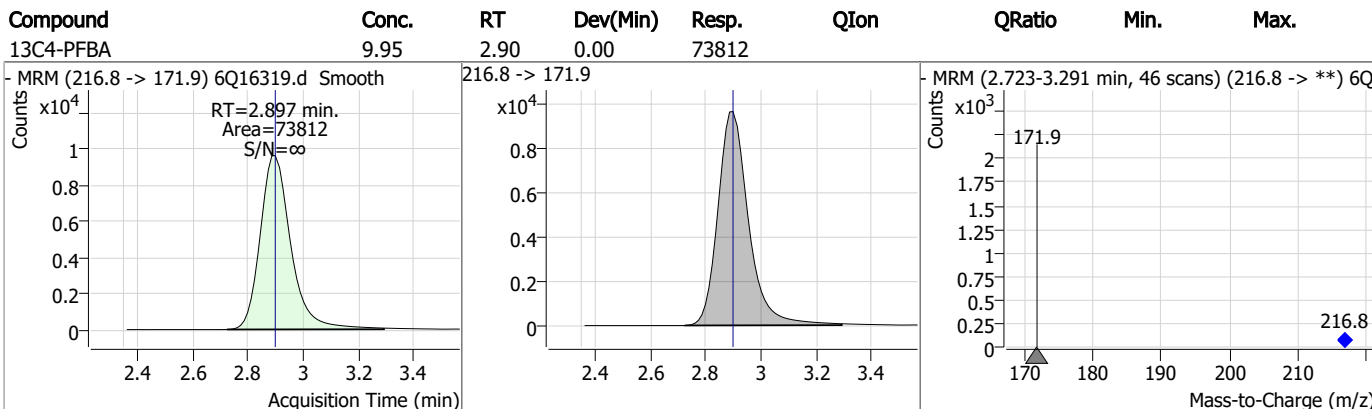
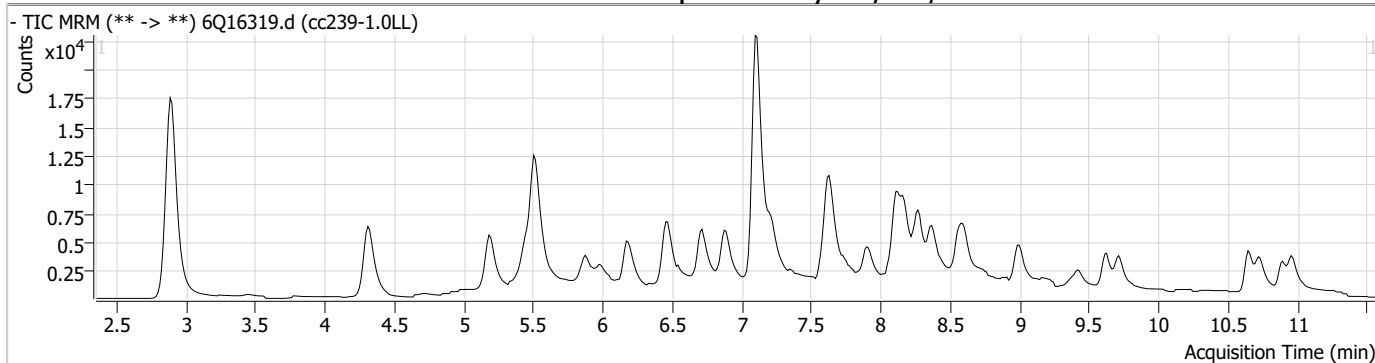
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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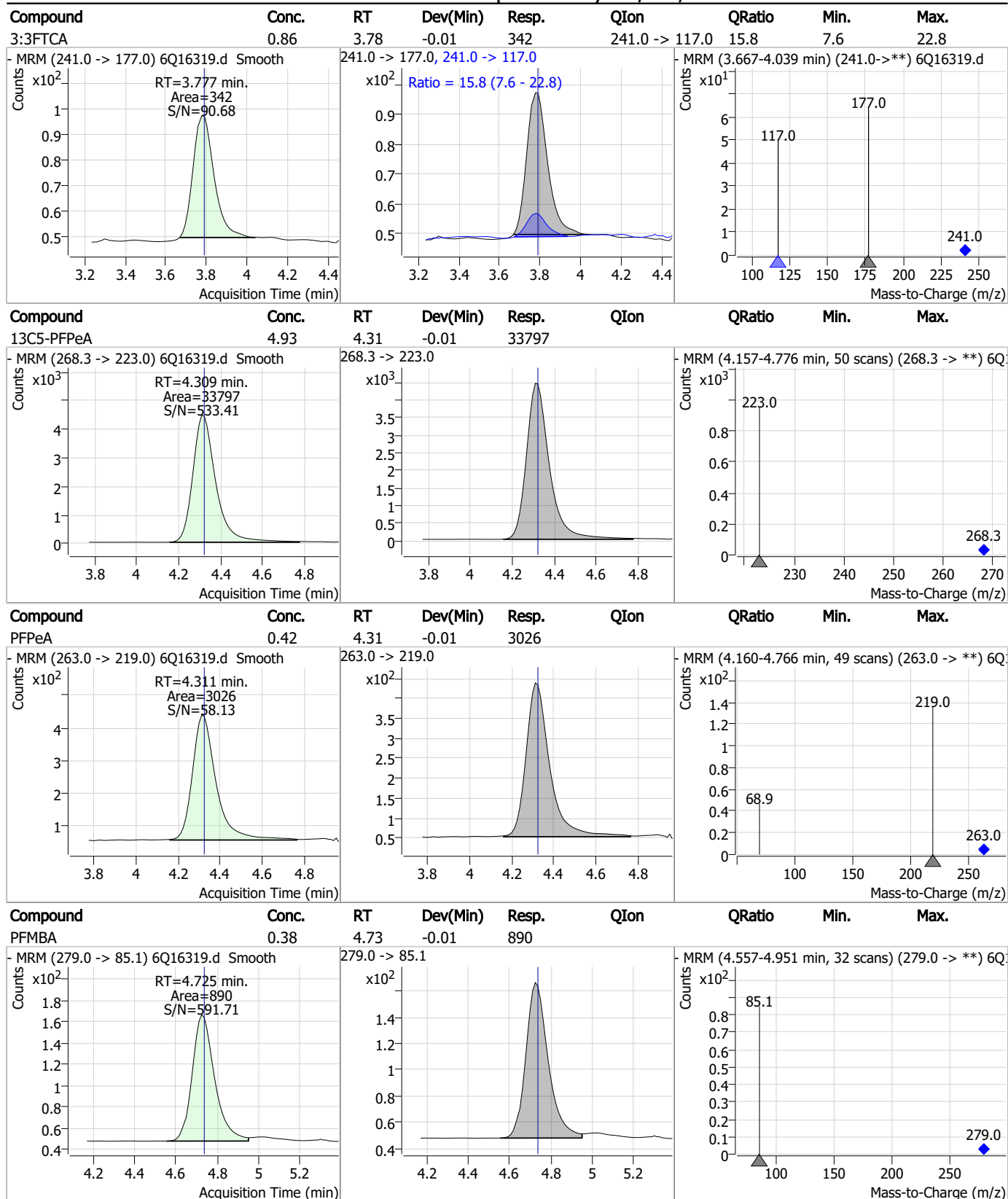
7.7.15

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Perfluorinated Compounds by LC/MS/MS

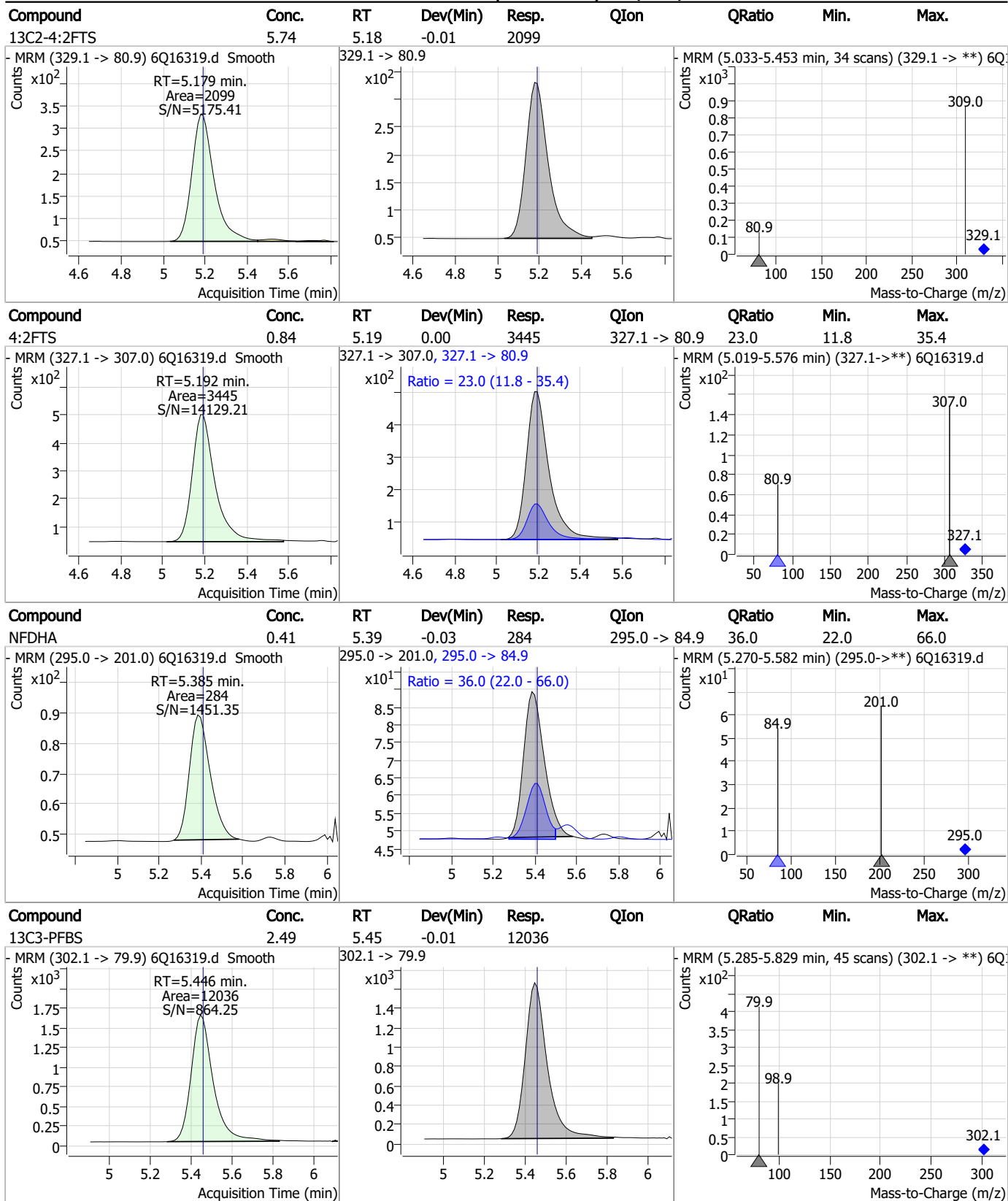


Perfluorinated Compounds by LC/MS/MS



7.7.15

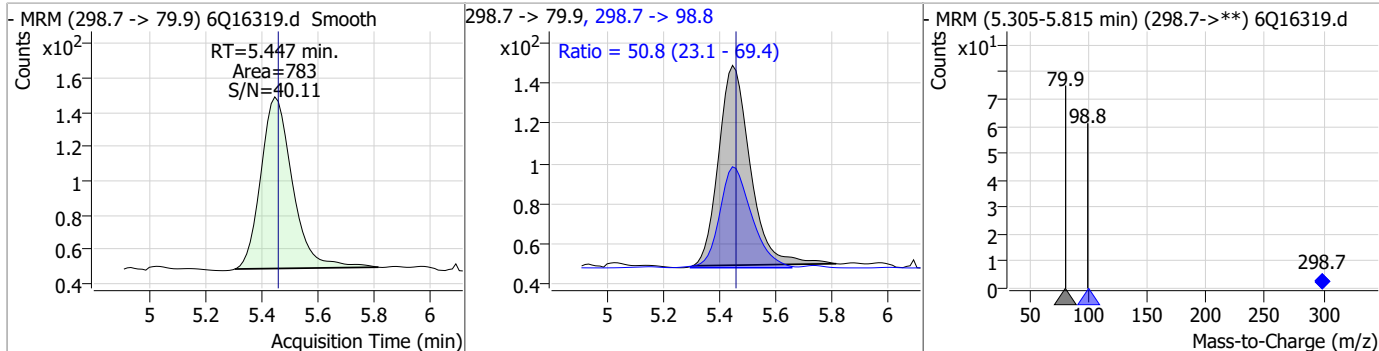
Perfluorinated Compounds by LC/MS/MS



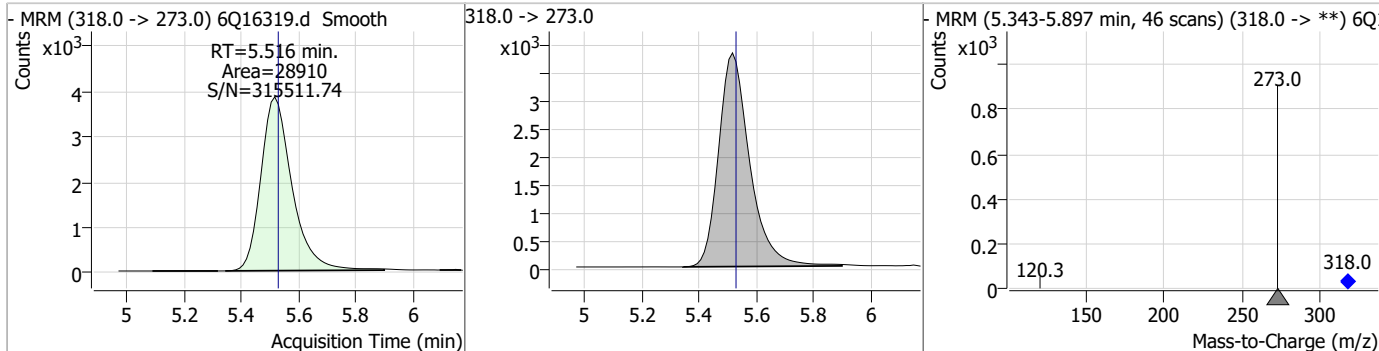
7.7.15 7

Perfluorinated Compounds by LC/MS/MS

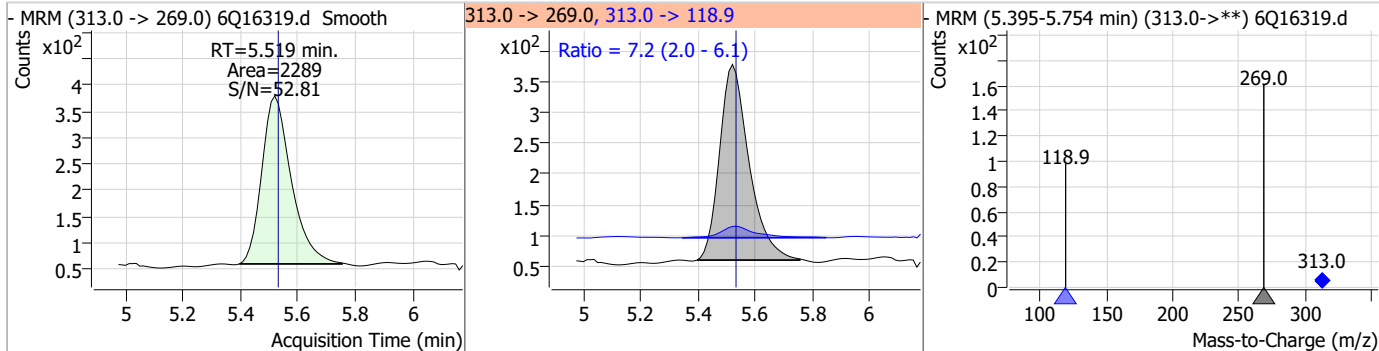
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.45	-0.01	783	298.7 -> 98.8	50.8	23.1	69.4



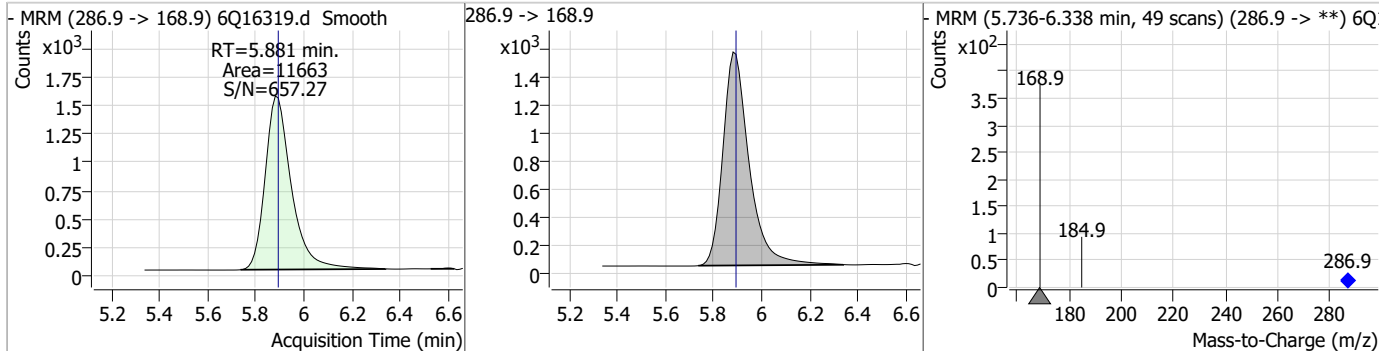
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.38	5.52	-0.01	28910				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.52	-0.01	2289	313.0 -> 118.9	7.2	2.0	6.1

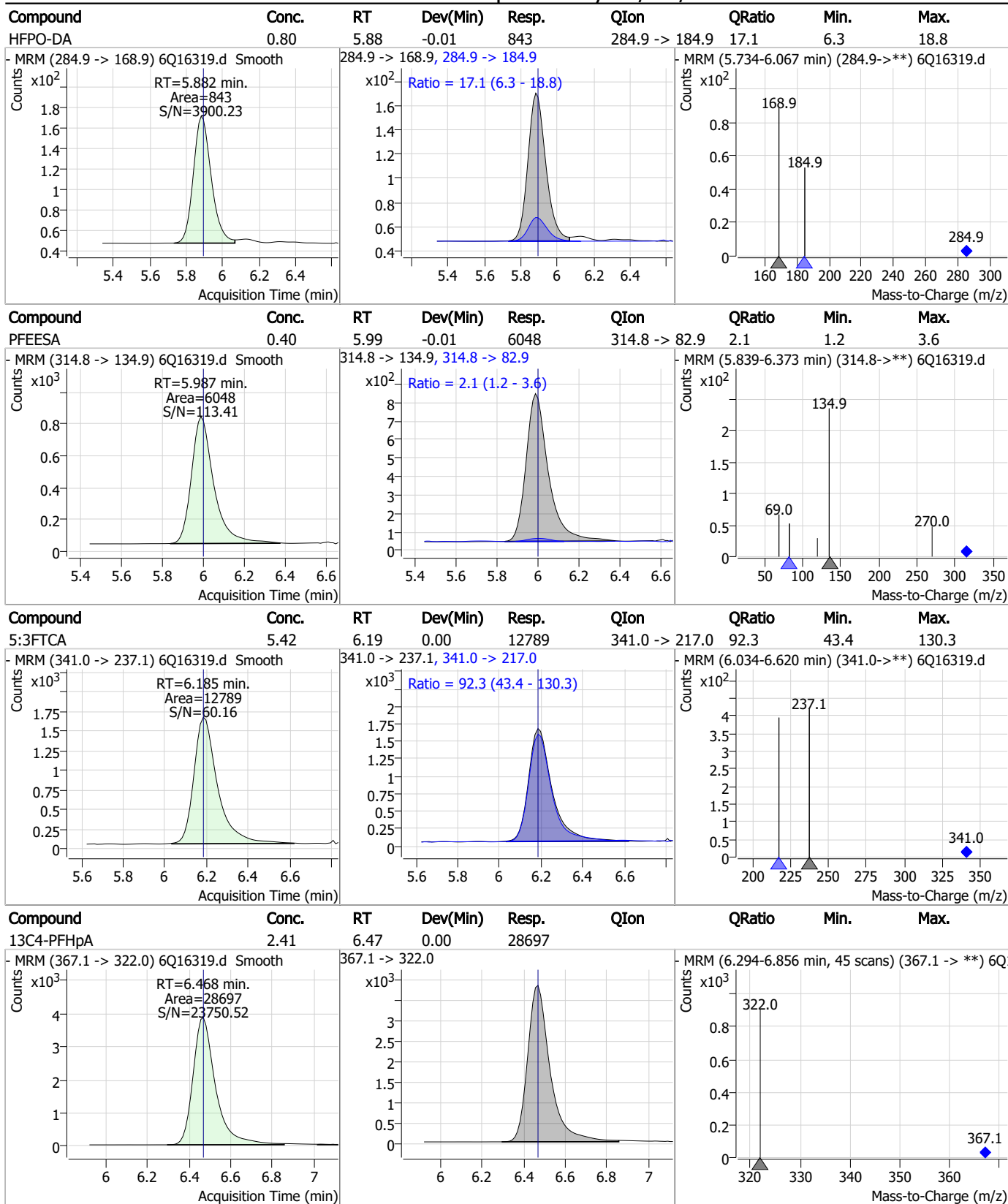


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.11	5.88	-0.01	11663				



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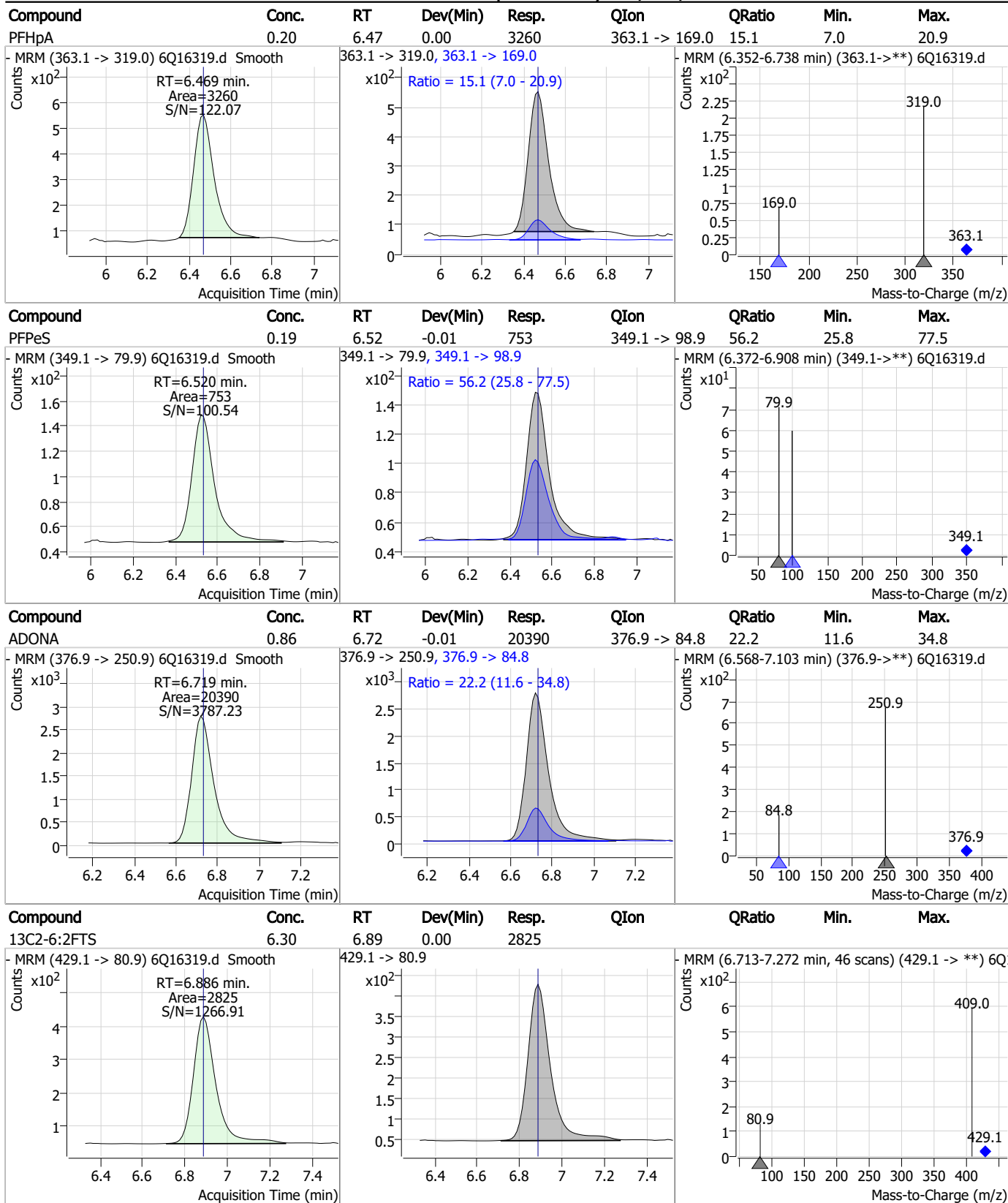
Perfluorinated Compounds by LC/MS/MS



7.7.15

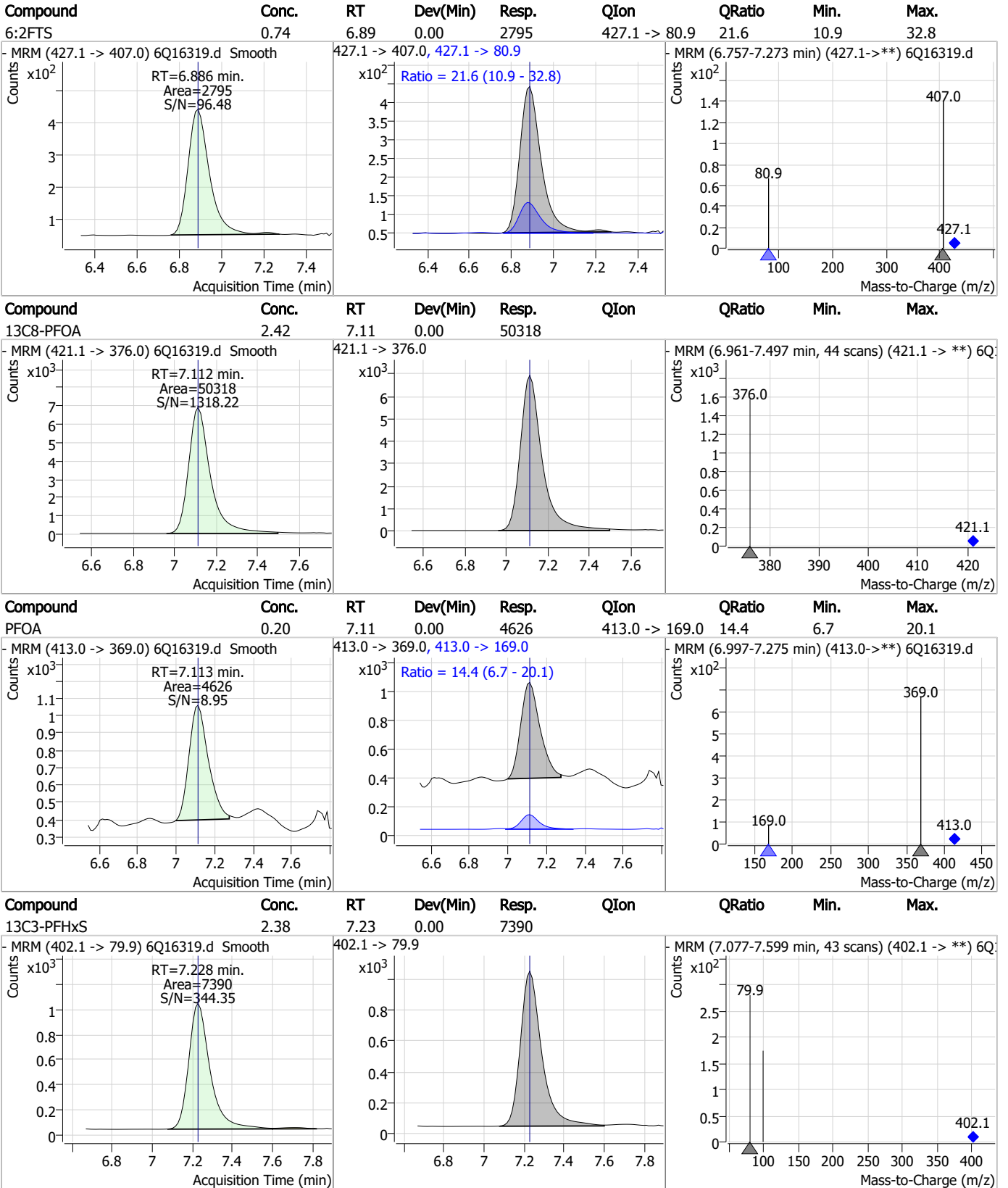
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

