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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC3763

Sampling Date: 03/27/23



Report to:

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Total number of pages in report: 812



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: FC3763

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC3763-1	03/27/23	10:40 TM	03/28/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2303W4
FC3763-2	03/27/23	11:25 ZD	03/28/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2303W4
FC3763-3	03/27/23	11:25 ZD	03/28/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2303W4
FC3763-4	03/27/23	12:35 TM	03/28/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2303W4
FC3763-5	03/27/23	13:50 ZD	03/28/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2303W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC3763

Site: N6274223F0104 RH Fire Suppression System

Report Date: 4/4/2023 3:10:23 PM

On 03/28/2023, 5 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC3763 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: OP96143

Sample(s) FC3763-3MS, FC3763-5DUP were used as the QC samples indicated.

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: FC3763
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/27/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC3763-1 AF-RHMW04-WGN01LF-2303W4

No hits reported in this sample.

FC3763-2 AF-RHMW12A-WGN01LF-2303W4

Perfluoropentanoic acid	4.8 J	9.6	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.4 J	4.8	0.96	ng/l	EPA DRAFT 1633

FC3763-3 AF-RHMW12A-WGFD01LF-2303W4

Perfluoropentanoic acid	4.3 J	9.4	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.2 J	4.7	0.94	ng/l	EPA DRAFT 1633

FC3763-4 AF-RHMW06-WGN01LF-2303W4

No hits reported in this sample.

FC3763-5 AF-RHMW16-WGN01LF-2303W4

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW04-WGN01LF-2303W4		
Lab Sample ID:	FC3763-1	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	6Q15825.D	1	03/30/23 22:41	MV	03/29/23 10:00	OP96143	S6Q237
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.9	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2303W4		
Lab Sample ID:	FC3763-1	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	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	1.2	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	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	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	106%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	108%		20-150%
	13C9-PFNA	109%		20-150%
	13C6-PFDA	98%		20-150%
	13C7-PFUnDA	80%		20-150%
	13C2-PFDoDA	73%		20-150%
	13C2-PFTeDA	71%		20-150%
	13C3-PFBS	117%		20-150%
	13C3-PFHxS	108%		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-RHMW04-WGN01LF-2303W4	
Lab Sample ID:	FC3763-1	Date Sampled: 03/27/23
Matrix:	AQ - Ground Water	Date Received: 03/28/23
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	109%		20-150%
	13C8-FOSA	99%		20-150%
	d3-MeFOSA	79%		20-150%
	d5-EtFOSA	74%		20-150%
	d3-MeFOSAA	107%		20-150%
	d5-EtFOSAA	98%		20-150%
	d7-MeFOSE	83%		20-150%
	d9-EtFOSE	84%		20-150%
	13C2-4:2FTS	123%		20-150%
	13C2-6:2FTS	123%		20-150%
	13C2-8:2FTS	117%		20-150%
	13C3-HFPO-DA	108%		20-150%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW12A-WGN01LF-2303W4		
Lab Sample ID:	FC3763-2	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	6Q15826.D	1	03/30/23 22:55	MV	03/29/23 10:00	OP96143	S6Q237
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	4.8	9.6	1.9	0.90	ng/l	J
307-24-4	Perfluorohexanoic acid	1.4	4.8	0.96	0.48	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.96	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	0.96	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2303W4		
Lab Sample ID:	FC3763-2	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.6 U	48	9.6	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.96	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.6	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	9.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.6	3.8	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.6	1.9	0.75	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	24	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	108%		20-150%
	13C5-PFPeA	103%		20-150%
	13C5-PFHxA	104%		20-150%
	13C4-PFHpA	105%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	97%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	92%		20-150%
	13C2-PFDoDA	78%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	115%		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-RHMW12A-WGN01LF-2303W4		
Lab Sample ID:	FC3763-2	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	102%		20-150%
	13C8-FOSA	96%		20-150%
	d3-MeFOSA	75%		20-150%
	d5-EtFOSA	79%		20-150%
	d3-MeFOSAA	93%		20-150%
	d5-EtFOSAA	94%		20-150%
	d7-MeFOSE	74%		20-150%
	d9-EtFOSE	76%		20-150%
	13C2-4:2FTS	122%		20-150%
	13C2-6:2FTS	114%		20-150%
	13C2-8:2FTS	106%		20-150%
	13C3-HFPO-DA	106%		20-150%

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

SGS North America Inc.

Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW12A-WGFD01LF-2303W4		
Lab Sample ID:	FC3763-3	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	6Q15827.D	1	03/30/23 23:09	MV	03/29/23 10:00	OP96143	S6Q237
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	4.3	9.4	1.9	0.89	ng/l	J
307-24-4	Perfluorohexanoic acid	1.2	4.7	0.94	0.47	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
335-67-1	Perfluorooctanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.94 U	4.7	0.94	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.7	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.94 U	4.7	0.94	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.94	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	0.94	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2303W4		
Lab Sample ID:	FC3763-3	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.4 U	47	9.4	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	7.0	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.94	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.4	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	9.4	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.4	3.8	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.4	1.9	0.74	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	24	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	107%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	114%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	94%		20-150%
	13C6-PFDA	111%		20-150%
	13C7-PFUnDA	96%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	84%		20-150%
	13C3-PFBS	114%		20-150%
	13C3-PFHxS	108%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2303W4	
Lab Sample ID:	FC3763-3	Date Sampled: 03/27/23
Matrix:	AQ - Ground Water	Date Received: 03/28/23
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	104%		20-150%
	13C8-FOSA	107%		20-150%
	d3-MeFOSA	99%		20-150%
	d5-EtFOSA	97%		20-150%
	d3-MeFOSAA	118%		20-150%
	d5-EtFOSAA	116%		20-150%
	d7-MeFOSE	92%		20-150%
	d9-EtFOSE	98%		20-150%
	13C2-4:2FTS	132%		20-150%
	13C2-6:2FTS	130%		20-150%
	13C2-8:2FTS	111%		20-150%
	13C3-HFPO-DA	110%		20-150%

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW06-WGN01LF-2303W4		
Lab Sample ID:	FC3763-4	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	6Q15829.D	1	03/30/23 23:36	MV	03/29/23 10:00	OP96143	S6Q237
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.9	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2303W4		Date Sampled:	03/27/23
Lab Sample ID:	FC3763-4	Date Received:	03/28/23	
Matrix:	AQ - Ground Water	Percent Solids:	n/a	
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	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	1.2	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	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	116%		20-150%
	13C5-PFPeA	111%		20-150%
	13C5-PFHxA	109%		20-150%
	13C4-PFHpA	112%		20-150%
	13C8-PFOA	118%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	90%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	123%		20-150%
	13C3-PFHxS	110%		20-150%

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

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Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2303W4	
Lab Sample ID:	FC3763-4	Date Sampled: 03/27/23
Matrix:	AQ - Ground Water	Date Received: 03/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	110%		20-150%
	13C8-FOSA	101%		20-150%
	d3-MeFOSA	97%		20-150%
	d5-EtFOSA	99%		20-150%
	d3-MeFOSAA	110%		20-150%
	d5-EtFOSAA	110%		20-150%
	d7-MeFOSE	96%		20-150%
	d9-EtFOSE	100%		20-150%
	13C2-4:2FTS	133%		20-150%
	13C2-6:2FTS	122%		20-150%
	13C2-8:2FTS	130%		20-150%
	13C3-HFPO-DA	109%		20-150%

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

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Report of Analysis

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Client Sample ID:	AF-RHMW16-WGN01LF-2303W4		
Lab Sample ID:	FC3763-5	Date Sampled:	03/27/23
Matrix:	AQ - Ground Water	Date Received:	03/28/23
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	6Q15830.D	1	03/30/23 23:50	MV	03/29/23 10:00	OP96143	S6Q237
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	18	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.9	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2303W4		Date Sampled:	03/27/23
Lab Sample ID:	FC3763-5	Date Received:	03/28/23	
Matrix:	AQ - Ground Water	Percent Solids:	n/a	
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	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	1.2	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	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	110%		20-150%
	13C5-PFPeA	114%		20-150%
	13C5-PFHxA	112%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	108%		20-150%
	13C9-PFNA	114%		20-150%
	13C6-PFDA	96%		20-150%
	13C7-PFUnDA	92%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	86%		20-150%
	13C3-PFBS	116%		20-150%
	13C3-PFHxS	117%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2303W4	
Lab Sample ID:	FC3763-5	Date Sampled: 03/27/23
Matrix:	AQ - Ground Water	Date Received: 03/28/23
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	100%		20-150%
	13C8-FOSA	101%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	92%		20-150%
	d3-MeFOSAA	110%		20-150%
	d5-EtFOSAA	106%		20-150%
	d7-MeFOSE	85%		20-150%
	d9-EtFOSE	88%		20-150%
	13C2-4:2FTS	129%		20-150%
	13C2-6:2FTS	121%		20-150%
	13C2-8:2FTS	133%		20-150%
	13C3-HFPO-DA	115%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando
Chain of Custody

FC3763
SGS - ORLANDO JOB # :

COC #: 2303W4AFSG08

PAGE 1 OF 1

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TEL: 407-425-0700 FAX: 407-425-0707
www.sgs.com

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																
Phone #: 303-796-4624 / 808-954-4512				Fax #														
Sampler(s) Name(s) (Printed)				Client Purchase Order #														
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	NaOH	HNO3	H2SO4		HNO3/H2SO4	DI WATER	MEDH		
1	AF-RHMW04-WGN01LF-2303W4	3/27/23	1040	TM	GW	3		X										
PFAS EPA Draft 1633																		
												TM 3/27/23						
												INITIAL ASSESSMENT						
												LABEL VERIFICATION						
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 75392973										
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 <i>Jessie Murphy / AECOM</i>		4/27/23 1347		2 <i>Kevin G...</i>		4/27/23 1510		3 <i>Kevin G...</i>		4/27/23 1510		4 <i>[Signature]</i>						
5				6				7				8 <i>1360</i>						
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <u>3.6 (R#1)</u>				http://www.sgs.com/en/terms-and-conditions														

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FC3763: Chain of Custody

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Chain of Custody

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FC3763

SGS - ORLANDO JOB # :

COC # 2303W4AFSG05

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	NH3-NH4	DI WATER			MECH		
2	AF-RHMW12A-WGN01LF-2303W4	03/27/23	11:25	ZD	GW	3			X										
3	AF-RHMW12A-WGFD01LF-2303W4	03/27/23	11:25	ZD	GW	3			X										
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks											
10 Day (Business) _____ Approved By: / Date: _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW 016 United Aw B 75392973											
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		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Relinquished By/Affiliation		Date Time:		Received By/Affiliation			
1 DeJani mckee		03/27/23		216 y ARcom		3 16 y ARcom		3/27/23		4 [Signature] 3/27/23		5 [Signature] 3/27/23		6 [Signature] 3/27/23		7 [Signature] 3/27/23			
5				6		7		8		9		10		11		12			
Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.6 IR#1										http://www.sgs.com/en/terms-and-conditions									

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FC3763: Chain of Custody

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FC3763

COC #: 2303W4AFSG09

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Client / Reporting Information		Project Information		Analytical Information								Matrix Codes					
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		PFAS EPA Draft 1633 <i>TM 3/29/23</i>								DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe					
Address: 1001 Bishop St. ste 1600		Street															
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810															
Project Manager: Watson Tani Email: watson.tani@aecom.com		Fax #															
Sampler(s) Name(s) (Printed)		Client Purchase Order #															
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	NaOH	H2SO4	HNO3		NACH-ZNAC	DI WATER	MEDH	
4	AF-RHMW06-WGN01LF-2303W4	3/27/23	1235	TM	GW	3		X									
						<i>TM 3/29/23</i>											
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 Unified AWRB oib 75392973									
7 Day																	
<input checked="" type="checkbox"/> 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 1 <i>TESSA MURPHY/AECOM</i>		Date Time: 3/27/23 1347		Received By/Affiliation 2 <i>Bonhamy Tamirez / AECOM</i>				Relinquished By/Affiliation 3 <i>Bonhamy Tamirez / AECOM</i>		Date Time: 3/27/23 1570		Received By/Affiliation <i>[Signature]</i> 3/18/23					
Relinquished by/Affiliation 5		Date Time:		Received By/Affiliation 6				Relinquished By/Affiliation 7		Date Time:		Received By/Affiliation 8					
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <u>3.6 (RTH)</u>												http://www.sgs.com/en/terms-and-conditions					

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FC3763: Chain of Custody

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Chain of Custody

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FC3763

SGS - ORLANDO JOB #:

COC #: 2303W4AFSG06

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	Analytical Information	Matrix Codes
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NADH-ZINC	DI WATER			
5	AF-RHMW16-WGN01LF-2303W4	3/27/23	1350	ZS	GW	3			X								
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks													
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S		EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AWB - 016 75392973													
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	Relinquished By/Affiliation	Date Time:	Received By/Affiliation												
1 [Signature]	3/27/23 1505	2 [Signature] AECOM	3 [Signature] AECOM	3/27/23 1535	4 [Signature]	3/28/23											
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation												
5		6	7		8	1500											
Lab Use Only: Cooler Temperature (s) Celsius (corrected):		3.6 IR#1		http://www.sgs.com/en/terms-and-conditions													

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FC3763: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC3763

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 3/28/2023 3:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-75392973

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (5.6);

Cooler Temps (Corrected) °C: Cooler 1: (5.5);

Cooler Information

Y or N

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

Sample Information

Y or N N/A

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

Trip Blank Information

Y or N N/A

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

W or S N/A

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

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 _____ 230320 _____

pH 10-12 _____ 25BDH07 _____

Other: (Specify) pH 1.0 - 12.0 _____ 222221 _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 3/28/2023 3:00:00 PM

Reviewer: CD

Date: 3/31/2023

FC3763: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC3763
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/27/23

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 FC3763

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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: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-IBLK	6Q15787.D	1	03/30/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Instrument Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-IBLK	6Q15787.D	1	03/30/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	96% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	106% 20-150%
	13C6-PFDA	110% 20-150%
	13C7-PFUnDA	104% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	107% 20-150%
	13C3-PFBS	95% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	98% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	108% 20-150%
	d7-MeFOSE	97% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	113% 20-150%
	13C2-6:2FTS	112% 20-150%
	13C2-8:2FTS	110% 20-150%
	13C3-HFPO-DA	99% 20-150%

6.1.1
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Instrument Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-IBLK	6Q15888.D	1	03/31/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Instrument Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-IBLK	6Q15888.D	1	03/31/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	0.0109	0.050	0.010	ug/l	J

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	93% 20-150%
	13C5-PFHxA	88% 20-150%
	13C4-PFHpA	96% 20-150%
	13C8-PFOA	110% 20-150%
	13C9-PFNA	95% 20-150%
	13C6-PFDA	101% 20-150%
	13C7-PFUnDA	111% 20-150%
	13C2-PFDoDA	101% 20-150%
	13C2-PFTeDA	101% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	106% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	101% 20-150%
	d5-EtFOSA	103% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	125% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	100% 20-150%
	13C2-4:2FTS	126% 20-150%
	13C2-6:2FTS	123% 20-150%
	13C2-8:2FTS	103% 20-150%
	13C3-HFPO-DA	97% 20-150%

6.12
6

Continuing Calibration Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-ICCB	6Q15821.D	1	03/30/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Continuing Calibration Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-ICCB	6Q15821.D	1	03/30/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	92% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	92% 20-150%
	13C6-PFDA	107% 20-150%
	13C7-PFUnDA	105% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	110% 20-150%
	13C3-PFHxS	108% 20-150%
	13C8-PFOS	102% 20-150%
	13C8-FOSA	97% 20-150%
	d3-MeFOSA	96% 20-150%
	d5-EtFOSA	94% 20-150%
	d3-MeFOSAA	111% 20-150%
	d5-EtFOSAA	113% 20-150%
	d7-MeFOSE	94% 20-150%
	d9-EtFOSE	95% 20-150%
	13C2-4:2FTS	129% 20-150%
	13C2-6:2FTS	125% 20-150%
	13C2-8:2FTS	111% 20-150%
	13C3-HFPO-DA	99% 20-150%

Continuing Calibration Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-ICCB	6Q15881.D	1	03/31/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q237-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Continuing Calibration Blank

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q237-ICCB	6Q15881.D	1	03/31/23	MV	n/a	n/a	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q237-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	95% 20-150%
	13C5-PFHxA	94% 20-150%
	13C4-PFHpA	96% 20-150%
	13C8-PFOA	107% 20-150%
	13C9-PFNA	93% 20-150%
	13C6-PFDA	118% 20-150%
	13C7-PFUnDA	104% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	101% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	98% 20-150%
	13C8-PFOS	105% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	102% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	97% 20-150%
	d9-EtFOSE	101% 20-150%
	13C2-4:2FTS	126% 20-150%
	13C2-6:2FTS	108% 20-150%
	13C2-8:2FTS	114% 20-150%
	13C3-HFPO-DA	99% 20-150%

Method Blank Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-MB	6Q15824.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

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: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-MB	6Q15824.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

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	105% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	105% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	105% 20-150%
	13C6-PFDA	110% 20-150%
	13C7-PFUnDA	110% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	86% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	118% 20-150%
	13C8-FOSA	100% 20-150%
	d3-MeFOSA	80% 20-150%
	d5-EtFOSA	86% 20-150%
	d3-MeFOSAA	117% 20-150%
	d5-EtFOSAA	117% 20-150%
	d7-MeFOSE	88% 20-150%
	d9-EtFOSE	93% 20-150%
	13C2-4:2FTS	124% 20-150%
	13C2-6:2FTS	123% 20-150%
	13C2-8:2FTS	121% 20-150%
	13C3-HFPO-DA	104% 20-150%

6.1.5
6

Blank Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-LLBS	6Q15823.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0383	96	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0189	95	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0105	105	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0094	94	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0099	99	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0104	104	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0079	79	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0098	98	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0093	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0097	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0092	92	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0084	95	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0094	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0085	93	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0092	97	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0102	110	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0089	93	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0092	95	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0090	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0324	86	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0397	104	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0398	104	40-150
754-91-6	PFOSA	0.01	0.0097	97	40-150
31506-32-8	MeFOSA	0.01	0.0104	104	40-150
4151-50-2	EtFOSA	0.01	0.0099	99	40-150
2355-31-9	MeFOSAA	0.01	0.0093	93	40-150
2991-50-6	EtFOSAA	0.01	0.0105	105	40-150
24448-09-7	MeFOSE	0.1	0.0913	91	40-150
1691-99-2	EtFOSE	0.1	0.0977	98	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0378	95	40-150
919005-14-4	ADONA	0.0378	0.0378	100	40-150
377-73-1	PFMPA	0.02	0.0186	93	40-150
863090-89-5	PFMBA	0.02	0.0187	94	40-150
151772-58-6	NFDHA	0.02	0.0194	97	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0377	101	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0348	92	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-LLBS	6Q15823.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0174	98	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0433	87	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.236	94	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.233	93	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	103%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	98%	20-150%
	13C6-PFDA	123%	20-150%
	13C7-PFUnDA	113%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	120%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	102%	20-150%
	d3-MeFOSA	87%	20-150%
	d5-EtFOSA	87%	20-150%
	d3-MeFOSAA	108%	20-150%
	d5-EtFOSAA	111%	20-150%
	d7-MeFOSE	88%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	141%	20-150%
	13C2-6:2FTS	118%	20-150%
	13C2-8:2FTS	123%	20-150%
	13C3-HFPO-DA	106%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-BS	6Q15822.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0995	100	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0498	100	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0255	102	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0248	99	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0248	99	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0265	106	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0232	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0275	110	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0235	94	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0240	96	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0259	104	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0214	97	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0225	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0227	99	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0229	96	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0214	92	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0233	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0250	104	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0220	91	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0947	101	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0915	96	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.100	104	40-150
754-91-6	PFOSA	0.025	0.0250	100	40-150
31506-32-8	MeFOSA	0.025	0.0261	104	40-150
4151-50-2	EtFOSA	0.025	0.0247	99	40-150
2355-31-9	MeFOSAA	0.025	0.0241	96	40-150
2991-50-6	EtFOSAA	0.025	0.0243	97	40-150
24448-09-7	MeFOSE	0.25	0.264	106	40-150
1691-99-2	EtFOSE	0.25	0.250	100	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.104	104	40-150
919005-14-4	ADONA	0.0945	0.0992	105	40-150
377-73-1	PFMPA	0.05	0.0403	81	40-150
863090-89-5	PFMBA	0.05	0.0501	100	40-150
151772-58-6	NFDHA	0.05	0.0533	107	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0961	103	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0964	102	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-BS	6Q15822.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0459	103	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.106	85	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.661	106	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.635	102	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	38%	20-150%
	13C5-PFPeA	108%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	101%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	99%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	87%	20-150%
	13C3-PFBS	123%	20-150%
	13C3-PFHxS	123%	20-150%
	13C8-PFOS	109%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSA	100%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	117%	20-150%
	d5-EtFOSAA	115%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	97%	20-150%
	13C2-4:2FTS	136%	20-150%
	13C2-6:2FTS	143%	20-150%
	13C2-8:2FTS	138%	20-150%
	13C3-HFPO-DA	106%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-MS	6Q15828.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237
FC3763-3	6Q15827.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	FC3763-3 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.019 U		0.0926	0.0957	103	40-150
2706-90-3	Perfluoropentanoic acid	0.0043 J		0.0463	0.0519	103	40-150
307-24-4	Perfluorohexanoic acid	0.0012 J		0.0231	0.0243	100	40-150
375-85-9	Perfluoroheptanoic acid	0.0047 U		0.0231	0.0241	104	40-150
335-67-1	Perfluorooctanoic acid	0.0047 U		0.0231	0.0224	97	40-150
375-95-1	Perfluorononanoic acid	0.0047 U		0.0231	0.0229	99	40-150
335-76-2	Perfluorodecanoic acid	0.0047 U		0.0231	0.0271	117	40-150
2058-94-8	Perfluoroundecanoic acid	0.0047 U		0.0231	0.0219	95	40-150
307-55-1	Perfluorododecanoic acid	0.0047 U		0.0231	0.0249	108	40-150
72629-94-8	Perfluorotridecanoic acid	0.0047 U		0.0231	0.0255	110	40-150
376-06-7	Perfluorotetradecanoic acid	0.0047 U		0.0231	0.0236	102	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0047 U		0.0205	0.0214	104	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0047 U		0.0218	0.0210	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0047 U		0.0212	0.0212	100	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0047 U		0.0221	0.0243	110	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0047 U		0.0215	0.0221	103	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0047 U		0.0223	0.0219	98	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0047 U		0.0223	0.0210	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0047 U		0.0225	0.0225	100	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U		0.0868	0.0876	101	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U		0.088	0.0961	109	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		0.0889	0.0926	104	40-150
754-91-6	PFOSA	0.0047 U		0.0231	0.0243	105	40-150
31506-32-8	MeFOSA	0.0047 U		0.0231	0.0234	101	40-150
4151-50-2	EtFOSA	0.0047 U		0.0231	0.0232	100	40-150
2355-31-9	MeFOSAA	0.0047 U		0.0231	0.0263	114	40-150
2991-50-6	EtFOSAA	0.0047 U		0.0231	0.0230	99	40-150
24448-09-7	MeFOSE	0.047 U		0.231	0.244	105	40-150
1691-99-2	EtFOSE	0.047 U		0.231	0.225	97	40-150
13252-13-6	HFPO-DA (GenX)	0.019 U		0.0926	0.0912	98	40-150
919005-14-4	ADONA	0.019 U		0.0875	0.0900	103	40-150
377-73-1	PFMPA	0.0094 U		0.0463	0.0461	100	40-150
863090-89-5	PFMBA	0.0094 U		0.0463	0.0454	98	40-150
151772-58-6	NFDHA	0.0094 U		0.0463	0.0482	104	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.019 U		0.0866	0.0809	93	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.019 U		0.0875	0.0747	85	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-MS	6Q15828.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237
FC3763-3	6Q15827.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	FC3763-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0094 U	0.0412	0.0422	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.024 U	0.116	0.109	94	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.12 U	0.579	0.591	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.12 U	0.579	0.597	103	40-150

CAS No.	ID Standard Recoveries	MS	FC3763-3	Limits
	13C4-PFBA	74%	107%	20-150%
	13C5-PFPeA	105%	110%	20-150%
	13C5-PFHxA	103%	114%	20-150%
	13C4-PFHpA	104%	107%	20-150%
	13C8-PFOA	112%	107%	20-150%
	13C9-PFNA	104%	94%	20-150%
	13C6-PFDA	93%	111%	20-150%
	13C7-PFUnDA	99%	96%	20-150%
	13C2-PFDoDA	84%	89%	20-150%
	13C2-PFTeDA	86%	84%	20-150%
	13C3-PFBS	110%	114%	20-150%
	13C3-PFHxS	111%	108%	20-150%
	13C8-PFOS	98%	104%	20-150%
	13C8-FOSA	100%	107%	20-150%
	d3-MeFOSA	97%	99%	20-150%
	d5-EtFOSA	91%	97%	20-150%
	d3-MeFOSAA	101%	118%	20-150%
	d5-EtFOSAA	99%	116%	20-150%
	d7-MeFOSE	86%	92%	20-150%
	d9-EtFOSE	91%	98%	20-150%
	13C2-4:2FTS	128%	132%	20-150%
	13C2-6:2FTS	117%	130%	20-150%
	13C2-8:2FTS	112%	111%	20-150%
	13C3-HFPO-DA	108%	110%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-DUP	6Q15831.D	1	03/31/23	MV	03/29/23	OP96143	S6Q237
FC3763-5	6Q15830.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	FC3763-5 ug/l	DUP Q ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.018 U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0089 U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0045 U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0045 U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0045 U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0045 U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0045 U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0045 U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0045 U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0045 U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0045 U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0045 U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U	ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
754-91-6	PFOSA	0.0045 U	ND		nc	30
31506-32-8	MeFOSA	0.0045 U	ND		nc	30
4151-50-2	EtFOSA	0.0045 U	ND		nc	30
2355-31-9	MeFOSAA	0.0045 U	ND		nc	30
2991-50-6	EtFOSAA	0.0045 U	ND		nc	30
24448-09-7	MeFOSE	0.045 U	ND		nc	30
1691-99-2	EtFOSE	0.045 U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.018 U	ND		nc	30
919005-14-4	ADONA	0.018 U	ND		nc	30
377-73-1	PFMPA	0.0089 U	ND		nc	30
863090-89-5	PFMBA	0.0089 U	ND		nc	30
151772-58-6	NFDHA	0.0089 U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.018 U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.018 U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96143-DUP	6Q15831.D	1	03/31/23	MV	03/29/23	OP96143	S6Q237
FC3763-5	6Q15830.D	1	03/30/23	MV	03/29/23	OP96143	S6Q237

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC3763-1, FC3763-2, FC3763-3, FC3763-4, FC3763-5

CAS No.	Compound	FC3763-5 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0089 U	ND			nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.022 U	ND			nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.11 U	ND			nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.11 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC3763-5	Limits
	13C4-PFBA	105%	110%	20-150%
	13C5-PFPeA	106%	114%	20-150%
	13C5-PFHxA	107%	112%	20-150%
	13C4-PFHpA	109%	114%	20-150%
	13C8-PFOA	101%	108%	20-150%
	13C9-PFNA	88%	114%	20-150%
	13C6-PFDA	94%	96%	20-150%
	13C7-PFUnDA	85%	92%	20-150%
	13C2-PFDoDA	80%	84%	20-150%
	13C2-PFTeDA	85%	86%	20-150%
	13C3-PFBS	115%	116%	20-150%
	13C3-PFHxS	107%	117%	20-150%
	13C8-PFOS	104%	100%	20-150%
	13C8-FOSA	96%	101%	20-150%
	d3-MeFOSA	86%	90%	20-150%
	d5-EtFOSA	86%	92%	20-150%
	d3-MeFOSAA	106%	110%	20-150%
	d5-EtFOSAA	97%	106%	20-150%
	d7-MeFOSE	80%	85%	20-150%
	d9-EtFOSE	85%	88%	20-150%
	13C2-4:2FTS	120%	129%	20-150%
	13C2-6:2FTS	121%	121%	20-150%
	13C2-8:2FTS	114%	133%	20-150%
	13C3-HFPO-DA	106%	115%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q237-CC235	Injection Date:	03/30/23
Lab File ID:	6Q15820.D	Injection Time:	21:31
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	32461	2.92	32342	5.55	71984	7.14	19091	7.67	21365	8.15
Check Std ^c	33983	2.92	36540	5.55	76018	7.14	19604	7.67	21780	8.15
Upper Limit ^d	64922	3.32	64684	5.95	143968	7.54	38182	8.07	42730	8.55
Lower Limit ^e	9738	2.52	9703	5.15	21595	6.74	5727	7.27	6410	7.75

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
S6Q237-ICCB	34091	2.92	35193	5.55	75907	7.15	21191	7.67	21434	8.15	1
OP96143-BS	29435	2.95	28538	5.55	64531	7.15	16976	7.67	19647	8.15	1
OP96143-LLBS	28647	2.97	29491	5.55	62812	7.14	17374	7.67	17983	8.15	1
OP96143-MB	30740	2.97	31389	5.55	68086	7.14	17411	7.67	18595	8.15	1
FC3763-1	29681	2.97	29180	5.55	65101	7.14	15940	7.67	19567	8.15	1
FC3763-2	27791	2.97	27958	5.55	58822	7.15	16331	7.67	16997	8.15	1
FC3763-3	29591	2.97	28298	5.55	63290	7.15	17344	7.67	18824	8.15	1
OP96143-MS	30481	2.97	30032	5.55	63928	7.15	17654	7.67	19393	8.15	1
FC3763-4	29532	2.97	30204	5.55	63014	7.15	17750	7.68	19306	8.15	1
FC3763-5	29557	2.97	27500	5.55	62534	7.15	16276	7.67	19490	8.15	1
OP96143-DUP	29881	2.97	28919	5.55	65358	7.14	18215	7.67	19163	8.15	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: S6Q235-ICC235 6Q15596.D 03/28/23 17:02. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1
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Injection Standard Area Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q237-CC235	Injection Date:	03/30/23
Lab File ID:	6Q15820.D	Injection Time:	21:31
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	6198	7.26	9449	8.31
Check Std ^c	6414	7.26	9535	8.31
Upper Limit ^d	12396	7.66	18898	8.71
Lower Limit ^e	1859	6.86	2835	7.91

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q237-ICCB	6100	7.26	9773	8.31	1
OP96143-BS	4968	7.26	8237	8.31	1
OP96143-LLBS	5284	7.25	8553	8.31	1
OP96143-MB	5681	7.26	7979	8.31	1
FC3763-1	5326	7.26	7911	8.31	1
FC3763-2	5069	7.26	8010	8.31	1
FC3763-3	5321	7.26	7825	8.31	1
OP96143-MS	5512	7.26	8269	8.31	1
FC3763-4	5513	7.26	8067	8.31	1
FC3763-5	5143	7.26	8473	8.31	1
OP96143-DUP	5250	7.26	8209	8.31	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q235-ICC235 6Q15596.D 03/28/23 17:02. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1
6

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q235-RT	Injection Date:	03/28/23
Lab File ID:	6Q15590.D	Injection Time:	15:38
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.311	--	--
TDCA	6.847	1.464	1.000
TCDCA	6.686	1.625	1.000
TUDCA	5.846	2.465	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
S6Q235-IC235	6Q15592.D	03/28/23	16:06	00:28	Mass Calibration Verification
S6Q235-IC235	6Q15593.D	03/28/23	16:20	00:42	Initial cal 1
S6Q235-IC235	6Q15594.D	03/28/23	16:34	00:56	Initial cal 2
S6Q235-IC235	6Q15595.D	03/28/23	16:48	01:10	Initial cal 3
S6Q235-ICC235	6Q15596.D	03/28/23	17:02	01:24	Initial cal 4
S6Q235-IC235	6Q15597.D	03/28/23	17:16	01:38	Initial cal 5
S6Q235-IC235	6Q15598.D	03/28/23	17:30	01:52	Initial cal 6
S6Q235-IC235	6Q15599.D	03/28/23	17:44	02:06	Initial cal 7
S6Q235-IC235	6Q15600.D	03/28/23	17:58	02:20	Initial cal 8
S6Q235-IBLK	6Q15601.D	03/28/23	18:12	02:34	Instrument Blank
S6Q235-IBLK	6Q15601.D	03/28/23	18:12	02:34	Instrument Blank
S6Q235-ICV235	6Q15602.D	03/28/23	18:26	02:48	Initial cal verification 4
S6Q235-ICV235	6Q15603.D	03/28/23	18:40	03:02	Initial cal verification 20
S6Q235-CC235	6Q15604.D	03/28/23	18:54	03:16	Continuing cal 4
S6Q235-CC235	6Q15605.D	03/28/23	19:08	03:30	Continuing cal 1.0LL
OP96085-BS	6Q15606.D	03/28/23	19:22	03:44	Blank Spike
OP96085-LLBS	6Q15607.D	03/28/23	19:36	03:58	Blank Spike
OP96085-MB	6Q15608.D	03/28/23	19:50	04:12	Method Blank
ZZZZZZ	6Q15609.D	03/28/23	20:04	04:26	(unrelated sample)
ZZZZZZ	6Q15610.D	03/28/23	20:18	04:40	(unrelated sample)
ZZZZZZ	6Q15611.D	03/28/23	20:32	04:54	(unrelated sample)
ZZZZZZ	6Q15612.D	03/28/23	20:46	05:08	(unrelated sample)
ZZZZZZ	6Q15613.D	03/28/23	21:00	05:22	(unrelated sample)
ZZZZZZ	6Q15614.D	03/28/23	21:14	05:36	(unrelated sample)
S6Q235-CC235	6Q15615.D	03/28/23	21:28	05:50	Continuing cal 4
S6Q235-ICCB	6Q15616.D	03/28/23	21:42	06:04	Continuing Calibration Blank
ZZZZZZ	6Q15617.D	03/28/23	21:56	06:18	(unrelated sample)
ZZZZZZ	6Q15618.D	03/28/23	22:10	06:32	(unrelated sample)
ZZZZZZ	6Q15619.D	03/28/23	22:24	06:46	(unrelated sample)
ZZZZZZ	6Q15620.D	03/28/23	22:38	07:00	(unrelated sample)
ZZZZZZ	6Q15621.D	03/28/23	22:52	07:14	(unrelated sample)
ZZZZZZ	6Q15622.D	03/28/23	23:06	07:28	(unrelated sample)
ZZZZZZ	6Q15623.D	03/28/23	23:20	07:42	(unrelated sample)
ZZZZZZ	6Q15624.D	03/28/23	23:34	07:56	(unrelated sample)

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q235-RT	Injection Date:	03/28/23
Lab File ID:	6Q15590.D	Injection Time:	15:38
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q15625.D	03/28/23	23:48	08:10	(unrelated sample)
ZZZZZZ	6Q15626.D	03/29/23	00:02	08:24	(unrelated sample)
S6Q235-CC235	6Q15627.D	03/29/23	00:16	08:38	Continuing cal 4
S6Q235-ICCB	6Q15628.D	03/29/23	00:30	08:52	Continuing Calibration Blank
ZZZZZZ	6Q15629.D	03/29/23	00:44	09:06	(unrelated sample)
ZZZZZZ	6Q15630.D	03/29/23	00:58	09:20	(unrelated sample)
ZZZZZZ	6Q15632.D	03/29/23	01:26	09:48	(unrelated sample)
ZZZZZZ	6Q15633.D	03/29/23	01:40	10:02	(unrelated sample)
ZZZZZZ	6Q15634.D	03/29/23	01:54	10:16	(unrelated sample)
ZZZZZZ	6Q15635.D	03/29/23	02:08	10:30	(unrelated sample)
ZZZZZZ	6Q15636.D	03/29/23	02:22	10:44	(unrelated sample)
ZZZZZZ	6Q15637.D	03/29/23	02:36	10:58	(unrelated sample)
ZZZZZZ	6Q15638.D	03/29/23	02:50	11:12	(unrelated sample)
S6Q235-CC235	6Q15639.D	03/29/23	03:04	11:26	Continuing cal 4
S6Q235-ICCB	6Q15640.D	03/29/23	03:18	11:40	Continuing Calibration Blank
ZZZZZZ	6Q15641.D	03/29/23	03:32	11:54	(unrelated sample)
ZZZZZZ	6Q15642.D	03/29/23	03:46	12:08	(unrelated sample)
ZZZZZZ	6Q15643.D	03/29/23	04:00	12:22	(unrelated sample)
ZZZZZZ	6Q15644.D	03/29/23	04:14	12:36	(unrelated sample)
ZZZZZZ	6Q15645.D	03/29/23	04:28	12:50	(unrelated sample)
ZZZZZZ	6Q15646.D	03/29/23	04:42	13:04	(unrelated sample)
OP96086-BS	6Q15647.D	03/29/23	04:56	13:18	Blank Spike
OP96086-LLBS	6Q15648.D	03/29/23	05:10	13:32	Blank Spike
OP96086-MB	6Q15649.D	03/29/23	05:24	13:46	Method Blank
ZZZZZZ	6Q15650.D	03/29/23	05:38	14:00	(unrelated sample)
S6Q235-CC235	6Q15651.D	03/29/23	05:52	14:14	Continuing cal 4
S6Q235-CC235	6Q15652.D	03/29/23	06:06	14:28	Continuing cal 1.0LL
S6Q235-ICCB	6Q15653.D	03/29/23	06:20	14:42	Continuing Calibration Blank
ZZZZZZ	6Q15654.D	03/29/23	06:34	14:56	(unrelated sample)
ZZZZZZ	6Q15655.D	03/29/23	06:48	15:10	(unrelated sample)
ZZZZZZ	6Q15656.D	03/29/23	07:02	15:24	(unrelated sample)
ZZZZZZ	6Q15657.D	03/29/23	07:16	15:38	(unrelated sample)
ZZZZZZ	6Q15658.D	03/29/23	07:30	15:52	(unrelated sample)
ZZZZZZ	6Q15659.D	03/29/23	07:44	16:06	(unrelated sample)
ZZZZZZ	6Q15661.D	03/29/23	08:12	16:34	(unrelated sample)
ZZZZZZ	6Q15663.D	03/29/23	08:39	17:01	(unrelated sample)
S6Q235-CC235	6Q15664.D	03/29/23	08:53	17:15	Continuing cal 4
S6Q235-ICCB	6Q15665.D	03/29/23	09:07	17:29	Continuing Calibration Blank
ZZZZZZ	6Q15666.D	03/29/23	09:21	17:43	(unrelated sample)
ZZZZZZ	6Q15667.D	03/29/23	09:35	17:57	(unrelated sample)
ZZZZZZ	6Q15669.D	03/29/23	10:03	18:25	(unrelated sample)
ZZZZZZ	6Q15670.D	03/29/23	10:17	18:39	(unrelated sample)
ZZZZZZ	6Q15671.D	03/29/23	10:31	18:53	(unrelated sample)
ZZZZZZ	6Q15672.D	03/29/23	10:45	19:07	(unrelated sample)

6.6.1
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TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q235-RT	Injection Date:	03/28/23
Lab File ID:	6Q15590.D	Injection Time:	15:38
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q235-CC235	6Q15674.D	03/29/23	11:13	19:35	Continuing cal 4
S6Q235-ICCB	6Q15675.D	03/29/23	11:27	19:49	Continuing Calibration Blank
OP96087-BS	6Q15676.D	03/29/23	11:41	20:03	Blank Spike
OP96087-LLBS	6Q15677.D	03/29/23	11:55	20:17	Blank Spike
OP96087-MB	6Q15678.D	03/29/23	12:09	20:31	Method Blank
ZZZZZZ	6Q15679.D	03/29/23	12:23	20:45	(unrelated sample)
JD62251-3	6Q15680.D	03/29/23	12:37	20:59	(used for QC only; not part of job FC3763)
OP96087-MS	6Q15681.D	03/29/23	12:51	21:13	Matrix Spike
JD62251-4	6Q15682.D	03/29/23	13:05	21:27	(used for QC only; not part of job FC3763)
OP96087-DUP	6Q15683.D	03/29/23	13:19	21:41	Duplicate
ZZZZZZ	6Q15684.D	03/29/23	13:33	21:55	(unrelated sample)
ZZZZZZ	6Q15685.D	03/29/23	13:47	22:09	(unrelated sample)
S6Q235-CC235	6Q15686.D	03/29/23	14:01	22:23	Continuing cal 4
S6Q235-ICCB	6Q15687.D	03/29/23	14:15	22:37	Continuing Calibration Blank
ZZZZZZ	6Q15688.D	03/29/23	14:29	22:51	(unrelated sample)
ZZZZZZ	6Q15689.D	03/29/23	14:43	23:05	(unrelated sample)
S6Q235-ECC235	6Q15690.D	03/29/23	14:57	23:19	Ending cal 4
S6Q235-ICCB	6Q15691.D	03/29/23	15:11	23:33	Continuing Calibration Blank

6.6.1
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TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q237-RT	Injection Date:	03/30/23
Lab File ID:	6Q15784.D	Injection Time:	12:57
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.311	--	--
TDCA	6.847	1.464	1.000
TCDCA	6.686	1.625	1.000
TUDCA	5.834	2.477	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
S6Q237-IBLK	6Q15787.D	03/30/23	13:39	00:42	Instrument Blank
S6Q237-CC235	6Q15788.D	03/30/23	13:53	00:56	Continuing cal 4
S6Q237-CC235	6Q15789.D	03/30/23	14:07	01:10	Continuing cal 1.0LL
ZZZZZZ	6Q15790.D	03/30/23	14:21	01:24	(unrelated sample)
ZZZZZZ	6Q15791.D	03/30/23	14:35	01:38	(unrelated sample)
ZZZZZZ	6Q15792.D	03/30/23	14:49	01:52	(unrelated sample)
ZZZZZZ	6Q15793.D	03/30/23	15:02	02:05	(unrelated sample)
ZZZZZZ	6Q15794.D	03/30/23	15:16	02:19	(unrelated sample)
ZZZZZZ	6Q15795.D	03/30/23	15:30	02:33	(unrelated sample)
ZZZZZZ	6Q15796.D	03/30/23	15:44	02:47	(unrelated sample)
ZZZZZZ	6Q15797.D	03/30/23	15:58	03:01	(unrelated sample)
ZZZZZZ	6Q15799.D	03/30/23	16:37	03:40	(unrelated sample)
S6Q237-CC235	6Q15800.D	03/30/23	16:51	03:54	Continuing cal 4
S6Q237-CC235	6Q15801.D	03/30/23	17:05	04:08	Continuing cal 1.0LL
ZZZZZZ	6Q15802.D	03/30/23	17:19	04:22	(unrelated sample)
ZZZZZZ	6Q15803.D	03/30/23	17:33	04:36	(unrelated sample)
FC3600-4	6Q15804.D	03/30/23	17:47	04:50	(used for QC only; not part of job FC3763)
OP96088-DUP	6Q15805.D	03/30/23	18:01	05:04	Duplicate
ZZZZZZ	6Q15806.D	03/30/23	18:15	05:18	(unrelated sample)
ZZZZZZ	6Q15807.D	03/30/23	18:29	05:32	(unrelated sample)
ZZZZZZ	6Q15808.D	03/30/23	18:43	05:46	(unrelated sample)
ZZZZZZ	6Q15809.D	03/30/23	18:57	06:00	(unrelated sample)
S6Q237-CC235	6Q15810.D	03/30/23	19:11	06:14	Continuing cal 4
S6Q237-ICCB	6Q15811.D	03/30/23	19:25	06:28	Continuing Calibration Blank
OP96111-LBS	6Q15812.D	03/30/23	19:39	06:42	Blank Spike
OP96111-LLBS	6Q15813.D	03/30/23	19:53	06:56	Blank Spike
OP96111-LB	6Q15814.D	03/30/23	20:07	07:10	Leachate Blank
JD61406-3R	6Q15817.D	03/30/23	20:49	07:52	(used for QC only; not part of job FC3763)
OP96111-MS	6Q15818.D	03/30/23	21:03	08:06	Matrix Spike
OP96111-DUP	6Q15819.D	03/30/23	21:17	08:20	Duplicate
S6Q237-CC235	6Q15820.D	03/30/23	21:31	08:34	Continuing cal 4
S6Q237-ICCB	6Q15821.D	03/30/23	21:45	08:48	Continuing Calibration Blank
OP96143-BS	6Q15822.D	03/30/23	21:59	09:02	Blank Spike
OP96143-LLBS	6Q15823.D	03/30/23	22:13	09:16	Blank Spike

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q237-RT	Injection Date:	03/30/23
Lab File ID:	6Q15784.D	Injection Time:	12:57
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP96143-MB	6Q15824.D	03/30/23	22:27	09:30	Method Blank
FC3763-1	6Q15825.D	03/30/23	22:41	09:44	AF-RHMW04-WGN01LF-2303W4
FC3763-2	6Q15826.D	03/30/23	22:55	09:58	AF-RHMW12A-WGN01LF-2303W4
FC3763-3	6Q15827.D	03/30/23	23:09	10:12	AF-RHMW12A-WGFD01LF-2303W4
OP96143-MS	6Q15828.D	03/30/23	23:22	10:25	Matrix Spike
FC3763-4	6Q15829.D	03/30/23	23:36	10:39	AF-RHMW06-WGN01LF-2303W4
FC3763-5	6Q15830.D	03/30/23	23:50	10:53	AF-RHMW16-WGN01LF-2303W4
OP96143-DUP	6Q15831.D	03/31/23	00:04	11:07	Duplicate
S6Q237-CC235	6Q15832.D	03/31/23	00:18	11:21	Continuing cal 4
S6Q237-CC235	6Q15833.D	03/31/23	00:32	11:35	Continuing cal 1.0LL
S6Q237-ICCB	6Q15834.D	03/31/23	00:46	11:49	Continuing Calibration Blank
OP96114-BS	6Q15835.D	03/31/23	01:00	12:03	Blank Spike
OP96114-LLBS	6Q15836.D	03/31/23	01:14	12:17	Blank Spike
OP96114-MB	6Q15837.D	03/31/23	01:28	12:31	Method Blank
ZZZZZZ	6Q15838.D	03/31/23	01:42	12:45	(unrelated sample)
ZZZZZZ	6Q15839.D	03/31/23	01:56	12:59	(unrelated sample)
ZZZZZZ	6Q15840.D	03/31/23	02:10	13:13	(unrelated sample)
ZZZZZZ	6Q15841.D	03/31/23	02:24	13:27	(unrelated sample)
ZZZZZZ	6Q15842.D	03/31/23	02:38	13:41	(unrelated sample)
ZZZZZZ	6Q15843.D	03/31/23	02:52	13:55	(unrelated sample)
S6Q237-CC235	6Q15844.D	03/31/23	03:06	14:09	Continuing cal 4
S6Q237-ICCB	6Q15845.D	03/31/23	03:20	14:23	Continuing Calibration Blank
FC3641-7	6Q15846.D	03/31/23	03:34	14:37	(used for QC only; not part of job FC3763)
OP96114-MS1	6Q15847.D	03/31/23	03:48	14:51	Matrix Spike
OP96114-MSD1	6Q15848.D	03/31/23	04:02	15:05	Matrix Spike Duplicate
ZZZZZZ	6Q15849.D	03/31/23	04:16	15:19	(unrelated sample)
ZZZZZZ	6Q15850.D	03/31/23	04:30	15:33	(unrelated sample)
ZZZZZZ	6Q15851.D	03/31/23	04:44	15:47	(unrelated sample)
OP96114-MS2	6Q15853.D	03/31/23	05:12	16:15	Matrix Spike
OP96114-MSD2	6Q15854.D	03/31/23	05:26	16:29	Matrix Spike Duplicate
ZZZZZZ	6Q15855.D	03/31/23	05:40	16:43	(unrelated sample)
S6Q237-CC235	6Q15856.D	03/31/23	05:54	16:57	Continuing cal 4
S6Q237-ICCB	6Q15857.D	03/31/23	06:08	17:11	Continuing Calibration Blank
ZZZZZZ	6Q15858.D	03/31/23	06:22	17:25	(unrelated sample)
OP96115-BS	6Q15859.D	03/31/23	06:36	17:39	Blank Spike
OP96115-LLBS	6Q15860.D	03/31/23	06:50	17:53	Blank Spike
OP96115-MB	6Q15861.D	03/31/23	07:04	18:07	Method Blank
ZZZZZZ	6Q15862.D	03/31/23	07:18	18:21	(unrelated sample)
ZZZZZZ	6Q15863.D	03/31/23	07:32	18:35	(unrelated sample)
ZZZZZZ	6Q15864.D	03/31/23	07:46	18:49	(unrelated sample)
ZZZZZZ	6Q15865.D	03/31/23	08:00	19:03	(unrelated sample)
ZZZZZZ	6Q15866.D	03/31/23	08:14	19:17	(unrelated sample)
ZZZZZZ	6Q15867.D	03/31/23	08:28	19:31	(unrelated sample)
S6Q237-CC235	6Q15868.D	03/31/23	08:42	19:45	Continuing cal 4

6.6.2

6

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q237-RT	Injection Date:	03/30/23
Lab File ID:	6Q15784.D	Injection Time:	12:57
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q237-ICCB	6Q15869.D	03/31/23	08:56	19:59	Continuing Calibration Blank
ZZZZZZ	6Q15870.D	03/31/23	09:10	20:13	(unrelated sample)
ZZZZZZ	6Q15871.D	03/31/23	09:24	20:27	(unrelated sample)
ZZZZZZ	6Q15872.D	03/31/23	09:38	20:41	(unrelated sample)
ZZZZZZ	6Q15873.D	03/31/23	09:52	20:55	(unrelated sample)
FC3671-11	6Q15874.D	03/31/23	10:06	21:09	(used for QC only; not part of job FC3763)
OP96115-MS	6Q15875.D	03/31/23	10:20	21:23	Matrix Spike
OP96115-MSD	6Q15876.D	03/31/23	10:34	21:37	Matrix Spike Duplicate
ZZZZZZ	6Q15877.D	03/31/23	10:48	21:51	(unrelated sample)
ZZZZZZ	6Q15878.D	03/31/23	11:01	22:04	(unrelated sample)
ZZZZZZ	6Q15879.D	03/31/23	11:15	22:18	(unrelated sample)
S6Q237-CC235	6Q15880.D	03/31/23	11:29	22:32	Continuing cal 4
S6Q237-ICCB	6Q15881.D	03/31/23	11:43	22:46	Continuing Calibration Blank
ZZZZZZ	6Q15882.D	03/31/23	11:57	23:00	(unrelated sample)
ZZZZZZ	6Q15883.D	03/31/23	12:11	23:14	(unrelated sample)
ZZZZZZ	6Q15884.D	03/31/23	12:25	23:28	(unrelated sample)

6.6.2
6

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q237-RT	Injection Date:	03/31/23
Lab File ID:	6Q15885.D	Injection Time:	12:39
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.311	--	--
TDCA	6.835	1.476	1.000
TCDCA	6.686	1.625	1.000
TUDCA	5.834	2.477	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
S6Q237-IBLK	6Q15888.D	03/31/23	13:21	00:42	Instrument Blank
S6Q237-CC235	6Q15889.D	03/31/23	13:35	00:56	Continuing cal 1.0LL
OP96145-BS	6Q15890.D	03/31/23	13:49	01:10	Blank Spike
OP96145-LLBS	6Q15891.D	03/31/23	14:03	01:24	Blank Spike
OP96145-MB	6Q15892.D	03/31/23	14:17	01:38	Method Blank
FC3723-1	6Q15893.D	03/31/23	14:31	01:52	(used for QC only; not part of job FC3763)
ZZZZZZ	6Q15896.D	03/31/23	15:13	02:34	(unrelated sample)
S6Q237-CC235	6Q15897.D	03/31/23	15:27	02:48	Continuing cal 4
S6Q237-ICCB	6Q15898.D	03/31/23	15:41	03:02	Continuing Calibration Blank
ZZZZZZ	6Q15899.D	03/31/23	15:55	03:16	(unrelated sample)
ZZZZZZ	6Q15900.D	03/31/23	16:09	03:30	(unrelated sample)
ZZZZZZ	6Q15901.D	03/31/23	16:23	03:44	(unrelated sample)
ZZZZZZ	6Q15902.D	03/31/23	16:37	03:58	(unrelated sample)
ZZZZZZ	6Q15903.D	03/31/23	16:51	04:12	(unrelated sample)
ZZZZZZ	6Q15904.D	03/31/23	17:05	04:26	(unrelated sample)
ZZZZZZ	6Q15905.D	03/31/23	17:19	04:40	(unrelated sample)
ZZZZZZ	6Q15906.D	03/31/23	17:33	04:54	(unrelated sample)
ZZZZZZ	6Q15907.D	03/31/23	17:47	05:08	(unrelated sample)
ZZZZZZ	6Q15908.D	03/31/23	18:01	05:22	(unrelated sample)
S6Q237-CC235	6Q15909.D	03/31/23	18:15	05:36	Continuing cal 4
S6Q237-ICCB	6Q15910.D	03/31/23	18:29	05:50	Continuing Calibration Blank
ZZZZZZ	6Q15911.D	03/31/23	18:43	06:04	(unrelated sample)
ZZZZZZ	6Q15912.D	03/31/23	18:57	06:18	(unrelated sample)
ZZZZZZ	6Q15913.D	03/31/23	19:11	06:32	(unrelated sample)
OP96169-BS	6Q15914.D	03/31/23	19:25	06:46	Blank Spike
OP96169-LLBS	6Q15915.D	03/31/23	19:39	07:00	Blank Spike
OP96169-MB	6Q15916.D	03/31/23	19:53	07:14	Method Blank
FC3793-1	6Q15917.D	03/31/23	20:07	07:28	(used for QC only; not part of job FC3763)
OP96169-MS	6Q15918.D	03/31/23	20:21	07:42	Matrix Spike
FC3793-2	6Q15919.D	03/31/23	20:35	07:56	(used for QC only; not part of job FC3763)
OP96169-DUP	6Q15920.D	03/31/23	20:49	08:10	Duplicate
S6Q237-CC235	6Q15921.D	03/31/23	21:03	08:24	Continuing cal 4
S6Q237-CC235	6Q15922.D	03/31/23	21:17	08:38	Continuing cal 1.0LL
S6Q237-ICCB	6Q15923.D	03/31/23	21:31	08:52	Continuing Calibration Blank

TDCA Retention Time Check

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q237-RT	Injection Date:	03/31/23
Lab File ID:	6Q15885.D	Injection Time:	12:39
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP96170-BS	6Q15924.D	03/31/23	21:45	09:06	Blank Spike
OP96170-LLBS	6Q15925.D	03/31/23	21:59	09:20	Blank Spike
OP96170-MB	6Q15926.D	03/31/23	22:13	09:34	Method Blank
ZZZZZZ	6Q15927.D	03/31/23	22:27	09:48	(unrelated sample)
ZZZZZZ	6Q15928.D	03/31/23	22:41	10:02	(unrelated sample)
ZZZZZZ	6Q15929.D	03/31/23	22:55	10:16	(unrelated sample)
ZZZZZZ	6Q15930.D	03/31/23	23:09	10:30	(unrelated sample)
ZZZZZZ	6Q15931.D	03/31/23	23:23	10:44	(unrelated sample)
S6Q237-CC235	6Q15932.D	03/31/23	23:37	10:58	Continuing cal 4
S6Q237-ICCB	6Q15933.D	03/31/23	23:51	11:12	Continuing Calibration Blank
FC3722-6	6Q15934.D	04/01/23	00:04	11:25	(used for QC only; not part of job FC3763)
OP96170-MS	6Q15935.D	04/01/23	00:19	11:40	Matrix Spike
OP96170-MSD	6Q15936.D	04/01/23	00:33	11:54	Matrix Spike Duplicate
ZZZZZZ	6Q15937.D	04/01/23	00:46	12:07	(unrelated sample)
ZZZZZZ	6Q15938.D	04/01/23	01:00	12:21	(unrelated sample)
ZZZZZZ	6Q15939.D	04/01/23	01:14	12:35	(unrelated sample)
ZZZZZZ	6Q15940.D	04/01/23	01:28	12:49	(unrelated sample)
ZZZZZZ	6Q15941.D	04/01/23	01:42	13:03	(unrelated sample)
ZZZZZZ	6Q15942.D	04/01/23	01:56	13:17	(unrelated sample)
ZZZZZZ	6Q15943.D	04/01/23	02:10	13:31	(unrelated sample)
S6Q237-CC235	6Q15944.D	04/01/23	02:24	13:45	Continuing cal 4
S6Q237-ICCB	6Q15945.D	04/01/23	02:38	13:59	Continuing Calibration Blank
ZZZZZZ	6Q15946.D	04/01/23	02:52	14:13	(unrelated sample)
ZZZZZZ	6Q15947.D	04/01/23	03:06	14:27	(unrelated sample)
ZZZZZZ	6Q15948.D	04/01/23	03:20	14:41	(unrelated sample)
ZZZZZZ	6Q15949.D	04/01/23	03:34	14:55	(unrelated sample)
S6Q237-ECC235	6Q15950.D	04/01/23	03:48	15:09	Ending cal 4
S6Q237-ICCB	6Q15951.D	04/01/23	04:02	15:23	Continuing Calibration Blank

6.6.3

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Ion Ratio Summary

Job Number: FC3763
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q237	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios	
		PFPeA	PFHxA
S6Q235-ICC235	6Q15596.D	0	4.1
FC3763-1	6Q15825.D		
FC3763-2	6Q15826.D	0	5.3
FC3763-3	6Q15827.D	0	1.6
FC3763-4	6Q15829.D		
FC3763-5	6Q15830.D		

6.7.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC3763
 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
FC3763-1	6Q15825.D	108	109	106	107	108	109	98	80
FC3763-2	6Q15826.D	108	103	104	105	110	97	102	92
FC3763-3	6Q15827.D	107	110	114	107	107	94	111	96
FC3763-4	6Q15829.D	116	111	109	112	118	101	106	100
FC3763-5	6Q15830.D	110	114	112	114	108	114	96	92
OP96143-BS	6Q15822.D	38	108	105	106	103	101	104	99
OP96143-DUP	6Q15831.D	105	106	107	109	101	88	94	85
OP96143-LLBS	6Q15823.D	111	106	103	106	113	98	123	113
OP96143-MB	6Q15824.D	105	101	105	106	105	105	110	110
OP96143-MS	6Q15828.D	74	105	103	104	112	104	93	99

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

6.8.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC3763
 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
FC3763-1	6Q15825.D	73	71	117	108	109	99	79	74
FC3763-2	6Q15826.D	78	80	115	107	102	96	75	79
FC3763-3	6Q15827.D	89	84	114	108	104	107	99	97
FC3763-4	6Q15829.D	90	80	123	110	110	101	97	99
FC3763-5	6Q15830.D	84	86	116	117	100	101	90	92
OP96143-BS	6Q15822.D	99	87	123	123	109	104	100	98
OP96143-DUP	6Q15831.D	80	85	115	107	104	96	86	86
OP96143-LLBS	6Q15823.D	108	107	120	109	102	102	87	87
OP96143-MB	6Q15824.D	96	86	100	104	118	100	80	86
OP96143-MS	6Q15828.D	84	86	110	111	98	100	97	91

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
6

Isotope Dilution Standard Recovery Summary

Job Number: FC3763
 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
FC3763-1	6Q15825.D	107	98	83	84	123	123	117	108
FC3763-2	6Q15826.D	93	94	74	76	122	114	106	106
FC3763-3	6Q15827.D	118	116	92	98	132	130	111	110
FC3763-4	6Q15829.D	110	110	96	100	133	122	130	109
FC3763-5	6Q15830.D	110	106	85	88	129	121	133	115
OP96143-BS	6Q15822.D	117	115	90	97	136	143	138	106
OP96143-DUP	6Q15831.D	106	97	80	85	120	121	114	106
OP96143-LLBS	6Q15823.D	108	111	88	85	141	118	123	106
OP96143-MB	6Q15824.D	117	117	88	93	124	123	121	104
OP96143-MS	6Q15828.D	101	99	86	91	128	117	112	108

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%

Initial Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICC235
 Lab FileID: 6Q15596.D

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
D:\MassHunter\Methods	1633_032923_S6Q235.quantmethod.xml	D:\MassHunter\Data\032823_1633_S6Q235	3/29/2023 10:06:44 AM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d	Avg RF	0.1926	0.2437	0.2270	0.2055	0.2187	0.2416	0.2489	0.2408	0.2274	8.925
D:\MassHunter\Data\032823_1633_S6Q235	6Q15594.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d	3/28/2023 4:20:50 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d	Avg RF	0.2566	0.3252	0.2930	0.2636	0.2792	0.3012	0.3127	0.3148	0.2933	8.488
D:\MassHunter\Data\032823_1633_S6Q235	6Q15595.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d	3/28/2023 4:34:49 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d	Avg RF	0.0523	0.0609	0.0566	0.0500	0.0532	0.0571	0.0599	0.0605	0.0563	7.251
D:\MassHunter\Data\032823_1633_S6Q235	6Q15596.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 4:48:51 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.9518	1.1776	1.0582	0.9726	1.0118	1.0884	1.1277	1.0902	1.0598	7.289
D:\MassHunter\Data\032823_1633_S6Q235	6Q15597.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:02:50 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.2776	0.3548	0.3261	0.3048	0.3167	0.3292	0.3514	0.3479	0.3261	8.067
D:\MassHunter>Data\032823_1633_S6Q235	6Q15598.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:16:49 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.0430	0.0559	0.0582	0.0530	0.0560	0.0547	0.0542	0.0528	0.0535	8.609
D:\MassHunter>Data\032823_1633_S6Q235	6Q15599.d	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:30:49 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.9094	1.0191	0.8851	0.7873	0.8303	0.8882	0.9374	0.9401	0.8996	7.883
D:\MassHunter>Data\032823_1633_S6Q235	6Q15599.d	D:\MassHunter>Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:44:47 PM	D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d	Avg RF	1.1145	1.4803	1.2569	1.2262	1.2947	1.3000	1.3236	1.3167	1.2891	7.985
D:\MassHunter>Data\032823_1633_S6Q235	6Q15599.d	D:\MassHunter>Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:48:46 PM	D:\MassHunter>Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.1887	0.2272	0.2053	0.1911	0.2077	0.2080	0.2108	0.2018	0.2051	5.861
D:\MassHunter>Data\032823_1633_S6Q235	6Q15599.d	D:\MassHunter>Data\032823_1633_S6Q235\6Q15599.d	3/28/2023 5:58:46 PM	D:\MassHunter>Data\032823_1633_S6Q235\6Q15599.d	Avg RF	0.0980	0.1308	0.1089	0.1018	0.1028	0.1097	0.1076	0.1098	0.1087	9.122
I M4-PFbA	T PFbA				Avg RF	1.2627	1.5577	1.4611	1.3889	1.5429	1.4307	1.5023	1.5494	1.4620	6.888
I M8-PFOA	T PFOA				Avg RF	1.0155	1.0895	1.0002	0.9946	1.0227	1.1491	1.1470	1.1060	1.0656	6.088
I M9-PFNA	T PFNA				Avg RF	0.6534	0.8216	0.7827	0.6624	0.7399	0.7521	0.7755	0.7801	0.7460	7.972
I M6-PFDA	T PFDA				Avg RF	1.3949	1.4952	1.4134	1.3070	1.3273	1.4403	1.5628	1.5111	1.4315	6.232
I M7-PFUndA	T PFUndA				Avg RF	0.7581	1.1843	1.0792	0.9240	1.1313	1.1410	1.2000	1.0887	1.0633	14.105
I M2-PFDoda															

Generated at 10:07 AM on 3/29/2023

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Initial Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICC235
 Lab FileID: 6Q15596.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9673	0.9383	0.9322	0.8525	0.8568	0.9323	0.9774	0.9333	0.9238	4.976
T PFTfDA	Avg RF	0.8664	0.8584	0.8413	0.7287	0.7931	0.8241	0.8760	0.7525	0.8176	6.667
I M2-PFTeDA	Avg RF	1.4441	1.5376	1.4633	1.2240	1.2533	1.4048	1.5746	1.4292	1.4164	8.712
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	0.8027	0.9561	0.8963	0.7944	0.8378	0.8799	0.9637	0.9553	0.8858	7.816
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.7707	1.1503	1.0473	0.8298	0.9324	1.0241	0.9991	0.9709	0.9656	12.556
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	0.9416	1.3702	1.2600	1.1053	1.2383	1.2424	1.3384	1.3090	1.2257	11.427
T PFPeS	Avg RF	0.8349	1.3073	1.1303	0.9619	1.0282	1.0480	1.1796	1.0732	1.0704	13.267
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.0436	1.1170	0.9805	0.9146	1.0028	0.9950	1.0393	0.9270	1.0025	6.545
T PFHpS	Avg RF	0.8472	1.3364	1.1110	0.9224	1.0734	1.0457	1.0707	0.9698	1.0471	14.002
T PFOs	Avg RF	0.9999	1.0824	1.1104	0.9139	1.2009	1.0349	1.1328	0.9172	1.0491	9.747
T PFNS	Avg RF	0.5826	0.8742	0.7742	0.6868	0.8166	0.7370	0.7852	0.7012	0.7447	12.013
T PFDS	Avg RF	0.4330	0.4834	0.4585	0.4173	0.4621	0.4615	0.4659	0.4167	0.4498	5.436
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	10.11	11.92	11.03	8.7471	10.30	9.4414	11.00	10.95	10.44	9.649
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	5.8831	7.7610	6.8254	6.2394	6.1804	7.1645	7.4164	6.1692	6.7049	10.242
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.1915	4.4200	3.8484	3.5034	3.5429	3.5598	3.9807	3.0503	3.6371	12.080
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	0.6890	1.1150	0.8476	0.8269	0.9042	1.0572	0.9467	0.9823	0.9211	14.735
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	0.9145	1.0484	0.9660	0.8097	0.8862	0.9388	0.9558	0.8415	0.9201	8.190
T HFO-DA	Avg RF	19.41	24.00	22.28	19.53	21.26	21.50	21.63	18.80	21.05	8.201
T ADONA	Avg RF	9.7791	12.33	11.49	9.6393	10.41	10.42	10.55	10.16	10.60	8.474
T 9Cl-PF3ONS	Avg RF	5.3127	6.5272	6.1181	5.0720	5.6257	5.9204	5.9197	5.3258	5.7277	8.450
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.6711	0.9125	0.8139	0.7447	0.6930	0.8151	0.7354	0.7830	0.7711	10.041
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	0.8163	0.9370	0.9038	0.8086	0.8478	0.9845	0.9730	0.9508	0.9027	7.773
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	0.8029	0.9150	0.9273	0.8050	0.9095	0.9344	0.9172	0.9448	0.8945	6.374
T EFOSE	Avg RF					ISTD					

Initial Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICC235
 Lab FileID: 6Q15596.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA											
T EFOSA	Avg RF	0.9199	1.2034	1.0763	0.9909	1.0485	1.0308	1.1164	1.1344	1.0651	8.301
I M3-MeFOSA											
T MeFOSA	Avg RF	0.9213	1.2874	1.1410	0.9763	1.0141	1.1590	1.1034	1.0282	1.0789	10.883
I 13C4-PFOS											
S d3-MeFOSAA	Linear	1.3376	1.1461	1.2798	1.3032	1.2492	1.1312	1.2687	1.1528	1.2336	6.422
S 13C8-PFOS	Linear	0.8287	0.8032	0.7802	0.8464	0.7266	0.8179	0.8515	0.8847	0.8174	5.937
S d5-EFOSAA	Linear	1.1128	1.1268	1.0423	1.0399	1.0983	1.0670	1.1600	0.9912	1.0798	5.082
S 13C8-FOSA	Linear	1.8949	1.8161	1.8567	1.8321	1.8465	1.8565	1.8671	1.7171	1.8359	2.907
S d7-MeFOSE	Linear	0.2806	0.2725	0.2586	0.2714	0.2646	0.2568	0.2642	0.2341	0.2628	5.317
S d3-MeFOSA	Linear	0.6260	0.5702	0.5819	0.6005	0.5957	0.6080	0.6414	0.6372	0.6076	4.224
S d9-EFOSE	Linear	0.1810	0.1737	0.1746	0.1766	0.1684	0.1719	0.1776	0.1541	0.1722	4.784
S d5-EFOSA	Linear	0.6838	0.6860	0.6685	0.6852	0.6798	0.6988	0.7085	0.6577	0.6835	2.330
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1607	1.1682	1.1535	1.1489	1.1601	1.1473	1.1432	1.1592	1.1551	0.723
I 18O2-PFHxS											
S 13C2-4:2FTS	Linear	0.1645	0.1635	0.1647	0.1837	0.1737	0.1815	0.1476	0.1236	0.1628	12.020
S 13C3-PFBS	Linear	1.9434	1.9702	2.0034	2.1155	2.1603	2.1045	2.0342	1.9597	2.0364	3.991
S 13C2-6:2FTS	Linear	0.2384	0.2148	0.2390	0.2260	0.2436	0.2205	0.1978	0.1894	0.2212	8.943
S 13C3-PFHxS	Linear	1.4317	1.3647	1.3835	1.4708	1.4121	1.4992	1.3761	1.3623	1.4125	3.614
S 13C2-8:2FTS	Linear	0.2395	0.2112	0.2152	0.2109	0.2297	0.2224	0.2019	0.2034	0.2168	5.993
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8572	0.8105	0.8662	0.7964	0.8260	0.8741	0.7922	0.8106	0.8291	3.903
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.7315	0.7215	0.8017	0.7851	0.6889	0.7238	0.6747	0.6685	0.7245	6.718
S 13C7-PFUnDA	Linear	0.8861	0.8190	0.8413	0.9137	0.7289	0.7994	0.6978	0.6969	0.7979	10.433
S 13C2-PFDODA	Linear	0.9604	1.0472	1.1001	1.0959	0.9578	1.0184	0.9706	0.9812	1.0164	5.784
S 13C2-PFTeDA	Linear	0.5806	0.5680	0.6384	0.6320	0.5616	0.6084	0.5274	0.5479	0.5830	6.838
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.9608	0.9778	0.9423	0.9673	1.0264	1.0121	0.9909	1.0167	0.9868	3.025
I 13C2-PFHxA											
S 13C5-PPFA	Linear	0.5818	0.5708	0.5737	0.5610	0.5556	0.5652	0.5462	0.5408	0.5619	2.476
S 13C5-PFHxA	Linear	1.0990	1.0236	1.0434	1.0172	1.0058	1.0603	1.0280	1.0068	1.0355	3.044
S 13C3-HPOD-A	Linear	0.1045	0.1058	0.1050	0.1066	0.1070	0.1111	0.1083	0.1125	0.1076	2.671
S 13C4-PFHpA	Linear	1.1210	1.1116	1.0523	1.0005	1.0060	1.1020	1.0392	1.0071	1.0550	4.767

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

Initial Calibration Summary

Job Number: FC3763
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICC235
 Lab FileID: 6Q15596.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 = 1.155135 * x	
S 13C5-PFPeA	Linear	y = 0.561894 * x	
S 13C2-4:2FTS	Linear	y = 0.162839 * x	
S 13C3-PFBS	Linear	y = 2.036402 * x	
S 13C5-PFHxA	Linear	y = 1.035530 * x	
S 13C3-HFPO-DA	Linear	y = 0.107606 * x	
S 13C4-PFHpA	Linear	y = 1.054967 * x	
S 13C8-PFOA	Linear	y = 0.221187 * x	
S 13C3-PFHxS	Linear	y = 0.829148 * x	
S 13C9-PFNA	Linear	y = 1.412538 * x	
S 13C2-8:2FTS	Linear	y = 0.986795 * x	
S 13C6-PEDA	Linear	y = 0.216777 * x	
S d3-MeFOSAA	Linear	y = 0.724479 * x	
S 13C8-PFOS	Linear	y = 1.233585 * x	
S d5-EFOSAA	Linear	y = 0.817396 * x	
S 13C7-PFUInDA	Linear	y = 1.079777 * x	
S 13C2-PFDODA	Linear	y = 0.797898 * x	
S 13C8-FOSA	Linear	y = 1.016441 * x	
S 13C2-PFTeDA	Linear	y = 1.835886 * x	
S d7-MeFOSE	Linear	y = 0.583028 * x	
S d3-MeFOSA	Linear	y = 0.262837 * x	
S d9-EFOSE	Linear	y = 0.607615 * x	
S d5-EFOSA	Linear	y = 0.172240 * x	
S d5-EFOSA	Linear	y = 0.683534 * x	

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

Initial Calibration Verification

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICV235
 Lab FileID: 6Q15602.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q235.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15602
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.354	7.1	107.1
13C2-6:2FTS	5.000	5.216	4.3	104.3
13C2-8:2FTS	5.000	5.586	11.7	111.7
13C2-PFDoDA	1.250	1.293	3.5	103.5
13C2-PFTeDA	1.250	1.377	10.2	110.2
13C3-PFBS	2.500	2.770	10.8	110.8
13C3-PFHxS	2.500	2.589	3.5	103.5
13C4-PFBA	10.000	9.840	-1.6	98.4
13C4-PFHpA	2.500	2.513	0.5	100.5
13C5-PFHxA	2.500	2.412	-3.5	96.5
13C5-PFPeA	5.000	4.994	-0.1	99.9
13C6-PFDA	1.250	1.272	1.8	101.8
13C7-PFUnDA	1.250	1.327	6.2	106.2
13C8-FOSA	2.500	2.367	-5.3	94.7
13C8-PFOA	2.500	2.502	0.1	100.1
13C8-PFOS	2.500	2.590	3.6	103.6
13C9-PFNA	1.250	1.126	-9.9	90.1
4:2FTS	9.375	9.834	4.9	104.9
6:2FTS	9.500	10.214	7.5	107.5
8:2FTS	9.600	9.342	-2.7	97.3
d3-MeFOSAA	5.000	4.883	-2.3	97.7
EtFOSAA	2.500	2.451	-2.0	98.0
FOSA	2.500	2.588	3.5	103.5
MeFOSAA	2.500	2.551	2.0	102.0
PFBA	10.000	9.946	-0.5	99.5
PFBS	2.218	1.992	-10.2	89.8
PFDA	2.500	2.394	-4.3	95.7
PFDoDA	2.500	2.502	0.1	100.1
PFDS	2.413	2.278	-5.6	94.4
PFHpA	2.500	2.434	-2.6	97.4
PFHpS	2.383	2.184	-8.3	91.7
PFHxA	2.500	2.492	-0.3	99.7
PFHxS	2.285	2.297	0.5	100.5
PFNA	2.500	2.733	9.3	109.3
PFNS	2.405	2.340	-2.7	97.3
PFOA	2.500	2.396	-4.2	95.8
PFOS	2.320	2.051	-11.6	88.4

Initial Calibration Verification

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICV235
 Lab FileID: 6Q15602.D

PFPeA	5.000	4.865	-2.7	97.3
PFPeS	2.353	2.468	4.9	104.9
PFTeDA	2.500	2.323	-7.1	92.9
PFTTrDA	2.500	2.573	2.9	102.9
PFUnDA	2.500	2.313	-7.5	92.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	9.539	0.9	100.9
13C3-HFPO-DA	10.000	9.923	-0.8	99.2
9C1-PF3ONS	9.350	9.439	1.0	101.0
ADONA	9.450	9.280	-1.8	98.2
HFPO-DA	10.000	9.385	-6.1	93.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.756	-5.8	94.2
5:3FTCA	62.400	64.072	2.7	102.7
7:3FTCA	62.400	62.988	0.9	100.9
d3-MeFOSA	2.500	2.362	-5.5	94.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.426	-3.0	97.0
EtFOSE	25.000	24.290	-2.8	97.2
MeFOSA	2.500	2.590	3.6	103.6
MeFOSE	25.000	23.013	-7.9	92.1
PFDoDS	2.425	2.283	-5.9	94.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.047	0.9	100.9
d7-MeFOSE	25.000	26.354	5.4	105.4
d9-EtFOSE	25.000	25.468	1.9	101.9
d5-EtFOSA	2.500	2.462	-1.5	98.5
NFDHA	5.000	5.067	1.3	101.3
PFMBA	5.000	4.699	-6.0	94.0
PFMPA	5.000	4.840	-3.2	96.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.652	4.5	104.5

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICV235
 Lab FileID: 6Q15603.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q235.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15603
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.719	14.4	114.4
13C2-6:2FTS	5.000	5.719	14.4	114.4
13C2-8:2FTS	5.000	5.350	7.0	107.0
13C2-PFDoDA	1.250	1.333	6.6	106.6
13C2-PFTeDA	1.250	1.307	4.6	104.6
13C3-PFBS	2.500	2.695	7.8	107.8
13C3-PFHxS	2.500	2.649	6.0	106.0
13C4-PFBA	10.000	10.045	0.4	100.4
13C4-PFHpA	2.500	2.586	3.4	103.4
13C5-PFHxA	2.500	2.501	0.0	100.0
13C5-PFPeA	5.000	5.076	1.5	101.5
13C6-PFDA	1.250	1.339	7.1	107.1
13C7-PFUnDA	1.250	1.267	1.3	101.3
13C8-FOSA	2.500	2.427	-2.9	97.1
13C8-PFOA	2.500	2.688	7.5	107.5
13C8-PFOS	2.500	2.581	3.2	103.2
13C9-PFNA	1.250	1.233	-1.3	98.7
4:2FTS	20.000	21.311	6.6	106.6
6:2FTS	20.000	19.853	-0.7	99.3
8:2FTS	20.000	21.383	6.9	106.9
d3-MeFOSAA	5.000	4.963	-0.7	99.3
EtFOSAA	20.000	20.780	3.9	103.9
FOSA	20.000	22.128	10.6	110.6
MeFOSAA	20.000	22.085	10.4	110.4
PFBA	20.000	20.109	0.5	100.5
PFBS	20.000	22.035	10.2	110.2
PFDA	20.000	20.211	1.1	101.1
PFDoDA	20.000	18.403	-8.0	92.0
PFDS	20.000	21.063	5.3	105.3
PFHpA	20.000	19.518	-2.4	97.6
PFHpS	20.000	20.923	4.6	104.6
PFHxA	20.000	21.871	9.4	109.4
PFHxS	20.000	23.245	16.2	116.2
PFNA	20.000	23.314	16.6	116.6
PFNS	20.000	22.625	13.1	113.1
PFOA	20.000	21.828	9.1	109.1
PFOS	20.000	17.744	-11.3	88.7

Initial Calibration Verification

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q235-ICV235
 Lab FileID: 6Q15603.D

PFPeA	20.000	22.655	13.3	113.3
PFPeS	20.000	22.178	10.9	110.9
PFTeDA	20.000	21.723	8.6	108.6
PFTTrDA	20.000	18.987	-5.1	94.9
PFUnDA	20.000	21.030	5.2	105.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	21.672	8.4	108.4
13C3-HFPO-DA	10.000	10.506	5.1	105.1
9C1-PF3ONS	20.000	20.543	2.7	102.7
ADONA	20.000	21.021	5.1	105.1
HFPO-DA	20.000	19.001	-5.0	95.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.969	-5.2	94.8
5:3FTCA	20.000	20.556	2.8	102.8
7:3FTCA	20.000	19.623	-1.9	98.1
d3-MeFOSA	2.500	2.537	1.5	101.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	19.210	-3.9	96.1
EtFOSE	100.000	91.969	-8.0	92.0
MeFOSA	20.000	20.110	0.6	100.6
MeFOSE	100.000	86.374	-13.6	86.4
PFDoDS	20.000	18.535	-7.3	92.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.303	6.1	106.1
d7-MeFOSE	25.000	25.648	2.6	102.6
d9-EtFOSE	25.000	25.038	0.2	100.2
d5-EtFOSA	2.500	2.581	3.2	103.2
NFDHA	20.000	21.595	8.0	108.0
PFMBA	20.000	20.644	3.2	103.2
PFMPA	20.000	20.846	4.2	104.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.243	-8.8	91.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15801.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15801
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.560	11.2	111.2
13C2-6:2FTS	5.000	5.394	7.9	107.9
13C2-8:2FTS	5.000	5.322	6.4	106.4
13C2-PFDoDA	1.250	1.195	-4.4	95.6
13C2-PFTeDA	1.250	1.211	-3.1	96.9
13C3-PFBS	2.500	2.439	-2.4	97.6
13C3-PFHxS	2.500	2.337	-6.5	93.5
13C4-PFBA	10.000	9.998	0.0	100.0
13C4-PFHpA	2.500	2.445	-2.2	97.8
13C5-PFHxA	2.500	2.425	-3.0	97.0
13C5-PFPeA	5.000	4.909	-1.8	98.2
13C6-PFDA	1.250	1.337	7.0	107.0
13C7-PFUnDA	1.250	1.251	0.1	100.1
13C8-FOSA	2.500	2.645	5.8	105.8
13C8-PFOA	2.500	2.479	-0.9	99.1
13C8-PFOS	2.500	2.697	7.9	107.9
13C9-PFNA	1.250	1.180	-5.6	94.4
4:2FTS	0.750	0.669	-10.8	89.2
6:2FTS	0.760	0.745	-1.9	98.1
8:2FTS	0.768	0.805	4.9	104.9
d3-MeFOSAA	5.000	5.149	3.0	103.0
EtFOSAA	0.200	0.213	6.6	106.6
FOSA	0.200	0.186	-6.9	93.1
MeFOSAA	0.200	0.196	-1.9	98.1
PFBA	0.800	0.726	-9.3	90.7
PFBS	0.177	0.143	-19.3	80.7
PFDA	0.200	0.140	-29.8	70.2
PFDoDA	0.200	0.182	-8.8	91.2
PFDS	0.193	0.189	-2.0	98.0
PFHpA	0.200	0.176	-12.2	87.8
PFHpS	0.191	0.186	-2.8	97.2
PFHxA	0.200	0.183	-8.5	91.5
PFHxS	0.183	0.201	10.0	110.0
PFNA	0.200	0.160	-20.1	79.9
PFNS	0.192	0.170	-11.6	88.4
PFOA	0.200	0.168	-16.0	84.0
PFOS	0.186	0.172	-7.4	92.6

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15801.D

PFPeA	0.400	0.374	-6.4	93.6
PFPeS	0.188	0.168	-10.8	89.2
PFTeDA	0.200	0.168	-16.1	83.9
PFTrDA	0.200	0.167	-16.7	83.3
PFUnDA	0.200	0.164	-18.0	82.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.756	0.644	-14.9	85.1
13C3-HFPO-DA	10.000	9.818	-1.8	98.2
9C1-PF3ONS	0.748	0.703	-6.0	94.0
ADONA	0.756	0.682	-9.8	90.2
HFPO-DA	0.800	0.761	-4.9	95.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.922	-7.7	92.3
5:3FTCA	4.992	4.318	-13.5	86.5
7:3FTCA	4.992	4.464	-10.6	89.4
d3-MeFOSA	2.500	2.468	-1.3	98.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.170	-15.0	85.0
EtFOSE	2.000	1.824	-8.8	91.2
MeFOSA	0.200	0.174	-12.9	87.1
MeFOSE	2.000	1.838	-8.1	91.9
PFDoDS	0.194	0.165	-14.8	85.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.506	10.1	110.1
d7-MeFOSE	25.000	26.037	4.1	104.1
d9-EtFOSE	25.000	24.606	-1.6	98.4
d5-EtFOSA	2.500	2.596	3.9	103.9
NFDHA	0.400	0.374	-6.4	93.6
PFMBA	0.400	0.348	-13.1	86.9
PFMPA	0.400	0.366	-8.4	91.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.302	-15.1	84.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15810.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15810
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.777	15.5	115.5
13C2-6:2FTS	5.000	5.341	6.8	106.8
13C2-8:2FTS	5.000	5.539	10.8	110.8
13C2-PFDoDA	1.250	1.276	2.1	102.1
13C2-PFTeDA	1.250	1.236	-1.1	98.9
13C3-PFBS	2.500	2.513	0.5	100.5
13C3-PFHxS	2.500	2.475	-1.0	99.0
13C4-PFBA	10.000	9.921	-0.8	99.2
13C4-PFHpA	2.500	2.431	-2.7	97.3
13C5-PFHxA	2.500	2.462	-1.5	98.5
13C5-PFPeA	5.000	4.785	-4.3	95.7
13C6-PFDA	1.250	1.345	7.6	107.6
13C7-PFUnDA	1.250	1.250	0.0	100.0
13C8-FOSA	2.500	2.673	6.9	106.9
13C8-PFOA	2.500	2.492	-0.3	99.7
13C8-PFOS	2.500	2.594	3.8	103.8
13C9-PFNA	1.250	1.277	2.2	102.2
4:2FTS	9.375	8.580	-8.5	91.5
6:2FTS	9.500	9.159	-3.6	96.4
8:2FTS	9.600	8.846	-7.9	92.1
d3-MeFOSAA	5.000	5.099	2.0	102.0
EtFOSAA	2.500	2.468	-1.3	98.7
FOSA	2.500	2.215	-11.4	88.6
MeFOSAA	2.500	2.318	-7.3	92.7
PFBA	10.000	9.214	-7.9	92.1
PFBS	2.218	1.970	-11.2	88.8
PFDA	2.500	1.981	-20.8	79.2
PFDoDA	2.500	2.224	-11.0	89.0
PFDS	2.413	2.157	-10.6	89.4
PFHpA	2.500	2.217	-11.3	88.7
PFHpS	2.383	2.056	-13.7	86.3
PFHxA	2.500	2.275	-9.0	91.0
PFHxS	2.285	2.104	-7.9	92.1
PFNA	2.500	2.295	-8.2	91.8
PFNS	2.405	2.231	-7.3	92.7
PFOA	2.500	2.333	-6.7	93.3
PFOS	2.320	2.053	-11.5	88.5

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15810.D

PFPeA	5.000	4.530	-9.4	90.6
PFPeS	2.353	2.301	-2.2	97.8
PFTeDA	2.500	2.171	-13.2	86.8
PFTrDA	2.500	2.332	-6.7	93.3
PFUnDA	2.500	2.353	-5.9	94.1
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	8.361	-11.5	88.5
13C3-HFPO-DA	10.000	9.764	-2.4	97.6
9C1-PF3ONS	9.350	8.540	-8.7	91.3
ADONA	9.450	8.698	-8.0	92.0
HFPO-DA	10.000	9.233	-7.7	92.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.550	-15.5	84.5
5:3FTCA	62.400	52.318	-16.2	83.8
7:3FTCA	62.400	55.337	-11.3	88.7
d3-MeFOSA	2.500	2.533	1.3	101.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.222	-11.1	88.9
EtFOSE	25.000	22.986	-8.1	91.9
MeFOSA	2.500	2.368	-5.3	94.7
MeFOSE	25.000	22.441	-10.2	89.8
PFDoDS	2.425	2.244	-7.5	92.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.481	9.6	109.6
d7-MeFOSE	25.000	24.752	-1.0	99.0
d9-EtFOSE	25.000	24.652	-1.4	98.6
d5-EtFOSA	2.500	2.644	5.8	105.8
NFDHA	5.000	4.343	-13.1	86.9
PFMBA	5.000	4.568	-8.6	91.4
PFMPA	5.000	4.481	-10.4	89.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	3.979	-10.6	89.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15820.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15820
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.610	12.2	112.2
13C2-6:2FTS	5.000	5.535	10.7	110.7
13C2-8:2FTS	5.000	5.635	12.7	112.7
13C2-PFDoDA	1.250	1.211	-3.1	96.9
13C2-PFTeDA	1.250	1.250	0.0	100.0
13C3-PFBS	2.500	2.581	3.3	103.3
13C3-PFHxS	2.500	2.450	-2.0	98.0
13C4-PFBA	10.000	9.997	0.0	100.0
13C4-PFHpA	2.500	2.344	-6.2	93.8
13C5-PFHxA	2.500	2.337	-6.5	93.5
13C5-PFPeA	5.000	4.661	-6.8	93.2
13C6-PFDA	1.250	1.341	7.2	107.2
13C7-PFUnDA	1.250	1.296	3.6	103.6
13C8-FOSA	2.500	2.455	-1.8	98.2
13C8-PFOA	2.500	2.536	1.4	101.4
13C8-PFOS	2.500	2.600	4.0	104.0
13C9-PFNA	1.250	1.212	-3.0	97.0
4:2FTS	9.375	9.011	-3.9	96.1
6:2FTS	9.500	9.182	-3.3	96.7
8:2FTS	9.600	8.633	-10.1	89.9
d3-MeFOSAA	5.000	5.448	9.0	109.0
EtFOSAA	2.500	2.287	-8.5	91.5
FOSA	2.500	2.415	-3.4	96.6
MeFOSAA	2.500	2.288	-8.5	91.5
PFBA	10.000	9.172	-8.3	91.7
PFBS	2.218	2.151	-3.0	97.0
PFDA	2.500	2.136	-14.6	85.4
PFDoDA	2.500	2.420	-3.2	96.8
PFDS	2.413	2.053	-14.9	85.1
PFHpA	2.500	2.238	-10.5	89.5
PFHpS	2.383	2.073	-13.0	87.0
PFHxA	2.500	2.208	-11.7	88.3
PFHxS	2.285	2.116	-7.4	92.6
PFNA	2.500	2.245	-10.2	89.8
PFNS	2.405	2.165	-10.0	90.0
PFOA	2.500	2.190	-12.4	87.6
PFOS	2.320	2.007	-13.5	86.5

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15820.D

PFPeA	5.000	4.588	-8.2	91.8
PFPeS	2.353	2.286	-2.9	97.1
PFTeDA	2.500	2.313	-7.5	92.5
PFTTrDA	2.500	2.487	-0.5	99.5
PFUnDA	2.500	2.413	-3.5	96.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	9.470	0.2	100.2
13C3-HFPO-DA	10.000	8.997	-10.0	90.0
9C1-PF3ONS	9.350	9.520	1.8	101.8
ADONA	9.450	9.475	0.3	100.3
HFPO-DA	10.000	8.785	-12.2	87.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.286	-17.6	82.4
5:3FTCA	62.400	54.802	-12.2	87.8
7:3FTCA	62.400	54.713	-12.3	87.7
d3-MeFOSA	2.500	2.558	2.3	102.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.200	-12.0	88.0
EtFOSE	25.000	22.517	-9.9	90.1
MeFOSA	2.500	2.287	-8.5	91.5
MeFOSE	25.000	22.962	-8.2	91.8
PFDoDS	2.425	2.122	-12.5	87.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.533	10.7	110.7
d7-MeFOSE	25.000	23.552	-5.8	94.2
d9-EtFOSE	25.000	23.698	-5.2	94.8
d5-EtFOSA	2.500	2.563	2.5	102.5
NFDHA	5.000	4.590	-8.2	91.8
PFMBA	5.000	4.440	-11.2	88.8
PFMPA	5.000	4.470	-10.6	89.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.008	-9.9	90.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15832.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15832
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.679	13.6	113.6
13C2-6:2FTS	5.000	5.393	7.9	107.9
13C2-8:2FTS	5.000	5.630	12.6	112.6
13C2-PFDoDA	1.250	1.157	-7.4	92.6
13C2-PFTeDA	1.250	1.186	-5.1	94.9
13C3-PFBS	2.500	2.480	-0.8	99.2
13C3-PFHxS	2.500	2.301	-8.0	92.0
13C4-PFBA	10.000	9.799	-2.0	98.0
13C4-PFHpA	2.500	2.387	-4.5	95.5
13C5-PFHxA	2.500	2.356	-5.8	94.2
13C5-PFPeA	5.000	4.795	-4.1	95.9
13C6-PFDA	1.250	1.141	-8.7	91.3
13C7-PFUnDA	1.250	1.176	-5.9	94.1
13C8-FOSA	2.500	2.299	-8.1	91.9
13C8-PFOA	2.500	2.547	1.9	101.9
13C8-PFOS	2.500	2.403	-3.9	96.1
13C9-PFNA	1.250	1.266	1.2	101.2
4:2FTS	9.375	8.166	-12.9	87.1
6:2FTS	9.500	8.642	-9.0	91.0
8:2FTS	9.600	8.320	-13.3	86.7
d3-MeFOSAA	5.000	5.212	4.2	104.2
EtFOSAA	2.500	2.144	-14.2	85.8
FOSA	2.500	2.465	-1.4	98.6
MeFOSAA	2.500	2.483	-0.7	99.3
PFBA	10.000	9.242	-7.6	92.4
PFBS	2.218	2.064	-7.0	93.0
PFDA	2.500	2.260	-9.6	90.4
PFDoDA	2.500	2.361	-5.6	94.4
PFDS	2.413	2.140	-11.3	88.7
PFHpA	2.500	2.313	-7.5	92.5
PFHpS	2.383	2.268	-4.8	95.2
PFHxA	2.500	2.263	-9.5	90.5
PFHxS	2.285	2.185	-4.4	95.6
PFNA	2.500	2.348	-6.1	93.9
PFNS	2.405	2.234	-7.1	92.9
PFOA	2.500	2.350	-6.0	94.0
PFOS	2.320	2.008	-13.4	86.6

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15832.D

PFPeA	5.000	4.532	-9.4	90.6
PFPeS	2.353	2.340	-0.6	99.4
PFTeDA	2.500	2.145	-14.2	85.8
PFTrDA	2.500	2.404	-3.8	96.2
PFUnDA	2.500	2.314	-7.4	92.6
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	9.081	-3.9	96.1
13C3-HFPO-DA	10.000	9.481	-5.2	94.8
9C1-PF3ONS	9.350	8.593	-8.1	91.9
ADONA	9.450	9.033	-4.4	95.6
HFPO-DA	10.000	9.369	-6.3	93.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.360	-17.0	83.0
5:3FTCA	62.400	55.457	-11.1	88.9
7:3FTCA	62.400	57.007	-8.6	91.4
d3-MeFOSA	2.500	2.386	-4.5	95.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.232	-10.7	89.3
EtFOSE	25.000	23.132	-7.5	92.5
MeFOSA	2.500	2.030	-18.8	81.2
MeFOSE	25.000	21.945	-12.2	87.8
PFDoDS	2.425	2.271	-6.4	93.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.487	9.7	109.7
d7-MeFOSE	25.000	24.700	-1.2	98.8
d9-EtFOSE	25.000	24.500	-2.0	98.0
d5-EtFOSA	2.500	2.512	0.5	100.5
NFDHA	5.000	5.023	0.5	100.5
PFMBA	5.000	4.480	-10.4	89.6
PFMPA	5.000	4.512	-9.8	90.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.194	-5.7	94.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15833.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15833
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.944	18.9	118.9
13C2-6:2FTS	5.000	5.363	7.3	107.3
13C2-8:2FTS	5.000	5.510	10.2	110.2
13C2-PFDoDA	1.250	1.222	-2.2	97.8
13C2-PFTeDA	1.250	1.257	0.5	100.5
13C3-PFBS	2.500	2.532	1.3	101.3
13C3-PFHxS	2.500	2.348	-6.1	93.9
13C4-PFBA	10.000	9.803	-2.0	98.0
13C4-PFHpA	2.500	2.500	0.0	100.0
13C5-PFHxA	2.500	2.485	-0.6	99.4
13C5-PFPeA	5.000	4.914	-1.7	98.3
13C6-PFDA	1.250	1.258	0.7	100.7
13C7-PFUnDA	1.250	1.256	0.5	100.5
13C8-FOSA	2.500	2.495	-0.2	99.8
13C8-PFOA	2.500	2.488	-0.5	99.5
13C8-PFOS	2.500	2.585	3.4	103.4
13C9-PFNA	1.250	1.125	-10.0	90.0
4:2FTS	0.750	0.632	-15.8	84.2
6:2FTS	0.760	0.780	2.6	102.6
8:2FTS	0.768	0.693	-9.8	90.2
d3-MeFOSAA	5.000	5.383	7.7	107.7
EtFOSAA	0.200	0.152	-24.2	75.8
FOSA	0.200	0.189	-5.6	94.4
MeFOSAA	0.200	0.182	-8.9	91.1
PFBA	0.800	0.702	-12.3	87.7
PFBS	0.177	0.147	-17.0	83.0
PFDA	0.200	0.156	-21.9	78.1
PFDoDA	0.200	0.193	-3.5	96.5
PFDS	0.193	0.170	-11.7	88.3
PFHpA	0.200	0.183	-8.3	91.7
PFHpS	0.191	0.171	-10.2	89.8
PFHxA	0.200	0.175	-12.6	87.4
PFHxS	0.183	0.181	-1.2	98.8
PFNA	0.200	0.191	-4.4	95.6
PFNS	0.192	0.172	-10.5	89.5
PFOA	0.200	0.166	-17.0	83.0
PFOS	0.186	0.167	-10.4	89.6

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15833.D

PFPeA	0.400	0.350	-12.4	87.6
PFPeS	0.188	0.194	3.4	103.4
PFTeDA	0.200	0.164	-17.8	82.2
PFTTrDA	0.200	0.186	-6.9	93.1
PFUnDA	0.200	0.175	-12.5	87.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	0.756	0.680	-10.1	89.9
13C3-HFPO-DA	10.000	9.675	-3.3	96.7
9C1-PF3ONS	0.748	0.692	-7.5	92.5
ADONA	0.756	0.720	-4.7	95.3
HFPO-DA	0.800	0.771	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.857	-14.2	85.8
5:3FTCA	4.992	4.373	-12.4	87.6
7:3FTCA	4.992	4.157	-16.7	83.3
d3-MeFOSA	2.500	2.400	-4.0	96.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.193	-3.3	96.7
EtFOSE	2.000	1.818	-9.1	90.9
MeFOSA	0.200	0.199	-0.4	99.6
MeFOSE	2.000	1.743	-12.8	87.2
PFDoDS	0.194	0.165	-15.0	85.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.703	14.1	114.1
d7-MeFOSE	25.000	24.996	0.0	100.0
d9-EtFOSE	25.000	24.564	-1.7	98.3
d5-EtFOSA	2.500	2.415	-3.4	96.6
NFDHA	0.400	0.319	-20.4	79.6
PFMBA	0.400	0.347	-13.3	86.7
PFMPA	0.400	0.333	-16.8	83.2
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.325	-8.8	91.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15844.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15844
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.541	10.8	110.8
13C2-6:2FTS	5.000	5.431	8.6	108.6
13C2-8:2FTS	5.000	5.261	5.2	105.2
13C2-PFDoDA	1.250	1.218	-2.6	97.4
13C2-PFTeDA	1.250	1.186	-5.1	94.9
13C3-PFBS	2.500	2.563	2.5	102.5
13C3-PFHxS	2.500	2.418	-3.3	96.7
13C4-PFBA	10.000	9.763	-2.4	97.6
13C4-PFHpA	2.500	2.446	-2.2	97.8
13C5-PFHxA	2.500	2.402	-3.9	96.1
13C5-PFPeA	5.000	4.648	-7.0	93.0
13C6-PFDA	1.250	1.328	6.2	106.2
13C7-PFUnDA	1.250	1.263	1.0	101.0
13C8-FOSA	2.500	2.446	-2.2	97.8
13C8-PFOA	2.500	2.441	-2.4	97.6
13C8-PFOS	2.500	2.511	0.4	100.4
13C9-PFNA	1.250	1.066	-14.7	85.3
4:2FTS	9.375	9.275	-1.1	98.9
6:2FTS	9.500	9.663	1.7	101.7
8:2FTS	9.600	9.686	0.9	100.9
d3-MeFOSAA	5.000	5.714	14.3	114.3
EtFOSAA	2.500	2.584	3.4	103.4
FOSA	2.500	2.264	-9.5	90.5
MeFOSAA	2.500	2.167	-13.3	86.7
PFBA	10.000	9.285	-7.2	92.8
PFBS	2.218	2.210	-0.3	99.7
PFDA	2.500	2.177	-12.9	87.1
PFDoDA	2.500	2.267	-9.3	90.7
PFDS	2.413	2.166	-10.2	89.8
PFHpA	2.500	2.075	-17.0	83.0
PFHpS	2.383	2.091	-12.3	87.7
PFHxA	2.500	2.209	-11.6	88.4
PFHxS	2.285	2.131	-6.8	93.2
PFNA	2.500	2.361	-5.6	94.4
PFNS	2.405	2.290	-4.8	95.2
PFOA	2.500	2.279	-8.8	91.2
PFOS	2.320	2.132	-8.1	91.9

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15844.D

PFPeA	5.000	4.587	-8.3	91.7
PFPeS	2.353	2.345	-0.3	99.7
PFTeDA	2.500	2.236	-10.6	89.4
PFTTrDA	2.500	2.306	-7.7	92.3
PFUnDA	2.500	2.356	-5.8	94.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	9.450	8.753	-7.4	92.6
13C3-HFPO-DA	10.000	9.457	-5.4	94.6
9C1-PF3ONS	9.350	8.668	-7.3	92.7
ADONA	9.450	8.620	-8.8	91.2
HFPO-DA	10.000	8.764	-12.4	87.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.428	-16.4	83.6
5:3FTCA	62.400	53.507	-14.3	85.7
7:3FTCA	62.400	59.367	-4.9	95.1
d3-MeFOSA	2.500	2.393	-4.3	95.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.094	-16.2	83.8
EtFOSE	25.000	21.837	-12.7	87.3
MeFOSA	2.500	2.326	-6.9	93.1
MeFOSE	25.000	21.602	-13.6	86.4
PFDoDS	2.425	2.187	-9.8	90.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.299	6.0	106.0
d7-MeFOSE	25.000	25.243	1.0	101.0
d9-EtFOSE	25.000	23.889	-4.4	95.6
d5-EtFOSA	2.500	2.674	7.0	107.0
NFDHA	5.000	4.710	-5.8	94.2
PFMBA	5.000	4.462	-10.8	89.2
PFMPA	5.000	4.453	-10.9	89.1
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	3.958	-11.1	88.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15880.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15880
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.487	9.7	109.7
13C2-6:2FTS	5.000	5.456	9.1	109.1
13C2-8:2FTS	5.000	5.010	0.2	100.2
13C2-PFDoDA	1.250	1.193	-4.5	95.5
13C2-PFTeDA	1.250	1.233	-1.3	98.7
13C3-PFBS	2.500	2.633	5.3	105.3
13C3-PFHxS	2.500	2.525	1.0	101.0
13C4-PFBA	10.000	9.896	-1.0	99.0
13C4-PFHpA	2.500	2.511	0.4	100.4
13C5-PFHxA	2.500	2.397	-4.1	95.9
13C5-PFPeA	5.000	4.888	-2.2	97.8
13C6-PFDA	1.250	1.311	4.9	104.9
13C7-PFUnDA	1.250	1.241	-0.7	99.3
13C8-FOSA	2.500	2.275	-9.0	91.0
13C8-PFOA	2.500	2.409	-3.6	96.4
13C8-PFOS	2.500	2.466	-1.4	98.6
13C9-PFNA	1.250	1.220	-2.4	97.6
4:2FTS	9.375	8.881	-5.3	94.7
6:2FTS	9.500	9.477	-0.2	99.8
8:2FTS	9.600	9.567	-0.3	99.7
d3-MeFOSAA	5.000	4.768	-4.6	95.4
EtFOSAA	2.500	2.306	-7.7	92.3
FOSA	2.500	2.389	-4.4	95.6
MeFOSAA	2.500	2.471	-1.2	98.8
PFBA	10.000	9.221	-7.8	92.2
PFBS	2.218	1.983	-10.6	89.4
PFDA	2.500	2.173	-13.1	86.9
PFDoDA	2.500	2.370	-5.2	94.8
PFDS	2.413	2.260	-6.4	93.6
PFHpA	2.500	2.228	-10.9	89.1
PFHpS	2.383	2.111	-11.4	88.6
PFHxA	2.500	2.201	-11.9	88.1
PFHxS	2.285	2.140	-6.3	93.7
PFNA	2.500	2.351	-6.0	94.0
PFNS	2.405	2.258	-6.1	93.9
PFOA	2.500	2.268	-9.3	90.7
PFOS	2.320	2.063	-11.1	88.9

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15880.D

PFPeA	5.000	4.589	-8.2	91.8
PFPeS	2.353	2.171	-7.7	92.3
PFTeDA	2.500	2.144	-14.2	85.8
PFTrDA	2.500	2.521	0.9	100.9
PFUnDA	2.500	2.467	-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	8.776	-7.1	92.9
13C3-HFPO-DA	10.000	10.074	0.7	100.7
9C1-PF3ONS	9.350	8.131	-13.0	87.0
ADONA	9.450	9.029	-4.5	95.5
HFPO-DA	10.000	8.996	-10.0	90.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.714	-14.1	85.9
5:3FTCA	62.400	57.904	-7.2	92.8
7:3FTCA	62.400	56.687	-9.2	90.8
d3-MeFOSA	2.500	2.285	-8.6	91.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	2.500	2.294	-8.3	91.7
EtFOSE	25.000	21.531	-13.9	86.1
MeFOSA	2.500	2.371	-5.2	94.8
MeFOSE	25.000	22.770	-8.9	91.1
PFDoDS	2.425	2.239	-7.7	92.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.017	0.3	100.3
d7-MeFOSE	25.000	23.329	-6.7	93.3
d9-EtFOSE	25.000	23.172	-7.3	92.7
d5-EtFOSA	2.500	2.338	-6.5	93.5
NFDHA	5.000	4.759	-4.8	95.2
PFMBA	5.000	4.487	-10.3	89.7
PFMPA	5.000	4.515	-9.7	90.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.261	-4.2	95.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15889.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\032823_1633_S6Q235\s6q237.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\032823_1633_S6Q235\6Q15593.d
 2:D:\MassHunter\Data\032823_1633_S6Q235\6Q15594.d
 3:D:\MassHunter\Data\032823_1633_S6Q235\6Q15595.d
 4:D:\MassHunter\Data\032823_1633_S6Q235\6Q15596.d
 5:D:\MassHunter\Data\032823_1633_S6Q235\6Q15597.d
 6:D:\MassHunter\Data\032823_1633_S6Q235\6Q15598.d
 7:D:\MassHunter\Data\032823_1633_S6Q235\6Q15599.d
 8:D:\MassHunter\Data\032823_1633_S6Q235\6Q15600.d

Data File: 6Q15889
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.981	19.6	119.6
13C2-6:2FTS	5.000	5.668	13.4	113.4
13C2-8:2FTS	5.000	5.613	12.3	112.3
13C2-PFDoDA	1.250	1.214	-2.9	97.1
13C2-PFTeDA	1.250	1.295	3.6	103.6
13C3-PFBS	2.500	2.716	8.6	108.6
13C3-PFHxS	2.500	2.623	4.9	104.9
13C4-PFBA	10.000	9.773	-2.3	97.7
13C4-PFHpA	2.500	2.468	-1.3	98.7
13C5-PFHxA	2.500	2.577	3.1	103.1
13C5-PFPeA	5.000	5.095	1.9	101.9
13C6-PFDA	1.250	1.289	3.1	103.1
13C7-PFUnDA	1.250	1.383	10.7	110.7
13C8-FOSA	2.500	2.549	2.0	102.0
13C8-PFOA	2.500	2.595	3.8	103.8
13C8-PFOS	2.500	2.768	10.7	110.7
13C9-PFNA	1.250	1.231	-1.5	98.5
4:2FTS	0.750	0.824	9.9	109.9
6:2FTS	0.760	0.816	7.4	107.4
8:2FTS	0.768	0.866	12.8	112.8
d3-MeFOSAA	5.000	5.610	12.2	112.2
EtFOSAA	0.200	0.218	9.0	109.0
FOSA	0.200	0.236	17.9	117.9
MeFOSAA	0.200	0.207	3.5	103.5
PFBA	0.800	0.826	3.2	103.2
PFBS	0.177	0.185	4.4	104.4
PFDA	0.200	0.210	5.2	105.2
PFDoDA	0.200	0.241	20.6	120.6
PFDS	0.193	0.198	2.5	102.5
PFHpA	0.200	0.221	10.4	110.4
PFHpS	0.191	0.188	-1.6	98.4
PFHxA	0.200	0.222	11.2	111.2
PFHxS	0.183	0.197	7.7	107.7
PFNA	0.200	0.243	21.7	121.7
PFNS	0.192	0.195	1.8	101.8
PFOA	0.200	0.217	8.4	108.4
PFOS	0.186	0.151	-18.6	81.4

Continuing Calibration Summary

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q237-CC235
 Lab FileID: 6Q15889.D

PFPeA	0.400	0.411	2.8	102.8
PFPeS	0.188	0.220	17.0	117.0
PFTeDA	0.200	0.213	6.3	106.3
PFTrDA	0.200	0.243	21.3	121.3
PFUnDA	0.200	0.204	2.1	102.1
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	0.756	0.757	0.1	100.1
13C3-HFPO-DA	10.000	10.579	5.8	105.8
9C1-PF3ONS	0.748	0.742	-0.8	99.2
ADONA	0.756	0.750	-0.8	99.2
HFPO-DA	0.800	0.747	-6.6	93.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.928	-7.0	93.0
5:3FTCA	4.992	5.099	2.2	102.2
7:3FTCA	4.992	6.209	24.4	124.4
d3-MeFOSA	2.500	2.463	-1.5	98.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.200	0.239	19.4	119.4
EtFOSE	2.000	2.477	23.9	123.9
MeFOSA	0.200	0.247	23.3	123.3
MeFOSE	2.000	2.289	14.5	114.5
PFDoDS	0.194	0.222	14.6	114.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.433	8.7	108.7
d7-MeFOSE	25.000	25.569	2.3	102.3
d9-EtFOSE	25.000	24.770	-0.9	99.1
d5-EtFOSA	2.500	2.573	2.9	102.9
NFDHA	0.400	0.444	11.0	111.0
PFMBA	0.400	0.391	-2.1	97.9
PFMPA	0.400	0.423	5.8	105.8
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.380	6.8	106.8

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q235	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
S6Q235-RT	6Q15590.D	03/28/23 15:38	n/a	Retention Time Marker
S6Q235-RT	6Q15591.D	03/28/23 15:52	n/a	Retention Time Marker
S6Q235-IC235	6Q15592.D	03/28/23 16:06	n/a	Mass Calibration Verification
S6Q235-IC235	6Q15593.D	03/28/23 16:20	n/a	Initial cal 1
S6Q235-IC235	6Q15594.D	03/28/23 16:34	n/a	Initial cal 2
S6Q235-IC235	6Q15595.D	03/28/23 16:48	n/a	Initial cal 3
S6Q235-ICC235	6Q15596.D	03/28/23 17:02	n/a	Initial cal 4
S6Q235-IC235	6Q15597.D	03/28/23 17:16	n/a	Initial cal 5
S6Q235-IC235	6Q15598.D	03/28/23 17:30	n/a	Initial cal 6
S6Q235-IC235	6Q15599.D	03/28/23 17:44	n/a	Initial cal 7
S6Q235-IC235	6Q15600.D	03/28/23 17:58	n/a	Initial cal 8
S6Q235-IBLK	6Q15601.D	03/28/23 18:12	n/a	Instrument Blank
S6Q235-IBLK	6Q15601.D	03/28/23 18:12	n/a	Instrument Blank
S6Q235-ICV235	6Q15602.D	03/28/23 18:26	n/a	Initial cal verification 4
S6Q235-ICV235	6Q15603.D	03/28/23 18:40	n/a	Initial cal verification 20
S6Q235-CC235	6Q15604.D	03/28/23 18:54	n/a	Continuing cal 4
S6Q235-CC235	6Q15605.D	03/28/23 19:08	n/a	Continuing cal 1.0LL
OP96085-BS	6Q15606.D	03/28/23 19:22	OP96085	Blank Spike
OP96085-LLBS	6Q15607.D	03/28/23 19:36	OP96085	Blank Spike
OP96085-MB	6Q15608.D	03/28/23 19:50	OP96085	Method Blank
ZZZZZZ	6Q15609.D	03/28/23 20:04	OP96085	(unrelated sample)
ZZZZZZ	6Q15610.D	03/28/23 20:18	OP96085	(unrelated sample)
ZZZZZZ	6Q15611.D	03/28/23 20:32	OP96085	(unrelated sample)
ZZZZZZ	6Q15612.D	03/28/23 20:46	OP96085	(unrelated sample)
ZZZZZZ	6Q15613.D	03/28/23 21:00	OP96085	(unrelated sample)
ZZZZZZ	6Q15614.D	03/28/23 21:14	OP96085	(unrelated sample)
S6Q235-CC235	6Q15615.D	03/28/23 21:28	n/a	Continuing cal 4
S6Q235-ICCB	6Q15616.D	03/28/23 21:42	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15617.D	03/28/23 21:56	OP96085	(unrelated sample)
ZZZZZZ	6Q15618.D	03/28/23 22:10	OP96085	(unrelated sample)
ZZZZZZ	6Q15619.D	03/28/23 22:24	OP96085	(unrelated sample)
ZZZZZZ	6Q15620.D	03/28/23 22:38	OP96085	(unrelated sample)
ZZZZZZ	6Q15621.D	03/28/23 22:52	OP96085	(unrelated sample)
ZZZZZZ	6Q15622.D	03/28/23 23:06	OP96085	(unrelated sample)
ZZZZZZ	6Q15623.D	03/28/23 23:20	OP96085	(unrelated sample)
ZZZZZZ	6Q15624.D	03/28/23 23:34	OP96085	(unrelated sample)
ZZZZZZ	6Q15625.D	03/28/23 23:48	OP96085	(unrelated sample)
ZZZZZZ	6Q15626.D	03/29/23 00:02	OP96085	(unrelated sample)
S6Q235-CC235	6Q15627.D	03/29/23 00:16	n/a	Continuing cal 4
S6Q235-ICCB	6Q15628.D	03/29/23 00:30	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15629.D	03/29/23 00:44	OP96085	(unrelated sample)
ZZZZZZ	6Q15630.D	03/29/23 00:58	OP96085	(unrelated sample)
ZZZZZZ	6Q15632.D	03/29/23 01:26	OP96085	(unrelated sample)
ZZZZZZ	6Q15633.D	03/29/23 01:40	OP96085	(unrelated sample)
ZZZZZZ	6Q15634.D	03/29/23 01:54	OP96085	(unrelated sample)
ZZZZZZ	6Q15635.D	03/29/23 02:08	OP96085	(unrelated sample)

Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q235	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	6Q15636.D	03/29/23 02:22	OP96085	(unrelated sample)
ZZZZZZ	6Q15637.D	03/29/23 02:36	OP96015	(unrelated sample)
ZZZZZZ	6Q15638.D	03/29/23 02:50	OP96069	(unrelated sample)
S6Q235-CC235	6Q15639.D	03/29/23 03:04	n/a	Continuing cal 4
S6Q235-ICCB	6Q15640.D	03/29/23 03:18	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15641.D	03/29/23 03:32	OP96069	(unrelated sample)
ZZZZZZ	6Q15642.D	03/29/23 03:46	OP96069	(unrelated sample)
ZZZZZZ	6Q15643.D	03/29/23 04:00	OP96069	(unrelated sample)
ZZZZZZ	6Q15644.D	03/29/23 04:14	OP96069	(unrelated sample)
ZZZZZZ	6Q15645.D	03/29/23 04:28	OP96069	(unrelated sample)
ZZZZZZ	6Q15646.D	03/29/23 04:42	OP96044	(unrelated sample)
OP96086-BS	6Q15647.D	03/29/23 04:56	OP96086	Blank Spike
OP96086-LLBS	6Q15648.D	03/29/23 05:10	OP96086	Blank Spike
OP96086-MB	6Q15649.D	03/29/23 05:24	OP96086	Method Blank
ZZZZZZ	6Q15650.D	03/29/23 05:38	OP96086	(unrelated sample)
S6Q235-CC235	6Q15651.D	03/29/23 05:52	n/a	Continuing cal 4
S6Q235-CC235	6Q15652.D	03/29/23 06:06	n/a	Continuing cal 1.0LL
S6Q235-ICCB	6Q15653.D	03/29/23 06:20	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15654.D	03/29/23 06:34	OP96086	(unrelated sample)
ZZZZZZ	6Q15655.D	03/29/23 06:48	OP96086	(unrelated sample)
ZZZZZZ	6Q15656.D	03/29/23 07:02	OP96086	(unrelated sample)
ZZZZZZ	6Q15657.D	03/29/23 07:16	OP96086	(unrelated sample)
ZZZZZZ	6Q15658.D	03/29/23 07:30	OP96086	(unrelated sample)
ZZZZZZ	6Q15659.D	03/29/23 07:44	OP96086	(unrelated sample)
ZZZZZZ	6Q15661.D	03/29/23 08:12	OP96086	(unrelated sample)
ZZZZZZ	6Q15663.D	03/29/23 08:39	OP96086	(unrelated sample)
S6Q235-CC235	6Q15664.D	03/29/23 08:53	n/a	Continuing cal 4
S6Q235-ICCB	6Q15665.D	03/29/23 09:07	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15666.D	03/29/23 09:21	OP96086	(unrelated sample)
ZZZZZZ	6Q15667.D	03/29/23 09:35	OP96086	(unrelated sample)
ZZZZZZ	6Q15669.D	03/29/23 10:03	OP96086	(unrelated sample)
ZZZZZZ	6Q15670.D	03/29/23 10:17	OP96086	(unrelated sample)
ZZZZZZ	6Q15671.D	03/29/23 10:31	OP96086	(unrelated sample)
ZZZZZZ	6Q15672.D	03/29/23 10:45	OP96086	(unrelated sample)
S6Q235-CC235	6Q15674.D	03/29/23 11:13	n/a	Continuing cal 4
S6Q235-ICCB	6Q15675.D	03/29/23 11:27	n/a	Continuing Calibration Blank
OP96087-BS	6Q15676.D	03/29/23 11:41	OP96087	Blank Spike
OP96087-LLBS	6Q15677.D	03/29/23 11:55	OP96087	Blank Spike
OP96087-MB	6Q15678.D	03/29/23 12:09	OP96087	Method Blank
ZZZZZZ	6Q15679.D	03/29/23 12:23	OP96087	(unrelated sample)
JD62251-3	6Q15680.D	03/29/23 12:37	OP96087	(used for QC only; not part of job FC3763)
OP96087-MS	6Q15681.D	03/29/23 12:51	OP96087	Matrix Spike
JD62251-4	6Q15682.D	03/29/23 13:05	OP96087	(used for QC only; not part of job FC3763)
OP96087-DUP	6Q15683.D	03/29/23 13:19	OP96087	Duplicate
ZZZZZZ	6Q15684.D	03/29/23 13:33	OP96087	(unrelated sample)
ZZZZZZ	6Q15685.D	03/29/23 13:47	OP96087	(unrelated sample)

6-10-1
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Run Sequence Report

Job Number: FC3763
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q235	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
S6Q235-CC235	6Q15686.D	03/29/23 14:01	n/a	Continuing cal 4
S6Q235-ICCB	6Q15687.D	03/29/23 14:15	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15688.D	03/29/23 14:29	OP96087	(unrelated sample)
ZZZZZZ	6Q15689.D	03/29/23 14:43	OP96087	(unrelated sample)
S6Q235-ECC235	6Q15690.D	03/29/23 14:57	n/a	Ending cal 4
S6Q235-ICCB	6Q15691.D	03/29/23 15:11	n/a	Continuing Calibration Blank

6.10.1

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Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q237	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q237-RT	6Q15784.D	03/30/23 12:57	n/a	Retention Time Marker
S6Q237-RT	6Q15785.D	03/30/23 13:11	n/a	Retention Time Marker
S6Q237-IBLK	6Q15787.D	03/30/23 13:39	n/a	Instrument Blank
S6Q237-CC235	6Q15788.D	03/30/23 13:53	n/a	Continuing cal 4
S6Q237-CC235	6Q15789.D	03/30/23 14:07	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q15790.D	03/30/23 14:21	OP96112	(unrelated sample)
ZZZZZZ	6Q15791.D	03/30/23 14:35	OP96112	(unrelated sample)
ZZZZZZ	6Q15792.D	03/30/23 14:49	OP96112	(unrelated sample)
ZZZZZZ	6Q15793.D	03/30/23 15:02	OP96112	(unrelated sample)
ZZZZZZ	6Q15794.D	03/30/23 15:16	OP96112	(unrelated sample)
ZZZZZZ	6Q15795.D	03/30/23 15:30	OP96112	(unrelated sample)
ZZZZZZ	6Q15796.D	03/30/23 15:44	OP96112	(unrelated sample)
ZZZZZZ	6Q15797.D	03/30/23 15:58	OP96112	(unrelated sample)
ZZZZZZ	6Q15799.D	03/30/23 16:37	OP96112	(unrelated sample)
S6Q237-CC235	6Q15800.D	03/30/23 16:51	n/a	Continuing cal 4
S6Q237-CC235	6Q15801.D	03/30/23 17:05	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q15802.D	03/30/23 17:19	OP96085	(unrelated sample)
ZZZZZZ	6Q15803.D	03/30/23 17:33	OP96088	(unrelated sample)
FC3600-4	6Q15804.D	03/30/23 17:47	OP96088	(used for QC only; not part of job FC3763)
OP96088-DUP	6Q15805.D	03/30/23 18:01	OP96088	Duplicate
ZZZZZZ	6Q15806.D	03/30/23 18:15	OP96088	(unrelated sample)
ZZZZZZ	6Q15807.D	03/30/23 18:29	OP96088	(unrelated sample)
ZZZZZZ	6Q15808.D	03/30/23 18:43	OP96088	(unrelated sample)
ZZZZZZ	6Q15809.D	03/30/23 18:57	OP96088	(unrelated sample)
S6Q237-CC235	6Q15810.D	03/30/23 19:11	n/a	Continuing cal 4
S6Q237-ICCB	6Q15811.D	03/30/23 19:25	n/a	Continuing Calibration Blank
OP96111-LBS	6Q15812.D	03/30/23 19:39	OP96111	Blank Spike
OP96111-LLBS	6Q15813.D	03/30/23 19:53	OP96111	Blank Spike
OP96111-LB	6Q15814.D	03/30/23 20:07	OP96111	Leachate Blank
JD61406-3R	6Q15817.D	03/30/23 20:49	OP96111	(used for QC only; not part of job FC3763)
OP96111-MS	6Q15818.D	03/30/23 21:03	OP96111	Matrix Spike
OP96111-DUP	6Q15819.D	03/30/23 21:17	OP96111	Duplicate
S6Q237-CC235	6Q15820.D	03/30/23 21:31	n/a	Continuing cal 4
S6Q237-ICCB	6Q15821.D	03/30/23 21:45	n/a	Continuing Calibration Blank
OP96143-BS	6Q15822.D	03/30/23 21:59	OP96143	Blank Spike
OP96143-LLBS	6Q15823.D	03/30/23 22:13	OP96143	Blank Spike
OP96143-MB	6Q15824.D	03/30/23 22:27	OP96143	Method Blank
FC3763-1	6Q15825.D	03/30/23 22:41	OP96143	AF-RHMW04-WGN01LF-2303W4
FC3763-2	6Q15826.D	03/30/23 22:55	OP96143	AF-RHMW12A-WGN01LF-2303W4
FC3763-3	6Q15827.D	03/30/23 23:09	OP96143	AF-RHMW12A-WGFD01LF-2303W4
OP96143-MS	6Q15828.D	03/30/23 23:22	OP96143	Matrix Spike
FC3763-4	6Q15829.D	03/30/23 23:36	OP96143	AF-RHMW06-WGN01LF-2303W4
FC3763-5	6Q15830.D	03/30/23 23:50	OP96143	AF-RHMW16-WGN01LF-2303W4
OP96143-DUP	6Q15831.D	03/31/23 00:04	OP96143	Duplicate
S6Q237-CC235	6Q15832.D	03/31/23 00:18	n/a	Continuing cal 4
S6Q237-CC235	6Q15833.D	03/31/23 00:32	n/a	Continuing cal 1.0LL

Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q237	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
S6Q237-ICCB	6Q15834.D	03/31/23 00:46	n/a	Continuing Calibration Blank
OP96114-BS	6Q15835.D	03/31/23 01:00	OP96114	Blank Spike
OP96114-LLBS	6Q15836.D	03/31/23 01:14	OP96114	Blank Spike
OP96114-MB	6Q15837.D	03/31/23 01:28	OP96114	Method Blank
ZZZZZZ	6Q15838.D	03/31/23 01:42	OP96114	(unrelated sample)
ZZZZZZ	6Q15839.D	03/31/23 01:56	OP96114	(unrelated sample)
ZZZZZZ	6Q15840.D	03/31/23 02:10	OP96114	(unrelated sample)
ZZZZZZ	6Q15841.D	03/31/23 02:24	OP96114	(unrelated sample)
ZZZZZZ	6Q15842.D	03/31/23 02:38	OP96114	(unrelated sample)
ZZZZZZ	6Q15843.D	03/31/23 02:52	OP96114	(unrelated sample)
S6Q237-CC235	6Q15844.D	03/31/23 03:06	n/a	Continuing cal 4
S6Q237-ICCB	6Q15845.D	03/31/23 03:20	n/a	Continuing Calibration Blank
FC3641-7	6Q15846.D	03/31/23 03:34	OP96114	(used for QC only; not part of job FC3763)
OP96114-MS1	6Q15847.D	03/31/23 03:48	OP96114	Matrix Spike
OP96114-MSD1	6Q15848.D	03/31/23 04:02	OP96114	Matrix Spike Duplicate
ZZZZZZ	6Q15849.D	03/31/23 04:16	OP96114	(unrelated sample)
ZZZZZZ	6Q15850.D	03/31/23 04:30	OP96114	(unrelated sample)
ZZZZZZ	6Q15851.D	03/31/23 04:44	OP96114	(unrelated sample)
OP96114-MS2	6Q15853.D	03/31/23 05:12	OP96114	Matrix Spike
OP96114-MSD2	6Q15854.D	03/31/23 05:26	OP96114	Matrix Spike Duplicate
ZZZZZZ	6Q15855.D	03/31/23 05:40	OP96114	(unrelated sample)
S6Q237-CC235	6Q15856.D	03/31/23 05:54	n/a	Continuing cal 4
S6Q237-ICCB	6Q15857.D	03/31/23 06:08	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15858.D	03/31/23 06:22	OP96114	(unrelated sample)
OP96115-BS	6Q15859.D	03/31/23 06:36	OP96115	Blank Spike
OP96115-LLBS	6Q15860.D	03/31/23 06:50	OP96115	Blank Spike
OP96115-MB	6Q15861.D	03/31/23 07:04	OP96115	Method Blank
ZZZZZZ	6Q15862.D	03/31/23 07:18	OP96115	(unrelated sample)
ZZZZZZ	6Q15863.D	03/31/23 07:32	OP96115	(unrelated sample)
ZZZZZZ	6Q15864.D	03/31/23 07:46	OP96115	(unrelated sample)
ZZZZZZ	6Q15865.D	03/31/23 08:00	OP96115	(unrelated sample)
ZZZZZZ	6Q15866.D	03/31/23 08:14	OP96115	(unrelated sample)
ZZZZZZ	6Q15867.D	03/31/23 08:28	OP96115	(unrelated sample)
S6Q237-CC235	6Q15868.D	03/31/23 08:42	n/a	Continuing cal 4
S6Q237-ICCB	6Q15869.D	03/31/23 08:56	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15870.D	03/31/23 09:10	OP96115	(unrelated sample)
ZZZZZZ	6Q15871.D	03/31/23 09:24	OP96115	(unrelated sample)
ZZZZZZ	6Q15872.D	03/31/23 09:38	OP96115	(unrelated sample)
ZZZZZZ	6Q15873.D	03/31/23 09:52	OP96115	(unrelated sample)
FC3671-11	6Q15874.D	03/31/23 10:06	OP96115	(used for QC only; not part of job FC3763)
OP96115-MS	6Q15875.D	03/31/23 10:20	OP96115	Matrix Spike
OP96115-MSD	6Q15876.D	03/31/23 10:34	OP96115	Matrix Spike Duplicate
ZZZZZZ	6Q15877.D	03/31/23 10:48	OP96115	(unrelated sample)
ZZZZZZ	6Q15878.D	03/31/23 11:01	OP96115	(unrelated sample)
ZZZZZZ	6Q15879.D	03/31/23 11:15	OP96115	(unrelated sample)
S6Q237-CC235	6Q15880.D	03/31/23 11:29	n/a	Continuing cal 4

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Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q237	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
S6Q237-ICCB	6Q15881.D	03/31/23 11:43	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15882.D	03/31/23 11:57	OP96115	(unrelated sample)
ZZZZZZ	6Q15883.D	03/31/23 12:11	OP96115	(unrelated sample)
ZZZZZZ	6Q15884.D	03/31/23 12:25	OP96115	(unrelated sample)
S6Q237-RT	6Q15885.D	03/31/23 12:39	n/a	Retention Time Marker
S6Q237-RT	6Q15886.D	03/31/23 12:53	n/a	Retention Time Marker
S6Q237-IBLK	6Q15888.D	03/31/23 13:21	n/a	Instrument Blank
S6Q237-CC235	6Q15889.D	03/31/23 13:35	n/a	Continuing cal 1.0LL
OP96145-BS	6Q15890.D	03/31/23 13:49	OP96145	Blank Spike
OP96145-LLBS	6Q15891.D	03/31/23 14:03	OP96145	Blank Spike
OP96145-MB	6Q15892.D	03/31/23 14:17	OP96145	Method Blank
FC3723-1	6Q15893.D	03/31/23 14:31	OP96145	(used for QC only; not part of job FC3763)
ZZZZZZ	6Q15896.D	03/31/23 15:13	OP96145	(unrelated sample)
S6Q237-CC235	6Q15897.D	03/31/23 15:27	n/a	Continuing cal 4
S6Q237-ICCB	6Q15898.D	03/31/23 15:41	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15899.D	03/31/23 15:55	OP96145	(unrelated sample)
ZZZZZZ	6Q15900.D	03/31/23 16:09	OP96145	(unrelated sample)
ZZZZZZ	6Q15901.D	03/31/23 16:23	OP96145	(unrelated sample)
ZZZZZZ	6Q15902.D	03/31/23 16:37	OP96145	(unrelated sample)
ZZZZZZ	6Q15903.D	03/31/23 16:51	OP96145	(unrelated sample)
ZZZZZZ	6Q15904.D	03/31/23 17:05	OP96145	(unrelated sample)
ZZZZZZ	6Q15905.D	03/31/23 17:19	OP96145	(unrelated sample)
ZZZZZZ	6Q15906.D	03/31/23 17:33	OP96145	(unrelated sample)
ZZZZZZ	6Q15907.D	03/31/23 17:47	OP96145	(unrelated sample)
ZZZZZZ	6Q15908.D	03/31/23 18:01	OP96145	(unrelated sample)
S6Q237-CC235	6Q15909.D	03/31/23 18:15	n/a	Continuing cal 4
S6Q237-ICCB	6Q15910.D	03/31/23 18:29	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15911.D	03/31/23 18:43	OP96145	(unrelated sample)
ZZZZZZ	6Q15912.D	03/31/23 18:57	OP96145	(unrelated sample)
ZZZZZZ	6Q15913.D	03/31/23 19:11	OP96145	(unrelated sample)
OP96169-BS	6Q15914.D	03/31/23 19:25	OP96169	Blank Spike
OP96169-LLBS	6Q15915.D	03/31/23 19:39	OP96169	Blank Spike
OP96169-MB	6Q15916.D	03/31/23 19:53	OP96169	Method Blank
FC3793-1	6Q15917.D	03/31/23 20:07	OP96169	(used for QC only; not part of job FC3763)
OP96169-MS	6Q15918.D	03/31/23 20:21	OP96169	Matrix Spike
FC3793-2	6Q15919.D	03/31/23 20:35	OP96169	(used for QC only; not part of job FC3763)
OP96169-DUP	6Q15920.D	03/31/23 20:49	OP96169	Duplicate
S6Q237-CC235	6Q15921.D	03/31/23 21:03	n/a	Continuing cal 4
S6Q237-CC235	6Q15922.D	03/31/23 21:17	n/a	Continuing cal 1.0LL
S6Q237-ICCB	6Q15923.D	03/31/23 21:31	n/a	Continuing Calibration Blank
OP96170-BS	6Q15924.D	03/31/23 21:45	OP96170	Blank Spike
OP96170-LLBS	6Q15925.D	03/31/23 21:59	OP96170	Blank Spike
OP96170-MB	6Q15926.D	03/31/23 22:13	OP96170	Method Blank
ZZZZZZ	6Q15927.D	03/31/23 22:27	OP96170	(unrelated sample)
ZZZZZZ	6Q15928.D	03/31/23 22:41	OP96170	(unrelated sample)
ZZZZZZ	6Q15929.D	03/31/23 22:55	OP96170	(unrelated sample)

Run Sequence Report

Job Number: FC3763
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q237	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	6Q15930.D	03/31/23 23:09	OP96170	(unrelated sample)
ZZZZZZ	6Q15931.D	03/31/23 23:23	OP96170	(unrelated sample)
S6Q237-CC235	6Q15932.D	03/31/23 23:37	n/a	Continuing cal 4
S6Q237-ICCB	6Q15933.D	03/31/23 23:51	n/a	Continuing Calibration Blank
FC3722-6	6Q15934.D	04/01/23 00:04	OP96170	(used for QC only; not part of job FC3763)
OP96170-MS	6Q15935.D	04/01/23 00:19	OP96170	Matrix Spike
OP96170-MSD	6Q15936.D	04/01/23 00:33	OP96170	Matrix Spike Duplicate
ZZZZZZ	6Q15937.D	04/01/23 00:46	OP96170	(unrelated sample)
ZZZZZZ	6Q15938.D	04/01/23 01:00	OP96170	(unrelated sample)
ZZZZZZ	6Q15939.D	04/01/23 01:14	OP96170	(unrelated sample)
ZZZZZZ	6Q15940.D	04/01/23 01:28	OP96170	(unrelated sample)
ZZZZZZ	6Q15941.D	04/01/23 01:42	OP96170	(unrelated sample)
ZZZZZZ	6Q15942.D	04/01/23 01:56	OP96170	(unrelated sample)
ZZZZZZ	6Q15943.D	04/01/23 02:10	OP96170	(unrelated sample)
S6Q237-CC235	6Q15944.D	04/01/23 02:24	n/a	Continuing cal 4
S6Q237-ICCB	6Q15945.D	04/01/23 02:38	n/a	Continuing Calibration Blank
ZZZZZZ	6Q15946.D	04/01/23 02:52	OP96170	(unrelated sample)
ZZZZZZ	6Q15947.D	04/01/23 03:06	OP96170	(unrelated sample)
ZZZZZZ	6Q15948.D	04/01/23 03:20	OP96170	(unrelated sample)
ZZZZZZ	6Q15949.D	04/01/23 03:34	OP96170	(unrelated sample)
S6Q237-ECC235	6Q15950.D	04/01/23 03:48	n/a	Ending cal 4
S6Q237-ICCB	6Q15951.D	04/01/23 04:02	n/a	Continuing Calibration Blank

6.10.2

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MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15825.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 10:41:03 PM
 Sample Name : FC3763-1
 Vial : P3-C7
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	74187	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35599	5.00 µg/L	0.012
M5-PFHxA	5.565	318.0 -> 273.0	31913	2.50 µg/L	0.012
M4-PFHpA	6.506	367.1 -> 322.0	32906	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	58516	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	17116	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	13943	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	12548	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	14596	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	8136	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	14431	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	12691	2.50 µg/L	0.012
M3-PFHxS	7.252	402.1 -> 79.9	8135	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7021	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2140	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2895	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2704	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	20949	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	13514	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	16762	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	17210	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	11390	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4025	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	3818	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	7911	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	29681	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5326	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	65101	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	19567	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	15940	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	29180	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2140	6.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.4%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2895	6.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.9%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2704	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C2-PFDoDA	9.019	615.1 -> 570.0	14596	0.92 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 73.4%		
13C2-PFTeDA	9.746	715.2 -> 670.0	8136	0.89 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 71.3%		
13C3-PFBS	5.496	302.1 -> 79.9	12691	2.93 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.0%		
13C3-PFHxS	7.252	402.1 -> 79.9	8135	2.70 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 = 108.1%	
13C4-PFBA	2.963	216.8 -> 171.9	74187	10.82 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C4-PFHpA	6.506	367.1 -> 322.0	32906	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C5-PFHxA	5.565	318.0 -> 273.0	31913	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C5-PFPeA	4.359	268.3 -> 223.0	35599	5.43 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C6-PFDA	8.147	519.1 -> 474.1	13943	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.589	570.0 -> 525.1	12548	1.00 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 80.4%	
13C8-FOSA	9.631	506.1 -> 77.8	14431	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-PFOA	7.137	421.1 -> 376.0	58516	2.71 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C8-PFOS	8.310	507.1 -> 79.9	7021	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C9-PFNA	7.667	472.1 -> 427.0	17116	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
d3-MeFOSAA	8.192	573.2 -> 419.0	20949	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	13514	10.76 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d3-MeFOSA	10.745	515.0 -> 219.0	3818	1.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.4%	
d5-EtFOSAA	8.400	589.2 -> 419.0	16762	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d7-MeFOSE	10.653	623.2 -> 58.9	17210	20.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
d9-EtFOSE	10.900	639.2 -> 58.9	11390	20.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.6%	
d5-EtFOSA	10.965	531.1 -> 219.0	4025	1.86 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.4%	

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	-	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	8.275	398.7 -> 98.9	0	0.00	µg/L	#m
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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



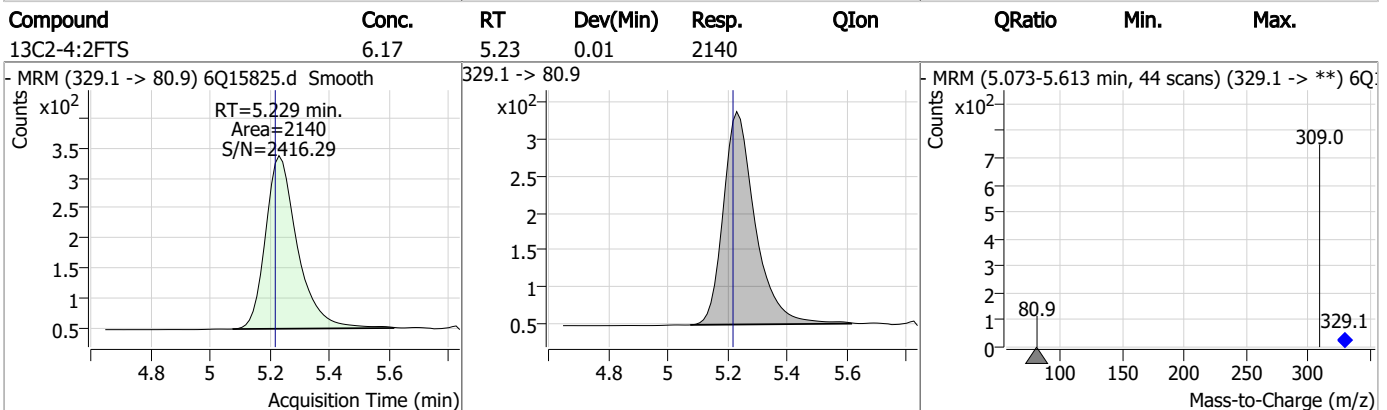
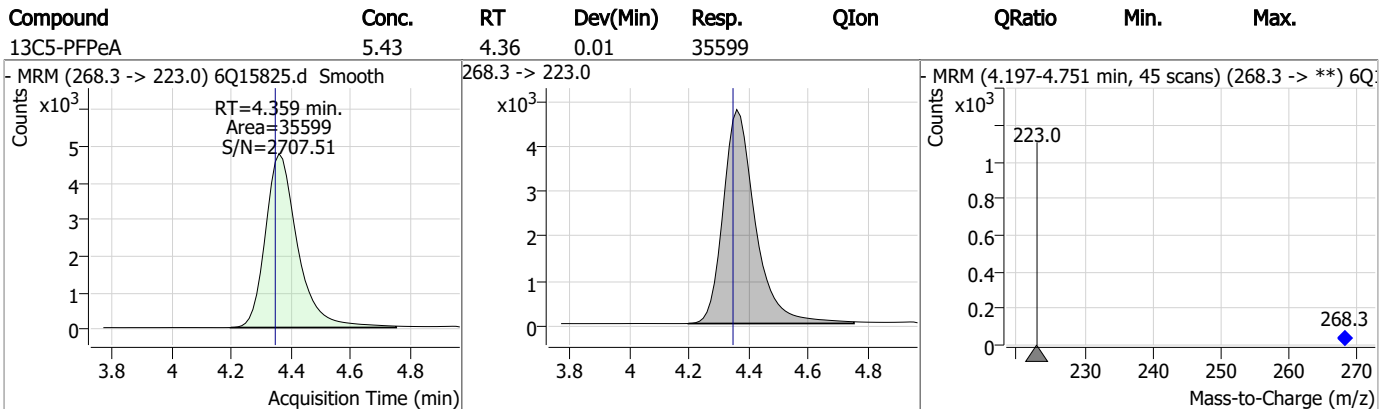
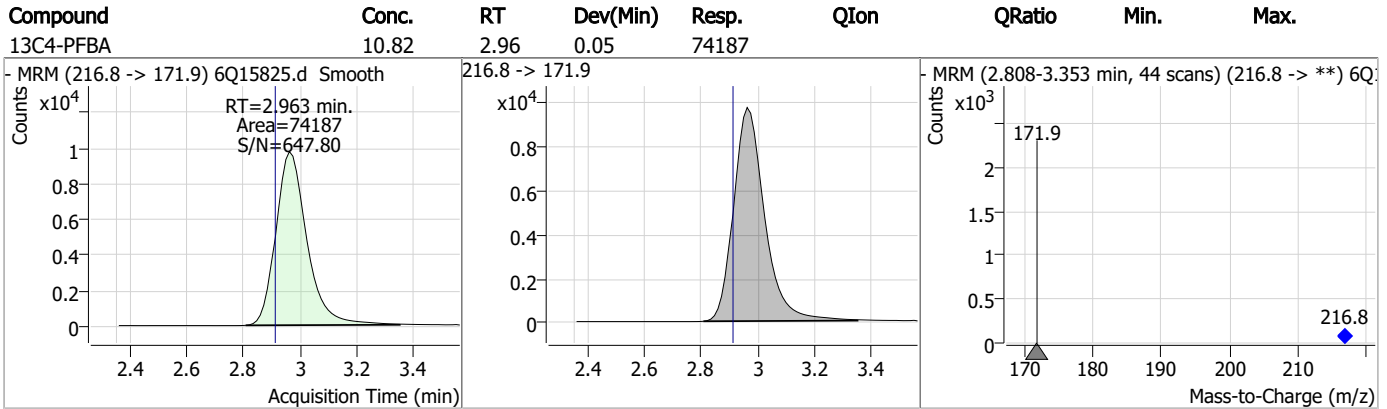
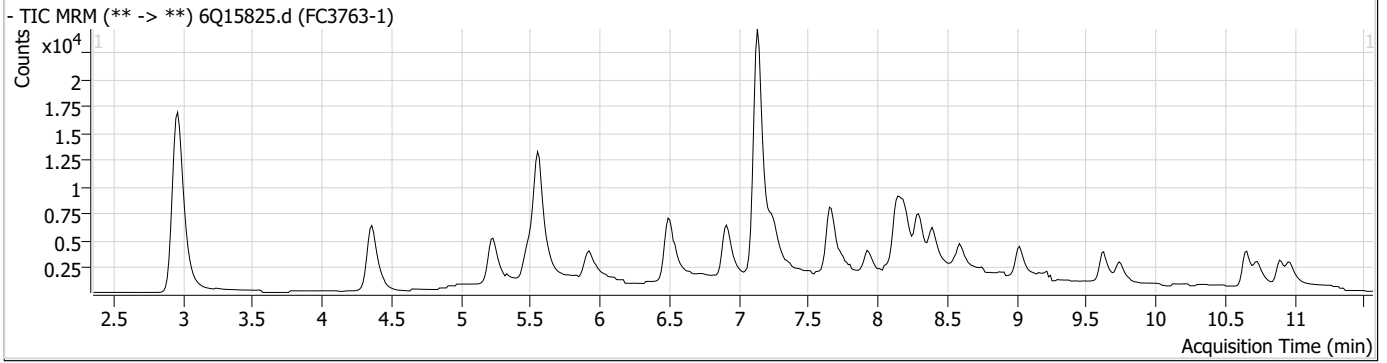
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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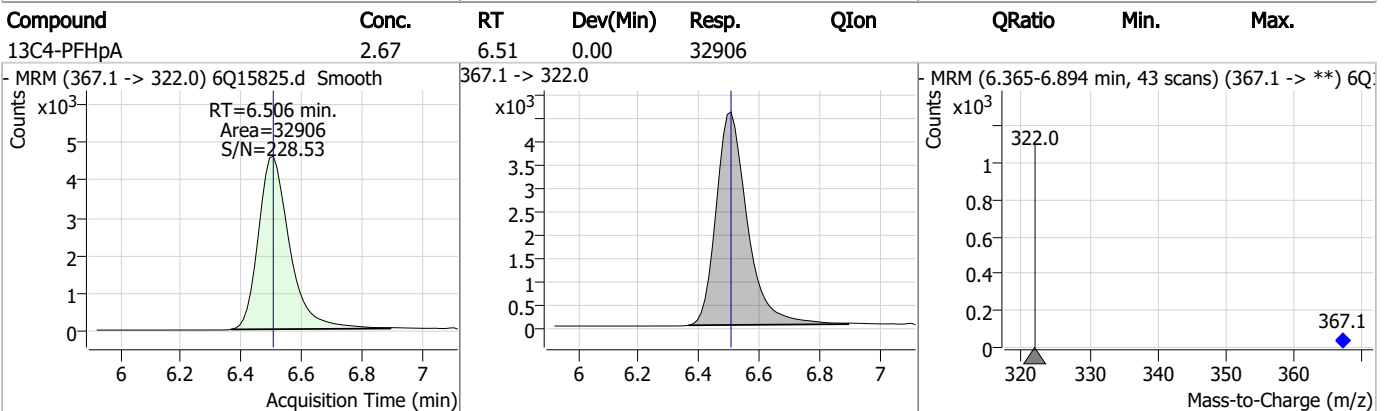
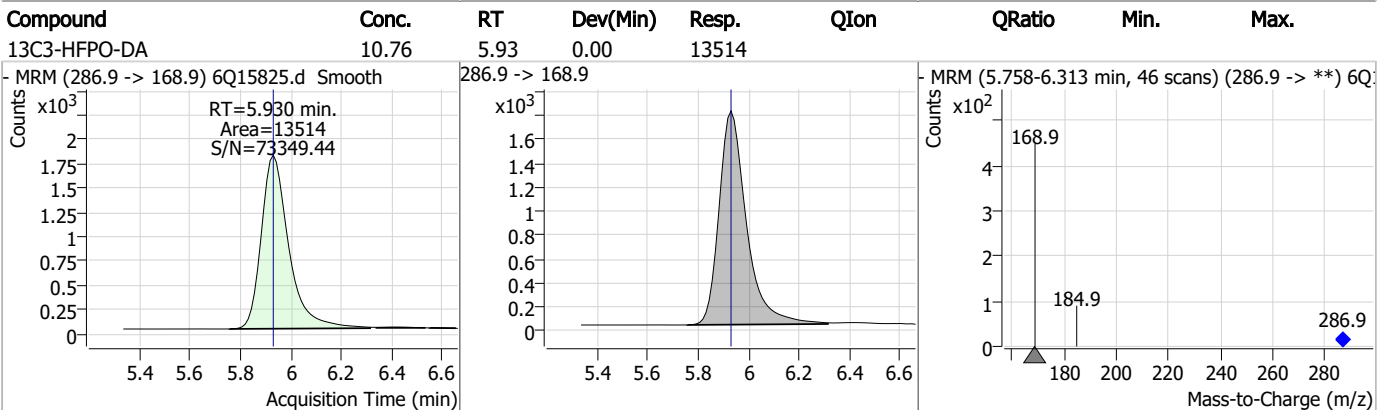
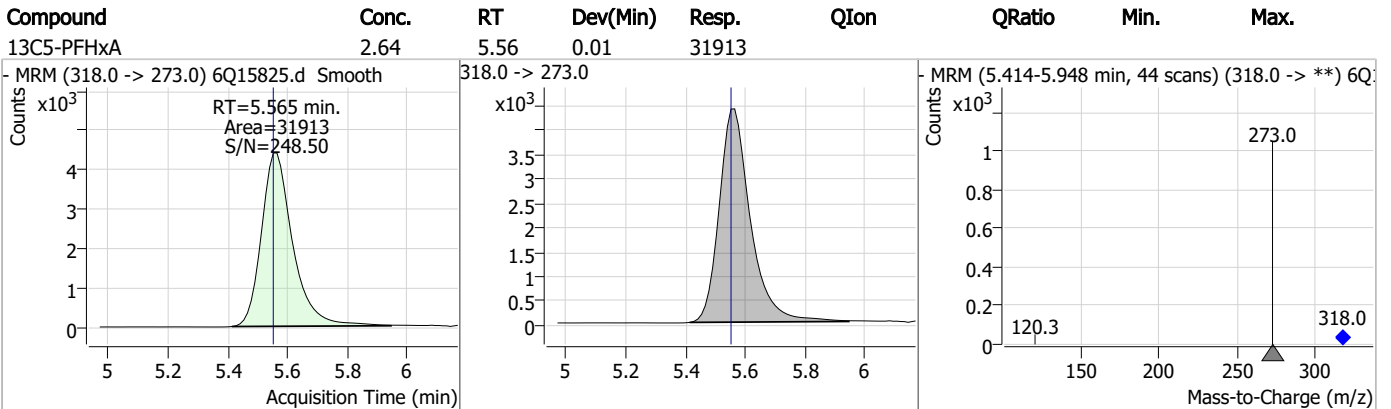
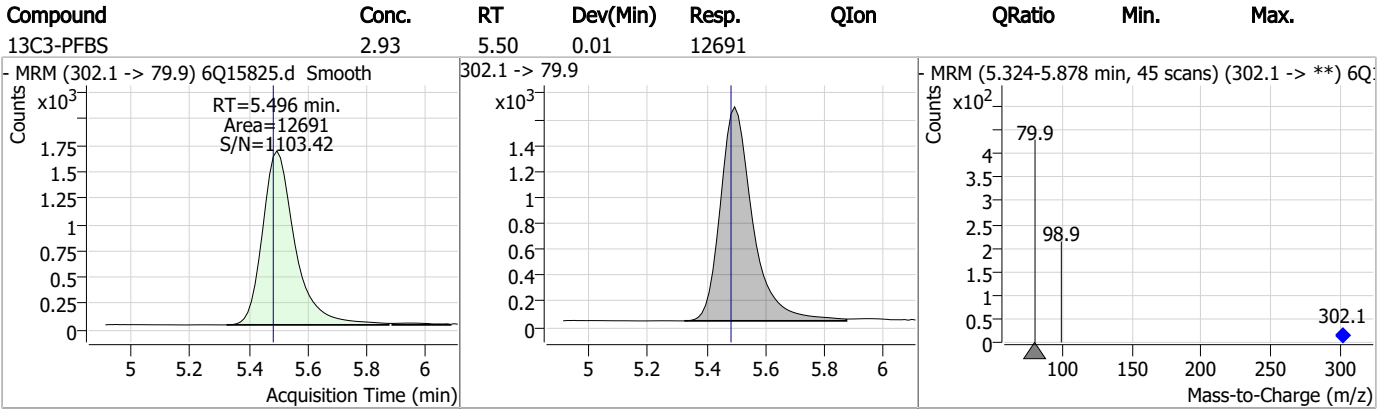
7.1.1
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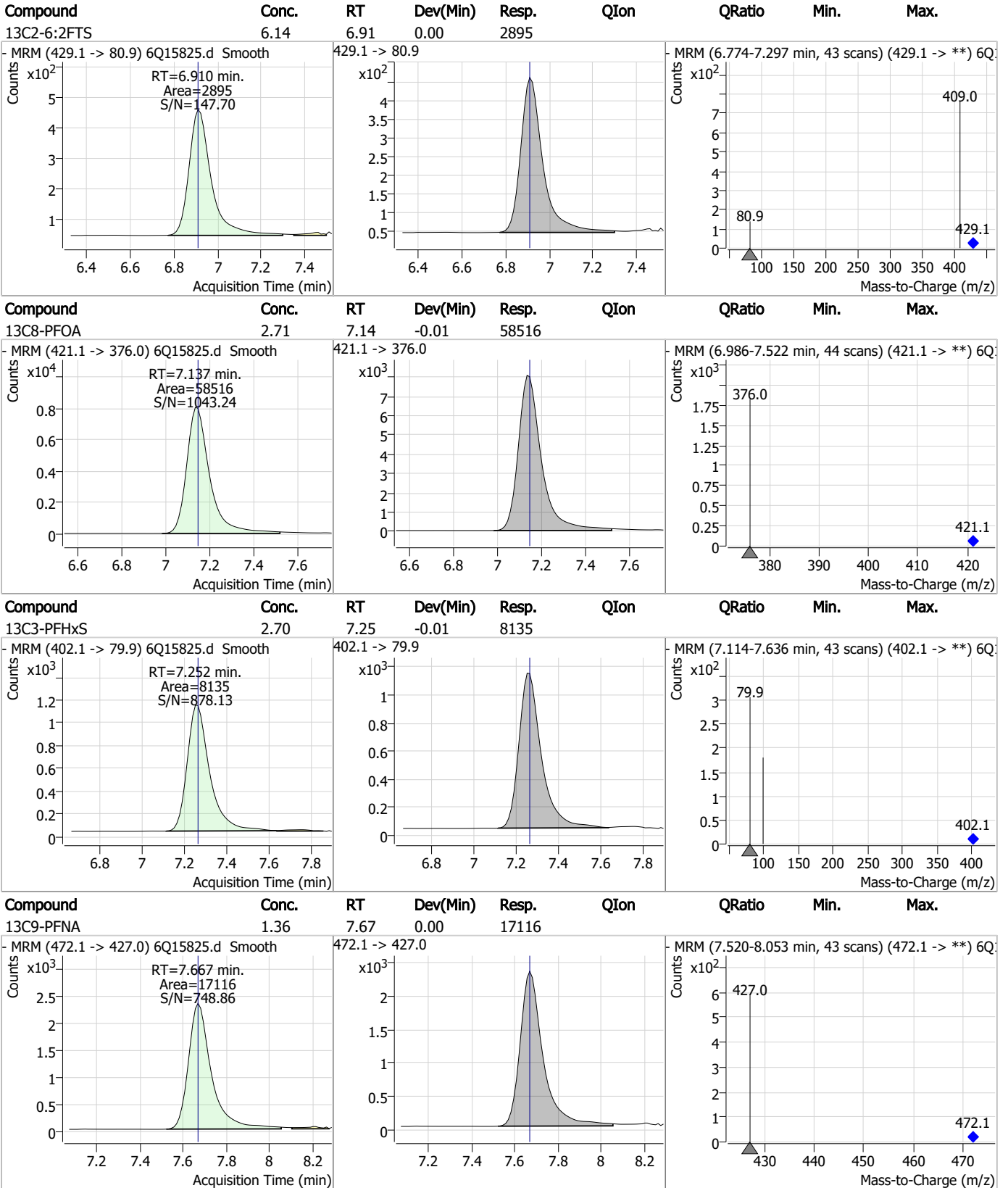
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



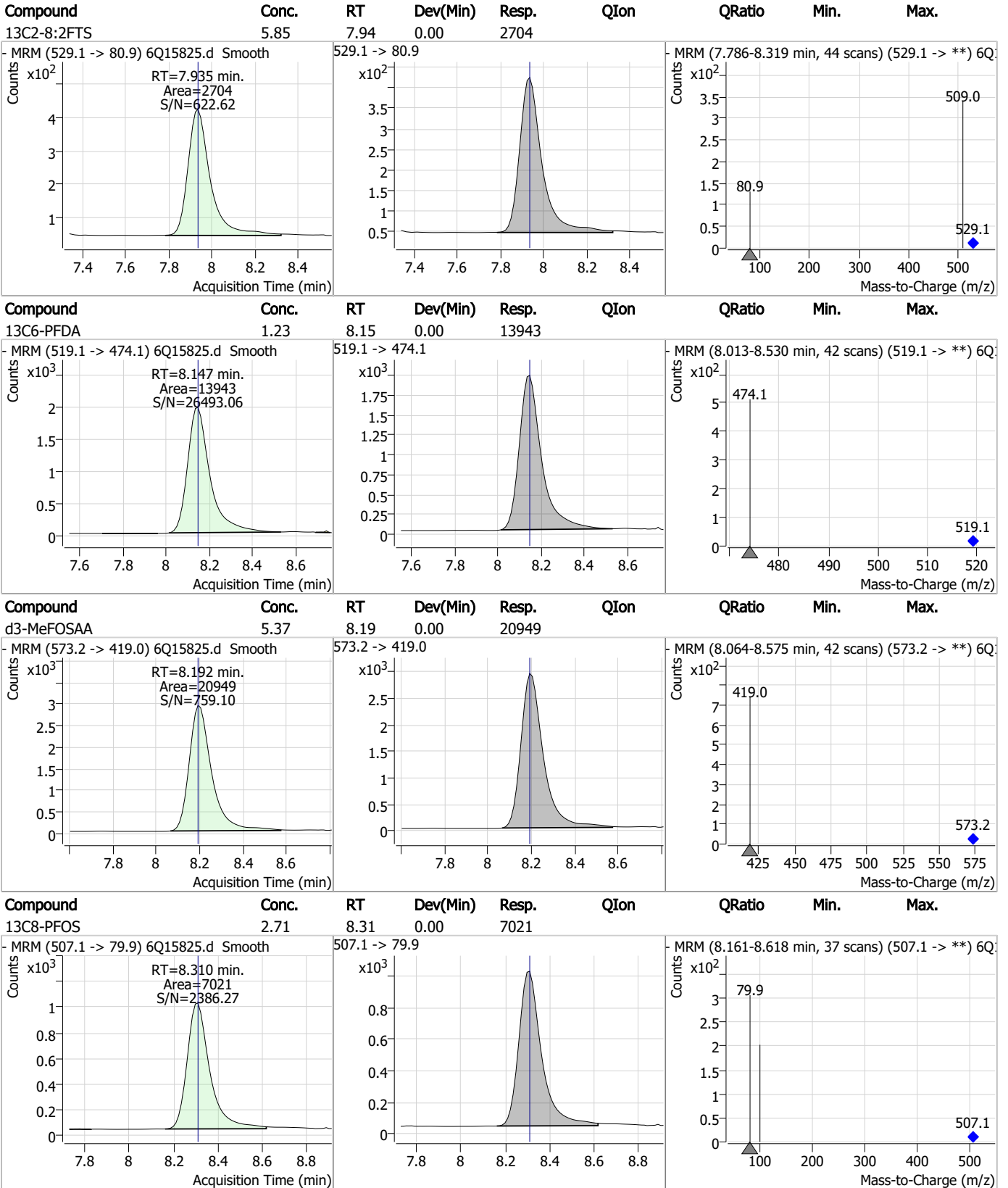
Perfluorinated Compounds by LC/MS/MS



7.1.1

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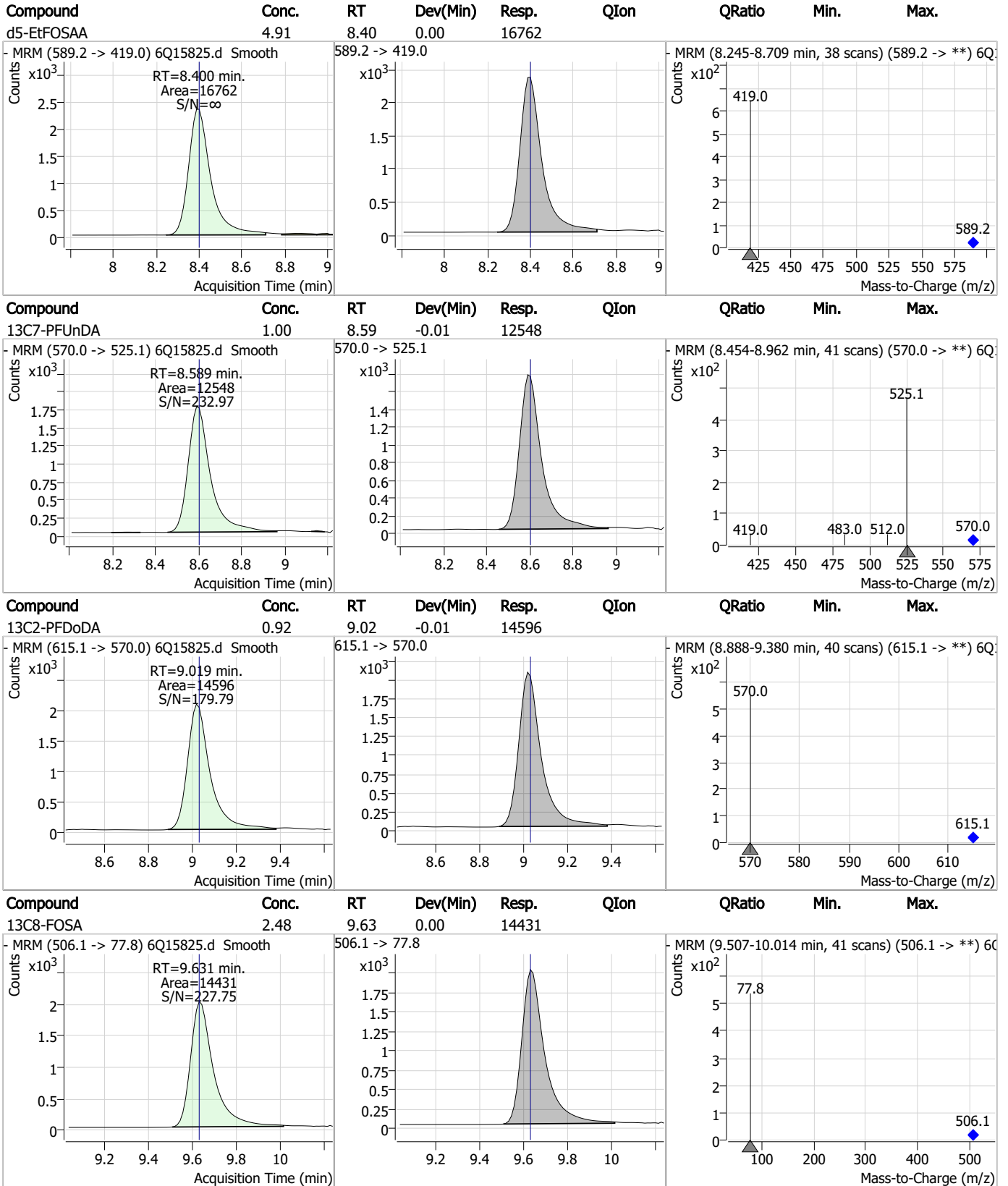
Perfluorinated Compounds by LC/MS/MS



7.1.1

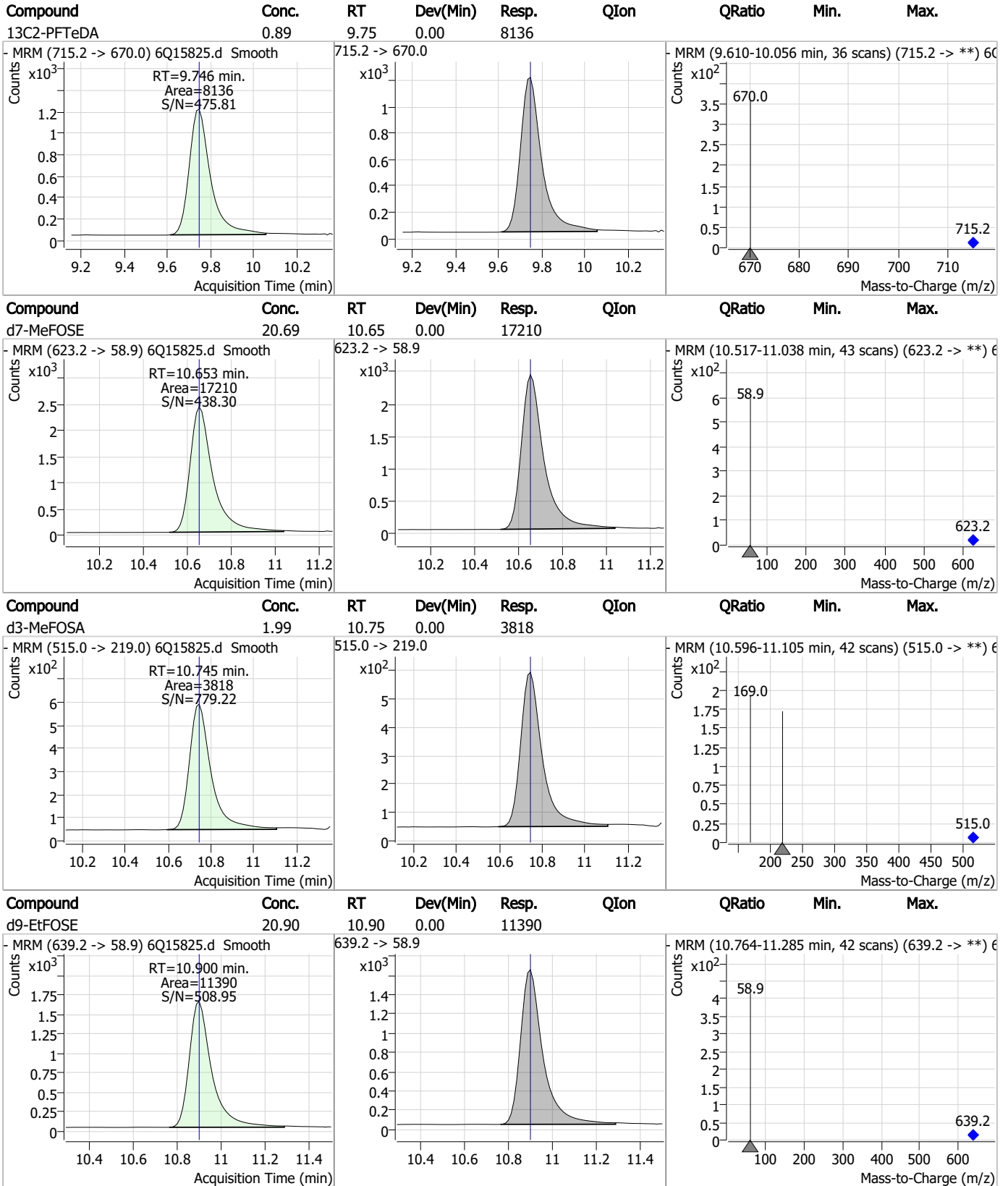
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Perfluorinated Compounds by LC/MS/MS



7.1.1
7

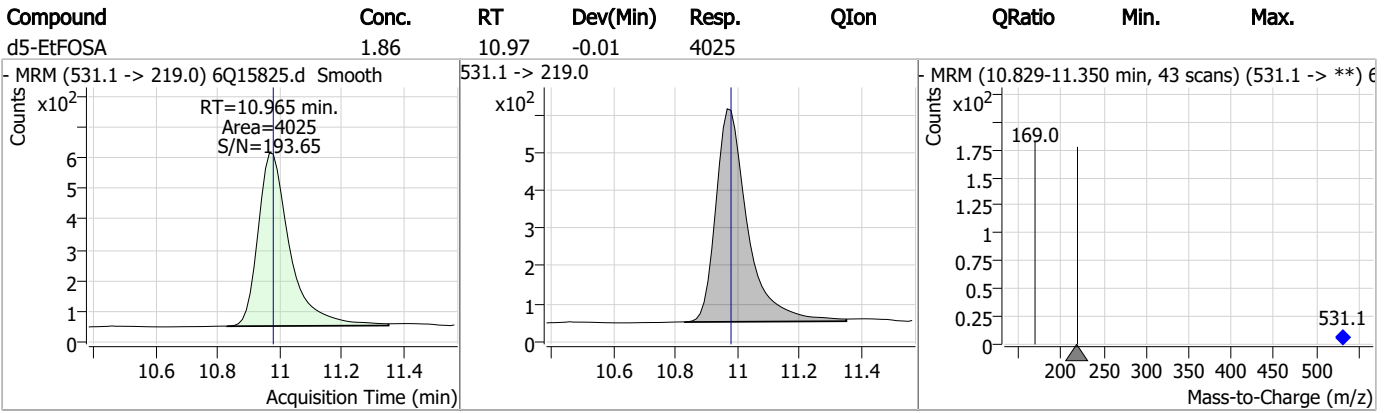
Perfluorinated Compounds by LC/MS/MS



7.1.1

7

Perfluorinated Compounds by LC/MS/MS



7.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15826.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 10:55:02 PM
 Sample Name : FC3763-2
 Vial : P3-C8
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,520,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	69234	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	32496	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	30020	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	30895	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	53884	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	15594	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	12613	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	12510	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	13508	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	7914	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	14133	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	11852	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	7635	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	6664	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2014	5.00 µg/L	0.012
M2-6:2FTS	6.923	429.1 -> 80.9	2549	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2333	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	18441	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	12717	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	16179	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	15684	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	10449	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	4328	2.50 µg/L	-0.012
M3-MeFOSA	10.733	515.0 -> 219.0	3663	2.50 µg/L	-0.012
13C4-PFOS	8.311	502.8 -> 79.9	8010	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	27791	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5069	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	58822	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	16997	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	16331	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	27958	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2014	6.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.0%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2549	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2333	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C2-PFDoDA	9.019	615.1 -> 570.0	13508	0.98 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 78.2%		
13C2-PFTeDA	9.746	715.2 -> 670.0	7914	1.00 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.9%		
13C3-PFBS	5.496	302.1 -> 79.9	11852	2.87 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C3-PFHxS	7.265	402.1 -> 79.9	7635	2.67 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C4-PFBA	2.963	216.8 -> 171.9	69234	10.78 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C4-PFHpA	6.506	367.1 -> 322.0	30895	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C5-PFHxA	5.553	318.0 -> 273.0	30020	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C5-PFPeA	4.359	268.3 -> 223.0	32496	5.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C6-PFDA	8.147	519.1 -> 474.1	12613	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.601	570.0 -> 525.1	12510	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C8-FOSA	9.631	506.1 -> 77.8	14133	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOA	7.149	421.1 -> 376.0	53884	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C8-PFOS	8.310	507.1 -> 79.9	6664	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.667	472.1 -> 427.0	15594	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSAA	8.204	573.2 -> 419.0	18441	4.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	12717	10.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
d3-MeFOSA	10.733	515.0 -> 219.0	3663	1.88 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.3%	
d5-EtFOSAA	8.400	589.2 -> 419.0	16179	4.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
d7-MeFOSE	10.653	623.2 -> 58.9	15684	18.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.5%	
d9-EtFOSE	10.900	639.2 -> 58.9	10449	18.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.7%	
d5-EtFOSA	10.965	531.1 -> 219.0	4328	1.98 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.1%	

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	5.568	449.0 -> 98.9	1565	0.14 µg/L	97
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	83	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	4.361	498.9 -> 98.8	3417	0.50 µg/L	100
		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

7.1.2
7

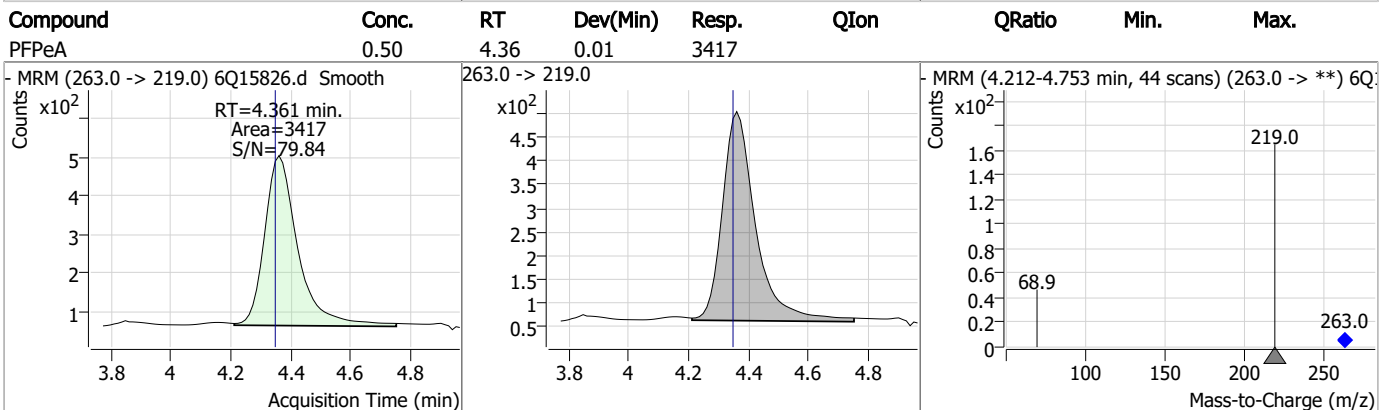
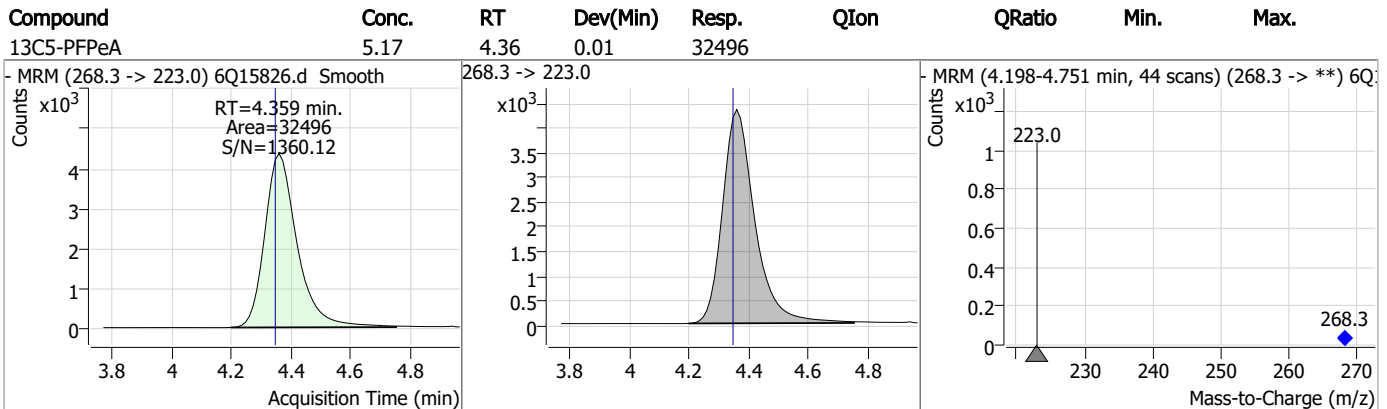
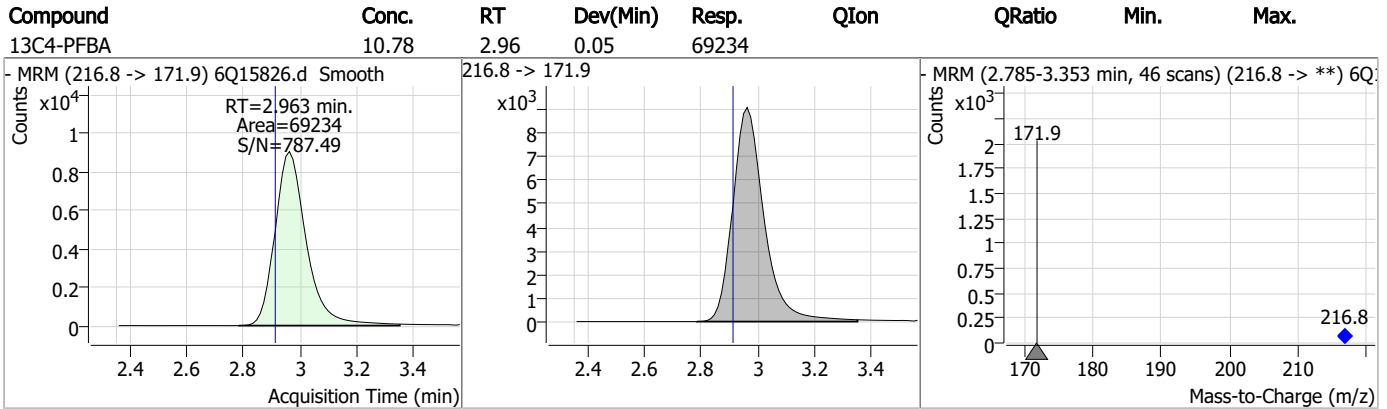
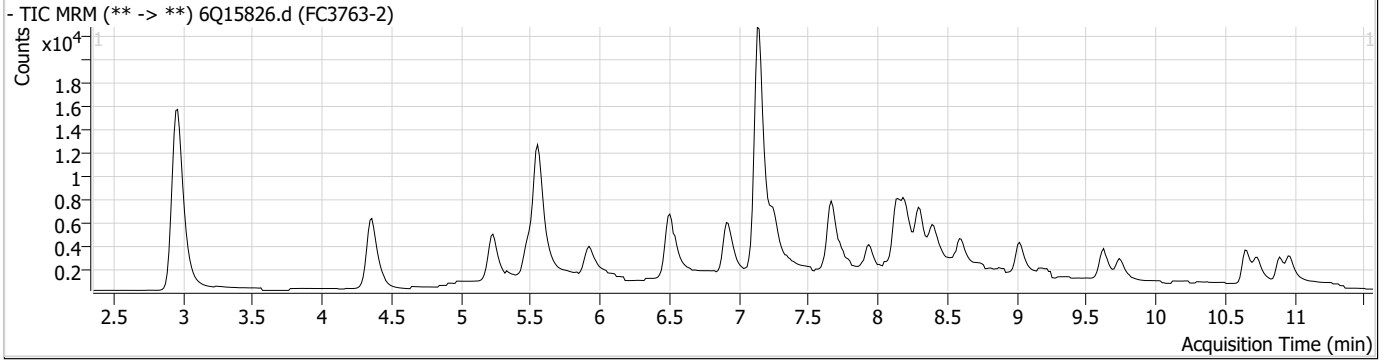
Perfluorinated Compounds by LC/MS/MS

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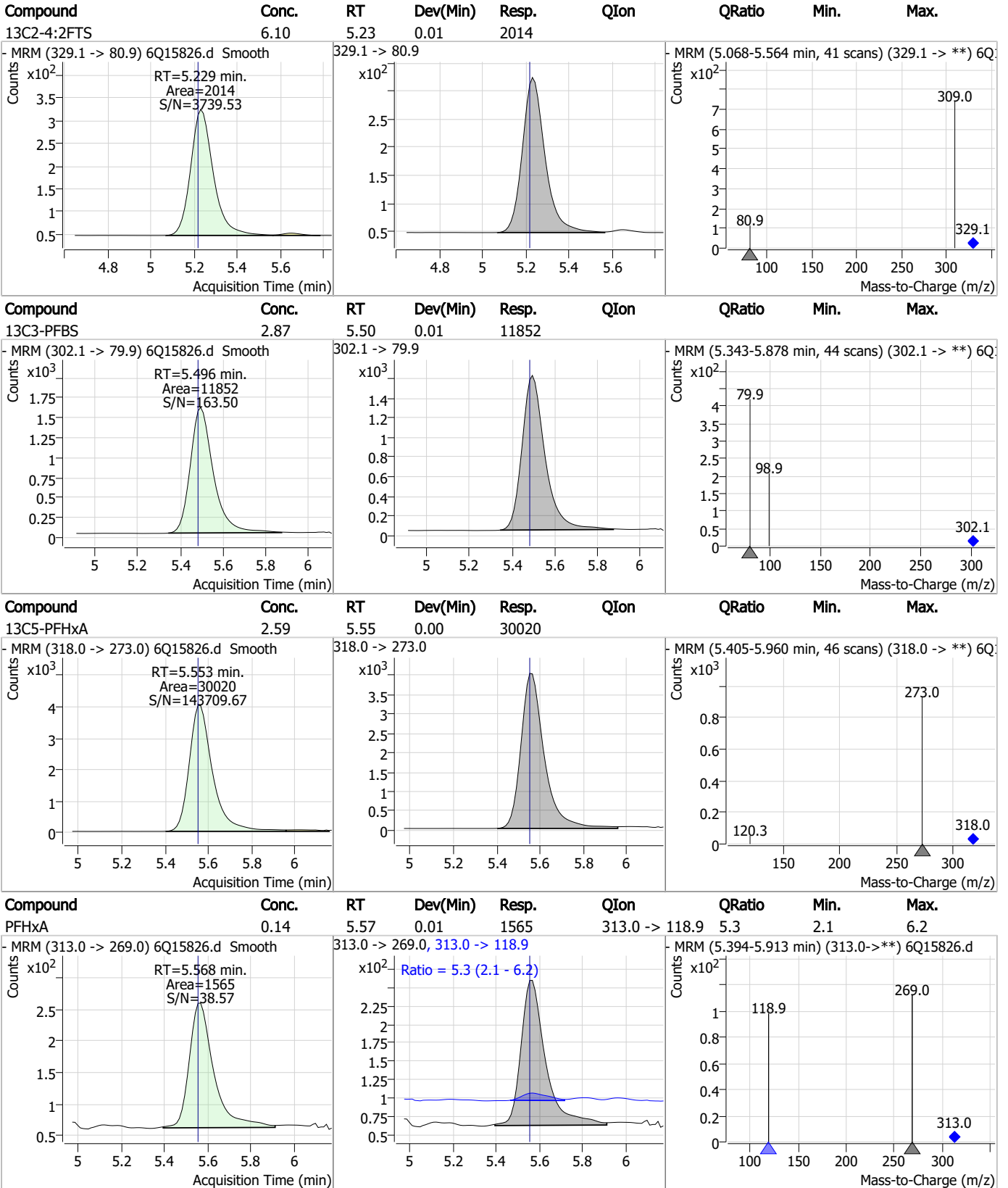
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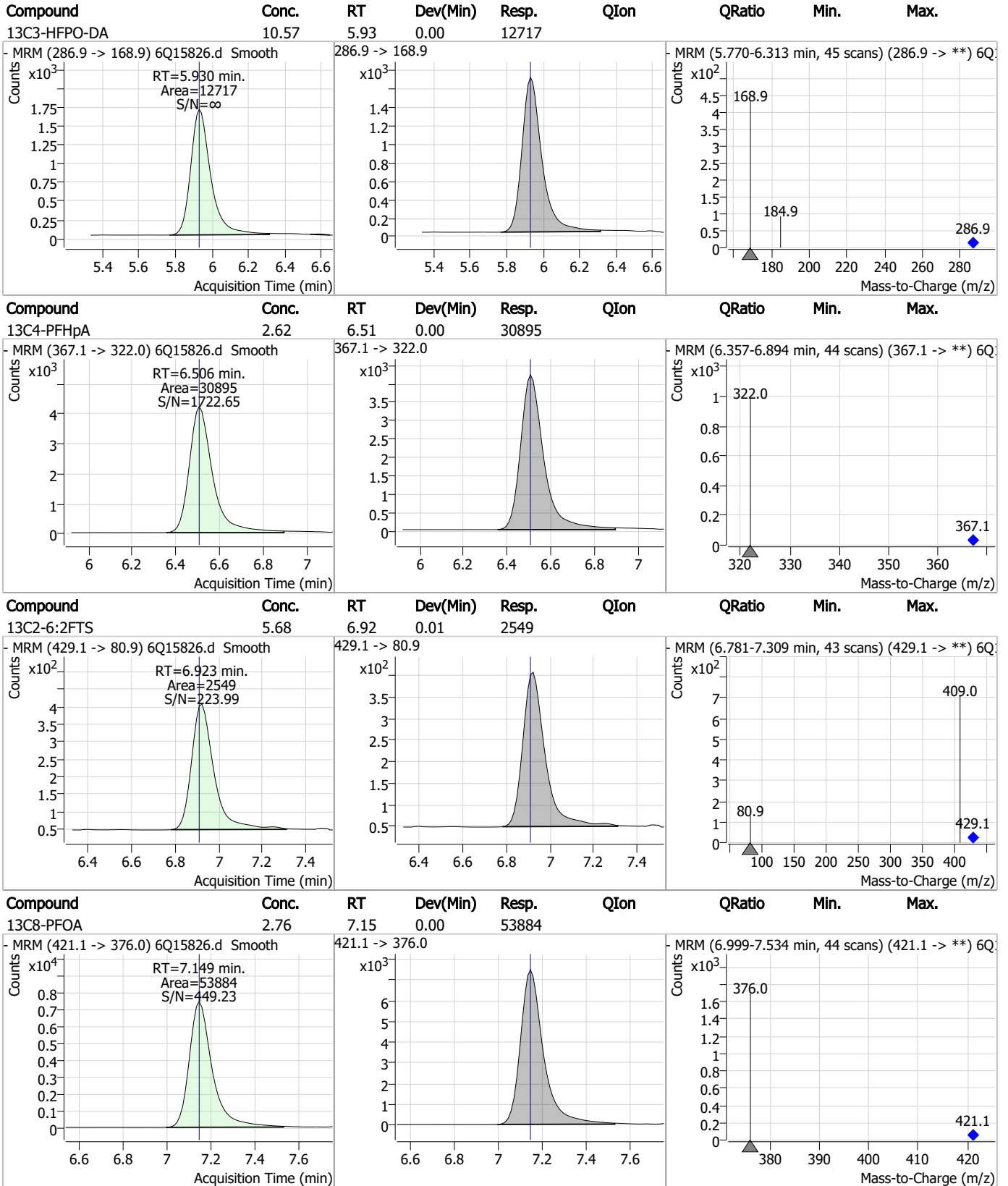
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



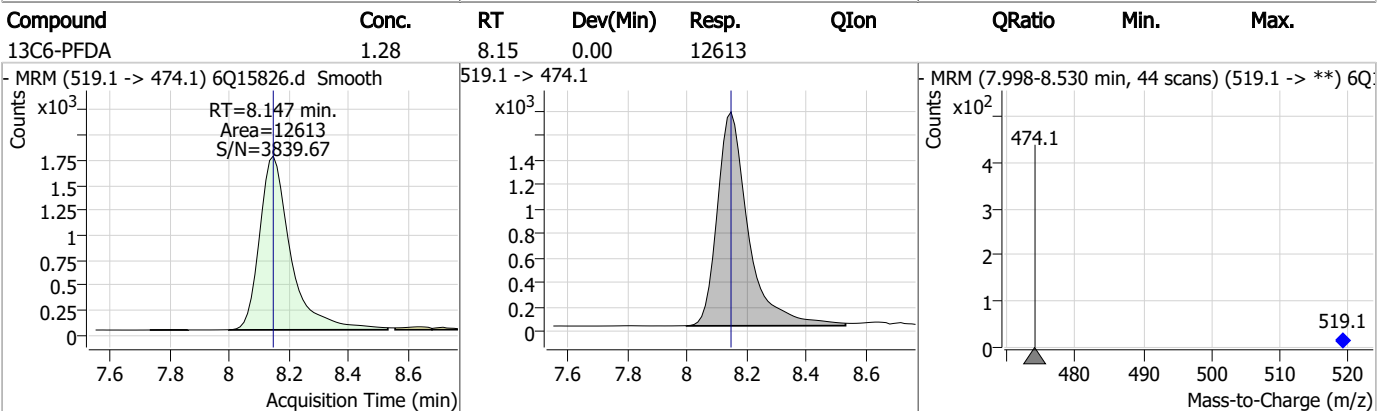
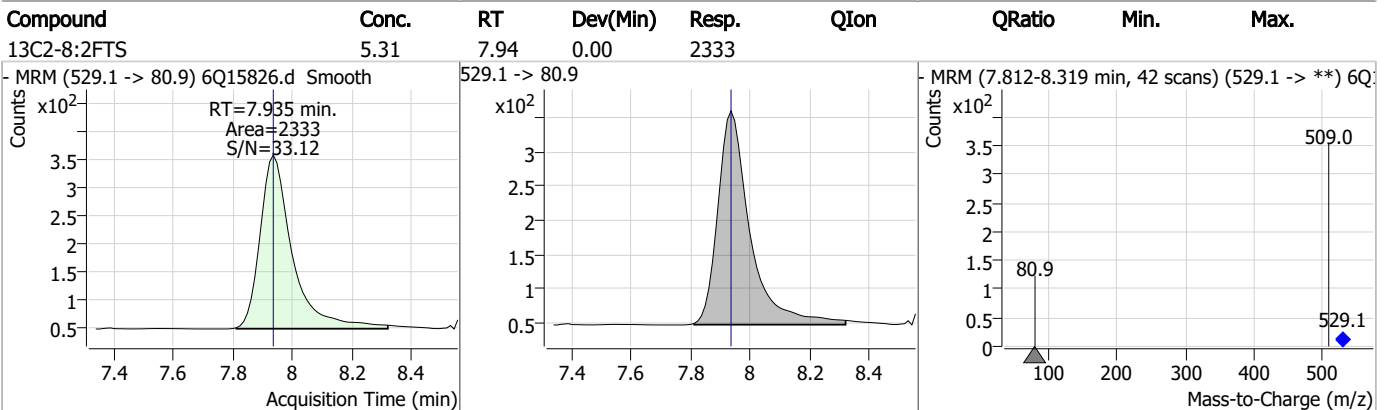
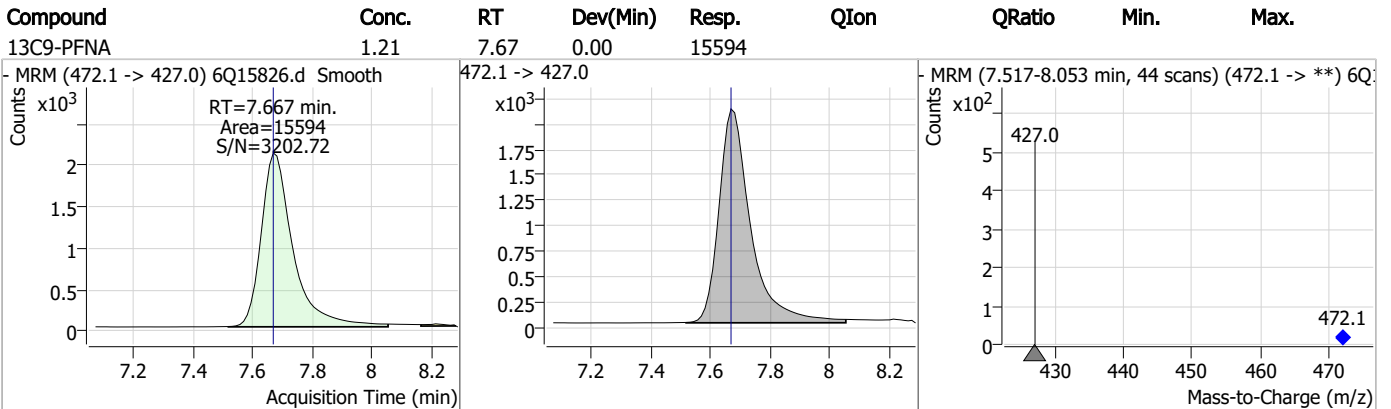
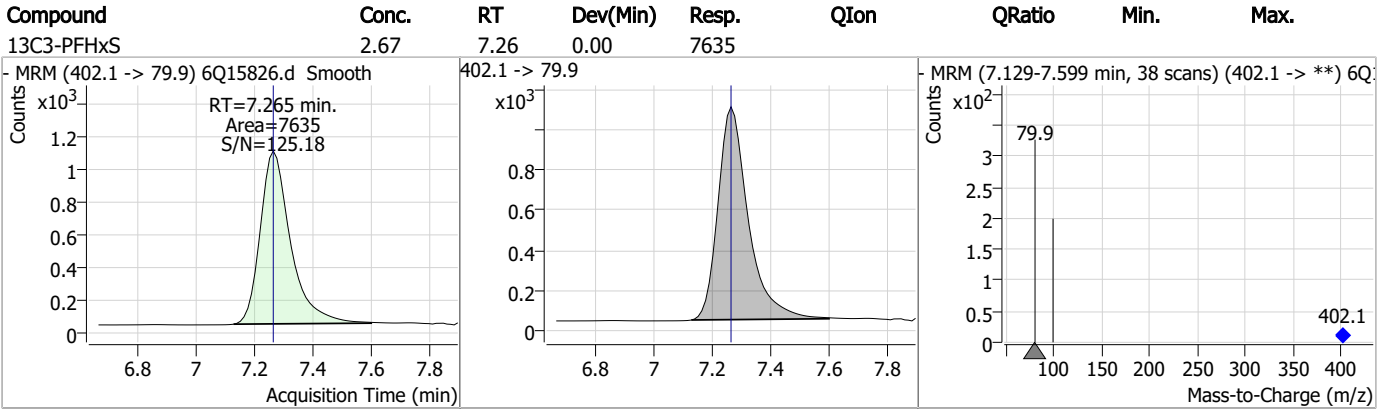
Perfluorinated Compounds by LC/MS/MS



7.1.2

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Perfluorinated Compounds by LC/MS/MS

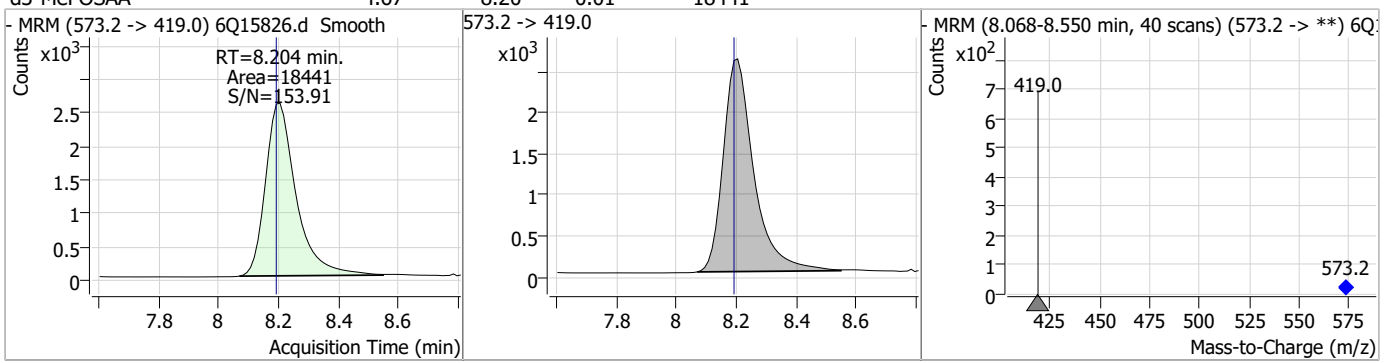


7.1.2

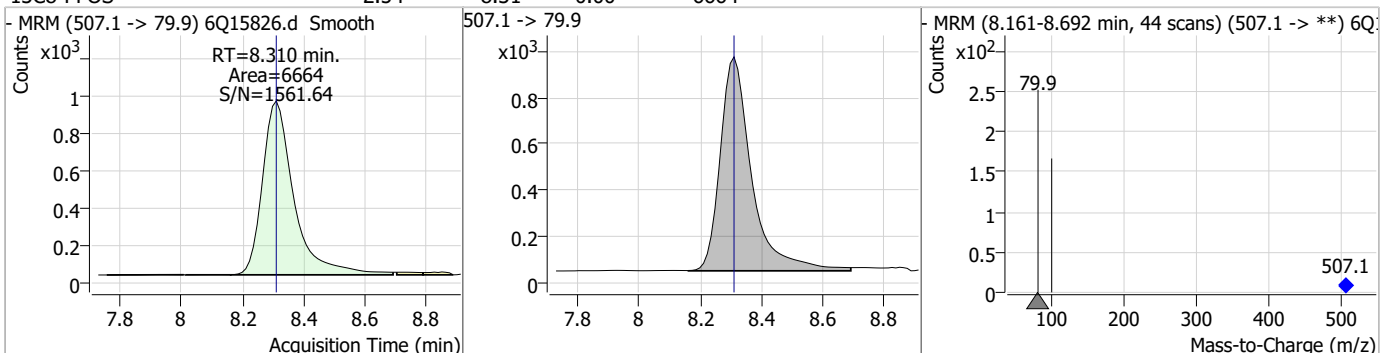
7

Perfluorinated Compounds by LC/MS/MS

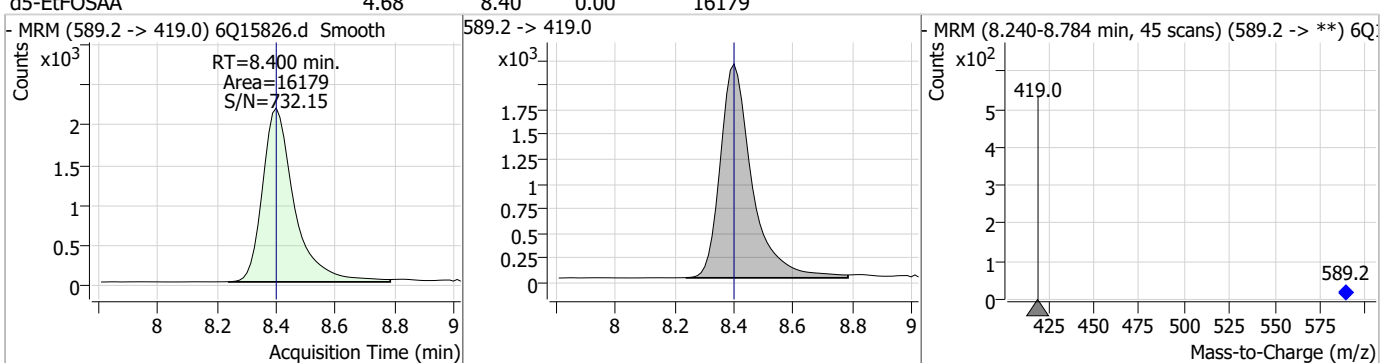
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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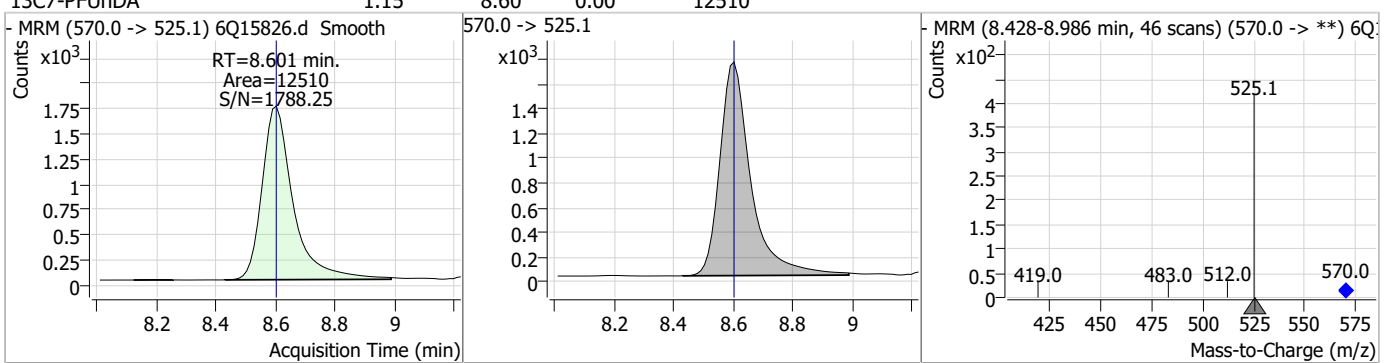
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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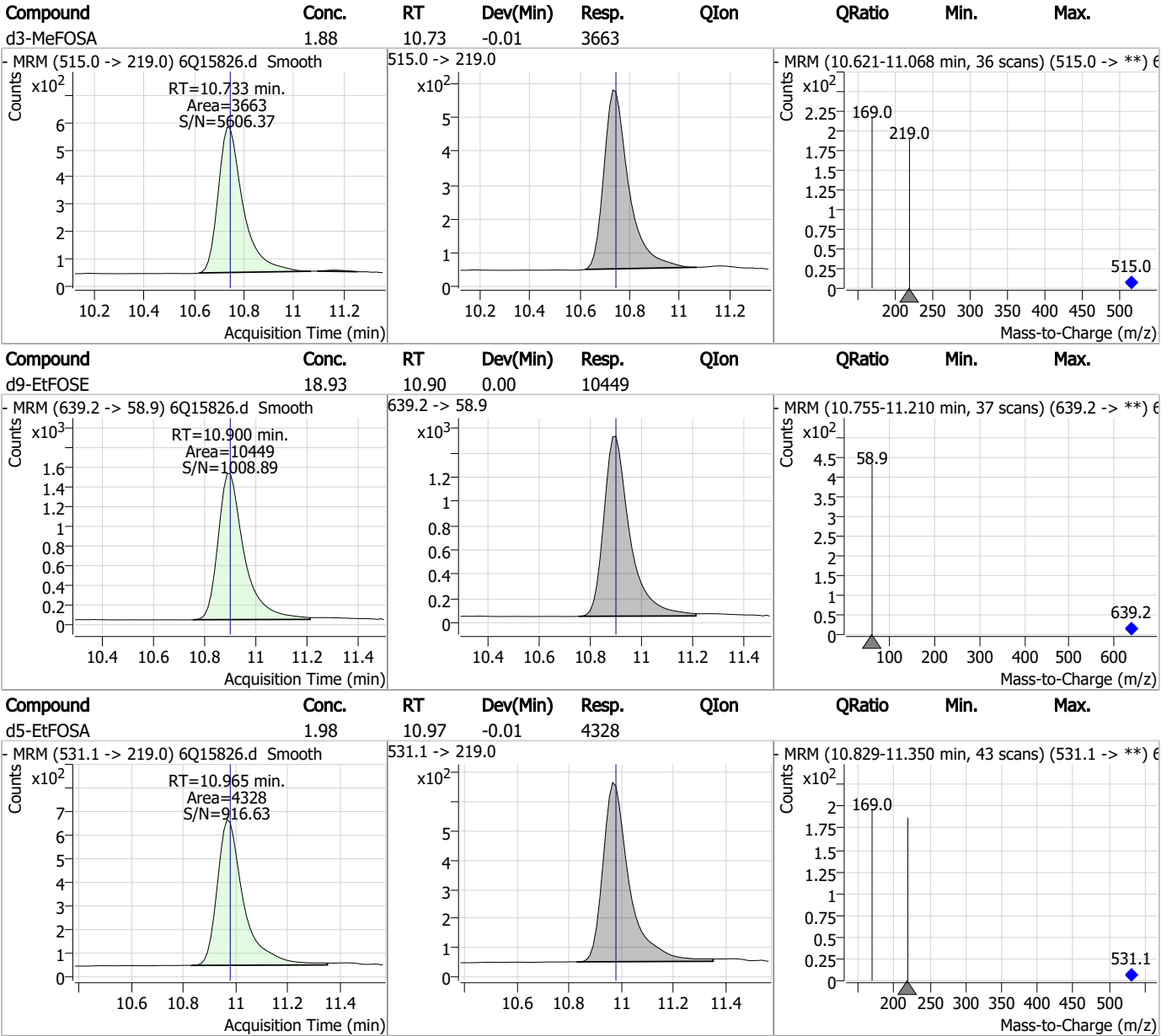
7.1.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.98	9.02	-0.01	13508				
13C8-FOSA	2.40	9.63	0.00	14133				
13C2-PFTeDA	1.00	9.75	0.00	7914				
d7-MeFOSE	18.62	10.65	0.00	15684				

7.1.2
7

Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15827.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 11:09:00 PM
 Sample Name : FC3763-3
 Vial : P3-C9
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	72969	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35001	5.00 µg/L	0.012
M5-PFHxA	5.565	318.0 -> 273.0	33346	2.50 µg/L	0.012
M4-PFHpA	6.506	367.1 -> 322.0	31966	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	55996	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	16137	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15166	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	14472	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	16962	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	9237	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15371	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	12382	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	8092	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	6668	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2292	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3066	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2570	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22718	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13343	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	19605	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	18969	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	13168	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5167	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	4718	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	7825	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	29591	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5321	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	63290	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	18824	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17344	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	28298	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2292	6.61 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.3%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3066	6.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.2%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2570	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C2-PFDoDA	9.019	615.1 -> 570.0	16962	1.11 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.7%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9237	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.2%		
13C3-PFBS	5.496	302.1 -> 79.9	12382	2.86 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 114.3%		
13C3-PFHxS	7.265	402.1 -> 79.9	8092	2.69 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 = 107.7%	
13C4-PFBA	2.963	216.8 -> 171.9	72969	10.67 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C4-PFHpA	6.506	367.1 -> 322.0	31966	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C5-PFHxA	5.565	318.0 -> 273.0	33346	2.84 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C5-PFPeA	4.359	268.3 -> 223.0	35001	5.50 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C6-PFDA	8.147	519.1 -> 474.1	15166	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C7-PFUnDA	8.601	570.0 -> 525.1	14472	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-FOSA	9.631	506.1 -> 77.8	15371	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C8-PFOA	7.149	421.1 -> 376.0	55996	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C8-PFOS	8.310	507.1 -> 79.9	6668	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C9-PFNA	7.667	472.1 -> 427.0	16137	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
d3-MeFOSAA	8.204	573.2 -> 419.0	22718	5.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.7%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	13343	10.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
d3-MeFOSA	10.745	515.0 -> 219.0	4718	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
d5-EtFOSAA	8.400	589.2 -> 419.0	19605	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.0%	
d7-MeFOSE	10.653	623.2 -> 58.9	18969	23.06 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
d9-EtFOSE	10.900	639.2 -> 58.9	13168	24.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d5-EtFOSA	10.965	531.1 -> 219.0	5167	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	

Target Compounds

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

7.1.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	5.556	449.0 -> 98.9	1513	0.13 µg/L	#	92
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	24	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	4.361	498.9 -> 98.8	3398	0.46 µg/L		100
		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

7.1.3
7

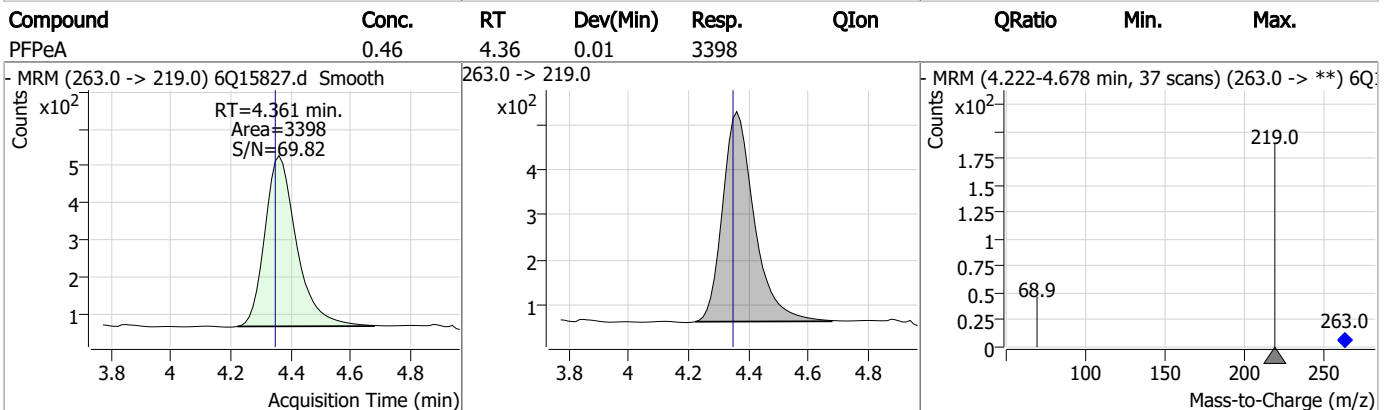
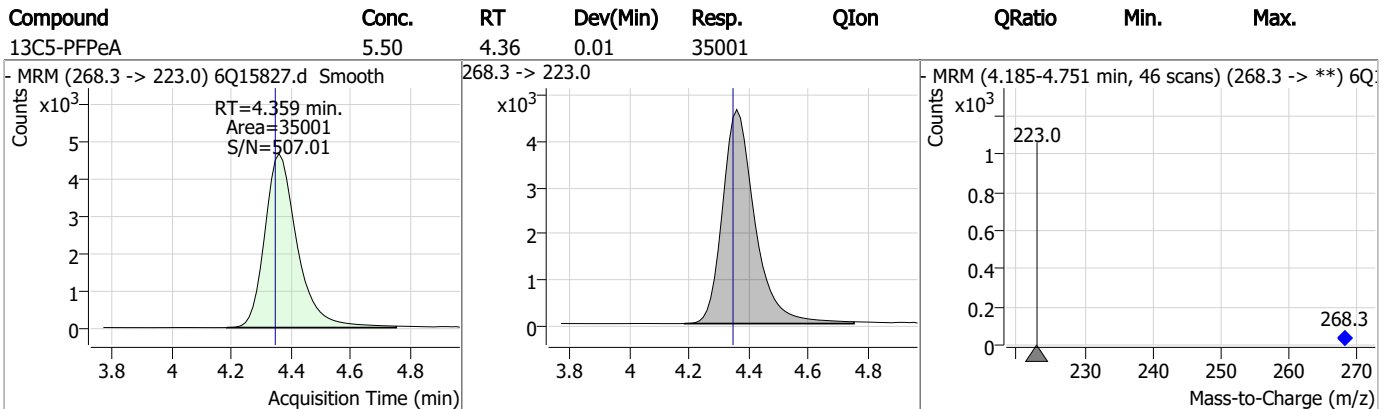
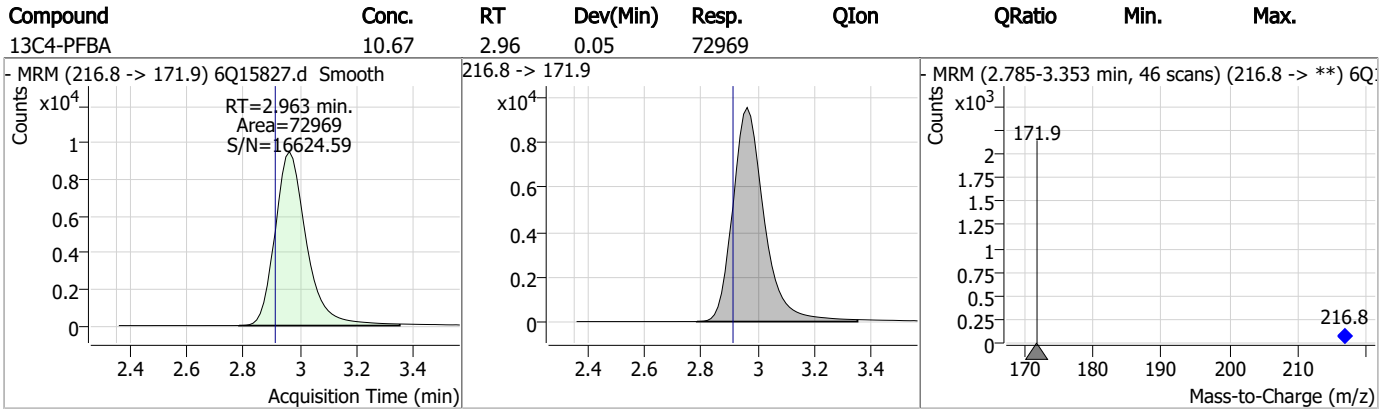
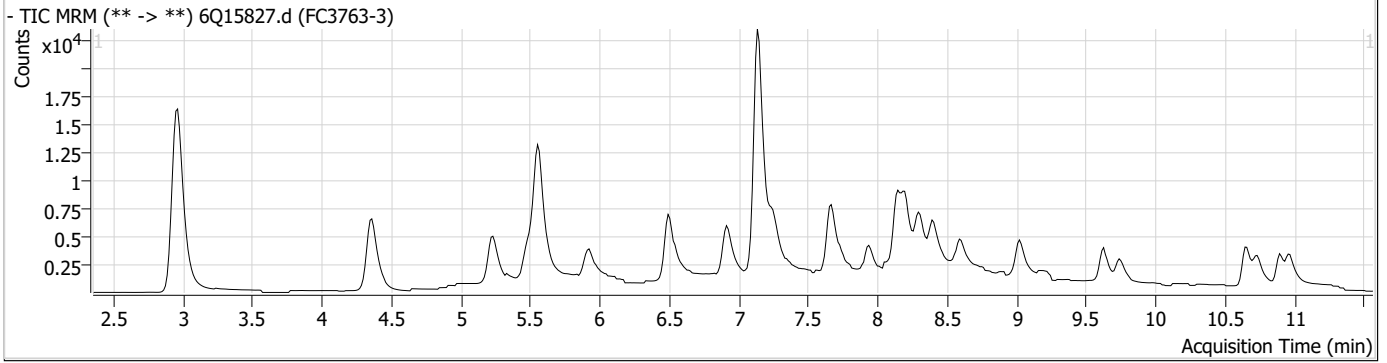
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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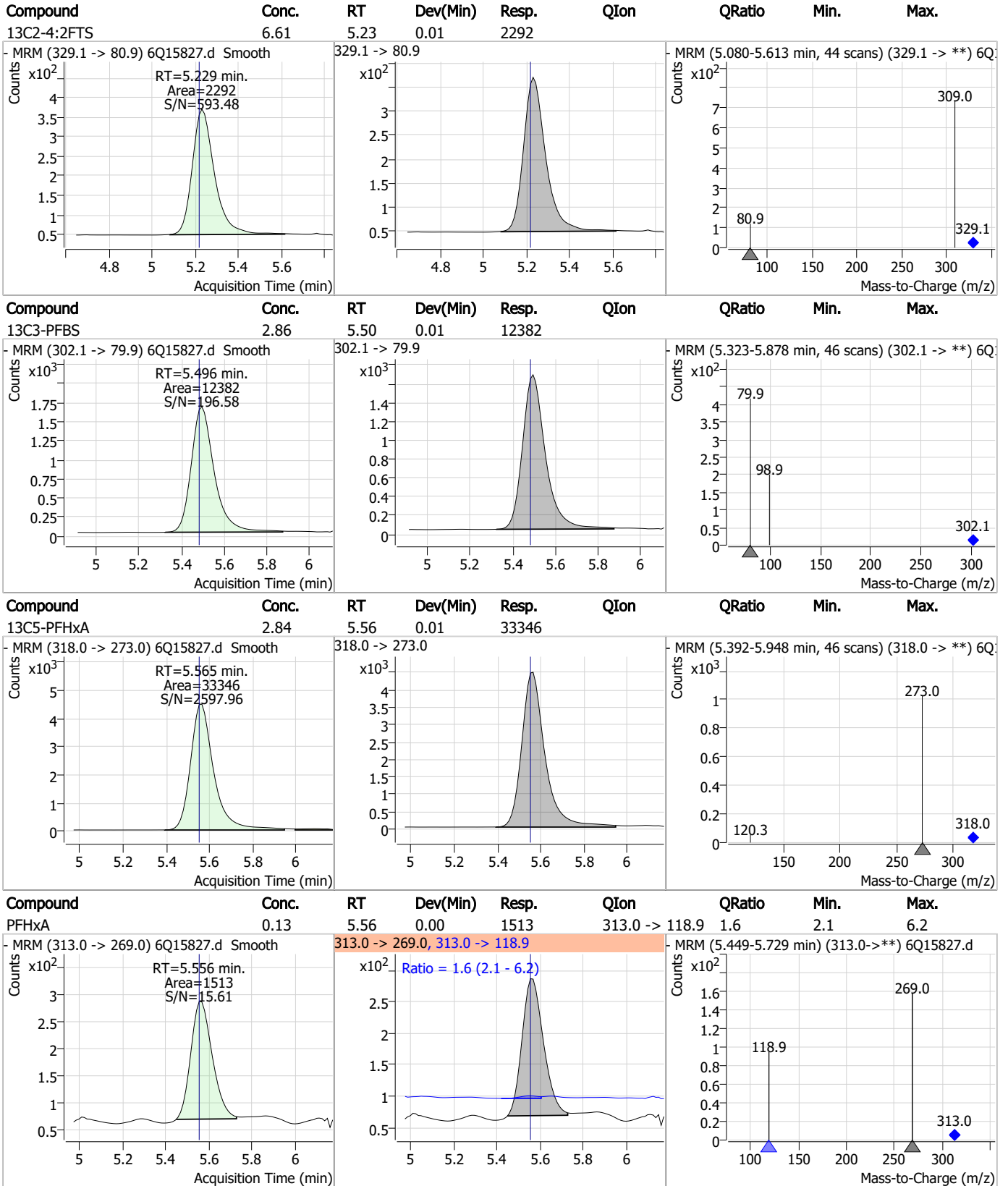
7.1.3
7



Perfluorinated Compounds by LC/MS/MS



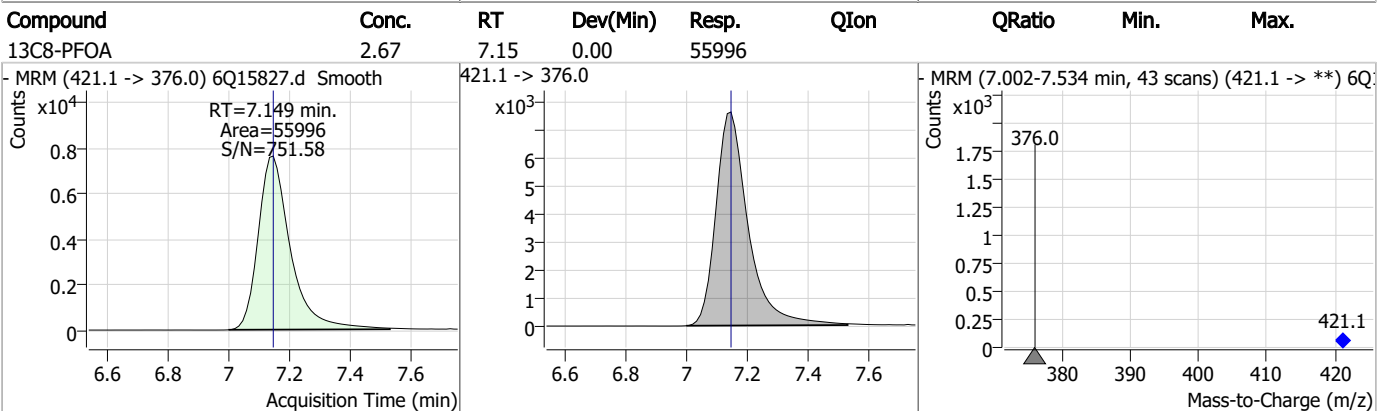
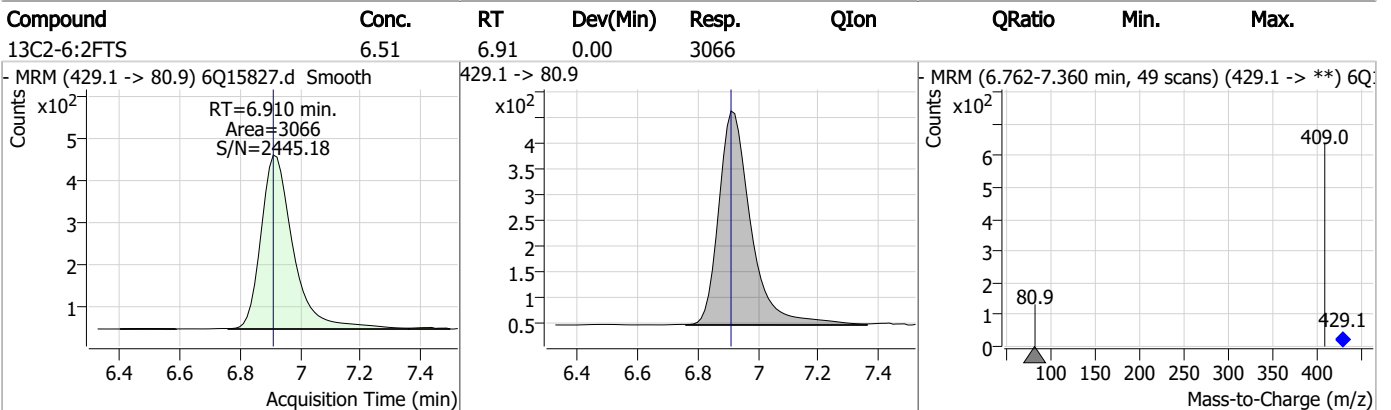
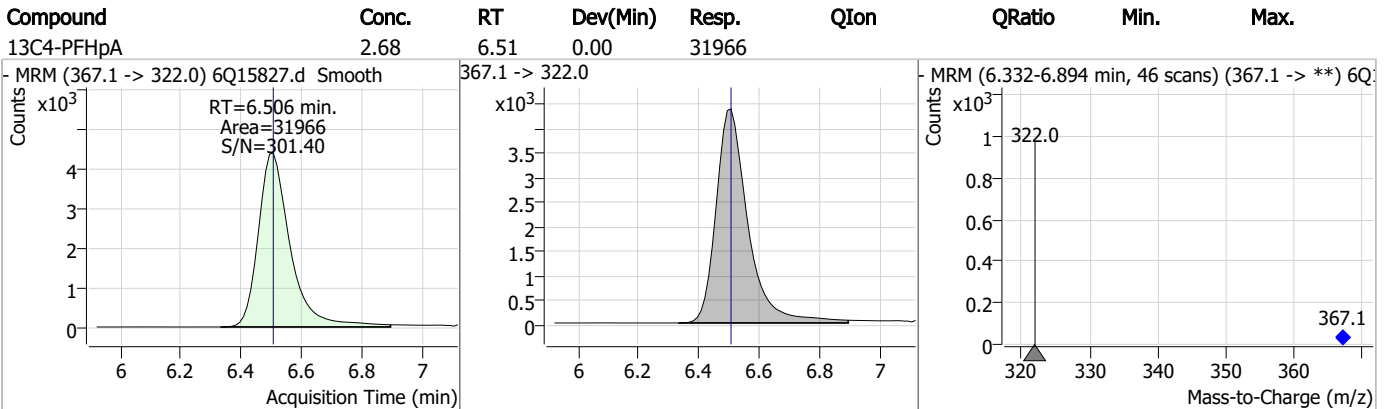
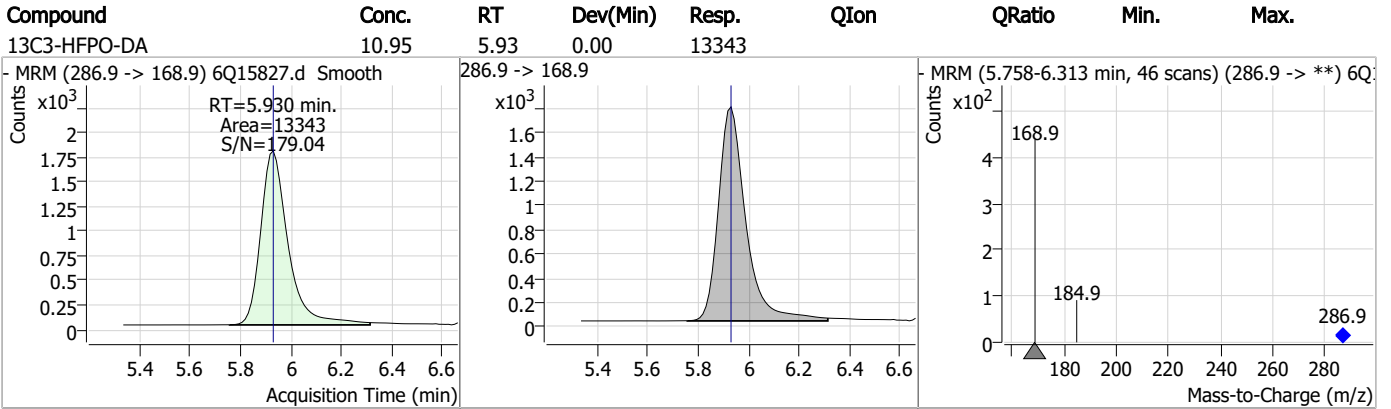
Perfluorinated Compounds by LC/MS/MS



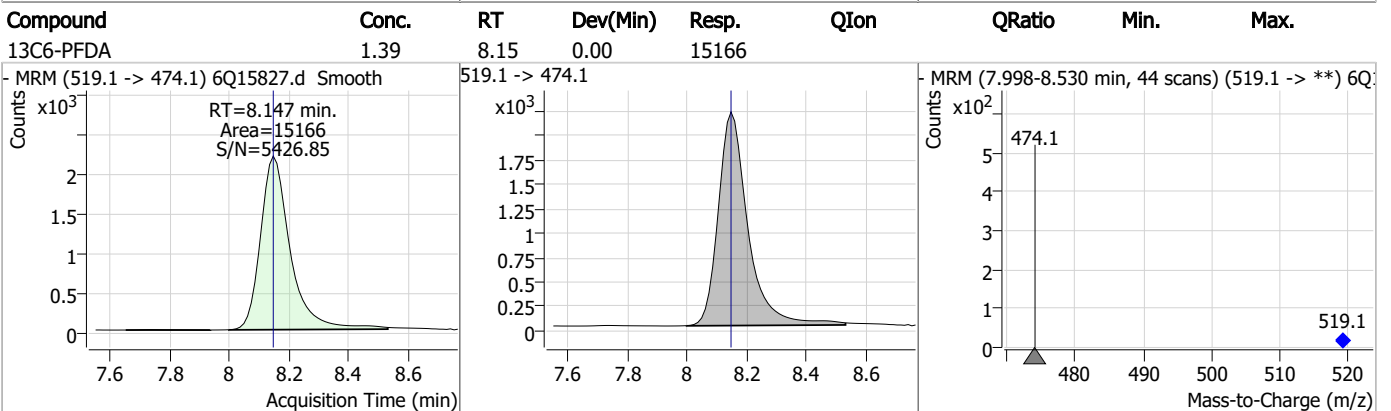
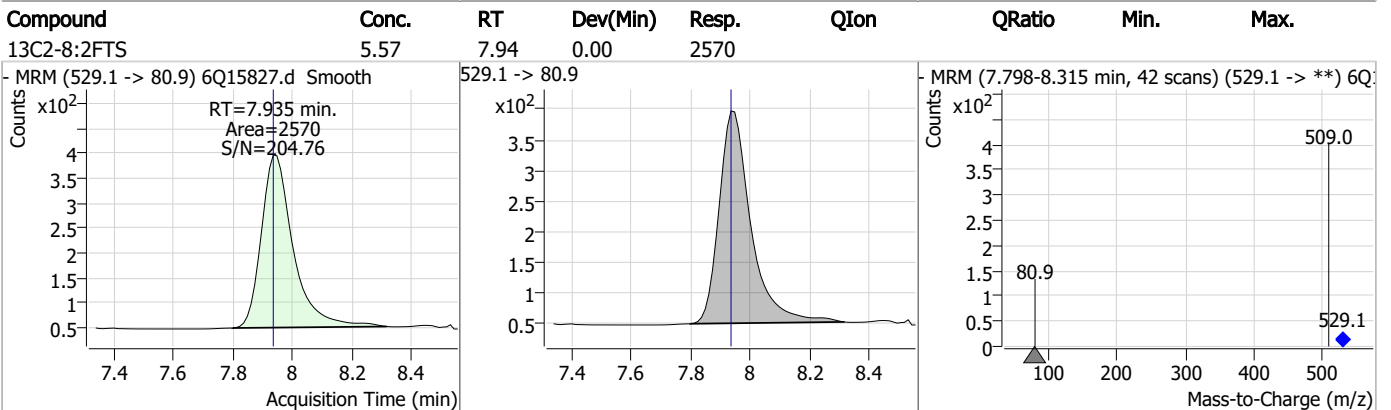
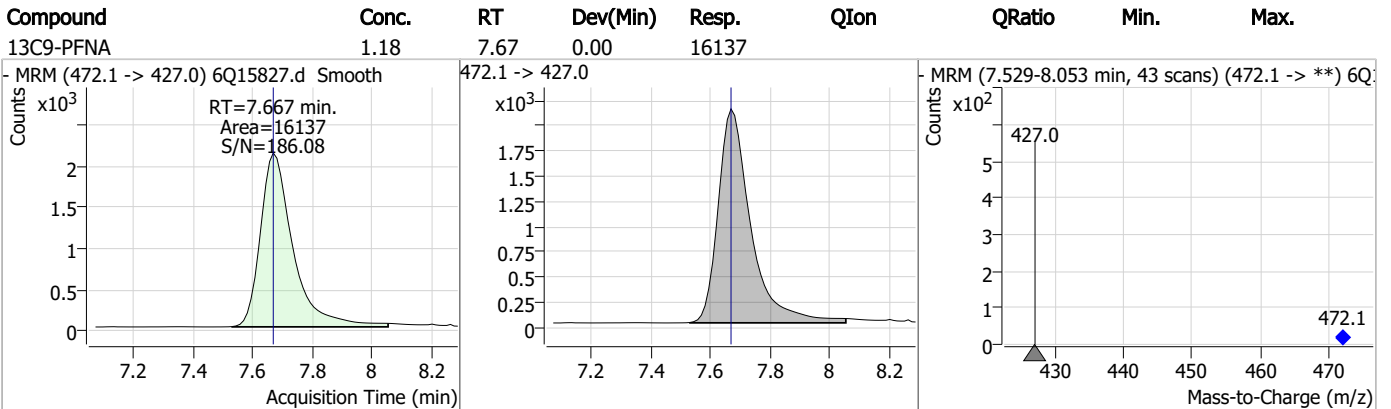
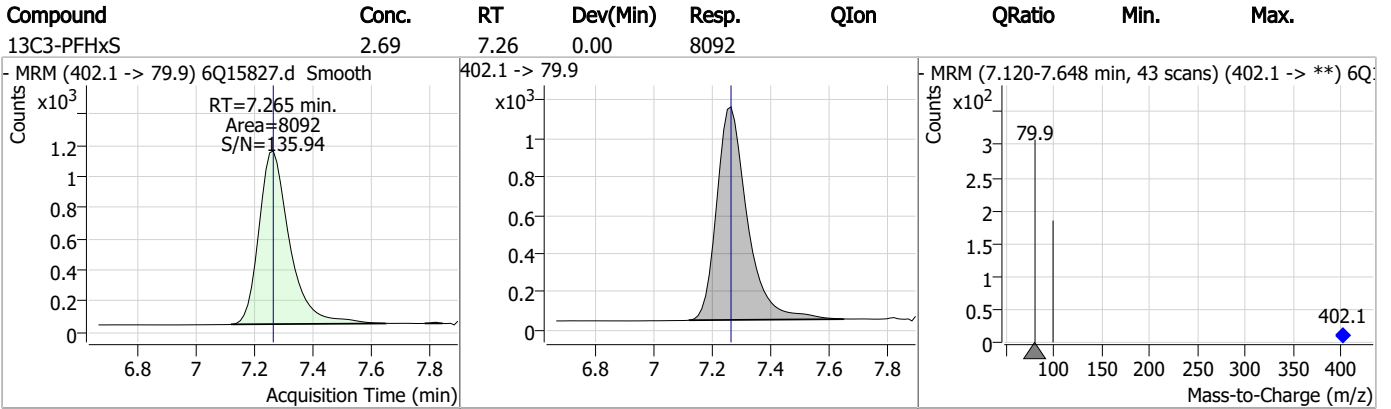
7.1.3

7

Perfluorinated Compounds by LC/MS/MS



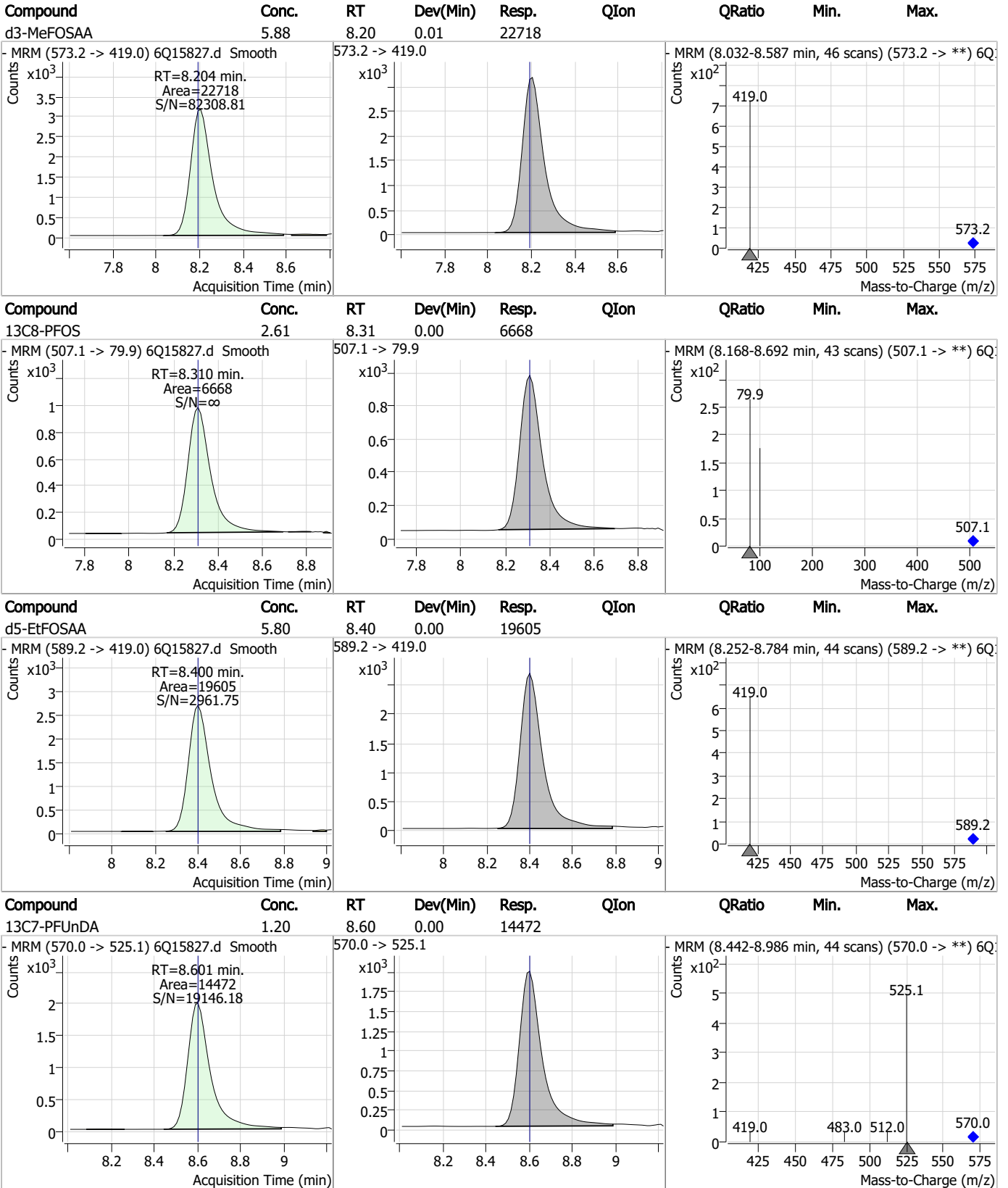
Perfluorinated Compounds by LC/MS/MS



7.1.3

7

Perfluorinated Compounds by LC/MS/MS



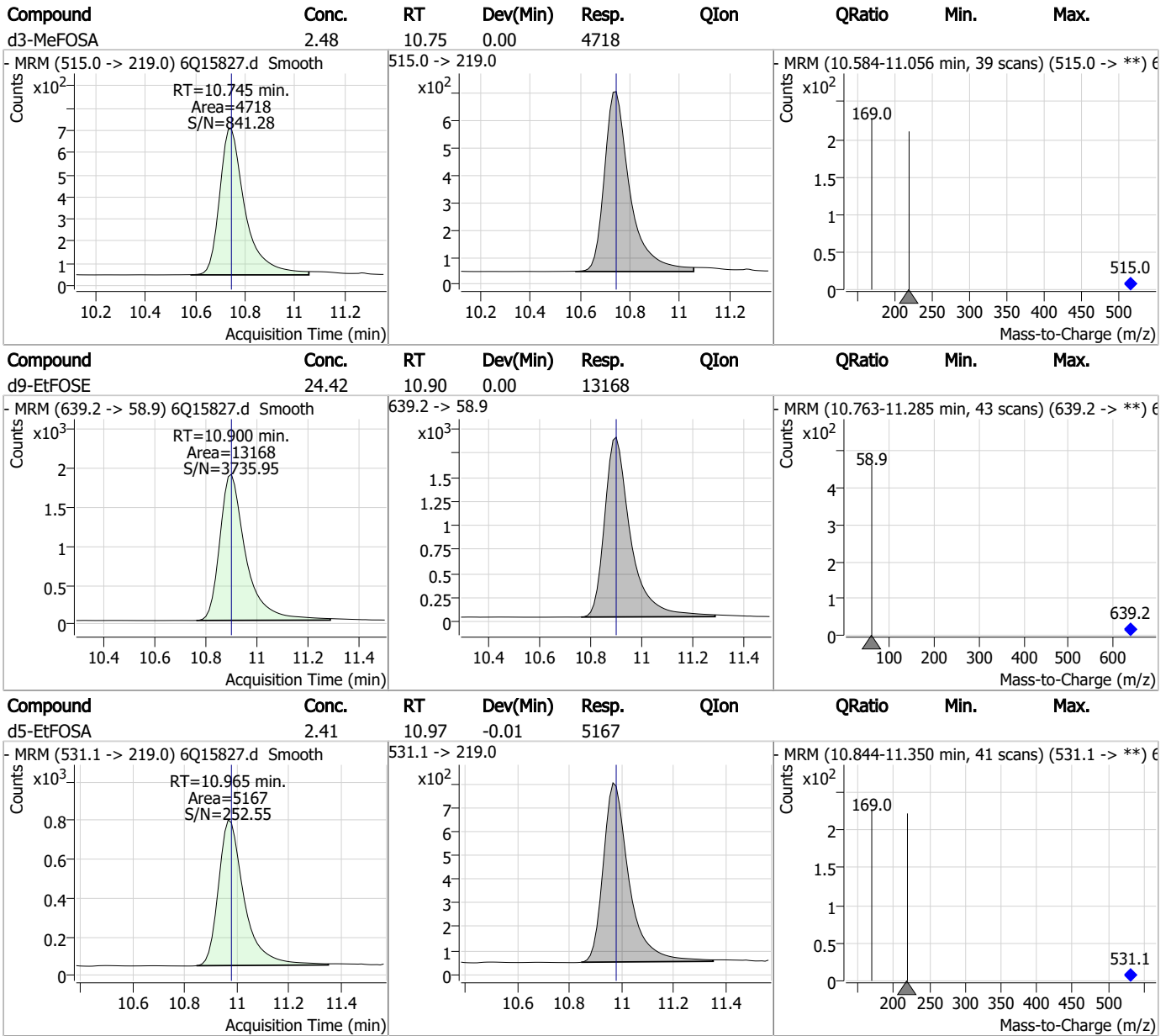
7.1.3

7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.11	9.02	-0.01	16962				
13C8-FOSA	2.67	9.63	0.00	15371				
13C2-PFTeDA	1.05	9.75	0.00	9237				
d7-MeFOSE	23.06	10.65	0.00	18969				

Perfluorinated Compounds by LC/MS/MS



7.1.3

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15829.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 11:36:58 PM
 Sample Name : FC3763-4
 Vial : P3-D2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	79245	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	37724	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	33997	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	35598	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	61650	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	17750	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14843	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	15458	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	17726	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	9049	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	14919	2.50 µg/L	0.012
M3-PFBS	5.496	302.1 -> 79.9	13780	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	8590	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7268	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2395	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2982	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3111	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	21954	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	14127	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	19192	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	20426	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	13906	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5483	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	4736	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8067	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	29532	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5513	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	63014	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	19306	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	17750	1.25 µg/L	0.012
13C2-PFHxA	5.553	315.1 -> 270.0	30204	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2395	6.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 133.4%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2982	6.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.3%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3111	6.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 130.2%		
13C2-PFDoDA	9.031	615.1 -> 570.0	17726	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9049	1.00 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.4%		
13C3-PFBS	5.496	302.1 -> 79.9	13780	3.07 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 122.7%		
13C3-PFHxS	7.265	402.1 -> 79.9	8590	2.76 µg/L	0.000

7.14
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C4-PFBA	2.963	216.8 -> 171.9	79245	11.61 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.1%	
13C4-PFHpA	6.506	367.1 -> 322.0	35598	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C5-PFHxA	5.553	318.0 -> 273.0	33997	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C5-PFPeA	4.359	268.3 -> 223.0	37724	5.56 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C6-PFDA	8.147	519.1 -> 474.1	14843	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C7-PFUnDA	8.601	570.0 -> 525.1	15458	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-FOSA	9.643	506.1 -> 77.8	14919	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-PFOA	7.149	421.1 -> 376.0	61650	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 118.0%	
13C8-PFOS	8.310	507.1 -> 79.9	7268	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C9-PFNA	7.667	472.1 -> 427.0	17750	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
d3-MeFOSAA	8.204	573.2 -> 419.0	21954	5.52 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	14127	10.87 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
d3-MeFOSA	10.745	515.0 -> 219.0	4736	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSAA	8.400	589.2 -> 419.0	19192	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
d7-MeFOSE	10.653	623.2 -> 58.9	20426	24.08 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d9-EtFOSE	10.900	639.2 -> 58.9	13906	25.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSA	10.965	531.1 -> 219.0	5483	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	

7.14
7

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	6.923	427.1 -> 407.0 427.1 -> 80.9	691 133	0.17 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	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDODA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.	
		363.1 -> 319.0			
PFHpS	-	363.1 -> 169.0	-	N.D.	
		449.0 -> 79.9			
PFHxA	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
PFPeS	-	349.1 -> 79.9	-	N.D.	
		349.1 -> 98.9			
PFTeDA	-	713.1 -> 669.0	-	N.D.	
		713.1 -> 168.9			
PFTrDA	-	663.0 -> 619.0	-	N.D.	
		663.0 -> 168.9			
PFUnDA	-	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

7.1.4
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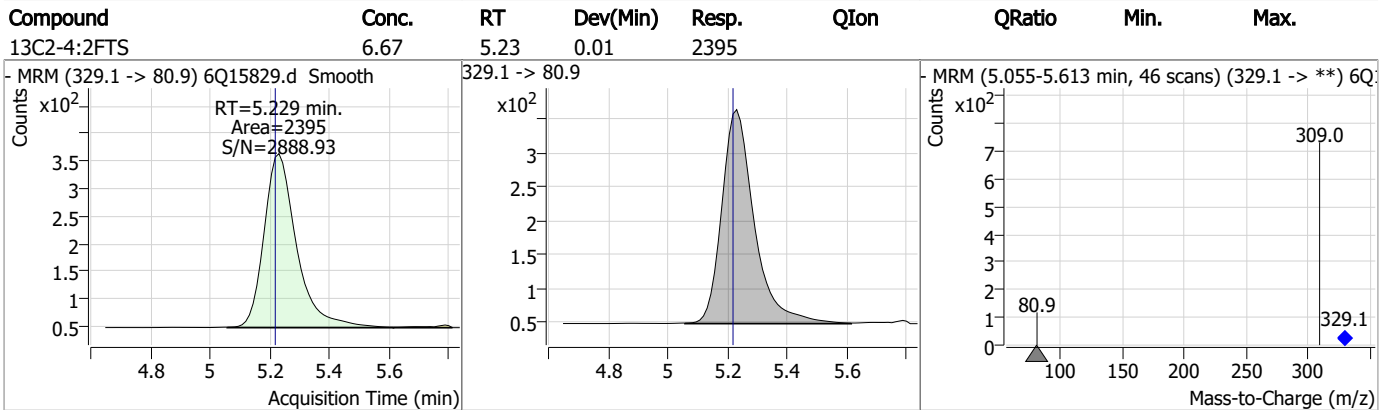
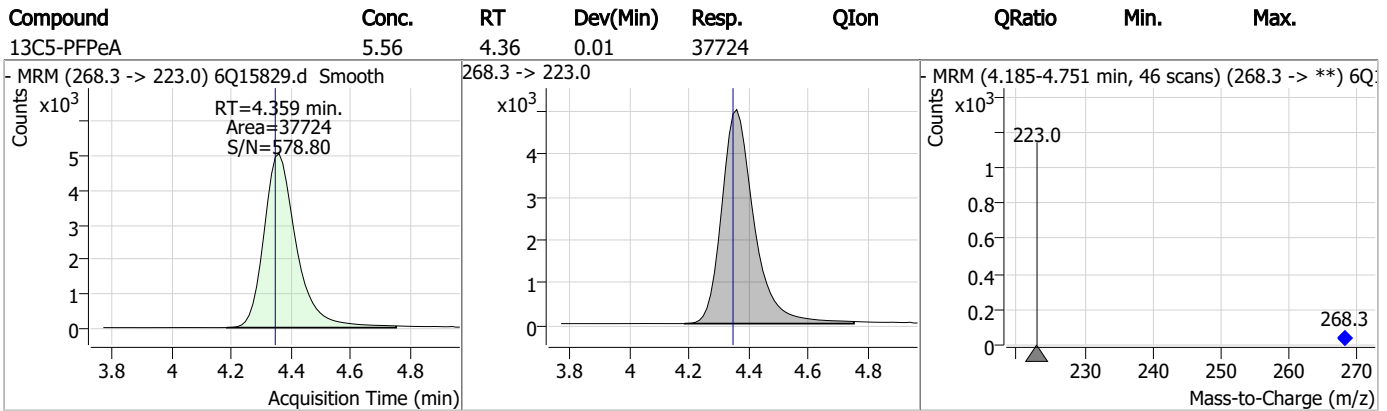
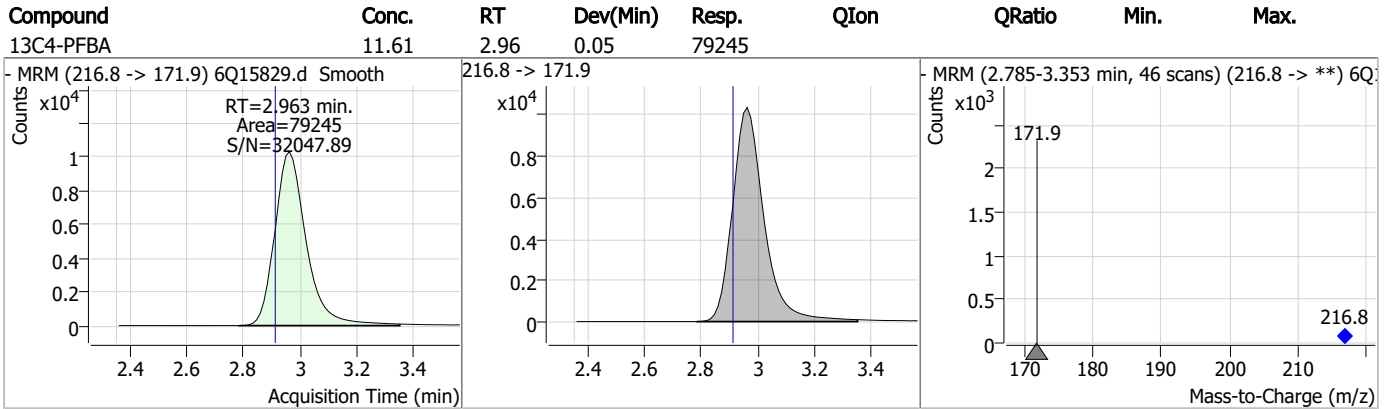
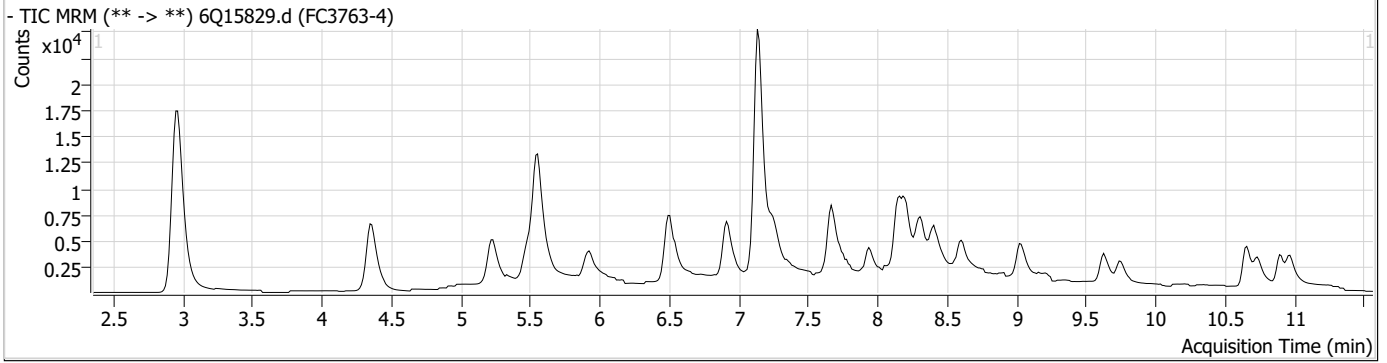
Perfluorinated Compounds by LC/MS/MS

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



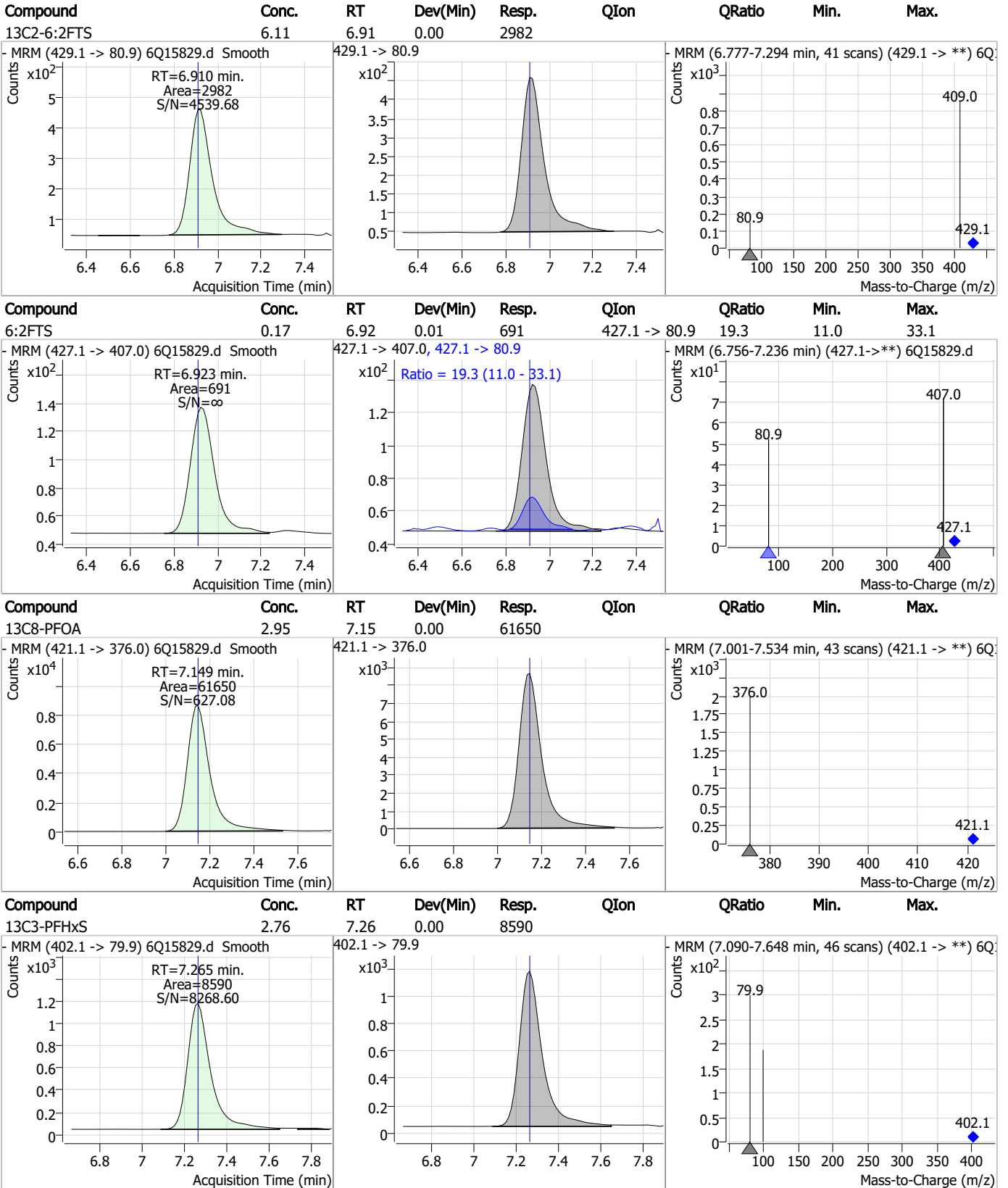
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.07	5.50	0.01	13780				
13C5-PFHxA	2.72	5.55	0.00	33997				
13C3-HFPO-DA	10.87	5.93	0.00	14127				
13C4-PFHpA	2.79	6.51	0.00	35598				

7.1.4

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Perfluorinated Compounds by LC/MS/MS



7.1.4

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Perfluorinated Compounds by LC/MS/MS

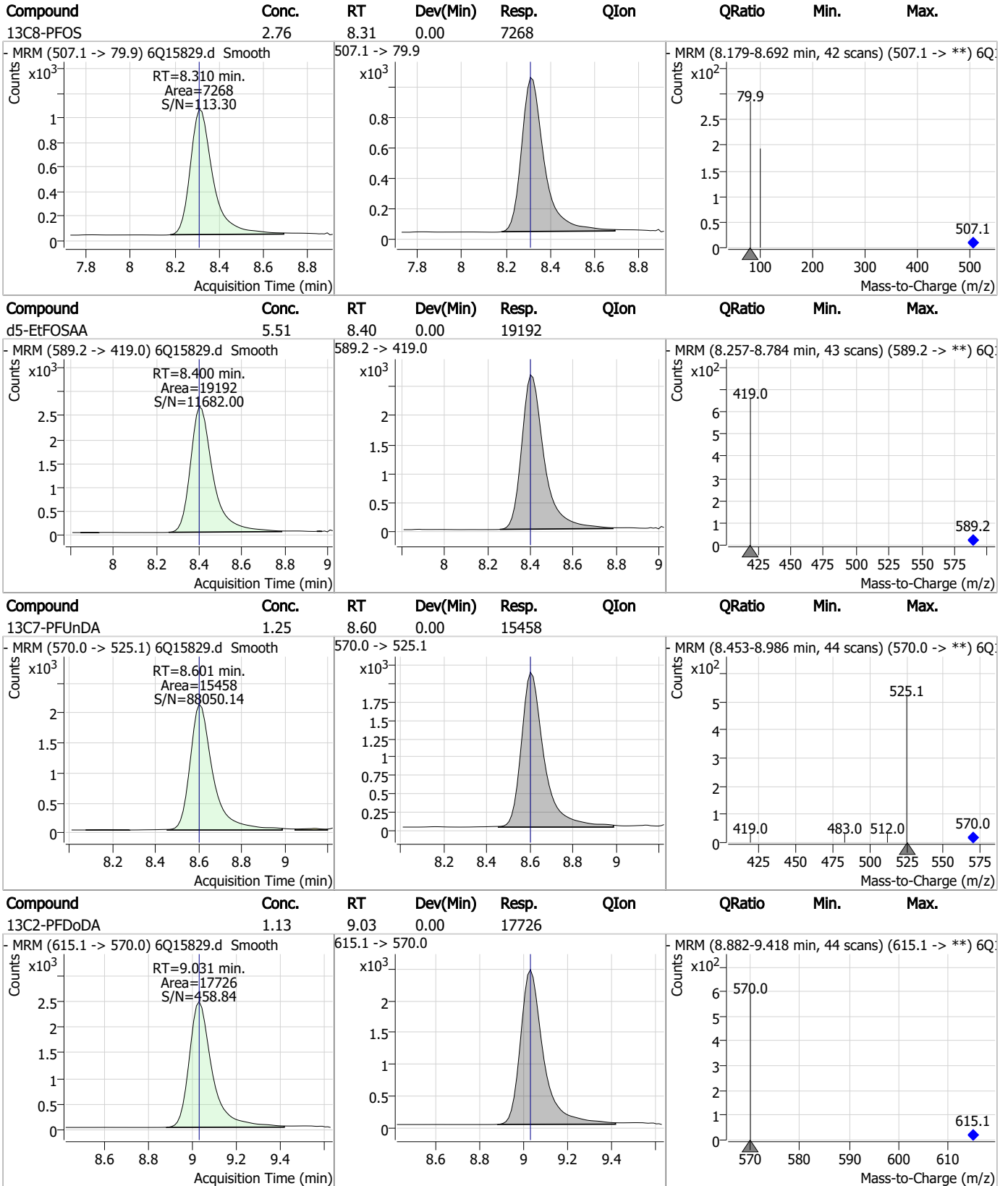
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.67	0.00	17750				
13C2-8:2FTS	6.51	7.94	0.00	3111				
13C6-PFDA	1.33	8.15	0.00	14843				
d3-MeFOSAA	5.52	8.20	0.01	21954				

7.1.4

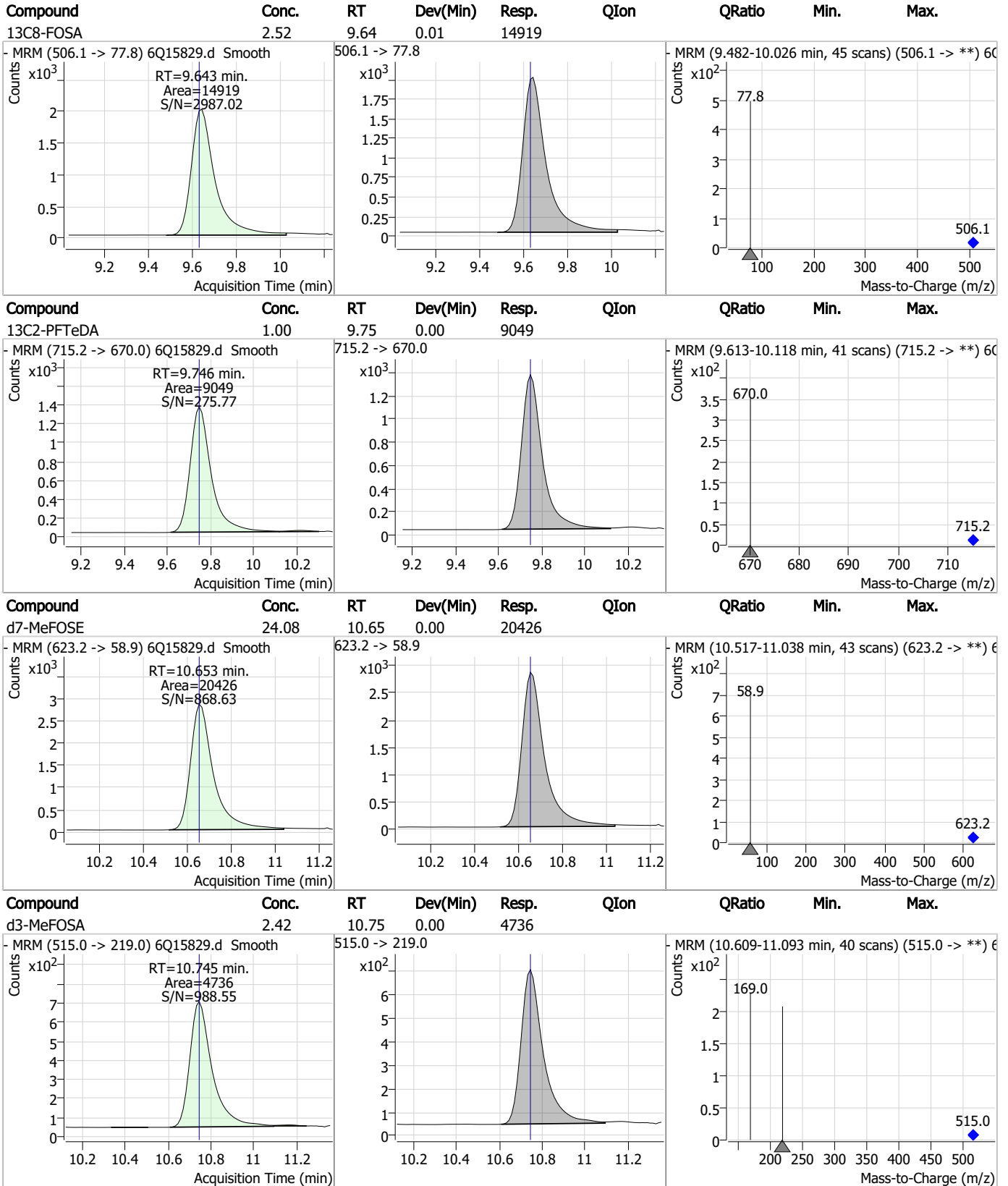
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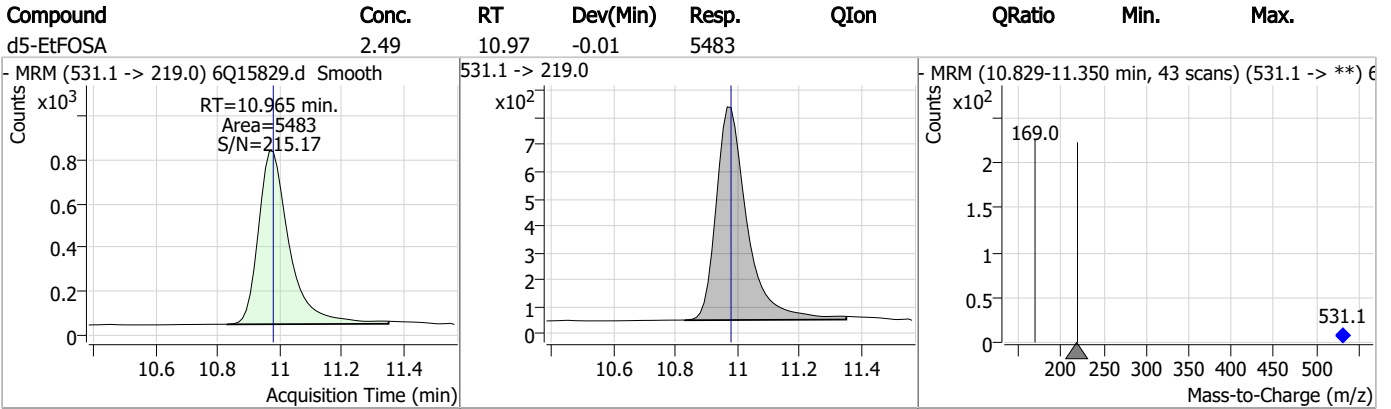
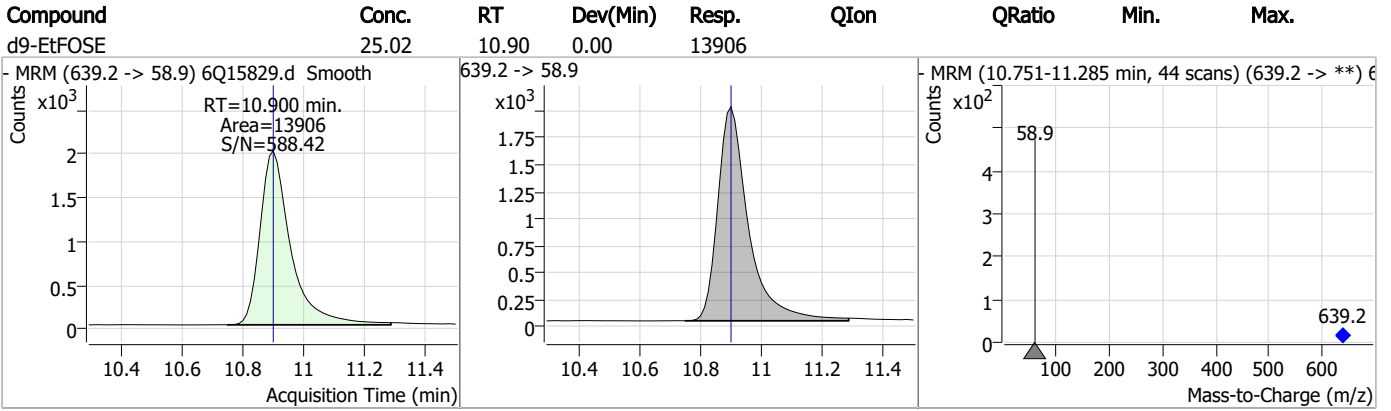
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.4

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15830.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 11:50:56 PM
 Sample Name : FC3763-5
 Vial : P3-D3
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	75075	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35099	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	31755	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	33143	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	55741	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	18235	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	13514	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	14235	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	16717	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	9788	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	15714	2.50 µg/L	0.012
M3-PFBS	5.483	302.1 -> 79.9	12147	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8474	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	6923	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2159	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	2758	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2963	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22951	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	13622	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	19379	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	18866	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	12896	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5328	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	4632	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8473	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	29557	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5143	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	62534	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	19490	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	16276	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	27500	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2159	6.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.9%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2758	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.2%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2963	6.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.9%		
13C2-PFDoDA	9.031	615.1 -> 570.0	16717	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.4%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9788	1.08 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.1%		
13C3-PFBS	5.483	302.1 -> 79.9	12147	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C3-PFHxS	7.252	402.1 -> 79.9	8474	2.92 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 = 116.6%	
13C4-PFBA	2.963	216.8 -> 171.9	75075	10.99 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C4-PFHpA	6.493	367.1 -> 322.0	33143	2.86 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.2%	
13C5-PFHxA	5.553	318.0 -> 273.0	31755	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.5%	
13C5-PFPeA	4.359	268.3 -> 223.0	35099	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.6%	
13C6-PFDA	8.147	519.1 -> 474.1	13514	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C7-PFUnDA	8.601	570.0 -> 525.1	14235	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C8-FOSA	9.643	506.1 -> 77.8	15714	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-PFOA	7.137	421.1 -> 376.0	55741	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-PFOS	8.310	507.1 -> 79.9	6923	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.667	472.1 -> 427.0	18235	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.5%	
d3-MeFOSAA	8.204	573.2 -> 419.0	22951	5.49 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	13622	11.51 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.1%	
d3-MeFOSA	10.745	515.0 -> 219.0	4632	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	19379	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
d7-MeFOSE	10.653	623.2 -> 58.9	18866	21.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.7%	
d9-EtFOSE	10.900	639.2 -> 58.9	12896	22.09 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	5328	2.30 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	

7.15
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Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

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

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

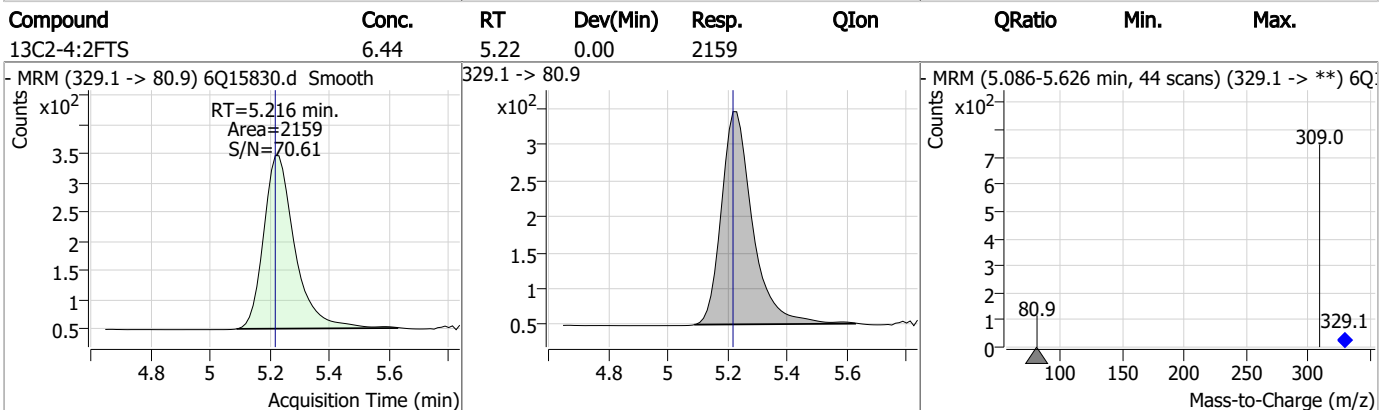
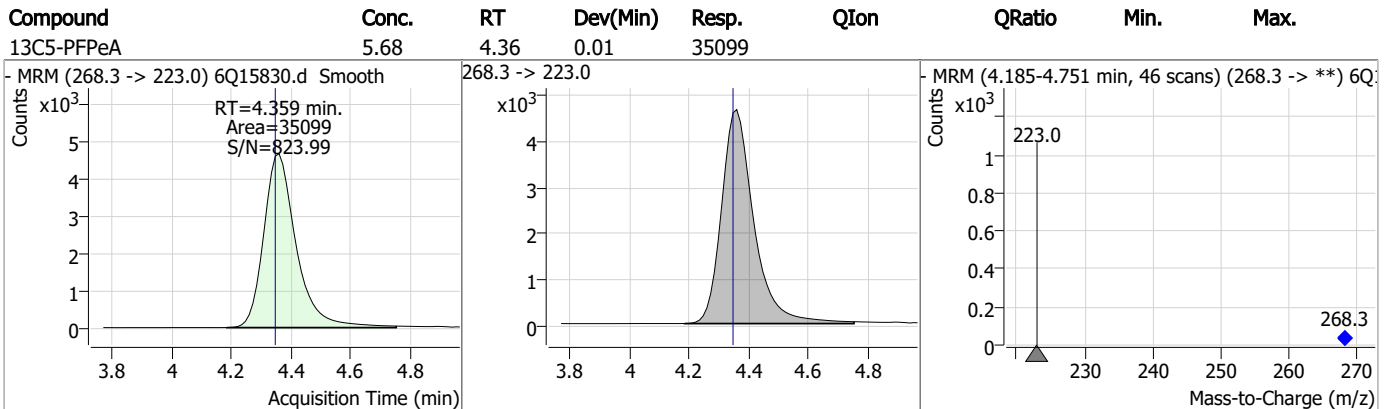
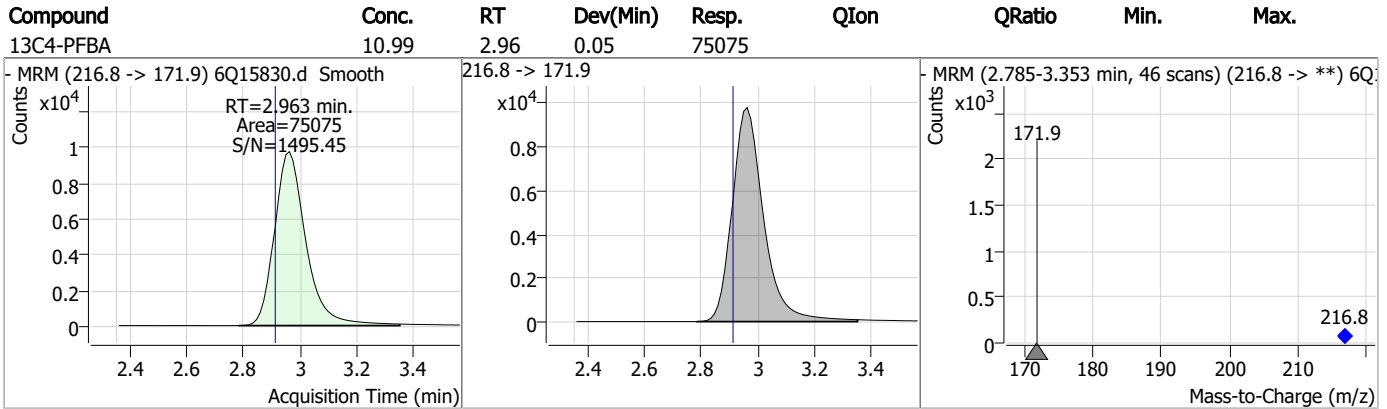
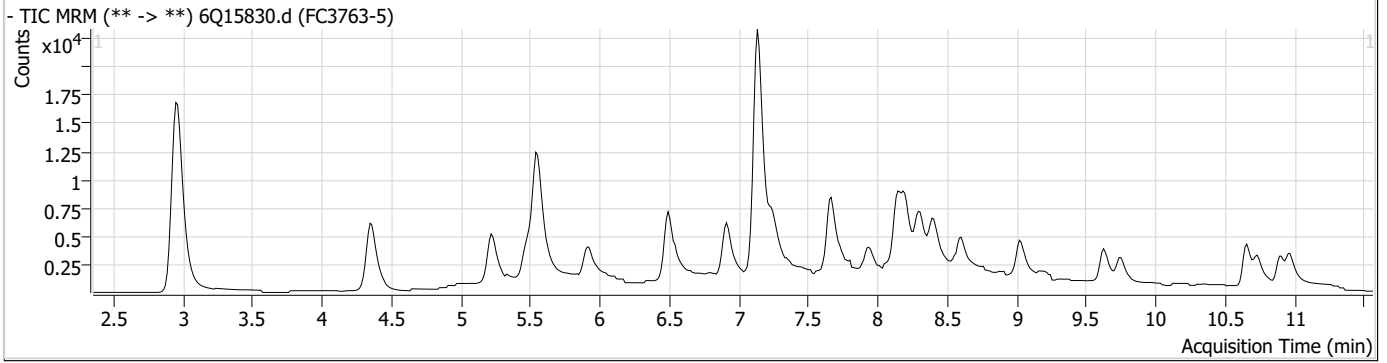
Perfluorinated Compounds by LC/MS/MS

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



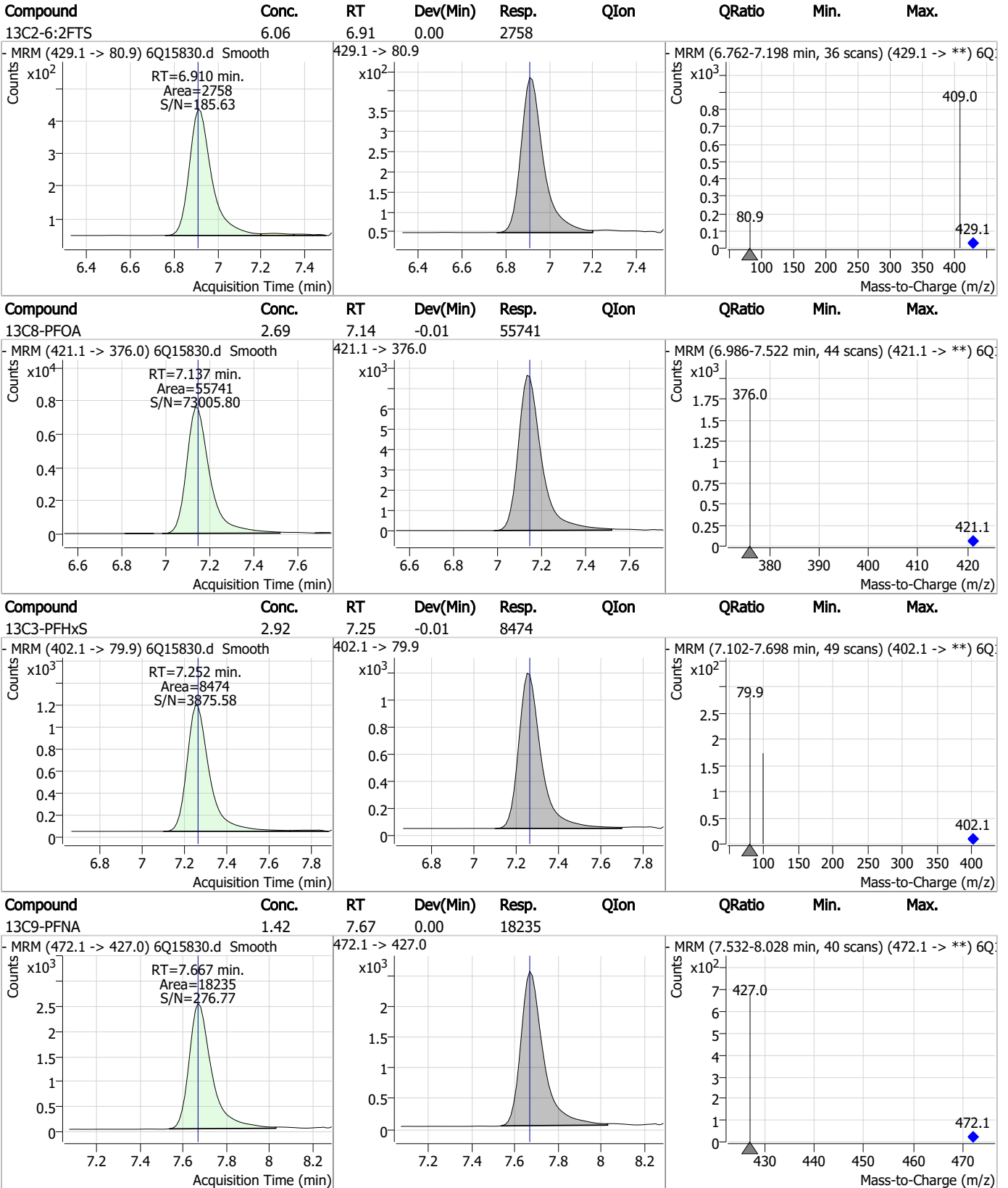
Perfluorinated Compounds by LC/MS/MS



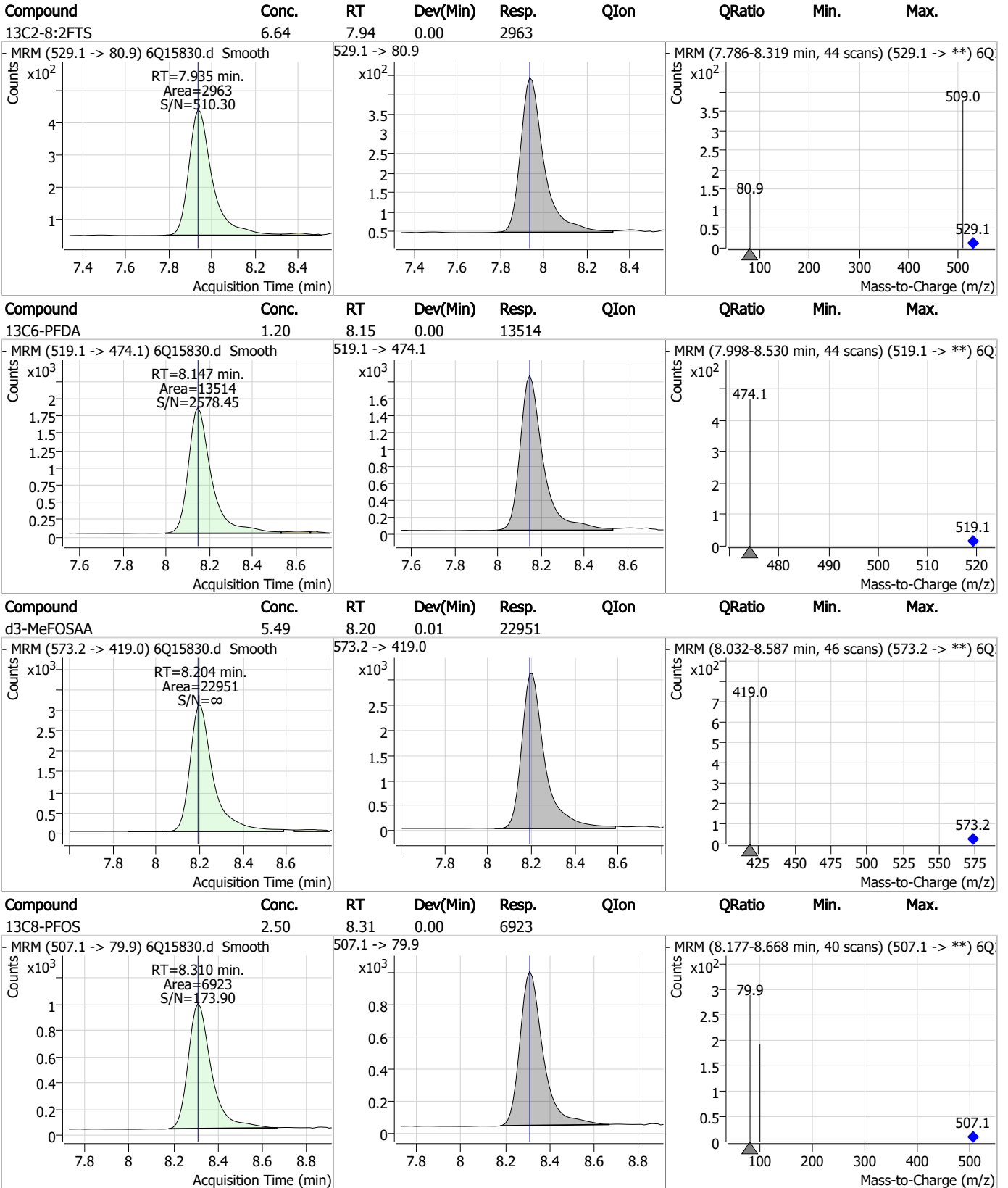
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.90	5.48	0.00	12147				
13C5-PFHxA	2.79	5.55	0.00	31755				
13C3-HFPO-DA	11.51	5.92	-0.01	13622				
13C4-PFHpA	2.86	6.49	-0.01	33143				

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.5

7

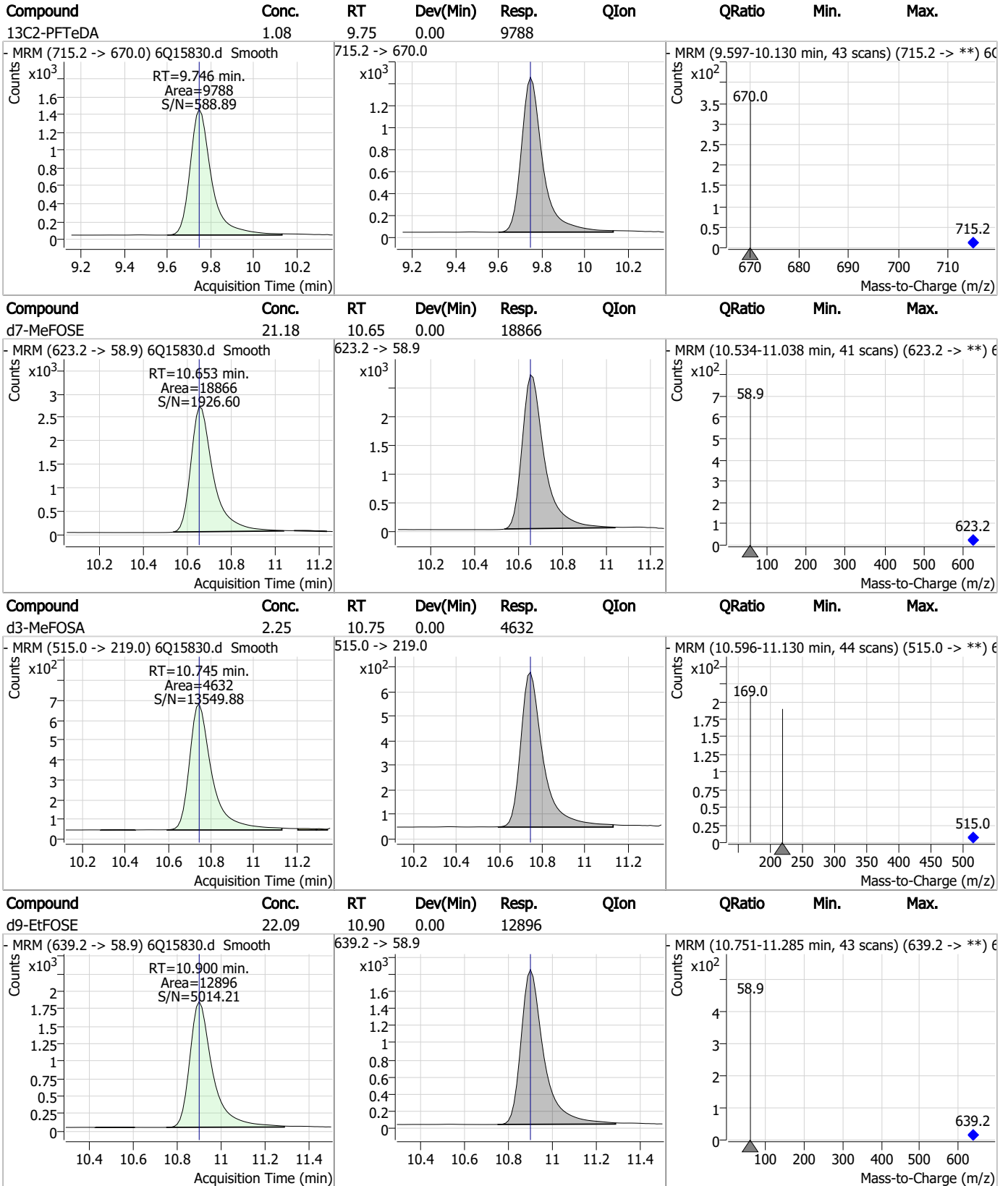
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.40	0.00	19379				
13C7-PFUnDA	1.14	8.60	0.00	14235				
13C2-PFDoDA	1.05	9.03	0.00	16717				
13C8-FOSA	2.53	9.64	0.01	15714				

7.1.5

7

Perfluorinated Compounds by LC/MS/MS

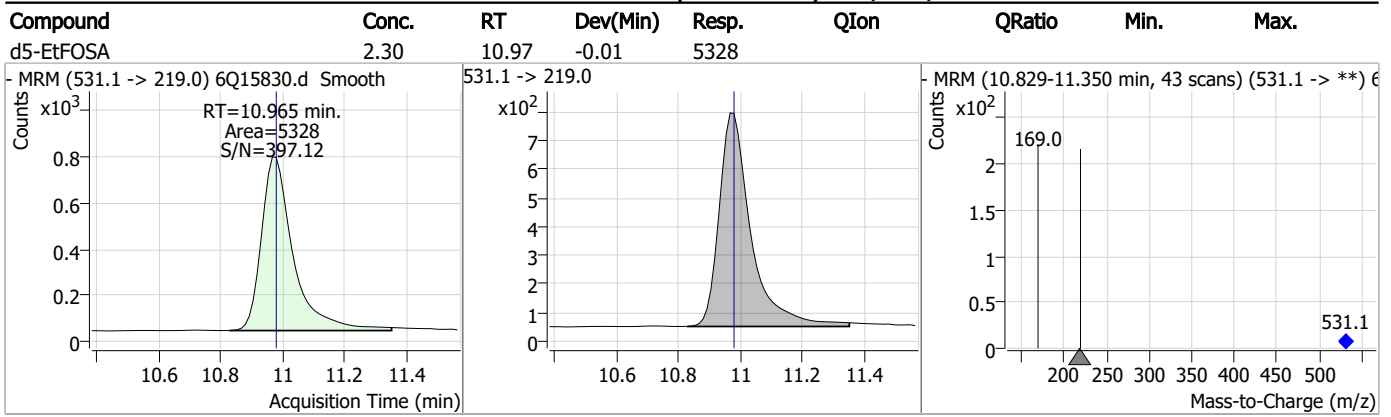


7.1.5

7



Perfluorinated Compounds by LC/MS/MS



7.1.5
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15787.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 1:39:08 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	77529	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37558	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34625	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	37153	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	62310	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	20497	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16819	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	17375	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	22139	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	13138	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17638	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13269	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	9116	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7905	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2527	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3408	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3267	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	25941	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	14766	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	22871	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25121	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16689	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6664	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5669	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9823	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	34052	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6854	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	74874	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	21034	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19667	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	34809	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2527	5.66 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3408	5.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.4%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3267	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-PFDoDA	9.031	615.1 -> 570.0	22139	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-PFTeDA	9.746	715.2 -> 670.0	13138	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C3-PFBS	5.483	302.1 -> 79.9	13269	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C3-PFHxS	7.265	402.1 -> 79.9	9116	2.35 µg/L	0.000

7.2.1
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 = 94.2%		
13C4-PFBA	2.913	216.8 -> 171.9	77529	9.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C4-PFHpA	6.506	367.1 -> 322.0	37153	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C5-PFHxA	5.553	318.0 -> 273.0	34625	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C5-PFPeA	4.347	268.3 -> 223.0	37558	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C6-PFDA	8.147	519.1 -> 474.1	16819	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.4%		
13C7-PFUnDA	8.601	570.0 -> 525.1	17375	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C8-FOSA	9.631	506.1 -> 77.8	17638	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C8-PFOA	7.149	421.1 -> 376.0	62310	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C8-PFOS	8.310	507.1 -> 79.9	7905	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C9-PFNA	7.667	472.1 -> 427.0	20497	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
d3-MeFOSAA	8.204	573.2 -> 419.0	25941	5.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	14766	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
d3-MeFOSA	10.745	515.0 -> 219.0	5669	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.0%		
d5-EtFOSAA	8.400	589.2 -> 419.0	22871	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
d7-MeFOSE	10.653	623.2 -> 58.9	25121	24.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
d9-EtFOSE	10.900	639.2 -> 58.9	16689	24.66 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
d5-EtFOSA	10.965	531.1 -> 219.0	6664	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		

7.21
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	8.401	584.2 -> 419.1	145	0.04 µg/L	m 92
		584.2 -> 526.0	82		
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	7.138	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	7.633	441.0 -> 316.9	1168 2232	0.78 µg/L	m	99
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.1
7

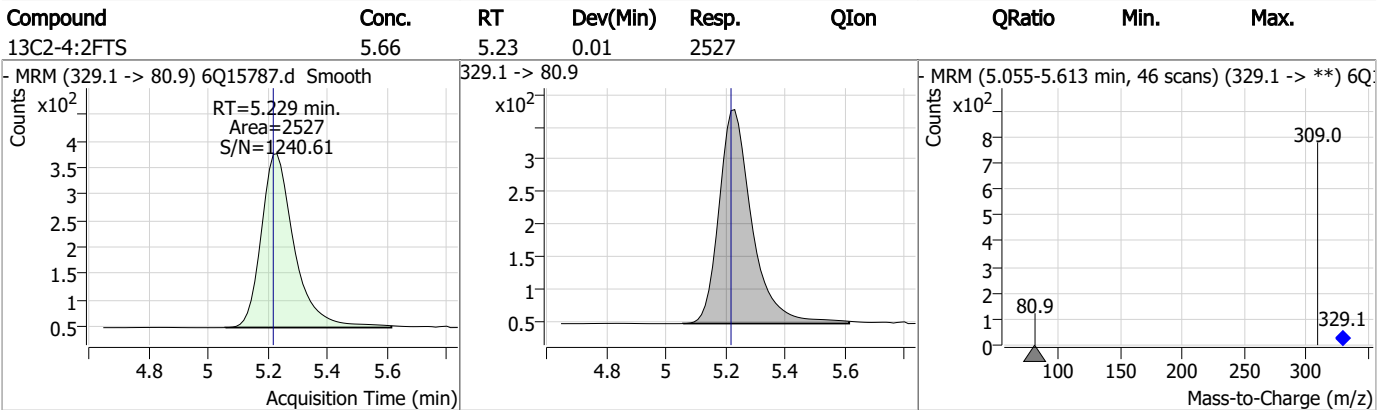
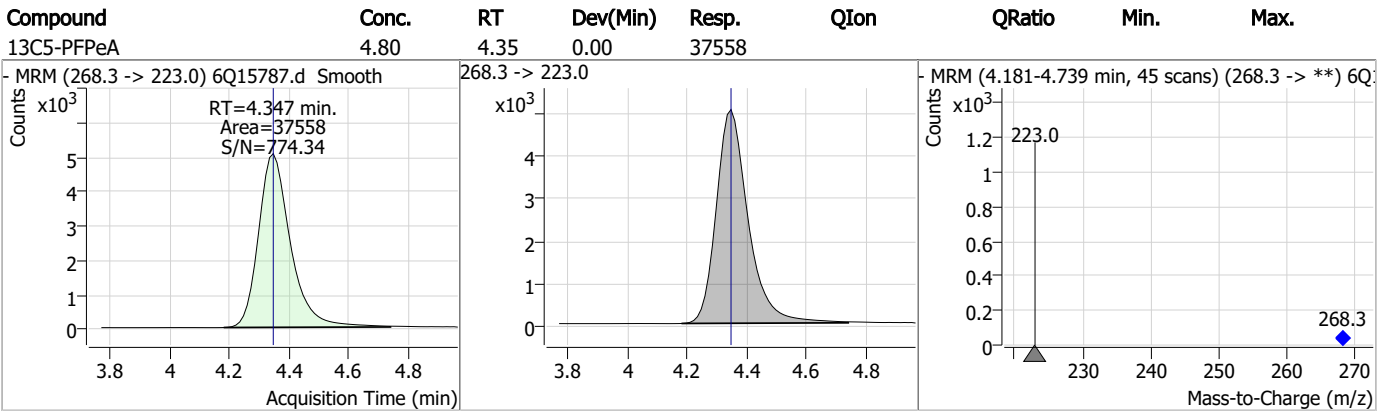
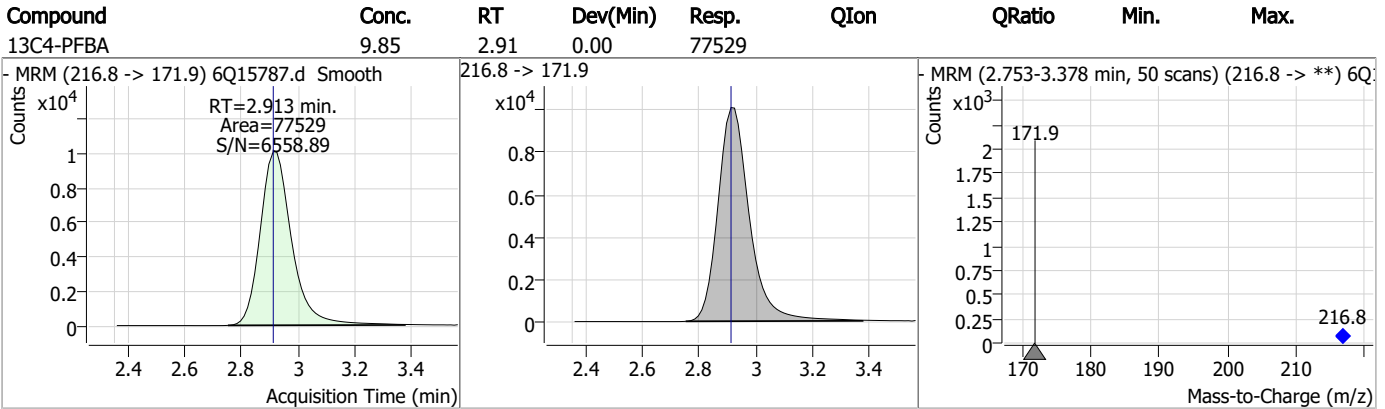
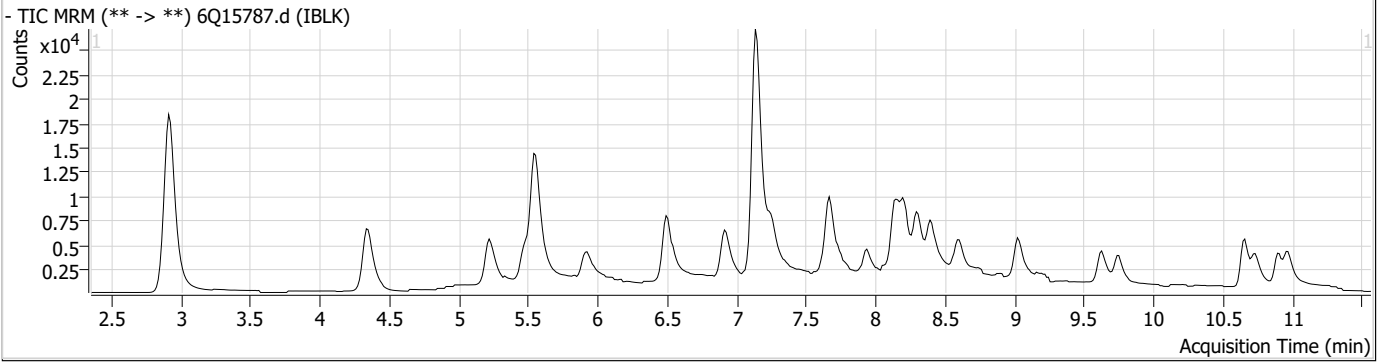
Perfluorinated Compounds by LC/MS/MS

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

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

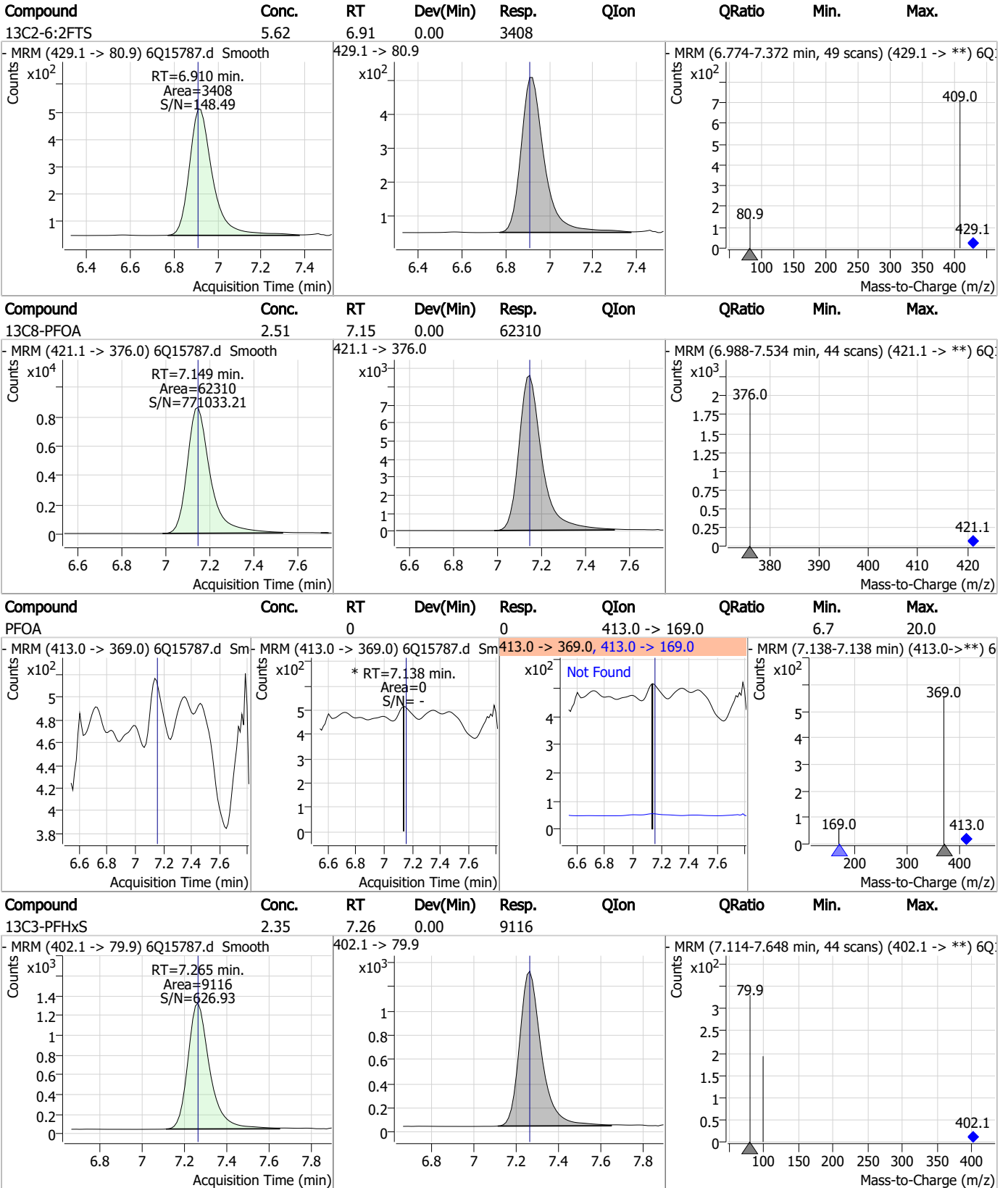
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.38	5.48	0.00	13269				
13C5-PFHxA	2.40	5.55	0.00	34625				
13C3-HFPO-DA	9.86	5.93	0.00	14766				
13C4-PFHpA	2.53	6.51	0.00	37153				

7.2.1

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Perfluorinated Compounds by LC/MS/MS



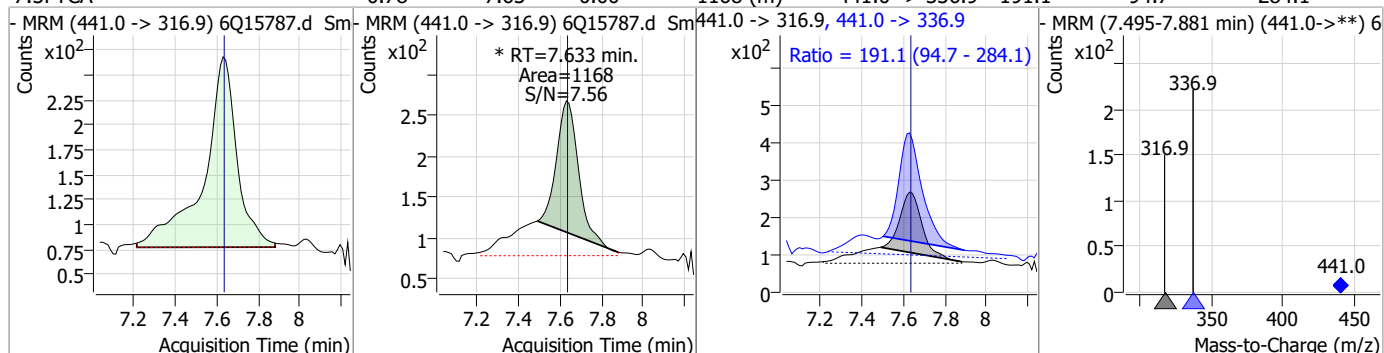
7.2.1

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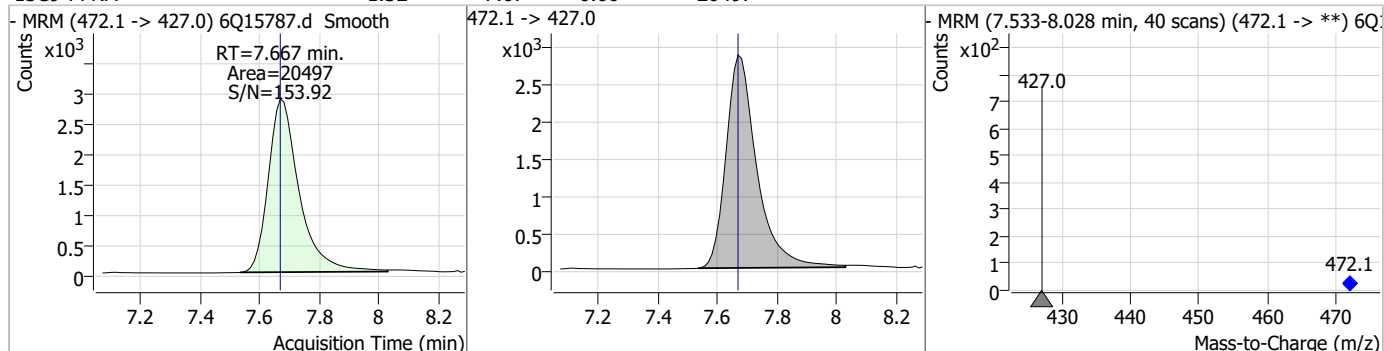


Perfluorinated Compounds by LC/MS/MS

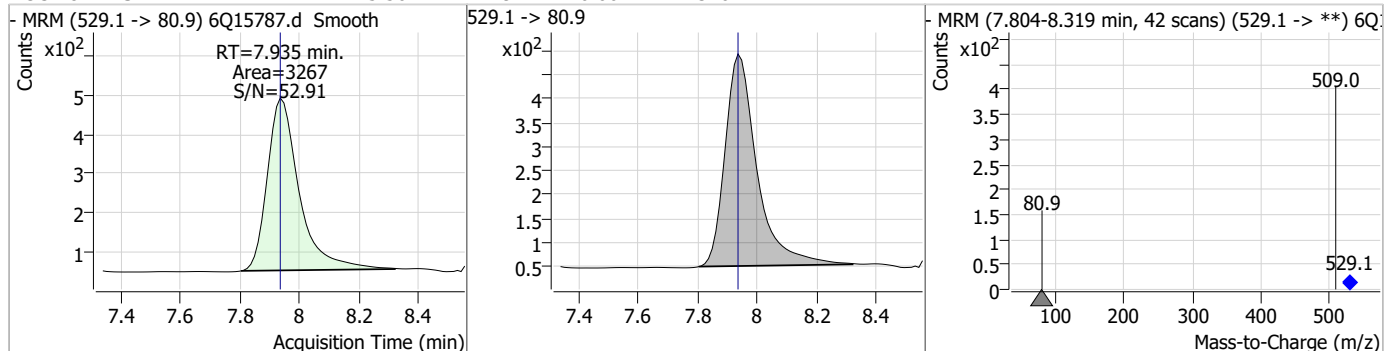
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	0.78	7.63	0.00	1168 (m)	441.0 -> 336.9	191.1	94.7	284.1



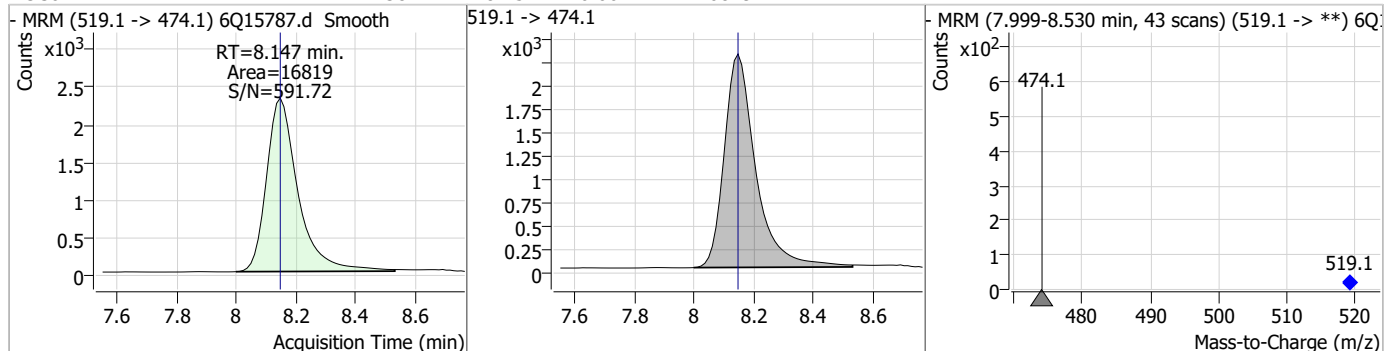
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	7.67	0.00	20497				



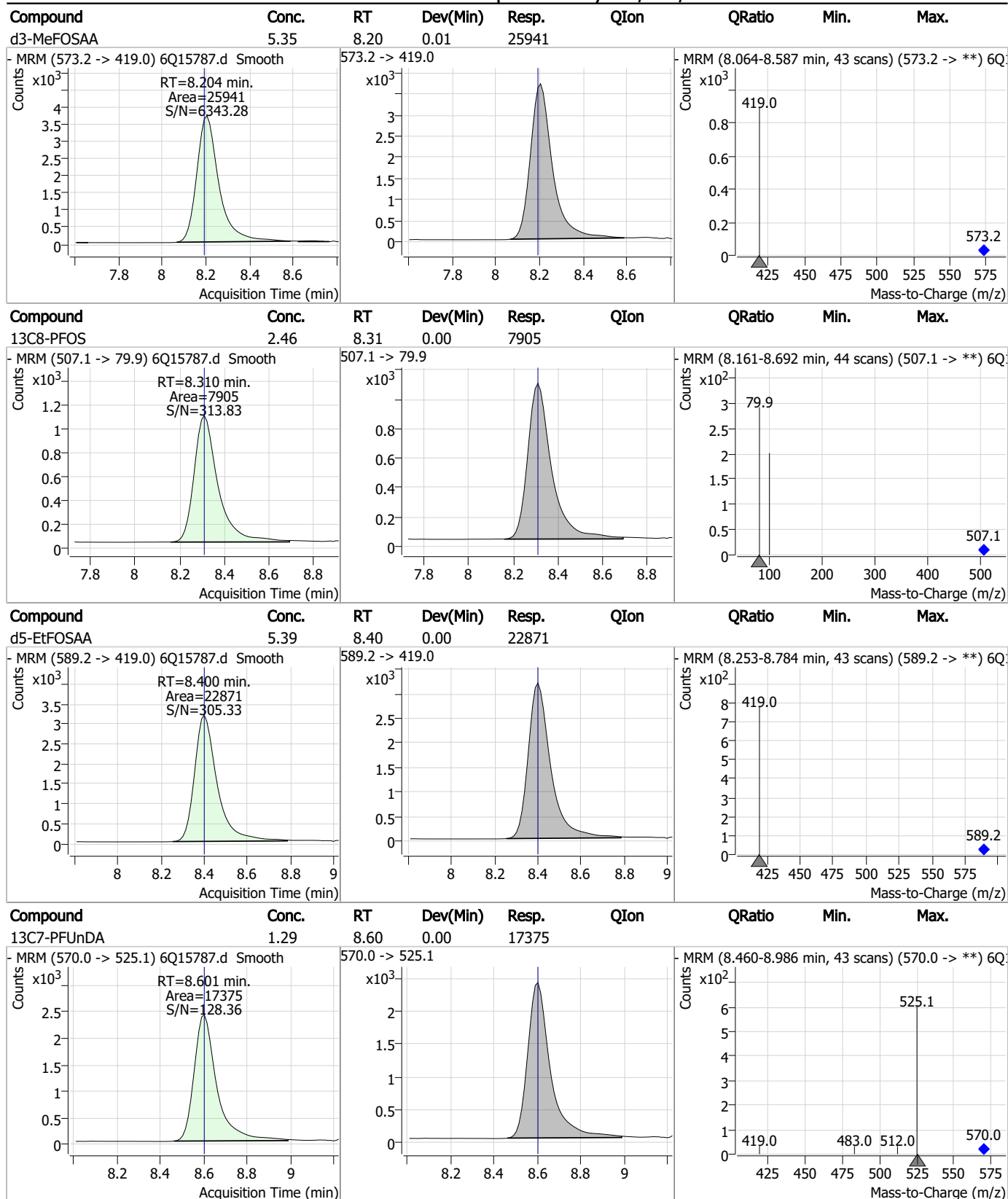
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.50	7.94	0.00	3267				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.38	8.15	0.00	16819				



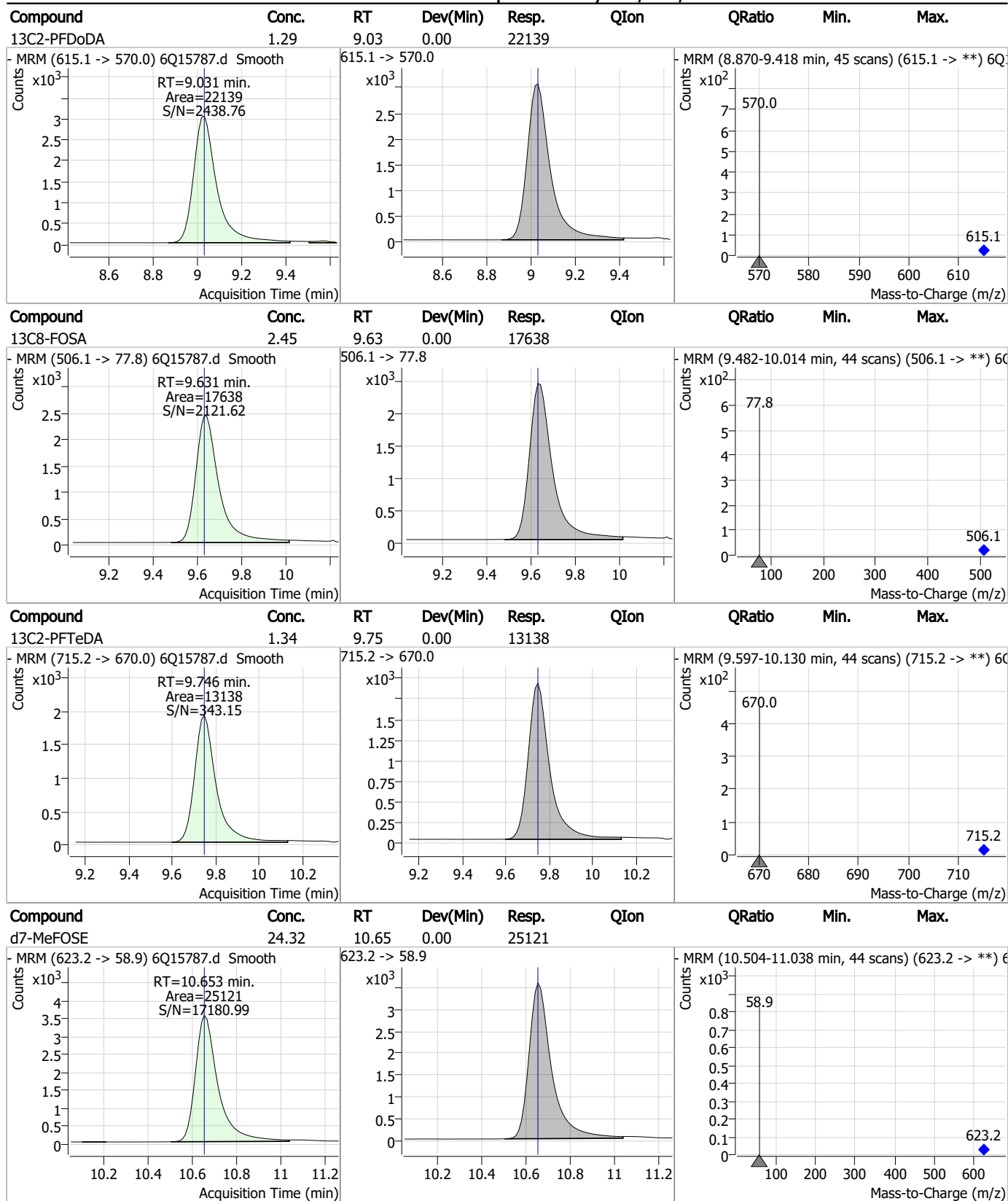
Perfluorinated Compounds by LC/MS/MS



7.2.1
7

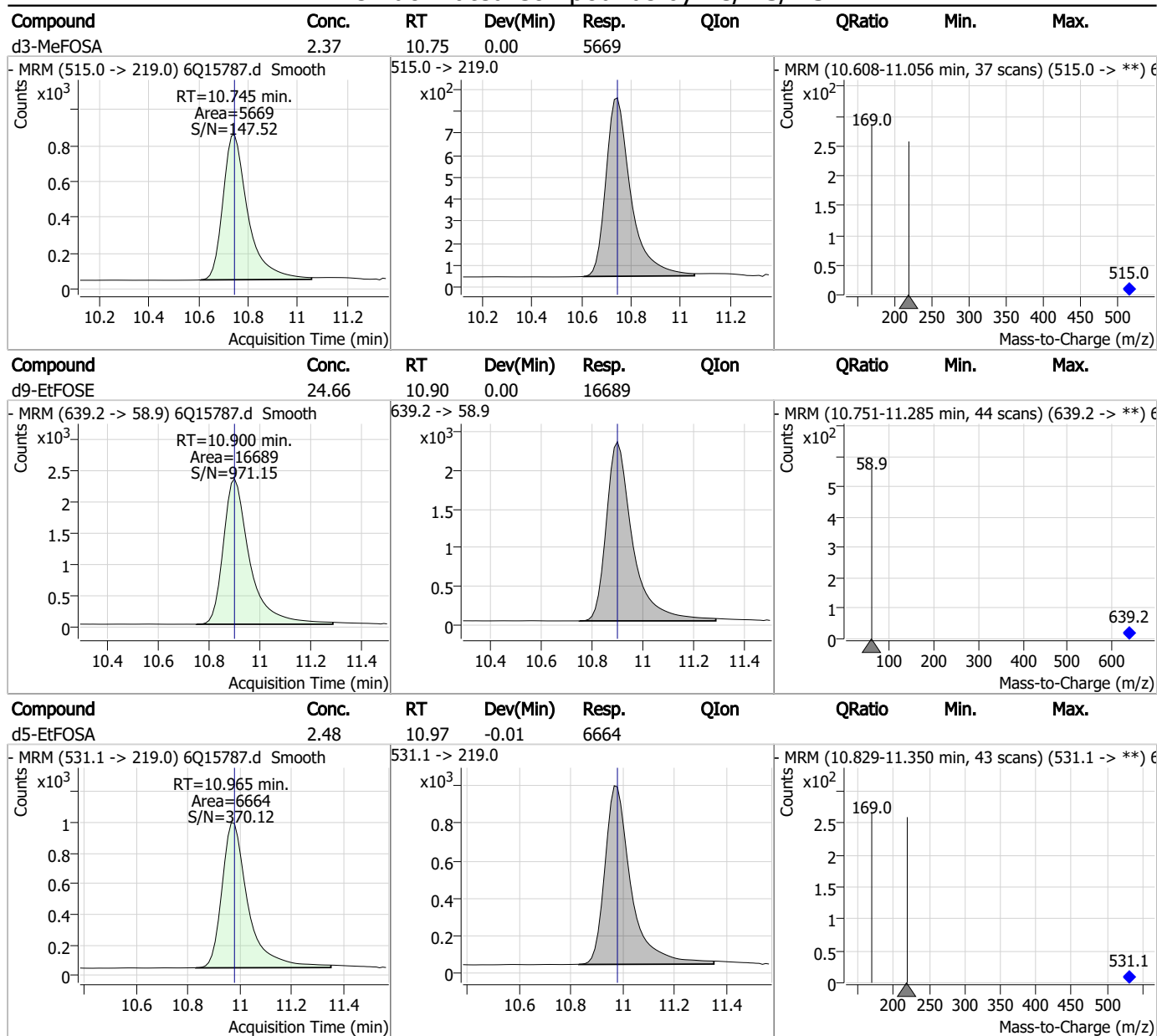


Perfluorinated Compounds by LC/MS/MS



7.2.1
7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7



Manual Integration Approval Summary

Sample Number: S6Q237-IBLK Method: EPA DRAFT 1633
Lab FileID: 6Q15787.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/30/23 13:39 Supervisor approved: 03/31/23 16:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
7:3 Fluorotelomer carboxylate	812-70-4		7.63	Poor instrument integration
EtFOSAA	2991-50-6		8.40	Poor instrument integration

