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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC5930

Sampling Date: 05/08/23



Report to:

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Total number of pages in report: 642



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: FC5930

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC5930-1	05/08/23	10:10 RS	05/09/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2305W2
FC5930-2	05/08/23	10:50 AAMY	05/09/23	AQ	Ground Water	AF-RHMW225401-WGN01B-2305W2
FC5930-3	05/08/23	11:30 RS	05/09/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2305W2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC5930

Site: N6274223F0104 RH Fire Suppression System

Report Date: 5/17/2023 11:48:56 AM

On 05/09/2023, 3 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 2.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5930 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: OP96871

Sample(s) FC5968-2MS, FC5968-3DUP 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: FC5930
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/08/23



Lab Sample ID	Client Sample ID	Result/ Analyte	LOQ	LOD	Units	Method
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FC5930-1 AF-RHMW04-WGN01LF-2305W2

No hits reported in this sample.

FC5930-2 AF-RHMW225401-WGN01B-2305W2

Perfluorohexanoic acid	0.89 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.81 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.66 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid	0.89 J	3.7	1.9	ng/l	EPA DRAFT 1633

FC5930-3 AF-RHMW06-WGN01LF-2305W2

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-2305W2		
Lab Sample ID:	FC5930-1	Date Sampled:	05/08/23
Matrix:	AQ - Ground Water	Date Received:	05/09/23
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	6Q17829.D	1	05/16/23 01:19	MV	05/12/23 11:00	OP96871	S6Q269
Run #2							

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

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

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2305W2		
Lab Sample ID:	FC5930-1	Date Sampled:	05/08/23
Matrix:	AQ - Ground Water	Date Received:	05/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	102%		20-150%
	13C5-PFPeA	106%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	94%		20-150%
	13C6-PFDA	115%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	92%		20-150%
	13C2-PFTeDA	89%		20-150%
	13C3-PFBS	111%		20-150%
	13C3-PFHxS	104%		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-2305W2	
Lab Sample ID:	FC5930-1	Date Sampled: 05/08/23
Matrix:	AQ - Ground Water	Date Received: 05/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	95%		20-150%
	13C8-FOSA	80%		20-150%
	d3-MeFOSA	74%		20-150%
	d5-EtFOSA	75%		20-150%
	d3-MeFOSAA	88%		20-150%
	d5-EtFOSAA	75%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	79%		20-150%
	13C2-4:2FTS	99%		20-180%
	13C2-6:2FTS	105%		20-180%
	13C2-8:2FTS	99%		20-180%
	13C3-HFPO-DA	98%		20-150%

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 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW225401-WGN01B-2305W2		
Lab Sample ID:	FC5930-2	Date Sampled:	05/08/23
Matrix:	AQ - Ground Water	Date Received:	05/09/23
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	6Q17830.D	1	05/16/23 01:34	MV	05/12/23 11:00	OP96871	S6Q269
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	0.89	3.7	1.9	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.81	3.7	1.9	0.46	ng/l	J
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.66	3.7	1.9	0.46	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	0.89	3.7	1.9	0.65	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2305W2		
Lab Sample ID:	FC5930-2	Date Sampled:	05/08/23
Matrix:	AQ - Ground Water	Date Received:	05/09/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l

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

13C4-PFBA	99%	20-150%
13C5-PFPeA	106%	20-150%
13C5-PFHxA	113%	20-150%
13C4-PFHpA	107%	20-150%
13C8-PFOA	110%	20-150%
13C9-PFNA	119%	20-150%
13C6-PFDA	128%	20-150%
13C7-PFUnDA	112%	20-150%
13C2-PFDoDA	104%	20-150%
13C2-PFTeDA	96%	20-150%
13C3-PFBS	119%	20-150%
13C3-PFHxS	112%	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-RHMW225401-WGN01B-2305W2	
Lab Sample ID:	FC5930-2	Date Sampled: 05/08/23
Matrix:	AQ - Ground Water	Date Received: 05/09/23
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	99%		20-150%
	13C8-FOSA	84%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	78%		20-150%
	d3-MeFOSAA	89%		20-150%
	d5-EtFOSAA	92%		20-150%
	d7-MeFOSE	77%		20-150%
	d9-EtFOSE	83%		20-150%
	13C2-4:2FTS	117%		20-180%
	13C2-6:2FTS	117%		20-180%
	13C2-8:2FTS	109%		20-180%
	13C3-HFPO-DA	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

SGS North America Inc.

Report of Analysis

Page 1 of 3

Client Sample ID:	AF-RHMW06-WGN01LF-2305W2		
Lab Sample ID:	FC5930-3	Date Sampled:	05/08/23
Matrix:	AQ - Ground Water	Date Received:	05/09/23
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	6Q17831.D	1	05/16/23 01:48	MV	05/12/23 11:00	OP96871	S6Q269
Run #2							

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

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

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2305W2		Date Sampled:	05/08/23
Lab Sample ID:	FC5930-3	Date Received:	05/09/23	
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
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

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

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

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

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	106%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	104%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	83%		20-150%
	13C2-PFTeDA	79%		20-150%
	13C3-PFBS	121%		20-150%
	13C3-PFHxS	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

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2305W2	
Lab Sample ID:	FC5930-3	Date Sampled: 05/08/23
Matrix:	AQ - Ground Water	Date Received: 05/09/23
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	72%		20-150%
	d3-MeFOSA	64%		20-150%
	d5-EtFOSA	69%		20-150%
	d3-MeFOSAA	89%		20-150%
	d5-EtFOSAA	83%		20-150%
	d7-MeFOSE	70%		20-150%
	d9-EtFOSE	79%		20-150%
	13C2-4:2FTS	103%		20-180%
	13C2-6:2FTS	104%		20-180%
	13C2-8:2FTS	98%		20-180%
	13C3-HFPO-DA	102%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando

Chain of Custody

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

FC 5930

COC #: 2305W2AFSG08

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Form containing Client/Reporting Information, Project Information, Analytical Information, Matrix Codes, and Chain of Custody table. Includes handwritten notes like 'OK 5/8/23' and 'Initial Assessment'.

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FC5930: Chain of Custody

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SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0717
www.sgs.com

FC 5930

COC #: 2305W2AFSG07

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		<div style="text-align: center; font-size: 2em; opacity: 0.5;"> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe									
Address: 1001 Bishop St. ste 1600		Street																					
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii																					
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810																					
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #																					
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #		PFAS EPA Draft 1633										LAB USE ONLY									
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NOISE	PH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH			
2	AF-RHMW225401-WGN01B-2305W2	5/8/23	1050	AA,MY	GW	3		X															
Turnaround Time (Business days)		Data Deliverable Information										Comments / Remarks											
10 Day (Business) _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____		Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United Arab 016-96968454									
Rush T/A Data Available VIA Email or Lablink																							
Sample Custody must be documented below each time samples change possession, including courier delivery.																							
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation			
1 Andy Young / AECOM		5/8/23		2 Alex Edmunds / AECOM		5/8/23		3 Alex Edmunds / AECOM		5/8/23		4 [Signature] / SGS		5/8/23		5 [Signature] / AECOM		5/8/23		6 [Signature] / AECOM		5/8/23	
5				6				7				8											
Lab Use Only: Cooler Temperature (s) Celsius (corrected): 30 IRFL																		http://www.sgs.com/en/terms-and-conditions					

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FC5930: Chain of Custody

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SGS North America Inc - Orlando

Chain of Custody

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

FC 5930

COC #: 2305W2AFSG09

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				<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">PFAS EPA Draft 1633</div> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe	
Address: 1001 Bishop St. ste 1600		Street															
City: Honolulu State: HI Zip: 96813		City: Honolulu State: Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810															
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #															
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	NOI#	FOI	ING#3	ING#3	PS#C4	NACH#ZINC		BY WATER	RECH
3	AF-RHMMW06-WGN01LF-2305W2		5/8/23	11:20	ASL	GW	3		X								X
Turnaround Time (Business days)					Data Deliverable Information					Comments / Remarks							
10 Day (Business)		Approved By: / Date:			<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S					EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AMB 016-96968754							
7 Day																	
5 Day																	
3 Day RUSH																	
2 Day RUSH																	
1 Day RUSH																	
Other																	
Rush T/A Data Available VIA Email or Lablink																	
Relinquished by Sampler/Affiliation					Received By/Affiliation					Relinquished By/Affiliation					Received By/Affiliation		
Alex Summitt					Alex Edmonds, AECOM					Alex Edmonds, AECOM					Alex Edmonds, AECOM		
Date Time: 5/8/23					Date Time: 5/8/23					Date Time: 5/8/23					Date Time: 5/8/23		
5					6					7					8		
Lab Use Only: Cooler Temperature (s) Celsius (corrected): 3.0 (REF)																	

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FC5930: Chain of Custody

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5.1
5



SGS Sample Receipt Summary

Job Number: FC5930

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 5/9/2023 3:30:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-96968454

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

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

Cooler Temps (Corrected) °C: Cooler 1: (2.9);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

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

Misc. Information

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

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320

pH 10-12 25BDH07

Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: TORYW

Date: 5/9/2023 3:30:00 PM

Reviewer: CD

Date: 5/15/2023

FC5930: Chain of Custody

Page 5 of 5

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5930
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/08/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC5930

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-IBLK	6Q17784.D	1	05/15/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-IBLK	6Q17784.D	1	05/15/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	104% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	94% 20-150%
	13C2-PFDoDA	92% 20-150%
	13C2-PFTeDA	91% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	101% 20-150%
	13C8-PFOS	99% 20-150%
	13C8-FOSA	98% 20-150%
	d3-MeFOSA	98% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	77% 20-150%
	d5-EtFOSAA	79% 20-150%
	d7-MeFOSE	112% 20-150%
	d9-EtFOSE	120% 20-150%
	13C2-4:2FTS	99% 20-180%
	13C2-6:2FTS	91% 20-180%
	13C2-8:2FTS	89% 20-180%
	13C3-HFPO-DA	102% 20-150%

6.1.1
6

Continuing Calibration Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-ICCB	6Q17822.D	1	05/15/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-ICCB	6Q17822.D	1	05/15/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	98% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	100% 20-150%
	13C6-PFDA	111% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	113% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	102% 20-150%
	d3-MeFOSA	91% 20-150%
	d5-EtFOSA	92% 20-150%
	d3-MeFOSAA	88% 20-150%
	d5-EtFOSAA	92% 20-150%
	d7-MeFOSE	113% 20-150%
	d9-EtFOSE	108% 20-150%
	13C2-4:2FTS	109% 20-180%
	13C2-6:2FTS	103% 20-180%
	13C2-8:2FTS	104% 20-180%
	13C3-HFPO-DA	98% 20-150%

Method Blank Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-MB	6Q17825.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-MB	6Q17825.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	103% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	110% 20-150%
	13C9-PFNA	113% 20-150%
	13C6-PFDA	109% 20-150%
	13C7-PFUnDA	103% 20-150%
	13C2-PFDoDA	79% 20-150%
	13C2-PFTeDA	77% 20-150%
	13C3-PFBS	113% 20-150%
	13C3-PFHxS	109% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	73% 20-150%
	d3-MeFOSA	66% 20-150%
	d5-EtFOSA	64% 20-150%
	d3-MeFOSAA	84% 20-150%
	d5-EtFOSAA	83% 20-150%
	d7-MeFOSE	64% 20-150%
	d9-EtFOSE	75% 20-150%
	13C2-4:2FTS	104% 20-180%
	13C2-6:2FTS	104% 20-180%
	13C2-8:2FTS	100% 20-180%
	13C3-HFPO-DA	96% 20-150%

Continuing Calibration Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-ICCB	6Q17834.D	1	05/16/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96871-DUP, OP96871-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q269-ICCB	6Q17834.D	1	05/16/23	MV	n/a	n/a	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP96871-DUP, OP96871-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	96% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	96% 20-150%
	13C9-PFNA	100% 20-150%
	13C6-PFDA	113% 20-150%
	13C7-PFUnDA	105% 20-150%
	13C2-PFDoDA	100% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	95% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	94% 20-150%
	13C8-FOSA	99% 20-150%
	d3-MeFOSA	87% 20-150%
	d5-EtFOSA	91% 20-150%
	d3-MeFOSAA	89% 20-150%
	d5-EtFOSAA	96% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	106% 20-150%
	13C2-4:2FTS	94% 20-180%
	13C2-6:2FTS	94% 20-180%
	13C2-8:2FTS	87% 20-180%
	13C3-HFPO-DA	97% 20-150%

Blank Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-LLBS	6Q17824.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0283	94	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0137	91	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0069	92	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0067	89	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0070	93	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0079	105	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0063	84	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0061	81	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0067	89	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0065	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0066	88	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0061	92	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0070	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0069	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0064	90	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0062	89	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0059	82	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0064	88	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0057	78	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0266	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0255	89	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0242	84	40-150
754-91-6	PFOSA	0.0075	0.0072	96	40-150
31506-32-8	MeFOSA	0.015	0.0131	87	40-150
4151-50-2	EtFOSA	0.015	0.0134	89	40-150
2355-31-9	MeFOSAA	0.0075	0.0074	99	40-150
2991-50-6	EtFOSAA	0.0075	0.0066	88	40-150
24448-09-7	MeFOSE	0.0375	0.0352	94	40-150
1691-99-2	EtFOSE	0.0375	0.0346	92	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0142	95	40-150
919005-14-4	ADONA	0.0142	0.0131	92	40-150
377-73-1	PFMPA	0.015	0.0142	95	40-150
863090-89-5	PFMBA	0.015	0.0146	97	40-150
151772-58-6	NFDHA	0.015	0.0133	89	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0129	92	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0127	90	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-LLBS	6Q17824.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0112	84	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0270	72	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.153	82	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.161	86	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	110%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	120%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	121%	20-150%
	13C7-PFUnDA	121%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	116%	20-150%
	13C3-PFHxS	111%	20-150%
	13C8-PFOS	118%	20-150%
	13C8-FOSA	85%	20-150%
	d3-MeFOSA	83%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	95%	20-150%
	d5-EtFOSAA	97%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	94%	20-150%
	13C2-4:2FTS	112%	20-180%
	13C2-6:2FTS	111%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	105%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-BS	6Q17823.D	1	05/15/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0948	95	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0465	93	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0230	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0243	97	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0236	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0250	100	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0228	91	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0235	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0253	101	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0242	97	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0252	101	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0207	93	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0237	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0237	104	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0234	98	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0222	96	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0237	99	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0220	91	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0201	83	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0805	86	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0990	104	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0770	80	40-150
754-91-6	PFOSA	0.025	0.0243	97	40-150
31506-32-8	MeFOSA	0.05	0.0466	93	40-150
4151-50-2	EtFOSA	0.05	0.0476	95	40-150
2355-31-9	MeFOSAA	0.025	0.0217	87	40-150
2991-50-6	EtFOSAA	0.025	0.0229	92	40-150
24448-09-7	MeFOSE	0.125	0.115	92	40-150
1691-99-2	EtFOSE	0.125	0.111	89	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0494	99	40-150
919005-14-4	ADONA	0.0473	0.0478	101	40-150
377-73-1	PFMPA	0.05	0.0478	96	40-150
863090-89-5	PFMBA	0.05	0.0483	97	40-150
151772-58-6	NFDHA	0.05	0.0509	102	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0467	100	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0418	88	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-BS	6Q17823.D	1	05/15/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0387	87	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0890	71	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.561	90	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.605	97	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	106%	20-150%
	13C5-PFPeA	105%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	96%	20-150%
	13C2-PFDoDA	86%	20-150%
	13C2-PFTeDA	80%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	105%	20-150%
	13C8-FOSA	78%	20-150%
	d3-MeFOSA	72%	20-150%
	d5-EtFOSA	75%	20-150%
	d3-MeFOSAA	92%	20-150%
	d5-EtFOSAA	85%	20-150%
	d7-MeFOSE	75%	20-150%
	d9-EtFOSE	84%	20-150%
	13C2-4:2FTS	109%	20-180%
	13C2-6:2FTS	99%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	99%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-MS	6Q17836.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269
FC5968-2	6Q17835.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	FC5968-2 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0943	0.0913	97	40-150
2706-90-3	Perfluoropentanoic acid	0.0032 J		0.0472	0.0486	96	40-150
307-24-4	Perfluorohexanoic acid	0.00089 J		0.0236	0.0245	100	40-150
375-85-9	Perfluoroheptanoic acid	0.0036 U		0.0236	0.0226	96	40-150
335-67-1	Perfluorooctanoic acid	0.0036 U		0.0236	0.0229	97	40-150
375-95-1	Perfluorononanoic acid	0.0036 U		0.0236	0.0234	99	40-150
335-76-2	Perfluorodecanoic acid	0.0036 U		0.0236	0.0222	94	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036 U		0.0236	0.0222	94	40-150
307-55-1	Perfluorododecanoic acid	0.0036 U		0.0236	0.0215	91	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036 U		0.0236	0.0236	100	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036 U		0.0236	0.0237	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0036 U		0.0209	0.0201	96	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		0.0222	0.0226	102	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036 U		0.0216	0.0220	102	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		0.0225	0.0224	100	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U		0.0219	0.0223	102	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		0.0227	0.0227	100	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036 U		0.0228	0.0212	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		0.0229	0.0217	95	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0884	0.0869	98	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		0.0896	0.0973	109	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0906	0.0970	107	40-150
754-91-6	PFOSA	0.0036 U		0.0236	0.0234	99	40-150
31506-32-8	MeFOSA	0.0073 U		0.0472	0.0450	95	40-150
4151-50-2	EtFOSA	0.0073 U		0.0472	0.0462	98	40-150
2355-31-9	MeFOSAA	0.0045 U		0.0236	0.0231	98	40-150
2991-50-6	EtFOSAA	0.0045 U		0.0236	0.0223	95	40-150
24448-09-7	MeFOSE	0.036 U		0.118	0.106	90	40-150
1691-99-2	EtFOSE	0.036 U		0.118	0.113	96	40-150
13252-13-6	HFPO-DA (GenX)	0.0036 U		0.0472	0.0476	101	40-150
919005-14-4	ADONA	0.0073 U		0.0446	0.0435	98	40-150
377-73-1	PFMPA	0.0073 U		0.0472	0.0433	92	40-150
863090-89-5	PFMBA	0.0073 U		0.0472	0.0464	98	40-150
151772-58-6	NFDHA	0.0073 U		0.0472	0.0437	93	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0073 U		0.0441	0.0365	83	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0073 U		0.0446	0.0339	76	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-MS	6Q17836.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269
FC5968-2	6Q17835.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	FC5968-2 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0073 U	0.042	0.0376	90	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.118	0.0753	64	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.091 U	0.59	0.504	85	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.091 U	0.59	0.527	89	40-150

CAS No.	ID Standard Recoveries	MS	FC5968-2	Limits
	13C4-PFBA	64%	64%	20-150%
	13C5-PFPeA	107%	110%	20-150%
	13C5-PFHxA	114%	118%	20-150%
	13C4-PFHpA	108%	108%	20-150%
	13C8-PFOA	102%	113%	20-150%
	13C9-PFNA	100%	121%	20-150%
	13C6-PFDA	105%	116%	20-150%
	13C7-PFUnDA	98%	101%	20-150%
	13C2-PFDoDA	90%	97%	20-150%
	13C2-PFTeDA	90%	91%	20-150%
	13C3-PFBS	118%	118%	20-150%
	13C3-PFHxS	111%	108%	20-150%
	13C8-PFOS	90%	103%	20-150%
	13C8-FOSA	90%	94%	20-150%
	d3-MeFOSA	82%	90%	20-150%
	d5-EtFOSA	78%	90%	20-150%
	d3-MeFOSAA	82%	98%	20-150%
	d5-EtFOSAA	82%	97%	20-150%
	d7-MeFOSE	86%	91%	20-150%
	d9-EtFOSE	90%	99%	20-150%
	13C2-4:2FTS	111%	103%	20-180%
	13C2-6:2FTS	99%	114%	20-180%
	13C2-8:2FTS	89%	95%	20-180%
	13C3-HFPO-DA	104%	114%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-DUP	6Q17838.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269
FC5968-3	6Q17837.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	FC5968-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.014 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0033 J		0.0035 J		6	30
307-24-4	Perfluorohexanoic acid	0.0010 J		0.0011 J		10	30
375-85-9	Perfluoroheptanoic acid	0.0036 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0036 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0036 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0036 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0036 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0036 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0036 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0036 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0036 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0036 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0036 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	0.0036 U		ND		nc	30
31506-32-8	MeFOSA	0.0071 U		ND		nc	30
4151-50-2	EtFOSA	0.0071 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	0.036 U		ND		nc	30
1691-99-2	EtFOSE	0.036 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0036 U		ND		nc	30
919005-14-4	ADONA	0.0071 U		ND		nc	30
377-73-1	PFMPA	0.0071 U		ND		nc	30
863090-89-5	PFMBA	0.0071 U		ND		nc	30
151772-58-6	NFDHA	0.0071 U		ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0071 U		ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0071 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96871-DUP	6Q17838.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269
FC5968-3	6Q17837.D	1	05/16/23	MV	05/12/23	OP96871	S6Q269

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5930-1, FC5930-2, FC5930-3

CAS No.	Compound	FC5968-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0071	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018	U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.089	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.089	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC5968-3	Limits
	13C4-PFBA	55%	64%	20-150%
	13C5-PFPeA	104%	109%	20-150%
	13C5-PFHxA	106%	110%	20-150%
	13C4-PFHpA	101%	106%	20-150%
	13C8-PFOA	105%	109%	20-150%
	13C9-PFNA	93%	110%	20-150%
	13C6-PFDA	95%	121%	20-150%
	13C7-PFUnDA	90%	107%	20-150%
	13C2-PFDoDA	80%	94%	20-150%
	13C2-PFTeDA	81%	87%	20-150%
	13C3-PFBS	118%	128%	20-150%
	13C3-PFHxS	106%	115%	20-150%
	13C8-PFOS	92%	102%	20-150%
	13C8-FOSA	82%	90%	20-150%
	d3-MeFOSA	75%	89%	20-150%
	d5-EtFOSA	79%	83%	20-150%
	d3-MeFOSAA	80%	83%	20-150%
	d5-EtFOSAA	84%	91%	20-150%
	d7-MeFOSE	81%	88%	20-150%
	d9-EtFOSE	82%	94%	20-150%
	13C2-4:2FTS	109%	112%	20-180%
	13C2-6:2FTS	100%	126%	20-180%
	13C2-8:2FTS	98%	108%	20-180%
	13C3-HFPO-DA	100%	101%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q269-CC268	Injection Date:	05/15/23
Lab File ID:	6Q17820.D	Injection Time:	23:09
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	63276	2.90	46451	5.47	73935	7.07	24723	7.58	21248	8.06
Check Std ^c	60743	2.90	42978	5.45	69792	7.07	24315	7.58	19657	8.06
Upper Limit ^d	126552	3.30	92902	5.85	147870	7.47	49446	7.98	42496	8.46
Lower Limit ^e	18983	2.50	13935	5.05	22181	6.67	7417	7.18	6374	7.66

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
S6Q269-ICCB	60723	2.90	44243	5.47	68122	7.07	23932	7.60	19057	8.06	1
OP96871-BS	51767	2.90	38014	5.47	58611	7.07	19474	7.60	17948	8.06	1
OP96871-LLBS	52035	2.90	38148	5.47	59353	7.07	21372	7.60	16597	8.06	1
OP96871-MB	53639	2.90	40057	5.47	59147	7.07	19635	7.60	17824	8.06	1
ZZZZZZ	51722	2.90	39165	5.47	58194	7.07	19083	7.60	16489	8.08	1
ZZZZZZ	51198	2.90	38854	5.47	58508	7.07	20288	7.60	16152	8.06	1
ZZZZZZ	52250	2.90	38251	5.45	59877	7.07	20344	7.58	18276	8.05	1
FC5930-1	49548	2.90	36105	5.47	58053	7.07	20797	7.58	15194	8.06	1
FC5930-2	52209	2.90	39353	5.47	59346	7.07	19510	7.58	15488	8.06	1
FC5930-3	52904	2.90	39666	5.47	60953	7.07	21929	7.58	17483	8.06	1
ZZZZZZ	53107	2.90	38041	5.47	62418	7.07	21054	7.60	17090	8.06	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: S6Q268-ICC268 6Q17741.D 05/12/23 12:58. 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

Injection Standard Area Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q269-CC268	Injection Date:	05/15/23
Lab File ID:	6Q17820.D	Injection Time:	23:09
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	8457	7.17	12749	8.23
Check Std ^c	8260	7.17	12135	8.23
Upper Limit ^d	16914	7.57	25498	8.63
Lower Limit ^e	2537	6.77	3825	7.83

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q269-ICCB	7589	7.18	12443	8.23	1
OP96871-BS	6818	7.18	10712	8.23	1
OP96871-LLBS	6750	7.18	10527	8.23	1
OP96871-MB	6706	7.18	10949	8.23	1
ZZZZZZ	6769	7.18	11674	8.23	1
ZZZZZZ	6787	7.18	9677	8.23	1
ZZZZZZ	6724	7.17	9959	8.21	1
FC5930-1	6558	7.18	10631	8.21	1
FC5930-2	6819	7.18	11517	8.23	1
FC5930-3	7027	7.17	11398	8.23	1
ZZZZZZ	7044	7.18	11964	8.23	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q268-ICC268 6Q17741.D 05/12/23 12:58. 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

Injection Standard Area Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q269-CC268	Injection Date:	05/16/23
Lab File ID:	6Q17833.D	Injection Time:	02:17
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	63276	2.90	46451	5.47	73935	7.07	24723	7.58	21248	8.06
Check Std ^c	61559	2.90	43324	5.47	71539	7.07	23409	7.58	19857	8.08
Upper Limit ^d	126552	3.30	92902	5.87	147870	7.47	49446	7.98	42496	8.48
Lower Limit ^e	18983	2.50	13935	5.07	22181	6.67	7417	7.18	6374	7.68

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
S6Q269-ICCB	60828	2.90	44507	5.47	70597	7.07	24781	7.60	19267	8.06	1
FC5968-2	50369	2.90	36542	5.47	54285	7.07	18886	7.60	16062	8.06	1
OP96871-MS	51225	2.90	37725	5.47	60615	7.07	19497	7.58	15732	8.06	1
FC5968-3	50440	2.90	37048	5.47	57993	7.07	19484	7.58	16124	8.06	1
OP96871-DUP	52056	2.90	38086	5.47	59656	7.07	21434	7.60	17148	8.06	1
ZZZZZZ	52786	2.90	39208	5.47	59589	7.07	21787	7.60	16132	8.06	1
ZZZZZZ	52011	2.90	37374	5.47	58169	7.07	20151	7.60	16028	8.08	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: S6Q268-ICC268 6Q17741.D 05/12/23 12:58. 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.

6.5.2
6

Injection Standard Area Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q269-CC268	Injection Date:	05/16/23
Lab File ID:	6Q17833.D	Injection Time:	02:17
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	8457	7.17	12749	8.23
Check Std ^c	7894	7.18	12363	8.23
Upper Limit ^d	16914	7.58	25498	8.63
Lower Limit ^e	2537	6.78	3825	7.83

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q269-ICCB	8256	7.18	13036	8.23	1
FC5968-2	6805	7.18	10232	8.23	1
OP96871-MS	6570	7.17	10674	8.23	1
FC5968-3	6208	7.18	10433	8.23	1
OP96871-DUP	6611	7.17	10875	8.23	1
ZZZZZZ	6756	7.18	11075	8.23	1
ZZZZZZ	7251	7.18	10853	8.23	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q268-ICC268 6Q17741.D 05/12/23 12:58. 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.

6.5.2
6

TDCA Retention Time Check

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q268-RT	Injection Date:	05/12/23
Lab File ID:	6Q17735.D	Injection Time:	11:31
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.228	--	--
TDCA	6.787	1.441	1.000
TCDCA	6.638	1.590	1.000
TUDCA	5.772	2.456	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
S6Q268-IC268	6Q17737.D	05/12/23	12:00	00:29	Mass Calibration Verification
S6Q268-IC268	6Q17738.D	05/12/23	12:15	00:44	Initial cal 1
S6Q268-IC268	6Q17739.D	05/12/23	12:29	00:58	Initial cal 2
S6Q268-IC268	6Q17740.D	05/12/23	12:44	01:13	Initial cal 3
S6Q268-ICC268	6Q17741.D	05/12/23	12:58	01:27	Initial cal 4
S6Q268-IC268	6Q17742.D	05/12/23	13:13	01:42	Initial cal 5
S6Q268-IC268	6Q17743.D	05/12/23	13:27	01:56	Initial cal 6
S6Q268-IC268	6Q17744.D	05/12/23	13:42	02:11	Initial cal 7
S6Q268-IC268	6Q17745.D	05/12/23	13:56	02:25	Initial cal 8
S6Q268-IBLK	6Q17746.D	05/12/23	14:11	02:40	Instrument Blank
S6Q268-IBLK	6Q17746.D	05/12/23	14:11	02:40	Instrument Blank
S6Q268-ICV268	6Q17747.D	05/12/23	14:25	02:54	Initial cal verification 4
S6Q268-ICV268	6Q17748.D	05/12/23	14:40	03:09	Initial cal verification 20
S6Q268-CC268	6Q17749.D	05/12/23	14:54	03:23	Continuing cal 4
S6Q268-CC268	6Q17750.D	05/12/23	15:09	03:38	Continuing cal 1.0LL
OP96784-MB	6Q17751.D	05/12/23	15:23	03:52	Method Blank
FC5890-1	6Q17752.D	05/12/23	15:38	04:07	(used for QC only; not part of job FC5930)
FC5890-2	6Q17755.D	05/12/23	16:21	04:50	(used for QC only; not part of job FC5930)
OP96784-DUP	6Q17757.D	05/12/23	16:50	05:19	Duplicate
S6Q268-CC268	6Q17759.D	05/12/23	17:19	05:48	Continuing cal 4
S6Q268-ICCB	6Q17760.D	05/12/23	17:34	06:03	Continuing Calibration Blank
OP96723-MS	6Q17762.D	05/12/23	18:03	06:32	Matrix Spike
OP96723-MSD	6Q17763.D	05/12/23	18:17	06:46	Matrix Spike Duplicate
S6Q268-CC268	6Q17764.D	05/12/23	18:32	07:01	Continuing cal 4
S6Q268-ICCB	6Q17765.D	05/12/23	18:46	07:15	Continuing Calibration Blank
OP96842-MB	6Q17766.D	05/12/23	19:00	07:29	Method Blank
OP96842-BS	6Q17767.D	05/12/23	19:15	07:44	Blank Spike
OP96842-LLBS	6Q17768.D	05/12/23	19:29	07:58	Blank Spike
ZZZZZZ	6Q17769.D	05/12/23	19:44	08:13	(unrelated sample)
ZZZZZZ	6Q17770.D	05/12/23	19:58	08:27	(unrelated sample)
ZZZZZZ	6Q17771.D	05/12/23	20:13	08:42	(unrelated sample)
FC5443-4	6Q17772.D	05/12/23	20:27	08:56	(used for QC only; not part of job FC5930)
ZZZZZZ	6Q17775.D	05/12/23	21:11	09:40	(unrelated sample)
S6Q268-ECC268	6Q17777.D	05/12/23	21:40	10:09	Ending cal 4

TDCA Retention Time Check

Job Number: FC5930
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-RT	Injection Date: 05/12/23
Lab File ID: 6Q17735.D	Injection Time: 11:31
Instrument ID: GCMS6Q	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q268-ICCB	6Q17778.D	05/12/23	21:54	10:23	Continuing Calibration Blank

6.6.1
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TDCA Retention Time Check

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q269-RT	Injection Date:	05/15/23
Lab File ID:	6Q17781.D	Injection Time:	13:19
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.240	--	--
TDCA	6.787	1.453	1.000
TCDCA	6.638	1.602	1.000
TUDCA	5.785	2.455	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
S6Q269-IBLK	6Q17784.D	05/15/23	14:02	00:43	Instrument Blank
S6Q269-IBLK	6Q17784.D	05/15/23	14:02	00:43	Instrument Blank
S6Q269-CC268	6Q17785.D	05/15/23	14:17	00:58	Continuing cal 4
S6Q269-CC268	6Q17786.D	05/15/23	14:31	01:12	Continuing cal 1.0LL
OP96847-BS	6Q17787.D	05/15/23	15:07	01:48	Blank Spike
OP96847-LLBS	6Q17788.D	05/15/23	15:22	02:03	Blank Spike
OP96847-MB	6Q17789.D	05/15/23	15:37	02:18	Method Blank
ZZZZZZ	6Q17790.D	05/15/23	15:51	02:32	(unrelated sample)
ZZZZZZ	6Q17792.D	05/15/23	16:20	03:01	(unrelated sample)
ZZZZZZ	6Q17795.D	05/15/23	17:07	03:48	(unrelated sample)
ZZZZZZ	6Q17796.D	05/15/23	17:21	04:02	(unrelated sample)
S6Q269-CC268	6Q17797.D	05/15/23	17:36	04:17	Continuing cal 4
S6Q269-ICCB	6Q17798.D	05/15/23	17:50	04:31	Continuing Calibration Blank
ZZZZZZ	6Q17799.D	05/15/23	18:05	04:46	(unrelated sample)
ZZZZZZ	6Q17800.D	05/15/23	18:19	05:00	(unrelated sample)
ZZZZZZ	6Q17801.D	05/15/23	18:34	05:15	(unrelated sample)
ZZZZZZ	6Q17802.D	05/15/23	18:48	05:29	(unrelated sample)
ZZZZZZ	6Q17803.D	05/15/23	19:03	05:44	(unrelated sample)
ZZZZZZ	6Q17804.D	05/15/23	19:17	05:58	(unrelated sample)
ZZZZZZ	6Q17805.D	05/15/23	19:32	06:13	(unrelated sample)
ZZZZZZ	6Q17806.D	05/15/23	19:46	06:27	(unrelated sample)
S6Q269-CC268	6Q17808.D	05/15/23	20:15	06:56	Continuing cal 4
S6Q269-ICCB	6Q17809.D	05/15/23	20:30	07:11	Continuing Calibration Blank
ZZZZZZ	6Q17810.D	05/15/23	20:44	07:25	(unrelated sample)
ZZZZZZ	6Q17811.D	05/15/23	20:59	07:40	(unrelated sample)
ZZZZZZ	6Q17812.D	05/15/23	21:13	07:54	(unrelated sample)
ZZZZZZ	6Q17813.D	05/15/23	21:28	08:09	(unrelated sample)
ZZZZZZ	6Q17814.D	05/15/23	21:42	08:23	(unrelated sample)
FC5443-4	6Q17815.D	05/15/23	21:57	08:38	(used for QC only; not part of job FC5930)
OP96842-MS	6Q17816.D	05/15/23	22:11	08:52	Matrix Spike
OP96842-MSD	6Q17817.D	05/15/23	22:25	09:06	Matrix Spike Duplicate
ZZZZZZ	6Q17818.D	05/15/23	22:40	09:21	(unrelated sample)
ZZZZZZ	6Q17819.D	05/15/23	22:54	09:35	(unrelated sample)
S6Q269-CC268	6Q17820.D	05/15/23	23:09	09:50	Continuing cal 4

TDCA Retention Time Check

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q269-RT	Injection Date:	05/15/23
Lab File ID:	6Q17781.D	Injection Time:	13:19
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q269-CC268	6Q17821.D	05/15/23	23:23	10:04	Continuing cal 1.0LL
S6Q269-ICCB	6Q17822.D	05/15/23	23:38	10:19	Continuing Calibration Blank
OP96871-BS	6Q17823.D	05/15/23	23:52	10:33	Blank Spike
OP96871-LLBS	6Q17824.D	05/16/23	00:07	10:48	Blank Spike
OP96871-MB	6Q17825.D	05/16/23	00:21	11:02	Method Blank
ZZZZZZ	6Q17826.D	05/16/23	00:36	11:17	(unrelated sample)
ZZZZZZ	6Q17827.D	05/16/23	00:50	11:31	(unrelated sample)
ZZZZZZ	6Q17828.D	05/16/23	01:05	11:46	(unrelated sample)
FC5930-1	6Q17829.D	05/16/23	01:19	12:00	AF-RHMW04-WGN01LF-2305W2
FC5930-2	6Q17830.D	05/16/23	01:34	12:15	AF-RHMW225401-WGN01B-2305W2
FC5930-3	6Q17831.D	05/16/23	01:48	12:29	AF-RHMW06-WGN01LF-2305W2
ZZZZZZ	6Q17832.D	05/16/23	02:03	12:44	(unrelated sample)
S6Q269-CC268	6Q17833.D	05/16/23	02:17	12:58	Continuing cal 4
S6Q269-ICCB	6Q17834.D	05/16/23	02:32	13:13	Continuing Calibration Blank
FC5968-2	6Q17835.D	05/16/23	02:46	13:27	(used for QC only; not part of job FC5930)
OP96871-MS	6Q17836.D	05/16/23	03:01	13:42	Matrix Spike
FC5968-3	6Q17837.D	05/16/23	03:15	13:56	(used for QC only; not part of job FC5930)
OP96871-DUP	6Q17838.D	05/16/23	03:30	14:11	Duplicate
ZZZZZZ	6Q17839.D	05/16/23	03:44	14:25	(unrelated sample)
ZZZZZZ	6Q17840.D	05/16/23	03:59	14:40	(unrelated sample)
S6Q269-CC268	6Q17841.D	05/16/23	04:13	14:54	Continuing cal 4
S6Q269-ICCB	6Q17842.D	05/16/23	04:28	15:09	Continuing Calibration Blank
OP96901-BS	6Q17843.D	05/16/23	04:42	15:23	Blank Spike
OP96901-LLBS	6Q17844.D	05/16/23	04:57	15:38	Blank Spike
OP96901-MB	6Q17845.D	05/16/23	05:11	15:52	Method Blank
ZZZZZZ	6Q17846.D	05/16/23	05:26	16:07	(unrelated sample)
ZZZZZZ	6Q17847.D	05/16/23	05:40	16:21	(unrelated sample)
S6Q269-ECC268	6Q17848.D	05/16/23	05:54	16:35	Ending cal 4
S6Q269-ICCB	6Q17849.D	05/16/23	06:09	16:50	Continuing Calibration Blank

6.6.2

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Ion Ratio Summary

Job Number: FC5930
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q269 Method: EPA DRAFT 1633

Lab Sample ID	Lab File ID	Ion Ratios			
		PFHxA	PFHpA	PFBS	PFHxS
S6Q268-ICC268	6Q17741.D	4.8	16.3	36.6	49.8
FC5930-1	6Q17829.D				
FC5930-2	6Q17830.D	4.9	14.4	36.6	40.9
FC5930-3	6Q17831.D				

6.7.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC5930
 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
FC5930-1	6Q17829.D	102	106	110	110	106	94	115	99
FC5930-2	6Q17830.D	99	106	113	107	110	119	128	112
FC5930-3	6Q17831.D	106	107	110	108	104	98	106	99
OP96871-BS	6Q17823.D	106	105	107	104	104	109	100	96
OP96871-DUP	6Q17838.D	55	104	106	101	105	93	95	90
OP96871-LLBS	6Q17824.D	110	109	120	110	108	99	121	121
OP96871-MB	6Q17825.D	103	100	102	97	110	113	109	103
OP96871-MS	6Q17836.D	64	107	114	108	102	100	105	98
S6Q269-IBLK	6Q17784.D	99	101	104	102	100	98	102	94
S6Q269-ICCB	6Q17822.D	99	98	99	101	105	100	111	107
S6Q269-ICCB	6Q17834.D	99	96	96	103	96	100	113	105

Isotope Dilution Standards

Recovery Limits

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

6.8.1
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Isotope Dilution Standard Recovery Summary

Job Number: FC5930
 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
FC5930-1	6Q17829.D	92	89	111	104	95	80	74	75
FC5930-2	6Q17830.D	104	96	119	112	99	84	76	78
FC5930-3	6Q17831.D	83	79	121	109	104	72	64	69
OP96871-BS	6Q17823.D	86	80	112	102	105	78	72	75
OP96871-DUP	6Q17838.D	80	81	118	106	92	82	75	79
OP96871-LLBS	6Q17824.D	105	99	116	111	118	85	83	88
OP96871-MB	6Q17825.D	79	77	113	109	98	73	66	64
OP96871-MS	6Q17836.D	90	90	118	111	90	90	82	78
S6Q269-IBLK	6Q17784.D	92	91	101	101	99	98	98	99
S6Q269-ICCB	6Q17822.D	104	99	113	104	100	102	91	92
S6Q269-ICCB	6Q17834.D	100	98	95	99	94	99	87	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%

Isotope Dilution Standard Recovery Summary

Job Number: FC5930
 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
FC5930-1	6Q17829.D	88	75	78	79	99	105	99	98
FC5930-2	6Q17830.D	89	92	77	83	117	117	109	107
FC5930-3	6Q17831.D	89	83	70	79	103	104	98	102
OP96871-BS	6Q17823.D	92	85	75	84	109	99	114	99
OP96871-DUP	6Q17838.D	80	84	81	82	109	100	98	100
OP96871-LLBS	6Q17824.D	95	97	83	94	112	111	114	105
OP96871-MB	6Q17825.D	84	83	64	75	104	104	100	96
OP96871-MS	6Q17836.D	82	82	86	90	111	99	89	104
S6Q269-IBLK	6Q17784.D	77	79	112	120	99	91	89	102
S6Q269-ICCB	6Q17822.D	88	92	113	108	109	103	104	98
S6Q269-ICCB	6Q17834.D	89	96	103	106	94	94	87	97

Isotope Dilution Standards **Recovery Limits**

S17 = d3-MeFOSAA	20-150%
S18 = d5-EtFOSAA	20-150%
S19 = d7-MeFOSE	20-150%
S20 = d9-EtFOSE	20-150%
S21 = 13C2-4:2FTS	20-180%
S22 = 13C2-6:2FTS	20-180%
S23 = 13C2-8:2FTS	20-180%
S24 = 13C3-HFPO-DA	20-150%

6.8.1
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Initial Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICC268
 Lab FileID: 6Q17741.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods	Level Name	Level Last Update Time								
Method File	1633_051223_S6Q268.quantmethod.xml	1	5/15/2023 10:38:00 AM								
Batch Name	D:\MassHunter\Data\051223_1633_S6Q268\QuantResults\s6q268.batch.bin	2	5/15/2023 10:38:00 AM								
Last Calib Update	5/15/2023 10:38:00 AM	3	5/15/2023 10:38:00 AM								
Calibration Files	D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d	4	5/15/2023 12:15:25 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d	5	5/15/2023 12:29:54 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d	6	5/15/2023 12:44:26 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d	7	5/15/2023 12:58:55 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d	8	5/15/2023 1:13:23 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d		5/15/2023 1:27:52 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d		5/15/2023 1:42:21 PM								
	D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d		5/15/2023 1:56:51 PM								
Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA	Avg RF	0.3414	0.3414	0.3473	0.3457	0.3793	0.3767	0.3726	0.3656	0.3587	4.580
T PFBA											
I M5-PFPeA	Avg RF	0.7045	0.7085	0.7136	0.7174	0.7918	0.7713	0.7879	0.7414	0.7421	4.932
T PFMPA	Avg RF	0.0861	0.0849	0.0856	0.0851	0.0930	0.0919	0.0957	0.0934	0.0895	4.977
T 3:3FTCA	Avg RF	1.3776	1.3884	1.3956	1.4127	1.5345	1.4897	1.5349	1.4185	1.4440	4.534
T PFPeA	Avg RF	0.9734	1.0051	0.9841	1.0055	1.0978	1.0782	1.0631	1.0356	1.0303	4.430
T PFMBa											
I M5-PFHxA	Avg RF	0.1090	0.1021	0.1070	0.1081	0.1128	0.1148	0.1119	0.1088	0.1093	3.588
T NFDHA	Avg RF	0.9983	0.9239	0.9309	0.9177	0.9954	1.0056	1.0502	1.1006	0.9903	6.531
T PFHxA	Avg RF	1.2675	1.2020	1.3313	1.2889	1.4255	1.3987	1.3603	1.3631	1.3297	5.529
T PFEEsA	Avg RF	0.1810	0.1593	0.1672	0.1675	0.1794	0.1718	0.1678	0.1787	0.1716	4.417
T 5:3FTCA	Avg RF	0.0762	0.0752	0.0790	0.0785	0.0788	0.0781	0.0784	0.0787	0.0778	1.793
T 7:3FTCA											
I M4-PFHpA	Avg RF	1.2305	1.2547	1.1628	1.1869	1.3507	1.2992	1.2737	1.2370	1.2495	4.808
T PFHpA											
I M8-PFOA	Avg RF	1.1979	1.4101	1.2713	1.1317	1.3008	1.2684	1.1651	1.2062	1.2439	7.097
T PFOA											
I M9-PFNA	Avg RF	0.9088	0.7976	0.9299	0.9173	1.0350	0.9545	0.9402	0.9457	0.9286	7.063
T PFNA											
I M6-PFDA	Avg RF	1.4944	1.2432	1.6199	1.3669	1.8264	1.4765	1.6275	1.7187	1.5467	12.262
T PFDA											
I M7-PFUnDA	Avg RF	0.8048	0.8877	0.9919	0.8347	0.9561	0.9551	0.8783	0.9544	0.9079	7.337
T PFUnDA											
I M2-PFDODA											



Initial Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICC268
 Lab FileID: 6Q17741.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	1.0325	1.0023	1.0042	0.9417	1.0070	1.0577	0.9546	0.9654	0.9957	3.977
T PFTfDA	Avg RF	1.0722	1.1173	1.1929	1.1642	1.2716	1.2627	1.1072	1.0469	1.1544	7.244
I M2-PFTeDA	Avg RF	1.2629	1.2832	1.1925	1.1527	1.4295	1.3841	1.2789	1.2570	1.2801	7.102
T PFTeDA						ISTD					
I M8-FOSA	Avg RF	0.9201	0.8719	0.9052	0.9554	0.9686	0.9644	0.9789	0.9221	0.9358	3.955
T FOSA						ISTD					
I M3-PFBS	Avg RF	1.1842	1.1812	1.1979	1.2055	1.2522	1.2096	1.2719	1.2579	1.2200	2.899
T PFBS						ISTD					
I M3-PFHxS	Avg RF	1.2379	1.3617	1.4321	1.3173	1.3949	1.3445	1.4975	1.3919	1.3722	5.653
T PFPeS	Avg RF	1.3838	1.3765	1.4082	1.2534	1.4773	1.3501	1.4300	1.3908	1.3838	4.708
T PFHxS						ISTD					
I M8-PFOS	Avg RF	1.2889	1.4378	1.1981	1.2297	1.4115	1.4276	1.2499	1.4270	1.3338	7.638
T PFHpS	Avg RF	1.2705	1.3508	1.2391	1.2039	1.4472	1.4075	1.2378	1.3293	1.3108	6.665
T PFOS	Avg RF	1.2445	1.2972	1.1345	1.0683	1.2286	1.2934	1.1344	1.2710	1.2090	7.081
T PFNS	Avg RF	0.8519	0.8788	0.7349	0.7201	0.8616	0.8609	0.7678	0.8175	0.8117	7.692
T PFDS	Avg RF	0.3906	0.4760	0.4171	0.4032	0.4558	0.4403	0.4197	0.4299	0.4291	6.484
T PFDoDS						ISTD					
I M2-4:2FTS	Avg RF	7.0997	7.3295	7.4788	7.6060	7.6226	7.6647	7.6807	7.6536	7.5169	2.741
T 4:2FTS						ISTD					
I M2-6:2FTS	Avg RF	5.2815	5.4612	5.6074	5.1463	5.7396	5.8387	5.7881	4.6750	5.4422	7.267
T 6:2FTS						ISTD					
I M2-8:2FTS	Avg RF	3.2419	2.7408	2.6251	3.0807	3.0176	2.8086	3.0273	2.1853	2.8409	11.687
T 8:2FTS						ISTD					
I M3-MeFOSAA	Avg RF	0.8210	0.9035	1.0349	0.9505	1.0140	1.0189	0.9896	1.0073	0.9675	7.543
T MeFOSAA						ISTD					
I M3-HFO-DA	Avg RF	1.0129	0.9388	0.9489	0.9077	1.0434	0.9614	0.9991	0.9214	0.9667	4.901
T HFPO-DA	Avg RF	15.39	14.90	16.05	16.39	17.72	16.30	15.86	14.77	15.92	5.954
T ADONA	Avg RF	5.6537	5.6627	6.2009	6.3895	6.5828	6.2872	6.2154	5.2969	6.0361	7.351
T 9Cl-PF3ONS	Avg RF	3.5794	3.8276	3.7217	4.0079	4.0372	3.8744	3.6131	3.5692	3.7788	4.953
T 11Cl-PF3OUds						ISTD					
I M5-EFOSAA	Avg RF	1.1049	0.8169	0.9222	0.8995	0.9167	0.9565	0.9353	0.8960	0.9310	8.747
T EFOSAA						ISTD					
I M7-MeFOSE	Avg RF	1.1901	1.1008	1.1064	1.0819	1.1809	1.2100	1.2417	1.2441	1.1695	5.535
T MeFOSE						ISTD					
I M9-EFOSE	Avg RF	1.0298	1.0058	1.0581	1.0412	1.1200	1.1685	1.1424	1.1498	1.0894	5.753
T EFOSE						ISTD					

Initial Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICC268
 Lab FileID: 6Q17741.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	1.1049	1.1427	0.9891	1.0016	1.1522	1.0966	1.1428	1.0276	1.0822	6.160
I M3-MeFOSA											
T MeFOSA	Avg RF	1.2190	1.2124	1.0551	1.0738	1.2457	1.2345	1.1746	0.9943	1.1512	8.345
I 13C4-PFOS											
S d3-MeFOSAA	Linear	0.7703	0.8456	0.7443	0.8014	0.7919	0.7925	0.7641	0.7569	0.7834	4.073
S 13C8-PFOS	Linear	0.7133	0.7794	0.7757	0.8277	0.7744	0.7817	0.7935	0.7772	0.7777	4.048
S d5-EFOSAA	Linear	0.6083	0.6885	0.5529	0.6316	0.6170	0.6282	0.6117	0.6176	0.6195	5.983
S 13C8-FOSA	Linear	1.5500	1.7763	1.5505	1.6831	1.6532	1.7120	1.6017	1.7376	1.6587	5.056
S d7-MeFOSE	Linear	0.5697	0.6835	0.5887	0.6301	0.6385	0.6445	0.5938	0.5779	0.6158	6.406
S d3-MeFOSA	Linear	0.5215	0.6121	0.5884	0.6390	0.5953	0.5911	0.5938	0.6955	0.6046	8.164
S d9-EFOSE	Linear	0.7242	0.8500	0.7107	0.7859	0.7327	0.7477	0.7156	0.6857	0.7441	6.973
S d5-EFOSA	Linear	0.6800	0.7366	0.6998	0.7542	0.6959	0.7762	0.7103	0.7802	0.7292	5.246
I 13C3-PFBA											
S 13C4-PFBA	Linear	1.1861	1.1920	1.1834	1.2023	1.1961	1.1808	1.1763	1.1737	1.1863	0.832
I 18O2-PFHxS											
S 13C2-4:2FTS	Linear	0.0962	0.0939	0.0940	0.0958	0.0944	0.1019	0.1005	0.0853	0.0953	5.258
S 13C3-PFBS	Linear	2.1400	2.1440	2.2449	2.1862	2.1994	2.2884	2.2645	1.9538	2.1776	4.833
S 13C2-6:2FTS	Linear	0.1215	0.1209	0.1221	0.1309	0.1222	0.1260	0.1169	0.1212	0.1227	3.359
S 13C3-PFHxS	Linear	1.3333	1.2552	1.2661	1.3882	1.3218	1.4594	1.3469	1.2821	1.3316	5.113
S 13C2-8:2FTS	Linear	0.1249	0.1303	0.1347	0.1197	0.1282	0.1438	0.1323	0.1420	0.1320	6.185
I 13C4-PFOA											
S 13C8-PFOA	Linear	0.8598	0.9549	0.9200	0.9577	0.9895	0.9857	0.9733	0.9061	0.9434	4.755
I 13C2-PFDA											
S 13C6-PFDA	Linear	0.8225	0.8970	0.8909	0.8553	0.7606	0.7855	0.7645	0.7773	0.8192	6.816
S 13C7-PFUDA	Linear	1.1403	1.0565	1.0819	1.1089	1.0602	0.9589	1.0814	0.9231	1.0514	7.021
S 13C2-PFDODA	Linear	1.0734	1.0747	1.1339	1.0549	1.0029	0.9410	1.0661	1.0160	1.0454	5.551
S 13C2-PFTeDA	Linear	0.7596	0.6753	0.8067	0.7162	0.6658	0.6255	0.7148	0.7065	0.7088	7.939
I 13C5-PFNA											
S 13C9-PFNA	Linear	0.8537	0.9703	0.8632	0.8985	0.8355	1.0052	1.0384	0.9283	0.9241	8.074
I 13C2-PFHxA											
S 13C5-PPeA	Linear	0.5477	0.5455	0.5377	0.4901	0.5467	0.5285	0.5105	0.4999	0.5258	4.332
S 13C5-PFHxA	Linear	1.2408	1.2989	1.1756	1.0829	1.2349	1.1870	1.1516	1.0852	1.1821	6.403
S 13C3-HPOD-A	Linear	0.1810	0.1874	0.1818	0.1654	0.1843	0.1846	0.1884	0.1908	0.1830	4.275
S 13C4-PFHpA	Linear	1.0678	1.0582	1.0661	0.9892	1.0529	1.0496	1.0353	0.9891	1.0385	3.092

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

Initial Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICC268
 Lab FileID: 6Q17741.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	%RSE
S 13C4-PBBA	Linear	$y = 1.186335 * x$	
S 13C5-PFPeA	Linear	$y = 0.525834 * x$	
S 13C2-4:2FTS	Linear	$y = 0.095253 * x$	
S 13C3-PFBS	Linear	$y = 2.177640 * x$	
S 13C5-PFHxA	Linear	$y = 1.182127 * x$	
S 13C3-HFPO-DA	Linear	$y = 0.182964 * x$	
S 13C4-PFHpA	Linear	$y = 1.038521 * x$	
S 13C8-PFOA	Linear	$y = 0.122707 * x$	
S 13C3-PFHxS	Linear	$y = 0.943385 * x$	
S 13C9-PFNA	Linear	$y = 1.331627 * x$	
S 13C2-8:2FTS	Linear	$y = 0.924150 * x$	
S 13C6-PEDA	Linear	$y = 0.132008 * x$	
S d3-MeFOSAA	Linear	$y = 0.819193 * x$	
S 13C8-PFOS	Linear	$y = 0.783379 * x$	
S d5-EFOSAA	Linear	$y = 0.777742 * x$	
S 13C7-PFUInDA	Linear	$y = 0.619470 * x$	
S 13C2-PFDODA	Linear	$y = 1.051404 * x$	
S 13C8-FOSA	Linear	$y = 1.045358 * x$	
S 13C2-PFTeDA	Linear	$y = 1.658683 * x$	
S d7-MeFOSE	Linear	$y = 0.708815 * x$	
S d3-MeFOSA	Linear	$y = 0.615845 * x$	
S d9-EFOSE	Linear	$y = 0.604592 * x$	
S d5-EFOSA	Linear	$y = 0.744056 * x$	
S d5-EFOSA	Linear	$y = 0.729153 * x$	

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

Initial Calibration Verification

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICV268
 Lab FileID: 6Q17747.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051223_1633_S6Q268\s6q268.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17747
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.579	-8.4	91.6
13C2-6:2FTS	5.000	5.040	0.8	100.8
13C2-8:2FTS	5.000	4.644	-7.1	92.9
13C2-PFDoDA	1.250	1.272	1.7	101.7
13C2-PFTeDA	1.250	1.183	-5.4	94.6
13C3-PFBS	2.500	2.450	-2.0	98.0
13C3-PFHxS	2.500	2.455	-1.8	98.2
13C4-PFBA	10.000	9.971	-0.3	99.7
13C4-PFHpA	2.500	2.463	-1.5	98.5
13C5-PFHxA	2.500	2.542	1.7	101.7
13C5-PFPeA	5.000	4.942	-1.2	98.8
13C6-PFDA	1.250	1.141	-8.7	91.3
13C7-PFUnDA	1.250	1.301	4.0	104.0
13C8-FOSA	2.500	2.658	6.3	106.3
13C8-PFOA	2.500	2.401	-4.0	96.0
13C8-PFOS	2.500	2.647	5.9	105.9
13C9-PFNA	1.250	1.385	10.8	110.8
4:2FTS	9.375	10.106	7.8	107.8
6:2FTS	9.500	9.210	-3.1	96.9
8:2FTS	9.600	10.582	10.2	110.2
d3-MeFOSAA	5.000	5.320	6.4	106.4
EtFOSAA	2.500	2.508	0.3	100.3
FOSA	2.500	2.364	-5.4	94.6
MeFOSAA	2.500	2.440	-2.4	97.6
PFBA	10.000	9.770	-2.3	97.7
PFBS	2.218	2.197	-1.0	99.0
PFDA	2.500	2.752	10.1	110.1
PFDoDA	2.500	2.344	-6.3	93.7
PFDS	2.413	2.412	0.0	100.0
PFHpA	2.500	2.612	4.5	104.5
PFHpS	2.383	2.204	-7.5	92.5
PFHxA	2.500	2.491	-0.4	99.6
PFHxS	2.285	2.230	-2.4	97.6
PFNA	2.500	2.261	-9.5	90.5
PFNS	2.405	2.423	0.7	100.7
PFOA	2.500	2.477	-0.9	99.1
PFOS	2.320	2.403	3.6	103.6

Initial Calibration Verification

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICV268
 Lab FileID: 6Q17747.D

PFPeA	5.000	5.020	0.4	100.4
PFPeS	2.353	2.307	-1.9	98.1
PFTeDA	2.500	2.621	4.8	104.8
PFTTrDA	2.500	2.365	-5.4	94.6
PFUnDA	2.500	2.400	-4.0	96.0
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	4.725	4.586	-2.9	97.1
13C3-HFPO-DA	10.000	9.790	-2.1	97.9
9C1-PF3ONS	4.675	4.615	-1.3	98.7
ADONA	4.725	4.622	-2.2	97.8
HFPO-DA	5.000	5.172	3.4	103.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.284	-1.6	98.4
5:3FTCA	62.400	58.105	-6.9	93.1
7:3FTCA	62.400	61.457	-1.5	98.5
d3-MeFOSA	2.500	2.651	6.0	106.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.139	2.8	102.8
EtFOSE	12.500	11.880	-5.0	95.0
MeFOSA	5.000	4.865	-2.7	97.3
MeFOSE	12.500	12.535	0.3	100.3
PFDoDS	2.425	2.521	4.0	104.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.357	7.1	107.1
d7-MeFOSE	25.000	26.256	5.0	105.0
d9-EtFOSE	25.000	26.315	5.3	105.3
d5-EtFOSA	2.500	2.557	2.3	102.3
NFDHA	5.000	4.838	-3.2	96.8
PFMBA	5.000	5.013	0.3	100.3
PFMPA	5.000	4.998	0.0	100.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.284	-3.7	96.3

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICV268
 Lab FileID: 6Q17748.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051223_1633_S6Q268\s6q268.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17748
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.653	13.1	113.1
13C2-6:2FTS	5.000	5.261	5.2	105.2
13C2-8:2FTS	5.000	4.859	-2.8	97.2
13C2-PFDoDA	1.250	1.332	6.5	106.5
13C2-PFTeDA	1.250	1.318	5.5	105.5
13C3-PFBS	2.500	2.724	8.9	108.9
13C3-PFHxS	2.500	2.472	-1.1	98.9
13C4-PFBA	10.000	9.972	-0.3	99.7
13C4-PFHpA	2.500	2.712	8.5	108.5
13C5-PFHxA	2.500	2.767	10.7	110.7
13C5-PFPeA	5.000	5.316	6.3	106.3
13C6-PFDA	1.250	1.384	10.7	110.7
13C7-PFUnDA	1.250	1.313	5.0	105.0
13C8-FOSA	2.500	2.559	2.4	102.4
13C8-PFOA	2.500	2.508	0.3	100.3
13C8-PFOS	2.500	2.732	9.3	109.3
13C9-PFNA	1.250	1.244	-0.4	99.6
4:2FTS	20.000	20.468	2.3	102.3
6:2FTS	20.000	21.758	8.8	108.8
8:2FTS	20.000	22.115	10.6	110.6
d3-MeFOSAA	5.000	5.272	5.4	105.4
EtFOSAA	20.000	18.879	-5.6	94.4
FOSA	20.000	22.974	14.9	114.9
MeFOSAA	20.000	23.036	15.2	115.2
PFBA	20.000	21.118	5.6	105.6
PFBS	20.000	21.200	6.0	106.0
PFDA	20.000	21.392	7.0	107.0
PFDoDA	20.000	20.090	0.5	100.5
PFDS	20.000	21.783	8.9	108.9
PFHpA	20.000	21.328	6.6	106.6
PFHpS	20.000	21.417	7.1	107.1
PFHxA	20.000	20.345	1.7	101.7
PFHxS	20.000	23.661	18.3	118.3
PFNA	20.000	24.840	24.2	124.2
PFNS	20.000	23.003	15.0	115.0
PFOA	20.000	20.006	0.0	100.0
PFOS	20.000	16.358	-18.2	81.8

Initial Calibration Verification

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q268-ICV268
 Lab FileID: 6Q17748.D

PFPeA	20.000	23.584	17.9	117.9
PFPeS	20.000	23.435	17.2	117.2
PFTeDA	20.000	22.462	12.3	112.3
PFTTrDA	20.000	18.430	-7.9	92.1
PFUnDA	20.000	20.848	4.2	104.2
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	22.839	14.2	114.2
13C3-HFPO-DA	10.000	10.936	9.4	109.4
9C1-PF3ONS	20.000	20.482	2.4	102.4
ADONA	20.000	20.786	3.9	103.9
HFPO-DA	20.000	20.810	4.1	104.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	21.207	6.0	106.0
5:3FTCA	20.000	21.452	7.3	107.3
7:3FTCA	20.000	20.114	0.6	100.6
d3-MeFOSA	2.500	2.682	7.3	107.3
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	21.073	5.4	105.4
EtFOSE	100.000	123.179	23.2	123.2
MeFOSA	20.000	20.763	3.8	103.8
MeFOSE	100.000	114.159	14.2	114.2
PFDoDS	20.000	19.657	-1.7	98.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.638	12.8	112.8
d7-MeFOSE	25.000	24.941	-0.2	99.8
d9-EtFOSE	25.000	26.187	4.7	104.7
d5-EtFOSA	2.500	2.505	0.2	100.2
NFDHA	20.000	21.072	5.4	105.4
PFMBA	20.000	21.935	9.7	109.7
PFMPA	20.000	22.214	11.1	111.1
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	18.322	-8.4	91.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17820.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051523_1633_S6Q269\s6q269.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17820
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.772	-4.6	95.4
13C2-6:2FTS	5.000	4.513	-9.7	90.3
13C2-8:2FTS	5.000	4.566	-8.7	91.3
13C2-PFDoDA	1.250	1.191	-4.7	95.3
13C2-PFTeDA	1.250	1.226	-2.0	98.0
13C3-PFBS	2.500	2.576	3.1	103.1
13C3-PFHxS	2.500	2.413	-3.5	96.5
13C4-PFBA	10.000	9.915	-0.9	99.1
13C4-PFHpA	2.500	2.556	2.3	102.3
13C5-PFHxA	2.500	2.717	8.7	108.7
13C5-PFPeA	5.000	5.139	2.8	102.8
13C6-PFDA	1.250	1.281	2.5	102.5
13C7-PFUnDA	1.250	1.261	0.9	100.9
13C8-FOSA	2.500	2.677	7.1	107.1
13C8-PFOA	2.500	2.373	-5.1	94.9
13C8-PFOS	2.500	2.736	9.4	109.4
13C9-PFNA	1.250	1.172	-6.2	93.8
4:2FTS	9.375	8.431	-10.1	89.9
6:2FTS	9.500	9.484	-0.2	99.8
8:2FTS	9.600	9.575	-0.3	99.7
d3-MeFOSAA	5.000	4.831	-3.4	96.6
EtFOSAA	2.500	2.303	-7.9	92.1
FOSA	2.500	2.345	-6.2	93.8
MeFOSAA	2.500	2.199	-12.0	88.0
PFBA	10.000	9.688	-3.1	96.9
PFBS	2.218	2.075	-6.5	93.5
PFDA	2.500	2.430	-2.8	97.2
PFDoDA	2.500	2.540	1.6	101.6
PFDS	2.413	2.159	-10.5	89.5
PFHpA	2.500	2.450	-2.0	98.0
PFHpS	2.383	2.134	-10.4	89.6
PFHxA	2.500	2.290	-8.4	91.6
PFHxS	2.285	2.337	2.3	102.3
PFNA	2.500	2.353	-5.9	94.1
PFNS	2.405	2.306	-4.1	95.9
PFOA	2.500	2.491	-0.4	99.6
PFOS	2.320	2.077	-10.5	89.5

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17820.D

PFPeA	5.000	4.703	-5.9	94.1
PFPeS	2.353	2.463	4.7	104.7
PFTeDA	2.500	2.613	4.5	104.5
PFTTrDA	2.500	2.477	-0.9	99.1
PFUnDA	2.500	2.389	-4.4	95.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.728	0.1	100.1
13C3-HFPO-DA	10.000	9.832	-1.7	98.3
9C1-PF3ONS	4.675	4.849	3.7	103.7
ADONA	4.725	4.625	-2.1	97.9
HFPO-DA	5.000	4.911	-1.8	98.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.962	-4.1	95.9
5:3FTCA	62.400	58.538	-6.2	93.8
7:3FTCA	62.400	58.662	-6.0	94.0
d3-MeFOSA	2.500	2.414	-3.4	96.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.581	-8.4	91.6
EtFOSE	12.500	12.576	0.6	100.6
MeFOSA	5.000	4.862	-2.8	97.2
MeFOSE	12.500	12.103	-3.2	96.8
PFDoDS	2.425	2.354	-2.9	97.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.812	-3.8	96.2
d7-MeFOSE	25.000	27.646	10.6	110.6
d9-EtFOSE	25.000	26.238	5.0	105.0
d5-EtFOSA	2.500	2.508	0.3	100.3
NFDHA	5.000	4.455	-10.9	89.1
PFMBA	5.000	4.922	-1.6	98.4
PFMPA	5.000	4.831	-3.4	96.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.117	-7.5	92.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17821.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051523_1633_S6Q269\s6q269.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17821
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.820	-3.6	96.4
13C2-6:2FTS	5.000	4.919	-1.6	98.4
13C2-8:2FTS	5.000	4.462	-10.8	89.2
13C2-PFDoDA	1.250	1.265	1.2	101.2
13C2-PFTeDA	1.250	1.350	8.0	108.0
13C3-PFBS	2.500	2.521	0.8	100.8
13C3-PFHxS	2.500	2.613	4.5	104.5
13C4-PFBA	10.000	9.862	-1.4	98.6
13C4-PFHpA	2.500	2.490	-0.4	99.6
13C5-PFHxA	2.500	2.639	5.6	105.6
13C5-PFPeA	5.000	4.944	-1.1	98.9
13C6-PFDA	1.250	1.488	19.0	119.0
13C7-PFUnDA	1.250	1.450	16.0	116.0
13C8-FOSA	2.500	2.436	-2.6	97.4
13C8-PFOA	2.500	2.389	-4.4	95.6
13C8-PFOS	2.500	2.611	4.4	104.4
13C9-PFNA	1.250	1.234	-1.3	98.7
4:2FTS	0.750	0.728	-3.0	97.0
6:2FTS	0.760	0.700	-7.8	92.2
8:2FTS	0.768	0.721	-6.1	93.9
d3-MeFOSAA	5.000	4.815	-3.7	96.3
EtFOSAA	0.200	0.201	0.5	100.5
FOSA	0.200	0.201	0.6	100.6
MeFOSAA	0.200	0.186	-7.2	92.8
PFBA	0.800	0.758	-5.3	94.7
PFBS	0.177	0.171	-3.4	96.6
PFDA	0.200	0.191	-4.6	95.4
PFDoDA	0.200	0.225	12.5	112.5
PFDS	0.193	0.188	-2.4	97.6
PFHpA	0.200	0.185	-7.3	92.7
PFHpS	0.191	0.182	-4.8	95.2
PFHxA	0.200	0.186	-7.1	92.9
PFHxS	0.183	0.182	-0.5	99.5
PFNA	0.200	0.198	-0.8	99.2
PFNS	0.192	0.195	1.6	101.6
PFOA	0.200	0.174	-13.0	87.0
PFOS	0.186	0.199	6.9	106.9

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17821.D

PFPeA	0.400	0.380	-5.0	95.0
PFPeS	0.188	0.182	-3.2	96.8
PFTeDA	0.200	0.211	5.5	105.5
PFTTrDA	0.200	0.213	6.4	106.4
PFUnDA	0.200	0.180	-10.1	89.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.379	0.3	100.3
13C3-HFPO-DA	10.000	9.722	-2.8	97.2
9C1-PF3ONS	0.367	0.364	-1.0	99.0
ADONA	0.378	0.346	-8.3	91.7
HFPO-DA	0.400	0.388	-3.0	97.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.994	-0.5	99.5
5:3FTCA	4.992	5.099	2.1	102.1
7:3FTCA	4.992	5.038	0.9	100.9
d3-MeFOSA	2.500	2.394	-4.2	95.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.377	-5.8	94.2
EtFOSE	1.000	1.000	0.0	100.0
MeFOSA	0.400	0.399	-0.3	99.7
MeFOSE	1.000	0.920	-8.0	92.0
PFDoDS	0.194	0.203	4.8	104.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.471	-10.6	89.4
d7-MeFOSE	25.000	26.971	7.9	107.9
d9-EtFOSE	25.000	25.798	3.2	103.2
d5-EtFOSA	2.500	2.396	-4.2	95.8
NFDHA	0.400	0.368	-8.0	92.0
PFMBA	0.400	0.390	-2.5	97.5
PFMPA	0.400	0.387	-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--		
PFEESA	0.356	0.323	-9.2	90.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17833.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051523_1633_S6Q269\s6q269.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17833
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.236	4.7	104.7
13C2-6:2FTS	5.000	5.124	2.5	102.5
13C2-8:2FTS	5.000	4.782	-4.4	95.6
13C2-PFDoDA	1.250	1.223	-2.2	97.8
13C2-PFTeDA	1.250	1.219	-2.5	97.5
13C3-PFBS	2.500	2.707	8.3	108.3
13C3-PFHxS	2.500	2.581	3.2	103.2
13C4-PFBA	10.000	9.699	-3.0	97.0
13C4-PFHpA	2.500	2.483	-0.7	99.3
13C5-PFHxA	2.500	2.612	4.5	104.5
13C5-PFPeA	5.000	5.031	0.6	100.6
13C6-PFDA	1.250	1.343	7.4	107.4
13C7-PFUnDA	1.250	1.383	10.6	110.6
13C8-FOSA	2.500	2.621	4.8	104.8
13C8-PFOA	2.500	2.449	-2.1	97.9
13C8-PFOS	2.500	2.712	8.5	108.5
13C9-PFNA	1.250	1.202	-3.9	96.1
4:2FTS	9.375	8.628	-8.0	92.0
6:2FTS	9.500	8.377	-11.8	88.2
8:2FTS	9.600	9.295	-3.2	96.8
d3-MeFOSAA	5.000	4.769	-4.6	95.4
EtFOSAA	2.500	2.074	-17.1	82.9
FOSA	2.500	2.234	-10.6	89.4
MeFOSAA	2.500	2.482	-0.7	99.3
PFBA	10.000	9.714	-2.9	97.1
PFBS	2.218	1.985	-10.5	89.5
PFDA	2.500	2.170	-13.2	86.8
PFDoDA	2.500	2.428	-2.9	97.1
PFDS	2.413	2.182	-9.6	90.4
PFHpA	2.500	2.463	-1.5	98.5
PFHpS	2.383	2.144	-10.0	90.0
PFHxA	2.500	2.393	-4.3	95.7
PFHxS	2.285	2.255	-1.3	98.7
PFNA	2.500	2.535	1.4	101.4
PFNS	2.405	2.242	-6.8	93.2
PFOA	2.500	2.392	-4.3	95.7
PFOS	2.320	2.040	-12.1	87.9

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17833.D

PFPeA	5.000	4.760	-4.8	95.2
PFPeS	2.353	2.361	0.3	100.3
PFTeDA	2.500	2.506	0.3	100.3
PFTTrDA	2.500	2.454	-1.9	98.1
PFUnDA	2.500	2.201	-12.0	88.0
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	4.725	4.559	-3.5	96.5
13C3-HFPO-DA	10.000	9.777	-2.2	97.8
9C1-PF3ONS	4.675	4.787	2.4	102.4
ADONA	4.725	4.577	-3.1	96.9
HFPO-DA	5.000	4.837	-3.3	96.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.096	-3.1	96.9
5:3FTCA	62.400	59.658	-4.4	95.6
7:3FTCA	62.400	59.538	-4.6	95.4
d3-MeFOSA	2.500	2.385	-4.6	95.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.709	-5.8	94.2
EtFOSE	12.500	13.072	4.6	104.6
MeFOSA	5.000	4.682	-6.4	93.6
MeFOSE	12.500	11.685	-6.5	93.5
PFDODS	2.425	2.169	-10.6	89.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.821	-3.6	96.4
d7-MeFOSE	25.000	27.710	10.8	110.8
d9-EtFOSE	25.000	25.293	1.2	101.2
d5-EtFOSA	2.500	2.431	-2.8	97.2
NFDHA	5.000	4.379	-12.4	87.6
PFMBA	5.000	4.972	-0.6	99.4
PFMPA	5.000	4.868	-2.6	97.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.003	-10.0	90.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17841.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051523_1633_S6Q269\s6q269.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\051223_1633_S6Q268\6Q17738.d
 2:D:\MassHunter\Data\051223_1633_S6Q268\6Q17739.d
 3:D:\MassHunter\Data\051223_1633_S6Q268\6Q17740.d
 4:D:\MassHunter\Data\051223_1633_S6Q268\6Q17741.d
 5:D:\MassHunter\Data\051223_1633_S6Q268\6Q17742.d
 6:D:\MassHunter\Data\051223_1633_S6Q268\6Q17743.d
 7:D:\MassHunter\Data\051223_1633_S6Q268\6Q17744.d
 8:D:\MassHunter\Data\051223_1633_S6Q268\6Q17745.d

Data File: 6Q17841
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.619	-7.6	92.4
13C2-6:2FTS	5.000	4.984	-0.3	99.7
13C2-8:2FTS	5.000	4.997	-0.1	99.9
13C2-PFDoDA	1.250	1.207	-3.4	96.6
13C2-PFTeDA	1.250	1.246	-0.3	99.7
13C3-PFBS	2.500	2.611	4.4	104.4
13C3-PFHxS	2.500	2.483	-0.7	99.3
13C4-PFBA	10.000	10.001	0.0	100.0
13C4-PFHpA	2.500	2.668	6.7	106.7
13C5-PFHxA	2.500	2.731	9.2	109.2
13C5-PFPeA	5.000	5.183	3.7	103.7
13C6-PFDA	1.250	1.357	8.5	108.5
13C7-PFUnDA	1.250	1.345	7.6	107.6
13C8-FOSA	2.500	2.287	-8.5	91.5
13C8-PFOA	2.500	2.490	-0.4	99.6
13C8-PFOS	2.500	2.170	-13.2	86.8
13C9-PFNA	1.250	1.262	1.0	101.0
4:2FTS	9.375	9.523	1.6	101.6
6:2FTS	9.500	9.104	-4.2	95.8
8:2FTS	9.600	9.479	-1.3	98.7
d3-MeFOSAA	5.000	4.111	-17.8	82.2
EtFOSAA	2.500	2.260	-9.6	90.4
FOSA	2.500	2.390	-4.4	95.6
MeFOSAA	2.500	2.378	-4.9	95.1
PFBA	10.000	9.612	-3.9	96.1
PFBS	2.218	2.113	-4.7	95.3
PFDA	2.500	2.244	-10.2	89.8
PFDoDA	2.500	2.648	5.9	105.9
PFDS	2.413	2.442	1.2	101.2
PFHpA	2.500	2.348	-6.1	93.9
PFHpS	2.383	2.341	-1.8	98.2
PFHxA	2.500	2.197	-12.1	87.9
PFHxS	2.285	2.206	-3.5	96.5
PFNA	2.500	2.562	2.5	102.5
PFNS	2.405	2.482	3.2	103.2
PFOA	2.500	2.542	1.7	101.7
PFOS	2.320	2.390	3.0	103.0

Continuing Calibration Summary

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q269-CC268
 Lab FileID: 6Q17841.D

PFPeA	5.000	4.696	-6.1	93.9
PFPeS	2.353	2.452	4.2	104.2
PFTeDA	2.500	2.436	-2.6	97.4
PFTTrDA	2.500	2.618	4.7	104.7
PFUnDA	2.500	2.483	-0.7	99.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.787	1.3	101.3
13C3-HFPO-DA	10.000	10.063	0.6	100.6
9C1-PF3ONS	4.675	4.700	0.5	100.5
ADONA	4.725	4.381	-7.3	92.7
HFPO-DA	5.000	4.714	-5.7	94.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.262	-1.7	98.3
5:3FTCA	62.400	60.241	-3.5	96.5
7:3FTCA	62.400	60.014	-3.8	96.2
d3-MeFOSA	2.500	2.140	-14.4	85.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.809	-3.8	96.2
EtFOSE	12.500	12.232	-2.1	97.9
MeFOSA	5.000	4.828	-3.4	96.6
MeFOSE	12.500	11.948	-4.4	95.6
PFDoDS	2.425	2.348	-3.2	96.8
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.058	-18.8	81.2
d7-MeFOSE	25.000	23.569	-5.7	94.3
d9-EtFOSE	25.000	23.523	-5.9	94.1
d5-EtFOSA	2.500	2.091	-16.4	83.6
NFDHA	5.000	4.736	-5.3	94.7
PFMBA	5.000	4.868	-2.6	97.4
PFMPA	5.000	4.917	-1.7	98.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.024	-9.6	90.4

CC Criteria: +/- 30%

6.9.7
6

Run Sequence Report

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q268	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
S6Q268-RT	6Q17735.D	05/12/23 11:31	n/a	Retention Time Marker
S6Q268-RT	6Q17736.D	05/12/23 11:46	n/a	Retention Time Marker
S6Q268-IC268	6Q17737.D	05/12/23 12:00	n/a	Mass Calibration Verification
S6Q268-IC268	6Q17738.D	05/12/23 12:15	n/a	Initial cal 1
S6Q268-IC268	6Q17739.D	05/12/23 12:29	n/a	Initial cal 2
S6Q268-IC268	6Q17740.D	05/12/23 12:44	n/a	Initial cal 3
S6Q268-ICC268	6Q17741.D	05/12/23 12:58	n/a	Initial cal 4
S6Q268-IC268	6Q17742.D	05/12/23 13:13	n/a	Initial cal 5
S6Q268-IC268	6Q17743.D	05/12/23 13:27	n/a	Initial cal 6
S6Q268-IC268	6Q17744.D	05/12/23 13:42	n/a	Initial cal 7
S6Q268-IC268	6Q17745.D	05/12/23 13:56	n/a	Initial cal 8
S6Q268-IBLK	6Q17746.D	05/12/23 14:11	n/a	Instrument Blank
S6Q268-IBLK	6Q17746.D	05/12/23 14:11	n/a	Instrument Blank
S6Q268-ICV268	6Q17747.D	05/12/23 14:25	n/a	Initial cal verification 4
S6Q268-ICV268	6Q17748.D	05/12/23 14:40	n/a	Initial cal verification 20
S6Q268-CC268	6Q17749.D	05/12/23 14:54	n/a	Continuing cal 4
S6Q268-CC268	6Q17750.D	05/12/23 15:09	n/a	Continuing cal 1.0LL
OP96784-MB	6Q17751.D	05/12/23 15:23	OP96784	Method Blank
FC5890-1	6Q17752.D	05/12/23 15:38	OP96784	(used for QC only; not part of job FC5930)
FC5890-2	6Q17755.D	05/12/23 16:21	OP96784	(used for QC only; not part of job FC5930)
OP96784-DUP	6Q17757.D	05/12/23 16:50	OP96784	Duplicate
S6Q268-CC268	6Q17759.D	05/12/23 17:19	n/a	Continuing cal 4
S6Q268-ICCB	6Q17760.D	05/12/23 17:34	n/a	Continuing Calibration Blank
OP96723-MS	6Q17762.D	05/12/23 18:03	OP96723	Matrix Spike
OP96723-MSD	6Q17763.D	05/12/23 18:17	OP96723	Matrix Spike Duplicate
S6Q268-CC268	6Q17764.D	05/12/23 18:32	n/a	Continuing cal 4
S6Q268-ICCB	6Q17765.D	05/12/23 18:46	n/a	Continuing Calibration Blank
OP96842-MB	6Q17766.D	05/12/23 19:00	OP96842	Method Blank
OP96842-BS	6Q17767.D	05/12/23 19:15	OP96842	Blank Spike
OP96842-LLBS	6Q17768.D	05/12/23 19:29	OP96842	Blank Spike
ZZZZZZ	6Q17769.D	05/12/23 19:44	OP96842	(unrelated sample)
ZZZZZZ	6Q17770.D	05/12/23 19:58	OP96842	(unrelated sample)
ZZZZZZ	6Q17771.D	05/12/23 20:13	OP96842	(unrelated sample)
FC5443-4	6Q17772.D	05/12/23 20:27	OP96842	(used for QC only; not part of job FC5930)
ZZZZZZ	6Q17775.D	05/12/23 21:11	OP96842	(unrelated sample)
S6Q268-ECC268	6Q17777.D	05/12/23 21:40	n/a	Ending cal 4
S6Q268-ICCB	6Q17778.D	05/12/23 21:54	n/a	Continuing Calibration Blank

Run Sequence Report

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q269	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q269-RT	6Q17781.D	05/15/23 13:19	n/a	Retention Time Marker
S6Q269-RT	6Q17782.D	05/15/23 13:33	n/a	Retention Time Marker
S6Q269-IBLK	6Q17784.D	05/15/23 14:02	n/a	Instrument Blank
S6Q269-IBLK	6Q17784.D	05/15/23 14:02	n/a	Instrument Blank
S6Q269-CC268	6Q17785.D	05/15/23 14:17	n/a	Continuing cal 4
S6Q269-CC268	6Q17786.D	05/15/23 14:31	n/a	Continuing cal 1.0LL
OP96847-BS	6Q17787.D	05/15/23 15:07	OP96847	Blank Spike
OP96847-LLBS	6Q17788.D	05/15/23 15:22	OP96847	Blank Spike
OP96847-MB	6Q17789.D	05/15/23 15:37	OP96847	Method Blank
ZZZZZZ	6Q17790.D	05/15/23 15:51	OP96847	(unrelated sample)
ZZZZZZ	6Q17792.D	05/15/23 16:20	OP96847	(unrelated sample)
ZZZZZZ	6Q17795.D	05/15/23 17:07	OP96847	(unrelated sample)
ZZZZZZ	6Q17796.D	05/15/23 17:21	OP96847	(unrelated sample)
S6Q269-CC268	6Q17797.D	05/15/23 17:36	n/a	Continuing cal 4
S6Q269-ICCB	6Q17798.D	05/15/23 17:50	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17799.D	05/15/23 18:05	OP96847	(unrelated sample)
ZZZZZZ	6Q17800.D	05/15/23 18:19	OP96847	(unrelated sample)
ZZZZZZ	6Q17801.D	05/15/23 18:34	OP96847	(unrelated sample)
ZZZZZZ	6Q17802.D	05/15/23 18:48	OP96847	(unrelated sample)
ZZZZZZ	6Q17803.D	05/15/23 19:03	OP96847	(unrelated sample)
ZZZZZZ	6Q17804.D	05/15/23 19:17	OP96847	(unrelated sample)
ZZZZZZ	6Q17805.D	05/15/23 19:32	OP96847	(unrelated sample)
ZZZZZZ	6Q17806.D	05/15/23 19:46	OP96847	(unrelated sample)
S6Q269-CC268	6Q17808.D	05/15/23 20:15	n/a	Continuing cal 4
S6Q269-ICCB	6Q17809.D	05/15/23 20:30	n/a	Continuing Calibration Blank
ZZZZZZ	6Q17810.D	05/15/23 20:44	OP96847	(unrelated sample)
ZZZZZZ	6Q17811.D	05/15/23 20:59	OP96847	(unrelated sample)
ZZZZZZ	6Q17812.D	05/15/23 21:13	OP96847	(unrelated sample)
ZZZZZZ	6Q17813.D	05/15/23 21:28	OP96847	(unrelated sample)
ZZZZZZ	6Q17814.D	05/15/23 21:42	OP96847	(unrelated sample)
FC5443-4	6Q17815.D	05/15/23 21:57	OP96842	(used for QC only; not part of job FC5930)
OP96842-MS	6Q17816.D	05/15/23 22:11	OP96842	Matrix Spike
OP96842-MSD	6Q17817.D	05/15/23 22:25	OP96842	Matrix Spike Duplicate
ZZZZZZ	6Q17818.D	05/15/23 22:40	OP96842	(unrelated sample)
ZZZZZZ	6Q17819.D	05/15/23 22:54	OP96847	(unrelated sample)
S6Q269-CC268	6Q17820.D	05/15/23 23:09	n/a	Continuing cal 4
S6Q269-CC268	6Q17821.D	05/15/23 23:23	n/a	Continuing cal 1.0LL
S6Q269-ICCB	6Q17822.D	05/15/23 23:38	n/a	Continuing Calibration Blank
OP96871-BS	6Q17823.D	05/15/23 23:52	OP96871	Blank Spike
OP96871-LLBS	6Q17824.D	05/16/23 00:07	OP96871	Blank Spike
OP96871-MB	6Q17825.D	05/16/23 00:21	OP96871	Method Blank
ZZZZZZ	6Q17826.D	05/16/23 00:36	OP96871	(unrelated sample)
ZZZZZZ	6Q17827.D	05/16/23 00:50	OP96871	(unrelated sample)
ZZZZZZ	6Q17828.D	05/16/23 01:05	OP96871	(unrelated sample)
FC5930-1	6Q17829.D	05/16/23 01:19	OP96871	AF-RHMW04-WGN01LF-2305W2
FC5930-2	6Q17830.D	05/16/23 01:34	OP96871	AF-RHMW225401-WGN01B-2305W2

Run Sequence Report

Job Number: FC5930
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q269	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
FC5930-3	6Q17831.D	05/16/23 01:48	OP96871	AF-RHMW06-WGN01LF-2305W2
ZZZZZZ	6Q17832.D	05/16/23 02:03	OP96871	(unrelated sample)
S6Q269-CC268	6Q17833.D	05/16/23 02:17	n/a	Continuing cal 4
S6Q269-ICCB	6Q17834.D	05/16/23 02:32	n/a	Continuing Calibration Blank
FC5968-2	6Q17835.D	05/16/23 02:46	OP96871	(used for QC only; not part of job FC5930)
OP96871-MS	6Q17836.D	05/16/23 03:01	OP96871	Matrix Spike
FC5968-3	6Q17837.D	05/16/23 03:15	OP96871	(used for QC only; not part of job FC5930)
OP96871-DUP	6Q17838.D	05/16/23 03:30	OP96871	Duplicate
ZZZZZZ	6Q17839.D	05/16/23 03:44	OP96871	(unrelated sample)
ZZZZZZ	6Q17840.D	05/16/23 03:59	OP96871	(unrelated sample)
S6Q269-CC268	6Q17841.D	05/16/23 04:13	n/a	Continuing cal 4
S6Q269-ICCB	6Q17842.D	05/16/23 04:28	n/a	Continuing Calibration Blank
OP96901-BS	6Q17843.D	05/16/23 04:42	OP96901	Blank Spike
OP96901-LLBS	6Q17844.D	05/16/23 04:57	OP96901	Blank Spike
OP96901-MB	6Q17845.D	05/16/23 05:11	OP96901	Method Blank
ZZZZZZ	6Q17846.D	05/16/23 05:26	OP96901	(unrelated sample)
ZZZZZZ	6Q17847.D	05/16/23 05:40	OP96901	(unrelated sample)
S6Q269-ECC268	6Q17848.D	05/16/23 05:54	n/a	Ending cal 4
S6Q269-ICCB	6Q17849.D	05/16/23 06:09	n/a	Continuing Calibration Blank

6.10.2

6

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17829.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 1:19:44 AM
 Sample Name : FC5930-1
 Vial : P5-D6
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	120212	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	40428	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	46829	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	41321	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	58254	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	18021	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	14319	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	15836	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	14676	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	9561	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	14137	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	15814	2.50 µg/L	0.000
M3-PFHxS	7.167	402.1 -> 79.9	9072	2.50 µg/L	0.000
M8-PFOS	8.214	507.1 -> 79.9	7890	2.50 µg/L	-0.012
M2-4:2FTS	5.131	329.1 -> 80.9	1235	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1689	5.00 µg/L	0.000
M2-8:2FTS	7.852	529.1 -> 80.9	1722	5.00 µg/L	-0.012
M3-MeFOSAA	8.121	573.2 -> 419.0	14665	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	26008	10.00 µg/L	0.000
M5-EtFOSAA	8.316	589.2 -> 419.0	9869	5.00 µg/L	-0.012
M7-MeFOSE	10.672	623.2 -> 58.9	51213	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	62803	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	5820	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	4729	2.50 µg/L	0.000
13C4-PFOS	8.215	502.8 -> 79.9	10631	2.50 µg/L	-0.012
13C3-PFBA	2.904	216.0 -> 172.0	49548	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	6558	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	58053	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	15194	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	20797	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	36105	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1235	4.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1689	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-8:2FTS	7.852	529.1 -> 80.9	1722	4.97 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C2-PFDoDA	8.949	615.1 -> 570.0	14676	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C2-PFTeDA	9.677	715.2 -> 670.0	9561	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C3-PFBS	5.397	302.1 -> 79.9	15814	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C3-PFHxS	7.167	402.1 -> 79.9	9072	2.60 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C4-PFBA	2.901	216.8 -> 171.9	120212	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFHpA	6.420	367.1 -> 322.0	41321	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C5-PFHxA	5.466	318.0 -> 273.0	46829	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C5-PFPeA	4.272	268.3 -> 223.0	40428	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C6-PFDA	8.064	519.1 -> 474.1	14319	1.44 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 115.0%	
13C7-PFUnDA	8.518	570.0 -> 525.1	15836	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-FOSA	9.636	506.1 -> 77.8	14137	2.00 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.2%	
13C8-PFOA	7.064	421.1 -> 376.0	58254	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C8-PFOS	8.214	507.1 -> 79.9	7890	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C9-PFNA	7.595	472.1 -> 427.0	18021	1.17 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%	
d3-MeFOSAA	8.121	573.2 -> 419.0	14665	4.40 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.0%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	26008	9.84 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	4729	1.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.6%	
d5-EtFOSAA	8.316	589.2 -> 419.0	9869	3.75 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 74.9%	
d7-MeFOSE	10.672	623.2 -> 58.9	51213	19.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 78.2%	
d9-EtFOSE	10.907	639.2 -> 58.9	62803	19.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.4%	
d5-EtFOSA	10.984	531.1 -> 219.0	5820	1.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.1%	

Target Compounds

QValue

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

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.315	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.1.1
7