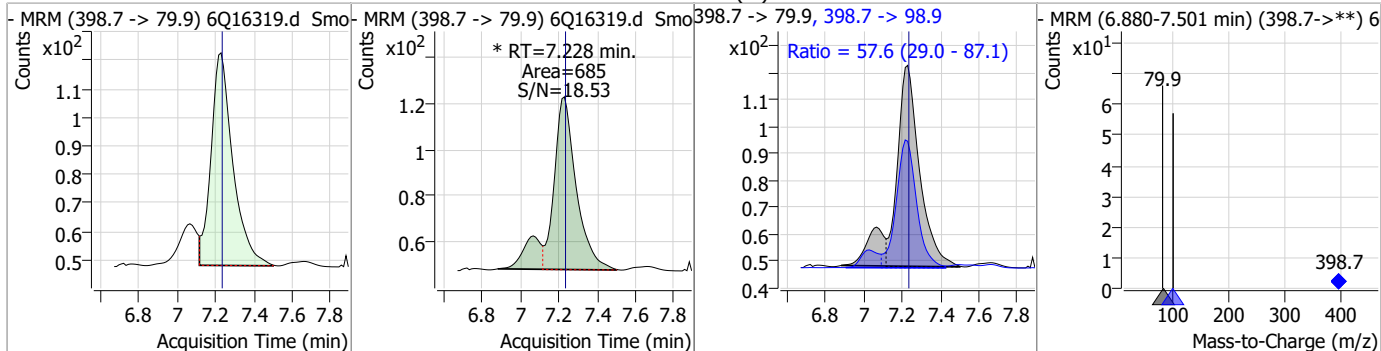


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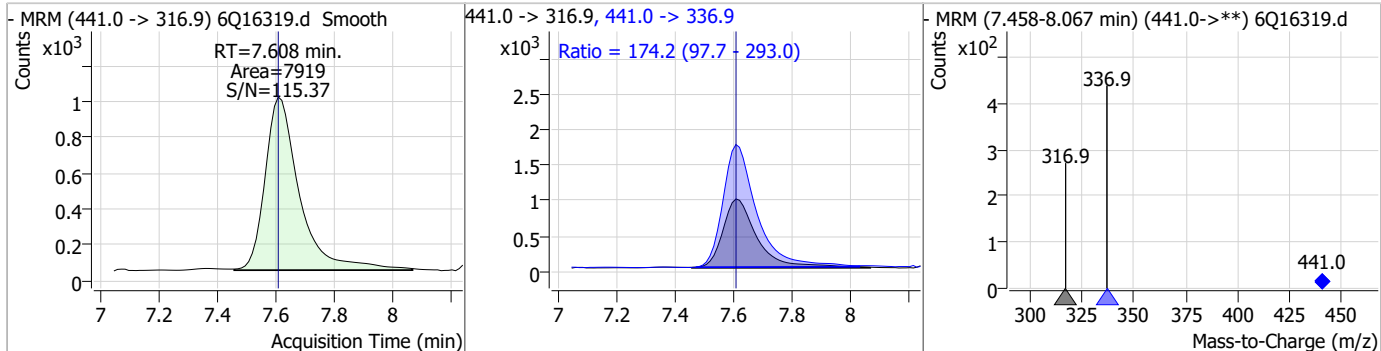
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Perfluorinated Compounds by LC/MS/MS

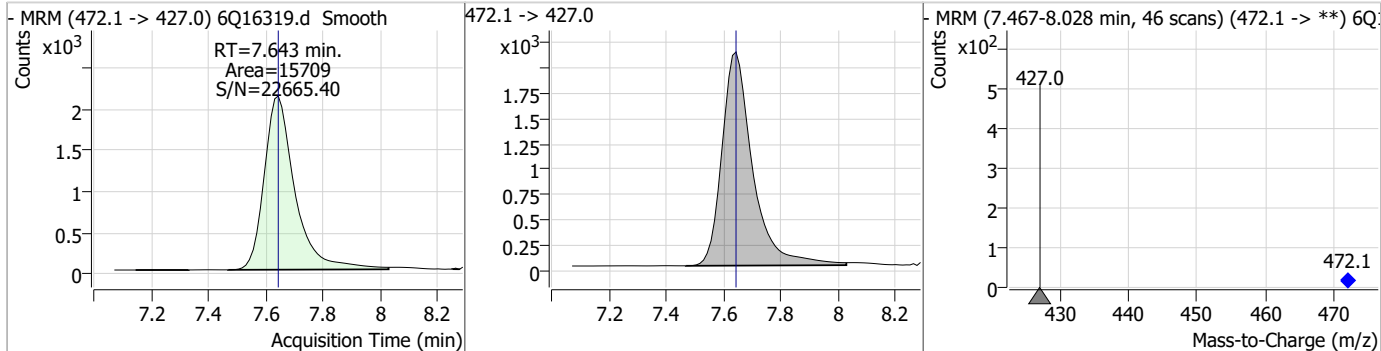
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.21	7.23	0.00	685 (m)	398.7 -> 98.9	57.6	29.0	87.1



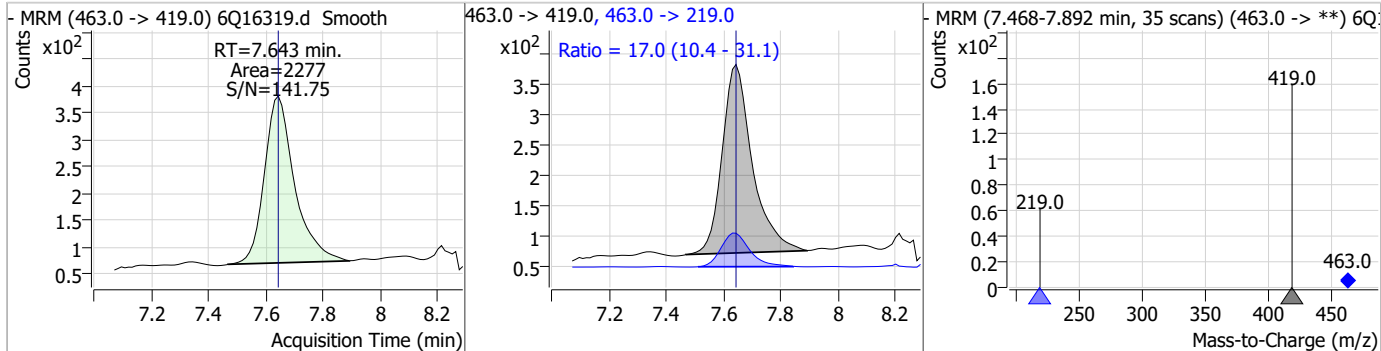
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	6.63	7.61	0.00	7919	441.0 -> 336.9	174.2	97.7	293.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.64	0.00	15709	472.1 -> 427.0	46	427.1	472.1

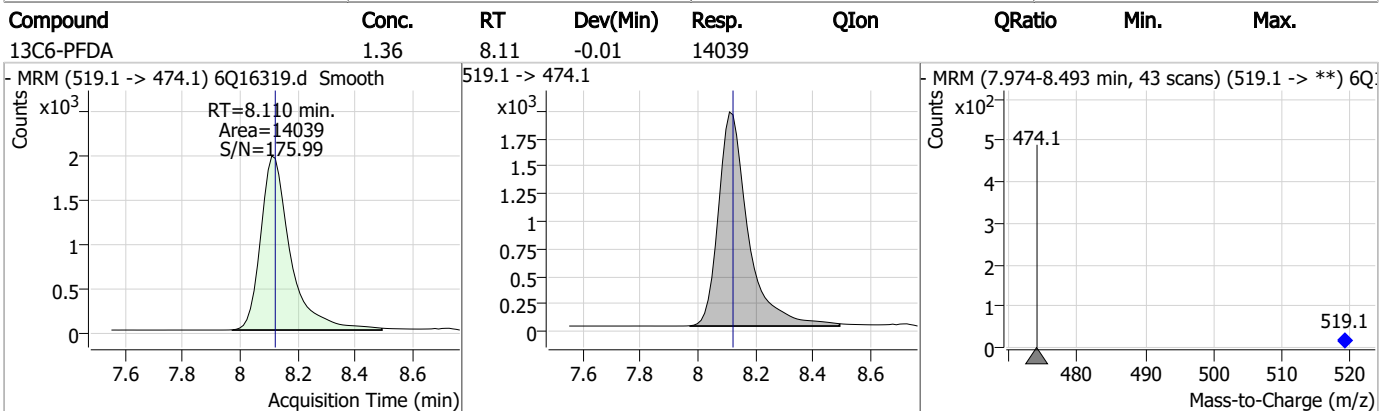
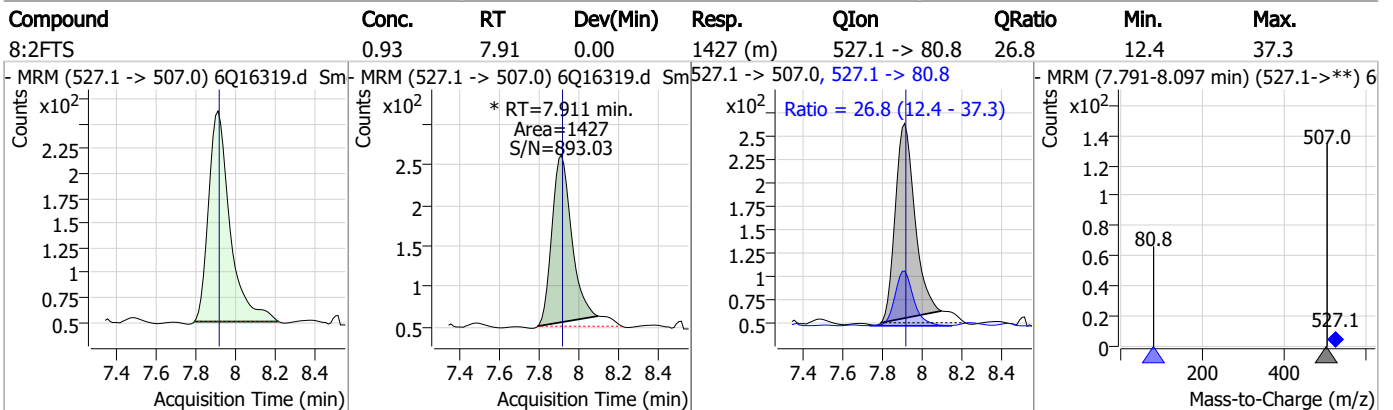
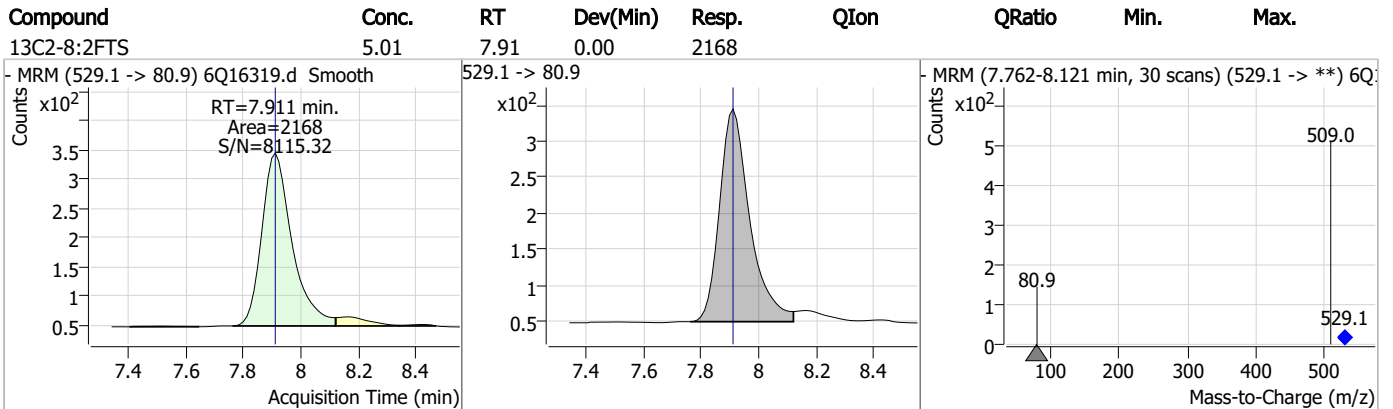
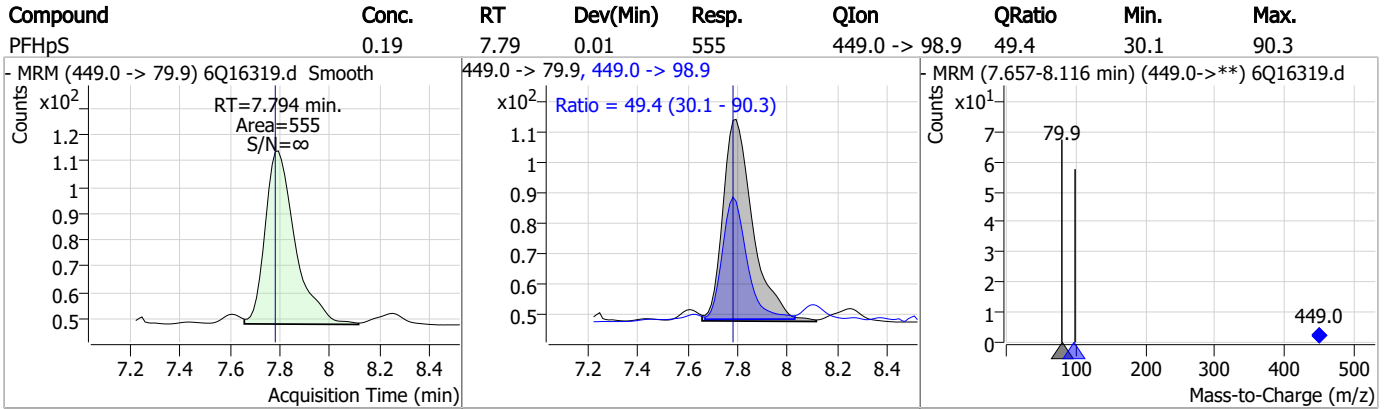


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.22	7.64	0.00	2277	463.0 -> 219.0	17.0	10.4	31.1

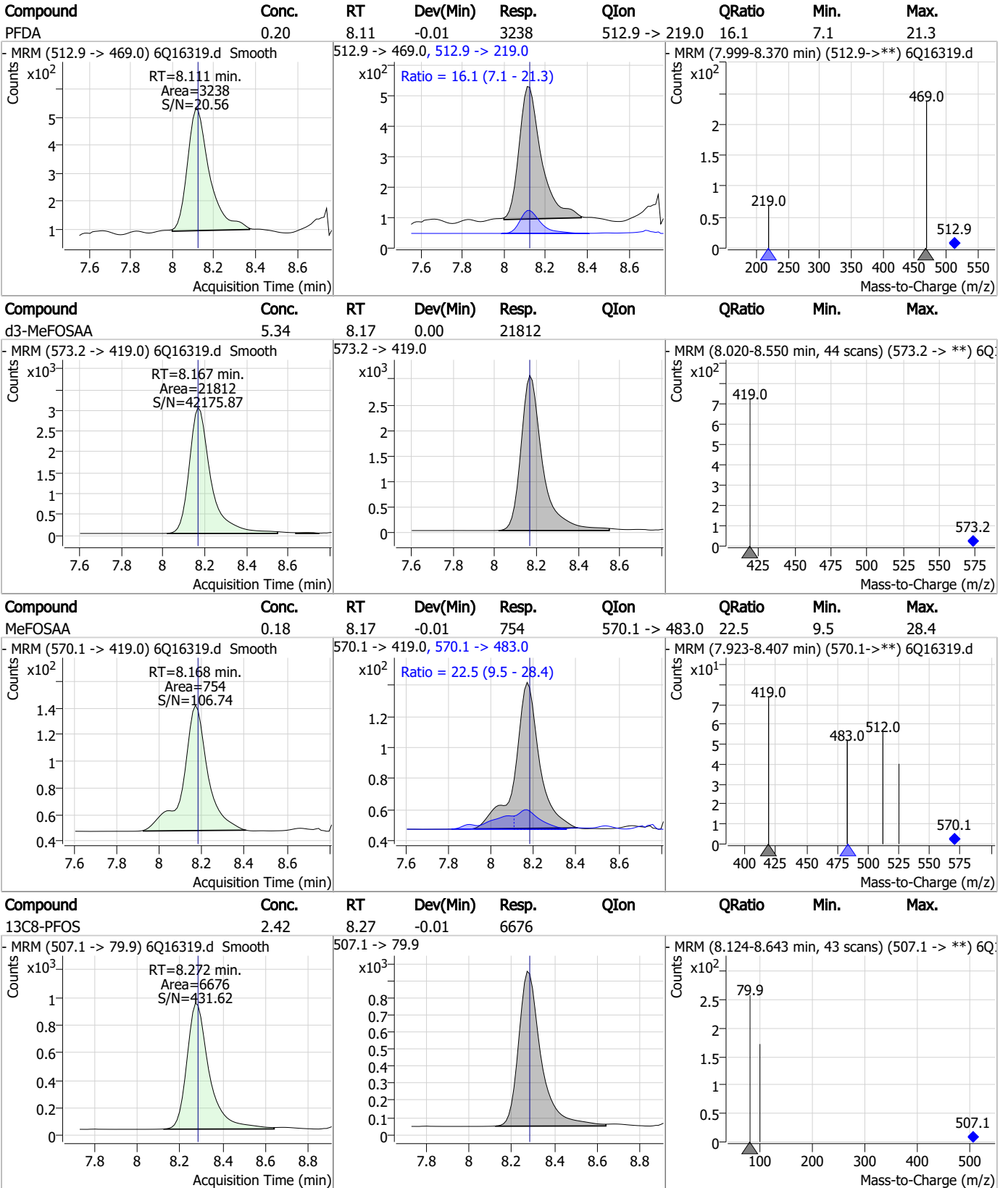


7.7.15
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

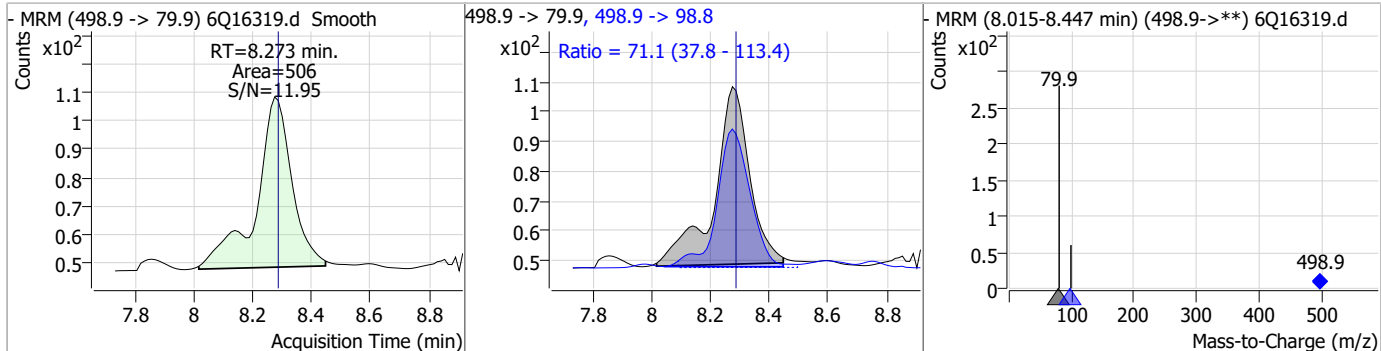


7.7.15 7

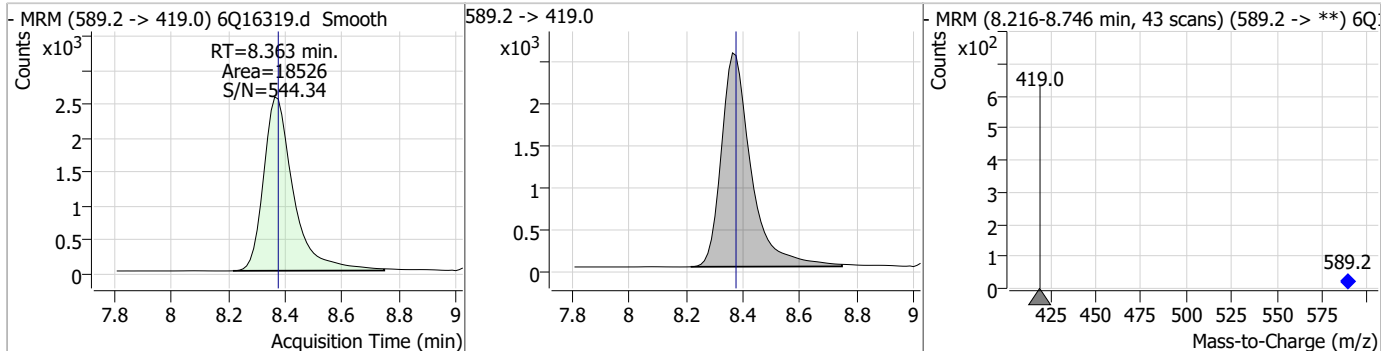


Perfluorinated Compounds by LC/MS/MS

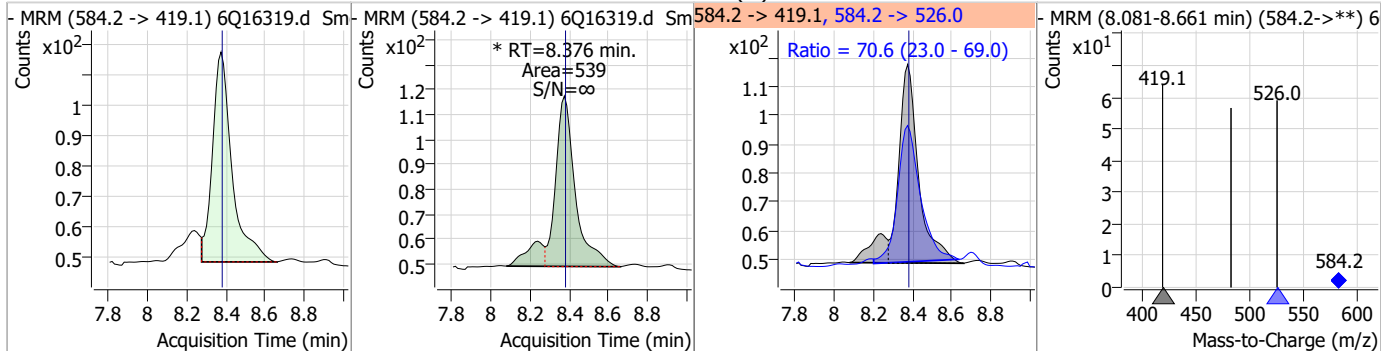
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.27	-0.01	506	498.9 -> 98.8	71.1	37.8	113.4



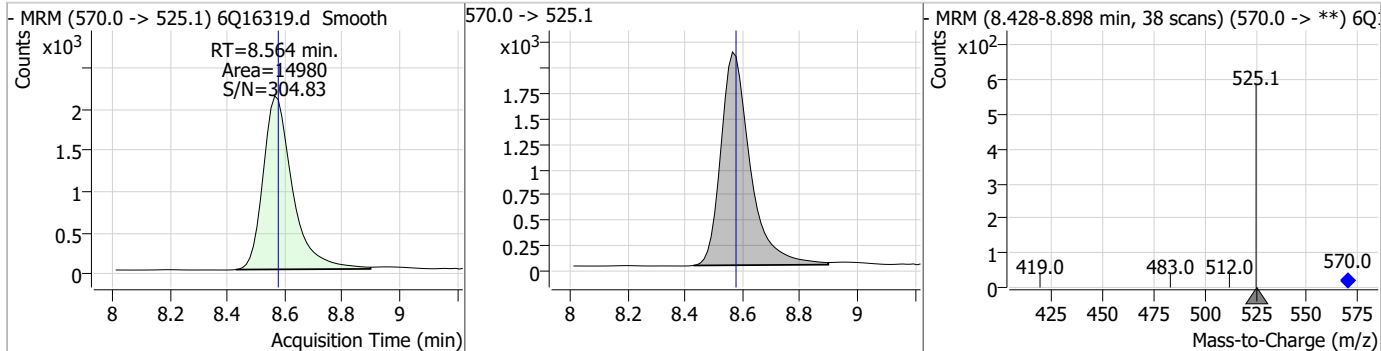
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.24	8.36	-0.01	18526				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.19	8.38	0.00	539 (m)	584.2 -> 526.0	70.6	23.0	69.0



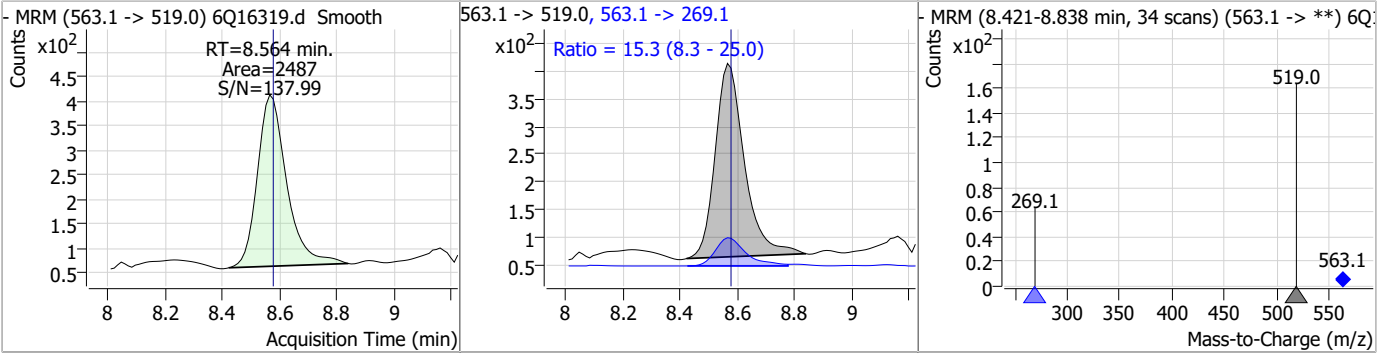
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.56	-0.01	14980				



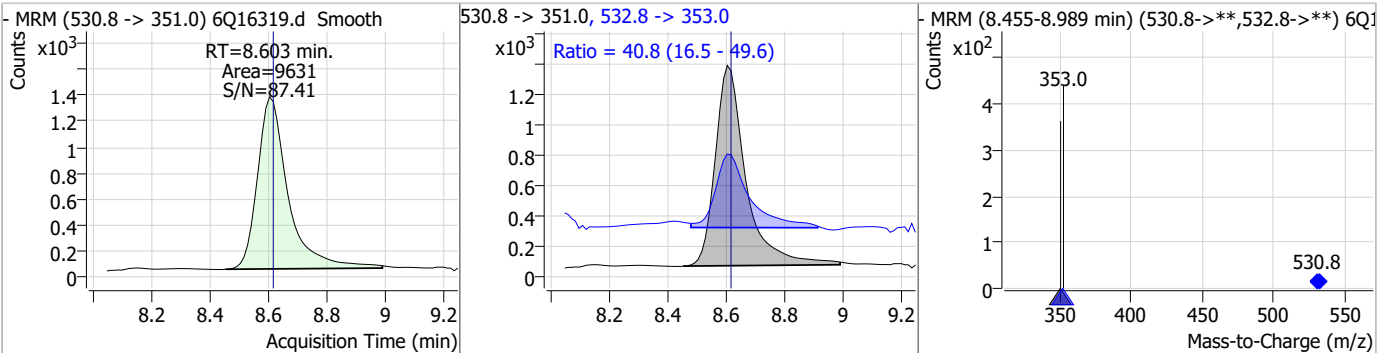
7.7.15
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Perfluorinated Compounds by LC/MS/MS

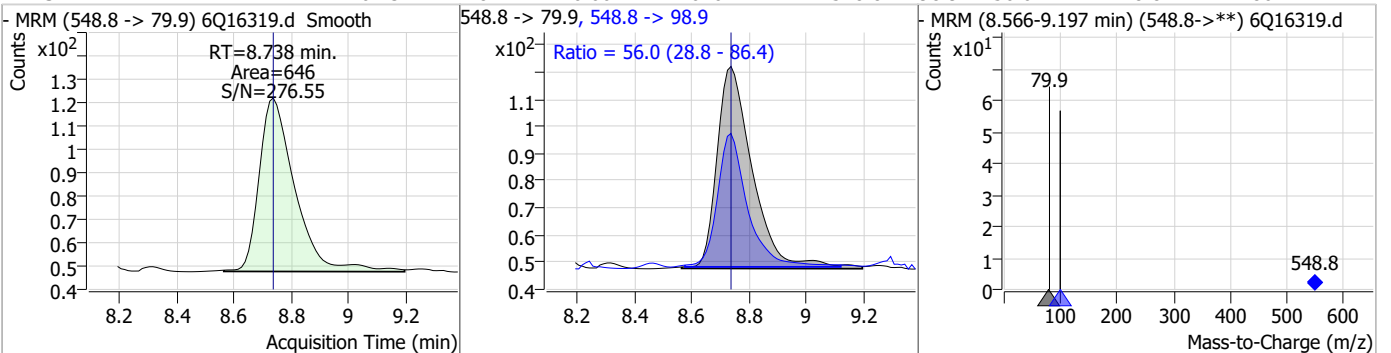
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.21	8.56	-0.01	2487	563.1 -> 269.1	15.3	8.3	25.0



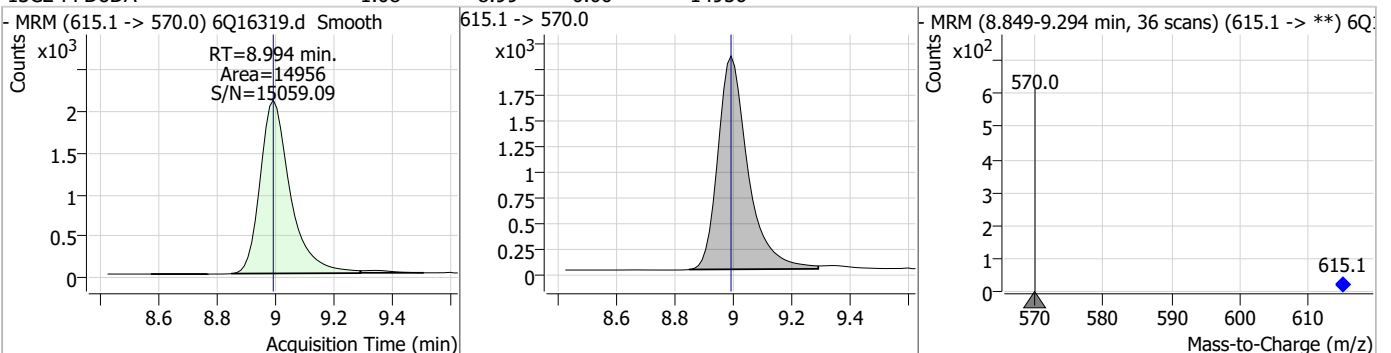
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.80	8.60	-0.01	9631	532.8 -> 353.0	40.8	16.5	49.6