7.2.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15821.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 9:45:06 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78684	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	38710	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	33630	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	37196	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	62900	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	19219	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16620	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	17884	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	22417	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	12706	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17356	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13692	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	9307	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8121	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2562	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3372	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2937	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	26815	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	14922	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	23922	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	24052	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16032	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6281	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5690	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9773	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	34091	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6100	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	75907	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	21434	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	21191	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	35193	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2562	6.45 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.0%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3372	6.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.0%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2937	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C2-PFDoDA	9.019	615.1 -> 570.0	22417	1.29 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12706	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C3-PFBS	5.483	302.1 -> 79.9	13692	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.2%		
13C3-PFHxS	7.265	402.1 -> 79.9	9307	2.70 µg/L	0.000



7.22
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C4-PFBA	2.913	216.8 -> 171.9	78684	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.506	367.1 -> 322.0	37196	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFHxA	5.553	318.0 -> 273.0	33630	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C5-PFPeA	4.347	268.3 -> 223.0	38710	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C6-PFDA	8.147	519.1 -> 474.1	16620	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C7-PFUnDA	8.601	570.0 -> 525.1	17884	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-FOSA	9.631	506.1 -> 77.8	17356	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C8-PFOA	7.149	421.1 -> 376.0	62900	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOS	8.310	507.1 -> 79.9	8121	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C9-PFNA	7.667	472.1 -> 427.0	19219	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.9%	
d3-MeFOSAA	8.204	573.2 -> 419.0	26815	5.56 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	14922	9.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSA	10.745	515.0 -> 219.0	5690	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	8.400	589.2 -> 419.0	23922	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.3%	
d7-MeFOSE	10.653	623.2 -> 58.9	24052	23.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
d9-EtFOSE	10.900	639.2 -> 58.9	16032	23.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
d5-EtFOSA	10.965	531.1 -> 219.0	6281	2.35 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	

Target Compounds

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

7.22
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.2
7

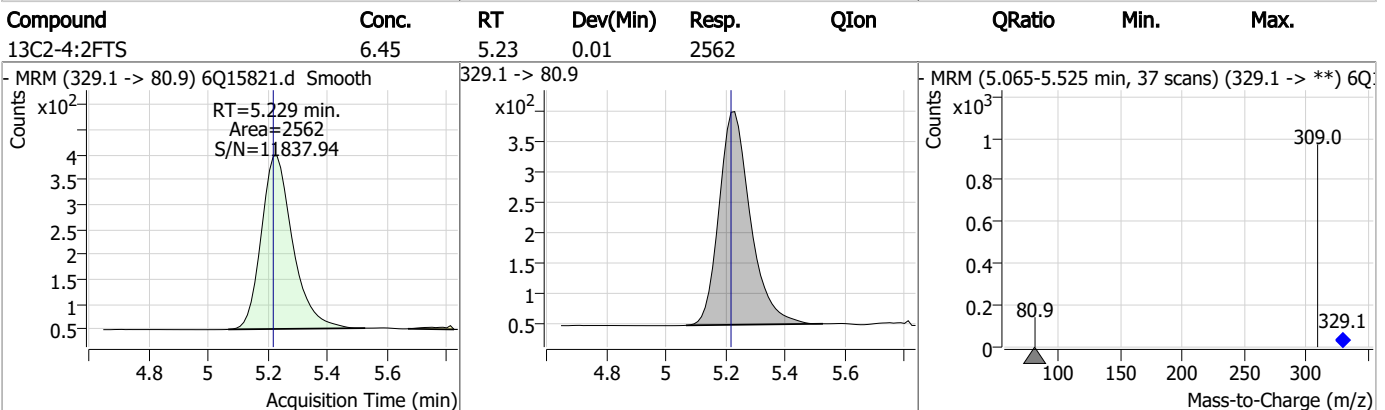
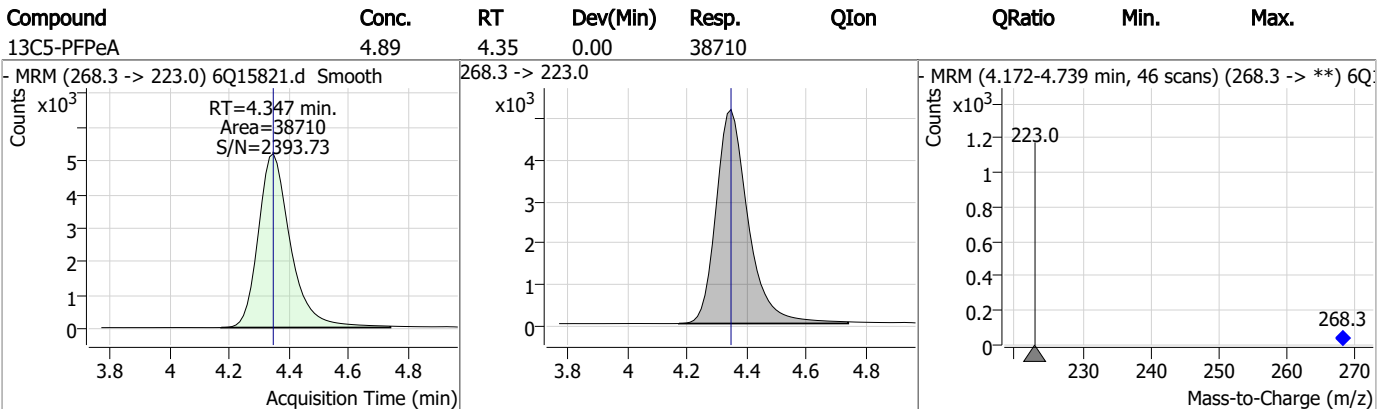
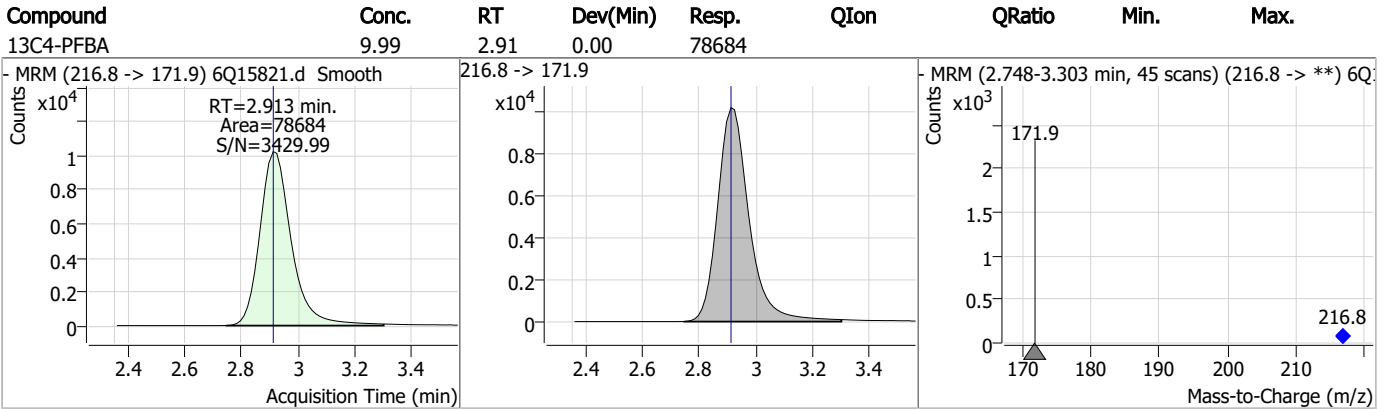
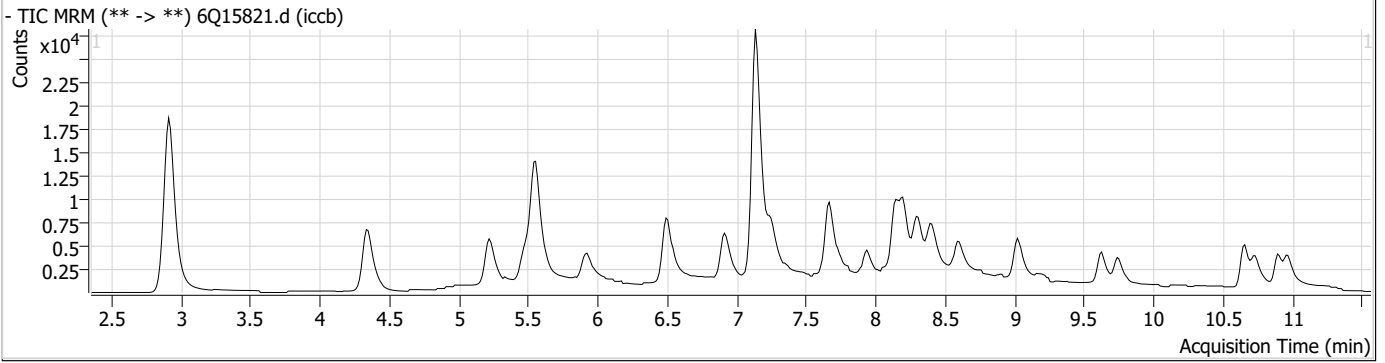
Perfluorinated Compounds by LC/MS/MS

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

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Perfluorinated Compounds by LC/MS/MS

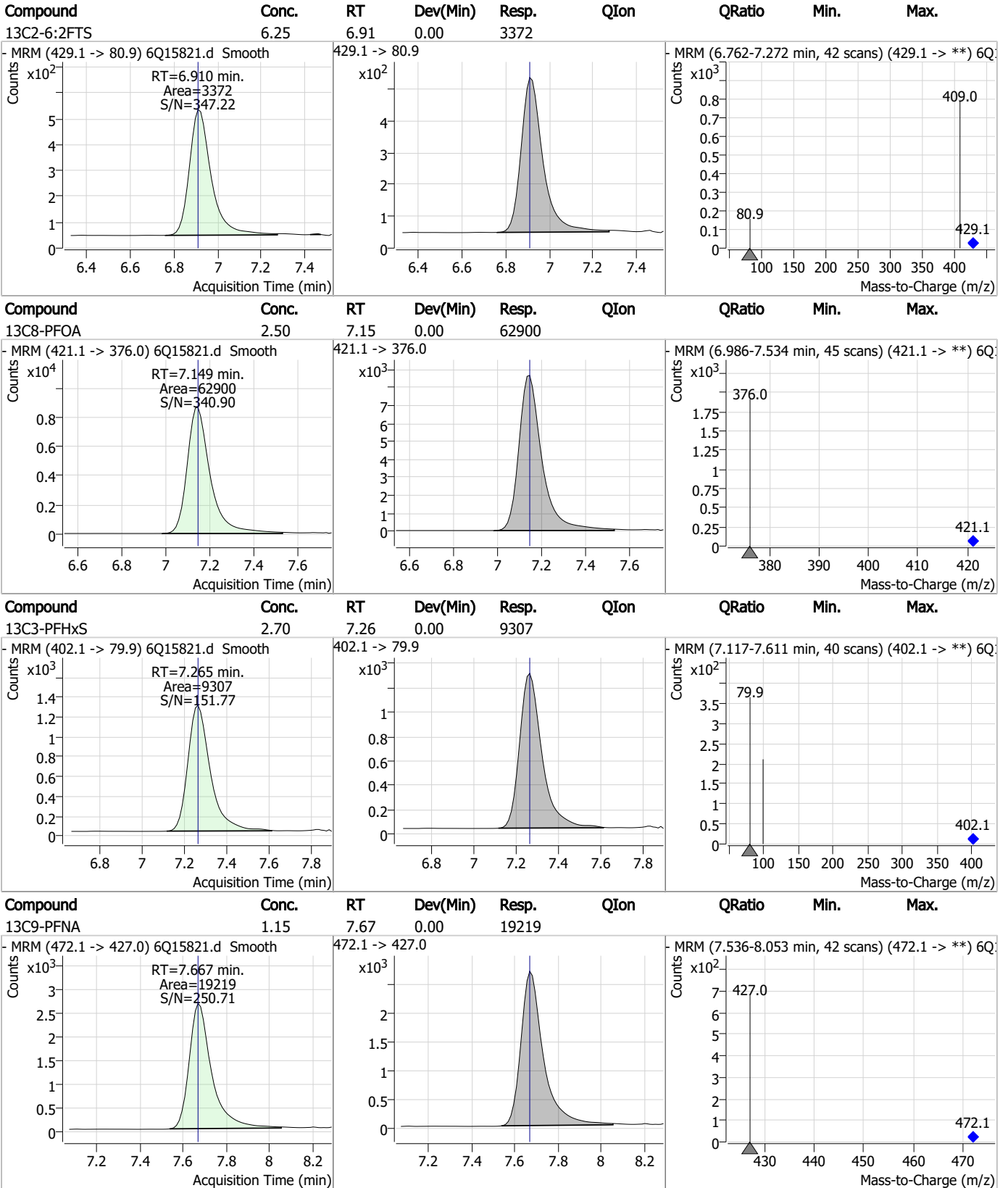


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.76	5.48	0.00	13692				
13C5-PFHxA	2.31	5.55	0.00	33630				
13C3-HFPO-DA	9.85	5.93	0.00	14922				
13C4-PFHpA	2.50	6.51	0.00	37196				

7.2.2
7

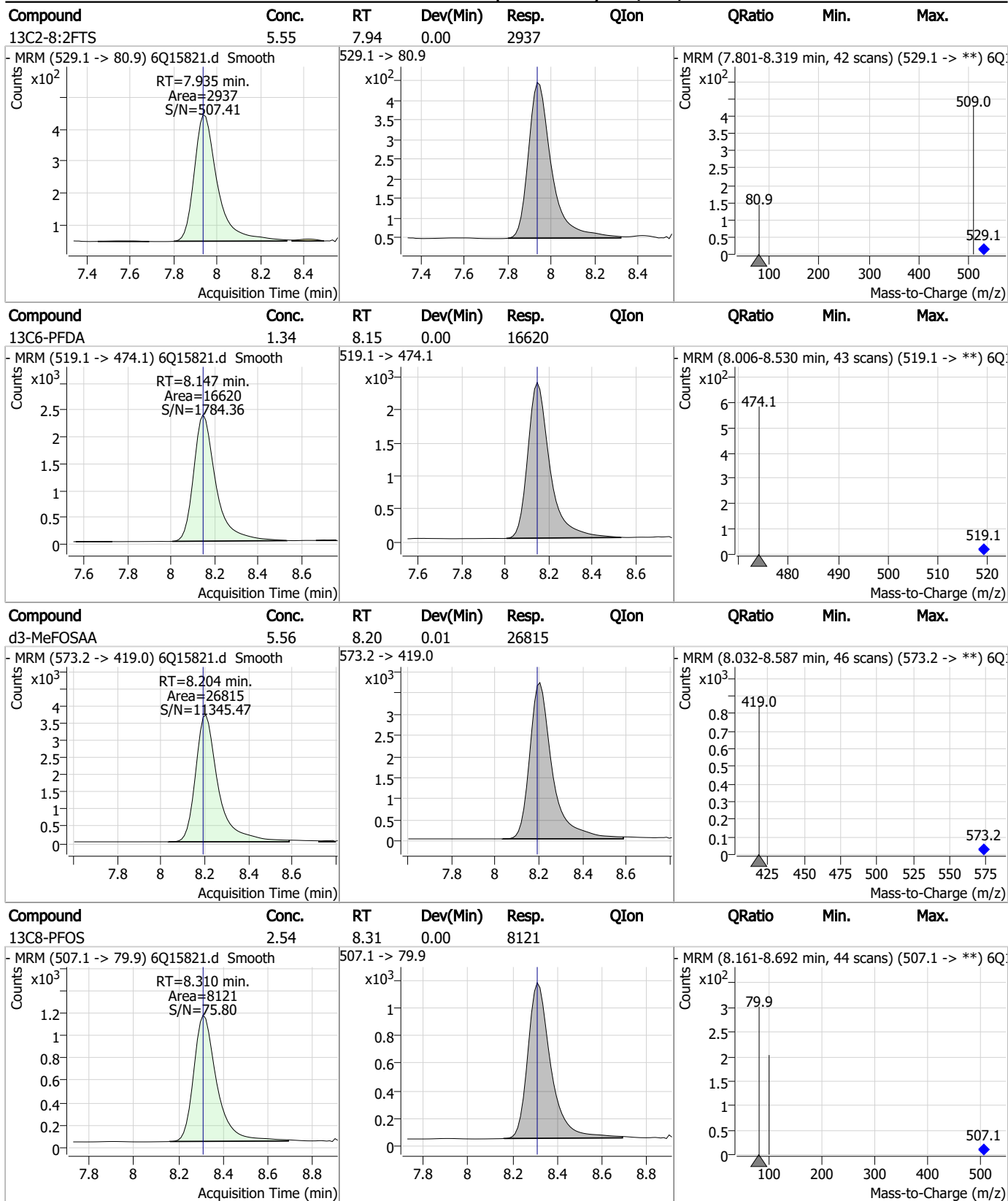
Perfluorinated Compounds by LC/MS/MS



7.2.2

7

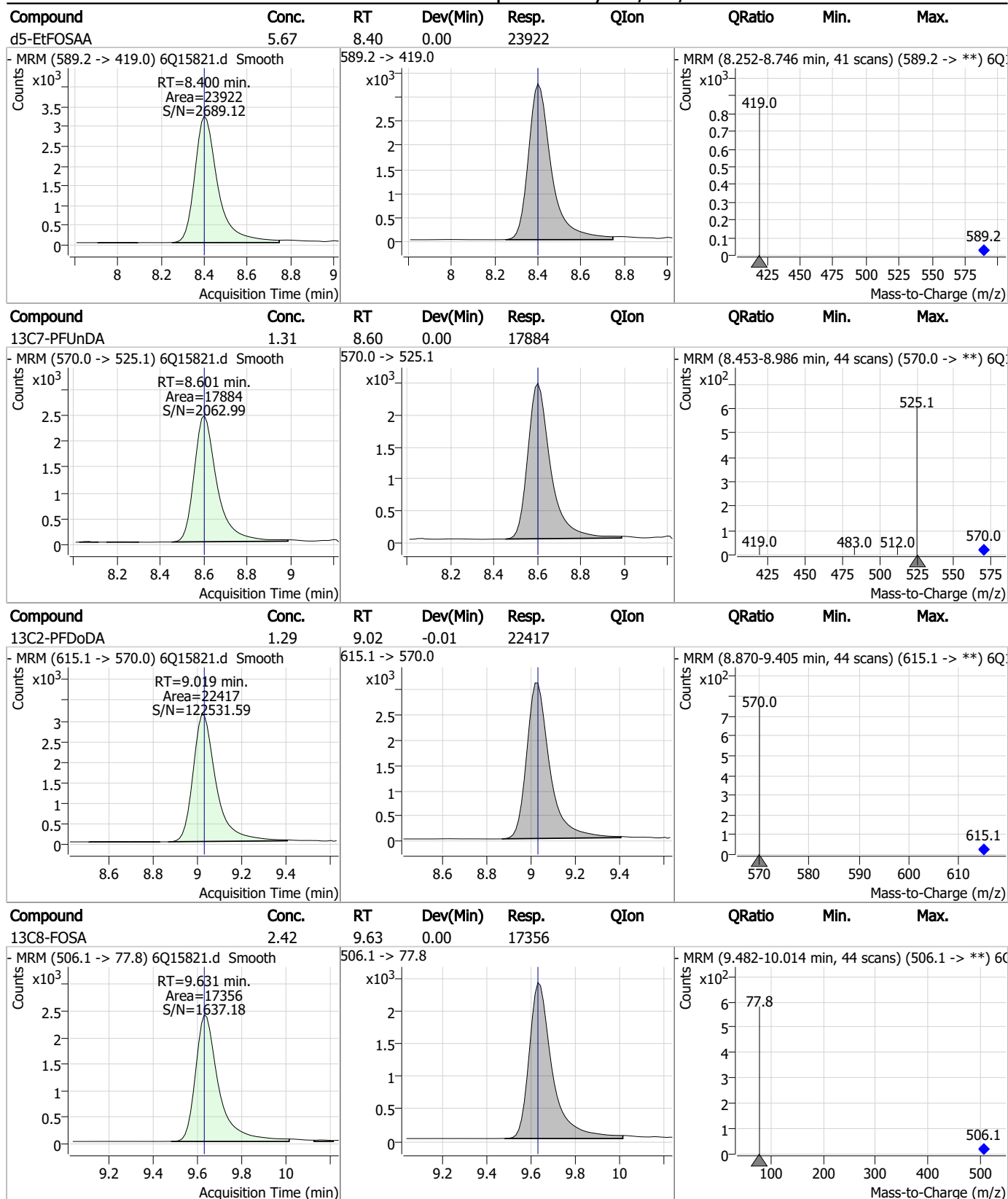
Perfluorinated Compounds by LC/MS/MS



7.22
7



Perfluorinated Compounds by LC/MS/MS



7.2.2
7

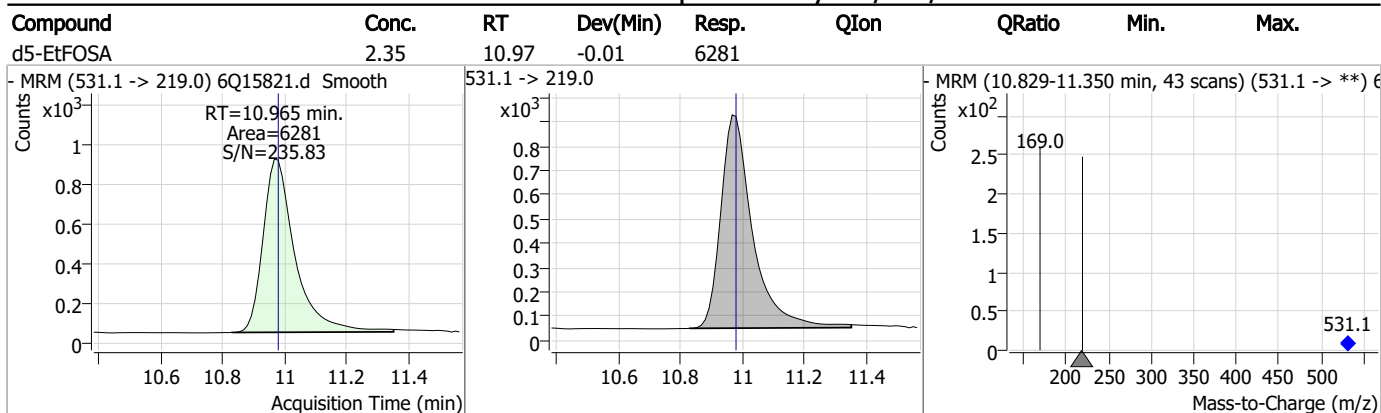
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.75	0.00	12706				
d7-MeFOSE	23.41	10.65	0.00	24052				
d3-MeFOSA	2.40	10.75	0.00	5690				
d9-EtFOSE	23.81	10.90	0.00	16032				

7.2.2

7

Perfluorinated Compounds by LC/MS/MS



7.22
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15888.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 1:21:48 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78264	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37672	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	32884	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	36624	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	64837	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	18771	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15840	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	19178	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	22198	1.25 µg/L	-0.013
M2-PFTeDA	9.733	715.2 -> 670.0	12734	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	16857	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13542	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	9210	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7918	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2680	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3572	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2926	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	24164	5.00 µg/L	0.000
M3-HFPO-DA	5.918	286.9 -> 168.9	15056	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	24635	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	24027	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15764	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6412	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5606	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9149	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	34256	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	6555	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	71193	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21690	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	20098	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	36077	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2680	6.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 125.5%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3572	6.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.2%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2926	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-PFDoDA	9.019	615.1 -> 570.0	22198	1.26 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.733	715.2 -> 670.0	12734	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-PFBS	5.483	302.1 -> 79.9	13542	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C3-PFHxS	7.252	402.1 -> 79.9	9210	2.49 µg/L	-0.012

7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C4-PFBA	2.913	216.8 -> 171.9	78264	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C4-PFHpA	6.493	367.1 -> 322.0	36624	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C5-PFHxA	5.553	318.0 -> 273.0	32884	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.0%		
13C5-PFPeA	4.347	268.3 -> 223.0	37672	4.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C6-PFDA	8.147	519.1 -> 474.1	15840	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C7-PFUnDA	8.589	570.0 -> 525.1	19178	1.39 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C8-FOSA	9.631	506.1 -> 77.8	16857	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C8-PFOA	7.137	421.1 -> 376.0	64837	2.75 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C8-PFOS	8.310	507.1 -> 79.9	7918	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C9-PFNA	7.667	472.1 -> 427.0	18771	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
d3-MeFOSAA	8.192	573.2 -> 419.0	24164	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	15056	9.70 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
d3-MeFOSA	10.745	515.0 -> 219.0	5606	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
d5-EtFOSAA	8.400	589.2 -> 419.0	24635	6.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	24027	24.98 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
d9-EtFOSE	10.900	639.2 -> 58.9	15764	25.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
d5-EtFOSA	10.965	531.1 -> 219.0	6412	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		

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	8.389	584.2 -> 419.1	128	0.03 µg/L	#m 1
		584.2 -> 526.0	159		
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	7.633	441.0 -> 316.9	1553	1.09 µg/L	m	91
		441.0 -> 336.9	2748			
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.3
7

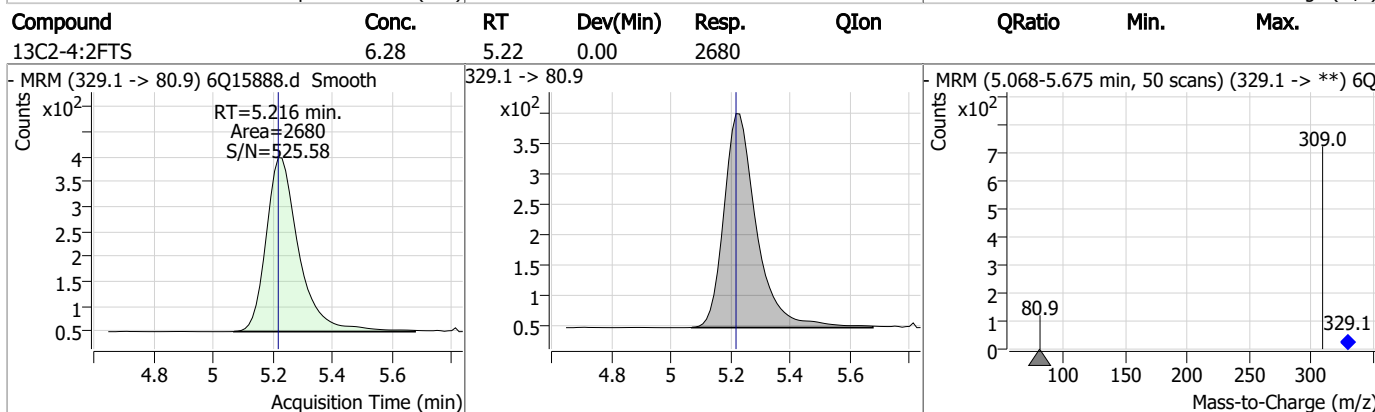
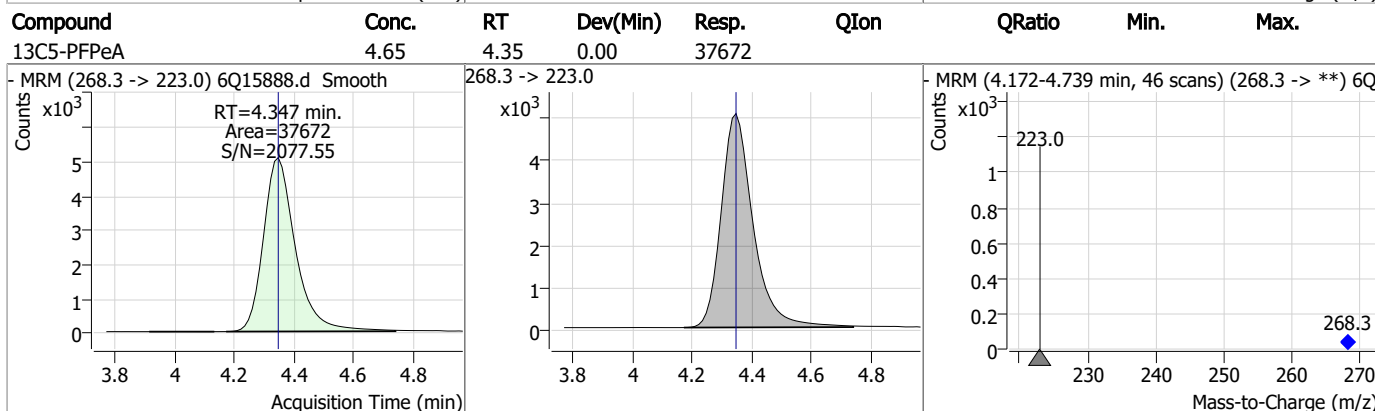
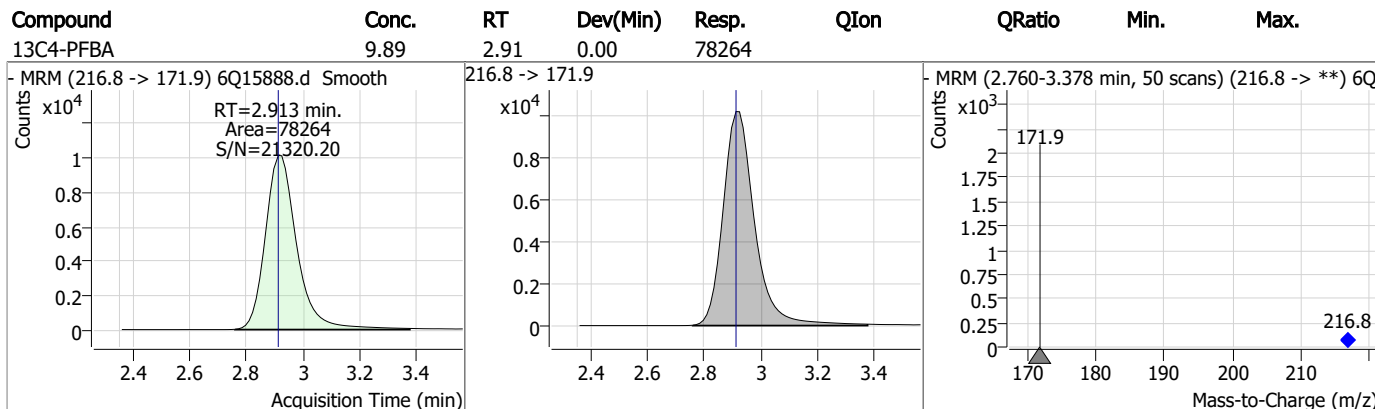
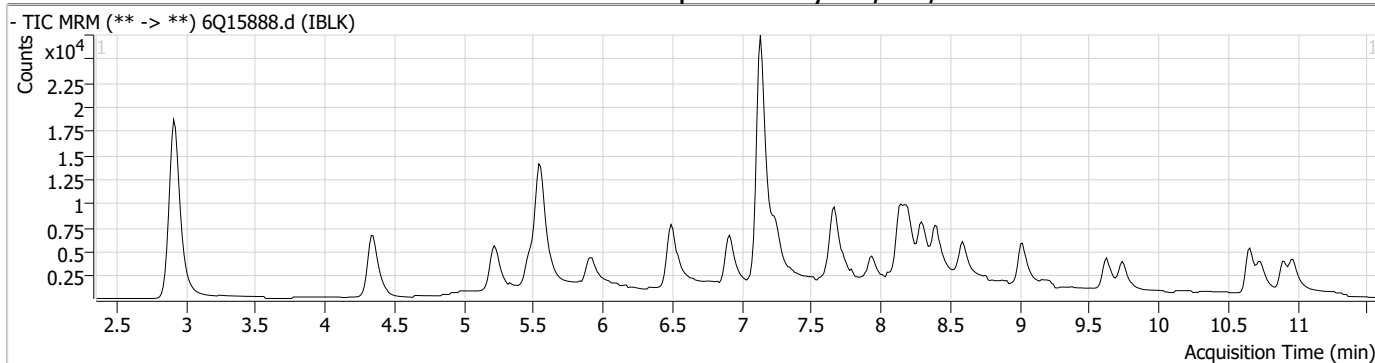
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



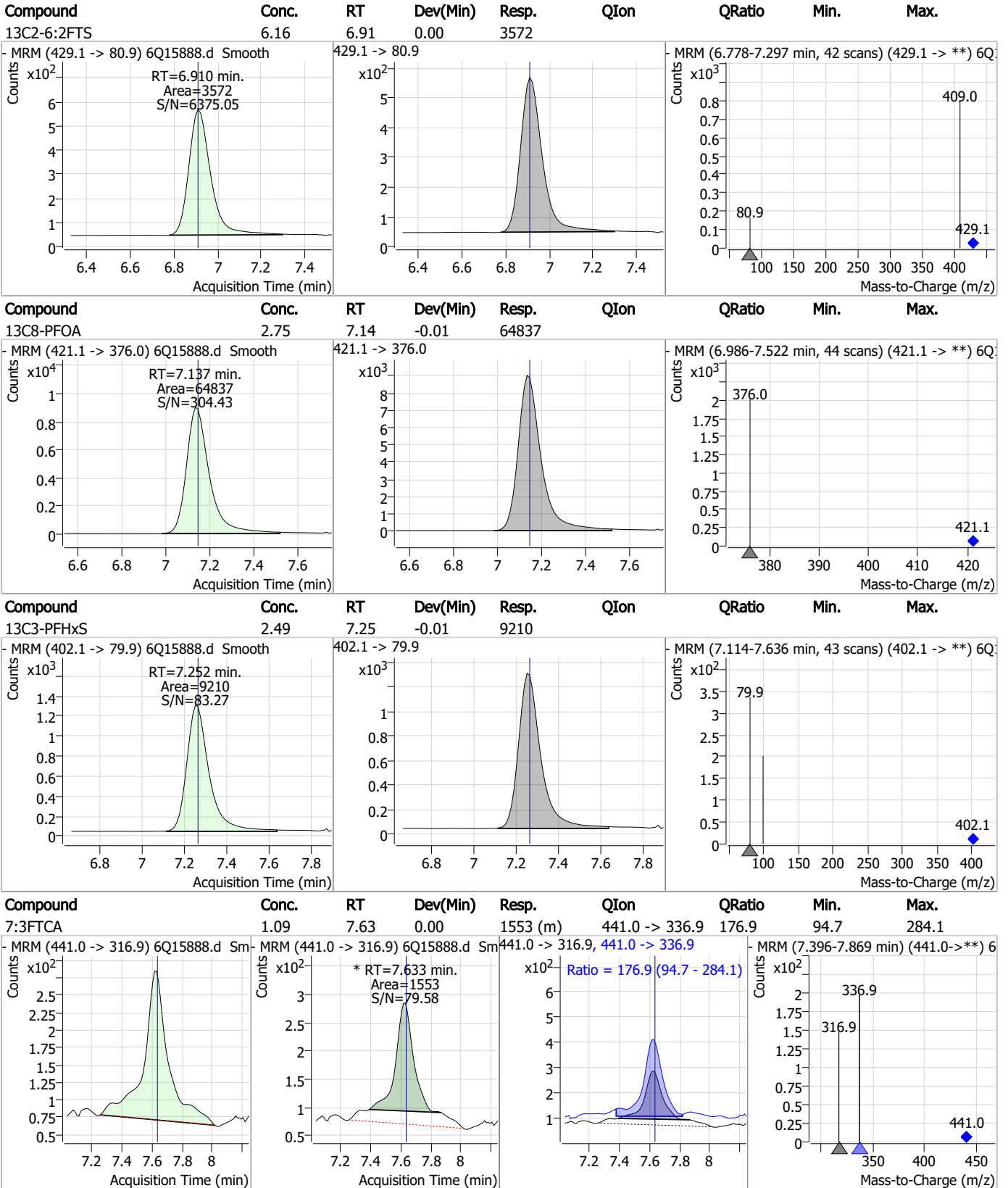
7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.54	5.48	0.00	13542				
13C5-PFHxA	2.20	5.55	0.00	32884				
13C3-HFPO-DA	9.70	5.92	-0.01	15056				
13C4-PFHpA	2.41	6.49	-0.01	36624				

7.2.3
7

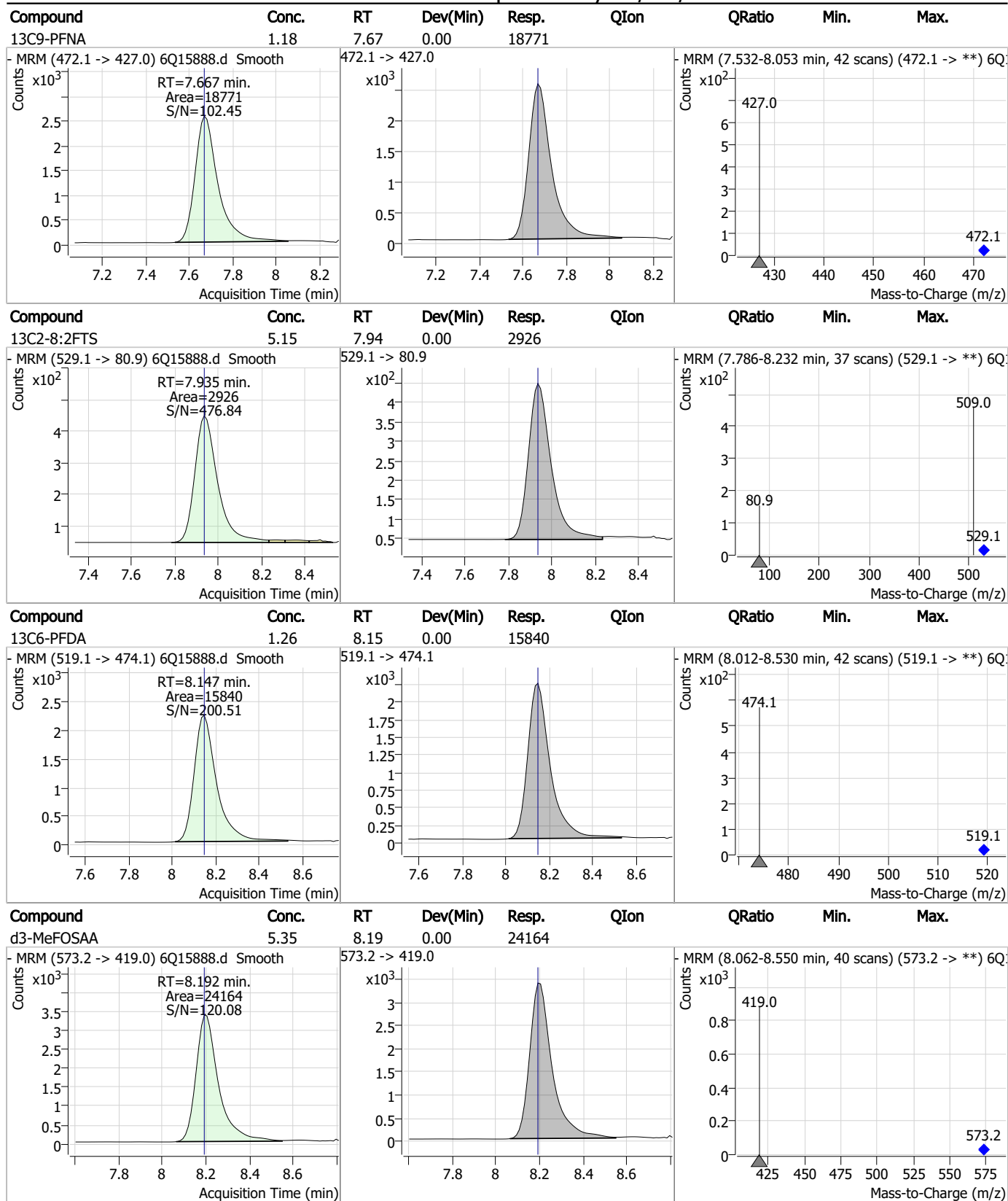
Perfluorinated Compounds by LC/MS/MS



7.2.3

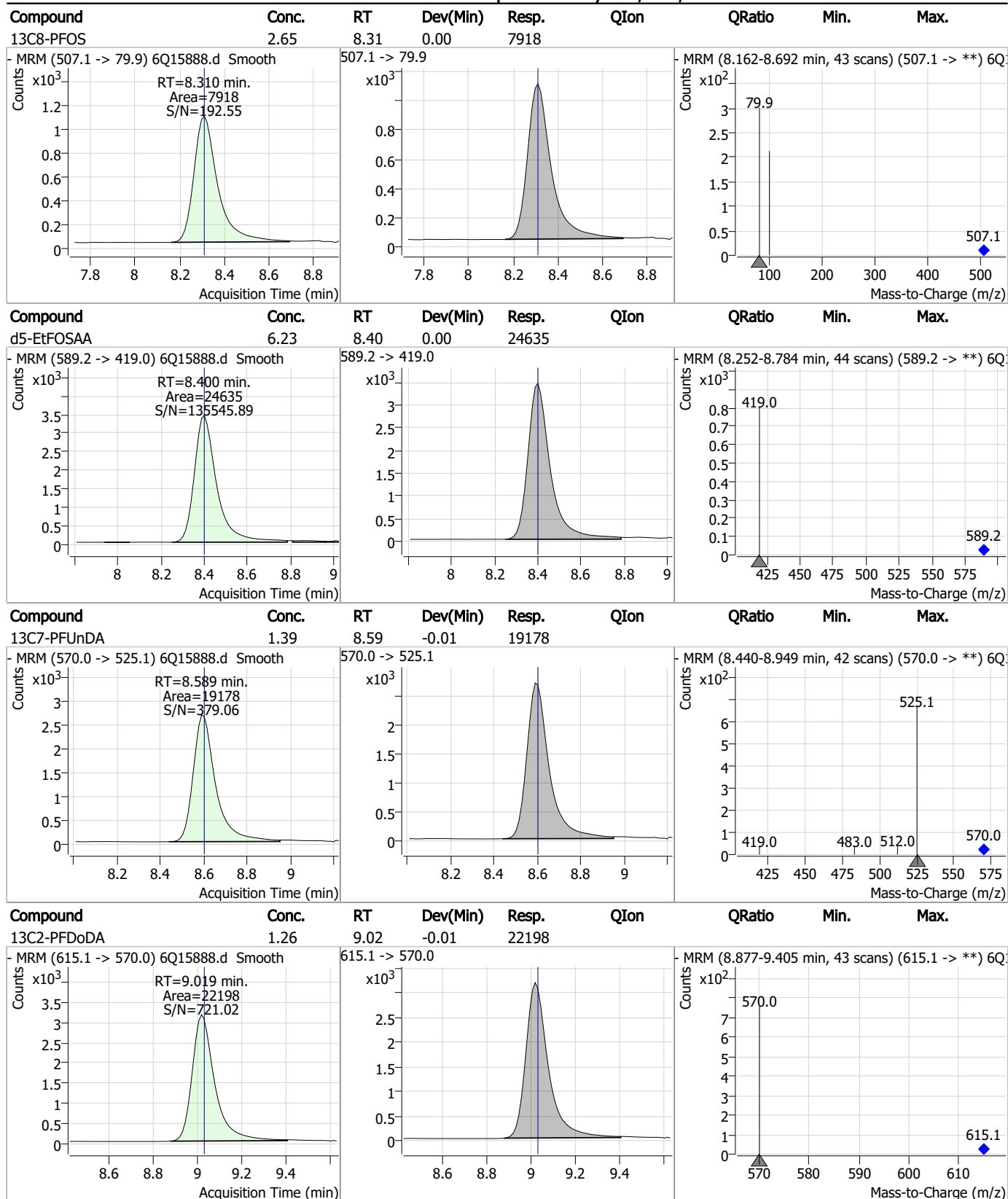
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Perfluorinated Compounds by LC/MS/MS



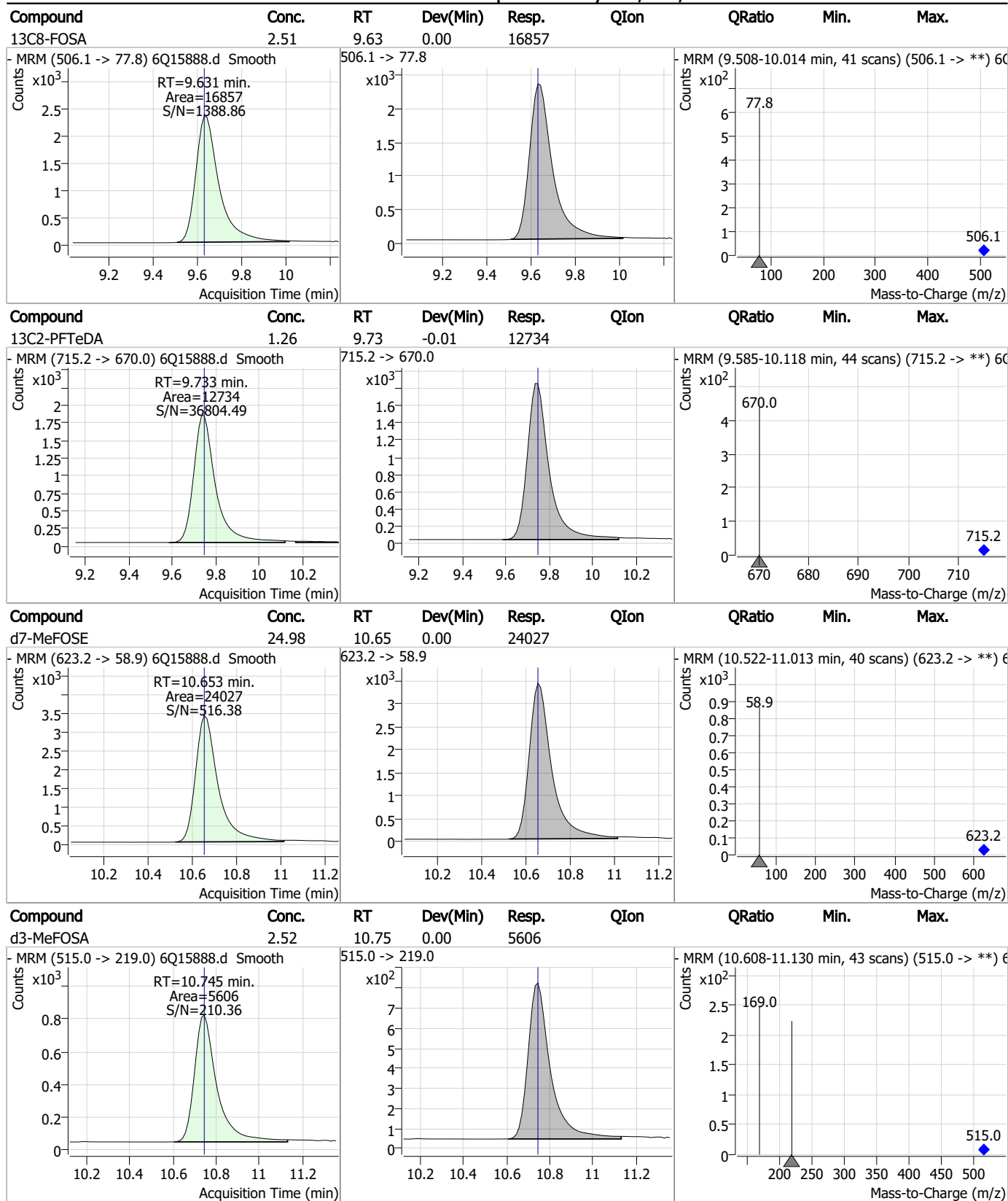
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Perfluorinated Compounds by LC/MS/MS



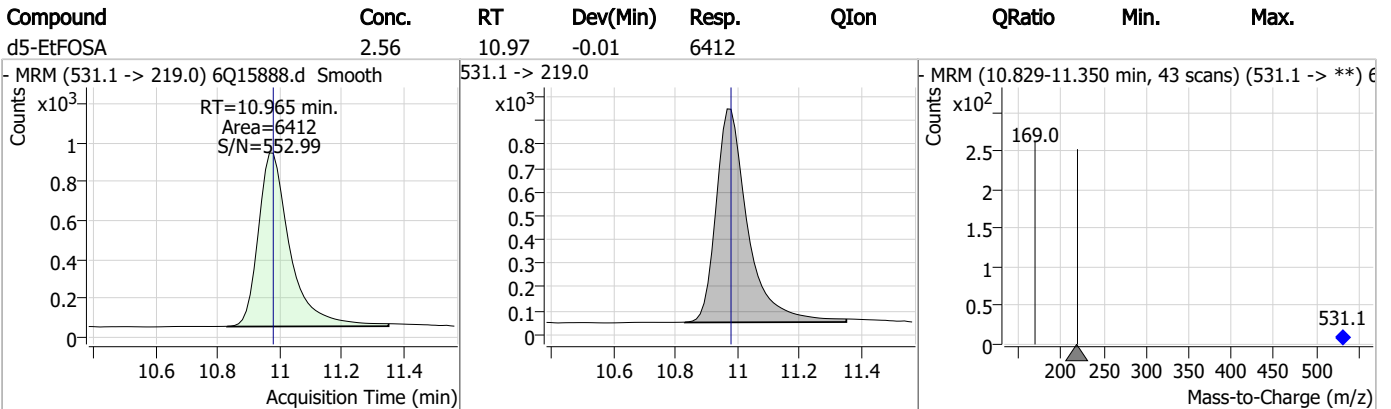
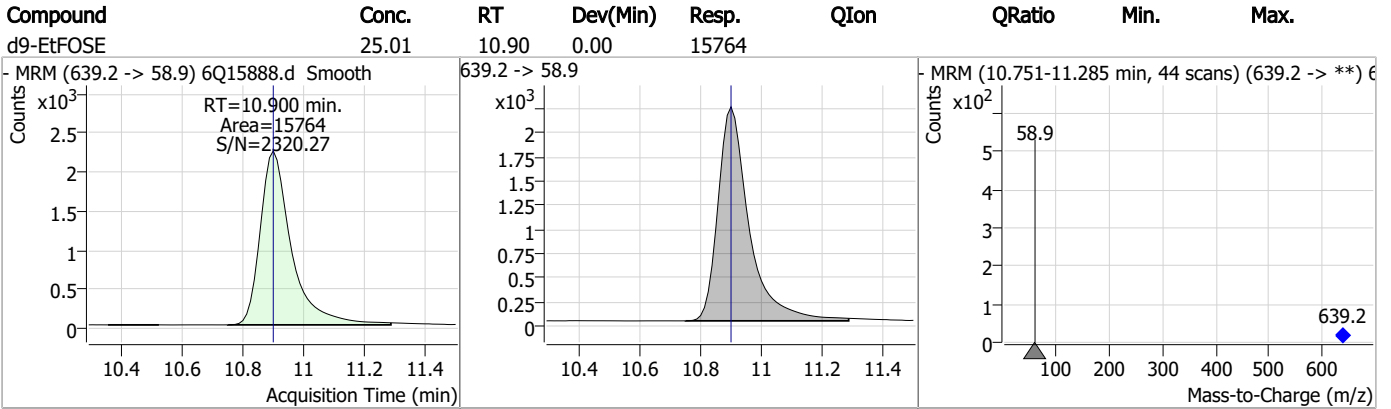
7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3

7



Manual Integration Approval Summary

Sample Number: S6Q237-IBLK Method: EPA DRAFT 1633
Lab FileID: 6Q15888.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/31/23 13:21 Supervisor approved: 03/31/23 16:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
7:3 Fluorotelomer carboxylate	812-70-4		7.63	Poor instrument integration
EtFOSAA	2991-50-6		8.39	Poor instrument integration

7.2.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15881.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 11:43:55 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78488	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37486	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34458	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	35694	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	62484	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	18385	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	17550	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	17070	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	21695	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	12159	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17459	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13973	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8978	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	8167	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2662	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3092	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3217	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	25068	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	15038	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	22795	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	24069	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16460	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6616	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5377	2.50 µg/L	0.000
13C4-PFOS	8.298	502.8 -> 79.9	9475	2.50 µg/L	-0.012
13C3-PFBA	2.916	216.0 -> 172.0	34334	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	6484	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	70150	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	20560	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	20135	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	35265	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2662	6.30 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 126.1%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3092	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3217	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.4%		
13C2-PFDoDA	9.019	615.1 -> 570.0	21695	1.30 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12159	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C3-PFBS	5.483	302.1 -> 79.9	13973	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C3-PFHxS	7.252	402.1 -> 79.9	8978	2.45 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C4-PFBA	2.913	216.8 -> 171.9	78488	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.506	367.1 -> 322.0	35694	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C5-PFHxA	5.553	318.0 -> 273.0	34458	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C5-PFPeA	4.347	268.3 -> 223.0	37486	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C6-PFDA	8.147	519.1 -> 474.1	17550	1.47 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C7-PFUnDA	8.589	570.0 -> 525.1	17070	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-FOSA	9.631	506.1 -> 77.8	17459	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOA	7.137	421.1 -> 376.0	62484	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C8-PFOS	8.310	507.1 -> 79.9	8167	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C9-PFNA	7.667	472.1 -> 427.0	18385	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.5%	
d3-MeFOSAA	8.192	573.2 -> 419.0	25068	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	15038	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	10.745	515.0 -> 219.0	5377	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
d5-EtFOSAA	8.400	589.2 -> 419.0	22795	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
d7-MeFOSE	10.653	623.2 -> 58.9	24069	24.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d9-EtFOSE	10.900	639.2 -> 58.9	16460	25.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d5-EtFOSA	10.965	531.1 -> 219.0	6616	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	

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



7.2.4
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.4
7

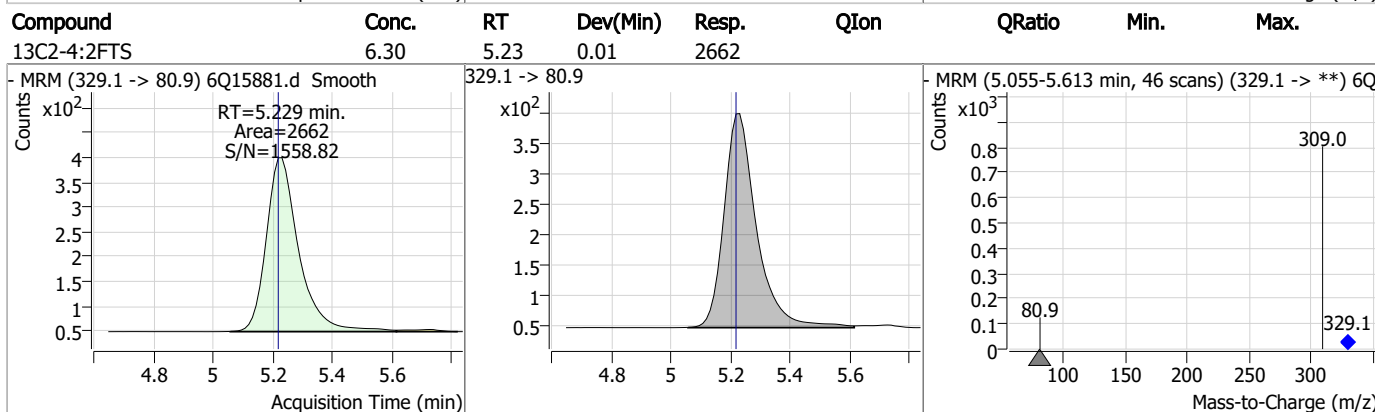
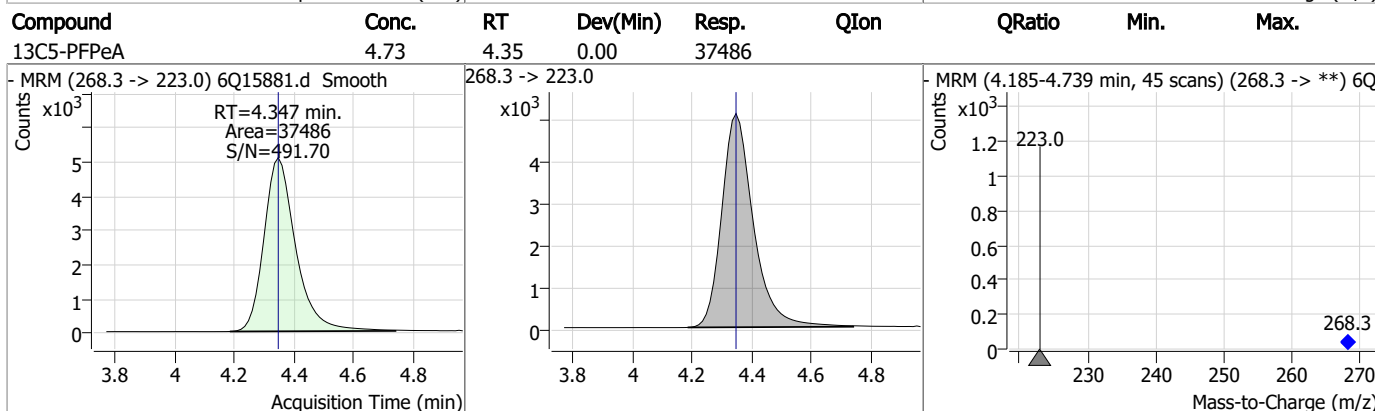
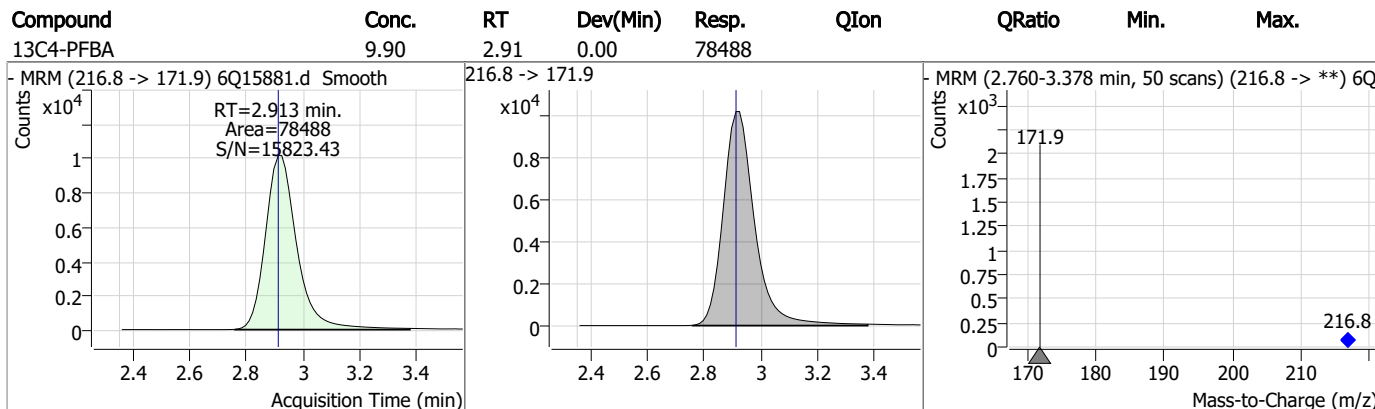
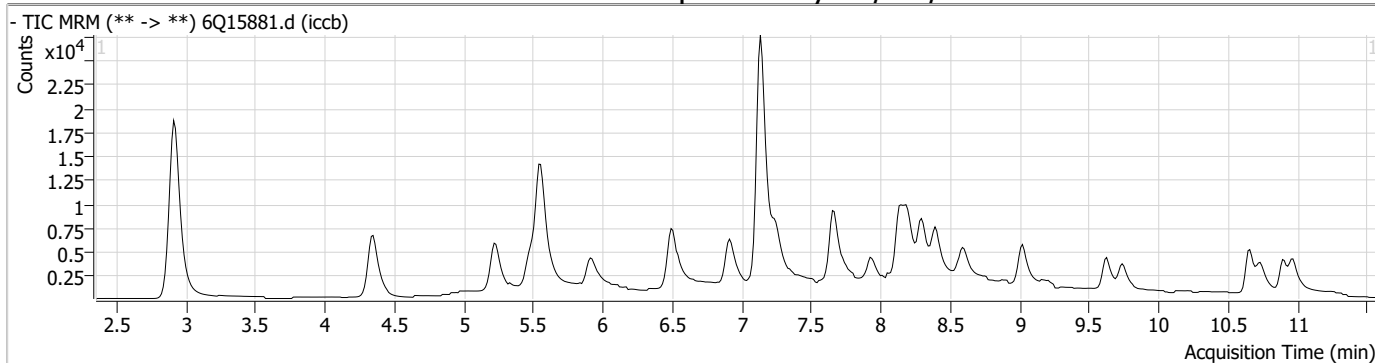
Perfluorinated Compounds by LC/MS/MS

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

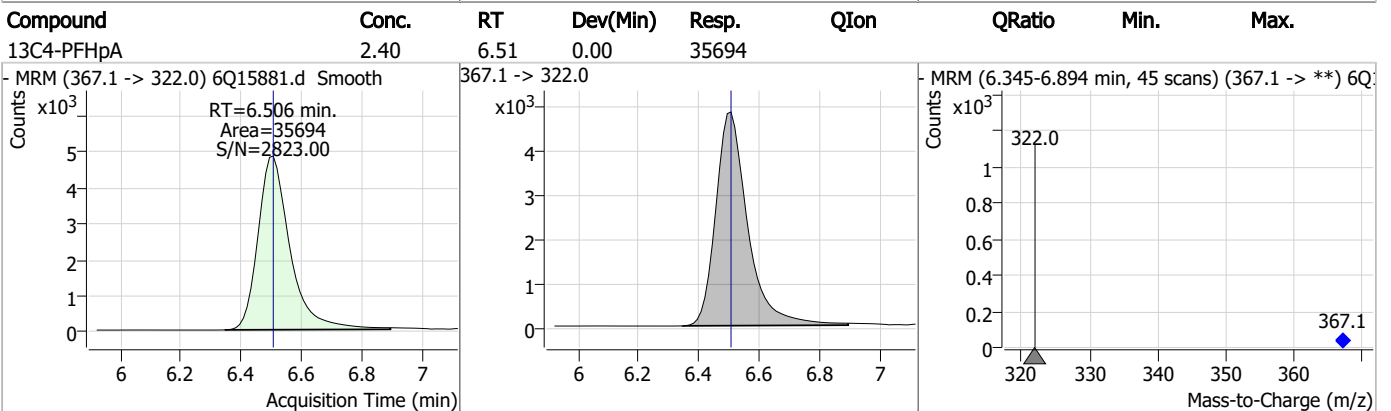
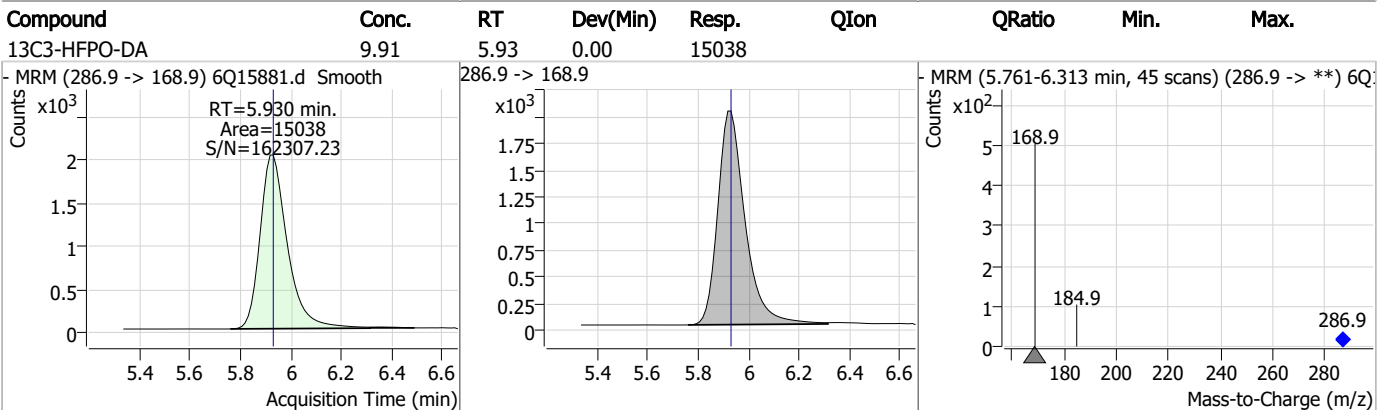
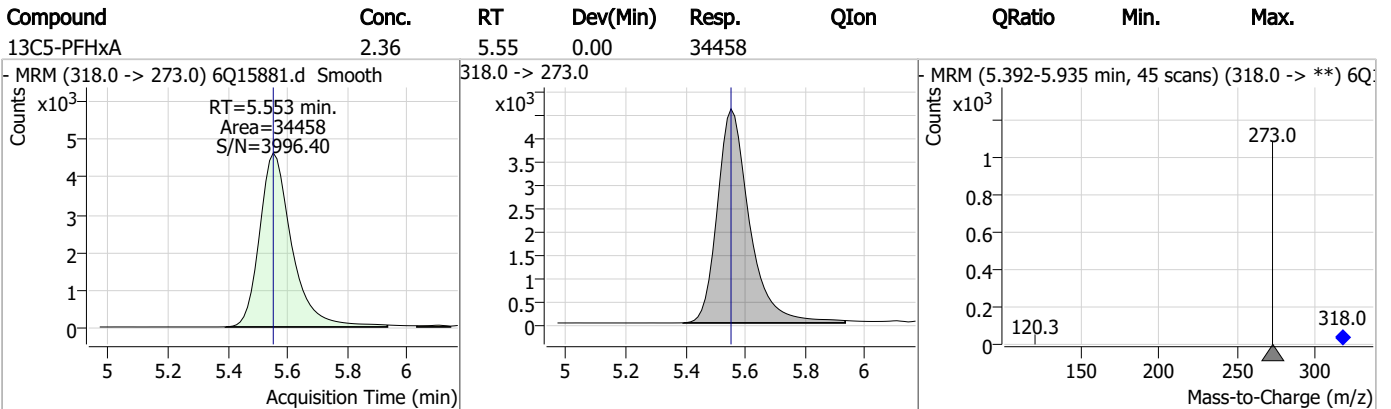
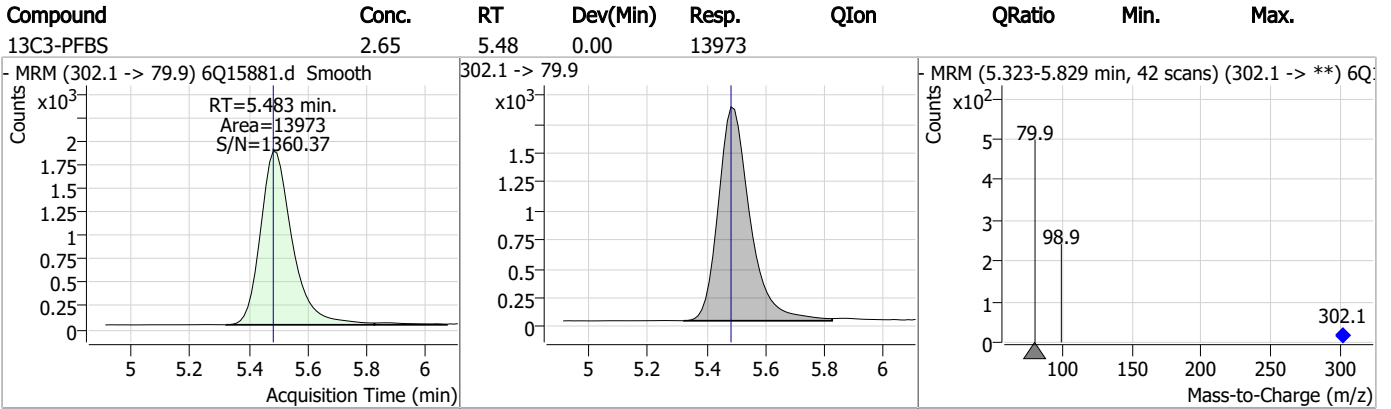
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Perfluorinated Compounds by LC/MS/MS

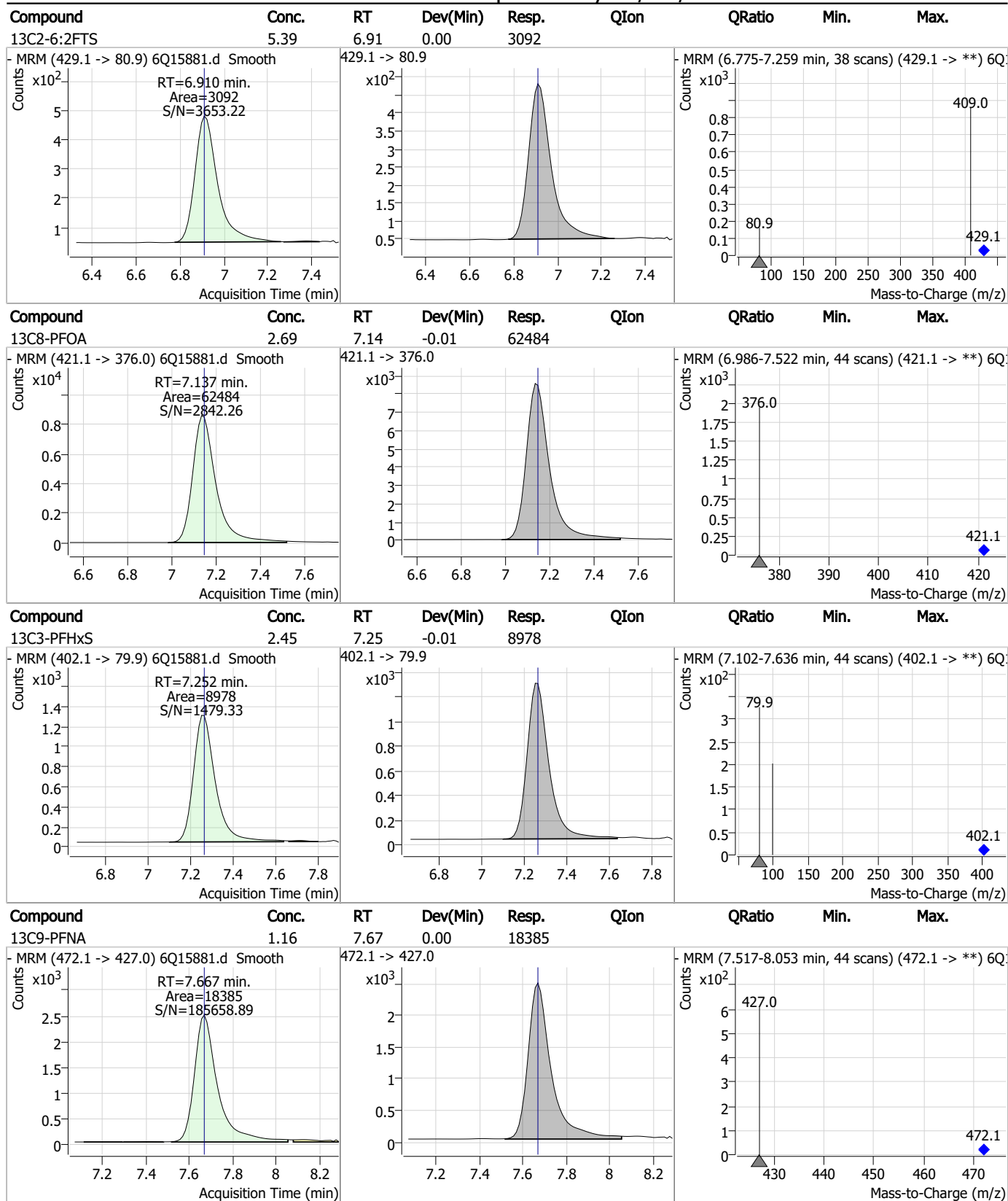


7.2.4
7

Perfluorinated Compounds by LC/MS/MS

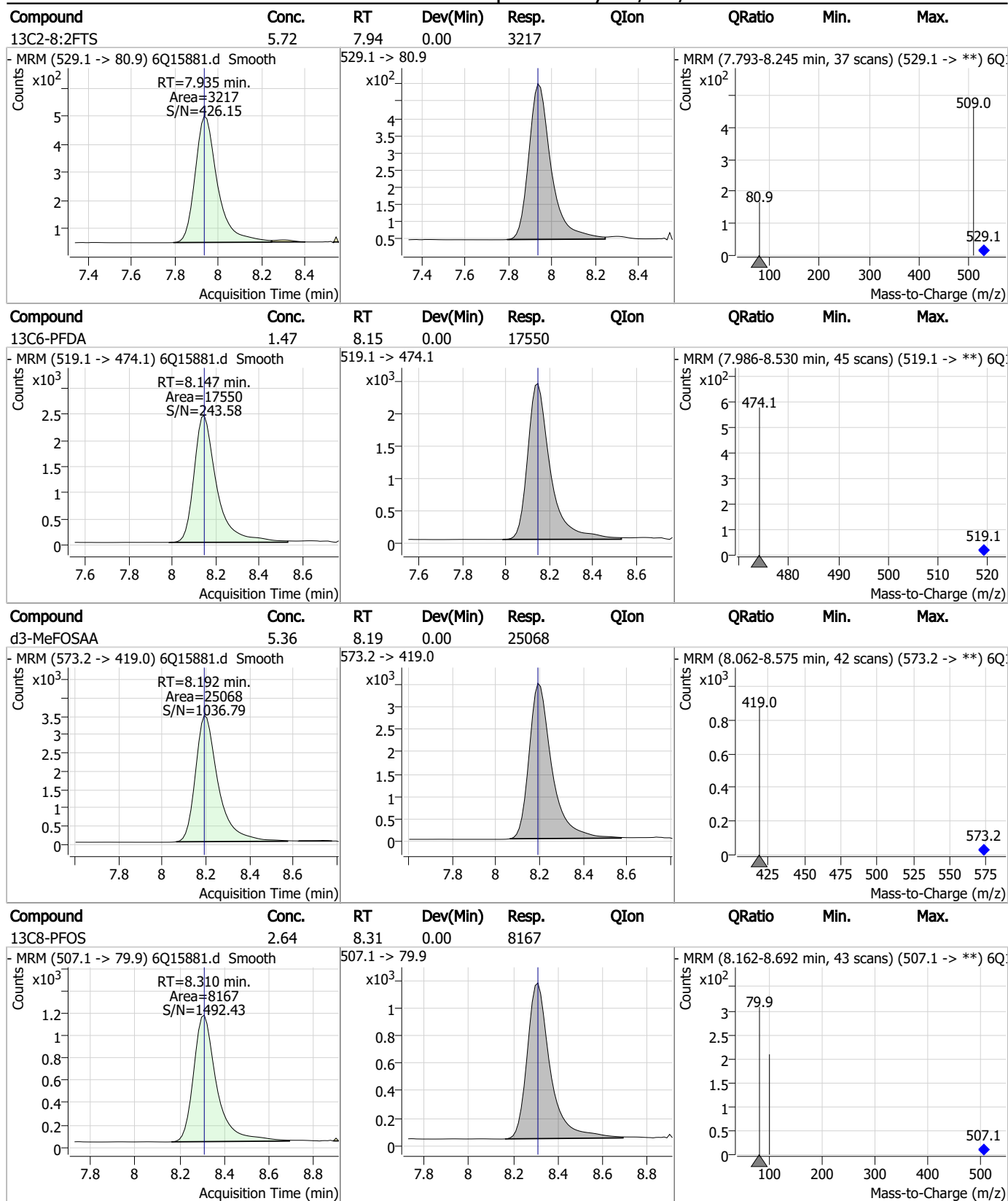


Perfluorinated Compounds by LC/MS/MS



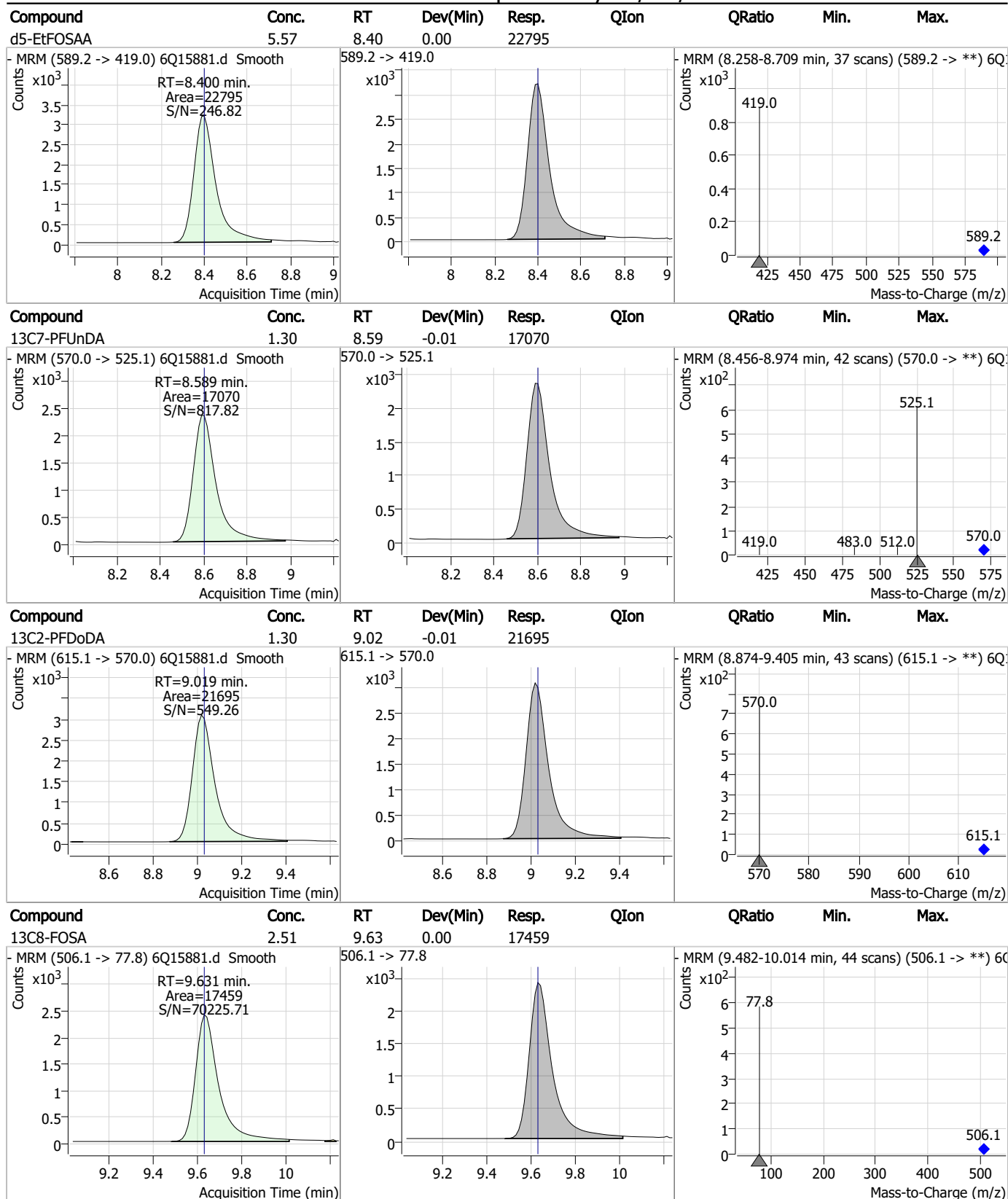
7.2.4
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Perfluorinated Compounds by LC/MS/MS



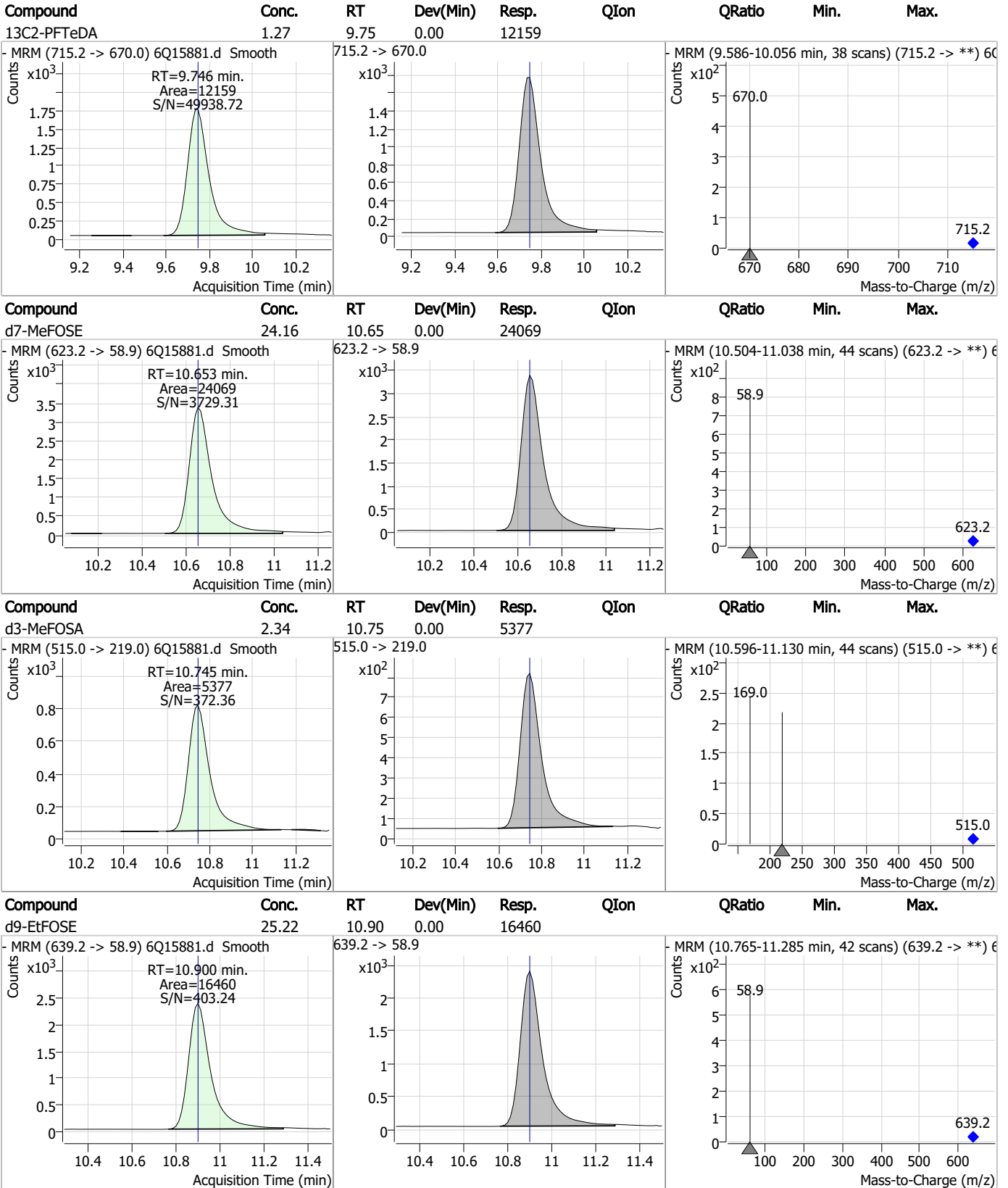
7.24
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Perfluorinated Compounds by LC/MS/MS



7.2.4
7

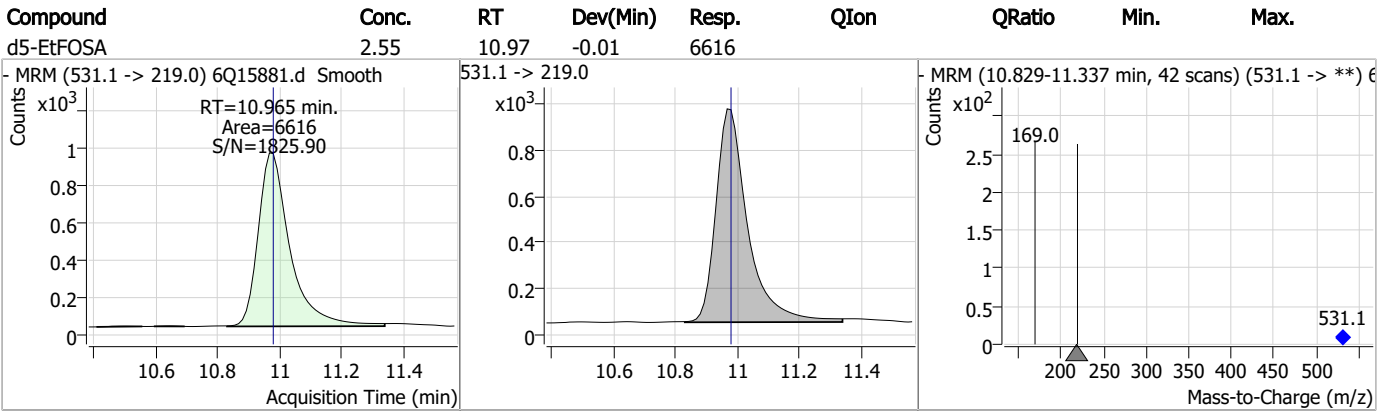
Perfluorinated Compounds by LC/MS/MS



7.2.4

7

Perfluorinated Compounds by LC/MS/MS



7.2.4
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15824.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 10:27:02 PM
 Sample Name : op96143-mb
 Vial : P3-C6
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	74780	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35564	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	34038	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	35215	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	59381	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	17992	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14787	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16313	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	18204	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	9283	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	14596	2.50 µg/L	0.012
M3-PFBS	5.496	302.1 -> 79.9	11594	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	8360	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7680	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2286	5.00 µg/L	0.012
M2-6:2FTS	6.923	429.1 -> 80.9	3080	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2986	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	23046	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	14022	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	20126	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	18374	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	12776	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	4694	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	3902	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	7979	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	30740	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5681	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	68086	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	18595	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17411	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	31389	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2286	6.18 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.6%		
13C2-6:2FTS	6.923	429.1 -> 80.9	3080	6.13 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 122.6%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2986	6.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.2%		
13C2-PFDoDA	9.019	615.1 -> 570.0	18204	1.20 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9283	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.6%		
13C3-PFBS	5.496	302.1 -> 79.9	11594	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C3-PFHxS	7.265	402.1 -> 79.9	8360	2.60 µg/L	0.000

7.2.5
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 = 104.2%	
13C4-PFBA	2.963	216.8 -> 171.9	74780	10.53 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C4-PFHpA	6.506	367.1 -> 322.0	35215	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C5-PFHxA	5.553	318.0 -> 273.0	34038	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C5-PFPeA	4.359	268.3 -> 223.0	35564	5.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.147	519.1 -> 474.1	14787	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C7-PFUnDA	8.601	570.0 -> 525.1	16313	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C8-FOSA	9.643	506.1 -> 77.8	14596	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.137	421.1 -> 376.0	59381	2.63 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-PFOS	8.310	507.1 -> 79.9	7680	2.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C9-PFNA	7.667	472.1 -> 427.0	17992	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.7%	
d3-MeFOSAA	8.192	573.2 -> 419.0	23046	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	14022	10.38 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d3-MeFOSA	10.745	515.0 -> 219.0	3902	2.01 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.5%	
d5-EtFOSAA	8.400	589.2 -> 419.0	20126	5.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.8%	
d7-MeFOSE	10.653	623.2 -> 58.9	18374	21.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.6%	
d9-EtFOSE	10.900	639.2 -> 58.9	12776	23.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
d5-EtFOSA	10.978	531.1 -> 219.0	4694	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.1%	

Target Compounds

QValue

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



7.25
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.139	398.7 -> 98.9	0	0.00	µg/L	m
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.449	548.8 -> 98.9	0	0.00	µg/L	#m
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	0	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.5
7

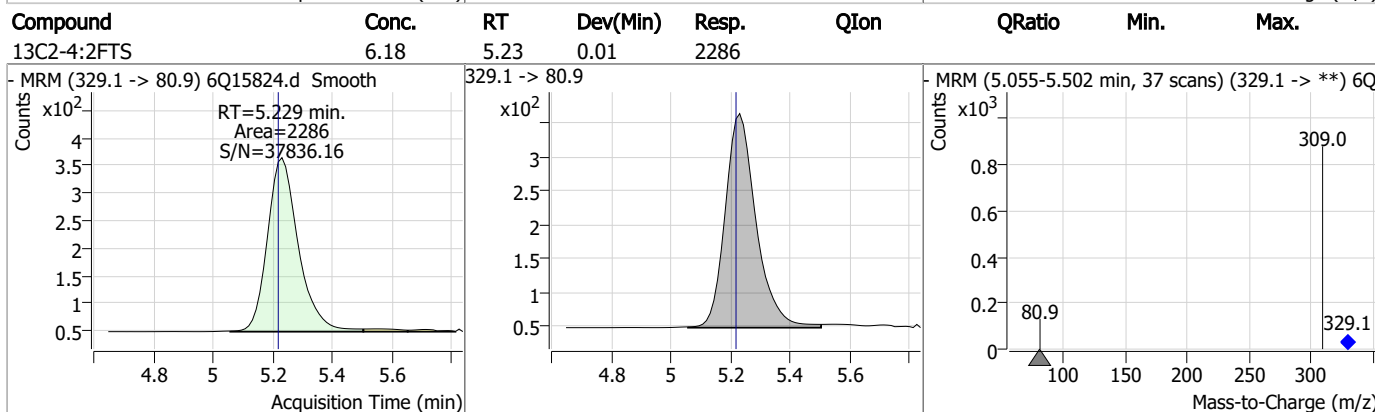
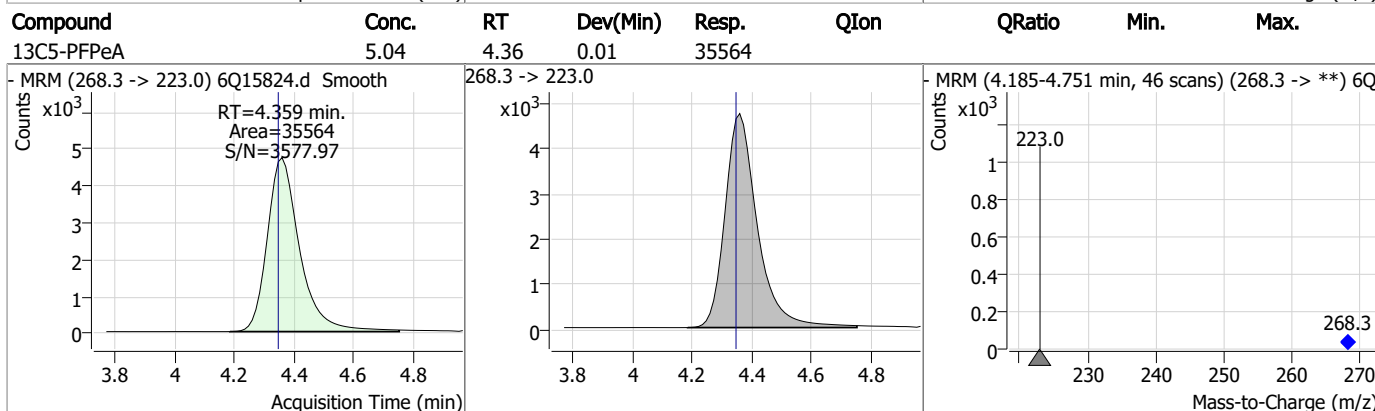
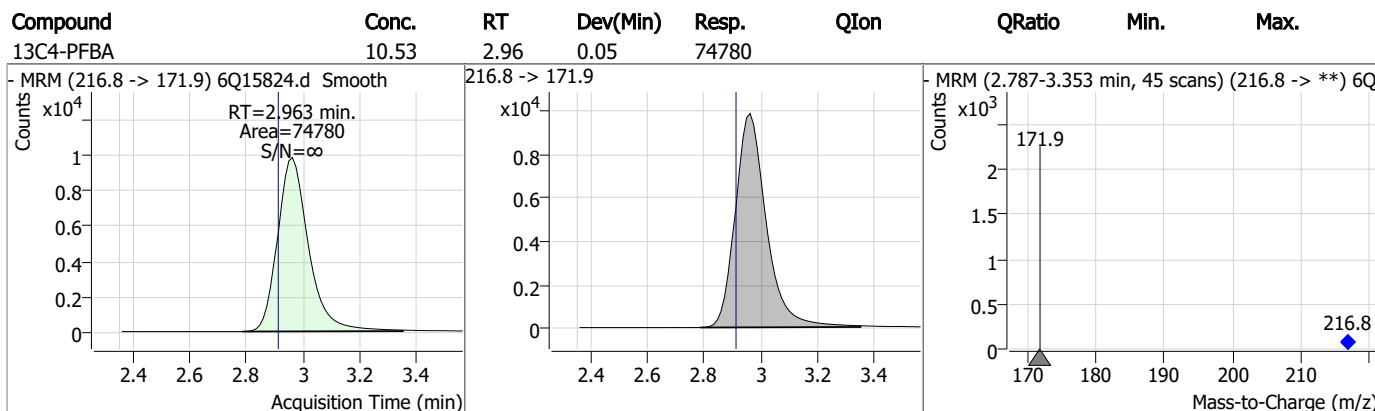
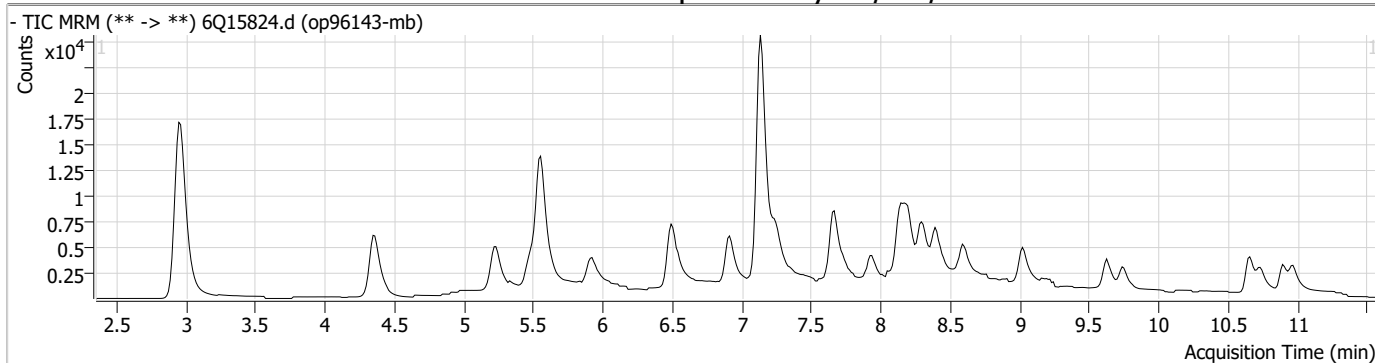
Perfluorinated Compounds by LC/MS/MS

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

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Perfluorinated Compounds by LC/MS/MS



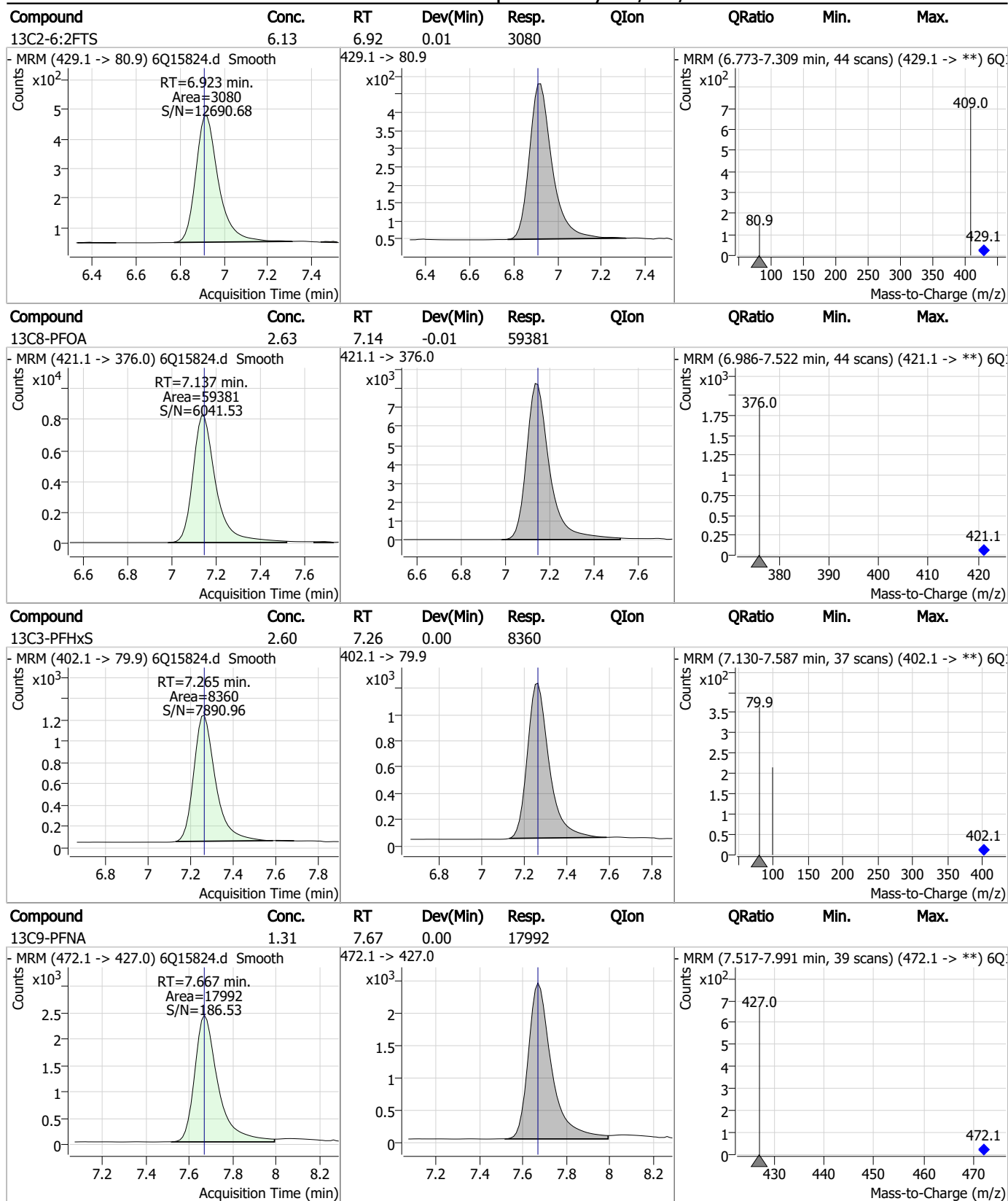
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.50	0.01	11594				
13C5-PFHxA	2.62	5.55	0.00	34038				
13C3-HFPO-DA	10.38	5.93	0.00	14022				
13C4-PFHpA	2.66	6.51	0.00	35215				

7.2.5

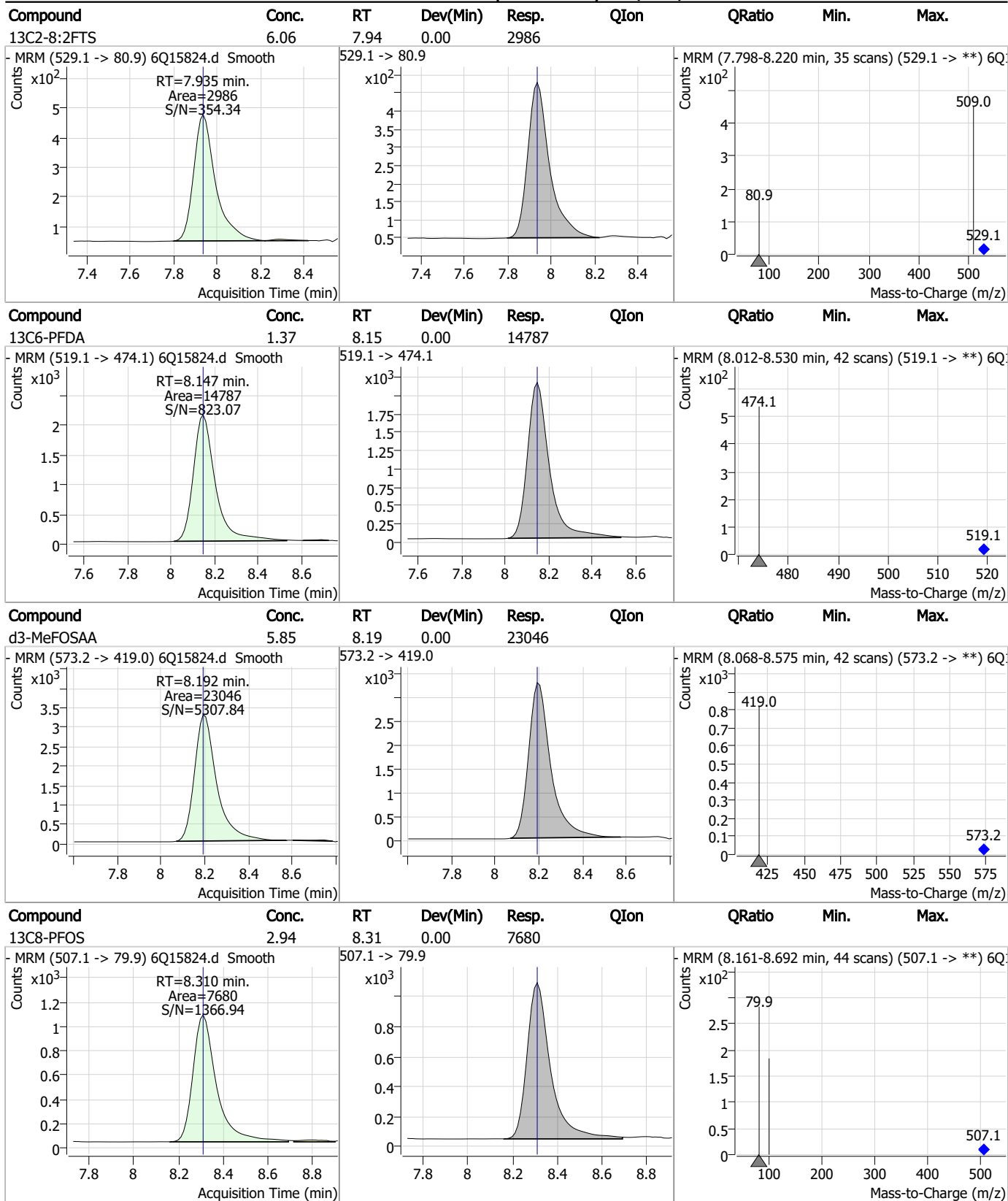
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Perfluorinated Compounds by LC/MS/MS



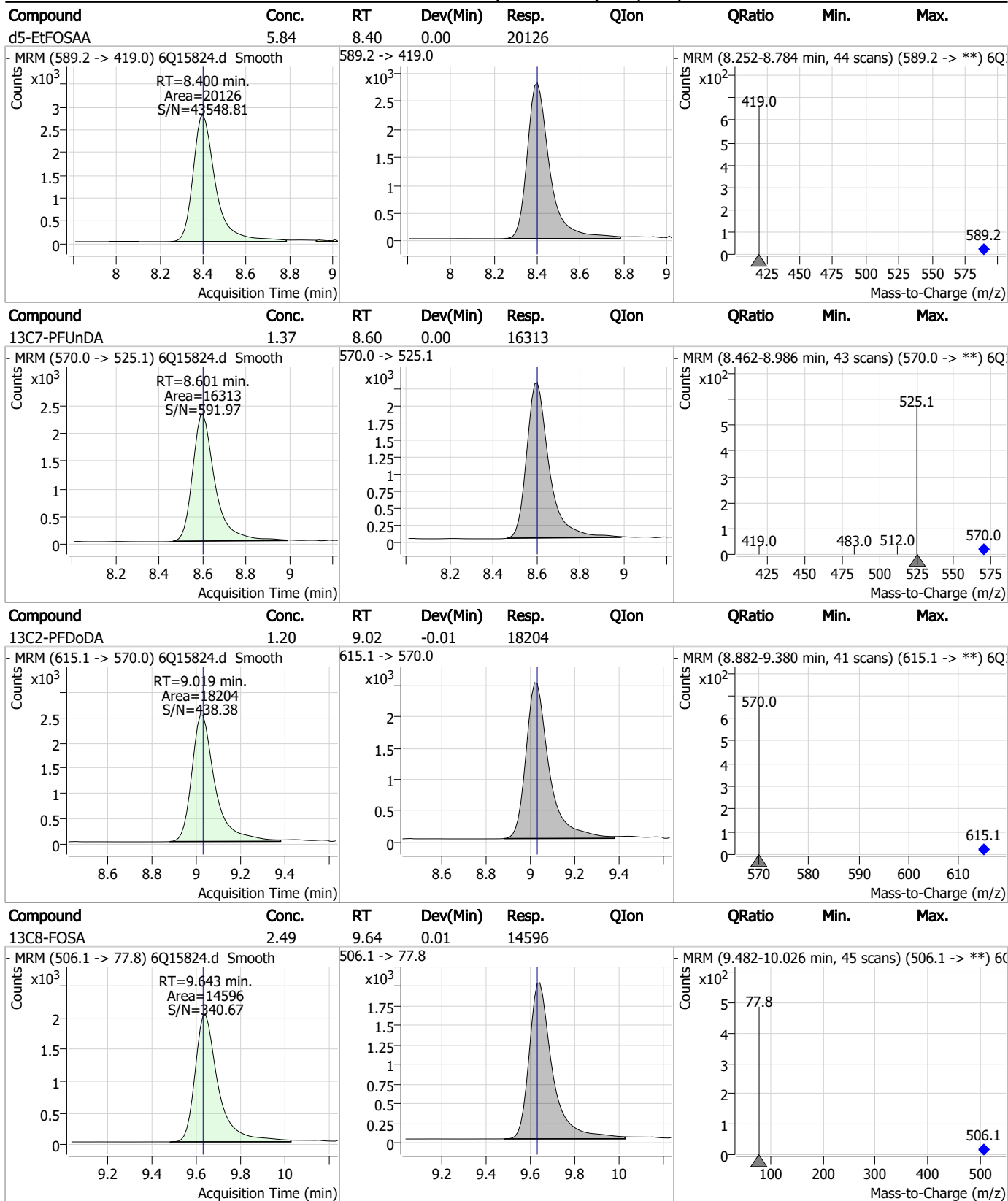
7.25
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Perfluorinated Compounds by LC/MS/MS



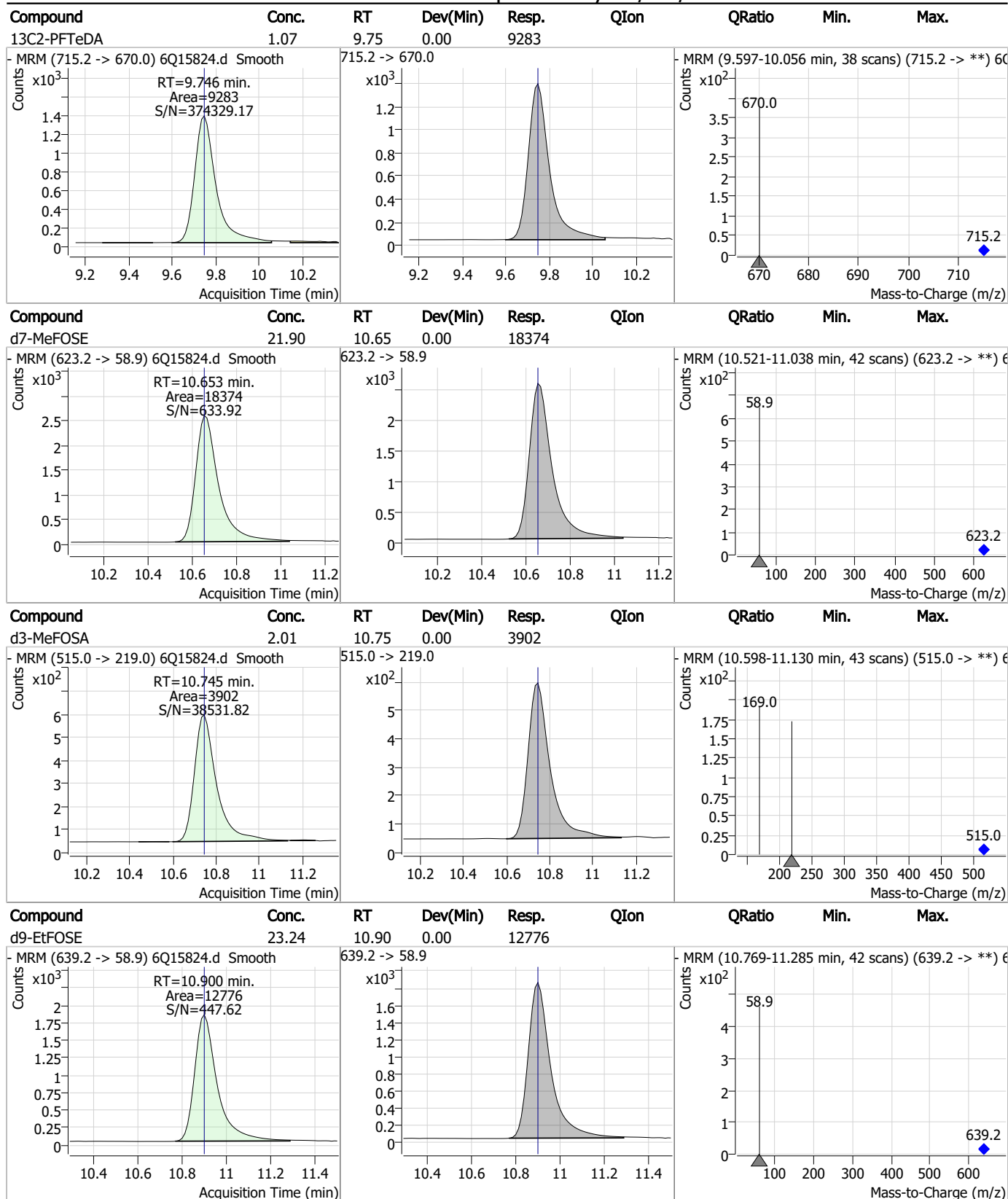
7.25
7

Perfluorinated Compounds by LC/MS/MS



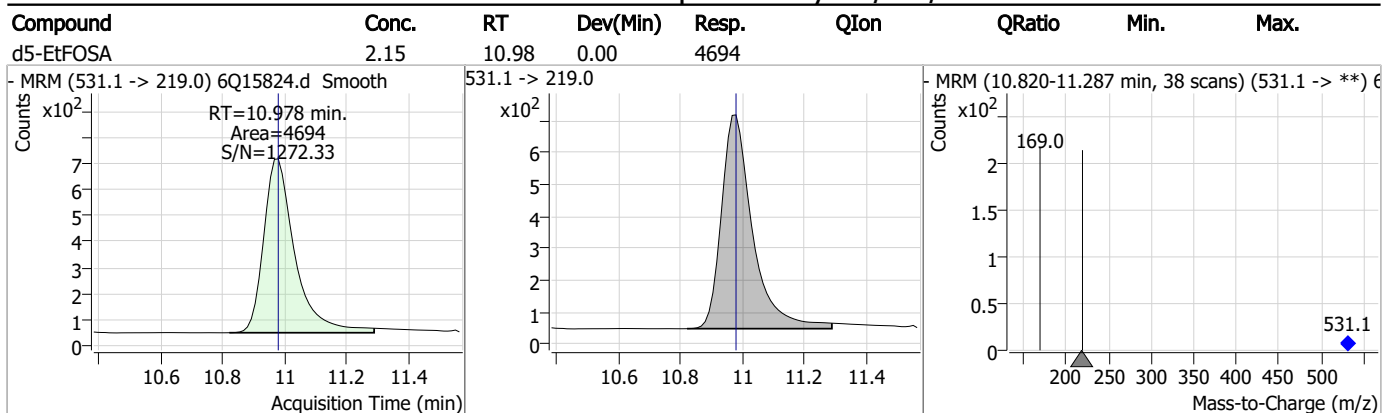
7.2.5
7

Perfluorinated Compounds by LC/MS/MS



7.2.5
7

Perfluorinated Compounds by LC/MS/MS



7.2.5
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15822.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 9:59:05 PM
 Sample Name : op96143-bs
 Vial : P3-C4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	25727	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	34588	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	31156	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	31931	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	55338	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	16868	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14734	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	15570	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	19844	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	9979	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	15722	2.50 µg/L	0.012
M3-PFBS	5.483	302.1 -> 79.9	12493	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8646	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7334	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2206	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3137	5.00 µg/L	0.000
M2-8:2FTS	7.948	529.1 -> 80.9	2965	5.00 µg/L	0.012
M3-MeFOSAA	8.204	573.2 -> 419.0	23693	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	13070	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	20531	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	19579	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	13804	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	5514	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5003	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8237	2.50 µg/L	0.000
13C3-PFBA	2.954	216.0 -> 172.0	29435	5.00 µg/L	0.037
18O2-PFHxS	7.264	403.0 -> 83.9	4968	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	64531	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	19647	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	16976	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	28538	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2206	6.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.3%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3137	7.14 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 142.8%		
13C2-8:2FTS	7.948	529.1 -> 80.9	2965	6.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.7%		
13C2-PFDoDA	9.031	615.1 -> 570.0	19844	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9979	1.09 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 87.1%		
13C3-PFBS	5.483	302.1 -> 79.9	12493	3.09 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 123.5%		
13C3-PFHxS	7.265	402.1 -> 79.9	8646	3.08 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 = 123.2%	
13C4-PFBA	2.963	216.8 -> 171.9	25727	3.78 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 37.8%	
13C4-PFHpA	6.493	367.1 -> 322.0	31931	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFHxA	5.553	318.0 -> 273.0	31156	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C5-PFPeA	4.359	268.3 -> 223.0	34588	5.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C6-PFDA	8.147	519.1 -> 474.1	14734	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.601	570.0 -> 525.1	15570	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.643	506.1 -> 77.8	15722	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOA	7.137	421.1 -> 376.0	55338	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C8-PFOS	8.310	507.1 -> 79.9	7334	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C9-PFNA	7.667	472.1 -> 427.0	16868	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSAA	8.204	573.2 -> 419.0	23693	5.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.6%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	13070	10.64 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
d3-MeFOSA	10.745	515.0 -> 219.0	5003	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	20531	5.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.4%	
d7-MeFOSE	10.653	623.2 -> 58.9	19579	22.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
d9-EtFOSE	10.900	639.2 -> 58.9	13804	24.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSA	10.978	531.1 -> 219.0	5514	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	43618	9.47 µg/L	100
		327.1 -> 80.9	10378		
6:2FTS	6.911	427.1 -> 407.0	38476	9.15 µg/L	97
		427.1 -> 80.9	7902		
8:2FTS	7.936	527.1 -> 507.0	21645	10.04 µg/L	95
		527.1 -> 80.8	5466		
EtFOSAA	8.413	584.2 -> 419.1	7709	2.43 µg/L	92
		584.2 -> 526.0	4389		
FOSA	9.634	498.1 -> 77.9	13932	2.50 µg/L	100
		498.1 -> 478.0	514		
MeFOSAA	8.205	570.1 -> 419.0	10512	2.41 µg/L	95
		570.1 -> 483.0	1972		
PFBA	2.957	212.8 -> 168.9	5822	9.95 µg/L	100
PFBS	5.484	298.7 -> 79.9	10335	2.14 µg/L	97
		298.7 -> 98.8	4678		
PFDA	8.148	512.9 -> 469.0	39205	2.32 µg/L	100
		512.9 -> 219.0	5420		
PFDODA	9.032	613.1 -> 569.0	34489	2.35 µg/L	100
		613.1 -> 319.0	4402		
PFDS	9.195	599.0 -> 79.9	5473	2.50 µg/L	91

7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	2644	2.48	µg/L	100
		363.1 -> 319.0	46240			
PFHpS	7.819	363.1 -> 169.0	6655	2.29	µg/L	98
		449.0 -> 79.9	6744			
PFHxA	5.556	449.0 -> 98.9	3776	2.55	µg/L	100
		313.0 -> 269.0	28612			
PFHxS	7.253	313.0 -> 118.9	1156	2.27	µg/L	99
		398.7 -> 79.9	8421			
PFNA	7.668	398.7 -> 98.9	4598	2.65	µg/L	98
		463.0 -> 419.0	26655			
PFNS	8.776	463.0 -> 219.0	5740	2.33	µg/L	86
		548.8 -> 79.9	7161			
PFOA	7.138	548.8 -> 98.9	4307	2.48	µg/L	100
		413.0 -> 369.0	58587			
PFOS	8.311	413.0 -> 169.0	7784	2.14	µg/L	91
		498.9 -> 79.9	6560			
PFPeA	4.349	498.9 -> 98.8	4716	4.98	µg/L	100
		263.0 -> 219.0	36488			
PFPeS	6.558	349.1 -> 79.9	9535	2.25	µg/L	96
		349.1 -> 98.9	4998			
PFTeDA	9.746	713.1 -> 669.0	29230	2.59	µg/L	100
		713.1 -> 168.9	2046			
PFTrDA	9.403	663.0 -> 619.0	31090	2.40	µg/L	98
		663.0 -> 168.9	2678			
PFUnDA	8.601	563.1 -> 519.0	36412	2.75	µg/L	99
		563.1 -> 269.1	5193			
11CI-PF3OUdS	9.454	630.9 -> 450.9	72148	9.64	µg/L	98
		632.9 -> 452.9	21068			
9CI-PF3ONS	8.641	530.8 -> 351.0	133092	9.61	µg/L	99
		532.8 -> 353.0	42076			
ADONA	6.756	376.9 -> 250.9	272929	9.92	µg/L	97
		376.9 -> 84.8	62030			
HFPO-DA	5.919	284.9 -> 168.9	12509	10.40	µg/L	98
		284.9 -> 184.9	1389			
3:3FTCA	3.852	241.0 -> 177.0	4139	10.62	µg/L	98
		241.0 -> 117.0	578			
5:3FTCA	6.223	341.0 -> 237.1	168832	66.06	µg/L	89
		341.0 -> 217.0	136741			
7:3FTCA	7.633	441.0 -> 316.9	85996	63.49	µg/L	94
		441.0 -> 336.9	155903			
EtFOSA	10.979	526.0 -> 219.0	5805	2.47	µg/L	100
		526.0 -> 169.0	5697			
EtFOSE	10.913	630.0 -> 58.9	12329	24.96	µg/L	100
		511.9 -> 219.0	5630			
MeFOSA	10.747	511.9 -> 169.0	5545	2.61	µg/L	96
		616.1 -> 58.9	18678			
MeFOSE	10.666	699.1 -> 79.9	2900	26.42	µg/L	100
		699.1 -> 98.8	1820			
PFDoDS	9.873	295.0 -> 201.0	3553	2.20	µg/L	91
		295.0 -> 84.9	1807			
NFDHA	5.435	279.0 -> 85.1	11307	5.33	µg/L	89
		229.0 -> 84.9	8184			
PFMBA	4.762	314.8 -> 134.9	73779	4.59	µg/L	100
		314.8 -> 82.9	1803			

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

7.3.1
7

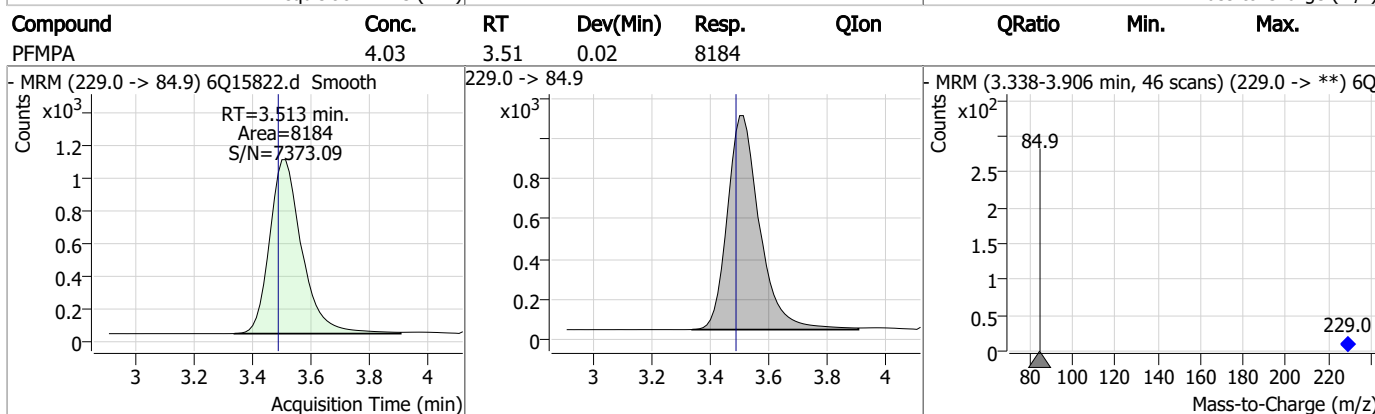
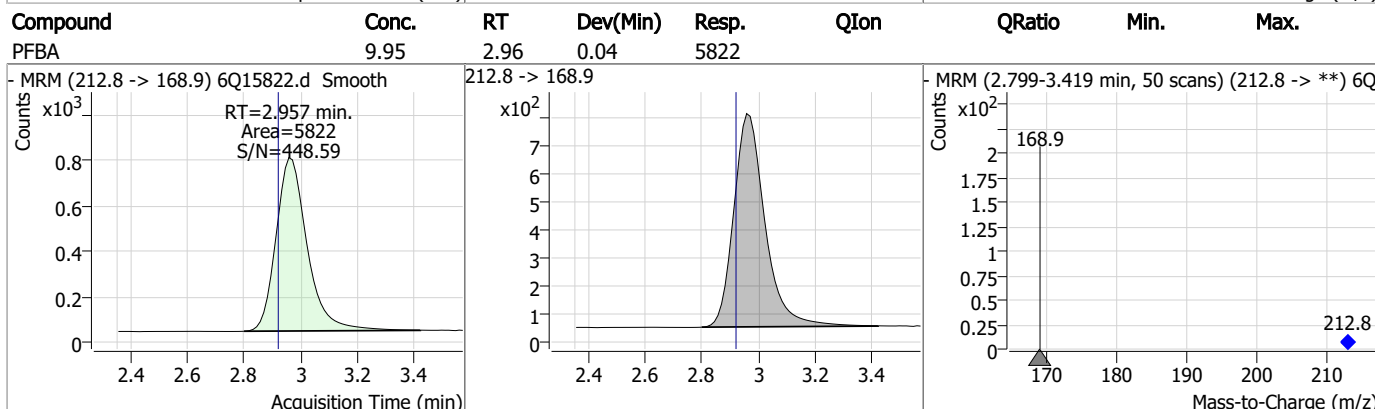
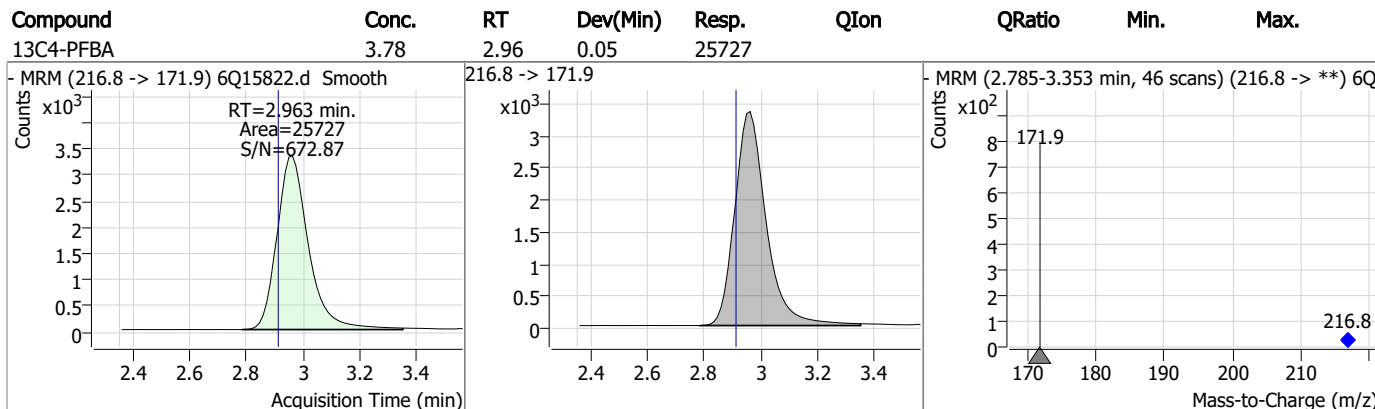
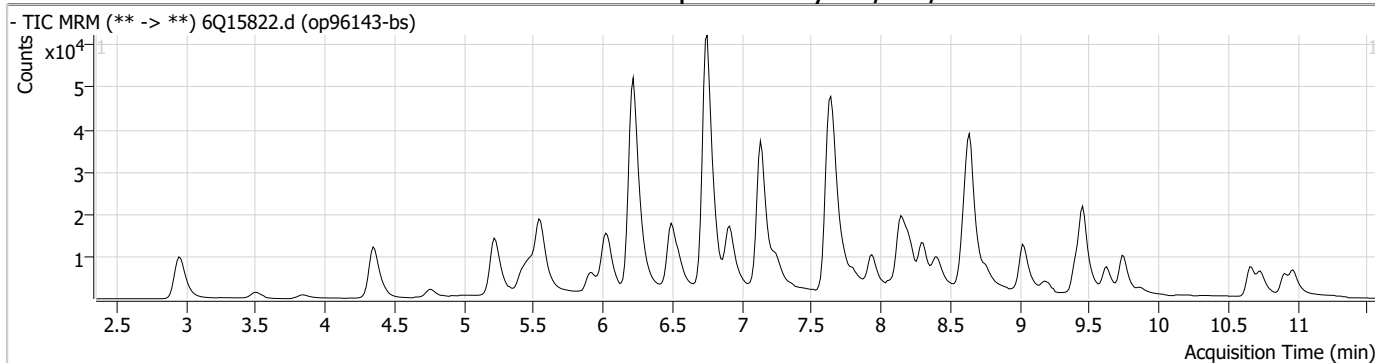
Perfluorinated Compounds by LC/MS/MS

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

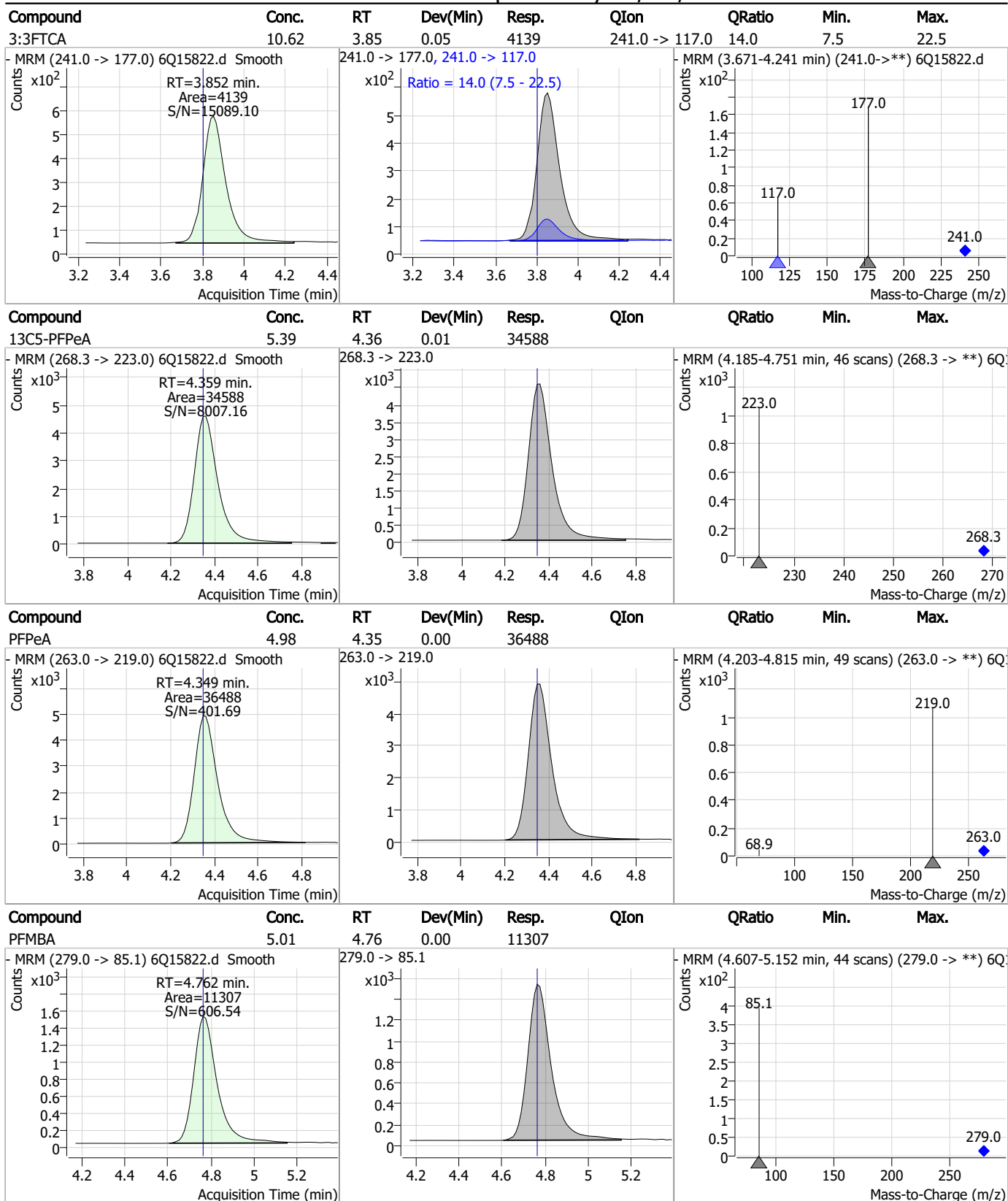
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Perfluorinated Compounds by LC/MS/MS



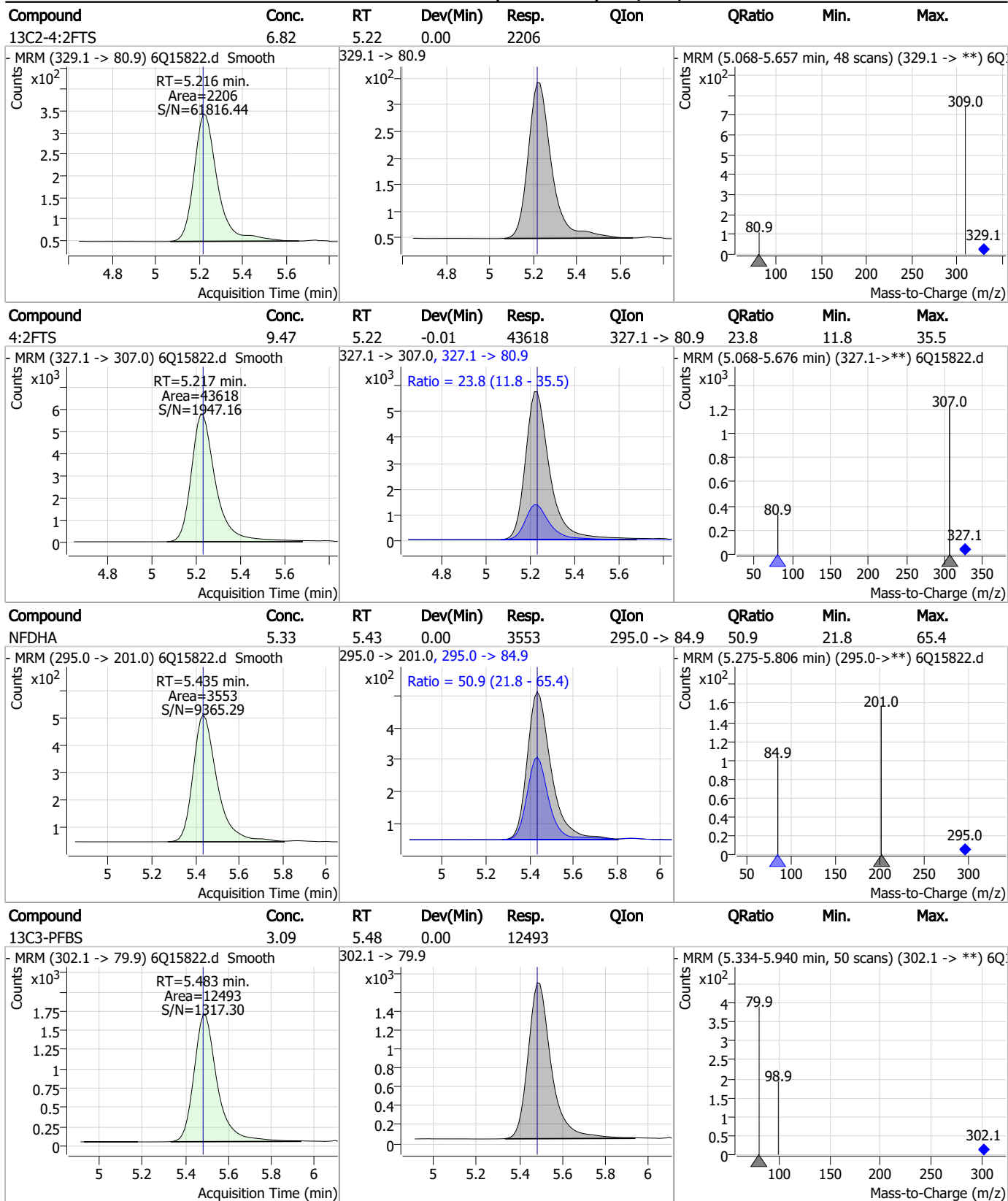
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Perfluorinated Compounds by LC/MS/MS



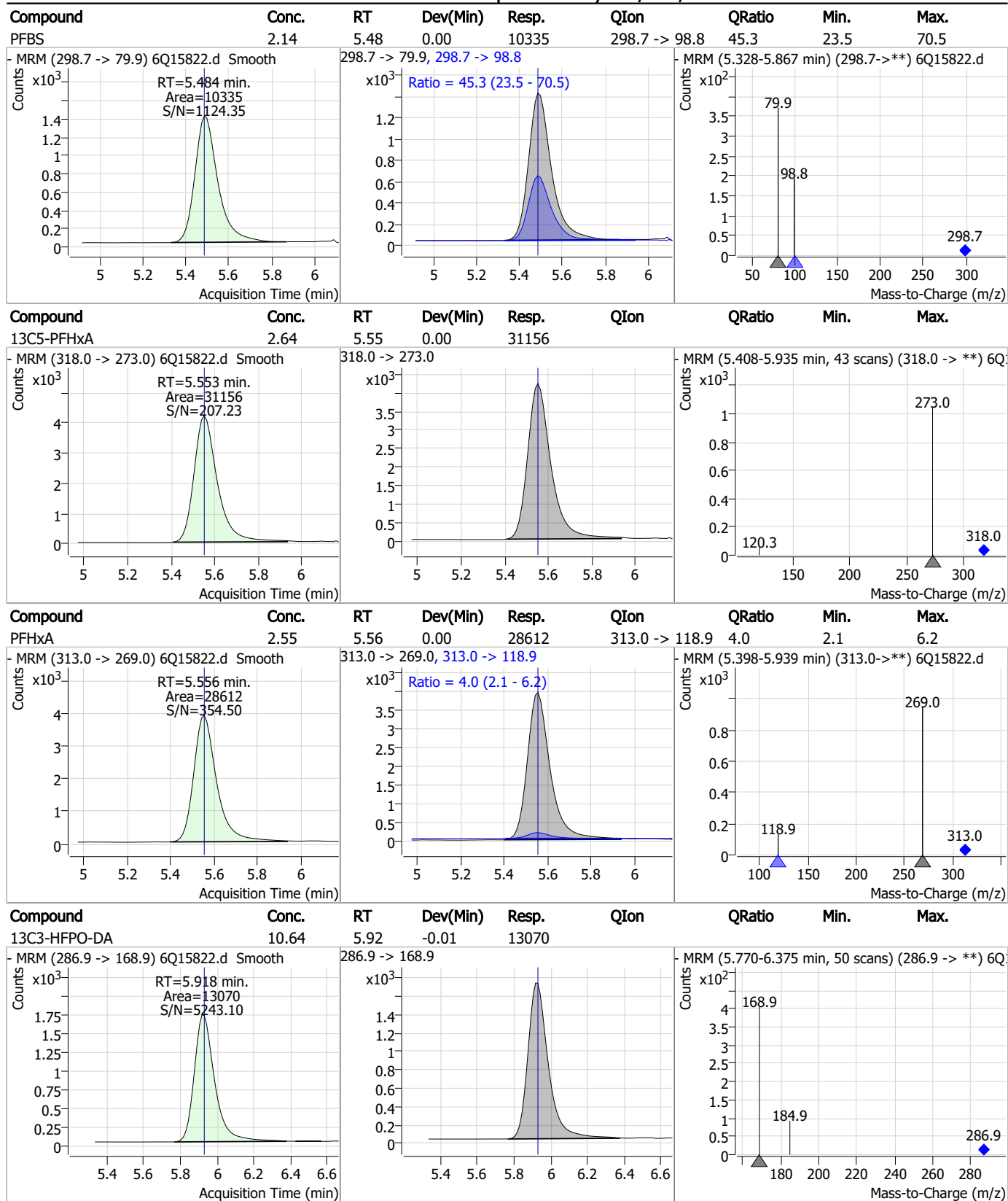
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Perfluorinated Compounds by LC/MS/MS



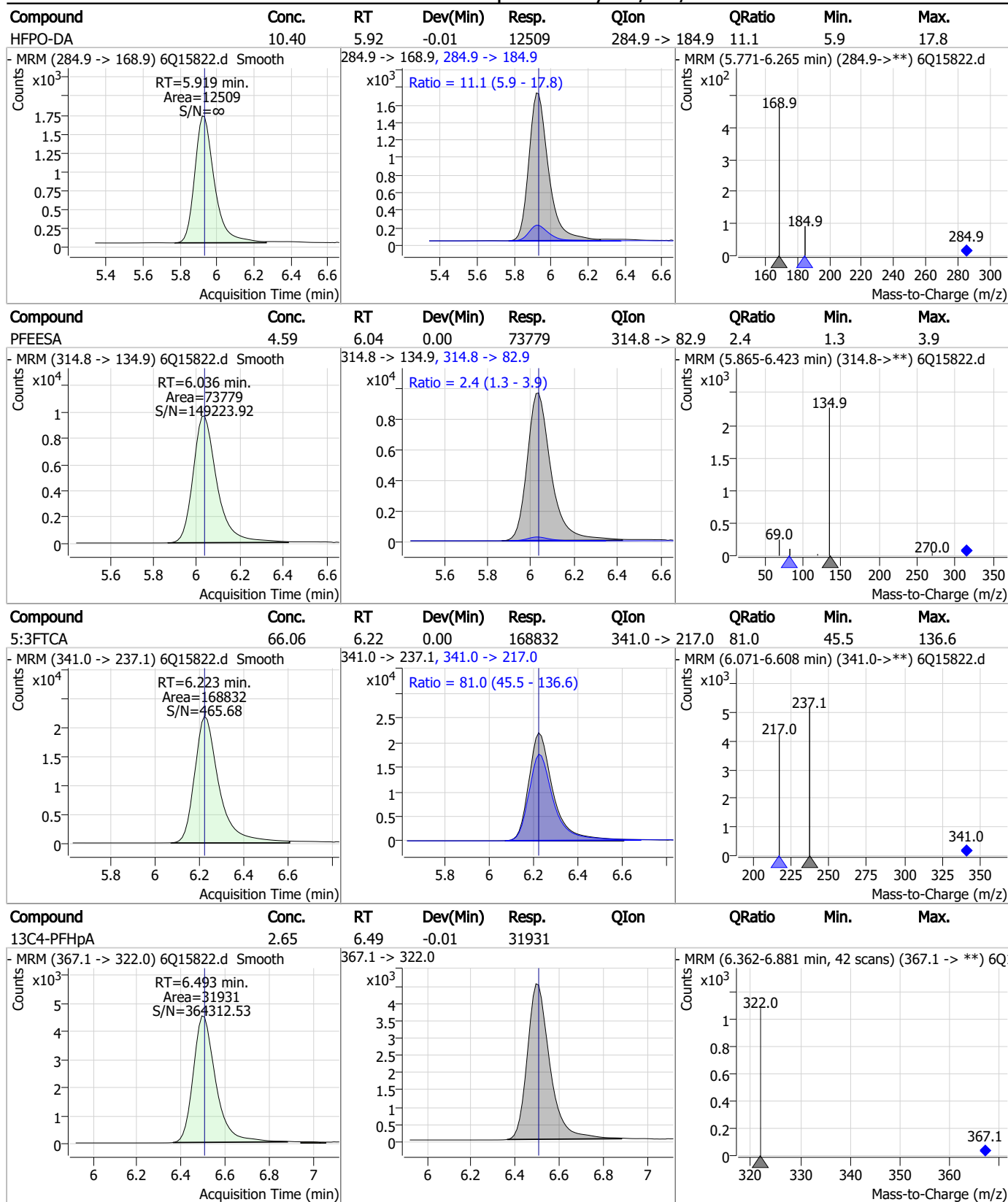
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Perfluorinated Compounds by LC/MS/MS



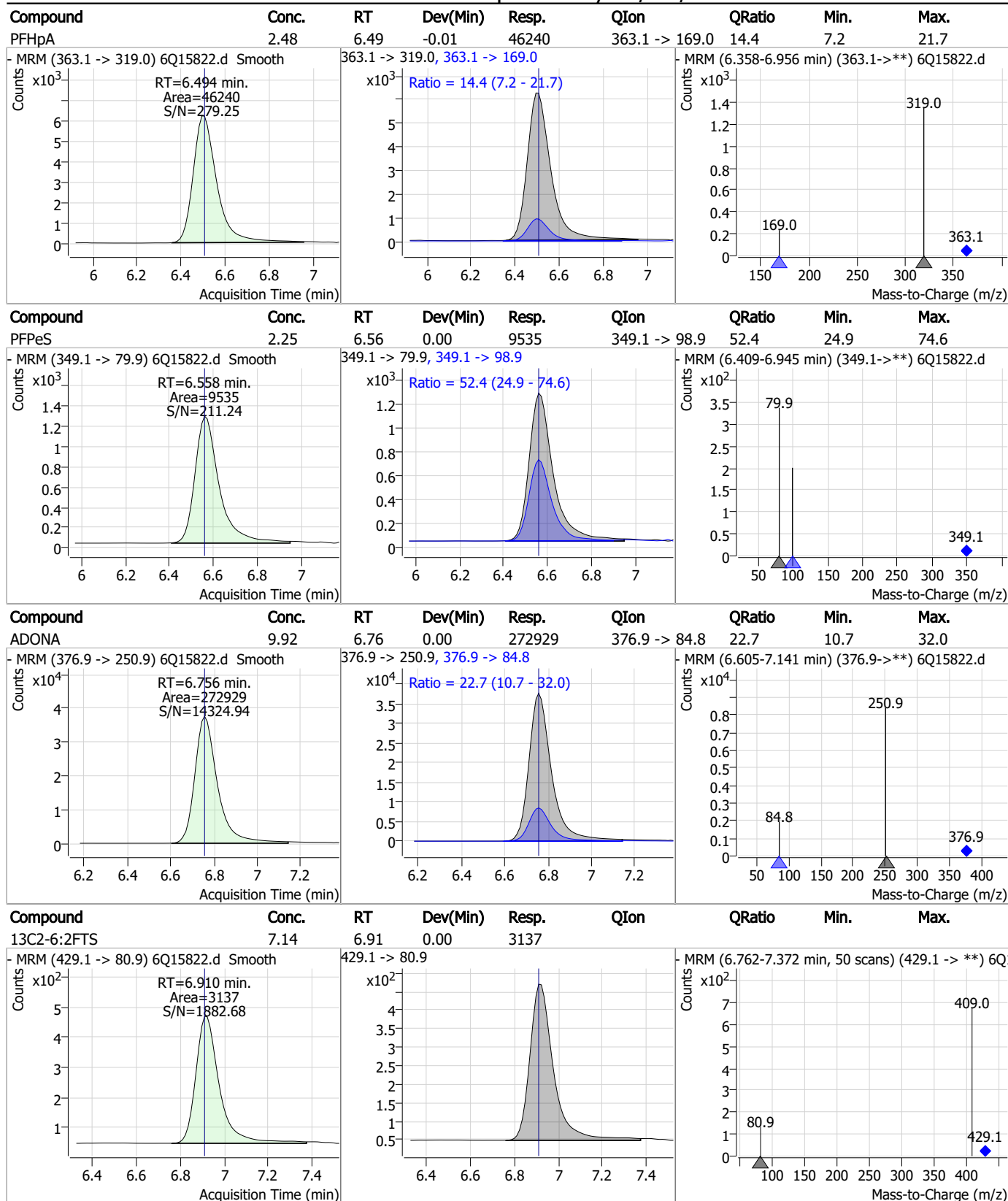
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Perfluorinated Compounds by LC/MS/MS



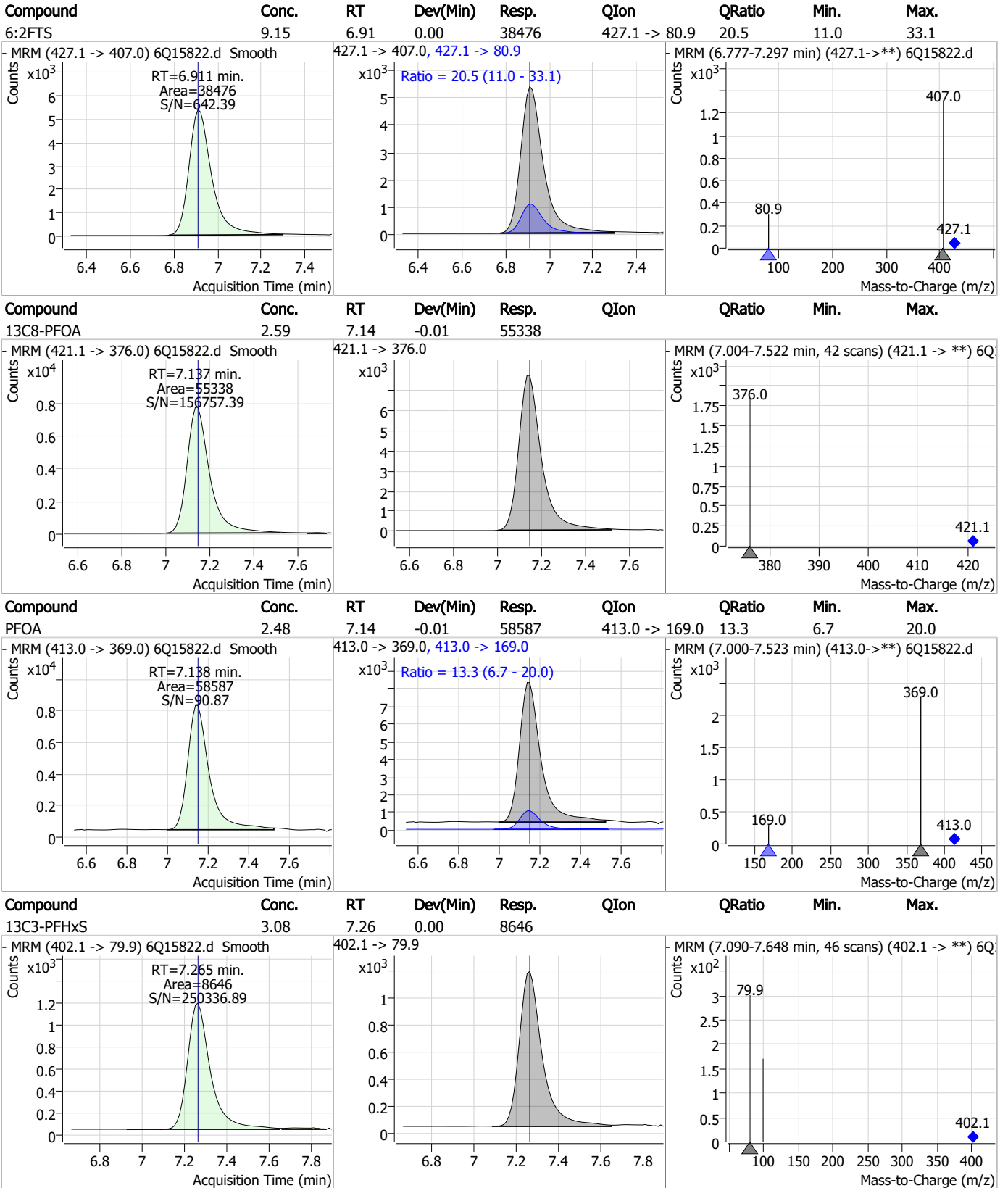
7.3.1
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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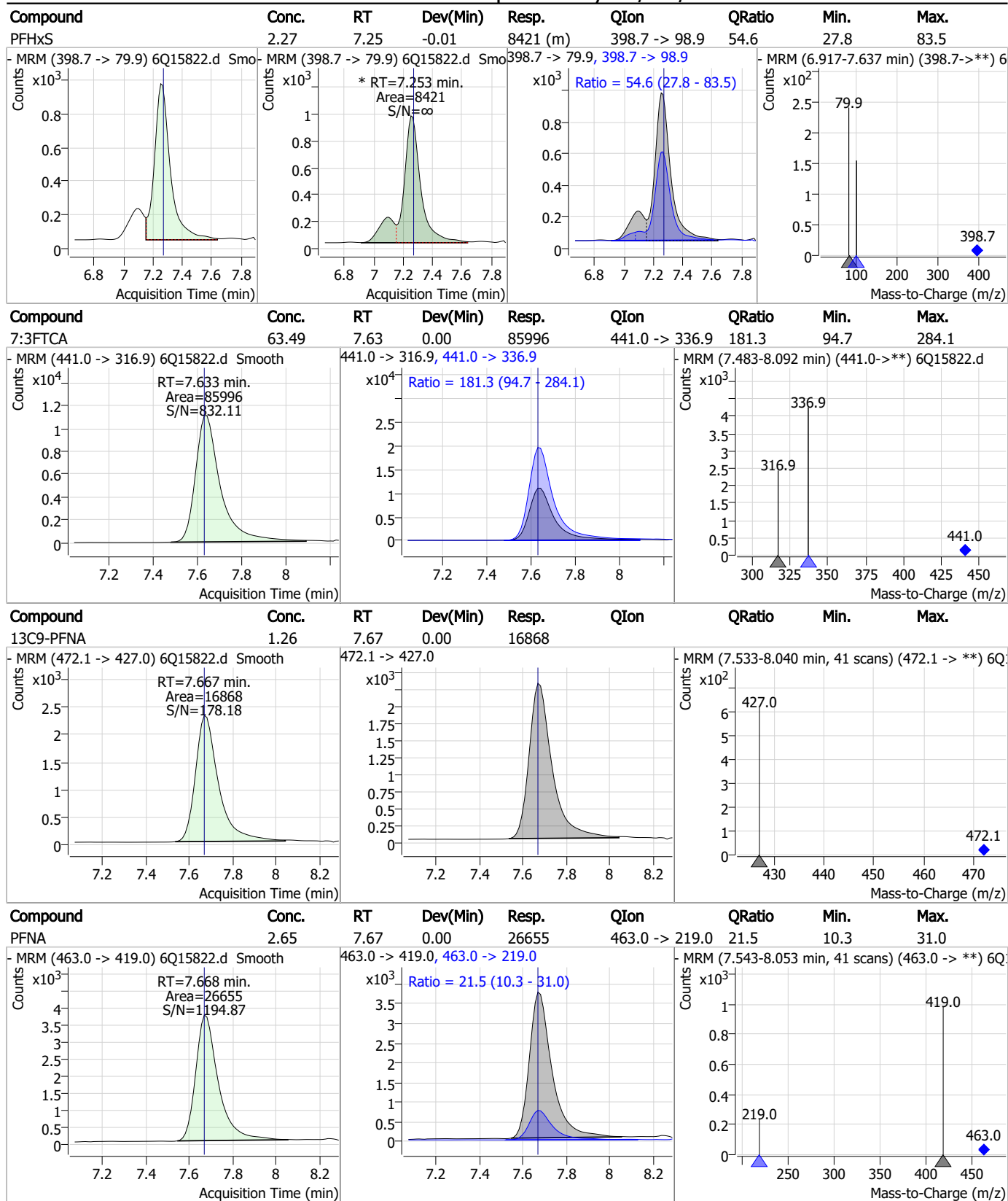
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7.3.1

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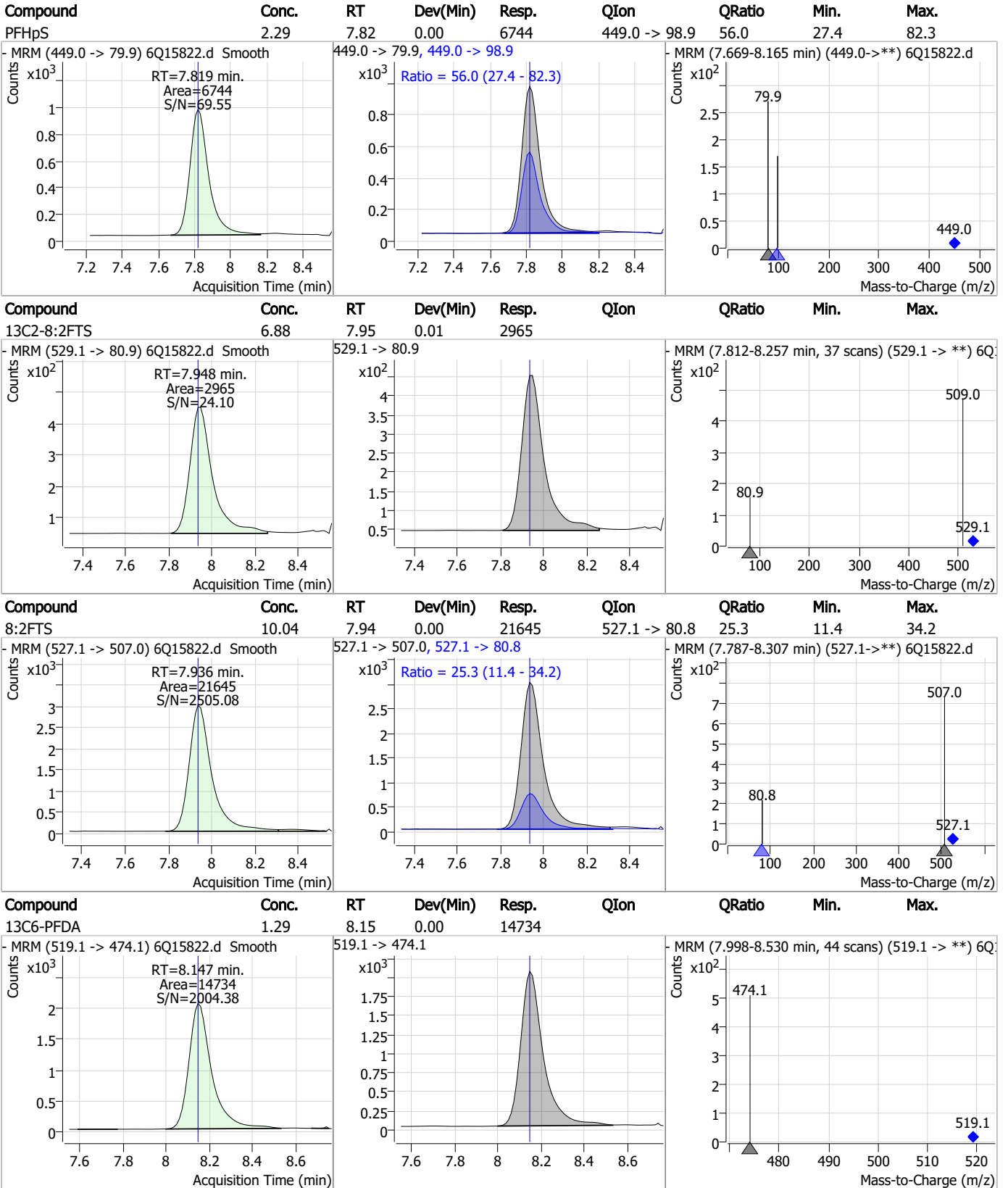
Perfluorinated Compounds by LC/MS/MS



7.3.1
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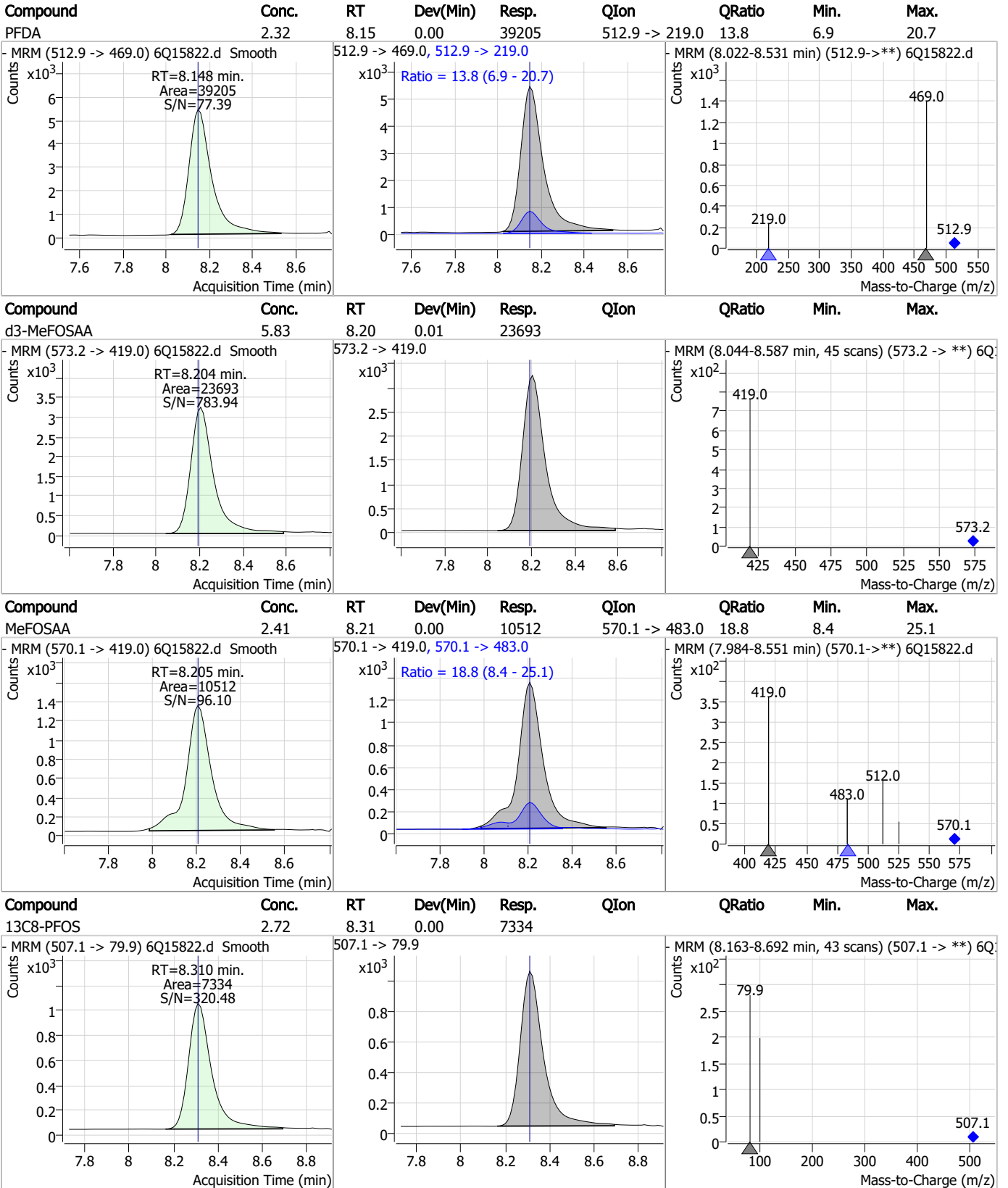
Perfluorinated Compounds by LC/MS/MS



7.3.1

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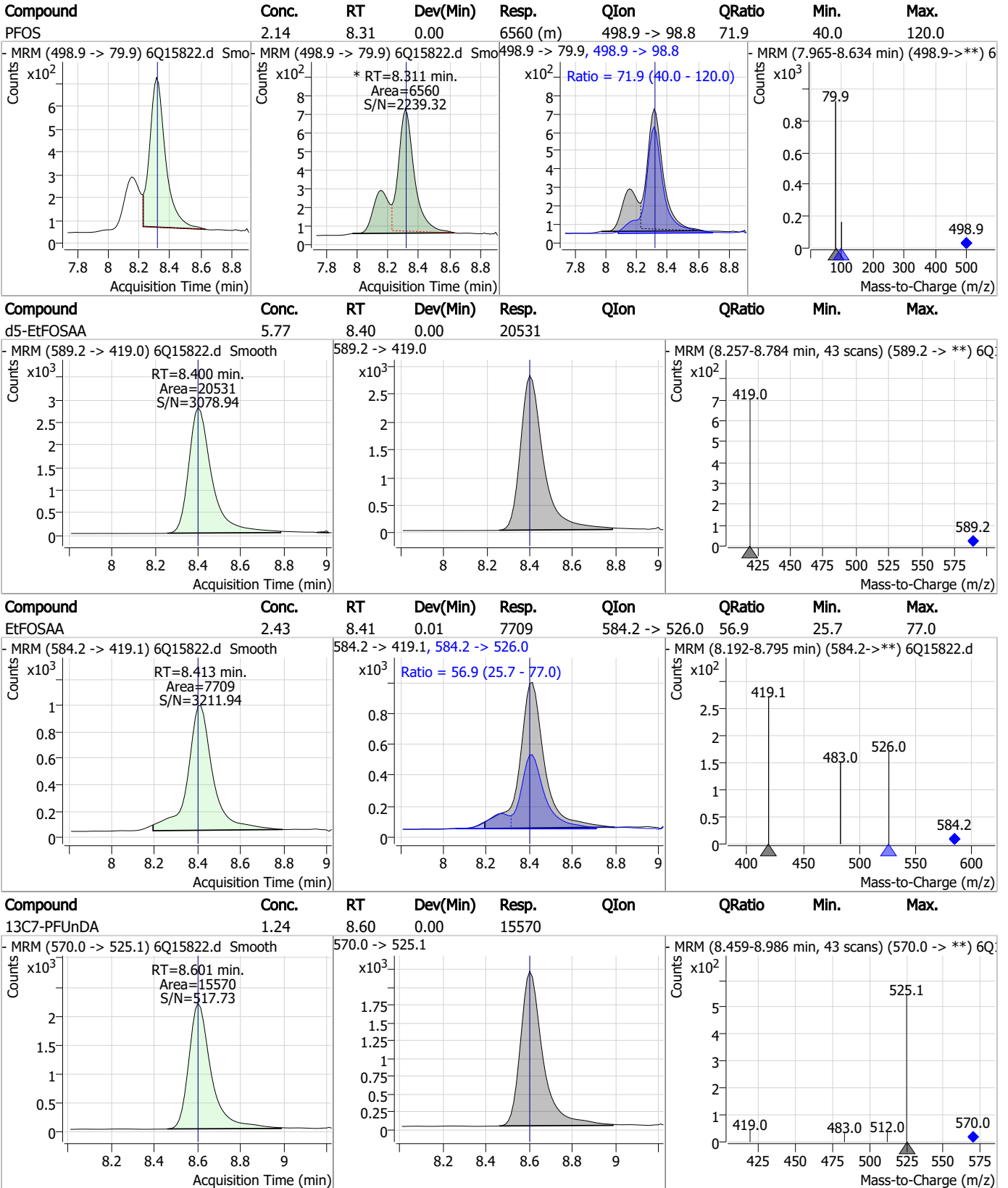
Perfluorinated Compounds by LC/MS/MS



7.3.1

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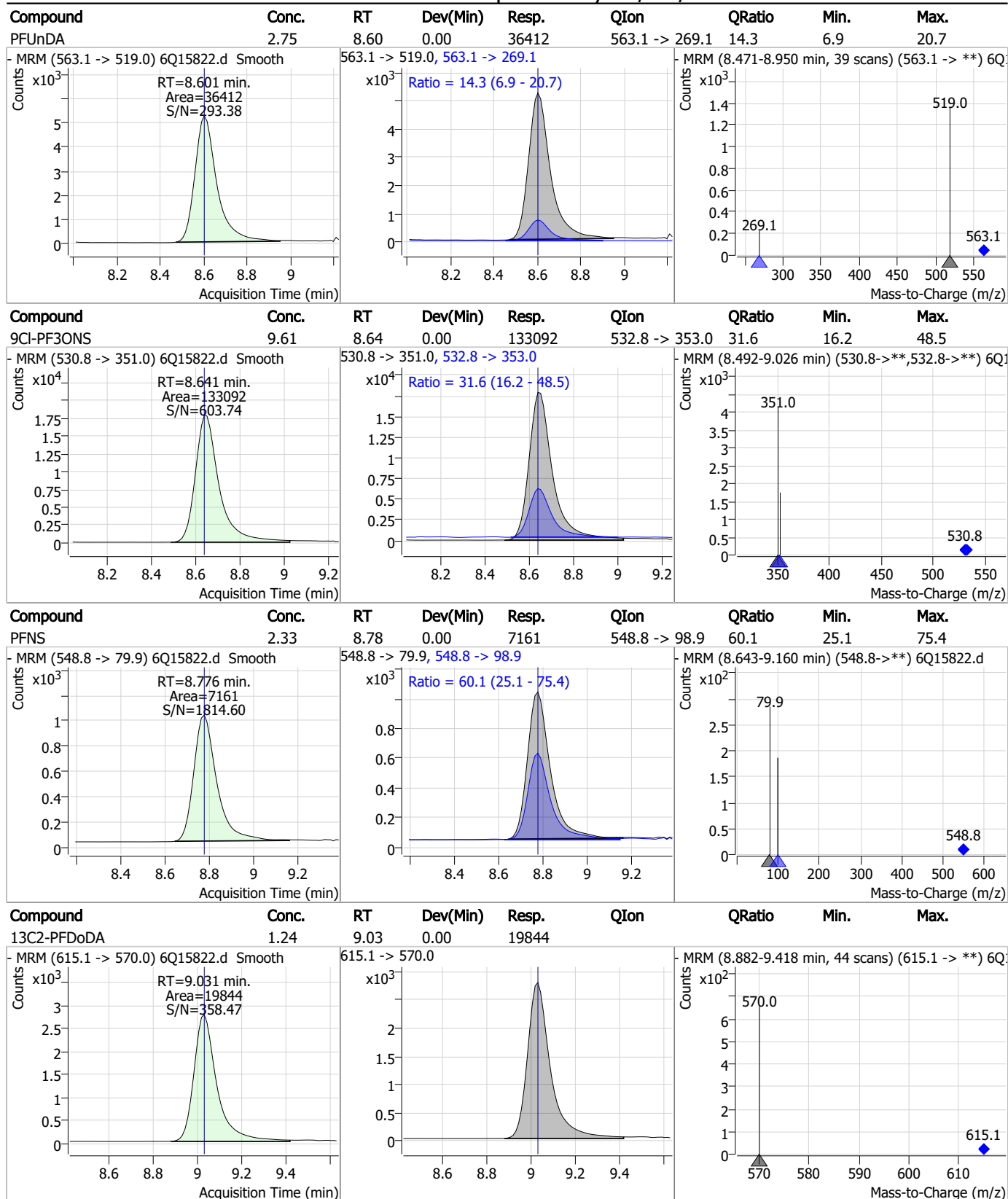
Perfluorinated Compounds by LC/MS/MS



7.3.1

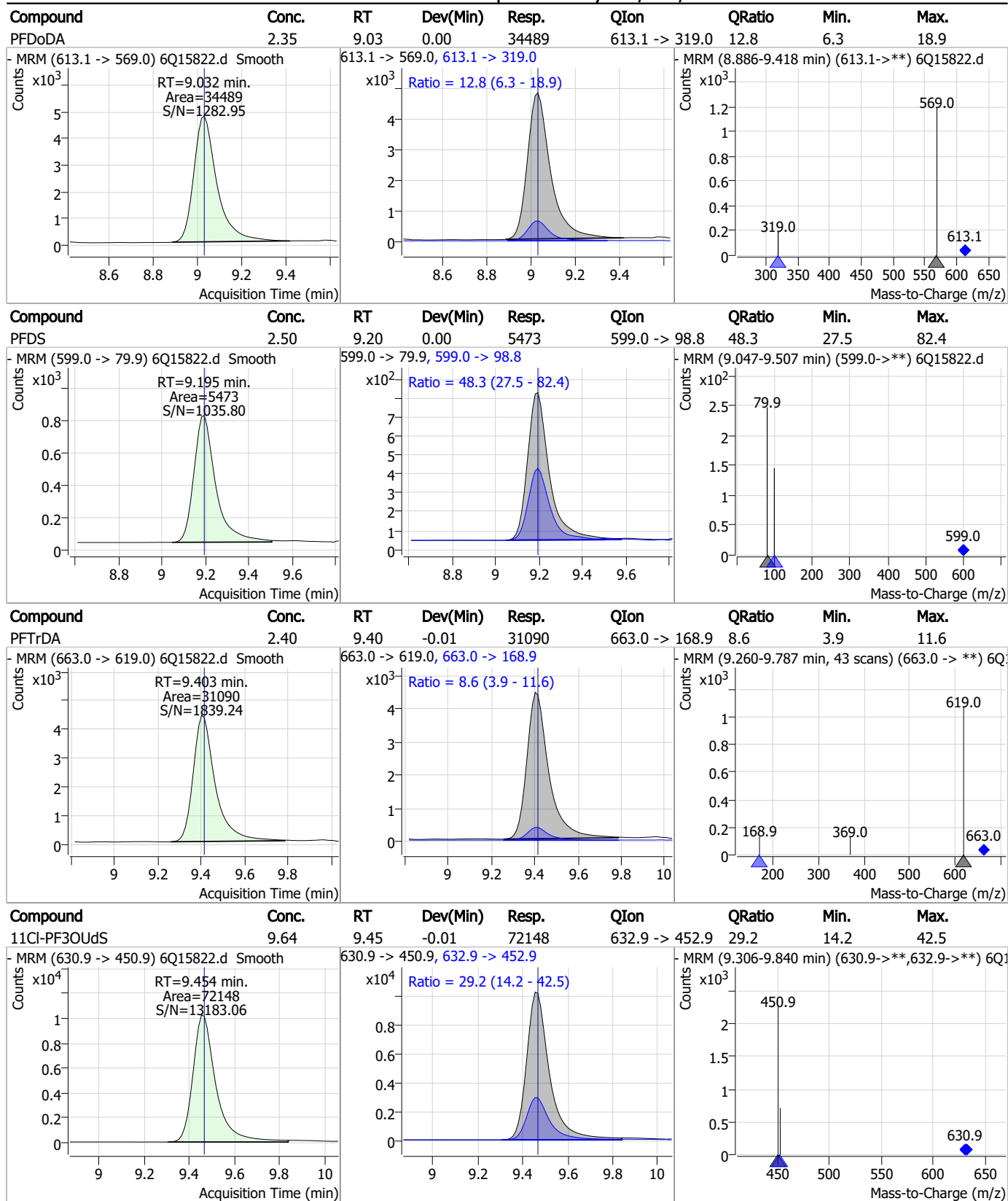
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Perfluorinated Compounds by LC/MS/MS



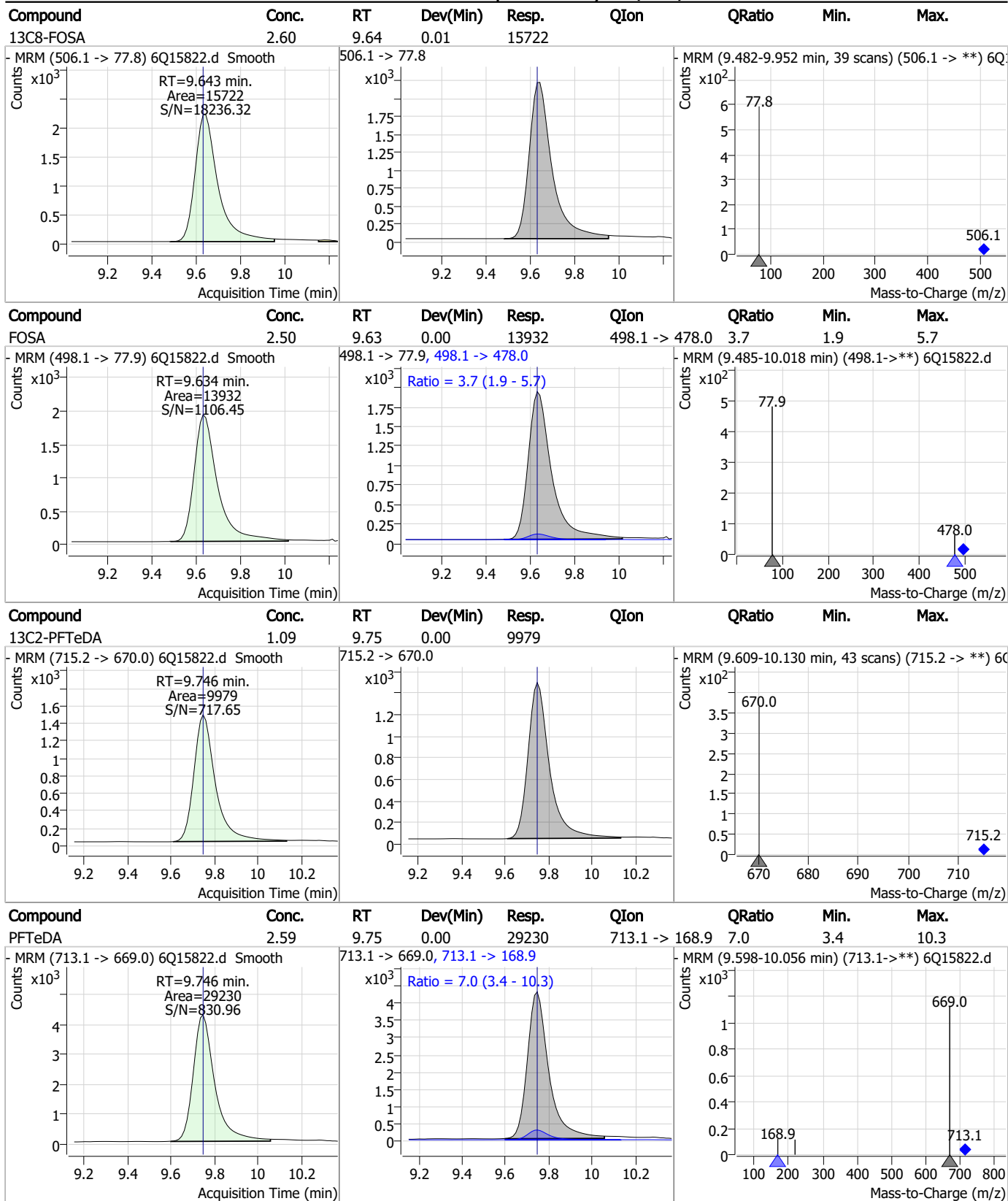
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Perfluorinated Compounds by LC/MS/MS



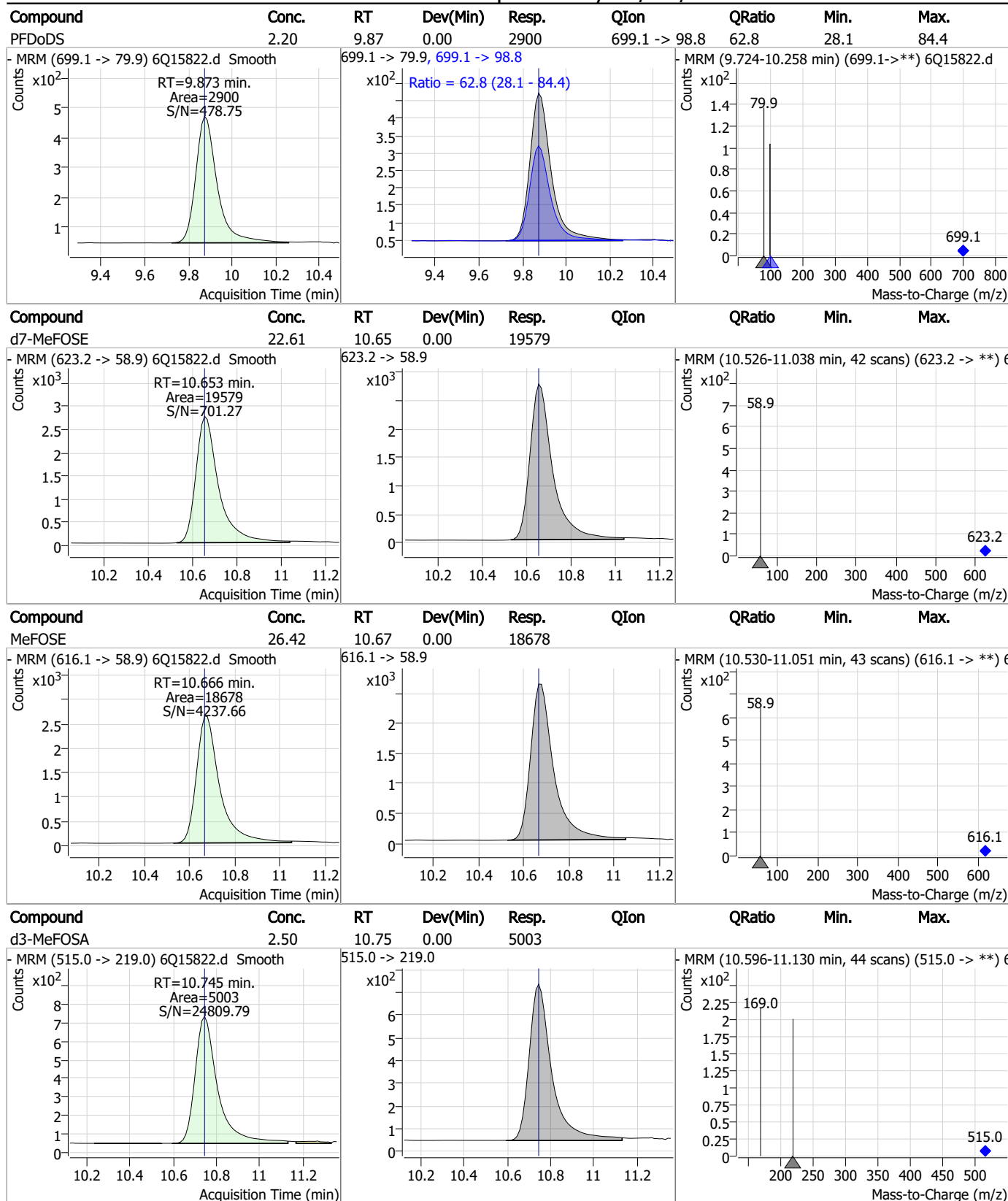
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Perfluorinated Compounds by LC/MS/MS



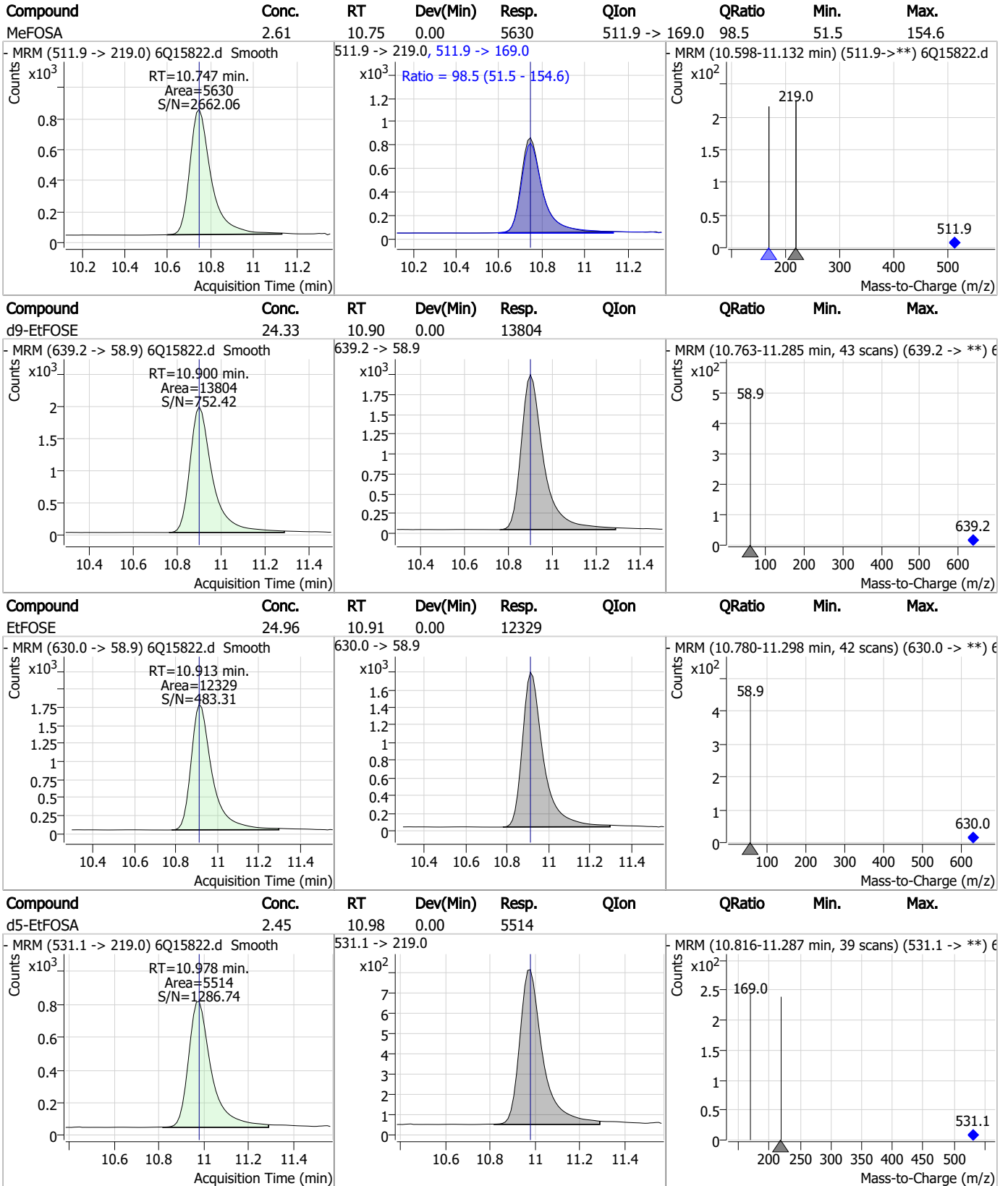
7.3.1
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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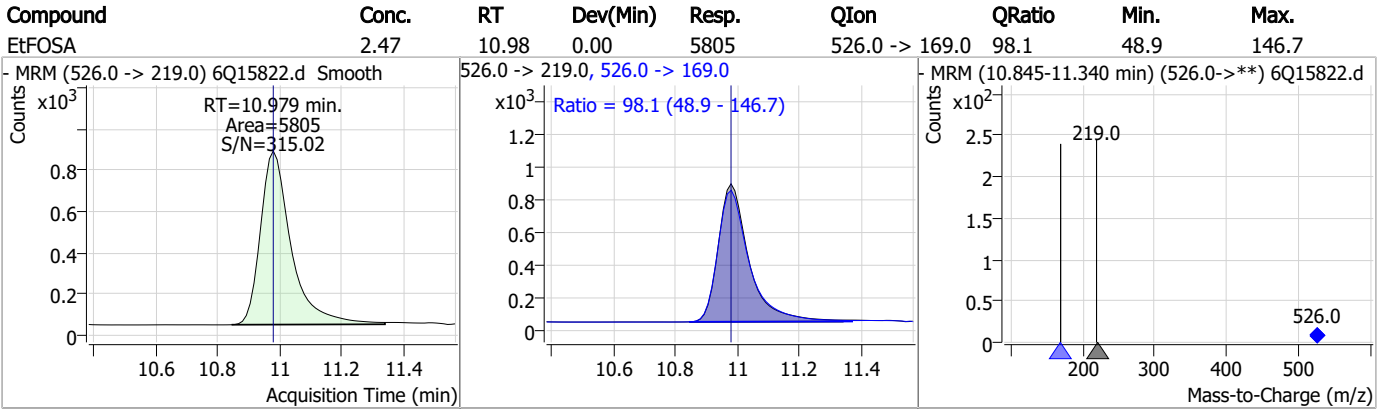
Perfluorinated Compounds by LC/MS/MS



7.3.1

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Perfluorinated Compounds by LC/MS/MS



7.3.1

7

Manual Integration Approval Summary

Sample Number: OP96143-BS Method: EPA DRAFT 1633
Lab FileID: 6Q15822.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/30/23 21:59 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.3.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15823.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 10:13:04 PM
 Sample Name : op96143-llbs:3
 Vial : P3-C5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	73528	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35000	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	31582	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	33032	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	58680	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	16751	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16060	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16281	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	19760	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	11167	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	16091	2.50 µg/L	0.012
M3-PFBS	5.483	302.1 -> 79.9	12894	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8136	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7111	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2420	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2751	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2817	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22805	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	13456	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	20496	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	19690	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	12512	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5079	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	4496	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8553	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	28647	5.00 µg/L	0.050
18O2-PFHxS	7.251	403.0 -> 83.9	5284	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	62812	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	17983	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17374	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	29491	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2420	7.03 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 140.6%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2751	5.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2817	6.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.0%		
13C2-PFDoDA	9.031	615.1 -> 570.0	19760	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C2-PFTeDA	9.746	715.2 -> 670.0	11167	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C3-PFBS	5.483	302.1 -> 79.9	12894	3.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 119.8%		
13C3-PFHxS	7.252	402.1 -> 79.9	8136	2.72 µg/L	-0.012

7.32
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C4-PFBA	2.963	216.8 -> 171.9	73528	11.11 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 111.1%		
13C4-PFHpA	6.493	367.1 -> 322.0	33032	2.65 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C5-PFHxA	5.553	318.0 -> 273.0	31582	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFPeA	4.359	268.3 -> 223.0	35000	5.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C6-PFDA	8.147	519.1 -> 474.1	16060	1.54 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 123.3%		
13C7-PFUnDA	8.601	570.0 -> 525.1	16281	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C8-FOSA	9.643	506.1 -> 77.8	16091	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C8-PFOA	7.137	421.1 -> 376.0	58680	2.82 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C8-PFOS	8.310	507.1 -> 79.9	7111	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C9-PFNA	7.667	472.1 -> 427.0	16751	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
d3-MeFOSAA	8.204	573.2 -> 419.0	22805	5.40 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	13456	10.60 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
d3-MeFOSA	10.745	515.0 -> 219.0	4496	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.5%		
d5-EtFOSAA	8.400	589.2 -> 419.0	20496	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
d7-MeFOSE	10.653	623.2 -> 58.9	19690	21.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 87.6%		
d9-EtFOSE	10.900	639.2 -> 58.9	12512	21.23 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 84.9%		
d5-EtFOSA	10.965	531.1 -> 219.0	5079	2.17 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.9%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	16342	3.24 µg/L	100
		327.1 -> 80.9	3903		
6:2FTS	6.911	427.1 -> 407.0	14628	3.97 µg/L	100
		427.1 -> 80.9	3260		
8:2FTS	7.936	527.1 -> 507.0	8149	3.98 µg/L	94
		527.1 -> 80.8	2099		
EtFOSAA	8.413	584.2 -> 419.1	3324	1.05 µg/L	94
		584.2 -> 526.0	1841		
FOSA	9.634	498.1 -> 77.9	5518	0.97 µg/L	97
		498.1 -> 478.0	164		
MeFOSAA	8.205	570.1 -> 419.0	3902	0.93 µg/L	100
		570.1 -> 483.0	655		
PFBA	2.957	212.8 -> 168.9	6410	3.83 µg/L	100
PFBS	5.484	298.7 -> 79.9	4178	0.84 µg/L	96
		298.7 -> 98.8	1849		
PFDA	8.148	512.9 -> 469.0	14506	0.79 µg/L	95
		512.9 -> 219.0	2318		
PFDODA	9.032	613.1 -> 569.0	13558	0.93 µg/L	99
		613.1 -> 319.0	1766		
PFDS	9.195	599.0 -> 79.9	1957	0.92 µg/L	97

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	1122	0.94	µg/L	98
		363.1 -> 319.0	18237			
PFHpS	7.819	363.1 -> 169.0	2482	0.92	µg/L	86
		449.0 -> 79.9	2624			
PFHxA	5.556	449.0 -> 98.9	1708	1.05	µg/L	96
		313.0 -> 269.0	11952			
PFHxS	7.253	313.0 -> 118.9	355	0.85	µg/L	91
		398.7 -> 79.9	2966			
PFNA	7.668	398.7 -> 98.9	1852	1.04	µg/L	98
		463.0 -> 419.0	10444			
PFNS	8.776	463.0 -> 219.0	2246	0.89	µg/L	95
		548.8 -> 79.9	2657			
PFOA	7.138	548.8 -> 98.9	1424	0.99	µg/L	97
		413.0 -> 369.0	24830			
PFOS	8.311	413.0 -> 169.0	3023	1.02	µg/L	73
		498.9 -> 79.9	3028			
PFPeA	4.361	498.9 -> 98.8	1709	1.89	µg/L	100
		263.0 -> 219.0	14048			
PFPeS	6.558	349.1 -> 79.9	3767	0.94	µg/L	92
		349.1 -> 98.9	2077			
PFTeDA	9.746	713.1 -> 669.0	11644	0.92	µg/L	100
		713.1 -> 168.9	804			
PFTrDA	9.415	663.0 -> 619.0	12477	0.97	µg/L	99
		663.0 -> 168.9	1027			
PFUnDA	8.601	563.1 -> 519.0	13591	0.98	µg/L	99
		563.1 -> 269.1	1931			
11CI-PF3OUdS	9.454	630.9 -> 450.9	26842	3.48	µg/L	94
		632.9 -> 452.9	8452			
9CI-PF3ONS	8.641	530.8 -> 351.0	53750	3.77	µg/L	99
		532.8 -> 353.0	17166			
ADONA	6.756	376.9 -> 250.9	106997	3.78	µg/L	99
		376.9 -> 84.8	23515			
HFPO-DA	5.919	284.9 -> 168.9	4681	3.78	µg/L	100
		284.9 -> 184.9	549			
3:3FTCA	3.852	241.0 -> 177.0	1706	4.33	µg/L	99
		241.0 -> 117.0	261			
5:3FTCA	6.223	341.0 -> 237.1	61255	23.65	µg/L	100
		341.0 -> 217.0	55685			
7:3FTCA	7.633	441.0 -> 316.9	31927	23.26	µg/L	97
		441.0 -> 336.9	59155			
EtFOSA	10.979	526.0 -> 219.0	2149	0.99	µg/L	95
		526.0 -> 169.0	1987			
EtFOSE	10.913	630.0 -> 58.9	4373	9.77	µg/L	100
		511.9 -> 219.0	2017			
MeFOSA	10.747	511.9 -> 169.0	2224	1.04	µg/L	93
		616.1 -> 58.9	6490			
MeFOSE	10.666	699.1 -> 79.9	1148	9.13	µg/L	100
		699.1 -> 98.8	716			
PFDoDS	9.873	295.0 -> 201.0	1308	0.90	µg/L	92
		295.0 -> 84.9	663			
NFDHA	5.435	279.0 -> 85.1	4264	1.94	µg/L	89
		229.0 -> 84.9	3823			
PFMBA	4.762	314.8 -> 134.9	28291	1.87	µg/L	100
		314.8 -> 82.9	724			
PFMPA	3.500			1.86	µg/L	100
PFEESA	6.024			1.74	µg/L	100

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



7.3.2
7

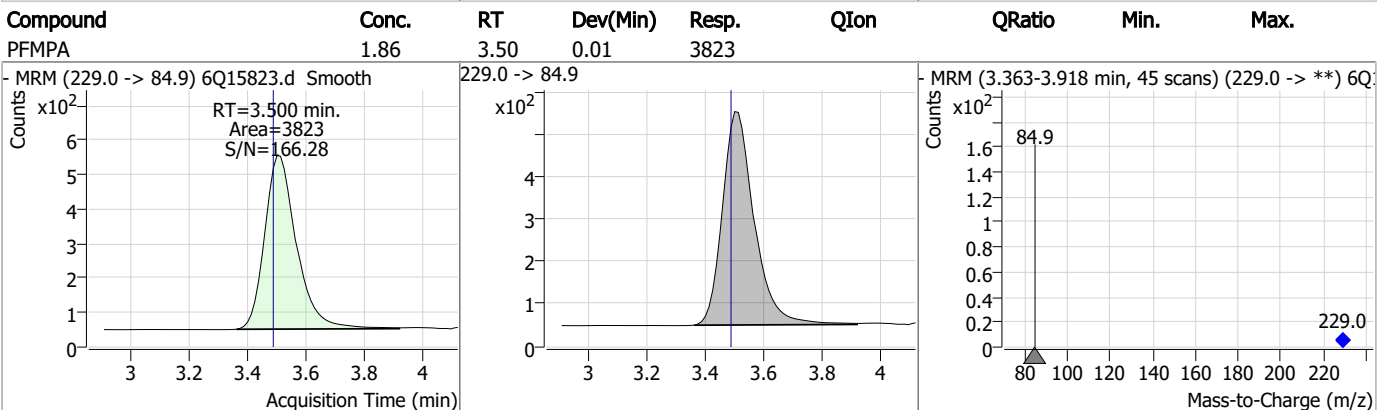
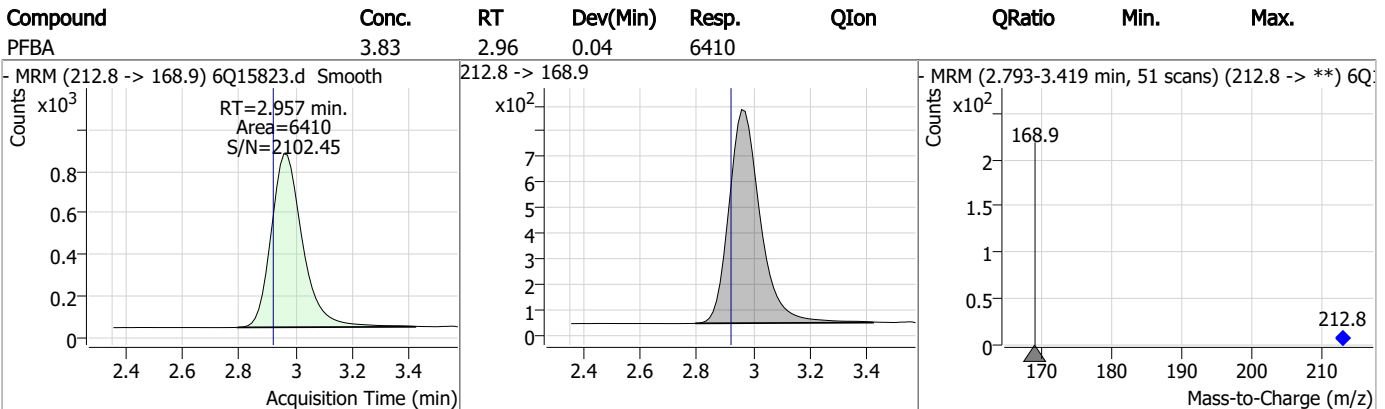
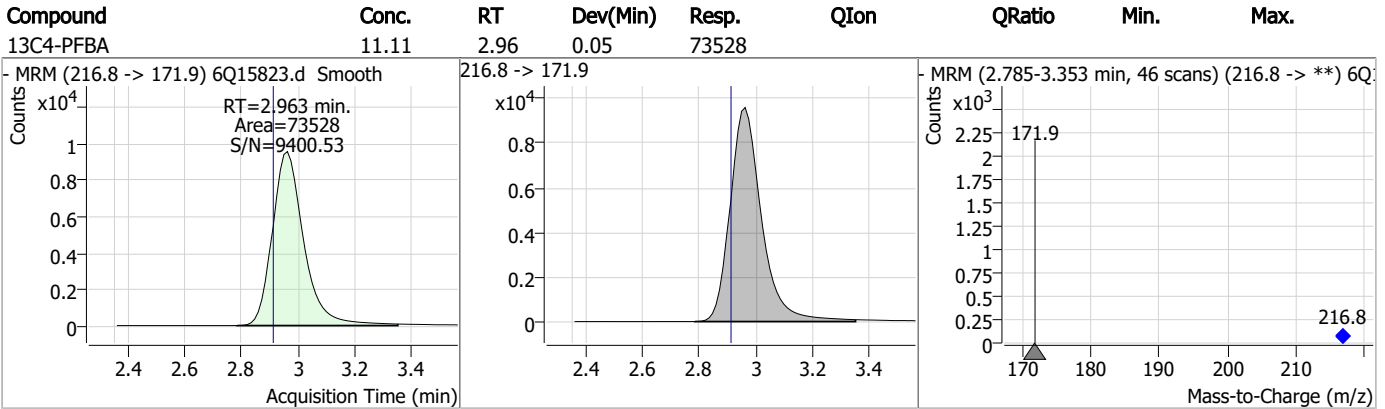
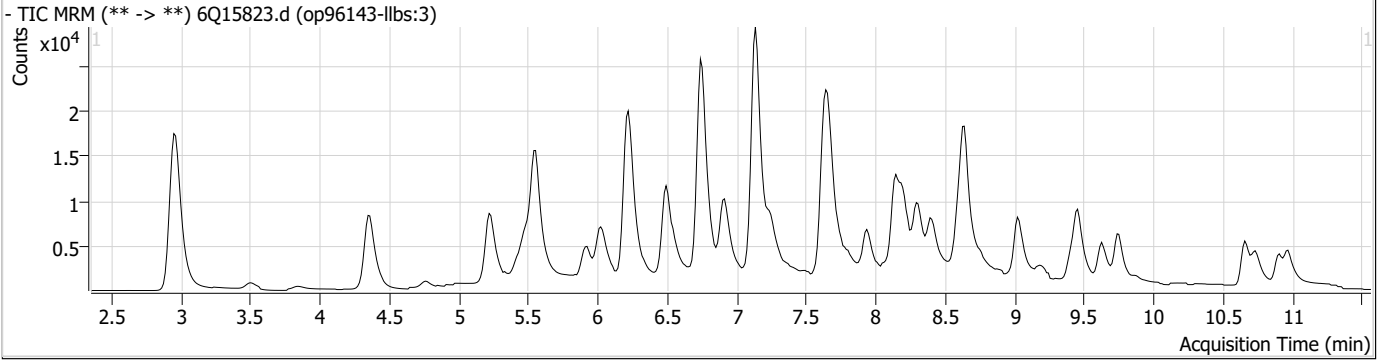
Perfluorinated Compounds by LC/MS/MS

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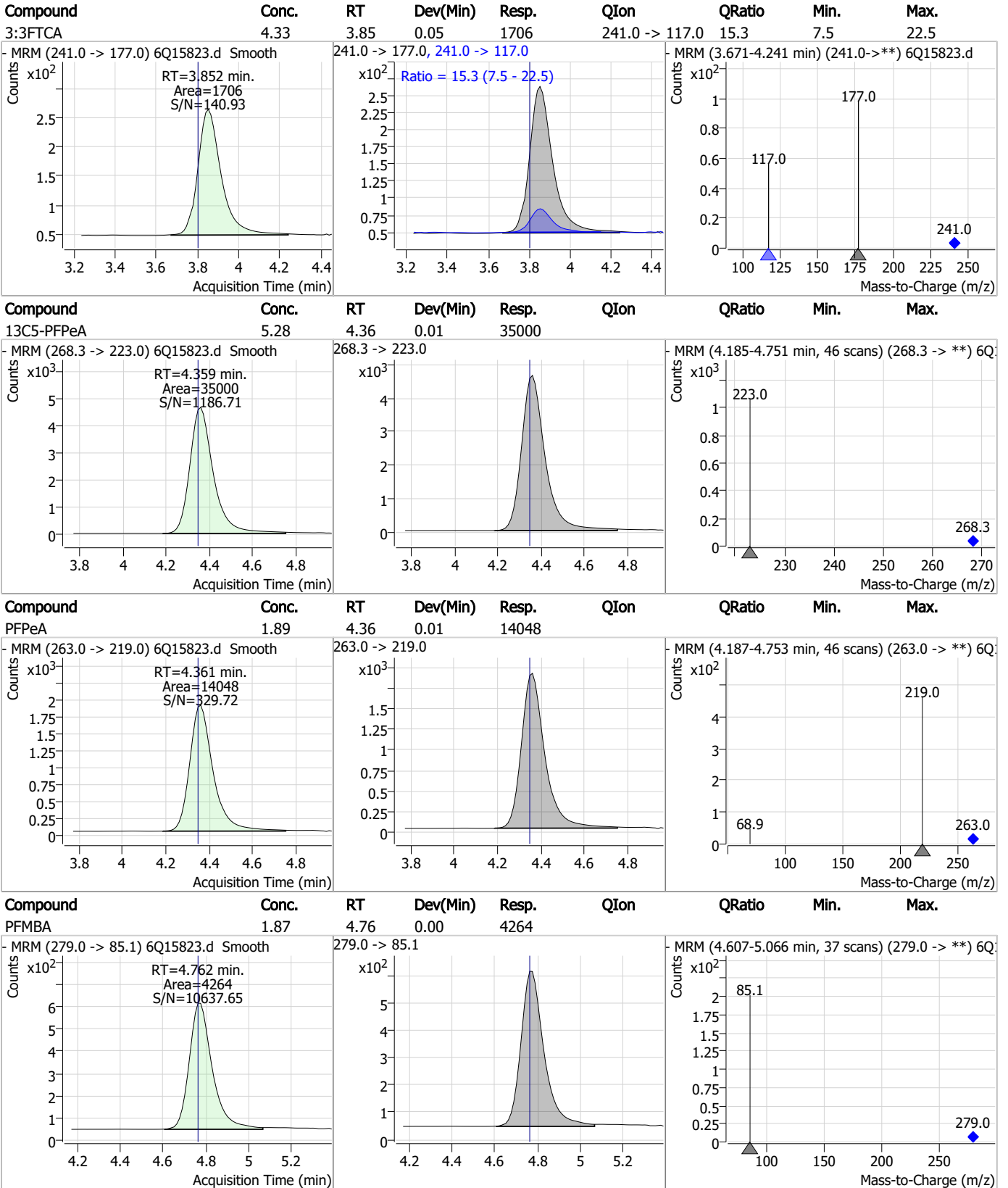
7.3.2

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Perfluorinated Compounds by LC/MS/MS

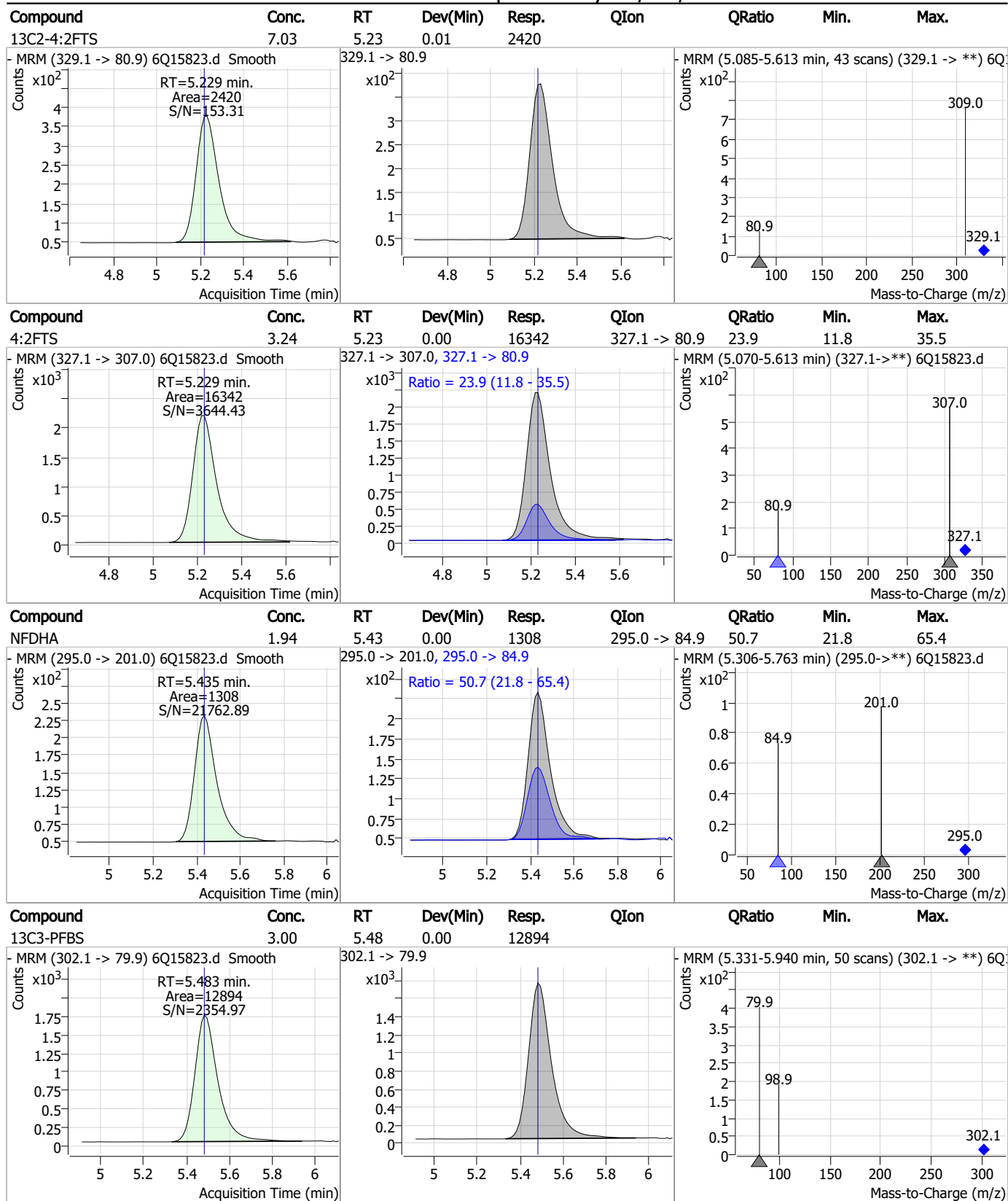


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

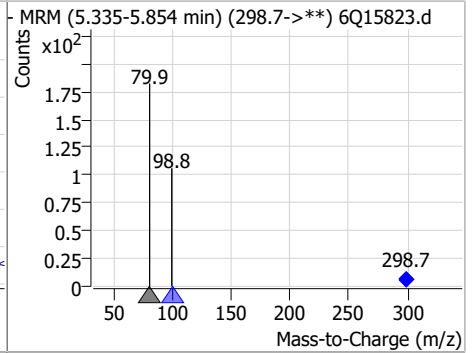
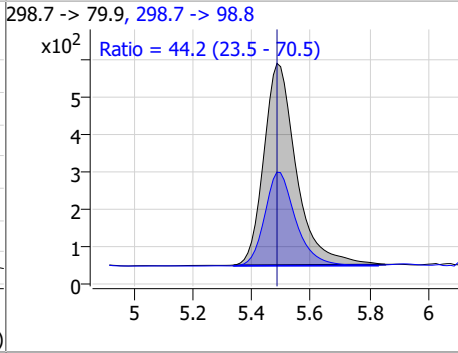
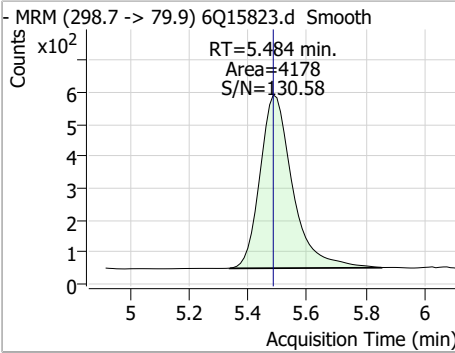
Perfluorinated Compounds by LC/MS/MS



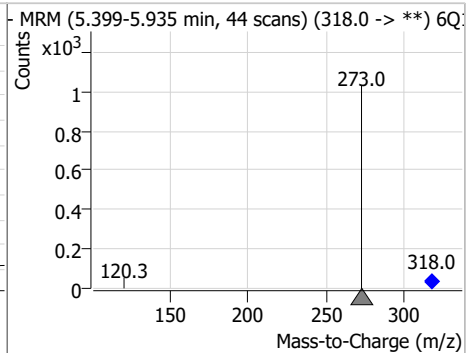
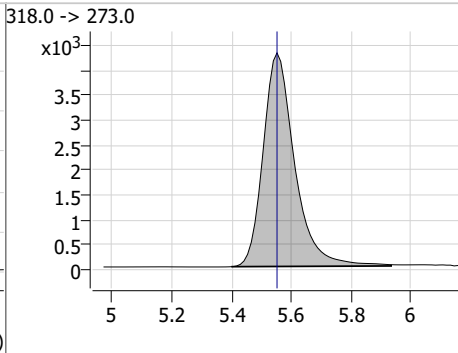
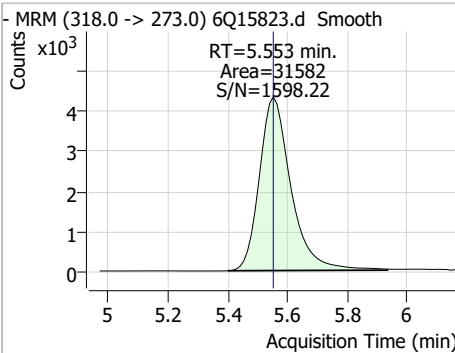
7.3.2
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Perfluorinated Compounds by LC/MS/MS

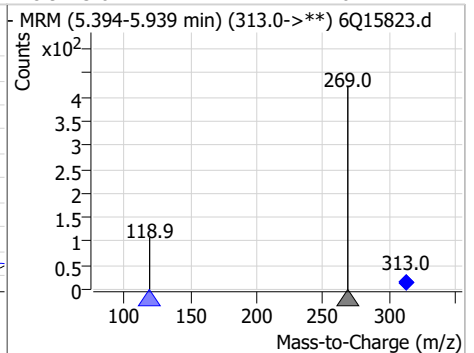
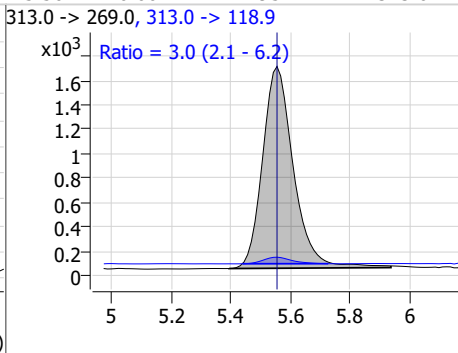
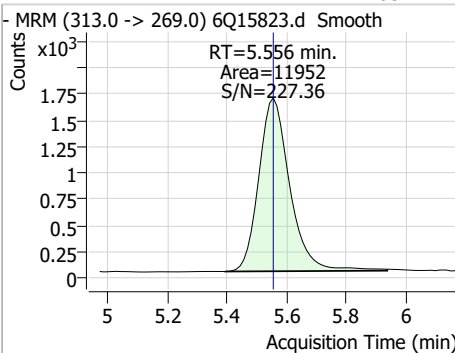
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.84	5.48	0.00	4178	298.7 -> 98.8	44.2	23.5	70.5



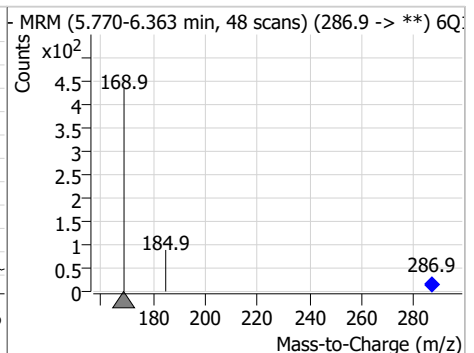
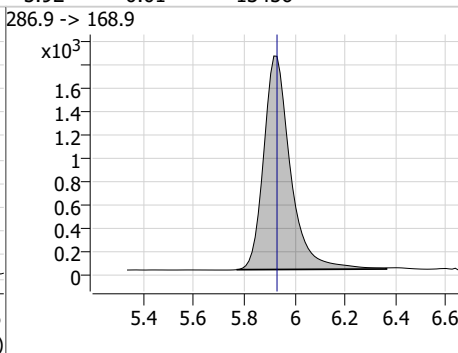
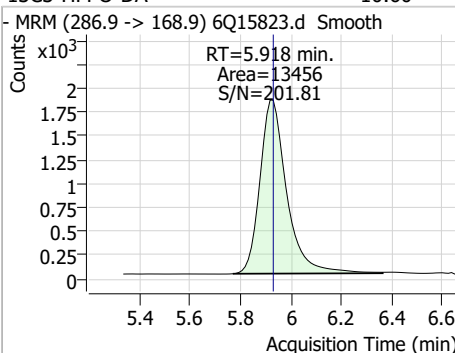
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.59	5.55	0.00	31582				



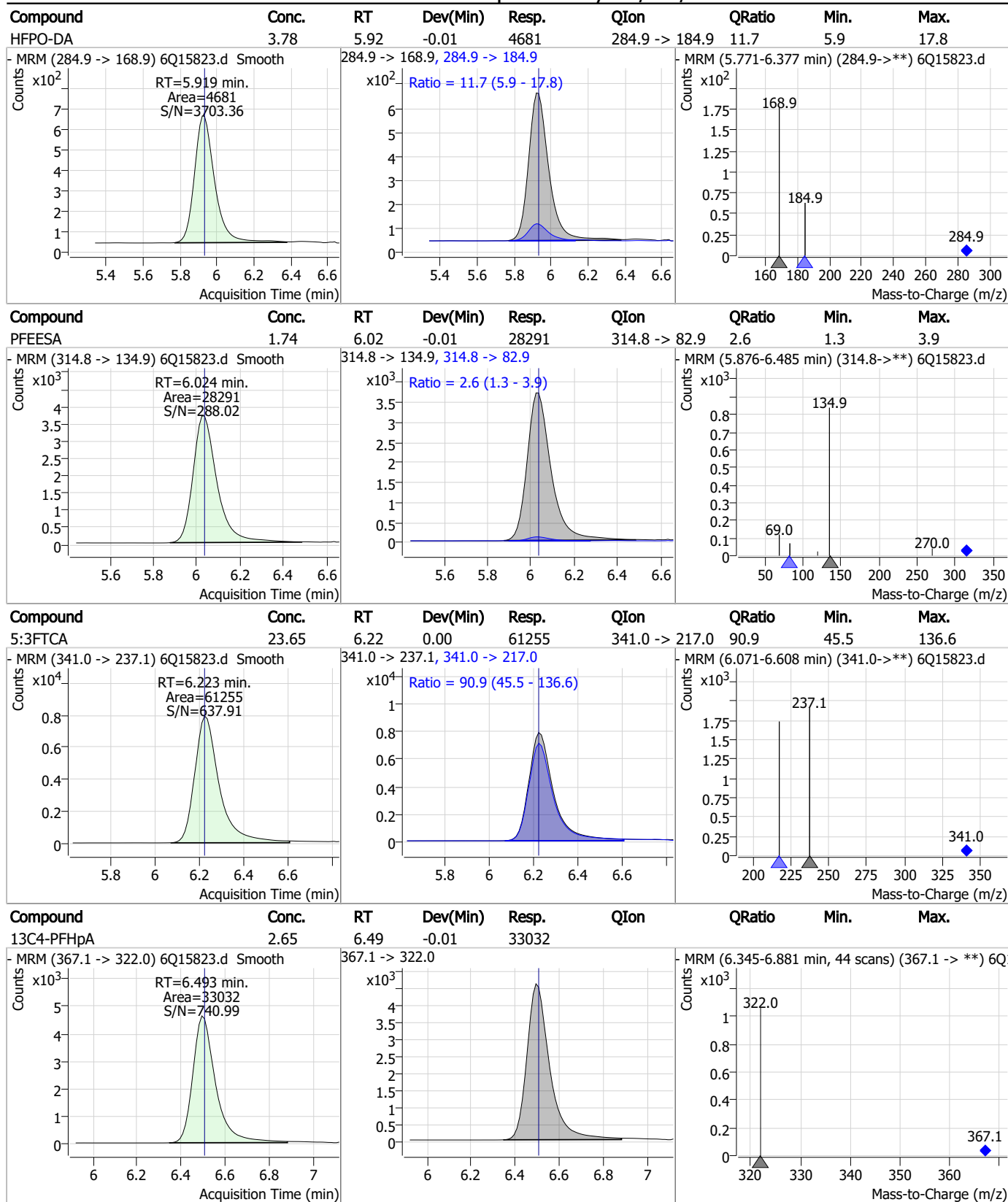
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.05	5.56	0.00	11952	313.0 -> 118.9	3.0	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.60	5.92	-0.01	13456				



Perfluorinated Compounds by LC/MS/MS

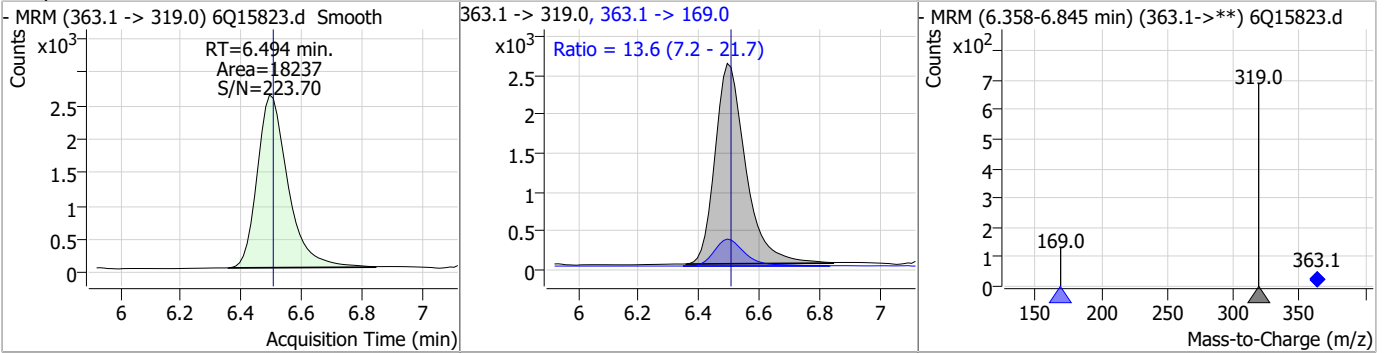


7.3.2
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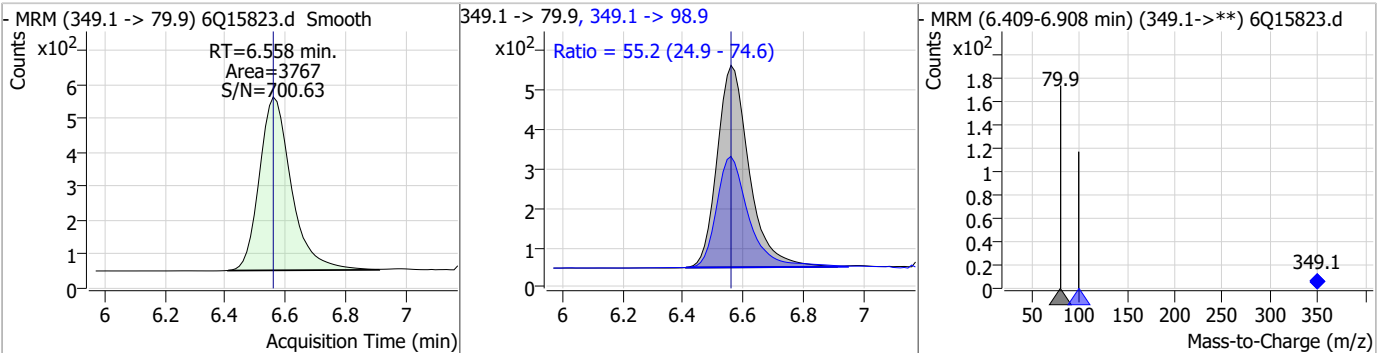


Perfluorinated Compounds by LC/MS/MS

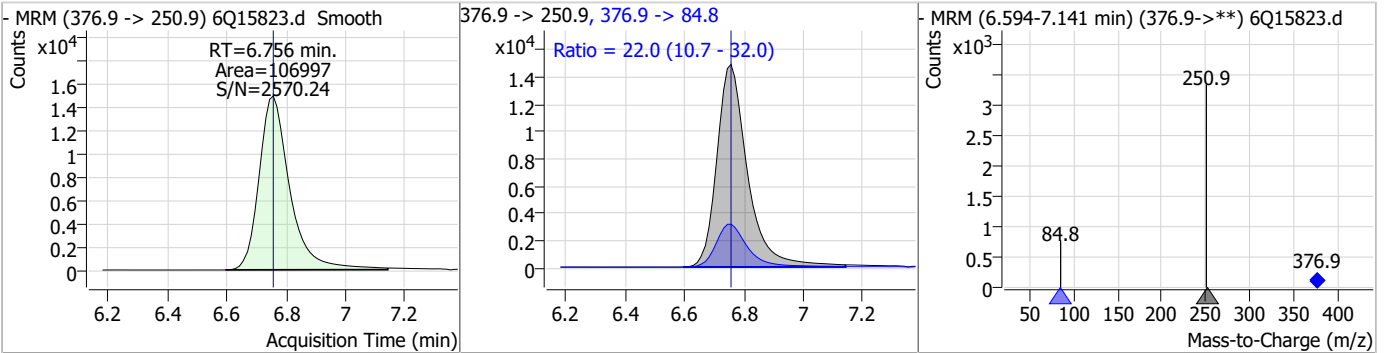
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	6.49	-0.01	18237	363.1 -> 169.0	13.6	7.2	21.7



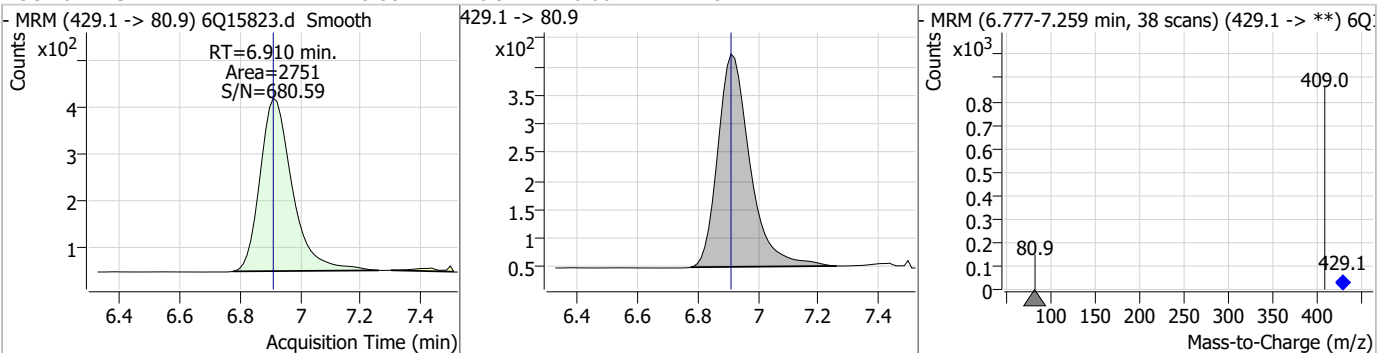
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.94	6.56	0.00	3767	349.1 -> 98.9	55.2	24.9	74.6



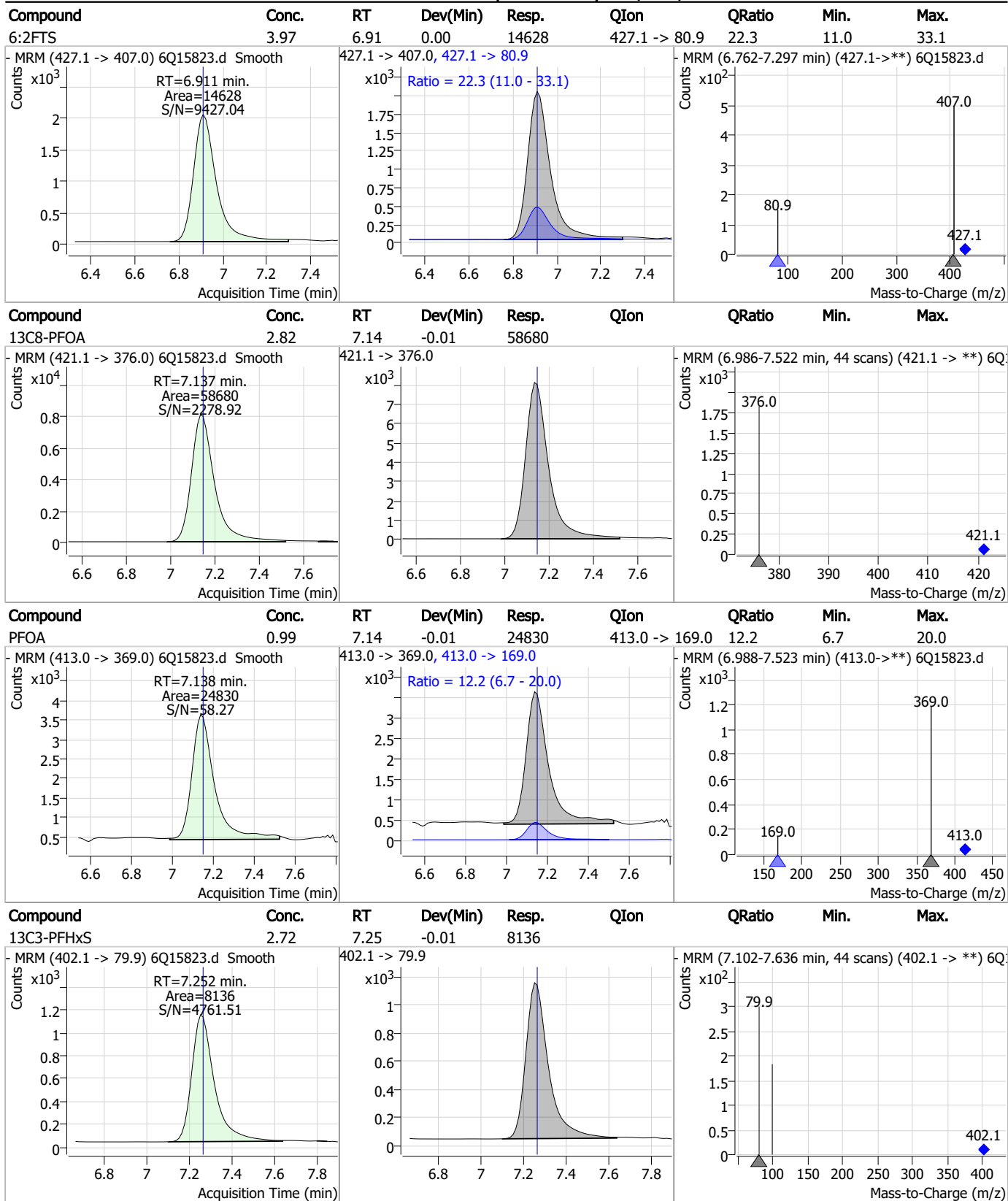
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	3.78	6.76	0.00	106997	376.9 -> 84.8	22.0	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.88	6.91	0.00	2751	429.1 -> 80.9			

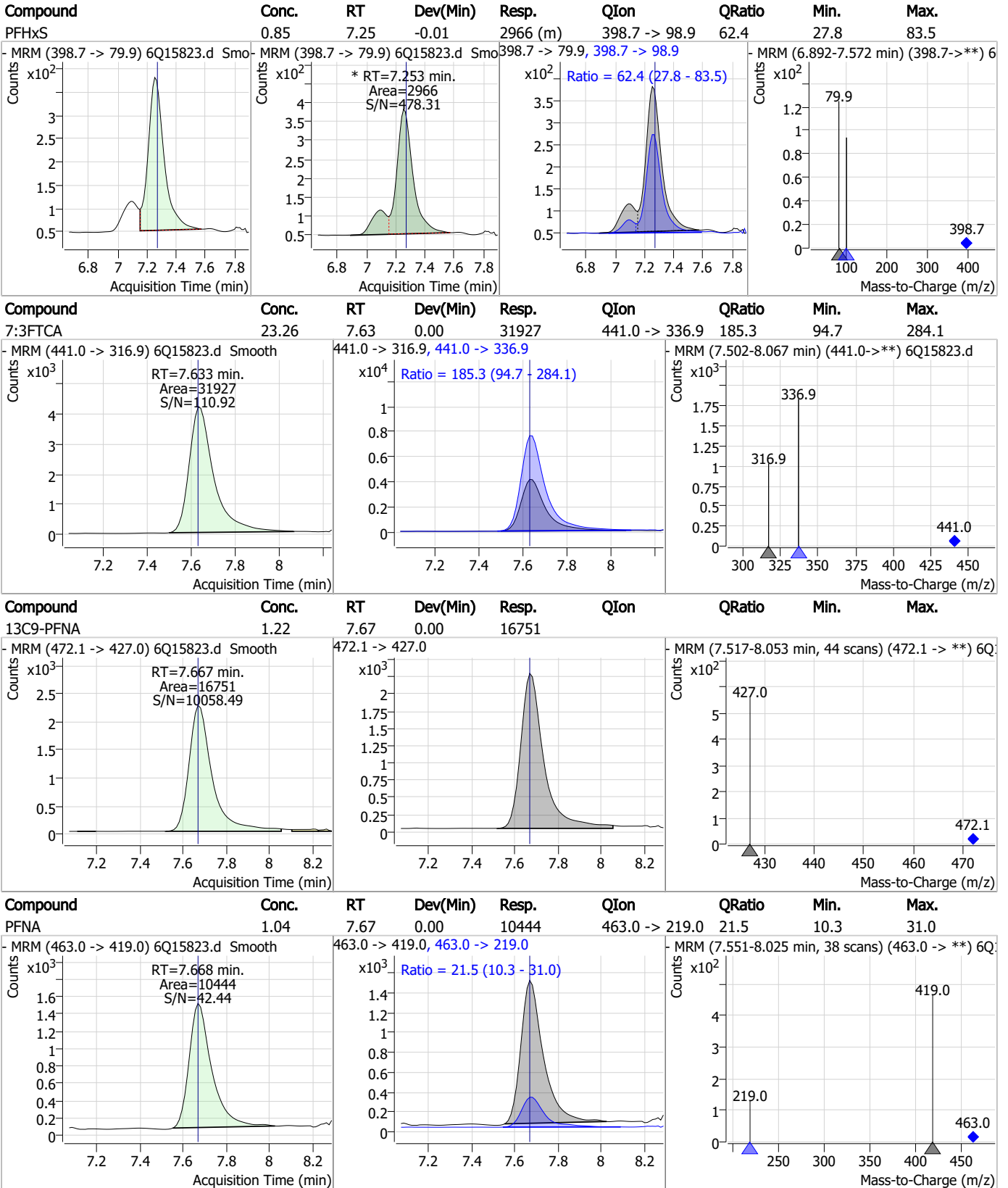


Perfluorinated Compounds by LC/MS/MS



7.3.2
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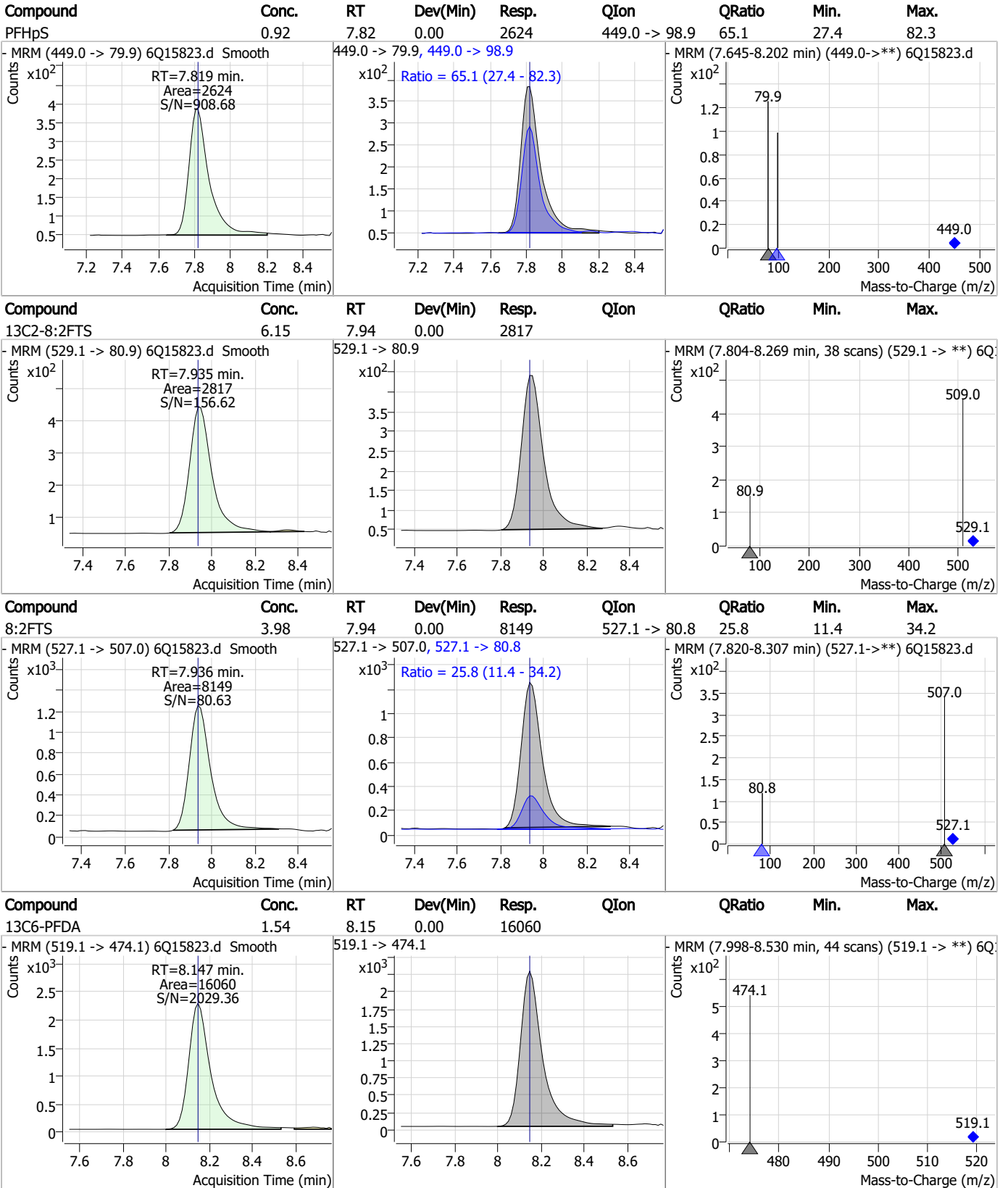
Perfluorinated Compounds by LC/MS/MS



7.3.2

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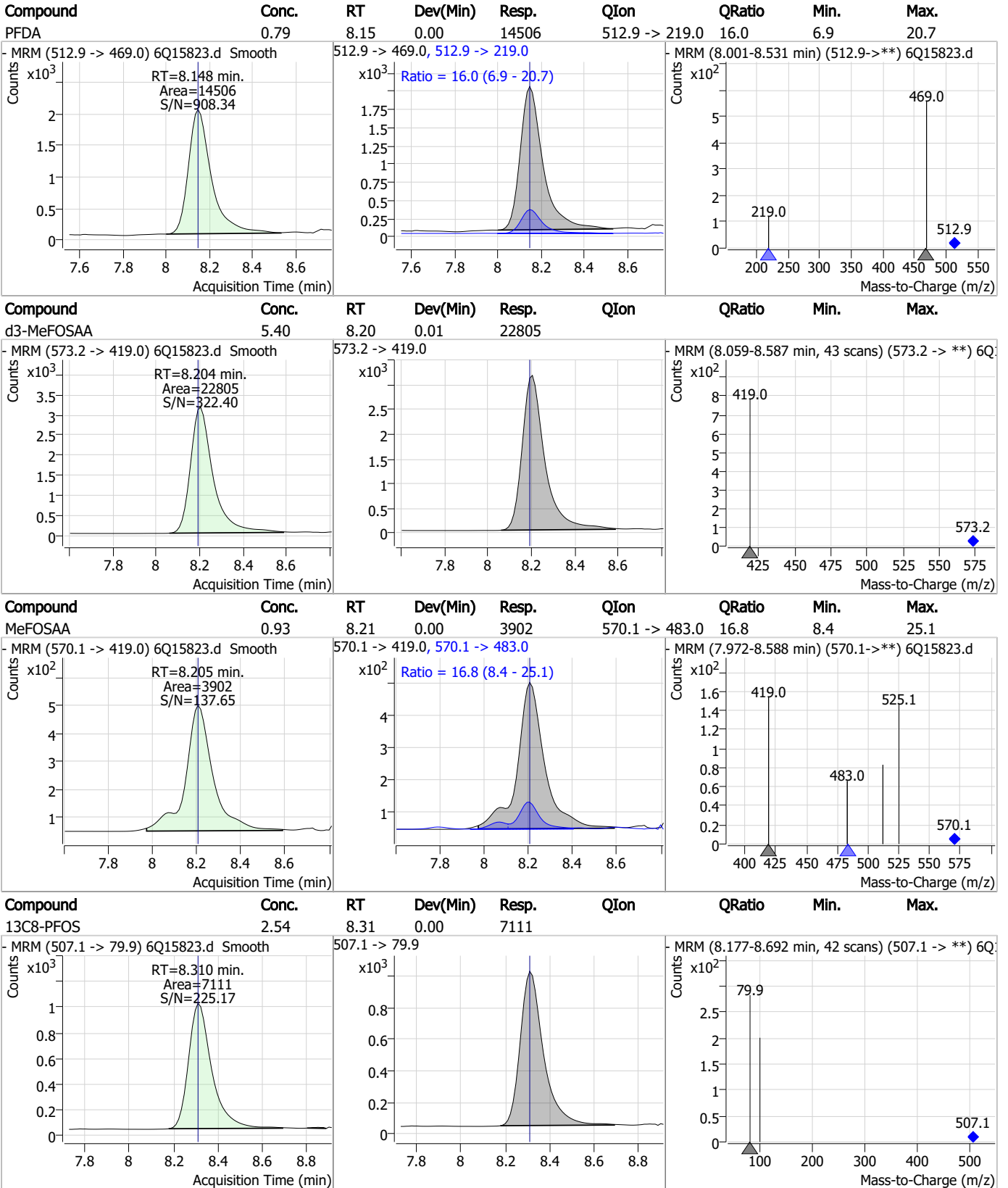
Perfluorinated Compounds by LC/MS/MS



7.3.2

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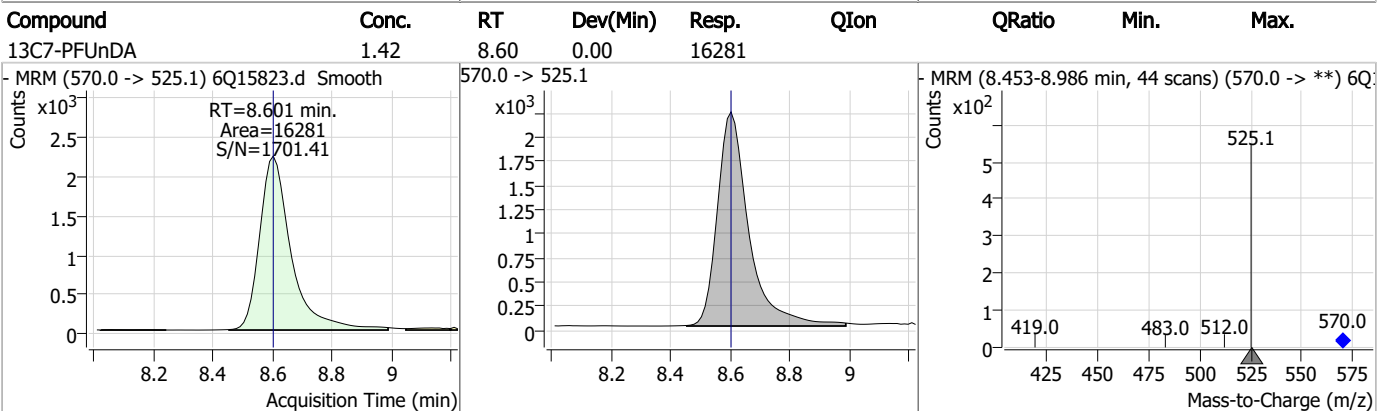
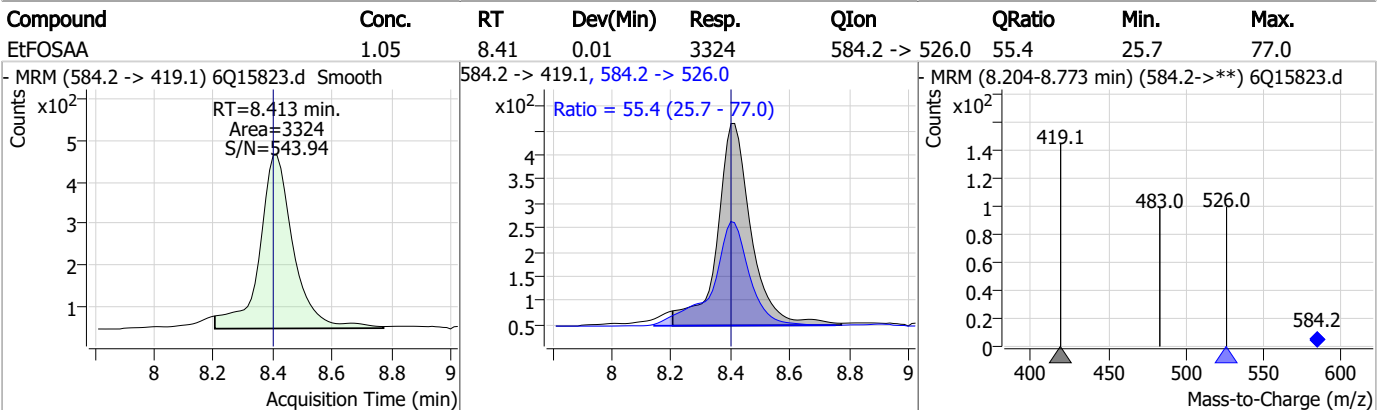
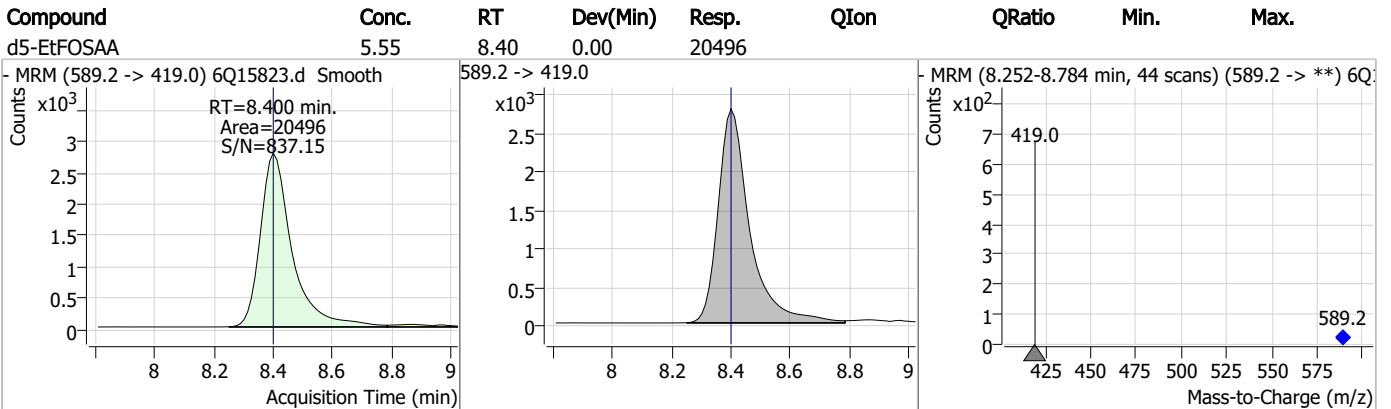
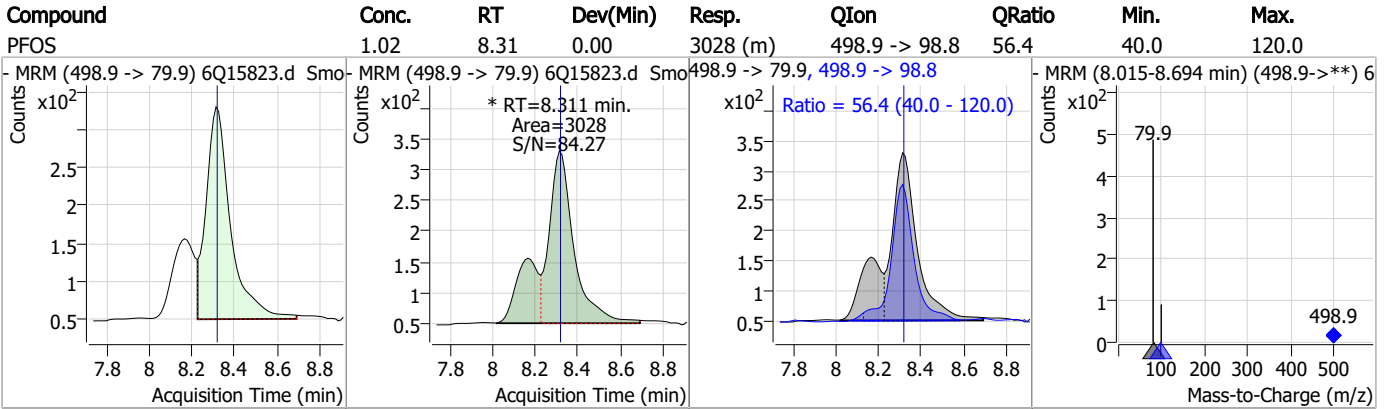
Perfluorinated Compounds by LC/MS/MS



7.3.2

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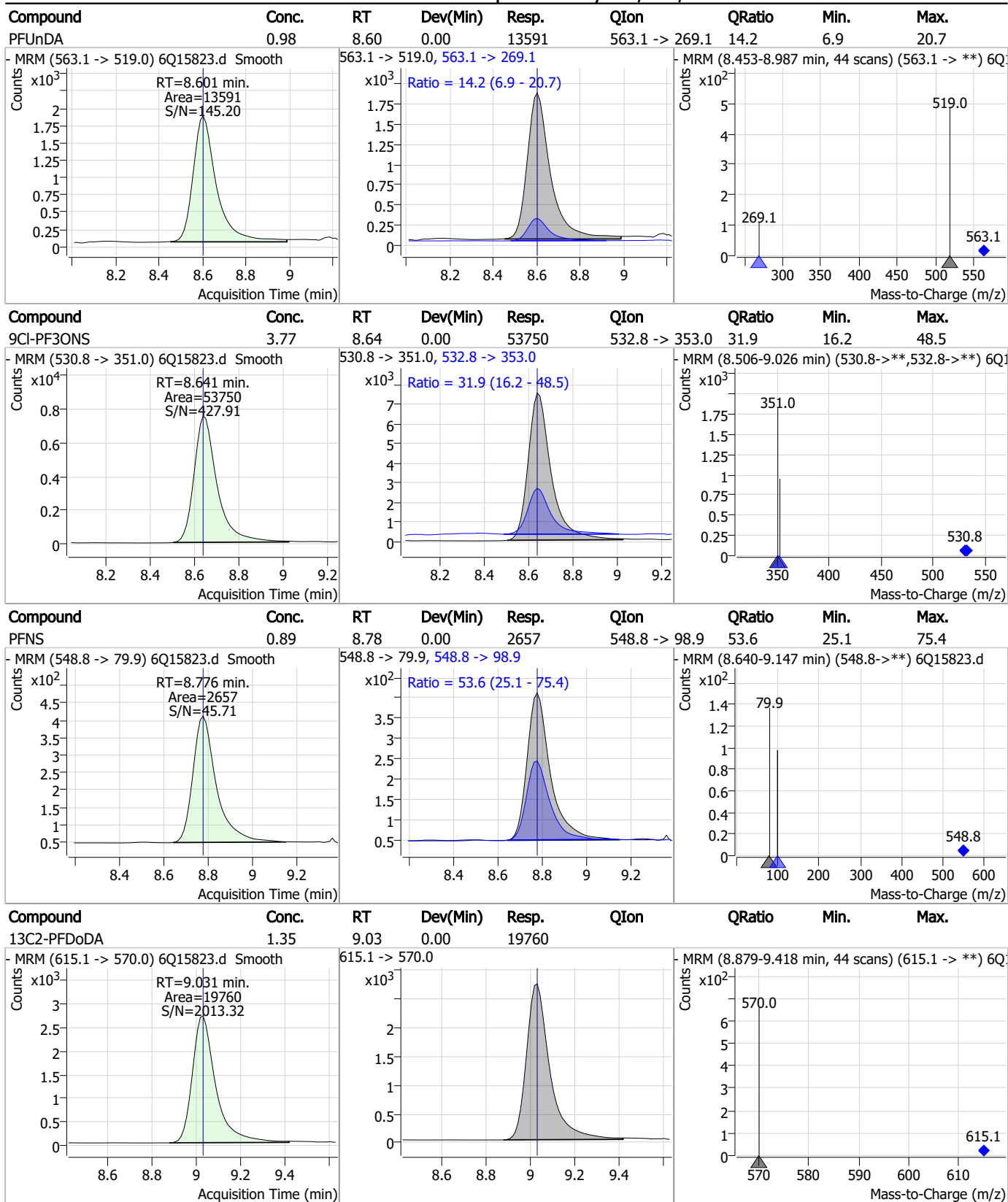
Perfluorinated Compounds by LC/MS/MS



7.3.2

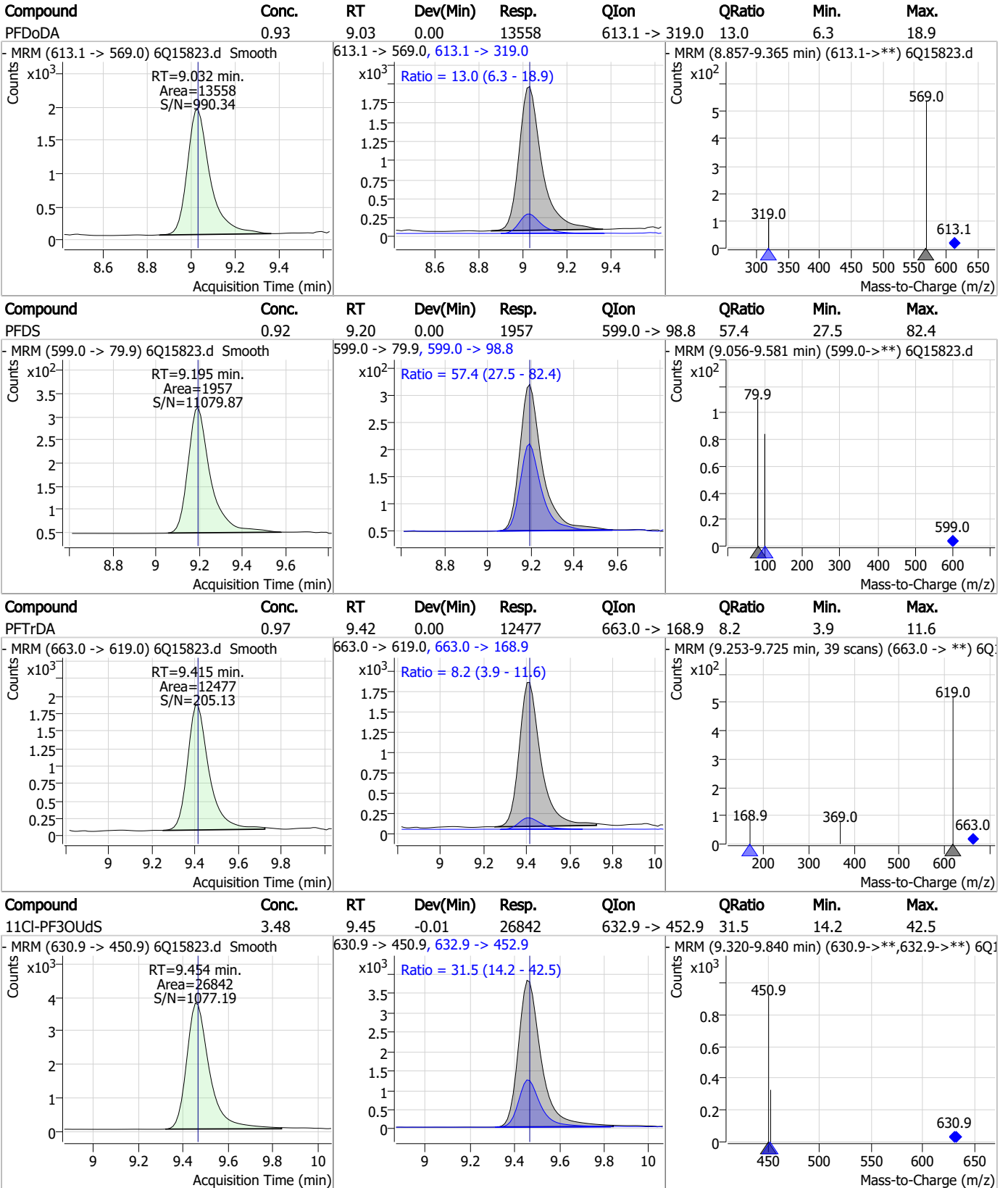
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Perfluorinated Compounds by LC/MS/MS



7.3.2
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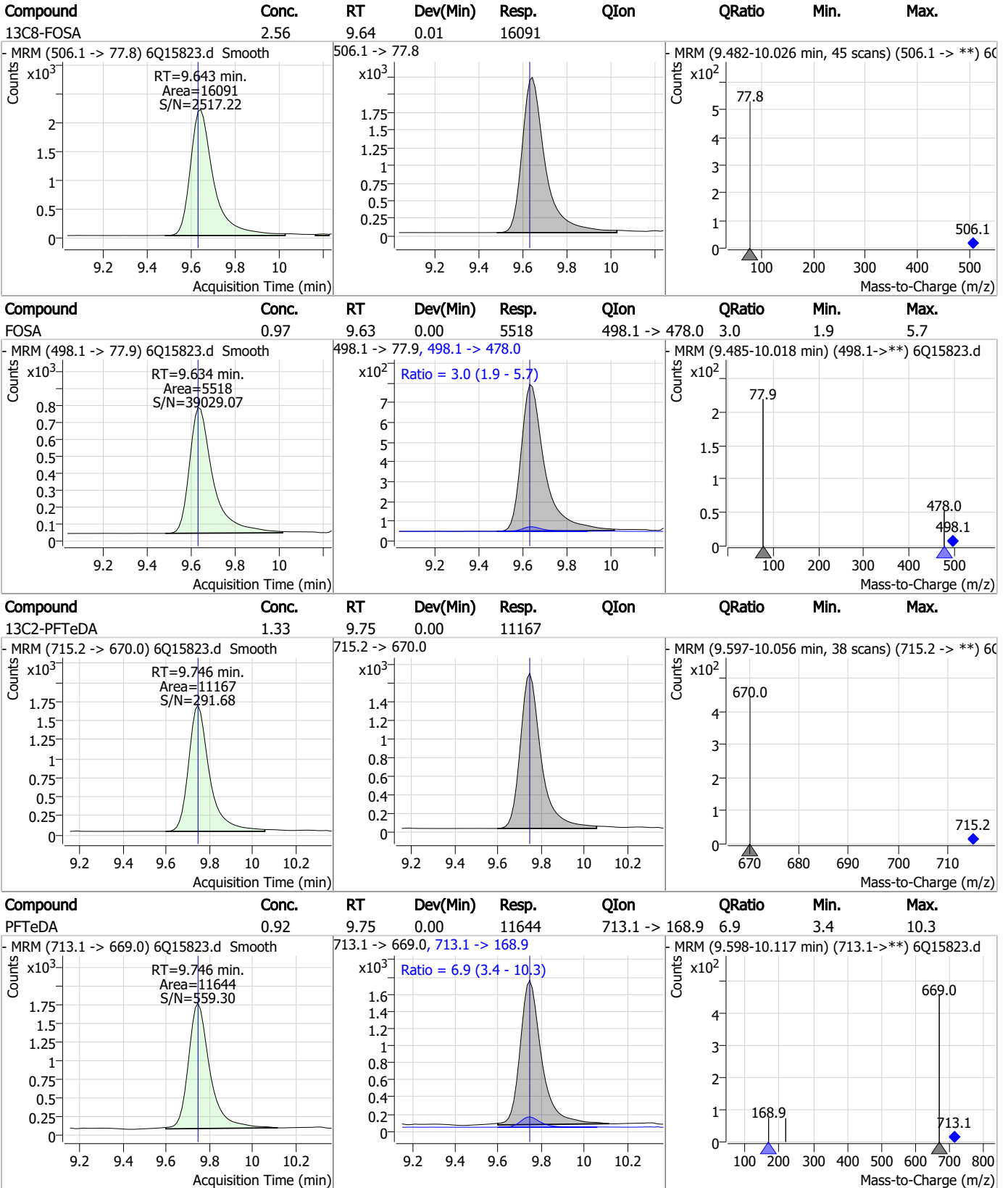
Perfluorinated Compounds by LC/MS/MS



7.3.2

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Perfluorinated Compounds by LC/MS/MS



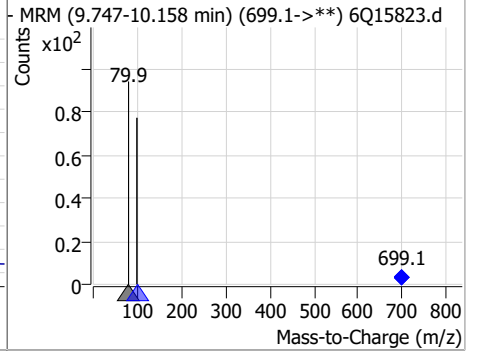
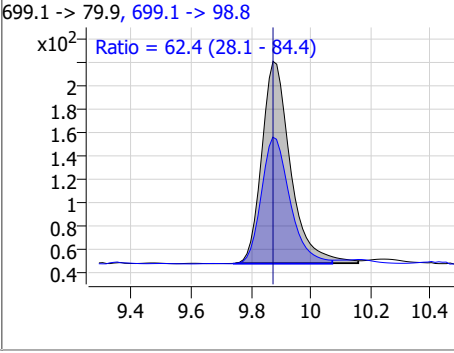
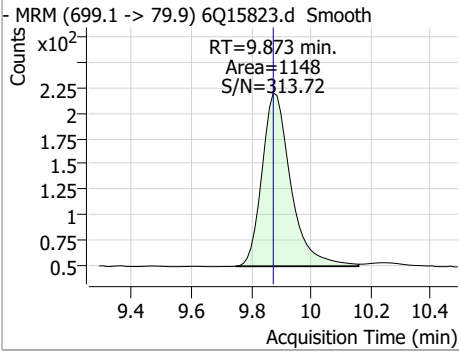
7.3.2

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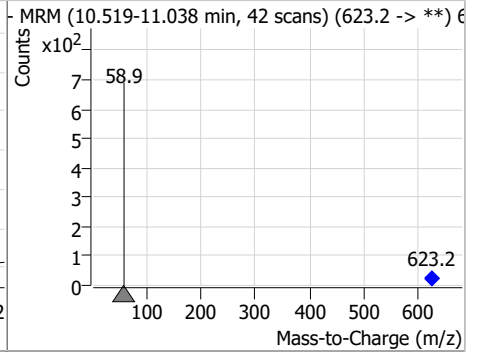
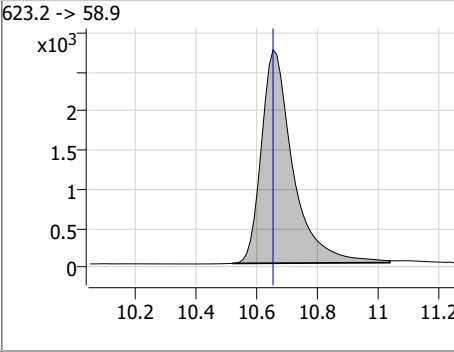
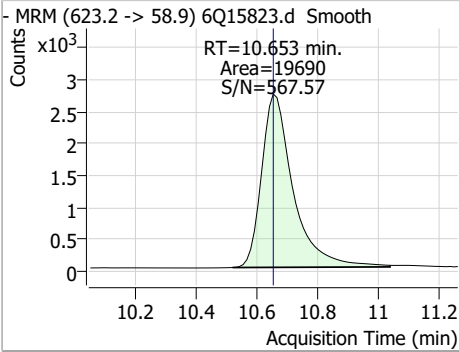


Perfluorinated Compounds by LC/MS/MS

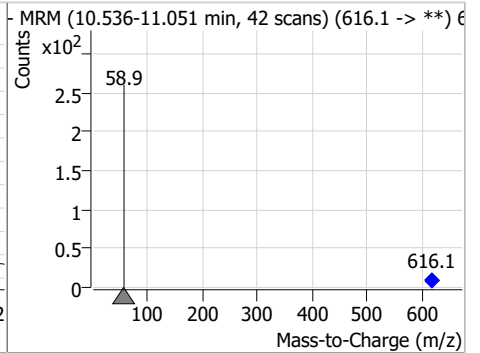
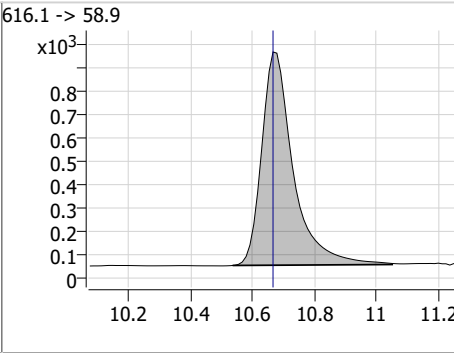
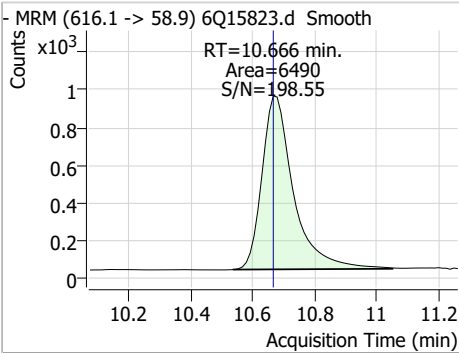
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.90	9.87	0.00	1148	699.1 -> 98.8	62.4	28.1	84.4



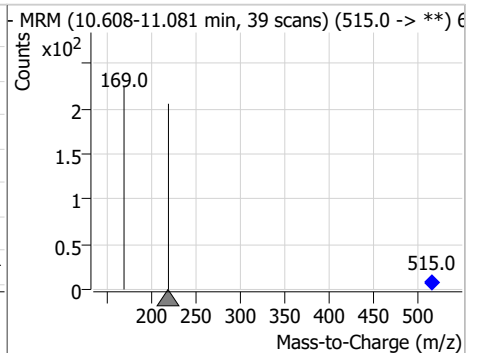
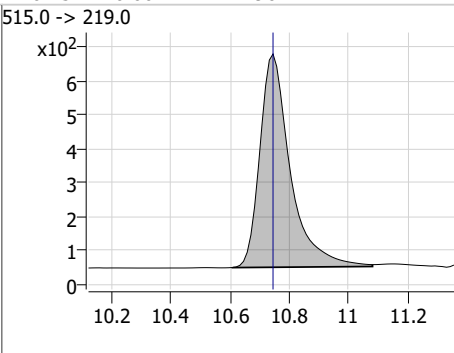
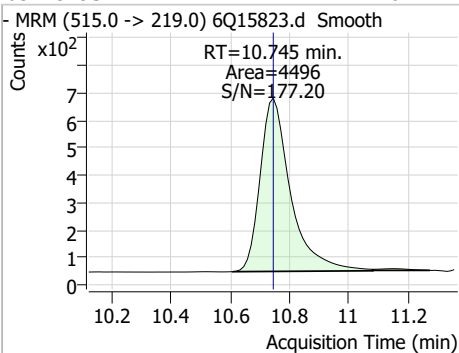
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.90	10.65	0.00	19690				



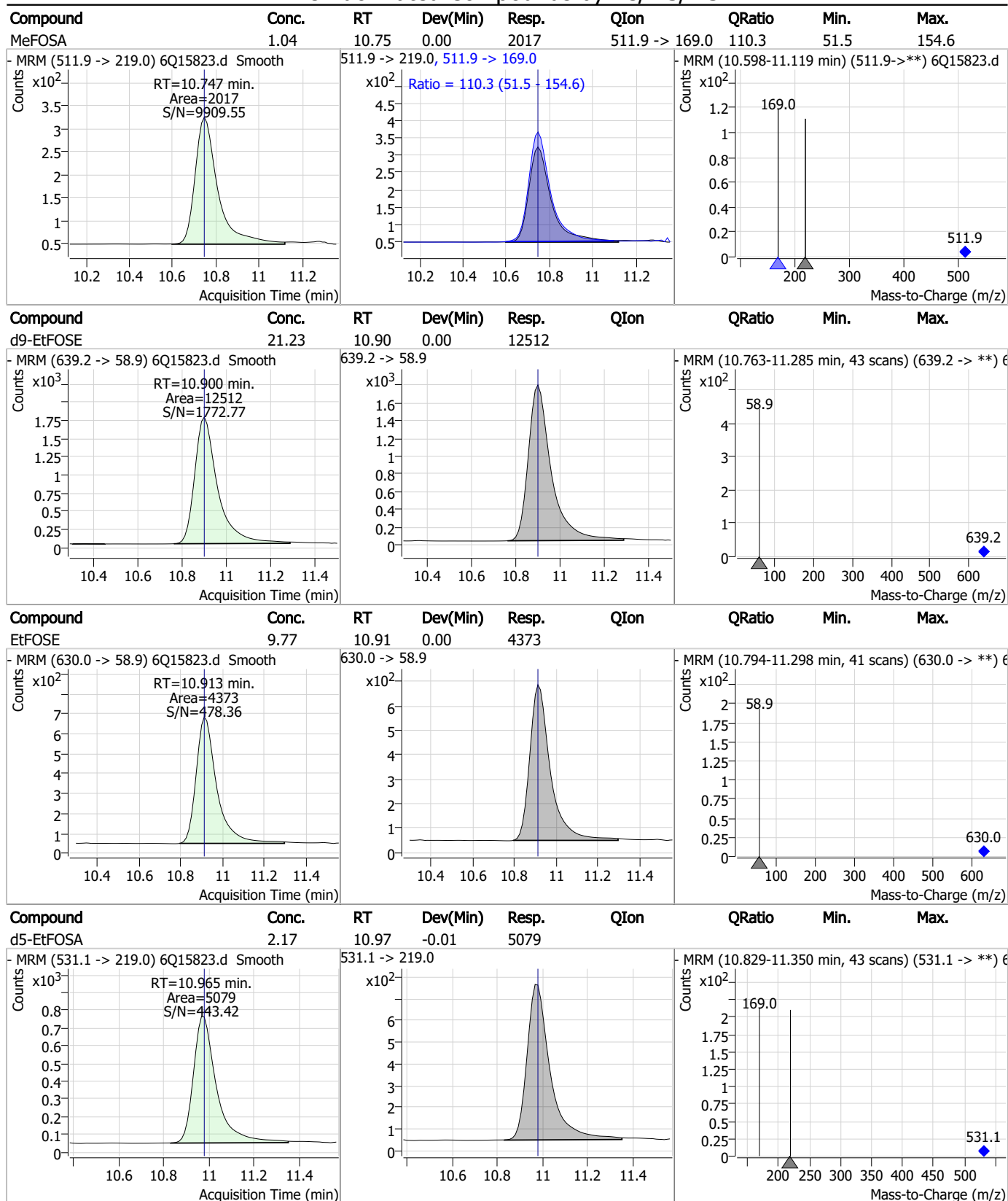
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	9.13	10.67	0.00	6490				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.16	10.75	0.00	4496				

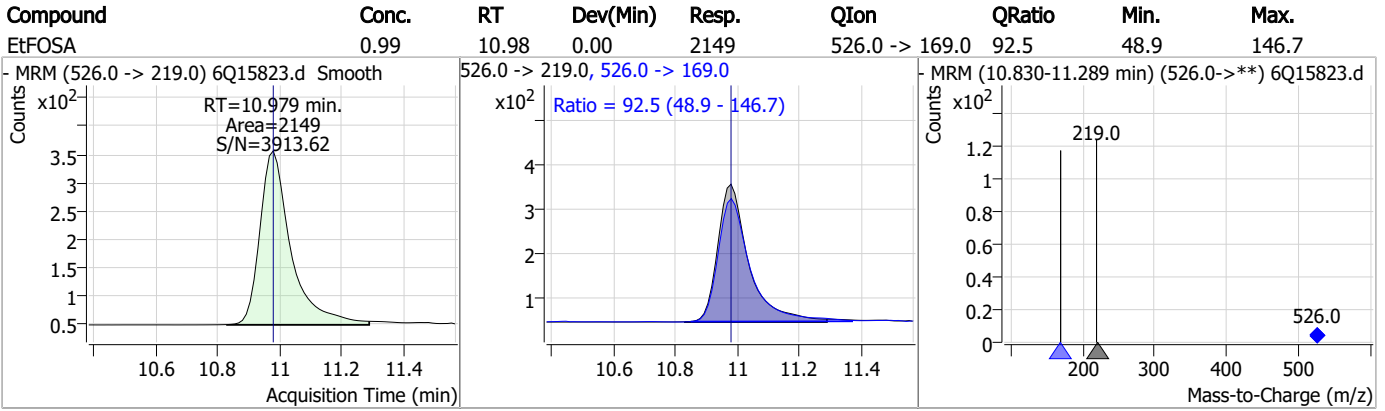


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Manual Integration Approval Summary

Sample Number: OP96143-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q15823.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/30/23 22:13 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15828.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 11:22:59 PM
 Sample Name : op96143-ms
 Vial : P3-D1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	51922	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	35422	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	32155	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	32905	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	59288	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	18109	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	13012	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	15354	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	16572	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	9702	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	15141	2.50 µg/L	0.012
M3-PFBS	5.496	302.1 -> 79.9	12396	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	8677	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	6651	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2294	5.00 µg/L	0.012
M2-6:2FTS	6.923	429.1 -> 80.9	2846	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2681	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	20608	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13951	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	17691	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	18779	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	13008	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5158	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	4889	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8269	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	30481	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5512	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	63928	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	19393	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17654	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	30032	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2294	6.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 127.8%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2846	5.84 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2681	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-PFDoDA	9.031	615.1 -> 570.0	16572	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.1%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9702	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.8%		
13C3-PFBS	5.496	302.1 -> 79.9	12396	2.76 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.4%		
13C3-PFHxS	7.265	402.1 -> 79.9	8677	2.79 µg/L	0.000



7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.4%		
13C4-PFBA	2.963	216.8 -> 171.9	51922	7.37 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 73.7%		
13C4-PFHpA	6.506	367.1 -> 322.0	32905	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C5-PFHxA	5.553	318.0 -> 273.0	32155	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFPeA	4.359	268.3 -> 223.0	35422	5.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C6-PFDA	8.147	519.1 -> 474.1	13012	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C7-PFUnDA	8.601	570.0 -> 525.1	15354	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C8-FOSA	9.643	506.1 -> 77.8	15141	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C8-PFOA	7.149	421.1 -> 376.0	59288	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C8-PFOS	8.310	507.1 -> 79.9	6651	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C9-PFNA	7.667	472.1 -> 427.0	18109	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
d3-MeFOSAA	8.204	573.2 -> 419.0	20608	5.05 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13951	10.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
d3-MeFOSA	10.745	515.0 -> 219.0	4889	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.3%		
d5-EtFOSAA	8.400	589.2 -> 419.0	17691	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
d7-MeFOSE	10.653	623.2 -> 58.9	18779	21.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 86.4%		
d9-EtFOSE	10.900	639.2 -> 58.9	13008	22.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 91.3%		
d5-EtFOSA	10.965	531.1 -> 219.0	5158	2.28 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.3%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	45320	9.47 µg/L	97
		327.1 -> 80.9	10063		
6:2FTS	6.923	427.1 -> 407.0	39606	10.38 µg/L	96
		427.1 -> 80.9	7975		
8:2FTS	7.936	527.1 -> 507.0	19492	10.00 µg/L	95
		527.1 -> 80.8	4945		
EtFOSAA	8.401	584.2 -> 419.1	6768	2.48 µg/L	89
		584.2 -> 526.0	4016		
FOSA	9.634	498.1 -> 77.9	14104	2.63 µg/L	100
		498.1 -> 478.0	529		
MeFOSAA	8.205	570.1 -> 419.0	10802	2.85 µg/L	99
		570.1 -> 483.0	1842		
PFBA	2.957	212.8 -> 168.9	12197	10.33 µg/L	100
PFBS	5.497	298.7 -> 79.9	11049	2.31 µg/L	98
		298.7 -> 98.8	5320		
PFDA	8.148	512.9 -> 469.0	43557	2.92 µg/L	95
		512.9 -> 219.0	5204		
PFDODA	9.032	613.1 -> 569.0	32911	2.69 µg/L	97
		613.1 -> 319.0	3803		
PFDS	9.195	599.0 -> 79.9	4500	2.27 µg/L	94

7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2272			
PFHpA	6.506	363.1 -> 319.0	49985	2.60	µg/L	99
		363.1 -> 169.0	6986			
PFHpS	7.819	449.0 -> 79.9	6986	2.62	µg/L	91
		449.0 -> 98.9	4257			
PFHxA	5.556	313.0 -> 269.0	30427	2.63	µg/L	98
		313.0 -> 118.9	1118			
PFHxS	7.265	398.7 -> 79.9	8512	2.29	µg/L	m 96
		398.7 -> 98.9	4503			
PFNA	7.668	463.0 -> 419.0	26784	2.48	µg/L	96
		463.0 -> 219.0	5070			
PFNS	8.776	548.8 -> 79.9	6604	2.37	µg/L	87
		548.8 -> 98.9	3912			
PFOA	7.151	413.0 -> 369.0	61091	2.42	µg/L	100
		413.0 -> 169.0	8186			
PFOS	8.311	498.9 -> 79.9	6645	2.39	µg/L	m 81
		498.9 -> 98.8	4223			
PFPeA	4.361	263.0 -> 219.0	42063	5.60	µg/L	100
PFPeS	6.571	349.1 -> 79.9	9665	2.27	µg/L	93
		349.1 -> 98.9	5273			
PFTeDA	9.746	713.1 -> 669.0	28054	2.55	µg/L	99
		713.1 -> 168.9	1875			
PFTrDA	9.403	663.0 -> 619.0	29820	2.75	µg/L	100
		663.0 -> 168.9	2377			
PFUnDA	8.601	563.1 -> 519.0	30839	2.36	µg/L	99
		563.1 -> 269.1	4395			
11CI-PF3OUdS	9.467	630.9 -> 450.9	64463	8.07	µg/L	96
		632.9 -> 452.9	19498			
9CI-PF3ONS	8.641	530.8 -> 351.0	129242	8.74	µg/L	94
		532.8 -> 353.0	37474			
ADONA	6.756	376.9 -> 250.9	285421	9.72	µg/L	99
		376.9 -> 84.8	62350			
HFPO-DA	5.931	284.9 -> 168.9	12639	9.85	µg/L	98
		284.9 -> 184.9	1622			
3:3FTCA	3.852	241.0 -> 177.0	4689	11.75	µg/L	99
		241.0 -> 117.0	724			
5:3FTCA	6.235	341.0 -> 237.1	168379	63.84	µg/L	97
		341.0 -> 217.0	149371			
7:3FTCA	7.645	441.0 -> 316.9	90187	64.52	µg/L	91
		441.0 -> 336.9	158982			
EtFOSA	10.979	526.0 -> 219.0	5506	2.51	µg/L	94
		526.0 -> 169.0	5737			
EtFOSE	10.913	630.0 -> 58.9	11302	24.28	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	5336	2.53	µg/L	99
		511.9 -> 169.0	5453			
MeFOSE	10.666	616.1 -> 58.9	17841	26.31	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	2913	2.43	µg/L	95
		699.1 -> 98.8	1737			
NFDHA	5.435	295.0 -> 201.0	3583	5.21	µg/L	96
		295.0 -> 84.9	1663			
PFMBA	4.775	279.0 -> 85.1	11328	4.90	µg/L	100
PFMPA	3.513	229.0 -> 84.9	10346	4.98	µg/L	100
PFEESA	6.036	314.8 -> 134.9	75591	4.56	µg/L	99
		314.8 -> 82.9	1667			

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

7.4.1
7

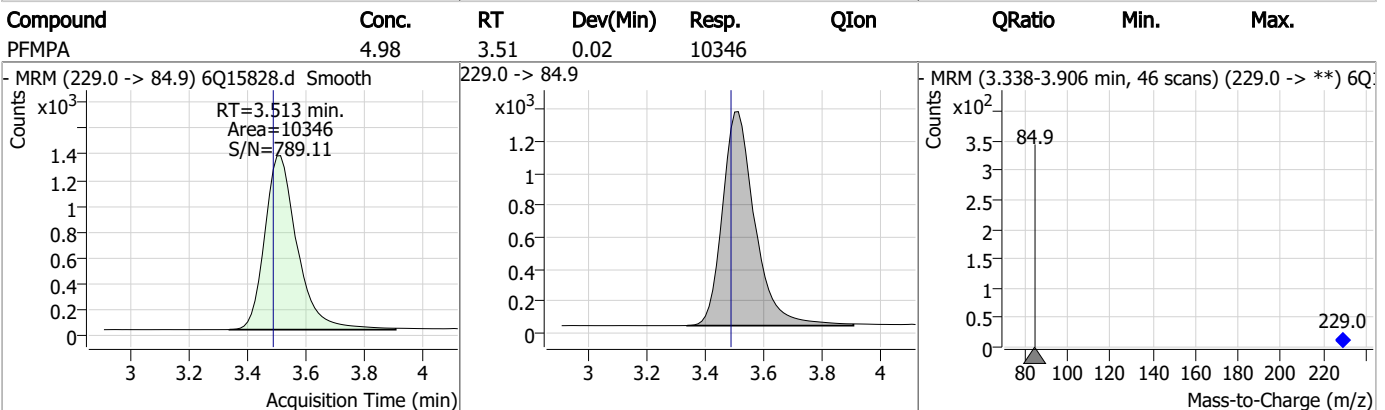
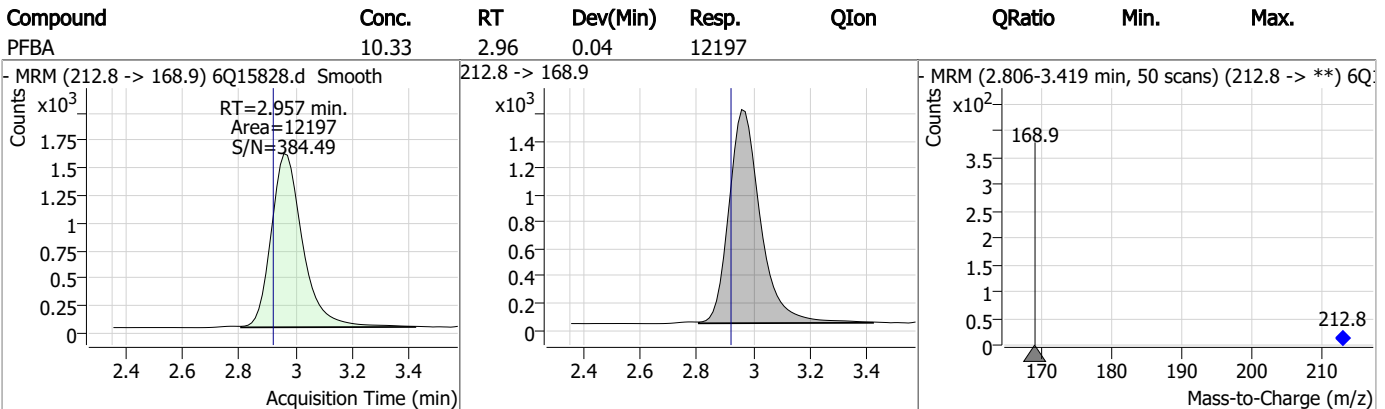
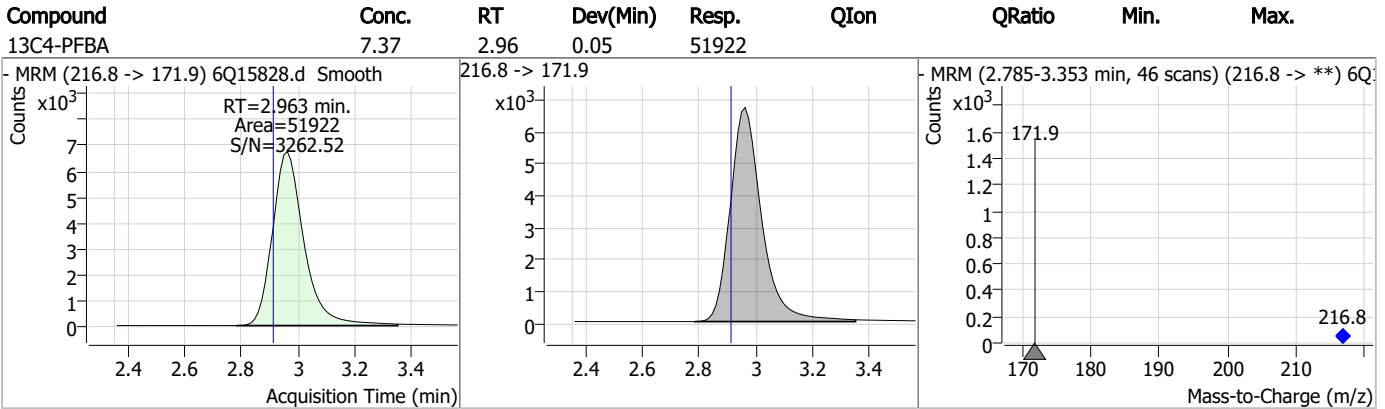
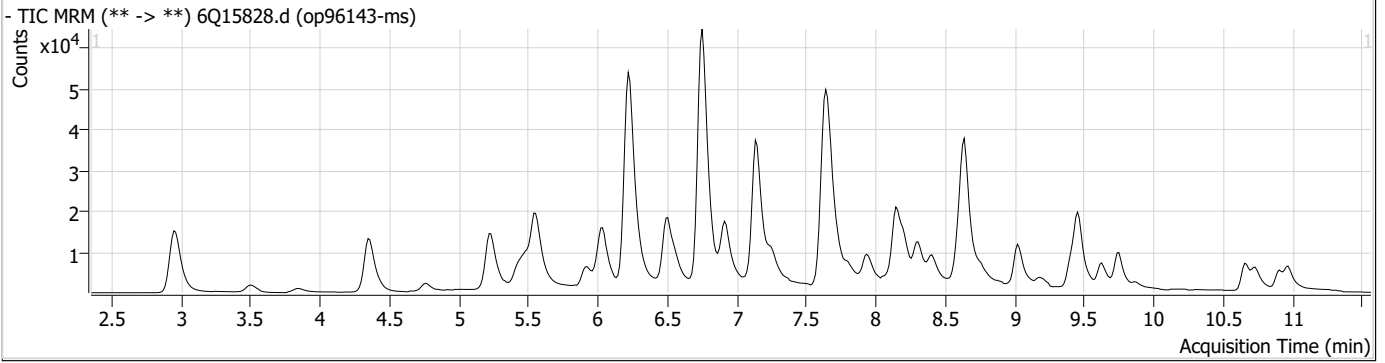
Perfluorinated Compounds by LC/MS/MS

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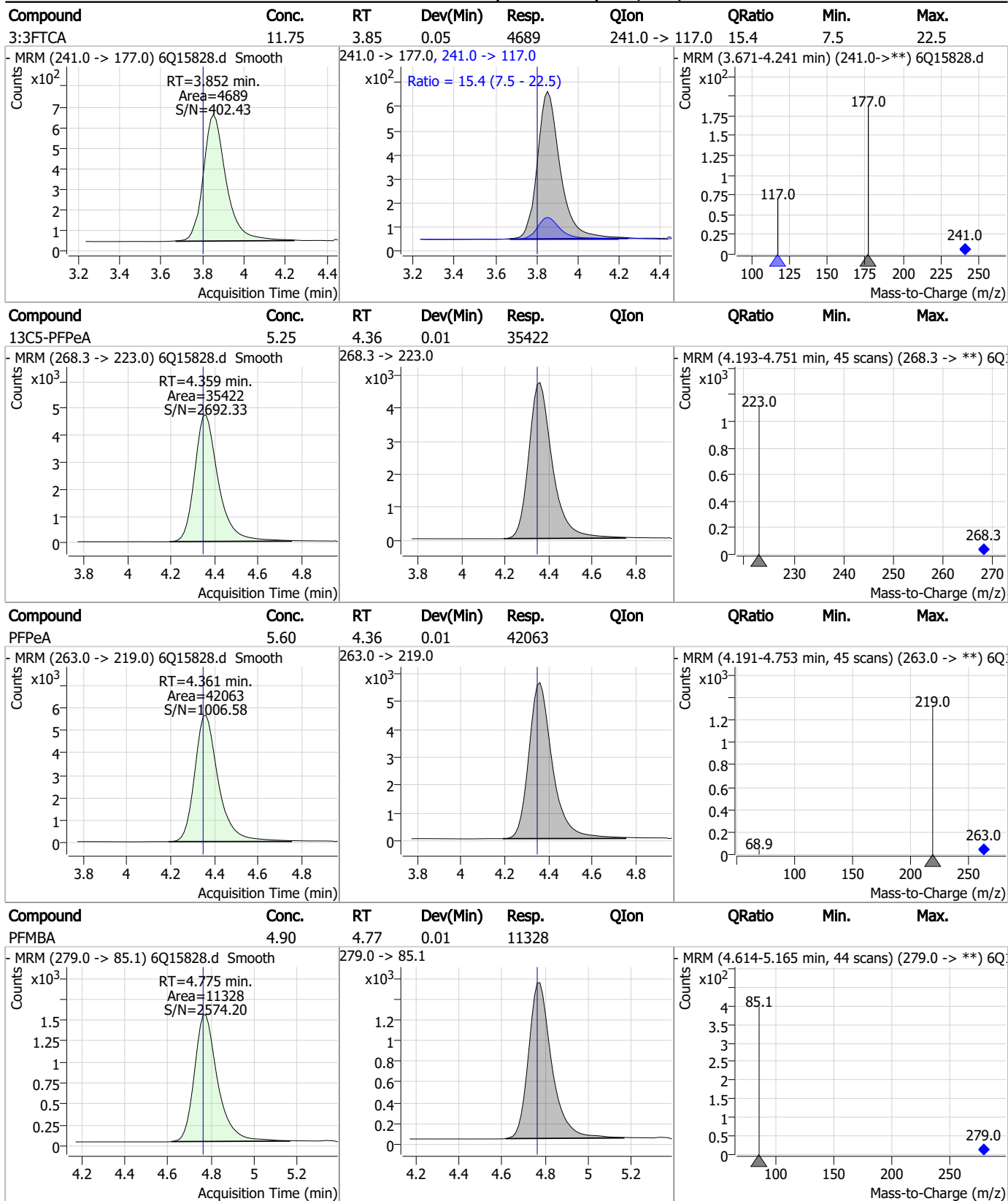
7.4.1

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Perfluorinated Compounds by LC/MS/MS

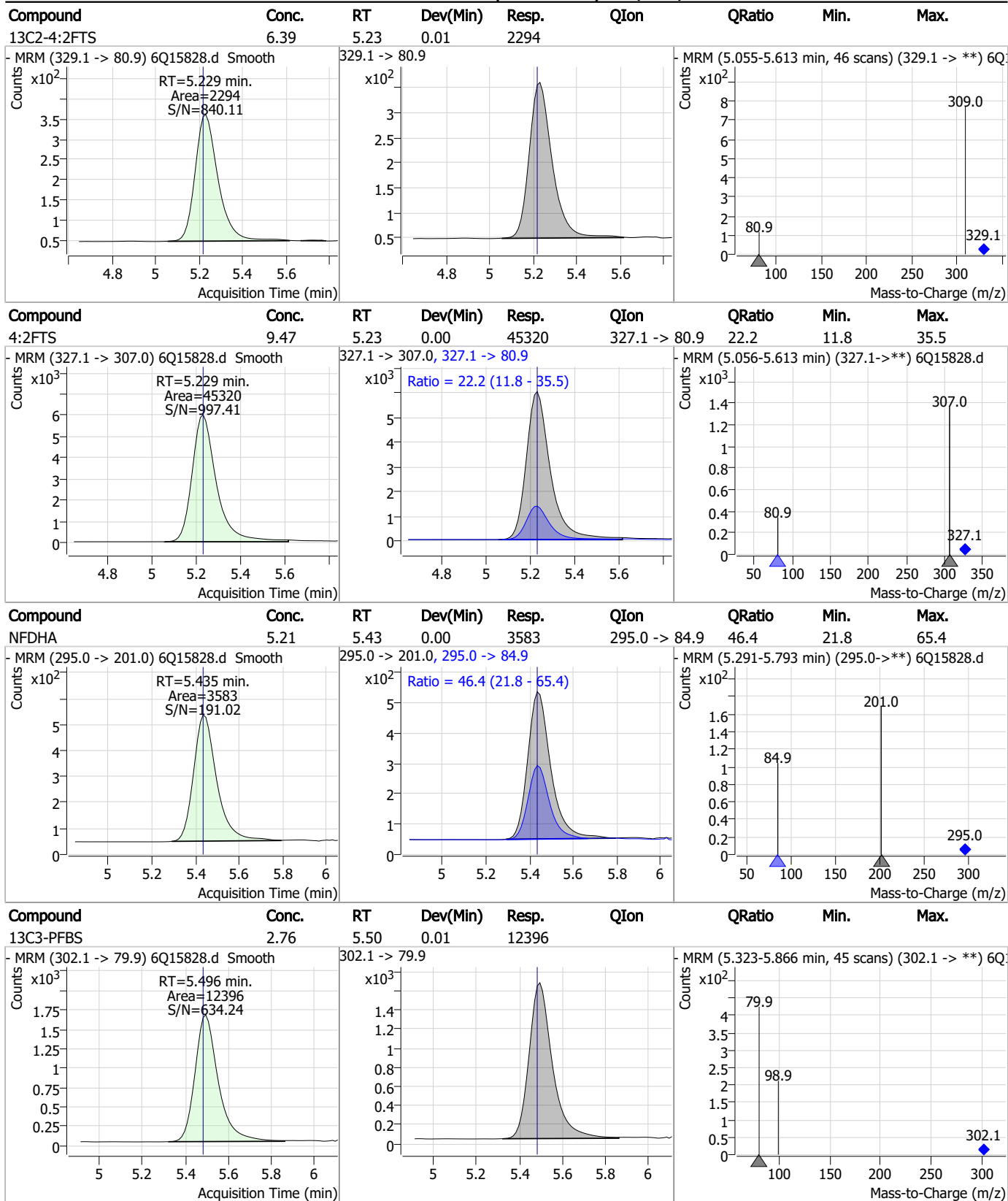


Perfluorinated Compounds by LC/MS/MS



7.4.1
7

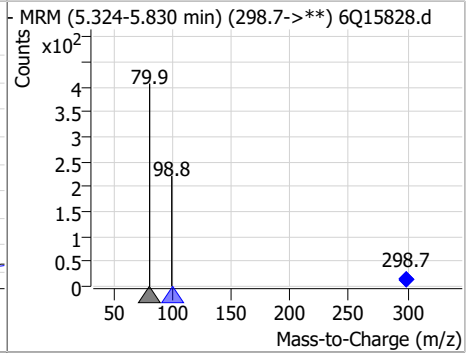
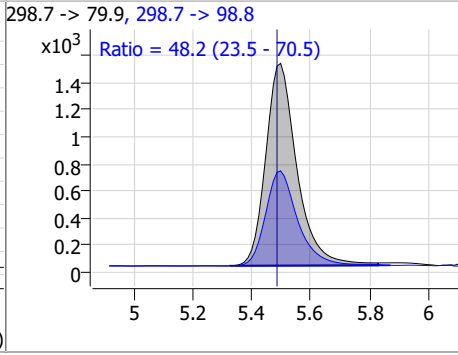
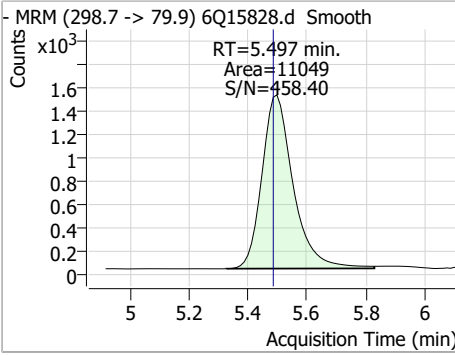
Perfluorinated Compounds by LC/MS/MS



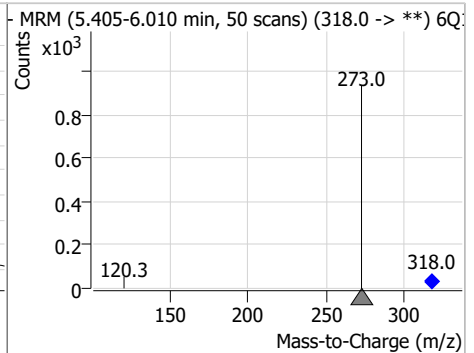
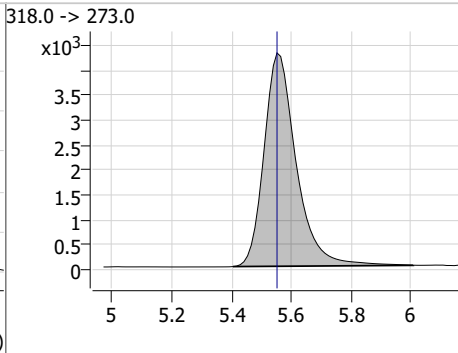
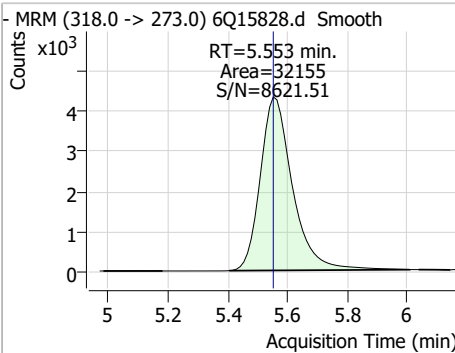
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Perfluorinated Compounds by LC/MS/MS

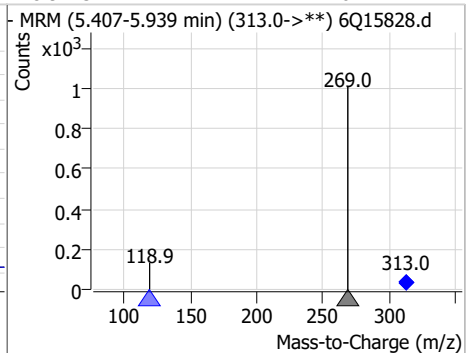
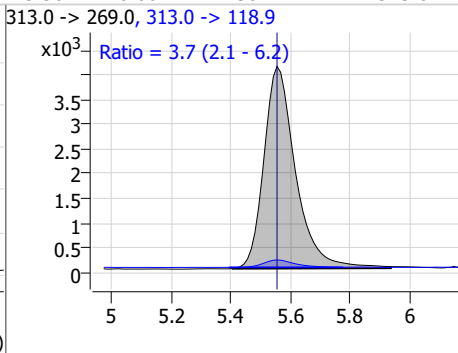
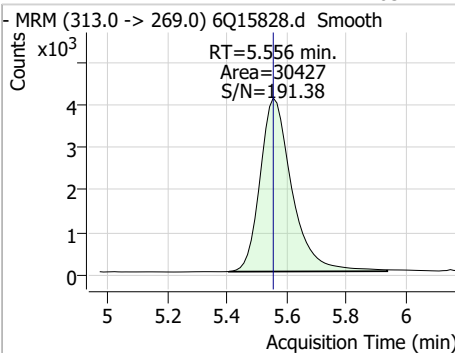
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.31	5.50	0.01	11049	298.7 -> 98.8	48.2	23.5	70.5



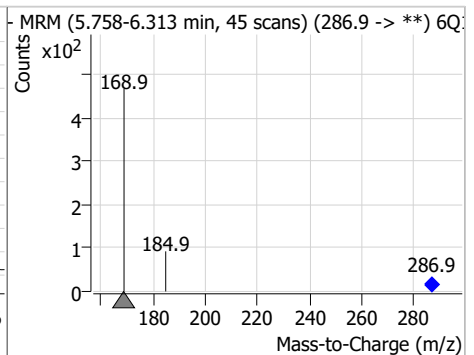
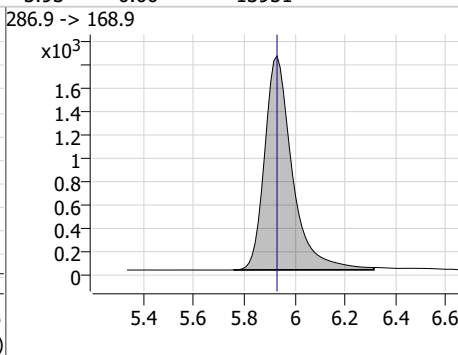
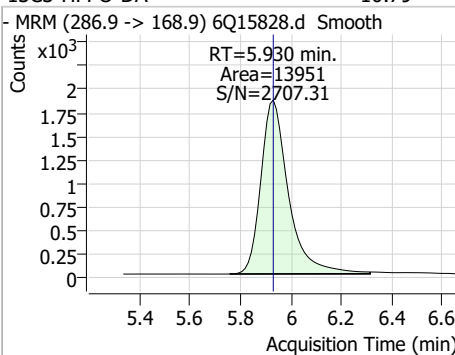
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	5.55	0.00	32155				



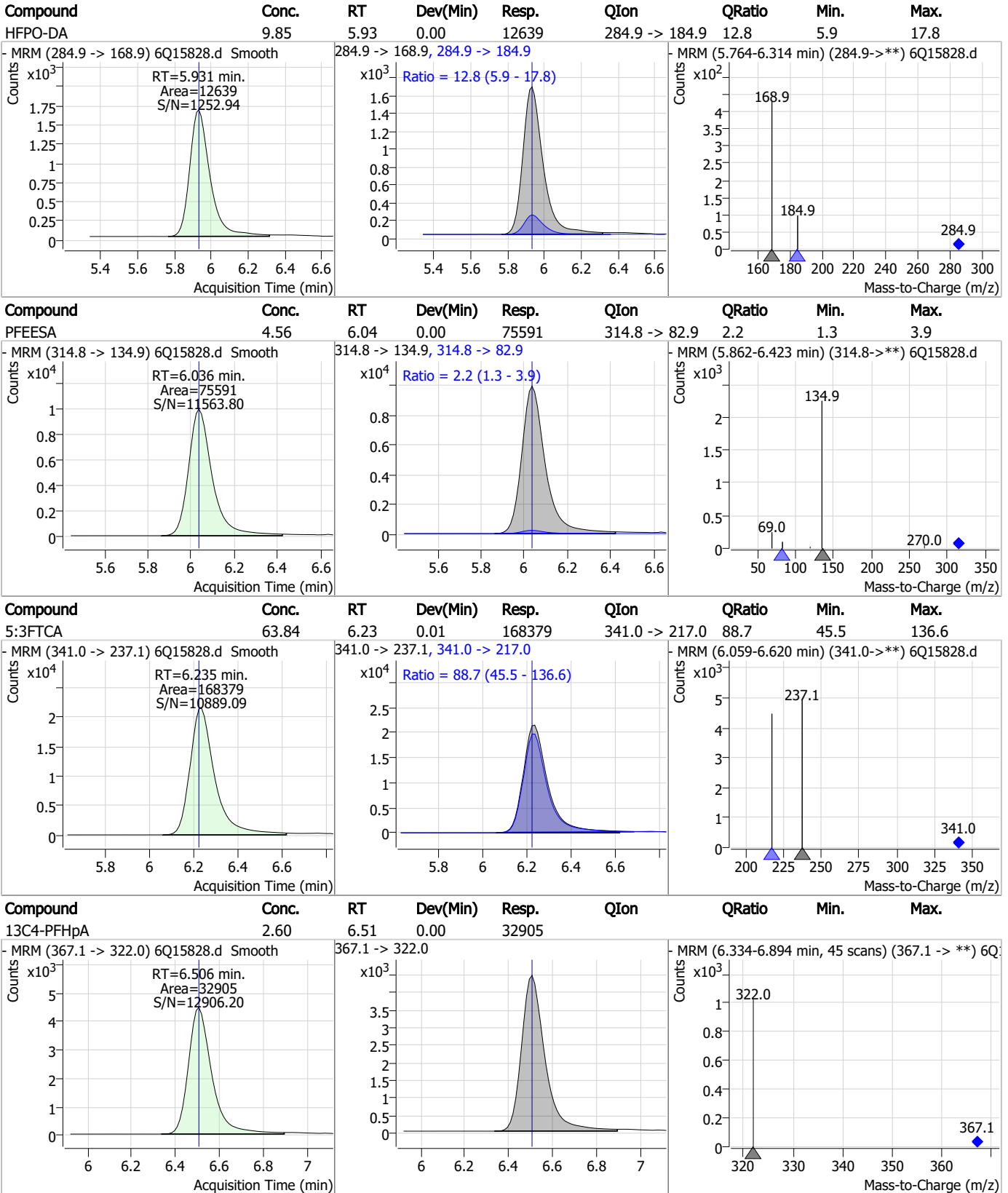
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.63	5.56	0.00	30427	313.0 -> 118.9	3.7	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.79	5.93	0.00	13951				



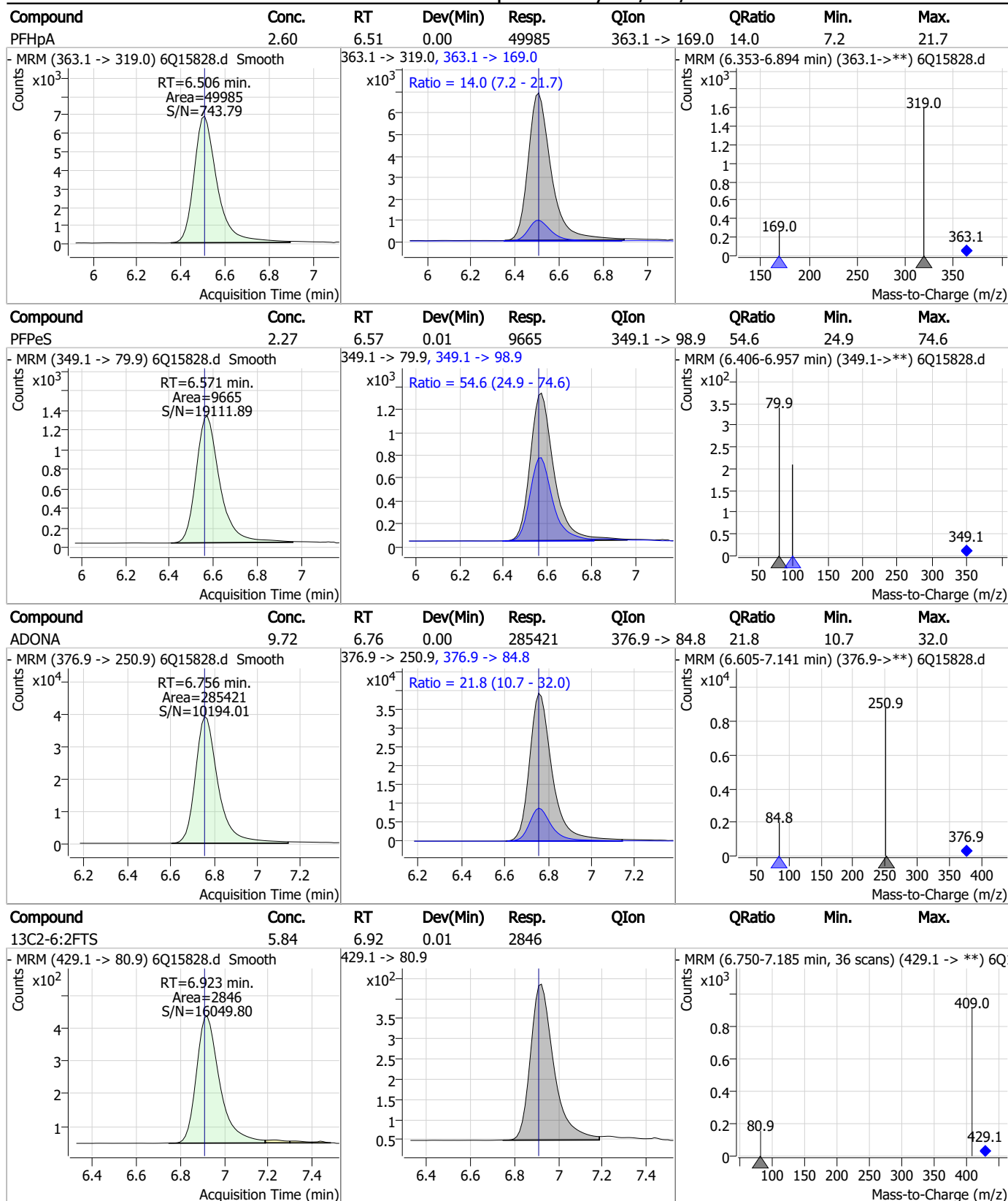
Perfluorinated Compounds by LC/MS/MS



7.4.1

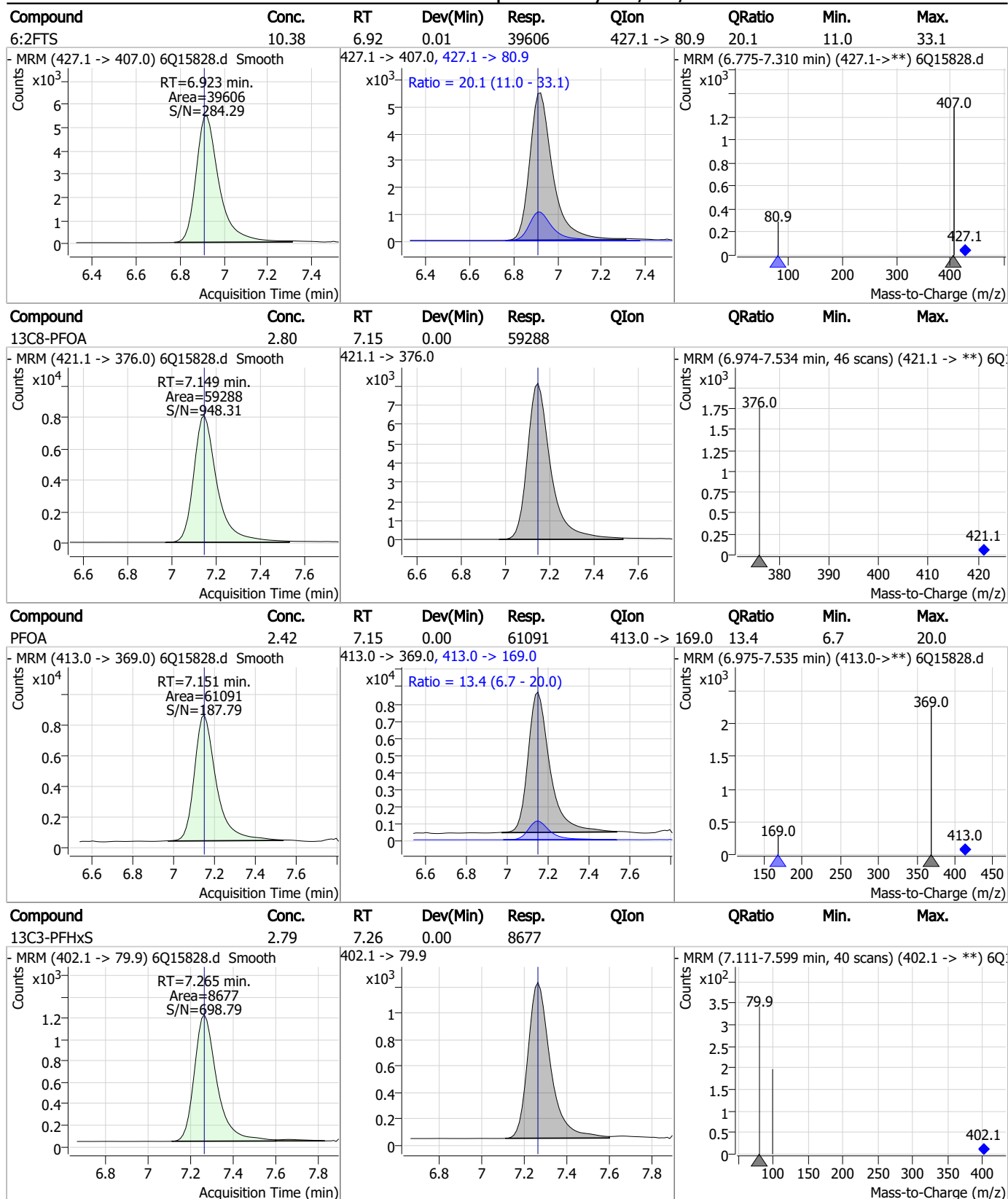
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Perfluorinated Compounds by LC/MS/MS



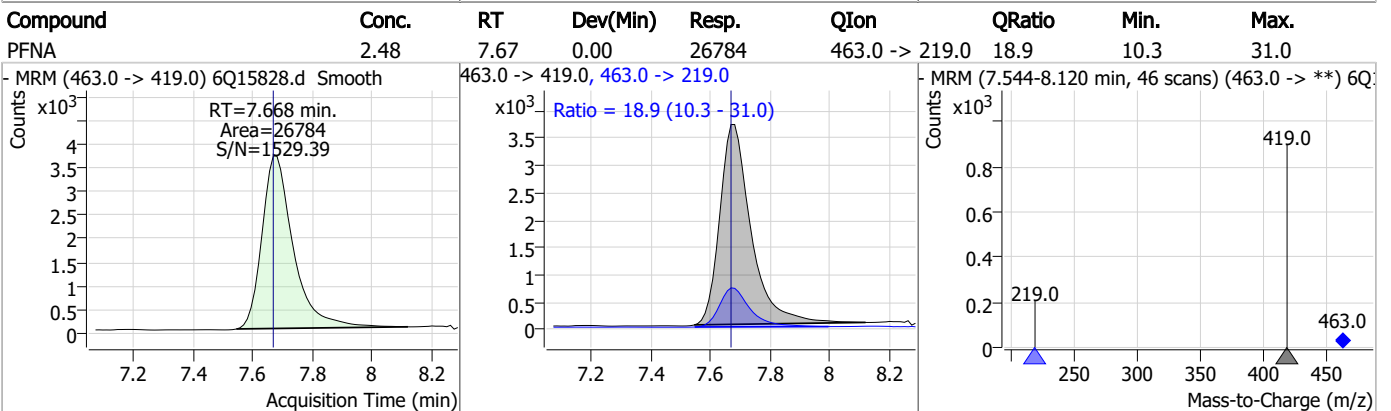
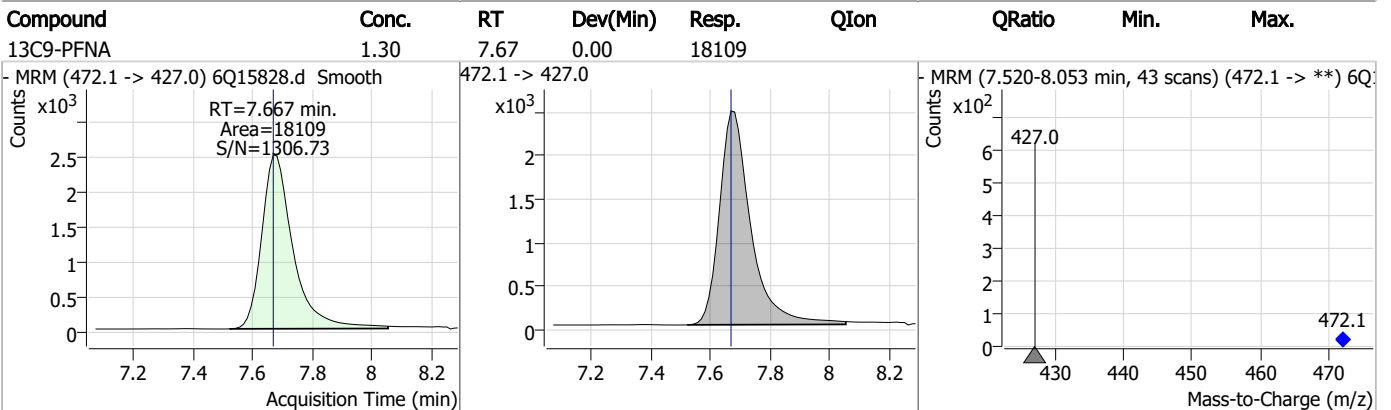
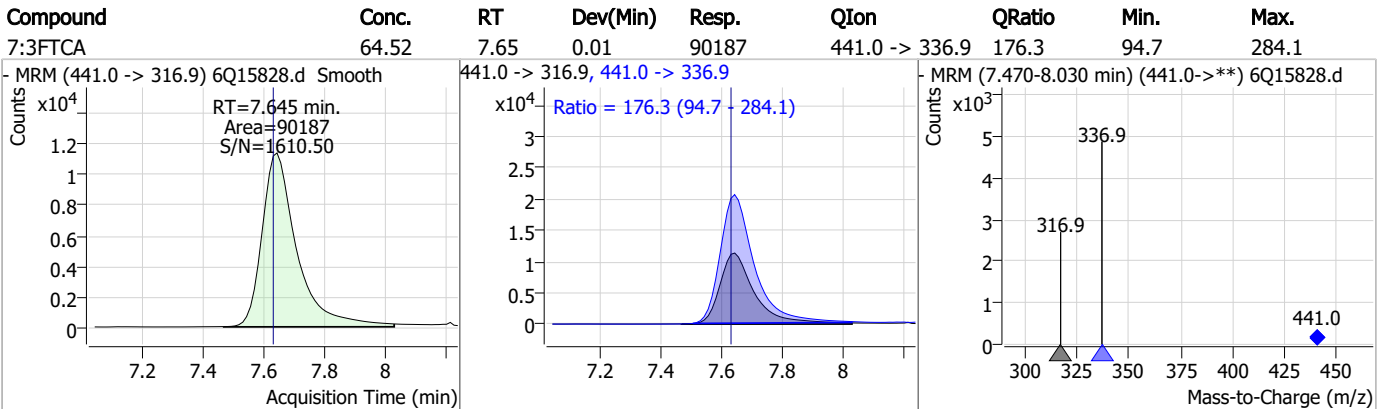
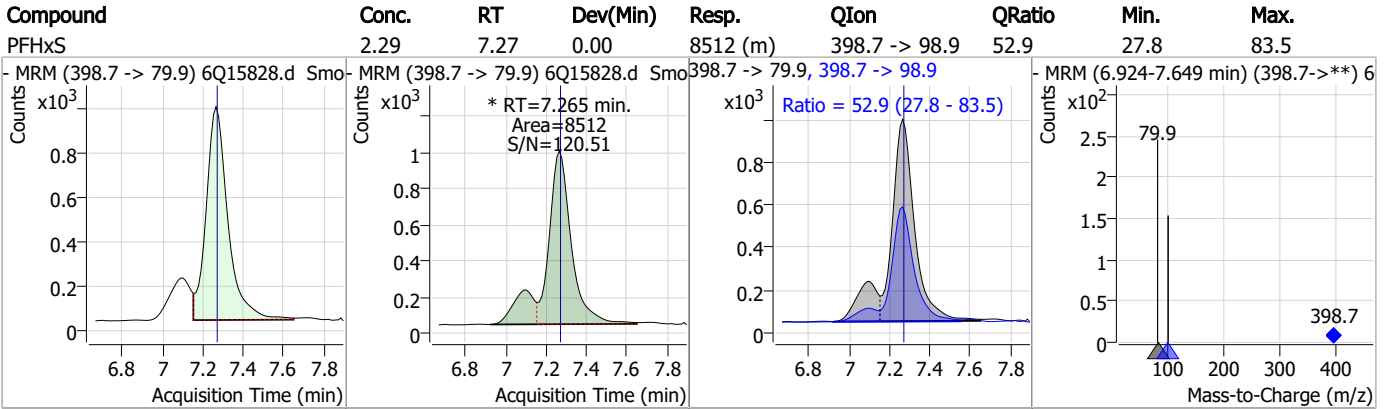
7.4.1
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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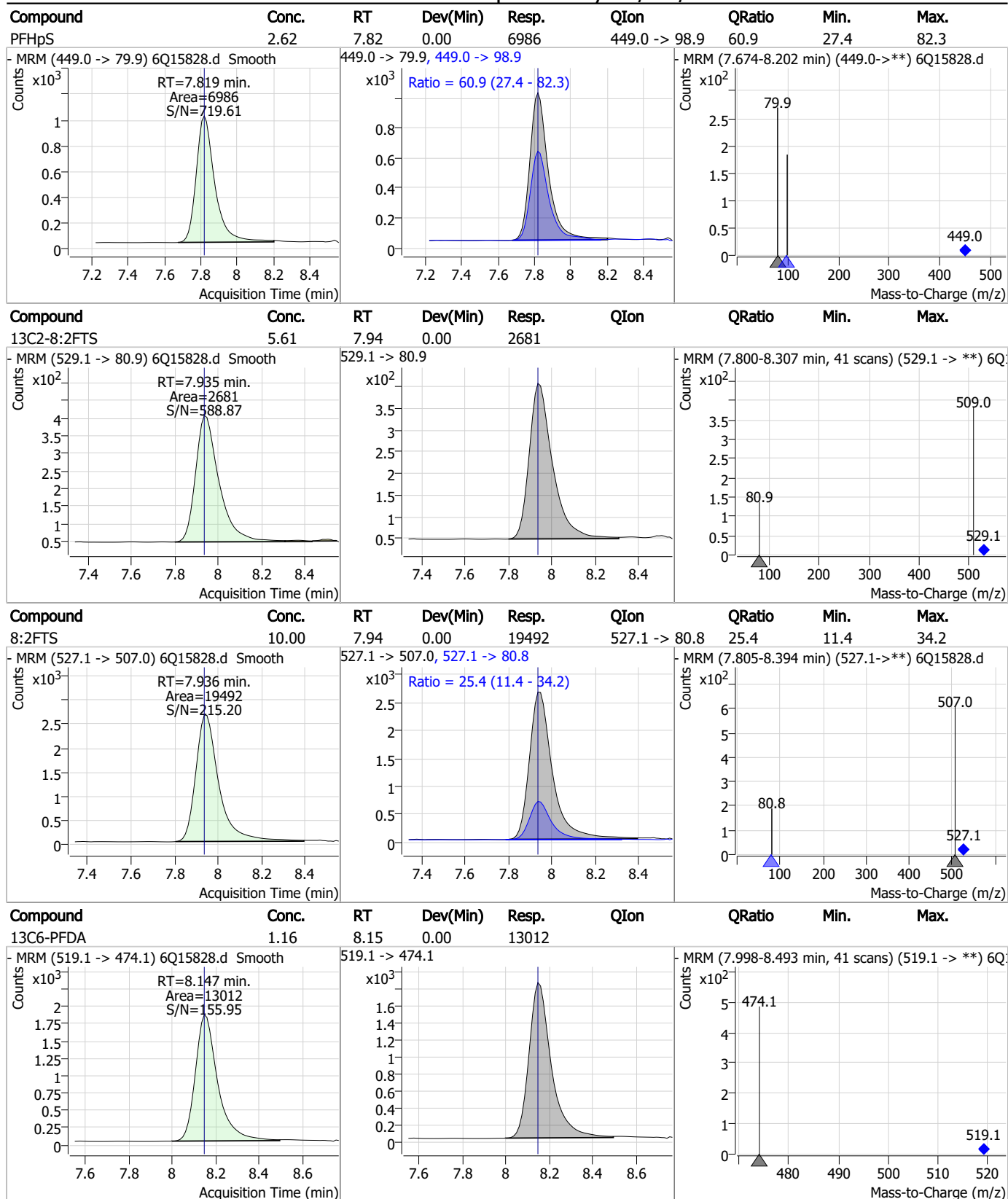
Perfluorinated Compounds by LC/MS/MS