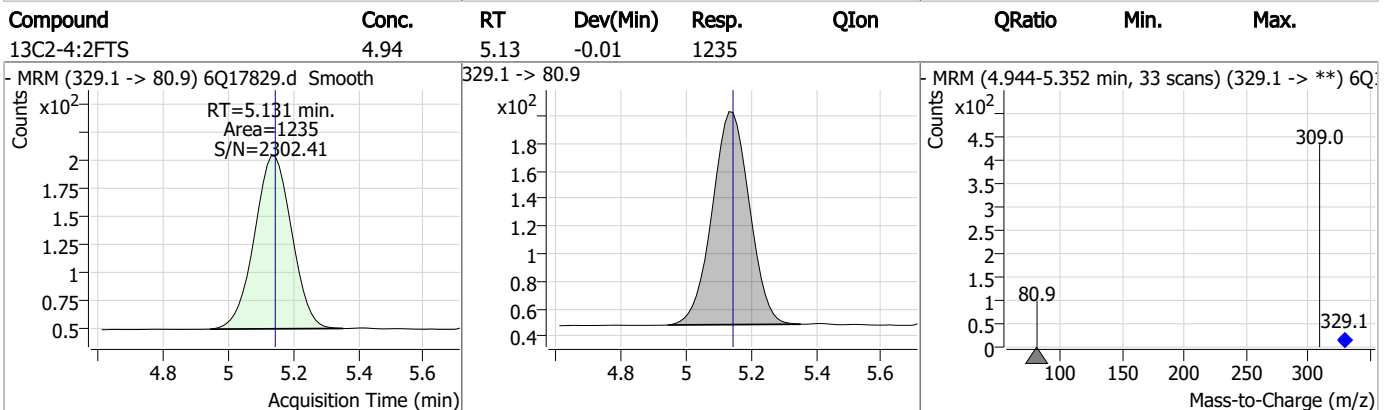
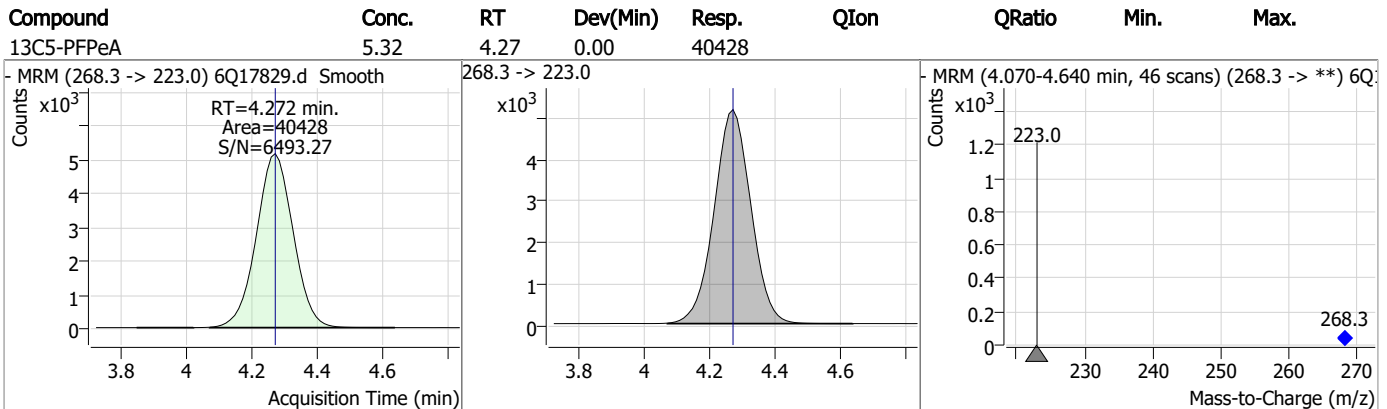
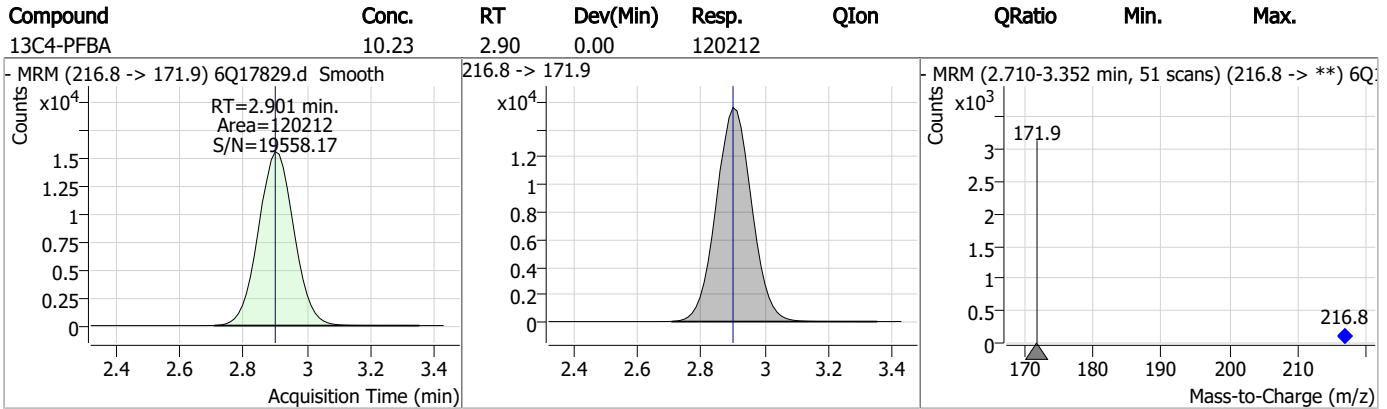
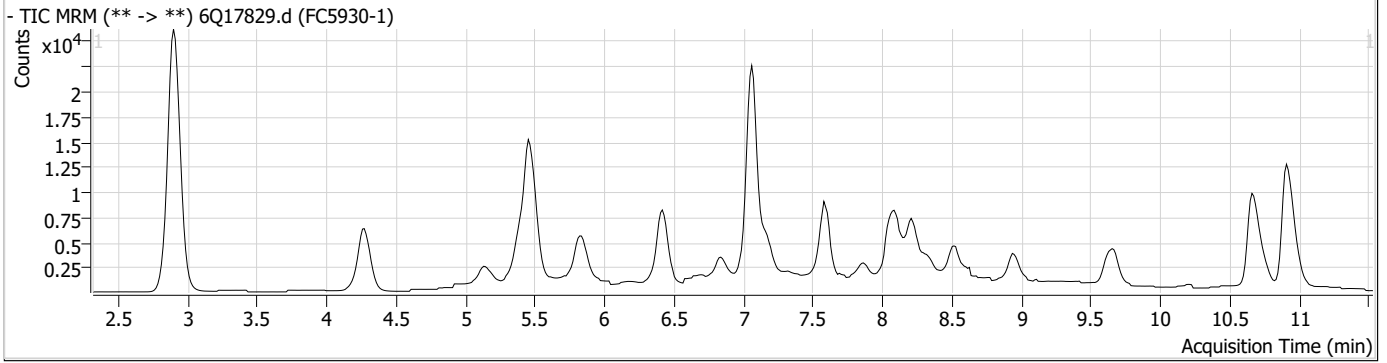
Perfluorinated Compounds by LC/MS/MS

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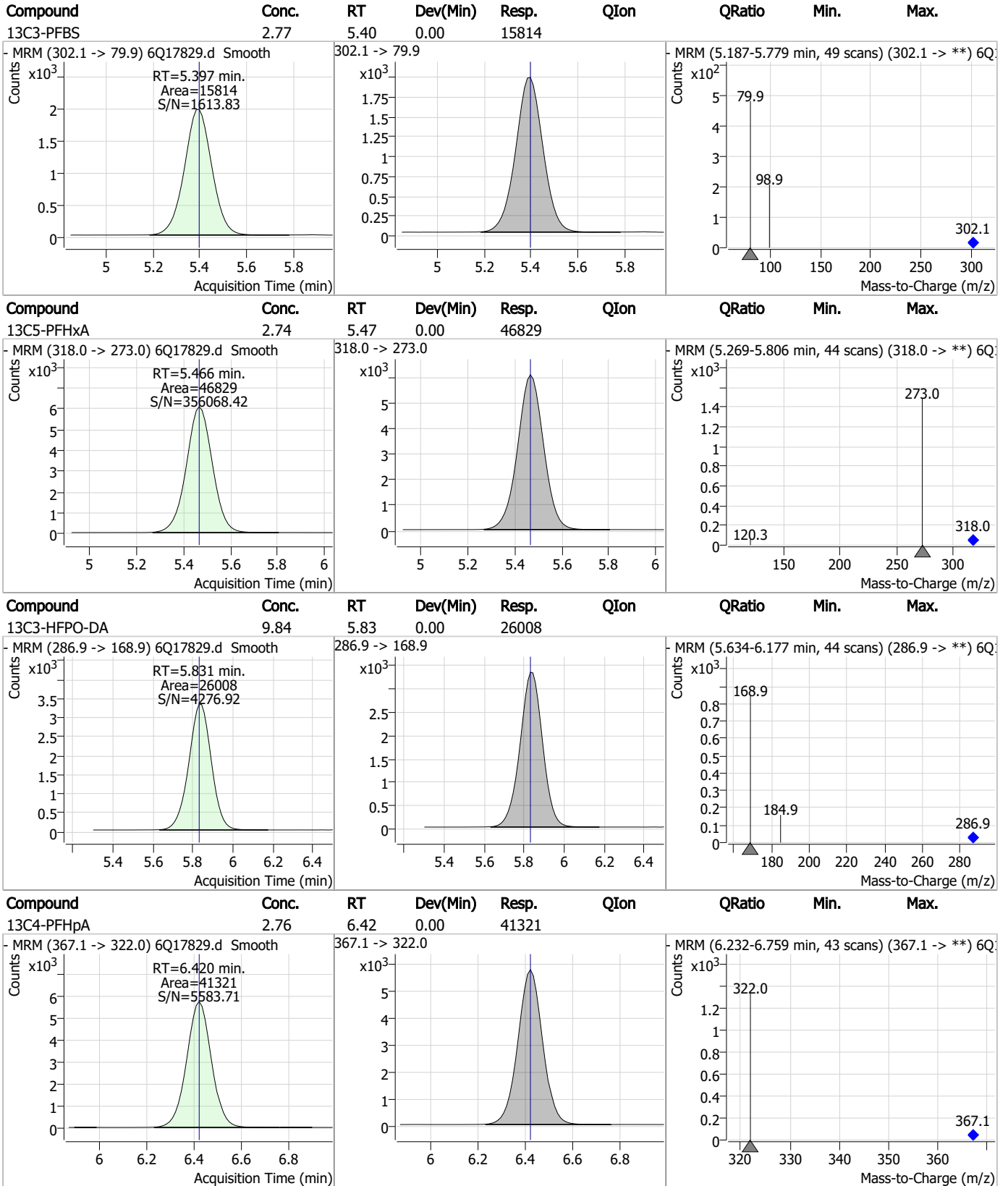
7.1.1
7



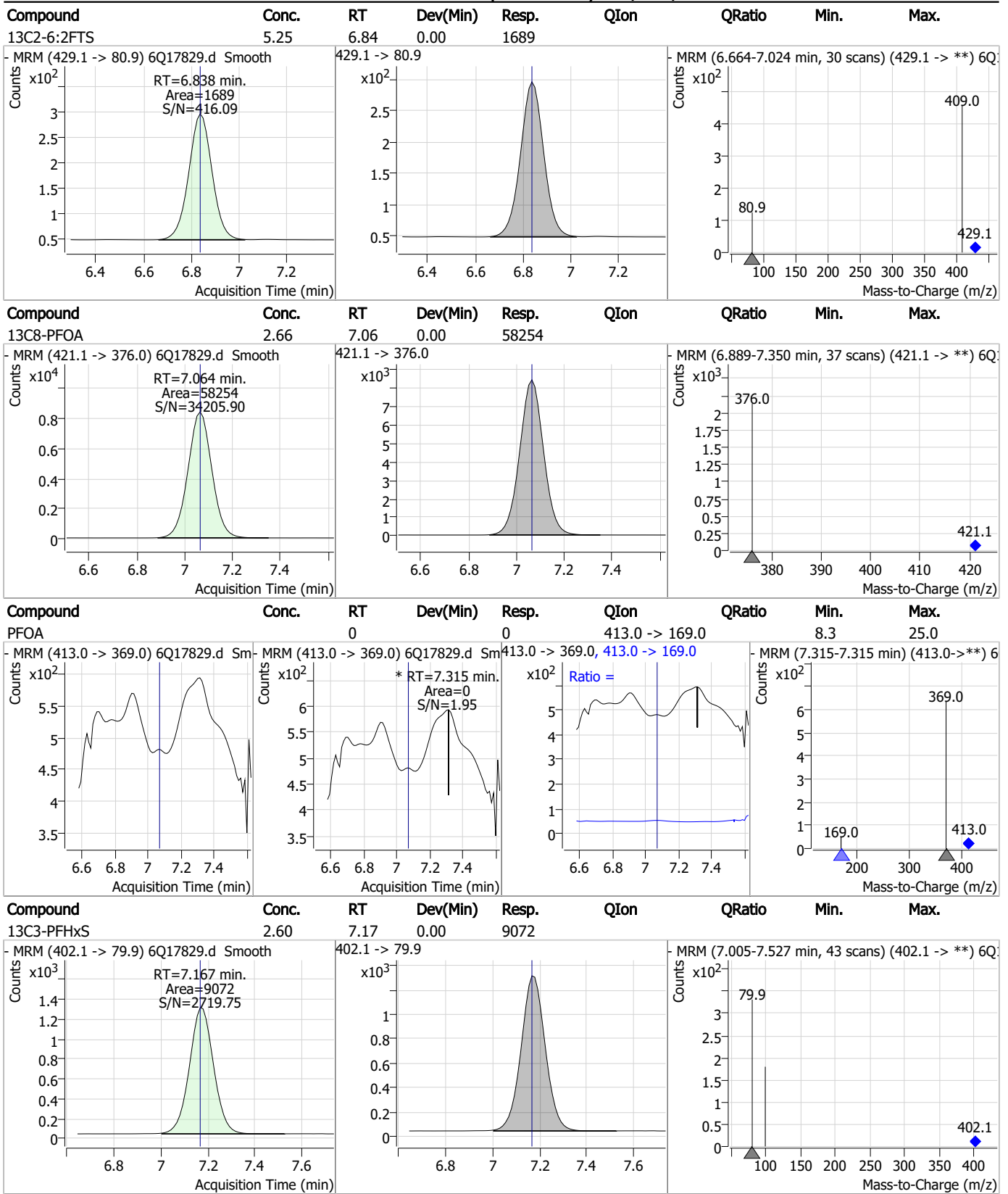
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



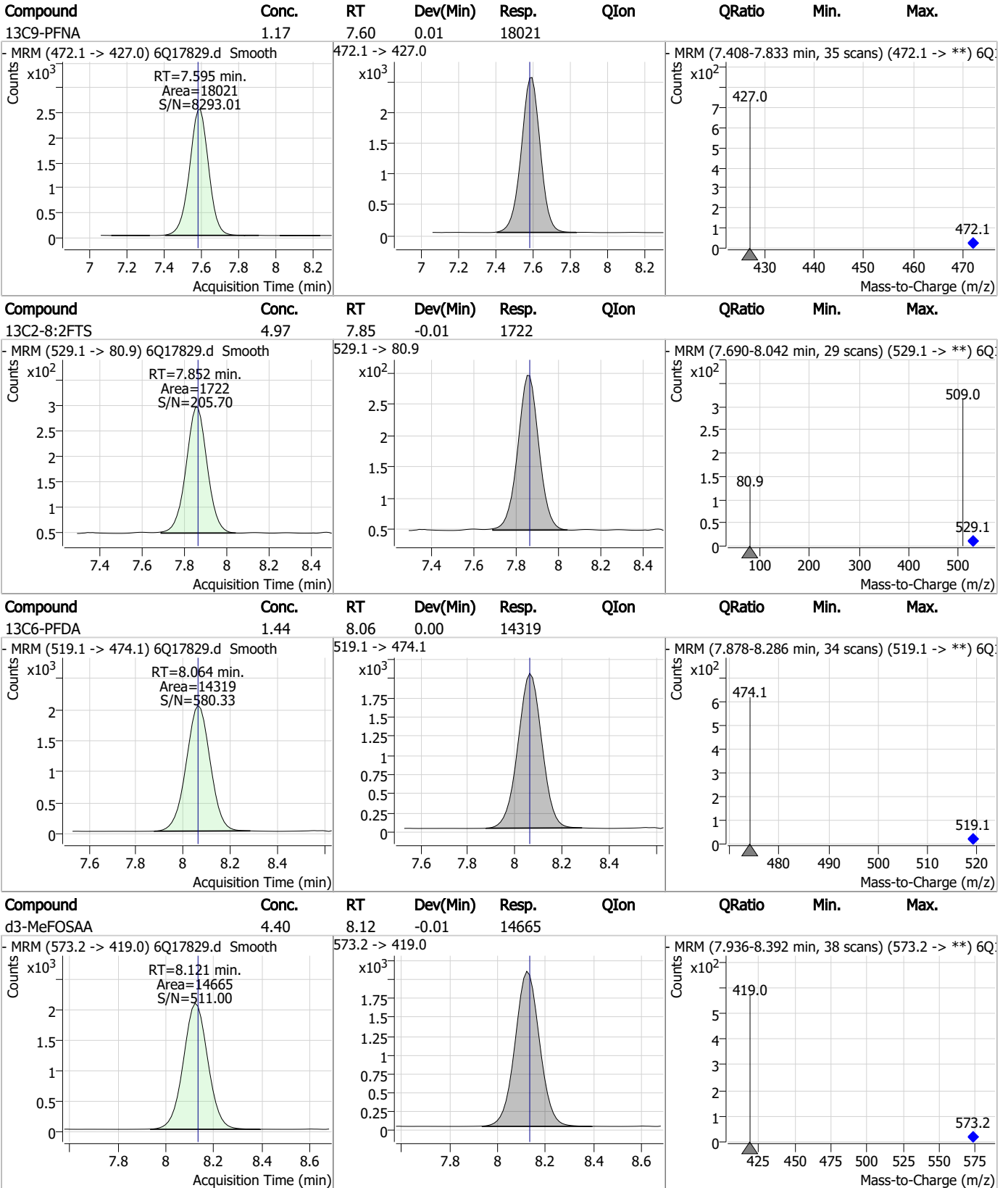
Perfluorinated Compounds by LC/MS/MS



7.1.1
7

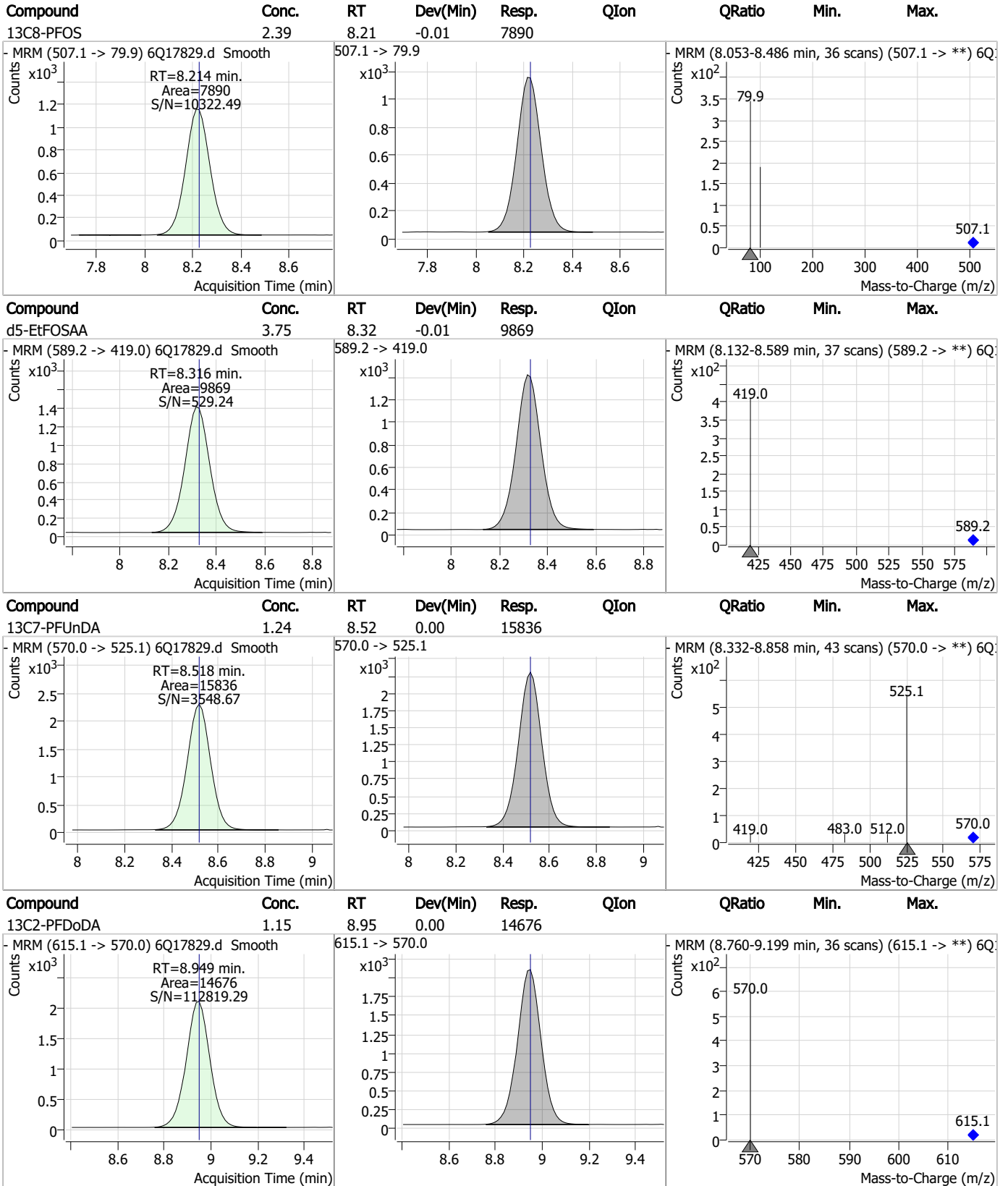


Perfluorinated Compounds by LC/MS/MS

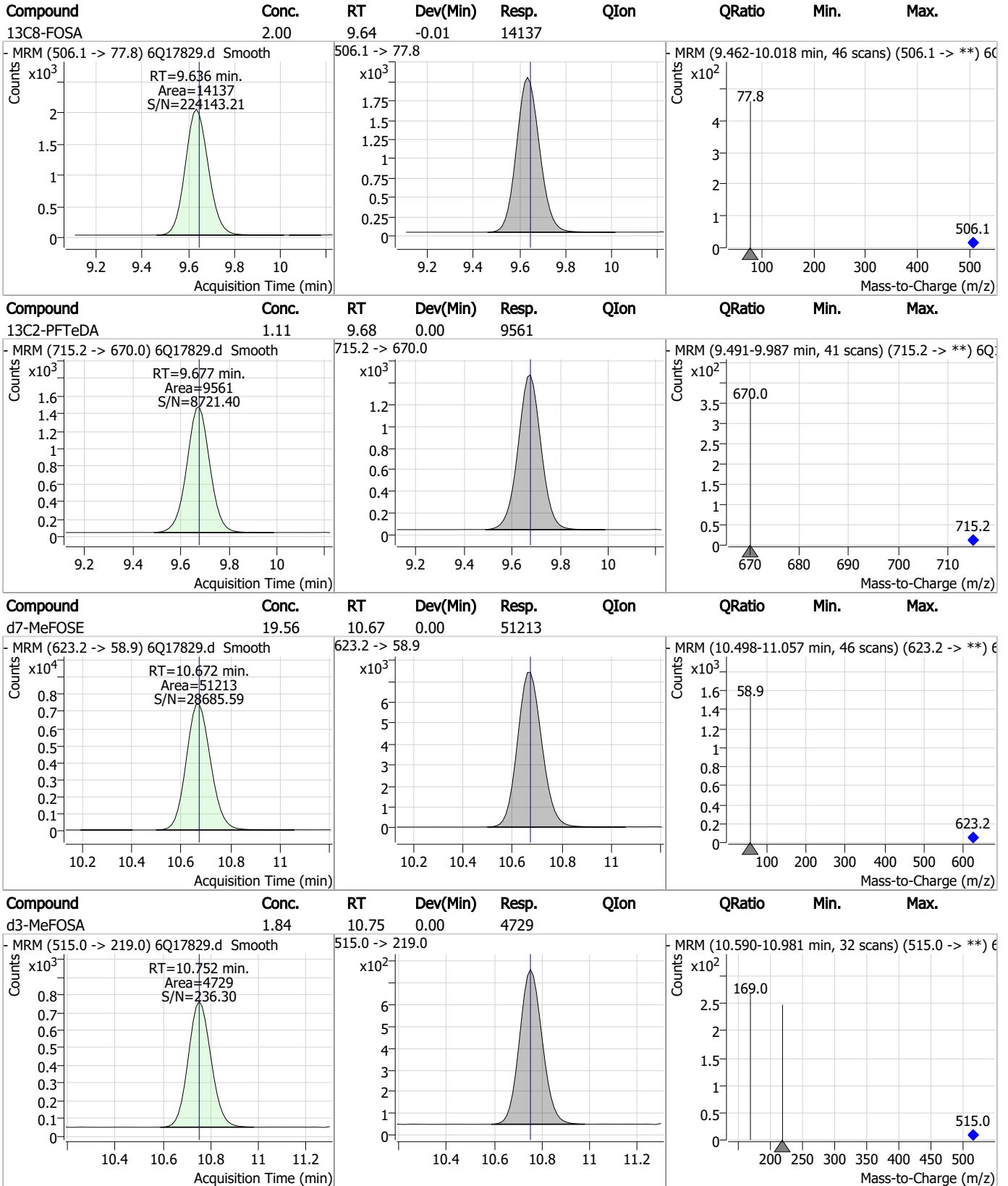


7.1.1
7

Perfluorinated Compounds by LC/MS/MS

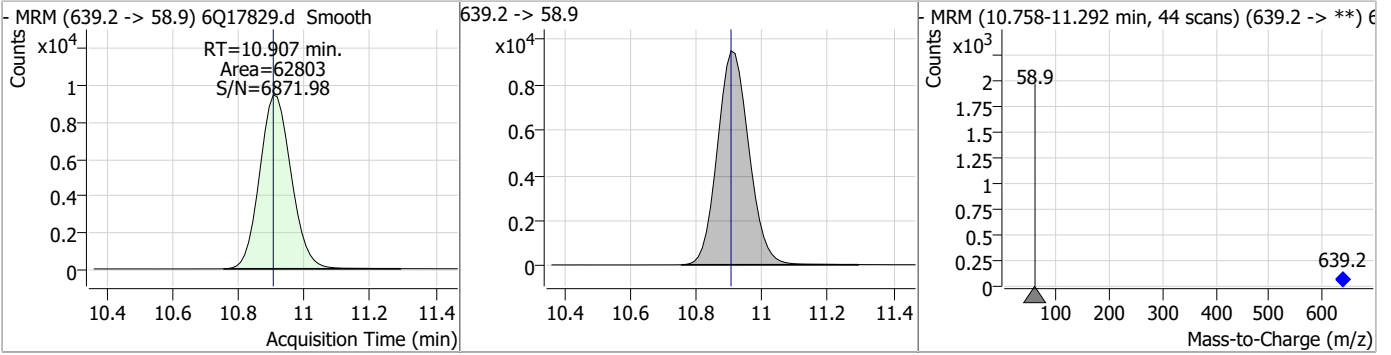


Perfluorinated Compounds by LC/MS/MS

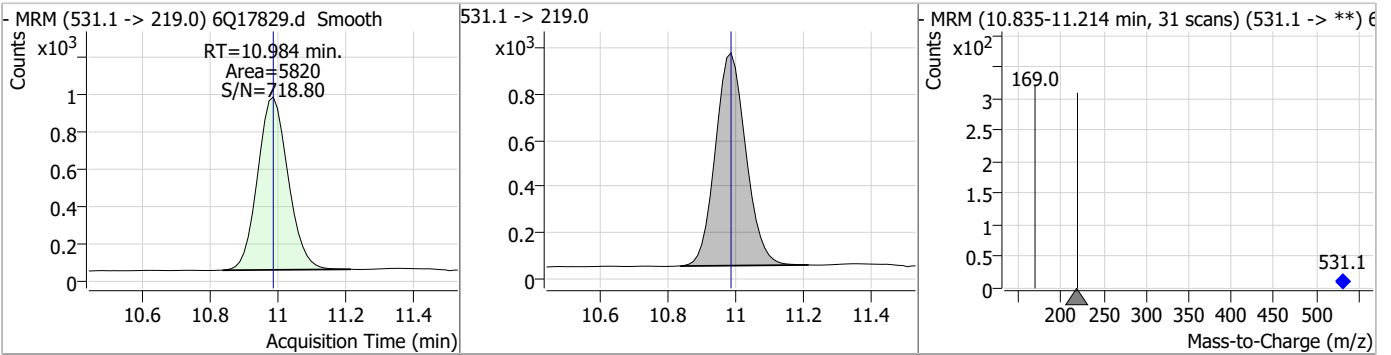


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	19.85	10.91	0.00	62803				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	1.88	10.98	0.00	5820				



7.1.1

7



Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 05/17/23 08:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17830.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 1:34:16 AM
 Sample Name : FC5930-2
 Vial : P5-D7
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,540,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.913	216.8 -> 171.9	123019	10.00 µg/L	0.012
M5-PFPeA	4.272	268.3 -> 223.0	44027	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	52582	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	43720	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	61437	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	21480	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	16249	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	18191	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	16842	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	10536	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	16004	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	17658	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10199	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	8846	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1520	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1959	5.00 µg/L	0.000
M2-8:2FTS	7.852	529.1 -> 80.9	1969	5.00 µg/L	-0.012
M3-MeFOSAA	8.121	573.2 -> 419.0	16138	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	30764	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	13059	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	54608	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	71246	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	6533	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	5283	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	11517	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	52209	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	6819	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	59346	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	15488	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	19510	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	39353	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1520	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.0%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1959	5.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.0%		
13C2-8:2FTS	7.852	529.1 -> 80.9	1969	5.47 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.3%		
13C2-PFDoDA	8.949	615.1 -> 570.0	16842	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	10536	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C3-PFBS	5.397	302.1 -> 79.9	17658	2.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	10199	2.81 µg/L	0.012

7.12
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.3%	
13C4-PFBA	2.913	216.8 -> 171.9	123019	9.93 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.420	367.1 -> 322.0	43720	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C5-PFHxA	5.466	318.0 -> 273.0	52582	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C5-PFPeA	4.272	268.3 -> 223.0	44027	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C6-PFDA	8.064	519.1 -> 474.1	16249	1.60 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 128.1%	
13C7-PFUnDA	8.518	570.0 -> 525.1	18191	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C8-FOSA	9.636	506.1 -> 77.8	16004	2.09 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C8-PFOA	7.064	421.1 -> 376.0	61437	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C8-PFOS	8.226	507.1 -> 79.9	8846	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C9-PFNA	7.595	472.1 -> 427.0	21480	1.49 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.1%	
d3-MeFOSAA	8.121	573.2 -> 419.0	16138	4.47 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.4%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	30764	10.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
d3-MeFOSA	10.752	515.0 -> 219.0	5283	1.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.9%	
d5-EtFOSAA	8.329	589.2 -> 419.0	13059	4.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	54608	19.25 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 77.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	71246	20.79 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
d5-EtFOSA	10.984	531.1 -> 219.0	6533	1.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.8%	

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	5.398	298.7 -> 79.9	612	0.07 µg/L	m 100
		298.7 -> 98.8	224		
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8				
		363.1 -> 319.0	1919	0.09 µg/L	m	96
PFHpS	-	363.1 -> 169.0	276			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.469	449.0 -> 98.9				
		313.0 -> 269.0	2009	0.10 µg/L		100
PFHxS	7.168	313.0 -> 118.9	98			
		398.7 -> 79.9	541	0.10 µg/L	m	87
PFNA	8.093	398.7 -> 98.9	221			
		463.0 -> 419.0	0	µg/L	m	1
PFNS	-	463.0 -> 219.0	0			
		548.8 -> 79.9	-	N.D.		
PFOA	7.066	548.8 -> 98.9				
		413.0 -> 369.0	0	µg/L	m	1
PFOS	-	413.0 -> 169.0	0			
		498.9 -> 79.9	-	N.D.		
PFPeA	-	498.9 -> 98.8				
		263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0	-	N.D.		
MeFOSA	-	511.9 -> 169.0				
		616.1 -> 58.9	-	N.D.		
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9	-	N.D.		
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.12
7



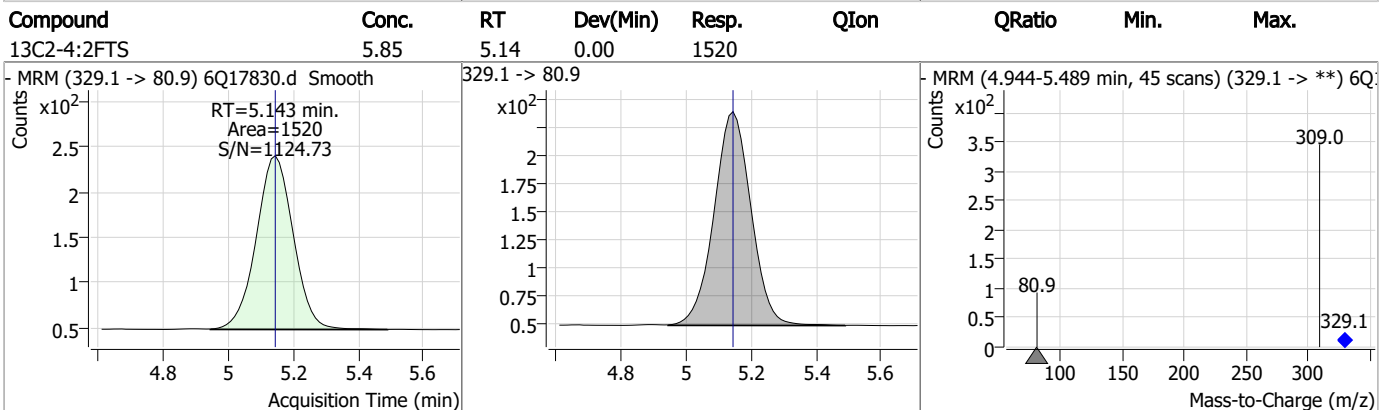
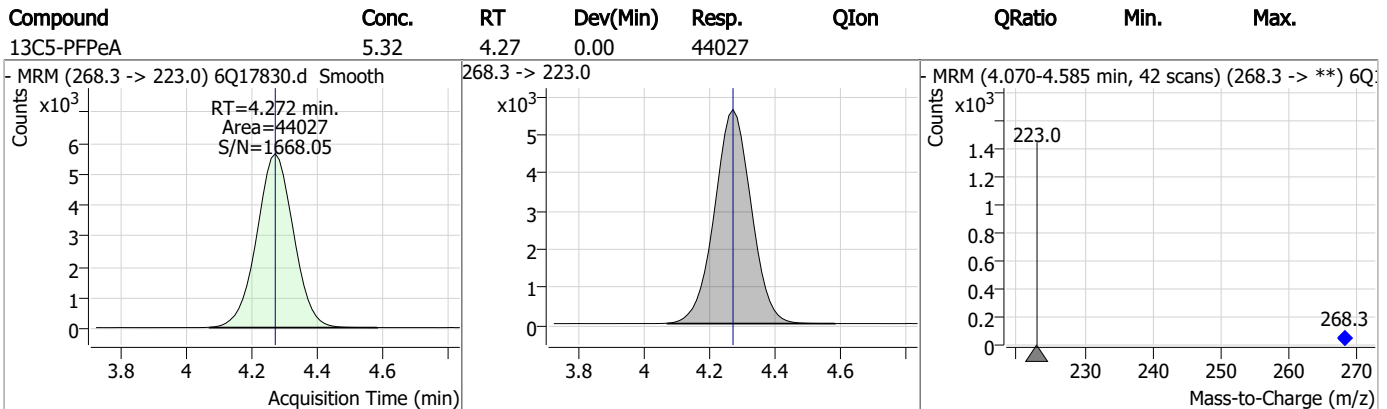
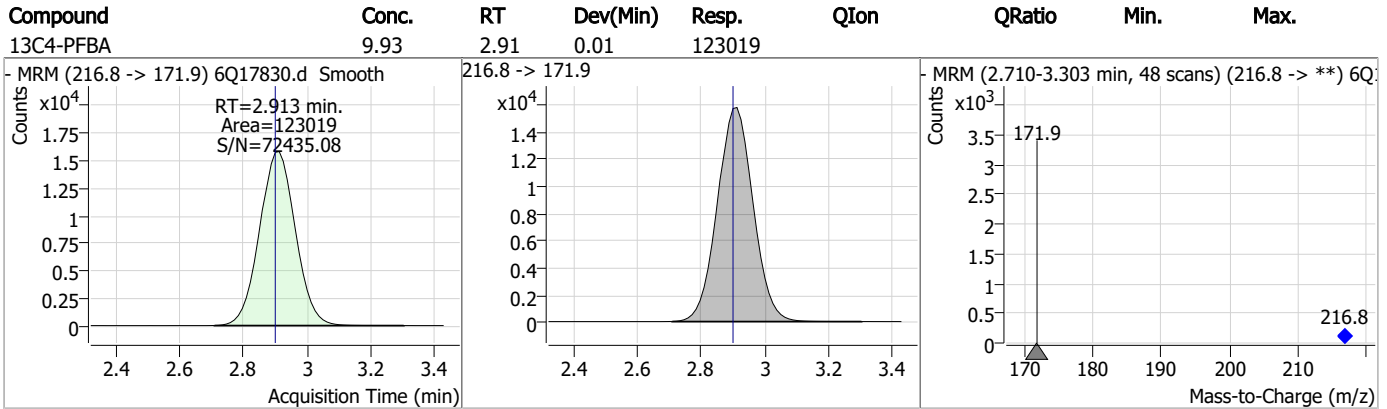
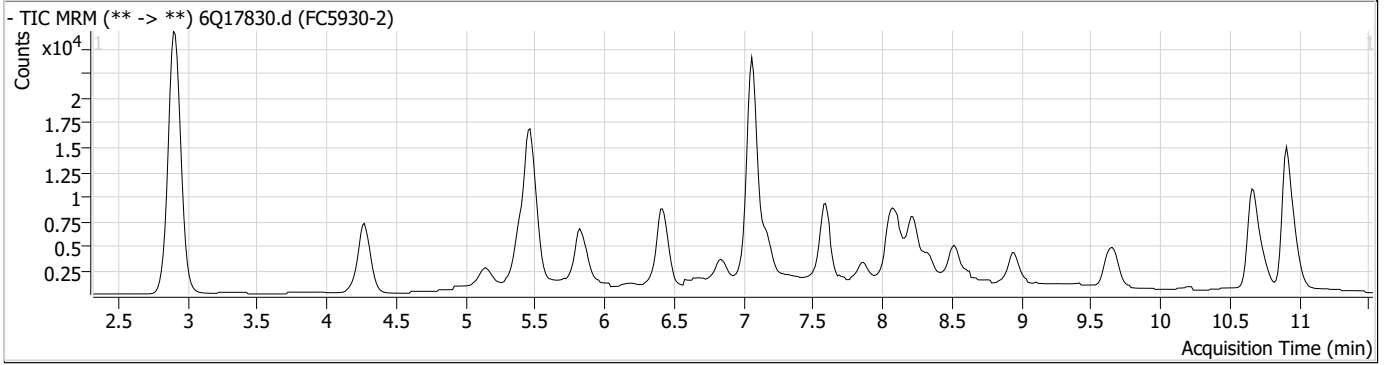
Perfluorinated Compounds by LC/MS/MS

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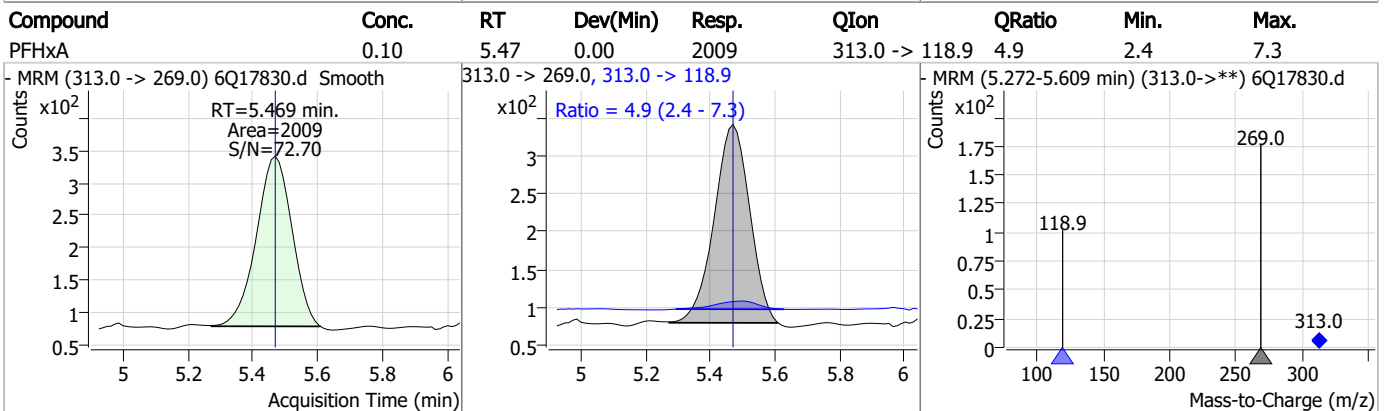
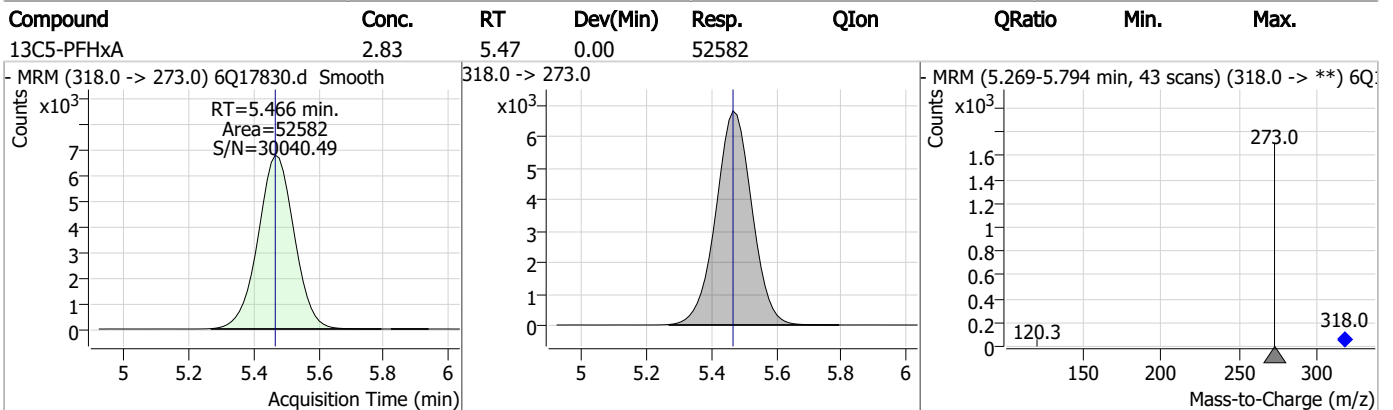
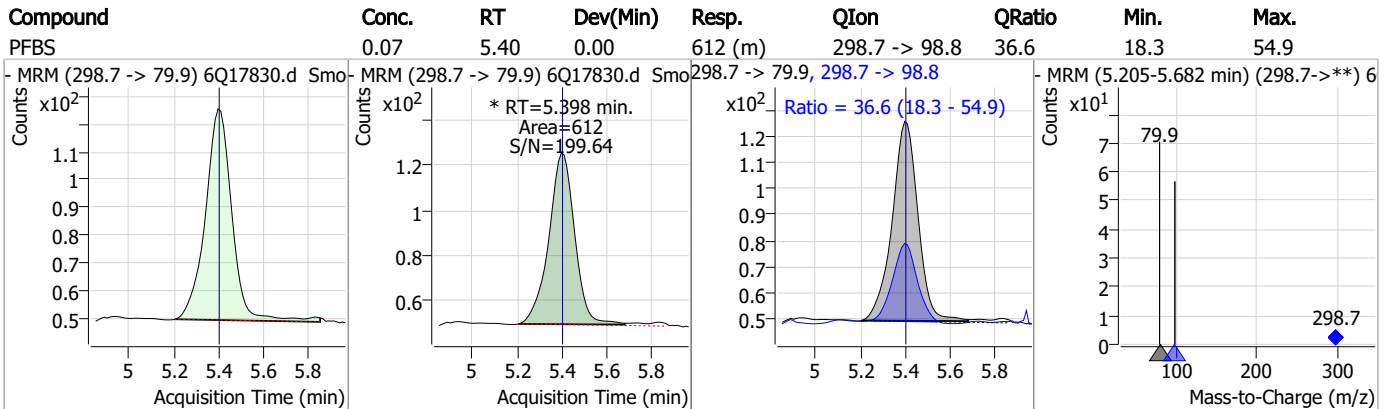
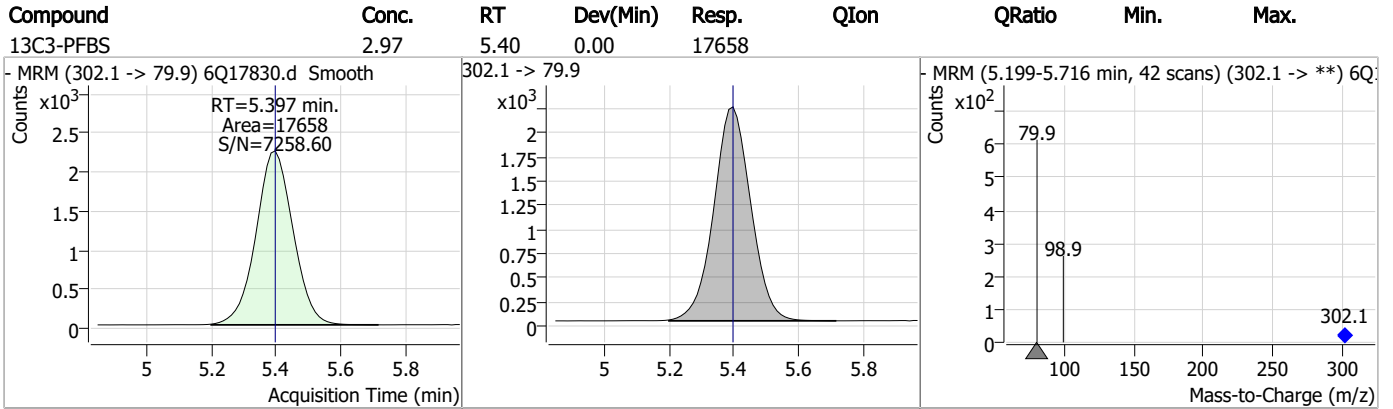
7.1.2
7



Perfluorinated Compounds by LC/MS/MS

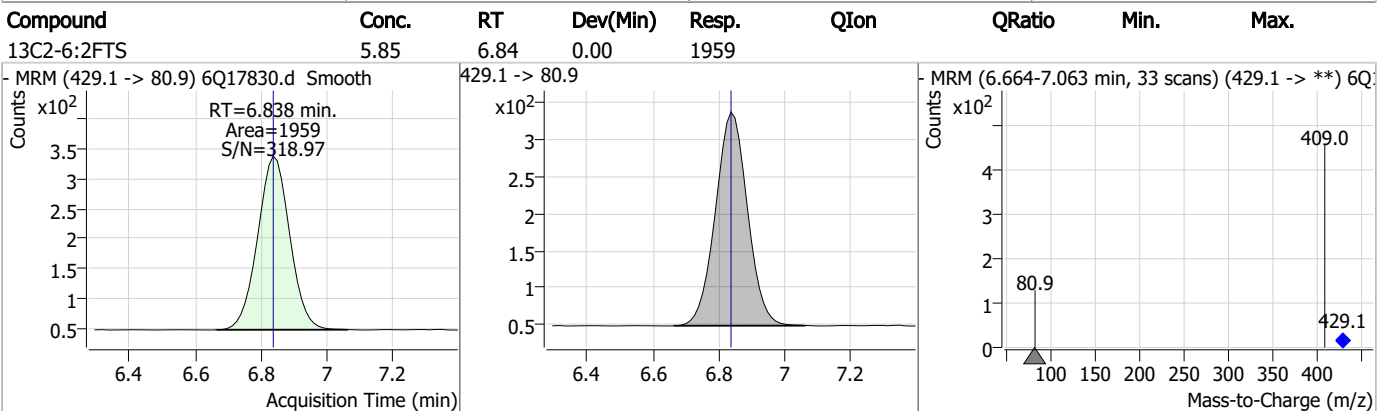
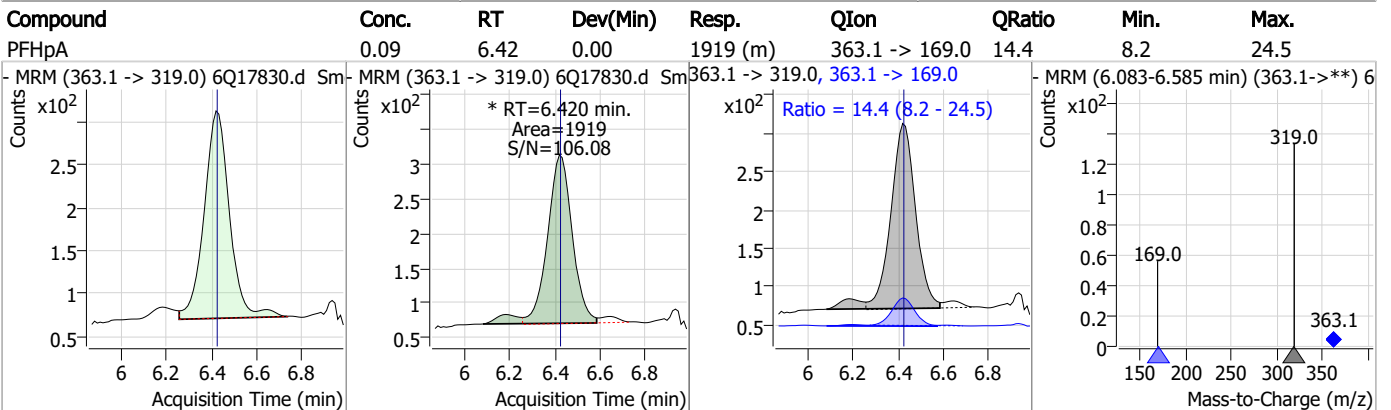
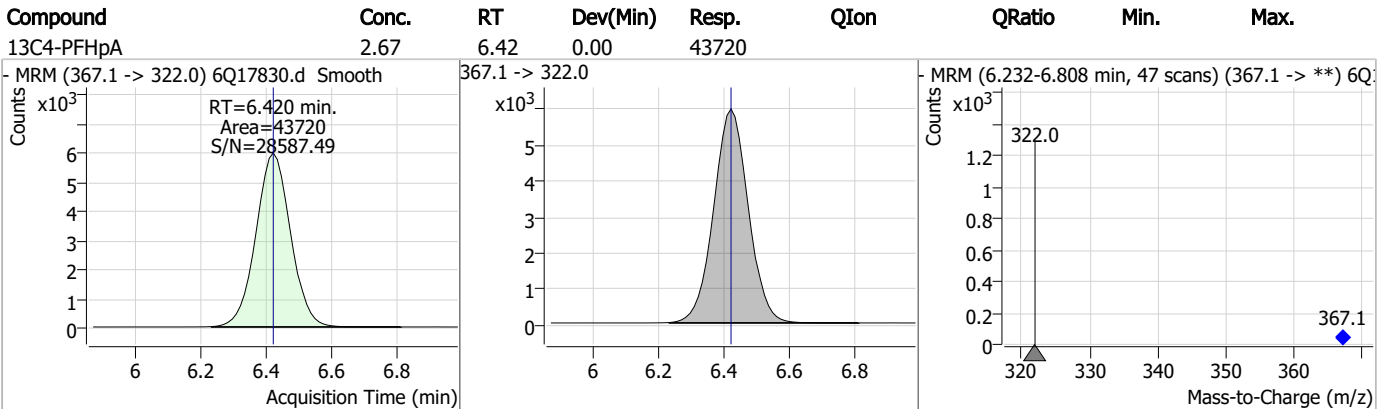
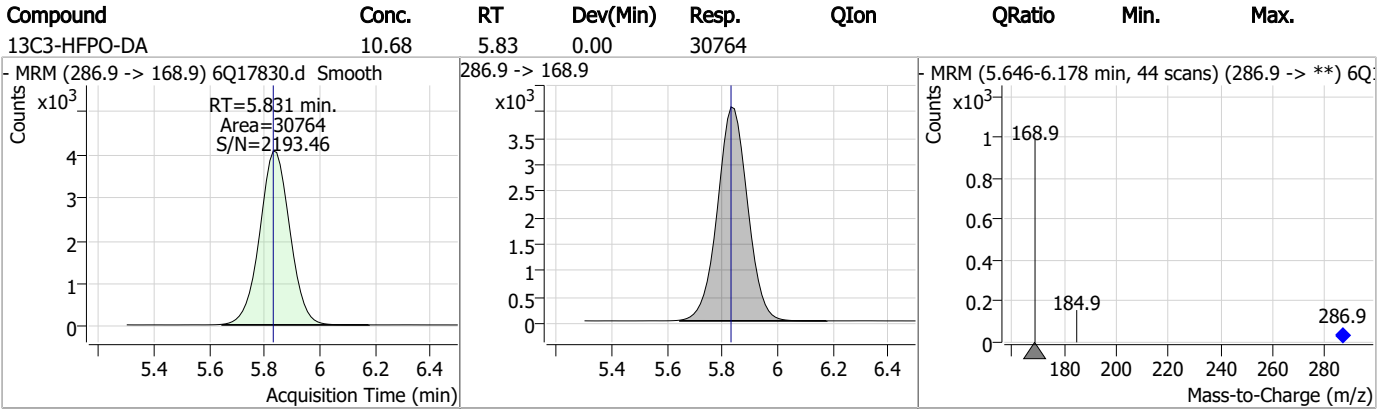


Perfluorinated Compounds by LC/MS/MS



7.1.2
7

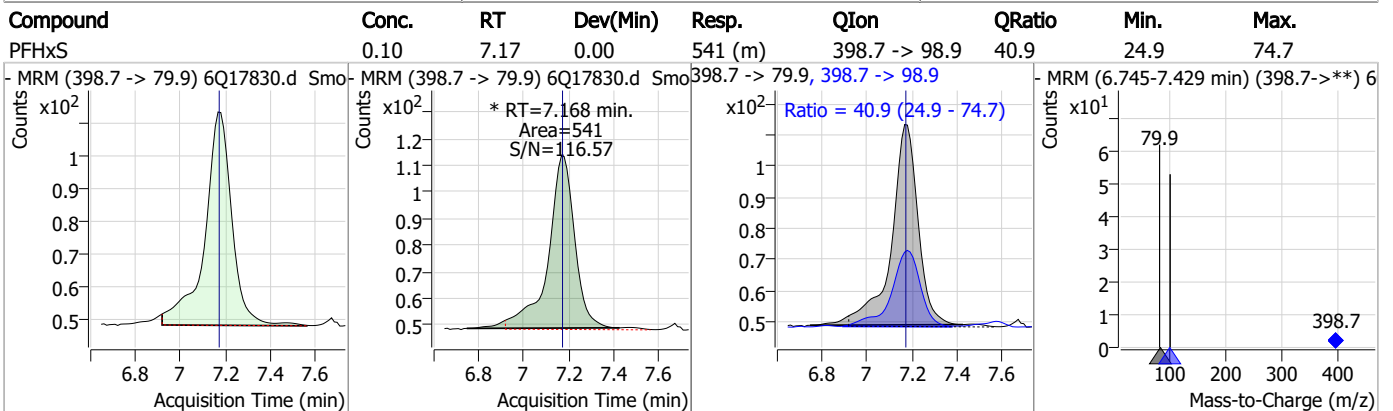
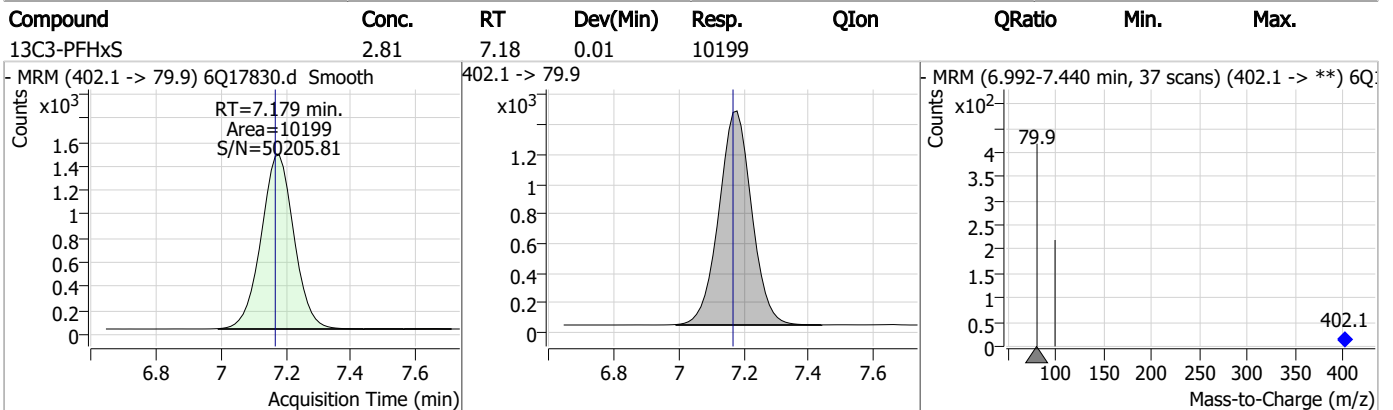
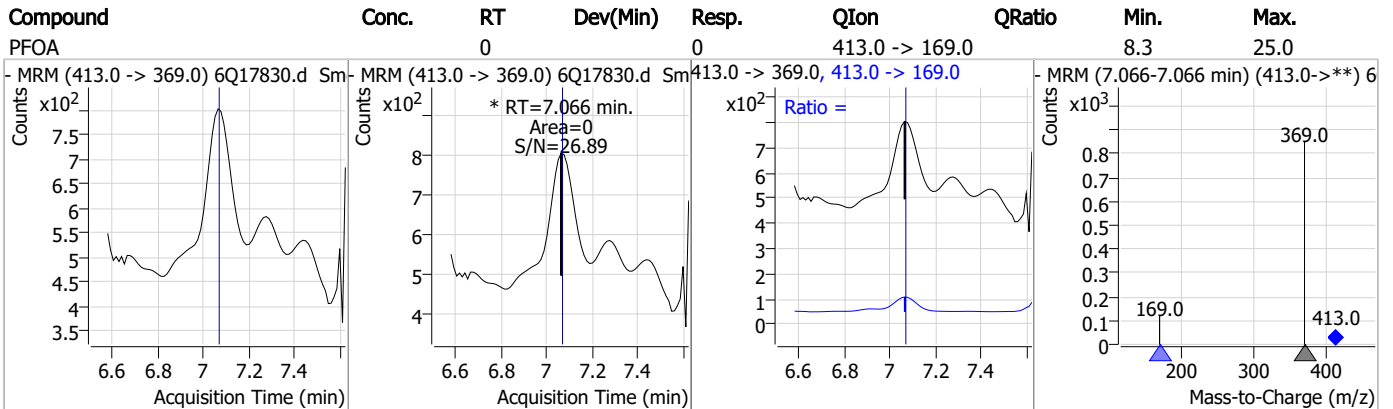
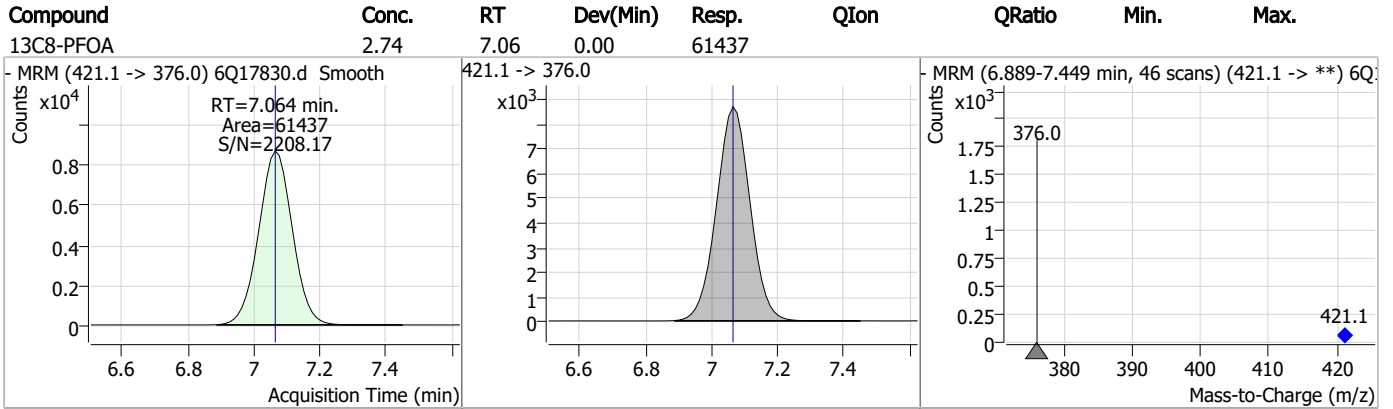
Perfluorinated Compounds by LC/MS/MS



7.1.2

7

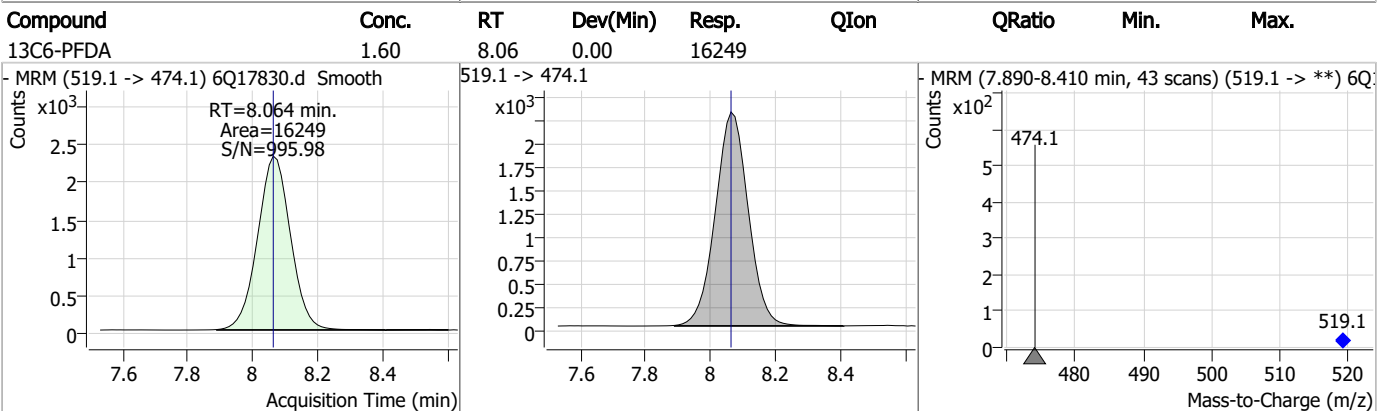
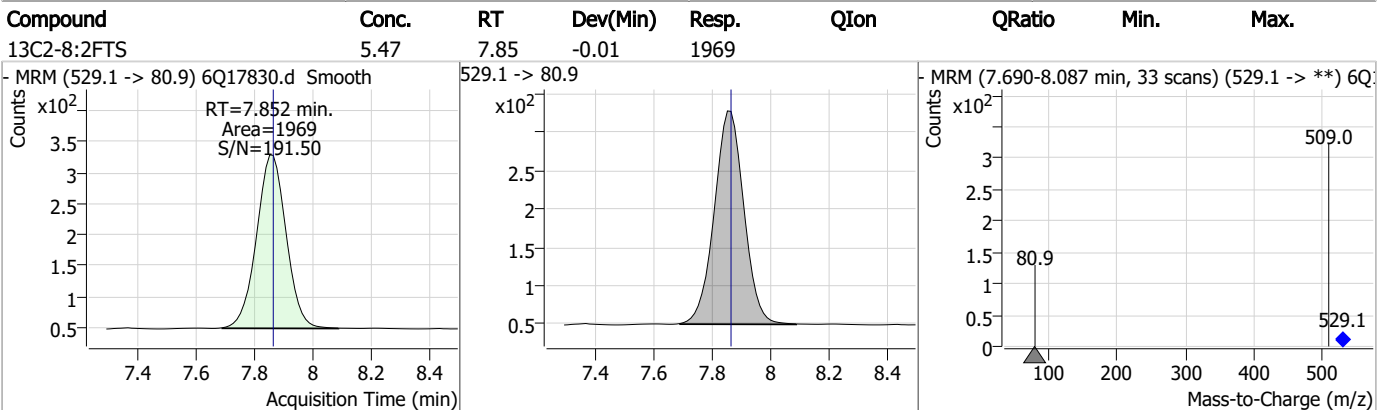
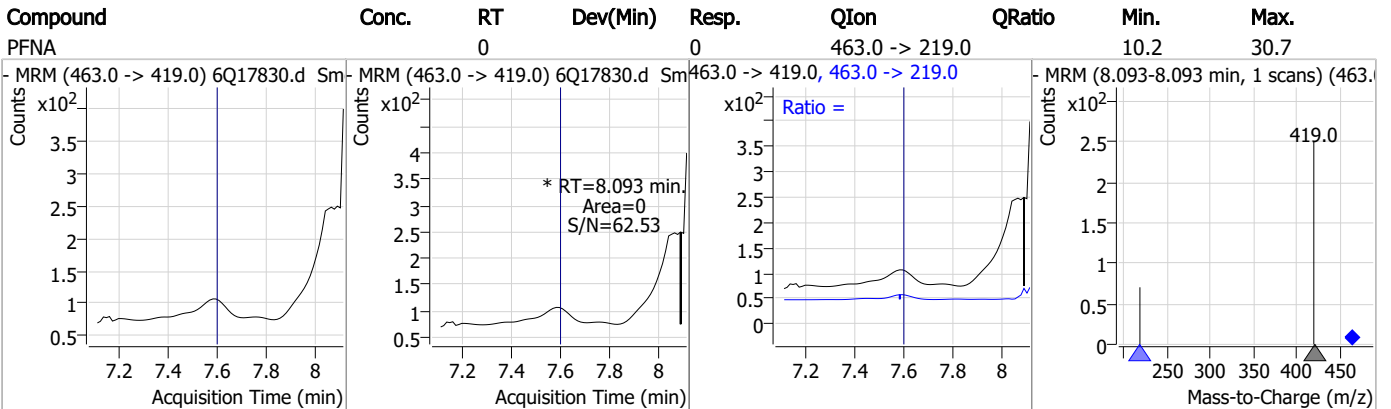
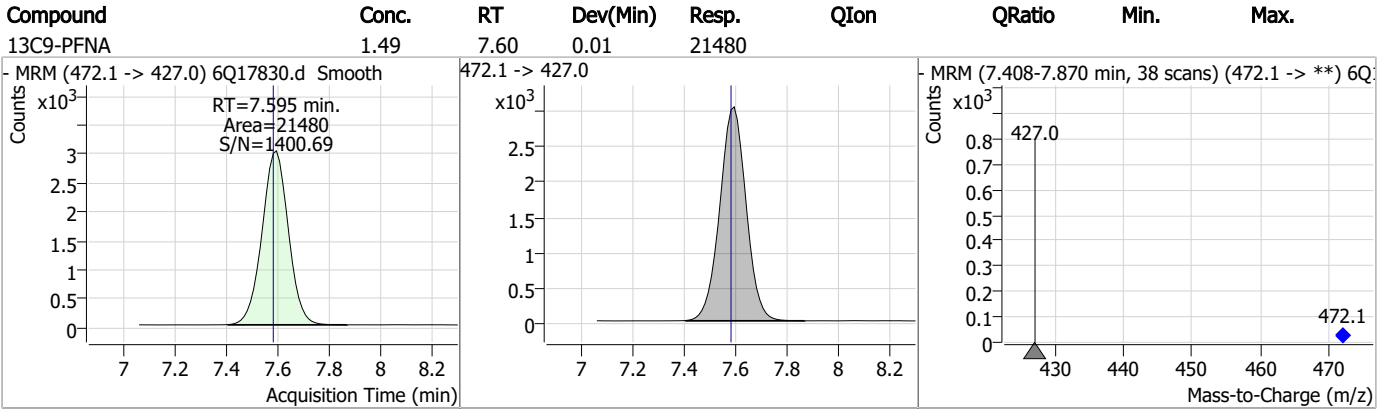
Perfluorinated Compounds by LC/MS/MS



7.1.2

7

Perfluorinated Compounds by LC/MS/MS



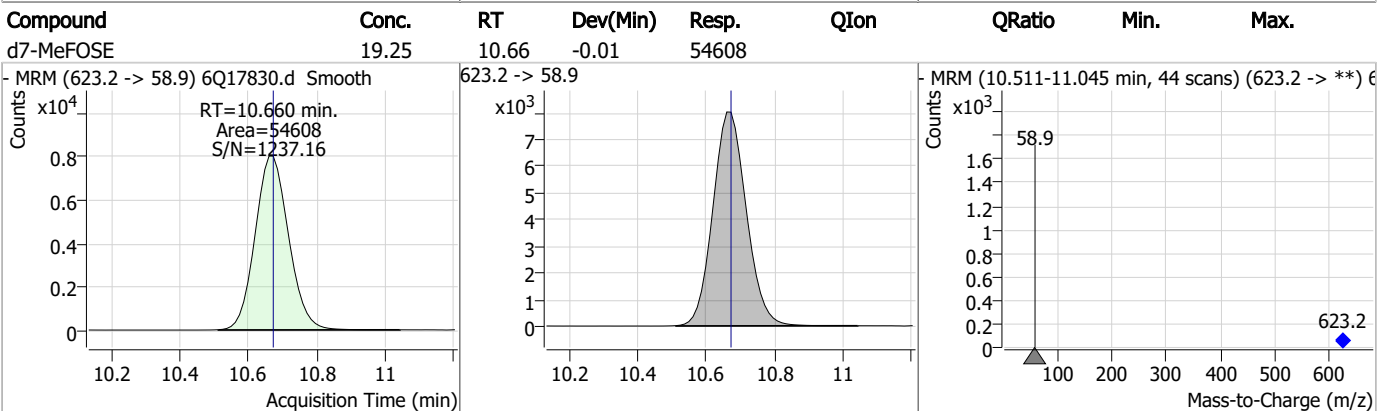
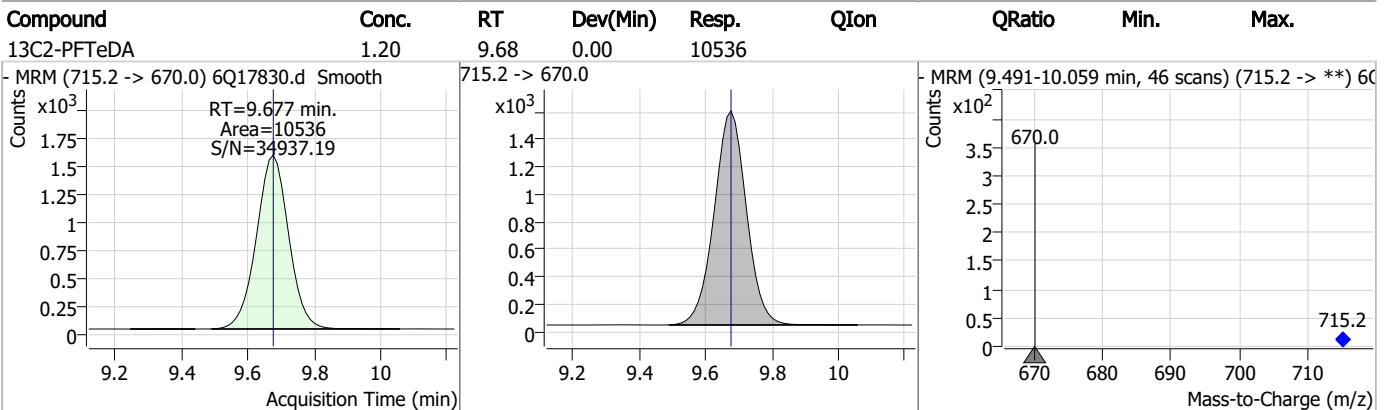
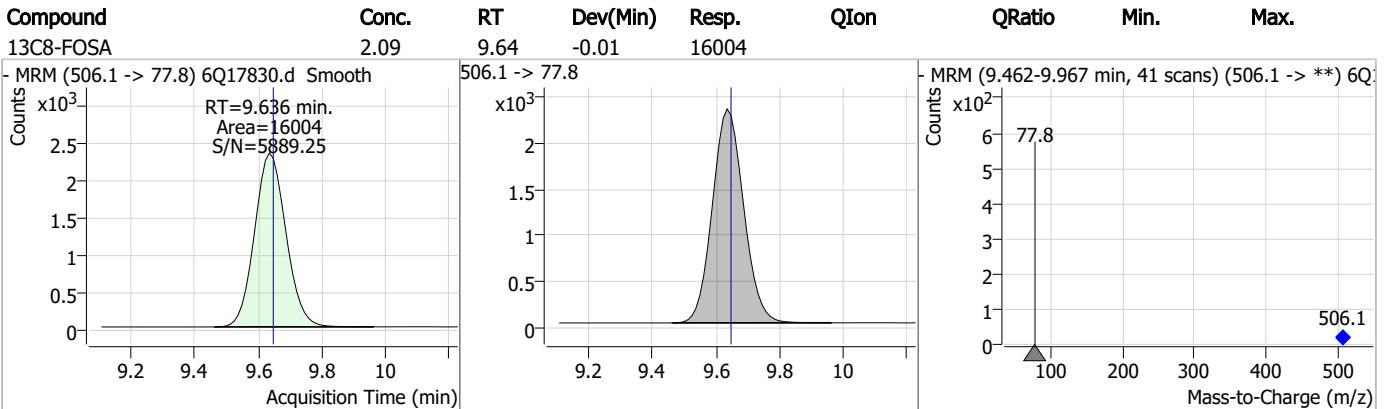
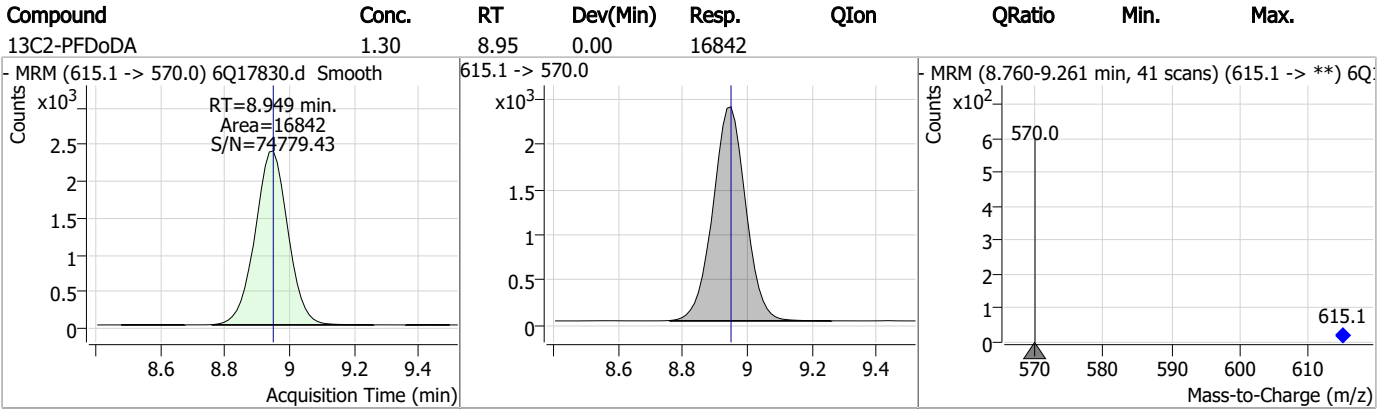
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.47	8.12	-0.01	16138				
- MRM (573.2 -> 419.0) 6Q17830.d Smooth			573.2 -> 419.0		- MRM (7.949-8.491 min, 45 scans) (573.2 -> **) 6Q			
13C8-PFOS	2.47	8.23	0.00	8846				
- MRM (507.1 -> 79.9) 6Q17830.d Smooth			507.1 -> 79.9		- MRM (8.041-8.453 min, 34 scans) (507.1 -> **) 6Q			
d5-EtFOSAA	4.58	8.33	0.00	13059				
- MRM (589.2 -> 419.0) 6Q17830.d Smooth			589.2 -> 419.0		- MRM (8.144-8.564 min, 35 scans) (589.2 -> **) 6Q			
13C7-PFUnDA	1.40	8.52	0.00	18191				
- MRM (570.0 -> 525.1) 6Q17830.d Smooth			570.0 -> 525.1		- MRM (8.332-8.816 min, 40 scans) (570.0 -> **) 6Q			

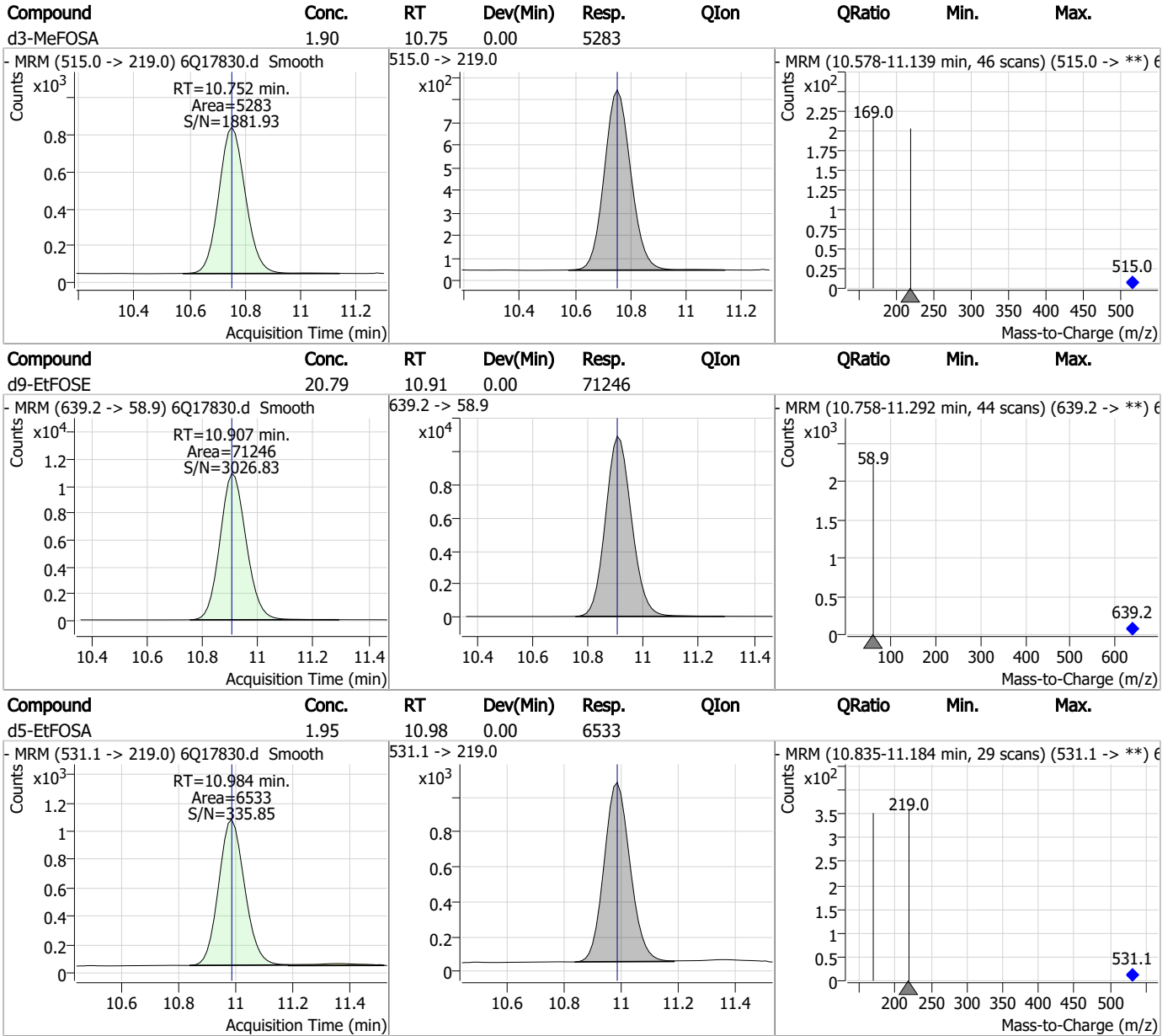
7.1.2

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.2

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Manual Integration Approval Summary

Sample Number: FC5930-2 Method: EPA DRAFT 1633
Lab FileID: 6Q17830.D Analyst approved: 05/16/23 13:58 Martha Valls
Injection Time: 05/16/23 01:34 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		5.40	Split peak
Perfluoroheptanoic acid	375-85-9		6.42	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak

7.1.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17831.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 1:48:45 AM
 Sample Name : FC5930-3
 Vial : P5-D8
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,560,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	133298	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	44631	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	51676	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	44464	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	59884	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	19779	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	15172	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	18263	1.25 µg/L	0.000
M2-PFDoDA	8.937	615.1 -> 570.0	15175	1.25 µg/L	-0.012
M2-PFTeDA	9.677	715.2 -> 670.0	9808	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	13553	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	18498	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10155	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9221	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1378	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1797	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1818	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	15900	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	29746	10.00 µg/L	0.000
M5-EtFOSAA	8.316	589.2 -> 419.0	11721	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	49152	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	66672	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	5728	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	4438	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	11398	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	52904	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	7027	2.50 µg/L	0.000
13C4-PFOA	7.065	417.1 -> 372.0	60953	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	17483	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	21929	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	39666	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1378	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1797	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1818	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFDoDA	8.937	615.1 -> 570.0	15175	1.04 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	9808	0.99 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.1%		
13C3-PFBS	5.397	302.1 -> 79.9	18498	3.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 120.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	10155	2.71 µg/L	0.012



7.1.3
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C4-PFBA	2.901	216.8 -> 171.9	133298	10.62 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C4-PFHpA	6.420	367.1 -> 322.0	44464	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C5-PFHxA	5.466	318.0 -> 273.0	51676	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	44631	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C6-PFDA	8.064	519.1 -> 474.1	15172	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C7-PFUnDA	8.518	570.0 -> 525.1	18263	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C8-FOSA	9.636	506.1 -> 77.8	13553	1.79 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 71.7%	
13C8-PFOA	7.064	421.1 -> 376.0	59884	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOS	8.226	507.1 -> 79.9	9221	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C9-PFNA	7.583	472.1 -> 427.0	19779	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.121	573.2 -> 419.0	15900	4.45 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.0%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	29746	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
d3-MeFOSA	10.752	515.0 -> 219.0	4438	1.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 64.4%	
d5-EtFOSAA	8.316	589.2 -> 419.0	11721	4.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.0%	
d7-MeFOSE	10.660	623.2 -> 58.9	49152	17.51 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 70.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	66672	19.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 78.6%	
d5-EtFOSA	10.984	531.1 -> 219.0	5728	1.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 68.9%	

Target Compounds

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

Perfluorinated Compounds by LC/MS/MS

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

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

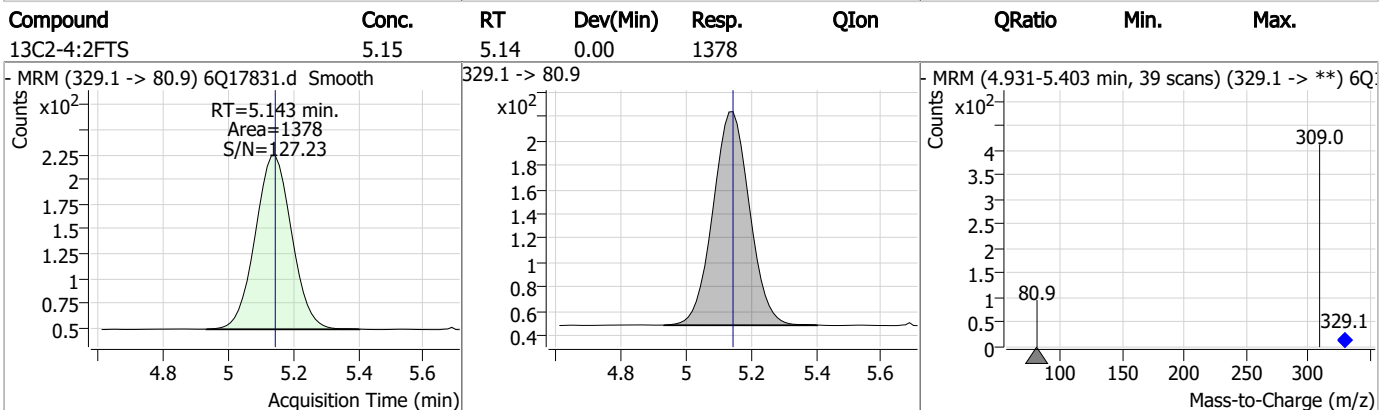
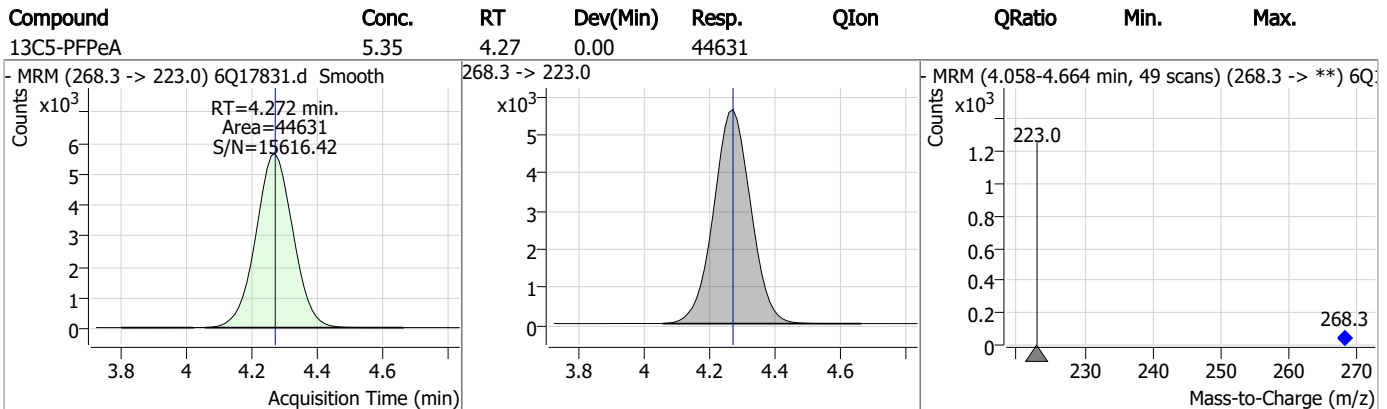
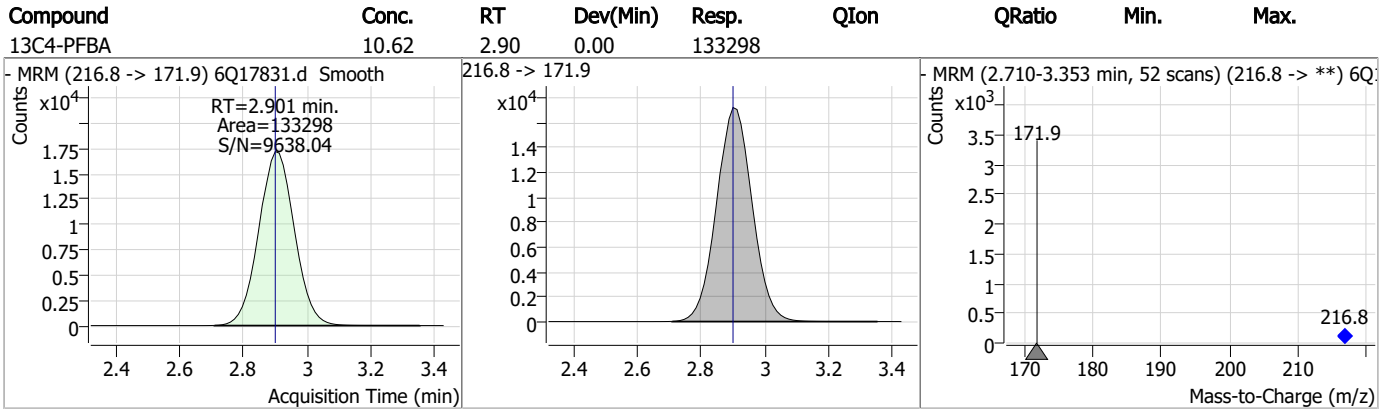
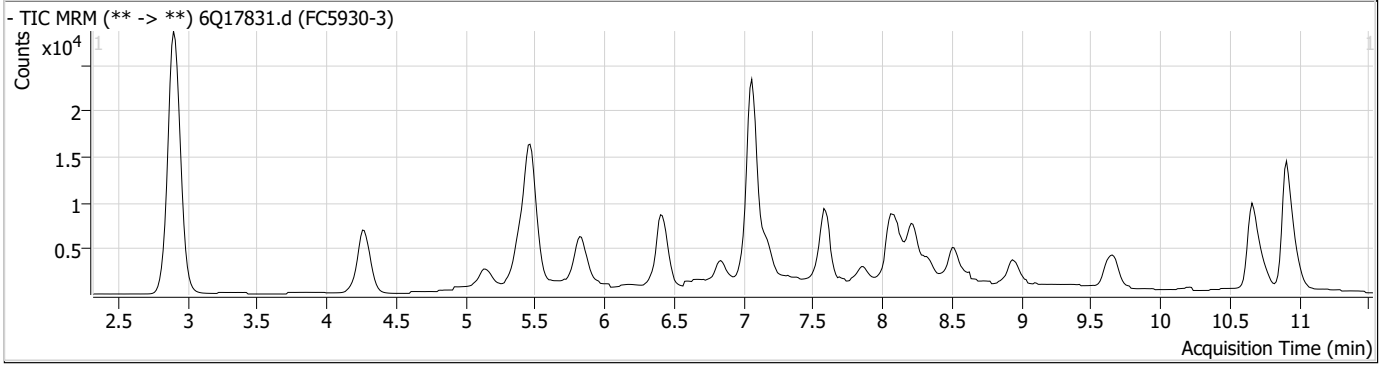
Perfluorinated Compounds by LC/MS/MS

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



Perfluorinated Compounds by LC/MS/MS



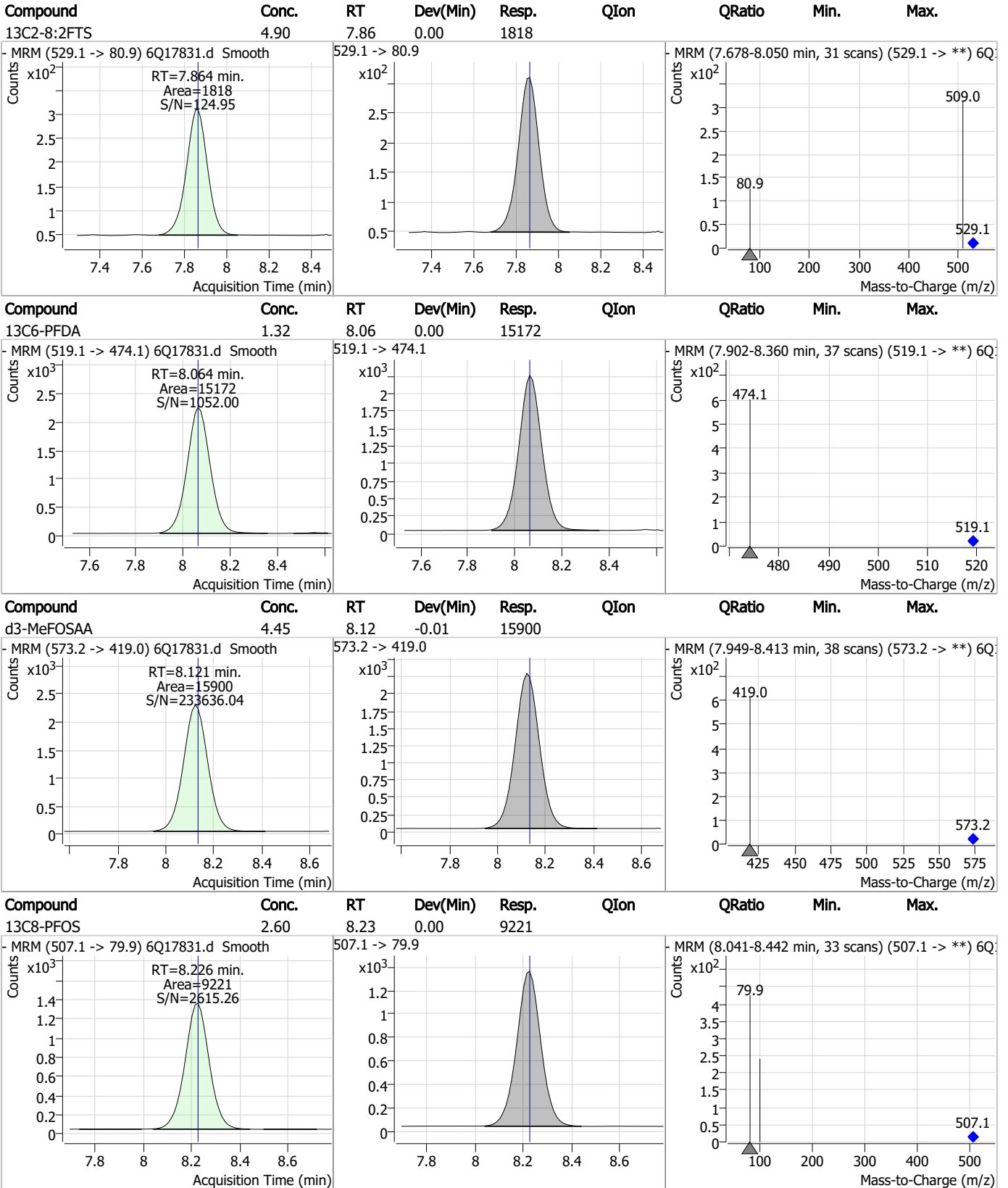
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.02	5.40	0.00	18498				
13C5-PFHxA	2.76	5.47	0.00	51676				
13C3-HFPO-DA	10.25	5.83	0.00	29746				
13C4-PFHpA	2.70	6.42	0.00	44464				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.21	6.84	0.00	1797				
13C8-PFOA	2.60	7.06	0.00	59884				
13C3-PFHxS	2.71	7.18	0.01	10155				
13C9-PFNA	1.22	7.58	0.00	19779				