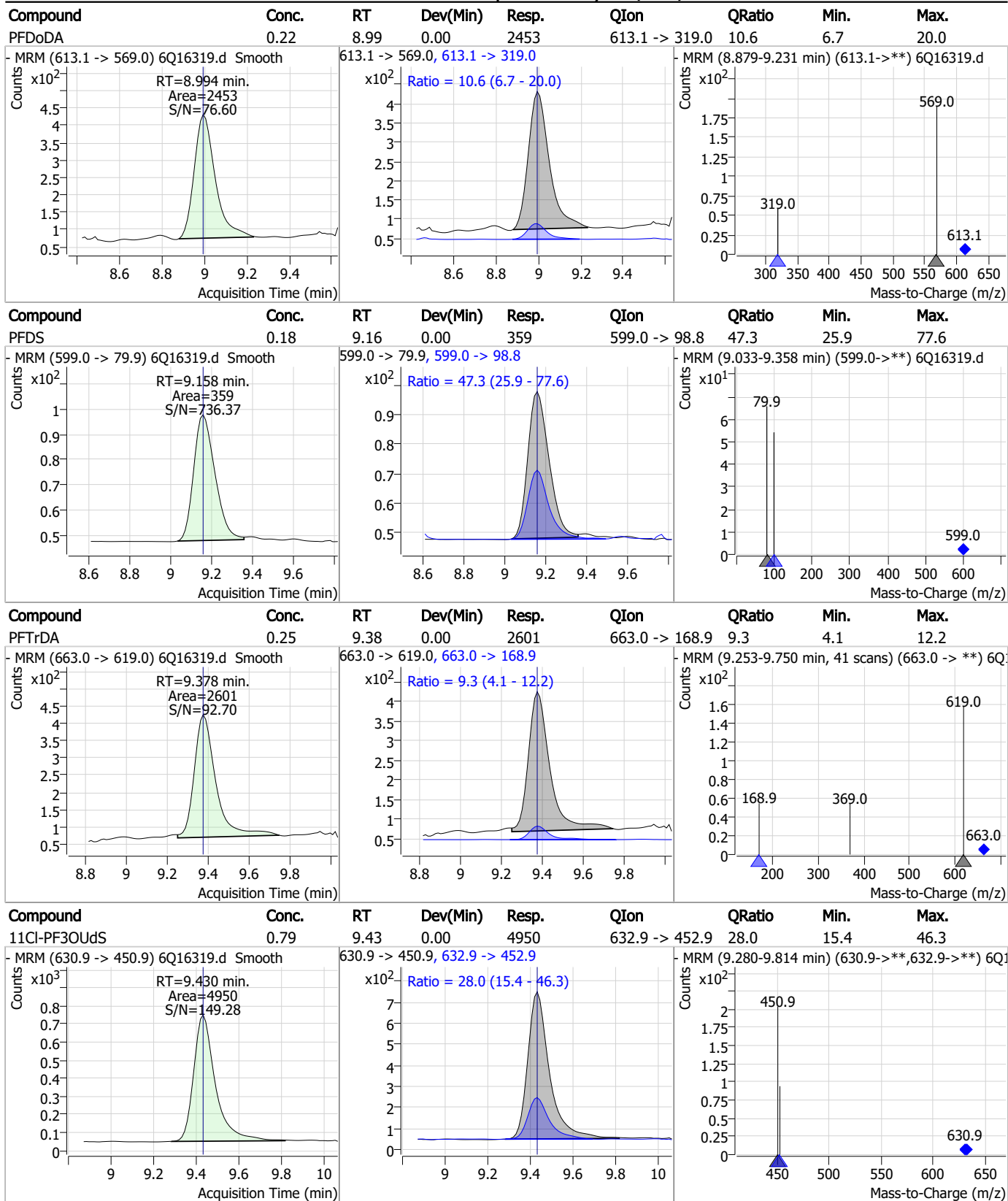
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.23	8.74	0.00	646	548.8 -> 98.9	56.0	28.8	86.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.08	8.99	0.00	14956	615.1 -> 570.0			



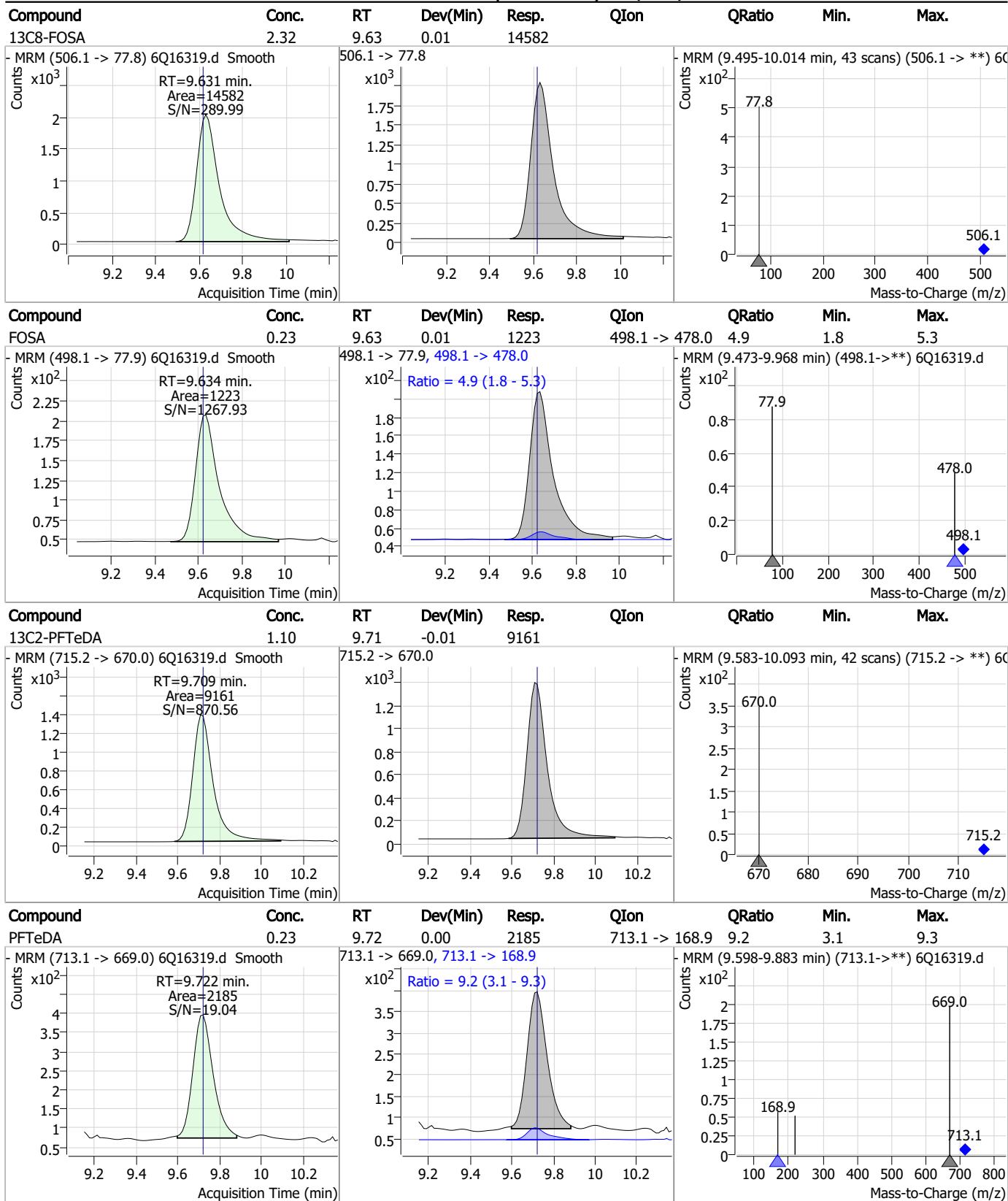
Perfluorinated Compounds by LC/MS/MS



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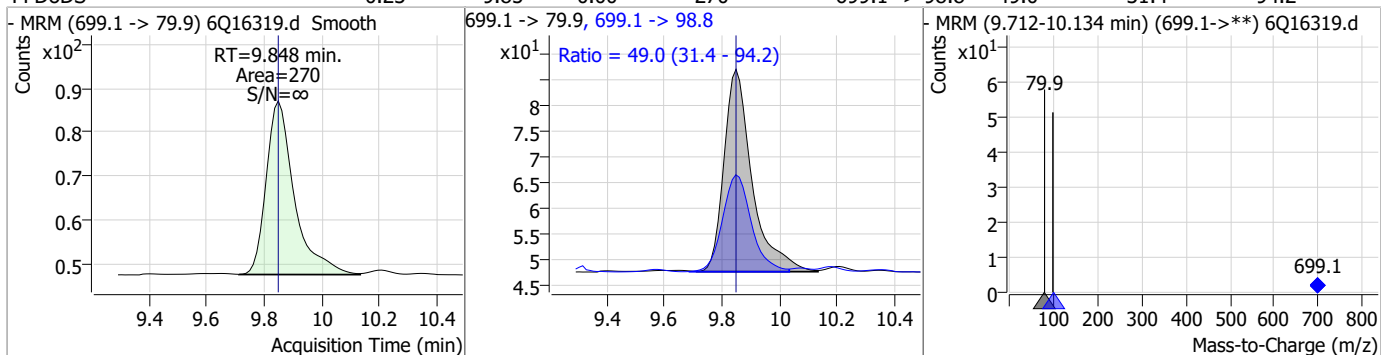
Perfluorinated Compounds by LC/MS/MS



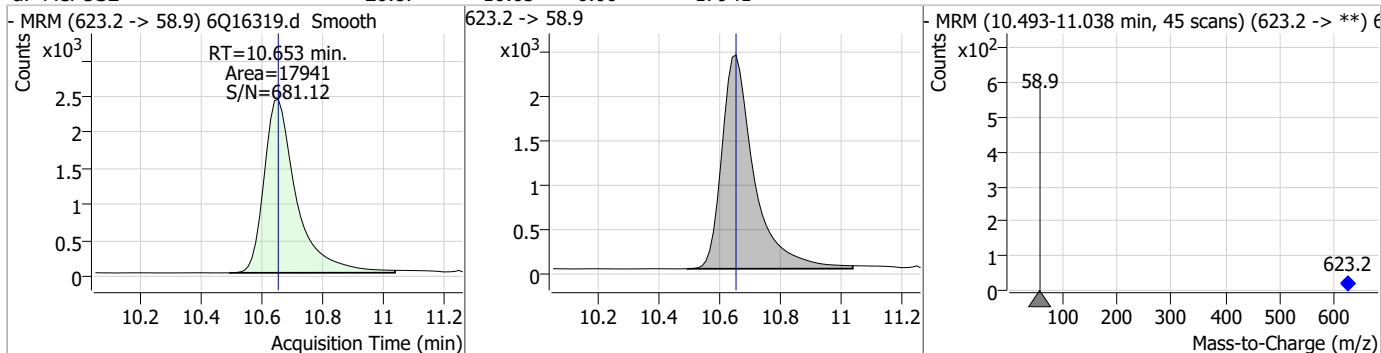
7.7.15

Perfluorinated Compounds by LC/MS/MS

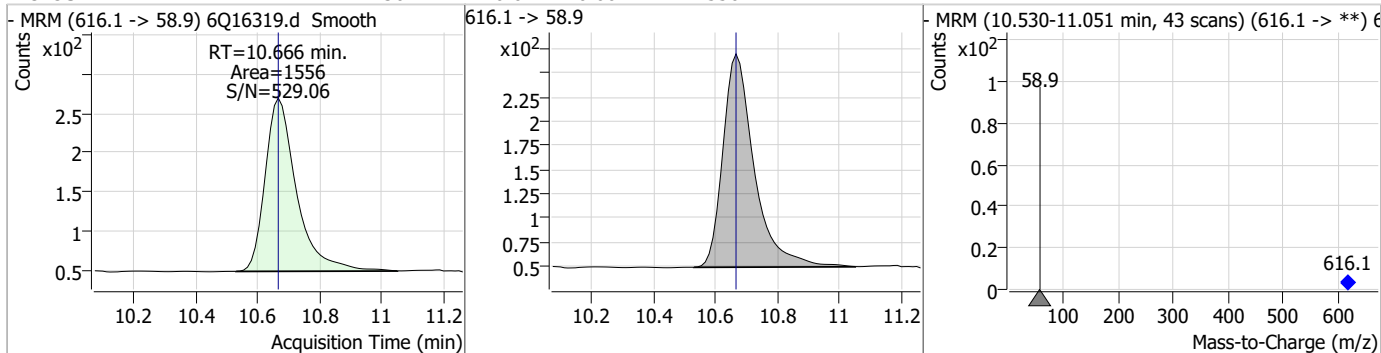
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.23	9.85	0.00	270	699.1 -> 98.8	49.0	31.4	94.2



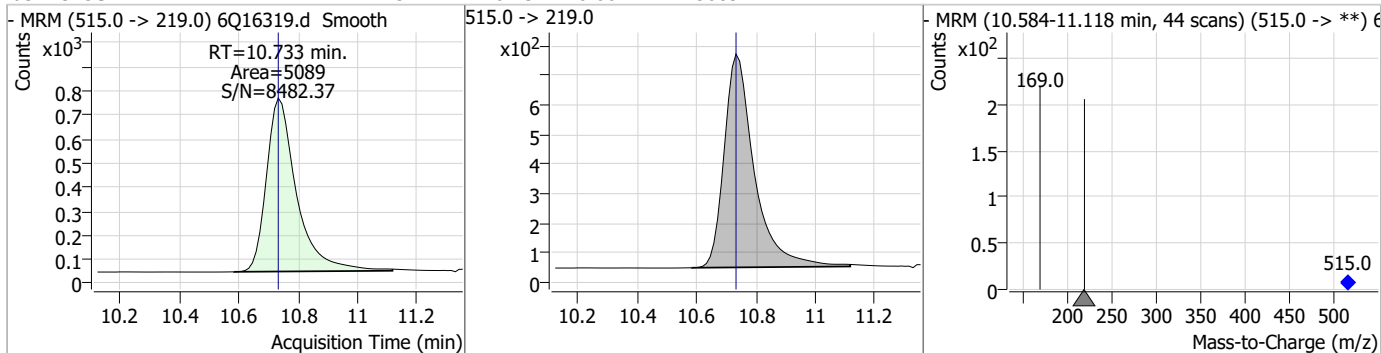
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	20.87	10.65	0.00	17941				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.30	10.67	0.00	1556				

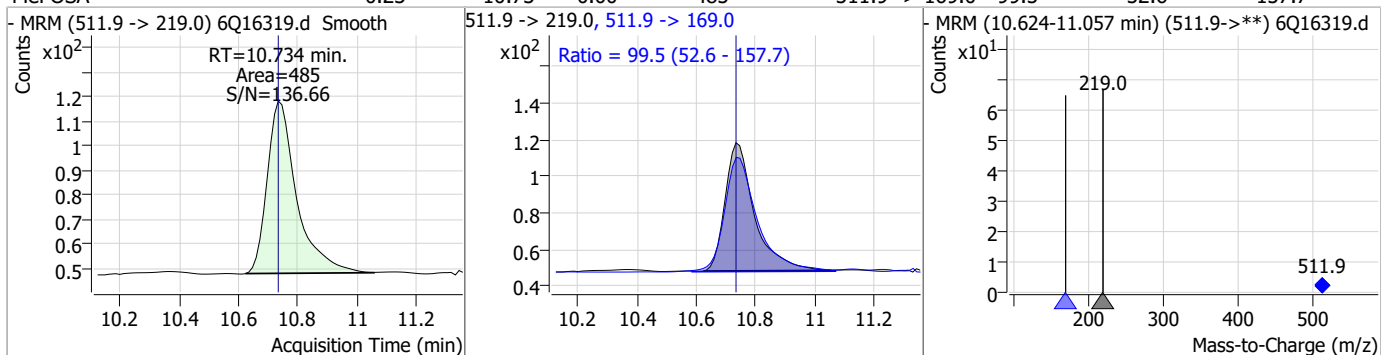


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.25	10.73	0.00	5089				

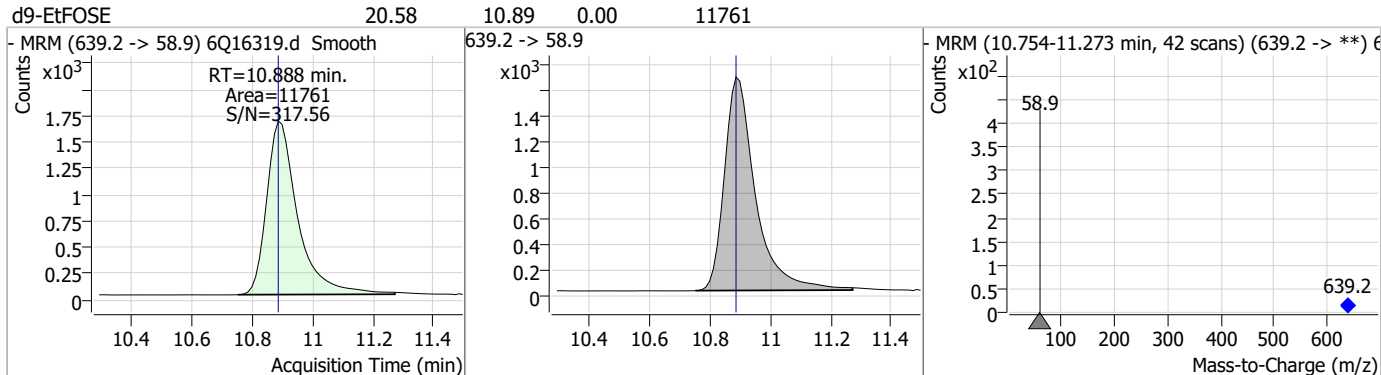


Perfluorinated Compounds by LC/MS/MS

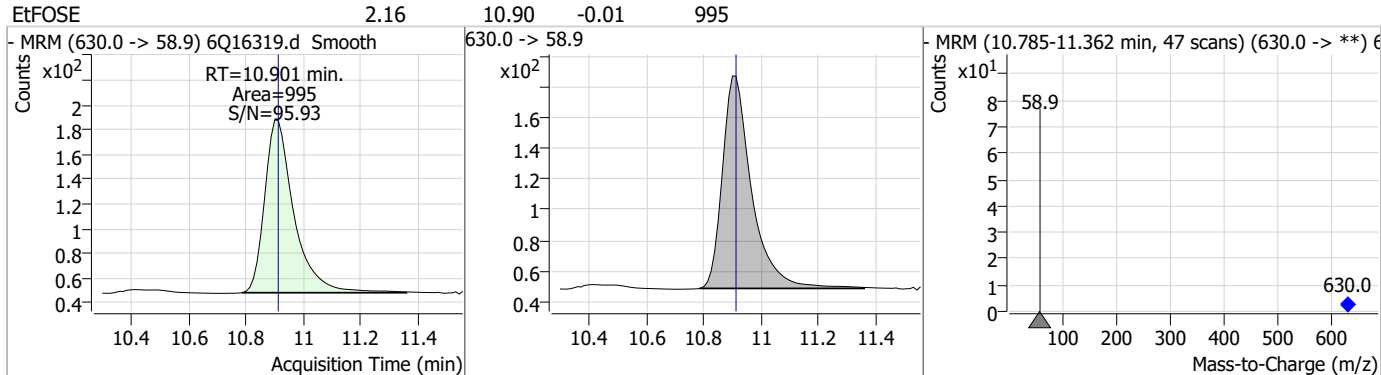
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	0.23	10.73	0.00	485	511.9 -> 169.0	99.5	52.6	157.7



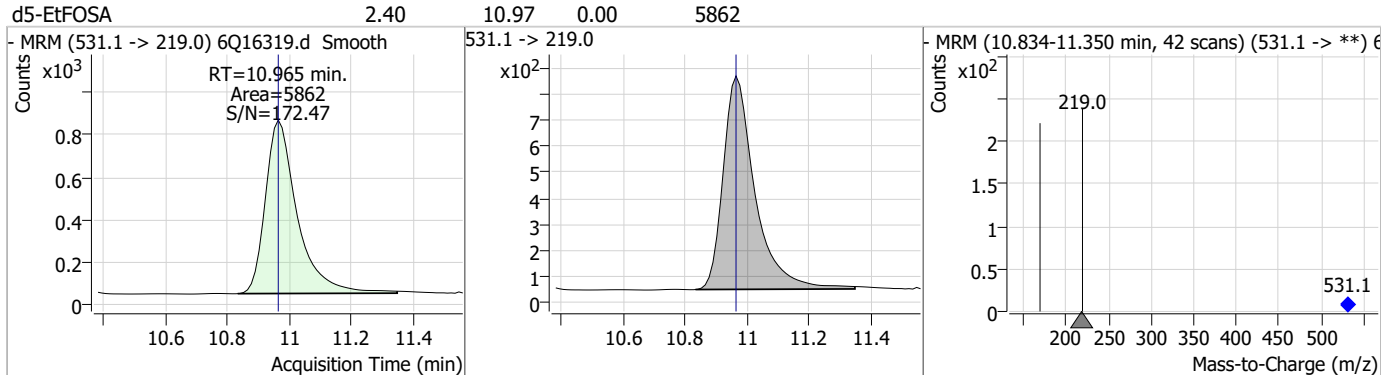
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.58	10.89	0.00	11761				



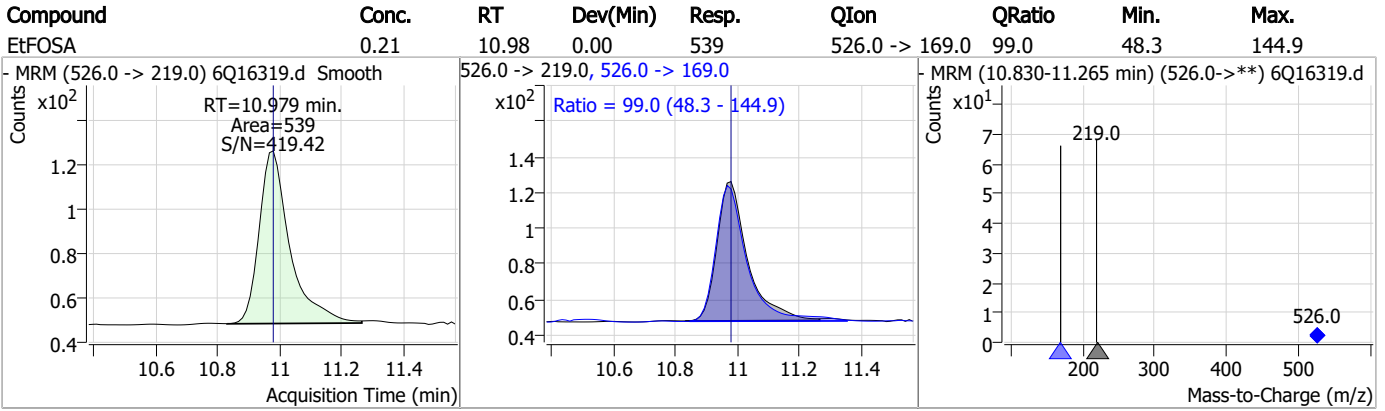
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	2.16	10.90	-0.01	995				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.40	10.97	0.00	5862				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q243-CC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16319.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 20:34 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
8:2 Fluorotelomer sulfonate	39108-34-4		7.91	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q16328.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 4/7/2023 10:40:34 PM
 Sample Name : cc239-4
 Vial : P1-A5
 DA Method File : 1633_040423_S6Q239.quantmethod.xml
 Batch Name : S6Q243.batch.bin
 Sample Information : OP96171,S6Q243,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.897	216.8 -> 171.9	80392	10.00 µg/L	0.000
M5-PFPeA	4.322	268.3 -> 223.0	36676	5.00 µg/L	0.000
M5-PFHxA	5.516	318.0 -> 273.0	33287	2.50 µg/L	-0.012
M4-PFHpA	6.468	367.1 -> 322.0	32097	2.50 µg/L	0.000
M8-PFOA	7.112	421.1 -> 376.0	56449	2.50 µg/L	0.000
M9-PFNA	7.630	472.1 -> 427.0	17634	1.25 µg/L	-0.012
M6-PFDA	8.110	519.1 -> 474.1	14305	1.25 µg/L	-0.012
M7-PFUnDA	8.564	570.0 -> 525.1	17242	1.25 µg/L	-0.012
M2-PFDoDA	8.994	615.1 -> 570.0	17867	1.25 µg/L	0.000
M2-PFTeDA	9.721	715.2 -> 670.0	10437	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15571	2.50 µg/L	0.012
M3-PFBS	5.446	302.1 -> 79.9	12821	2.50 µg/L	-0.012
M3-PFHxS	7.228	402.1 -> 79.9	8333	2.50 µg/L	0.000
M8-PFOS	8.272	507.1 -> 79.9	6867	2.50 µg/L	-0.012
M2-4:2FTS	5.191	329.1 -> 80.9	2347	5.00 µg/L	0.000
M2-6:2FTS	6.886	429.1 -> 80.9	3006	5.00 µg/L	0.000
M2-8:2FTS	7.911	529.1 -> 80.9	2671	5.00 µg/L	0.000
M3-MeFOSAA	8.167	573.2 -> 419.0	23661	5.00 µg/L	0.000
M3-HFPO-DA	5.881	286.9 -> 168.9	13252	10.00 µg/L	-0.012
M5-EtFOSAA	8.363	589.2 -> 419.0	18986	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	18938	25.00 µg/L	0.000
M9-EtFOSE	10.888	639.2 -> 58.9	12651	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6020	2.50 µg/L	0.000
M3-MeFOSA	10.733	515.0 -> 219.0	5437	2.50 µg/L	0.000
13C4-PFOS	8.273	502.8 -> 79.9	8835	2.50 µg/L	-0.012
13C3-PFBA	2.902	216.0 -> 172.0	34170	5.00 µg/L	0.000
18O2-PFHxS	7.227	403.0 -> 83.9	5879	2.50 µg/L	0.000
13C4-PFOA	7.112	417.1 -> 372.0	65232	2.50 µg/L	0.000
13C2-PFDA	8.110	515.1 -> 470.1	19269	1.25 µg/L	-0.012
13C5-PFNA	7.631	468.0 -> 423.0	17643	1.25 µg/L	-0.012
13C2-PFHxA	5.516	315.1 -> 270.0	30673	2.50 µg/L	-0.012

System Monitoring Compounds

13C2-4:2FTS	5.191	329.1 -> 80.9	2347	5.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.7%		
13C2-6:2FTS	6.886	429.1 -> 80.9	3006	6.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.9%		
13C2-8:2FTS	7.911	529.1 -> 80.9	2671	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.2%		
13C2-PFDoDA	8.994	615.1 -> 570.0	17867	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C2-PFTeDA	9.721	715.2 -> 670.0	10437	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.4%		
13C3-PFBS	5.446	302.1 -> 79.9	12821	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C3-PFHxS	7.228	402.1 -> 79.9	8333	2.48 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 = 99.0%		
13C4-PFBA	2.897	216.8 -> 171.9	80392	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C4-PFHpA	6.468	367.1 -> 322.0	32097	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFHxA	5.516	318.0 -> 273.0	33287	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C5-PFPeA	4.322	268.3 -> 223.0	36676	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C6-PFDA	8.110	519.1 -> 474.1	14305	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C7-PFUnDA	8.564	570.0 -> 525.1	17242	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C8-FOSA	9.631	506.1 -> 77.8	15571	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C8-PFOA	7.112	421.1 -> 376.0	56449	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C8-PFOS	8.272	507.1 -> 79.9	6867	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C9-PFNA	7.630	472.1 -> 427.0	17634	1.35 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.1%		
d3-MeFOSAA	8.167	573.2 -> 419.0	23661	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C3-HFPO-DA	5.881	286.9 -> 168.9	13252	9.91 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
d3-MeFOSA	10.733	515.0 -> 219.0	5437	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.8%		
d5-EtFOSAA	8.363	589.2 -> 419.0	18986	5.13 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
d7-MeFOSE	10.653	623.2 -> 58.9	18938	21.06 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 84.2%		
d9-EtFOSE	10.888	639.2 -> 58.9	12651	21.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 84.7%		
d5-EtFOSA	10.965	531.1 -> 219.0	6020	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.3%		
Target Compounds					QValue
4:2FTS	5.192	327.1 -> 307.0	41724	9.08 µg/L	100
		327.1 -> 80.9	9779		
6:2FTS	6.886	427.1 -> 407.0	34694	8.62 µg/L	100
		427.1 -> 80.9	7566		
8:2FTS	7.911	527.1 -> 507.0	18251	9.63 µg/L	100
		527.1 -> 80.8	4485		
EtFOSAA	8.376	584.2 -> 419.1	8025	2.76 µg/L	m 97
		584.2 -> 526.0	3847		
FOSA	9.634	498.1 -> 77.9	13502	2.35 µg/L	97
		498.1 -> 478.0	615		
MeFOSAA	8.168	570.1 -> 419.0	10511	2.37 µg/L	96
		570.1 -> 483.0	1777		
PFBA	2.893	212.8 -> 168.9	19440	9.57 µg/L	100
PFBS	5.447	298.7 -> 79.9	10814	2.15 µg/L	96
		298.7 -> 98.8	5303		
PFDA	8.111	512.9 -> 469.0	37866	2.27 µg/L	99
		512.9 -> 219.0	5533		
PFDODA	8.994	613.1 -> 569.0	31800	2.39 µg/L	98
		613.1 -> 319.0	4021		
PFDS	9.158	599.0 -> 79.9	4674	2.28 µg/L	91