7.4.1

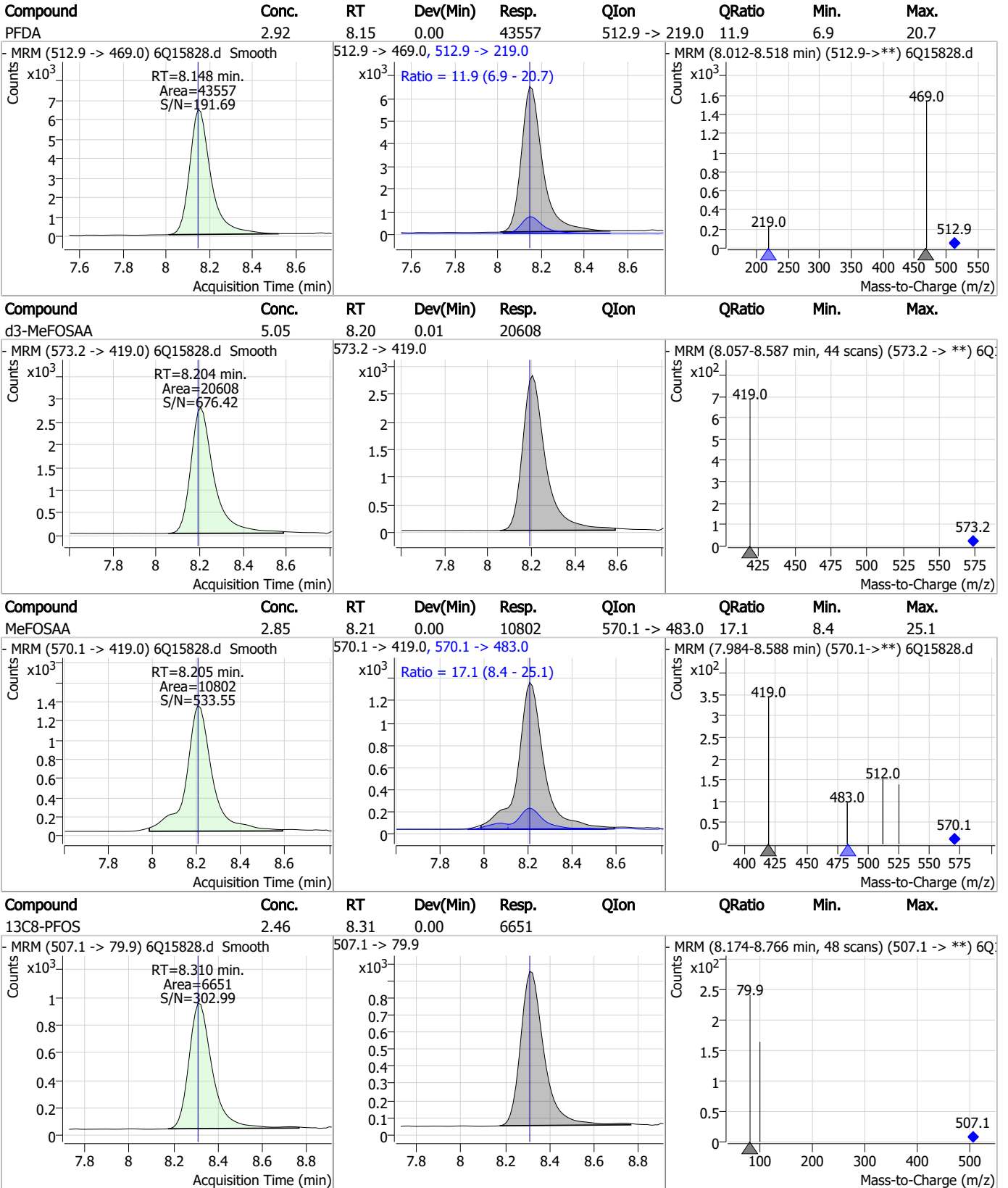
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

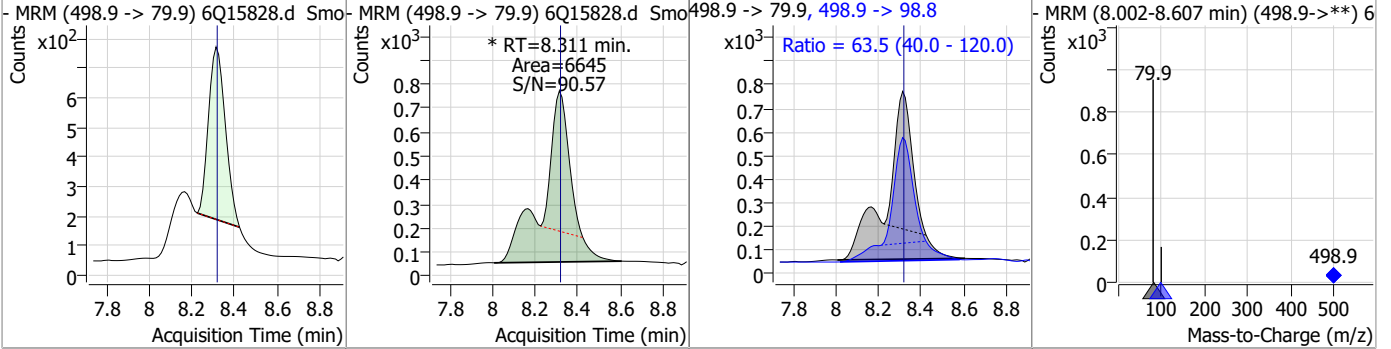


7.4.1

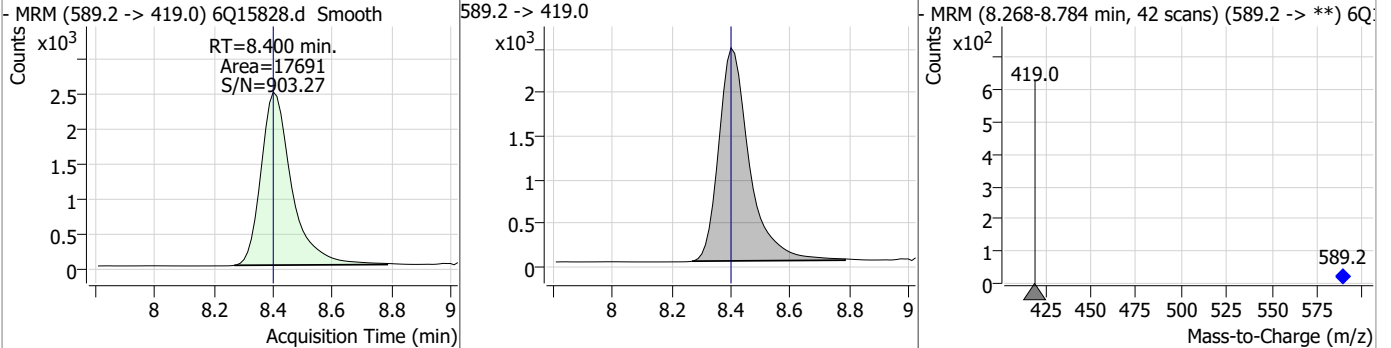
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Perfluorinated Compounds by LC/MS/MS

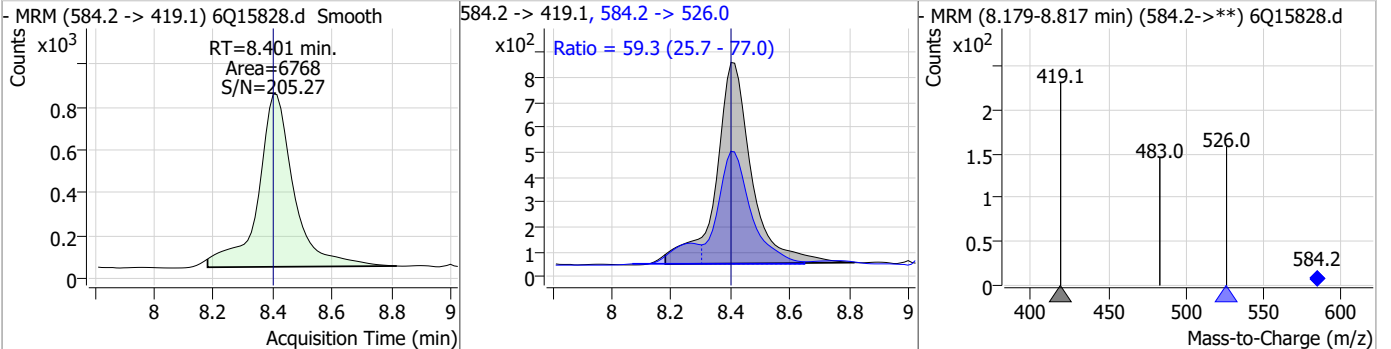
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.39	8.31	0.00	6645 (m)	498.9 -> 98.8	63.5	40.0	120.0



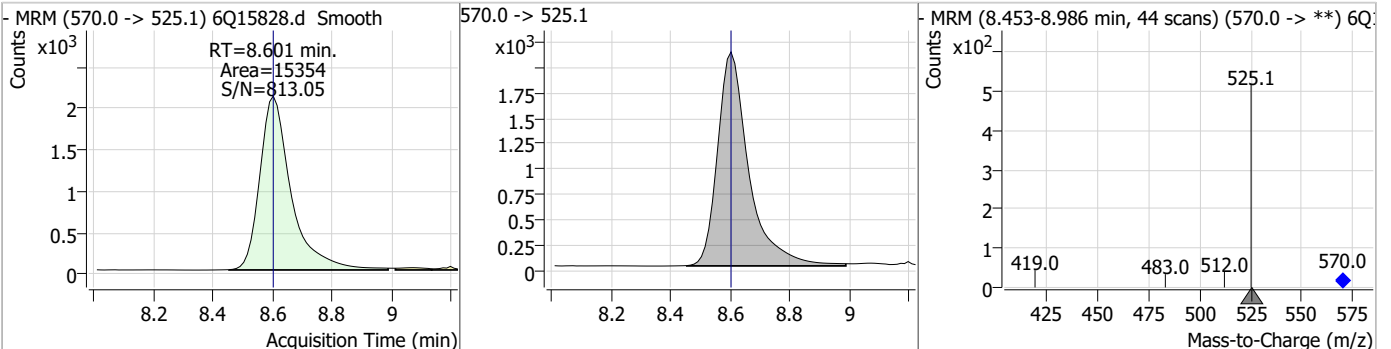
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.95	8.40	0.00	17691				



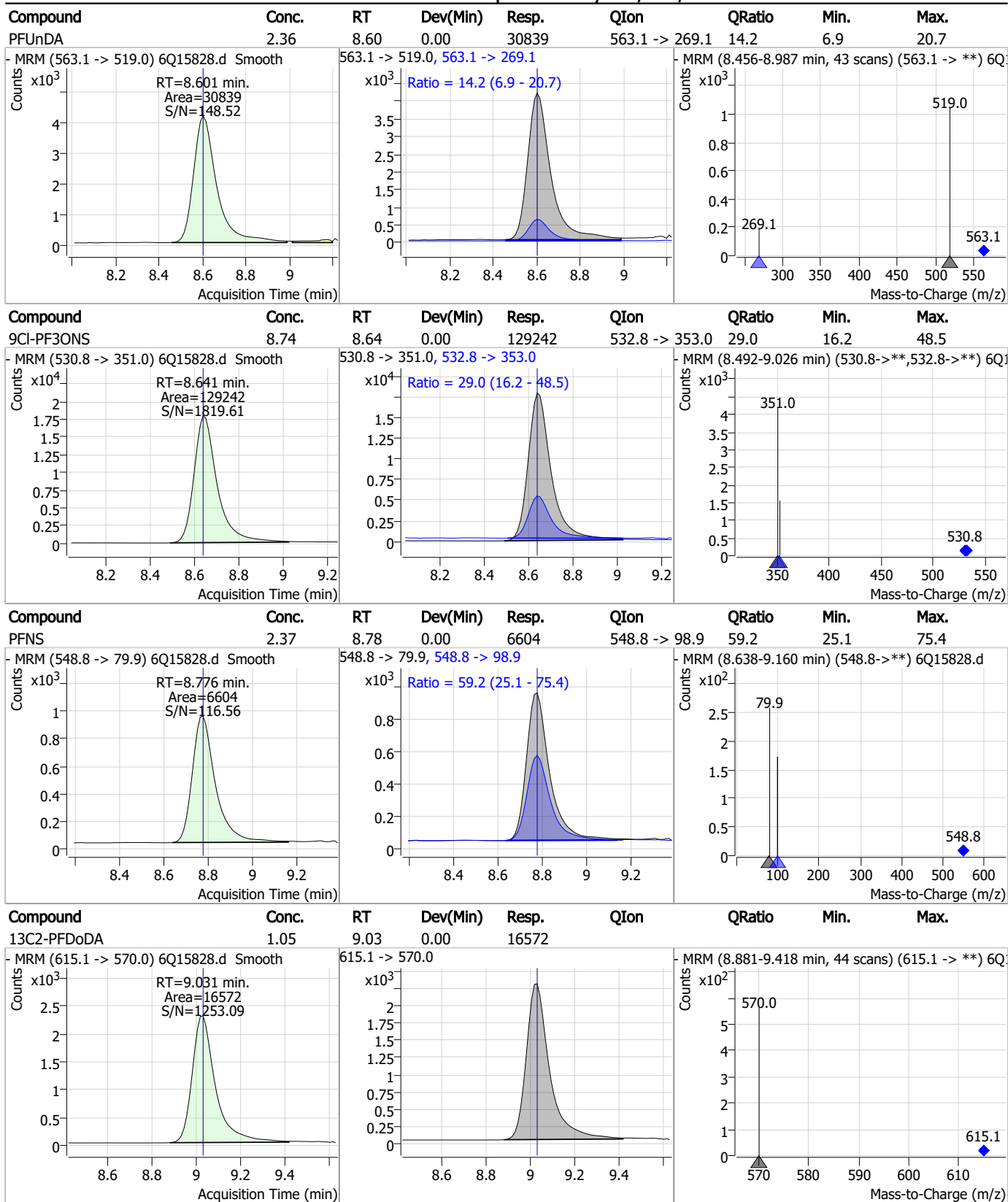
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.48	8.40	0.00	6768	584.2 -> 526.0	59.3	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.60	0.00	15354				

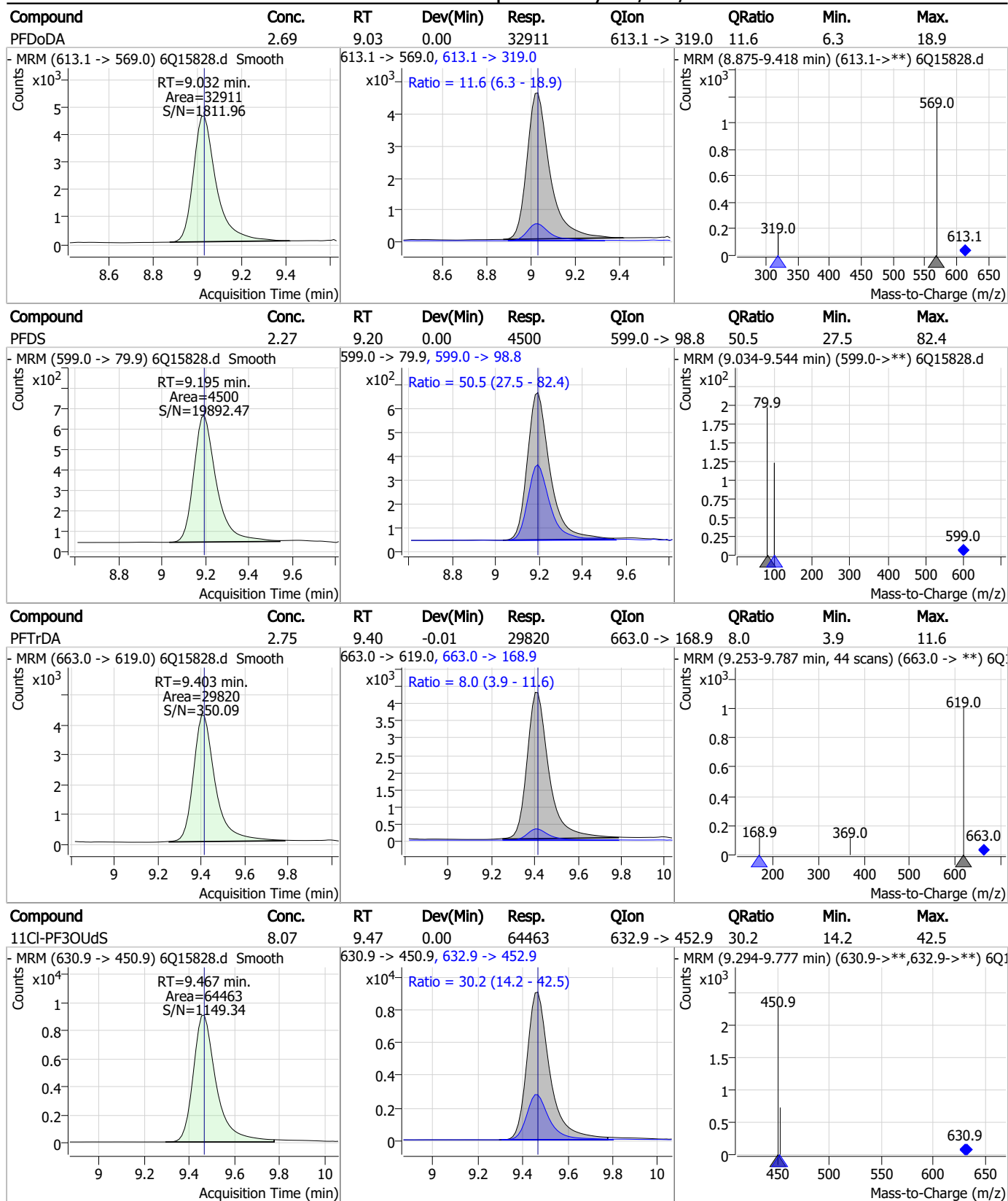


Perfluorinated Compounds by LC/MS/MS



7.4.1
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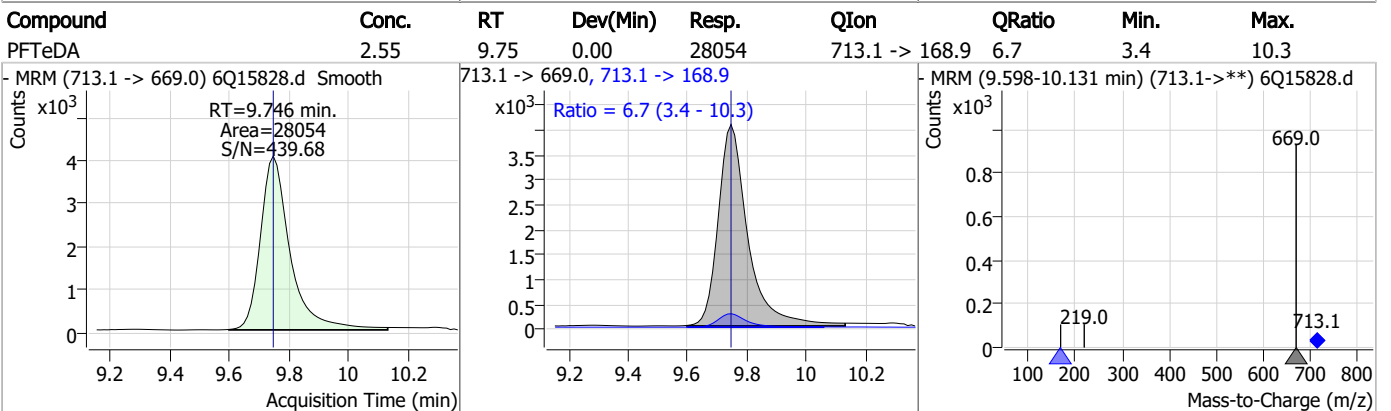
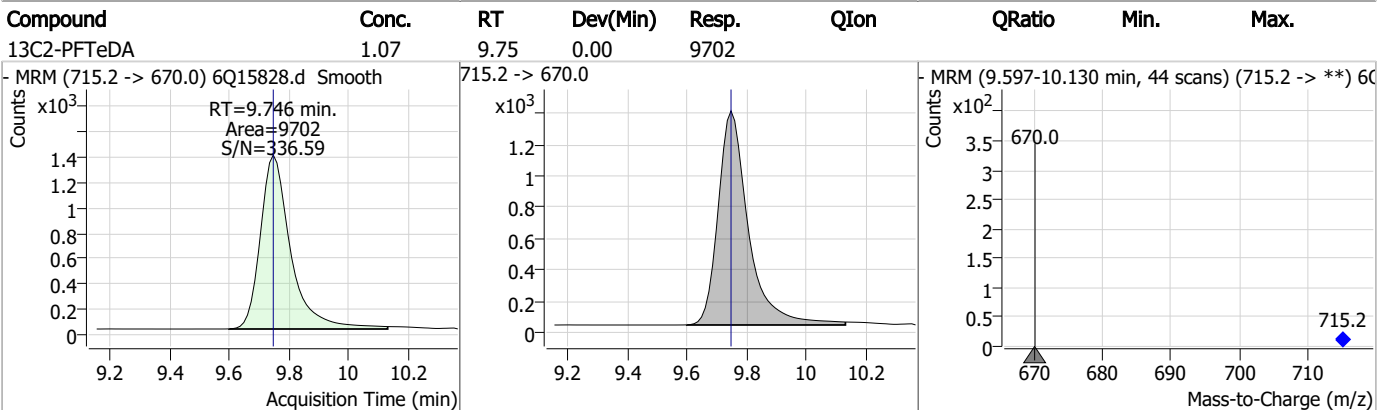
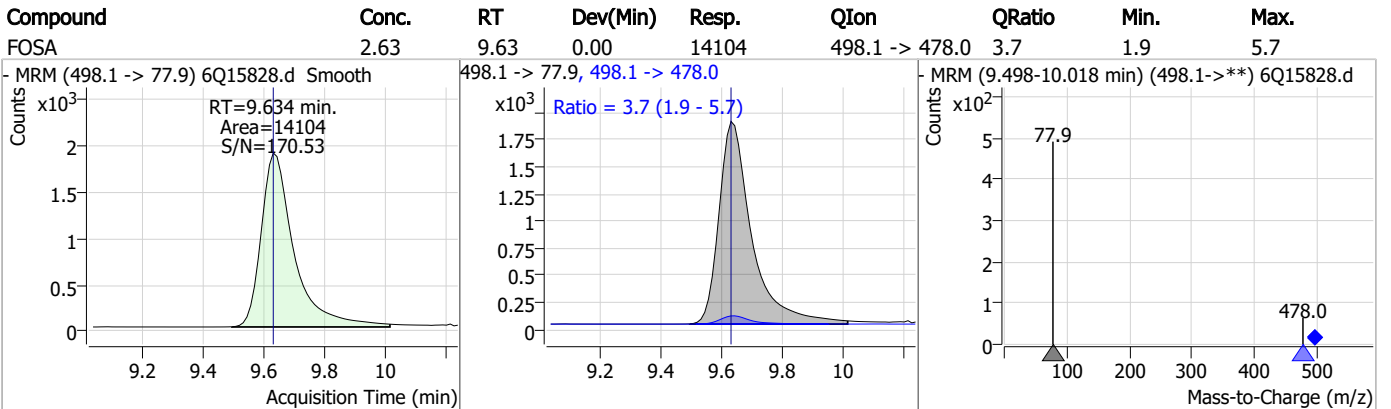
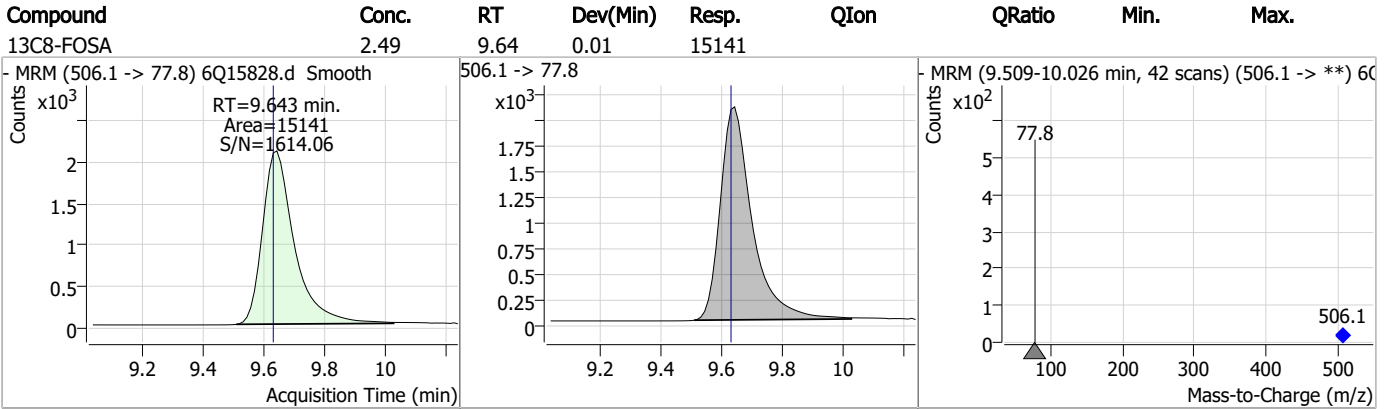
Perfluorinated Compounds by LC/MS/MS



7.4.1

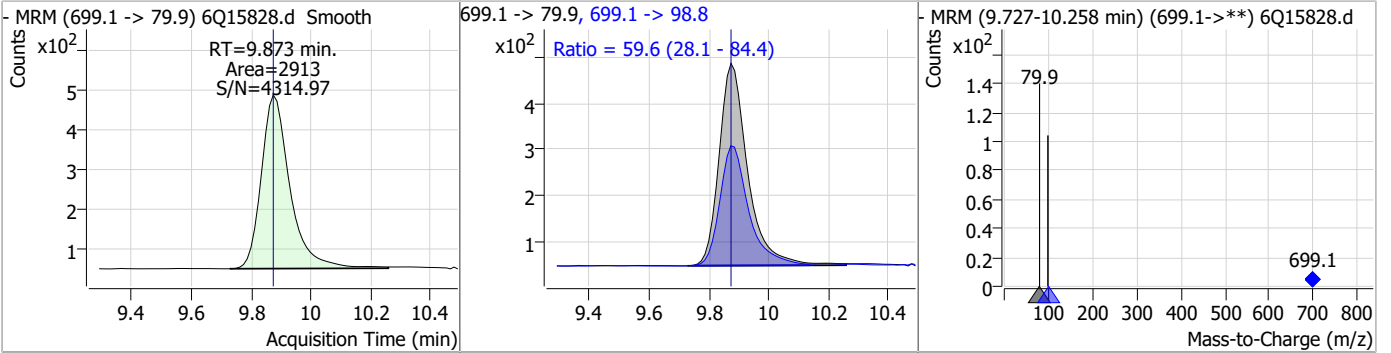
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Perfluorinated Compounds by LC/MS/MS

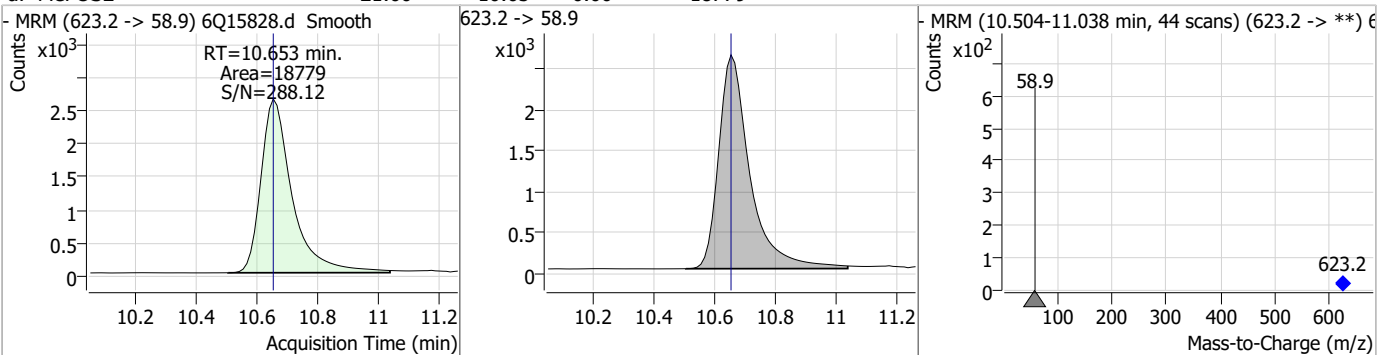


Perfluorinated Compounds by LC/MS/MS

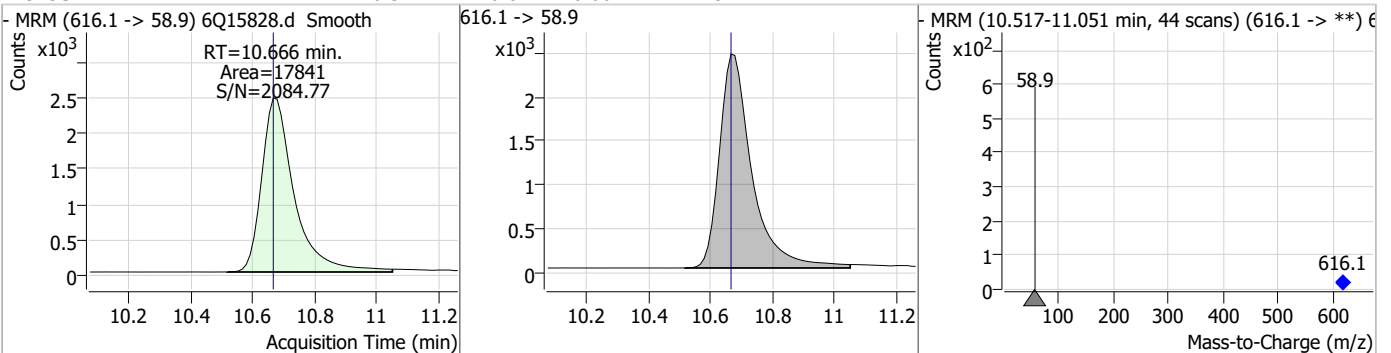
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.43	9.87	0.00	2913	699.1 -> 98.8	59.6	28.1	84.4



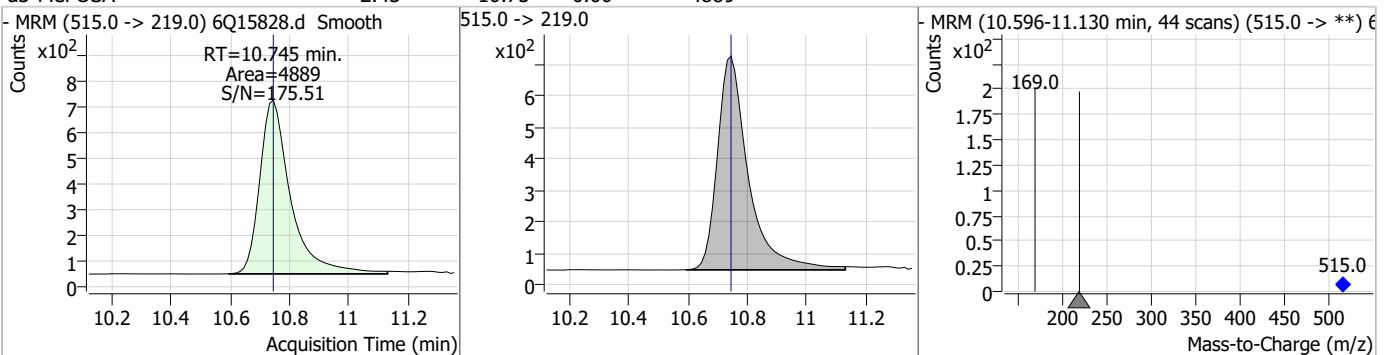
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.60	10.65	0.00	18779				



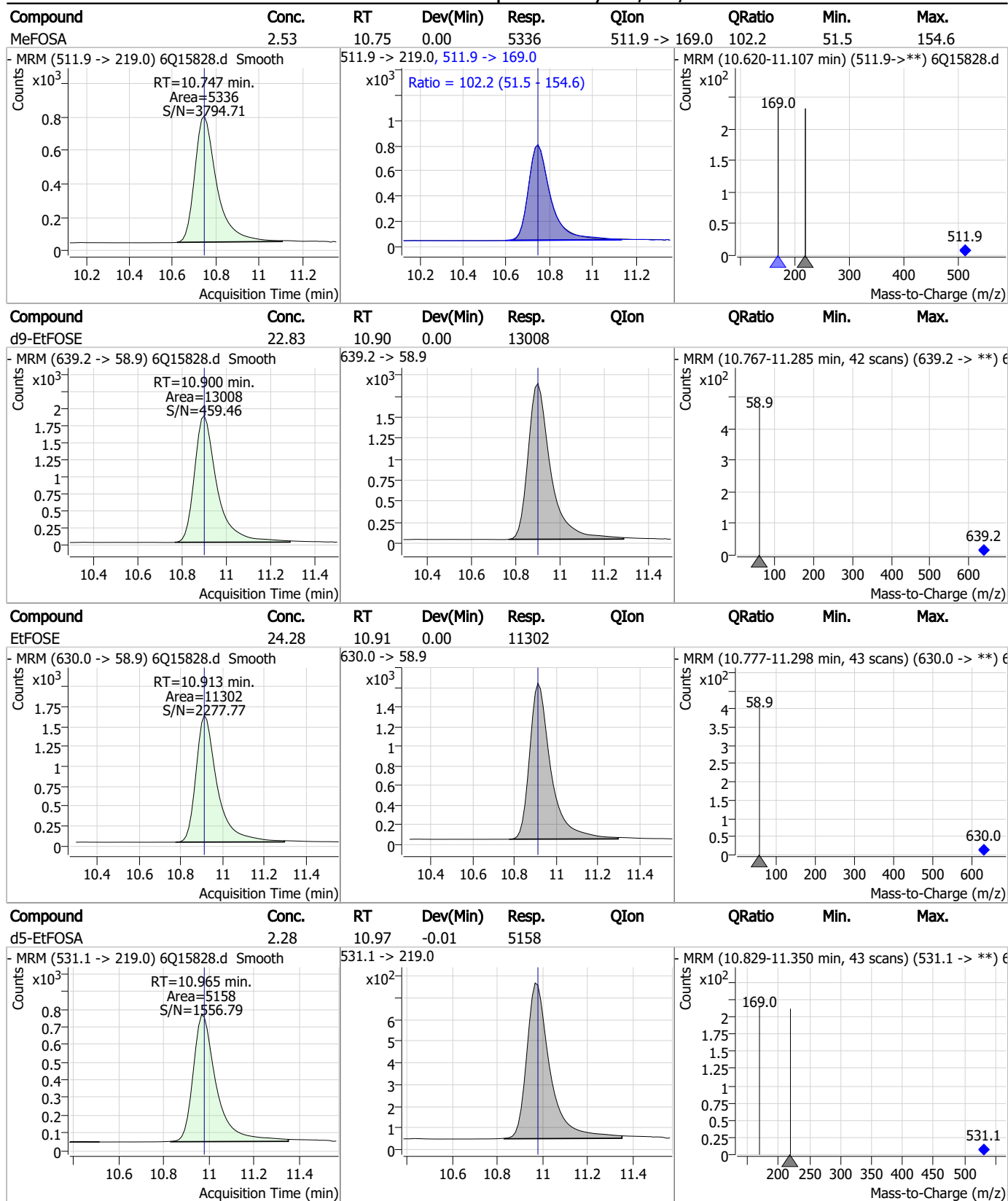
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	26.31	10.67	0.00	17841				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.43	10.75	0.00	4889				

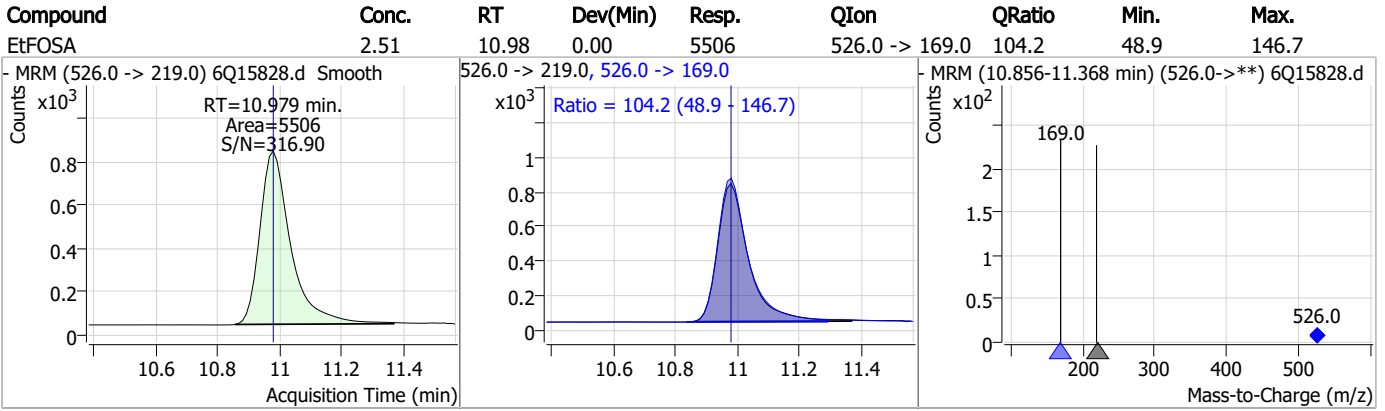


Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS



7.4.1

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Manual Integration Approval Summary

Sample Number: OP96143-MS Method: EPA DRAFT 1633
Lab FileID: 6Q15828.D Analyst approved: 03/31/23 15:22 Mike Eger
Injection Time: 03/30/23 23:22 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.4.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15831.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 12:04:55 AM
 Sample Name : op96143-dup
 Vial : P3-D4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96143,S6Q237,560,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.963	216.8 -> 171.9	72265	10.00 µg/L	0.050
M5-PFPeA	4.359	268.3 -> 223.0	34297	5.00 µg/L	0.012
M5-PFHxA	5.553	318.0 -> 273.0	32046	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	33303	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	54863	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	15809	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	13072	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	13063	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	15622	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	9500	1.25 µg/L	0.000
M8-FOSA	9.643	506.1 -> 77.8	14437	2.50 µg/L	0.012
M3-PFBS	5.496	302.1 -> 79.9	12343	2.50 µg/L	0.012
M3-PFHxS	7.252	402.1 -> 79.9	7918	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	6990	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2058	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2820	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2586	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	21513	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13198	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	17136	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	17363	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	11963	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	4840	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	4288	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8209	2.50 µg/L	0.000
13C3-PFBA	2.966	216.0 -> 172.0	29881	5.00 µg/L	0.050
18O2-PFHxS	7.264	403.0 -> 83.9	5250	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	65358	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	19163	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	18215	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	28919	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2058	6.02 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.4%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2820	6.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.4%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2586	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C2-PFDoDA	9.031	615.1 -> 570.0	15622	1.00 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.2%		
13C2-PFTeDA	9.746	715.2 -> 670.0	9500	1.06 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.0%		
13C3-PFBS	5.496	302.1 -> 79.9	12343	2.89 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.4%		
13C3-PFHxS	7.252	402.1 -> 79.9	7918	2.67 µg/L	-0.012

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 = 106.8%	
13C4-PFBA	2.963	216.8 -> 171.9	72265	10.47 µg/L	0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C4-PFHpA	6.506	367.1 -> 322.0	33303	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C5-PFHxA	5.553	318.0 -> 273.0	32046	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C5-PFPeA	4.359	268.3 -> 223.0	34297	5.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C6-PFDA	8.147	519.1 -> 474.1	13072	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C7-PFUnDA	8.601	570.0 -> 525.1	13063	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 85.4%	
13C8-FOSA	9.643	506.1 -> 77.8	14437	2.39 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C8-PFOA	7.137	421.1 -> 376.0	54863	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.310	507.1 -> 79.9	6990	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C9-PFNA	7.667	472.1 -> 427.0	15809	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.0%	
d3-MeFOSAA	8.204	573.2 -> 419.0	21513	5.31 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	13198	10.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSA	10.745	515.0 -> 219.0	4288	2.15 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	17136	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d7-MeFOSE	10.653	623.2 -> 58.9	17363	20.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
d9-EtFOSE	10.900	639.2 -> 58.9	11963	21.15 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.6%	
d5-EtFOSA	10.978	531.1 -> 219.0	4840	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.2%	

Target Compounds

QValue

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



7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	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	0.00	µg/L	#m
		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

7.5.1
7

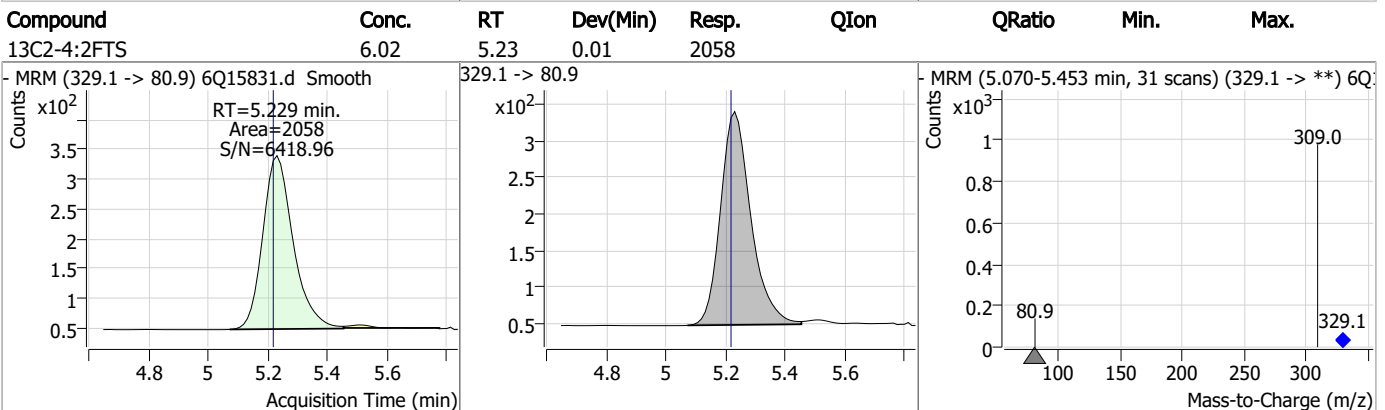
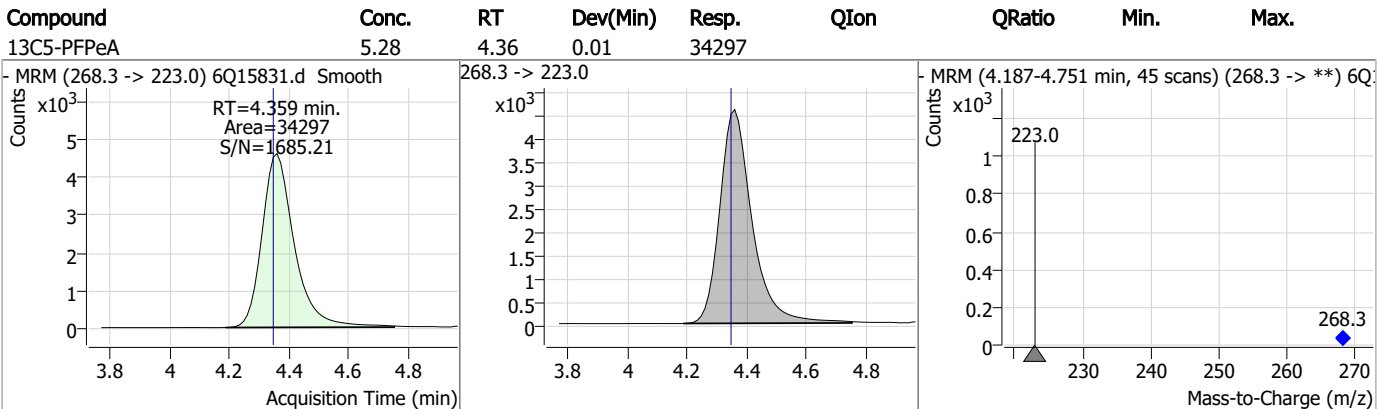
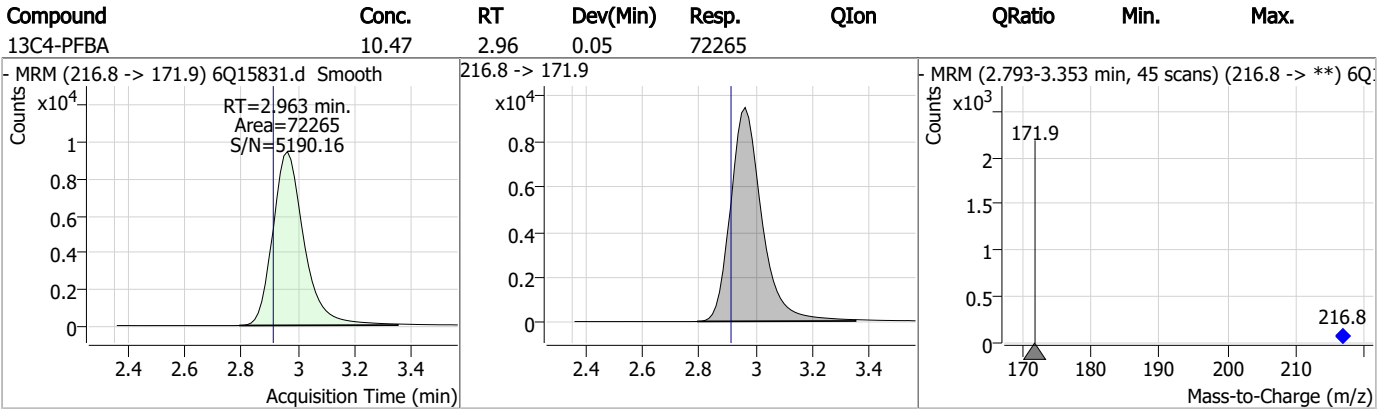
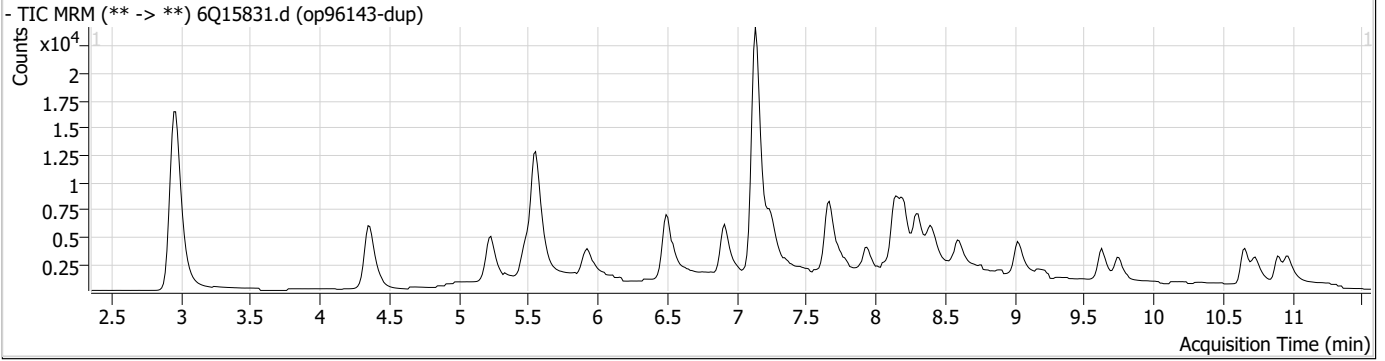
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.89	5.50	0.01	12343				
- MRM (302.1 -> 79.9) 6Q15831.d Smooth Counts x10 ³ RT=5.496 min. Area=12343 S/N=187.51 Acquisition Time (min)			302.1 -> 79.9 Counts x10 ³ Acquisition Time (min)			- MRM (5.335-5.878 min, 44 scans) (302.1 -> **) 6Q Counts x10 ² 79.9 98.9 302.1 Mass-to-Charge (m/z)		
13C5-PFHxA	2.68	5.55	0.00	32046				
- MRM (318.0 -> 273.0) 6Q15831.d Smooth Counts x10 ³ RT=5.553 min. Area=32046 S/N=229.11 Acquisition Time (min)			318.0 -> 273.0 Counts x10 ³ Acquisition Time (min)			- MRM (5.405-5.923 min, 43 scans) (318.0 -> **) 6Q Counts x10 ³ 273.0 318.0 Mass-to-Charge (m/z)		
13C3-HFPO-DA	10.60	5.93	0.00	13198				
- MRM (286.9 -> 168.9) 6Q15831.d Smooth Counts x10 ³ RT=5.930 min. Area=13198 S/N=21730.53 Acquisition Time (min)			286.9 -> 168.9 Counts x10 ³ Acquisition Time (min)			- MRM (5.758-6.313 min, 46 scans) (286.9 -> **) 6Q Counts x10 ² 168.9 184.9 286.9 Mass-to-Charge (m/z)		
13C4-PFHpA	2.73	6.51	0.00	33303				
- MRM (367.1 -> 322.0) 6Q15831.d Smooth Counts x10 ³ RT=6.506 min. Area=33303 S/N=237357.73 Acquisition Time (min)			367.1 -> 322.0 Counts x10 ³ Acquisition Time (min)			- MRM (6.332-6.894 min, 46 scans) (367.1 -> **) 6Q Counts x10 ³ 322.0 367.1 Mass-to-Charge (m/z)		

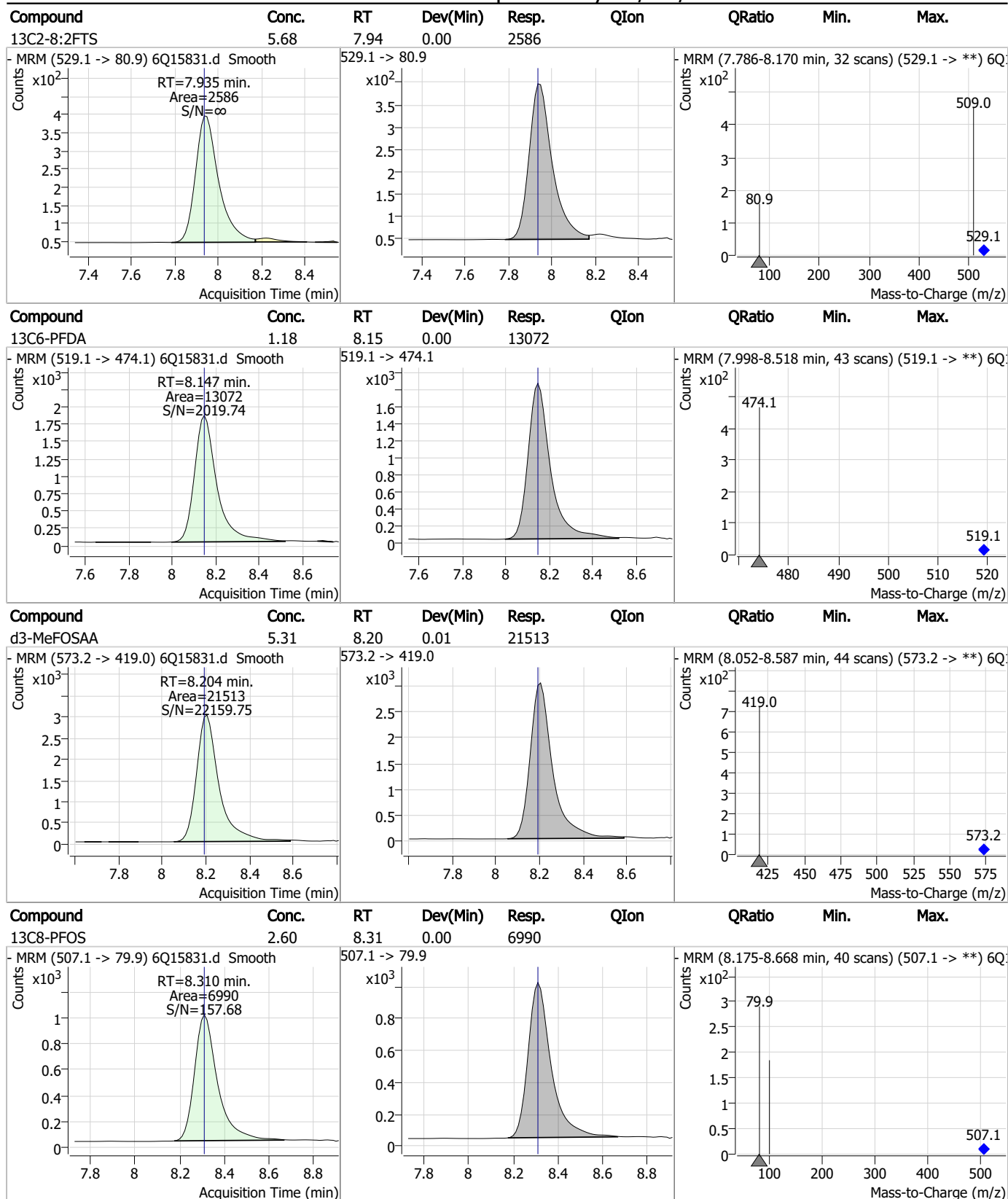
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.07	6.91	0.00	2820				
13C8-PFOA	2.53	7.14	-0.01	54863				
13C3-PFHxS	2.67	7.25	-0.01	7918				
13C9-PFNA	1.10	7.67	0.00	15809				

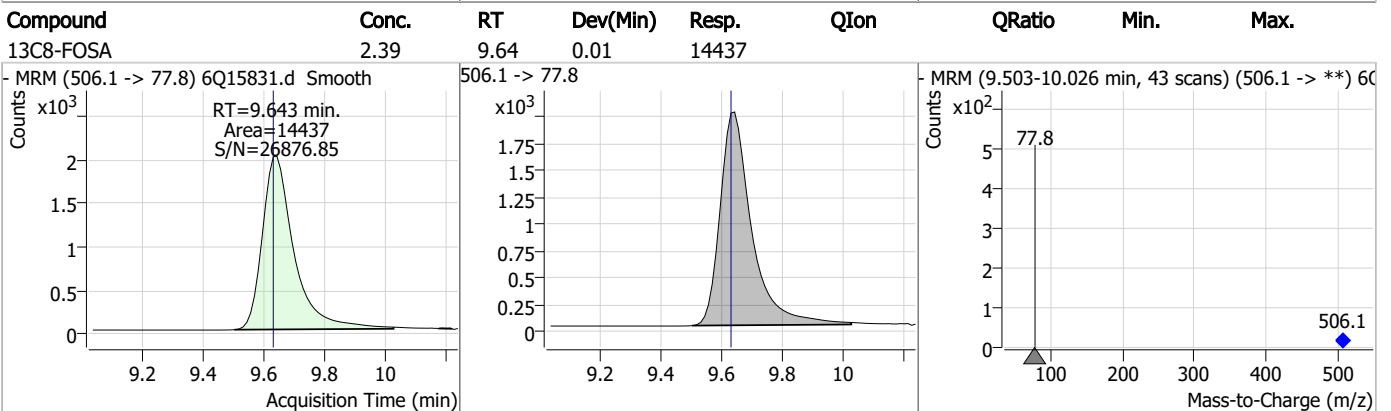
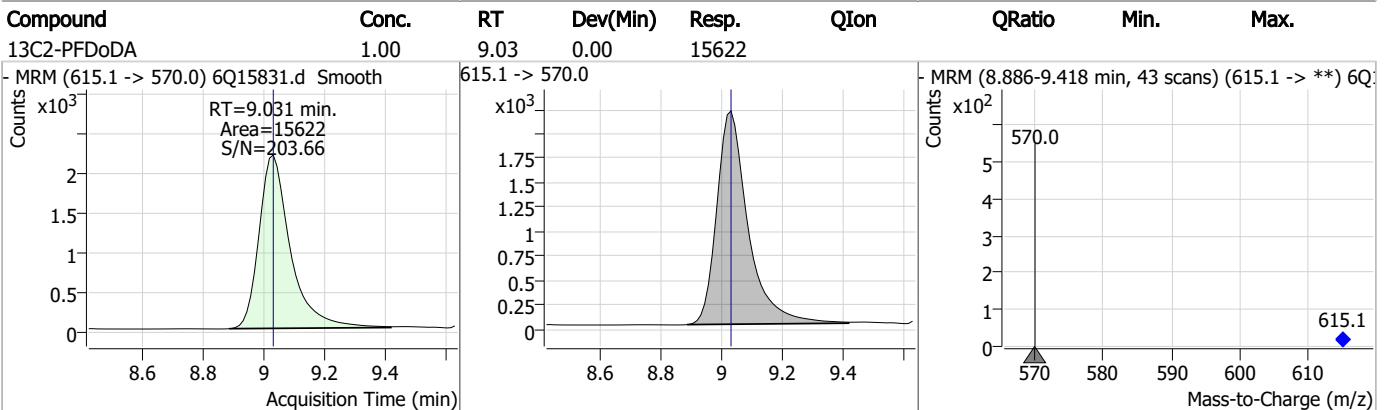
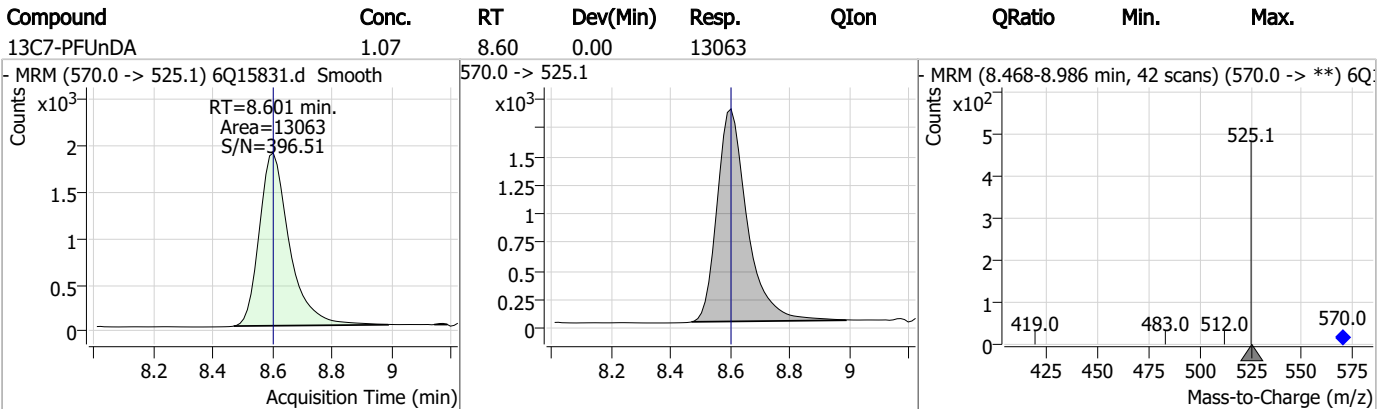
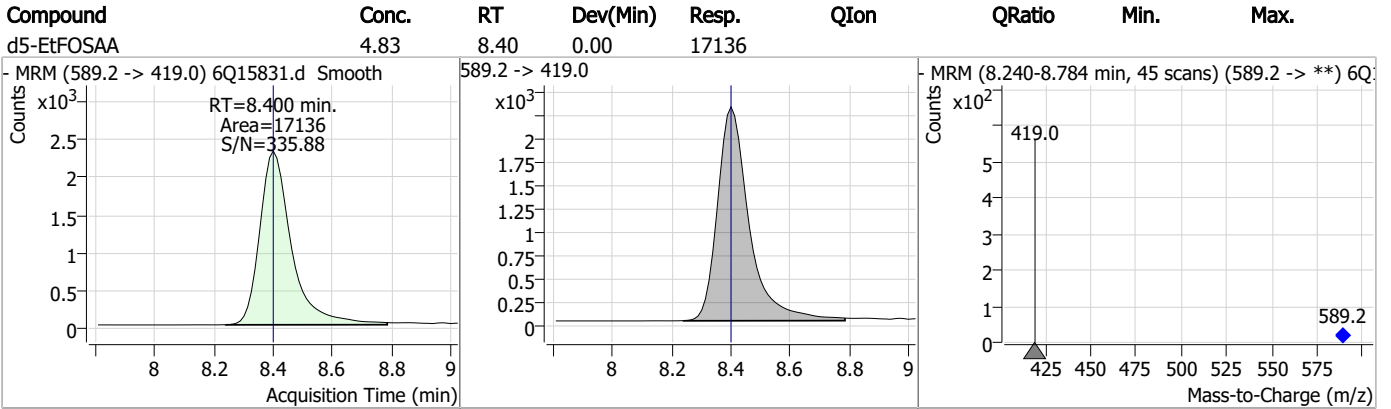
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

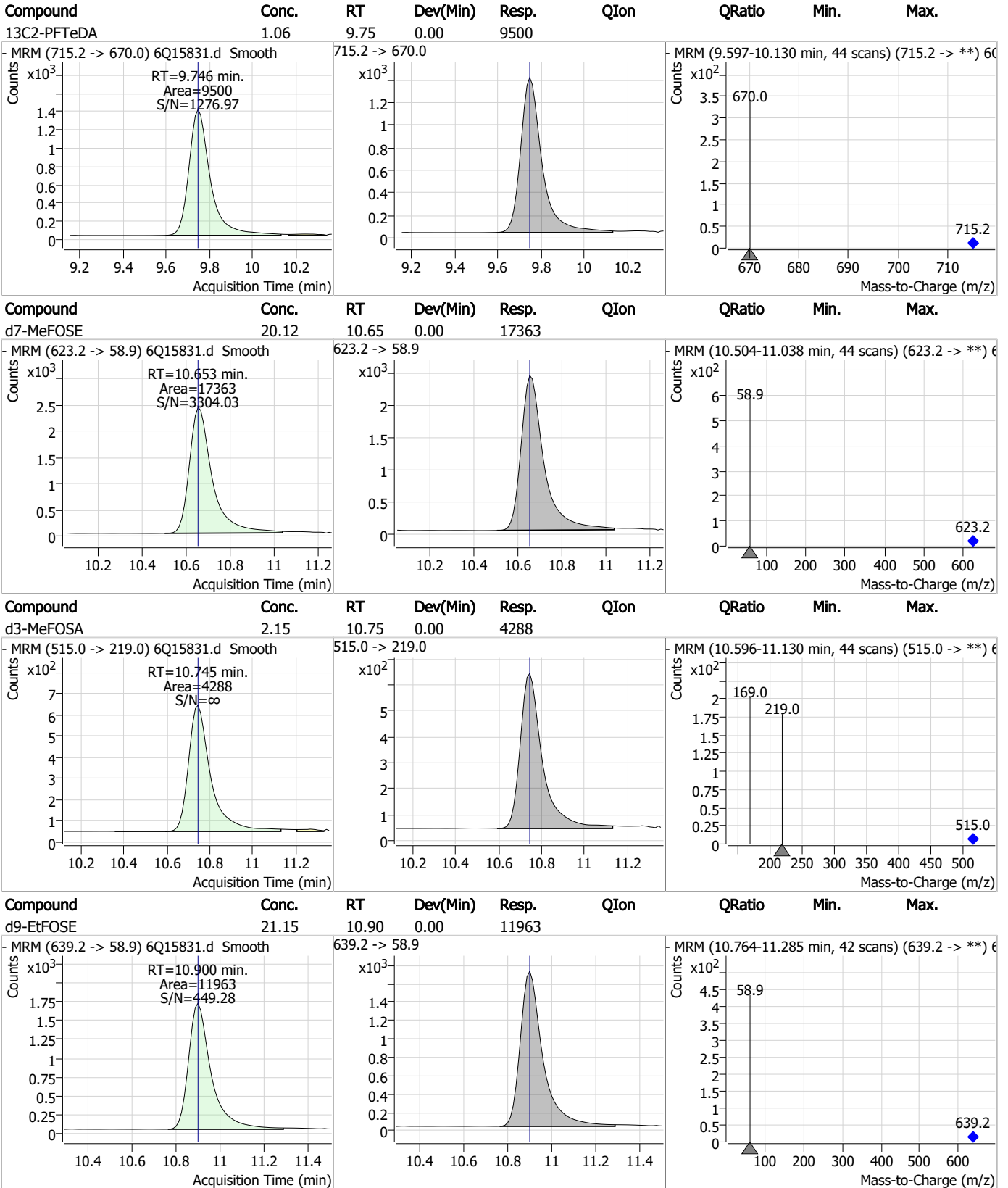


7.5.1
7

Perfluorinated Compounds by LC/MS/MS



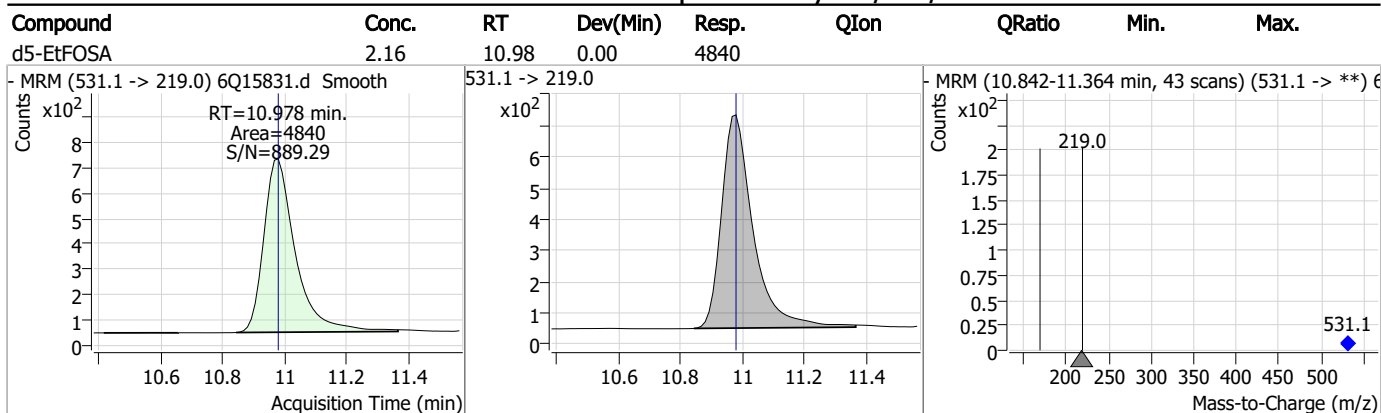
Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS



7.5.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 03/29/23 18:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15590.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 3:38:54 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q235 TDCA.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

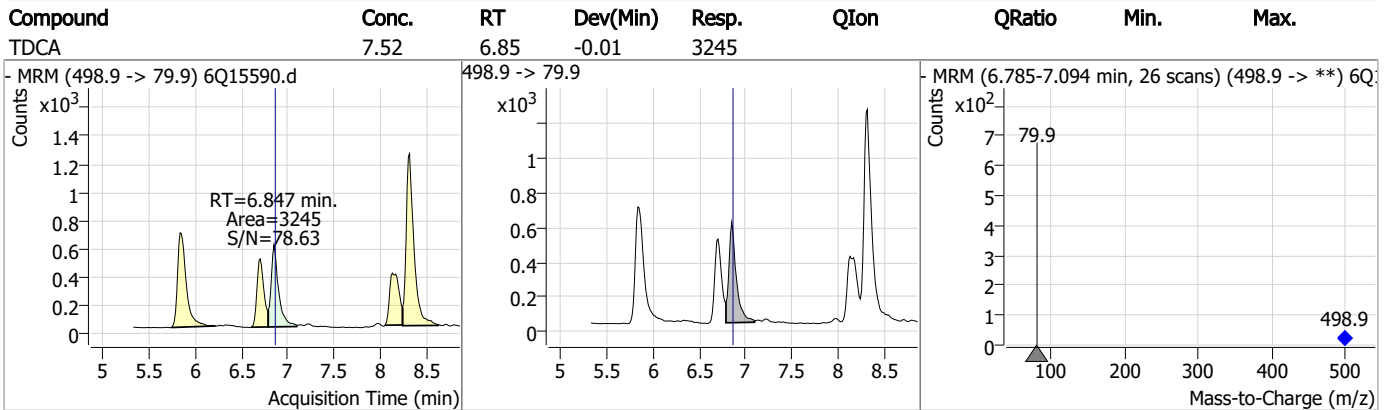
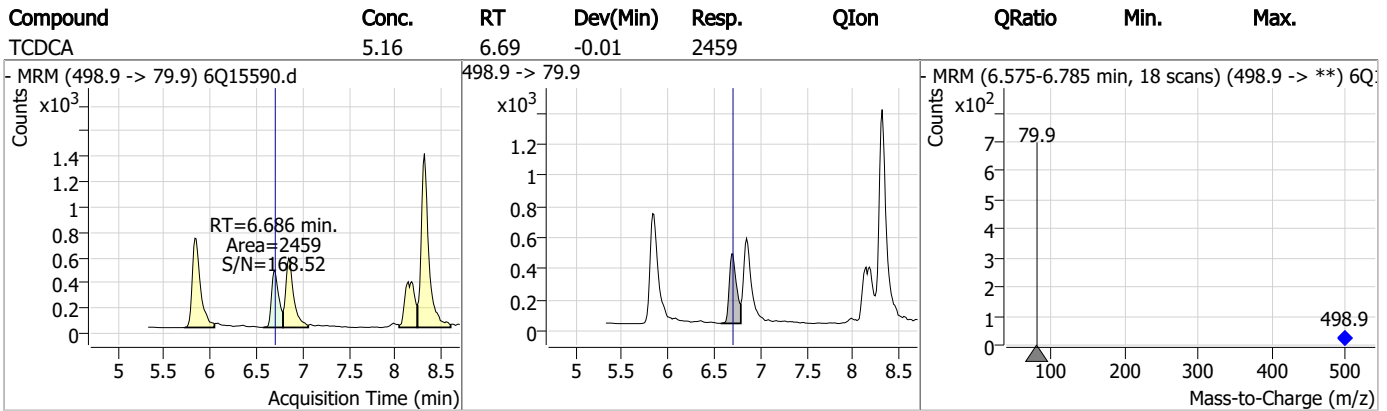
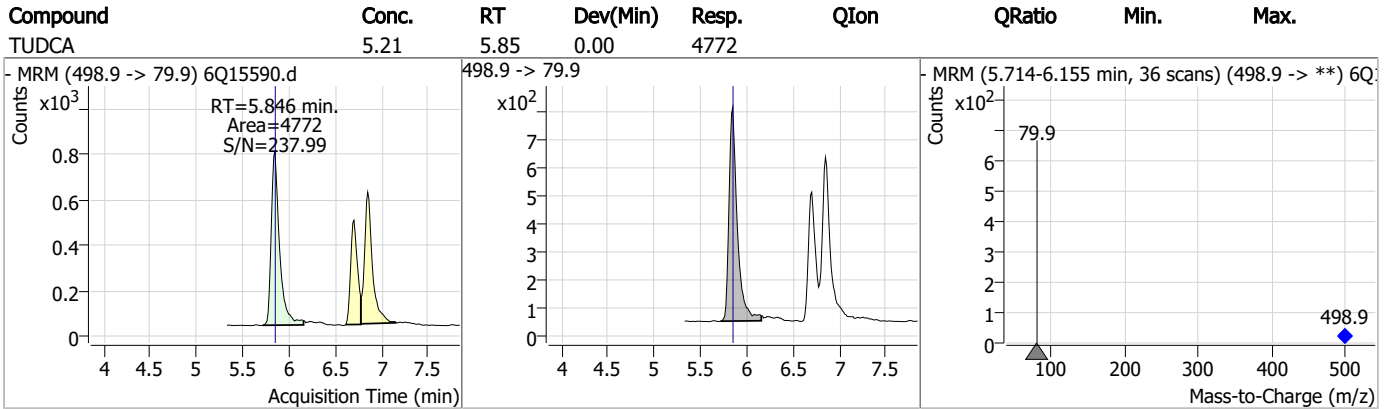
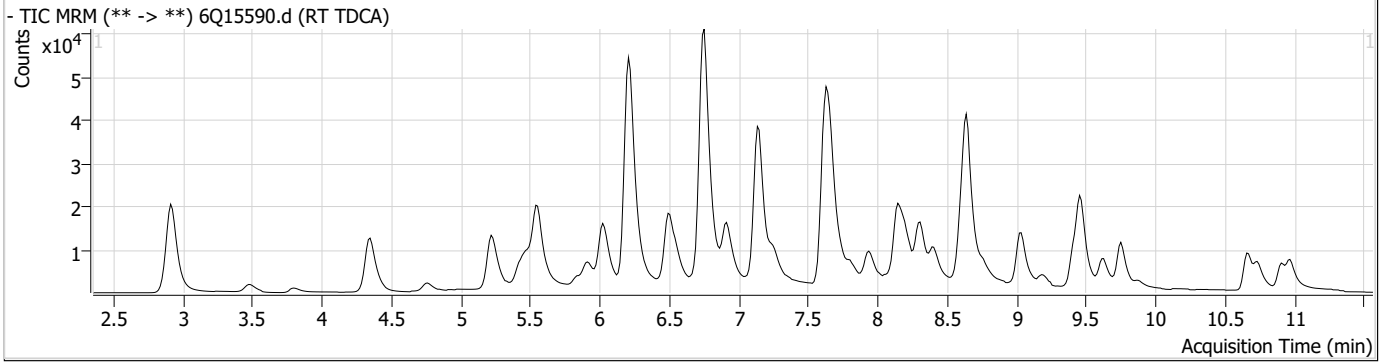
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.310	507.1 -> 79.9	10323	2.50	µg/L	-0.025	
13C4-PFOS	8.311	502.8 -> 79.9	12713	2.50	µg/L	-0.025	
System Monitoring Compounds							
13C8-PFOS	8.310	507.1 -> 79.9	10323	2.06	µg/L	-0.025	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 82.4%				
Target Compounds							
PFOS	8.311	498.9 -> 79.9 498.9 -> 98.8	9734 5916	2.76	µg/L m		82
TCDCa	6.686	498.9 -> 79.9	2459	5.16	ng/ml		100
TDCA	6.847	498.9 -> 79.9	3245	7.52	ng/ml		100
TUDCA	5.846	498.9 -> 79.9	4772	5.21	ng/ml		100

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

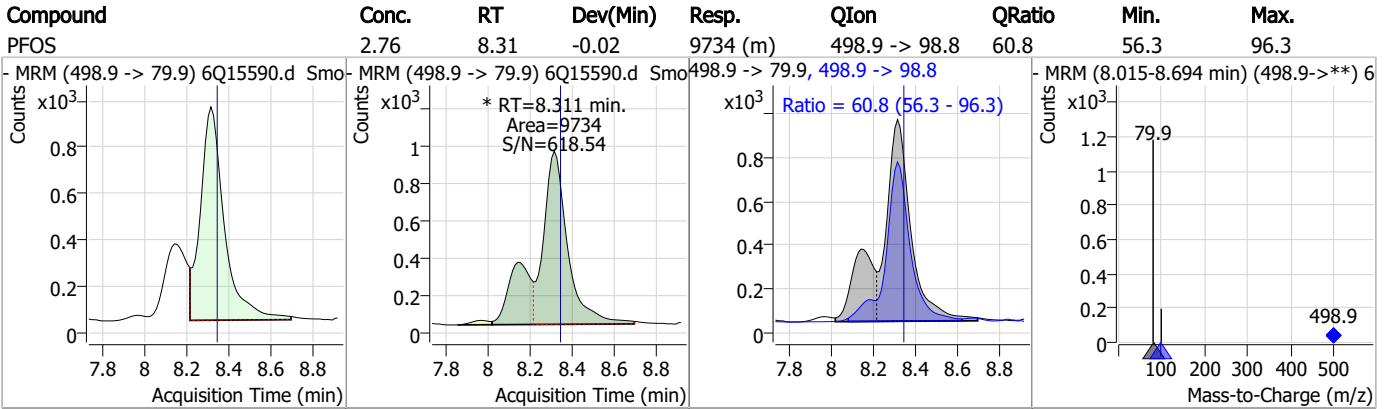
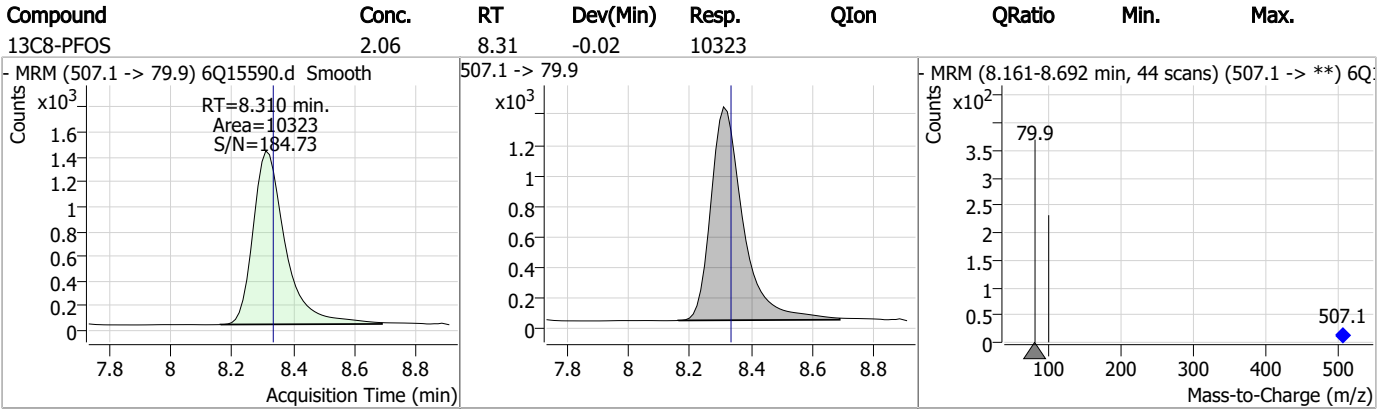
7.6.1
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1

7



Manual Integration Approval Summary

Sample Number: S6Q235-RT Method: EPA DRAFT 1633
Lab FileID: 6Q15590.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 15:38 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15591.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 3:52:53 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	69346	10.00 µg/L	0.012
M5-PFPeA	4.347	268.3 -> 223.0	33673	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	30030	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	31667	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	54965	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	16540	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14439	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16109	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	20759	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	11936	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	16297	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	11732	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	7992	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	6884	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	1745	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2388	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2466	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	21916	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	12722	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	18330	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	23647	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	14719	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6234	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5077	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8113	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	30387	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5327	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	65128	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	19868	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17583	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	29274	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	1745	5.03 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2388	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2466	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-PFDoDA	9.019	615.1 -> 570.0	20759	1.28 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	9.746	715.2 -> 670.0	11936	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C3-PFBS	5.483	302.1 -> 79.9	11732	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.1%		
13C3-PFHxS	7.265	402.1 -> 79.9	7992	2.66 µg/L	0.000



7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C4-PFBA	2.926	216.8 -> 171.9	69346	9.88 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFHpA	6.493	367.1 -> 322.0	31667	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFHxA	5.553	318.0 -> 273.0	30030	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFPeA	4.347	268.3 -> 223.0	33673	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C6-PFDA	8.147	519.1 -> 474.1	14439	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C7-PFUnDA	8.601	570.0 -> 525.1	16109	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-FOSA	9.631	506.1 -> 77.8	16297	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C8-PFOA	7.137	421.1 -> 376.0	54965	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOS	8.310	507.1 -> 79.9	6884	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C9-PFNA	7.667	472.1 -> 427.0	16540	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.3%	
d3-MeFOSAA	8.192	573.2 -> 419.0	21916	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	12722	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.745	515.0 -> 219.0	5077	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	18330	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d7-MeFOSE	10.653	623.2 -> 58.9	23647	27.72 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
d9-EtFOSE	10.900	639.2 -> 58.9	14719	26.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d5-EtFOSA	10.965	531.1 -> 219.0	6234	2.81 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.4%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	187271	51.43 µg/L	99
		327.1 -> 80.9	43556		
6:2FTS	6.911	427.1 -> 407.0	165960	51.84 µg/L	98
		427.1 -> 80.9	34019		
8:2FTS	7.936	527.1 -> 507.0	92233	51.42 µg/L	97
		527.1 -> 80.8	24059		
EtFOSAA	8.401	584.2 -> 419.1	35886	12.69 µg/L	98
		584.2 -> 526.0	21039		
FOSA	9.634	498.1 -> 77.9	174148	30.16 µg/L	99
		498.1 -> 478.0	5539		
MeFOSAA	8.205	570.1 -> 419.0	53919	13.35 µg/L	96
		570.1 -> 483.0	7981		
PFBA	2.919	212.8 -> 168.9	86708	54.99 µg/L	100
PFBS	5.484	298.7 -> 79.9	52918	11.68 µg/L	99
		298.7 -> 98.8	24249		
PFDA	8.148	512.9 -> 469.0	214655	12.98 µg/L	99
		512.9 -> 219.0	29957		
PFDoDA	9.032	613.1 -> 569.0	205463	13.39 µg/L	98
		613.1 -> 319.0	24015		
PFDS	9.195	599.0 -> 79.9	26959	13.15 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
		599.0 -> 98.8	14192		
PFHpA	6.506	363.1 -> 319.0	245307	13.25 µg/L	99
		363.1 -> 169.0	34704		
PFHpS	7.819	449.0 -> 79.9	36433	13.20 µg/L	98
		449.0 -> 98.9	19963		
PFHxA	5.556	313.0 -> 269.0	148144	13.71 µg/L	100
		313.0 -> 118.9	5806		
PFHxS	7.265	398.7 -> 79.9	35785	10.46 µg/L	100
		398.7 -> 98.9	21098		
PFNA	7.668	463.0 -> 419.0	152892	15.49 µg/L	96
		463.0 -> 219.0	29763		
PFNS	8.776	548.8 -> 79.9	38287	13.25 µg/L	100
		548.8 -> 98.9	22021		
PFOA	7.138	413.0 -> 369.0	626697	26.75 µg/L	96
		413.0 -> 169.0	67652		
PFOS	8.311	498.9 -> 79.9	29927	10.38 µg/L	78
		498.9 -> 98.8	23081		
PFPeA	4.349	263.0 -> 219.0	194455	27.25 µg/L	100
PFPeS	6.558	349.1 -> 79.9	49890	12.73 µg/L	98
		349.1 -> 98.9	26064		
PFTeDA	9.746	713.1 -> 669.0	172873	12.78 µg/L	99
		713.1 -> 168.9	11309		
PFTrDA	9.415	663.0 -> 619.0	180366	13.28 µg/L	100
		663.0 -> 168.9	14750		
PFUnDA	8.601	563.1 -> 519.0	192117	14.02 µg/L	98
		563.1 -> 269.1	26840		
11CI-PF3OUdS	9.467	630.9 -> 450.9	382209	52.45 µg/L	100
		632.9 -> 452.9	120973		
9CI-PF3ONS	8.641	530.8 -> 351.0	658976	48.87 µg/L	97
		532.8 -> 353.0	214228		
ADONA	6.756	376.9 -> 250.9	1398102	52.20 µg/L	98
		376.9 -> 84.8	317547		
HFPO-DA	5.931	284.9 -> 168.9	64114	54.77 µg/L	99
		284.9 -> 184.9	7436		
3:3FTCA	3.815	241.0 -> 177.0	25347	66.81 µg/L	99
		241.0 -> 117.0	3622		
5:3FTCA	6.210	341.0 -> 237.1	856998	347.91 µg/L	99
		341.0 -> 217.0	732196		
7:3FTCA	7.633	441.0 -> 316.9	468247	358.69 µg/L	86
		441.0 -> 336.9	790004		
EtFOSA	10.979	526.0 -> 219.0	84857	31.95 µg/L	75
		526.0 -> 169.0	95871		
EtFOSE	10.913	630.0 -> 58.9	80286	152.45 µg/L	100
MeFOSA	10.747	511.9 -> 219.0	78100	35.65 µg/L	86
		511.9 -> 169.0	89816		
MeFOSE	10.666	616.1 -> 58.9	123958	145.17 µg/L	100
PFDoDS	9.886	699.1 -> 79.9	16502	13.32 µg/L	99
		699.1 -> 98.8	9969		
NFDHA	5.435	295.0 -> 201.0	17195	26.76 µg/L	94
		295.0 -> 84.9	8456		
PFMBA	4.762	279.0 -> 85.1	58192	26.50 µg/L	100
PFMPA	3.488	229.0 -> 84.9	52835	26.75 µg/L	100
PFEESA	6.036	314.8 -> 134.9	389752	25.17 µg/L	100
		314.8 -> 82.9	10014		

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

7.6.2
7

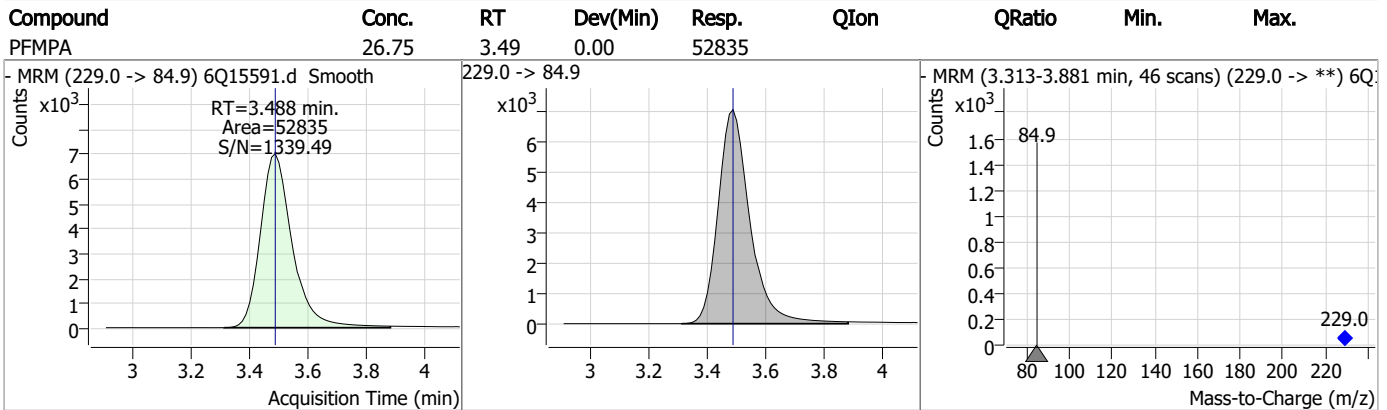
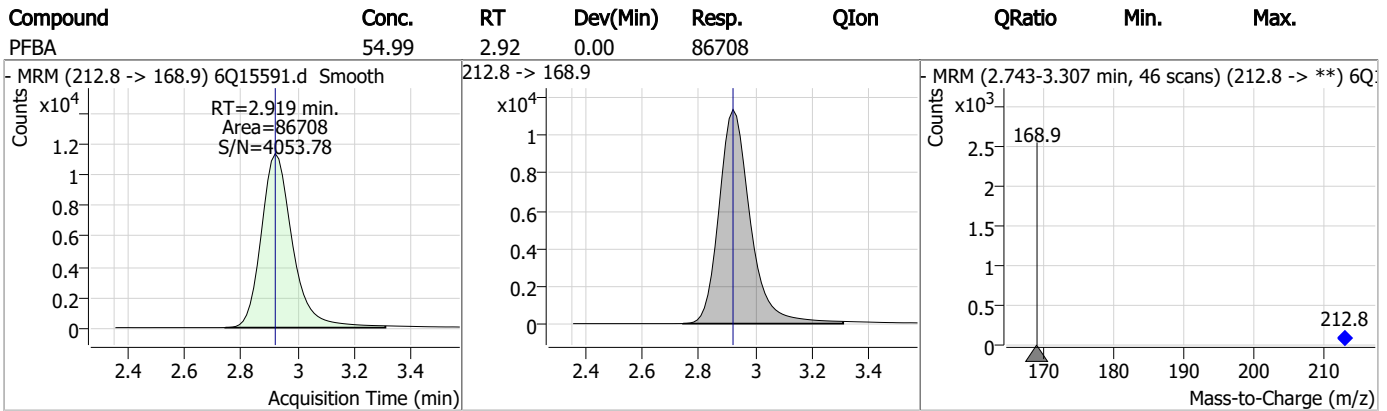
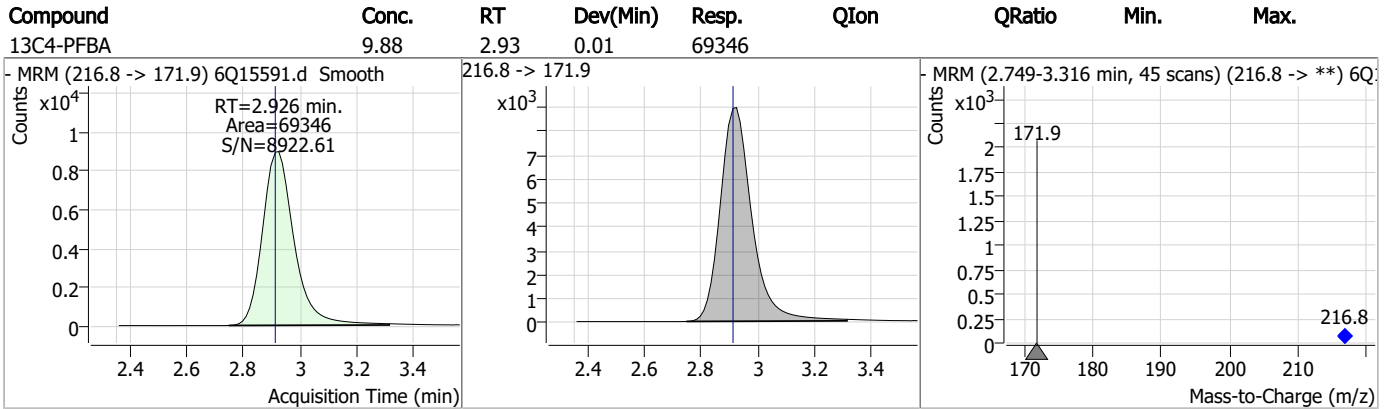
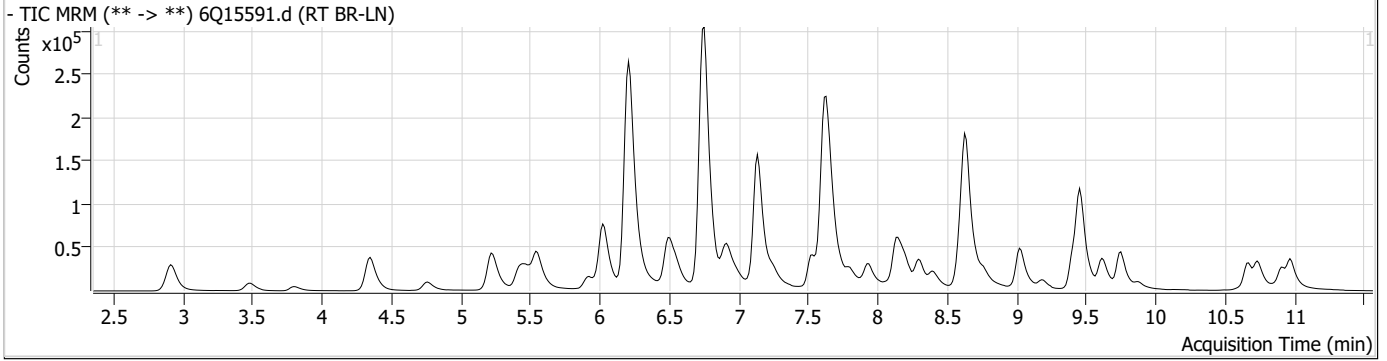
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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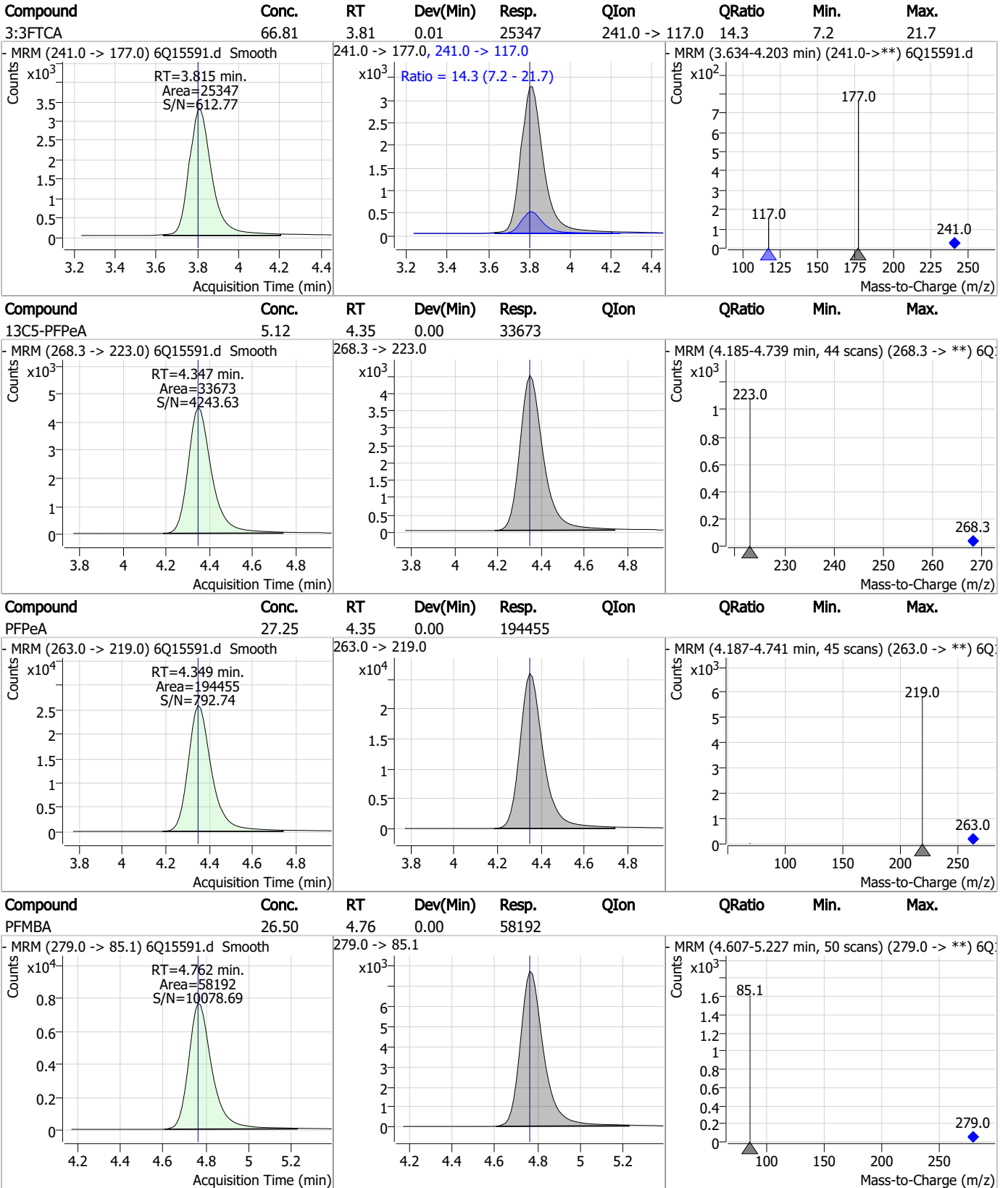
7.6.2

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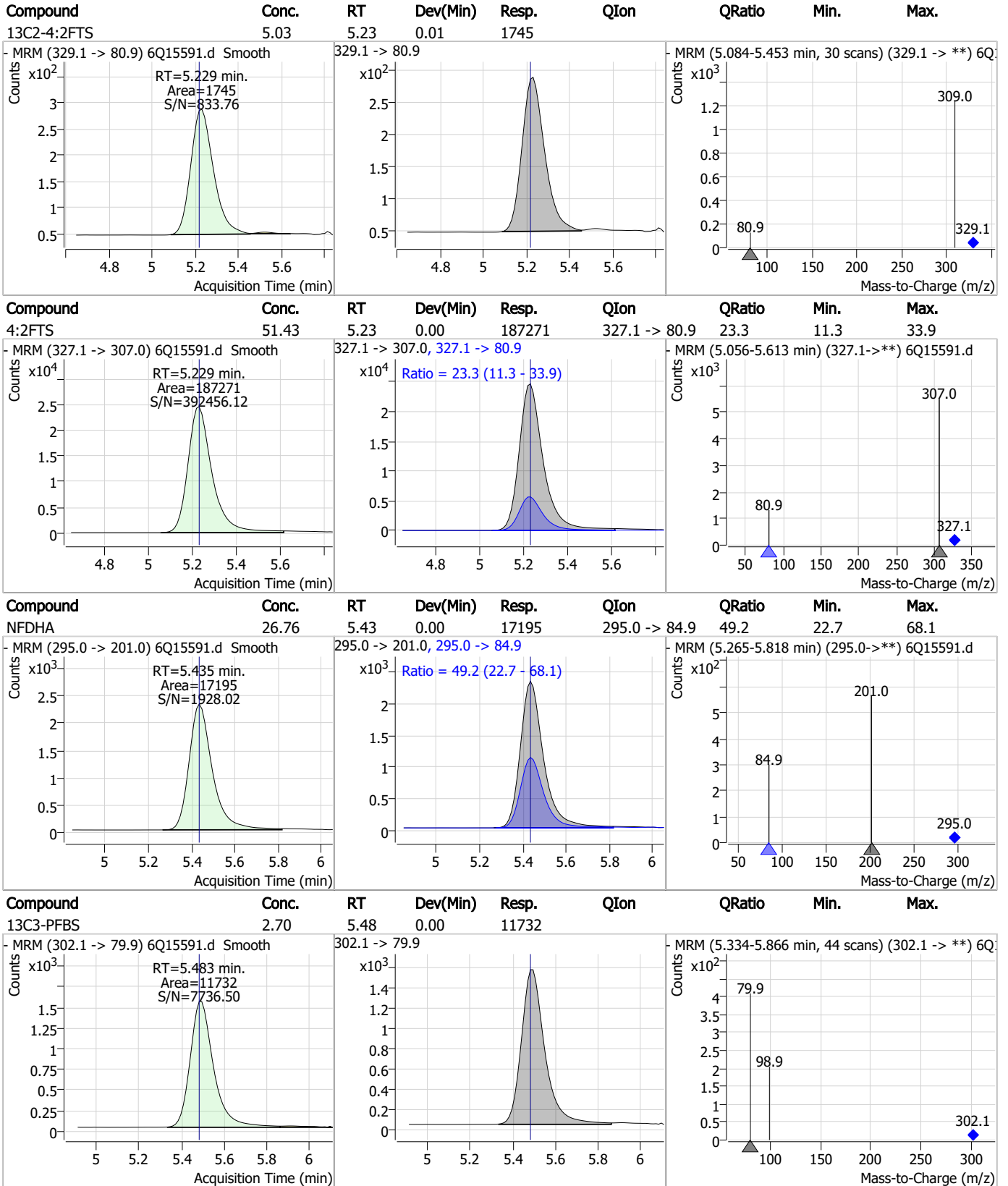
Perfluorinated Compounds by LC/MS/MS



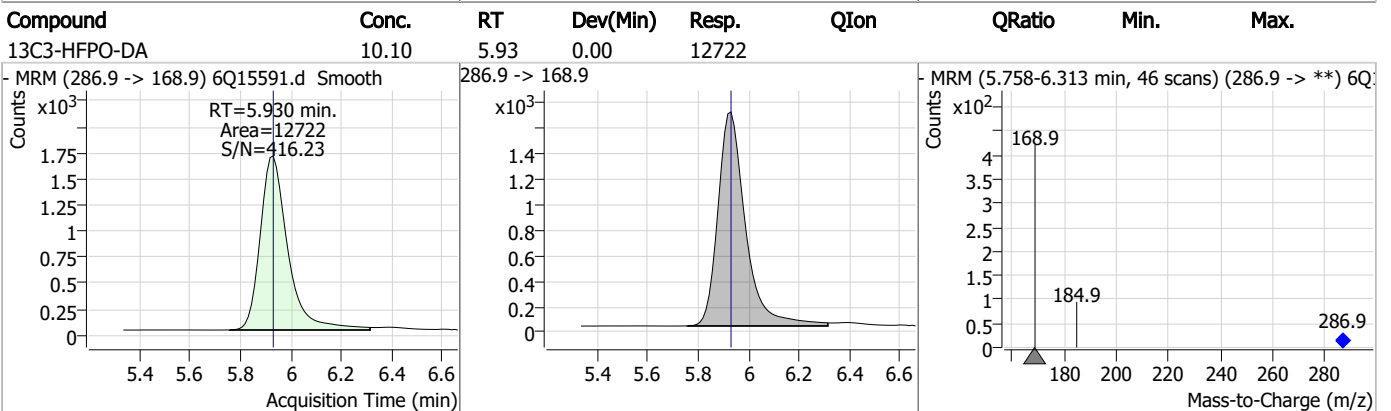
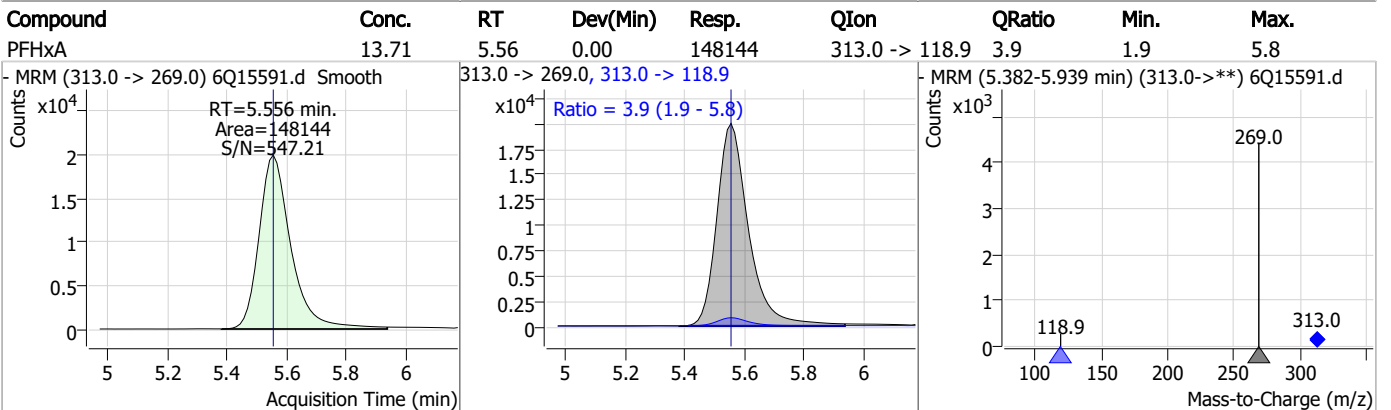
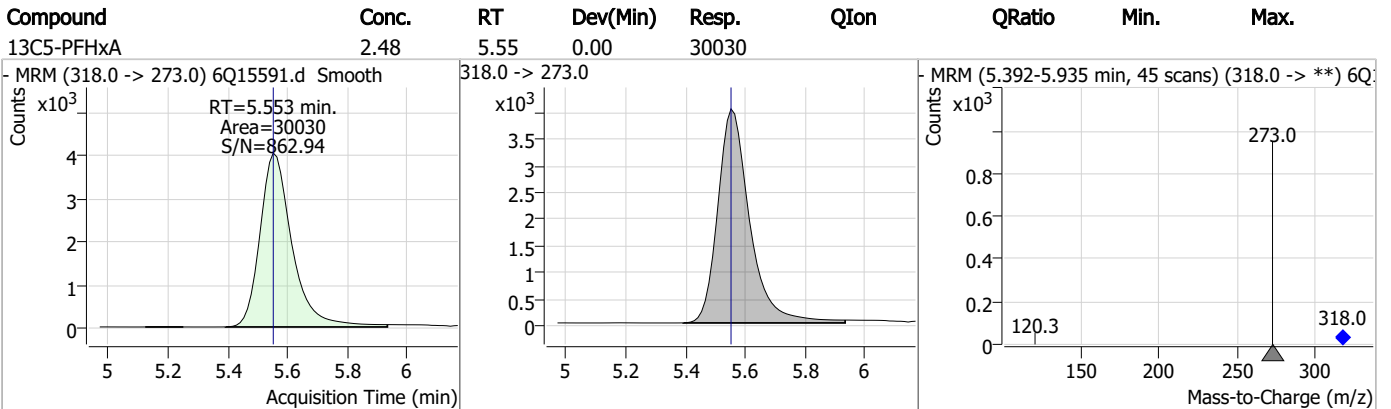
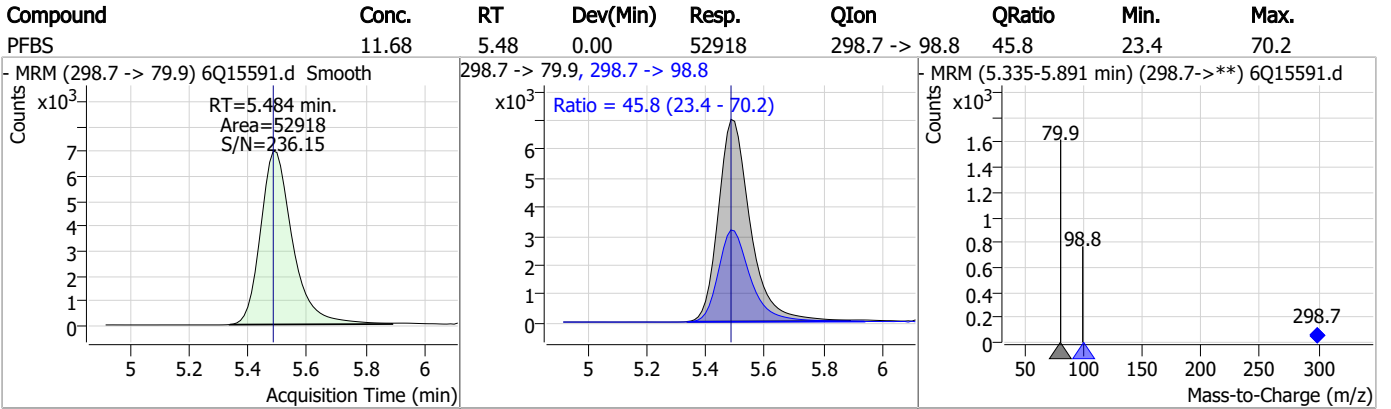
Perfluorinated Compounds by LC/MS/MS



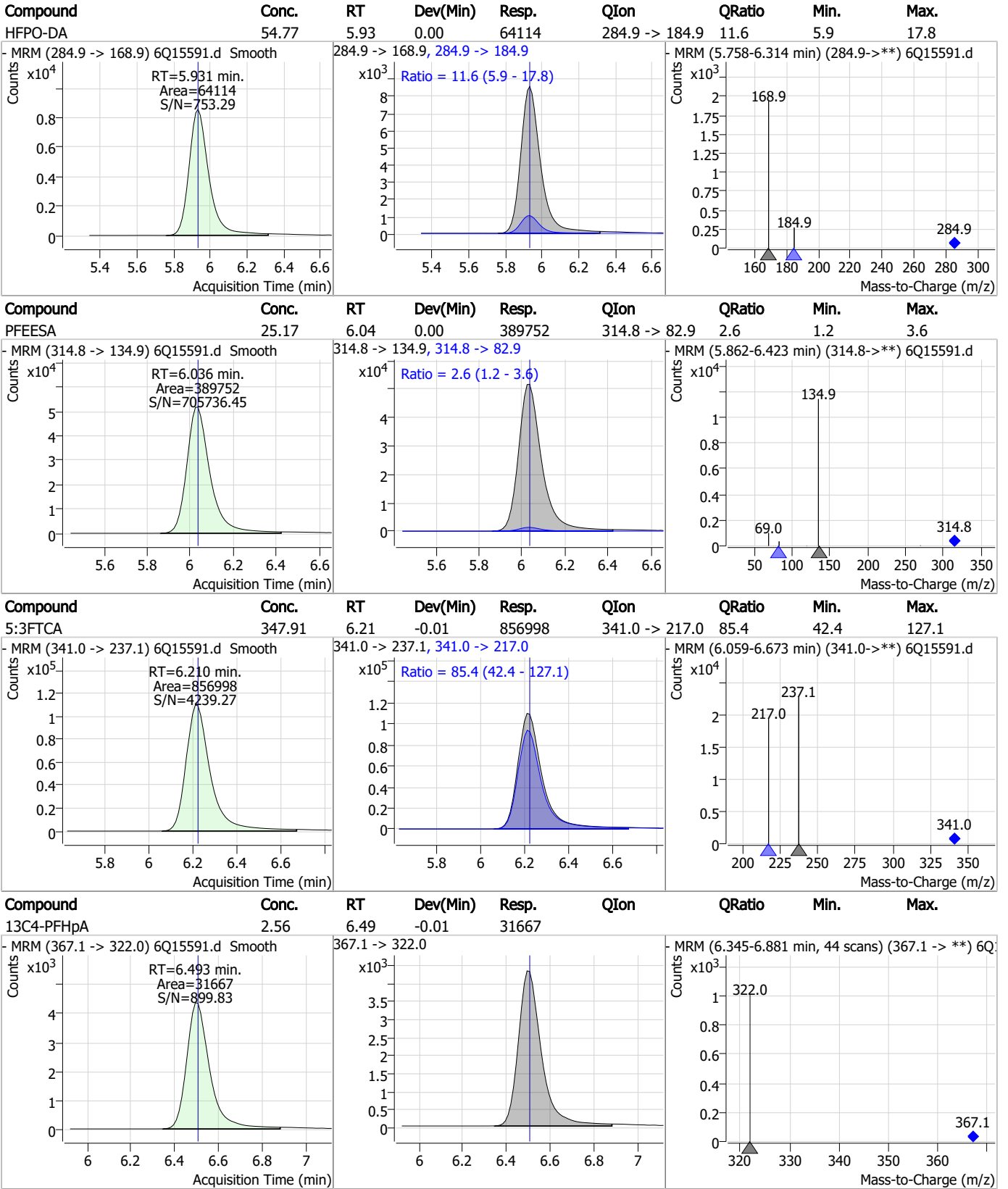
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



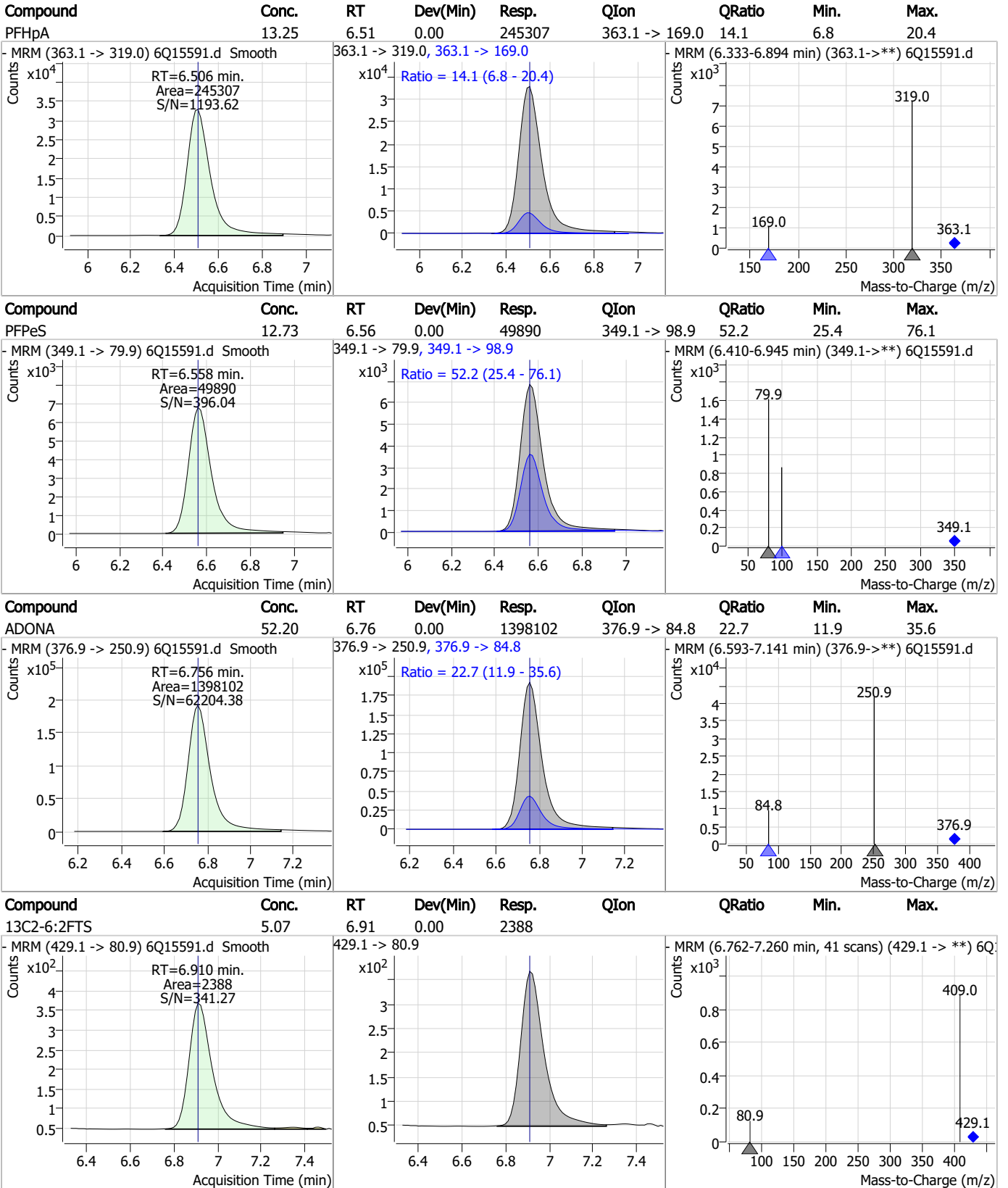
Perfluorinated Compounds by LC/MS/MS



7.6.2

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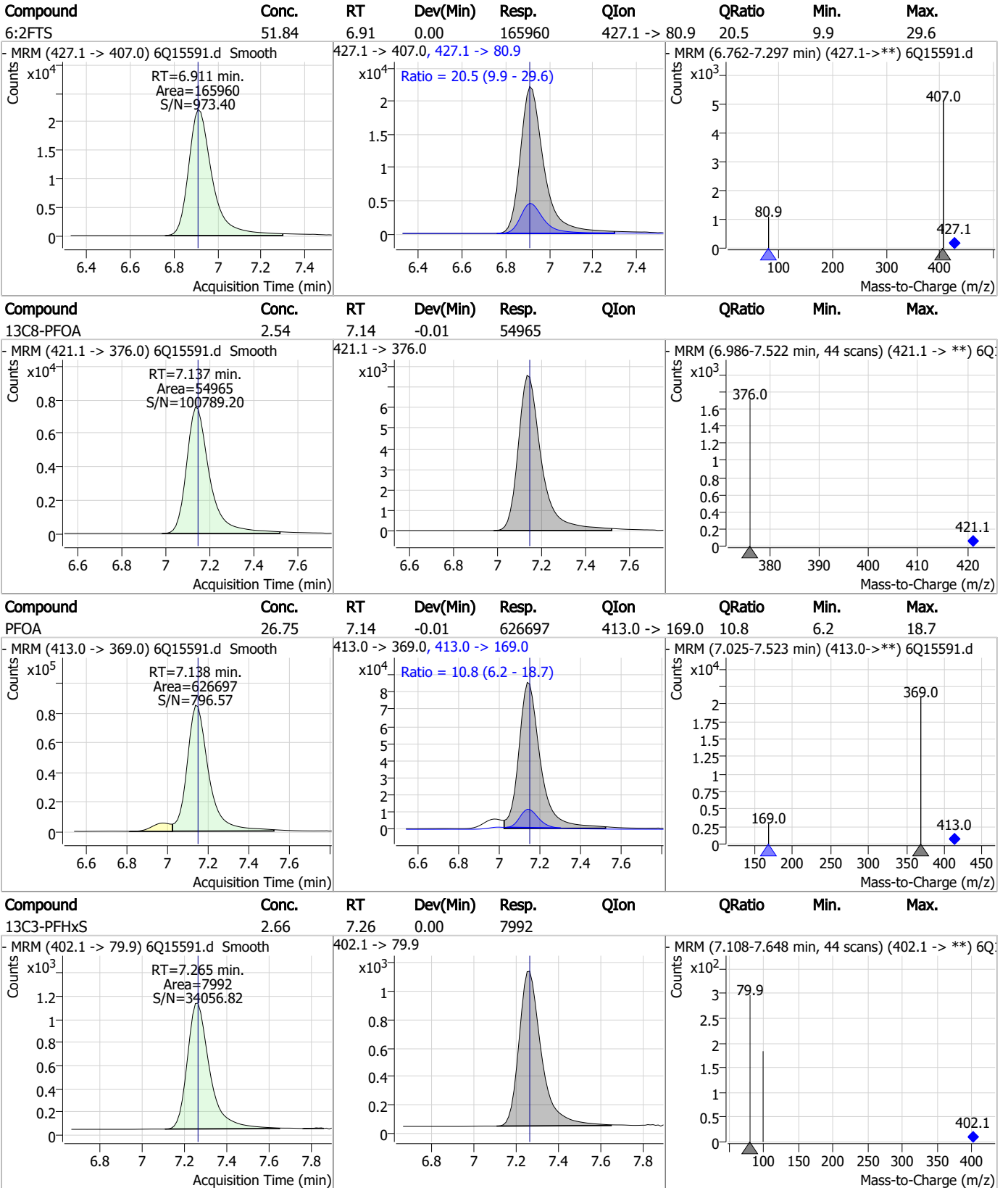
Perfluorinated Compounds by LC/MS/MS



7.6.2

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Perfluorinated Compounds by LC/MS/MS



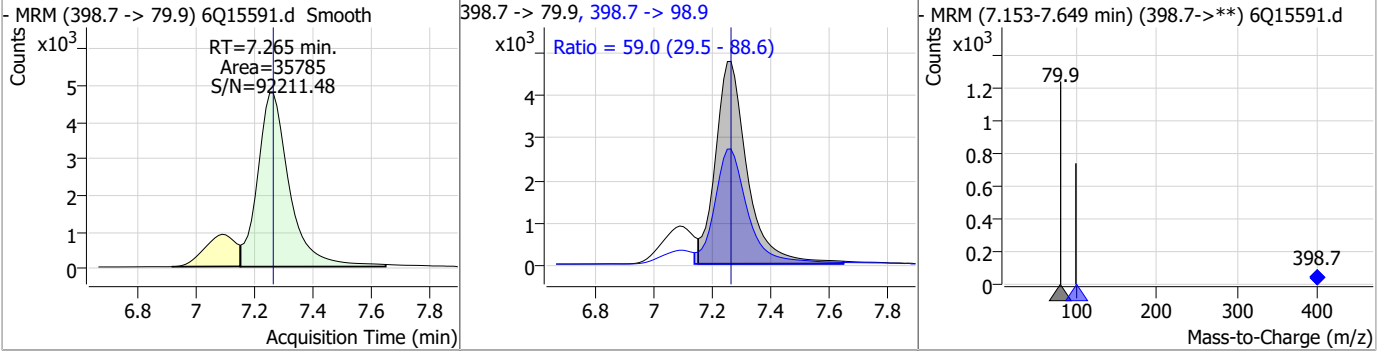
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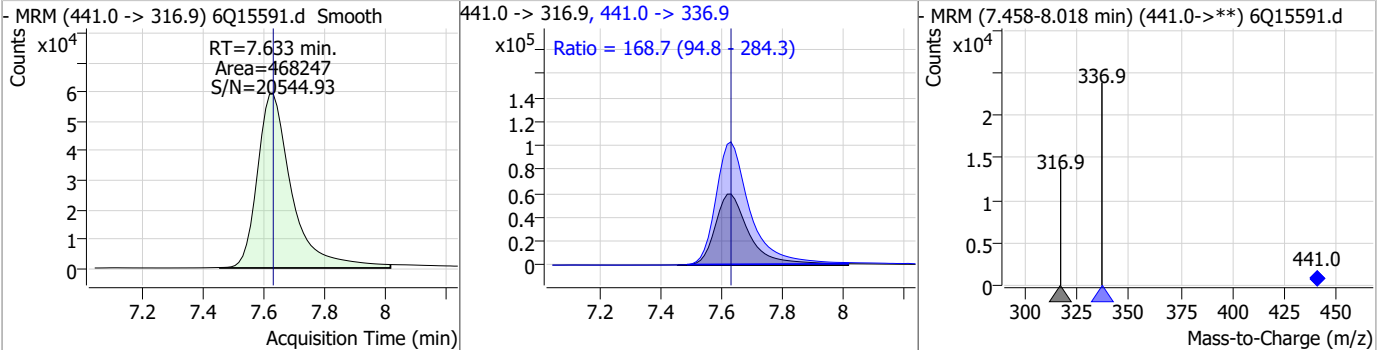


Perfluorinated Compounds by LC/MS/MS

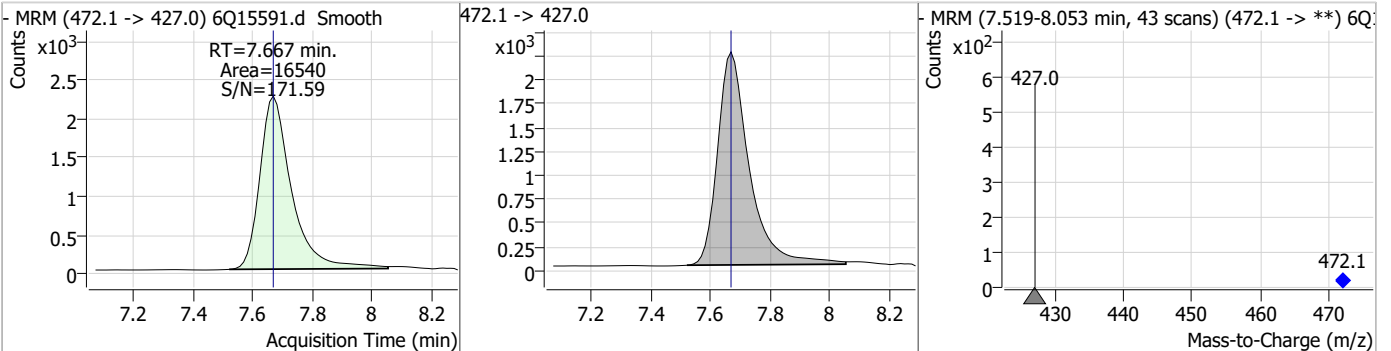
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.46	7.27	0.00	35785	398.7 -> 98.9	59.0	29.5	88.6



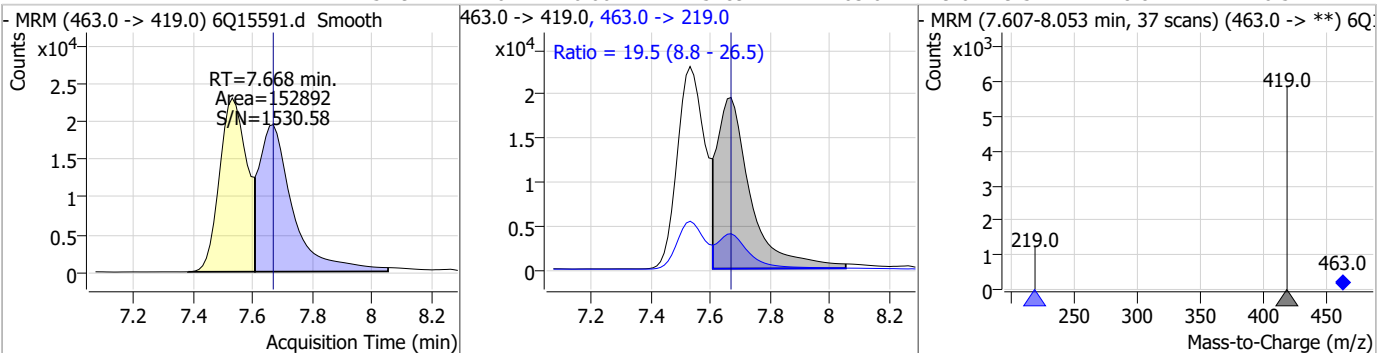
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	358.69	7.63	0.00	468247	441.0 -> 336.9	168.7	94.8	284.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.19	7.67	0.00	16540	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	15.49	7.67	0.00	152892	463.0 -> 219.0	19.5	8.8	26.5



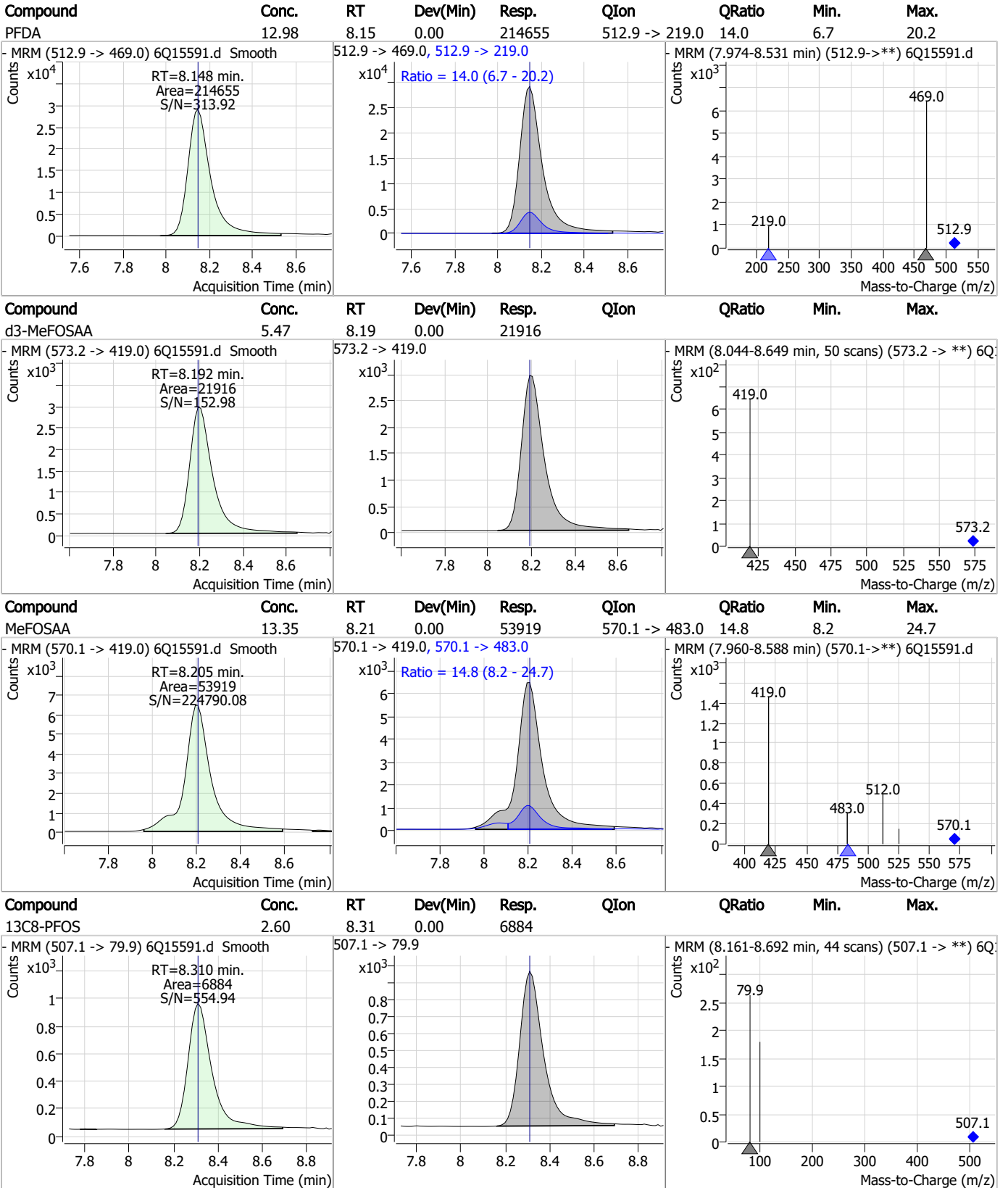
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.20	7.82	0.00	36433	449.0 -> 98.9	54.8	28.0	84.1
13C2-8:2FTS	5.34	7.94	0.00	2466	529.1 -> 80.9			
8:2FTS	51.42	7.94	0.00	92233	527.1 -> 80.8	26.1	12.2	36.6
13C6-PFDA	1.25	8.15	0.00	14439	519.1 -> 474.1			

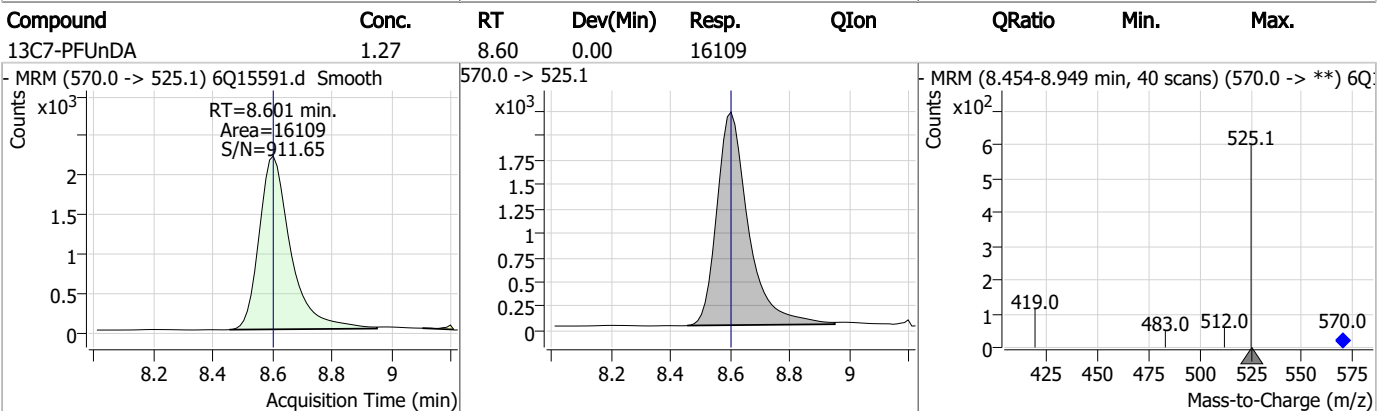
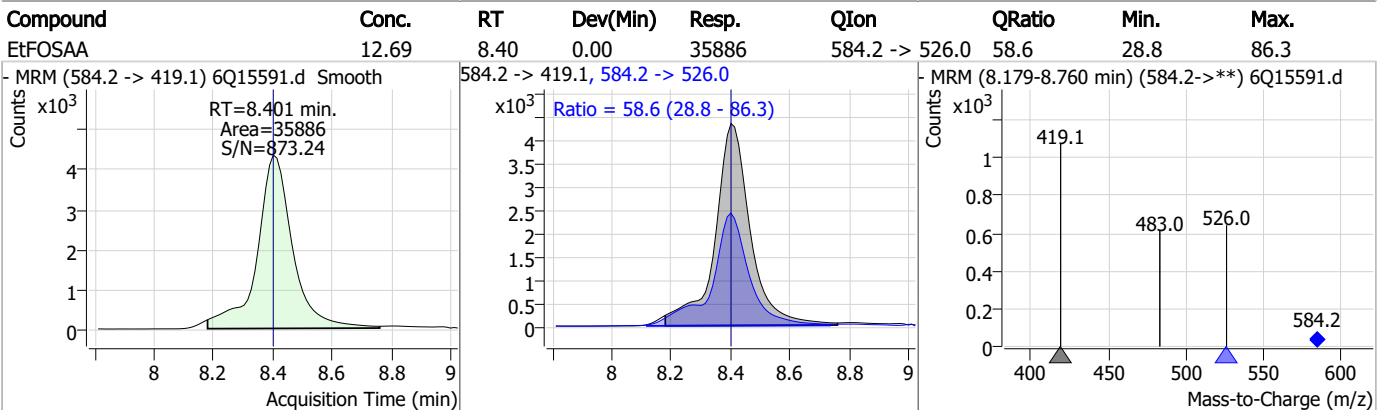
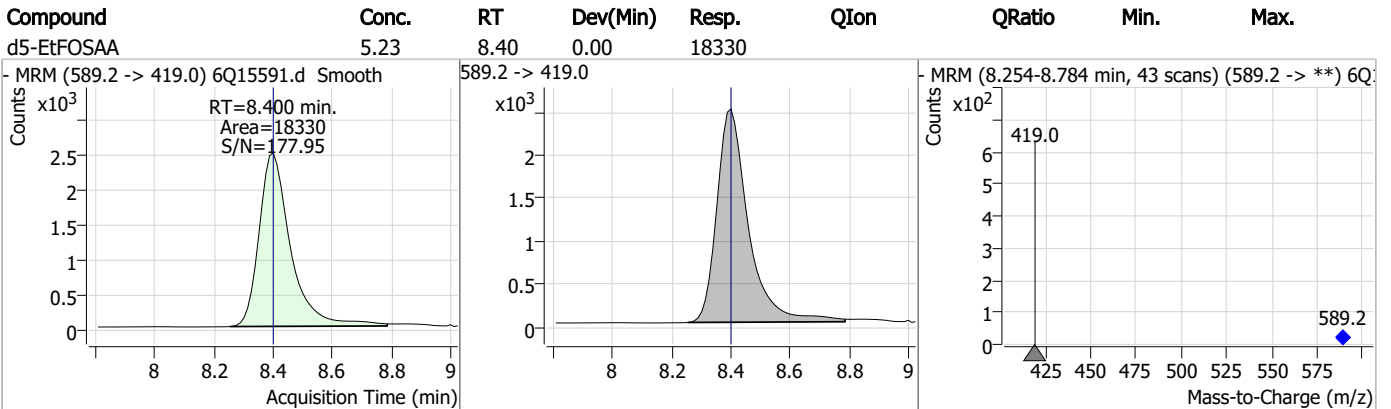
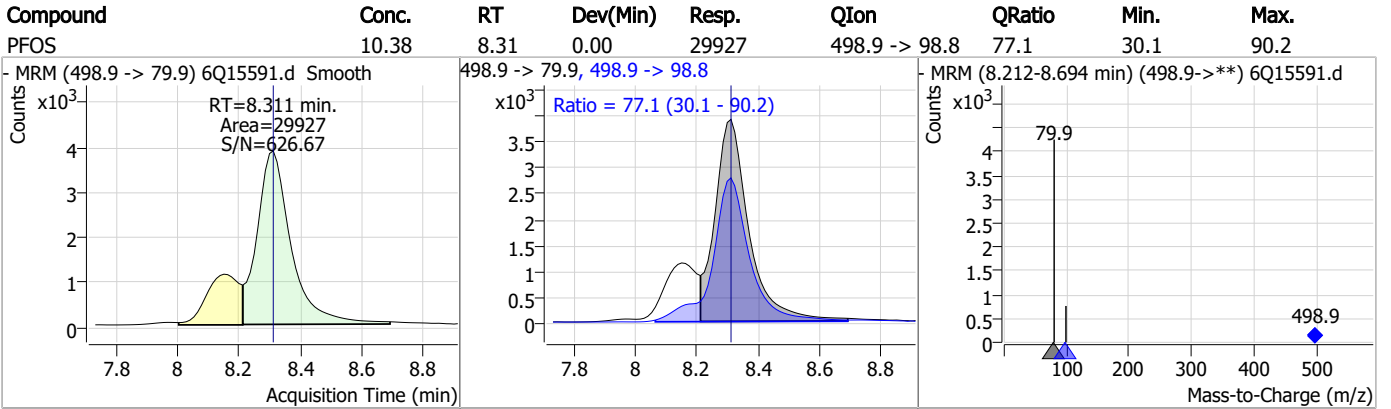
7.6.2

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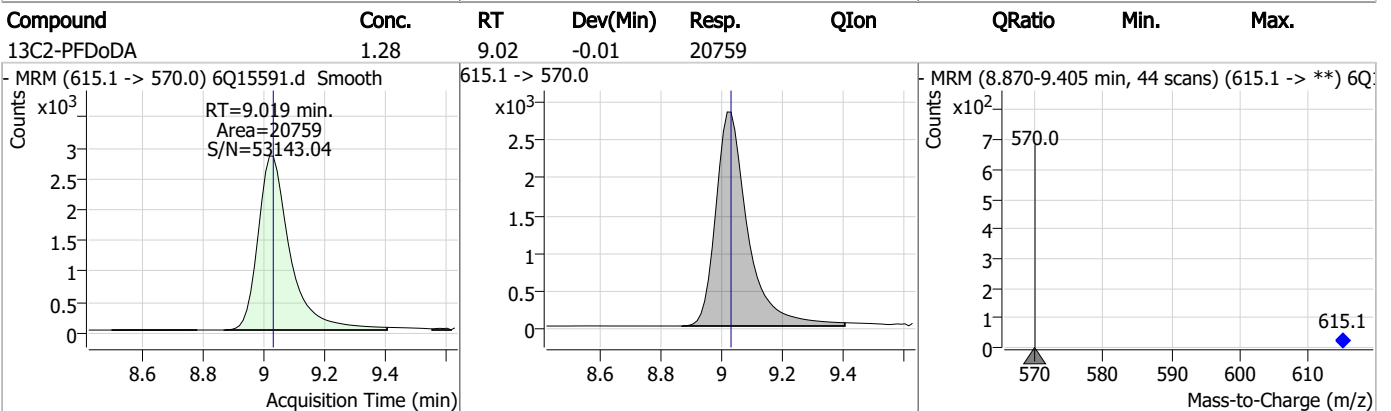
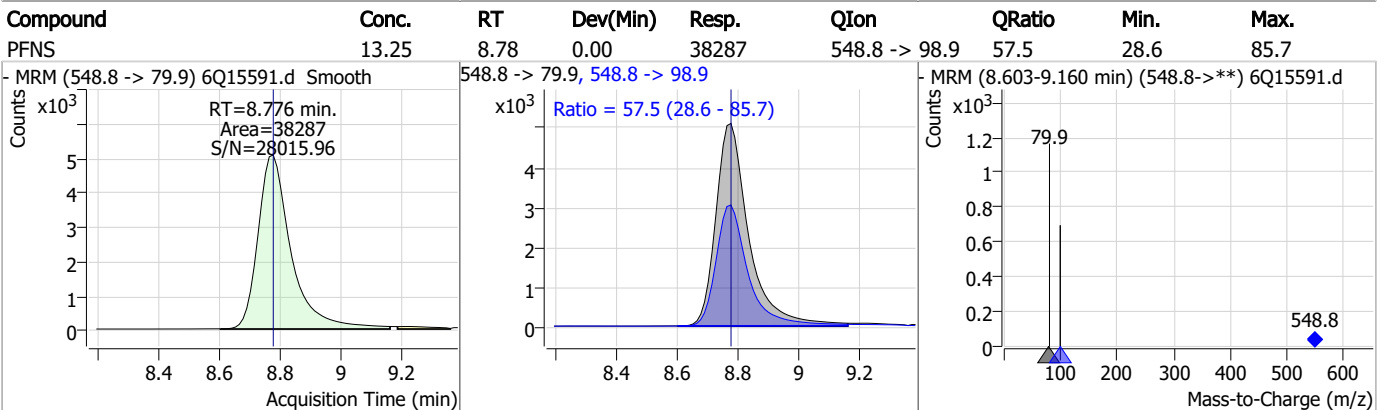
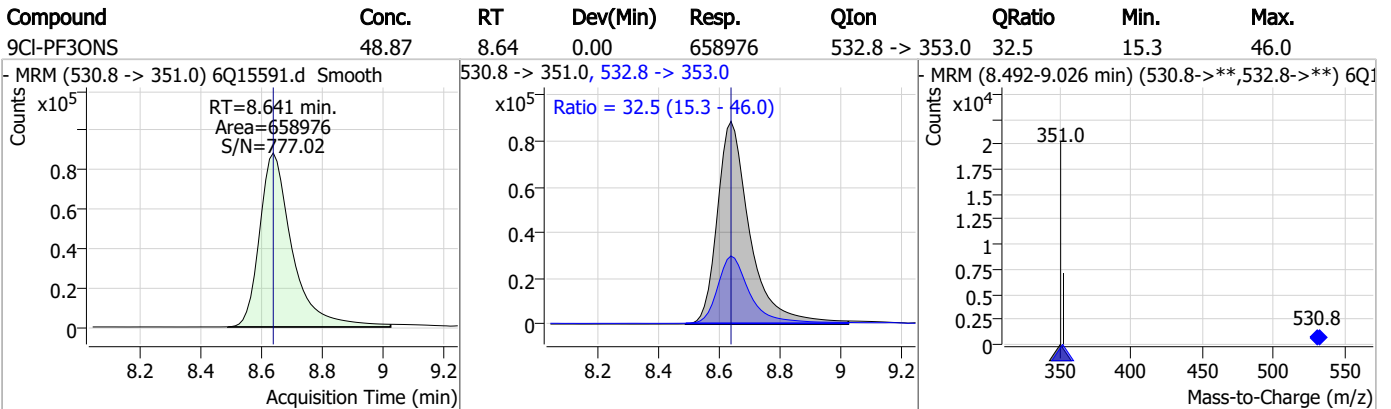
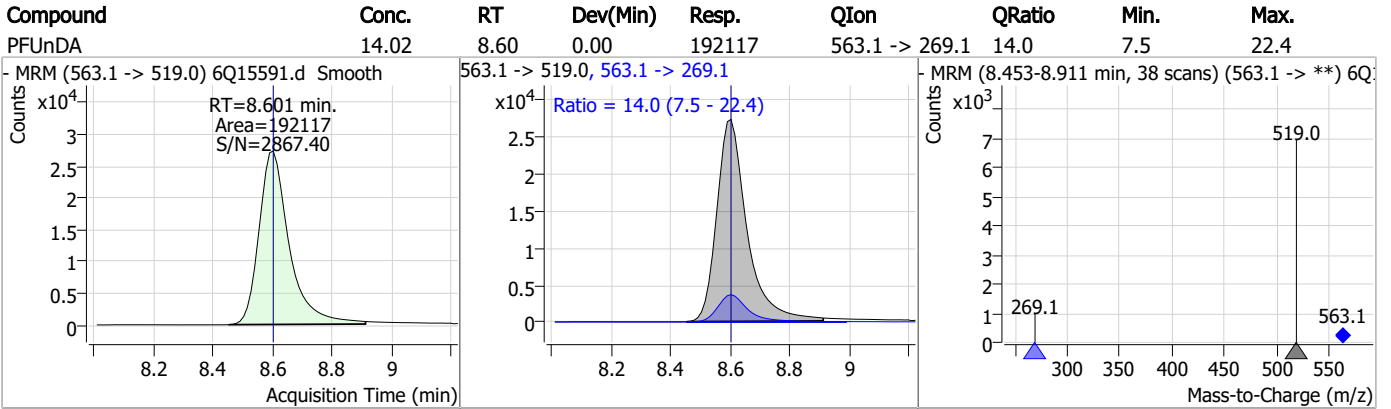
Perfluorinated Compounds by LC/MS/MS



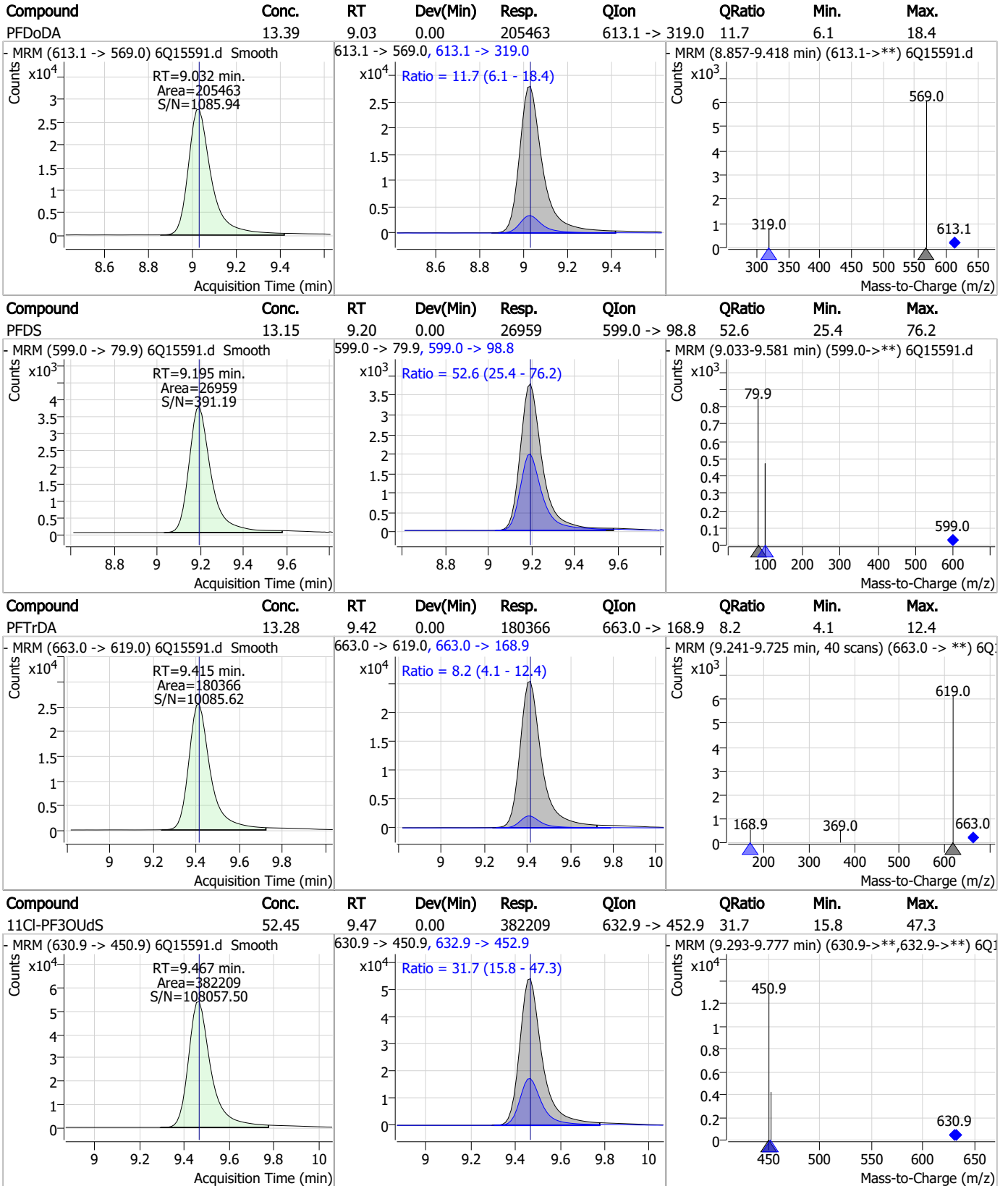
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



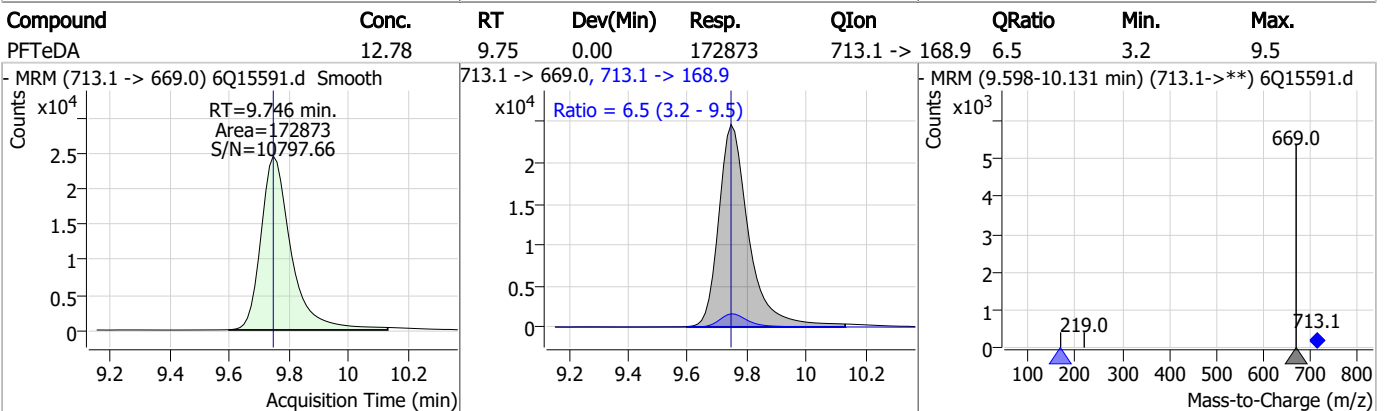
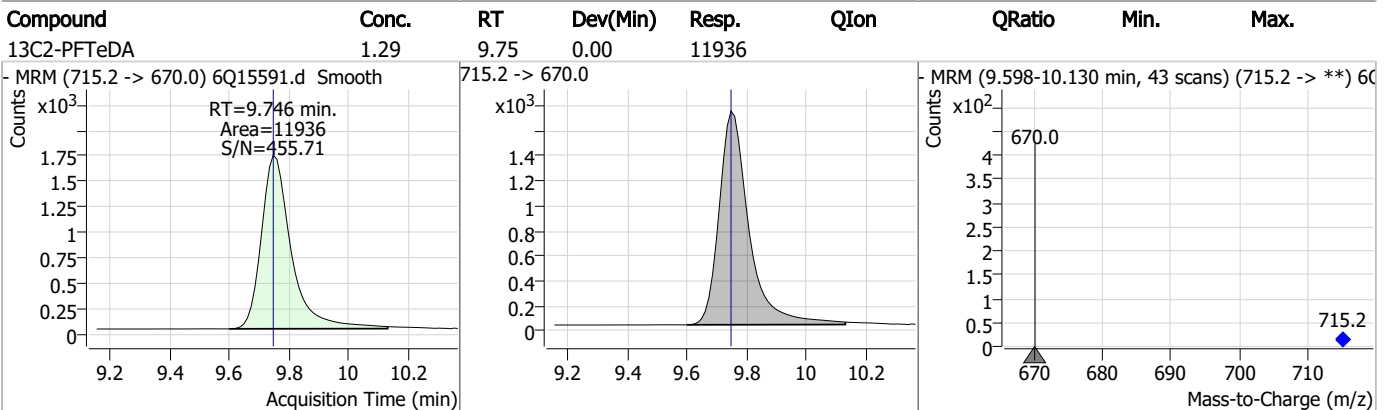
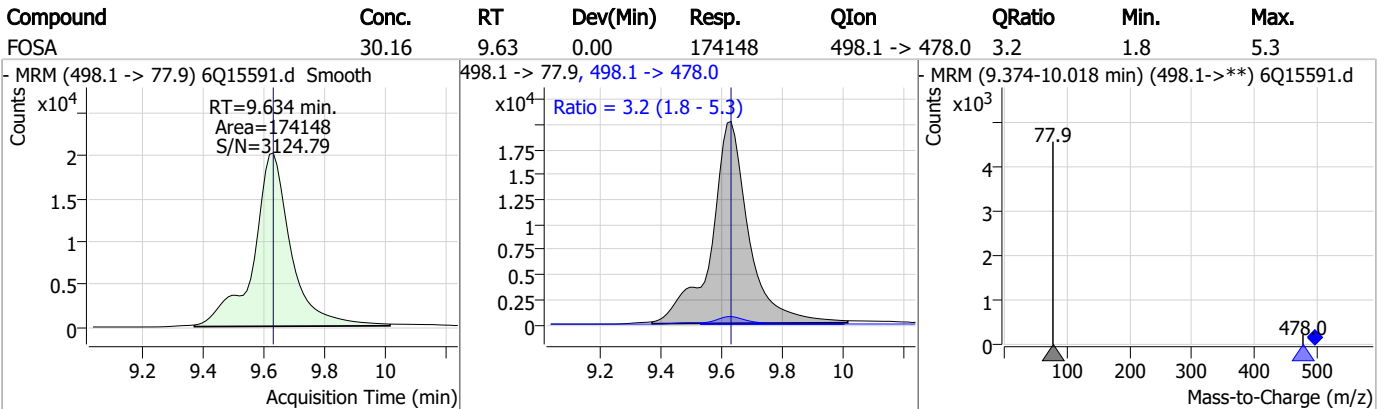
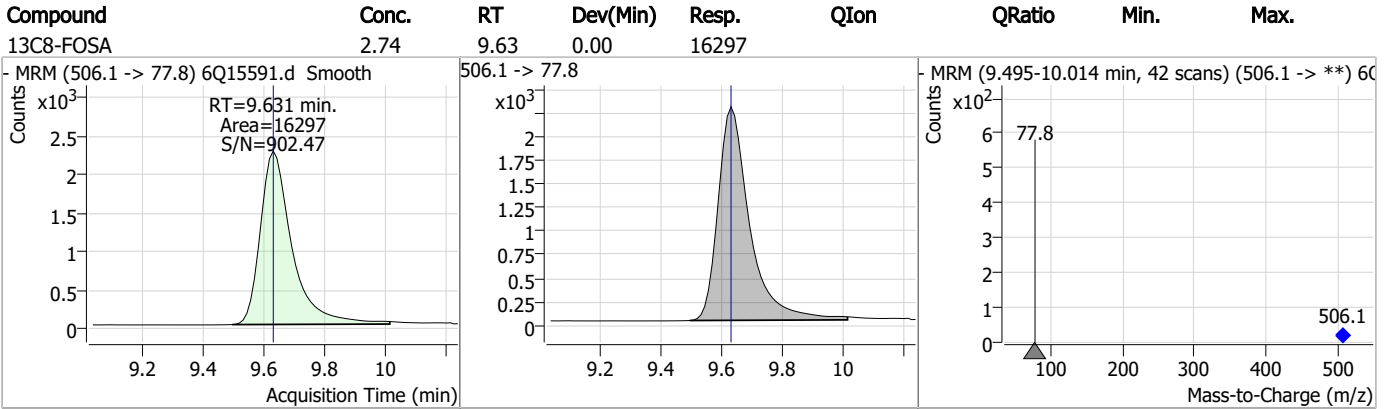
Perfluorinated Compounds by LC/MS/MS



7.6.2

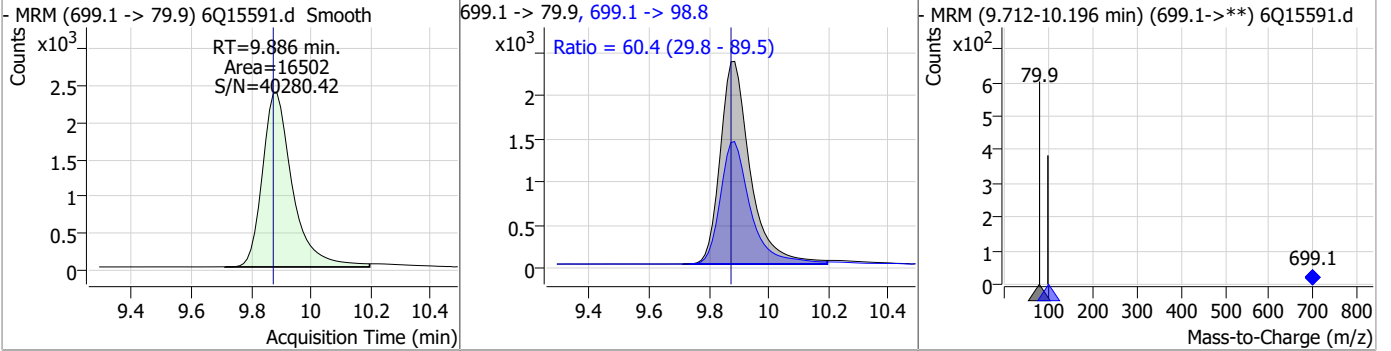
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Perfluorinated Compounds by LC/MS/MS

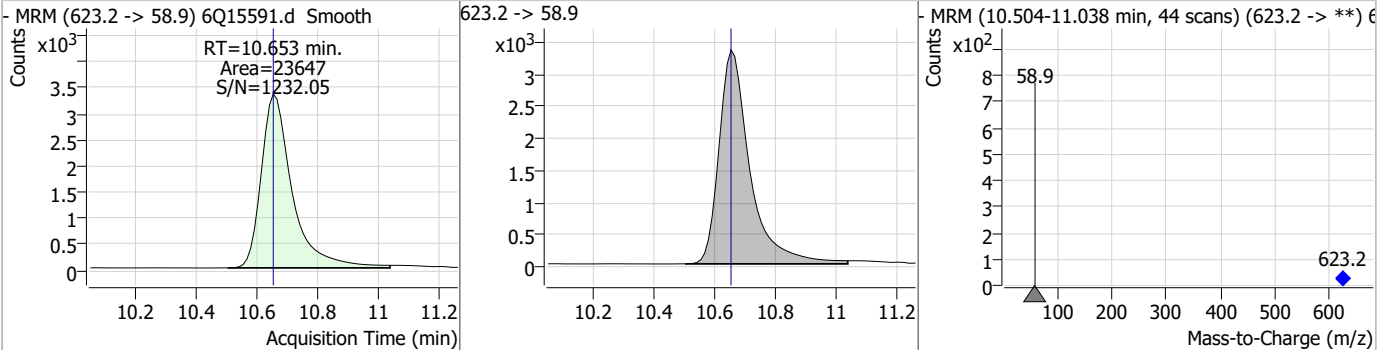


Perfluorinated Compounds by LC/MS/MS

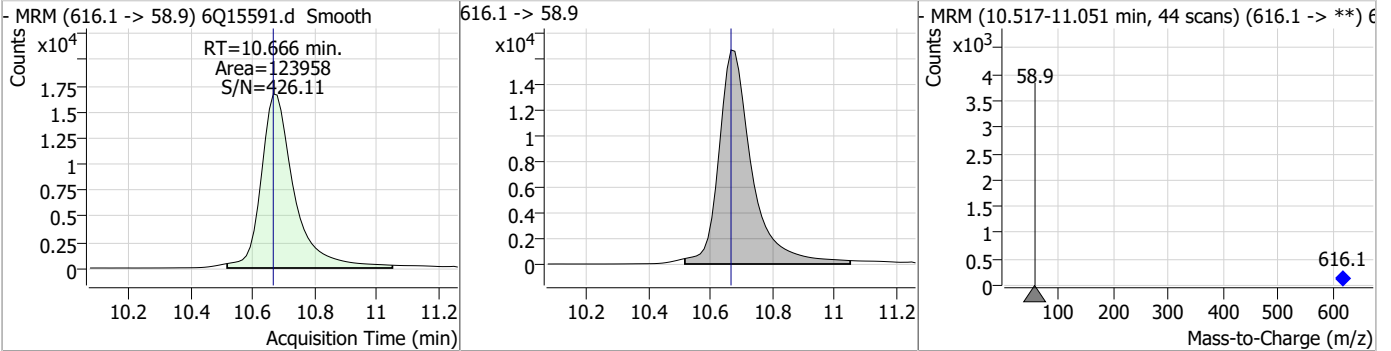
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	13.32	9.89	0.01	16502	699.1 -> 98.8	60.4	29.8	89.5



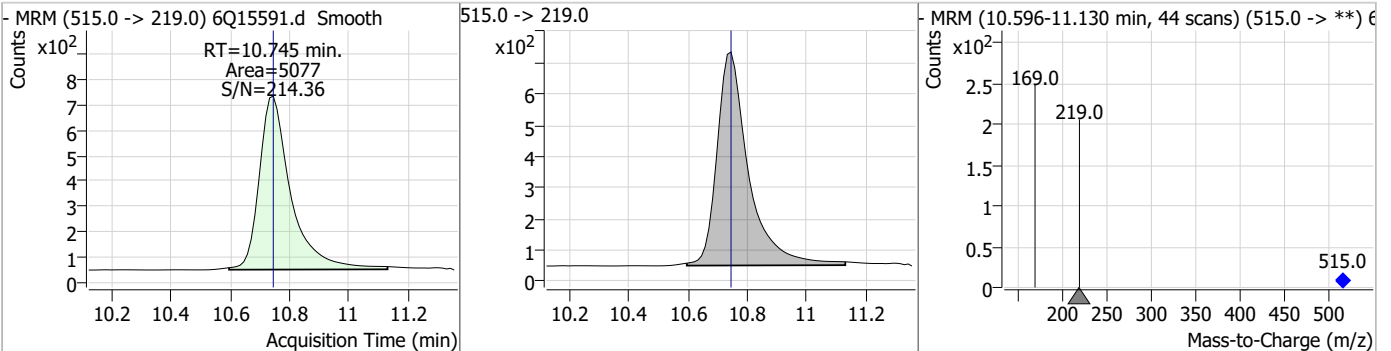
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.72	10.65	0.00	23647				



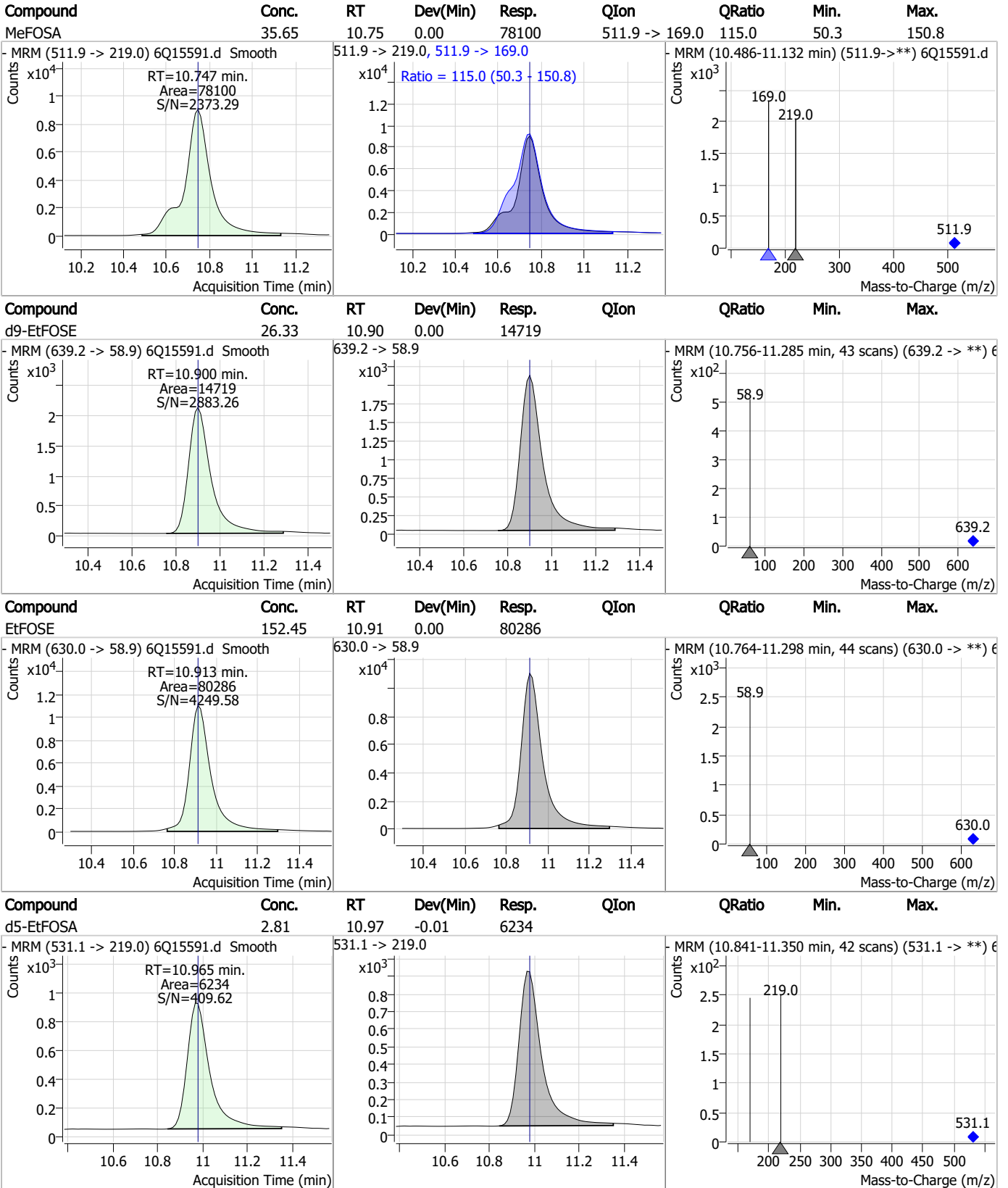
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	145.17	10.67	0.00	123958				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.57	10.75	0.00	5077				



Perfluorinated Compounds by LC/MS/MS

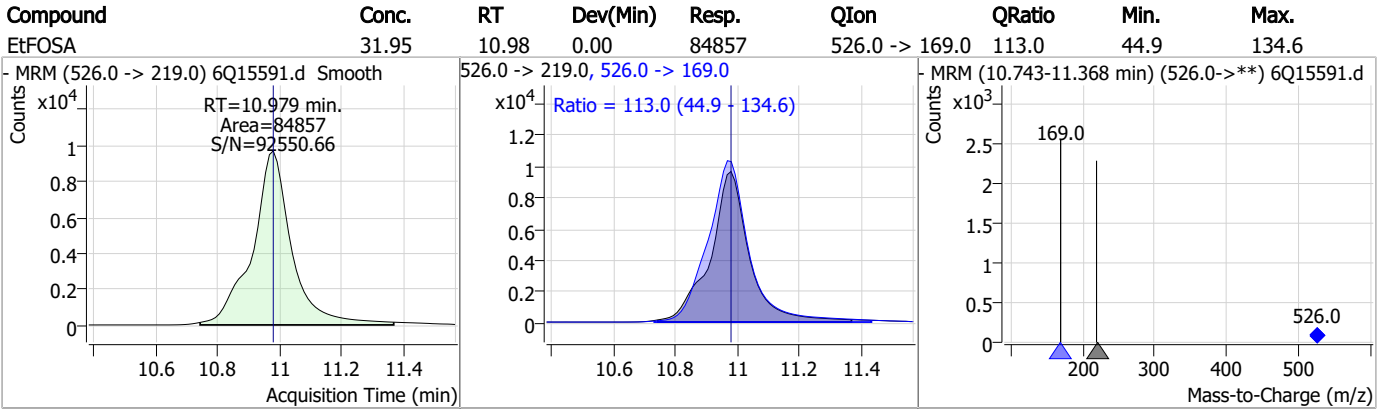


7.6.2

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Perfluorinated Compounds by LC/MS/MS



7.6.2

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Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 03/31/23 16:24

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15784.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 12:57:10 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q237 TDCA.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.310	507.1 -> 79.9	10621	2.50	µg/L	-0.025	
13C4-PFOS	8.311	502.8 -> 79.9	12135	2.50	µg/L	-0.025	
System Monitoring Compounds							
13C8-PFOS	8.310	507.1 -> 79.9	10621	2.22	µg/L	-0.025	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.8%				
Target Compounds							
PFOS	8.311	498.9 -> 79.9 498.9 -> 98.8	9858 6228	2.72	µg/L	m	85
TCDCa	6.686	498.9 -> 79.9	2287	4.67	ng/ml		100
TDCA	6.847	498.9 -> 79.9	3334	7.51	ng/ml		100
TUDCA	5.834	498.9 -> 79.9	4785	5.08	ng/ml		100

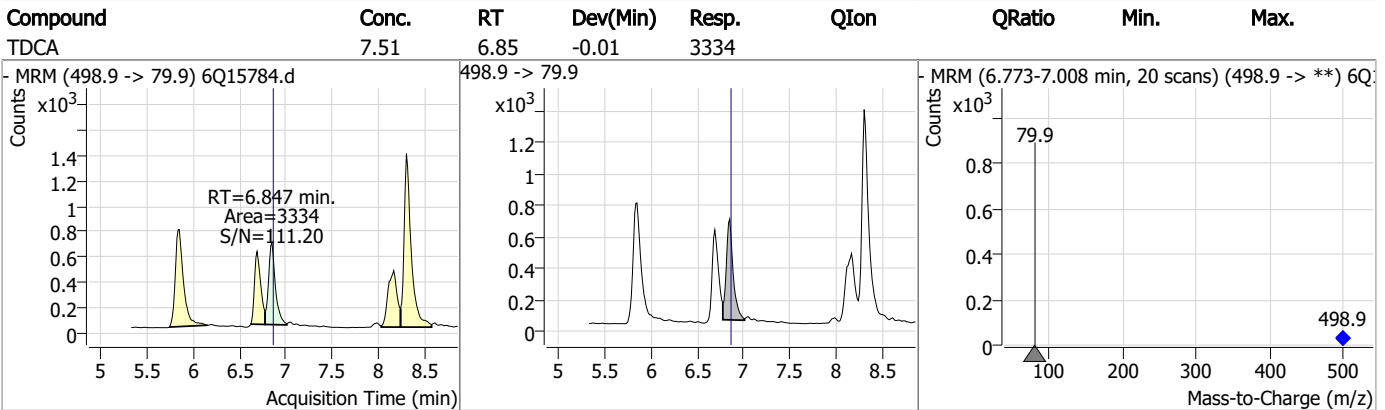
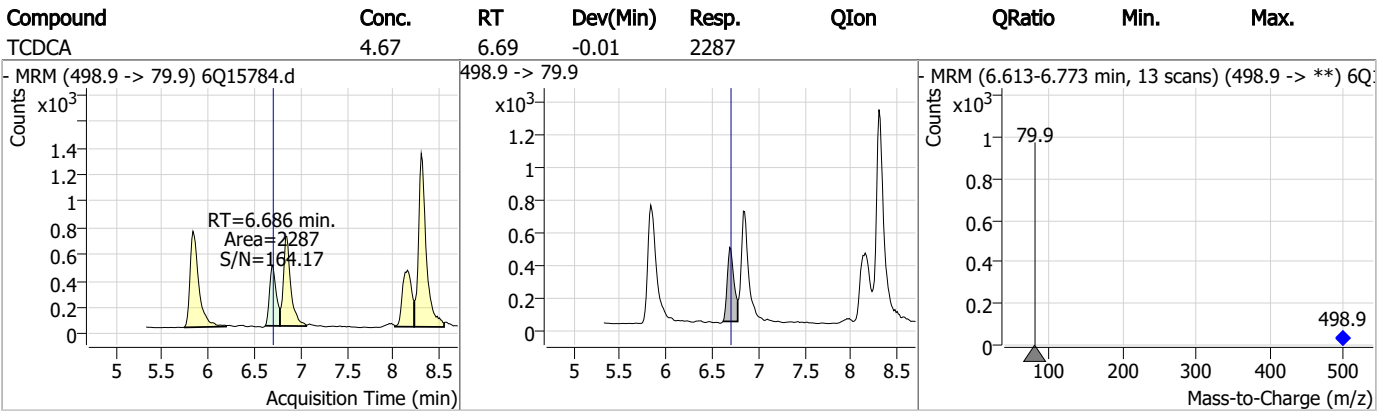
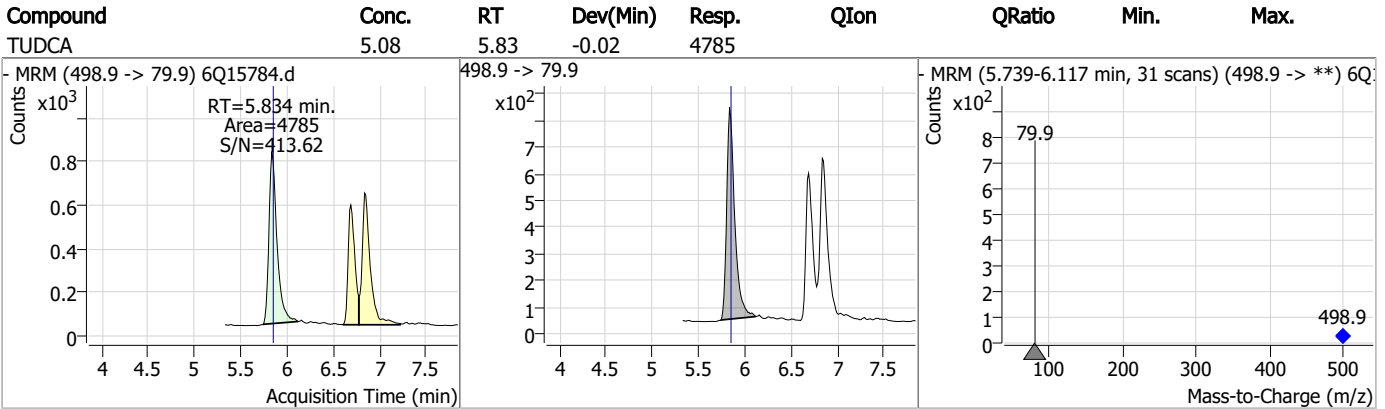
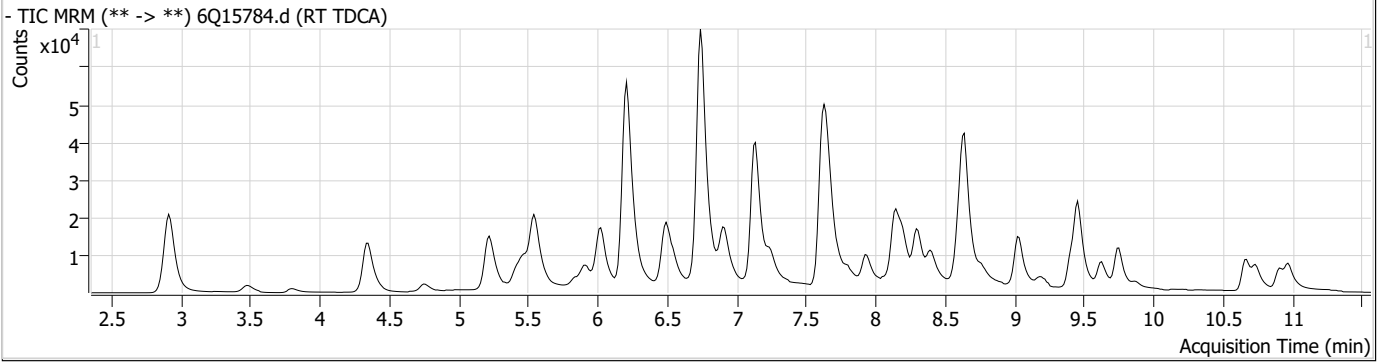
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.3

7

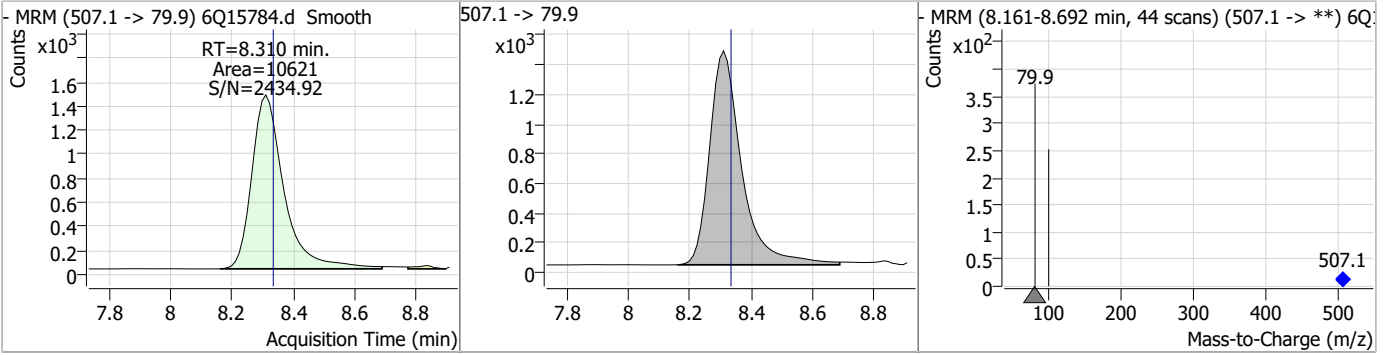


Perfluorinated Compounds by LC/MS/MS

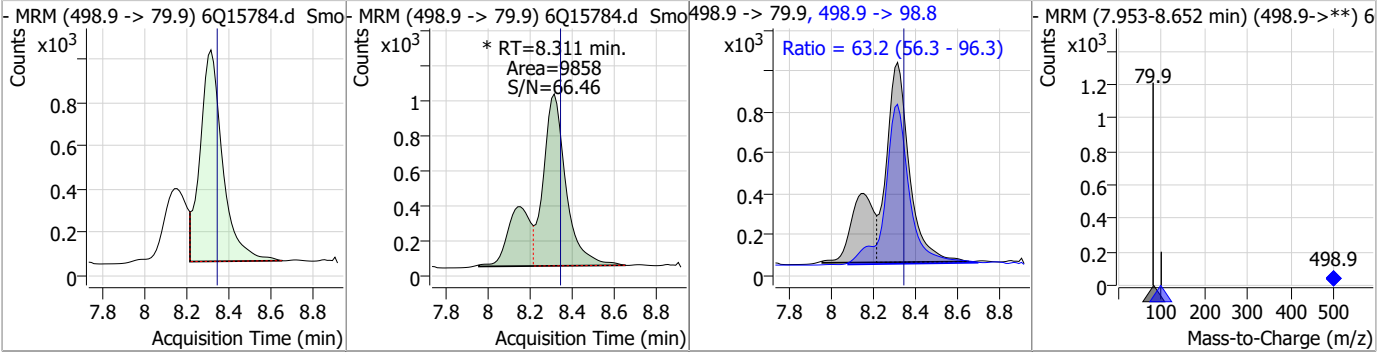


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.22	8.31	-0.02	10621				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.72	8.31	-0.02	9858 (m)	498.9 -> 98.8	63.2	56.3	96.3



7.6.3
7



Manual Integration Approval Summary

Sample Number: S6Q237-RT Method: EPA DRAFT 1633
Lab FileID: 6Q15784.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/30/23 12:57 Supervisor approved: 03/31/23 16:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.6.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15785.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 1:11:11 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	70430	10.00 µg/L	0.012
M5-PFPeA	4.347	268.3 -> 223.0	34608	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	30909	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	32639	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	53330	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	17694	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14034	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	15503	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	21019	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	11488	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15893	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12390	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	7881	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7422	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2119	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2742	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2738	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	21553	5.00 µg/L	0.000
M3-HFPO-DA	5.918	286.9 -> 168.9	13455	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	20065	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	22637	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	14336	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6097	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5419	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9090	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	30931	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	5500	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	69838	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	20933	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17295	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	31636	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2119	5.91 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.3%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2742	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2738	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.8%		
13C2-PFDoDA	9.019	615.1 -> 570.0	21019	1.23 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-PFTeDA	9.746	715.2 -> 670.0	11488	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C3-PFBS	5.483	302.1 -> 79.9	12390	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C3-PFHxS	7.252	402.1 -> 79.9	7881	2.54 µg/L	-0.012

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 = 101.5%	
13C4-PFBA	2.926	216.8 -> 171.9	70430	9.86 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.506	367.1 -> 322.0	32639	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.553	318.0 -> 273.0	30909	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C5-PFPeA	4.347	268.3 -> 223.0	34608	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C6-PFDA	8.147	519.1 -> 474.1	14034	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.5%	
13C7-PFUnDA	8.601	570.0 -> 525.1	15503	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C8-FOSA	9.631	506.1 -> 77.8	15893	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C8-PFOA	7.137	421.1 -> 376.0	53330	2.30 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.1%	
13C8-PFOS	8.310	507.1 -> 79.9	7422	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C9-PFNA	7.667	472.1 -> 427.0	17694	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%	
d3-MeFOSAA	8.192	573.2 -> 419.0	21553	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	13455	9.88 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSA	10.745	515.0 -> 219.0	5419	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSAA	8.400	589.2 -> 419.0	20065	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d7-MeFOSE	10.653	623.2 -> 58.9	22637	23.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d9-EtFOSE	10.900	639.2 -> 58.9	14336	22.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
d5-EtFOSA	10.978	531.1 -> 219.0	6097	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	215897	48.82 µg/L	96
		327.1 -> 80.9	47316		
6:2FTS	6.911	427.1 -> 407.0	182389	49.60 µg/L	96
		427.1 -> 80.9	36713		
8:2FTS	7.936	527.1 -> 507.0	95898	48.16 µg/L	94
		527.1 -> 80.8	24582		
EtFOSAA	8.401	584.2 -> 419.1	43264	13.98 µg/L	m 98
		584.2 -> 526.0	22784		
FOSA	9.634	498.1 -> 77.9	180505	32.06 µg/L	99
		498.1 -> 478.0	6447		
MeFOSAA	8.205	570.1 -> 419.0	60558	15.25 µg/L	100
		570.1 -> 483.0	10139		
PFBA	2.919	212.8 -> 168.9	88177	55.06 µg/L	100
PFBS	5.484	298.7 -> 79.9	57444	12.00 µg/L	95
		298.7 -> 98.8	25045		
PFDA	8.148	512.9 -> 469.0	221173	13.76 µg/L	99
		512.9 -> 219.0	29903		
PFDoDA	9.019	613.1 -> 569.0	200771	12.93 µg/L	99
		613.1 -> 319.0	24625		
PFDS	9.183	599.0 -> 79.9	27941	12.64 µg/L	100

7.6.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.506	599.0 -> 98.8	15278	13.22	µg/L	98
		363.1 -> 319.0	252362			
PFHpS	7.819	363.1 -> 169.0	34226	12.19	µg/L	94
		449.0 -> 79.9	36275			
PFHxA	5.556	449.0 -> 98.9	21547	13.67	µg/L	100
		313.0 -> 269.0	152006			
PFHxS	7.253	313.0 -> 118.9	6164	12.89	µg/L	m
		398.7 -> 79.9	43483			
PFNA	7.530	398.7 -> 98.9	23737	30.52	µg/L	m
		463.0 -> 419.0	322245			
PFNS	8.763	463.0 -> 219.0	70873	13.15	µg/L	96
		548.8 -> 79.9	40946			
PFOA	7.138	548.8 -> 98.9	21672	31.27	µg/L	m
		413.0 -> 369.0	710818			
PFOS	8.311	413.0 -> 169.0	91189	12.70	µg/L	m
		498.9 -> 79.9	39496			
PFPeA	4.349	498.9 -> 98.8	23420	26.71	µg/L	100
		263.0 -> 219.0	195894			
PFPeS	6.558	349.1 -> 79.9	50734	13.13	µg/L	93
		349.1 -> 98.9	27735			
PFTeDA	9.746	713.1 -> 669.0	172655	13.26	µg/L	99
		713.1 -> 168.9	11542			
PFTrDA	9.403	663.0 -> 619.0	185517	13.49	µg/L	99
		663.0 -> 168.9	14805			
PFUnDA	8.589	563.1 -> 519.0	185852	14.09	µg/L	97
		563.1 -> 269.1	28201			
11CI-PF3OUdS	9.454	630.9 -> 450.9	382301	49.61	µg/L	91
		632.9 -> 452.9	126069			
9CI-PF3ONS	8.641	530.8 -> 351.0	694400	48.70	µg/L	100
		532.8 -> 353.0	223612			
ADONA	6.756	376.9 -> 250.9	1442939	50.94	µg/L	96
		376.9 -> 84.8	333330			
HFPO-DA	5.931	284.9 -> 168.9	68229	55.11	µg/L	99
		284.9 -> 184.9	7757			
3:3FTCA	3.815	241.0 -> 177.0	24703	63.35	µg/L	100
		241.0 -> 117.0	3660			
5:3FTCA	6.223	341.0 -> 237.1	842561	332.32	µg/L	98
		341.0 -> 217.0	752773			
7:3FTCA	7.633	441.0 -> 316.9	448732	333.97	µg/L	88
		441.0 -> 336.9	772116			
EtFOSA	10.979	526.0 -> 219.0	88819	34.19	µg/L	89
		526.0 -> 169.0	96234			
EtFOSE	10.913	630.0 -> 58.9	82411	160.66	µg/L	100
		511.9 -> 219.0	79668			
MeFOSA	10.747	511.9 -> 169.0	90297	34.07	µg/L	90
		616.1 -> 58.9	125501			
MeFOSE	10.666	699.1 -> 79.9	17337	153.54	µg/L	100
		699.1 -> 98.8	10406			
PFDoDS	9.873	295.0 -> 201.0	18087	12.98	µg/L	95
		295.0 -> 84.9	8736			
NFDHA	5.435	279.0 -> 85.1	59259	27.35	µg/L	93
		229.0 -> 84.9	53068			
PFMBA	4.762	314.8 -> 134.9	399822	26.26	µg/L	100
		314.8 -> 82.9	9851			
PFMPA	3.488			26.14	µg/L	100
PFEESA	6.024			25.09	µg/L	100

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

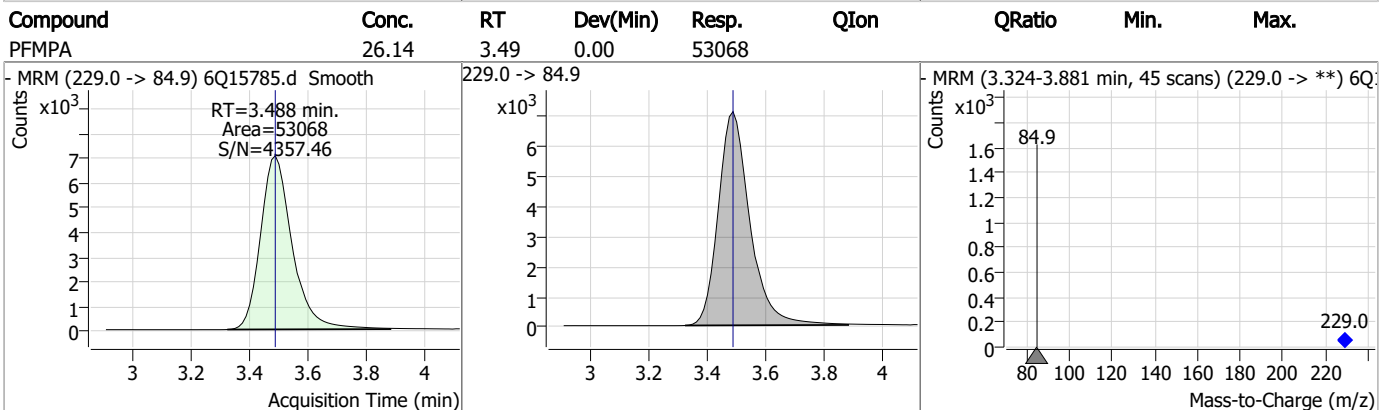
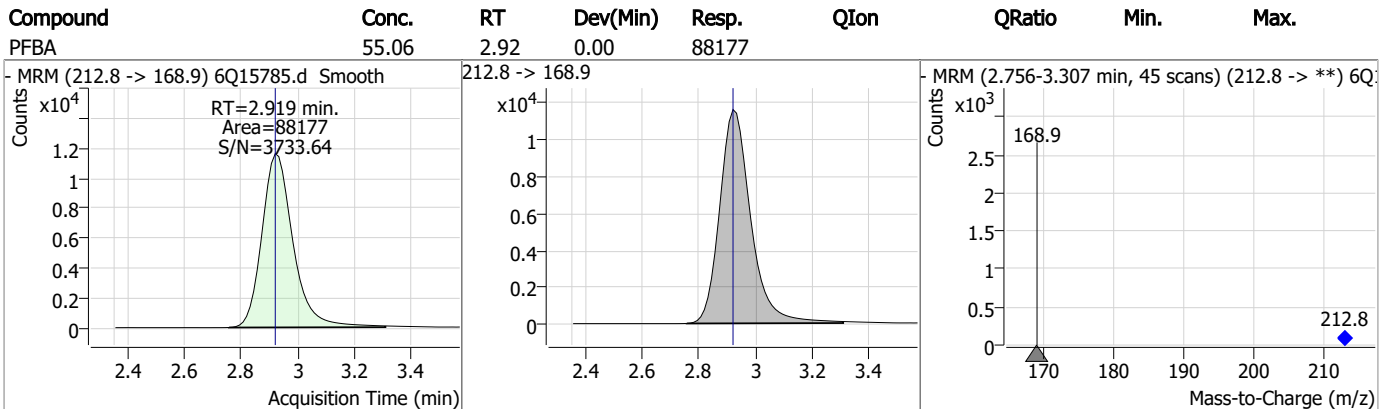
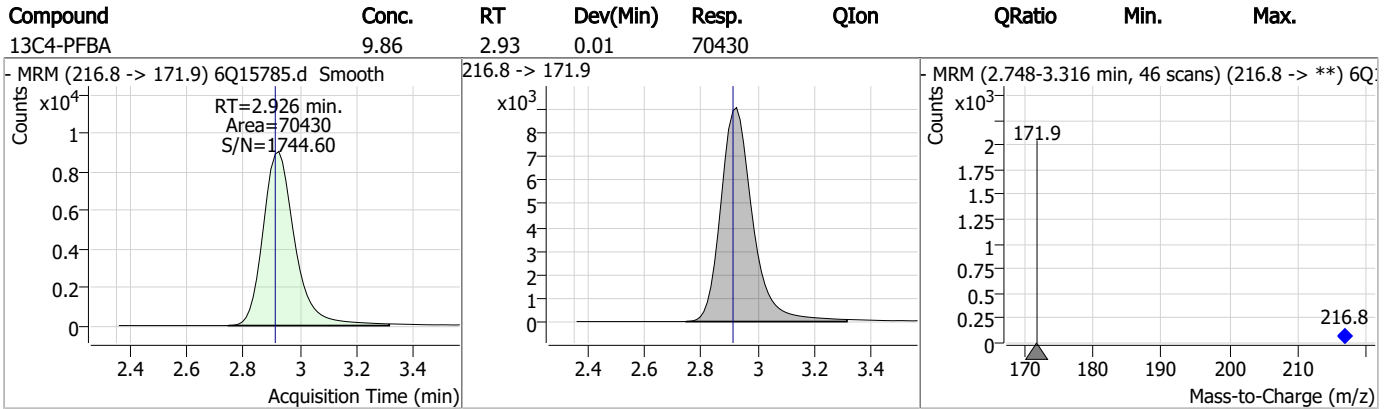
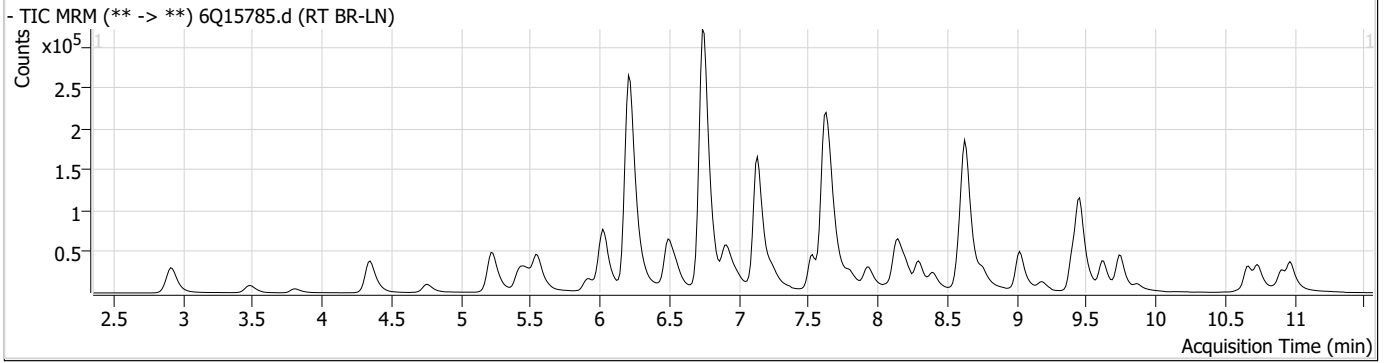
Perfluorinated Compounds by LC/MS/MS

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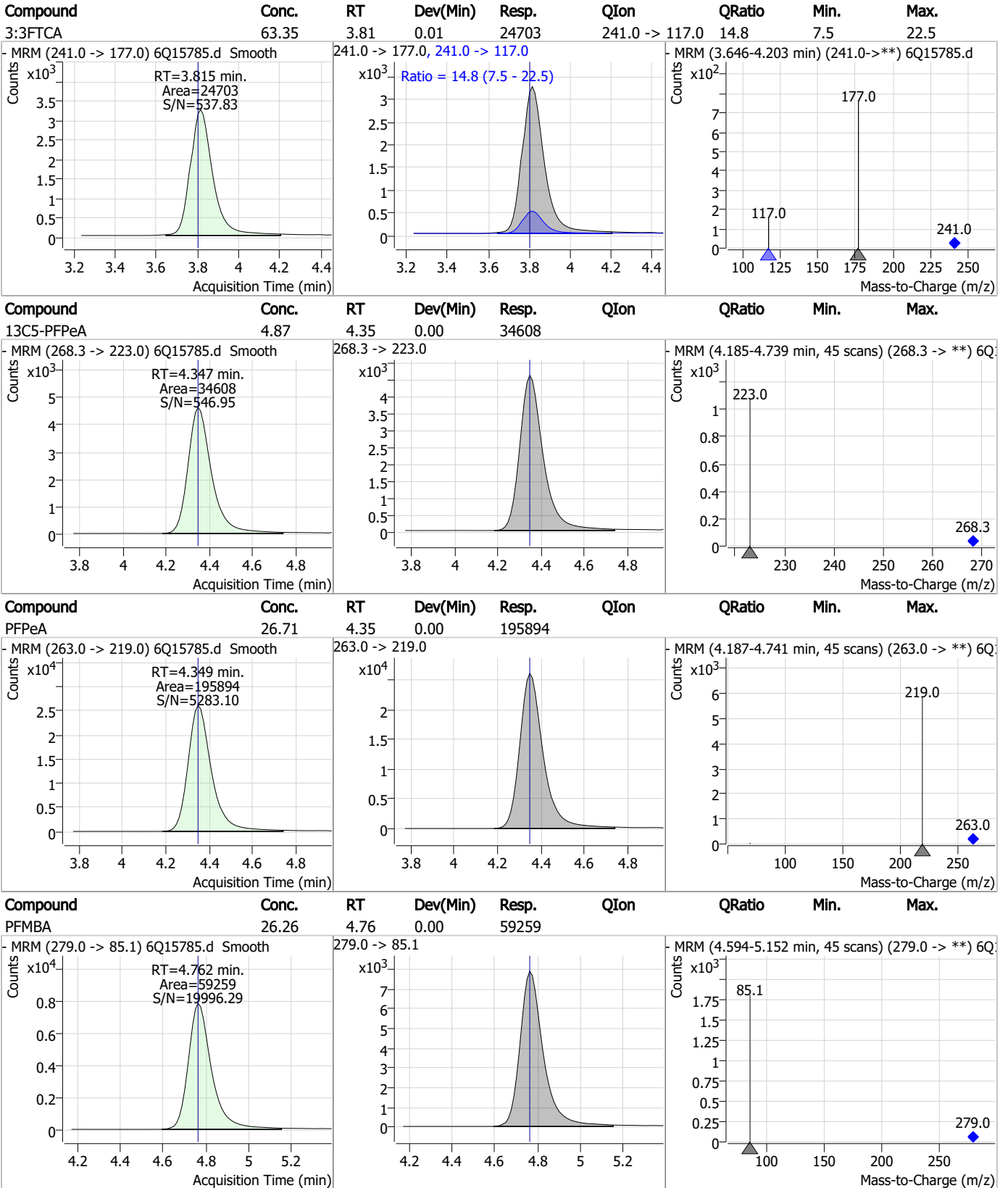
7.6.4

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Perfluorinated Compounds by LC/MS/MS



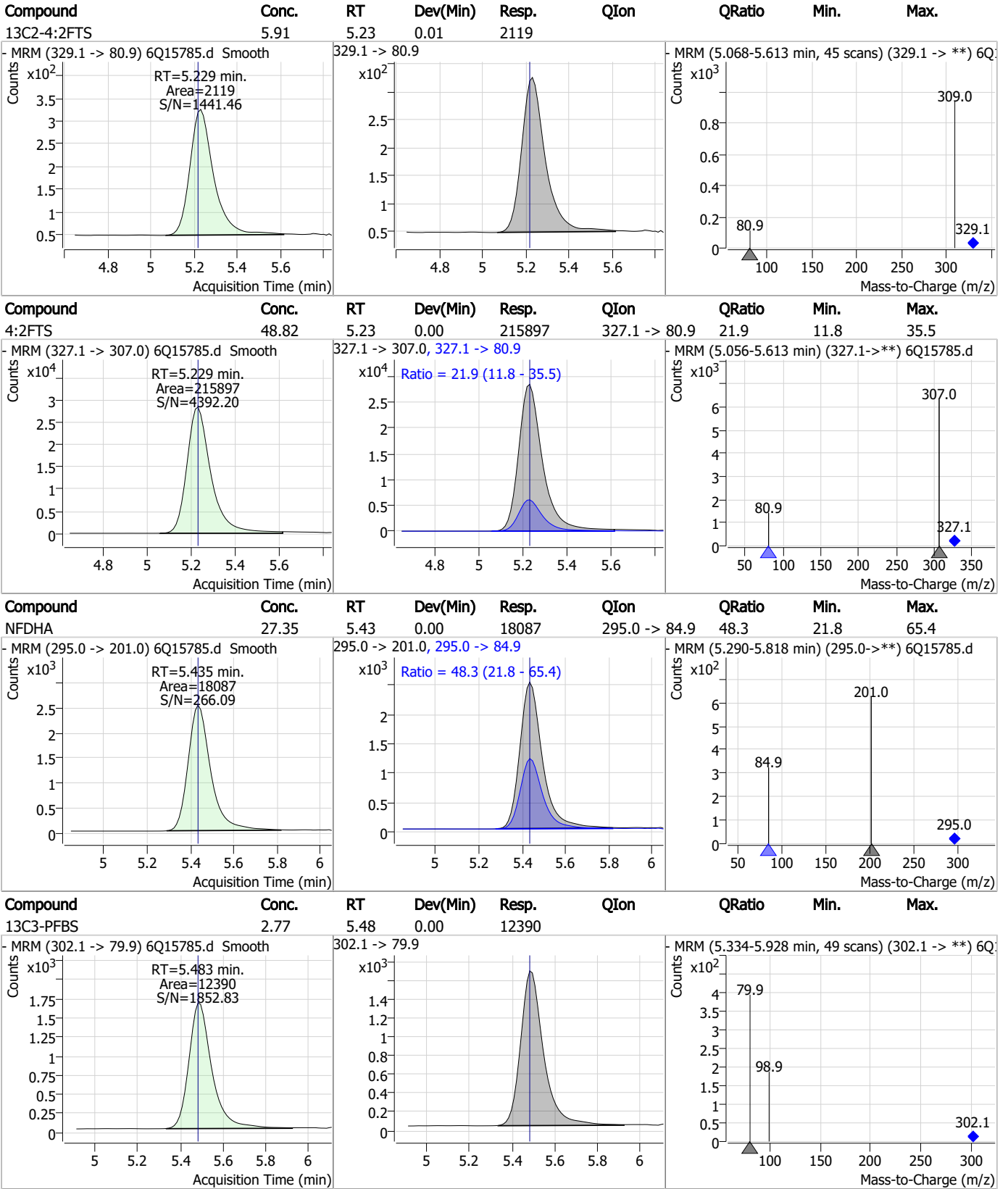
Perfluorinated Compounds by LC/MS/MS



7.6.4

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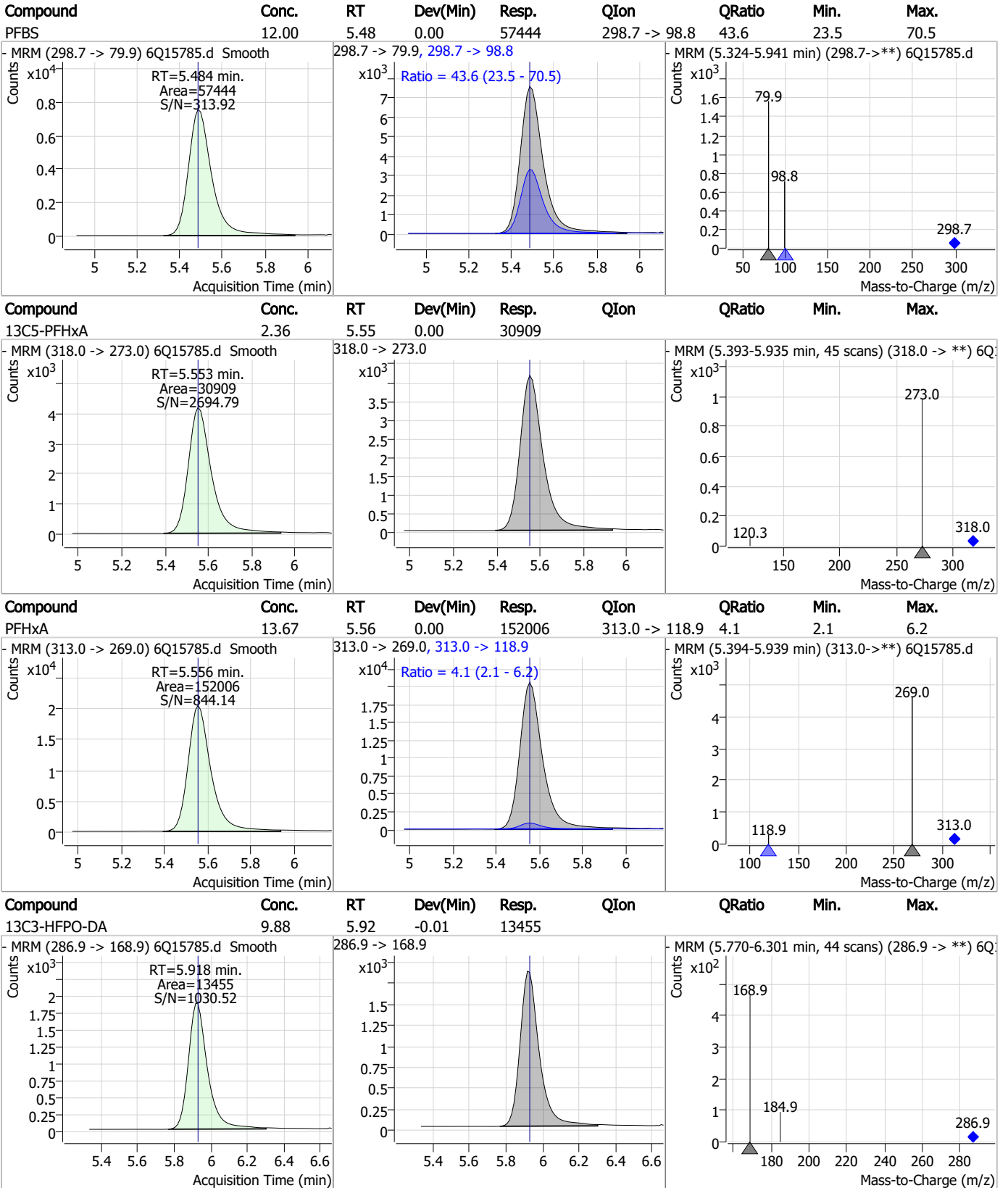
Perfluorinated Compounds by LC/MS/MS



7.6.4

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Perfluorinated Compounds by LC/MS/MS

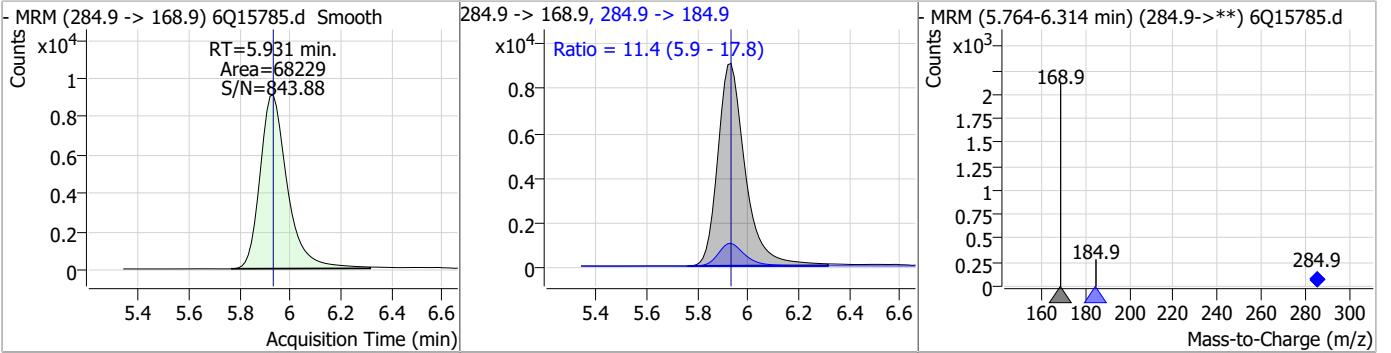


7.6.4

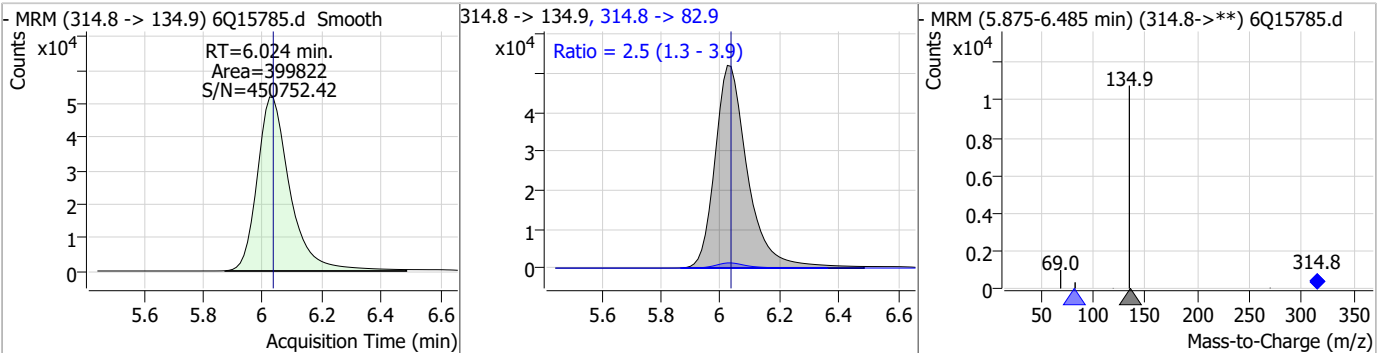
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Perfluorinated Compounds by LC/MS/MS

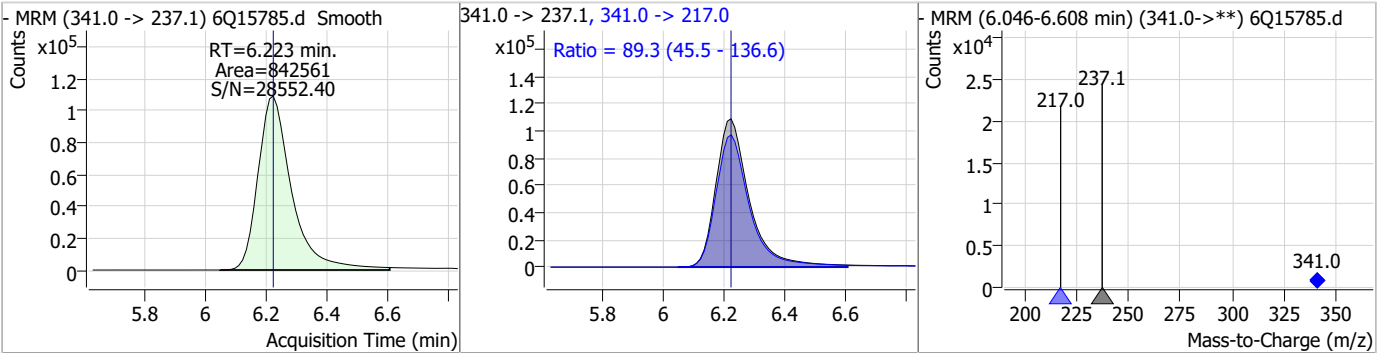
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	55.11	5.93	0.00	68229	284.9 -> 184.9	11.4	5.9	17.8



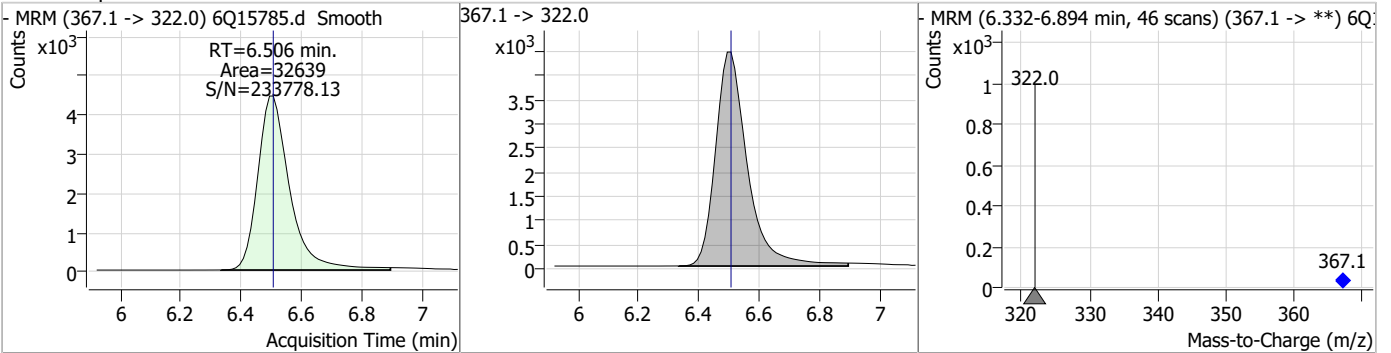
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	25.09	6.02	-0.01	399822	314.8 -> 82.9	2.5	1.3	3.9



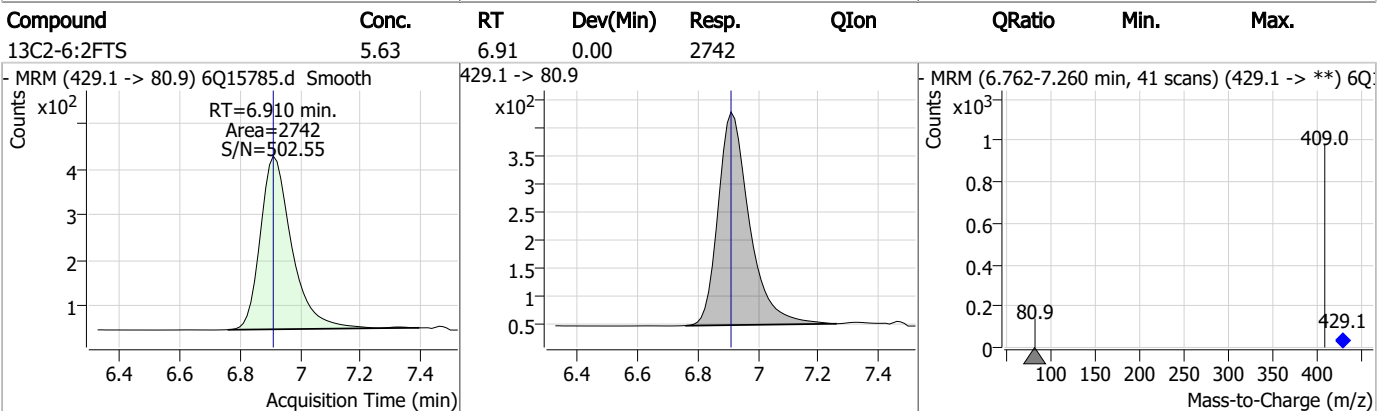
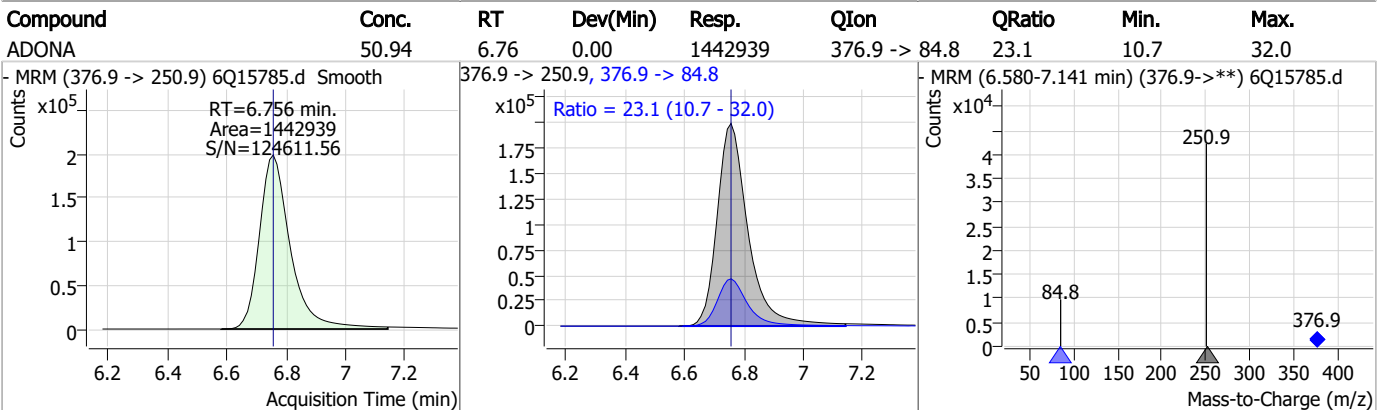
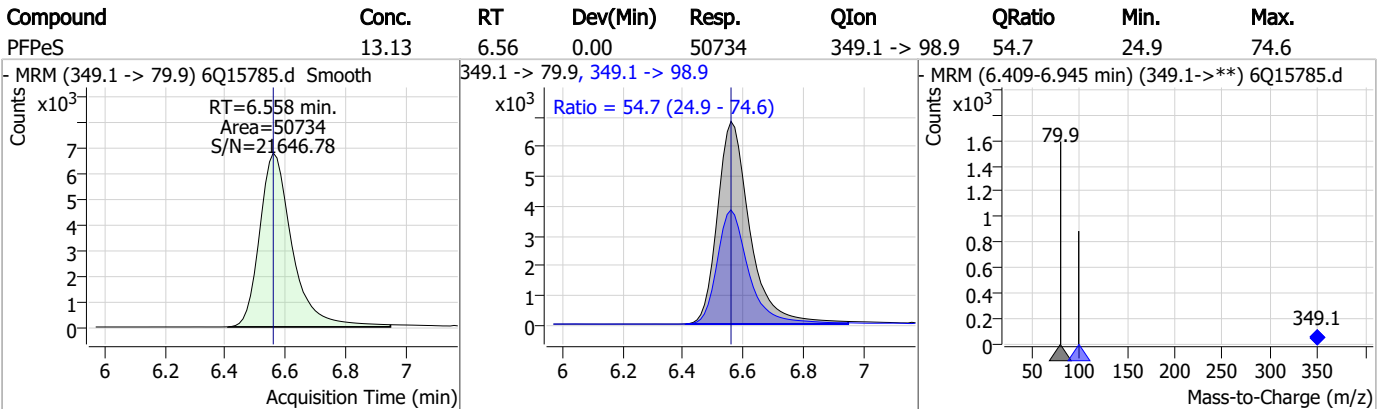
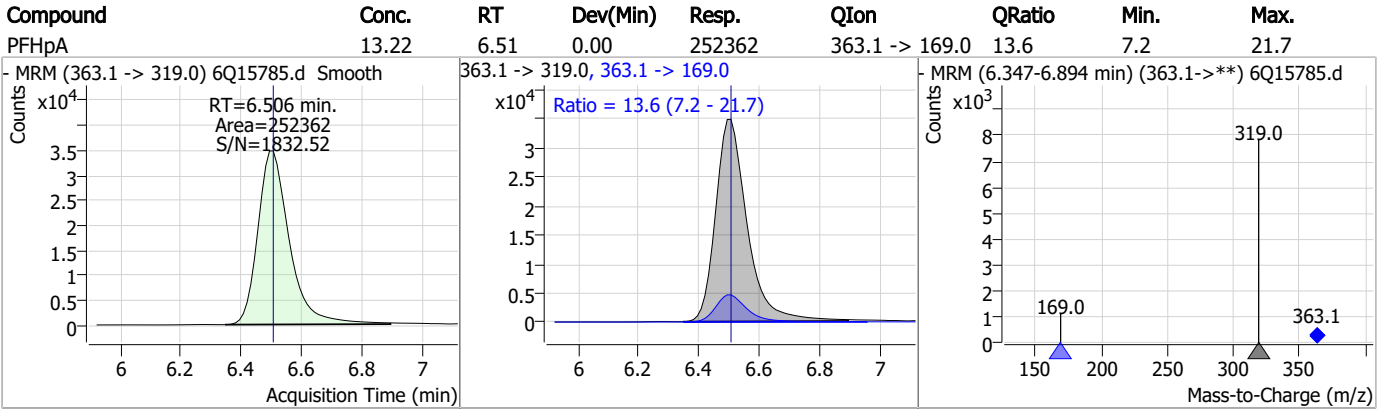
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	332.32	6.22	0.00	842561	341.0 -> 217.0	89.3	45.5	136.6



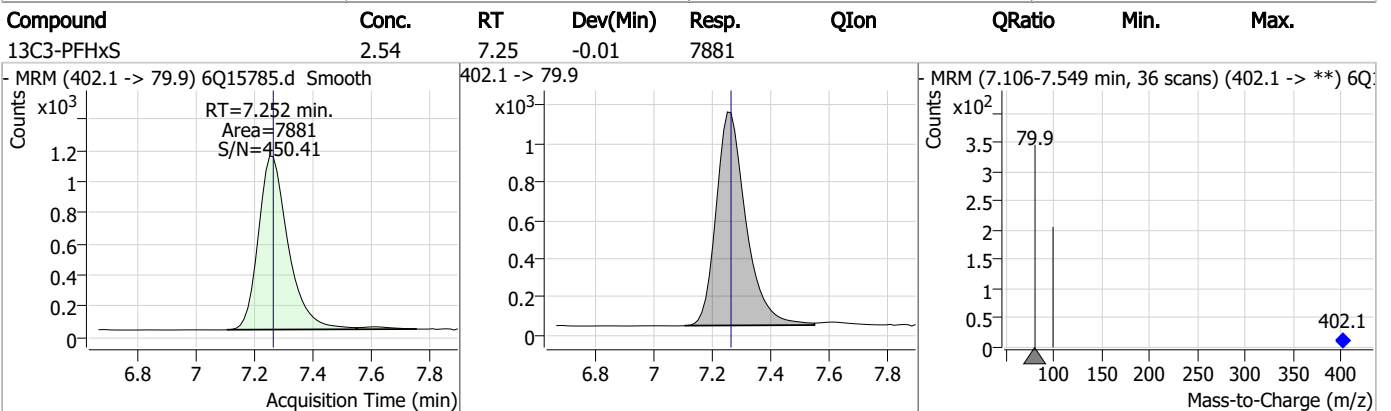
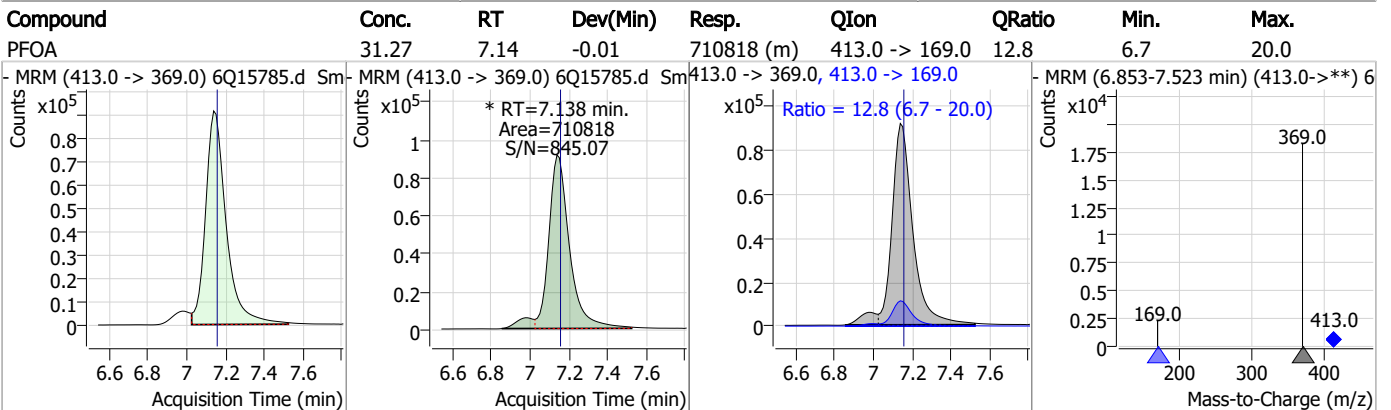
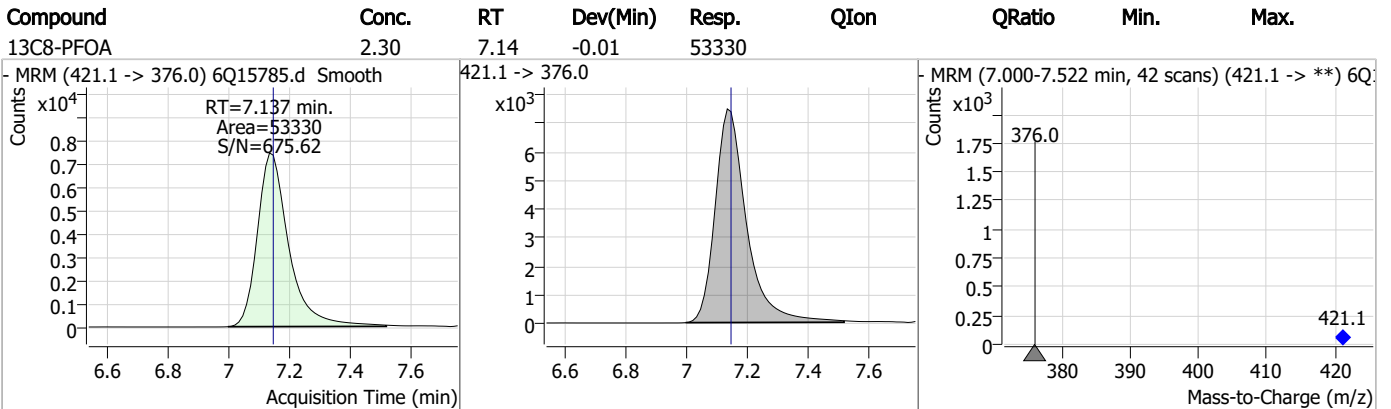
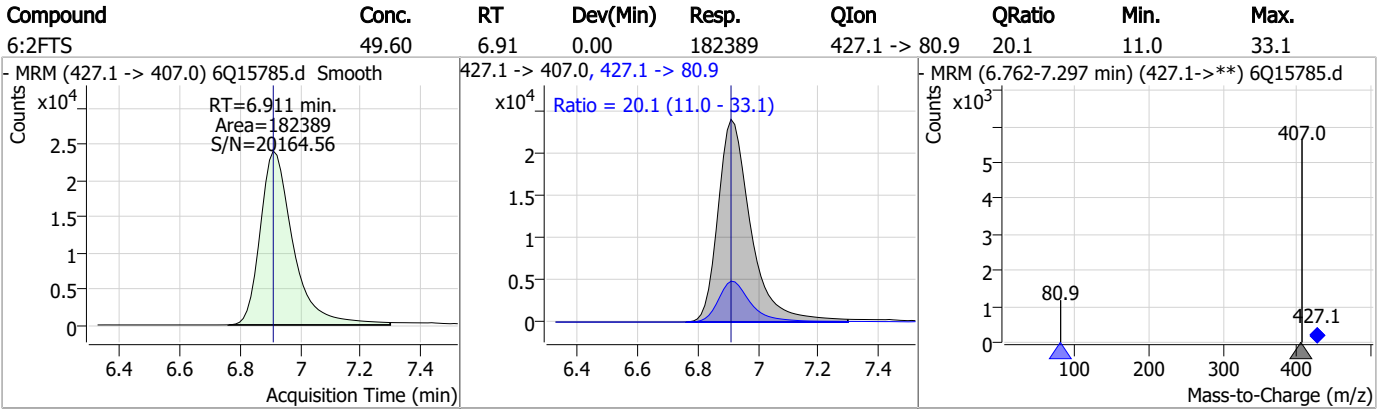
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.44	6.51	0.00	32639	367.1 -> 322.0			



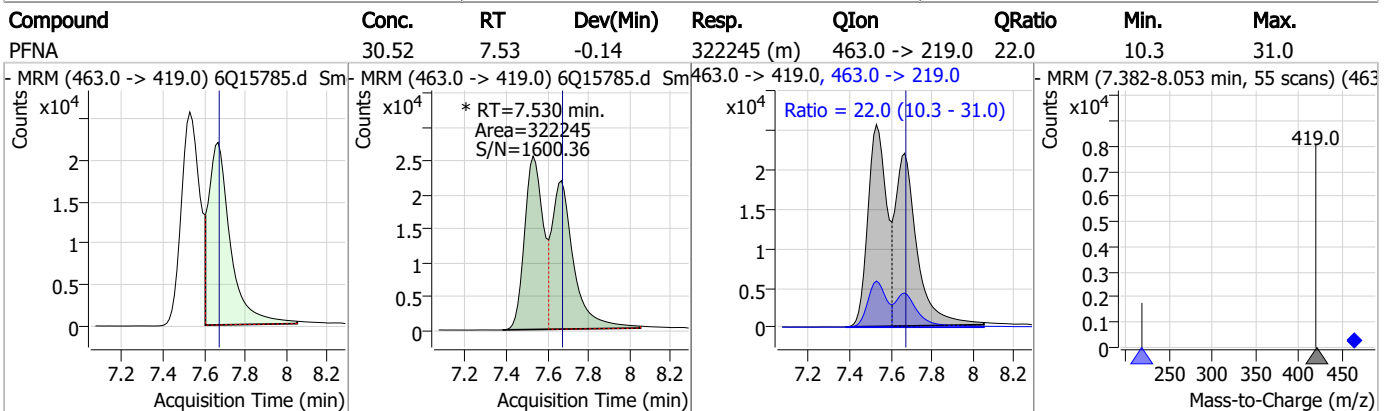
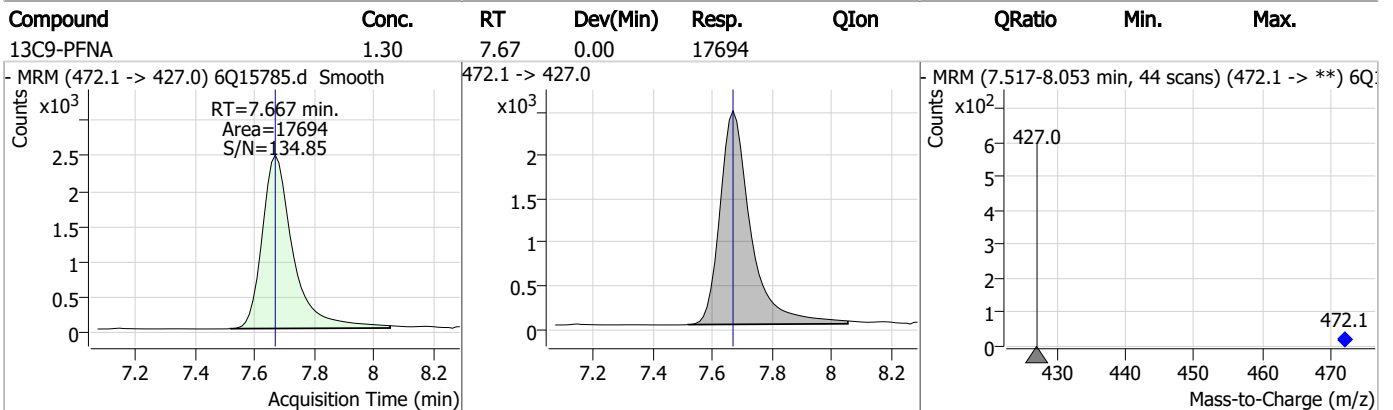
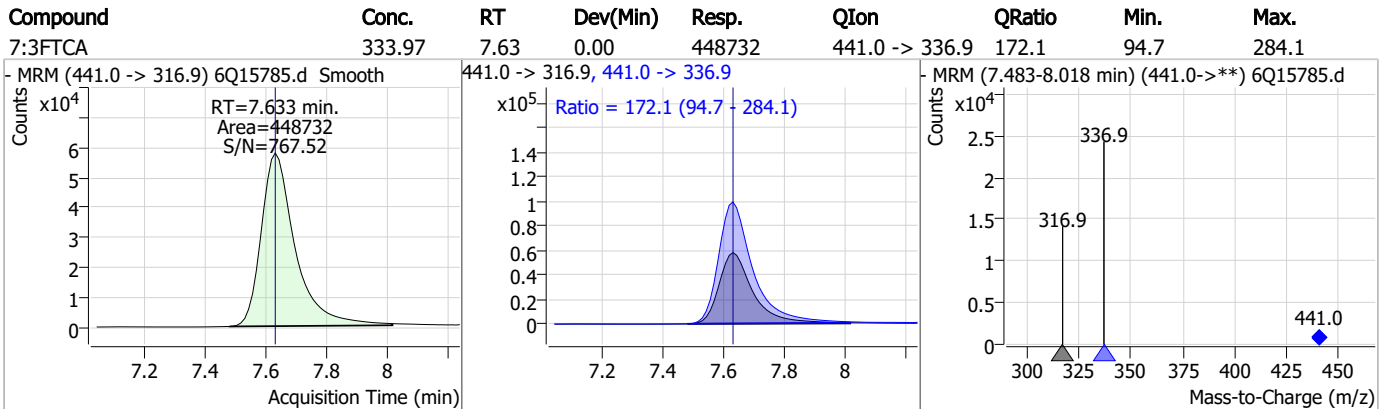
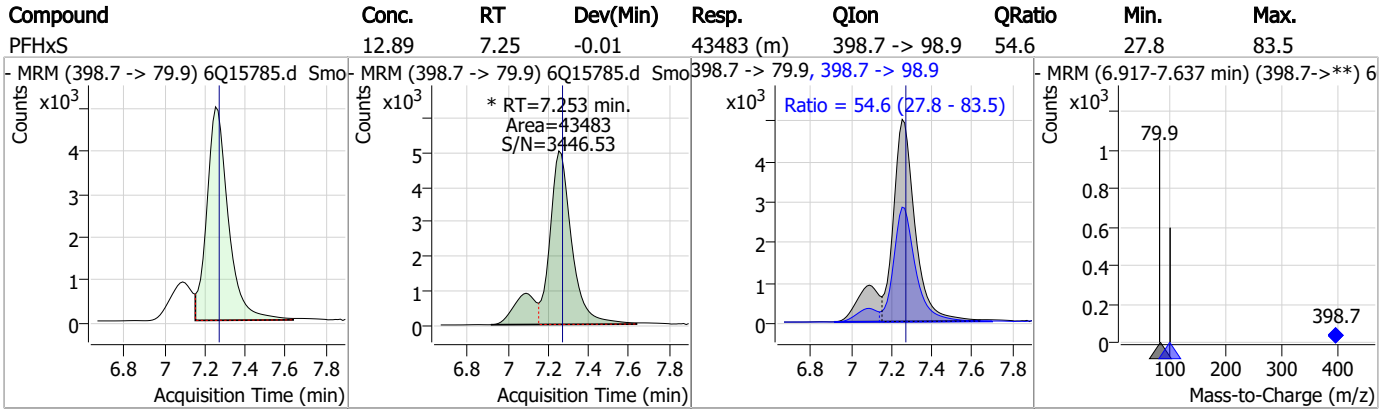
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



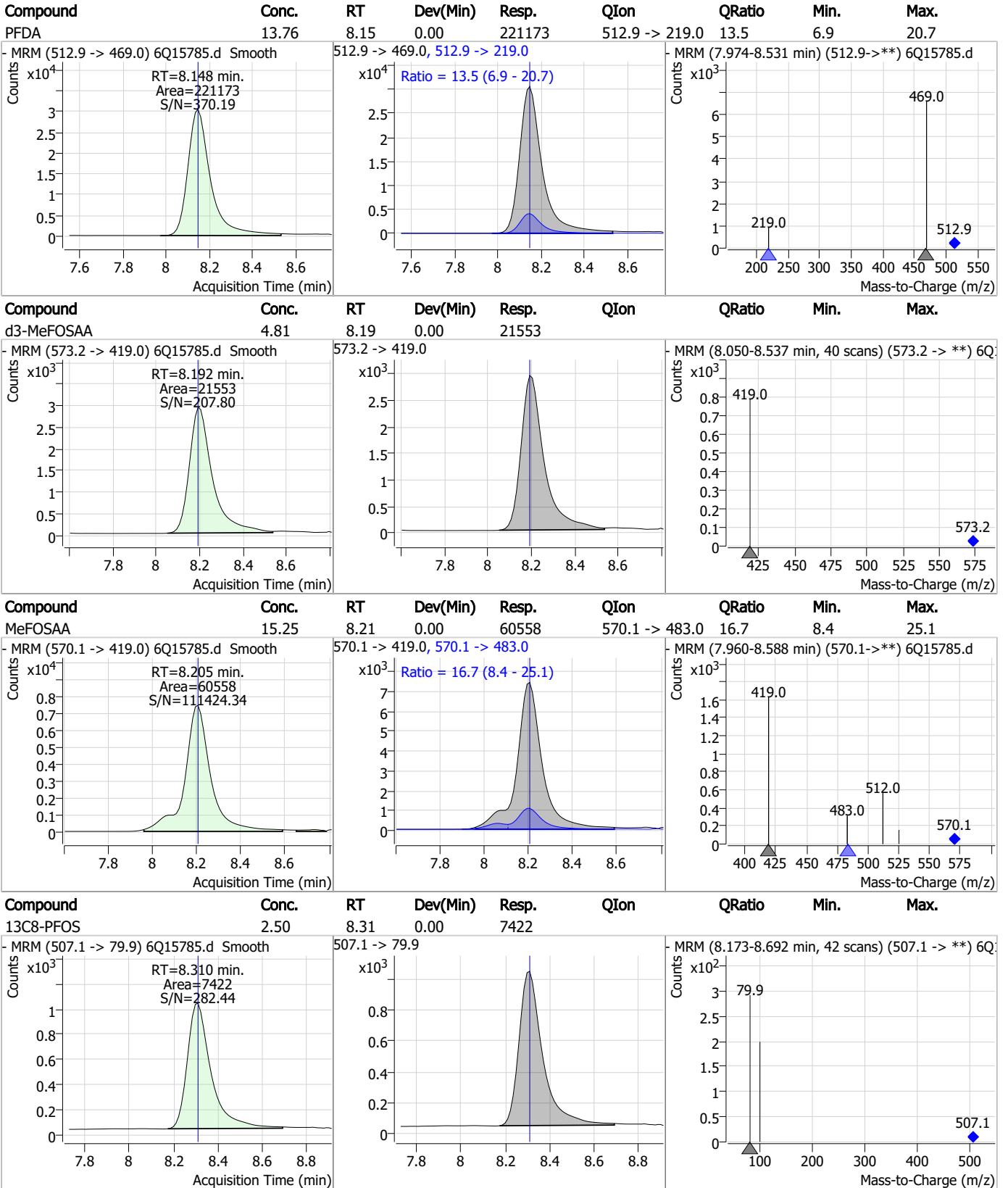
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.19	7.82	0.00	36275	449.0 -> 98.9	59.4	27.4	82.3
13C2-8:2FTS	5.74	7.94	0.00	2738				
8:2FTS	48.16	7.94	0.00	95898	527.1 -> 80.8	25.6	11.4	34.2
13C6-PFDA	1.16	8.15	0.00	14034				

7.6.4

7

Perfluorinated Compounds by LC/MS/MS

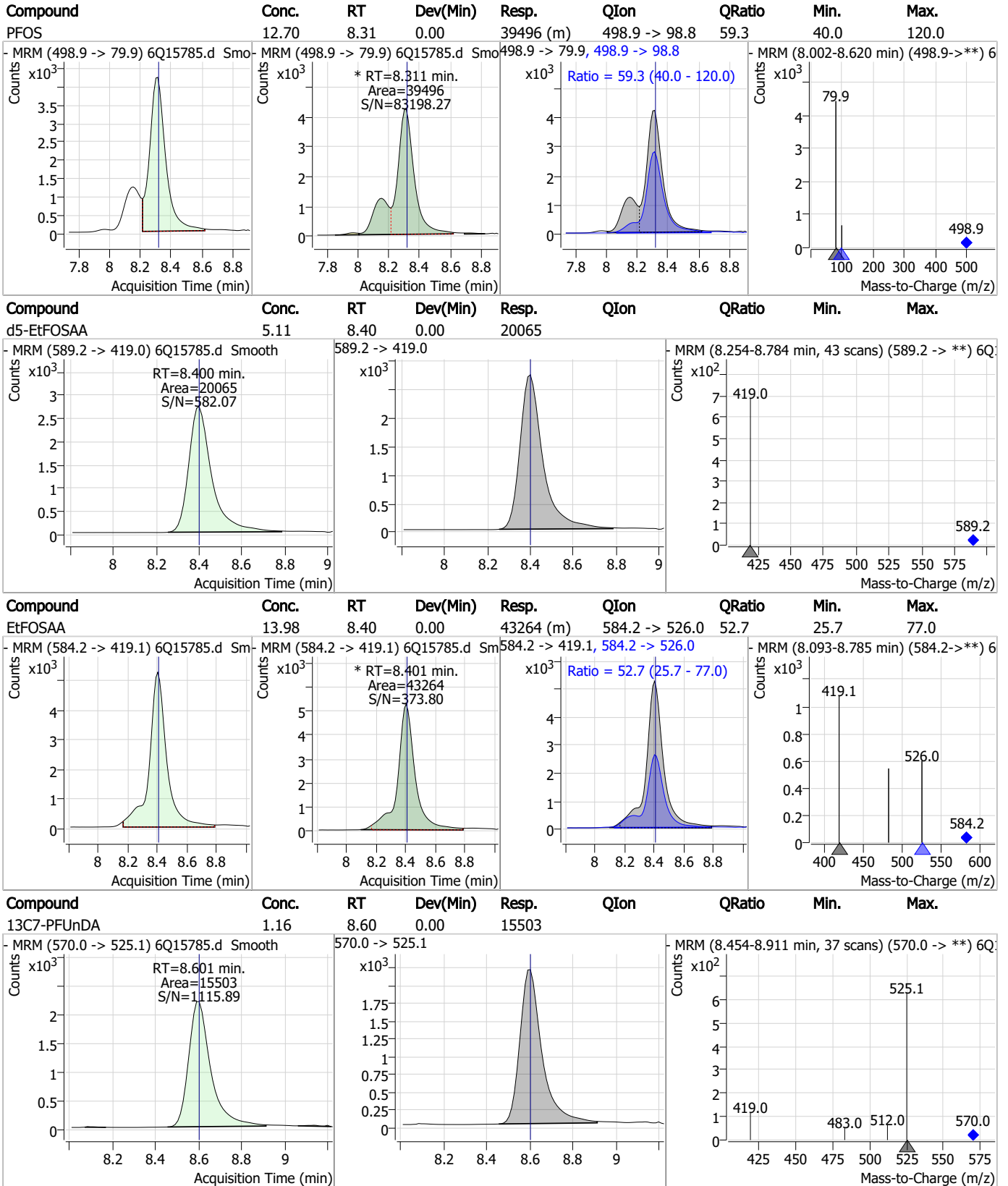


7.6.4

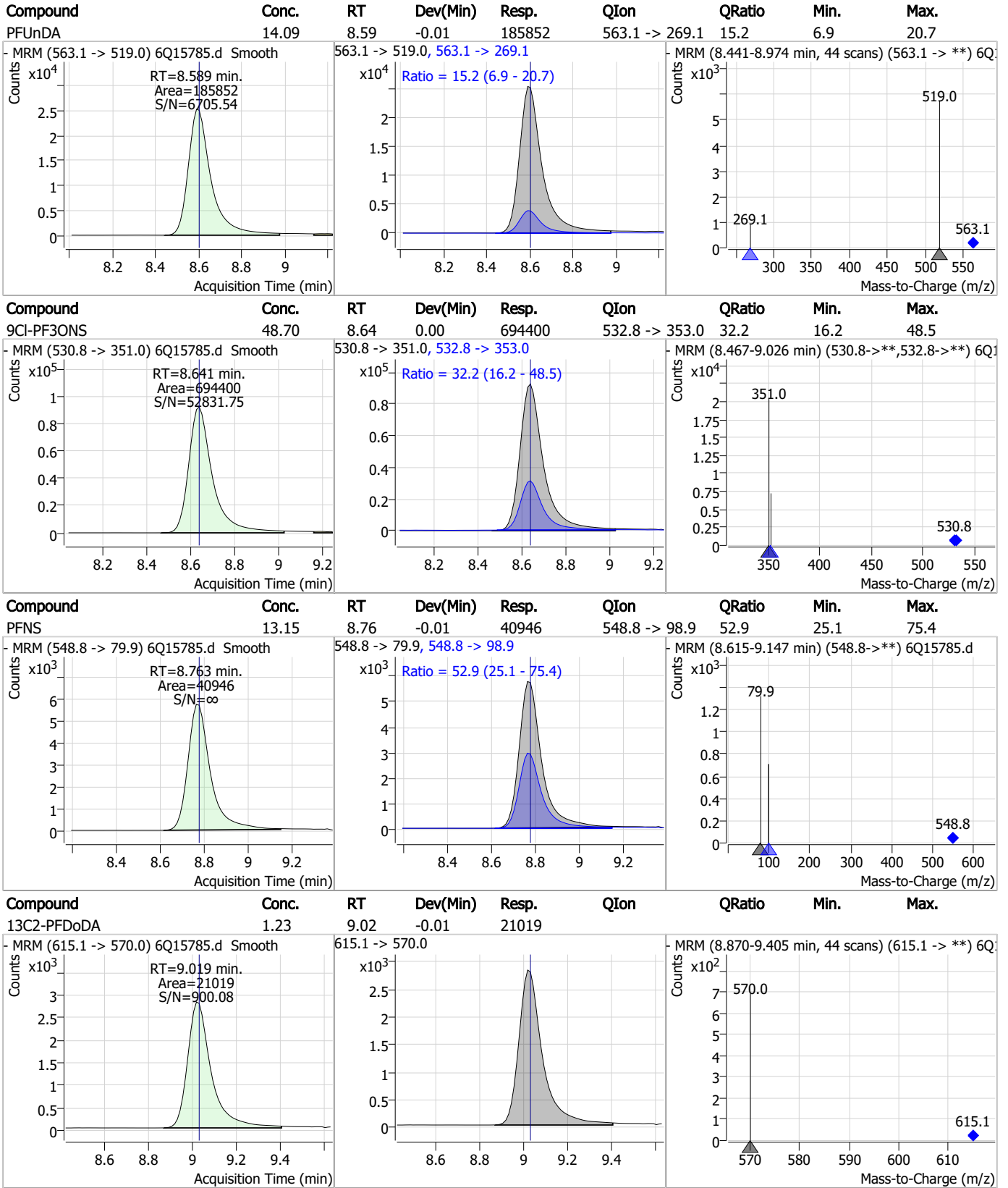
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Perfluorinated Compounds by LC/MS/MS



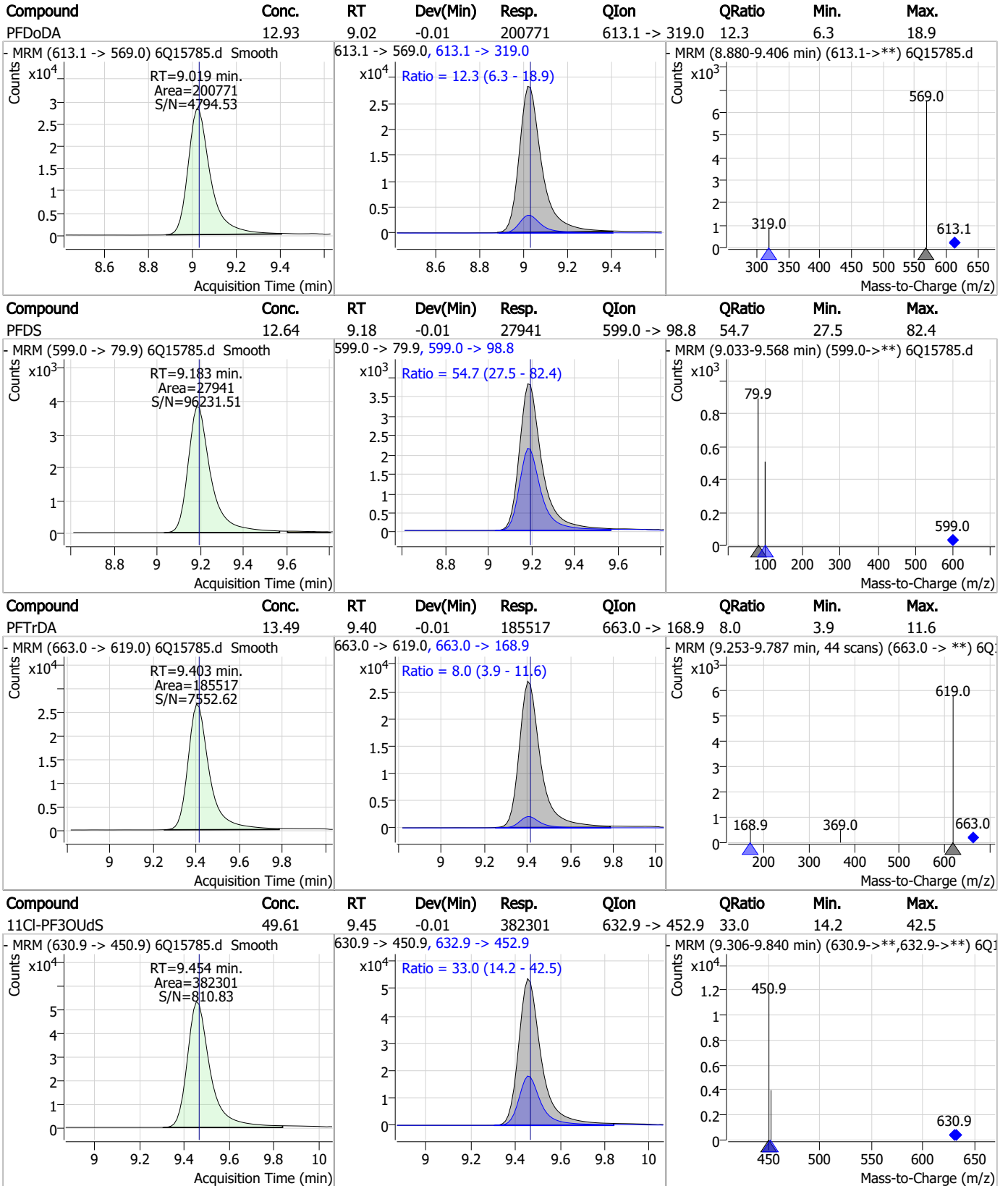
Perfluorinated Compounds by LC/MS/MS



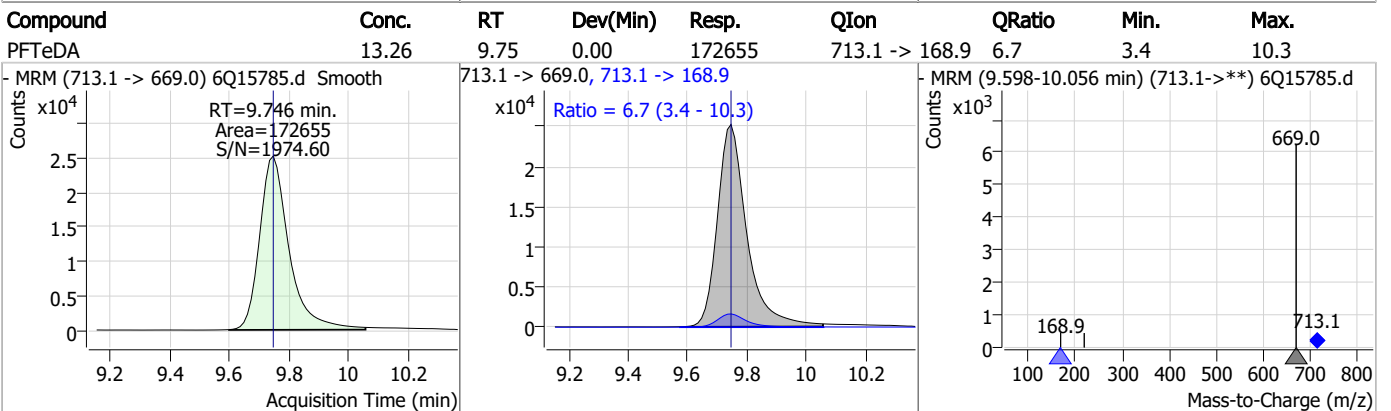
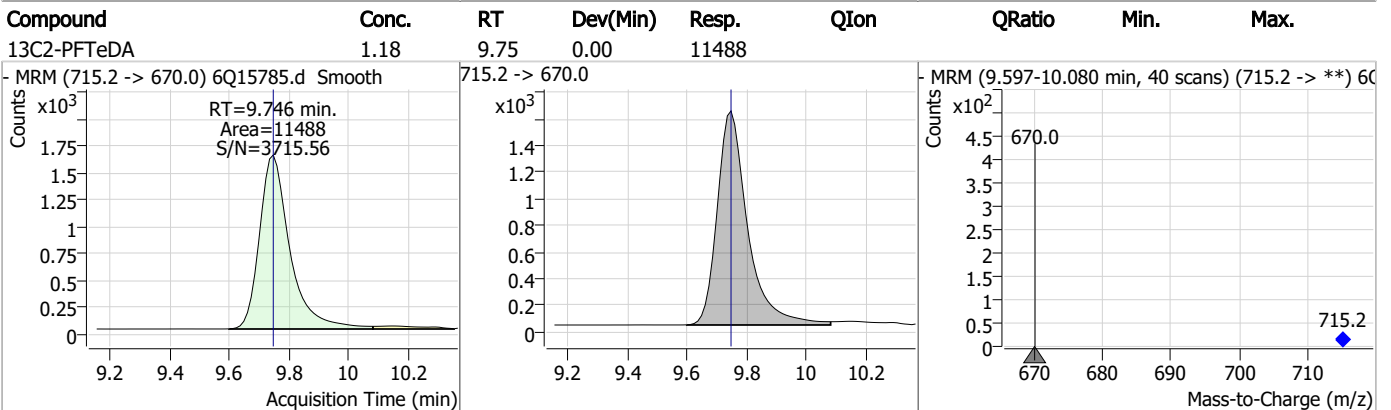
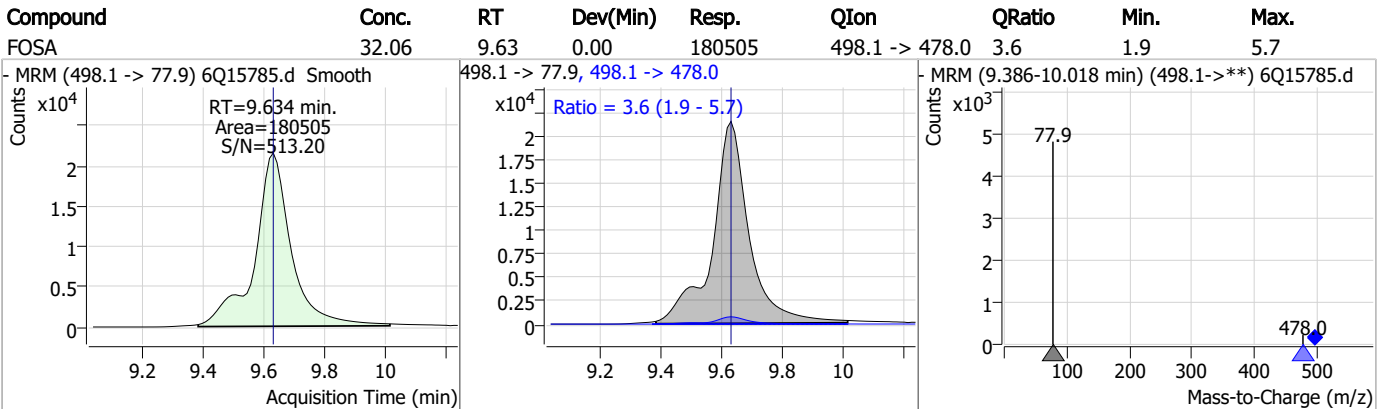
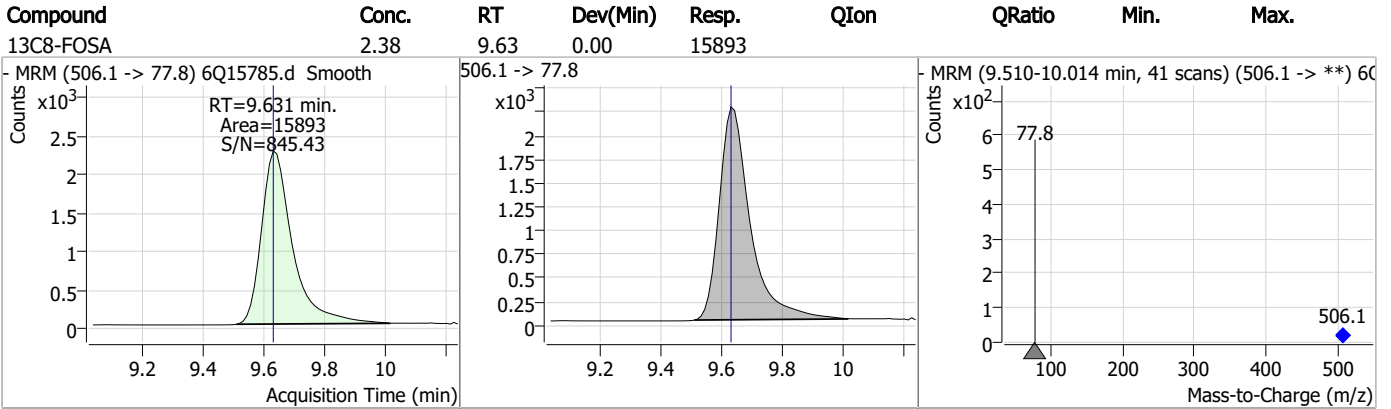
7.6.4

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Perfluorinated Compounds by LC/MS/MS

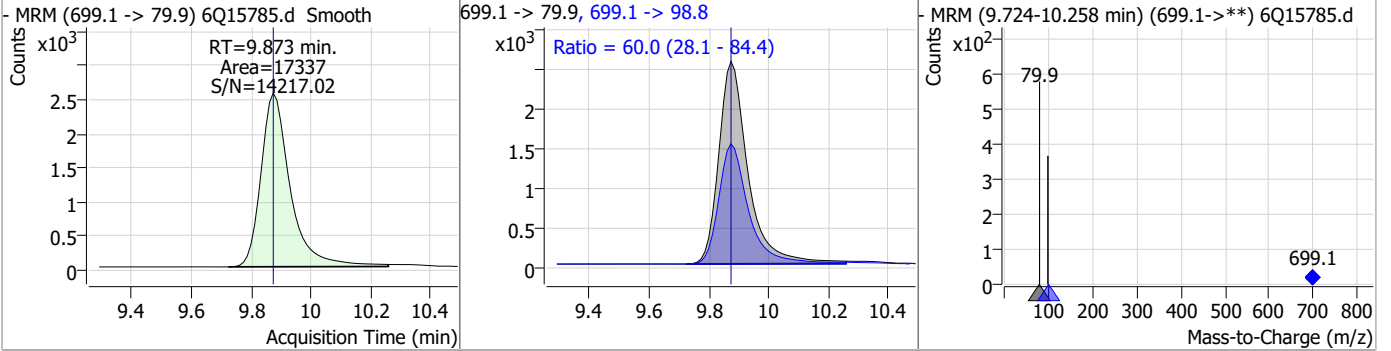


Perfluorinated Compounds by LC/MS/MS

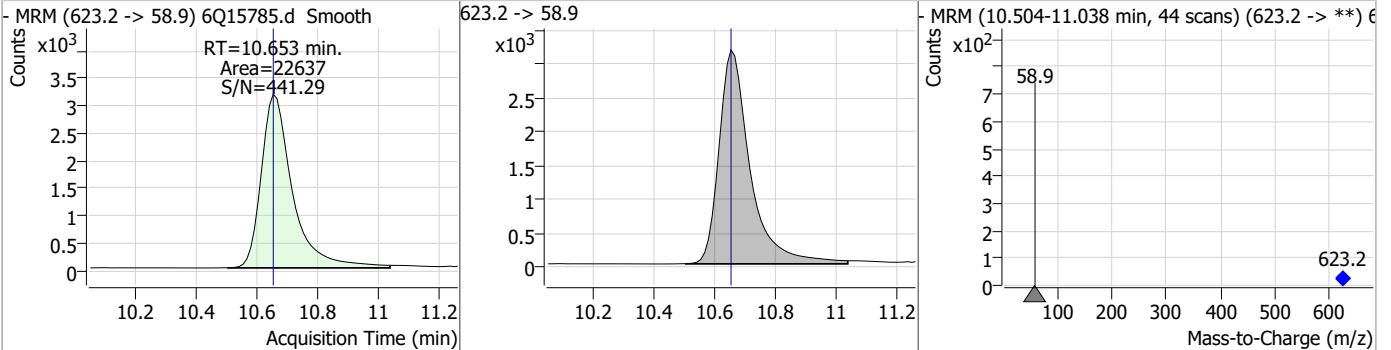


Perfluorinated Compounds by LC/MS/MS

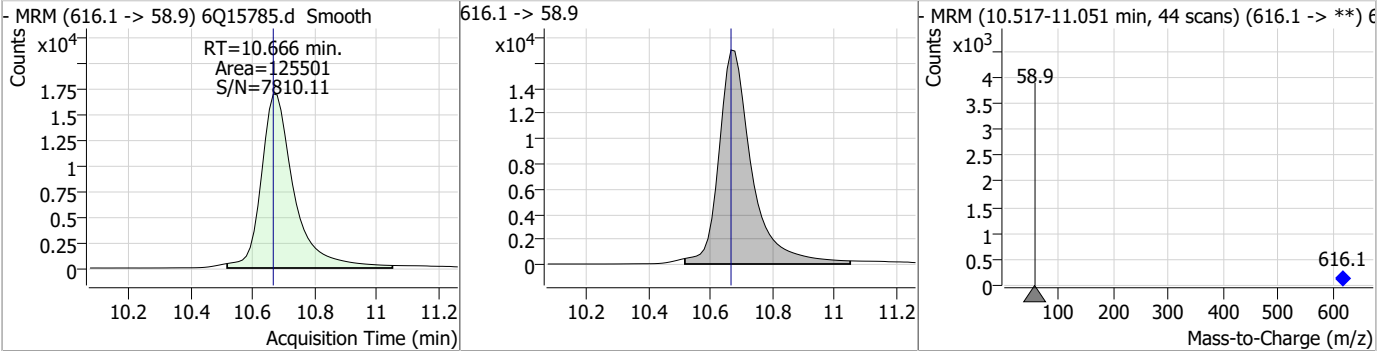
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	12.98	9.87	0.00	17337	699.1 -> 98.8	60.0	28.1	84.4



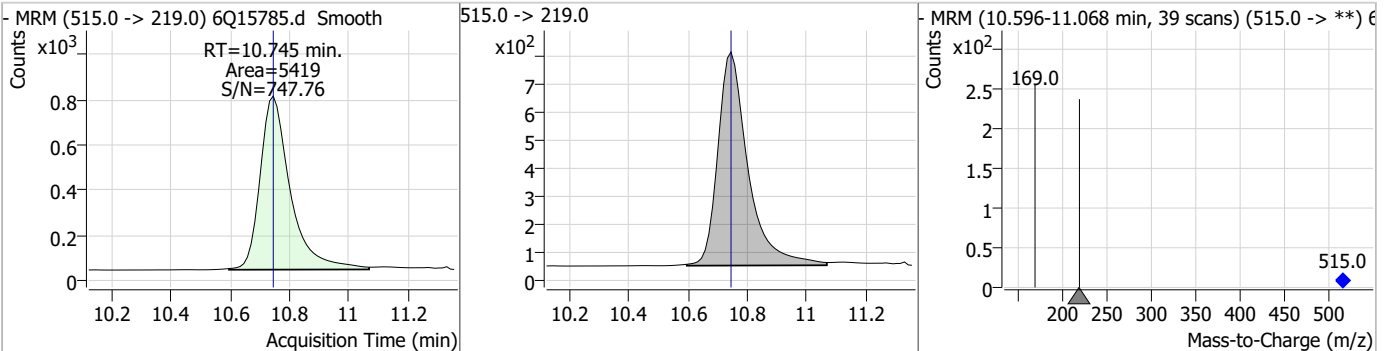
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.69	10.65	0.00	22637				



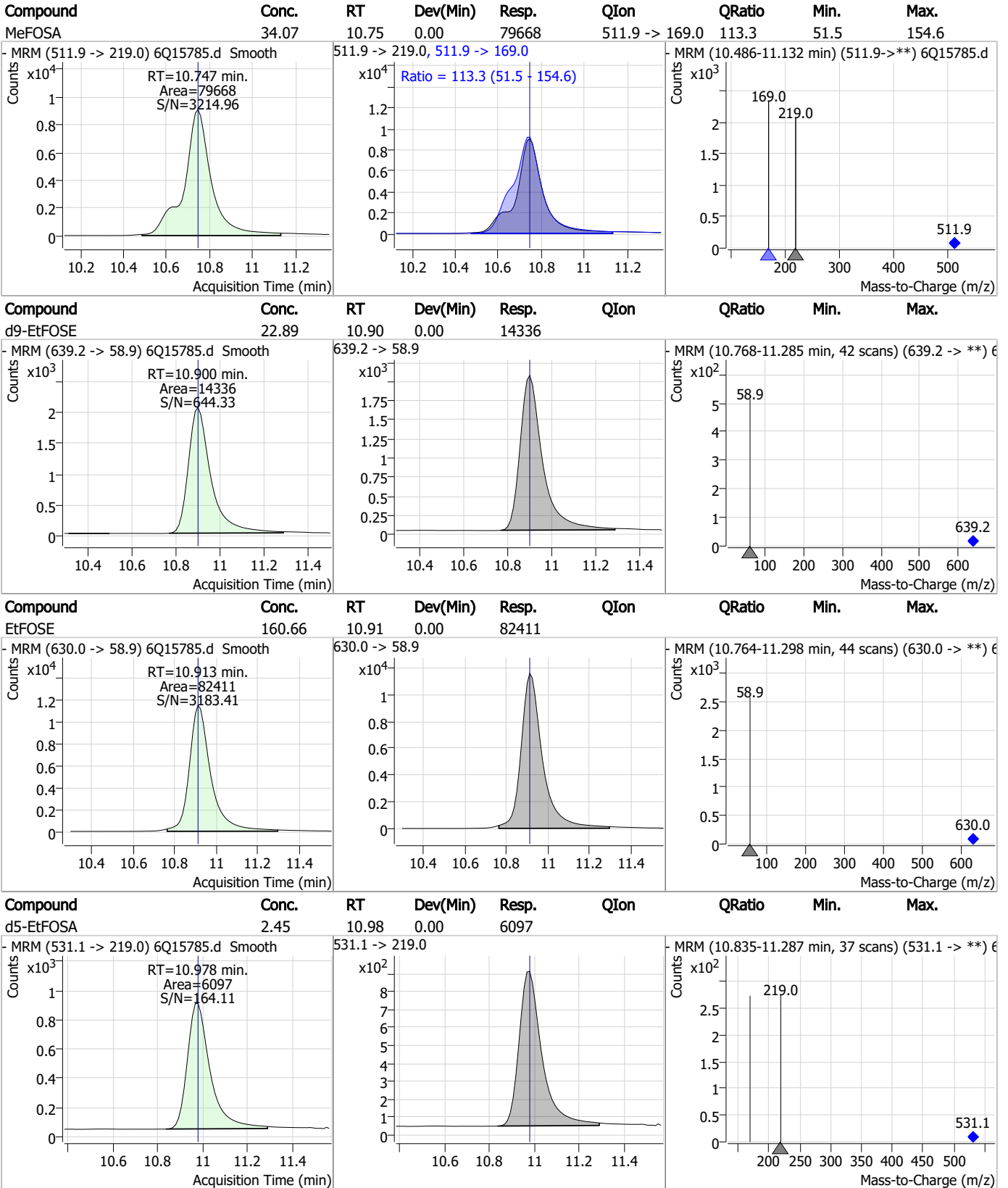
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	153.54	10.67	0.00	125501				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.45	10.75	0.00	5419				



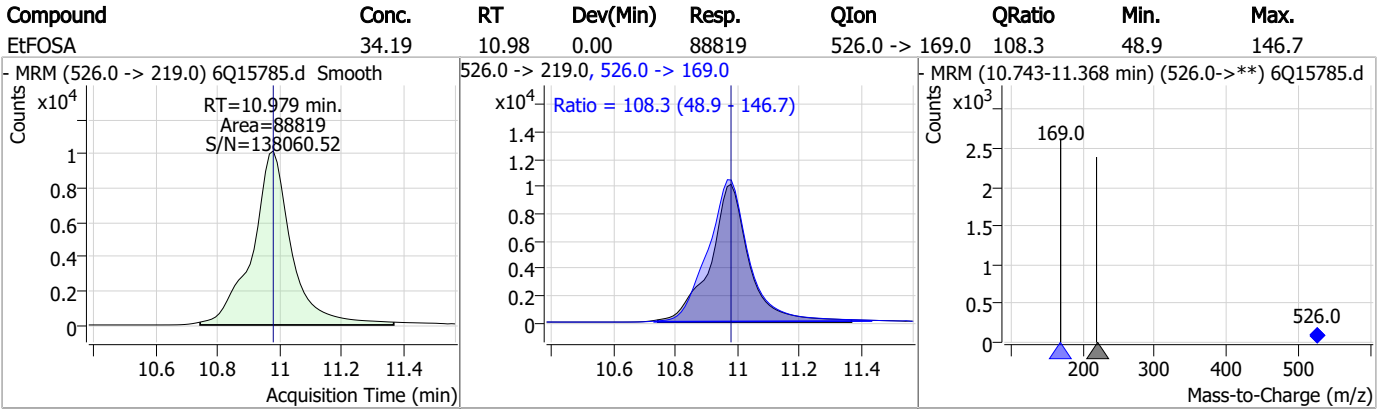
Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S6Q237-RT Method: EPA DRAFT 1633
Lab FileID: 6Q15785.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/30/23 13:11 Supervisor approved: 03/31/23 16:24 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.14	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorononanoic acid	375-95-1		7.53	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.6.4.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 03/31/23 16:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15885.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 12:39:52 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q237 TDCA.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.310	507.1 -> 79.9	10668	2.50	µg/L	-0.025	
13C4-PFOS	8.311	502.8 -> 79.9	12570	2.50	µg/L	-0.025	
System Monitoring Compounds							
13C8-PFOS	8.310	507.1 -> 79.9	10668	2.15	µg/L	-0.025	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.1%				
Target Compounds							
PFOS	8.311	498.9 -> 79.9	10044	2.76	µg/L	m	87
		498.9 -> 98.8	6581				
TCDCa	6.686	498.9 -> 79.9	2443	4.96	ng/ml		100
TDCA	6.835	498.9 -> 79.9	3815	8.56	ng/ml		100
TUDCA	5.834	498.9 -> 79.9	4862	5.14	ng/ml		100

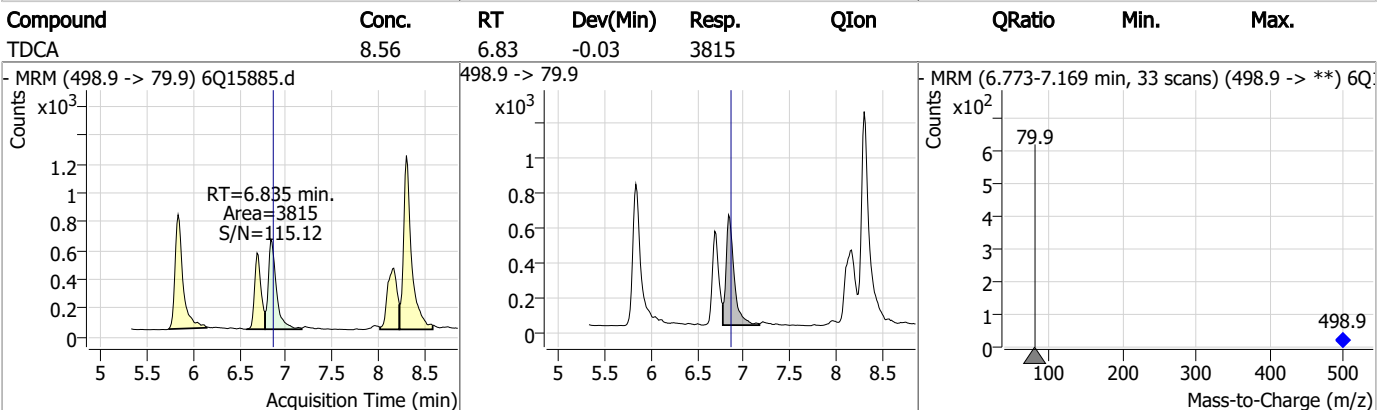
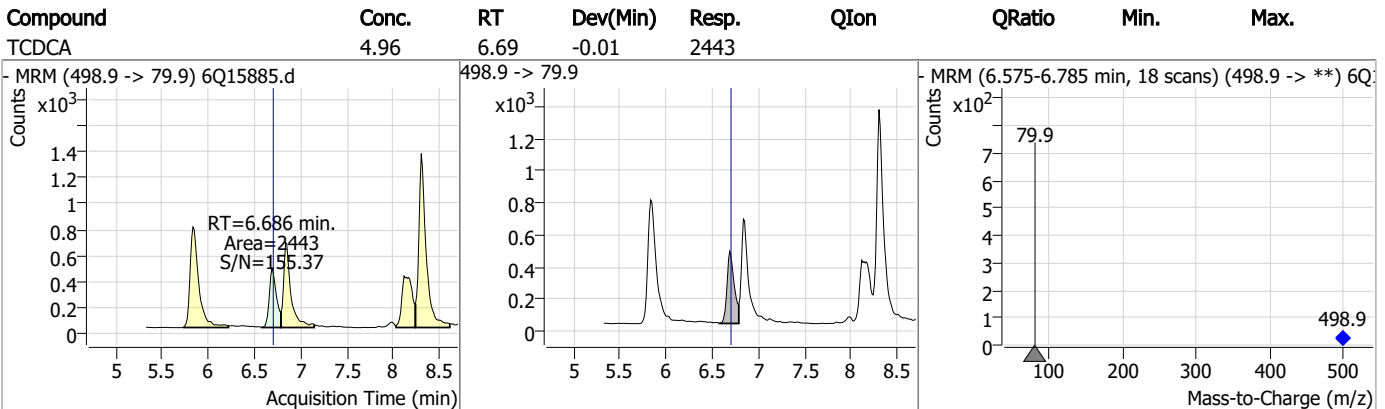
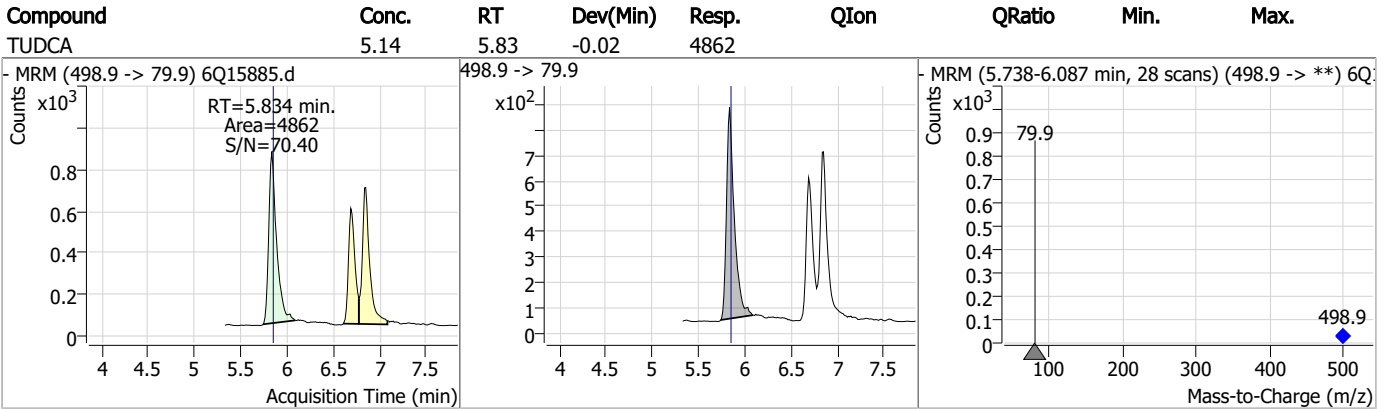
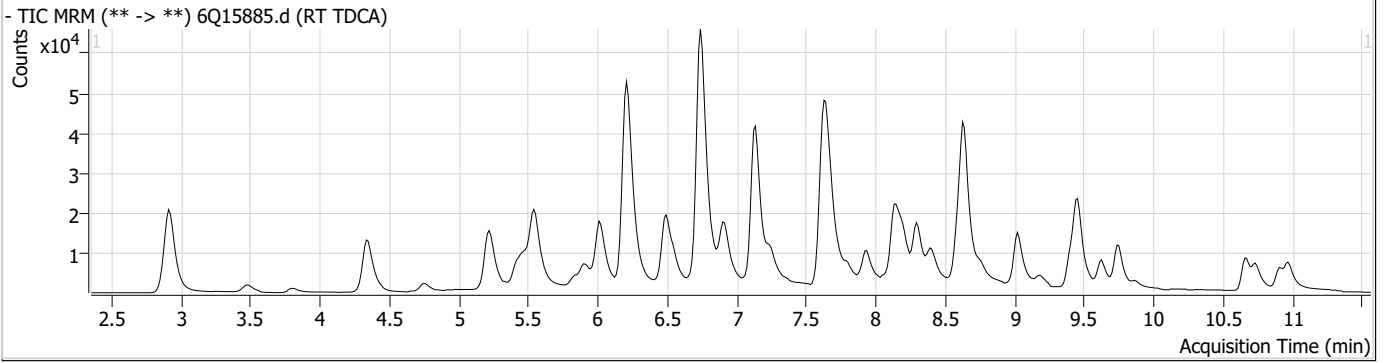
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.5

7

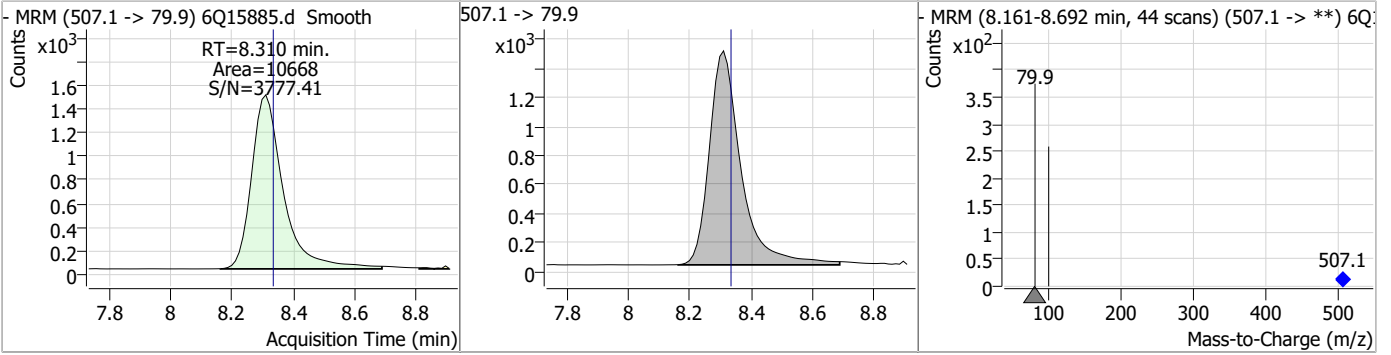


Perfluorinated Compounds by LC/MS/MS

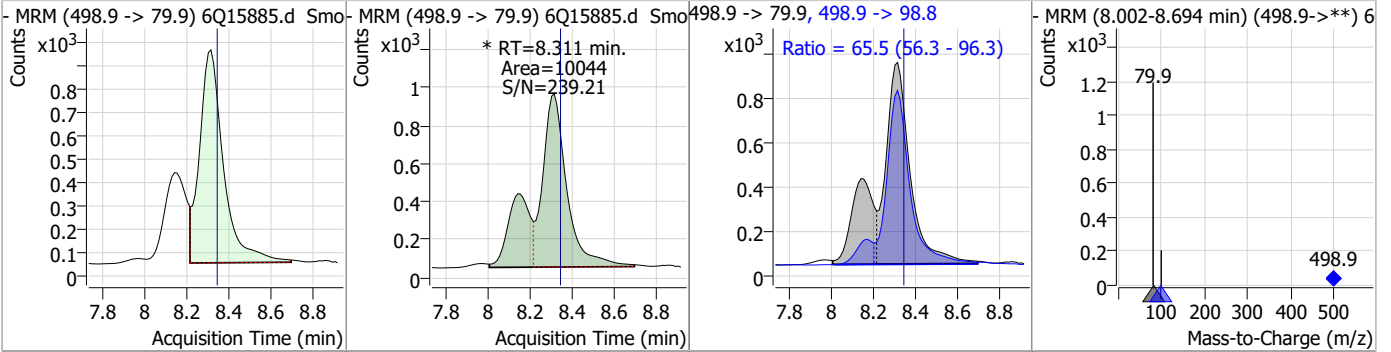


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.15	8.31	-0.02	10668				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.76	8.31	-0.02	10044 (m)	498.9 -> 98.8	65.5	56.3	96.3



7.6.5

7



Manual Integration Approval Summary

Sample Number: S6Q237-RT Method: EPA DRAFT 1633
Lab FileID: 6Q15885.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/31/23 12:39 Supervisor approved: 03/31/23 16:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.6.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15886.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 12:53:50 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	70689	10.00 µg/L	0.012
M5-PFPeA	4.347	268.3 -> 223.0	34759	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	31798	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	34229	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	55705	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	17871	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15488	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	16895	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	20116	1.25 µg/L	-0.013
M2-PFTeDA	9.733	715.2 -> 670.0	12237	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	15481	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12618	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	7877	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7571	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2103	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2632	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2572	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	23224	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	13407	10.00 µg/L	0.000
M5-EtFOSAA	8.387	589.2 -> 419.0	21363	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	21774	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	14449	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	5764	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5371	2.50 µg/L	0.000
13C4-PFOS	8.298	502.8 -> 79.9	8854	2.50 µg/L	-0.012
13C3-PFBA	2.916	216.0 -> 172.0	30878	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	5968	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	66573	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21049	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17123	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	32077	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2103	5.41 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2632	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2572	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C2-PFDoDA	9.019	615.1 -> 570.0	20116	1.18 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-PFTeDA	9.733	715.2 -> 670.0	12237	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFBS	5.483	302.1 -> 79.9	12618	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFHxS	7.252	402.1 -> 79.9	7877	2.34 µg/L	-0.012

7.6.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C4-PFBA	2.926	216.8 -> 171.9	70689	9.91 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C4-PFHpA	6.493	367.1 -> 322.0	34229	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C5-PFHxA	5.553	318.0 -> 273.0	31798	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C5-PFPeA	4.347	268.3 -> 223.0	34759	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C6-PFDA	8.147	519.1 -> 474.1	15488	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C7-PFUnDA	8.589	570.0 -> 525.1	16895	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C8-FOSA	9.631	506.1 -> 77.8	15481	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
13C8-PFOA	7.137	421.1 -> 376.0	55705	2.52 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C8-PFOS	8.310	507.1 -> 79.9	7571	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C9-PFNA	7.667	472.1 -> 427.0	17871	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.8%		
d3-MeFOSAA	8.192	573.2 -> 419.0	23224	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13407	9.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.1%		
d3-MeFOSA	10.745	515.0 -> 219.0	5371	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
d5-EtFOSAA	8.387	589.2 -> 419.0	21363	5.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	21774	23.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 93.6%		
d9-EtFOSE	10.900	639.2 -> 58.9	14449	23.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.7%		
d5-EtFOSA	10.978	531.1 -> 219.0	5764	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.2%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	208426	47.48 µg/L	98
		327.1 -> 80.9	47527		
6:2FTS	6.911	427.1 -> 407.0	194451	55.09 µg/L	94
		427.1 -> 80.9	37229		
8:2FTS	7.936	527.1 -> 507.0	95334	50.96 µg/L	91
		527.1 -> 80.8	25703		
EtFOSAA	8.401	584.2 -> 419.1	40857	12.40 µg/L	93
		584.2 -> 526.0	22948		
FOSA	9.634	498.1 -> 77.9	175954	32.08 µg/L	99
		498.1 -> 478.0	6326		
MeFOSAA	8.193	570.1 -> 419.0	58122	13.58 µg/L	99
		570.1 -> 483.0	9979		
PFBA	2.919	212.8 -> 168.9	87847	54.66 µg/L	100
PFBS	5.484	298.7 -> 79.9	55201	11.33 µg/L	98
		298.7 -> 98.8	25050		
PFDA	8.148	512.9 -> 469.0	223632	12.61 µg/L	100
		512.9 -> 219.0	30426		
PFDoDA	9.019	613.1 -> 569.0	201021	13.52 µg/L	99
		613.1 -> 319.0	24675		
PFDS	9.183	599.0 -> 79.9	28545	12.66 µg/L	96

7.6.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	14820			
PFHpA	6.494	363.1 -> 319.0	245352	12.26	µg/L	99
		363.1 -> 169.0	35998			
PFHpS	7.806	449.0 -> 79.9	39756	13.10	µg/L	92
		449.0 -> 98.9	19570			
PFHxA	5.556	313.0 -> 269.0	148001	12.93	µg/L	100
		313.0 -> 118.9	6107			
PFHxS	7.253	398.7 -> 79.9	43682	12.95	µg/L	m 97
		398.7 -> 98.9	23184			
PFNA	7.530	463.0 -> 419.0	319400	29.95	µg/L	m 99
		463.0 -> 219.0	67955			
PFNS	8.763	548.8 -> 79.9	42837	13.48	µg/L	99
		548.8 -> 98.9	21116			
PFOA	7.138	413.0 -> 369.0	703720	29.64	µg/L	m 100
		413.0 -> 169.0	93549			
PFOS	8.299	498.9 -> 79.9	38848	12.25	µg/L	m 82
		498.9 -> 98.8	25026			
PFPeA	4.349	263.0 -> 219.0	197626	26.82	µg/L	100
PFPeS	6.558	349.1 -> 79.9	51986	13.46	µg/L	96
		349.1 -> 98.9	27207			
PFTeDA	9.734	713.1 -> 669.0	173702	12.53	µg/L	99
		713.1 -> 168.9	11311			
PFTrDA	9.403	663.0 -> 619.0	186358	14.16	µg/L	100
		663.0 -> 168.9	14543			
PFUnDA	8.589	563.1 -> 519.0	183164	12.74	µg/L	99
		563.1 -> 269.1	26261			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	390746	50.88	µg/L	93
		632.9 -> 452.9	124561			
9Cl-PF3ONS	8.628	530.8 -> 351.0	733711	51.64	µg/L	99
		532.8 -> 353.0	232046			
ADONA	6.756	376.9 -> 250.9	1394150	49.40	µg/L	96
		376.9 -> 84.8	326643			
HFPO-DA	5.919	284.9 -> 168.9	68348	55.40	µg/L	100
		284.9 -> 184.9	8174			
3:3FTCA	3.815	241.0 -> 177.0	24035	61.38	µg/L	100
		241.0 -> 117.0	3619			
5:3FTCA	6.223	341.0 -> 237.1	852947	327.02	µg/L	94
		341.0 -> 217.0	725794			
7:3FTCA	7.633	441.0 -> 316.9	424330	306.98	µg/L	99
		441.0 -> 336.9	807581			
EtFOSA	10.979	526.0 -> 219.0	86219	35.11	µg/L	84
		526.0 -> 169.0	98264			
EtFOSE	10.913	630.0 -> 58.9	77300	149.52	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	77873	33.59	µg/L	83
		511.9 -> 169.0	93474			
MeFOSE	10.666	616.1 -> 58.9	120969	153.86	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	17092	12.55	µg/L	98
		699.1 -> 98.8	9836			
NFDHA	5.435	295.0 -> 201.0	18373	27.01	µg/L	95
		295.0 -> 84.9	8630			
PFMBA	4.762	279.0 -> 85.1	58502	25.81	µg/L	100
PFMPA	3.488	229.0 -> 84.9	52661	25.83	µg/L	100
PFEESA	6.024	314.8 -> 134.9	396641	24.19	µg/L	100
		314.8 -> 82.9	10075			

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

7.6.6
7

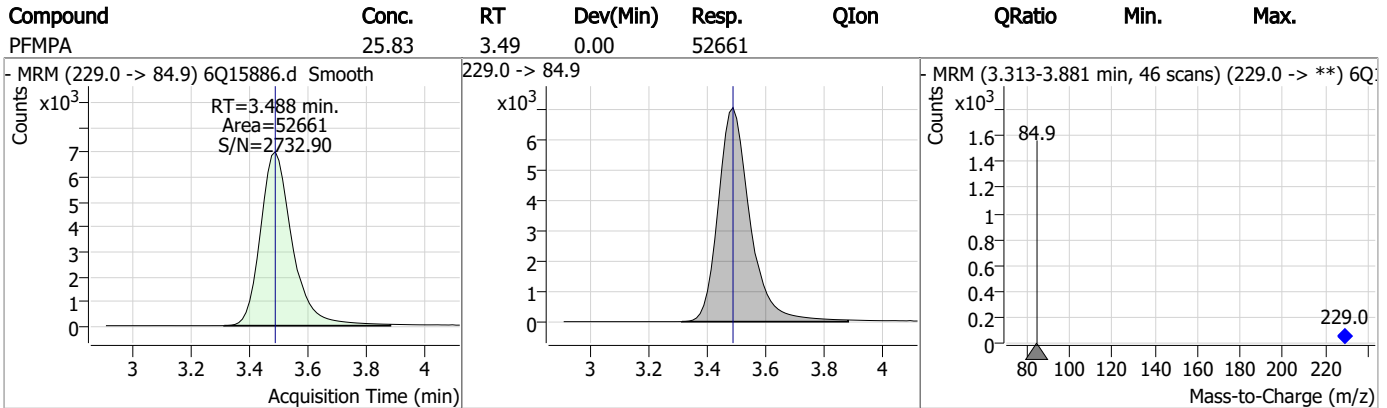
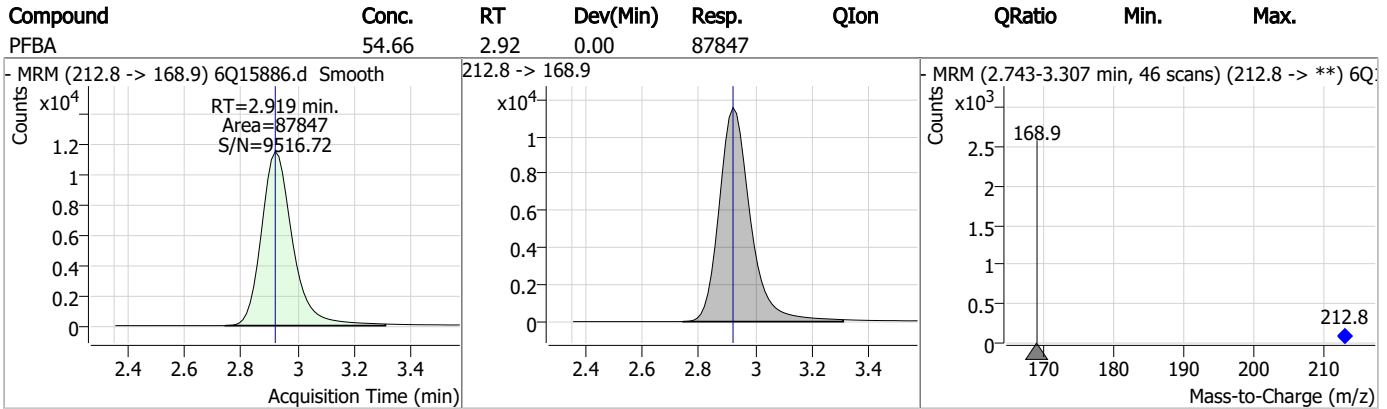
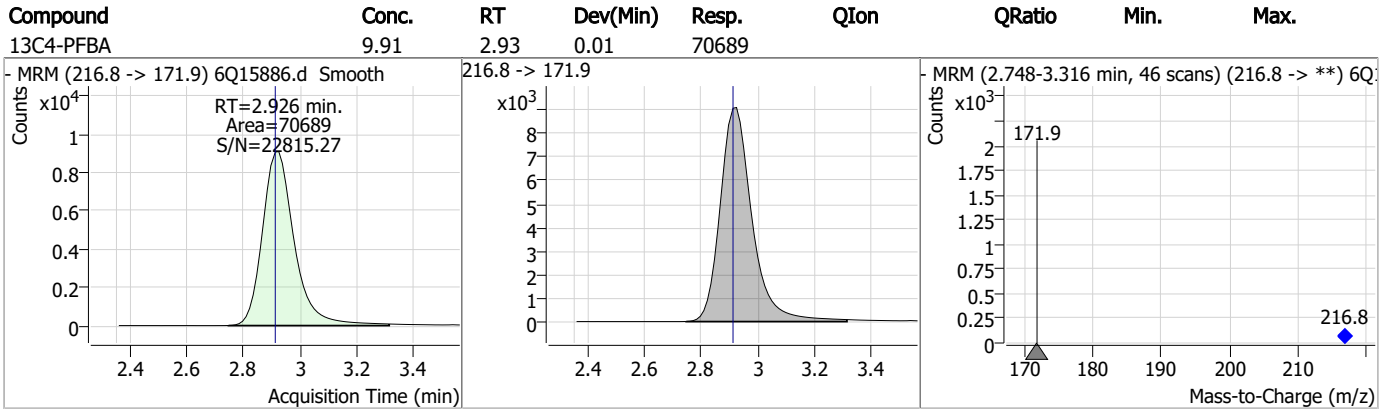
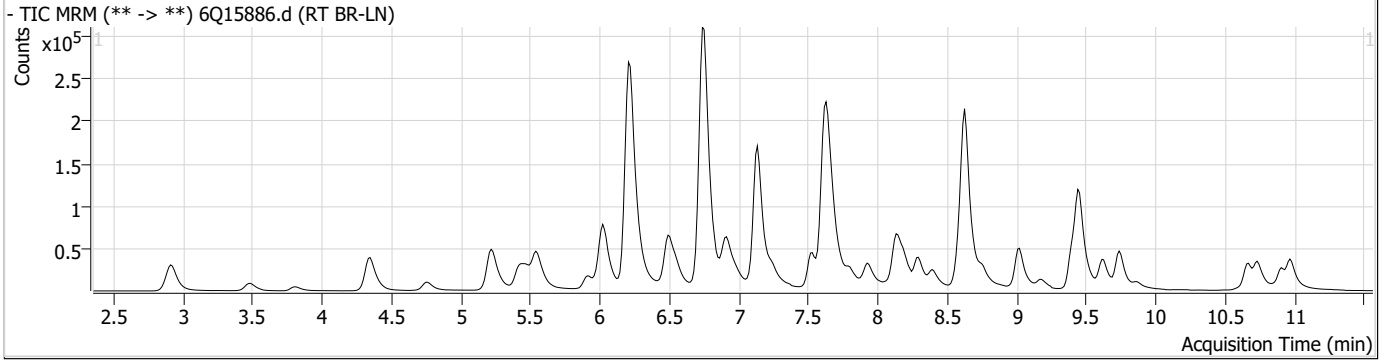
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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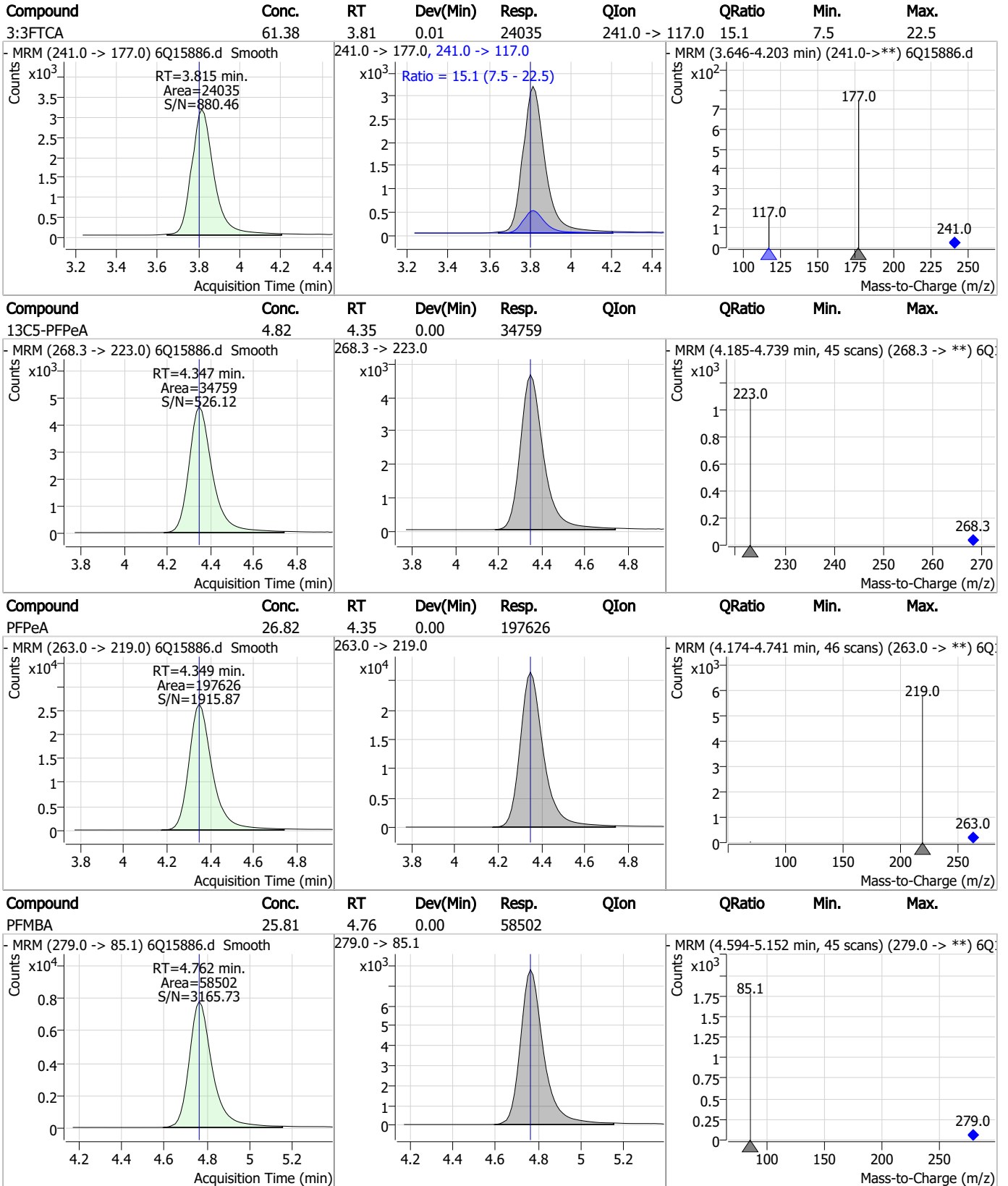
7.6.6

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

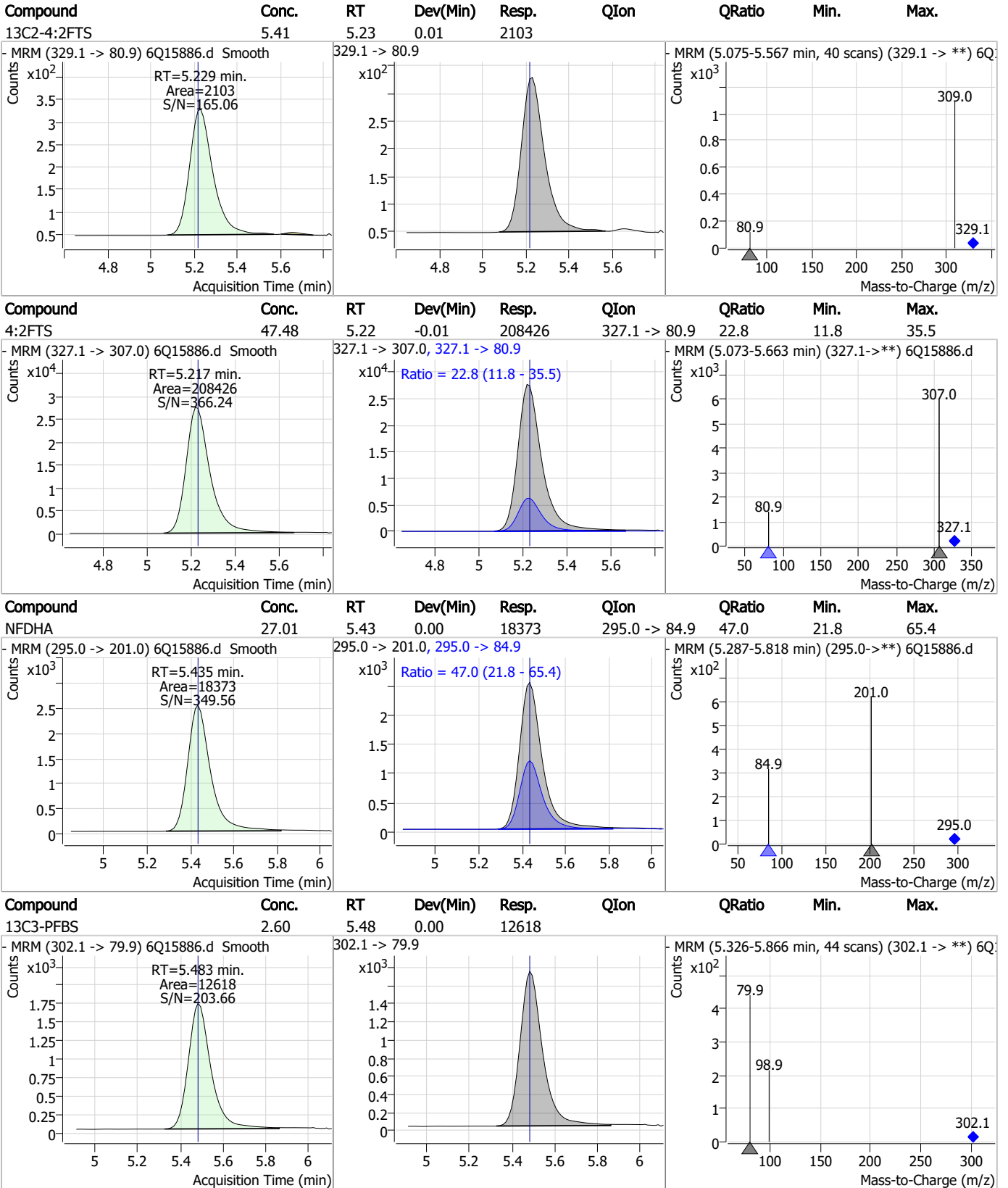


7.6.6

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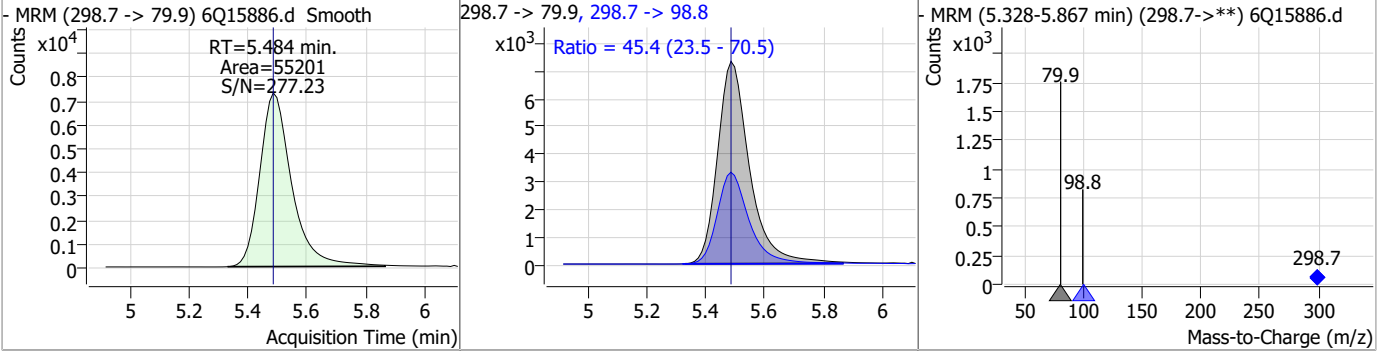


Perfluorinated Compounds by LC/MS/MS

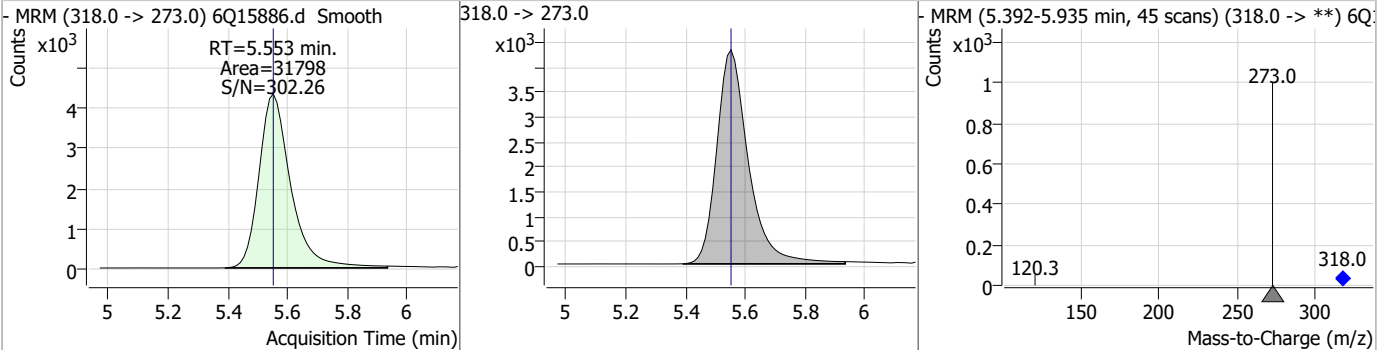


Perfluorinated Compounds by LC/MS/MS

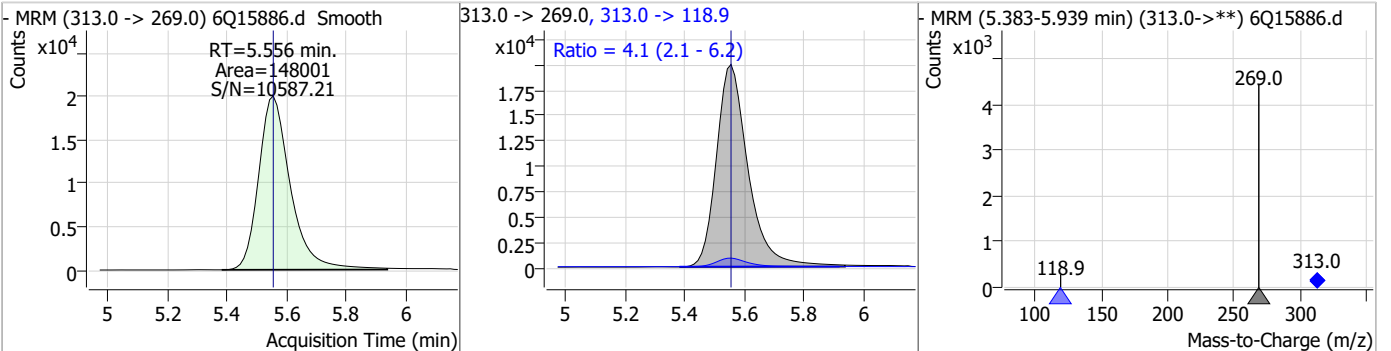
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.33	5.48	0.00	55201	298.7 -> 98.8	45.4	23.5	70.5



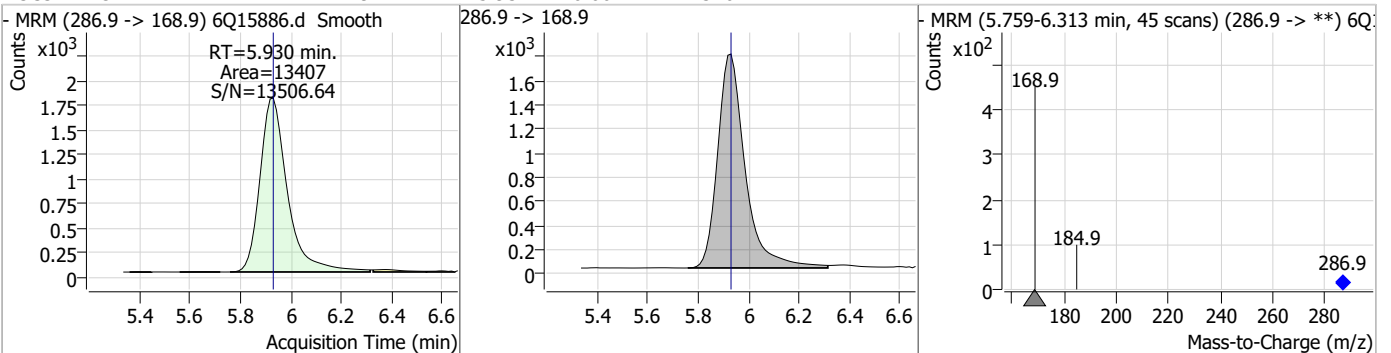
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.55	0.00	31798				



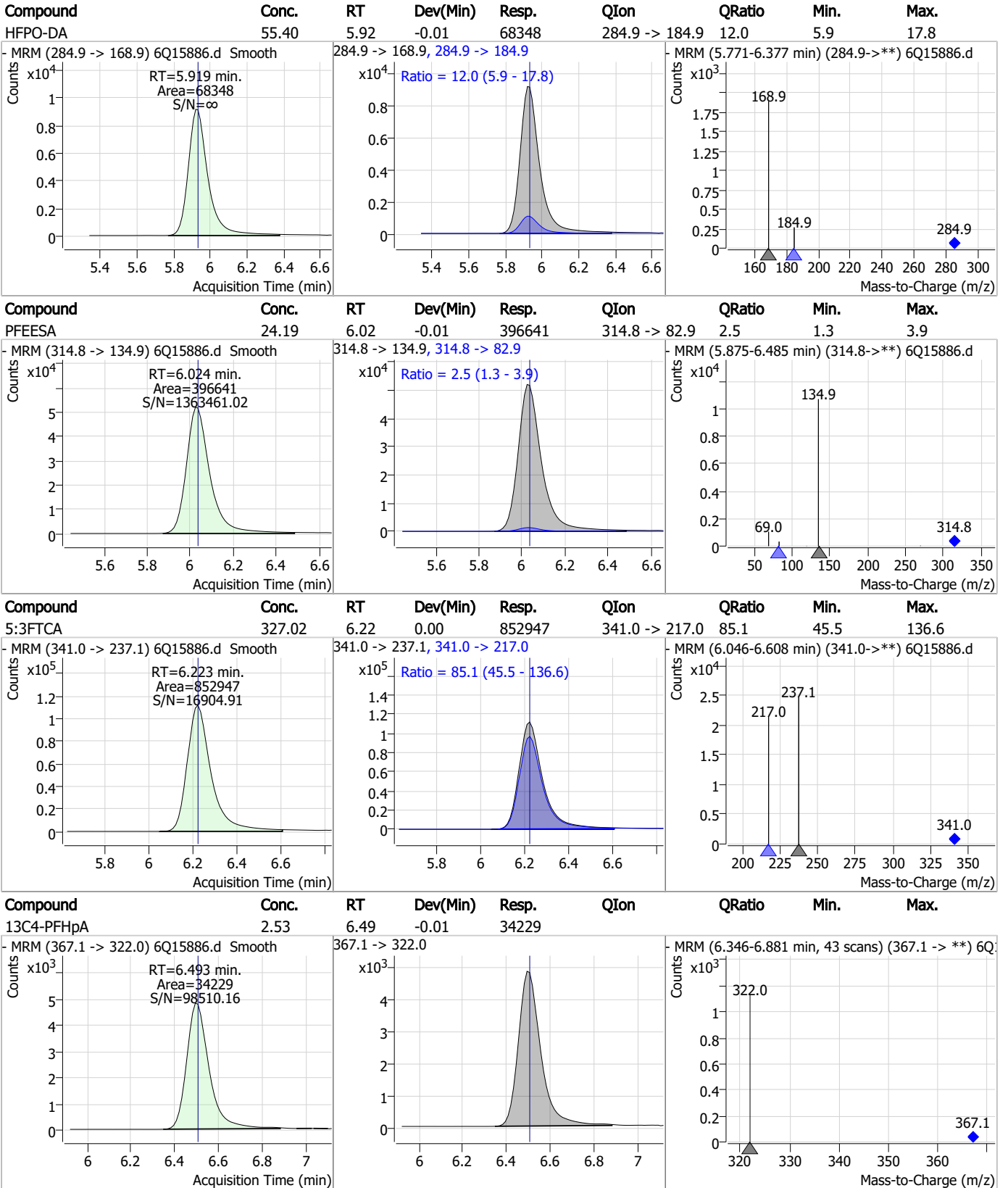
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.93	5.56	0.00	148001	313.0 -> 118.9	4.1	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.71	5.93	0.00	13407				



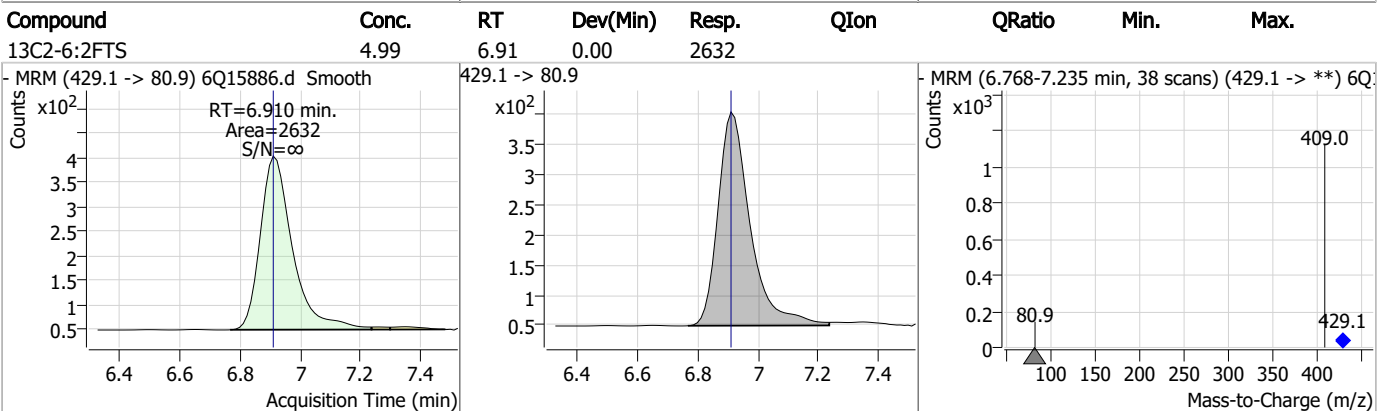
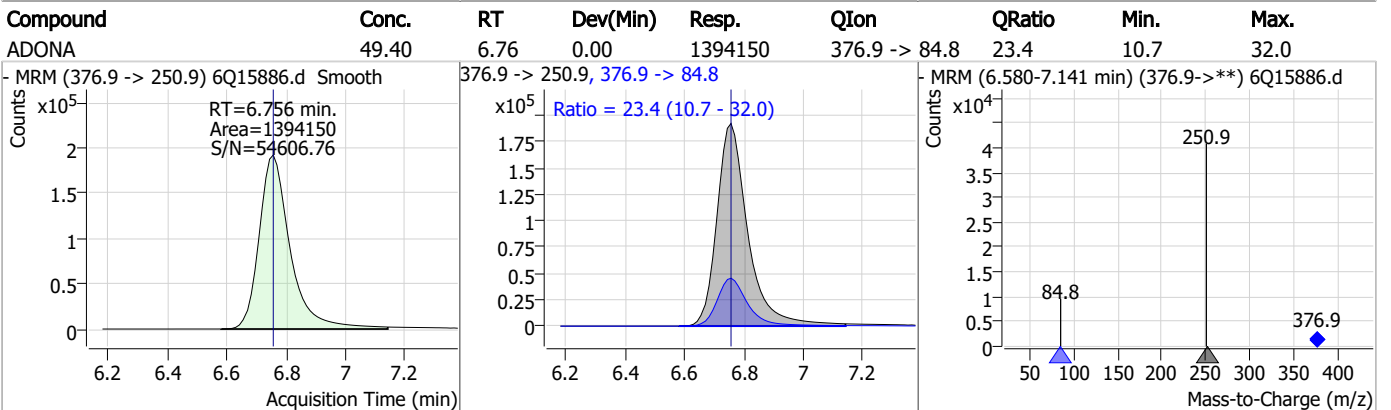
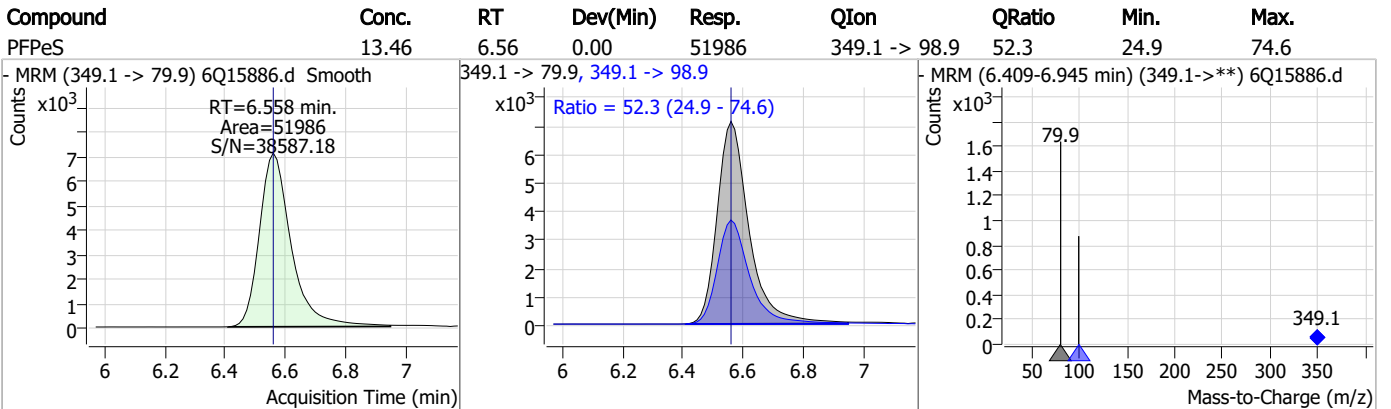
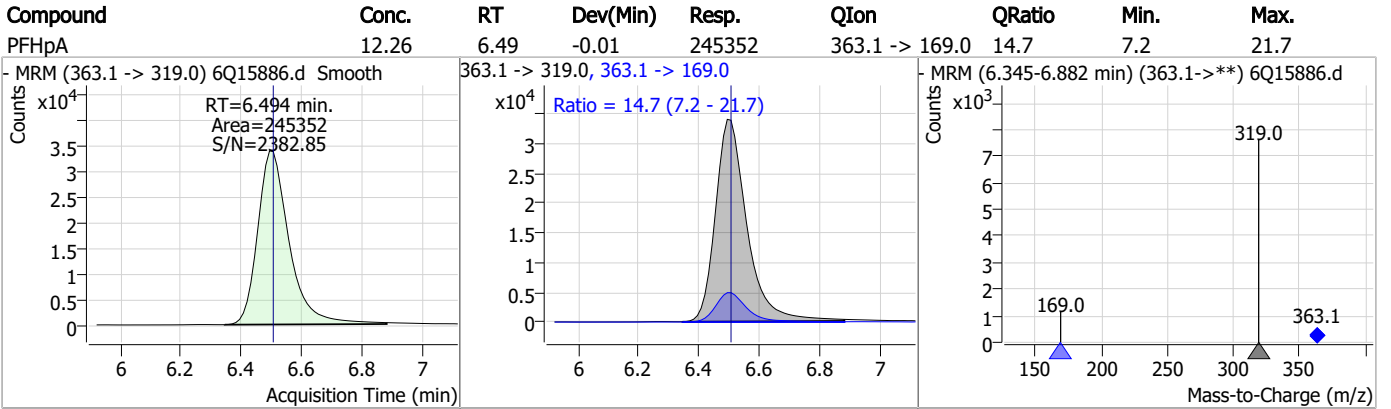
Perfluorinated Compounds by LC/MS/MS