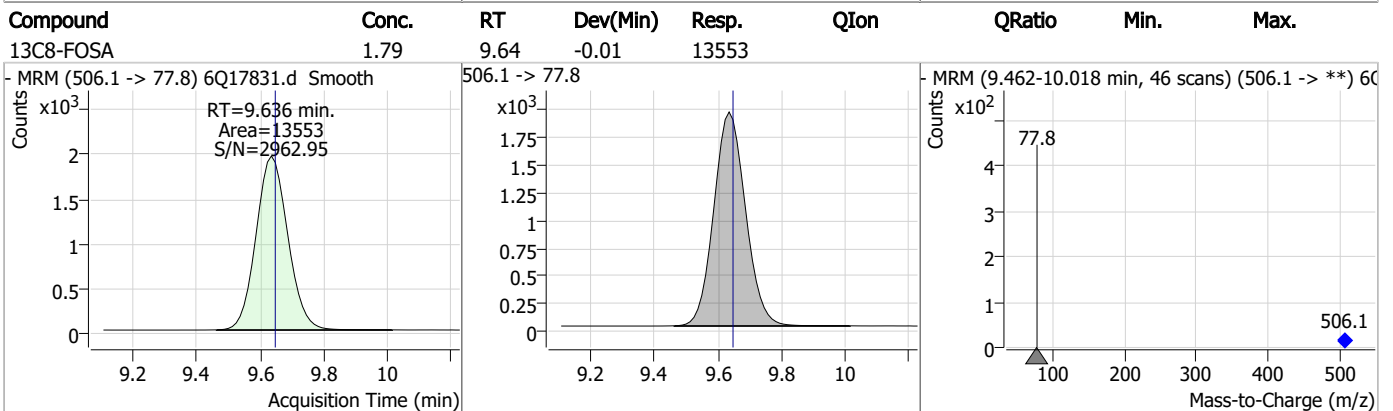
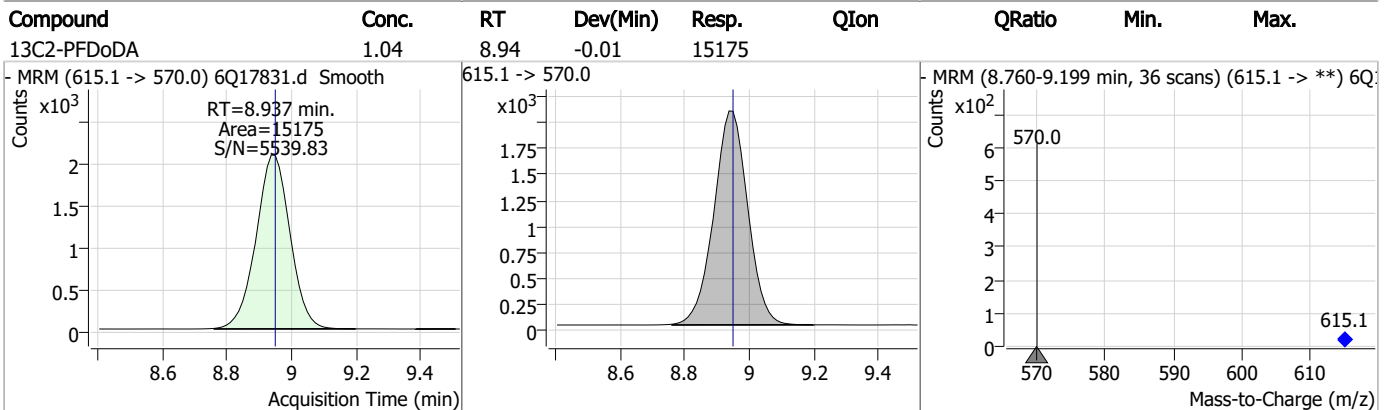
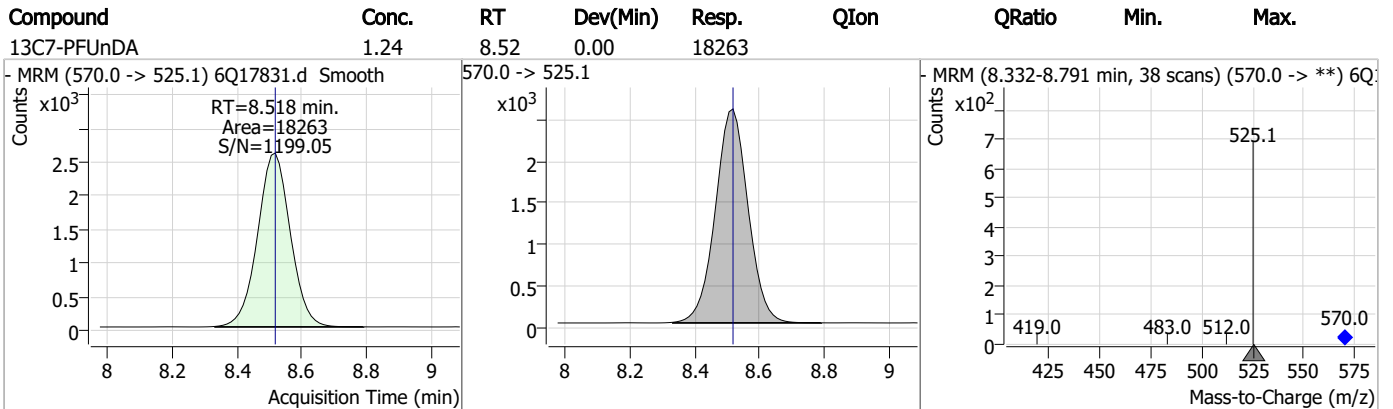
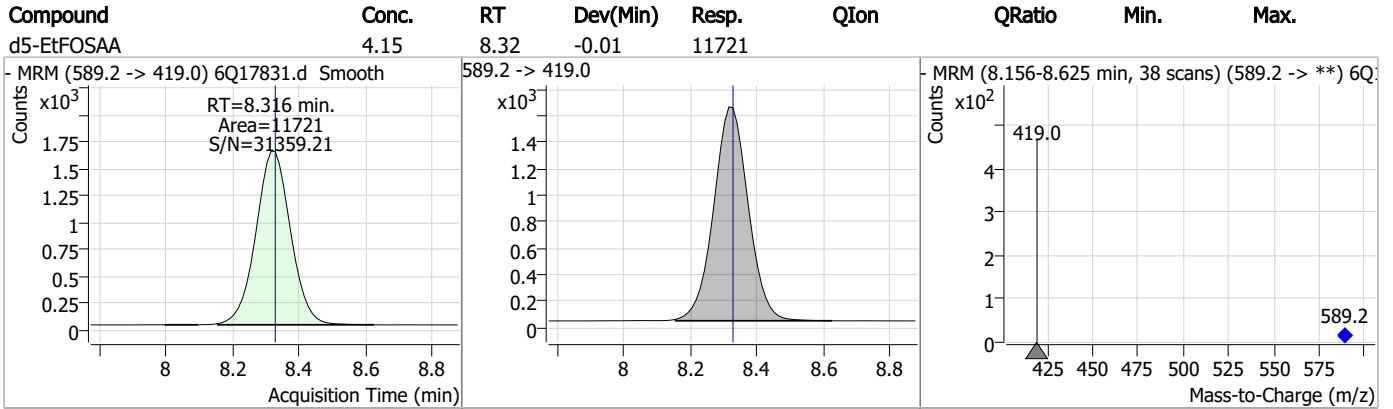
Perfluorinated Compounds by LC/MS/MS



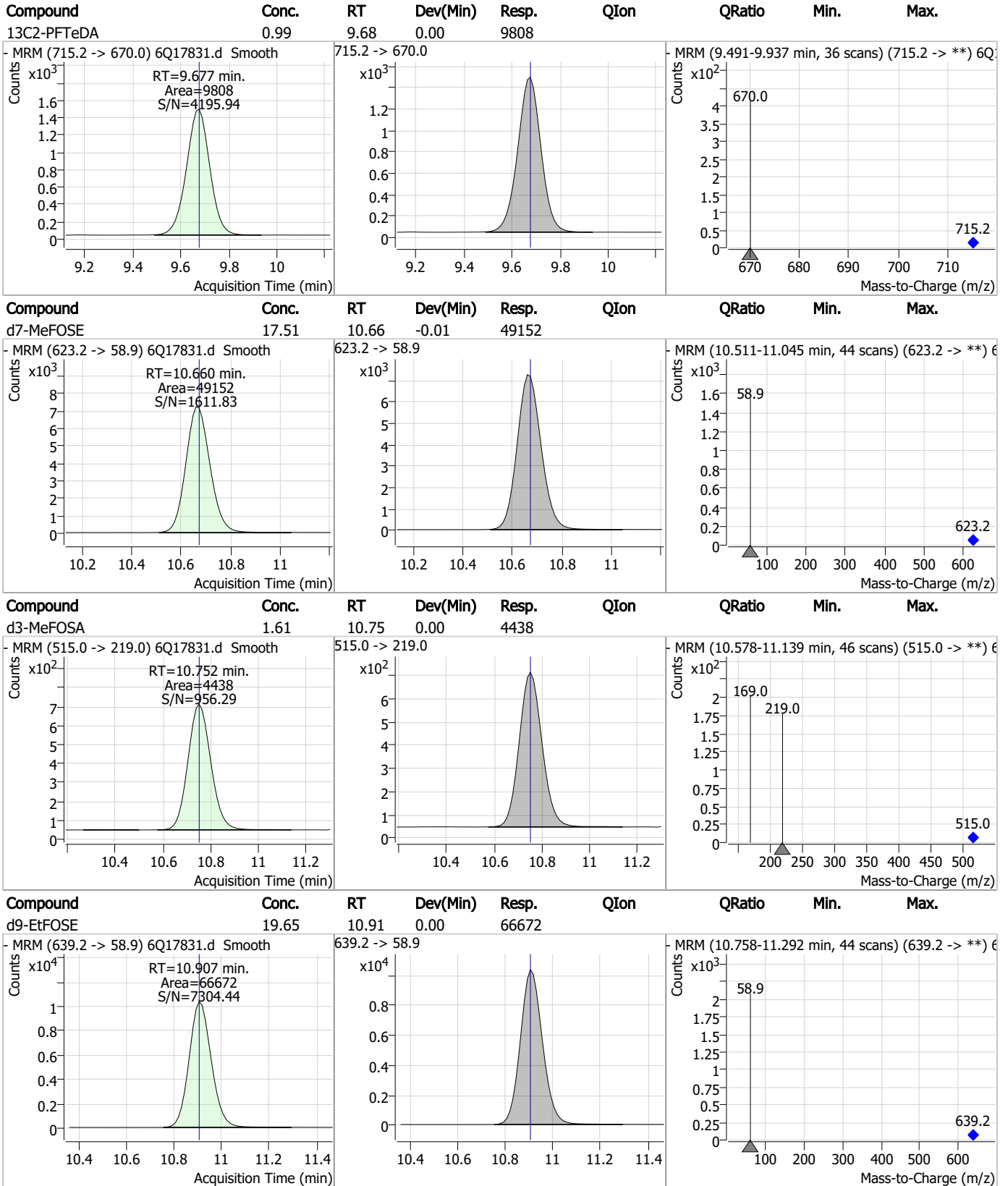
7.1.3

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

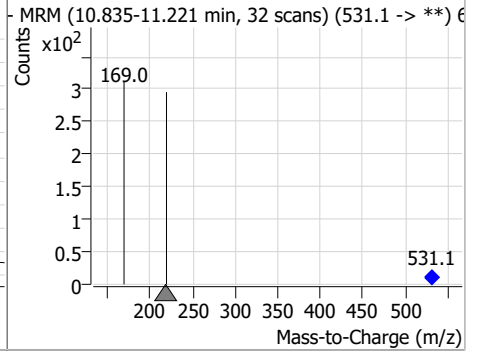
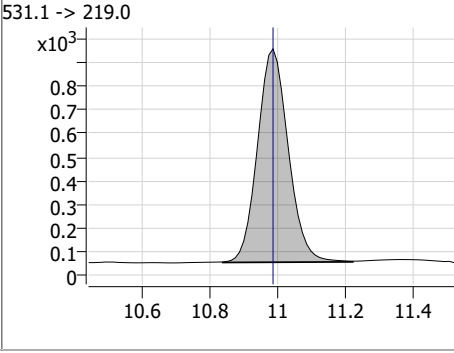
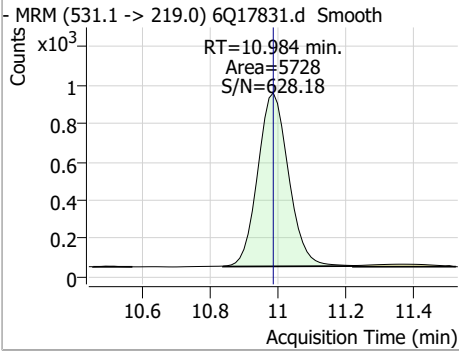


7.1.3

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.72	10.98	0.00	5728				



7.1.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17825.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 12:21:50 AM
 Sample Name : op96871-mb
 Vial : P5-D2
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	130453	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	42208	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	48492	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	40292	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	61173	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	20575	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	15842	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	19225	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	14731	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	9774	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	13222	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	16493	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	9721	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	8306	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1328	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1711	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1766	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	14459	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	28180	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	11300	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	43388	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	61357	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	5083	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	4341	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10949	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	53639	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	6706	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	59147	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	17824	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	19635	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	40057	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1328	5.20 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1711	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1766	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFDoDA	8.949	615.1 -> 570.0	14731	0.99 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.1%		
13C2-PFTeDA	9.677	715.2 -> 670.0	9774	0.97 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.4%		
13C3-PFBS	5.397	302.1 -> 79.9	16493	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	9721	2.72 µg/L	0.012

7.2.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C4-PFBA	2.901	216.8 -> 171.9	130453	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.420	367.1 -> 322.0	40292	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.466	318.0 -> 273.0	48492	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	4.272	268.3 -> 223.0	42208	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.064	519.1 -> 474.1	15842	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C7-PFUnDA	8.518	570.0 -> 525.1	19225	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-FOSA	9.636	506.1 -> 77.8	13222	1.82 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.8%	
13C8-PFOA	7.064	421.1 -> 376.0	61173	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C8-PFOS	8.226	507.1 -> 79.9	8306	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C9-PFNA	7.595	472.1 -> 427.0	20575	1.42 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.4%	
d3-MeFOSAA	8.133	573.2 -> 419.0	14459	4.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.3%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	28180	9.61 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d3-MeFOSA	10.752	515.0 -> 219.0	4341	1.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 65.6%	
d5-EtFOSAA	8.329	589.2 -> 419.0	11300	4.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.3%	
d7-MeFOSE	10.660	623.2 -> 58.9	43388	16.09 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 64.3%	
d9-EtFOSE	10.907	639.2 -> 58.9	61357	18.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.3%	
d5-EtFOSA	10.984	531.1 -> 219.0	5083	1.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 63.7%	

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

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.1
7

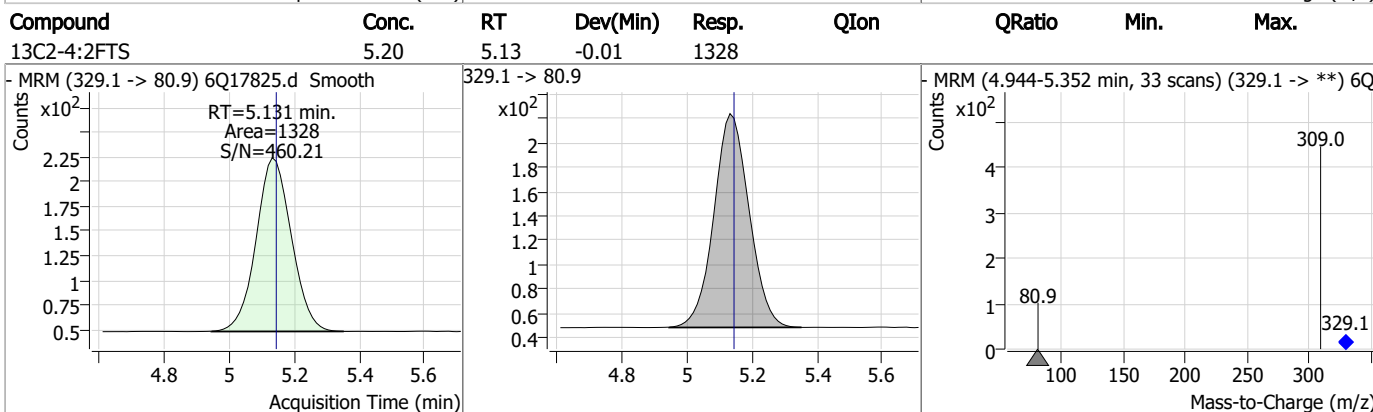
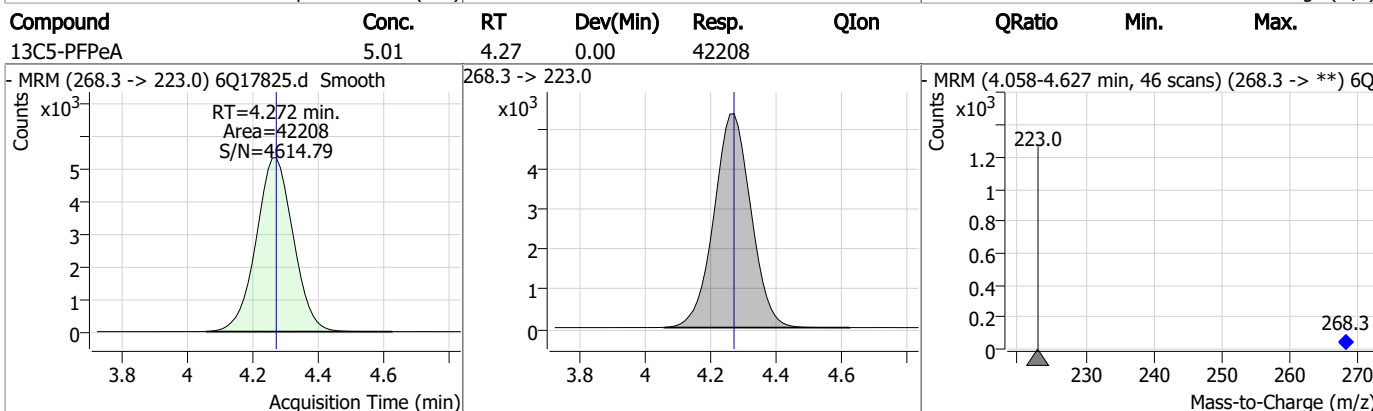
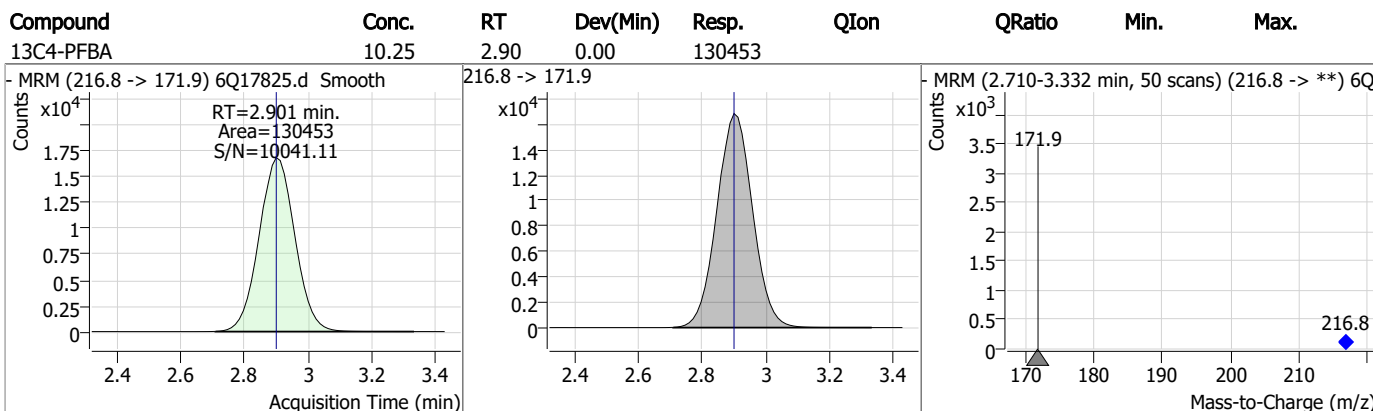
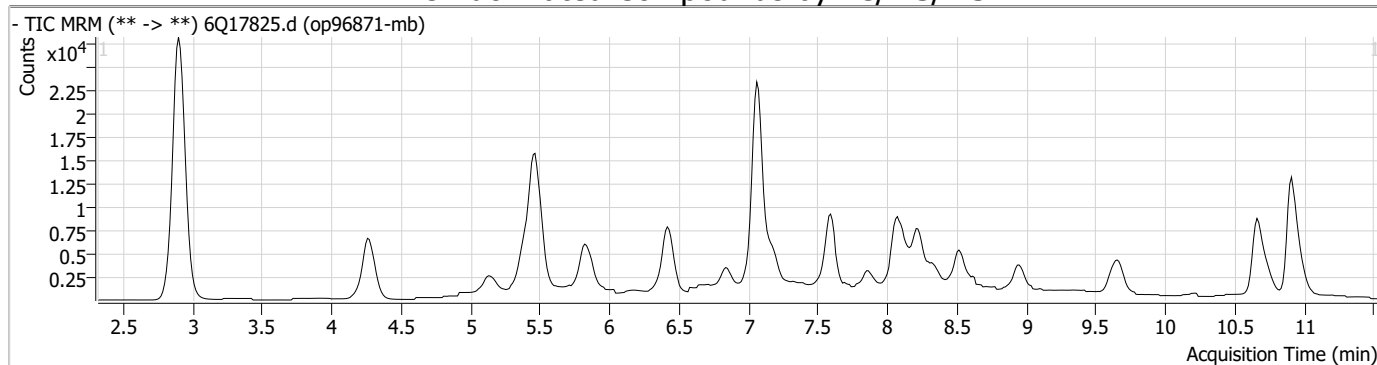
Perfluorinated Compounds by LC/MS/MS

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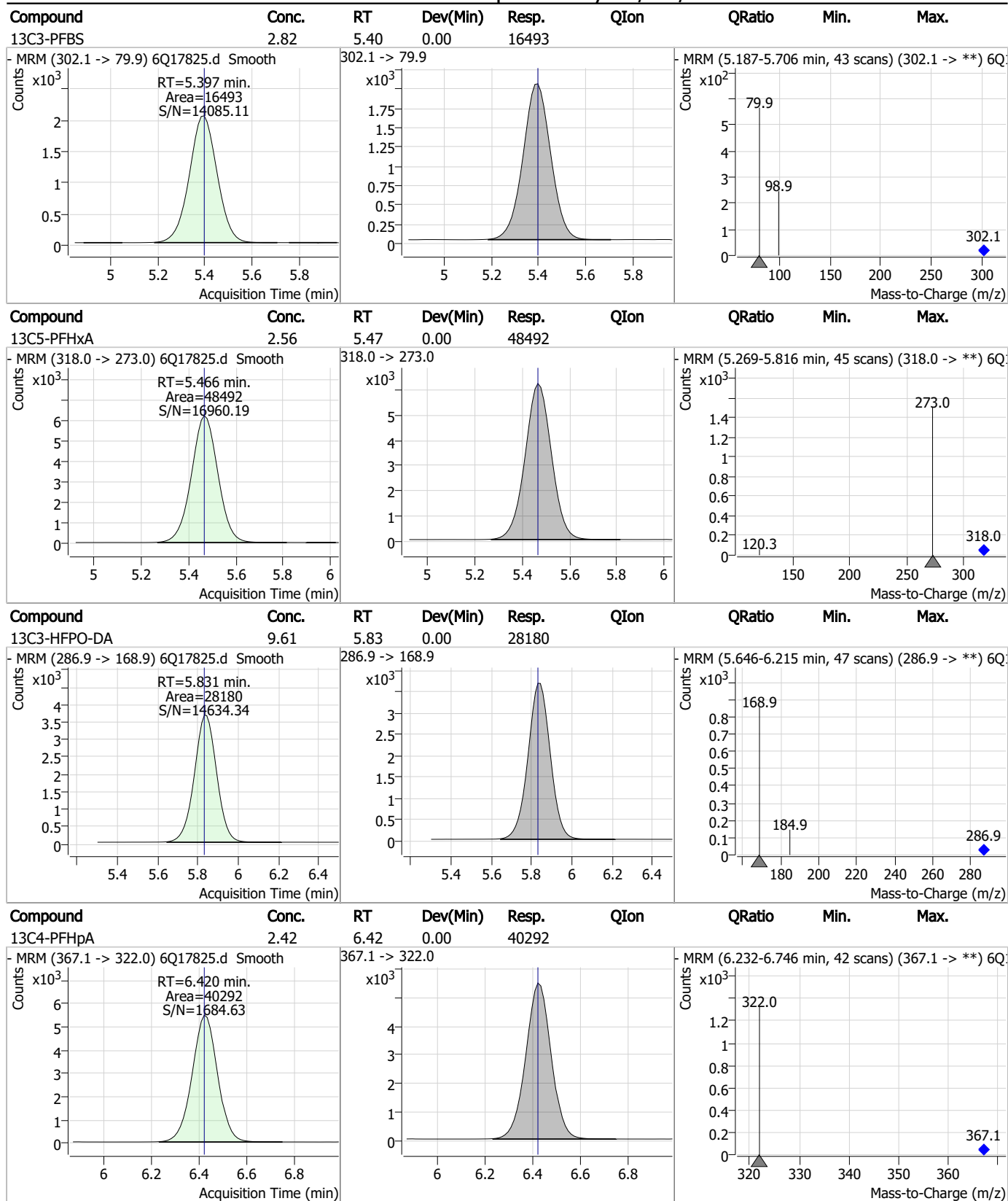
7.2.1

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Perfluorinated Compounds by LC/MS/MS

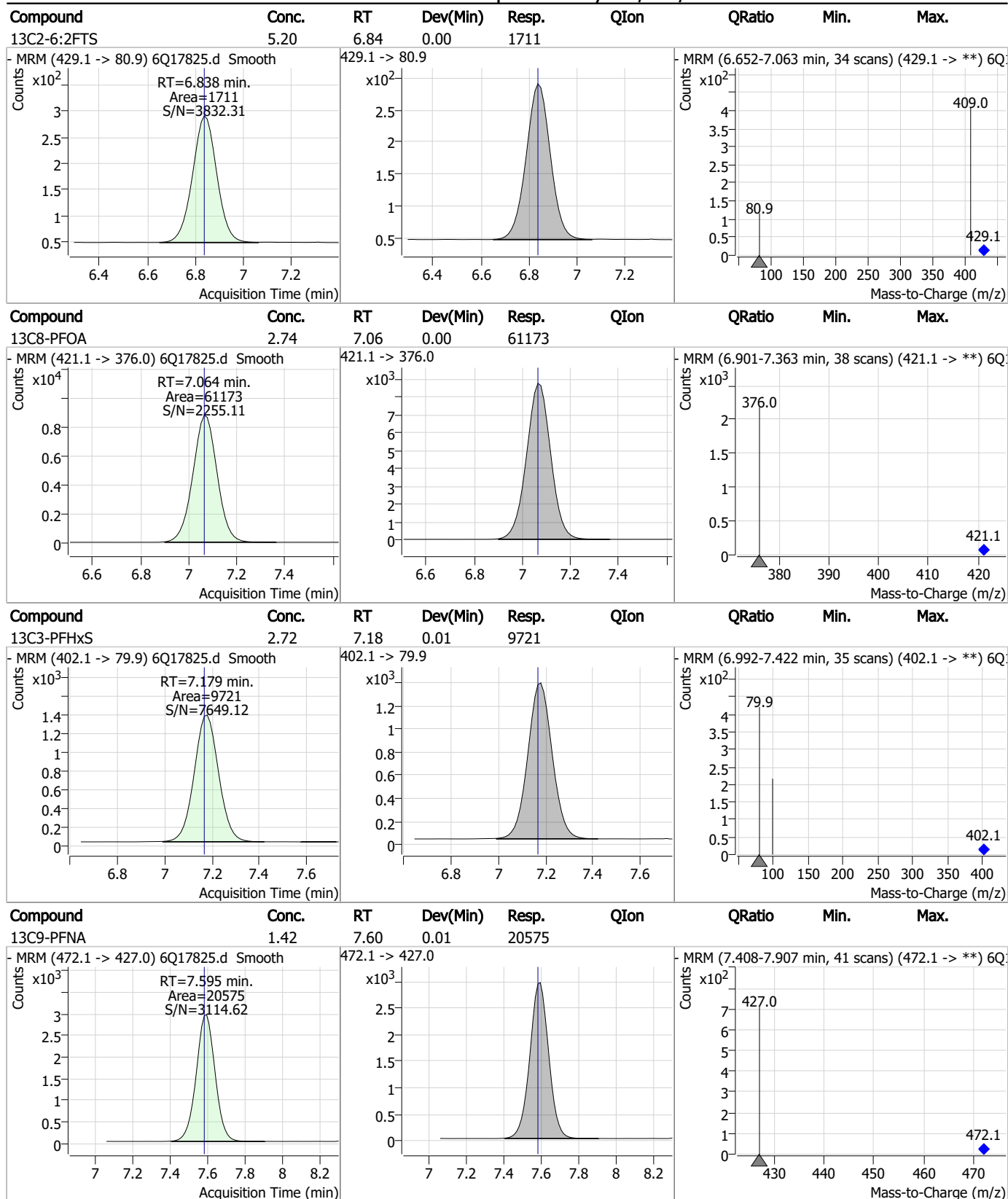


Perfluorinated Compounds by LC/MS/MS



7.2.1
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Perfluorinated Compounds by LC/MS/MS



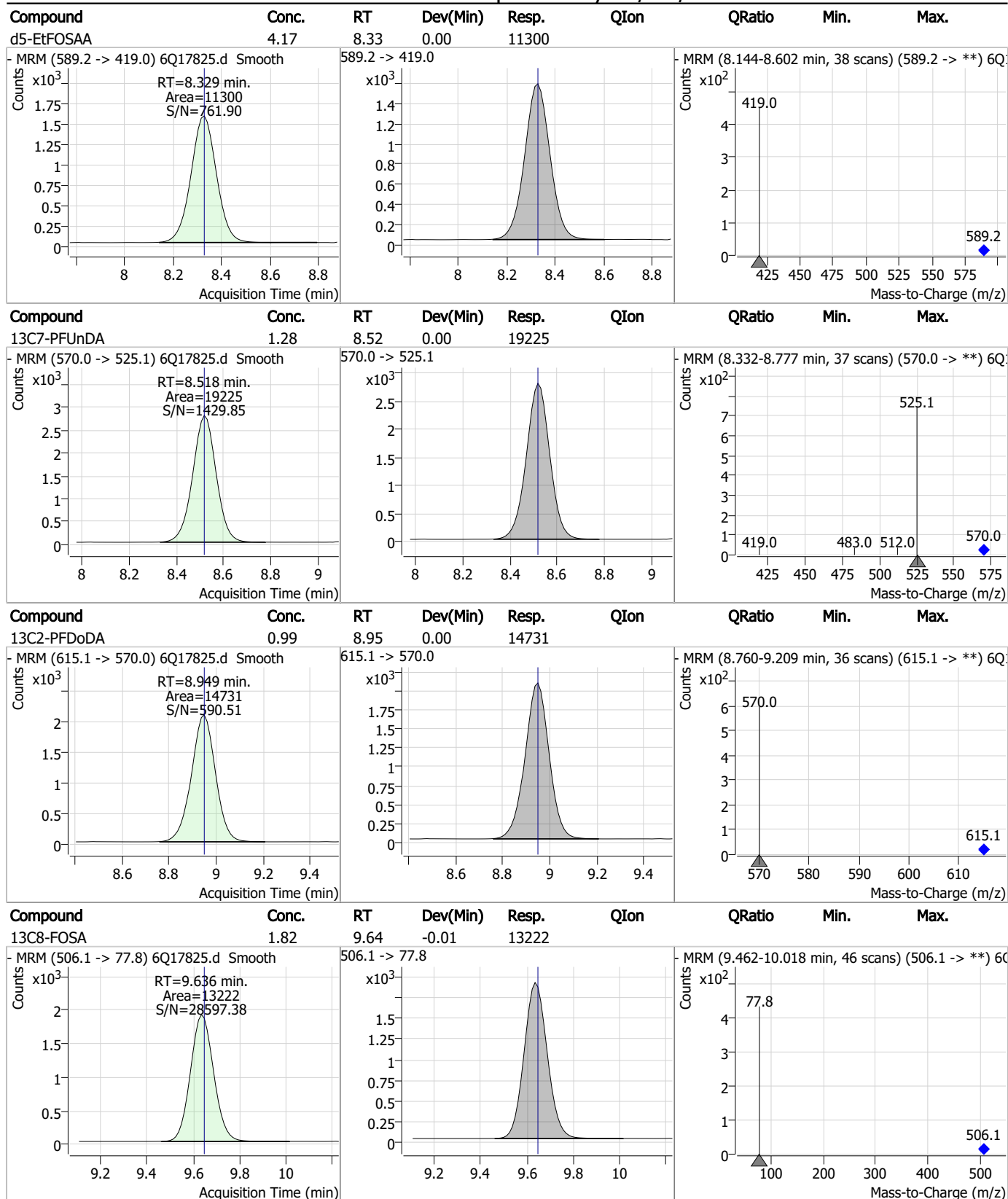
7.2.1
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.99	7.86	0.00	1766				
13C6-PFDA	1.36	8.06	0.00	15842				
d3-MeFOSAA	4.21	8.13	0.00	14459				
13C8-PFOS	2.44	8.23	0.00	8306				

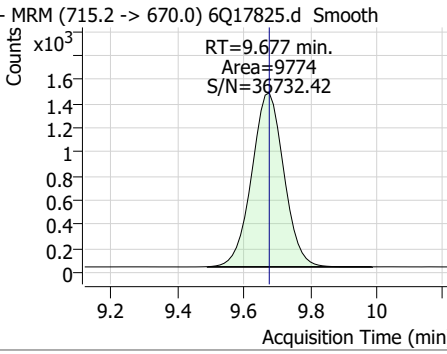
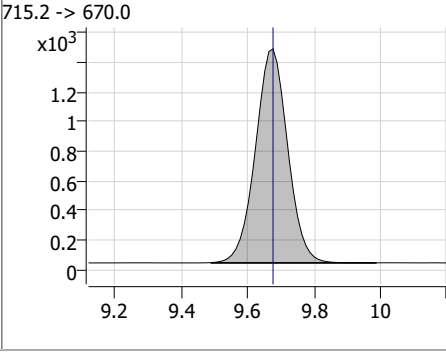
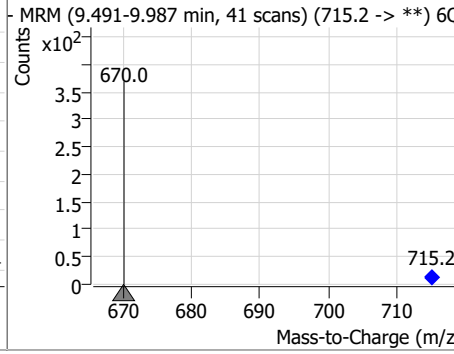
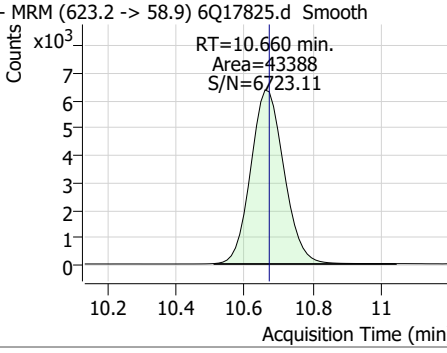
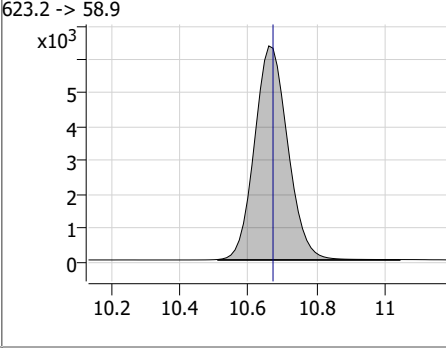
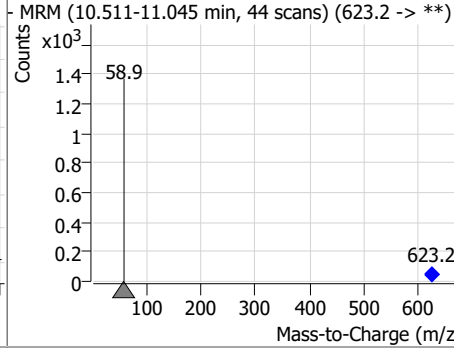
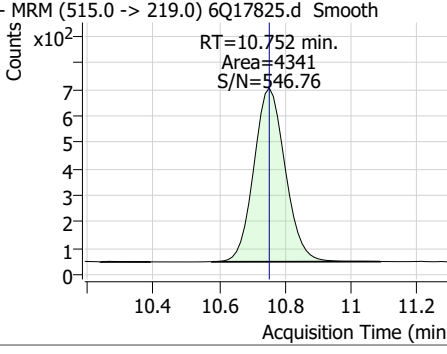
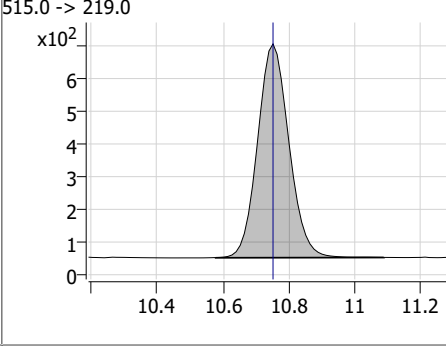
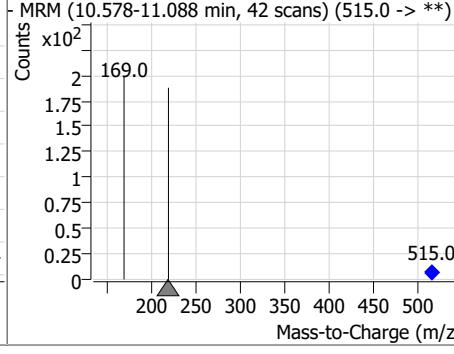
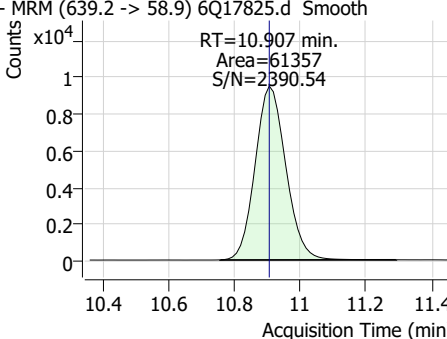
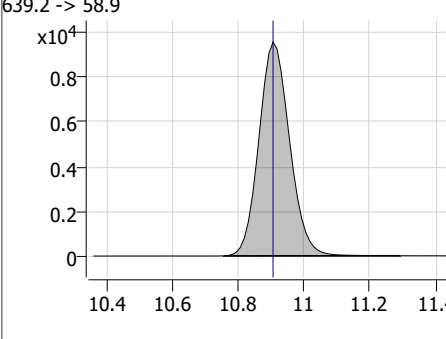
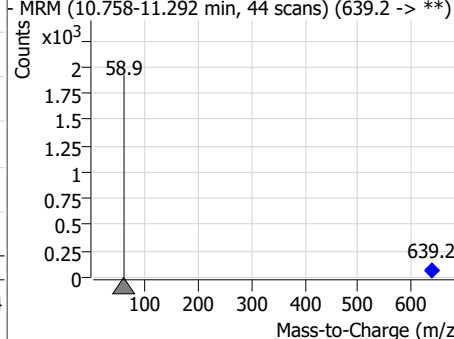
7.2.1
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Perfluorinated Compounds by LC/MS/MS



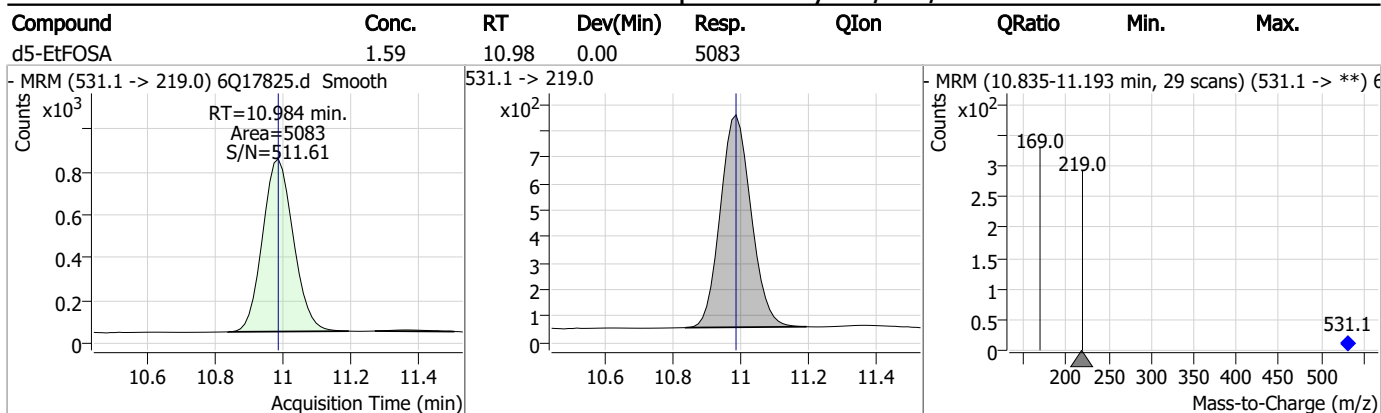
7.2.1
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.97	9.68	0.00	9774				
- MRM (715.2 -> 670.0) 6Q17825.d Smooth 			715.2 -> 670.0 			- MRM (9.491-9.987 min, 41 scans) (715.2 -> **) 6Q17825.d 		
d7-MeFOSE	16.09	10.66	-0.01	43388				
- MRM (623.2 -> 58.9) 6Q17825.d Smooth 			623.2 -> 58.9 			- MRM (10.511-11.045 min, 44 scans) (623.2 -> **) 6Q17825.d 		
d3-MeFOSA	1.64	10.75	0.00	4341				
- MRM (515.0 -> 219.0) 6Q17825.d Smooth 			515.0 -> 219.0 			- MRM (10.578-11.088 min, 42 scans) (515.0 -> **) 6Q17825.d 		
d9-EtFOSE	18.83	10.91	0.00	61357				
- MRM (639.2 -> 58.9) 6Q17825.d Smooth 			639.2 -> 58.9 			- MRM (10.758-11.292 min, 44 scans) (639.2 -> **) 6Q17825.d 		

7.2.1
7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17784.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 2:02:48 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	137029	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	44223	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	51164	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	44432	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	64090	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	20668	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	16896	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	20012	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	19574	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13105	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	20847	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	16876	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10346	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9897	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1441	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1712	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1796	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	15533	5.00 µg/L	-0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	31323	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	12616	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	88615	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	114462	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9246	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7572	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12809	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	58254	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7659	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	67667	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	20301	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	22756	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	41814	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1441	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1712	4.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.1%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1796	4.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C2-PFDoDA	8.949	615.1 -> 570.0	19574	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13105	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.1%		
13C3-PFBS	5.397	302.1 -> 79.9	16876	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C3-PFHxS	7.179	402.1 -> 79.9	10346	2.54 µg/L	0.012

7.2.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	2.901	216.8 -> 171.9	137029	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.420	367.1 -> 322.0	44432	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	5.466	318.0 -> 273.0	51164	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFPeA	4.272	268.3 -> 223.0	44223	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.064	519.1 -> 474.1	16896	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C7-PFUnDA	8.518	570.0 -> 525.1	20012	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C8-FOSA	9.636	506.1 -> 77.8	20847	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-PFOA	7.064	421.1 -> 376.0	64090	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOS	8.226	507.1 -> 79.9	9897	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C9-PFNA	7.595	472.1 -> 427.0	20668	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSAA	8.121	573.2 -> 419.0	15533	3.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 77.4%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	31323	10.24 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	7572	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.329	589.2 -> 419.0	12616	3.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 79.5%	
d7-MeFOSE	10.672	623.2 -> 58.9	88615	28.08 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 112.3%	
d9-EtFOSE	10.907	639.2 -> 58.9	114462	30.03 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 120.1%	
d5-EtFOSA	10.984	531.1 -> 219.0	9246	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	

Target Compounds

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

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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	7.340	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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



7.2.2
7

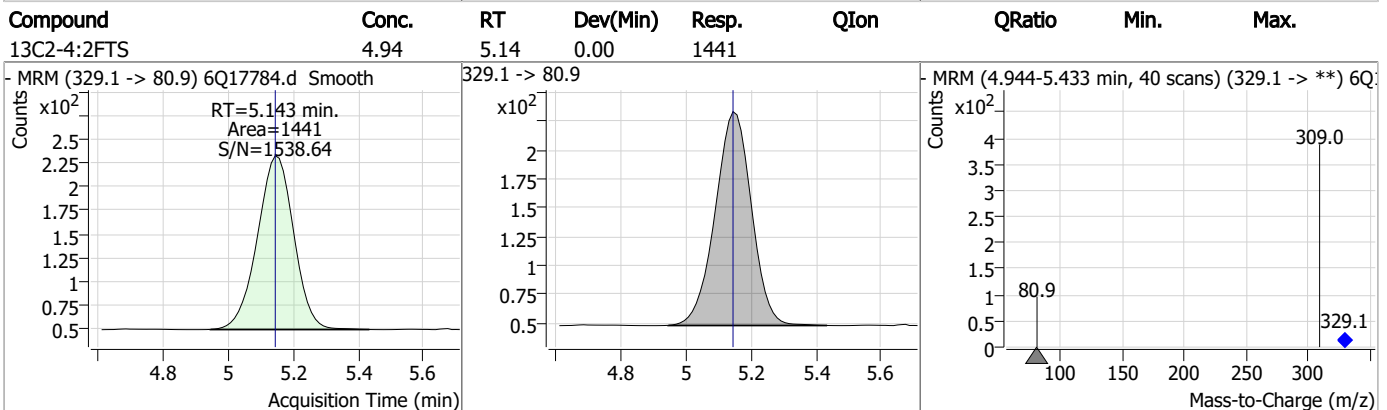
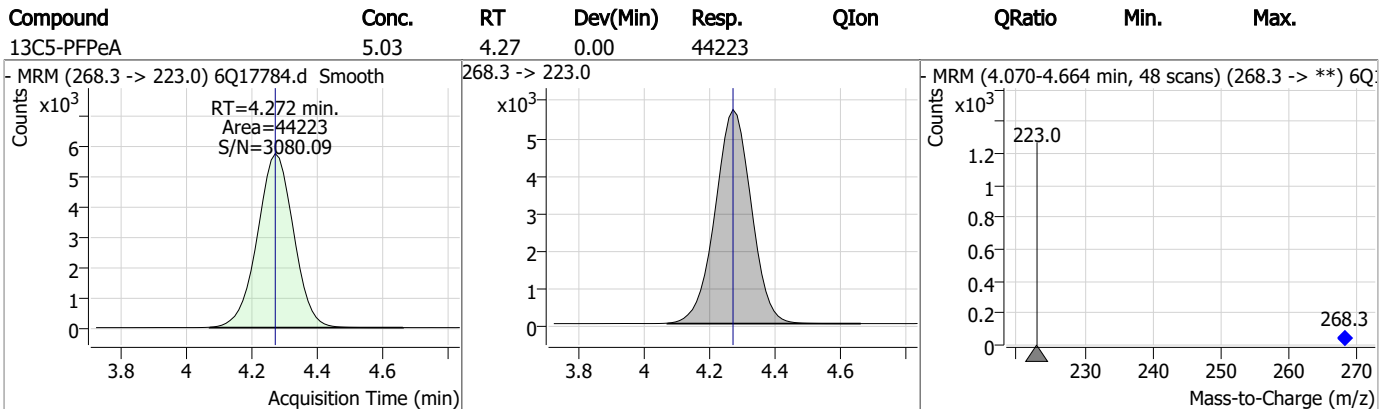
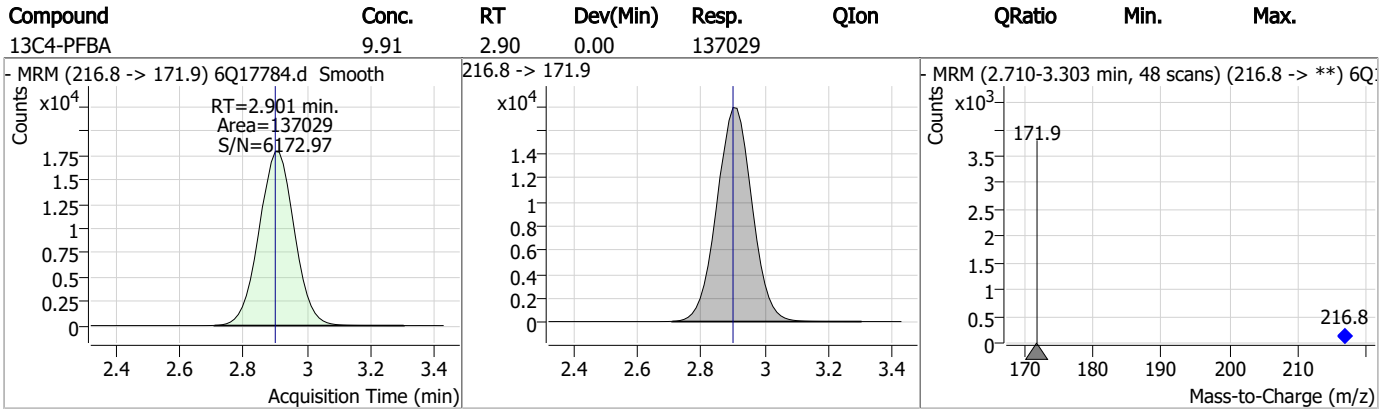
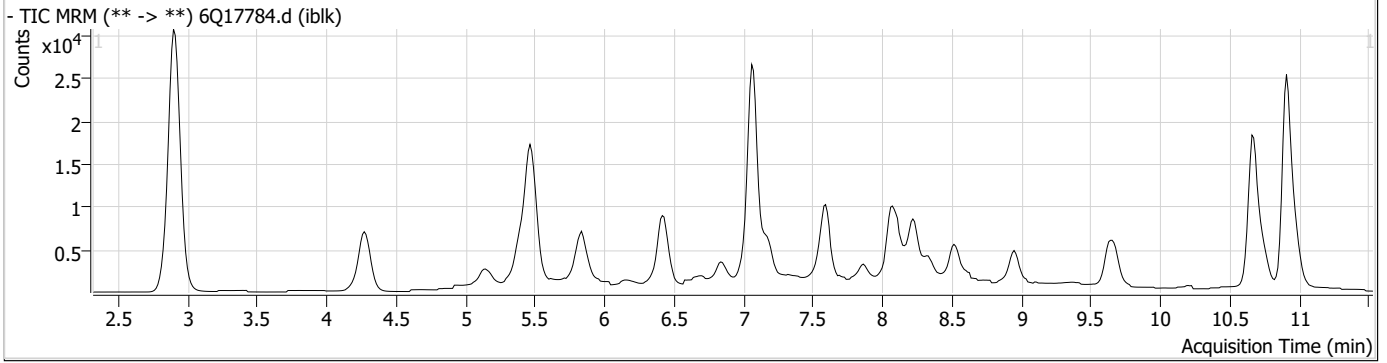
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS

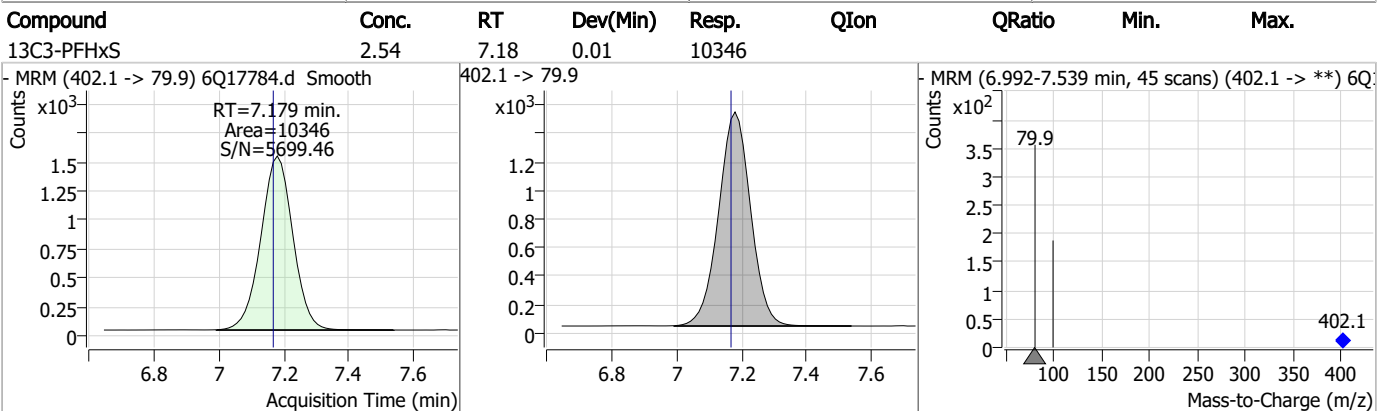
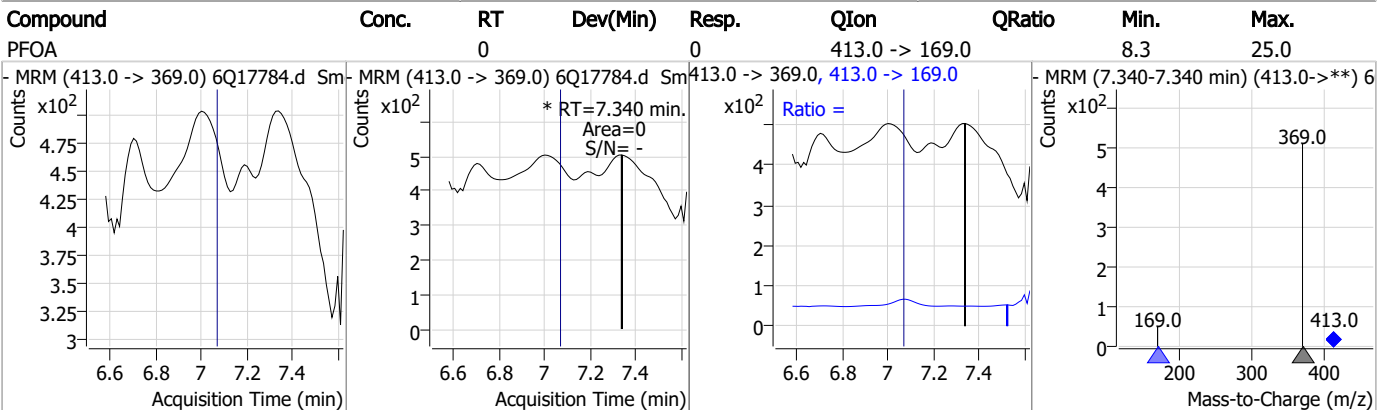
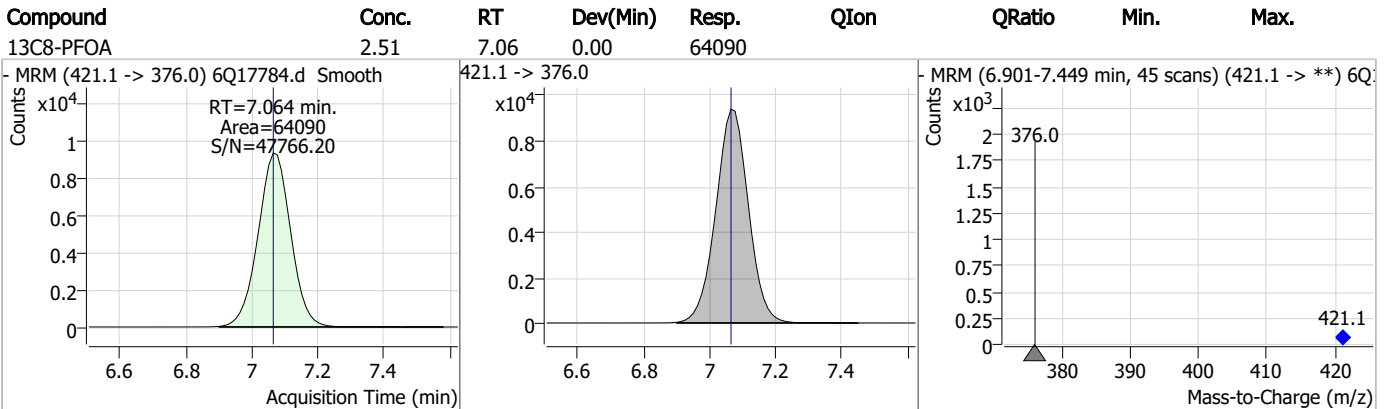
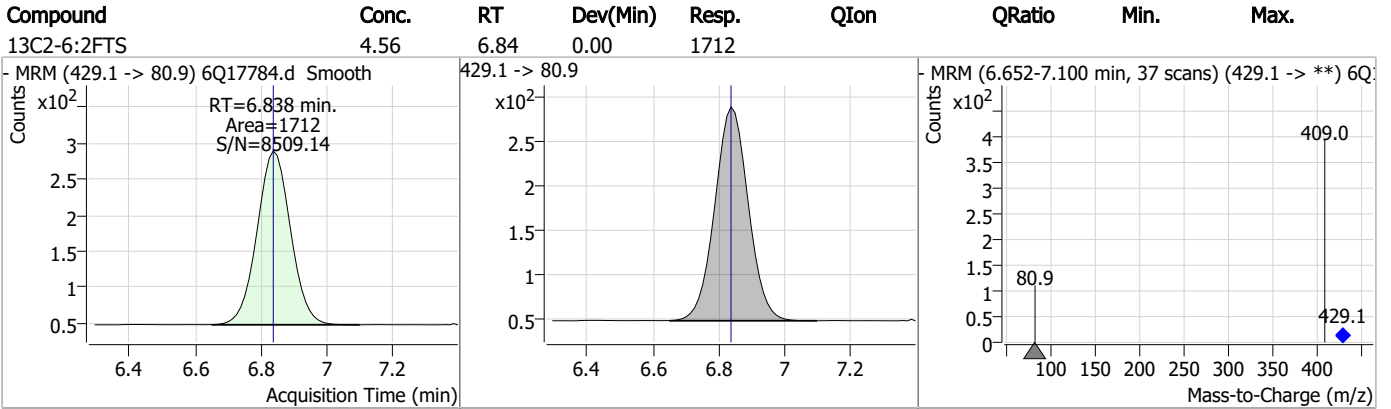


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.53	5.40	0.00	16876				
- MRM (302.1 -> 79.9) 6Q17784.d Smooth Counts x10 ³ RT=5.397 min. Area=16876 S/N=885.14 Acquisition Time (min)			302.1 -> 79.9 x10 ³ 1.75 1.5 1.25 1 0.75 0.5 0.25 0			- MRM (5.199-5.718 min, 43 scans) (302.1 -> **) 6Q Counts x10 ² 6 5 4 3 2 1 0 79.9 98.9 302.1 Mass-to-Charge (m/z)		
13C5-PFHxA	2.59	5.47	0.00	51164				
- MRM (318.0 -> 273.0) 6Q17784.d Smooth Counts x10 ³ RT=5.466 min. Area=51164 S/N=3392.46 Acquisition Time (min)			318.0 -> 273.0 x10 ³ 6 5 4 3 2 1 0			- MRM (5.282-5.798 min, 42 scans) (318.0 -> **) 6Q Counts x10 ³ 1.6 1.4 1.2 1 0.8 0.6 0.4 0.2 0 120.3 273.0 318.0 Mass-to-Charge (m/z)		
13C3-HFPO-DA	10.24	5.84	0.01	31323				
- MRM (286.9 -> 168.9) 6Q17784.d Smooth Counts x10 ³ RT=5.844 min. Area=31323 S/N=2360.02 Acquisition Time (min)			286.9 -> 168.9 x10 ³ 3.5 3 2.5 2 1.5 1 0.5 0			- MRM (5.646-6.128 min, 40 scans) (286.9 -> **) 6Q Counts x10 ³ 1 0.8 0.6 0.4 0.2 0 168.9 184.9 286.9 Mass-to-Charge (m/z)		
13C4-PFHpA	2.56	6.42	0.00	44432				
- MRM (367.1 -> 322.0) 6Q17784.d Smooth Counts x10 ³ RT=6.420 min. Area=44432 S/N=1510.53 Acquisition Time (min)			367.1 -> 322.0 x10 ³ 5 4 3 2 1 0			- MRM (6.232-6.684 min, 37 scans) (367.1 -> **) 6Q Counts x10 ³ 1.6 1.4 1.2 1 0.8 0.6 0.4 0.2 0 322.0 367.1 Mass-to-Charge (m/z)		

7.2.2
7

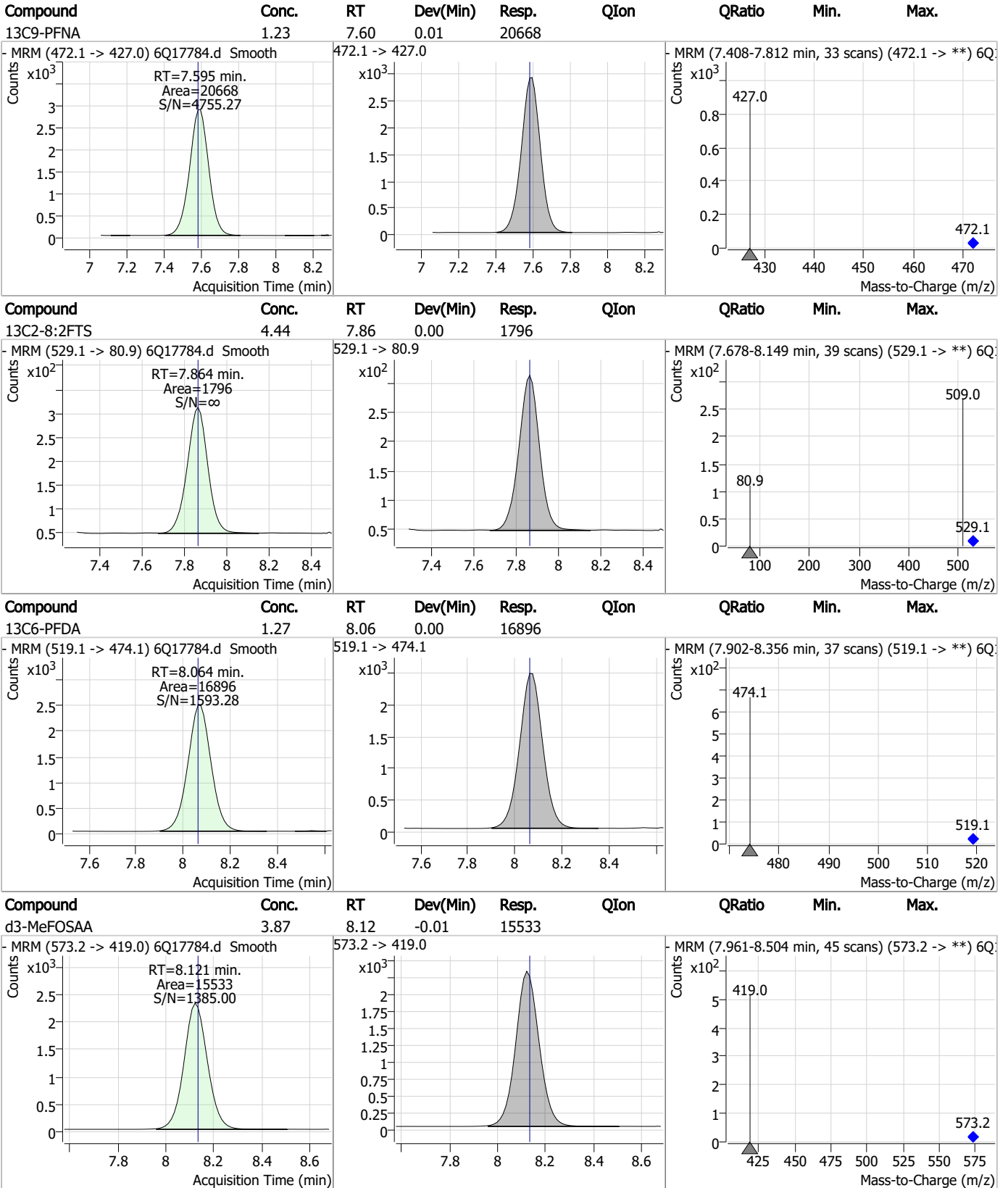
Perfluorinated Compounds by LC/MS/MS



7.2.2

7

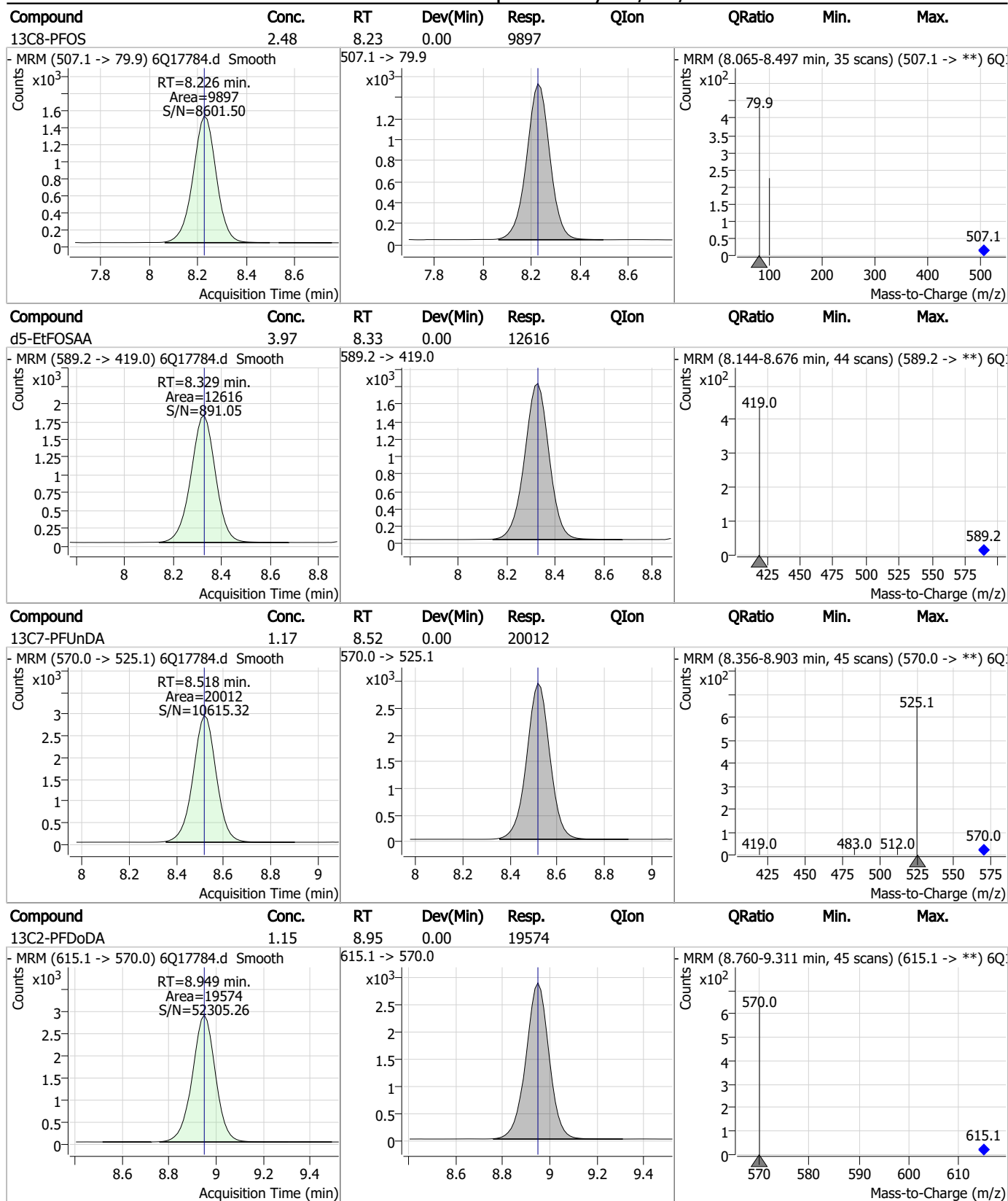
Perfluorinated Compounds by LC/MS/MS



7.2.2

7

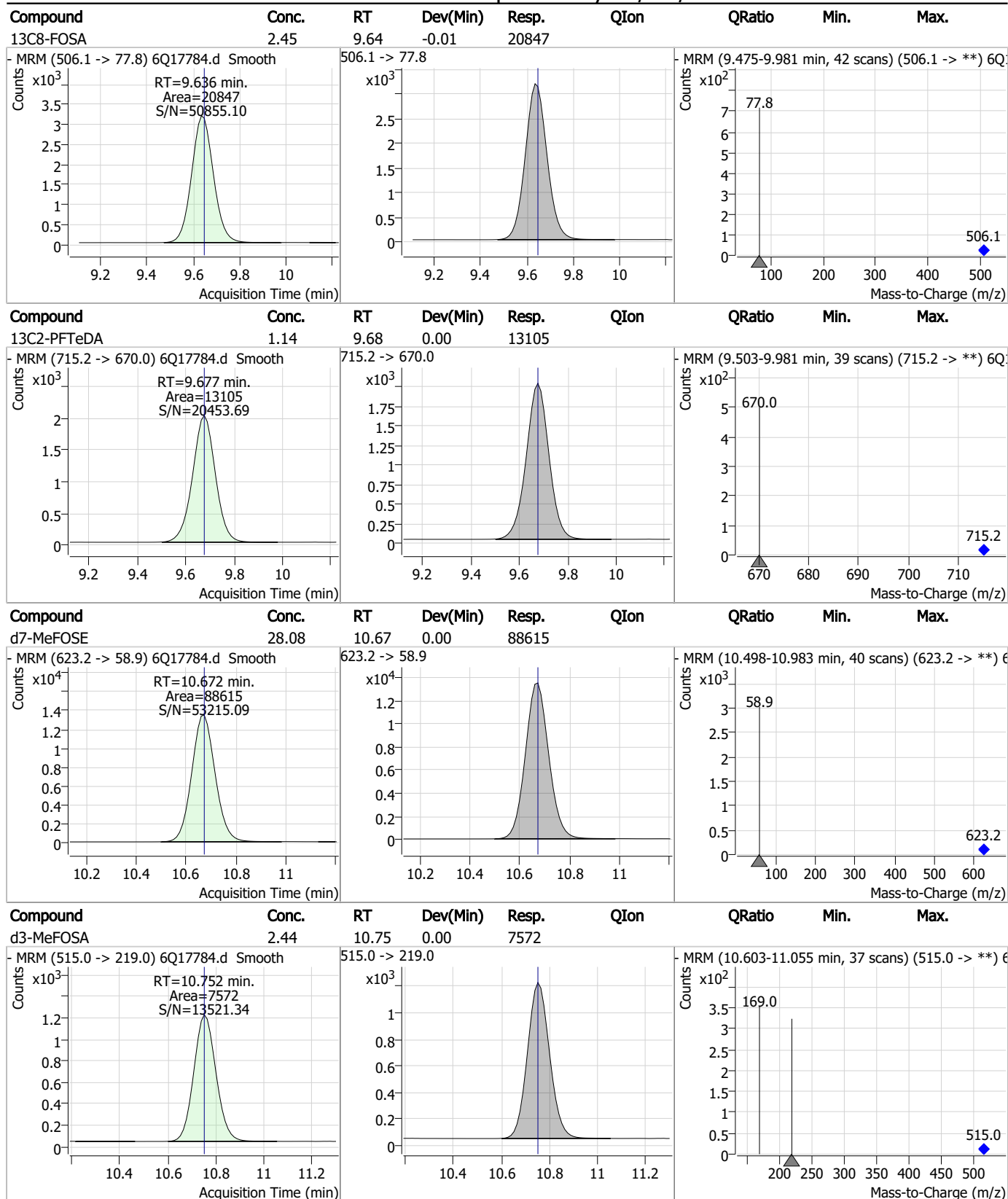
Perfluorinated Compounds by LC/MS/MS



7.2.2
7



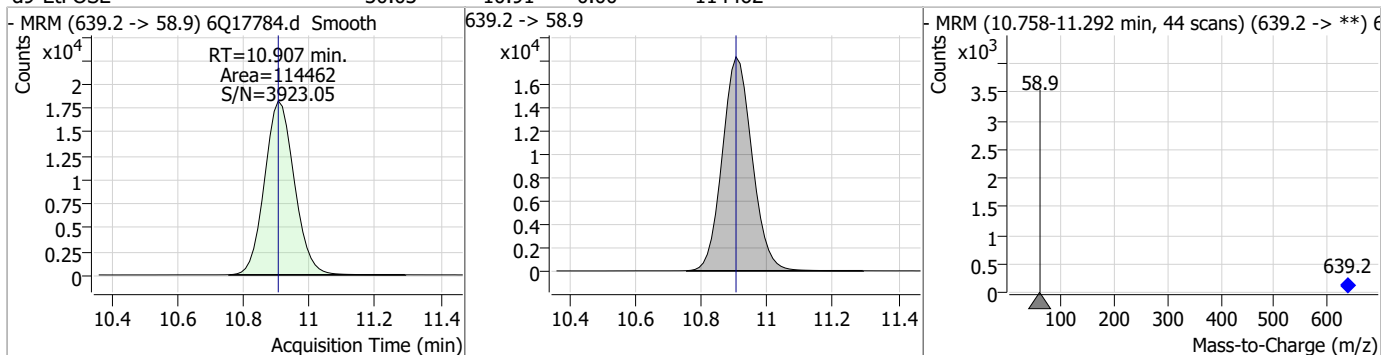
Perfluorinated Compounds by LC/MS/MS



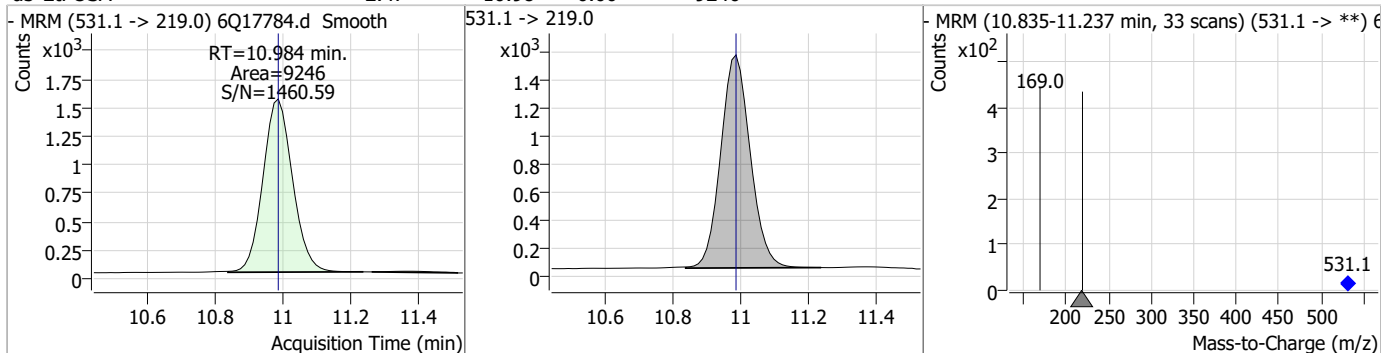
7.2.2
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	30.03	10.91	0.00	114462				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.47	10.98	0.00	9246				



7.2.2
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17822.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 11:38:25 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	142472	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	45466	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	51893	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	46432	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	67353	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	22007	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	17388	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	21434	1.25 µg/L	0.000
M2-PFDoDA	8.937	615.1 -> 570.0	20659	1.25 µg/L	-0.012
M2-PFTeDA	9.664	715.2 -> 670.0	13332	1.25 µg/L	-0.012
M8-FOSA	9.636	506.1 -> 77.8	21120	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	18609	2.50 µg/L	0.000
M3-PFHxS	7.167	402.1 -> 79.9	10535	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	9644	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1582	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1921	5.00 µg/L	0.000
M2-8:2FTS	7.852	529.1 -> 80.9	2091	5.00 µg/L	-0.012
M3-MeFOSAA	8.121	573.2 -> 419.0	17191	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	31872	10.00 µg/L	0.000
M5-EtFOSAA	8.316	589.2 -> 419.0	14137	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	86228	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	99998	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8302	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	6819	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12443	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	60723	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7589	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	68122	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	19057	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	23932	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	44243	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1582	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1921	5.16 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-8:2FTS	7.852	529.1 -> 80.9	2091	5.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C2-PFDoDA	8.937	615.1 -> 570.0	20659	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-PFTeDA	9.664	715.2 -> 670.0	13332	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.397	302.1 -> 79.9	18609	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.6%		
13C3-PFHxS	7.167	402.1 -> 79.9	10535	2.61 µg/L	0.000

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 = 104.2%	
13C4-PFBA	2.901	216.8 -> 171.9	142472	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.420	367.1 -> 322.0	46432	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFHxA	5.466	318.0 -> 273.0	51893	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	45466	4.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C6-PFDA	8.064	519.1 -> 474.1	17388	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C7-PFUnDA	8.518	570.0 -> 525.1	21434	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C8-FOSA	9.636	506.1 -> 77.8	21120	2.56 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-PFOA	7.064	421.1 -> 376.0	67353	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOS	8.226	507.1 -> 79.9	9644	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C9-PFNA	7.595	472.1 -> 427.0	22007	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.5%	
d3-MeFOSAA	8.121	573.2 -> 419.0	17191	4.41 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	31872	9.84 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	6819	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.6%	
d5-EtFOSAA	8.316	589.2 -> 419.0	14137	4.59 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.7%	
d7-MeFOSE	10.660	623.2 -> 58.9	86228	28.13 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 112.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	99998	27.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.0%	
d5-EtFOSA	10.984	531.1 -> 219.0	8302	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%	

Target Compounds

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

7.2.3
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Perfluorinated Compounds by LC/MS/MS

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

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

7.2.3
7

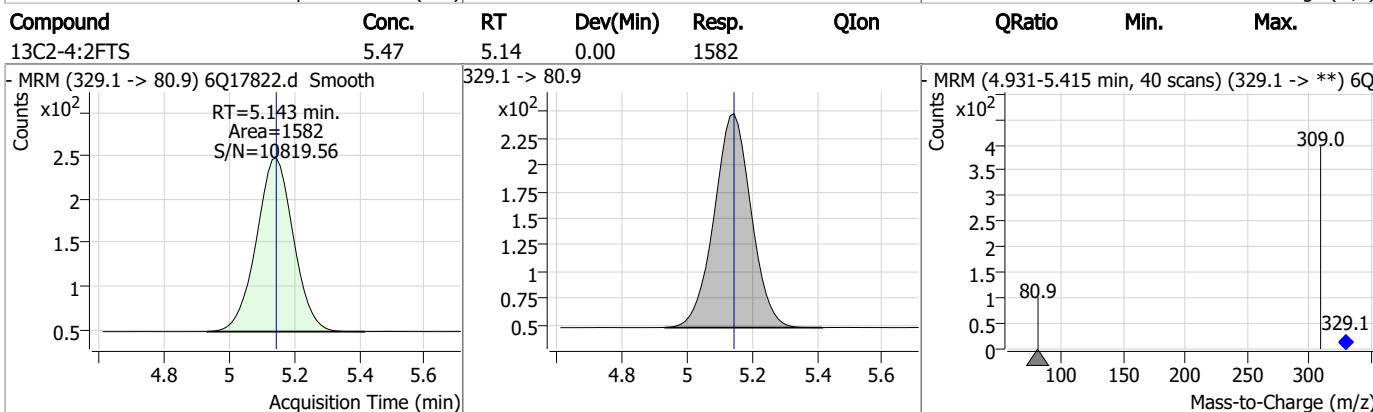
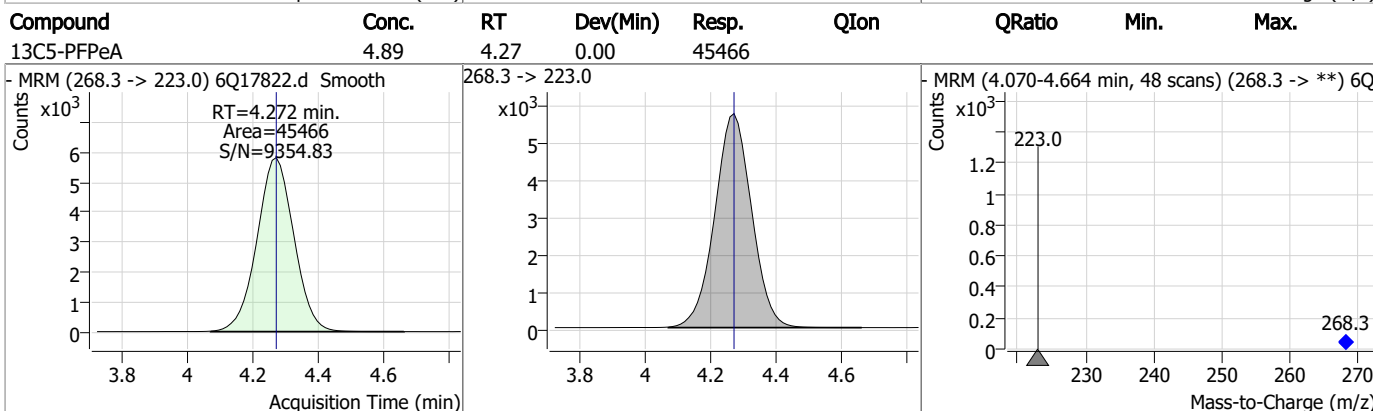
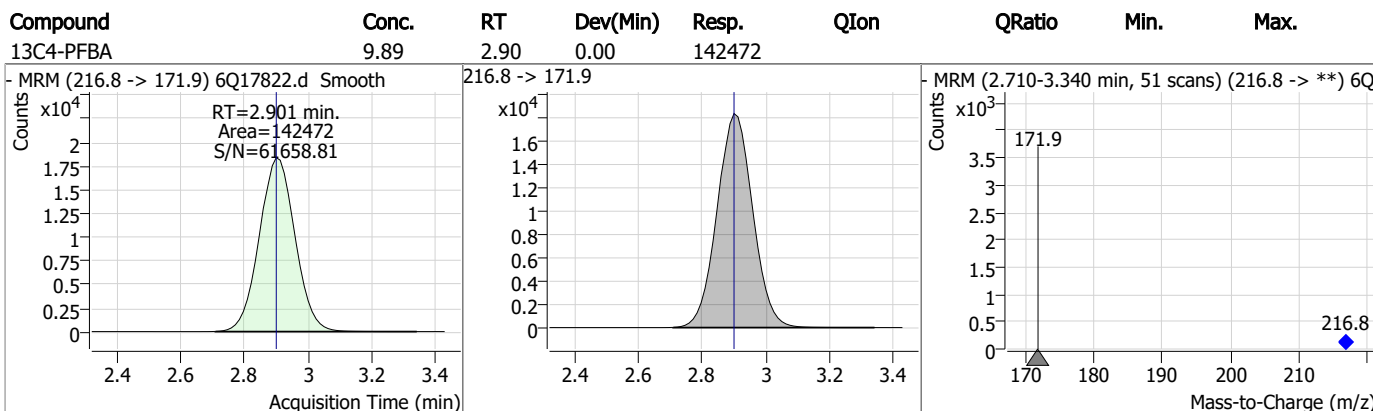
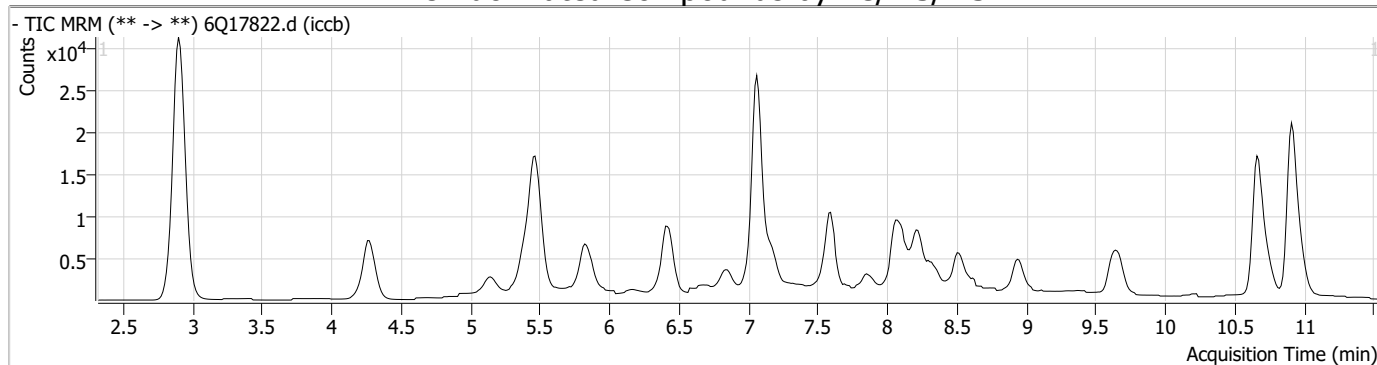
Perfluorinated Compounds by LC/MS/MS

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

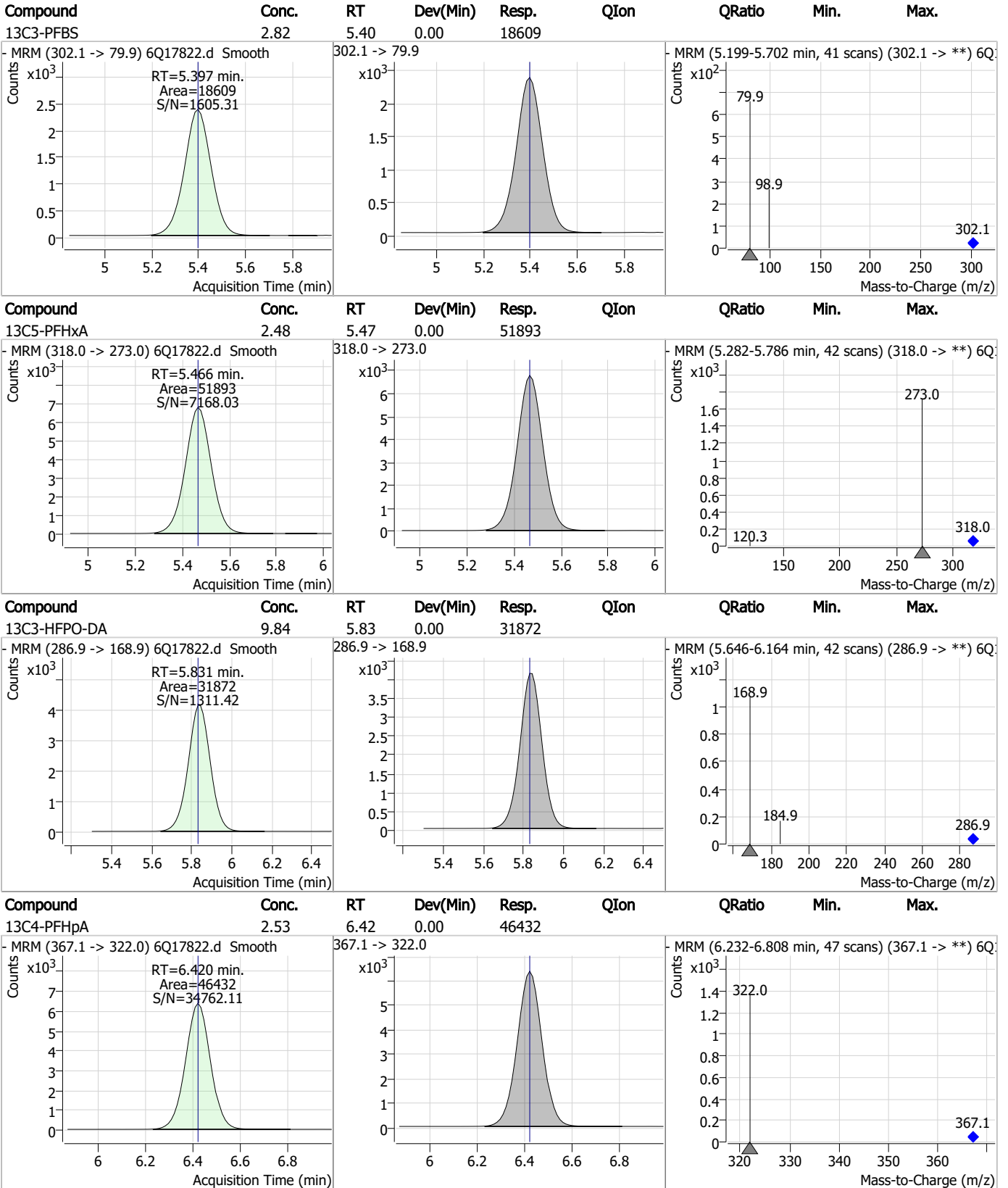
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Perfluorinated Compounds by LC/MS/MS