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.469	599.0 -> 98.8	2704	2.41	µg/L	100
		363.1 -> 319.0	43554			
PFHpS	7.781	363.1 -> 169.0	6021	2.28	µg/L	97
		449.0 -> 79.9	6690			
PFHxA	5.519	449.0 -> 98.9	4170	2.34	µg/L	100
		313.0 -> 269.0	28762			
PFHxS	7.228	313.0 -> 118.9	1190	2.28	µg/L	m
		398.7 -> 79.9	8344			
PFNA	7.643	398.7 -> 98.9	4559	2.39	µg/L	96
		463.0 -> 419.0	27446			
PFNS	8.738	463.0 -> 219.0	5176	2.44	µg/L	95
		548.8 -> 79.9	7113			
PFOA	7.113	548.8 -> 98.9	4352	2.41	µg/L	98
		413.0 -> 369.0	61579			
PFOS	8.273	413.0 -> 169.0	7817	2.23	µg/L	m
		498.9 -> 79.9	6722			
PFPeA	4.324	498.9 -> 98.8	4444	4.90	µg/L	100
		263.0 -> 219.0	37928			
PFPeS	6.520	349.1 -> 79.9	9569	2.17	µg/L	93
		349.1 -> 98.9	5443			
PFTeDA	9.722	713.1 -> 669.0	28089	2.55	µg/L	100
		713.1 -> 168.9	1783			
PFTrDA	9.378	663.0 -> 619.0	30748	2.45	µg/L	98
		663.0 -> 168.9	2698			
PFUnDA	8.564	563.1 -> 519.0	29868	2.16	µg/L	96
		563.1 -> 269.1	4449			
11CI-PF3OUdS	9.430	630.9 -> 450.9	65965	9.26	µg/L	98
		632.9 -> 452.9	19583			
9CI-PF3ONS	8.603	530.8 -> 351.0	140599	10.34	µg/L	95
		532.8 -> 353.0	42346			
ADONA	6.719	376.9 -> 250.9	265462	9.89	µg/L	97
		376.9 -> 84.8	57604			
HFPO-DA	5.882	284.9 -> 168.9	12176	10.16	µg/L	93
		284.9 -> 184.9	1840			
3:3FTCA	3.790	241.0 -> 177.0	4801	11.18	µg/L	98
		241.0 -> 117.0	700			
5:3FTCA	6.185	341.0 -> 237.1	154437	56.86	µg/L	95
		341.0 -> 217.0	141945			
7:3FTCA	7.608	441.0 -> 316.9	80335	58.43	µg/L	98
		441.0 -> 336.9	154477			
EtFOSA	10.967	526.0 -> 219.0	6243	2.40	µg/L	94
		526.0 -> 169.0	6379			
EtFOSE	10.913	630.0 -> 58.9	11412	23.00	µg/L	100
		511.9 -> 219.0	5763			
MeFOSA	10.734	511.9 -> 169.0	5597	2.52	µg/L	92
		616.1 -> 58.9	17899			
MeFOSE	10.666	699.1 -> 79.9	2728	25.07	µg/L	100
		699.1 -> 98.8	1799			
PFDoDS	9.848	295.0 -> 201.0	3758	2.29	µg/L	96
		295.0 -> 84.9	1600			
NFDHA	5.398	279.0 -> 85.1	11567	4.72	µg/L	98
		229.0 -> 84.9	10937			
PFMBA	4.725	314.8 -> 134.9	74440	4.51	µg/L	100
		314.8 -> 82.9	1828			
PFMPA	3.463			4.68	µg/L	100
PFEESA	5.987			4.28	µg/L	100

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



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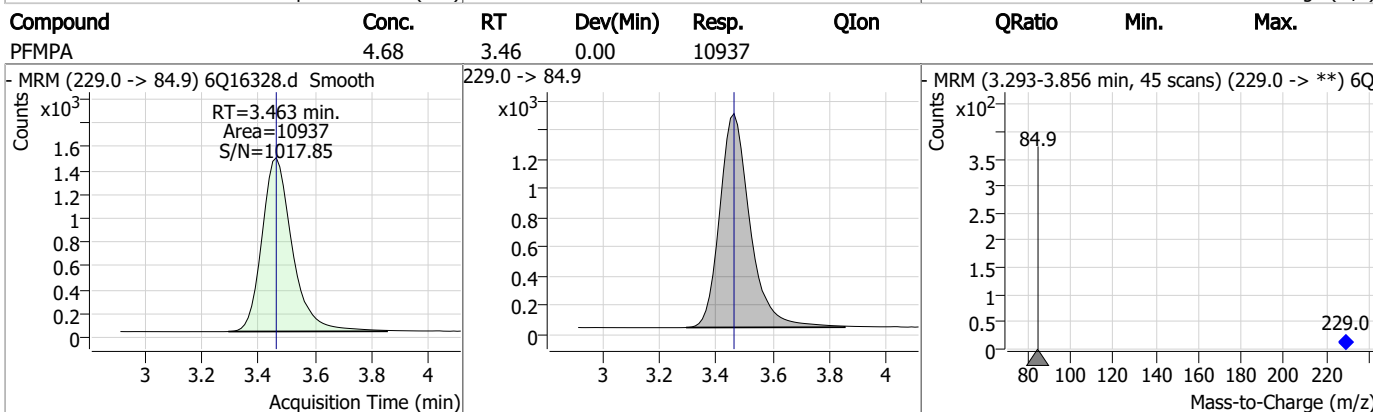
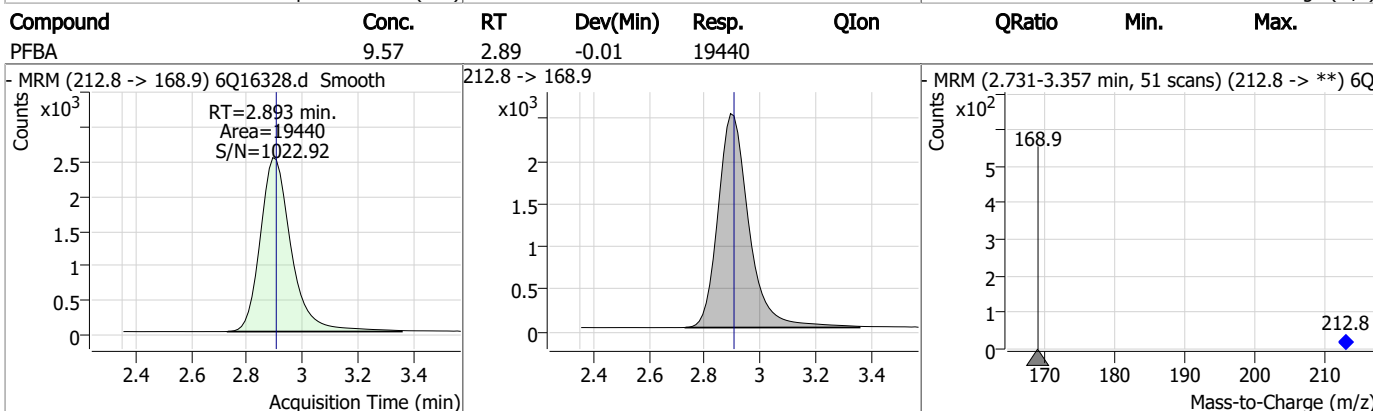
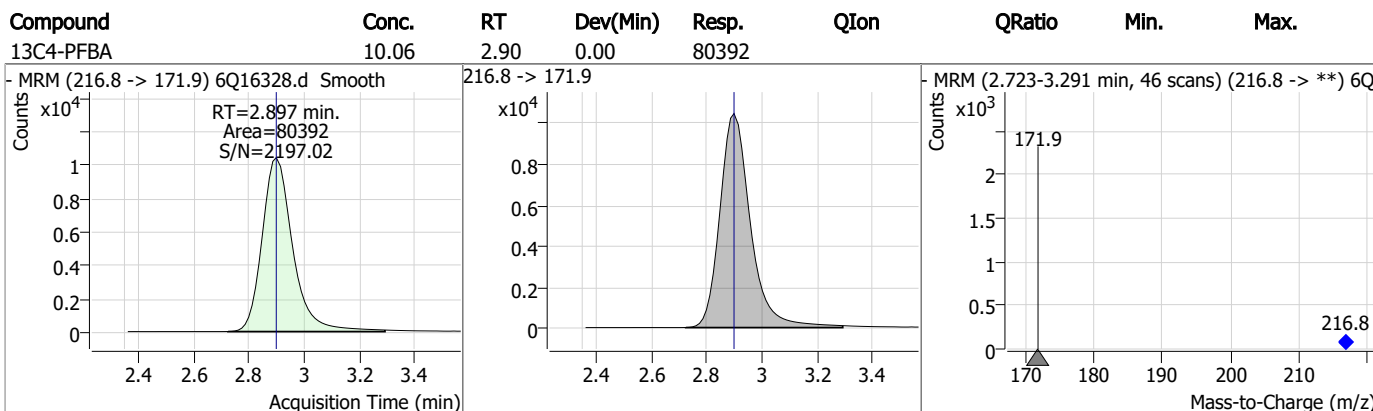
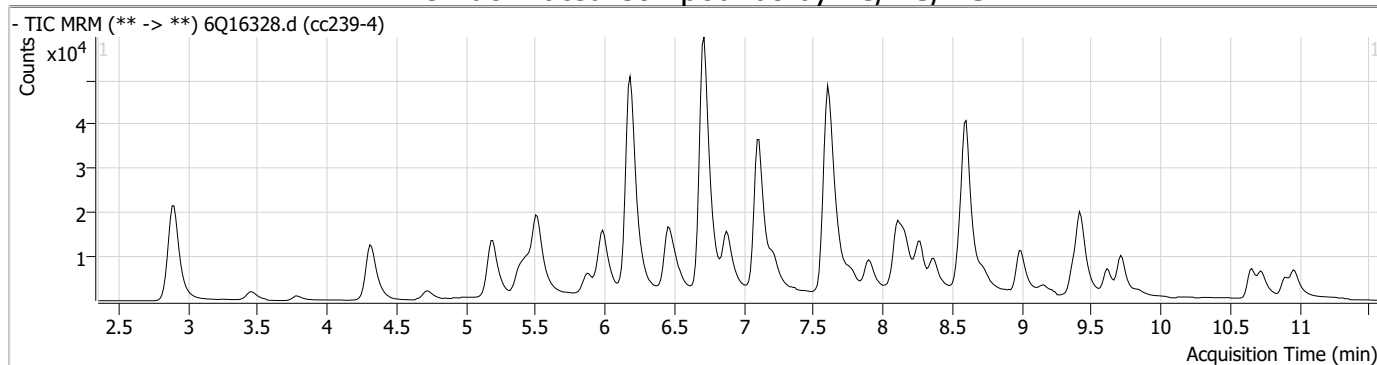
Perfluorinated Compounds by LC/MS/MS

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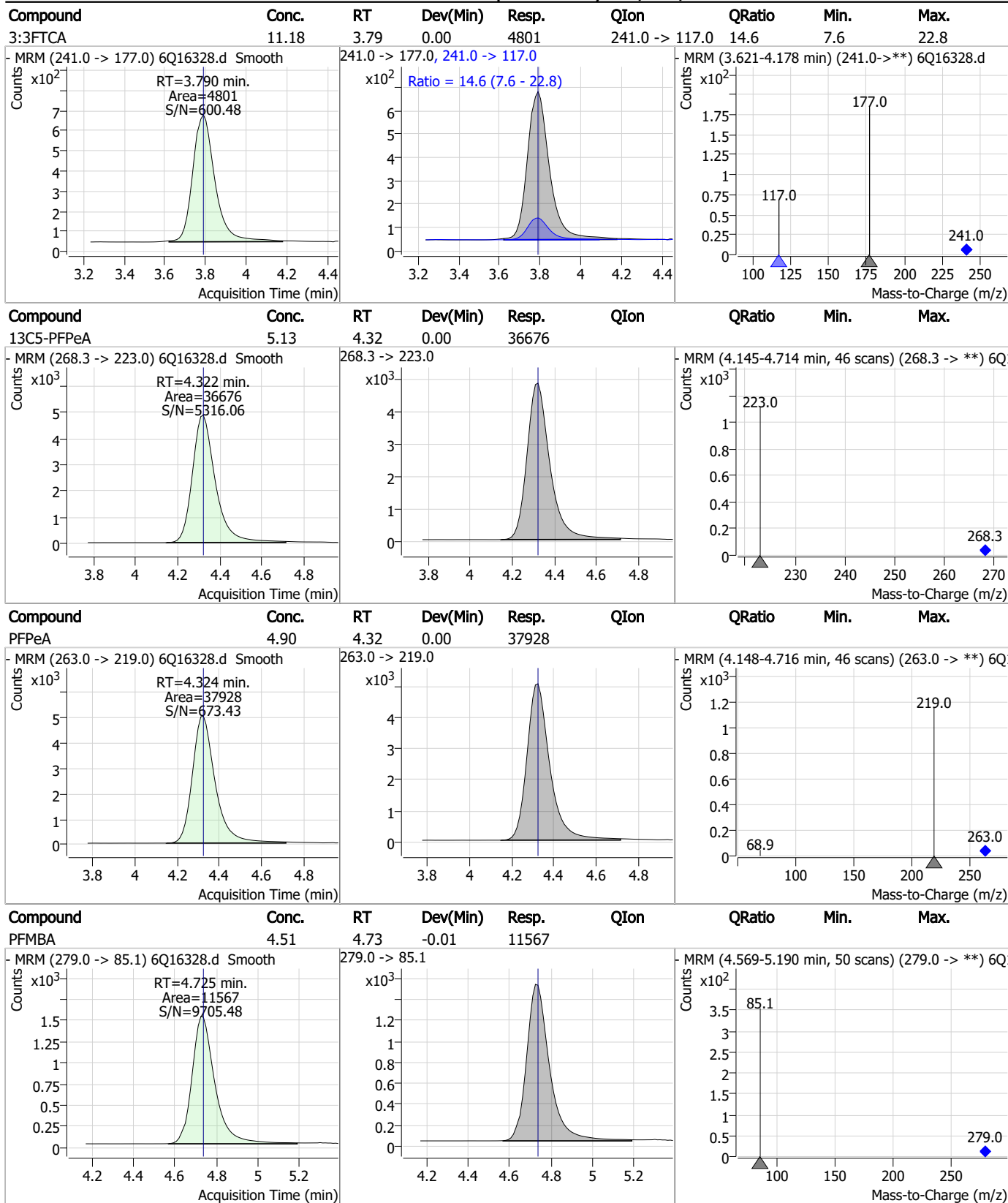
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Perfluorinated Compounds by LC/MS/MS

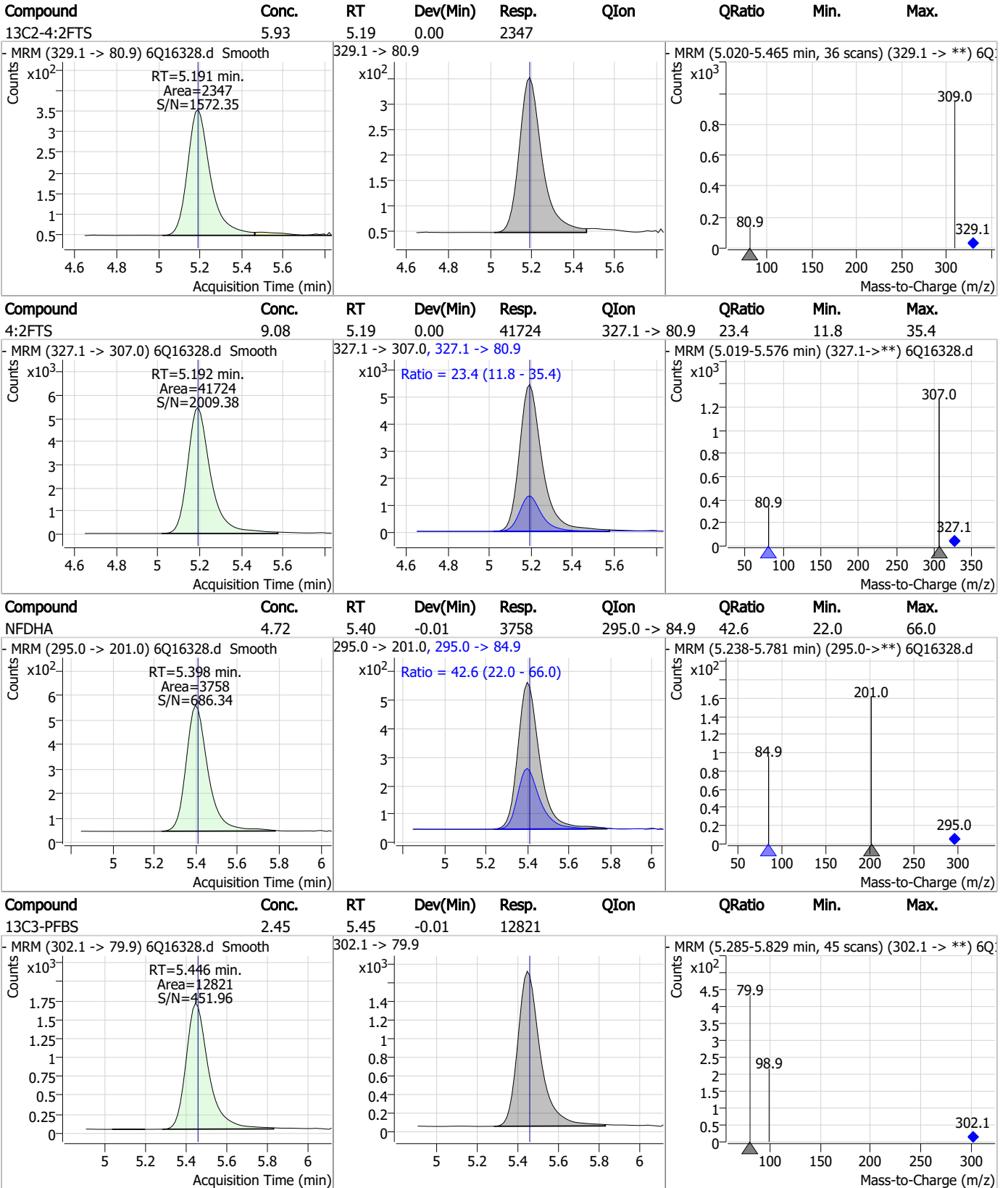


Perfluorinated Compounds by LC/MS/MS



7.7.16

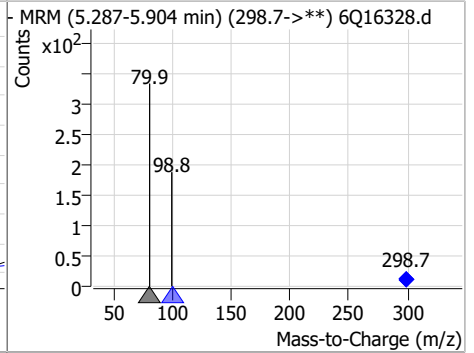
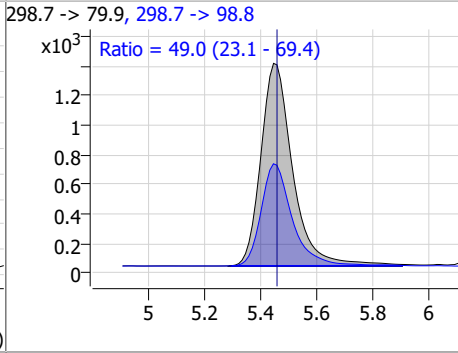
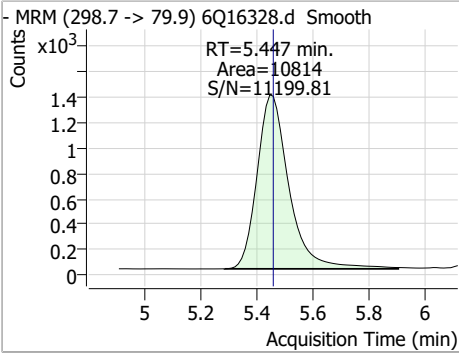
Perfluorinated Compounds by LC/MS/MS



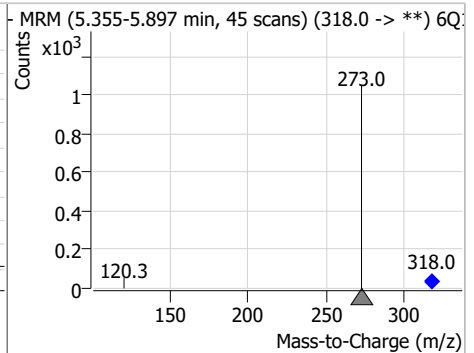
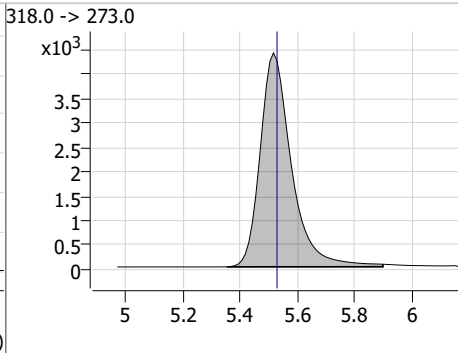
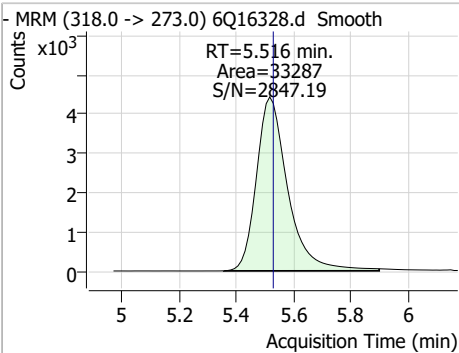
7.7.16 7

Perfluorinated Compounds by LC/MS/MS

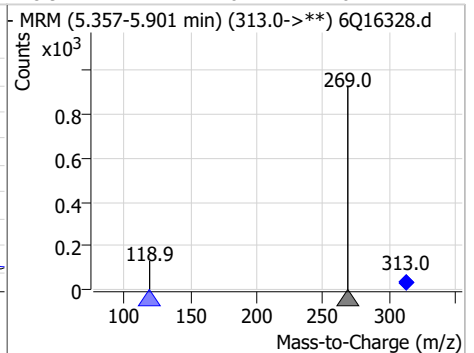
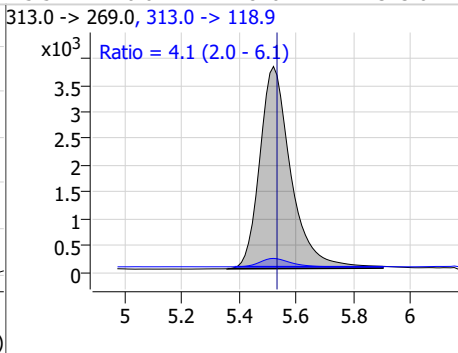
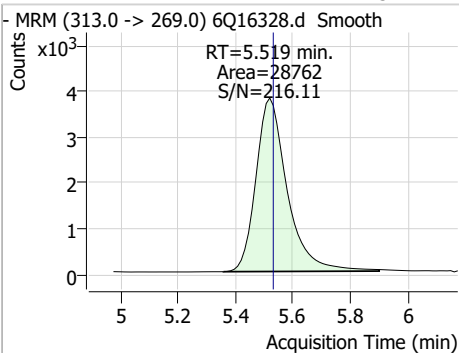
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.15	5.45	-0.01	10814	298.7 -> 98.8	49.0	23.1	69.4



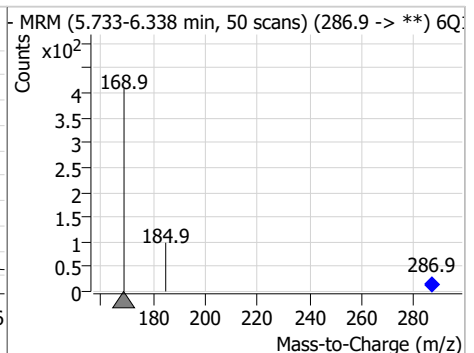
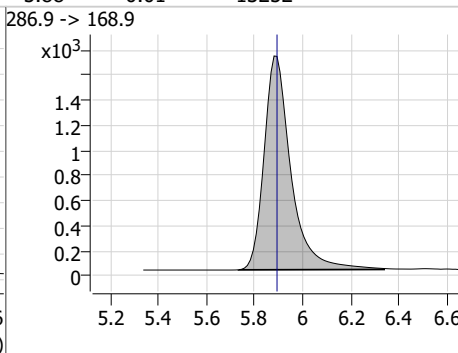
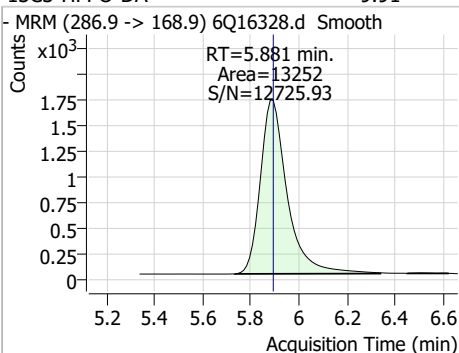
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.62	5.52	-0.01	33287	318.0 -> 273.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.34	5.52	-0.01	28762	313.0 -> 118.9	4.1	2.0	6.1

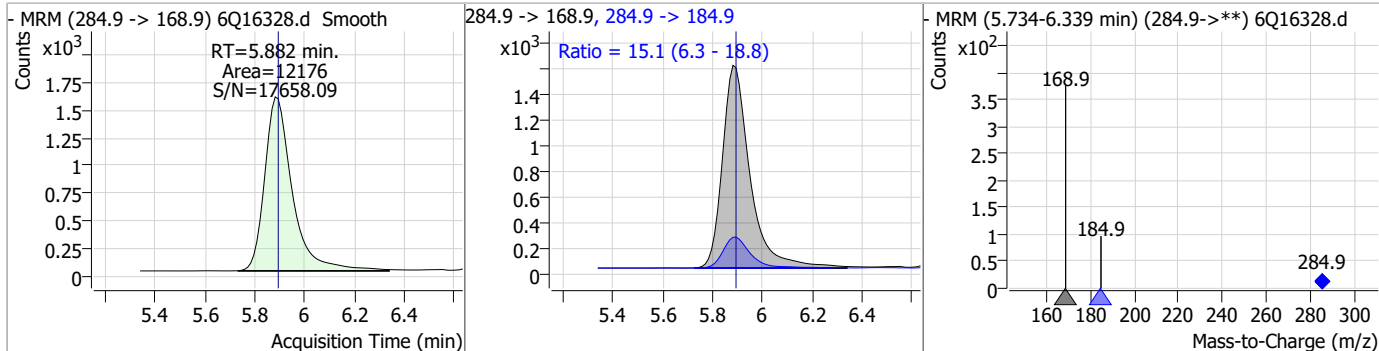


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.91	5.88	-0.01	13252	286.9 -> 168.9			

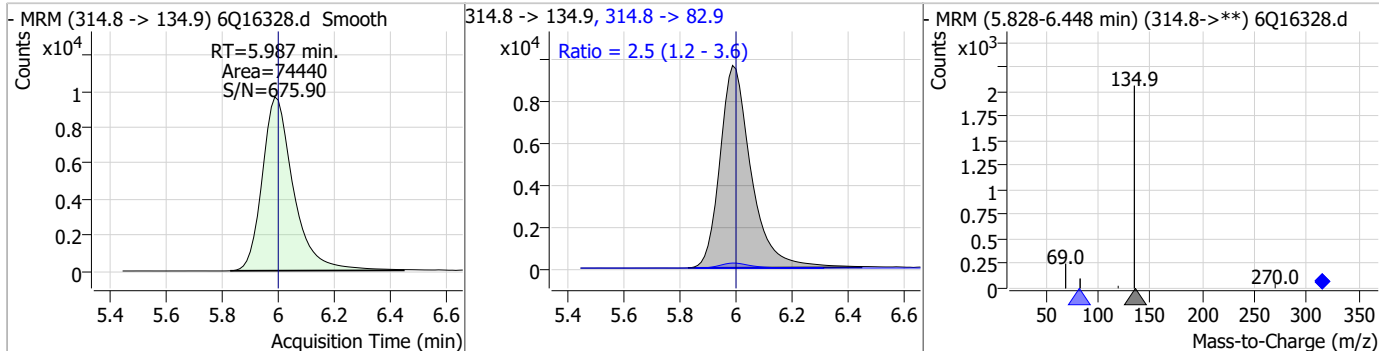


Perfluorinated Compounds by LC/MS/MS

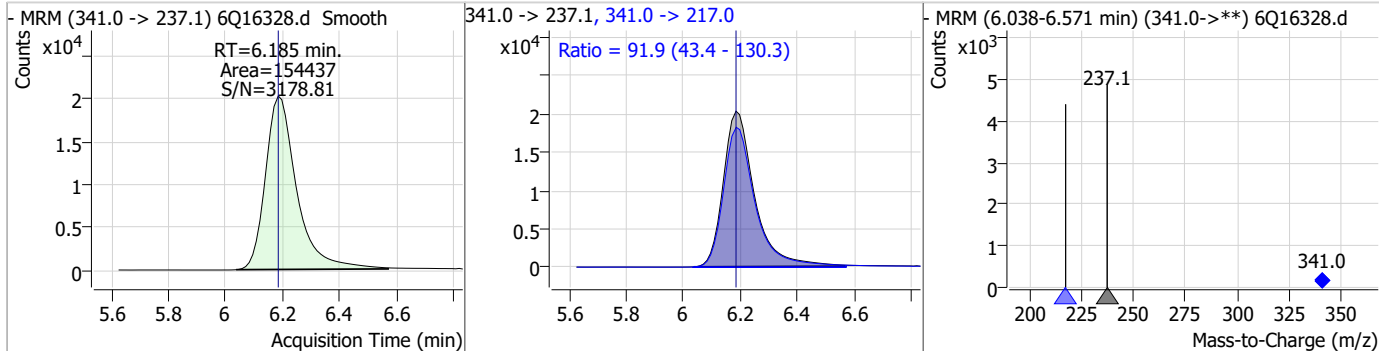
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.16	5.88	-0.01	12176	284.9 -> 184.9	15.1	6.3	18.8



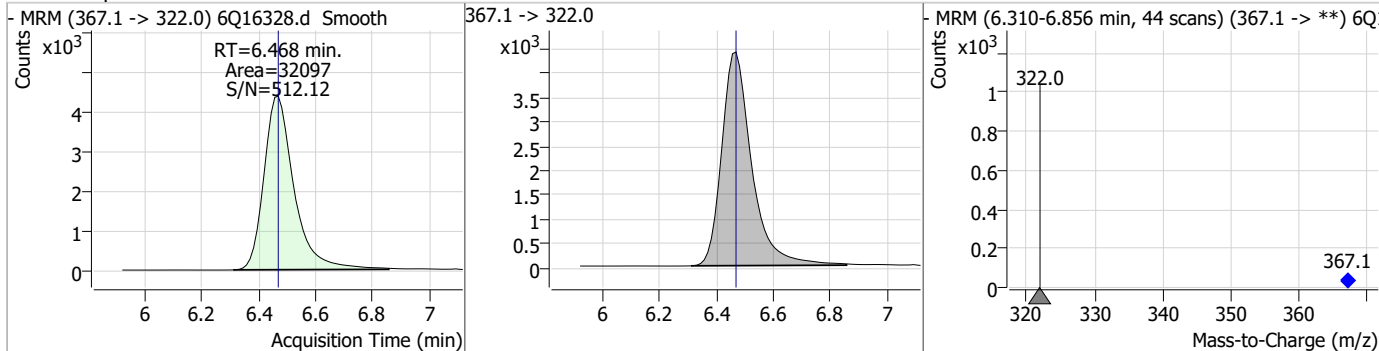
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.28	5.99	-0.01	74440	314.8 -> 82.9	2.5	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.86	6.19	0.00	154437	341.0 -> 217.0	91.9	43.4	130.3