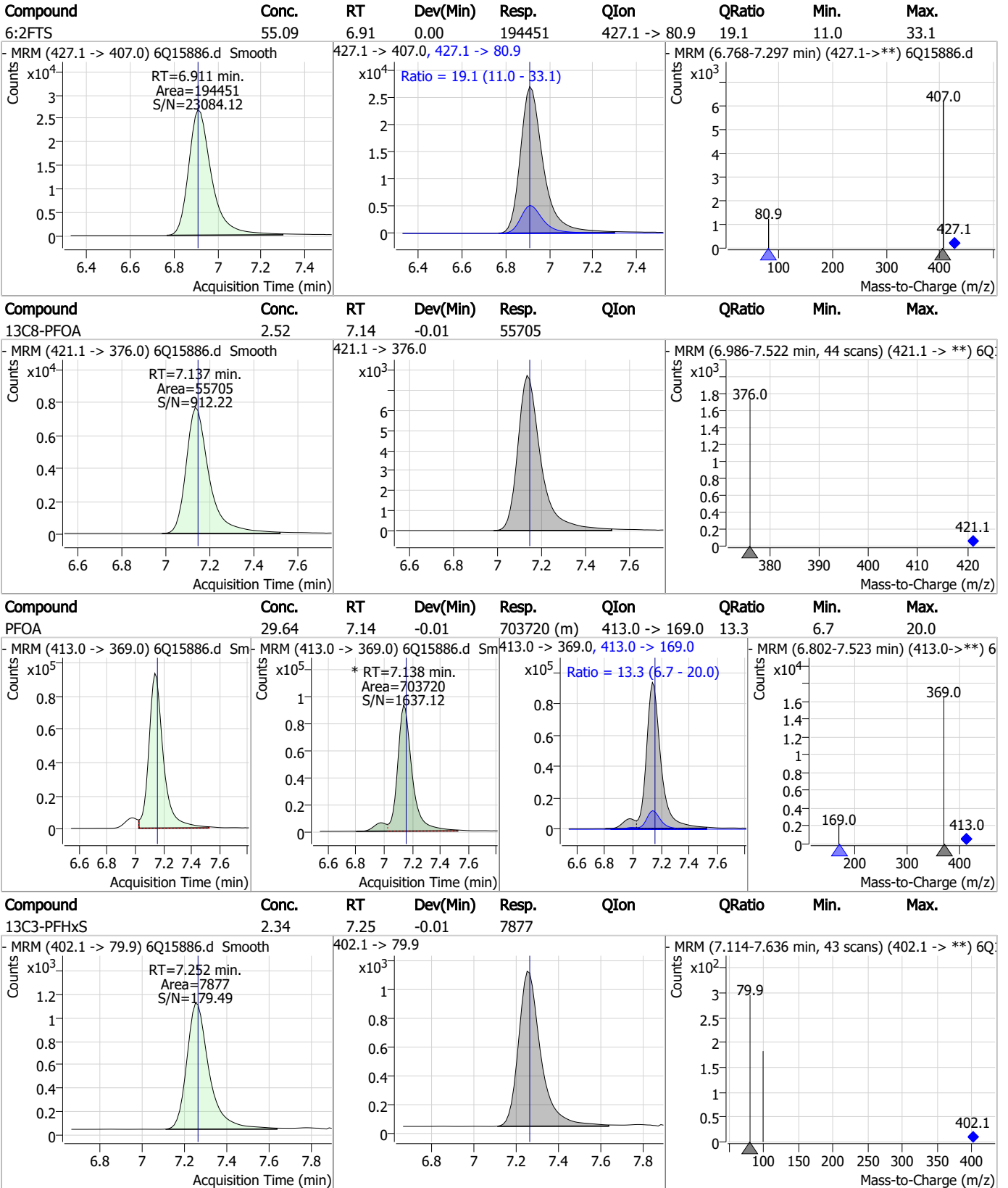
7.6.6

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

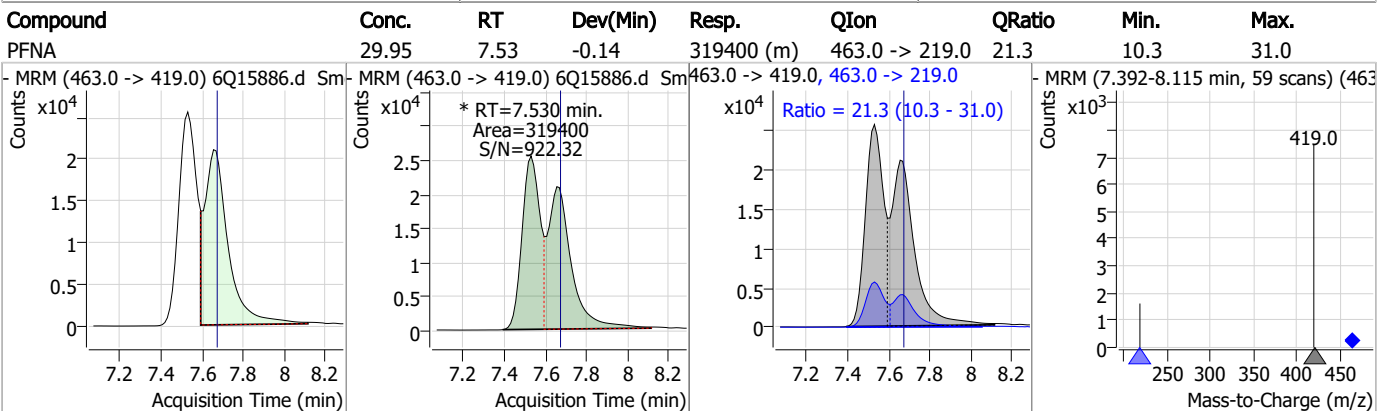
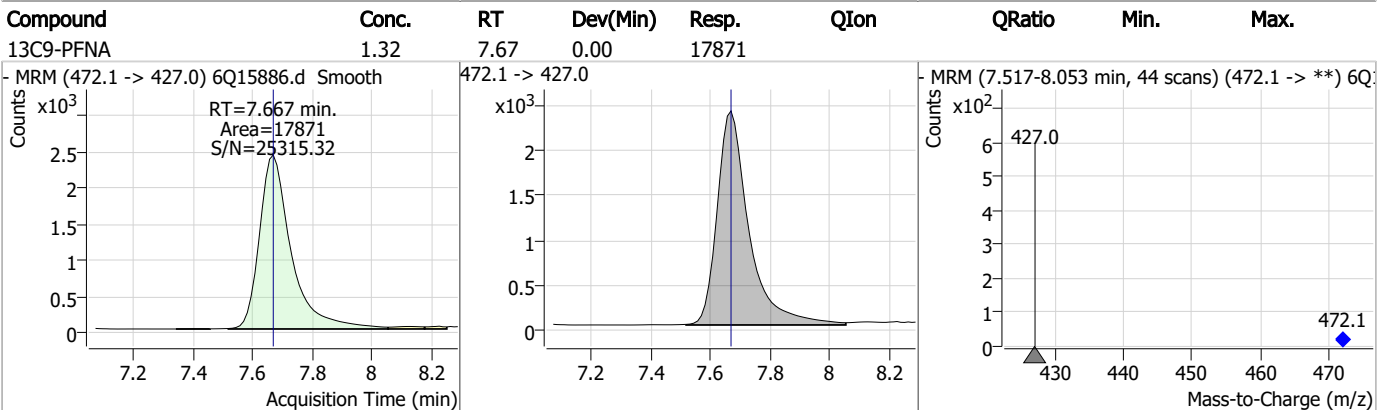
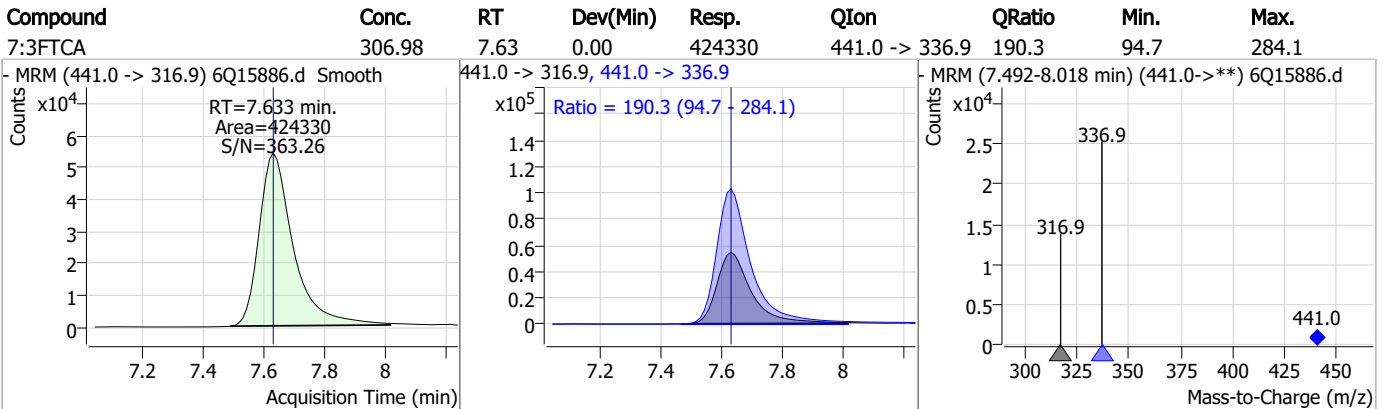
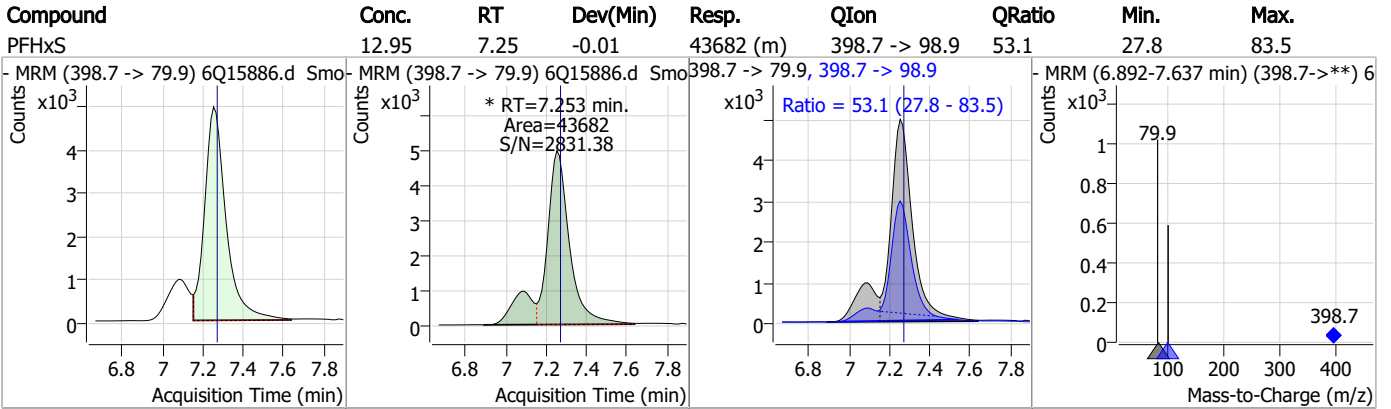


7.6.6

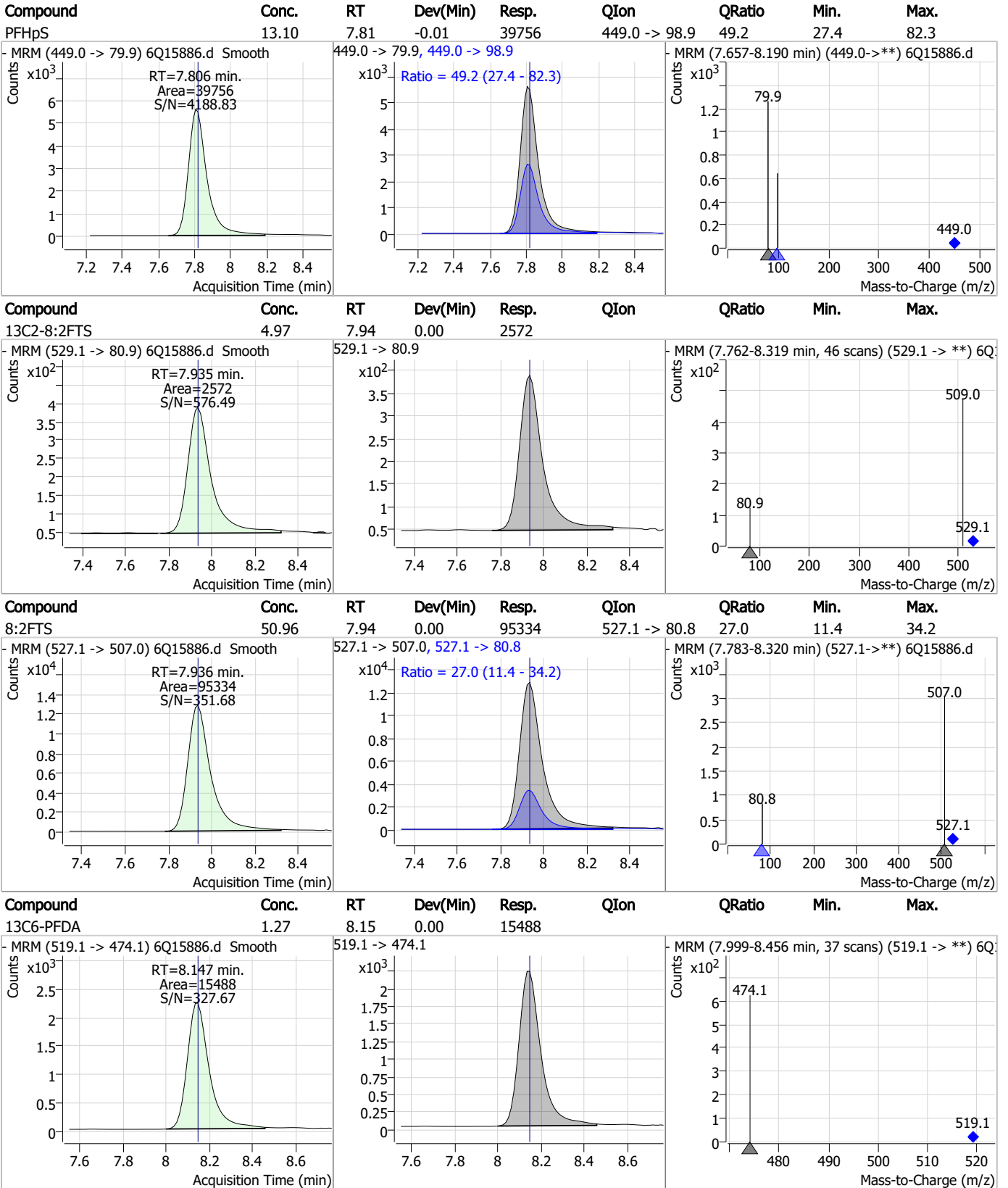
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Perfluorinated Compounds by LC/MS/MS



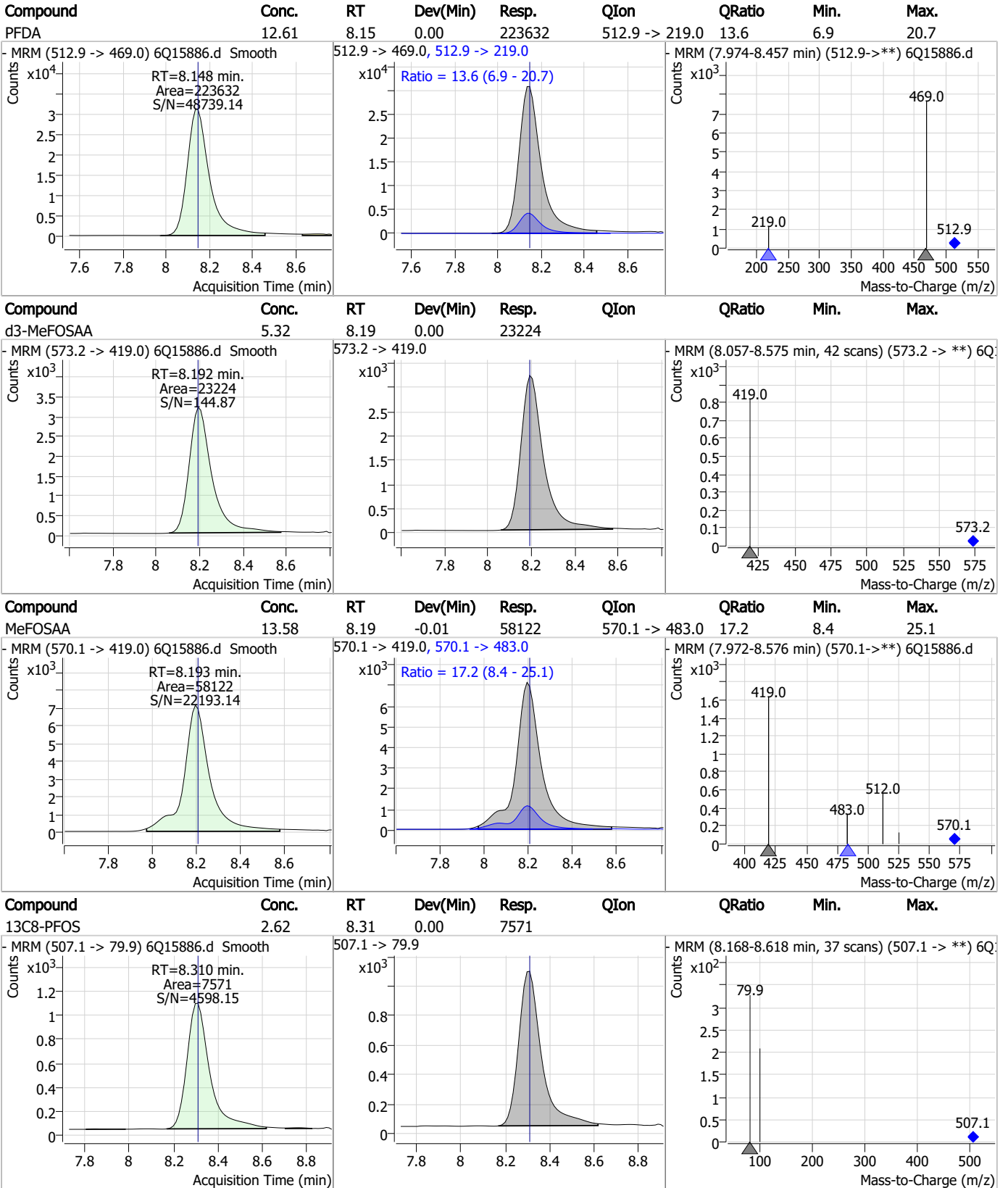
Perfluorinated Compounds by LC/MS/MS



7.6.6

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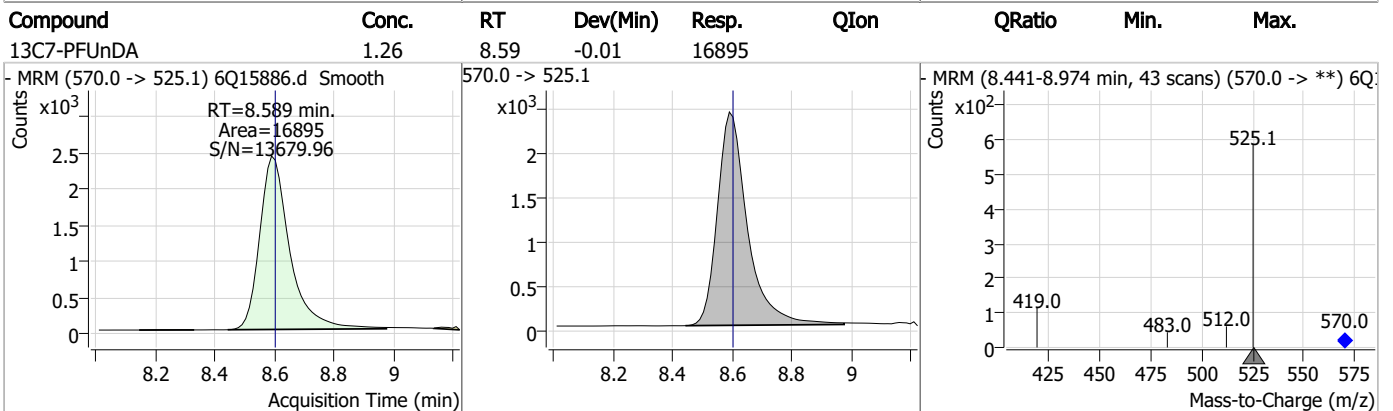
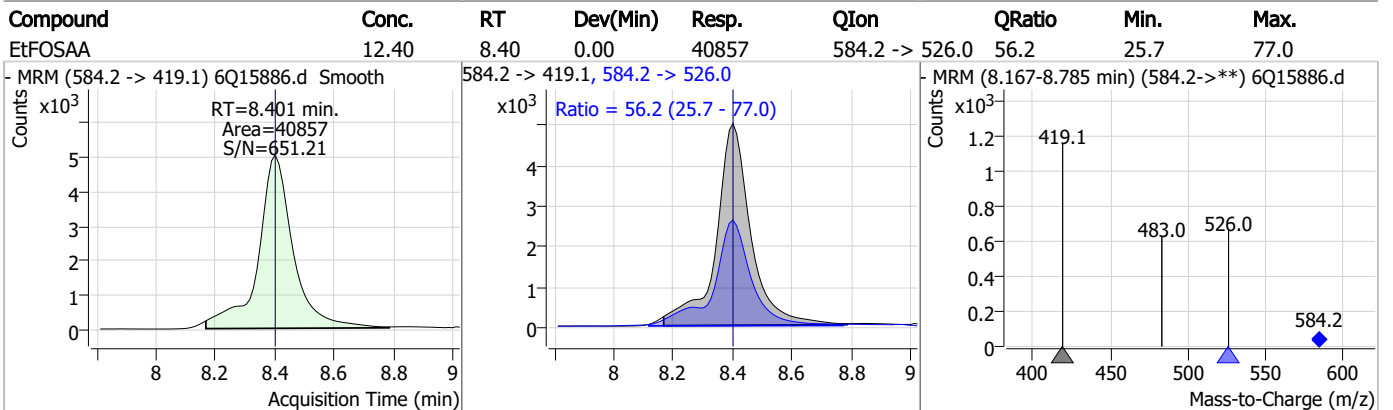
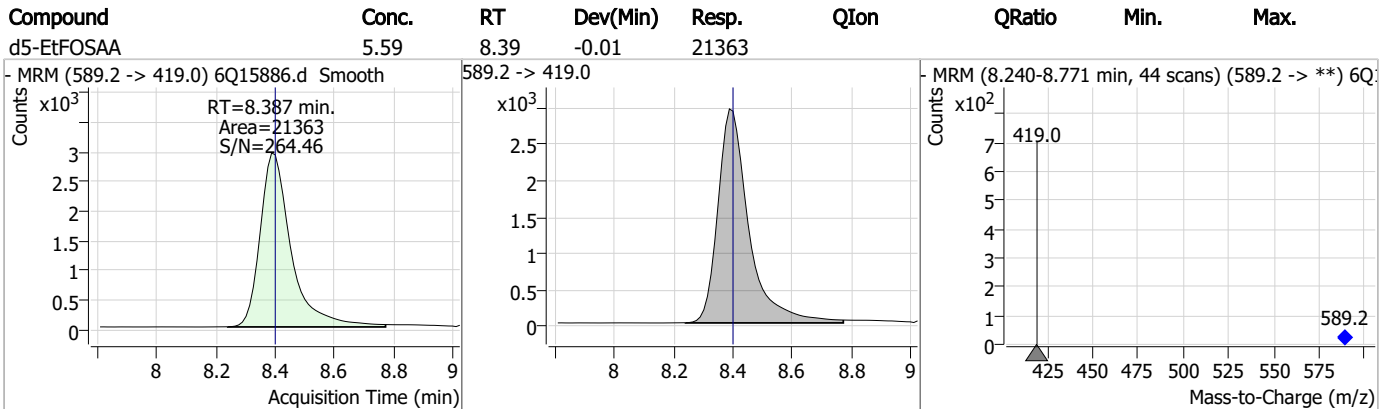
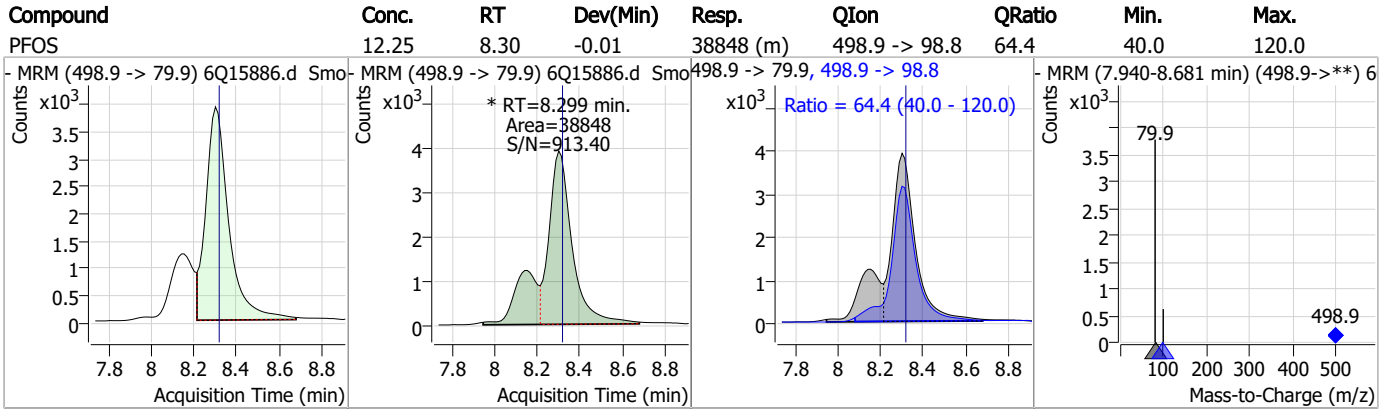
Perfluorinated Compounds by LC/MS/MS



7.6.6

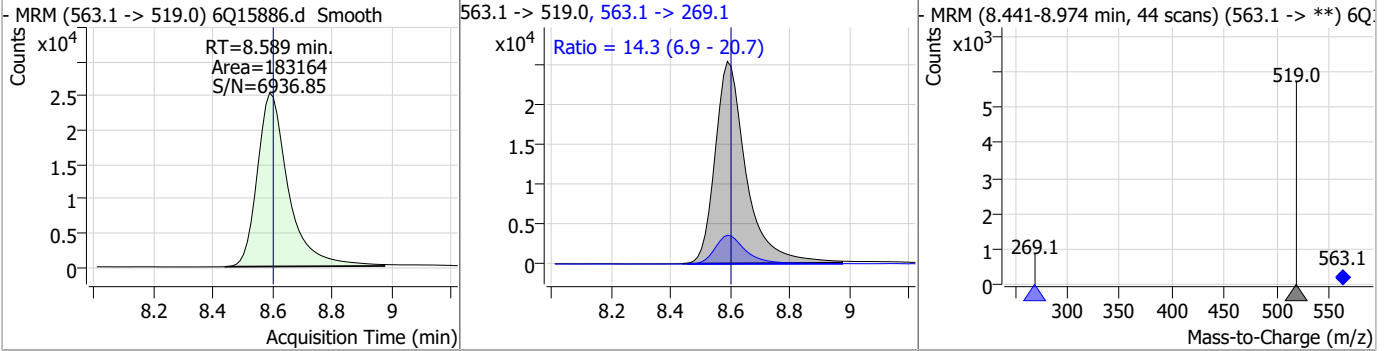
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Perfluorinated Compounds by LC/MS/MS

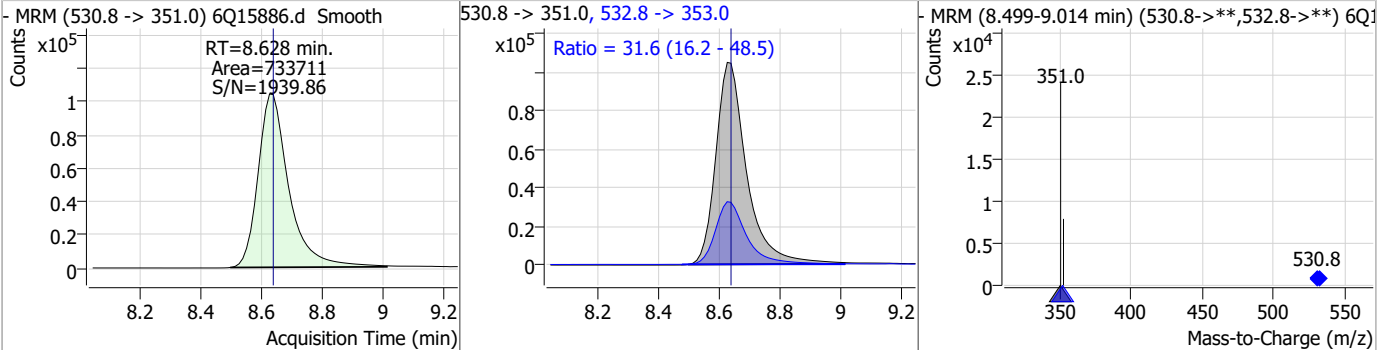


Perfluorinated Compounds by LC/MS/MS

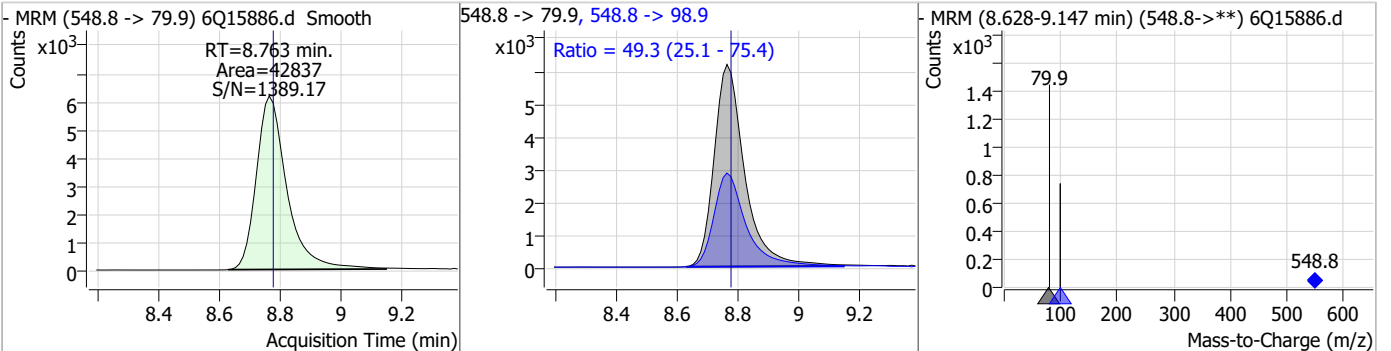
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.74	8.59	-0.01	183164	563.1 -> 269.1	14.3	6.9	20.7



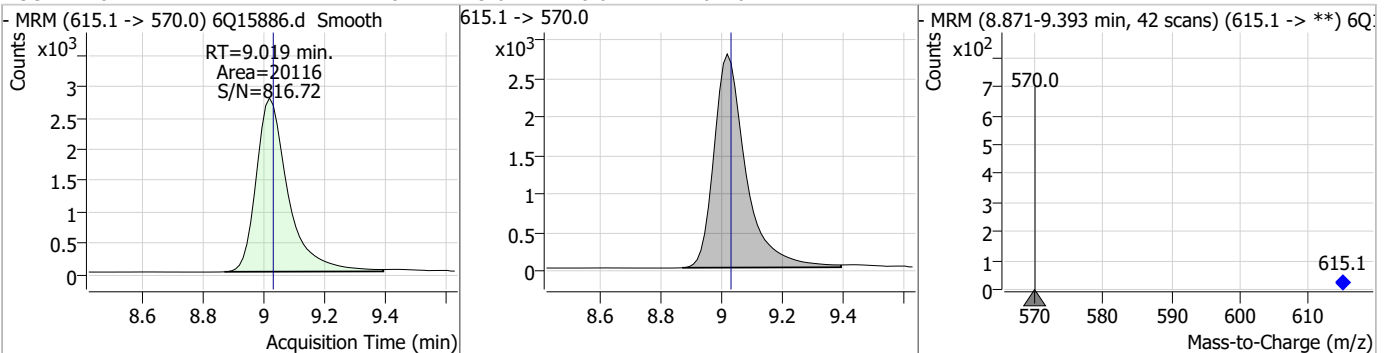
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	51.64	8.63	-0.01	733711	532.8 -> 353.0	31.6	16.2	48.5



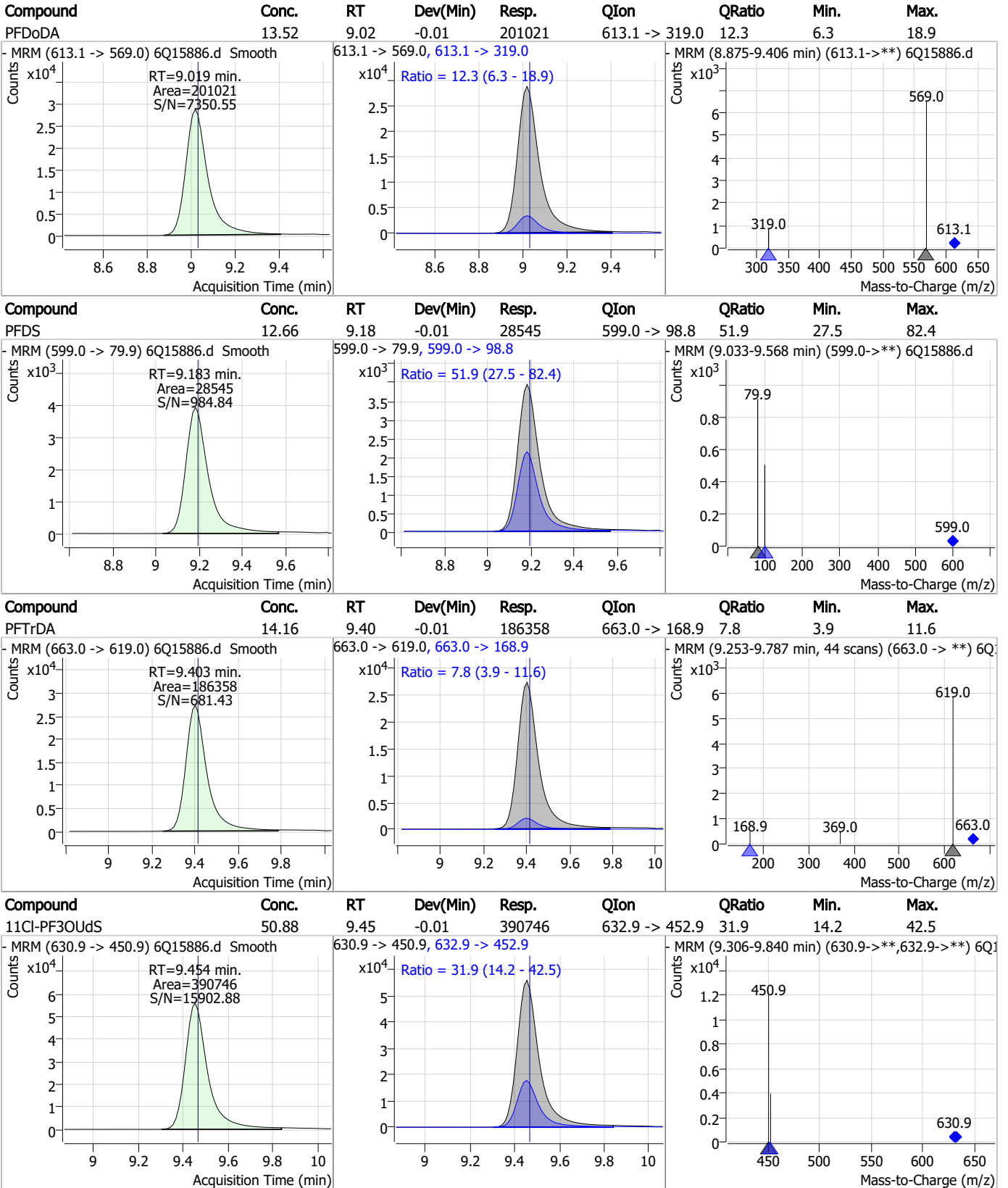
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.48	8.76	-0.01	42837	548.8 -> 98.9	49.3	25.1	75.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	9.02	-0.01	20116	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

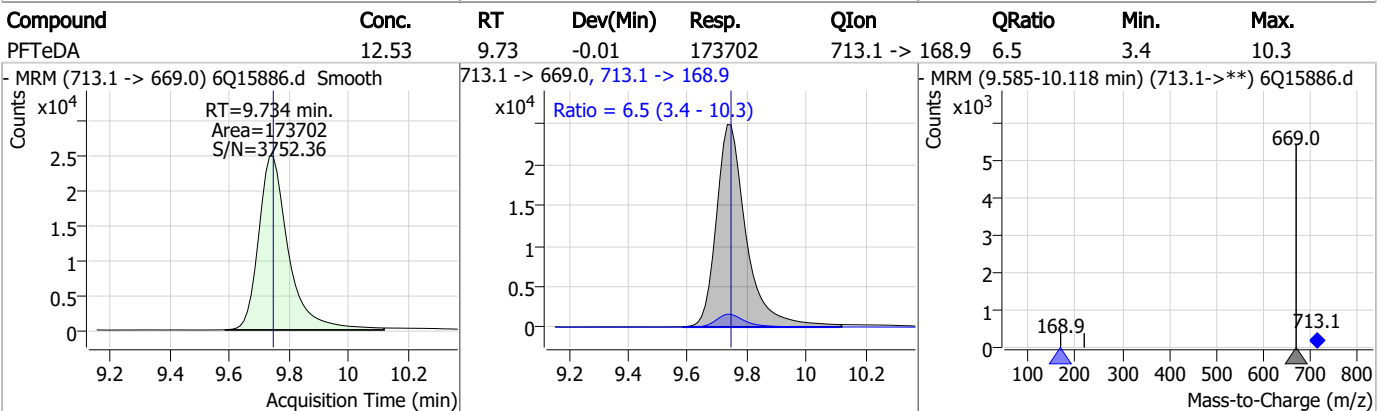
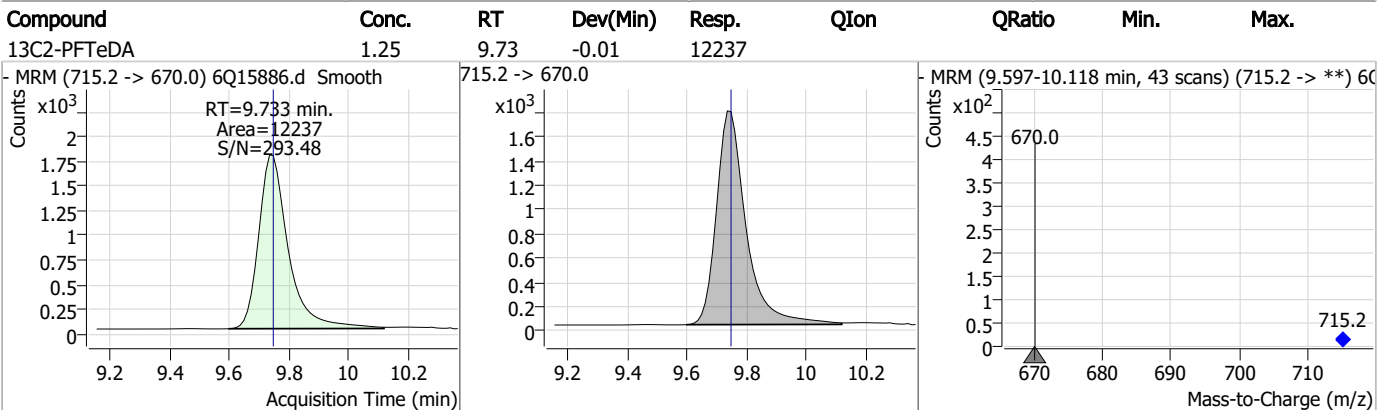
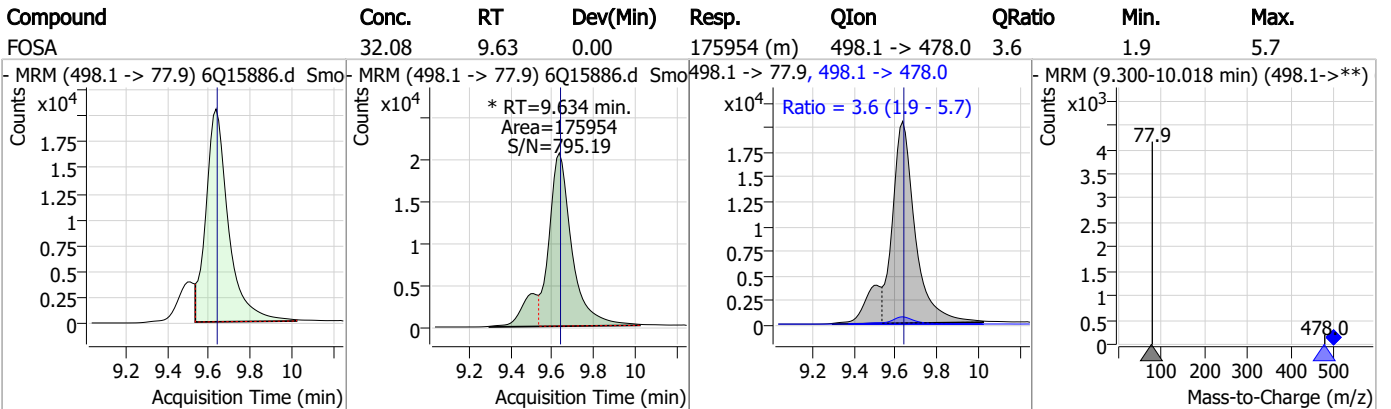
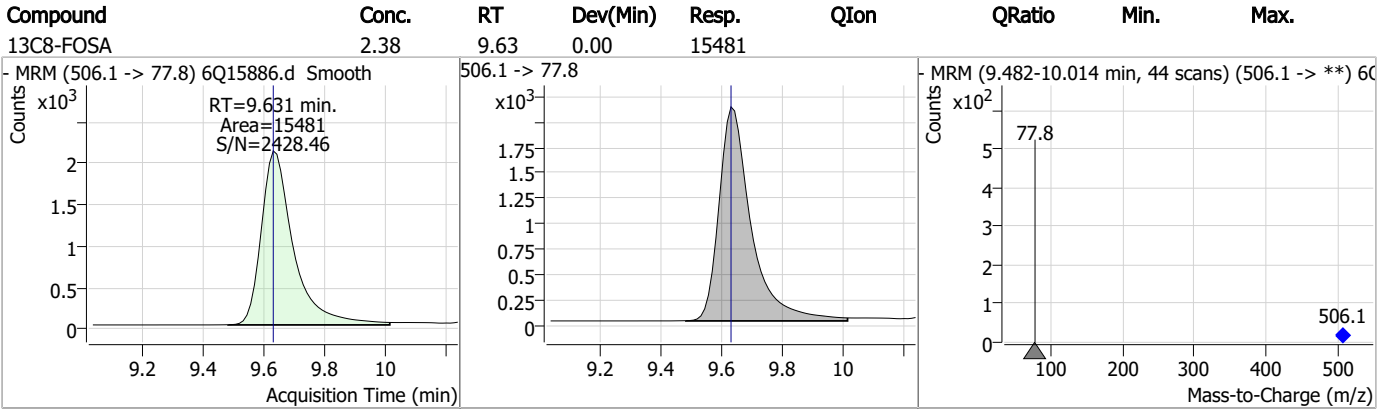


7.6.6

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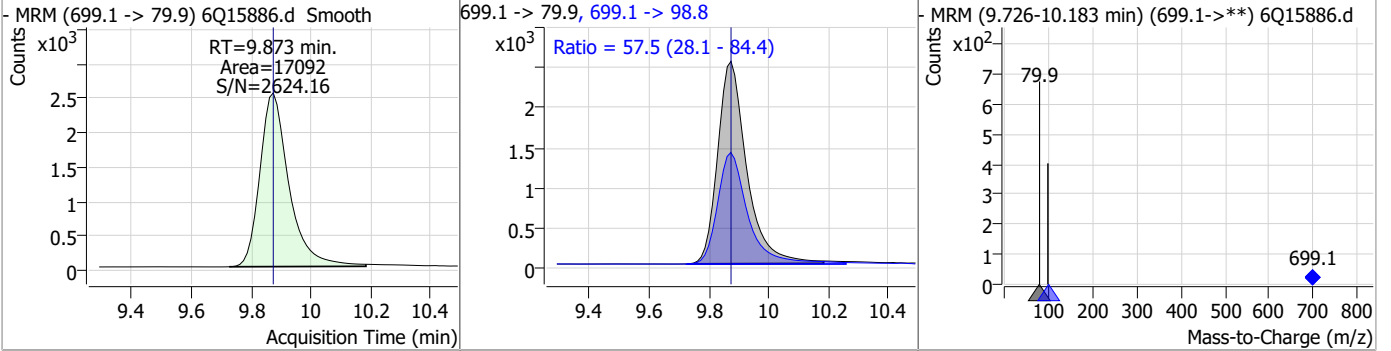


Perfluorinated Compounds by LC/MS/MS

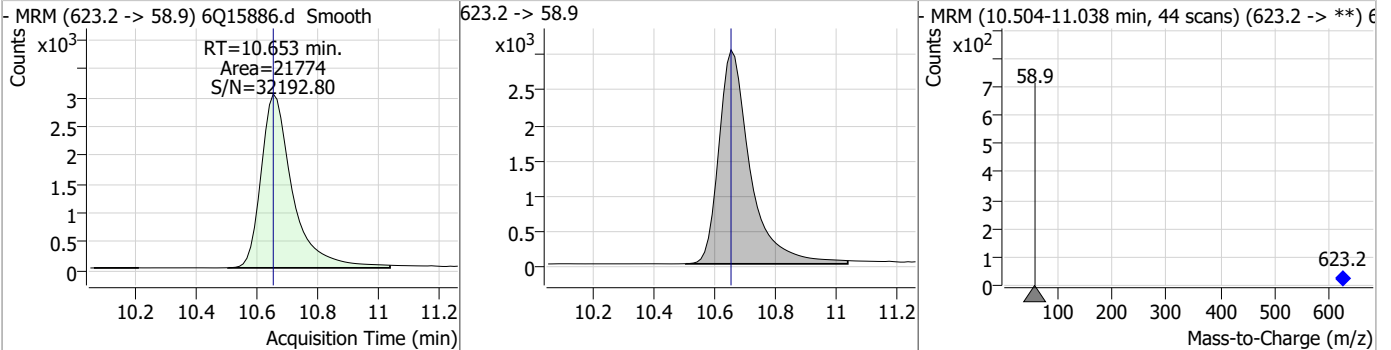


Perfluorinated Compounds by LC/MS/MS

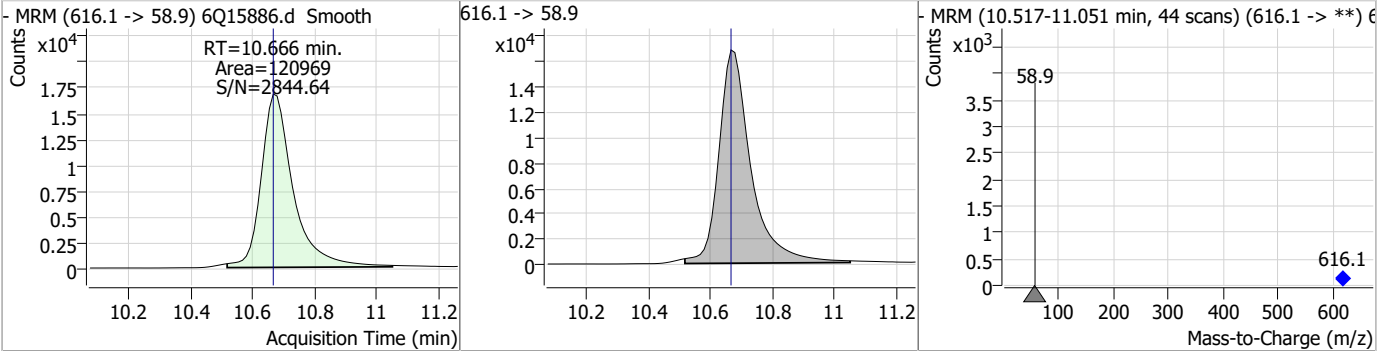
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	12.55	9.87	0.00	17092	699.1 -> 98.8	57.5	28.1	84.4



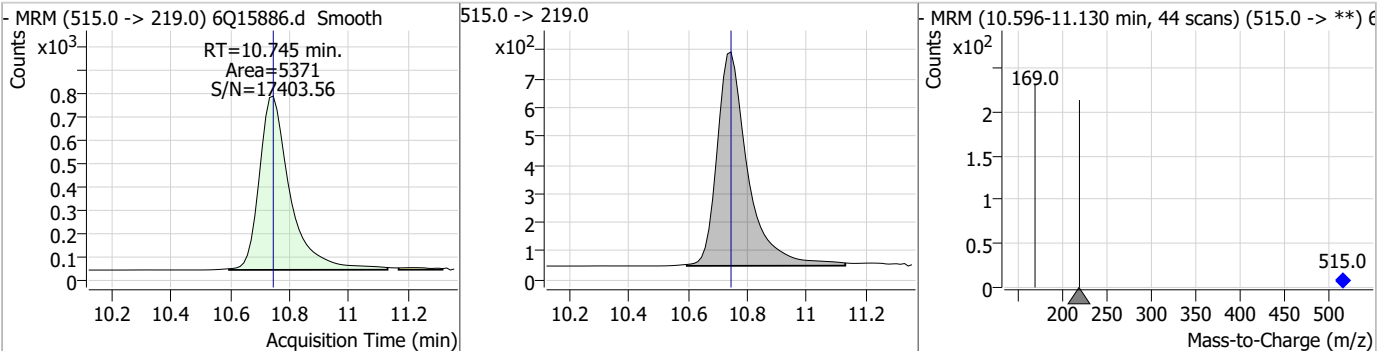
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.39	10.65	0.00	21774				



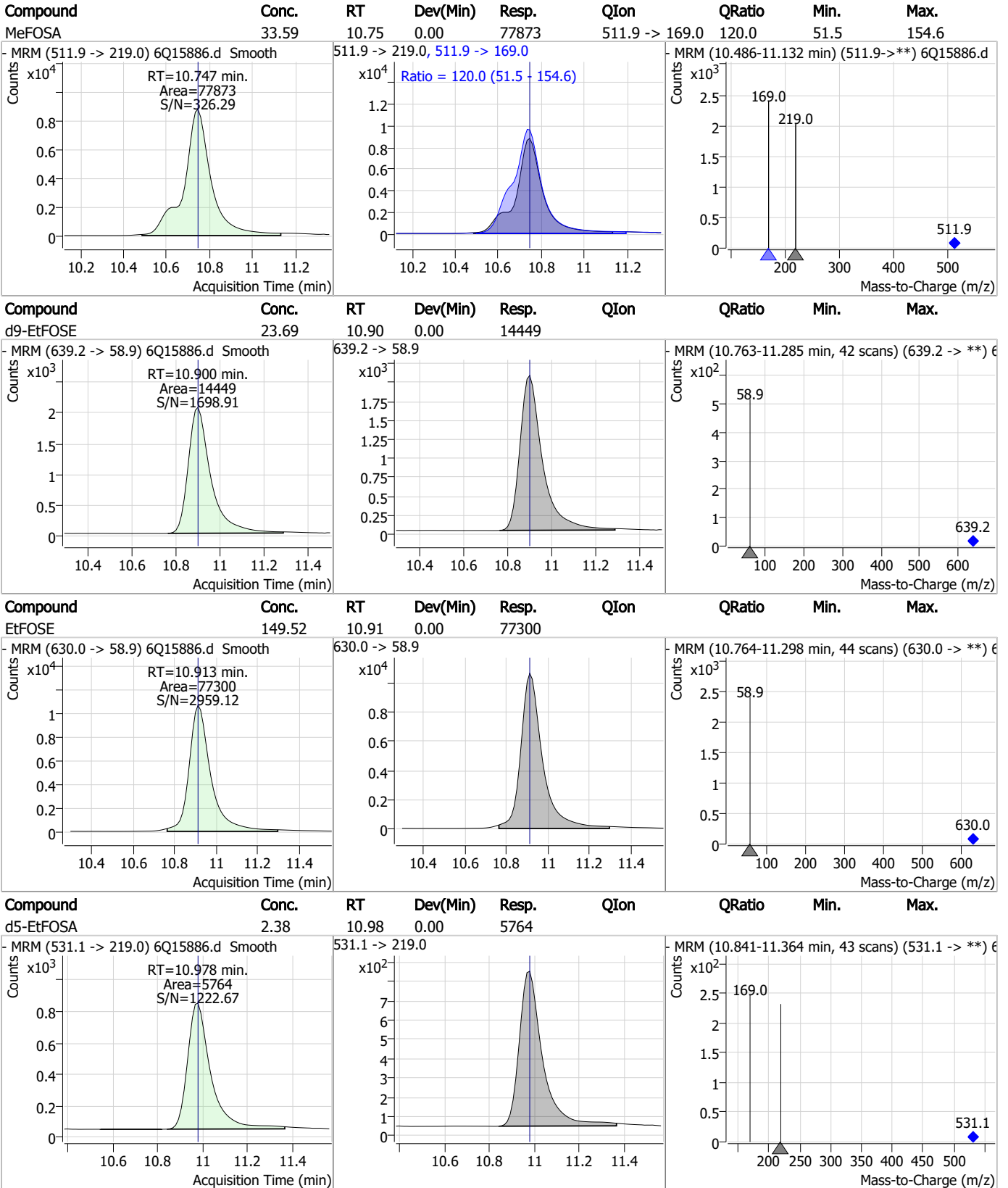
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	153.86	10.67	0.00	120969				



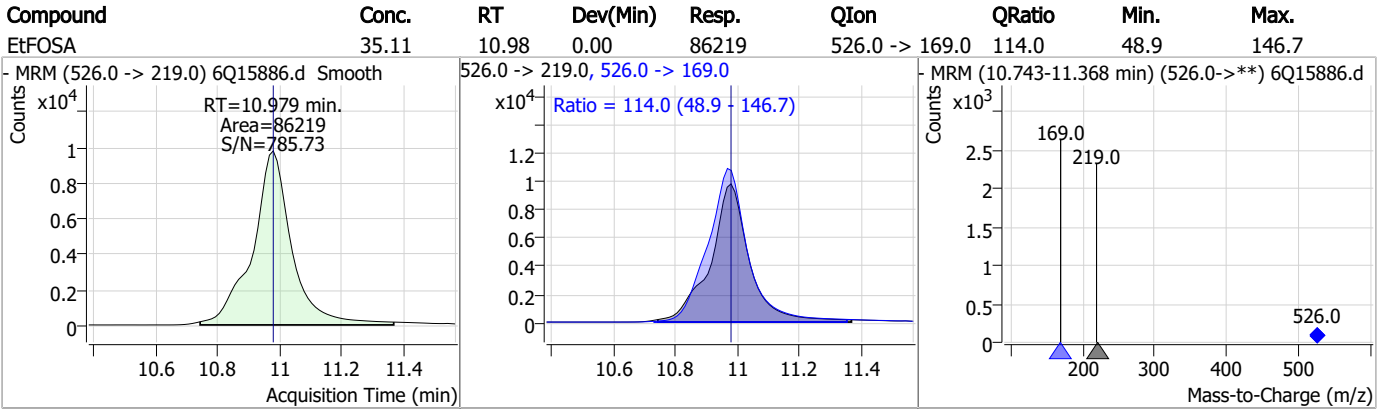
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.50	10.75	0.00	5371				



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-RT Method: EPA DRAFT 1633
Lab FileID: 6Q15886.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/31/23 12:53 Supervisor approved: 03/31/23 16:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.14	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorononanoic acid	375-95-1		7.53	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak
PFOSA	754-91-6		9.63	Split peak

7.6.6.1
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QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 27 March 2023 10:03:37
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.85E+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	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.91	-0.08	Pass	0.70	0.73	0.03	Pass	96843
302.00	301.95	-0.05	Pass	0.70	0.74	0.04	Pass	685360
601.98	601.99	0.01	Pass	0.70	0.74	0.04	Pass	2118492
1033.99	1033.90	-0.09	Pass	0.70	0.76	0.06	Pass	862152
1633.95	1633.87	-0.08	Pass	0.70	0.80	0.10	Pass	568145
2233.91	2233.92	0.01	Pass	0.70	0.71	0.01	Pass	167839

Analyzer: MS2 Polarity: Negative Width: Unit

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.04	0.04	Pass	0.70	0.63	-0.07	Pass	63654
112.99	112.98	-0.01	Pass	0.70	0.72	0.02	Pass	127677
302.00	302.01	0.01	Pass	0.70	0.68	-0.02	Pass	624308
601.98	601.94	-0.04	Pass	0.70	0.73	0.03	Pass	1528304
1033.99	1033.96	-0.03	Pass	0.70	0.73	0.03	Pass	1153296
1633.95	1633.93	-0.02	Pass	0.70	0.72	0.02	Pass	891028
2233.91	2233.85	-0.06	Pass	0.70	0.74	0.04	Pass	246558

Analyzer: MS1 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.93	-0.06	Pass	1.20	1.43	0.23	Pass	118622
302.00	301.96	-0.04	Pass	1.20	1.56	0.36	Pass	832553
601.98	601.92	-0.06	Pass	1.20	1.63	0.43	Pass	3052585
1033.99	1033.86	-0.13	Pass	1.20	1.54	0.34	Pass	1315064
1633.95	1633.84	-0.11	Pass	1.20	1.42	0.22	Pass	884073
2233.91	2233.87	-0.04	Pass	1.20	1.31	0.11	Pass	277523

Analyzer: MS2 Polarity: Negative Width: Wide

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.02	0.02	Pass	1.20	1.14	-0.06	Pass	89474
112.99	112.96	-0.03	Pass	1.20	1.20	0.00	Pass	203983
302.00	302.05	0.05	Pass	1.20	1.35	0.15	Pass	711932
601.98	602.05	0.07	Pass	1.20	1.18	-0.02	Pass	3087789
1033.99	1034.02	0.03	Pass	1.20	1.32	0.12	Pass	2601531
1633.95	1633.87	-0.08	Pass	1.20	1.48	0.28	Pass	2109758
2233.91	2233.91	0.00	Pass	1.20	1.35	0.15	Pass	695576

Analyzer: MS1 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
112.99	112.88	-0.11	Pass	2.50	2.63	0.13	Pass	142942
302.00	301.88	-0.12	Pass	2.50	2.85	0.35	Pass	1062976
601.98	601.74	-0.24	Pass	2.50	2.91	0.41	Pass	3908058
1033.99	1033.81	-0.18	Pass	2.50	2.71	0.21	Pass	2027008
1633.95	1633.77	-0.18	Pass	2.50	2.62	0.12	Pass	1994937
2233.91	2233.61	-0.30	Pass	2.50	2.37	-0.13	Pass	771353

Analyzer: MS2 Polarity: Negative Width: Widest

m/z	m/z	Delta	Result	FWHM	FWHM	Delta	Result	Abundance
Expected	Measured			Expected	Measured			
69.00	69.02	0.02	Pass	2.50	2.58	0.08	Pass	117085
112.99	113.03	0.04	Pass	2.50	2.59	0.09	Pass	279984
302.00	301.97	-0.03	Pass	2.50	2.76	0.26	Pass	1147206
601.98	602.05	0.07	Pass	2.50	2.75	0.25	Pass	3989507
1033.99	1033.92	-0.07	Pass	2.50	2.81	0.31	Pass	4952754
1633.95	1634.01	0.06	Pass	2.50	2.76	0.26	Pass	3897749
2233.91	2233.79	-0.12	Pass	2.50	2.53	0.03	Pass	1720347

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15593.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 4:20:50 PM
 Sample Name : ic235-1
 Vial : P1-A2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	79026	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	38480	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	36346	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	37073	2.50 µg/L	-0.012
M8-PFOA	7.149	421.1 -> 376.0	62484	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	19014	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15984	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	19364	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	20987	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12688	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	18072	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12697	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	9354	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7903	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2149	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3116	5.00 µg/L	0.000
M2-8:2FTS	7.948	529.1 -> 80.9	3130	5.00 µg/L	0.012
M3-MeFOSAA	8.204	573.2 -> 419.0	25515	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	13820	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	21227	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	26761	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	17262	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6522	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5970	2.50 µg/L	0.000
13C4-PFOS	8.323	502.8 -> 79.9	9537	2.50 µg/L	0.012
13C3-PFBA	2.916	216.0 -> 172.0	34042	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6534	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	72891	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	21853	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	19790	1.25 µg/L	0.012
13C2-PFHxA	5.553	315.1 -> 270.0	33071	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2149	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3116	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-8:2FTS	7.948	529.1 -> 80.9	3130	5.52 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-PFDoDA	9.031	615.1 -> 570.0	20987	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.5%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12688	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFBS	5.483	302.1 -> 79.9	12697	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C3-PFHxS	7.265	402.1 -> 79.9	9354	2.53 µg/L	0.000

7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.913	216.8 -> 171.9	79026	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.493	367.1 -> 322.0	37073	2.66 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C5-PFHxA	5.553	318.0 -> 273.0	36346	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFPeA	4.347	268.3 -> 223.0	38480	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	8.147	519.1 -> 474.1	15984	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C7-PFUnDA	8.601	570.0 -> 525.1	19364	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C8-FOSA	9.631	506.1 -> 77.8	18072	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-PFOA	7.149	421.1 -> 376.0	62484	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C8-PFOS	8.310	507.1 -> 79.9	7903	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C9-PFNA	7.667	472.1 -> 427.0	19014	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.204	573.2 -> 419.0	25515	5.42 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	13820	9.71 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d3-MeFOSA	10.745	515.0 -> 219.0	5970	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	21227	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d7-MeFOSE	10.653	623.2 -> 58.9	26761	26.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d9-EtFOSE	10.900	639.2 -> 58.9	17262	26.27 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
d5-EtFOSA	10.978	531.1 -> 219.0	6522	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	3258	0.73 µg/L	95
		327.1 -> 80.9	656		
6:2FTS	6.911	427.1 -> 407.0	2786	0.67 µg/L	95
		427.1 -> 80.9	609		
8:2FTS	7.936	527.1 -> 507.0	1534	0.67 µg/L	91
		527.1 -> 80.8	447		
EtFOSAA	8.413	584.2 -> 419.1	570	0.17 µg/L	88
		584.2 -> 526.0	279		
FOSA	9.634	498.1 -> 77.9	1161	0.18 µg/L	96
		498.1 -> 478.0	57		
MeFOSAA	8.205	570.1 -> 419.0	703	0.15 µg/L	98
		570.1 -> 483.0	122		
PFBA	2.919	212.8 -> 168.9	1217	0.68 µg/L	100
PFBS	5.484	298.7 -> 79.9	693	0.14 µg/L	76
		298.7 -> 98.8	436		
PFDA	8.148	512.9 -> 469.0	3567	0.19 µg/L	94
		512.9 -> 219.0	390		
PFDODA	9.032	613.1 -> 569.0	3248	0.21 µg/L	92
		613.1 -> 319.0	297		
PFDS	9.195	599.0 -> 79.9	355	0.15 µg/L	73

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	248			
PFHpA	6.506	363.1 -> 319.0	3745	0.17	µg/L	98
		363.1 -> 169.0	543			
PFHpS	7.819	449.0 -> 79.9	630	0.20	µg/L	76
		449.0 -> 98.9	244			
PFHxA	5.556	313.0 -> 269.0	2644	0.20	µg/L	98
		313.0 -> 118.9	86			
PFHxS	7.265	398.7 -> 79.9	572	0.14	µg/L	m 100
		398.7 -> 98.9	338			
PFNA	7.668	463.0 -> 419.0	1988	0.18	µg/L	83
		463.0 -> 219.0	505			
PFNS	8.776	548.8 -> 79.9	607	0.18	µg/L	92
		548.8 -> 98.9	313			
PFOA	7.151	413.0 -> 369.0	5076	0.19	µg/L	m 100
		413.0 -> 169.0	640			
PFOS	8.324	498.9 -> 79.9	498	0.15	µg/L	m 89
		498.9 -> 98.8	339			
PFPeA	4.349	263.0 -> 219.0	2930	0.36	µg/L	100
PFPeS	6.558	349.1 -> 79.9	662	0.14	µg/L	71
		349.1 -> 98.9	472			
PFTeDA	9.746	713.1 -> 669.0	2932	0.20	µg/L	99
		713.1 -> 168.9	192			
PFTrDA	9.415	663.0 -> 619.0	2909	0.21	µg/L	99
		663.0 -> 168.9	231			
PFUnDA	8.601	563.1 -> 519.0	2349	0.14	µg/L	98
		563.1 -> 269.1	334			
11Cl-PF3OUdS	9.467	630.9 -> 450.9	5551	0.70	µg/L	94
		632.9 -> 452.9	1933			
9Cl-PF3ONS	8.641	530.8 -> 351.0	10109	0.69	µg/L	98
		532.8 -> 353.0	3199			
ADONA	6.756	376.9 -> 250.9	20283	0.70	µg/L	98
		376.9 -> 84.8	4649			
HFPO-DA	5.919	284.9 -> 168.9	1011	0.80	µg/L	99
		284.9 -> 184.9	115			
3:3FTCA	3.802	241.0 -> 177.0	402	0.93	µg/L	95
		241.0 -> 117.0	66			
5:3FTCA	6.210	341.0 -> 237.1	13697	4.59	µg/L	99
		341.0 -> 217.0	11530			
7:3FTCA	7.633	441.0 -> 316.9	7115	4.50	µg/L	92
		441.0 -> 336.9	12662			
EtFOSA	10.979	526.0 -> 219.0	480	0.17	µg/L	89
		526.0 -> 169.0	481			
EtFOSE	10.913	630.0 -> 58.9	1109	1.80	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	440	0.17	µg/L	88
		511.9 -> 169.0	495			
MeFOSE	10.679	616.1 -> 58.9	1748	1.81	µg/L	100
PFDoDS	9.886	699.1 -> 79.9	266	0.19	µg/L	81
		699.1 -> 98.8	120			
NFDHA	5.435	295.0 -> 201.0	250	0.32	µg/L	73
		295.0 -> 84.9	158			
PFMBA	4.762	279.0 -> 85.1	855	0.34	µg/L	100
PFMPA	3.488	229.0 -> 84.9	790	0.35	µg/L	100
PFEESA	6.036	314.8 -> 134.9	5768	0.31	µg/L	98
		314.8 -> 82.9	176			

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

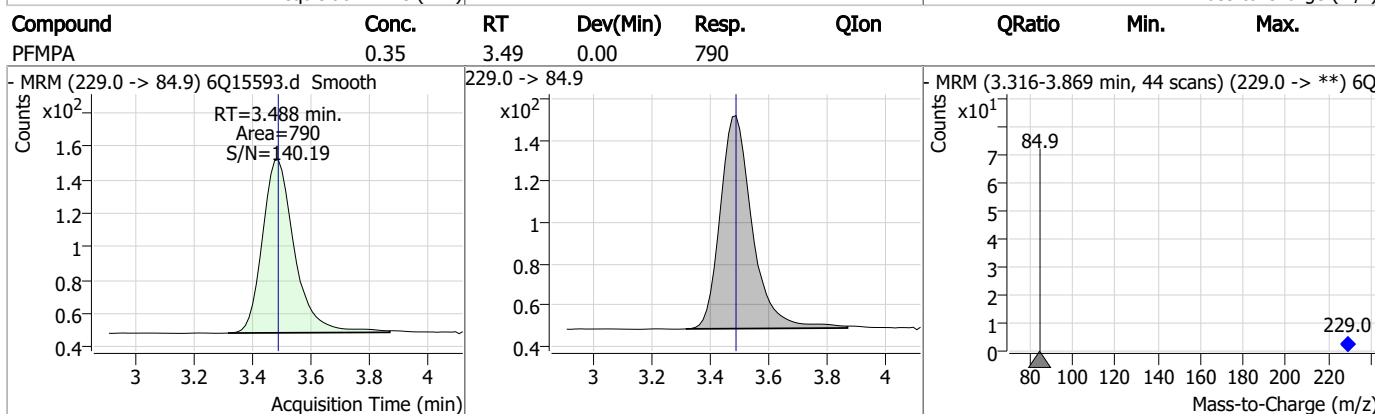
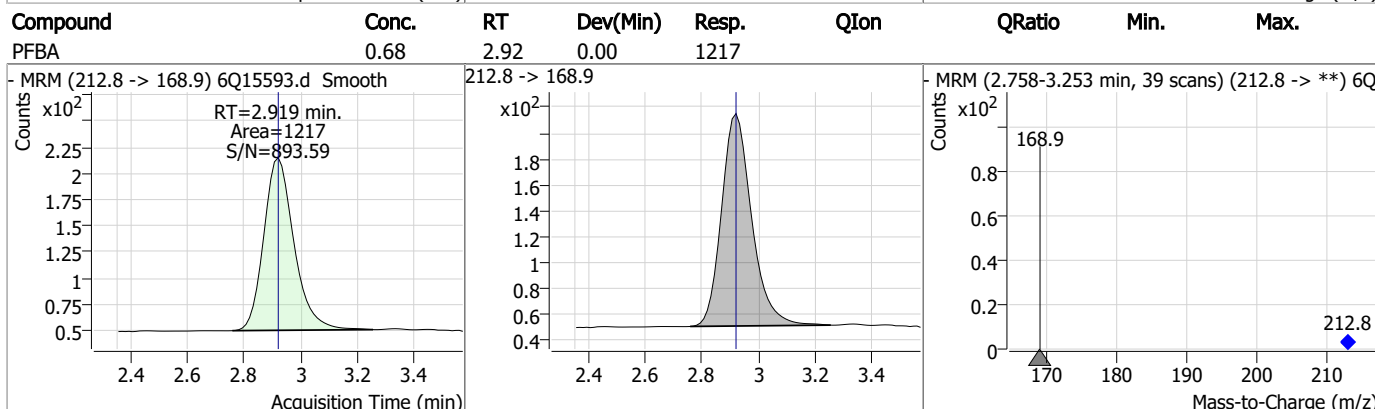
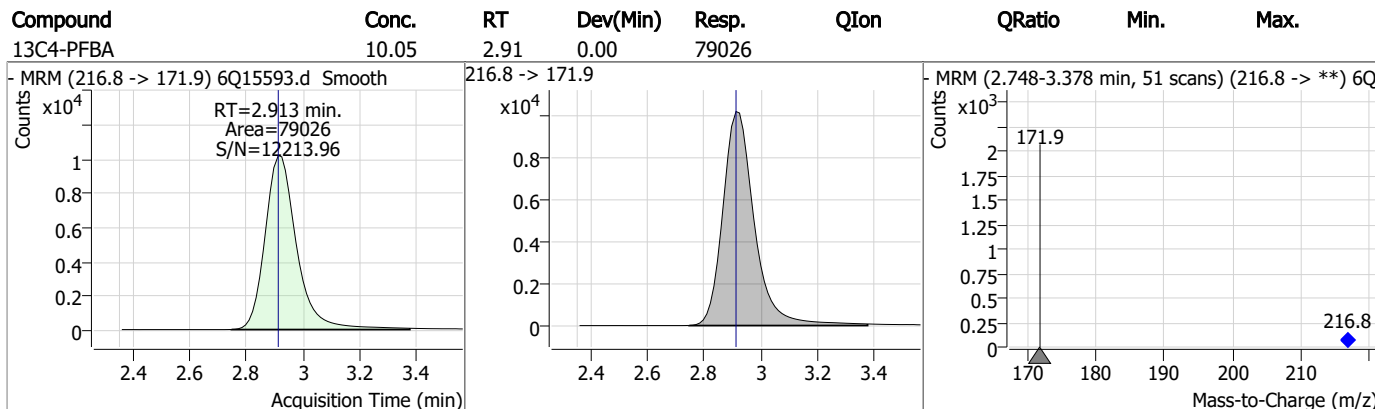
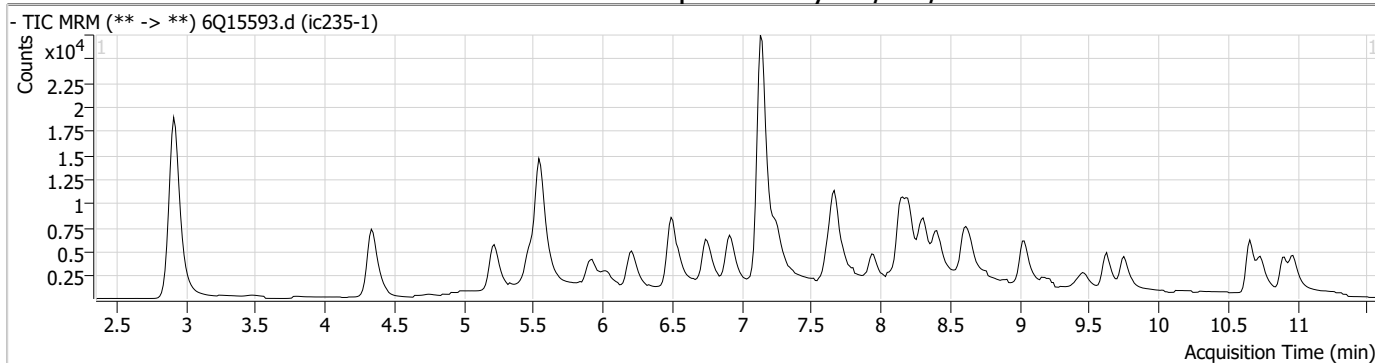
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.2
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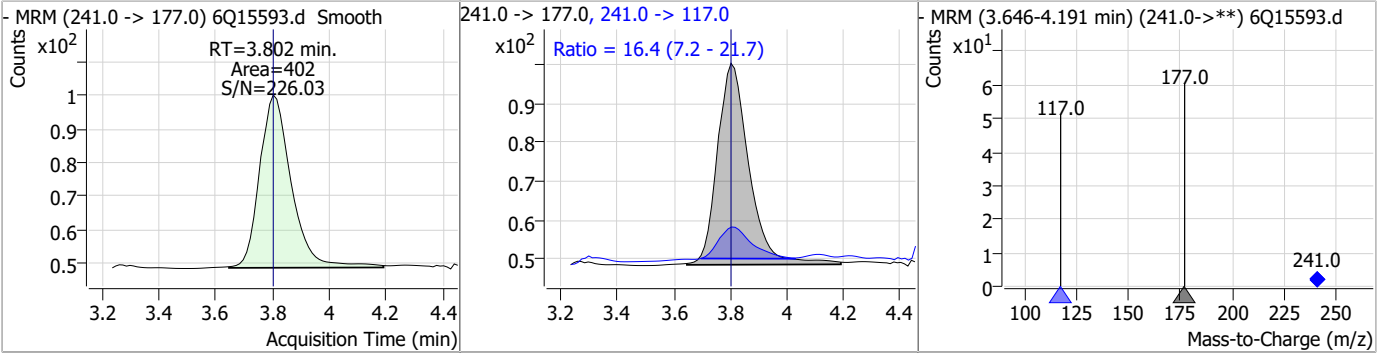
Perfluorinated Compounds by LC/MS/MS



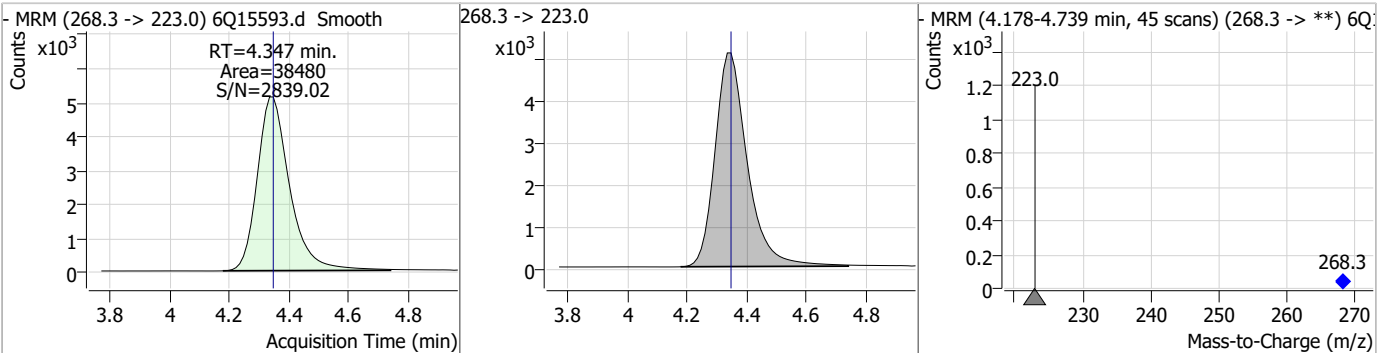
7.7.2
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Perfluorinated Compounds by LC/MS/MS

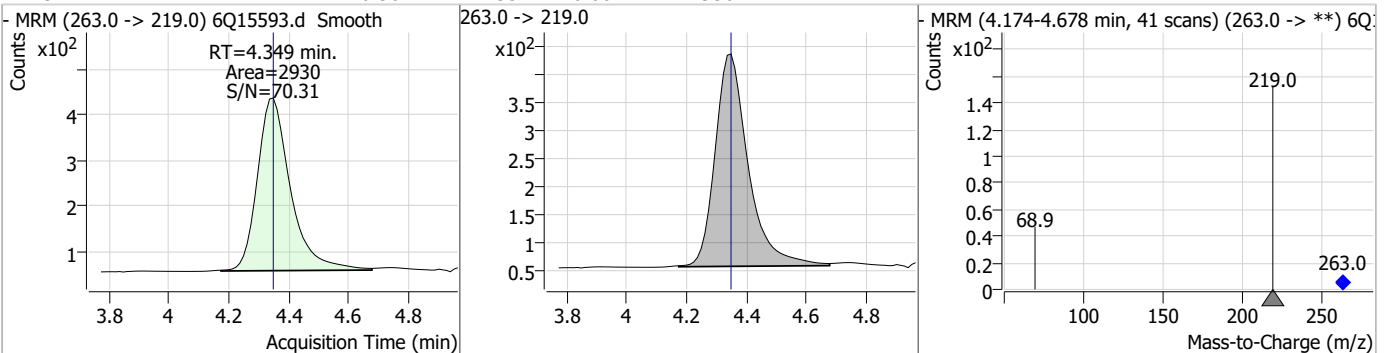
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.93	3.80	0.00	402	241.0 -> 117.0	16.4	7.2	21.7



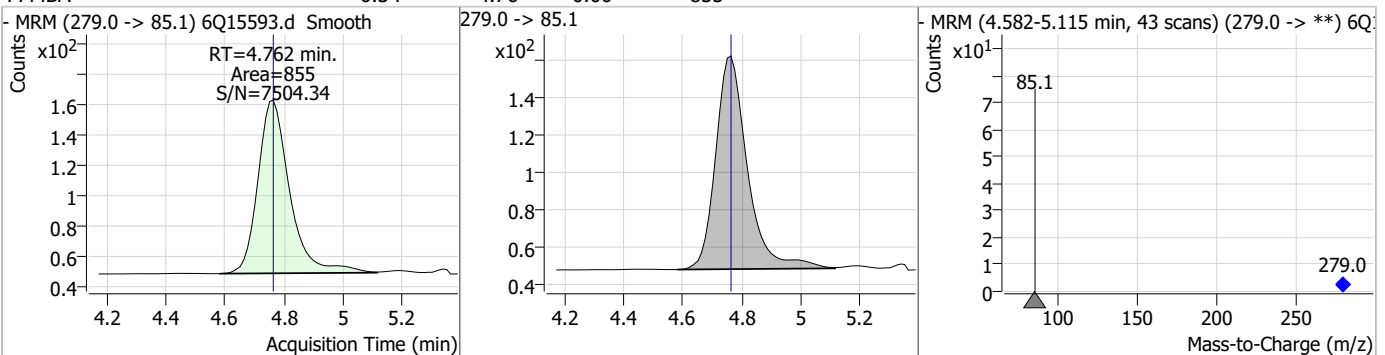
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.18	4.35	0.00	38480				



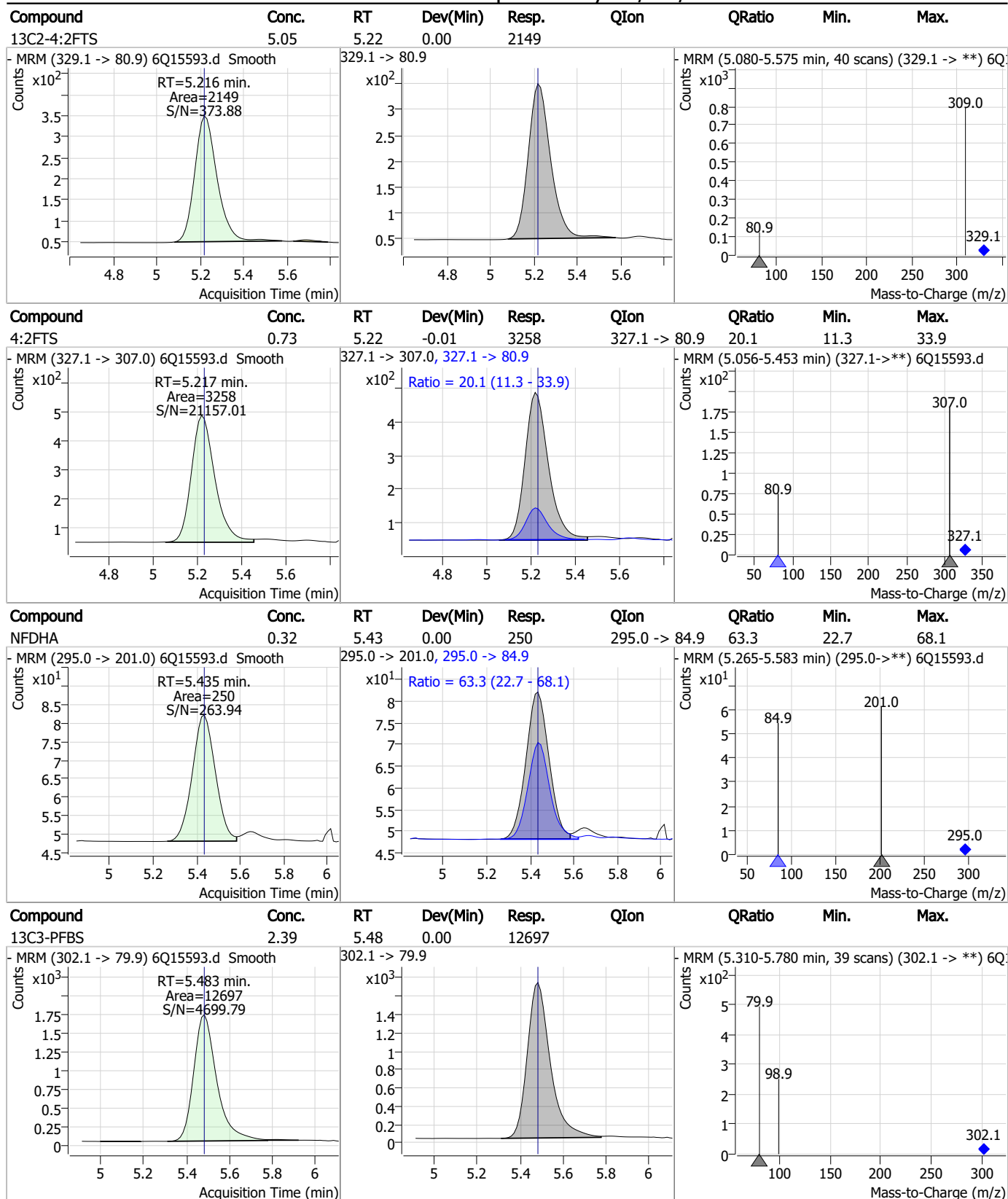
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.36	4.35	0.00	2930				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.34	4.76	0.00	855				

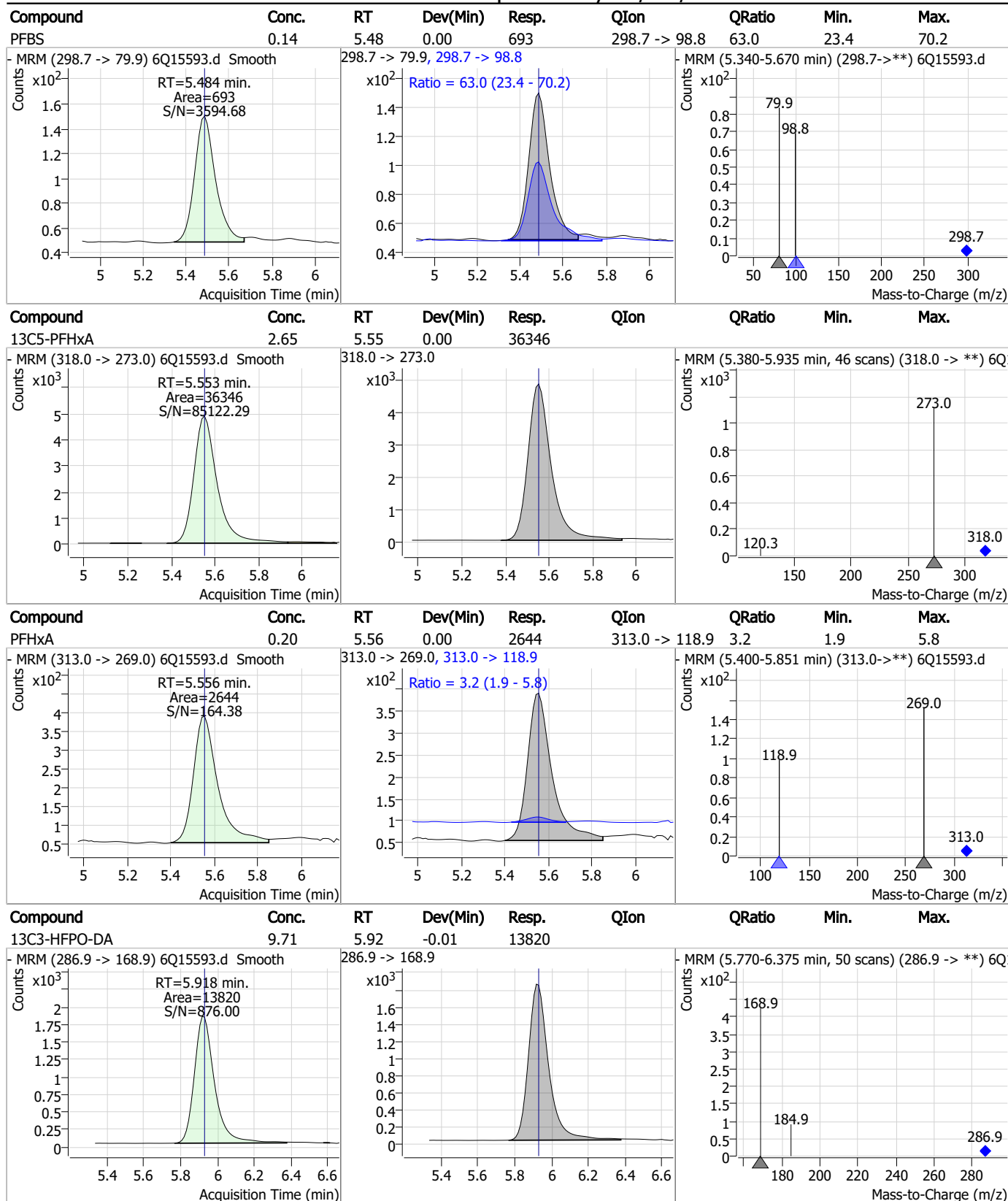


Perfluorinated Compounds by LC/MS/MS



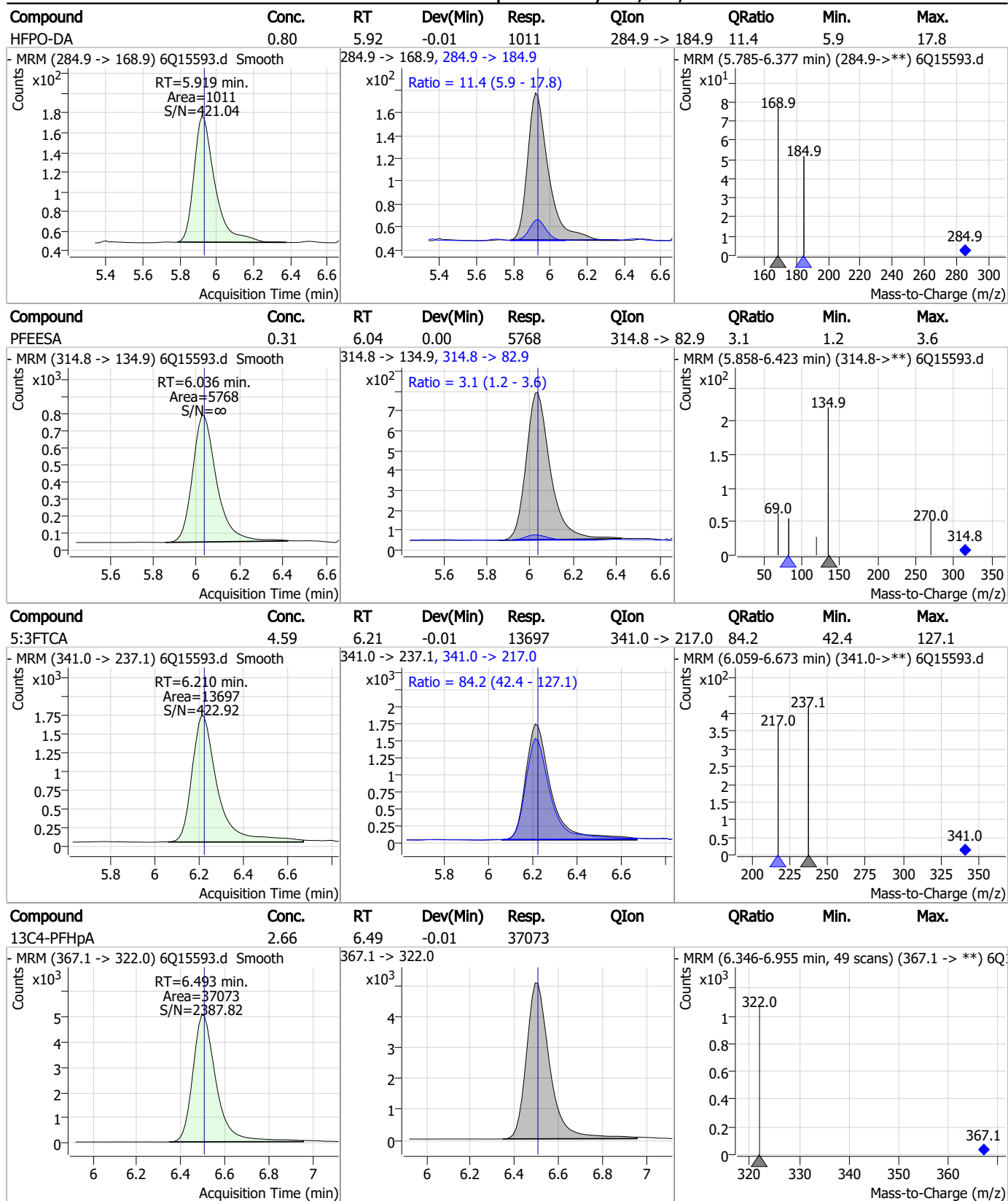
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Perfluorinated Compounds by LC/MS/MS



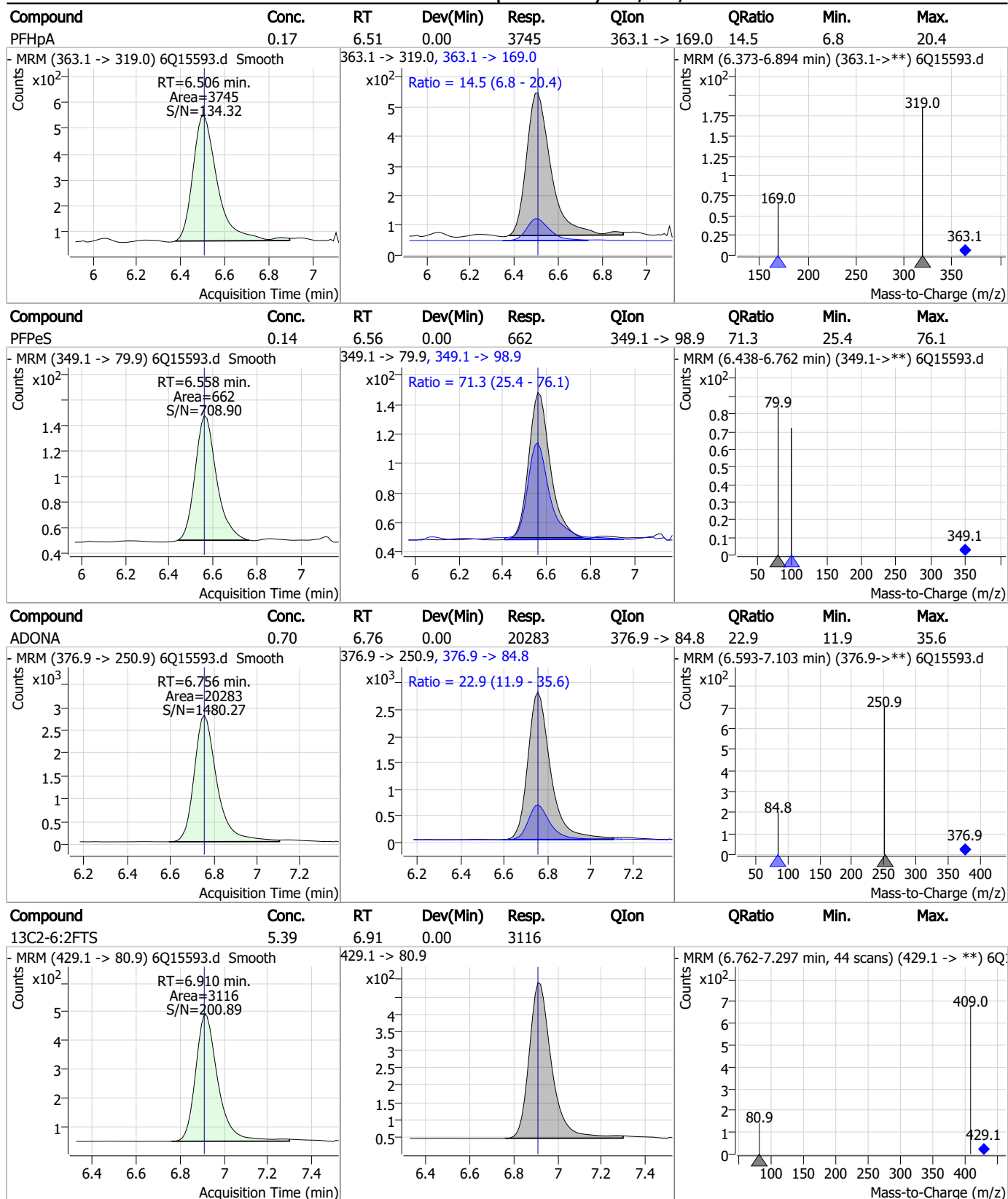
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Perfluorinated Compounds by LC/MS/MS



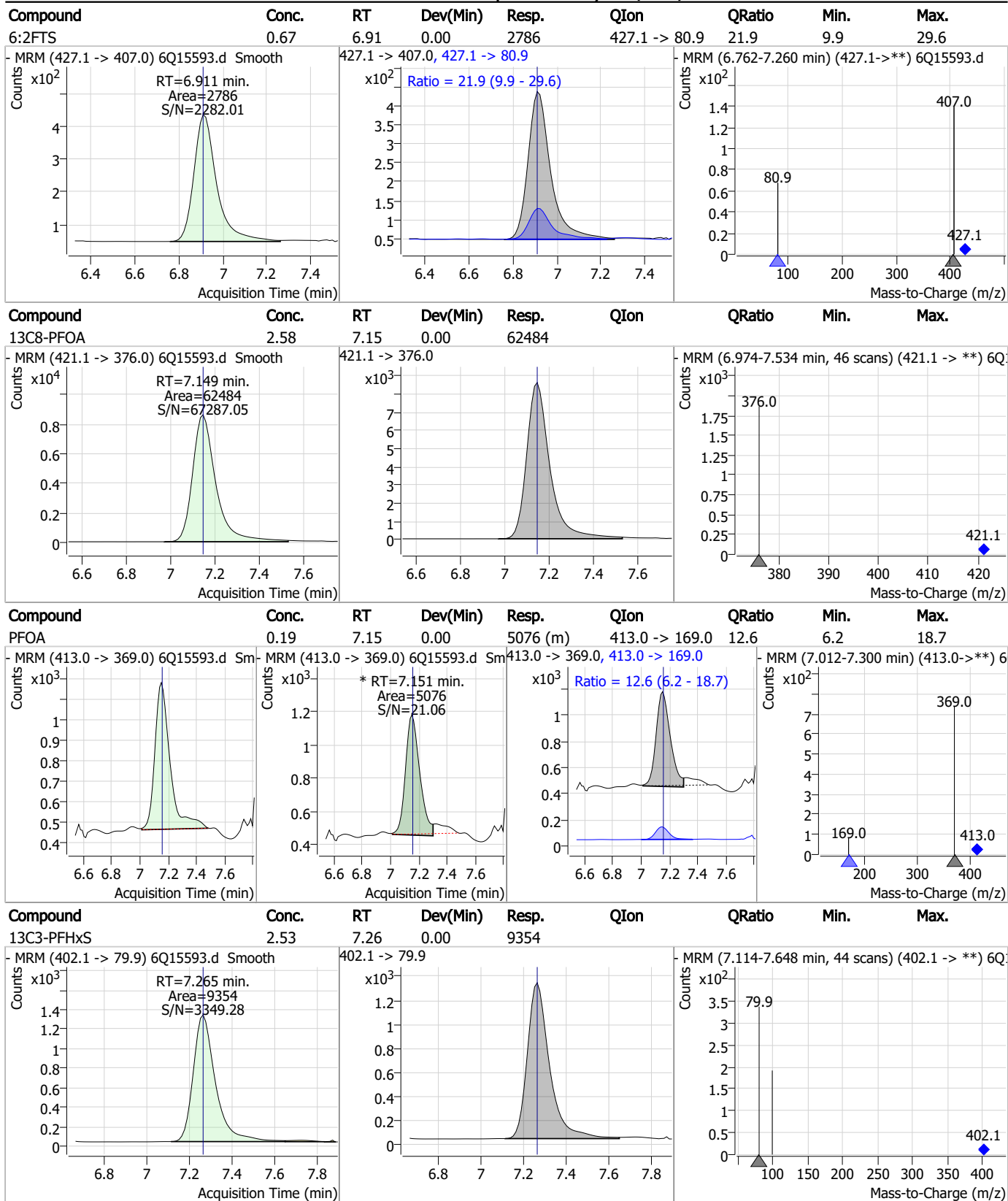
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Perfluorinated Compounds by LC/MS/MS



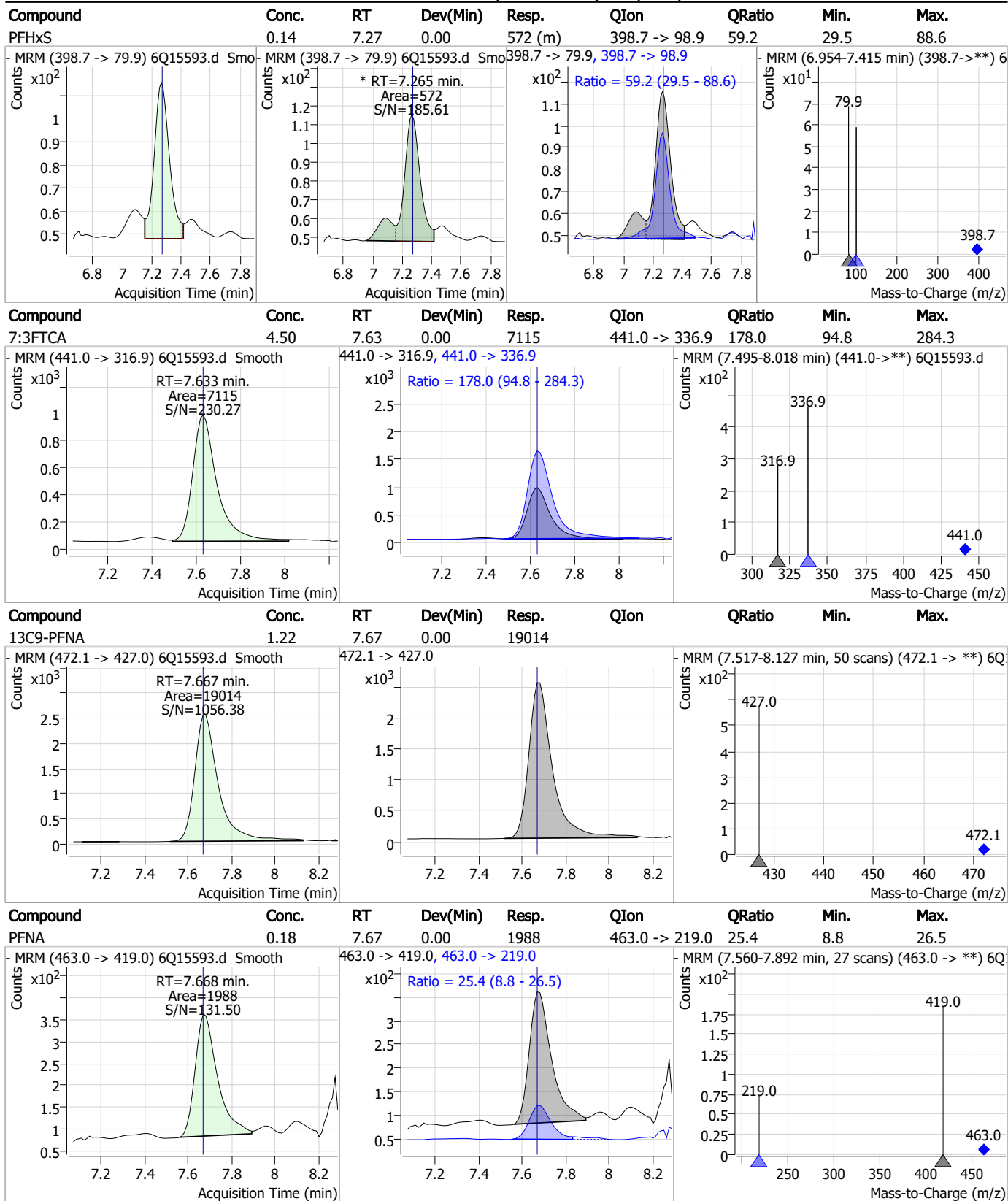
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Perfluorinated Compounds by LC/MS/MS



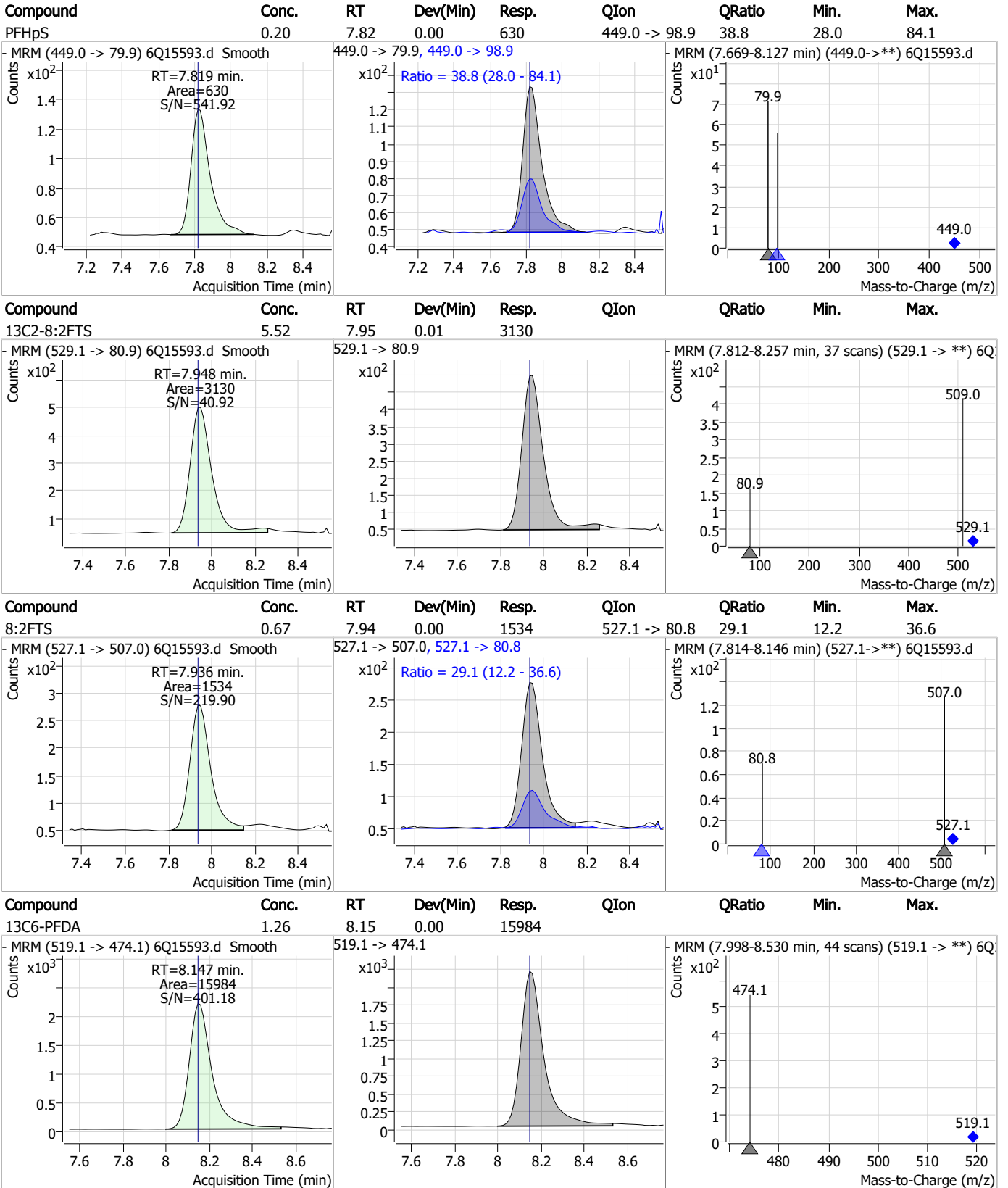
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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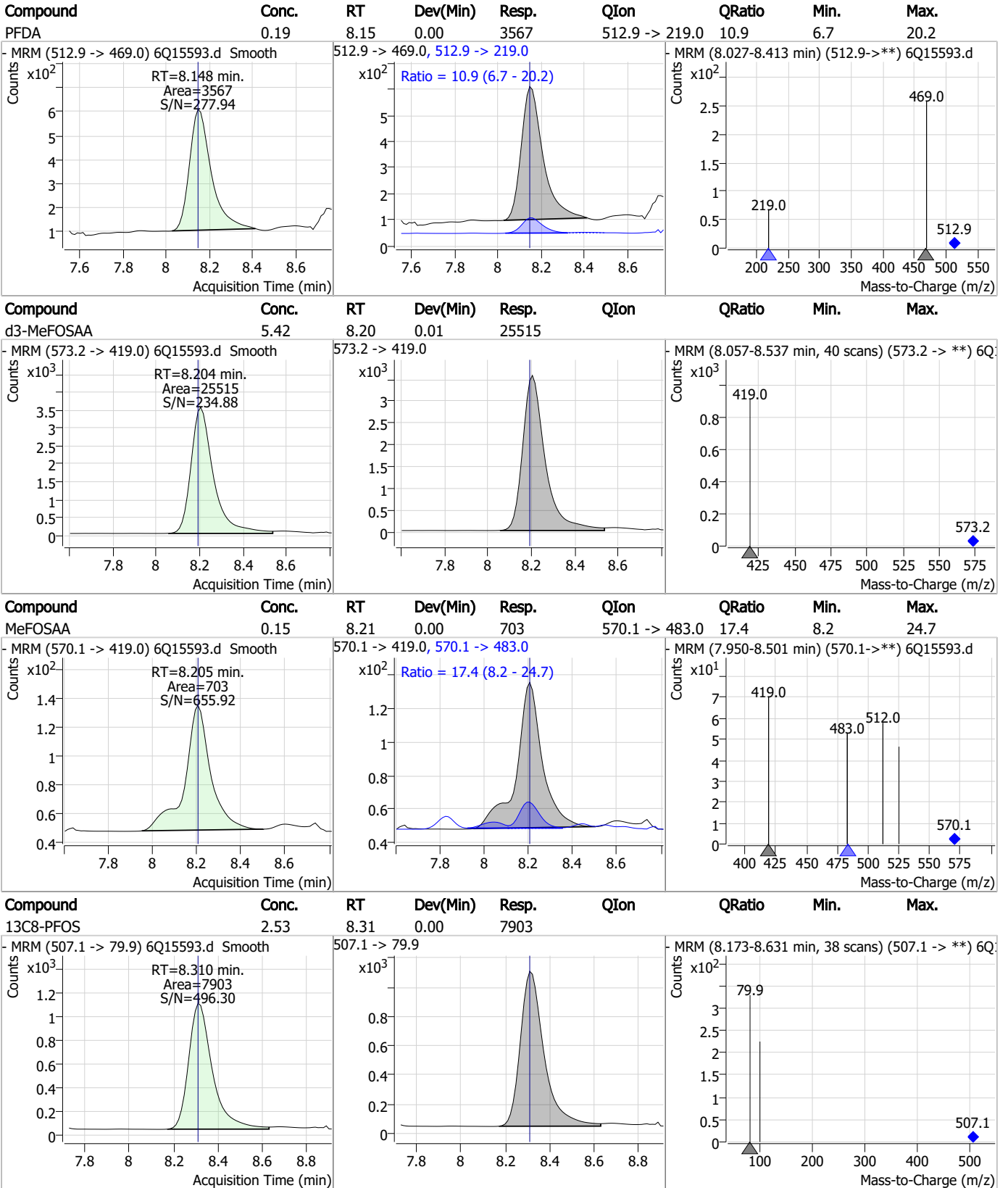
Perfluorinated Compounds by LC/MS/MS



7.7.2

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Perfluorinated Compounds by LC/MS/MS

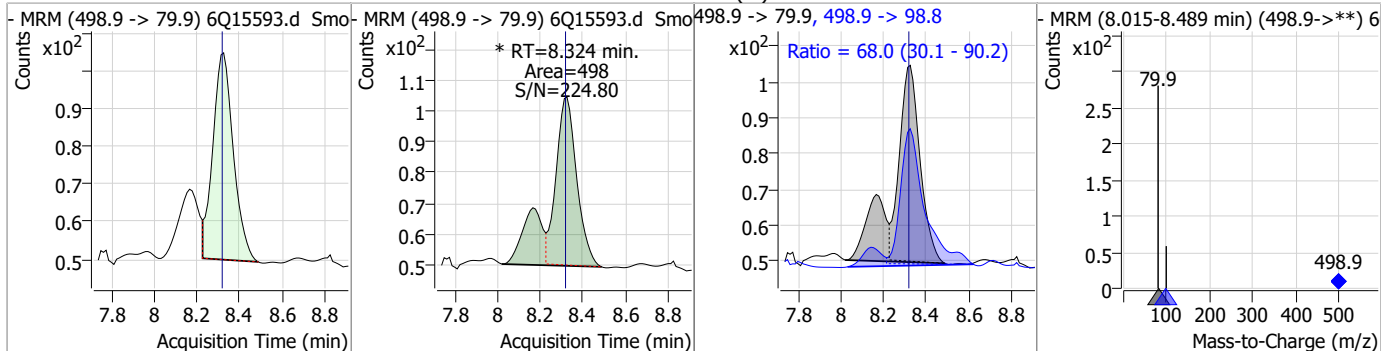


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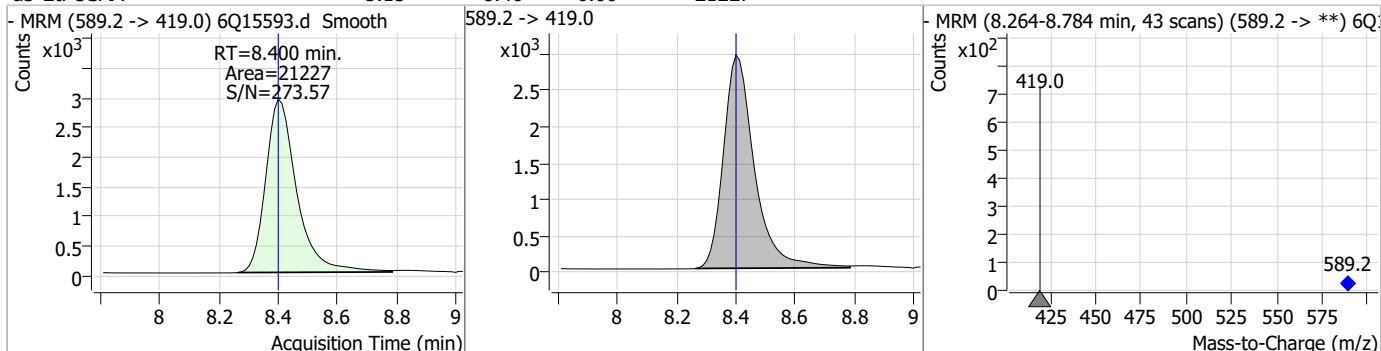
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Perfluorinated Compounds by LC/MS/MS

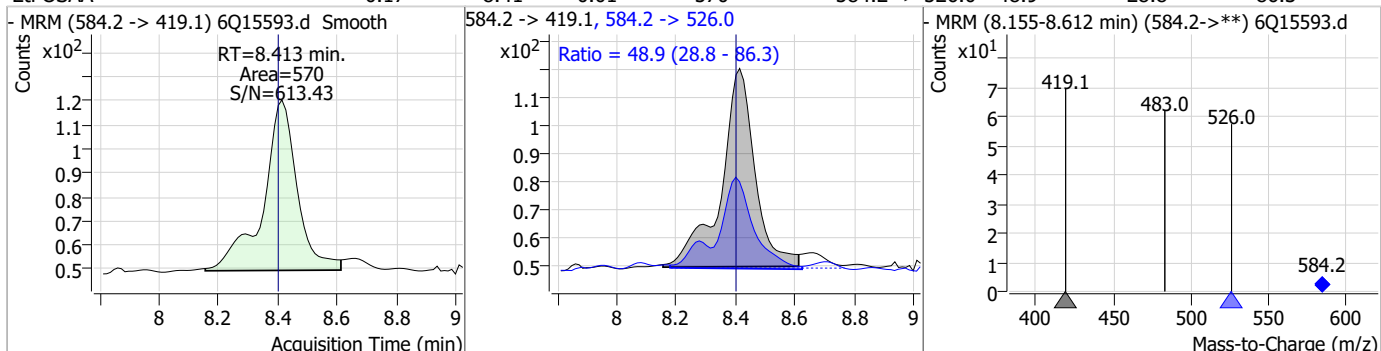
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.15	8.32	0.01	498 (m)	498.9 -> 98.8	68.0	30.1	90.2



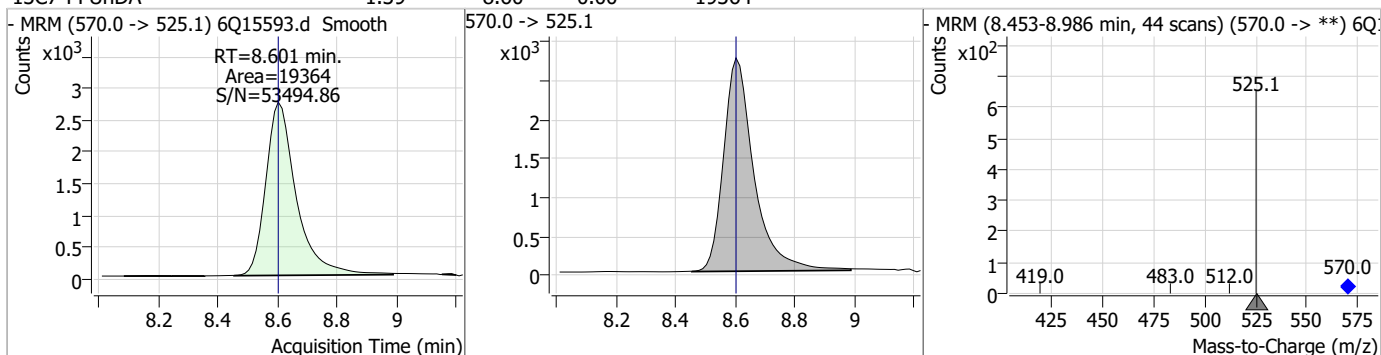
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.15	8.40	0.00	21227				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.17	8.41	0.01	570	584.2 -> 526.0	48.9	28.8	86.3

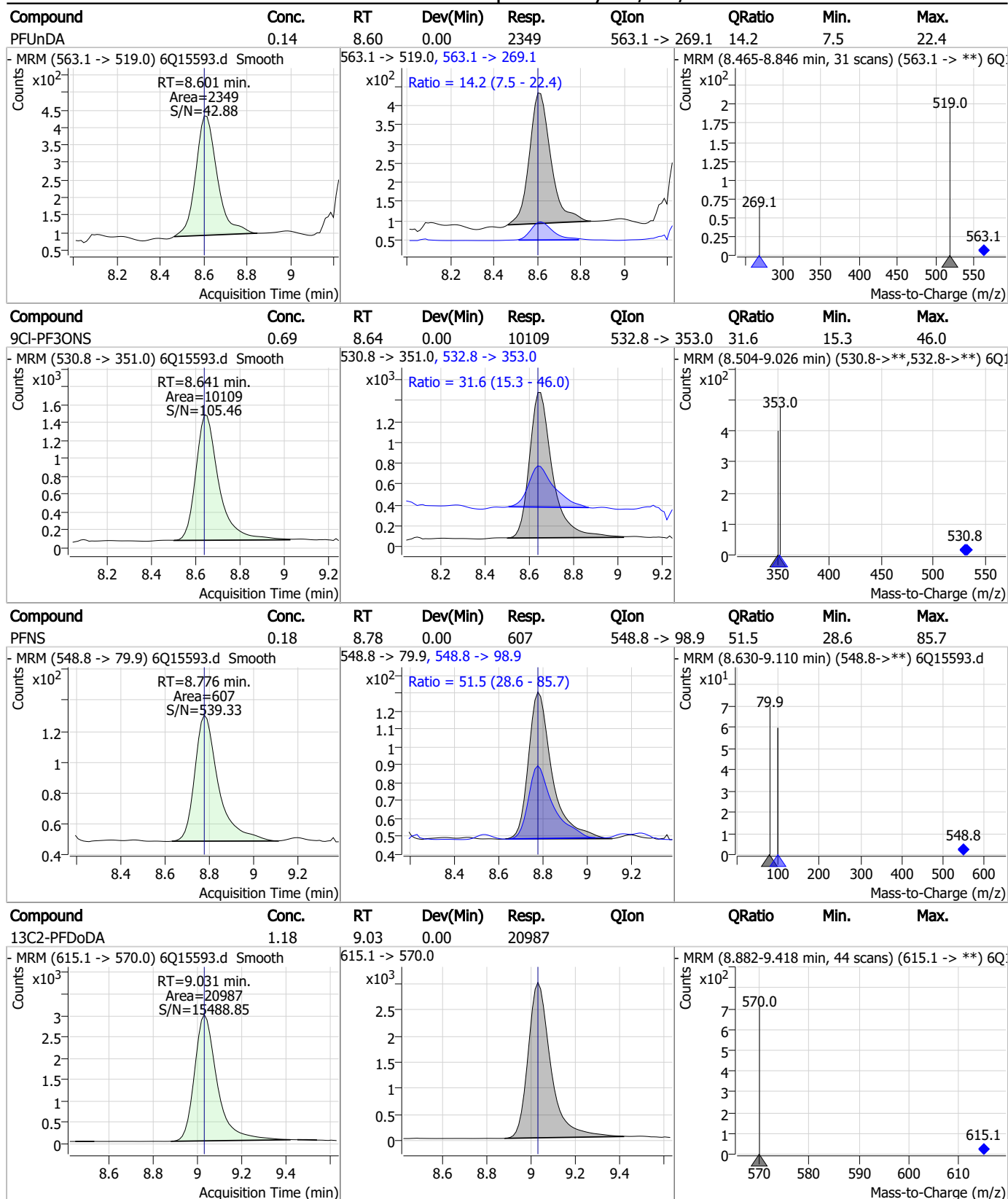


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.39	8.60	0.00	19364				



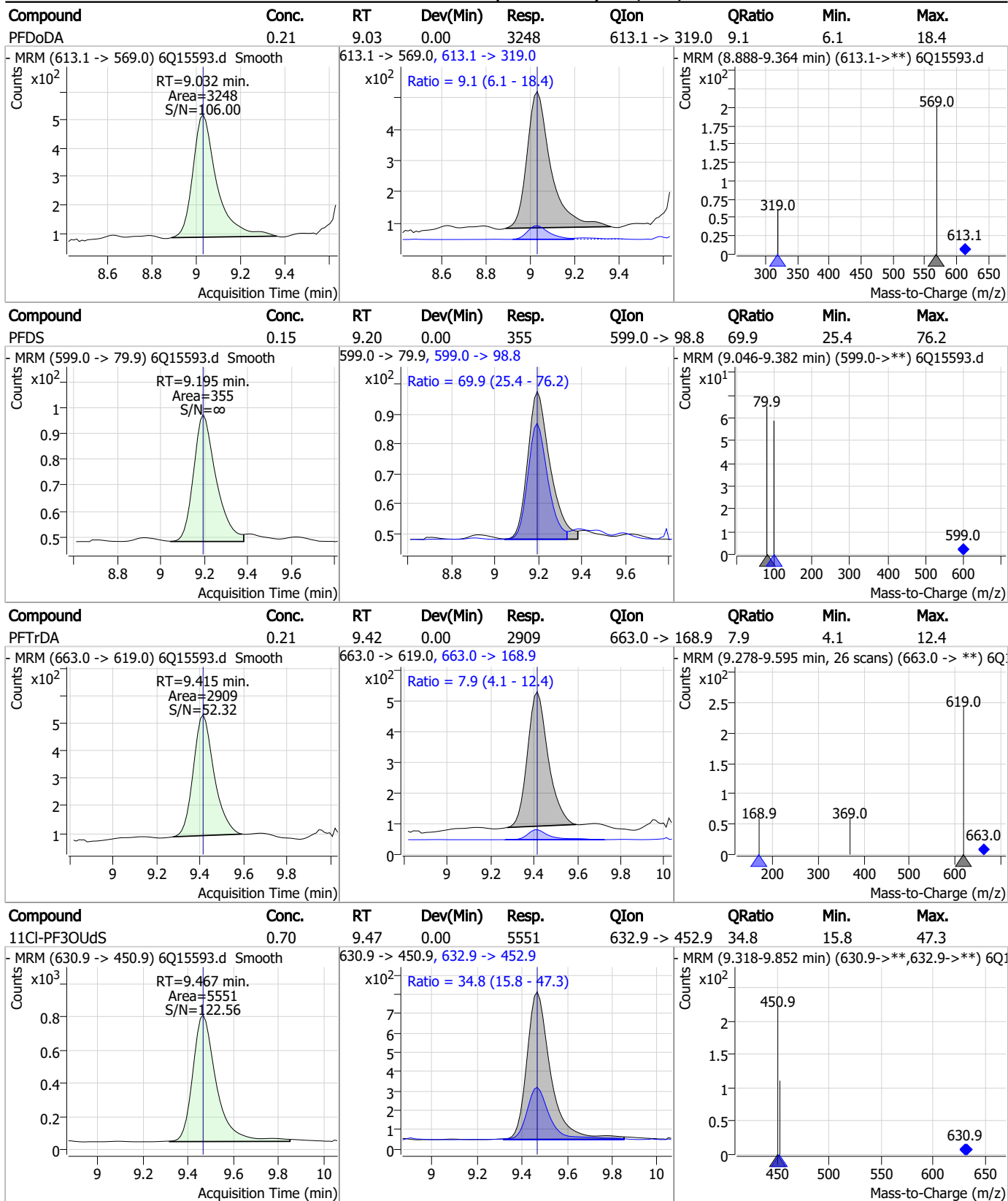
7.7.2
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Perfluorinated Compounds by LC/MS/MS



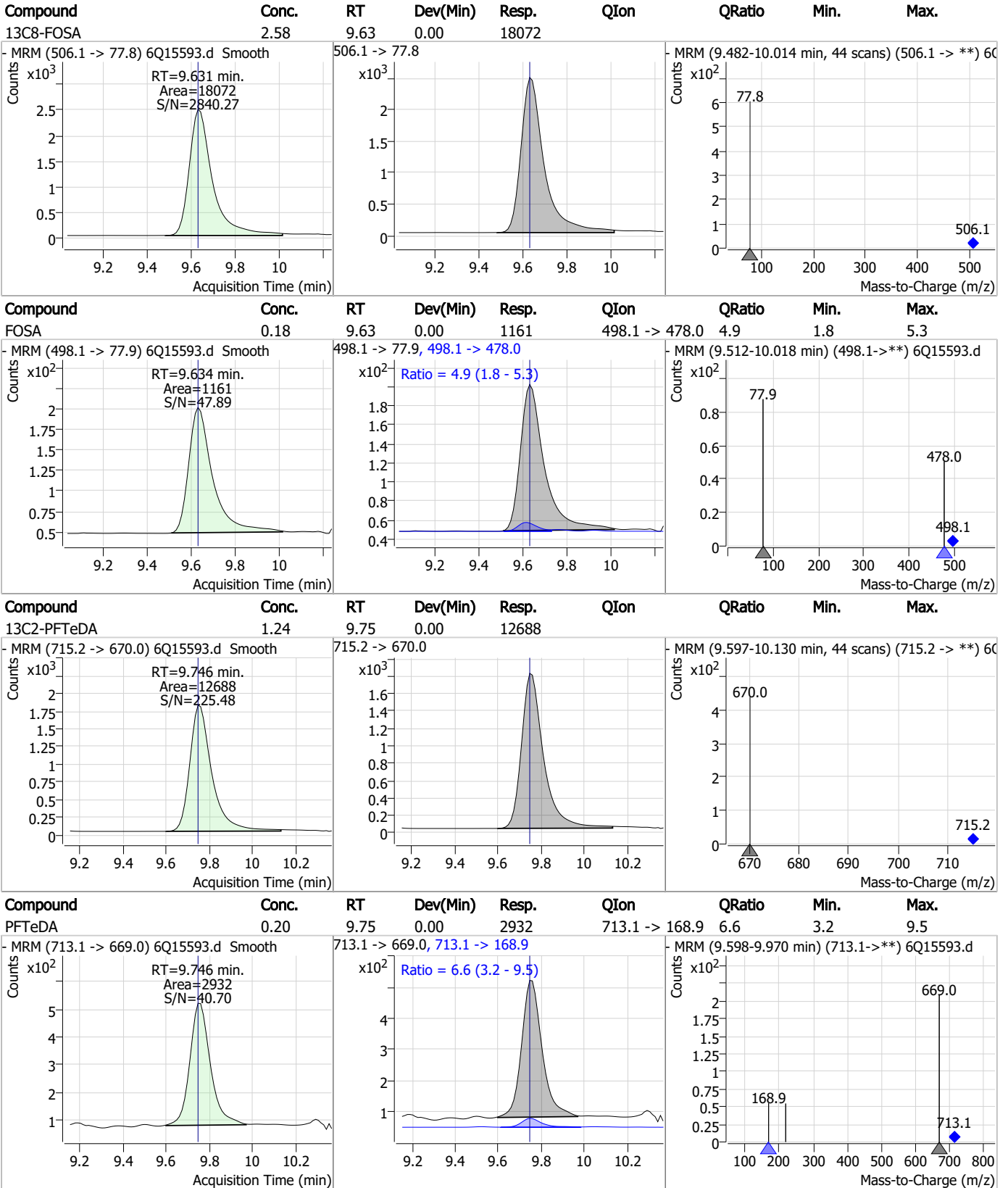
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

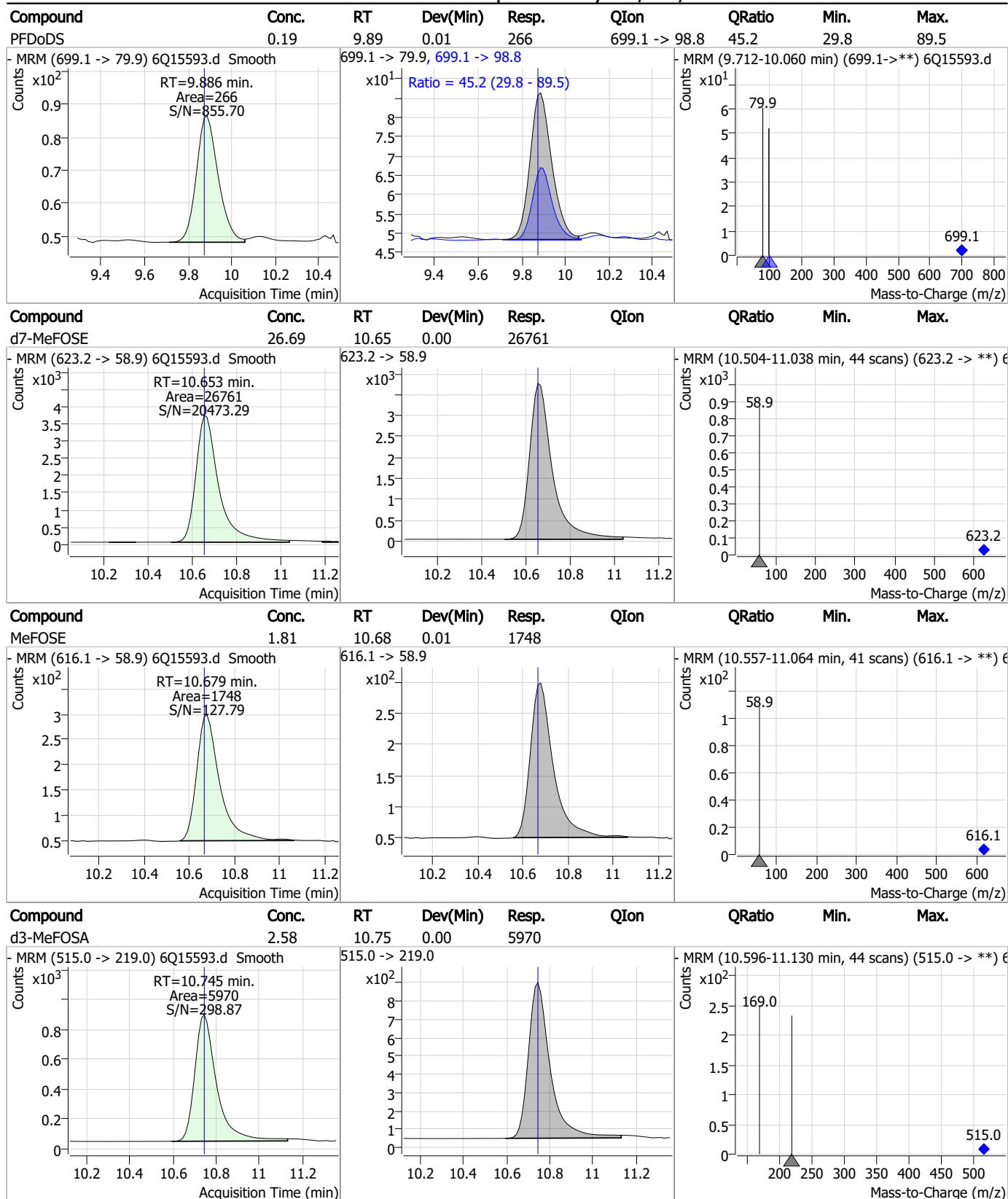


7.7.2

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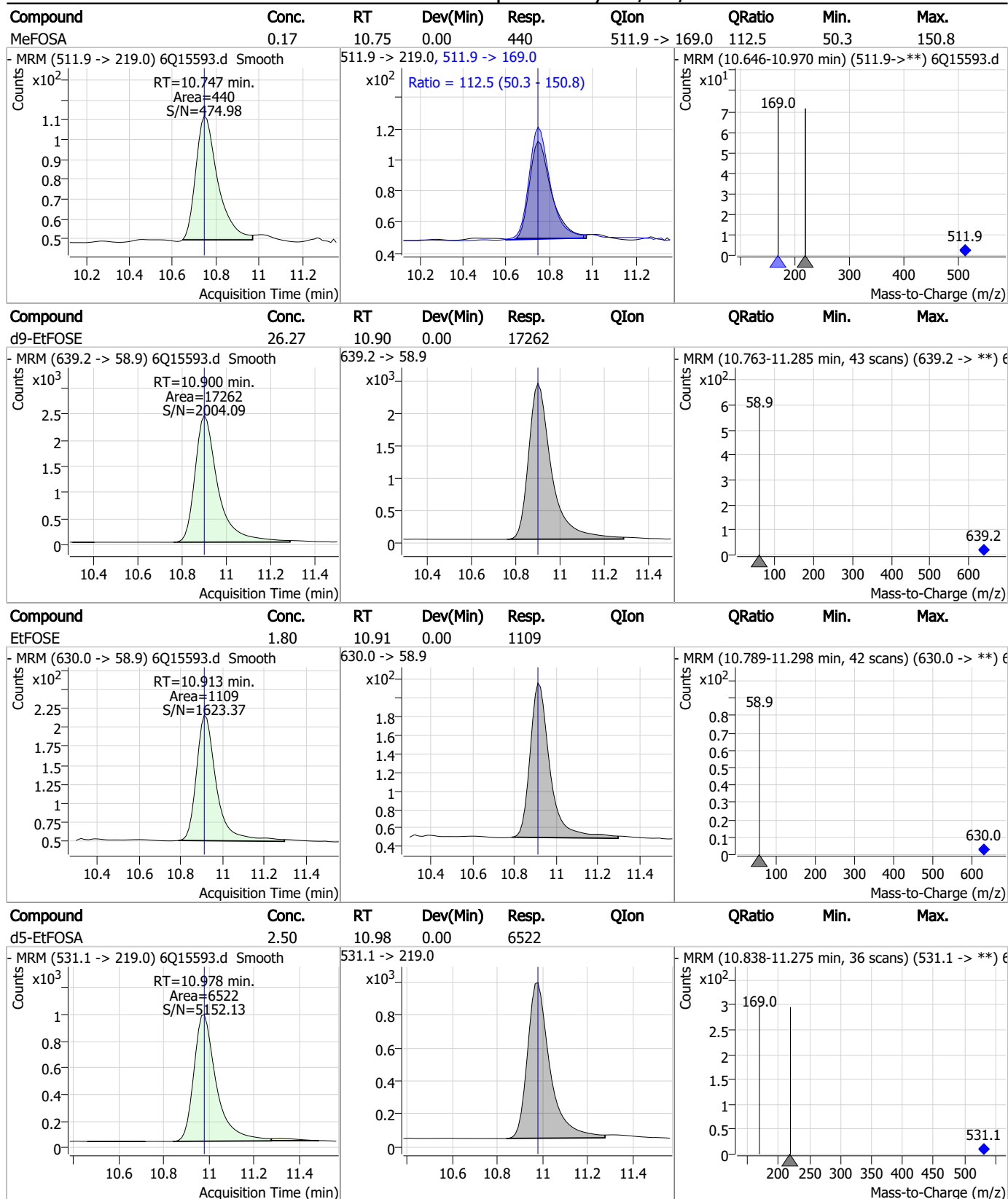


Perfluorinated Compounds by LC/MS/MS



7.7.2
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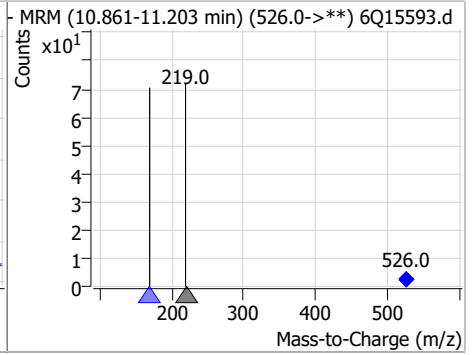
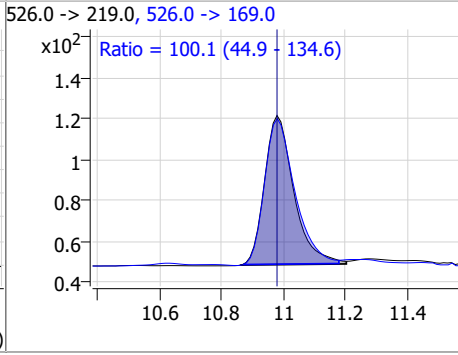
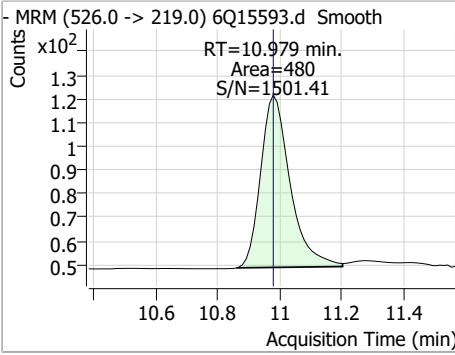
Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.17	10.98	0.00	480	526.0 -> 169.0	100.1	44.9	134.6



7.7.2

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Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15593.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 16:20 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.15	Poorly defined baseline
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.32	Split peak

7.7.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15594.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 4:34:49 PM
 Sample Name : ic235-2
 Vial : P1-A3
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78287	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37381	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	33517	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	36400	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	60021	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	19139	1.25 µg/L	0.012
M6-PFDA	8.147	519.1 -> 474.1	15975	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	18133	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	23185	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12575	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17782	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12872	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8916	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7865	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2136	5.00 µg/L	0.000
M2-6:2FTS	6.923	429.1 -> 80.9	2807	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2760	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22445	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13852	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	22065	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	26677	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	17006	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6717	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5583	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9791	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33509	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6533	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	74059	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	22140	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19573	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	32745	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2136	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2807	4.86 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2760	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFDoDA	9.031	615.1 -> 570.0	23185	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12575	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C3-PFBS	5.483	302.1 -> 79.9	12872	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C3-PFHxS	7.265	402.1 -> 79.9	8916	2.42 µg/L	0.000

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C4-PFBA	2.913	216.8 -> 171.9	78287	10.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C4-PFHpA	6.506	367.1 -> 322.0	36400	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C5-PFHxA	5.553	318.0 -> 273.0	33517	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C5-PFPeA	4.347	268.3 -> 223.0	37381	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C6-PFDA	8.147	519.1 -> 474.1	15975	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C7-PFUnDA	8.601	570.0 -> 525.1	18133	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C8-FOSA	9.631	506.1 -> 77.8	17782	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C8-PFOA	7.149	421.1 -> 376.0	60021	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C8-PFOS	8.310	507.1 -> 79.9	7865	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C9-PFNA	7.680	472.1 -> 427.0	19139	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.1%		
d3-MeFOSAA	8.204	573.2 -> 419.0	22445	4.65 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13852	9.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.3%		
d3-MeFOSA	10.745	515.0 -> 219.0	5583	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
d5-EtFOSAA	8.400	589.2 -> 419.0	22065	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.4%		
d7-MeFOSE	10.653	623.2 -> 58.9	26677	25.91 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
d9-EtFOSE	10.900	639.2 -> 58.9	17006	25.21 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
d5-EtFOSA	10.978	531.1 -> 219.0	6717	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	9546	2.14 µg/L	99
		327.1 -> 80.9	2189		
6:2FTS	6.923	427.1 -> 407.0	8279	2.20 µg/L	98
		427.1 -> 80.9	1695		
8:2FTS	7.936	527.1 -> 507.0	4685	2.33 µg/L	99
		527.1 -> 80.8	1170		
EtFOSAA	8.401	584.2 -> 419.1	2013	0.59 µg/L	m 82
		584.2 -> 526.0	888		
FOSA	9.634	498.1 -> 77.9	3400	0.54 µg/L	99
		498.1 -> 478.0	131		
MeFOSAA	8.205	570.1 -> 419.0	2503	0.61 µg/L	m 99
		570.1 -> 483.0	419		
PFBA	2.919	212.8 -> 168.9	3816	2.14 µg/L	100
PFBS	5.484	298.7 -> 79.9	2630	0.53 µg/L	98
		298.7 -> 98.8	1187		
PFDA	8.148	512.9 -> 469.0	9554	0.52 µg/L	99
		512.9 -> 219.0	1239		
PFDODA	9.032	613.1 -> 569.0	8701	0.51 µg/L	97
		613.1 -> 319.0	1156		
PFDS	9.195	599.0 -> 79.9	1328	0.57 µg/L	99

7.7.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	664			
PFHpA	6.506	363.1 -> 319.0	11340	0.53	µg/L	98
		363.1 -> 169.0	1653			
PFHpS	7.819	449.0 -> 79.9	1676	0.53	µg/L	96
		449.0 -> 98.9	894			
PFHxA	5.556	313.0 -> 269.0	6831	0.57	µg/L	100
		313.0 -> 118.9	258			
PFHxS	7.265	398.7 -> 79.9	2131	0.56	µg/L	m 92
		398.7 -> 98.9	1126			
PFNA	7.668	463.0 -> 419.0	6290	0.55	µg/L	96
		463.0 -> 219.0	1214			
PFNS	8.776	548.8 -> 79.9	1638	0.50	µg/L	90
		548.8 -> 98.9	1054			
PFOA	7.151	413.0 -> 369.0	13078	0.51	µg/L	96
		413.0 -> 169.0	1851			
PFOS	8.311	498.9 -> 79.9	1951	0.59	µg/L	m 98
		498.9 -> 98.8	1197			
PFPeA	4.349	263.0 -> 219.0	8804	1.11	µg/L	100
PFPeS	6.558	349.1 -> 79.9	2302	0.53	µg/L	93
		349.1 -> 98.9	1283			
PFTeDA	9.746	713.1 -> 669.0	7734	0.54	µg/L	100
		713.1 -> 168.9	499			
PFTrDA	9.415	663.0 -> 619.0	7961	0.52	µg/L	100
		663.0 -> 168.9	662			
PFUnDA	8.601	563.1 -> 519.0	8590	0.56	µg/L	100
		563.1 -> 269.1	1296			
11CI-PF3OUdS	9.467	630.9 -> 450.9	17088	2.15	µg/L	96
		632.9 -> 452.9	5740			
9CI-PF3ONS	8.641	530.8 -> 351.0	31942	2.18	µg/L	93
		532.8 -> 353.0	11021			
ADONA	6.756	376.9 -> 250.9	62836	2.15	µg/L	99
		376.9 -> 84.8	14531			
HFPO-DA	5.931	284.9 -> 168.9	2905	2.28	µg/L	94
		284.9 -> 184.9	411			
3:3FTCA	3.802	241.0 -> 177.0	1137	2.70	µg/L	93
		241.0 -> 117.0	196			
5:3FTCA	6.223	341.0 -> 237.1	38014	13.83	µg/L	94
		341.0 -> 217.0	34292			
7:3FTCA	7.633	441.0 -> 316.9	21882	15.02	µg/L	84
		441.0 -> 336.9	36206			
EtFOSA	10.979	526.0 -> 219.0	1617	0.56	µg/L	94
		526.0 -> 169.0	1548			
EtFOSE	10.913	630.0 -> 58.9	3112	5.11	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	1438	0.60	µg/L	96
		511.9 -> 169.0	1394			
MeFOSE	10.666	616.1 -> 58.9	4999	5.19	µg/L	100
PFDoDS	9.886	699.1 -> 79.9	738	0.52	µg/L	92
		699.1 -> 98.8	486			
NFDHA	5.435	295.0 -> 201.0	749	1.04	µg/L	90
		295.0 -> 84.9	390			
PFMBA	4.762	279.0 -> 85.1	2653	1.09	µg/L	100
PFMPA	3.488	229.0 -> 84.9	2431	1.11	µg/L	100
PFEESA	6.036	314.8 -> 134.9	17663	1.02	µg/L	99
		314.8 -> 82.9	381			

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

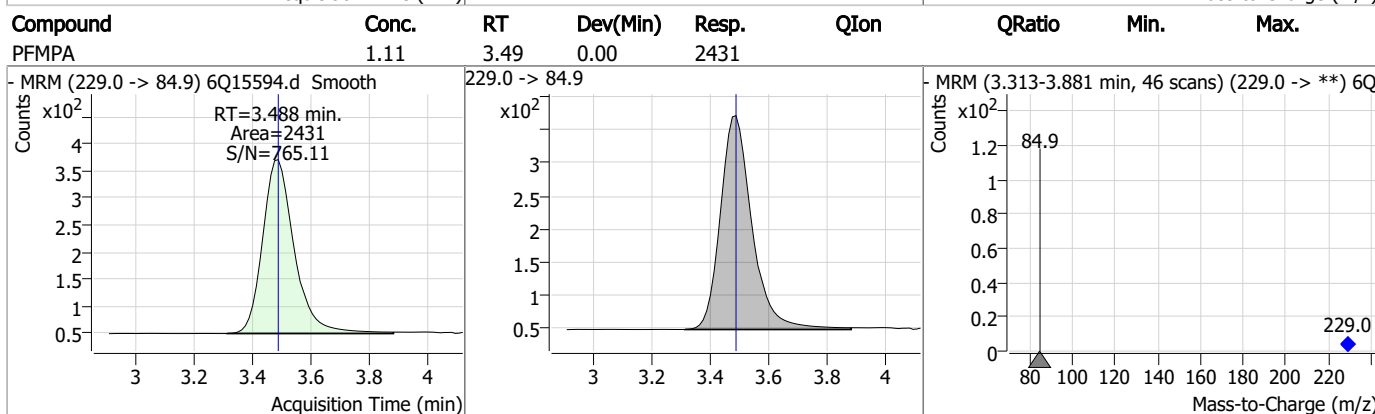
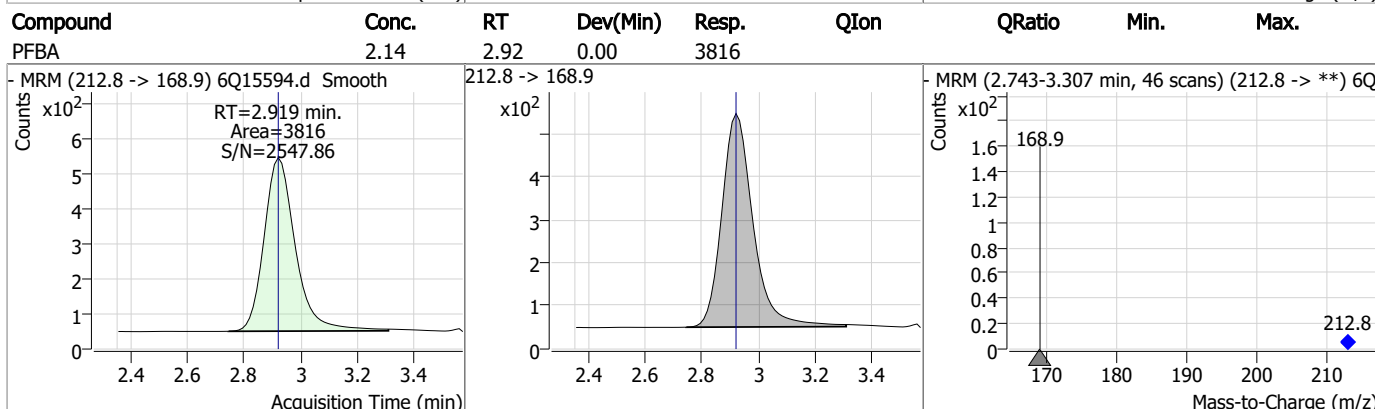
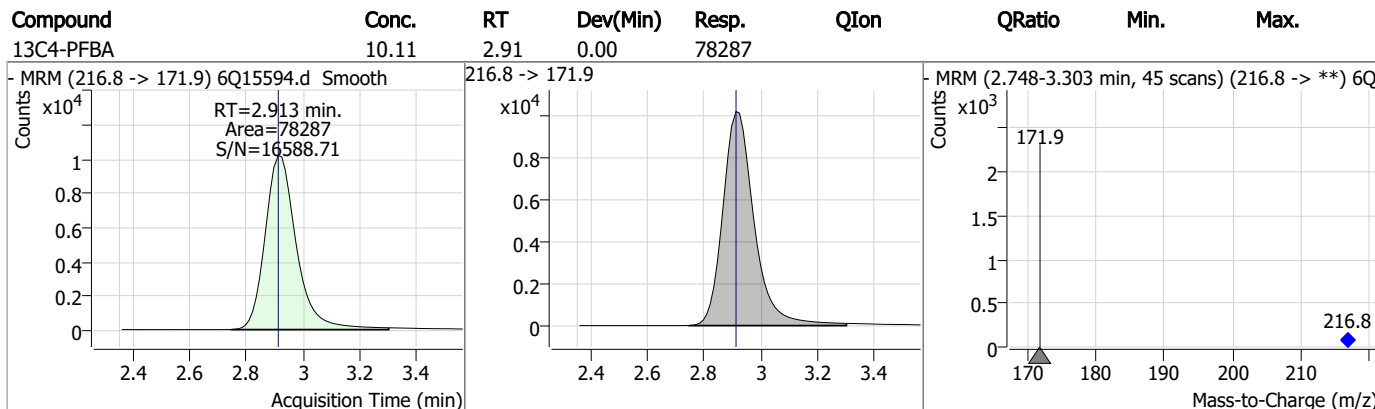
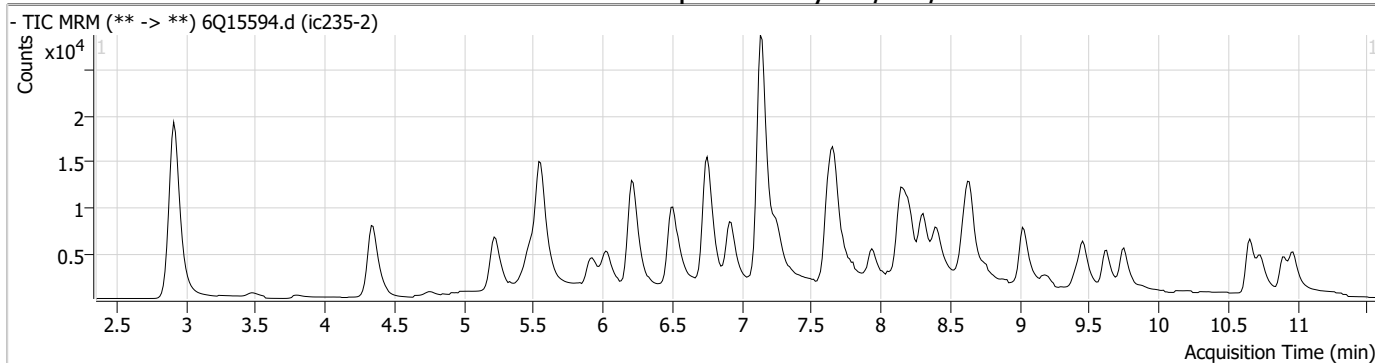
Perfluorinated Compounds by LC/MS/MS

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

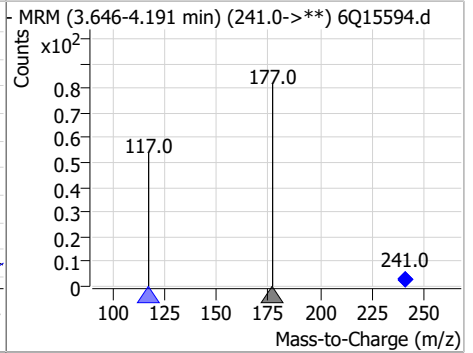
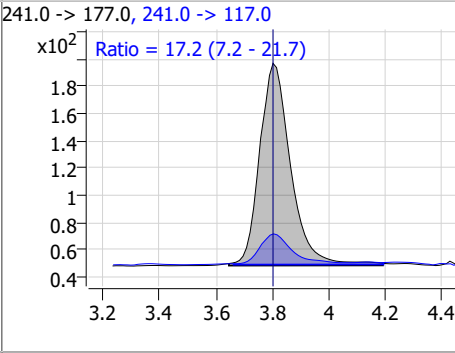
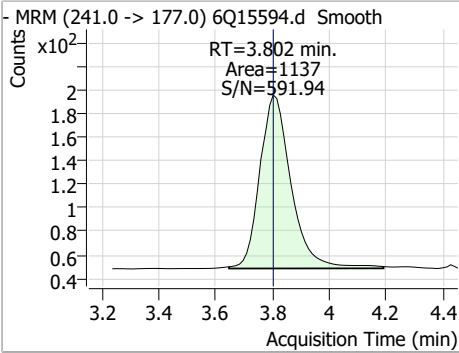
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Perfluorinated Compounds by LC/MS/MS

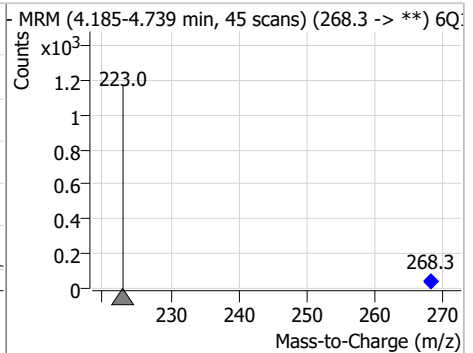
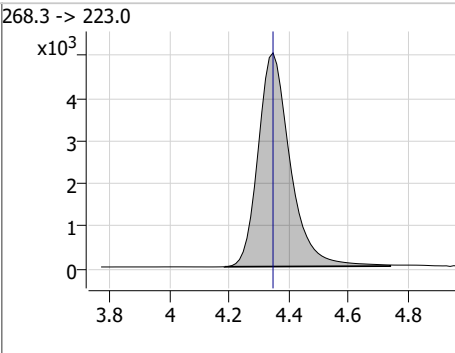
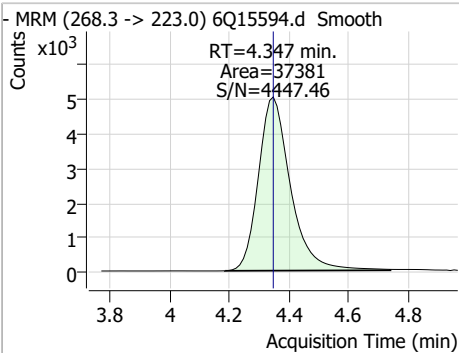


Perfluorinated Compounds by LC/MS/MS

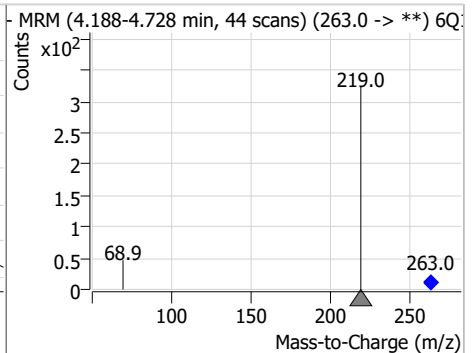
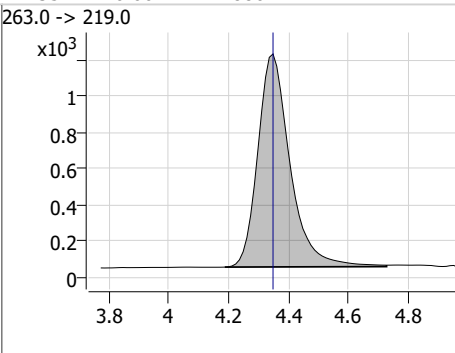
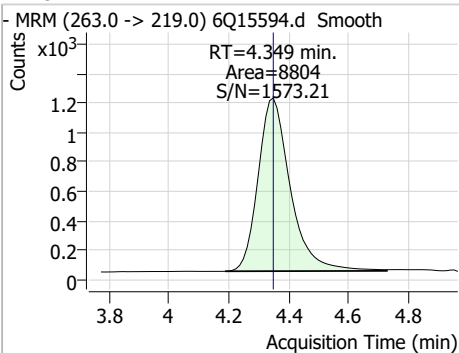
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.70	3.80	0.00	1137	241.0 -> 117.0	17.2	7.2	21.7



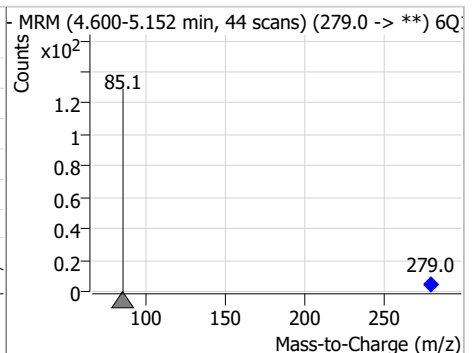
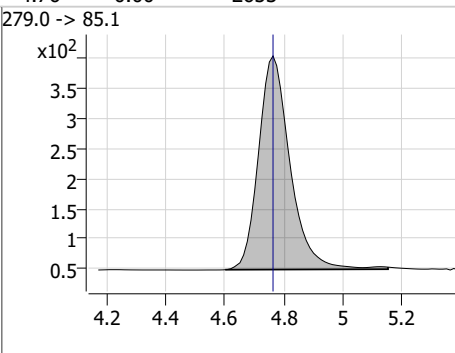
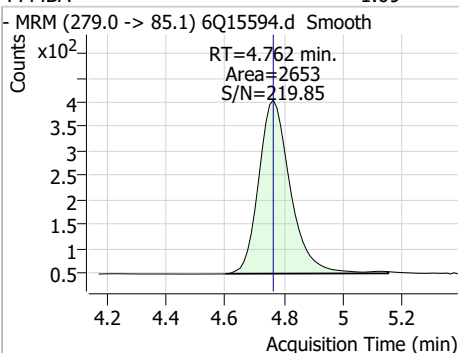
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.35	0.00	37381				



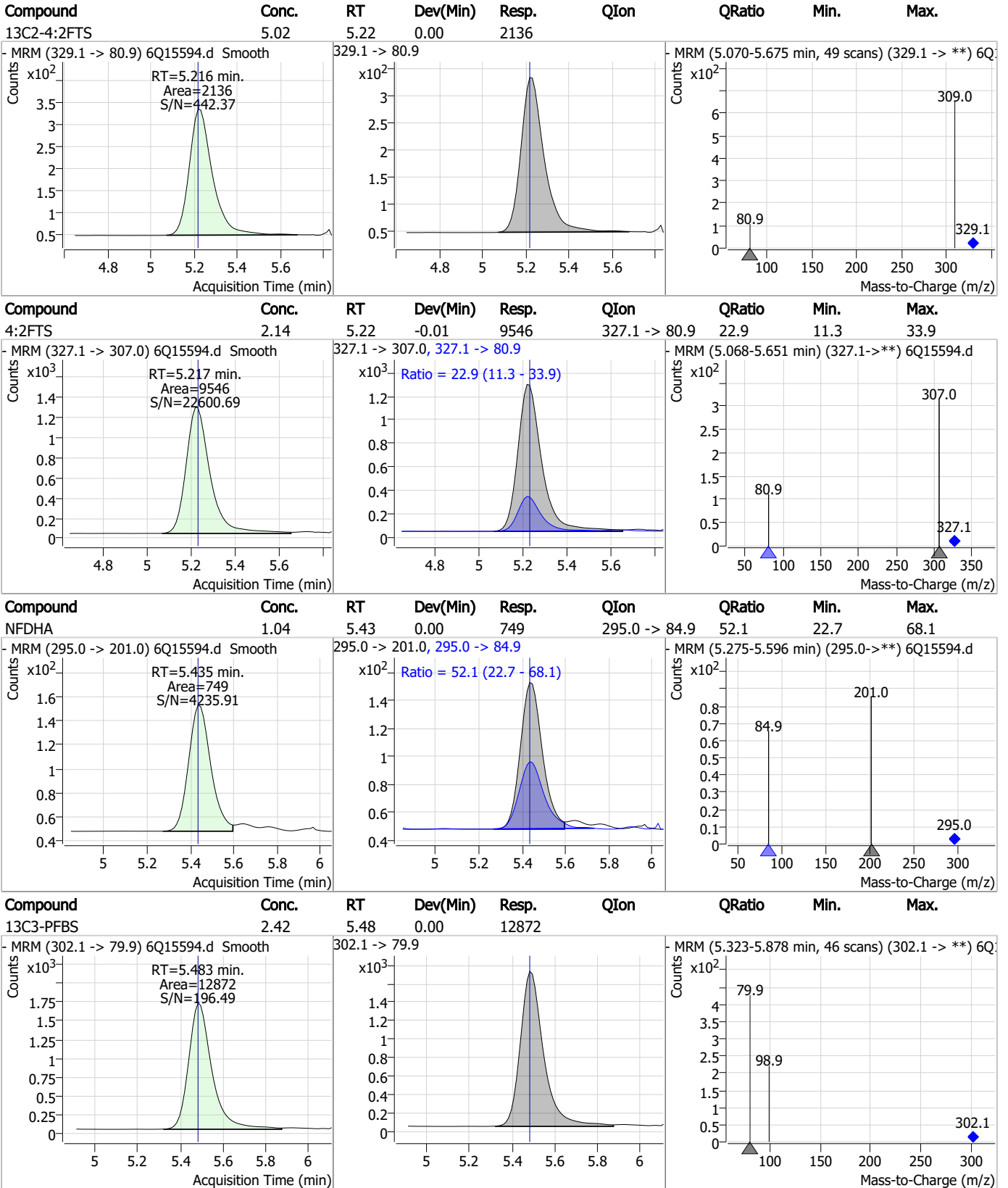
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.11	4.35	0.00	8804				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.09	4.76	0.00	2653				



Perfluorinated Compounds by LC/MS/MS

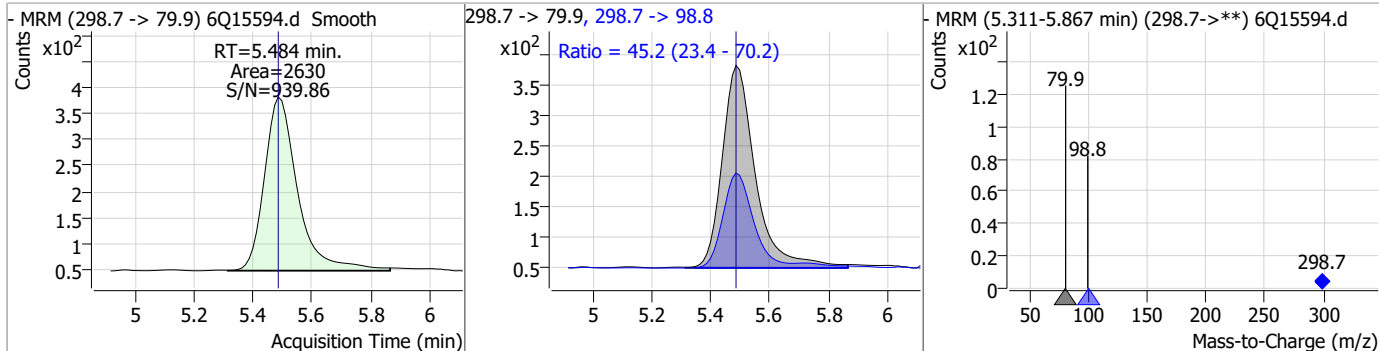


7.7.3

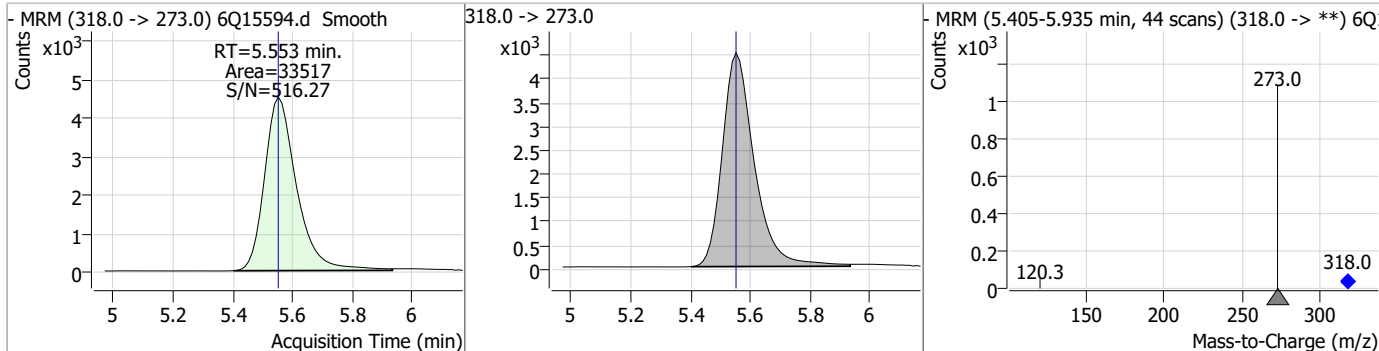
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Perfluorinated Compounds by LC/MS/MS

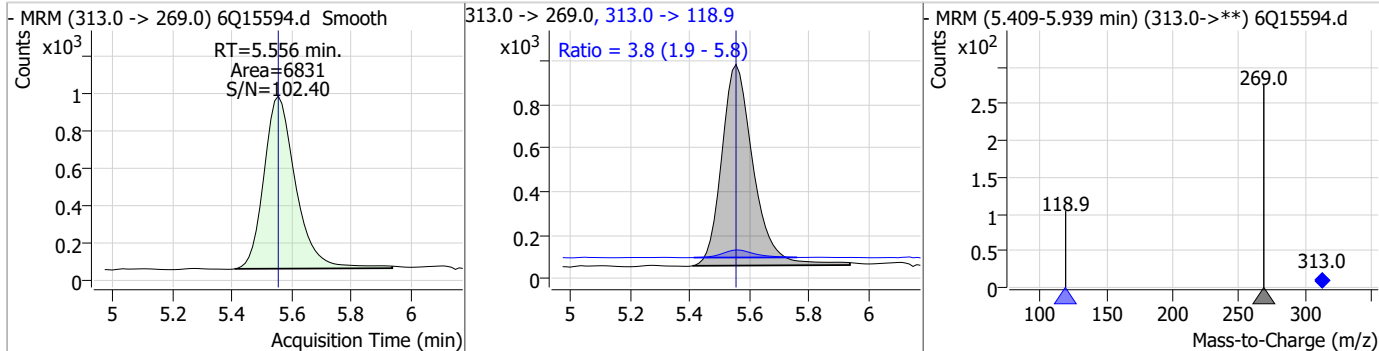
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.53	5.48	0.00	2630	298.7 -> 98.8	45.2	23.4	70.2



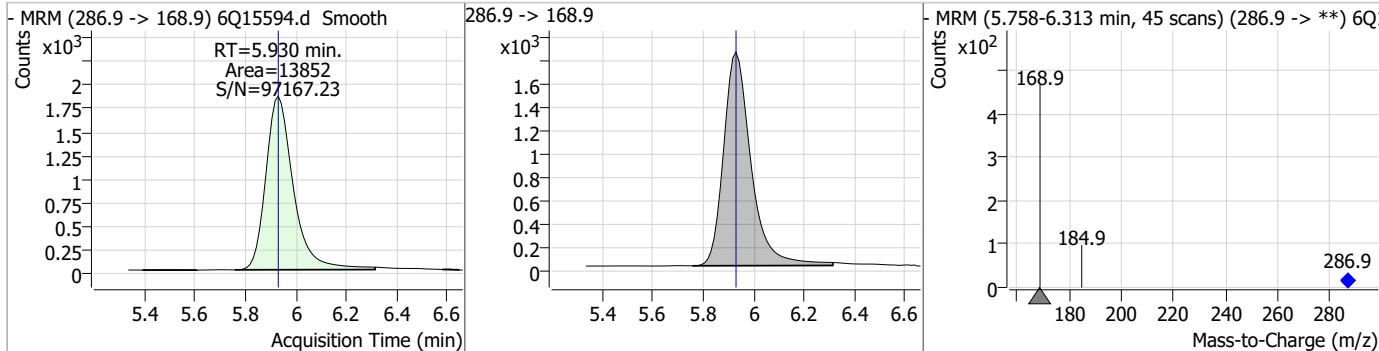
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.55	0.00	33517				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.57	5.56	0.00	6831	313.0 -> 118.9	3.8	1.9	5.8

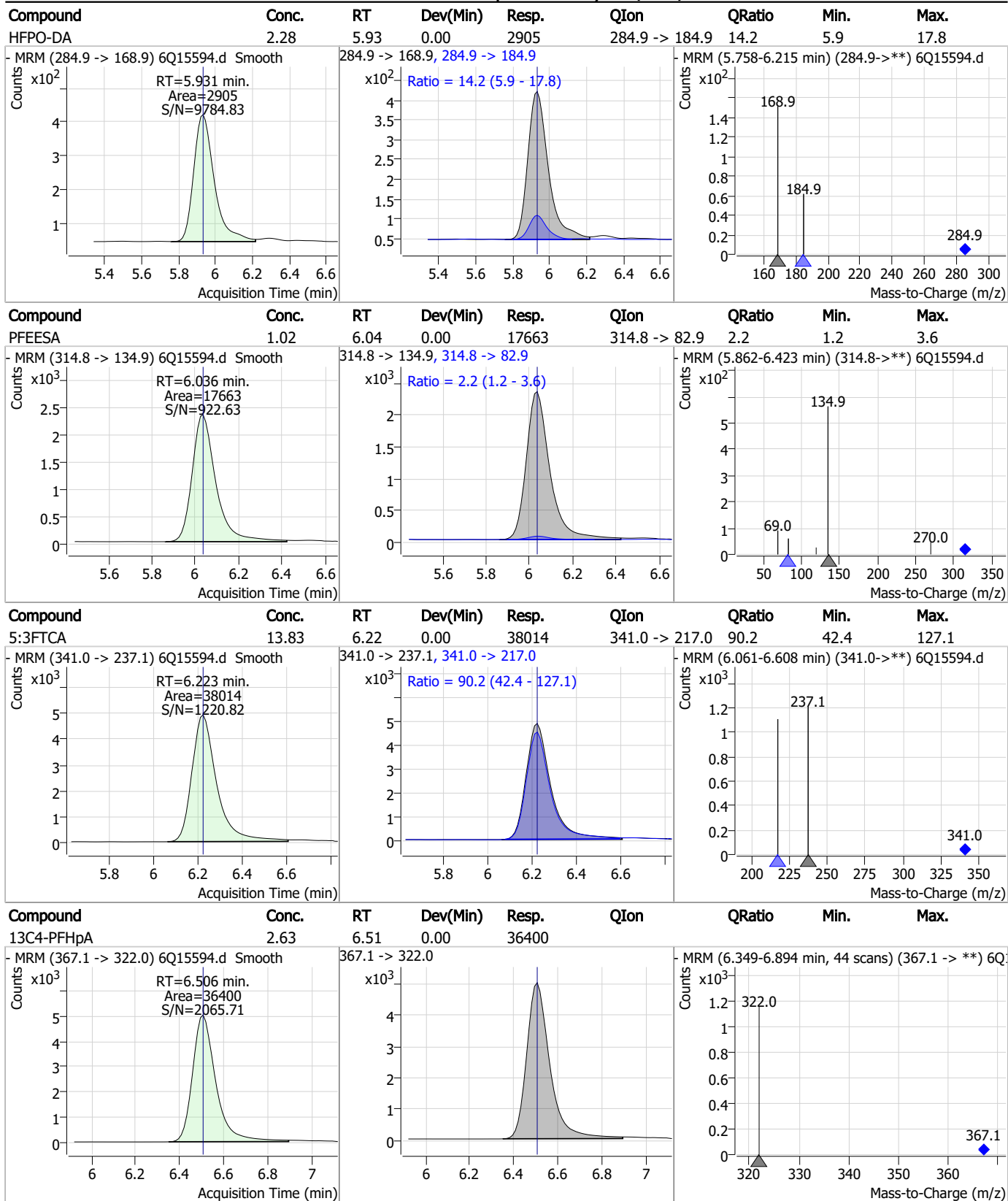


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.83	5.93	0.00	13852				



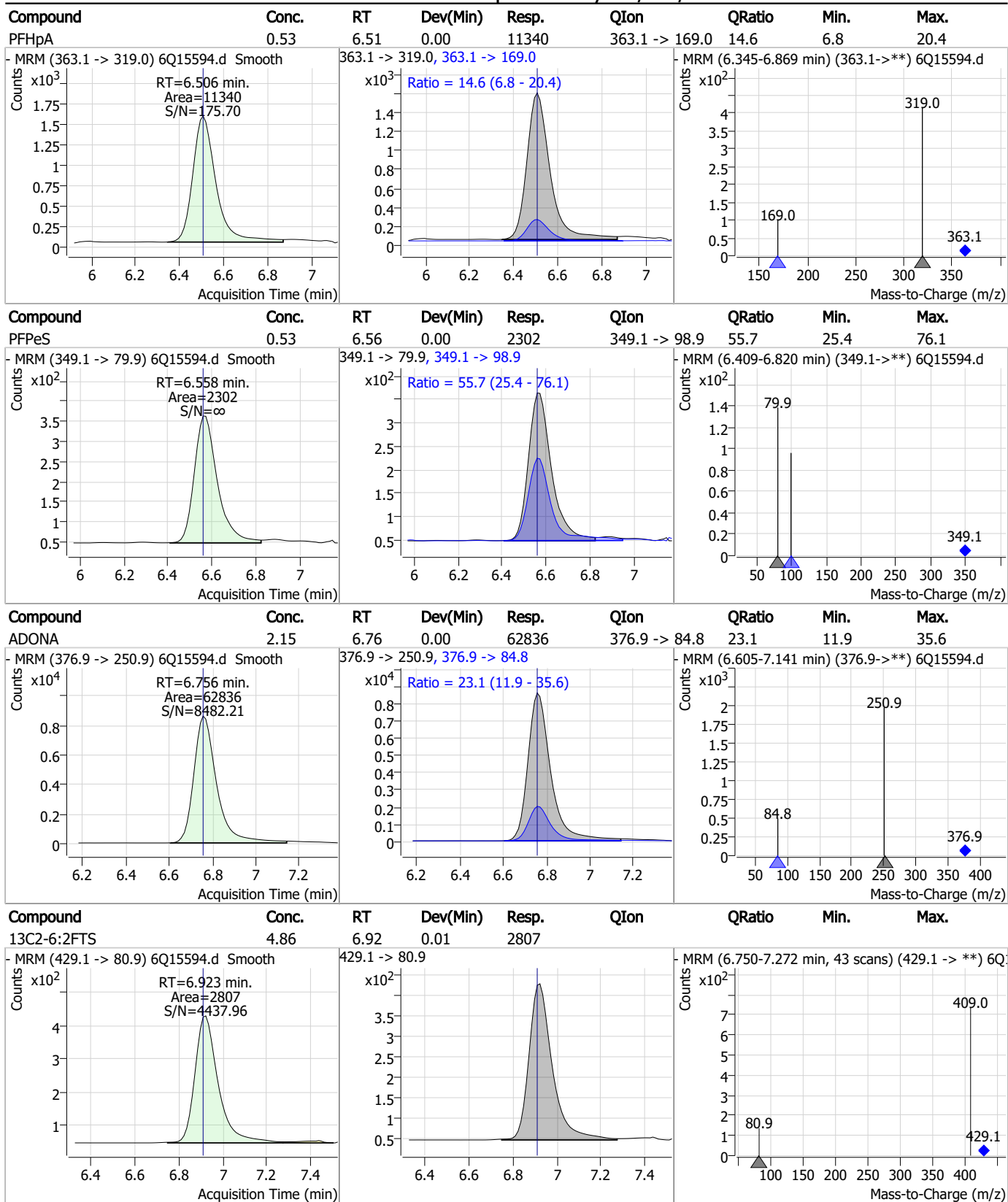
7.7.3
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Perfluorinated Compounds by LC/MS/MS



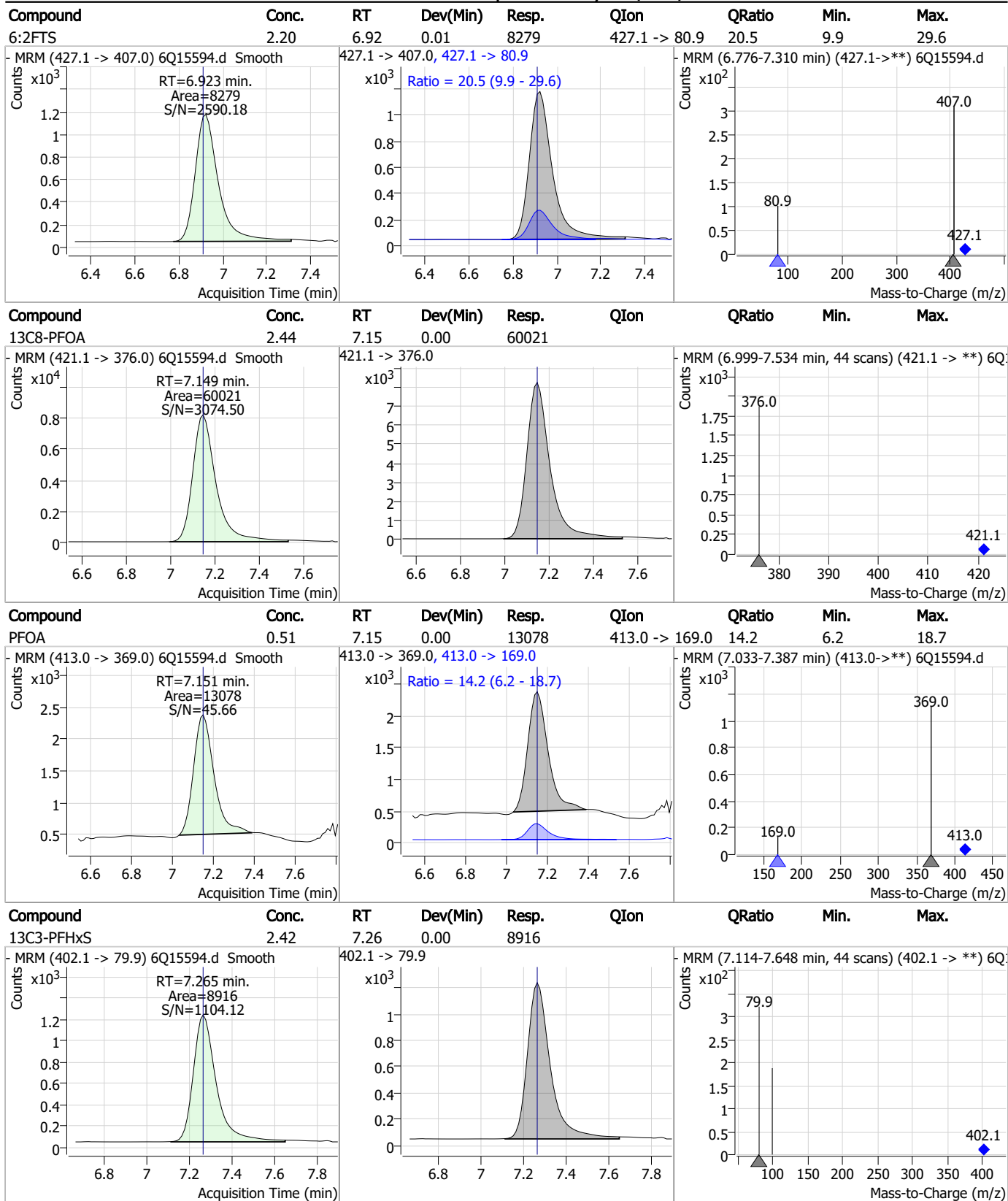
7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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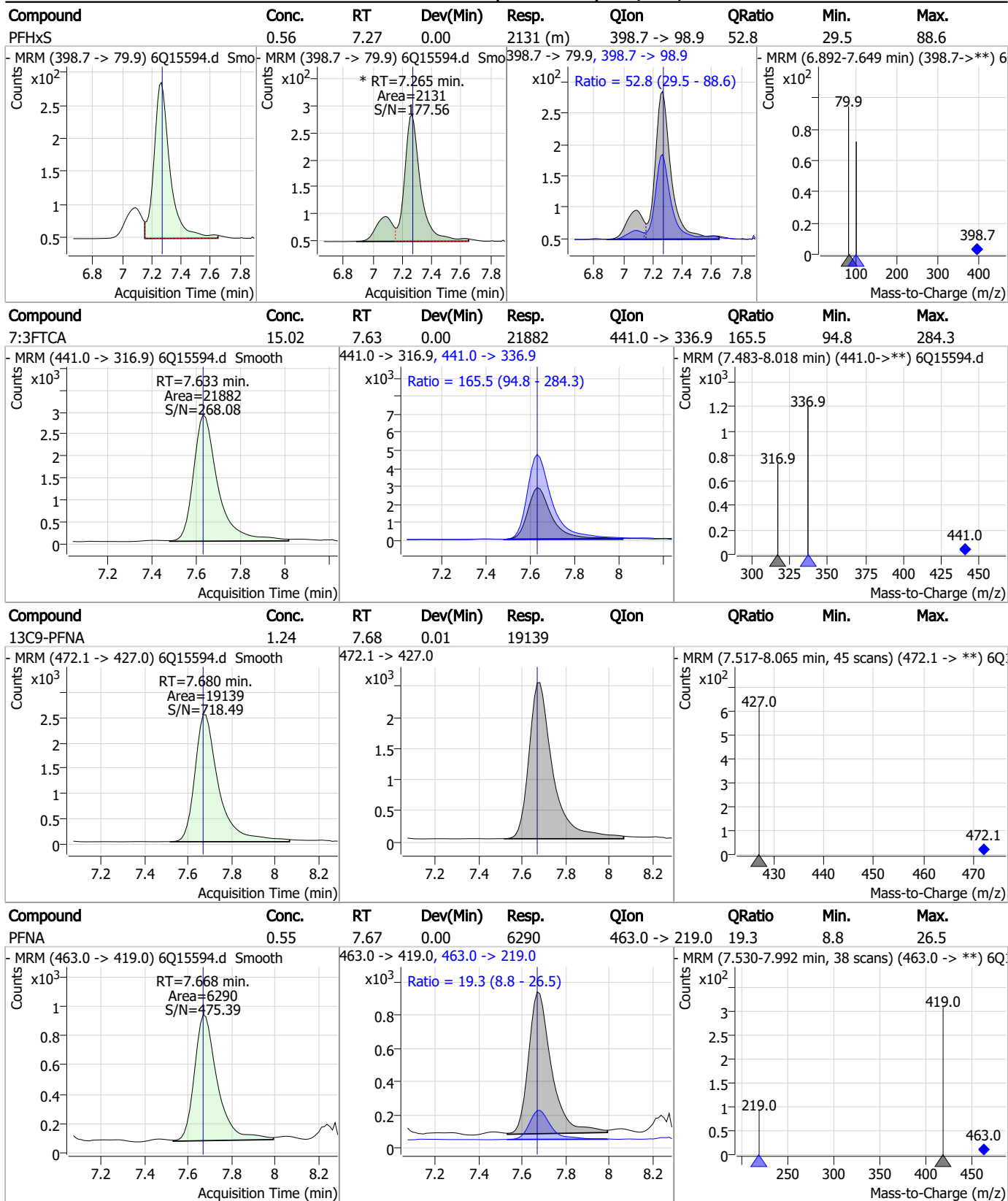
Perfluorinated Compounds by LC/MS/MS



7.7.3

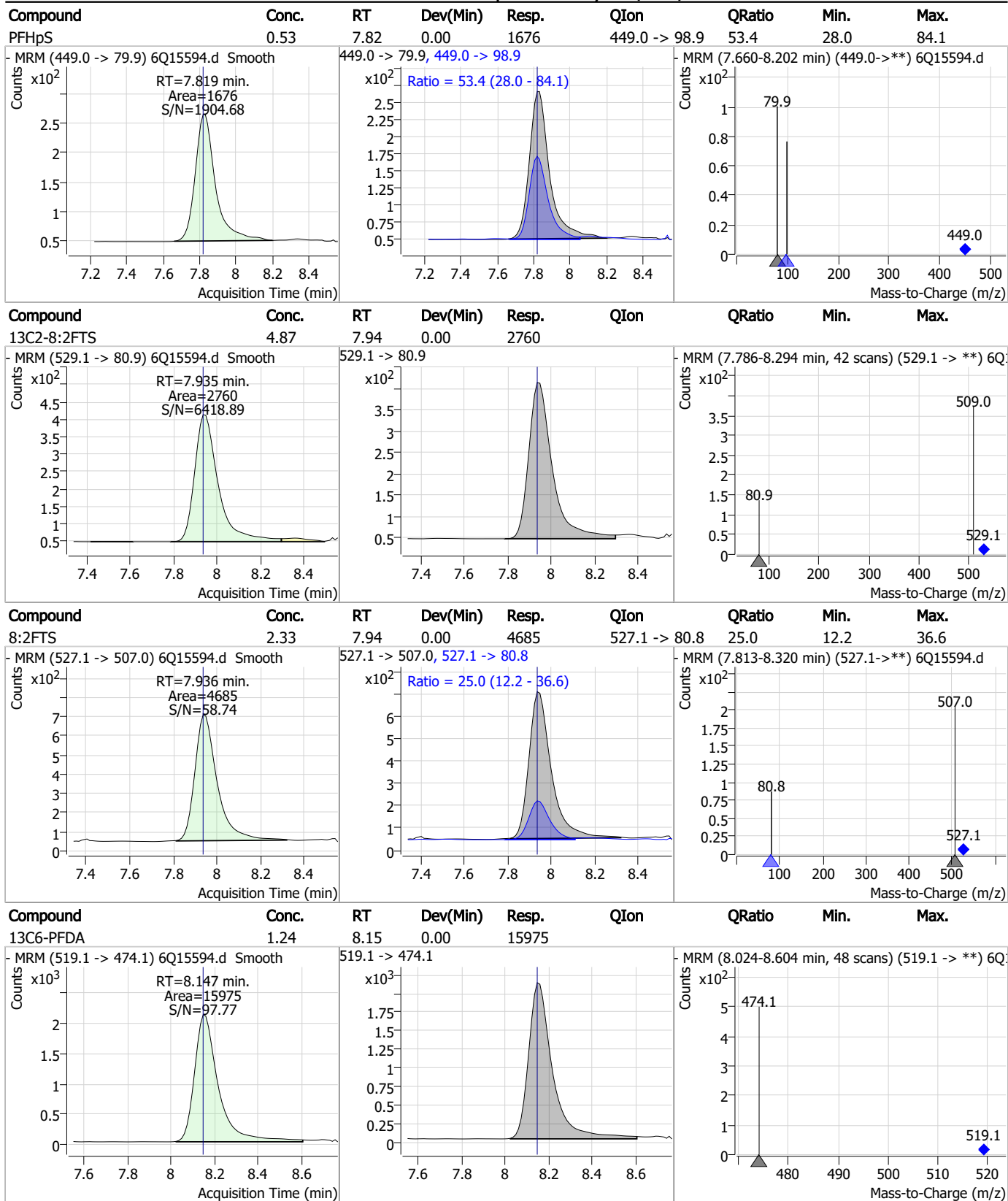
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Perfluorinated Compounds by LC/MS/MS



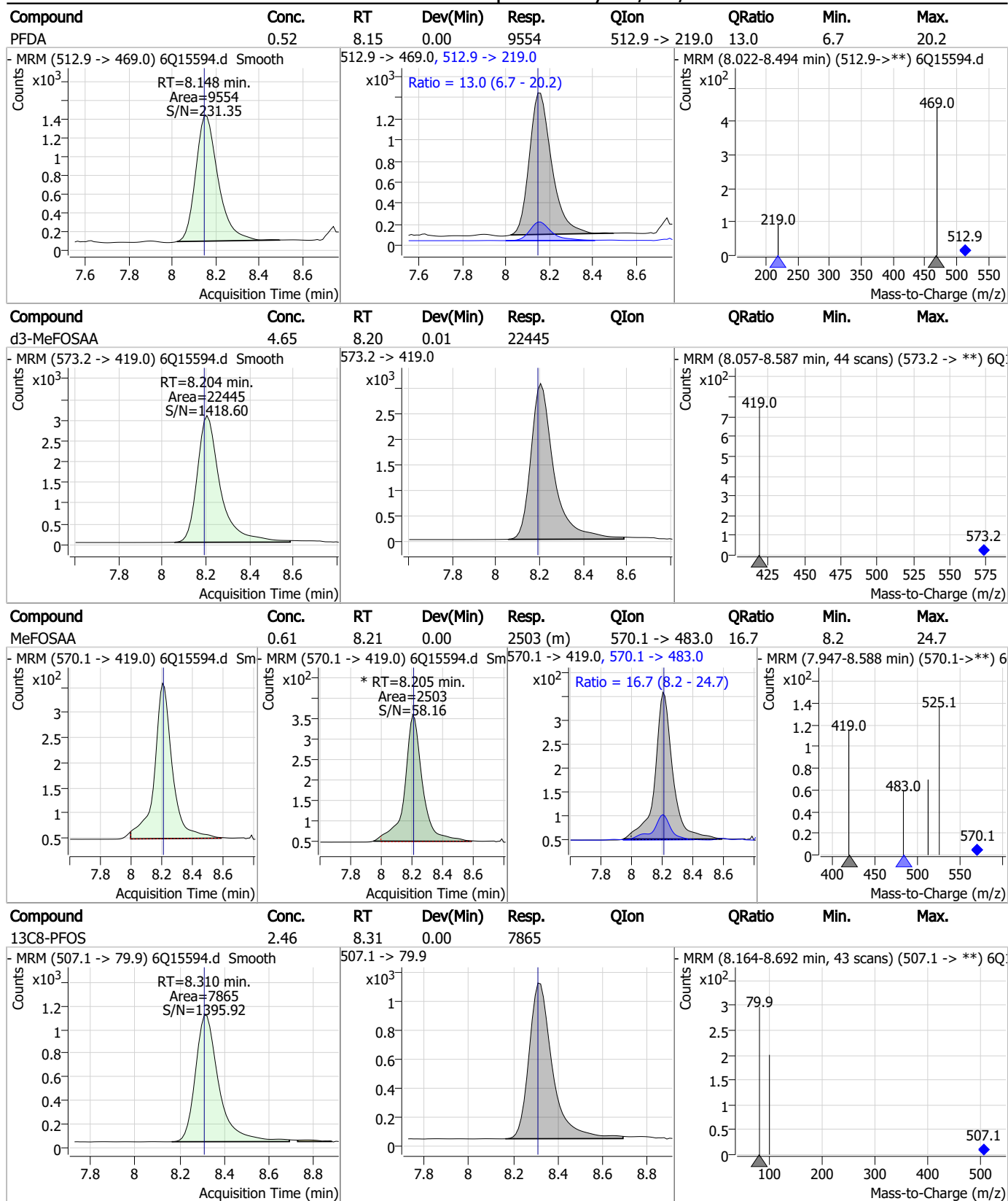
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS

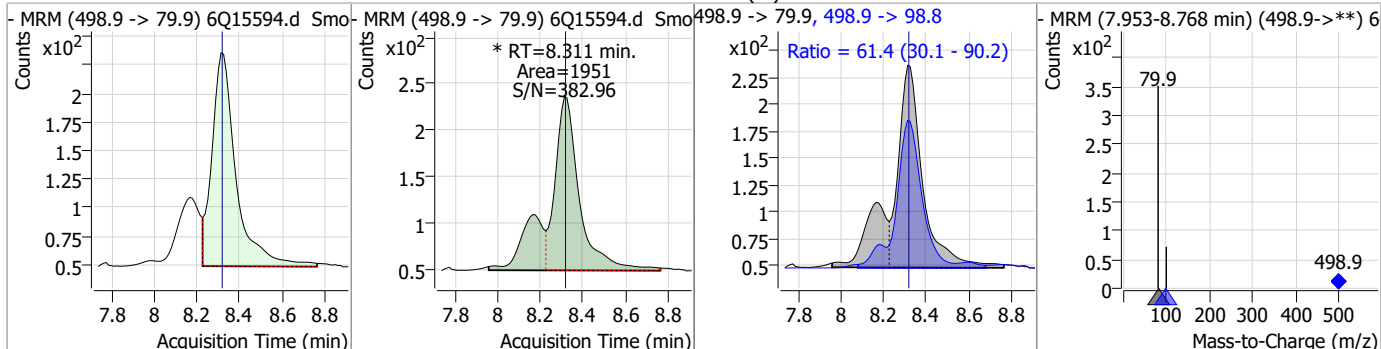


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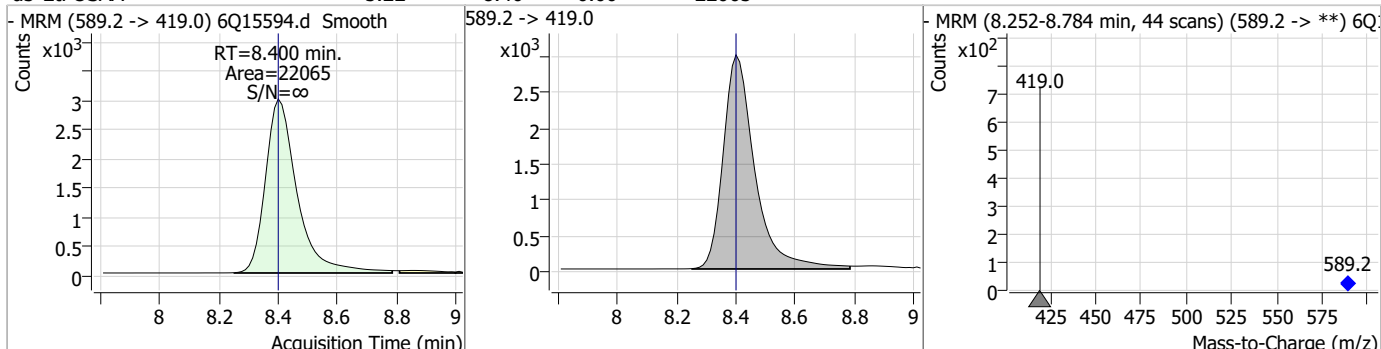
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Perfluorinated Compounds by LC/MS/MS

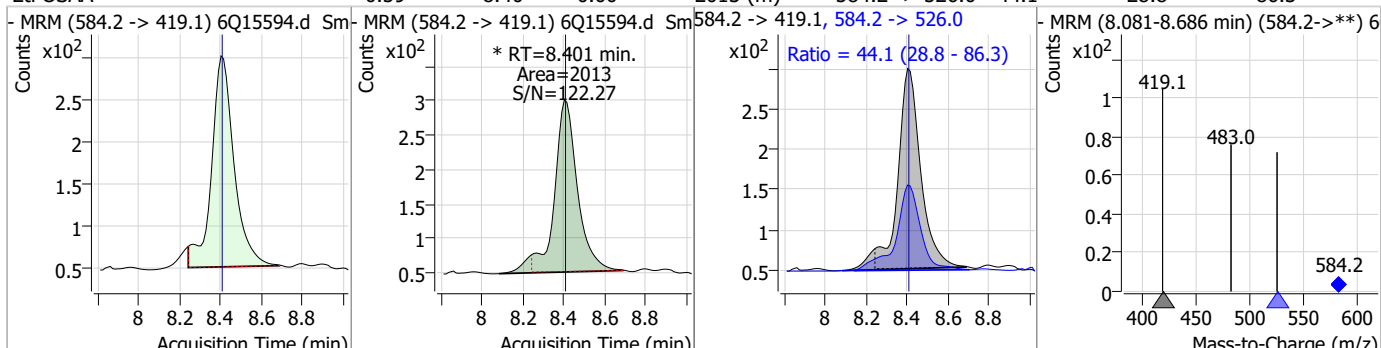
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.59	8.31	0.00	1951 (m)	498.9 -> 98.8	61.4	30.1	90.2



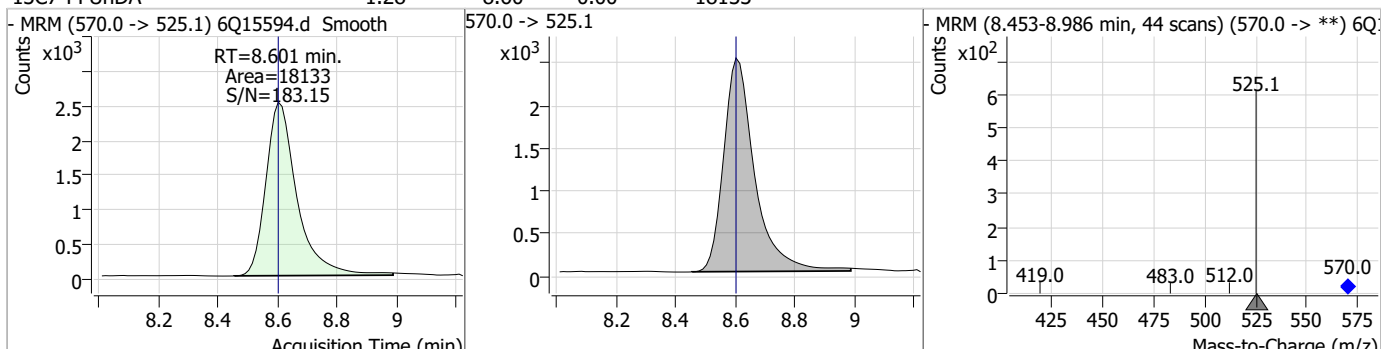
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.22	8.40	0.00	22065				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.59	8.40	0.00	2013 (m)	584.2 -> 526.0	44.1	28.8	86.3

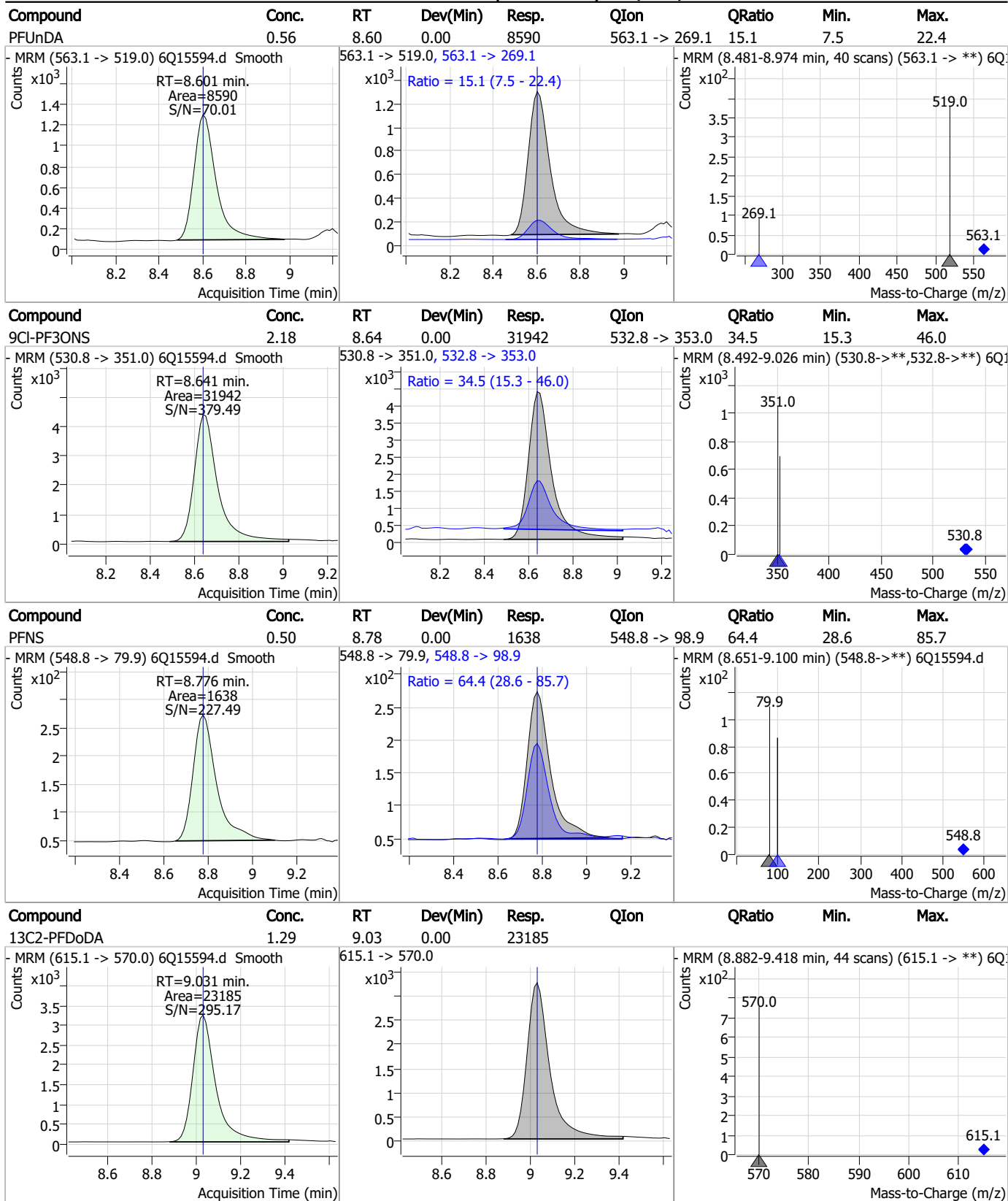


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.60	0.00	18133				



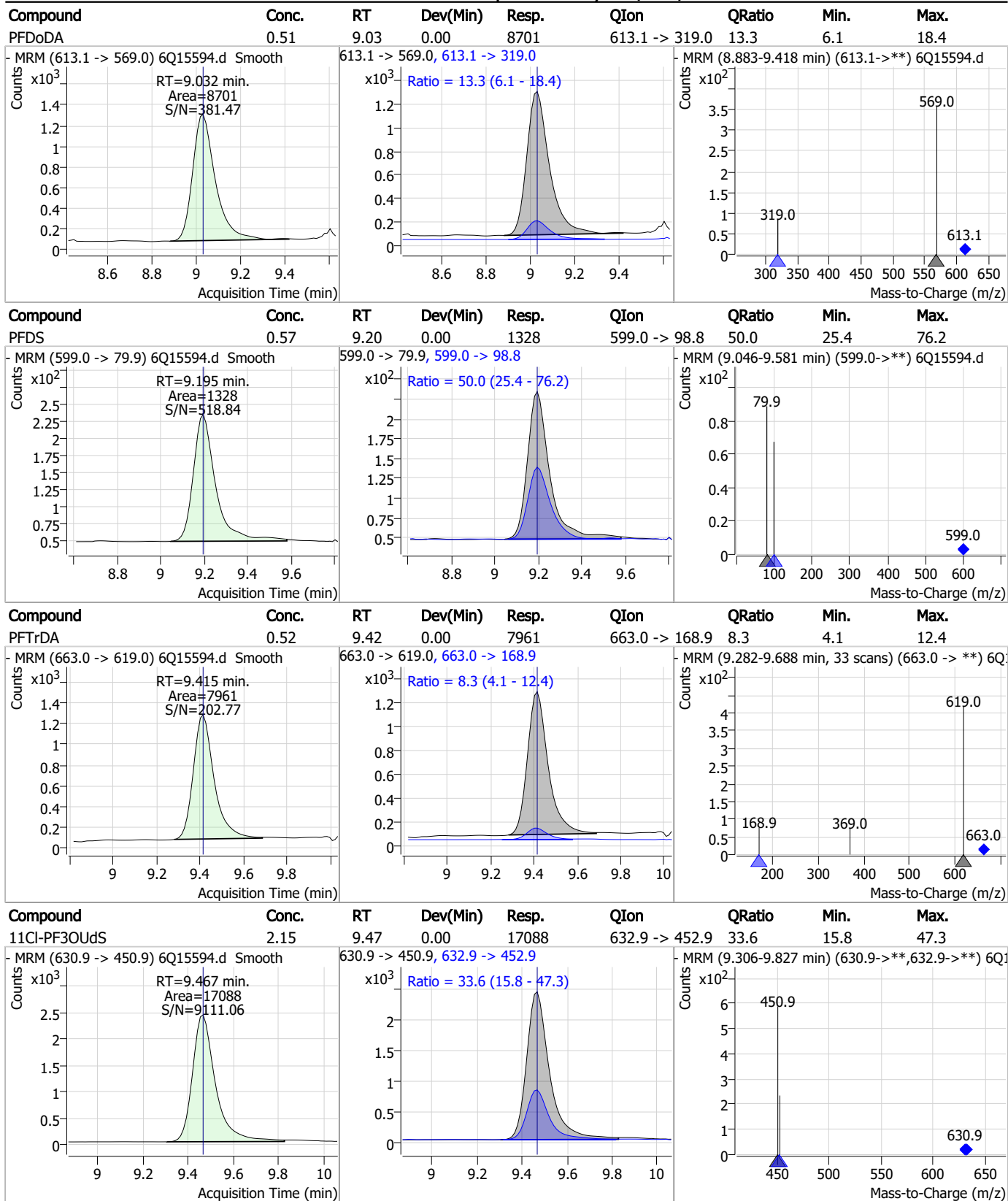
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Perfluorinated Compounds by LC/MS/MS



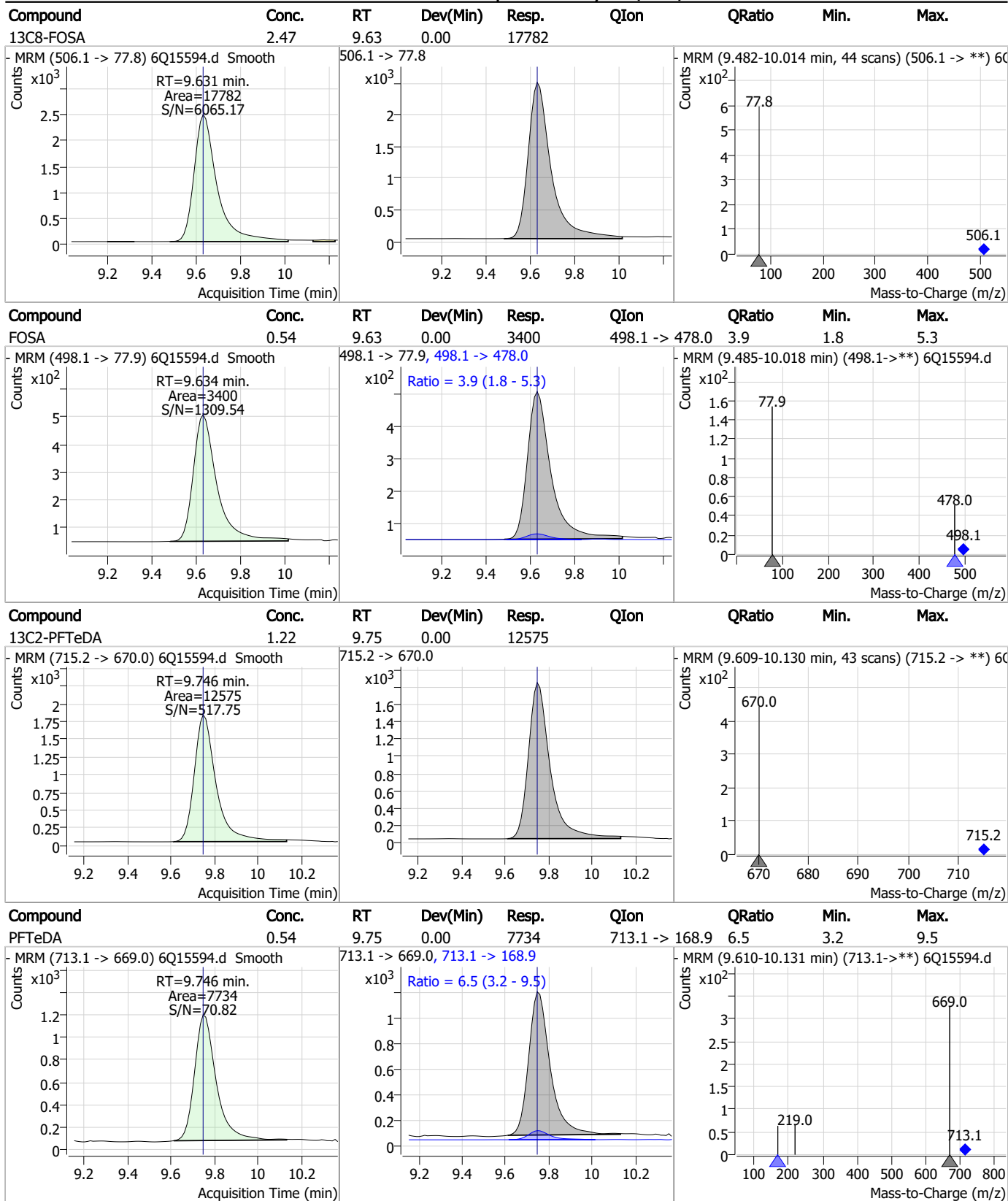
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Perfluorinated Compounds by LC/MS/MS



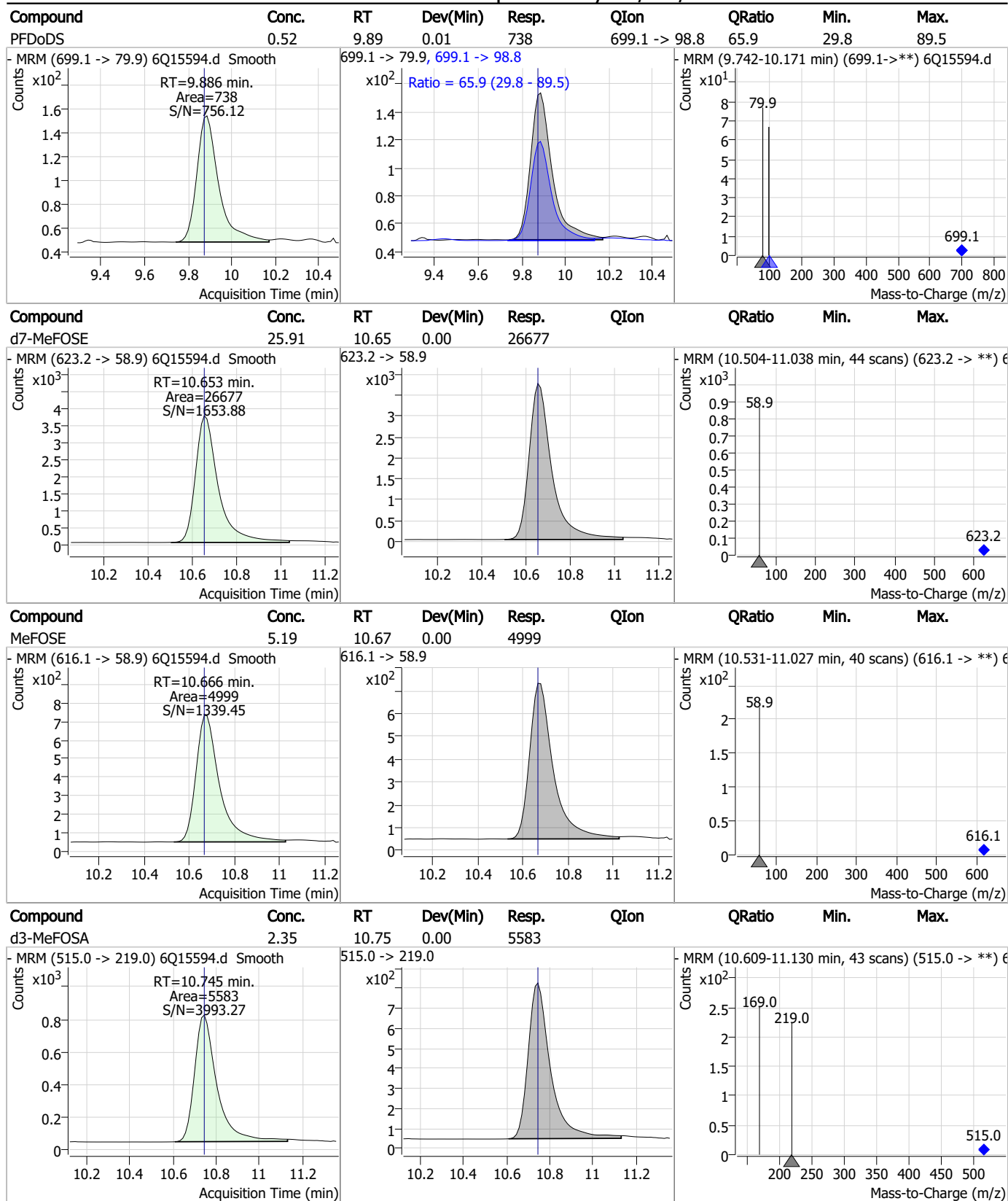
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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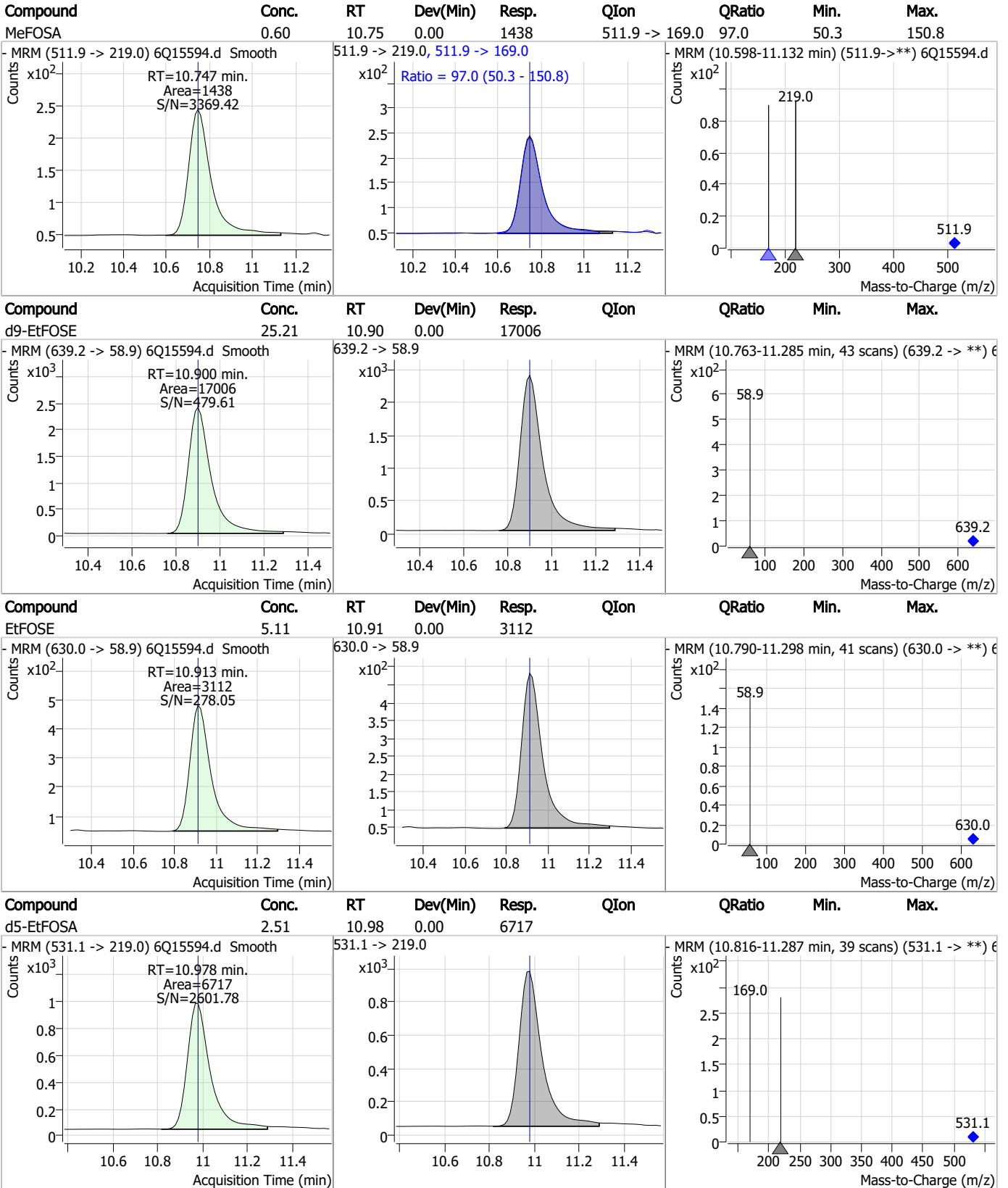
Perfluorinated Compounds by LC/MS/MS



7.7.3

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Perfluorinated Compounds by LC/MS/MS

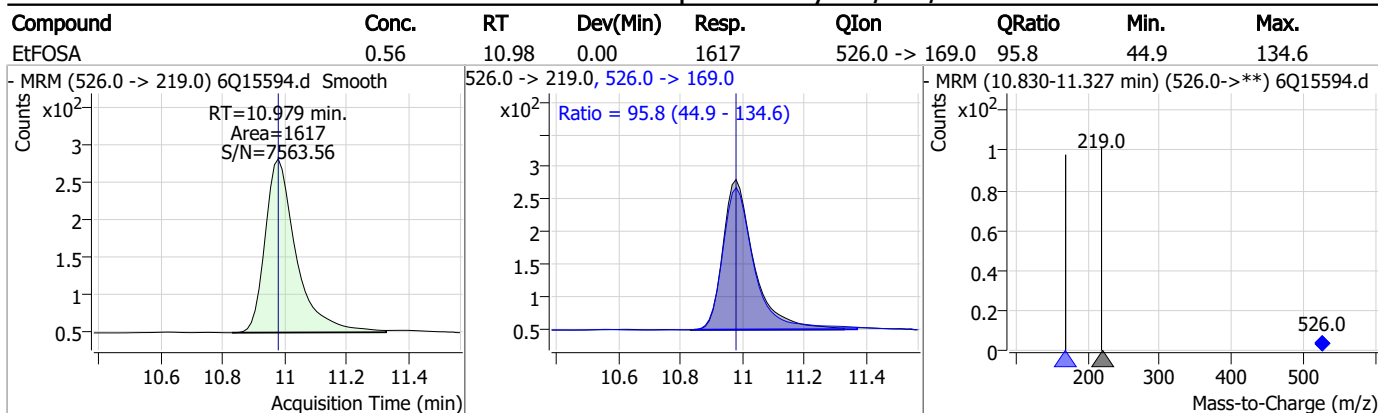


7.7.3

7



Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15594.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 16:34 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15595.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 4:48:51 PM
 Sample Name : ic235-3
 Vial : P1-A4
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78415	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37564	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34158	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	34450	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	64699	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	18833	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16056	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16848	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	22031	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12784	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	18047	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12570	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8681	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7583	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2066	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	2999	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2700	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	24879	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13756	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	20262	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25136	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16969	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6497	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5656	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9720	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33990	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6274	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	74692	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	20026	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19988	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	32737	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2066	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2999	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2700	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C2-PFDoDA	9.031	615.1 -> 570.0	22031	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12784	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C3-PFBS	5.483	302.1 -> 79.9	12570	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C3-PFHxS	7.265	402.1 -> 79.9	8681	2.45 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C4-PFBA	2.913	216.8 -> 171.9	78415	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C4-PFHpA	6.506	367.1 -> 322.0	34450	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C5-PFHxA	5.553	318.0 -> 273.0	34158	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C5-PFPeA	4.347	268.3 -> 223.0	37564	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C6-PFDA	8.147	519.1 -> 474.1	16056	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C7-PFUnDA	8.601	570.0 -> 525.1	16848	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C8-FOSA	9.631	506.1 -> 77.8	18047	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.1%		
13C8-PFOA	7.149	421.1 -> 376.0	64699	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C8-PFOS	8.310	507.1 -> 79.9	7583	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C9-PFNA	7.667	472.1 -> 427.0	18833	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
d3-MeFOSAA	8.204	573.2 -> 419.0	24879	5.19 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13756	9.76 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
d3-MeFOSA	10.745	515.0 -> 219.0	5656	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.8%		
d5-EtFOSAA	8.400	589.2 -> 419.0	20262	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.5%		
d7-MeFOSE	10.653	623.2 -> 58.9	25136	24.60 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
d9-EtFOSE	10.900	639.2 -> 58.9	16969	25.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
d5-EtFOSA	10.978	531.1 -> 219.0	6497	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.8%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	21374	4.96 µg/L	99
		327.1 -> 80.9	4925		
6:2FTS	6.911	427.1 -> 407.0	19444	4.84 µg/L	96
		427.1 -> 80.9	4212		
8:2FTS	7.948	527.1 -> 507.0	9976	5.08 µg/L	98
		527.1 -> 80.8	2548		
EtFOSAA	8.413	584.2 -> 419.1	4123	1.32 µg/L	m 91
		584.2 -> 526.0	2096		
FOSA	9.634	498.1 -> 77.9	8088	1.26 µg/L	99
		498.1 -> 478.0	259		
MeFOSAA	8.205	570.1 -> 419.0	5272	1.15 µg/L	m 96
		570.1 -> 483.0	953		
PFBA	2.919	212.8 -> 168.9	8902	4.99 µg/L	100
PFBS	5.484	298.7 -> 79.9	5840	1.20 µg/L	97
		298.7 -> 98.8	2613		
PFDA	8.148	512.9 -> 469.0	22692	1.23 µg/L	99
		512.9 -> 219.0	2974		
PFDODA	9.032	613.1 -> 569.0	20538	1.26 µg/L	98
		613.1 -> 319.0	2692		
PFDS	9.195	599.0 -> 79.9	2832	1.25 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1409			
PFHpA	6.506	363.1 -> 319.0	25167	1.25	µg/L	98
		363.1 -> 169.0	3618			
PFHpS	7.819	449.0 -> 79.9	3542	1.16	µg/L	85
		449.0 -> 98.9	2374			
PFHxA	5.556	313.0 -> 269.0	15116	1.23	µg/L	99
		313.0 -> 118.9	553			
PFHxS	7.265	398.7 -> 79.9	4486	1.21	µg/L	m 98
		398.7 -> 98.9	2573			
PFNA	7.668	463.0 -> 419.0	14742	1.31	µg/L	95
		463.0 -> 219.0	2951			
PFNS	8.776	548.8 -> 79.9	4052	1.27	µg/L	100
		548.8 -> 98.9	2311			
PFOA	7.151	413.0 -> 369.0	32358	1.17	µg/L	98
		413.0 -> 169.0	4336			
PFOS	8.311	498.9 -> 79.9	3909	1.23	µg/L	m 95
		498.9 -> 98.8	2502			
PFPeA	4.349	263.0 -> 219.0	19875	2.50	µg/L	100
PFPeS	6.558	349.1 -> 79.9	5145	1.21	µg/L	90
		349.1 -> 98.9	2982			
PFTeDA	9.746	713.1 -> 669.0	18707	1.29	µg/L	99
		713.1 -> 168.9	1224			
PFTrDA	9.415	663.0 -> 619.0	18536	1.29	µg/L	100
		663.0 -> 168.9	1513			
PFUnDA	8.601	563.1 -> 519.0	18184	1.27	µg/L	100
		563.1 -> 269.1	2707			
11CI-PF3OUdS	9.467	630.9 -> 450.9	39766	5.05	µg/L	100
		632.9 -> 452.9	12530			
9CI-PF3ONS	8.641	530.8 -> 351.0	73872	5.07	µg/L	99
		532.8 -> 353.0	22023			
ADONA	6.756	376.9 -> 250.9	144792	5.00	µg/L	98
		376.9 -> 84.8	32598			
HFPO-DA	5.931	284.9 -> 168.9	6644	5.25	µg/L	98
		284.9 -> 184.9	830			
3:3FTCA	3.802	241.0 -> 177.0	2653	6.27	µg/L	100
		241.0 -> 117.0	385			
5:3FTCA	6.210	341.0 -> 237.1	87514	31.23	µg/L	93
		341.0 -> 217.0	80050			
7:3FTCA	7.633	441.0 -> 316.9	46415	31.26	µg/L	93
		441.0 -> 336.9	83208			
EtFOSA	10.979	526.0 -> 219.0	3497	1.26	µg/L	85
		526.0 -> 169.0	3621			
EtFOSE	10.913	630.0 -> 58.9	7868	12.96	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	3227	1.32	µg/L	91
		511.9 -> 169.0	3519			
MeFOSE	10.679	616.1 -> 58.9	11359	12.51	µg/L	100
PFDoDS	9.886	699.1 -> 79.9	1687	1.24	µg/L	90
		699.1 -> 98.8	1139			
NFDHA	5.435	295.0 -> 201.0	1989	2.72	µg/L	92
		295.0 -> 84.9	793			
PFMBA	4.762	279.0 -> 85.1	6124	2.50	µg/L	100
PFMPA	3.488	229.0 -> 84.9	5503	2.50	µg/L	100
PFEESA	6.036	314.8 -> 134.9	38210	2.17	µg/L	99
		314.8 -> 82.9	1021			

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

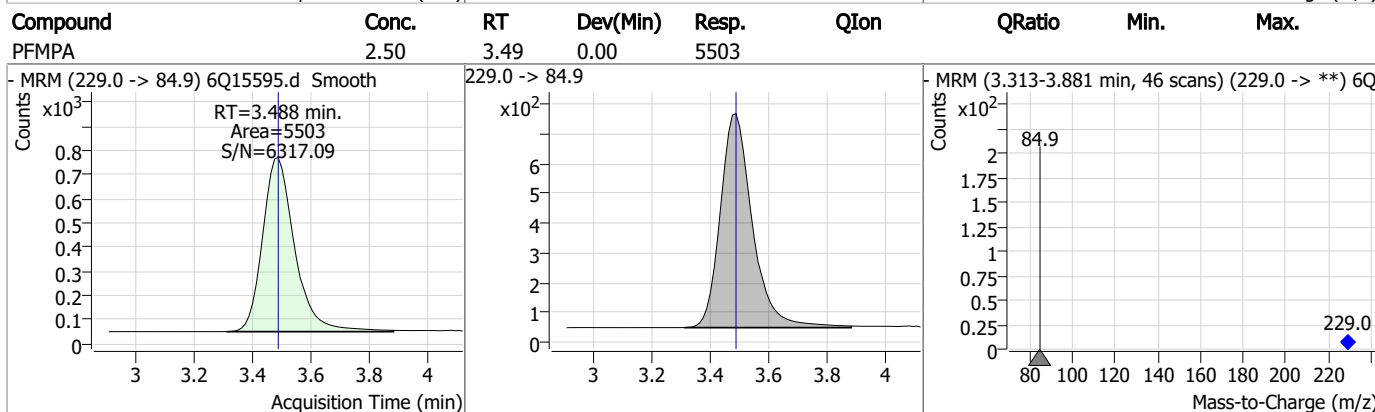
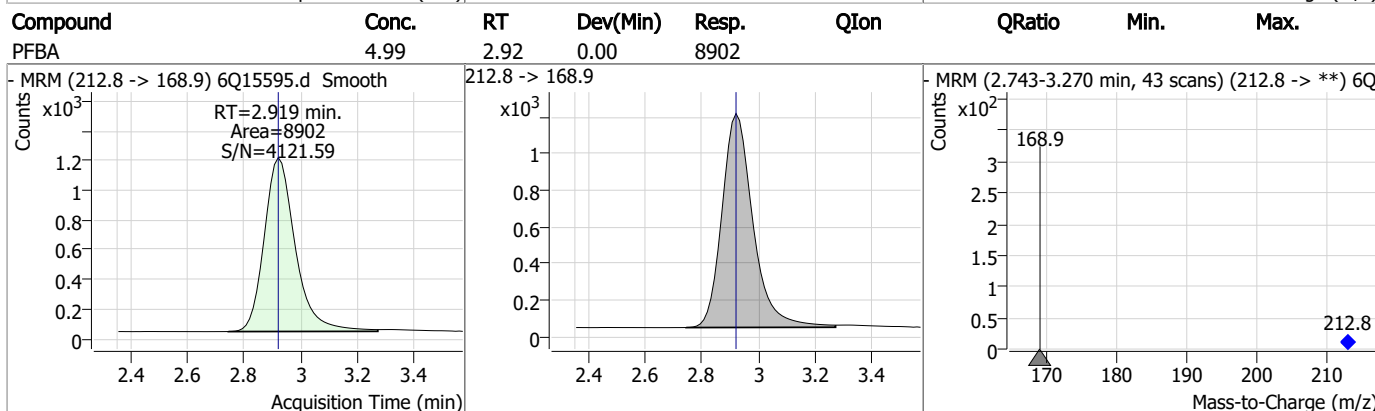
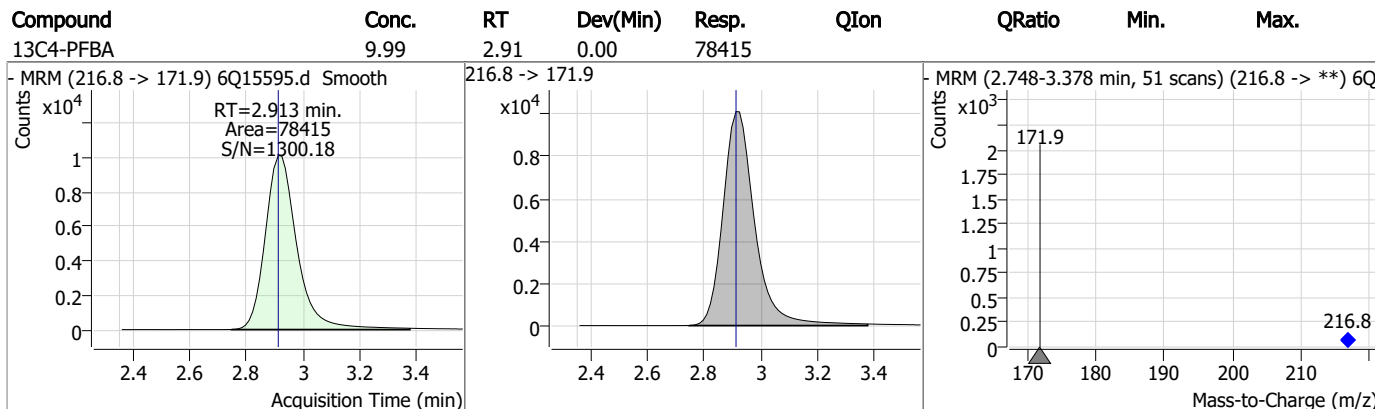
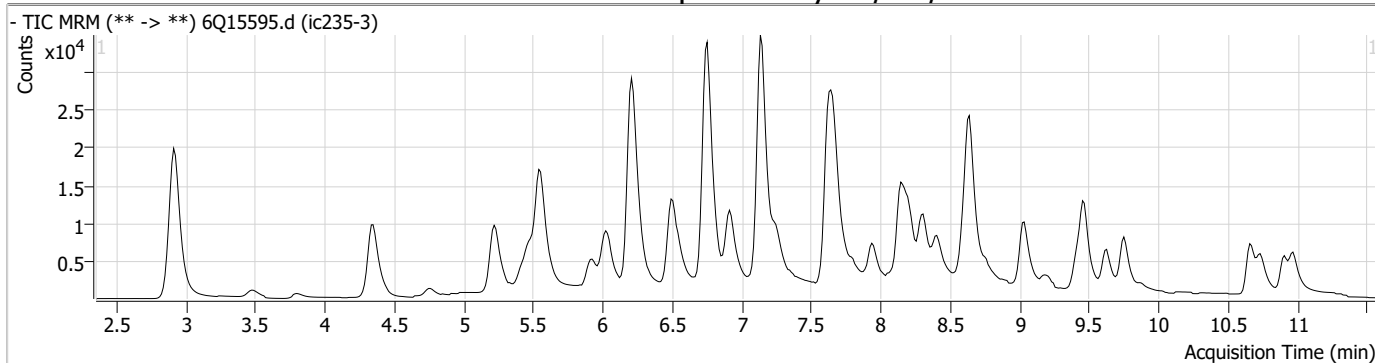
Perfluorinated Compounds by LC/MS/MS

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

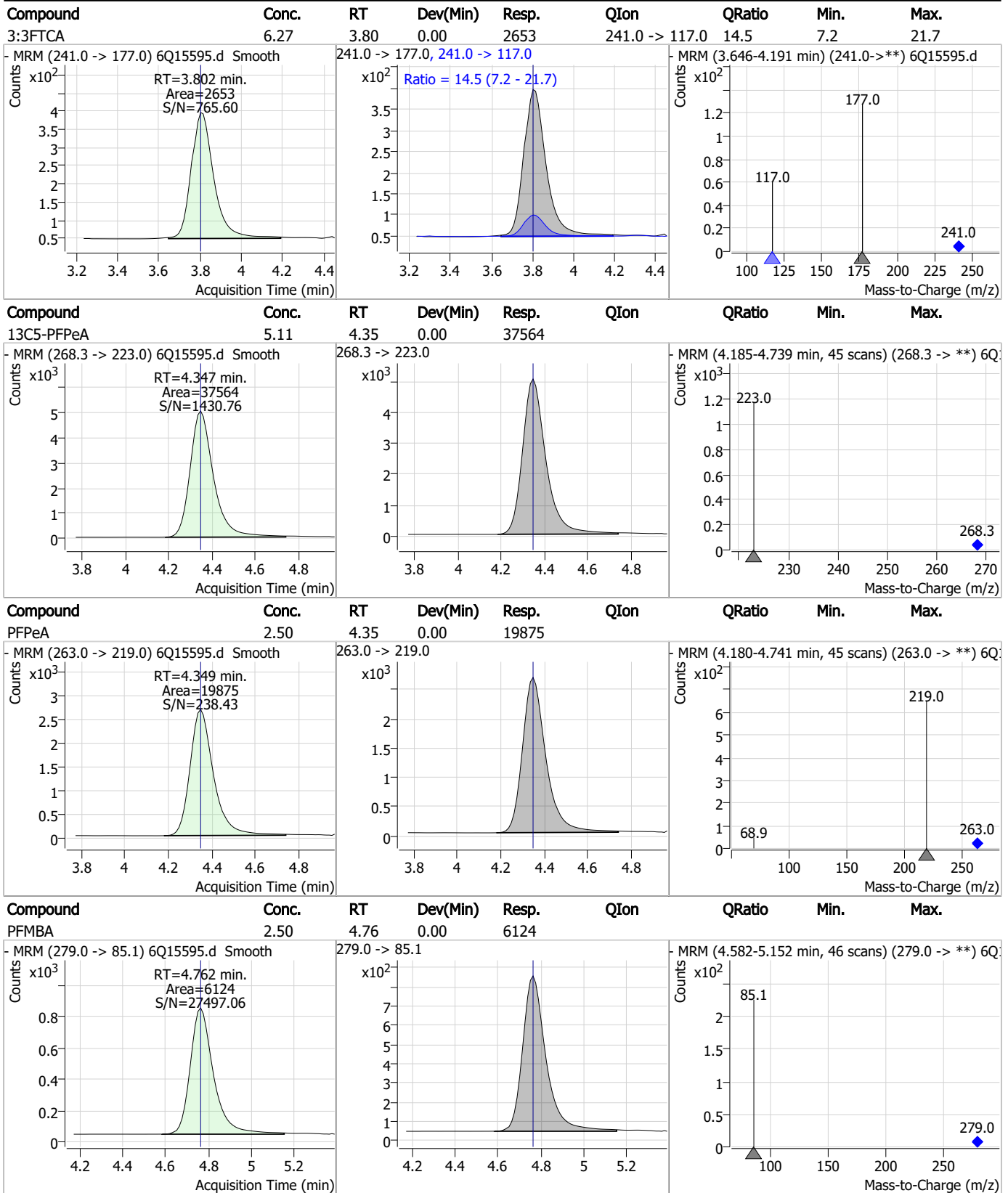
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

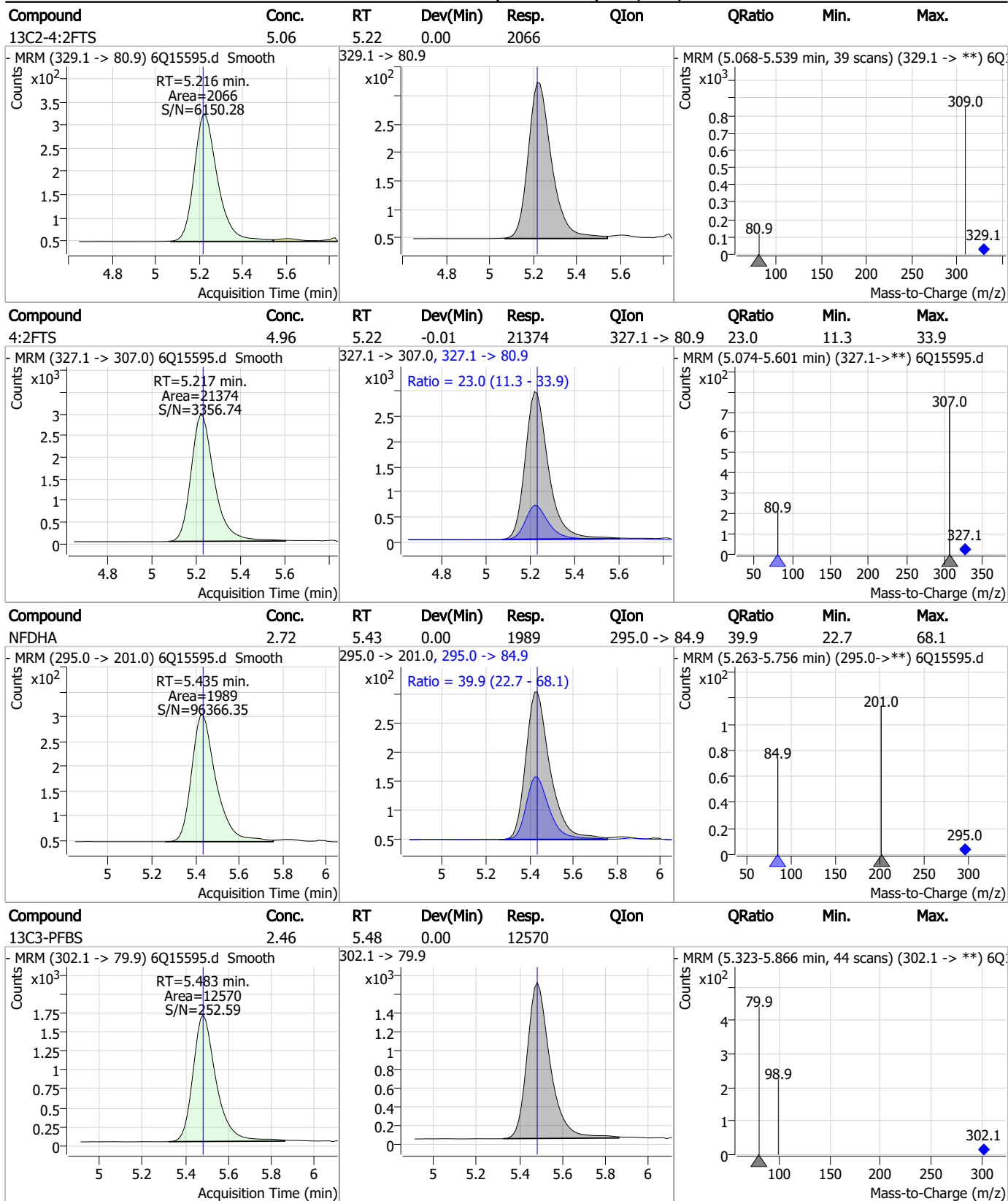
Perfluorinated Compounds by LC/MS/MS



7.7.4

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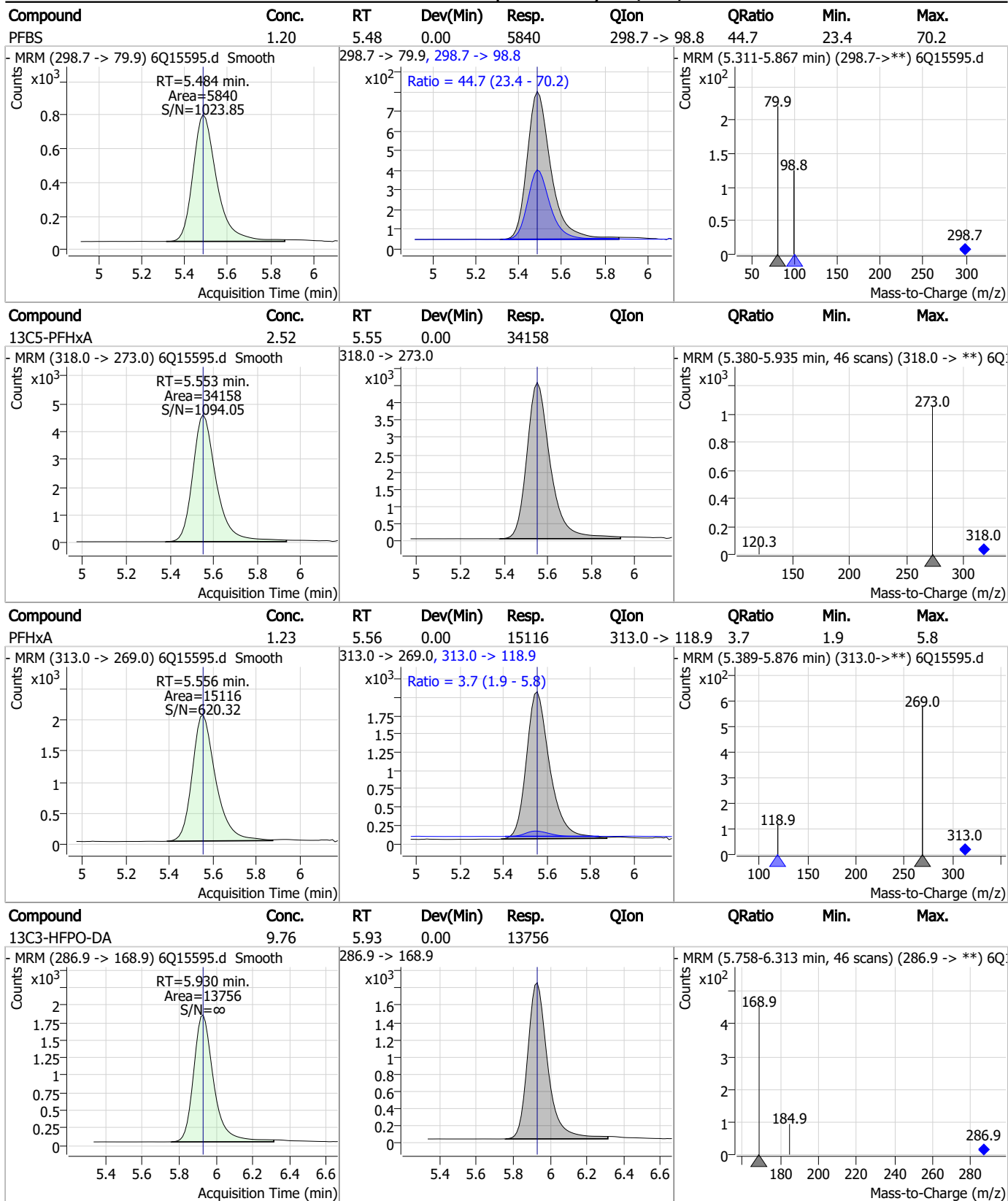
Perfluorinated Compounds by LC/MS/MS



7.7.4

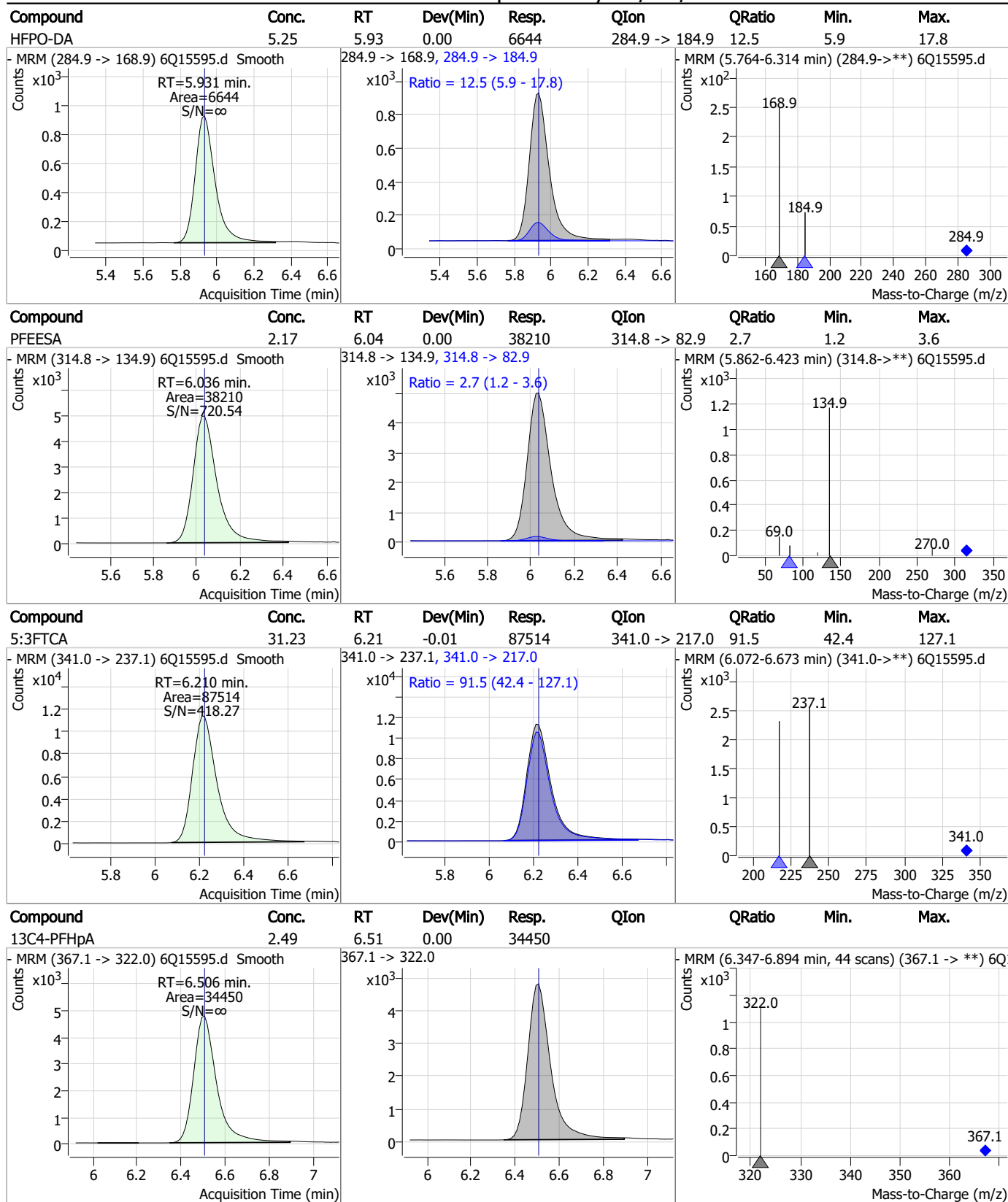
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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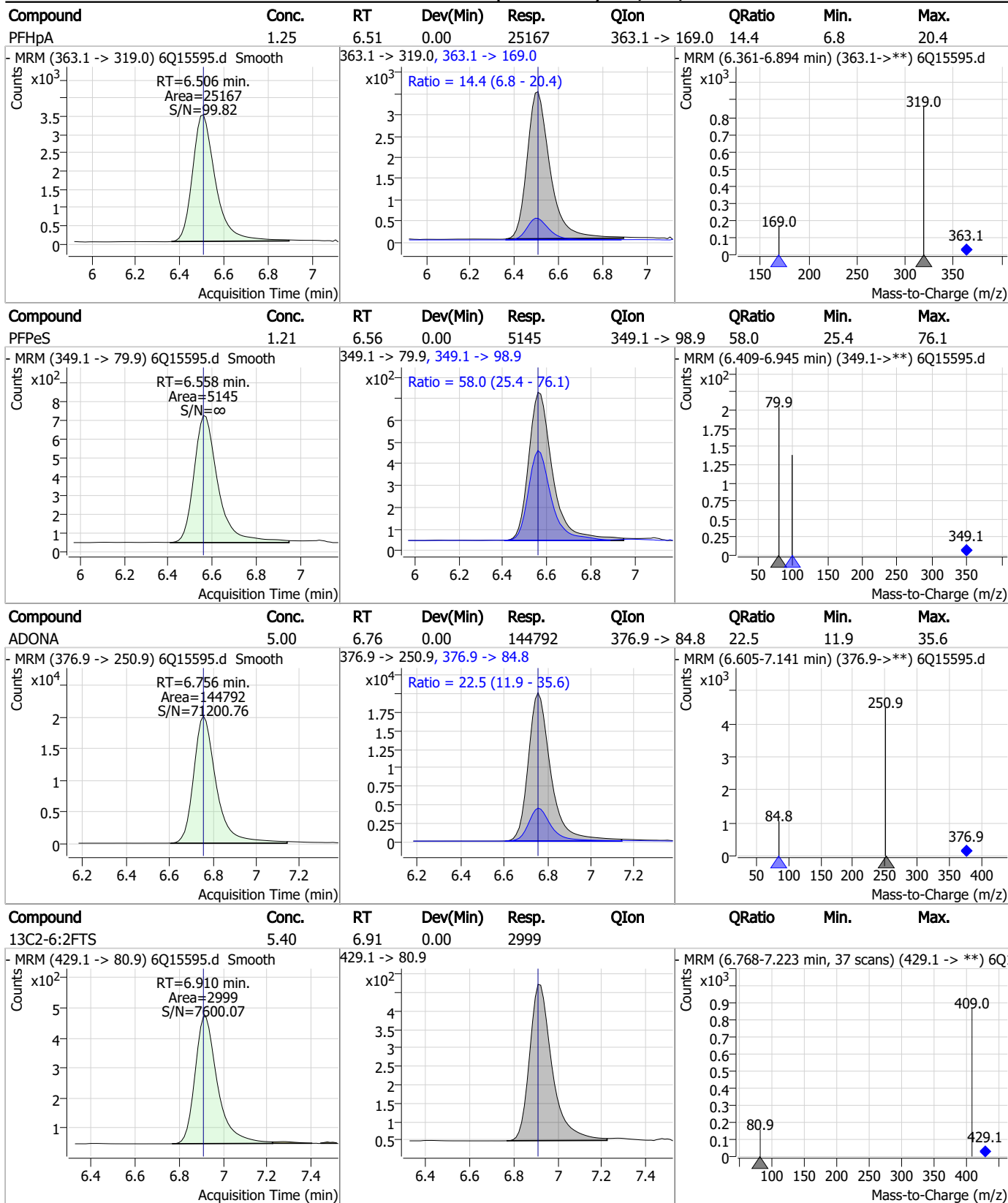
Perfluorinated Compounds by LC/MS/MS



7.7.4

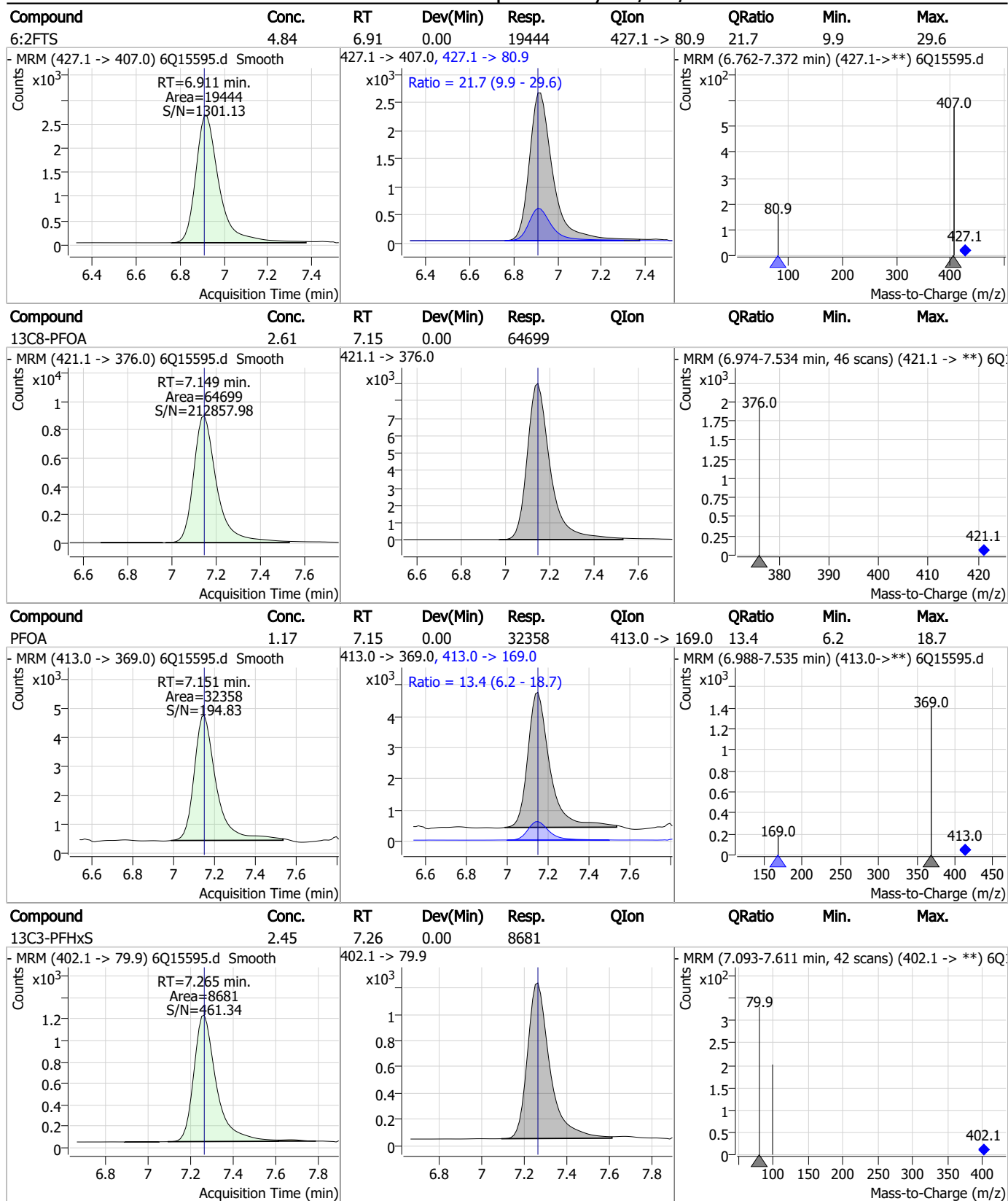
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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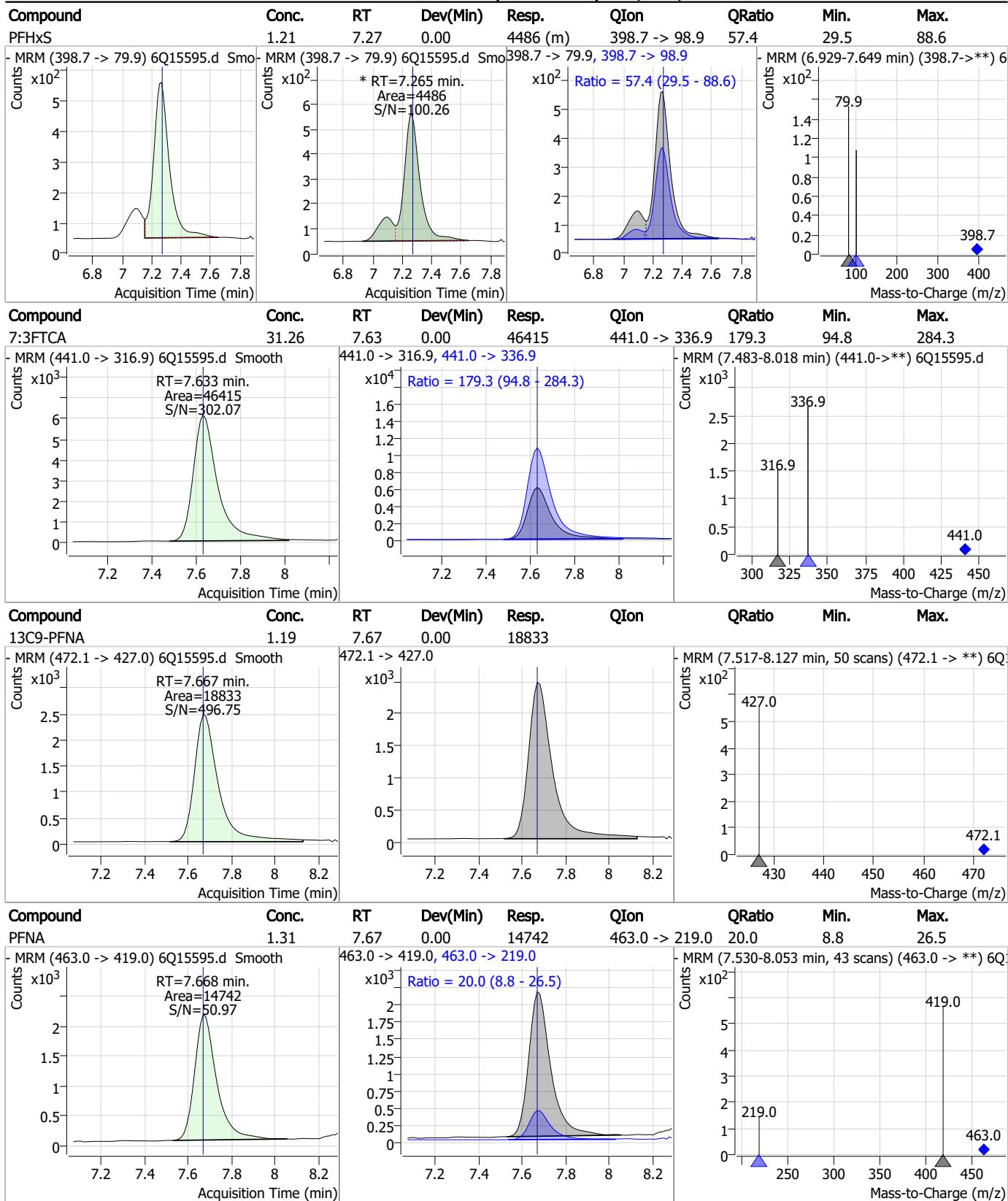
Perfluorinated Compounds by LC/MS/MS



7.7.4

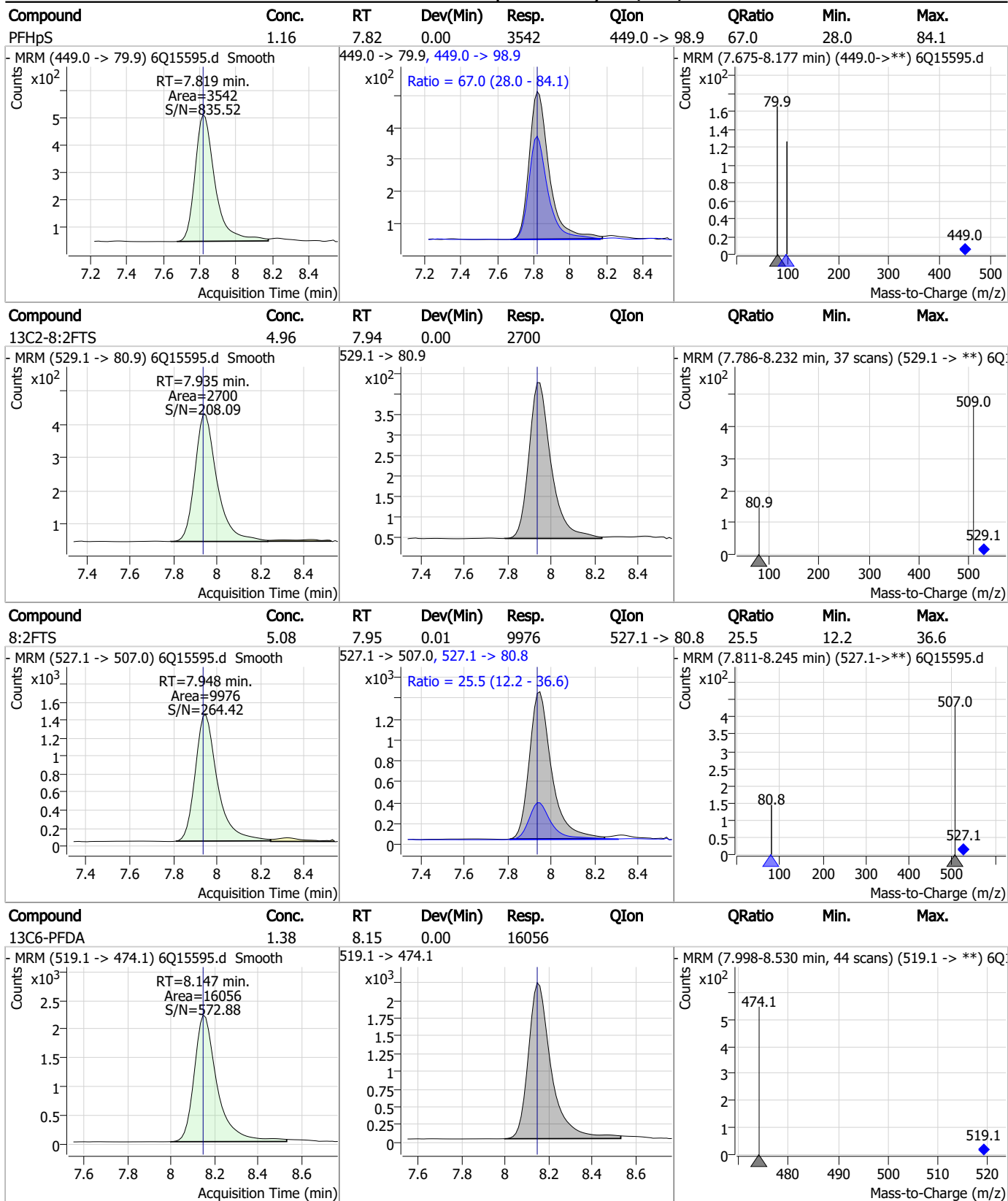
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Perfluorinated Compounds by LC/MS/MS



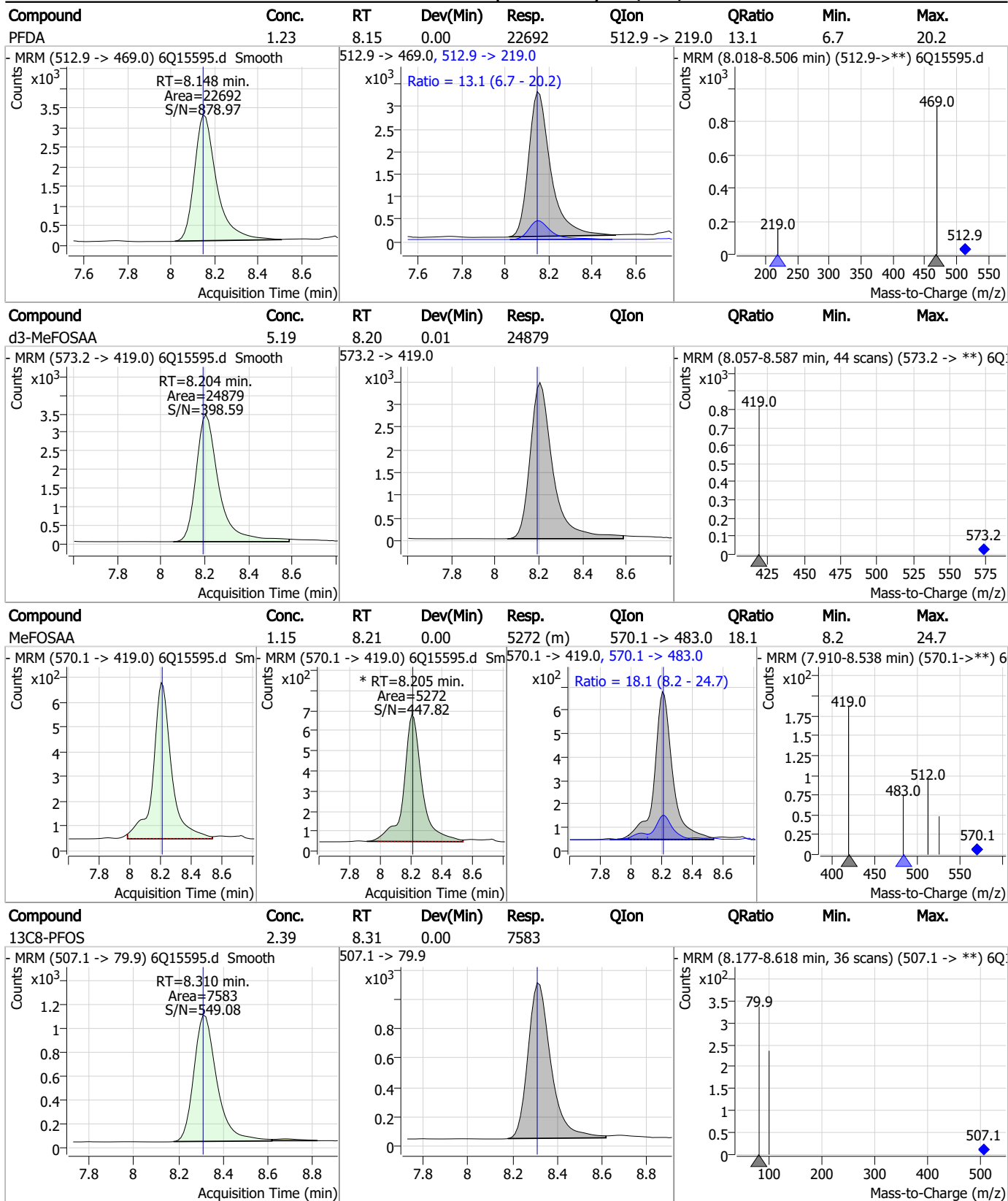
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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Perfluorinated Compounds by LC/MS/MS

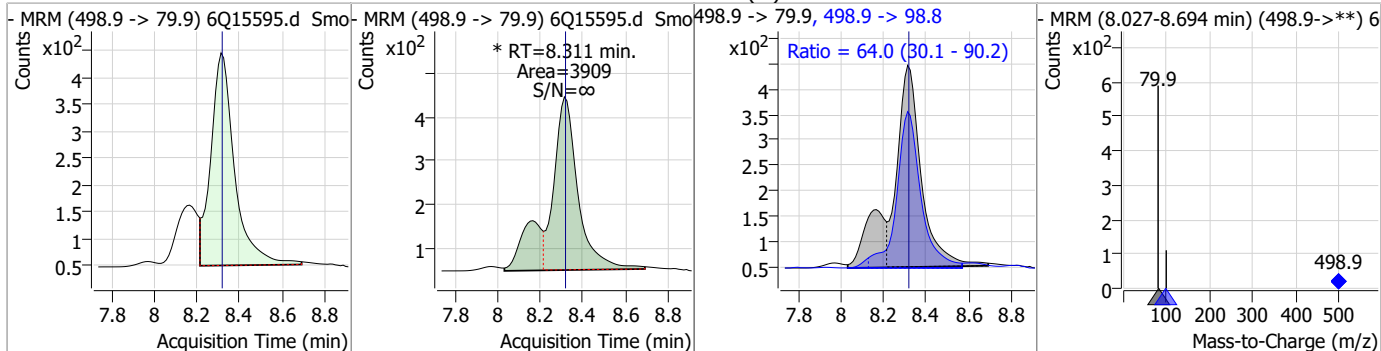


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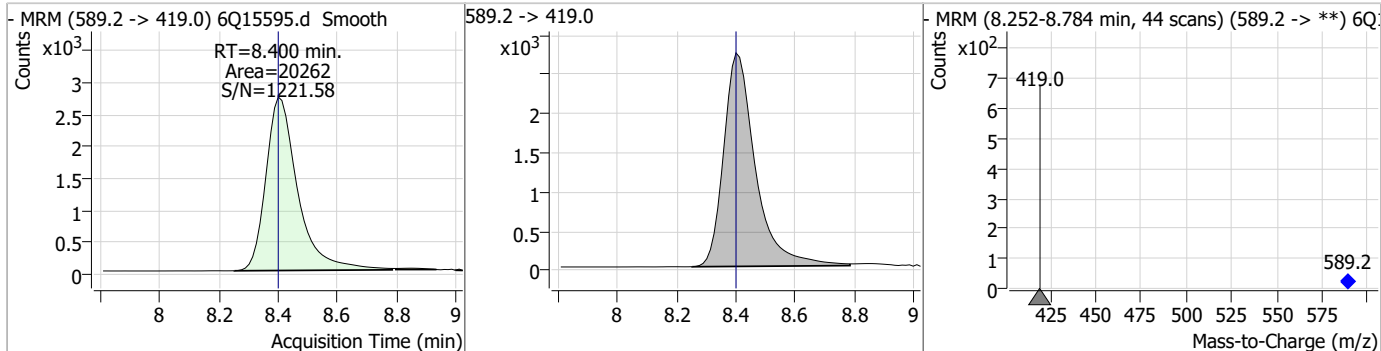
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Perfluorinated Compounds by LC/MS/MS

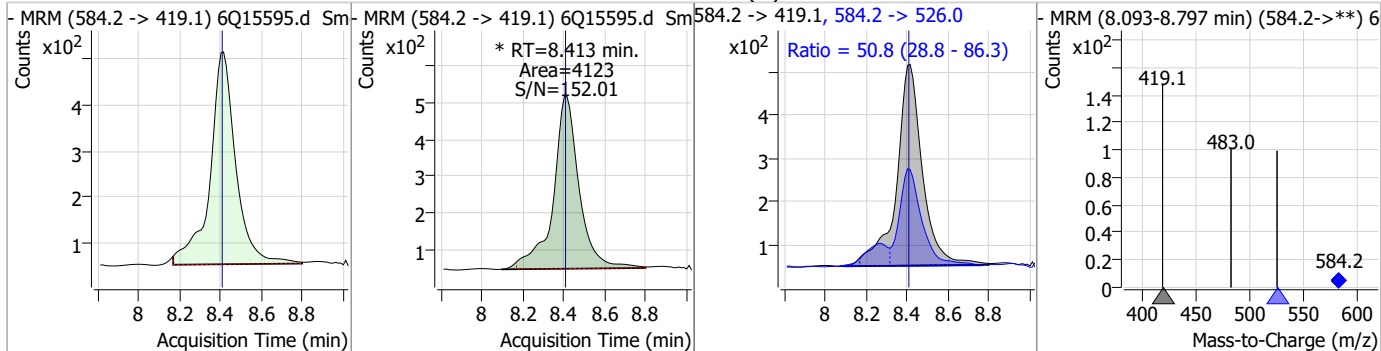
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.23	8.31	0.00	3909 (m)	498.9 -> 98.8	64.0	30.1	90.2



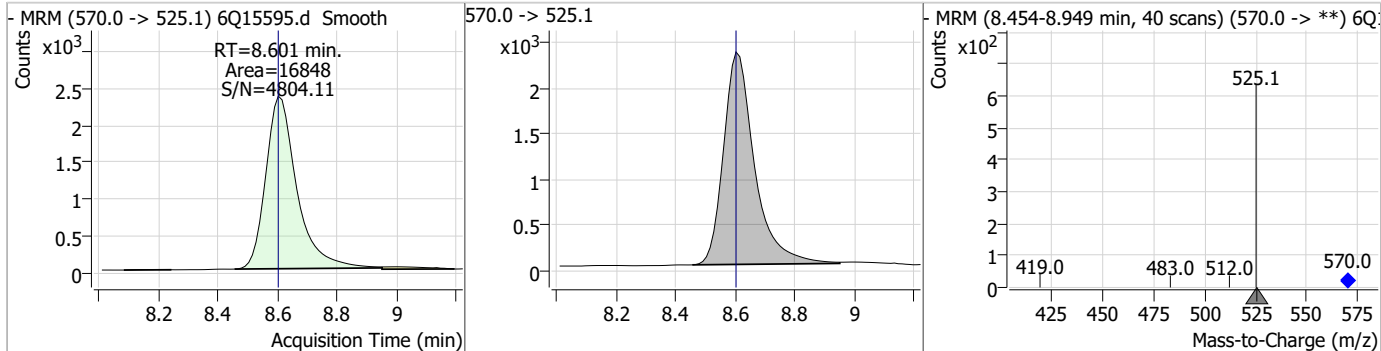
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.83	8.40	0.00	20262				



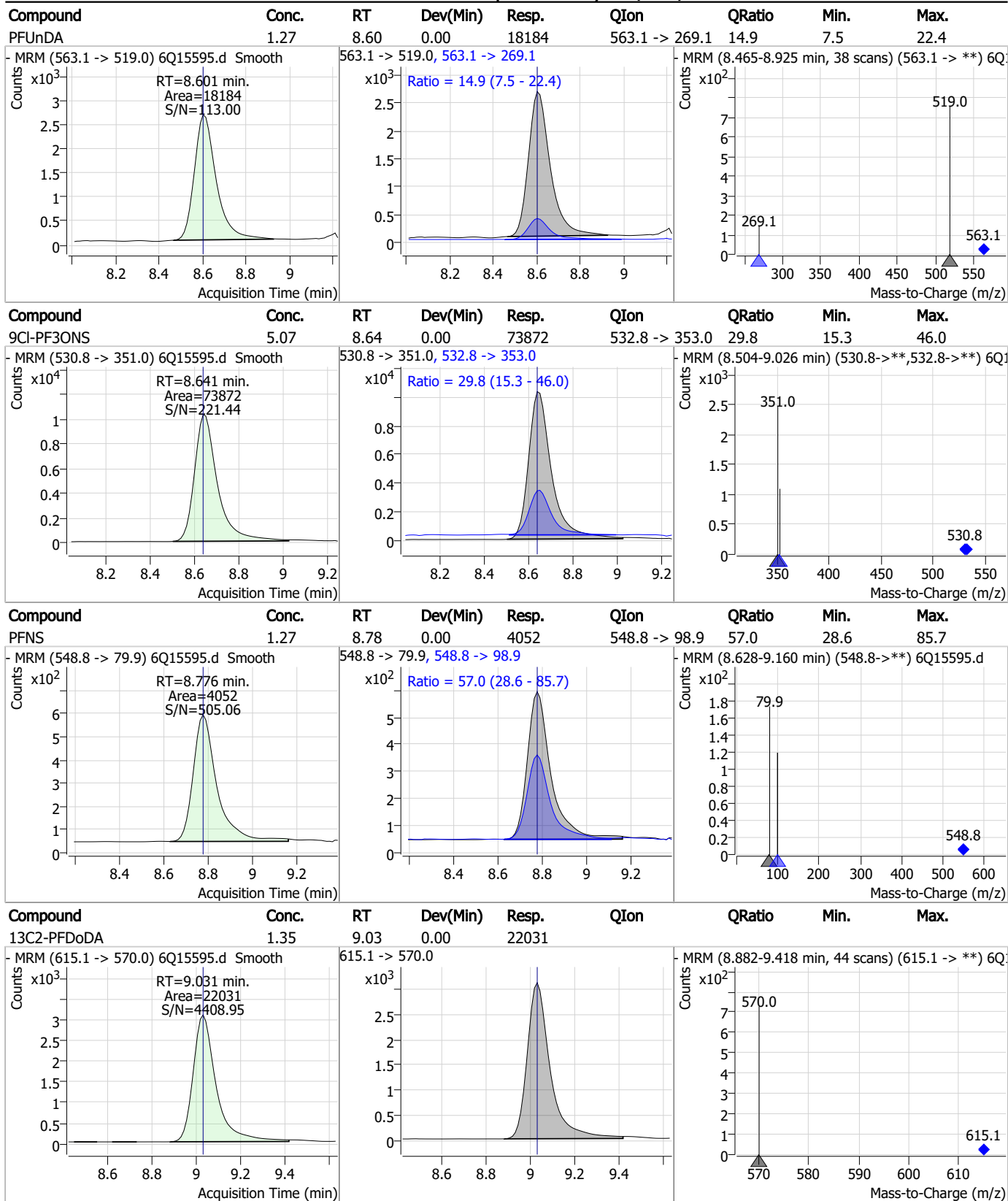
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.32	8.41	0.01	4123 (m)	584.2 -> 526.0	50.8	28.8	86.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.60	0.00	16848				

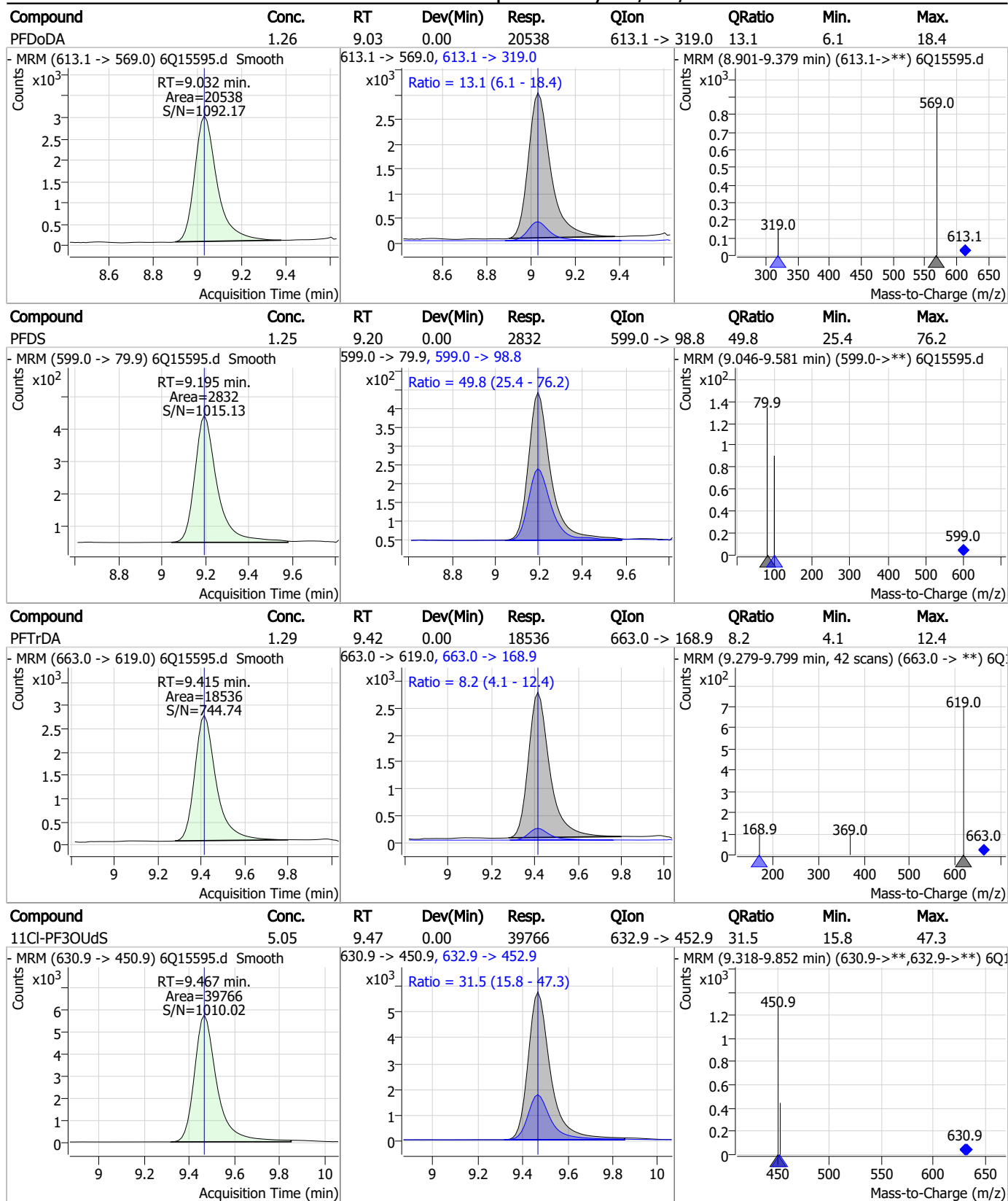


Perfluorinated Compounds by LC/MS/MS



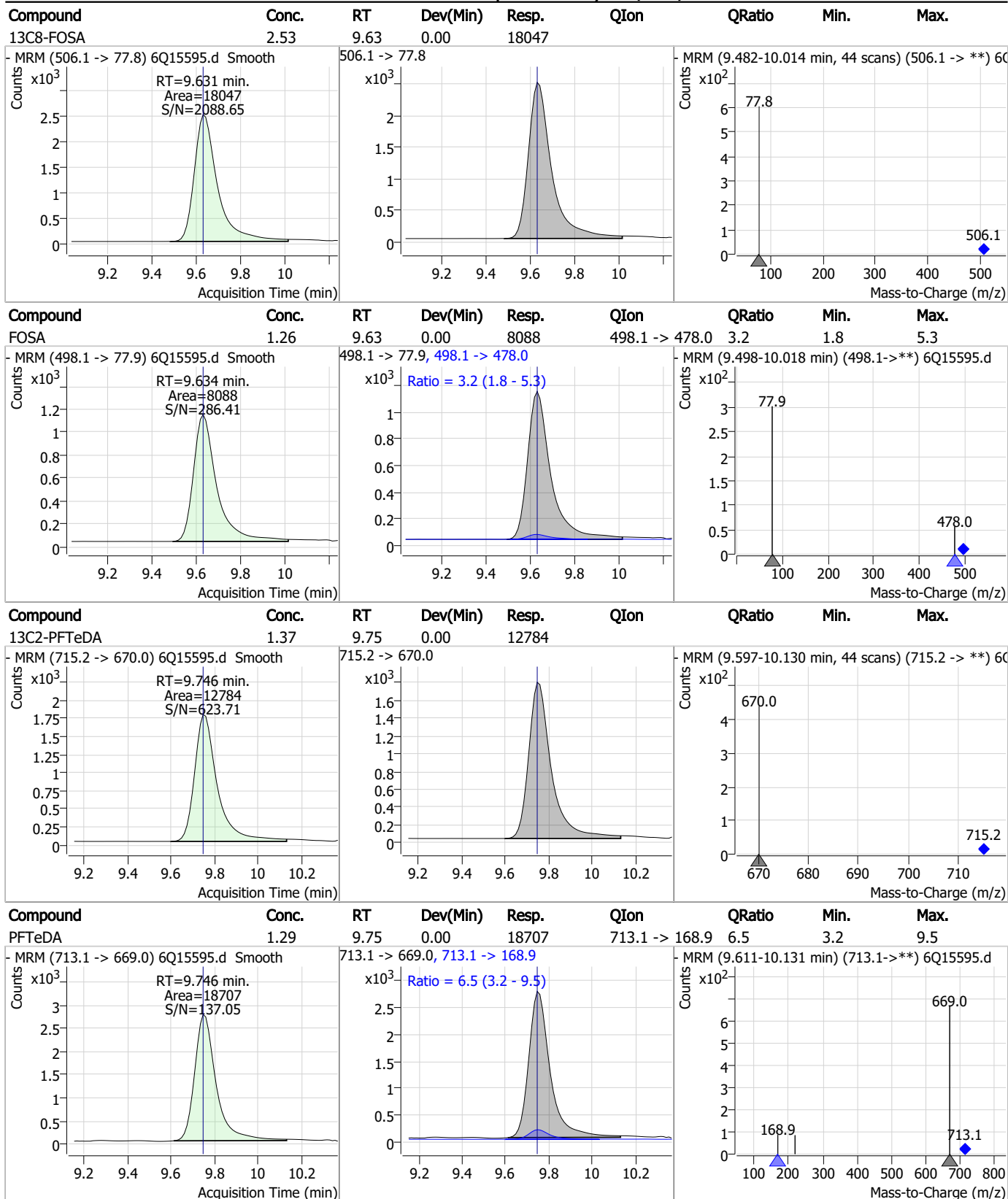
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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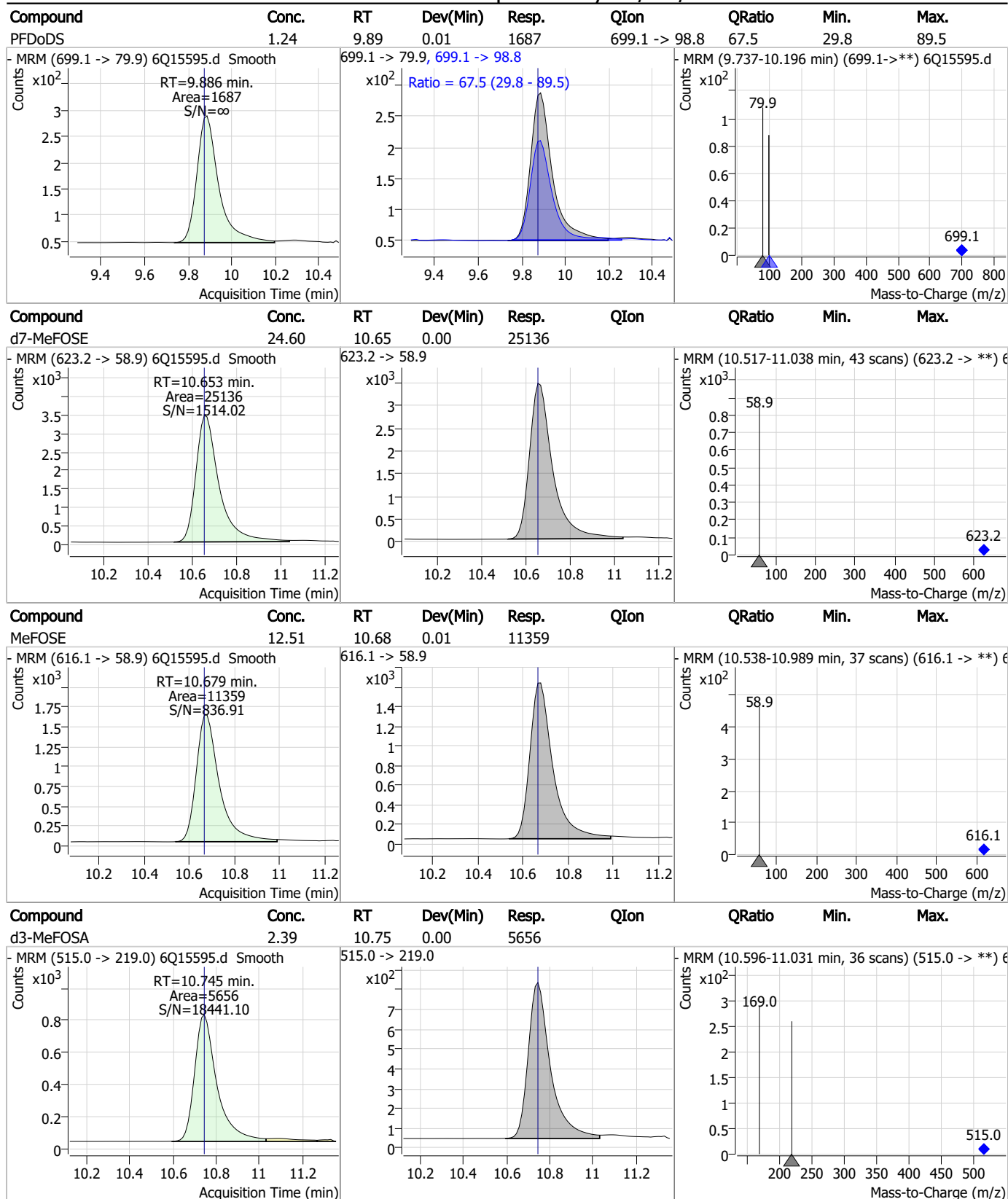
Perfluorinated Compounds by LC/MS/MS



7.7.4

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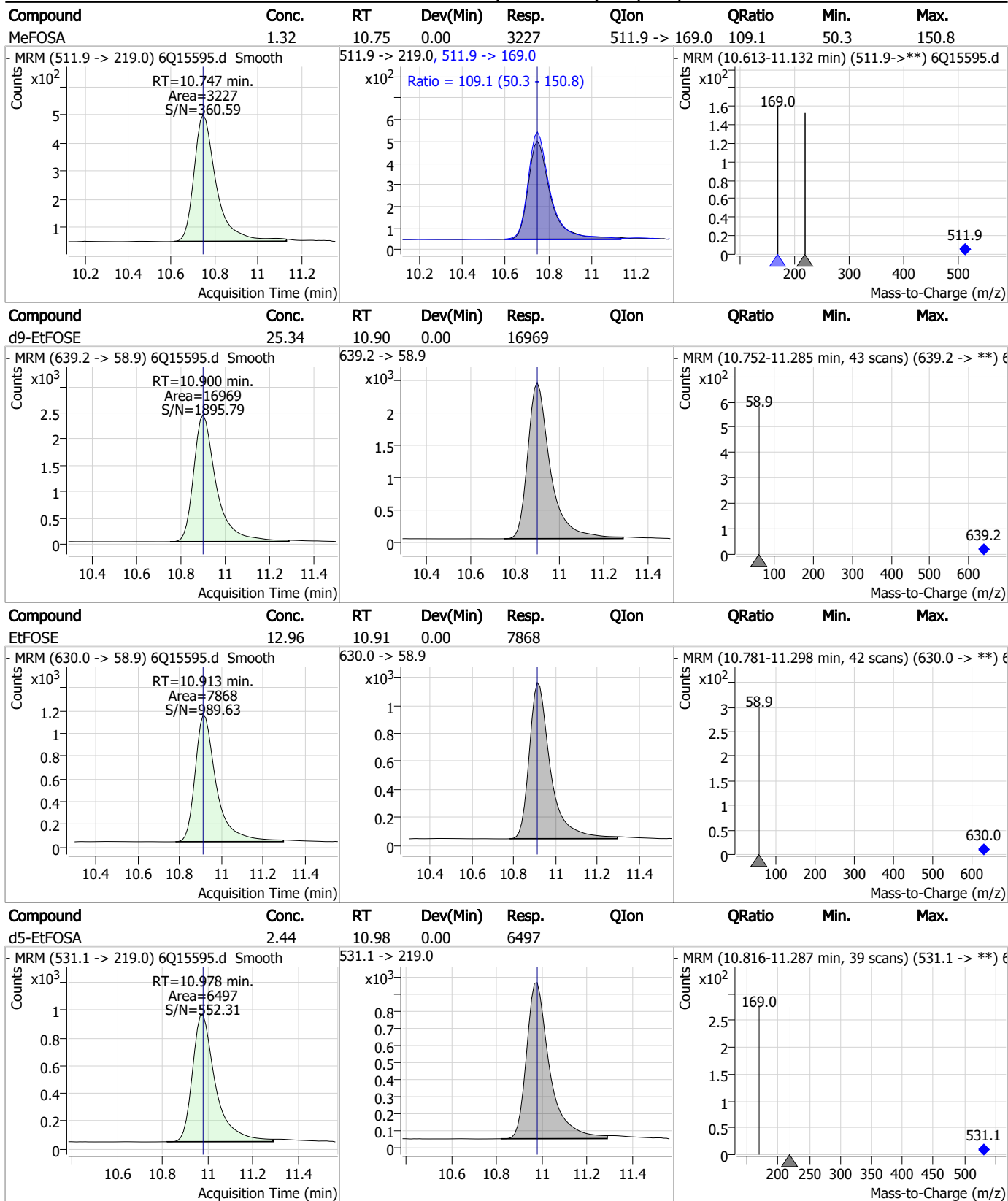
Perfluorinated Compounds by LC/MS/MS



7.7.4

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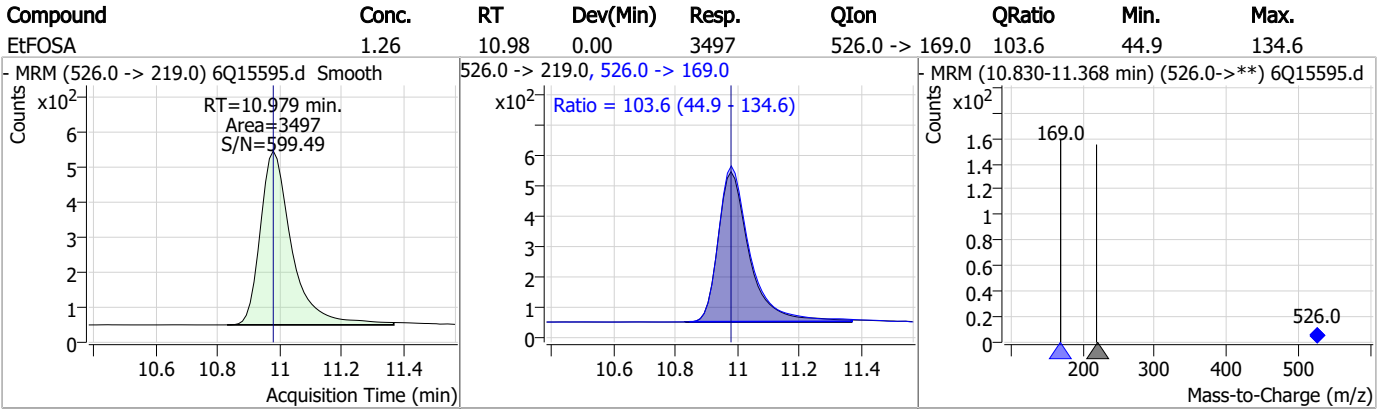
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15595.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 16:48 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.41	Split peak

7.7.4.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 03/29/23 18:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15596.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 5:02:50 PM
 Sample Name : icc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	77988	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37756	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34230	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	33667	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	61176	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	19473	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16262	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	18925	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	22698	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	13090	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17939	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13608	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	9461	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8287	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2363	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	2908	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2713	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	25519	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	14353	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	20363	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	26571	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	17289	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6709	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5879	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9791	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33941	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6432	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	76819	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	20713	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	20131	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	33649	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2363	5.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.8%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2908	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2713	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C2-PFDoDA	9.031	615.1 -> 570.0	22698	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C2-PFTeDA	9.746	715.2 -> 670.0	13090	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.4%		
13C3-PFBS	5.483	302.1 -> 79.9	13608	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFHxS	7.265	402.1 -> 79.9	9461	2.60 µg/L	0.000

7.7.5
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 = 104.1%	
13C4-PFBA	2.913	216.8 -> 171.9	77988	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.506	367.1 -> 322.0	33667	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C5-PFHxA	5.553	318.0 -> 273.0	34230	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.347	268.3 -> 223.0	37756	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C6-PFDA	8.147	519.1 -> 474.1	16262	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C7-PFUnDA	8.601	570.0 -> 525.1	18925	1.43 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.5%	
13C8-FOSA	9.631	506.1 -> 77.8	17939	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.149	421.1 -> 376.0	61176	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOS	8.310	507.1 -> 79.9	8287	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C9-PFNA	7.667	472.1 -> 427.0	19473	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
d3-MeFOSAA	8.192	573.2 -> 419.0	25519	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	14353	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
d3-MeFOSA	10.745	515.0 -> 219.0	5879	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
d5-EtFOSAA	8.400	589.2 -> 419.0	20363	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
d7-MeFOSE	10.653	623.2 -> 58.9	26571	25.81 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d9-EtFOSE	10.900	639.2 -> 58.9	17289	25.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
d5-EtFOSA	10.978	531.1 -> 219.0	6709	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	38753	7.86 µg/L	96
		327.1 -> 80.9	9478		
6:2FTS	6.911	427.1 -> 407.0	34471	8.84 µg/L	100
		427.1 -> 80.9	6869		
8:2FTS	7.936	527.1 -> 507.0	18246	9.25 µg/L	93
		527.1 -> 80.8	5100		
EtFOSAA	8.401	584.2 -> 419.1	7582	2.41 µg/L	m 98
		584.2 -> 526.0	4262		
FOSA	9.634	498.1 -> 77.9	14250	2.24 µg/L	100
		498.1 -> 478.0	519		
MeFOSAA	8.205	570.1 -> 419.0	10551	2.24 µg/L	m 97
		570.1 -> 483.0	1886		
PFBA	2.919	212.8 -> 168.9	16024	9.04 µg/L	100
PFBS	5.484	298.7 -> 79.9	10018	1.91 µg/L	97
		298.7 -> 98.8	4881		
PFDA	8.148	512.9 -> 469.0	42511	2.28 µg/L	98
		512.9 -> 219.0	5320		
PFDODA	9.032	613.1 -> 569.0	38700	2.31 µg/L	99
		613.1 -> 319.0	4635		
PFDS	9.195	599.0 -> 79.9	5493	2.23 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2690			
PFHpA	6.506	363.1 -> 319.0	46761	2.38	µg/L	100
		363.1 -> 169.0	6310			
PFHpS	7.819	449.0 -> 79.9	7225	2.17	µg/L	98
		449.0 -> 98.9	4167			
PFHxA	5.556	313.0 -> 269.0	26949	2.19	µg/L	99
		313.0 -> 118.9	1116			
PFHxS	7.265	398.7 -> 79.9	8317	2.05	µg/L	m 91
		398.7 -> 98.9	4328			
PFNA	7.668	463.0 -> 419.0	25796	2.22	µg/L	94
		463.0 -> 219.0	5295			
PFNS	8.776	548.8 -> 79.9	7286	2.10	µg/L	100
		548.8 -> 98.9	4185			
PFOA	7.151	413.0 -> 369.0	60847	2.33	µg/L	99
		413.0 -> 169.0	7866			
PFOS	8.311	498.9 -> 79.9	7094	2.04	µg/L	m 94
		498.9 -> 98.8	4586			
PFPeA	4.349	263.0 -> 219.0	36724	4.59	µg/L	100
PFPeS	6.558	349.1 -> 79.9	9842	2.12	µg/L	98
		349.1 -> 98.9	5119			
PFTeDA	9.746	713.1 -> 669.0	32044	2.16	µg/L	97
		713.1 -> 168.9	2340			
PFTrDA	9.415	663.0 -> 619.0	33081	2.23	µg/L	99
		663.0 -> 168.9	2903			
PFUnDA	8.601	563.1 -> 519.0	34974	2.17	µg/L	100
		563.1 -> 269.1	5191			
11CI-PF3OUdS	9.467	630.9 -> 450.9	68793	8.37	µg/L	98
		632.9 -> 452.9	22383			
9CI-PF3ONS	8.641	530.8 -> 351.0	129359	8.50	µg/L	99
		532.8 -> 353.0	39952			
ADONA	6.756	376.9 -> 250.9	264836	8.77	µg/L	99
		376.9 -> 84.8	60913			
HFPO-DA	5.931	284.9 -> 168.9	11621	8.80	µg/L	99
		284.9 -> 184.9	1326			
3:3FTCA	3.802	241.0 -> 177.0	4717	11.09	µg/L	98
		241.0 -> 117.0	729			
5:3FTCA	6.223	341.0 -> 237.1	163272	58.15	µg/L	93
		341.0 -> 217.0	148132			
7:3FTCA	7.633	441.0 -> 316.9	86959	58.44	µg/L	92
		441.0 -> 336.9	154356			
EtFOSA	10.979	526.0 -> 219.0	6649	2.33	µg/L	92
		526.0 -> 169.0	6483			
EtFOSE	10.913	630.0 -> 58.9	13918	22.50	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	5740	2.26	µg/L	92
		511.9 -> 169.0	6208			
MeFOSE	10.666	616.1 -> 58.9	21487	22.39	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	3355	2.25	µg/L	93
		699.1 -> 98.8	2186			
NFDHA	5.435	295.0 -> 201.0	3628	4.95	µg/L	100
		295.0 -> 84.9	1657			
PFMBA	4.762	279.0 -> 85.1	11508	4.67	µg/L	100
PFMPA	3.488	229.0 -> 84.9	9954	4.49	µg/L	100
PFEESA	6.036	314.8 -> 134.9	74710	4.23	µg/L	100
		314.8 -> 82.9	1883			

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

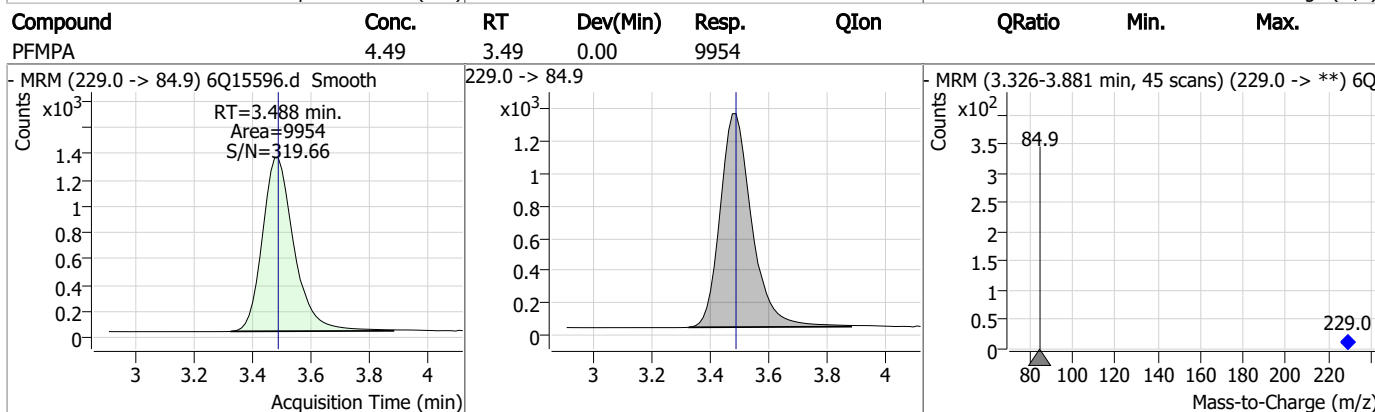
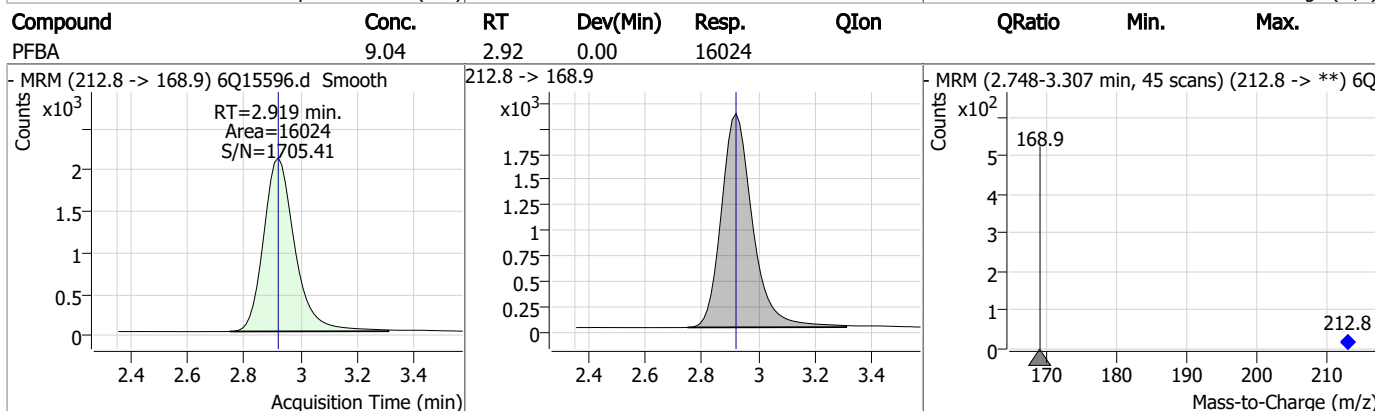
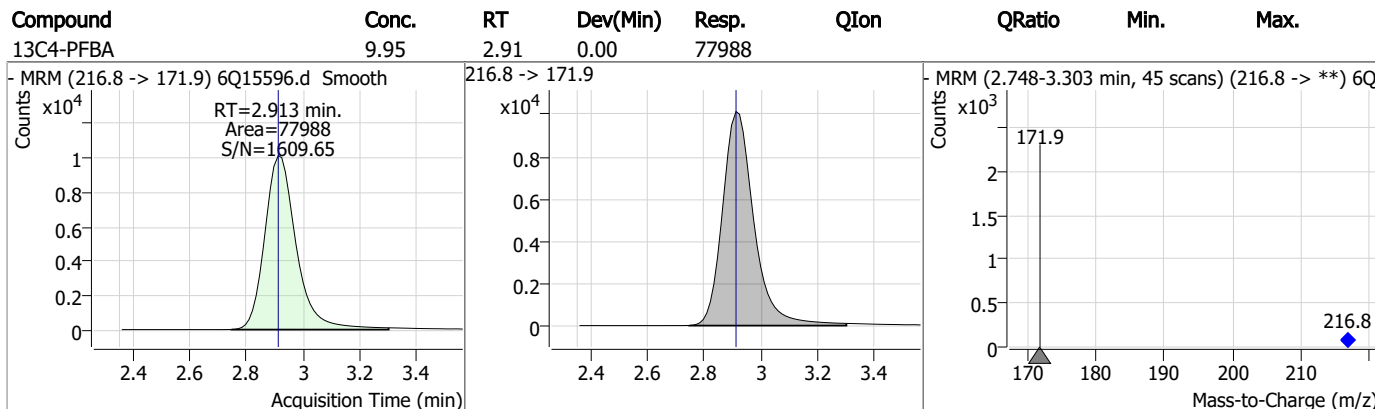
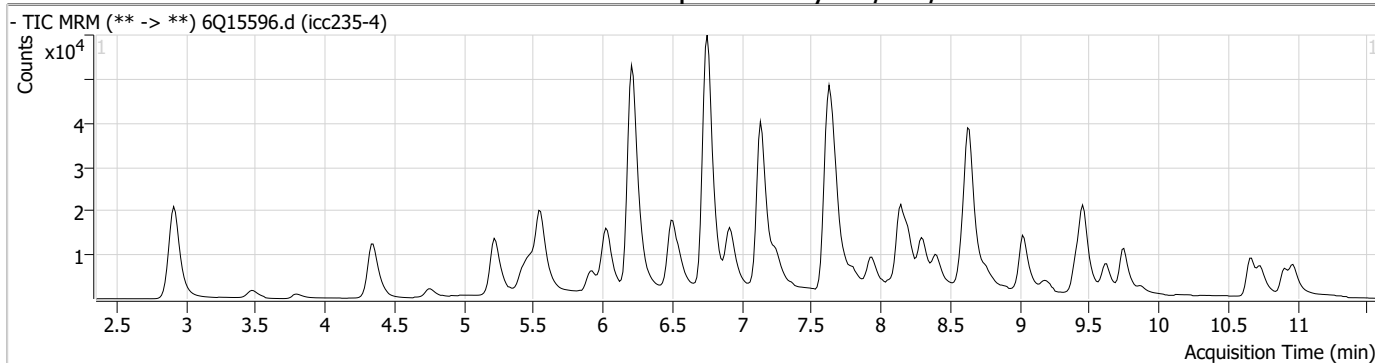
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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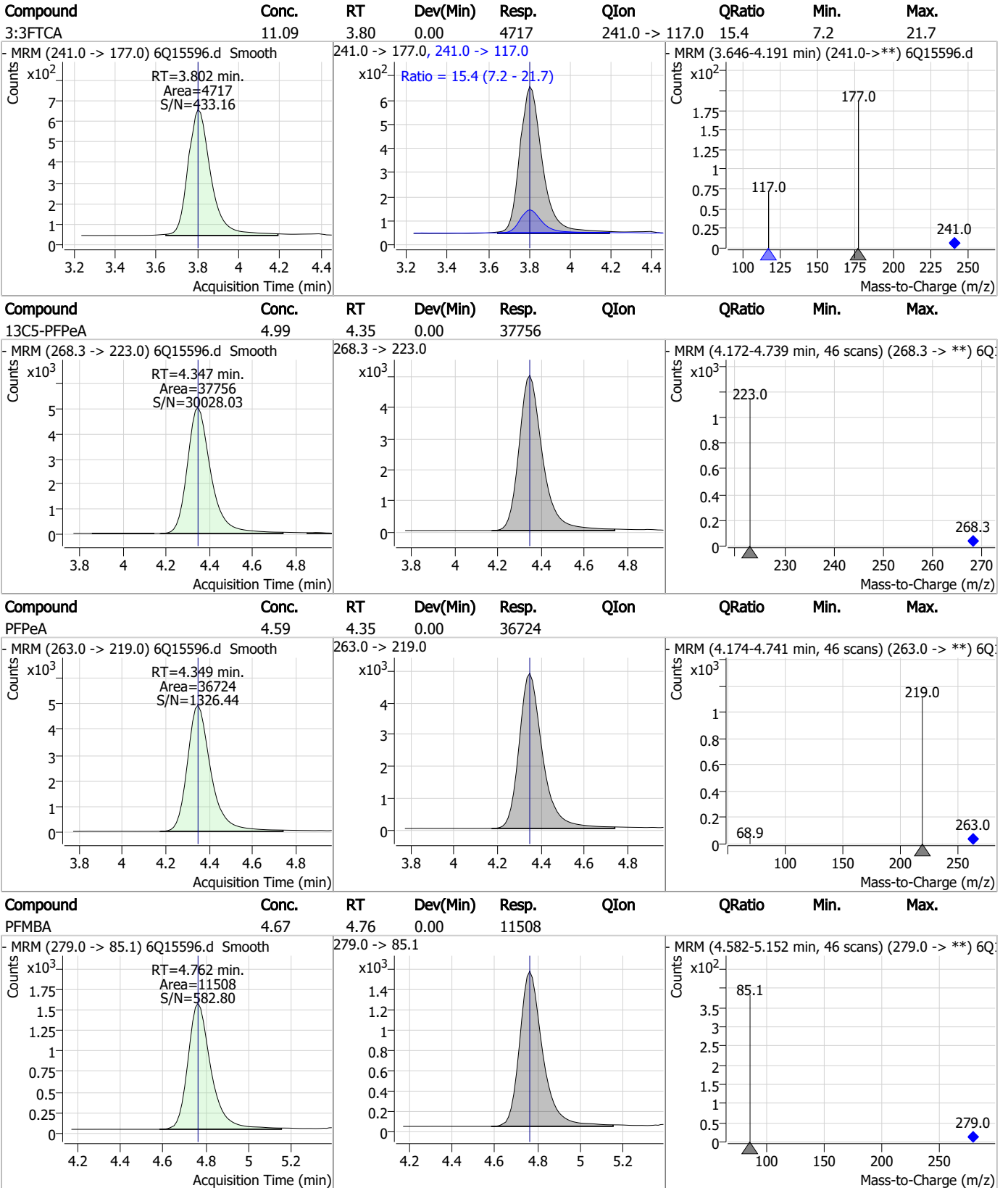
7.7.5
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Perfluorinated Compounds by LC/MS/MS