7.2.3
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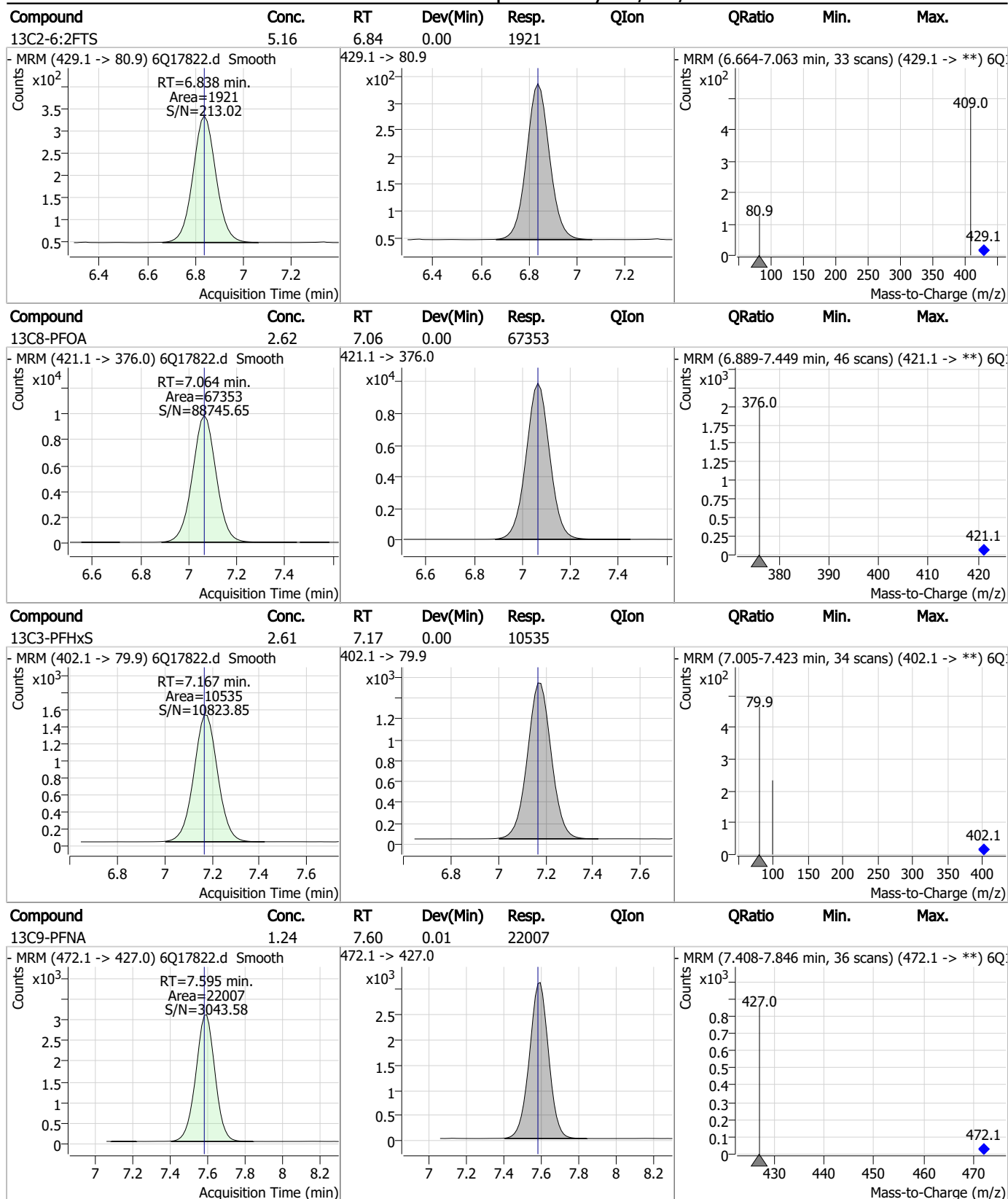
Perfluorinated Compounds by LC/MS/MS



7.2.3

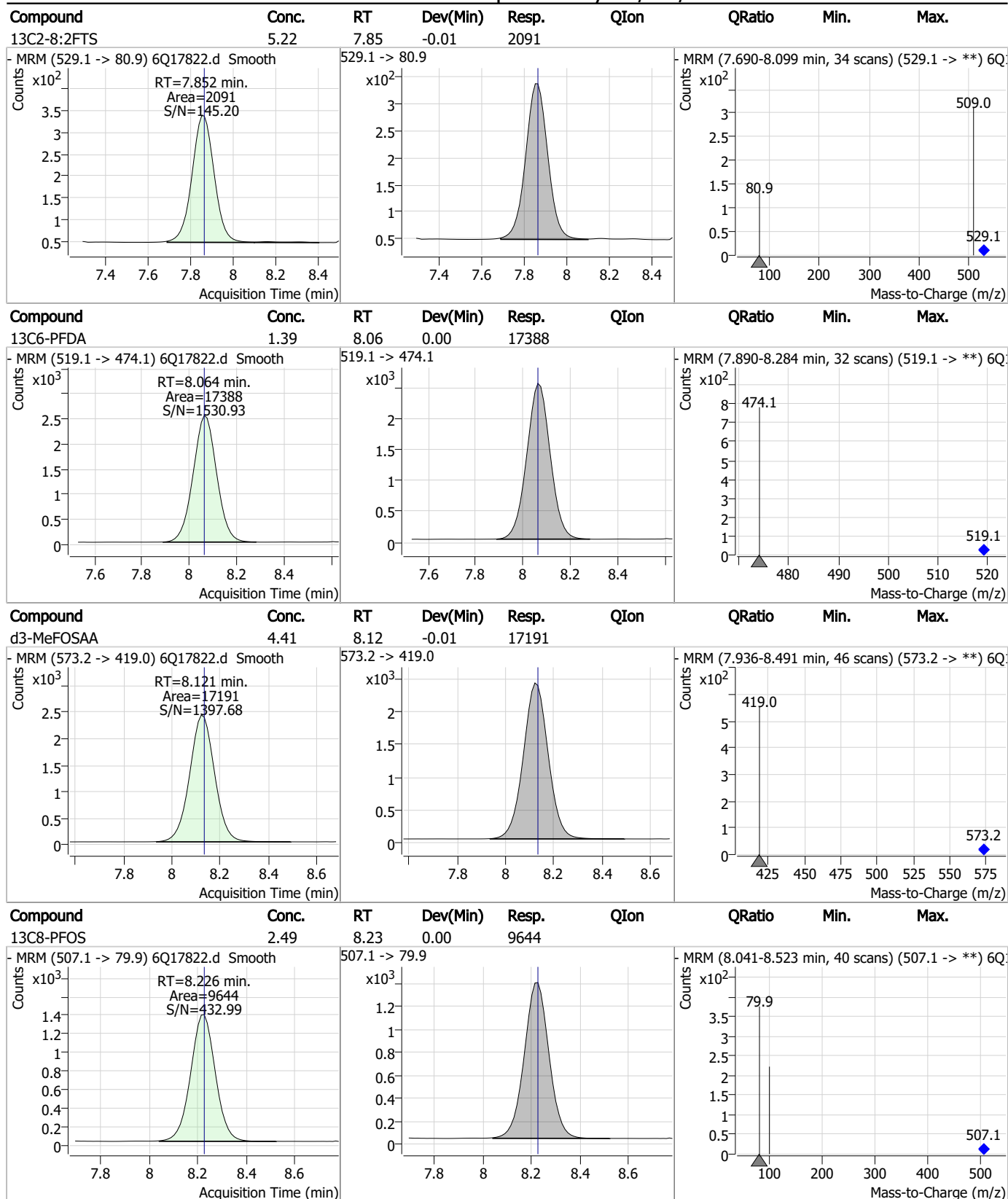
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Perfluorinated Compounds by LC/MS/MS



7.2.3
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Perfluorinated Compounds by LC/MS/MS



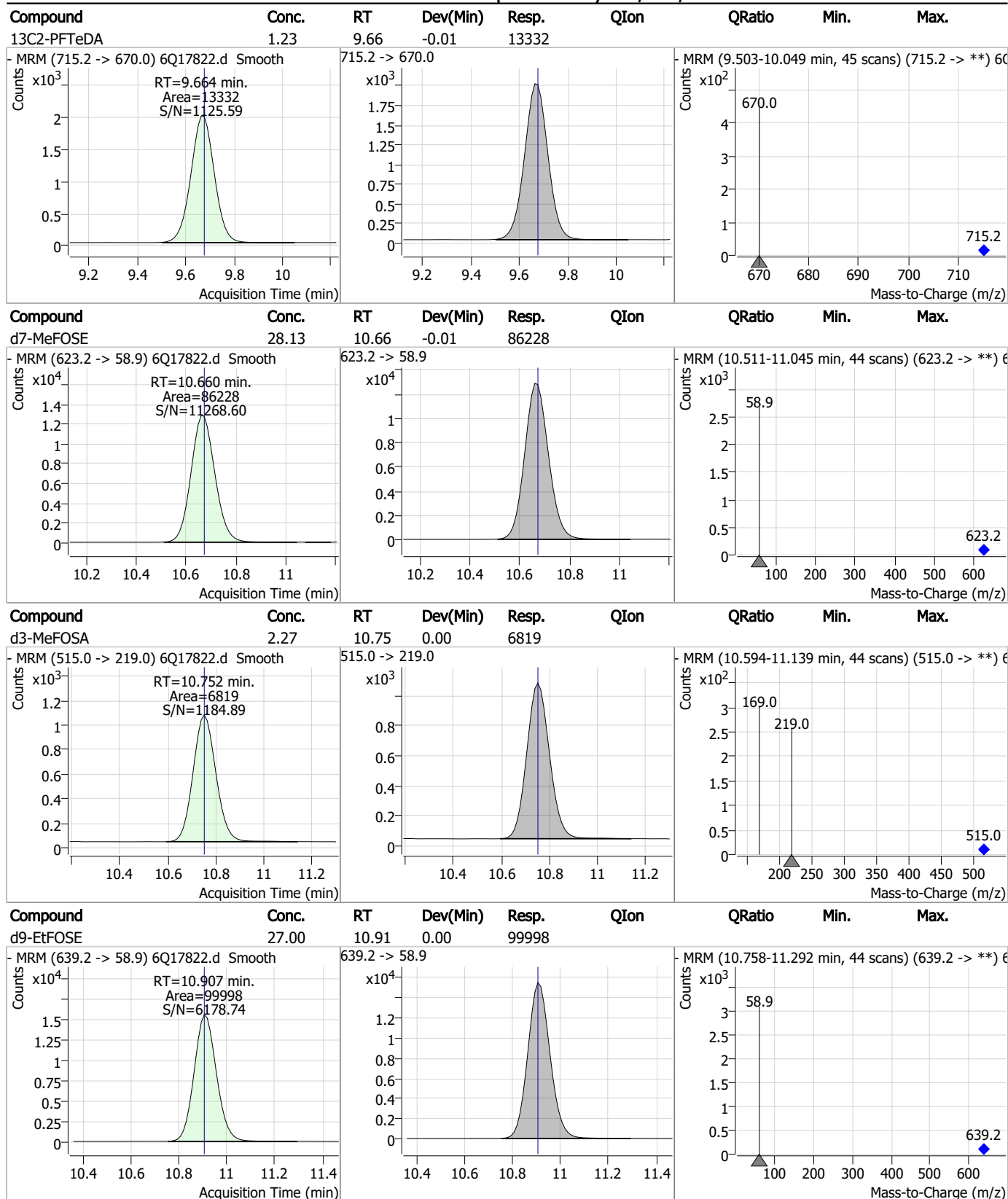
7.2.3
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.59	8.32	-0.01	14137				
13C7-PFUnDA	1.34	8.52	0.00	21434				
13C2-PFDoDA	1.30	8.94	-0.01	20659				
13C8-FOSA	2.56	9.64	-0.01	21120				

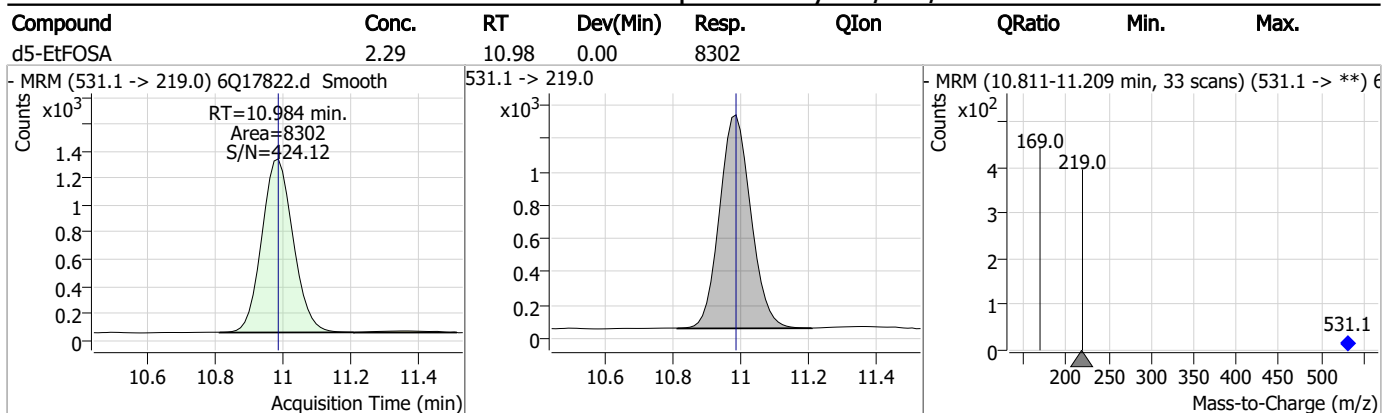
7.2.3
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Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17834.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 2:32:13 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	142705	10.00 µg/L	0.000
M5-PFPeA	4.259	268.3 -> 223.0	44863	5.00 µg/L	-0.012
M5-PFHxA	5.466	318.0 -> 273.0	50326	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	47518	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	63891	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	22930	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	17840	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	21353	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	20138	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13371	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	21336	2.50 µg/L	-0.012
M3-PFBS	5.384	302.1 -> 79.9	17094	2.50 µg/L	-0.013
M3-PFHxS	7.179	402.1 -> 79.9	10845	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9569	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1482	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1905	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1897	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	18109	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	31477	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	15444	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	82568	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	102436	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8658	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	6863	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13036	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	60828	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8256	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	70597	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	19267	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	24781	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	44507	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1482	4.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.2%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1905	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1897	4.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.0%		
13C2-PFDoDA	8.949	615.1 -> 570.0	20138	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13371	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.9%		
13C3-PFBS	5.384	302.1 -> 79.9	17094	2.38 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	10845	2.47 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 = 98.6%	
13C4-PFBA	2.901	216.8 -> 171.9	142705	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.420	367.1 -> 322.0	47518	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFHxA	5.466	318.0 -> 273.0	50326	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFPeA	4.259	268.3 -> 223.0	44863	4.79 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C6-PFDA	8.064	519.1 -> 474.1	17840	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C7-PFUnDA	8.518	570.0 -> 525.1	21353	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-FOSA	9.636	506.1 -> 77.8	21336	2.47 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOA	7.064	421.1 -> 376.0	63891	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C8-PFOS	8.226	507.1 -> 79.9	9569	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
13C9-PFNA	7.583	472.1 -> 427.0	22930	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.1%	
d3-MeFOSAA	8.133	573.2 -> 419.0	18109	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.7%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	31477	9.66 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
d3-MeFOSA	10.752	515.0 -> 219.0	6863	2.18 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.1%	
d5-EtFOSAA	8.329	589.2 -> 419.0	15444	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
d7-MeFOSE	10.660	623.2 -> 58.9	82568	25.71 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	102436	26.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d5-EtFOSA	10.984	531.1 -> 219.0	8658	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	

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
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.090	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.24
7

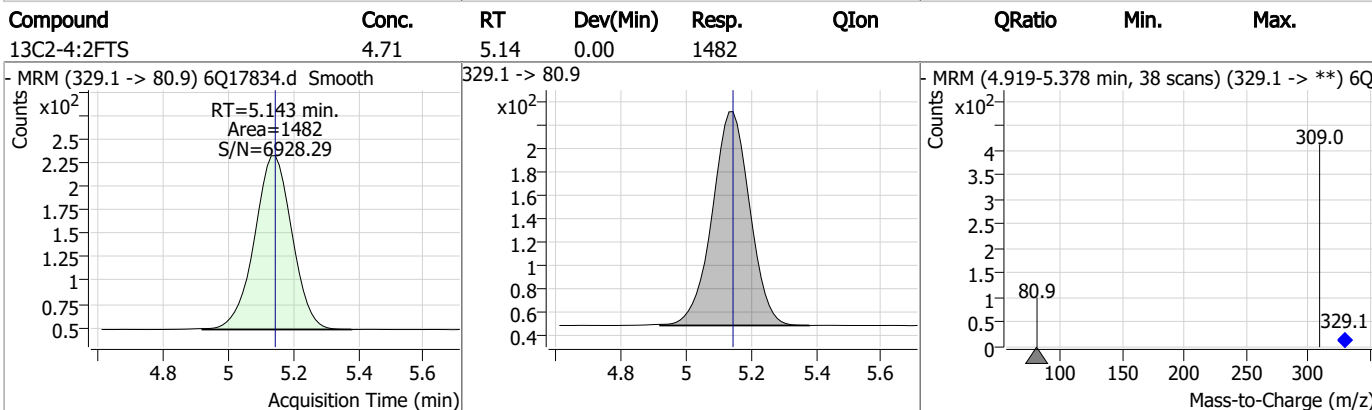
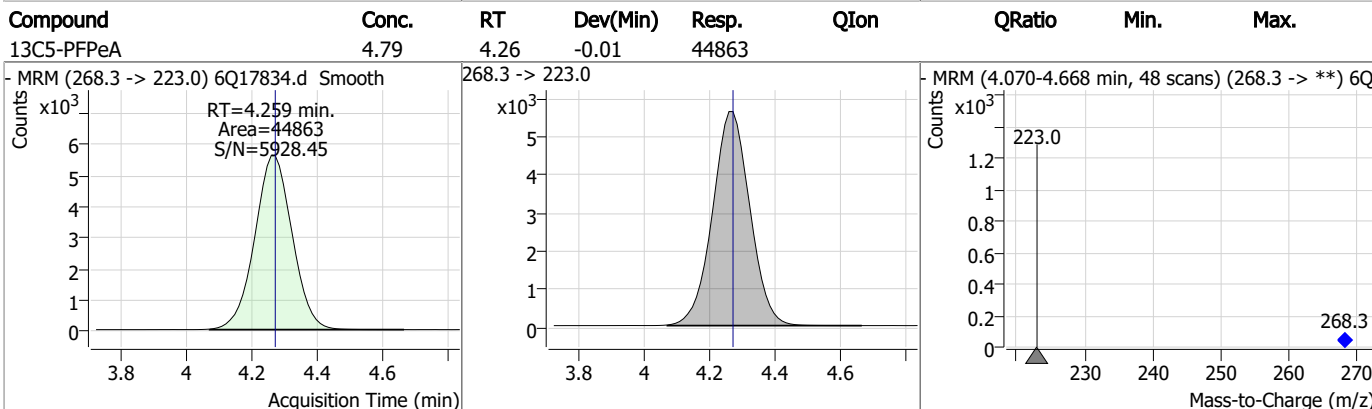
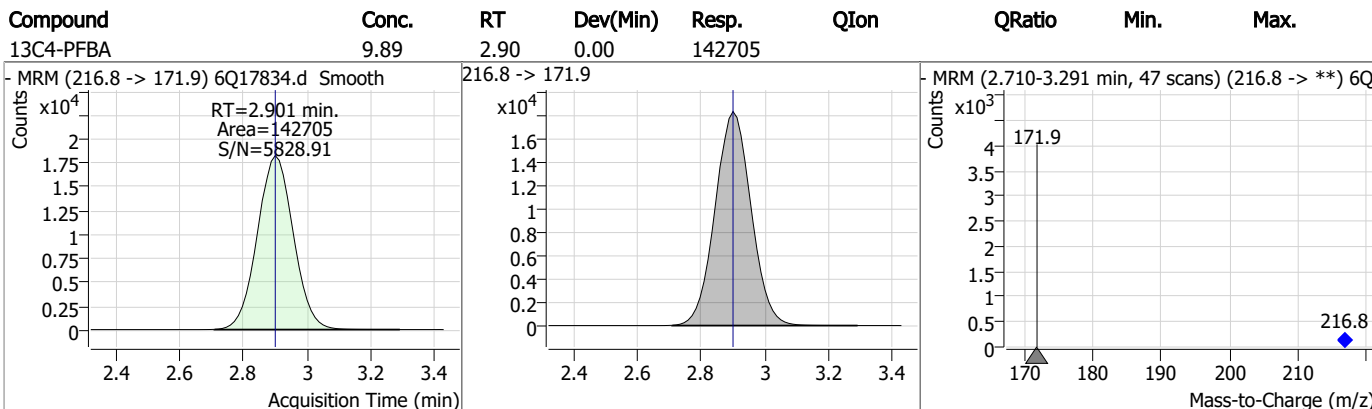
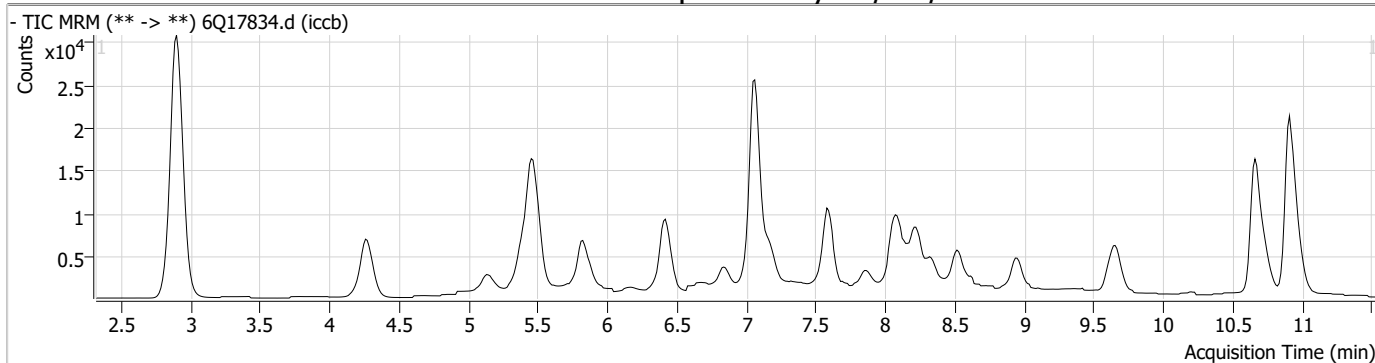
Perfluorinated Compounds by LC/MS/MS

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

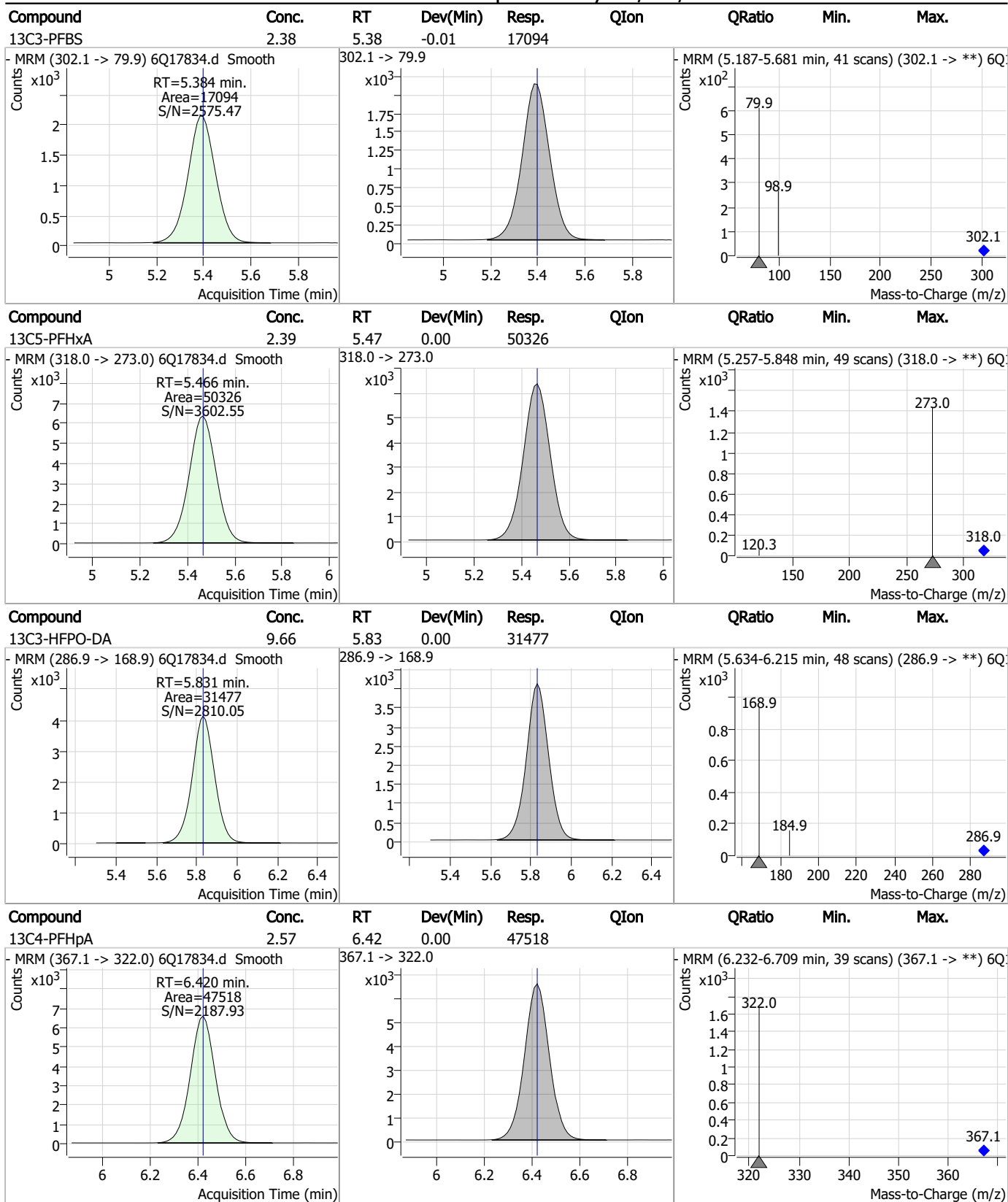
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Perfluorinated Compounds by LC/MS/MS



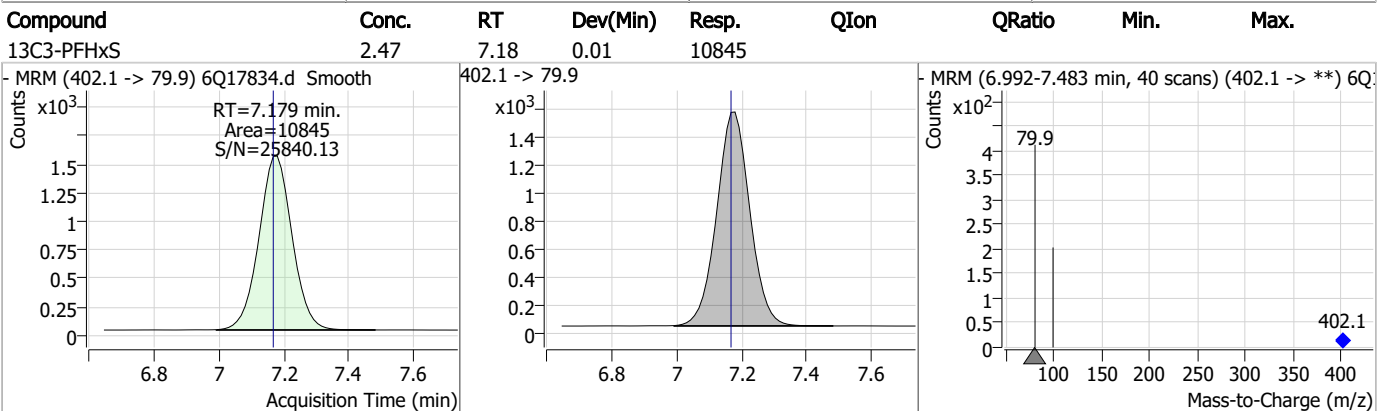
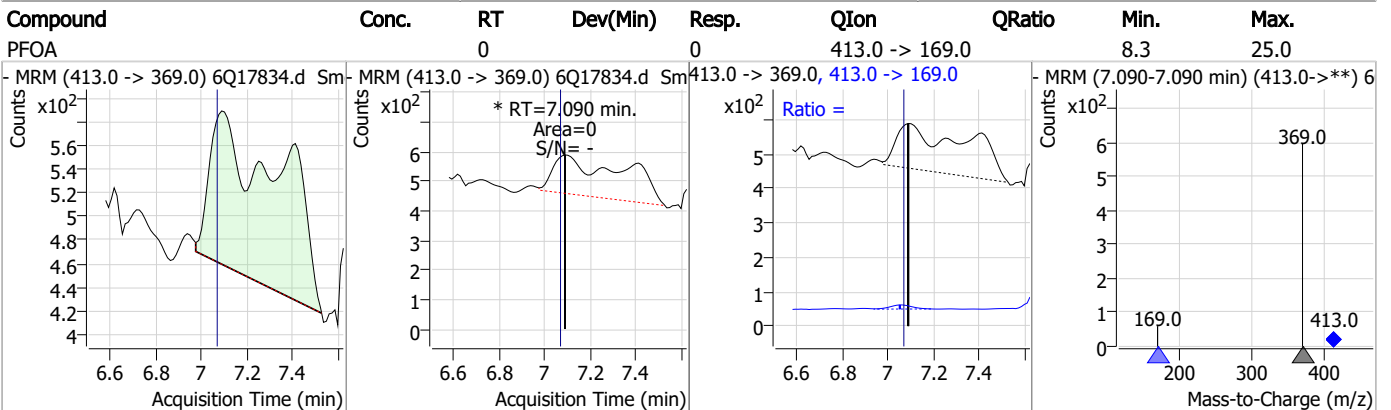
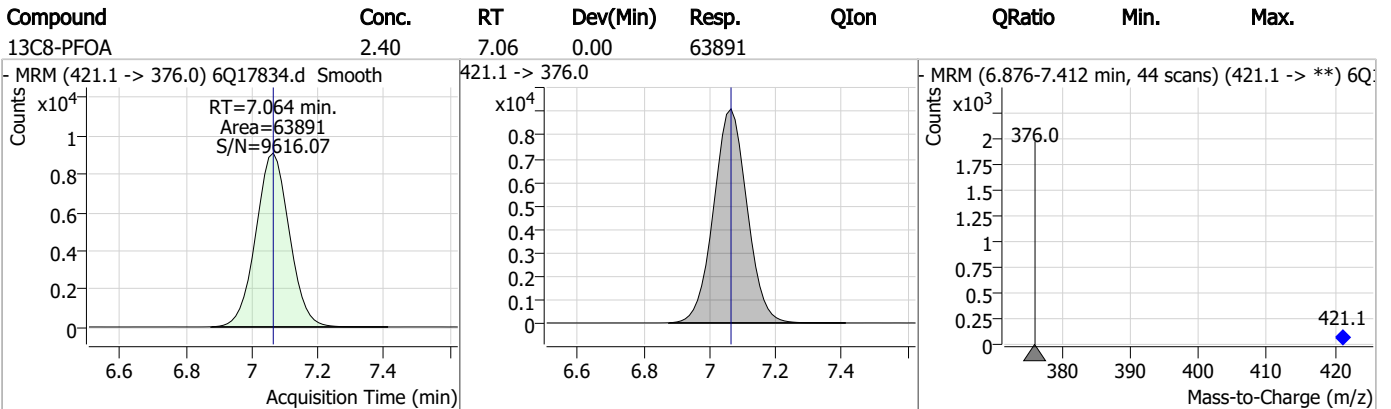
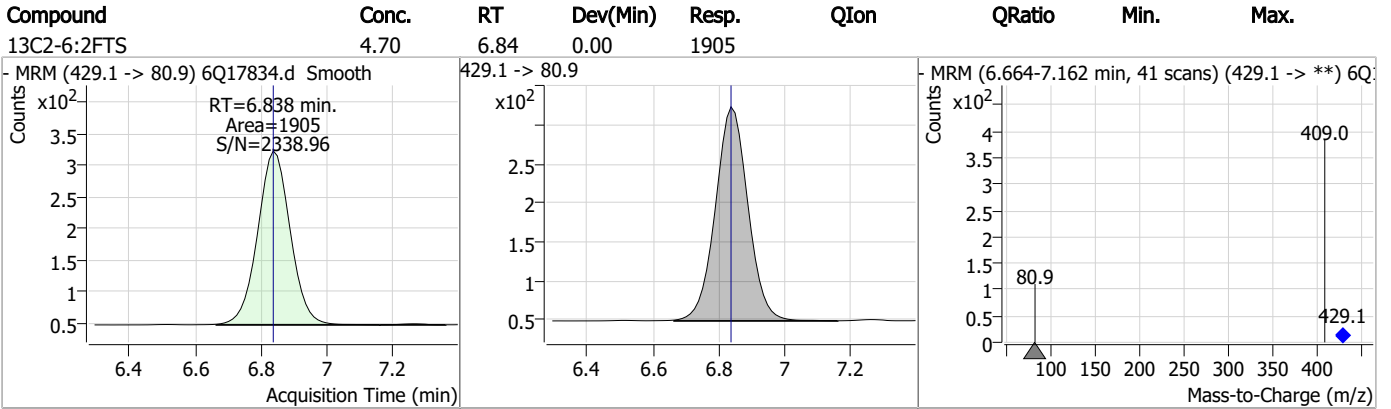
7.2.4
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Perfluorinated Compounds by LC/MS/MS

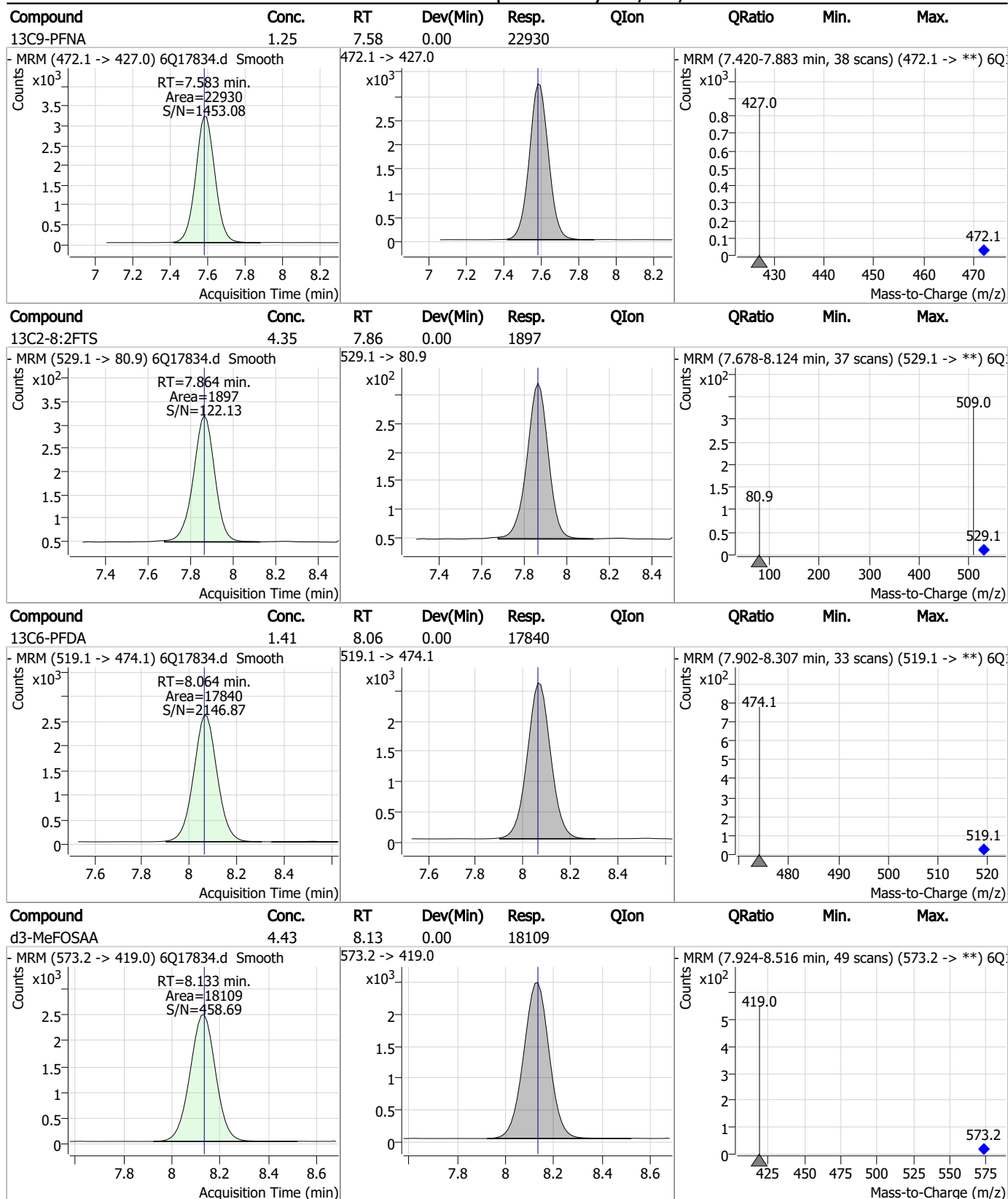


7.2.4
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Perfluorinated Compounds by LC/MS/MS

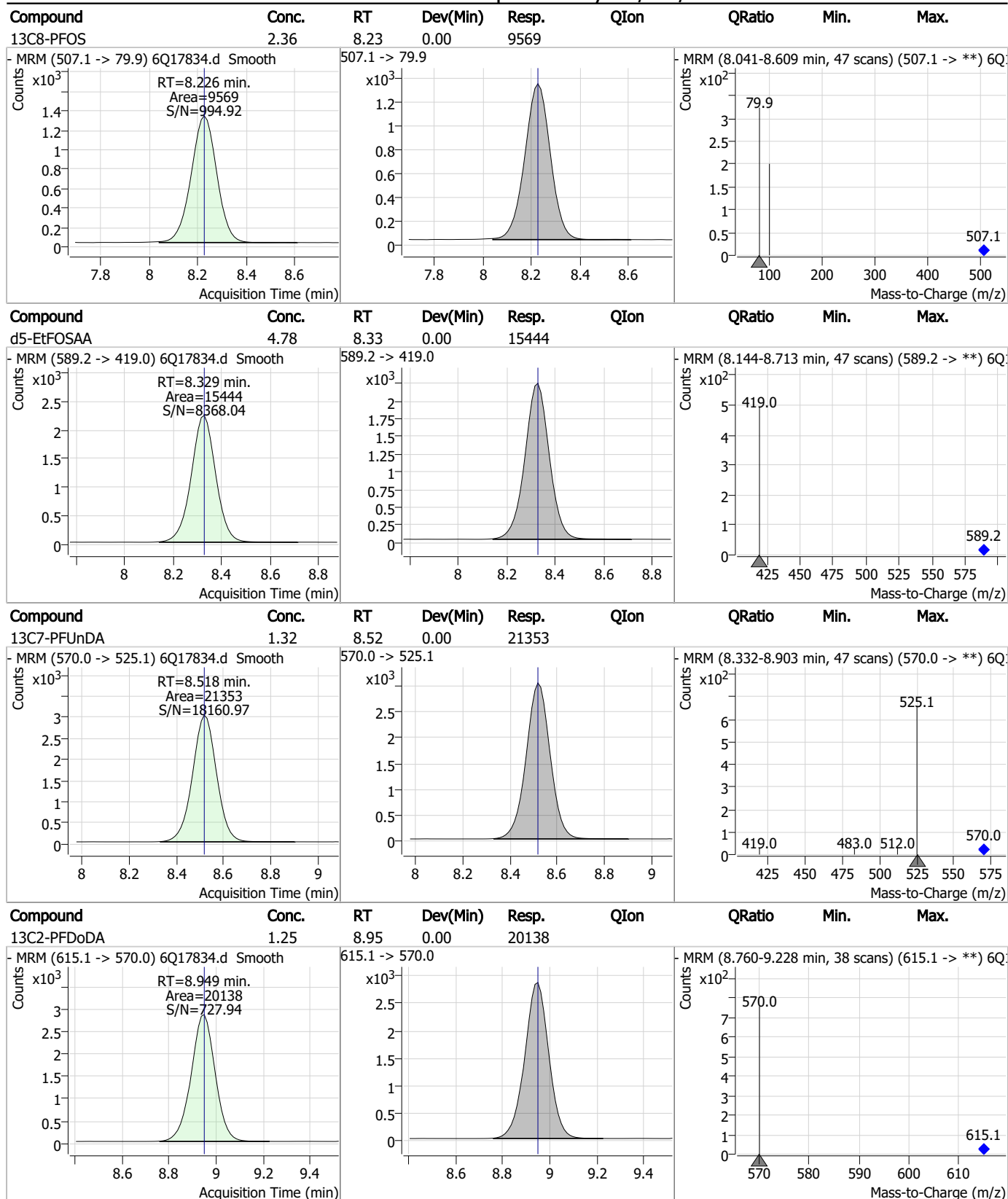


Perfluorinated Compounds by LC/MS/MS



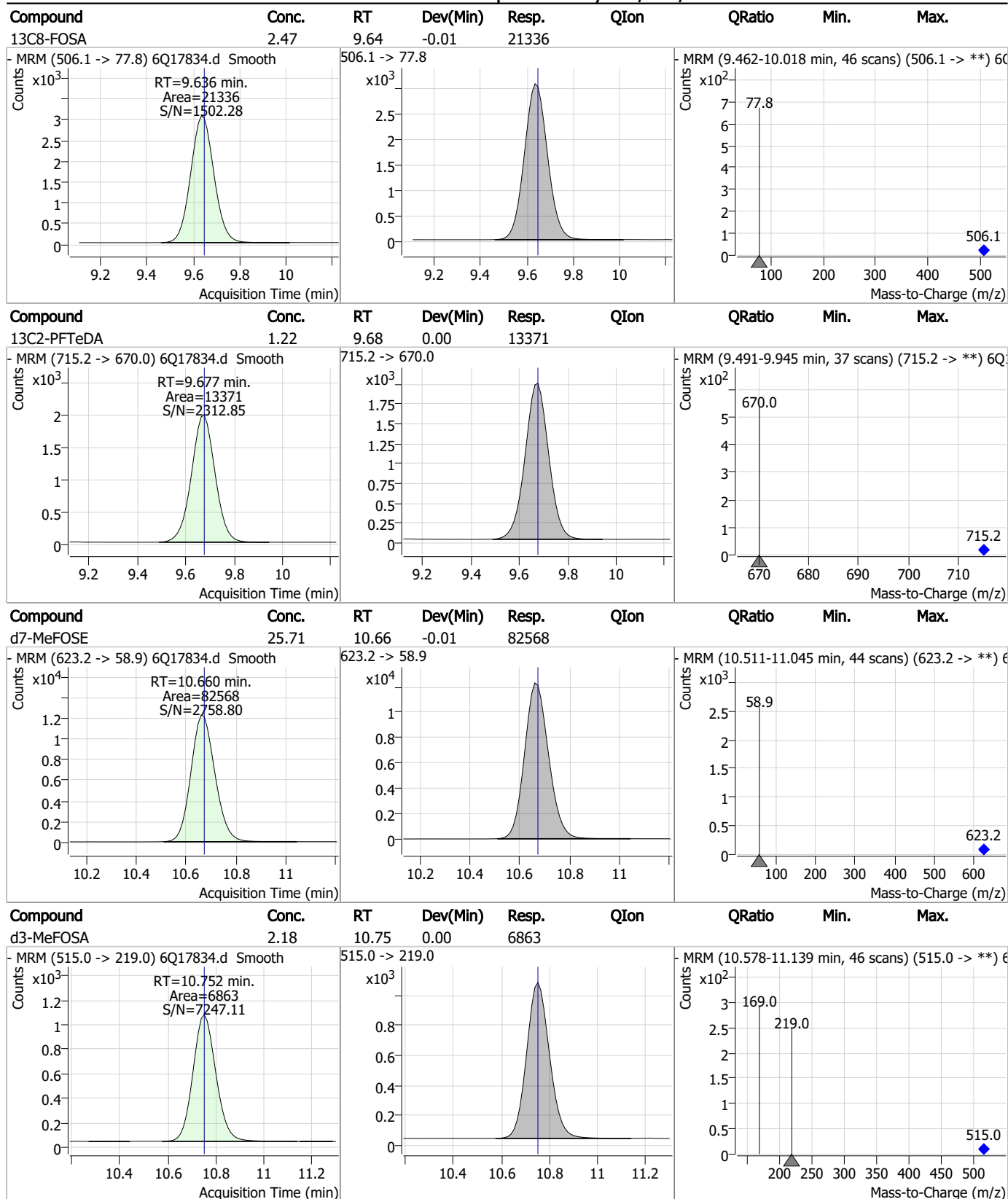
7.2.4
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Perfluorinated Compounds by LC/MS/MS



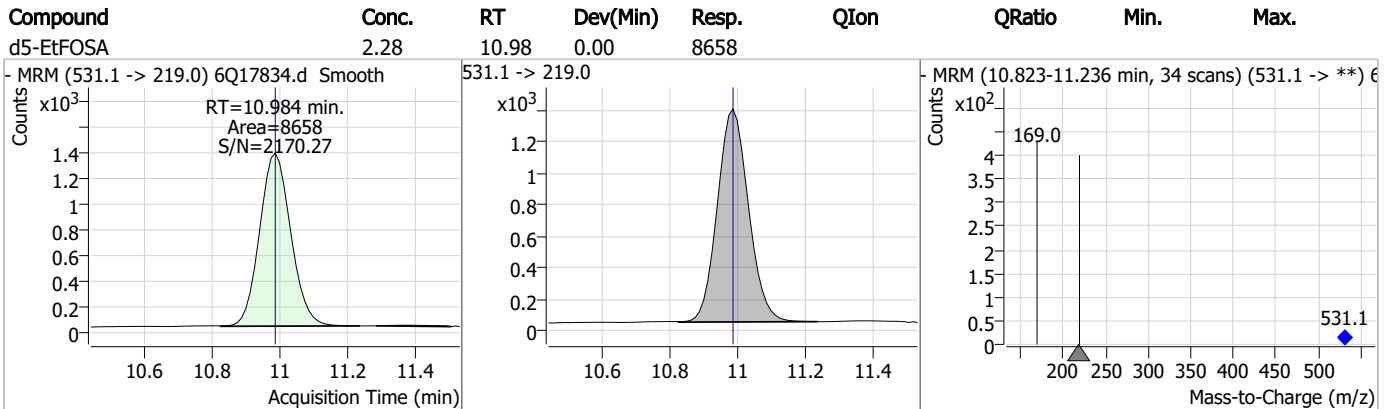
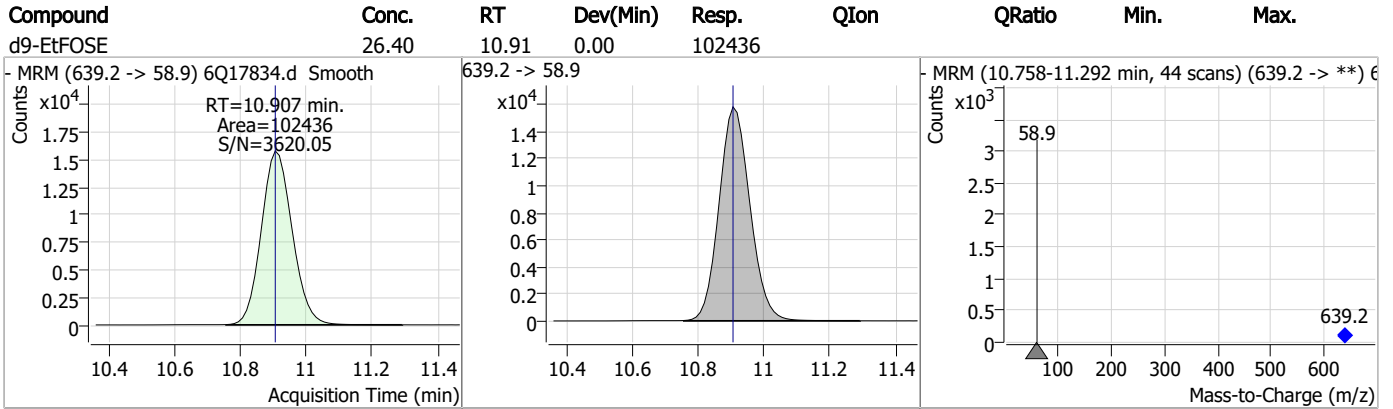
7.2.4
7

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 : 6Q17823.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 11:52:53 PM
 Sample Name : op96871-bs
 Vial : P5-C9
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	129781	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	41846	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	48160	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	40892	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	57528	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	19640	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	14647	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	18067	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	16044	1.25 µg/L	0.000
M2-PFTeDA	9.664	715.2 -> 670.0	10114	1.25 µg/L	-0.012
M8-FOSA	9.636	506.1 -> 77.8	13858	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	16680	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	9277	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	8764	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1413	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1651	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2058	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	15501	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	27486	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	11262	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	49229	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	67012	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	5843	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	4693	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10712	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	51767	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	6818	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	58611	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	17948	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	19474	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	38014	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1413	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1651	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2058	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.3%		
13C2-PFDoDA	8.949	615.1 -> 570.0	16044	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 85.5%		
13C2-PFTeDA	9.664	715.2 -> 670.0	10114	0.99 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.5%		
13C3-PFBS	5.397	302.1 -> 79.9	16680	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	9277	2.55 µg/L	0.012

7.3.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C4-PFBA	2.901	216.8 -> 171.9	129781	10.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C4-PFHpA	6.420	367.1 -> 322.0	40892	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.466	318.0 -> 273.0	48160	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	41846	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C6-PFDA	8.076	519.1 -> 474.1	14647	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C7-PFUnDA	8.518	570.0 -> 525.1	18067	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C8-FOSA	9.636	506.1 -> 77.8	13858	1.95 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.0%	
13C8-PFOA	7.064	421.1 -> 376.0	57528	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-PFOS	8.226	507.1 -> 79.9	8764	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C9-PFNA	7.595	472.1 -> 427.0	19640	1.36 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
d3-MeFOSAA	8.121	573.2 -> 419.0	15501	4.62 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	27486	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSA	10.752	515.0 -> 219.0	4693	1.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.5%	
d5-EtFOSAA	8.329	589.2 -> 419.0	11262	4.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.9%	
d7-MeFOSE	10.660	623.2 -> 58.9	49229	18.66 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.6%	
d9-EtFOSE	10.907	639.2 -> 58.9	67012	21.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.1%	
d5-EtFOSA	10.984	531.1 -> 219.0	5843	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.8%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	17097	8.05 µg/L	95
		327.1 -> 80.9	6880		
6:2FTS	6.838	427.1 -> 407.0	17786	9.90 µg/L	98
		427.1 -> 80.9	5964		
8:2FTS	7.865	527.1 -> 507.0	9003	7.70 µg/L	89
		527.1 -> 80.8	4299		
EtFOSAA	8.330	584.2 -> 419.1	4812	2.29 µg/L	98
		584.2 -> 526.0	2608		
FOSA	9.626	498.1 -> 77.9	12600	2.43 µg/L	100
		498.1 -> 478.0	328		
MeFOSAA	8.122	570.1 -> 419.0	6513	2.17 µg/L	97
		570.1 -> 483.0	1369		
PFBA	2.907	212.8 -> 168.9	44122	9.48 µg/L	100
PFBS	5.398	298.7 -> 79.9	16818	2.07 µg/L	98
		298.7 -> 98.8	6402		
PFDA	8.064	512.9 -> 469.0	41386	2.28 µg/L	99
		512.9 -> 219.0	6930		
PFDODA	8.938	613.1 -> 569.0	32319	2.53 µg/L	100
		613.1 -> 319.0	4504		
PFDS	9.101	599.0 -> 79.9	6260	2.20 µg/L	98

7.3.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3144	2.43	µg/L	99
		363.1 -> 319.0	49667			
PFHpS	7.735	363.1 -> 169.0	7793	2.34	µg/L	93
		449.0 -> 79.9	10926			
PFHxA	5.469	449.0 -> 98.9	5133	2.30	µg/L	100
		313.0 -> 269.0	43835			
PFHxS	7.180	313.0 -> 118.9	2115	2.37	µg/L	m
		398.7 -> 79.9	12177			
PFNA	7.596	398.7 -> 98.9	5794	2.50	µg/L	95
		463.0 -> 419.0	36480			
PFNS	8.681	463.0 -> 219.0	6548	2.37	µg/L	91
		548.8 -> 79.9	10062			
PFOA	7.066	548.8 -> 98.9	5148	2.36	µg/L	m
		413.0 -> 369.0	67571			
PFOS	8.228	413.0 -> 169.0	10970	2.22	µg/L	m
		498.9 -> 79.9	10195			
PFPeA	4.274	498.9 -> 98.8	4994	4.65	µg/L	100
		263.0 -> 219.0	56197			
PFPeS	6.471	349.1 -> 79.9	12088	2.37	µg/L	97
		349.1 -> 98.9	5661			
PFTeDA	9.665	713.1 -> 669.0	26120	2.52	µg/L	99
		713.1 -> 168.9	1898			
PFTrDA	9.333	663.0 -> 619.0	35835	2.42	µg/L	98
		663.0 -> 168.9	3079			
PFUnDA	8.518	563.1 -> 519.0	30795	2.35	µg/L	100
		563.1 -> 269.1	4915			
11Cl-PF3OUdS	9.373	630.9 -> 450.9	43405	4.18	µg/L	94
		632.9 -> 452.9	13409			
9Cl-PF3ONS	8.557	530.8 -> 351.0	77405	4.67	µg/L	92
		532.8 -> 353.0	25318			
ADONA	6.683	376.9 -> 250.9	209063	4.78	µg/L	97
		376.9 -> 84.8	53349			
HFPO-DA	5.832	284.9 -> 168.9	13138	4.94	µg/L	99
		284.9 -> 184.9	1772			
3:3FTCA	3.777	241.0 -> 177.0	6665	8.90	µg/L	97
		241.0 -> 117.0	821			
5:3FTCA	6.161	341.0 -> 237.1	185347	56.07	µg/L	97
		341.0 -> 217.0	129625			
7:3FTCA	7.586	441.0 -> 316.9	90792	60.55	µg/L	95
		441.0 -> 336.9	183552			
EtFOSA	10.986	526.0 -> 219.0	12034	4.76	µg/L	99
		526.0 -> 169.0	14989			
EtFOSE	10.920	630.0 -> 58.9	32555	11.15	µg/L	100
		511.9 -> 219.0	10067			
MeFOSA	10.753	511.9 -> 169.0	13764	4.66	µg/L	95
		616.1 -> 58.9	26573			
MeFOSE	10.673	699.1 -> 79.9	3016	11.54	µg/L	100
		699.1 -> 98.8	1660			
PFDoDS	9.793	295.0 -> 201.0	10716	2.01	µg/L	98
		295.0 -> 84.9	2462			
NFDHA	5.348	279.0 -> 85.1	41642	5.09	µg/L	92
		229.0 -> 84.9	29715			
PFMBA	4.688	314.8 -> 134.9	99150	4.83	µg/L	100
		314.8 -> 82.9	3864			
PFMPA	3.426			4.78	µg/L	100
PFEESA	5.938			3.87	µg/L	99

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

7.3.1
7

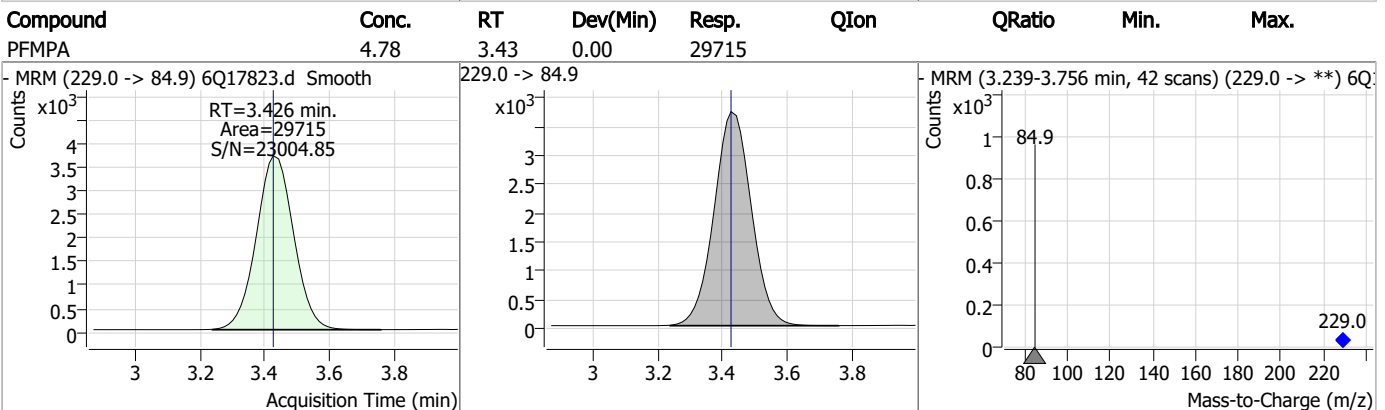
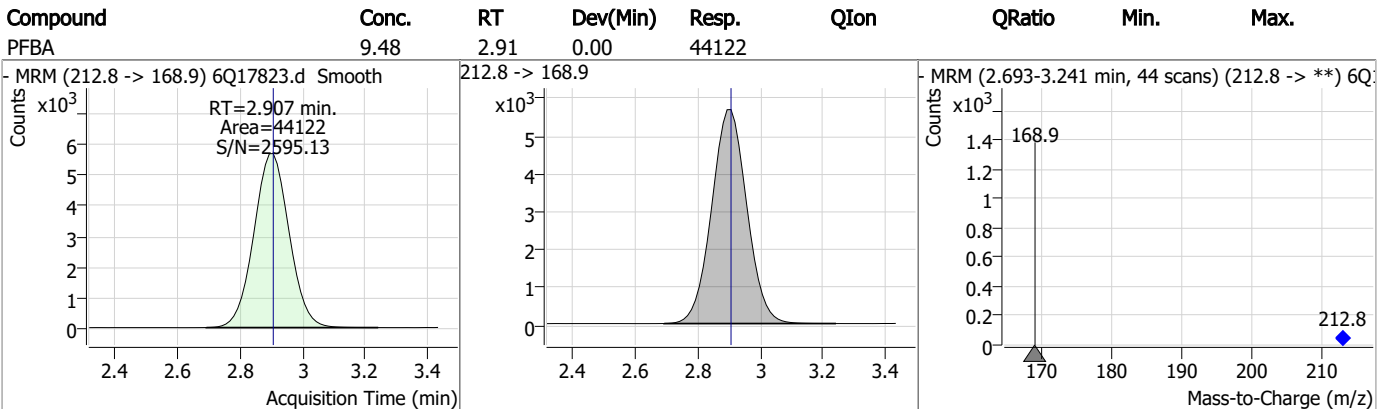
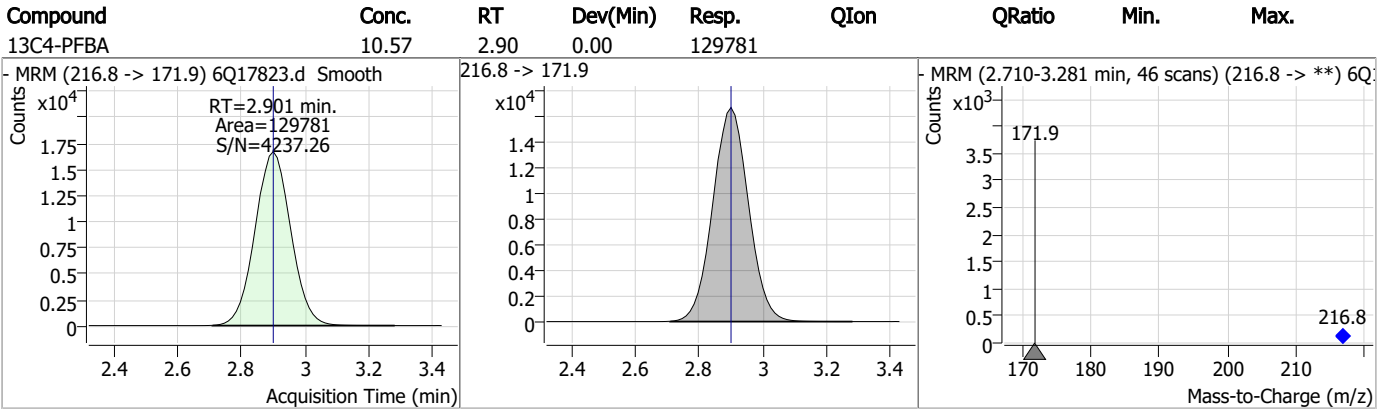
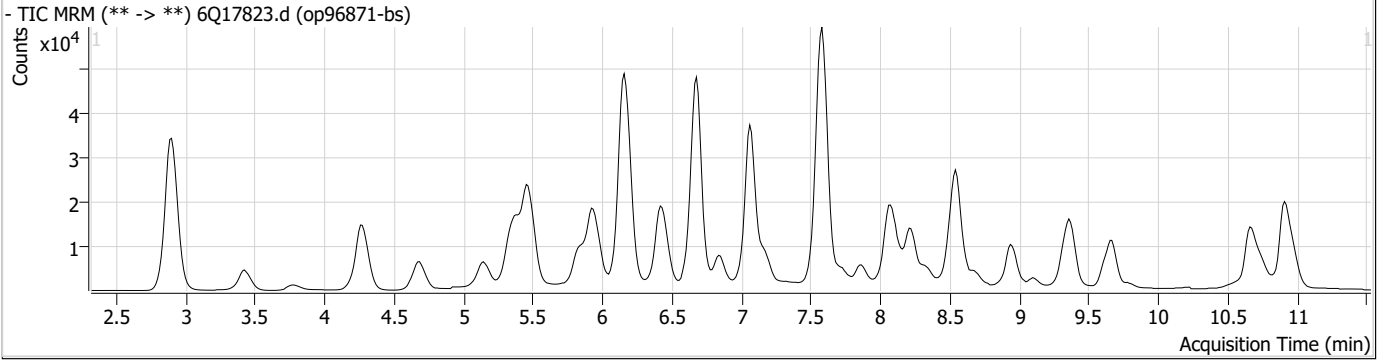
Perfluorinated Compounds by LC/MS/MS

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

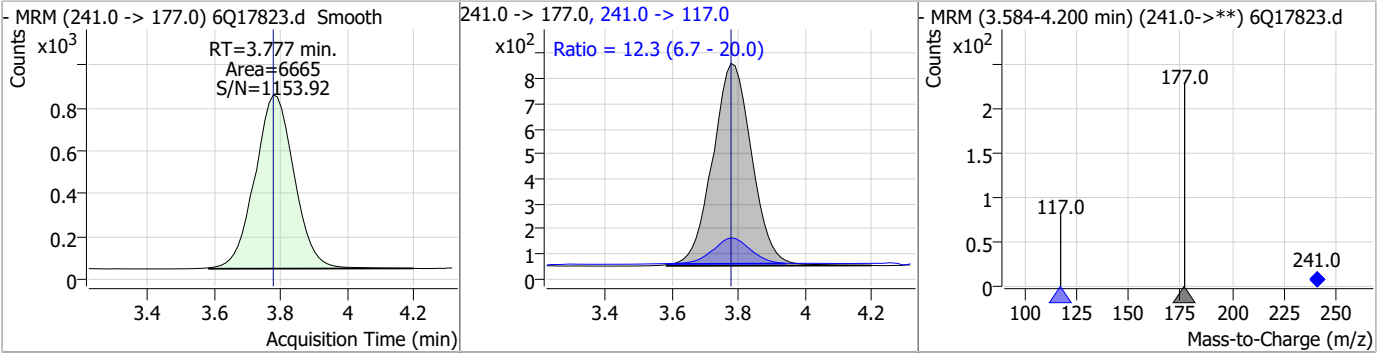
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Perfluorinated Compounds by LC/MS/MS

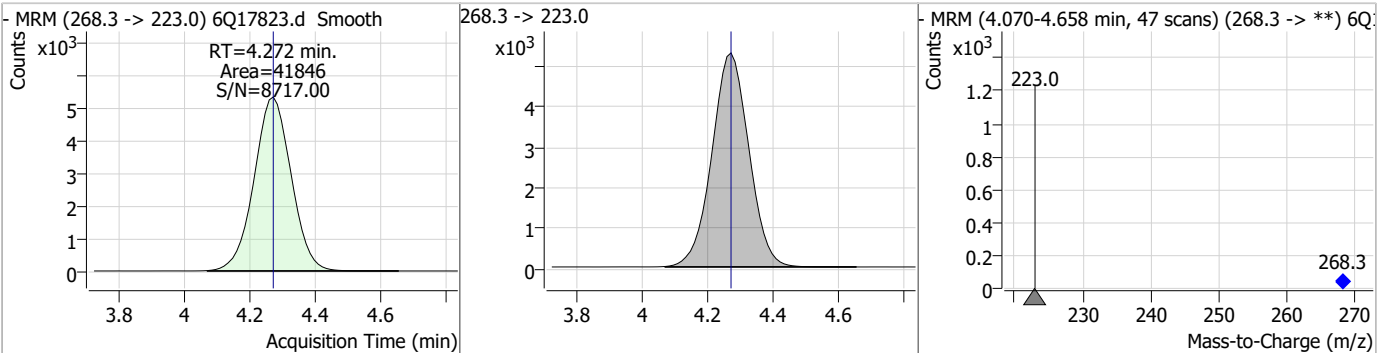


Perfluorinated Compounds by LC/MS/MS

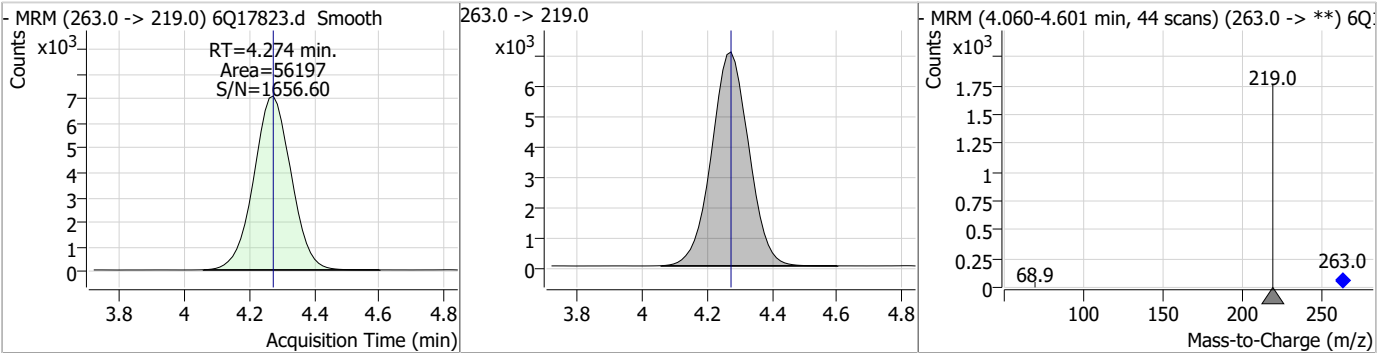
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	8.90	3.78	0.00	6665	241.0 -> 117.0	12.3	6.7	20.0



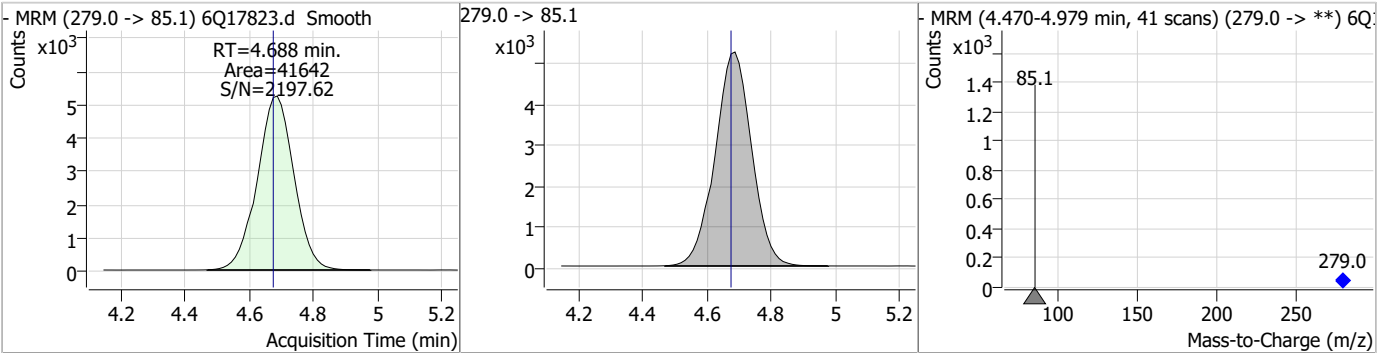
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.23	4.27	0.00	41846				



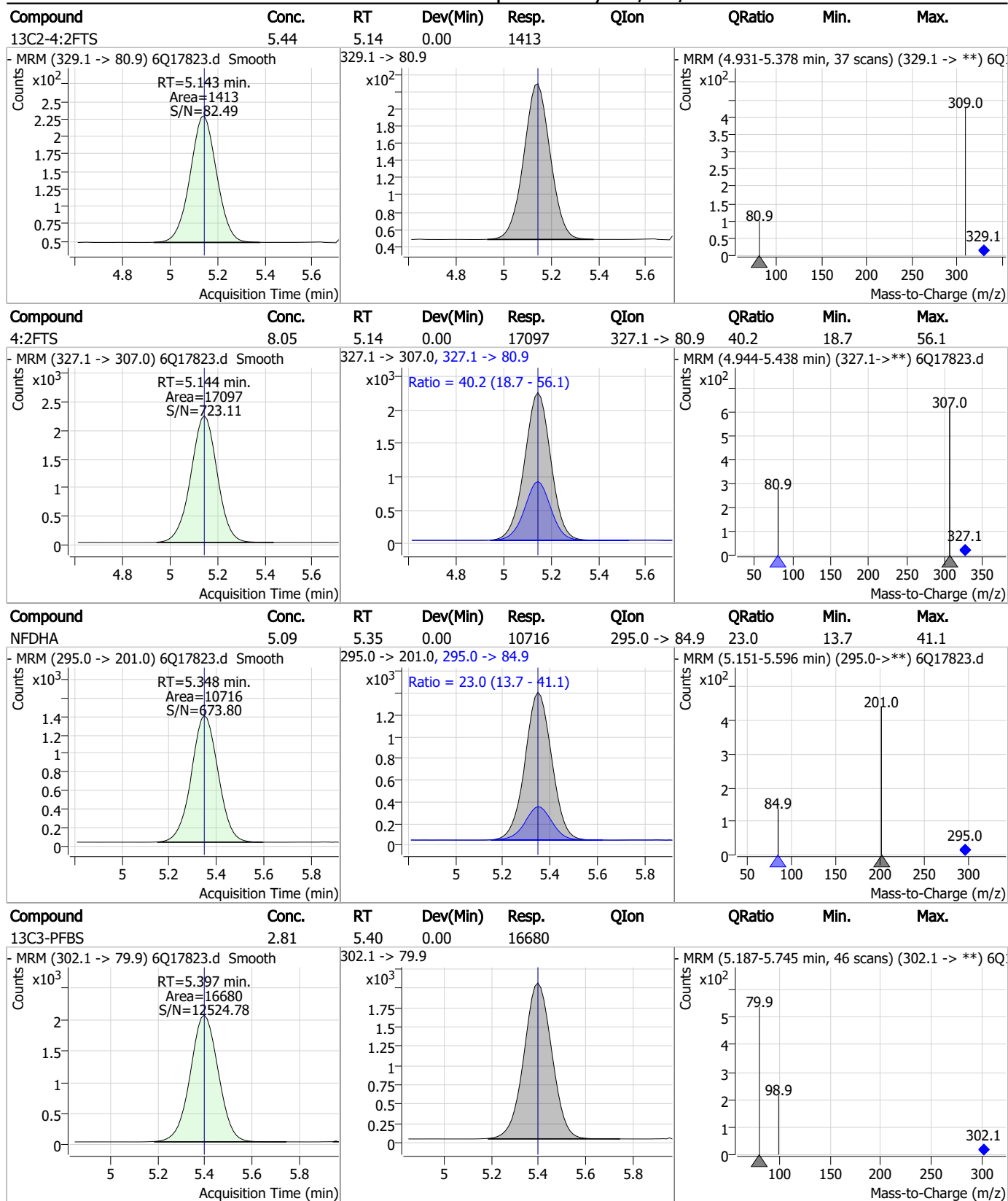
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.65	4.27	0.00	56197				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.83	4.69	0.01	41642				



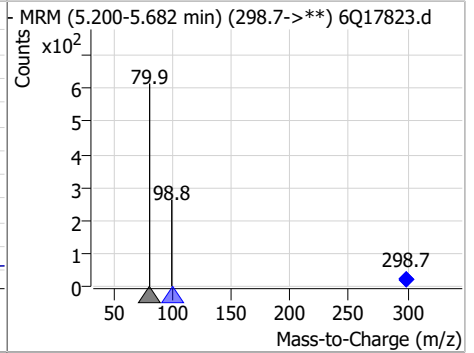
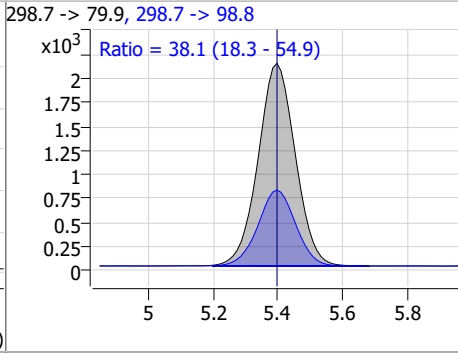
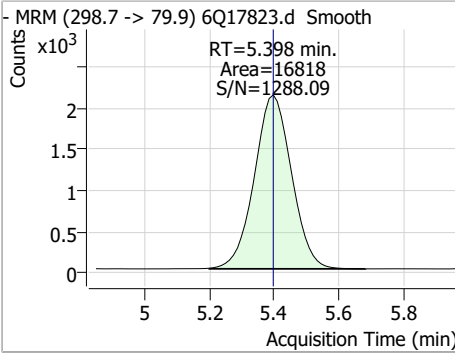
Perfluorinated Compounds by LC/MS/MS



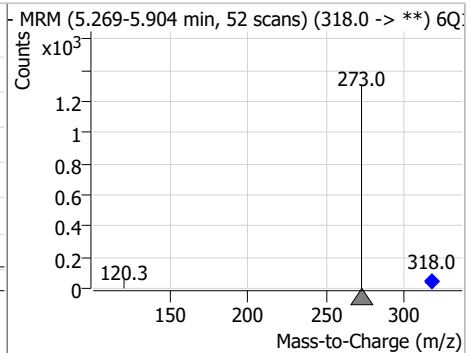
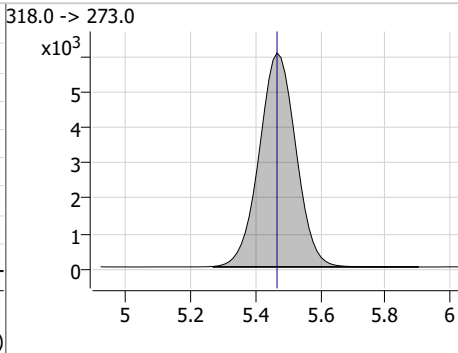
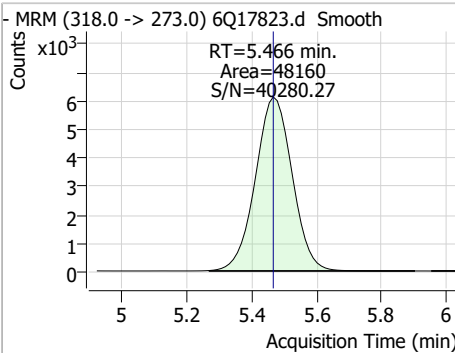
7.3.1
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Perfluorinated Compounds by LC/MS/MS

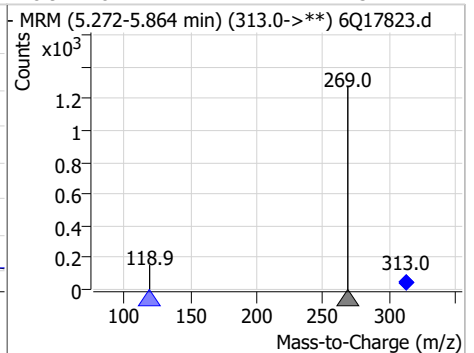
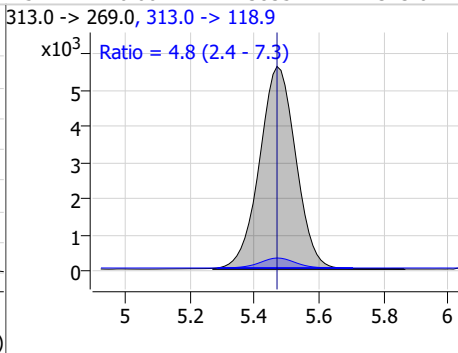
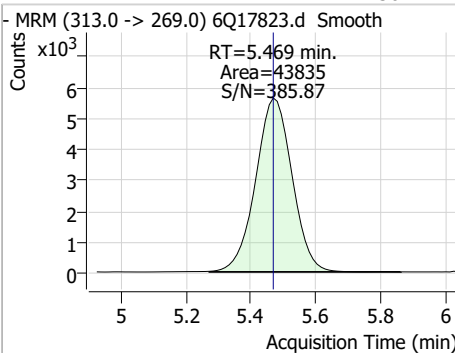
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.07	5.40	0.00	16818	298.7 -> 98.8	38.1	18.3	54.9



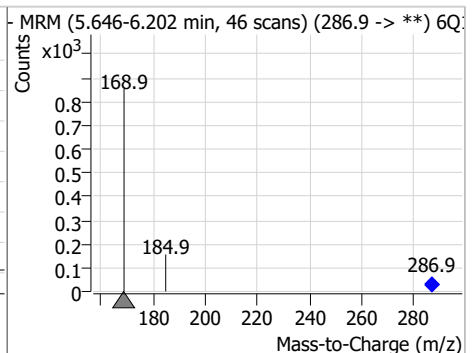
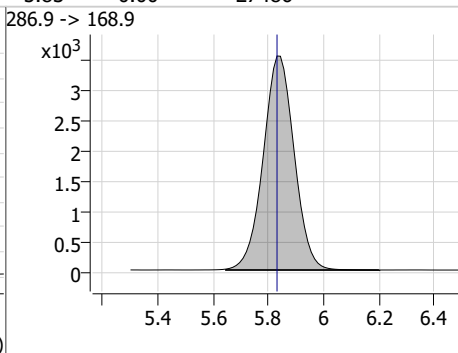
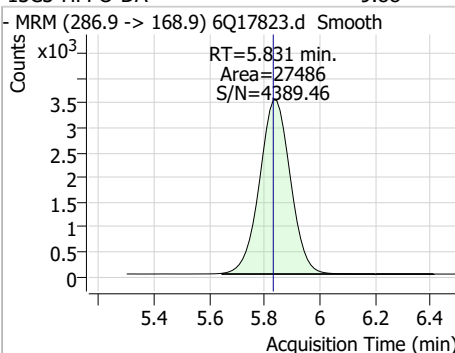
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.68	5.47	0.00	48160	318.0 -> 273.0	4.8	2.4	7.3



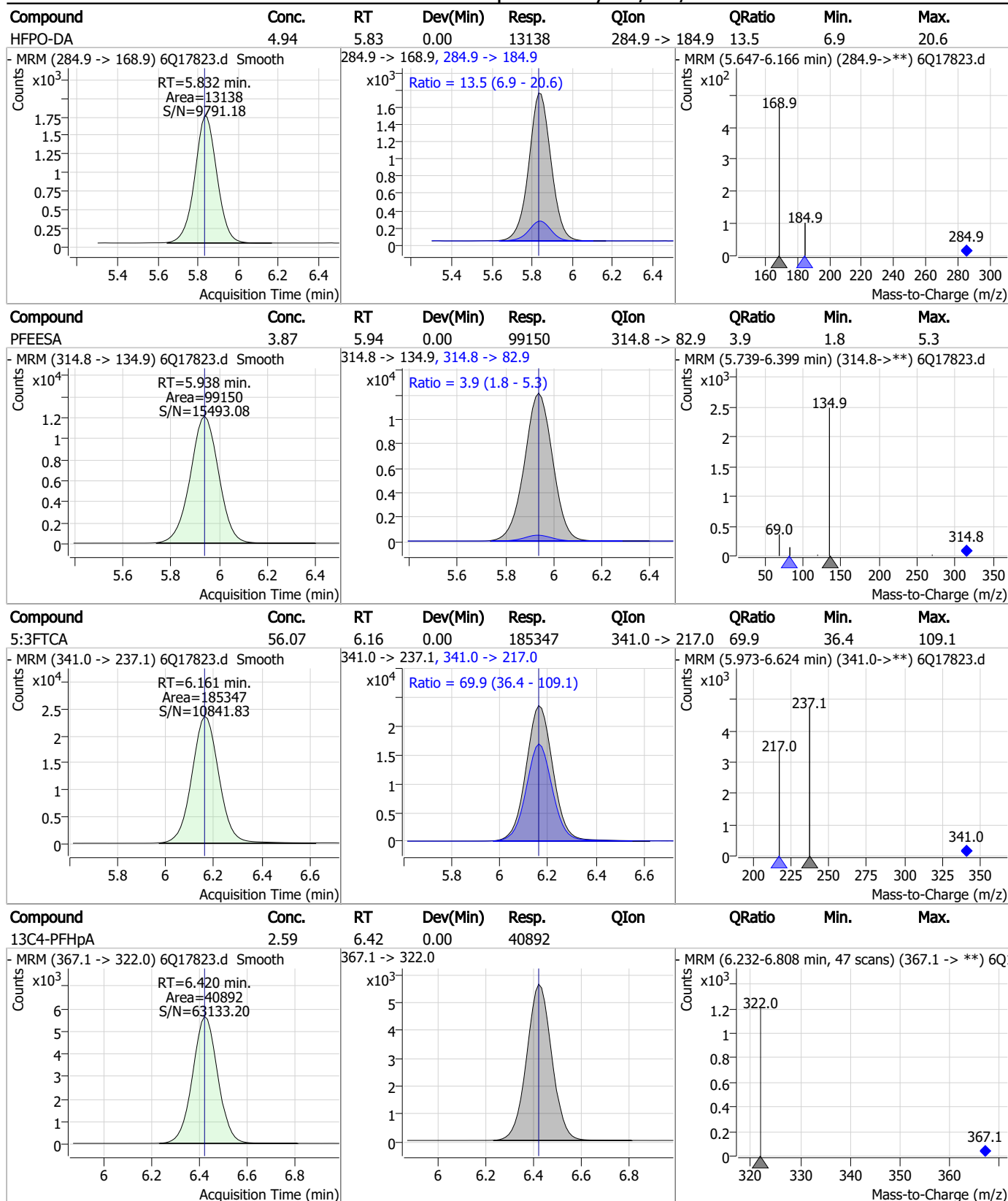
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.30	5.47	0.00	43835	313.0 -> 118.9	4.8	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.88	5.83	0.00	27486	286.9 -> 168.9	4.8	2.4	7.3

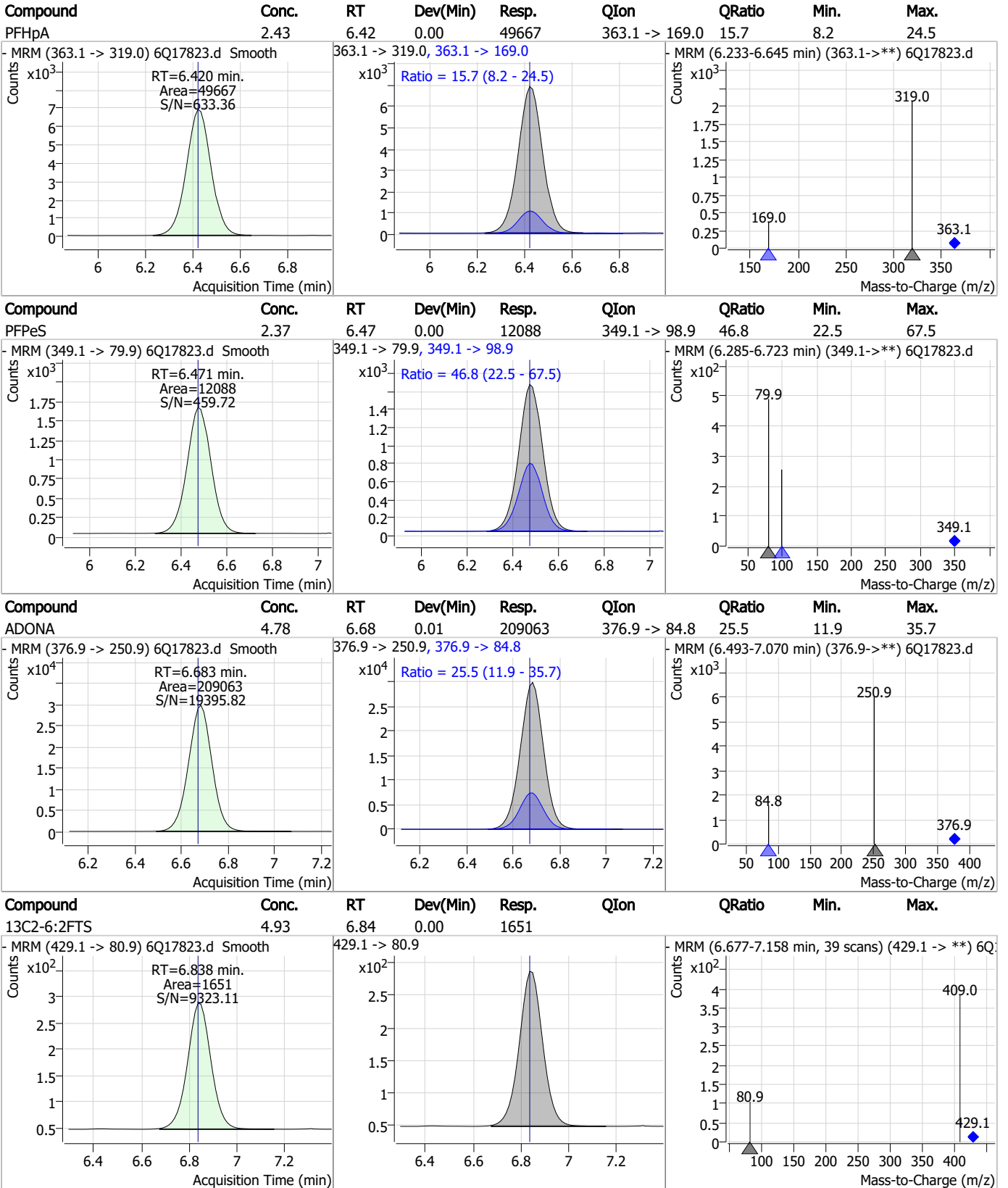


Perfluorinated Compounds by LC/MS/MS



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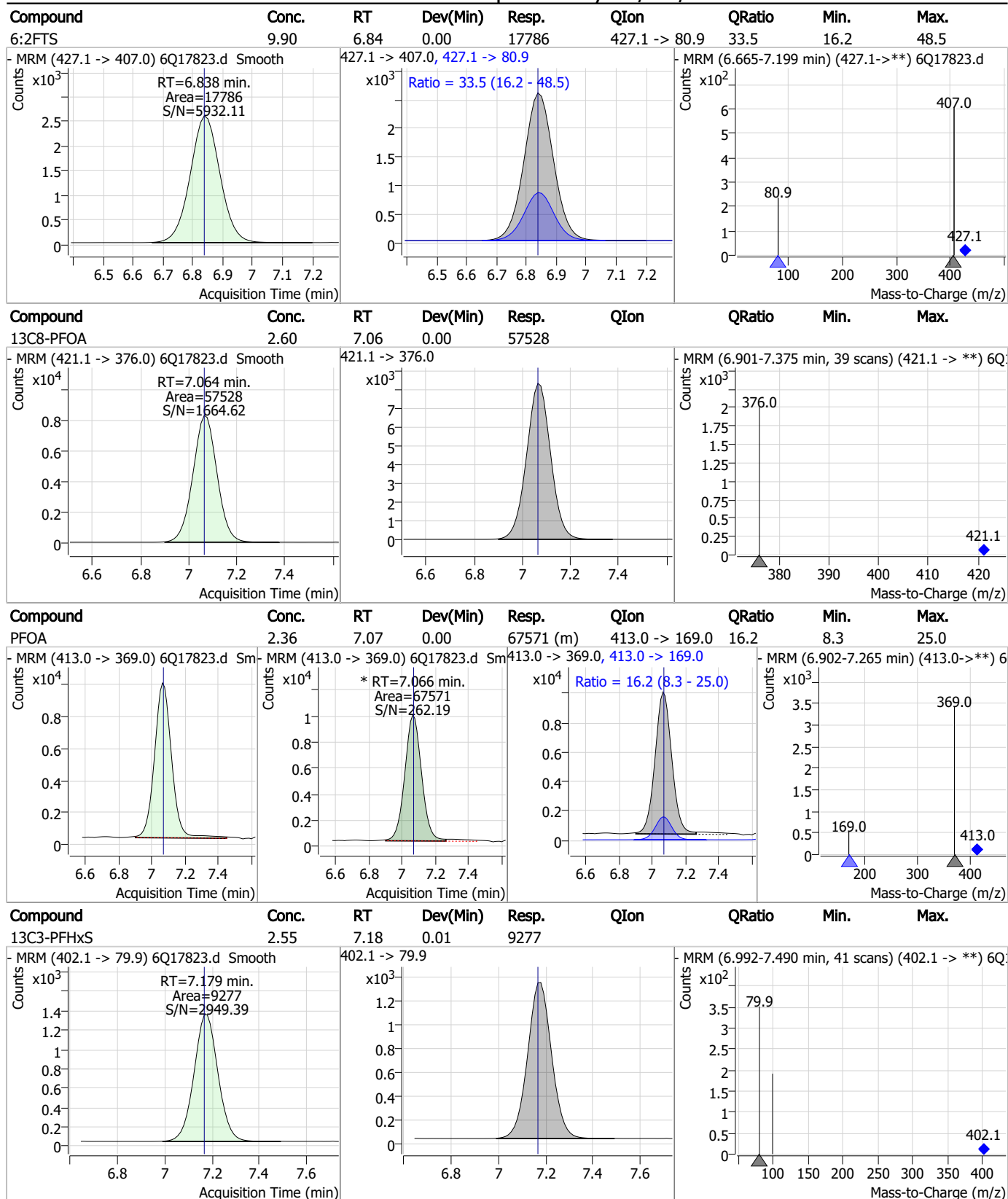
Perfluorinated Compounds by LC/MS/MS