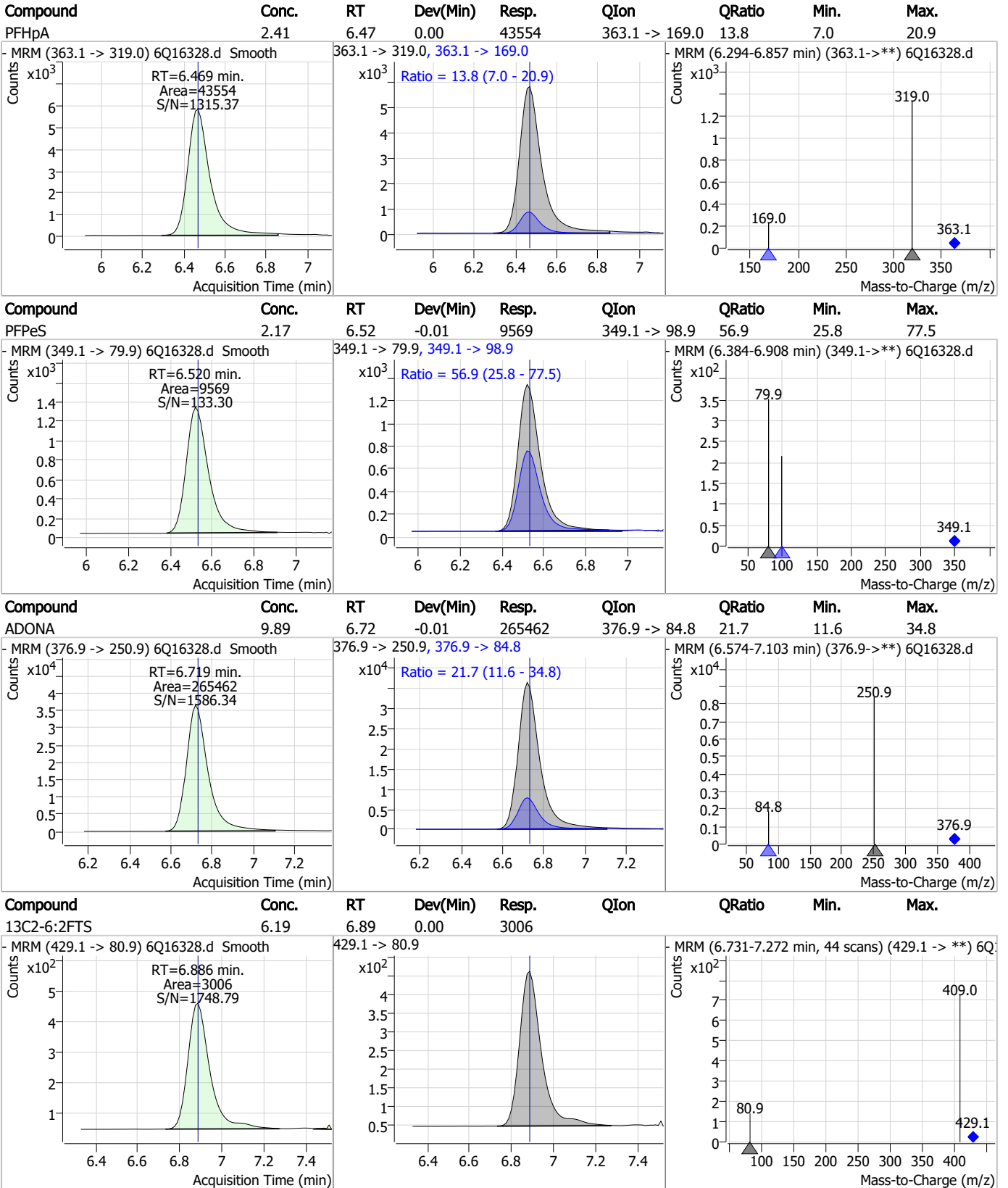


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.58	6.47	0.00	32097	367.1 -> 322.0	-	-	-



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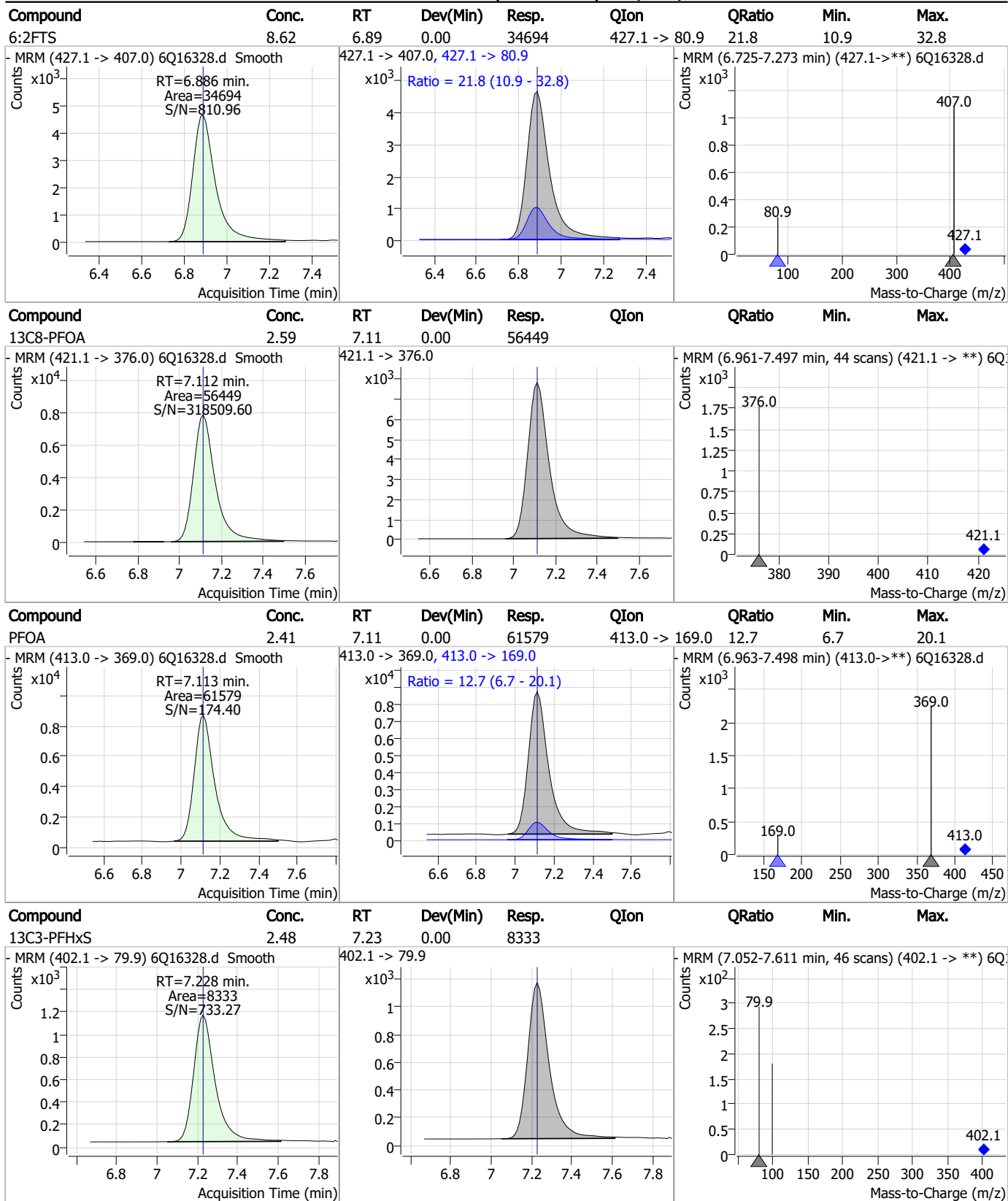
Perfluorinated Compounds by LC/MS/MS



7.7.16

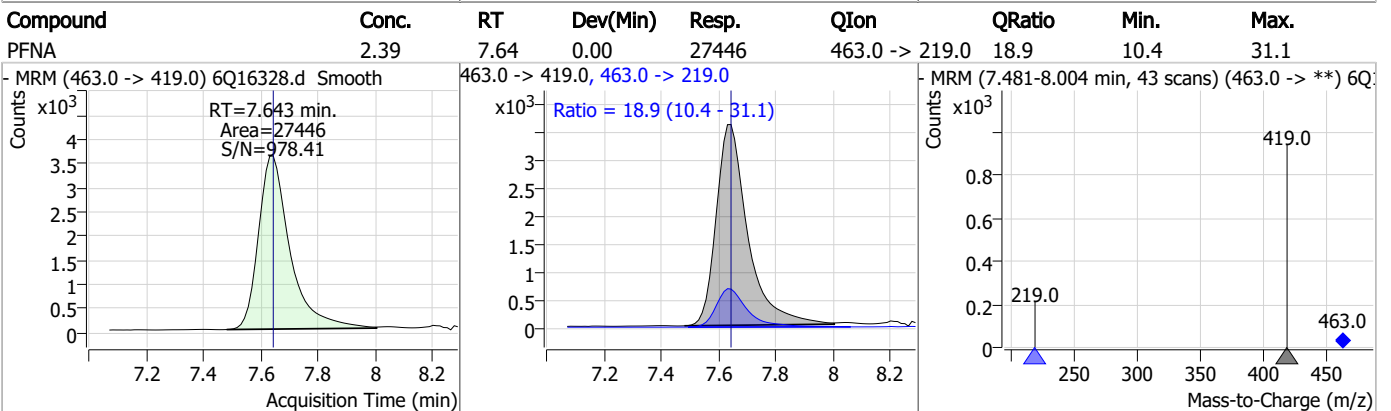
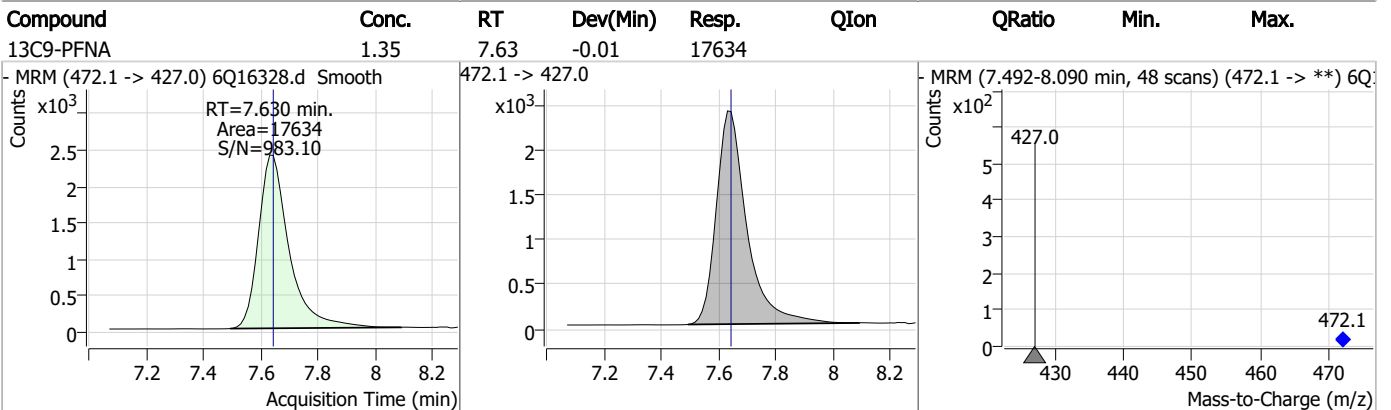
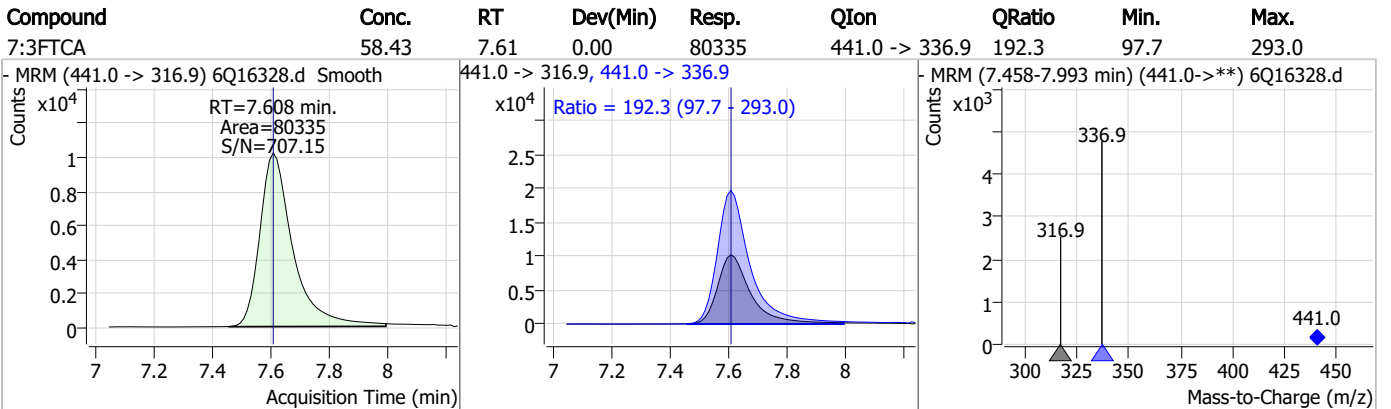
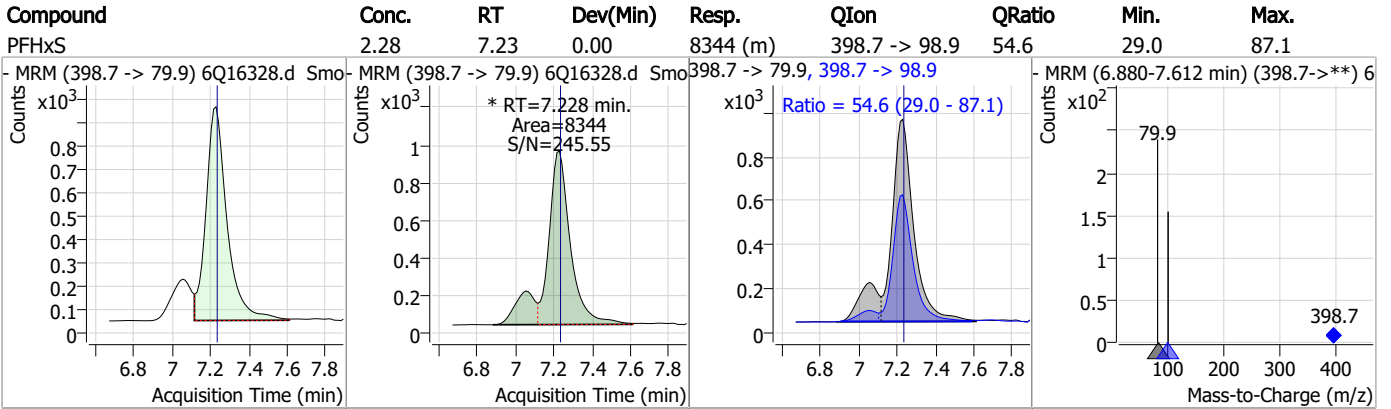
7

Perfluorinated Compounds by LC/MS/MS



7.7.16
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Perfluorinated Compounds by LC/MS/MS

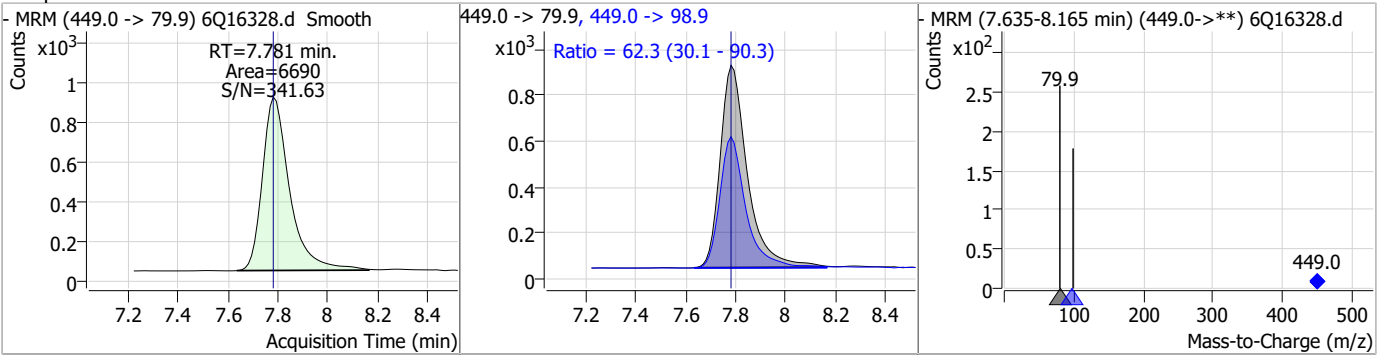


7.7.16
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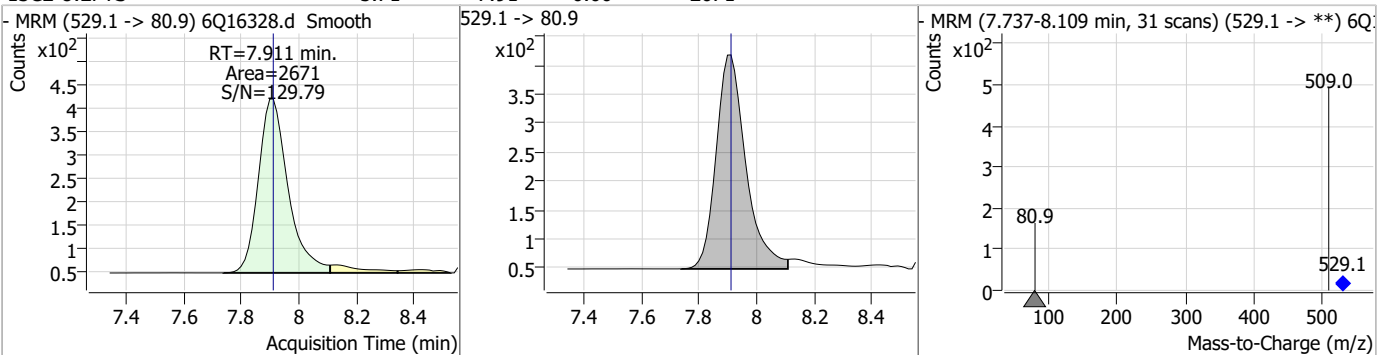


Perfluorinated Compounds by LC/MS/MS

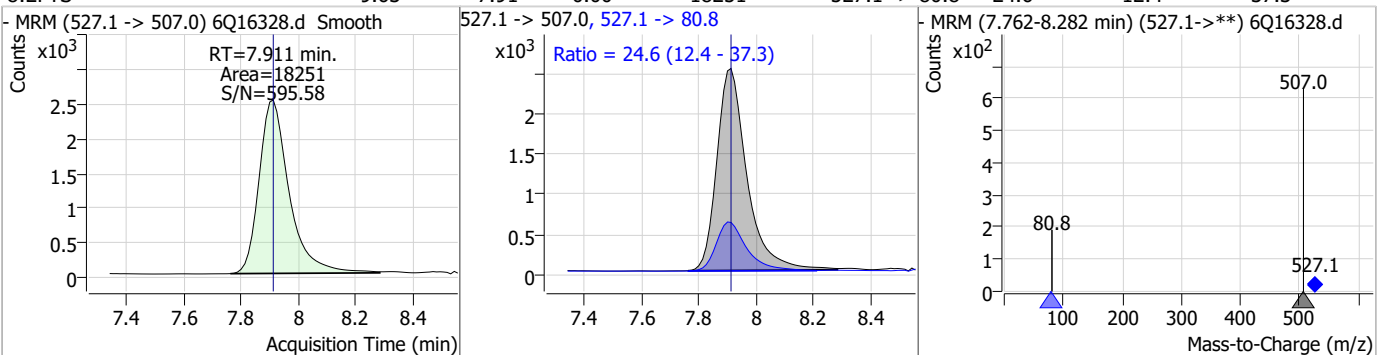
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.28	7.78	0.00	6690	449.0 -> 98.9	62.3	30.1	90.3



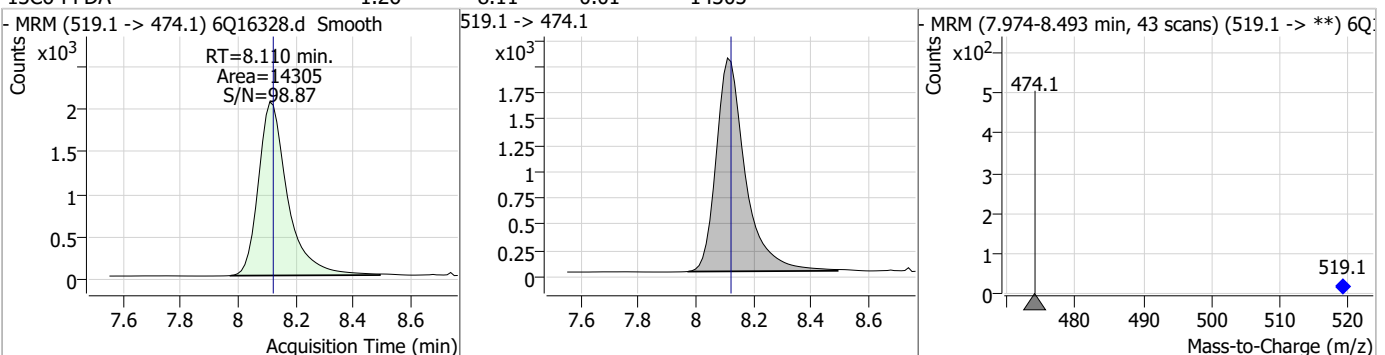
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.71	7.91	0.00	2671	529.1 -> 80.9			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.63	7.91	0.00	18251	527.1 -> 80.8	24.6	12.4	37.3

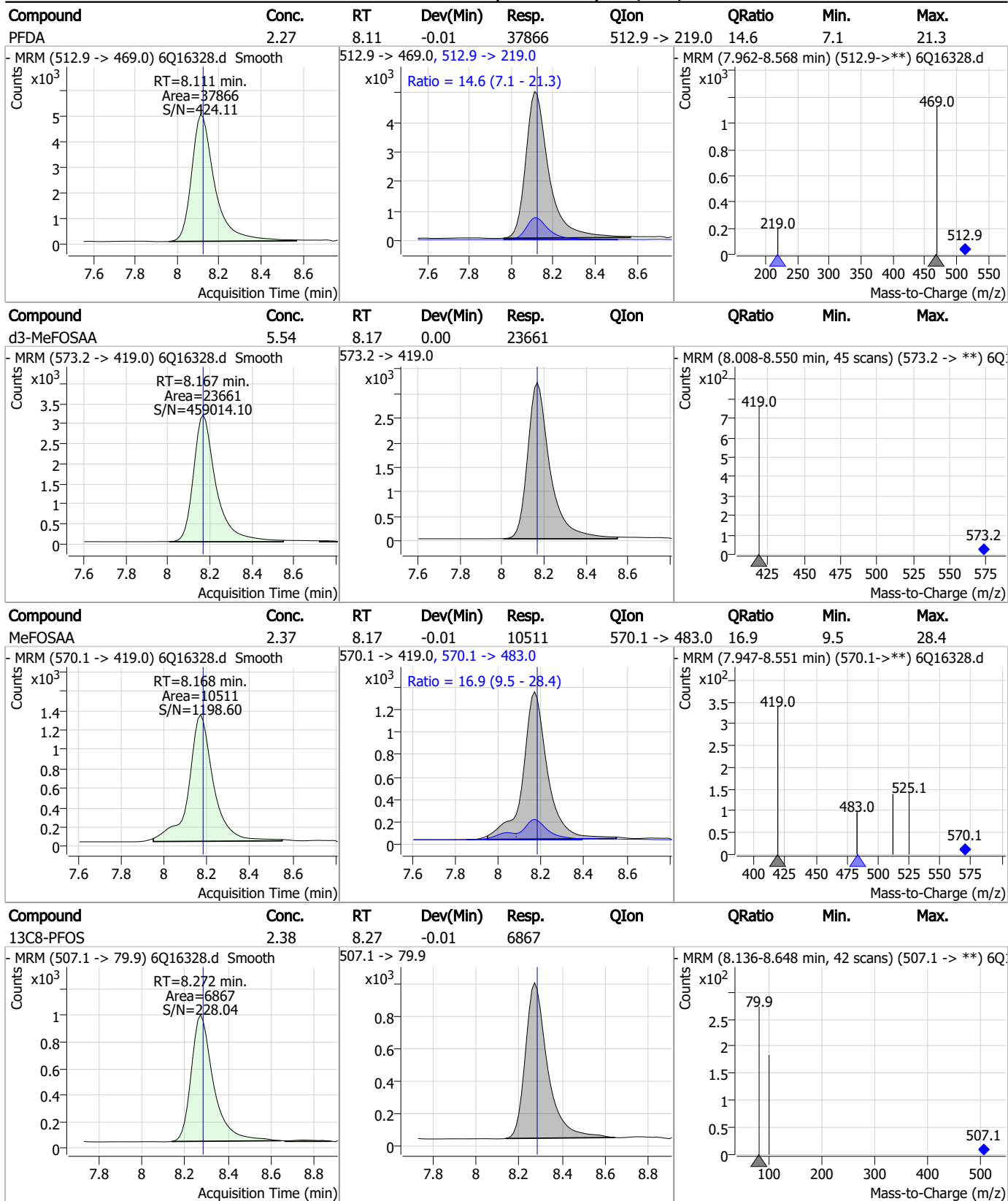


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.11	-0.01	14305	519.1 -> 474.1			



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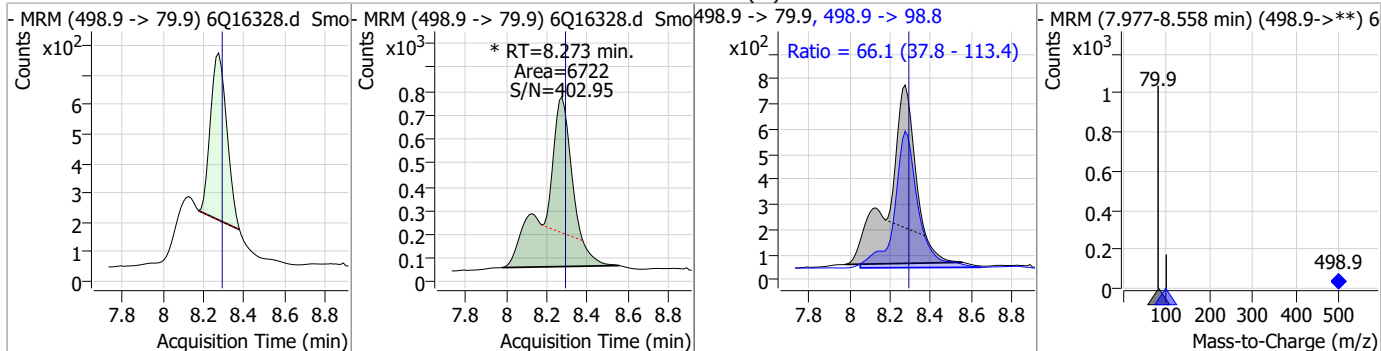
Perfluorinated Compounds by LC/MS/MS



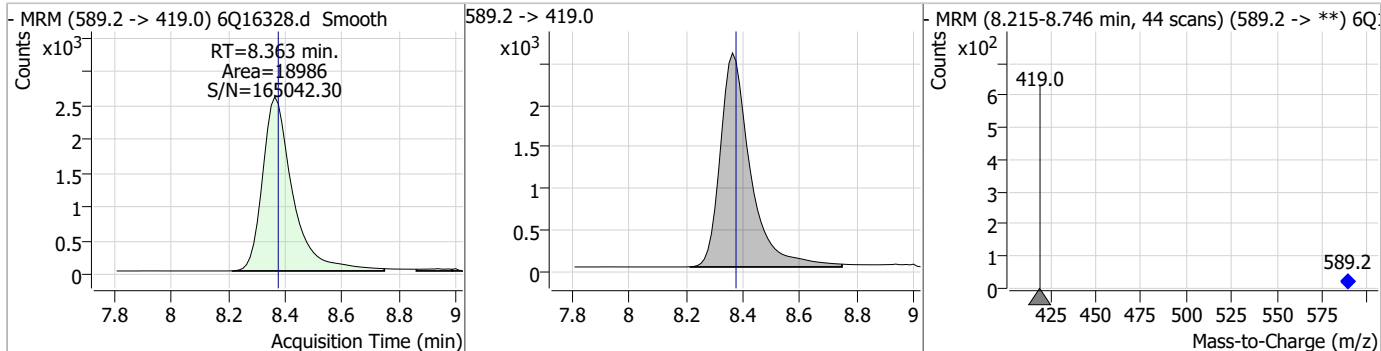
7.7.16
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Perfluorinated Compounds by LC/MS/MS

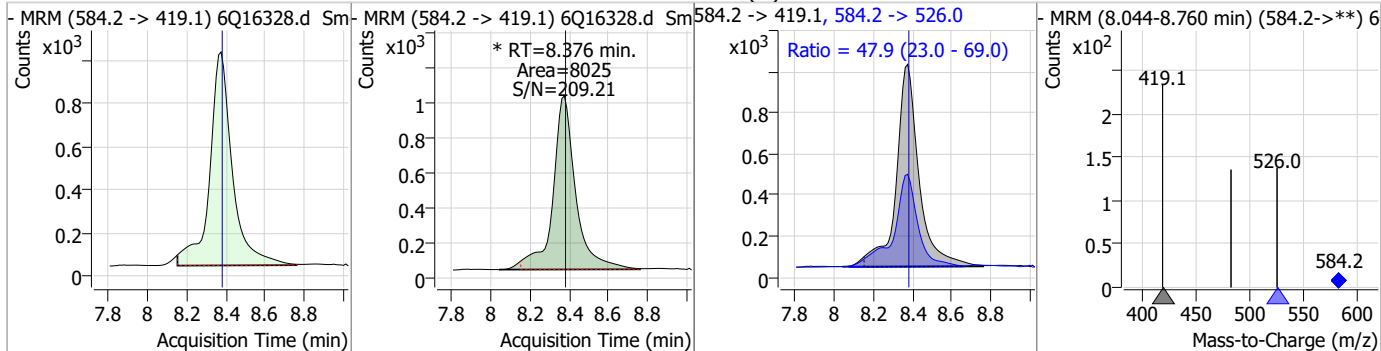
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.23	8.27	-0.01	6722 (m)	498.9 -> 98.8	66.1	37.8	113.4