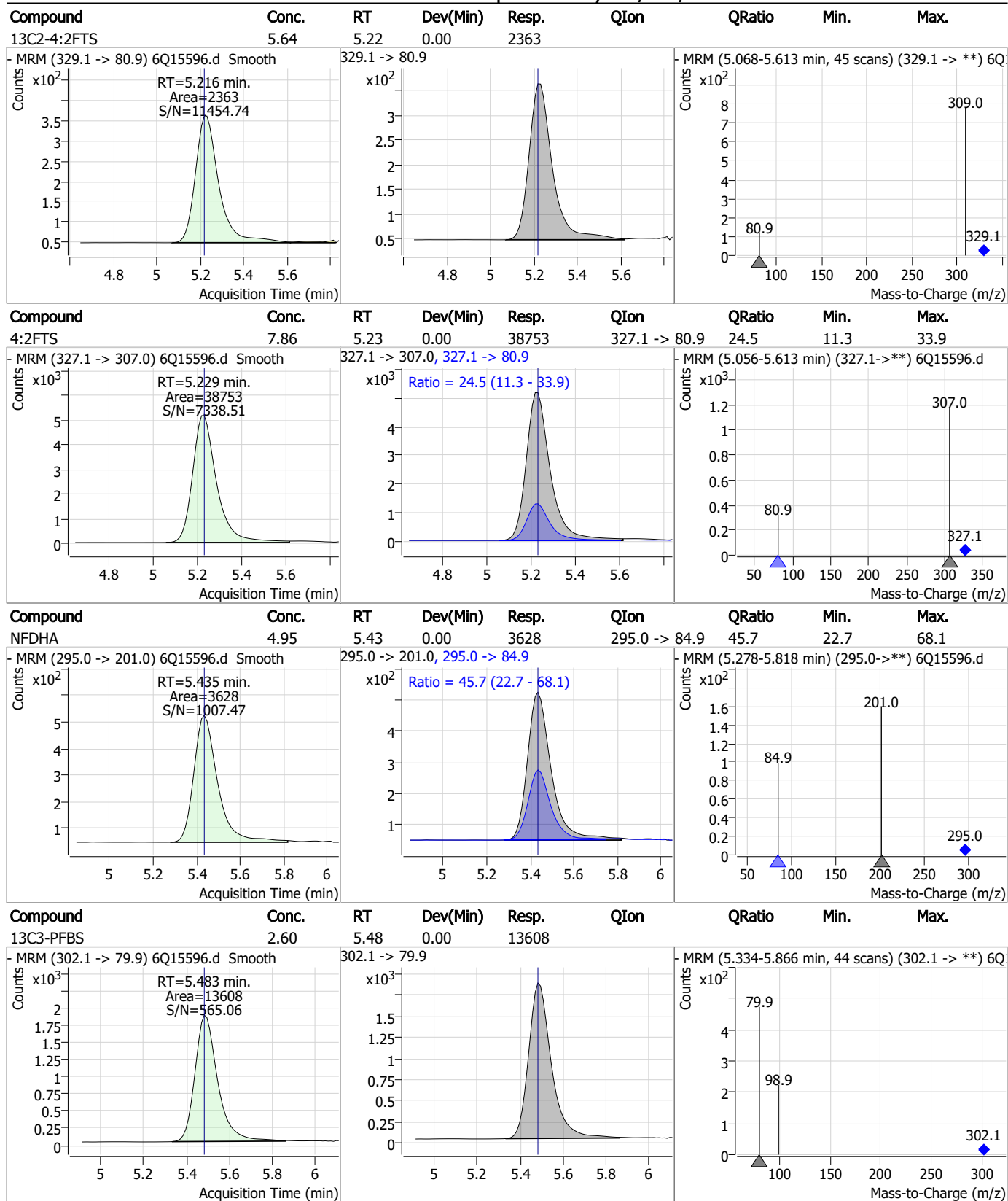


Perfluorinated Compounds by LC/MS/MS



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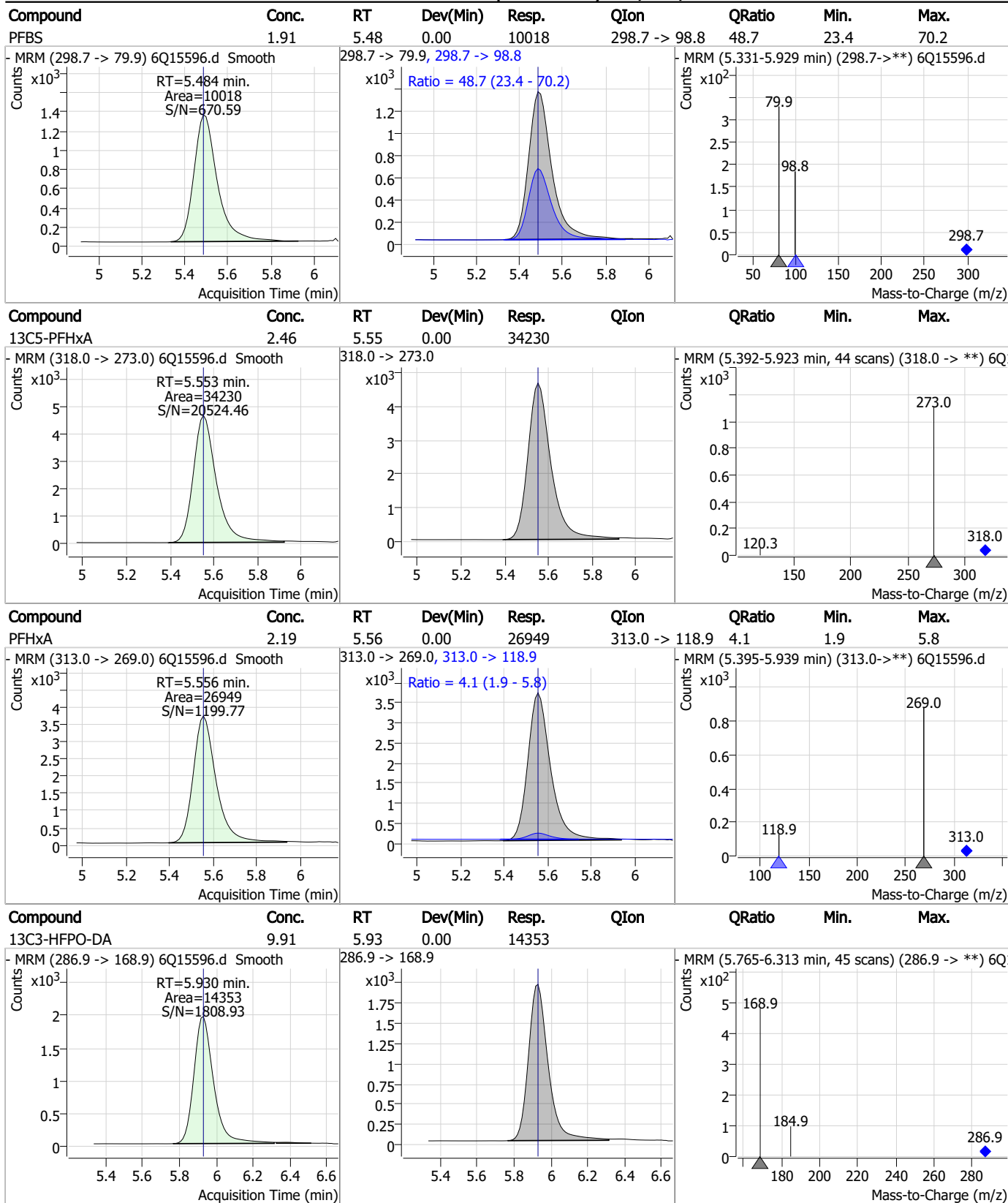
Perfluorinated Compounds by LC/MS/MS



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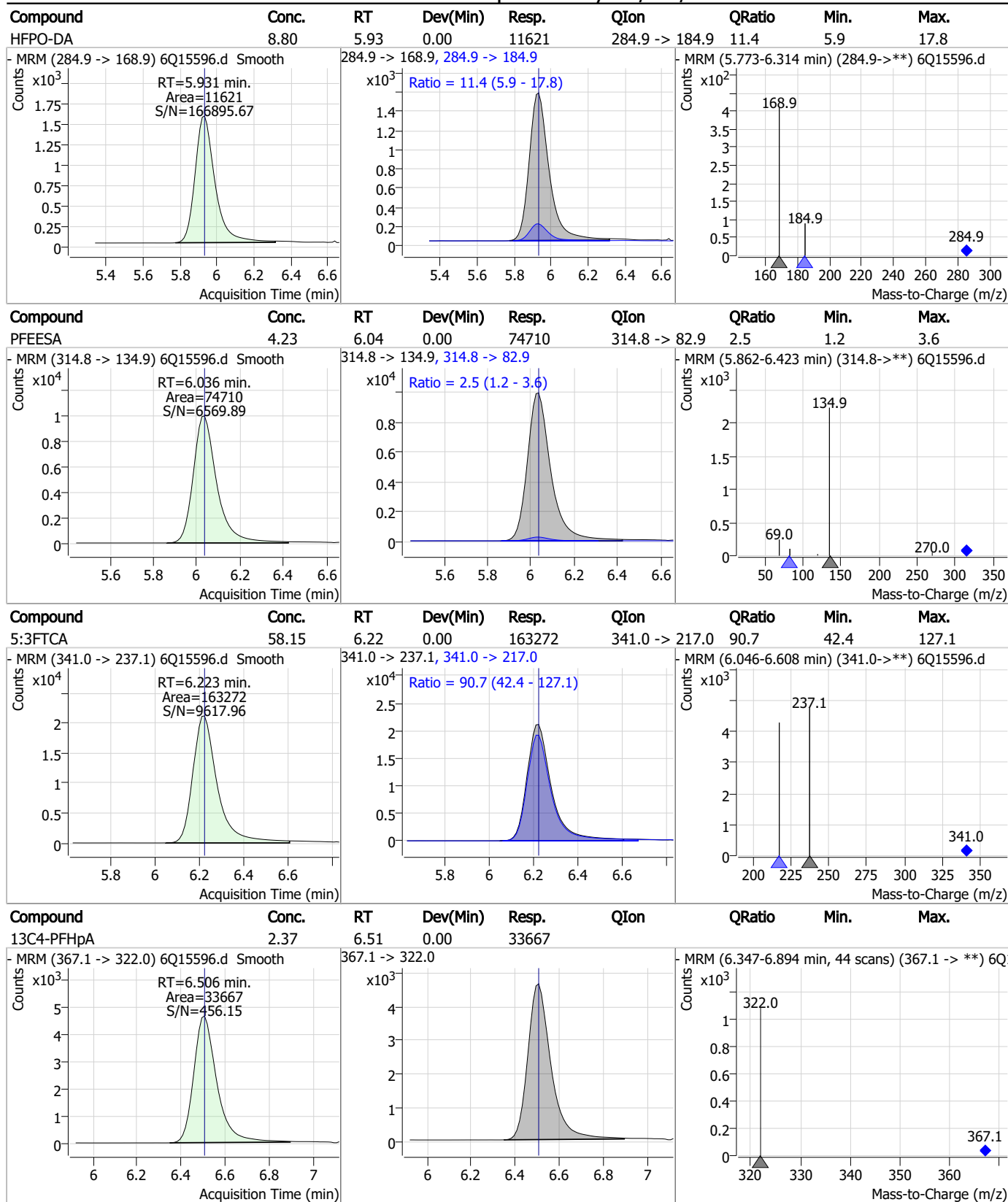
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Perfluorinated Compounds by LC/MS/MS



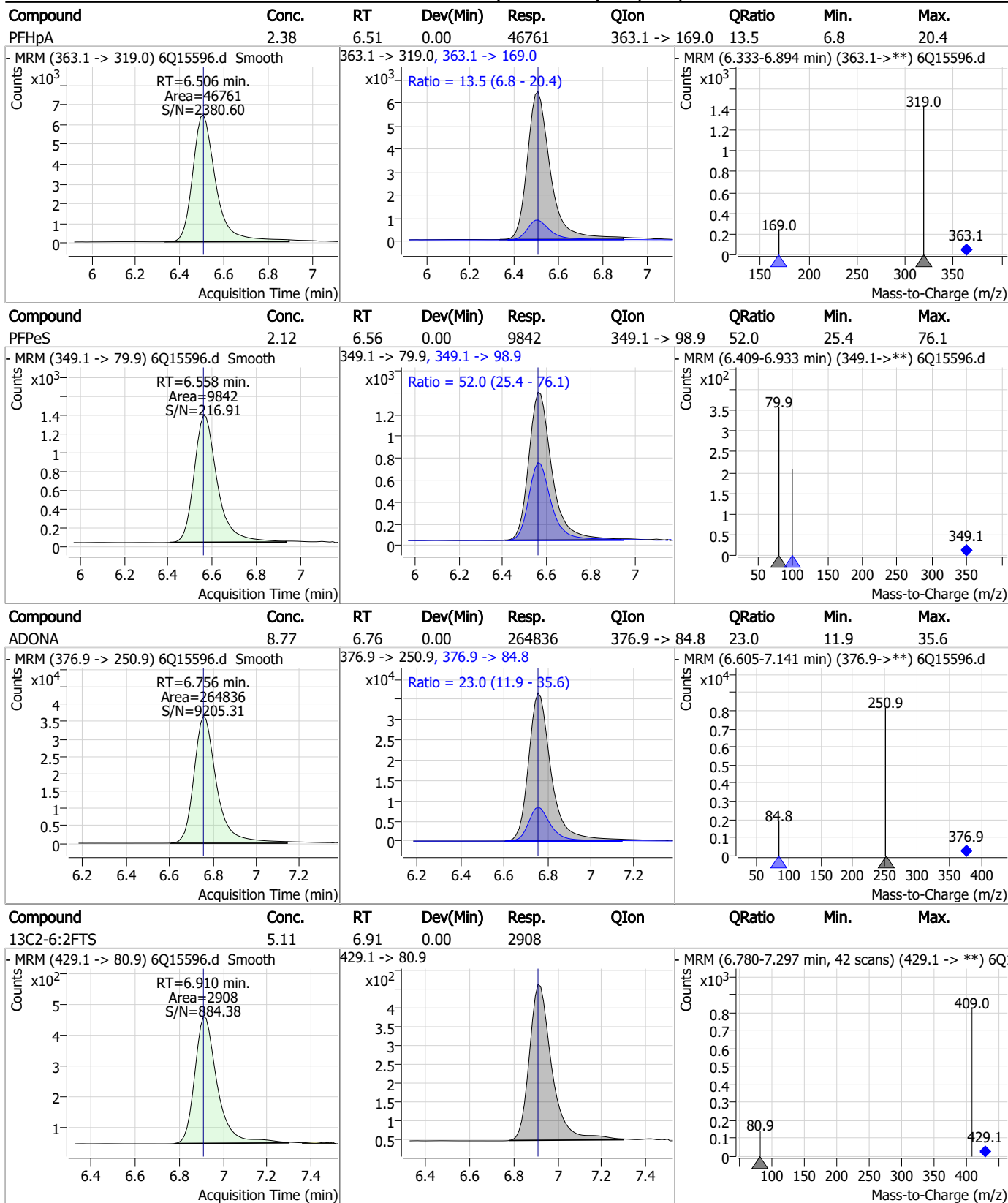
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Perfluorinated Compounds by LC/MS/MS



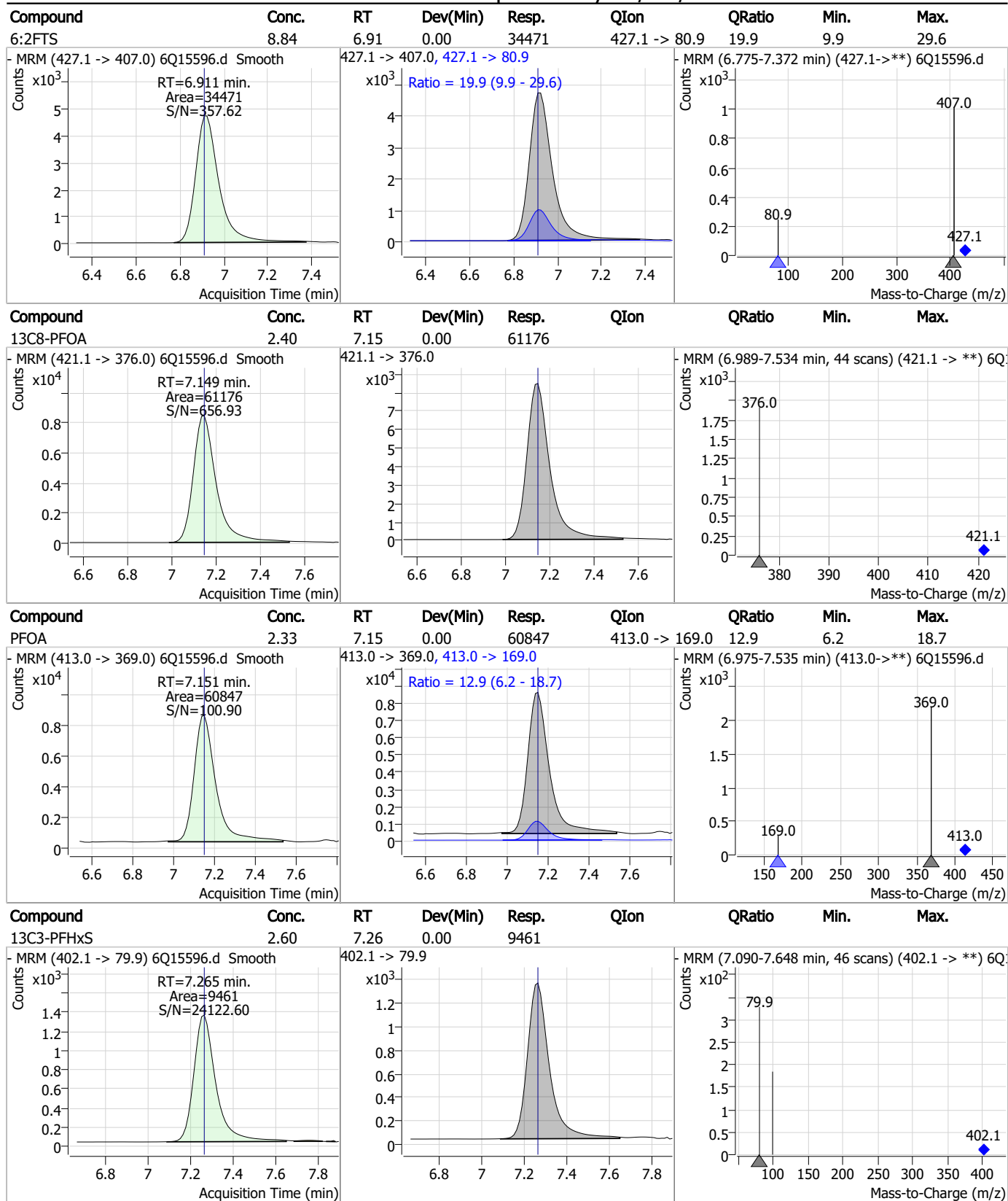
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Perfluorinated Compounds by LC/MS/MS



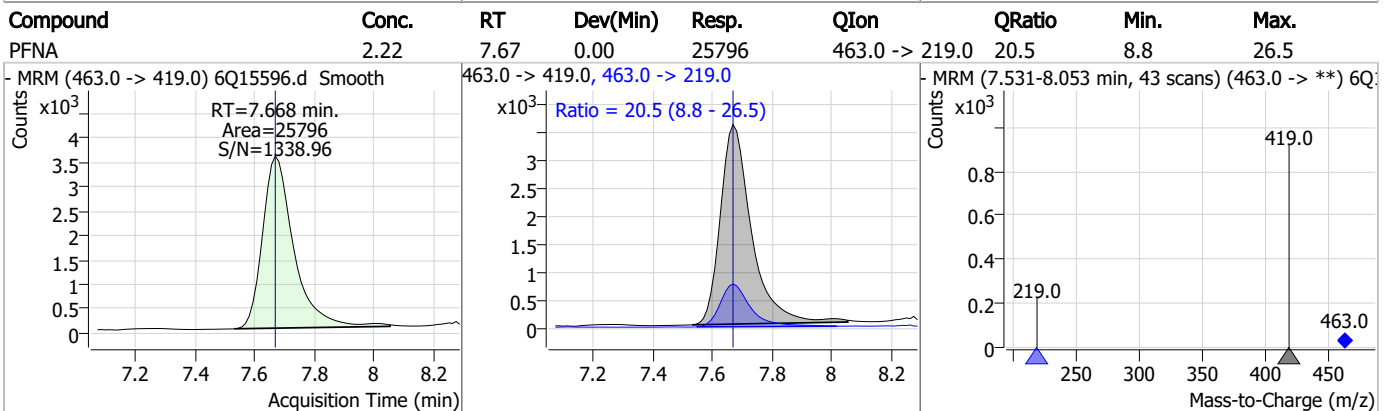
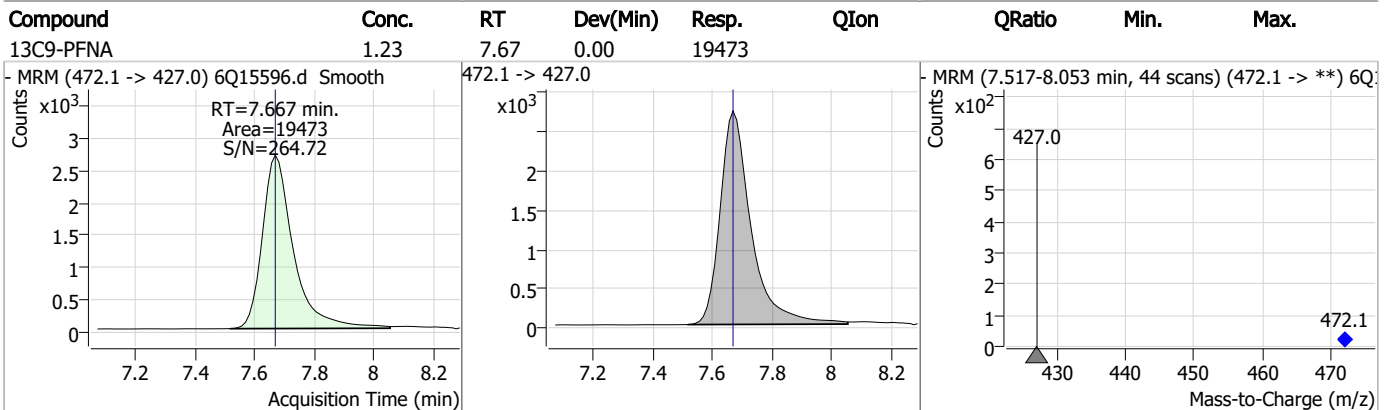
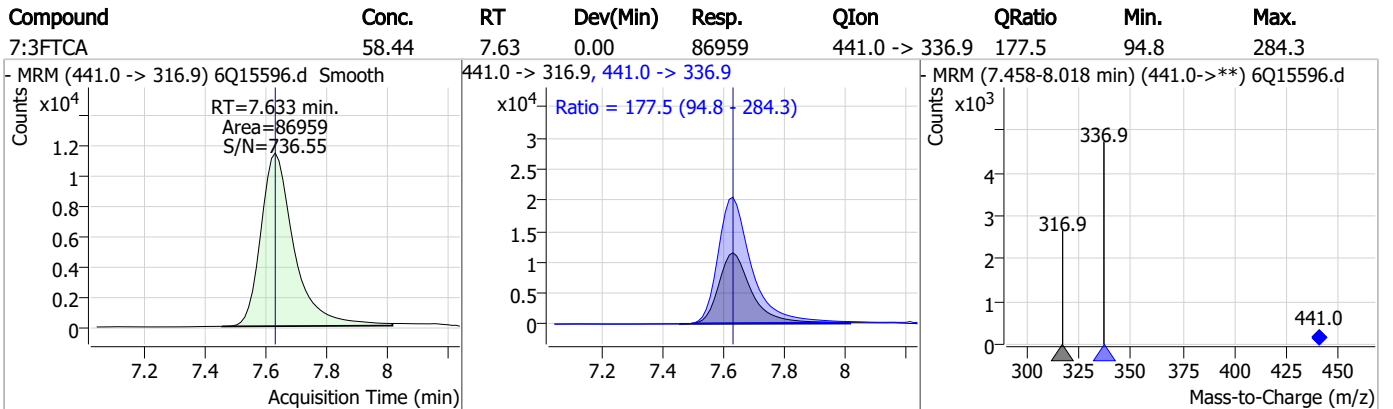
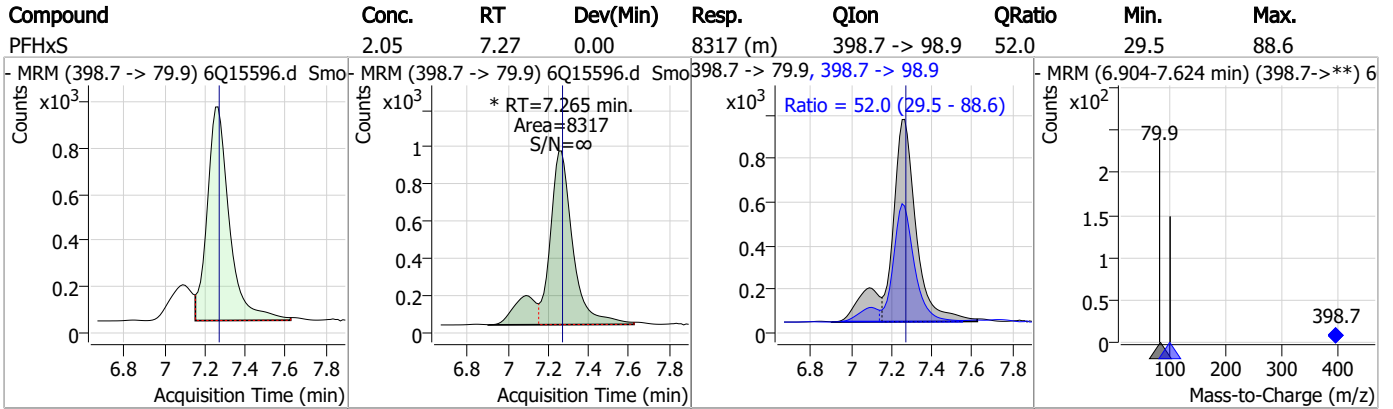
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Perfluorinated Compounds by LC/MS/MS



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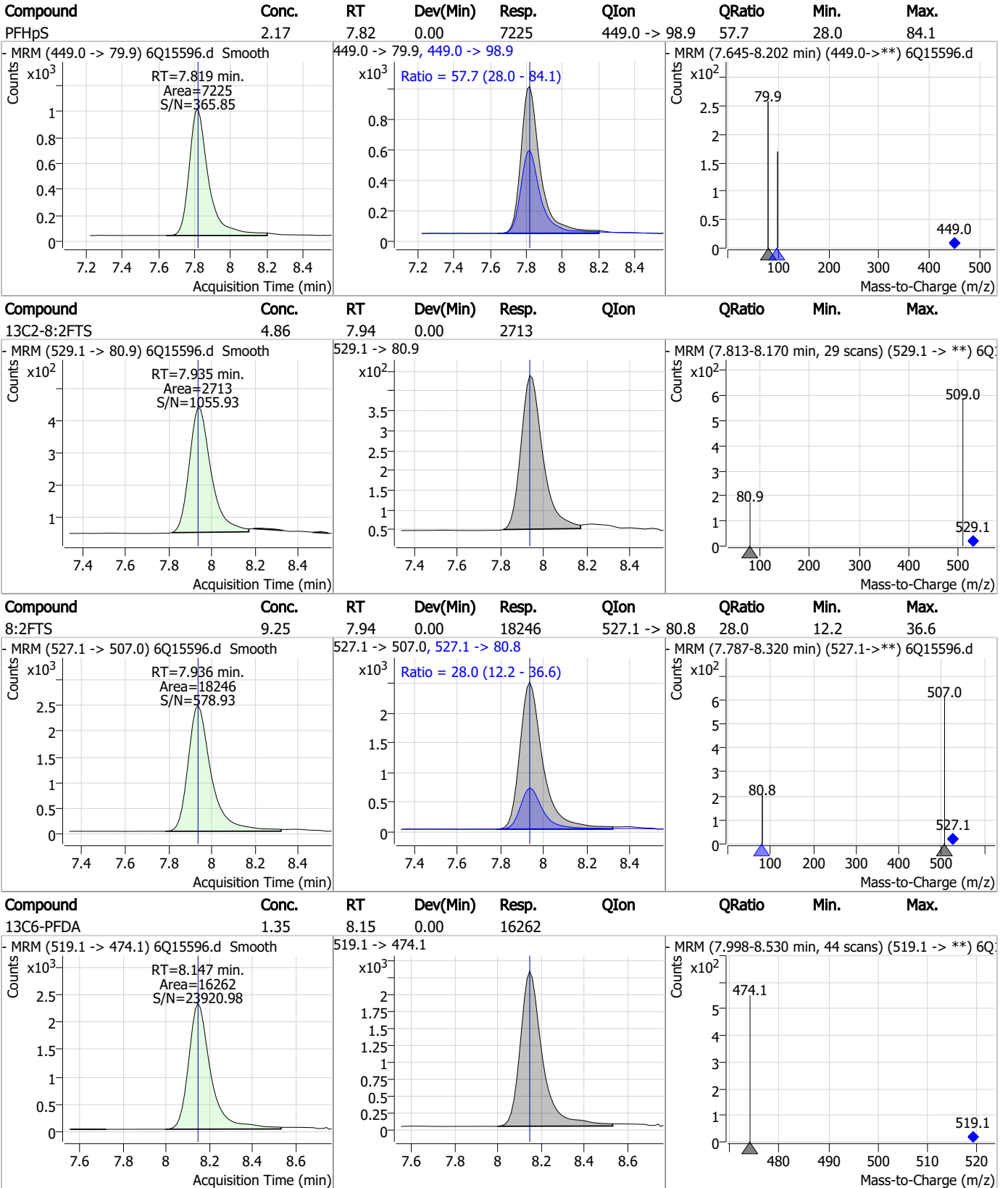
Perfluorinated Compounds by LC/MS/MS



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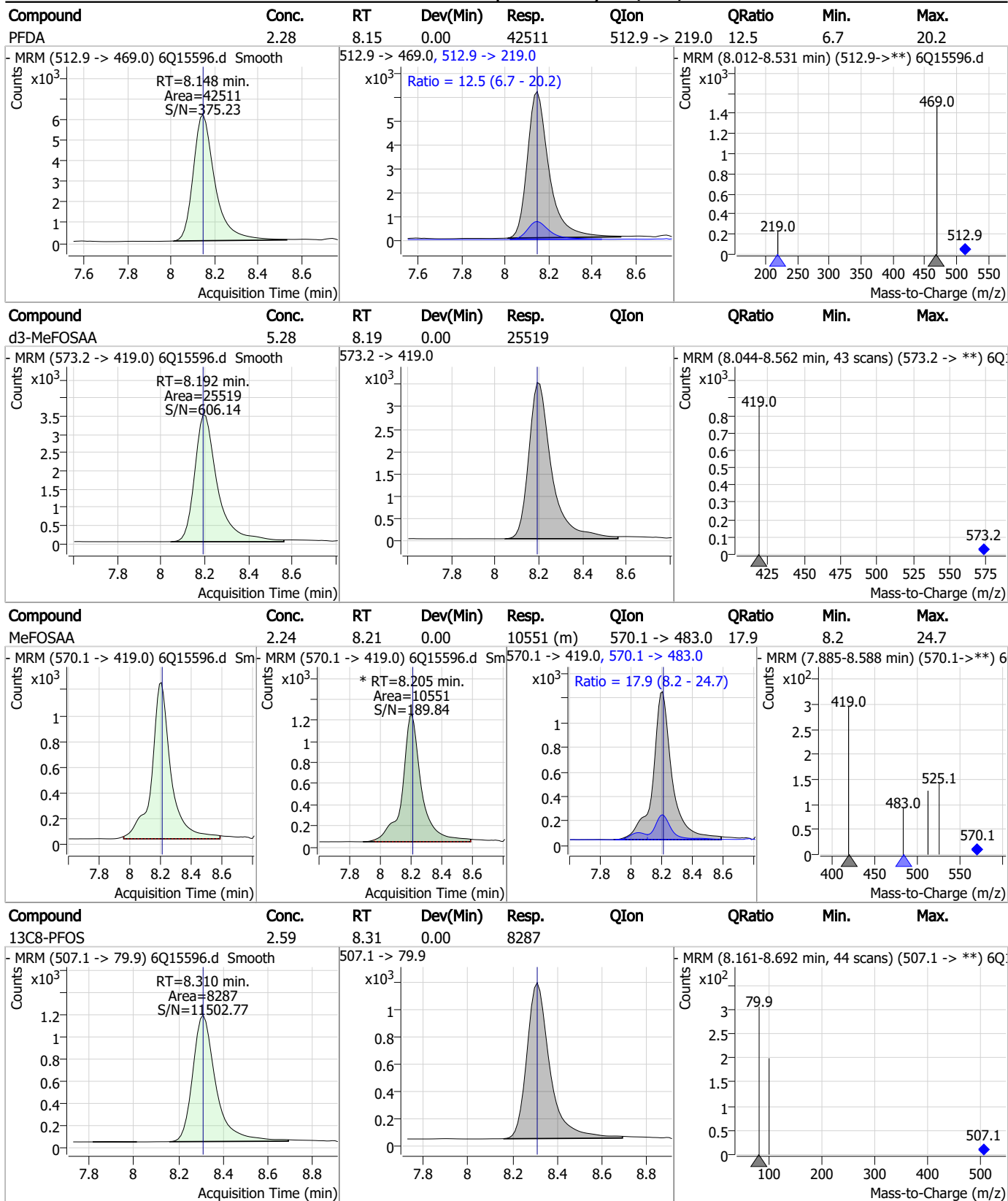
Perfluorinated Compounds by LC/MS/MS



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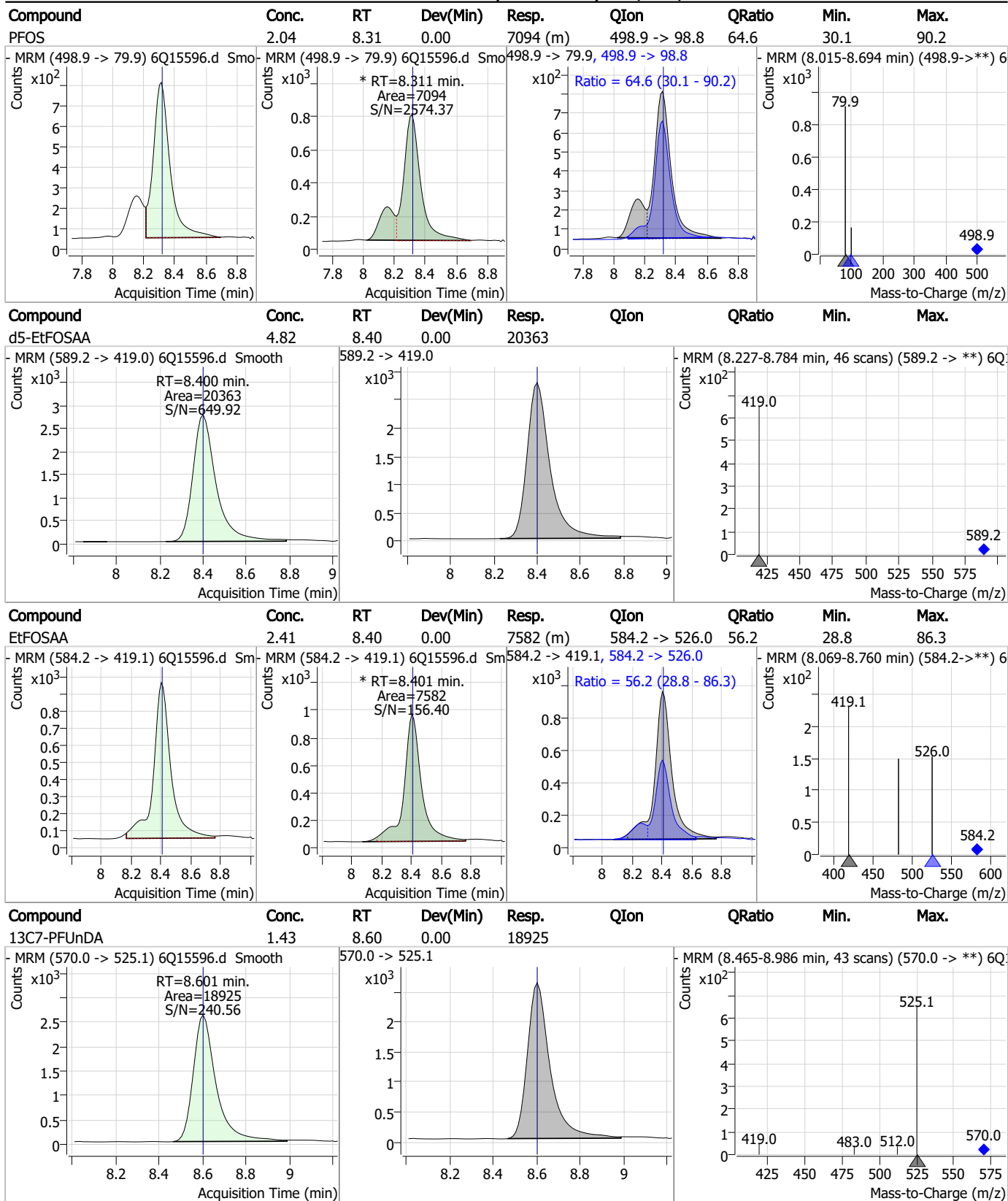
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Perfluorinated Compounds by LC/MS/MS



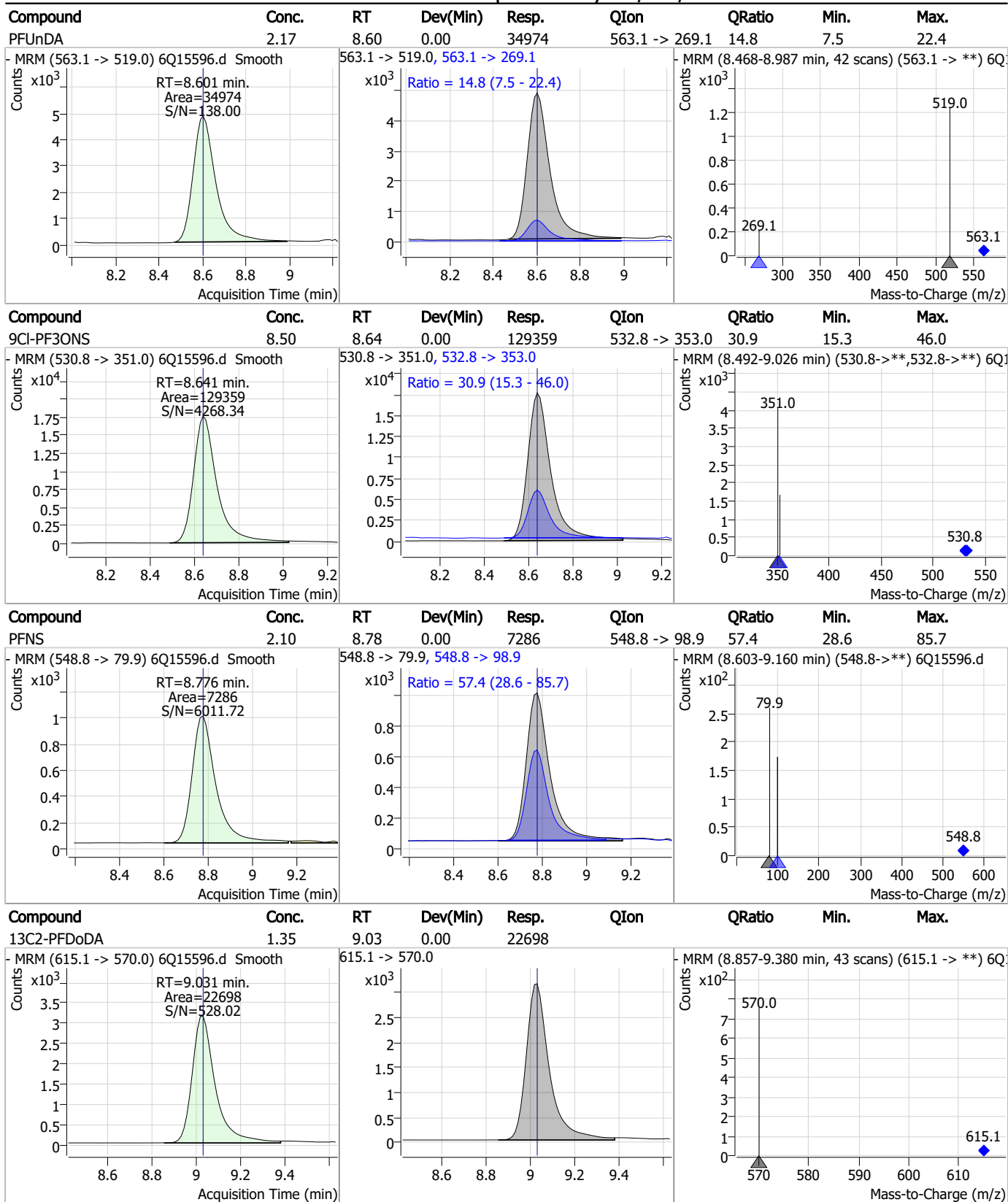
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Perfluorinated Compounds by LC/MS/MS



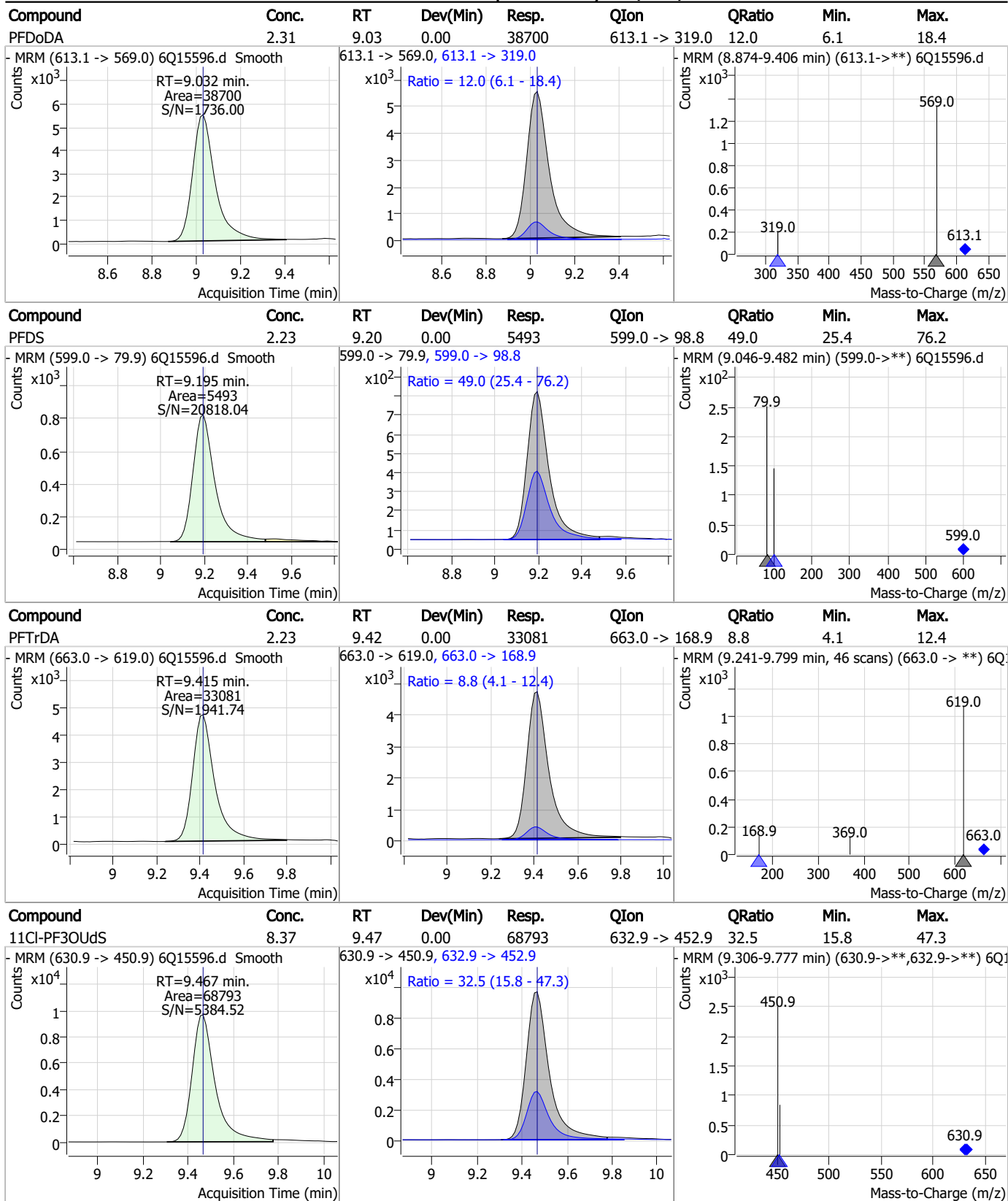
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Perfluorinated Compounds by LC/MS/MS



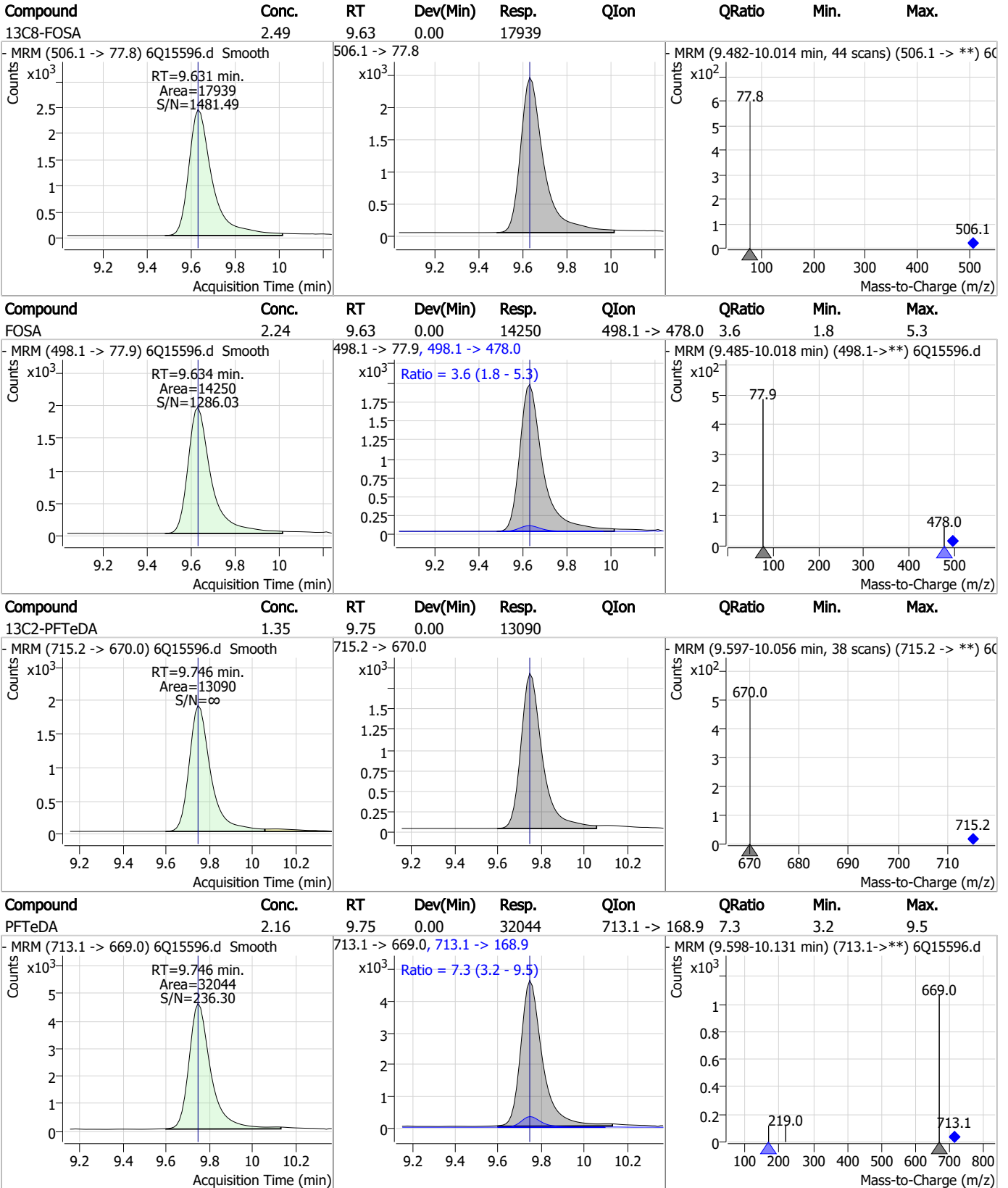
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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Perfluorinated Compounds by LC/MS/MS



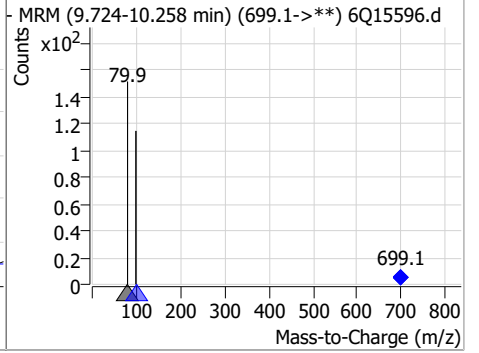
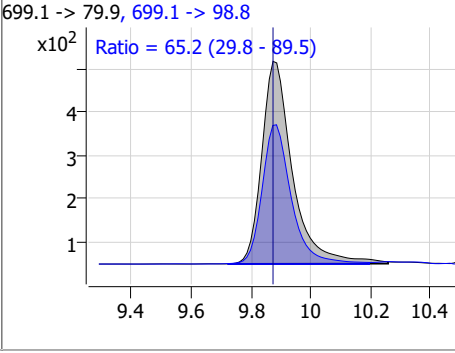
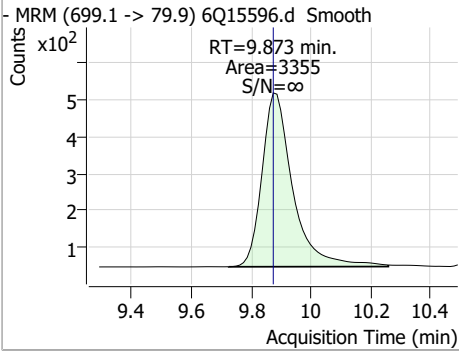
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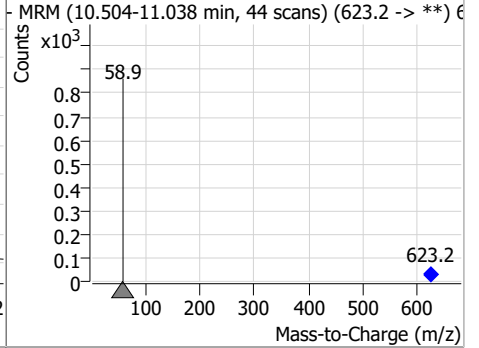
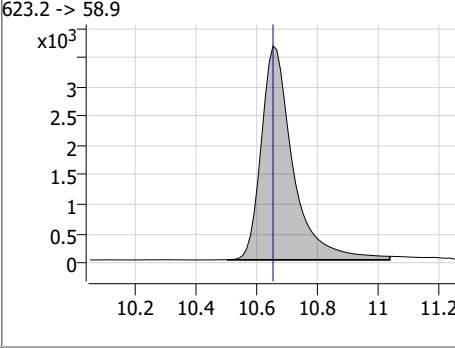
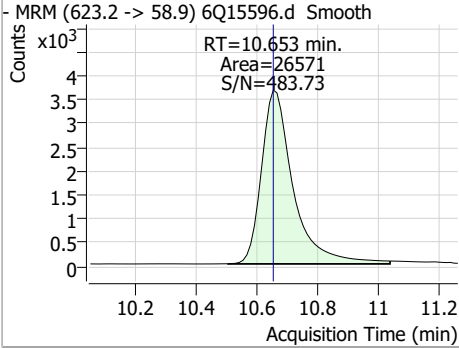


Perfluorinated Compounds by LC/MS/MS

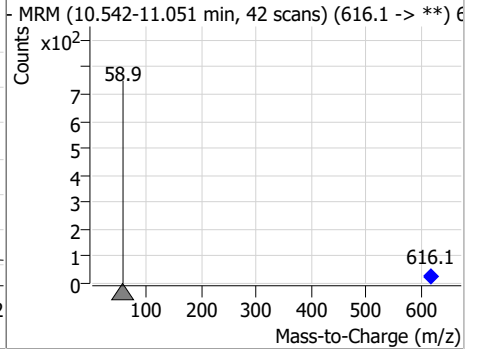
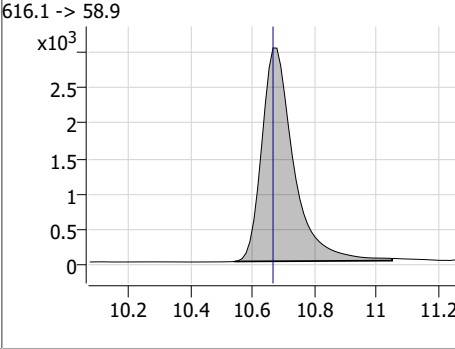
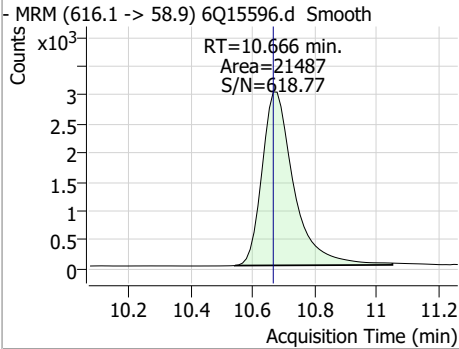
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.25	9.87	0.00	3355	699.1 -> 98.8	65.2	29.8	89.5



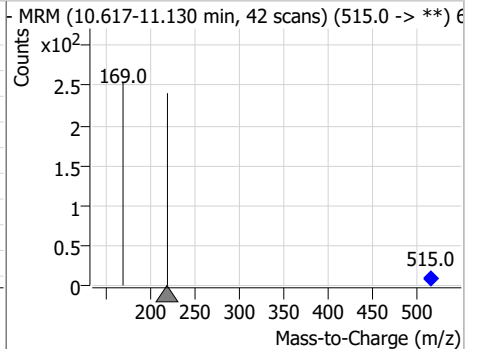
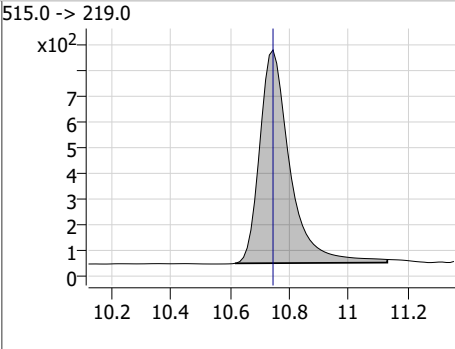
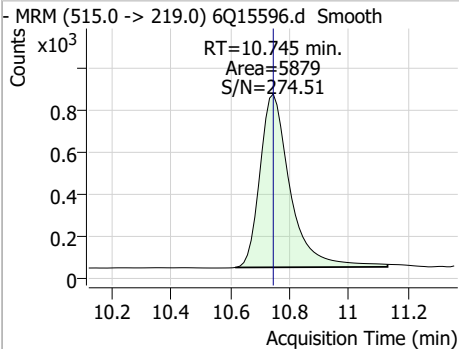
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.81	10.65	0.00	26571				



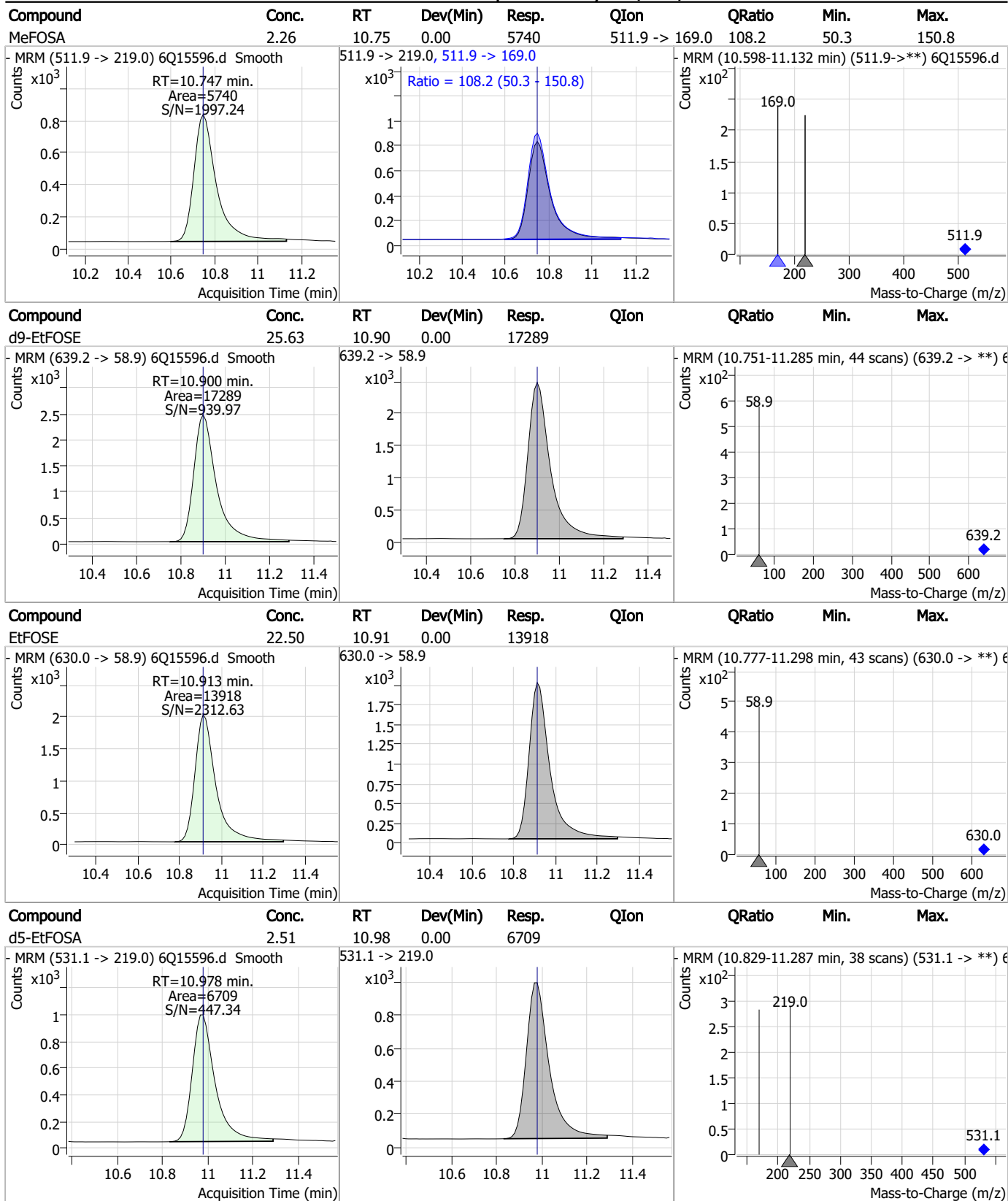
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.39	10.67	0.00	21487				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	10.75	0.00	5879				

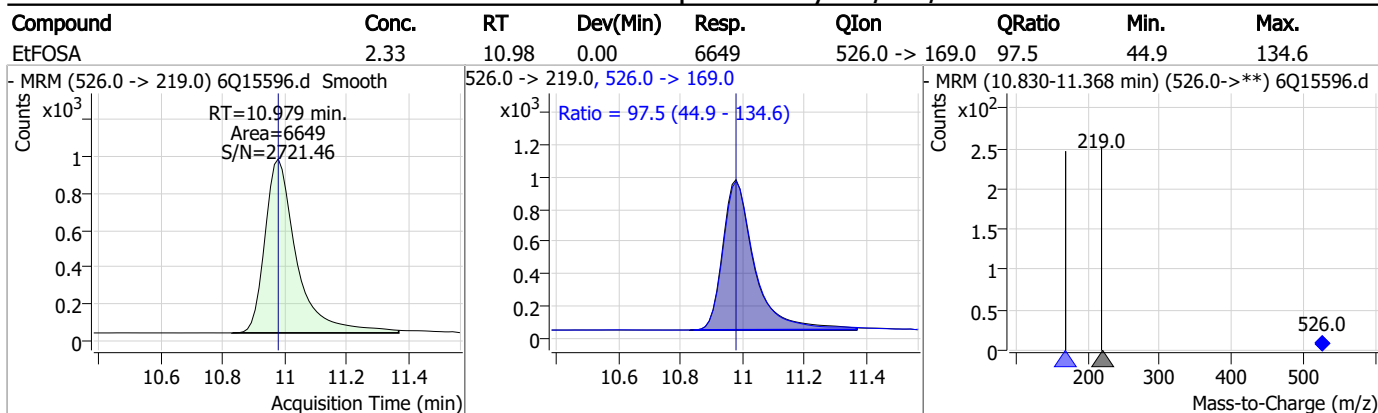


Perfluorinated Compounds by LC/MS/MS



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: S6Q235-ICC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15596.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 17:02 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
MeFOSAA	2355-31-9		8.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.5.1
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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 03/29/23 18:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15597.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 5:16:49 PM
 Sample Name : ic235-5
 Vial : P1-A6
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78460	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37168	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	33645	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	33650	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	61387	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	18964	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15782	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16697	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	21940	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12864	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	18078	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13301	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8695	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7114	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2139	5.00 µg/L	0.000
M2-6:2FTS	6.923	429.1 -> 80.9	3000	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2828	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	24461	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	14319	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	21507	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25906	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16490	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6656	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5832	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9791	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33815	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6157	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	74316	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	22908	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	18476	1.25 µg/L	0.012
13C2-PFHxA	5.553	315.1 -> 270.0	33451	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2139	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-6:2FTS	6.923	429.1 -> 80.9	3000	5.51 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.1%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2828	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C2-PFDoDA	9.031	615.1 -> 570.0	21940	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12864	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.3%		
13C3-PFBS	5.483	302.1 -> 79.9	13301	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.1%		
13C3-PFHxS	7.265	402.1 -> 79.9	8695	2.50 µg/L	0.000

7.7.6
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C4-PFBA	2.913	216.8 -> 171.9	78460	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C4-PFHpA	6.506	367.1 -> 322.0	33650	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C5-PFHxA	5.553	318.0 -> 273.0	33645	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C5-PFPeA	4.347	268.3 -> 223.0	37168	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C6-PFDA	8.147	519.1 -> 474.1	15782	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C7-PFUnDA	8.601	570.0 -> 525.1	16697	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.4%		
13C8-FOSA	9.631	506.1 -> 77.8	18078	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C8-PFOA	7.149	421.1 -> 376.0	61387	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C8-PFOS	8.310	507.1 -> 79.9	7114	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 88.9%		
13C9-PFNA	7.667	472.1 -> 427.0	18964	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
d3-MeFOSAA	8.204	573.2 -> 419.0	24461	5.06 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	14319	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
d3-MeFOSA	10.745	515.0 -> 219.0	5832	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
d5-EtFOSAA	8.400	589.2 -> 419.0	21507	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	25906	25.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
d9-EtFOSE	10.900	639.2 -> 58.9	16490	24.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 97.8%		
d5-EtFOSA	10.978	531.1 -> 219.0	6656	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	82648	18.51 µg/L	99
		327.1 -> 80.9	18973		
6:2FTS	6.923	427.1 -> 407.0	70448	17.51 µg/L	95
		427.1 -> 80.9	15347		
8:2FTS	7.936	527.1 -> 507.0	38477	18.70 µg/L	98
		527.1 -> 80.8	9746		
EtFOSAA	8.401	584.2 -> 419.1	14905	4.49 µg/L	m 94
		584.2 -> 526.0	7908		
FOSA	9.634	498.1 -> 77.9	30292	4.73 µg/L	99
		498.1 -> 478.0	1172		
MeFOSAA	8.205	570.1 -> 419.0	22117	4.91 µg/L	99
		570.1 -> 483.0	3783		
PFBA	2.919	212.8 -> 168.9	34323	19.24 µg/L	100
PFBS	5.484	298.7 -> 79.9	22002	4.28 µg/L	96
		298.7 -> 98.8	9721		
PFDA	8.148	512.9 -> 469.0	83793	4.64 µg/L	100
		512.9 -> 219.0	11217		
PFDODA	9.032	613.1 -> 569.0	75192	4.64 µg/L	98
		613.1 -> 319.0	9913		
PFDS	9.195	599.0 -> 79.9	11211	5.29 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	5650			
PFHpA	6.506	363.1 -> 319.0	103837	5.28	µg/L	99
		363.1 -> 169.0	13889			
PFHpS	7.819	449.0 -> 79.9	13596	4.77	µg/L	95
		449.0 -> 98.9	8146			
PFHxA	5.556	313.0 -> 269.0	55867	4.61	µg/L	98
		313.0 -> 118.9	2522			
PFHxS	7.265	398.7 -> 79.9	16341	4.39	µg/L	m 98
		398.7 -> 98.9	9455			
PFNA	7.680	463.0 -> 419.0	56128	4.96	µg/L	97
		463.0 -> 219.0	10596			
PFNS	8.776	548.8 -> 79.9	16436	5.51	µg/L	88
		548.8 -> 98.9	7978			
PFOA	7.151	413.0 -> 369.0	125566	4.80	µg/L	97
		413.0 -> 169.0	17216			
PFOS	8.311	498.9 -> 79.9	14173	4.76	µg/L	m 93
		498.9 -> 98.8	9263			
PFPeA	4.349	263.0 -> 219.0	75216	9.55	µg/L	100
PFPeS	6.571	349.1 -> 79.9	20263	4.75	µg/L	99
		349.1 -> 98.9	10385			
PFTeDA	9.746	713.1 -> 669.0	64489	4.42	µg/L	98
		713.1 -> 168.9	4435			
PFTrDA	9.415	663.0 -> 619.0	69601	4.85	µg/L	98
		663.0 -> 168.9	5397			
PFUnDA	8.601	563.1 -> 519.0	75560	5.32	µg/L	97
		563.1 -> 269.1	10467			
11CI-PF3OUdS	9.467	630.9 -> 450.9	152252	18.56	µg/L	99
		632.9 -> 452.9	49094			
9CI-PF3ONS	8.641	530.8 -> 351.0	278875	18.38	µg/L	98
		532.8 -> 353.0	88202			
ADONA	6.756	376.9 -> 250.9	575481	19.09	µg/L	96
		376.9 -> 84.8	124955			
HFPO-DA	5.931	284.9 -> 168.9	25381	19.26	µg/L	98
		284.9 -> 184.9	2787			
3:3FTCA	3.802	241.0 -> 177.0	9879	23.59	µg/L	100
		241.0 -> 117.0	1451			
5:3FTCA	6.223	341.0 -> 237.1	348812	126.39	µg/L	100
		341.0 -> 217.0	296394			
7:3FTCA	7.633	441.0 -> 316.9	172598	118.01	µg/L	96
		441.0 -> 336.9	337468			
EtFOSA	10.979	526.0 -> 219.0	13956	4.92	µg/L	94
		526.0 -> 169.0	13345			
EtFOSE	10.913	630.0 -> 58.9	29995	50.84	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	11828	4.70	µg/L	98
		511.9 -> 169.0	12171			
MeFOSE	10.679	616.1 -> 58.9	43924	46.96	µg/L	100
PFDoS	9.886	699.1 -> 79.9	6377	4.98	µg/L	91
		699.1 -> 98.8	4223			
NFDHA	5.435	295.0 -> 201.0	7543	10.48	µg/L	96
		295.0 -> 84.9	3246			
PFMBA	4.762	279.0 -> 85.1	23544	9.71	µg/L	100
PFMPA	3.488	229.0 -> 84.9	20758	9.52	µg/L	100
PFEESA	6.036	314.8 -> 134.9	155078	8.94	µg/L	100
		314.8 -> 82.9	3584			

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

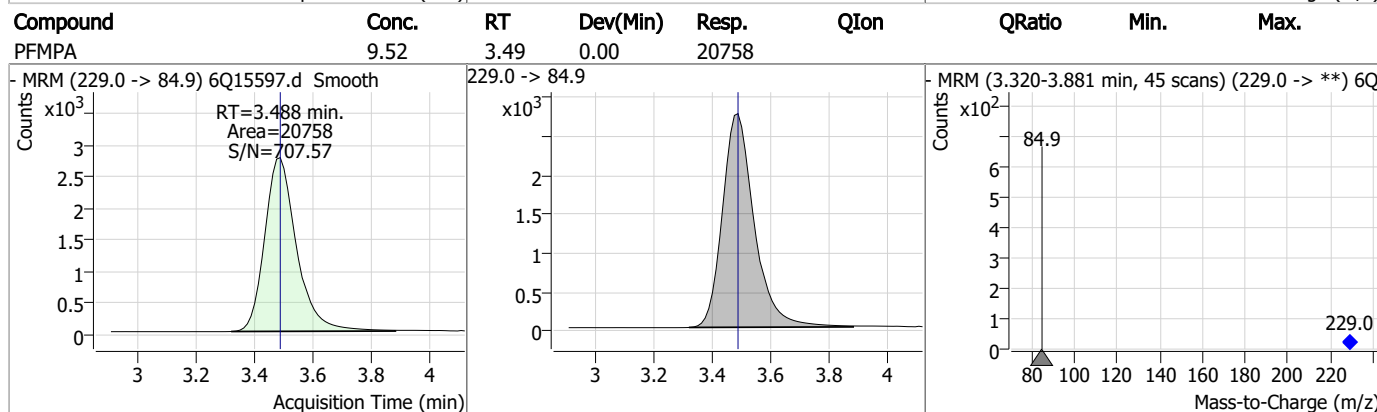
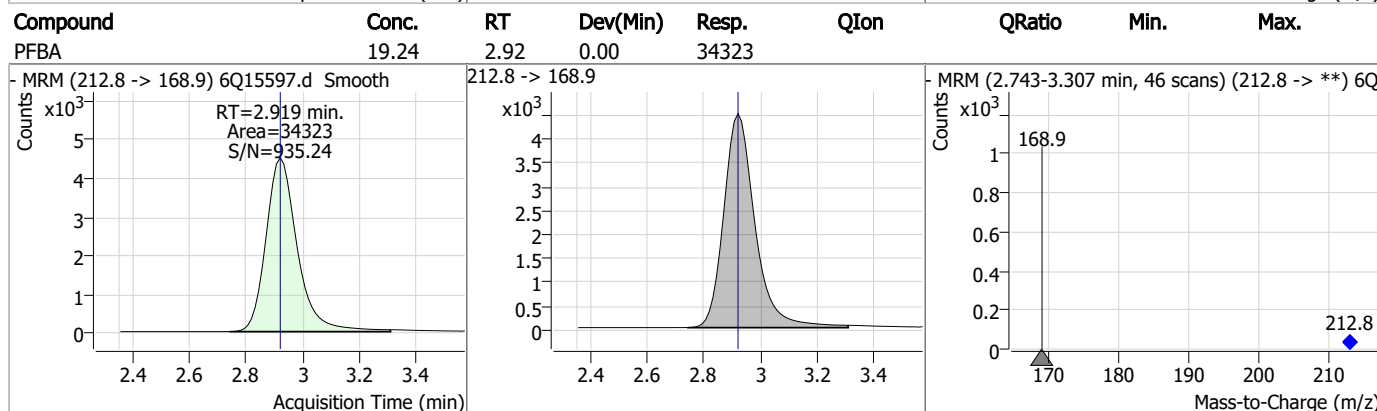
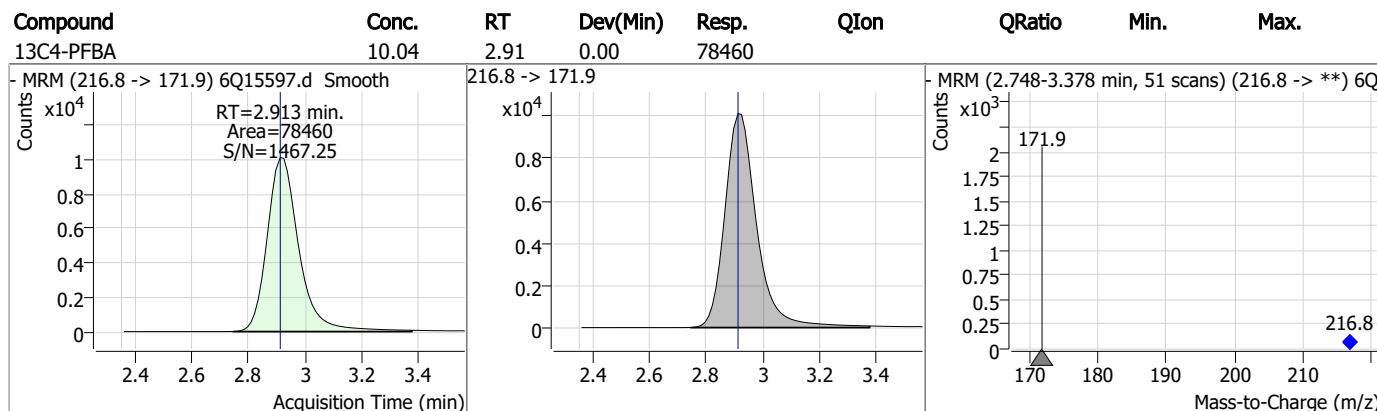
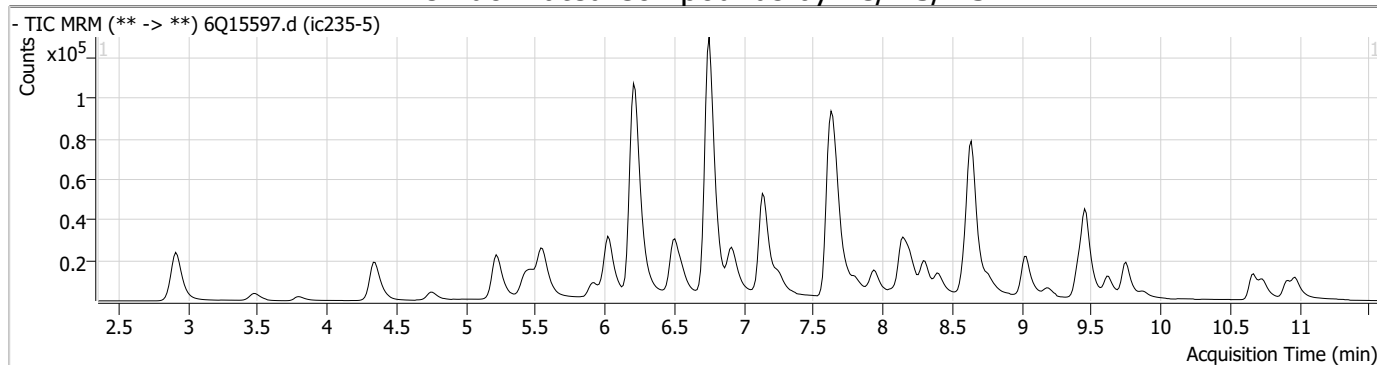
Perfluorinated Compounds by LC/MS/MS

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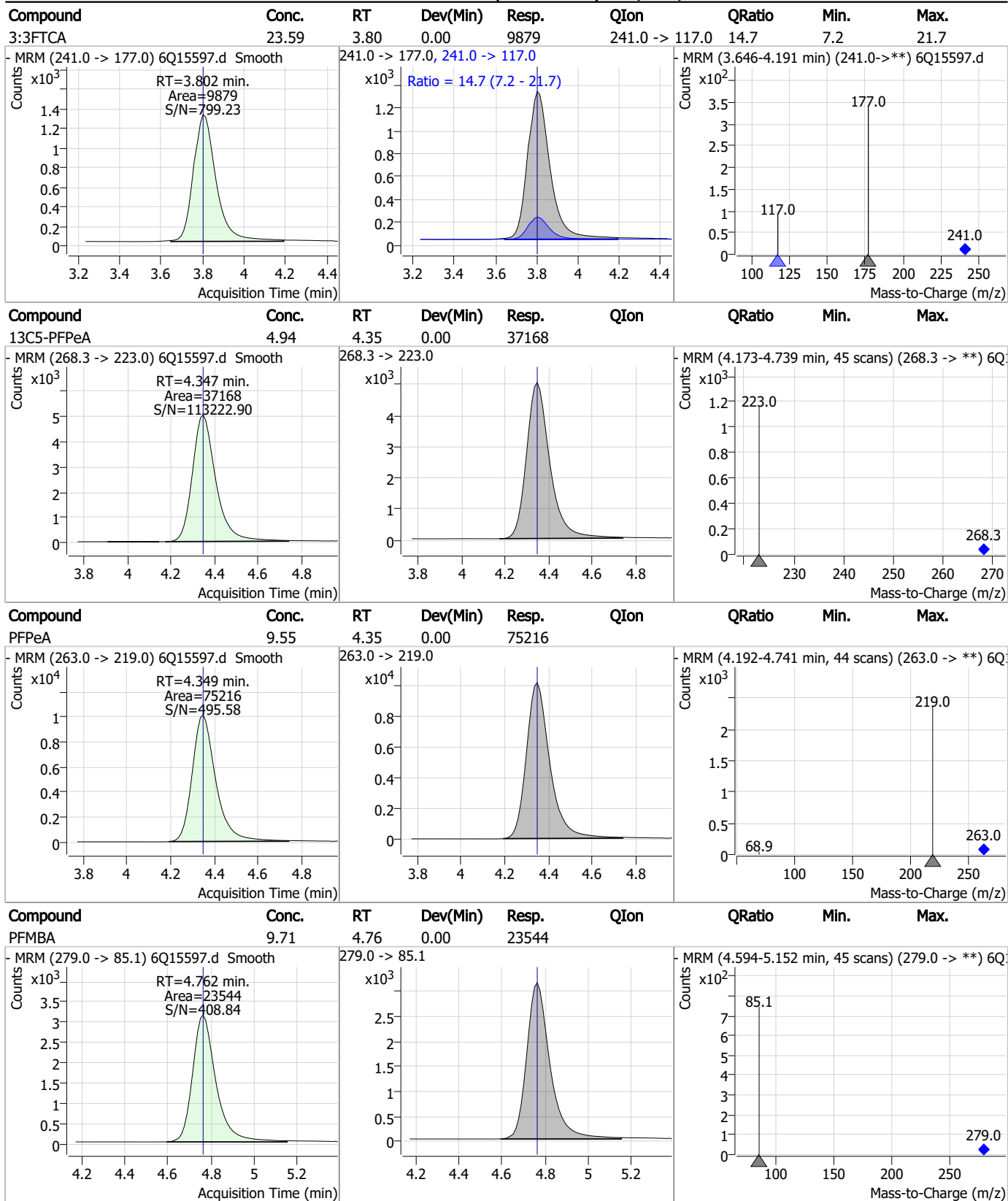
7.7.6

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Perfluorinated Compounds by LC/MS/MS

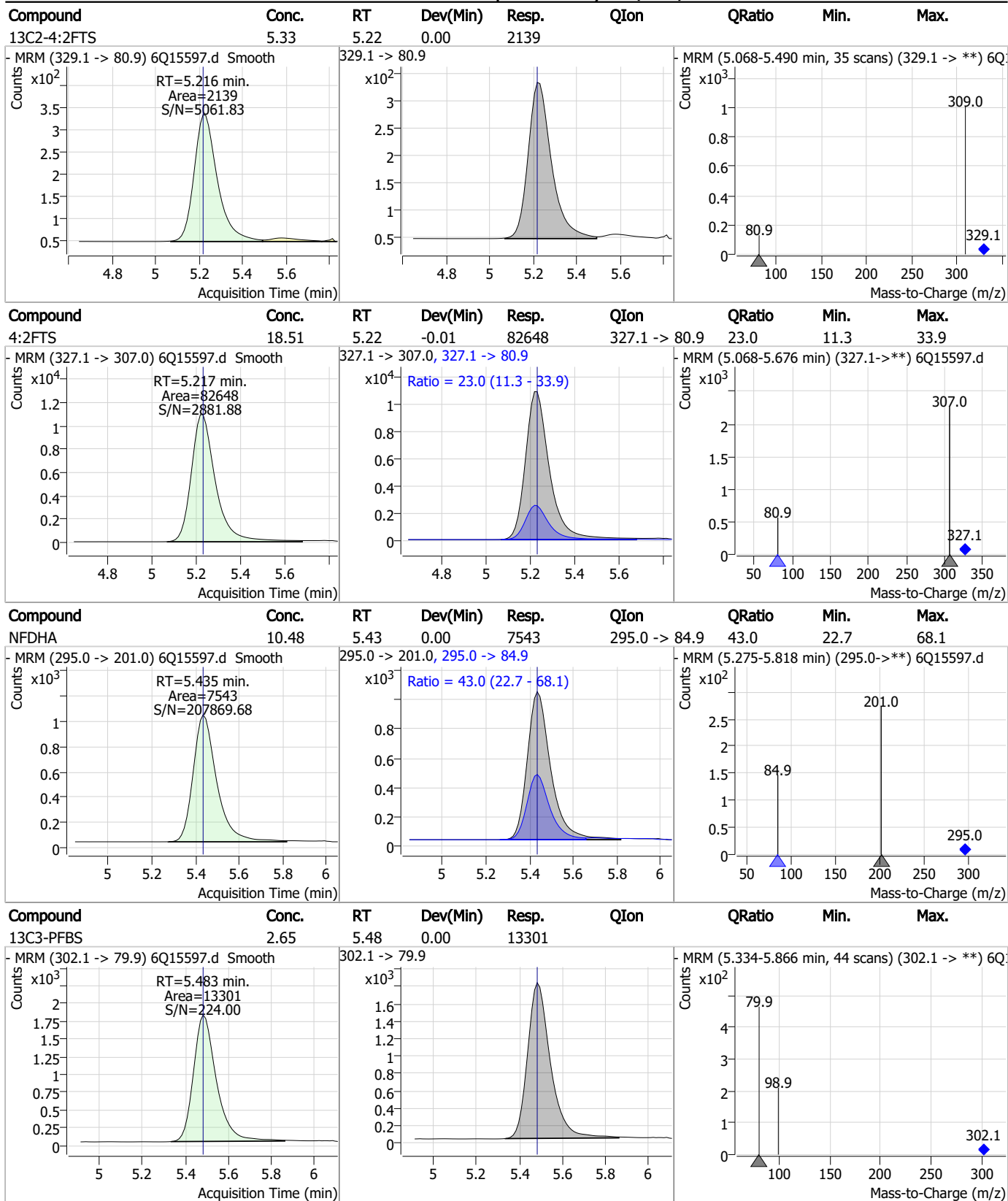


Perfluorinated Compounds by LC/MS/MS



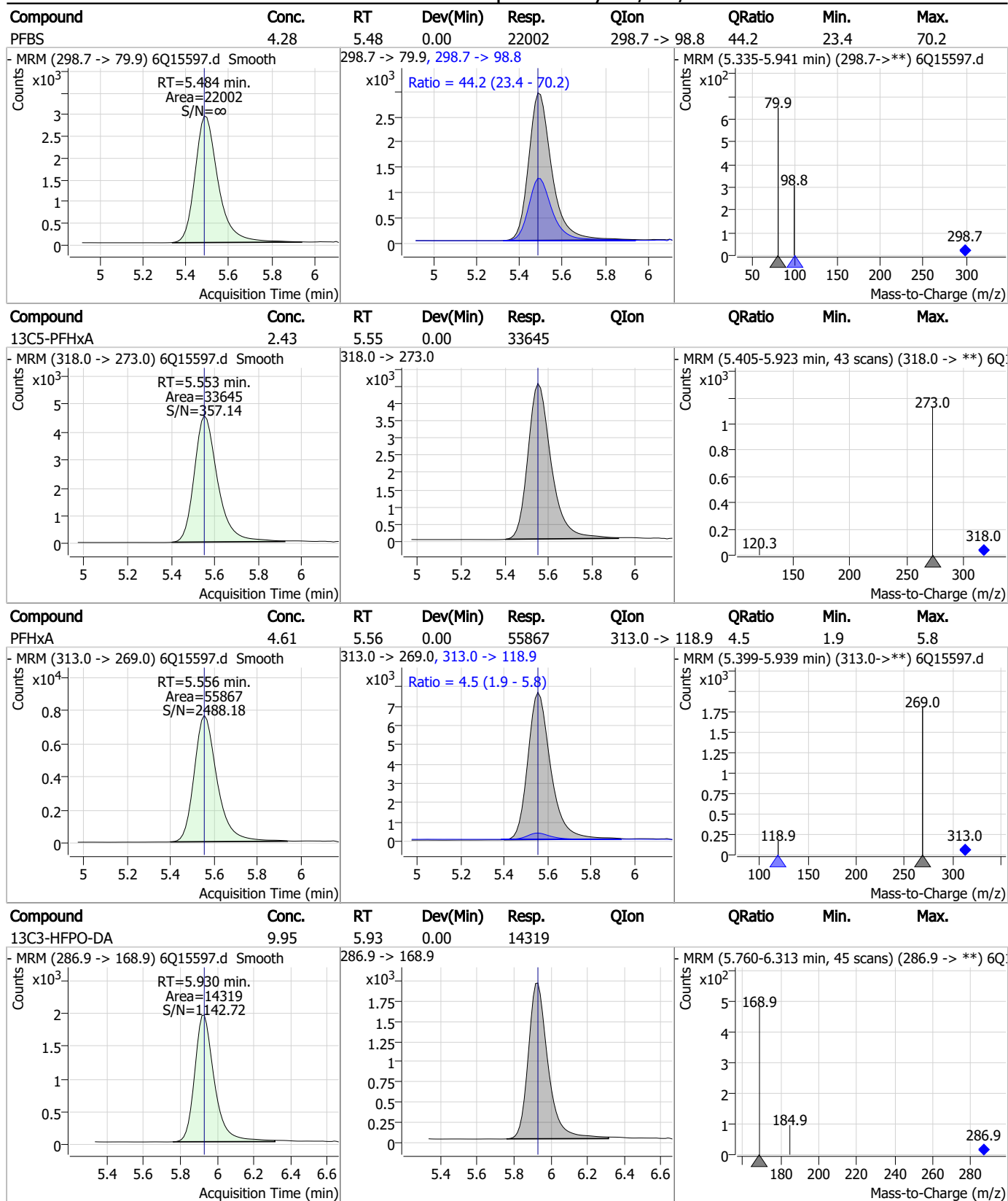
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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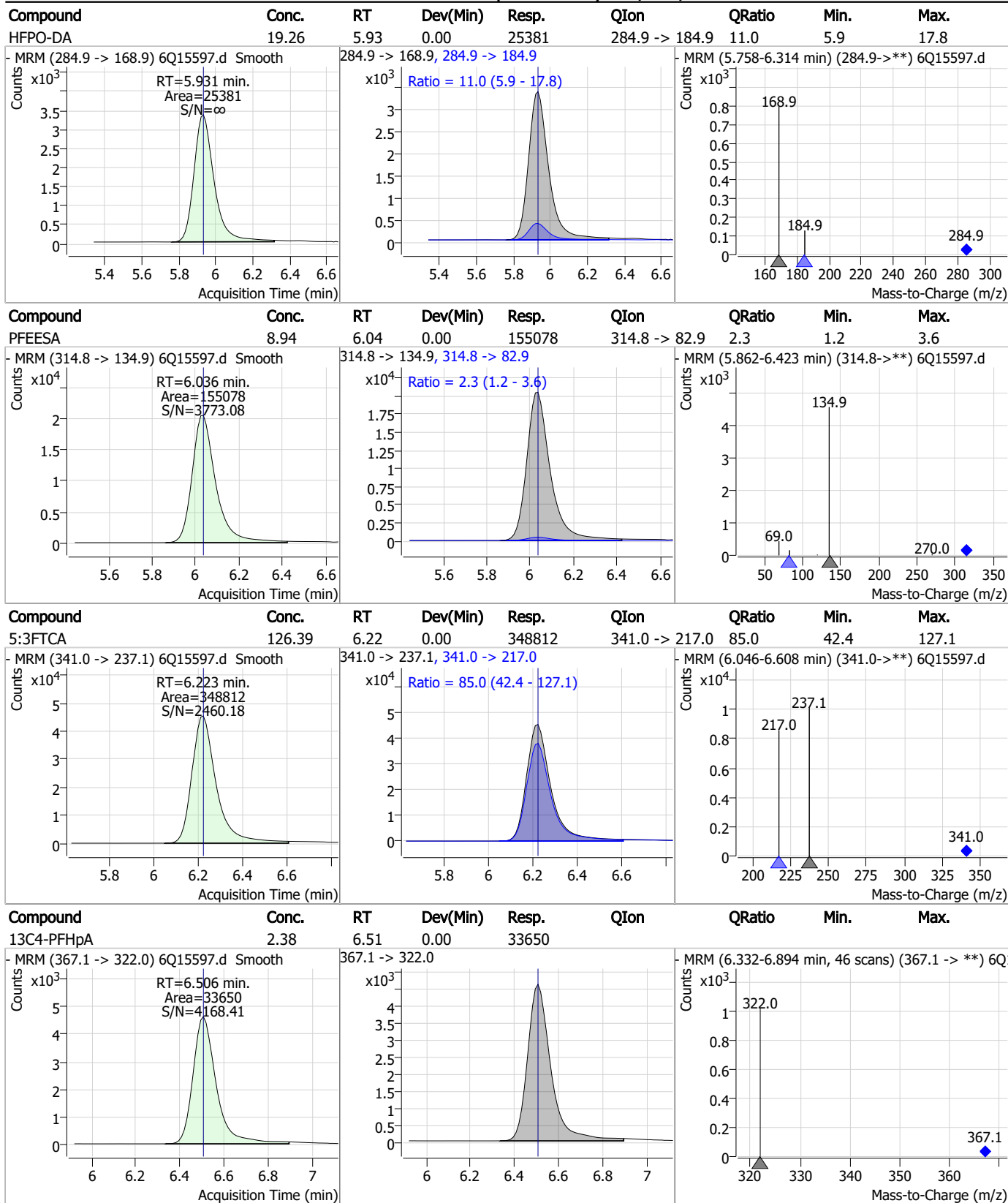
Perfluorinated Compounds by LC/MS/MS



7.7.6
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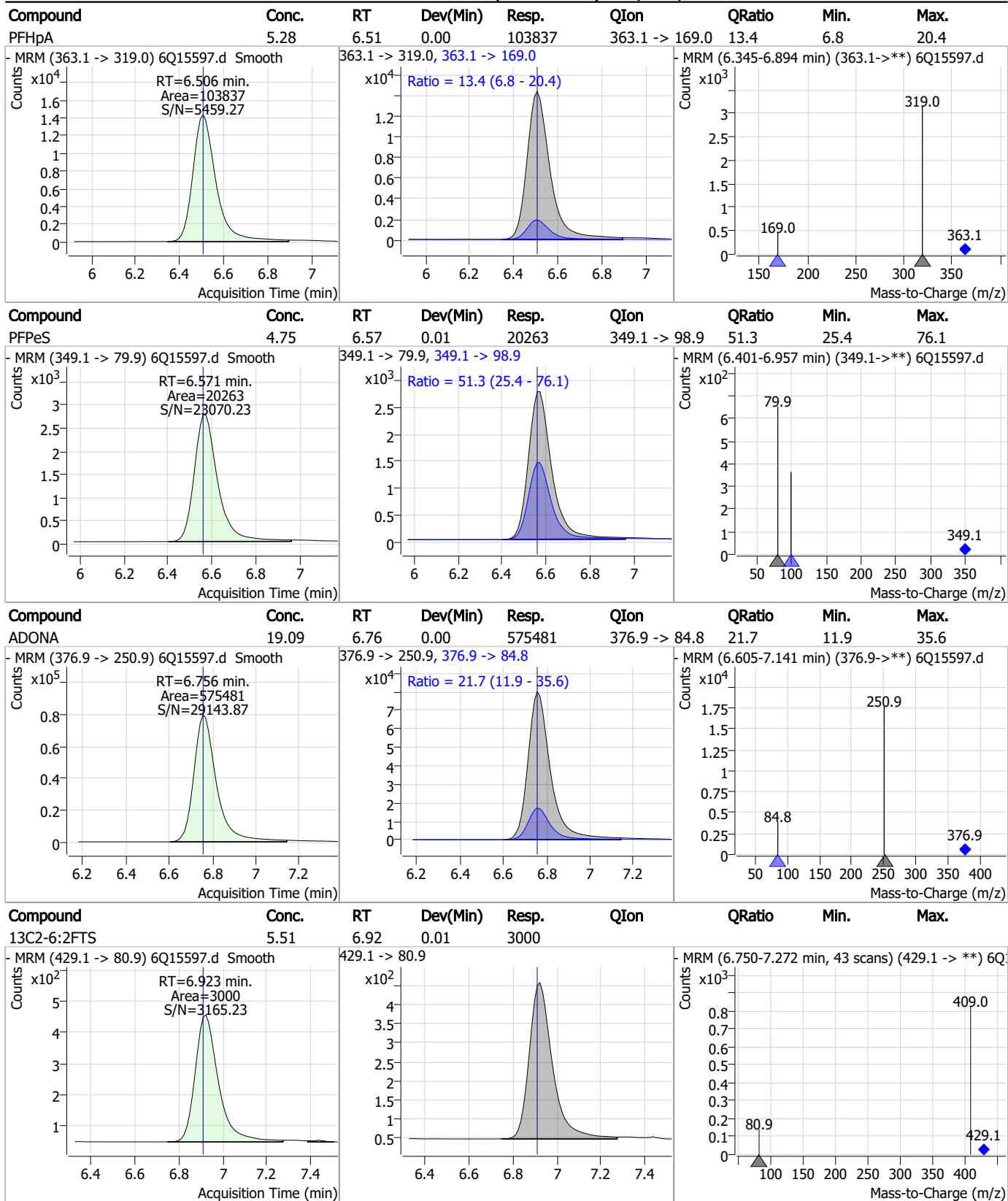


Perfluorinated Compounds by LC/MS/MS



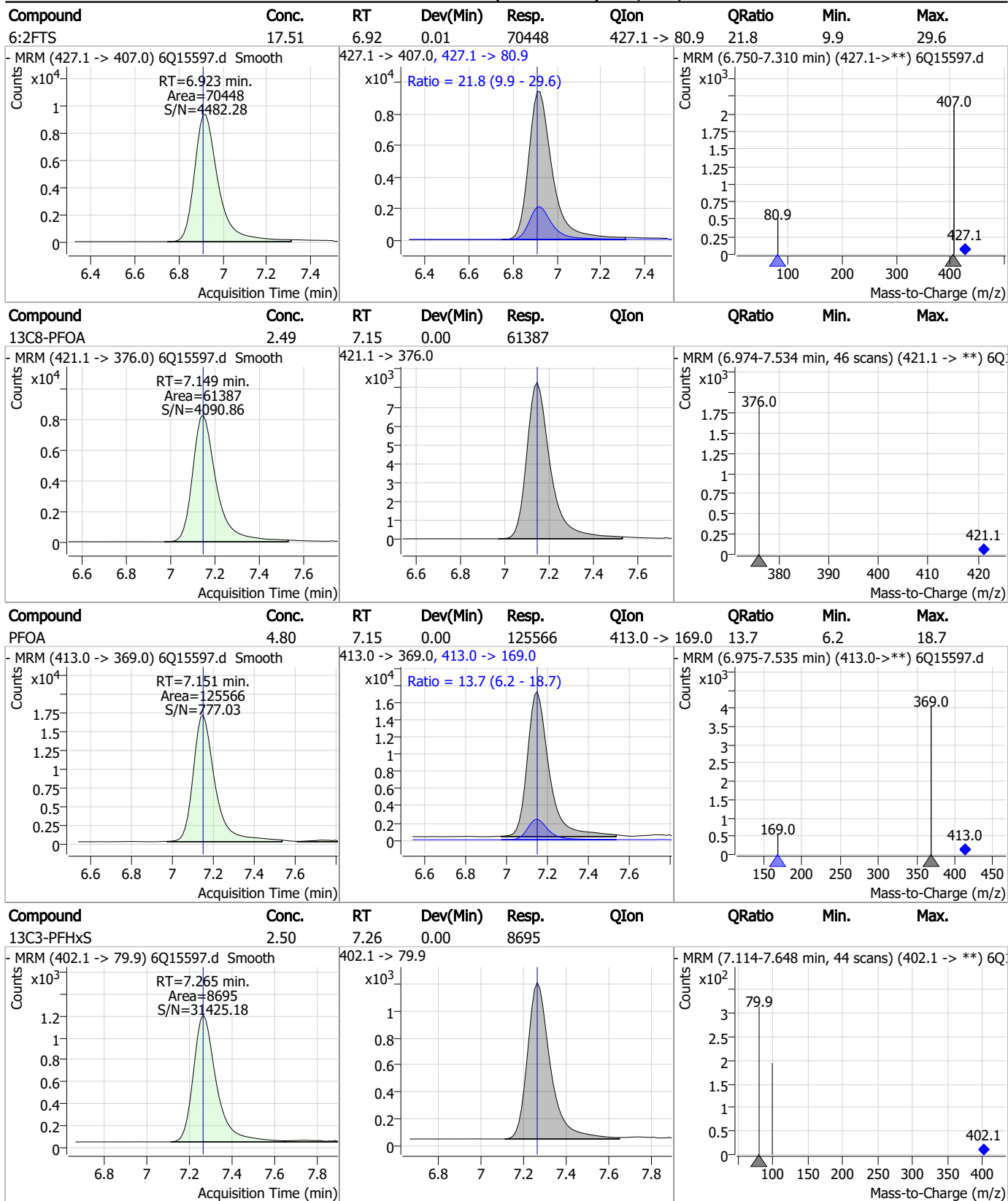
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Perfluorinated Compounds by LC/MS/MS



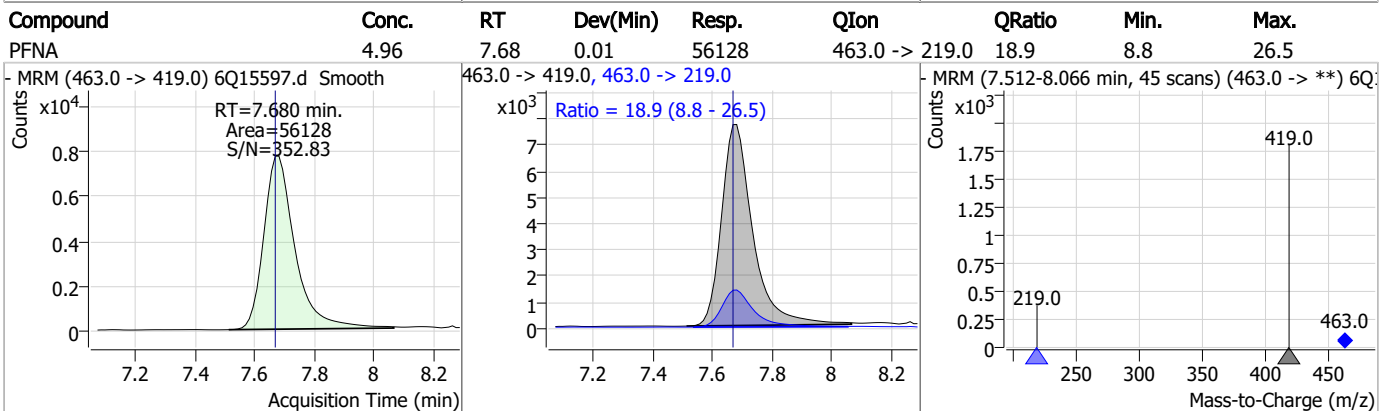
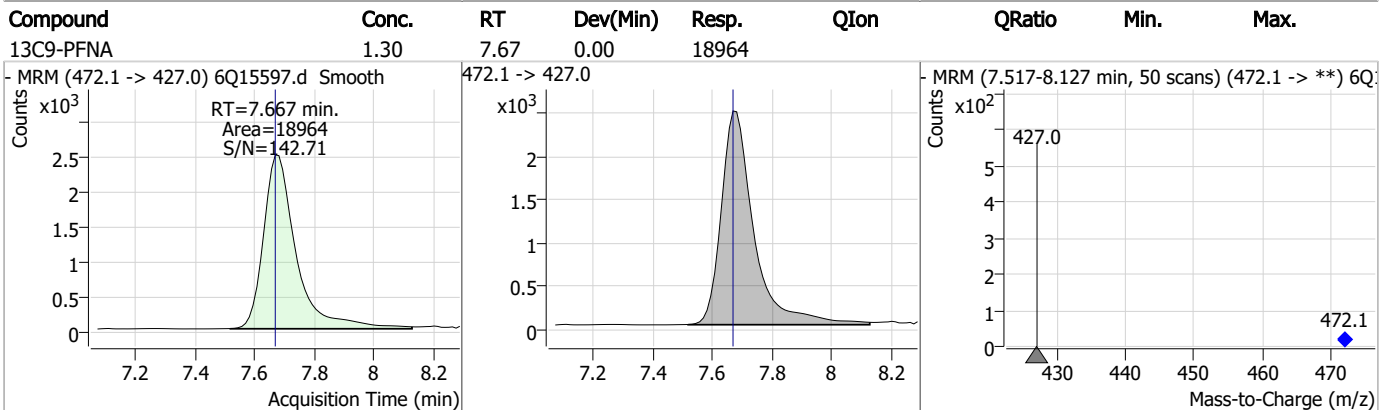
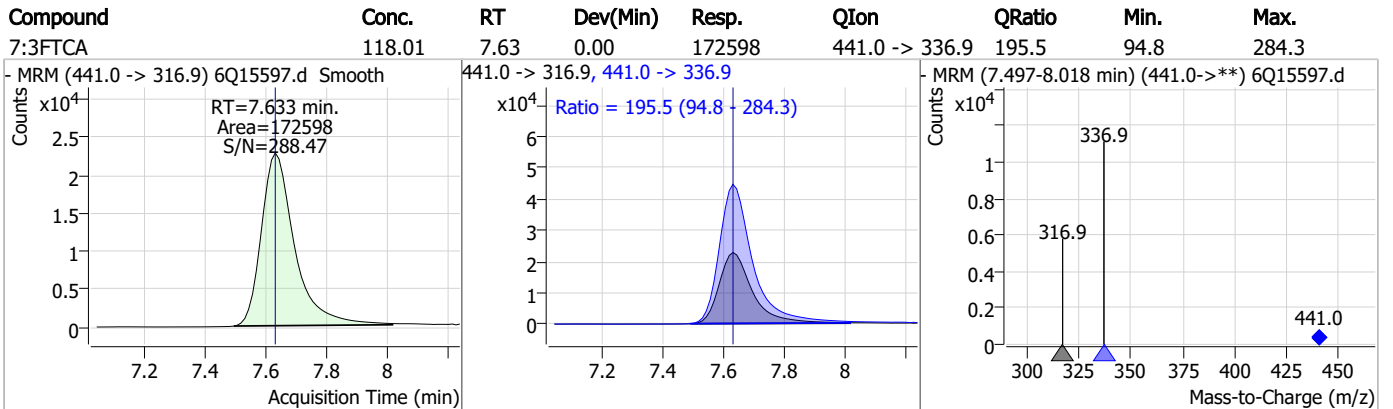
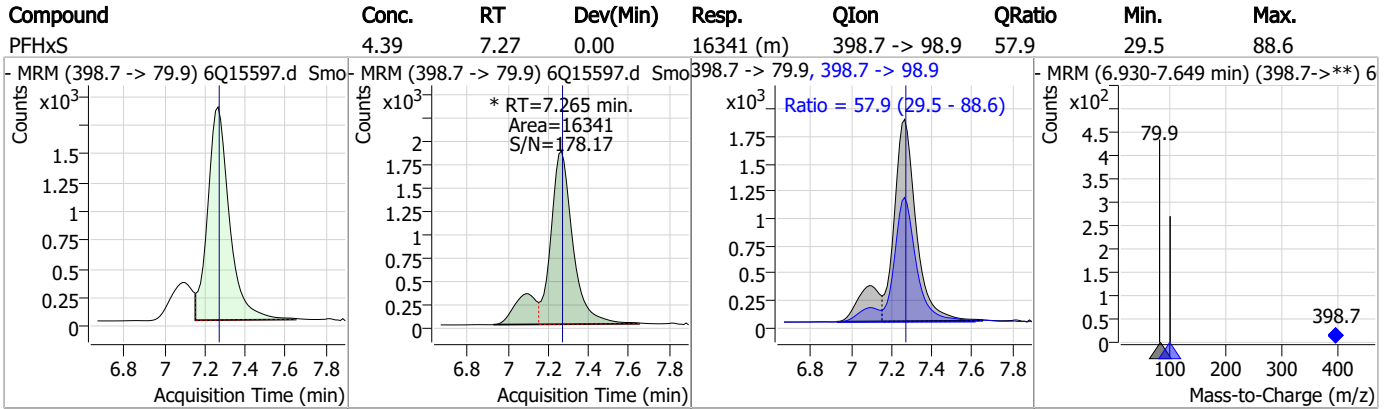
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6

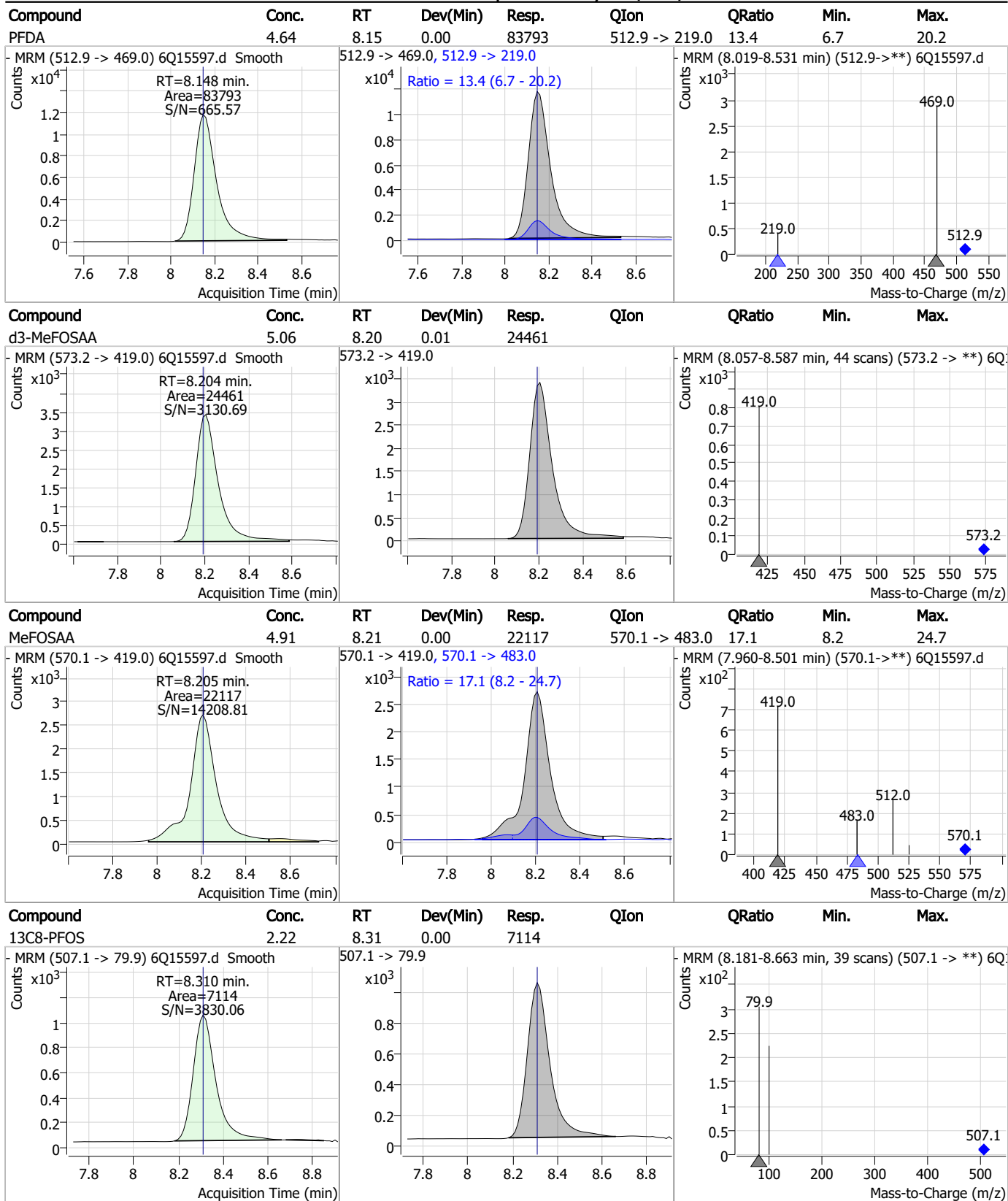
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.77	7.82	0.00	13596	449.0 -> 98.9	59.9	28.0	84.1
13C2-8:2FTS	5.30	7.94	0.00	2828				
8:2FTS	18.70	7.94	0.00	38477	527.1 -> 80.8	25.3	12.2	36.6
13C6-PFDA	1.19	8.15	0.00	15782				

7.7.6
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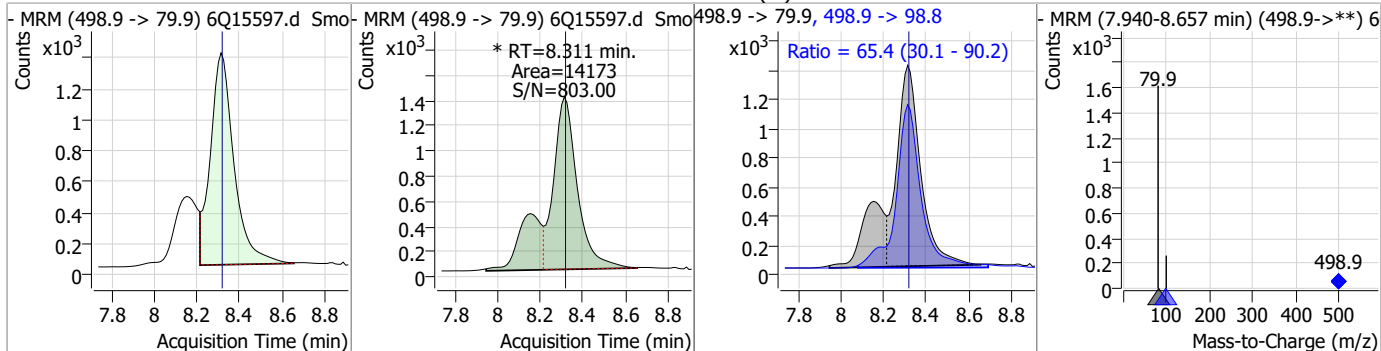
Perfluorinated Compounds by LC/MS/MS



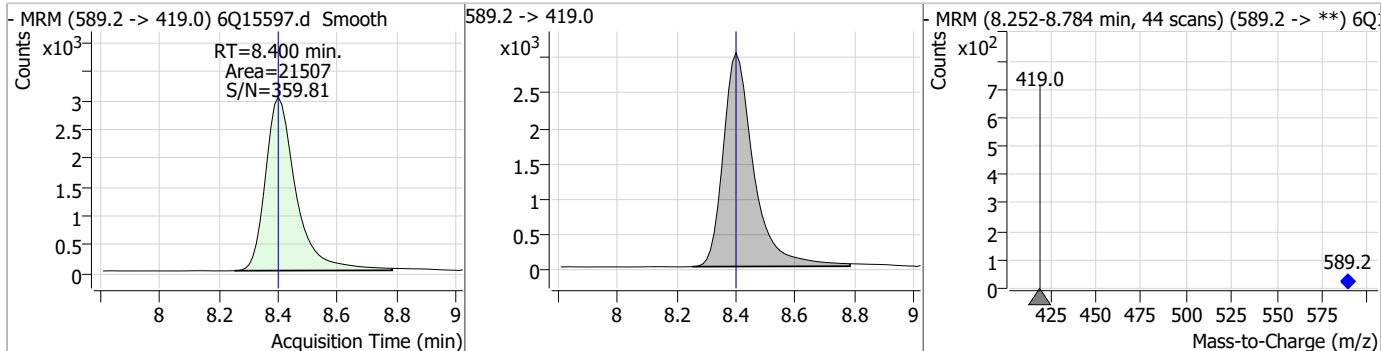
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Perfluorinated Compounds by LC/MS/MS

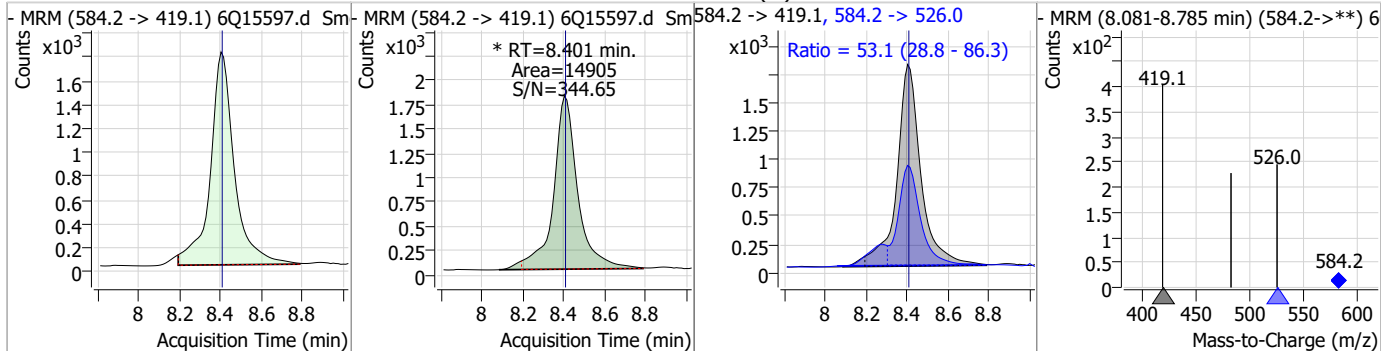
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.76	8.31	0.00	14173 (m)	498.9 -> 98.8	65.4	30.1	90.2



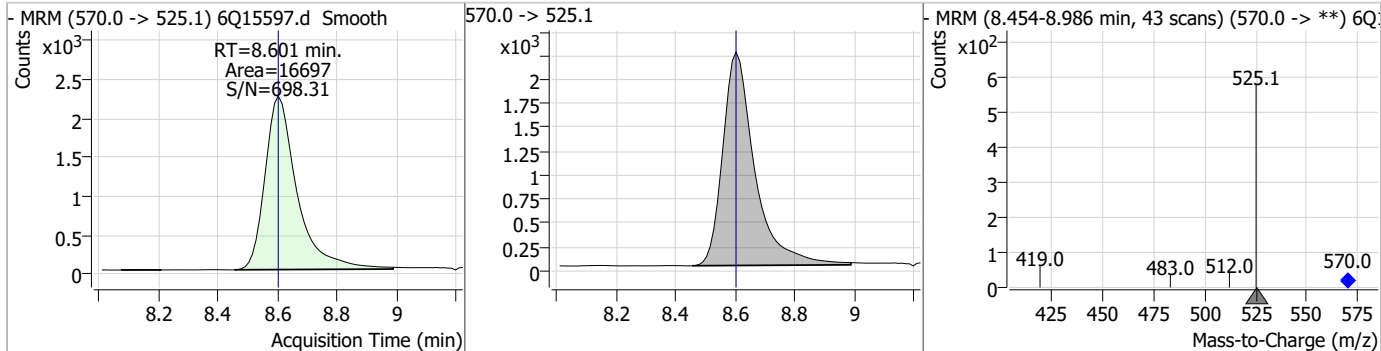
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.09	8.40	0.00	21507				



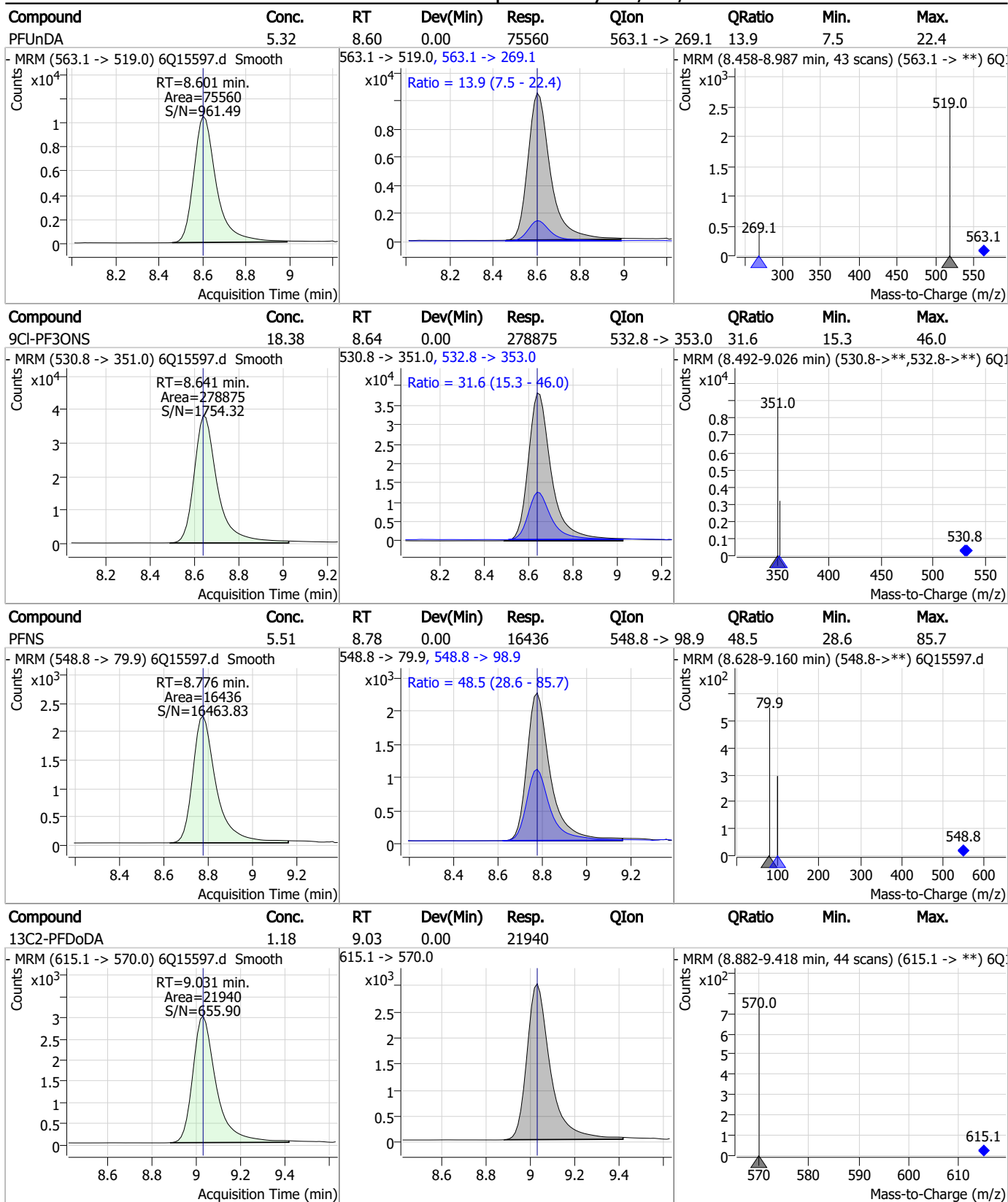
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.49	8.40	0.00	14905 (m)	584.2 -> 526.0	53.1	28.8	86.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.14	8.60	0.00	16697				

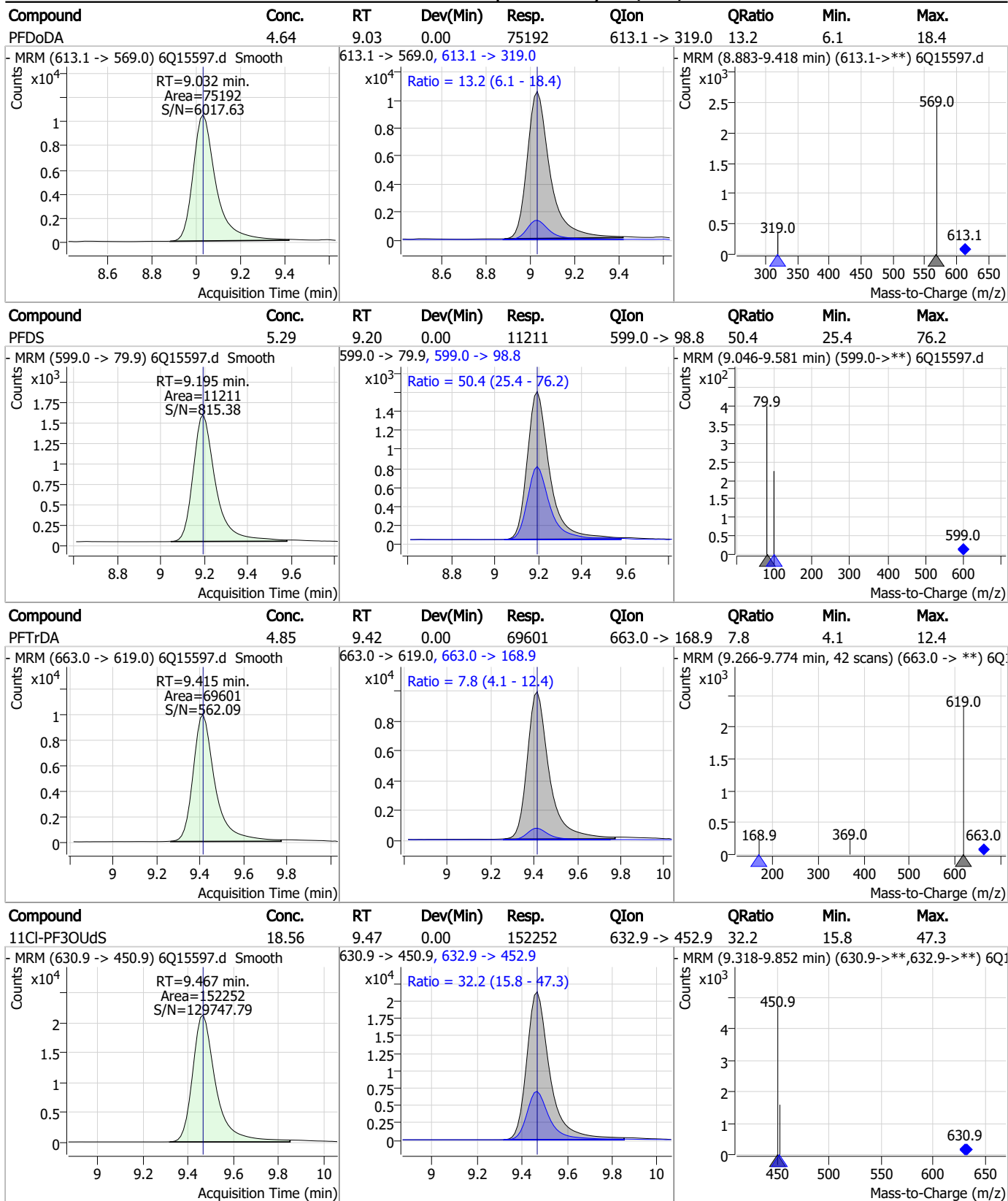


Perfluorinated Compounds by LC/MS/MS



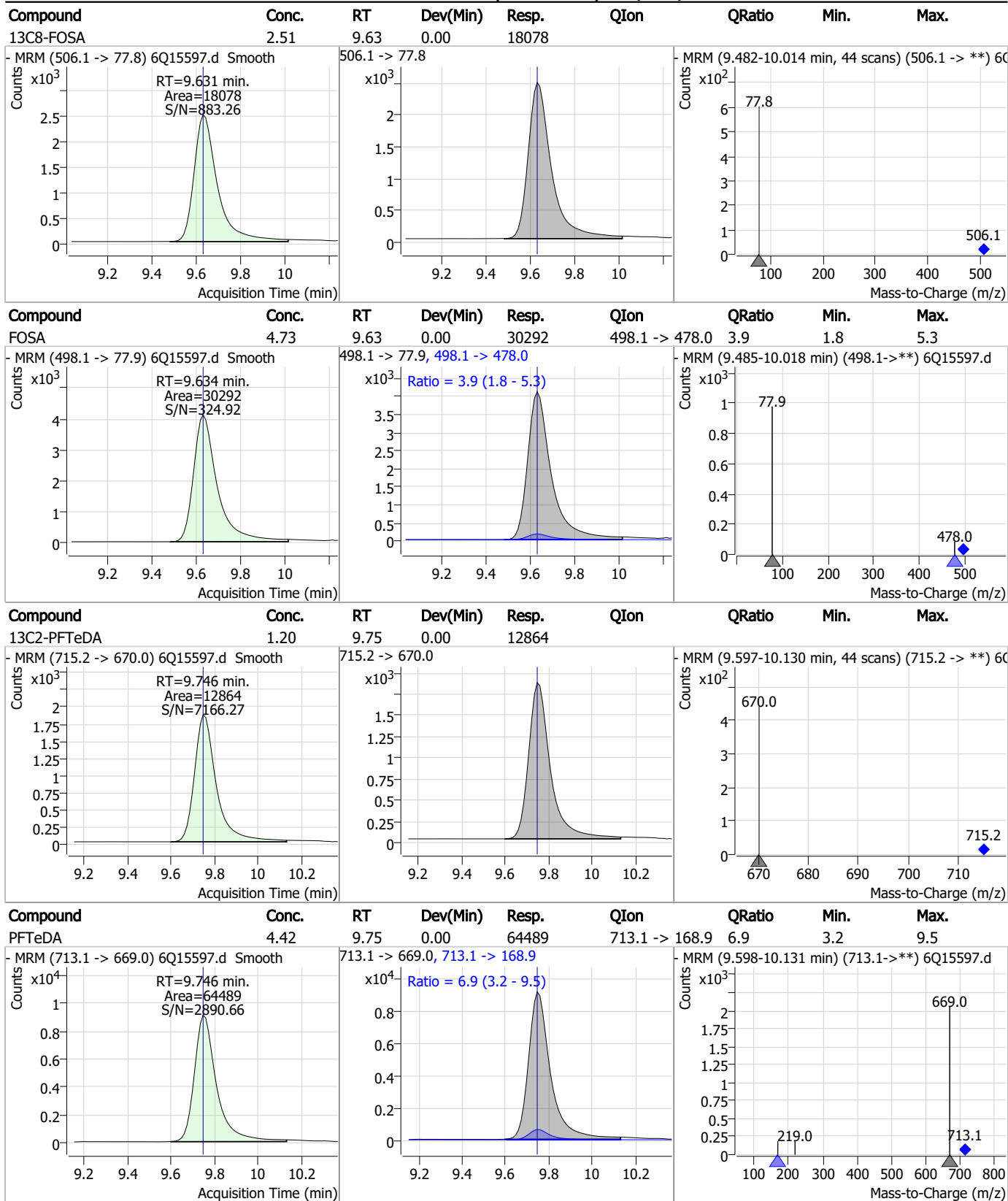
7.7.6
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Perfluorinated Compounds by LC/MS/MS



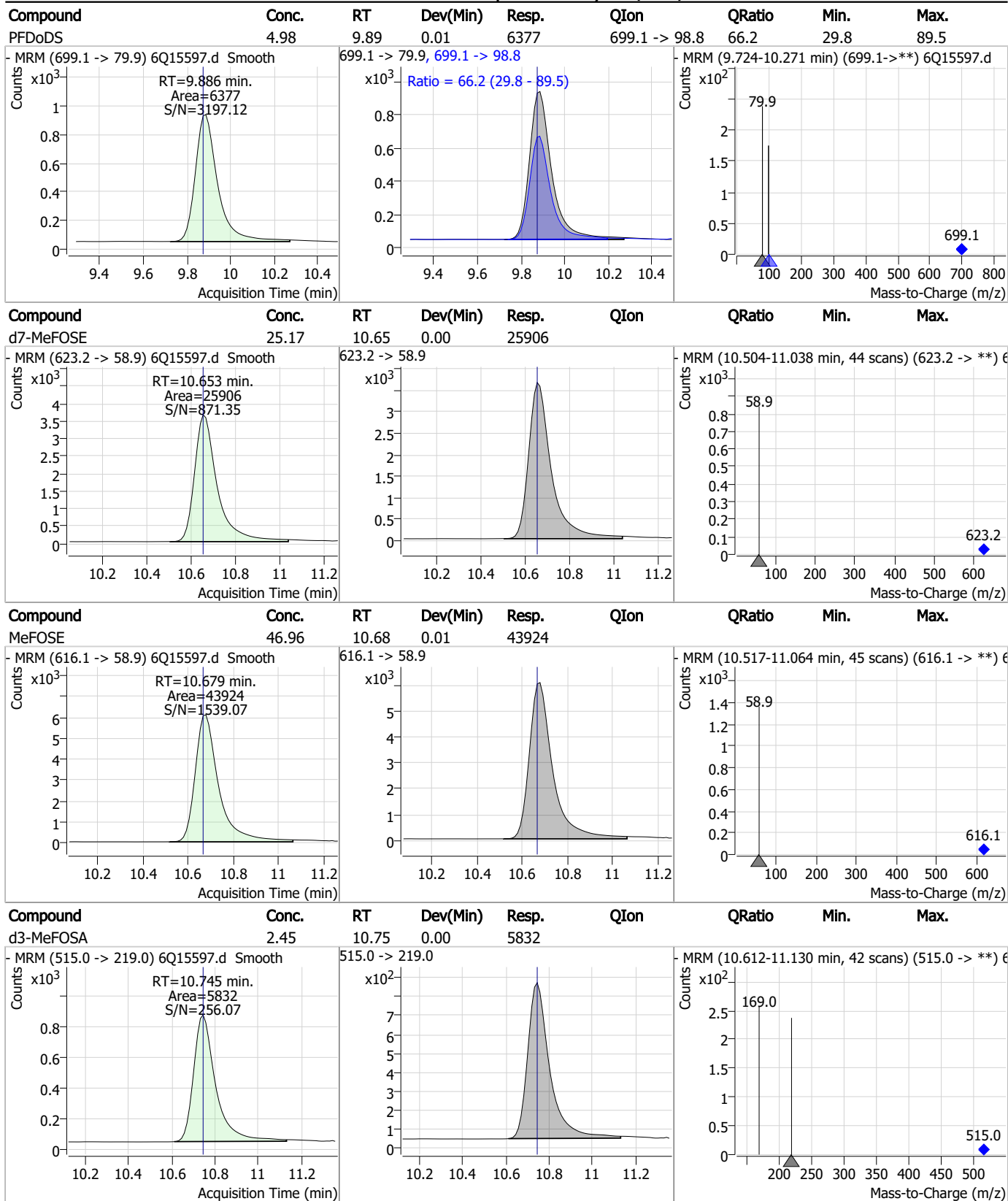
7.7.6
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Perfluorinated Compounds by LC/MS/MS



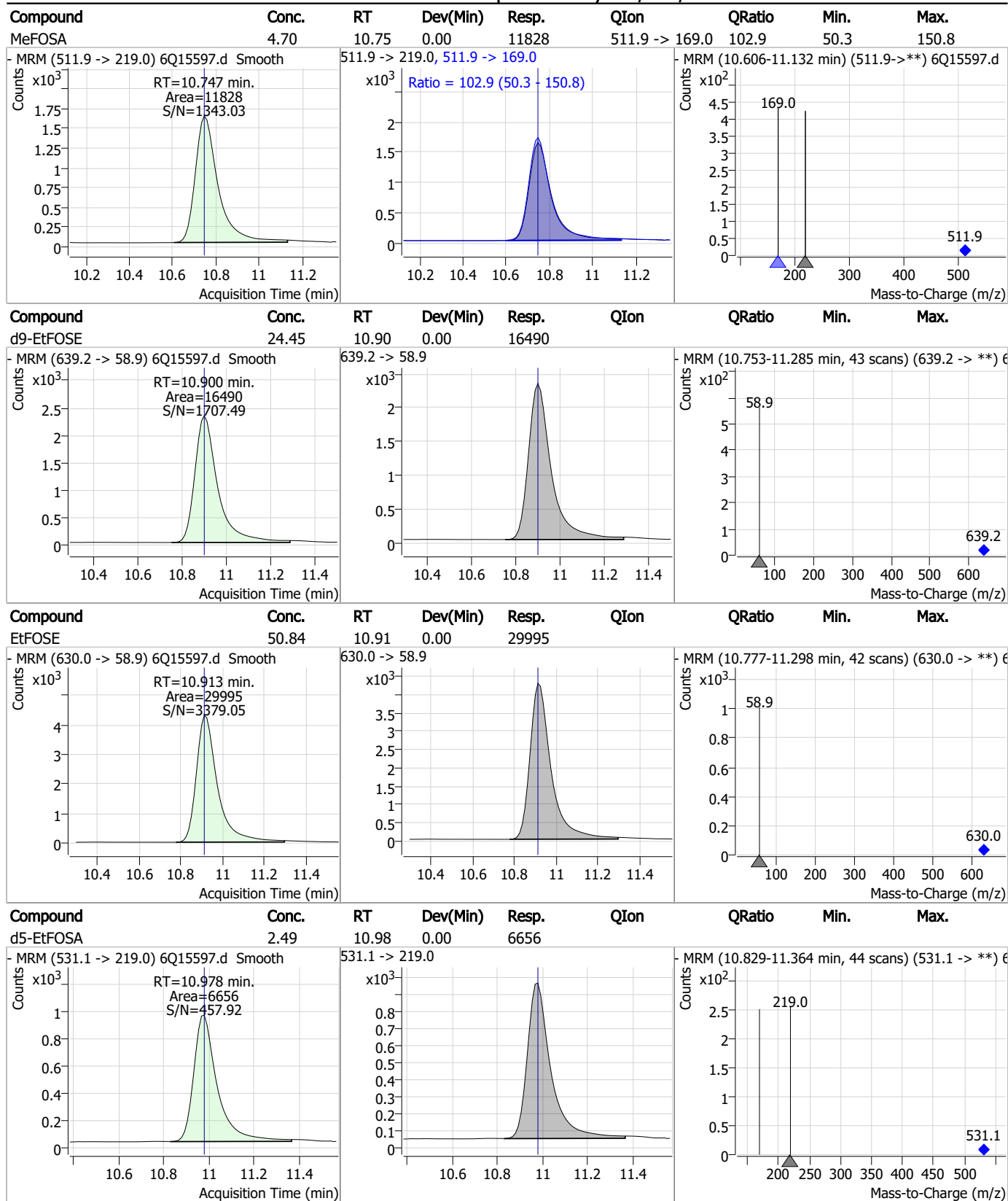
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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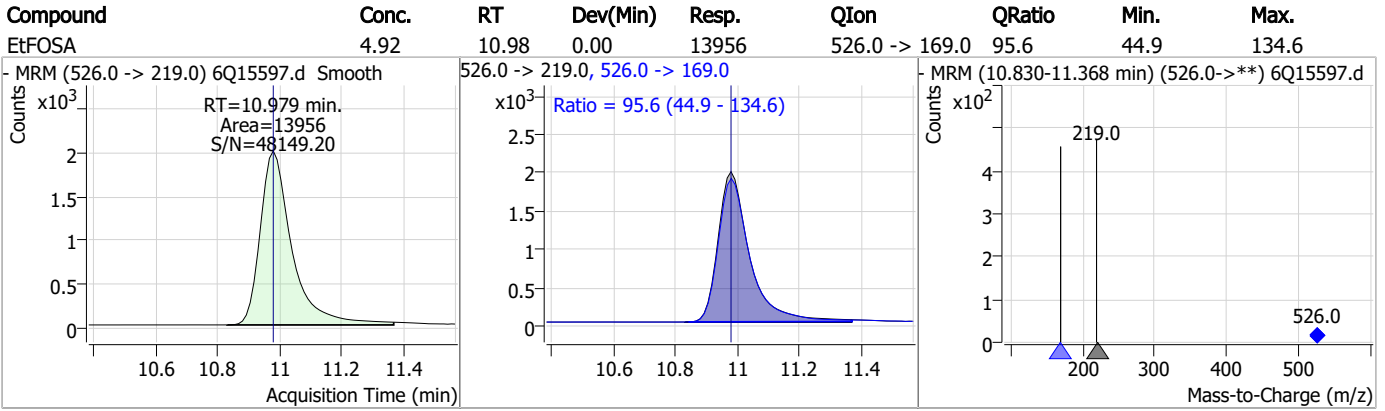
Perfluorinated Compounds by LC/MS/MS



7.7.6

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Perfluorinated Compounds by LC/MS/MS



7.7.6

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Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15597.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 17:16 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.6.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 03/29/23 18:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15598.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 5:30:49 PM
 Sample Name : ic235-6
 Vial : P1-A7
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	73659	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	35845	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	33624	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	34944	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	58614	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	19093	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15270	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16865	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	21485	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12835	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17257	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12397	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8831	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7603	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2139	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	2598	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2620	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	21031	5.00 µg/L	0.000
M3-HFPO-DA	5.918	286.9 -> 168.9	14089	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	19836	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	23872	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15981	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6495	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5652	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9295	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	32101	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5891	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	67054	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21097	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	18864	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	31711	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2139	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2598	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2620	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-PFDoDA	9.031	615.1 -> 570.0	21485	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12835	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C3-PFBS	5.483	302.1 -> 79.9	12397	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.252	402.1 -> 79.9	8831	2.65 µg/L	-0.012

7.7.7
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C4-PFBA	2.913	216.8 -> 171.9	73659	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.493	367.1 -> 322.0	34944	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFHxA	5.553	318.0 -> 273.0	33624	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.347	268.3 -> 223.0	35845	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.147	519.1 -> 474.1	15270	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.601	570.0 -> 525.1	16865	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C8-FOSA	9.631	506.1 -> 77.8	17257	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C8-PFOA	7.137	421.1 -> 376.0	58614	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.310	507.1 -> 79.9	7603	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C9-PFNA	7.667	472.1 -> 427.0	19093	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSAA	8.192	573.2 -> 419.0	21031	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	14089	10.32 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSA	10.745	515.0 -> 219.0	5652	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
d5-EtFOSAA	8.400	589.2 -> 419.0	19836	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d7-MeFOSE	10.653	623.2 -> 58.9	23872	24.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d9-EtFOSE	10.900	639.2 -> 58.9	15981	24.95 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.978	531.1 -> 219.0	6495	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	189316	42.40 µg/L	96
		327.1 -> 80.9	46169		
6:2FTS	6.911	427.1 -> 407.0	176810	50.76 µg/L	99
		427.1 -> 80.9	35300		
8:2FTS	7.936	527.1 -> 507.0	89542	46.98 µg/L	98
		527.1 -> 80.8	22623		
EtFOSAA	8.401	584.2 -> 419.1	40419	13.21 µg/L	m 95
		584.2 -> 526.0	21888		
FOSA	9.634	498.1 -> 77.9	75926	12.42 µg/L	100
		498.1 -> 478.0	2718		
MeFOSAA	8.205	570.1 -> 419.0	55586	14.35 µg/L	97
		570.1 -> 483.0	9828		
PFBA	2.919	212.8 -> 168.9	88982	53.13 µg/L	100
PFBS	5.484	298.7 -> 79.9	56306	11.76 µg/L	99
		298.7 -> 98.8	25839		
PFDA	8.148	512.9 -> 469.0	219934	12.58 µg/L	100
		512.9 -> 219.0	29338		
PFDoDA	9.032	613.1 -> 569.0	200290	12.61 µg/L	98
		613.1 -> 319.0	25971		
PFDS	9.195	599.0 -> 79.9	27035	11.94 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	14446			
PFHpA	6.494	363.1 -> 319.0	249977	12.23	µg/L	99
		363.1 -> 169.0	35262			
PFHpS	7.819	449.0 -> 79.9	36048	11.82	µg/L	99
		449.0 -> 98.9	20452			
PFHxA	5.556	313.0 -> 269.0	149322	12.34	µg/L	100
		313.0 -> 118.9	6011			
PFHxS	7.253	398.7 -> 79.9	42295	11.19	µg/L	m 99
		398.7 -> 98.9	24662			
PFNA	7.668	463.0 -> 419.0	143603	12.60	µg/L	96
		463.0 -> 219.0	28102			
PFNS	8.776	548.8 -> 79.9	37844	11.86	µg/L	100
		548.8 -> 98.9	21613			
PFOA	7.138	413.0 -> 369.0	336762	13.48	µg/L	100
		413.0 -> 169.0	41957			
PFOS	8.311	498.9 -> 79.9	36890	11.59	µg/L	m 90
		498.9 -> 98.8	24874			
PFPeA	4.349	263.0 -> 219.0	195064	25.67	µg/L	100
PFPeS	6.558	349.1 -> 79.9	51624	11.92	µg/L	97
		349.1 -> 98.9	27185			
PFTeDA	9.746	713.1 -> 669.0	180305	12.40	µg/L	100
		713.1 -> 168.9	11163			
PFTrDA	9.415	663.0 -> 619.0	177051	12.60	µg/L	100
		663.0 -> 168.9	14800			
PFUnDA	8.601	563.1 -> 519.0	192430	13.41	µg/L	97
		563.1 -> 269.1	26278			
11CI-PF3OUdS	9.467	630.9 -> 450.9	394133	48.84	µg/L	99
		632.9 -> 452.9	126236			
9CI-PF3ONS	8.641	530.8 -> 351.0	686437	45.97	µg/L	95
		532.8 -> 353.0	230167			
ADONA	6.743	376.9 -> 250.9	1431036	48.25	µg/L	99
		376.9 -> 84.8	329454			
HFPO-DA	5.919	284.9 -> 168.9	66136	51.02	µg/L	98
		284.9 -> 184.9	7169			
3:3FTCA	3.802	241.0 -> 177.0	25554	63.27	µg/L	99
		241.0 -> 117.0	3638			
5:3FTCA	6.210	341.0 -> 237.1	872677	316.41	µg/L	97
		341.0 -> 217.0	761123			
7:3FTCA	7.621	441.0 -> 316.9	460389	314.98	µg/L	93
		441.0 -> 336.9	823412			
EtFOSA	10.979	526.0 -> 219.0	33477	12.10	µg/L	88
		526.0 -> 169.0	33906			
EtFOSE	10.913	630.0 -> 58.9	74662	130.57	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	32751	13.43	µg/L	97
		511.9 -> 169.0	31818			
MeFOSE	10.679	616.1 -> 58.9	117515	136.33	µg/L	100
PFDoS	9.886	699.1 -> 79.9	17015	12.44	µg/L	99
		699.1 -> 98.8	10339			
NFDHA	5.435	295.0 -> 201.0	18405	25.59	µg/L	99
		295.0 -> 84.9	8271			
PFMBA	4.762	279.0 -> 85.1	58994	25.24	µg/L	100
PFMPA	3.488	229.0 -> 84.9	53980	25.67	µg/L	100
PFEESA	6.024	314.8 -> 134.9	389028	22.44	µg/L	99
		314.8 -> 82.9	10011			

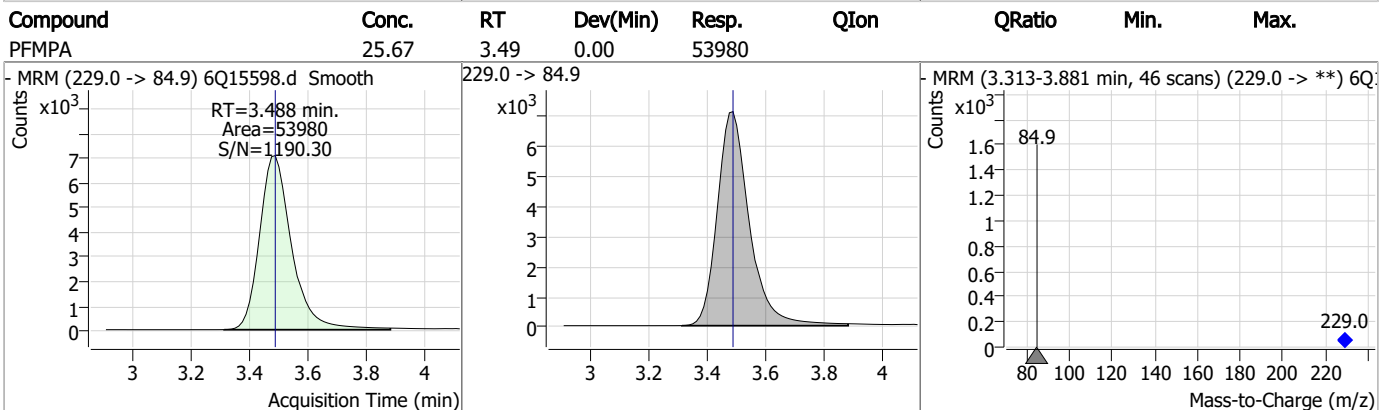
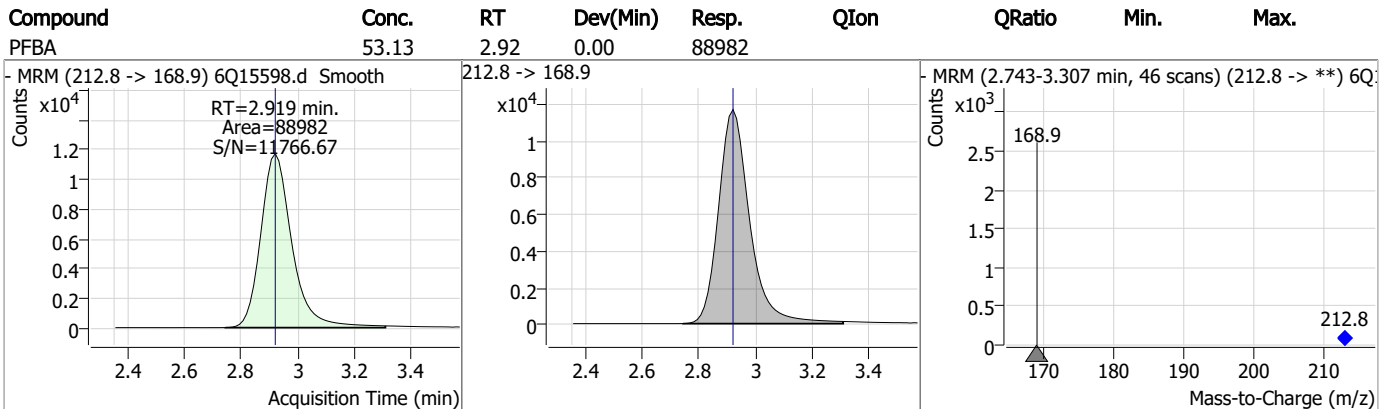
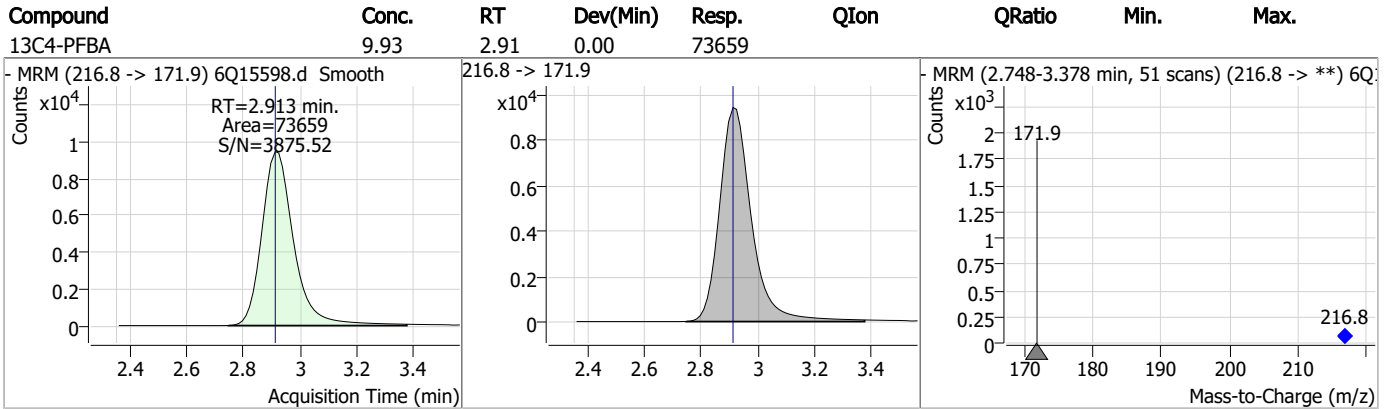
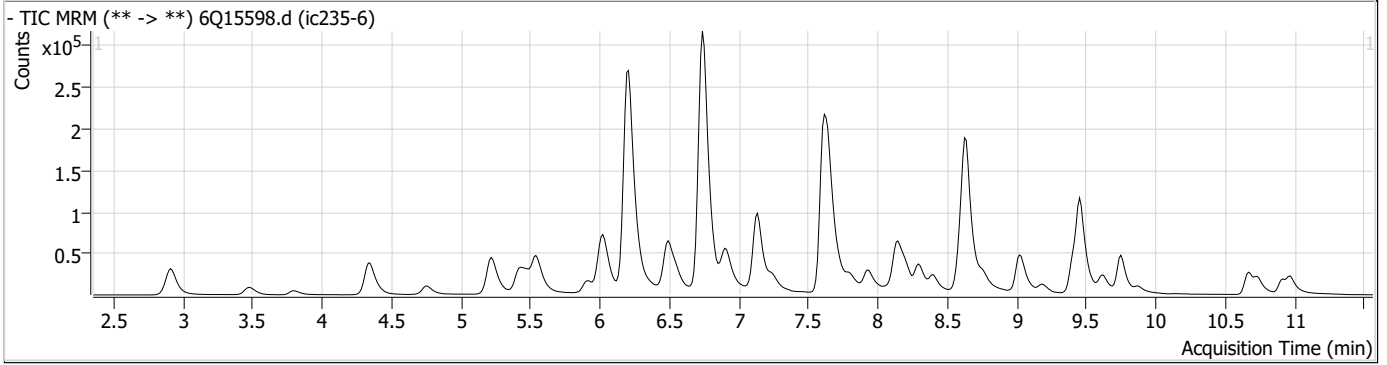
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

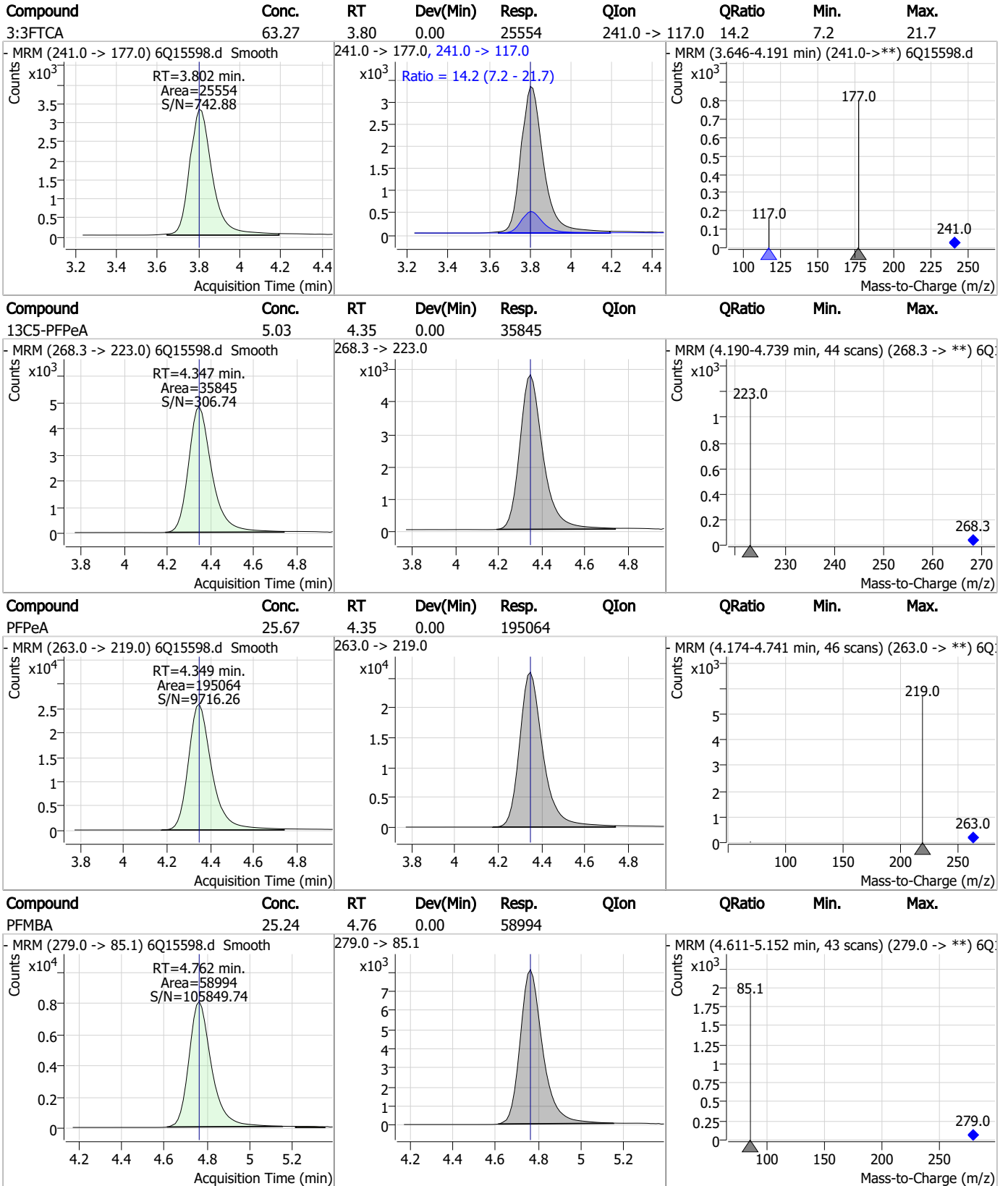
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.7
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Perfluorinated Compounds by LC/MS/MS



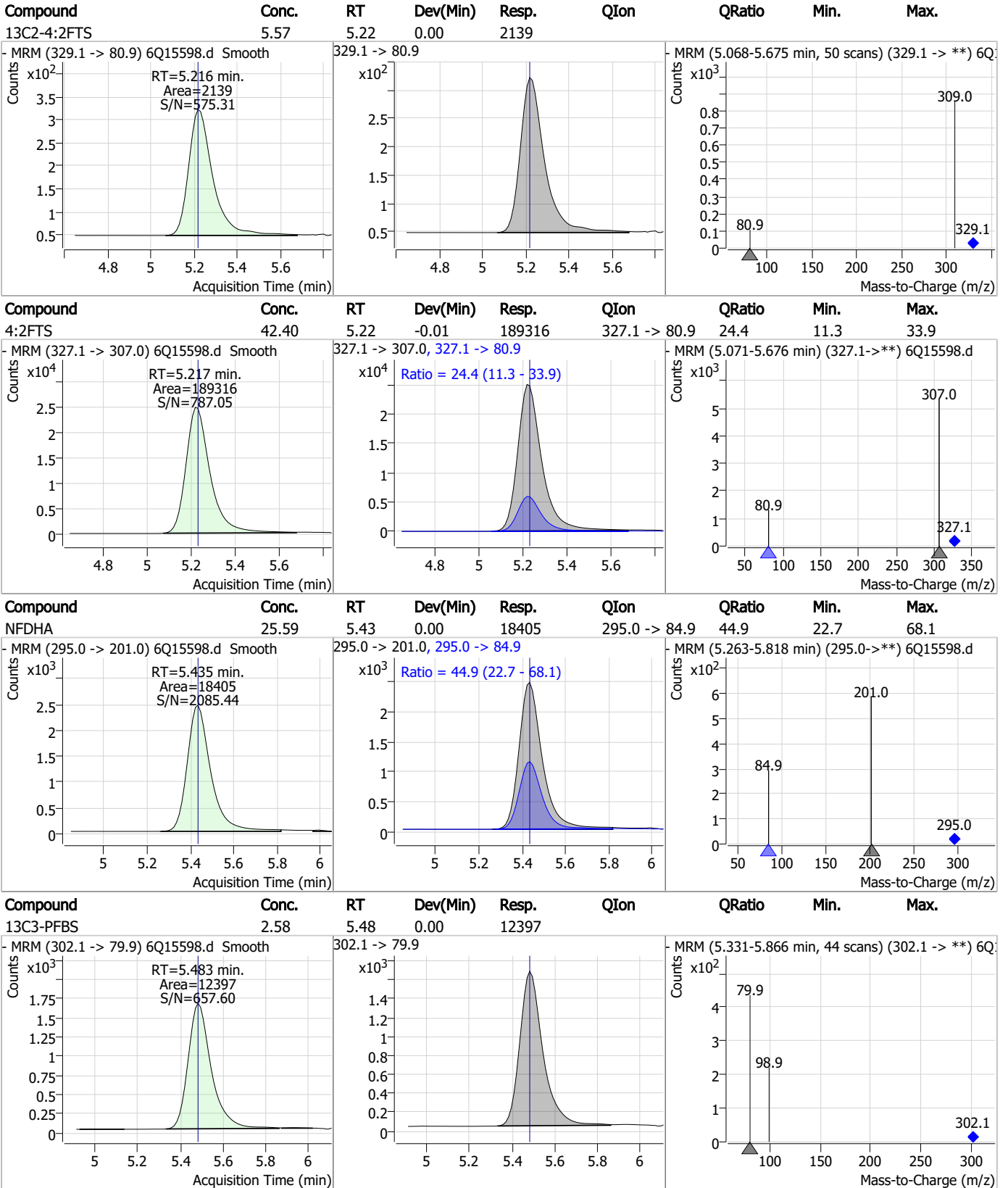
Perfluorinated Compounds by LC/MS/MS



7.7.7

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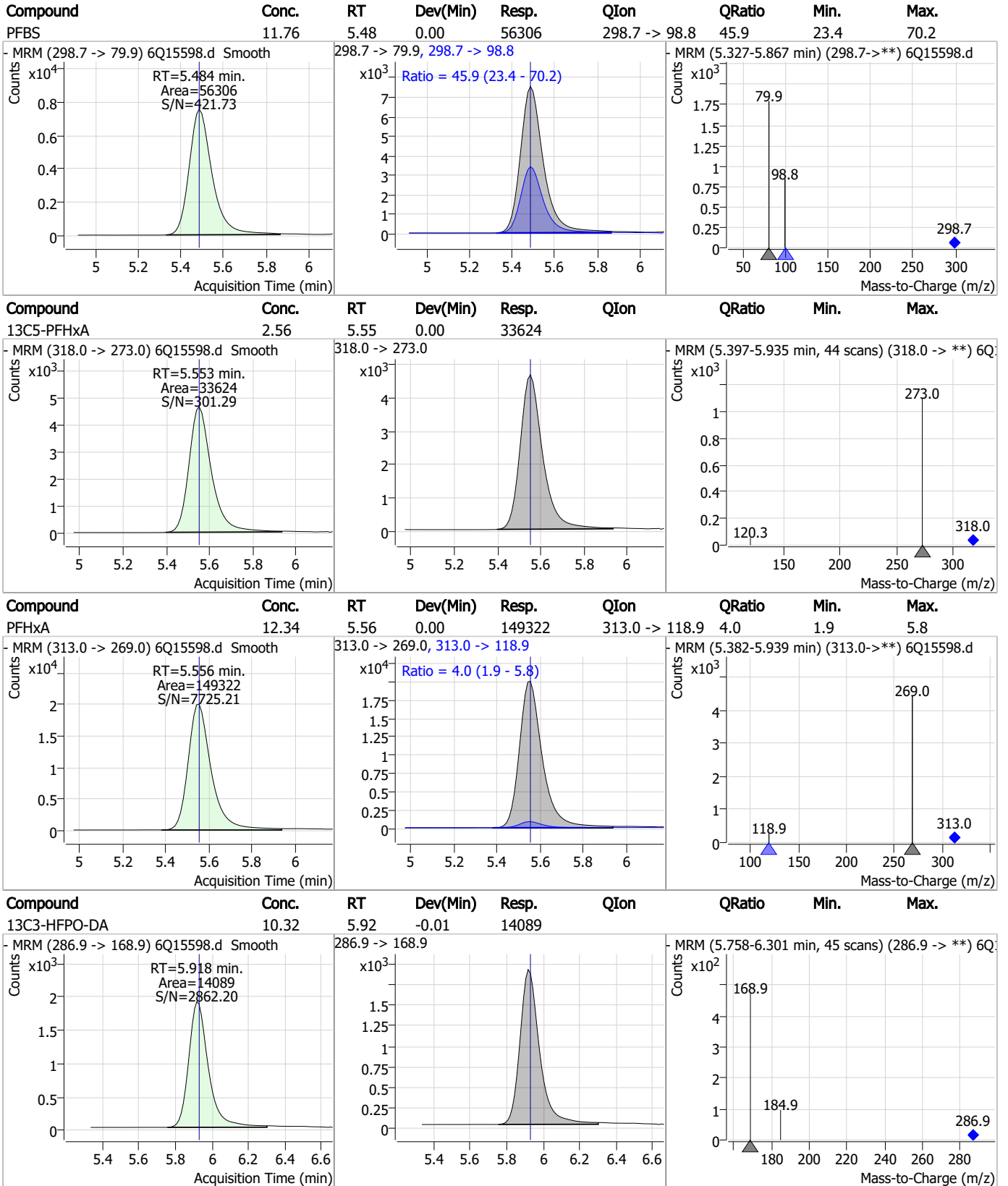
Perfluorinated Compounds by LC/MS/MS



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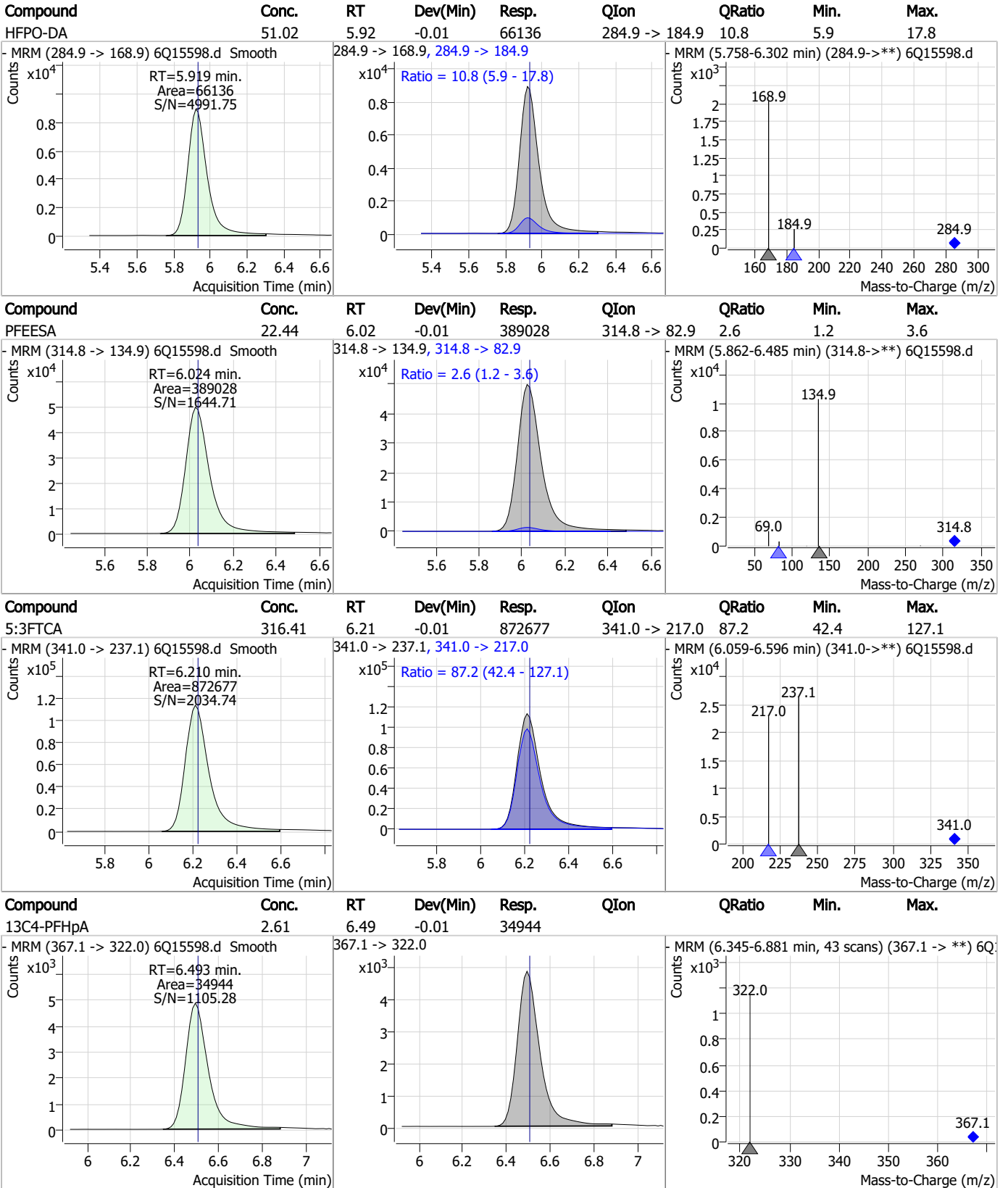
Perfluorinated Compounds by LC/MS/MS



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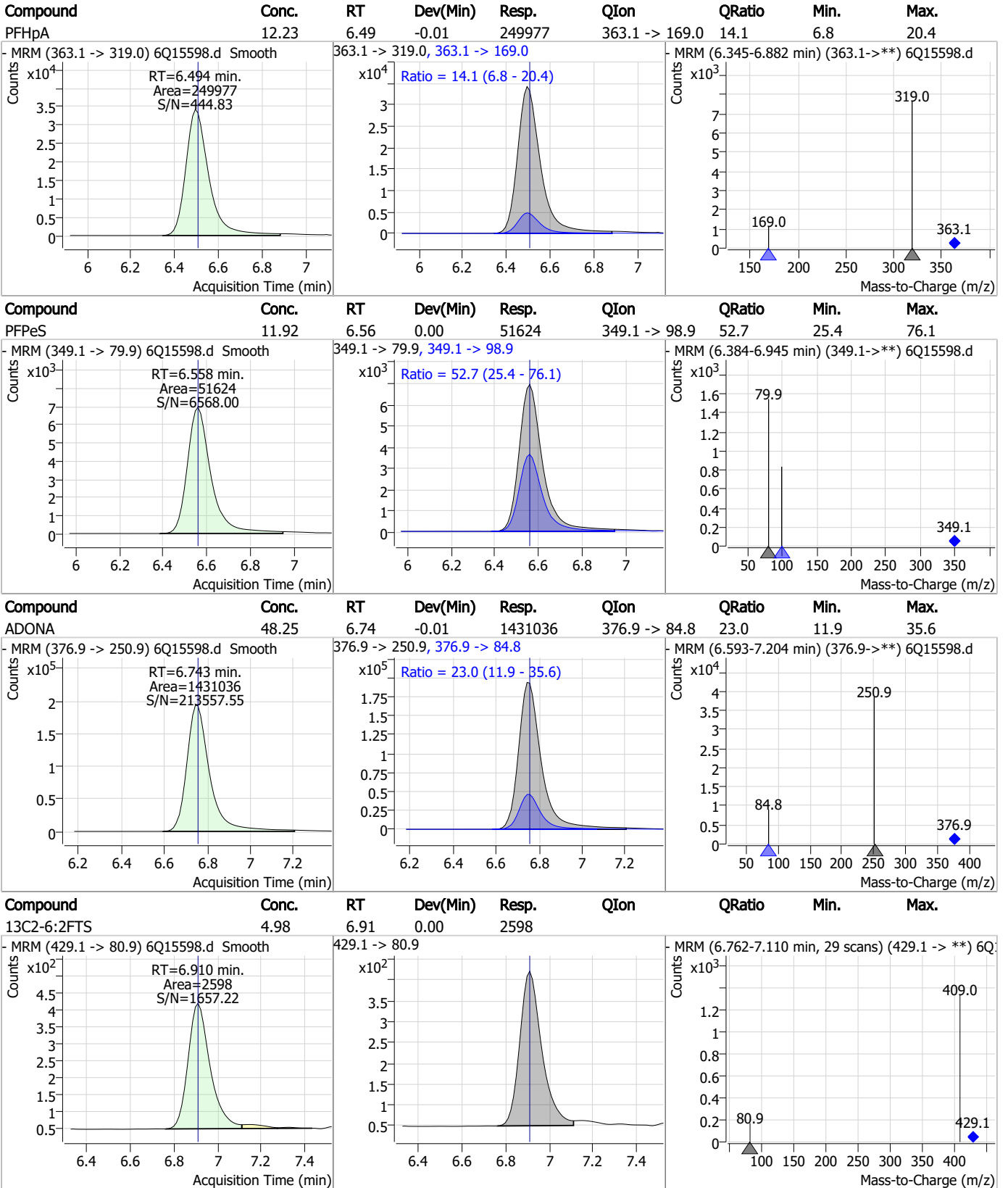
Perfluorinated Compounds by LC/MS/MS



7.7.7

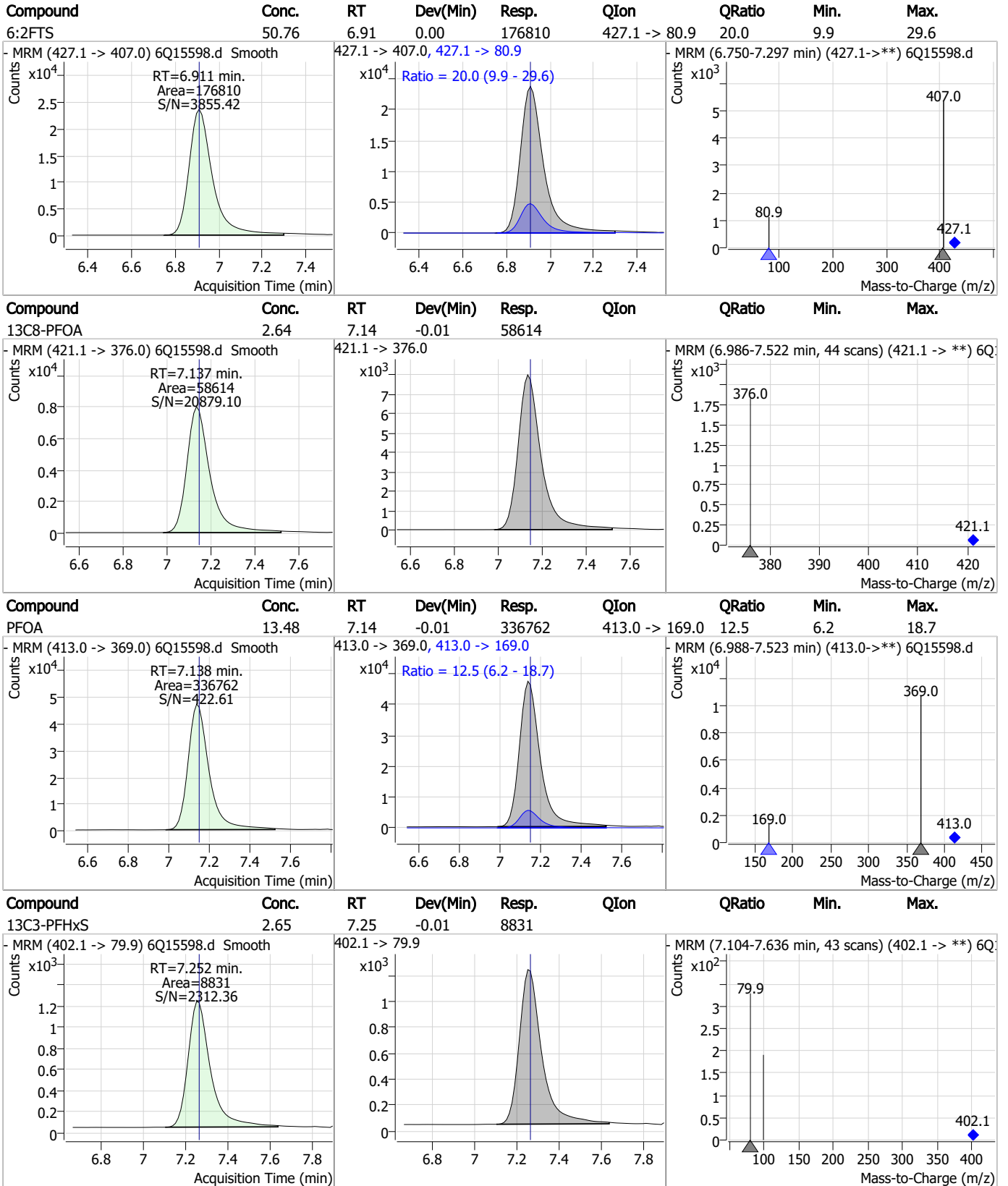
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Perfluorinated Compounds by LC/MS/MS



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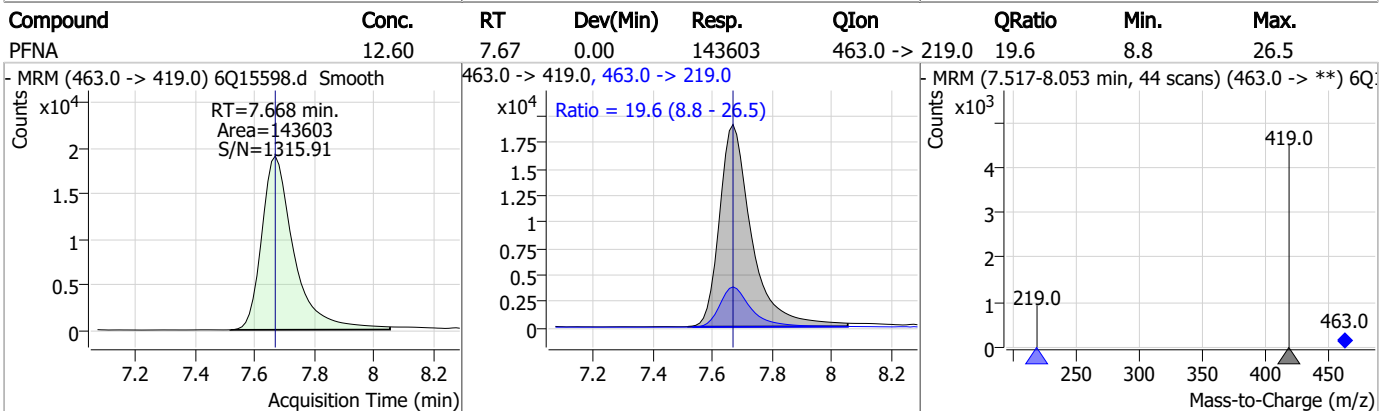
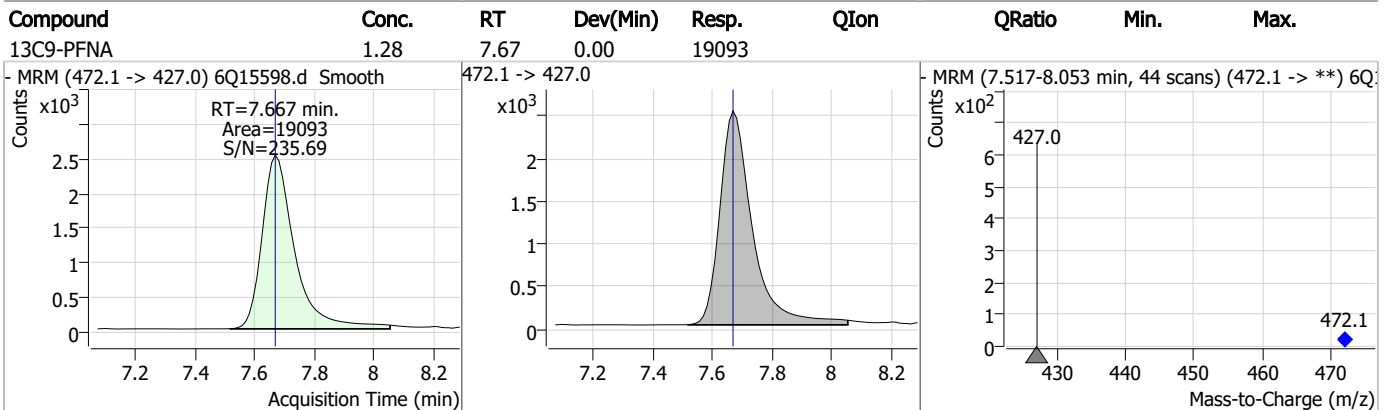
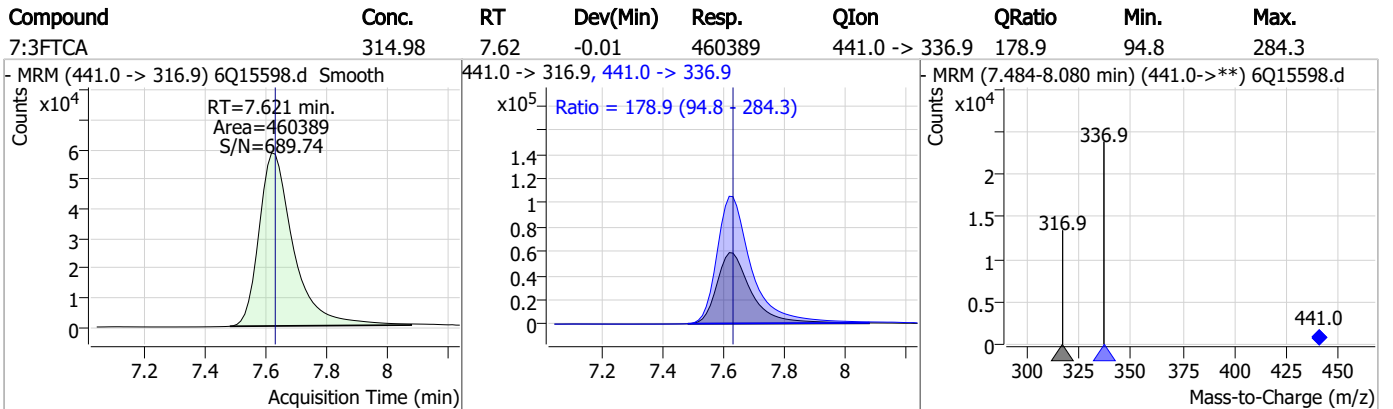
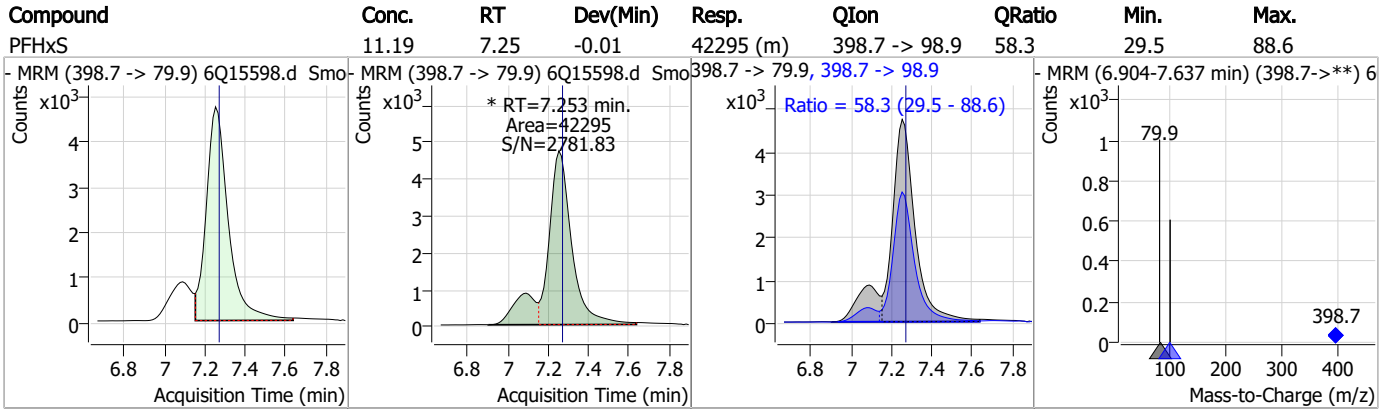
Perfluorinated Compounds by LC/MS/MS



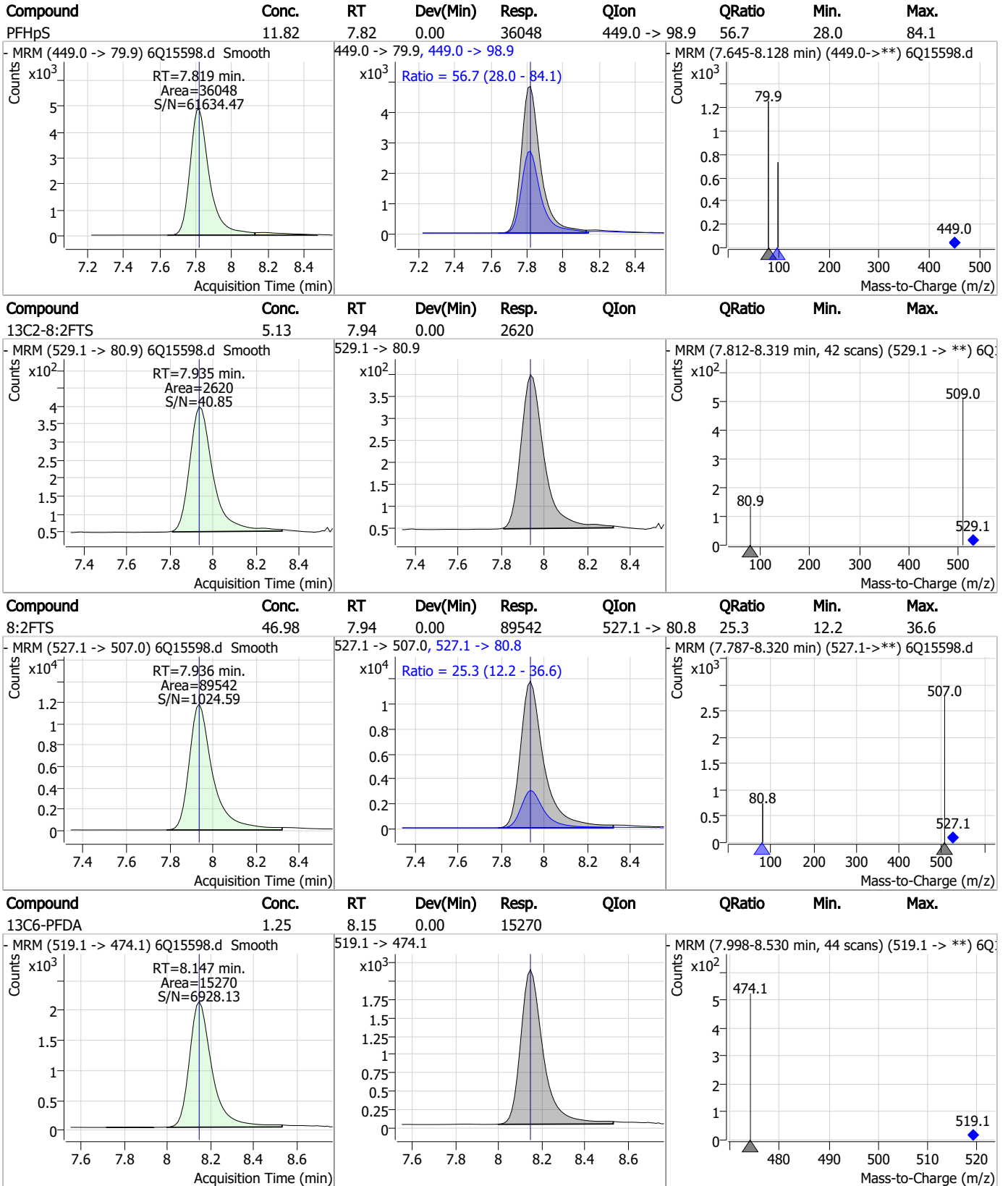
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Perfluorinated Compounds by LC/MS/MS



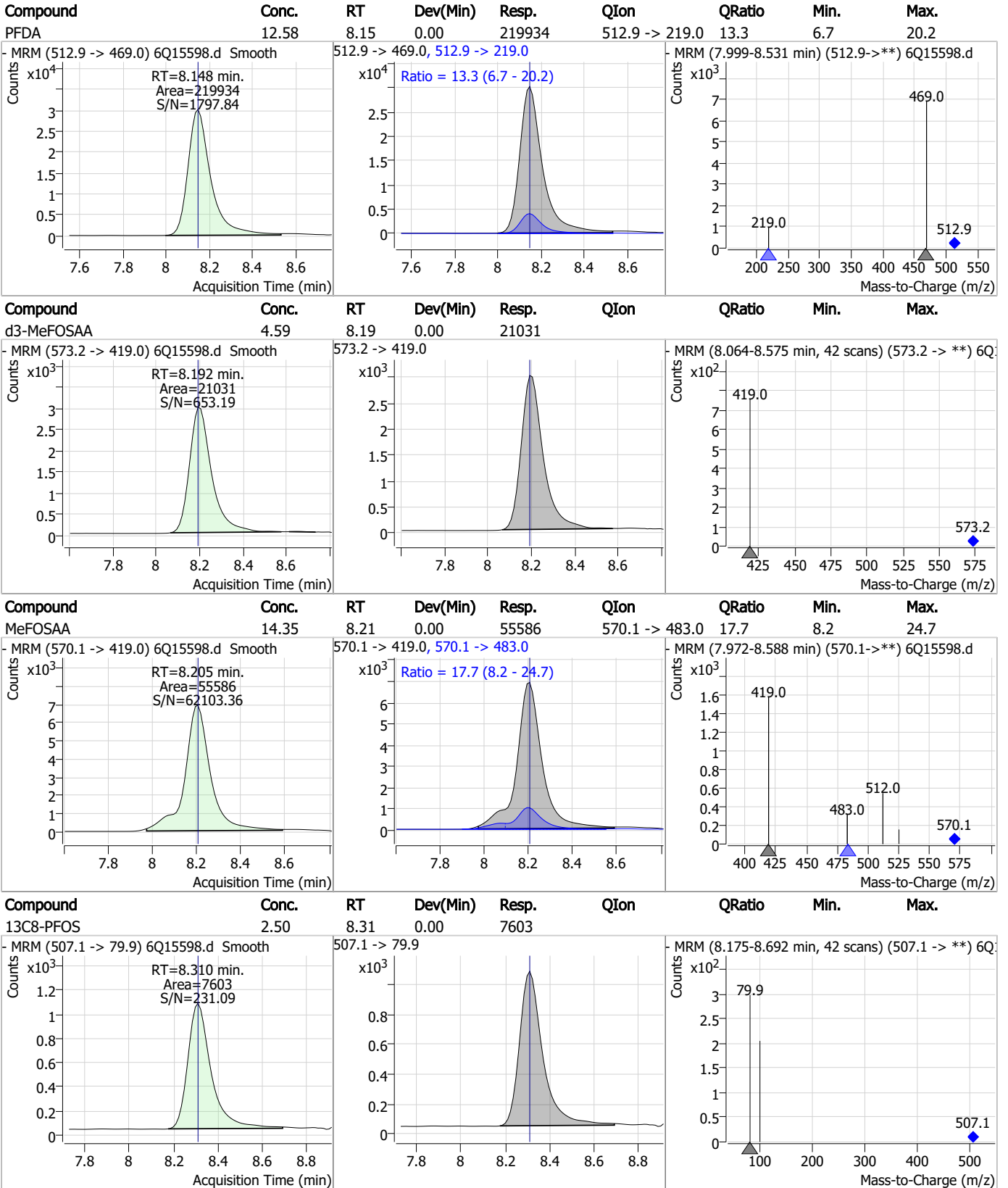
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

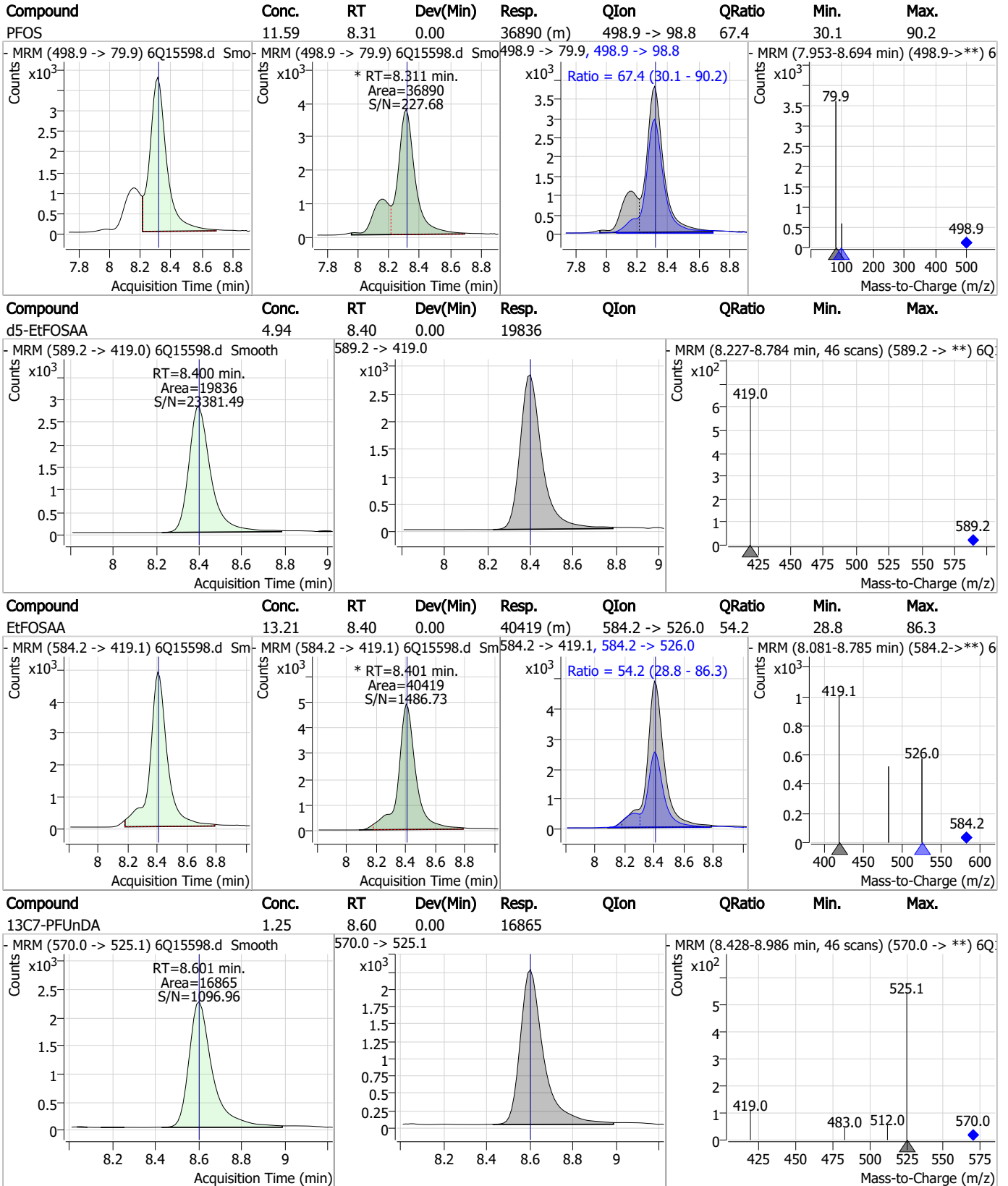


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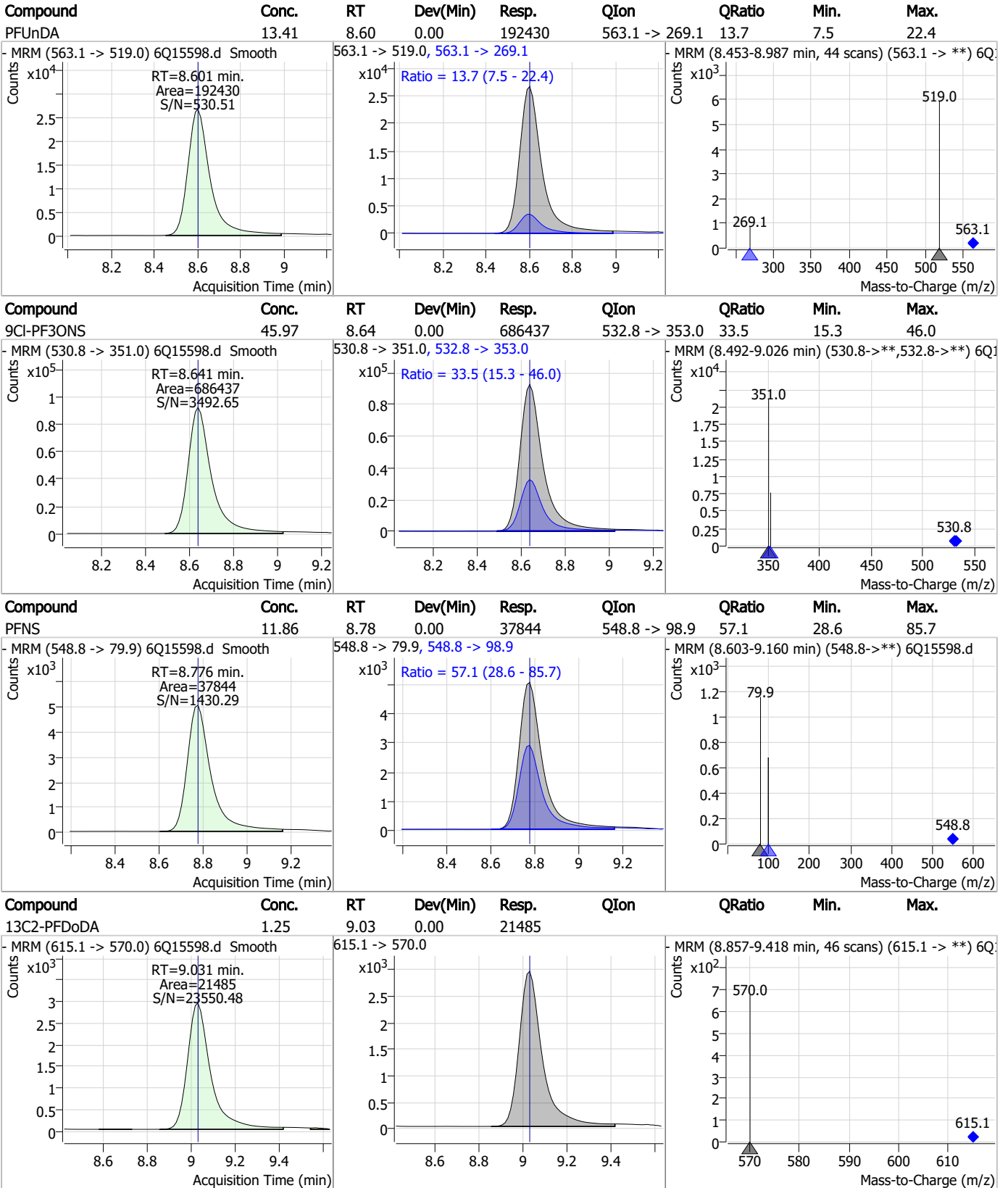
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

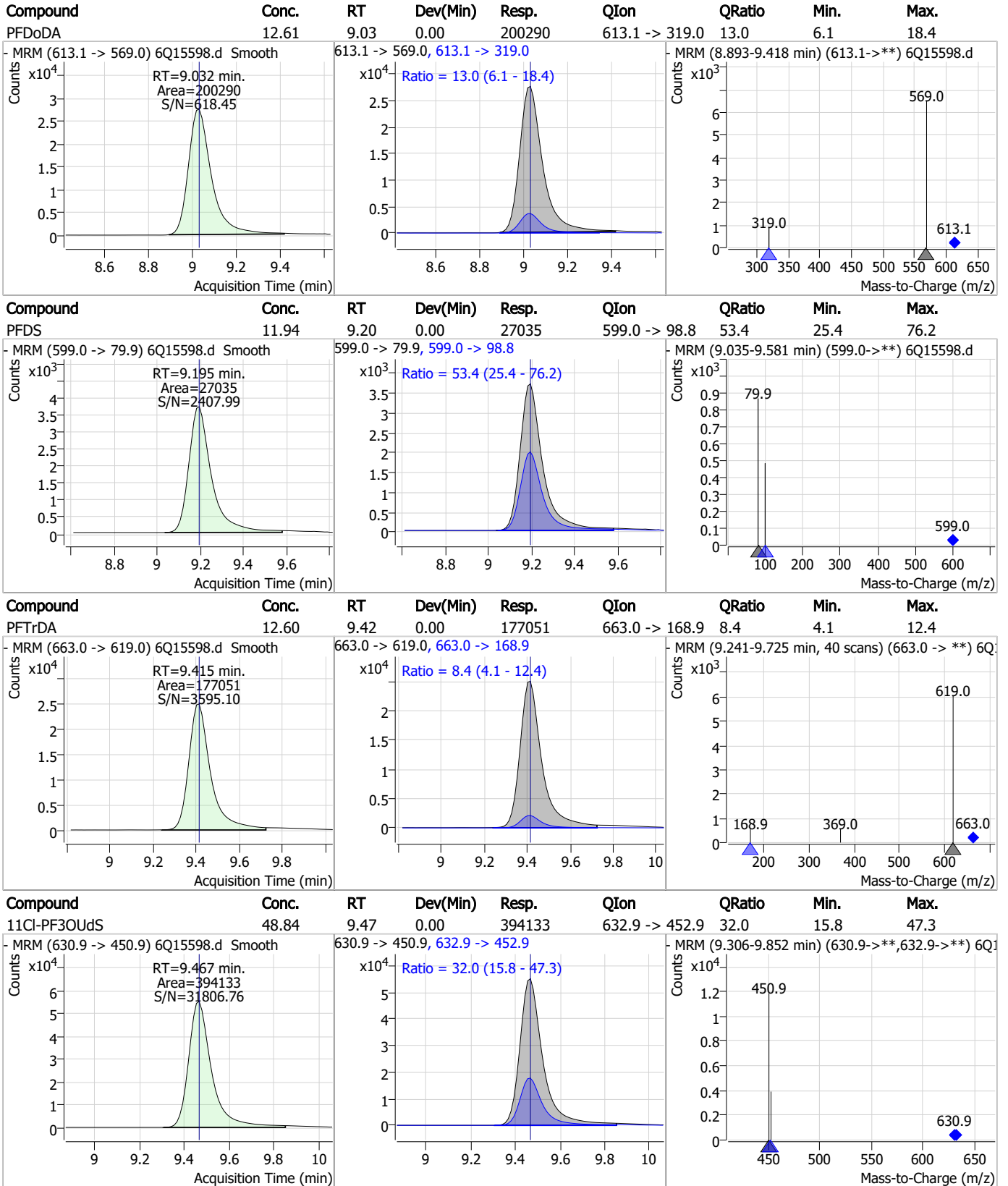


7.7.7

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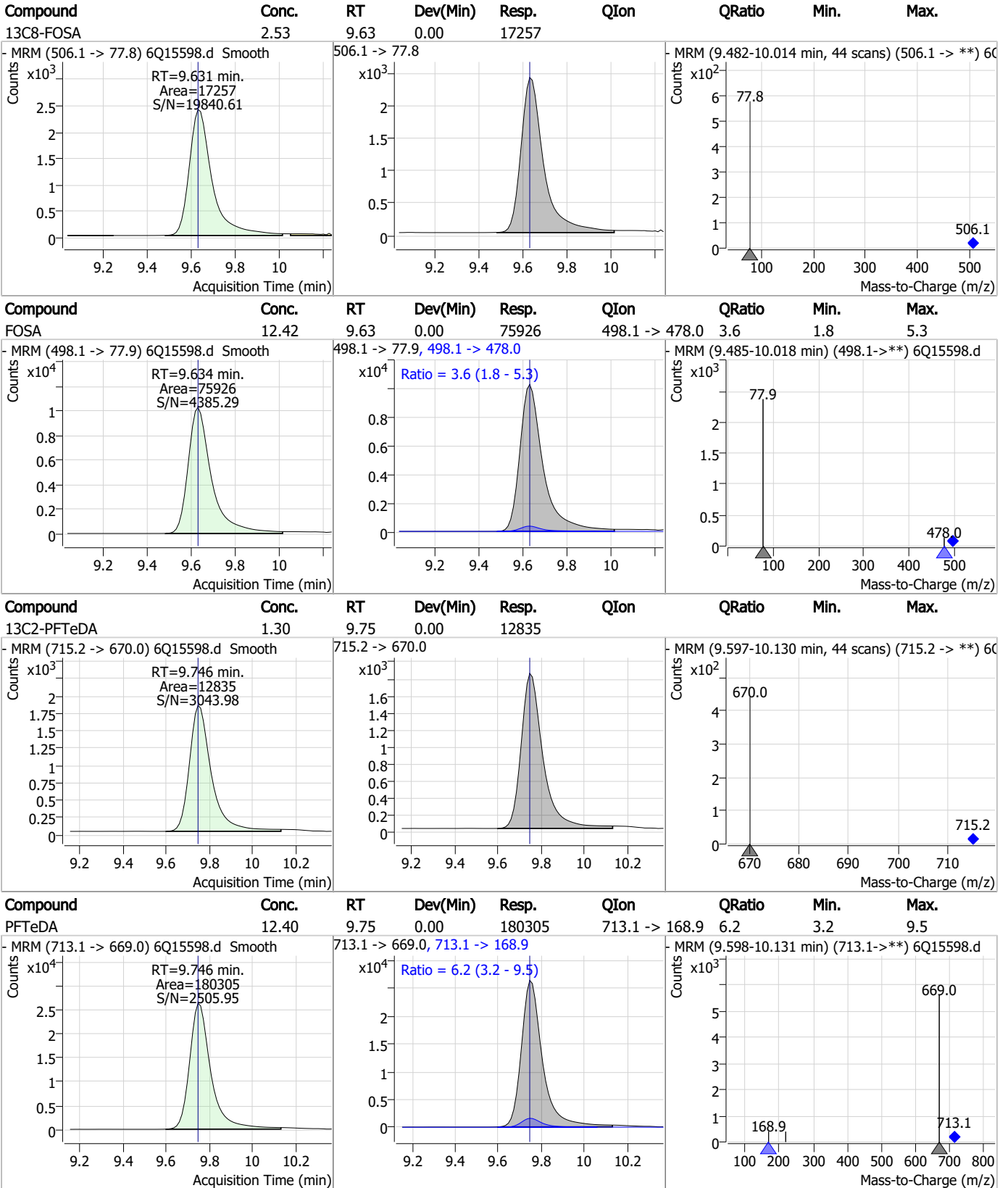


Perfluorinated Compounds by LC/MS/MS



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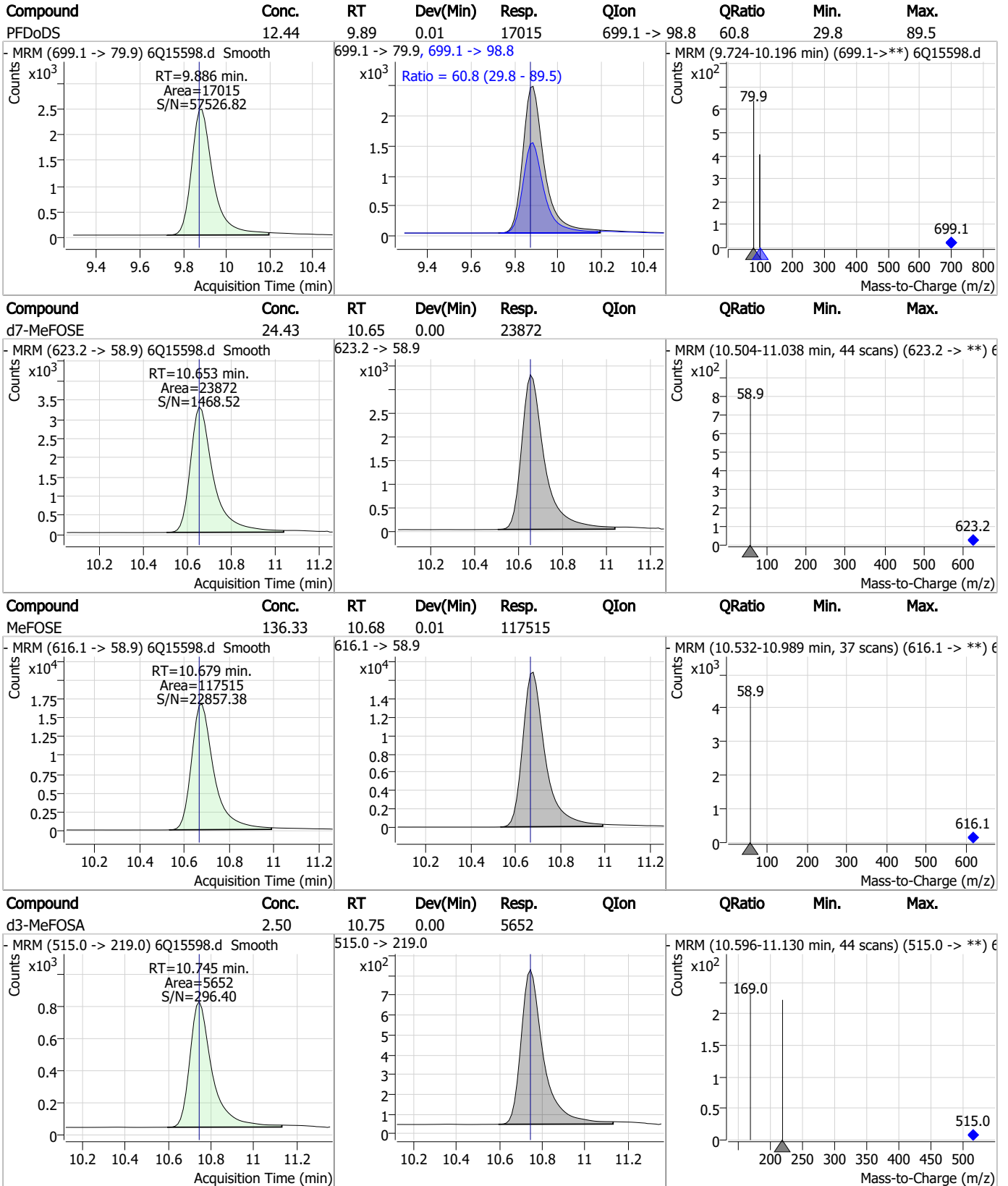
Perfluorinated Compounds by LC/MS/MS



7.7.7

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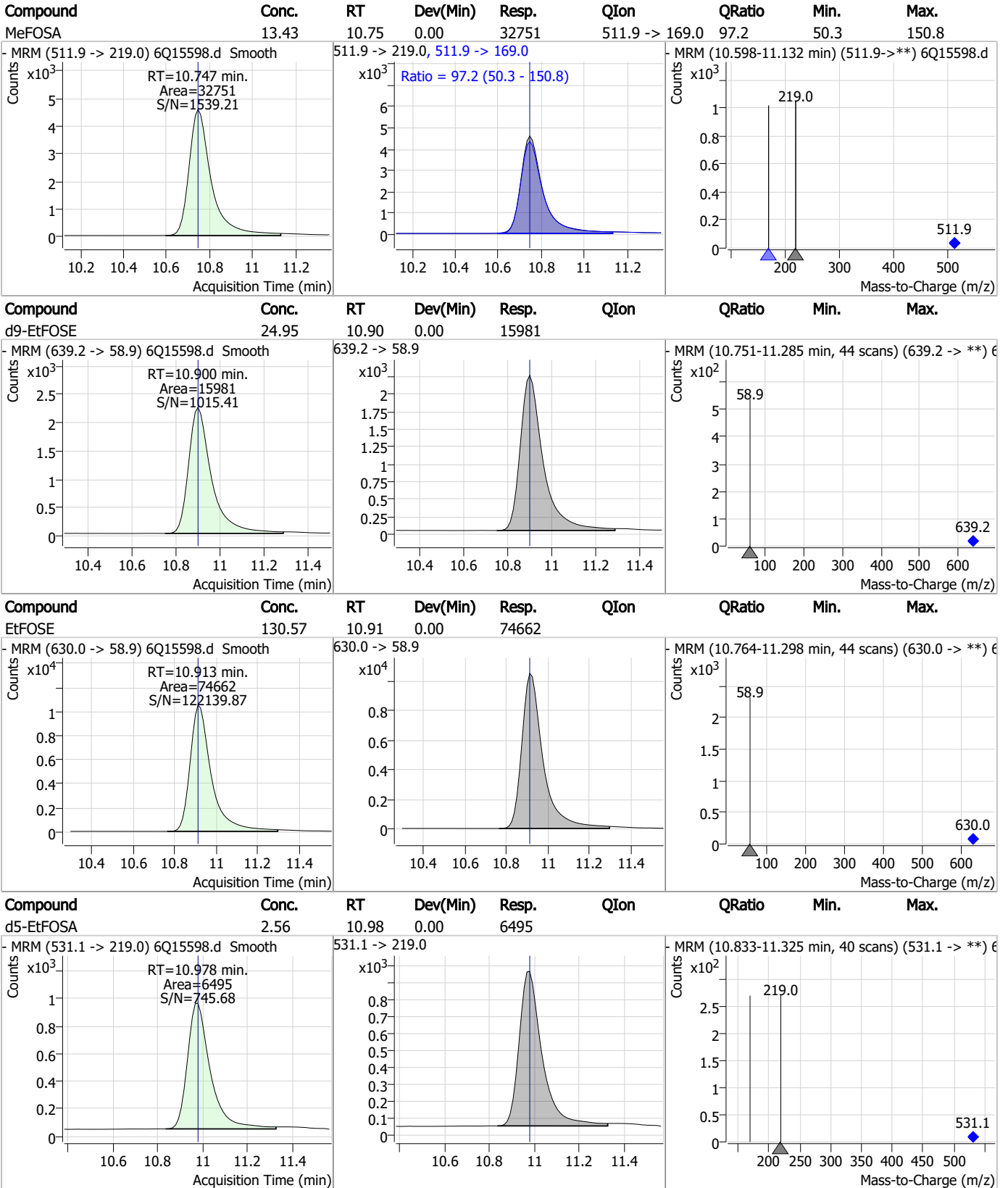
Perfluorinated Compounds by LC/MS/MS



7.7.7

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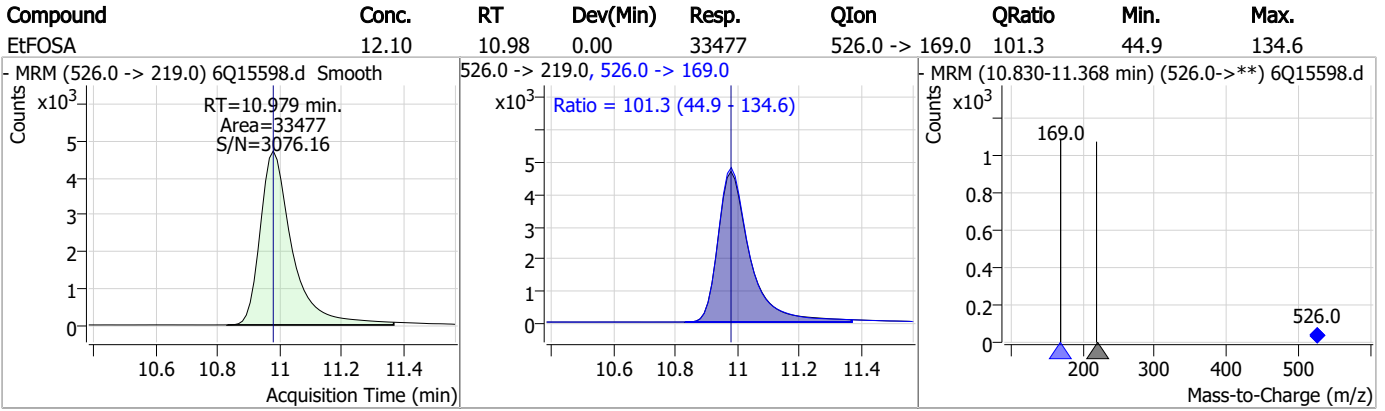
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15598.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 17:30 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 03/29/23 18:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15599.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 5:44:47 PM
 Sample Name : ic235-7
 Vial : P1-A8
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	69039	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	33599	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	31617	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	31962	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	53822	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	17980	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14076	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	14557	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	20248	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	11002	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15989	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	11763	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	7957	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7292	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	1708	5.00 µg/L	0.012
M2-6:2FTS	6.923	429.1 -> 80.9	2287	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2335	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	21729	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13325	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	19867	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	22622	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15212	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6067	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5493	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8563	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	30195	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5783	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	67942	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	20861	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	18145	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	30755	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	1708	4.53 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2287	4.47 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.4%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2335	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFDoDA	9.031	615.1 -> 570.0	20248	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-PFTeDA	9.746	715.2 -> 670.0	11002	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.5%		
13C3-PFBS	5.496	302.1 -> 79.9	11763	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFHxS	7.265	402.1 -> 79.9	7957	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 = 97.4%		
13C4-PFBA	2.913	216.8 -> 171.9	69039	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C4-PFHpA	6.506	367.1 -> 322.0	31962	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C5-PFHxA	5.553	318.0 -> 273.0	31617	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C5-PFPeA	4.347	268.3 -> 223.0	33599	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C6-PFDA	8.147	519.1 -> 474.1	14076	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.1%		
13C7-PFUnDA	8.601	570.0 -> 525.1	14557	1.09 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 87.5%		
13C8-FOSA	9.631	506.1 -> 77.8	15989	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C8-PFOA	7.149	421.1 -> 376.0	53822	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C8-PFOS	8.310	507.1 -> 79.9	7292	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C9-PFNA	7.667	472.1 -> 427.0	17980	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.4%		
d3-MeFOSAA	8.204	573.2 -> 419.0	21729	5.14 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13325	10.07 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.7%		
d3-MeFOSA	10.745	515.0 -> 219.0	5493	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.6%		
d5-EtFOSAA	8.400	589.2 -> 419.0	19867	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
d7-MeFOSE	10.653	623.2 -> 58.9	22622	25.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
d9-EtFOSE	10.900	639.2 -> 58.9	15212	25.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
d5-EtFOSA	10.965	531.1 -> 219.0	6067	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	352064	98.78 µg/L	100
		327.1 -> 80.9	79499		
6:2FTS	6.923	427.1 -> 407.0	322303	105.08 µg/L	100
		427.1 -> 80.9	63410		
8:2FTS	7.936	527.1 -> 507.0	178488	105.07 µg/L	98
		527.1 -> 80.8	45567		
EtFOSAA	8.401	584.2 -> 419.1	73044	23.84 µg/L	m 99
		584.2 -> 526.0	42649		
FOSA	9.634	498.1 -> 77.9	154094	27.20 µg/L	100
		498.1 -> 478.0	5565		
MeFOSAA	8.205	570.1 -> 419.0	102856	25.69 µg/L	93
		570.1 -> 483.0	19957		
PFBA	2.919	212.8 -> 168.9	171869	109.49 µg/L	100
PFBS	5.484	298.7 -> 79.9	104240	22.94 µg/L	100
		298.7 -> 98.8	48758		
PFDA	8.148	512.9 -> 469.0	439939	27.29 µg/L	100
		512.9 -> 219.0	58187		
PFDoDA	9.032	613.1 -> 569.0	395834	26.45 µg/L	99
		613.1 -> 319.0	50964		
PFDS	9.195	599.0 -> 79.9	55253	25.44 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	28220			
PFHpA	6.506	363.1 -> 319.0	480156	25.69	µg/L	99
		363.1 -> 169.0	67045			
PFHpS	7.819	449.0 -> 79.9	72225	24.70	µg/L	95
		449.0 -> 98.9	38041			
PFHxA	5.556	313.0 -> 269.0	296388	26.05	µg/L	100
		313.0 -> 118.9	11810			
PFHxS	7.265	398.7 -> 79.9	85795	25.18	µg/L	m 93
		398.7 -> 98.9	46369			
PFNA	7.668	463.0 -> 419.0	278884	25.99	µg/L	96
		463.0 -> 219.0	54084			
PFNS	8.776	548.8 -> 79.9	79465	25.97	µg/L	98
		548.8 -> 98.9	44366			
PFOA	7.151	413.0 -> 369.0	617350	26.91	µg/L	98
		413.0 -> 169.0	83067			
PFOS	8.311	498.9 -> 79.9	72450	23.72	µg/L	m 94
		498.9 -> 98.8	46559			
PFPeA	4.349	263.0 -> 219.0	378885	53.20	µg/L	100
PFPeS	6.571	349.1 -> 79.9	100219	25.69	µg/L	98
		349.1 -> 98.9	52050			
PFTeDA	9.746	713.1 -> 669.0	346469	27.79	µg/L	99
		713.1 -> 168.9	23551			
PFTrDA	9.415	663.0 -> 619.0	354753	26.79	µg/L	99
		663.0 -> 168.9	28592			
PFUnDA	8.601	563.1 -> 519.0	349368	28.21	µg/L	98
		563.1 -> 269.1	55248			
11Cl-PF3OUdS	9.467	630.9 -> 450.9	745408	97.67	µg/L	100
		632.9 -> 452.9	232944			
9Cl-PF3ONS	8.641	530.8 -> 351.0	1314588	93.09	µg/L	95
		532.8 -> 353.0	435130			
ADONA	6.756	376.9 -> 250.9	2723502	97.09	µg/L	97
		376.9 -> 84.8	607593			
HFPO-DA	5.931	284.9 -> 168.9	127366	103.88	µg/L	100
		284.9 -> 184.9	15070			
3:3FTCA	3.802	241.0 -> 177.0	50259	132.77	µg/L	100
		241.0 -> 117.0	7205			
5:3FTCA	6.223	341.0 -> 237.1	1663665	641.48	µg/L	96
		341.0 -> 217.0	1472021			
7:3FTCA	7.633	441.0 -> 316.9	849506	618.08	µg/L	95
		441.0 -> 336.9	1676422			
EtFOSA	10.979	526.0 -> 219.0	67739	26.21	µg/L	91
		526.0 -> 169.0	66771			
EtFOSE	10.913	630.0 -> 58.9	139524	256.35	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	60611	25.57	µg/L	97
		511.9 -> 169.0	63008			
MeFOSE	10.666	616.1 -> 58.9	220112	269.46	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	32953	25.12	µg/L	97
		699.1 -> 98.8	20517			
NFDHA	5.435	295.0 -> 201.0	34292	50.70	µg/L	95
		295.0 -> 84.9	16791			
PFMBA	4.762	279.0 -> 85.1	118052	53.88	µg/L	100
PFMPA	3.488	229.0 -> 84.9	105065	53.31	µg/L	100
PFEESA	6.036	314.8 -> 134.9	744923	45.69	µg/L	100
		314.8 -> 82.9	18776			

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

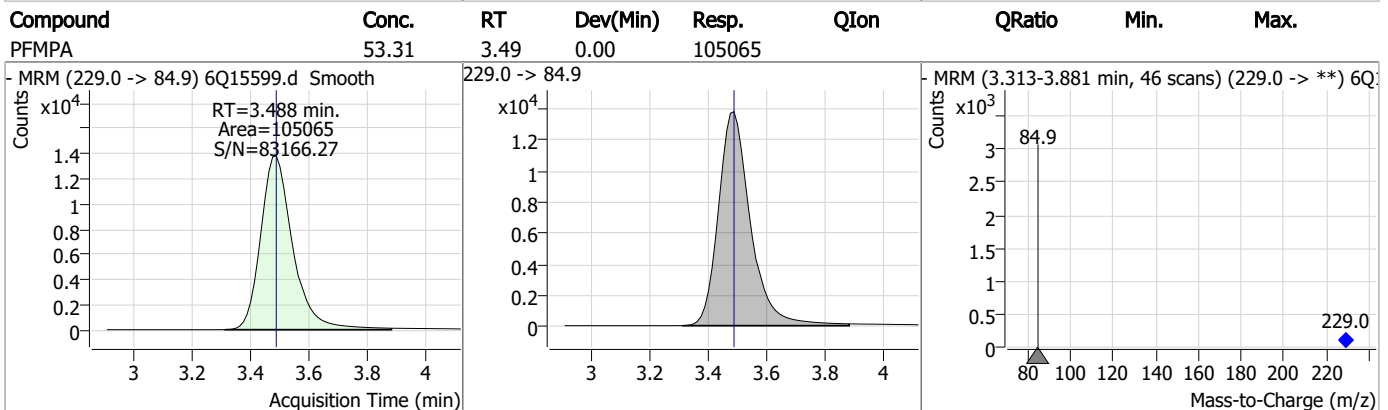
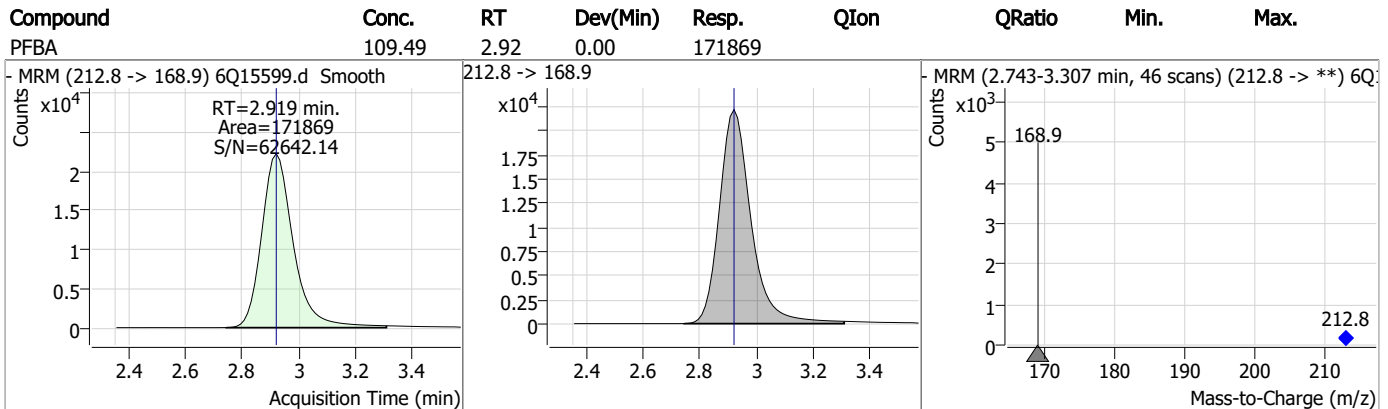
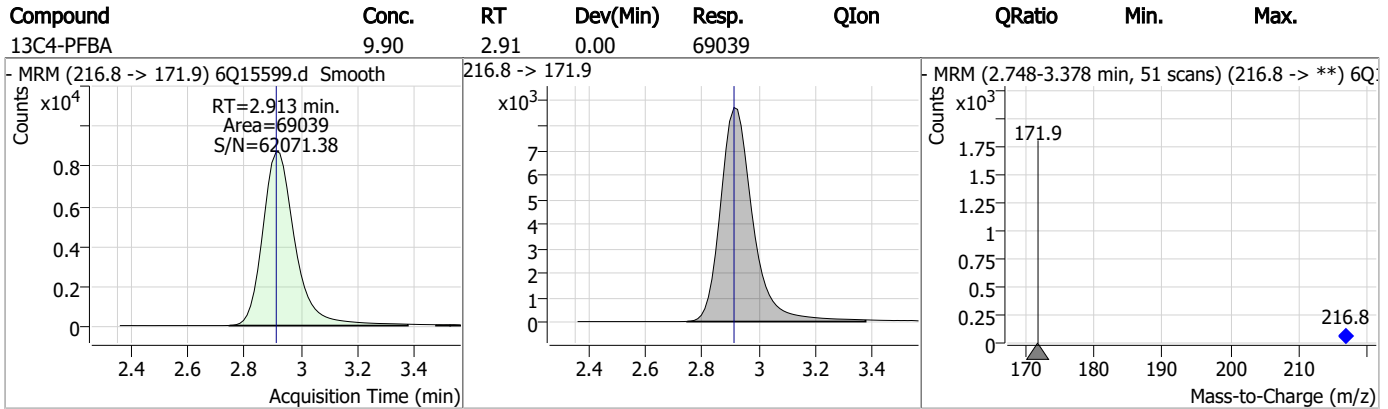
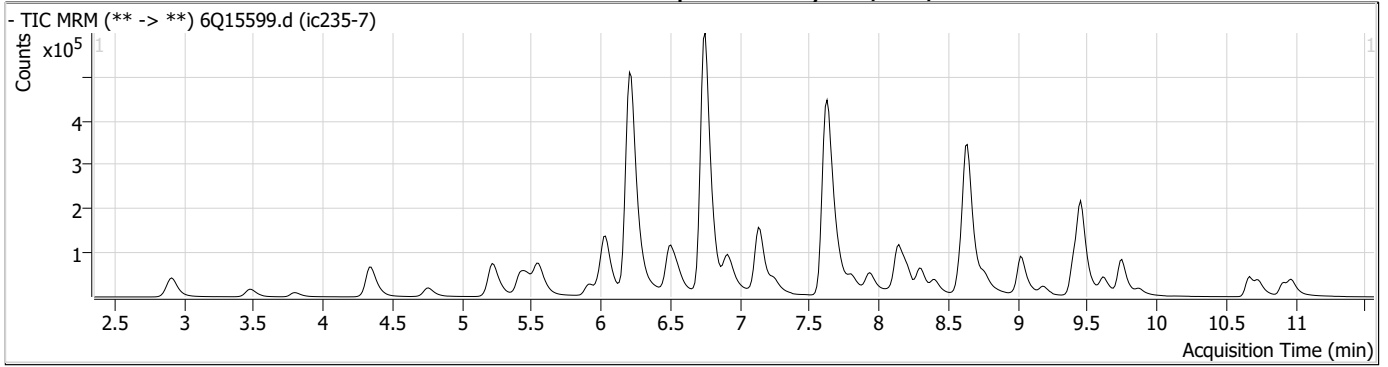
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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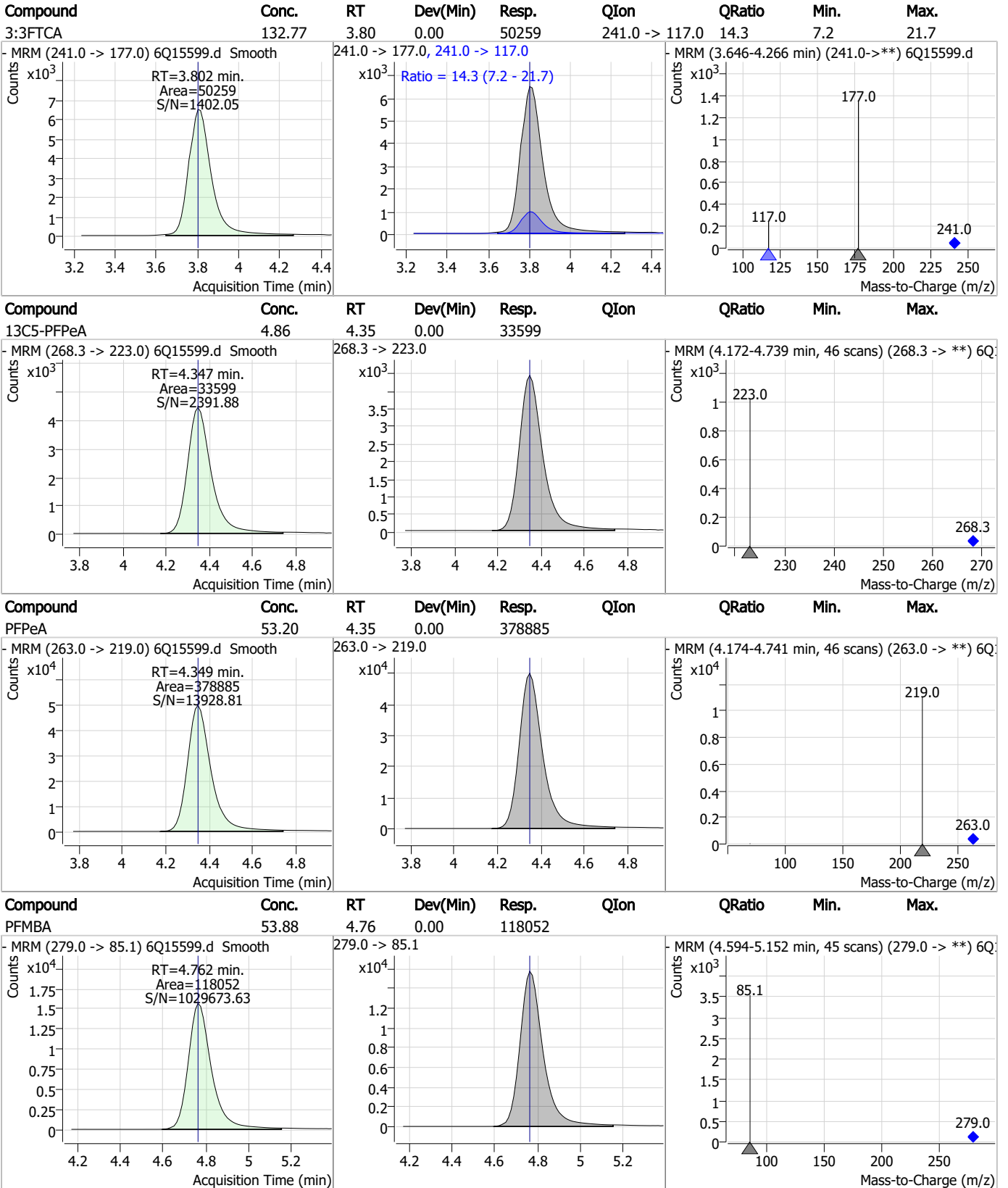
7.7.8
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Perfluorinated Compounds by LC/MS/MS



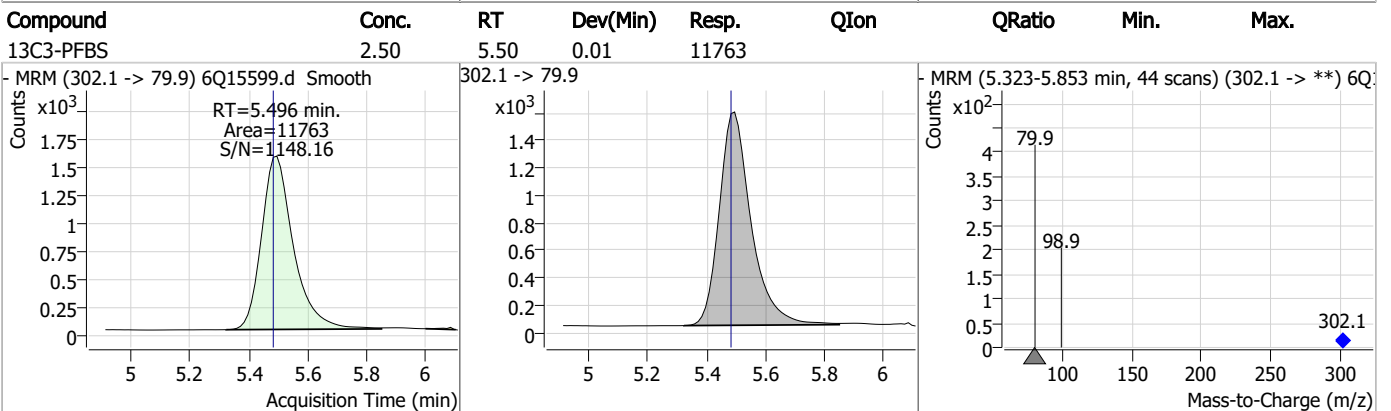
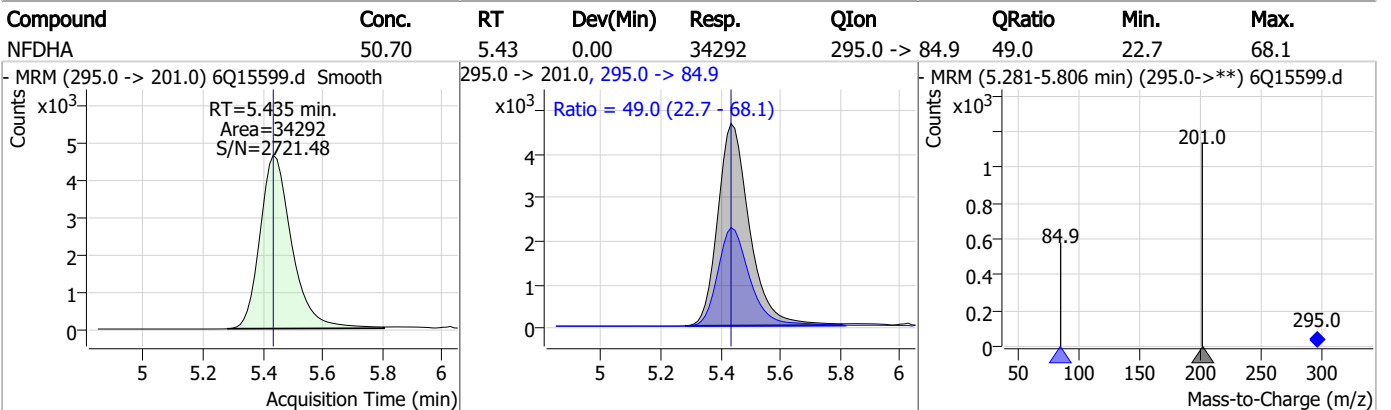
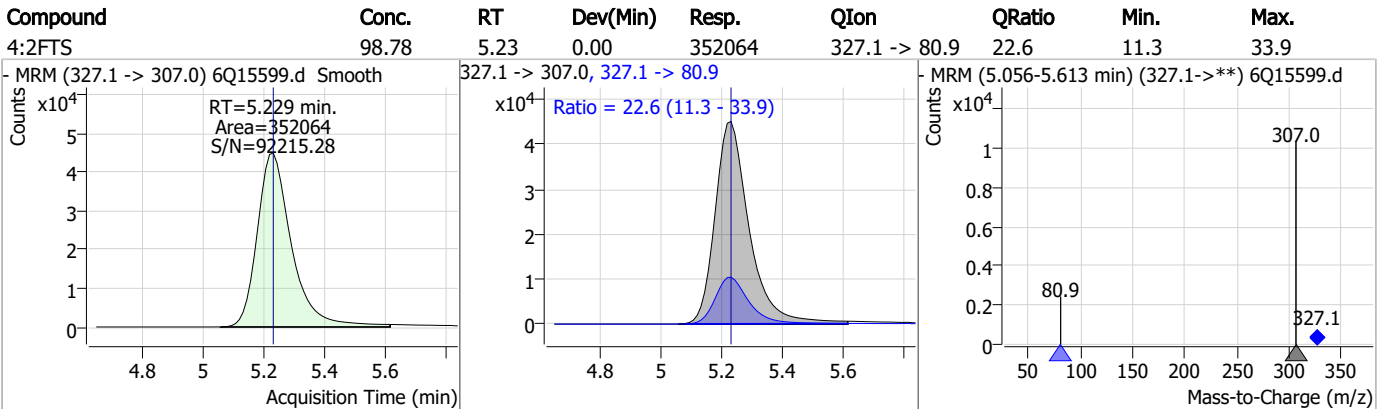
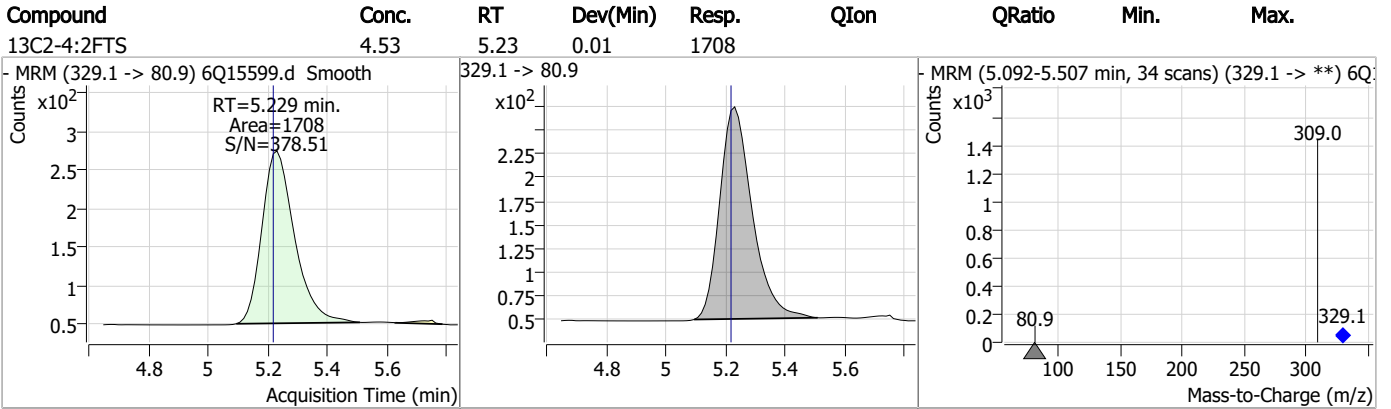
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

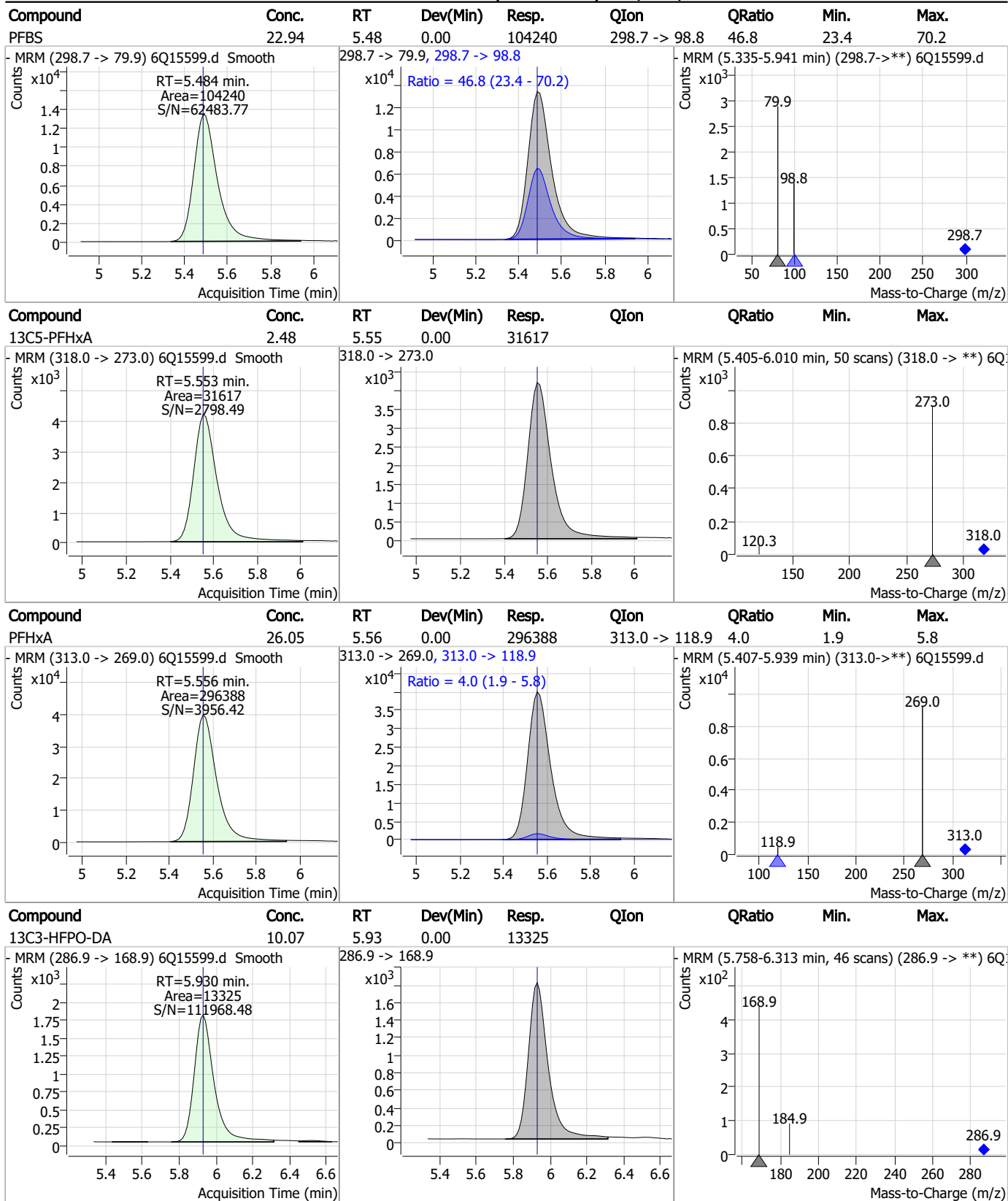


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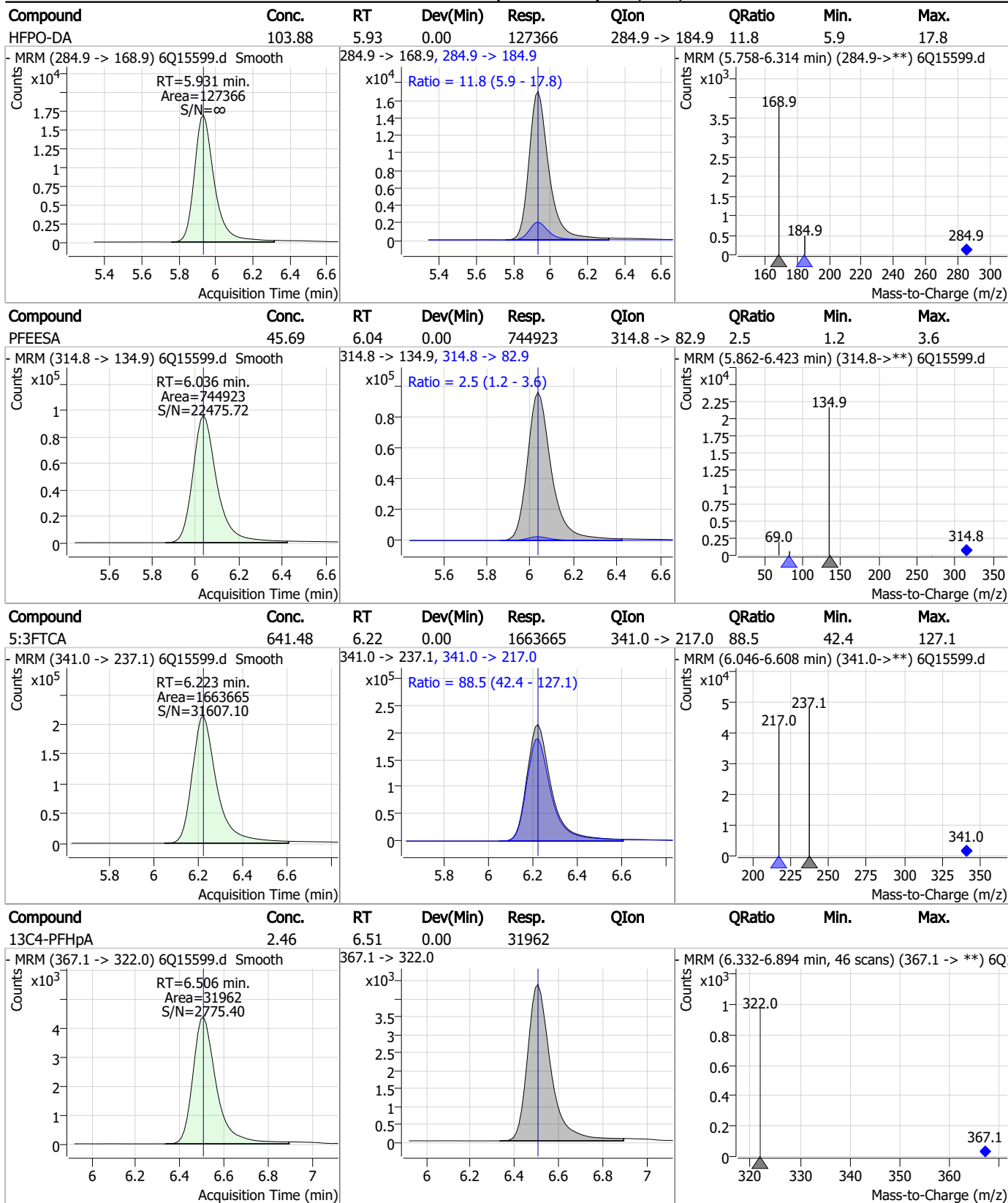


Perfluorinated Compounds by LC/MS/MS



7.7.8
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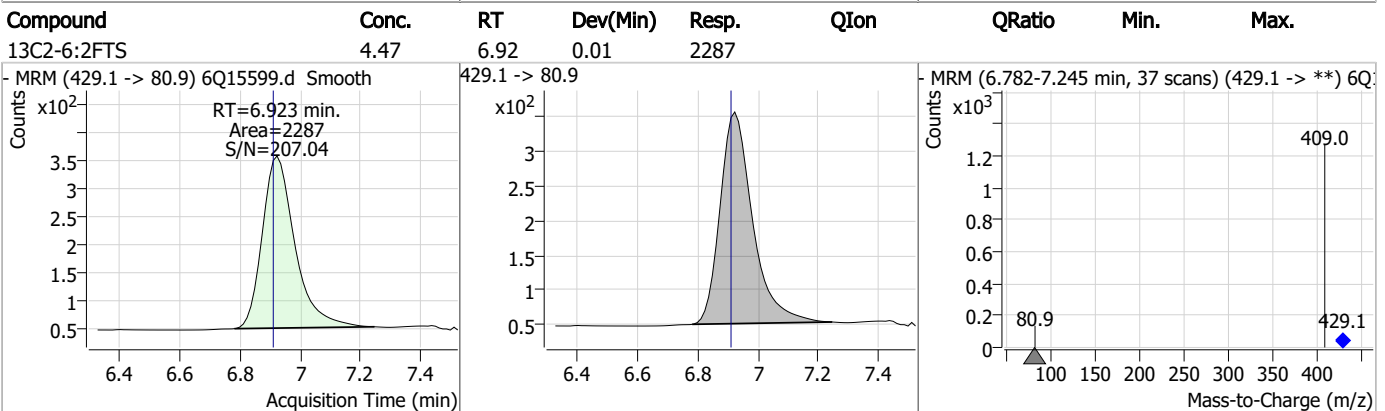
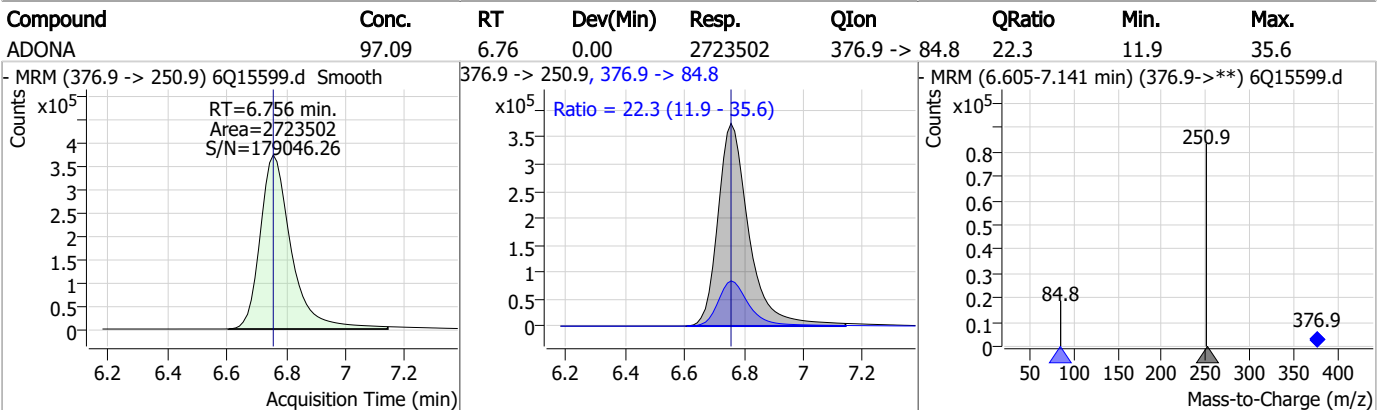
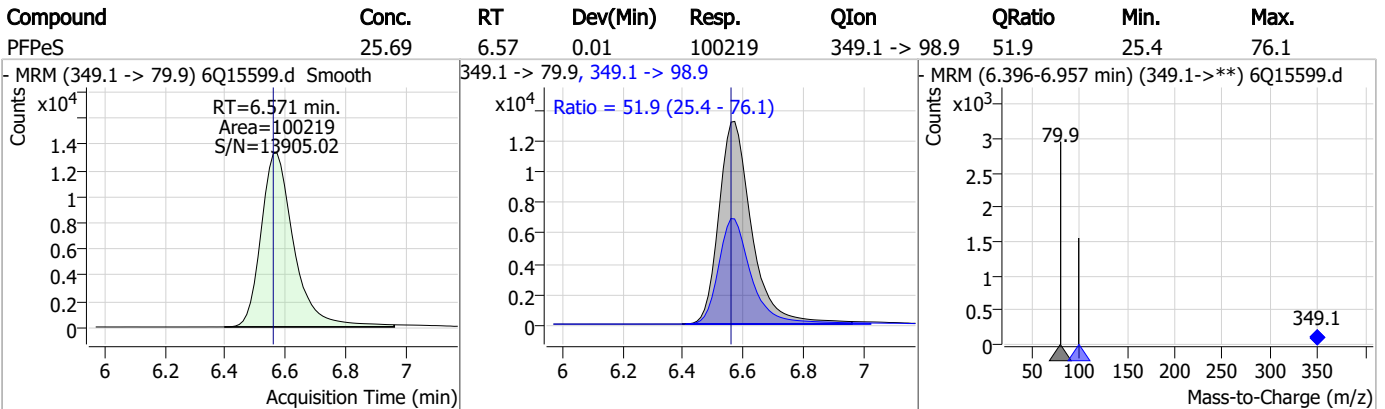
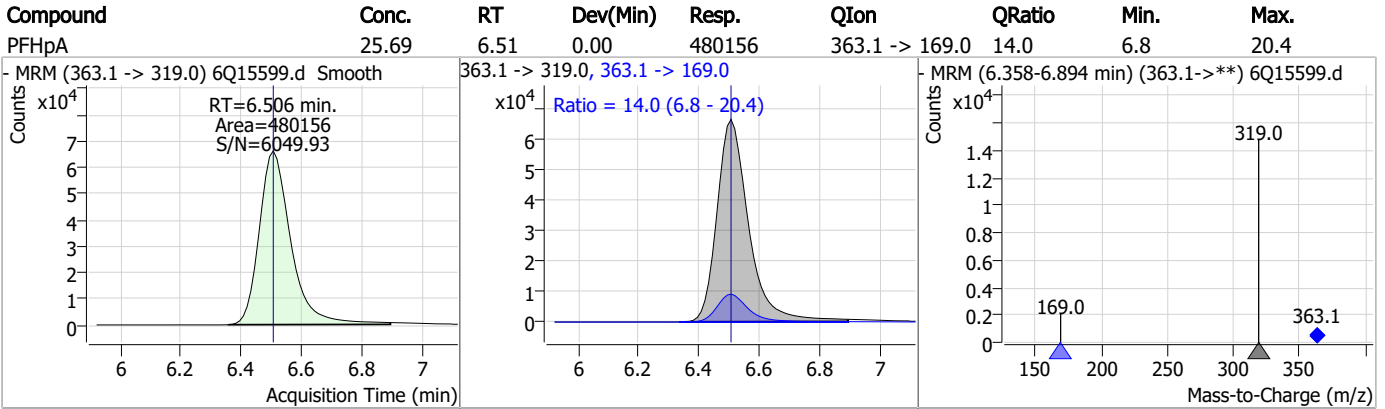
Perfluorinated Compounds by LC/MS/MS



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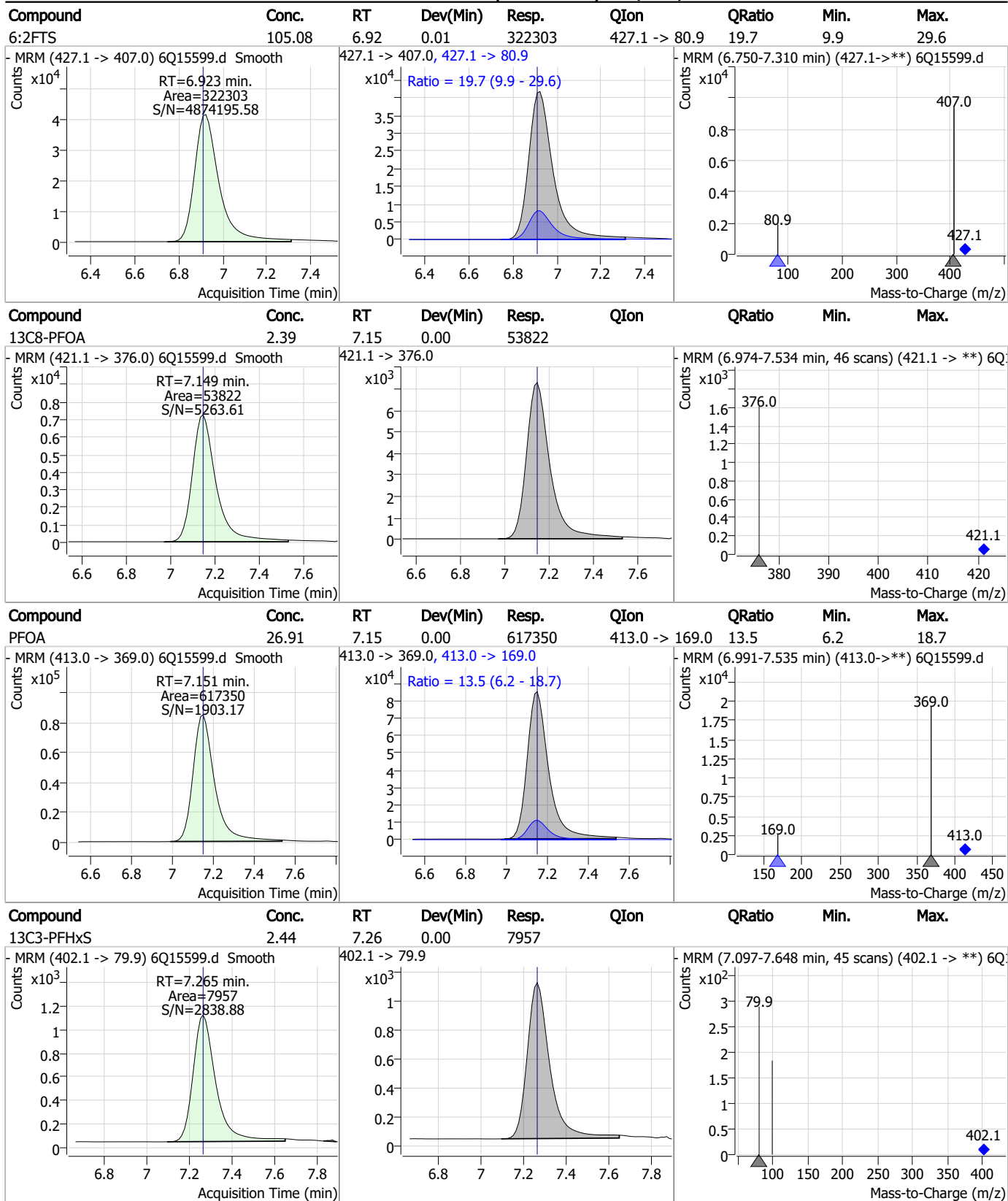
Perfluorinated Compounds by LC/MS/MS



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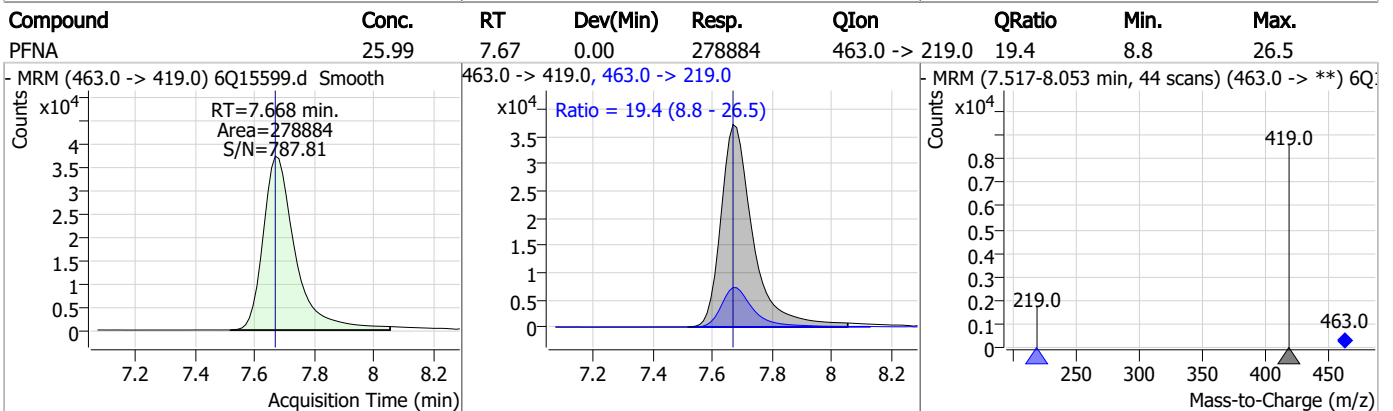
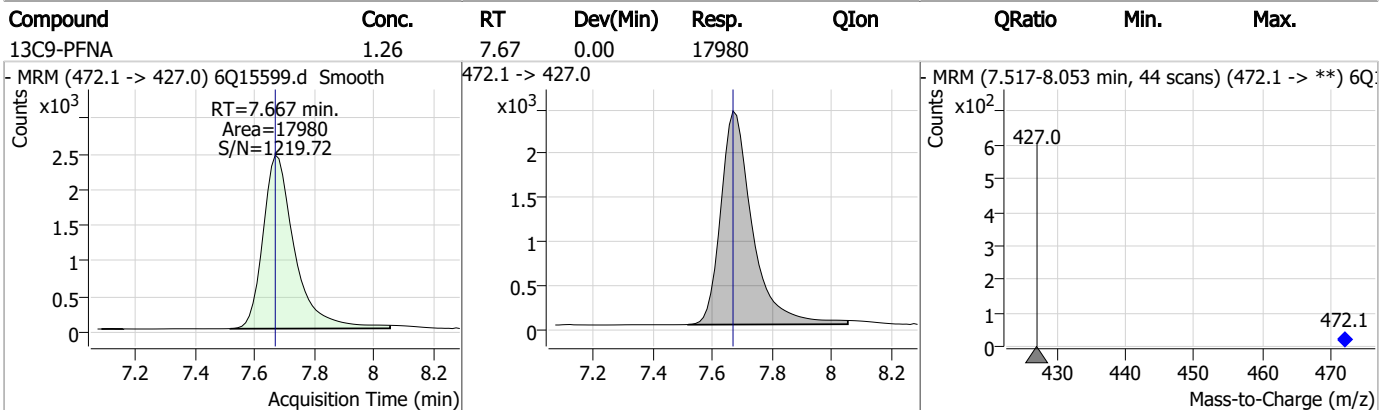
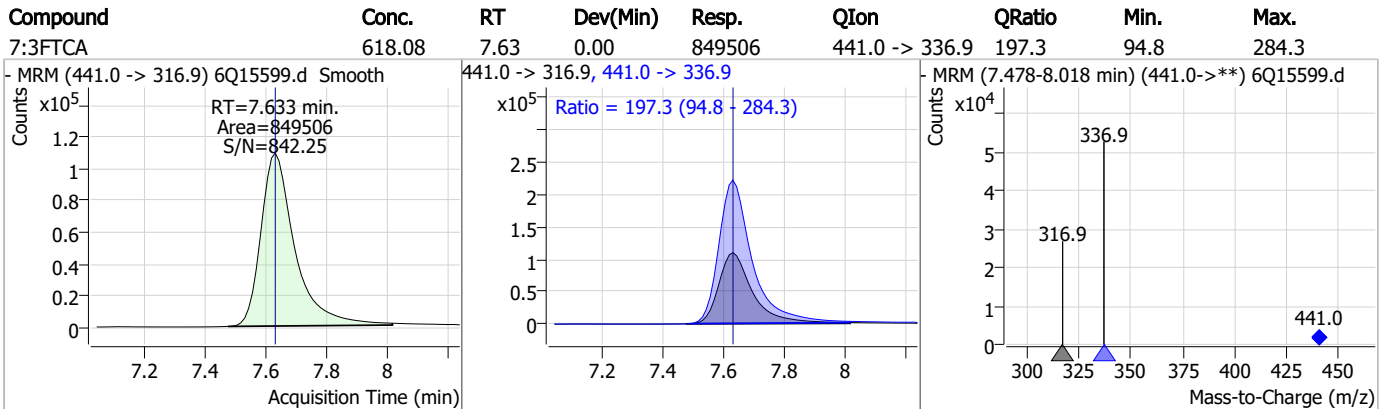
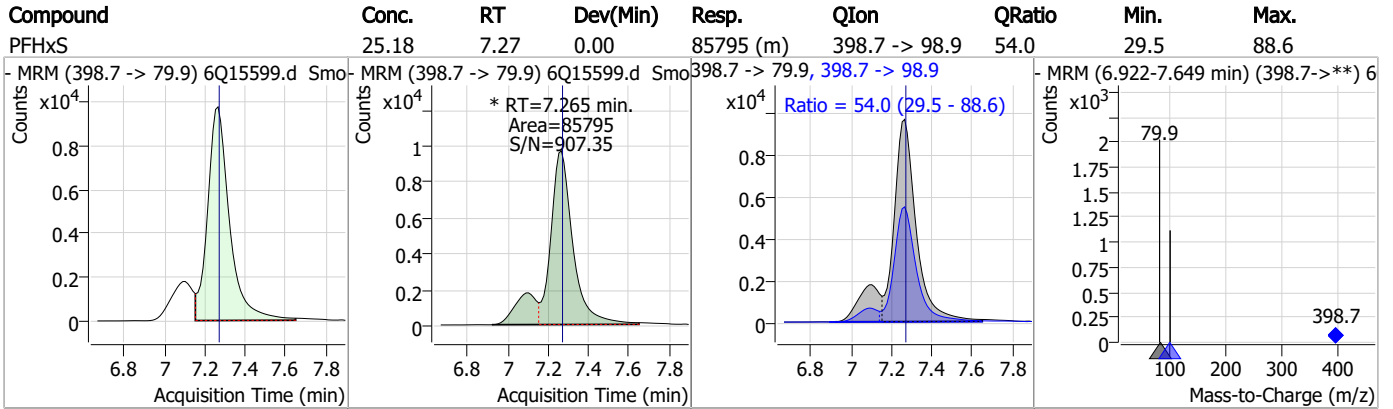
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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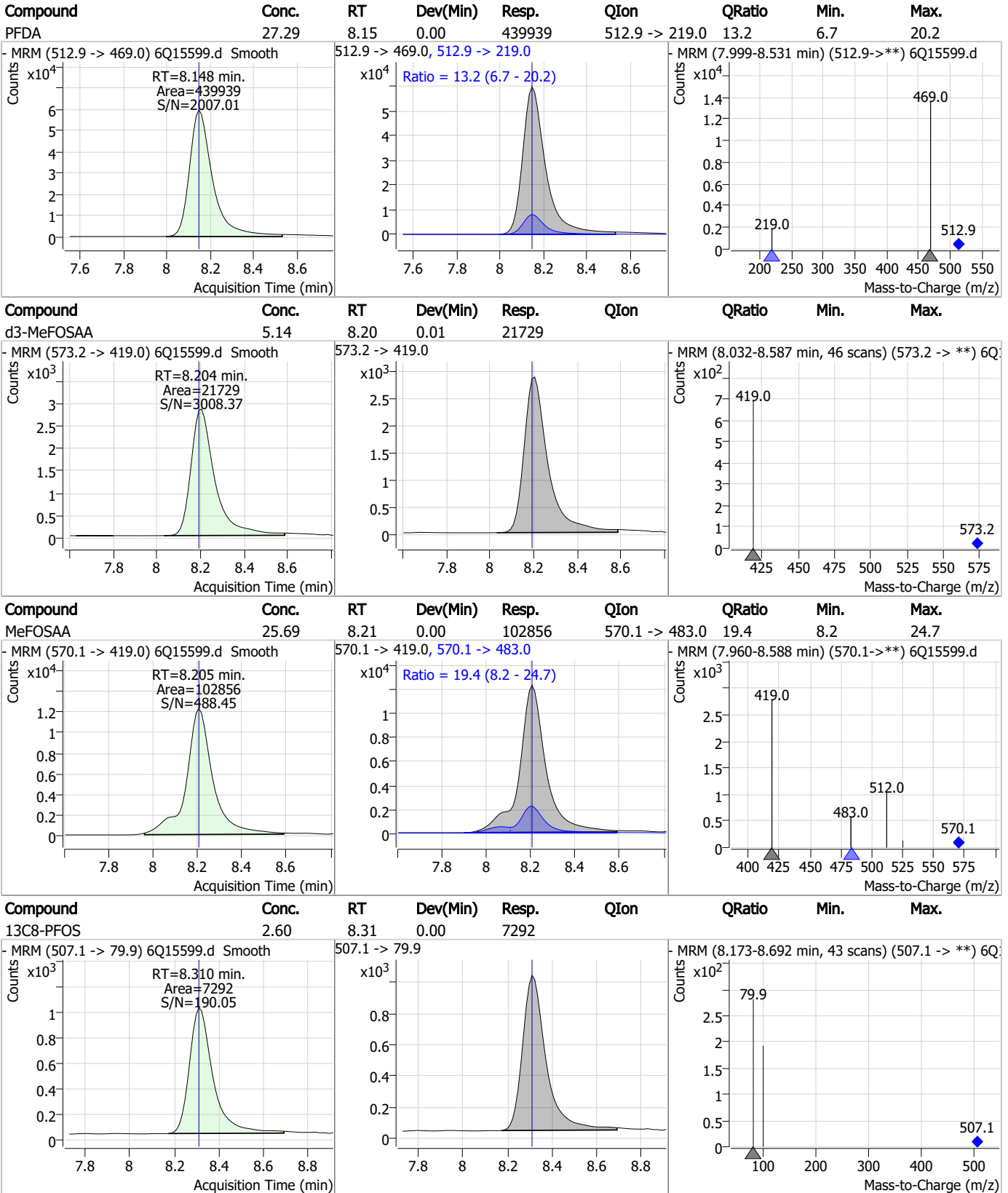
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	24.70	7.82	0.00	72225	449.0 -> 98.9	52.7	28.0	84.1
13C2-8:2FTS	4.66	7.94	0.00	2335				
8:2FTS	105.07	7.94	0.00	178488	527.1 -> 80.8	25.5	12.2	36.6
13C6-PFDA	1.16	8.15	0.00	14076				

7.7.8
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Perfluorinated Compounds by LC/MS/MS

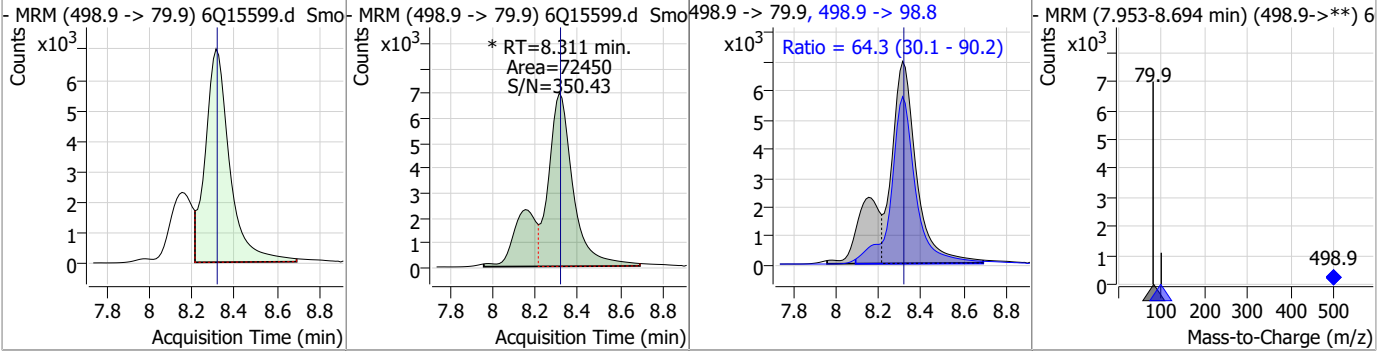


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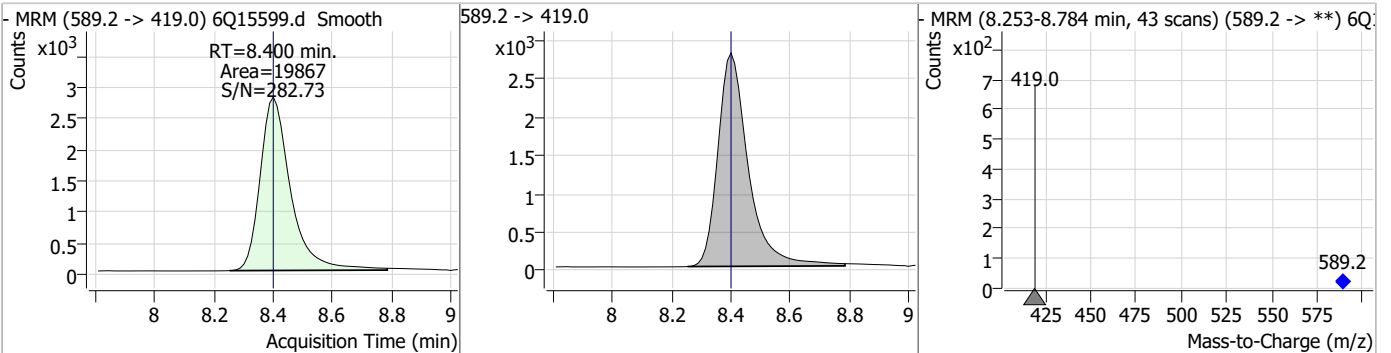
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Perfluorinated Compounds by LC/MS/MS

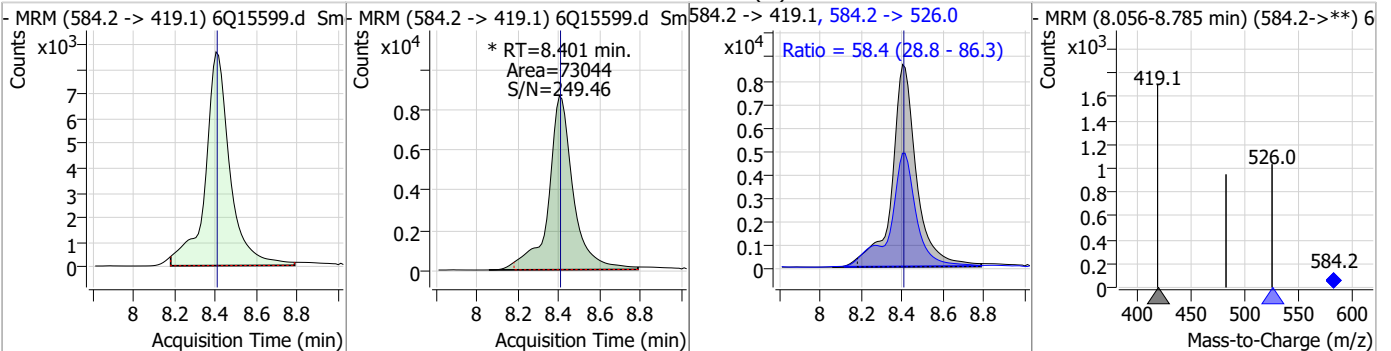
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.72	8.31	0.00	72450 (m)	498.9 -> 98.8	64.3	30.1	90.2



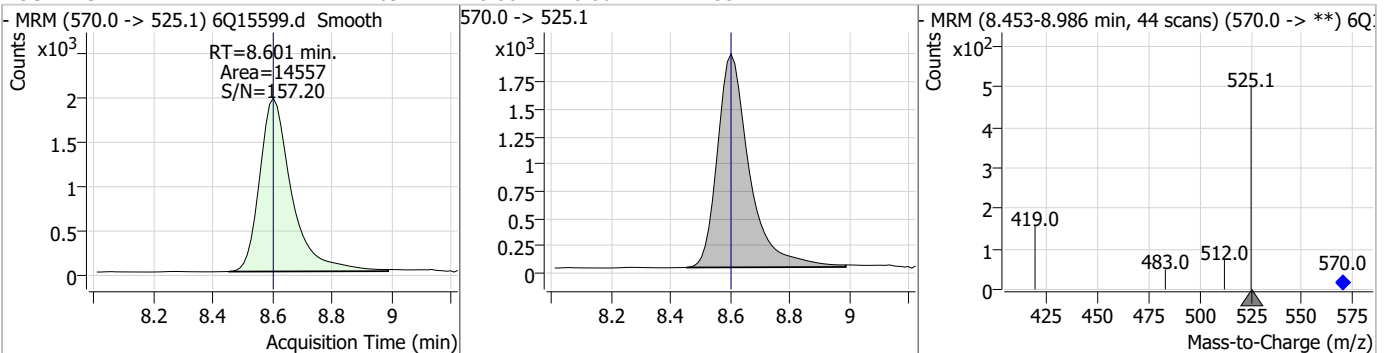
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.37	8.40	0.00	19867				



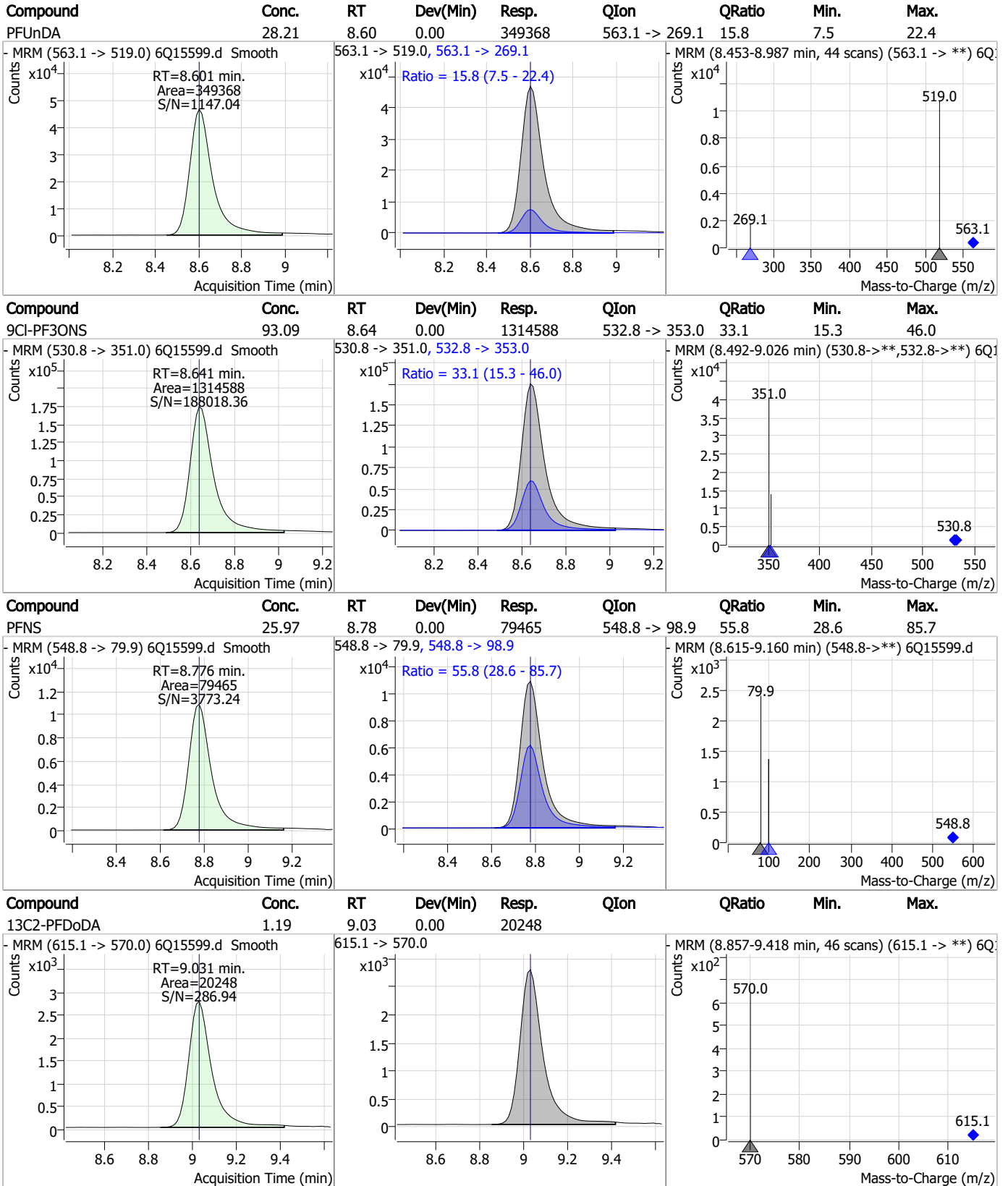
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.84	8.40	0.00	73044 (m)	584.2 -> 526.0	58.4	28.8	86.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.09	8.60	0.00	14557				



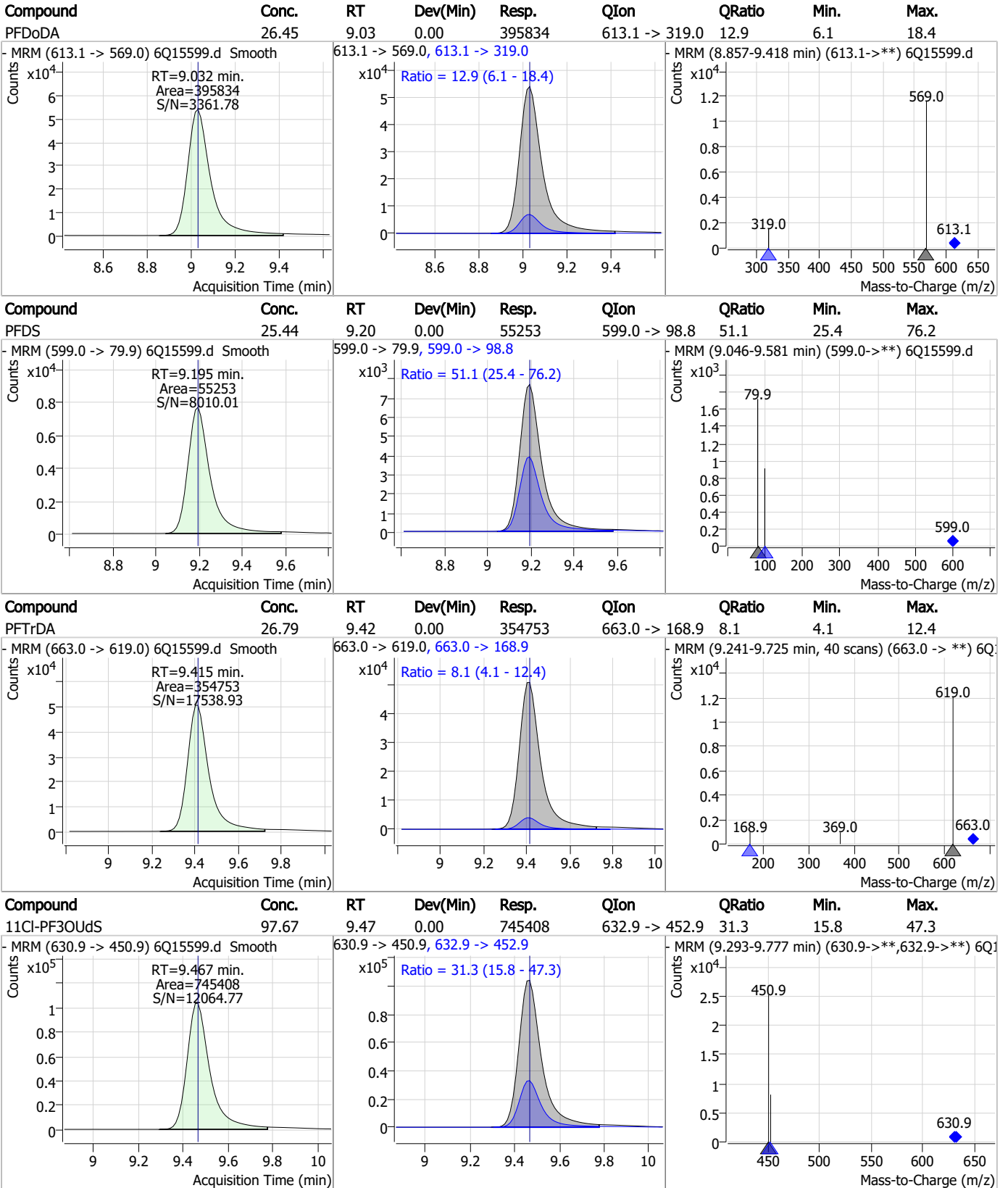
Perfluorinated Compounds by LC/MS/MS



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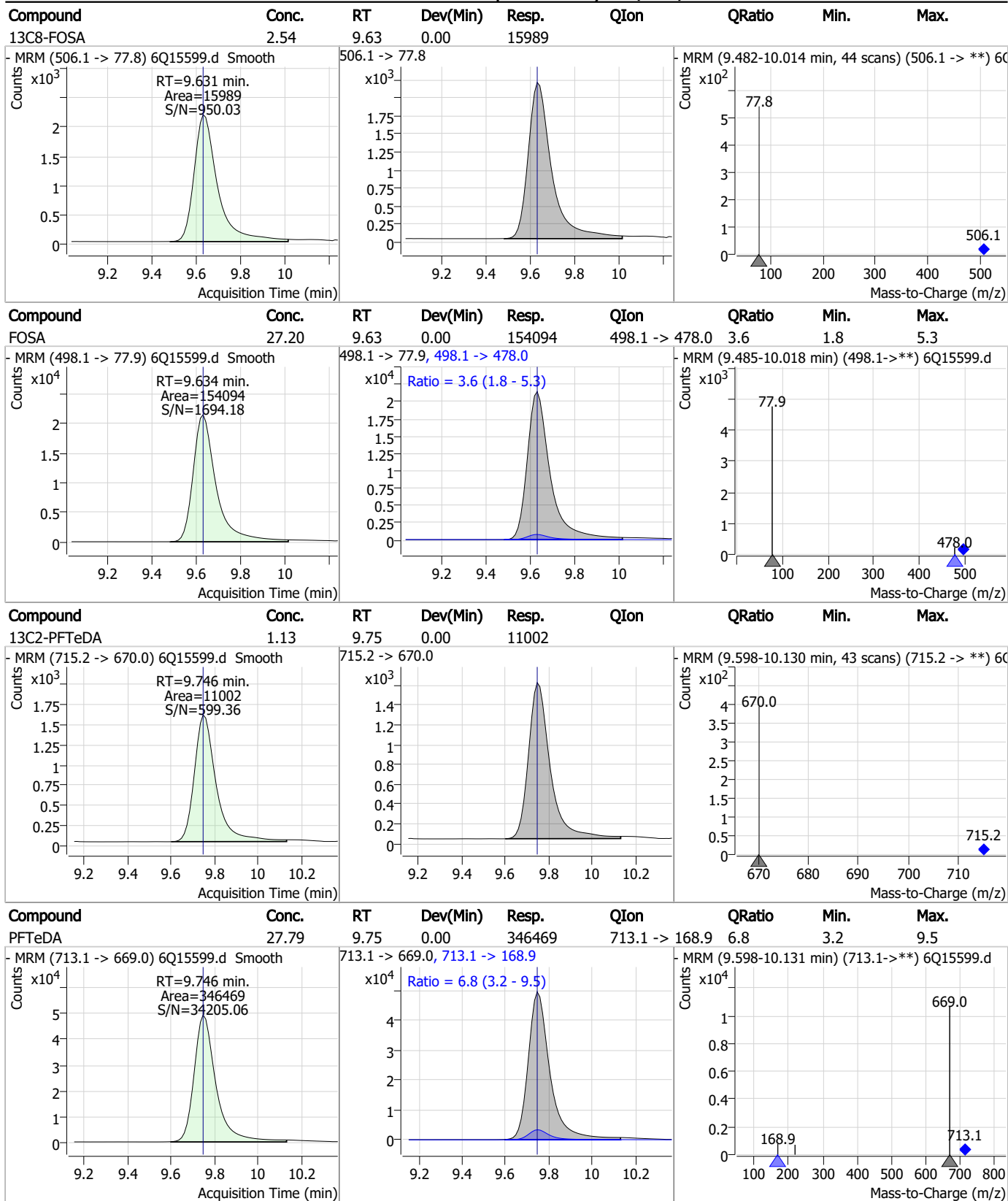
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

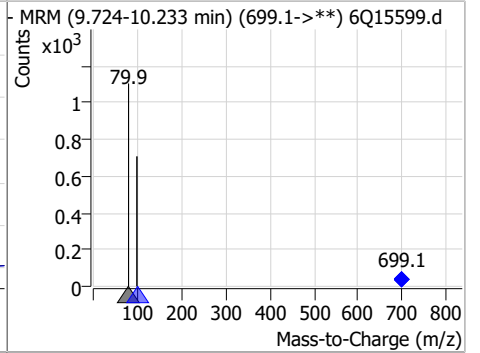
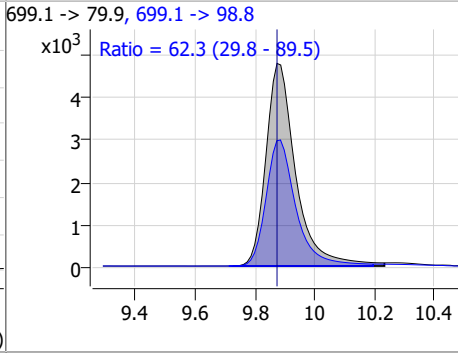
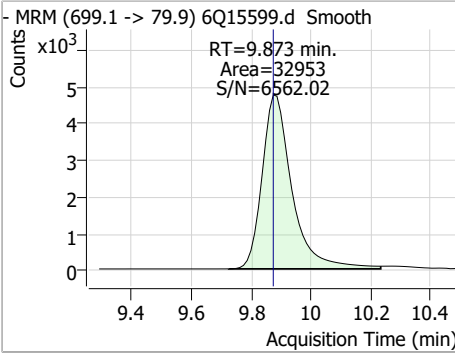


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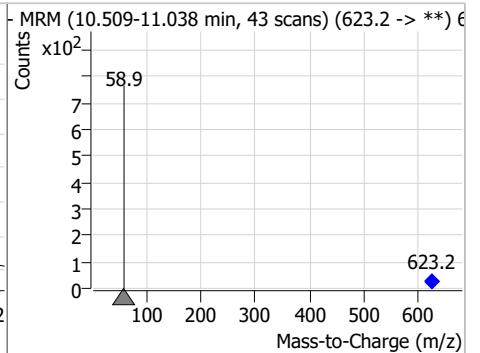
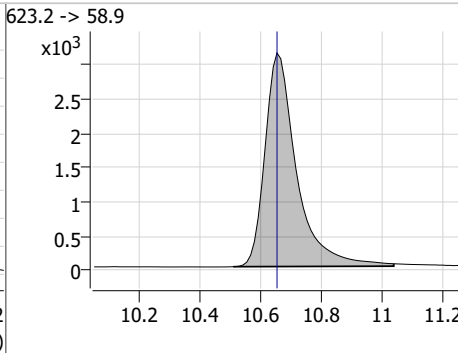
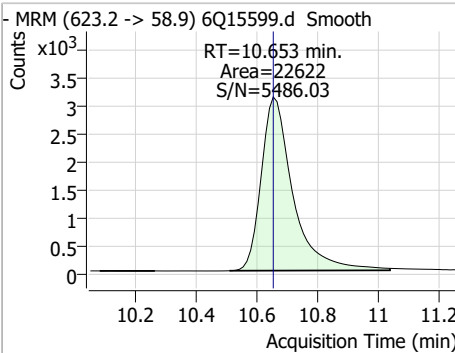


Perfluorinated Compounds by LC/MS/MS

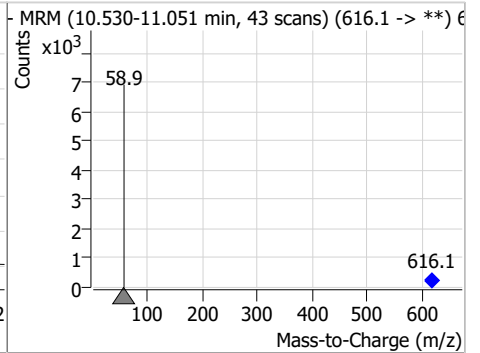
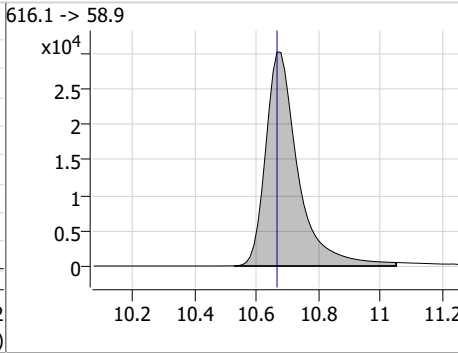
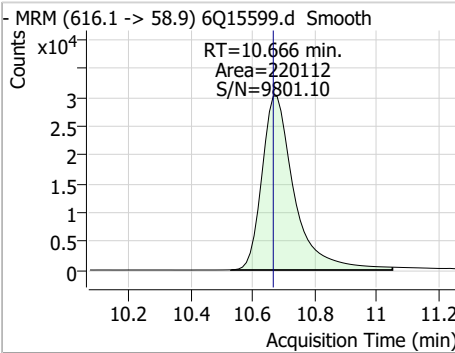
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	25.12	9.87	0.00	32953	699.1 -> 98.8	62.3	29.8	89.5



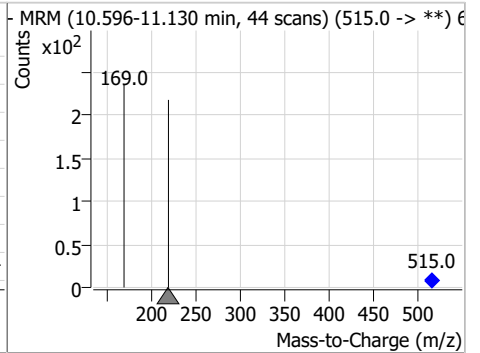
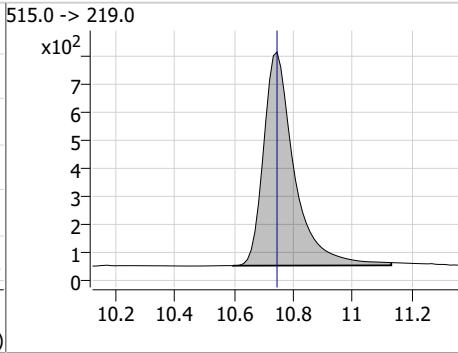
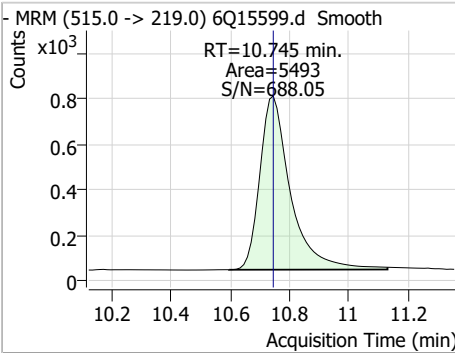
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.13	10.65	0.00	22622				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	269.46	10.67	0.00	220112				

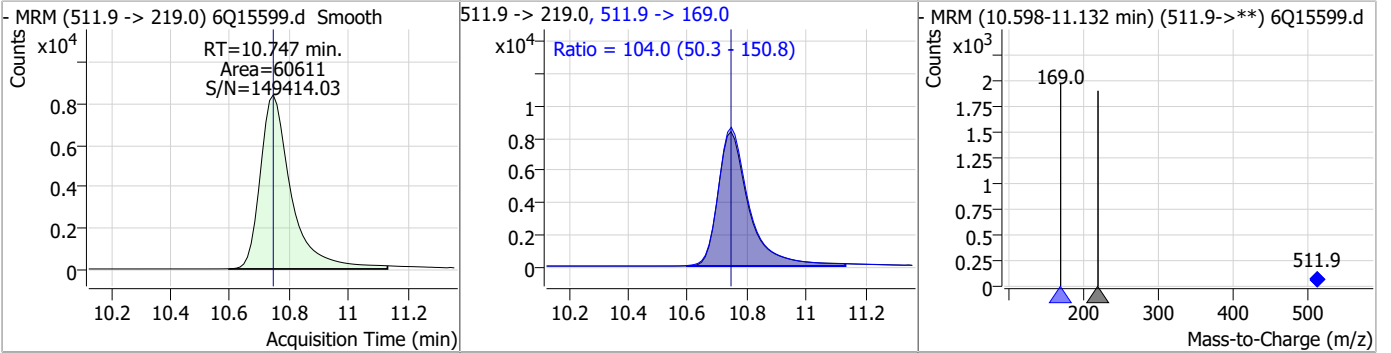


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.64	10.75	0.00	5493				

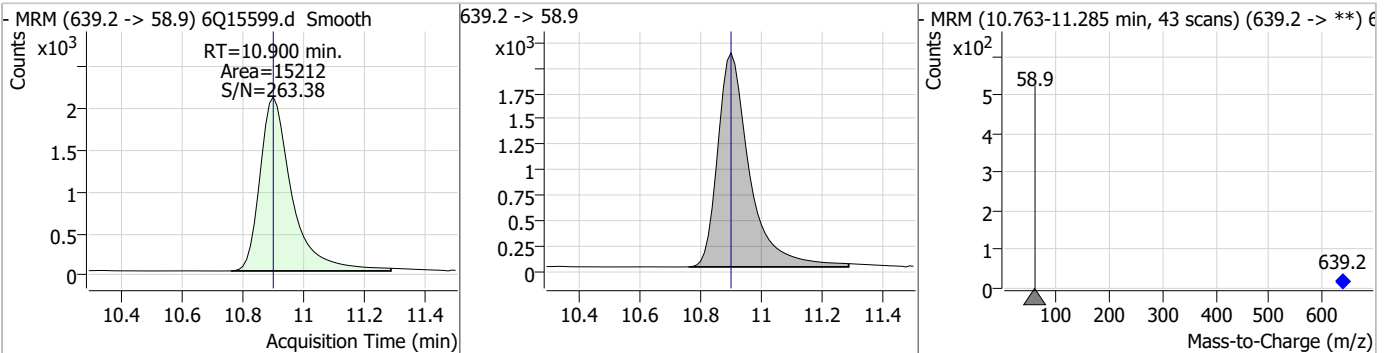


Perfluorinated Compounds by LC/MS/MS

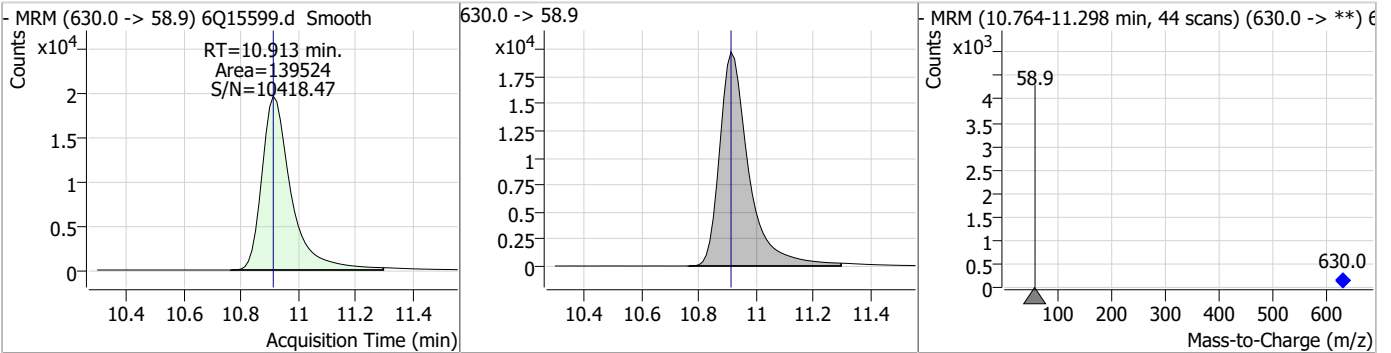
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	25.57	10.75	0.00	60611	511.9 -> 169.0	104.0	50.3	150.8



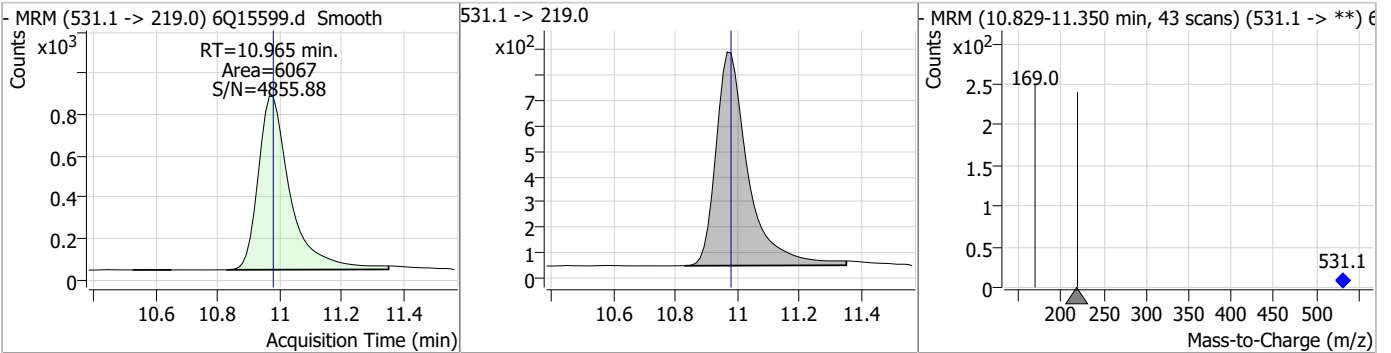
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.78	10.90	0.00	15212				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	256.35	10.91	0.00	139524				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.59	10.97	-0.01	6067				

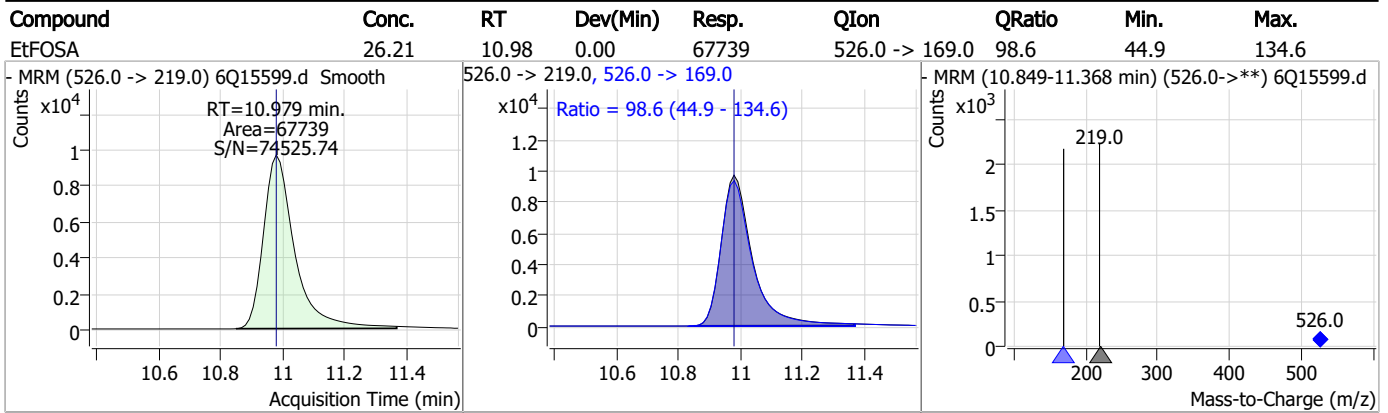


7.7.8

7



Perfluorinated Compounds by LC/MS/MS



7.7.8

7

Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15599.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 17:44 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15600.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 5:58:46 PM
 Sample Name : ic235-8
 Vial : P1-A9
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	65129	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	33121	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	30829	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	30836	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	55198	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	18057	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14251	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	14857	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	20917	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	11682	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	15635	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	11712	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8142	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8055	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	1477	5.00 µg/L	0.000
M2-6:2FTS	6.923	429.1 -> 80.9	2264	5.00 µg/L	0.012
M2-8:2FTS	7.948	529.1 -> 80.9	2432	5.00 µg/L	0.012
M3-MeFOSAA	8.204	573.2 -> 419.0	20992	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13783	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	18050	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	21312	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	14032	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	5988	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5802	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9105	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	28092	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5977	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	68096	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	21319	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	17761	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	30620	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	1477	3.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 75.9%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2264	4.28 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 85.6%		
13C2-8:2FTS	7.948	529.1 -> 80.9	2432	4.69 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C2-PFDoDA	9.031	615.1 -> 570.0	20917	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C2-PFTeDA	9.746	715.2 -> 670.0	11682	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C3-PFBS	5.483	302.1 -> 79.9	11712	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFHxS	7.265	402.1 -> 79.9	8142	2.41 µg/L	0.000



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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C4-PFBA	2.913	216.8 -> 171.9	65129	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.506	367.1 -> 322.0	30836	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C5-PFHxA	5.553	318.0 -> 273.0	30829	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C5-PFPeA	4.347	268.3 -> 223.0	33121	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C6-PFDA	8.147	519.1 -> 474.1	14251	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C7-PFUnDA	8.601	570.0 -> 525.1	14857	1.09 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.3%	
13C8-FOSA	9.631	506.1 -> 77.8	15635	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C8-PFOA	7.149	421.1 -> 376.0	55198	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOS	8.310	507.1 -> 79.9	8055	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C9-PFNA	7.667	472.1 -> 427.0	18057	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSAA	8.204	573.2 -> 419.0	20992	4.67 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	13783	10.46 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d3-MeFOSA	10.745	515.0 -> 219.0	5802	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
d5-EtFOSAA	8.400	589.2 -> 419.0	18050	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	10.653	623.2 -> 58.9	21312	22.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
d9-EtFOSE	10.900	639.2 -> 58.9	14032	22.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.5%	
d5-EtFOSA	10.965	531.1 -> 219.0	5988	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	758011	245.87 µg/L	100
		327.1 -> 80.9	171154		
6:2FTS	6.923	427.1 -> 407.0	663345	218.53 µg/L	100
		427.1 -> 80.9	130862		
8:2FTS	7.948	527.1 -> 507.0	356040	201.28 µg/L	100
		527.1 -> 80.8	86963		
EtFOSAA	8.401	584.2 -> 419.1	176662	63.47 µg/L	100
		584.2 -> 526.0	101637		
FOSA	9.634	498.1 -> 77.9	373386	67.40 µg/L	100
		498.1 -> 478.0	13156		
MeFOSAA	8.205	570.1 -> 419.0	257753	66.65 µg/L	100
		570.1 -> 483.0	42450		
PFBA	2.919	212.8 -> 168.9	392138	264.81 µg/L	100
PFBS	5.484	298.7 -> 79.9	252176	55.75 µg/L	100
		298.7 -> 98.8	118069		
PFDA	8.148	512.9 -> 469.0	1076701	65.97 µg/L	100
		512.9 -> 219.0	144678		
PFDoDA	9.032	613.1 -> 569.0	976147	63.15 µg/L	100
		613.1 -> 319.0	119914		
PFDS	9.195	599.0 -> 79.9	136265	56.79 µg/L	100

7.7.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	69197			
PFHpA	6.506	363.1 -> 319.0	1194422	66.24	µg/L	100
		363.1 -> 169.0	162339			
PFHpS	7.819	449.0 -> 79.9	177894	55.08	µg/L	100
		449.0 -> 98.9	99795			
PFHxA	5.556	313.0 -> 269.0	724566	65.31	µg/L	100
		313.0 -> 118.9	27937			
PFHxS	7.265	398.7 -> 79.9	199660	57.28	µg/L	m 100
		398.7 -> 98.9	117902			
PFNA	7.668	463.0 -> 419.0	704310	65.36	µg/L	100
		463.0 -> 219.0	124632			
PFNS	8.776	548.8 -> 79.9	177689	52.57	µg/L	100
		548.8 -> 98.9	101578			
PFOA	7.151	413.0 -> 369.0	1526294	64.87	µg/L	100
		413.0 -> 169.0	190692			
PFOS	8.311	498.9 -> 79.9	181237	53.72	µg/L	m 100
		498.9 -> 98.8	108947			
PFPeA	4.349	263.0 -> 219.0	902736	128.59	µg/L	100
PFPeS	6.558	349.1 -> 79.9	250707	62.81	µg/L	100
		349.1 -> 98.9	127275			
PFTeDA	9.746	713.1 -> 669.0	834793	63.07	µg/L	100
		713.1 -> 168.9	52961			
PFTrDA	9.415	663.0 -> 619.0	787053	57.53	µg/L	100
		663.0 -> 168.9	65173			
PFUnDA	8.601	563.1 -> 519.0	808779	63.99	µg/L	100
		563.1 -> 269.1	120669			
11Cl-PF3OUdS	9.467	630.9 -> 450.9	1734159	219.67	µg/L	100
		632.9 -> 452.9	547100			
9Cl-PF3ONS	8.641	530.8 -> 351.0	3272951	224.07	µg/L	100
		532.8 -> 353.0	1002643			
ADONA	6.756	376.9 -> 250.9	6121764	211.00	µg/L	100
		376.9 -> 84.8	1453256			
HFPO-DA	5.931	284.9 -> 168.9	289940	228.63	µg/L	100
		284.9 -> 184.9	34321			
3:3FTCA	3.802	241.0 -> 177.0	125005	334.98	µg/L	100
		241.0 -> 117.0	18099			
5:3FTCA	6.223	341.0 -> 237.1	3881413	1534.90	µg/L	100
		341.0 -> 217.0	3288291			
7:3FTCA	7.633	441.0 -> 316.9	2112208	1576.13	µg/L	100
		441.0 -> 336.9	4002672			
EtFOSA	10.979	526.0 -> 219.0	169831	66.57	µg/L	100
		526.0 -> 169.0	152418			
EtFOSE	10.913	630.0 -> 58.9	331420	660.12	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	149145	59.57	µg/L	100
		511.9 -> 169.0	149921			
MeFOSE	10.679	616.1 -> 58.9	506599	658.29	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	81387	56.16	µg/L	100
		699.1 -> 98.8	48580			
NFDHA	5.435	295.0 -> 201.0	81396	123.41	µg/L	100
		295.0 -> 84.9	36974			
PFMBA	4.762	279.0 -> 85.1	288079	133.38	µg/L	100
PFMPA	3.488	229.0 -> 84.9	260644	134.16	µg/L	100
PFEESA	6.036	314.8 -> 134.9	1806357	113.63	µg/L	100
		314.8 -> 82.9	42975			

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

7.7.9
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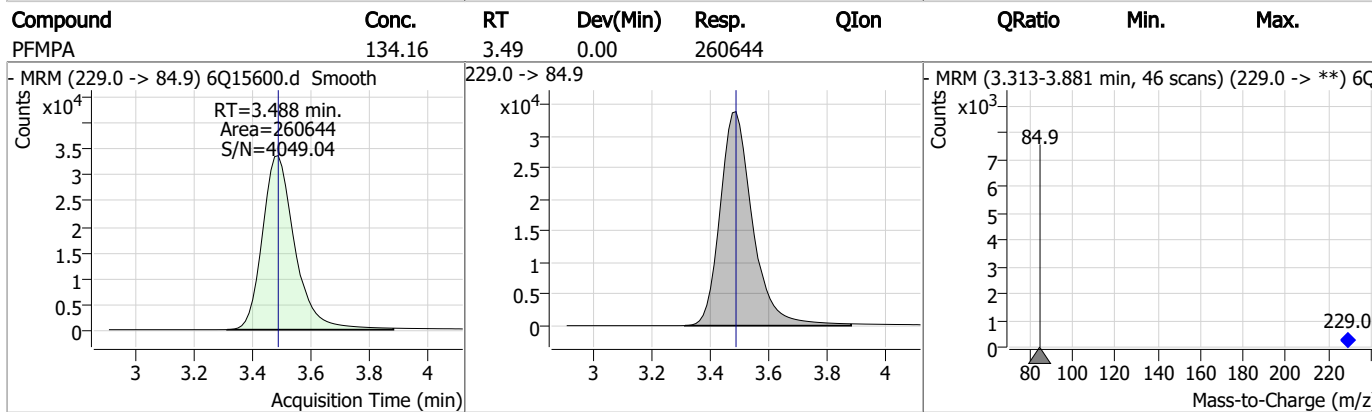
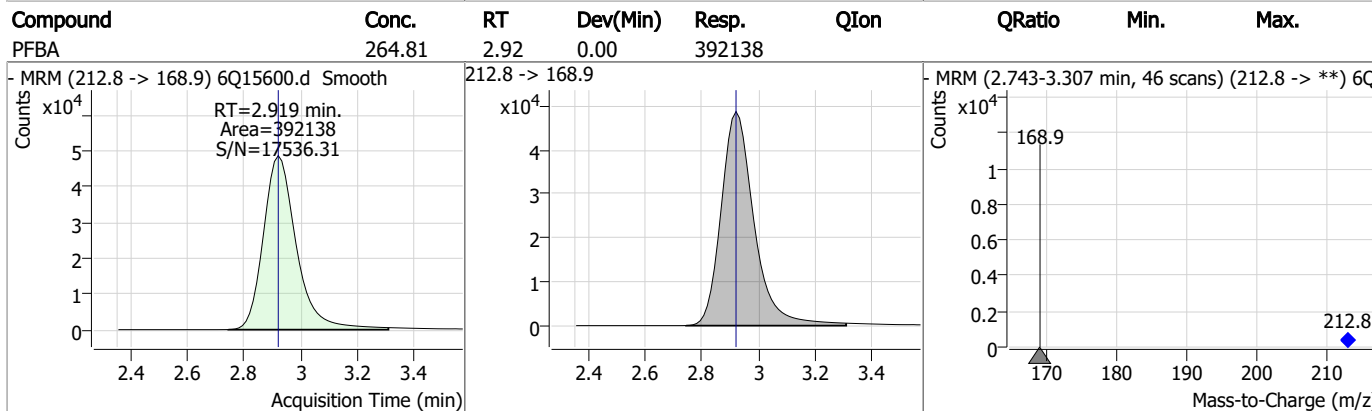
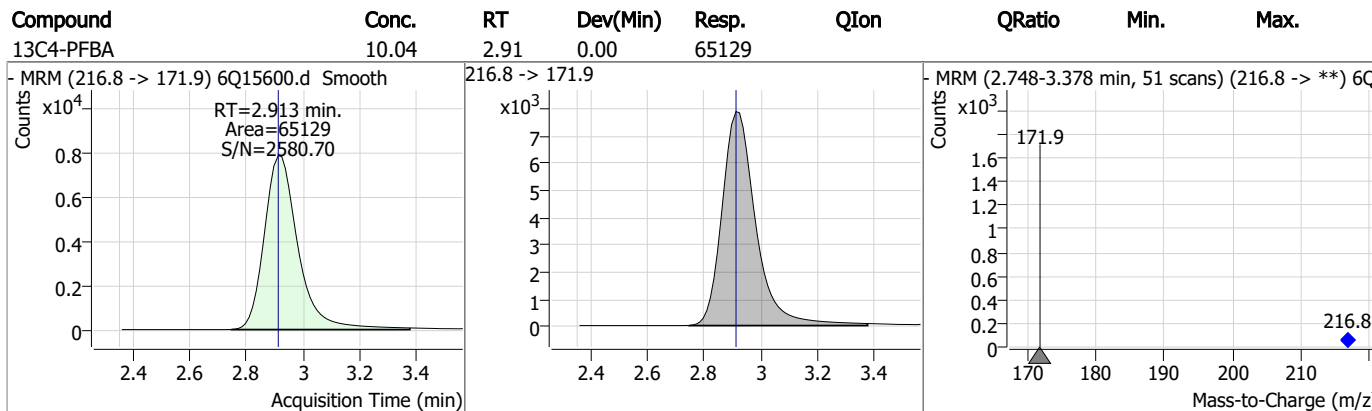
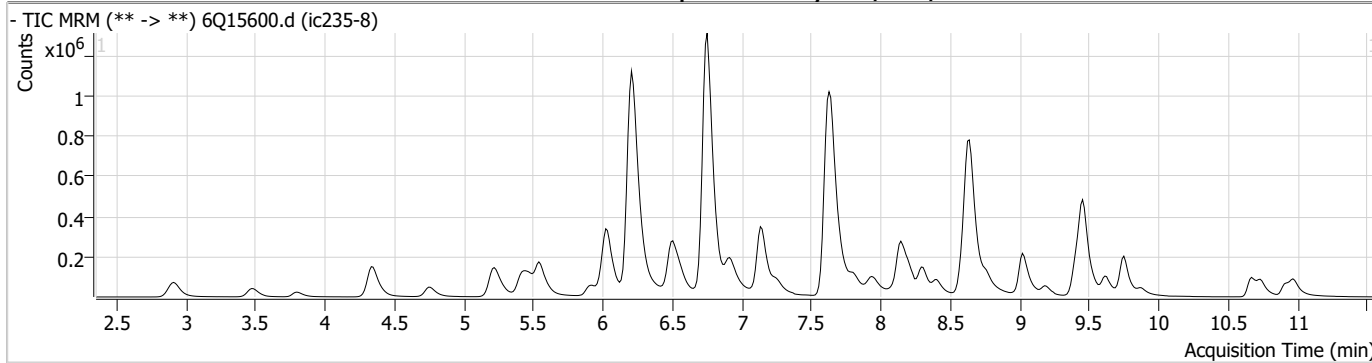
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.9

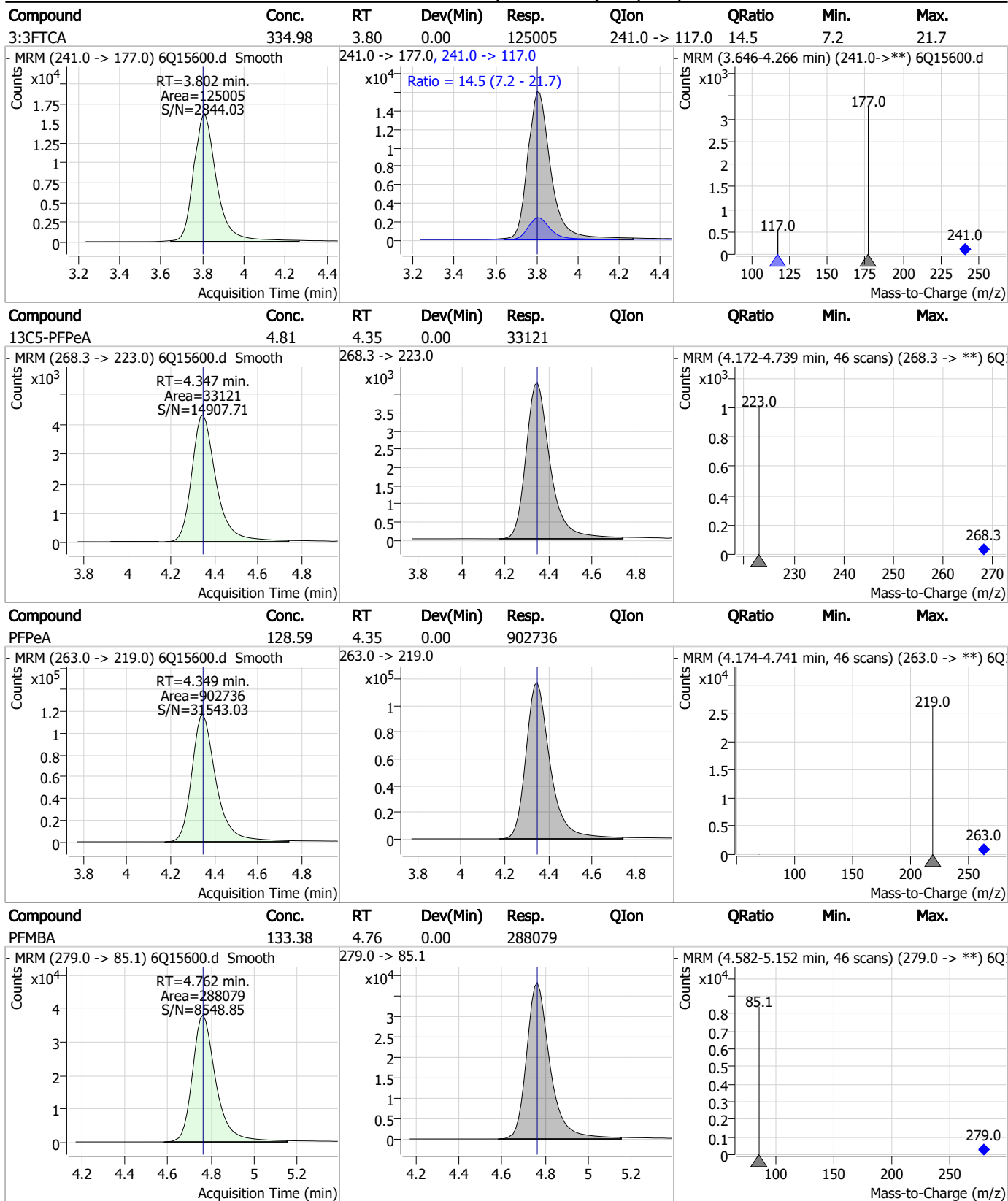
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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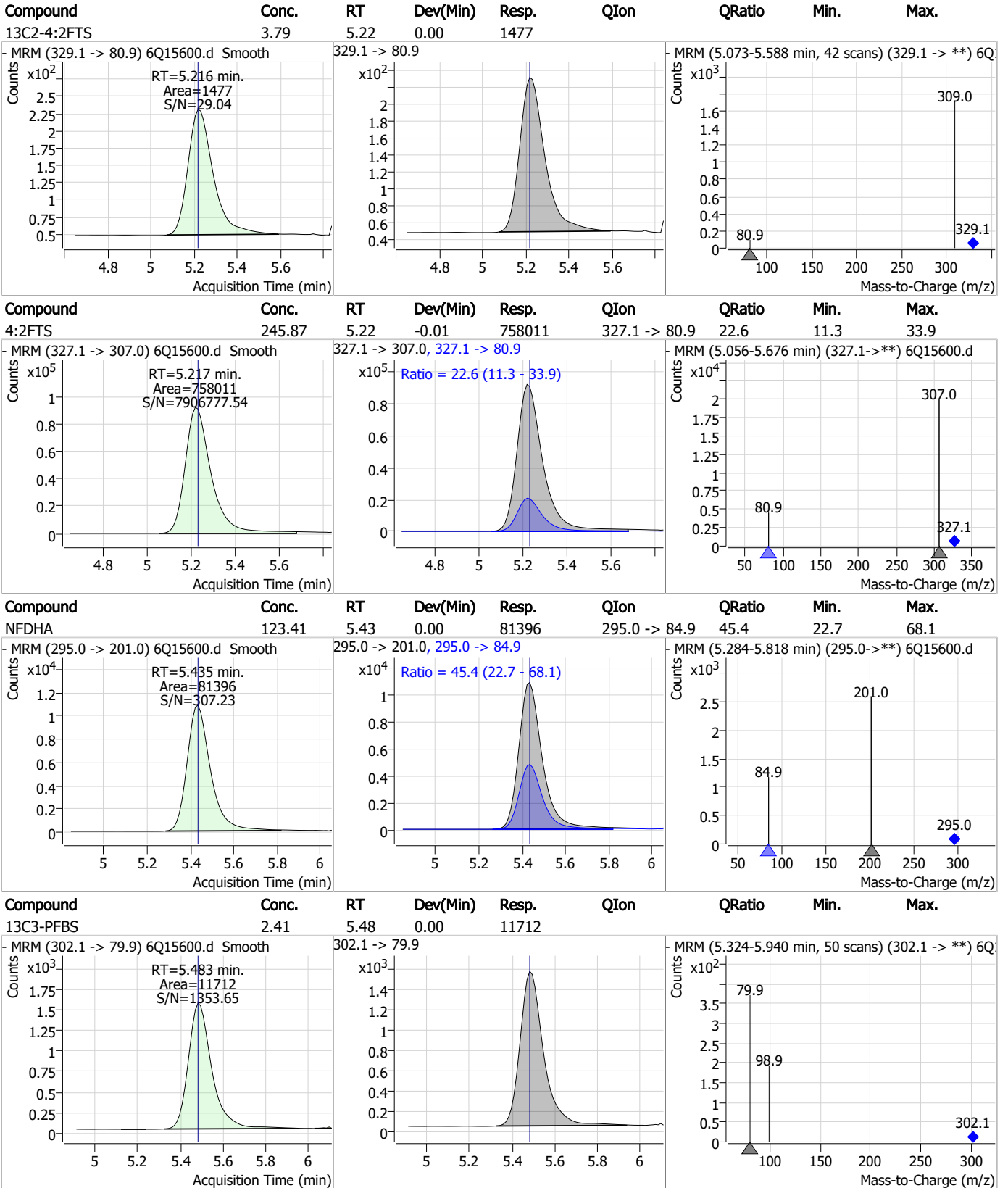
Perfluorinated Compounds by LC/MS/MS