7.3.1

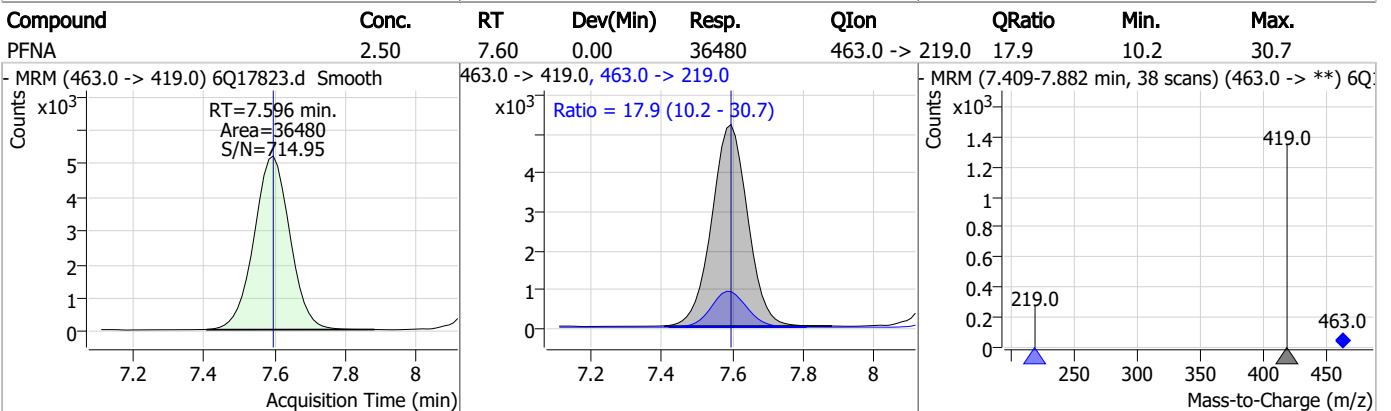
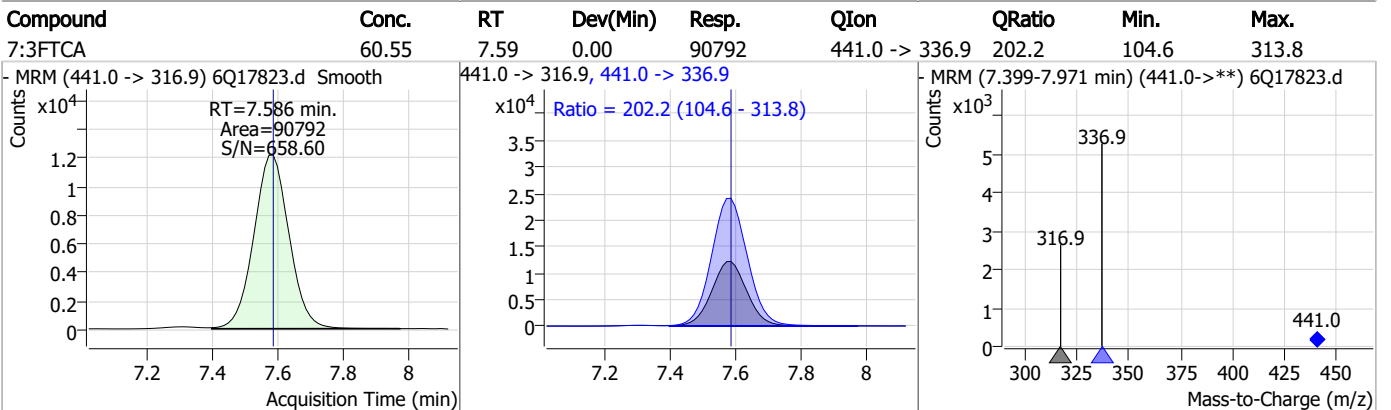
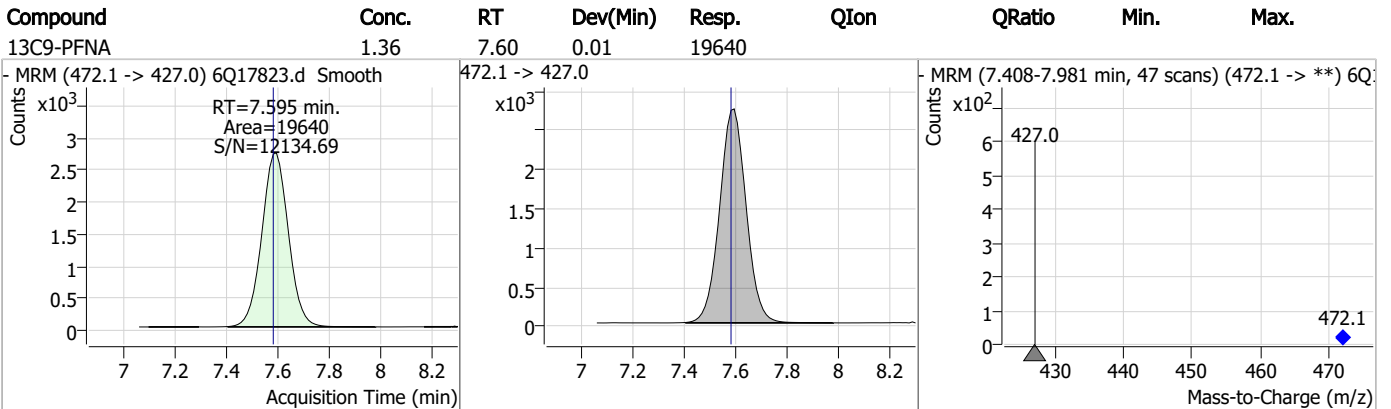
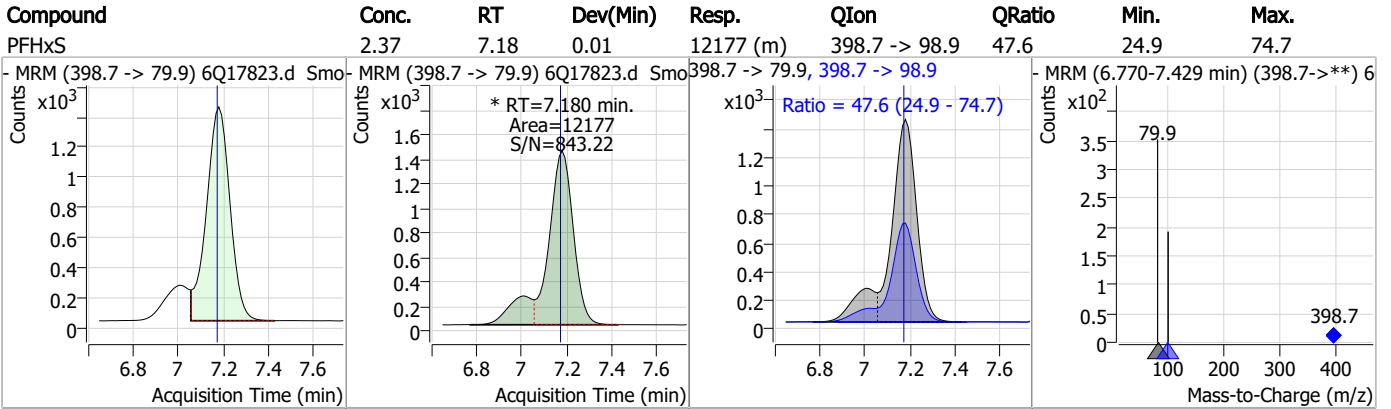
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Perfluorinated Compounds by LC/MS/MS

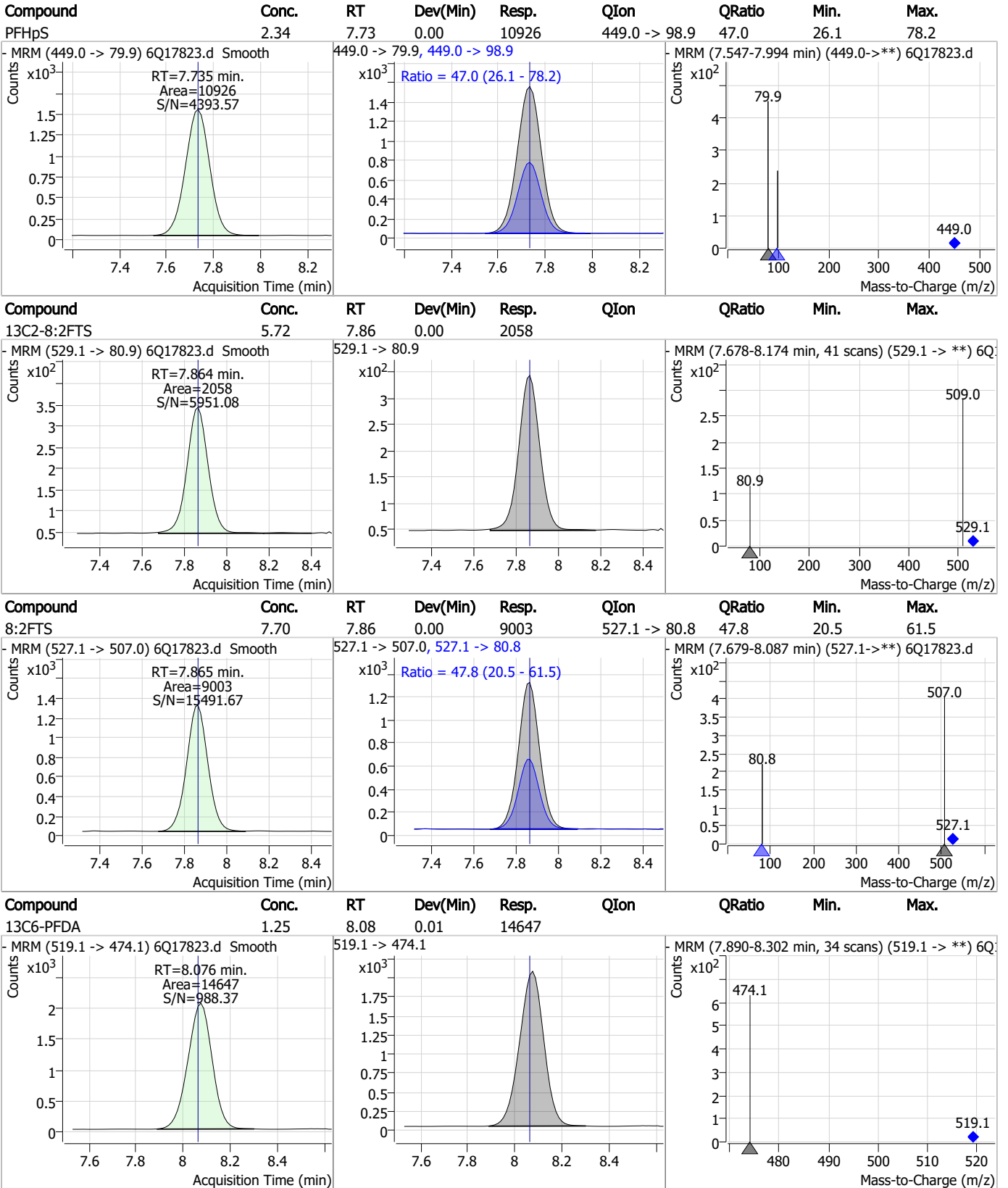


7.3.1

Perfluorinated Compounds by LC/MS/MS



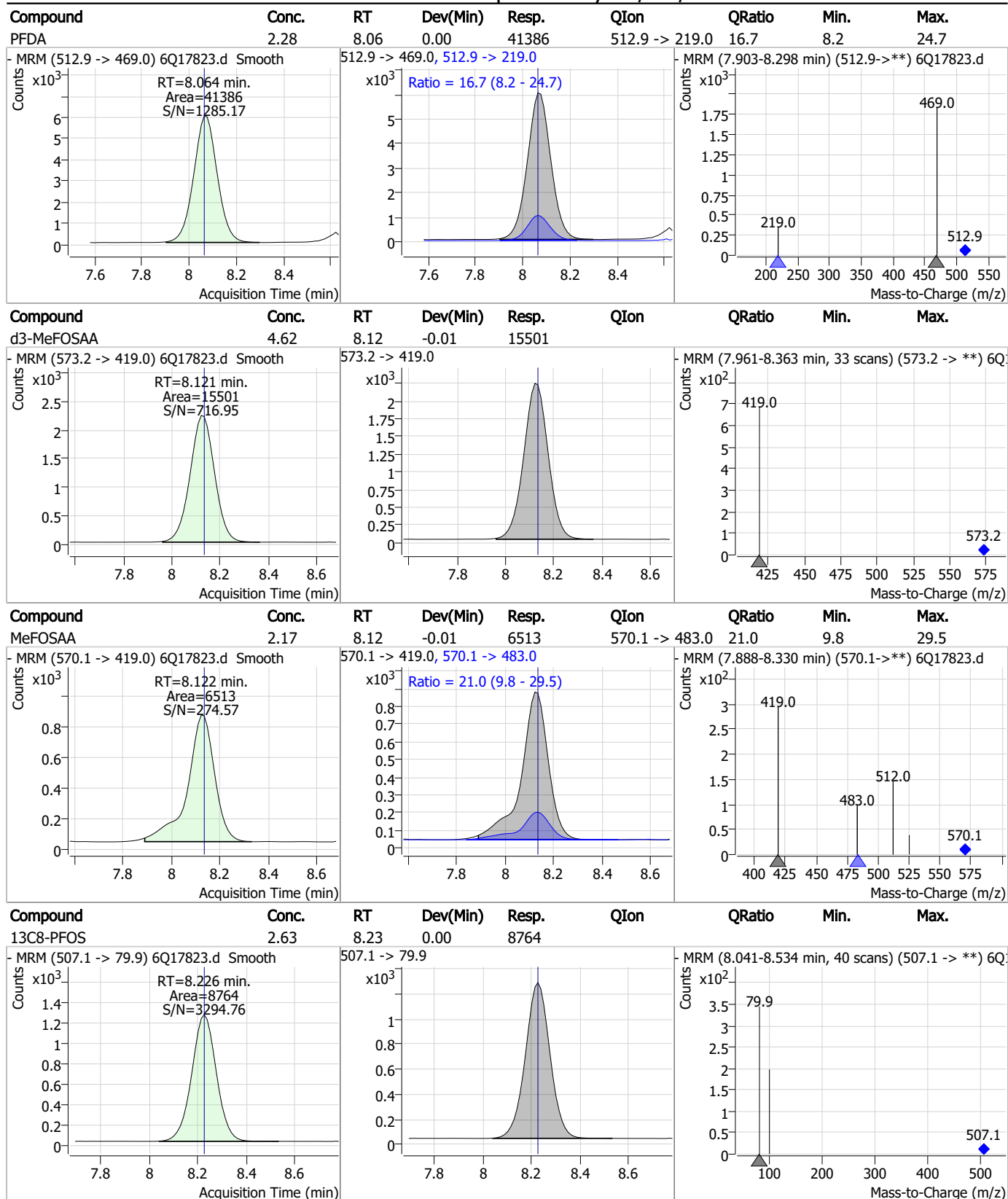
Perfluorinated Compounds by LC/MS/MS



7.3.1

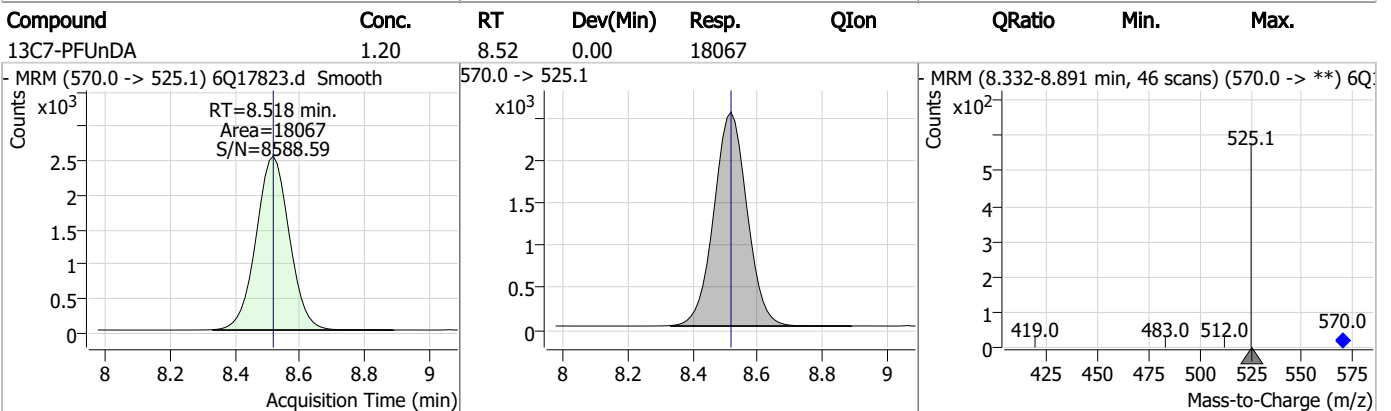
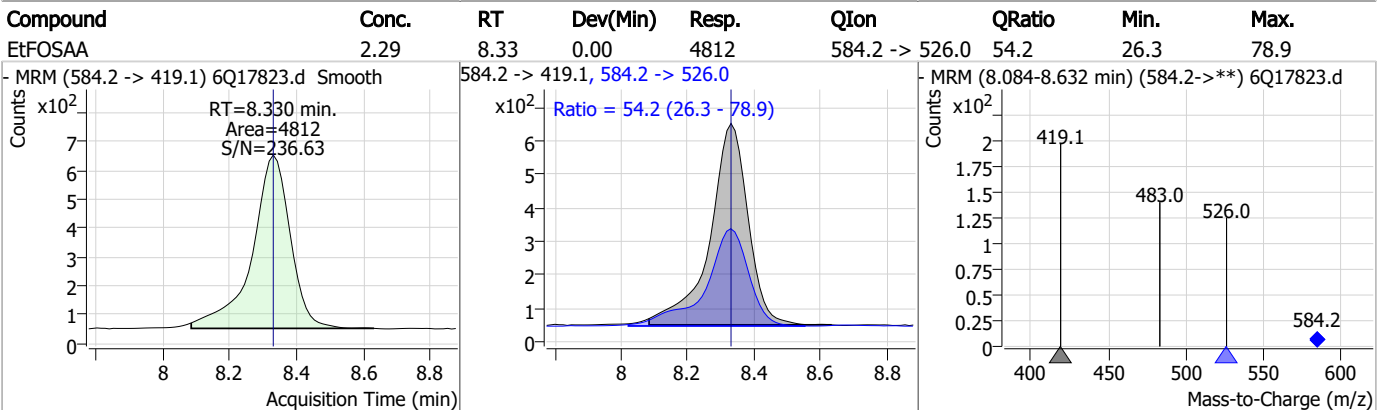
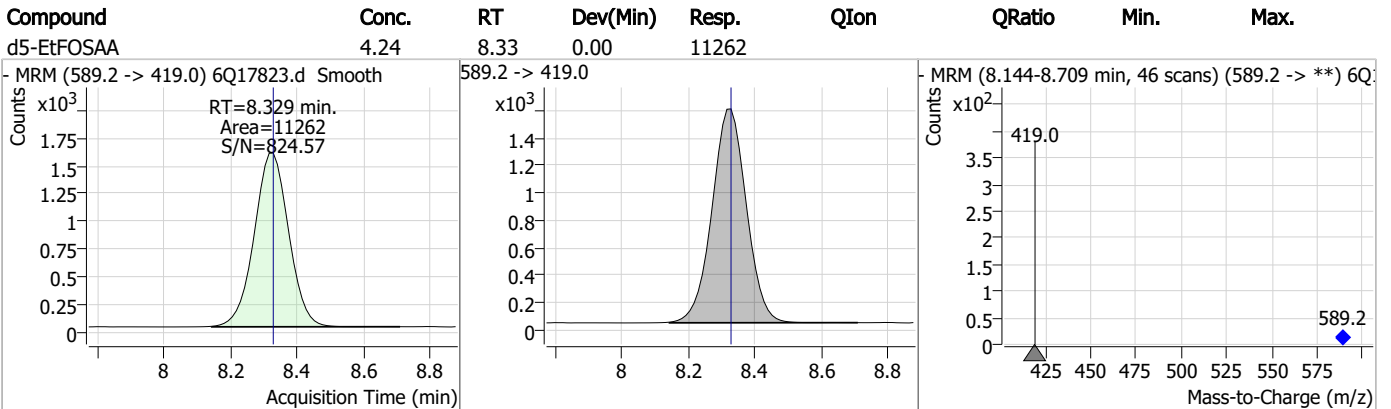
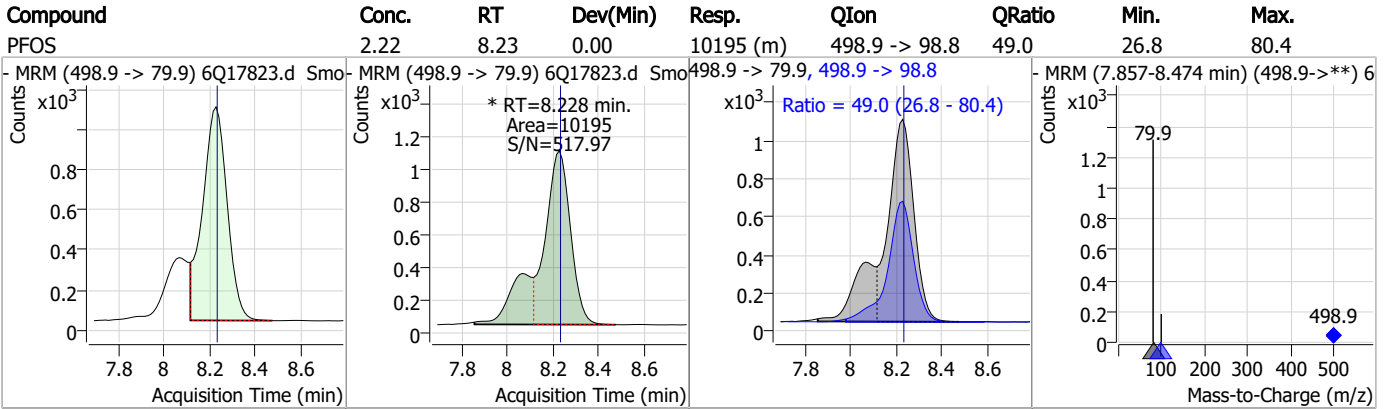
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Perfluorinated Compounds by LC/MS/MS



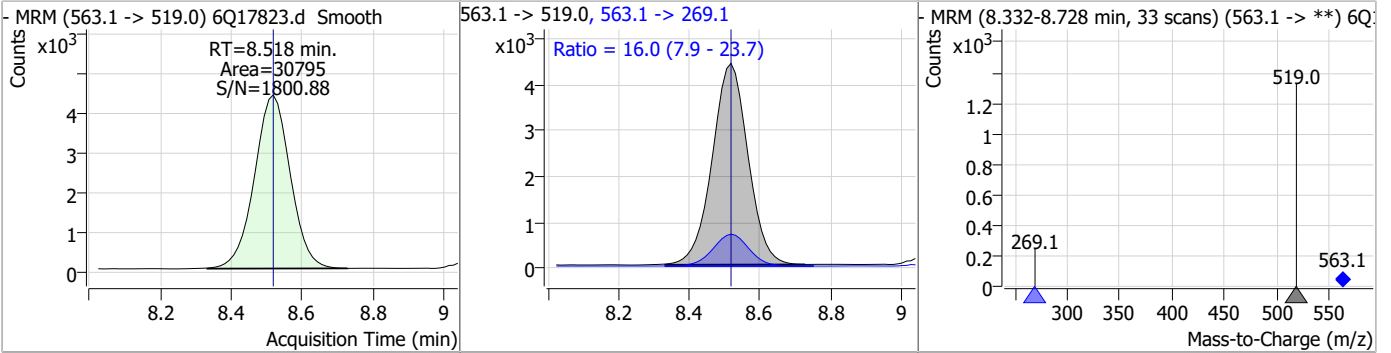
7.3.1
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Perfluorinated Compounds by LC/MS/MS

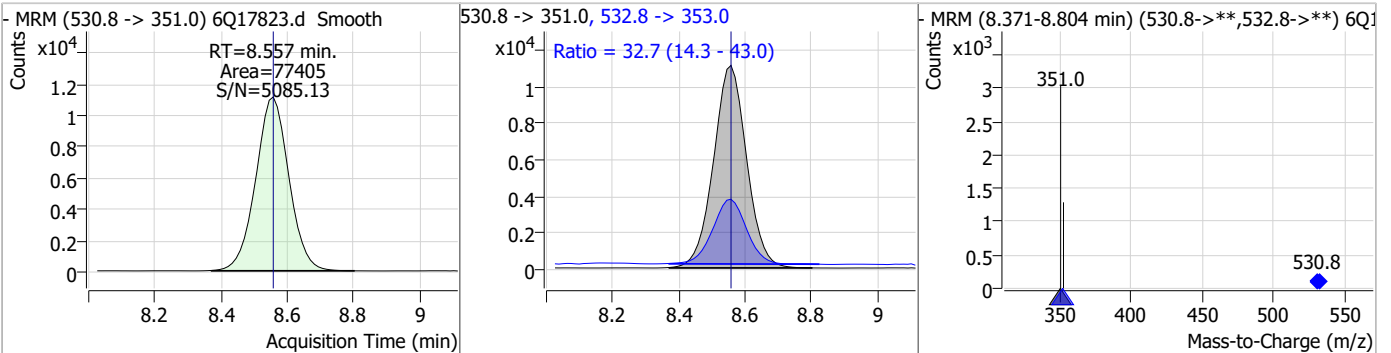


Perfluorinated Compounds by LC/MS/MS

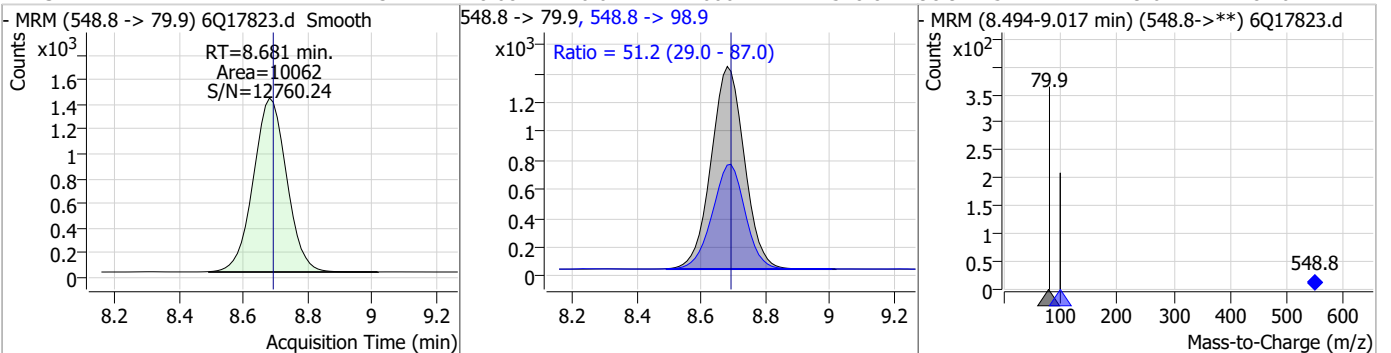
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.35	8.52	0.00	30795	563.1 -> 269.1	16.0	7.9	23.7



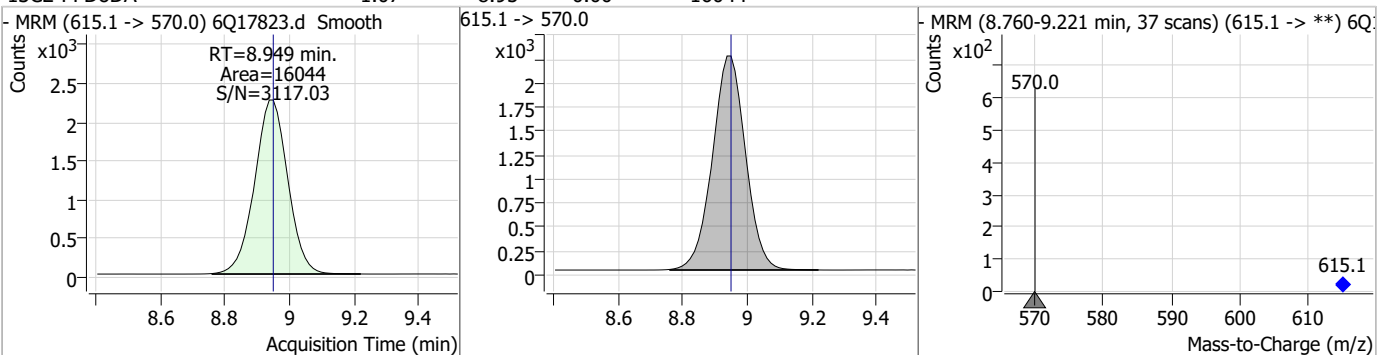
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.67	8.56	0.00	77405	532.8 -> 353.0	32.7	14.3	43.0



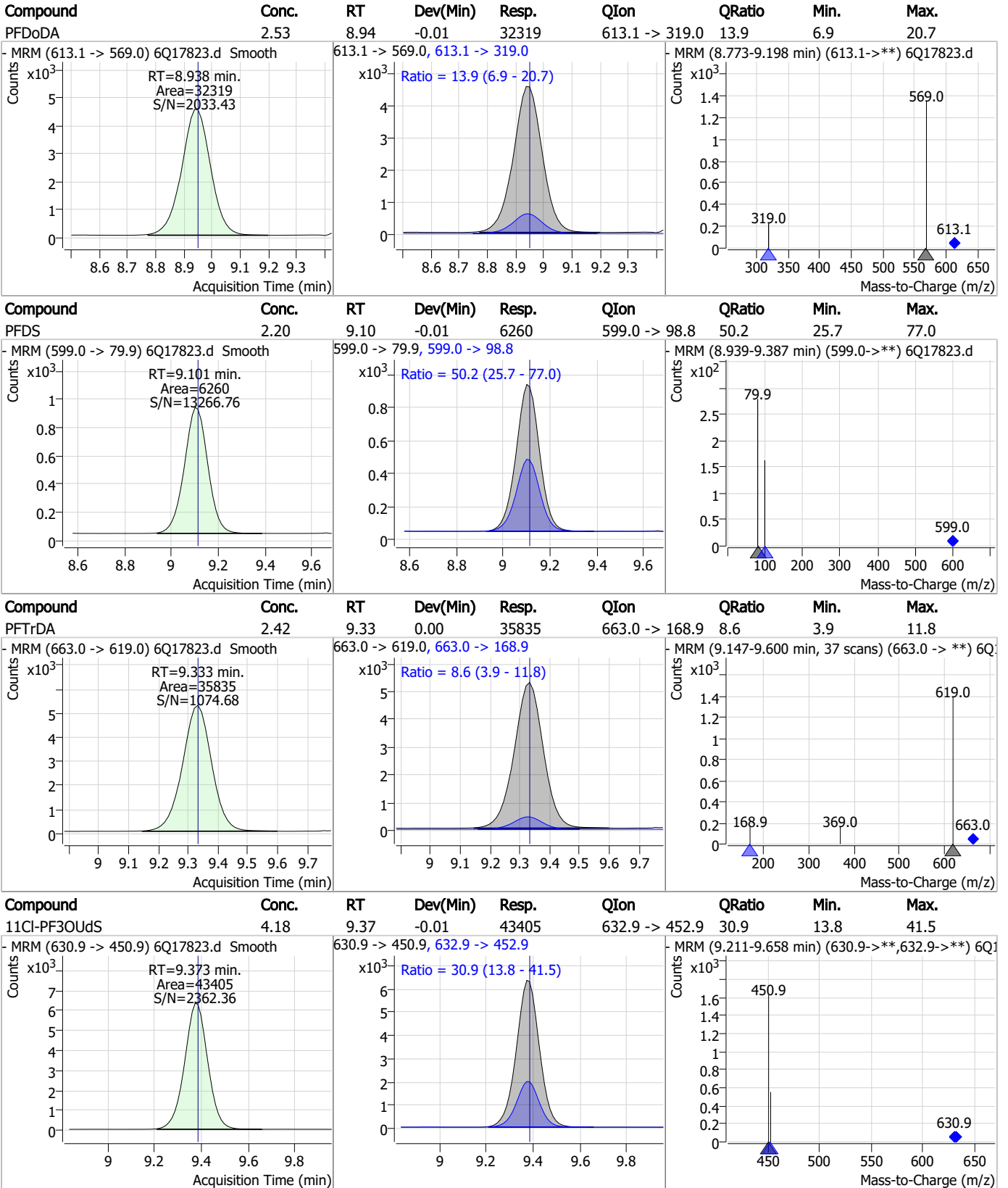
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.37	8.68	-0.01	10062	548.8 -> 98.9	51.2	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.07	8.95	0.00	16044	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS



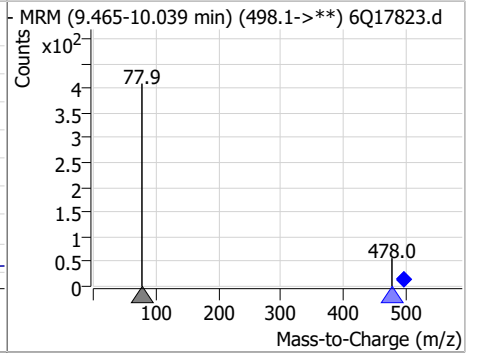
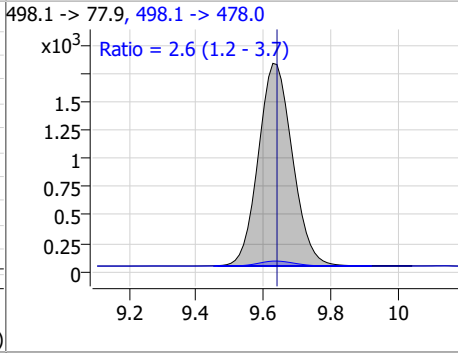
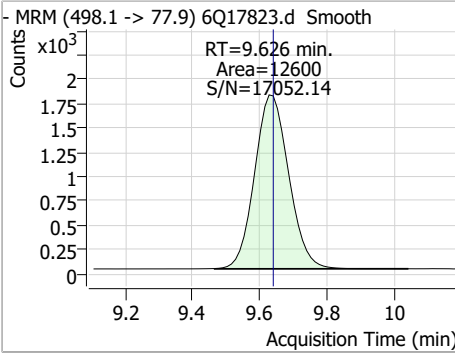
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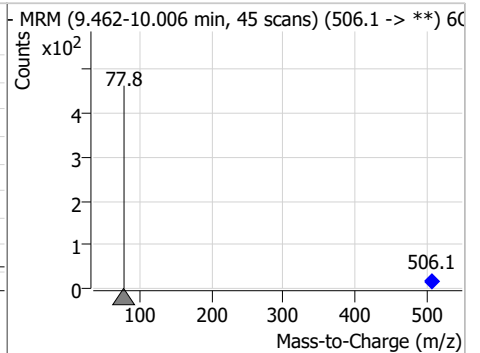
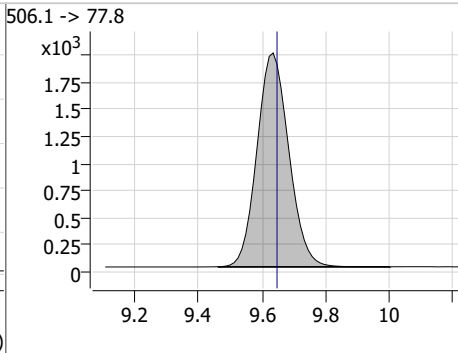
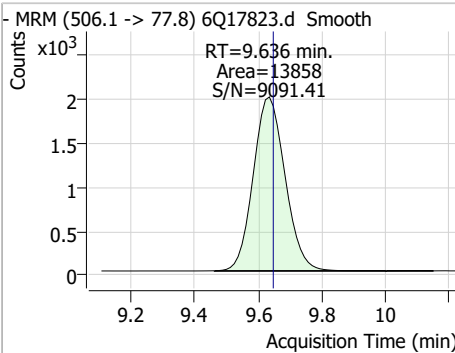


Perfluorinated Compounds by LC/MS/MS

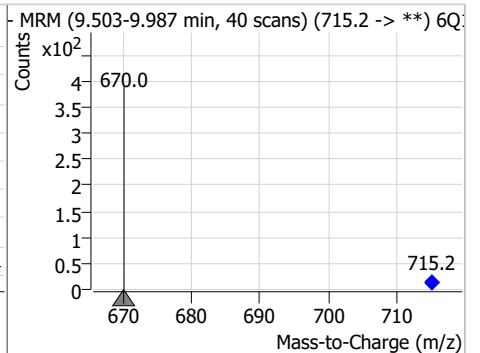
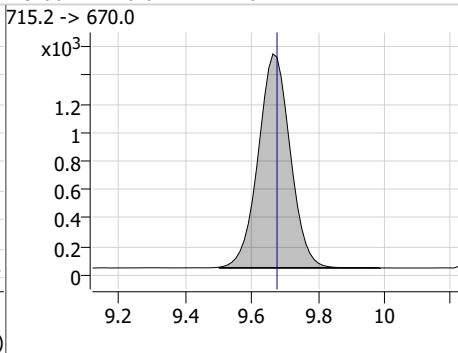
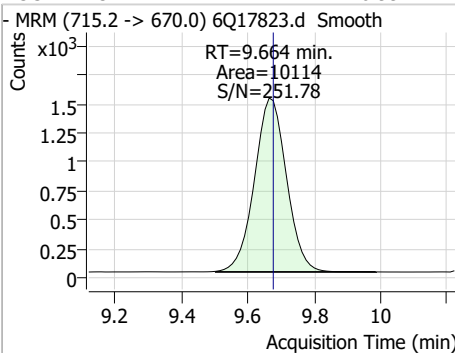
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.43	9.63	-0.01	12600	498.1 -> 478.0	2.6	1.2	3.7



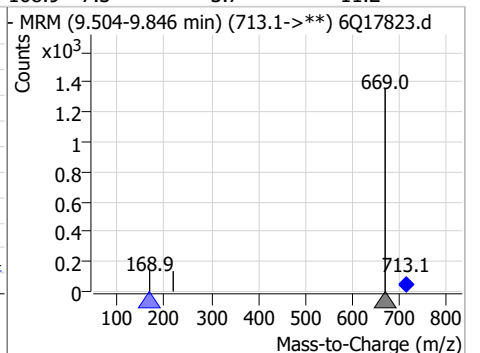
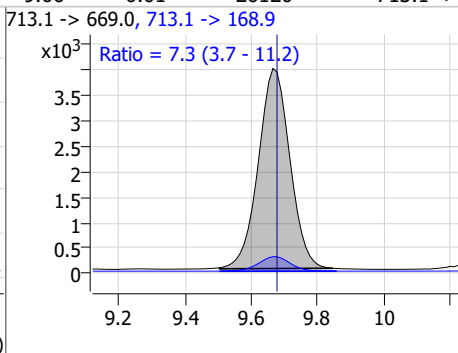
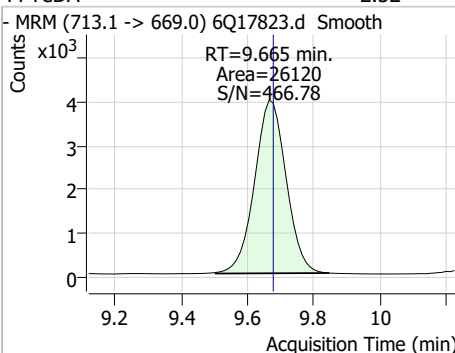
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.95	9.64	-0.01	13858				



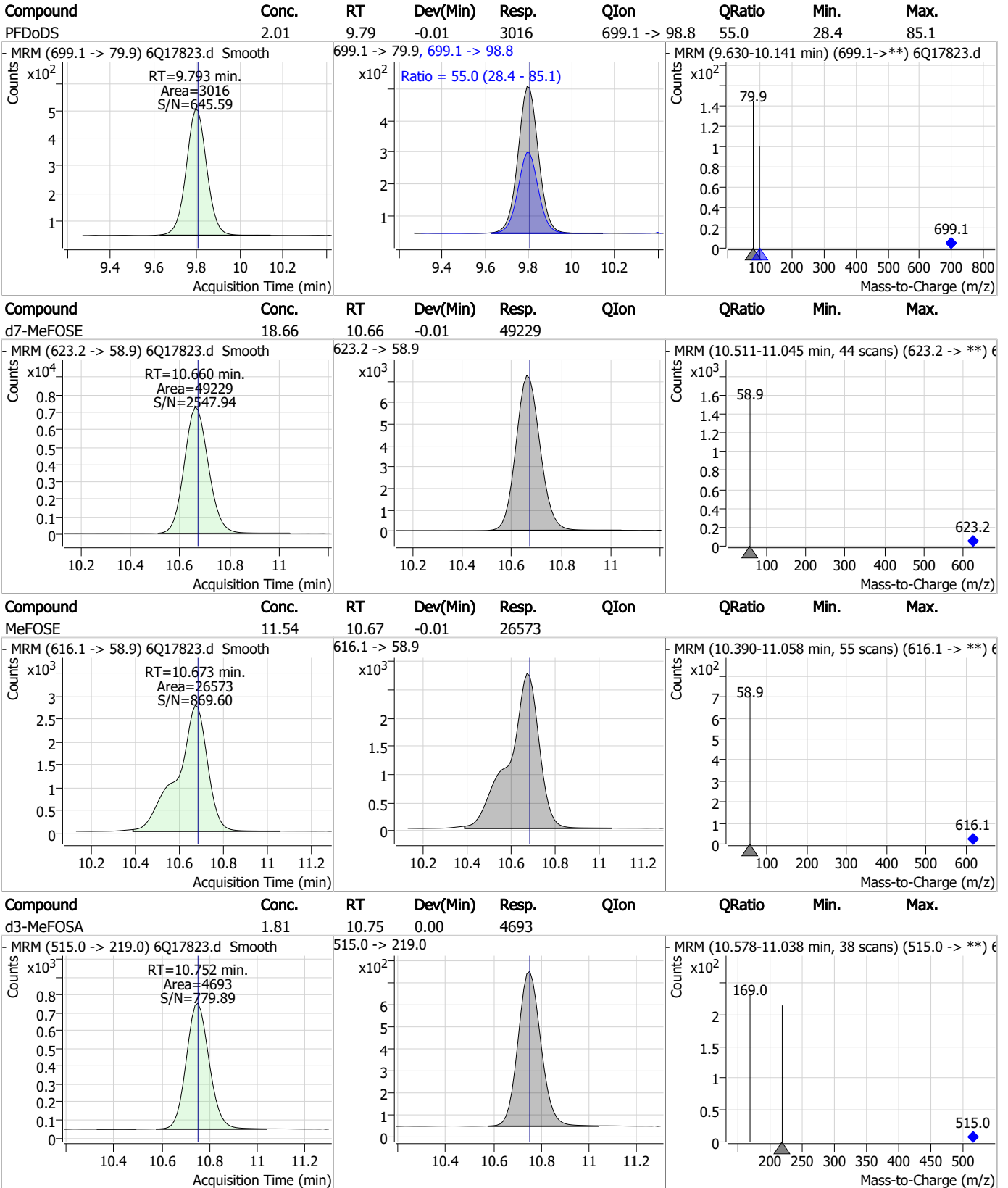
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.99	9.66	-0.01	10114				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.52	9.66	-0.01	26120	713.1 -> 168.9	7.3	3.7	11.2



Perfluorinated Compounds by LC/MS/MS

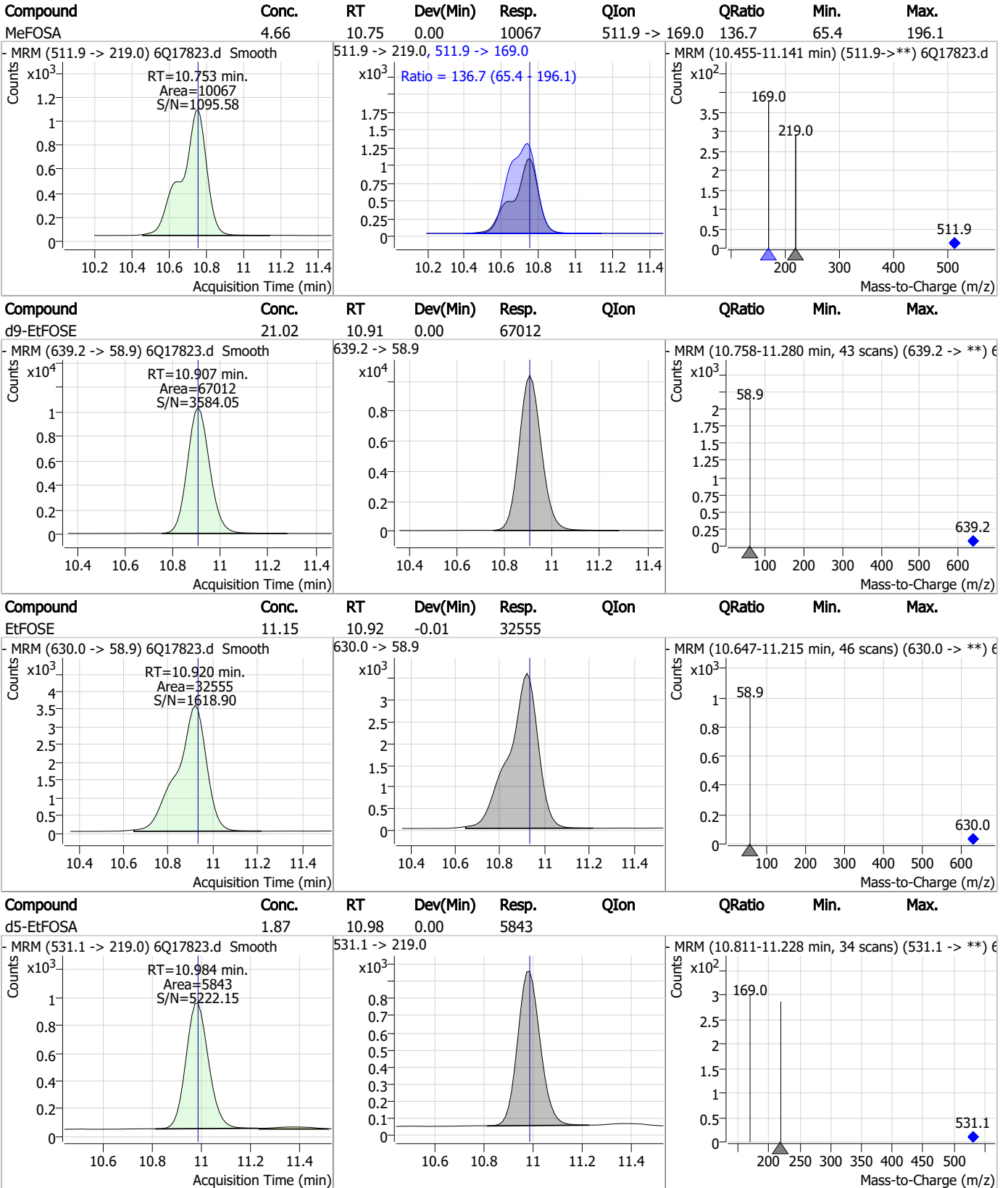


7.3.1

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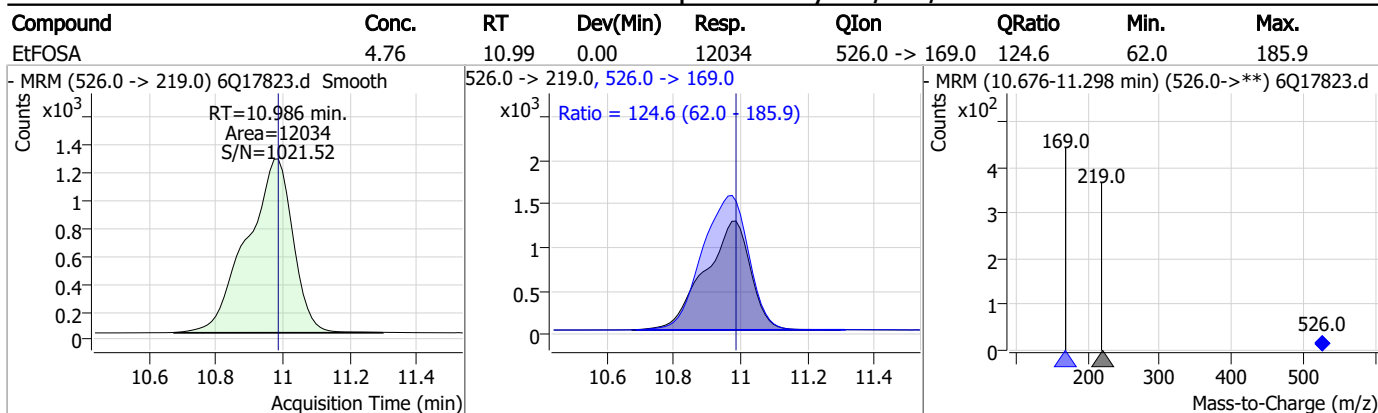
Perfluorinated Compounds by LC/MS/MS



7.3.1

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Perfluorinated Compounds by LC/MS/MS



7.3.1

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Manual Integration Approval Summary

Sample Number: OP96871-BS Method: EPA DRAFT 1633
Lab FileID: 6Q17823.D Analyst approved: 05/16/23 13:36 Martha Valls
Injection Time: 05/15/23 23:52 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.07	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17824.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 12:07:22 AM
 Sample Name : op96871-llbs:3
 Vial : P5-D1
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	135822	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	43836	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	54022	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	43515	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	60582	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	19490	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	16485	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	21137	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	18241	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	11604	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	14922	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	17031	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	9959	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9649	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1444	5.00 µg/L	-0.012
M2-6:2FTS	6.850	429.1 -> 80.9	1833	5.00 µg/L	0.012
M2-8:2FTS	7.864	529.1 -> 80.9	2038	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	15709	5.00 µg/L	-0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	29289	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	12619	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	53901	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	73517	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	6740	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	5307	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10527	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	52035	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	6750	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	59353	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	16597	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	21372	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	38148	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1444	5.62 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.3%		
13C2-6:2FTS	6.850	429.1 -> 80.9	1833	5.53 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2038	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.4%		
13C2-PFDoDA	8.949	615.1 -> 570.0	18241	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-PFTeDA	9.677	715.2 -> 670.0	11604	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFBS	5.397	302.1 -> 79.9	17031	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 115.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	9959	2.77 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 = 110.8%	
13C4-PFBA	2.901	216.8 -> 171.9	135822	11.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C4-PFHpA	6.420	367.1 -> 322.0	43515	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C5-PFHxA	5.466	318.0 -> 273.0	54022	2.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C5-PFPeA	4.272	268.3 -> 223.0	43836	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C6-PFDA	8.064	519.1 -> 474.1	16485	1.52 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 121.3%	
13C7-PFUnDA	8.518	570.0 -> 525.1	21137	1.51 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 121.1%	
13C8-FOSA	9.636	506.1 -> 77.8	14922	2.14 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.5%	
13C8-PFOA	7.064	421.1 -> 376.0	60582	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C8-PFOS	8.226	507.1 -> 79.9	9649	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.9%	
13C9-PFNA	7.595	472.1 -> 427.0	19490	1.23 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSAA	8.121	573.2 -> 419.0	15709	4.76 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	29289	10.49 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d3-MeFOSA	10.752	515.0 -> 219.0	5307	2.08 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.4%	
d5-EtFOSAA	8.329	589.2 -> 419.0	12619	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d7-MeFOSE	10.660	623.2 -> 58.9	53901	20.78 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
d9-EtFOSE	10.907	639.2 -> 58.9	73517	23.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSA	10.984	531.1 -> 219.0	6740	2.20 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.8%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	5773	2.66 µg/L	96
		327.1 -> 80.9	2286		
6:2FTS	6.838	427.1 -> 407.0	5080	2.55 µg/L	91
		427.1 -> 80.9	1910		
8:2FTS	7.865	527.1 -> 507.0	2805	2.42 µg/L	93
		527.1 -> 80.8	1272		
EtFOSAA	8.330	584.2 -> 419.1	1557	0.66 µg/L	97
		584.2 -> 526.0	781		
FOSA	9.639	498.1 -> 77.9	4035	0.72 µg/L	100
		498.1 -> 478.0	105		
MeFOSAA	8.122	570.1 -> 419.0	2263	0.74 µg/L	99
		570.1 -> 483.0	431		
PFBA	2.907	212.8 -> 168.9	13788	2.83 µg/L	100
PFBS	5.398	298.7 -> 79.9	5034	0.61 µg/L	93
		298.7 -> 98.8	2056		
PFDA	8.076	512.9 -> 469.0	12767	0.63 µg/L	100
		512.9 -> 219.0	2125		
PFDODA	8.950	613.1 -> 569.0	9779	0.67 µg/L	97
		613.1 -> 319.0	1480		
PFDS	9.101	599.0 -> 79.9	2007	0.64 µg/L	92

7.3.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	922			
PFHpA	6.420	363.1 -> 319.0	14526	0.67	µg/L	98
		363.1 -> 169.0	2494			
PFHpS	7.735	449.0 -> 79.9	3289	0.64	µg/L	93
		449.0 -> 98.9	1562			
PFHxA	5.469	313.0 -> 269.0	14727	0.69	µg/L	98
		313.0 -> 118.9	627			
PFHxS	7.180	398.7 -> 79.9	3787	0.69	µg/L	m 97
		398.7 -> 98.9	1802			
PFNA	7.596	463.0 -> 419.0	11435	0.79	µg/L	95
		463.0 -> 219.0	2103			
PFNS	8.681	548.8 -> 79.9	2743	0.59	µg/L	96
		548.8 -> 98.9	1665			
PFOA	7.066	413.0 -> 369.0	21238	0.70	µg/L	m 98
		413.0 -> 169.0	3408			
PFOS	8.228	498.9 -> 79.9	3131	0.62	µg/L	m 99
		498.9 -> 98.8	1665			
PFPeA	4.274	263.0 -> 219.0	17360	1.37	µg/L	100
PFPeS	6.471	349.1 -> 79.9	3808	0.70	µg/L	99
		349.1 -> 98.9	1680			
PFTeDA	9.677	713.1 -> 669.0	7869	0.66	µg/L	98
		713.1 -> 168.9	650			
PFTrDA	9.333	663.0 -> 619.0	10945	0.65	µg/L	94
		663.0 -> 168.9	1083			
PFUnDA	8.518	563.1 -> 519.0	9398	0.61	µg/L	99
		563.1 -> 269.1	1534			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	14104	1.27	µg/L	97
		632.9 -> 452.9	4156			
9Cl-PF3ONS	8.557	530.8 -> 351.0	22719	1.29	µg/L	86
		532.8 -> 353.0	8187			
ADONA	6.683	376.9 -> 250.9	60926	1.31	µg/L	93
		376.9 -> 84.8	16500			
HFPO-DA	5.832	284.9 -> 168.9	4020	1.42	µg/L	99
		284.9 -> 184.9	537			
3:3FTCA	3.790	241.0 -> 177.0	2121	2.70	µg/L	98
		241.0 -> 117.0	304			
5:3FTCA	6.161	341.0 -> 237.1	56687	15.29	µg/L	99
		341.0 -> 217.0	40612			
7:3FTCA	7.586	441.0 -> 316.9	27134	16.13	µg/L	96
		441.0 -> 336.9	58491			
EtFOSA	10.986	526.0 -> 219.0	3901	1.34	µg/L	98
		526.0 -> 169.0	4917			
EtFOSE	10.920	630.0 -> 58.9	11091	3.46	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	3196	1.31	µg/L	94
		511.9 -> 169.0	4399			
MeFOSE	10.686	616.1 -> 58.9	8879	3.52	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	949	0.57	µg/L	93
		699.1 -> 98.8	586			
NFDHA	5.348	295.0 -> 201.0	3142	1.33	µg/L	98
		295.0 -> 84.9	820			
PFMBA	4.675	279.0 -> 85.1	13161	1.46	µg/L	100
PFMPA	3.426	229.0 -> 84.9	9263	1.42	µg/L	100
PFEESA	5.938	314.8 -> 134.9	32182	1.12	µg/L	98
		314.8 -> 82.9	1297			

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

7.3.2
7

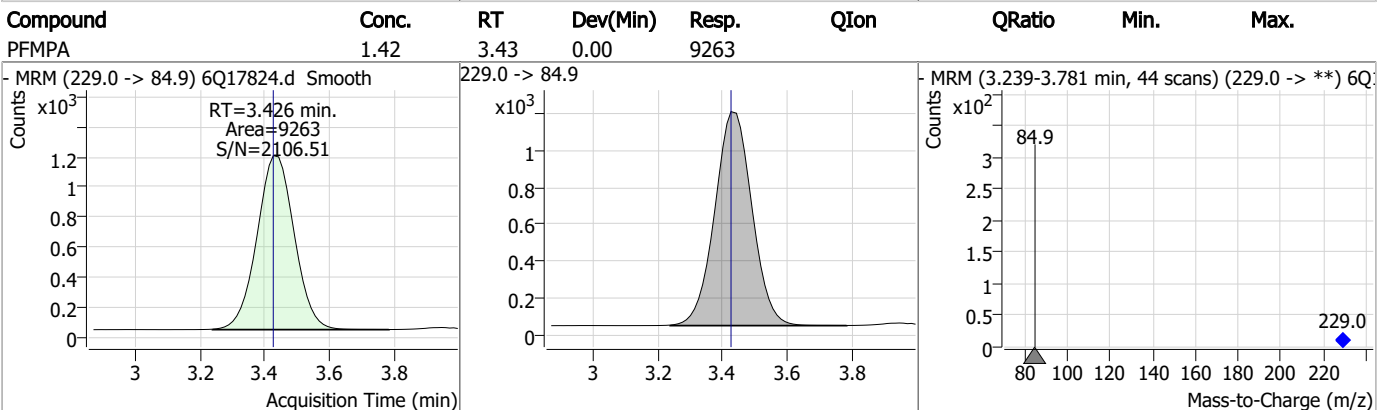
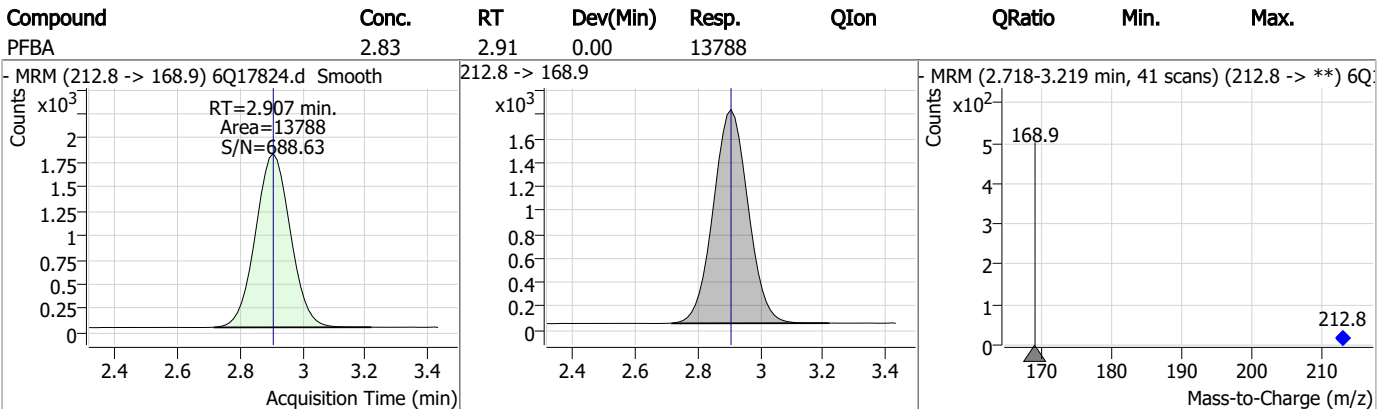
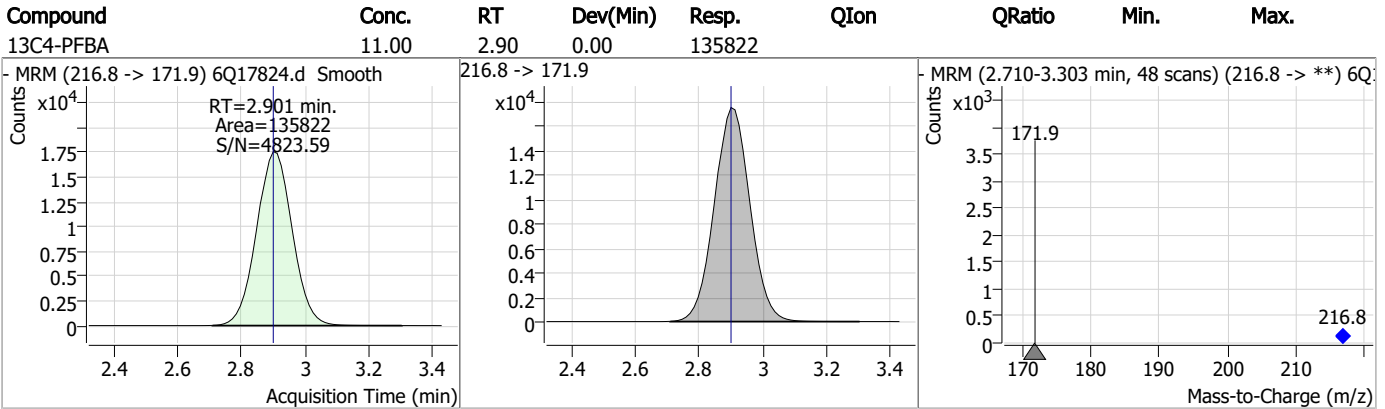
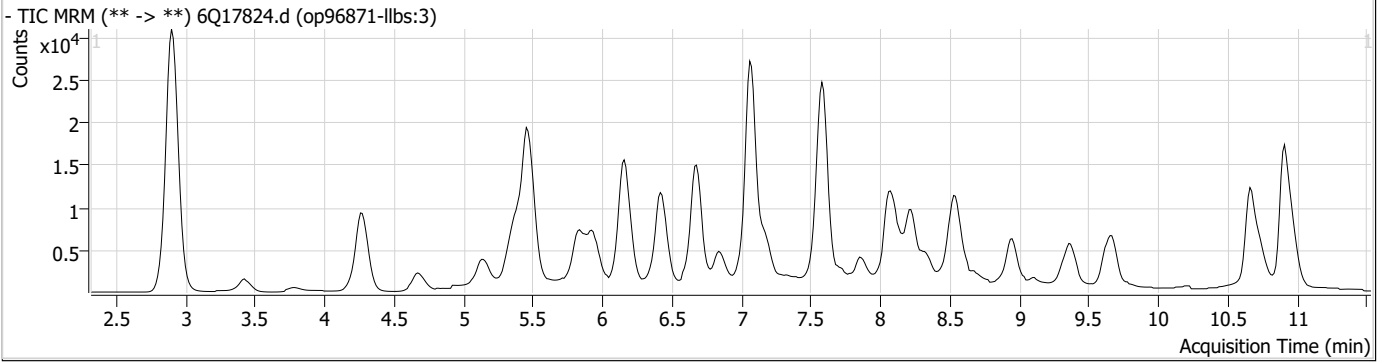
Perfluorinated Compounds by LC/MS/MS

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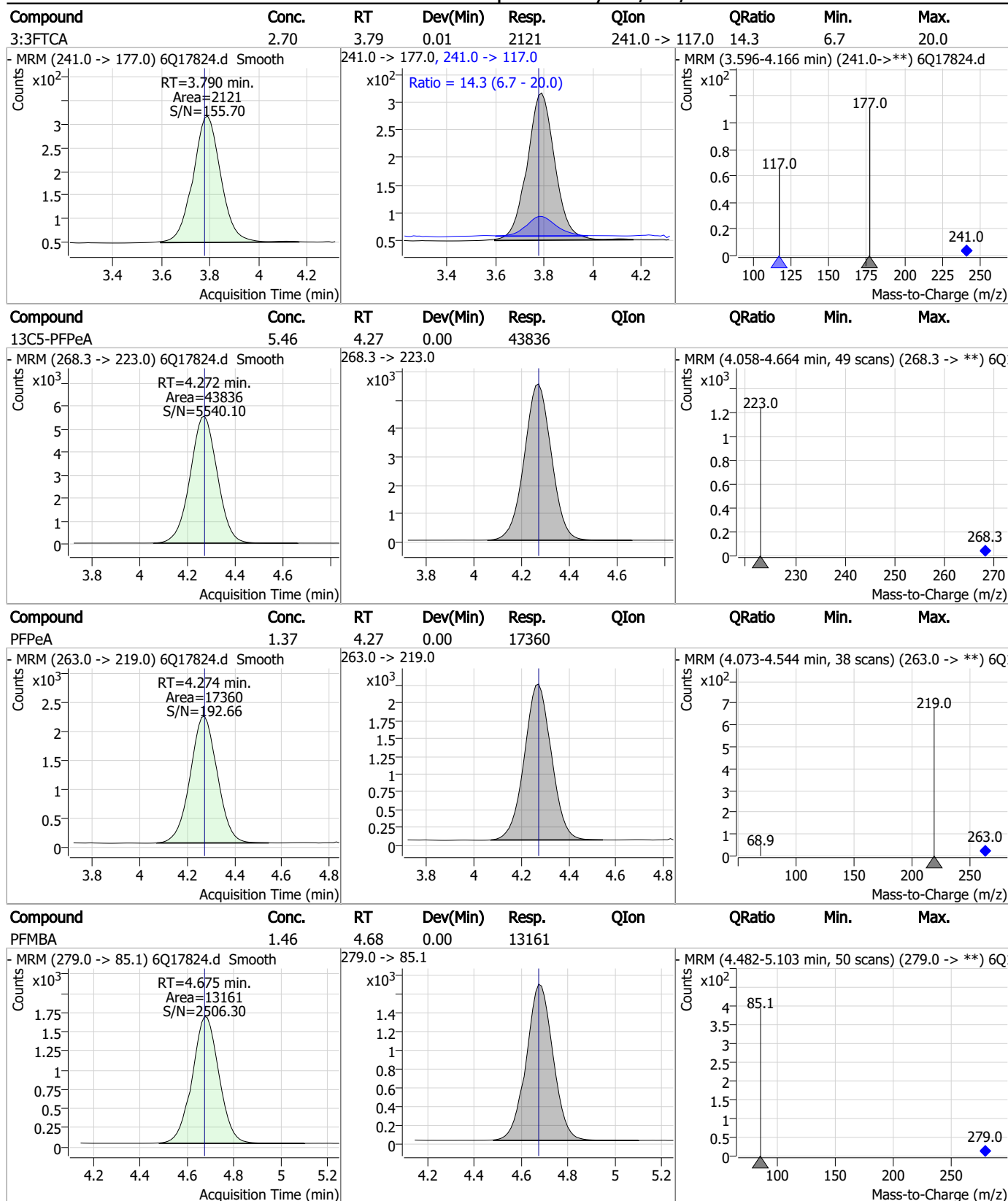
7.3.2

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Perfluorinated Compounds by LC/MS/MS

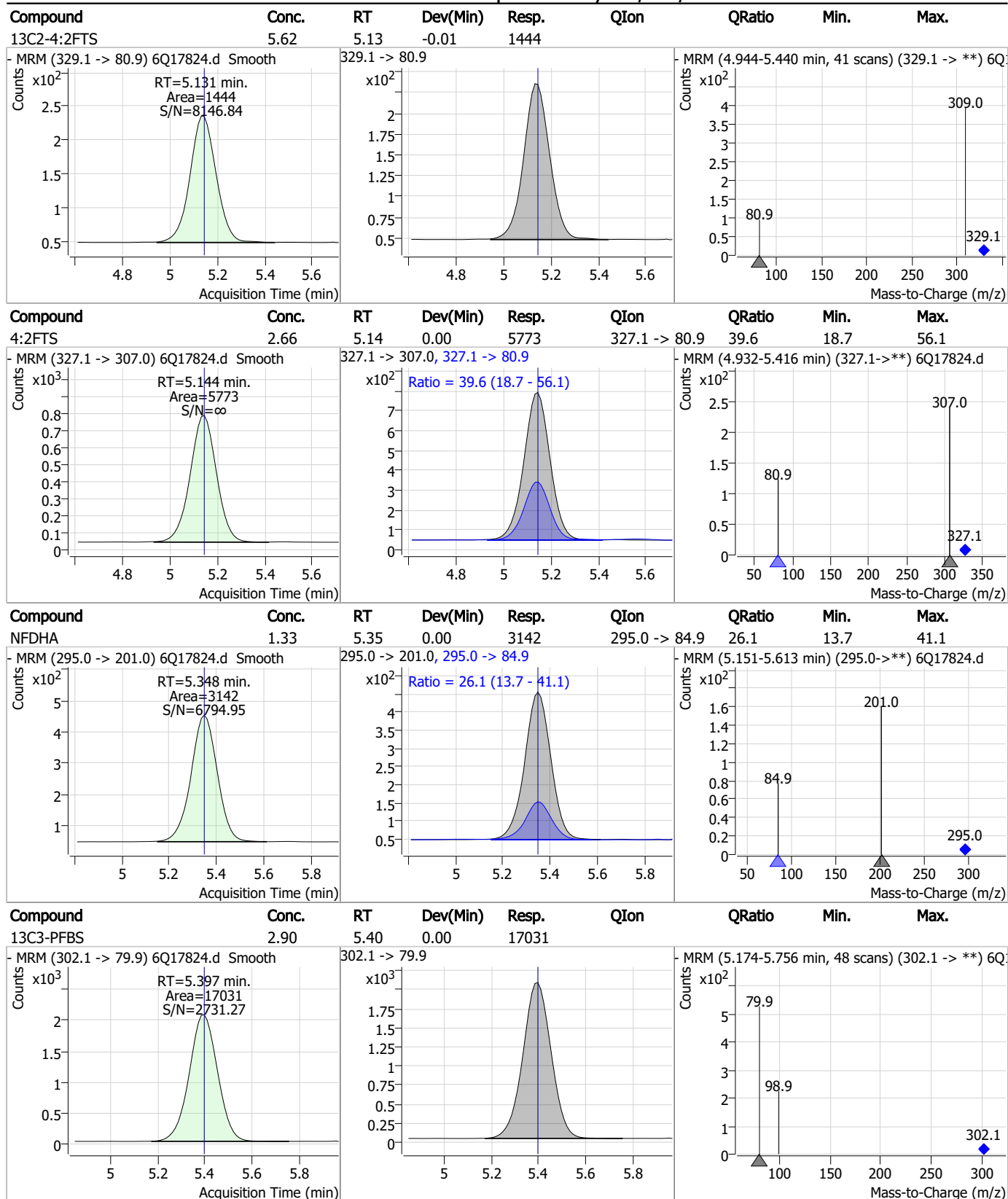


Perfluorinated Compounds by LC/MS/MS



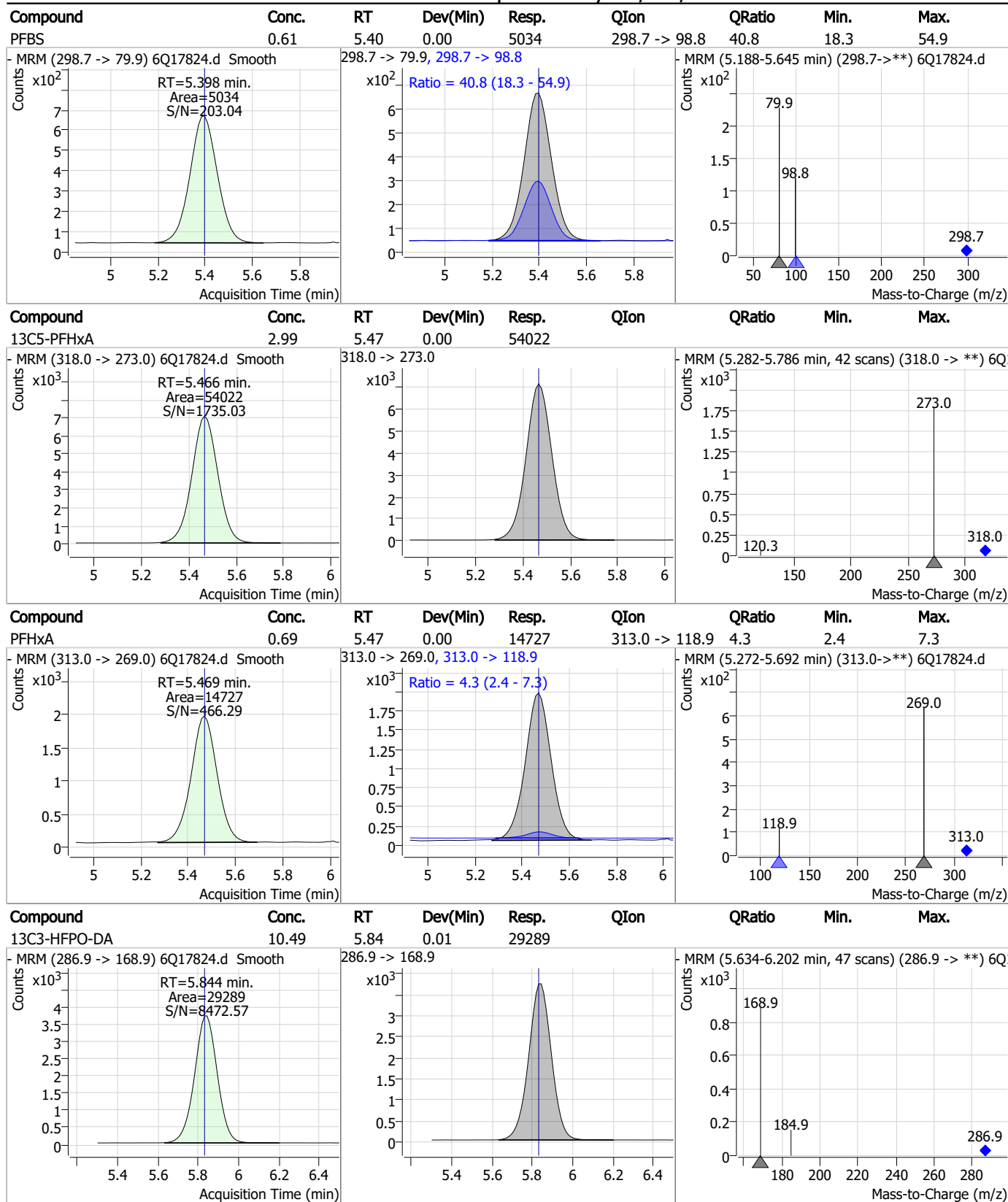
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

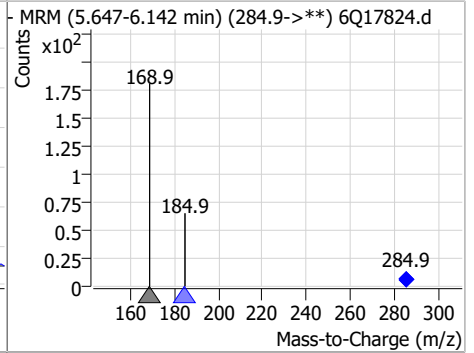
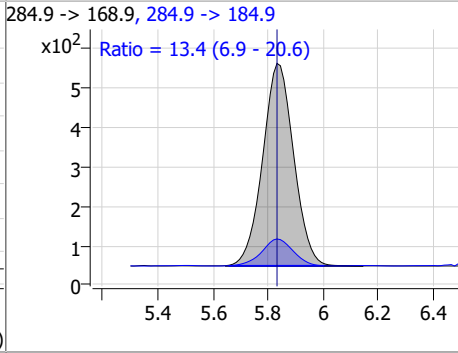
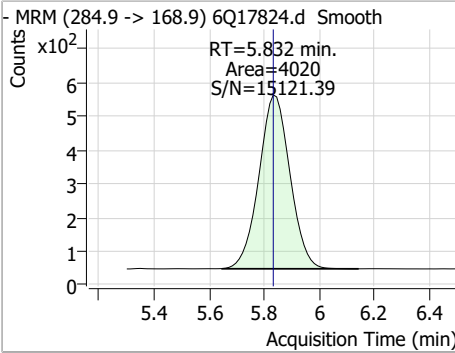
Perfluorinated Compounds by LC/MS/MS



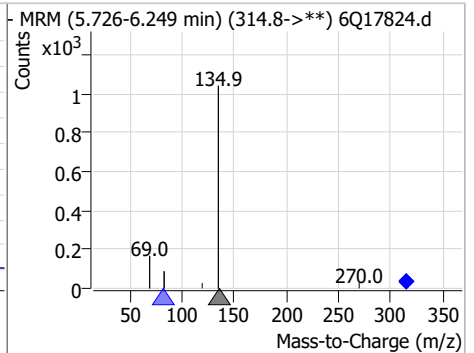
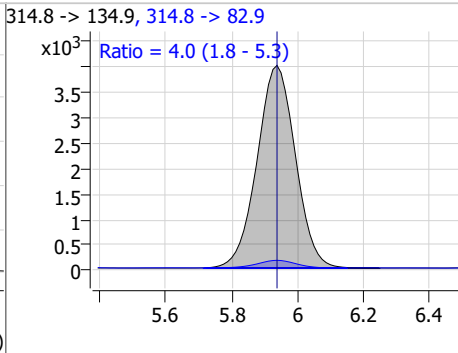
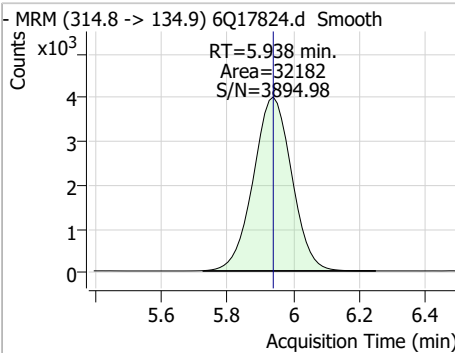
7.3.2
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Perfluorinated Compounds by LC/MS/MS

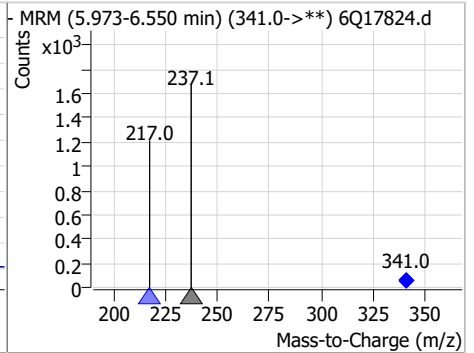
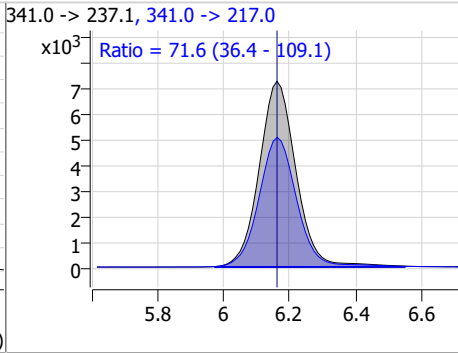
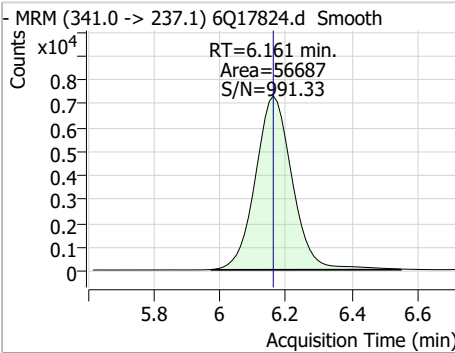
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.42	5.83	0.00	4020	284.9 -> 184.9	13.4	6.9	20.6



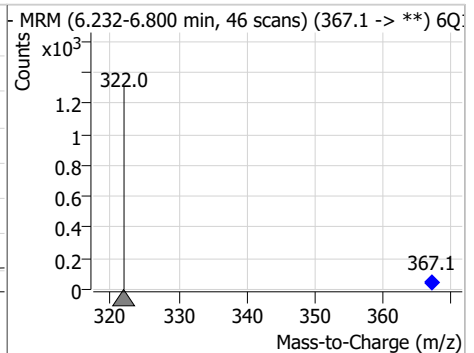
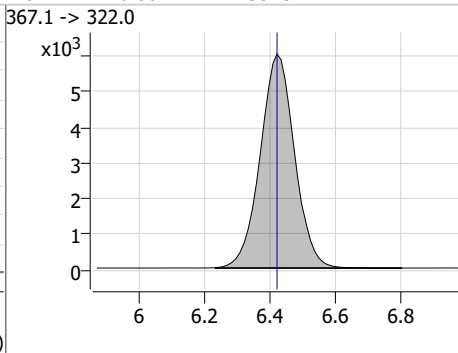
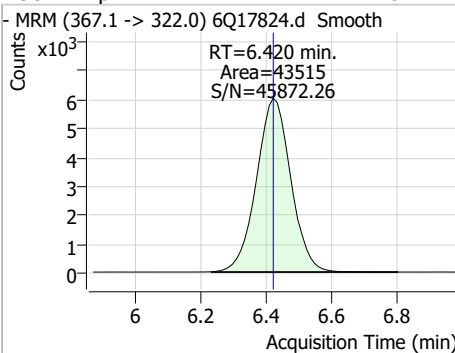
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.12	5.94	0.00	32182	314.8 -> 82.9	4.0	1.8	5.3



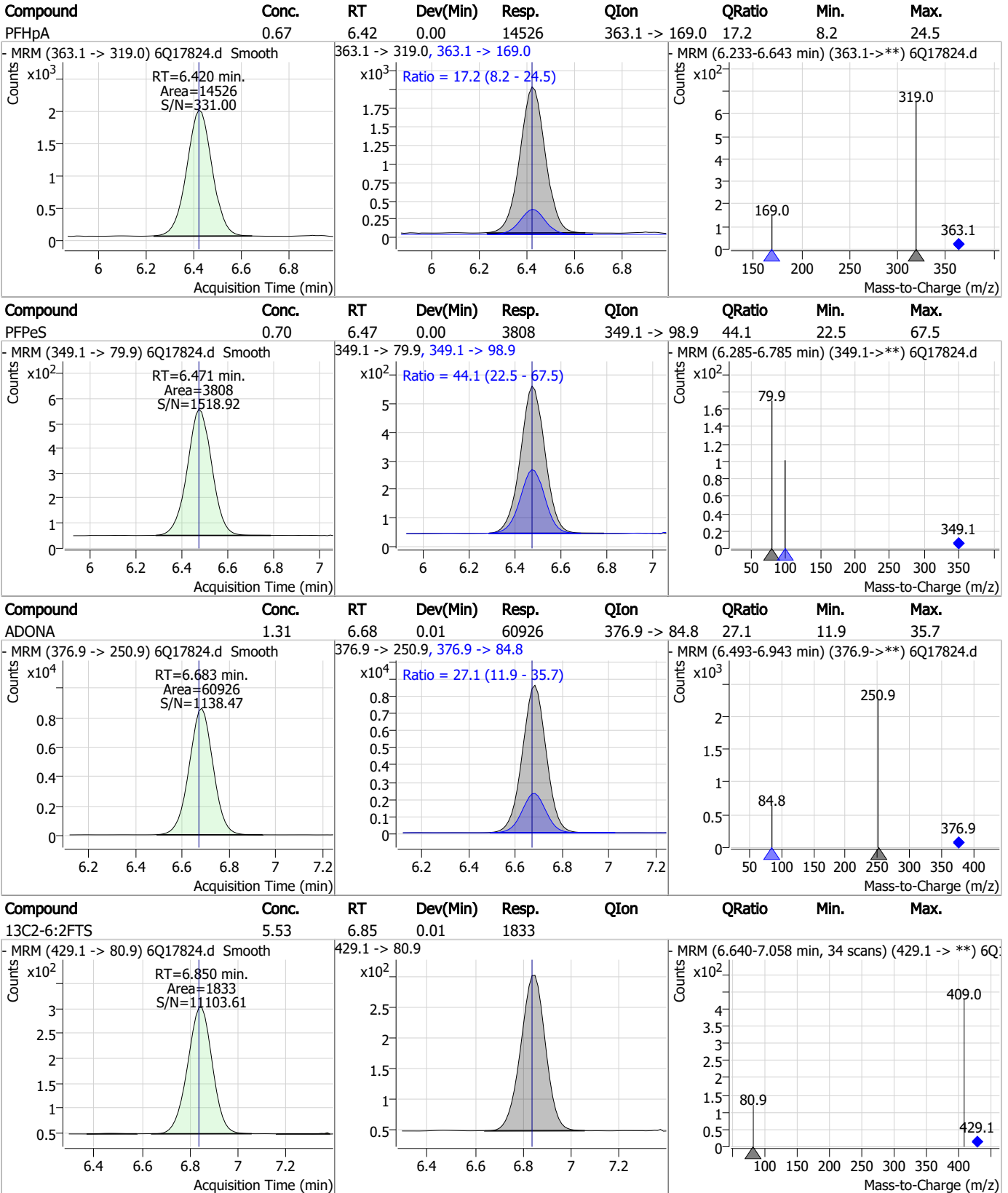
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	15.29	6.16	0.00	56687	341.0 -> 217.0	71.6	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.75	6.42	0.00	43515	367.1 -> 322.0			



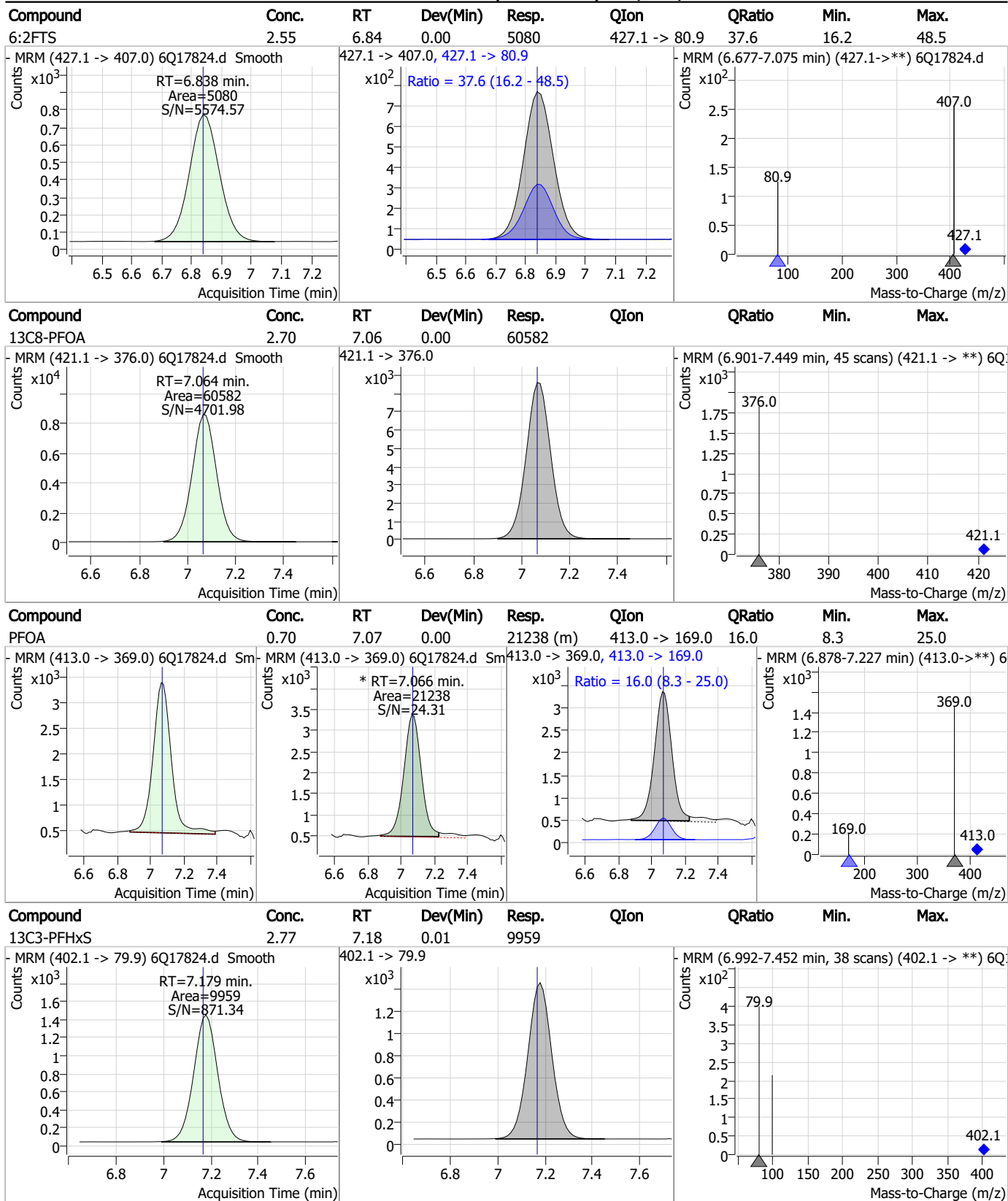
Perfluorinated Compounds by LC/MS/MS



7.3.2

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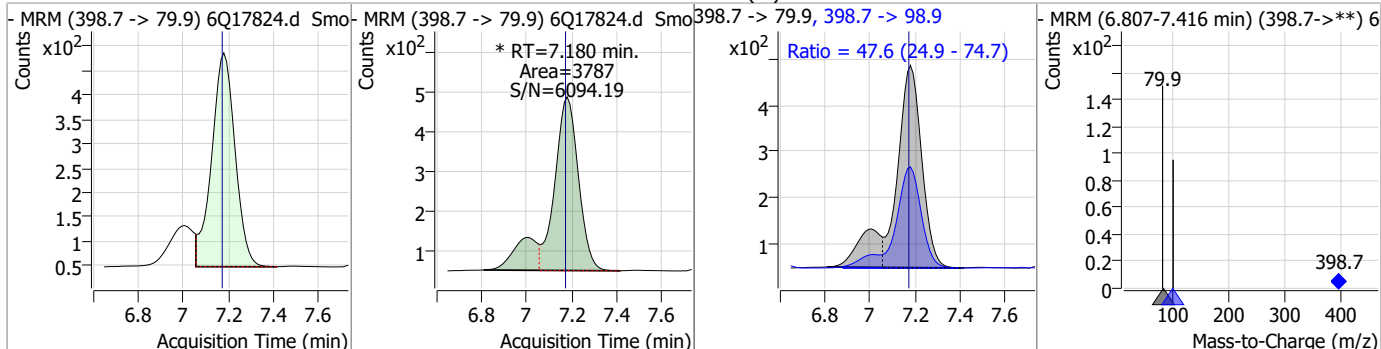
Perfluorinated Compounds by LC/MS/MS



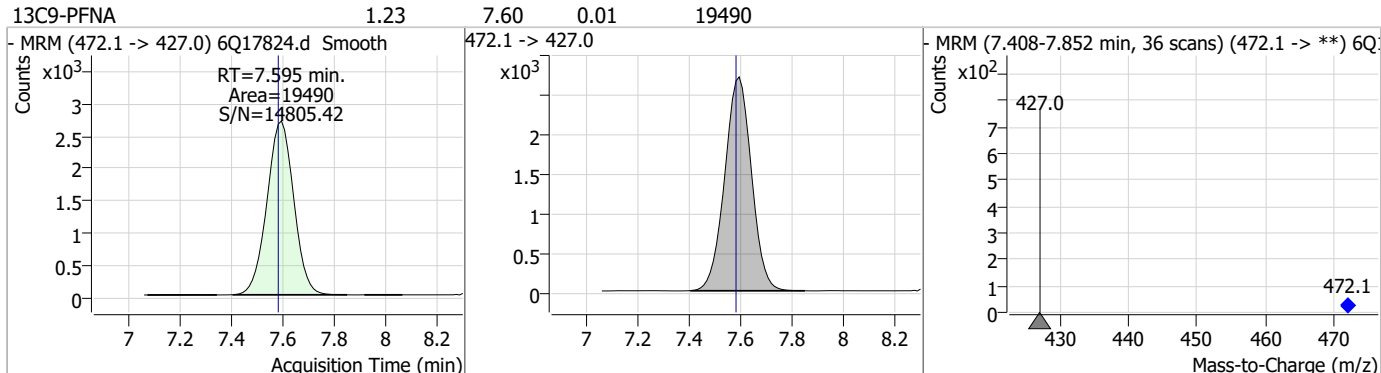
7.3.2
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Perfluorinated Compounds by LC/MS/MS

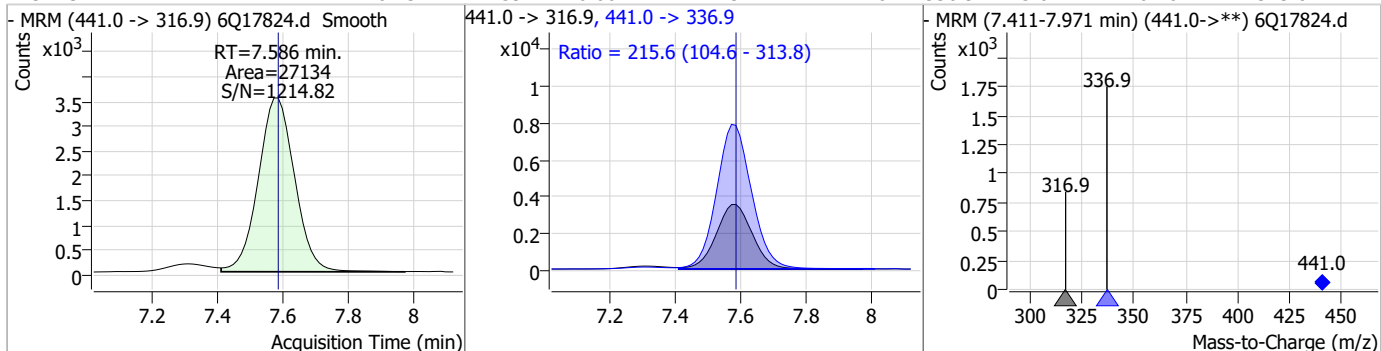
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.69	7.18	0.01	3787 (m)	398.7 -> 98.9	47.6	24.9	74.7



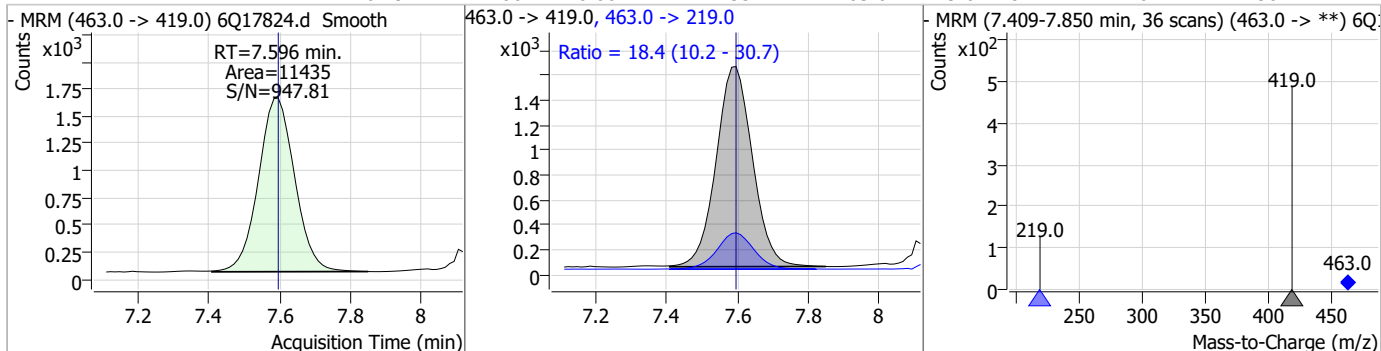
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.60	0.01	19490				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	16.13	7.59	0.00	27134	441.0 -> 336.9	215.6	104.6	313.8