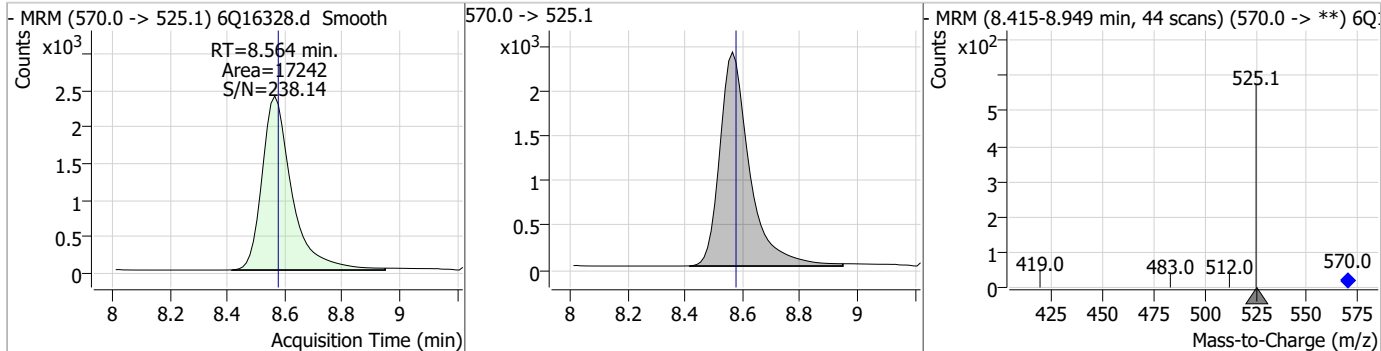
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.13	8.36	-0.01	18986				



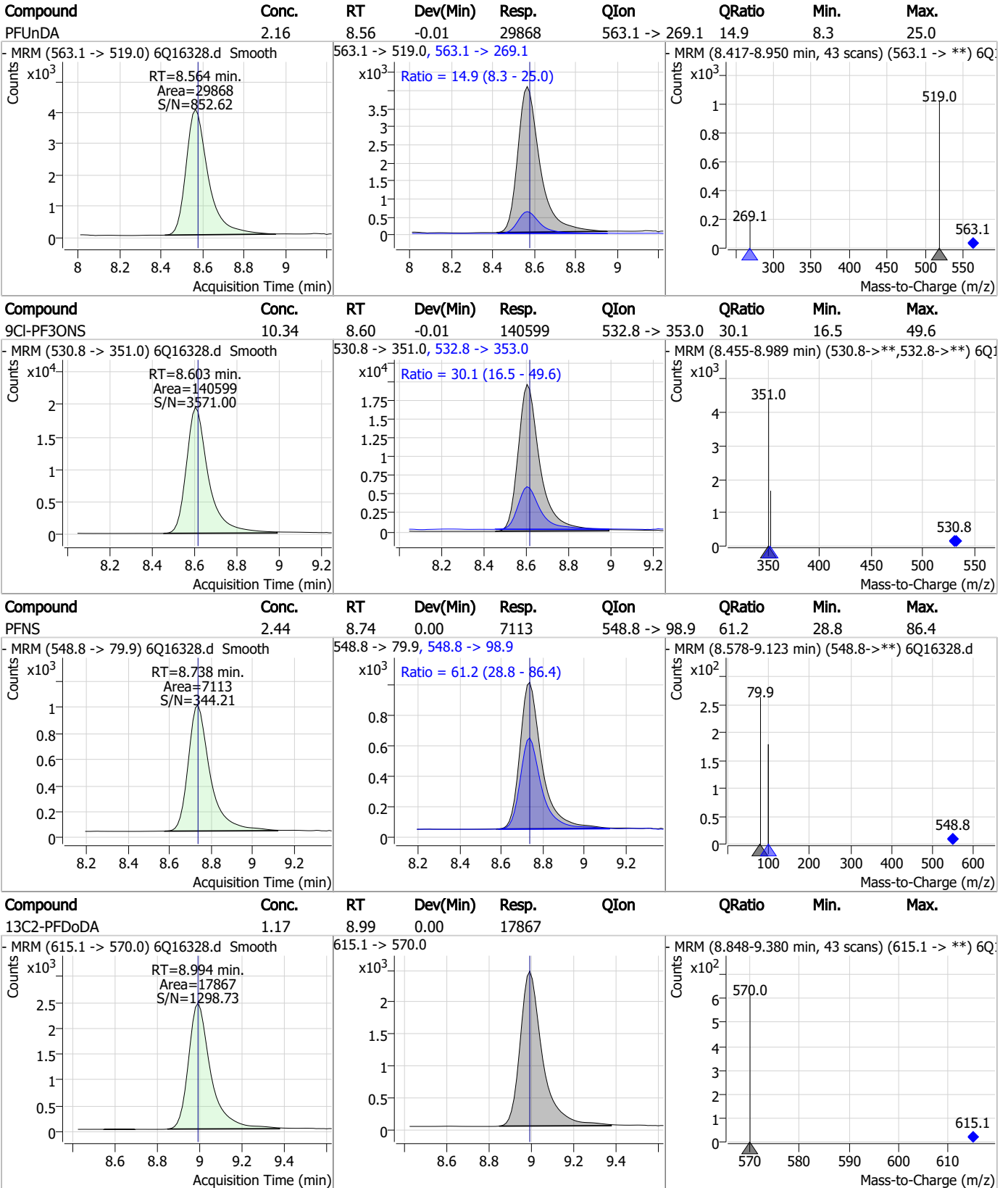
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.76	8.38	0.00	8025 (m)	584.2 -> 526.0	47.9	23.0	69.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.56	-0.01	17242				



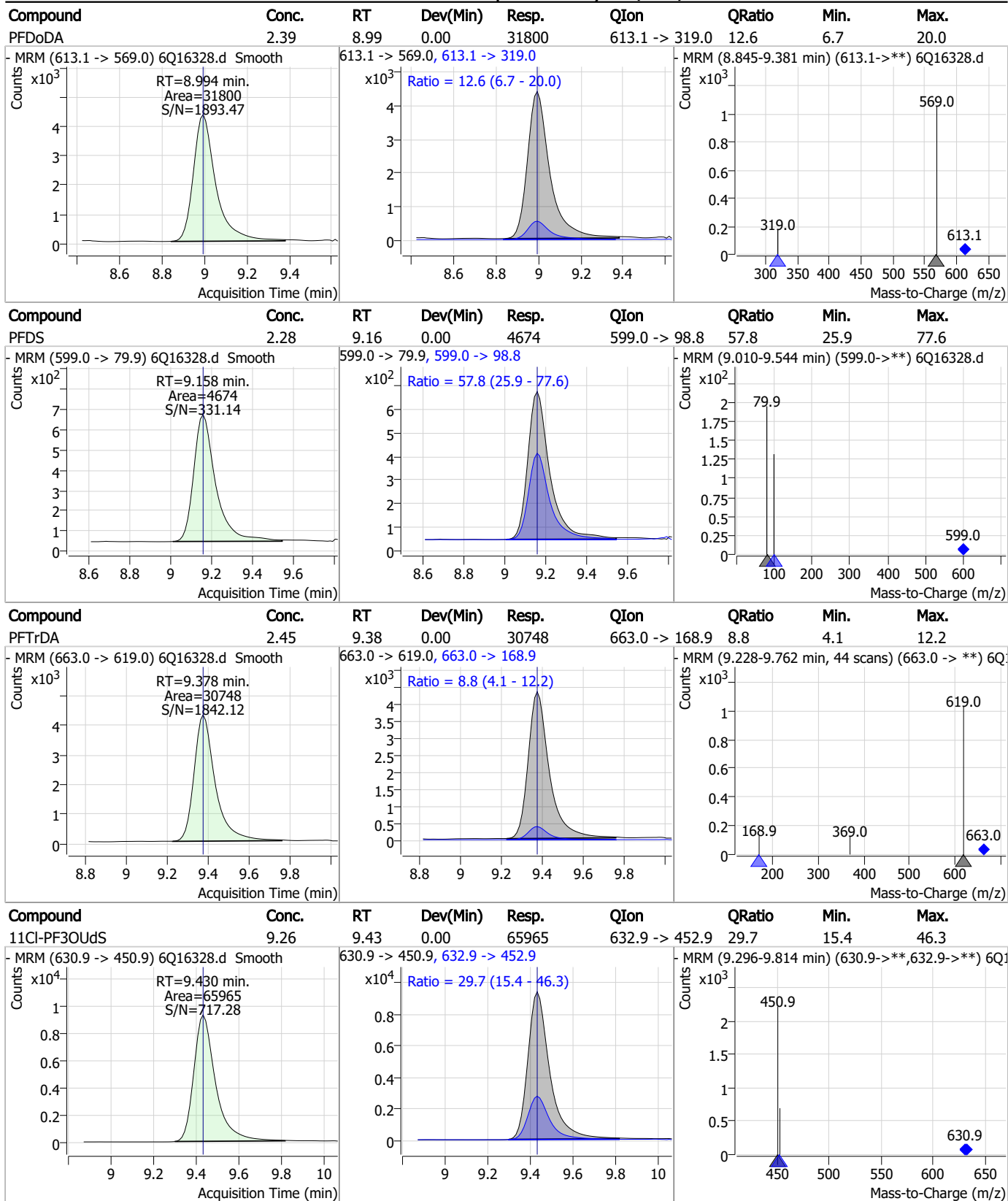
Perfluorinated Compounds by LC/MS/MS



7.7.16 7

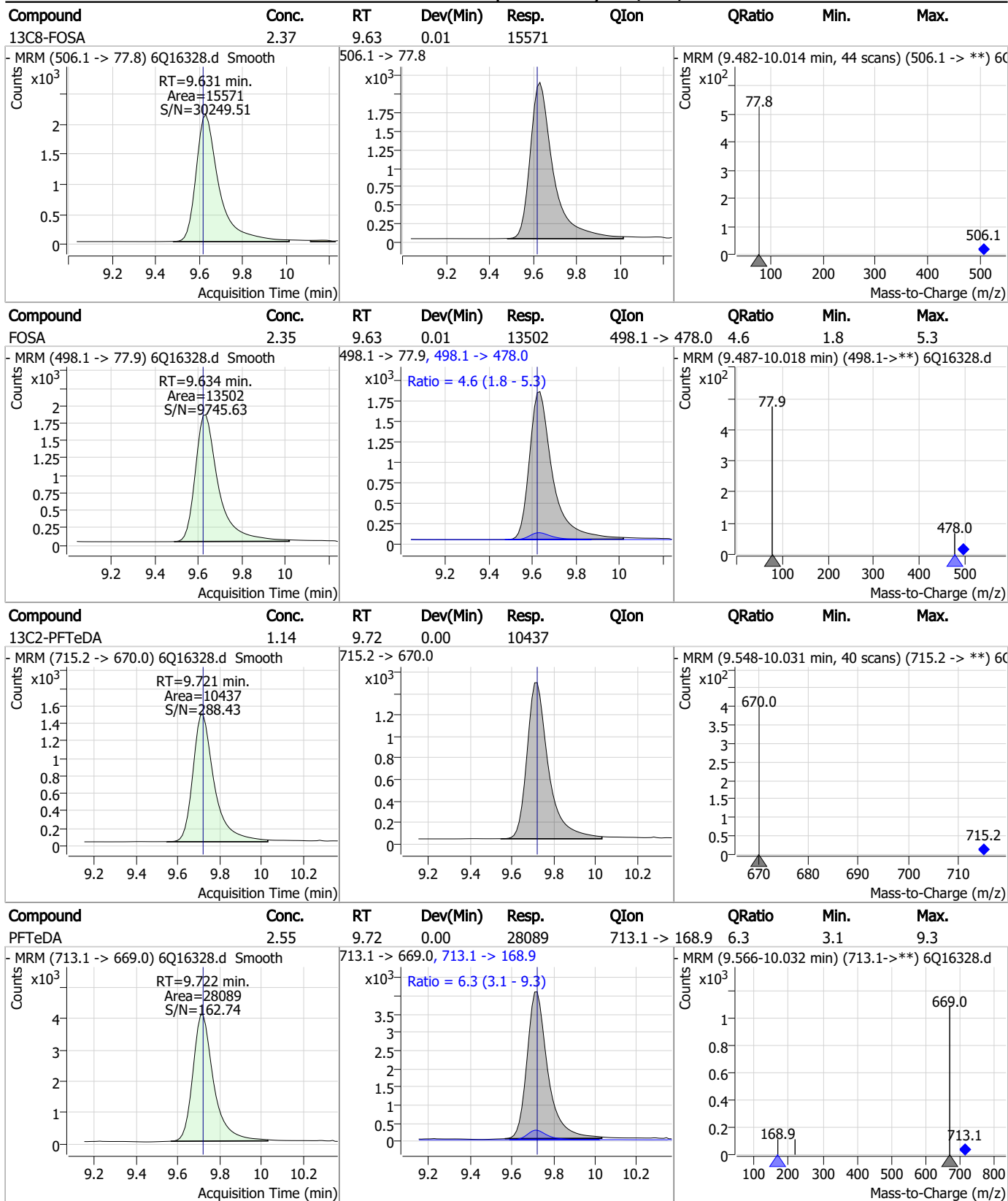


Perfluorinated Compounds by LC/MS/MS



7.7.16
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Perfluorinated Compounds by LC/MS/MS



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7

Perfluorinated Compounds by LC/MS/MS

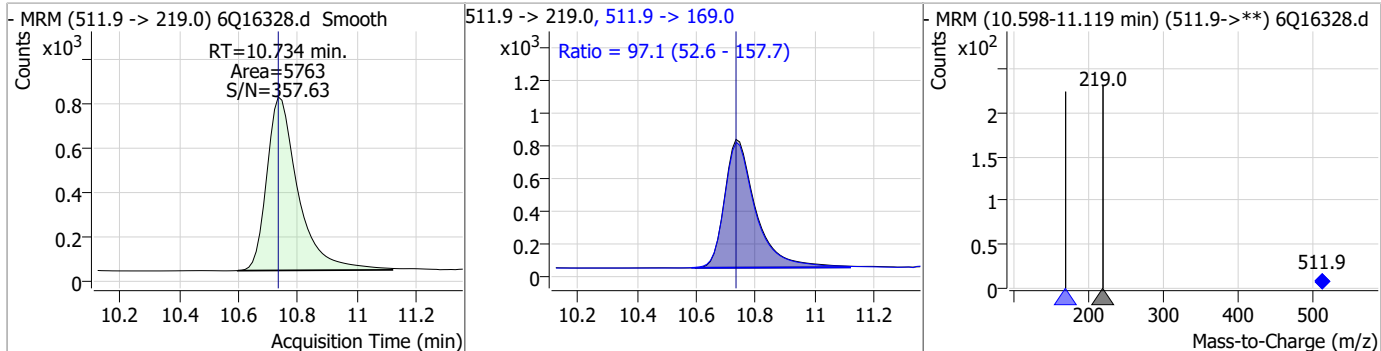
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.29	9.85	0.00	2728	699.1 -> 98.8	65.9	31.4	94.2
d7-MeFOSE	21.06	10.65	0.00	18938				
MeFOSE	25.07	10.67	0.00	17899				
d3-MeFOSA	2.29	10.73	0.00	5437				

7.7.16
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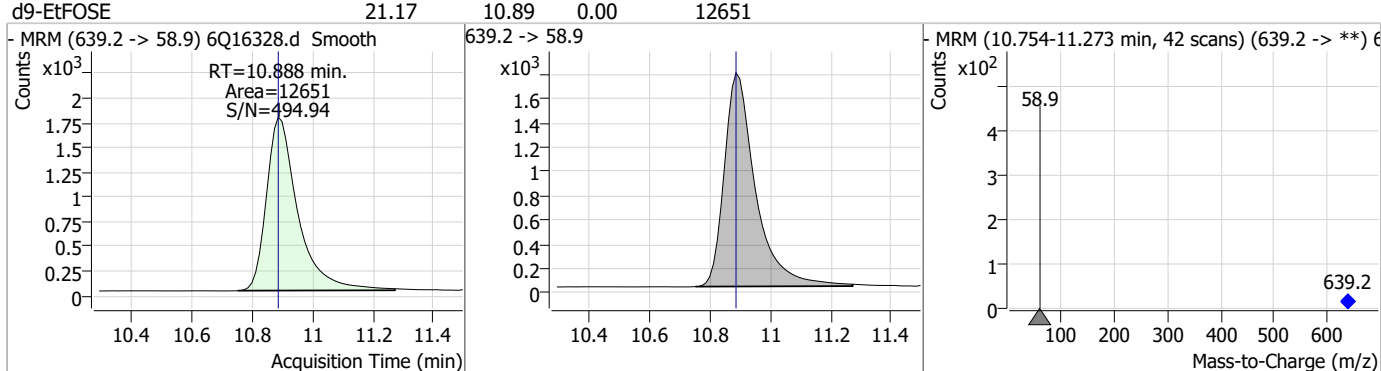


Perfluorinated Compounds by LC/MS/MS

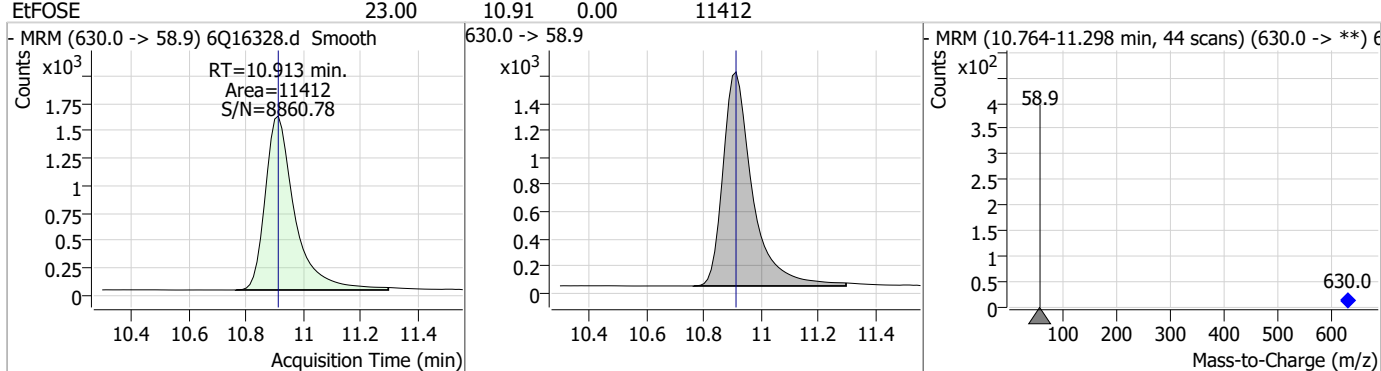
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.52	10.73	0.00	5763	511.9 -> 169.0	97.1	52.6	157.7



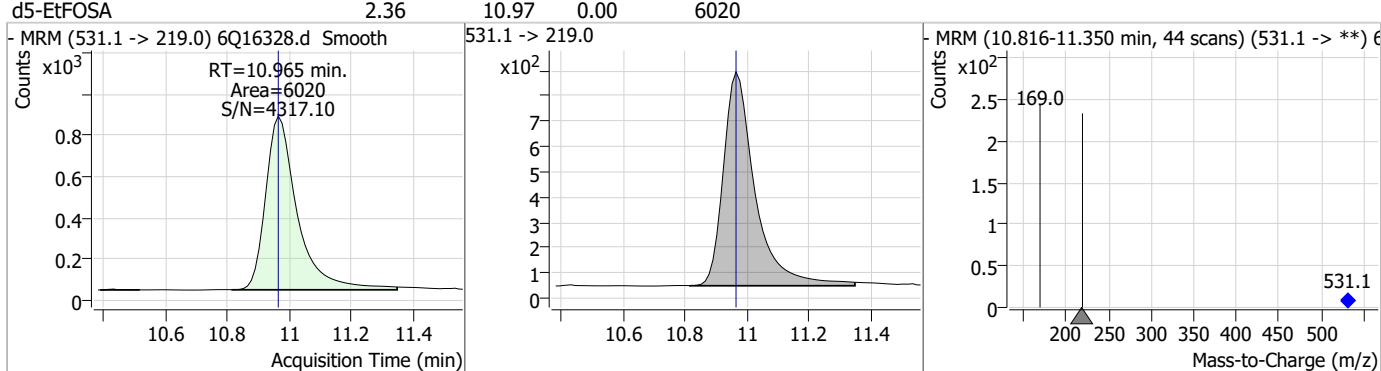
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.17	10.89	0.00	12651				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	23.00	10.91	0.00	11412				

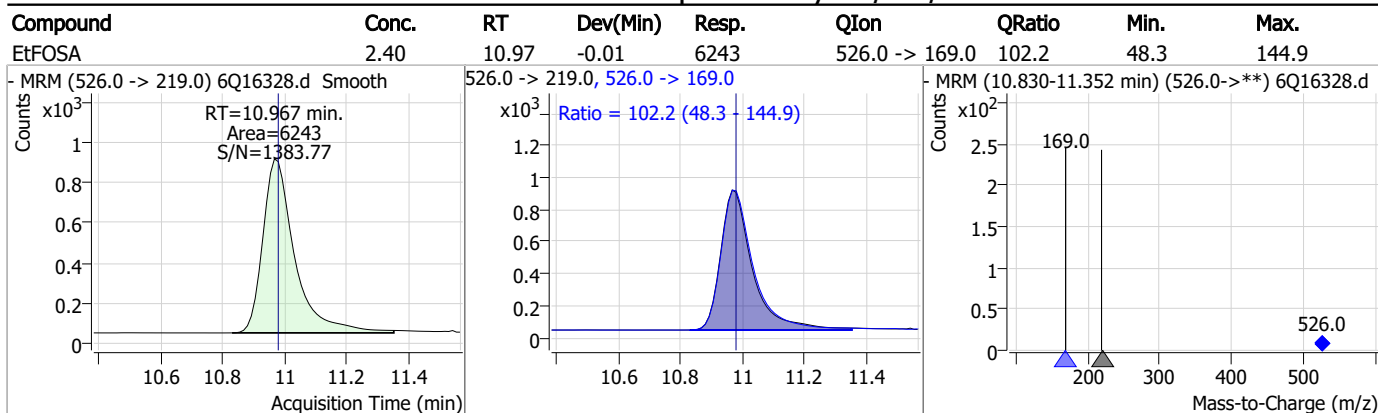


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.36	10.97	0.00	6020				



7.7.16
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Perfluorinated Compounds by LC/MS/MS



7.7.16
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Manual Integration Approval Summary

Sample Number: S6Q243-CC239 Method: EPA DRAFT 1633
Lab FileID: 6Q16328.D Analyst approved: 04/10/23 13:51 Martha Valls
Injection Time: 04/07/23 22:40 Supervisor approved: 04/10/23 18:10 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.27	Split peak
EtFOSAA	2991-50-6		8.38	Split peak

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DATE:	04/04/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_040423_S6Q239
CAL DATE:	04/04/23
ANALYST:	M. Valls
RUN BATCH:	S6Q239

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% CAN 220225 2mlM AMAC: 11387
IC/CC STD LOT #:	LCMS 2092B
ICV STD LOT #:	LCMS 2092B/2071
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q16001.d	P1-B9	CCB	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
2	6Q16002.d	P1-B9	CCB	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
3	6Q16003.d	P1-B3	RT TDCA	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
4	6Q16004.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
5	6Q16005.d	P1-A1	ic239-0	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
6	6Q16006.d	P1-A2	ic239-1	1633full.m	Calibration	1.6/500	OP96085.S6Q239.500,,,5.0,1,water	Curve Pass
7	6Q16007.d	P1-A3	ic239-2	1633full.m	Calibration	4/500	OP96085.S6Q239.500,,,5.0,1,water	✓
8	6Q16008.d	P1-A4	ic239-3	1633full.m	Calibration	10/500	OP96085.S6Q239.500,,,5.0,1,water	✓
9	6Q16009.d	P1-A5	ic239-4	1633full.m	Calibration	20/500	OP96085.S6Q239.500,,,5.0,1,water	✓
10	6Q16010.d	P1-A6	ic239-5	1633full.m	Calibration	40/500	OP96085.S6Q239.500,,,5.0,1,water	✓
11	6Q16011.d	P1-A7	ic239-6	1633full.m	Calibration	100/500	OP96085.S6Q239.500,,,5.0,1,water	✓
12	6Q16012.d	P1-A8	ic239-7	1633full.m	Calibration	200/500	OP96085.S6Q239.500,,,5.0,1,water	✓
13	6Q16013.d	P1-A9	ic239-8	1633full.m	Calibration	1x	OP96085.S6Q239.500,,,5.0,1,water	✓
14	6Q16014.d	P1-A1	IBLK	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
15	6Q16015.d	P1-B1	icv239-4	1633full.m	Sample	20/500	OP96085.S6Q239.500,,,5.0,1,water	Pass, prep by NG
16	6Q16016.d	P1-B2	icv239-20	1633full.m	Sample	100/500	OP96085.S6Q239.500,,,5.0,1,water	Pass
17	6Q16017.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96085.S6Q239.500,,,5.0,1,water	Pass
18	6Q16018.d	P1-A2	cc239-1.0LL	1633full.m	QC	1.6/500	OP96085.S6Q239.500,,,5.0,1,water	Pass
19	6Q16019.d	P2-C1	op96208-bs	1633full.m	Sample		OP96208.S6Q239.125,,,5.0,1,water	Pass
20	6Q16020.d	P2-C2	op96208-llbs:2	1633full.m	Sample		OP96208.S6Q239.125,,,5.0,1,water	Pass
21	6Q16021.d	P2-C3	op96208-mb	1633full.m	Sample		OP96208.S6Q239.125,,,5.0,1,water	✓
22	6Q16022.d	P2-C4	FC3457-7	1633full.m	Sample		OP96208.S6Q239.60,,,5.0,1,water	rr10x
23	6Q16023.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96085.S6Q239.500,,,5.0,1,water	Pass
24	6Q16024.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓
25	6Q16025.d	P2-C5	op96209-bs	1633full.m	Sample		OP96209.S6Q239.500,,,5.0,1,water	Pass
26	6Q16026.d	P2-C6	op96209-llbs:3	1633full.m	Sample		OP96209.S6Q239.500,,,5.0,1,water	Pass
27	6Q16027.d	P2-C7	op96209-mb	1633full.m	Sample		OP96209.S6Q239.500,,,5.0,1,water	✓
28	6Q16028.d	P2-C8	FC3853-1	1633full.m	Sample		OP96209.S6Q239.565,,,5.0,1,water	✓
29	6Q16029.d	P2-C9	op96209-ms	1633full.m	Sample		OP96209.S6Q239.565,,,5.0,1,water	✓
30	6Q16030.d	P2-D1	FC3853-2	1633full.m	Sample		OP96209.S6Q239.535,,,5.0,1,water	✓
31	6Q16031.d	P2-D2	op96209-dup	1633full.m	Sample		OP96209.S6Q239.535,,,5.0,1,water	✓
32	6Q16032.d	P2-D3	FC3641-1	1633full.m	Sample		OP96209.S6Q239.525,,,5.0,1,water	✓
33	6Q16033.d	P2-D4	FC3671-9	1633full.m	Sample		OP96209.S6Q239.535,,,5.0,1,water	✓
34	6Q16034.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96085.S6Q239.500,,,5.0,1,water	Pass
35	6Q16035.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q239.500,,,5.0,1,water	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q16036.d	P6-A1	op96190-bs	1633full.m	Sample	OP96190,S6Q239,500,,,5.0,1,water	Pass
37	6Q16037.d	P6-A2	op96190-llbs:2	1633full.m	Sample	OP96190,S6Q239,500,,,5.0,1,water	Pass
38	6Q16038.d	P6-A3	op96190-mb	1633full.m	Sample	OP96190,S6Q239,500,,,5.0,1,water	✓
39	6Q16039.d	P6-A4	JD62439-1	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	rr10x + redo 25ml
40	6Q16040.d	P6-A5	JD62439-2	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	ISTD fail, rr10x + redo 25ml
41	6Q16041.d	P6-A6	JD62439-3	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	ISTD fail, rr10x + redo 25ml
42	6Q16042.d	P6-A7	JD62439-4	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	rr1x co
43	6Q16043.d	P6-A8	JD62588-4	1633full.m	Sample	OP96190,S6Q239,560,,,5.0,1,water	✓
44	6Q16044.d	P6-A9	op96190-ms	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
45	6Q16045.d	P6-B1	JD62588-5	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
46	6Q16046.d	P1-A5	cc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
47	6Q16047.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
48	6Q16048.d	P6-B2	JD62588-6	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
49	6Q16049.d	P6-B3	JD62588-7	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
50	6Q16050.d	P6-B4	JD62588-10	1633full.m	Sample	OP96190,S6Q239,560,,,5.0,1,water	✓
51	6Q16051.d	P6-B5	JD62588-11	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	✓
52	6Q16052.d	P6-B6	JD62588-14	1633full.m	Sample	OP96190,S6Q239,490,,,5.0,1,water	✓
53	6Q16053.d	P6-B7	JD62588-15	1633full.m	Sample	OP96190,S6Q239,510,,,5.0,1,water	✓
54	6Q16054.d	P6-B8	JD62588-1A	1633full.m	Sample	OP96190,S6Q239,560,,,5.0,1,water	✓
55	6Q16055.d	P6-B9	JD62588-3A	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
56	6Q16056.d	P6-C1	JD62588-8A	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
57	6Q16057.d	P6-C2	JD62588-9A	1633full.m	Sample	OP96190,S6Q239,525,,,5.0,1,water	✓
58	6Q16058.d	P1-A5	cc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
59	6Q16059.d	P1-A2	cc239-1,0LL	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	8.2, 7.3:FTCA high,
60	6Q16060.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
61	6Q16061.d	P6-C3	JD62588-12A	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
62	6Q16062.d	P6-C4	op96190-dup	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
63	6Q16063.d	P6-C5	JD62588-13A	1633full.m	Sample	OP96190,S6Q239,570,,,5.0,1,water	✓
64	6Q16064.d	P6-C6	op96192-bs	1633full.m	Sample	OP96192,S6Q239,500,,,5.0,1,water	Pass
65	6Q16065.d	P6-C7	op96192-llbs:2	1633full.m	Sample	OP96192,S6Q239,500,,,5.0,1,water	Pass
66	6Q16066.d	P6-C8	op96192-mb	1633full.m	Sample	OP96192,S6Q239,500,,,5.0,1,water	✓
67	6Q16067.d	P6-C9	JD62631-1	1633full.m	Sample	OP96192,S6Q239,535,,,5.0,1,water	✓
68	6Q16068.d	P6-D1	JD62631-3A	1633full.m	Sample	OP96192,S6Q239,460,,,5.0,1,water	✓
69	6Q16069.d	P6-D5	JD62631-5A	1633full.m	Sample	OP96192,S6Q239,495,,,5.0,1,water	rr10x
70	6Q16070.d	P6-D6	JD62631-6A	1633full.m	Sample	OP96192,S6Q239,508,,,5.0,1,water	rr2x
71	6Q16071.d	P1-A5	cc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
72	6Q16072.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
73	6Q16073.d	P6-D2	JD62631-4A	1633full.m	Sample	OP96192,S6Q239,505,,,5.0,1,water	✓
74	6Q16074.d	P6-D3	op96192-ms	1633full.m	Sample	OP96192,S6Q239,545,,,5.0,1,water	✓
75	6Q16075.d	P6-D4	op96192-msd	1633full.m	Sample	OP96192,S6Q239,545,,,5.0,1,water	✓
76	6Q16076.d	P6-D7	JD62631-7A	1633full.m	Sample	OP96192,S6Q239,507,,,5.0,1,water	rr10x
77	6Q16077.d	P6-D8	JD62640-2	1633full.m	Sample	OP96192,S6Q239,545,,,5.0,1,water	✓
78	6Q16078.d	P6-D9	JD62640-3A	1633full.m	Sample	OP96192,S6Q239,480,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