7.7.9
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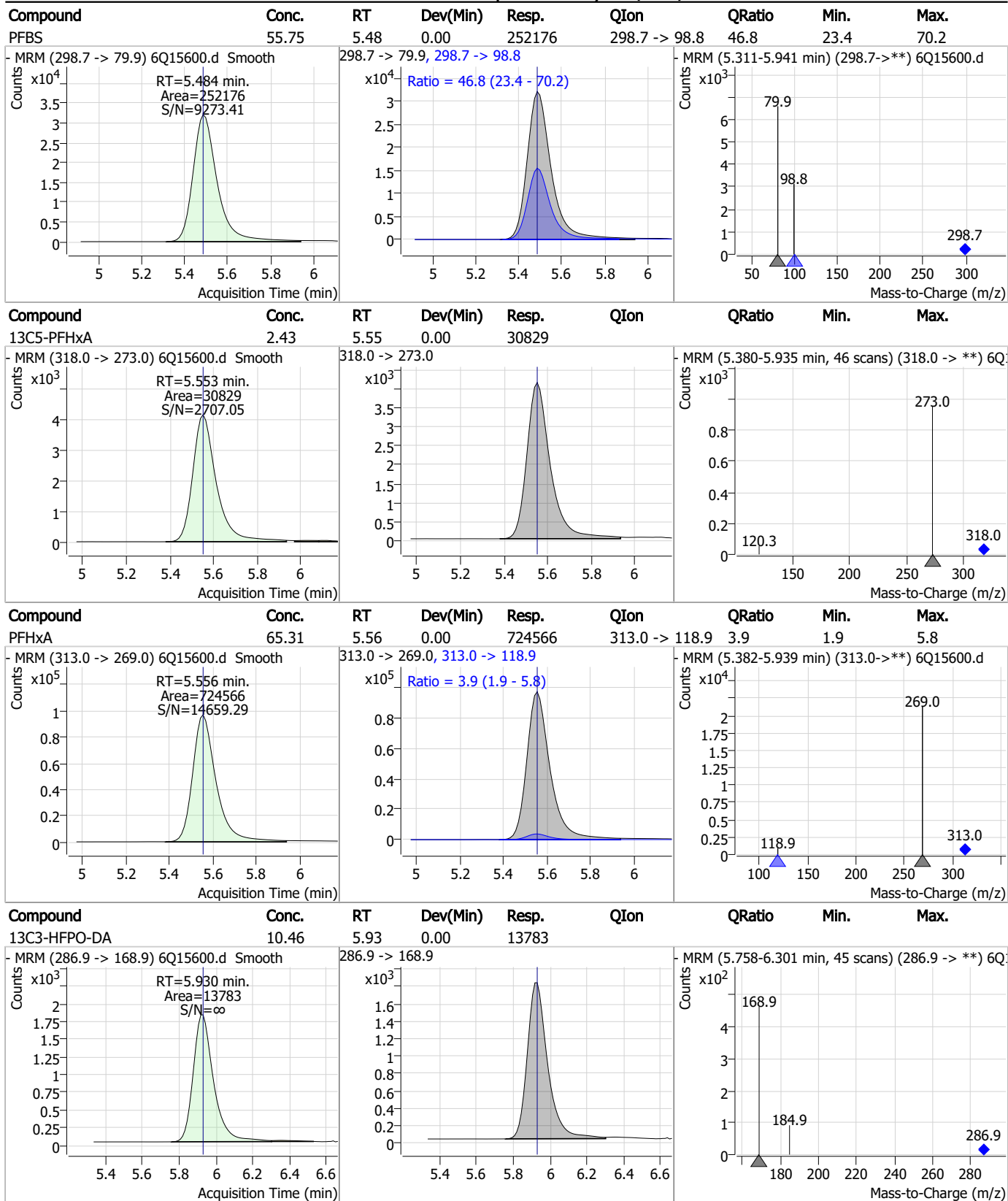
Perfluorinated Compounds by LC/MS/MS



7.7.9

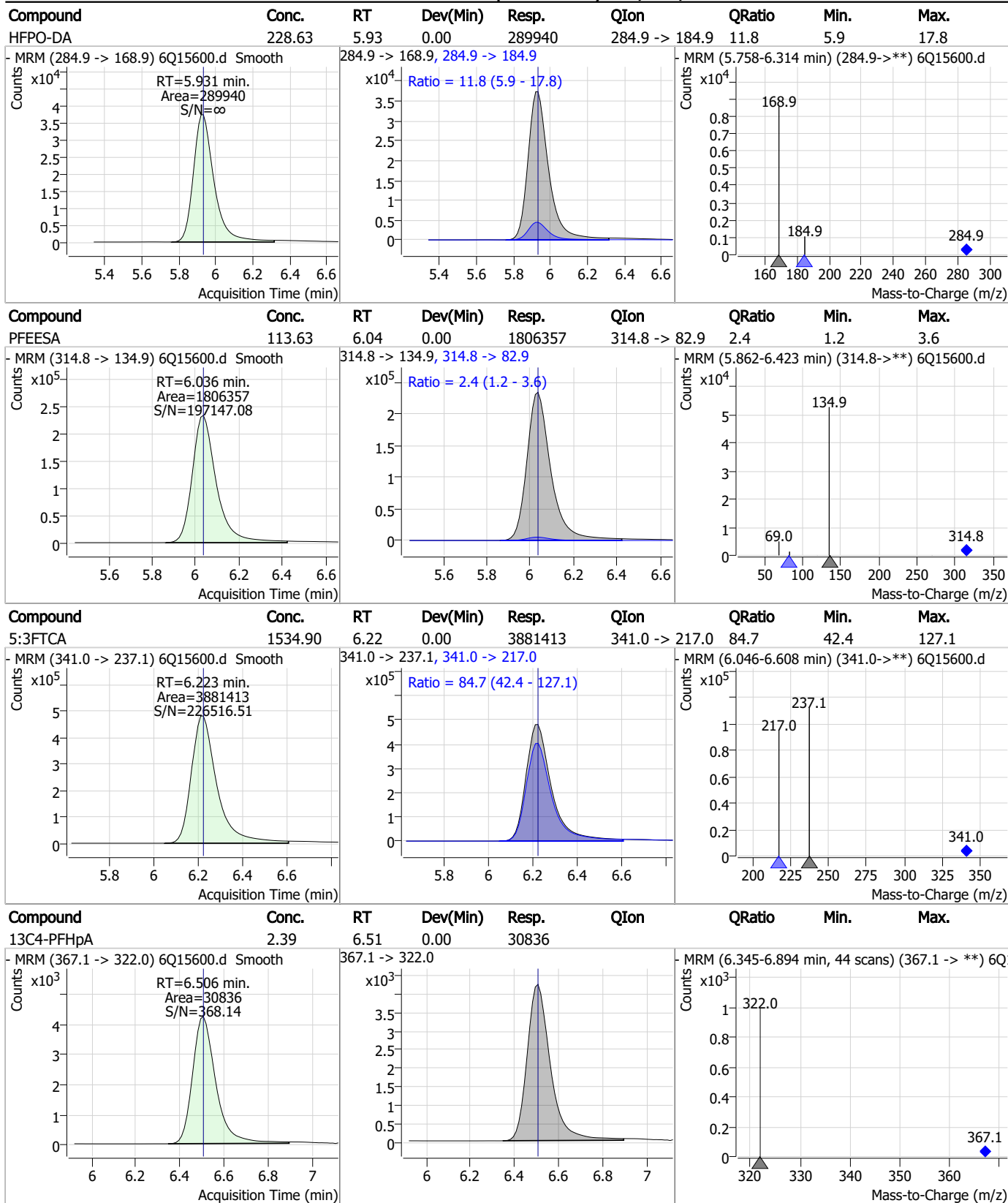
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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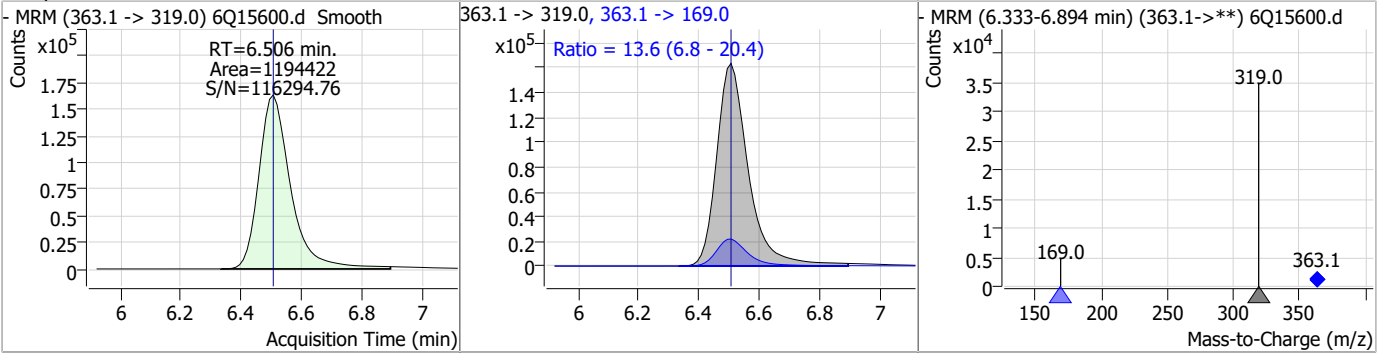
Perfluorinated Compounds by LC/MS/MS



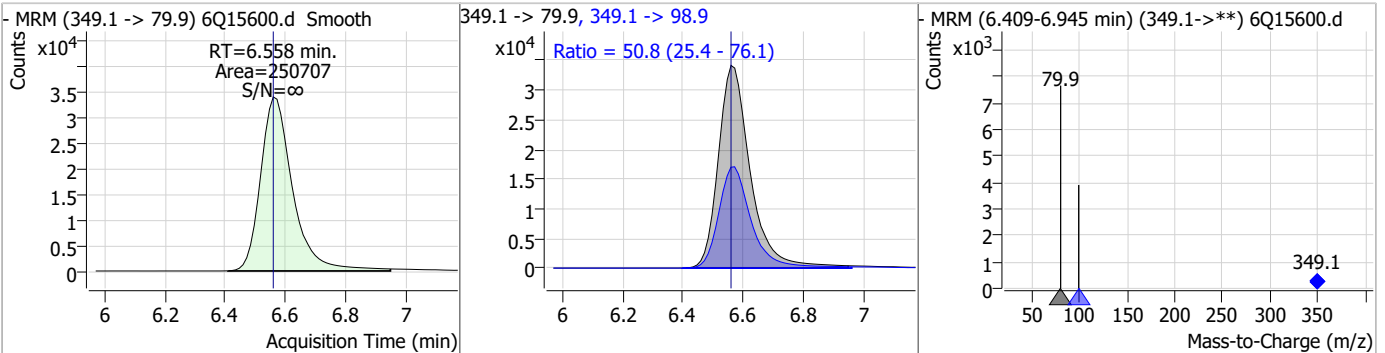
7.7.9
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Perfluorinated Compounds by LC/MS/MS

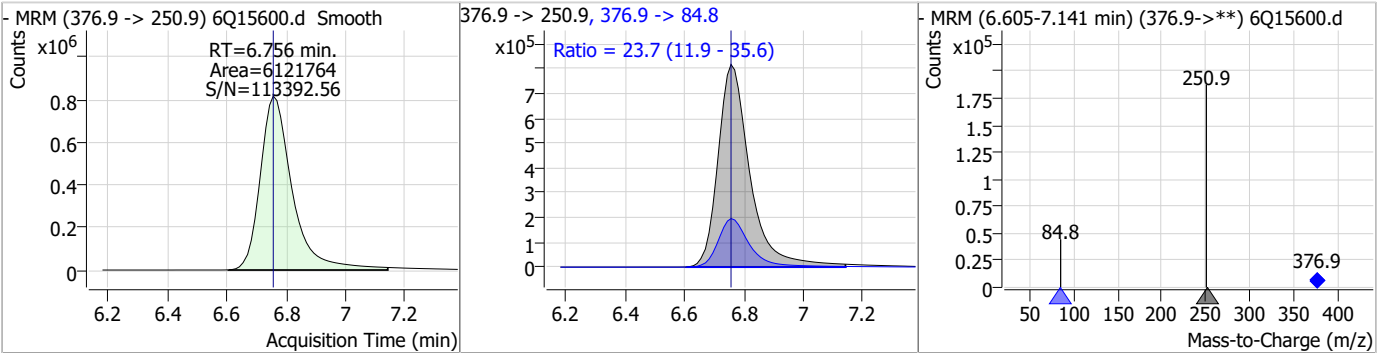
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	66.24	6.51	0.00	1194422	363.1 -> 169.0	13.6	6.8	20.4



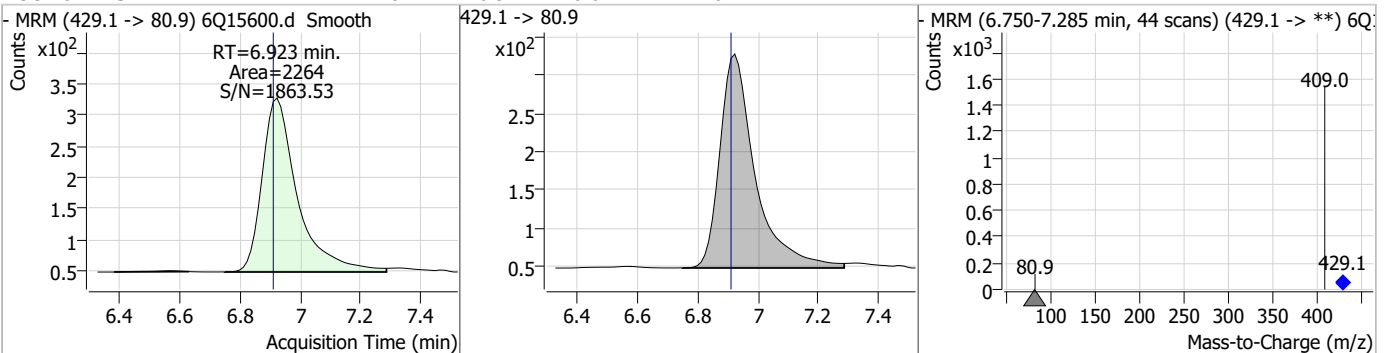
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	62.81	6.56	0.00	250707	349.1 -> 98.9	50.8	25.4	76.1



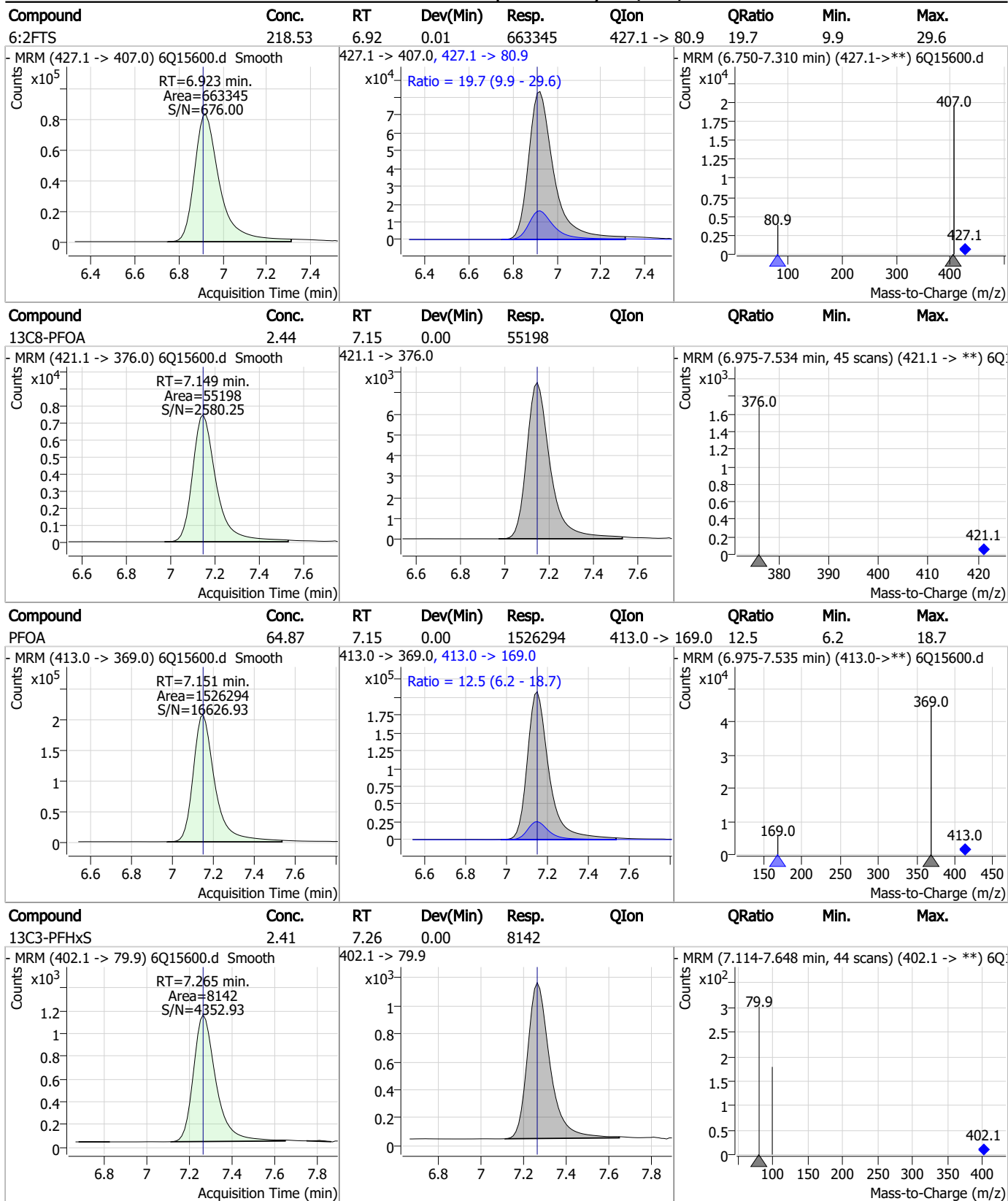
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	211.00	6.76	0.00	6121764	376.9 -> 84.8	23.7	11.9	35.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.28	6.92	0.01	2264	429.1 -> 80.9			



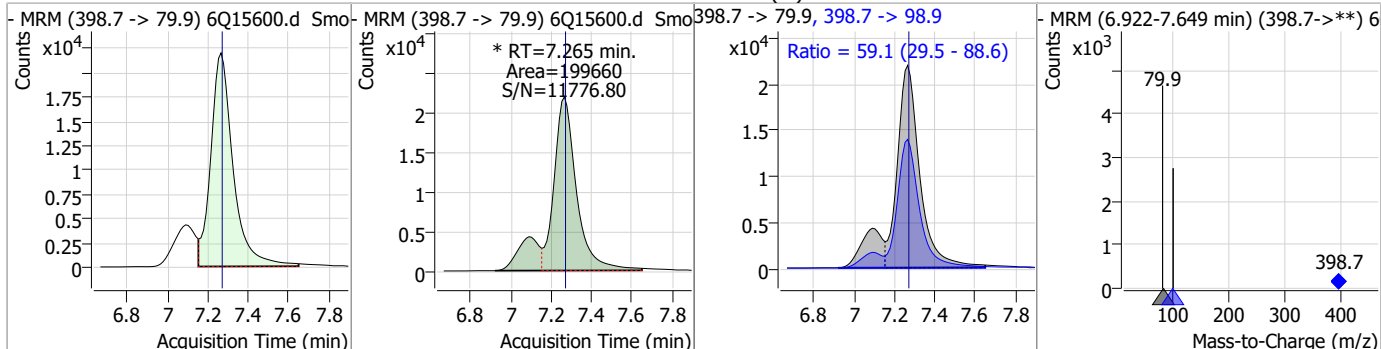
Perfluorinated Compounds by LC/MS/MS



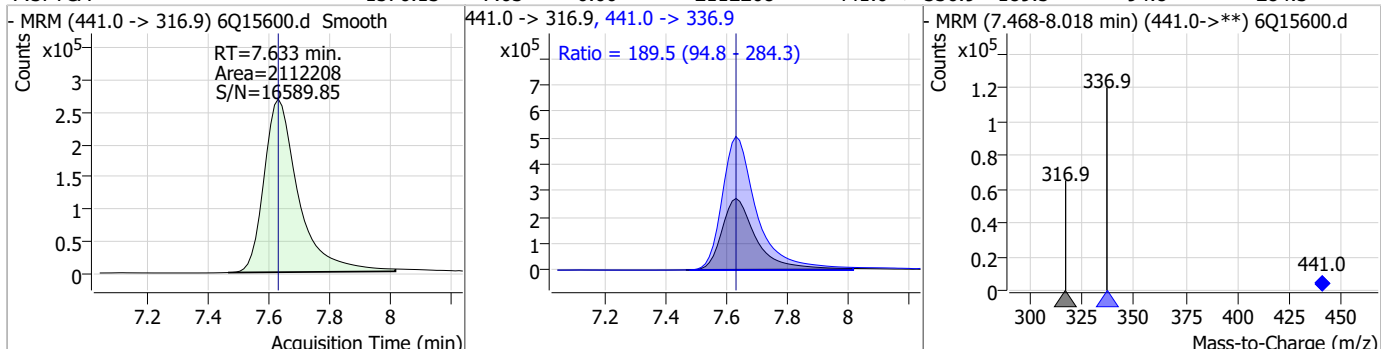
7.7.9

Perfluorinated Compounds by LC/MS/MS

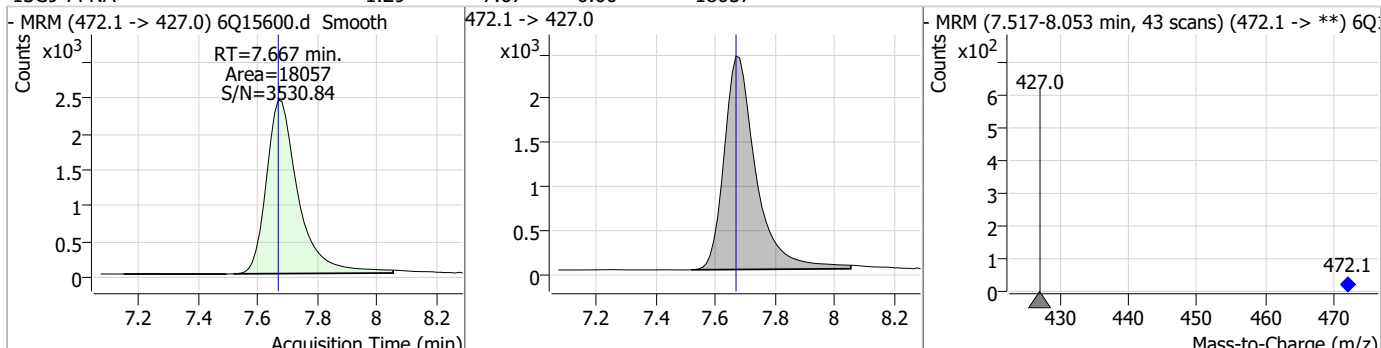
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	57.28	7.27	0.00	199660 (m)	398.7 -> 98.9	59.1	29.5	88.6



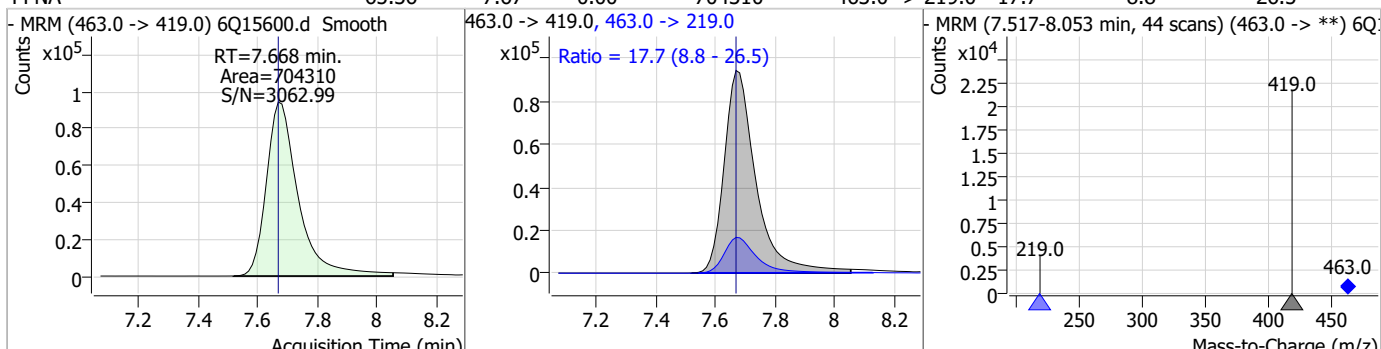
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1576.13	7.63	0.00	2112208	441.0 -> 336.9	189.5	94.8	284.3



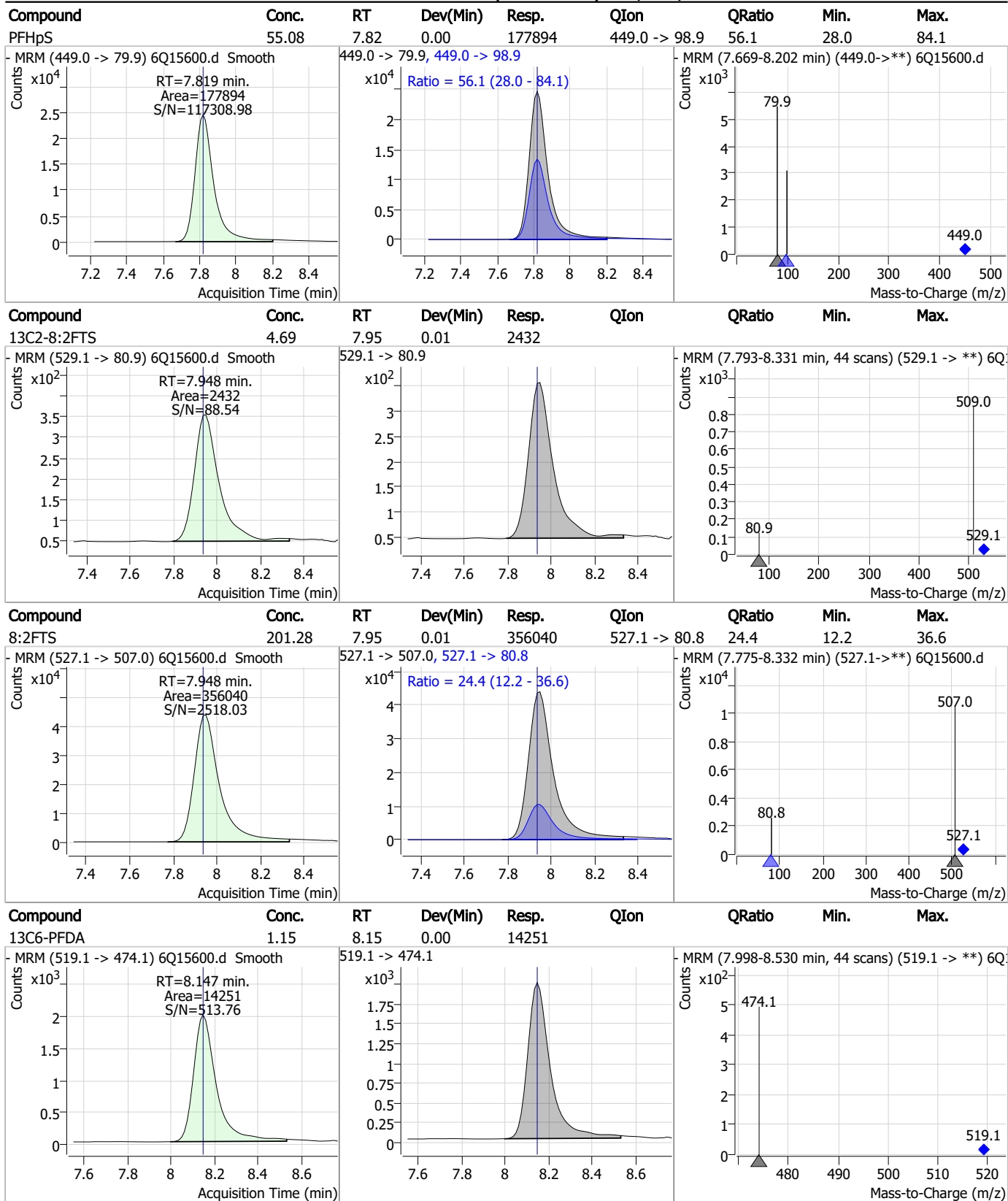
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.29	7.67	0.00	18057	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	65.36	7.67	0.00	704310	463.0 -> 219.0	17.7	8.8	26.5

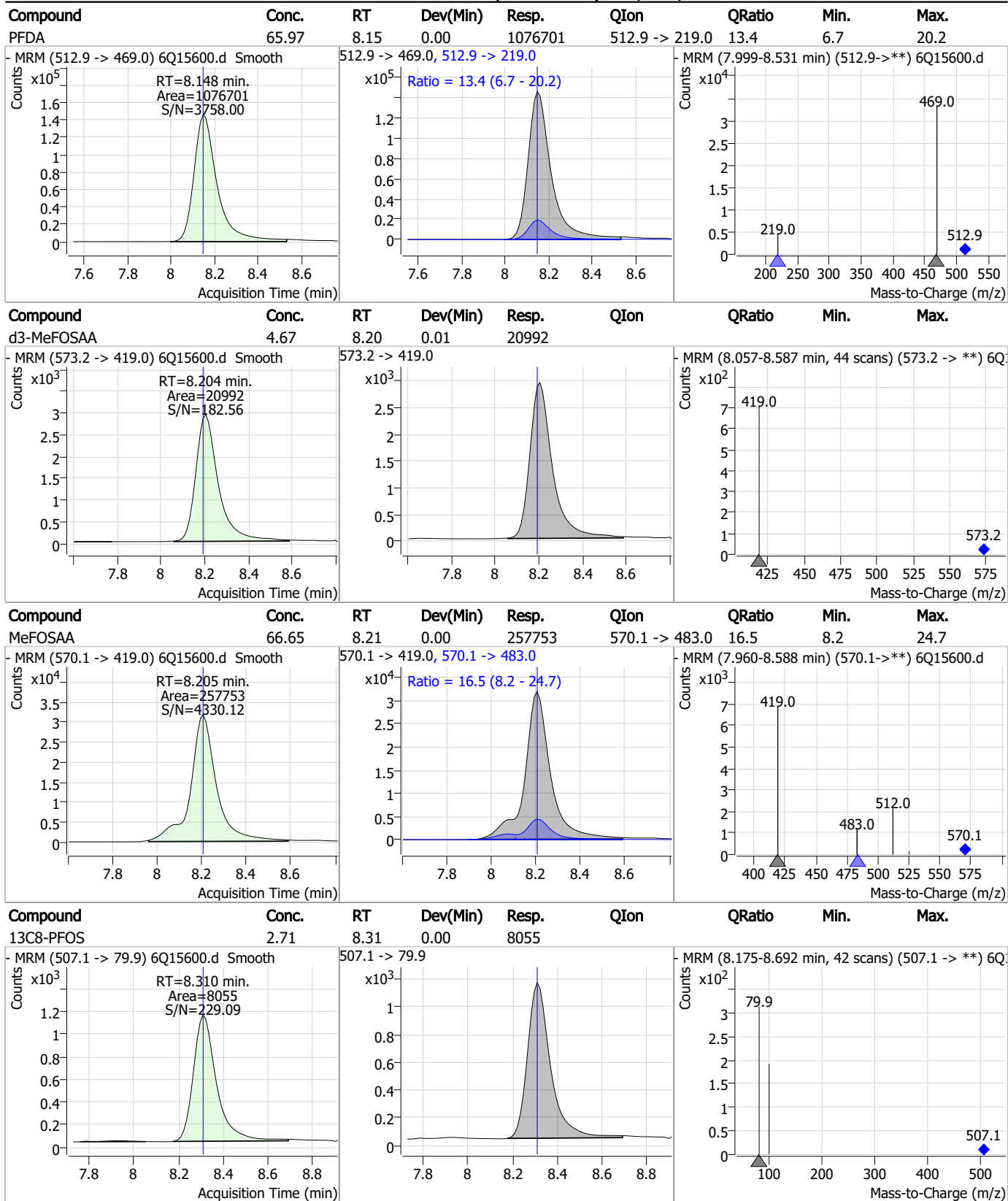


Perfluorinated Compounds by LC/MS/MS



7.7.9
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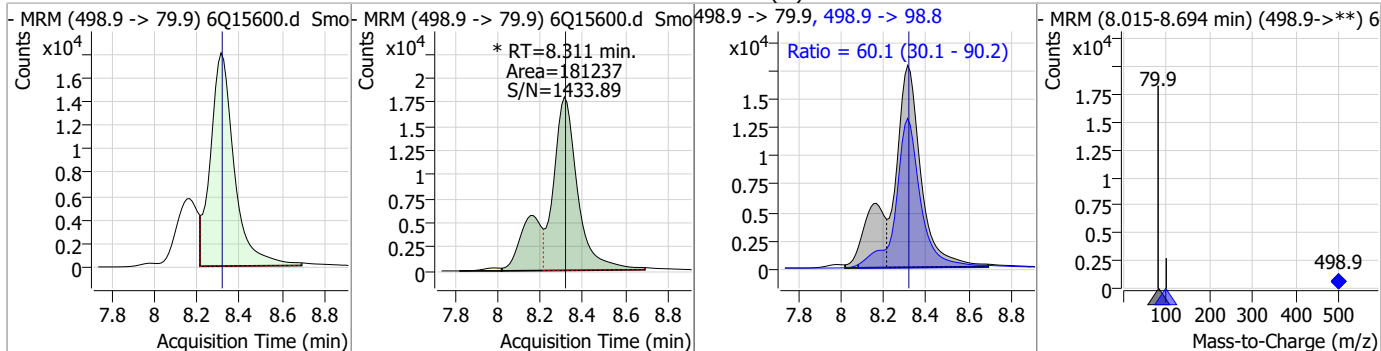
Perfluorinated Compounds by LC/MS/MS



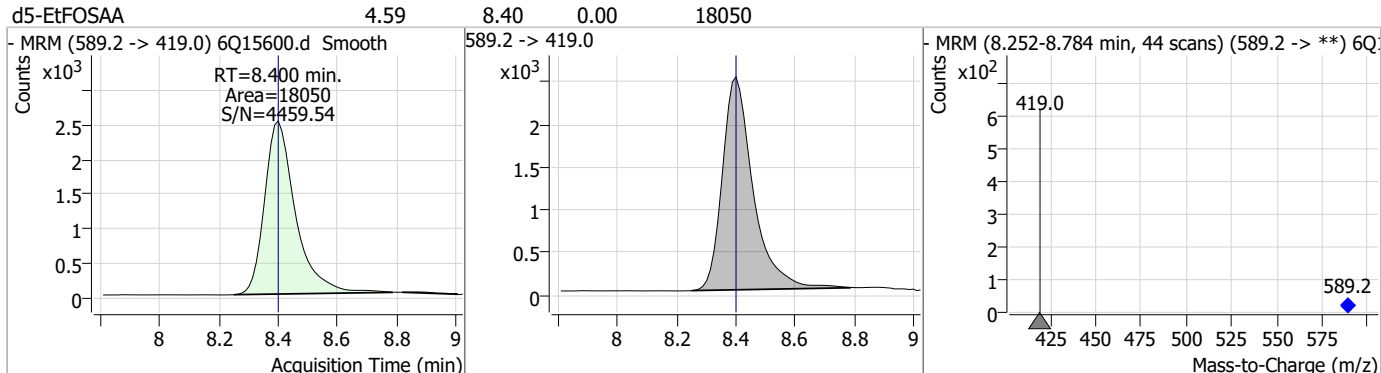
7.7.9
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Perfluorinated Compounds by LC/MS/MS

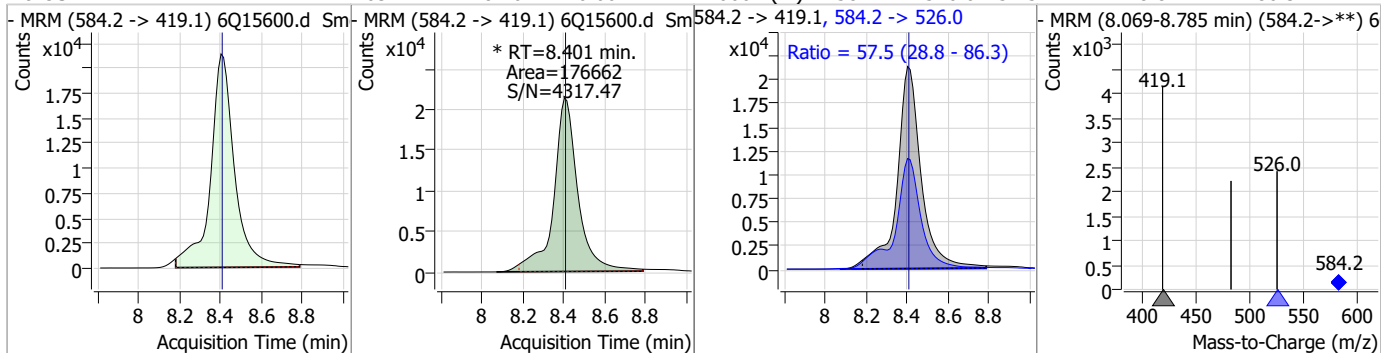
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	53.72	8.31	0.00	181237 (m)	498.9 -> 98.8	60.1	30.1	90.2



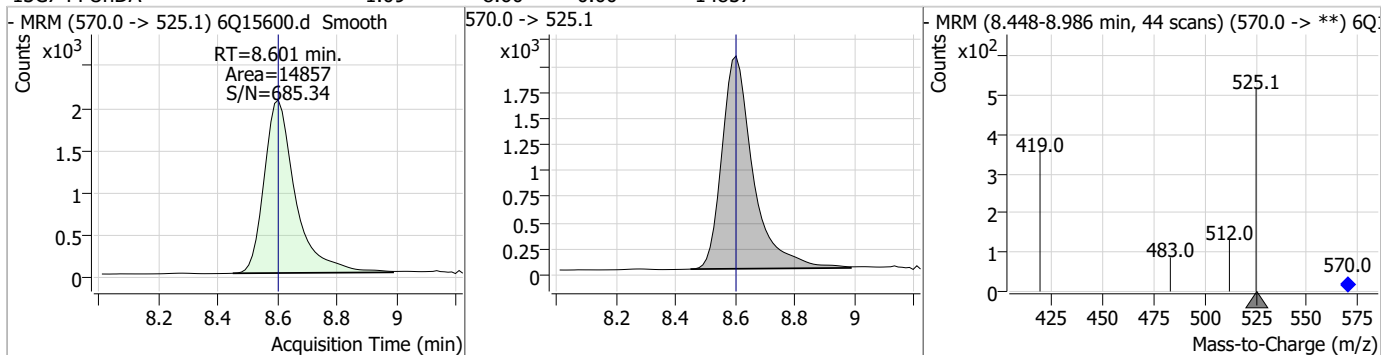
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.59	8.40	0.00	18050				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	63.47	8.40	0.00	176662 (m)	584.2 -> 526.0	57.5	28.8	86.3

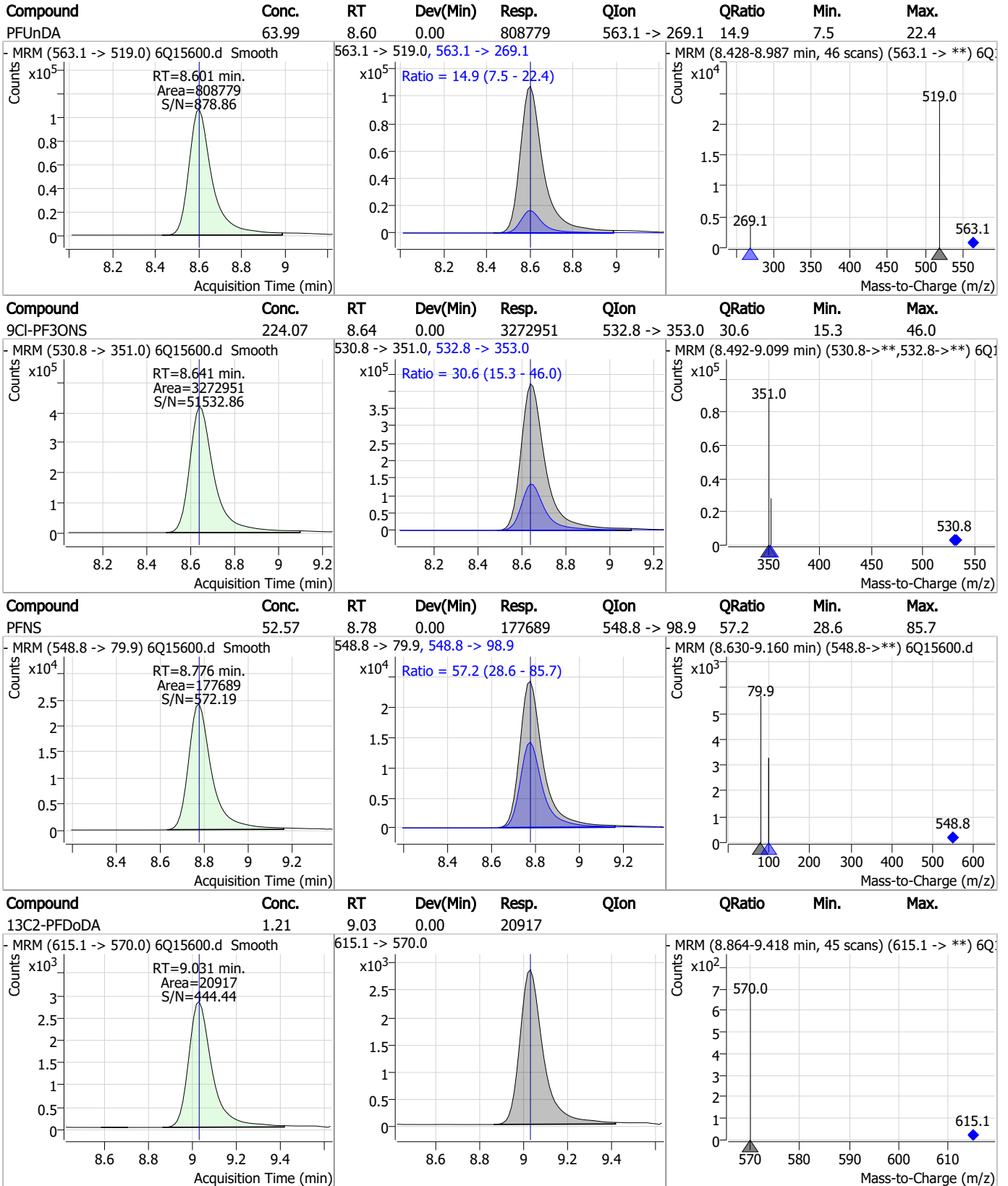


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.09	8.60	0.00	14857				



7.7.9
7

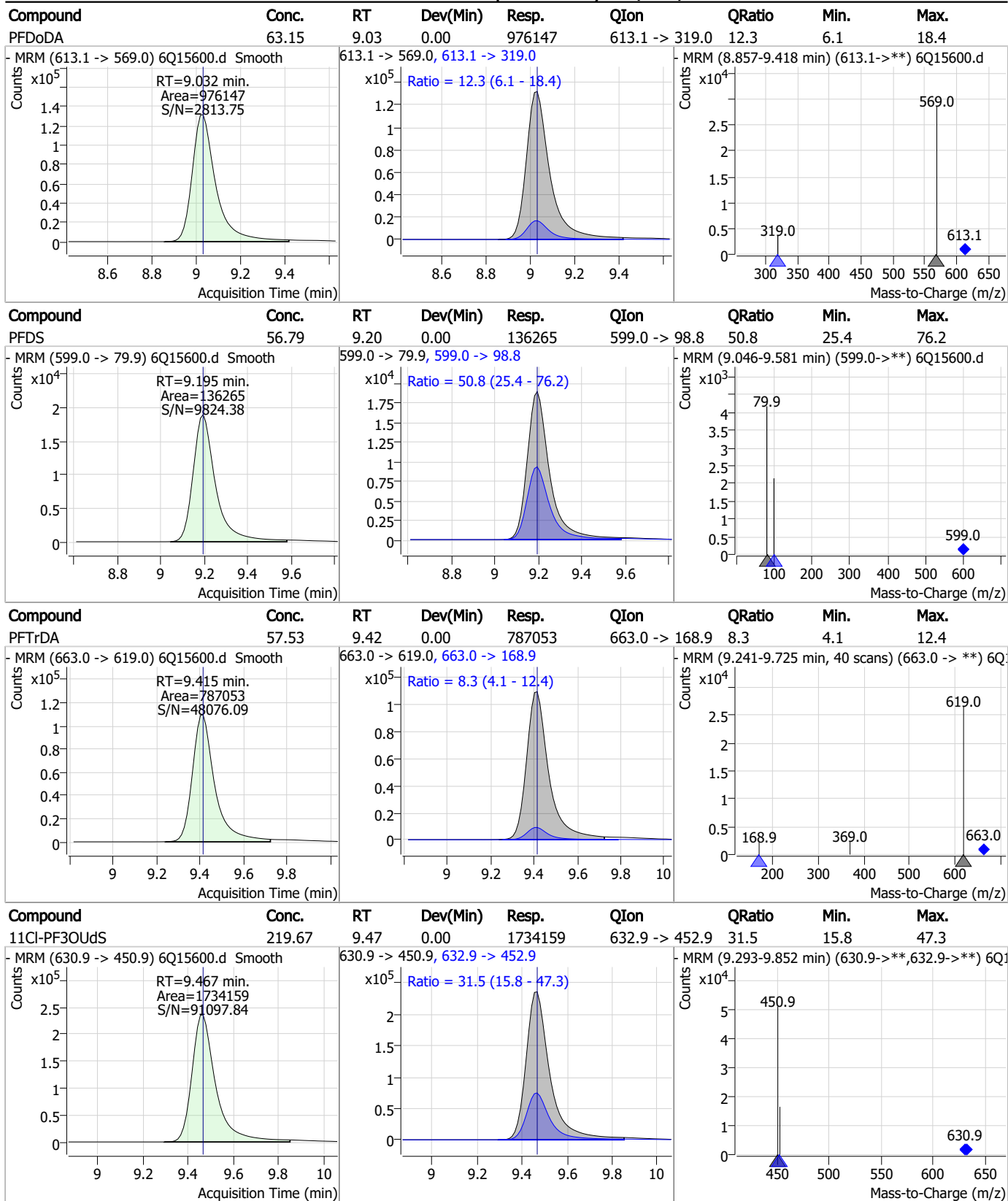
Perfluorinated Compounds by LC/MS/MS



7.7.9

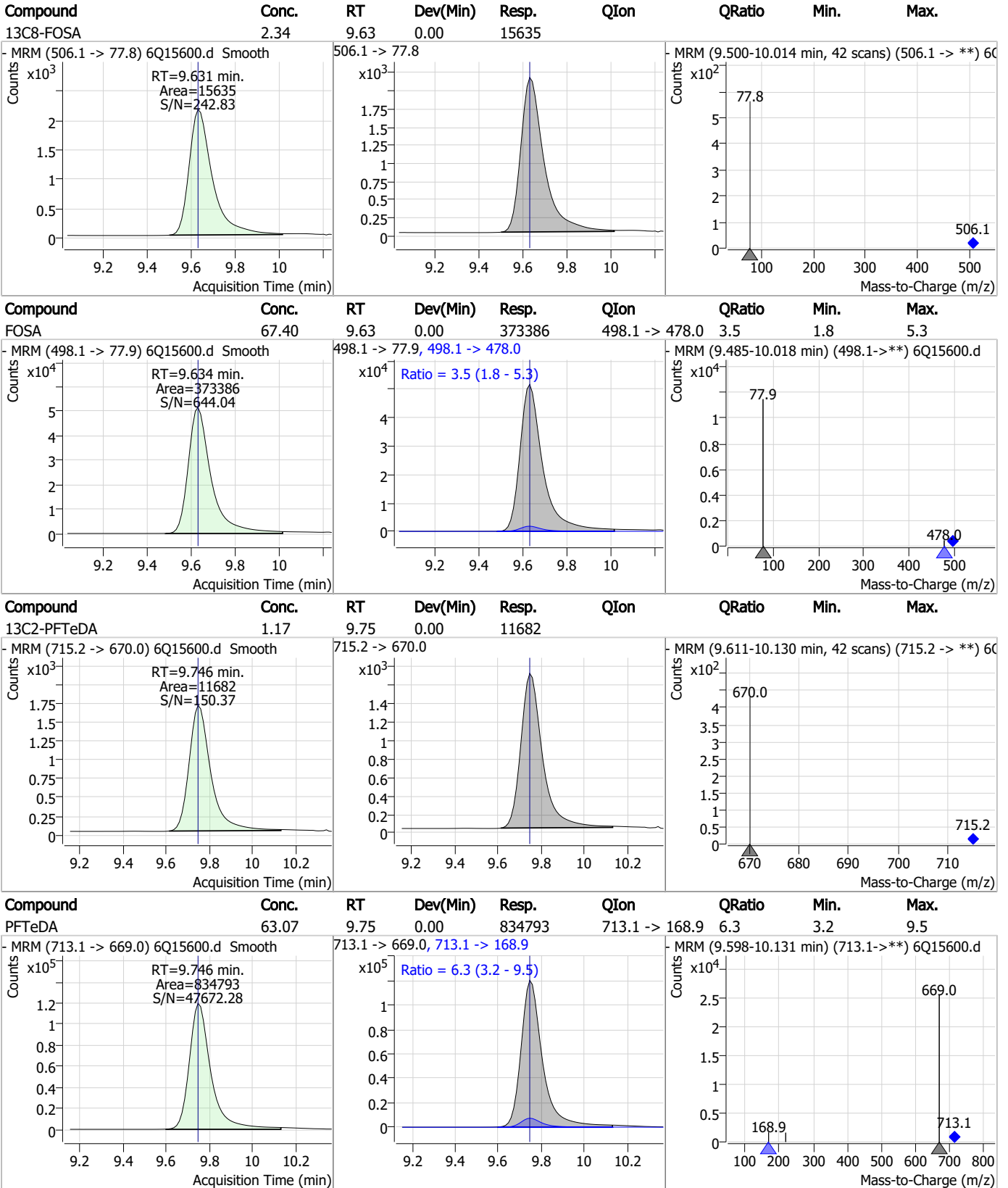
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Perfluorinated Compounds by LC/MS/MS



7.7.9
7

Perfluorinated Compounds by LC/MS/MS

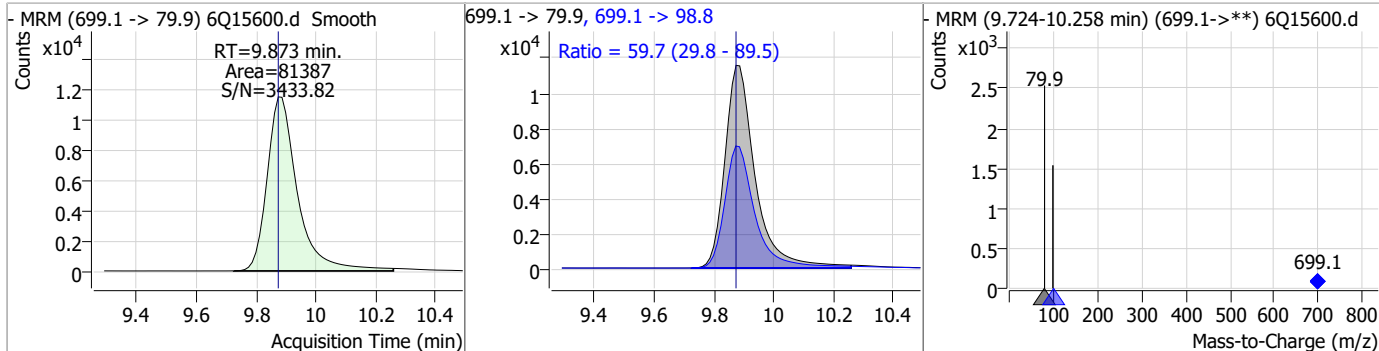


7.7.9

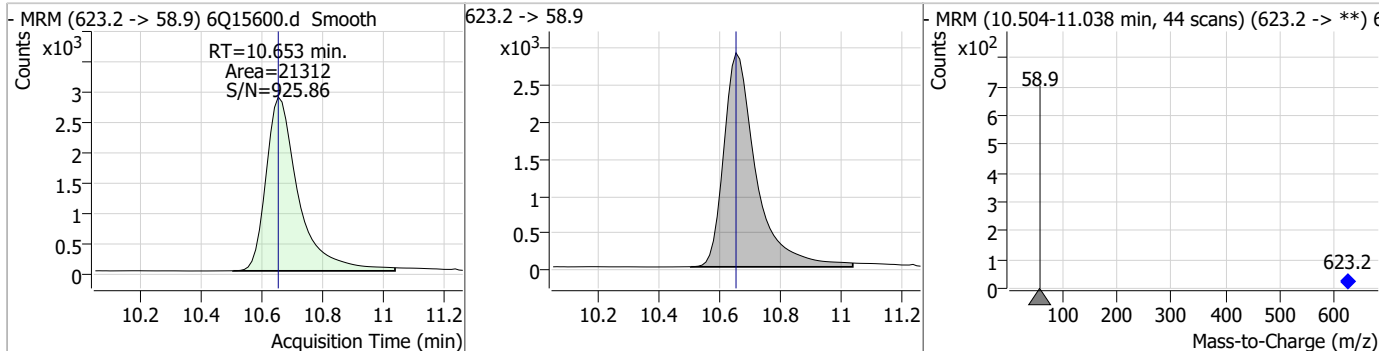
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Perfluorinated Compounds by LC/MS/MS

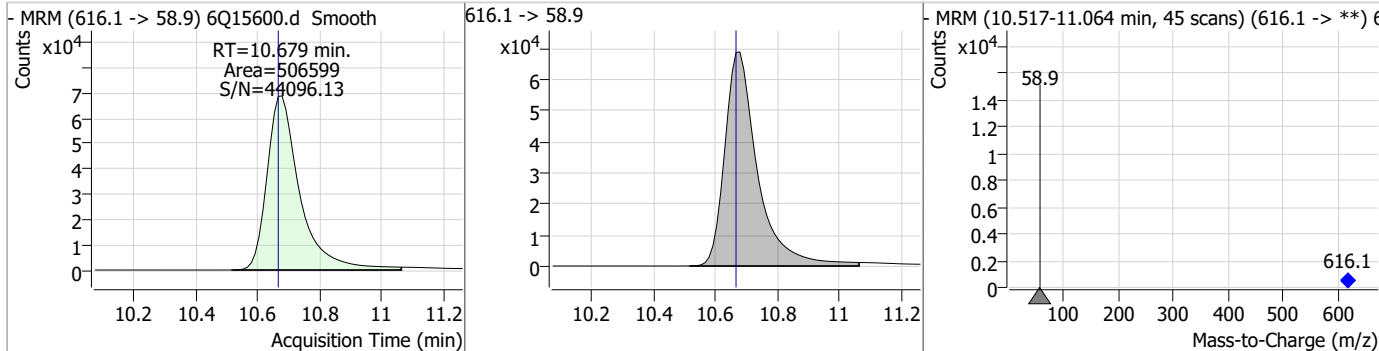
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	56.16	9.87	0.00	81387	699.1 -> 98.8	59.7	29.8	89.5



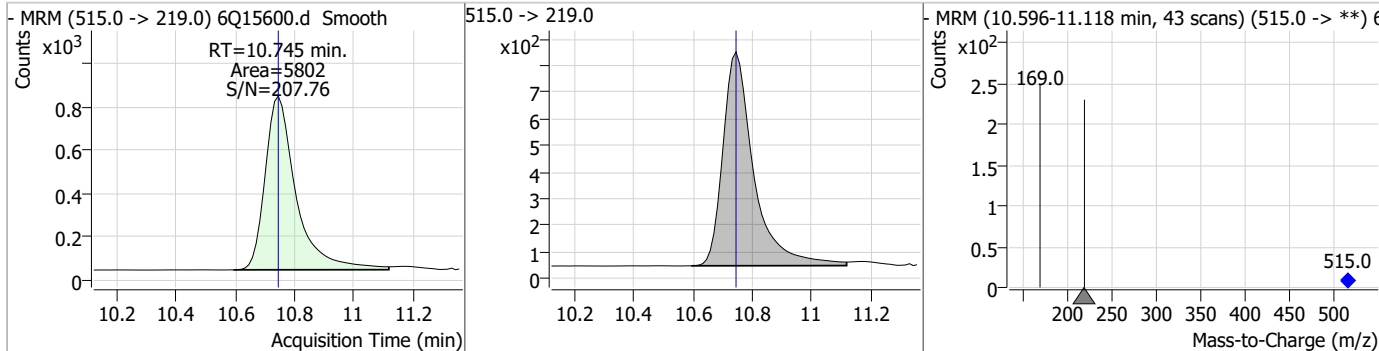
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.26	10.65	0.00	21312				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	658.29	10.68	0.01	506599				

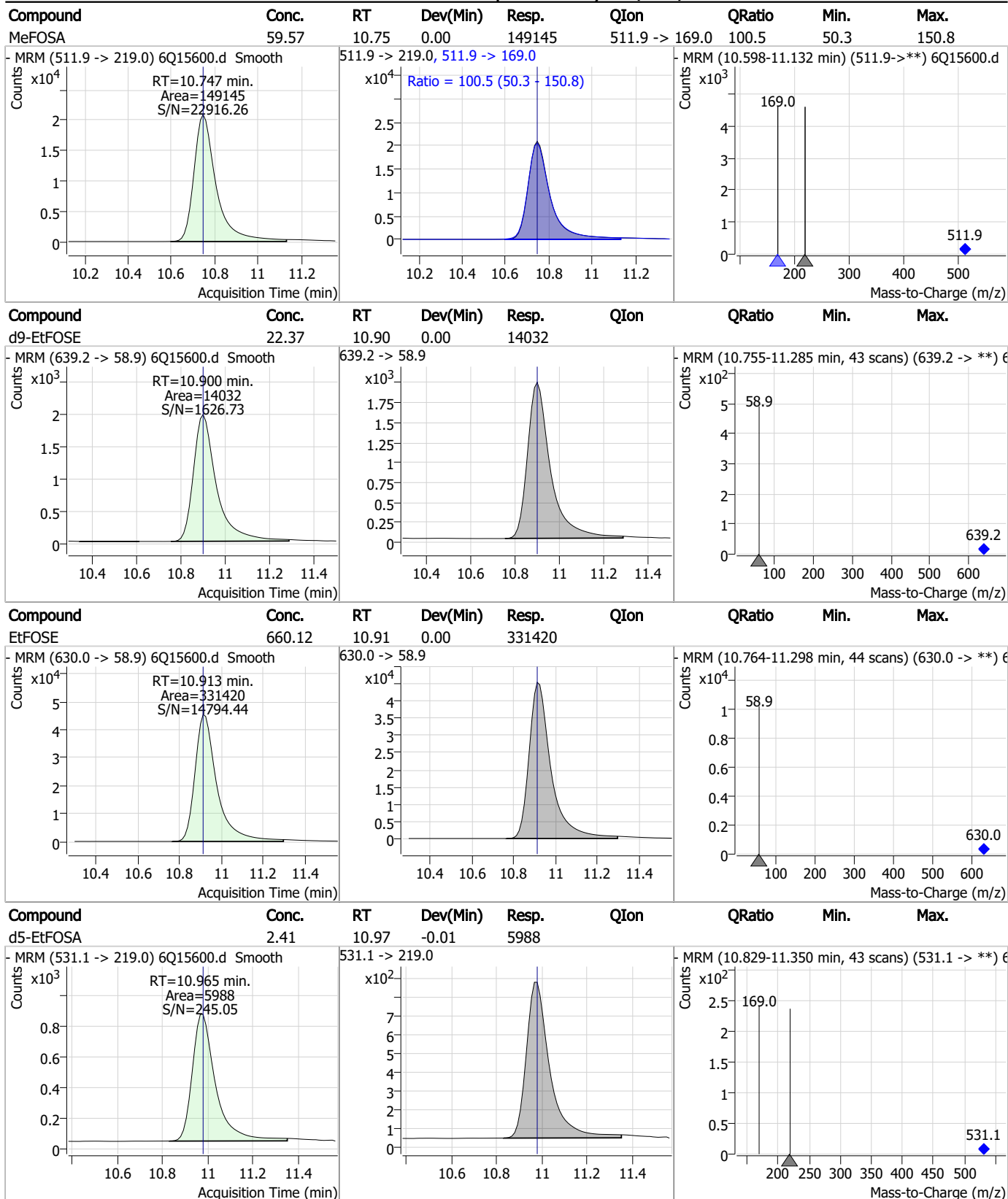


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.62	10.75	0.00	5802				



7.7.9
7

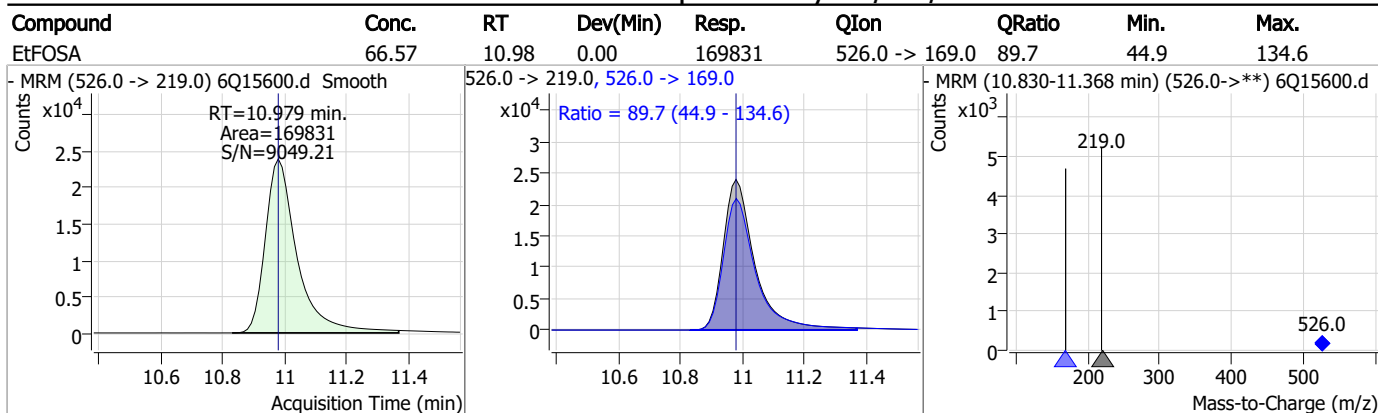
Perfluorinated Compounds by LC/MS/MS



7.7.9

7

Perfluorinated Compounds by LC/MS/MS



7.7.9
7

Manual Integration Approval Summary

Sample Number: S6Q235-IC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15600.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 17:58 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.9.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15602.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 6:26:45 PM
 Sample Name : icv235-4
 Vial : P1-B1
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	75671	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	36722	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	32684	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	34694	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	60990	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	17669	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15040	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	17285	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	21459	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	13107	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	16533	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13371	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8668	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8055	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2067	5.00 µg/L	0.000
M2-6:2FTS	6.923	429.1 -> 80.9	2735	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2871	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22917	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	13975	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	20734	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	26354	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16690	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6403	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5461	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9512	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33287	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5927	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	73493	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	20402	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19881	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	32720	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2067	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C2-6:2FTS	6.923	429.1 -> 80.9	2735	5.22 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2871	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-PFDoDA	9.031	615.1 -> 570.0	21459	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-PFTeDA	9.746	715.2 -> 670.0	13107	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.2%		
13C3-PFBS	5.483	302.1 -> 79.9	13371	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C3-PFHxS	7.265	402.1 -> 79.9	8668	2.59 µg/L	0.000

7.7.10
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 = 103.5%		
13C4-PFBA	2.913	216.8 -> 171.9	75671	9.84 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C4-PFHpA	6.506	367.1 -> 322.0	34694	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C5-PFHxA	5.553	318.0 -> 273.0	32684	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.5%		
13C5-PFPeA	4.347	268.3 -> 223.0	36722	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C6-PFDA	8.147	519.1 -> 474.1	15040	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C7-PFUnDA	8.601	570.0 -> 525.1	17285	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C8-FOSA	9.631	506.1 -> 77.8	16533	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.7%		
13C8-PFOA	7.149	421.1 -> 376.0	60990	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C8-PFOS	8.310	507.1 -> 79.9	8055	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C9-PFNA	7.667	472.1 -> 427.0	17669	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.1%		
d3-MeFOSAA	8.204	573.2 -> 419.0	22917	4.88 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	13975	9.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
d3-MeFOSA	10.745	515.0 -> 219.0	5461	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.5%		
d5-EtFOSAA	8.400	589.2 -> 419.0	20734	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
d7-MeFOSE	10.653	623.2 -> 58.9	26354	26.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
d9-EtFOSE	10.900	639.2 -> 58.9	16690	25.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
d5-EtFOSA	10.965	531.1 -> 219.0	6403	2.46 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	42427	9.83 µg/L	98
		327.1 -> 80.9	9936		
6:2FTS	6.923	427.1 -> 407.0	37461	10.21 µg/L	99
		427.1 -> 80.9	7499		
8:2FTS	7.936	527.1 -> 507.0	19508	9.34 µg/L	99
		527.1 -> 80.8	4873		
EtFOSAA	8.401	584.2 -> 419.1	7836	2.45 µg/L	95
		584.2 -> 526.0	4194		
FOSA	9.634	498.1 -> 77.9	15158	2.59 µg/L	100
		498.1 -> 478.0	555		
MeFOSAA	8.205	570.1 -> 419.0	10770	2.55 µg/L	96
		570.1 -> 483.0	1962		
PFBA	2.919	212.8 -> 168.9	17113	9.95 µg/L	100
PFBS	5.484	298.7 -> 79.9	10287	1.99 µg/L	96
		298.7 -> 98.8	5104		
PFDA	8.148	512.9 -> 469.0	41228	2.39 µg/L	97
		512.9 -> 219.0	5962		
PFDODA	9.032	613.1 -> 569.0	39674	2.50 µg/L	99
		613.1 -> 319.0	4958		
PFDS	9.195	599.0 -> 79.9	5467	2.28 µg/L	94

7.7.10
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.506	599.0 -> 98.8	2987	2.43	µg/L	100
		363.1 -> 319.0	49382			
PFHpS	7.819	363.1 -> 169.0	6667	2.18	µg/L	94
		449.0 -> 79.9	7054			
PFHxA	5.556	449.0 -> 98.9	4258	2.49	µg/L	100
		313.0 -> 269.0	29303			
PFHxS	7.265	313.0 -> 118.9	1188	2.30	µg/L	m
		398.7 -> 79.9	8526			
PFNA	7.668	398.7 -> 98.9	4878	2.73	µg/L	96
		463.0 -> 419.0	28817			
PFNS	8.776	463.0 -> 219.0	5620	2.34	µg/L	100
		548.8 -> 79.9	7908			
PFOA	7.151	548.8 -> 98.9	4503	2.40	µg/L	97
		413.0 -> 369.0	62286			
PFOS	8.311	413.0 -> 169.0	8511	2.05	µg/L	m
		498.9 -> 79.9	6920			
PFPeA	4.349	498.9 -> 98.8	4511	4.86	µg/L	100
		263.0 -> 219.0	37865			
PFPeS	6.558	349.1 -> 79.9	10490	2.47	µg/L	98
		349.1 -> 98.9	5449			
PFTeDA	9.746	713.1 -> 669.0	34506	2.32	µg/L	100
		713.1 -> 168.9	2170			
PFTrDA	9.415	663.0 -> 619.0	36107	2.57	µg/L	99
		663.0 -> 168.9	2902			
PFUnDA	8.601	563.1 -> 519.0	34013	2.31	µg/L	98
		563.1 -> 269.1	5329			
11CI-PF3OUdS	9.467	630.9 -> 450.9	76359	9.54	µg/L	99
		632.9 -> 452.9	23794			
9CI-PF3ONS	8.641	530.8 -> 351.0	139801	9.44	µg/L	99
		532.8 -> 353.0	41928			
ADONA	6.756	376.9 -> 250.9	273005	9.28	µg/L	99
		376.9 -> 84.8	63355			
HFPO-DA	5.931	284.9 -> 168.9	12069	9.39	µg/L	100
		284.9 -> 184.9	1438			
3:3FTCA	3.802	241.0 -> 177.0	4864	11.76	µg/L	100
		241.0 -> 117.0	707			
5:3FTCA	6.223	341.0 -> 237.1	171776	64.07	µg/L	97
		341.0 -> 217.0	150128			
7:3FTCA	7.633	441.0 -> 316.9	89493	62.99	µg/L	91
		441.0 -> 336.9	157504			
EtFOSA	10.979	526.0 -> 219.0	6617	2.43	µg/L	90
		526.0 -> 169.0	6554			
EtFOSE	10.913	630.0 -> 58.9	14505	24.29	µg/L	100
		511.9 -> 219.0	6104			
MeFOSA	10.747	511.9 -> 169.0	6111	2.59	µg/L	100
		616.1 -> 58.9	21899			
MeFOSE	10.666	699.1 -> 79.9	3308	23.01	µg/L	100
		699.1 -> 98.8	2131			
PFDoDS	9.873	295.0 -> 201.0	3543	2.28	µg/L	94
		295.0 -> 84.9	1585			
NFDHA	5.435	279.0 -> 85.1	11252	5.07	µg/L	99
		229.0 -> 84.9	10426			
PFMBA	4.762	314.8 -> 134.9	78406	4.70	µg/L	100
		314.8 -> 82.9	1811			
PFMPA	3.488			4.84	µg/L	100
PFEESA	6.036			4.65	µg/L	100

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



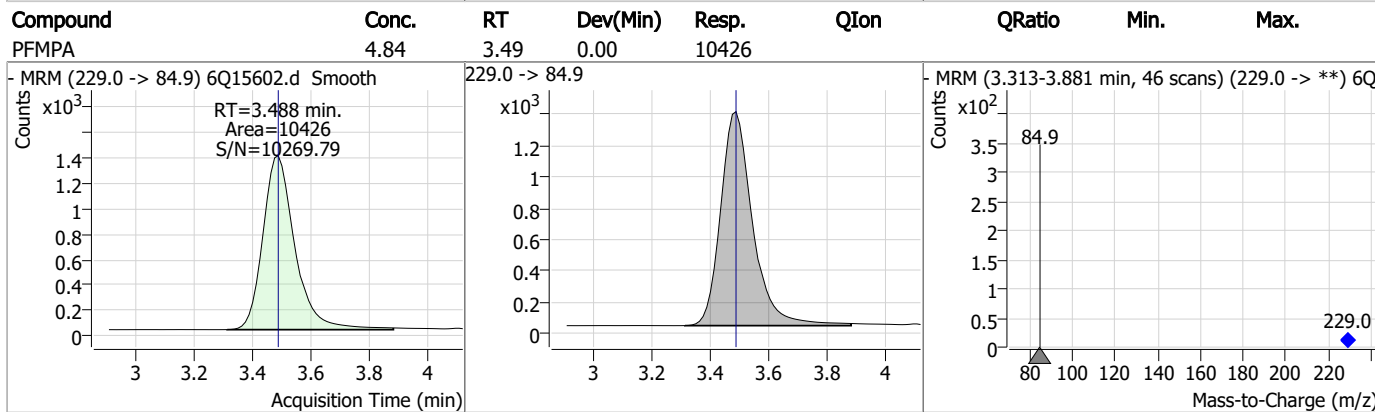
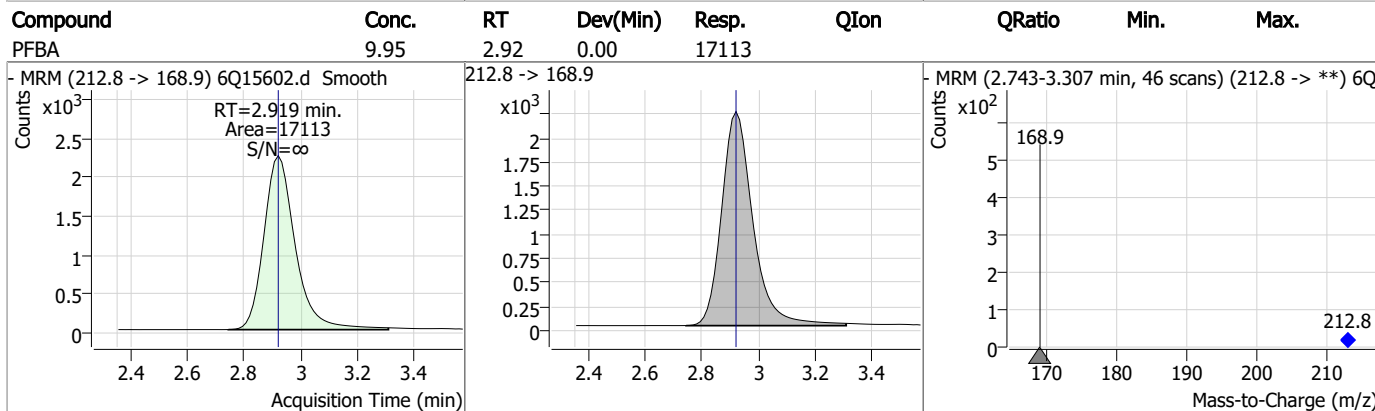
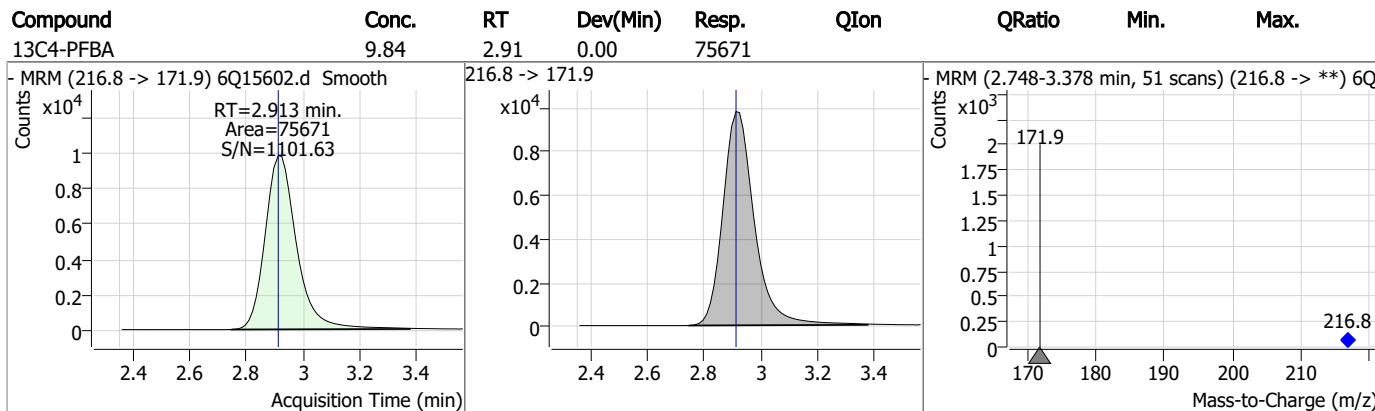
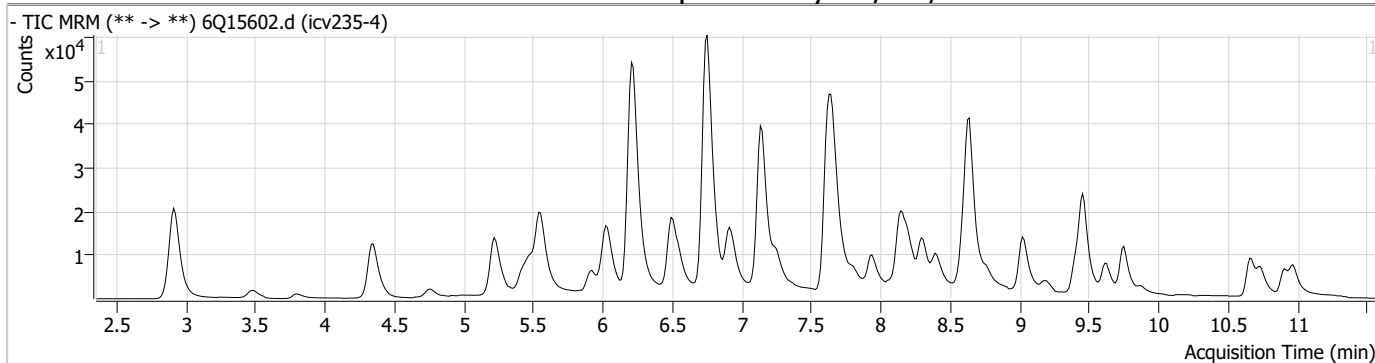
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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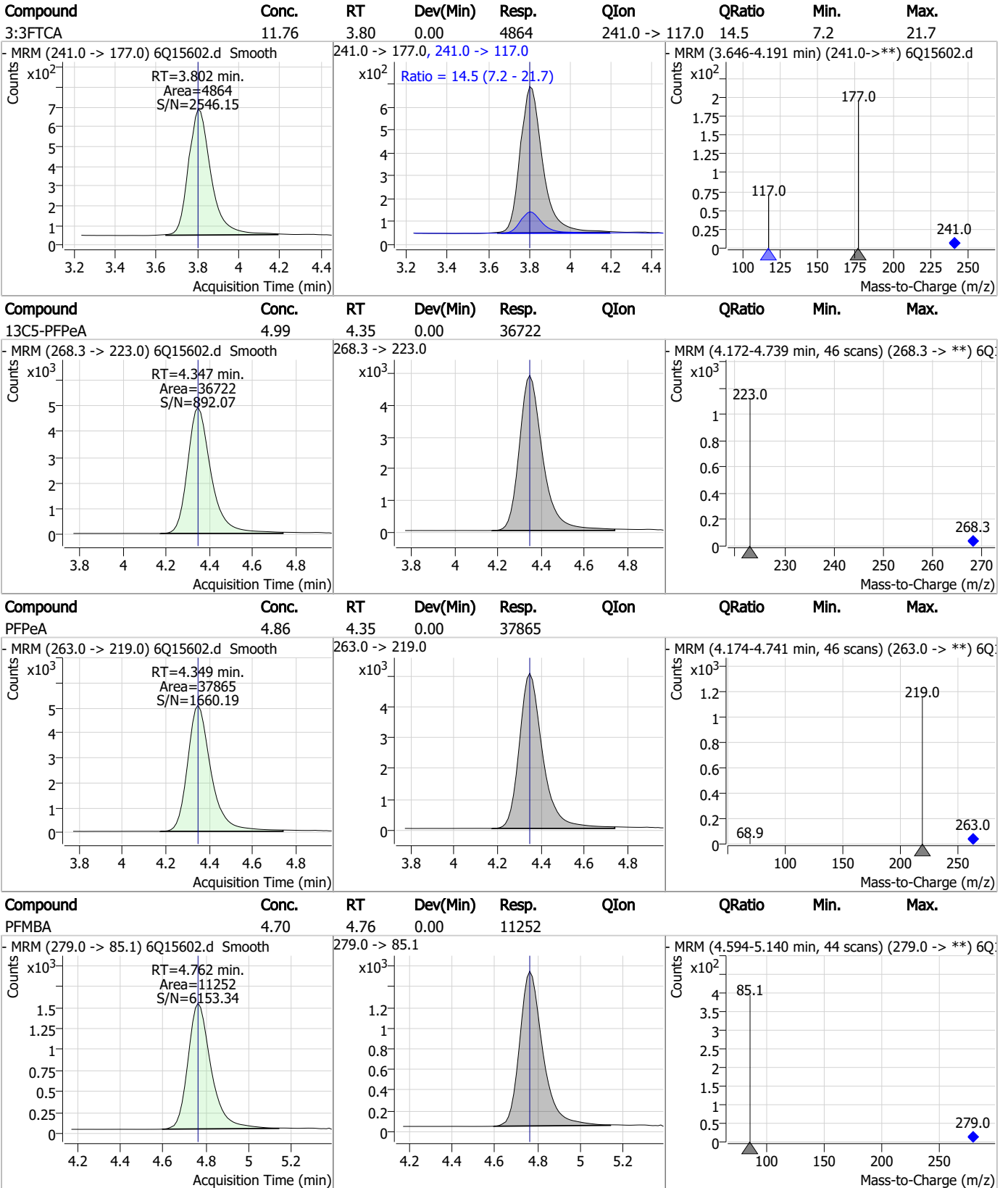
7.7.10

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Perfluorinated Compounds by LC/MS/MS



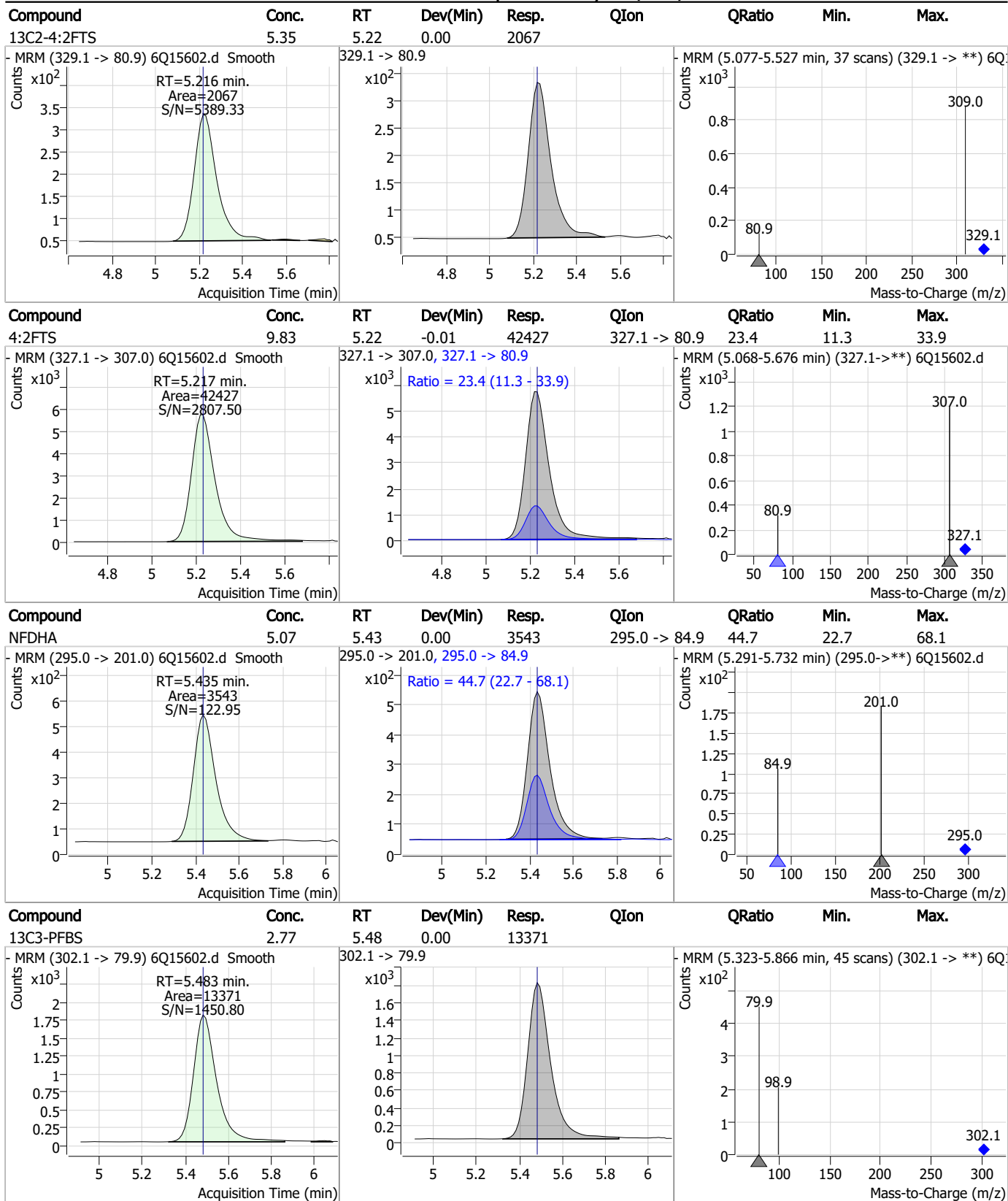
Perfluorinated Compounds by LC/MS/MS



7.7.10 7

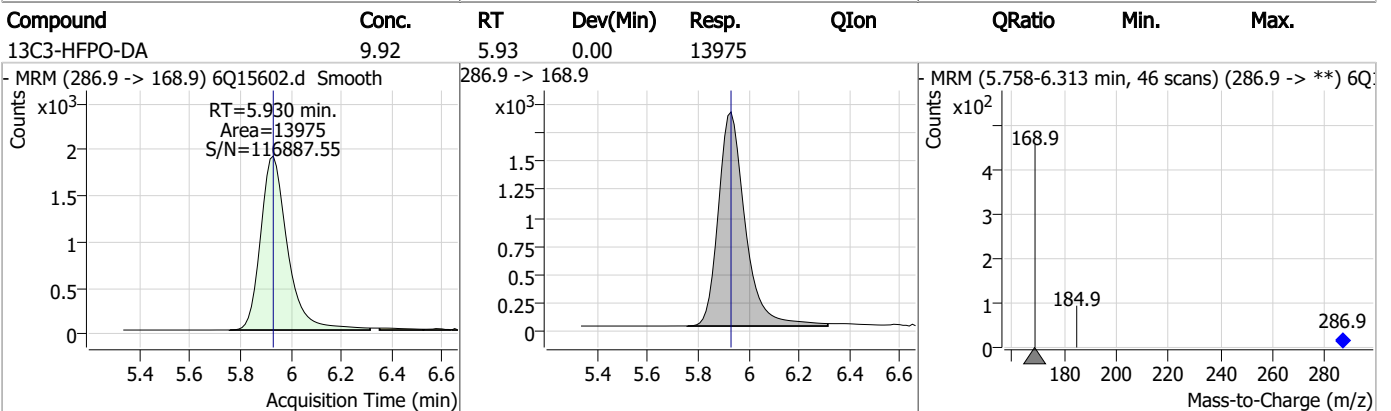
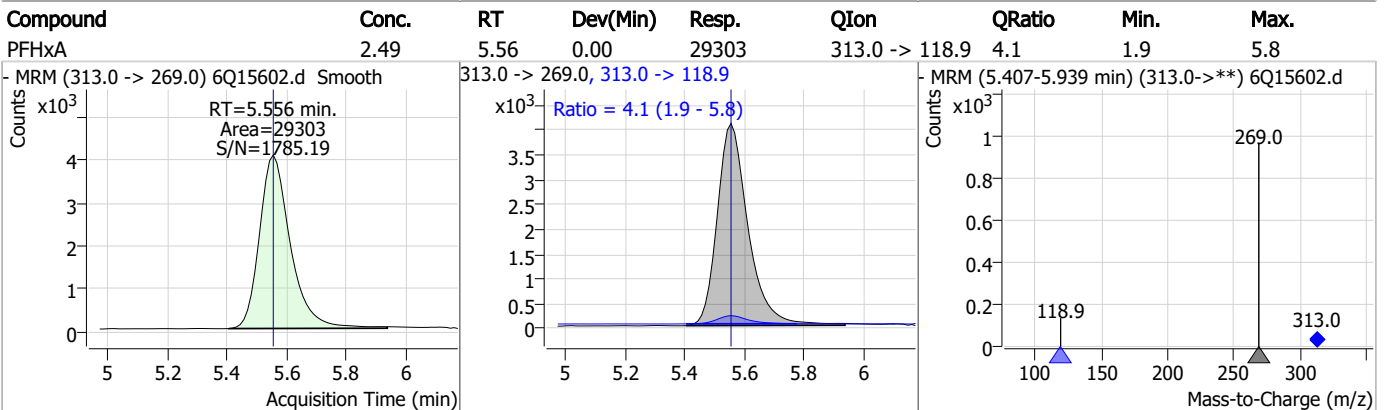
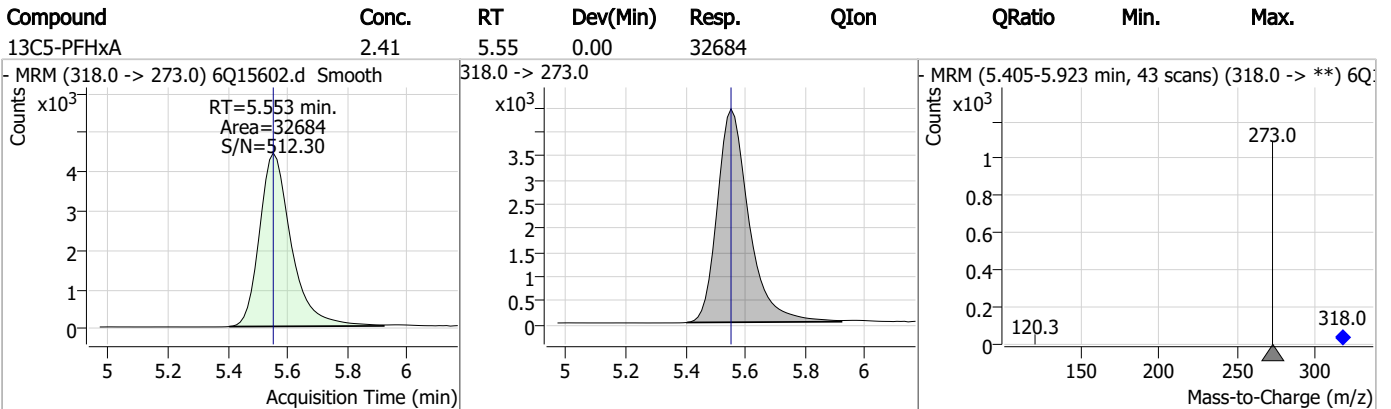
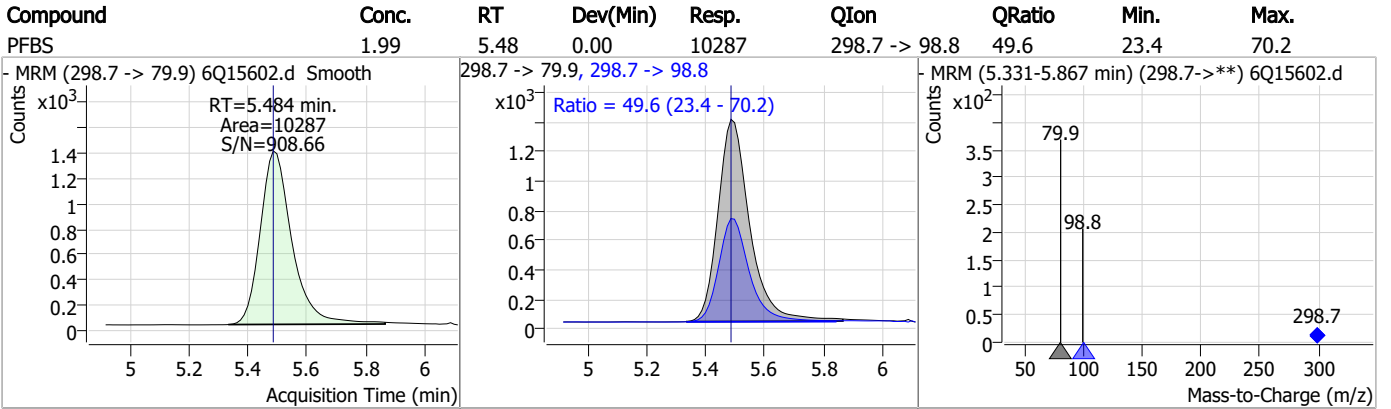


Perfluorinated Compounds by LC/MS/MS



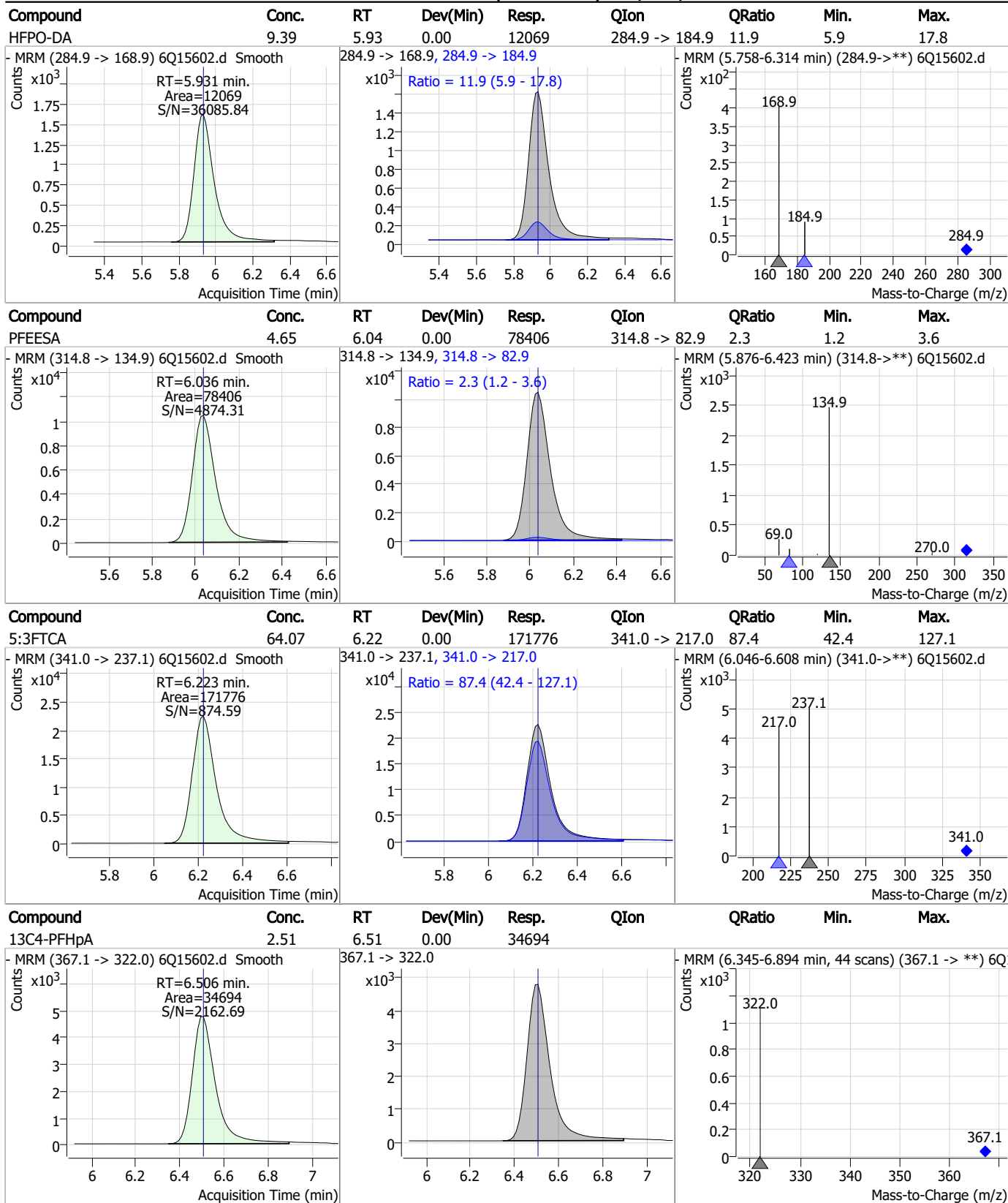
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



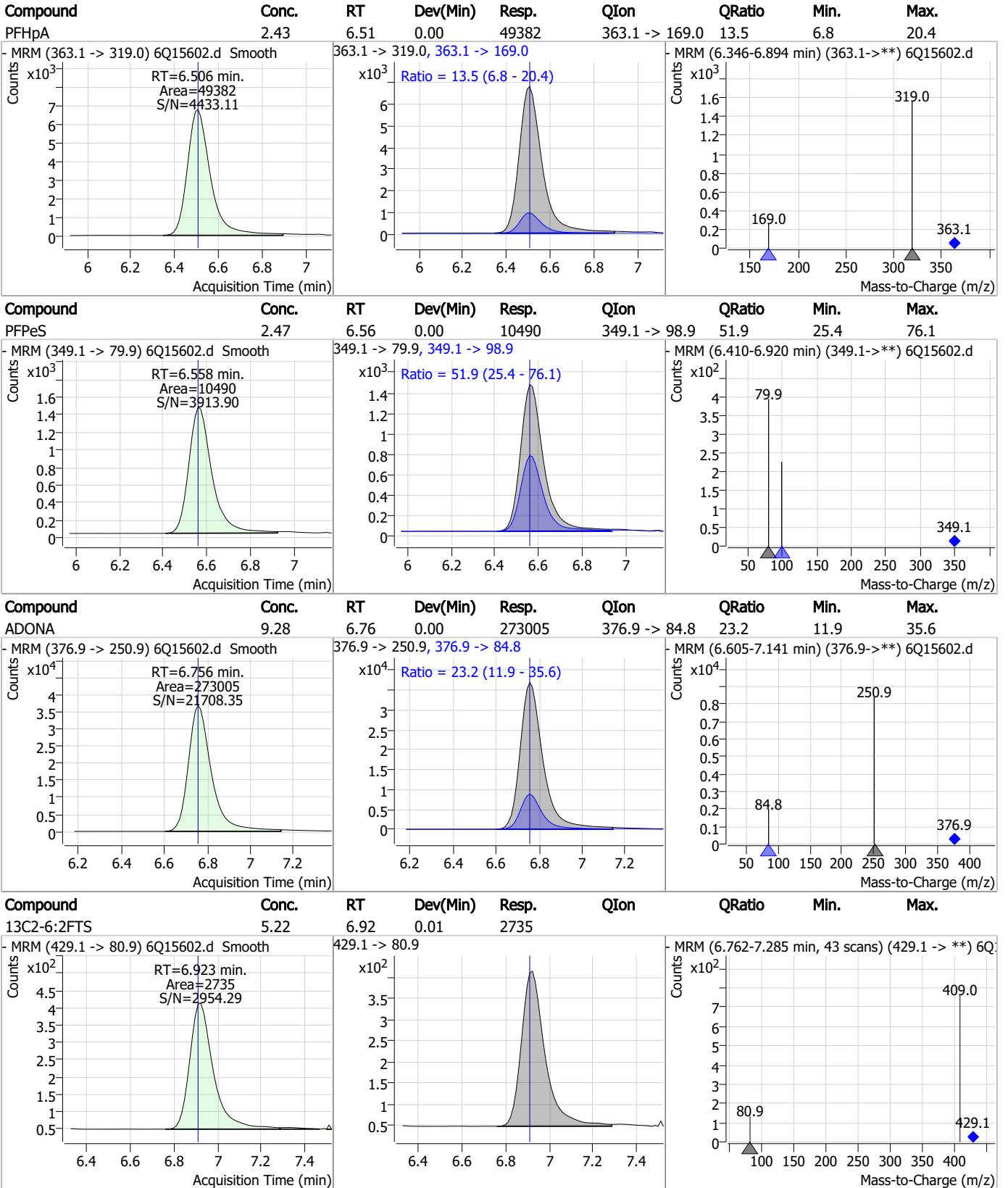
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

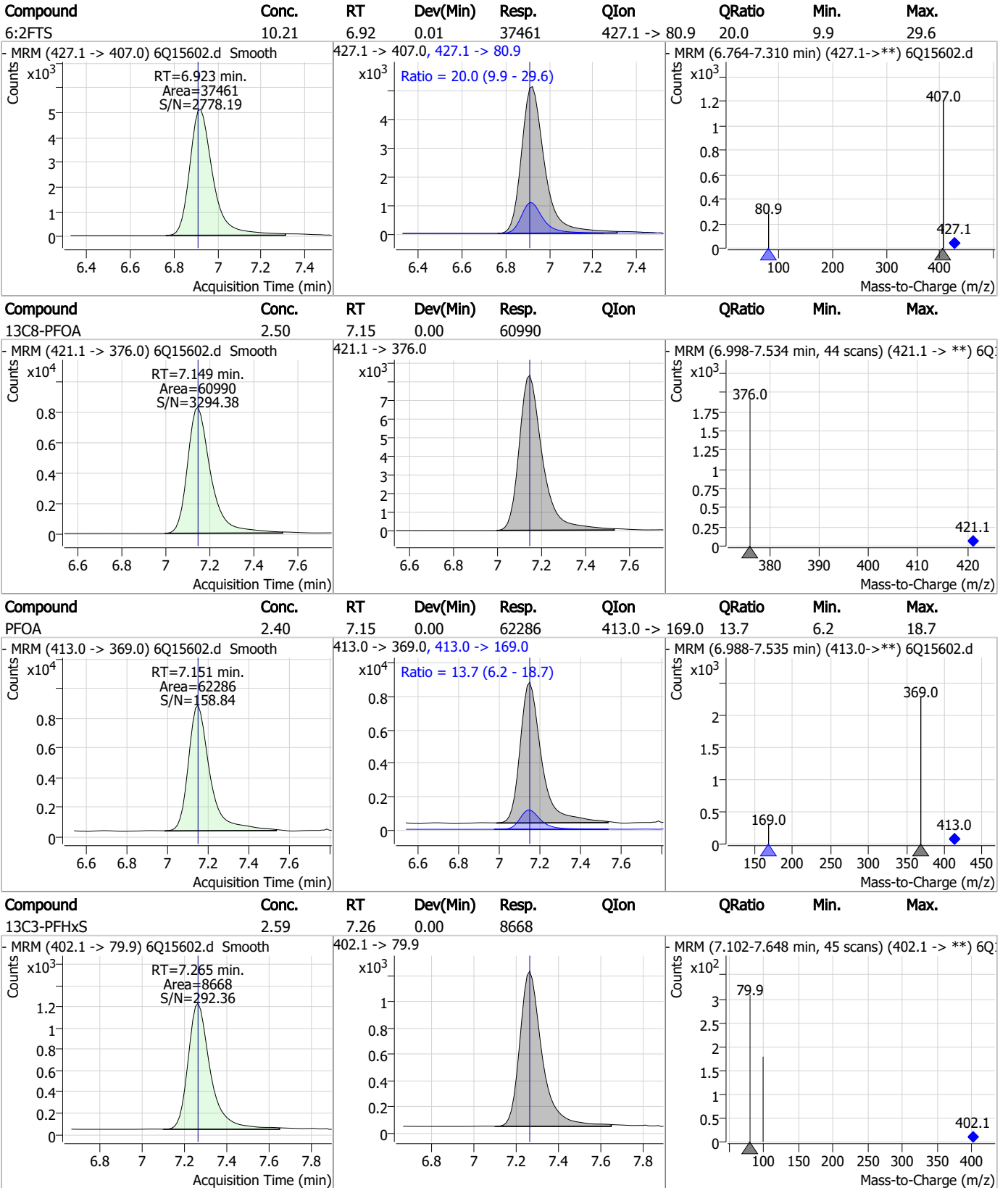
Perfluorinated Compounds by LC/MS/MS



7.7.10
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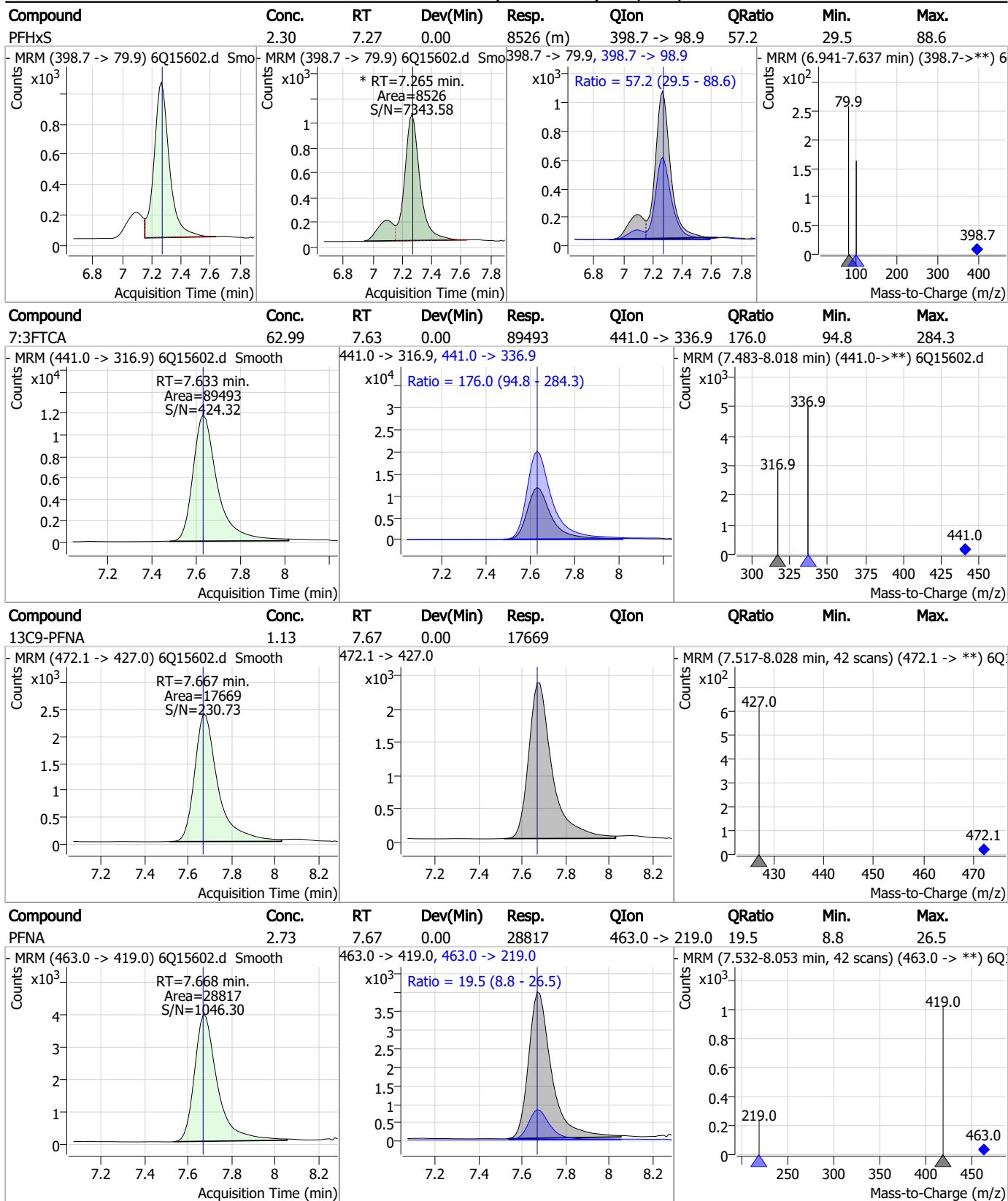


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



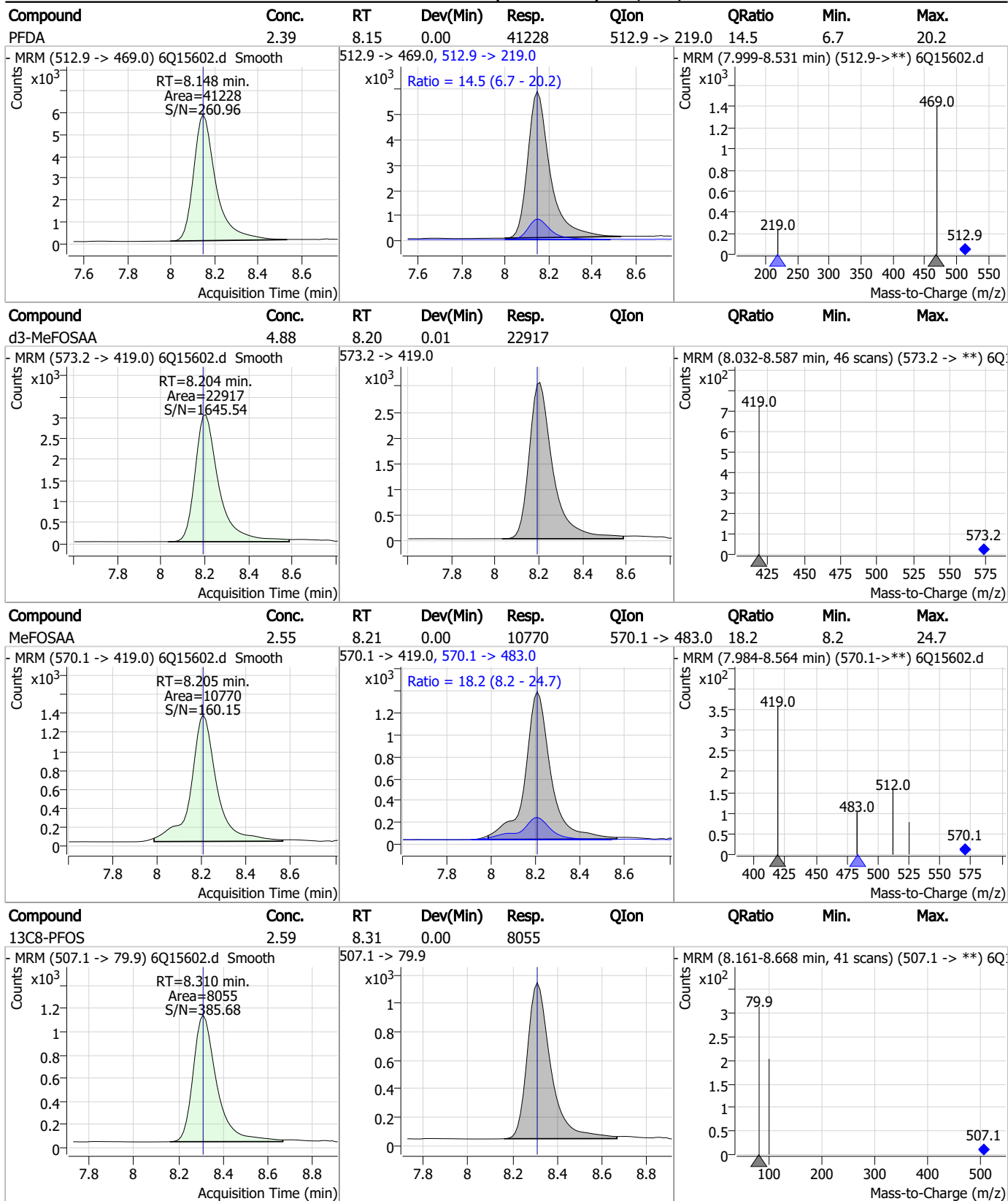
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.18	7.82	0.00	7054	449.0 -> 98.9	60.4	28.0	84.1
13C2-8:2FTS	5.59	7.94	0.00	2871	529.1 -> 80.9			
8:2FTS	9.34	7.94	0.00	19508	527.1 -> 80.8	25.0	12.2	36.6
13C6-PFDA	1.27	8.15	0.00	15040	519.1 -> 474.1			

7.7.10 7

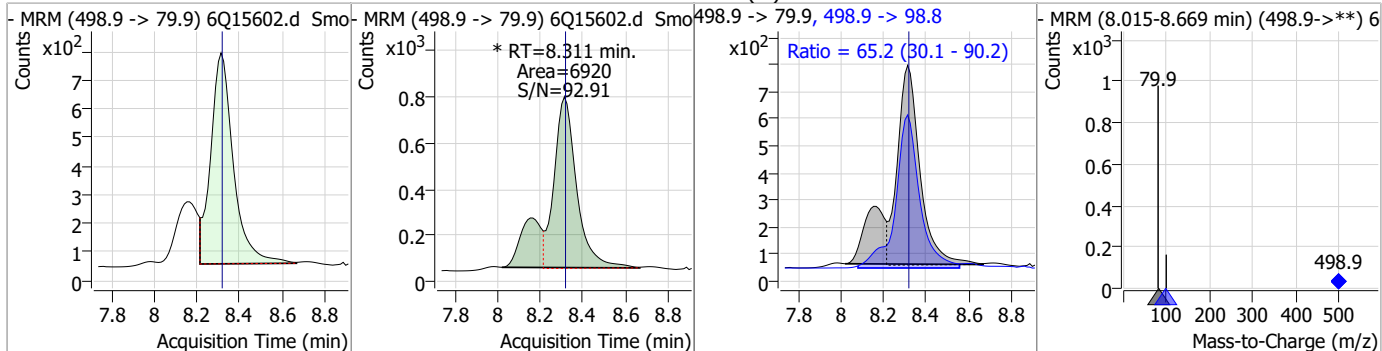
Perfluorinated Compounds by LC/MS/MS



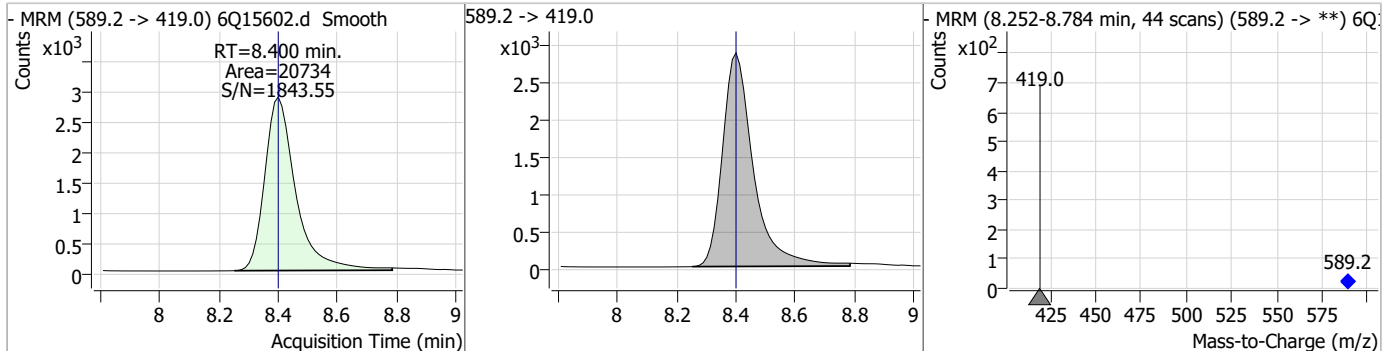
7.7.10
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Perfluorinated Compounds by LC/MS/MS

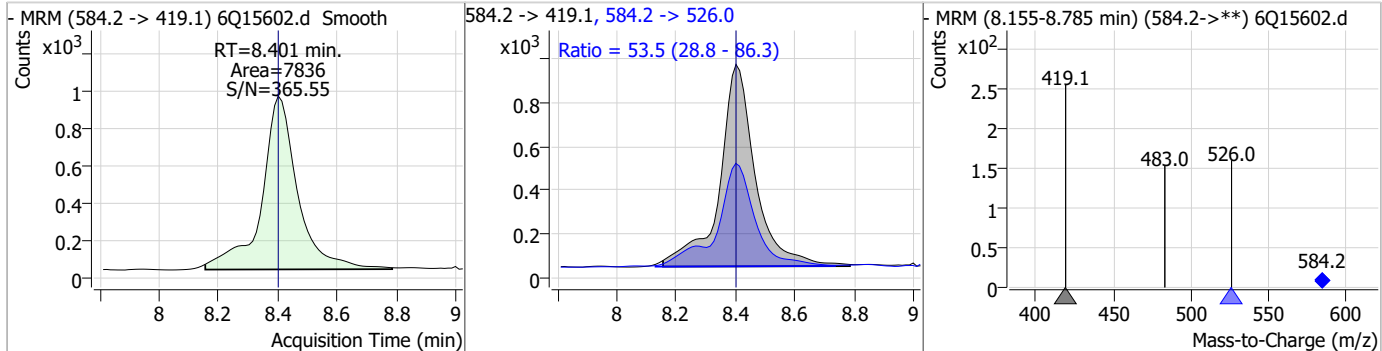
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.05	8.31	0.00	6920 (m)	498.9 -> 98.8	65.2	30.1	90.2



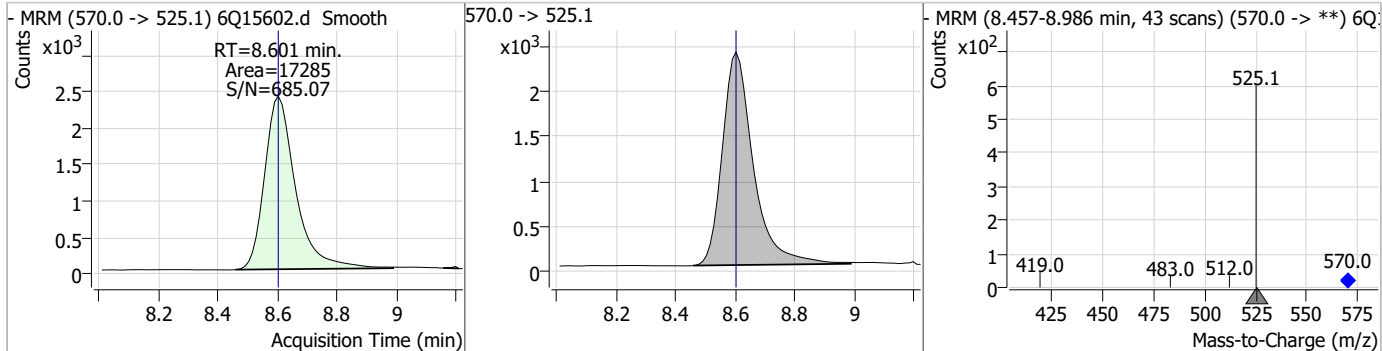
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.05	8.40	0.00	20734				



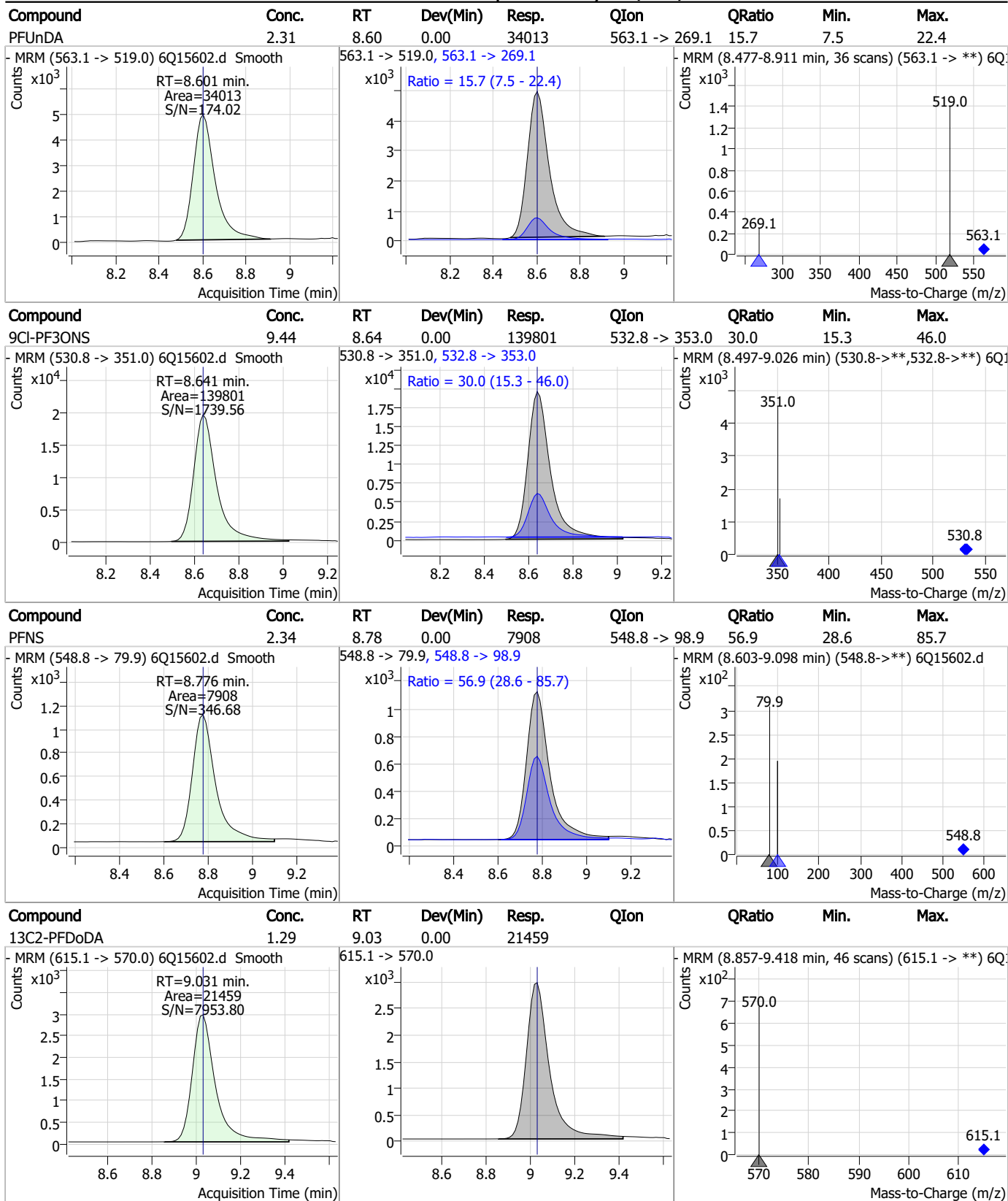
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.45	8.40	0.00	7836	584.2 -> 526.0	53.5	28.8	86.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	8.60	0.00	17285				

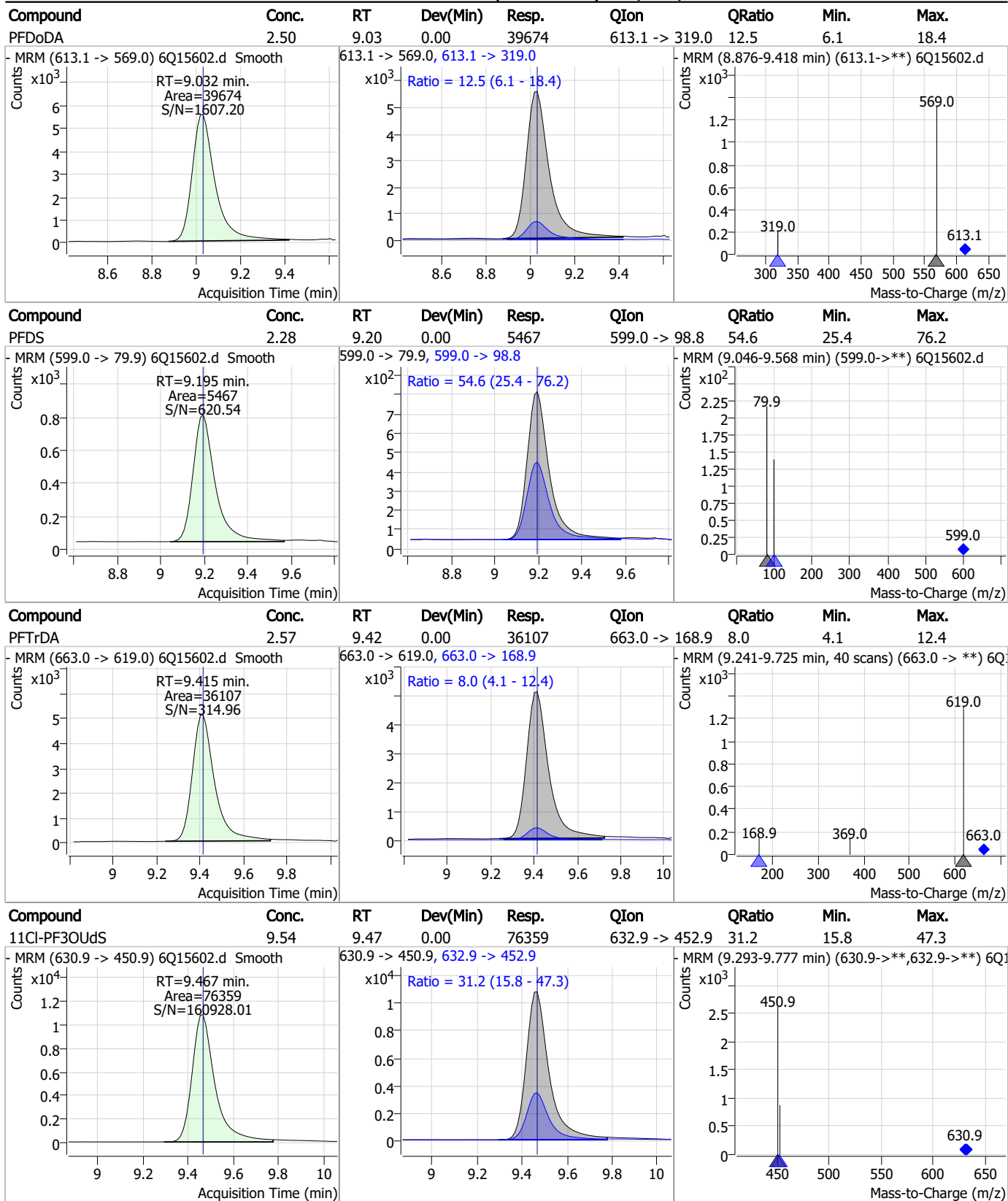


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

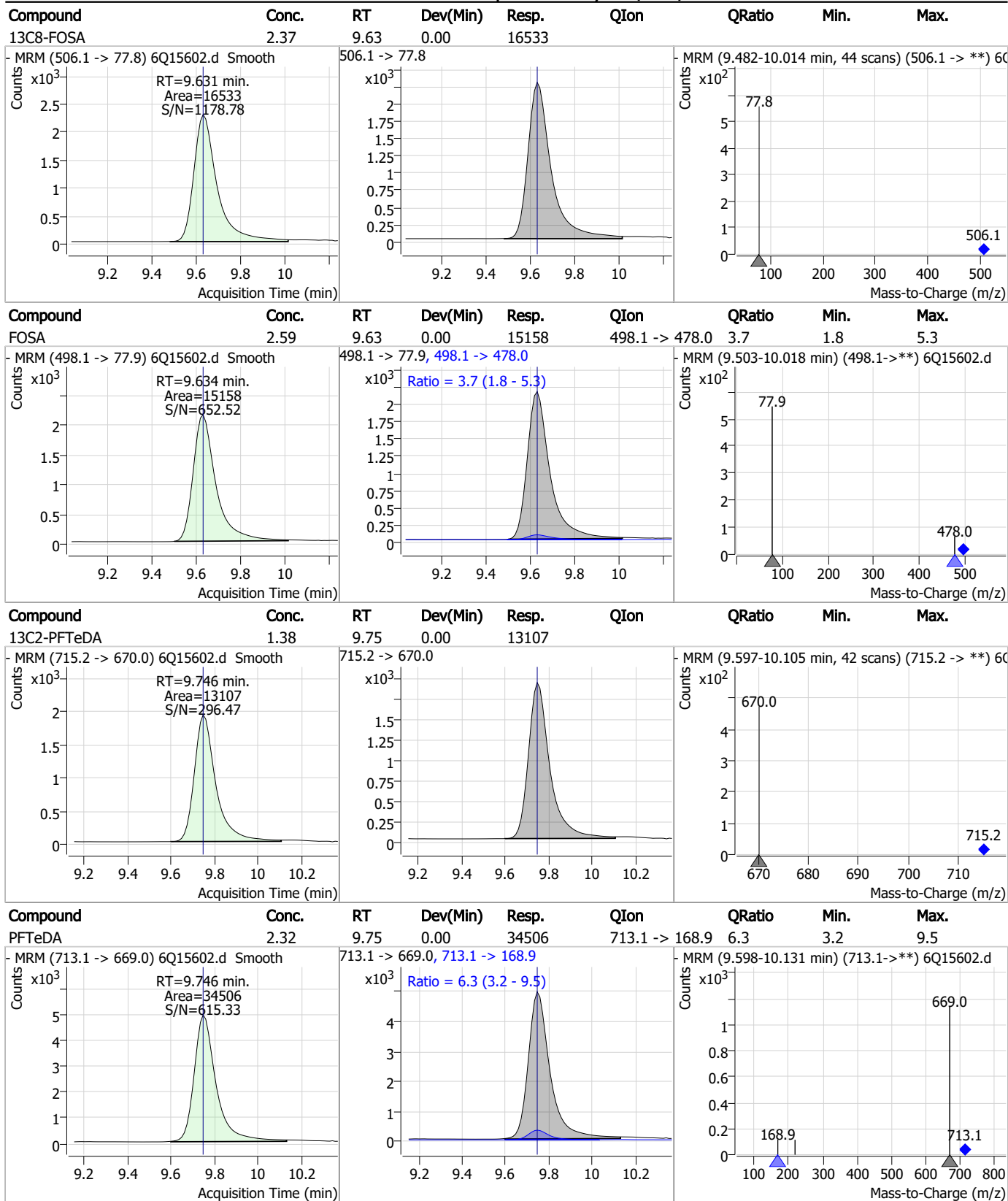
Perfluorinated Compounds by LC/MS/MS



7.7.10
7



Perfluorinated Compounds by LC/MS/MS



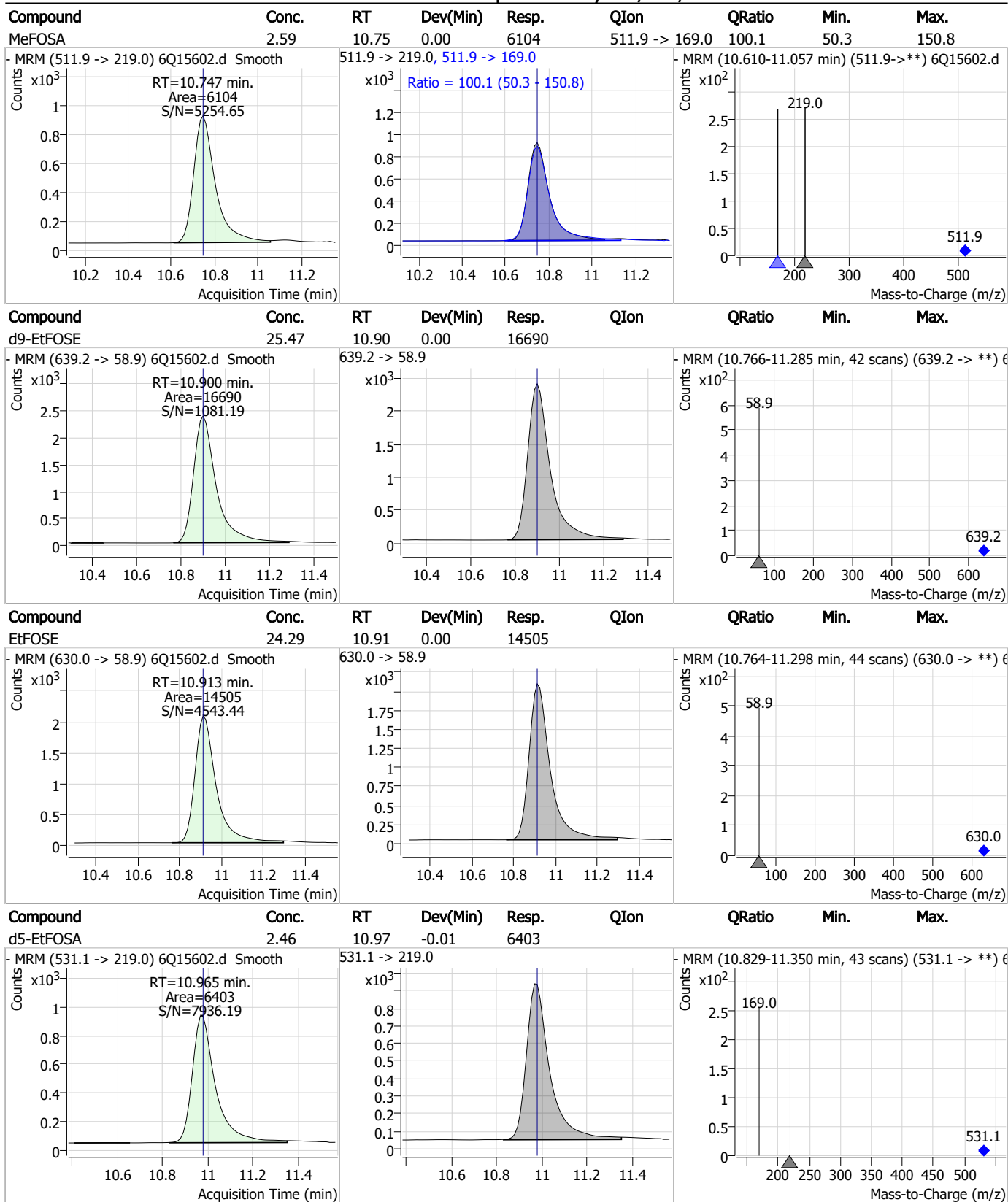
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.28	9.87	0.00	3308	699.1 -> 98.8	64.4	29.8	89.5
d7-MeFOSE	26.35	10.65	0.00	26354				
MeFOSE	23.01	10.67	0.00	21899				
d3-MeFOSA	2.36	10.75	0.00	5461				

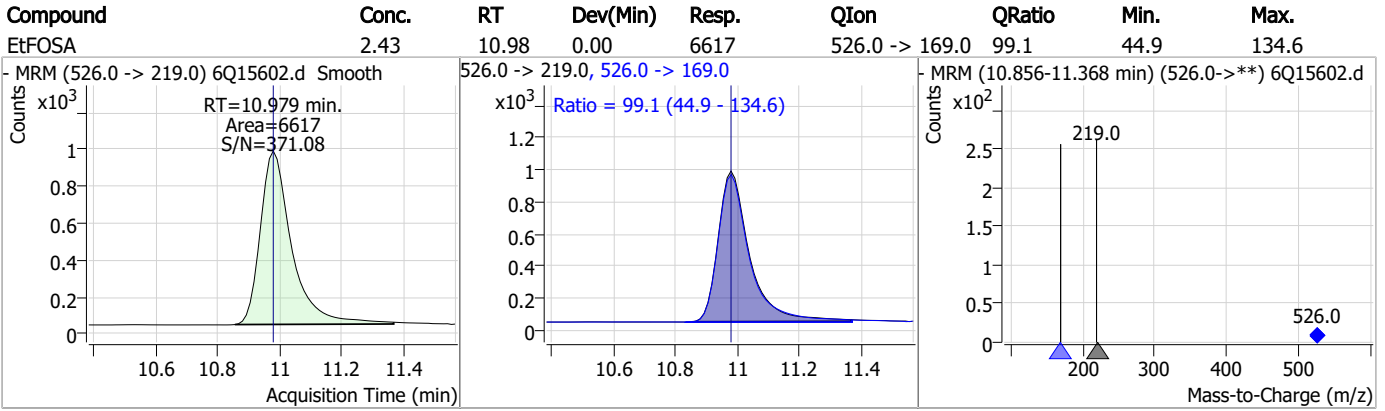
7.7.10
7

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.10
7

Manual Integration Approval Summary

Sample Number: S6Q235-ICV235 Method: EPA DRAFT 1633
Lab FileID: 6Q15602.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 18:26 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.7.10.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15603.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/28/2023 6:40:43 PM
 Sample Name : icv235-20
 Vial : P1-B2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q235.batch.bin
 Sample Information : OP96085,S6Q235,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	77243	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	36430	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	33075	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	34847	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	60958	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	19513	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15971	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	16642	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	22308	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12552	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	16504	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12559	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8562	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	7815	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2131	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	2894	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2653	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	22683	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	14438	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	21214	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	24975	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15977	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6536	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5710	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9262	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33285	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5720	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	68389	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	20585	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	20041	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	31930	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2131	5.72 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.4%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2894	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.4%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2653	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-PFDoDA	9.031	615.1 -> 570.0	22308	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12552	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C3-PFBS	5.483	302.1 -> 79.9	12559	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFHxS	7.265	402.1 -> 79.9	8562	2.65 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C4-PFBA	2.913	216.8 -> 171.9	77243	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C4-PFHpA	6.493	367.1 -> 322.0	34847	2.59 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.4%		
13C5-PFHxA	5.553	318.0 -> 273.0	33075	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C5-PFPeA	4.347	268.3 -> 223.0	36430	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C6-PFDA	8.147	519.1 -> 474.1	15971	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C7-PFUnDA	8.601	570.0 -> 525.1	16642	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C8-FOSA	9.631	506.1 -> 77.8	16504	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C8-PFOA	7.137	421.1 -> 376.0	60958	2.69 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C8-PFOS	8.310	507.1 -> 79.9	7815	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C9-PFNA	7.667	472.1 -> 427.0	19513	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
d3-MeFOSAA	8.204	573.2 -> 419.0	22683	4.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	14438	10.51 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
d3-MeFOSA	10.745	515.0 -> 219.0	5710	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
d5-EtFOSAA	8.400	589.2 -> 419.0	21214	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.1%		
d7-MeFOSE	10.653	623.2 -> 58.9	24975	25.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
d9-EtFOSE	10.900	639.2 -> 58.9	15977	25.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
d5-EtFOSA	10.978	531.1 -> 219.0	6536	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	94777	21.31 µg/L	99
		327.1 -> 80.9	21036		
6:2FTS	6.911	427.1 -> 407.0	77056	19.85 µg/L	95
		427.1 -> 80.9	17075		
8:2FTS	7.936	527.1 -> 507.0	41272	21.38 µg/L	99
		527.1 -> 80.8	10315		
EtFOSAA	8.401	584.2 -> 419.1	67984	20.78 µg/L	91
		584.2 -> 526.0	34763		
FOSA	9.634	498.1 -> 77.9	129397	22.13 µg/L	99
		498.1 -> 478.0	4817		
MeFOSAA	8.205	570.1 -> 419.0	92288	22.08 µg/L	99
		570.1 -> 483.0	15565		
PFBA	2.919	212.8 -> 168.9	35316	20.11 µg/L	100
PFBS	5.484	298.7 -> 79.9	106885	22.04 µg/L	100
		298.7 -> 98.8	49877		
PFDA	8.148	512.9 -> 469.0	369647	20.21 µg/L	99
		512.9 -> 219.0	50321		
PFDoDA	9.032	613.1 -> 569.0	303384	18.40 µg/L	98
		613.1 -> 319.0	35398		
PFDS	9.195	599.0 -> 79.9	49036	21.06 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.506	599.0 -> 98.8	25509	19.52	µg/L	97
		363.1 -> 319.0	397735			
PFHpS	7.819	363.1 -> 169.0	58202	20.92	µg/L	95
		449.0 -> 79.9	65570			
PFHxA	5.556	449.0 -> 98.9	34627	21.87	µg/L	100
		313.0 -> 269.0	260299			
PFHxS	7.253	313.0 -> 118.9	10233	23.25	µg/L	96
		398.7 -> 79.9	85220			
PFNA	7.668	398.7 -> 98.9	47520	23.31	µg/L	96
		463.0 -> 419.0	271491			
PFNS	8.776	463.0 -> 219.0	52587	22.63	µg/L	91
		548.8 -> 79.9	74199			
PFOA	7.138	548.8 -> 98.9	37462	21.83	µg/L	100
		413.0 -> 369.0	567159			
PFOS	8.311	413.0 -> 169.0	71780	17.74	µg/L	99
		498.9 -> 79.9	58080			
PFPeA	4.349	498.9 -> 98.8	34670	22.65	µg/L	100
		263.0 -> 219.0	174935			
PFPeS	6.558	349.1 -> 79.9	93100	22.18	µg/L	95
		349.1 -> 98.9	50582			
PFTeDA	9.746	713.1 -> 669.0	308951	21.72	µg/L	99
		713.1 -> 168.9	20477			
PFTrDA	9.415	663.0 -> 619.0	277033	18.99	µg/L	99
		663.0 -> 168.9	21521			
PFUnDA	8.601	563.1 -> 519.0	297720	21.03	µg/L	100
		563.1 -> 269.1	44729			
11CI-PF3OUdS	9.467	630.9 -> 450.9	179217	21.67	µg/L	98
		632.9 -> 452.9	54648			
9CI-PF3ONS	8.641	530.8 -> 351.0	314337	20.54	µg/L	99
		532.8 -> 353.0	95184			
ADONA	6.756	376.9 -> 250.9	638889	21.02	µg/L	98
		376.9 -> 84.8	144900			
HFPO-DA	5.931	284.9 -> 168.9	25242	19.00	µg/L	99
		284.9 -> 184.9	3080			
3:3FTCA	3.802	241.0 -> 177.0	7786	18.97	µg/L	100
		241.0 -> 117.0	1136			
5:3FTCA	6.210	341.0 -> 237.1	55769	20.56	µg/L	96
		341.0 -> 217.0	49139			
7:3FTCA	7.633	441.0 -> 316.9	28213	19.62	µg/L	100
		441.0 -> 336.9	53488			
EtFOSA	10.979	526.0 -> 219.0	53493	19.21	µg/L	90
		526.0 -> 169.0	52892			
EtFOSE	10.913	630.0 -> 58.9	52575	91.97	µg/L	100
		511.9 -> 219.0	49553			
MeFOSA	10.747	511.9 -> 169.0	50168	20.11	µg/L	99
		616.1 -> 58.9	77893			
MeFOSE	10.666	699.1 -> 79.9	26062	86.37	µg/L	100
		699.1 -> 98.8	16199			
PFDoDS	9.886	295.0 -> 201.0	15280	18.54	µg/L	97
		295.0 -> 84.9	6878			
NFDHA	5.435	279.0 -> 85.1	49042	21.60	µg/L	99
		229.0 -> 84.9	44546			
PFMBA	4.762	314.8 -> 134.9	311140	20.64	µg/L	100
PFMPA	3.476	314.8 -> 82.9	7947	20.85	µg/L	100
PFEESA	6.036			18.24	µg/L	100

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



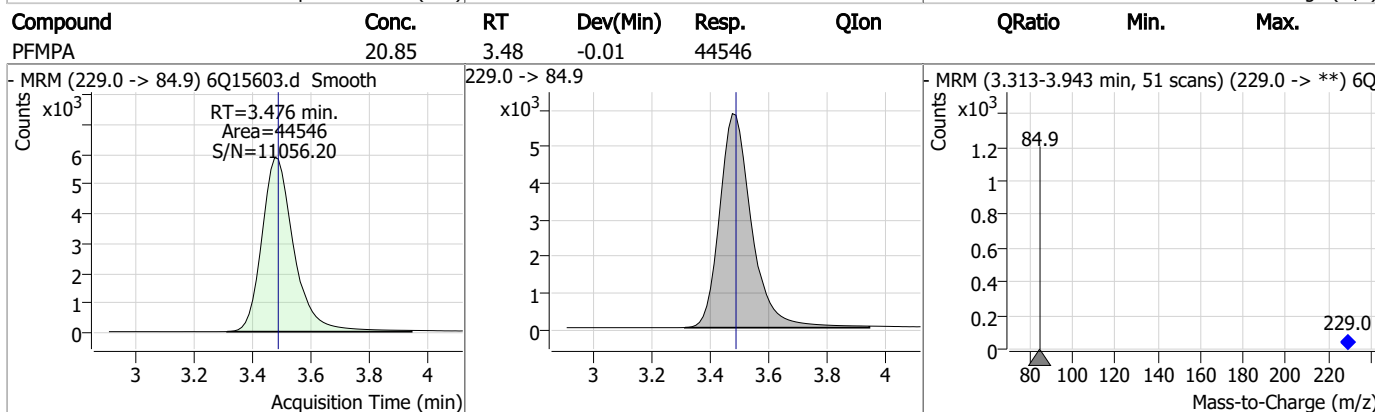
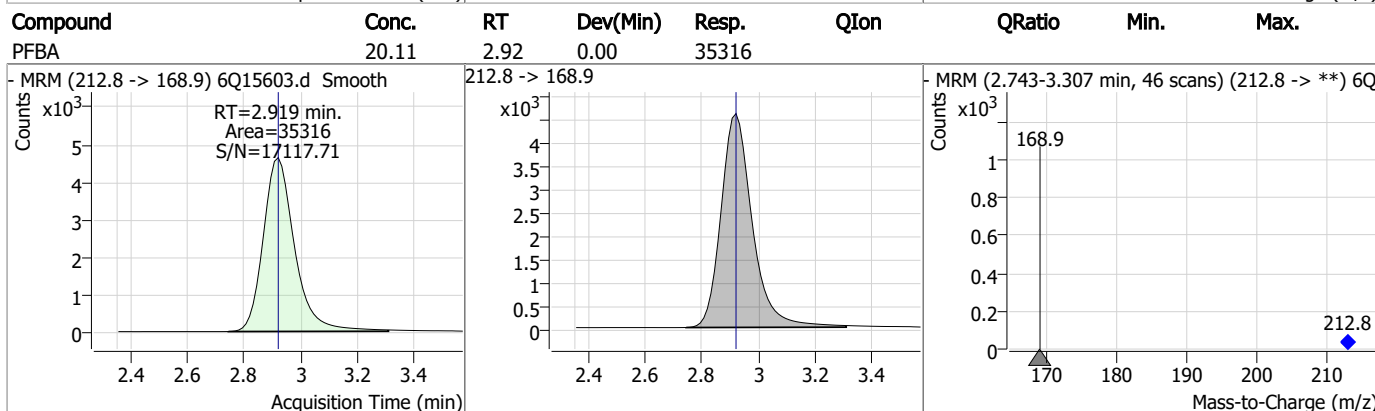
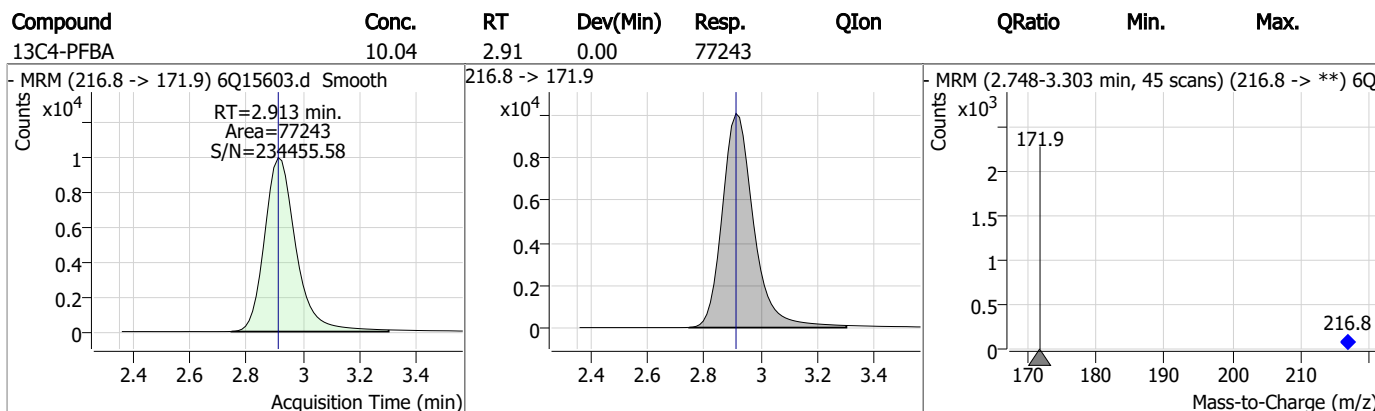
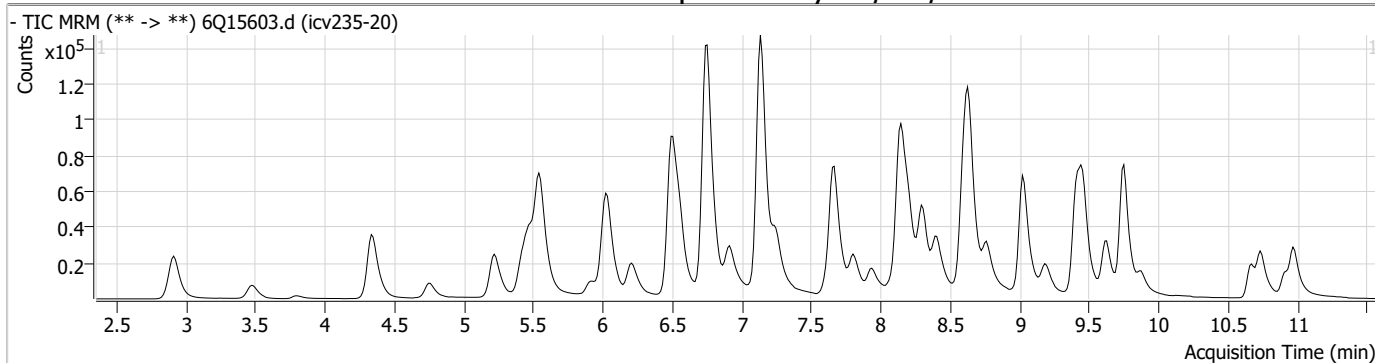
Perfluorinated Compounds by LC/MS/MS

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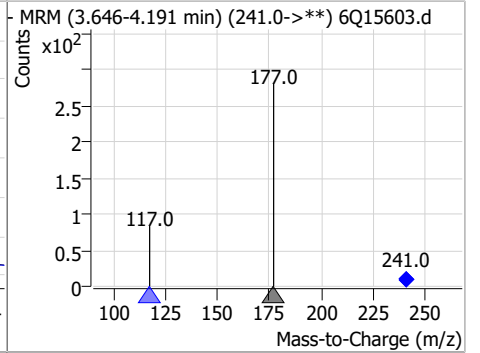
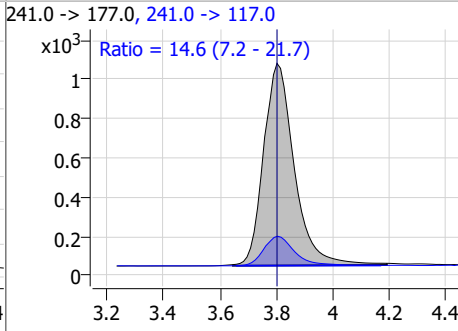
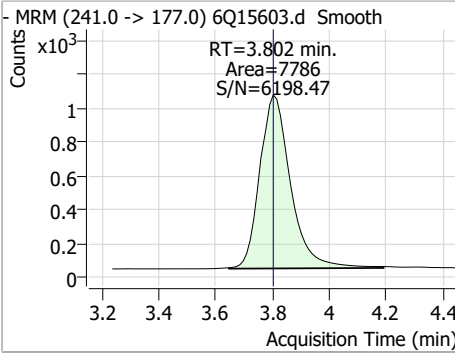
Perfluorinated Compounds by LC/MS/MS



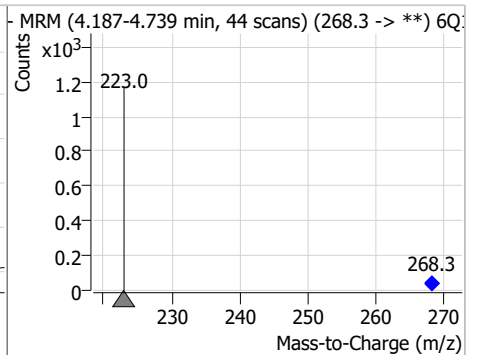
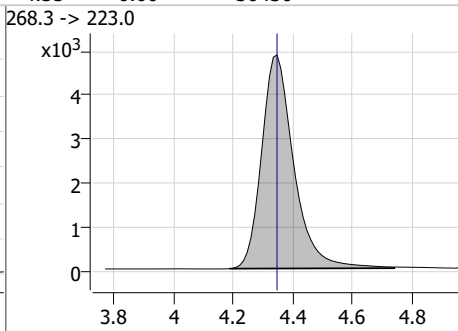
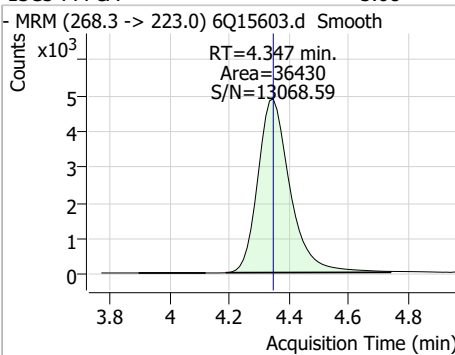
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Perfluorinated Compounds by LC/MS/MS

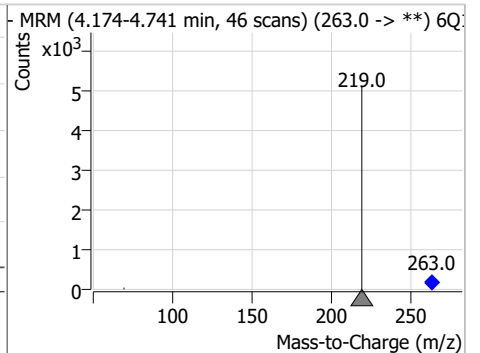
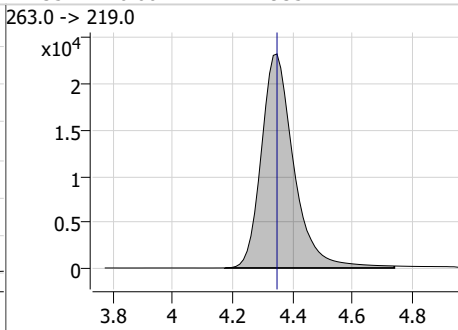
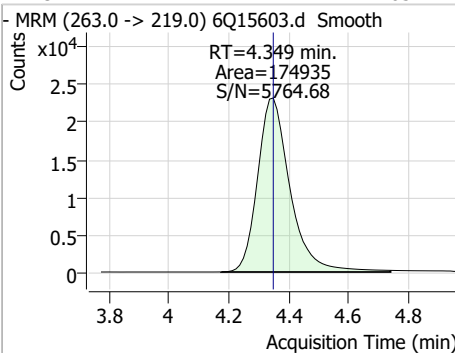
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	18.97	3.80	0.00	7786	241.0 -> 117.0	14.6	7.2	21.7



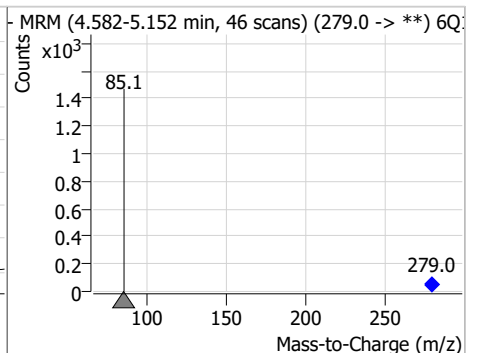
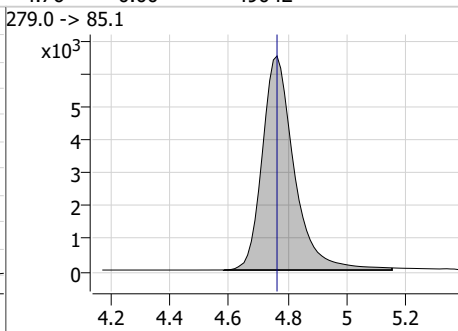
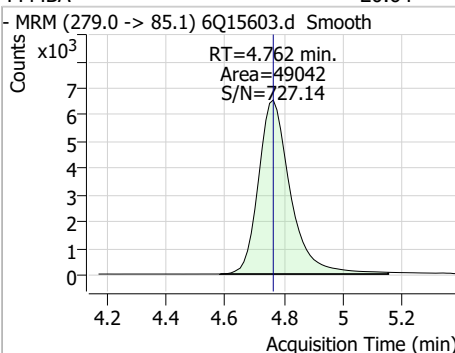
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.35	0.00	36430				



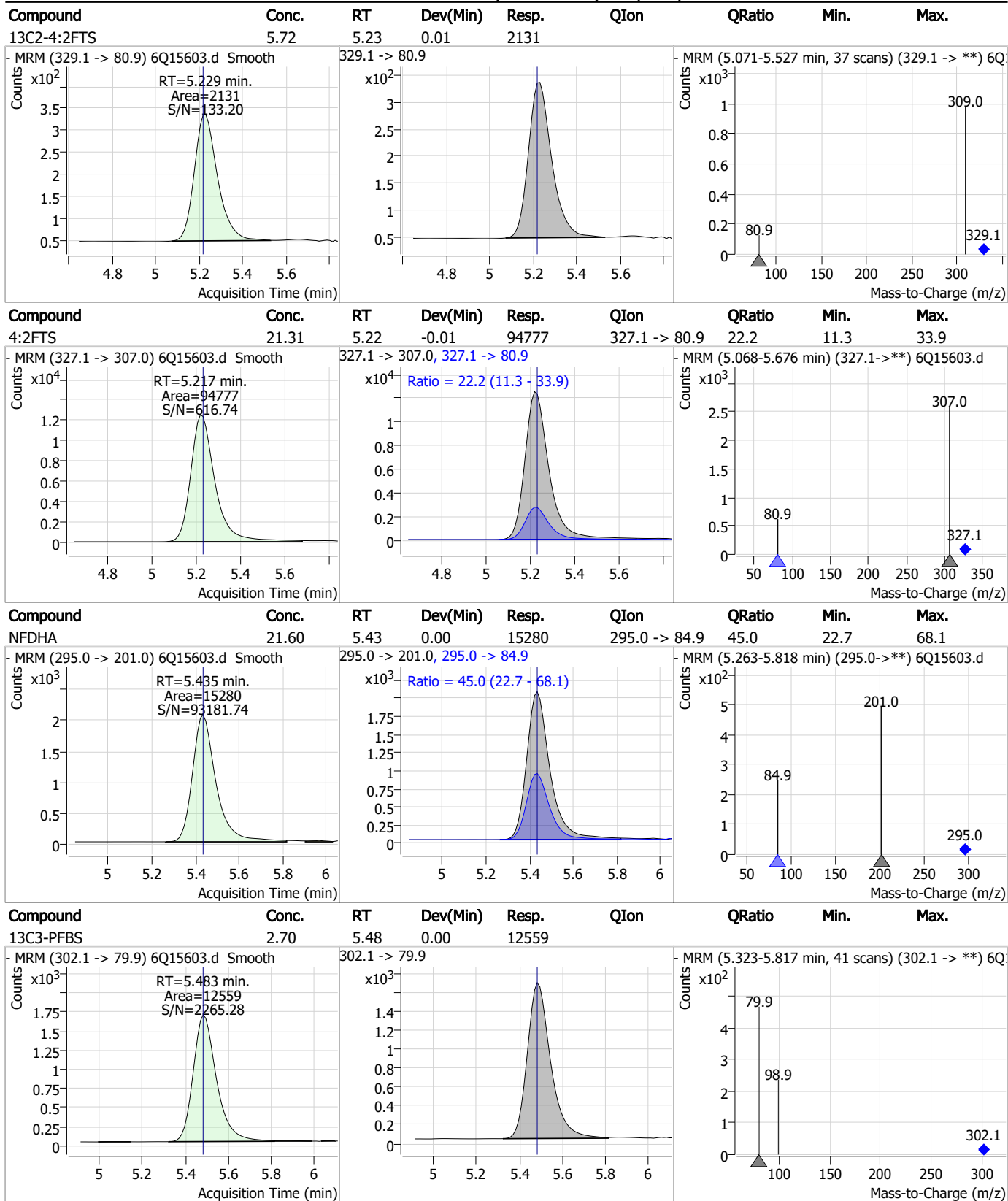
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	22.65	4.35	0.00	174935				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	20.64	4.76	0.00	49042				



Perfluorinated Compounds by LC/MS/MS



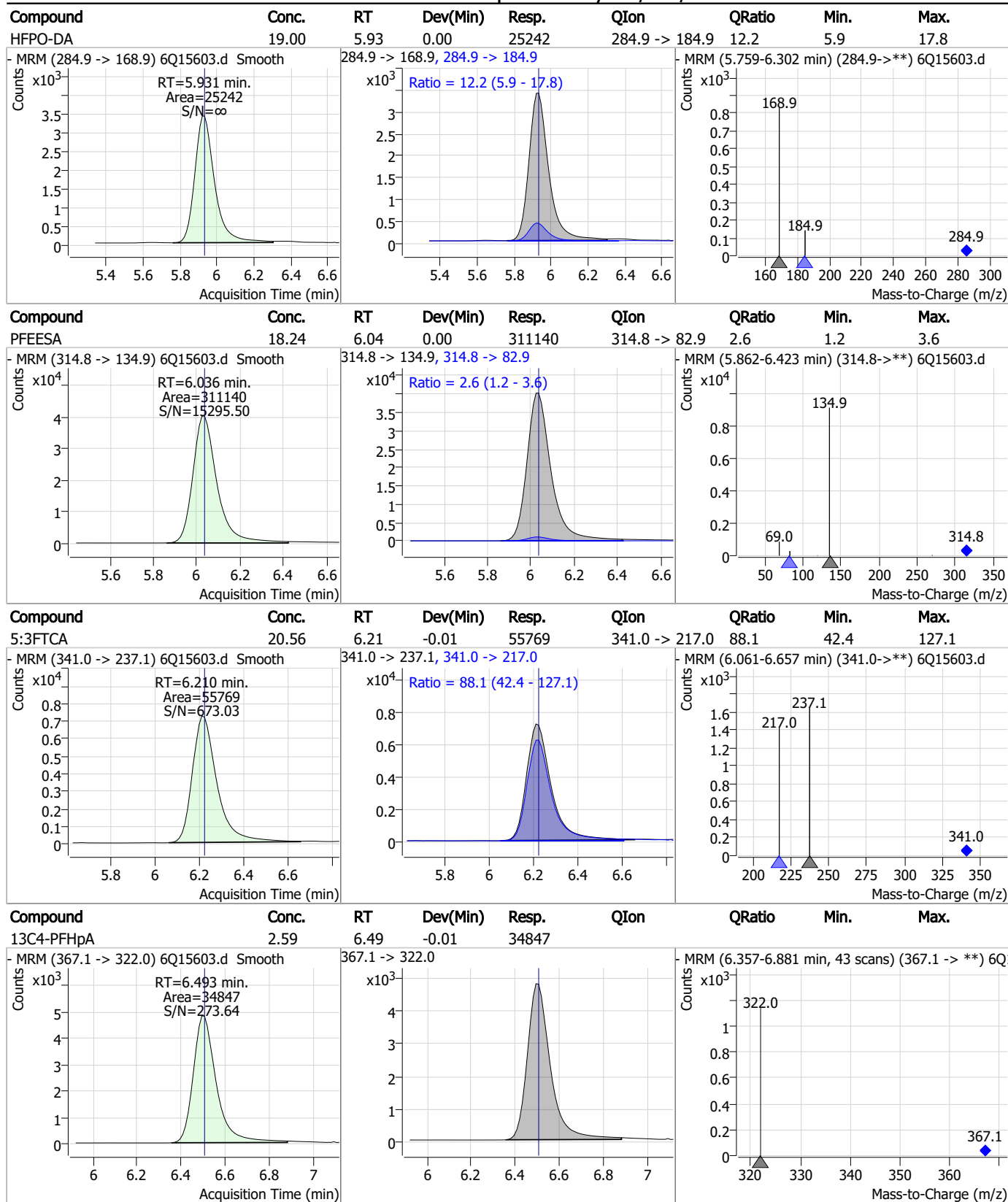
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.04	5.48	0.00	106885	298.7 -> 98.8	46.7	23.4	70.2
13C5-PFHxA	2.50	5.55	0.00	33075				
PFHxA	21.87	5.56	0.00	260299	313.0 -> 118.9	3.9	1.9	5.8
13C3-HFPO-DA	10.51	5.92	-0.01	14438				

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Perfluorinated Compounds by LC/MS/MS

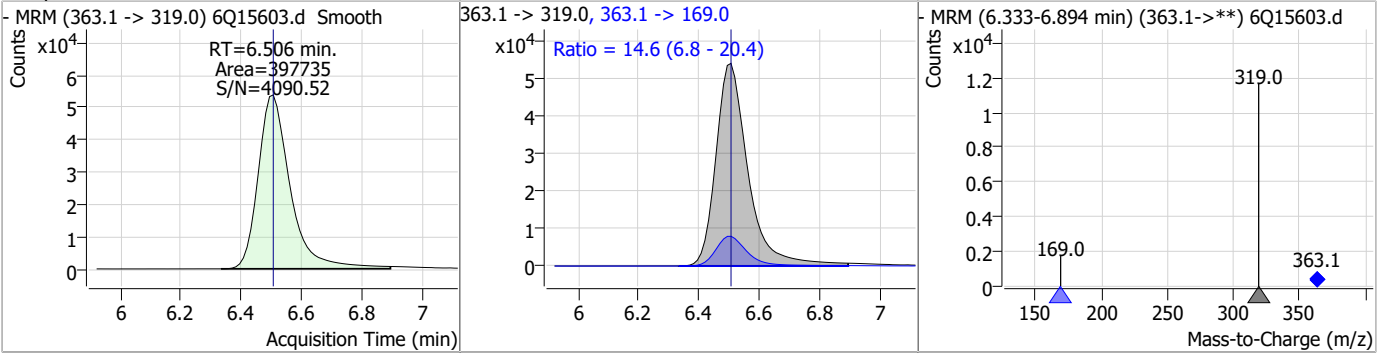


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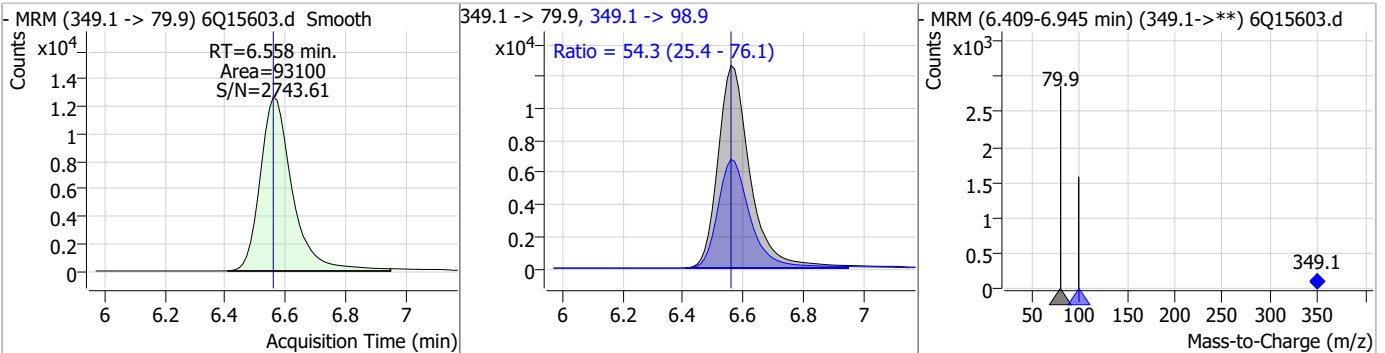
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Perfluorinated Compounds by LC/MS/MS

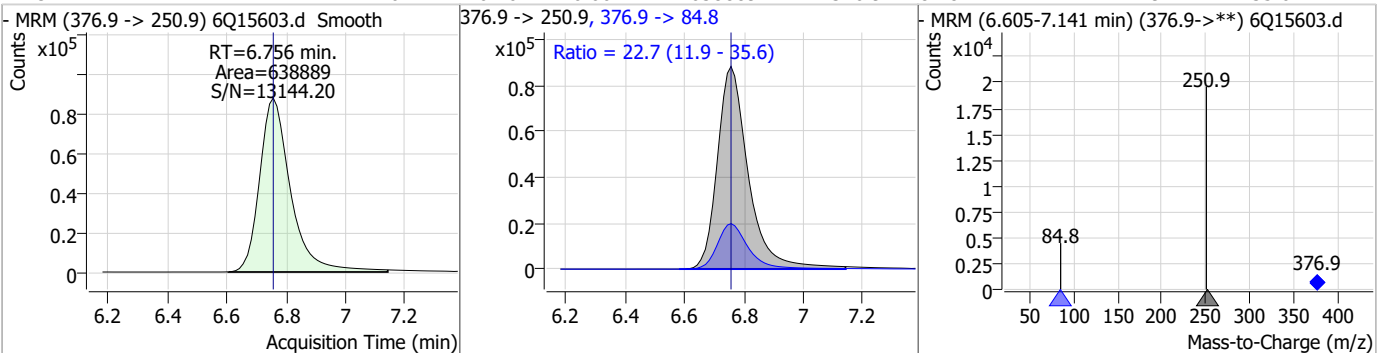
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.52	6.51	0.00	397735	363.1 -> 169.0	14.6	6.8	20.4



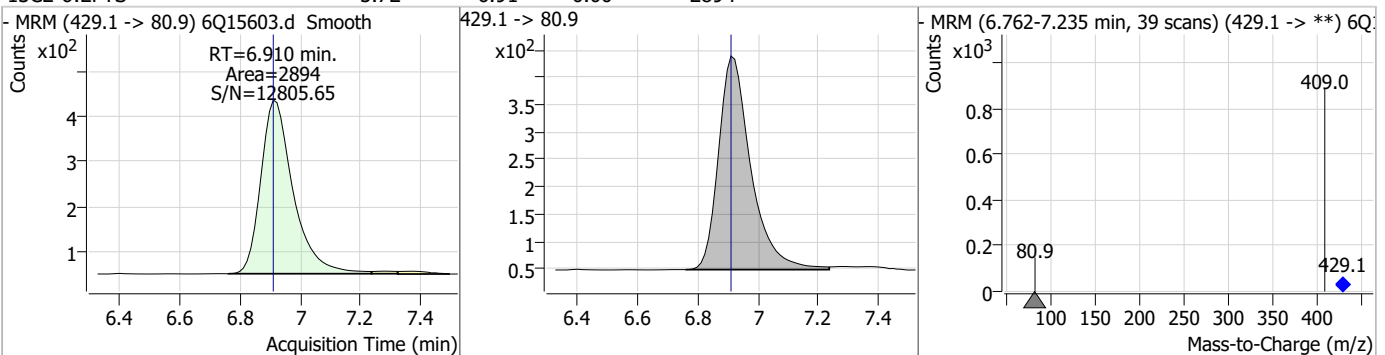
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	22.18	6.56	0.00	93100	349.1 -> 98.9	54.3	25.4	76.1



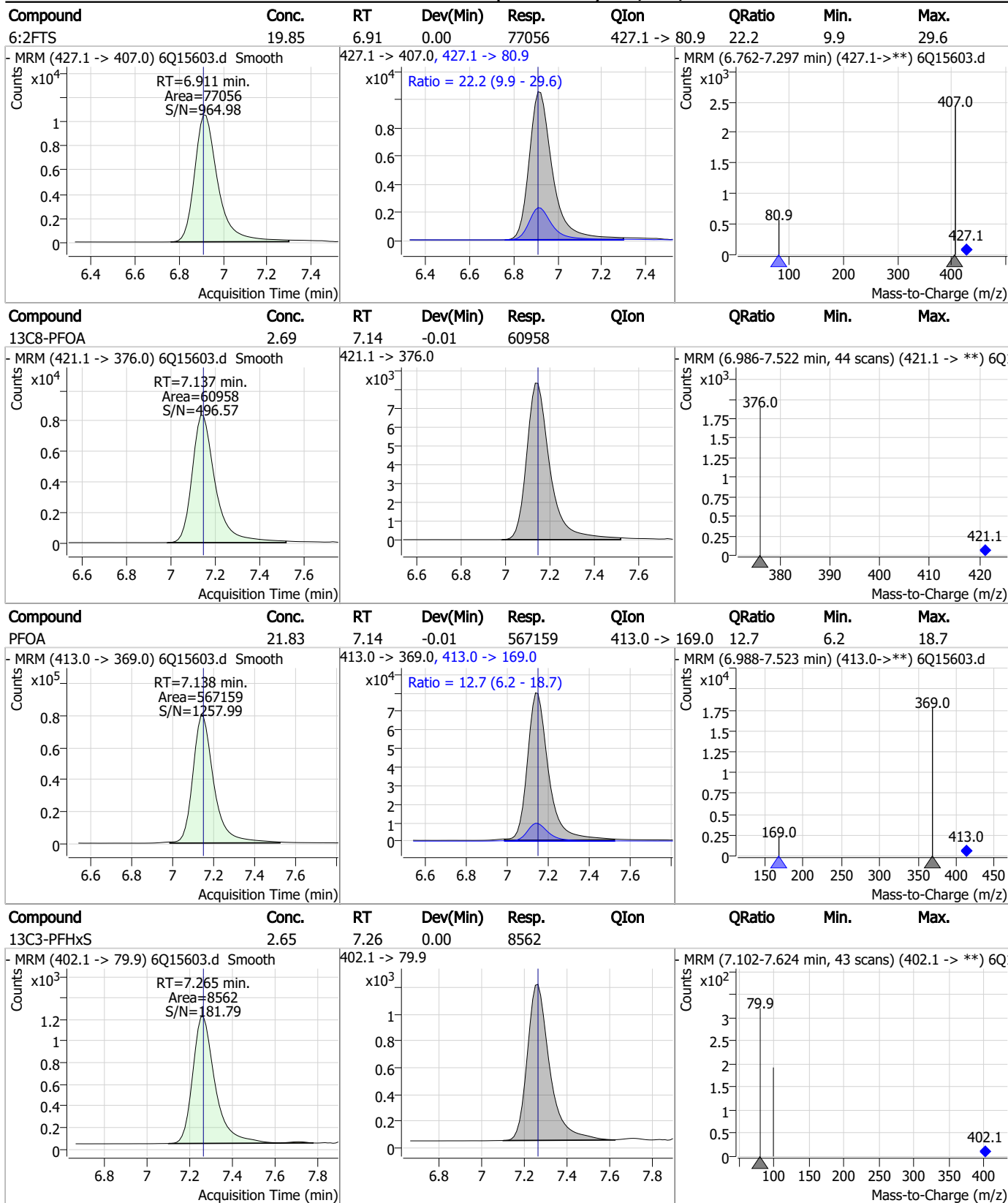
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	21.02	6.76	0.00	638889	376.9 -> 84.8	22.7	11.9	35.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.72	6.91	0.00	2894	429.1 -> 80.9			

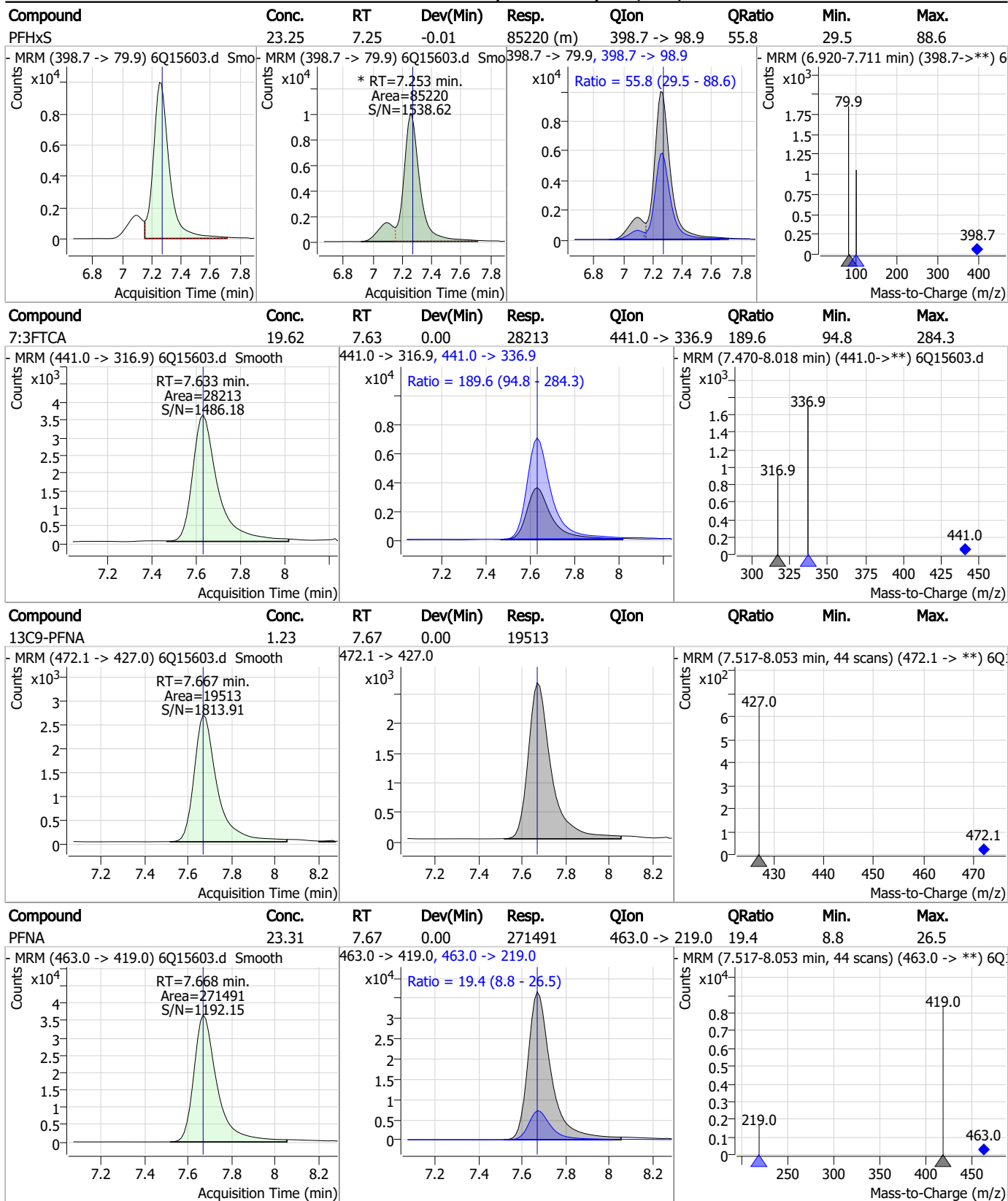


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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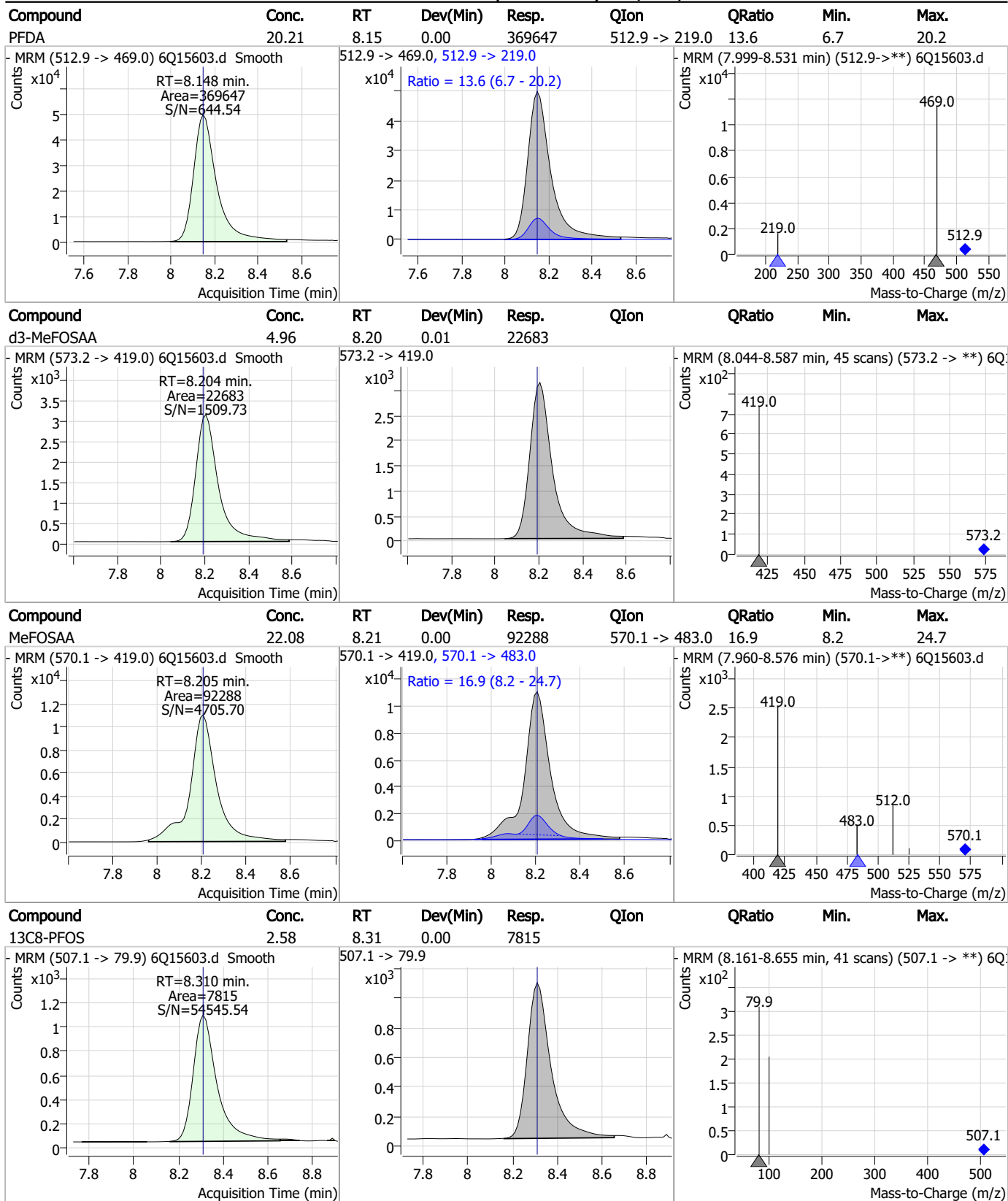


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.92	7.82	0.00	65570	449.0 -> 98.9	52.8	28.0	84.1
13C2-8:2FTS	5.35	7.94	0.00	2653	529.1 -> 80.9			
8:2FTS	21.38	7.94	0.00	41272	527.1 -> 80.8	25.0	12.2	36.6
13C6-PFDA	1.34	8.15	0.00	15971	519.1 -> 474.1			

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Perfluorinated Compounds by LC/MS/MS

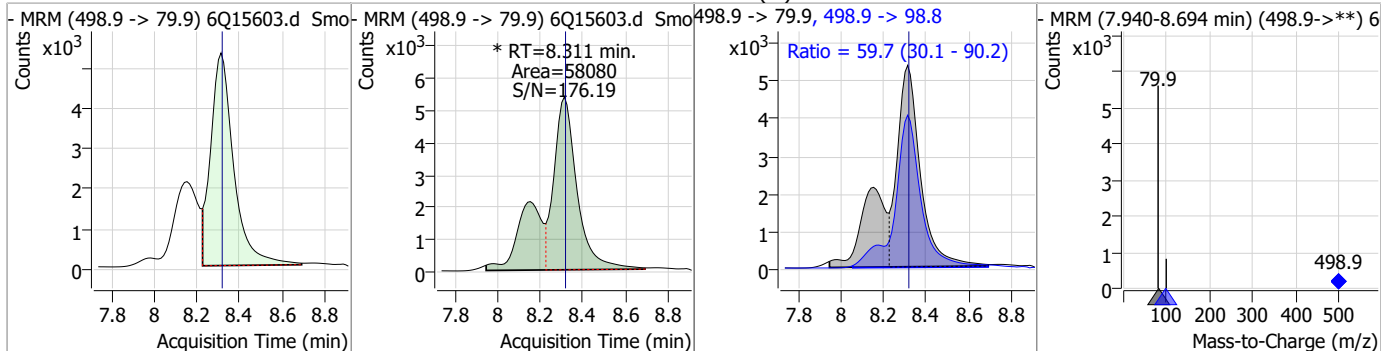


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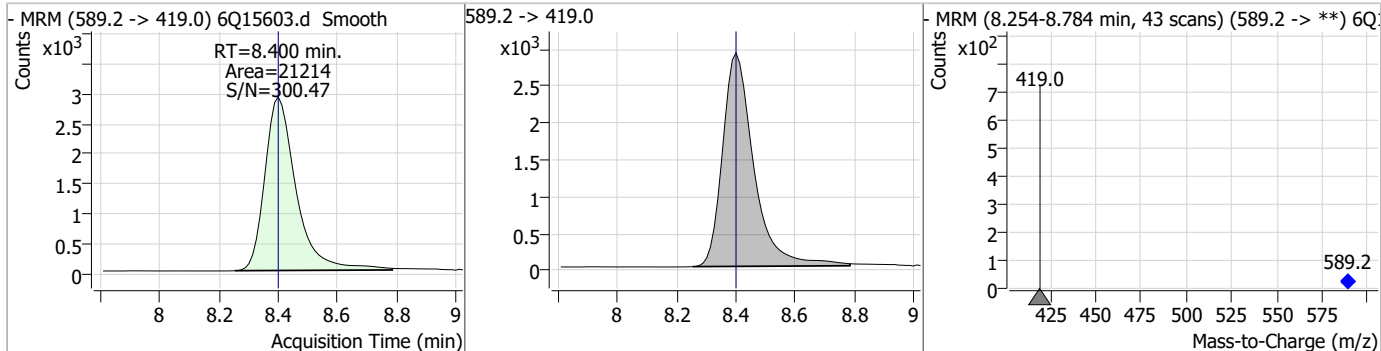


Perfluorinated Compounds by LC/MS/MS

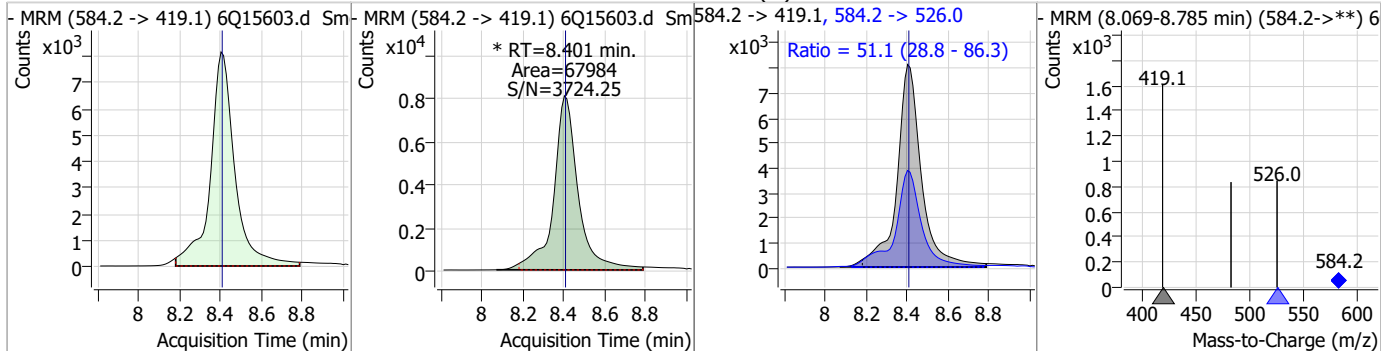
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.74	8.31	0.00	58080 (m)	498.9 -> 98.8	59.7	30.1	90.2



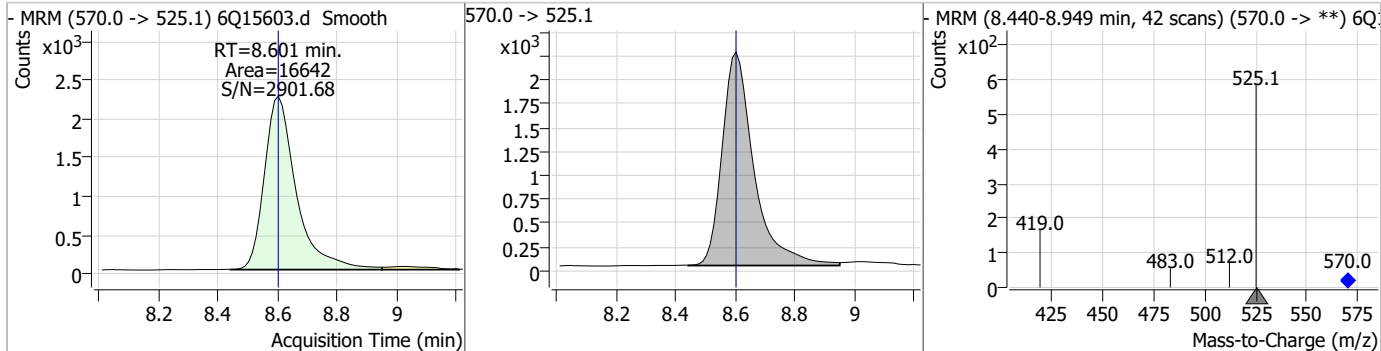
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.40	0.00	21214				



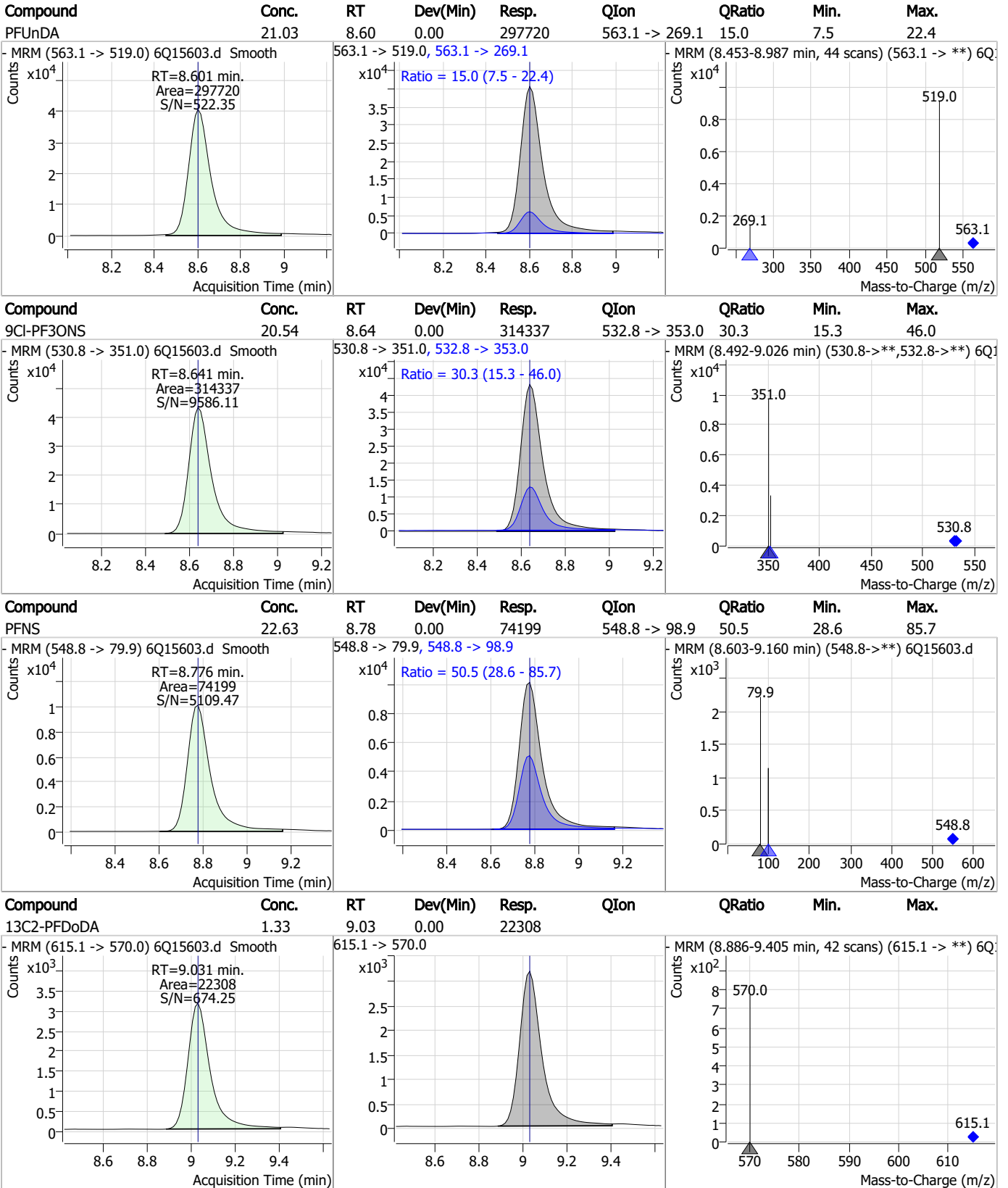
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.78	8.40	0.00	67984 (m)	584.2 -> 526.0	51.1	28.8	86.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.60	0.00	16642				



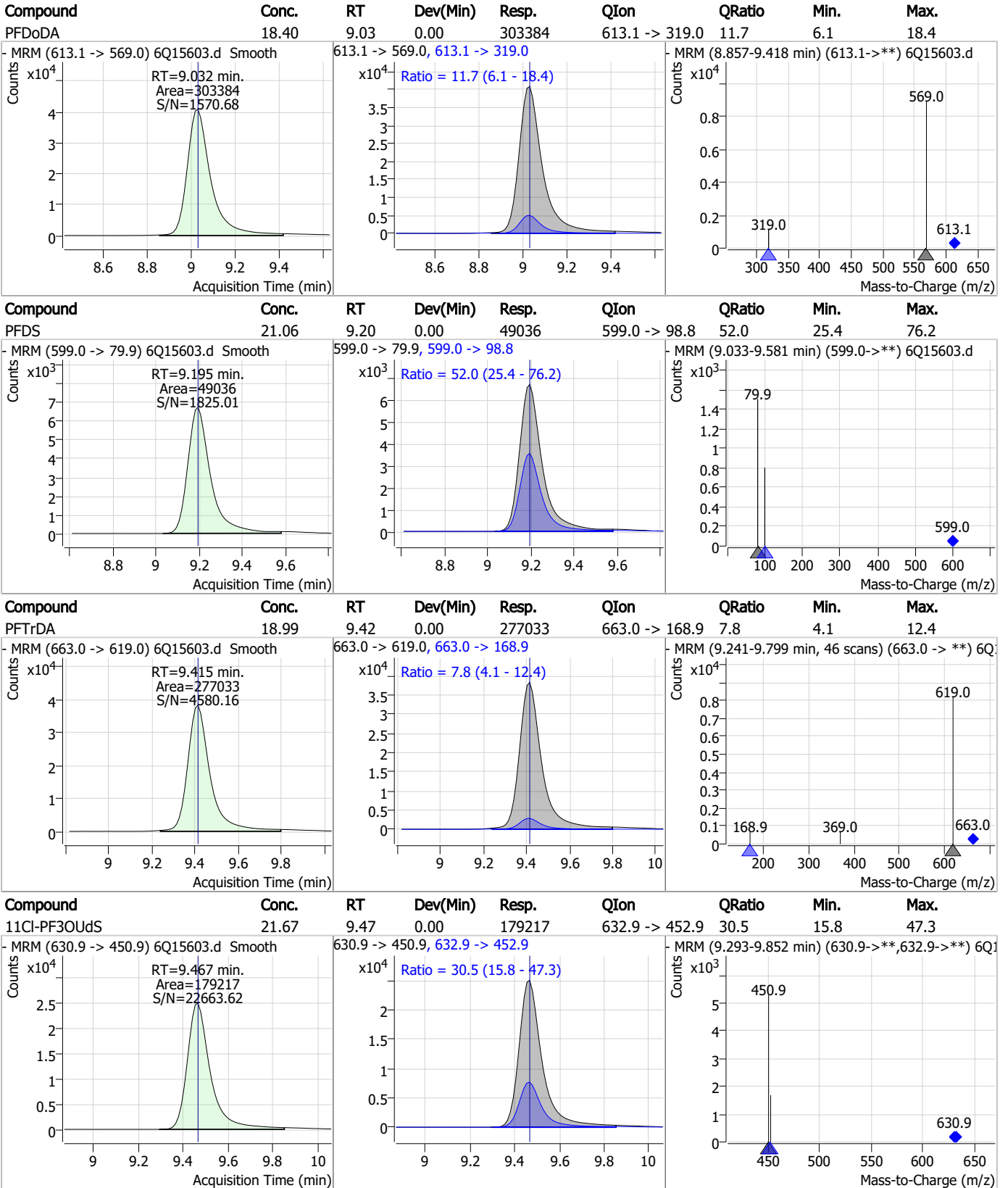
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

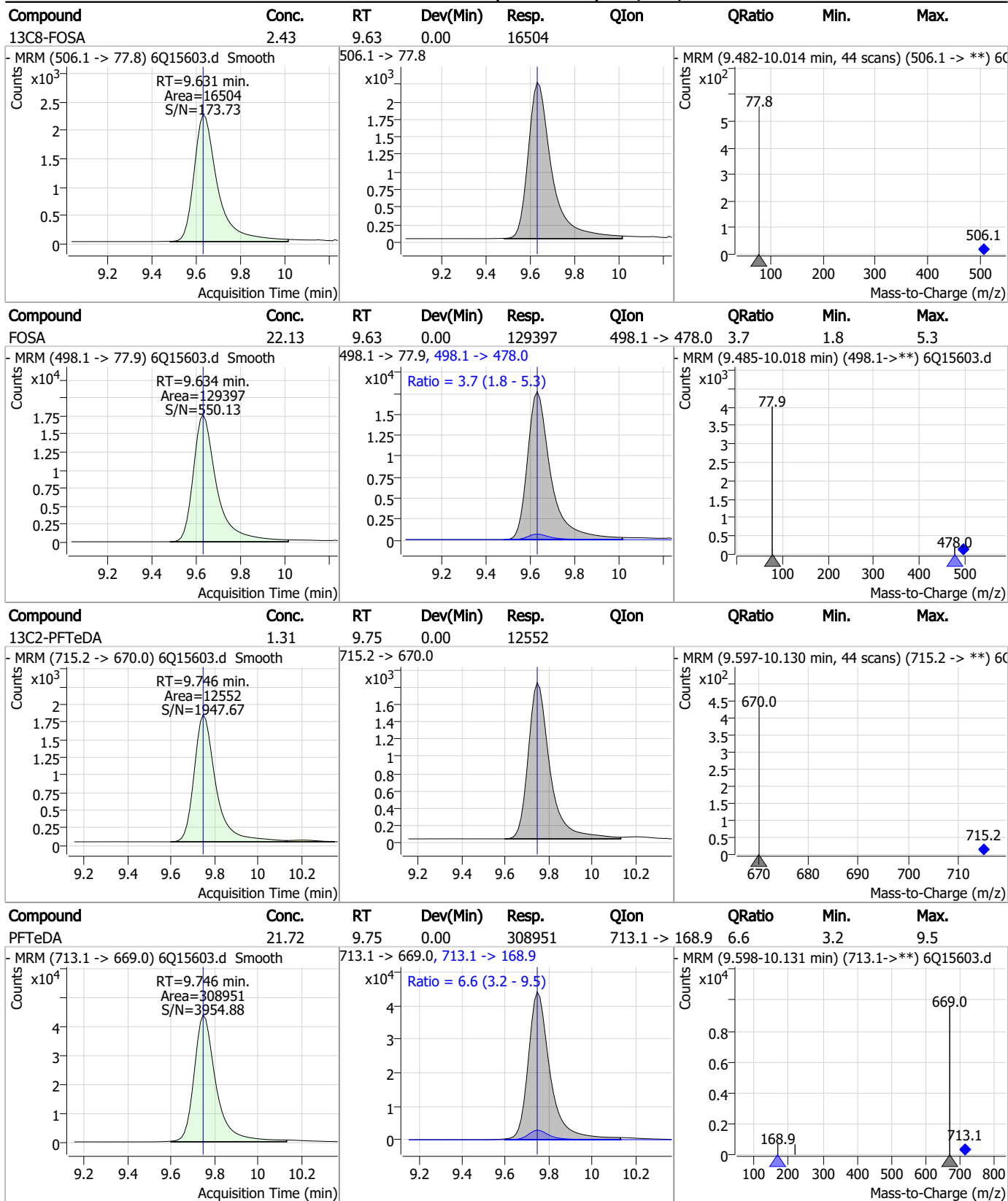


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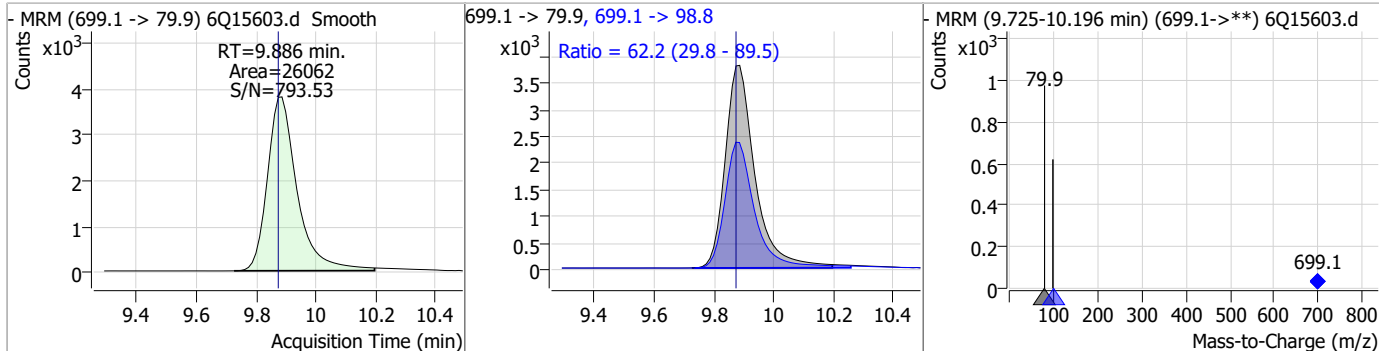
Perfluorinated Compounds by LC/MS/MS



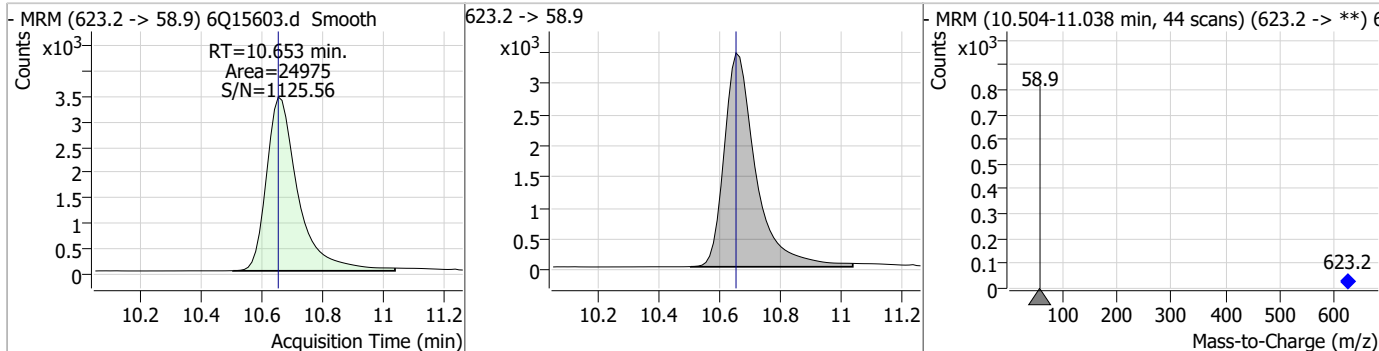
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Perfluorinated Compounds by LC/MS/MS

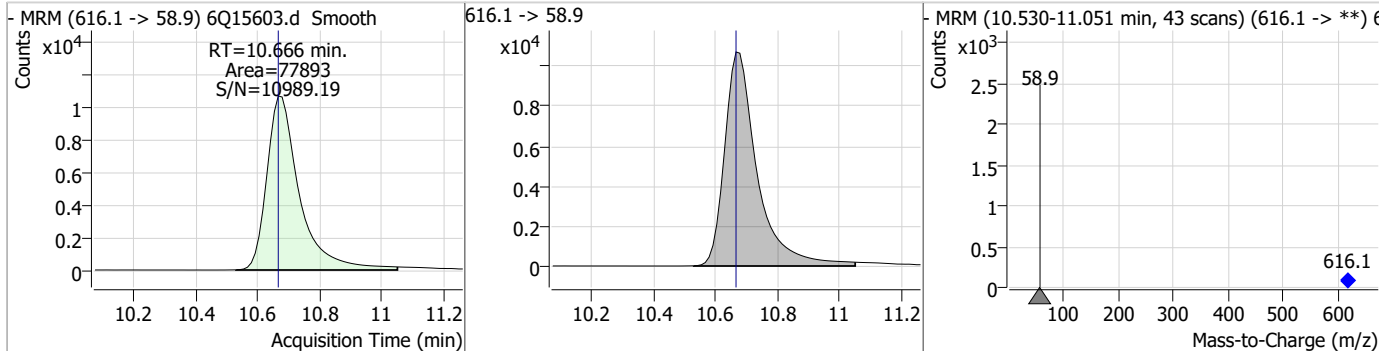
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	18.54	9.89	0.01	26062	699.1 -> 98.8	62.2	29.8	89.5



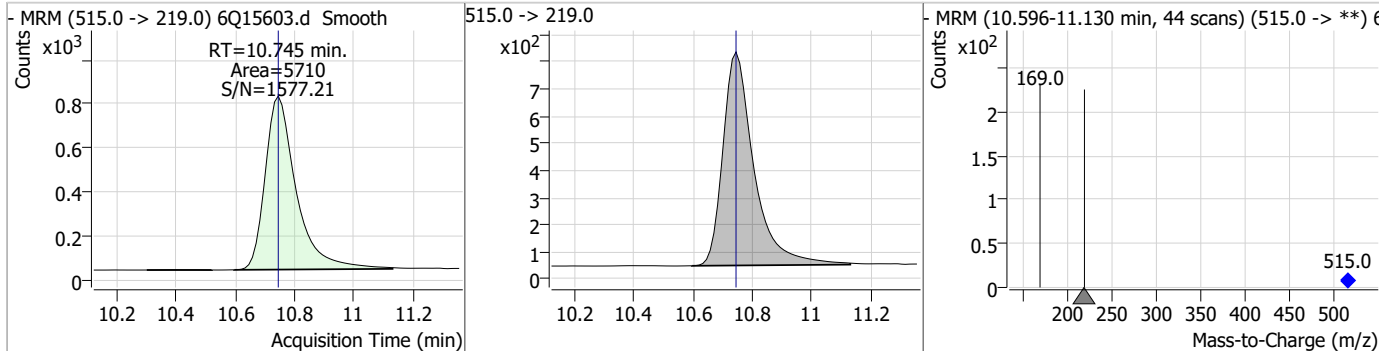
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.65	10.65	0.00	24975				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	86.37	10.67	0.00	77893				

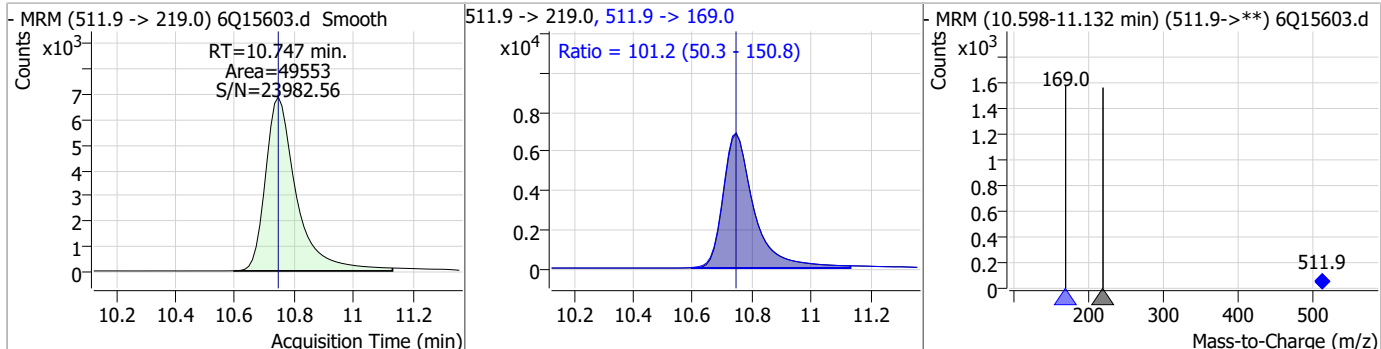


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.54	10.75	0.00	5710				

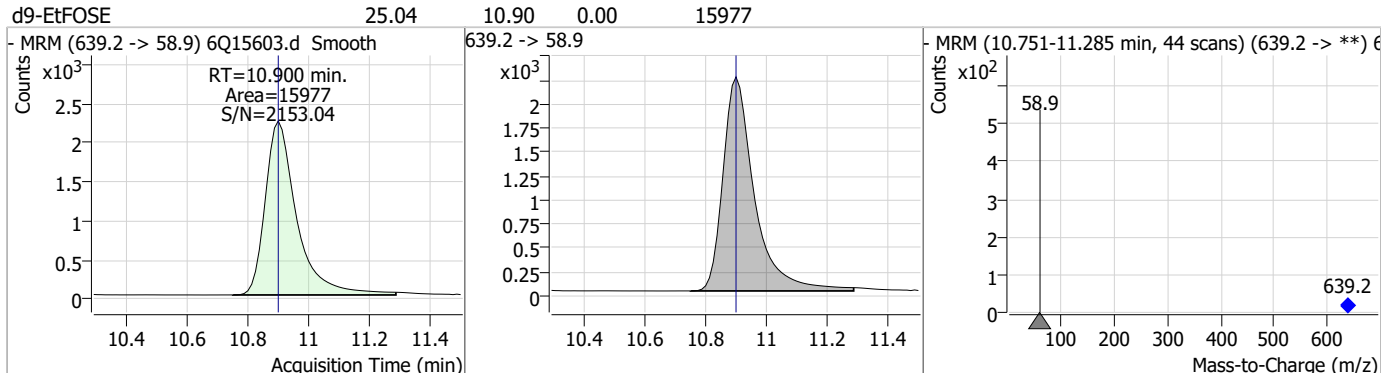


Perfluorinated Compounds by LC/MS/MS

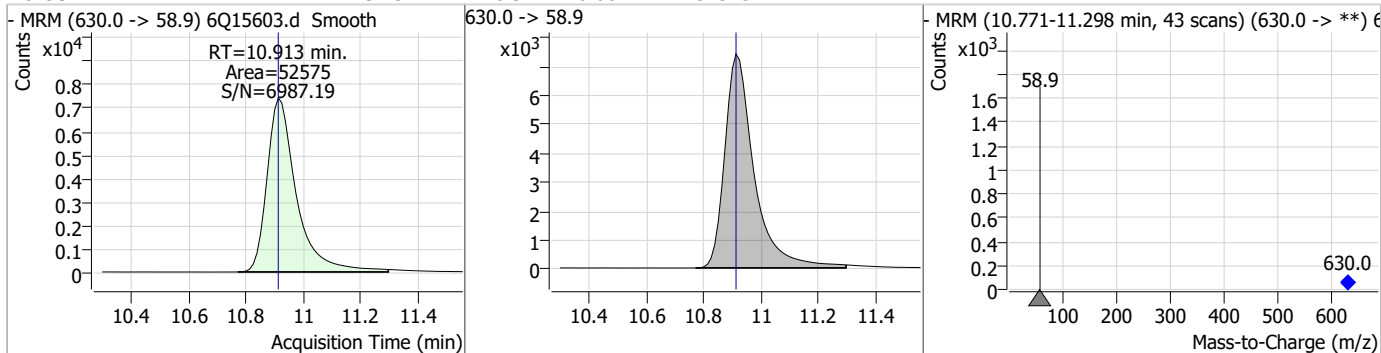
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.11	10.75	0.00	49553	511.9 -> 169.0	101.2	50.3	150.8



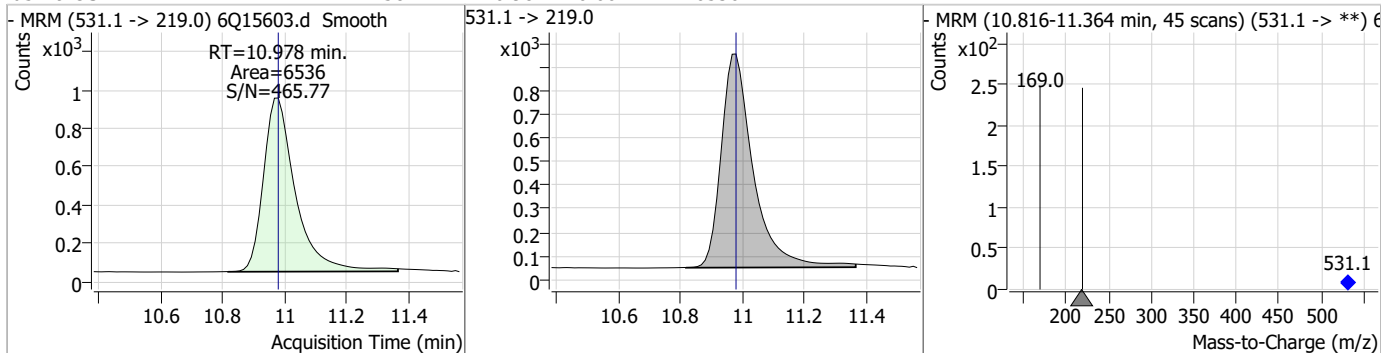
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.04	10.90	0.00	15977				



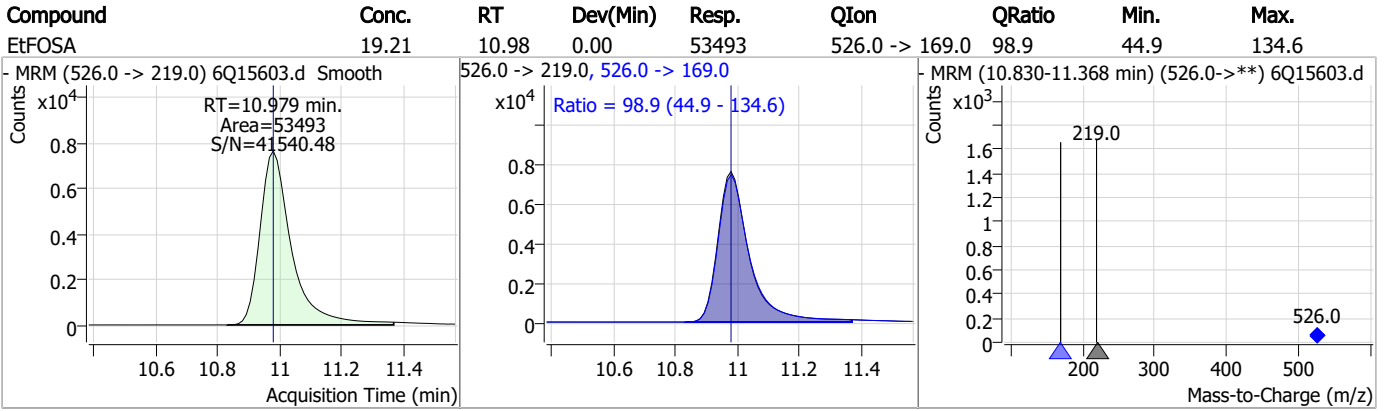
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	91.97	10.91	0.00	52575				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.58	10.98	0.00	6536				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q235-ICV235 Method: EPA DRAFT 1633
Lab FileID: 6Q15603.D Analyst approved: 03/29/23 13:08 Martha Valls
Injection Time: 03/28/23 18:40 Supervisor approved: 03/29/23 18:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15801.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 5:05:29 PM
 Sample Name : cc235-1.0LL
 Vial : P1-A2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	99609	10.00 µg/L	0.025
M5-PFPeA	4.347	268.3 -> 223.0	47448	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	43199	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	44383	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	77297	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	23677	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	21163	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	21807	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	26524	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	15427	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	22513	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	16500	2.50 µg/L	0.012
M3-PFHxS	7.252	402.1 -> 79.9	10964	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	10218	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	3007	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3963	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3832	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	29443	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	18175	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	27558	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	31725	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	19647	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	8227	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	6951	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	11589	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	43124	5.00 µg/L	0.025
18O2-PFHxS	7.264	403.0 -> 83.9	8304	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	94025	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	27302	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	25417	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	43008	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	3007	5.56 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.2%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3963	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3832	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-PFDoDA	9.019	615.1 -> 570.0	26524	1.19 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-PFTeDA	9.746	715.2 -> 670.0	15427	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.496	302.1 -> 79.9	16500	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFHxS	7.252	402.1 -> 79.9	10964	2.34 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 = 93.5%	
13C4-PFBA	2.938	216.8 -> 171.9	99609	10.00 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.493	367.1 -> 322.0	44383	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.553	318.0 -> 273.0	43199	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C5-PFPeA	4.347	268.3 -> 223.0	47448	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C6-PFDA	8.147	519.1 -> 474.1	21163	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C7-PFUnDA	8.589	570.0 -> 525.1	21807	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	22513	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C8-PFOA	7.137	421.1 -> 376.0	77297	2.48 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-PFOS	8.310	507.1 -> 79.9	10218	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C9-PFNA	7.667	472.1 -> 427.0	23677	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.4%	
d3-MeFOSAA	8.204	573.2 -> 419.0	29443	5.15 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	18175	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d3-MeFOSA	10.745	515.0 -> 219.0	6951	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSAA	8.400	589.2 -> 419.0	27558	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
d7-MeFOSE	10.653	623.2 -> 58.9	31725	26.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
d9-EtFOSE	10.900	639.2 -> 58.9	19647	24.61 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d5-EtFOSA	10.965	531.1 -> 219.0	8227	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	4198	0.67 µg/L	99
		327.1 -> 80.9	1025		
6:2FTS	6.911	427.1 -> 407.0	3961	0.75 µg/L	97
		427.1 -> 80.9	816		
8:2FTS	7.936	527.1 -> 507.0	2245	0.81 µg/L	100
		527.1 -> 80.8	517		
EtFOSAA	8.401	584.2 -> 419.1	906	0.21 µg/L	98
		584.2 -> 526.0	455		
FOSA	9.634	498.1 -> 77.9	1485	0.19 µg/L	98
		498.1 -> 478.0	46		
MeFOSAA	8.205	570.1 -> 419.0	1064	0.20 µg/L	m 97
		570.1 -> 483.0	191		
PFBA	2.944	212.8 -> 168.9	1644	0.73 µg/L	100
PFBS	5.497	298.7 -> 79.9	910	0.14 µg/L	87
		298.7 -> 98.8	504		
PFDA	8.148	512.9 -> 469.0	3402	0.14 µg/L	m 92
		512.9 -> 219.0	585		
PFDODA	9.019	613.1 -> 569.0	3576	0.18 µg/L	99
		613.1 -> 319.0	443		
PFDS	9.195	599.0 -> 79.9	576	0.19 µg/L	84

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.506	599.0 -> 98.8	251	0.18	µg/L	97
		363.1 -> 319.0	4559			
PFHpS	7.806	363.1 -> 169.0	608	0.19	µg/L	99
		449.0 -> 79.9	760			
PFHxA	5.556	449.0 -> 98.9	424	0.18	µg/L	98
		313.0 -> 269.0	2844			
PFHxS	7.253	313.0 -> 118.9	140	0.20	µg/L	m
		398.7 -> 79.9	945			
PFNA	7.668	398.7 -> 98.9	480	0.16	µg/L	m
		463.0 -> 419.0	2257			
PFNS	8.763	463.0 -> 219.0	634	0.17	µg/L	99
		548.8 -> 79.9	728			
PFOA	7.138	548.8 -> 98.9	369	0.17	µg/L	97
		413.0 -> 369.0	5536			
PFOS	8.311	413.0 -> 169.0	811	0.17	µg/L	m
		498.9 -> 79.9	737			
PFPeA	4.349	498.9 -> 98.8	447	0.37	µg/L	100
		263.0 -> 219.0	3765			
PFPeS	6.558	349.1 -> 79.9	902	0.17	µg/L	96
		349.1 -> 98.9	476			
PFTeDA	9.746	713.1 -> 669.0	2935	0.17	µg/L	95
		713.1 -> 168.9	256			
PFTrDA	9.403	663.0 -> 619.0	2892	0.17	µg/L	98
		663.0 -> 168.9	251			
PFUnDA	8.601	563.1 -> 519.0	3043	0.16	µg/L	89
		563.1 -> 269.1	550			
11CI-PF3OUdS	9.454	630.9 -> 450.9	6701	0.64	µg/L	92
		632.9 -> 452.9	2180			
9CI-PF3ONS	8.641	530.8 -> 351.0	13543	0.70	µg/L	96
		532.8 -> 353.0	4694			
ADONA	6.756	376.9 -> 250.9	26089	0.68	µg/L	97
		376.9 -> 84.8	5958			
HFPO-DA	5.931	284.9 -> 168.9	1272	0.76	µg/L	97
		284.9 -> 184.9	168			
3:3FTCA	3.827	241.0 -> 177.0	493	0.92	µg/L	98
		241.0 -> 117.0	79			
5:3FTCA	6.223	341.0 -> 237.1	15300	4.32	µg/L	96
		341.0 -> 217.0	13424			
7:3FTCA	7.633	441.0 -> 316.9	8383	4.46	µg/L	90
		441.0 -> 336.9	14689			
EtFOSA	10.979	526.0 -> 219.0	596	0.17	µg/L	88
		526.0 -> 169.0	652			
EtFOSE	10.913	630.0 -> 58.9	1282	1.82	µg/L	100
		511.9 -> 219.0	522			
MeFOSA	10.747	511.9 -> 169.0	513	0.17	µg/L	95
		616.1 -> 58.9	2106			
MeFOSE	10.666	699.1 -> 79.9	304	1.84	µg/L	100
		699.1 -> 98.8	191			
PFDoDS	9.873	295.0 -> 201.0	346	0.17	µg/L	91
		295.0 -> 84.9	138			
NFDHA	5.435	279.0 -> 85.1	1076	0.37	µg/L	94
		229.0 -> 84.9	1020			
PFMBA	4.762	314.8 -> 134.9	6731	0.35	µg/L	100
		314.8 -> 82.9	208			
PFMPA	3.500			0.37	µg/L	100
PFEESA	6.024			0.30	µg/L	99

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



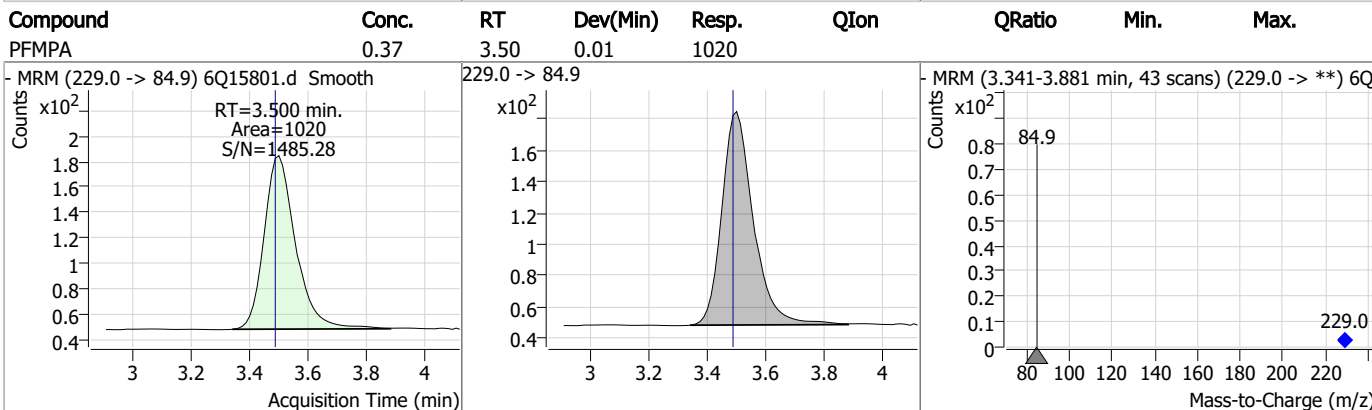
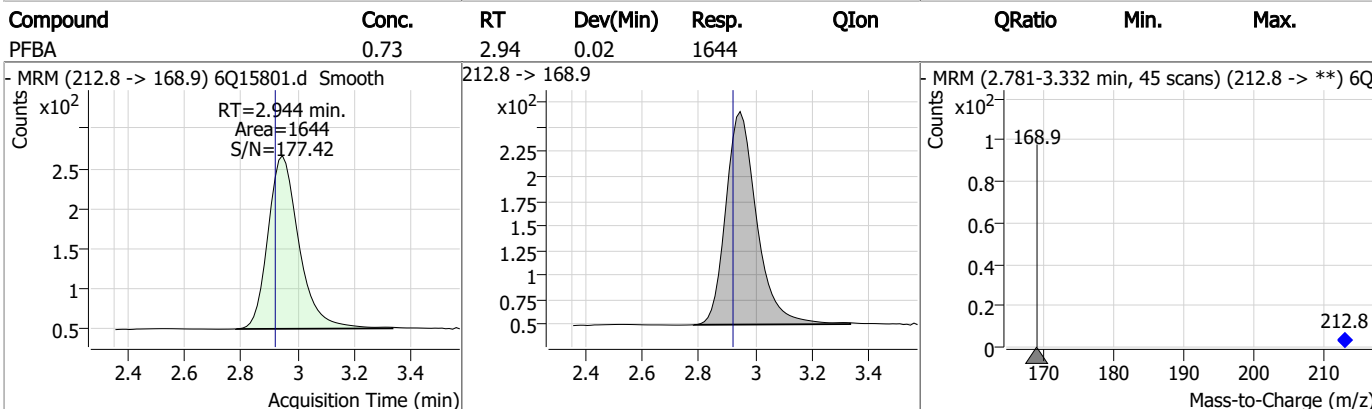
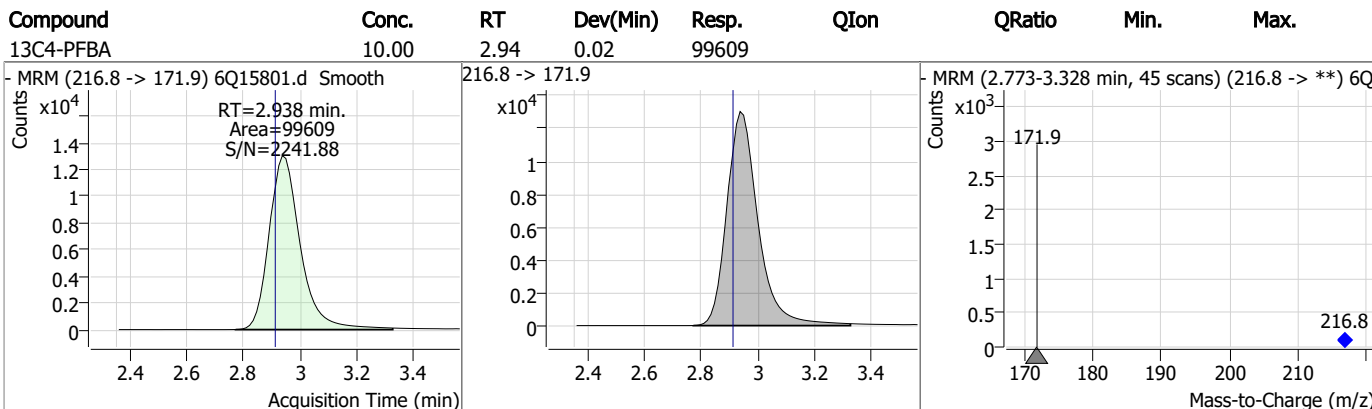
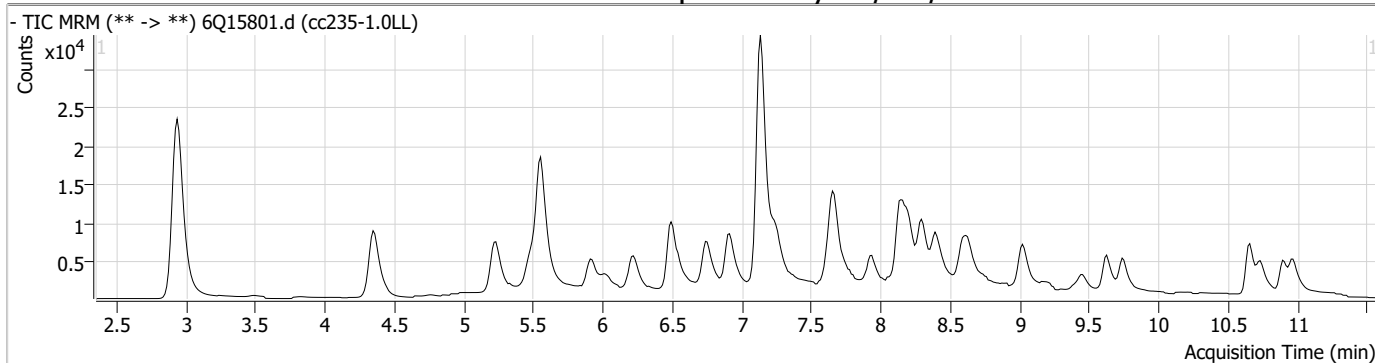
Perfluorinated Compounds by LC/MS/MS

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

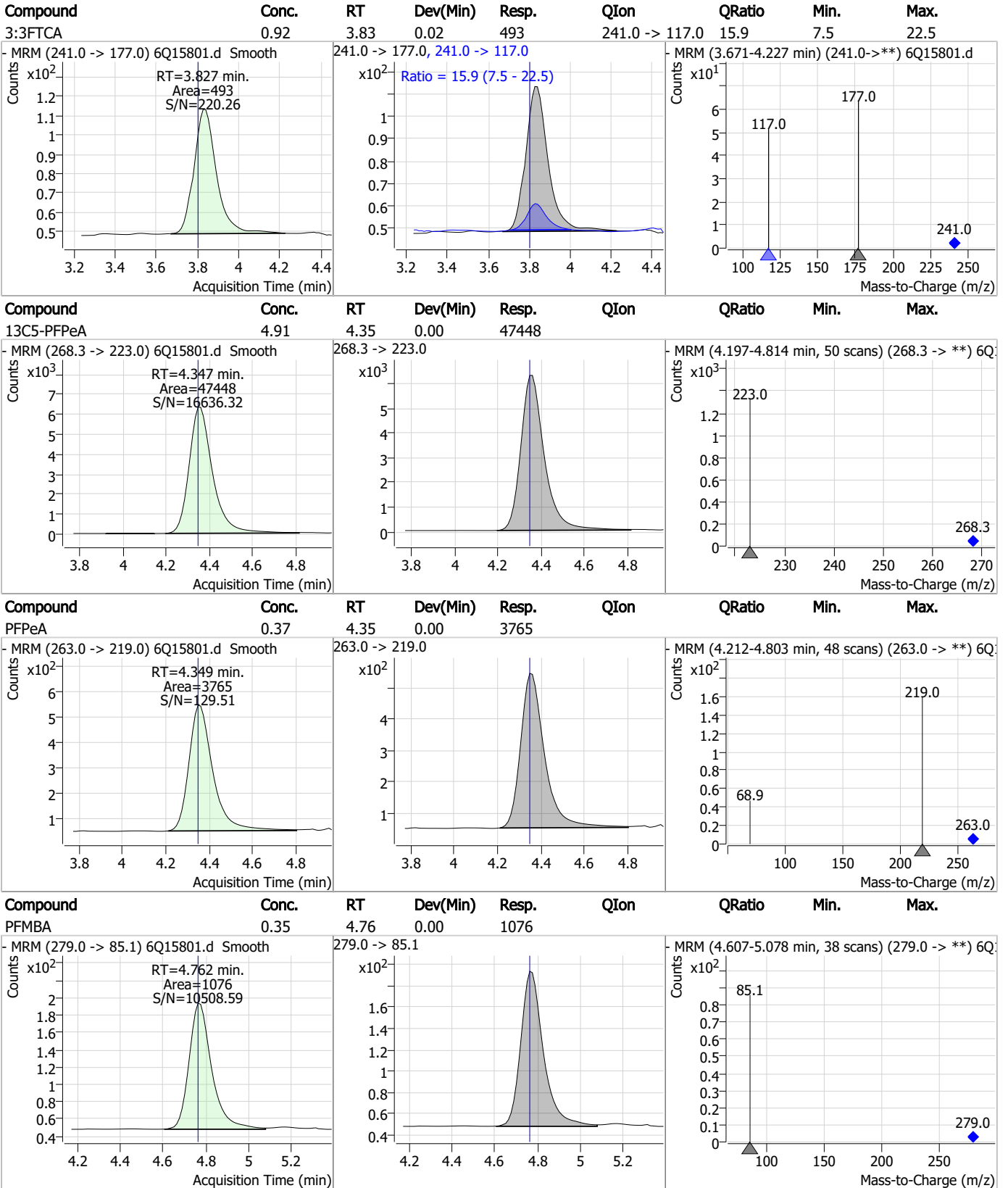
7

Perfluorinated Compounds by LC/MS/MS



7.7.12
7

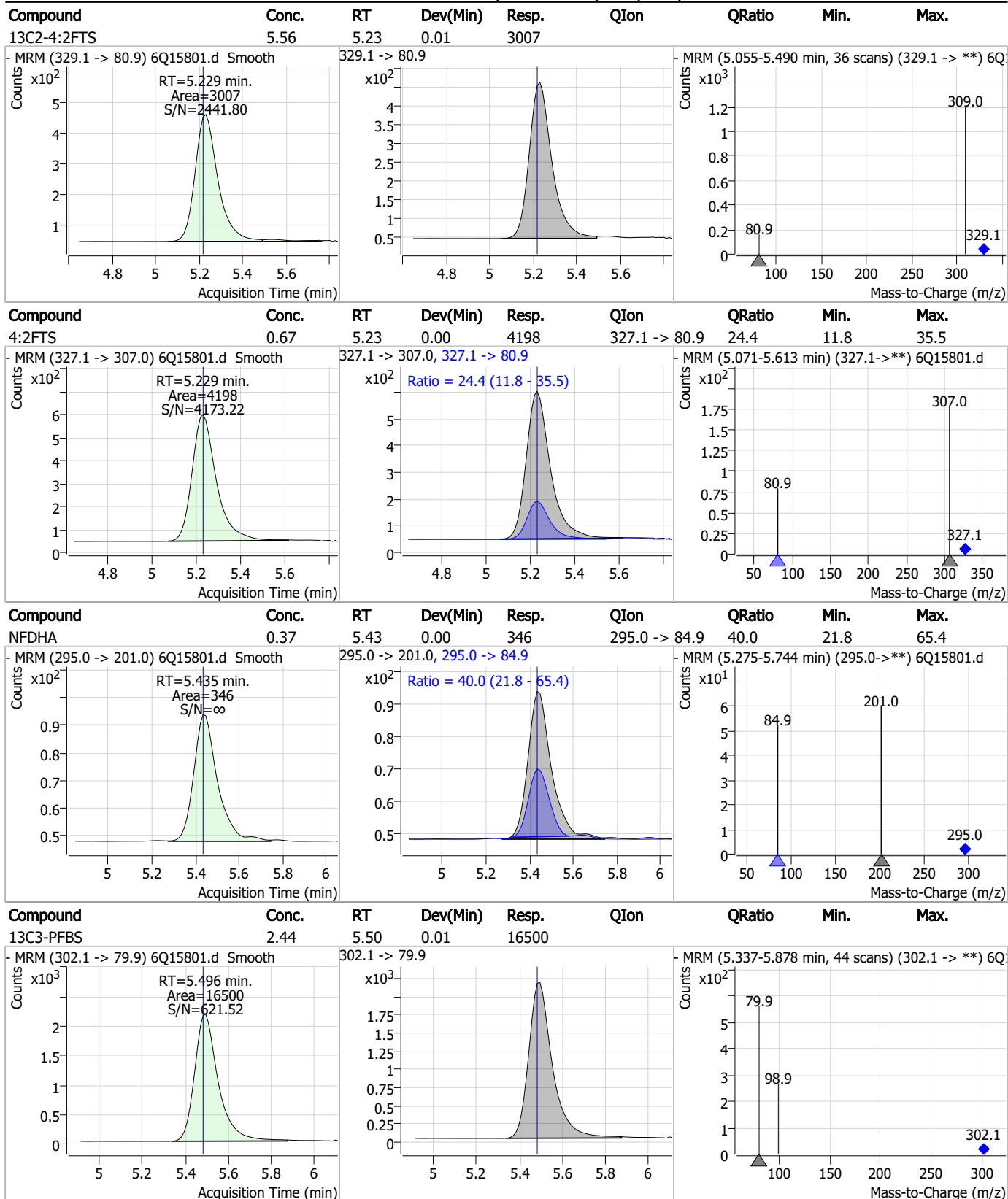
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



Perfluorinated Compounds by LC/MS/MS

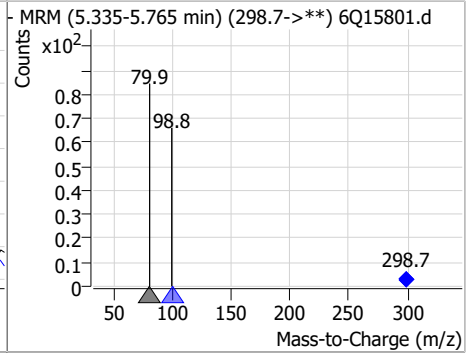
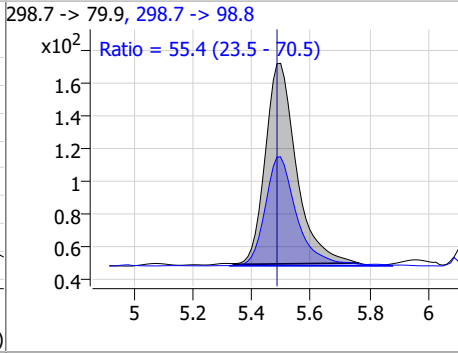
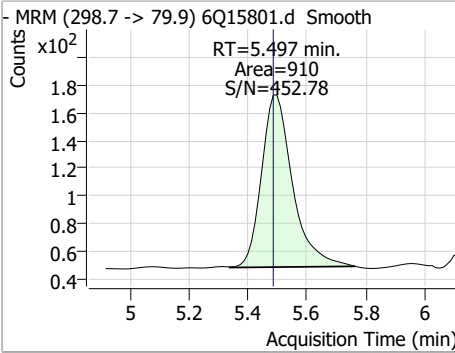


7.7.12
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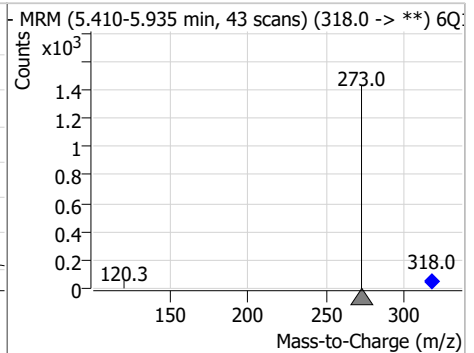
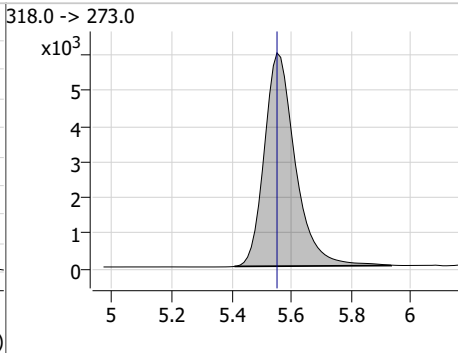
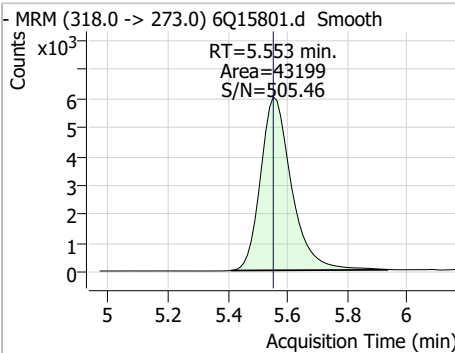


Perfluorinated Compounds by LC/MS/MS

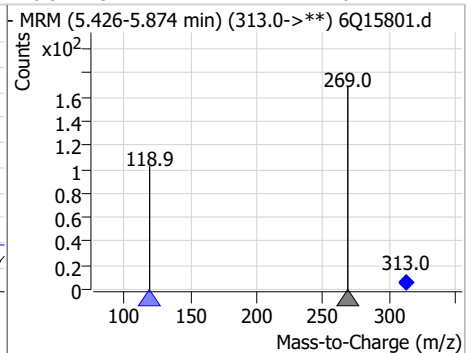
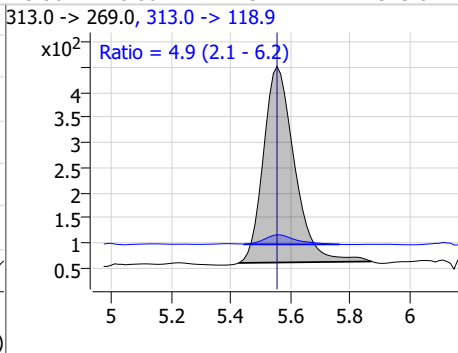
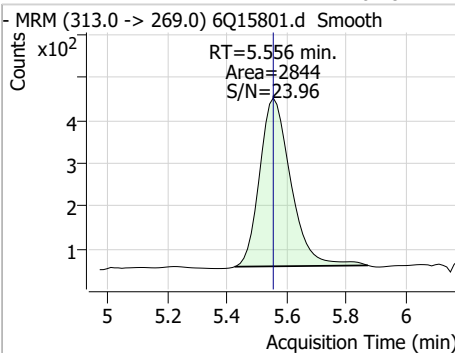
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.14	5.50	0.01	910	298.7 -> 98.8	55.4	23.5	70.5



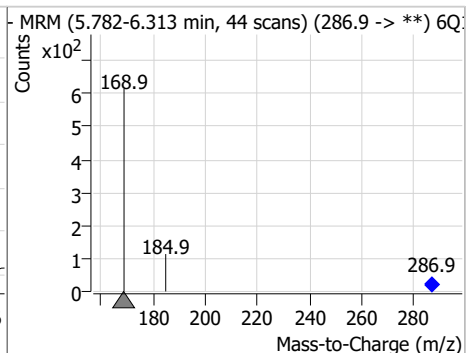
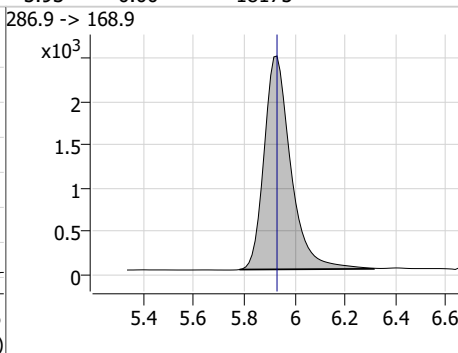
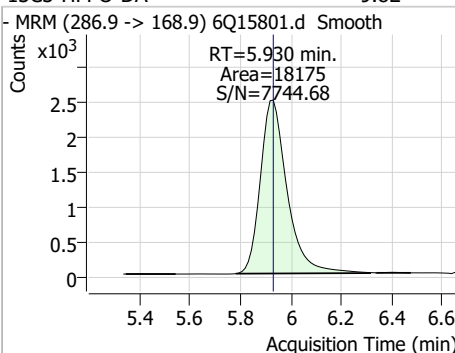
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.42	5.55	0.00	43199				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.18	5.56	0.00	2844	313.0 -> 118.9	4.9	2.1	6.2

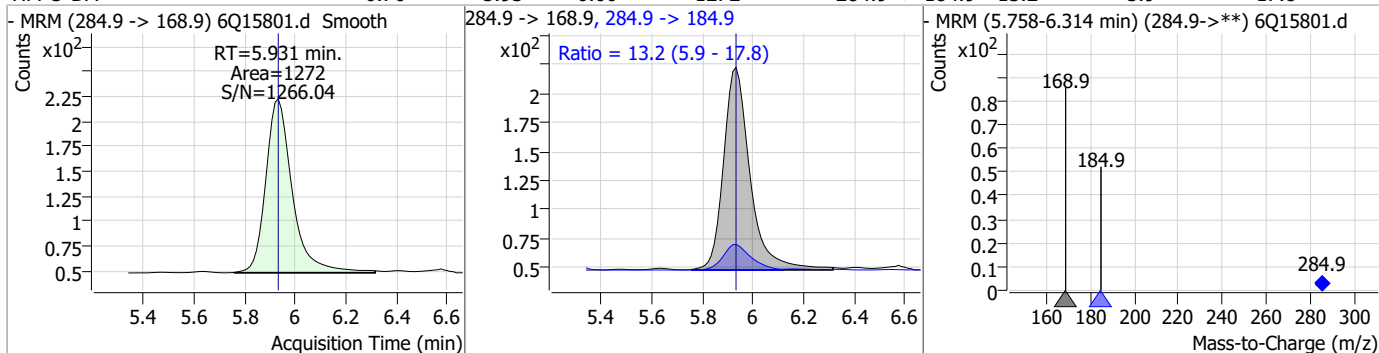


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.82	5.93	0.00	18175				

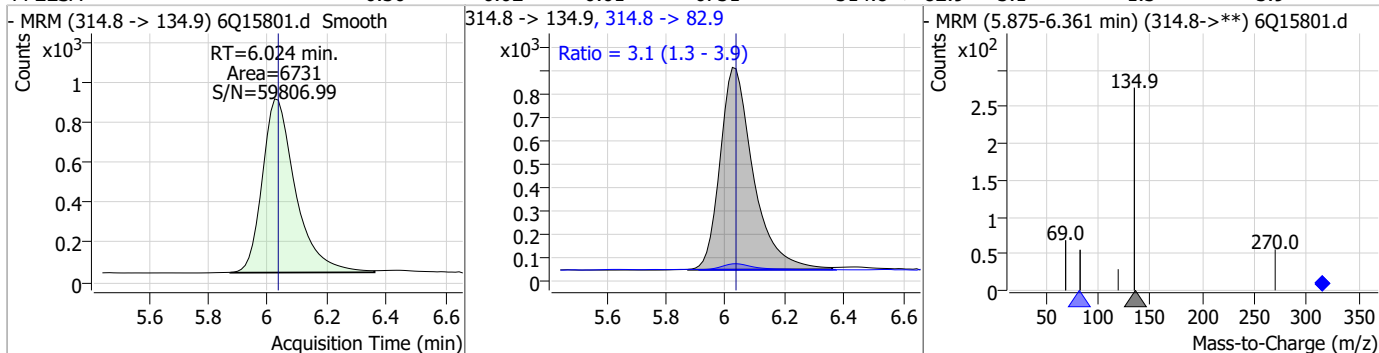


Perfluorinated Compounds by LC/MS/MS

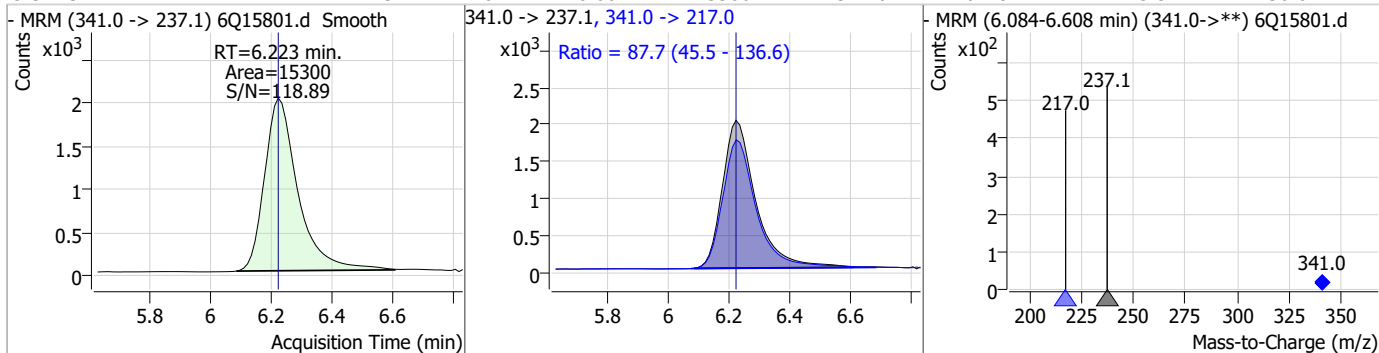
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.76	5.93	0.00	1272	284.9 -> 184.9	13.2	5.9	17.8



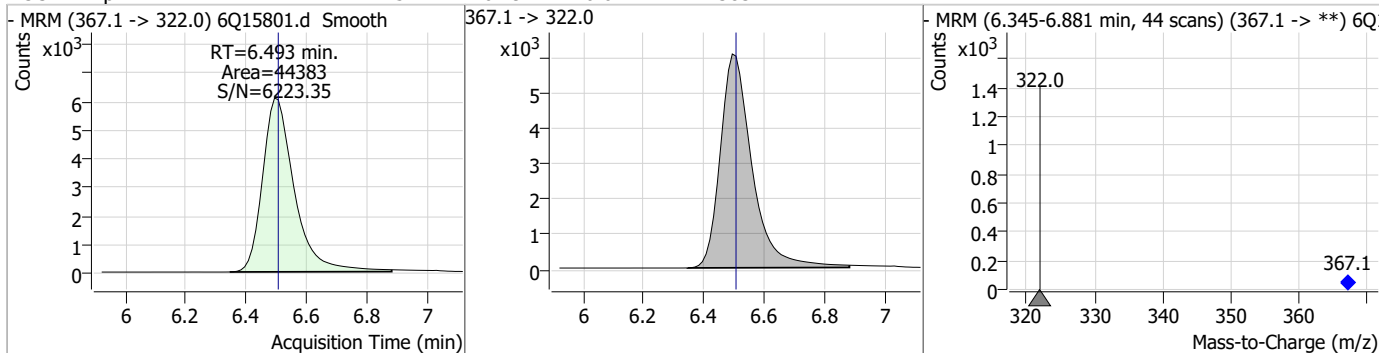
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.30	6.02	-0.01	6731	314.8 -> 82.9	3.1	1.3	3.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.32	6.22	0.00	15300	341.0 -> 217.0	87.7	45.5	136.6

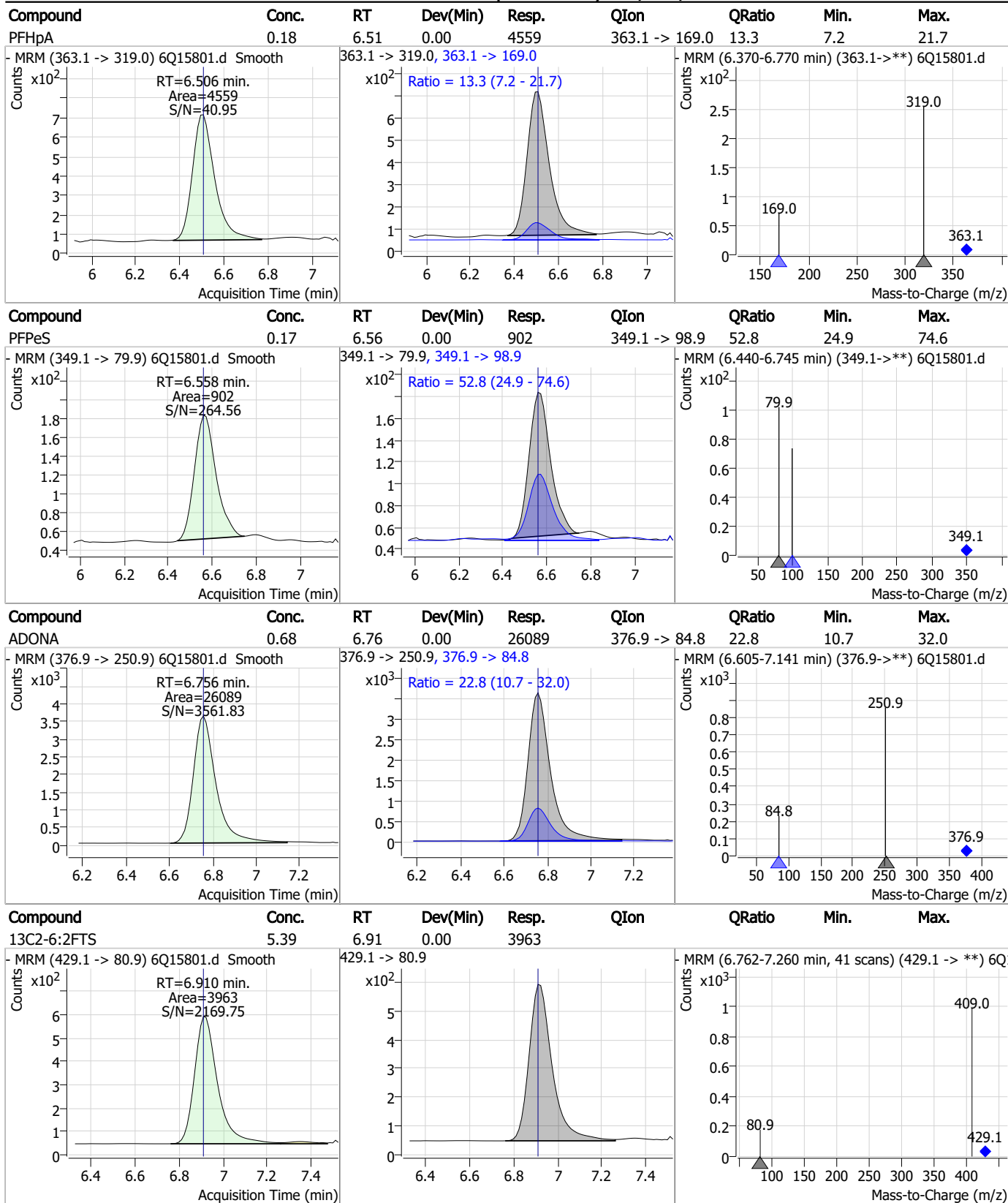


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.49	-0.01	44383	367.1 -> 322.0			



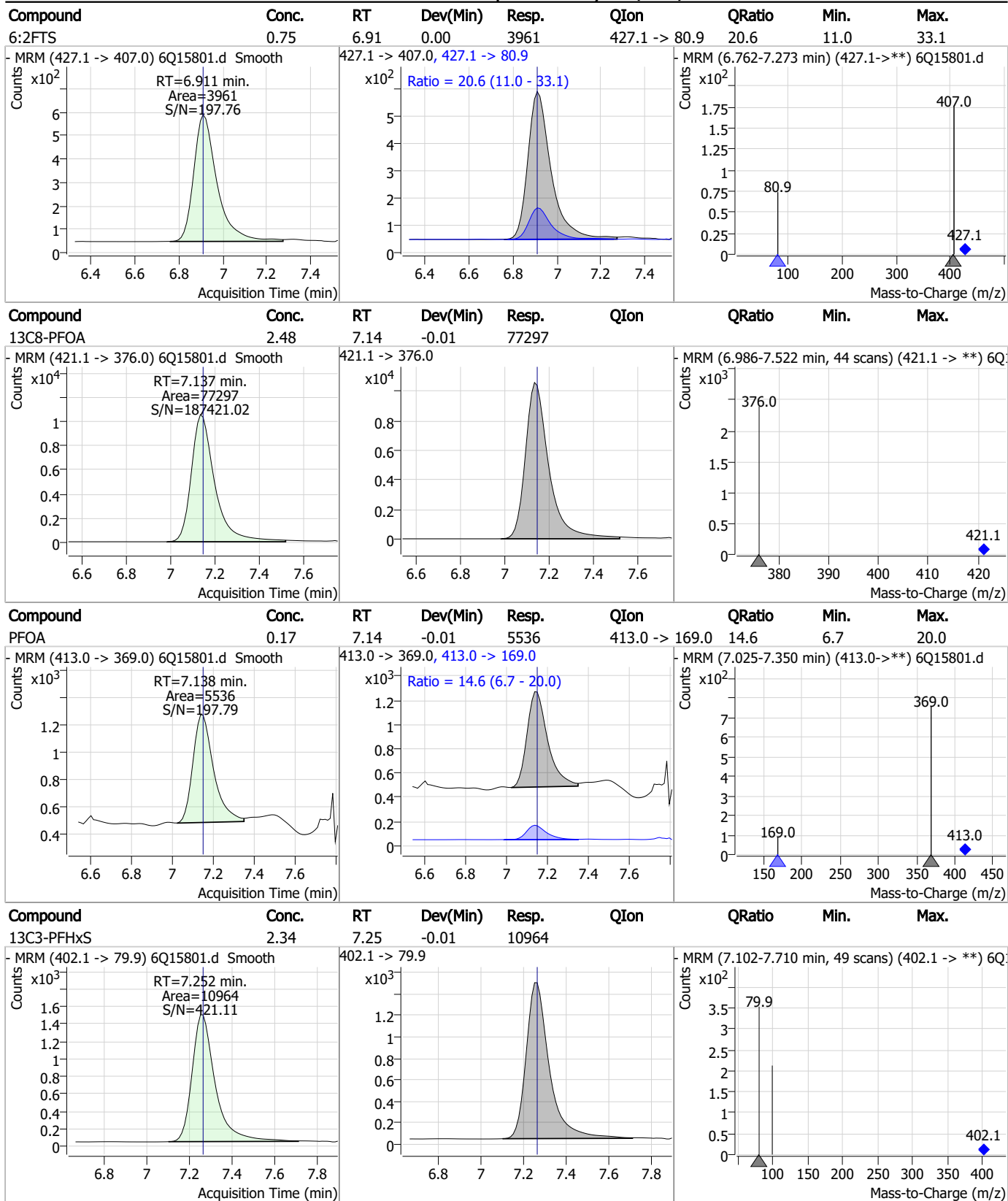
7.7.12
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Perfluorinated Compounds by LC/MS/MS



7.7.12

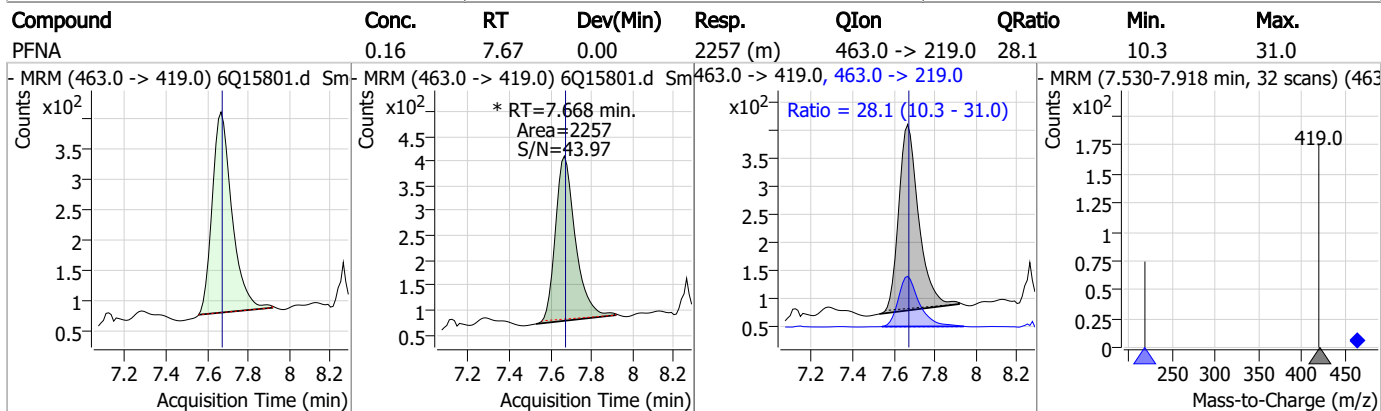
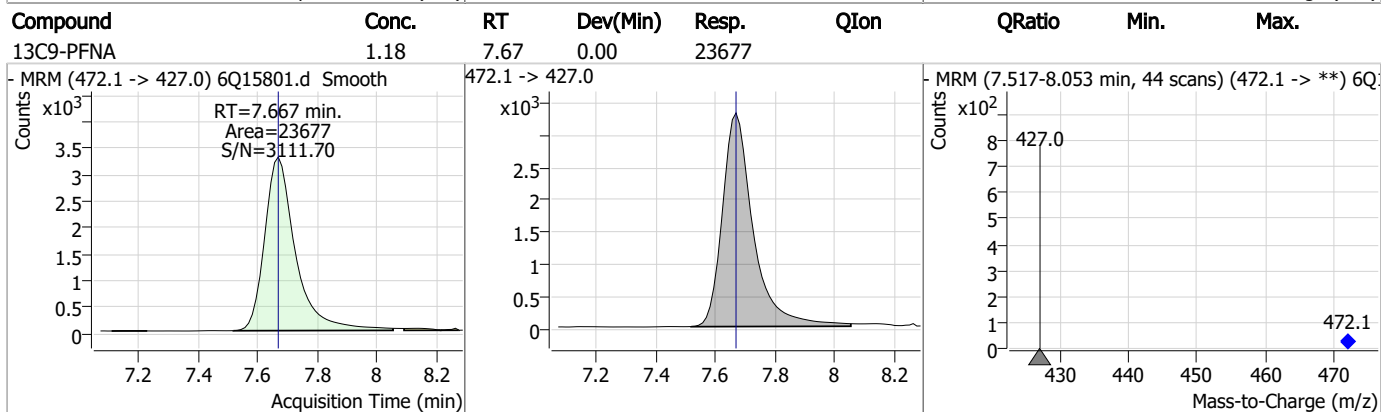
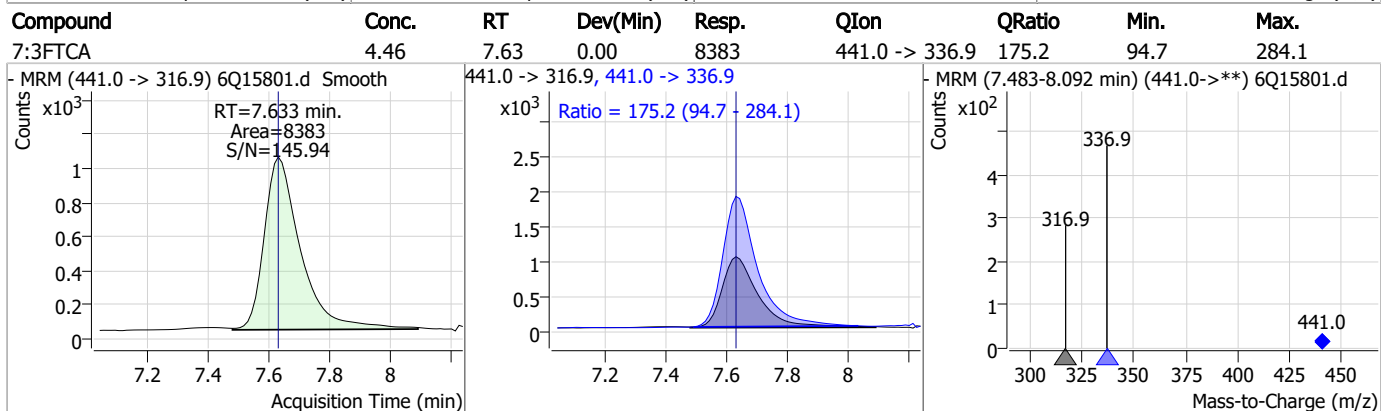
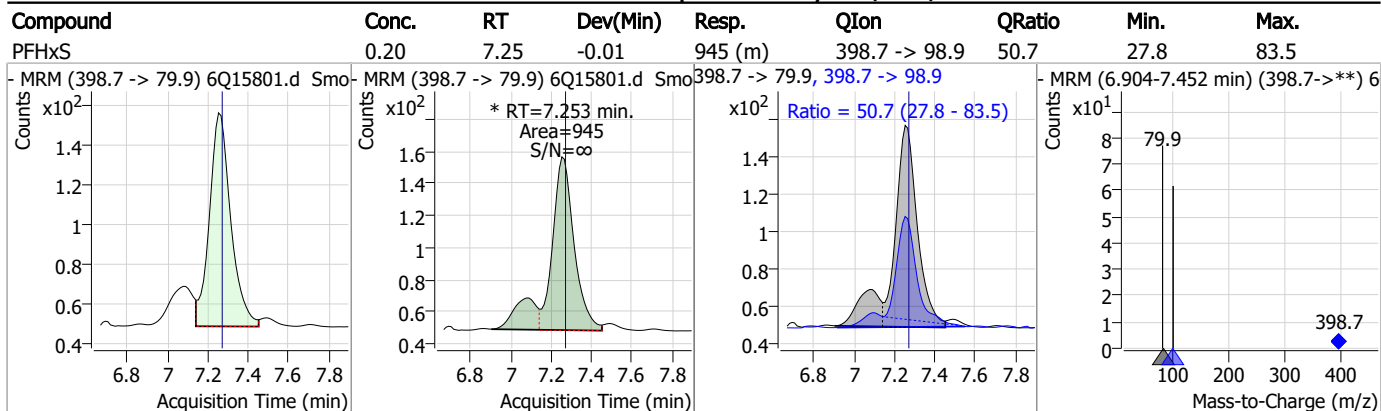
Perfluorinated Compounds by LC/MS/MS



7.7.12

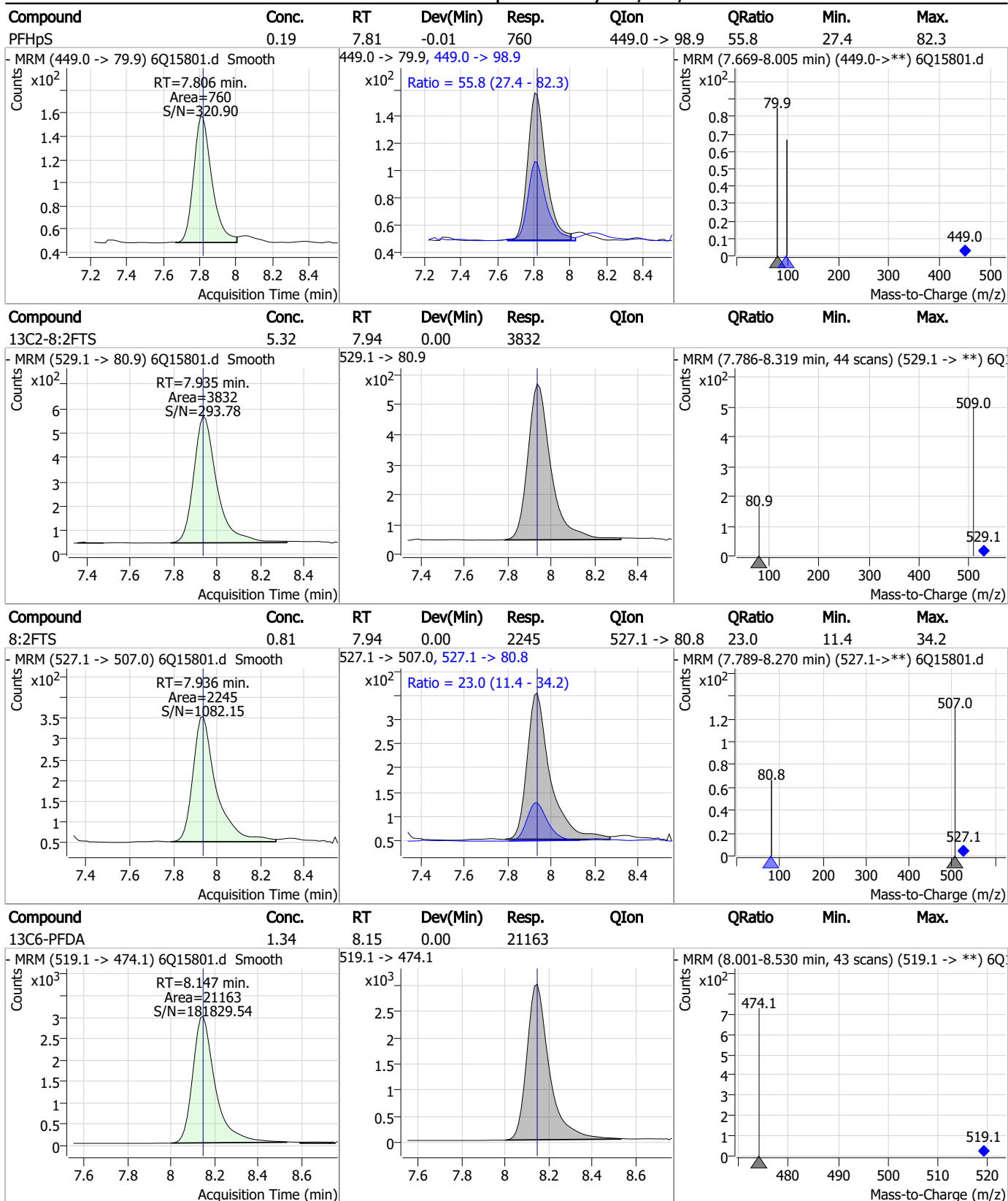


Perfluorinated Compounds by LC/MS/MS



7.7.12
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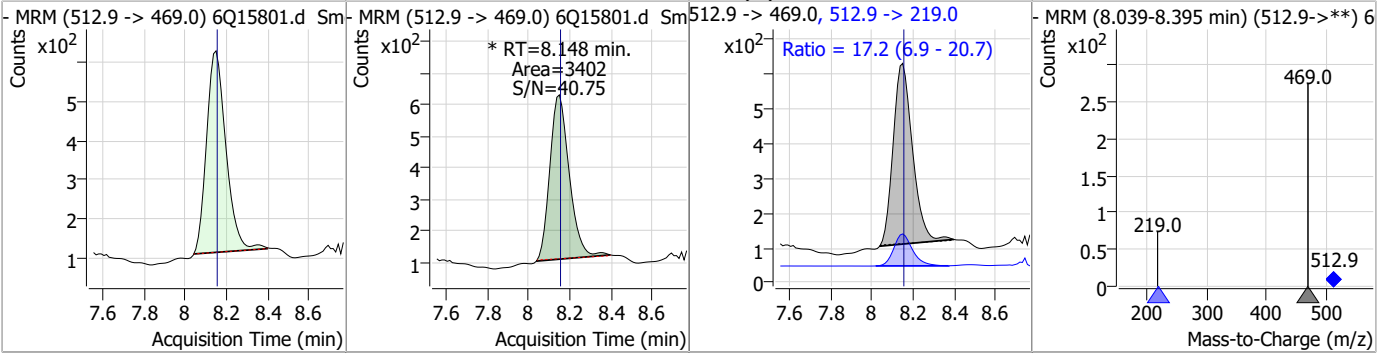
Perfluorinated Compounds by LC/MS/MS



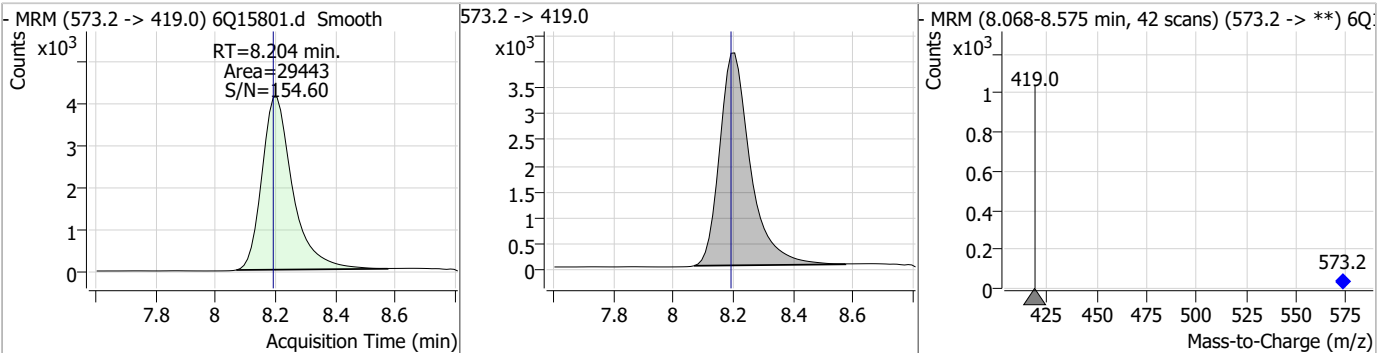
7.7.12
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Perfluorinated Compounds by LC/MS/MS

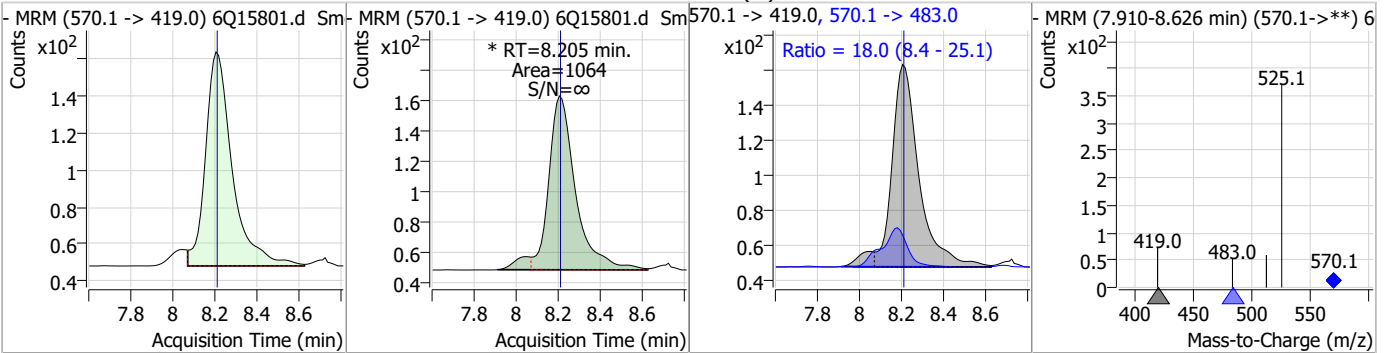
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.14	8.15	0.00	3402 (m)	512.9 -> 219.0	17.2	6.9	20.7



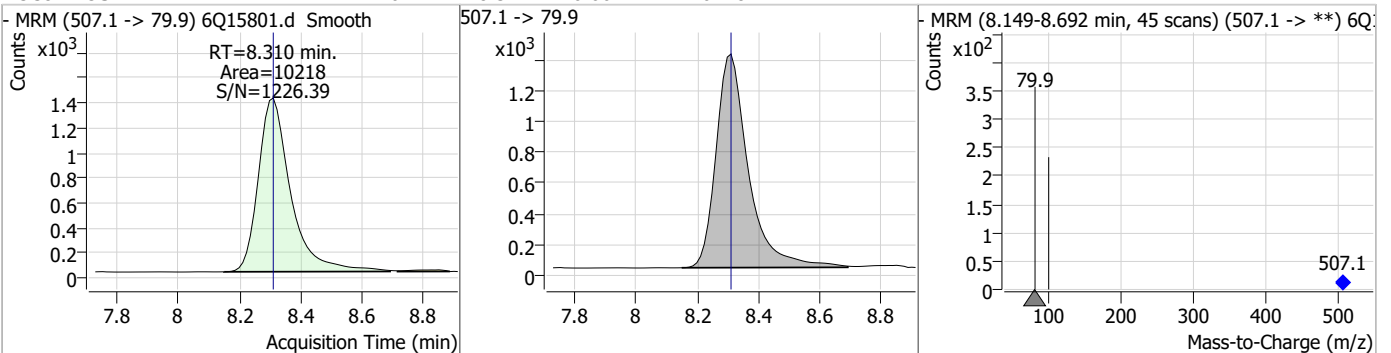
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.15	8.20	0.01	29443				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.21	0.00	1064 (m)	570.1 -> 483.0	18.0	8.4	25.1



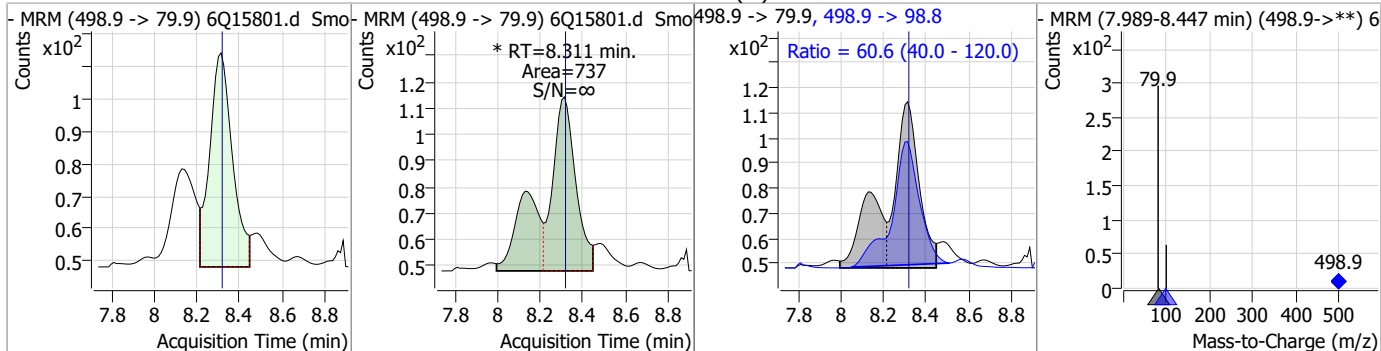
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.70	8.31	0.00	10218				



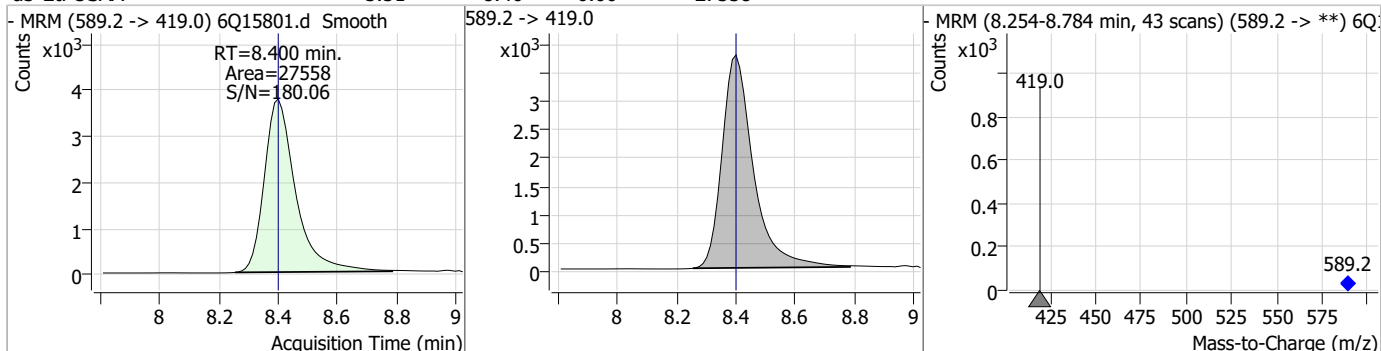
7.7.12
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Perfluorinated Compounds by LC/MS/MS

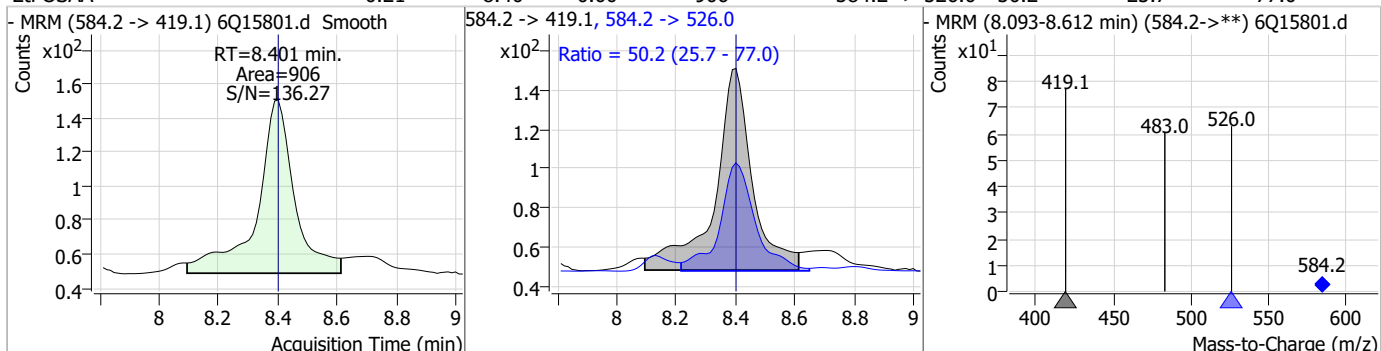
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.31	0.00	737 (m)	498.9 -> 98.8	60.6	40.0	120.0



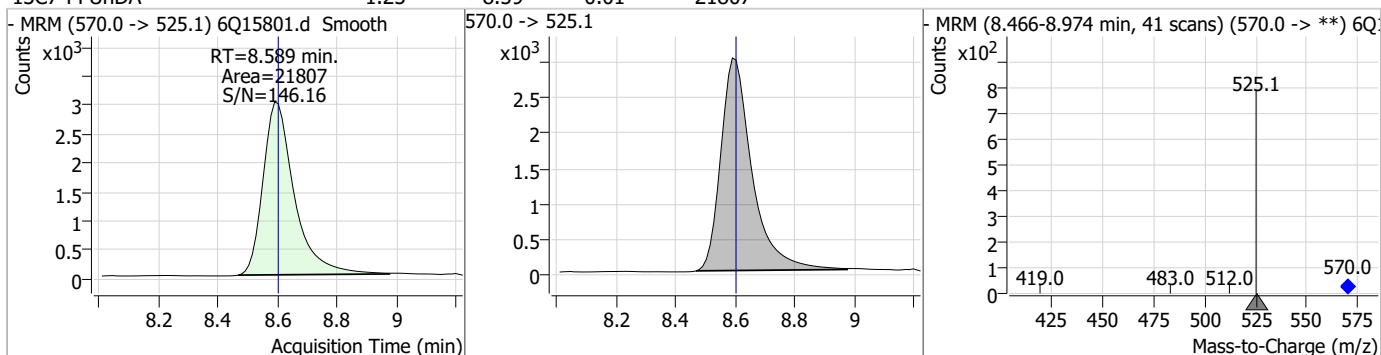
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.51	8.40	0.00	27558				



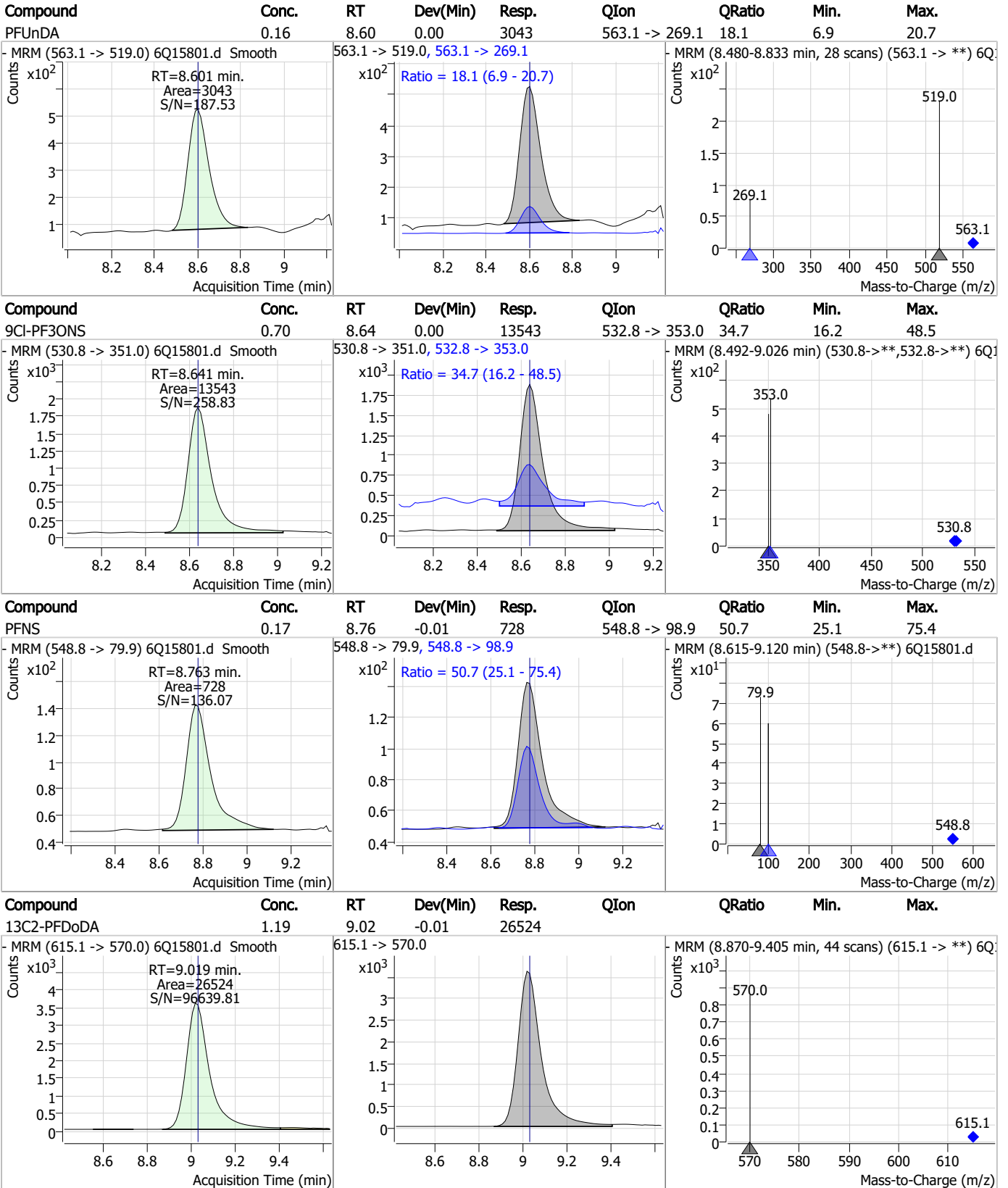
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.21	8.40	0.00	906	584.2 -> 526.0	50.2	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.59	-0.01	21807				



Perfluorinated Compounds by LC/MS/MS

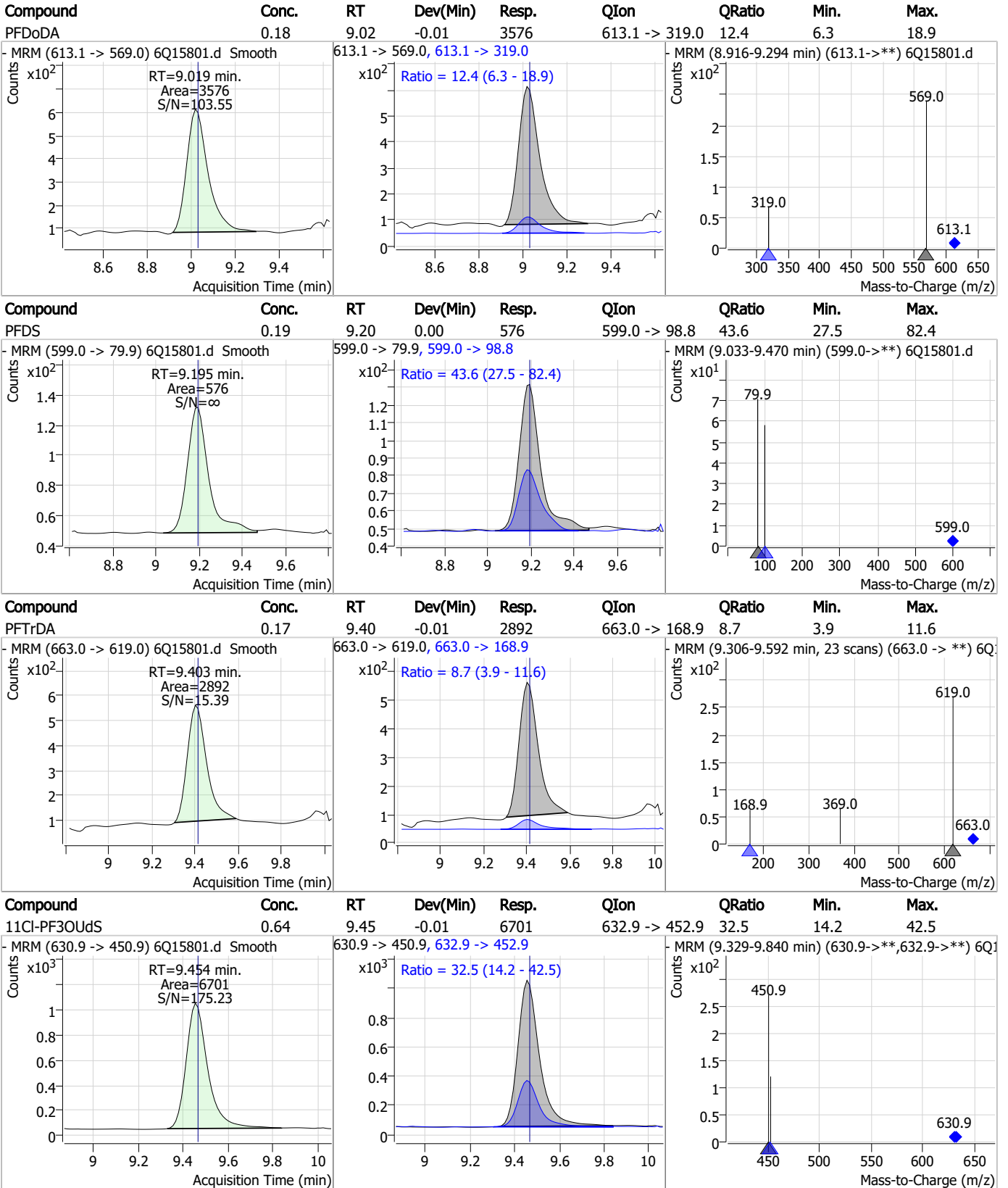


7.7.12

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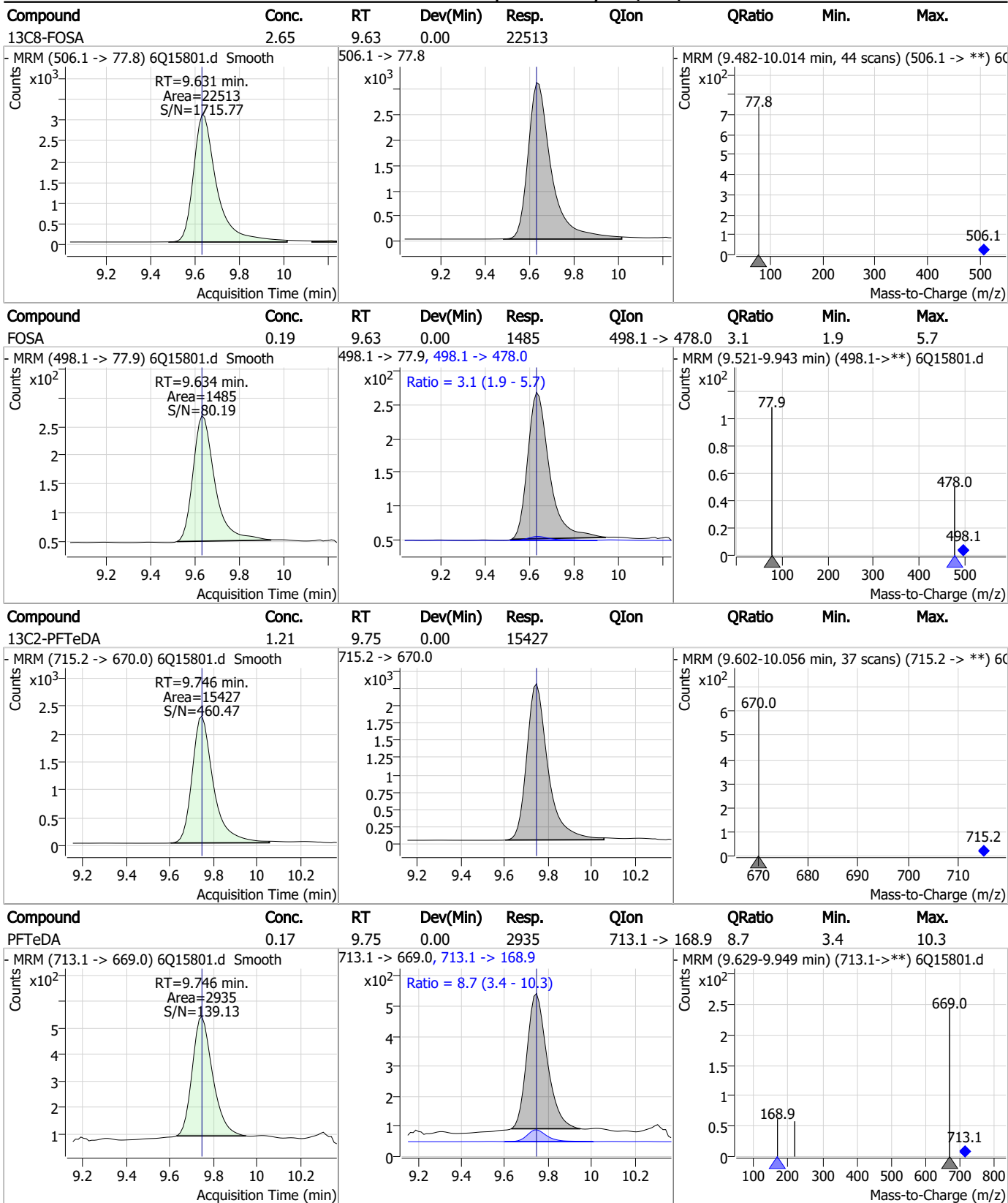
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



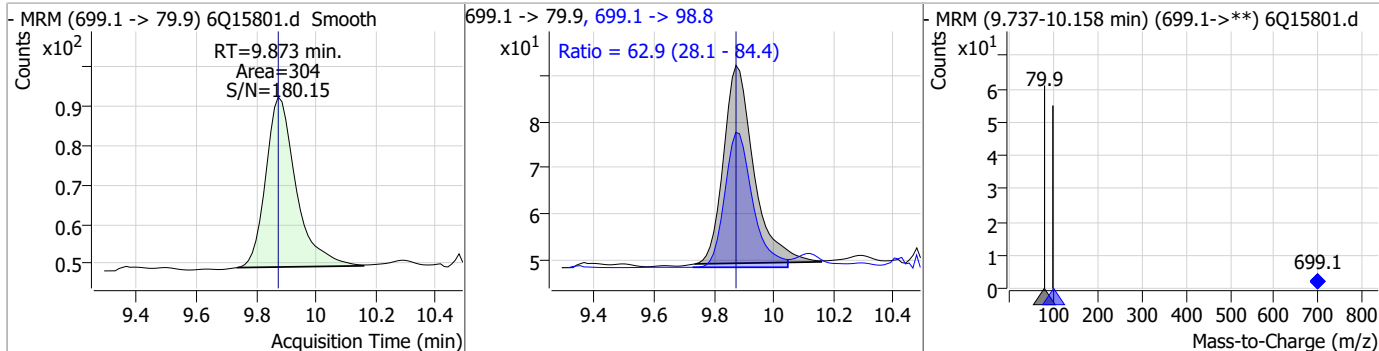
Perfluorinated Compounds by LC/MS/MS



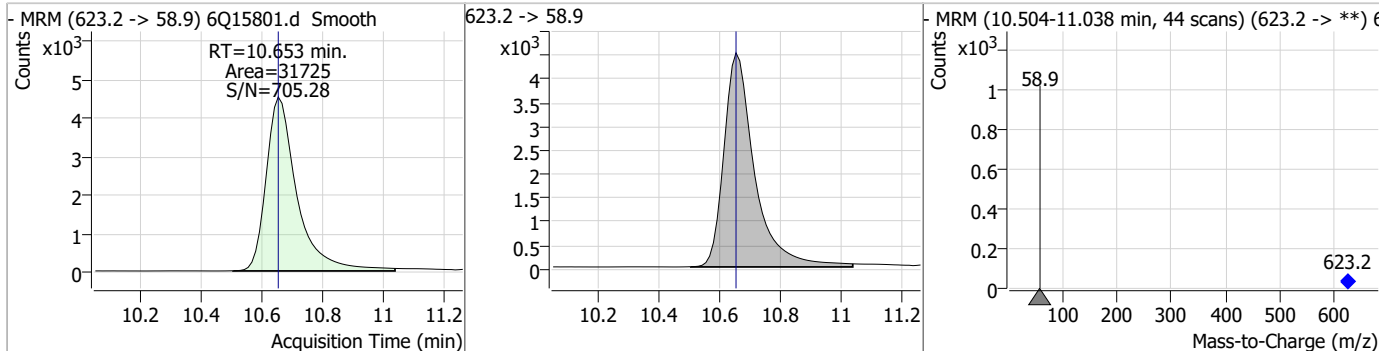
7.7.12

Perfluorinated Compounds by LC/MS/MS

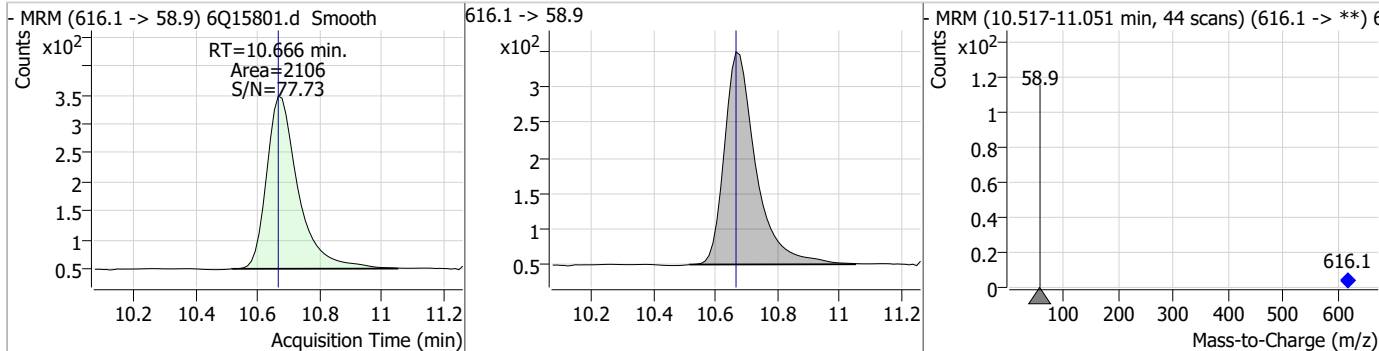
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.17	9.87	0.00	304	699.1 -> 98.8	62.9	28.1	84.4



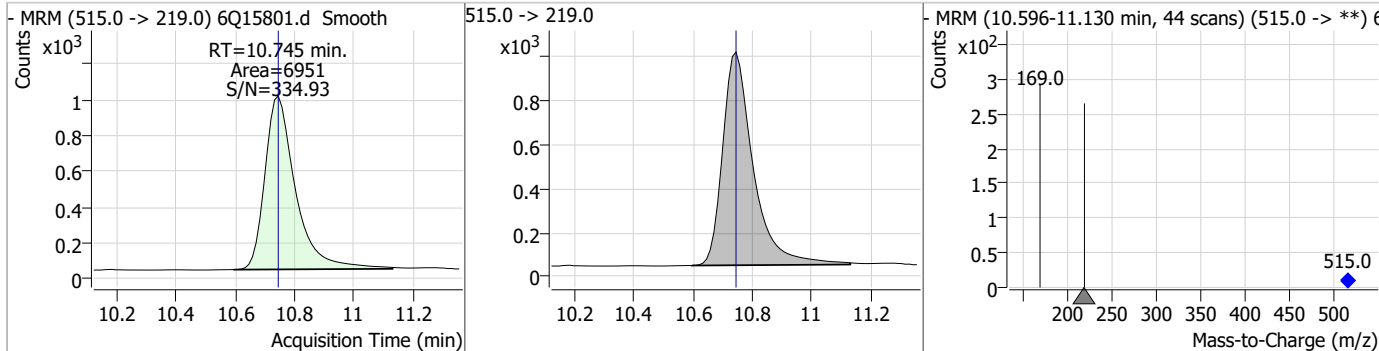
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.04	10.65	0.00	31725				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.84	10.67	0.00	2106				

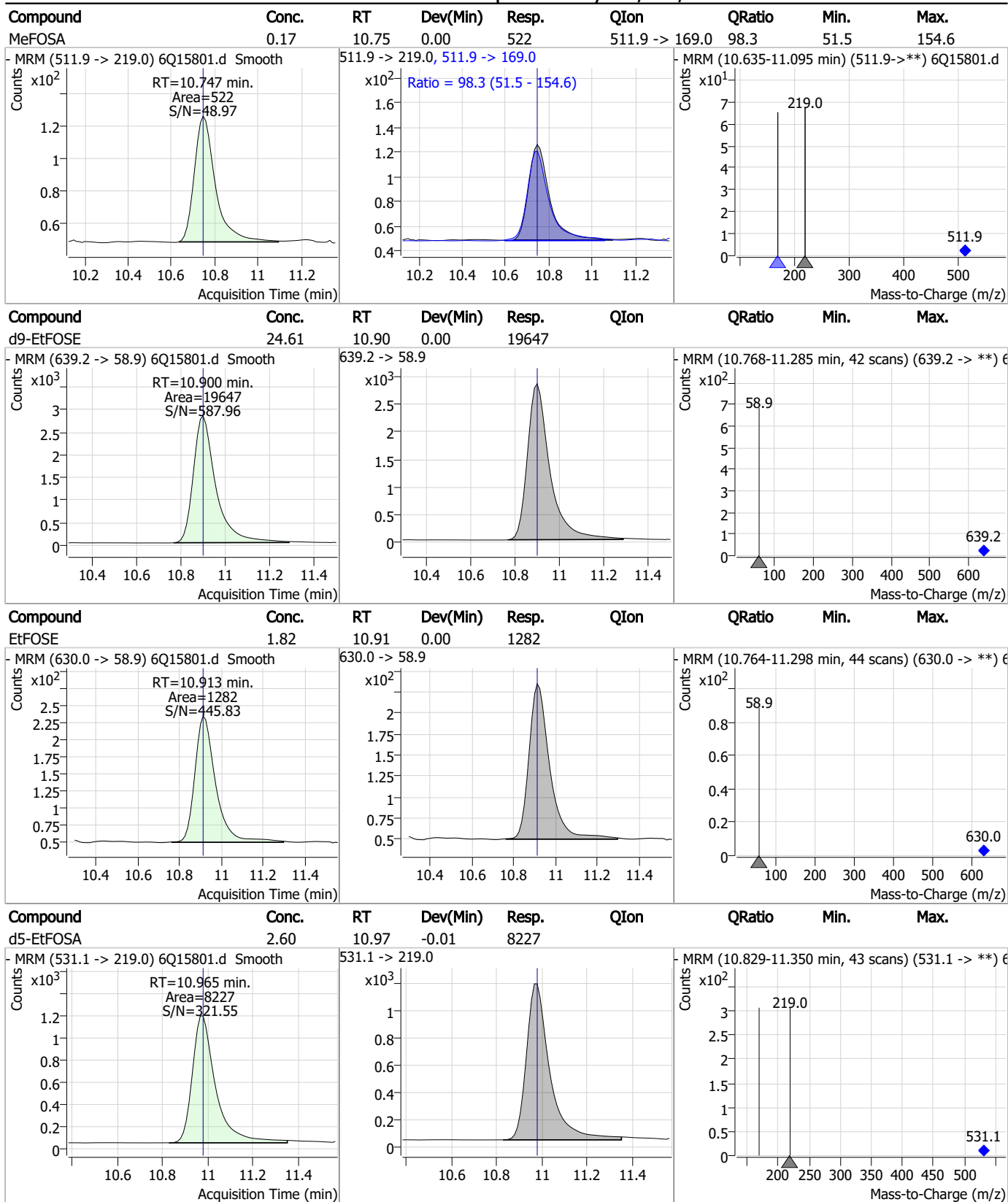


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	10.75	0.00	6951				



7.7.12
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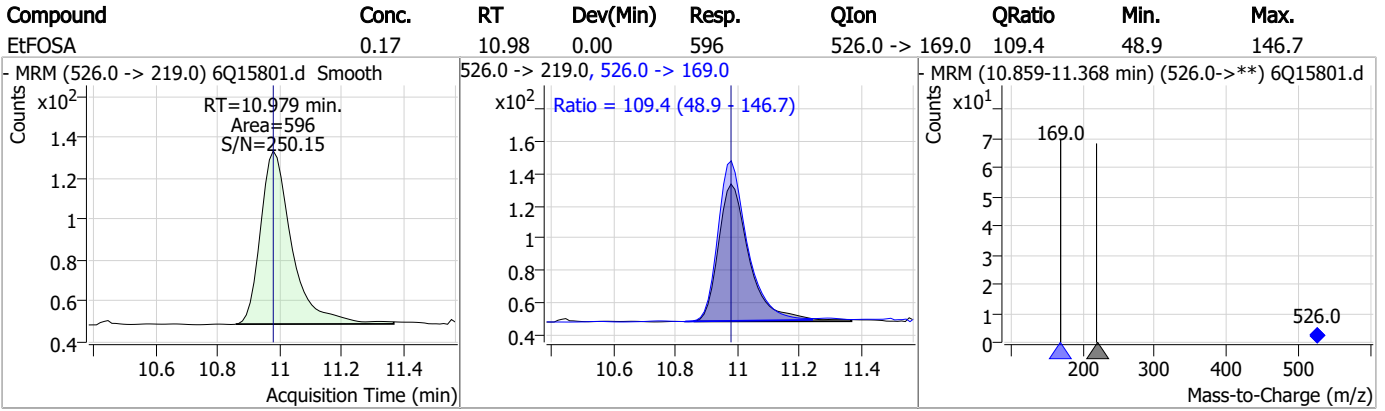
Perfluorinated Compounds by LC/MS/MS



7.7.12

7

Perfluorinated Compounds by LC/MS/MS



7.7.12
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Manual Integration Approval Summary

Sample Number: S6Q237-CC235
Lab FileID: 6Q15801.D
Injection Time: 03/30/23 17:05

Method: EPA DRAFT 1633
Analyst approved: 03/31/23 12:44 Mike Eger
Supervisor approved: 03/31/23 16:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorononanoic acid	375-95-1		7.67	Split peak
Perfluorodecanoic acid	335-76-2		8.15	Split peak
MeFOSAA	2355-31-9		8.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15810.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 7:11:18 PM
 Sample Name : cc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	77797	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	38277	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	36296	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	36514	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	62010	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	19902	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16991	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	17403	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	22624	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	12571	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17949	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13208	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	9025	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7756	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2428	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3049	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3099	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	23008	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	14957	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	21646	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	23797	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15531	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6612	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5629	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9144	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33943	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	6453	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	75024	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21803	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19740	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	35588	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2428	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.5%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3049	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3099	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-PFDoDA	9.019	615.1 -> 570.0	22624	1.28 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12571	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFBS	5.483	302.1 -> 79.9	13208	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C3-PFHxS	7.252	402.1 -> 79.9	9025	2.48 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 = 99.0%		
13C4-PFBA	2.913	216.8 -> 171.9	77797	9.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C4-PFHpA	6.493	367.1 -> 322.0	36514	2.43 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C5-PFHxA	5.553	318.0 -> 273.0	36296	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C5-PFPeA	4.347	268.3 -> 223.0	38277	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C6-PFDA	8.147	519.1 -> 474.1	16991	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C7-PFUnDA	8.601	570.0 -> 525.1	17403	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C8-FOSA	9.631	506.1 -> 77.8	17949	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.9%		
13C8-PFOA	7.137	421.1 -> 376.0	62010	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C8-PFOS	8.310	507.1 -> 79.9	7756	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C9-PFNA	7.667	472.1 -> 427.0	19902	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.2%		
d3-MeFOSAA	8.204	573.2 -> 419.0	23008	5.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	14957	9.76 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
d3-MeFOSA	10.745	515.0 -> 219.0	5629	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
d5-EtFOSAA	8.400	589.2 -> 419.0	21646	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.6%		
d7-MeFOSE	10.653	623.2 -> 58.9	23797	24.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
d9-EtFOSE	10.900	639.2 -> 58.9	15531	24.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
d5-EtFOSA	10.965	531.1 -> 219.0	6612	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.8%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	43481	8.58 µg/L	97
		327.1 -> 80.9	9679		
6:2FTS	6.911	427.1 -> 407.0	37447	9.16 µg/L	97
		427.1 -> 80.9	7792		
8:2FTS	7.936	527.1 -> 507.0	19940	8.85 µg/L	96
		527.1 -> 80.8	4911		
EtFOSAA	8.401	584.2 -> 419.1	8237	2.47 µg/L	97
		584.2 -> 526.0	4424		
FOSA	9.634	498.1 -> 77.9	14088	2.22 µg/L	100
		498.1 -> 478.0	520		
MeFOSAA	8.205	570.1 -> 419.0	9824	2.32 µg/L	93
		570.1 -> 483.0	1926		
PFBA	2.919	212.8 -> 168.9	16299	9.21 µg/L	100
PFBS	5.484	298.7 -> 79.9	10049	1.97 µg/L	98
		298.7 -> 98.8	4834		
PFDA	8.148	512.9 -> 469.0	38538	1.98 µg/L	98
		512.9 -> 219.0	5610		
PFDODA	9.019	613.1 -> 569.0	37187	2.22 µg/L	100
		613.1 -> 319.0	4629		
PFDS	9.183	599.0 -> 79.9	4984	2.16 µg/L	90

7.7.13
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	3079	2.22	µg/L	100
		363.1 -> 319.0	47348			
PFHpS	7.819	363.1 -> 169.0	6870	2.06	µg/L	89
		449.0 -> 79.9	6395			
PFHxA	5.556	449.0 -> 98.9	3998	2.27	µg/L	98
		313.0 -> 269.0	29708			
PFHxS	7.253	313.0 -> 118.9	1055	2.10	µg/L	m
		398.7 -> 79.9	8129			
PFNA	7.668	398.7 -> 98.9	4933	2.29	µg/L	99
		463.0 -> 419.0	27253			
PFNS	8.763	463.0 -> 219.0	5732	2.23	µg/L	93
		548.8 -> 79.9	7260			
PFOA	7.138	548.8 -> 98.9	3995	2.33	µg/L	99
		413.0 -> 369.0	61660			
PFOS	8.311	413.0 -> 169.0	8366	2.05	µg/L	m
		498.9 -> 79.9	6670			
PFPeA	4.349	498.9 -> 98.8	4857	4.53	µg/L	100
		263.0 -> 219.0	36755			
PFPeS	6.558	349.1 -> 79.9	10180	2.30	µg/L	97
		349.1 -> 98.9	5288			
PFTeDA	9.746	713.1 -> 669.0	30920	2.17	µg/L	100
		713.1 -> 168.9	2096			
PFTrDA	9.403	663.0 -> 619.0	34508	2.33	µg/L	97
		663.0 -> 168.9	3073			
PFUnDA	8.601	563.1 -> 519.0	34832	2.35	µg/L	96
		563.1 -> 269.1	5344			
11CI-PF3OUdS	9.454	630.9 -> 450.9	71626	8.36	µg/L	95
		632.9 -> 452.9	22154			
9CI-PF3ONS	8.641	530.8 -> 351.0	135373	8.54	µg/L	99
		532.8 -> 353.0	44393			
ADONA	6.756	376.9 -> 250.9	273878	8.70	µg/L	96
		376.9 -> 84.8	63983			
HFPO-DA	5.919	284.9 -> 168.9	12707	9.23	µg/L	98
		284.9 -> 184.9	1604			
3:3FTCA	3.802	241.0 -> 177.0	4550	10.55	µg/L	99
		241.0 -> 117.0	710			
5:3FTCA	6.223	341.0 -> 237.1	155764	52.32	µg/L	100
		341.0 -> 217.0	142254			
7:3FTCA	7.633	441.0 -> 316.9	87311	55.34	µg/L	91
		441.0 -> 336.9	153976			
EtFOSA	10.979	526.0 -> 219.0	6259	2.22	µg/L	96
		526.0 -> 169.0	6372			
EtFOSE	10.913	630.0 -> 58.9	12773	22.99	µg/L	100
		511.9 -> 219.0	5753			
MeFOSA	10.747	511.9 -> 169.0	5534	2.37	µg/L	93
		616.1 -> 58.9	19283			
MeFOSE	10.666	699.1 -> 79.9	3131	22.44	µg/L	100
		699.1 -> 98.8	2112			
PFDoDS	9.873	295.0 -> 201.0	3372	2.24	µg/L	85
		295.0 -> 84.9	1709			
NFDHA	5.423	279.0 -> 85.1	11402	4.34	µg/L	89
		229.0 -> 84.9	10060			
PFMBA	4.762	314.8 -> 134.9	74463	4.57	µg/L	100
		314.8 -> 82.9	1607			
PFMPA	3.488			4.48	µg/L	100
PFEESA	6.024			3.98	µg/L	99

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

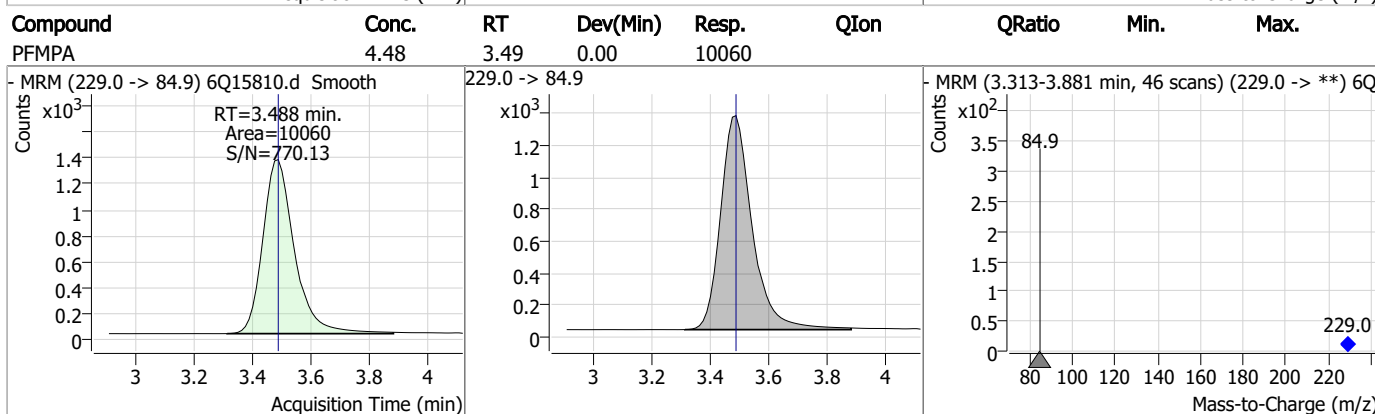
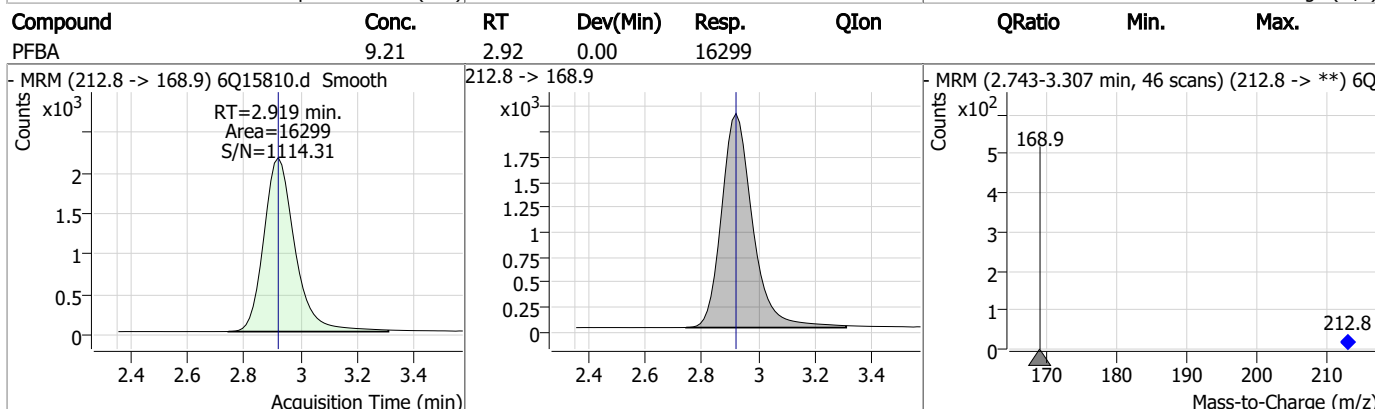
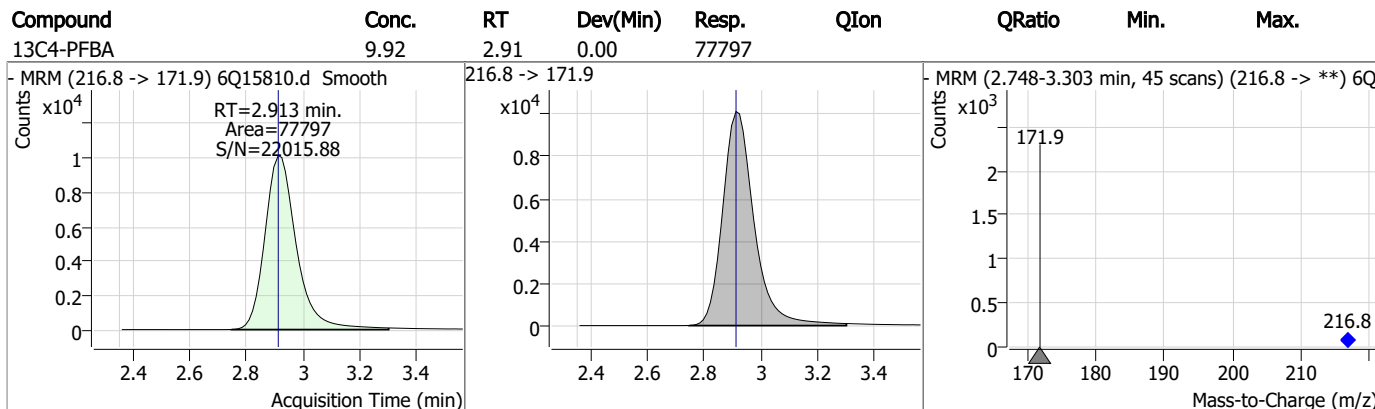
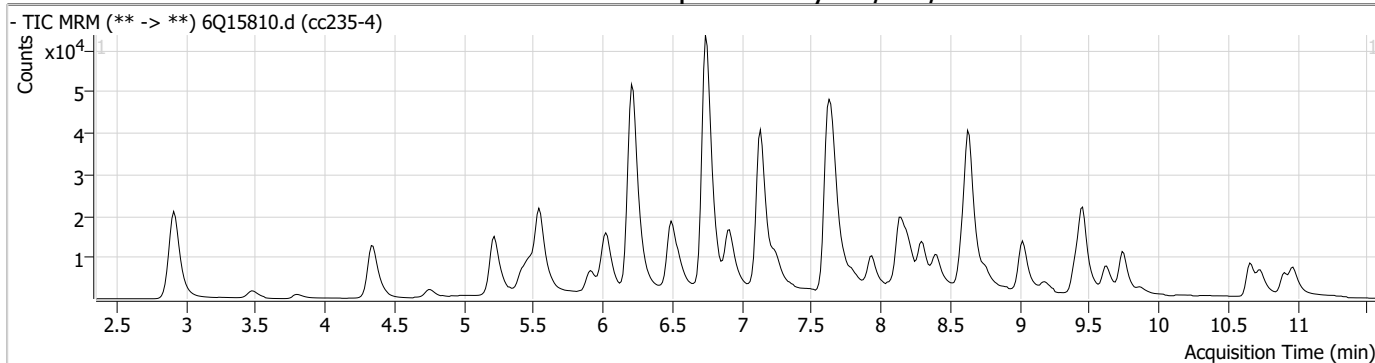
Perfluorinated Compounds by LC/MS/MS