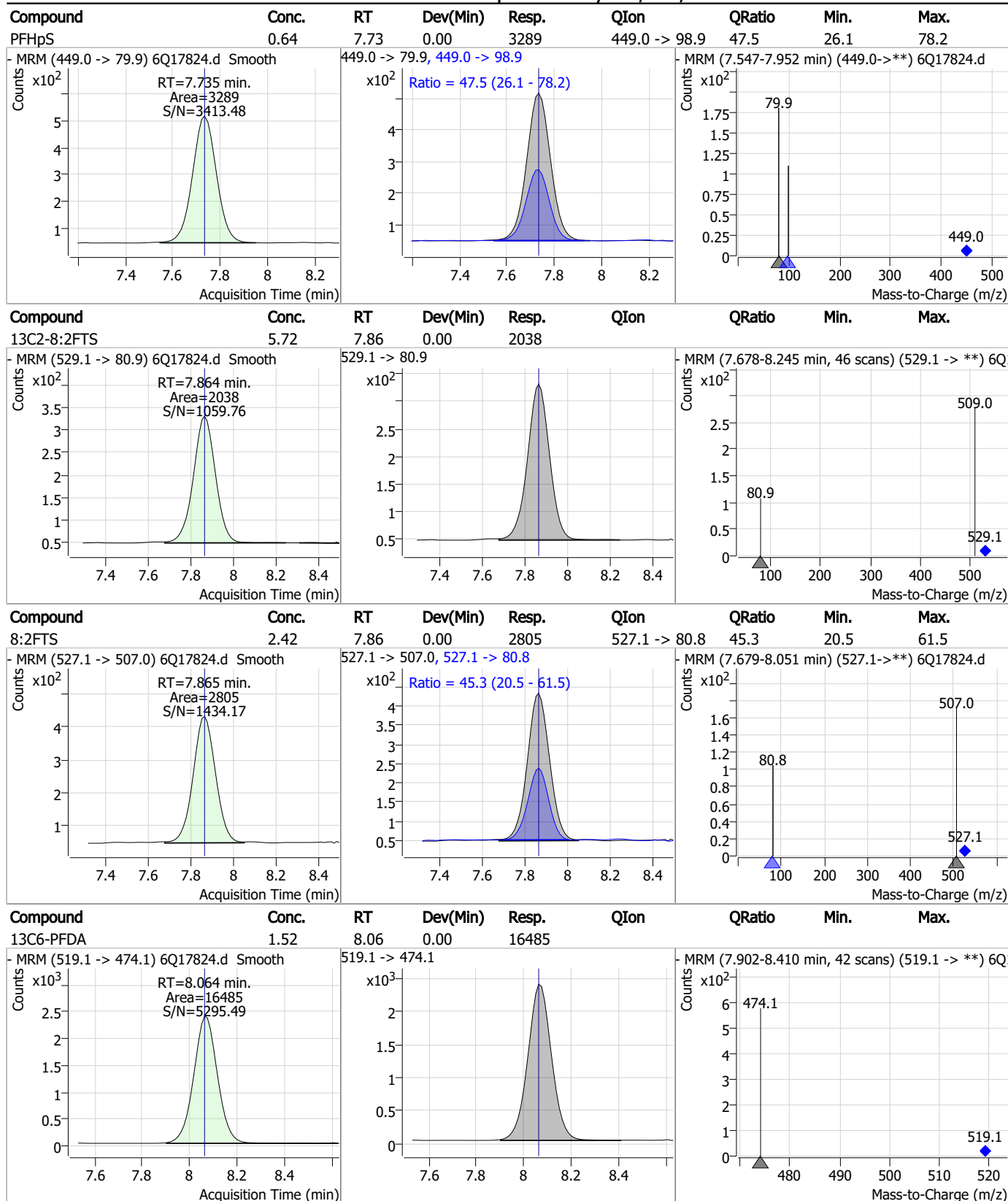


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.79	7.60	0.00	11435	463.0 -> 219.0	18.4	10.2	30.7



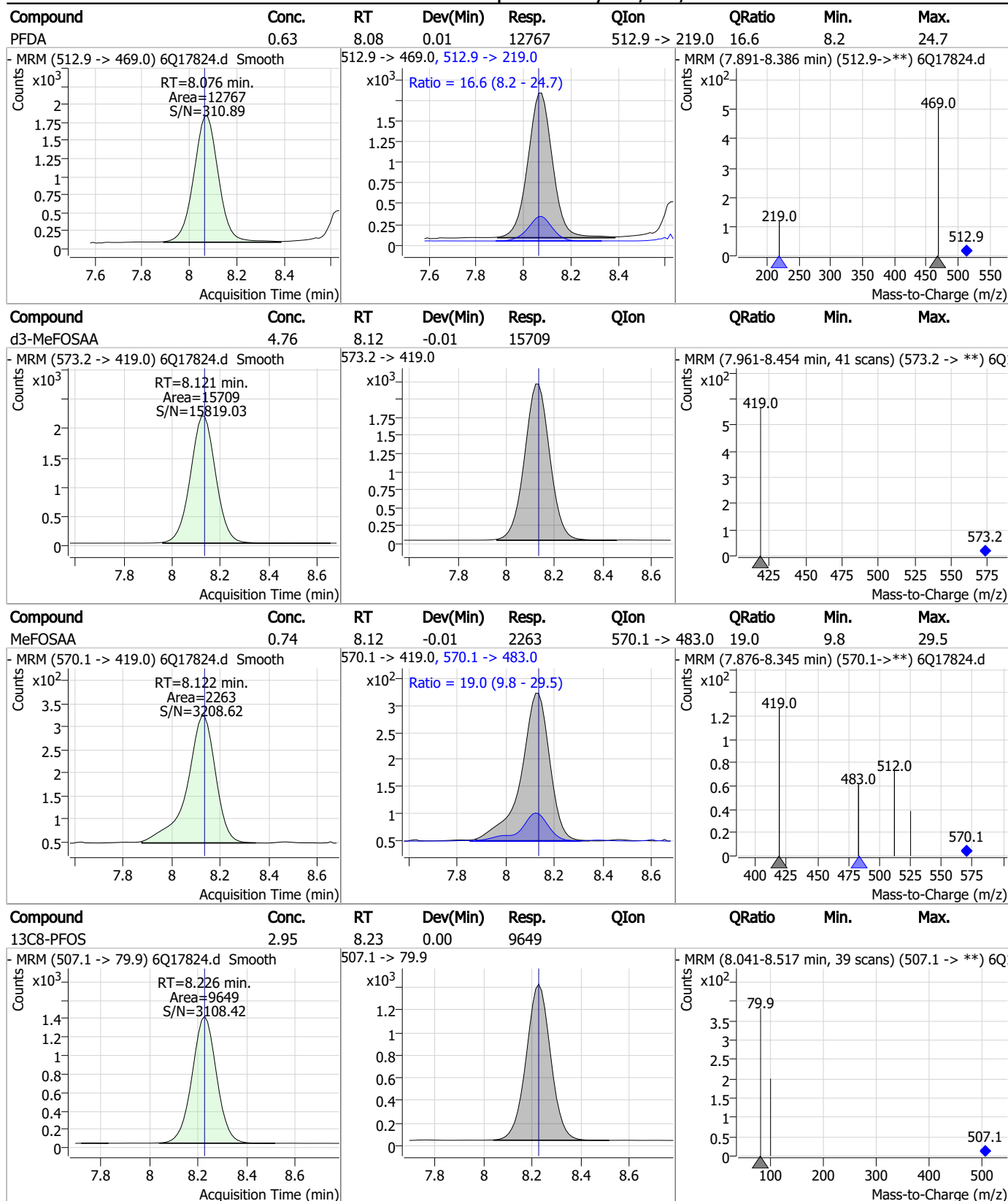
7.3.2
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Perfluorinated Compounds by LC/MS/MS



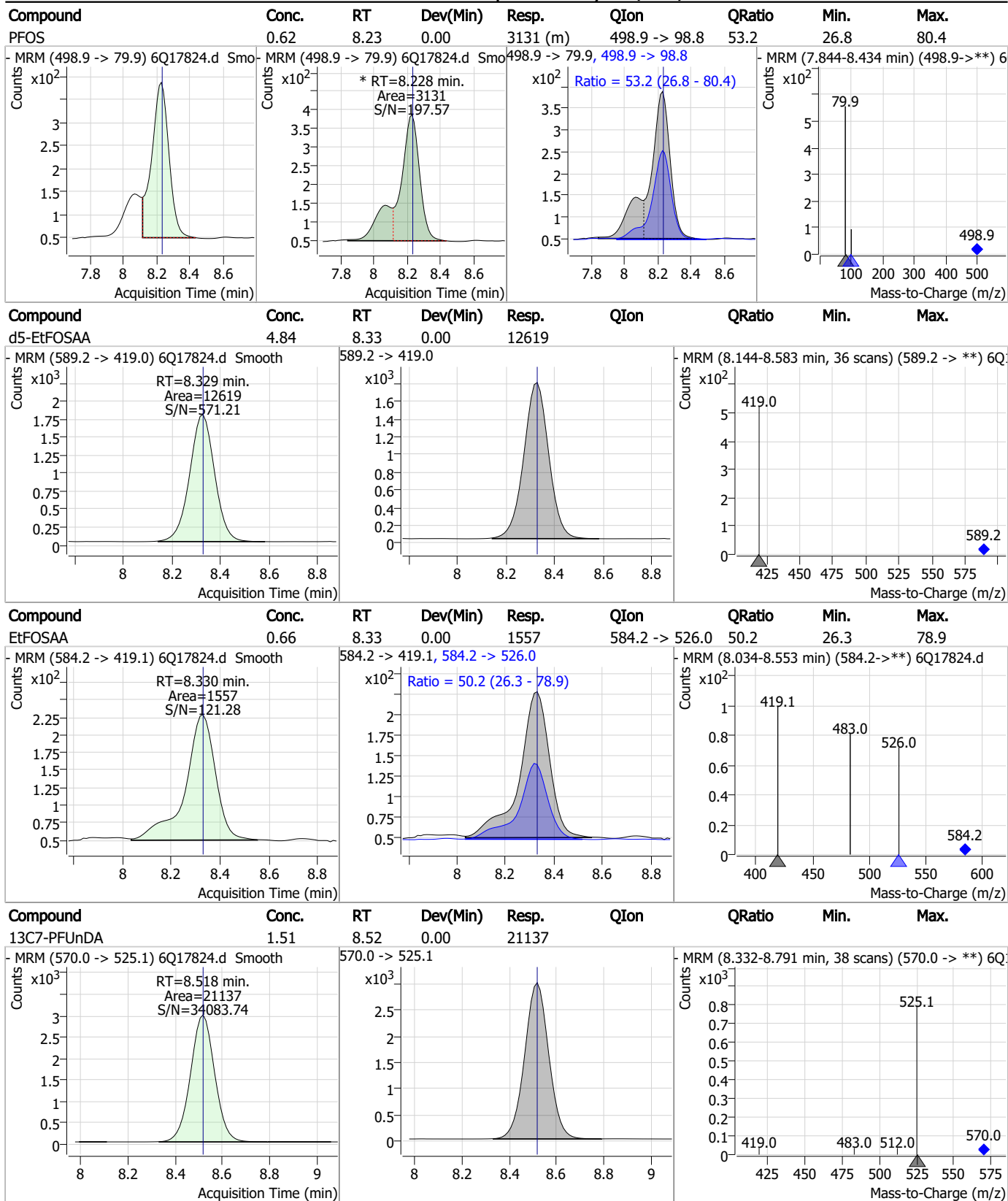
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

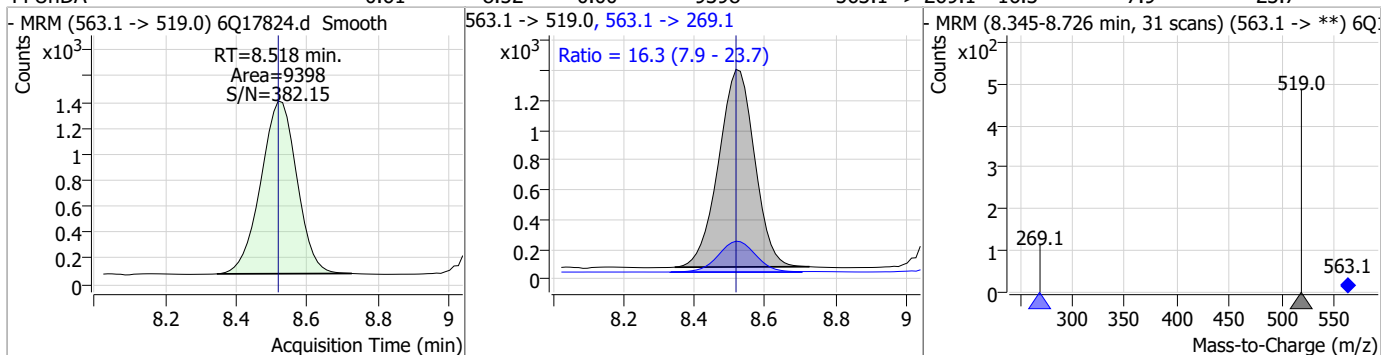
Perfluorinated Compounds by LC/MS/MS



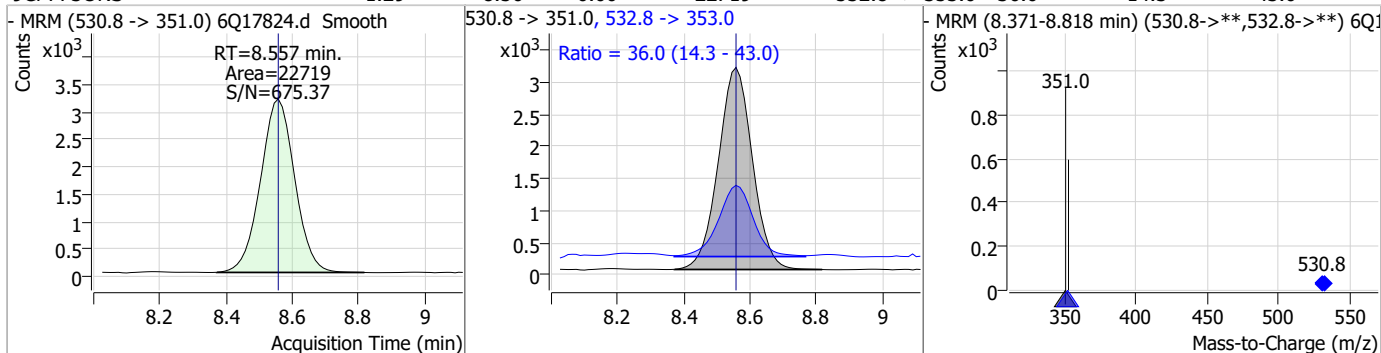
7.3.2
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Perfluorinated Compounds by LC/MS/MS

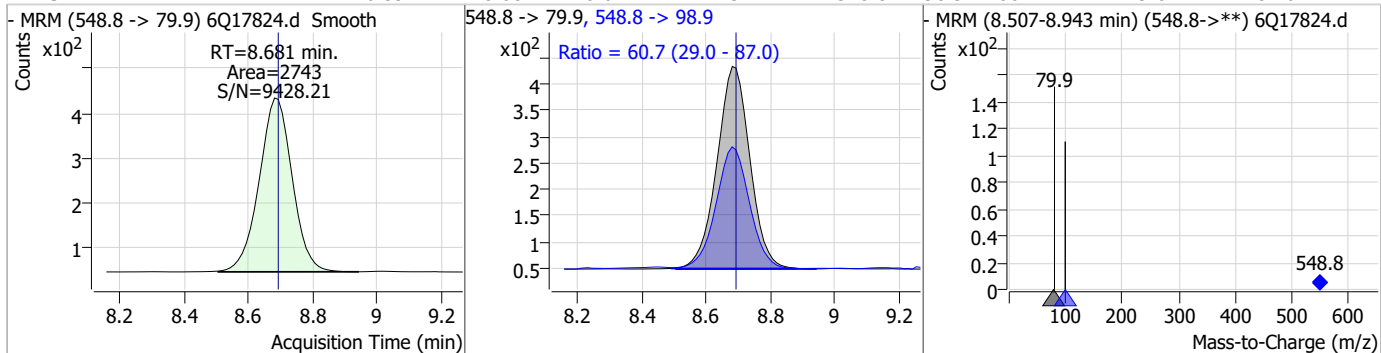
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.61	8.52	0.00	9398	563.1 -> 269.1	16.3	7.9	23.7



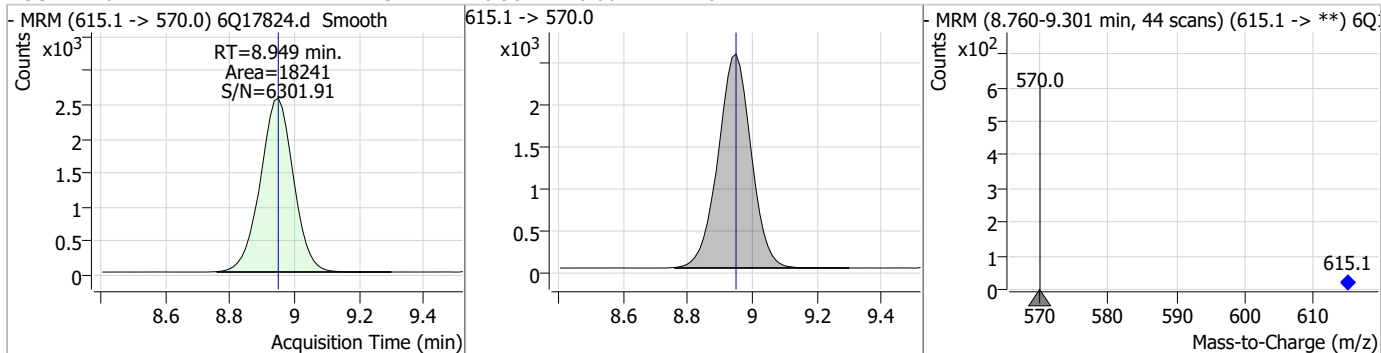
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	1.29	8.56	0.00	22719	532.8 -> 353.0	36.0	14.3	43.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.59	8.68	-0.01	2743	548.8 -> 98.9	60.7	29.0	87.0

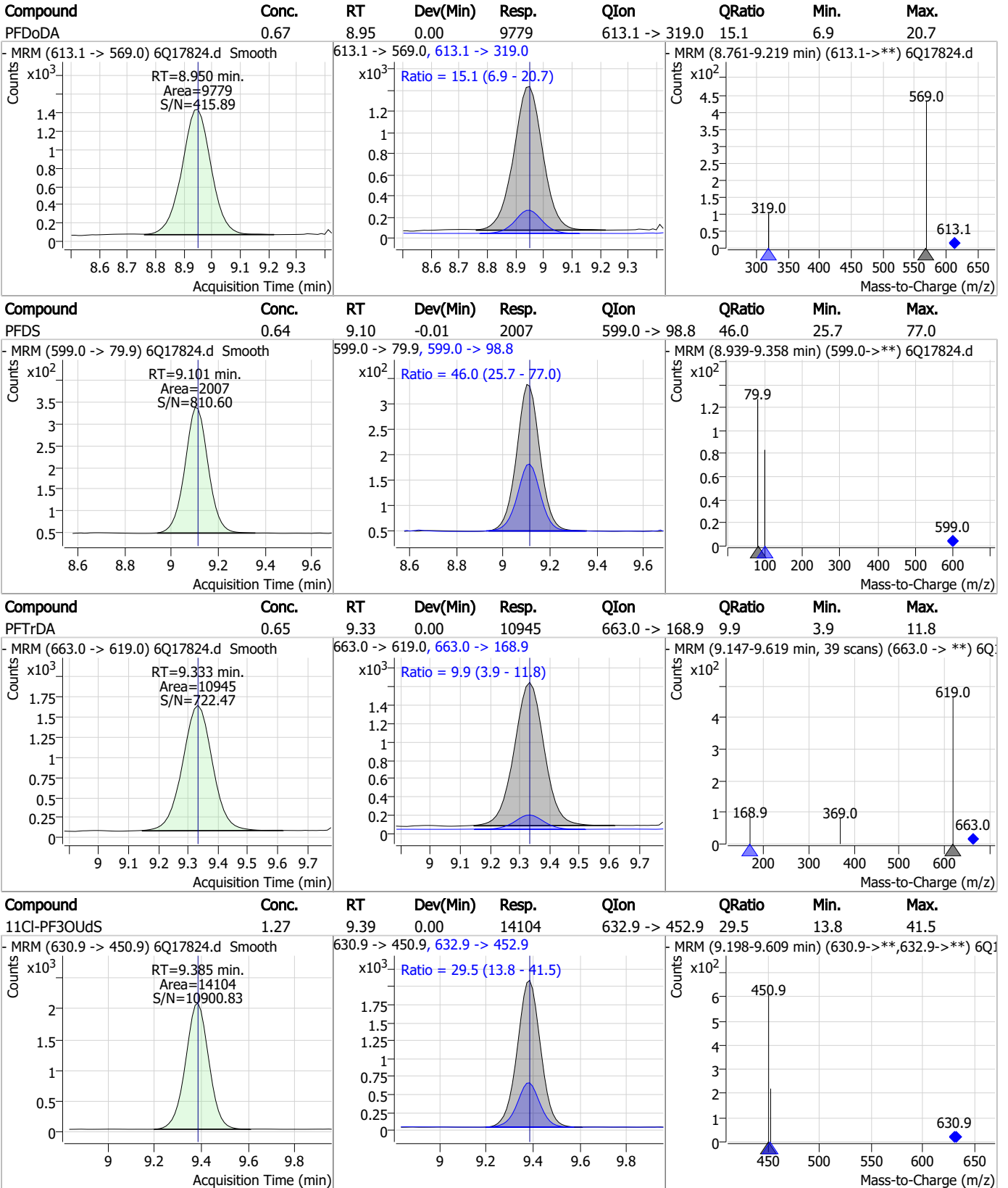


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	8.95	0.00	18241	615.1 -> 570.0			



7.3.2
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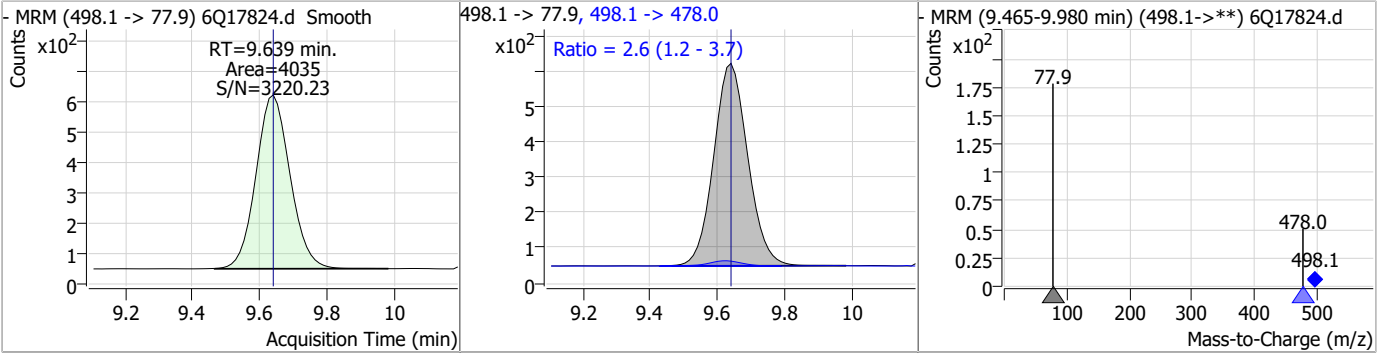
Perfluorinated Compounds by LC/MS/MS



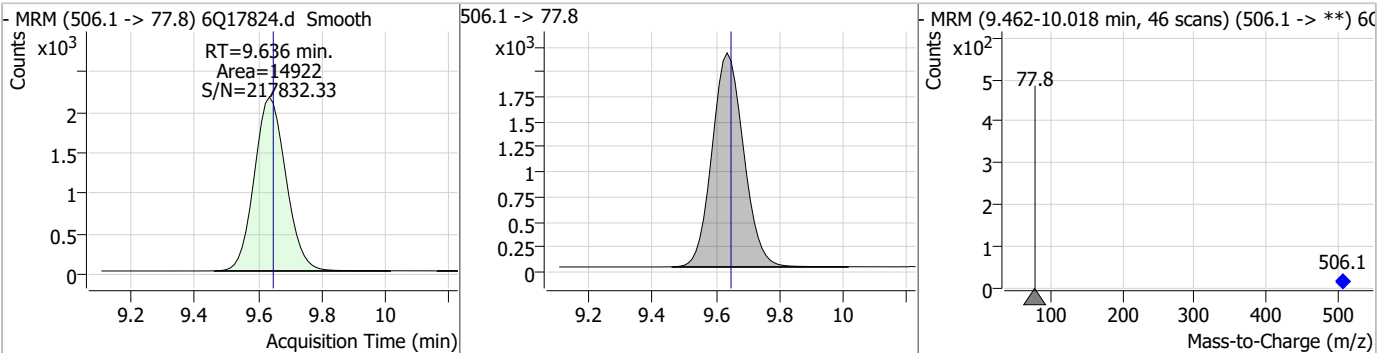
7.3.2
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Perfluorinated Compounds by LC/MS/MS

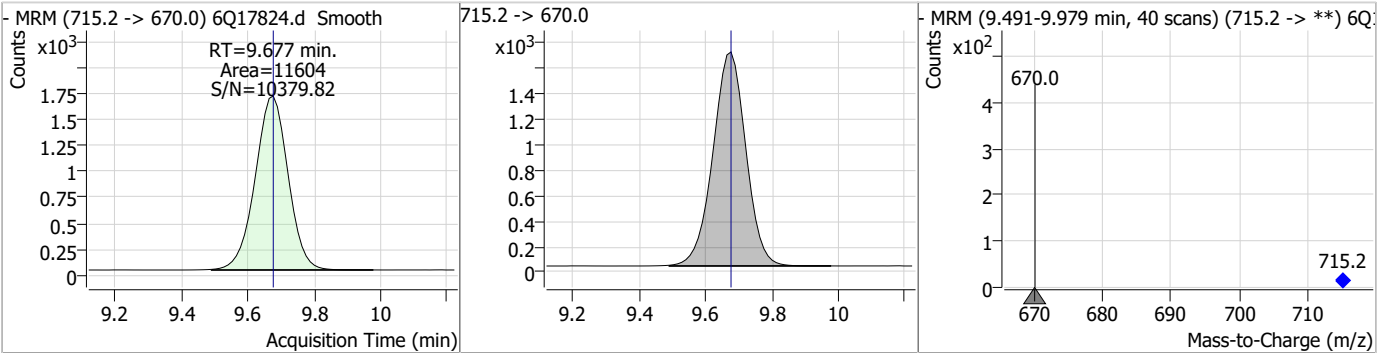
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.72	9.64	0.00	4035	498.1 -> 478.0	2.6	1.2	3.7



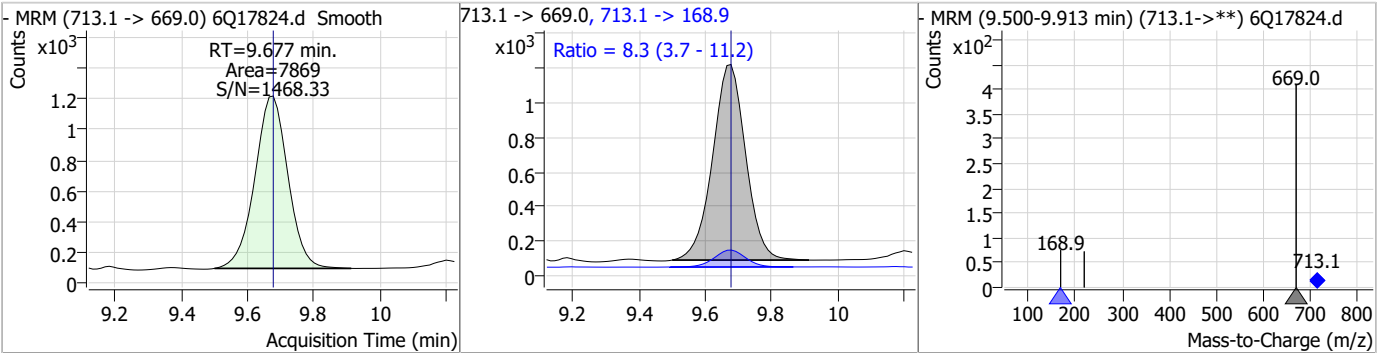
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.14	9.64	-0.01	14922				



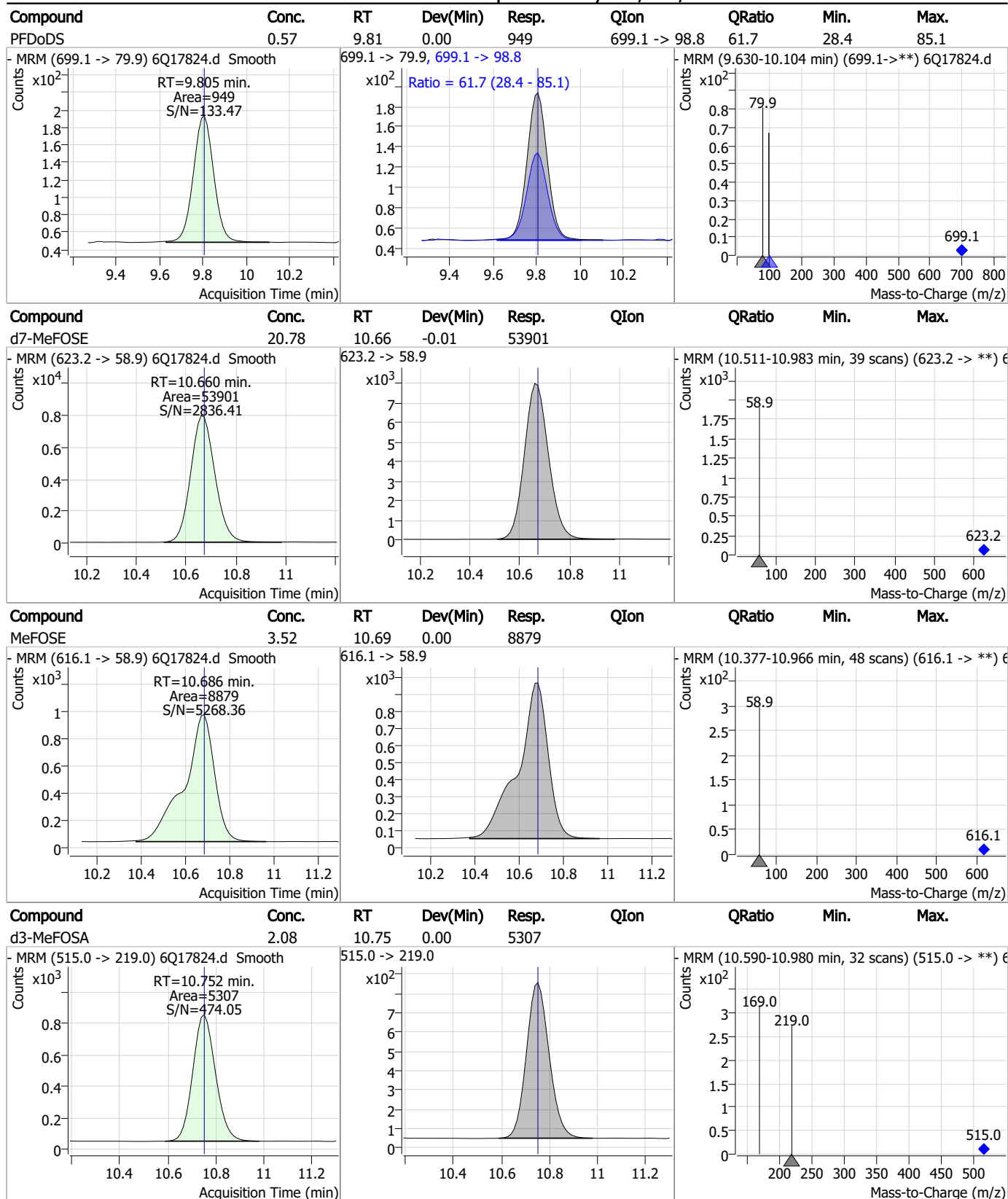
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.68	0.00	11604				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.66	9.68	0.00	7869	713.1 -> 168.9	8.3	3.7	11.2



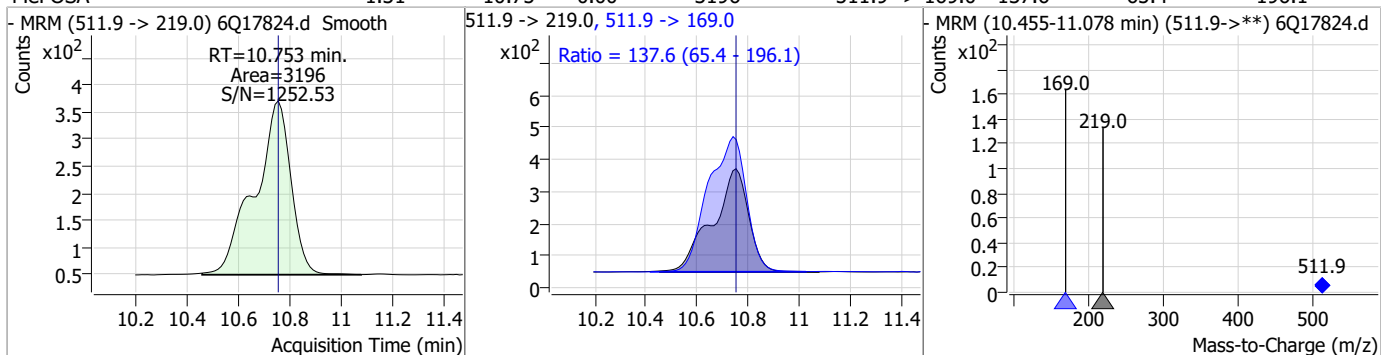
Perfluorinated Compounds by LC/MS/MS



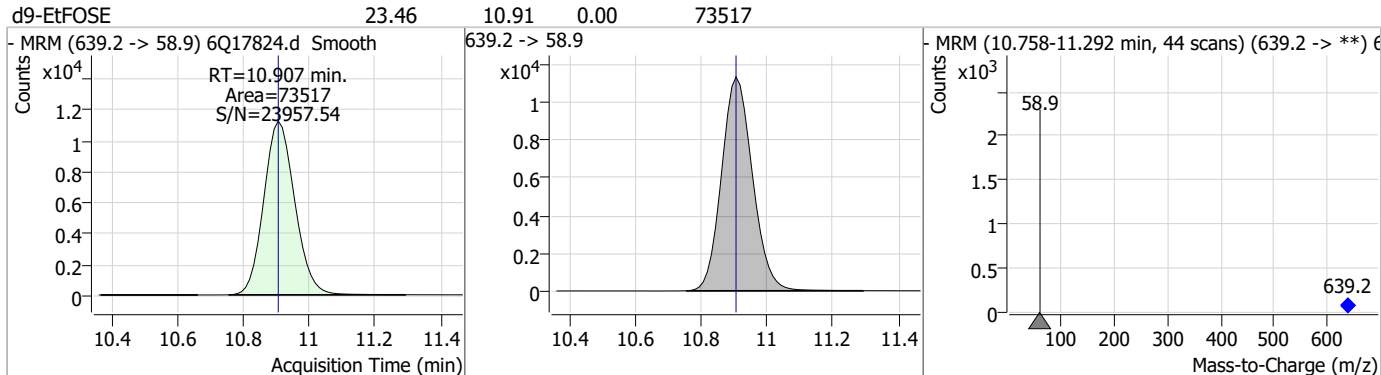
7.3.2
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Perfluorinated Compounds by LC/MS/MS

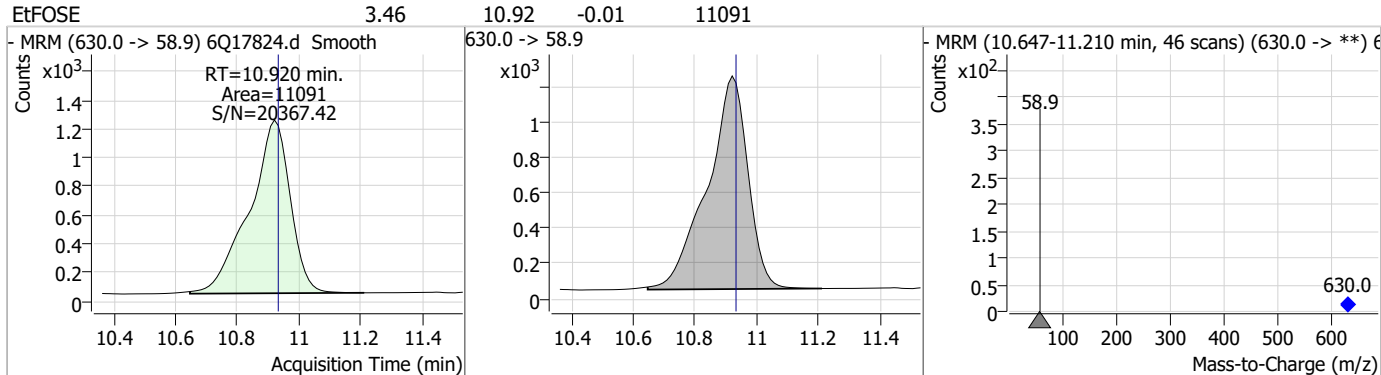
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	1.31	10.75	0.00	3196	511.9 -> 169.0	137.6	65.4	196.1



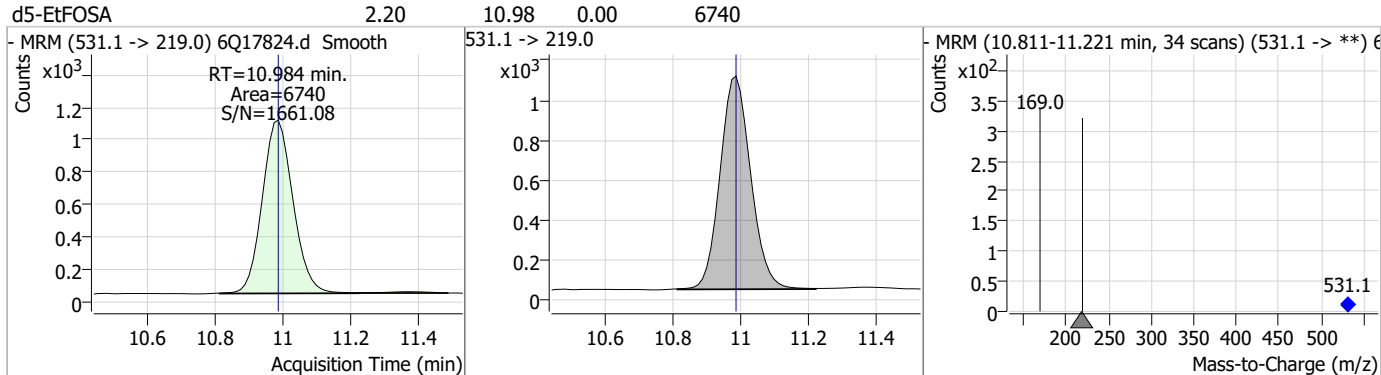
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.46	10.91	0.00	73517				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	3.46	10.92	-0.01	11091				

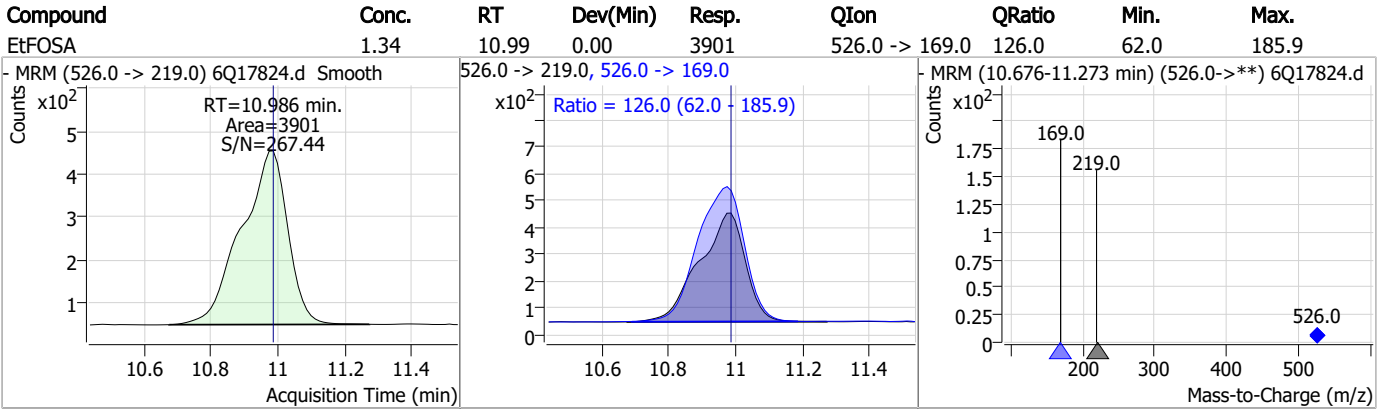


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.20	10.98	0.00	6740				



7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Manual Integration Approval Summary

Sample Number: OP96871-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q17824.D Analyst approved: 05/16/23 13:36 Martha Valls
Injection Time: 05/16/23 00:07 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.07	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17836.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 3:01:09 AM
 Sample Name : op96871-ms
 Vial : P5-E2
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	78297	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	42609	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	50963	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	42335	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	58364	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	17987	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	13562	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	16254	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	14750	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	9987	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	15876	2.50 µg/L	-0.012
M3-PFBS	5.384	302.1 -> 79.9	16921	2.50 µg/L	-0.013
M3-PFHxS	7.167	402.1 -> 79.9	9716	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	7463	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1385	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1590	5.00 µg/L	0.000
M2-8:2FTS	7.852	529.1 -> 80.9	1539	5.00 µg/L	-0.012
M3-MeFOSAA	8.121	573.2 -> 419.0	13654	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	28688	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	10778	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	56788	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	71198	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	6067	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	5321	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10674	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	51225	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	6570	2.50 µg/L	0.000
13C4-PFOA	7.065	417.1 -> 372.0	60615	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	15732	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	19497	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	37725	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1385	5.53 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1590	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-8:2FTS	7.852	529.1 -> 80.9	1539	4.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.7%		
13C2-PFDoDA	8.949	615.1 -> 570.0	14750	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	9987	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.6%		
13C3-PFBS	5.384	302.1 -> 79.9	16921	2.96 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.3%		
13C3-PFHxS	7.167	402.1 -> 79.9	9716	2.78 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C4-PFBA	2.901	216.8 -> 171.9	78297	6.44 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.4%	
13C4-PFHpA	6.420	367.1 -> 322.0	42335	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C5-PFHxA	5.466	318.0 -> 273.0	50963	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C5-PFPeA	4.272	268.3 -> 223.0	42609	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C6-PFDA	8.064	519.1 -> 474.1	13562	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C7-PFUnDA	8.518	570.0 -> 525.1	16254	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-FOSA	9.636	506.1 -> 77.8	15876	2.24 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.7%	
13C8-PFOA	7.064	421.1 -> 376.0	58364	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C8-PFOS	8.226	507.1 -> 79.9	7463	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.9%	
13C9-PFNA	7.583	472.1 -> 427.0	17987	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
d3-MeFOSAA	8.121	573.2 -> 419.0	13654	4.08 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	28688	10.39 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSA	10.752	515.0 -> 219.0	5321	2.06 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.5%	
d5-EtFOSAA	8.329	589.2 -> 419.0	10778	4.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 81.5%	
d7-MeFOSE	10.660	623.2 -> 58.9	56788	21.60 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	71198	22.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.6%	
d5-EtFOSA	10.984	531.1 -> 219.0	6067	1.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.9%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	19189	9.21 µg/L	97
		327.1 -> 80.9	7537		
6:2FTS	6.838	427.1 -> 407.0	17844	10.31 µg/L	98
		427.1 -> 80.9	5963		
8:2FTS	7.852	527.1 -> 507.0	8992	10.28 µg/L	100
		527.1 -> 80.8	3669		
EtFOSAA	8.330	584.2 -> 419.1	4737	2.36 µg/L	94
		584.2 -> 526.0	2295		
FOSA	9.639	498.1 -> 77.9	14772	2.49 µg/L	100
		498.1 -> 478.0	389		
MeFOSAA	8.122	570.1 -> 419.0	6482	2.45 µg/L	100
		570.1 -> 483.0	1286		
PFBA	2.907	212.8 -> 168.9	27176	9.68 µg/L	100
PFBS	5.385	298.7 -> 79.9	17610	2.13 µg/L	99
		298.7 -> 98.8	6571		
PFDA	8.064	512.9 -> 469.0	39519	2.35 µg/L	99
		512.9 -> 219.0	6275		
PFDODA	8.950	613.1 -> 569.0	26823	2.28 µg/L	98
		613.1 -> 319.0	3900		
PFDS	9.101	599.0 -> 79.9	5457	2.25 µg/L	93

7.4.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2531			
PFHpA	6.420	363.1 -> 319.0	50612	2.39	µg/L	100
		363.1 -> 169.0	8181			
PFHpS	7.723	449.0 -> 79.9	9456	2.37	µg/L	94
		449.0 -> 98.9	4518			
PFHxA	5.469	313.0 -> 269.0	52517	2.60	µg/L	98
		313.0 -> 118.9	2109			
PFHxS	7.168	398.7 -> 79.9	12560	2.34	µg/L	m 92
		398.7 -> 98.9	5591			
PFNA	7.584	463.0 -> 419.0	33097	2.48	µg/L	99
		463.0 -> 219.0	6978			
PFNS	8.681	548.8 -> 79.9	8669	2.40	µg/L	89
		548.8 -> 98.9	4331			
PFOA	7.066	413.0 -> 369.0	70385	2.42	µg/L	100
		413.0 -> 169.0	11689			
PFOS	8.215	498.9 -> 79.9	9251	2.36	µg/L	m 99
		498.9 -> 98.8	4877			
PFPeA	4.274	263.0 -> 219.0	63337	5.15	µg/L	100
PFPeS	6.471	349.1 -> 79.9	12780	2.40	µg/L	99
		349.1 -> 98.9	5875			
PFTeDA	9.677	713.1 -> 669.0	25650	2.51	µg/L	99
		713.1 -> 168.9	2053			
PFTrDA	9.333	663.0 -> 619.0	34021	2.50	µg/L	99
		663.0 -> 168.9	2717			
PFUnDA	8.518	563.1 -> 519.0	27783	2.35	µg/L	97
		563.1 -> 269.1	4752			
11CI-PF3OUdS	9.385	630.9 -> 450.9	38932	3.59	µg/L	91
		632.9 -> 452.9	12708			
9CI-PF3ONS	8.557	530.8 -> 351.0	67014	3.87	µg/L	93
		532.8 -> 353.0	21752			
ADONA	6.671	376.9 -> 250.9	210842	4.62	µg/L	90
		376.9 -> 84.8	60409			
HFPO-DA	5.832	284.9 -> 168.9	13986	5.04	µg/L	97
		284.9 -> 184.9	1760			
3:3FTCA	3.790	241.0 -> 177.0	6089	7.99	µg/L	99
		241.0 -> 117.0	795			
5:3FTCA	6.161	341.0 -> 237.1	186910	53.44	µg/L	100
		341.0 -> 217.0	136007			
7:3FTCA	7.573	441.0 -> 316.9	88619	55.85	µg/L	96
		441.0 -> 336.9	180508			
EtFOSA	10.986	526.0 -> 219.0	12873	4.90	µg/L	93
		526.0 -> 169.0	16975			
EtFOSE	10.920	630.0 -> 58.9	37270	12.01	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	11680	4.77	µg/L	96
		511.9 -> 169.0	15771			
MeFOSE	10.673	616.1 -> 58.9	29743	11.20	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	2941	2.30	µg/L	98
		699.1 -> 98.8	1624			
NFDHA	5.348	295.0 -> 201.0	10313	4.63	µg/L	97
		295.0 -> 84.9	2683			
PFMBA	4.675	279.0 -> 85.1	43144	4.91	µg/L	100
PFMPA	3.426	229.0 -> 84.9	29015	4.59	µg/L	100
PFEESA	5.926	314.8 -> 134.9	108051	3.99	µg/L	99
		314.8 -> 82.9	4127			

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

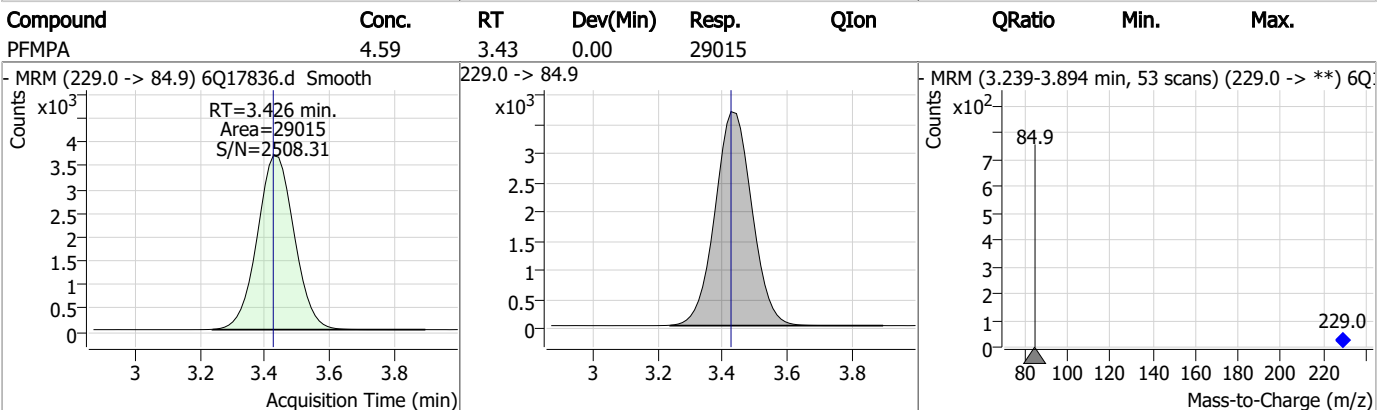
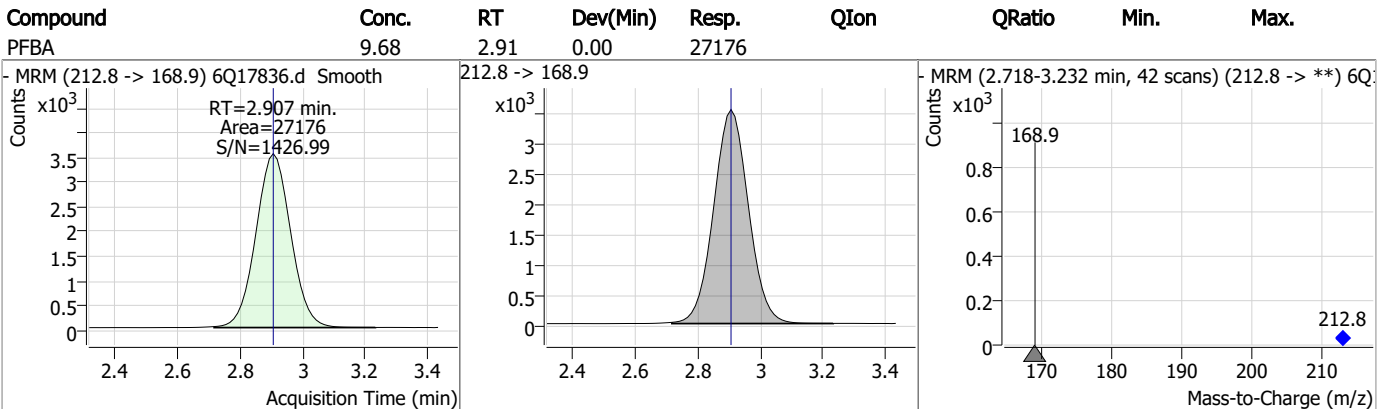
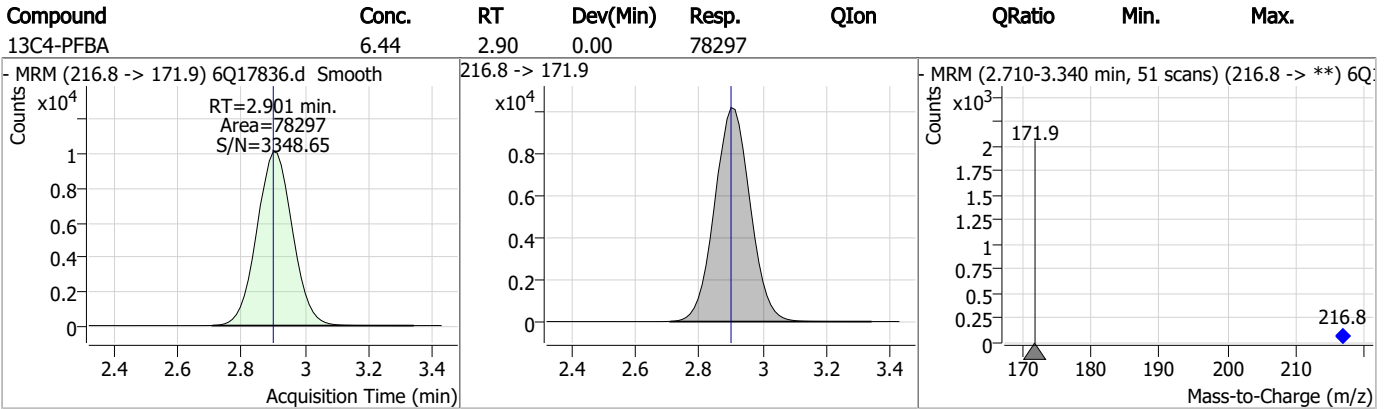
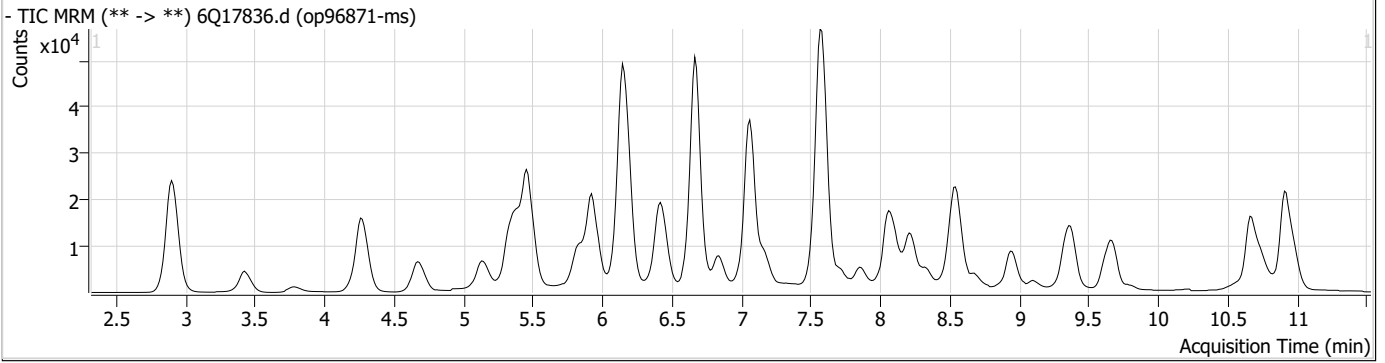
Perfluorinated Compounds by LC/MS/MS

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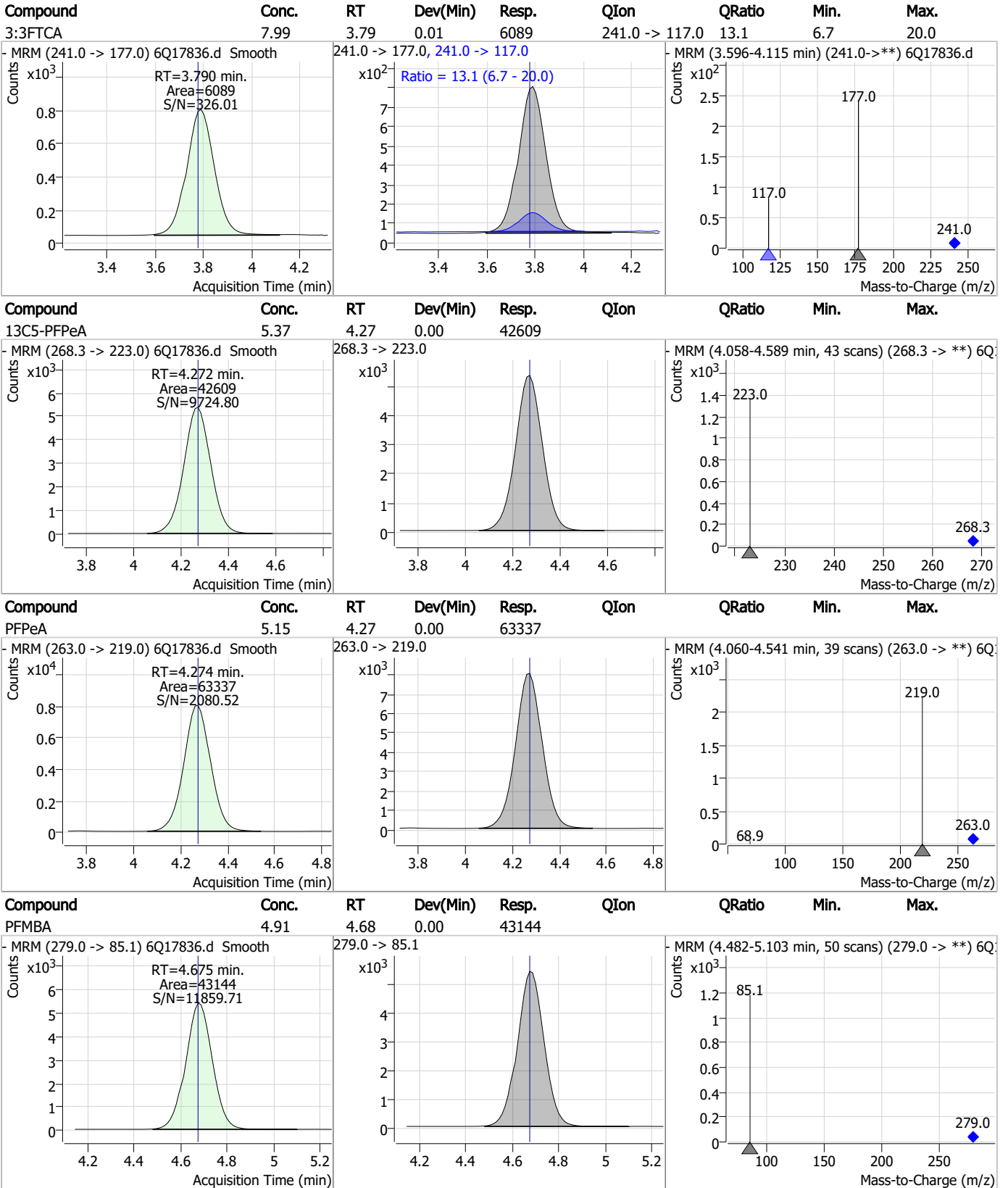
7.4.1

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Perfluorinated Compounds by LC/MS/MS



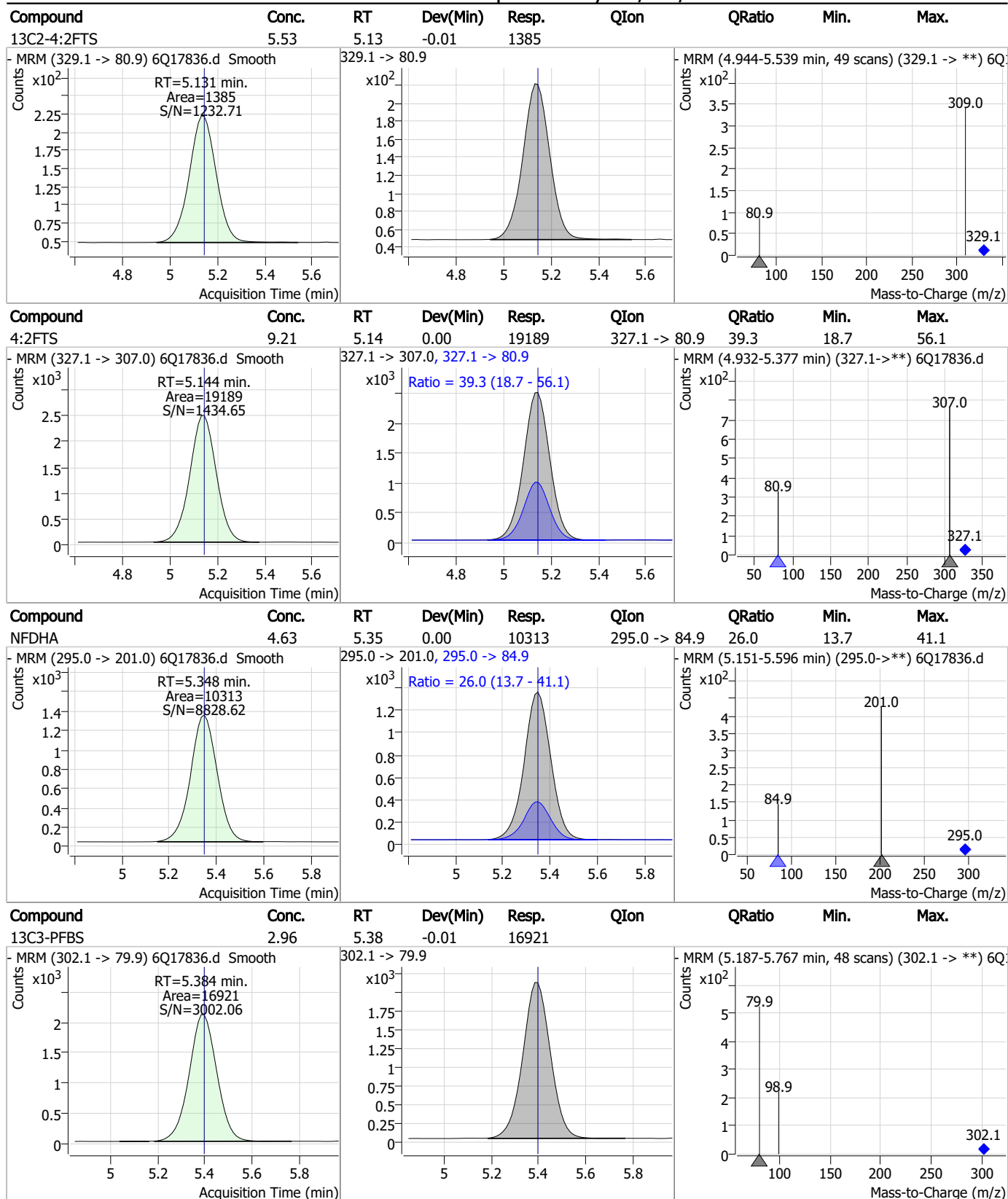
Perfluorinated Compounds by LC/MS/MS



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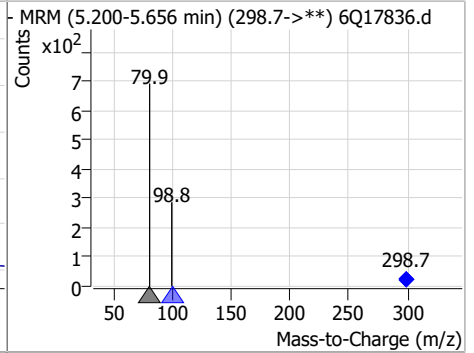
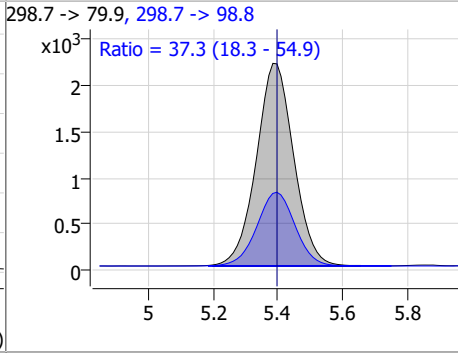
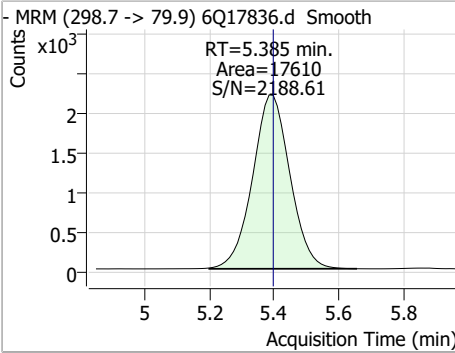
Perfluorinated Compounds by LC/MS/MS



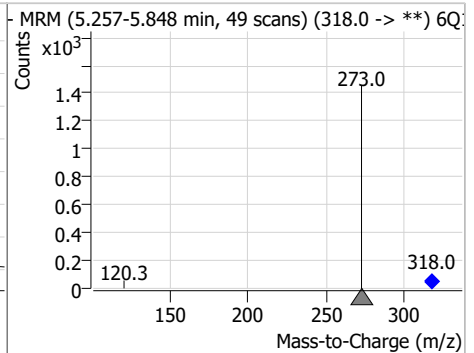
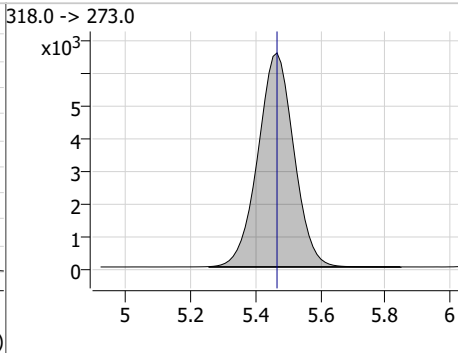
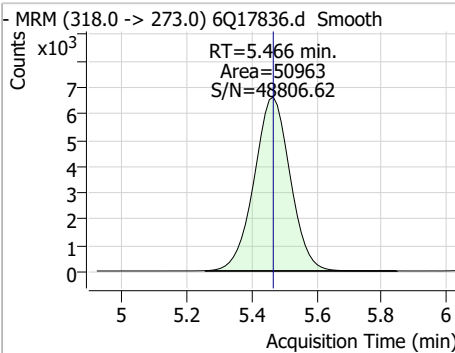
7.4.1
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Perfluorinated Compounds by LC/MS/MS

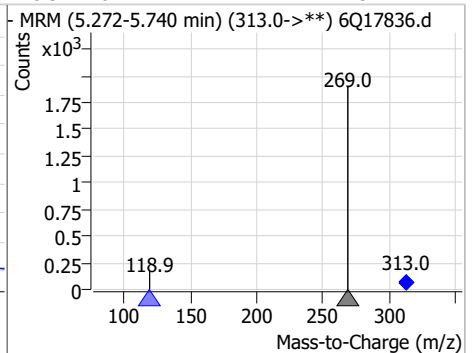
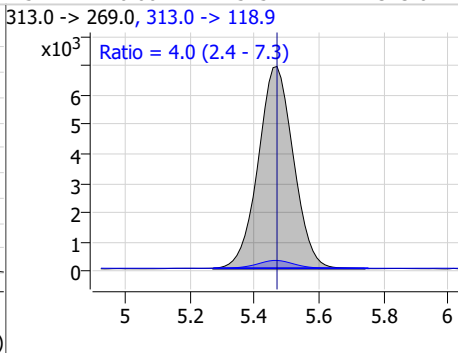
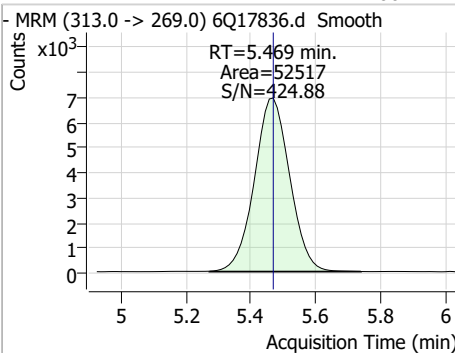
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.13	5.38	-0.01	17610	298.7 -> 98.8	37.3	18.3	54.9



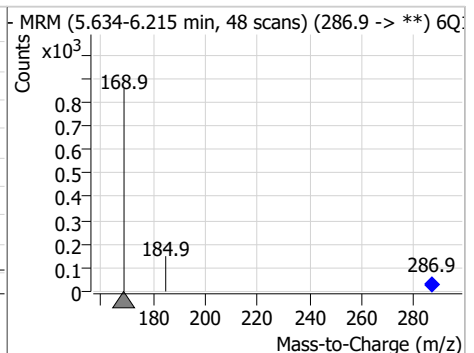
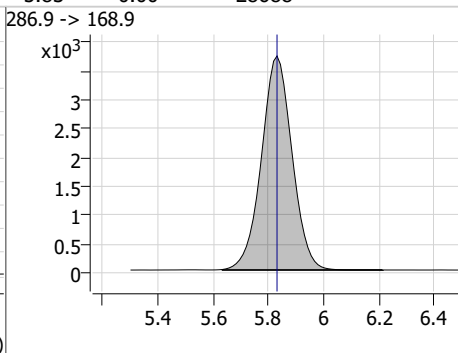
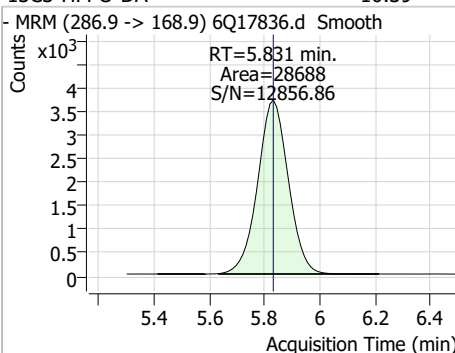
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.86	5.47	0.00	50963	318.0 -> 273.0	4.0	2.4	7.3



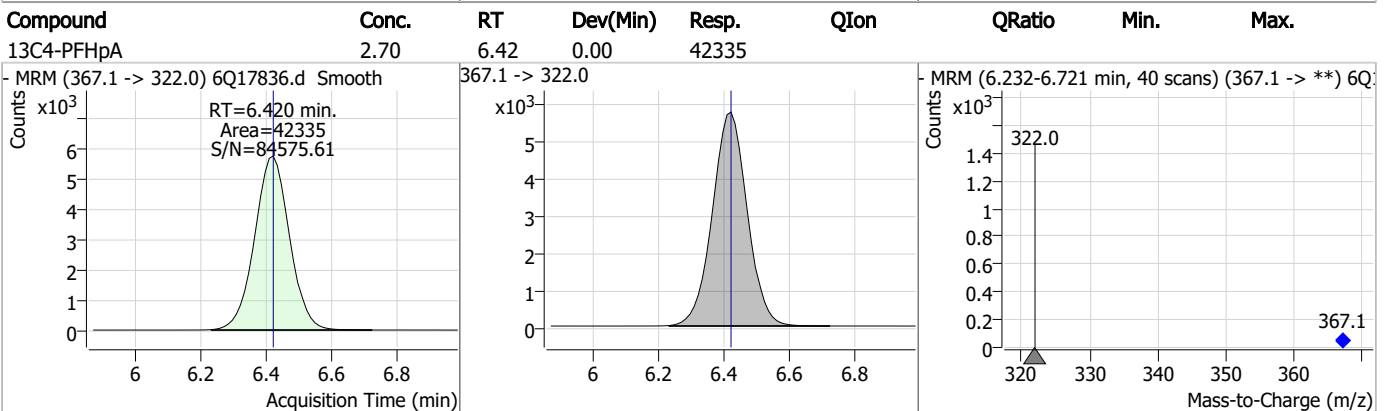
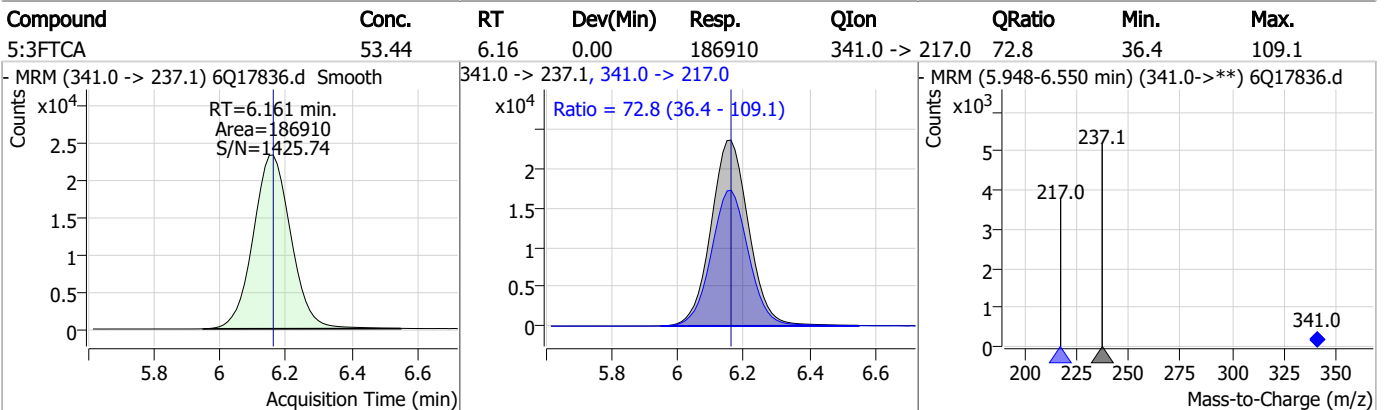
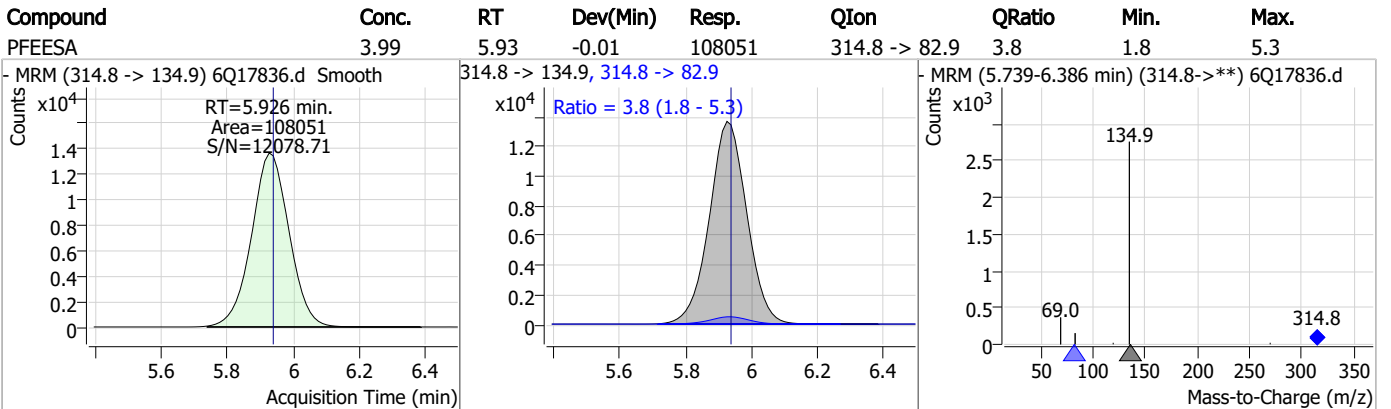
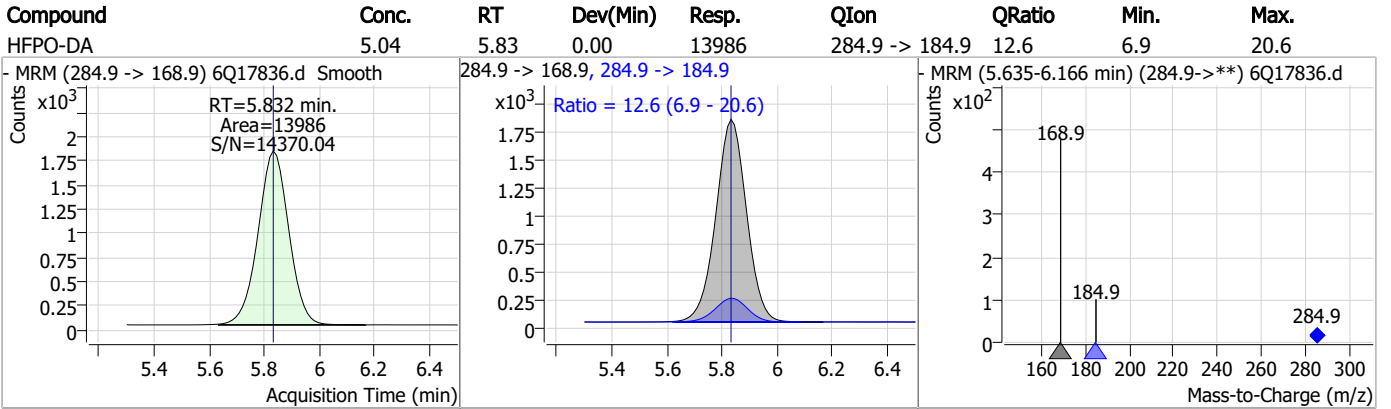
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.60	5.47	0.00	52517	313.0 -> 118.9	4.0	2.4	7.3



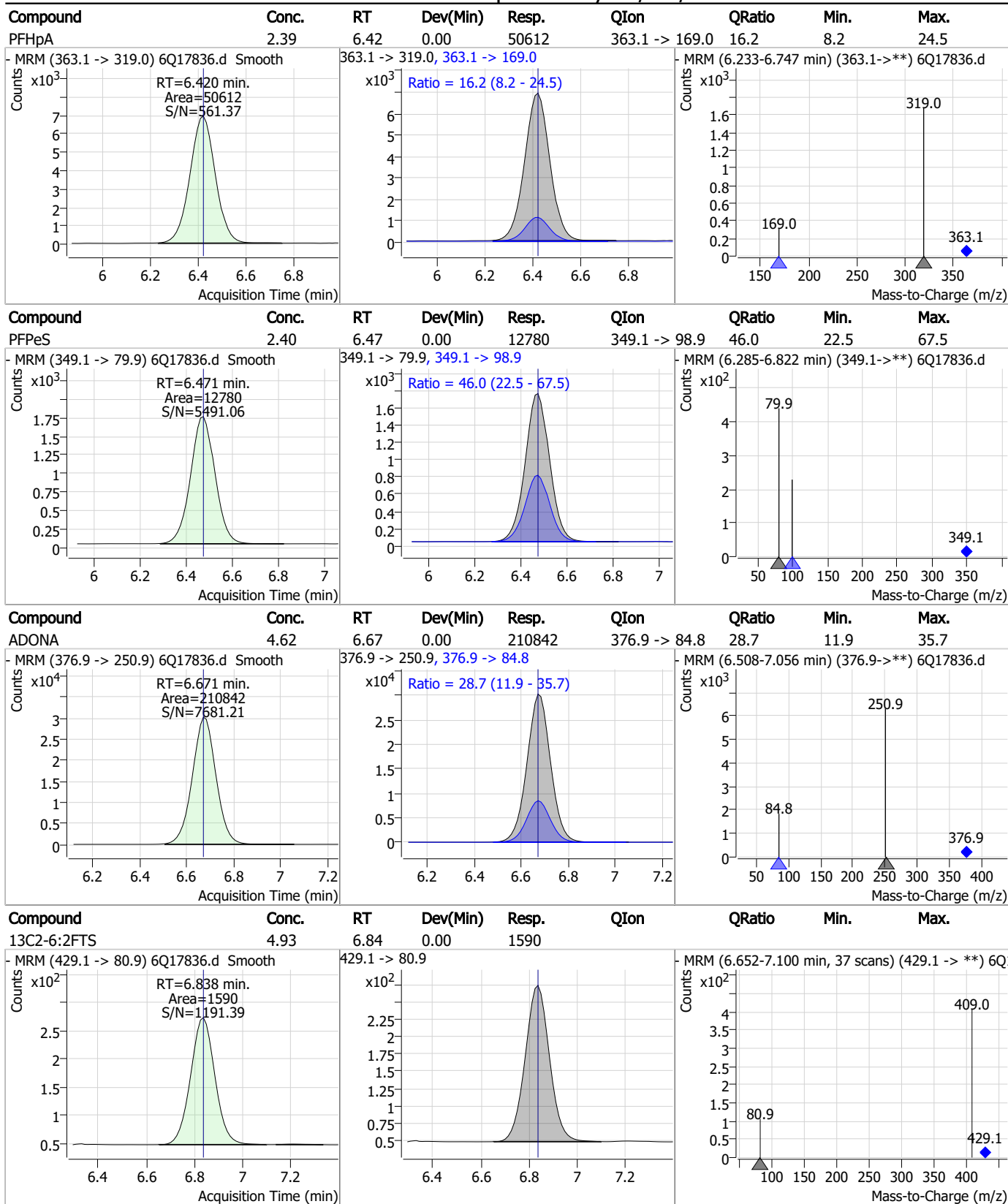
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.39	5.83	0.00	28688	286.9 -> 168.9	4.0	2.4	7.3



Perfluorinated Compounds by LC/MS/MS

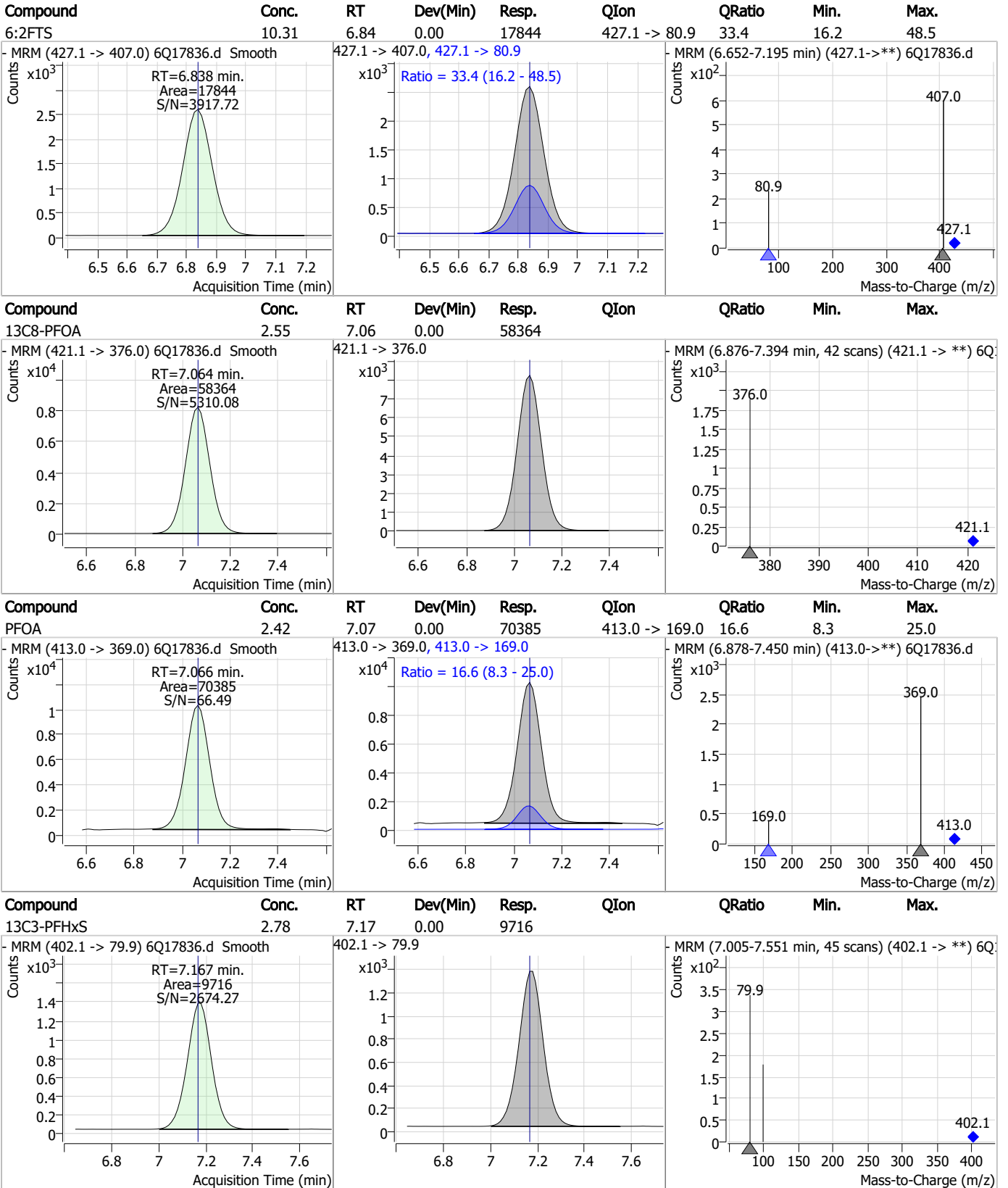


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

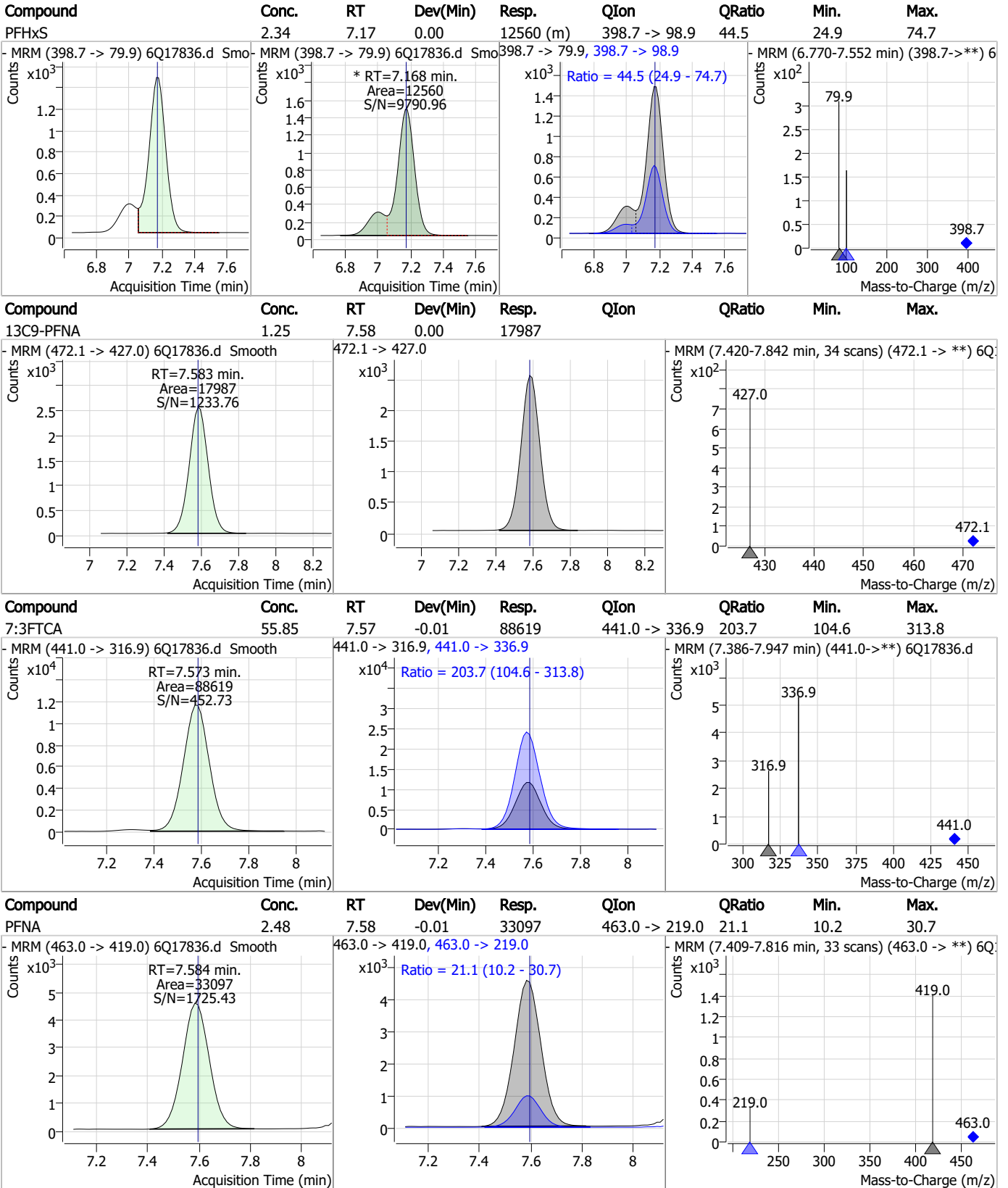


7.4.1

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Perfluorinated Compounds by LC/MS/MS

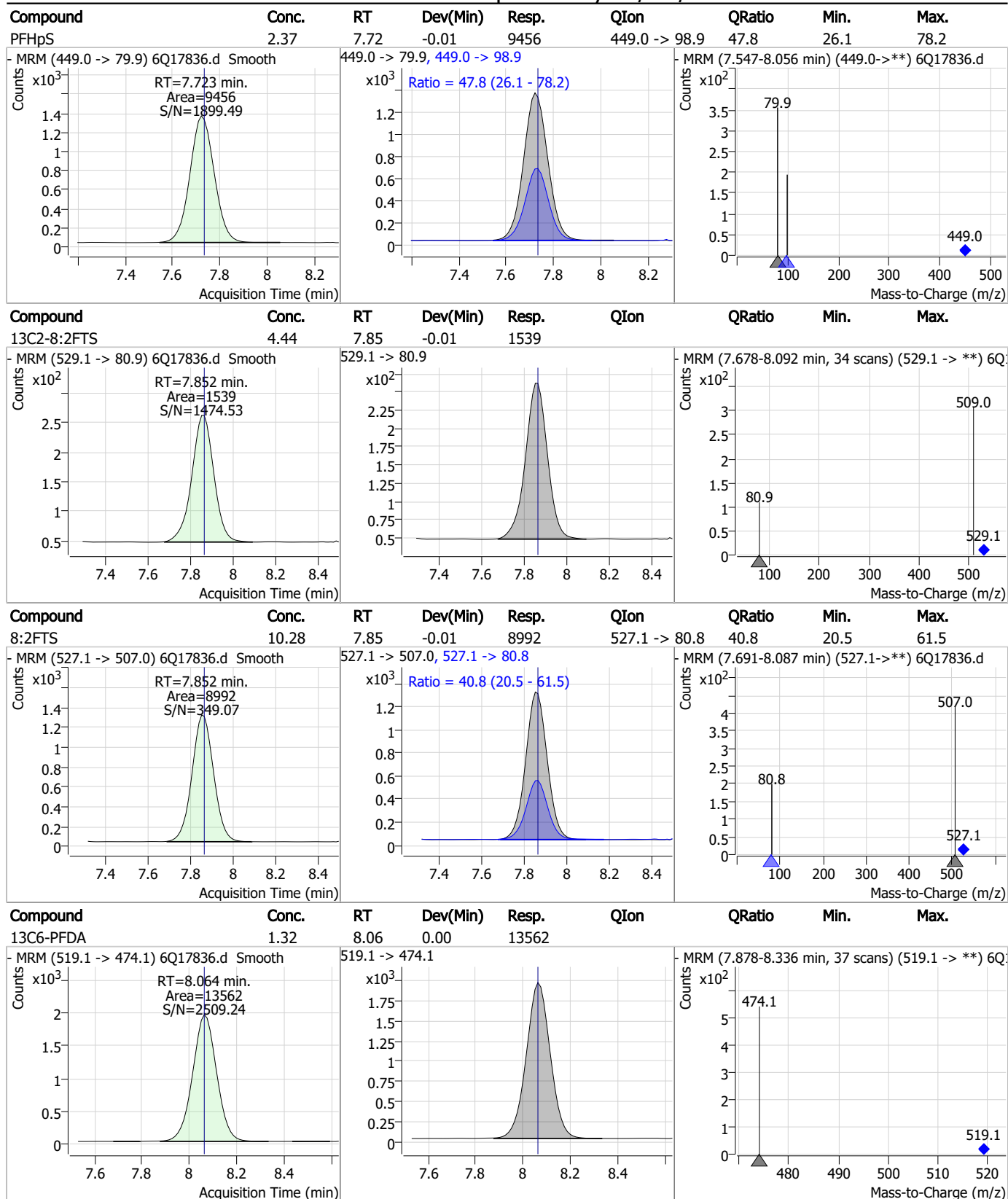


7.4.1

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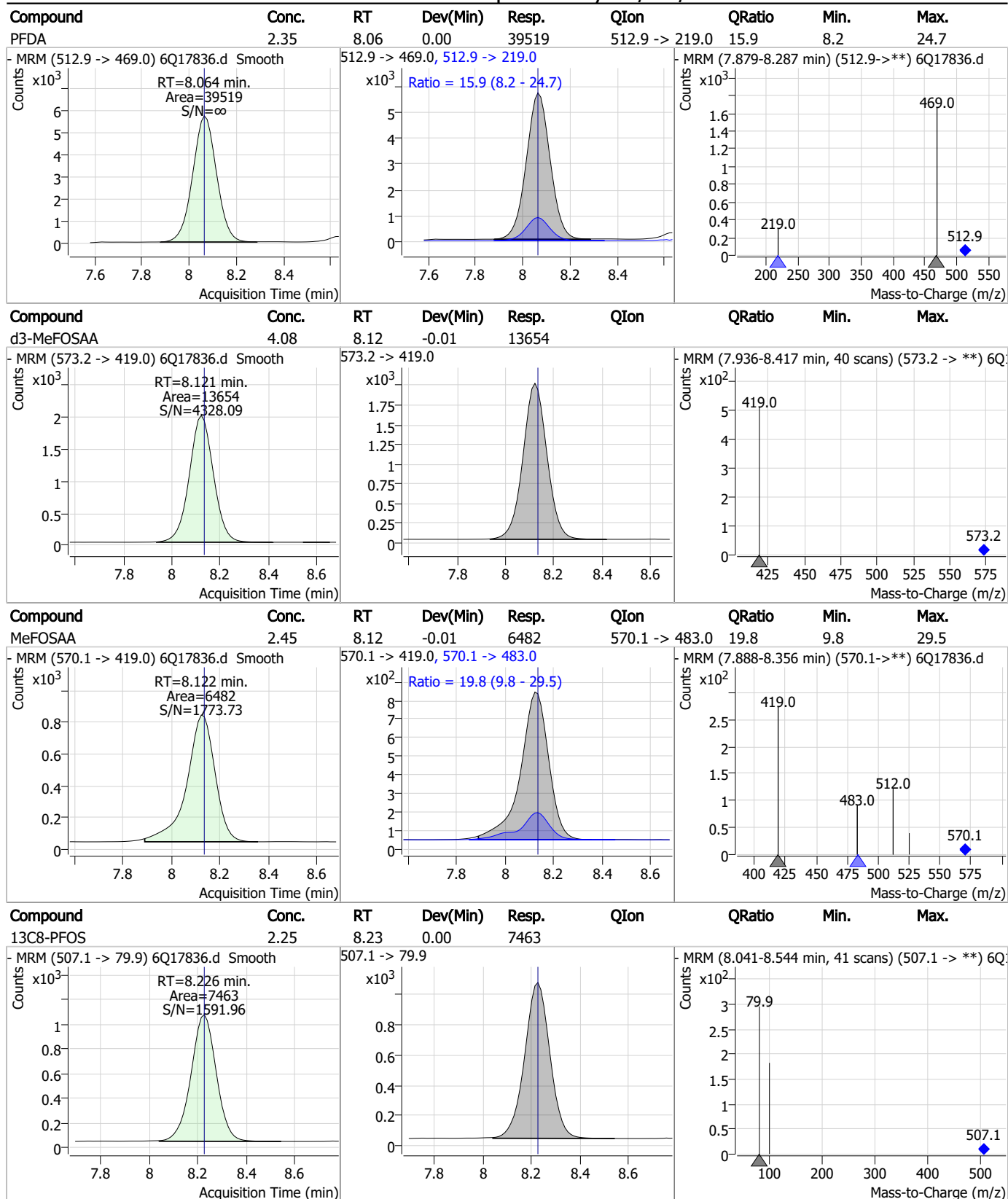