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79	6Q16079.d	P6-E1	JD62640-4A	1633full.m	Sample	OP96192,S6Q239,525,,,5.0,1,water	✓
80	6Q16080.d	P6-E2	JD62640-5A	1633full.m	Sample	OP96192,S6Q239,515,,,5.0,1,water	✓
81	6Q16081.d	P6-E3	JD62640-6A	1633full.m	Sample	OP96192,S6Q239,520,,,5.0,1,water	rf5x
82	6Q16082.d	P6-E4	JD62658-1	1633full.m	Sample	OP96192,S6Q239,410,,,5.0,1,water	rf1x co
83	6Q16083.d	P1-A5	cc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
84	6Q16084.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
85	6Q16085.d	P6-E5	JD62658-2	1633full.m	Sample	OP96192,S6Q239,495,,,5.0,1,water	✓
86	6Q16086.d	P6-E6	JD62658-3	1633full.m	Sample	OP96192,S6Q239,490,,,5.0,1,water	✓
87	6Q16087.d	P6-E7	JD62658-4	1633full.m	Sample	OP96192,S6Q239,535,,,5.0,1,water	✓
88	6Q16088.d	P6-E8	JD62658-5	1633full.m	Sample	OP96192,S6Q239,515,,,5.0,1,water	✓
89	6Q16089.d	P6-E9	JD62658-6	1633full.m	Sample	OP96192,S6Q239,535,,,5.0,1,water	✓
90	6Q16090.d	P6-F1	JD62629-1A	1633full.m	Sample	OP96192,S6Q239,530,,,5.0,1,water	✓
91	6Q16091.d	P6-F2	JD62629-3A	1633full.m	Sample	OP96192,S6Q239,465,,,5.0,1,water	✓
92	6Q16092.d	P1-A5	cc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
93	6Q16093.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
94	6Q16094.d	P1-A1	Reset injector	1633full.m	Sample	OP96085,S6Q239,500,,,5.0,1,water	✓
95	6Q16095.d	P2-D5	JD62439-4	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,1,water	✓
96	6Q16096.d	P2-D6	FC3457-7	1633full.m	Sample	OP96208,S6Q239,60,,,5.0,10,water	✓
97	6Q16097.d	P2-D7	JD62439-1	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,10,water	redo at lower volume
98	6Q16098.d	P2-D8	JD62439-2	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,10,water	redo at lower volume
99	6Q16099.d	P2-D9	JD62439-3	1633full.m	Sample	OP96190,S6Q239,540,,,5.0,10,water	redo at lower volume
100	6Q16100.d	P1-A5	ecc239-4	1633full.m	QC	OP96085,S6Q239,500,,,5.0,1,water	Pass
101	6Q16101.d	P1-B9	iccb	1633full.m	Sample	OP96085,S6Q240,500,,,5.0,1,water	✓

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DATE:	04/07/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_040423_S6Q239
CAL DATE:	04/04/23
ANALYST:	M. Valls
RUN BATCH:	S6Q242

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% CAN 220225 2mlM AMAC: 11387
IC/CC STD LOT #:	LCMS 2092B
ICV STD LOT #:	LCMS 2092B/2071
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
81	6Q16263.d	P1-B9	CCB	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
82	6Q16264.d	P1-B9	CCB	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
83	6Q16265.d	P1-B3	RT TDCA	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
84	6Q16266.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
85	6Q16267.d	P1-A9	high std	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
86	6Q16268.d	P1-A1	IBLK	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
87	6Q16269.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q242,500,,,5.0,1,water	✓
88	6Q16270.d	P1-A2	cc239-1.0LL	1633full.m	QC	1.6/500	OP96171,S6Q242,500,,,5.0,1,water	✓
89	6Q16271.d	P5-A1	op96232-bs	1633full.m	Sample		OP96232,S6Q242,500,,,5.0,1,water	✓
90	6Q16272.d	P5-A2	op96232-llbs:3	1633full.m	Sample		OP96232,S6Q242,500,,,5.0,1,water	✓
91	6Q16273.d	P5-A3	op96232-mb	1633full.m	Sample		OP96232,S6Q242,500,,,5.0,1,water	✓
92	6Q16274.d	P5-A4	FC3748-1	1633full.m	Sample		OP96232,S6Q242,565,,,5.0,1,water	✓
93	6Q16275.d	P5-A5	FC3748-2	1633full.m	Sample		OP96232,S6Q242,535,,,5.0,1,water	✓
94	6Q16276.d	P5-A6	FC3748-3	1633full.m	Sample		OP96232,S6Q242,560,,,5.0,1,water	✓
95	6Q16277.d	P5-A7	FC3748-4	1633full.m	Sample		OP96232,S6Q242,555,,,5.0,1,water	✓
96	6Q16278.d	P5-A8	FC3748-5	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
97	6Q16279.d	P5-A9	FC3748-6	1633full.m	Sample		OP96232,S6Q242,560,,,5.0,1,water	✓
98	6Q16280.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q242,500,,,5.0,1,water	✓
99	6Q16281.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
100	6Q16282.d	P5-B1	FC3748-7	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
101	6Q16283.d	P5-B2	op96232-ms	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
102	6Q16284.d	P5-B3	op96232-msd	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
103	6Q16285.d	P5-B4	FC3748-8	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
104	6Q16286.d	P5-B5	FC3748-9	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
105	6Q16287.d	P5-B6	FC3748-10	1633full.m	Sample		OP96232,S6Q242,535,,,5.0,1,water	✓
106	6Q16288.d	P5-B7	FC3748-11	1633full.m	Sample		OP96232,S6Q242,535,,,5.0,1,water	✓
107	6Q16289.d	P5-B8	FC3748-12	1633full.m	Sample		OP96232,S6Q242,560,,,5.0,1,water	✓
108	6Q16290.d	P5-B9	FC3748-13	1633full.m	Sample		OP96232,S6Q242,505,,,5.0,1,water	✓
109	6Q16291.d	P5-C1	FC3748-14	1633full.m	Sample		OP96232,S6Q242,530,,,5.0,1,water	✓
110	6Q16292.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q242,500,,,5.0,1,water	✓
111	6Q16293.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
112	6Q16294.d	P5-C2	FC3748-15	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
113	6Q16295.d	P5-C3	FC3748-16	1633full.m	Sample		OP96232,S6Q242,490,,,5.0,1,water	✓
114	6Q16296.d	P5-C4	FC3748-17	1633full.m	Sample		OP96232,S6Q242,540,,,5.0,1,water	✓
115	6Q16297.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q242,500,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

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116	6Q16298.d	P1-A2	cc239-1.0LL	1633full.m	QC	1.6/500	OP96171,S6Q242,500,,,5.0,1,water	✓
117	6Q16299.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓
118	6Q16300.d	P5-C5	op96214-bs	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	✓
119	6Q16301.d	P5-C6	op96214-llbs:2	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	✓
120	6Q16302.d	P5-C7	op96214-mb	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	✓
121	6Q16303.d	P5-C8	JD61598-6	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
122	6Q16304.d	P5-C9	op96214-ms	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
123	6Q16305.d	P5-D1	JD61598-4B	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
124	6Q16306.d	P5-D2	JD61598-7B	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
125	6Q16307.d	P5-D3	op96214-dup	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
126	6Q16308.d	P5-D4	JD61598-9B	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
127	6Q16309.d	P5-D5	JD61598-12B	1633full.m	Sample		OP96214,S6Q242,125,,,5.0,1,water	XH samples
128	6Q16310.d	P1-A5	Ecc239-4	1633full.m	QC	20/500	OP96171,S6Q242,500,,,5.0,1,water	✓
129	6Q16311.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q242,500,,,5.0,1,water	✓

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DATE:	04/08/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_040423_S6Q239
CAL DATE:	04/04/23
ANALYST:	M. Valls
RUN BATCH:	S6Q243

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W15% CAN 220225 2mlM AMAC: 11387
IC/CC STD LOT #:	LCMS 2092B
ICV STD LOT #:	LCMS 2092B/2071
ISTD/ID STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
130	6Q16312.d	P1-B9	CCB	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
131	6Q16313.d	P1-B9	CCB	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
132	6Q16314.d	P1-B3	RT TDCA	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
133	6Q16315.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
134	6Q16316.d	P1-A9	high std	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
135	6Q16317.d	P1-A1	IBLK	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
136	6Q16318.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q243,500,,,5.0,1,water	✓
137	6Q16319.d	P1-A2	cc239-1,0LL	1633full.m	QC	1.6/500	OP96171,S6Q243,500,,,5.0,1,water	✓
138	6Q16320.d	P6-D1	op96279-bs	1633full.m	Sample		OP96279,S6Q243,500,,,5.0,1,water	✓
139	6Q16321.d	P6-D2	op96279-llbs:3	1633full.m	Sample		OP96279,S6Q243,500,,,5.0,1,water	✓
140	6Q16322.d	P6-D3	op96279-mb	1633full.m	Sample		OP96279,S6Q243,500,,,5.0,1,water	✓
141	6Q16323.d	P6-D4	fc3898-1	1633full.m	Sample		OP96279,S6Q243,570,,,5.0,1,water	✓
142	6Q16324.d	P6-D5	op96279-ms	1633full.m	Sample		OP96279,S6Q243,550,,,5.0,1,water	✓
143	6Q16325.d	P6-D6	fc3898-2	1633full.m	Sample		OP96279,S6Q243,550,,,5.0,1,water	✓
144	6Q16326.d	P6-D7	fc3898-3	1633full.m	Sample		OP96279,S6Q243,540,,,5.0,1,water	✓
145	6Q16327.d	P6-D8	op96279-dup	1633full.m	Sample		OP96279,S6Q243,540,,,5.0,1,water	✓
146	6Q16328.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q243,500,,,5.0,1,water	✓
147	6Q16329.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
148	6Q16330.d	P6-D9	op96278-bs	1633full.m	Sample		OP96278,S6Q243,500,,,5.0,1,water	✓
149	6Q16331.d	P6-E1	op96278-llbs:2	1633full.m	Sample		OP96278,S6Q243,500,,,5.0,1,water	✓
150	6Q16332.d	P6-E2	op96278-mb	1633full.m	Sample		OP96278,S6Q243,500,,,5.0,1,water	✓
151	6Q16333.d	P6-E3	jd62439-1	1633full.m	Sample		OP96278,S6Q243,25,,,5.0,1,water	✓
152	6Q16334.d	P6-E4	jd62439-1	1633full.m	Sample	50/500	OP96278,S6Q243,25,,,5.0,10,water	✓
153	6Q16335.d	P6-E5	jd62439-2	1633full.m	Sample		OP96278,S6Q243,25,,,5.0,1,water	✓
154	6Q16336.d	P6-E6	jd62439-2	1633full.m	Sample	50/500	OP96278,S6Q243,25,,,5.0,10,water	✓
155	6Q16337.d	P6-E7	jd62439-3	1633full.m	Sample		OP96278,S6Q243,25,,,5.0,1,water	✓
156	6Q16338.d	P6-E8	jd62439-3	1633full.m	Sample	50/500	OP96278,S6Q243,25,,,5.0,10,water	✓
157	6Q16339.d	P1-A5	cc239-4	1633full.m	QC	20/500	OP96171,S6Q243,500,,,5.0,1,water	✓
158	6Q16340.d	P1-A1	iccb	1633full.m	Sample		OP96171,S6Q243,500,,,5.0,1,water	✓
159	6Q16341.d	P2-A1	op96276-bs	1633full.m	Sample		OP96276,S6Q243,500,,,5.0,1,water	✓
160	6Q16342.d	P2-A2	op96276-llbs:3	1633full.m	Sample		OP96276,S6Q243,500,,,5.0,1,water	✓
161	6Q16343.d	P2-A3	op96276-mb	1633full.m	Sample		OP96276,S6Q243,500,,,5.0,1,water	✓
162	6Q16344.d	P2-A4	fc3751-1	1633full.m	Sample		OP96276,S6Q243,560,,,5.0,1,water	✓
163	6Q16345.d	P2-A5	op96276-ms	1633full.m	Sample		OP96276,S6Q243,560,,,5.0,1,water	✓
164	6Q16346.d	P2-A6	fc3751-2	1633full.m	Sample		OP96276,S6Q243,540,,,5.0,1,water	✓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

165	6Q16347.d	P2-A7	op96276-dup	1633full.m	Sample	OP96276.S6Q243.540,,,5.0,1,water	✓
166	6Q16348.d	P2-A8	fc3751-3	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
167	6Q16349.d	P2-A9	fc3751-4	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
168	6Q16350.d	P2-B1	fc3751-5	1633full.m	Sample	OP96276.S6Q243.525,,,5.0,1,water	✓
169	6Q16351.d	P1-A5	cc239-4	1633full.m	QC	20/500	✓
170	6Q16352.d	P1-A1	iccb	1633full.m	Sample	OP96171.S6Q243.500,,,5.0,1,water	✓
171	6Q16353.d	P2-B2	fc3751-6	1633full.m	Sample	OP96276.S6Q243.510,,,5.0,1,water	✓
172	6Q16354.d	P2-B3	fc3751-7	1633full.m	Sample	OP96276.S6Q243.550,,,5.0,1,water	✓
173	6Q16355.d	P2-B4	fc3751-8	1633full.m	Sample	OP96276.S6Q243.525,,,5.0,1,water	✓
174	6Q16356.d	P2-B5	fc3751-9	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
175	6Q16357.d	P2-B6	fc3751-10	1633full.m	Sample	OP96276.S6Q243.545,,,5.0,1,water	✓
176	6Q16358.d	P2-B7	fc3751-11	1633full.m	Sample	OP96276.S6Q243.525,,,5.0,1,water	✓
177	6Q16359.d	P2-B8	fc3751-12	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
178	6Q16360.d	P2-B9	fc3751-13	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
179	6Q16361.d	P2-C1	fc3751-14	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
180	6Q16362.d	P2-C2	fc3751-15	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
181	6Q16363.d	P1-A5	cc239-4	1633full.m	QC	20/500	✓
182	6Q16364.d	P1-A2	cc239-1.0LL	1633full.m	QC	1.6/500	✓
183	6Q16365.d	P1-A1	iccb	1633full.m	Sample	OP96171.S6Q243.500,,,5.0,1,water	✓
184	6Q16366.d	P2-C3	fc3751-16	1633full.m	Sample	OP96276.S6Q243.565,,,5.0,1,water	✓
185	6Q16367.d	P2-C4	fc3751-17	1633full.m	Sample	OP96276.S6Q243.525,,,5.0,1,water	✓
186	6Q16368.d	P2-C5	op96277-bs	1633full.m	Sample	OP96277.S6Q243.500,,,5.0,1,water	✓
187	6Q16369.d	P2-C6	op96277-llbs:3	1633full.m	Sample	OP96277.S6Q243.500,,,5.0,1,water	✓
188	6Q16370.d	P2-C7	op96277-mb	1633full.m	Sample	OP96277.S6Q243.500,,,5.0,1,water	✓
189	6Q16371.d	P2-C8	fc3756-1	1633full.m	Sample	OP96277.S6Q243.535,,,5.0,1,water	✓
190	6Q16372.d	P2-C9	fc3756-2	1633full.m	Sample	OP96277.S6Q243.575,,,5.0,1,water	✓
191	6Q16373.d	P2-D1	op96277-ms	1633full.m	Sample	OP96277.S6Q243.535,,,5.0,1,water	✓
192	6Q16374.d	P2-D2	op96277-msd	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
193	6Q16375.d	P2-D3	fc3756-3	1633full.m	Sample	OP96277.S6Q243.575,,,5.0,1,water	✓
194	6Q16376.d	P1-A5	cc239-4	1633full.m	QC	20/500	✓
195	6Q16377.d	P1-A1	iccb	1633full.m	Sample	OP96171.S6Q243.500,,,5.0,1,water	✓
196	6Q16378.d	P2-D4	fc3756-4	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	RR2X
197	6Q16379.d	P2-D5	fc3756-5	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	RR2X
198	6Q16380.d	P2-D6	fc3756-6	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
199	6Q16381.d	P2-D7	fc3756-7	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
200	6Q16382.d	P2-D8	fc3756-8	1633full.m	Sample	OP96277.S6Q243.575,,,5.0,1,water	✓
201	6Q16383.d	P2-D9	fc3756-9	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	RR2X
202	6Q16384.d	P2-E1	fc3756-10	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
203	6Q16385.d	P2-E2	fc3756-11	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
204	6Q16386.d	P2-E3	fc3756-12	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
205	6Q16387.d	P2-E4	fc3756-13	1633full.m	Sample	OP96277.S6Q243.560,,,5.0,1,water	✓
206	6Q16388.d	P1-A5	cc239-4	1633full.m	QC	20/500	✓
207	6Q16389.d	P1-A1	iccb	1633full.m	Sample	OP96171.S6Q243.500,,,5.0,1,water	✓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

208	6Q16390.d	P2-E5	fc3756-14	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
209	6Q16391.d	P2-E6	fc3756-15	1633full.m	Sample	OP96277.S6Q243.575,,,5.0,1,water	✓
210	6Q16392.d	P2-E7	fc3756-16	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	rf5x teda low
211	6Q16393.d	P2-E8	fc3756-17	1633full.m	Sample	OP96277.S6Q243.540,,,5.0,1,water	✓
212	6Q16394.d	P1-A5	ecc239-4	1633full.m	QC	OP96171.S6Q243.500,,,5.0,1,water	✓
213	6Q16395.d	P1-A1	iccb	1633full.m	Sample	OP96171.S6Q243.500,,,5.0,1,water	✓

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2092	1033 SPIKE Cal. Std. A-B	11672	PFAC-MxH	Wellington	8/8/27	3/23/23	1-4 ppm	250uL	4mL	02.5 125 250ppb	1033 MIX	3/23/23	9/23/23	NUU
		11658	PFAC-MxJ		9/14/26	3/6/24	1-10 ppm	250uL		02.5 025ppb				
		11659B	PFAC-MxK		04/17/23	3/20/24	2 ppm	500uL		25ppb				
		11674A	PFAC-MxL		01/11/25	3/23/24	2 ppm	250uL		125ppb				
		11660	PFAC-MxG		12/1/27	3/6/24	2 ppm	250uL		312/160 ppb				
		11642A	PFAC-MxI		9/14/26	3/6/24	4-20 ppm	312uL						
		11642B	PFAC-MxJ		9/14/26	3/23/24	50ppm	400uL	4.0mL	15ppm	95/100H S/1420	03/21/23	06/23/23	NG
LCMS 2093	List 40 SURF AND-ON-SCOPE MIX	11333	DTN-METROSE	Wellington Labs	01/27/27	10/12/23	50ppm	400uL						NG
		11460	DTN-ETROSE		01/27/27	10/12/23		400uL						NG
		11115	DTN-PFHDA		11/23/28	08/12/23		80uL						NG
		10836	DTN-ETROSA		12/30/25	08/12/23		80uL						NG
LCMS 2094A-B	PFC ID STD.	11668	PFOA-TOD (2 COMPS)	Absolute	11/09/27	03/13/24	1.0ppm	400uL	4.0mL	100ppb	95/100H S/1420	03/28/23	09/28/23	NG
		11432	N-ME-TOSA-M	Wellington Labs	02/08/27	02/13/24	50ppm	8uL						NG
		11250	PBSA-1		11/10/26	11/08/23								NG
		11249	FHXSA-1		10/29/26	11/02/23								NG
		11327	PFEHS		03/20/27	10/16/23								NG
					NG	02/28/23								

* tested & passed on 3/29/24 10:57

* based on date opened as specified in each SGS - Orlando SOP.



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 1987	40 LIST STD ADD-ON #1	10726A	10'2 PF5	Washington Labs	03/03/26	03/31/23	50ppm	80uL	4.0mL	1ppm	05/1NEOH 5747D	10/18/22	03/21/23	NS
		10810	PFDoS		07/01/26	10/18/23								
		10829	N-HexOSA		08/03/26	06/23/23								
		10837	N-HeXOSA		08/10/26	08/23/23								
		10842	PFHDA	NS VENDOR	09/28/26	10/18/23								
		10841	PFODA		05/10/26	10/18/23								
		10681A	2:3 FTCA PFPPA		11/12/25	03/21/23								
		10685A	5:3 FTCA PFPPA		11/12/25	08/23/23								
		10683A	7:3 FTCA PFPPA		11/12/25	03/21/23								
		11117	PFECHS		10/14/26	06/23/23								
		10702B	PFEESA		05/12/25	10/18/23								
		10703B	PFMBA PF5OHXA		03/21/25	10/18/23								
		10764A	PFMPA PF4OPPA		03/31/25	03/21/23								
		10768B	PFHDA 3,6 OPF4PA		03/31/25	10/18/23								
						10/18/22								

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS A 2009 B	PFC SPIKE	11483	PFOA-DOD (28 COMPS)	Wellington Labs	08/05/17	11/05/13	1.0ppm	2mL	5mL	400ppb	95/MEOH 5% H2O	11/08/12	05/10/12	NG
		10839	N-ME-FOXA-M		08/13/16	09/13/13	50ppm	40uL						NG
		11294	FOXA-1		11/10/16	06/12/13								NG
		11249	FHXSA-1		12/29/16	11/03/13								NG
		11332	PFCHS		03/28/17	10/18/13								NG
LCMS A-B 2010	(SPIKE) 1623 CAL. STD.	10855F	PFAC-NXH	Wellington Labs	09/14/16	11/04/13	1-4 ppm	250uL	4mL	92.5/105/1250 ppb	16233	11/01/12	05/10/12	NG
		10853E	PFAC-NXI		09/14/16	11/04/13	1-10 ppm	250uL		162.5/162.5 ppb				NG
		10856I	PFAC-MXF		05/10/13	05/10/13	2 ppm	500uL		250ppb				NG
		10854E	PFAC-MXG		03/04/15	11/04/13	2 ppm	250uL		125 ppb				NG
		10857D	PFAC-MXJ		10/12/13	11/05/13	4-20 ppm	312uL		212/1160 ppb				NG
LCMS 2011	(SPIKE) FULL LIST STD.	11440	PFOA-DOD (28)	Absolute	08/05/17	10/14/13	1.0ppm	400uL	4.0mL	100ppb	95/MEOH 5% H2O	11/11/12	07/12/12	NG
		LCMS 1987	40 LIST ADDON #1			02/21/13	1.0ppm	400uL		100ppb				NG
		LCMS 1986	40 LIST ADDON #2			01/18/13	1.0ppm	400uL		100ppb				NG
		LCMS 2012	FOSE STD.			05/11/13	50ppm	400uL		500ppb				NG
LCMS 2012	FOSE STD.	11336	N-ET-FOSE	Wellington Labs	05/13/17	09/19/13	50ppm	200uL	2.0mL	5ppm	95/MEOH 5% H2O	11/11/12	05/11/12	NG
		11336	N-ME-FOSE		05/13/17	09/19/13	50ppm	200uL						NG

* based on date opened as specified in each SGS - Orlando SOP.

ORLD-QAC-0017-6-03-FORM-icms std prep log.xls 030819



11606 rec'd 01/13/23

CERTIFIED WEIGHT REPORT

Part Number: 64029A
Lot Number: 110922
Description: PFOA - DOD
28 components
Expiry Date: 11/09/27
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 8UTB

Solvent(s): Methanol (1 mM KOH)
2-Propanol
Lot# 102722 (98%)
32500 (2%)

SE-05 Balance Uncertainty
0.018 Flask Uncertainty

Prashant Chauhan 110922
Formulated By: Prashant Chauhan **DATE**

Pedro L. Rentas 110922
Reviewed By: Pedro L. Rentas **DATE**

Volume(s) shown below were combined and diluted to (mL):
Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									Free Acid CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid (PFBA)	99542	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid (PFPeA)	99543	050222	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid (PFHxA)	99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ipr-ret 189mg/kg
6. Perfluorononanoic acid (PFNA)	99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7. Perfluorodecanoic acid (PFDA)	99195	110922	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	ori-ret 57mg/kg
8. Perfluoroundecanoic acid (PFUnA)	99205	071522	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9. Perfluorododecanoic acid (PFDDA)	99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid (PFTDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid (PFTEA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	378-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA03221	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	N/A	N/A
13. N-Methylperfluorooctanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
14. N-Ethylperfluorooctanesulfonamidoacetic acid (br-NEFOSAA)*	4163	brNEFOSAA1121	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
15. Perfluorooctanesulfonic acid (PFOS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	032422	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17. Perfluorohexanesulfonic acid (br-PFHxS)*	99198	071522	0.02	2.00	0.017	50.2	1.00	0.02	355-46-4 (L)	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHps0822	0.021	2.10	0.017	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (br-PFOS)*	99201	033022	0.02	2.00	0.017	50.1	1.00	0.02	1763-23-1 (L)	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LPFNS1021	0.021	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A	N/A
21. Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPFDS0222	0.021	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	65271	080522	0.02	2.00	0.017	50.2	1.00	0.05	757124-72-4	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	65272	071522	0.02	2.00	0.017	50.2	1.00	0.05	27819-97-2	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3662	82FTS0822	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3-tetrafluoropropanoic acid (HPFO-DA)	99666	080522	0.02	2.00	0.017	50.1	1.00	0.02	13252-13-6	N/A	N/A
26. 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF30Uds)	4165	11ClPF30Uds0522	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27. 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF30NS)	4164	9ClPF30NS0522	0.021	2.14	0.017	46.6	1.00	0.05	756426-58-1	N/A	N/A
Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0922	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ipr-ret 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A	ipr-ret 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	071522	0.02	2.00	0.017	44.2	0.88	0.02	355-46-4 (L)	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	071522	0.02	2.00	0.017	6.0	0.12	0.0021	355-46-4 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	033022	0.02	2.00	0.017	38.1	0.76	0.02	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	7.5	0.15	0.003	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	4.0	0.08	0.002	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	033022	0.02	2.00	0.017	0.5	0.010	0.0002	1763-23-1 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	brNEFOSAA1121	0.02	2.00	0.017	36.6	0.73	0.04	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N., and Kuyatt, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

7.9.1
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11642 A-B
rec'd: 02/06/23



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>	PFACMXJ0921
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/08/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/14/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/14/2026
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

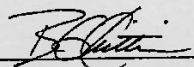
PFACMXJ:0921 (1 of 5)
rev1

7.9.1
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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: 10/02/2021
(m/mcd/yyyy)

11658 rec'd 02/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXI

Native Perfluorooctanesulfonamide and Perfluorooctanesulfonamidoethanol Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXI
<u>LOT NUMBER:</u>	PFACMXI0921
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/08/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/14/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/14/2026
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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PFACMXI0921 (1 of 5)
rev0

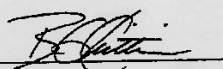
7.9.1

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Table A: PFAC-MXI; Components and Concentrations ($\mu\text{g}/\text{mL}$; $\pm 5\%$ in methanol)

Compound	Acronym	Concentration ($\mu\text{g}/\text{mL}$)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By:


B.G. Chittim, General Manager

Date: 09/23/2021
(mm/dd/yyyy)

11659 A-B rec'd: 02/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0122
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	01/10/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	01/11/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	01/11/2025
<u>RECOMMENDED STORAGE:</u>	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 (9CI-PF3ONS and 11CI-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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PFACMXF0122 (1 of 5)
rev0

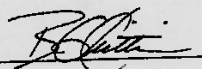
7.9.1
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Table A: PFAC-MXF; Components and Concentrations (ng/mL; $\pm 5\%$ in Methanol/Water (<1%))

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
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By:


B.G. Chittim, General Manager

Date: 01/12/2022
(mm/dd/yyyy)

11660 rec'd: 02/20/23



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)
revD

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)

11672
rec'd: 02/23/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

**Native PFAS
Solution/Mixture**

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0822
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	08/05/2022
LAST TESTED: (mm/dd/yyyy)	08/08/2022
EXPIRY DATE: (mm/dd/yyyy)	08/08/2027
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 (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of 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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PFACMXH0822 1 of 11
rev0

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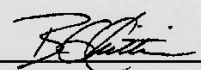
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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		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		24
Perfluoro-n-dodecanoic acid	PFDOA	1000		26
Perfluoro-n-tridecanoic acid	PFTDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^a	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: 08/09/2022
(mm/dd/yyyy)

11674 A-B
rec'd: 02/23/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9CI-PF3ONS and 11CI-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Table A:

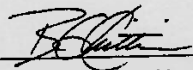
PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		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-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager



Date: 01/12/2022

(mm/dd/yyyy)

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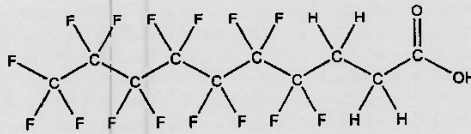
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid

LOT NUMBER: FHpPA1020

STRUCTURE:

CAS #: 812-70-4



MOLECULAR FORMULA: C₁₀H₉F₁₅O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/12/2020
EXPIRY DATE: (mm/dd/yyyy) 11/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 442.12
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.