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

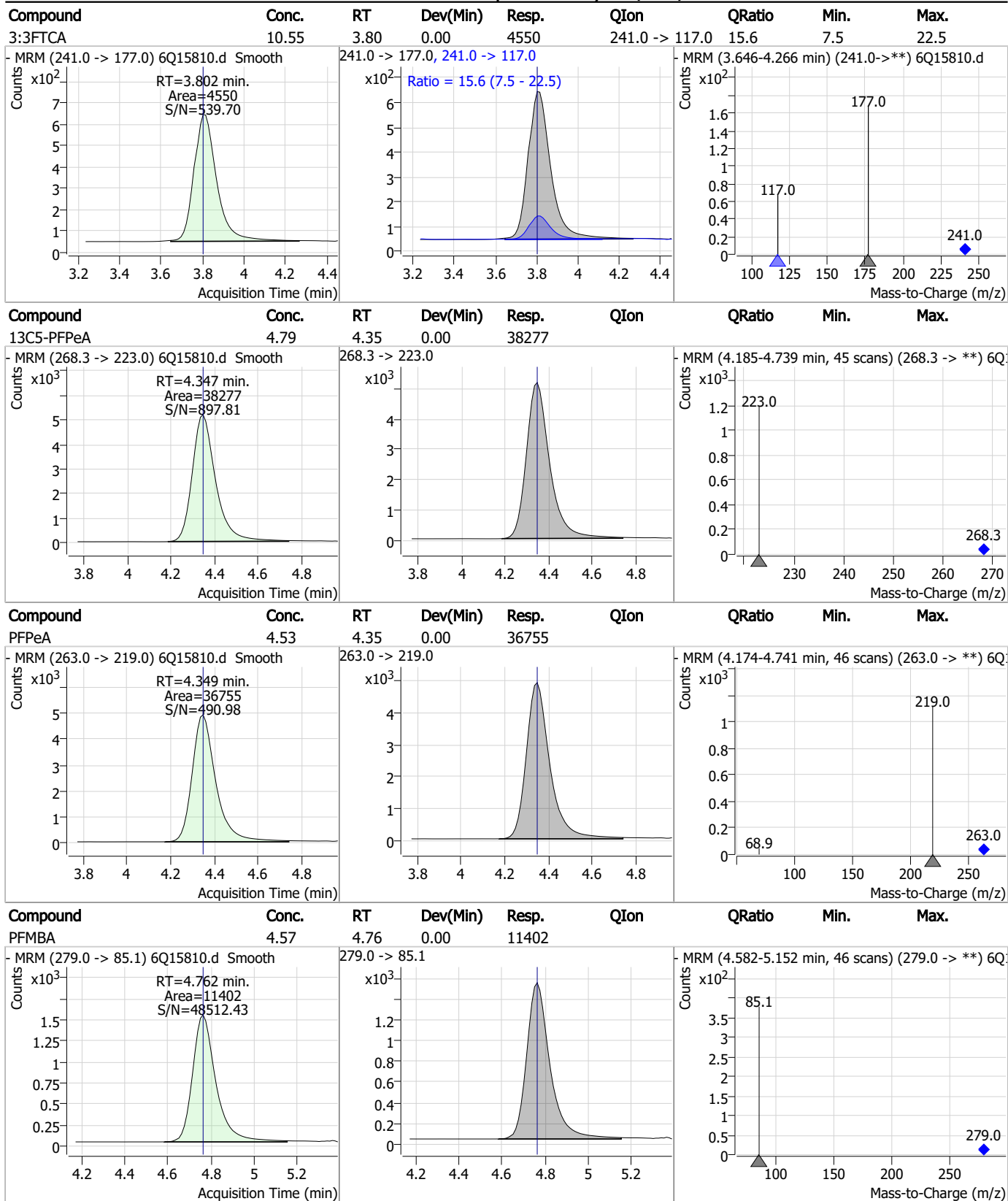
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Perfluorinated Compounds by LC/MS/MS



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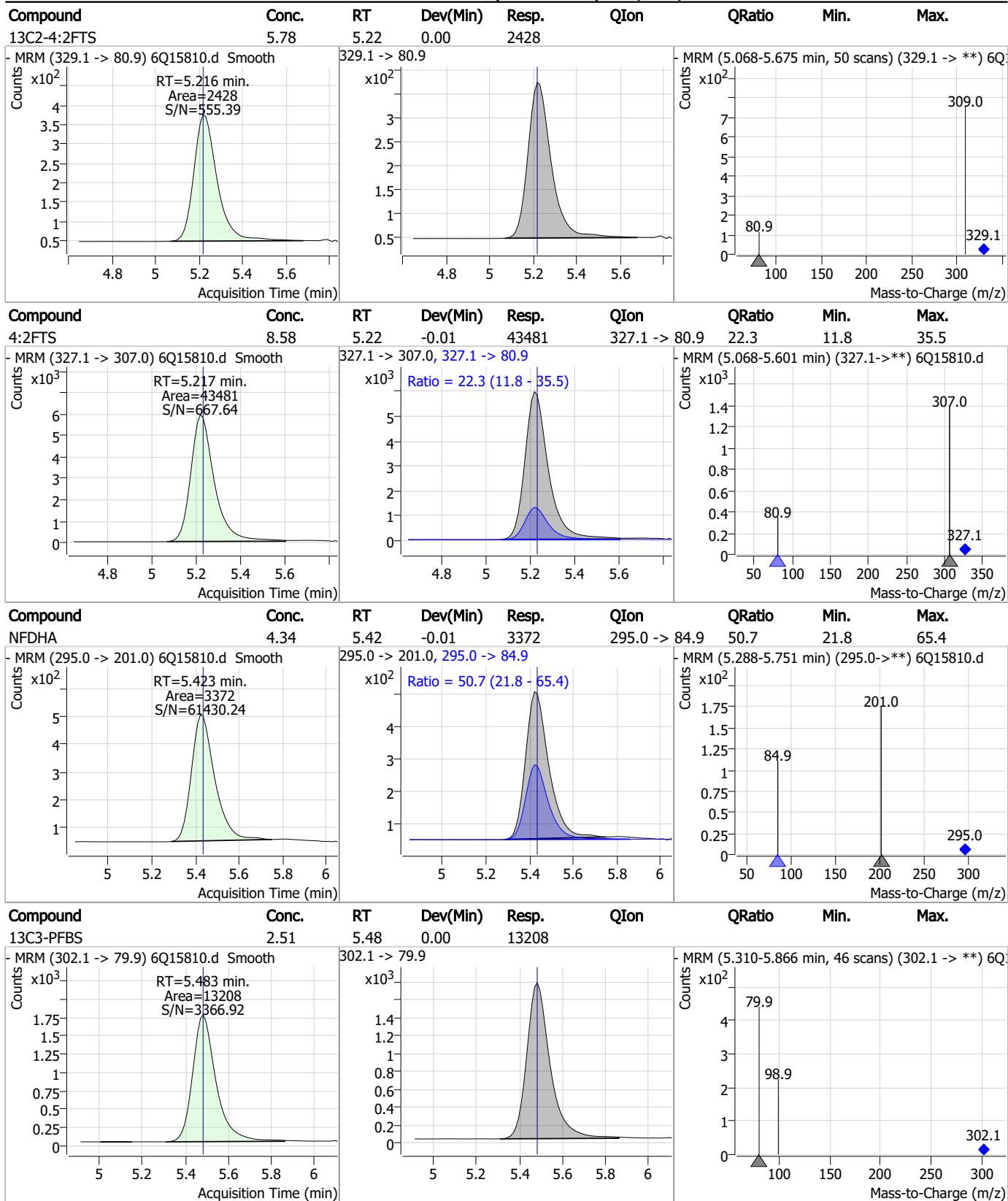
Perfluorinated Compounds by LC/MS/MS



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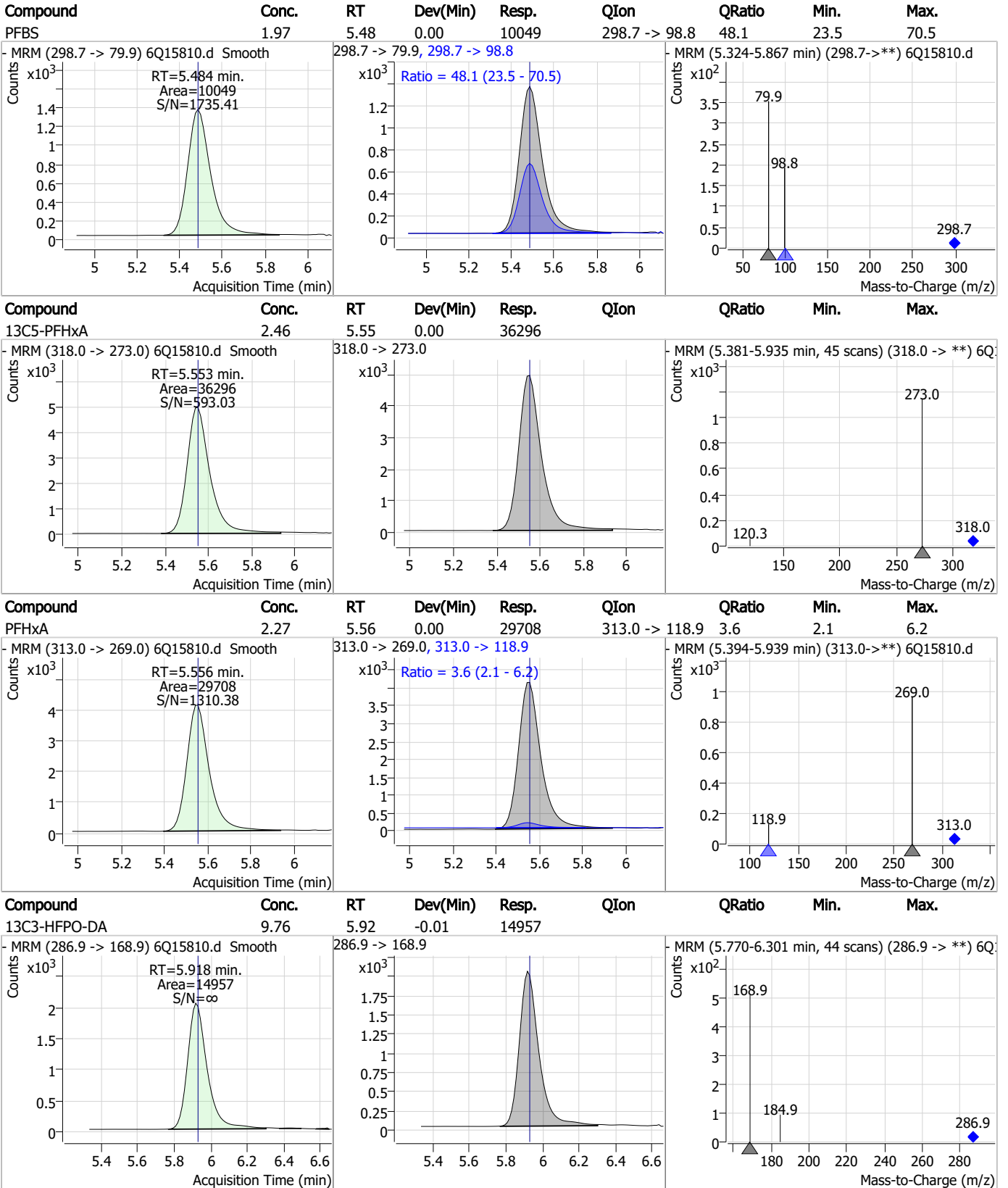
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Perfluorinated Compounds by LC/MS/MS



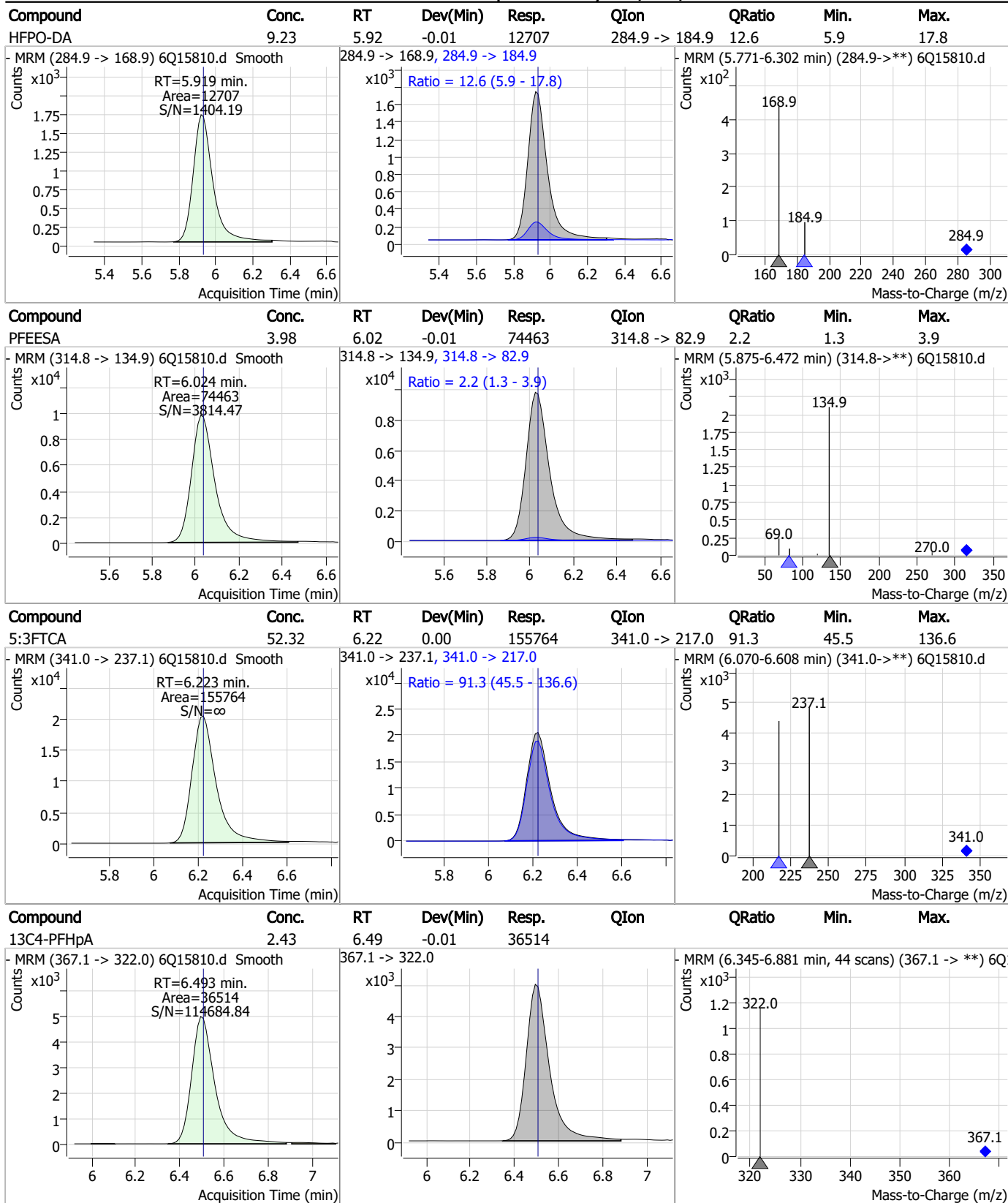
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Perfluorinated Compounds by LC/MS/MS



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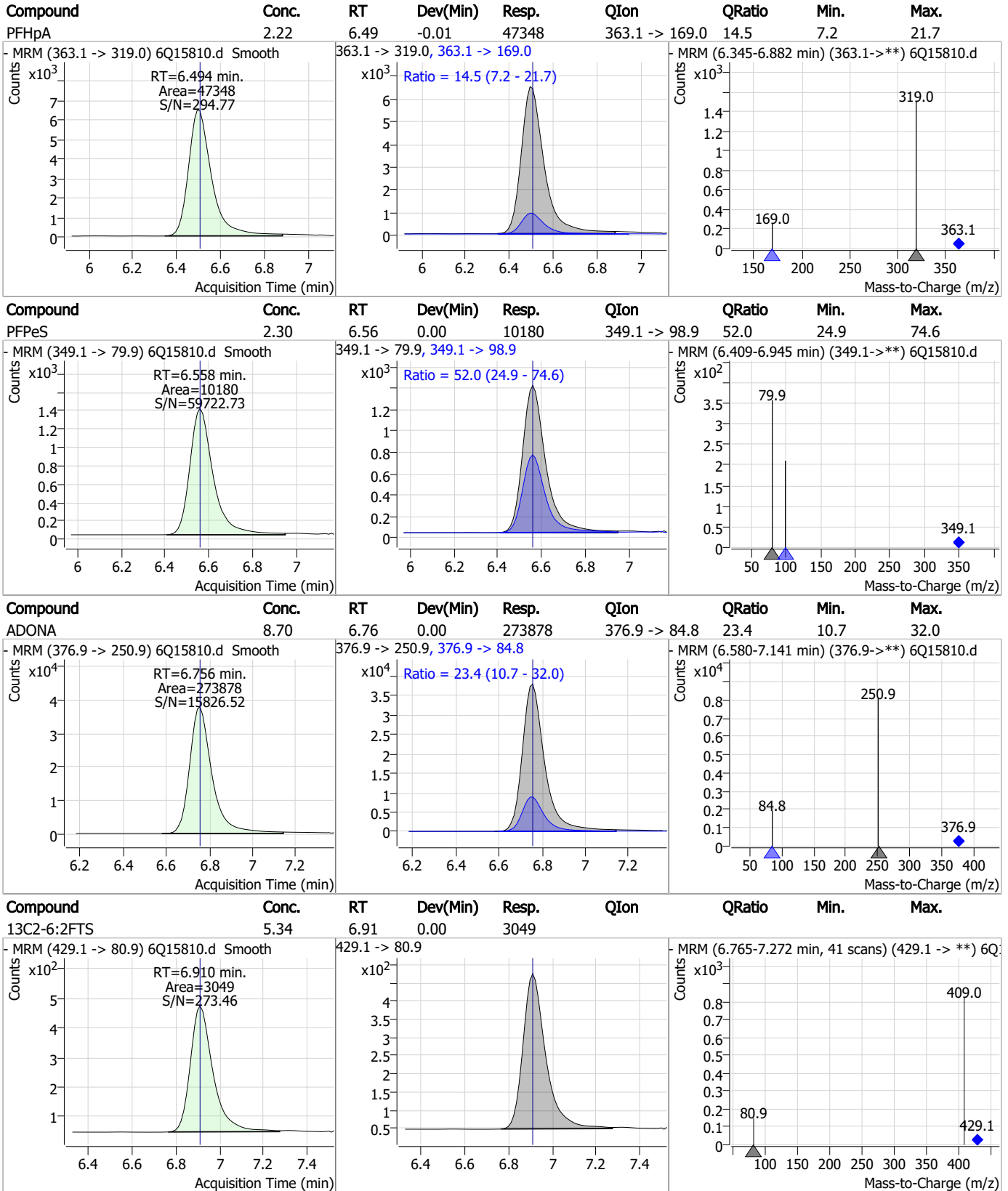
Perfluorinated Compounds by LC/MS/MS



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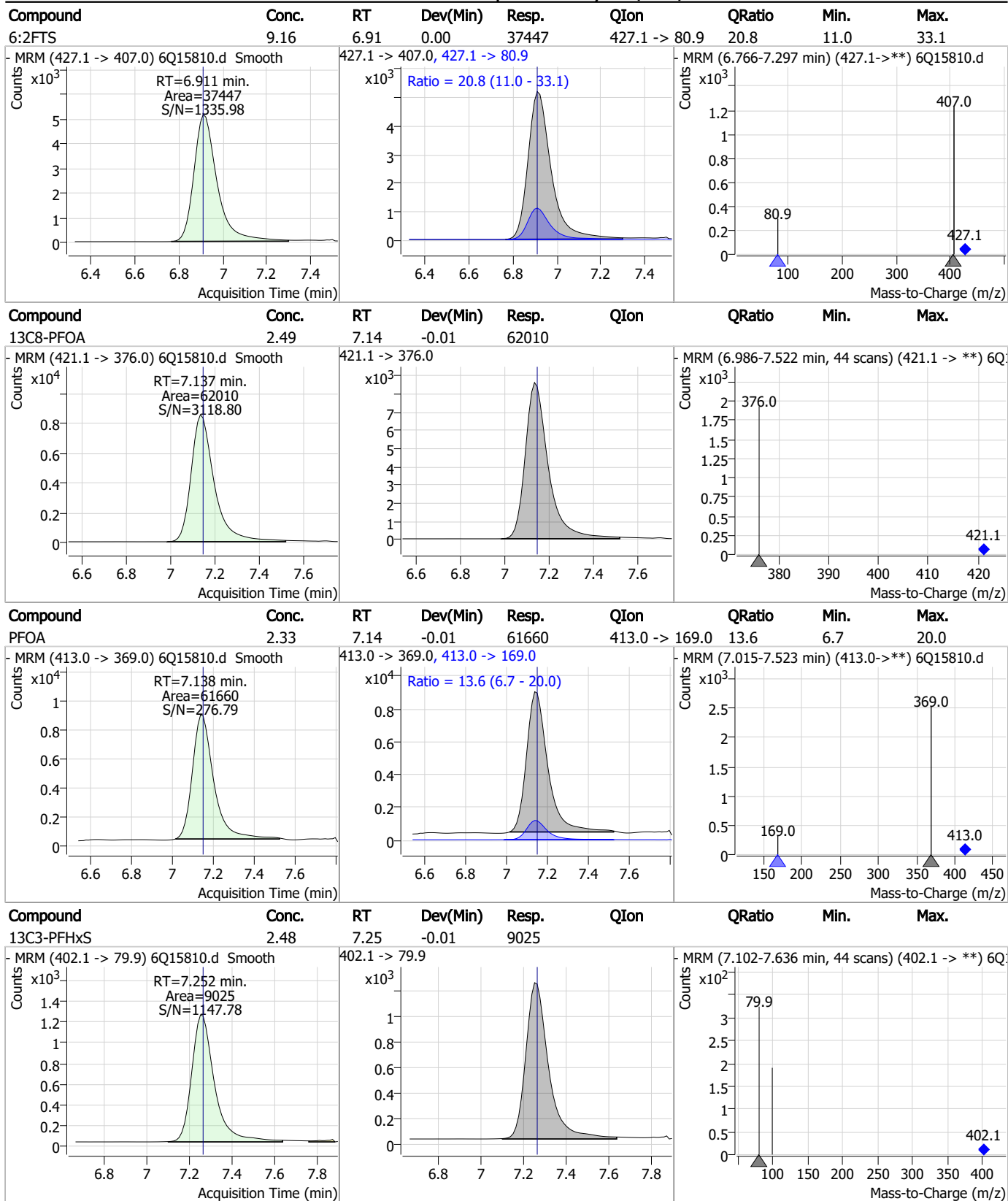


Perfluorinated Compounds by LC/MS/MS



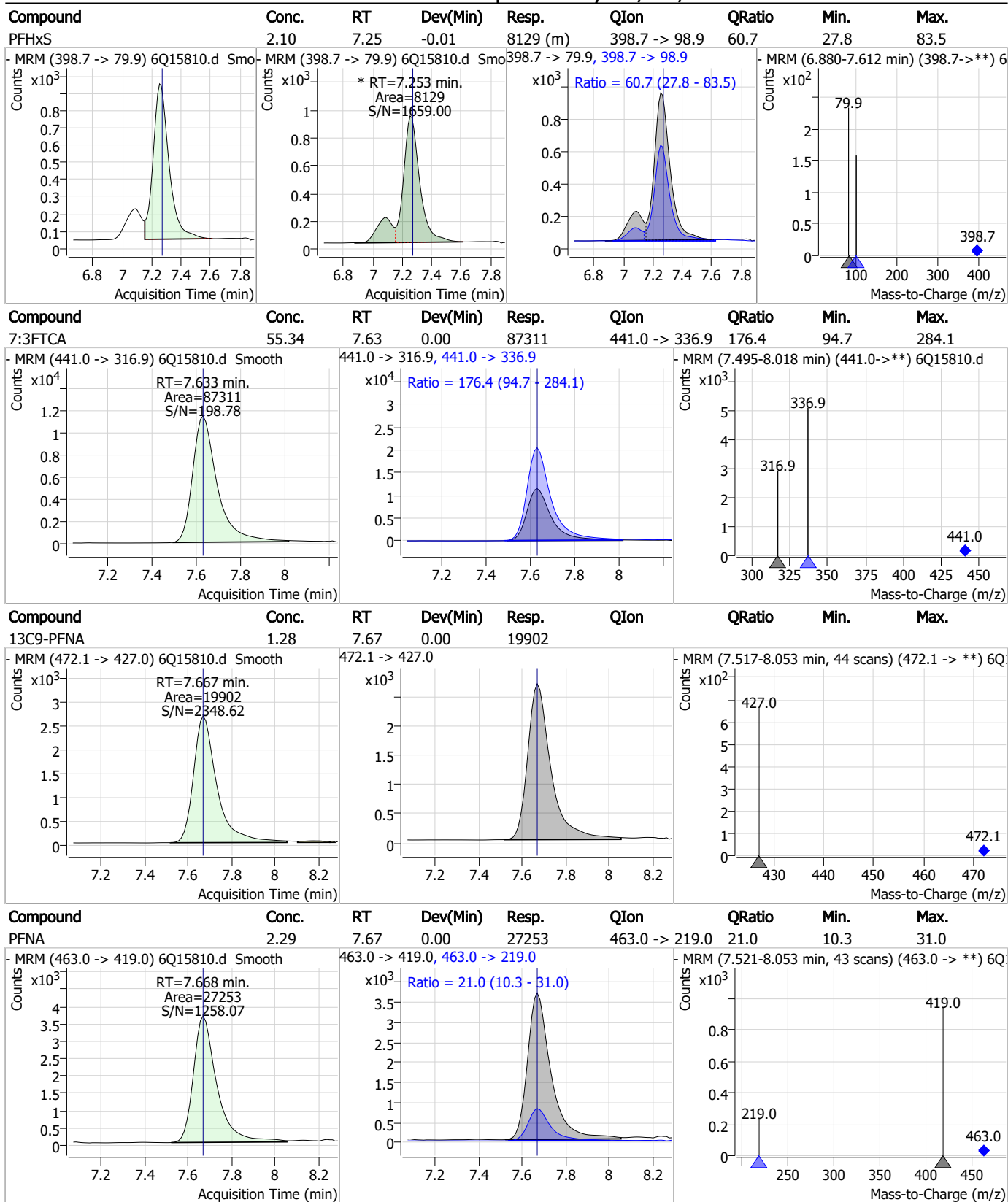
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Perfluorinated Compounds by LC/MS/MS



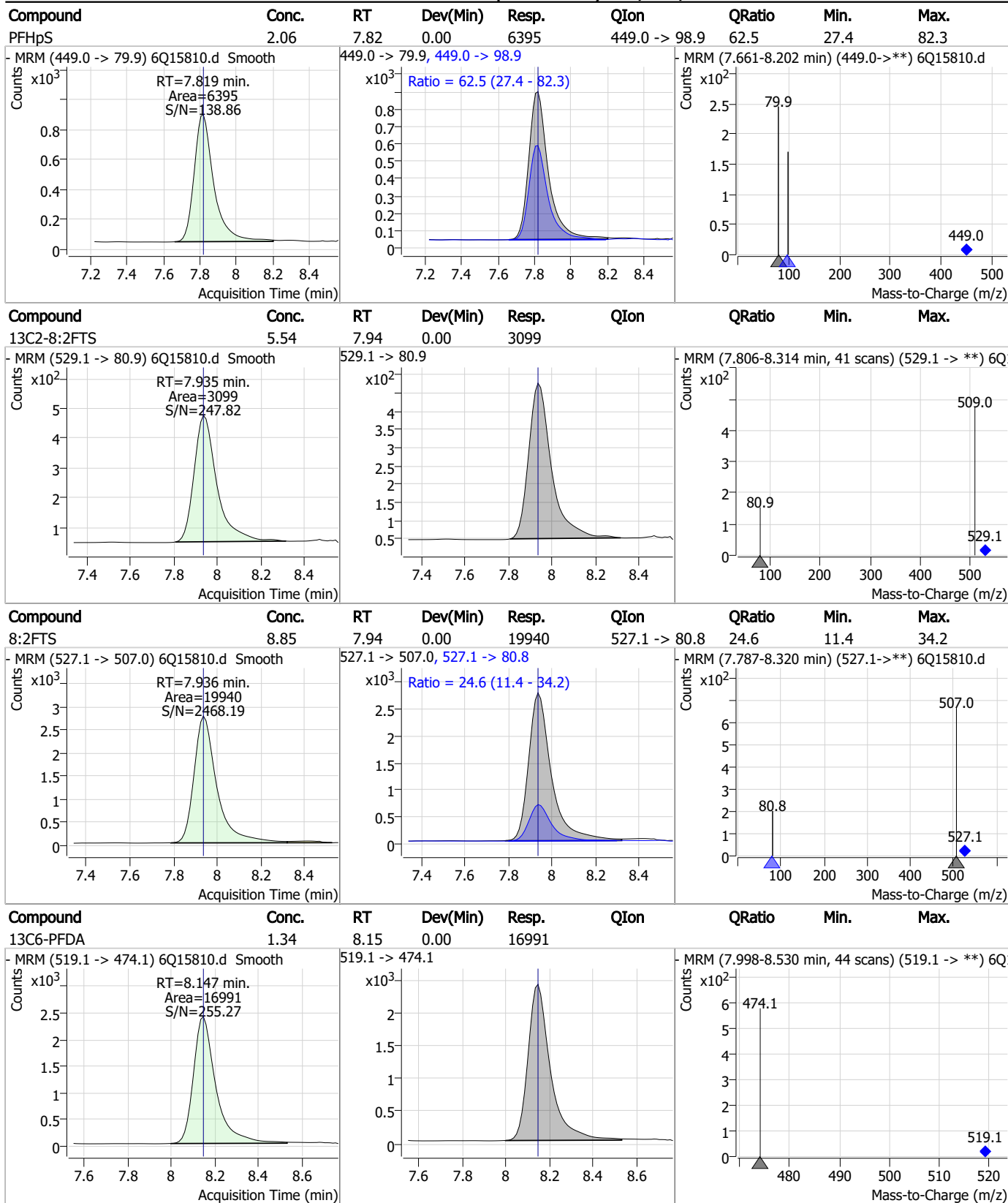
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Perfluorinated Compounds by LC/MS/MS



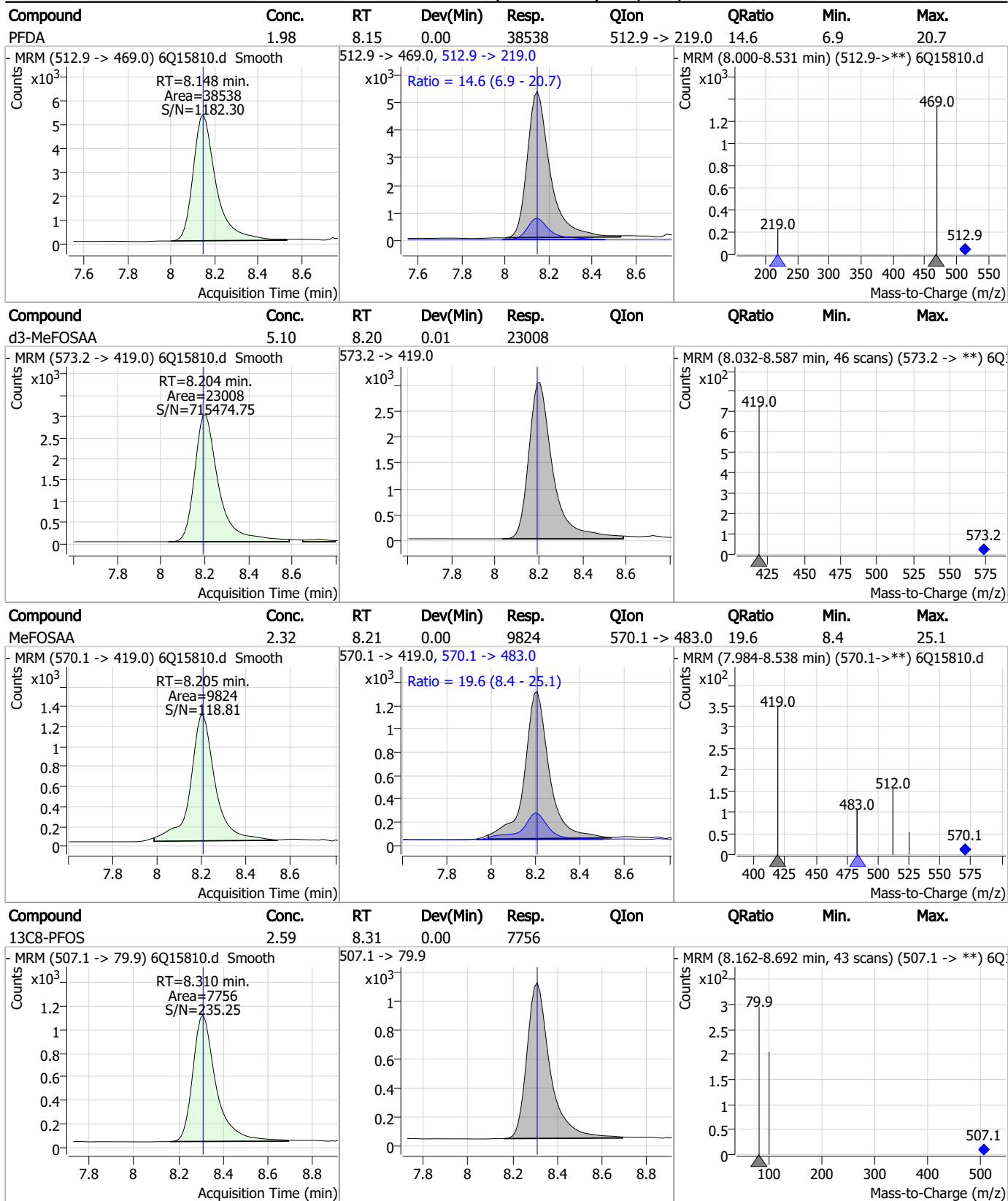
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Perfluorinated Compounds by LC/MS/MS



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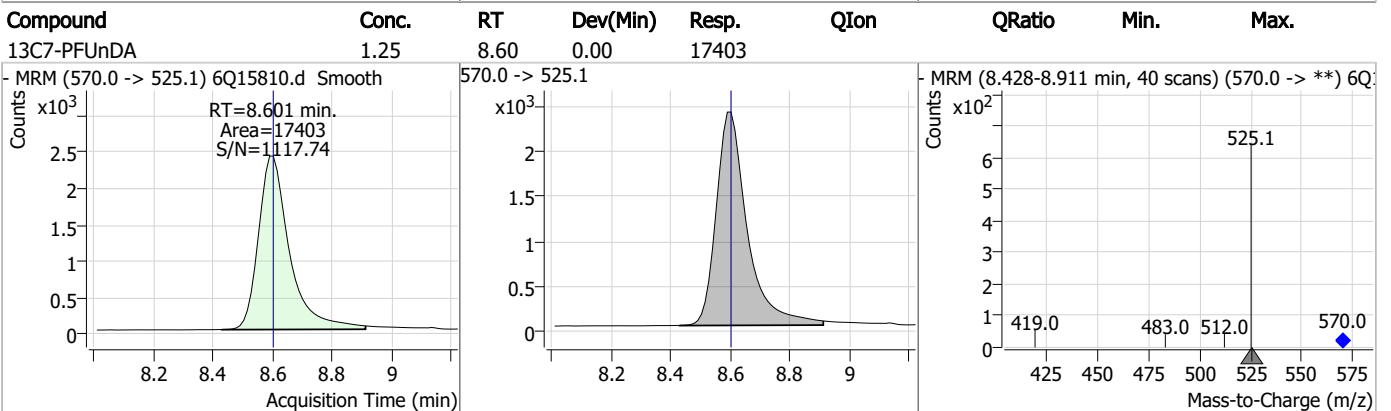
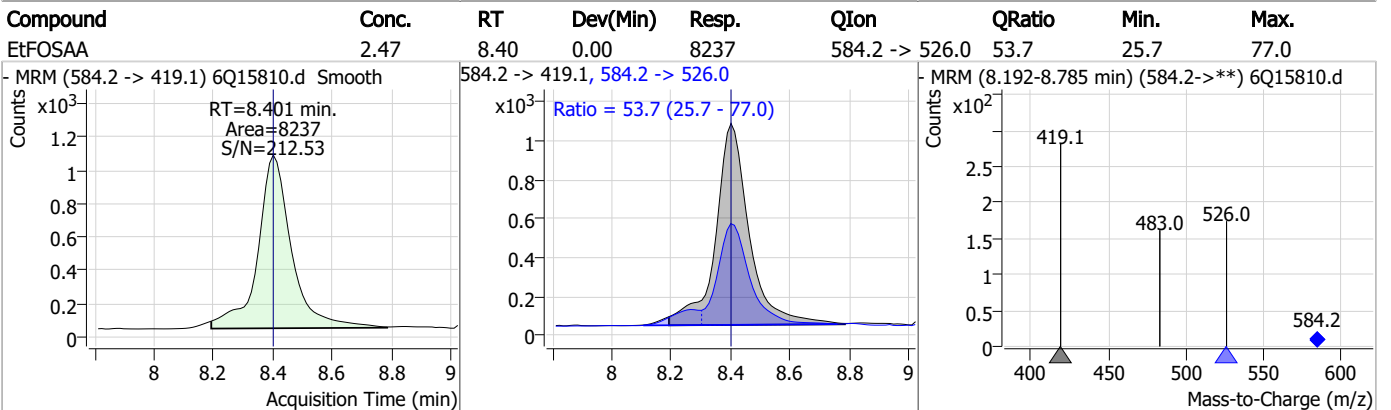
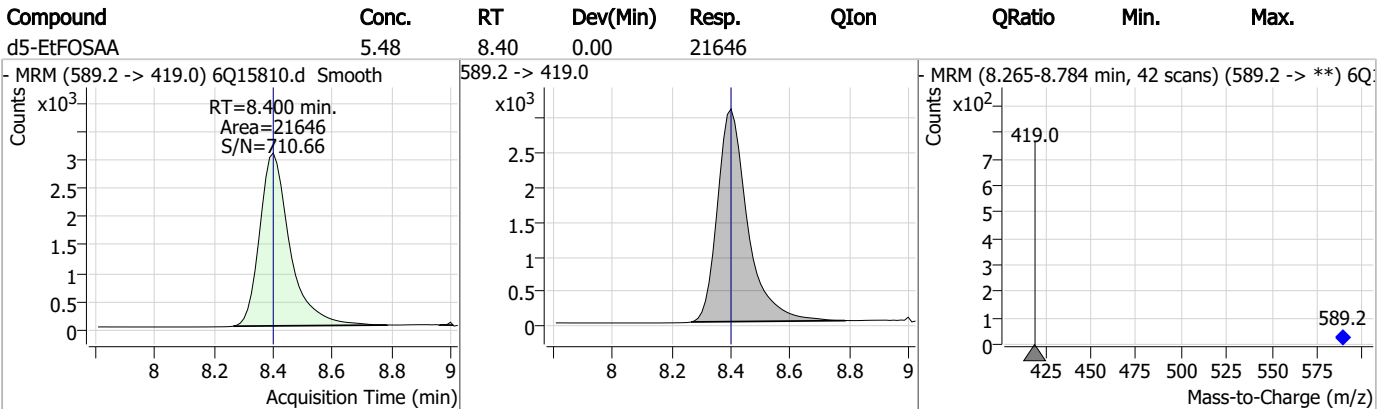
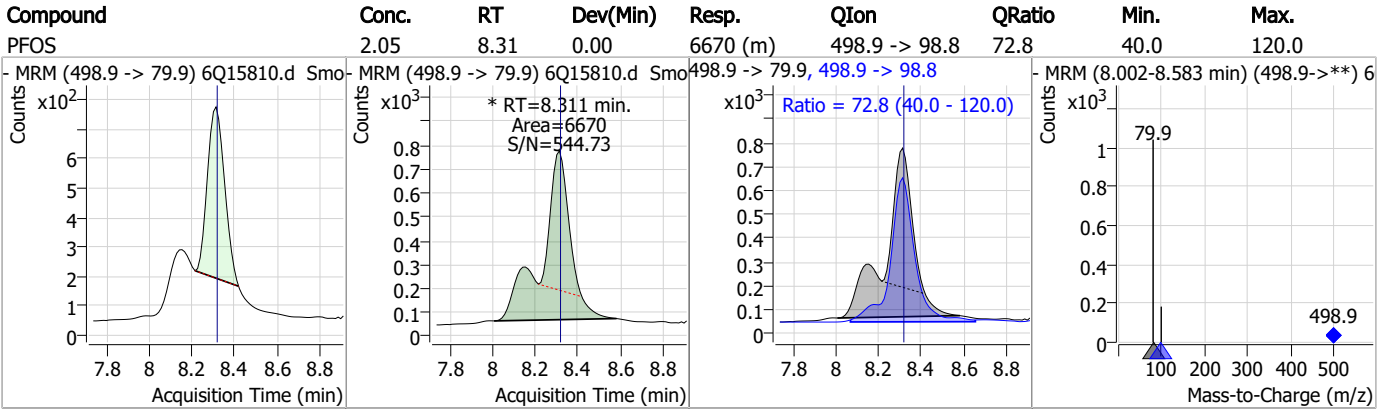
Perfluorinated Compounds by LC/MS/MS



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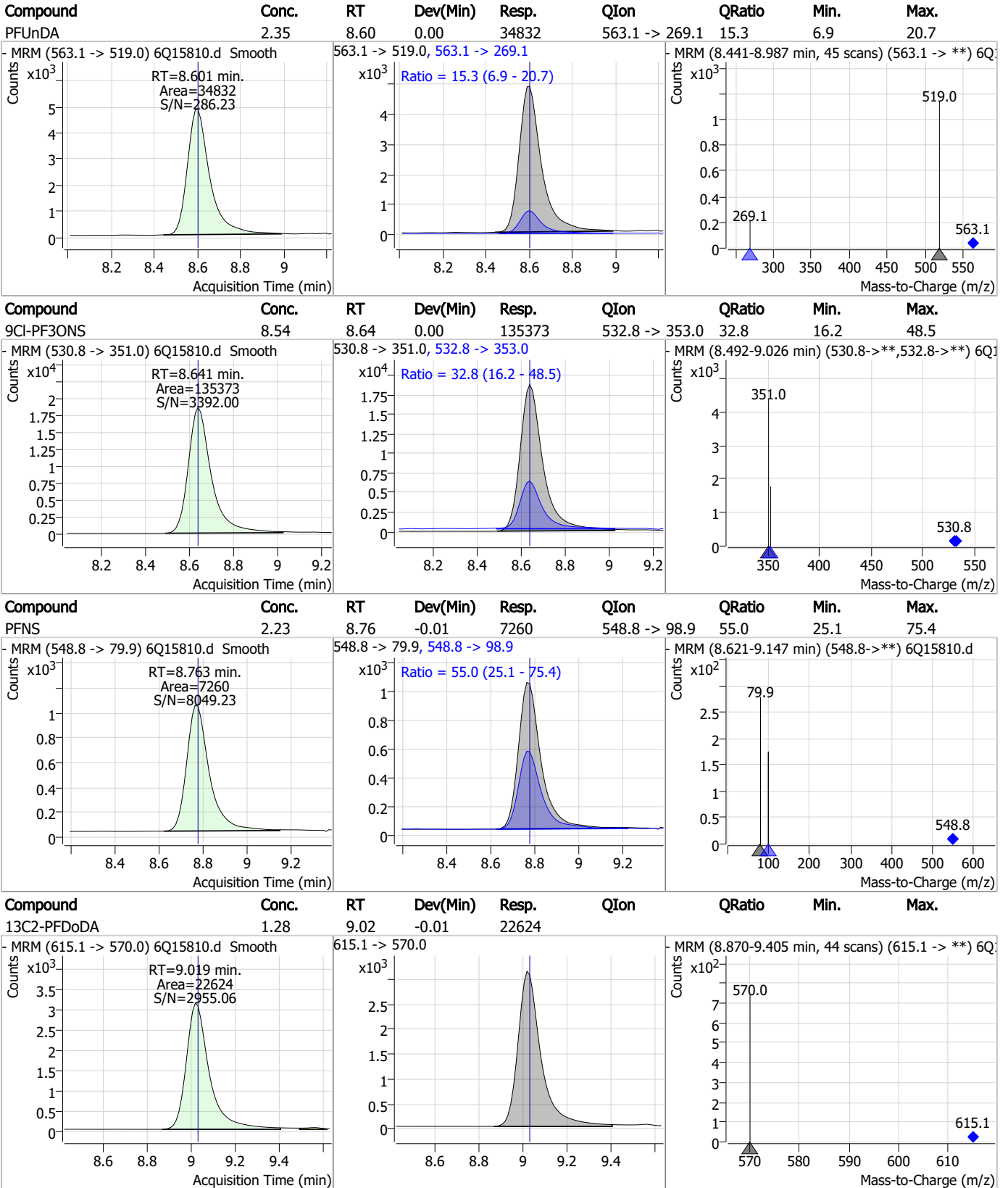
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Perfluorinated Compounds by LC/MS/MS



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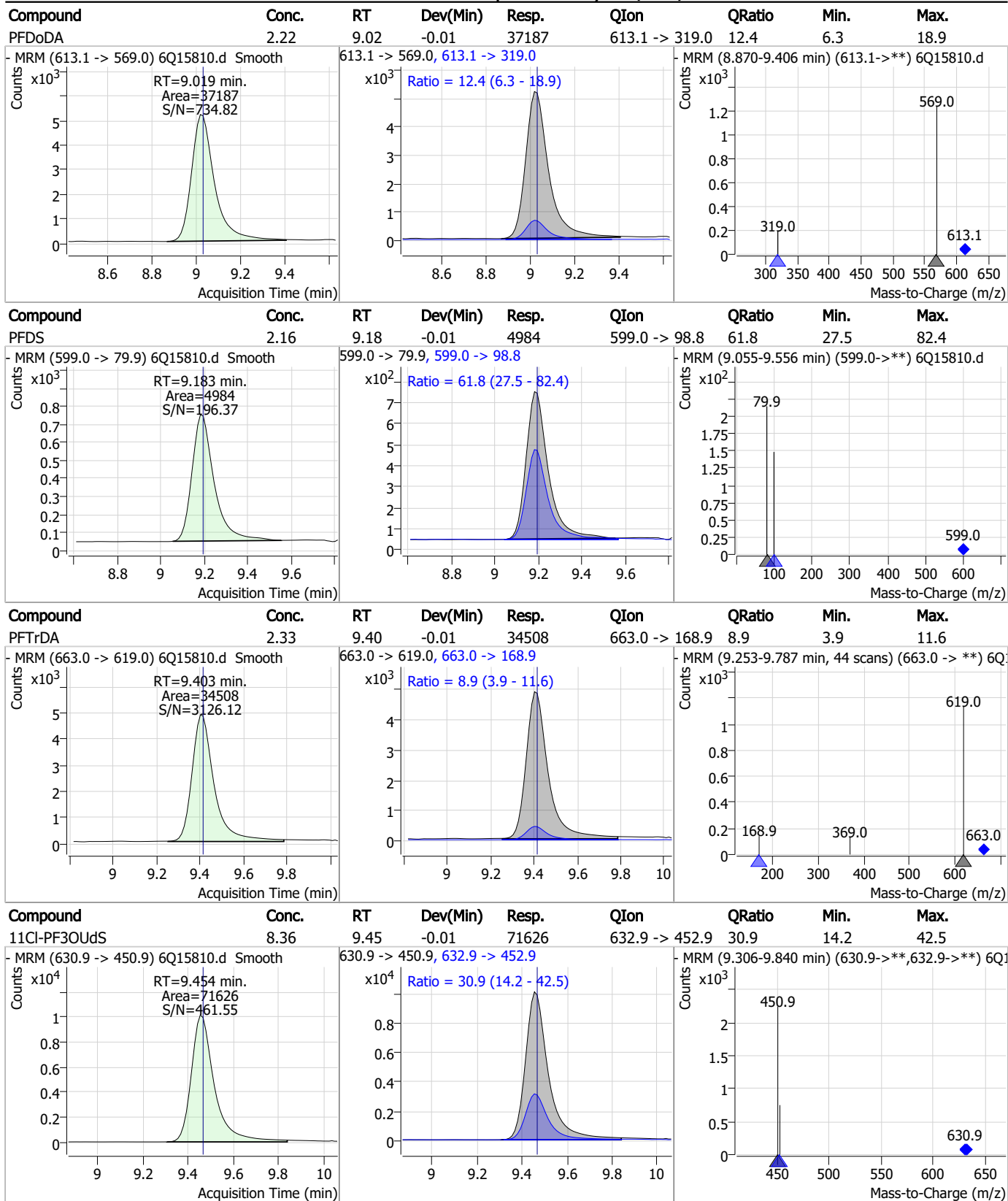
Perfluorinated Compounds by LC/MS/MS



7.7.13 7

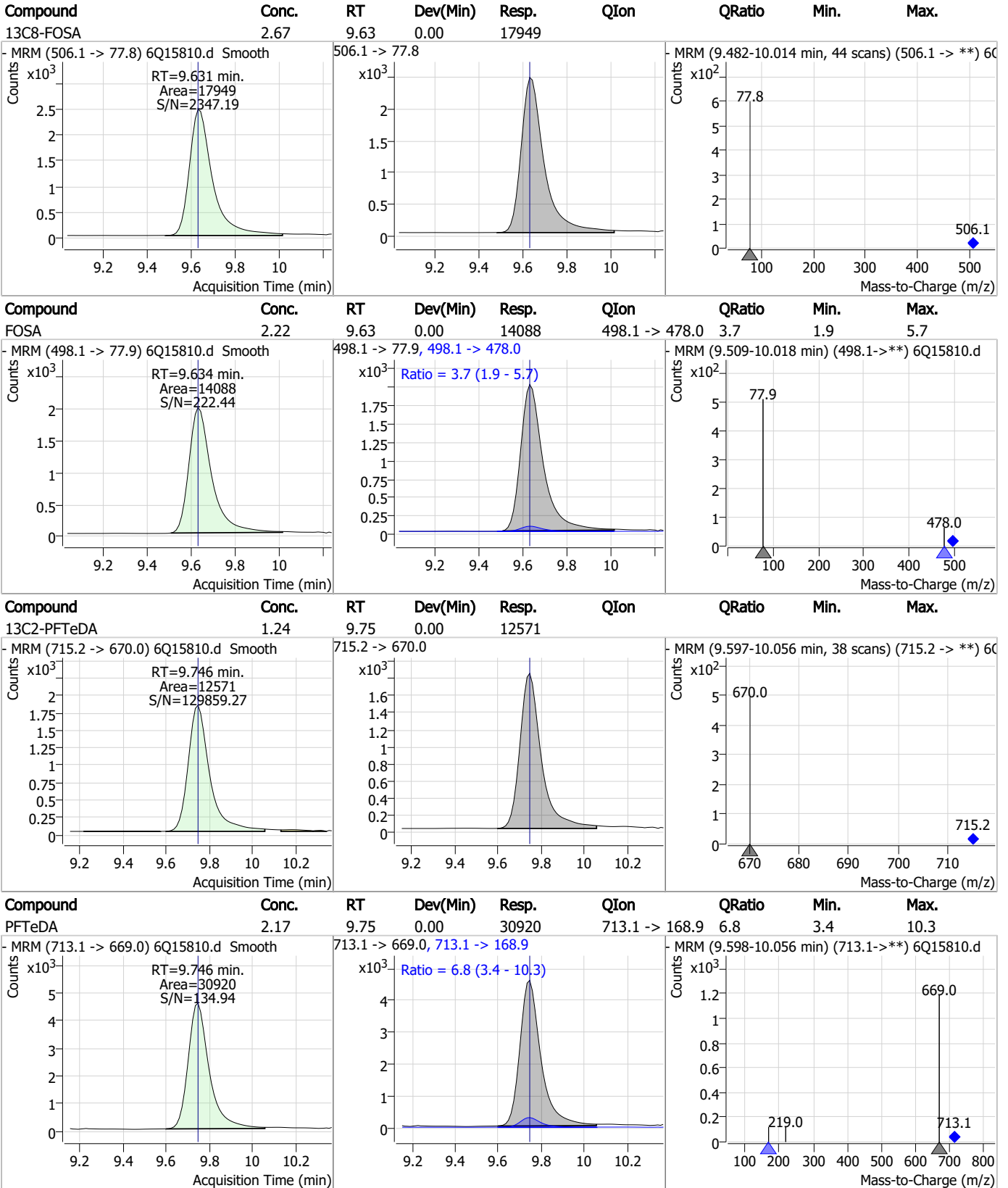


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

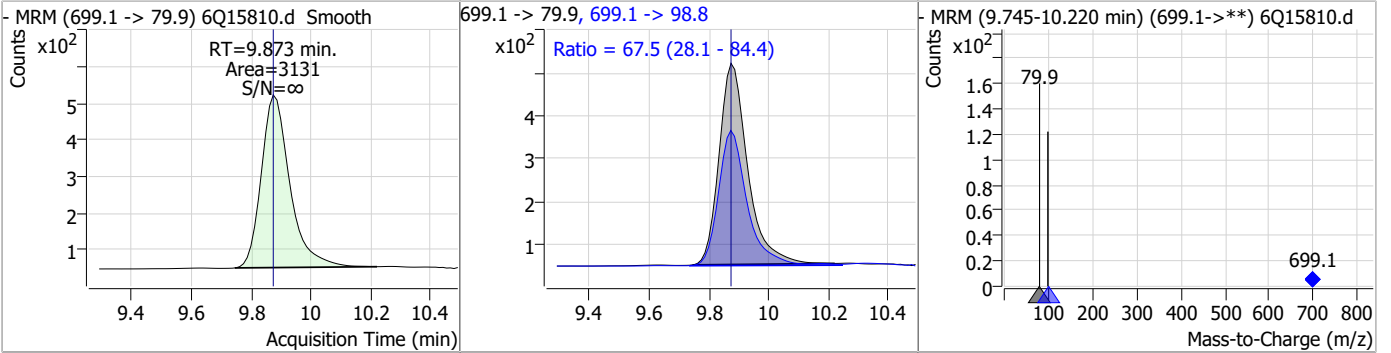


7.7.13 7

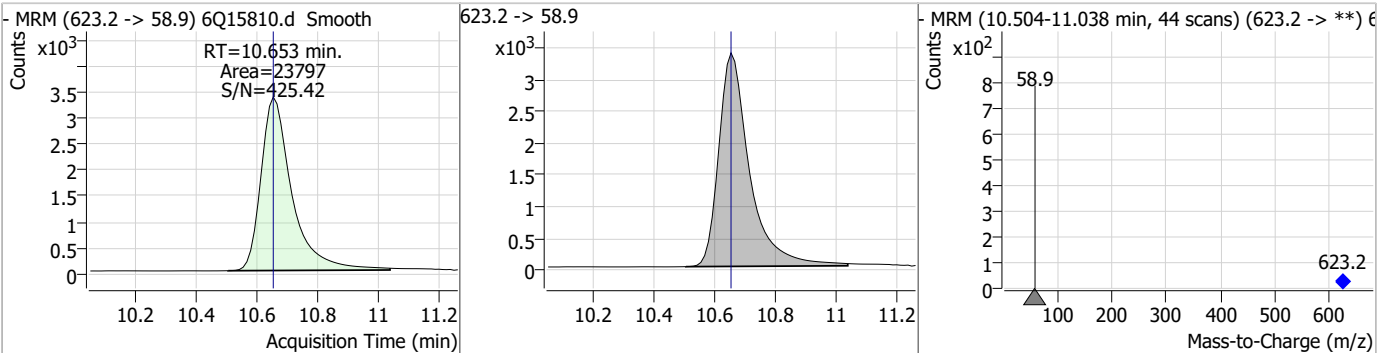


Perfluorinated Compounds by LC/MS/MS

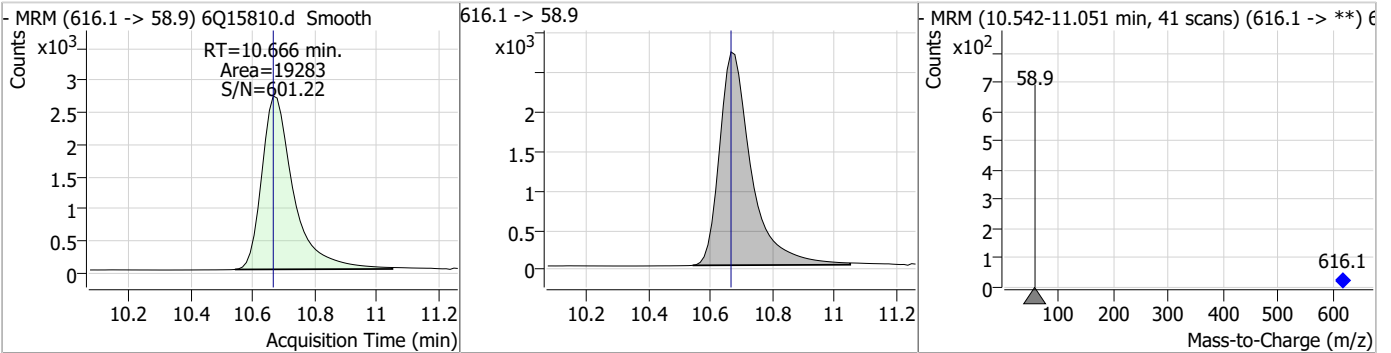
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.24	9.87	0.00	3131	699.1 -> 98.8	67.5	28.1	84.4



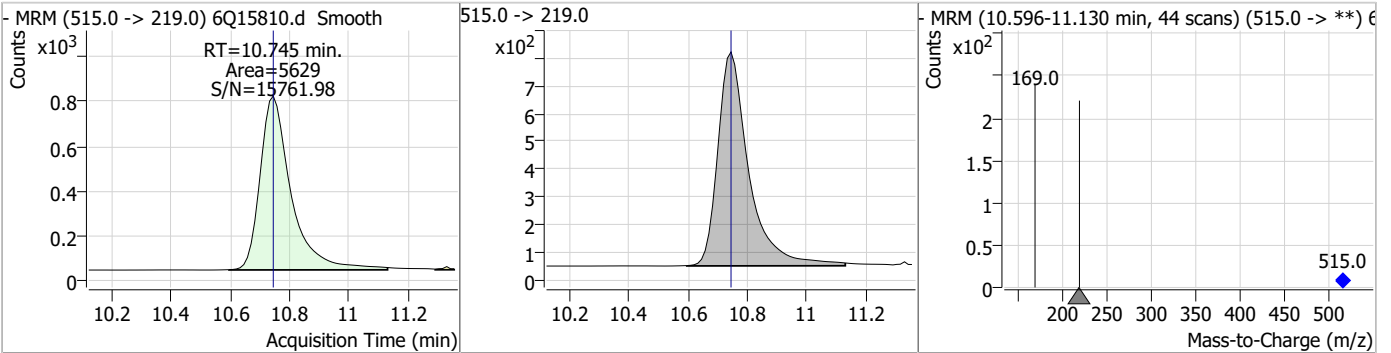
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.75	10.65	0.00	23797				



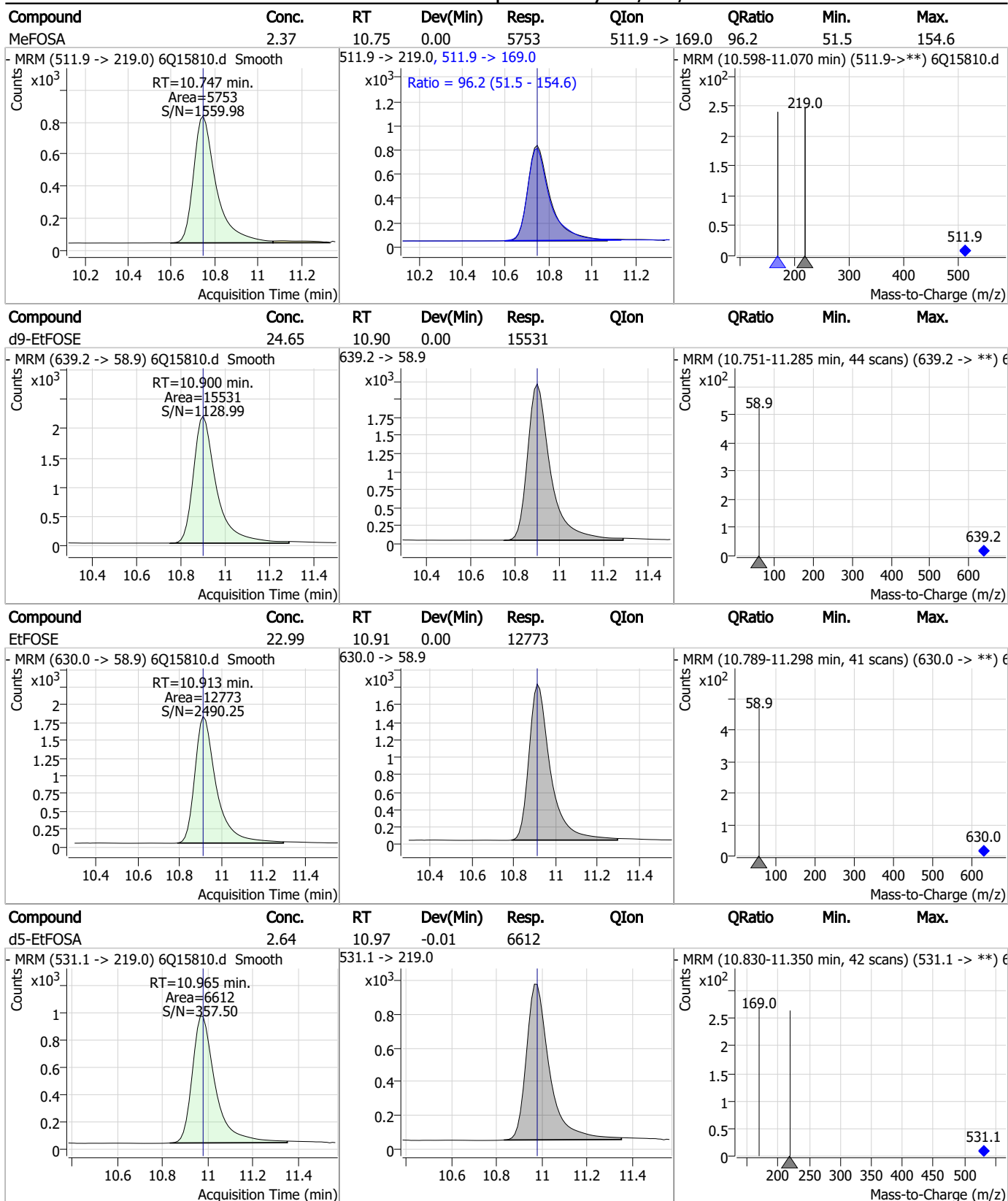
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.44	10.67	0.00	19283				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.75	0.00	5629				



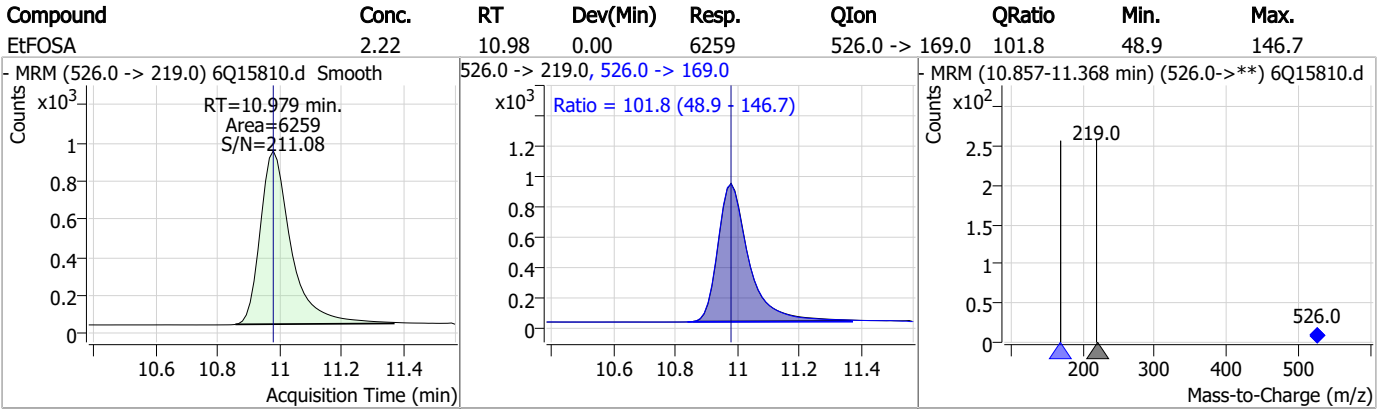
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15810.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/30/23 19:11 Supervisor approved: 03/31/23 16:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.7.13.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15820.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/30/2023 9:31:07 PM
 Sample Name : cc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	78483	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	38279	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	35376	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	36144	2.50 µg/L	0.000
M8-PFOA	7.137	421.1 -> 376.0	63929	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	18758	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16922	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	18013	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	21453	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	12699	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17190	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13487	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8880	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8106	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2344	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3141	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3134	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	25634	5.00 µg/L	0.000
M3-HFPO-DA	5.930	286.9 -> 168.9	14150	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	22784	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	23609	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	15568	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6682	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5928	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9535	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	33983	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6414	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	76018	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21780	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19604	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	36540	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2344	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3141	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3134	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C2-PFDoDA	9.019	615.1 -> 570.0	21453	1.21 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12699	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C3-PFBS	5.483	302.1 -> 79.9	13487	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.265	402.1 -> 79.9	8880	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 = 98.0%		
13C4-PFBA	2.913	216.8 -> 171.9	78483	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C4-PFHpA	6.506	367.1 -> 322.0	36144	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C5-PFHxA	5.553	318.0 -> 273.0	35376	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.5%		
13C5-PFPeA	4.347	268.3 -> 223.0	38279	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C6-PFDA	8.147	519.1 -> 474.1	16922	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C7-PFUnDA	8.601	570.0 -> 525.1	18013	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	17190	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C8-PFOA	7.137	421.1 -> 376.0	63929	2.54 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C8-PFOS	8.310	507.1 -> 79.9	8106	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C9-PFNA	7.667	472.1 -> 427.0	18758	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.0%		
d3-MeFOSAA	8.192	573.2 -> 419.0	25634	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C3-HFPO-DA	5.930	286.9 -> 168.9	14150	9.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 90.0%		
d3-MeFOSA	10.745	515.0 -> 219.0	5928	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.3%		
d5-EtFOSAA	8.400	589.2 -> 419.0	22784	5.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	23609	23.55 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.2%		
d9-EtFOSE	10.900	639.2 -> 58.9	15568	23.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
d5-EtFOSA	10.965	531.1 -> 219.0	6682	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	44088	9.01 µg/L	97
		327.1 -> 80.9	9726		
6:2FTS	6.911	427.1 -> 407.0	38675	9.18 µg/L	96
		427.1 -> 80.9	7758		
8:2FTS	7.936	527.1 -> 507.0	19682	8.63 µg/L	94
		527.1 -> 80.8	5086		
EtFOSAA	8.401	584.2 -> 419.1	8036	2.29 µg/L	94
		584.2 -> 526.0	4470		
FOSA	9.634	498.1 -> 77.9	14707	2.41 µg/L	98
		498.1 -> 478.0	460		
MeFOSAA	8.205	570.1 -> 419.0	10806	2.29 µg/L	98
		570.1 -> 483.0	1916		
PFBA	2.919	212.8 -> 168.9	16367	9.17 µg/L	100
PFBS	5.484	298.7 -> 79.9	11205	2.15 µg/L	97
		298.7 -> 98.8	5033		
PFDA	8.148	512.9 -> 469.0	41387	2.14 µg/L	99
		512.9 -> 219.0	5833		
PFDODA	9.019	613.1 -> 569.0	38362	2.42 µg/L	100
		613.1 -> 319.0	4775		
PFDS	9.183	599.0 -> 79.9	4958	2.05 µg/L	95

7.7.14
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2897			
PFHpA	6.506	363.1 -> 319.0	47311	2.24	µg/L	98
		363.1 -> 169.0	6477			
PFHpS	7.819	449.0 -> 79.9	6737	2.07	µg/L	86
		449.0 -> 98.9	4356			
PFHxA	5.556	313.0 -> 269.0	28112	2.21	µg/L	100
		313.0 -> 118.9	1161			
PFHxS	7.265	398.7 -> 79.9	8046	2.12	µg/L	m 97
		398.7 -> 98.9	4627			
PFNA	7.668	463.0 -> 419.0	25131	2.24	µg/L	98
		463.0 -> 219.0	5438			
PFNS	8.763	548.8 -> 79.9	7363	2.16	µg/L	93
		548.8 -> 98.9	4077			
PFOA	7.151	413.0 -> 369.0	59686	2.19	µg/L	99
		413.0 -> 169.0	7780			
PFOS	8.311	498.9 -> 79.9	6815	2.01	µg/L	m 78
		498.9 -> 98.8	4118			
PFPeA	4.349	263.0 -> 219.0	37224	4.59	µg/L	100
PFPeS	6.558	349.1 -> 79.9	9952	2.29	µg/L	97
		349.1 -> 98.9	5155			
PFTeDA	9.746	713.1 -> 669.0	33276	2.31	µg/L	99
		713.1 -> 168.9	2131			
PFTrDA	9.403	663.0 -> 619.0	34894	2.49	µg/L	98
		663.0 -> 168.9	2959			
PFUnDA	8.601	563.1 -> 519.0	36974	2.41	µg/L	98
		563.1 -> 269.1	4857			
11CI-PF3OUdS	9.454	630.9 -> 450.9	76750	9.47	µg/L	98
		632.9 -> 452.9	22535			
9CI-PF3ONS	8.641	530.8 -> 351.0	142767	9.52	µg/L	97
		532.8 -> 353.0	43593			
ADONA	6.756	376.9 -> 250.9	282229	9.47	µg/L	100
		376.9 -> 84.8	61022			
HFPO-DA	5.931	284.9 -> 168.9	11438	8.78	µg/L	92
		284.9 -> 184.9	1705			
3:3FTCA	3.815	241.0 -> 177.0	4436	10.29	µg/L	99
		241.0 -> 117.0	643			
5:3FTCA	6.223	341.0 -> 237.1	159024	54.80	µg/L	97
		341.0 -> 217.0	140339			
7:3FTCA	7.633	441.0 -> 316.9	84139	54.71	µg/L	96
		441.0 -> 336.9	155022			
EtFOSA	10.979	526.0 -> 219.0	6263	2.20	µg/L	98
		526.0 -> 169.0	6275			
EtFOSE	10.913	630.0 -> 58.9	12542	22.52	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	5851	2.29	µg/L	95
		511.9 -> 169.0	5730			
MeFOSE	10.666	616.1 -> 58.9	19575	22.96	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	3094	2.12	µg/L	91
		699.1 -> 98.8	1938			
NFDHA	5.435	295.0 -> 201.0	3474	4.59	µg/L	99
		295.0 -> 84.9	1539			
PFMBA	4.762	279.0 -> 85.1	11084	4.44	µg/L	100
PFMPA	3.488	229.0 -> 84.9	10037	4.47	µg/L	100
PFEESA	6.036	314.8 -> 134.9	73121	4.01	µg/L	100
		314.8 -> 82.9	1808			

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



7.7.14
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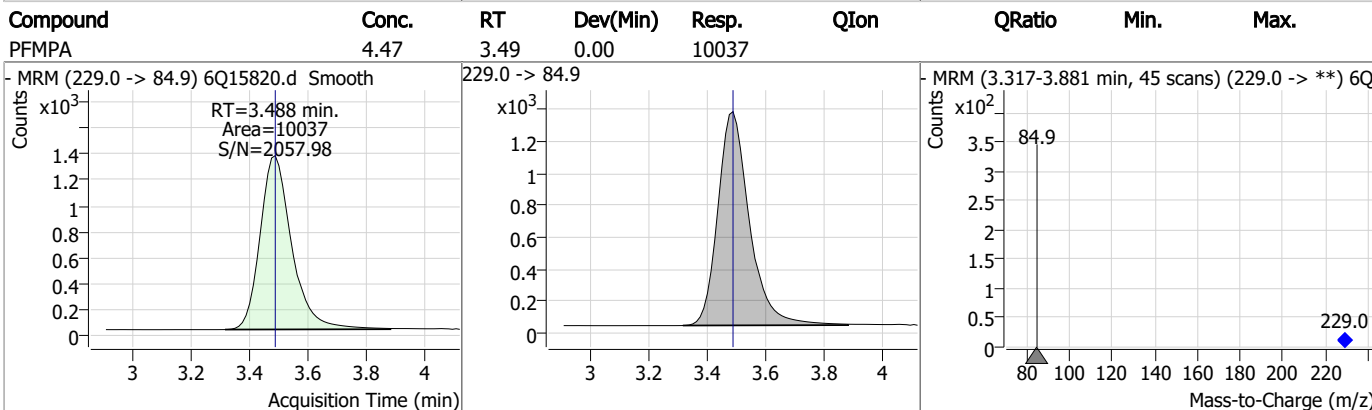
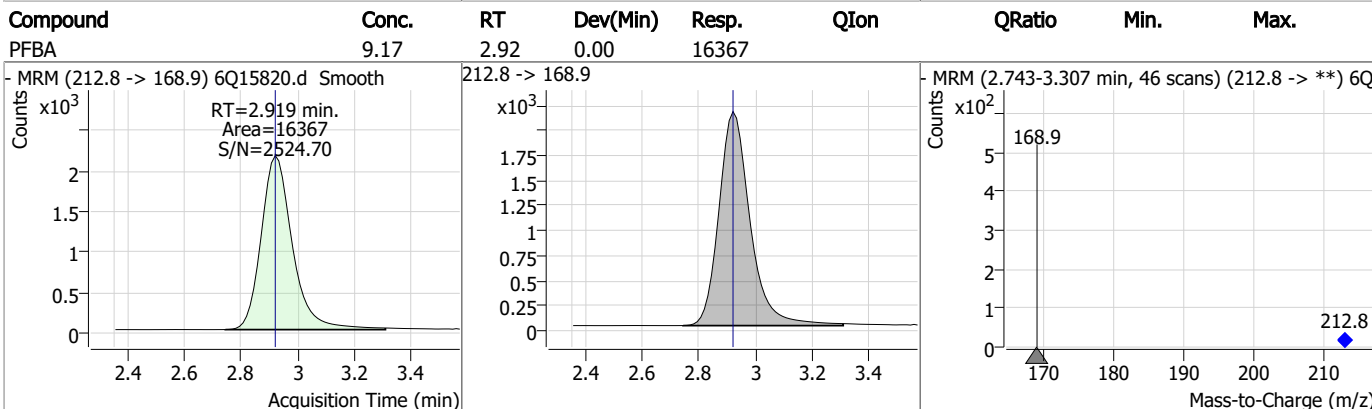
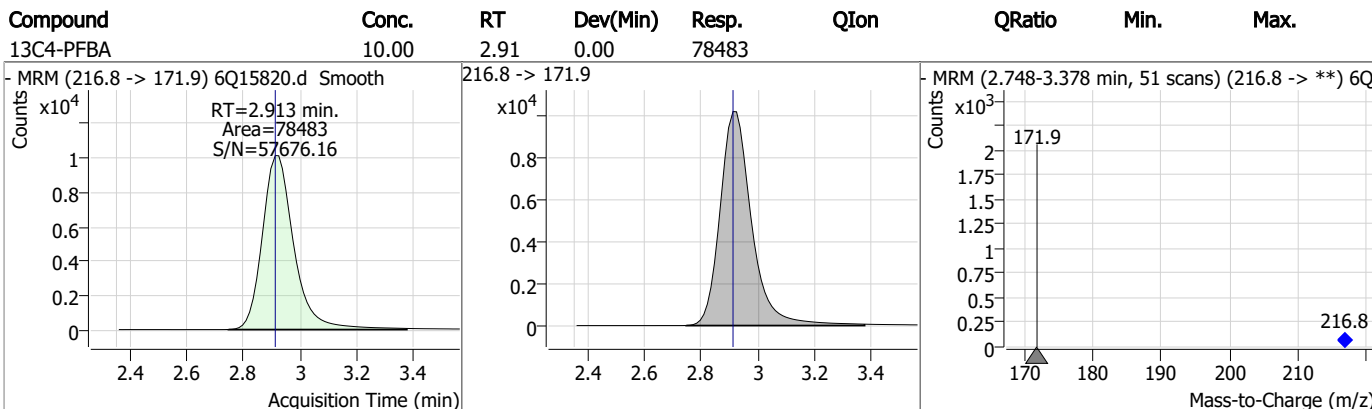
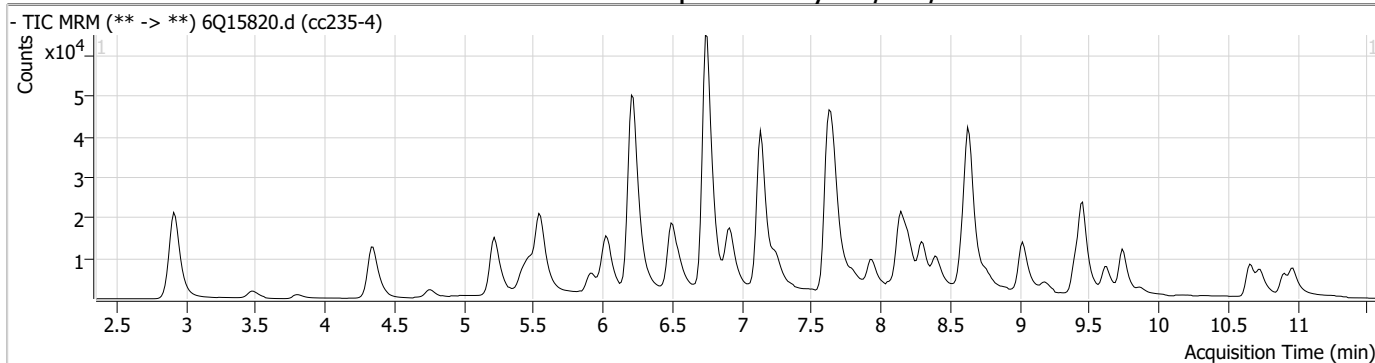
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.14

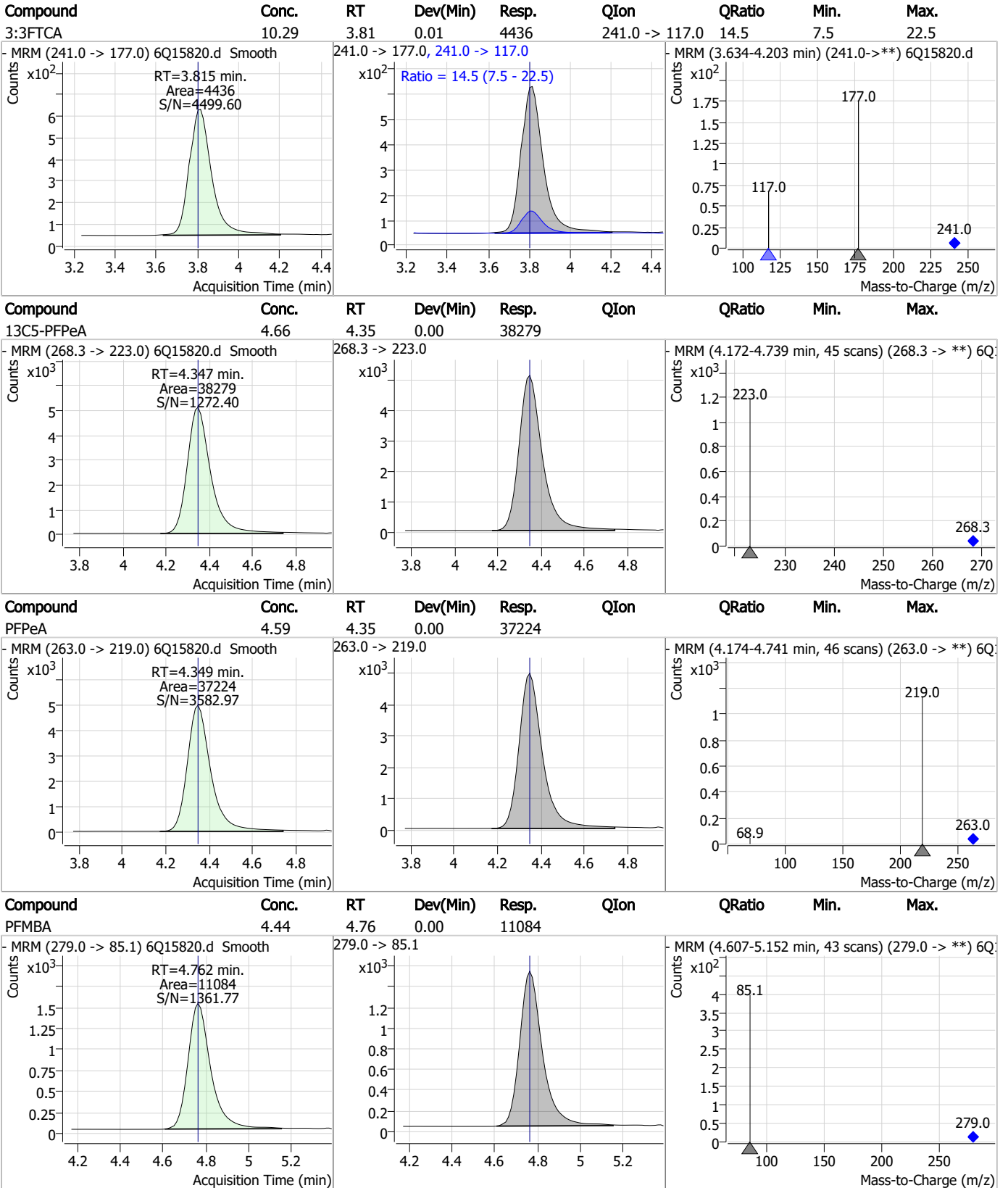
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Perfluorinated Compounds by LC/MS/MS



7.7.14
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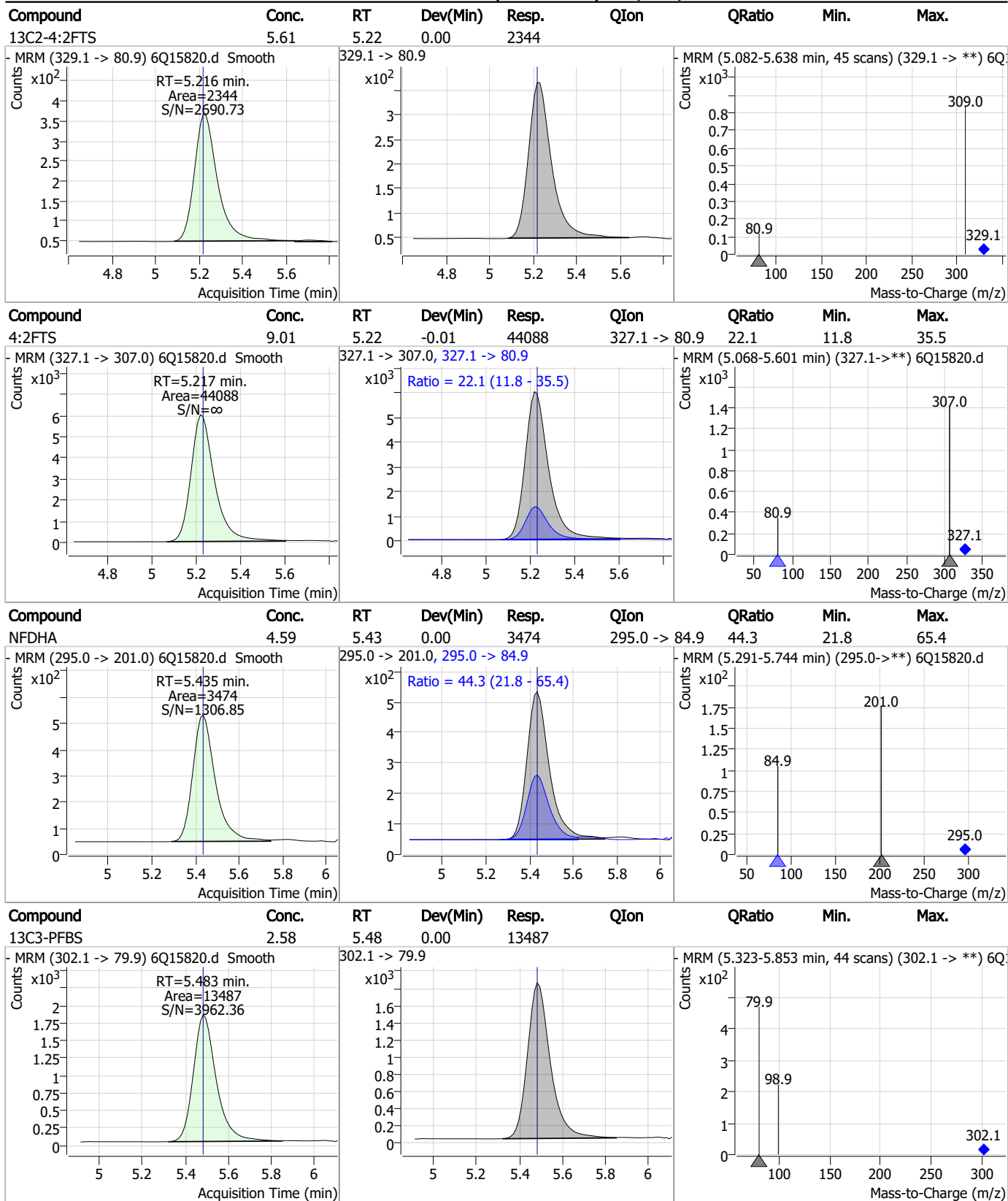
Perfluorinated Compounds by LC/MS/MS



7.7.14



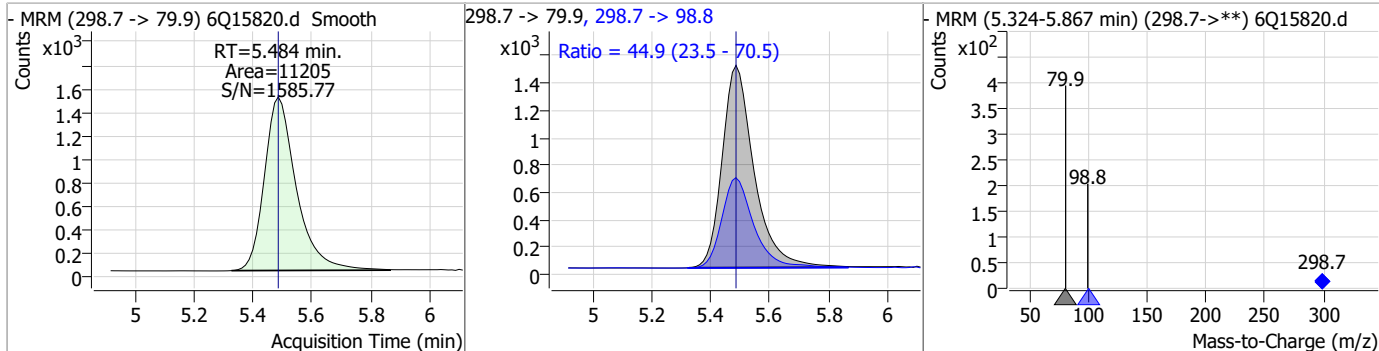
Perfluorinated Compounds by LC/MS/MS



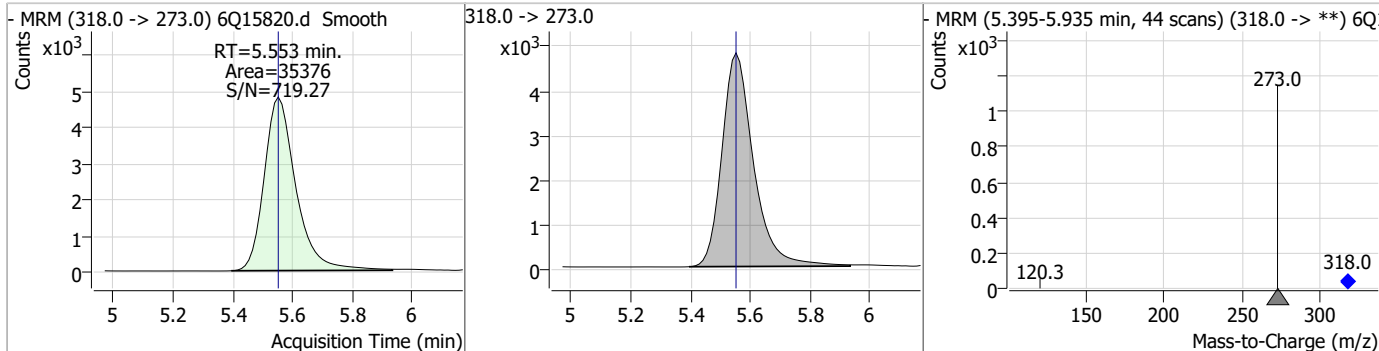
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Perfluorinated Compounds by LC/MS/MS

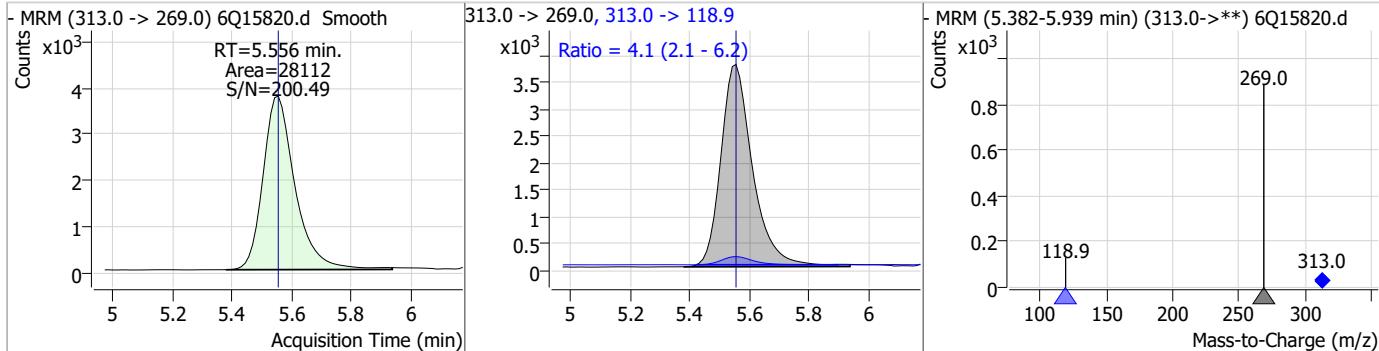
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.15	5.48	0.00	11205	298.7 -> 98.8	44.9	23.5	70.5



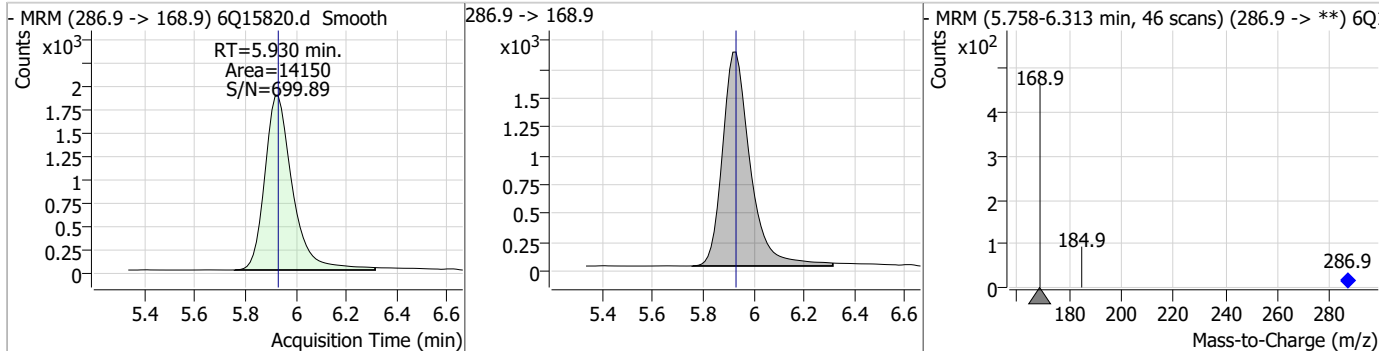
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.34	5.55	0.00	35376				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.21	5.56	0.00	28112	313.0 -> 118.9	4.1	2.1	6.2

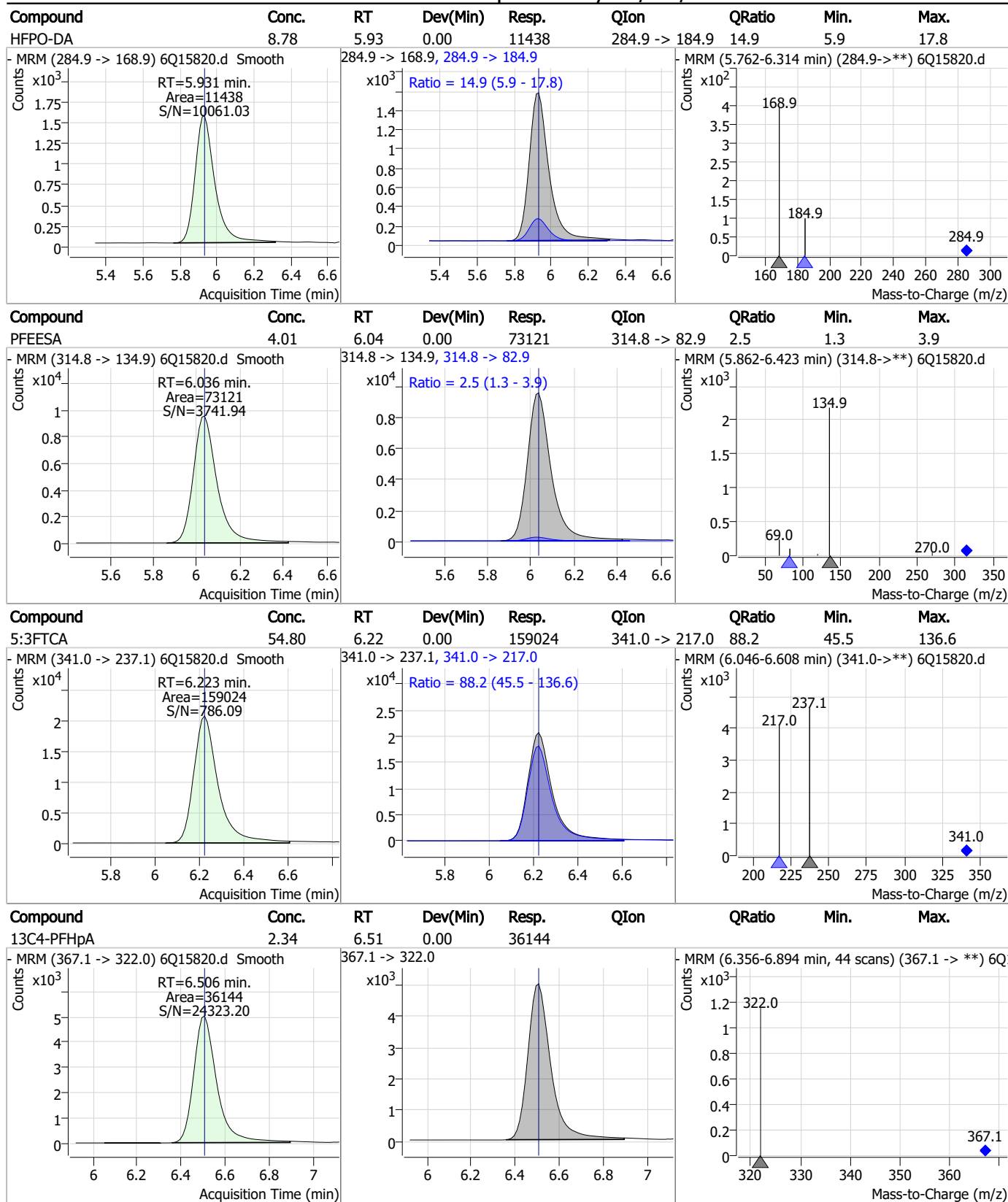


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.00	5.93	0.00	14150				



7.7.14
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Perfluorinated Compounds by LC/MS/MS

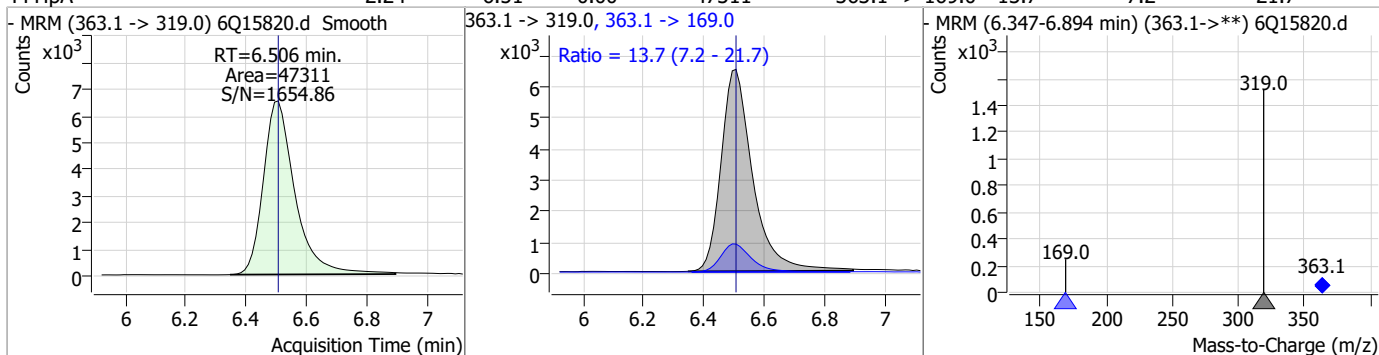


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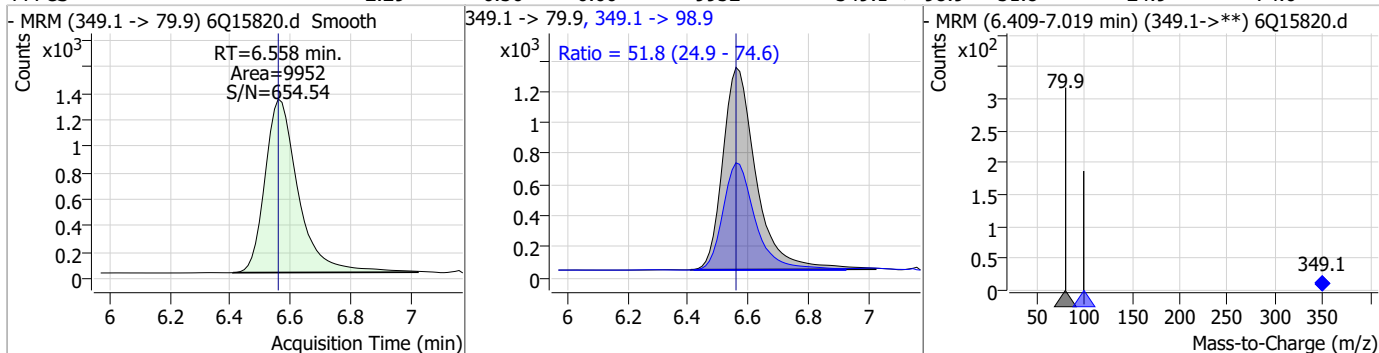


Perfluorinated Compounds by LC/MS/MS

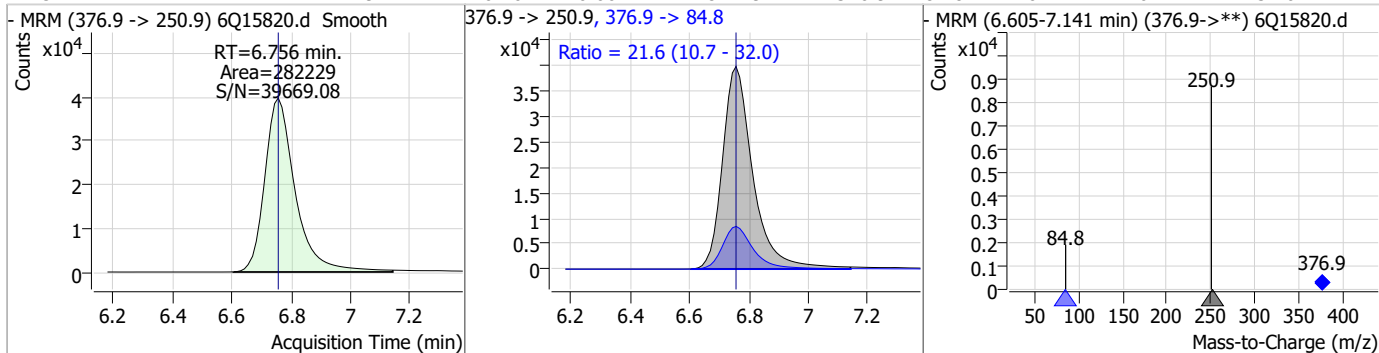
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.24	6.51	0.00	47311	363.1 -> 169.0	13.7	7.2	21.7



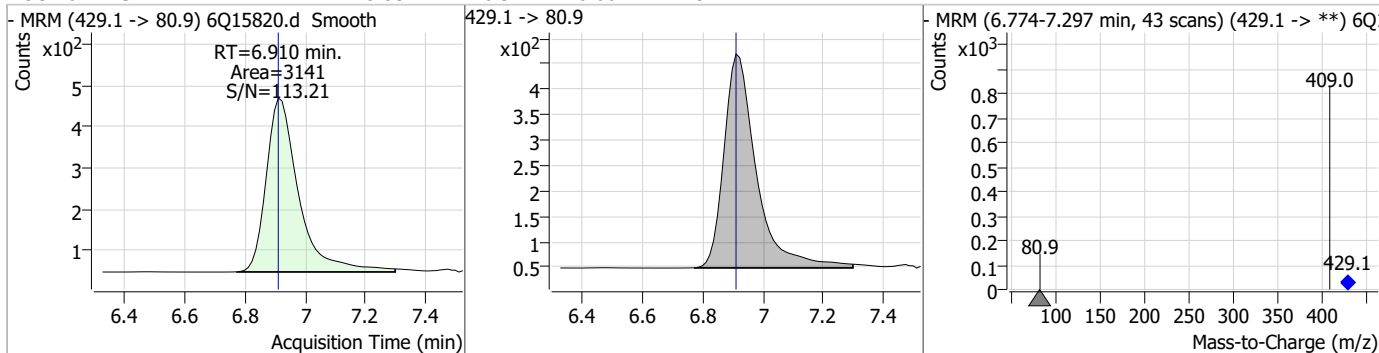
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.29	6.56	0.00	9952	349.1 -> 98.9	51.8	24.9	74.6



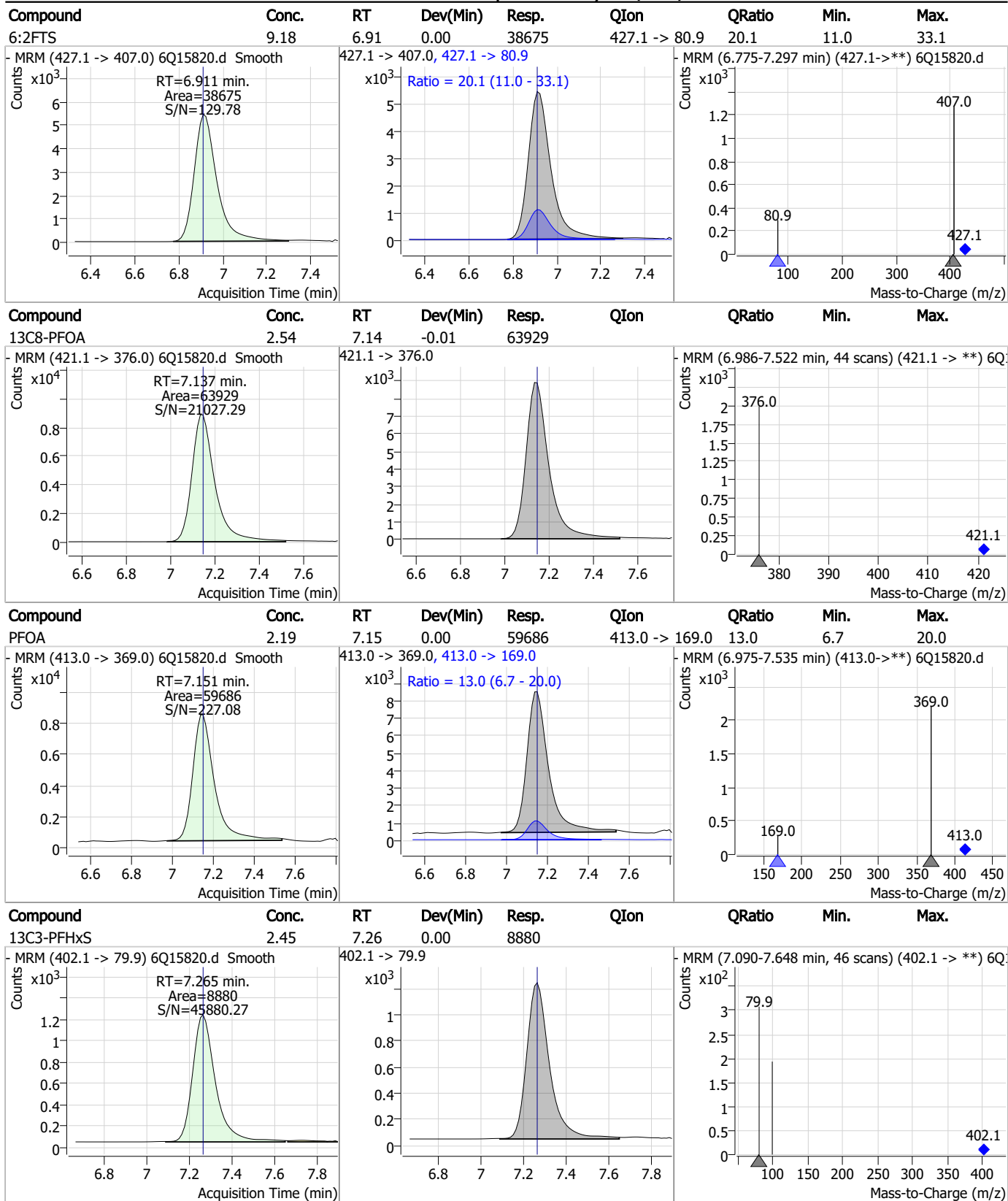
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.47	6.76	0.00	282229	376.9 -> 84.8	21.6	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.53	6.91	0.00	3141	429.1 -> 80.9			

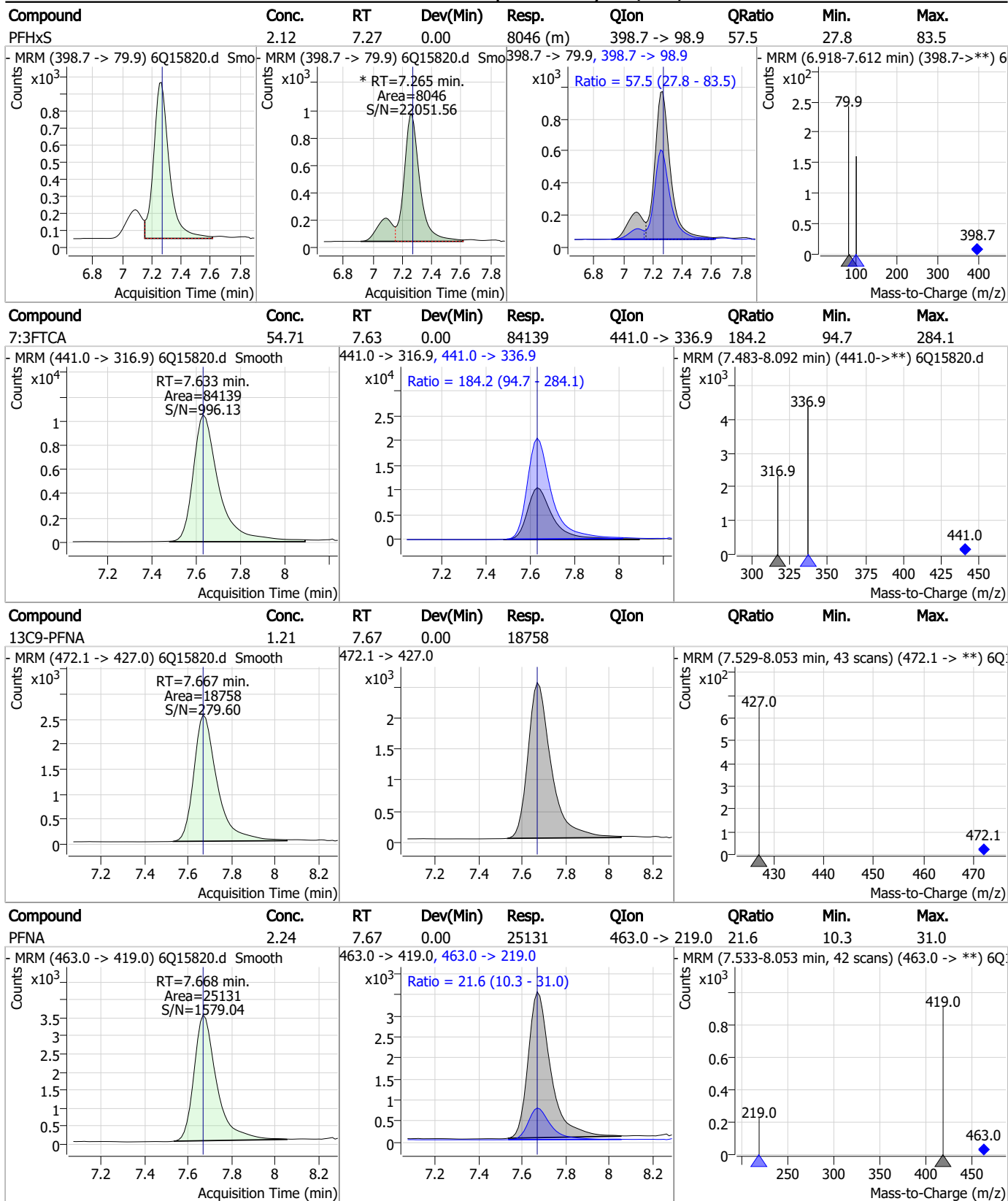


Perfluorinated Compounds by LC/MS/MS



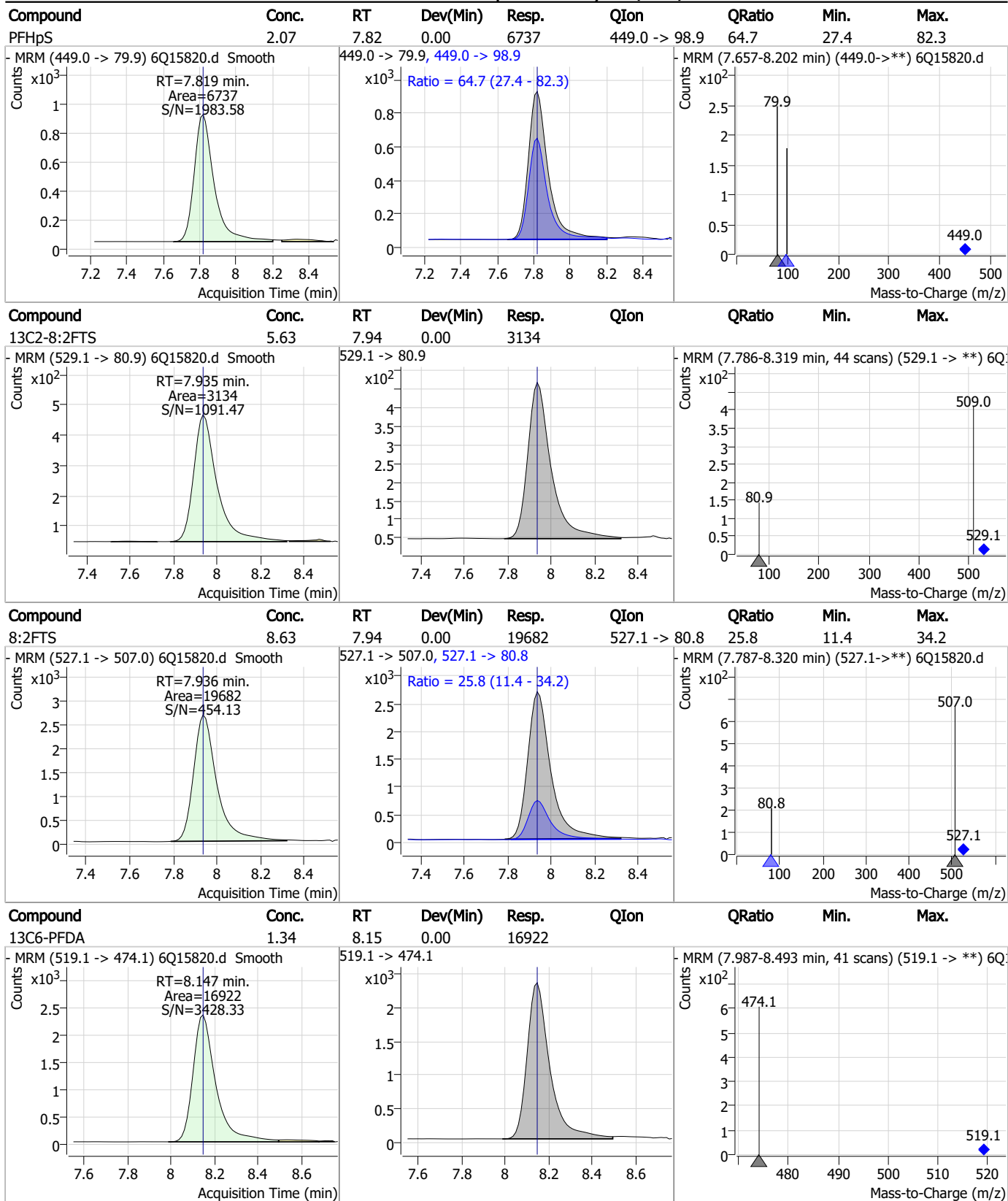
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Perfluorinated Compounds by LC/MS/MS



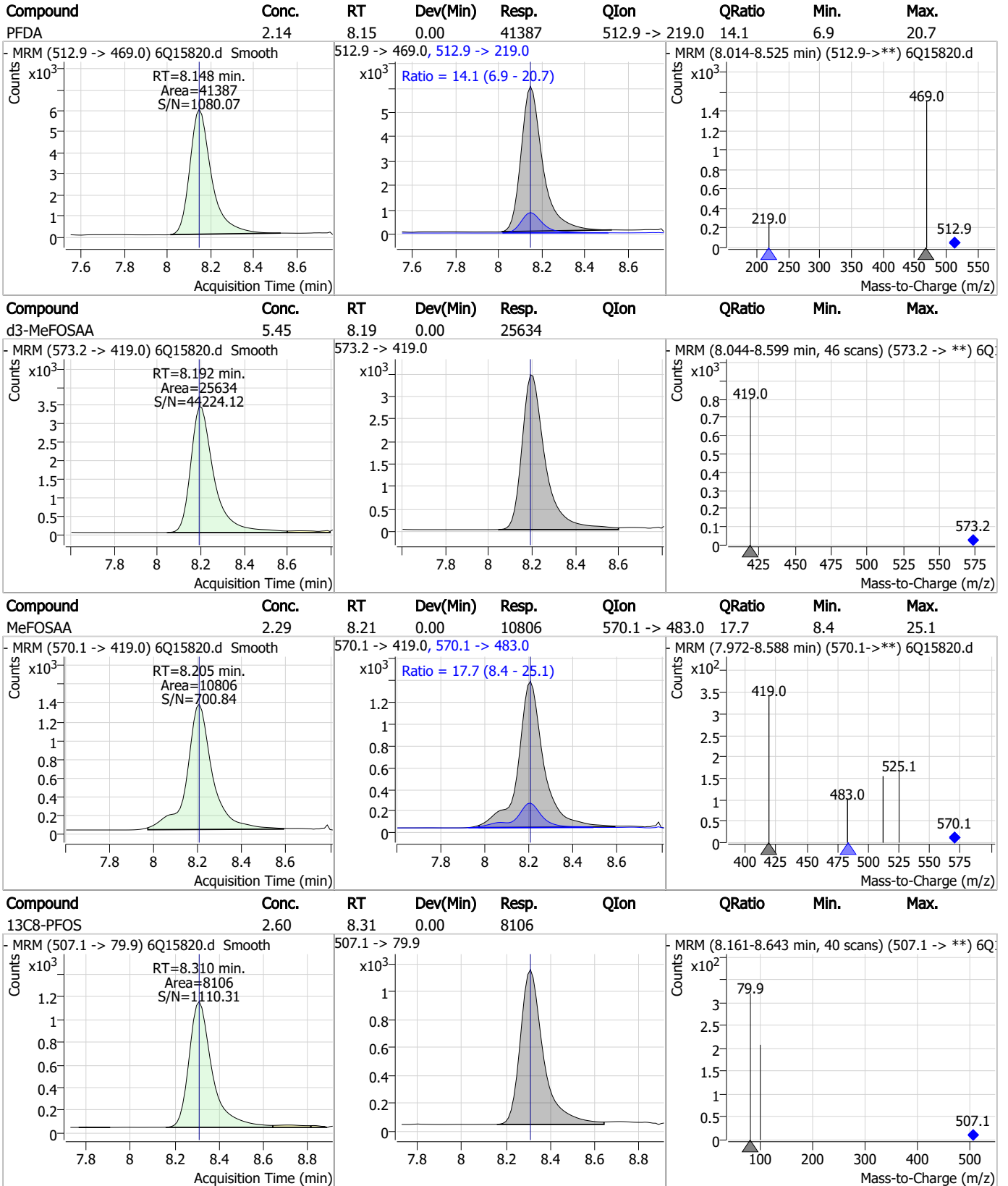
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Perfluorinated Compounds by LC/MS/MS



7.7.14

Perfluorinated Compounds by LC/MS/MS

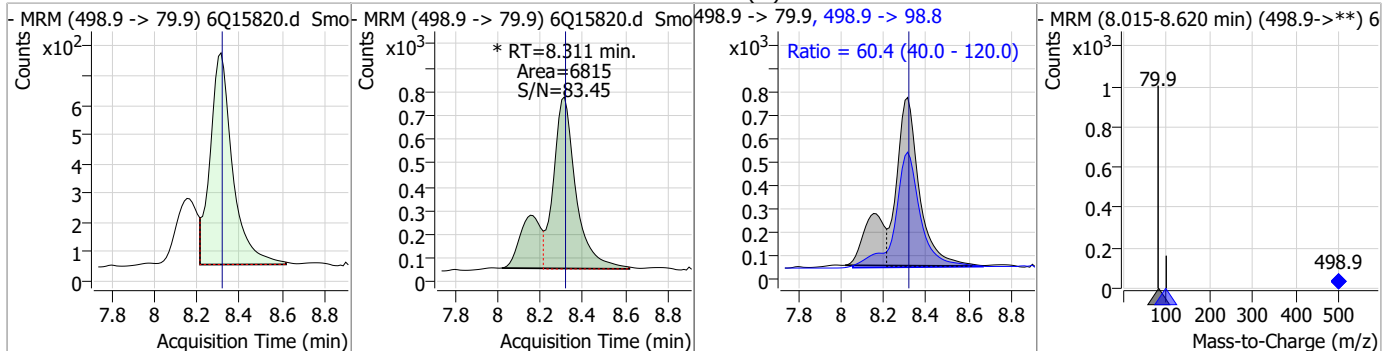


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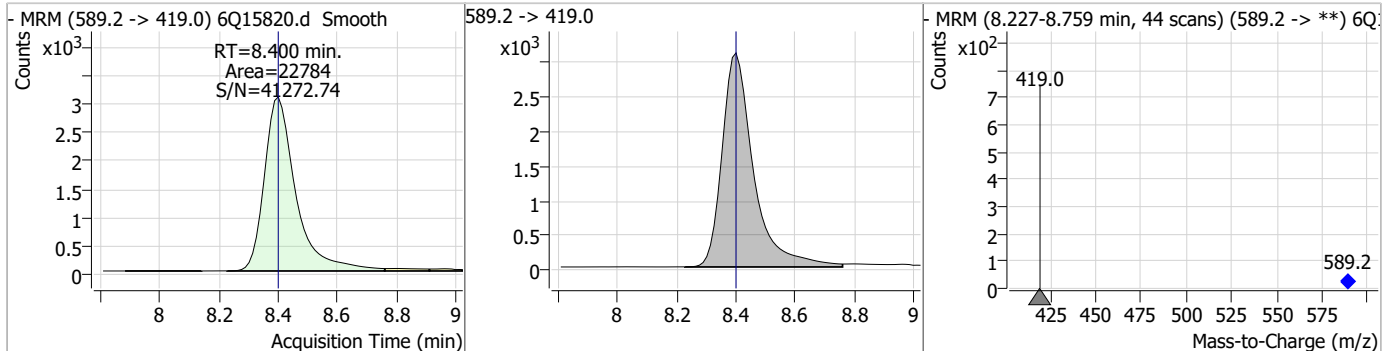


Perfluorinated Compounds by LC/MS/MS

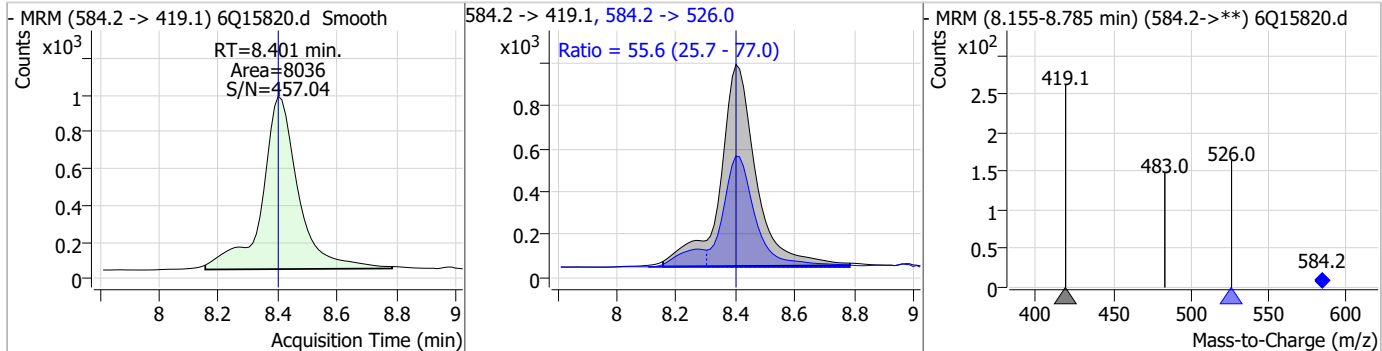
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.01	8.31	0.00	6815 (m)	498.9 -> 98.8	60.4	40.0	120.0



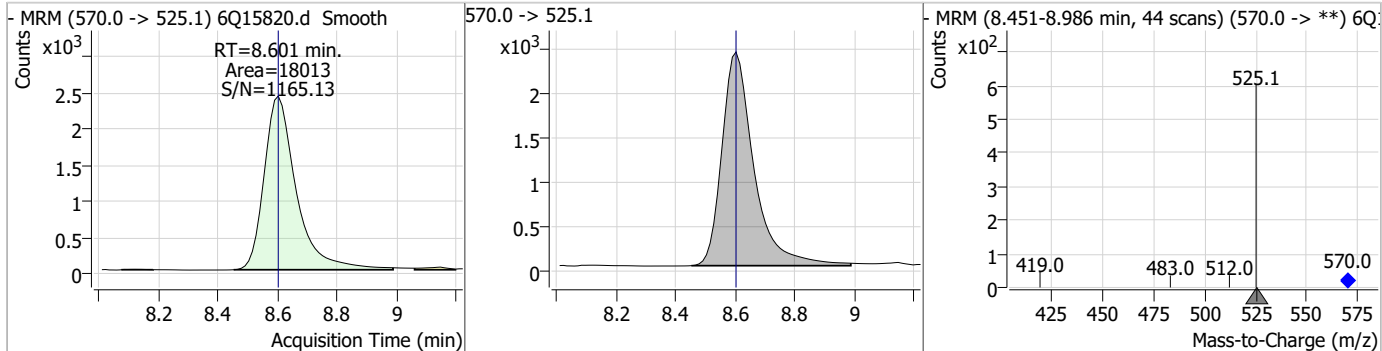
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.53	8.40	0.00	22784				



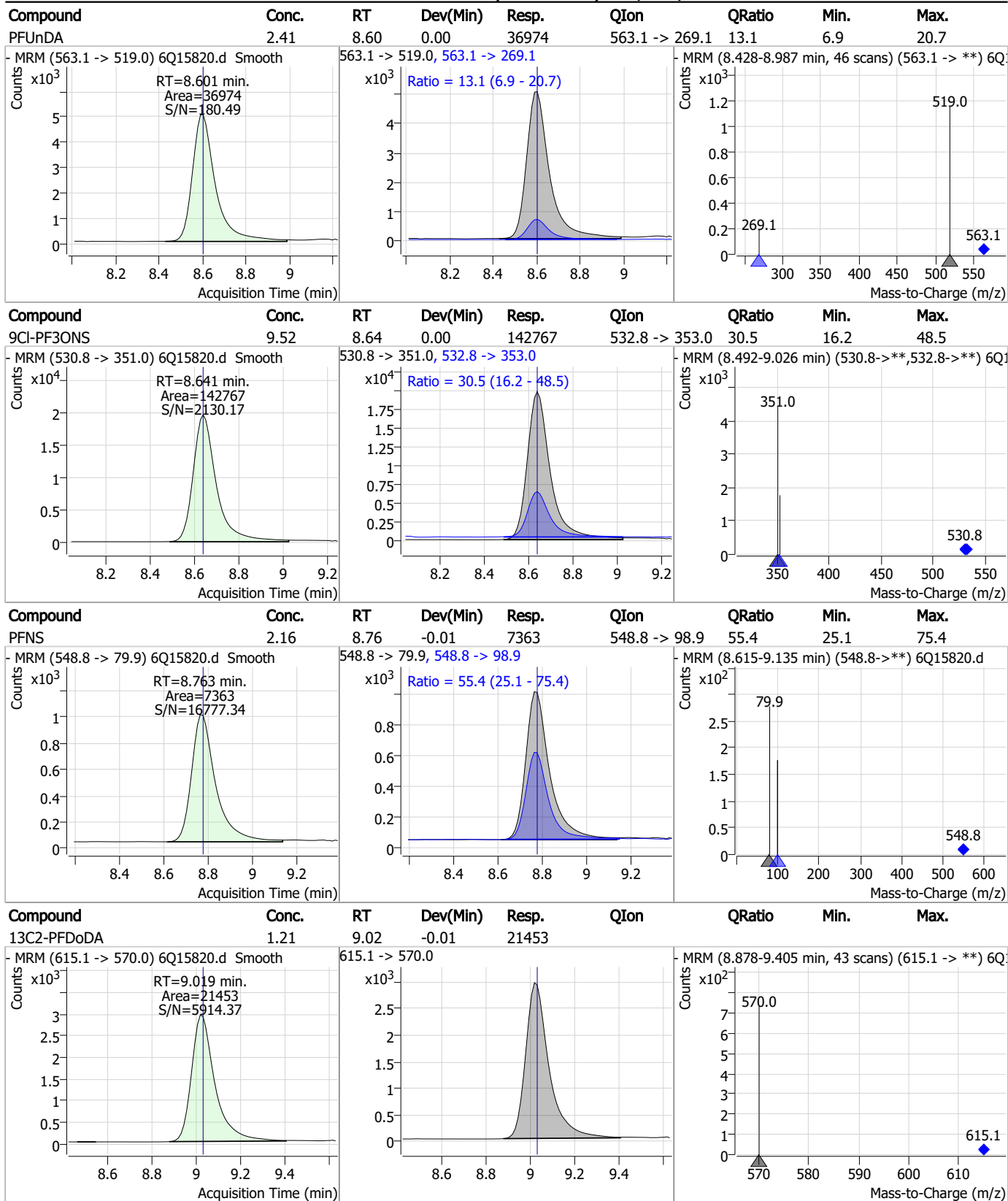
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.29	8.40	0.00	8036	584.2 -> 526.0	55.6	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.60	0.00	18013				

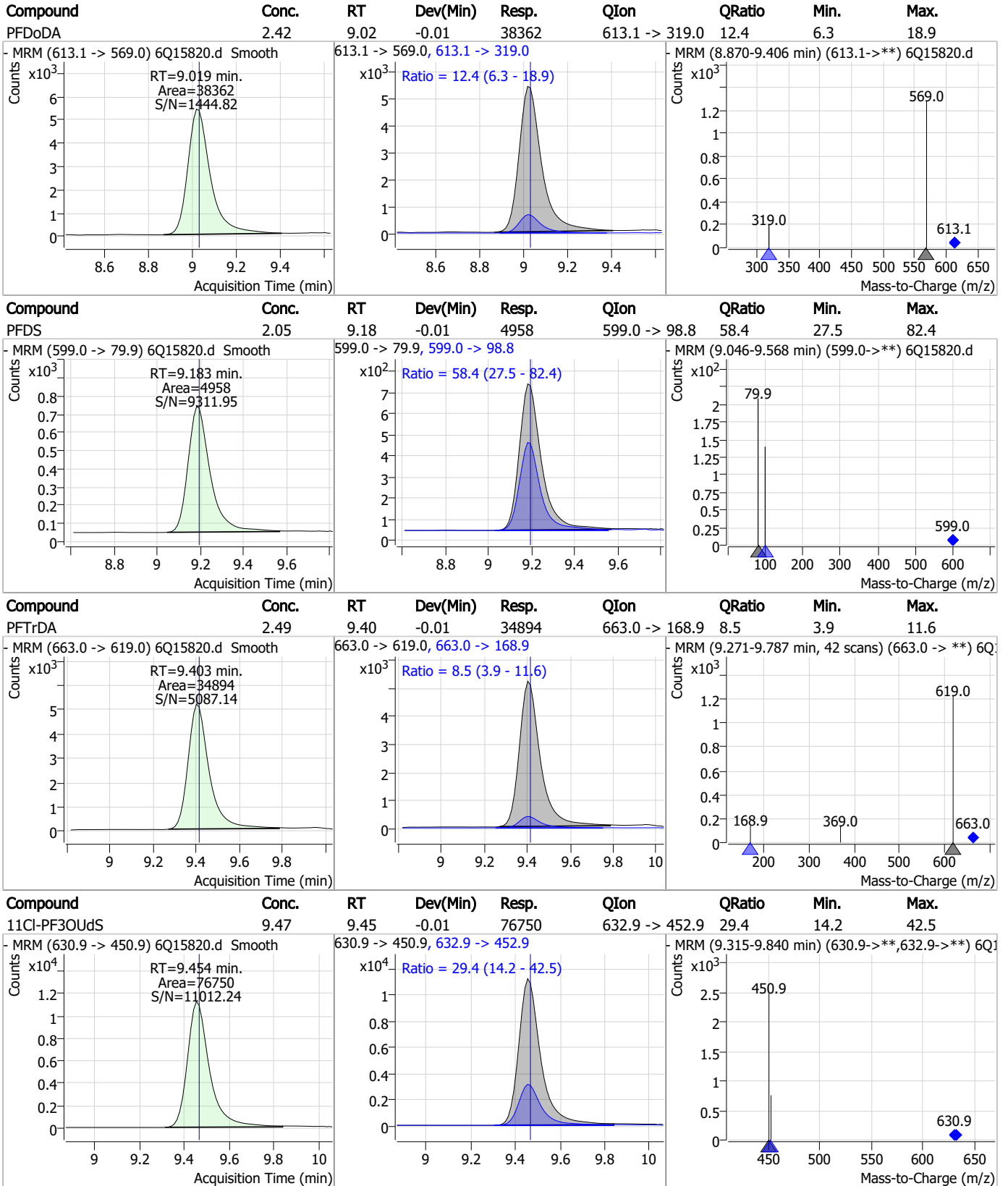


Perfluorinated Compounds by LC/MS/MS



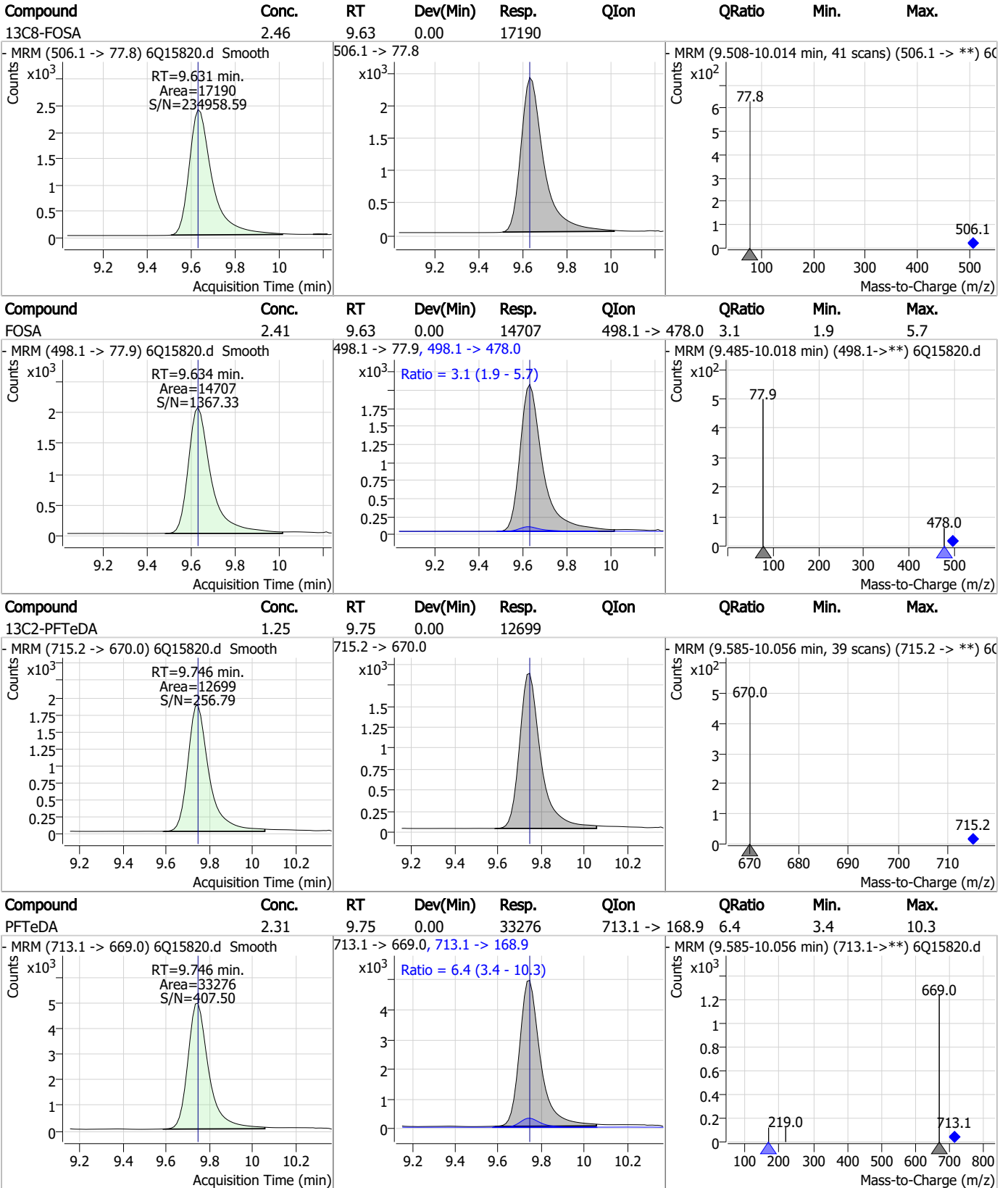
7.7.14
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Perfluorinated Compounds by LC/MS/MS



7.7.14 7

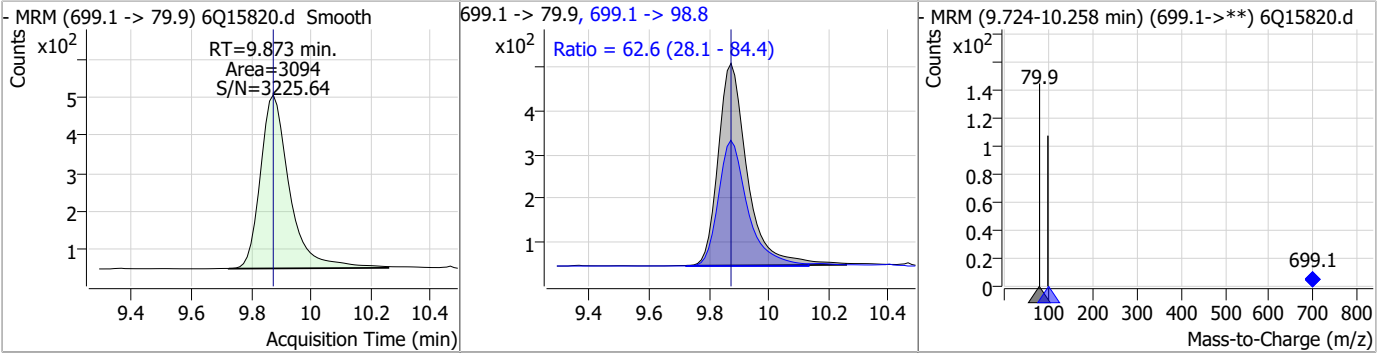
Perfluorinated Compounds by LC/MS/MS



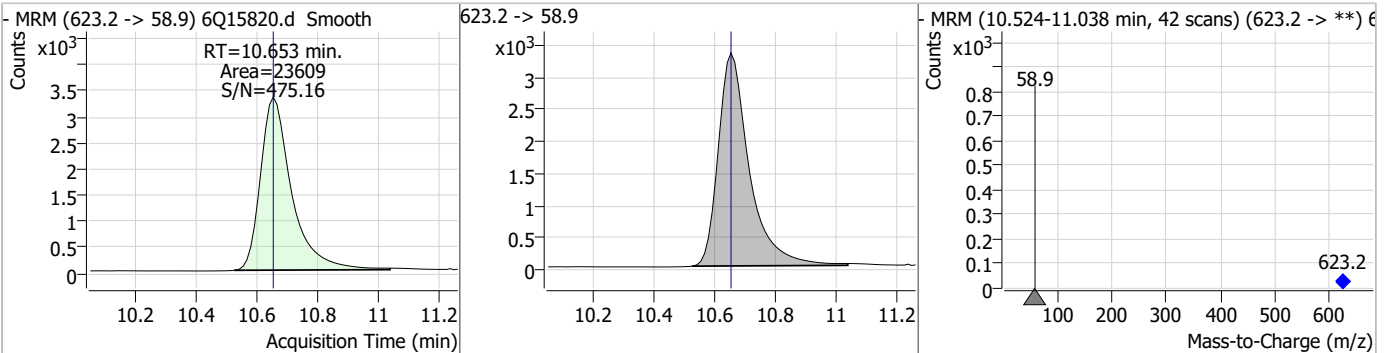
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Perfluorinated Compounds by LC/MS/MS

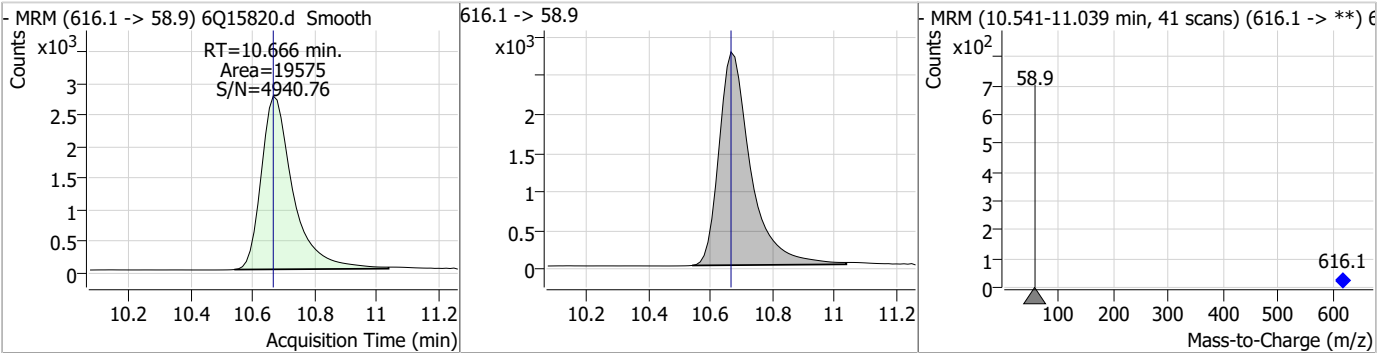
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.12	9.87	0.00	3094	699.1 -> 98.8	62.6	28.1	84.4



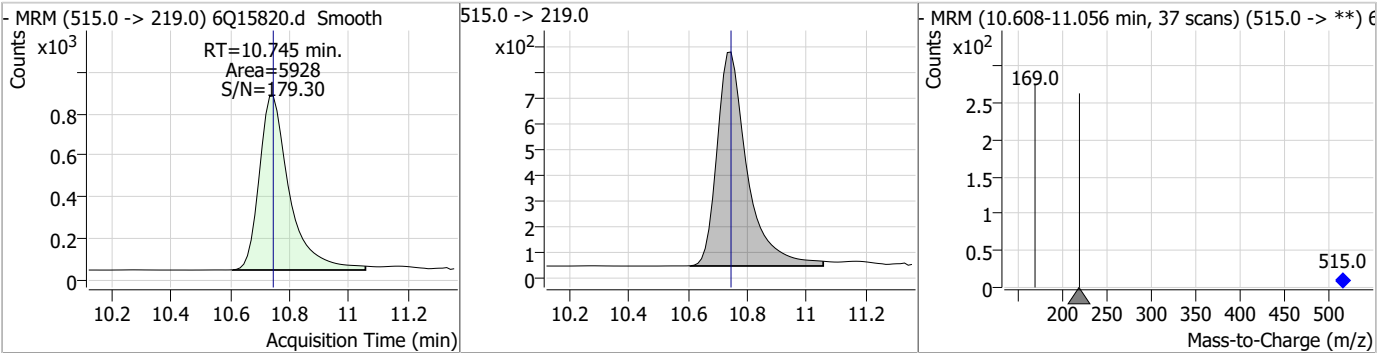
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.55	10.65	0.00	23609				



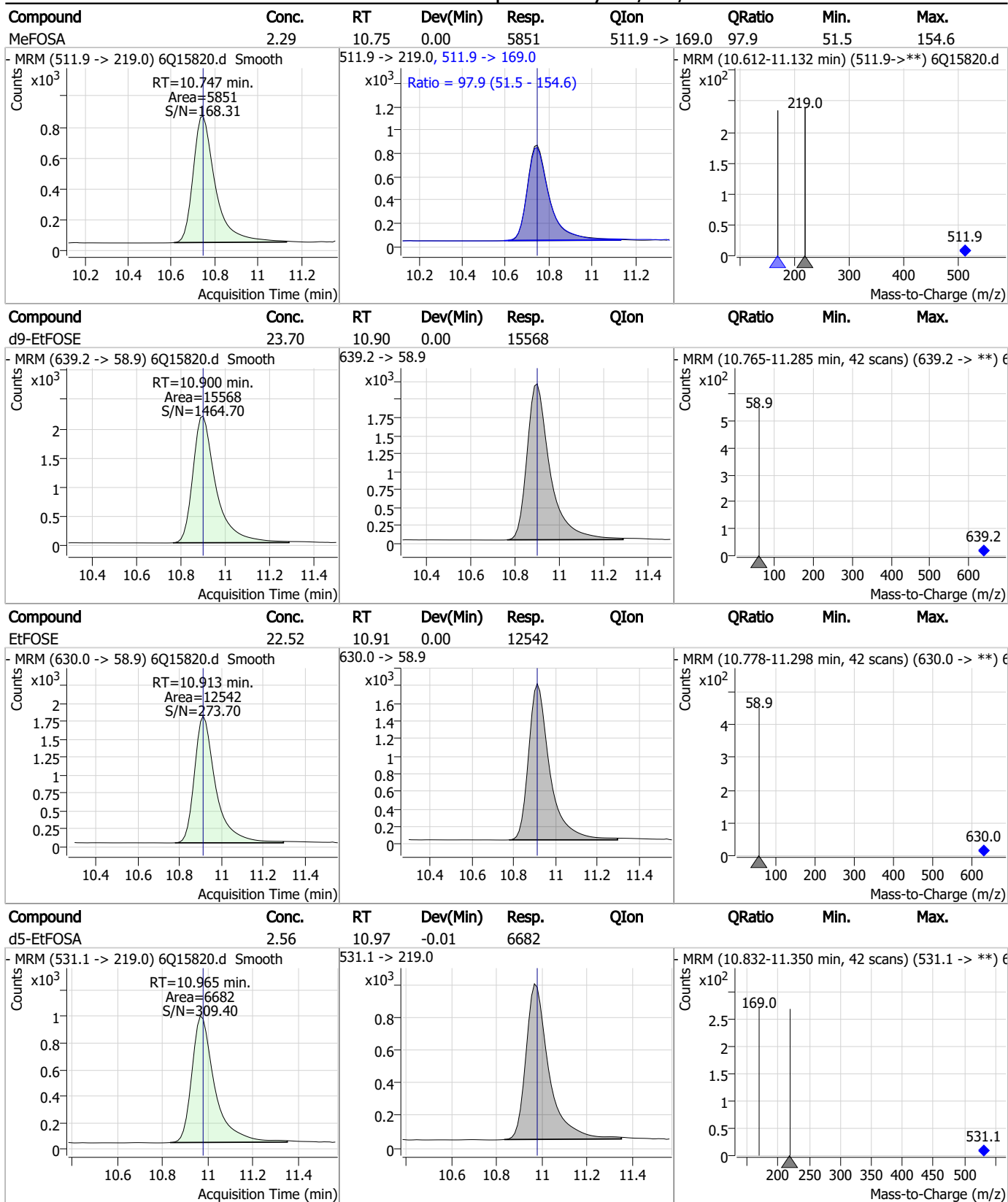
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.96	10.67	0.00	19575				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.56	10.75	0.00	5928				



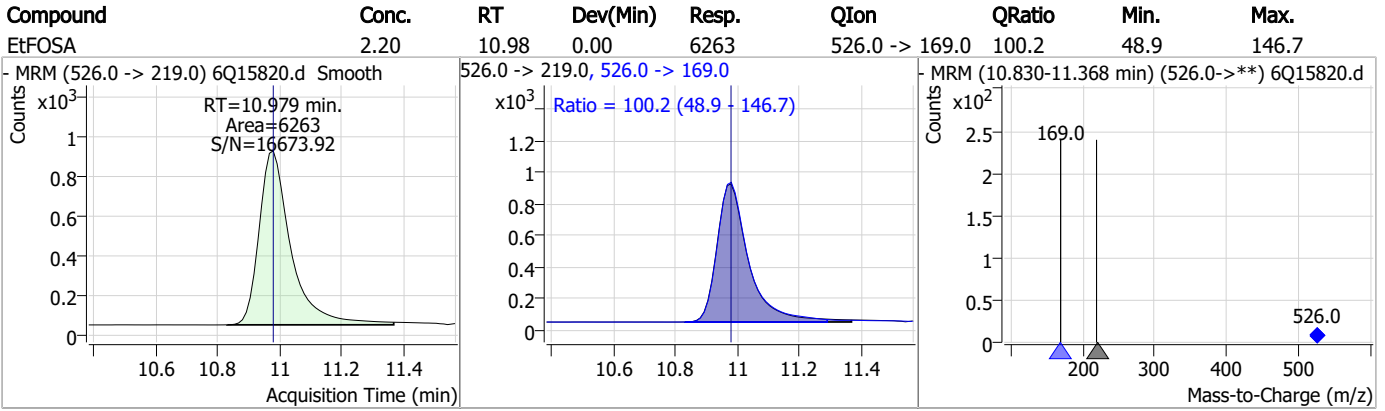
Perfluorinated Compounds by LC/MS/MS



7.7.14

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Perfluorinated Compounds by LC/MS/MS



7.7.14
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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15820.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/30/23 21:31 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.7.14.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15832.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 12:18:53 AM
 Sample Name : cc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	77963	10.00 µg/L	0.012
M5-PFPeA	4.347	268.3 -> 223.0	38230	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34619	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	35732	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	63397	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	19356	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	15759	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	17883	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	22421	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	13177	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	16546	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13578	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8739	2.50 µg/L	-0.012
M8-PFOS	8.298	507.1 -> 79.9	7701	2.50 µg/L	-0.012
M2-4:2FTS	5.216	329.1 -> 80.9	2487	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3208	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	3282	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	25209	5.00 µg/L	0.000
M3-HFPO-DA	5.918	286.9 -> 168.9	14476	10.00 µg/L	-0.013
M5-EtFOSAA	8.387	589.2 -> 419.0	23230	5.00 µg/L	-0.012
M7-MeFOSE	10.653	623.2 -> 58.9	25454	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16545	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	6733	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5685	2.50 µg/L	0.000
13C4-PFOS	8.298	502.8 -> 79.9	9802	2.50 µg/L	-0.012
13C3-PFBA	2.916	216.0 -> 172.0	34439	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	6722	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	75055	2.50 µg/L	0.000
13C2-PFDA	8.135	515.1 -> 470.1	23828	1.25 µg/L	-0.012
13C5-PFNA	7.668	468.0 -> 423.0	19373	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	35471	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2487	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.6%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3208	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C2-8:2FTS	7.935	529.1 -> 80.9	3282	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C2-PFDoDA	9.019	615.1 -> 570.0	22421	1.16 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-PFTeDA	9.746	715.2 -> 670.0	13177	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C3-PFBS	5.483	302.1 -> 79.9	13578	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C3-PFHxS	7.252	402.1 -> 79.9	8739	2.30 µg/L	-0.012

7.7.15
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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 = 92.0%		
13C4-PFBA	2.926	216.8 -> 171.9	77963	9.80 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C4-PFHpA	6.493	367.1 -> 322.0	35732	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C5-PFHxA	5.553	318.0 -> 273.0	34619	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C5-PFPeA	4.347	268.3 -> 223.0	38230	4.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C6-PFDA	8.147	519.1 -> 474.1	15759	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C7-PFUnDA	8.589	570.0 -> 525.1	17883	1.18 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C8-FOSA	9.631	506.1 -> 77.8	16546	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.9%		
13C8-PFOA	7.137	421.1 -> 376.0	63397	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C8-PFOS	8.298	507.1 -> 79.9	7701	2.40 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C9-PFNA	7.667	472.1 -> 427.0	19356	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.2%		
d3-MeFOSAA	8.192	573.2 -> 419.0	25209	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	14476	9.48 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 94.8%		
d3-MeFOSA	10.745	515.0 -> 219.0	5685	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.5%		
d5-EtFOSAA	8.387	589.2 -> 419.0	23230	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	25454	24.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
d9-EtFOSE	10.900	639.2 -> 58.9	16545	24.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
d5-EtFOSA	10.965	531.1 -> 219.0	6733	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.5%		
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	42382	8.17 µg/L	99
		327.1 -> 80.9	10221		
6:2FTS	6.911	427.1 -> 407.0	37172	8.64 µg/L	100
		427.1 -> 80.9	8127		
8:2FTS	7.936	527.1 -> 507.0	19861	8.32 µg/L	95
		527.1 -> 80.8	4973		
EtFOSAA	8.401	584.2 -> 419.1	7682	2.14 µg/L	94
		584.2 -> 526.0	4275		
FOSA	9.634	498.1 -> 77.9	14451	2.47 µg/L	99
		498.1 -> 478.0	498		
MeFOSAA	8.193	570.1 -> 419.0	11532	2.48 µg/L	97
		570.1 -> 483.0	2094		
PFBA	2.919	212.8 -> 168.9	16383	9.24 µg/L	100
PFBS	5.484	298.7 -> 79.9	10823	2.06 µg/L	95
		298.7 -> 98.8	4710		
PFDA	8.148	512.9 -> 469.0	40777	2.26 µg/L	98
		512.9 -> 219.0	5369		
PFDoDA	9.019	613.1 -> 569.0	39113	2.36 µg/L	99
		613.1 -> 319.0	4820		
PFDS	9.183	599.0 -> 79.9	4910	2.14 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	2921	2.31	µg/L	97
		363.1 -> 319.0	48338			
PFHpS	7.819	363.1 -> 169.0	6267	2.27	µg/L	97
		449.0 -> 79.9	7004			
PFHxA	5.556	449.0 -> 98.9	3706	2.26	µg/L	100
		313.0 -> 269.0	28194			
PFHxS	7.253	313.0 -> 118.9	1174	2.18	µg/L	100
		398.7 -> 79.9	8175			
PFNA	7.668	398.7 -> 98.9	4540	2.35	µg/L	96
		463.0 -> 419.0	27125			
PFNS	8.763	463.0 -> 219.0	5145	2.23	µg/L	92
		548.8 -> 79.9	7217			
PFOA	7.138	548.8 -> 98.9	4004	2.35	µg/L	99
		413.0 -> 369.0	63510			
PFOS	8.311	413.0 -> 169.0	8237	2.01	µg/L	97
		498.9 -> 79.9	6478			
PFPeA	4.349	498.9 -> 98.8	4990	4.53	µg/L	100
		263.0 -> 219.0	36727			
PFPeS	6.558	349.1 -> 79.9	10025	2.34	µg/L	98
		349.1 -> 98.9	5120			
PFTeDA	9.746	713.1 -> 669.0	32021	2.14	µg/L	99
		713.1 -> 168.9	2275			
PFTrDA	9.403	663.0 -> 619.0	35250	2.40	µg/L	99
		663.0 -> 168.9	2818			
PFUnDA	8.589	563.1 -> 519.0	35204	2.31	µg/L	97
		563.1 -> 269.1	5283			
11CI-PF3OUdS	9.454	630.9 -> 450.9	75289	9.08	µg/L	96
		632.9 -> 452.9	23081			
9CI-PF3ONS	8.641	530.8 -> 351.0	131822	8.59	µg/L	99
		532.8 -> 353.0	41655			
ADONA	6.756	376.9 -> 250.9	275262	9.03	µg/L	97
		376.9 -> 84.8	62846			
HFPO-DA	5.919	284.9 -> 168.9	12479	9.37	µg/L	99
		284.9 -> 184.9	1436			
3:3FTCA	3.815	241.0 -> 177.0	4462	10.36	µg/L	98
		241.0 -> 117.0	705			
5:3FTCA	6.223	341.0 -> 237.1	157478	55.46	µg/L	98
		341.0 -> 217.0	146331			
7:3FTCA	7.633	441.0 -> 316.9	85789	57.01	µg/L	96
		441.0 -> 336.9	158070			
EtFOSA	10.979	526.0 -> 219.0	6403	2.23	µg/L	100
		526.0 -> 169.0	6271			
EtFOSE	10.913	630.0 -> 58.9	13694	23.13	µg/L	100
		511.9 -> 219.0	4981			
MeFOSA	10.747	511.9 -> 169.0	6101	2.03	µg/L	81
		616.1 -> 58.9	20170			
MeFOSE	10.666	699.1 -> 79.9	3146	21.94	µg/L	100
		699.1 -> 98.8	2047			
PFDoDS	9.873	295.0 -> 201.0	3720	2.27	µg/L	88
		295.0 -> 84.9	1632			
NFDHA	5.435	279.0 -> 85.1	11168	5.02	µg/L	100
		229.0 -> 84.9	10117			
PFMBA	4.762	314.8 -> 134.9	74875	4.48	µg/L	100
		314.8 -> 82.9	1932			
PFMPA	3.488			4.51	µg/L	100
PFEESA	6.024			4.19	µg/L	100

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

7.7.15
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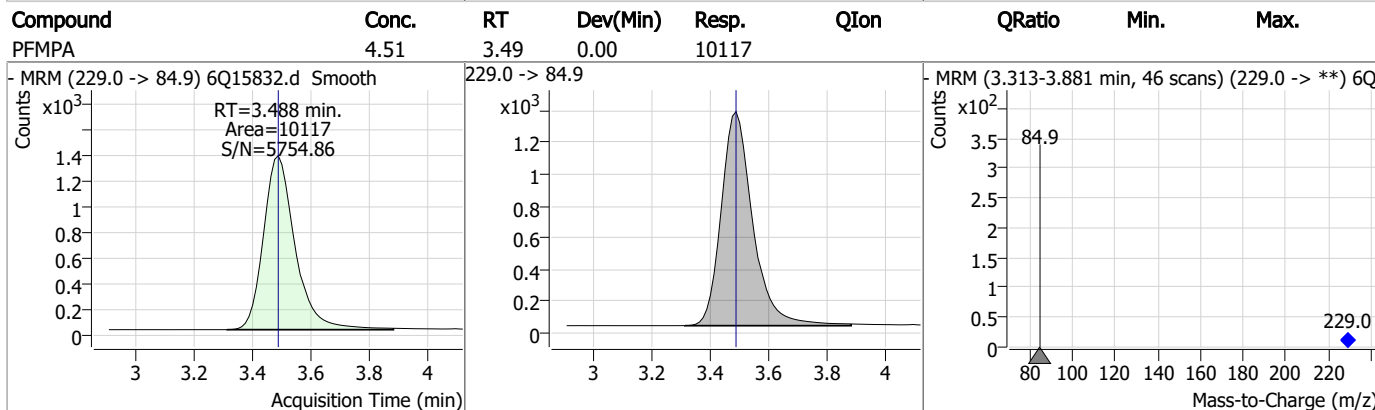
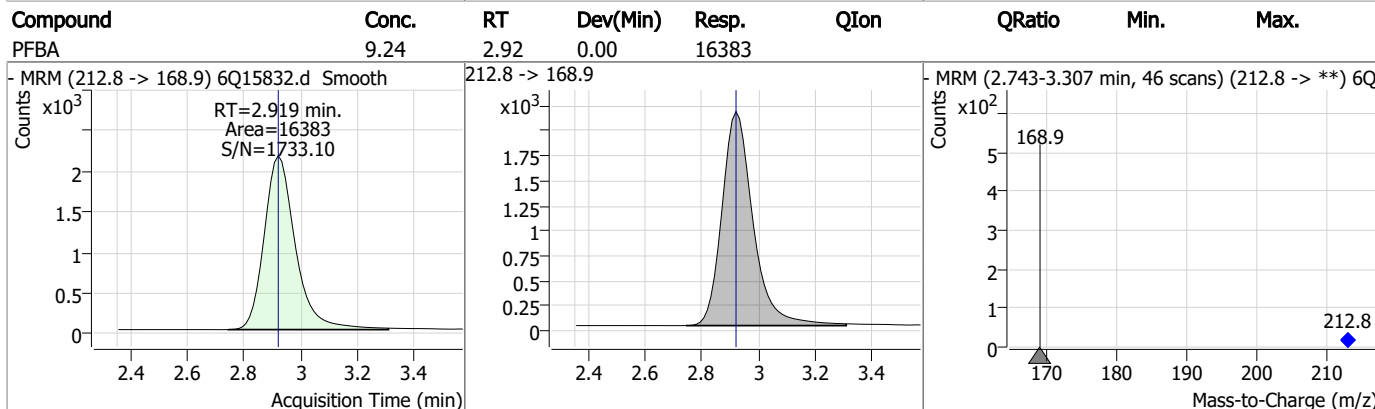
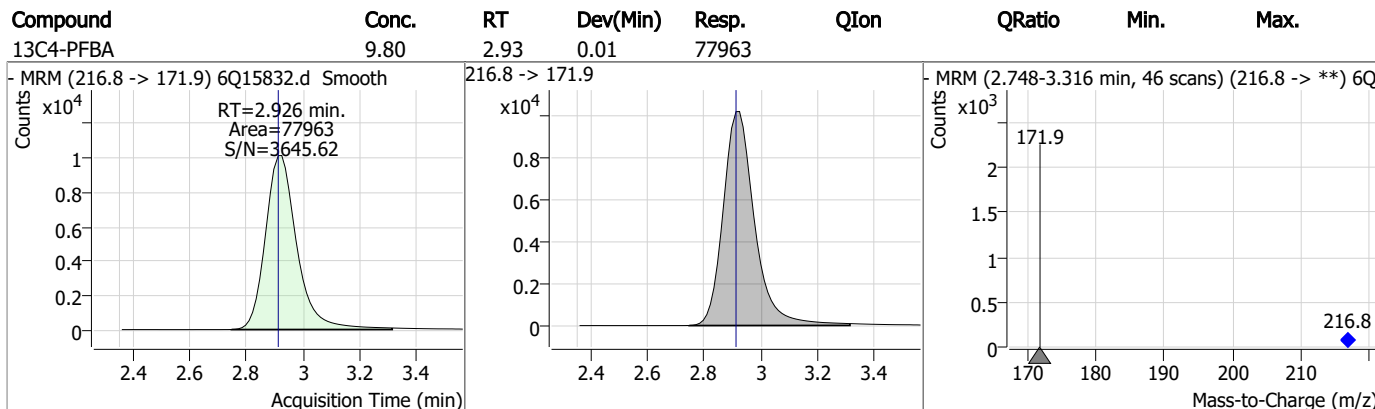
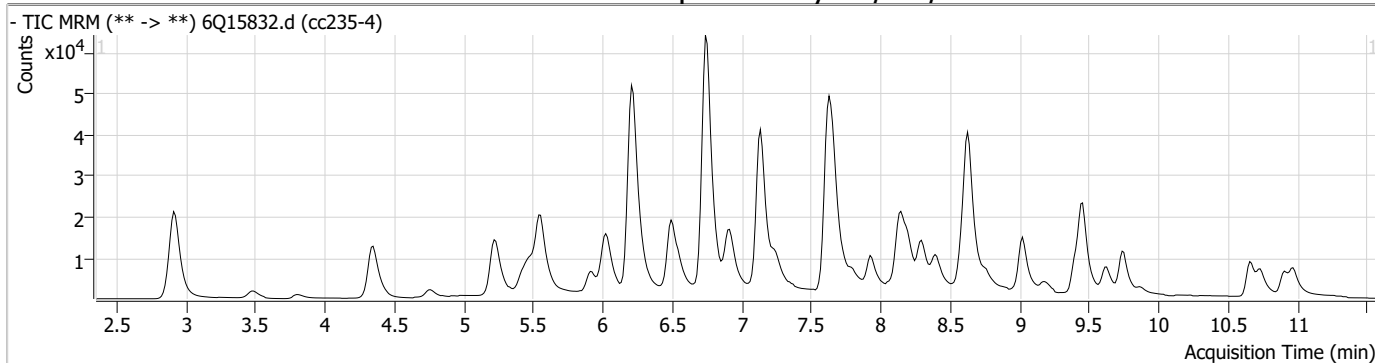
Perfluorinated Compounds by LC/MS/MS

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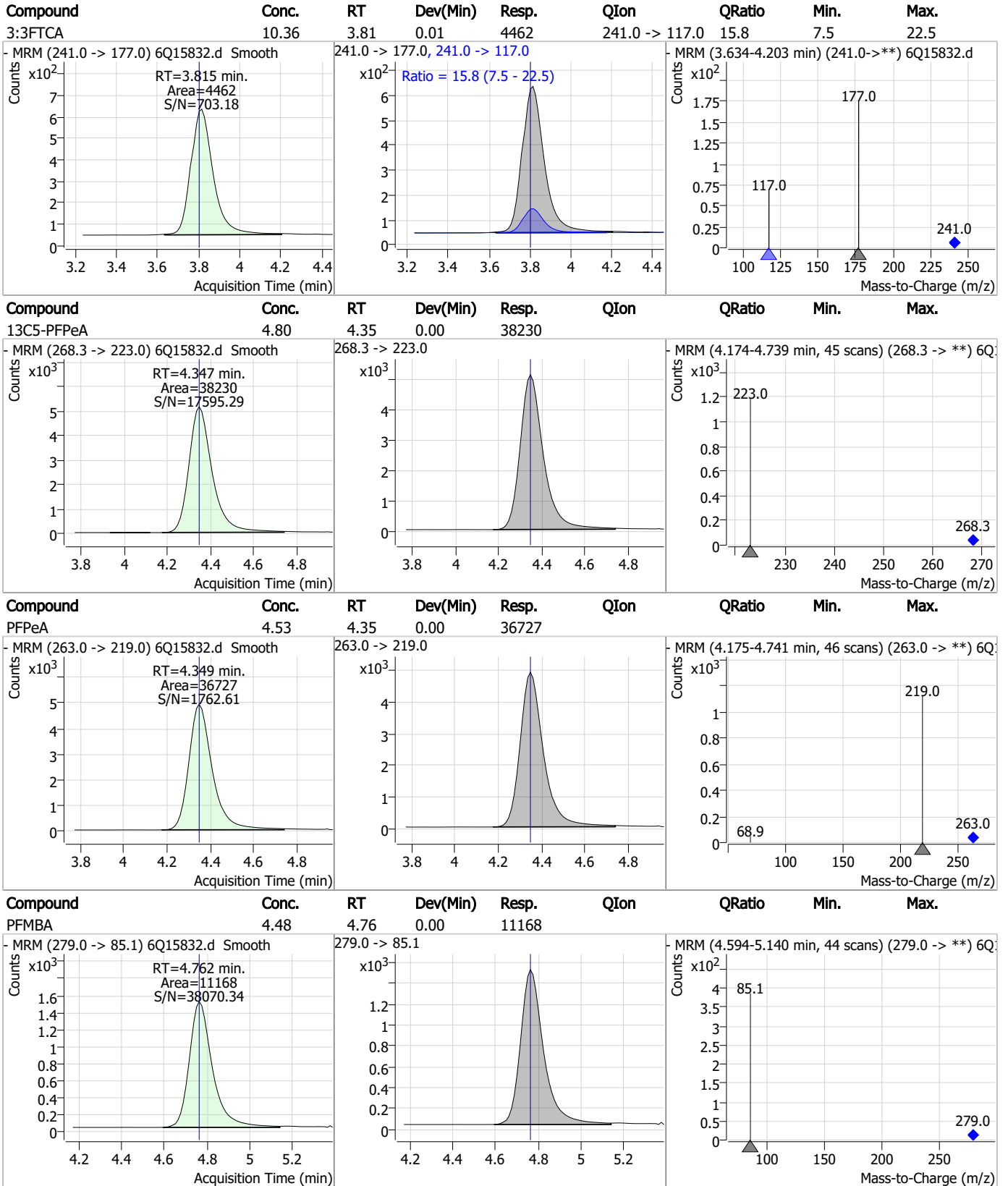
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Perfluorinated Compounds by LC/MS/MS



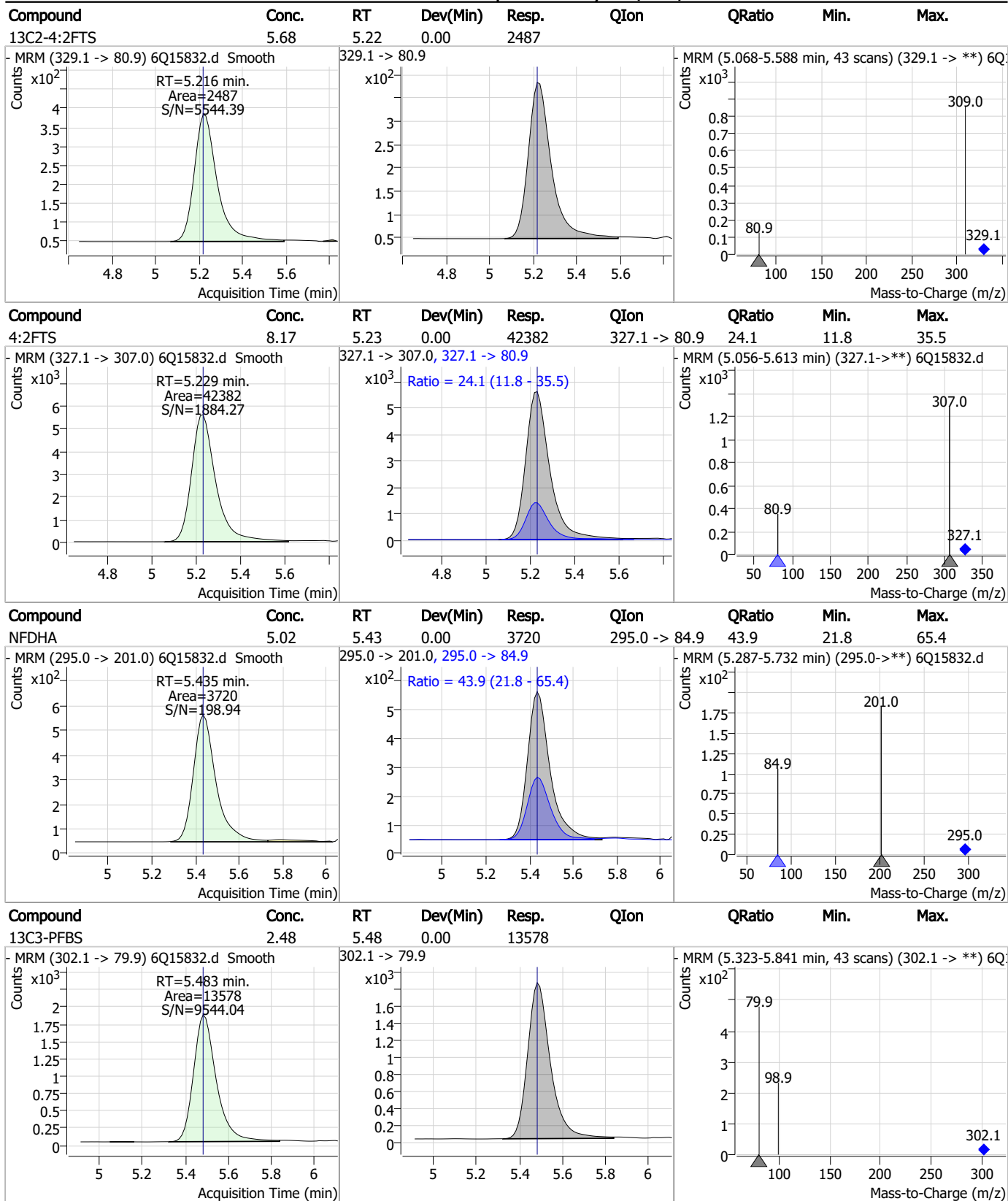
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Perfluorinated Compounds by LC/MS/MS



7.7.15 7

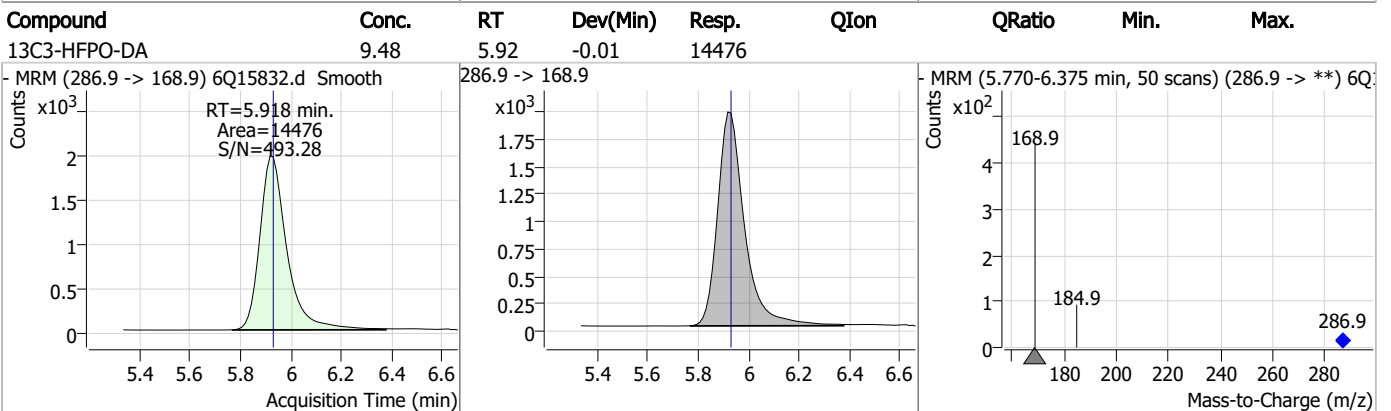
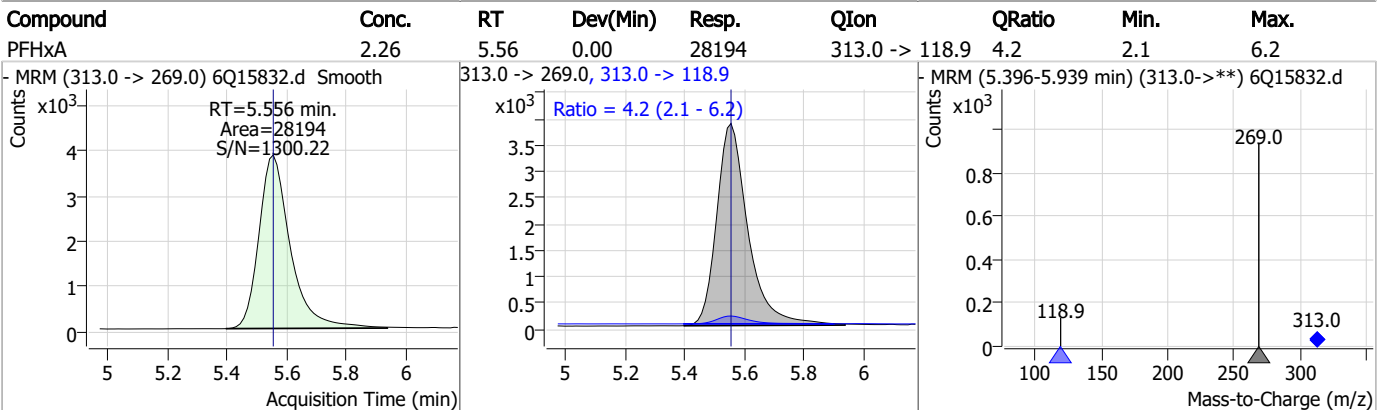
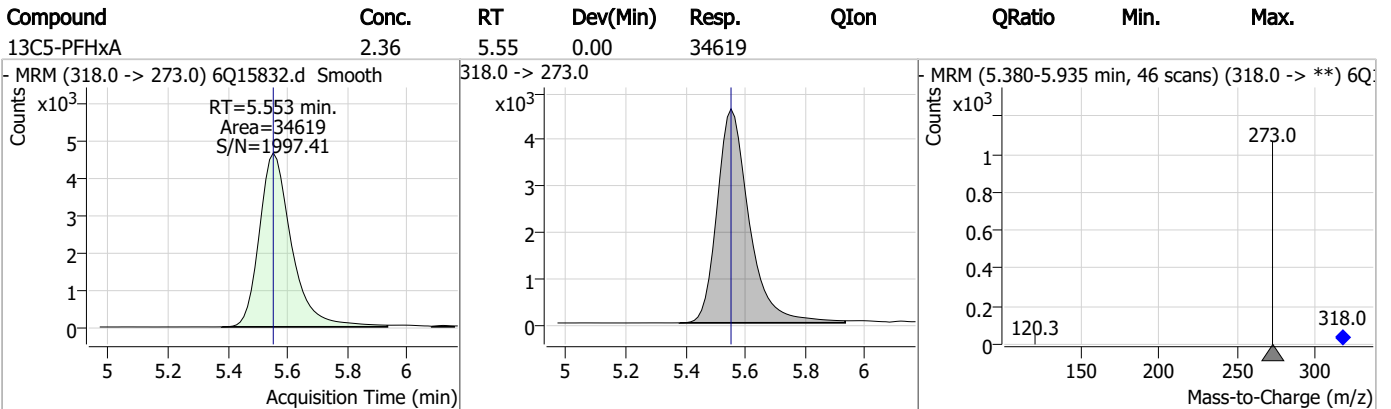
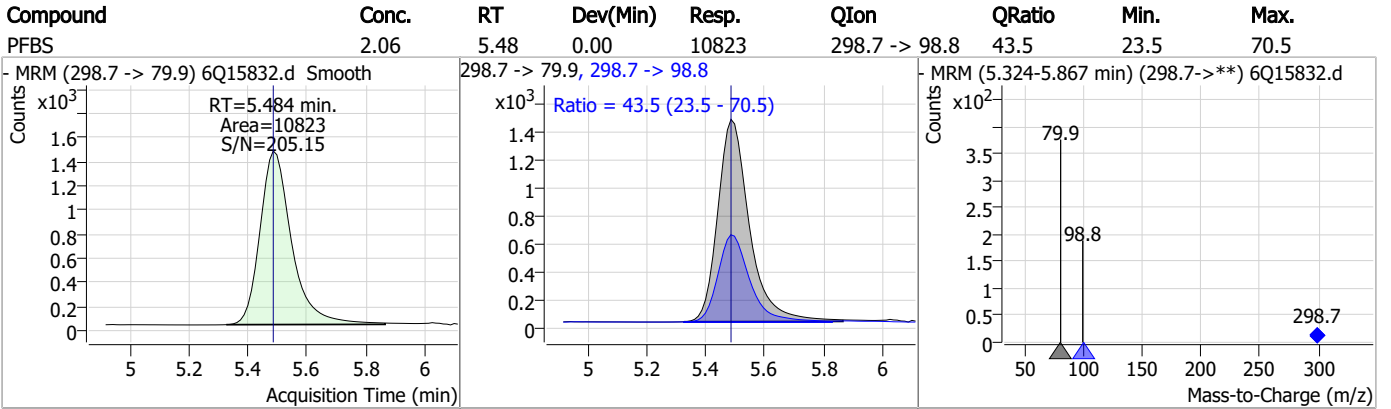
Perfluorinated Compounds by LC/MS/MS



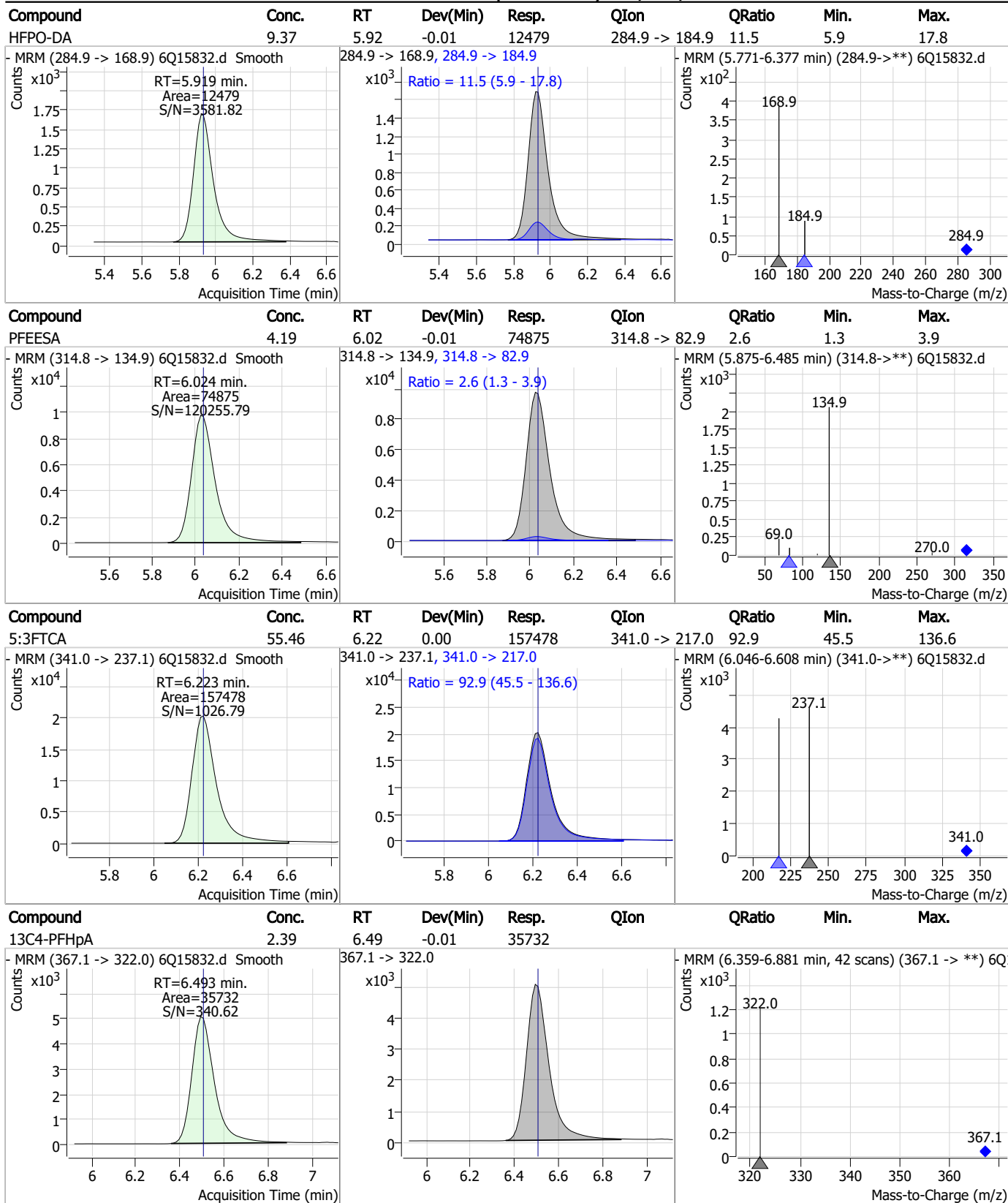
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Perfluorinated Compounds by LC/MS/MS



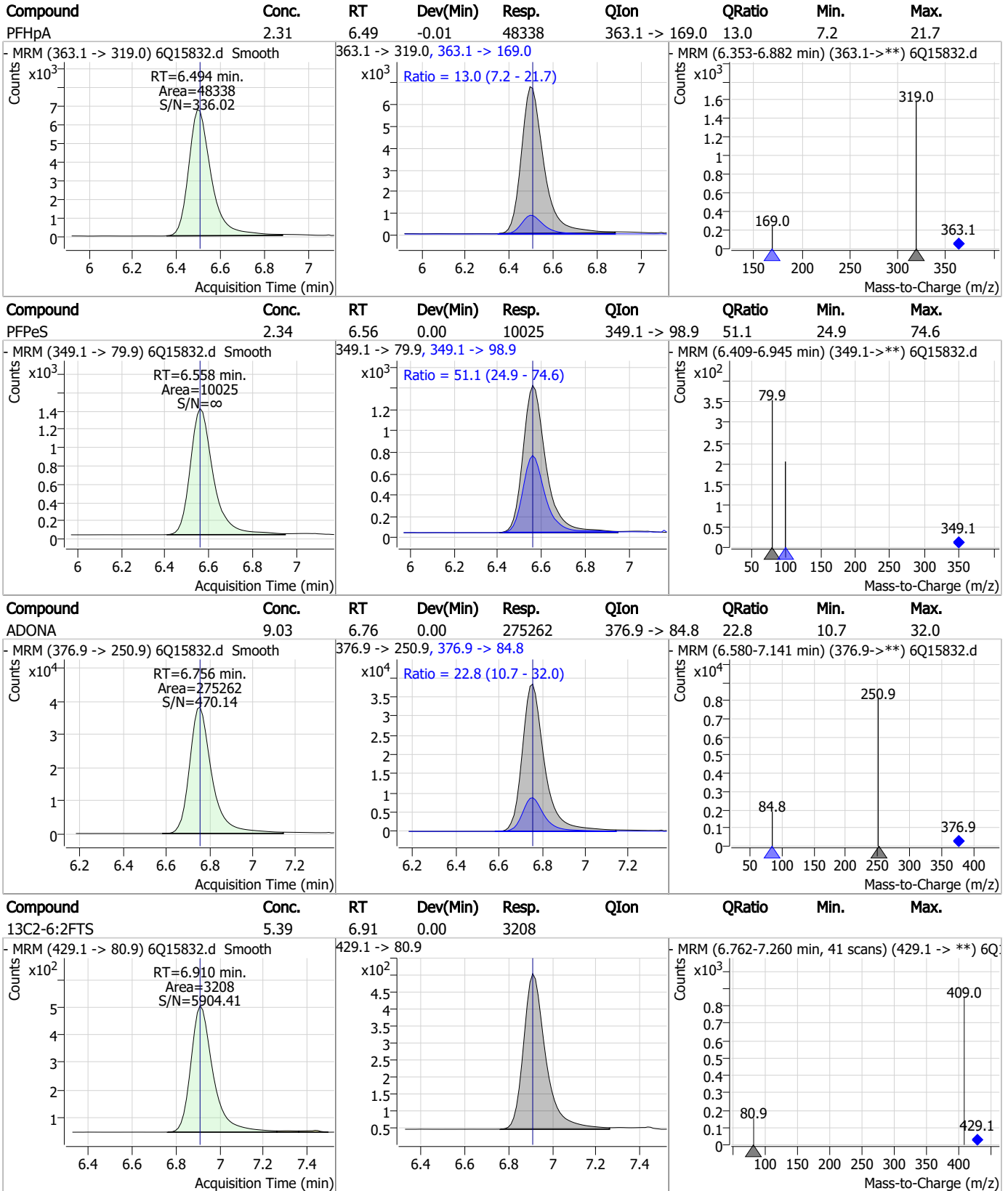
Perfluorinated Compounds by LC/MS/MS



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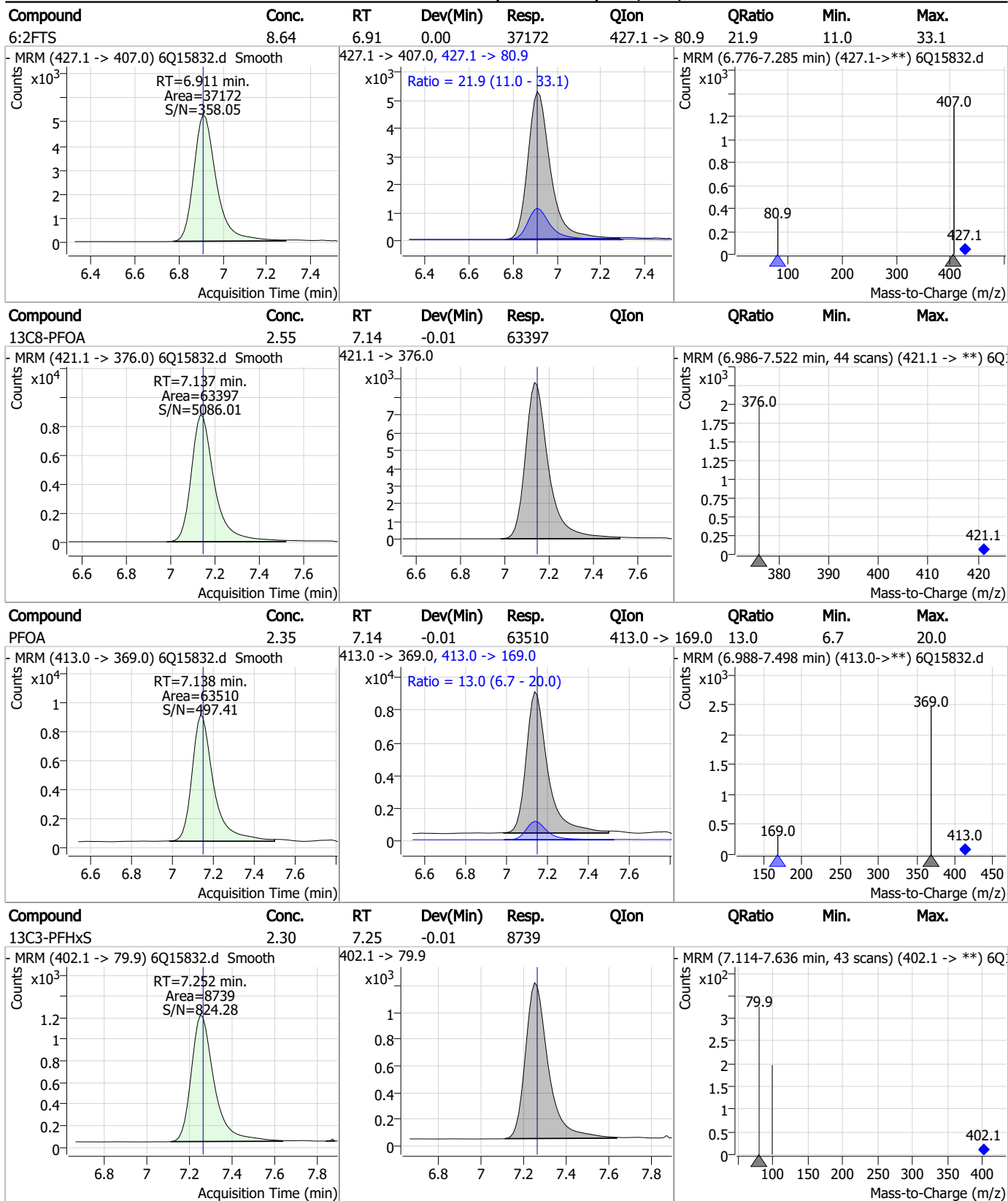
Perfluorinated Compounds by LC/MS/MS



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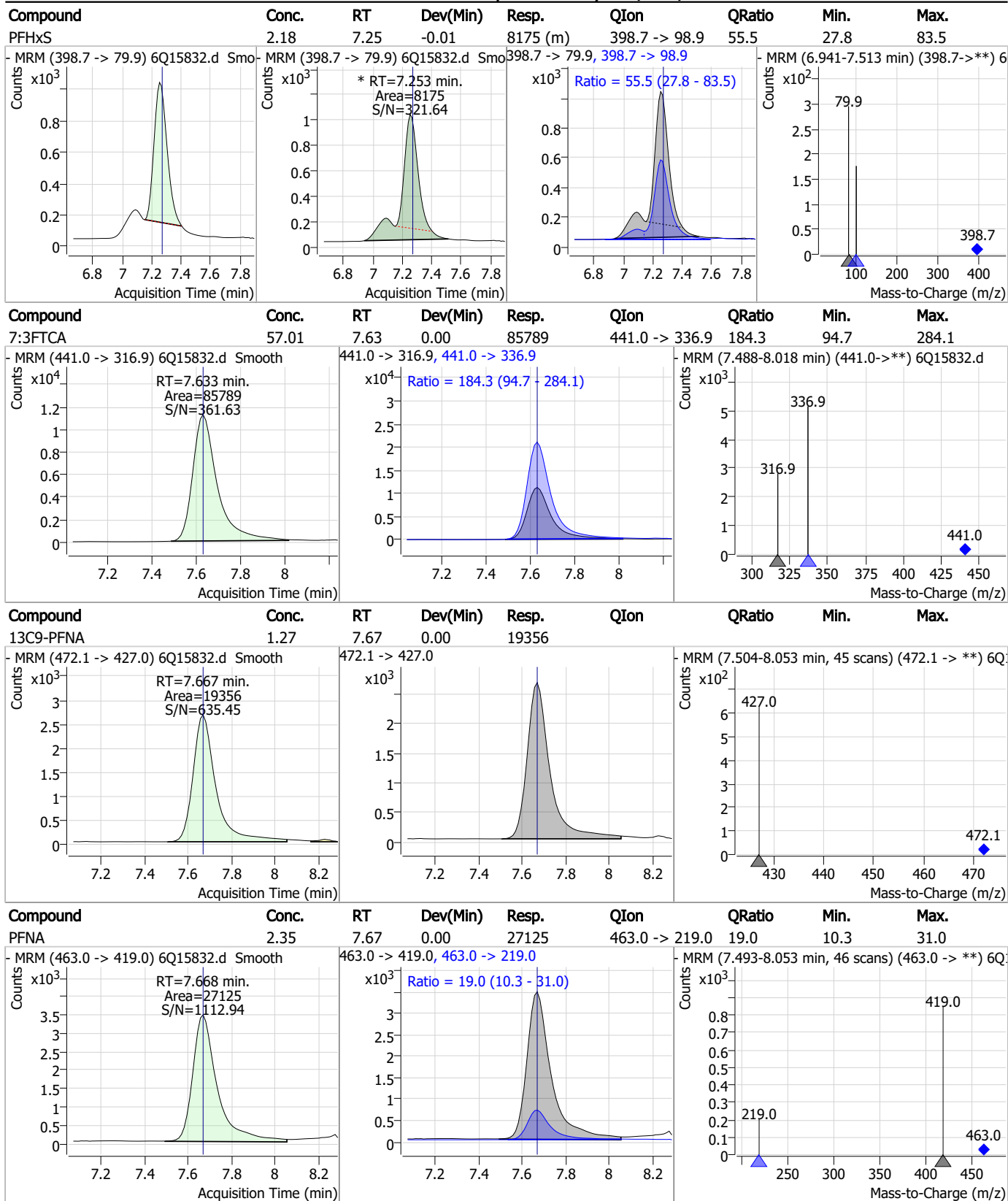
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Perfluorinated Compounds by LC/MS/MS



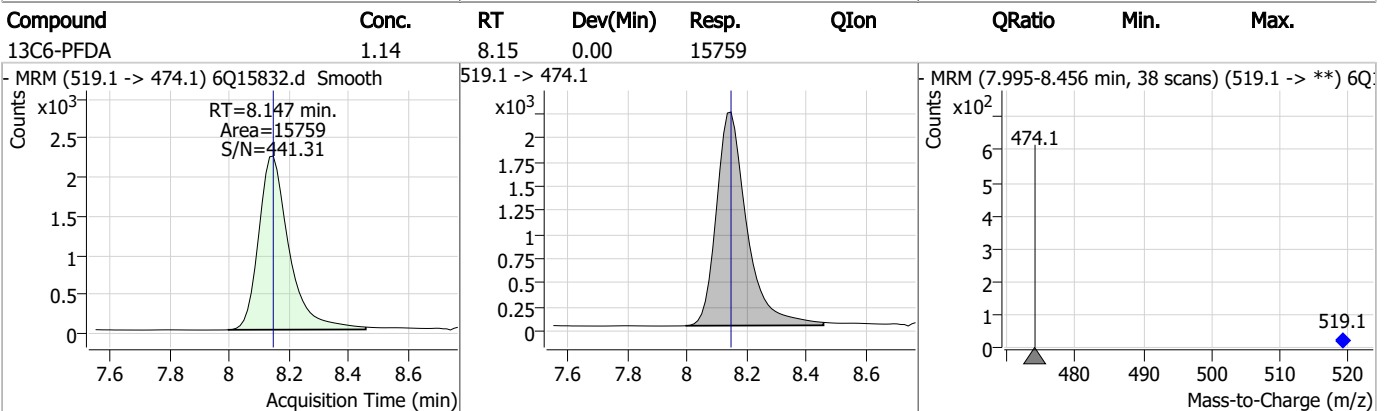
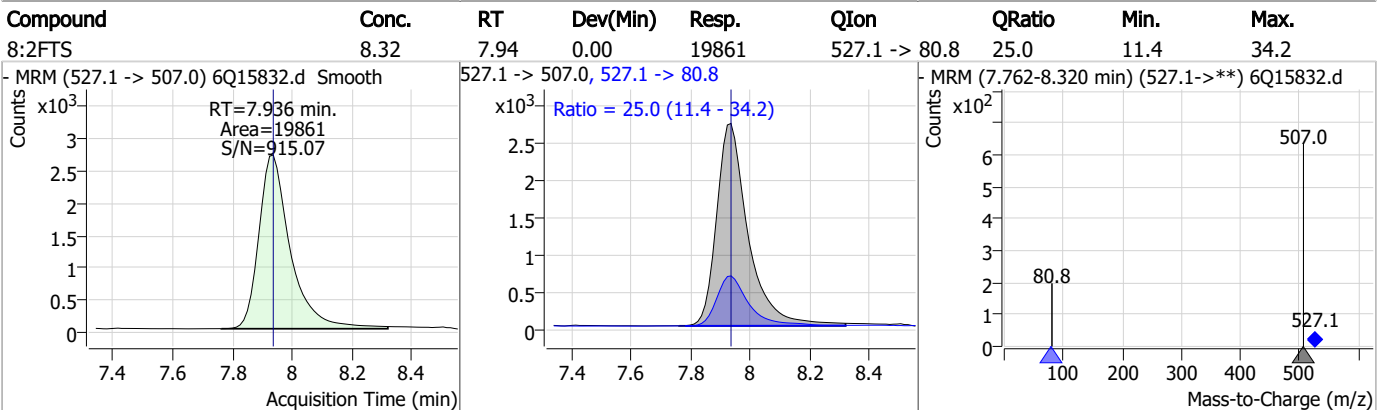
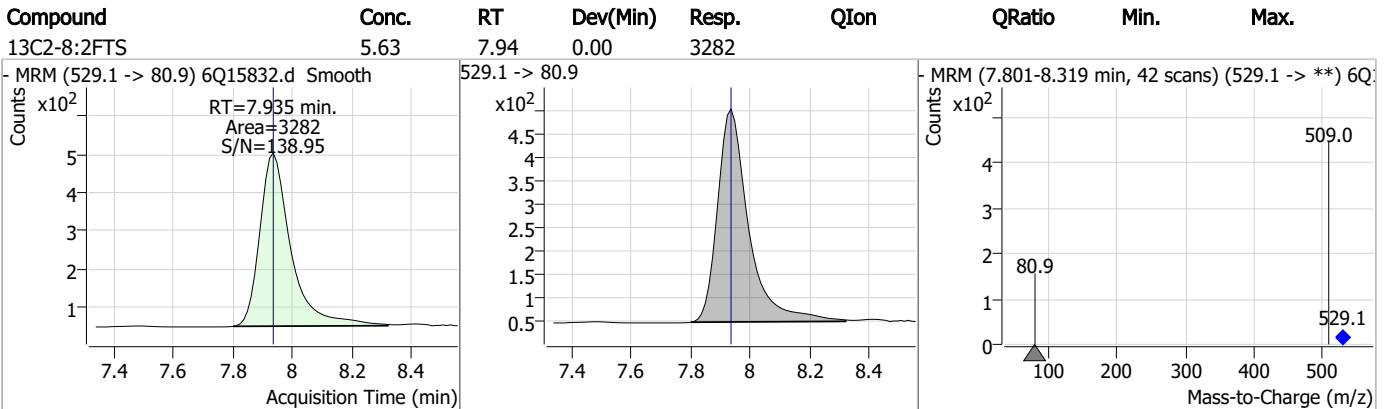
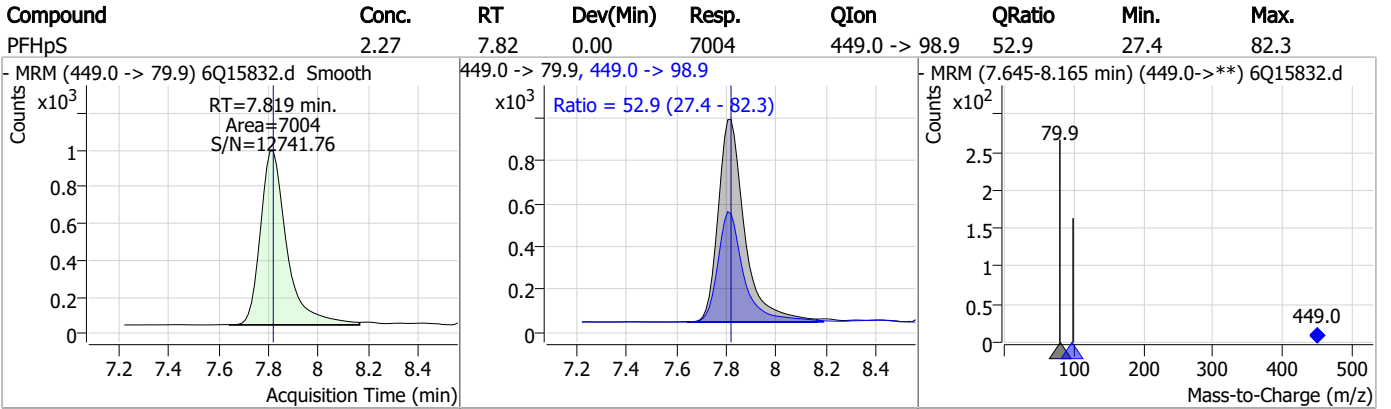
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Perfluorinated Compounds by LC/MS/MS



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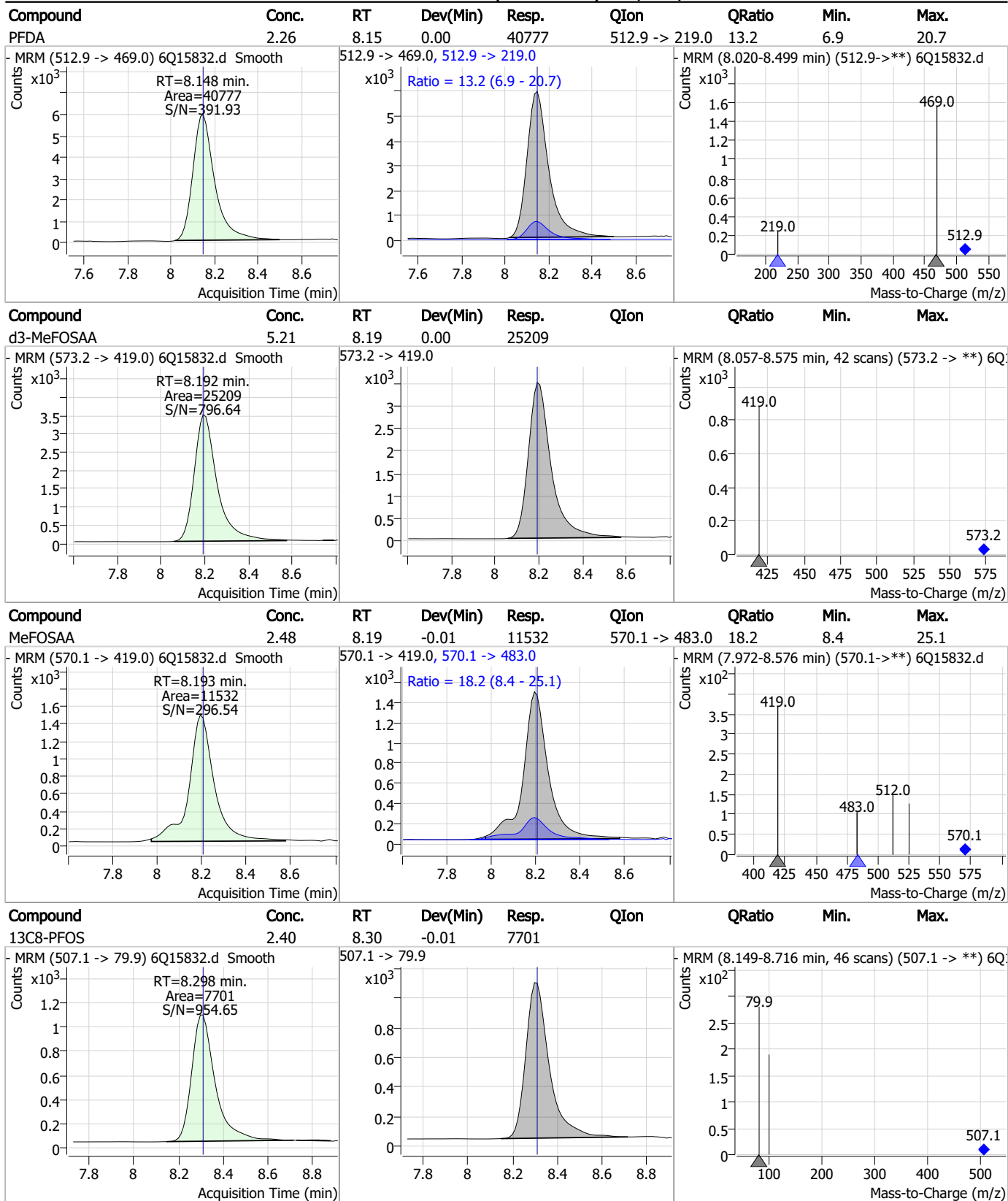
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

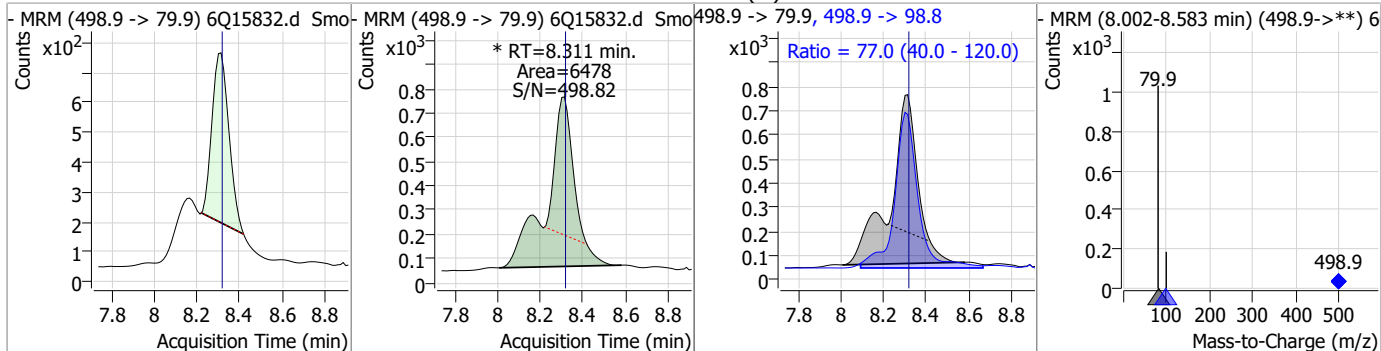


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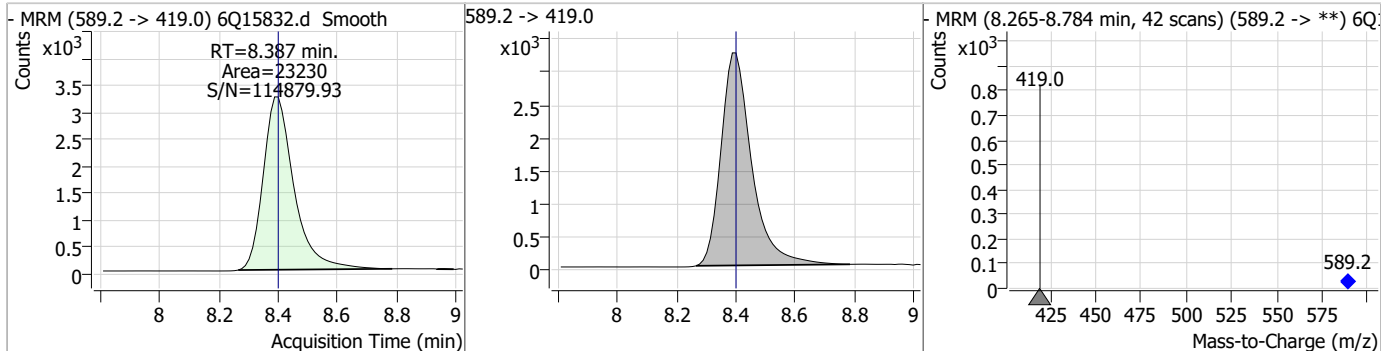
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Perfluorinated Compounds by LC/MS/MS

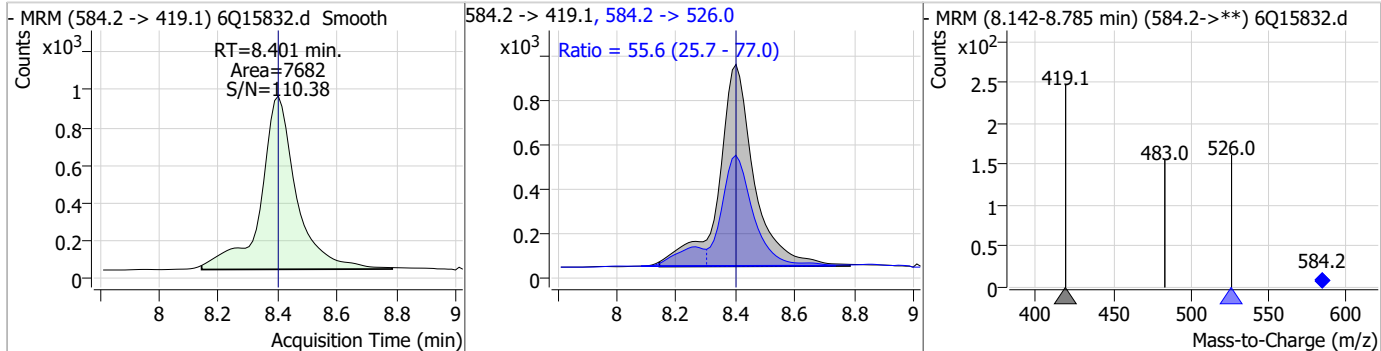
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.01	8.31	0.00	6478 (m)	498.9 -> 98.8	77.0	40.0	120.0



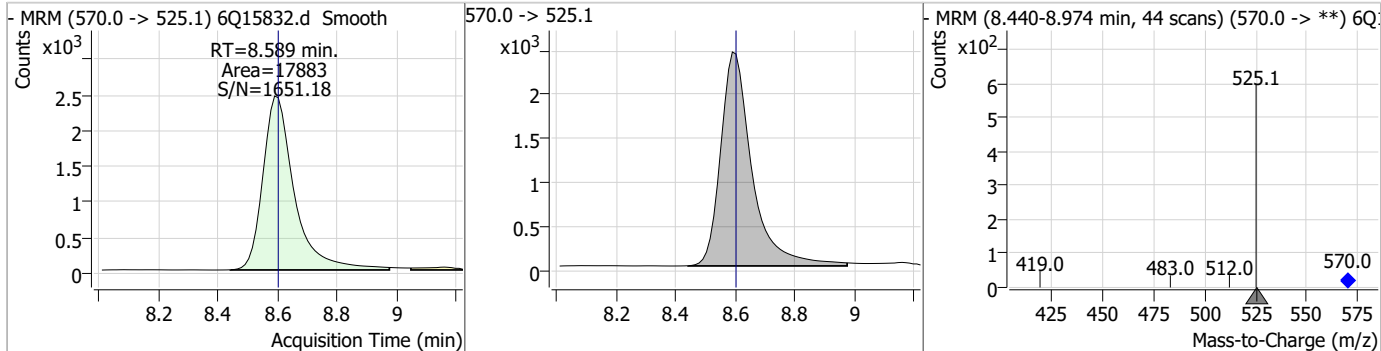
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.49	8.39	-0.01	23230				



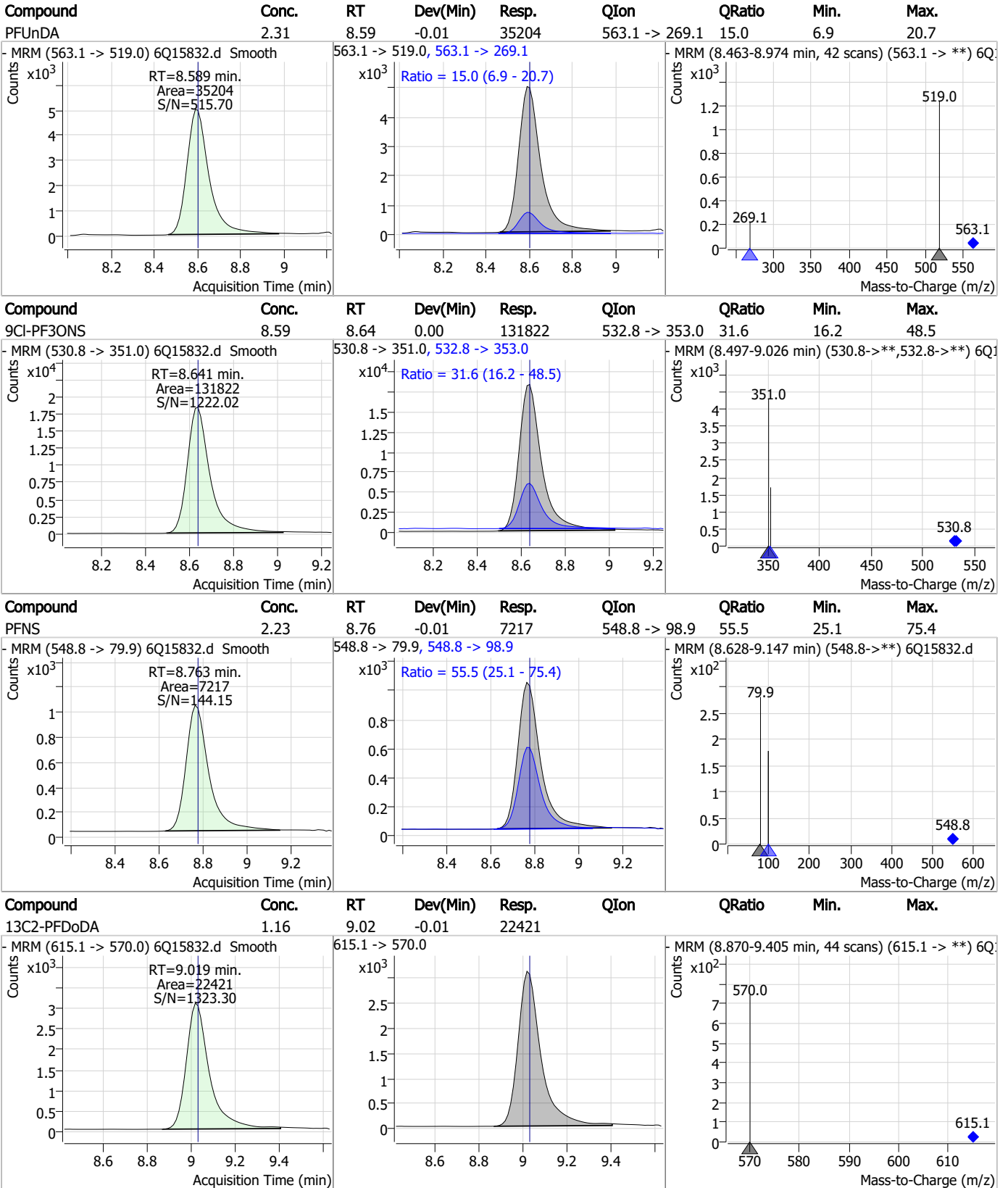
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.14	8.40	0.00	7682	584.2 -> 526.0	55.6	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.18	8.59	-0.01	17883				



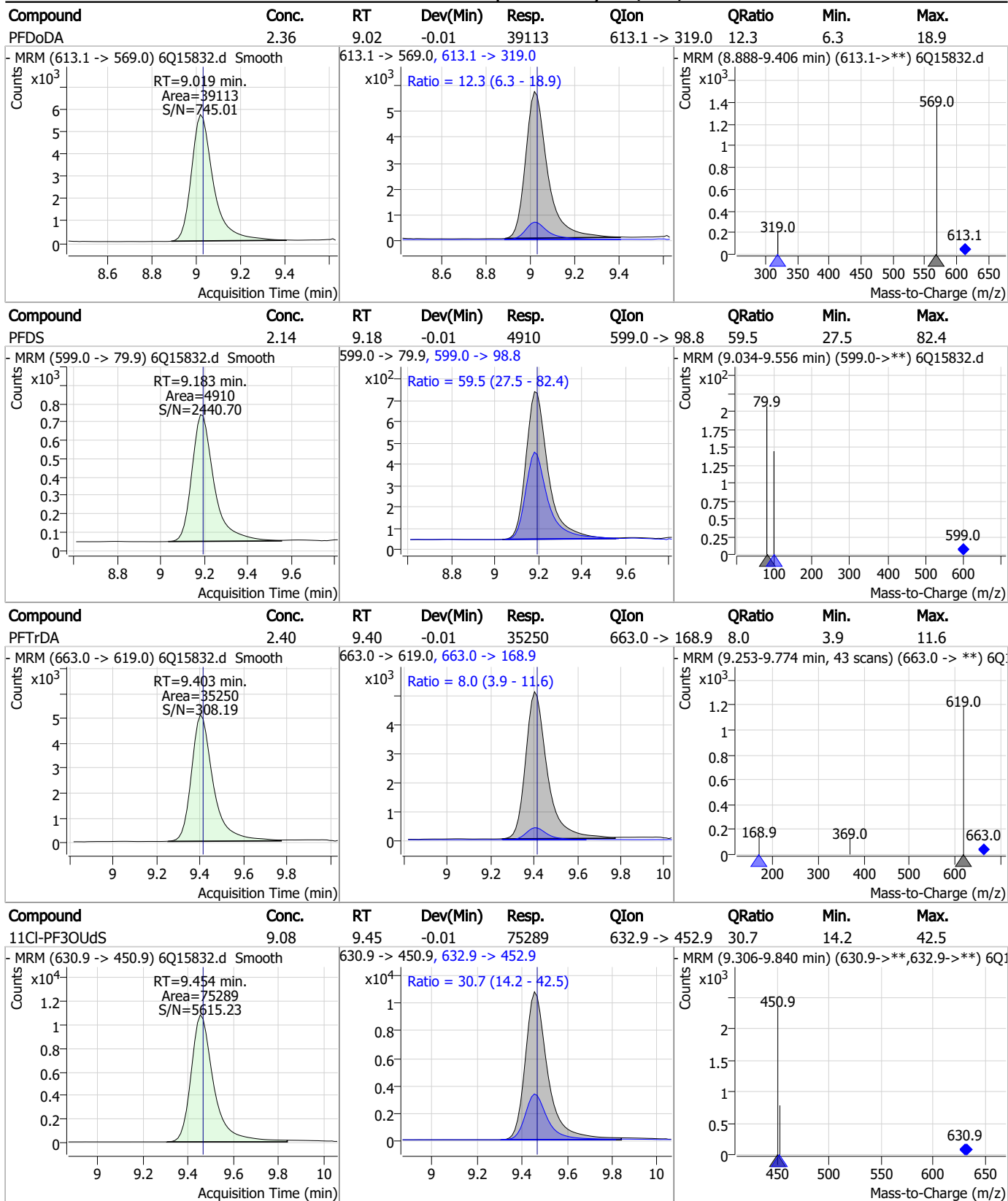
Perfluorinated Compounds by LC/MS/MS



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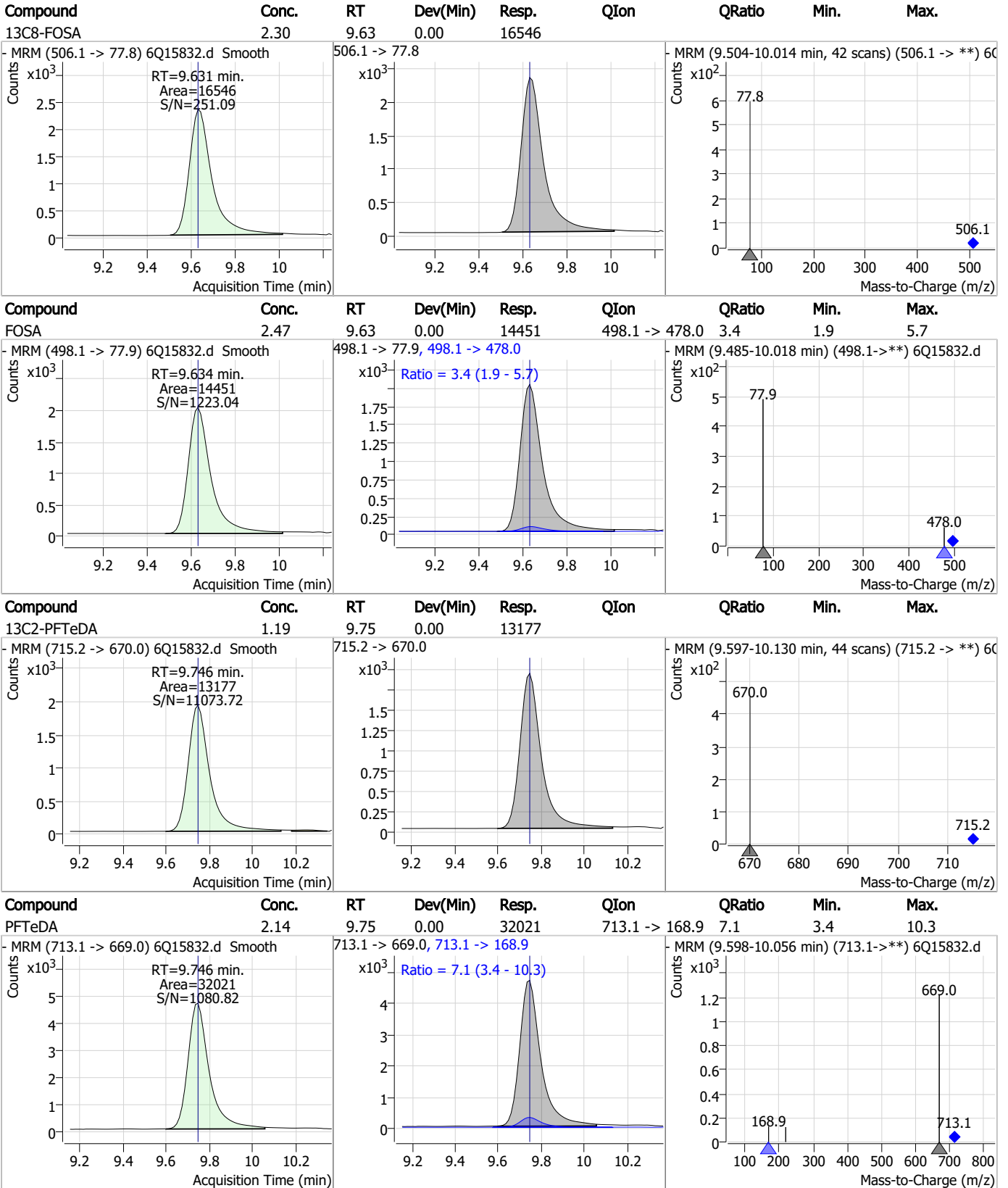


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

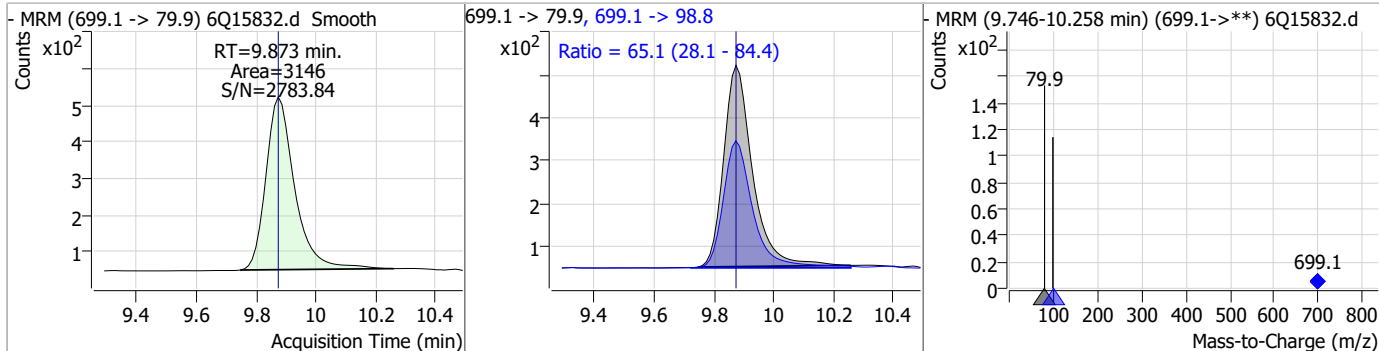


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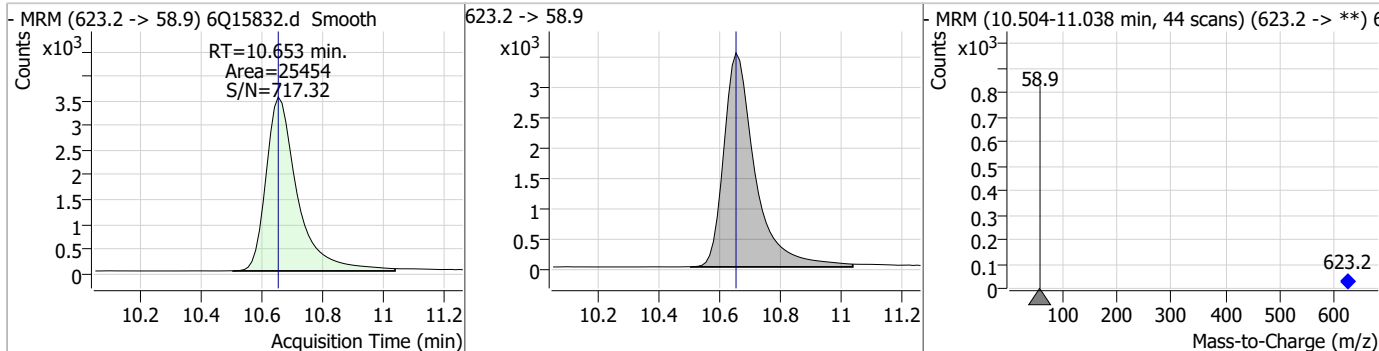


Perfluorinated Compounds by LC/MS/MS

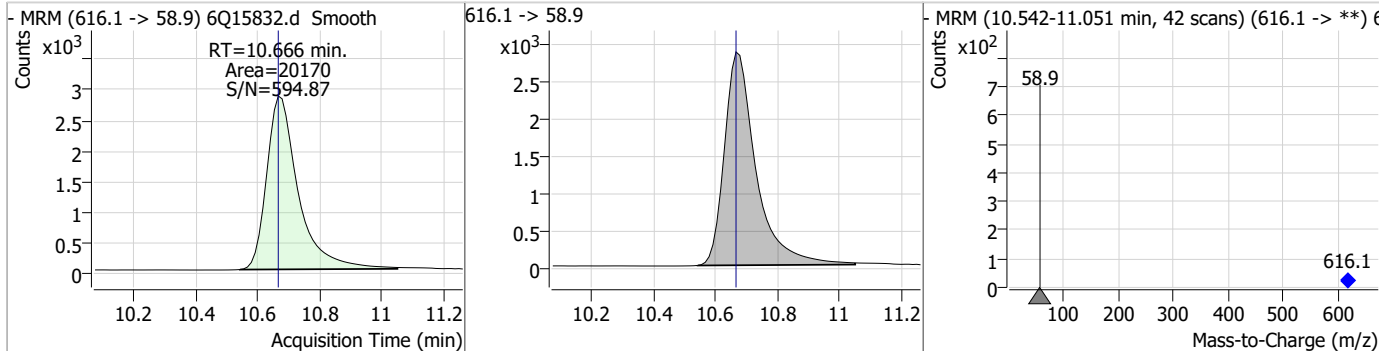
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.27	9.87	0.00	3146	699.1 -> 98.8	65.1	28.1	84.4



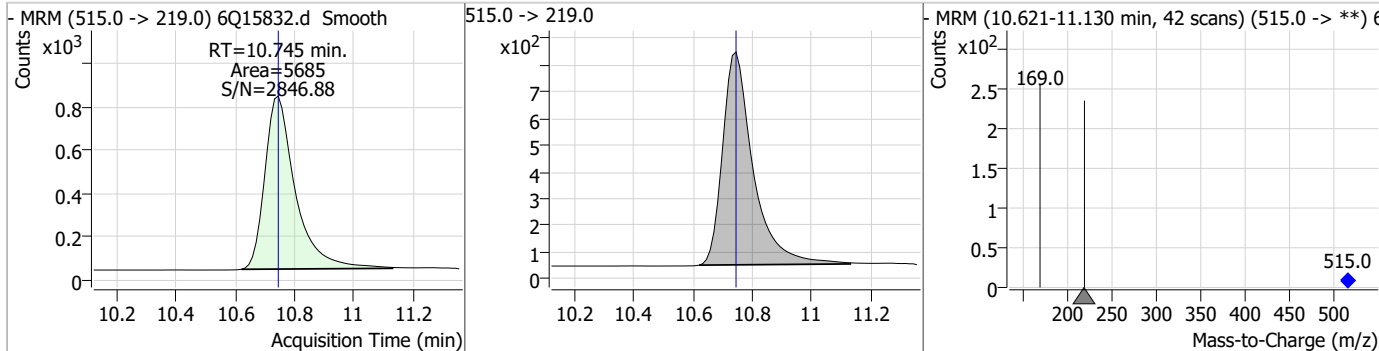
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.70	10.65	0.00	25454				



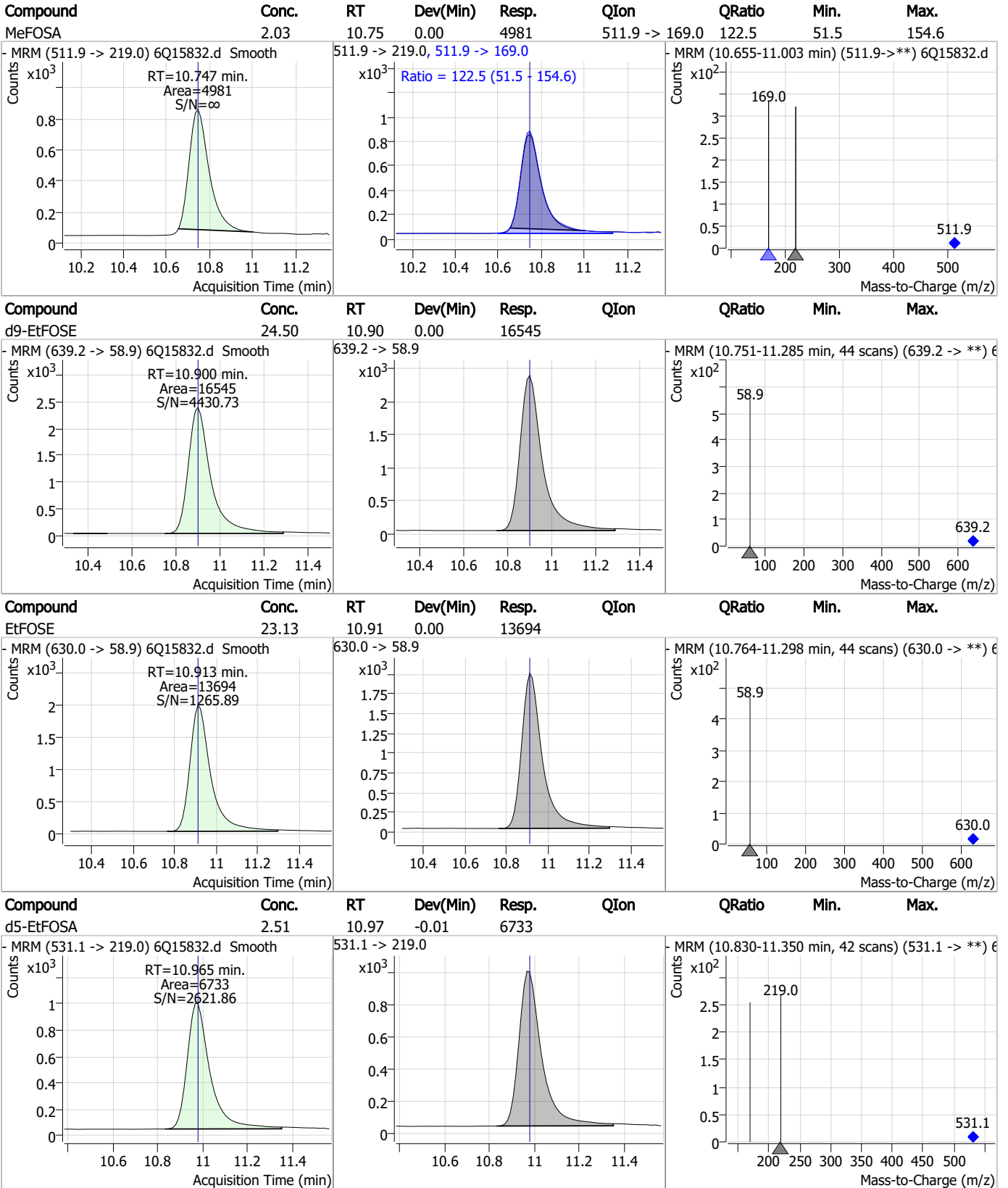
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	21.94	10.67	0.00	20170				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	10.75	0.00	5685				

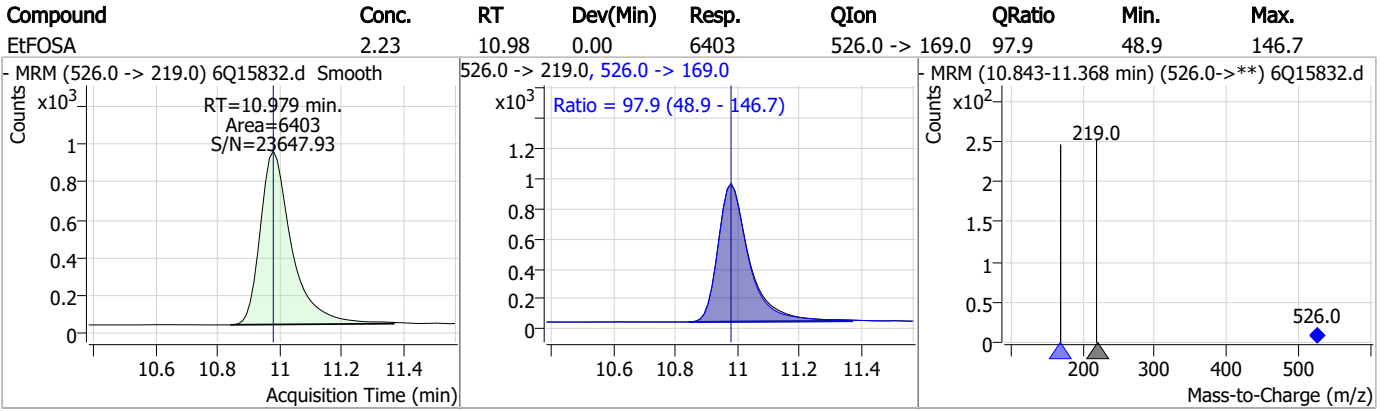


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15832.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/31/23 00:18 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15833.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 12:32:51 AM
 Sample Name : cc235-1.0LL
 Vial : P1-A2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.938	216.8 -> 171.9	102698	10.00 µg/L	0.025
M5-PFPeA	4.359	268.3 -> 223.0	48321	5.00 µg/L	0.012
M5-PFHxA	5.565	318.0 -> 273.0	45031	2.50 µg/L	0.012
M4-PFHpA	6.506	367.1 -> 322.0	46165	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	80087	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	23442	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	20773	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	22839	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	28309	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	16699	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	22793	2.50 µg/L	0.000
M3-PFBS	5.496	302.1 -> 79.9	17366	2.50 µg/L	0.012
M3-PFHxS	7.265	402.1 -> 79.9	11171	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	10512	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	3260	5.00 µg/L	0.012
M2-6:2FTS	6.910	429.1 -> 80.9	3995	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	4022	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	33035	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	18220	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	30635	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	32686	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	21049	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	8213	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	7255	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	12438	2.50 µg/L	0.000
13C3-PFBA	2.941	216.0 -> 172.0	45345	5.00 µg/L	0.025
18O2-PFHxS	7.264	403.0 -> 83.9	8419	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	97072	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	28486	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	26385	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	43752	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	3260	5.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.9%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3995	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C2-8:2FTS	7.935	529.1 -> 80.9	4022	5.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.2%		
13C2-PFDoDA	9.019	615.1 -> 570.0	28309	1.22 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFTeDA	9.746	715.2 -> 670.0	16699	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C3-PFBS	5.496	302.1 -> 79.9	17366	2.53 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C3-PFHxS	7.265	402.1 -> 79.9	11171	2.35 µg/L	0.000

7.7.16
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 = 93.9%	
13C4-PFBA	2.938	216.8 -> 171.9	102698	9.80 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C4-PFHpA	6.506	367.1 -> 322.0	46165	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFHxA	5.565	318.0 -> 273.0	45031	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFPeA	4.359	268.3 -> 223.0	48321	4.91 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C6-PFDA	8.147	519.1 -> 474.1	20773	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C7-PFUnDA	8.601	570.0 -> 525.1	22839	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-FOSA	9.631	506.1 -> 77.8	22793	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.149	421.1 -> 376.0	80087	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C8-PFOS	8.310	507.1 -> 79.9	10512	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C9-PFNA	7.667	472.1 -> 427.0	23442	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.0%	
d3-MeFOSAA	8.204	573.2 -> 419.0	33035	5.38 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	18220	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSA	10.745	515.0 -> 219.0	7255	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
d5-EtFOSAA	8.400	589.2 -> 419.0	30635	5.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.1%	
d7-MeFOSE	10.653	623.2 -> 58.9	32686	25.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.900	639.2 -> 58.9	21049	24.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d5-EtFOSA	10.965	531.1 -> 219.0	8213	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
Target Compounds					QValue
4:2FTS	5.229	327.1 -> 307.0	4297	0.63 µg/L	100
		327.1 -> 80.9	1027		
6:2FTS	6.911	427.1 -> 407.0	4177	0.78 µg/L	94
		427.1 -> 80.9	805		
8:2FTS	7.936	527.1 -> 507.0	2028	0.69 µg/L	92
		527.1 -> 80.8	543		
EtFOSAA	8.401	584.2 -> 419.1	716	0.15 µg/L	74
		584.2 -> 526.0	496		
FOSA	9.634	498.1 -> 77.9	1524	0.19 µg/L	98
		498.1 -> 478.0	68		
MeFOSAA	8.205	570.1 -> 419.0	1109	0.18 µg/L	m 99
		570.1 -> 483.0	189		
PFBA	2.944	212.8 -> 168.9	1639	0.70 µg/L	100
PFBS	5.497	298.7 -> 79.9	986	0.15 µg/L	83
		298.7 -> 98.8	574		
PFDA	8.148	512.9 -> 469.0	3718	0.16 µg/L	95
		512.9 -> 219.0	581		
PFDODA	9.019	613.1 -> 569.0	4037	0.19 µg/L	100
		613.1 -> 319.0	512		
PFDS	9.183	599.0 -> 79.9	534	0.17 µg/L	95

7.7.16
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	273			
PFHpA	6.506	363.1 -> 319.0	4953	0.18	µg/L	98
		363.1 -> 169.0	758			
PFHpS	7.806	449.0 -> 79.9	723	0.17	µg/L	81
		449.0 -> 98.9	495			
PFHxA	5.556	313.0 -> 269.0	2833	0.17	µg/L	98
		313.0 -> 118.9	134			
PFHxS	7.253	398.7 -> 79.9	865	0.18	µg/L	m 96
		398.7 -> 98.9	507			
PFNA	7.668	463.0 -> 419.0	2675	0.19	µg/L	98
		463.0 -> 219.0	578			
PFNS	8.776	548.8 -> 79.9	758	0.17	µg/L	97
		548.8 -> 98.9	366			
PFOA	7.151	413.0 -> 369.0	5669	0.17	µg/L	97
		413.0 -> 169.0	814			
PFOS	8.311	498.9 -> 79.9	734	0.17	µg/L	m 84
		498.9 -> 98.8	483			
PFPeA	4.361	263.0 -> 219.0	3589	0.35	µg/L	100
PFPeS	6.558	349.1 -> 79.9	1064	0.19	µg/L	97
		349.1 -> 98.9	508			
PFTeDA	9.746	713.1 -> 669.0	3110	0.16	µg/L	95
		713.1 -> 168.9	265			
PFTrDA	9.403	663.0 -> 619.0	3447	0.19	µg/L	98
		663.0 -> 168.9	292			
PFUnDA	8.601	563.1 -> 519.0	3401	0.18	µg/L	94
		563.1 -> 269.1	552			
11CI-PF3OUdS	9.454	630.9 -> 450.9	7092	0.68	µg/L	95
		632.9 -> 452.9	2197			
9CI-PF3ONS	8.641	530.8 -> 351.0	13364	0.69	µg/L	91
		532.8 -> 353.0	5004			
ADONA	6.756	376.9 -> 250.9	27625	0.72	µg/L	98
		376.9 -> 84.8	6202			
HFPO-DA	5.931	284.9 -> 168.9	1292	0.77	µg/L	90
		284.9 -> 184.9	102			
3:3FTCA	3.827	241.0 -> 177.0	467	0.86	µg/L	100
		241.0 -> 117.0	70			
5:3FTCA	6.223	341.0 -> 237.1	16151	4.37	µg/L	97
		341.0 -> 217.0	14272			
7:3FTCA	7.633	441.0 -> 316.9	8138	4.16	µg/L	96
		441.0 -> 336.9	15944			
EtFOSA	10.979	526.0 -> 219.0	677	0.19	µg/L	87
		526.0 -> 169.0	574			
EtFOSE	10.913	630.0 -> 58.9	1369	1.82	µg/L	100
MeFOSA	10.747	511.9 -> 219.0	624	0.20	µg/L	88
		511.9 -> 169.0	565			
MeFOSE	10.666	616.1 -> 58.9	2057	1.74	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	312	0.16	µg/L	96
		699.1 -> 98.8	185			
NFDHA	5.448	295.0 -> 201.0	307	0.32	µg/L	# 64
		295.0 -> 84.9	206			
PFMBA	4.775	279.0 -> 85.1	1093	0.35	µg/L	100
PFMPA	3.500	229.0 -> 84.9	944	0.33	µg/L	100
PFEESA	6.036	314.8 -> 134.9	7537	0.32	µg/L	100
		314.8 -> 82.9	193			

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



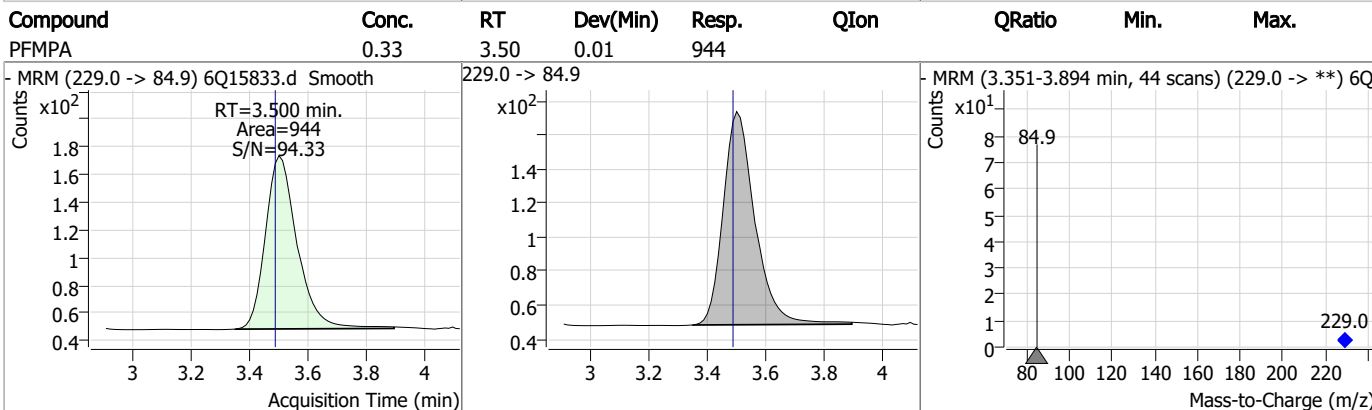
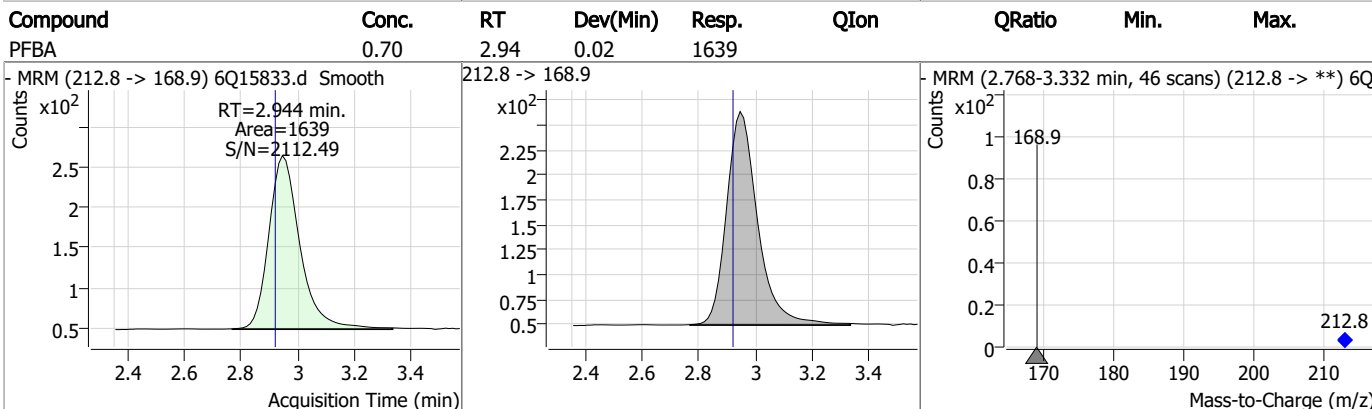
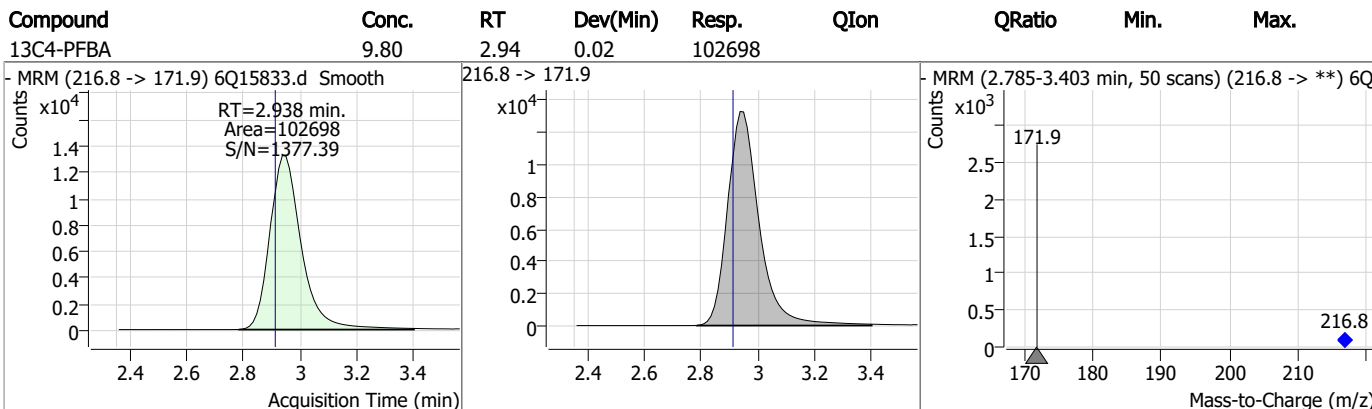
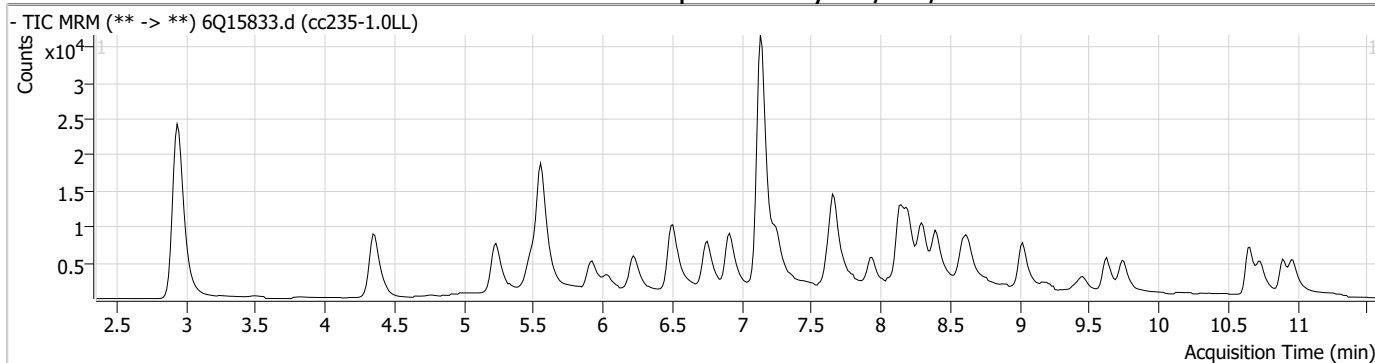
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.16

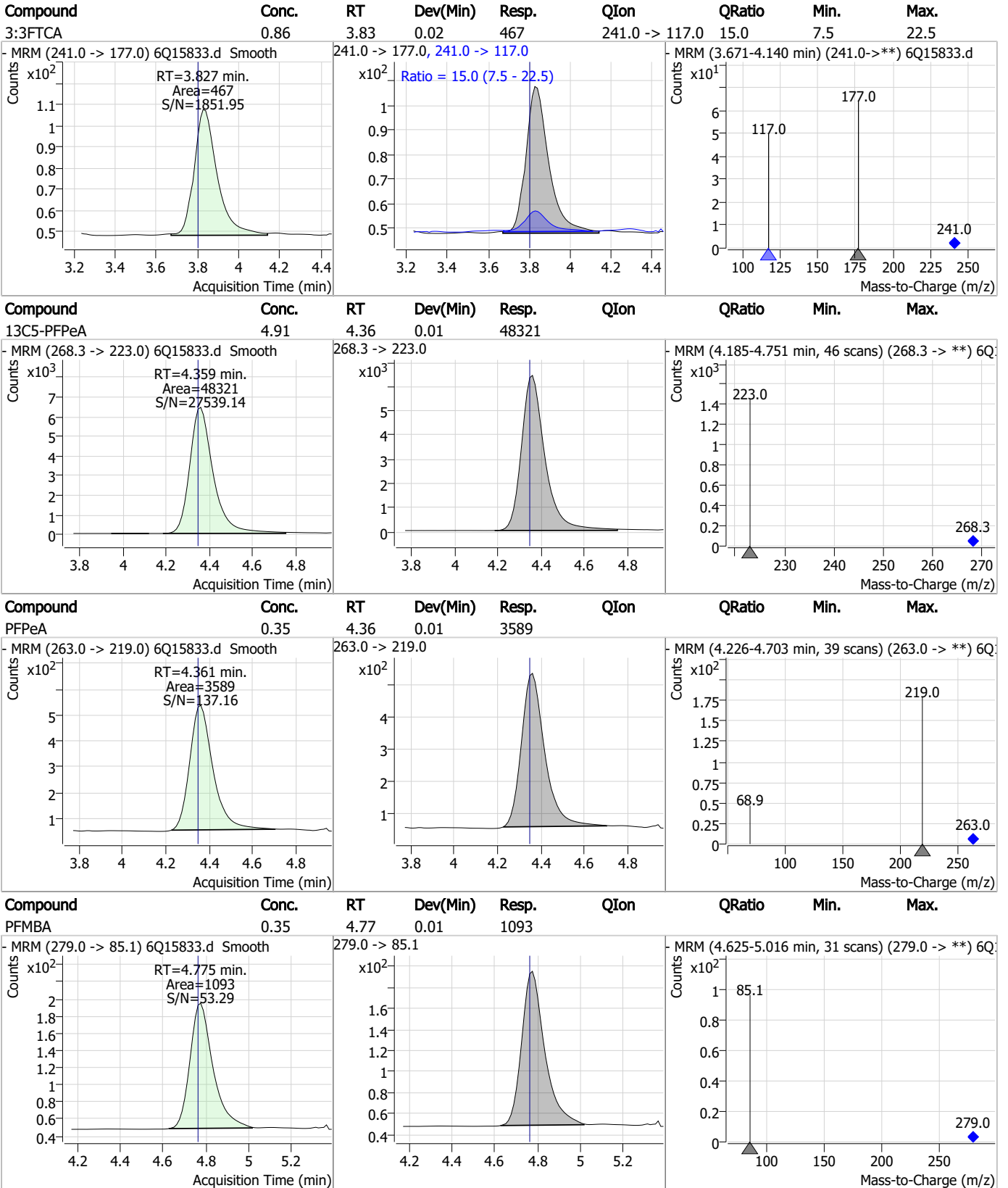
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Perfluorinated Compounds by LC/MS/MS



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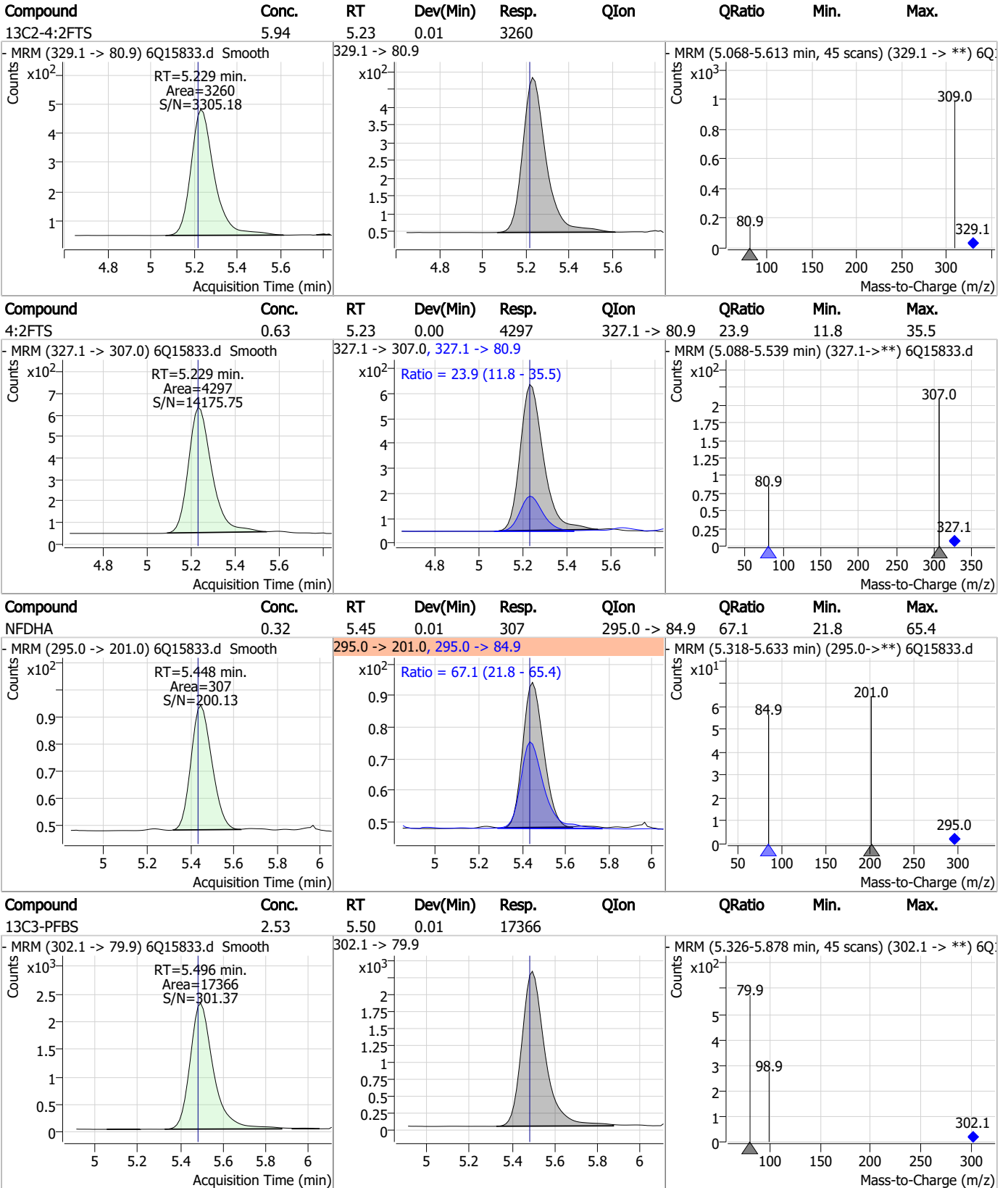
Perfluorinated Compounds by LC/MS/MS



7.7.16 7



Perfluorinated Compounds by LC/MS/MS

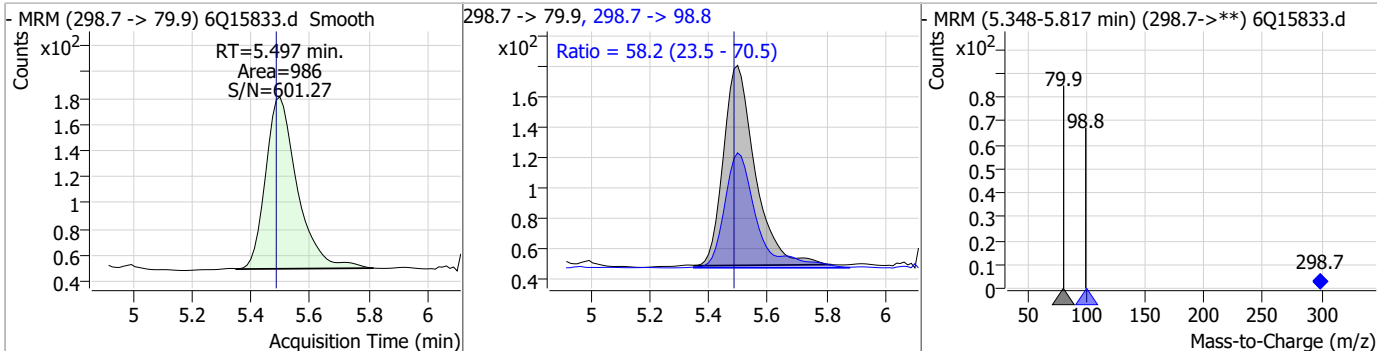


7.7.16 7

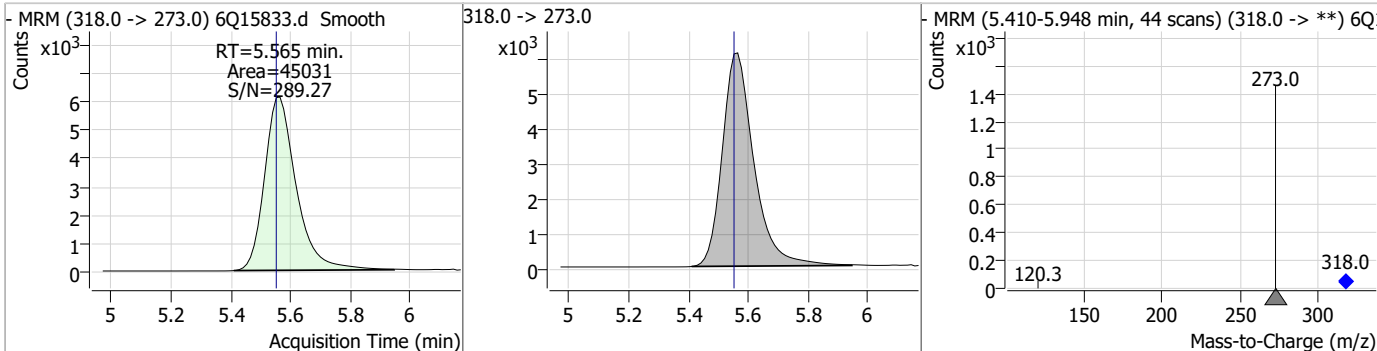


Perfluorinated Compounds by LC/MS/MS

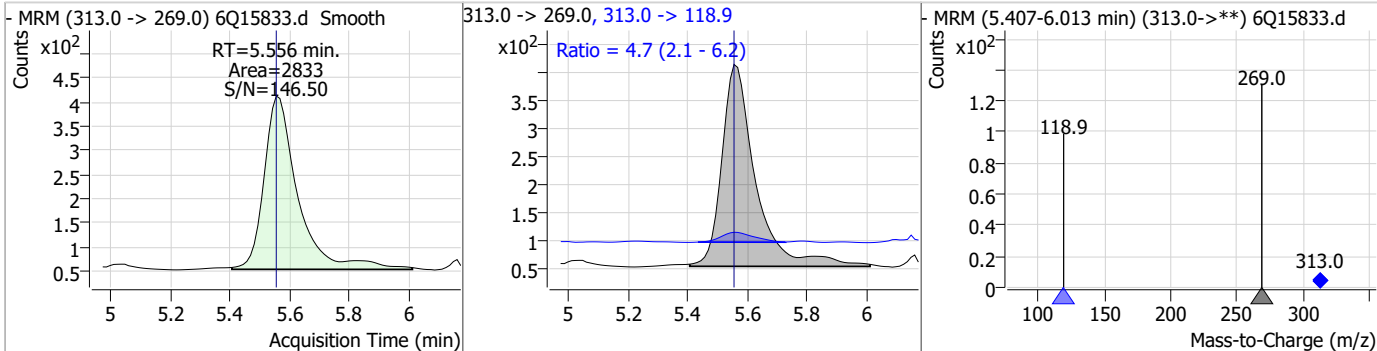
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.15	5.50	0.01	986	298.7 -> 98.8	58.2	23.5	70.5



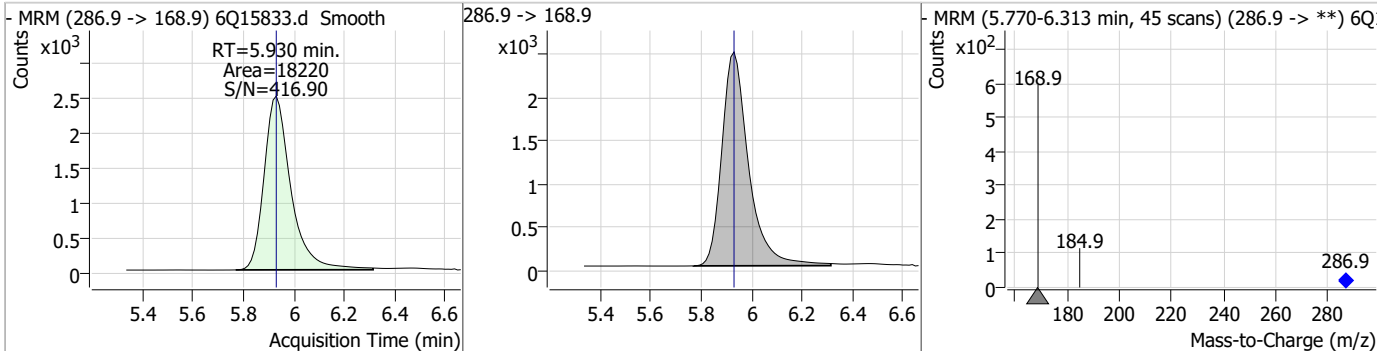
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.48	5.56	0.01	45031				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.17	5.56	0.00	2833	313.0 -> 118.9	4.7	2.1	6.2



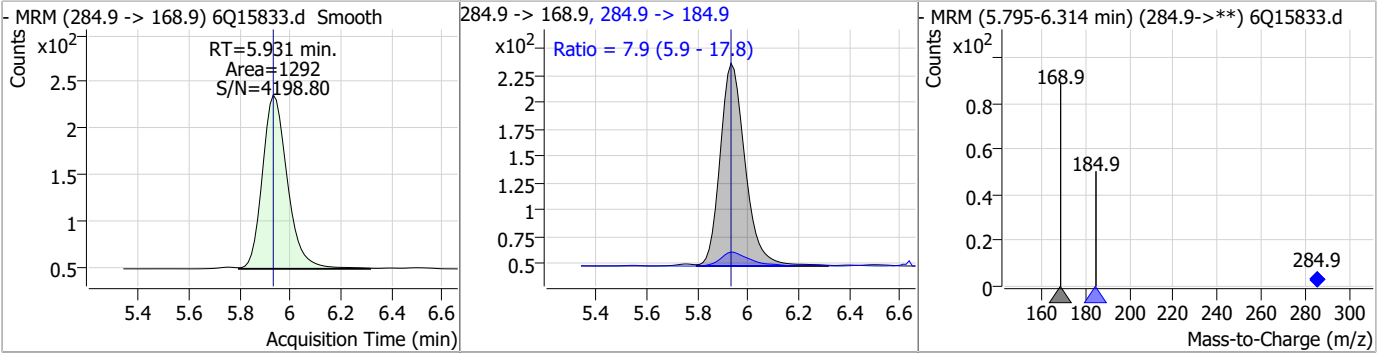
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.67	5.93	0.00	18220				



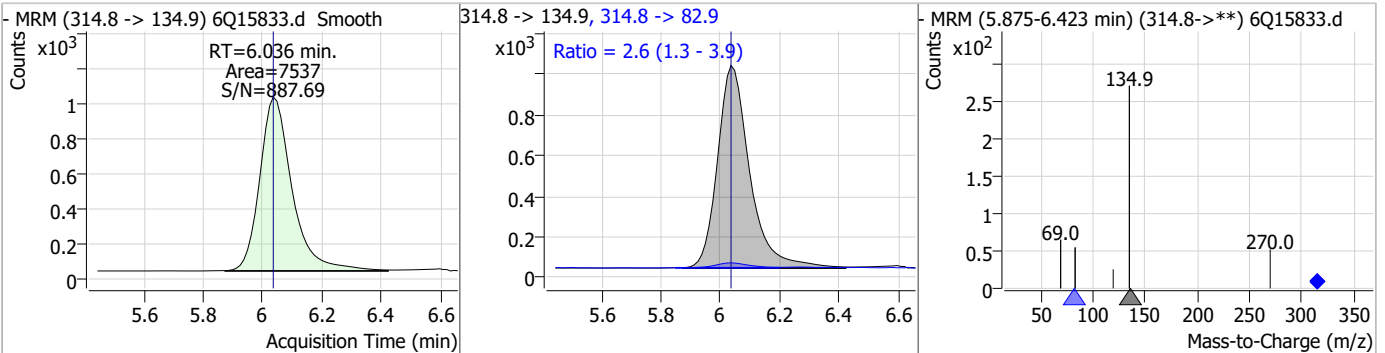
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Perfluorinated Compounds by LC/MS/MS

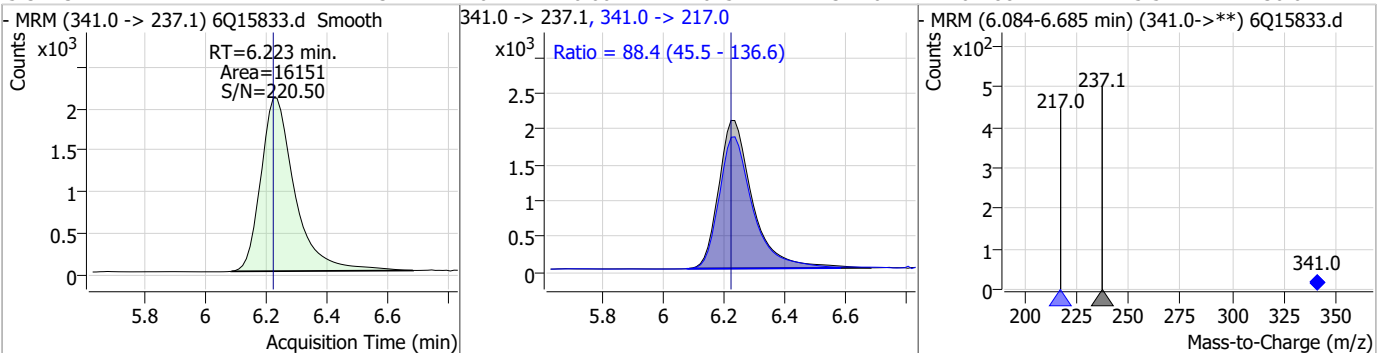
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.77	5.93	0.00	1292	284.9 -> 184.9	7.9	5.9	17.8



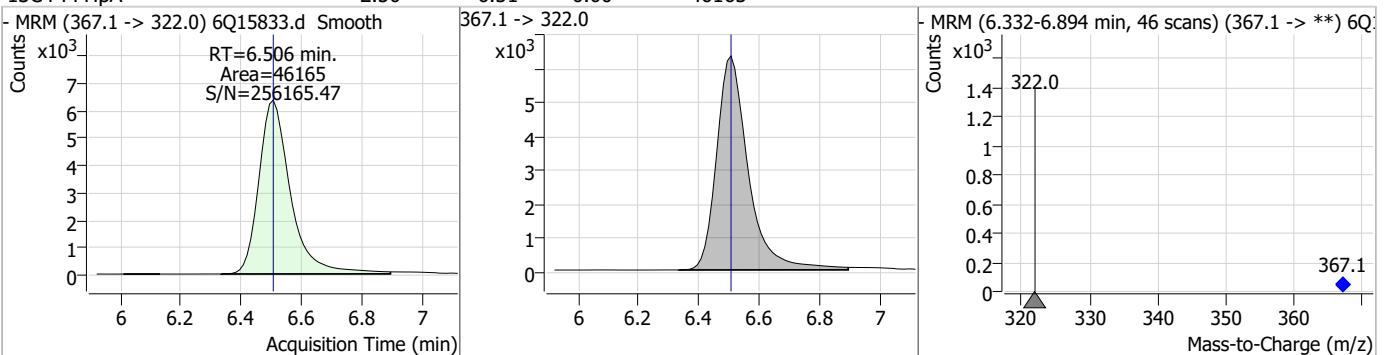
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.32	6.04	0.00	7537	314.8 -> 82.9	2.6	1.3	3.9



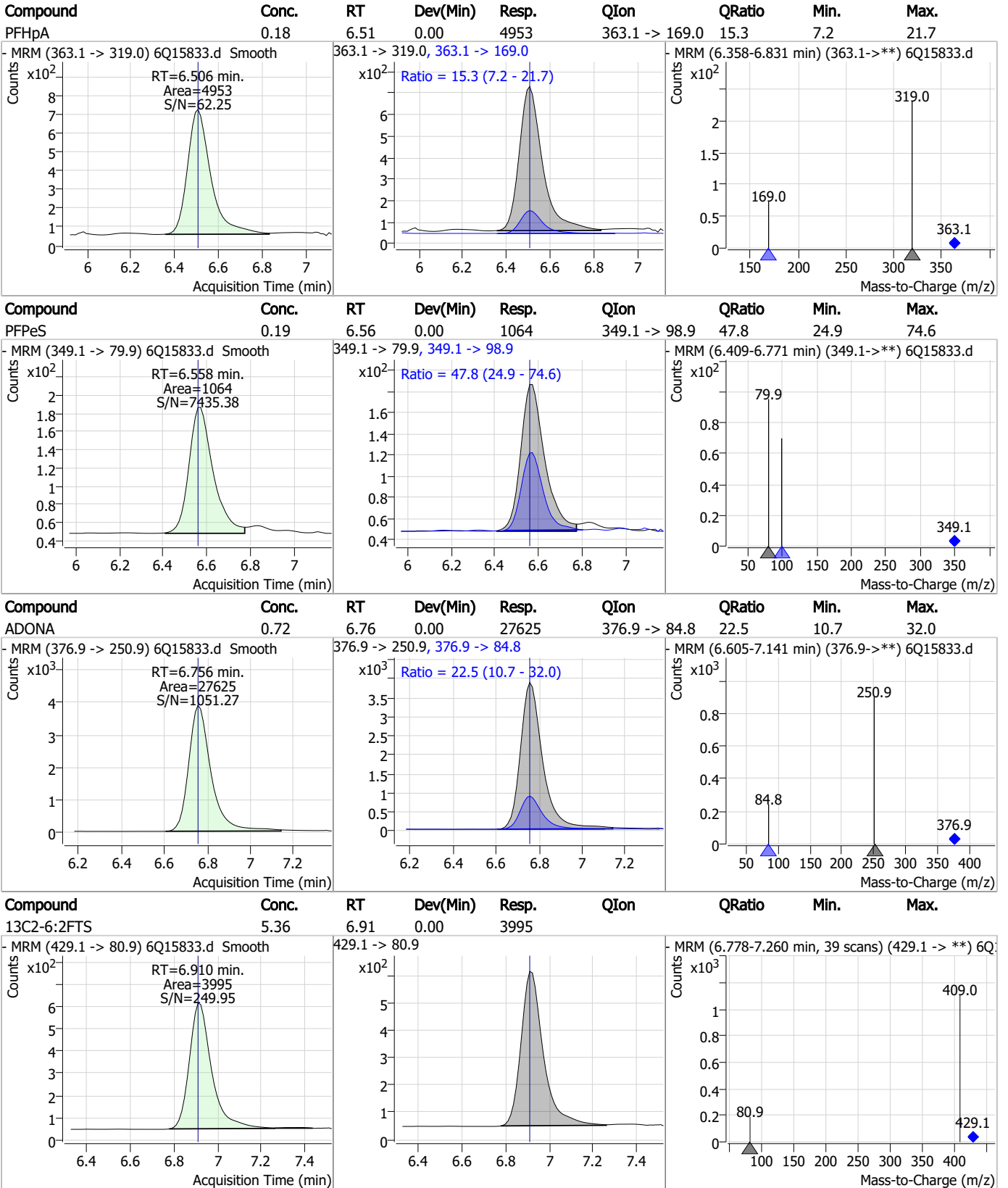
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.37	6.22	0.00	16151	341.0 -> 217.0	88.4	45.5	136.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.50	6.51	0.00	46165	367.1 -> 322.0	-	-	-

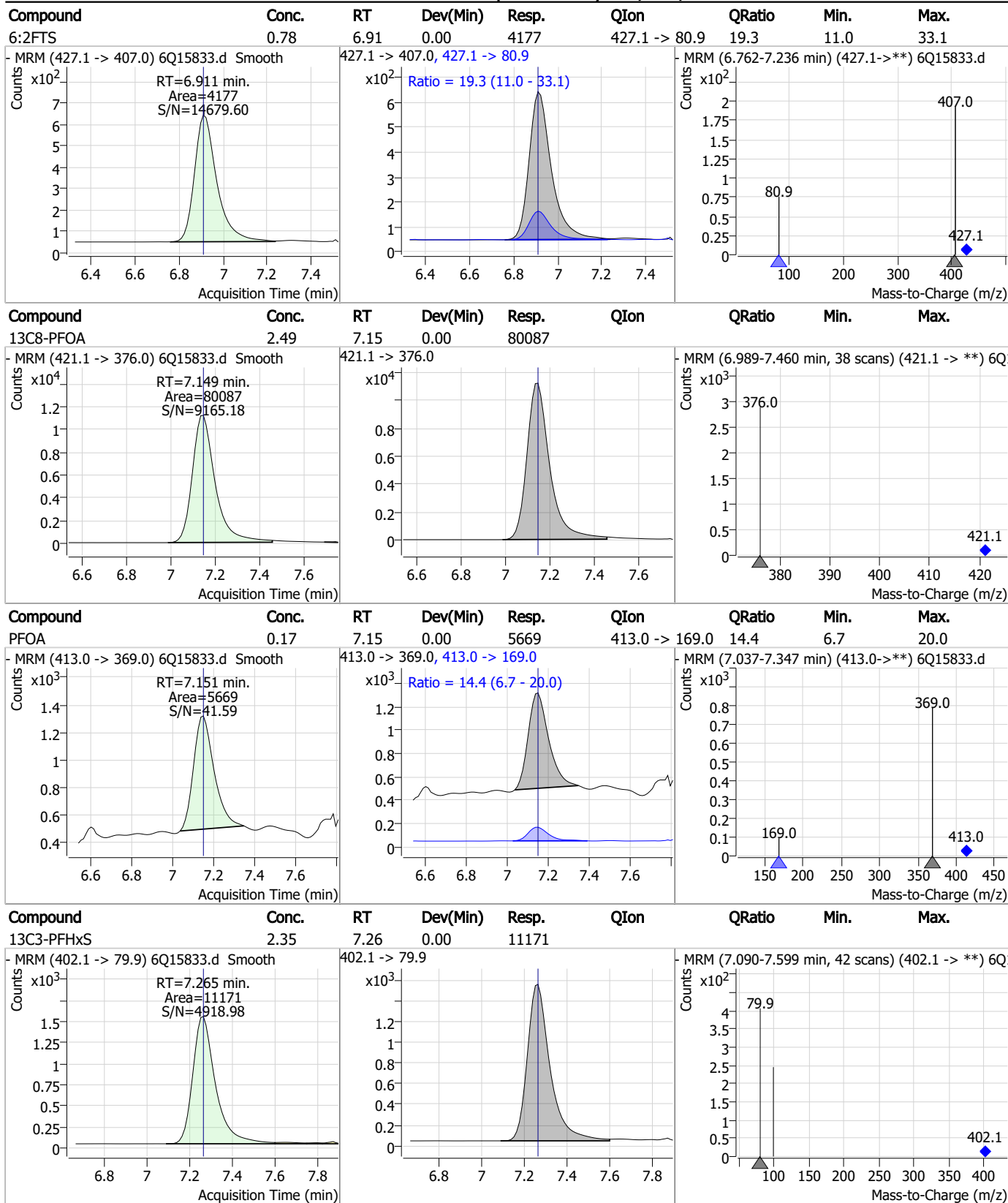


Perfluorinated Compounds by LC/MS/MS



7.7.16 7

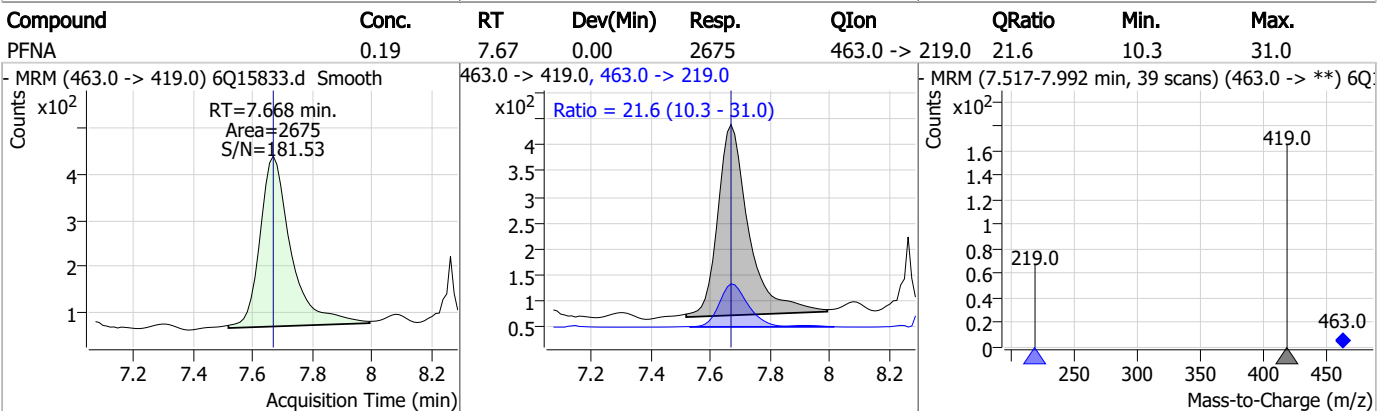
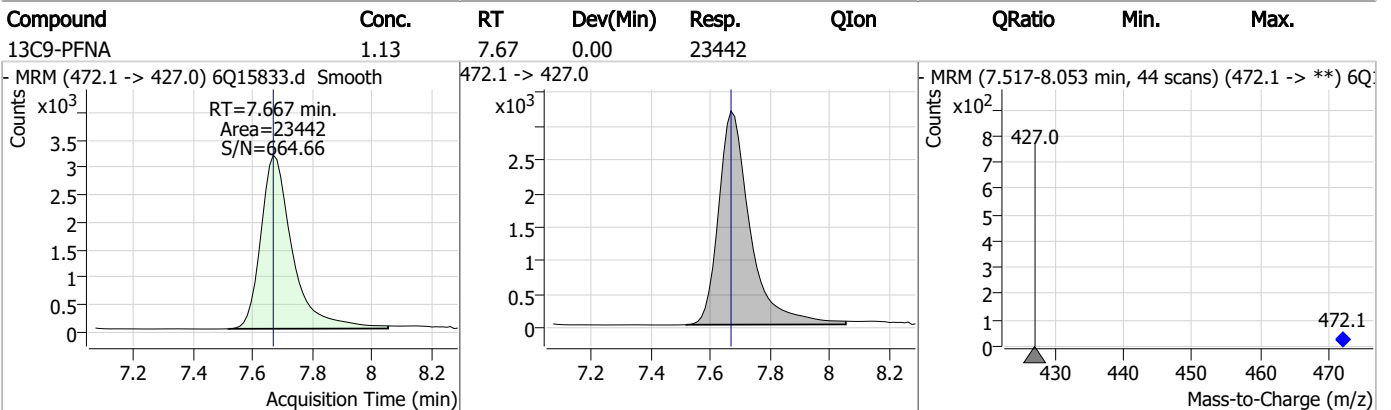
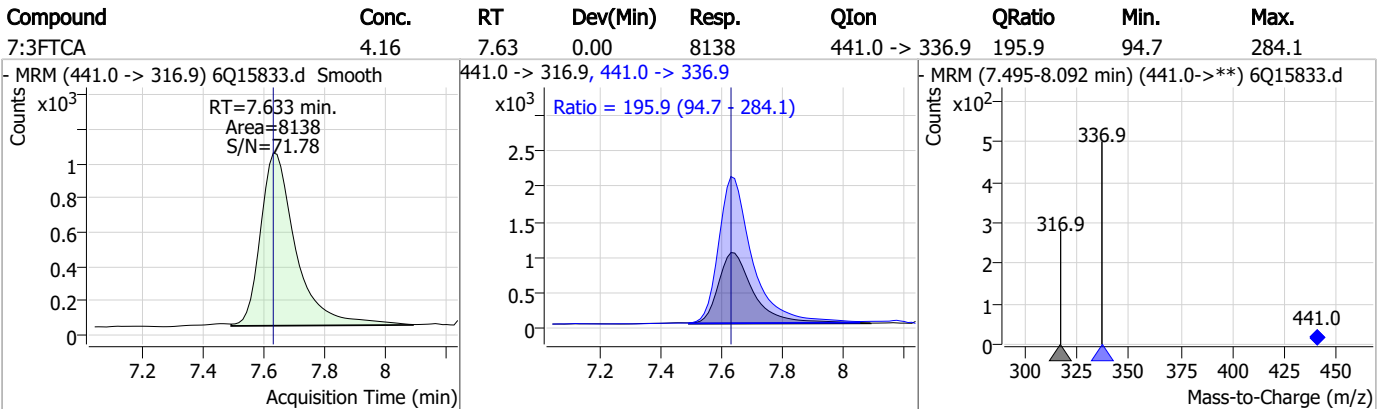
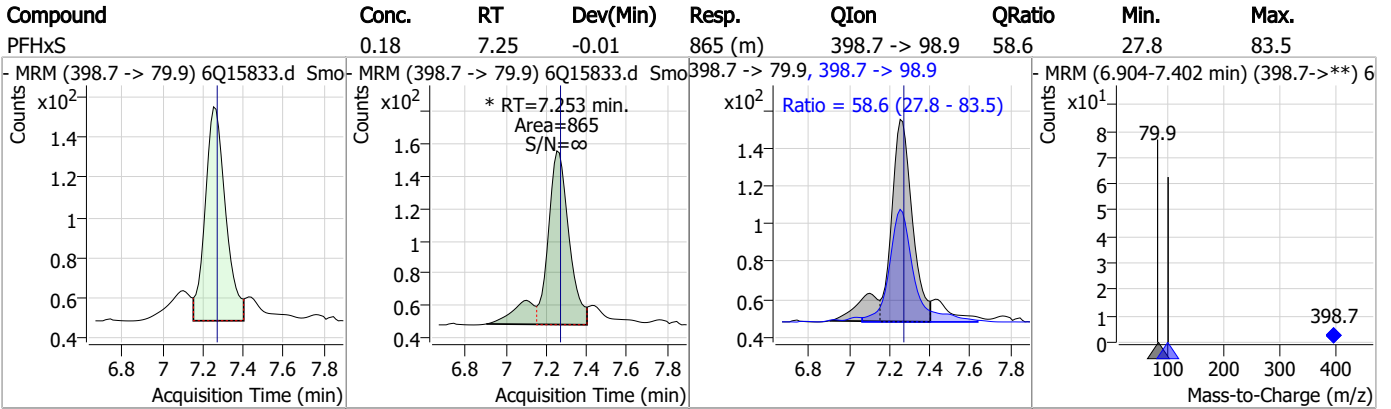
Perfluorinated Compounds by LC/MS/MS



7.7.16
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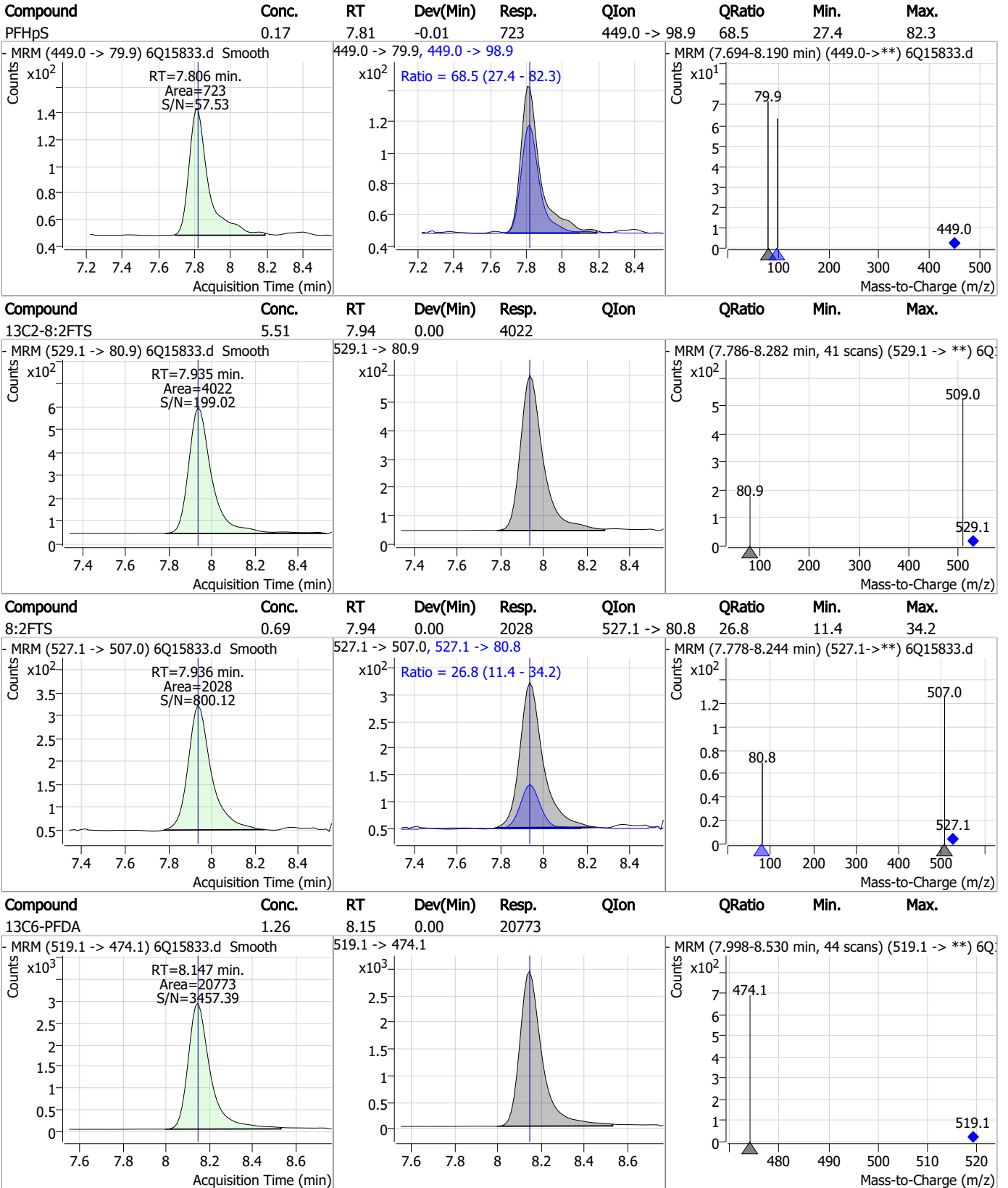


Perfluorinated Compounds by LC/MS/MS



7.7.16
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Perfluorinated Compounds by LC/MS/MS

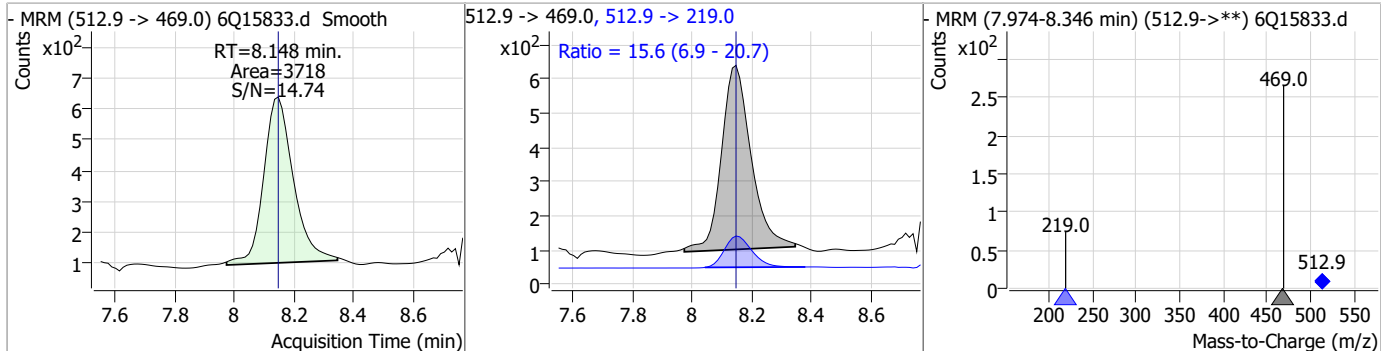


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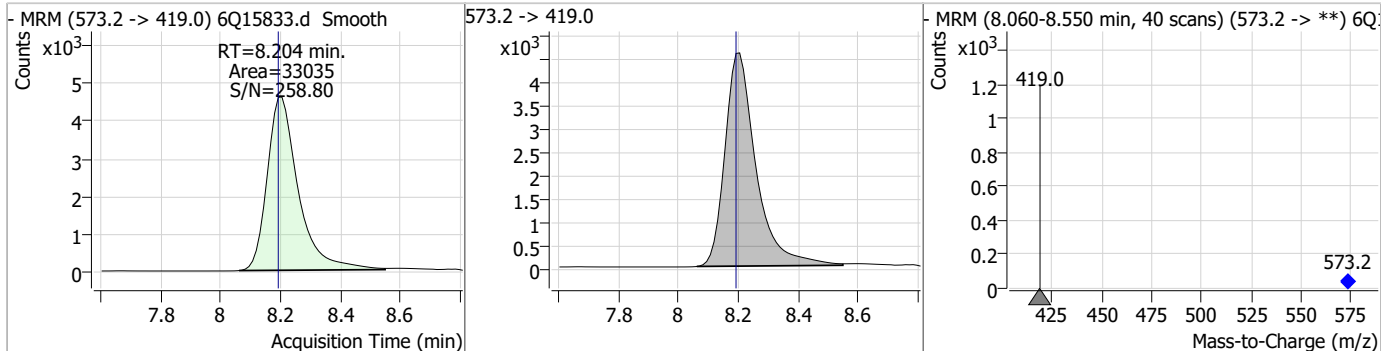
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Perfluorinated Compounds by LC/MS/MS

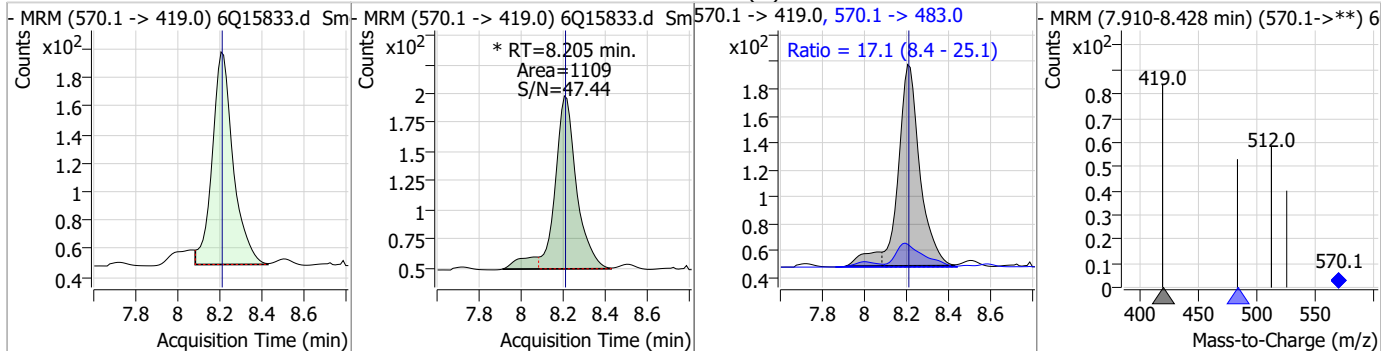
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.16	8.15	0.00	3718	512.9 -> 219.0	15.6	6.9	20.7



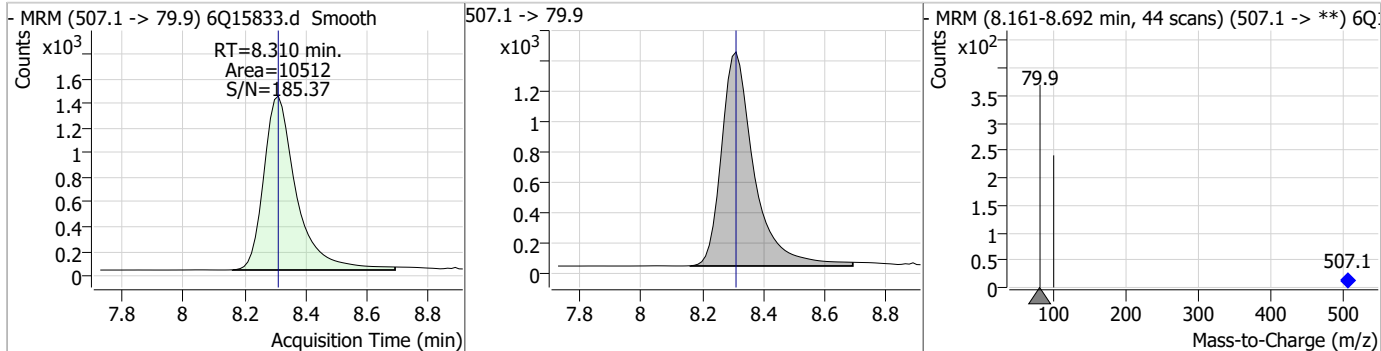
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.38	8.20	0.01	33035				



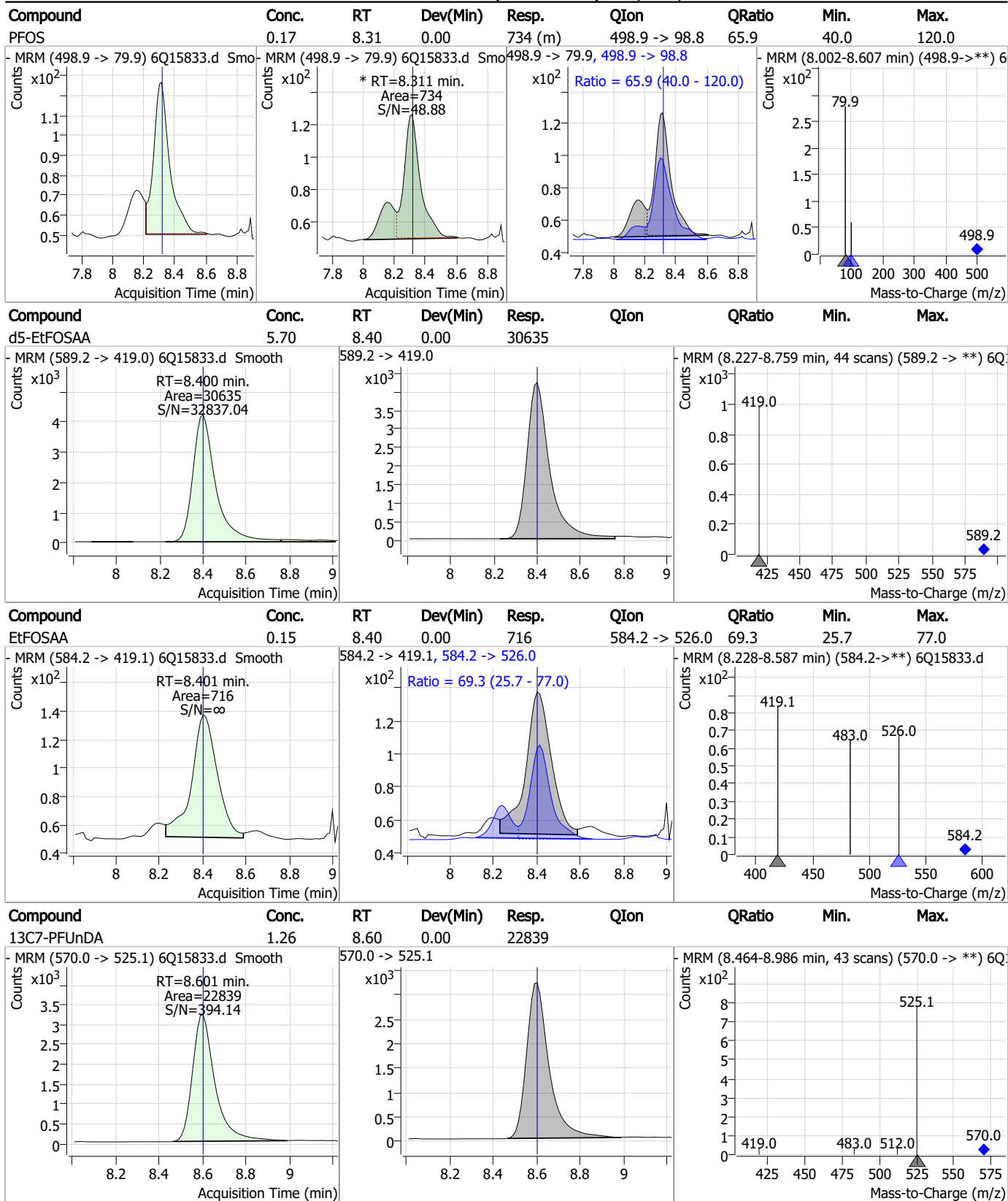
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.18	8.21	0.00	1109 (m)	570.1 -> 483.0	17.1	8.4	25.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	8.31	0.00	10512				

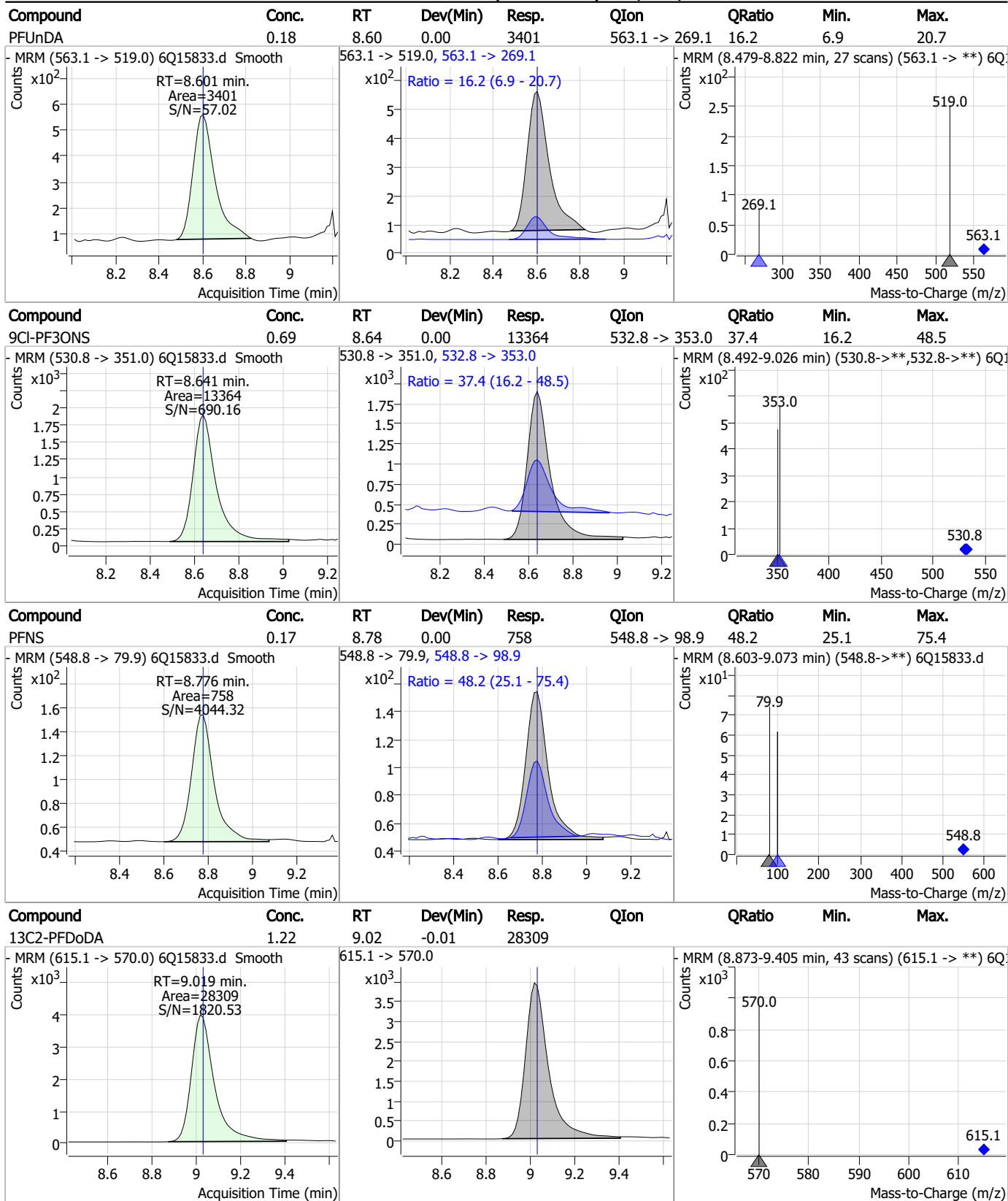


Perfluorinated Compounds by LC/MS/MS



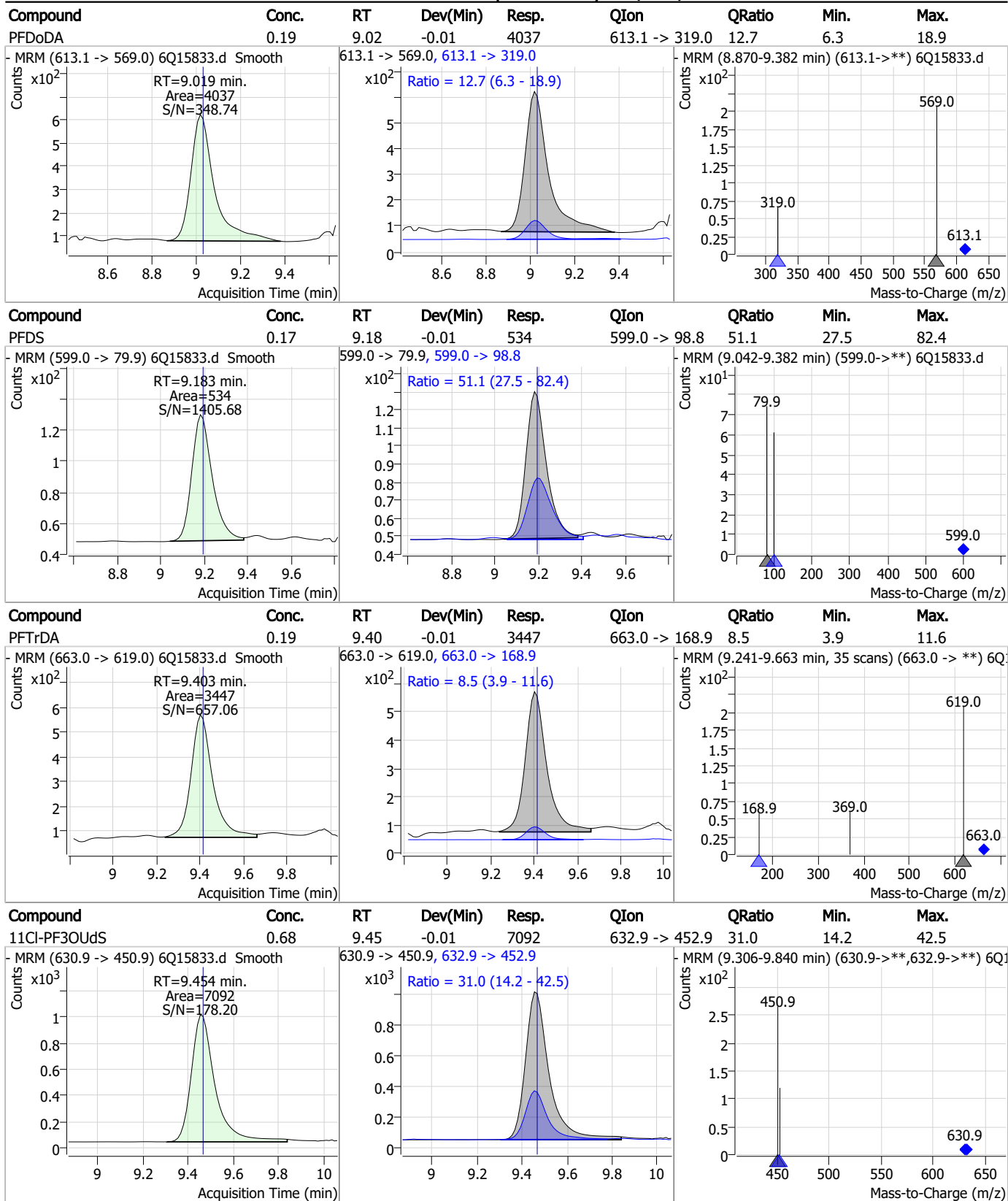
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Perfluorinated Compounds by LC/MS/MS



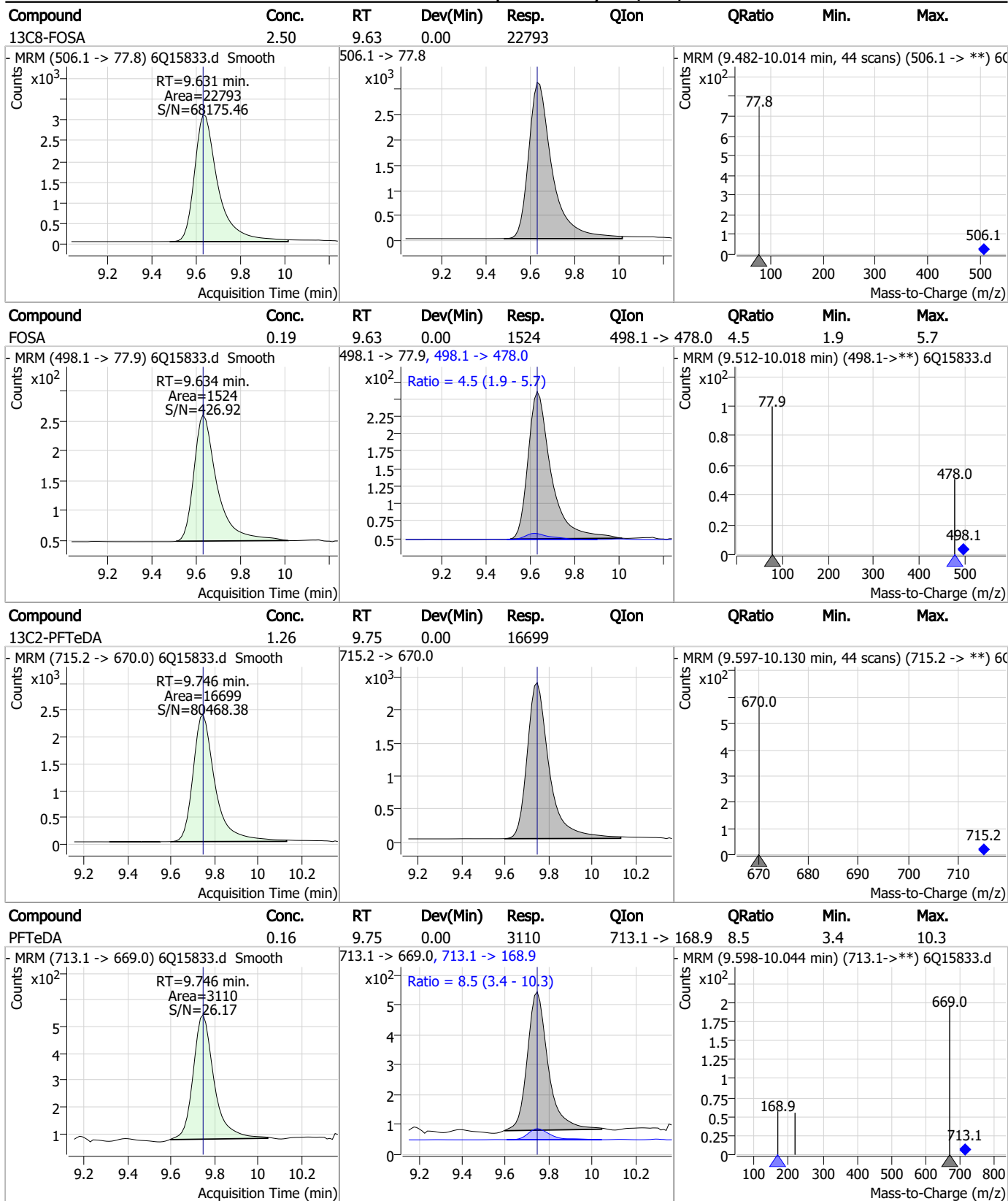
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Perfluorinated Compounds by LC/MS/MS



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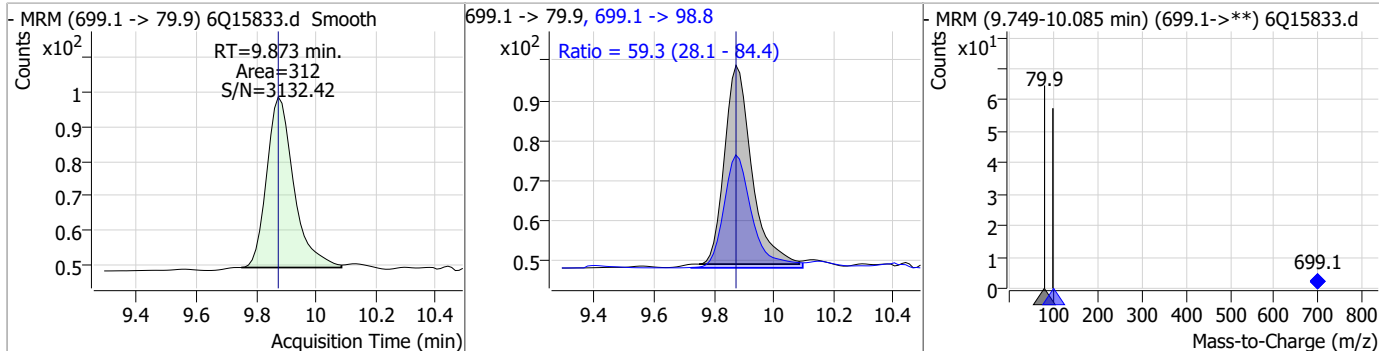
Perfluorinated Compounds by LC/MS/MS



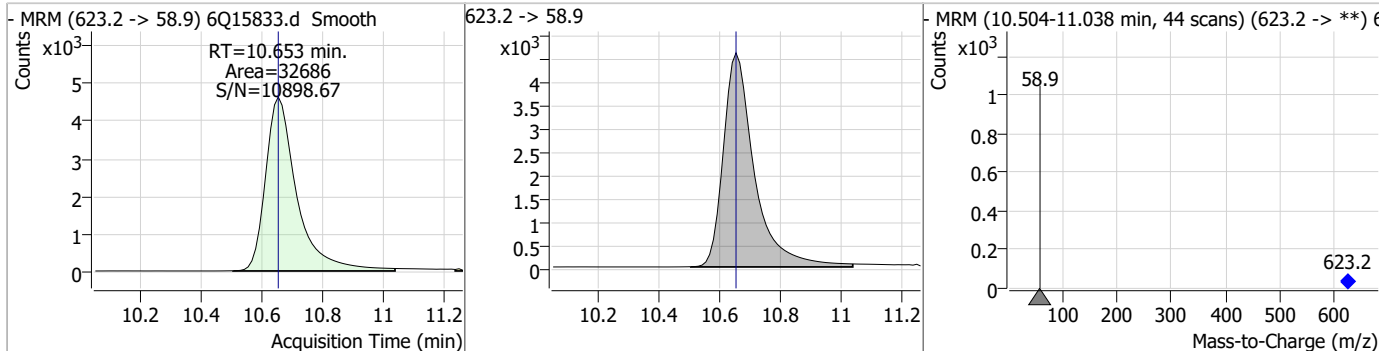
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Perfluorinated Compounds by LC/MS/MS

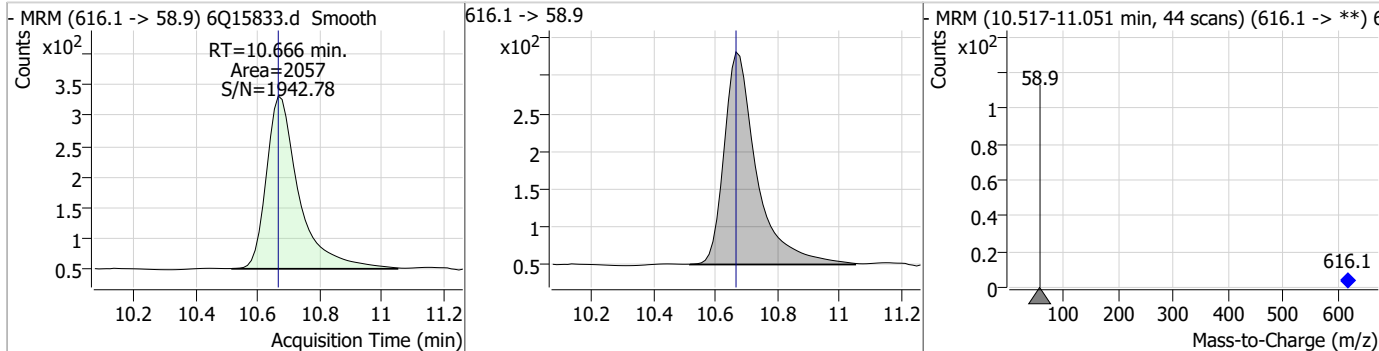
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.16	9.87	0.00	312	699.1 -> 98.8	59.3	28.1	84.4