Perfluorinated Compounds by LC/MS/MS



7.4.1
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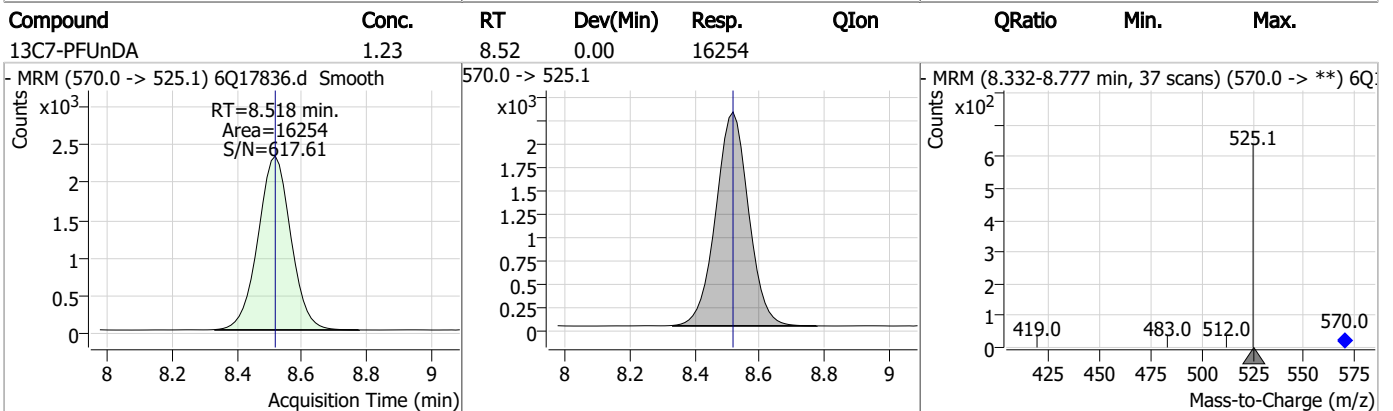
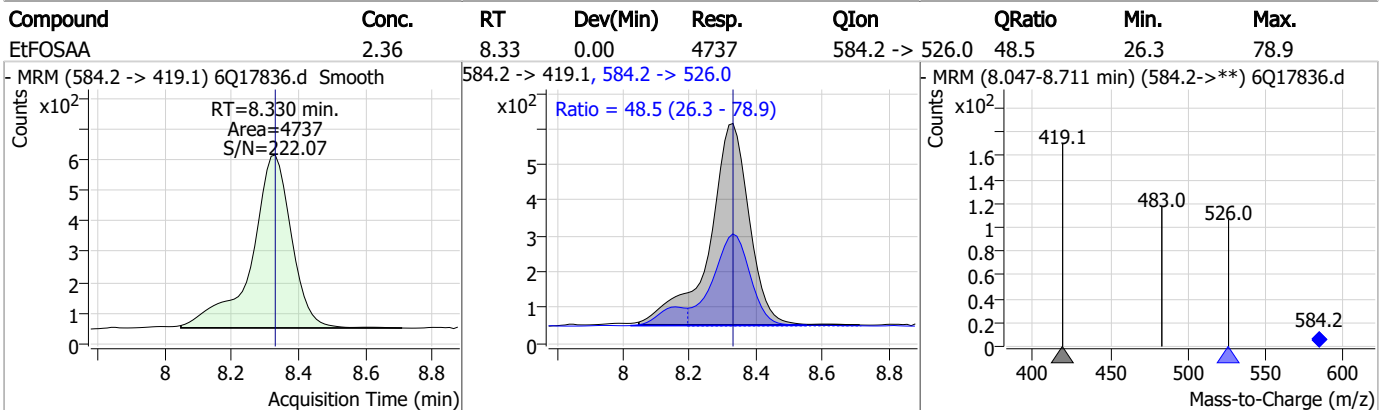
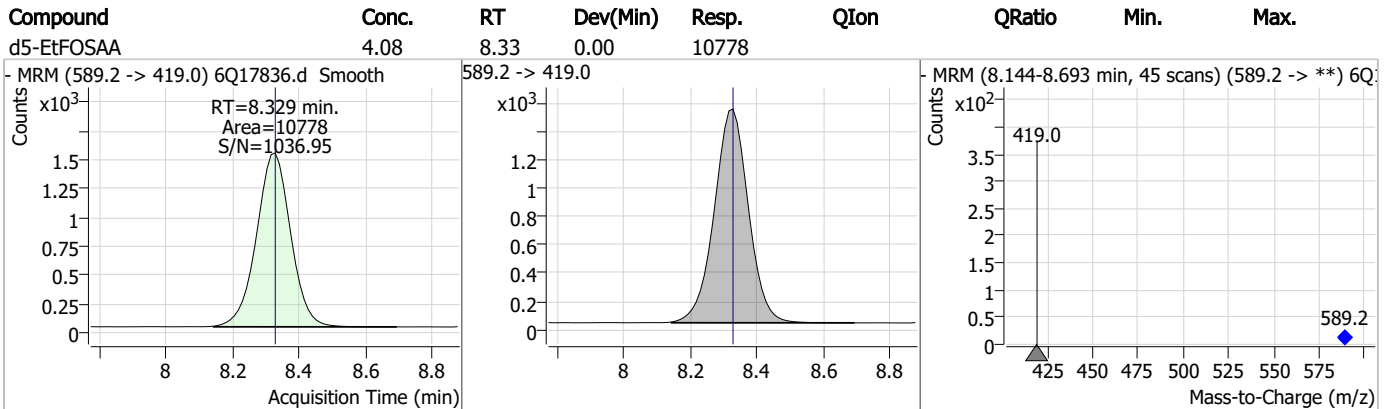
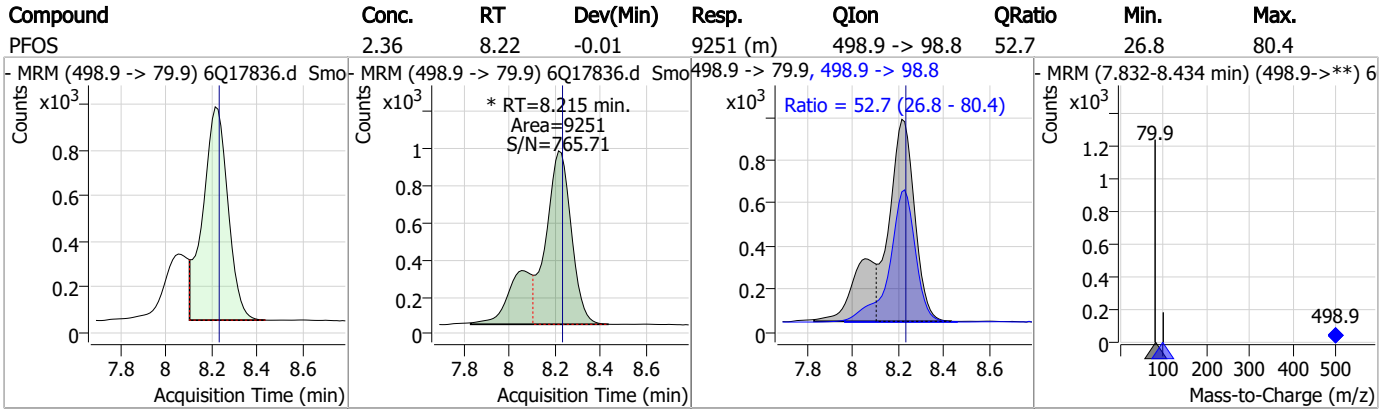
Perfluorinated Compounds by LC/MS/MS



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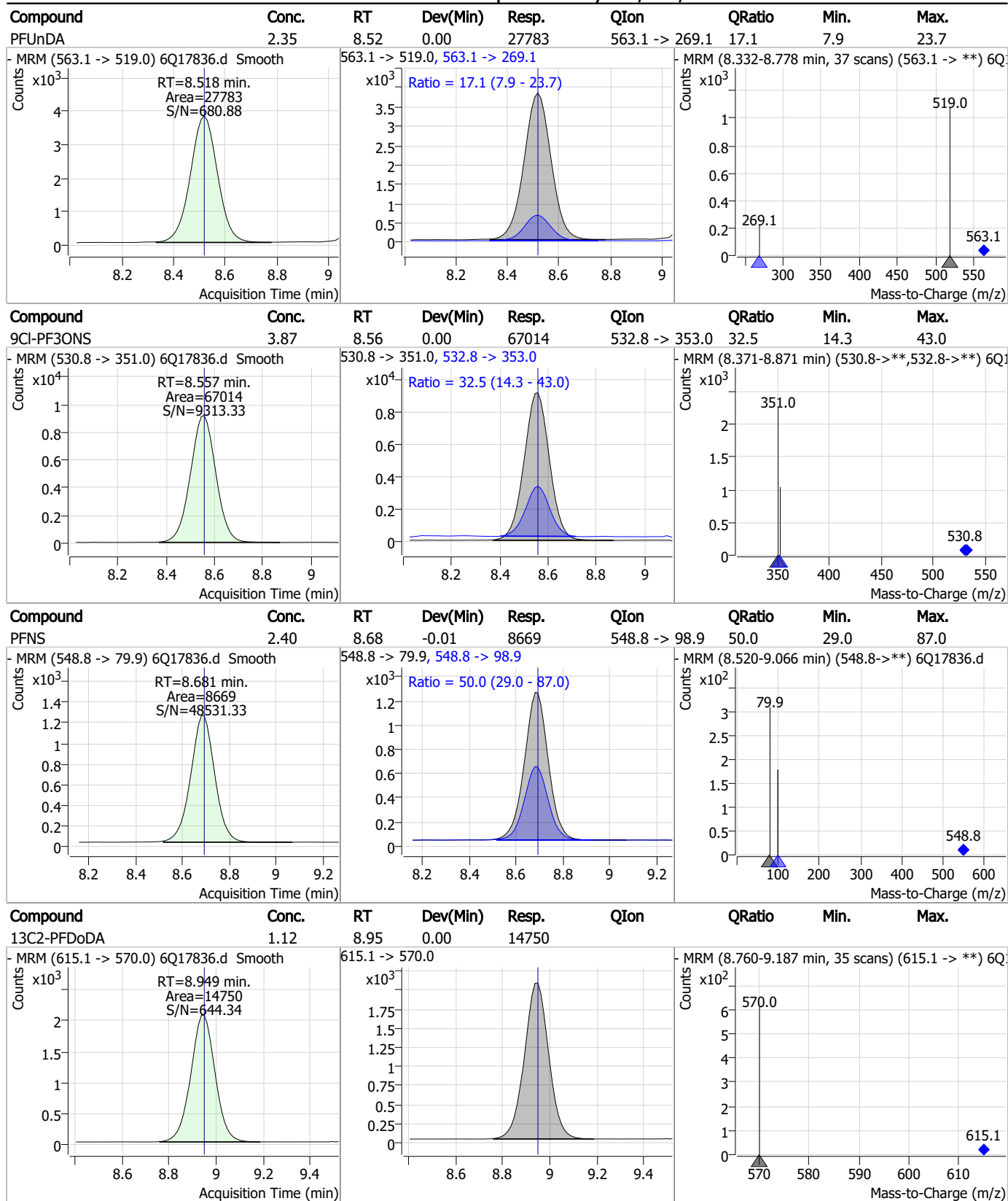
Perfluorinated Compounds by LC/MS/MS



7.4.1

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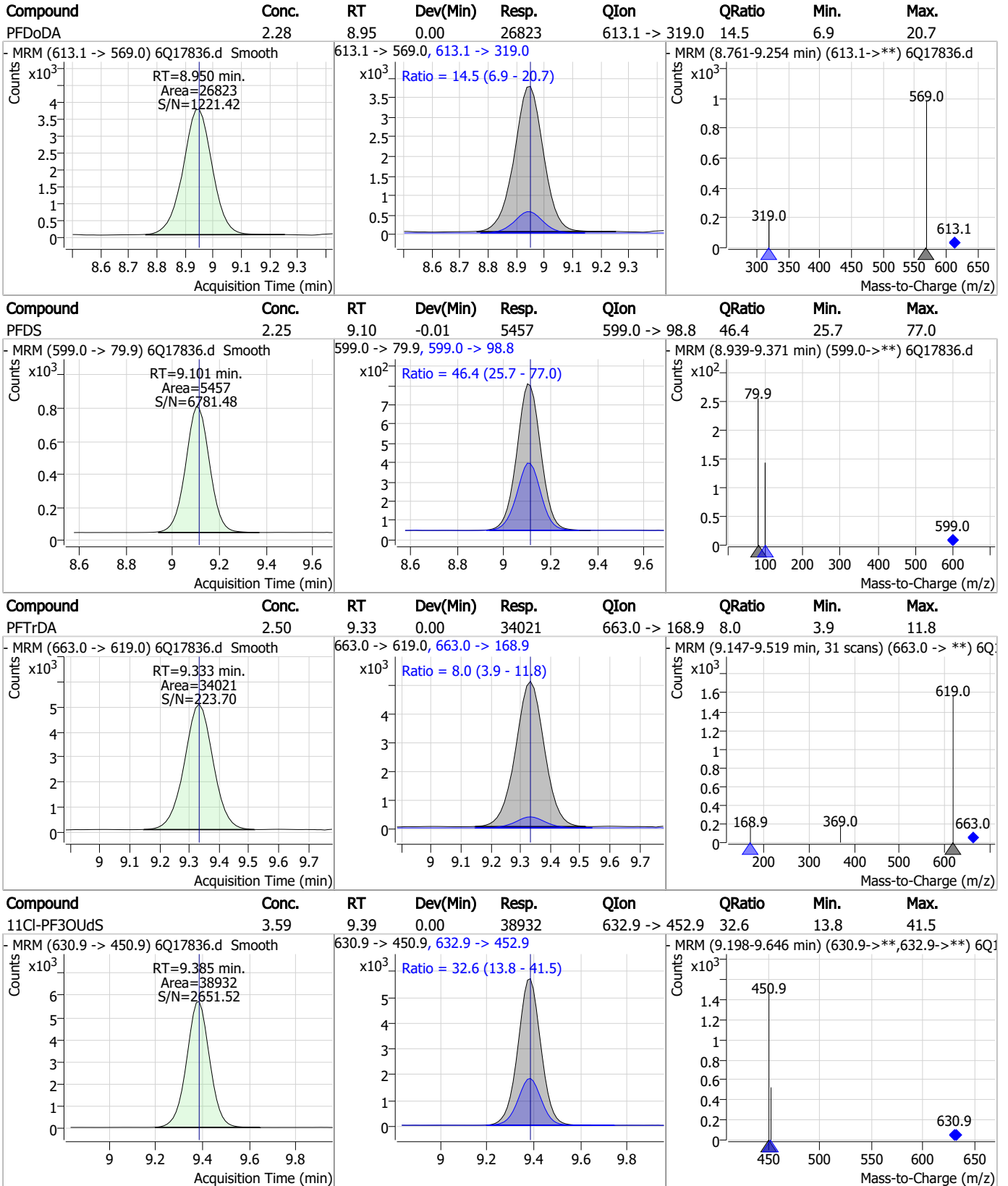
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

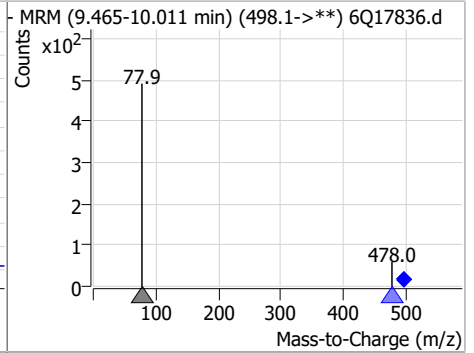
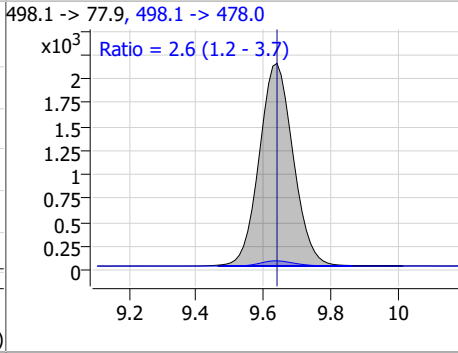
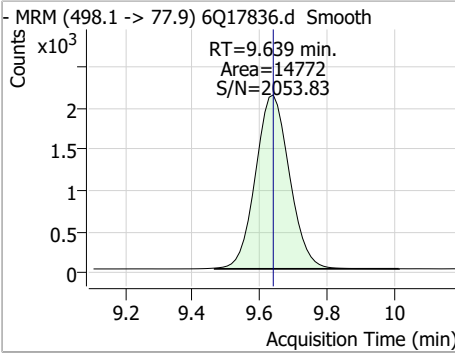


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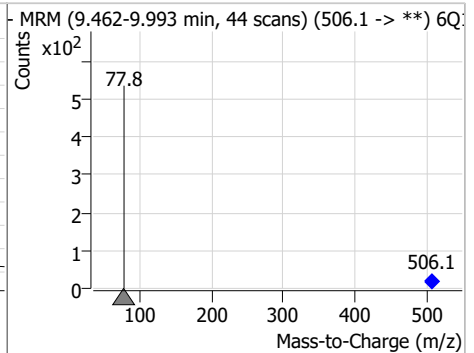
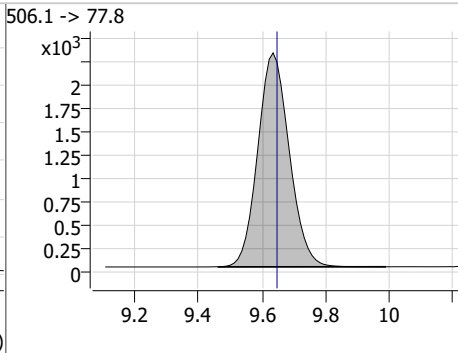
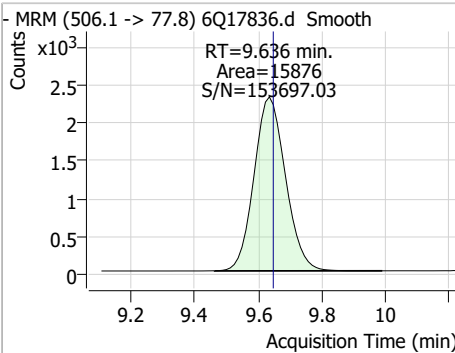
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Perfluorinated Compounds by LC/MS/MS

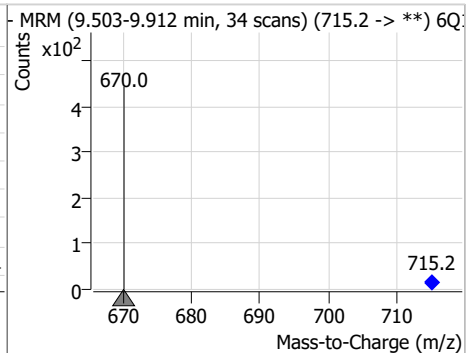
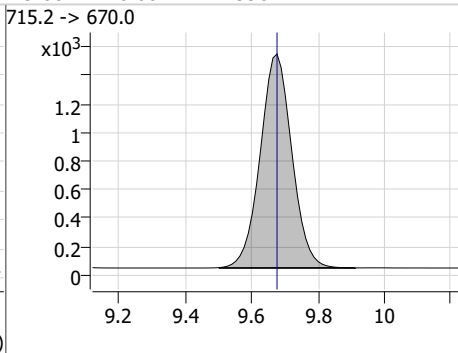
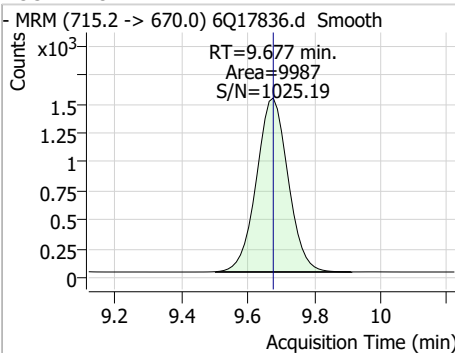
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.49	9.64	0.00	14772	498.1 -> 478.0	2.6	1.2	3.7



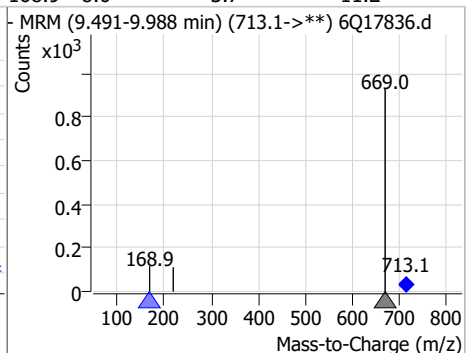
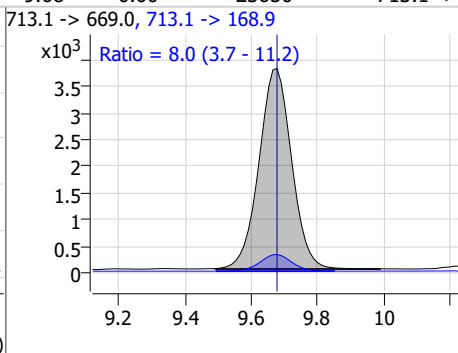
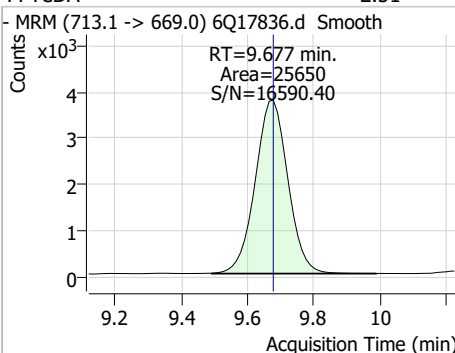
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.24	9.64	-0.01	15876				



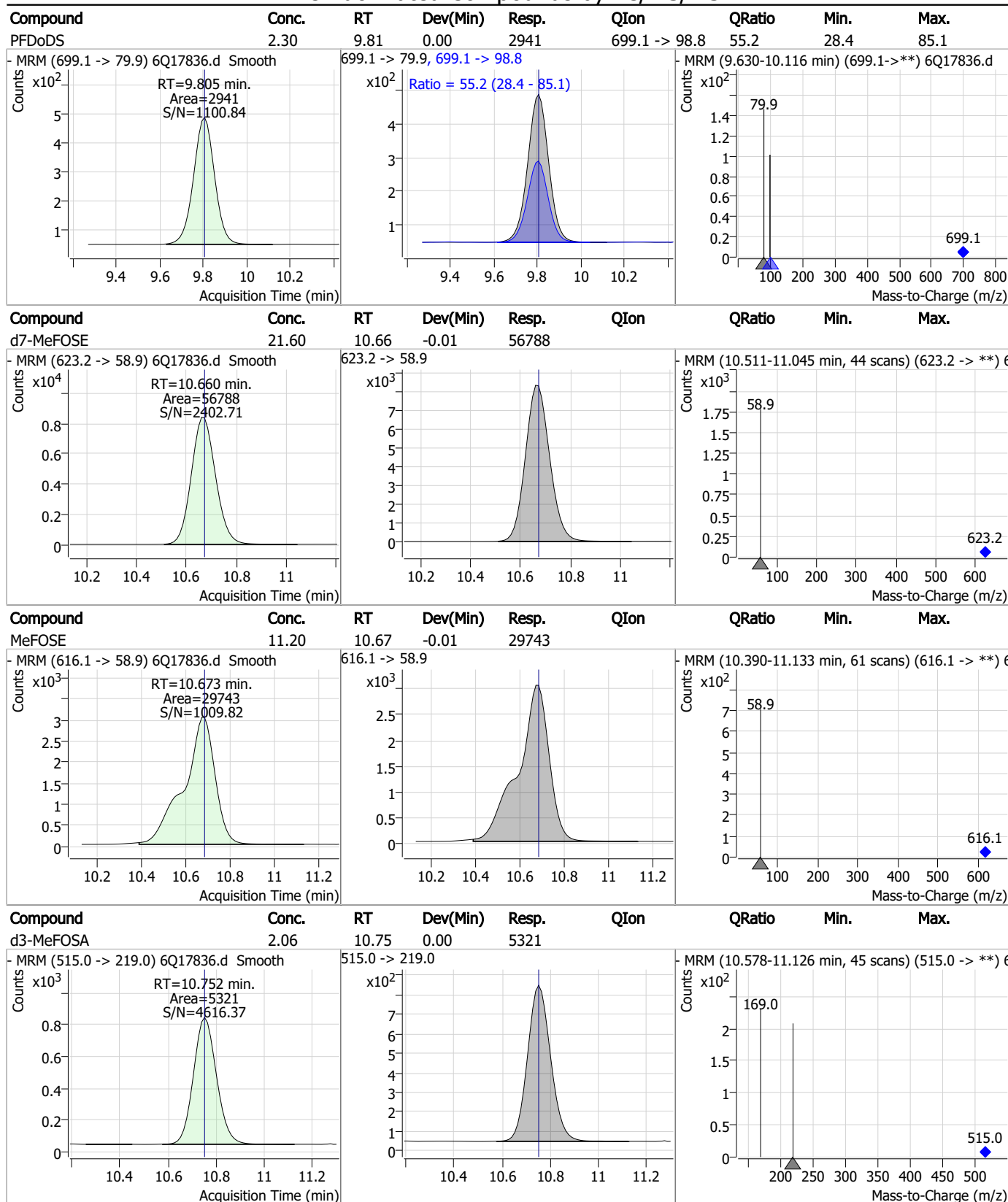
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.12	9.68	0.00	9987				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.51	9.68	0.00	25650	713.1 -> 168.9	8.0	3.7	11.2

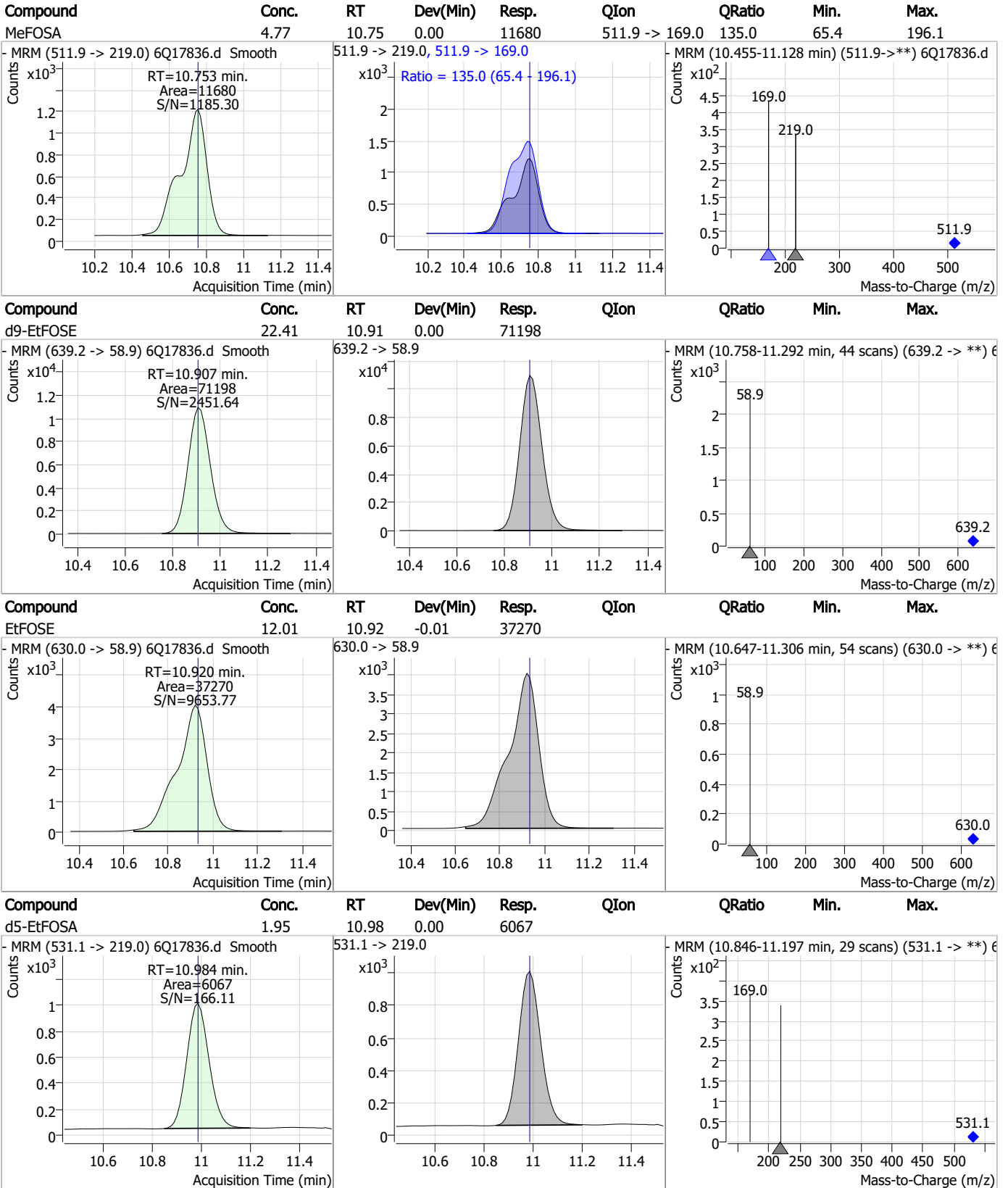


Perfluorinated Compounds by LC/MS/MS



7.4.1
7

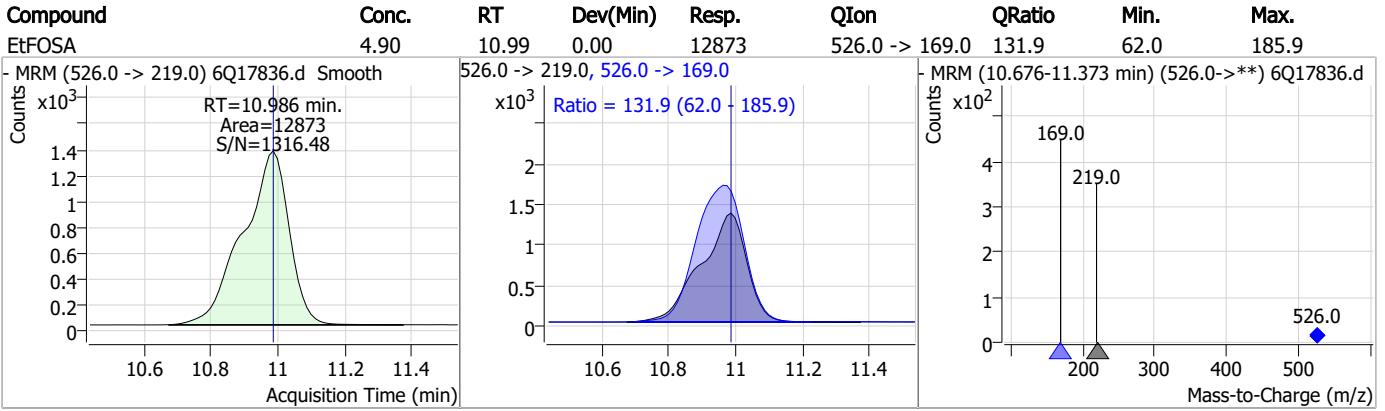
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP96871-MS Method: EPA DRAFT 1633
Lab FileID: 6Q17836.D Analyst approved: 05/16/23 13:58 Martha Valls
Injection Time: 05/16/23 03:01 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.21	Split peak

7.4.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17838.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 3:30:06 AM
 Sample Name : op96871-dup
 Vial : P5-E4
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96871,S6Q269,530,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	68020	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	41563	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	47827	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	40013	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	59048	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	18409	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	13385	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	16158	1.25 µg/L	0.000
M2-PFDoDA	8.937	615.1 -> 570.0	14295	1.25 µg/L	-0.012
M2-PFTeDA	9.664	715.2 -> 670.0	9803	1.25 µg/L	-0.012
M8-FOSA	9.636	506.1 -> 77.8	14756	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	16966	2.50 µg/L	0.000
M3-PFHxS	7.167	402.1 -> 79.9	9342	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	7757	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1375	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1618	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1712	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	13631	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	27779	10.00 µg/L	0.000
M5-EtFOSAA	8.316	589.2 -> 419.0	11376	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	53934	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	66238	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	6268	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	4956	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10875	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	52056	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	6611	2.50 µg/L	0.000
13C4-PFOA	7.065	417.1 -> 372.0	59656	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	17148	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	21434	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	38086	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1375	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1618	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1712	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFDoDA	8.937	615.1 -> 570.0	14295	1.00 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.7%		
13C2-PFTeDA	9.664	715.2 -> 670.0	9803	1.01 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 80.7%		
13C3-PFBS	5.397	302.1 -> 79.9	16966	2.95 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 117.9%		
13C3-PFHxS	7.167	402.1 -> 79.9	9342	2.65 µg/L	0.000

7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C4-PFBA	2.901	216.8 -> 171.9	68020	5.51 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 55.1%	
13C4-PFHpA	6.420	367.1 -> 322.0	40013	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	5.466	318.0 -> 273.0	47827	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C5-PFPeA	4.272	268.3 -> 223.0	41563	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C6-PFDA	8.064	519.1 -> 474.1	13385	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C7-PFUnDA	8.518	570.0 -> 525.1	16158	1.12 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.6%	
13C8-FOSA	9.636	506.1 -> 77.8	14756	2.05 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.8%	
13C8-PFOA	7.064	421.1 -> 376.0	59048	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOS	8.226	507.1 -> 79.9	7757	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C9-PFNA	7.583	472.1 -> 427.0	18409	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%	
d3-MeFOSAA	8.121	573.2 -> 419.0	13631	4.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 80.0%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	27779	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.752	515.0 -> 219.0	4956	1.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.4%	
d5-EtFOSAA	8.316	589.2 -> 419.0	11376	4.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	53934	20.13 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	66238	20.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.9%	
d5-EtFOSA	10.984	531.1 -> 219.0	6268	1.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.0%	

7.5.1
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	5.469	449.0 -> 98.9	2121	0.11 µg/L	m	99
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	4.274	498.9 -> 98.8	4443	0.37 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

7.5.1
7

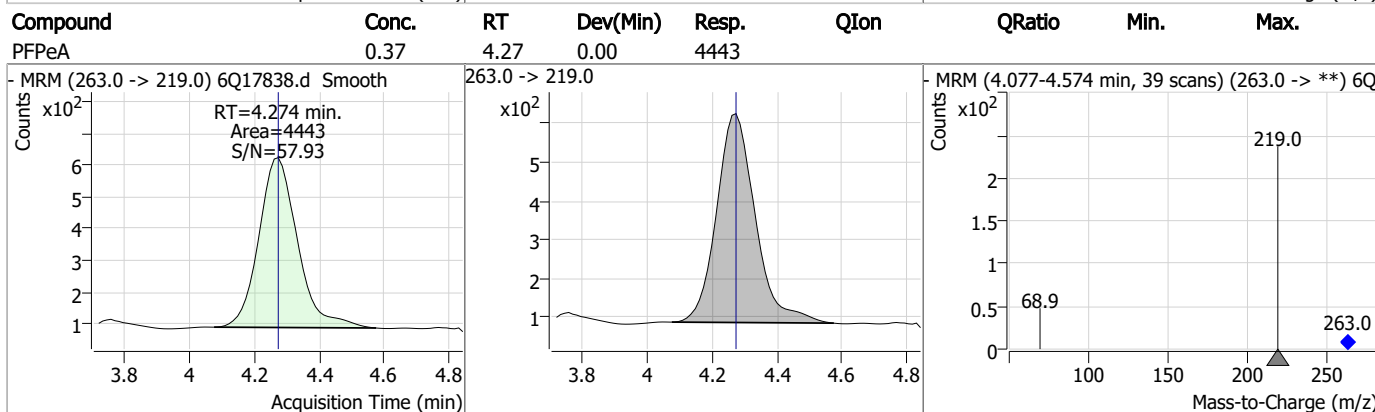
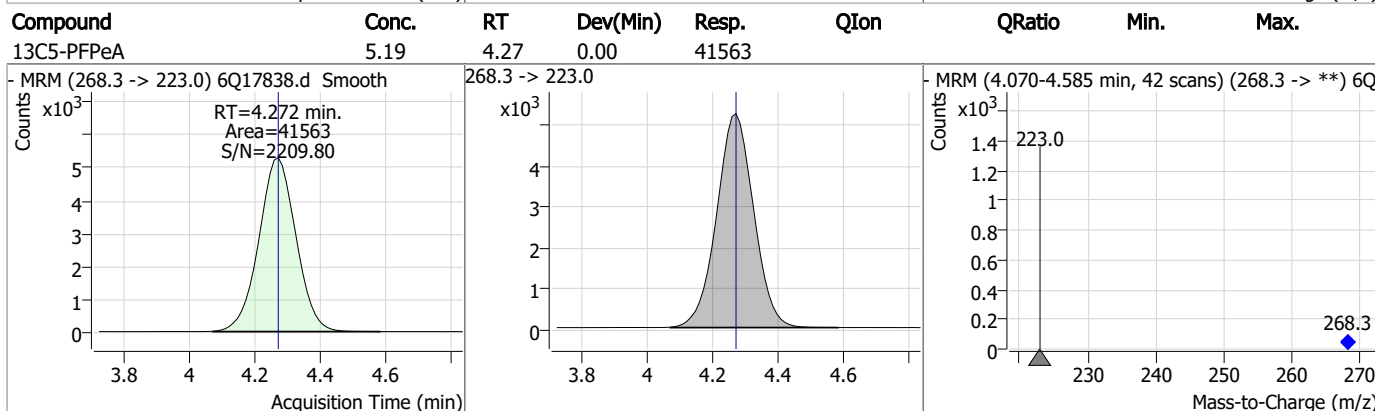
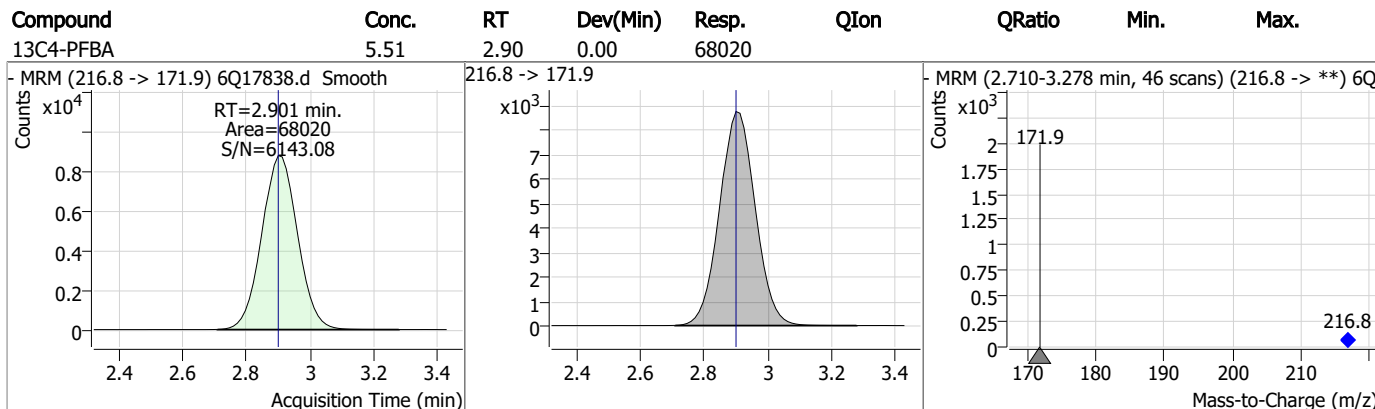
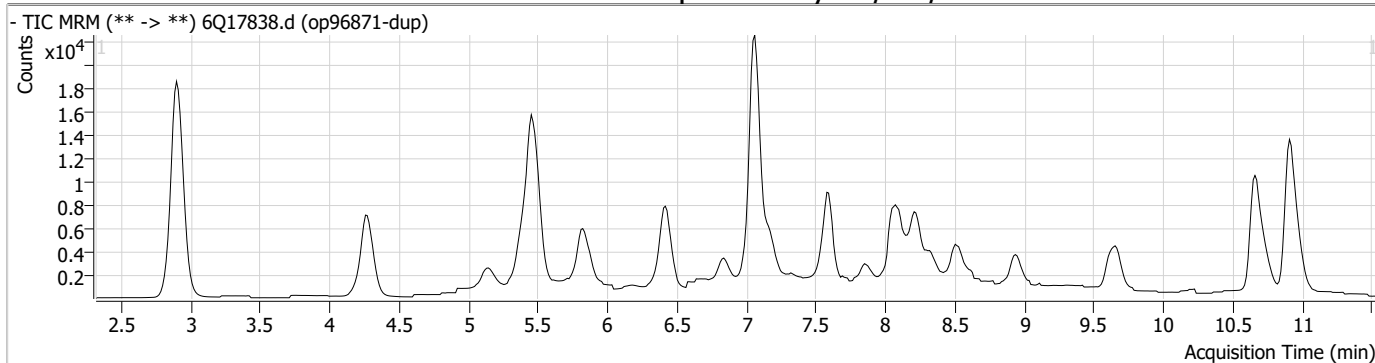
Perfluorinated Compounds by LC/MS/MS

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

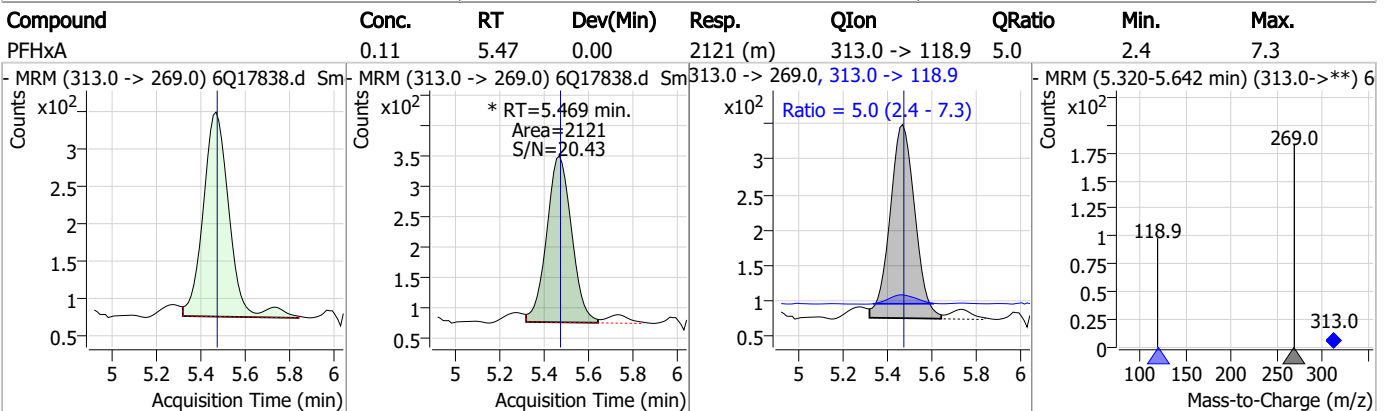
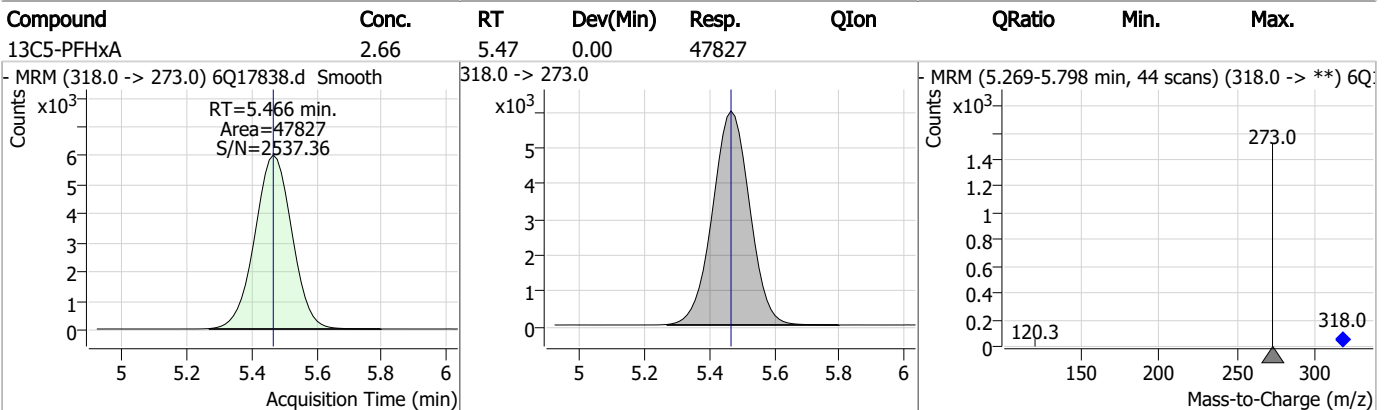
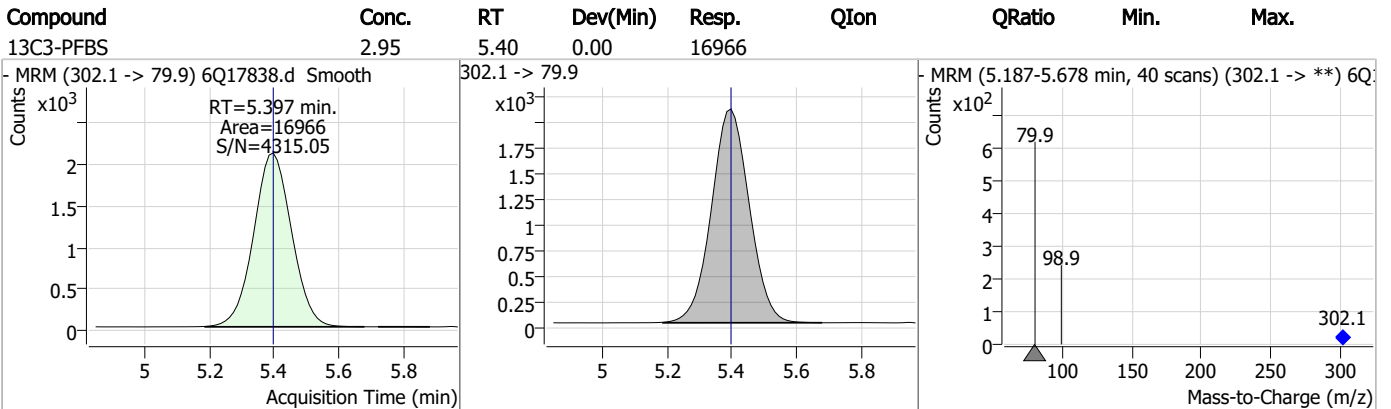
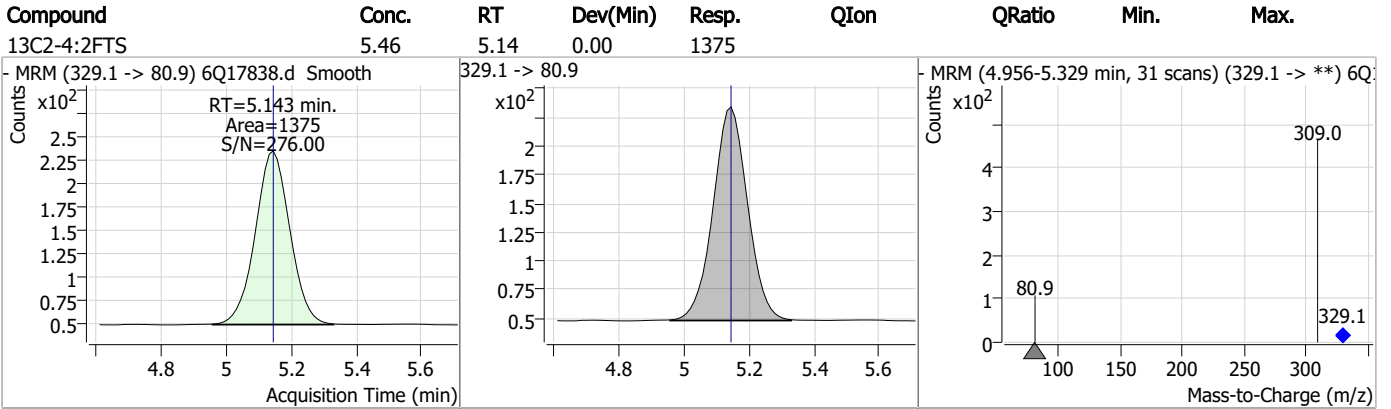
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Perfluorinated Compounds by LC/MS/MS

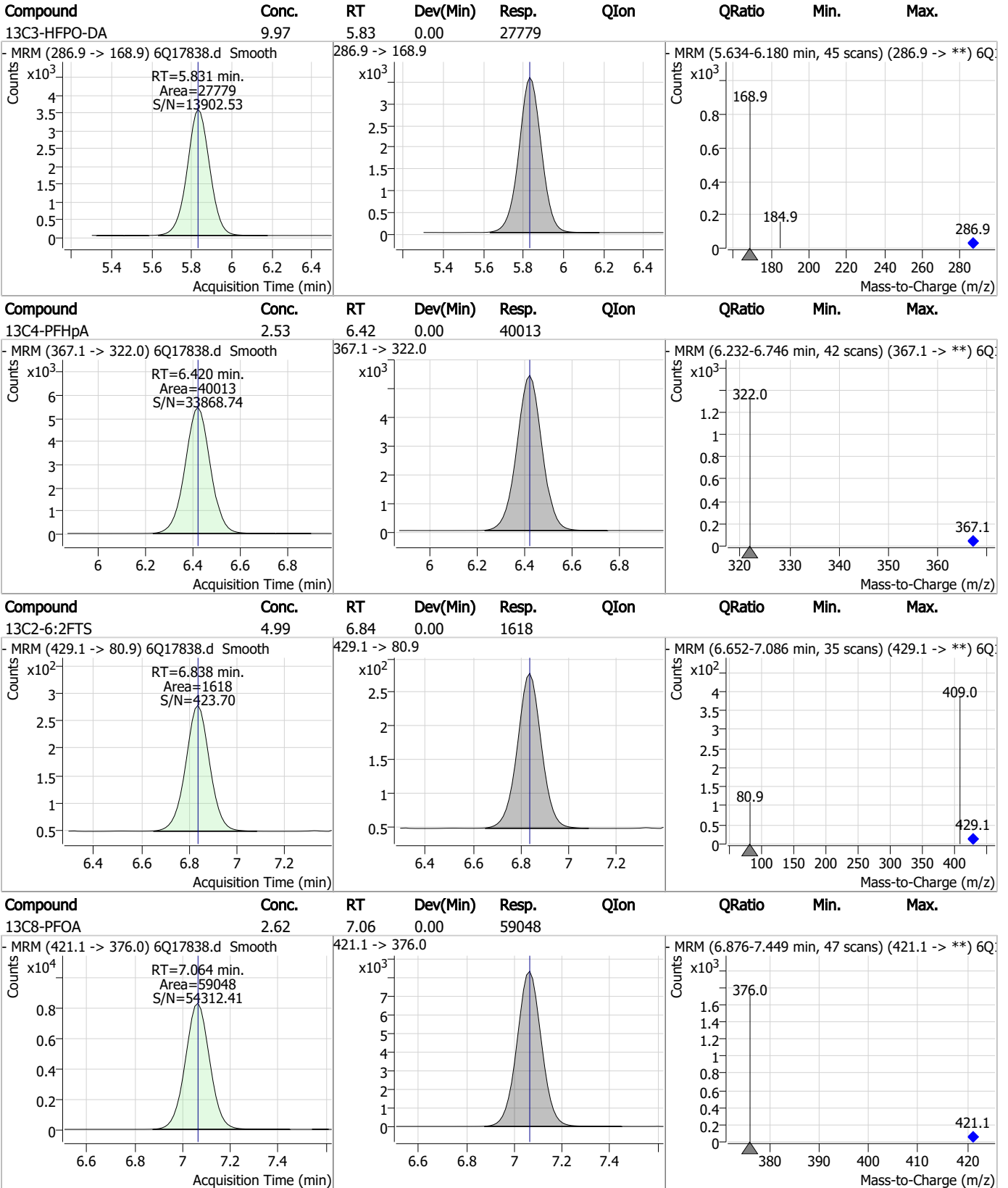


7.5.1
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Perfluorinated Compounds by LC/MS/MS



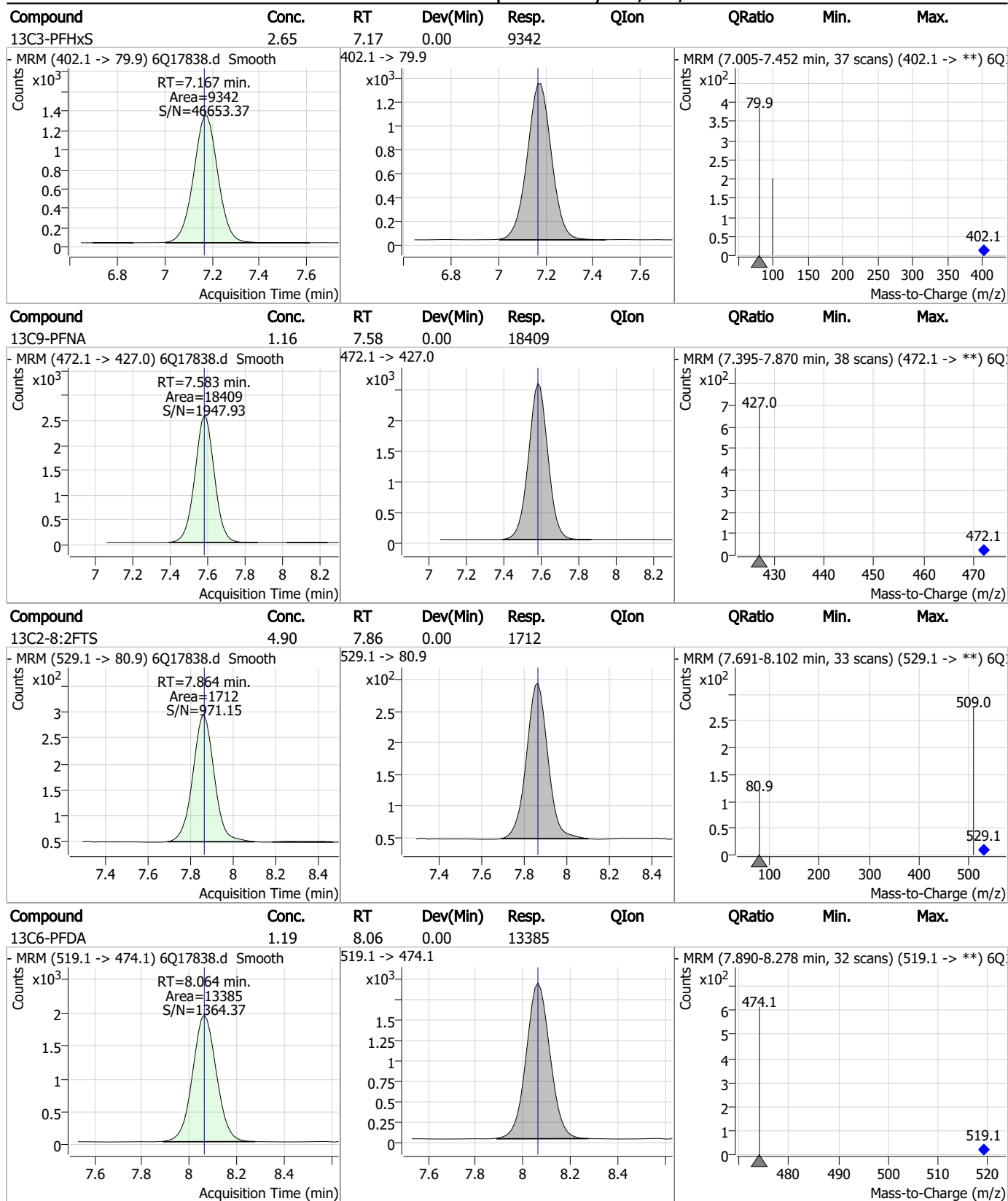
Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.00	8.12	-0.01	13631				
- MRM (573.2 -> 419.0) 6Q17838.d Smooth Counts x10 ³ RT=8.121 min. Area=13631 S/N=410.91 Acquisition Time (min)			573.2 -> 419.0 Counts x10 ³ Acquisition Time (min)			- MRM (7.936-8.367 min, 36 scans) (573.2 -> **) 6Q Counts x10 ² 419.0 573.2 Mass-to-Charge (m/z)		
13C8-PFOS	2.29	8.23	0.00	7757				
- MRM (507.1 -> 79.9) 6Q17838.d Smooth Counts x10 ³ RT=8.226 min. Area=7757 S/N=1031.11 Acquisition Time (min)			507.1 -> 79.9 Counts x10 ³ Acquisition Time (min)			- MRM (8.030-8.523 min, 40 scans) (507.1 -> **) 6Q Counts x10 ² 79.9 507.1 Mass-to-Charge (m/z)		
d5-EtFOSAA	4.22	8.32	-0.01	11376				
- MRM (589.2 -> 419.0) 6Q17838.d Smooth Counts x10 ³ RT=8.316 min. Area=11376 S/N=1183.04 Acquisition Time (min)			589.2 -> 419.0 Counts x10 ³ Acquisition Time (min)			- MRM (8.156-8.626 min, 39 scans) (589.2 -> **) 6Q Counts x10 ² 419.0 589.2 Mass-to-Charge (m/z)		
13C7-PFUnDA	1.12	8.52	0.00	16158				
- MRM (570.0 -> 525.1) 6Q17838.d Smooth Counts x10 ³ RT=8.518 min. Area=16158 S/N=1589.88 Acquisition Time (min)			570.0 -> 525.1 Counts x10 ³ Acquisition Time (min)			- MRM (8.332-8.903 min, 47 scans) (570.0 -> **) 6Q Counts x10 ² 419.0 483.0 512.0 570.0 525.1 Mass-to-Charge (m/z)		

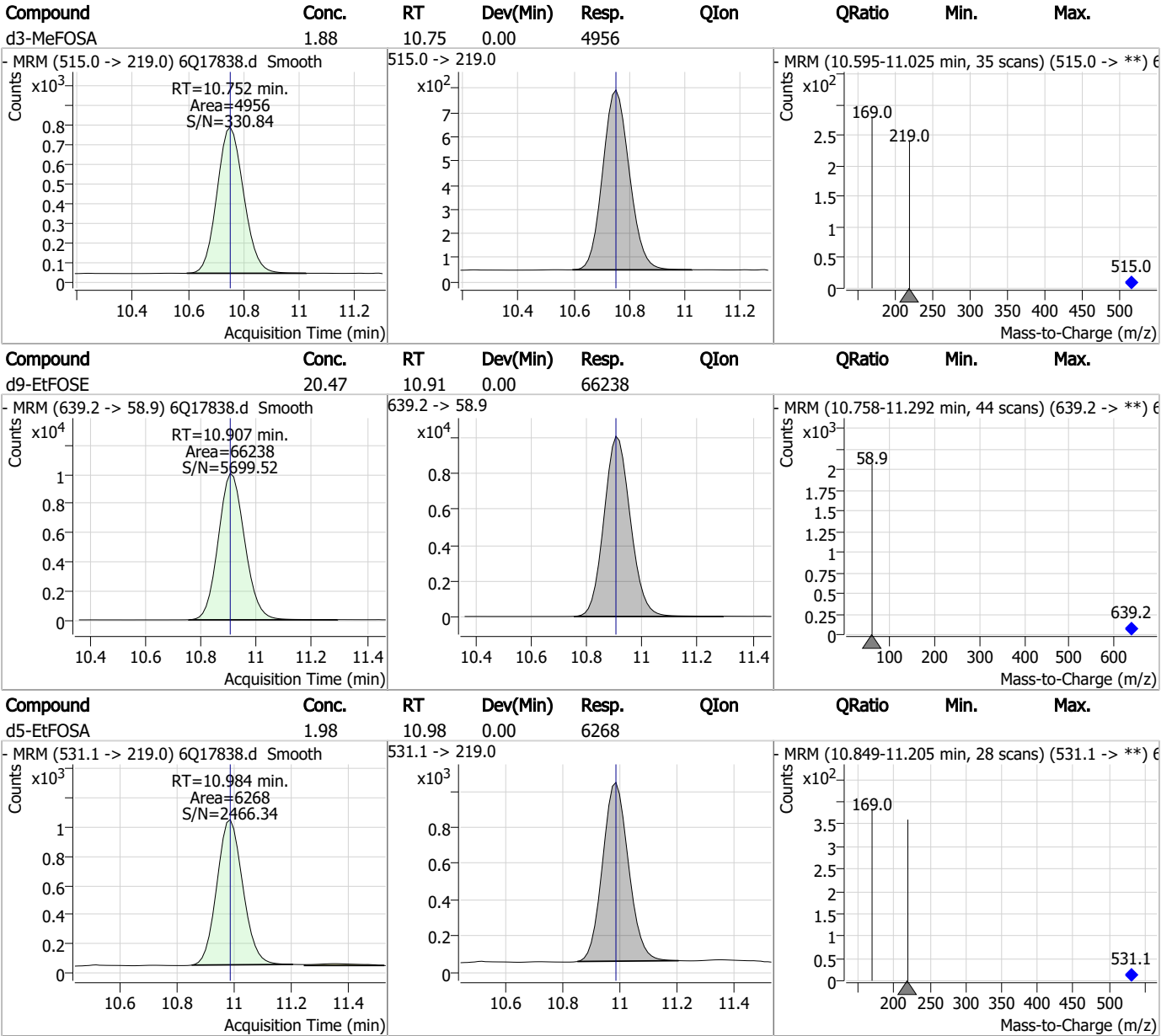
7.5.1
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.00	8.94	-0.01	14295				
13C8-FOSA	2.05	9.64	-0.01	14756				
13C2-PFTeDA	1.01	9.66	-0.01	9803				
d7-MeFOSE	20.13	10.66	-0.01	53934				

7.5.1
7

Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Manual Integration Approval Summary

Sample Number: OP96871-DUP Method: EPA DRAFT 1633
Lab FileID: 6Q17838.D Analyst approved: 05/16/23 13:58 Martha Valls
Injection Time: 05/16/23 03:30 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.47	Split peak

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 05/16/23 09:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17735.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 11:31:59 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q268_TDCA.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

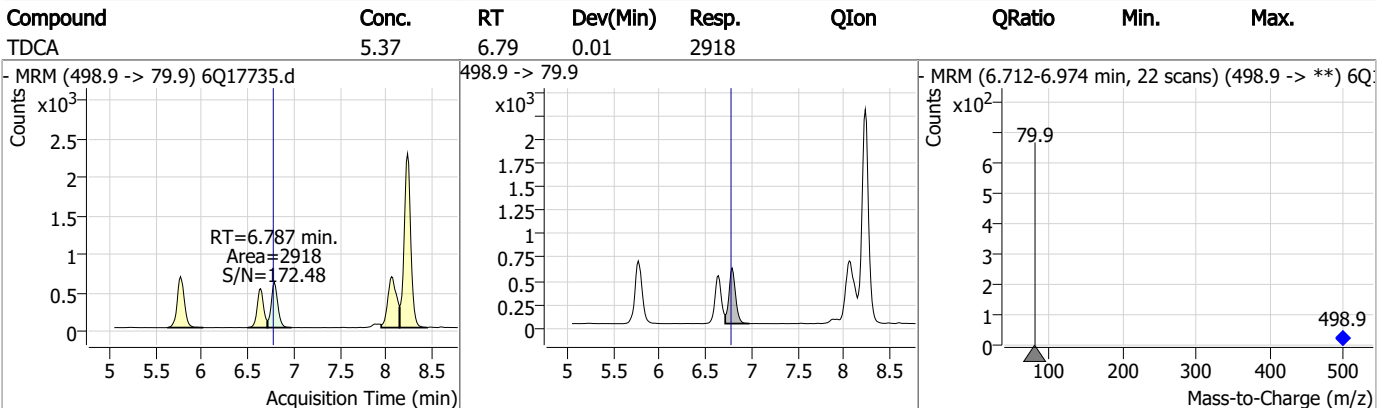
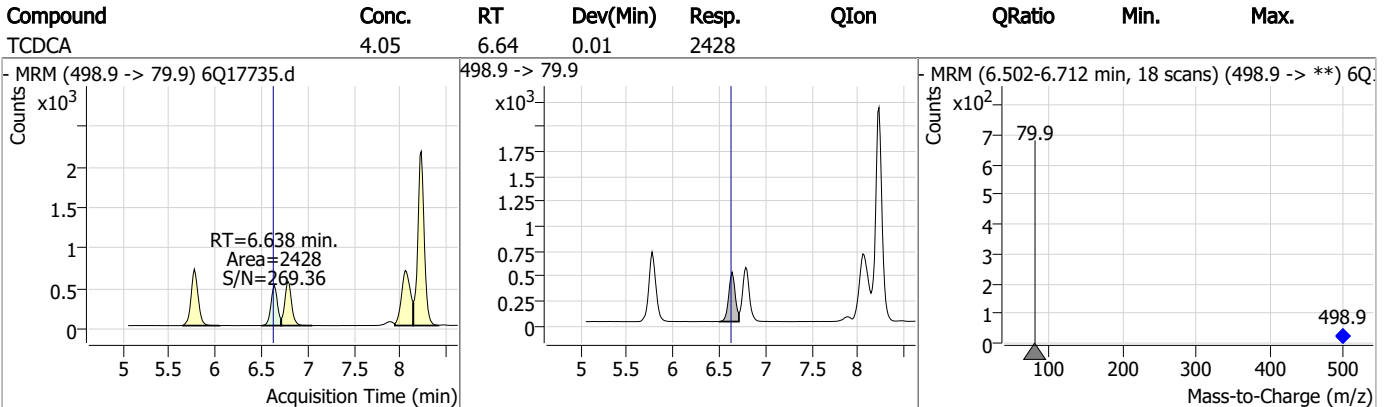
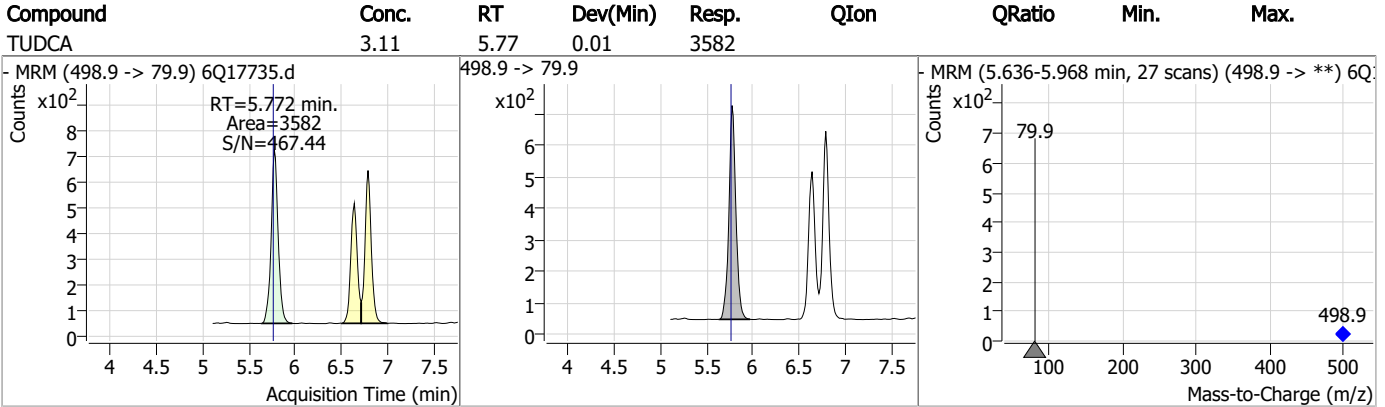
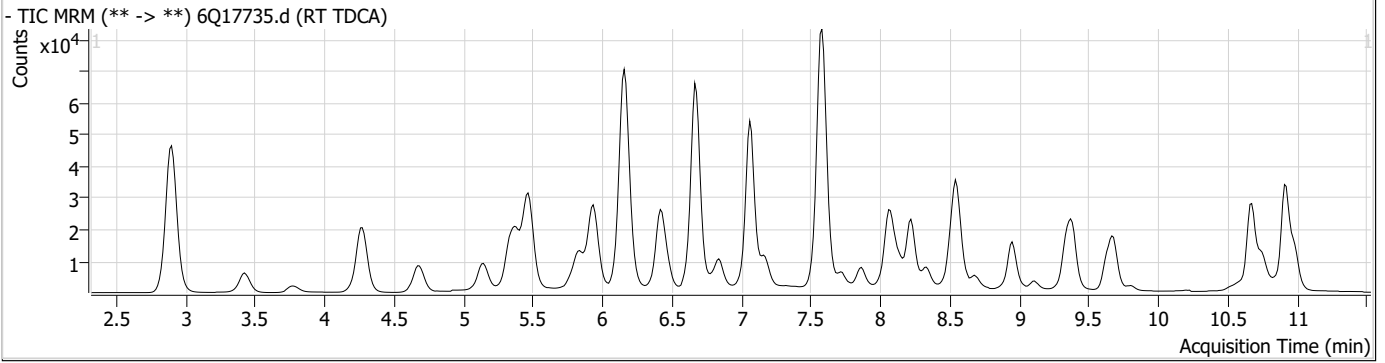
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)	QValue
Internal Standards							
M8-PFOS	8.226	507.1 -> 79.9	13002	2.50	µg/L	-0.012	
13C4-PFOS	8.227	502.8 -> 79.9	18368	2.50	µg/L	-0.012	
System Monitoring Compounds							
13C8-PFOS	8.226	507.1 -> 79.9	13002	1.80	µg/L	-0.012	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 71.8%				
Target Compounds							
PFOS	8.228	498.9 -> 79.9 498.9 -> 98.8	16353 7613	3.68	µg/L m		76
TCDCa	6.638	498.9 -> 79.9	2428	4.05	ng/ml		100
TDCA	6.787	498.9 -> 79.9	2918	5.37	ng/ml		100
TUDCA	5.772	498.9 -> 79.9	3582	3.11	ng/ml		100

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

7.6.1

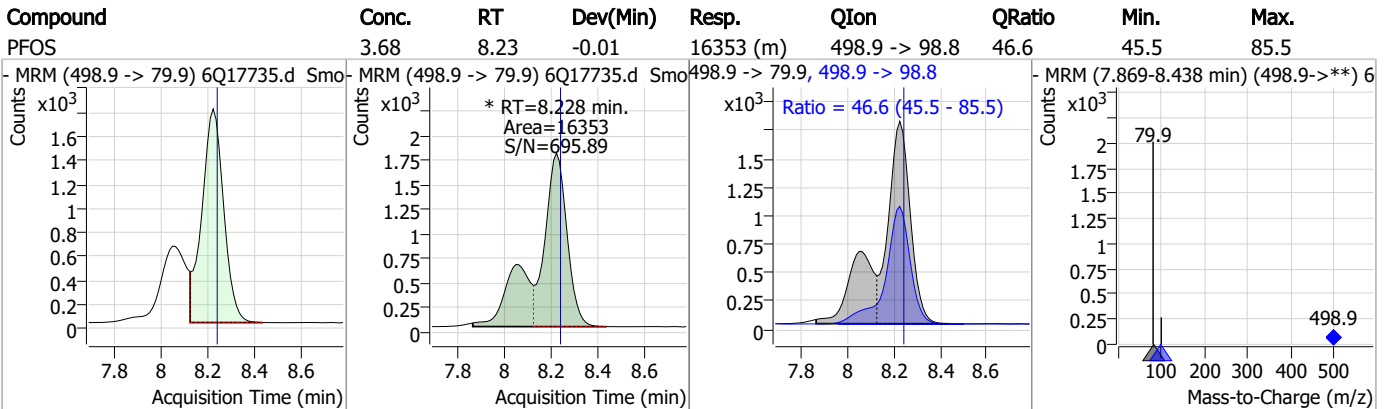
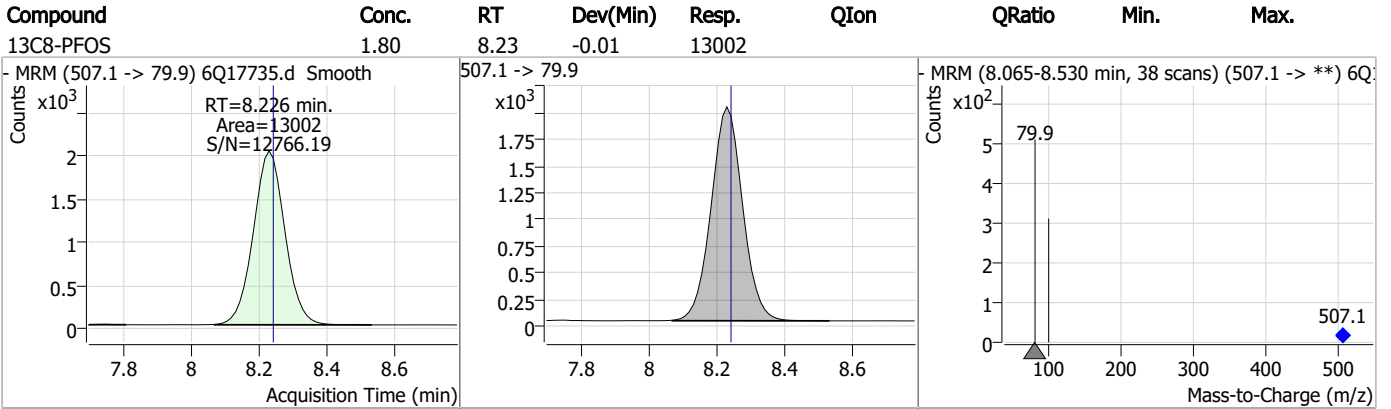
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Perfluorinated Compounds by LC/MS/MS



7.6.1
7

Perfluorinated Compounds by LC/MS/MS



7.6.1

7



Manual Integration Approval Summary

Sample Number: S6Q268-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17735.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 11:31 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.6.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17736.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 11:46:27 AM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	151901	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	49292	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	55451	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	48149	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	73350	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	23791	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	17361	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	22333	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	22885	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14428	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	22123	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	17493	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10435	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9401	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1651	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1878	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2208	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	21077	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	33282	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	17223	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	76265	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	85919	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8536	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7582	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13190	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	64589	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8619	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	73511	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	20607	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	25781	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	46545	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1651	5.03 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1878	4.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.8%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2208	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFDoDA	8.949	615.1 -> 570.0	22885	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14428	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFBS	5.397	302.1 -> 79.9	17493	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C3-PFHxS	7.179	402.1 -> 79.9	10435	2.27 µg/L	0.012

7.6.2
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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 = 90.9%	
13C4-PFBA	2.901	216.8 -> 171.9	151901	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.420	367.1 -> 322.0	48149	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFHxA	5.466	318.0 -> 273.0	55451	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C5-PFPeA	4.272	268.3 -> 223.0	49292	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C6-PFDA	8.064	519.1 -> 474.1	17361	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C7-PFUnDA	8.518	570.0 -> 525.1	22333	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-FOSA	9.648	506.1 -> 77.8	22123	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C8-PFOA	7.064	421.1 -> 376.0	73350	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C8-PFOS	8.226	507.1 -> 79.9	9401	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C9-PFNA	7.595	472.1 -> 427.0	23791	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
d3-MeFOSAA	8.133	573.2 -> 419.0	21077	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	33282	9.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSA	10.752	515.0 -> 219.0	7582	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSAA	8.329	589.2 -> 419.0	17223	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	76265	23.47 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	85919	21.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.5%	
d5-EtFOSA	10.984	531.1 -> 219.0	8536	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.8%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	109960	44.30 µg/L	98
		327.1 -> 80.9	42286		
6:2FTS	6.838	427.1 -> 407.0	109261	53.46 µg/L	96
		427.1 -> 80.9	33178		
8:2FTS	7.865	527.1 -> 507.0	63822	50.86 µg/L	90
		527.1 -> 80.8	22101		
EtFOSAA	8.330	584.2 -> 419.1	33290	10.38 µg/L	97
		584.2 -> 526.0	18241		
FOSA	9.639	498.1 -> 77.9	221944	26.80 µg/L	99
		498.1 -> 478.0	6584		
MeFOSAA	8.134	570.1 -> 419.0	47731	11.70 µg/L	97
		570.1 -> 483.0	8714		
PFBA	2.907	212.8 -> 168.9	267191	49.03 µg/L	100
PFBS	5.398	298.7 -> 79.9	96371	11.29 µg/L	94
		298.7 -> 98.8	38421		
PFDA	8.076	512.9 -> 469.0	277451	12.92 µg/L	96
		512.9 -> 219.0	41380		
PFDoDA	8.950	613.1 -> 569.0	211358	11.59 µg/L	100
		613.1 -> 319.0	28972		
PFDS	9.113	599.0 -> 79.9	36226	11.87 µg/L	98

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18185			
PFHpA	6.420	363.1 -> 319.0	308662	12.83	µg/L	97
		363.1 -> 169.0	45812			
PFHpS	7.735	449.0 -> 79.9	55966	11.16	µg/L	91
		449.0 -> 98.9	32838			
PFHxA	5.469	313.0 -> 269.0	271101	12.34	µg/L	99
		313.0 -> 118.9	12141			
PFHxS	7.180	398.7 -> 79.9	69332	12.00	µg/L	m 97
		398.7 -> 98.9	32923			
PFNA	7.458	463.0 -> 419.0	505392	28.59	µg/L	m 99
		463.0 -> 219.0	106848			
PFNS	8.693	548.8 -> 79.9	56617	12.45	µg/L	94
		548.8 -> 98.9	30333			
PFOA	7.066	413.0 -> 369.0	873695	23.94	µg/L	m 96
		413.0 -> 169.0	161757			
PFOS	8.228	498.9 -> 79.9	54356	11.03	µg/L	m 100
		498.9 -> 98.8	29145			
PFPeA	4.274	263.0 -> 219.0	353590	24.84	µg/L	100
PFPeS	6.471	349.1 -> 79.9	71332	12.45	µg/L	96
		349.1 -> 98.9	34051			
PFTeDA	9.677	713.1 -> 669.0	197921	13.40	µg/L	98
		713.1 -> 168.9	13431			
PFTrDA	9.333	663.0 -> 619.0	239049	11.31	µg/L	97
		663.0 -> 168.9	20831			
PFUnDA	8.518	563.1 -> 519.0	204895	12.63	µg/L	99
		563.1 -> 269.1	31124			
11CI-PF3OUdS	9.385	630.9 -> 450.9	301718	23.99	µg/L	96
		632.9 -> 452.9	90112			
9CI-PF3ONS	8.557	530.8 -> 351.0	481189	23.95	µg/L	97
		532.8 -> 353.0	145704			
ADONA	6.683	376.9 -> 250.9	1324425	24.99	µg/L	96
		376.9 -> 84.8	340401			
HFPO-DA	5.845	284.9 -> 168.9	79992	24.86	µg/L	99
		284.9 -> 184.9	10480			
3:3FTCA	3.777	241.0 -> 177.0	53627	60.80	µg/L	99
		241.0 -> 117.0	6872			
5:3FTCA	6.161	341.0 -> 237.1	1124444	295.46	µg/L	99
		341.0 -> 217.0	808988			
7:3FTCA	7.586	441.0 -> 316.9	530912	307.50	µg/L	97
		441.0 -> 336.9	1086300			
EtFOSA	10.986	526.0 -> 219.0	166534	45.07	µg/L	93
		526.0 -> 169.0	220424			
EtFOSE	10.932	630.0 -> 58.9	339000	90.54	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	149837	42.92	µg/L	m 99
		511.9 -> 169.0	197450			
MeFOSE	10.686	616.1 -> 58.9	291620	81.74	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	20588	12.76	µg/L	97
		699.1 -> 98.8	11201			
NFDHA	5.348	295.0 -> 201.0	59587	24.57	µg/L	97
		295.0 -> 84.9	15349			
PFMBA	4.675	279.0 -> 85.1	248378	24.45	µg/L	100
PFMPA	3.426	229.0 -> 84.9	180924	24.73	µg/L	100
PFEESA	5.938	314.8 -> 134.9	636876	21.59	µg/L	100
		314.8 -> 82.9	22478			

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

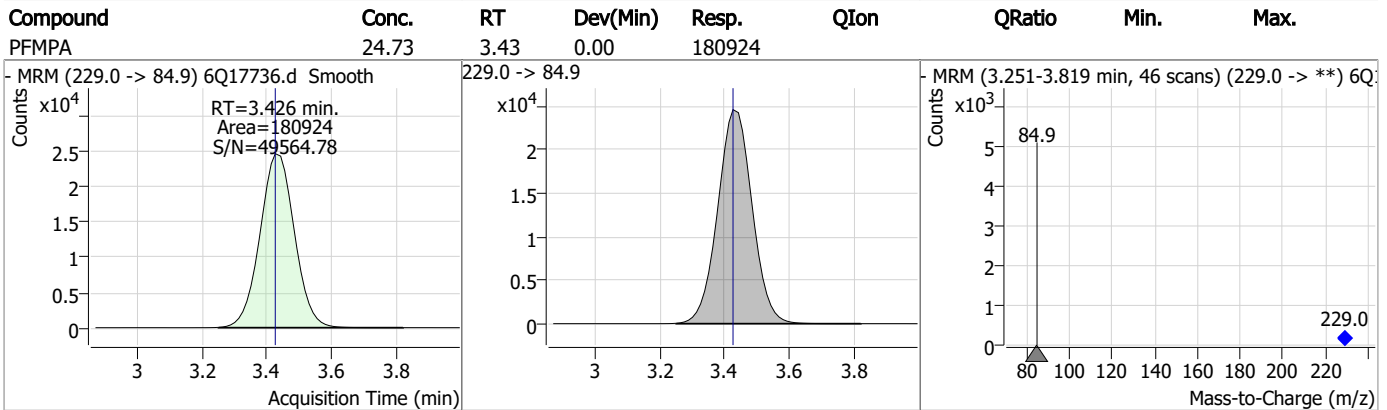
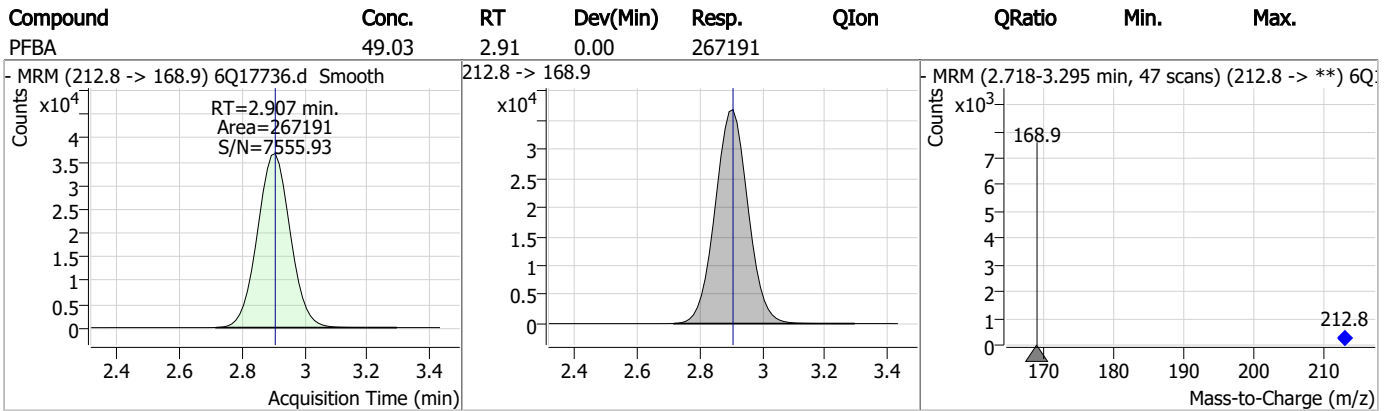
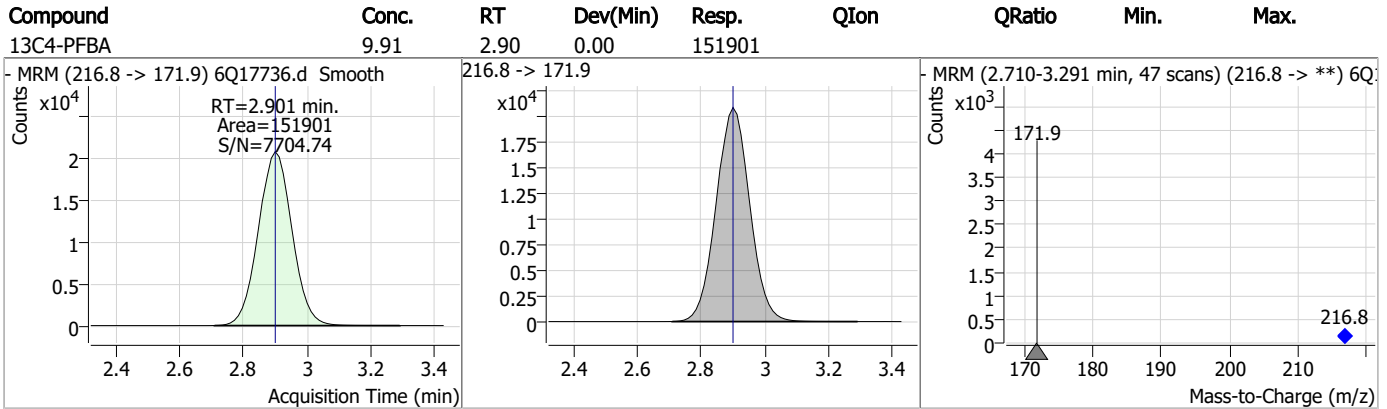
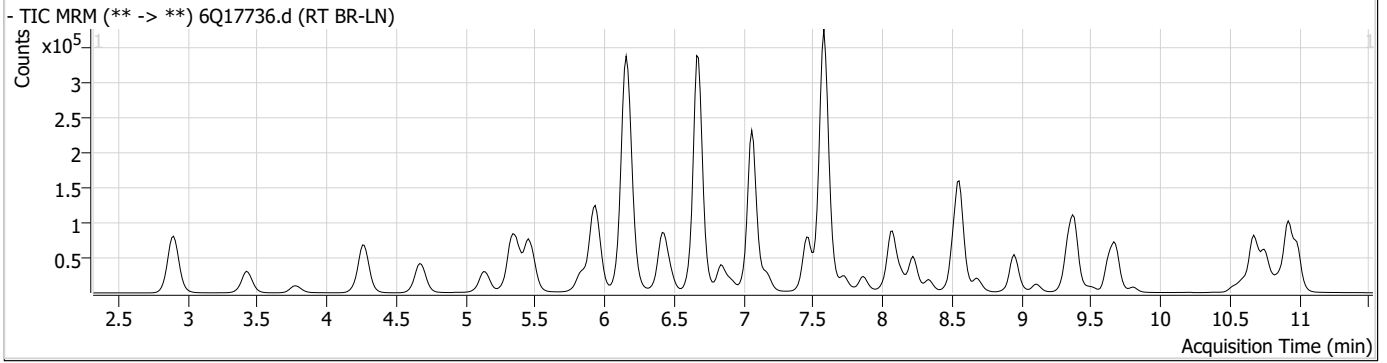
Perfluorinated Compounds by LC/MS/MS