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Certified By: 
B.G. Chittim, General Manager

Date: 11/27/2020
(mm/dd/yyyy)

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Revision#:8, Revised 2020-09-10

FHpPA1020 (1 of 4)
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPrPA

LOT NUMBER:

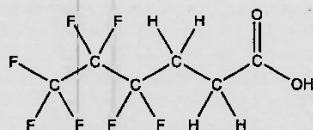
FPrPA1020

COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:**CAS #:**

356-02-5

**MOLECULAR FORMULA:** $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:**

242.09

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_8H_5F_7O_2$) 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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA

LOT NUMBER:

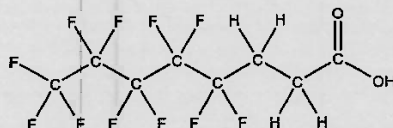
FPePA1120

COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:**CAS #:**

914637-49-3

**MOLECULAR FORMULA:** $C_8H_5F_{11}O_2$ **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 ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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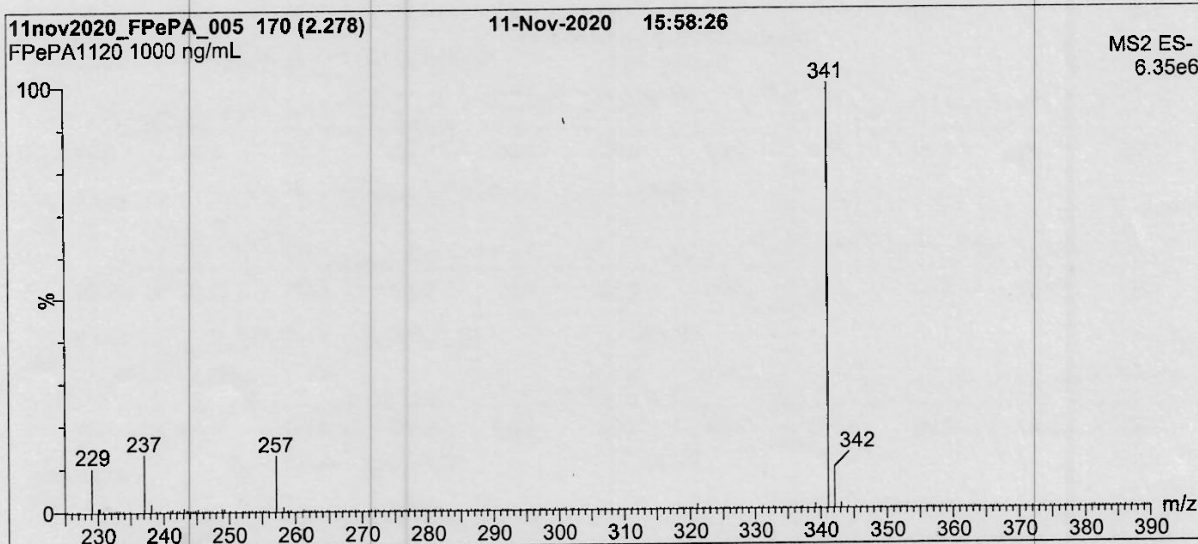
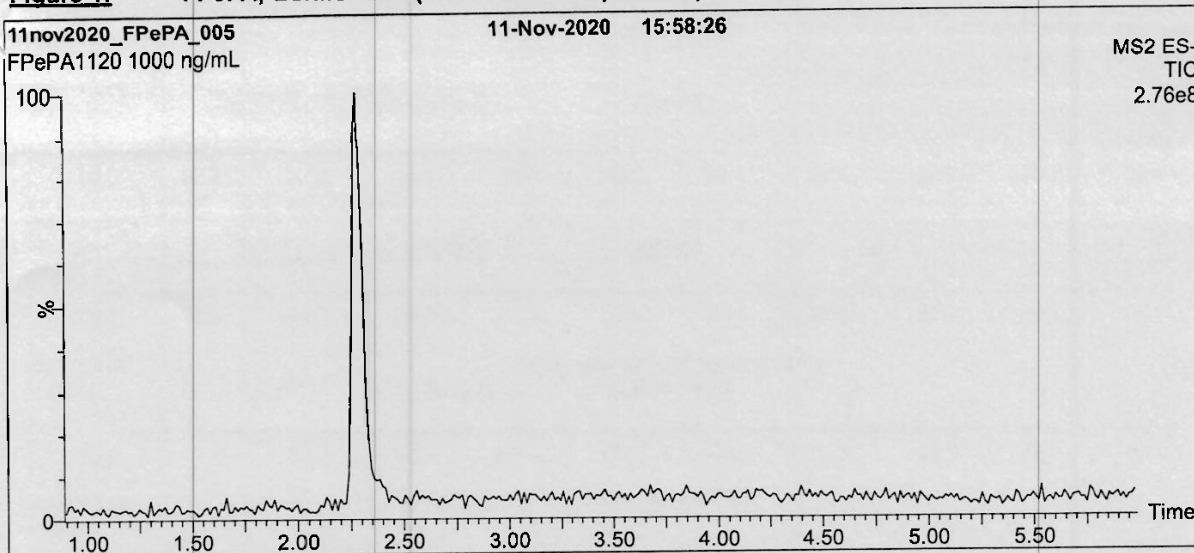
B.G. Chittim, General Manager

Date: 11/27/2020

(mm/dd/yyyy)

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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 μm, 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 μL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

10726 A

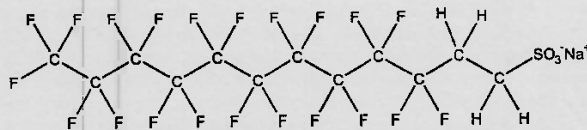


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CERTIFICATE OF ANALYSIS DOCUMENTATION

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

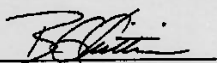
DOCUMENTATION/ DATA ATTACHED:

- 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
B.G. Chittim, General Manager (mm/dd/yyyy)

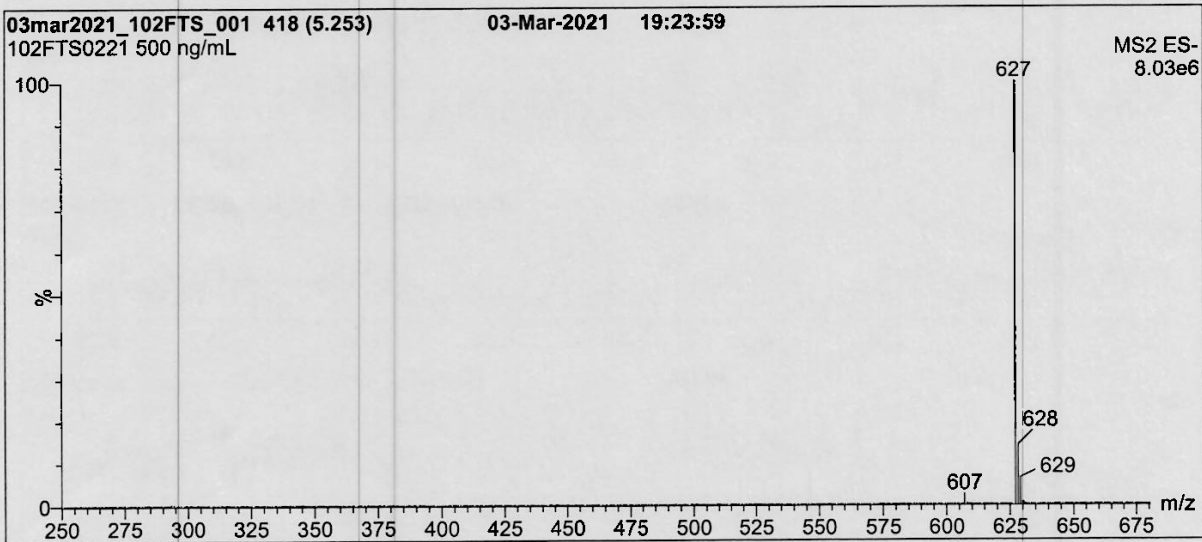
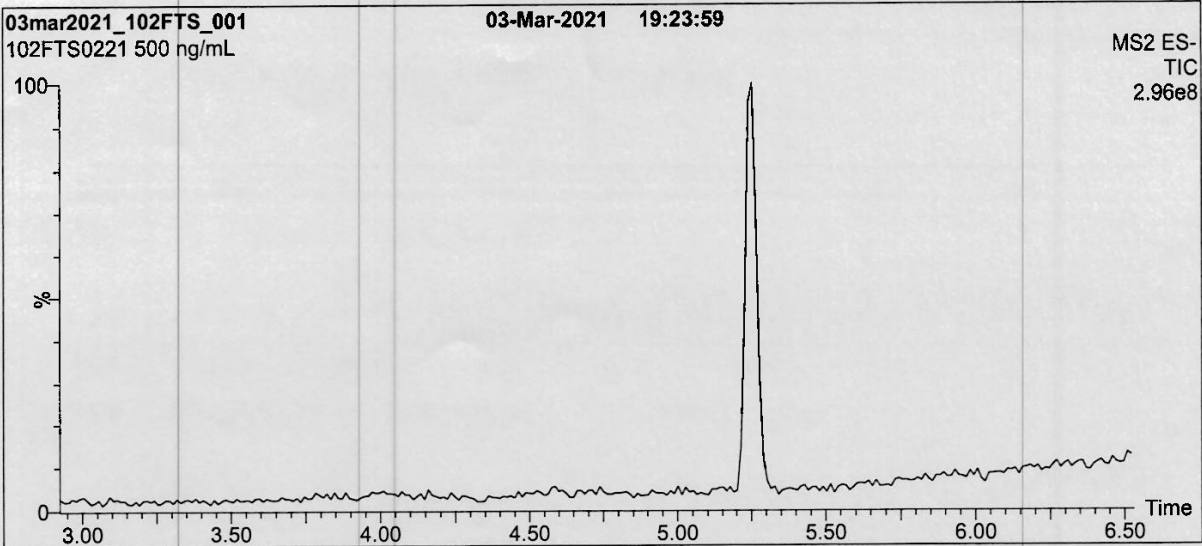
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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

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

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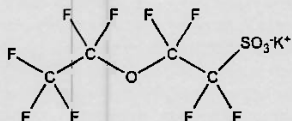


WELLINGTON LABORATORIES

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) **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

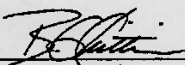
DOCUMENTATION/ DATA ATTACHED:

- 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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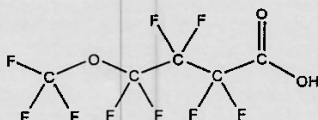
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *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

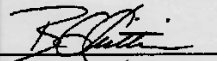
DOCUMENTATION/ DATA ATTACHED:

- 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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/21/2020
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

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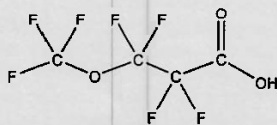
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA *rec'd
WPH
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

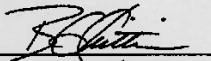
DOCUMENTATION/ DATA ATTACHED:

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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPH
8/20/21

LOT NUMBER:

36OPFHpA0320

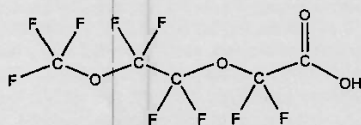
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₈O₄

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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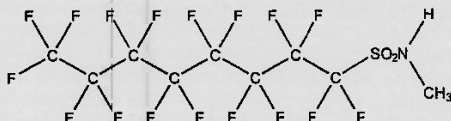
CERTIFICATE OF ANALYSIS DOCUMENTATION

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: C₈H₄F₁₇NO₂S
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

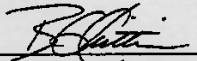
DOCUMENTATION/ DATA ATTACHED:

- 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

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PRODUCT CODE:

N-EtFOSA-M

10837

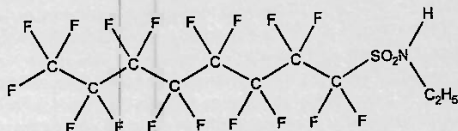
LOT NUMBER: NEtFOSA0821M

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)

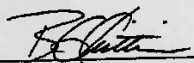
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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)

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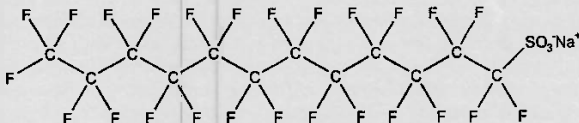
10840

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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PRODUCT CODE:

PFODA

10847 NS 01/18/23

LOT NUMBER:

PFODA0821

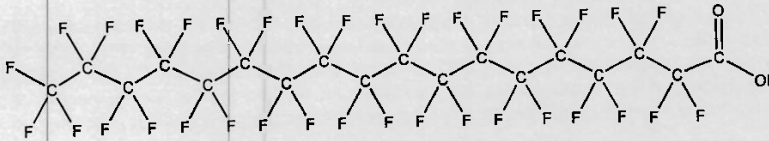
COMPOUND:

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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7.9.1
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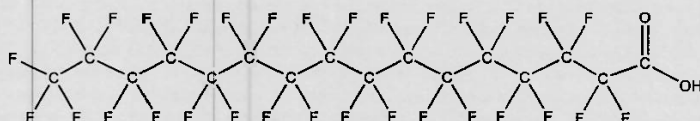
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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

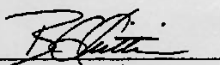
DOCUMENTATION/ DATA ATTACHED:

- 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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
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PFHxDA0421 (1 of 4)
 rev0

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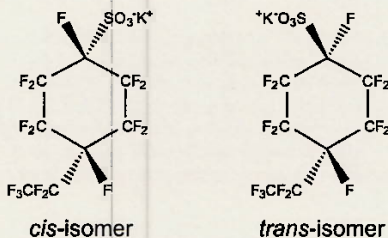
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7.9.1
7

PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS1021
COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE: **CAS #:** 335-24-0



MOLECULAR FORMULA: C₈F₁₆SO₃K **MOLECULAR WEIGHT:** 500.22
CONCENTRATION: 50.0 ± 2.5 µg/mL (K salt) **SOLVENT(S):** Methanol
 46.2 ± 2.3 µg/mL (PFECHS acid)
 46.1 ± 2.3 µg/mL (PFECHS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/14/2021
EXPIRY DATE: (mm/dd/yyyy) 10/14/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

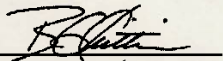
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 10/15/2021
 (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

PFECHS1021 (1 of 4)
 rev0

11140



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

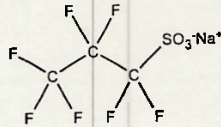
COMPOUND:

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

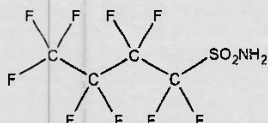
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11224


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CERTIFICATE OF ANALYSIS
 DOCUMENTATION

PRODUCT CODE: FBSA-I **LOT NUMBER:** FBSA11211
COMPOUND: Perfluoro-1-butanesulfonamide
STRUCTURE: **CAS #:** 30334-69-1



MOLECULAR FORMULA: C₄H₂F₉NO₂S **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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

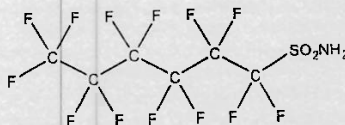
COMPOUND:

Perfluoro-1-hexanesulfonamide

CAS #:

41997-13-1

STRUCTURE:



MOLECULAR FORMULA:

C₈H₂F₁₃NO₂S

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.

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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11338



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

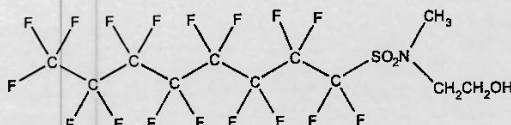
NMeFOSE0522M

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.

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Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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11383 A-J



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CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

**Mass-Labelled PFAS Extraction
Standard Solution/Mixture**

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES0822
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 07/20/2022
LAST TESTED: (mm/dd/yyyy) 08/02/2022
EXPIRY DATE: (mm/dd/yyyy) 08/02/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (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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Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

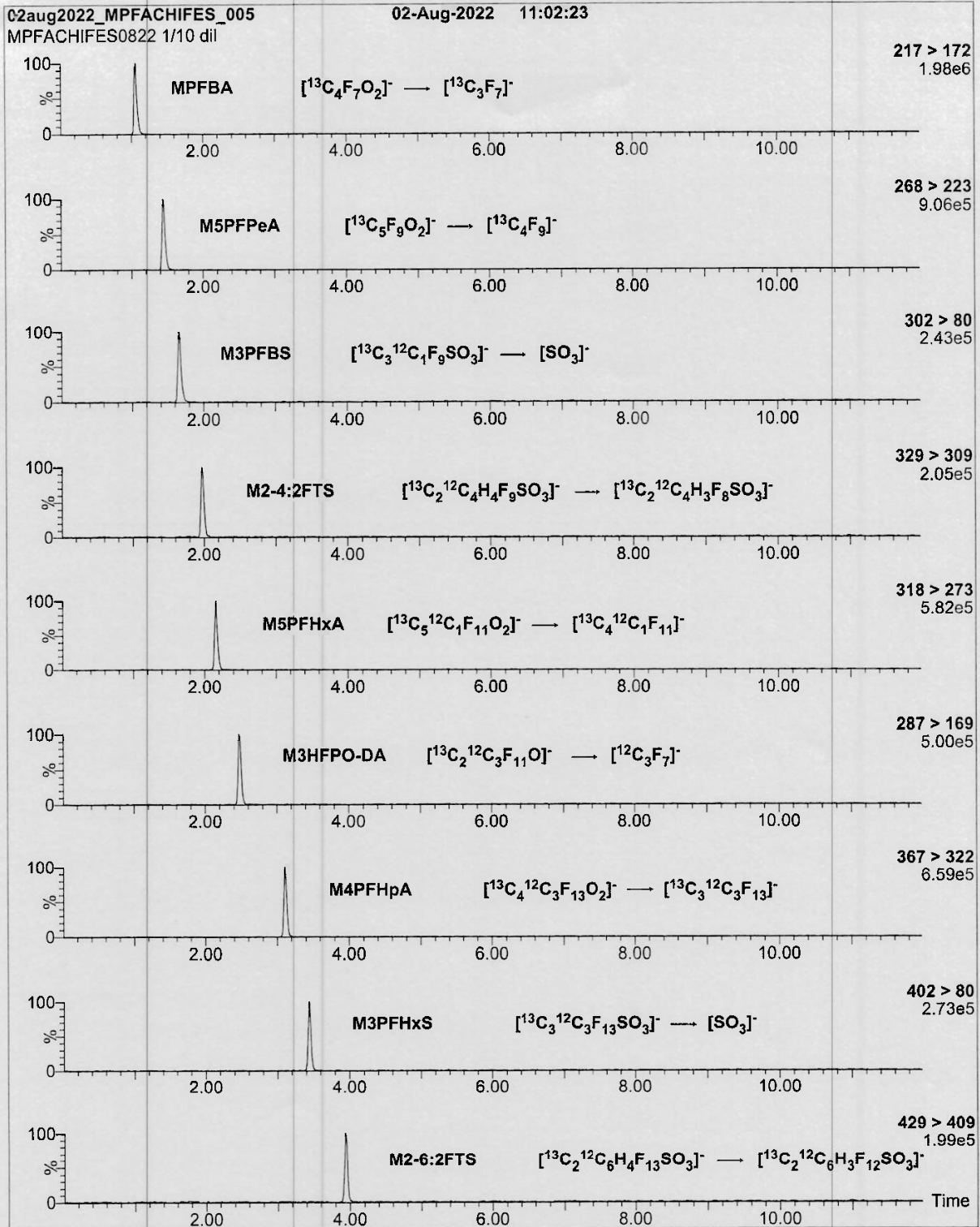
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	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		17
Perfluoro-n-(1,2- ¹³ C ₁₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₁₄)tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		18
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₃ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₅ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/02/2022
(mm/dd/yyyy)

Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)



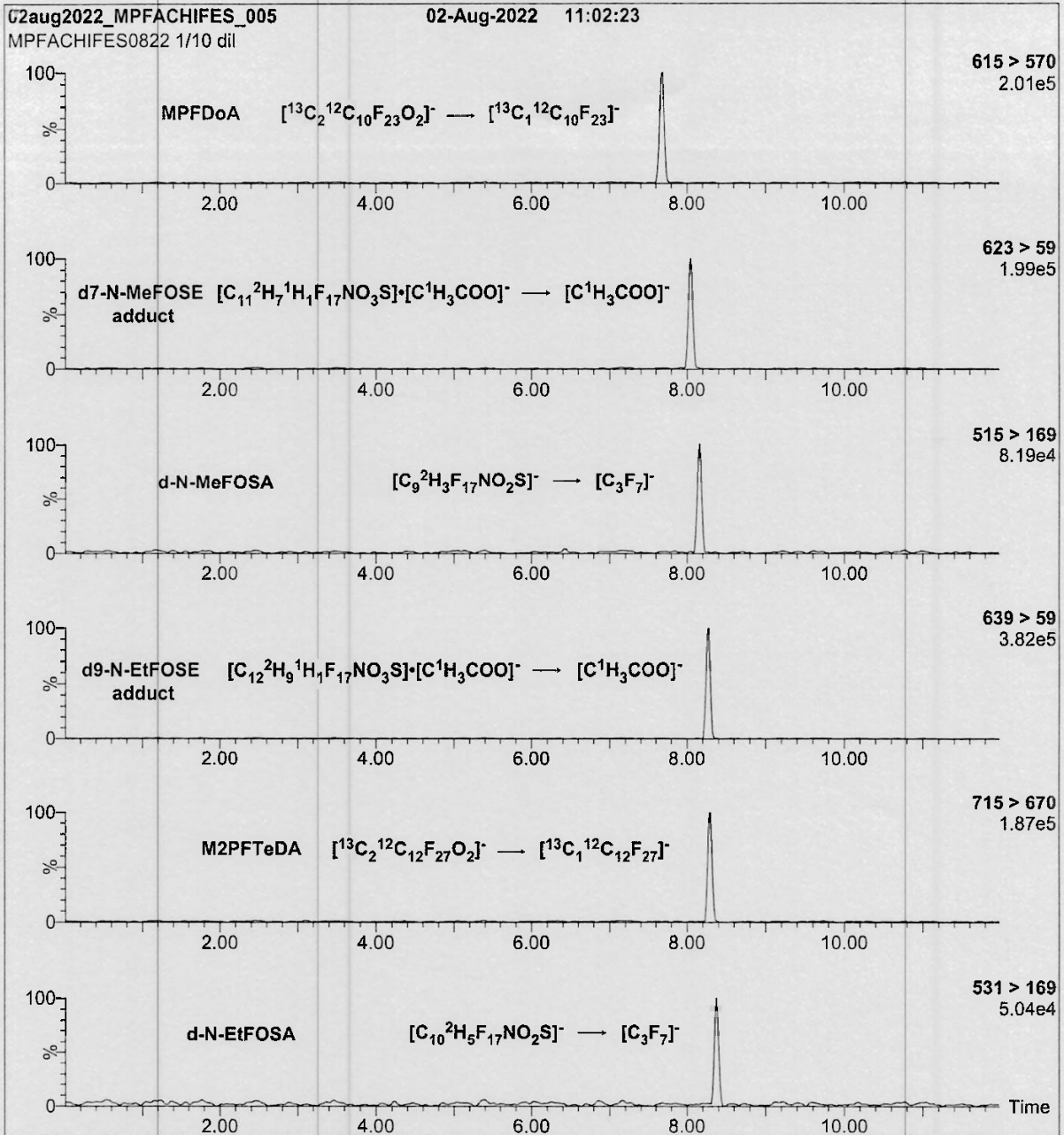
Form# 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

MPFACHIFES0822 (5 of 7)
rev0

7.9.1

7

Figure 2: MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFAC-HIF-ES)
 Mobile phase: Same as Figure 1
 Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.24e-3
 Collision Energy (eV) = 4-64 (variable)

11384 A-J



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled Perfluoroalkyl Substance
Injection Standard Solution/Mixture

<u>PRODUCT CODE:</u>	MPFAC-HIF-IS
<u>LOT NUMBER:</u>	MPFACHIFIS0921
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/07/2021
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2021
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	09/07/2026
<u>RECOMMENDED STORAGE:</u>	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 (C₈ and C₉). 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

MPFACHIFIS0921 (1 of 5)
rev1

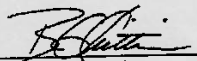
7.9.1

7

Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

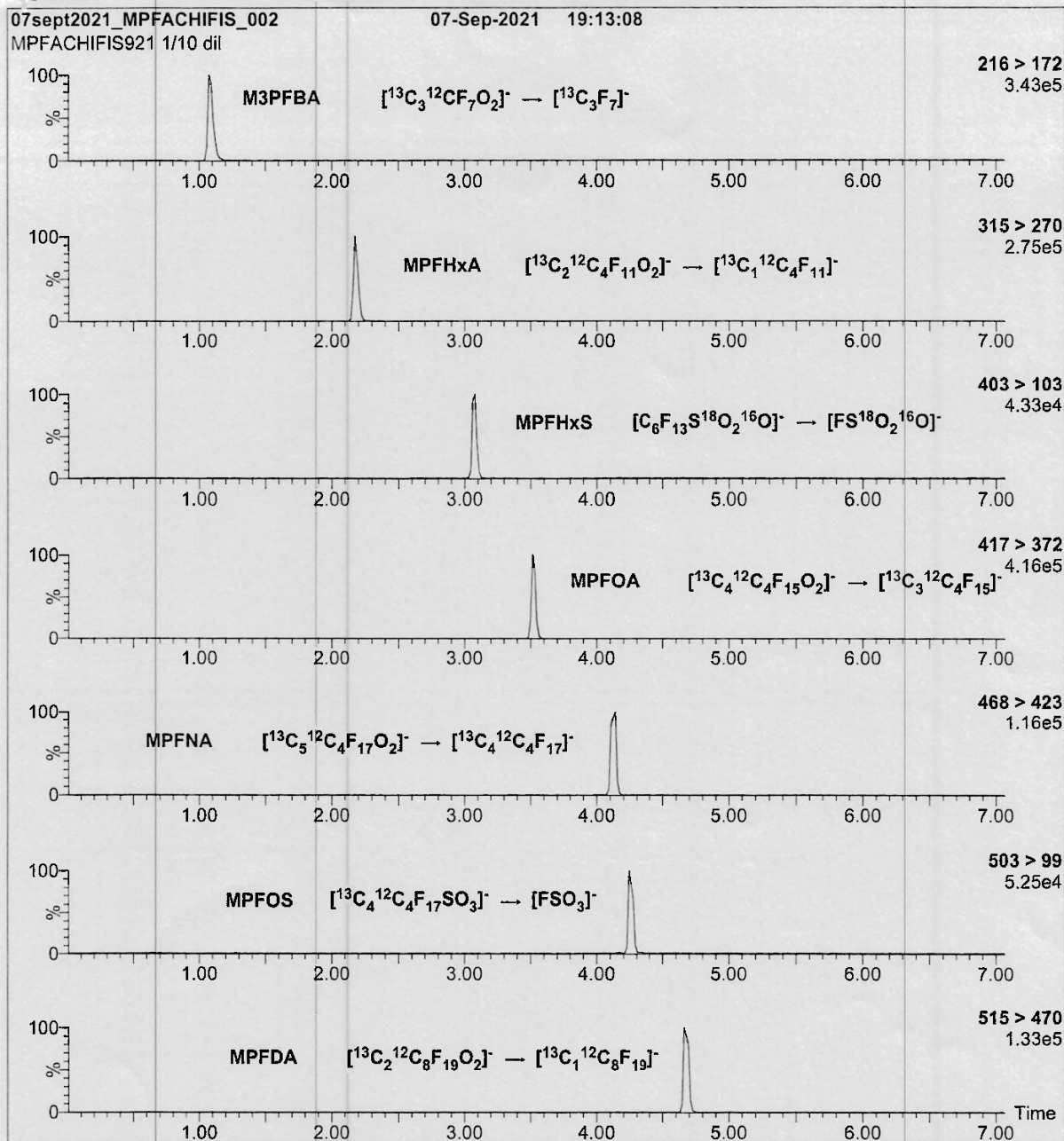
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	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: 
 B.G. Chittim, General Manager

Date: 10/13/2021
(mm/dd/yyyy)

Figure 2: MPFAC-HIF-IS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (MPFAC-HIF-IS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$

MS Parameters:

Collision Gas (mbar) = 3.18e-3

Collision Energy (eV) = 4-64 (variable)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/06/23 10:00
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time: 04/07/23 09:30
Finished (mm/dd/yy 24:00)

Balance ID: _____

Batch#: OP96279 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 96279 MB	/	500	7	N/A	25		5	A4	
OP 96279 BS	/	500	7						
OP 96279 LLBS	/	500	7			200			
FC3898-1	2	570	7			80			
	2	550	6						
	3	540	6	N/A	25		5	A4	
OP FC3898-1 MS	3	550	7			80	5	A4	
OP MSD									
OP FC3898-3 DUP	3	540	6				5	A4	

Comments:

EIS (SURR) ID: 11703 I-5 Conc: 250-5000 ng/ml Exp. Date: 04/03/24 Inj. By: GH Ver. By: DBL
 SPIKE.1 ID: LMS20969 Conc: VARIOUS Exp. Date: 09/30/23 Inj. By: GH Ver. By: DBL
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 1167155 Conc: 250-1000 ng/ml Exp. Date: 04/05/24 Inj. By: NG Ver. By: JL

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 PF345 SPE Lot # 6686211-04
 Water Lot# OP96255 0.3M Formic Acid PF333 Syringe filter Lot #
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF341 5% Formic Acid _____ Carbon Lot# 160898

Relinquished By: *[Signature]*
 Accepted By: *[Signature]*

Date: 04/06/23
 Date: 04/07/23

7.10.1 7