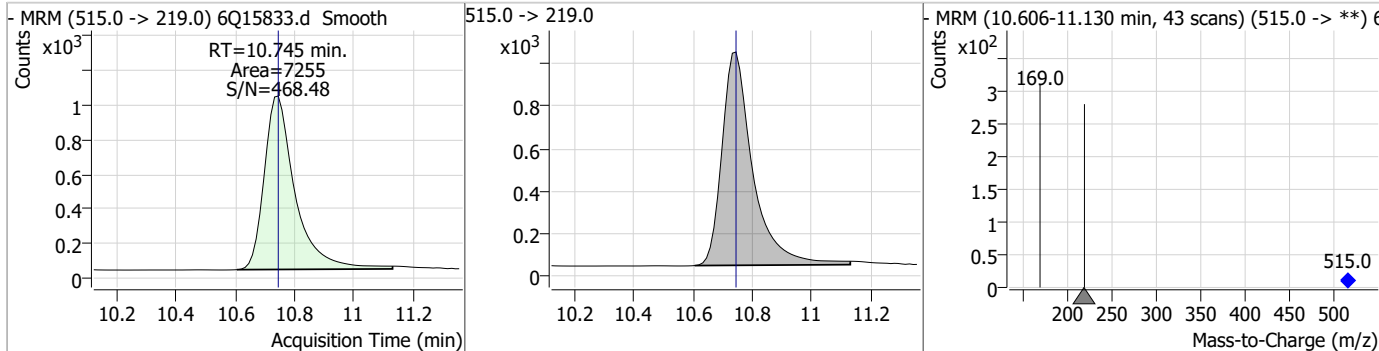
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.00	10.65	0.00	32686				



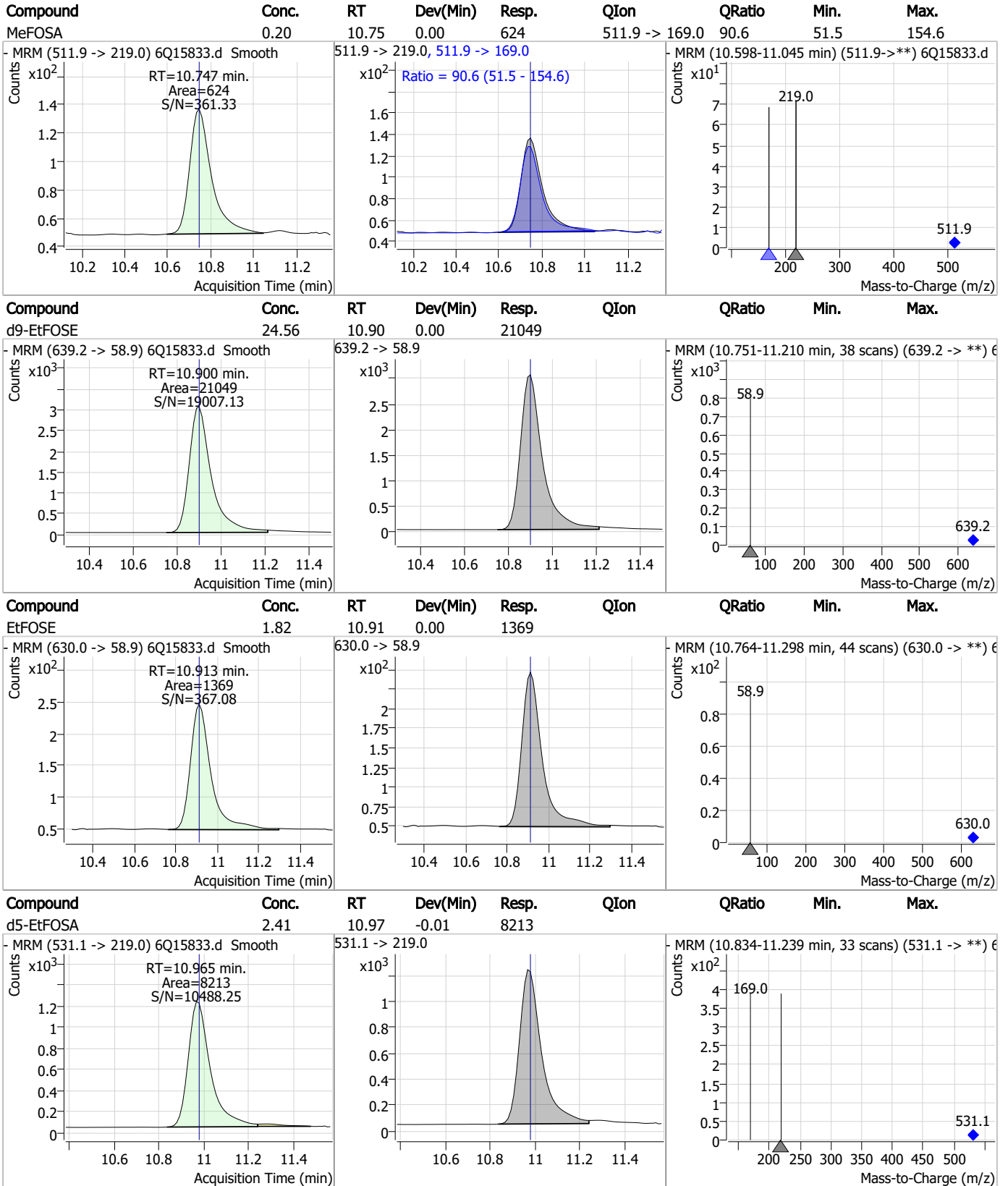
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.74	10.67	0.00	2057				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.40	10.75	0.00	7255				



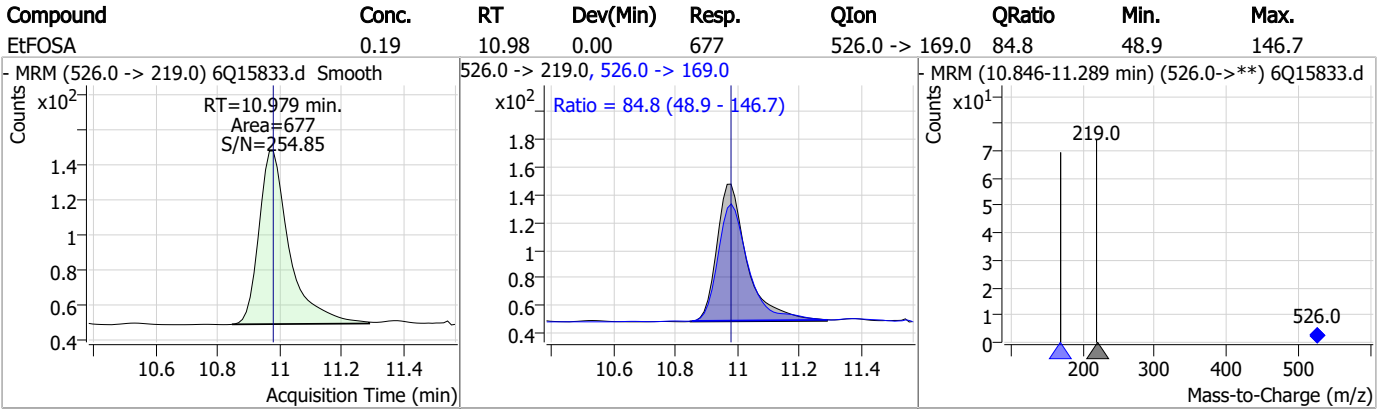
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15833.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/31/23 00:32 Supervisor approved: 03/31/23 16:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
MeFOSAA	2355-31-9		8.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15844.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 3:06:39 AM
 Sample Name : cc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.926	216.8 -> 171.9	77382	10.00 µg/L	0.012
M5-PFPeA	4.347	268.3 -> 223.0	37756	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	35952	2.50 µg/L	0.000
M4-PFHpA	6.506	367.1 -> 322.0	37295	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	63973	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	17935	1.25 µg/L	0.012
M6-PFDA	8.147	519.1 -> 474.1	17194	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	18004	1.25 µg/L	0.000
M2-PFDoDA	9.031	615.1 -> 570.0	22123	1.25 µg/L	0.000
M2-PFTeDA	9.746	715.2 -> 670.0	12359	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17559	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13162	2.50 µg/L	0.000
M3-PFHxS	7.265	402.1 -> 79.9	8611	2.50 µg/L	0.000
M8-PFOS	8.310	507.1 -> 79.9	8026	2.50 µg/L	0.000
M2-4:2FTS	5.229	329.1 -> 80.9	2275	5.00 µg/L	0.012
M2-6:2FTS	6.923	429.1 -> 80.9	3029	5.00 µg/L	0.012
M2-8:2FTS	7.935	529.1 -> 80.9	2876	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	27563	5.00 µg/L	0.012
M3-HFPO-DA	5.930	286.9 -> 168.9	14711	10.00 µg/L	0.000
M5-EtFOSAA	8.400	589.2 -> 419.0	22376	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25946	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16091	25.00 µg/L	0.000
M5-EtFOSA	10.965	531.1 -> 219.0	7148	2.50 µg/L	-0.012
M3-MeFOSA	10.745	515.0 -> 219.0	5687	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	9777	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	34307	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	6304	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	79014	2.50 µg/L	0.012
13C2-PFDA	8.147	515.1 -> 470.1	22338	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	21304	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	36138	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.229	329.1 -> 80.9	2275	5.54 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-6:2FTS	6.923	429.1 -> 80.9	3029	5.43 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2876	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-PFDoDA	9.031	615.1 -> 570.0	22123	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12359	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C3-PFBS	5.483	302.1 -> 79.9	13162	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFHxS	7.265	402.1 -> 79.9	8611	2.42 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C4-PFBA	2.926	216.8 -> 171.9	77382	9.76 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C4-PFHpA	6.506	367.1 -> 322.0	37295	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.553	318.0 -> 273.0	35952	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C5-PFPeA	4.347	268.3 -> 223.0	37756	4.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
13C6-PFDA	8.147	519.1 -> 474.1	17194	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C7-PFUnDA	8.601	570.0 -> 525.1	18004	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C8-FOSA	9.631	506.1 -> 77.8	17559	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C8-PFOA	7.149	421.1 -> 376.0	63973	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOS	8.310	507.1 -> 79.9	8026	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.680	472.1 -> 427.0	17935	1.07 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 85.3%	
d3-MeFOSAA	8.204	573.2 -> 419.0	27563	5.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C3-HFPO-DA	5.930	286.9 -> 168.9	14711	9.46 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d3-MeFOSA	10.745	515.0 -> 219.0	5687	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
d5-EtFOSAA	8.400	589.2 -> 419.0	22376	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d7-MeFOSE	10.653	623.2 -> 58.9	25946	25.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d9-EtFOSE	10.900	639.2 -> 58.9	16091	23.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
d5-EtFOSA	10.965	531.1 -> 219.0	7148	2.67 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	44047	9.28 µg/L	100
		327.1 -> 80.9	10402		
6:2FTS	6.923	427.1 -> 407.0	39252	9.66 µg/L	95
		427.1 -> 80.9	7817		
8:2FTS	7.936	527.1 -> 507.0	20263	9.69 µg/L	94
		527.1 -> 80.8	5209		
EtFOSAA	8.401	584.2 -> 419.1	8918	2.58 µg/L	82
		584.2 -> 526.0	3464		
FOSA	9.634	498.1 -> 77.9	14082	2.26 µg/L	100
		498.1 -> 478.0	547		
MeFOSAA	8.205	570.1 -> 419.0	11001	2.17 µg/L	97
		570.1 -> 483.0	1979		
PFBA	2.919	212.8 -> 168.9	16336	9.28 µg/L	100
PFBS	5.484	298.7 -> 79.9	11236	2.21 µg/L	95
		298.7 -> 98.8	4938		
PFDA	8.148	512.9 -> 469.0	42867	2.18 µg/L	97
		512.9 -> 219.0	5342		
PFDODA	9.032	613.1 -> 569.0	37061	2.27 µg/L	98
		613.1 -> 319.0	4903		
PFDS	9.195	599.0 -> 79.9	5178	2.17 µg/L	99

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.506	599.0 -> 98.8	2803	2.07	µg/L	97
		363.1 -> 319.0	45246			
PFHpS	7.819	363.1 -> 169.0	7004	2.09	µg/L	94
		449.0 -> 79.9	6728			
PFHxA	5.556	449.0 -> 98.9	3993	2.21	µg/L	100
		313.0 -> 269.0	28584			
PFHxS	7.265	313.0 -> 118.9	1182	2.13	µg/L	91
		398.7 -> 79.9	7855			
PFNA	7.668	398.7 -> 98.9	4874	2.36	µg/L	99
		463.0 -> 419.0	25269			
PFNS	8.763	463.0 -> 219.0	5119	2.29	µg/L	87
		548.8 -> 79.9	7712			
PFOA	7.151	548.8 -> 98.9	4594	2.28	µg/L	99
		413.0 -> 369.0	62149			
PFOS	8.311	413.0 -> 169.0	8055	2.13	µg/L	82
		498.9 -> 79.9	7167			
PFPeA	4.349	498.9 -> 98.8	4593	4.59	µg/L	100
		263.0 -> 219.0	36709			
PFPeS	6.571	349.1 -> 79.9	9900	2.35	µg/L	94
		349.1 -> 98.9	5335			
PFTeDA	9.746	713.1 -> 669.0	31314	2.24	µg/L	99
		713.1 -> 168.9	2092			
PFTrDA	9.403	663.0 -> 619.0	33374	2.31	µg/L	99
		663.0 -> 168.9	2721			
PFUnDA	8.601	563.1 -> 519.0	36085	2.36	µg/L	99
		563.1 -> 269.1	4906			
11CI-PF3OUdS	9.454	630.9 -> 450.9	73750	8.75	µg/L	95
		632.9 -> 452.9	23008			
9CI-PF3ONS	8.641	530.8 -> 351.0	135143	8.67	µg/L	99
		532.8 -> 353.0	42685			
ADONA	6.756	376.9 -> 250.9	266928	8.62	µg/L	97
		376.9 -> 84.8	60280			
HFPO-DA	5.931	284.9 -> 168.9	11862	8.76	µg/L	94
		284.9 -> 184.9	1679			
3:3FTCA	3.815	241.0 -> 177.0	4436	10.43	µg/L	98
		241.0 -> 117.0	710			
5:3FTCA	6.223	341.0 -> 237.1	157794	53.51	µg/L	96
		341.0 -> 217.0	137700			
7:3FTCA	7.633	441.0 -> 316.9	92780	59.37	µg/L	78
		441.0 -> 336.9	145959			
EtFOSA	10.979	526.0 -> 219.0	6378	2.09	µg/L	98
		526.0 -> 169.0	6348			
EtFOSE	10.913	630.0 -> 58.9	12572	21.84	µg/L	100
		511.9 -> 219.0	5709			
MeFOSA	10.747	511.9 -> 169.0	5955	2.33	µg/L	99
		616.1 -> 58.9	20238			
MeFOSE	10.666	699.1 -> 79.9	3158	21.60	µg/L	100
		699.1 -> 98.8	2026			
PFDoDS	9.873	295.0 -> 201.0	3623	2.19	µg/L	89
		295.0 -> 84.9	1550			
NFDHA	5.435	279.0 -> 85.1	10985	4.71	µg/L	99
		229.0 -> 84.9	9862			
PFMBA	4.762	314.8 -> 134.9	73369	4.46	µg/L	100
		314.8 -> 82.9	1822			
PFMPA	3.488			4.45	µg/L	100
PFEESA	6.036			3.96	µg/L	100

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



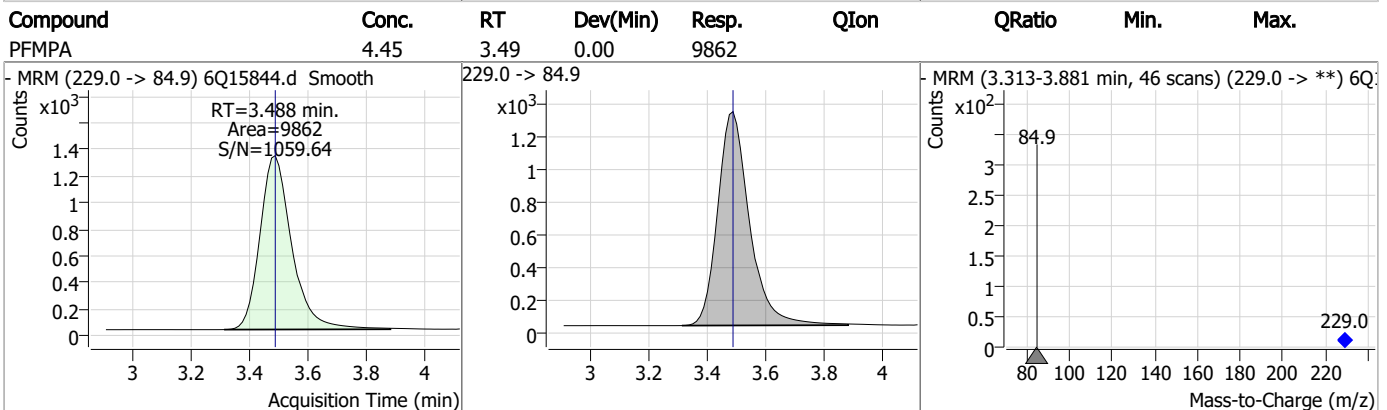
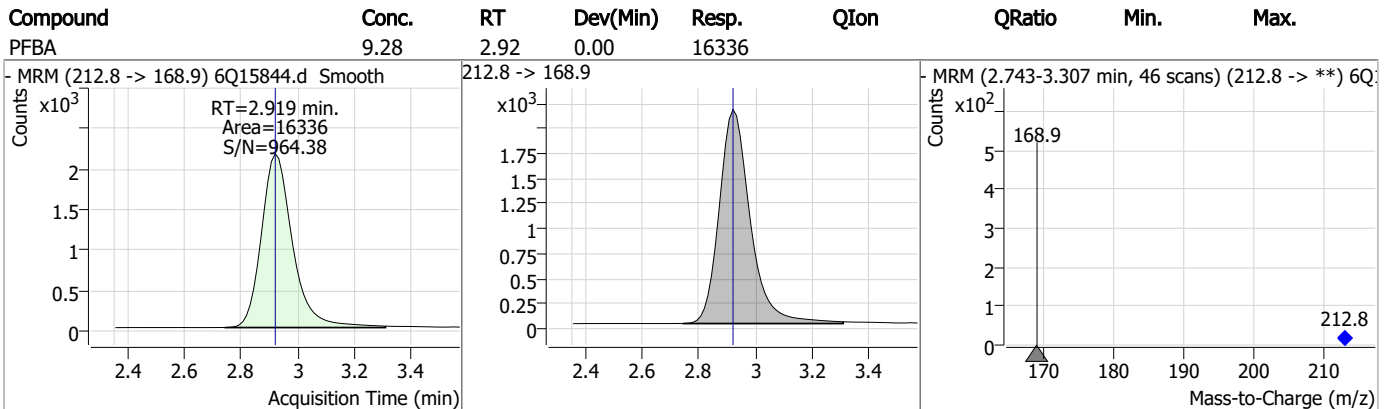
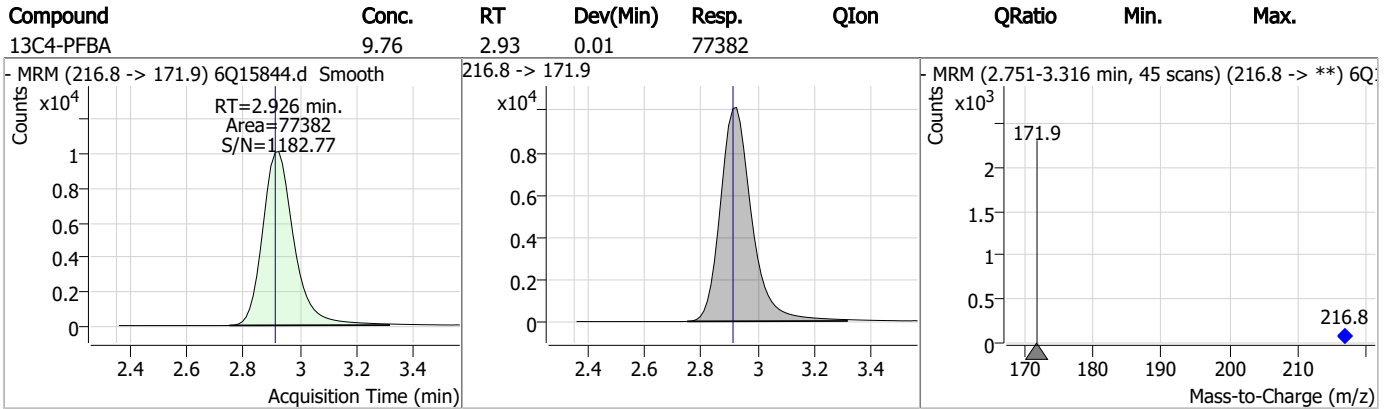
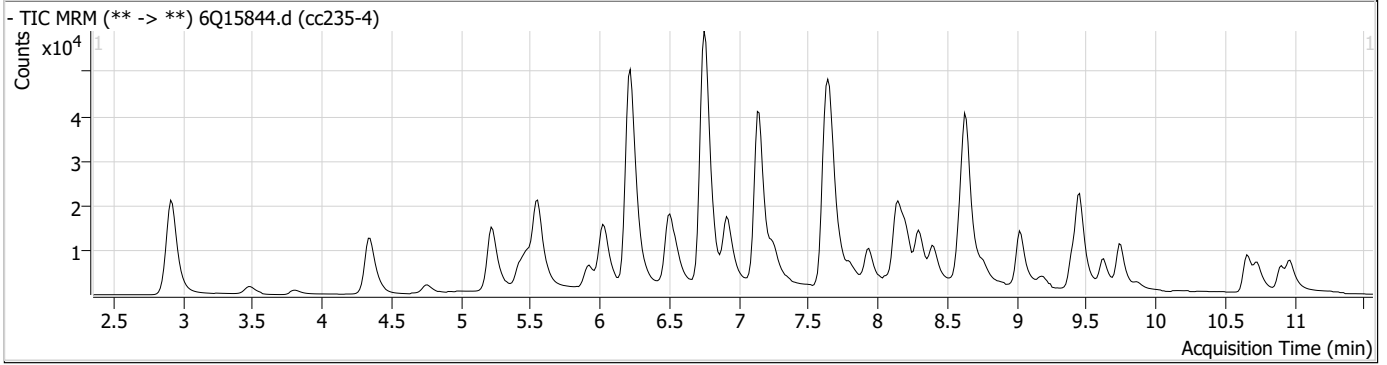
Perfluorinated Compounds by LC/MS/MS

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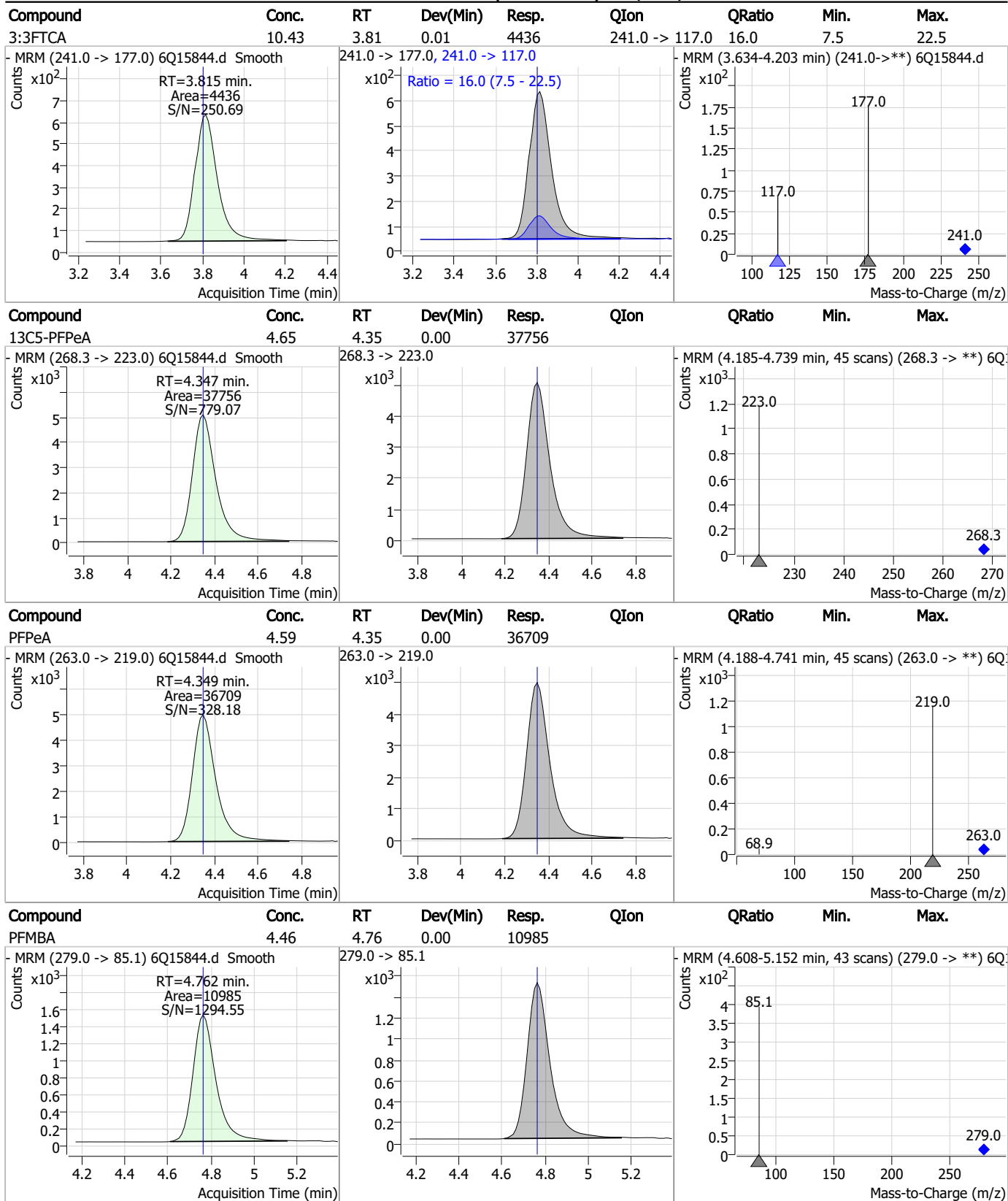
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Perfluorinated Compounds by LC/MS/MS

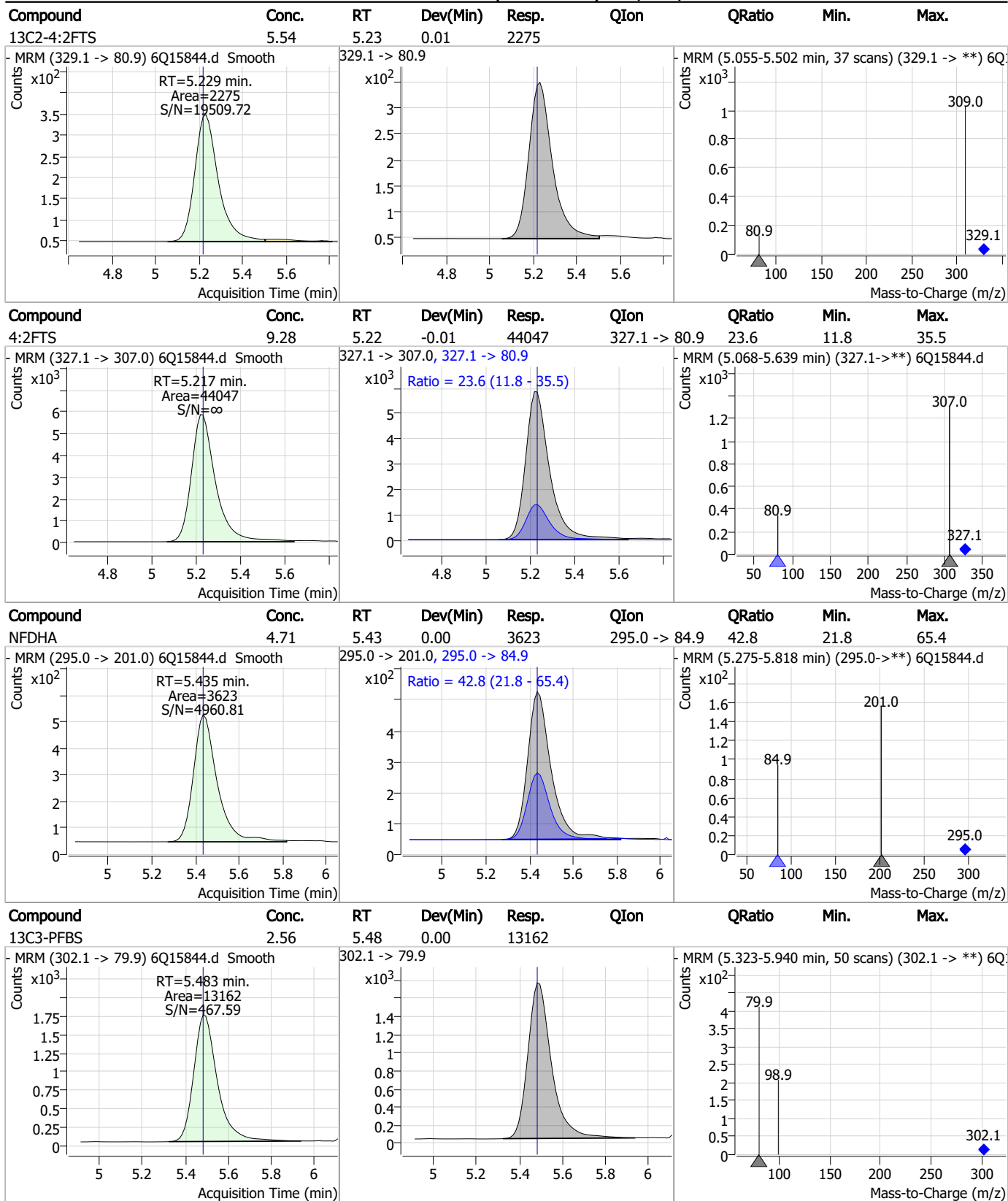


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

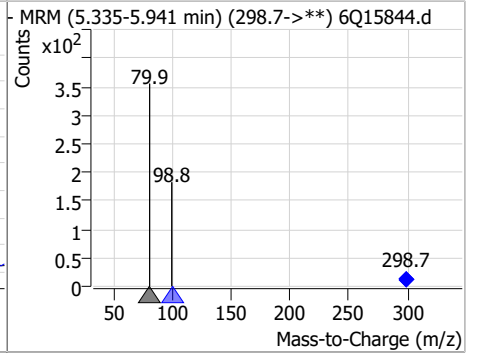
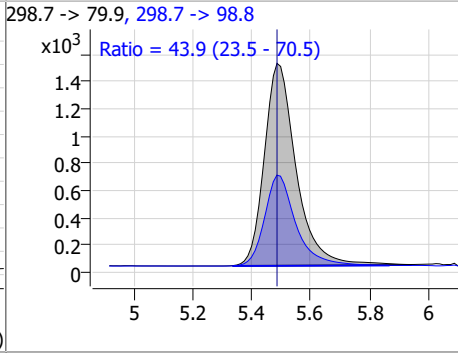
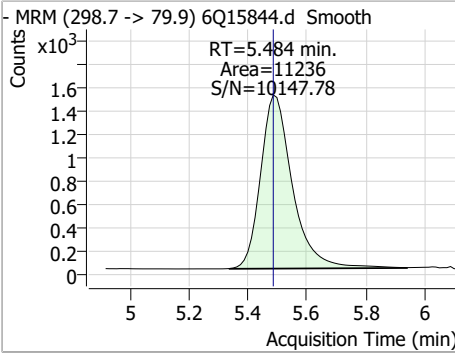


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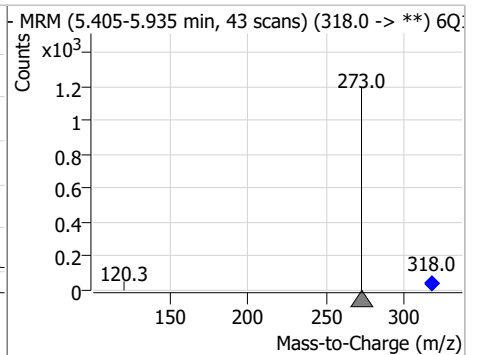
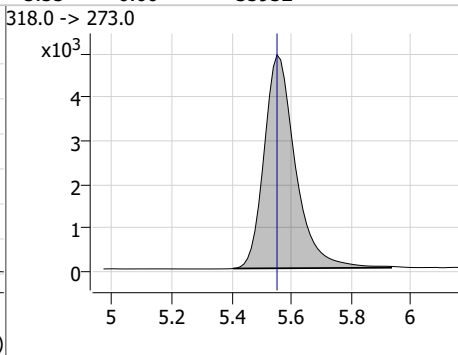
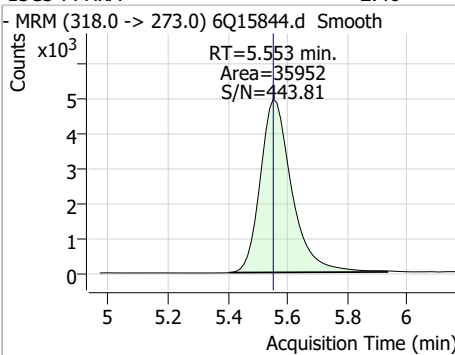


Perfluorinated Compounds by LC/MS/MS

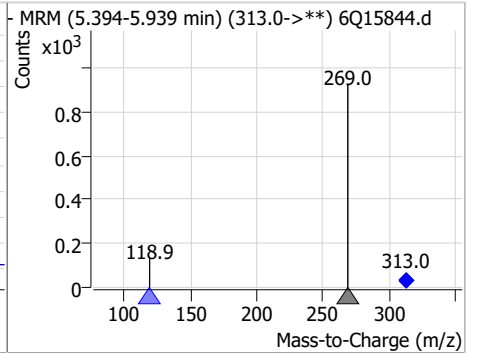
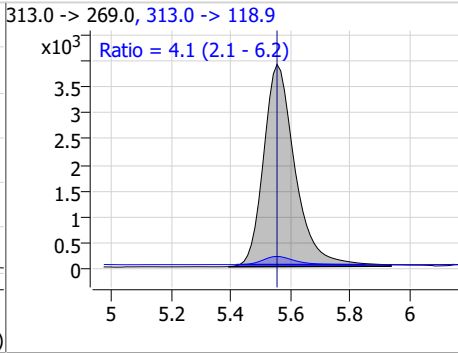
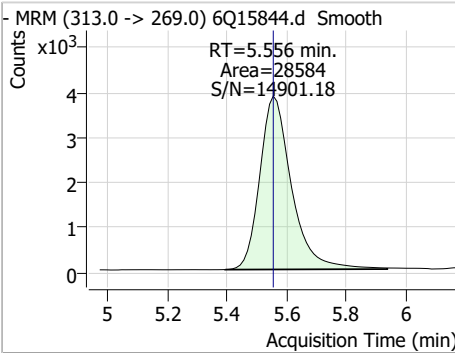
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.21	5.48	0.00	11236	298.7 -> 98.8	43.9	23.5	70.5



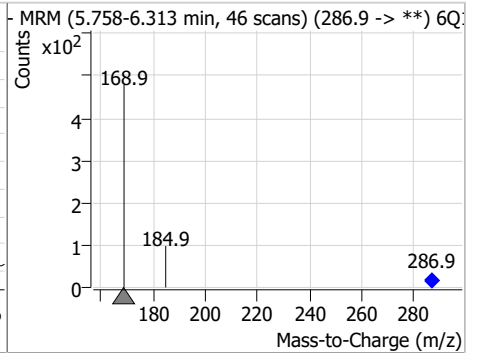
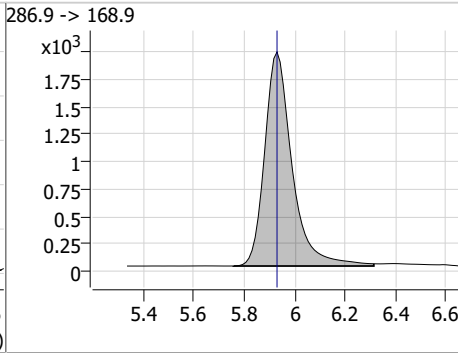
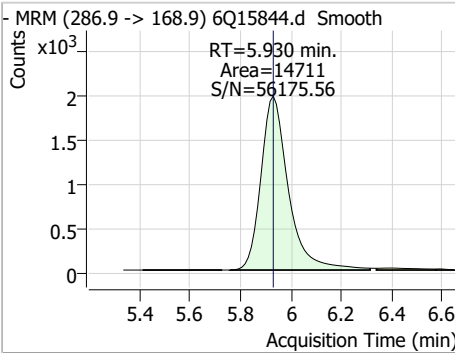
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.40	5.55	0.00	35952				



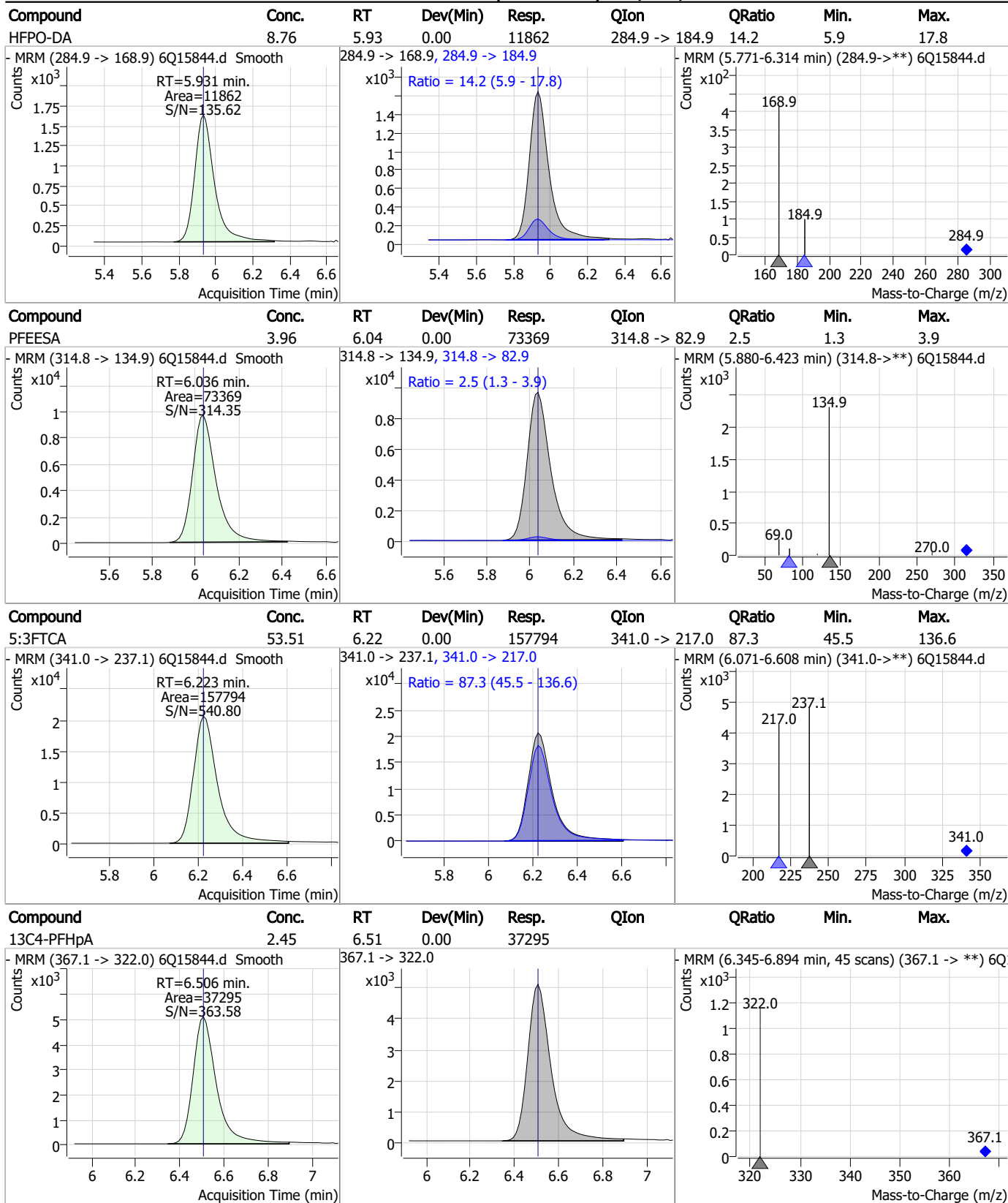
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.21	5.56	0.00	28584	313.0 -> 118.9	4.1	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.46	5.93	0.00	14711				



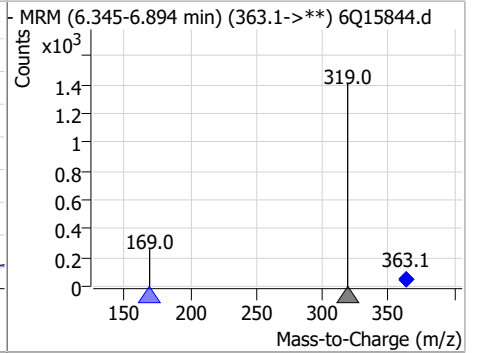
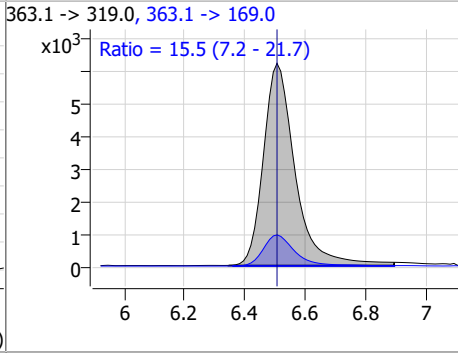
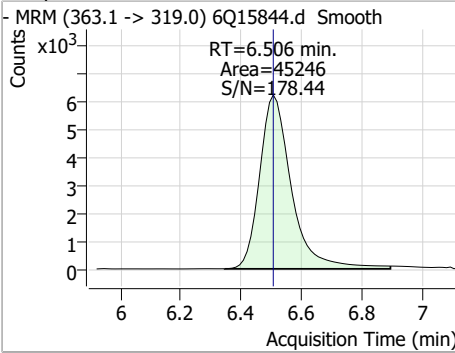
Perfluorinated Compounds by LC/MS/MS



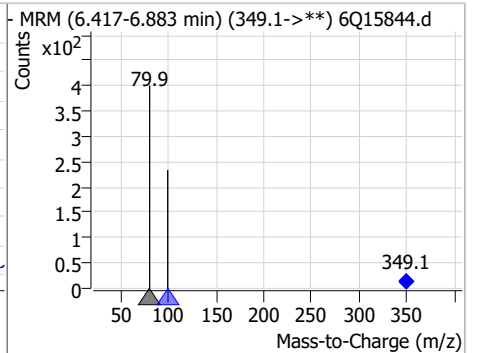
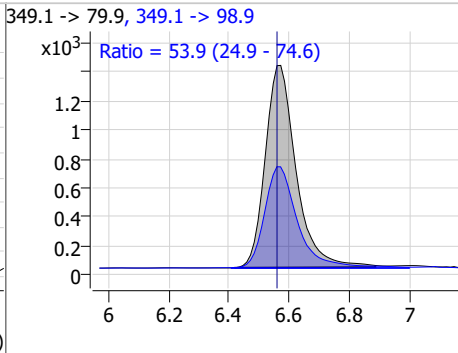
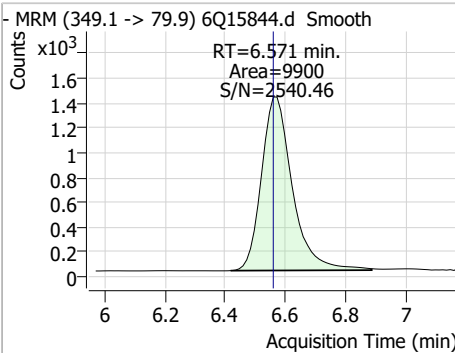
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Perfluorinated Compounds by LC/MS/MS

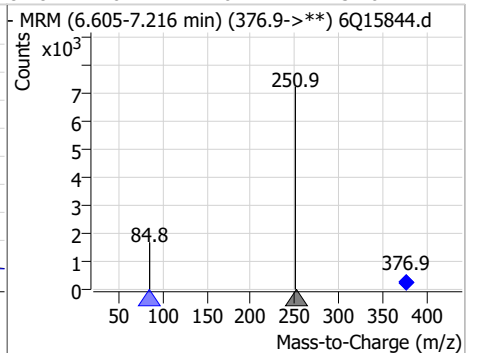
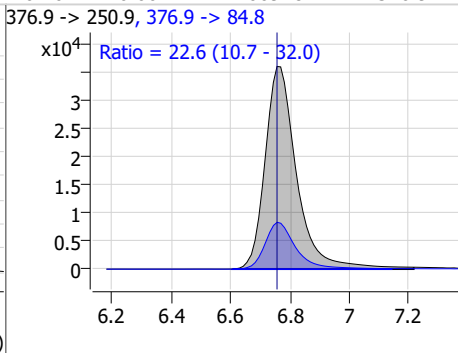
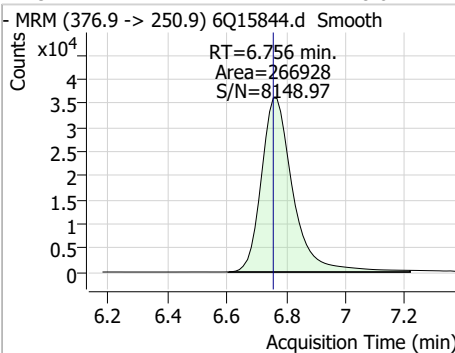
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.07	6.51	0.00	45246	363.1 -> 169.0	15.5	7.2	21.7



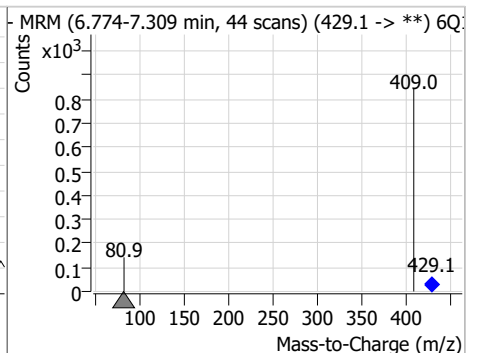
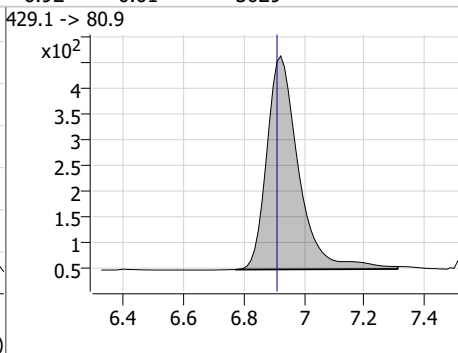
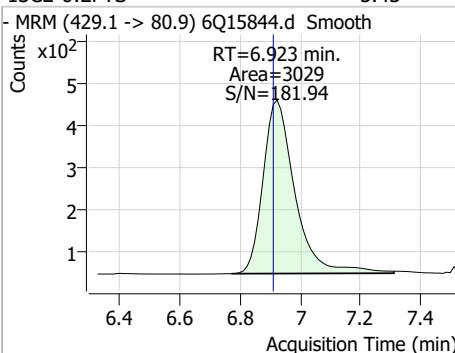
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.35	6.57	0.01	9900	349.1 -> 98.9	53.9	24.9	74.6



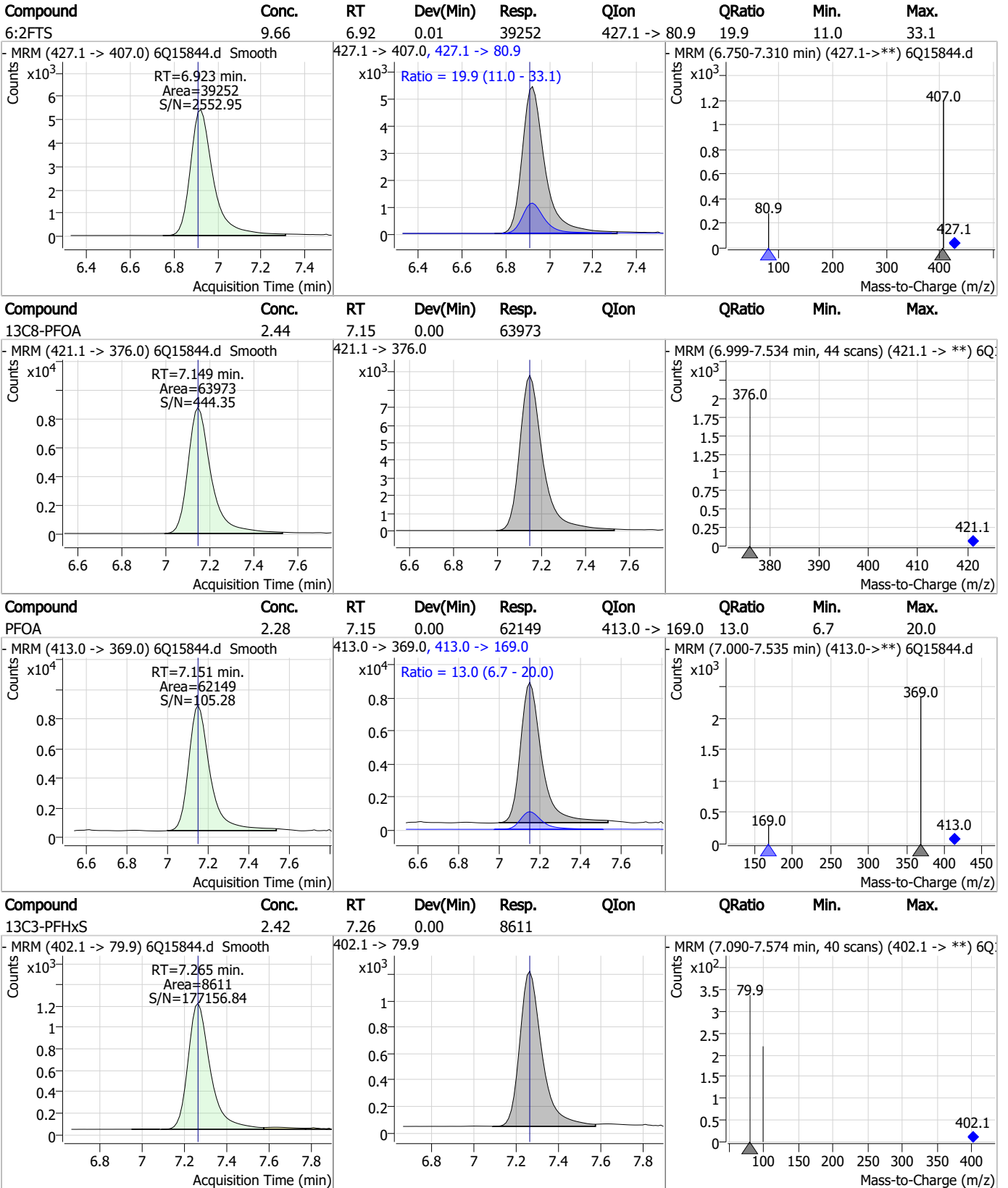
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.62	6.76	0.00	266928	376.9 -> 84.8	22.6	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.43	6.92	0.01	3029	429.1 -> 80.9			



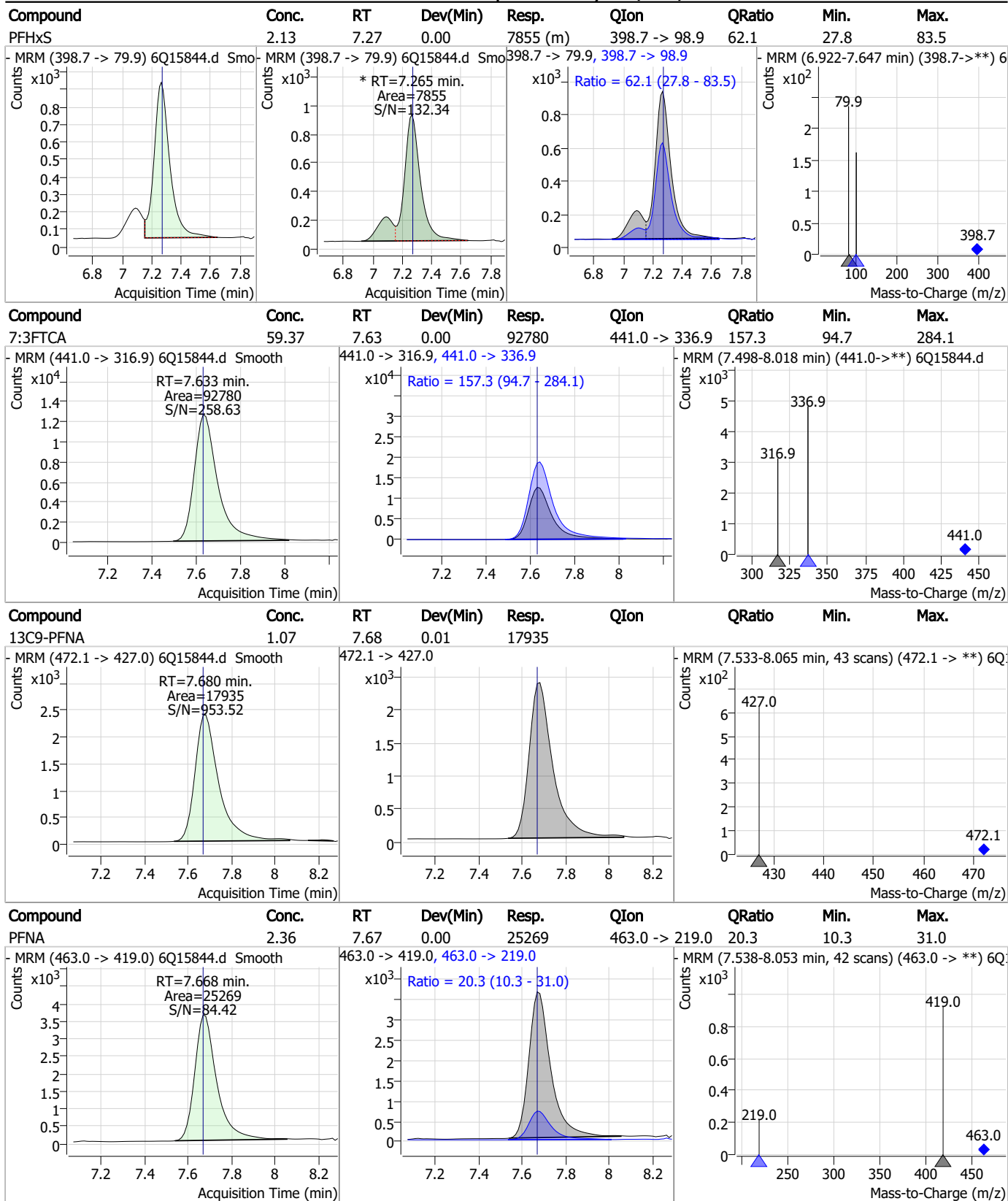
Perfluorinated Compounds by LC/MS/MS



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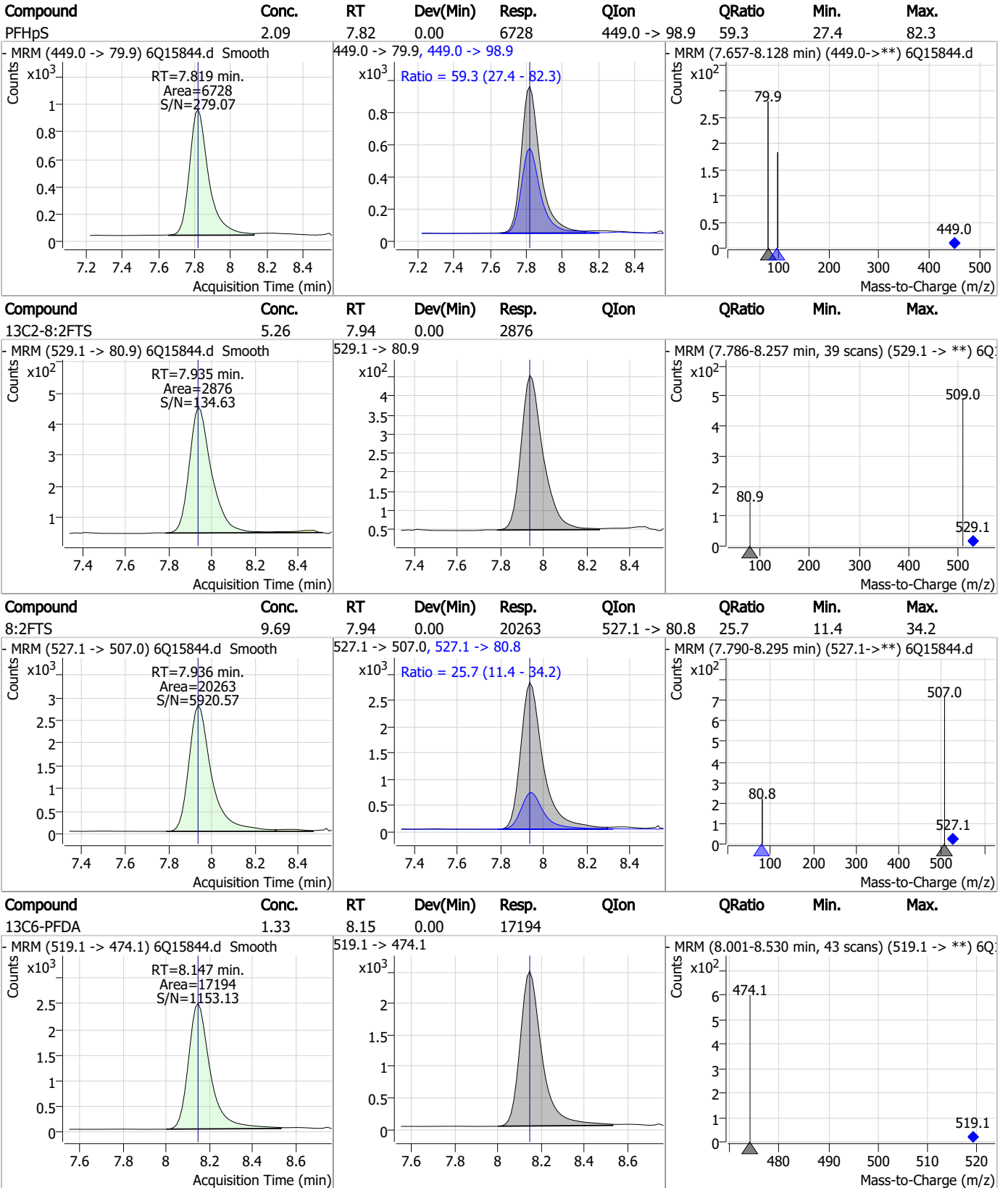


Perfluorinated Compounds by LC/MS/MS



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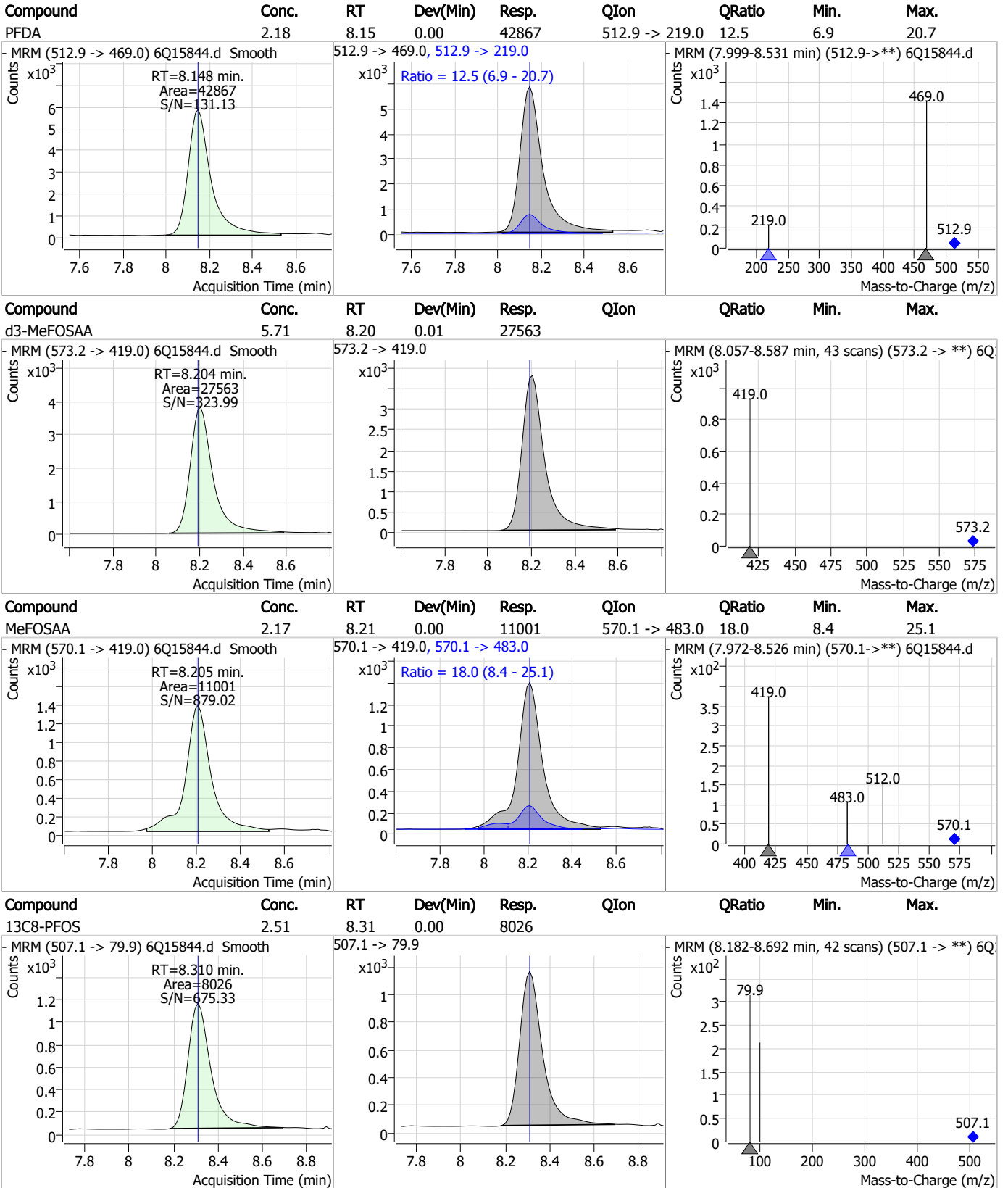
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

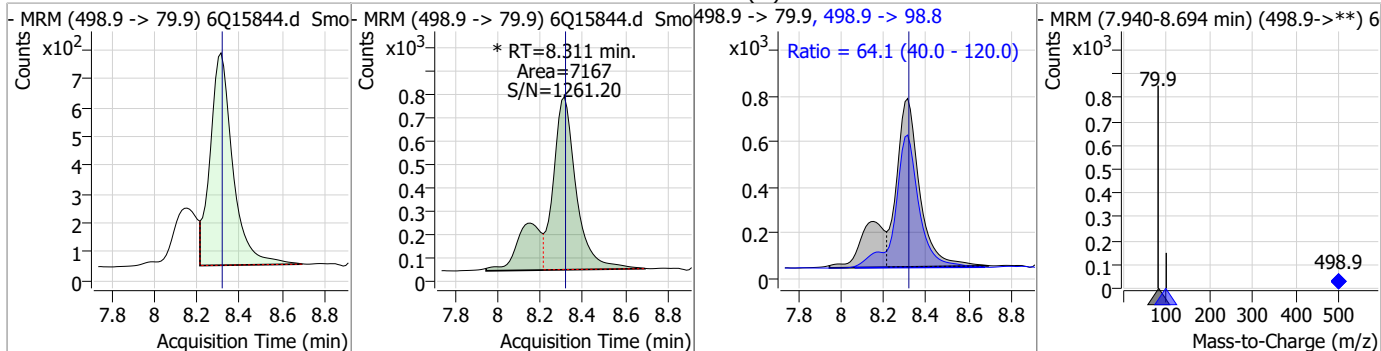


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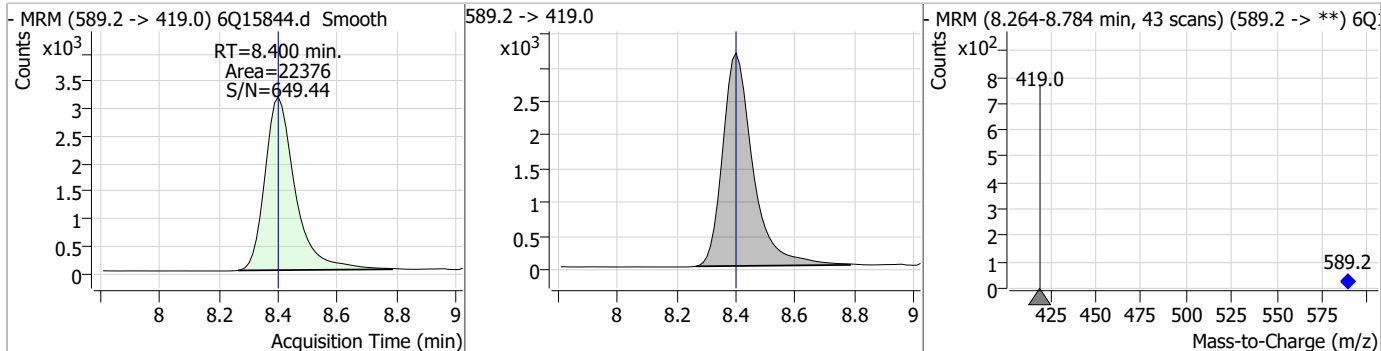


Perfluorinated Compounds by LC/MS/MS

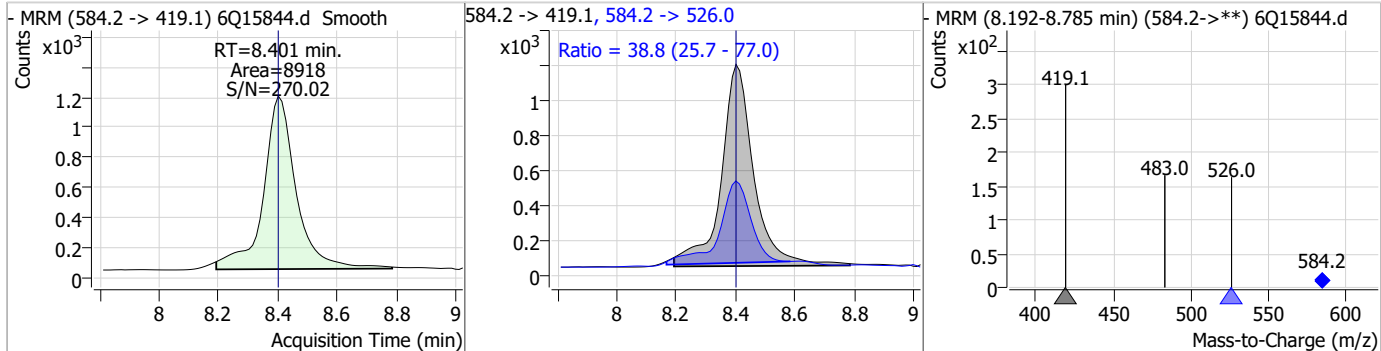
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.13	8.31	0.00	7167 (m)	498.9 -> 98.8	64.1	40.0	120.0



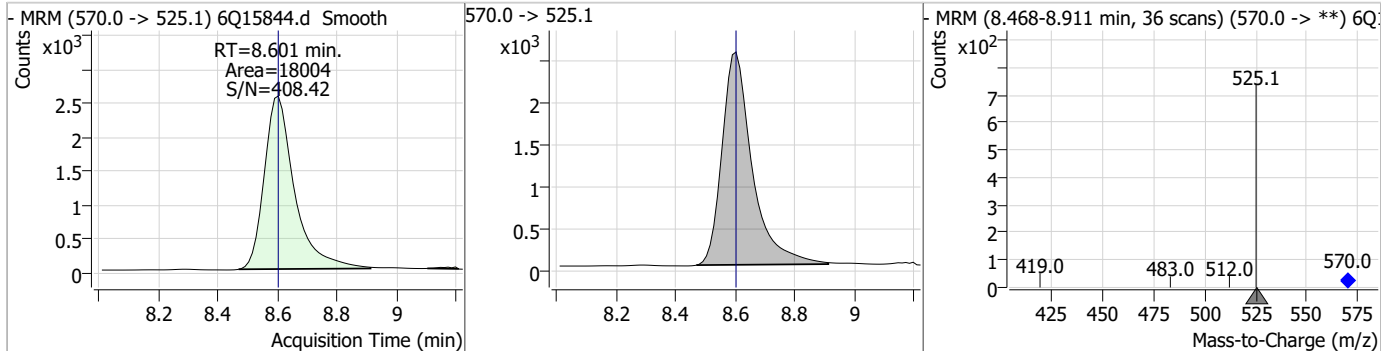
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.30	8.40	0.00	22376				



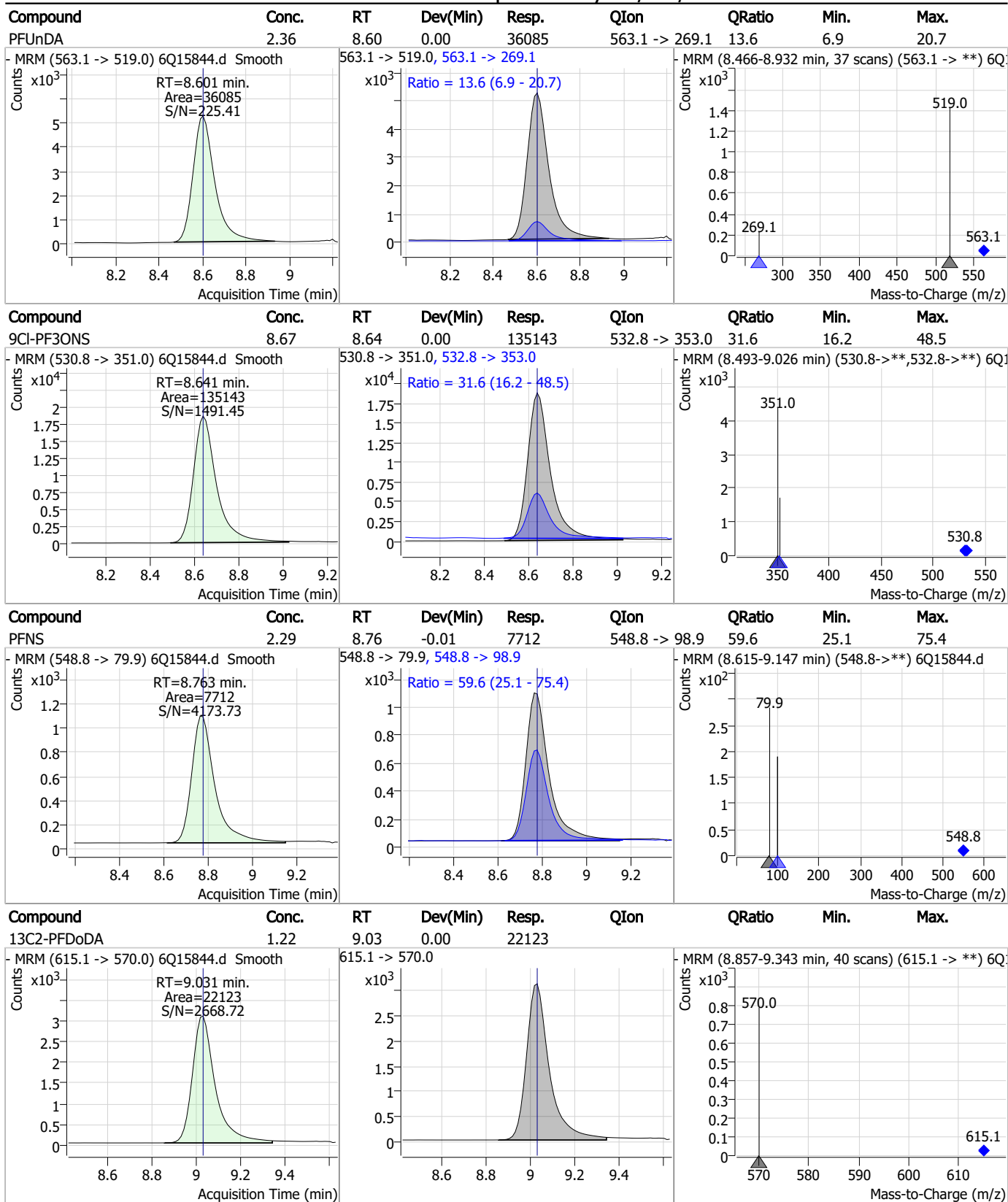
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.58	8.40	0.00	8918	584.2 -> 526.0	38.8	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.60	0.00	18004				

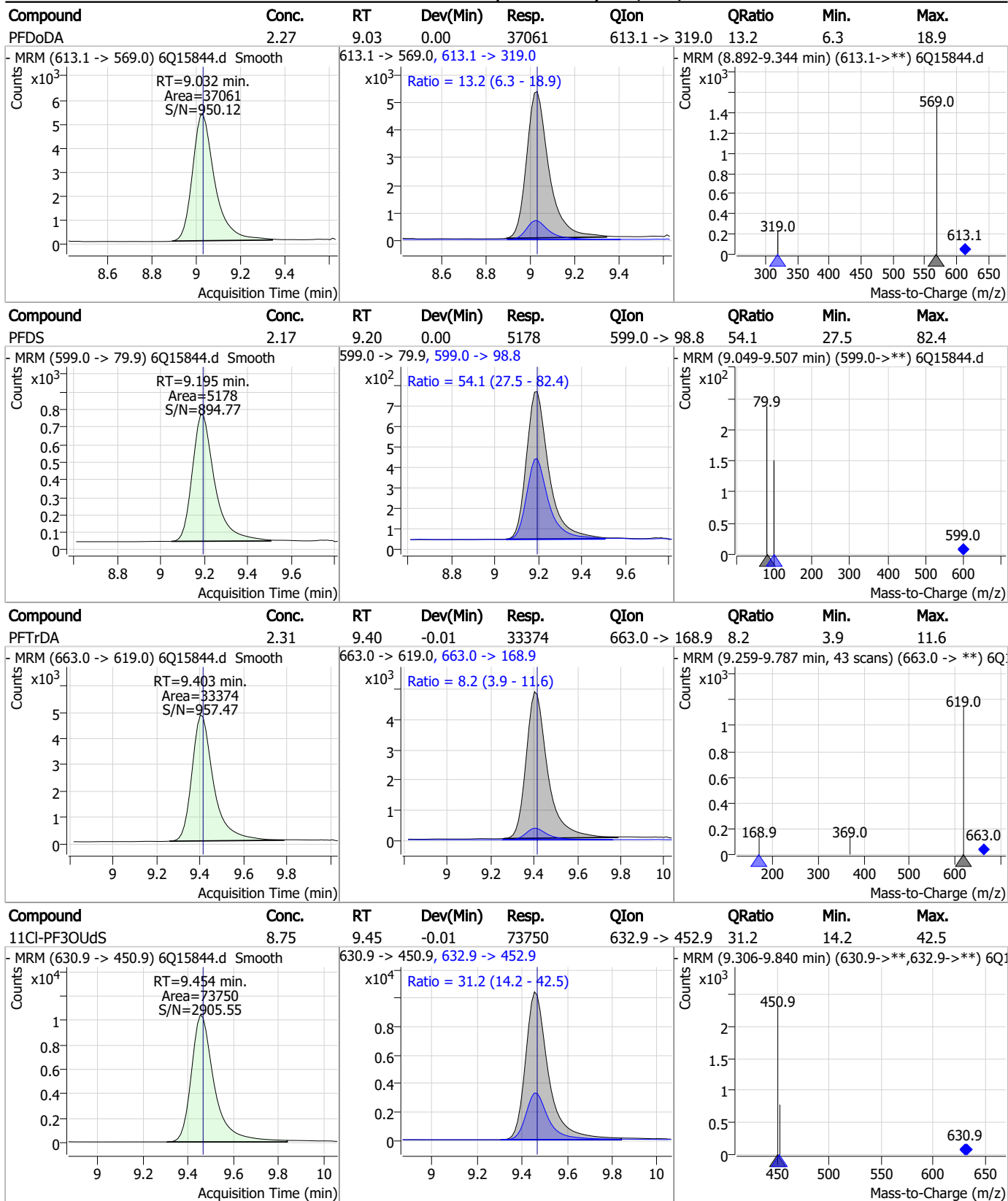


Perfluorinated Compounds by LC/MS/MS



7.7.17

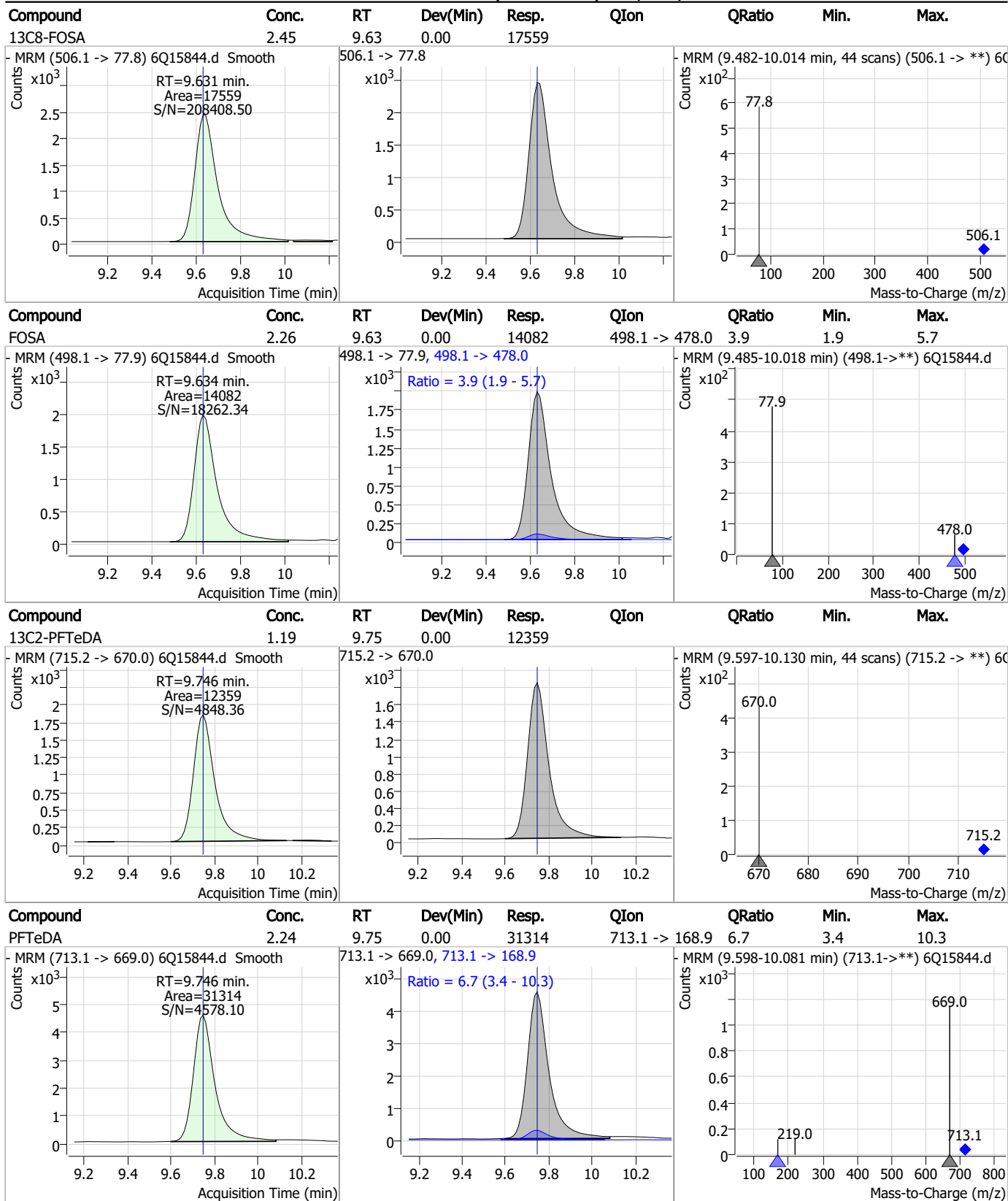
Perfluorinated Compounds by LC/MS/MS



7.7.17



Perfluorinated Compounds by LC/MS/MS

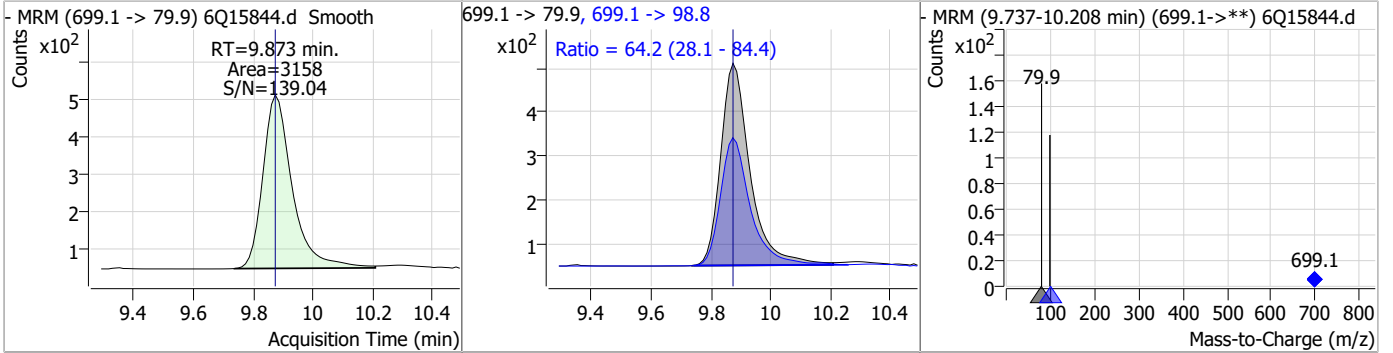


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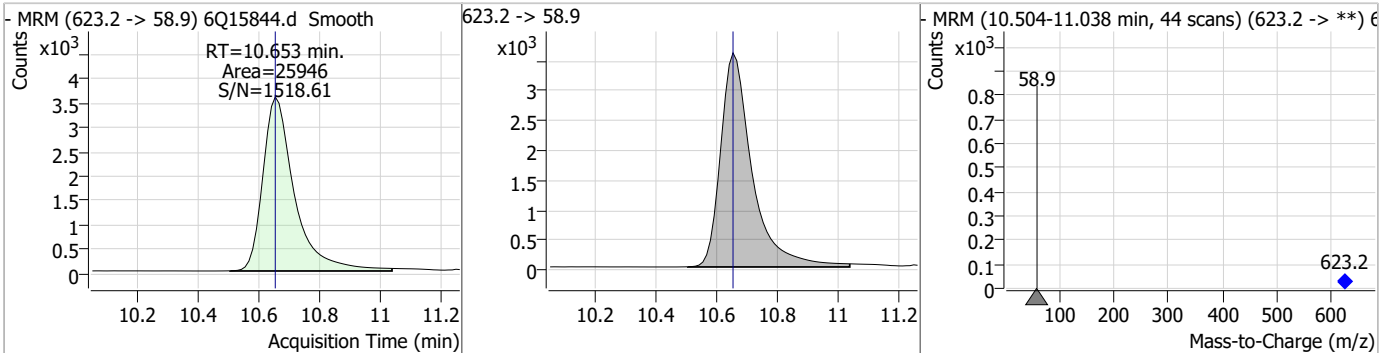


Perfluorinated Compounds by LC/MS/MS

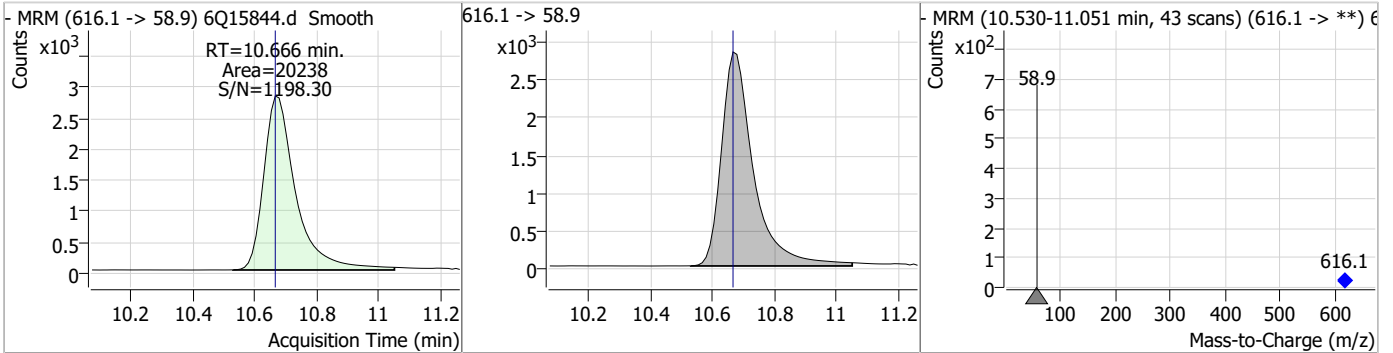
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.19	9.87	0.00	3158	699.1 -> 98.8	64.2	28.1	84.4



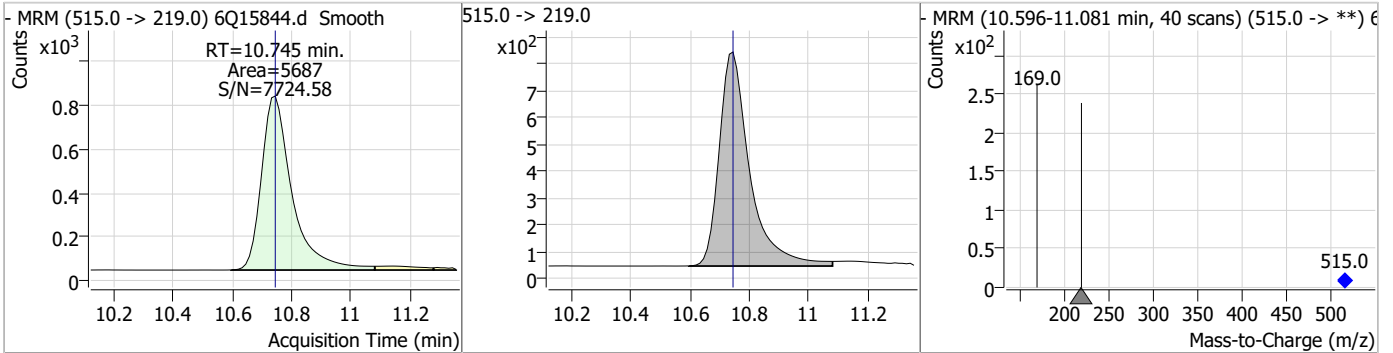
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.24	10.65	0.00	25946				



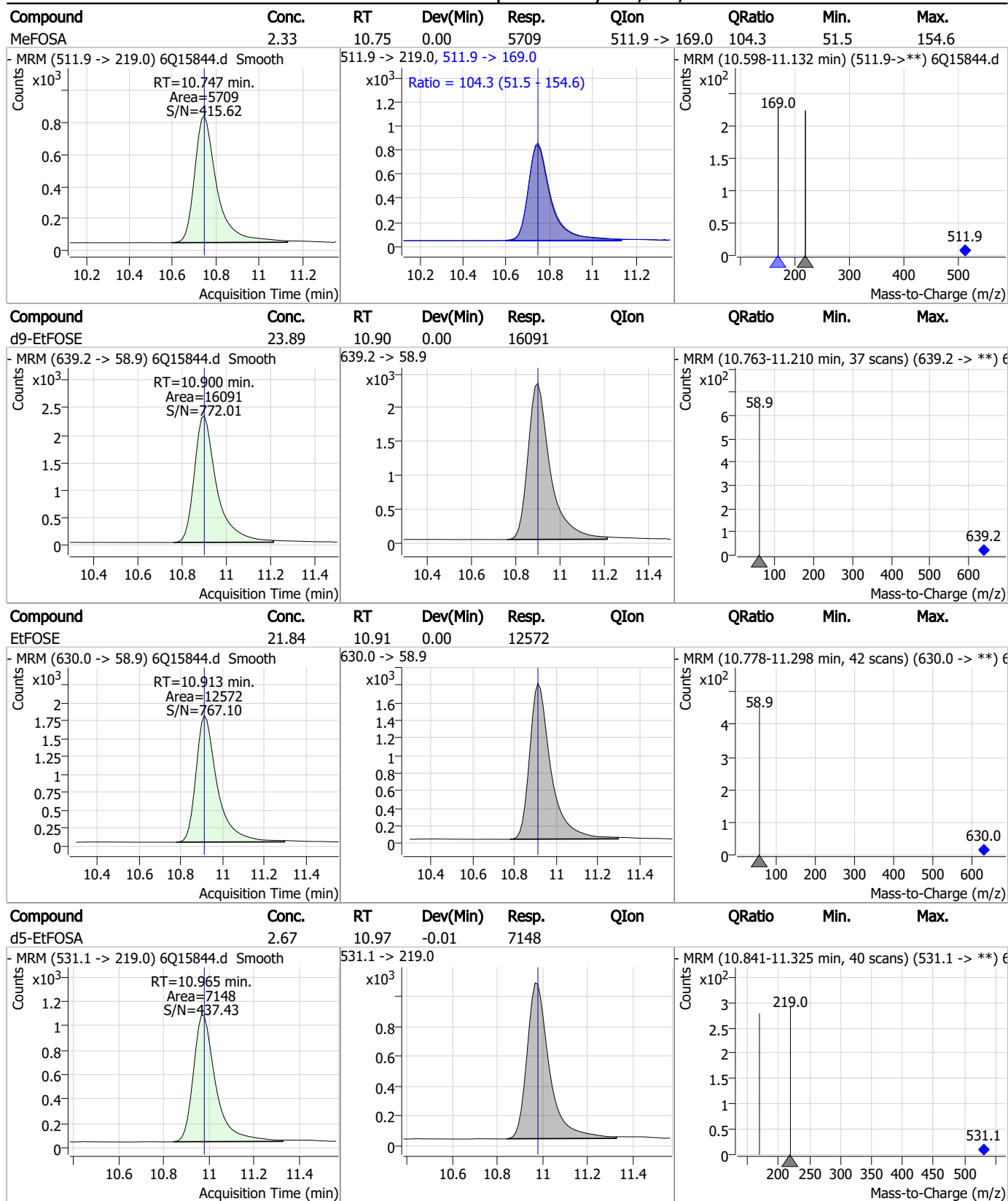
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	21.60	10.67	0.00	20238				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	10.75	0.00	5687				



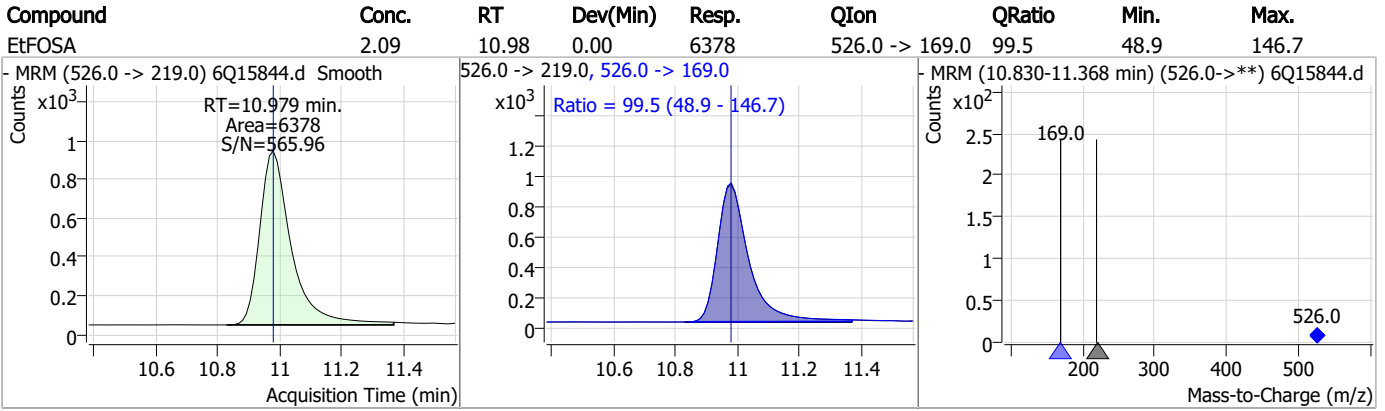
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15844.D Analyst approved: 03/31/23 12:44 Mike Eger
Injection Time: 03/31/23 03:06 Supervisor approved: 03/31/23 16:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.7.17.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15880.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 11:29:57 AM
 Sample Name : cc235-4
 Vial : P1-A5
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	77784	10.00 µg/L	0.000
M5-PFPeA	4.347	268.3 -> 223.0	37847	5.00 µg/L	0.000
M5-PFHxA	5.553	318.0 -> 273.0	34201	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	36497	2.50 µg/L	-0.012
M8-PFOA	7.137	421.1 -> 376.0	61629	2.50 µg/L	-0.012
M9-PFNA	7.667	472.1 -> 427.0	18985	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	16626	1.25 µg/L	0.000
M7-PFUnDA	8.589	570.0 -> 525.1	17337	1.25 µg/L	-0.012
M2-PFDoDA	9.019	615.1 -> 570.0	21234	1.25 µg/L	-0.013
M2-PFTeDA	9.746	715.2 -> 670.0	12588	1.25 µg/L	0.000
M8-FOSA	9.631	506.1 -> 77.8	17055	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	13870	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	9226	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	8231	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2311	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	3122	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2809	5.00 µg/L	0.000
M3-MeFOSAA	8.192	573.2 -> 419.0	24019	5.00 µg/L	0.000
M3-HFPO-DA	5.918	286.9 -> 168.9	14937	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	22120	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	25039	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	16298	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	6527	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5669	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	10209	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	34021	5.00 µg/L	0.000
18O2-PFHxS	7.251	403.0 -> 83.9	6466	2.50 µg/L	-0.012
13C4-PFOA	7.137	417.1 -> 372.0	77125	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	21884	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	19707	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	34448	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2311	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.7%		
13C2-6:2FTS	6.910	429.1 -> 80.9	3122	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2809	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-PFDoDA	9.019	615.1 -> 570.0	21234	1.19 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.5%		
13C2-PFTeDA	9.746	715.2 -> 670.0	12588	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.483	302.1 -> 79.9	13870	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C3-PFHxS	7.252	402.1 -> 79.9	9226	2.53 µg/L	-0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFBA	2.913	216.8 -> 171.9	77784	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.493	367.1 -> 322.0	36497	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFHxA	5.553	318.0 -> 273.0	34201	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C5-PFPeA	4.347	268.3 -> 223.0	37847	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C6-PFDA	8.147	519.1 -> 474.1	16626	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C7-PFUnDA	8.589	570.0 -> 525.1	17337	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.631	506.1 -> 77.8	17055	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.0%	
13C8-PFOA	7.137	421.1 -> 376.0	61629	2.41 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C8-PFOS	8.310	507.1 -> 79.9	8231	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C9-PFNA	7.667	472.1 -> 427.0	18985	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.192	573.2 -> 419.0	24019	4.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C3-HFPO-DA	5.918	286.9 -> 168.9	14937	10.07 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSA	10.745	515.0 -> 219.0	5669	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.4%	
d5-EtFOSAA	8.400	589.2 -> 419.0	22120	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
d7-MeFOSE	10.653	623.2 -> 58.9	25039	23.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d9-EtFOSE	10.900	639.2 -> 58.9	16298	23.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
d5-EtFOSA	10.978	531.1 -> 219.0	6527	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	42839	8.88 µg/L	99
		327.1 -> 80.9	10310		
6:2FTS	6.911	427.1 -> 407.0	39670	9.48 µg/L	96
		427.1 -> 80.9	7960		
8:2FTS	7.936	527.1 -> 507.0	19550	9.57 µg/L	90
		527.1 -> 80.8	5408		
EtFOSAA	8.401	584.2 -> 419.1	7868	2.31 µg/L	96
		584.2 -> 526.0	4263		
FOSA	9.634	498.1 -> 77.9	14437	2.39 µg/L	97
		498.1 -> 478.0	402		
MeFOSAA	8.205	570.1 -> 419.0	10934	2.47 µg/L	97
		570.1 -> 483.0	1982		
PFBA	2.919	212.8 -> 168.9	16308	9.22 µg/L	100
PFBS	5.484	298.7 -> 79.9	10623	1.98 µg/L	97
		298.7 -> 98.8	4805		
PFDA	8.148	512.9 -> 469.0	41369	2.17 µg/L	99
		512.9 -> 219.0	5854		
PFDoDA	9.019	613.1 -> 569.0	37189	2.37 µg/L	100
		613.1 -> 319.0	4731		
PFDS	9.183	599.0 -> 79.9	5540	2.26 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	2778	2.23	µg/L	99
		363.1 -> 319.0	47555			
PFHpS	7.819	363.1 -> 169.0	6692	2.11	µg/L	94
		449.0 -> 79.9	6969			
PFHxA	5.556	449.0 -> 98.9	4114	2.20	µg/L	99
		313.0 -> 269.0	27093			
PFHxS	7.253	313.0 -> 118.9	1089	2.14	µg/L	96
		398.7 -> 79.9	8454			
PFNA	7.668	398.7 -> 98.9	4443	2.35	µg/L	100
		463.0 -> 419.0	26639			
PFNS	8.763	463.0 -> 219.0	5441	2.26	µg/L	91
		548.8 -> 79.9	7800			
PFOA	7.138	548.8 -> 98.9	4402	2.27	µg/L	100
		413.0 -> 369.0	59568			
PFOS	8.311	413.0 -> 169.0	7967	2.06	µg/L	82
		498.9 -> 79.9	7111			
PFPeA	4.349	498.9 -> 98.8	4538	4.59	µg/L	100
		263.0 -> 219.0	36812			
PFPeS	6.558	349.1 -> 79.9	9820	2.17	µg/L	99
		349.1 -> 98.9	4933			
PFTeDA	9.746	713.1 -> 669.0	30578	2.14	µg/L	99
		713.1 -> 168.9	2260			
PFTrDA	9.403	663.0 -> 619.0	35018	2.52	µg/L	99
		663.0 -> 168.9	2613			
PFUnDA	8.601	563.1 -> 519.0	36391	2.47	µg/L	99
		563.1 -> 269.1	5192			
11CI-PF3OUdS	9.454	630.9 -> 450.9	75087	8.78	µg/L	97
		632.9 -> 452.9	22446			
9CI-PF3ONS	8.641	530.8 -> 351.0	128719	8.13	µg/L	97
		532.8 -> 353.0	43693			
ADONA	6.756	376.9 -> 250.9	283922	9.03	µg/L	99
		376.9 -> 84.8	62082			
HFPO-DA	5.919	284.9 -> 168.9	12364	9.00	µg/L	99
		284.9 -> 184.9	1538			
3:3FTCA	3.815	241.0 -> 177.0	4569	10.71	µg/L	99
		241.0 -> 117.0	660			
5:3FTCA	6.223	341.0 -> 237.1	162445	57.90	µg/L	98
		341.0 -> 217.0	144718			
7:3FTCA	7.633	441.0 -> 316.9	84279	56.69	µg/L	97
		441.0 -> 336.9	155761			
EtFOSA	10.979	526.0 -> 219.0	6378	2.29	µg/L	98
		526.0 -> 169.0	6374			
EtFOSE	10.913	630.0 -> 58.9	12556	21.53	µg/L	100
		511.9 -> 219.0	5799			
MeFOSA	10.747	511.9 -> 169.0	5934	2.37	µg/L	99
		616.1 -> 58.9	20587			
MeFOSE	10.679	699.1 -> 79.9	3315	22.77	µg/L	100
		699.1 -> 98.8	1882			
PFDoDS	9.873	295.0 -> 201.0	3482	2.24	µg/L	99
		295.0 -> 84.9	1630			
NFDHA	5.435	279.0 -> 85.1	11075	4.76	µg/L	95
		229.0 -> 84.9	10025			
PFMBA	4.762	314.8 -> 134.9	75150	4.49	µg/L	100
		314.8 -> 82.9	1693			
PFMPA	3.488			4.52	µg/L	100
PFEESA	6.024			4.26	µg/L	99

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

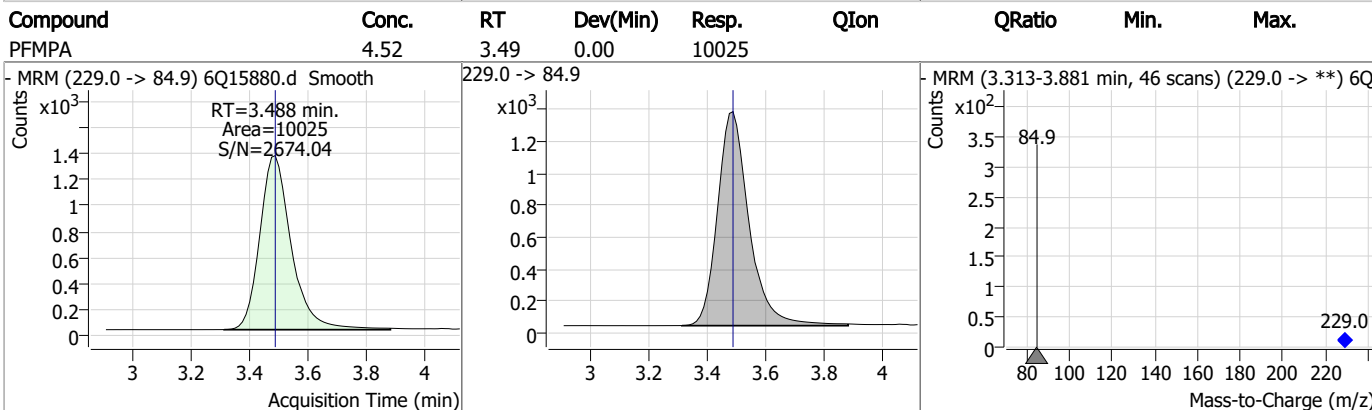
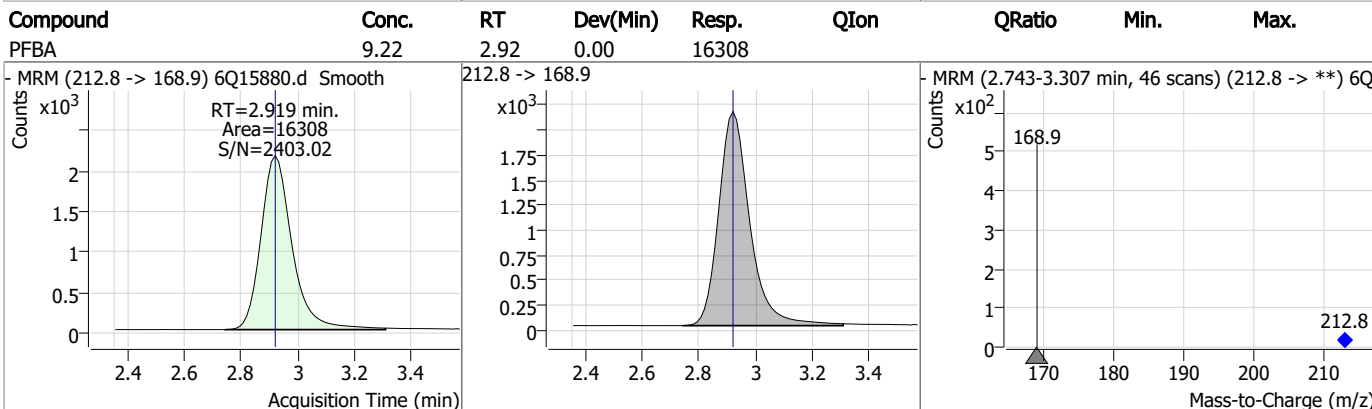
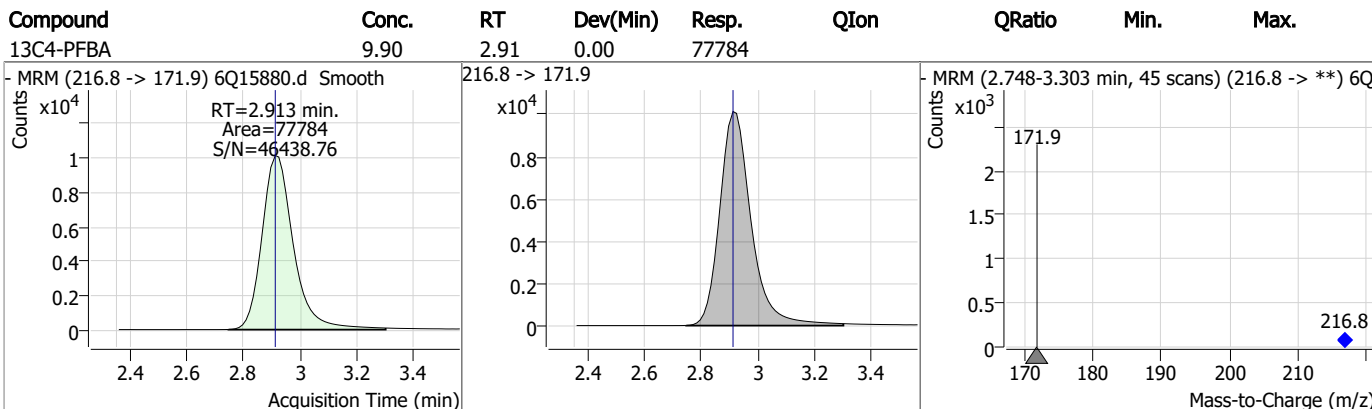
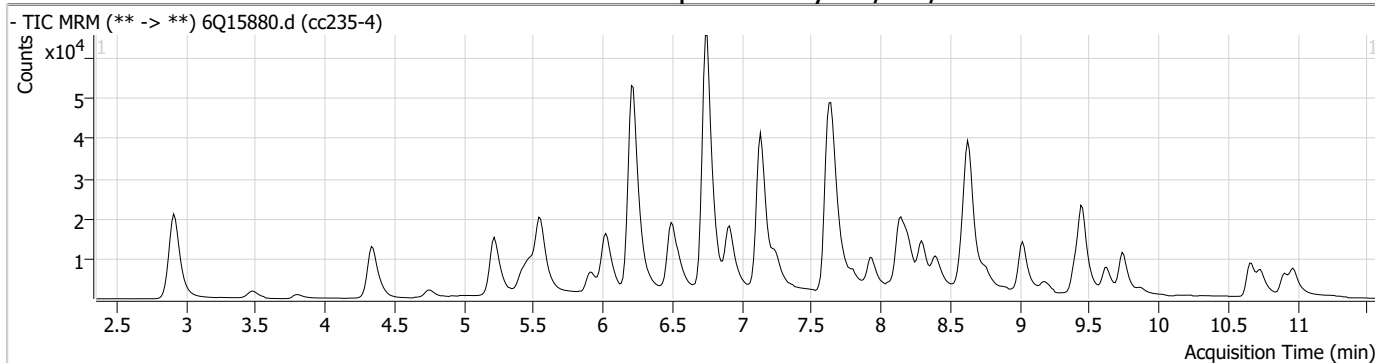
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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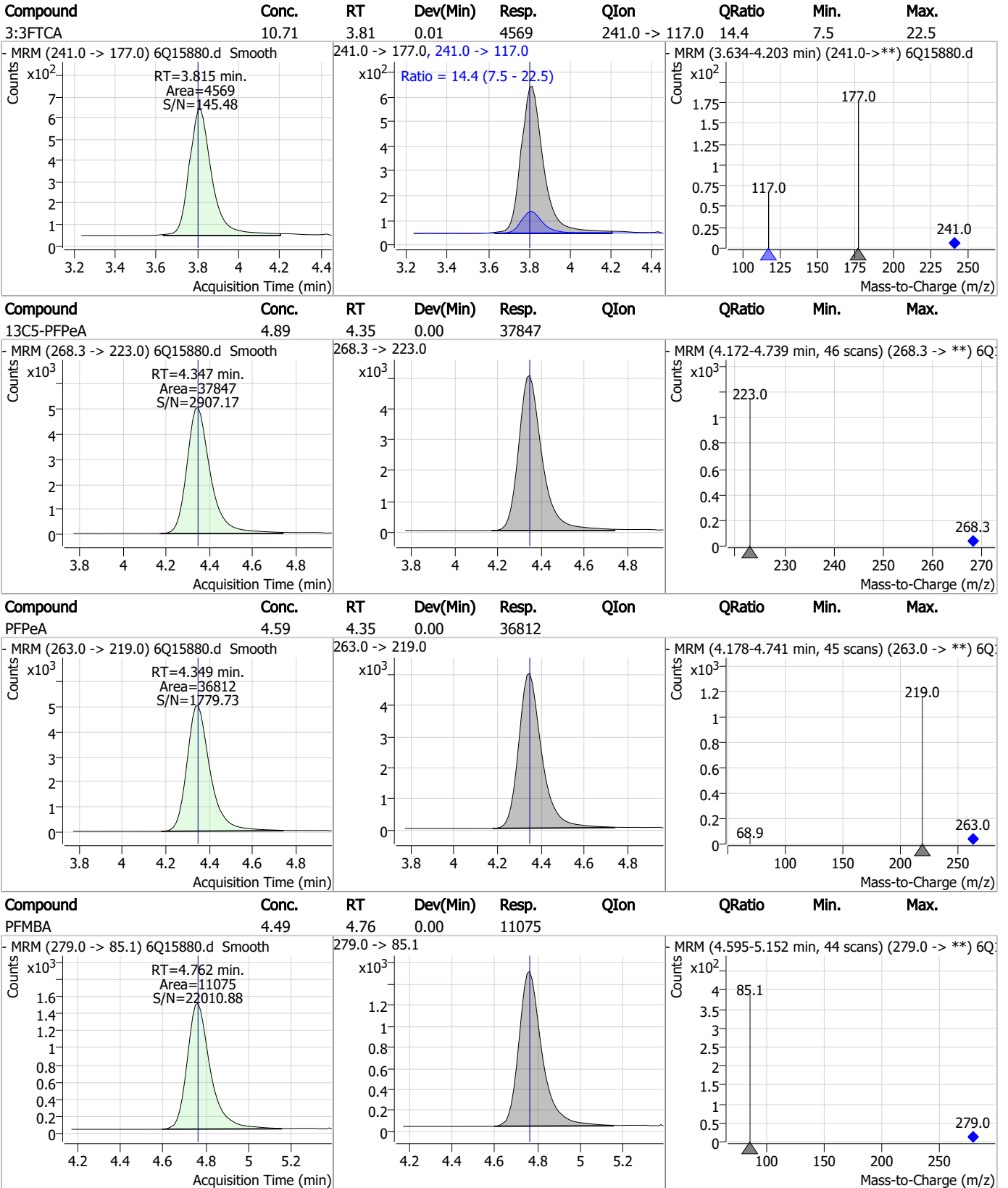
7.7.18

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

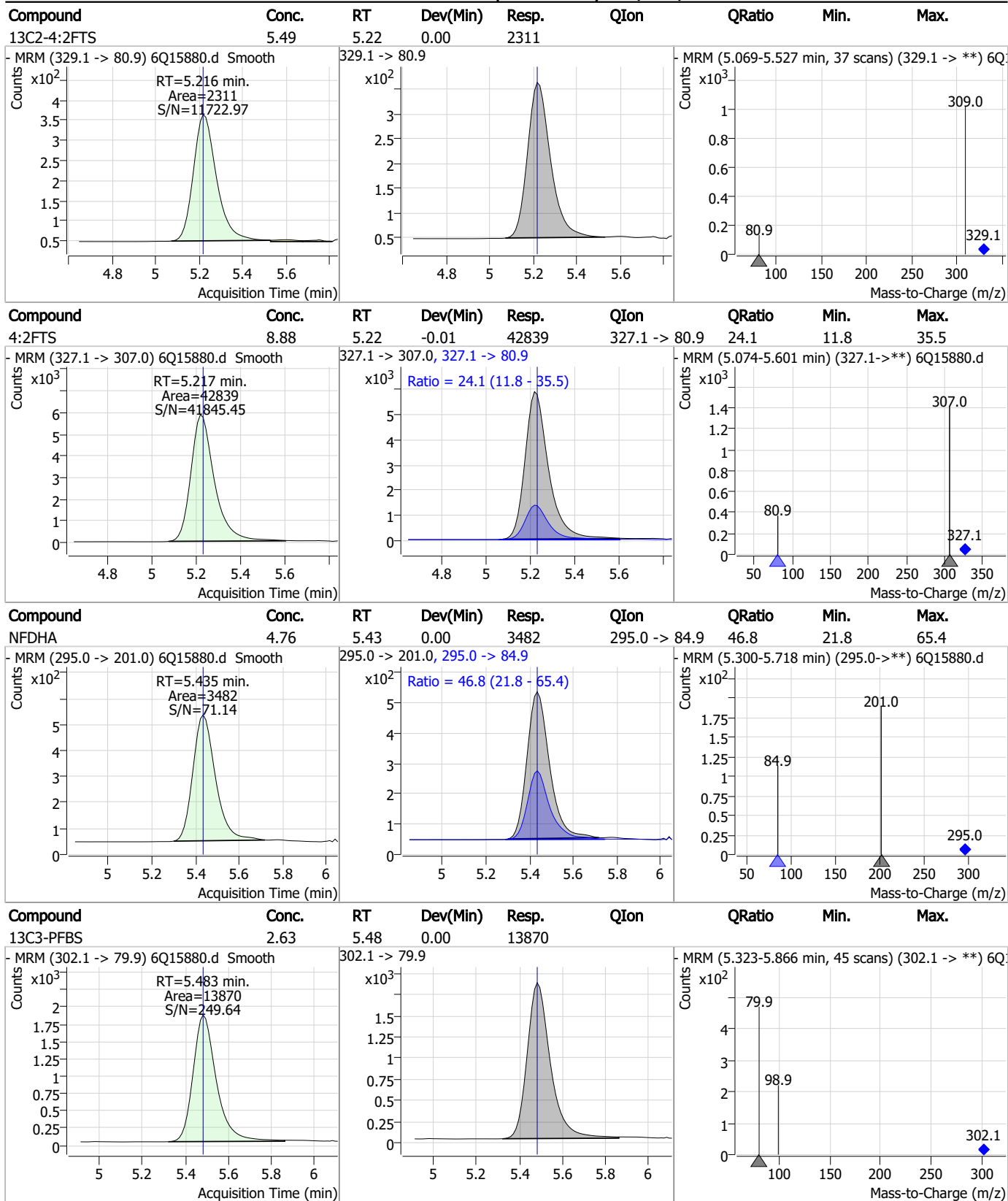


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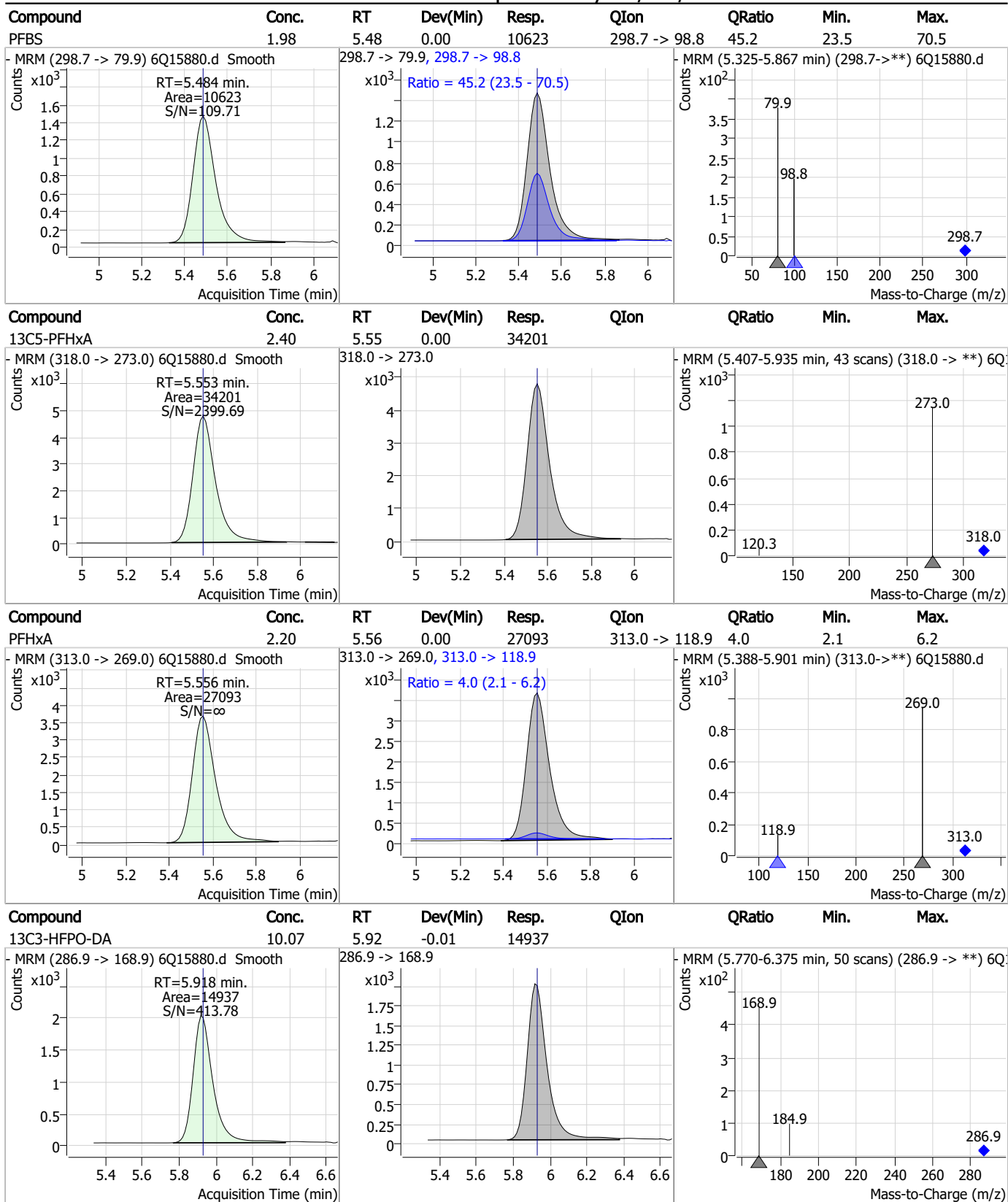


Perfluorinated Compounds by LC/MS/MS



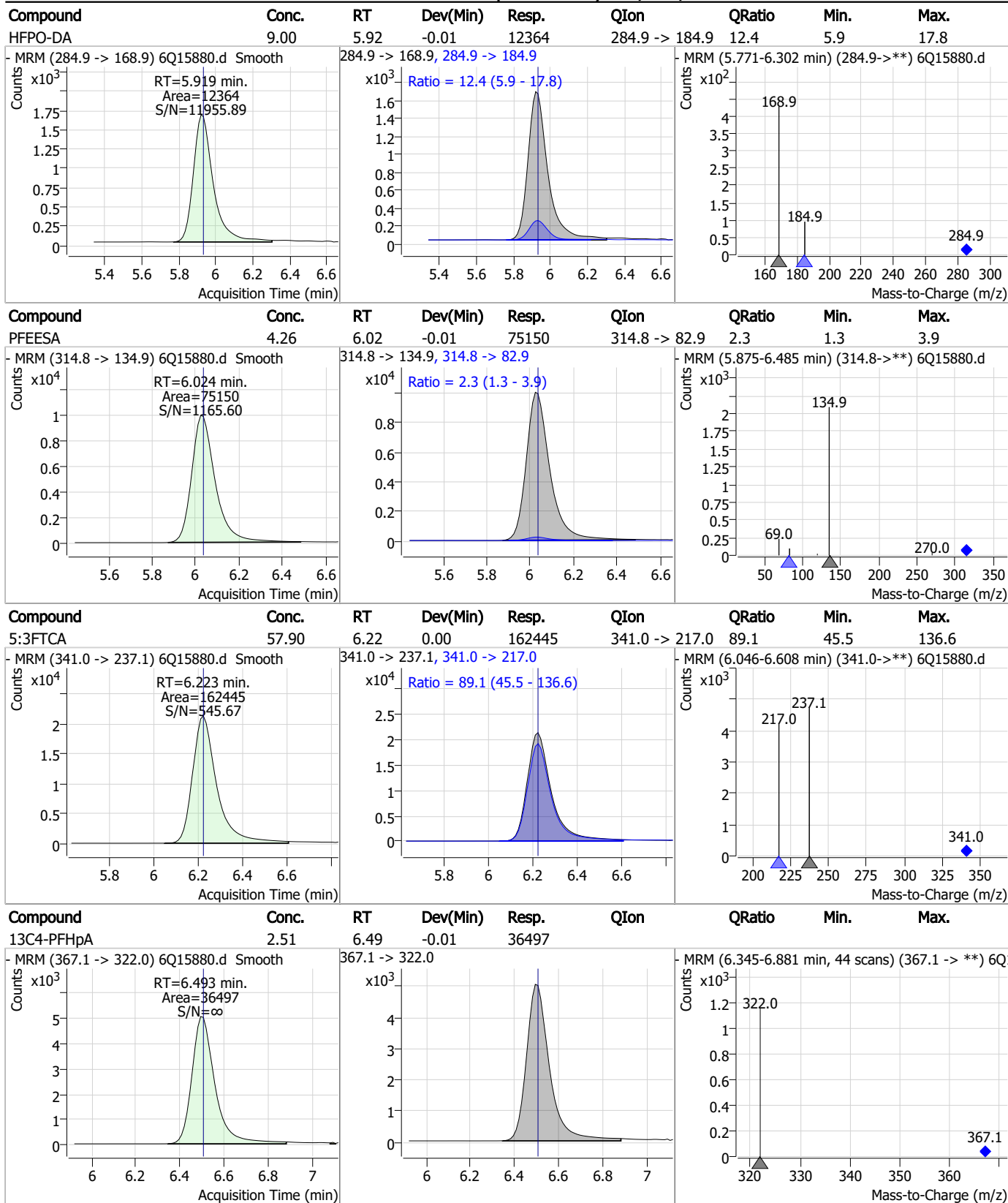
7.7.18
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Perfluorinated Compounds by LC/MS/MS



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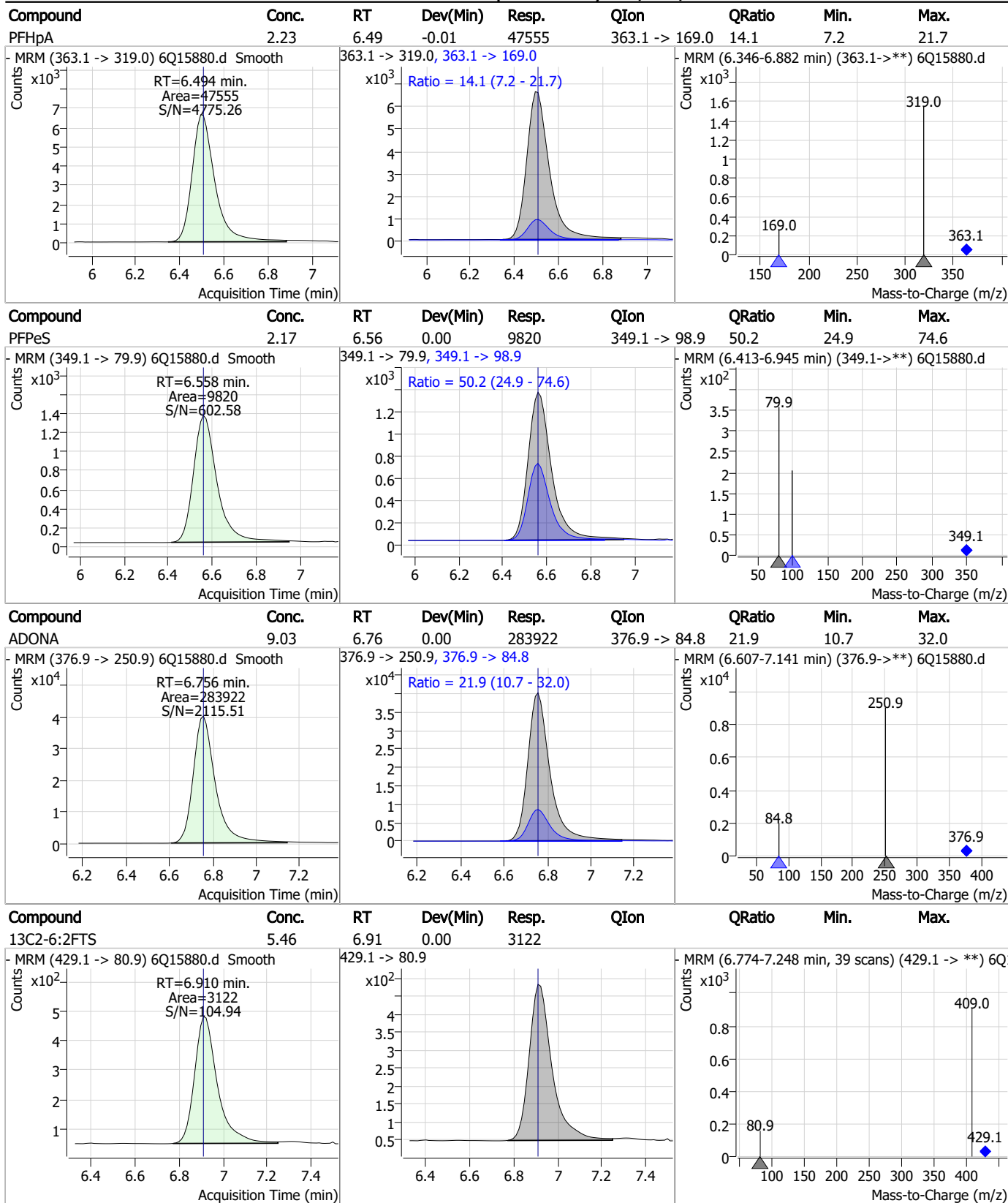
Perfluorinated Compounds by LC/MS/MS



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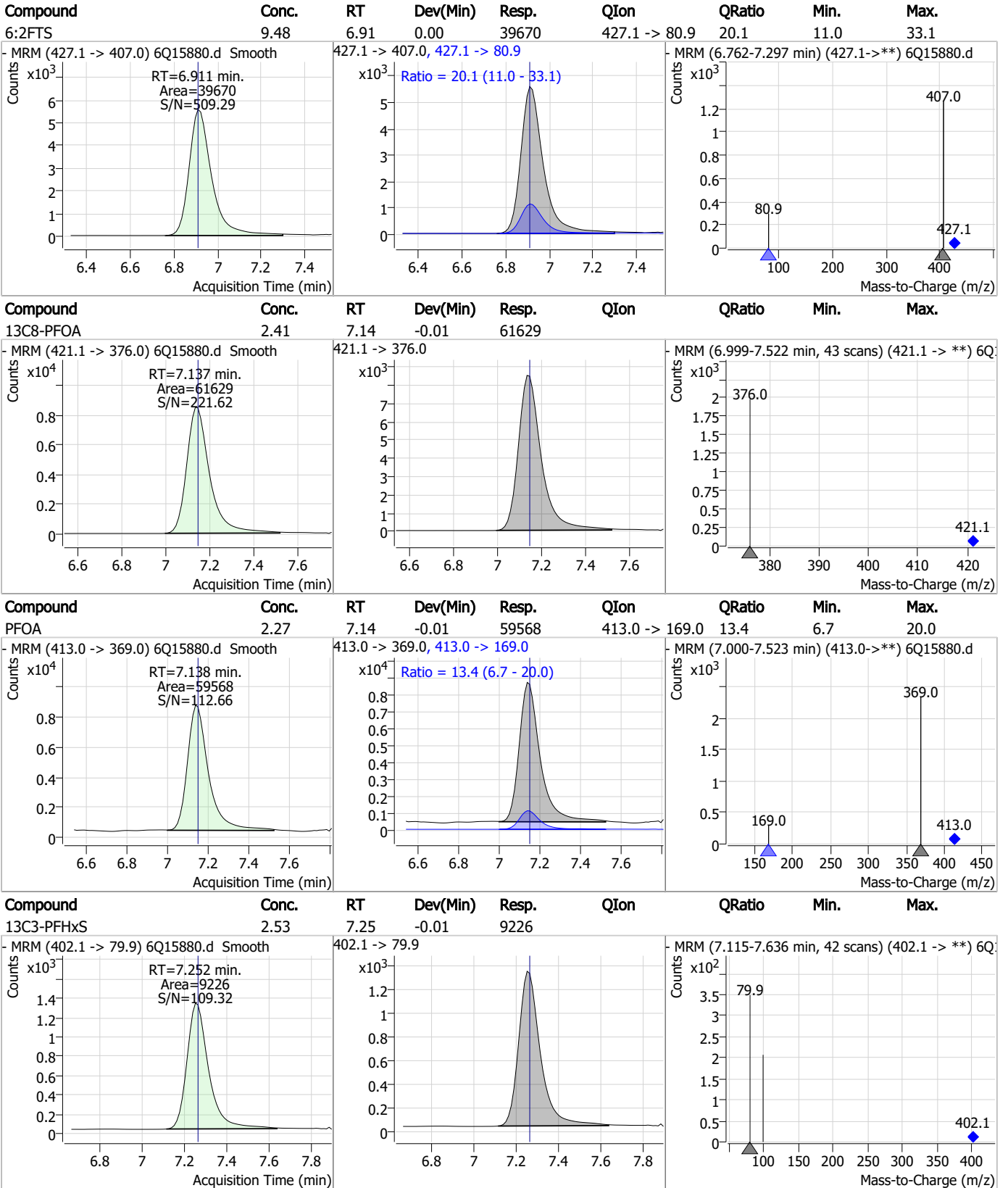
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Perfluorinated Compounds by LC/MS/MS



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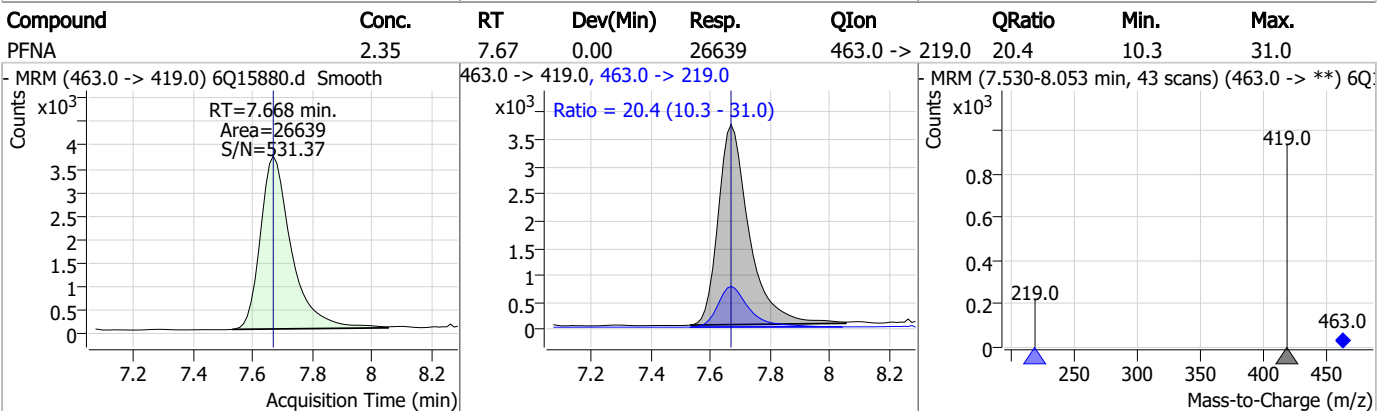
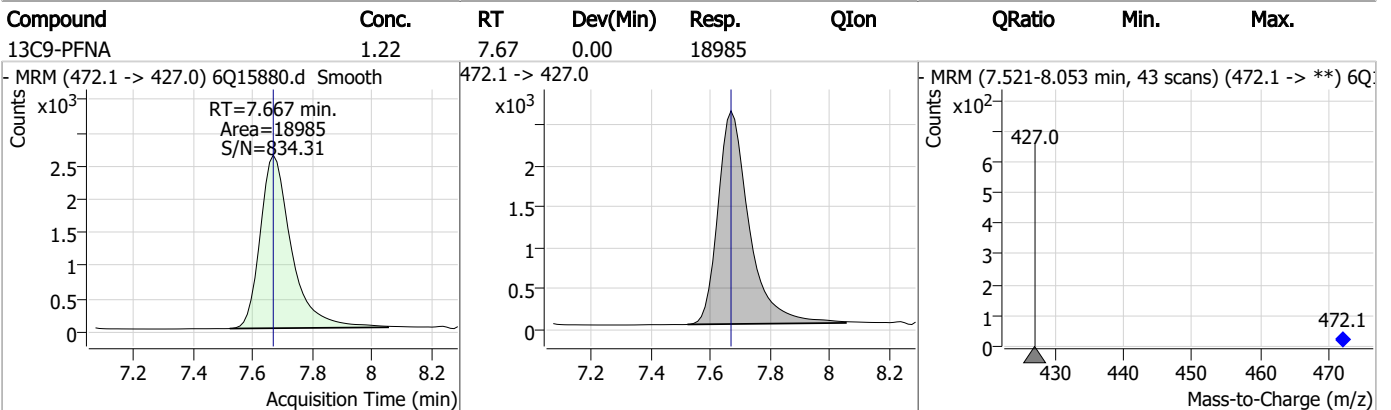
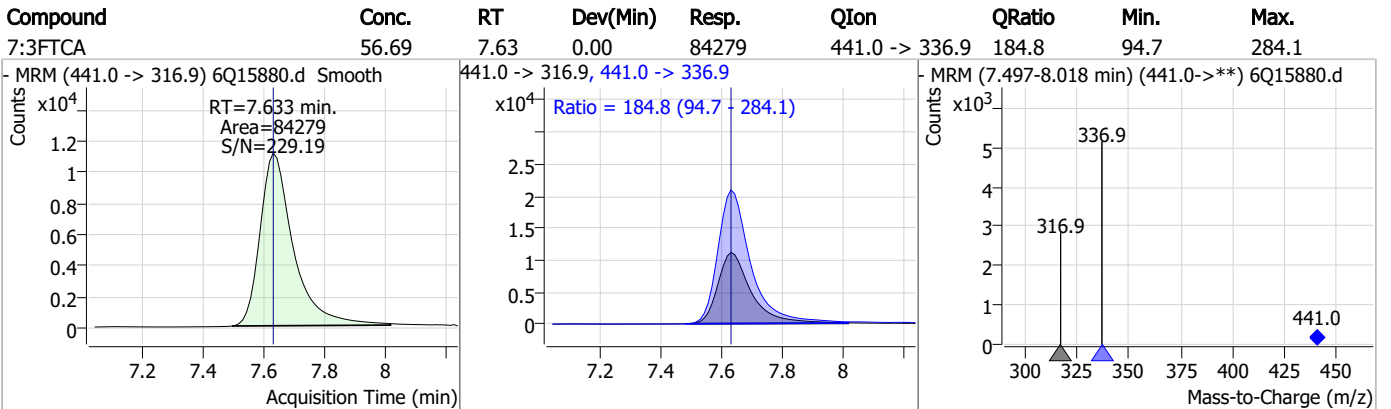
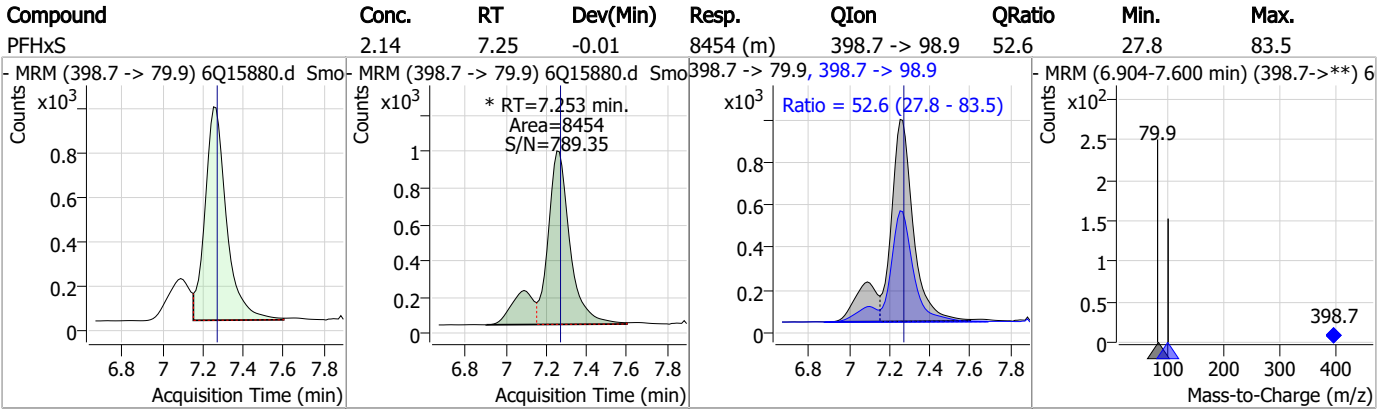
Perfluorinated Compounds by LC/MS/MS



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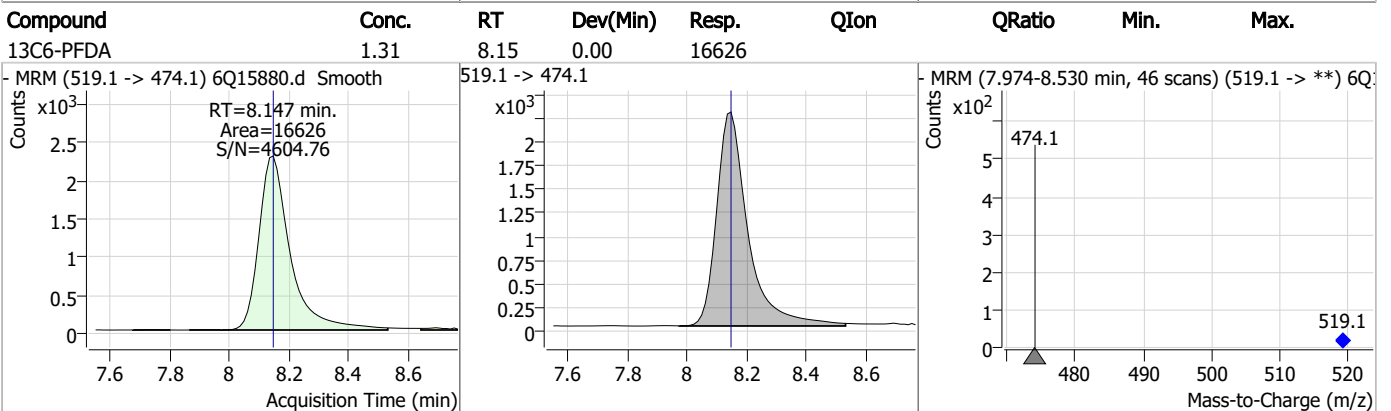
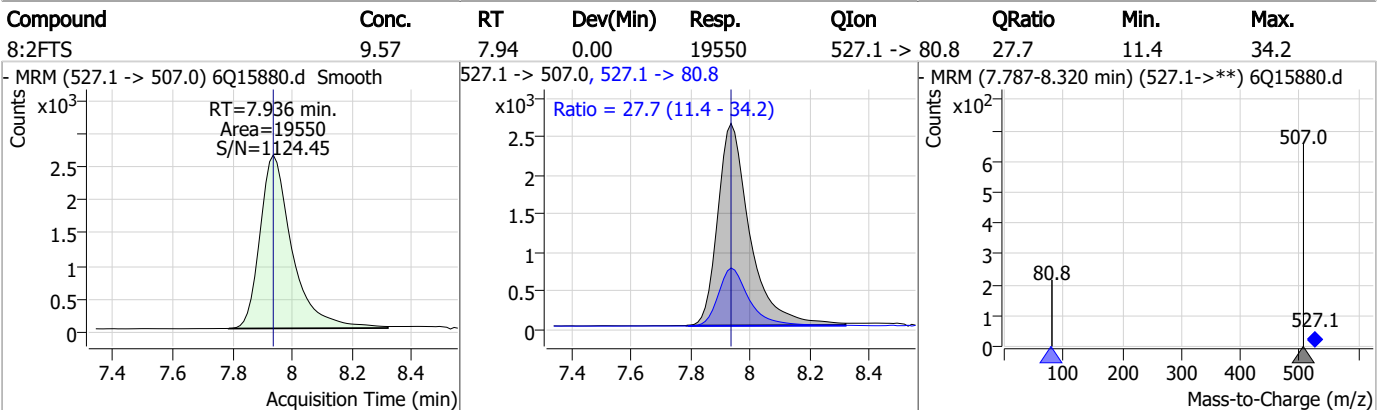
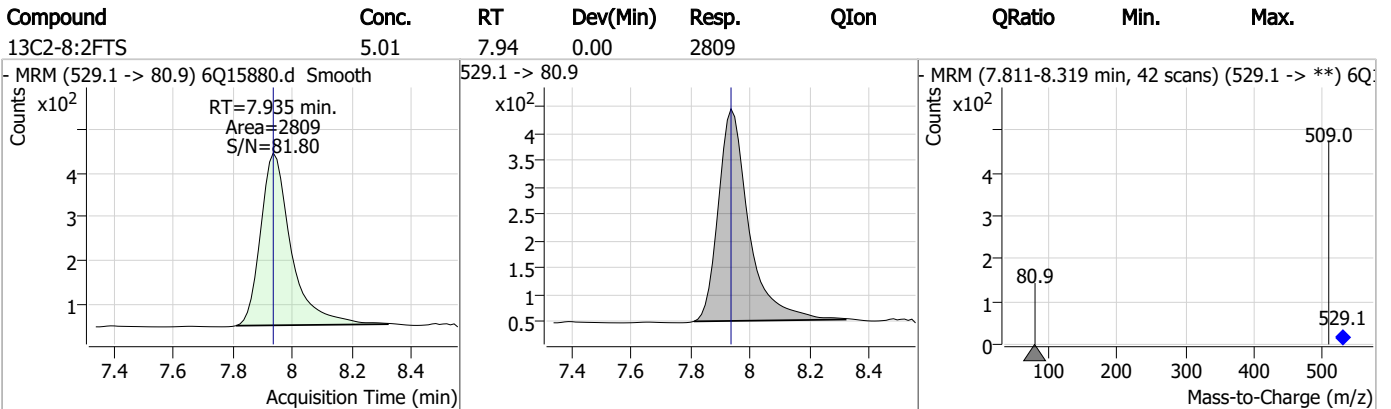
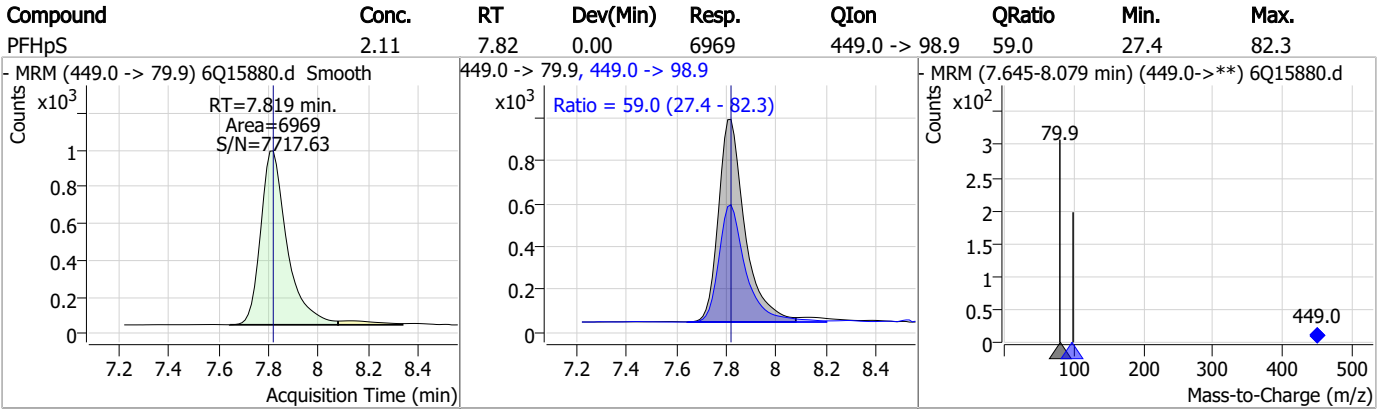


Perfluorinated Compounds by LC/MS/MS



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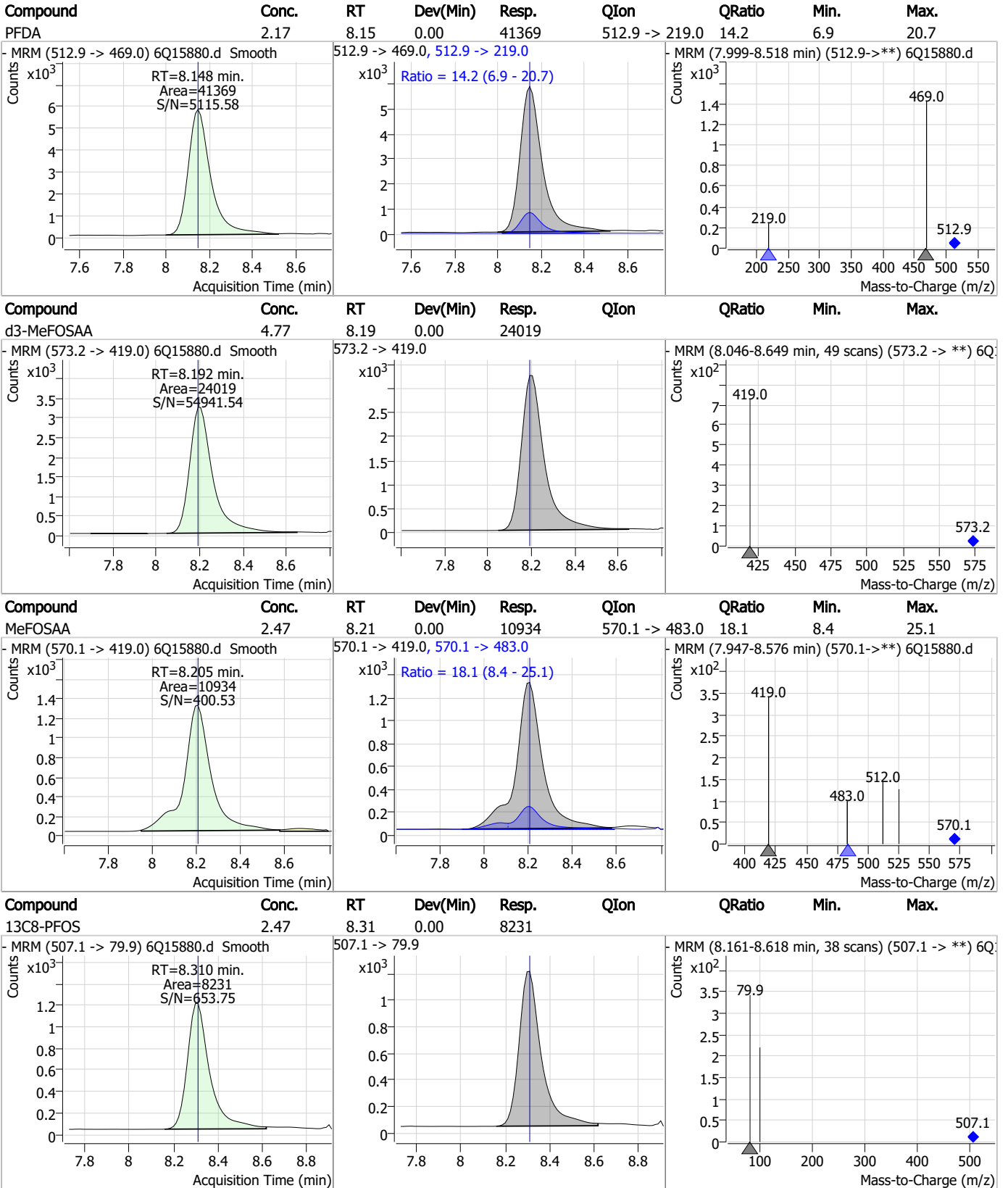
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

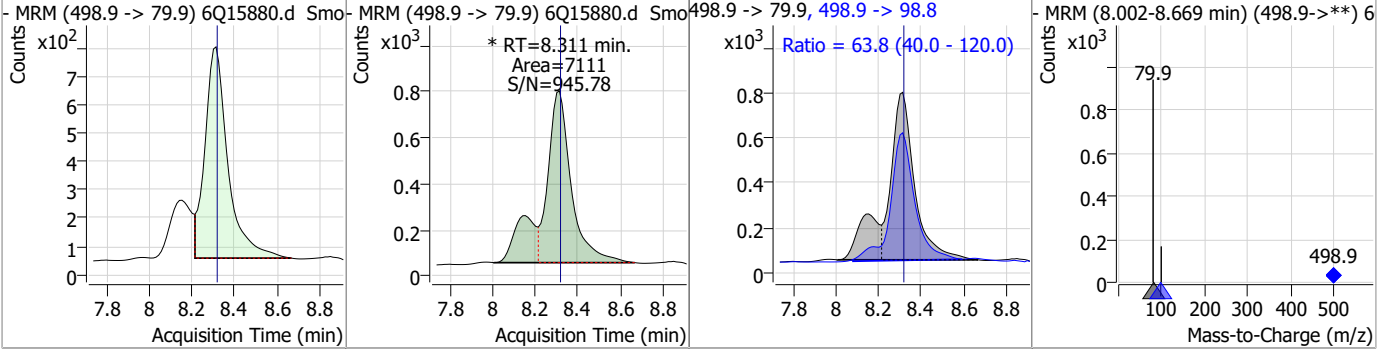


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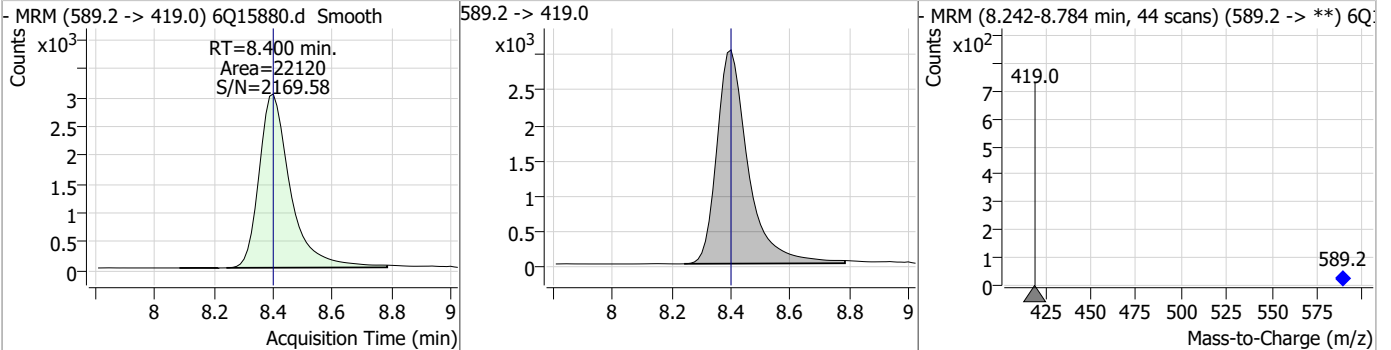


Perfluorinated Compounds by LC/MS/MS

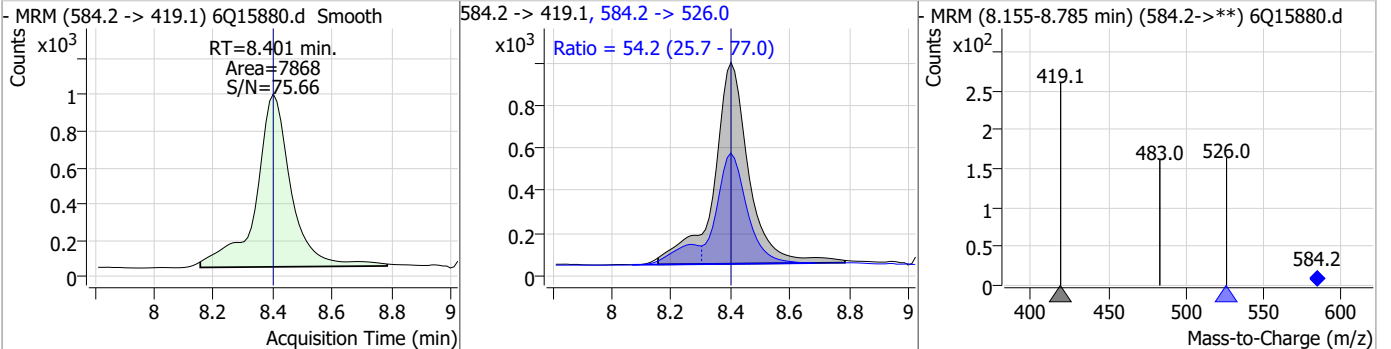
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.06	8.31	0.00	7111 (m)	498.9 -> 98.8	63.8	40.0	120.0



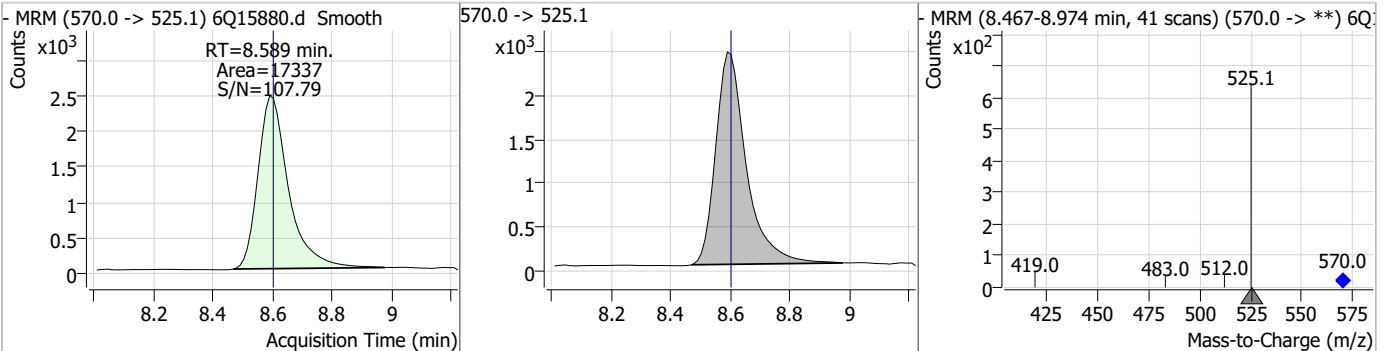
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.02	8.40	0.00	22120				



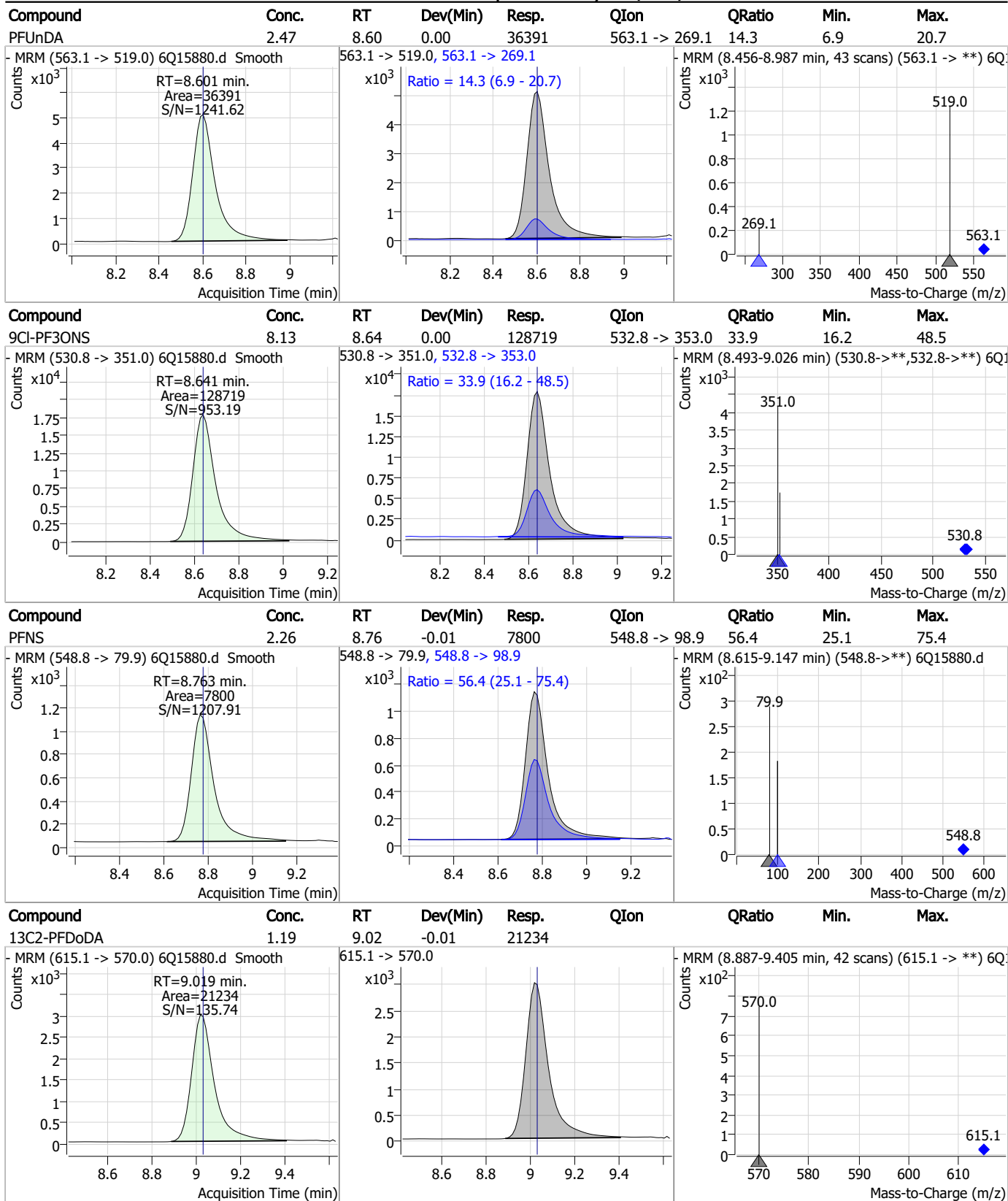
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.31	8.40	0.00	7868	584.2 -> 526.0	54.2	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.59	-0.01	17337				

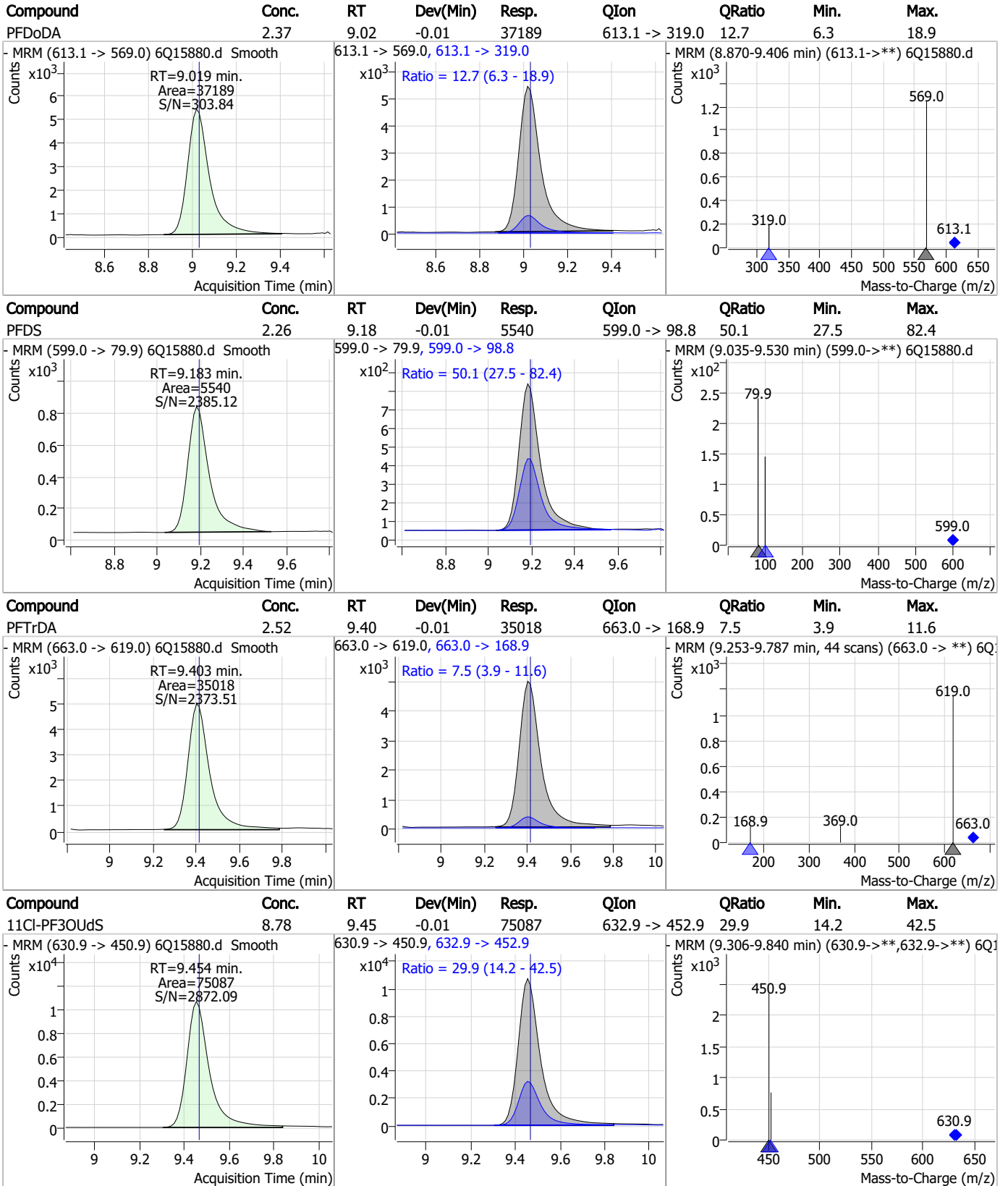


Perfluorinated Compounds by LC/MS/MS



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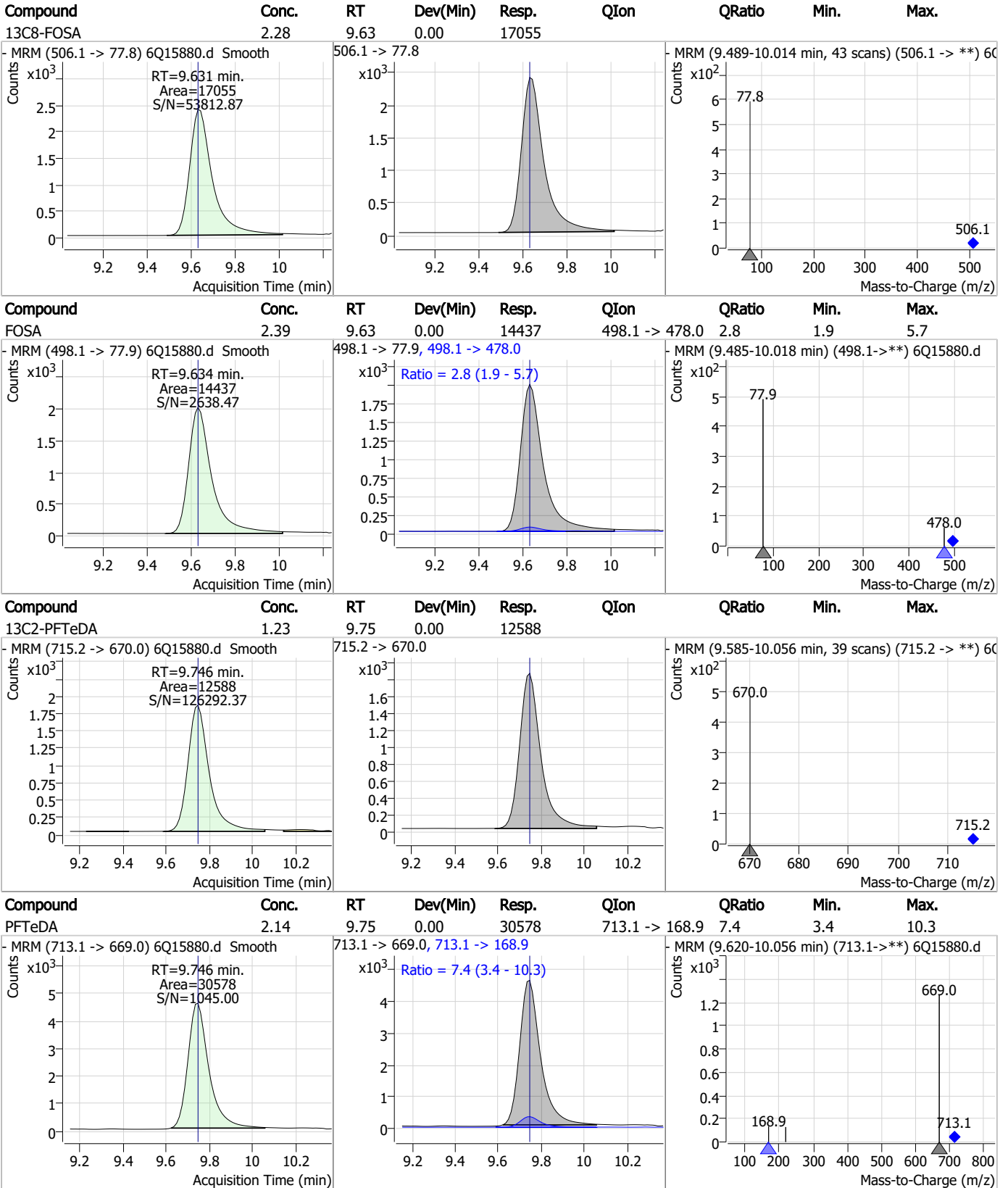
Perfluorinated Compounds by LC/MS/MS



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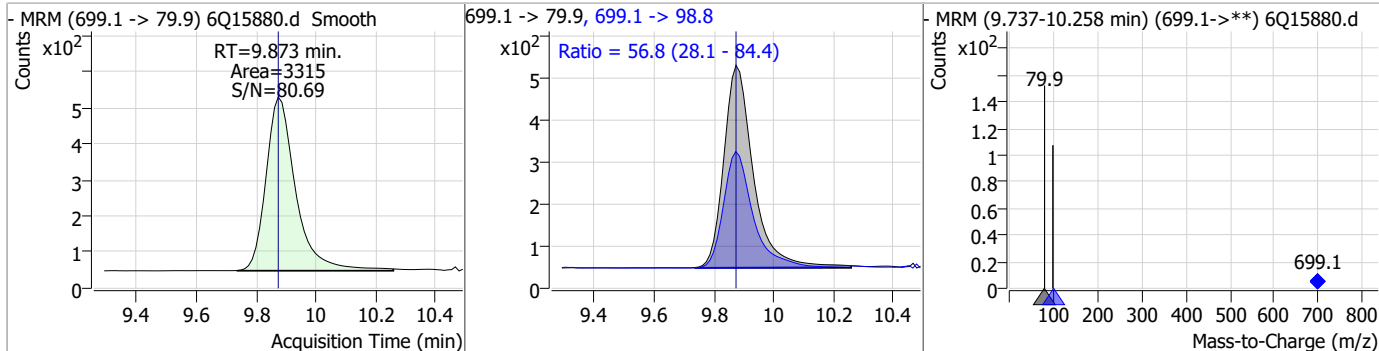
Perfluorinated Compounds by LC/MS/MS



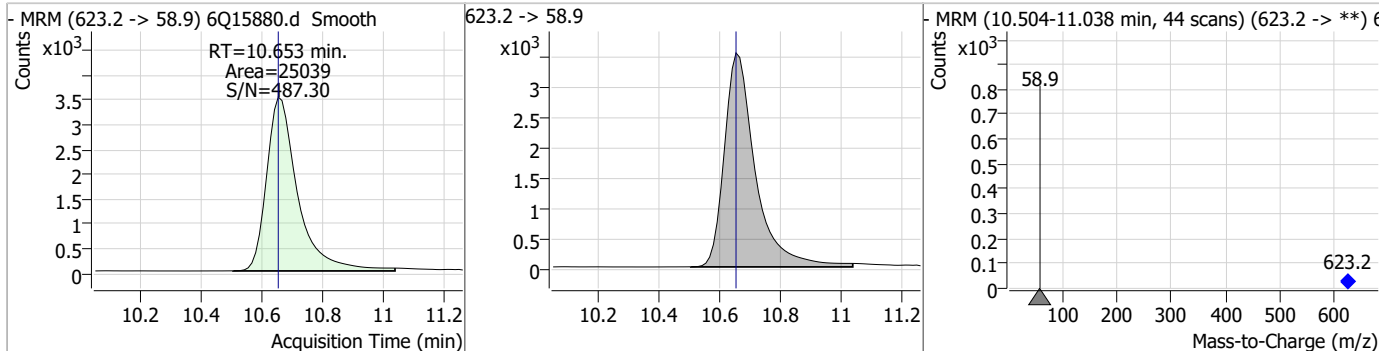
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Perfluorinated Compounds by LC/MS/MS

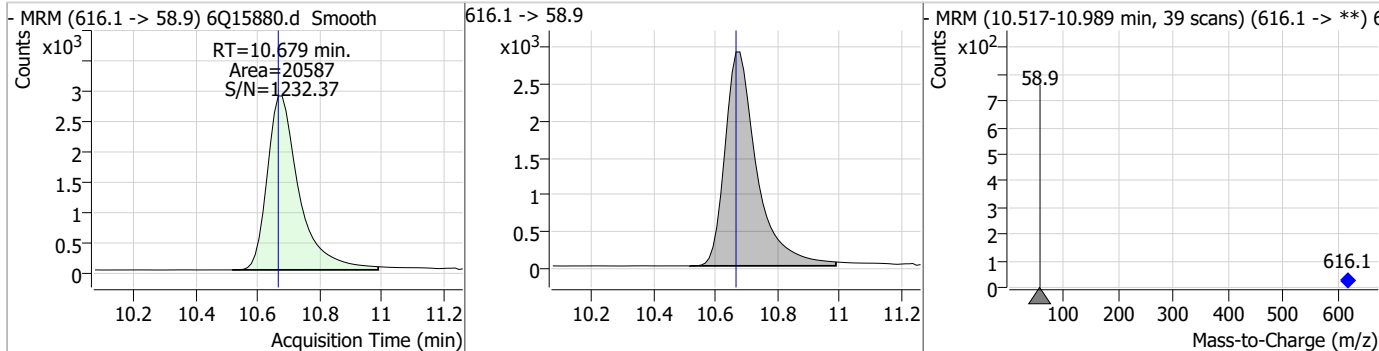
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.24	9.87	0.00	3315	699.1 -> 98.8	56.8	28.1	84.4



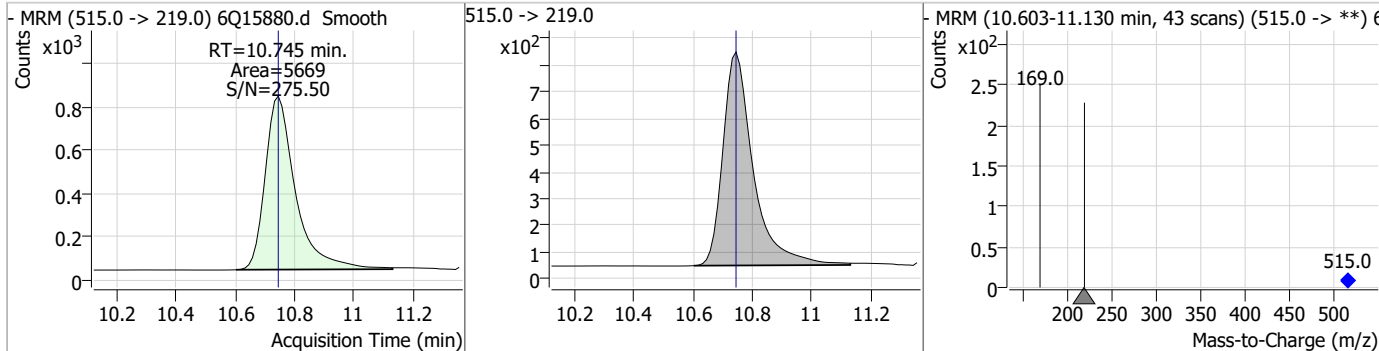
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.33	10.65	0.00	25039				



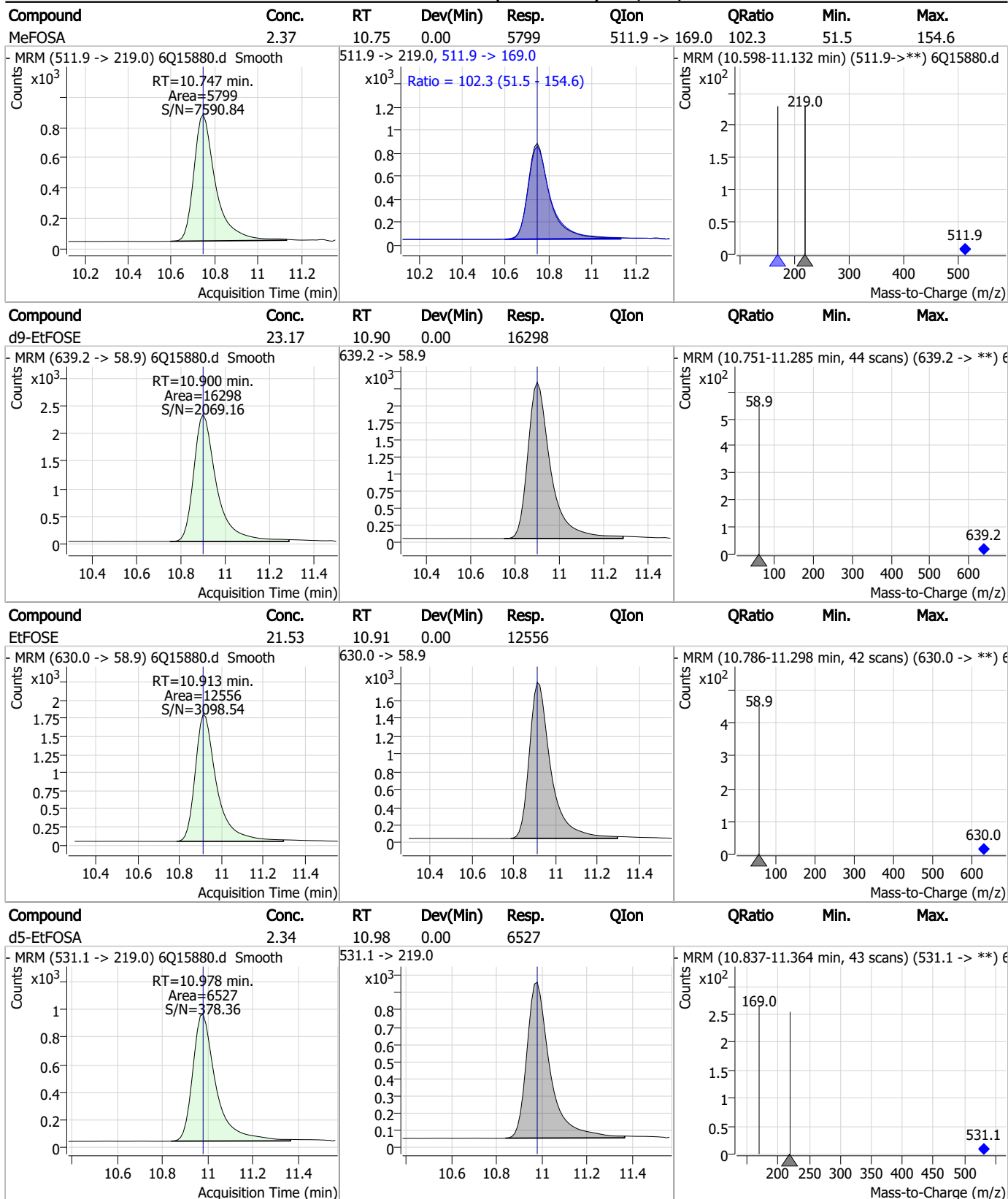
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	22.77	10.68	0.01	20587				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.28	10.75	0.00	5669				



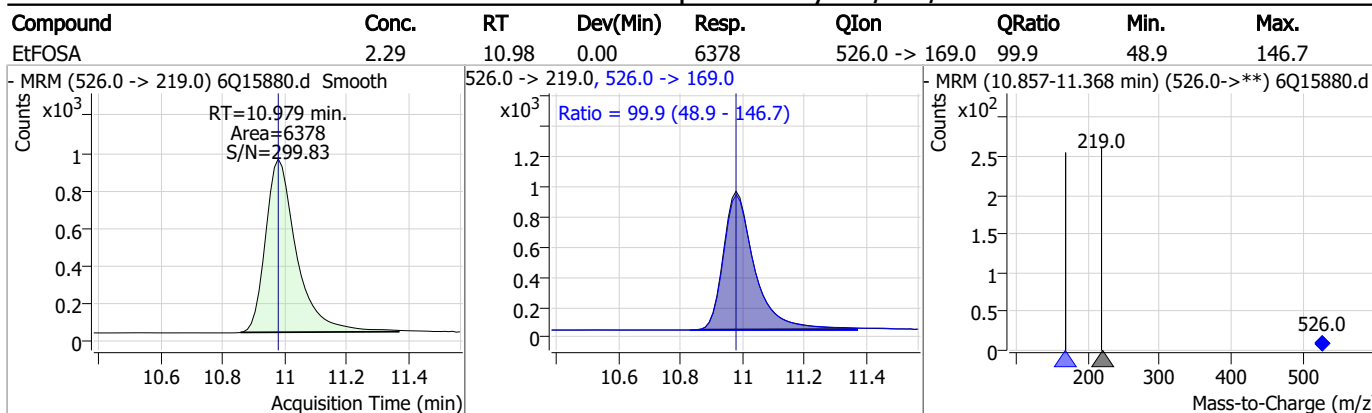
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15880.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/31/23 11:29 Supervisor approved: 03/31/23 16:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q15889.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 3/31/2023 1:35:46 PM
 Sample Name : cc235-1.0LL
 Vial : P1-A2
 DA Method File : 1633_032923_S6Q235.quantmethod.xml
 Batch Name : s6q237.batch.bin
 Sample Information : OP96085,S6Q237,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	72105	10.00 µg/L	0.000
M5-PFPeA	4.334	268.3 -> 223.0	34969	5.00 µg/L	-0.012
M5-PFHxA	5.553	318.0 -> 273.0	32598	2.50 µg/L	0.000
M4-PFHpA	6.493	367.1 -> 322.0	31802	2.50 µg/L	-0.012
M8-PFOA	7.149	421.1 -> 376.0	58620	2.50 µg/L	0.000
M9-PFNA	7.667	472.1 -> 427.0	17605	1.25 µg/L	0.000
M6-PFDA	8.147	519.1 -> 474.1	14730	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	17416	1.25 µg/L	0.000
M2-PFDoDA	9.019	615.1 -> 570.0	19462	1.25 µg/L	-0.013
M2-PFTeDA	9.733	715.2 -> 670.0	11908	1.25 µg/L	-0.012
M8-FOSA	9.631	506.1 -> 77.8	15925	2.50 µg/L	0.000
M3-PFBS	5.483	302.1 -> 79.9	12850	2.50 µg/L	0.000
M3-PFHxS	7.252	402.1 -> 79.9	8610	2.50 µg/L	-0.012
M8-PFOS	8.310	507.1 -> 79.9	7700	2.50 µg/L	0.000
M2-4:2FTS	5.216	329.1 -> 80.9	2263	5.00 µg/L	0.000
M2-6:2FTS	6.910	429.1 -> 80.9	2913	5.00 µg/L	0.000
M2-8:2FTS	7.935	529.1 -> 80.9	2827	5.00 µg/L	0.000
M3-MeFOSAA	8.204	573.2 -> 419.0	23547	5.00 µg/L	0.012
M3-HFPO-DA	5.918	286.9 -> 168.9	13905	10.00 µg/L	-0.013
M5-EtFOSAA	8.400	589.2 -> 419.0	19963	5.00 µg/L	0.000
M7-MeFOSE	10.653	623.2 -> 58.9	22868	25.00 µg/L	0.000
M9-EtFOSE	10.900	639.2 -> 58.9	14517	25.00 µg/L	0.000
M5-EtFOSA	10.978	531.1 -> 219.0	5985	2.50 µg/L	0.000
M3-MeFOSA	10.745	515.0 -> 219.0	5093	2.50 µg/L	0.000
13C4-PFOS	8.311	502.8 -> 79.9	8507	2.50 µg/L	0.000
13C3-PFBA	2.916	216.0 -> 172.0	31935	5.00 µg/L	0.000
18O2-PFHxS	7.264	403.0 -> 83.9	5809	2.50 µg/L	0.000
13C4-PFOA	7.137	417.1 -> 372.0	68112	2.50 µg/L	0.000
13C2-PFDA	8.147	515.1 -> 470.1	19721	1.25 µg/L	0.000
13C5-PFNA	7.668	468.0 -> 423.0	18112	1.25 µg/L	0.000
13C2-PFHxA	5.553	315.1 -> 270.0	30538	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.216	329.1 -> 80.9	2263	5.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.6%		
13C2-6:2FTS	6.910	429.1 -> 80.9	2913	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.4%		
13C2-8:2FTS	7.935	529.1 -> 80.9	2827	5.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C2-PFDoDA	9.019	615.1 -> 570.0	19462	1.21 µg/L	-0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFTeDA	9.733	715.2 -> 670.0	11908	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C3-PFBS	5.483	302.1 -> 79.9	12850	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.6%		
13C3-PFHxS	7.252	402.1 -> 79.9	8610	2.62 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 = 104.9%		
13C4-PFBA	2.913	216.8 -> 171.9	72105	9.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C4-PFHpA	6.493	367.1 -> 322.0	31802	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C5-PFHxA	5.553	318.0 -> 273.0	32598	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C5-PFPeA	4.334	268.3 -> 223.0	34969	5.09 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C6-PFDA	8.147	519.1 -> 474.1	14730	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C7-PFUnDA	8.601	570.0 -> 525.1	17416	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C8-FOSA	9.631	506.1 -> 77.8	15925	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C8-PFOA	7.149	421.1 -> 376.0	58620	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C8-PFOS	8.310	507.1 -> 79.9	7700	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C9-PFNA	7.667	472.1 -> 427.0	17605	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.5%		
d3-MeFOSAA	8.204	573.2 -> 419.0	23547	5.61 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C3-HFPO-DA	5.918	286.9 -> 168.9	13905	10.58 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
d3-MeFOSA	10.745	515.0 -> 219.0	5093	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
d5-EtFOSAA	8.400	589.2 -> 419.0	19963	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
d7-MeFOSE	10.653	623.2 -> 58.9	22868	25.57 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.3%		
d9-EtFOSE	10.900	639.2 -> 58.9	14517	24.77 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
d5-EtFOSA	10.978	531.1 -> 219.0	5985	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.9%		
Target Compounds					QValue
4:2FTS	5.217	327.1 -> 307.0	3893	0.82 µg/L	100
		327.1 -> 80.9	913		
6:2FTS	6.911	427.1 -> 407.0	3188	0.82 µg/L	96
		427.1 -> 80.9	759		
8:2FTS	7.936	527.1 -> 507.0	1781	0.87 µg/L	95
		527.1 -> 80.8	448		
EtFOSAA	8.401	584.2 -> 419.1	671	0.22 µg/L	m 86
		584.2 -> 526.0	412		
FOSA	9.634	498.1 -> 77.9	1331	0.24 µg/L	100
		498.1 -> 478.0	53		
MeFOSAA	8.205	570.1 -> 419.0	898	0.21 µg/L	82
		570.1 -> 483.0	219		
PFBA	2.919	212.8 -> 168.9	1354	0.83 µg/L	100
PFBS	5.484	298.7 -> 79.9	917	0.18 µg/L	96
		298.7 -> 98.8	454		
PFDA	8.148	512.9 -> 469.0	3550	0.21 µg/L	98
		512.9 -> 219.0	518		
PFDODA	9.019	613.1 -> 569.0	3468	0.24 µg/L	100
		613.1 -> 319.0	443		
PFDS	9.183	599.0 -> 79.9	454	0.20 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.494	599.0 -> 98.8	249	0.22	µg/L	97
		363.1 -> 319.0	4106			
PFHpS	7.819	363.1 -> 169.0	646	0.19	µg/L	88
		449.0 -> 79.9	580			
PFHxA	5.543	449.0 -> 98.9	370	0.22	µg/L	99
		313.0 -> 269.0	2609			
PFHxS	7.253	313.0 -> 118.9	116	0.20	µg/L	m
		398.7 -> 79.9	726			
PFNA	7.668	398.7 -> 98.9	470	0.24	µg/L	87
		463.0 -> 419.0	2557			
PFNS	8.776	463.0 -> 219.0	376	0.20	µg/L	77
		548.8 -> 79.9	632			
PFOA	7.138	548.8 -> 98.9	417	0.22	µg/L	m
		413.0 -> 369.0	5416			
PFOS	8.311	413.0 -> 169.0	678	0.15	µg/L	83
		498.9 -> 79.9	489			
PFPeA	4.336	498.9 -> 98.8	462	0.41	µg/L	100
		263.0 -> 219.0	3049			
PFPeS	6.558	349.1 -> 79.9	928	0.22	µg/L	87
		349.1 -> 98.9	376			
PFTeDA	9.734	713.1 -> 669.0	2869	0.21	µg/L	98
		713.1 -> 168.9	215			
PFTrDA	9.403	663.0 -> 619.0	3088	0.24	µg/L	100
		663.0 -> 168.9	240			
PFUnDA	8.601	563.1 -> 519.0	3026	0.20	µg/L	100
		563.1 -> 269.1	413			
11CI-PF3OUdS	9.454	630.9 -> 450.9	6027	0.76	µg/L	97
		632.9 -> 452.9	1788			
9CI-PF3ONS	8.641	530.8 -> 351.0	10934	0.74	µg/L	89
		532.8 -> 353.0	4224			
ADONA	6.756	376.9 -> 250.9	21960	0.75	µg/L	97
		376.9 -> 84.8	5022			
HFPO-DA	5.919	284.9 -> 168.9	956	0.75	µg/L	97
		284.9 -> 184.9	125			
3:3FTCA	3.802	241.0 -> 177.0	366	0.93	µg/L	98
		241.0 -> 117.0	57			
5:3FTCA	6.223	341.0 -> 237.1	13635	5.10	µg/L	96
		341.0 -> 217.0	12983			
7:3FTCA	7.633	441.0 -> 316.9	8799	6.21	µg/L	88
		441.0 -> 336.9	15055			
EtFOSA	10.979	526.0 -> 219.0	609	0.24	µg/L	96
		526.0 -> 169.0	573			
EtFOSE	10.913	630.0 -> 58.9	1287	2.48	µg/L	100
		511.9 -> 219.0	542			
MeFOSA	10.747	511.9 -> 169.0	580	0.25	µg/L	96
		616.1 -> 58.9	1890			
MeFOSE	10.666	699.1 -> 79.9	308	2.29	µg/L	100
		699.1 -> 98.8	195			
PFDoDS	9.873	295.0 -> 201.0	310	0.44	µg/L	82
		295.0 -> 84.9	99			
NFDHA	5.435	279.0 -> 85.1	893	0.39	µg/L	100
		229.0 -> 84.9	868			
PFMBA	4.750	314.8 -> 134.9	6388	0.42	µg/L	100
		314.8 -> 82.9	170			
PFMPA	3.476			0.38	µg/L	100
PFEESA	6.024					

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

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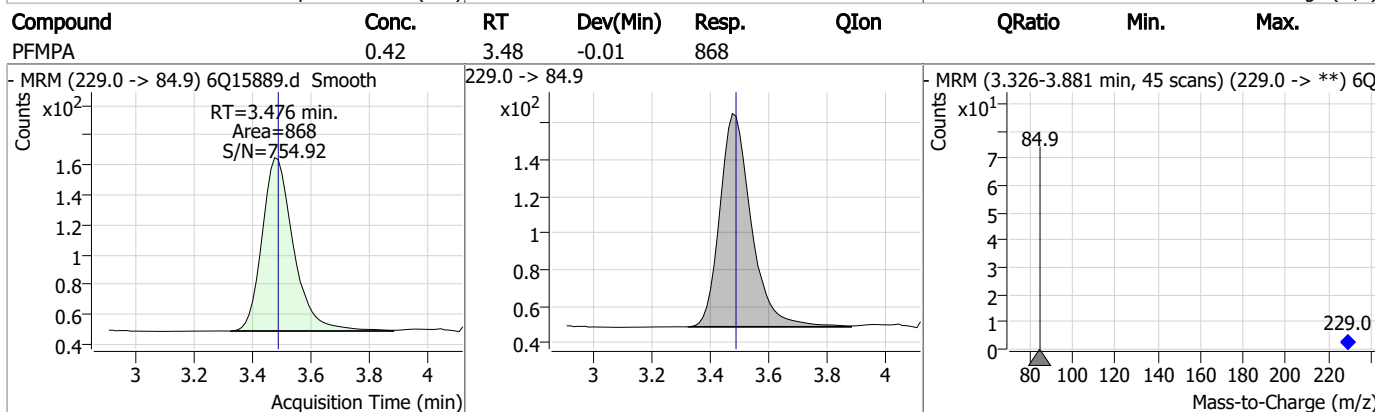
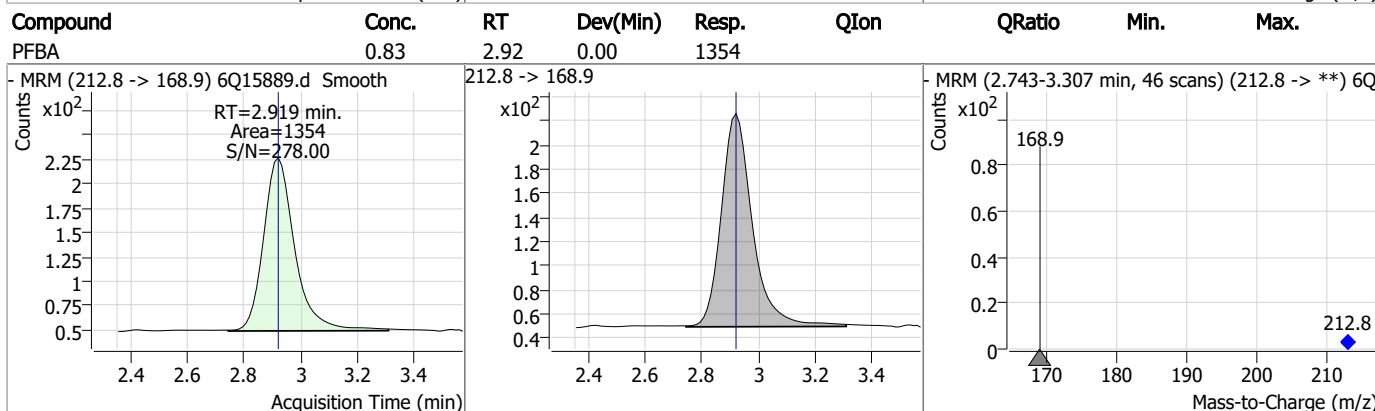
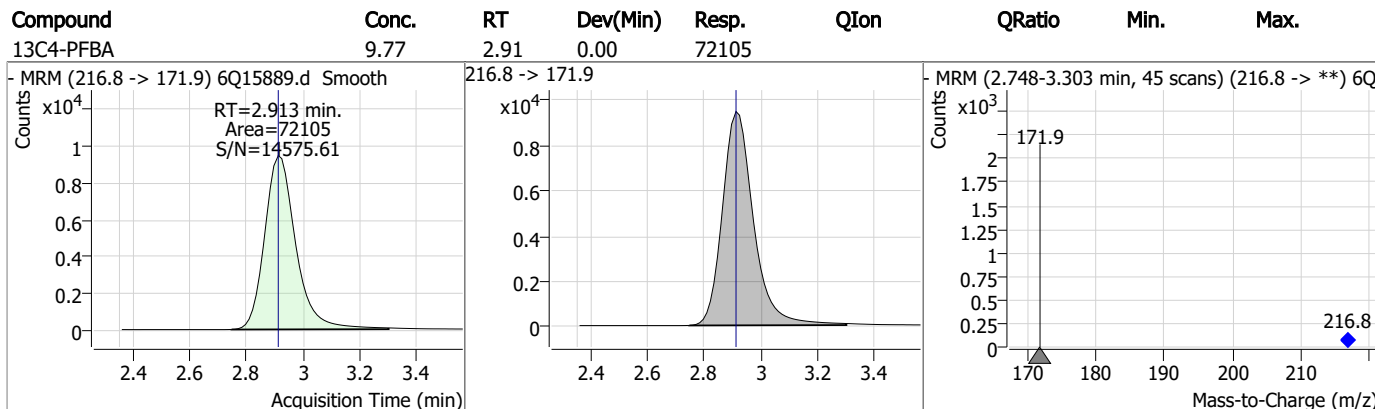
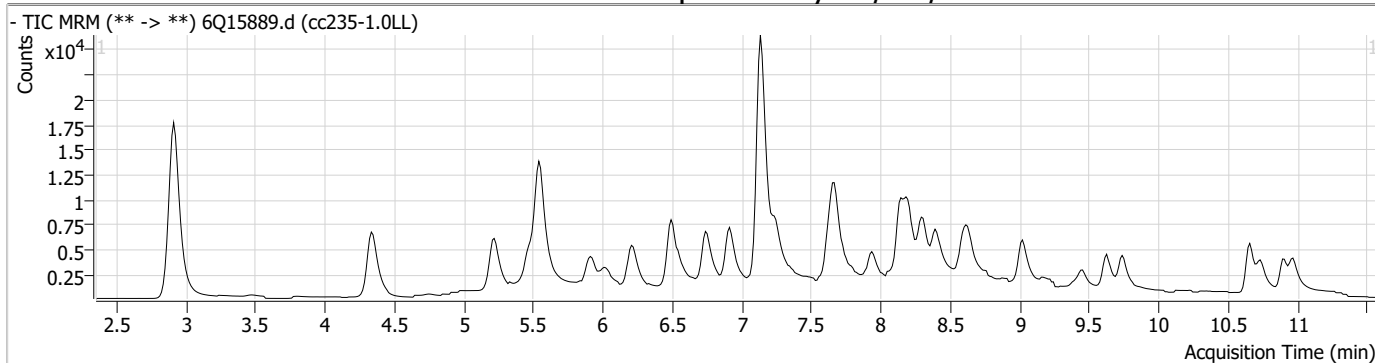
Perfluorinated Compounds by LC/MS/MS

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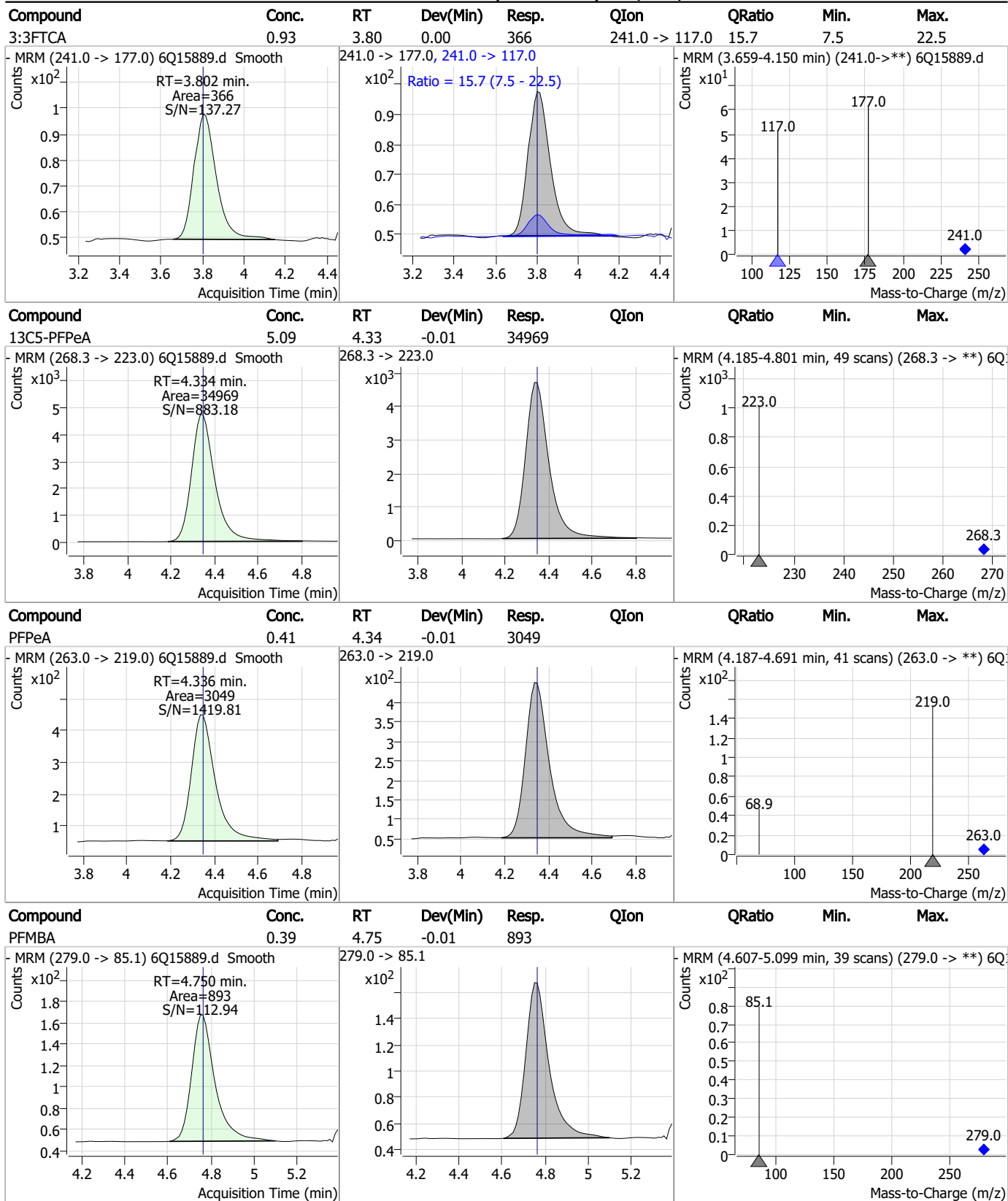
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Perfluorinated Compounds by LC/MS/MS

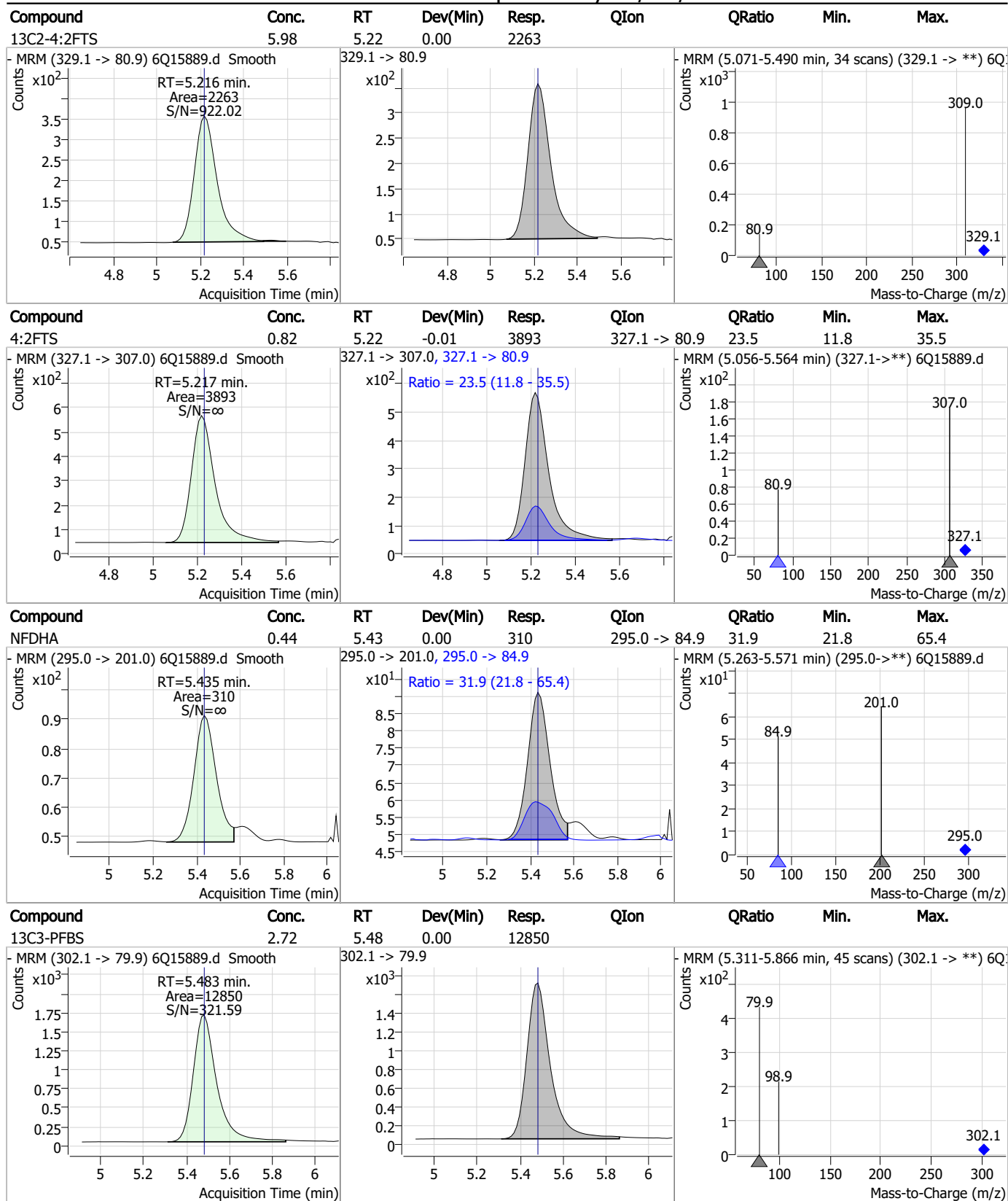


Perfluorinated Compounds by LC/MS/MS



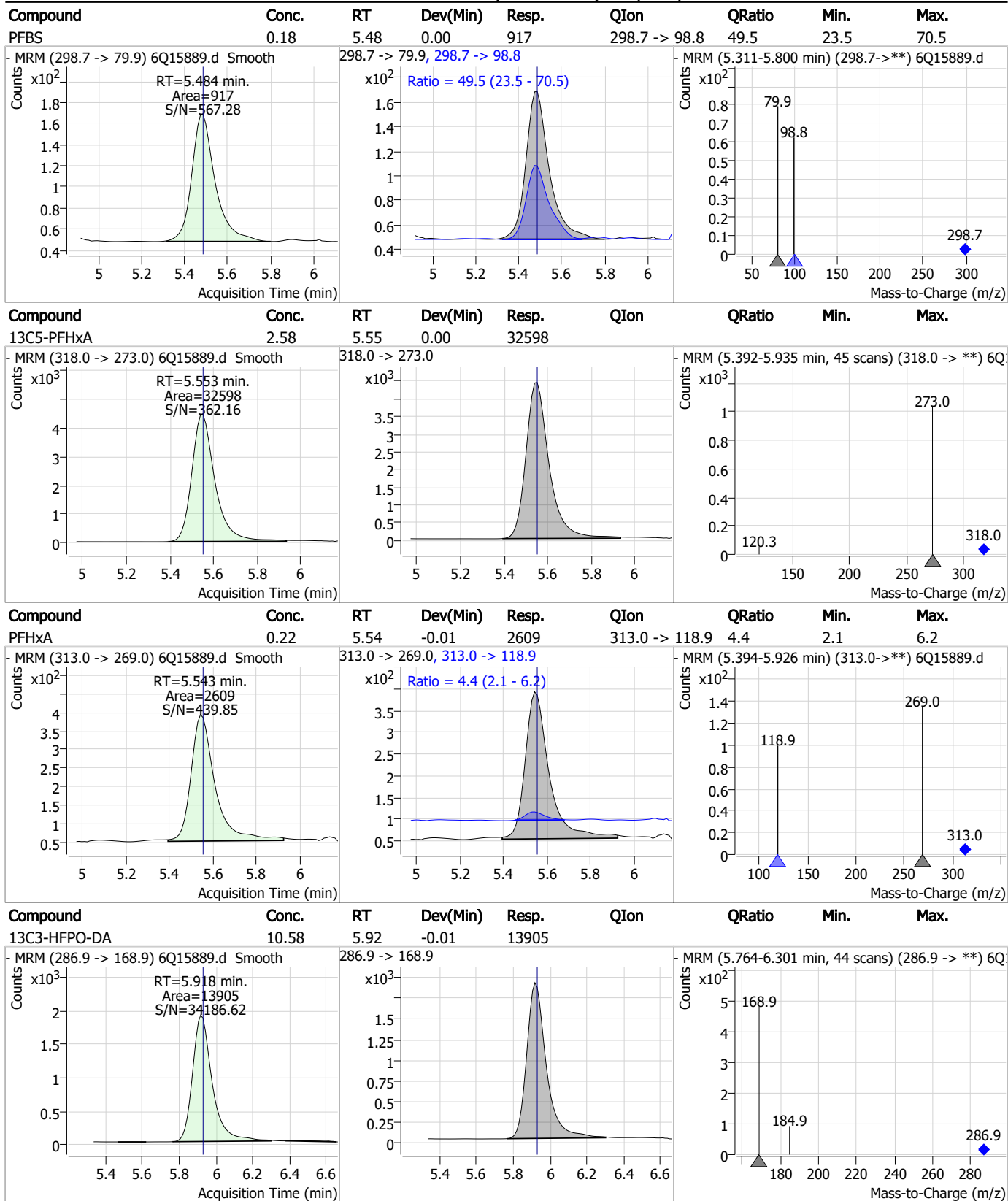
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Perfluorinated Compounds by LC/MS/MS



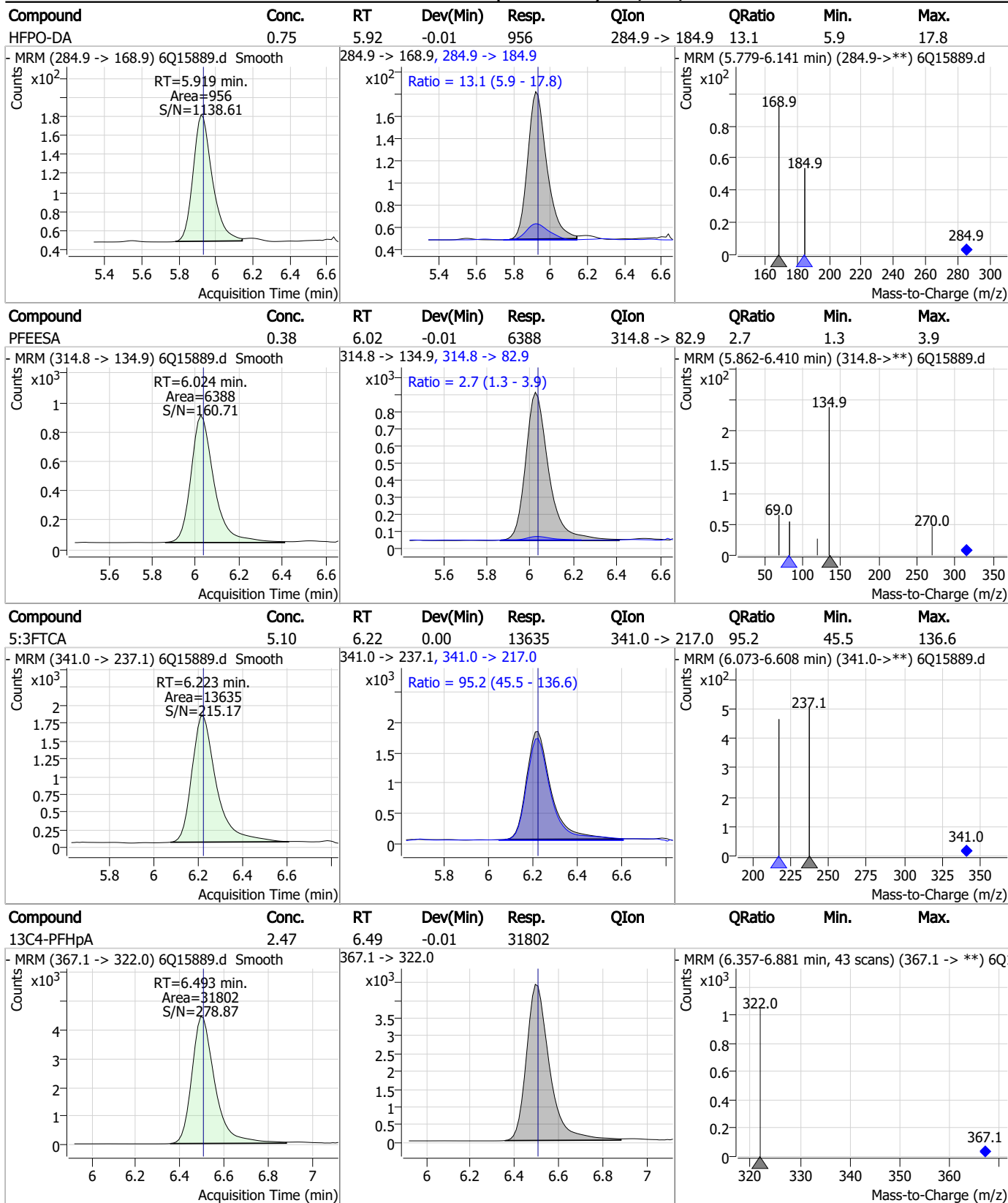
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Perfluorinated Compounds by LC/MS/MS



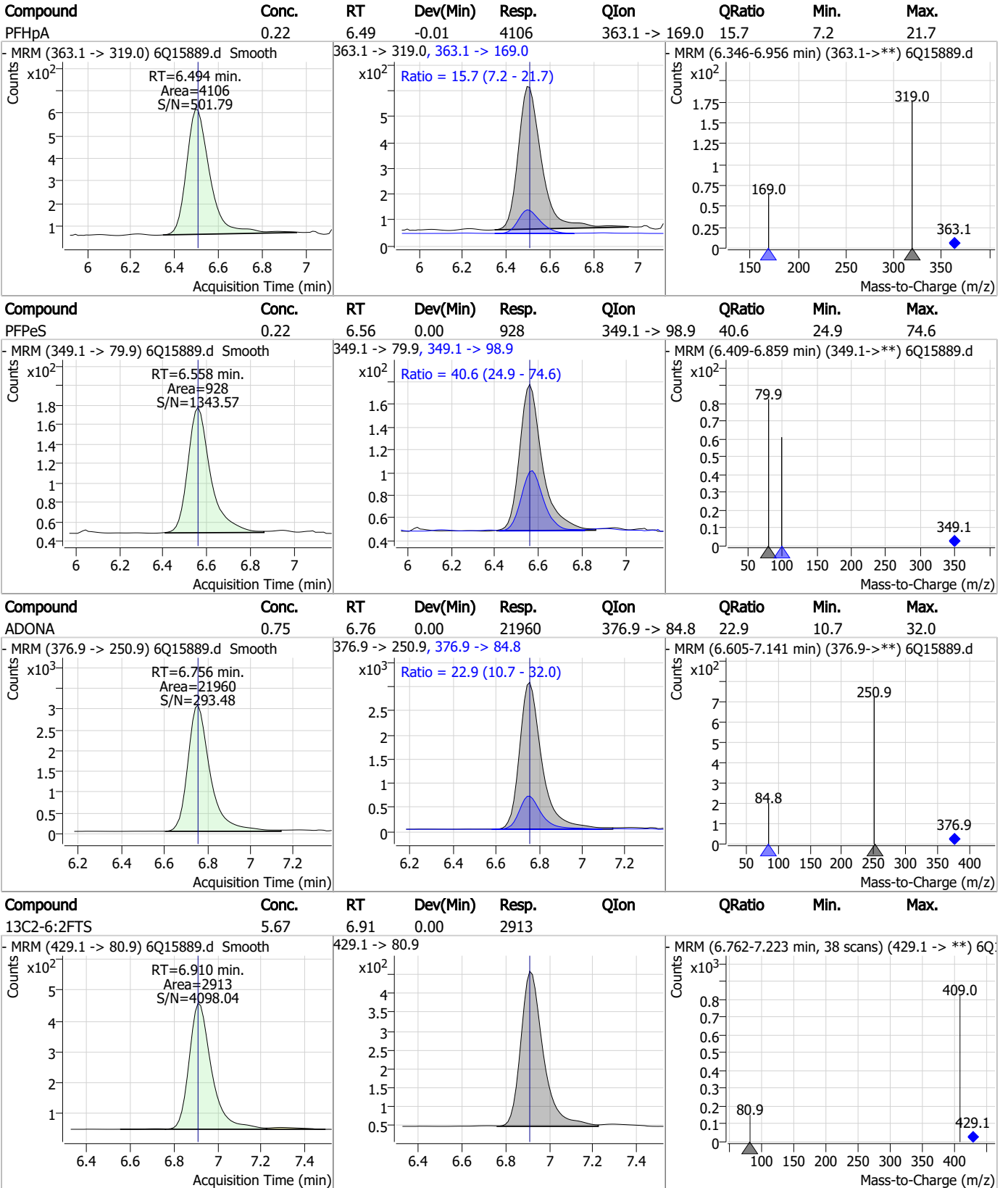
7.7.19 7

Perfluorinated Compounds by LC/MS/MS



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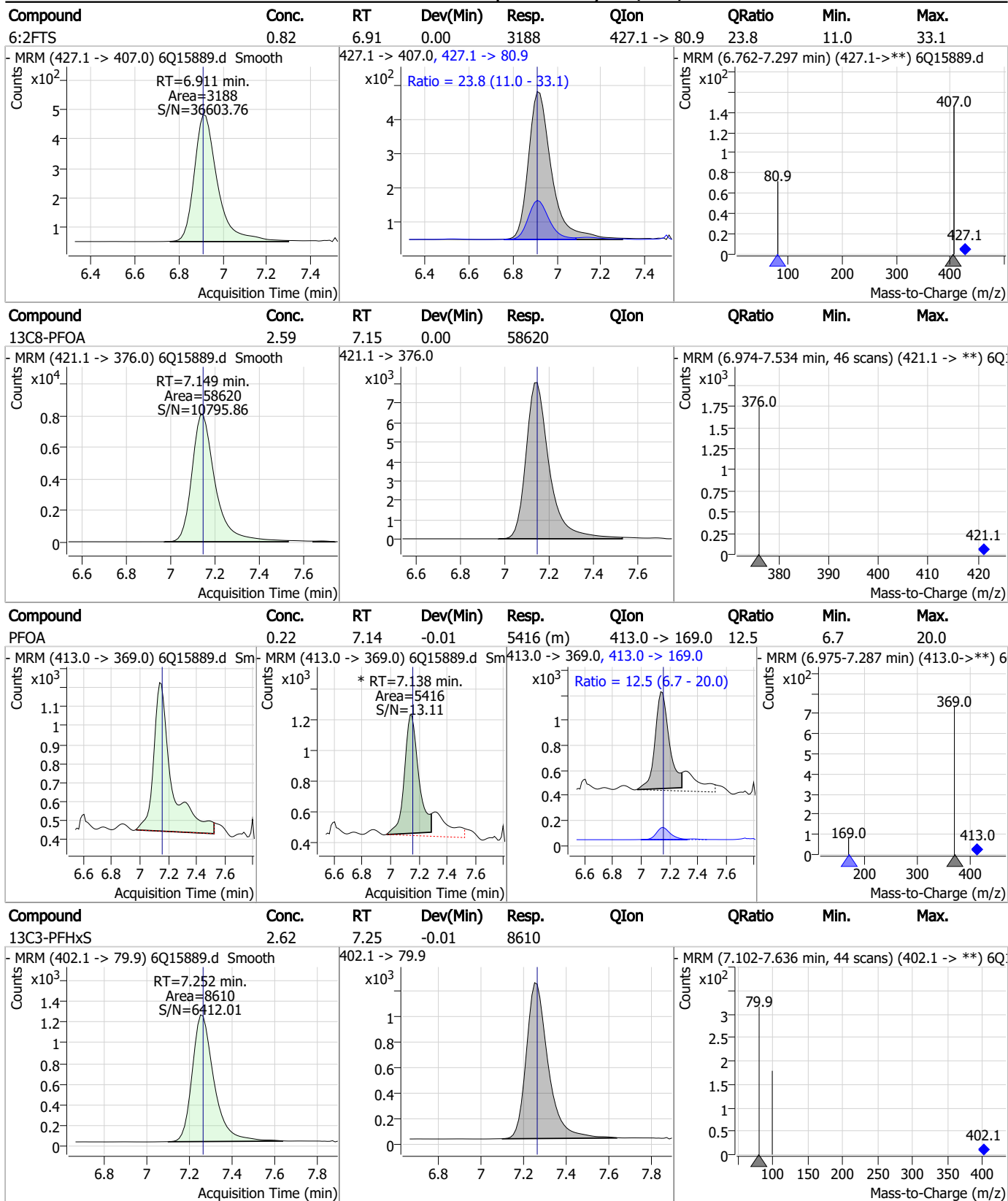
Perfluorinated Compounds by LC/MS/MS



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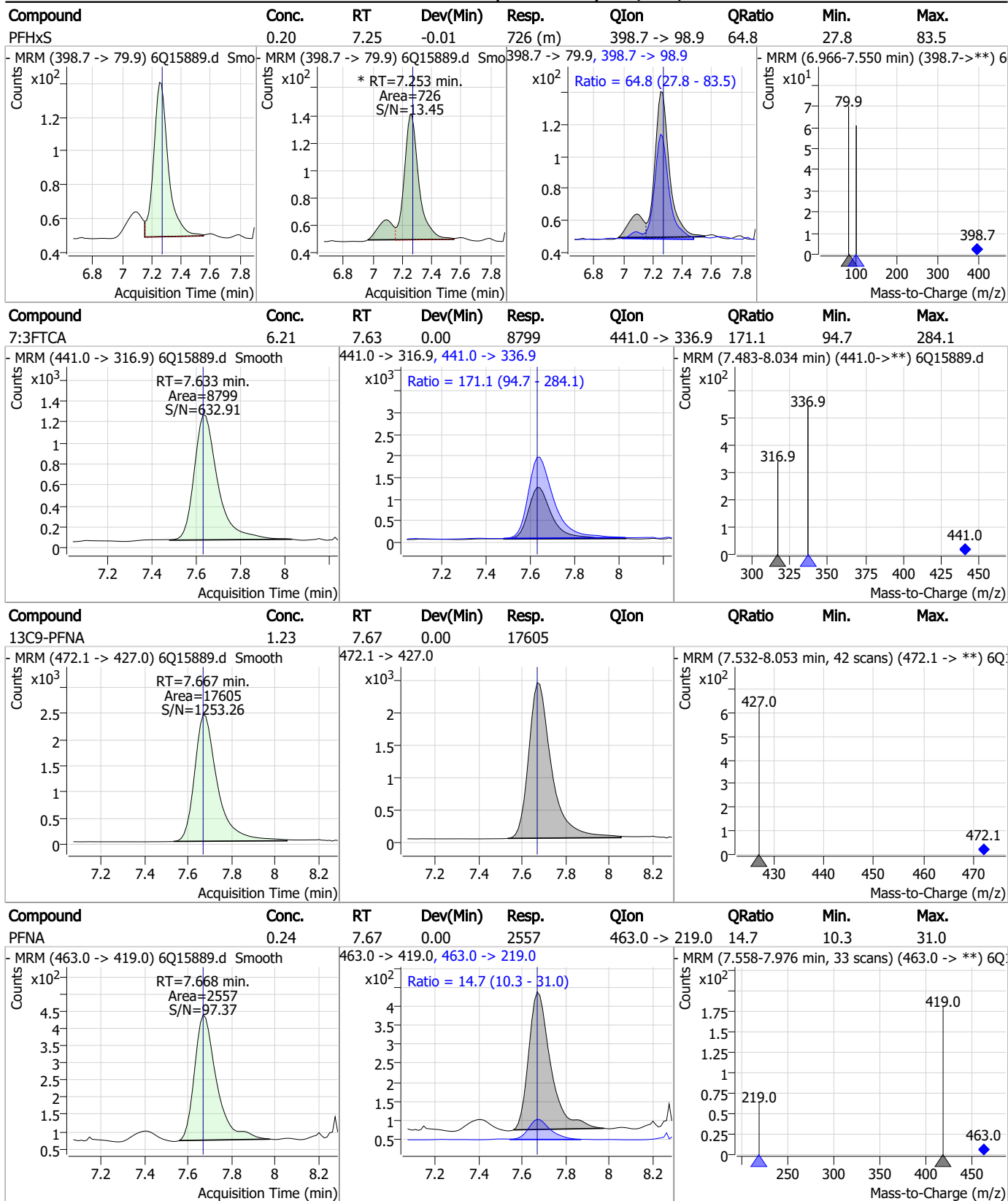
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.19

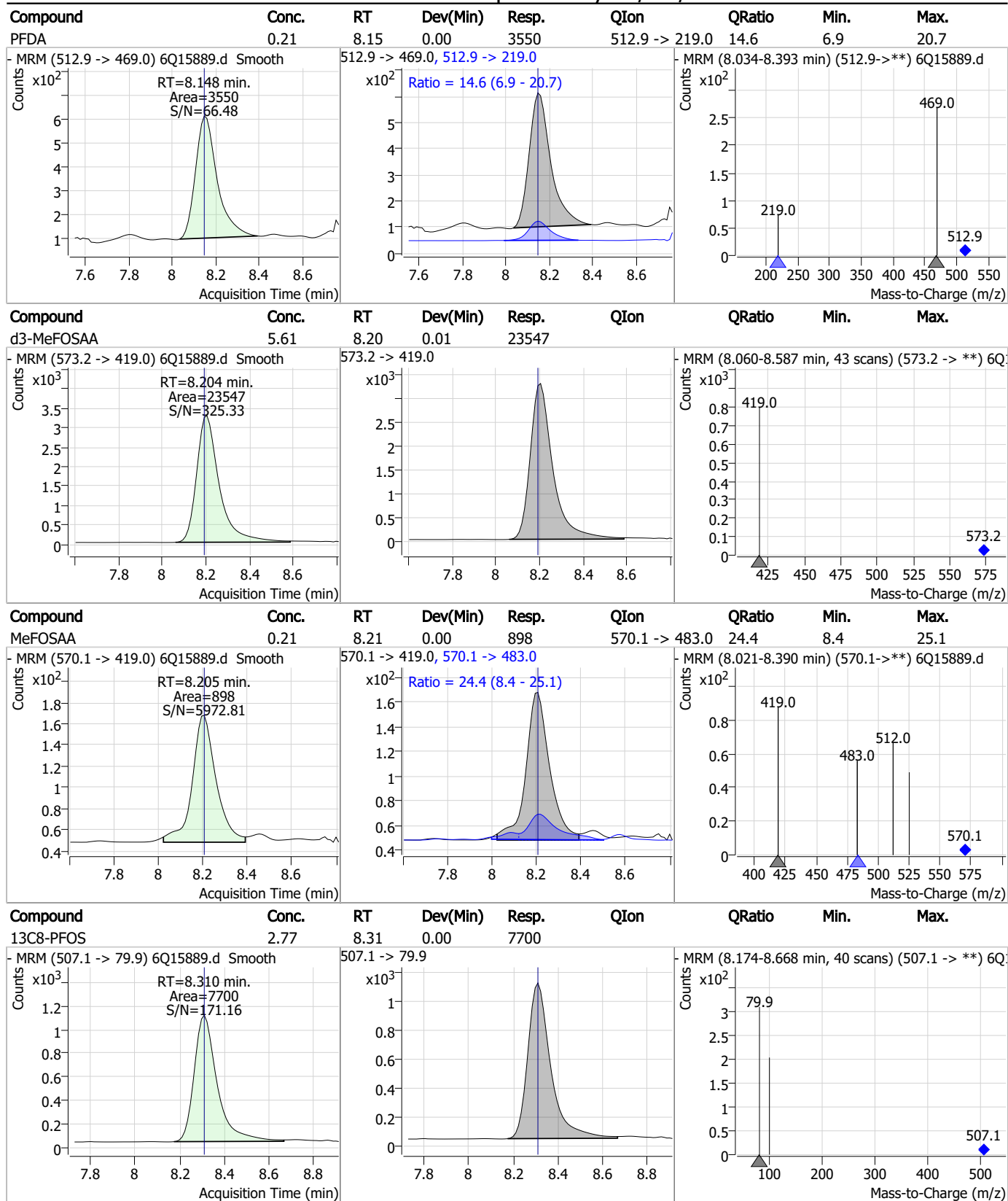
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.19	7.82	0.00	580	449.0 -> 98.9	63.8	27.4	82.3
13C2-8:2FTS	5.61	7.94	0.00	2827	529.1 -> 80.9			
8:2FTS	0.87	7.94	0.00	1781	527.1 -> 80.8	25.2	11.4	34.2
13C6-PFDA	1.29	8.15	0.00	14730	519.1 -> 474.1			

7.7.19 7



Perfluorinated Compounds by LC/MS/MS

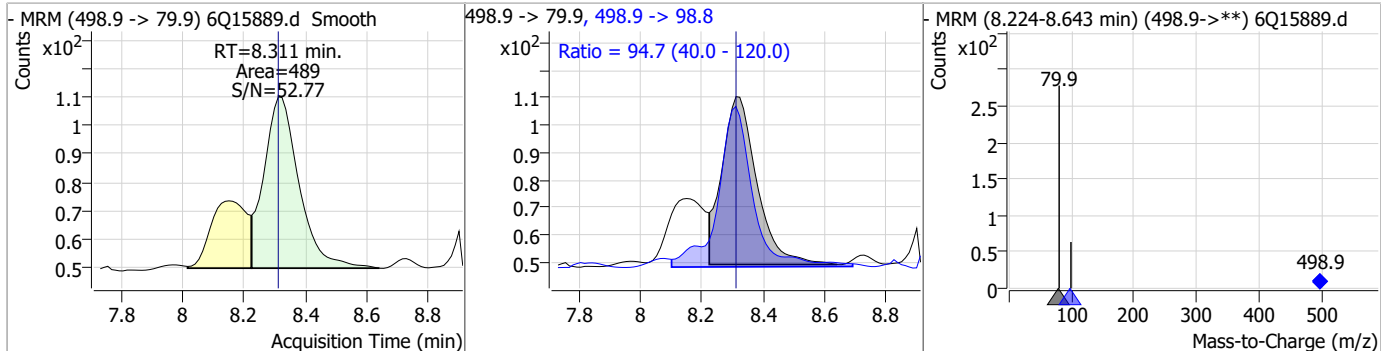


7.7.19

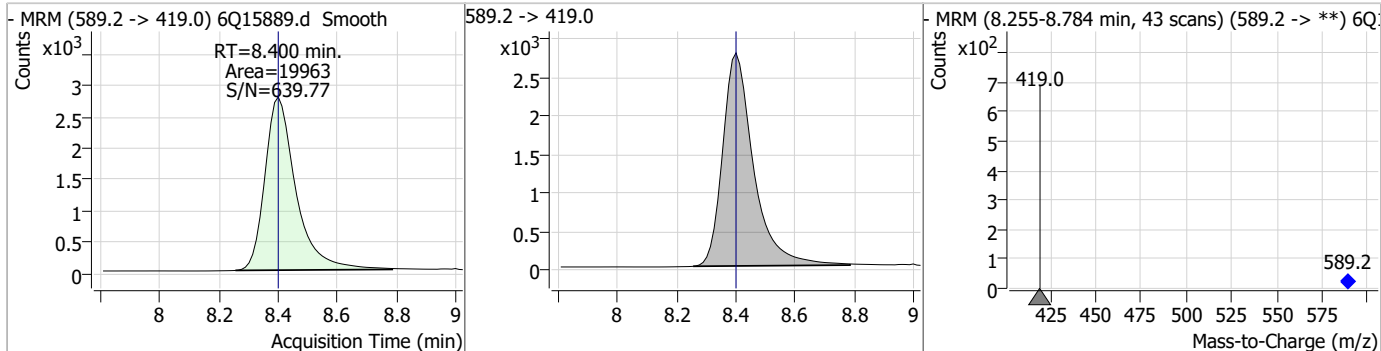
7

Perfluorinated Compounds by LC/MS/MS

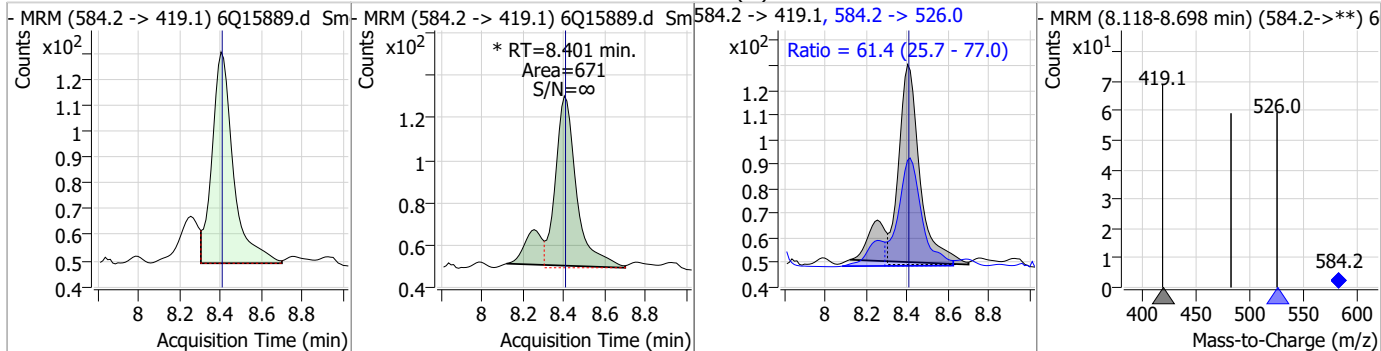
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.15	8.31	0.00	489	498.9 -> 98.8	94.7	40.0	120.0



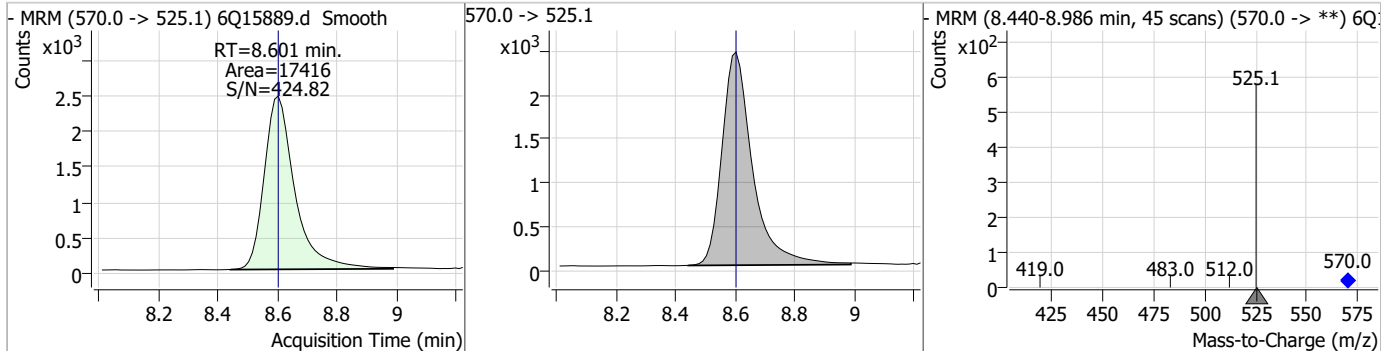
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.43	8.40	0.00	19963				



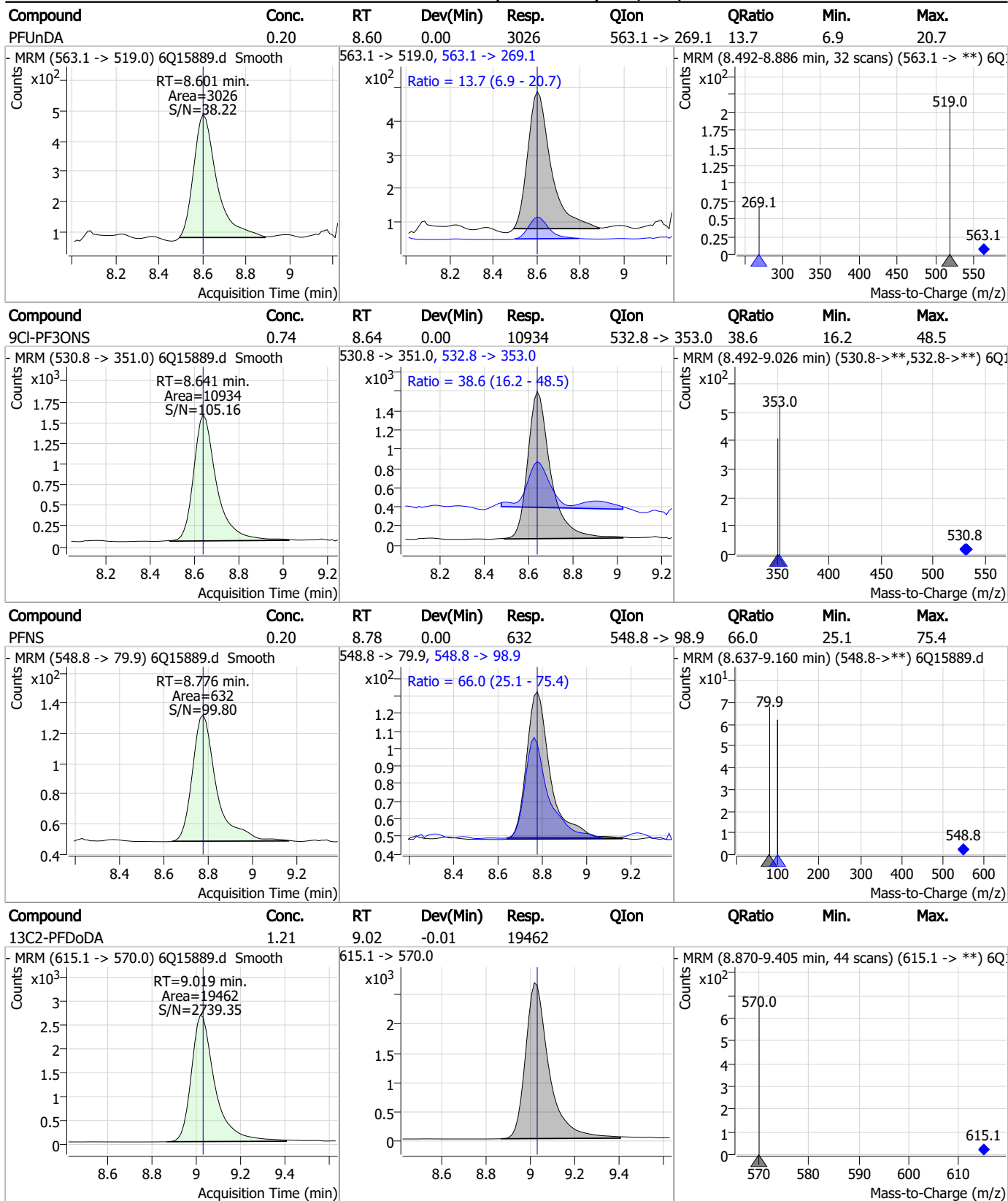
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.40	0.00	671 (m)	584.2 -> 526.0	61.4	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.38	8.60	0.00	17416				

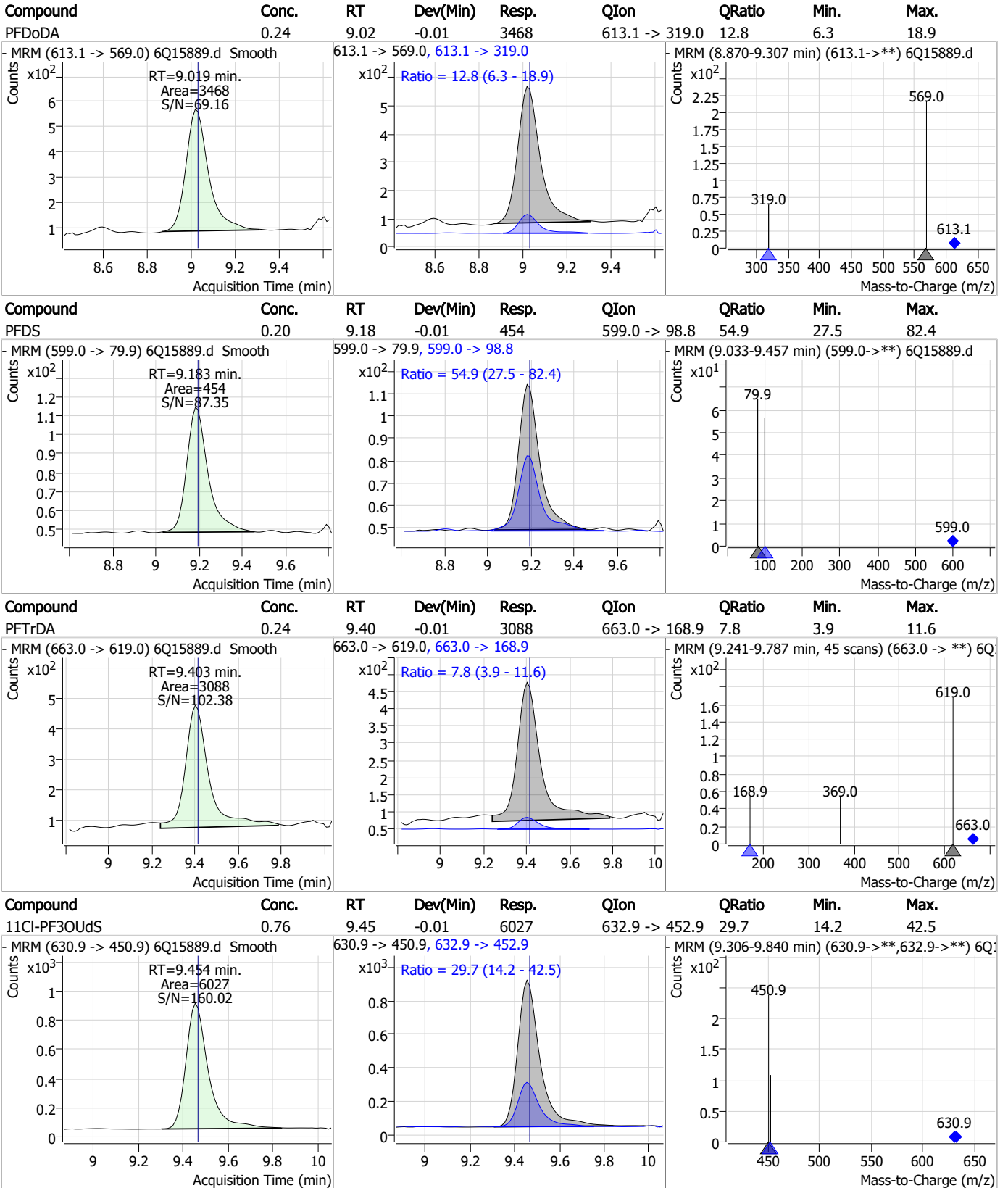


Perfluorinated Compounds by LC/MS/MS



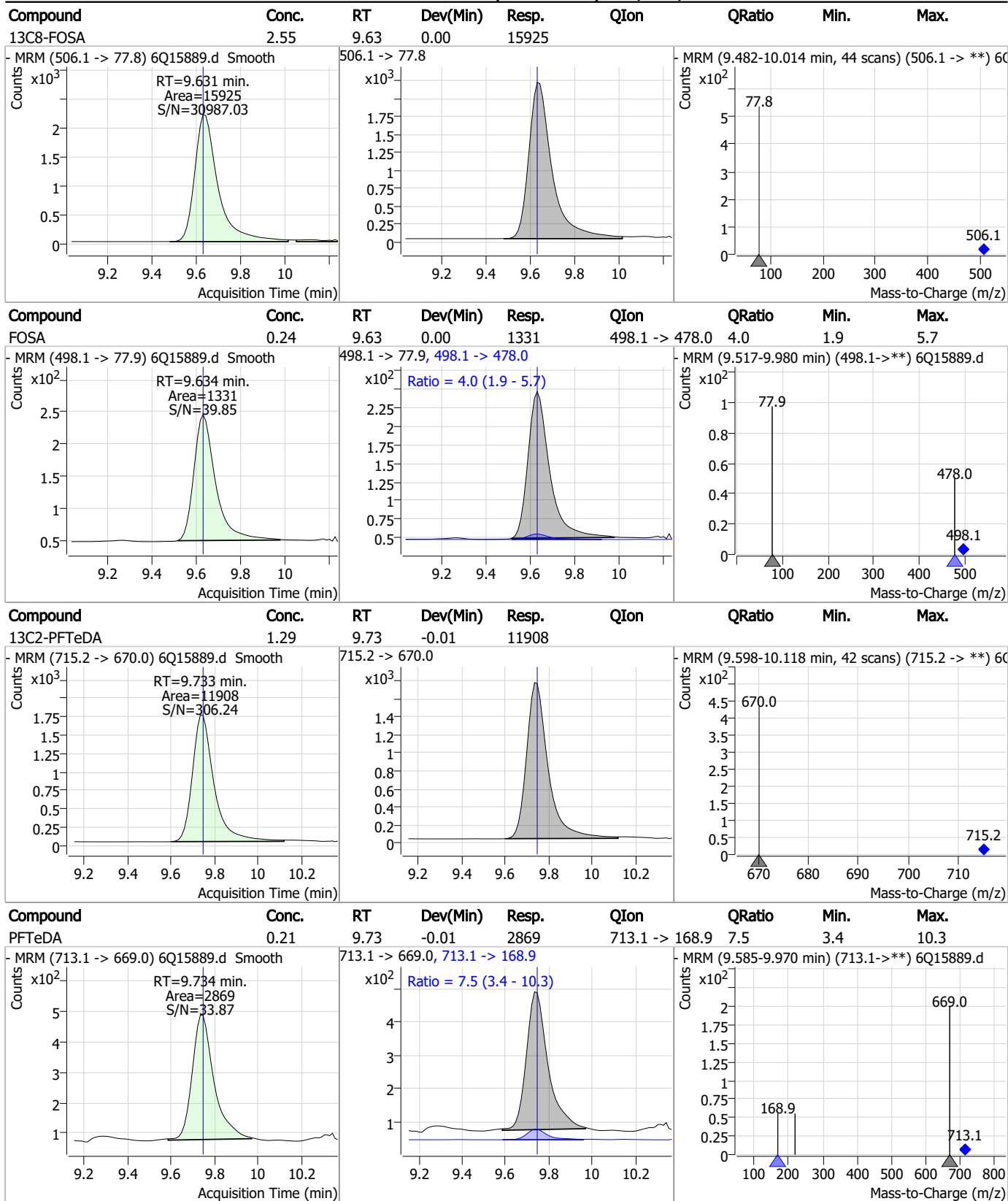
7.7.19

Perfluorinated Compounds by LC/MS/MS



7.7.19 7

Perfluorinated Compounds by LC/MS/MS

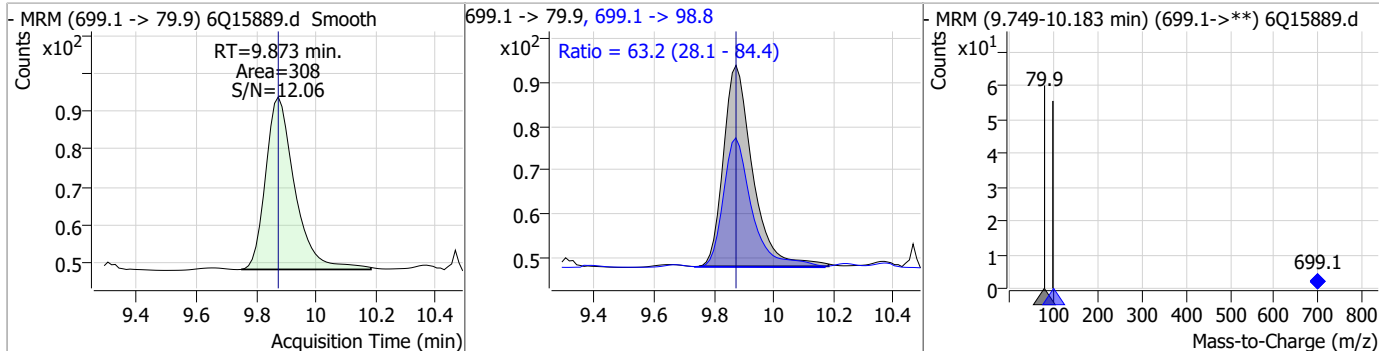


7.7.19

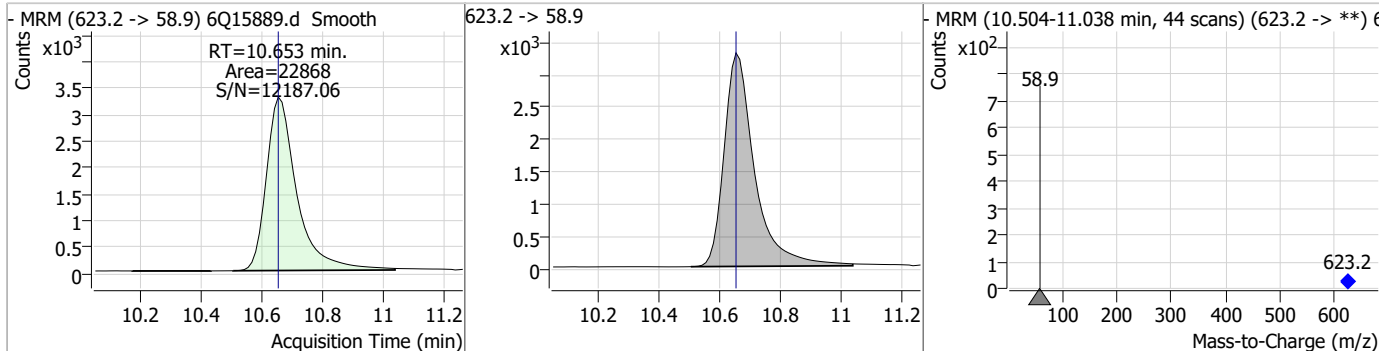
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Perfluorinated Compounds by LC/MS/MS

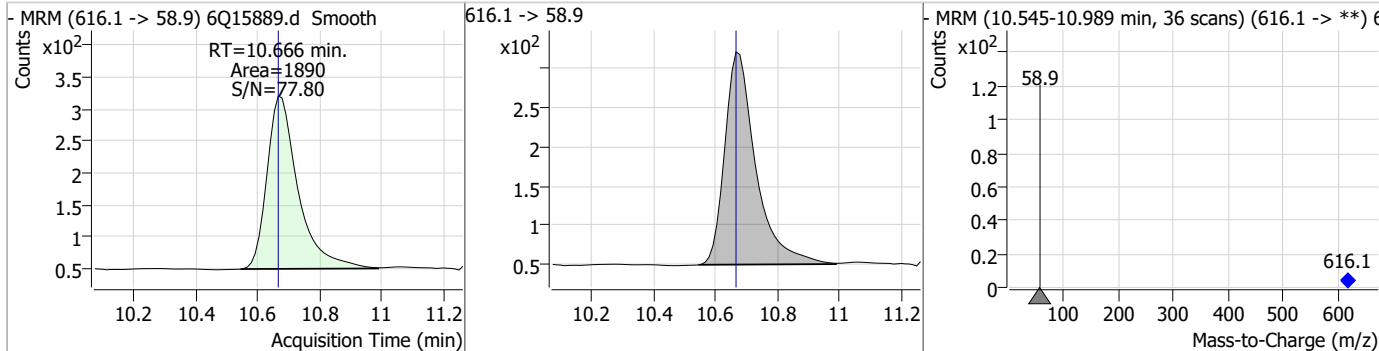
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.22	9.87	0.00	308	699.1 -> 98.8	63.2	28.1	84.4



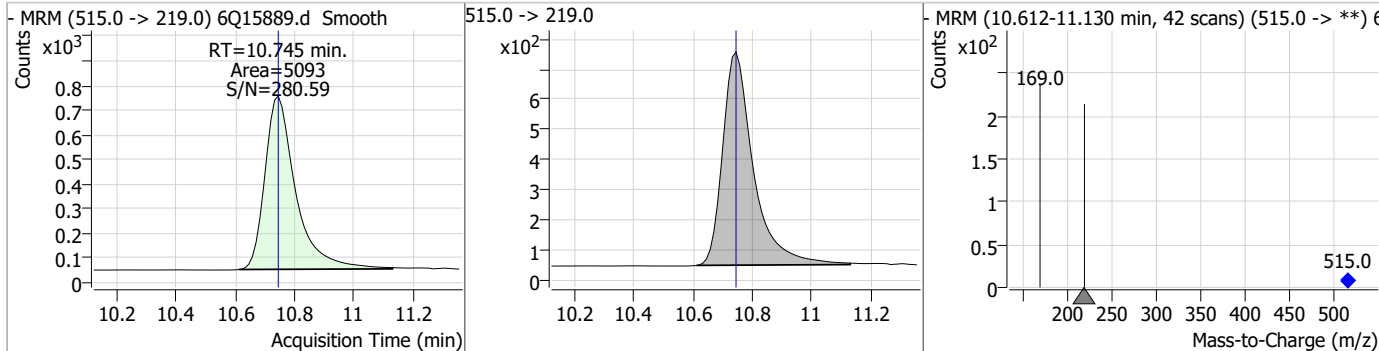
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.57	10.65	0.00	22868				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	2.29	10.67	0.00	1890				

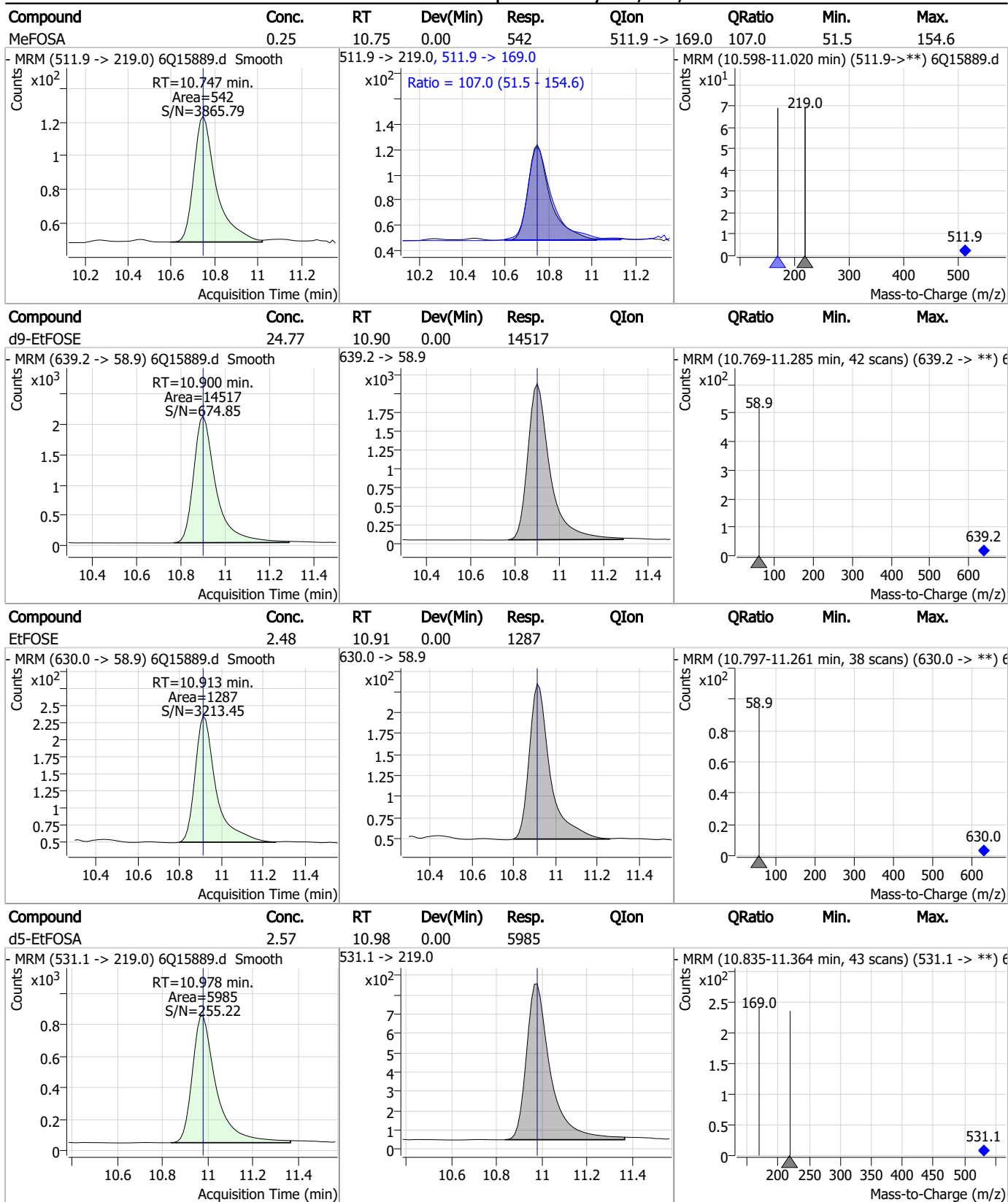


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.75	0.00	5093				



7.7.19
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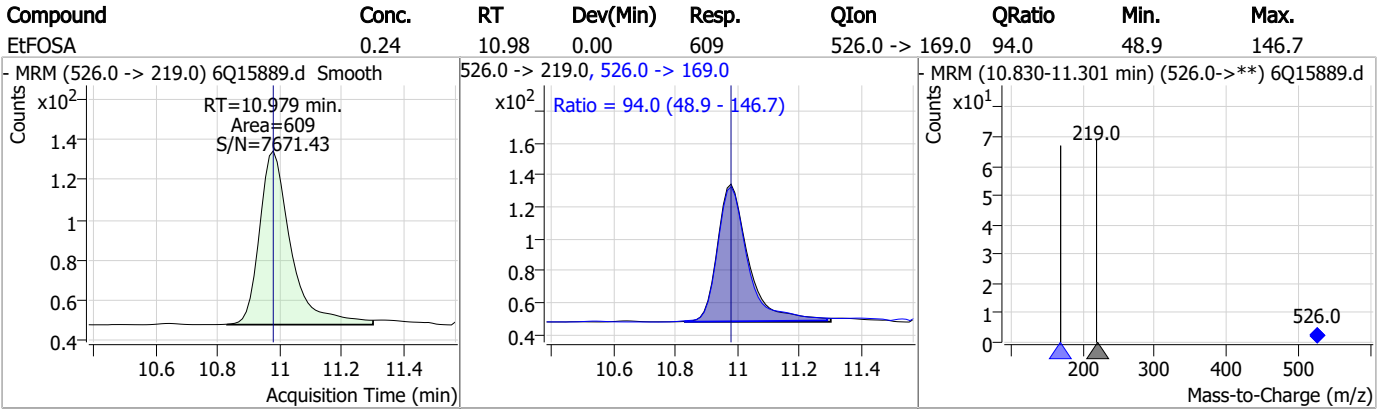
Perfluorinated Compounds by LC/MS/MS



7.7.19

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Perfluorinated Compounds by LC/MS/MS



7.7.19

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Manual Integration Approval Summary

Sample Number: S6Q237-CC235 Method: EPA DRAFT 1633
Lab FileID: 6Q15889.D Analyst approved: 03/31/23 14:52 Mike Eger
Injection Time: 03/31/23 13:35 Supervisor approved: 03/31/23 16:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.14	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
EtFOSAA	2991-50-6		8.40	Split peak

7.7.19.1

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DATE:	03/28/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_032823_S6Q235
CAL DATE:	03/28/23
ANALYST:	M. Valls
RUN BATCH:	S6Q235

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/D STD LOT #:	11384/11383

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q15579.d	P1-A1	CCB	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
2	6Q15580.d	P1-A1	CCB	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
3	6Q15581.d	P1-B3	RT TDCA	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
4	6Q15582.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
5	6Q15583.d	P1-A9	high std	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
6	6Q15584.d	P1-A1	IBLK	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
7	6Q15585.d	P1-A5	cc225-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	response low. Recalibrate
8	6Q15586.d	P1-A2	cc225-1.0LL	1633full.m	QC	1.6/500	OP96085.S6Q235.500,,,5.0,1,water	rt
9	6Q15587.d	P6-A1	op96085-bs	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	rt
10	6Q15588.d	P1-B9	CCB	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
11	6Q15589.d	P1-B9	CCB	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
12	6Q15590.d	P1-B3	RT TDCA	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
13	6Q15591.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
14	6Q15592.d	P1-A1	ic235-0	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
15	6Q15593.d	P1-A2	ic235-1	1633full.m	Calibration	1.6/500	OP96085.S6Q235.500,,,5.0,1,water	✓
16	6Q15594.d	P1-A3	ic235-2	1633full.m	Calibration	4/500	OP96085.S6Q235.500,,,5.0,1,water	✓
17	6Q15595.d	P1-A4	ic235-3	1633full.m	Calibration	10/500	OP96085.S6Q235.500,,,5.0,1,water	✓
18	6Q15596.d	P1-A5	ic235-4	1633full.m	Calibration	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
19	6Q15597.d	P1-A6	ic235-5	1633full.m	Calibration	40/500	OP96085.S6Q235.500,,,5.0,1,water	✓
20	6Q15598.d	P1-A7	ic235-6	1633full.m	Calibration	100/500	OP96085.S6Q235.500,,,5.0,1,water	✓
21	6Q15599.d	P1-A8	ic235-7	1633full.m	Calibration	200/500	OP96085.S6Q235.500,,,5.0,1,water	✓
22	6Q15600.d	P1-A9	ic235-8	1633full.m	Calibration	1x	OP96085.S6Q235.500,,,5.0,1,water	✓
23	6Q15601.d	P1-A1	IBLK	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
24	6Q15602.d	P1-B1	icv235-4	1633full.m	Sample	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
25	6Q15603.d	P1-B2	icv235-20	1633full.m	Sample	100/500	OP96085.S6Q235.500,,,5.0,1,water	✓
26	6Q15604.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
27	6Q15605.d	P1-A2	cc235-1.0LL	1633full.m	QC	1.6/500	OP96085.S6Q235.500,,,5.0,1,water	✓
28	6Q15606.d	P6-A1	op96085-bs	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
29	6Q15607.d	P6-A2	op96085-llbs:2	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
30	6Q15608.d	P6-A3	op96085-mb	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
31	6Q15609.d	P6-A4	FC3385-1	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
32	6Q15610.d	P6-A5	FC3385-2	1633full.m	Sample		OP96085.S6Q235.510,,,5.0,1,water	elfosa qual out
33	6Q15611.d	P6-A6	FC3385-2	1633full.m	Sample	250/500	OP96085.S6Q235.510,,,5.0,2,water	✓
34	6Q15612.d	P6-A7	FC3385-3	1633full.m	Sample		OP96085.S6Q235.530,,,5.0,1,water	rt2x for plna
35	6Q15613.d	P6-A8	FC3385-4	1633full.m	Sample		OP96085.S6Q235.60,,,5.0,1,water	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q15614.d	P6-A9	FC3385-4	1633full.m	Sample	50/500	OP96085.S6Q235.60,,,5.0,10,water	✓
37	6Q15615.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
38	6Q15616.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
39	6Q15617.d	P6-B1	FC3385-5	1633full.m	Sample		OP96085.S6Q235.25,,,5.0,1,water	✓
40	6Q15618.d	P6-B2	FC3385-5	1633full.m	Sample	50/500	OP96085.S6Q235.25,,,5.0,10,water	✓
41	6Q15619.d	P6-B3	FC3385-6	1633full.m	Sample		OP96085.S6Q235.485,,,5.0,1,water	efosa qual out, rfx surr high
42	6Q15620.d	P6-B4	FC3385-7	1633full.m	Sample		OP96085.S6Q235.550,,,5.0,1,water	✓
43	6Q15621.d	P6-B5	FC3385-8	1633full.m	Sample		OP96085.S6Q235.565,,,5.0,1,water	✓
44	6Q15622.d	P6-B6	FC3385-9	1633full.m	Sample		OP96085.S6Q235.475,,,5.0,1,water	✓
45	6Q15623.d	P6-B7	FC3386-1	1633full.m	Sample		OP96085.S6Q235.485,,,5.0,1,water	✓
46	6Q15624.d	P6-B8	FC3386-1	1633full.m	Sample	50/500	OP96085.S6Q235.485,,,5.0,10,water	✓
47	6Q15625.d	P6-B9	FC3386-2	1633full.m	Sample		OP96085.S6Q235.515,,,5.0,1,water	✓
48	6Q15626.d	P6-C1	FC3386-3	1633full.m	Sample		OP96085.S6Q235.515,,,5.0,1,water	✓
49	6Q15627.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
50	6Q15628.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
51	6Q15629.d	P6-C2	FC3388-1	1633full.m	Sample		OP96085.S6Q235.60,,,5.0,1,water	✓
52	6Q15630.d	P6-C3	FC3388-2	1633full.m	Sample		OP96085.S6Q235.60,,,5.0,1,water	✓
53	6Q15631.d	P6-C4	FC3388-3	1633full.m	Sample		OP96085.S6Q235.515,,,5.0,1,water	✓
54	6Q15632.d	P6-C5	FC3388-3	1633full.m	Sample	250/500	OP96085.S6Q235.565,,,5.0,1,water	✓
55	6Q15633.d	P6-C6	FC3388-4	1633full.m	Sample		OP96085.S6Q235.60,,,5.0,1,water	✓
56	6Q15634.d	P6-C7	FC3388-5	1633full.m	Sample		OP96085.S6Q235.535,,,5.0,1,water	✓
57	6Q15635.d	P6-C8	FC3388-6	1633full.m	Sample		OP96085.S6Q235.535,,,5.0,1,water	✓
58	6Q15636.d	P6-C9	FC3388-7	1633full.m	Sample		OP96085.S6Q235.485,,,5.0,1,water	✓
59	6Q15637.d	P6-D1	FC3488-4	1633full.m	Sample		OP96015.S6Q235.540,,,5.0,1,water	✓
60	6Q15638.d	P6-D2	JD62172-1A	1633full.m	Sample	100/500	OP96069.S6Q235.380,,,5.0,5,water	✓
61	6Q15639.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
62	6Q15640.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
63	6Q15641.d	P6-D3	JD62172-2A	1633full.m	Sample	100/500	OP96069.S6Q235.465,,,5.0,5,water	✓
64	6Q15642.d	P6-D4	JD62172-3A	1633full.m	Sample		OP96069.S6Q235.245,,,5.0,1,water	✓
65	6Q15643.d	P6-D5	JD62172-11A	1633full.m	Sample	250/500	OP96069.S6Q235.215,,,5.0,2,water	✓
66	6Q15644.d	P6-D6	JD62172-12A	1633full.m	Sample	250/500	OP96069.S6Q235.285,,,5.0,2,water	✓
67	6Q15645.d	P6-D7	JD62172-13A	1633full.m	Sample		OP96069.S6Q235.285,,,5.0,1,water	✓
68	6Q15646.d	P6-D8	fc3532-9	1633full.m	Sample	100/500	OP96044.S6Q235.530,,,5.0,5,water	✓
69	6Q15647.d	P6-D9	op96086-bs	1633full.m	Sample		OP96086.S6Q235.500,,,5.0,1,water	✓
70	6Q15648.d	P6-E1	op96086-llbs:2	1633full.m	Sample		OP96086.S6Q235.500,,,5.0,1,water	✓
71	6Q15649.d	P6-E2	op96086-mb	1633full.m	Sample		OP96086.S6Q235.500,,,5.0,1,water	✓
72	6Q15650.d	P6-E3	JD62214-7	1633full.m	Sample		OP96086.S6Q235.526,,,5.0,1,water	✓
73	6Q15651.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085.S6Q235.500,,,5.0,1,water	✓
74	6Q15652.d	P1-A2	cc235-1.0LL	1633full.m	QC	1.6/500	OP96085.S6Q235.500,,,5.0,1,water	✓
75	6Q15653.d	P1-A1	iccb	1633full.m	Sample		OP96085.S6Q235.500,,,5.0,1,water	✓
76	6Q15654.d	P6-E4	JD62214-8	1633full.m	Sample		OP96086.S6Q235.520,,,5.0,1,water	✓
77	6Q15655.d	P6-E5	JD62214-9A	1633full.m	Sample		OP96086.S6Q235.552,,,5.0,1,water	✓
78	6Q15656.d	P6-E6	JD62324-1A	1633full.m	Sample		OP96086.S6Q235.152,,,5.0,1,water	rr2x pfoa

LCMS6-6Q ANALYSIS LOG

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79	6Q15657.d	P6-E7	JD62324-2A	1633full.m	Sample	OP96086,S6Q235,,250,,,5.0,1,,water	rr2x pfoa
80	6Q15658.d	P6-E8	JD62324-3A	1633full.m	Sample	OP96086,S6Q235,,250,,,5.0,1,,water	rr2x pfoa
81	6Q15659.d	P6-E9	JD62324-4A	1633full.m	Sample	OP96086,S6Q235,,250,,,5.0,1,,water	rr2x pfoa
82	6Q15660.d	P6-F1	JD62324-5A	1633full.m	Sample	OP96086,S6Q235,,255,,,5.0,1,,water	rr1x co
83	6Q15661.d	P6-F2	JD62324-6A	1633full.m	Sample	OP96086,S6Q235,,255,,,5.0,1,,water	rr2x pfoa
84	6Q15662.d	P6-F3	JD62324-7A	1633full.m	Sample	OP96086,S6Q235,,275,,,5.0,1,,water	rr1x co
85	6Q15663.d	P6-F4	JD62324-8A	1633full.m	Sample	OP96086,S6Q235,,255,,,5.0,1,,water	✓
86	6Q15664.d	P1-A5	cc235-4	1633full.m	QC	OP96085,S6Q235,,500,,,5.0,1,,water	✓
87	6Q15665.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q235,,500,,,5.0,1,,water	✓
88	6Q15666.d	P6-F5	JD62324-9A	1633full.m	Sample	OP96086,S6Q235,,270,,,5.0,1,,water	rr2x pfoa
89	6Q15667.d	P6-F6	JD62324-10A	1633full.m	Sample	OP96086,S6Q235,,270,,,5.0,1,,water	rr2x pfoa
90	6Q15668.d	P6-F7	JD62324-11A	1633full.m	Sample	OP96086,S6Q235,,275,,,5.0,1,,water	rr1x co
91	6Q15669.d	P6-F8	JD62324-12A	1633full.m	Sample	OP96086,S6Q235,,250,,,5.0,1,,water	✓
92	6Q15670.d	P6-F9	JD62324-13A	1633full.m	Sample	OP96086,S6Q235,,275,,,5.0,1,,water	rr2x pfoa
93	6Q15671.d	P1-E1	JD62324-14A	1633full.m	Sample	OP96086,S6Q235,,275,,,5.0,1,,water	rr2x pfoa
94	6Q15672.d	P1-E2	JD62324-15A	1633full.m	Sample	OP96086,S6Q235,,275,,,5.0,1,,water	rr2x pfoa
95	6Q15673.d	P1-E3	JD62324-16A	1633full.m	Sample	OP96086,S6Q235,,285,,,5.0,1,,water	rr1x co
96	6Q15674.d	P1-A5	cc235-4	1633full.m	QC	OP96085,S6Q235,,500,,,5.0,1,,water	✓
97	6Q15675.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q235,,500,,,5.0,1,,water	✓
98	6Q15676.d	P1-E4	op96087-bs	1633full.m	Sample	OP96087,S6Q235,,500,,,5.0,1,,water	✓
99	6Q15677.d	P1-E5	op96087-llbs:2	1633full.m	Sample	OP96087,S6Q235,,500,,,5.0,1,,water	✓
100	6Q15678.d	P1-E6	op96087-mb	1633full.m	Sample	OP96087,S6Q235,,500,,,5.0,1,,water	✓
101	6Q15679.d	P1-E7	JD62172-21A	1633full.m	Sample	OP96087,S6Q235,,280,,,5.0,1,,water	✓
102	6Q15680.d	P1-E8	JD62251-3	1633full.m	Sample	OP96087,S6Q235,,532,,,5.0,1,,water	✓
103	6Q15681.d	P1-E9	op96087-ms	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
104	6Q15682.d	P1-F1	JD62251-4	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
105	6Q15683.d	P1-F2	op96087-dup	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
106	6Q15684.d	P1-F3	JD62251-5	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
107	6Q15685.d	P1-F4	JD62251-9	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
108	6Q15686.d	P1-A5	cc235-4	1633full.m	QC	OP96085,S6Q235,,500,,,5.0,1,,water	✓
109	6Q15687.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q235,,500,,,5.0,1,,water	✓
110	6Q15688.d	P1-F5	JD62251-10	1633full.m	Sample	OP96085,S6Q235,,552,,,5.0,1,,water	✓
111	6Q15689.d	P1-F6	JD62251-8A	1633full.m	Sample	OP96087,S6Q235,,552,,,5.0,1,,water	✓
112	6Q15690.d	P1-A5	ecc235-4	1633full.m	QC	OP96085,S6Q235,,500,,,5.0,1,,water	✓
113	6Q15691.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q235,,500,,,5.0,1,,water	✓

SGS ORLANDO

DATE:	03/30/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_032823_S6Q235
CAL DATE:	03/28/23
ANALYST:	M. Valls
RUN BATCH:	S6Q237

ELUENT A LOT #:	AGN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 WIS% 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
205	6Q15783.d	P1-A1	CCB	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
206	6Q15784.d	P1-B3	RT TDCA	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	PASS
207	6Q15785.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
208	6Q15786.d	P1-A9	HIGH STD	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
209	6Q15787.d	P1-A1	IBLK	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
210	6Q15788.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085,S6Q237,500,,,5.0,1,water	PASS
211	6Q15789.d	P1-A2	cc235-1.0LL	1633full.m	QC	1.6/500	OP96085,S6Q237,500,,,5.0,1,water	PASS
212	6Q15790.d	P1-E1	FC3453-1	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
213	6Q15791.d	P1-E2	FC3457-7	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
214	6Q15792.d	P1-E3	FC3457-7	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
215	6Q15793.d	P1-E4	FC3457-8	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
216	6Q15794.d	P1-E5	FC3457-8	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
217	6Q15795.d	P1-E6	FC3457-9	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,5,water	✓
218	6Q15796.d	P1-E7	FC3488-1	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
219	6Q15797.d	P1-E8	FC3488-2	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
220	6Q15798.d	P1-E9	FC3488-3	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
221	6Q15799.d	P1-F1	FC3488-3	1633full.m	Sample		OP96112,S6Q237,60,,,5.0,1,water	✓
222	6Q15800.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085,S6Q237,500,,,5.0,1,water	PASS
223	6Q15801.d	P1-A2	iccb	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
224	6Q15802.d	P1-F2	FC3385-6	1633full.m	Sample		OP96085,S6Q237,485,,,5.0,1,water	✓
225	6Q15803.d	P1-F3	FC3532-5	1633full.m	Sample		OP96088,S6Q237,550,,,5.0,2,water	✓
226	6Q15804.d	P1-F4	FC3600-4	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,5,water	✓
227	6Q15805.d	P1-F5	op96088-dup	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,5,water	✓
228	6Q15806.d	P1-F6	FC3600-8	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,5,water	✓
229	6Q15807.d	P1-F7	FC3600-9	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,5,water	✓
230	6Q15808.d	P1-F8	FC3600-13	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,1,water	REDO
231	6Q15809.d	P1-F9	FC3600-17	1633full.m	Sample		OP96088,S6Q237,565,,,5.0,2,water	✓
232	6Q15810.d	P1-A5	cc235-4	1633full.m	QC	20/500	OP96085,S6Q237,500,,,5.0,1,water	PASS
233	6Q15811.d	P1-A2	iccb	1633full.m	Sample		OP96085,S6Q237,500,,,5.0,1,water	✓
234	6Q15812.d	P3-B5	op96111-bs	1633full.m	Sample		OP96111,S6Q237,60,,,5.0,1,water	✓
235	6Q15813.d	P3-B6	op96111-llbs-2	1633full.m	Sample		OP96111,S6Q237,60,,,5.0,1,water	✓
236	6Q15814.d	P3-B7	op96111-mb	1633full.m	Sample		OP96111,S6Q237,60,,,5.0,1,water	✓
237	6Q15815.d	P3-B8	op96111-bs1	1633full.m	Sample		OP96111,S6Q237,125,,,5.0,1,water	✓
238	6Q15816.d	P3-B9	op96111-bs2	1633full.m	Sample		OP96111,S6Q237,125,,,5.0,1,water	✓
239	6Q15817.d	P3-C1	JD61406-3R	1633full.m	Sample		OP96111,S6Q237,60,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

240	6Q15818.d	P3-C2	op9611-ms	1633full.m	Sample	OP96111,S6Q237,60,,,5.0,1,water	✓
241	6Q15819.d	P3-C3	op9611-dup	1633full.m	Sample	OP96111,S6Q237,60,,,5.0,1,water	✓
242	6Q15820.d	P1-A5	cc235-4	1633full.m	QC	20/500	PASS
243	6Q15821.d	P1-A2	iccb	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
244	6Q15822.d	P3-C4	op96143-bs	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
245	6Q15823.d	P3-C5	op96143-llbs:3	1633full.m	Sample	OP96143,S6Q237,500,,,5.0,1,water	✓
246	6Q15824.d	P3-C6	op96143-mb	1633full.m	Sample	OP96143,S6Q237,500,,,5.0,1,water	✓
247	6Q15825.d	P3-C7	FC3763-1	1633full.m	Sample	OP96143,S6Q237,560,,,5.0,1,water	✓
248	6Q15826.d	P3-C8	FC3763-2	1633full.m	Sample	OP96143,S6Q237,520,,,5.0,1,water	✓
249	6Q15827.d	P3-C9	FC3763-3	1633full.m	Sample	OP96143,S6Q237,530,,,5.0,1,water	✓
250	6Q15828.d	P3-D1	op96143-ms	1633full.m	Sample	OP96143,S6Q237,540,,,5.0,1,water	✓
251	6Q15829.d	P3-D2	FC3763-4	1633full.m	Sample	OP96143,S6Q237,560,,,5.0,1,water	✓
252	6Q15830.d	P3-D3	FC3763-5	1633full.m	Sample	OP96143,S6Q237,560,,,5.0,1,water	✓
253	6Q15831.d	P3-D4	op96143-dup	1633full.m	Sample	OP96143,S6Q237,560,,,5.0,1,water	✓
254	6Q15832.d	P1-A5	cc235-4	1633full.m	QC	20/500	PASS
255	6Q15833.d	P1-A2	cc235-1.0LL	1633full.m	QC	1.6/500	PASS
256	6Q15834.d	P1-A1	iccb	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
257	6Q15835.d	P3-D7	op96114-bs	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
258	6Q15836.d	P3-D8	op96114-llbs:3	1633full.m	Sample	OP96114,S6Q237,500,,,5.0,1,water	✓
259	6Q15837.d	P3-D9	op96114-mb	1633full.m	Sample	OP96114,S6Q237,500,,,5.0,1,water	✓
260	6Q15838.d	P3-E1	FC3641-1	1633full.m	Sample	OP96114,S6Q237,540,,,5.0,1,water	✓
261	6Q15839.d	P3-E2	FC3641-2	1633full.m	Sample	OP96114,S6Q237,540,,,5.0,1,water	✓
262	6Q15840.d	P3-E3	FC3641-3	1633full.m	Sample	OP96114,S6Q237,540,,,5.0,1,water	✓
263	6Q15841.d	P3-E4	FC3641-4	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
264	6Q15842.d	P3-E5	FC3641-5	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
265	6Q15843.d	P3-E6	FC3641-6	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
266	6Q15844.d	P1-A5	cc235-4	1633full.m	QC	20/500	PASS
267	6Q15845.d	P1-A2	iccb	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
268	6Q15846.d	P3-E7	FC3641-7	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
269	6Q15847.d	P3-E8	op96114-ms1	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
270	6Q15848.d	P3-E9	op96114-msd1	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
271	6Q15849.d	P3-F1	FC3641-8	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
272	6Q15850.d	P3-F2	FC3641-9	1633full.m	Sample	OP96114,S6Q237,560,,,5.0,1,water	✓
273	6Q15851.d	P3-F3	FC3641-10	1633full.m	Sample	OP96114,S6Q237,530,,,5.0,1,water	RR 5X
274	6Q15852.d	P3-F4	FC3641-11	1633full.m	Sample	OP96114,S6Q237,530,,,5.0,1,water	RR 5X
275	6Q15853.d	P3-F5	op96114-ms2	1633full.m	Sample	OP96114,S6Q237,570,,,5.0,1,water	RR CO
276	6Q15854.d	P3-F6	op96114-msd2	1633full.m	Sample	OP96114,S6Q237,570,,,5.0,1,water	✓
277	6Q15855.d	P3-F7	FC3641-12	1633full.m	Sample	OP96114,S6Q237,570,,,5.0,1,water	✓
278	6Q15856.d	P1-A5	cc235-4	1633full.m	QC	20/500	PASS
279	6Q15857.d	P1-A2	iccb	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
280	6Q15858.d	P3-F8	FC3641-13	1633full.m	Sample	OP96085,S6Q237,500,,,5.0,1,water	✓
281	6Q15859.d	P3-F9	op96115-bs	1633full.m	Sample	OP96115,S6Q237,500,,,5.0,1,water	✓
282	6Q15860.d	P4-A1	op96115-llbs:3	1633full.m	Sample	OP96115,S6Q237,500,,,5.0,1,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

283	6Q15861.d	P4-A2	op96115-mb	1633full.m	Sample	OP96115.S6Q237.500,,,5.0,1,water	✓
284	6Q15862.d	P4-A3	FC3671-1	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
285	6Q15863.d	P4-A4	FC3671-2	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
286	6Q15864.d	P4-A5	FC3671-3	1633full.m	Sample	OP96115.S6Q237.560,,,5.0,1,water	✓
287	6Q15865.d	P4-A6	FC3671-4	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
288	6Q15866.d	P4-A7	FC3671-5	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
289	6Q15867.d	P4-A8	FC3671-6	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
290	6Q15868.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1,water	PASS
291	6Q15869.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
292	6Q15870.d	P4-A9	FC3671-7	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
293	6Q15871.d	P4-B1	FC3671-8	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
294	6Q15872.d	P4-B2	FC3671-9	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	Redo
295	6Q15873.d	P4-B3	FC3671-10	1633full.m	Sample	OP96115.S6Q237.545,,,5.0,1,water	✓
296	6Q15874.d	P4-B4	FC3671-11	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
297	6Q15875.d	P4-B5	op96115-ms	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
298	6Q15876.d	P4-B6	op96115-msd	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
299	6Q15877.d	P4-B7	FC3671-12	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
300	6Q15878.d	P4-B8	FC3671-13	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
301	6Q15879.d	P4-B9	FC3671-14	1633full.m	Sample	OP96115.S6Q237.555,,,5.0,1,water	✓
302	6Q15880.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1,water	PASS
303	6Q15881.d	P1-A1	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
304	6Q15882.d	P4-C1	FC3671-15	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
305	6Q15883.d	P4-C2	FC3671-16	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
306	6Q15884.d	P4-C3	FC3671-17	1633full.m	Sample	OP96115.S6Q237.580,,,5.0,1,water	✓
307	6Q15885.d	P1-B3	RT TDCA	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
308	6Q15886.d	P1-B4	RT BR-LN	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
309	6Q15887.d	P1-A9	HIGH STD	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
310	6Q15888.d	P1-A1	IBLK	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
311	6Q15889.d	P1-A2	cc235-1.0LL	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1,water	PASS
312	6Q15890.d	P4-C4	op96145-bs	1633full.m	Sample	OP96145.S6Q237.500,,,5.0,1,water	✓
313	6Q15891.d	P4-C5	op96145-lbs:3	1633full.m	Sample	OP96145.S6Q237.500,,,5.0,1,water	✓
314	6Q15892.d	P4-C6	op96145-mb	1633full.m	Sample	OP96145.S6Q237.500,,,5.0,1,water	✓
315	6Q15893.d	P4-C7	FC3723-1	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1,water	rr2x
316	6Q15894.d	P4-C8	op96145-ms	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1,water	rr2x
317	6Q15895.d	P4-C9	op96145-msd	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1,water	rr2x
318	6Q15896.d	P4-D1	FC3723-2	1633full.m	Sample	OP96145.S6Q237.525,,,5.0,1,water	rr2x
319	6Q15897.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1,water	✓
320	6Q15898.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1,water	✓
321	6Q15899.d	P4-D2	FC3723-3	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1,water	✓
322	6Q15900.d	P4-D3	FC3723-4	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1,water	✓
323	6Q15901.d	P4-D4	FC3723-5	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1,water	✓
324	6Q15902.d	P4-D5	FC3672-1	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1,water	✓
325	6Q15903.d	P4-D6	FC3672-2	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

326	6Q15904.d	P4-D7	FC3672-3	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1.,water	✓
327	6Q15905.d	P4-D8	FC3672-4	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1.,water	✓
328	6Q15906.d	P4-D9	FC3672-5	1633full.m	Sample	OP96145.S6Q237.545,,,5.0,1.,water	✓
329	6Q15907.d	P4-E1	FC3672-6	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1.,water	✓
330	6Q15908.d	P4-E2	FC3672-7	1633full.m	Sample	OP96145.S6Q237.565,,,5.0,1.,water	✓
331	6Q15909.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1.,water	✓
332	6Q15910.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1.,water	✓
333	6Q15911.d	P4-E3	FC3672-8	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1.,water	rt2x
334	6Q15912.d	P4-E4	FC3672-9	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1.,water	rt2x
335	6Q15913.d	P4-E5	FC3672-10	1633full.m	Sample	OP96145.S6Q237.560,,,5.0,1.,water	✓
336	6Q15914.d	P4-E6	op96169-bs	1633full.m	Sample	OP96169.S6Q237.500,,,5.0,1.,water	✓
337	6Q15915.d	P4-E7	op96169-llbs:3	1633full.m	Sample	OP96169.S6Q237.500,,,5.0,1.,water	✓
338	6Q15916.d	P4-E8	op96169-mb	1633full.m	Sample	OP96169.S6Q237.500,,,5.0,1.,water	✓
339	6Q15917.d	P4-E9	FC3793-1	1633full.m	Sample	OP96169.S6Q237.550,,,5.0,1.,water	✓
340	6Q15918.d	P4-F1	op96169-ms	1633full.m	Sample	OP96169.S6Q237.540,,,5.0,1.,water	✓
341	6Q15919.d	P4-F2	FC3793-2	1633full.m	Sample	OP96169.S6Q237.550,,,5.0,1.,water	✓
342	6Q15920.d	P4-F3	op96169-dup	1633full.m	Sample	OP96169.S6Q237.560,,,5.0,1.,water	✓
343	6Q15921.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1.,water	✓
344	6Q15922.d	P1-A2	cc235-1.0LL	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1.,water	✓
345	6Q15923.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1.,water	✓
346	6Q15924.d	P5-A1	op96170-bs	1633full.m	Sample	OP96170.S6Q237.500,,,5.0,1.,water	✓
347	6Q15925.d	P5-A2	op96170-llbs:3	1633full.m	Sample	OP96170.S6Q237.500,,,5.0,1.,water	✓
348	6Q15926.d	P5-A3	op96170-mb	1633full.m	Sample	OP96170.S6Q237.500,,,5.0,1.,water	✓
349	6Q15927.d	P5-A4	FC3722-1	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓
350	6Q15928.d	P5-A5	FC3722-2	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
351	6Q15929.d	P5-A6	FC3722-3	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
352	6Q15930.d	P5-A7	FC3722-4	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
353	6Q15931.d	P5-A8	FC3722-5	1633full.m	Sample	OP96170.S6Q237.530,,,5.0,1.,water	✓
354	6Q15932.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1.,water	✓
355	6Q15933.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1.,water	✓
356	6Q15934.d	P5-A9	FC3722-6	1633full.m	Sample	OP96170.S6Q237.590,,,5.0,1.,water	✓
357	6Q15935.d	P5-B1	op96170-ms	1633full.m	Sample	OP96170.S6Q237.590,,,5.0,1.,water	✓
358	6Q15936.d	P5-B2	op96170-msd	1633full.m	Sample	OP96170.S6Q237.590,,,5.0,1.,water	✓
359	6Q15937.d	P5-B3	FC3722-7	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
360	6Q15938.d	P5-B4	FC3722-8	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
361	6Q15939.d	P5-B5	FC3722-9	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓
362	6Q15940.d	P5-B6	FC3722-10	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓
363	6Q15941.d	P5-B7	FC3722-11	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓
364	6Q15942.d	P5-B8	FC3722-12	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓
365	6Q15943.d	P5-B9	FC3722-13	1633full.m	Sample	OP96170.S6Q237.545,,,5.0,1.,water	✓
366	6Q15944.d	P1-A5	cc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1.,water	✓
367	6Q15945.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,5.0,1.,water	✓
368	6Q15946.d	P5-C1	FC3722-14	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1.,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

369	6Q15947.d	P5-C2	FC3722-15	1633full.m	Sample	OP96170.S6Q237.590,,,5.0,1,.water	✓
370	6Q15948.d	P5-C3	FC3722-16	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1,.water	✓
371	6Q15949.d	P5-C4	FC3722-17	1633full.m	Sample	OP96170.S6Q237.555,,,5.0,1,.water	rf5x
372	6Q15950.d	P1-A5	ecc235-4	1633full.m	QC	OP96085.S6Q237.500,,,5.0,1,.water	✓
373	6Q15951.d	P1-A2	iccb	1633full.m	Sample	OP96085.S6Q237.500,,,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-MxI		9/14/26	3/6/24	1-10 ppm	250uL		02.5 025ppb				
		11659B	PFAC-MxJ		04/17/23	3/20/24	2 ppm	500uL		25ppb				
		11674A	PFAC-MxF		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-MxJ		9/14/26	3/6/24	4-20 ppm	312uL		15 ppm	95/160H 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	10/26/23	50ppm	400uL	4.0mL					NG
		11460	DTN-ERFOS		01/27/27	10/26/23		400uL						NG
		11115	DTN-PFHDA		11/23/28	08/23/23		80uL						NG
		10836	DTN-ERFOSA		12/20/25	08/23/23		80uL						NG
LCMS 2094A-B	PFC ID STD.	11668	PFOA-TOD (8 COMPS)	Absolute	11/09/27	03/13/24	1.0ppm	400uL	4.0mL	100ppb	95/160H S/1420	03/28/23	09/28/23	NG
		11432	N-ME-TOSA-M	Wellington Labs	02/28/27	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	PFCMS		03/20/27	10/16/23								NG
					NG	03/28/23								

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

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	08/23/23								
		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		11/11/25	08/23/23								
		10683A	7:3 FTCA FHPA		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 PF4OPRA		03/31/25	03/21/23								
		10768B	PFHDA 3,6 OPFA		03/31/25	10/18/23								
						10/18/22								

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

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

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS A 2009 B	PFC Spike	11483	PFOA-DOD (28 Comp)	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		162.5/105 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			02/11/13	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

Formulated By: Prashant Chauhan 11/09/22
Reviewed By: Pedro L. Rentas 11/09/22

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 (PFTeDA)	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. Perfluorobutanesulfonic acid (PFBS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	032422	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17. Perfluorohexanesulfonic acid (br-PFHxS)*	99198	071522	0.02	2.00	0.017	50.2	1.00	0.02	355-46-4 (L)	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	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-(Heptadecaproxy)-2,3,3,3-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
7

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

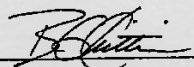
PFACMXJ:0921 (1 of 5)
rev1

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

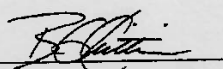
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Table A: PFAC-MXI; Components and Concentrations ($\mu\text{g/mL}$; $\pm 5\%$ in methanol)

Compound	Acronym	Concentration ($\mu\text{g/mL}$)	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



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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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PFACMXF0122 (1 of 5)
rev0

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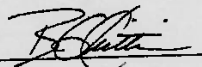
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Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

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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PFACMXG1122 (1 of 5)
revD


7.9.1

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Table A: PFAC-MXG; 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	
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.

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B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11672
rec'd: 02/23/23



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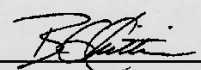
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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

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	PFTrDA	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-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.
^c See Table D for percent composition of linear and branched PFHxSK isomers.
^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 08/09/2022
(mm/dd/yyyy)

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



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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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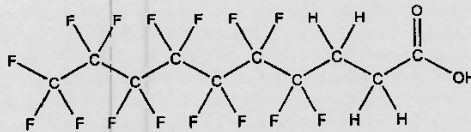
CERTIFICATE OF ANALYSIS DOCUMENTATION

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
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FHpPA1020 (1 of 4)
rev0

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PRODUCT CODE:

FPrPA

LOT NUMBER:

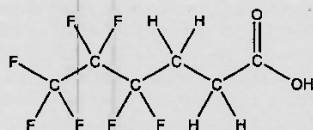
FPrPA1020

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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PRODUCT CODE:

FPePA

LOT NUMBER:

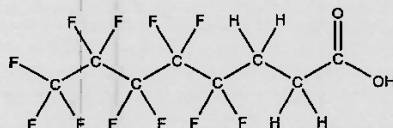
FPePA1120

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.

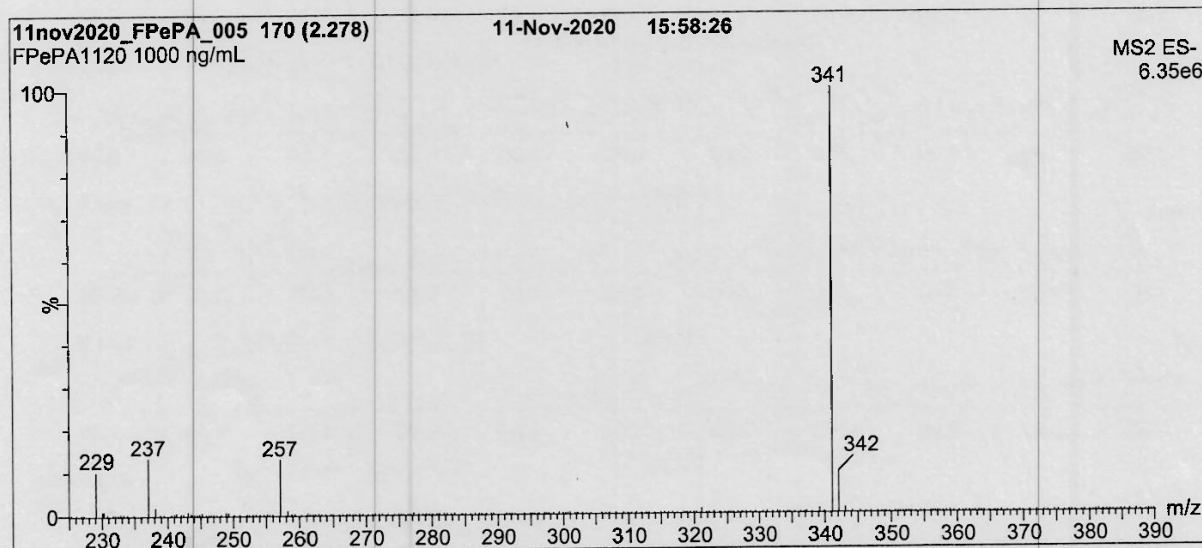
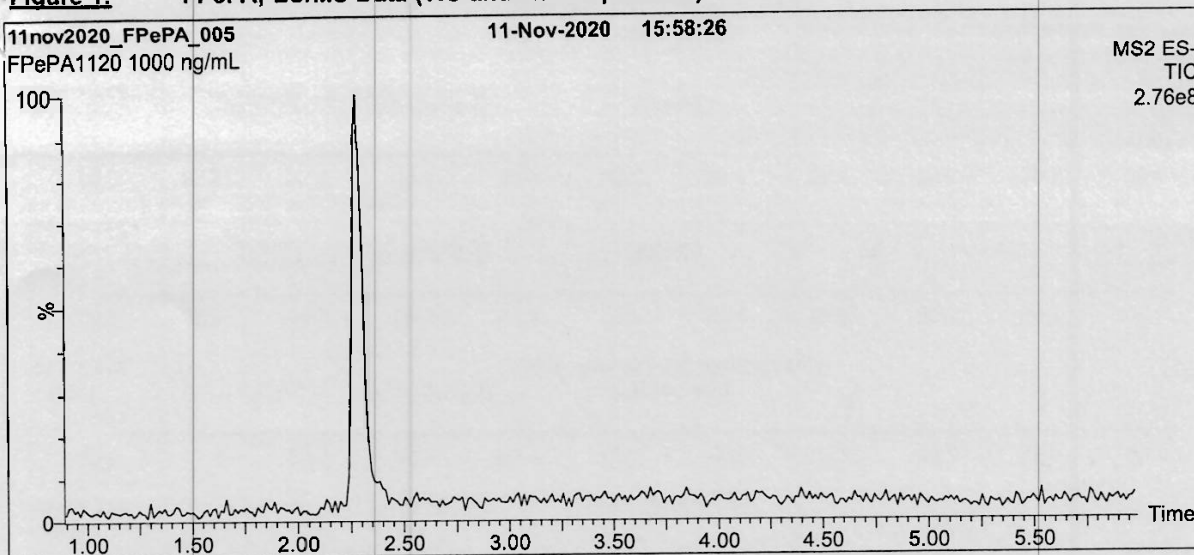
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Certified By:

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 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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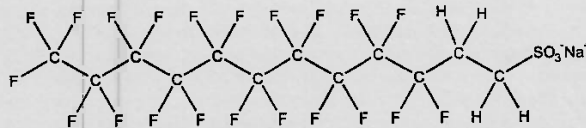


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CERTIFICATE OF ANALYSIS DOCUMENTATION

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

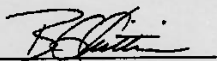
DOCUMENTATION/ DATA ATTACHED:

- 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.

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Certified By:  **Date:** 03/05/2021
B.G. Chittim, General Manager (mm/dd/yyyy)

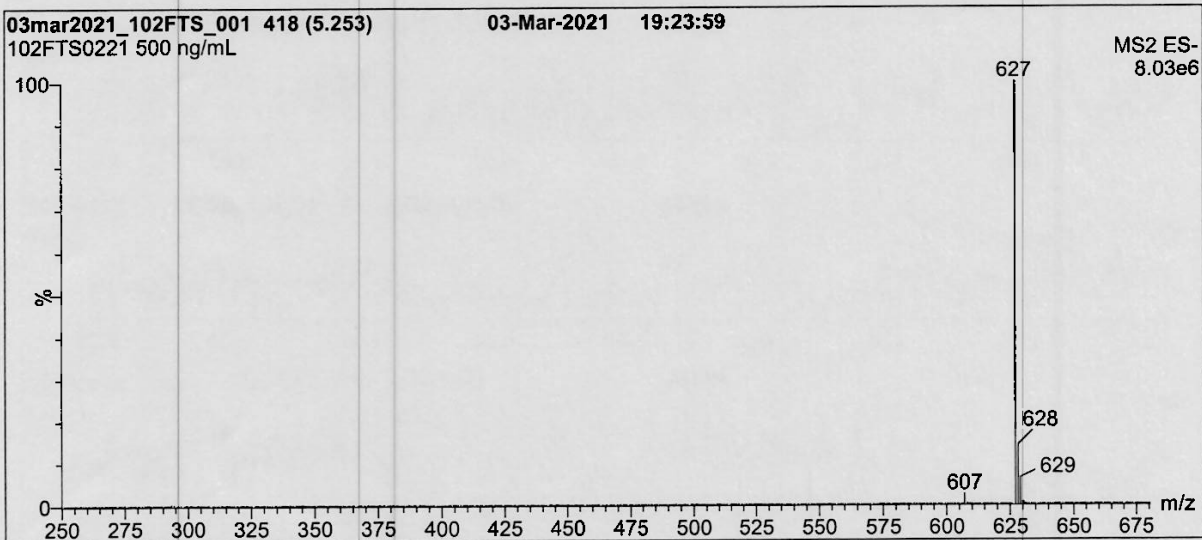
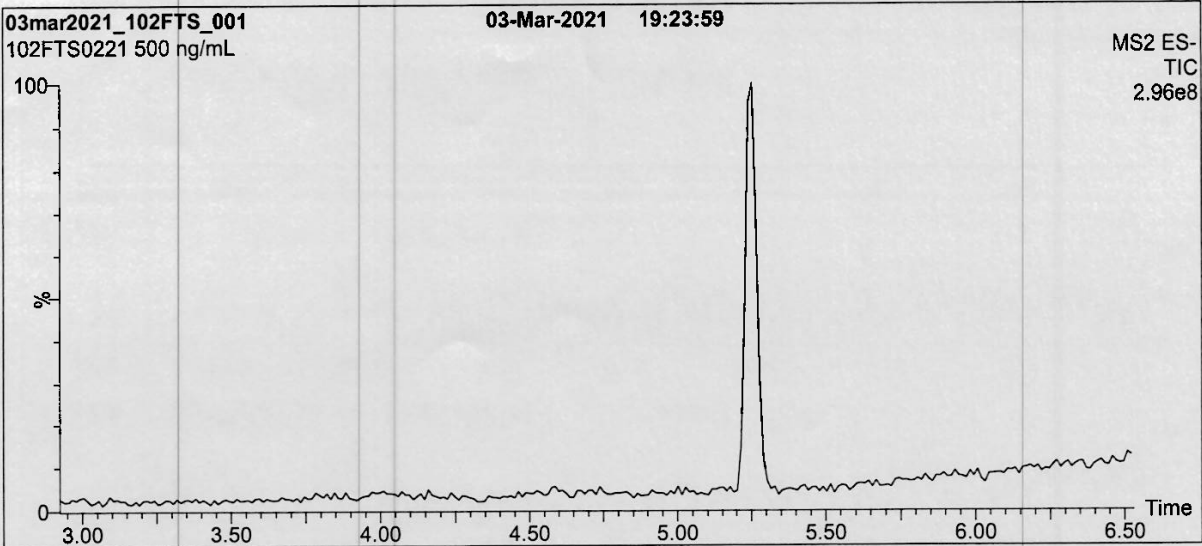
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Revision#: 9, Revised 2020-12-23

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

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

10762 A-B



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFEESA

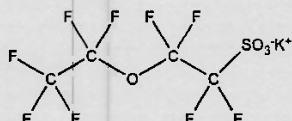
LOT NUMBER:

PFEESA0520

COMPOUND:

Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE:



CAS #:

117205-07-9

MOLECULAR FORMULA:

$C_4F_8SO_4K$

MOLECULAR WEIGHT:

354.19

CONCENTRATION:

50.0 ± 2.5 µg/ml (K salt)
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2020

EXPIRY DATE: (mm/dd/yyyy)

05/13/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/29/2020
(mm/dd/yyyy)

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10763 A-B



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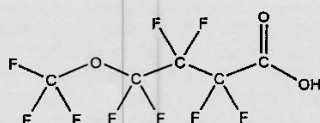
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place


DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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Certified By: 
B.G. Chittim, General Manager

Date: 12/21/2020
(mm/dd/yyyy)

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Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

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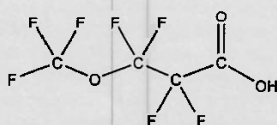
CERTIFICATE OF ANALYSIS DOCUMENTATION

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

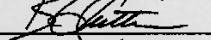
DOCUMENTATION/ DATA ATTACHED:

- 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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10765 A-13



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

*rec'd
WPH
8/20/21*

LOT NUMBER:

36OPFHpA0320

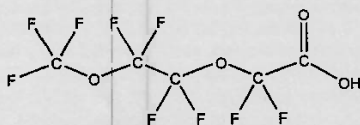
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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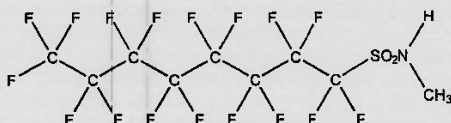
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



rec'd
WHL
10/5/21

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

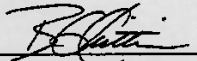
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
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Date: 08/04/2021
(mm/dd/yyyy)

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Revision#: 9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

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7



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

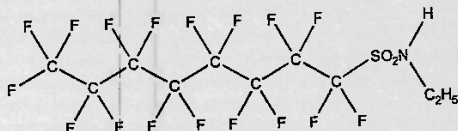
LOT NUMBER: NEtFOSA0821M

COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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


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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021
(mm/dd/yyyy)

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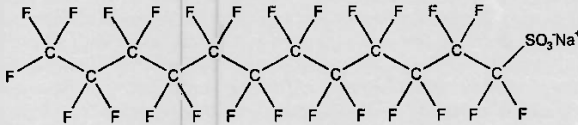
10840

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

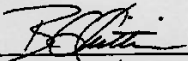
DOCUMENTATION/ DATA ATTACHED:

- 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).

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Certified By: 
B.G. Chittim, General Manager
Date: 07/16/2021
(mm/dd/yyyy)

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PRODUCT CODE:

PFODA

10847 NG 01/18/23

LOT NUMBER:

PFODA0821

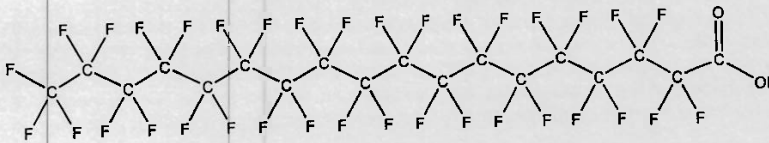
COMPOUND:

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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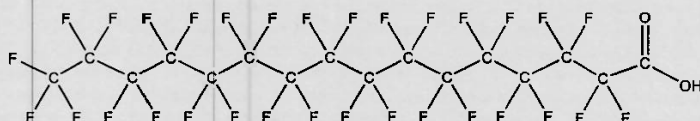
CERTIFICATE OF ANALYSIS DOCUMENTATION

10842 * NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

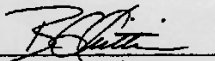
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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

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 Revision#:9, Revised 2020-12-23

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

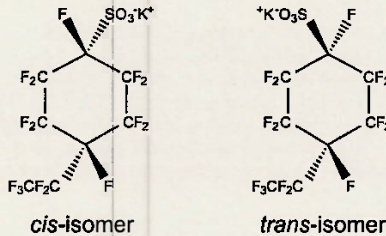
PFECHS

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)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)

SOLVENT(S): Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

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*).

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Certified By:

B.G. Chittim, General Manager

Date: 10/15/2021
(mm/dd/yyyy)

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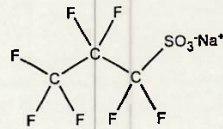
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
46.0 ± 2.3 µg/mL (PFPrS acid)
45.8 ± 2.3 µg/mL (PFPrS anion)

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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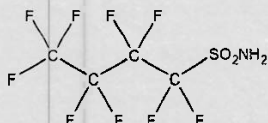
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FBSA-I
COMPOUND: Perfluoro-1-butanesulfonamide

LOT NUMBER: FBSA11211

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA: C₄H₂F₉NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/10/2021
EXPIRY DATE: (mm/dd/yyyy) 11/10/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 299.11
SOLVENT(S): Isopropanol

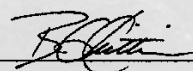
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 11/10/2021
(mm/dd/yyyy)

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Revision#: 9, Revised 2020-12-23

FBSA11211 (1 of 4)
rev0

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11225



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

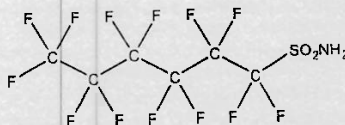
COMPOUND:

Perfluoro-1-hexanesulfonamide

CAS #:

41997-13-1

STRUCTURE:



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

MOLECULAR WEIGHT:

399.13

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

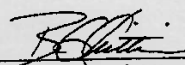
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

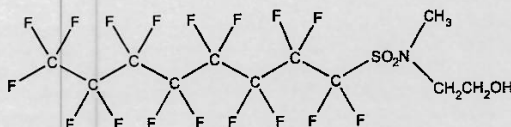
NMeFOSE0522M

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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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) perfluorooctane-sulfonamidoethanols, 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%))

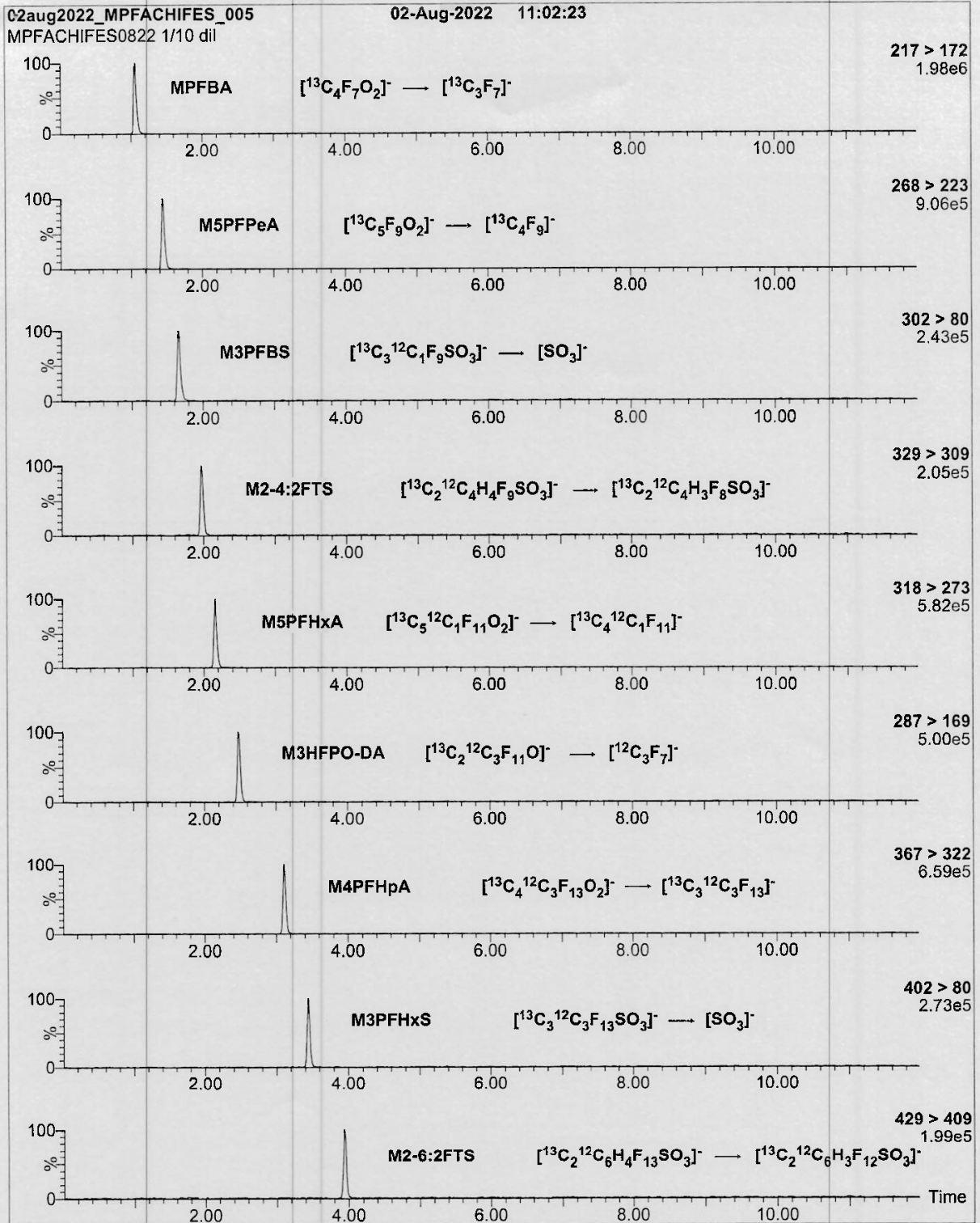
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	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)



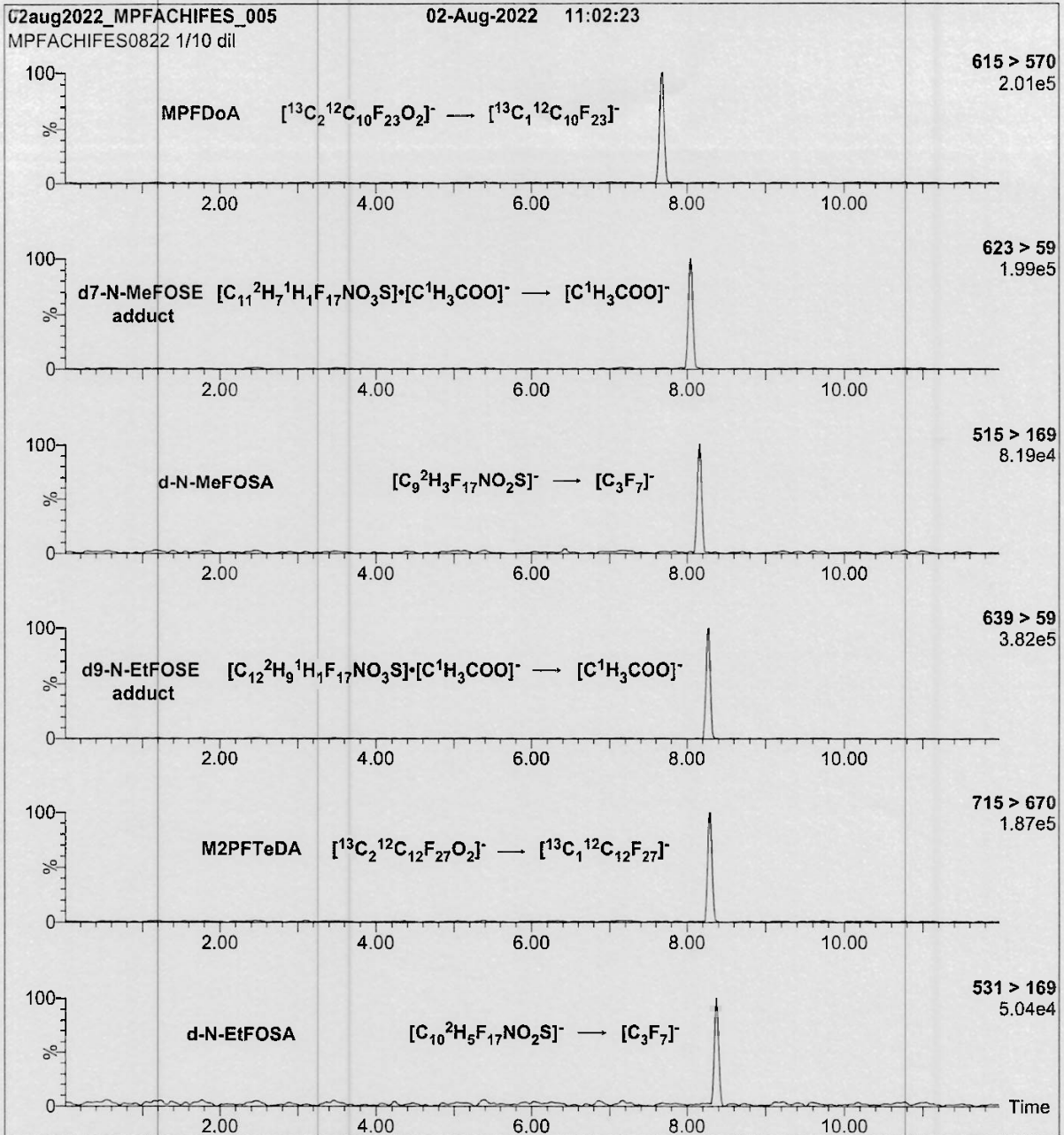
Form# 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

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)

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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

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rev1

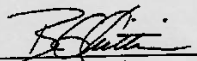
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7

Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

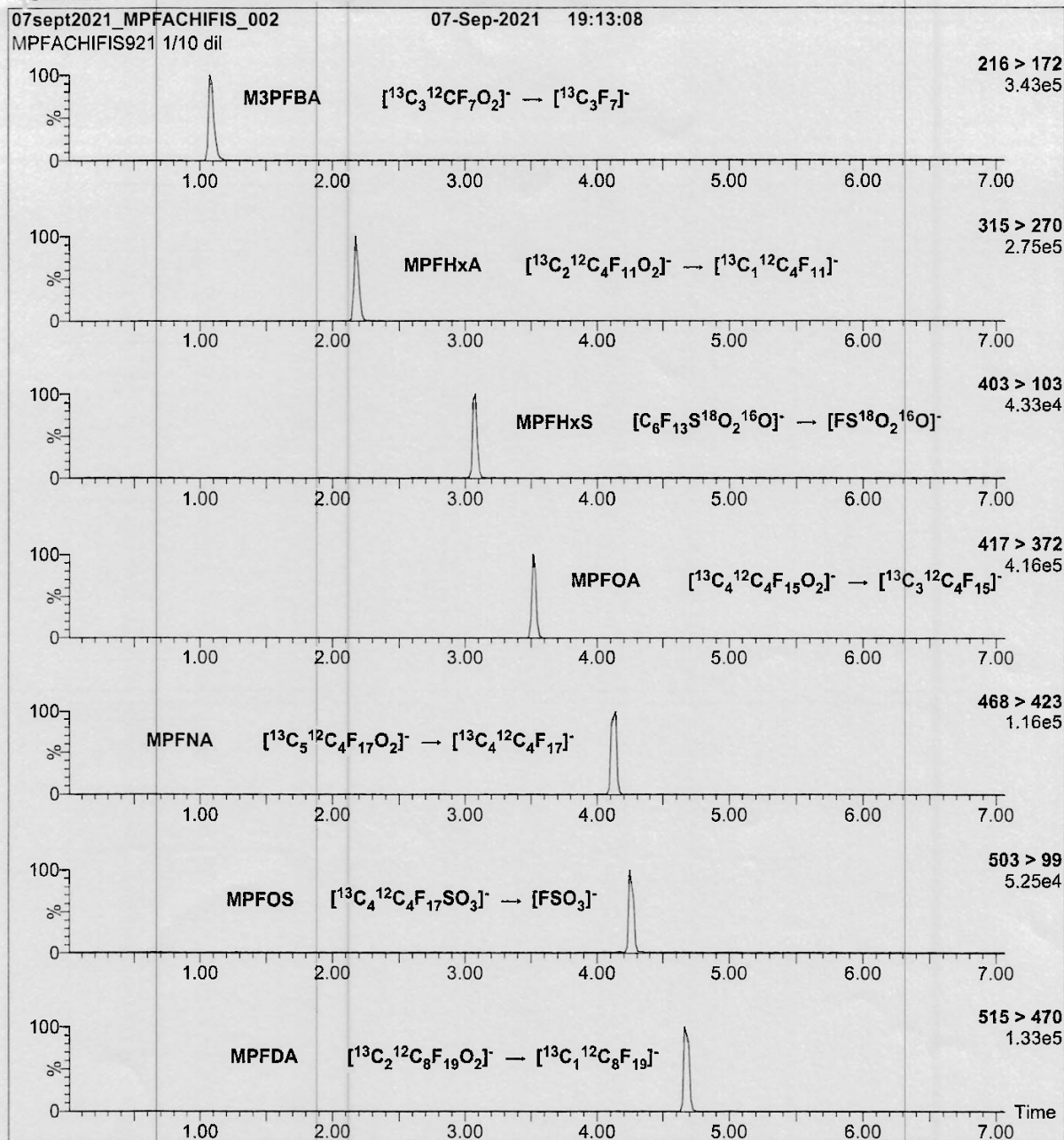
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	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 Started: 03/29/23 10:00
(mm/dd/yyyy 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time Finished: 3/30/23 10:35
(mm/dd/yyyy 24:00)

Balance ID: _____

Batch#: OP96143 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 96143 MB	/	500	7	N/A	25		5	AG	
OP 96143 BS	/	500	7						
OP 96143 LLBS	/	500	7			200			
FC3763-1	2	560	7			80			
	2	520							
	3	530							
	4	500							
	5	560	7	N/A	25		5	AG	
OPFC3763-3MS	3	540	7	N/A	25	200	5	AG	
OP MSD									
OPFC3763-5DUP	3	560	7	N/A	25		5	AG	

Comments:

EIS (SURR) ID: 11703C-F Conc: 250-5000 ng/ml² Exp. Date: 03/23/24 Inj. By: GH Ver. By: CM
 SPIKE.1 ID: LEMS2092A Conc: VARIED Exp. Date: 01/23/23 Inj. By: GH Ver. By: CM
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11671F-J Conc: 250-1000 ng/ml² Exp. Date: 3/29/24 Inj. By: MW Ver. By: UR

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 227231
 Water Lot# OP95448
 Acetic Acid# 194003
 0.1M Formic PE331
 1% NH4OH MeOH PE334
 0.3M Formic Acid PE333
 3% NH4OH Sol _____
 5% Formic Acid _____
 SPE Lot # 323-001184
 Syringe filter Lot # _____
 pH paper Lot# 215322
 Carbon Lot# 160898

Relinquished By: Michelle Vachon
 Accepted By: MW

Date: 03/29/23
 Date: 3/29/23

1633 AQ extraction 042222.xls NF

7.10.1
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