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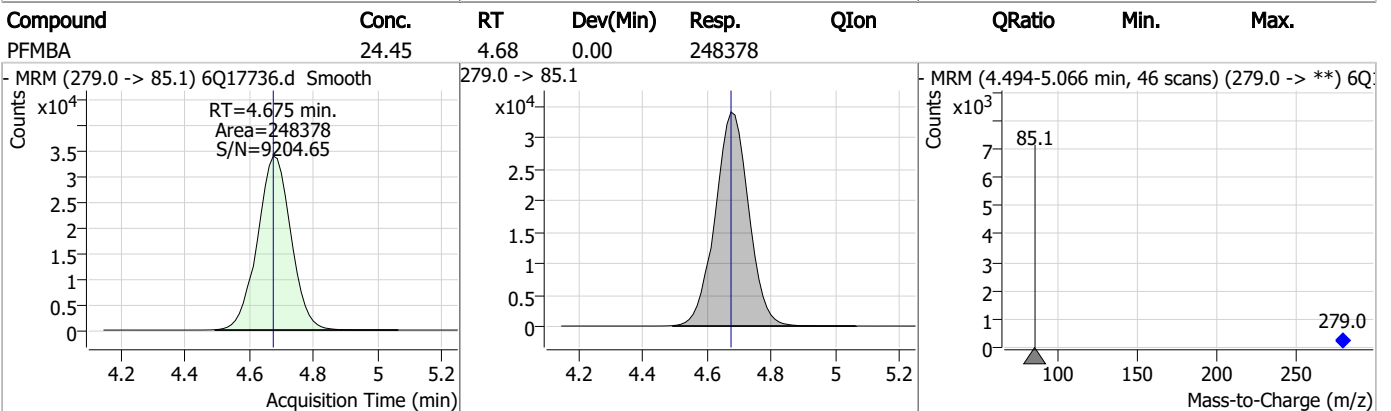
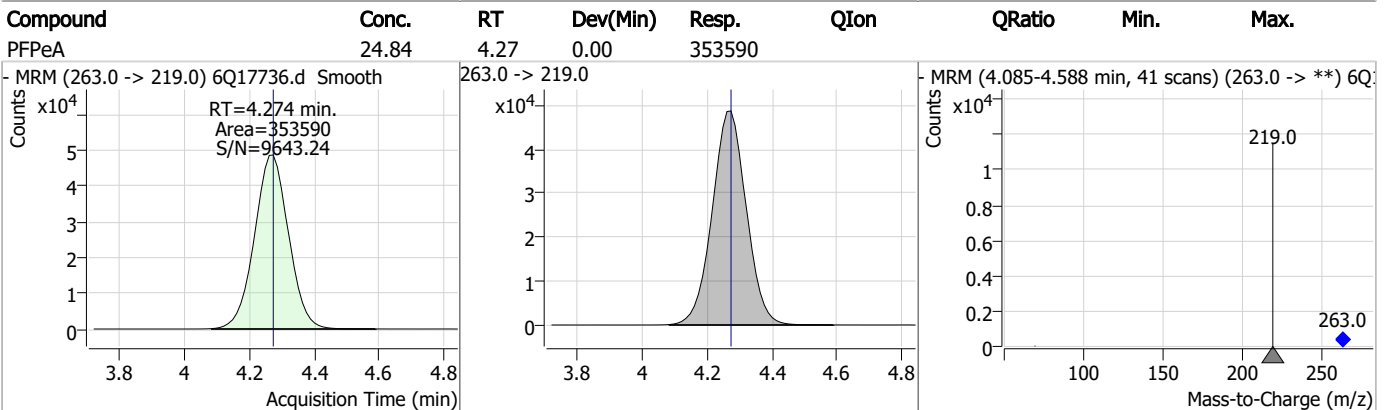
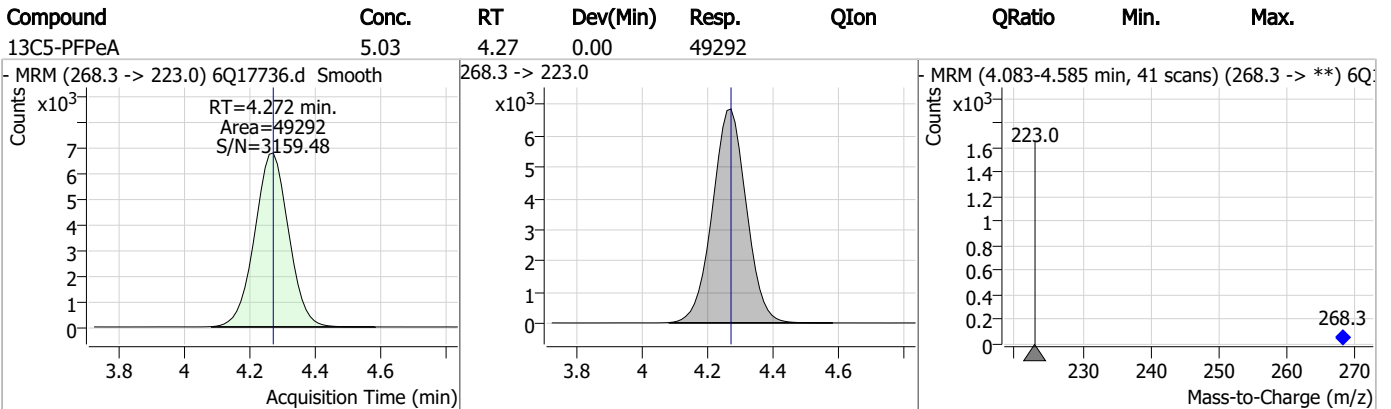
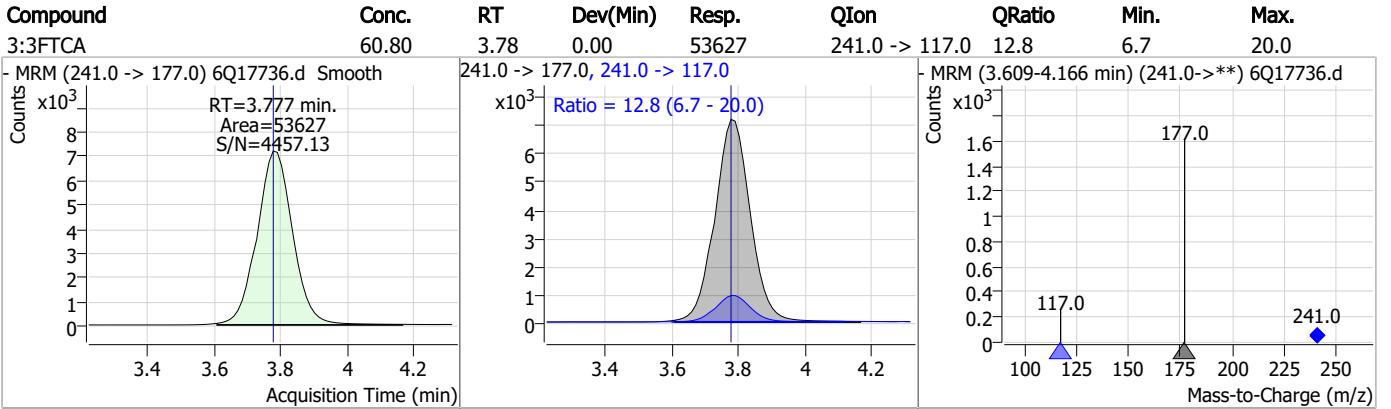
7.6.2

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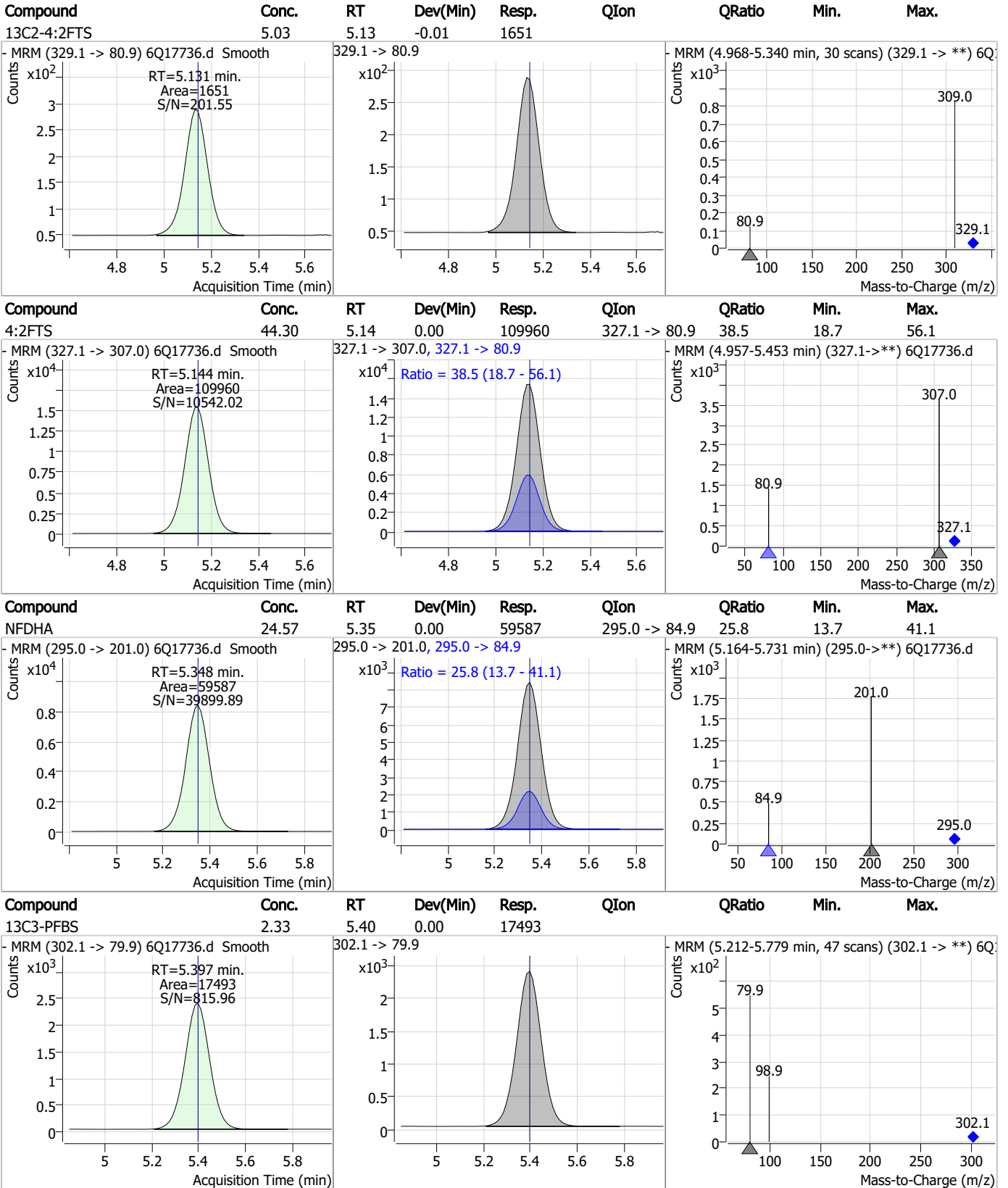
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



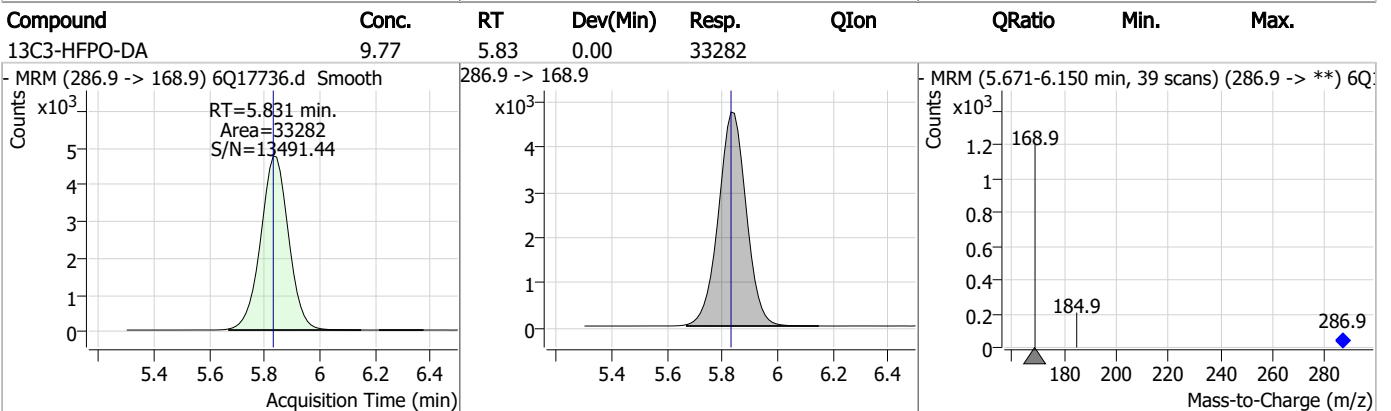
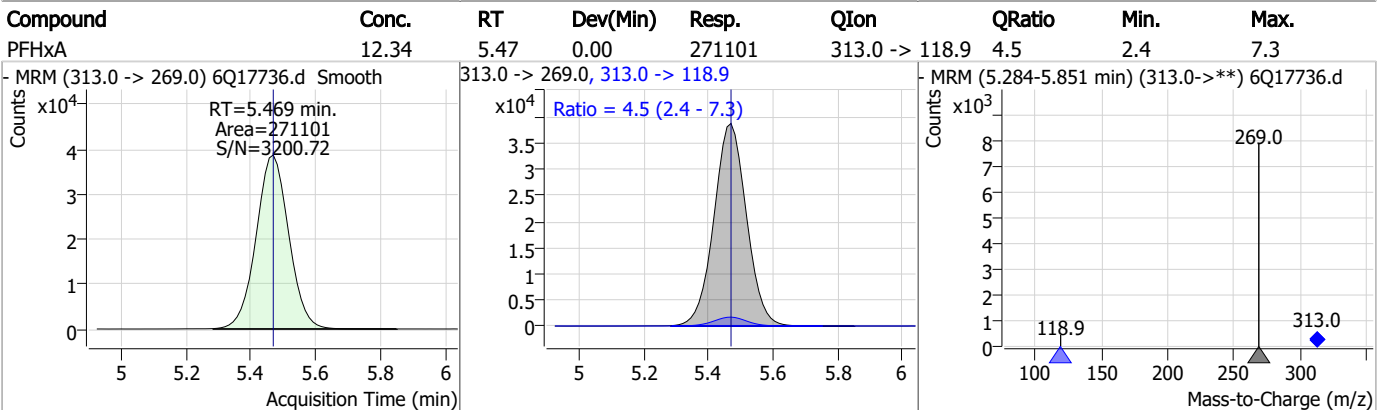
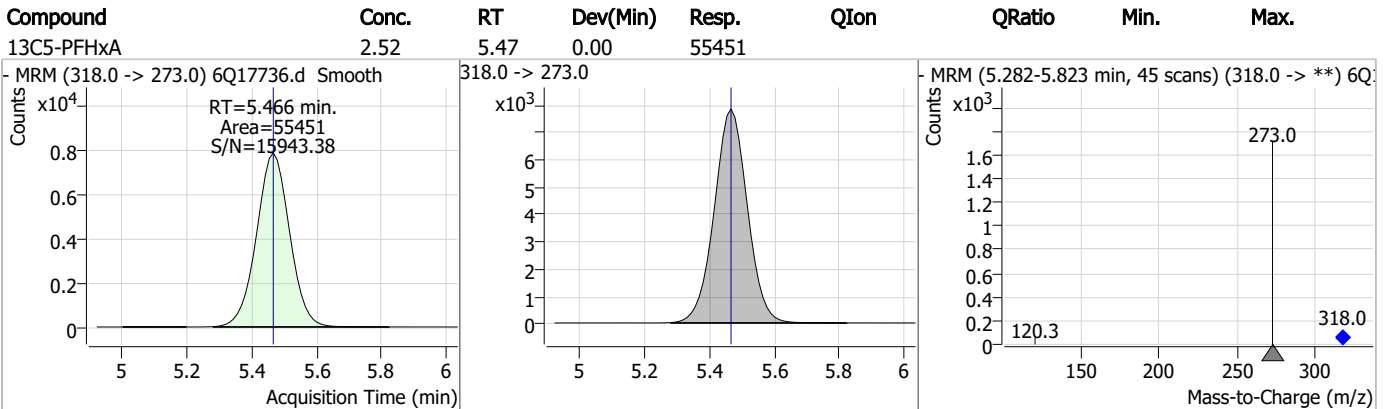
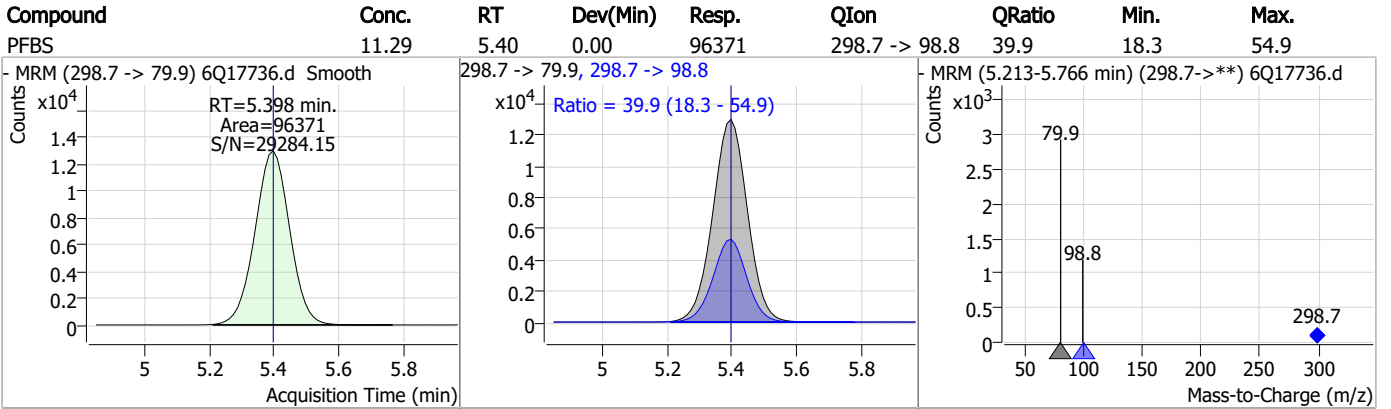
Perfluorinated Compounds by LC/MS/MS



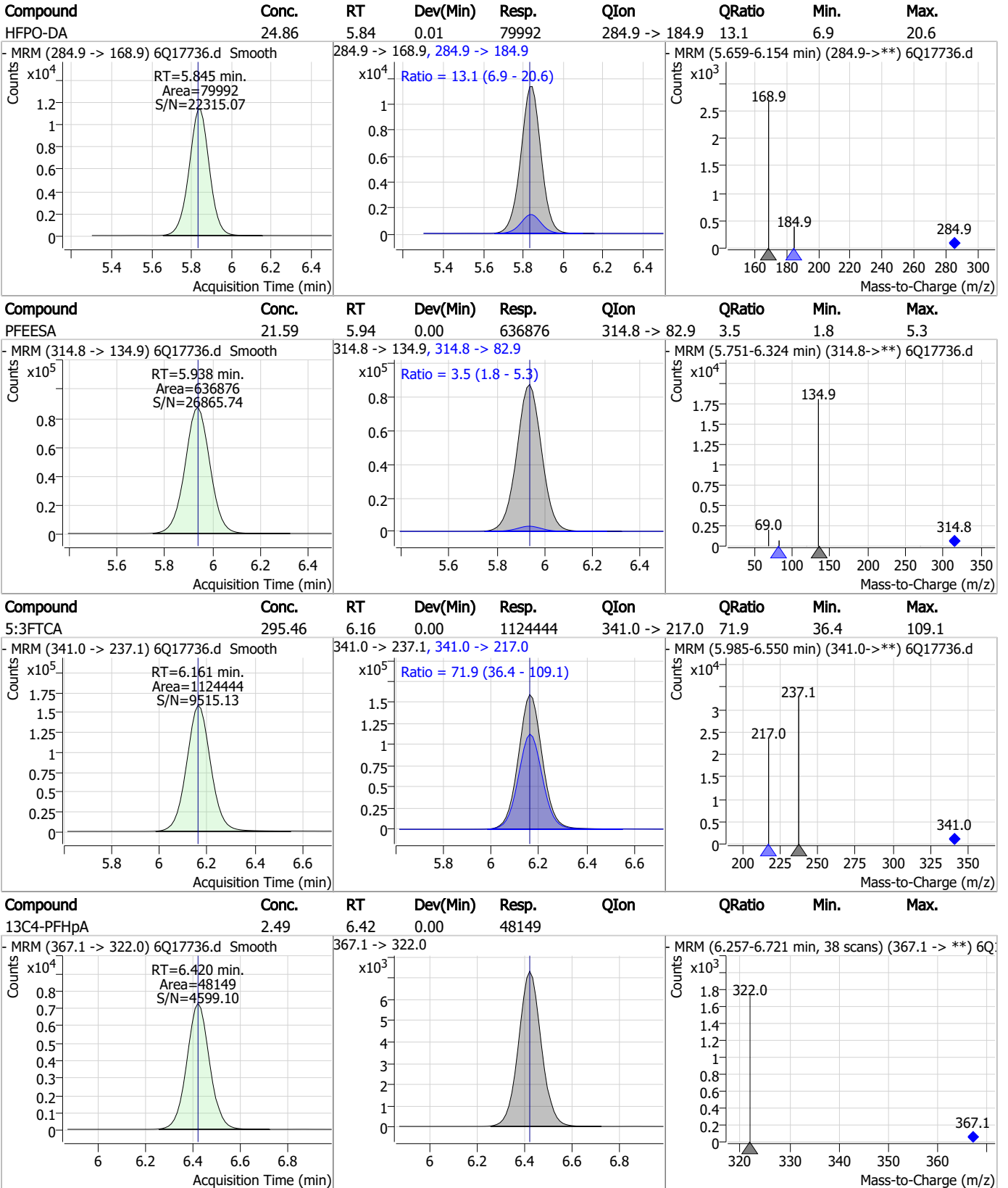
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Perfluorinated Compounds by LC/MS/MS



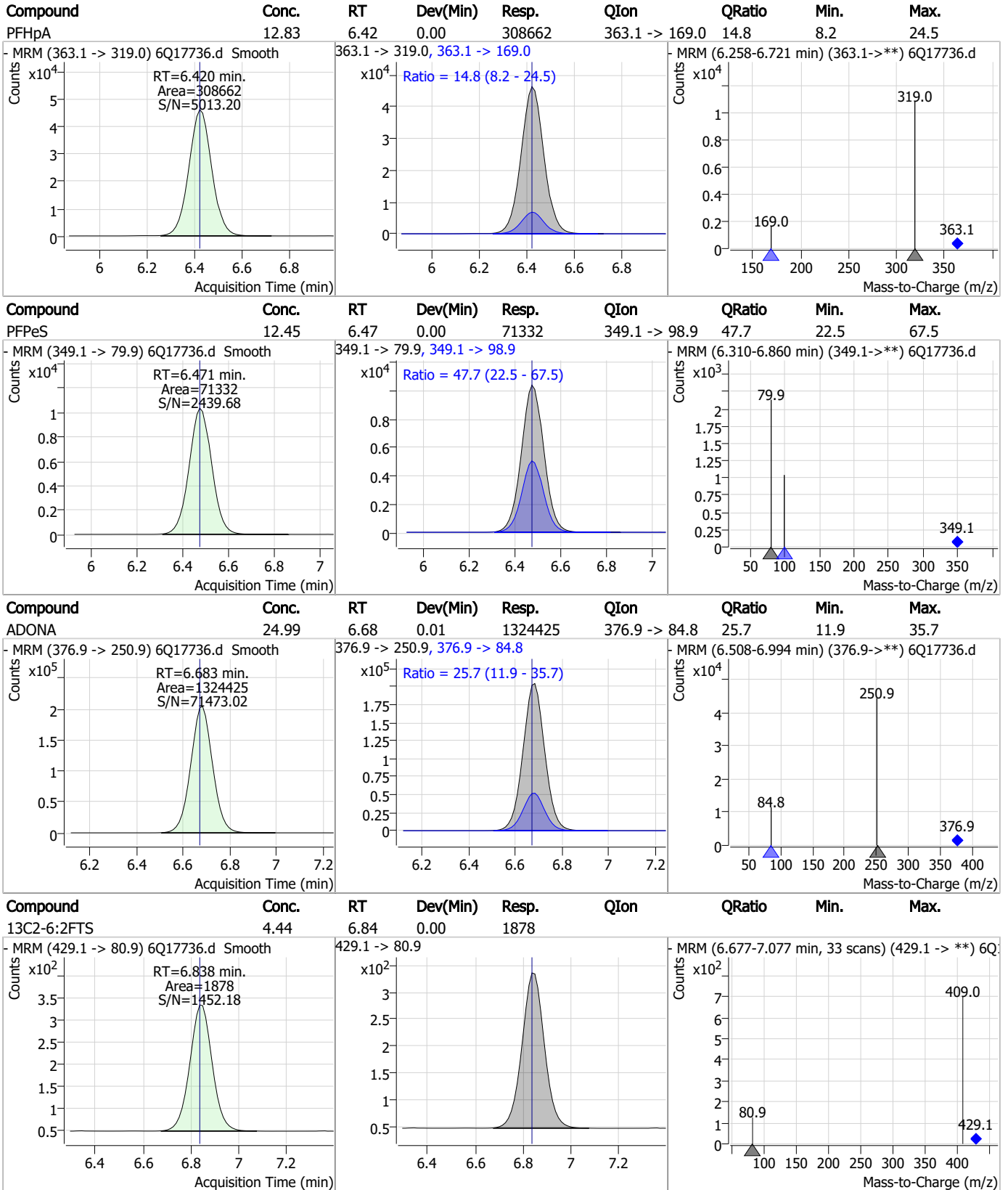
Perfluorinated Compounds by LC/MS/MS



7.6.2

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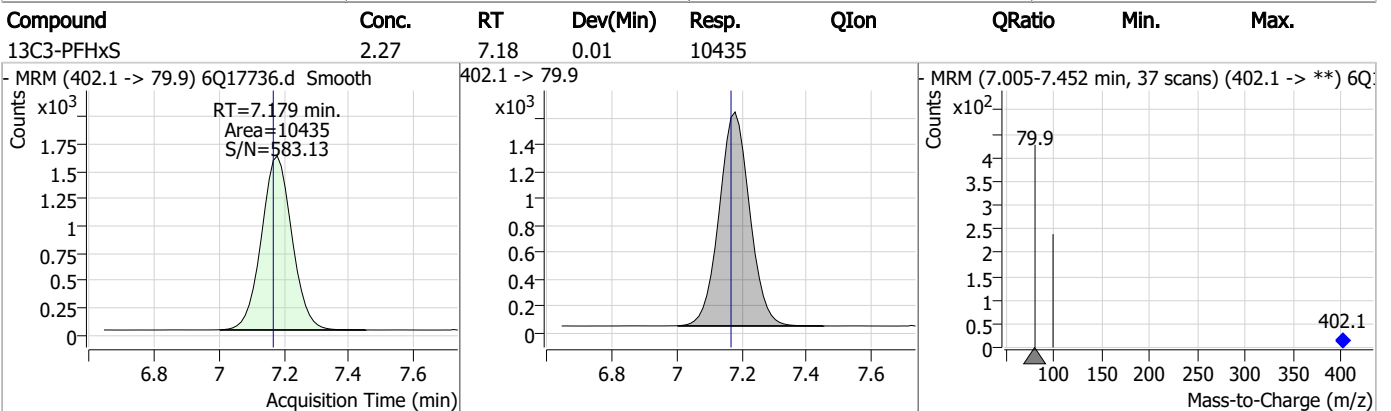
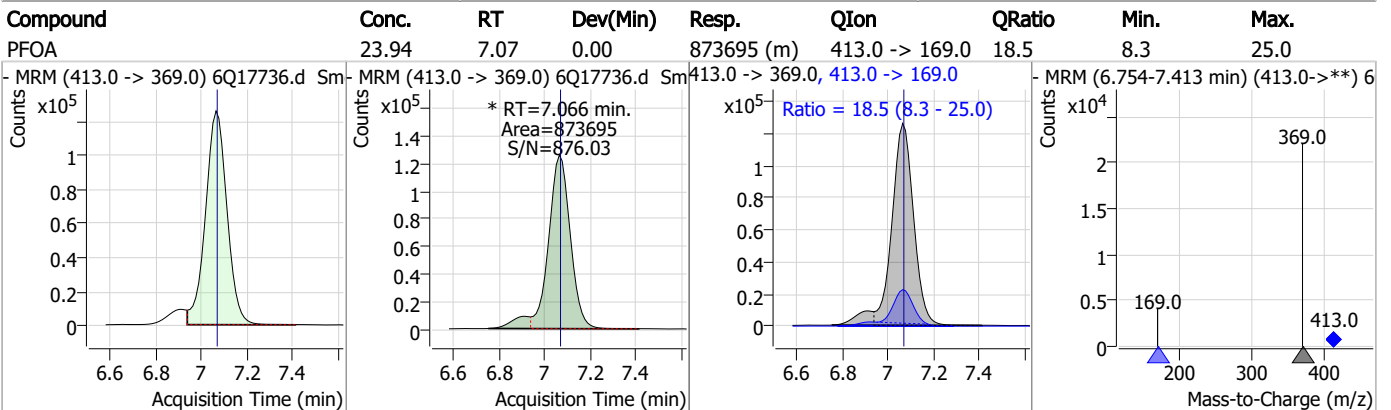
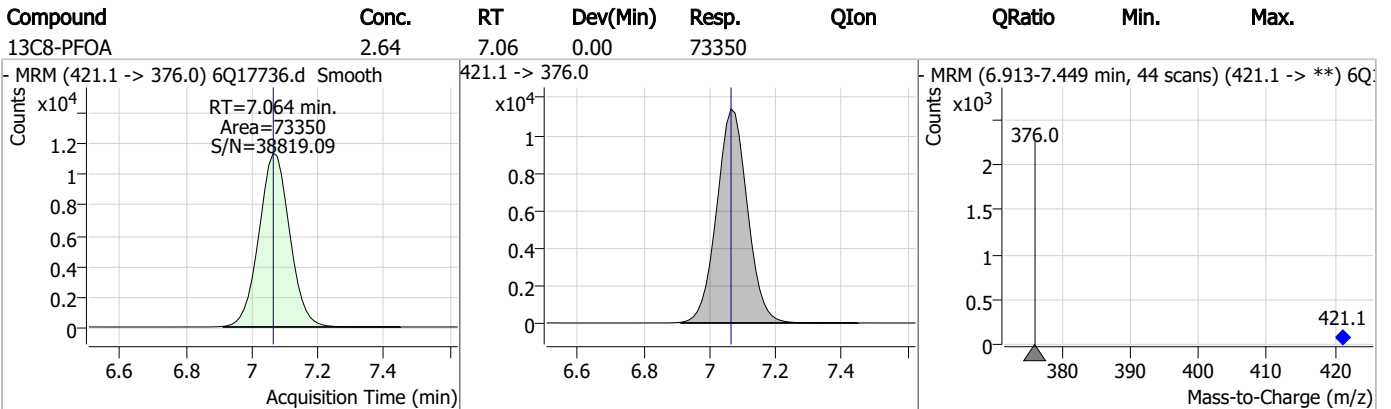
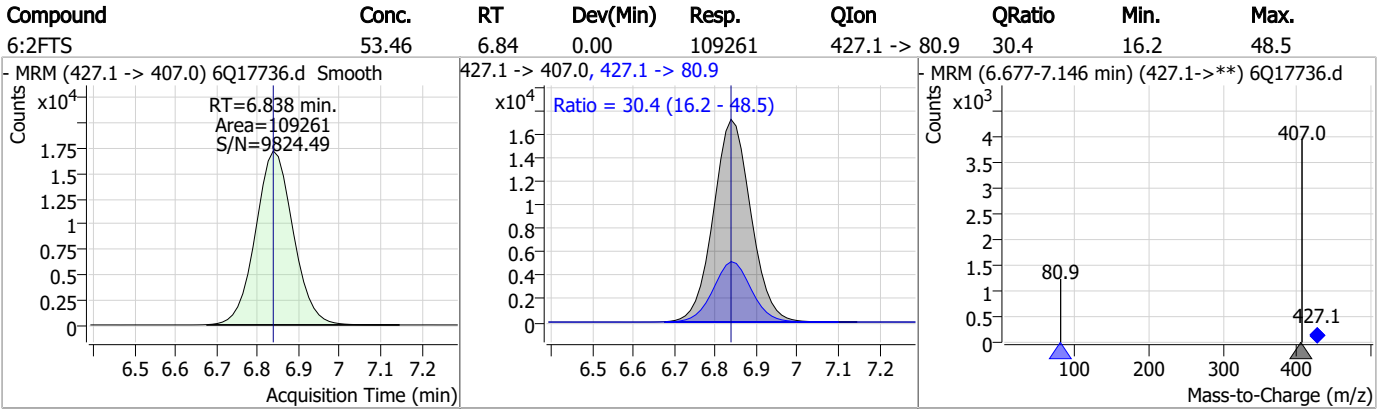
Perfluorinated Compounds by LC/MS/MS



7.6.2

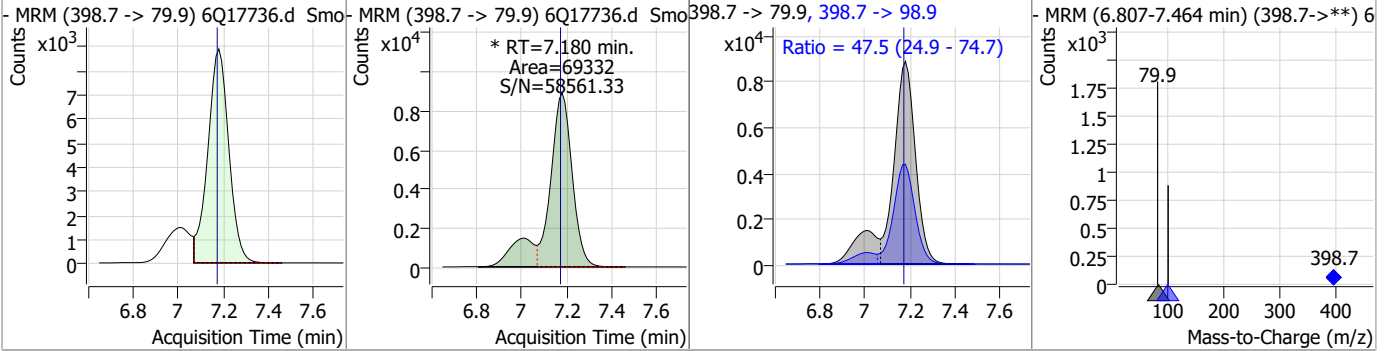
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Perfluorinated Compounds by LC/MS/MS

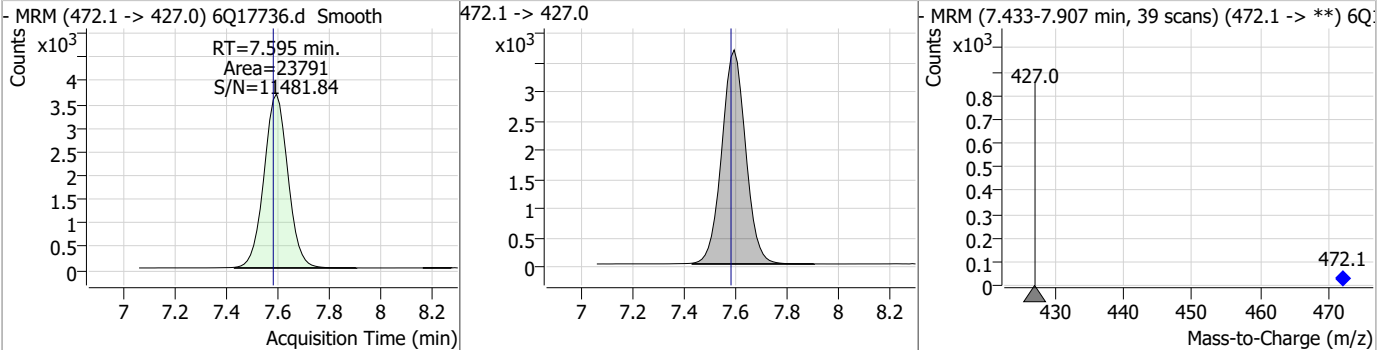


Perfluorinated Compounds by LC/MS/MS

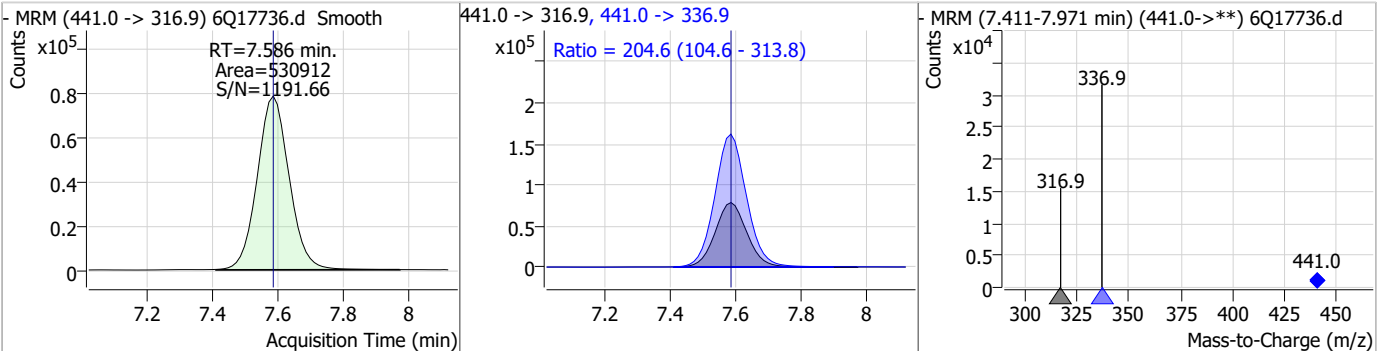
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	12.00	7.18	0.01	69332 (m)	398.7 -> 98.9	47.5	24.9	74.7



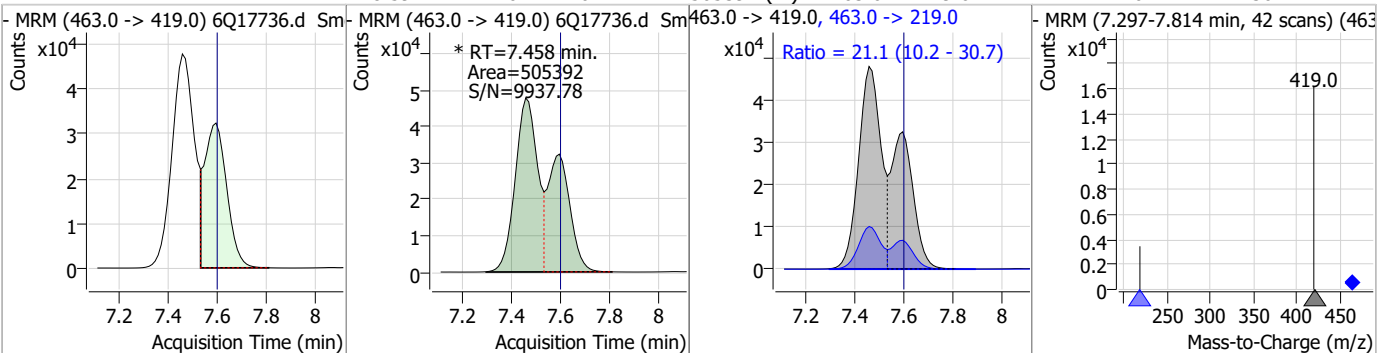
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.60	0.01	23791				



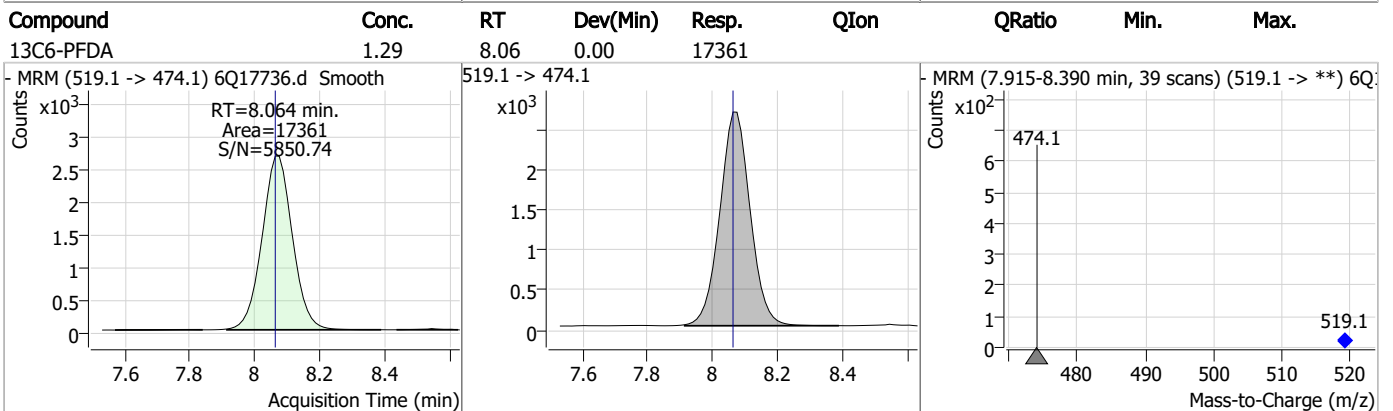
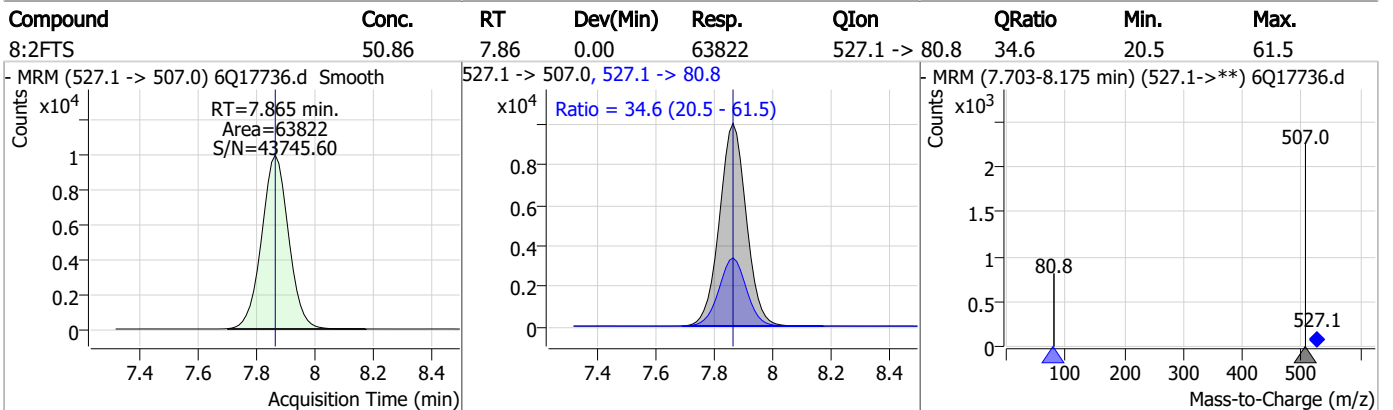
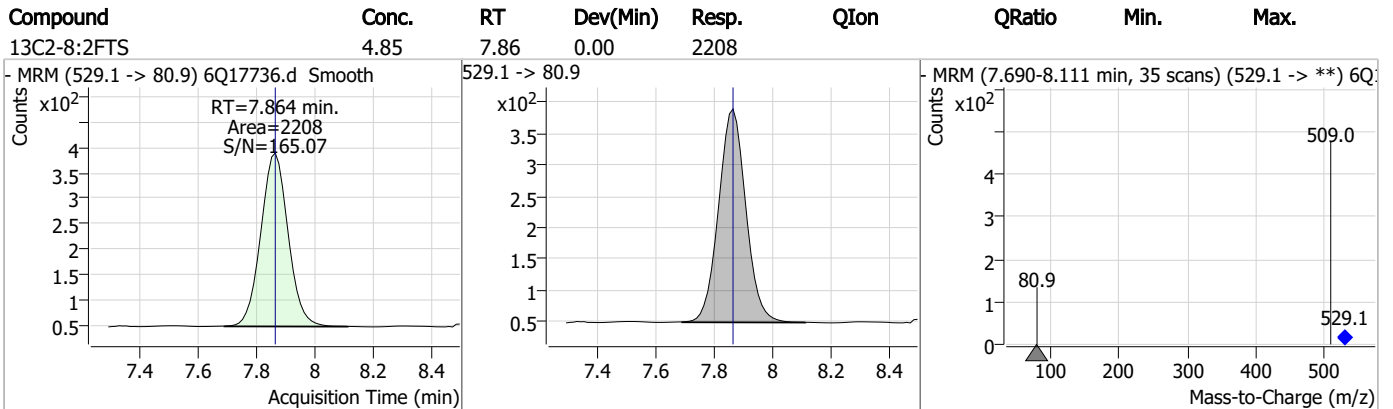
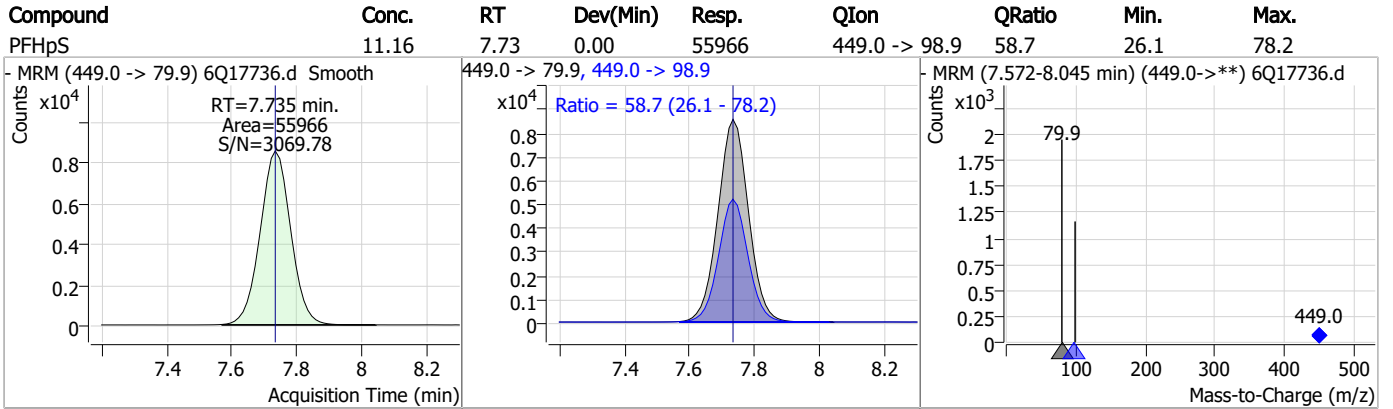
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	307.50	7.59	0.00	530912	441.0 -> 336.9	204.6	104.6	313.8



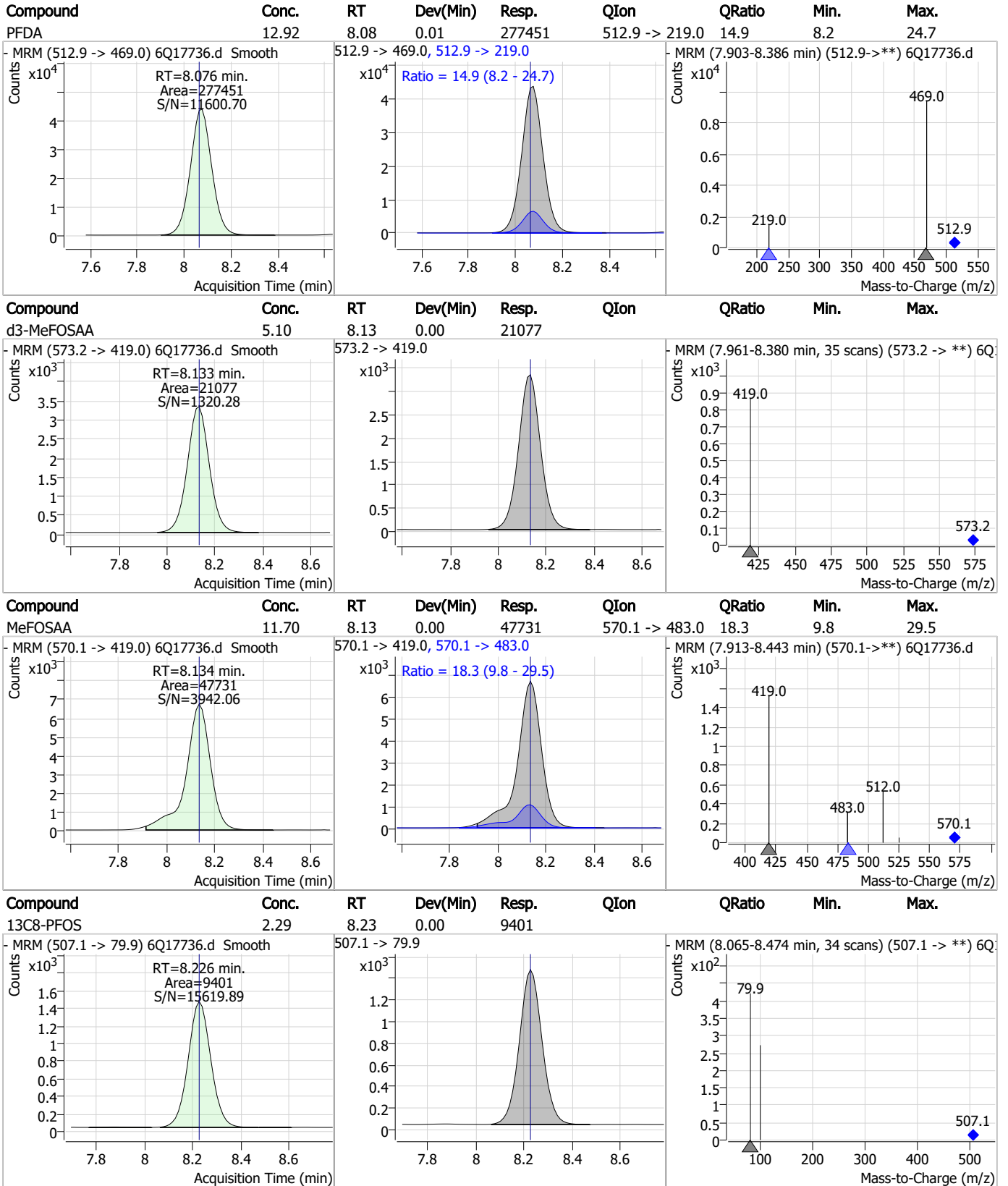
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	28.59	7.46	-0.14	505392 (m)	463.0 -> 219.0	21.1	10.2	30.7



Perfluorinated Compounds by LC/MS/MS



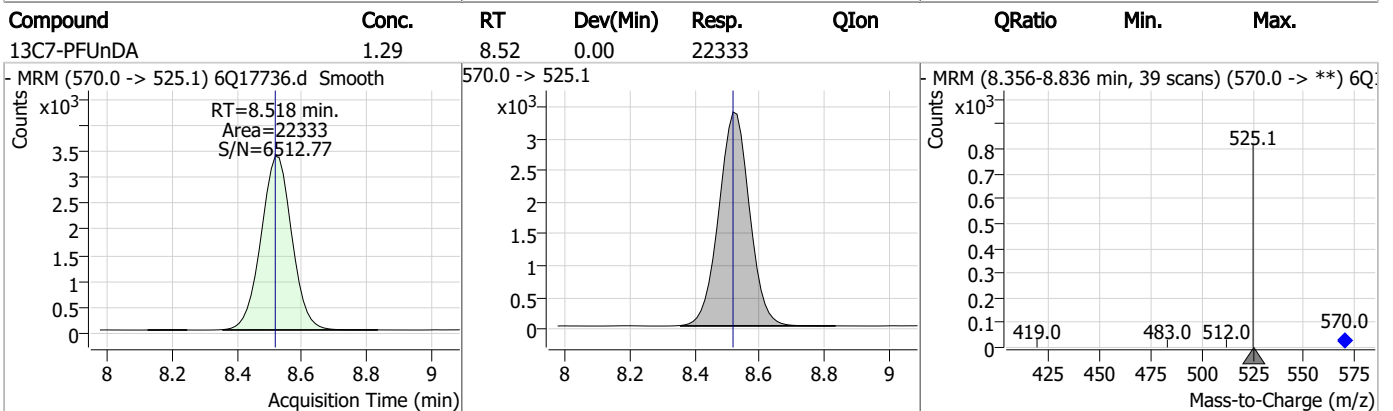
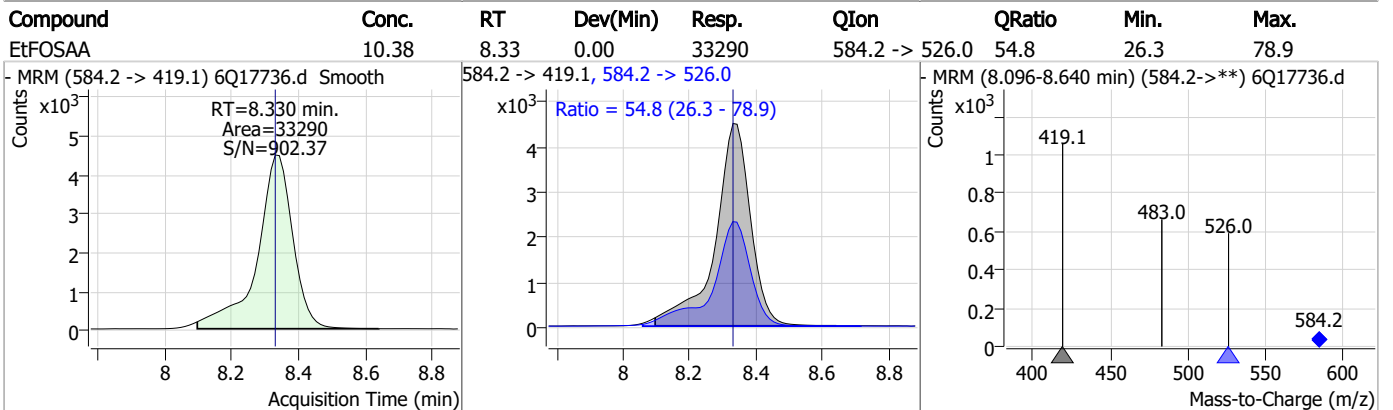
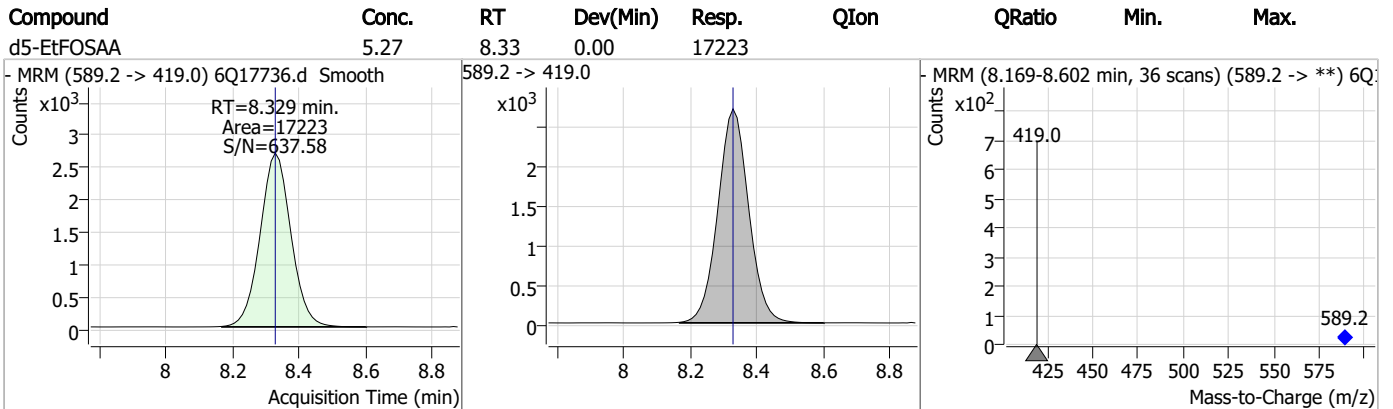
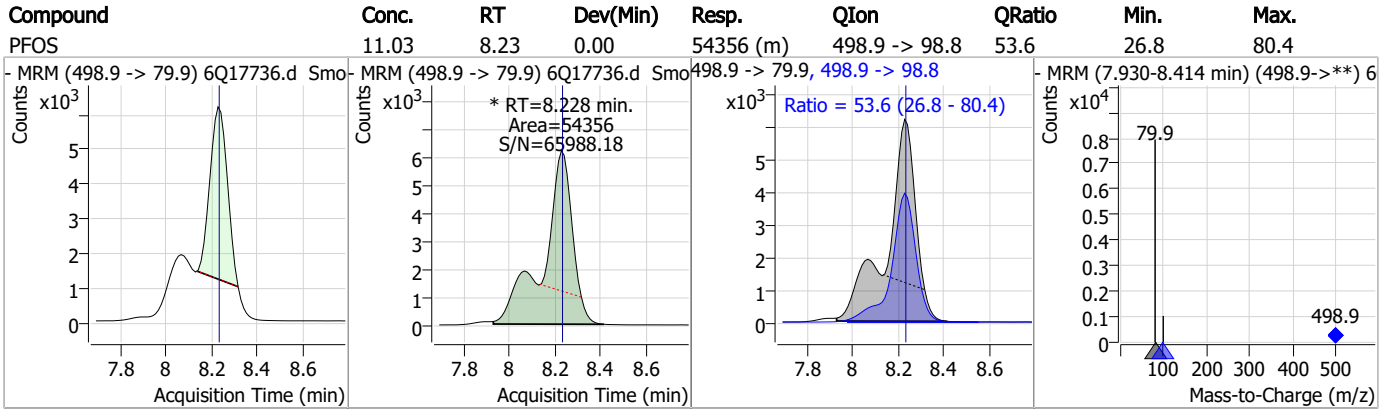
Perfluorinated Compounds by LC/MS/MS



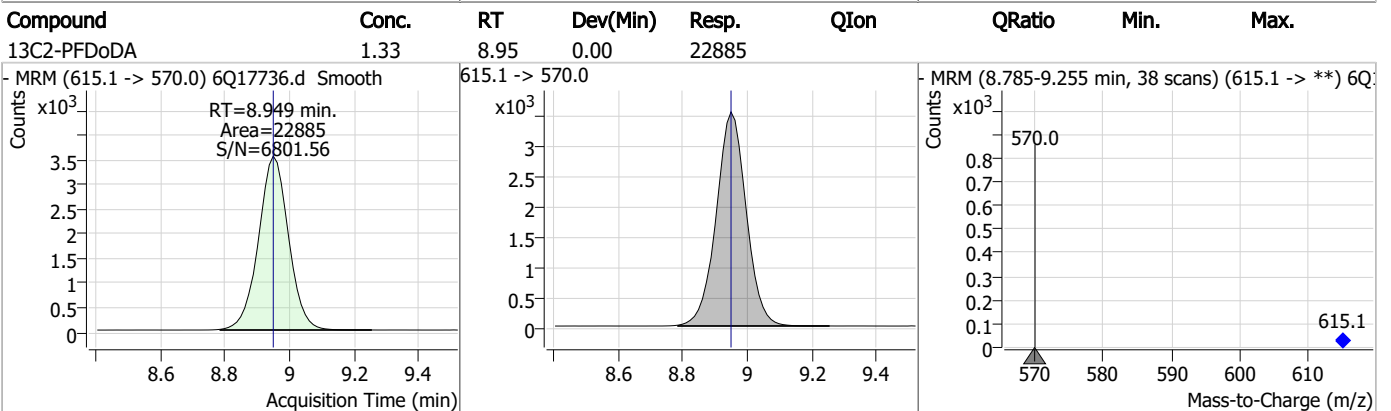
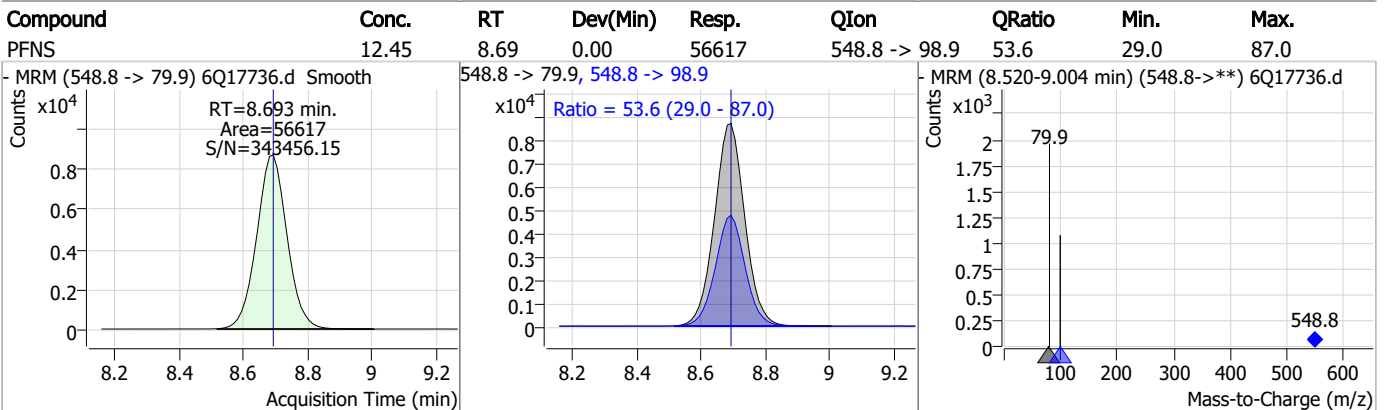
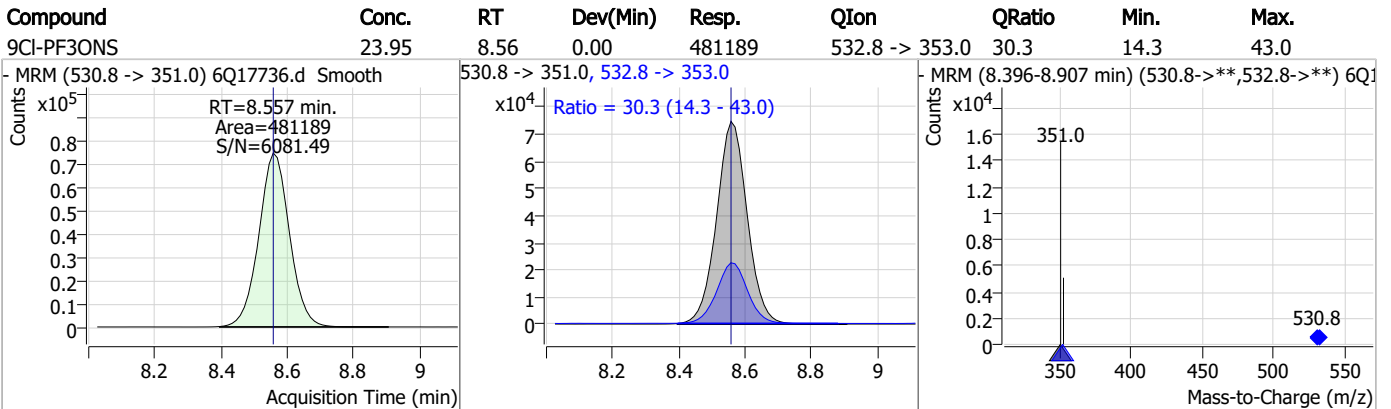
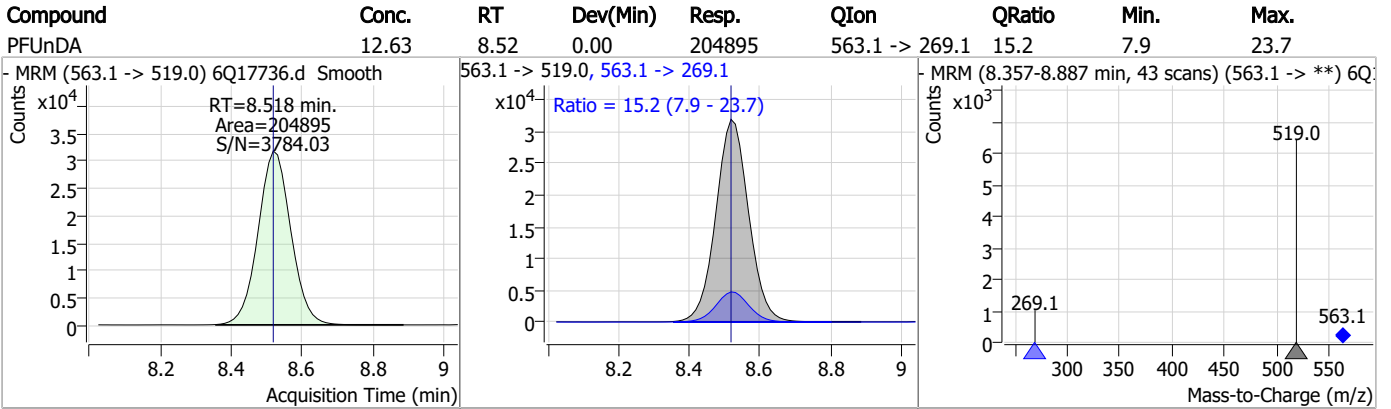
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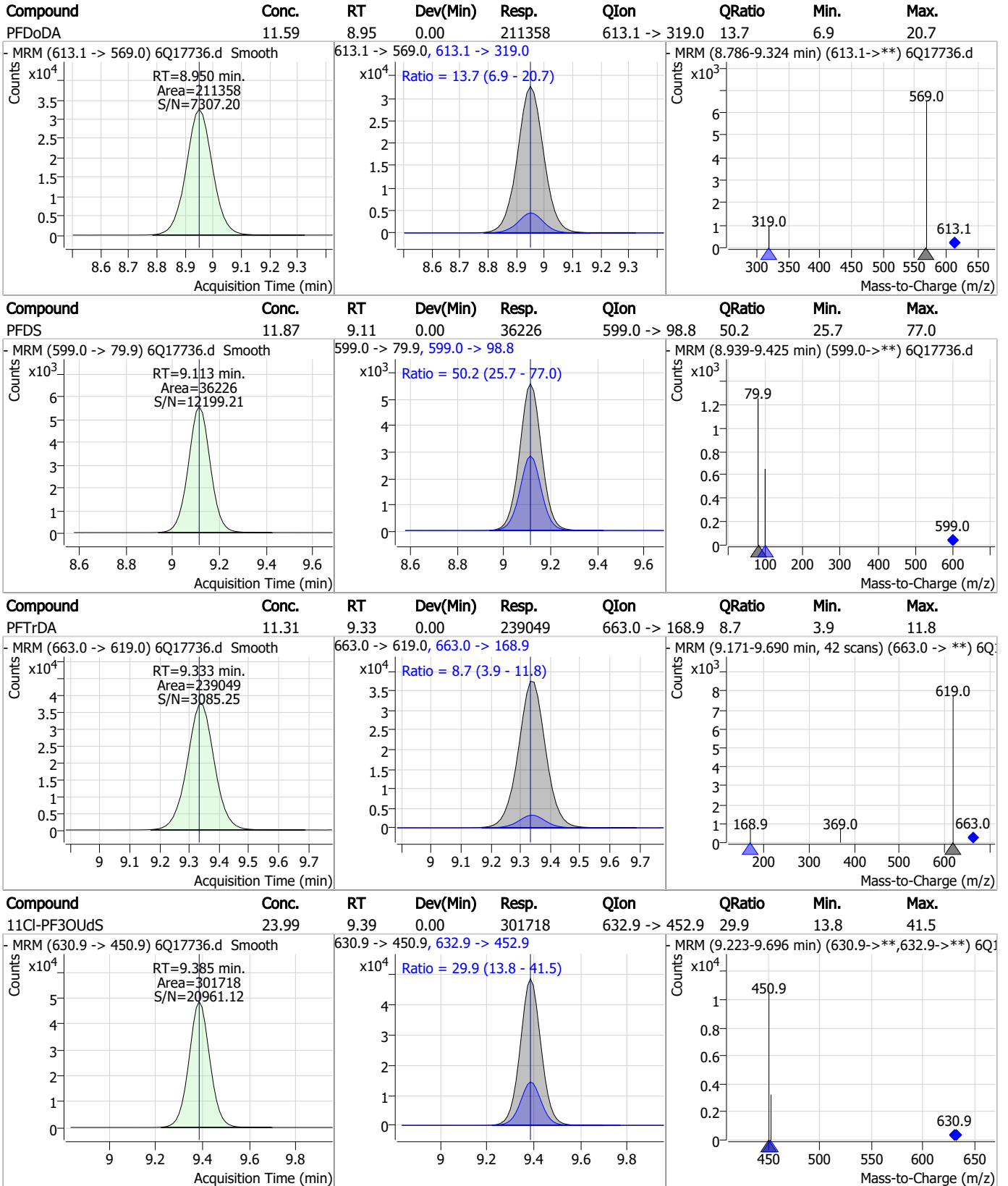
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



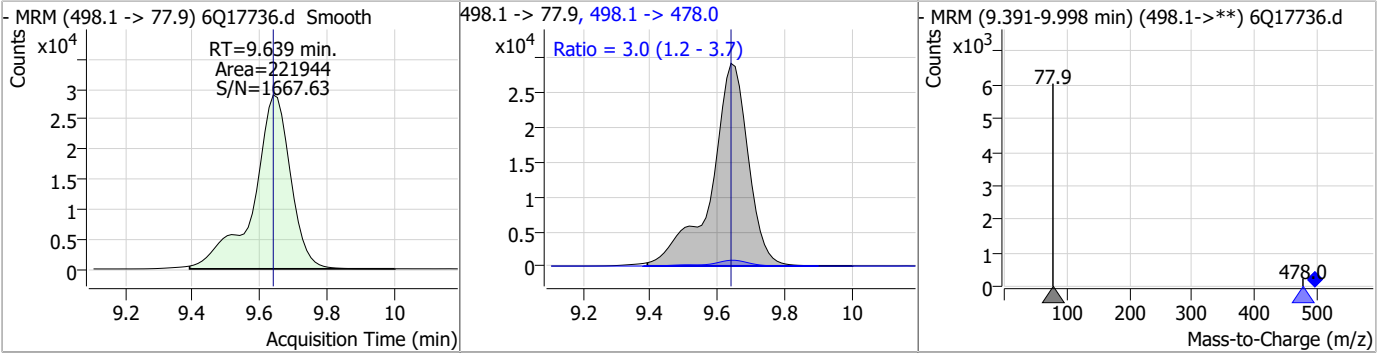
Perfluorinated Compounds by LC/MS/MS



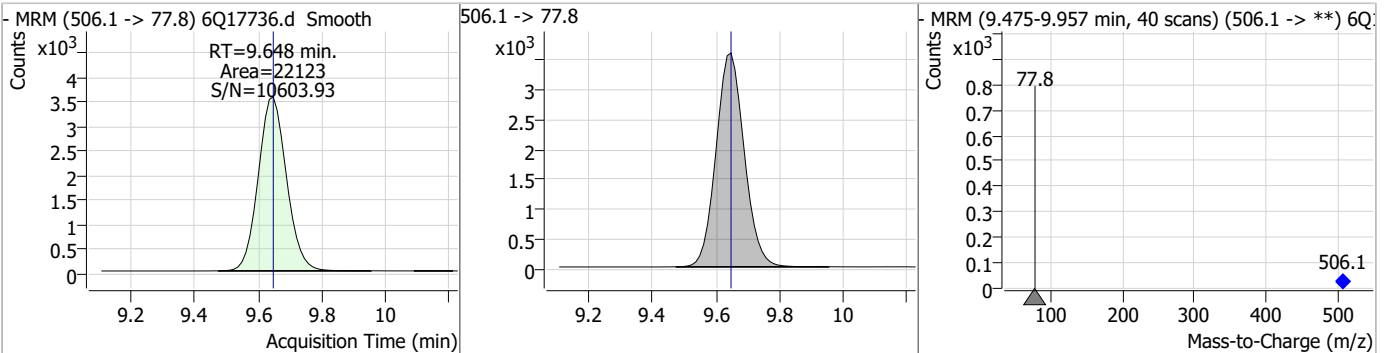
7.6.2
7

Perfluorinated Compounds by LC/MS/MS

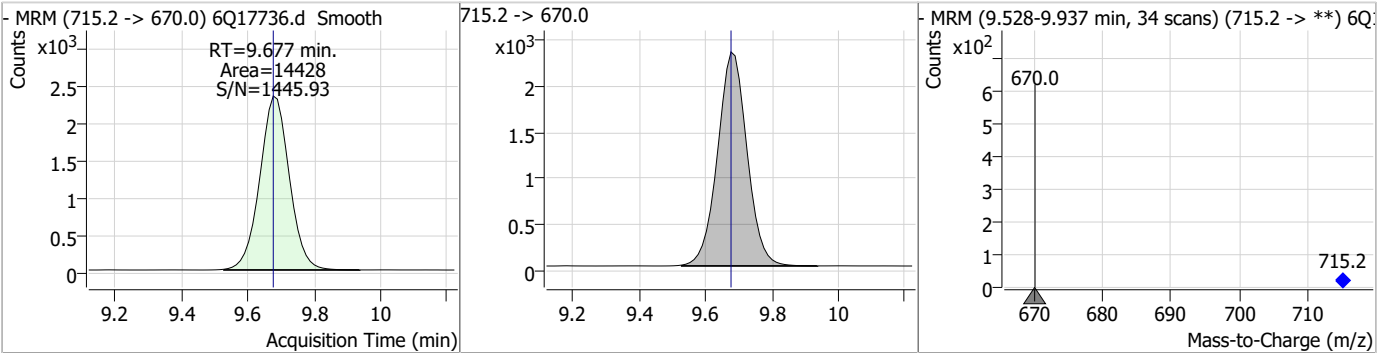
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	26.80	9.64	0.00	221944	498.1 -> 478.0	3.0	1.2	3.7



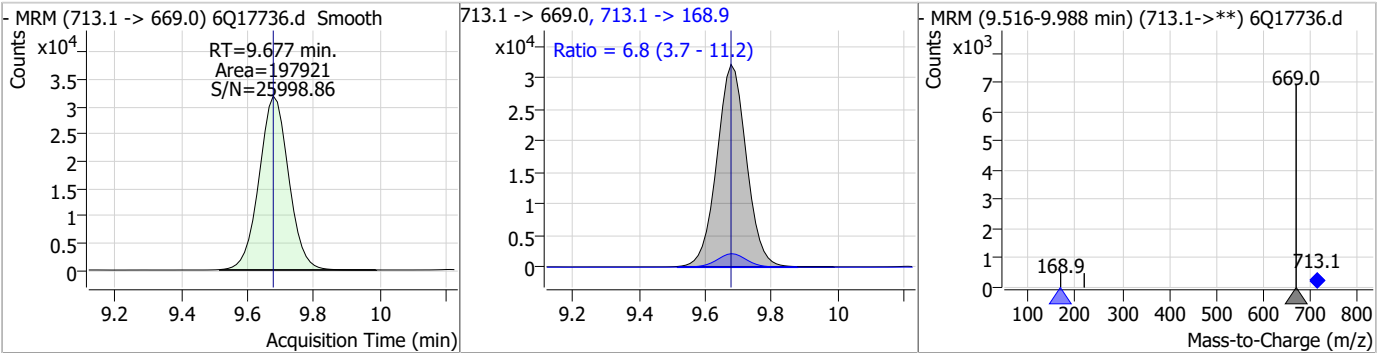
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.53	9.65	0.00	22123				



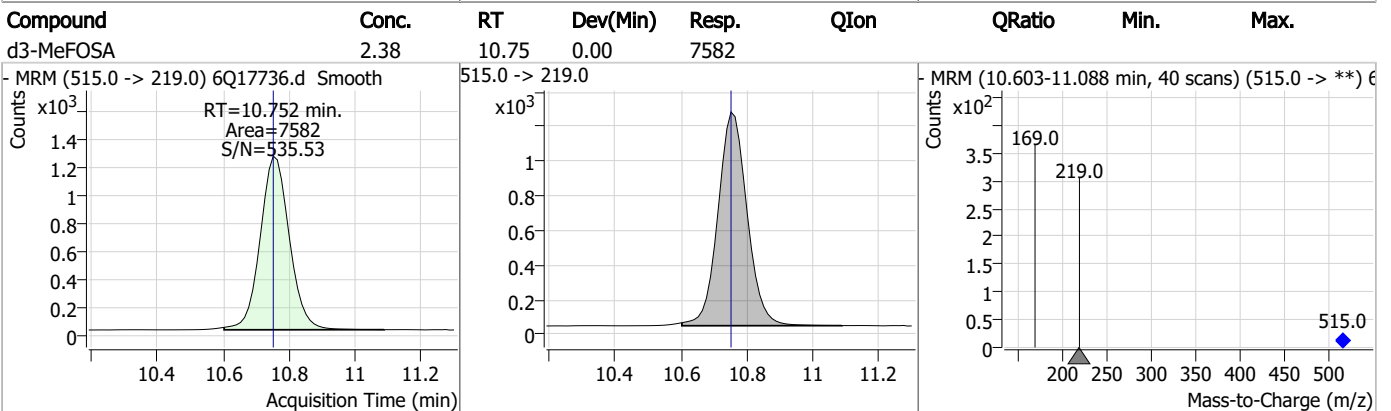
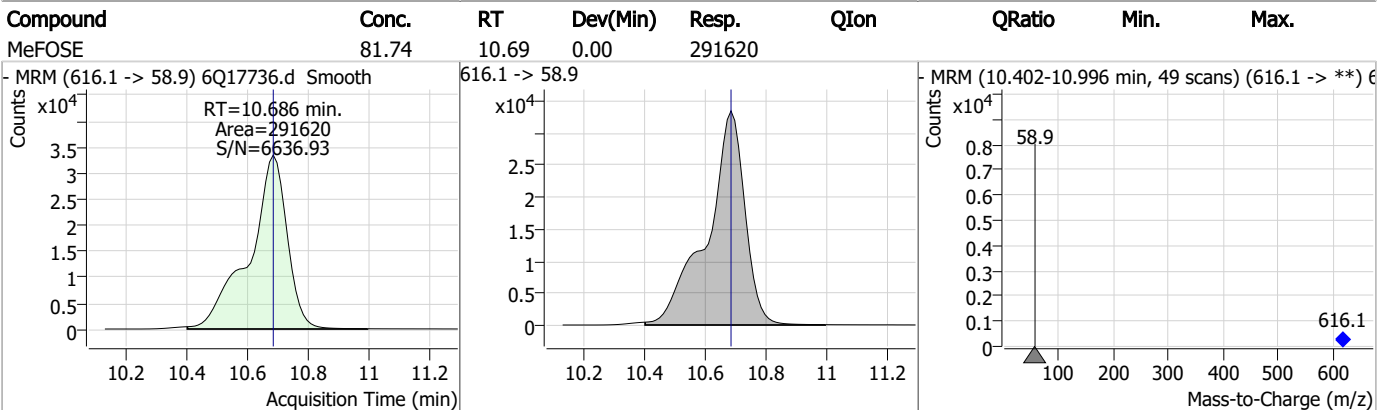
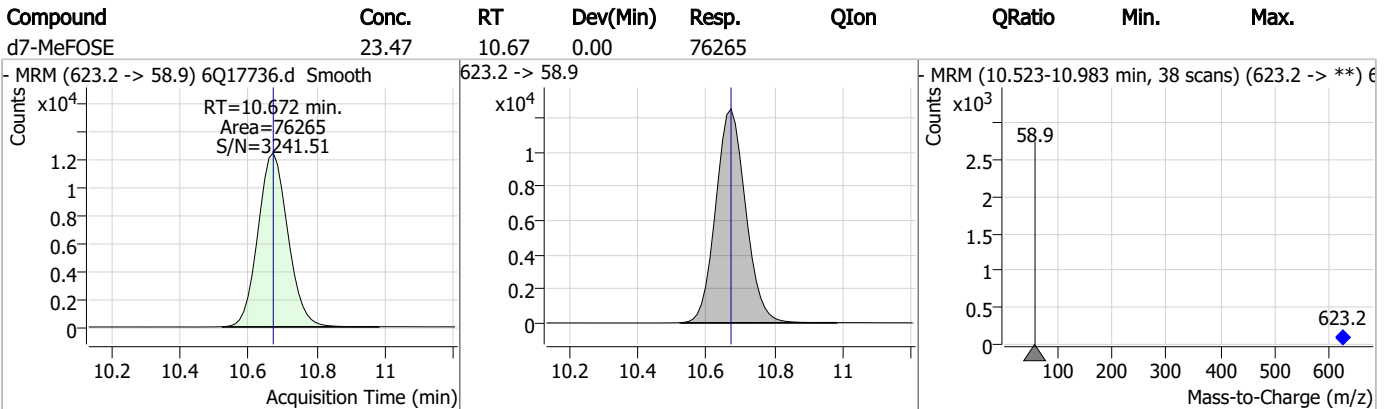
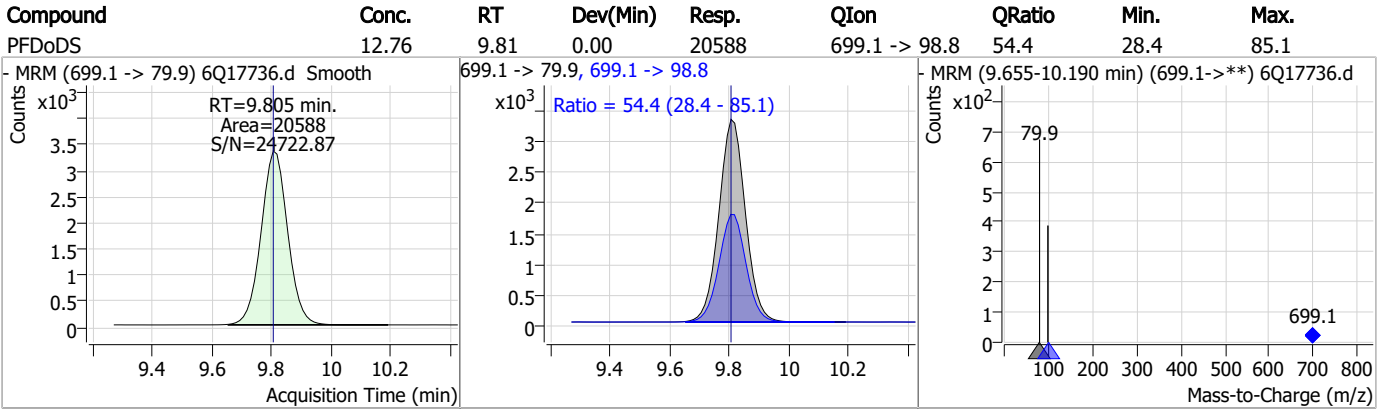
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.68	0.00	14428				



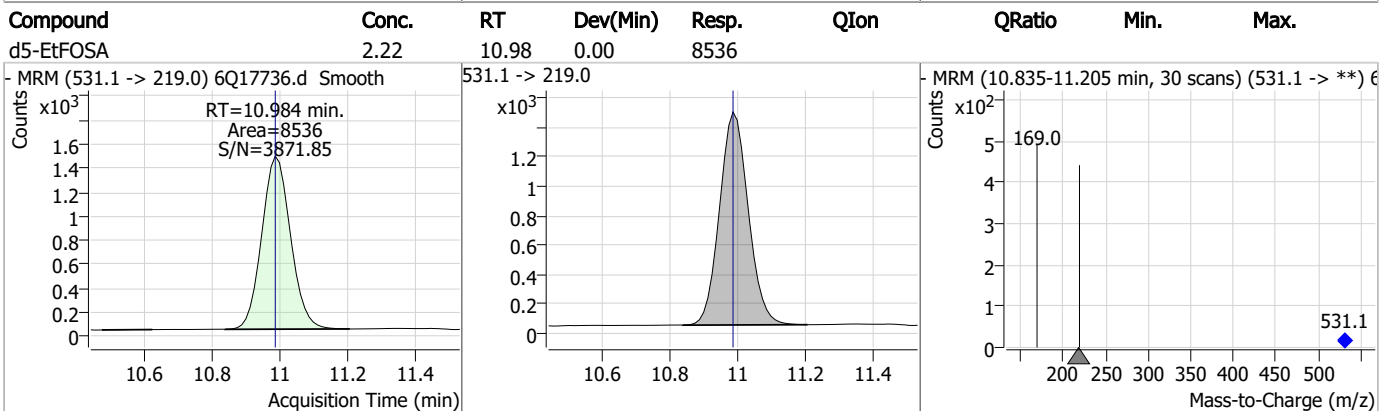
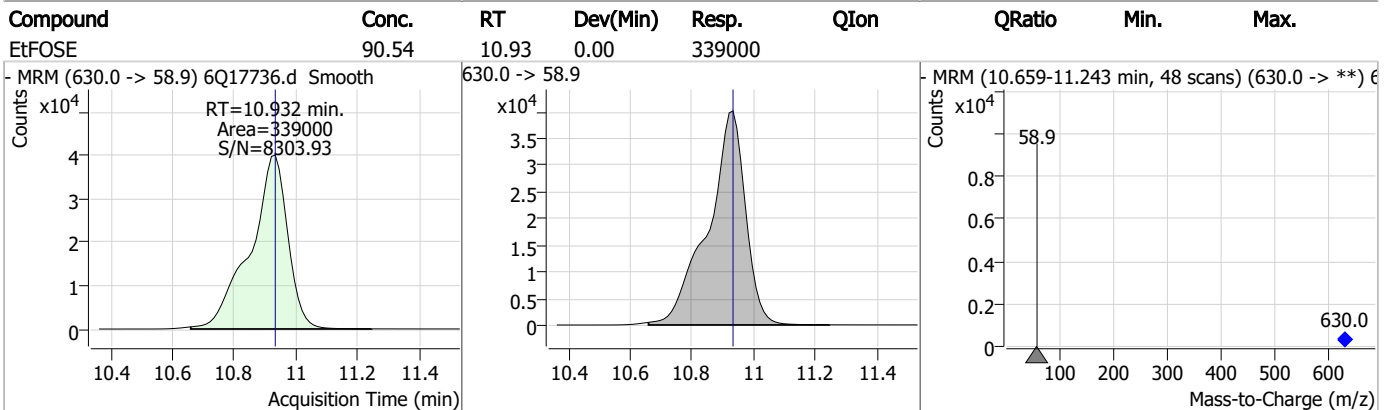
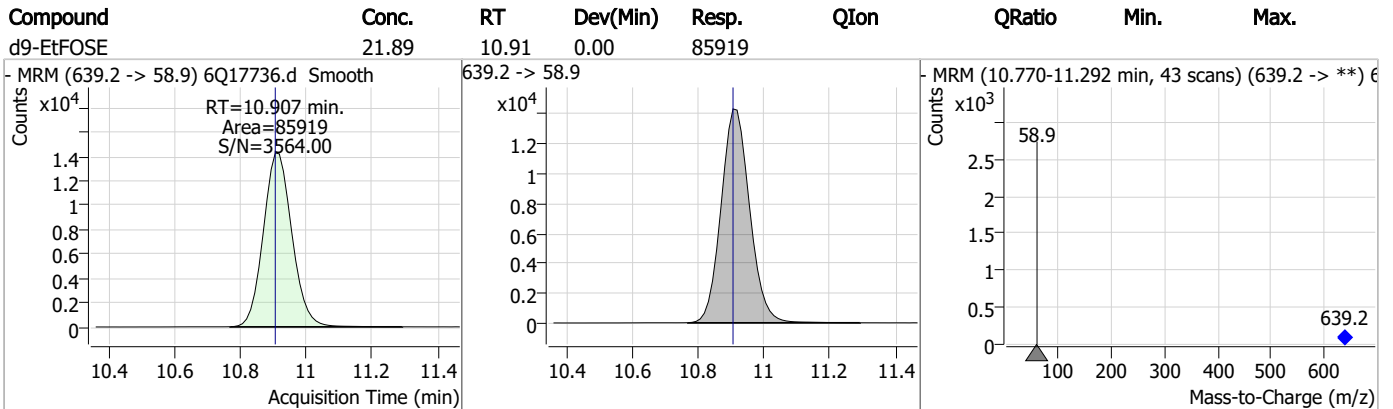
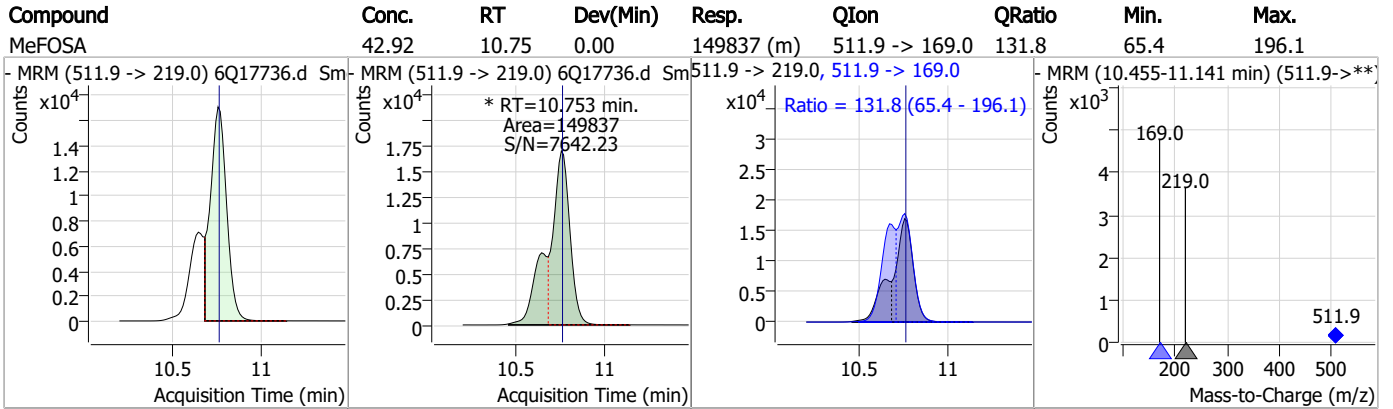
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.40	9.68	0.00	197921	713.1 -> 168.9	6.8	3.7	11.2



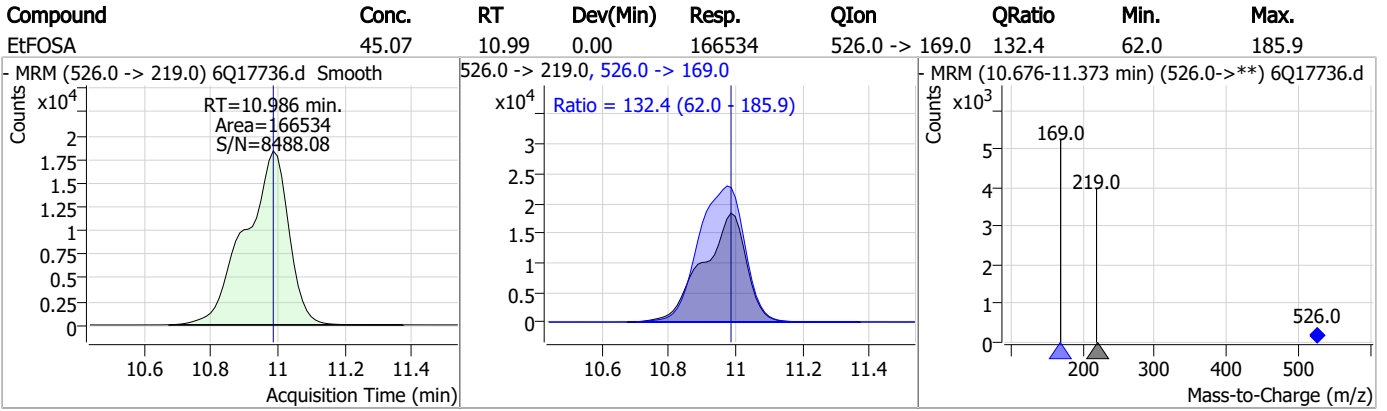
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q268-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17736.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 11:46 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.07	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorononanoic acid	375-95-1		7.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.6.2.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)
Norman Farmer
 05/17/23 08:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17781.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 1:19:20 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q269 TDCA.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

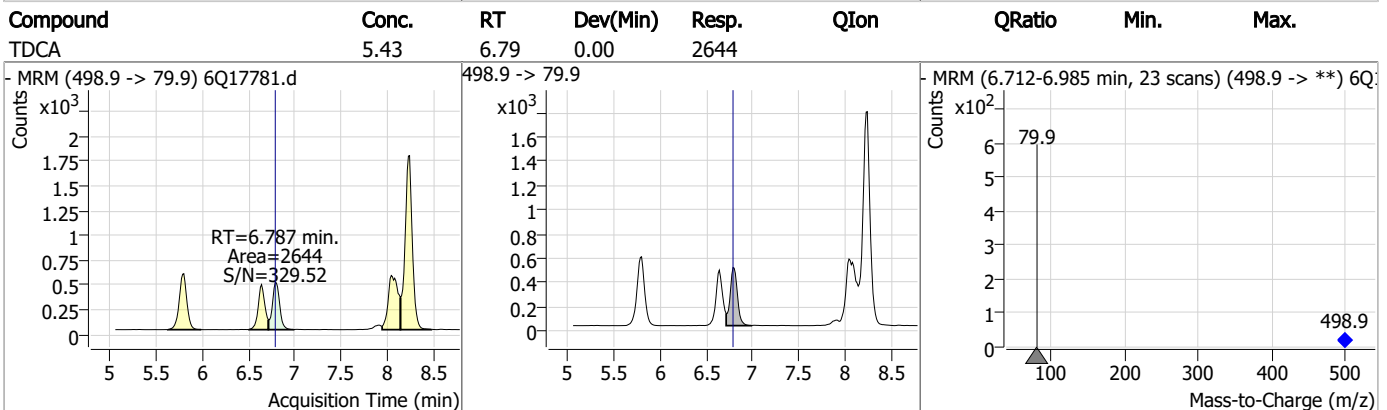
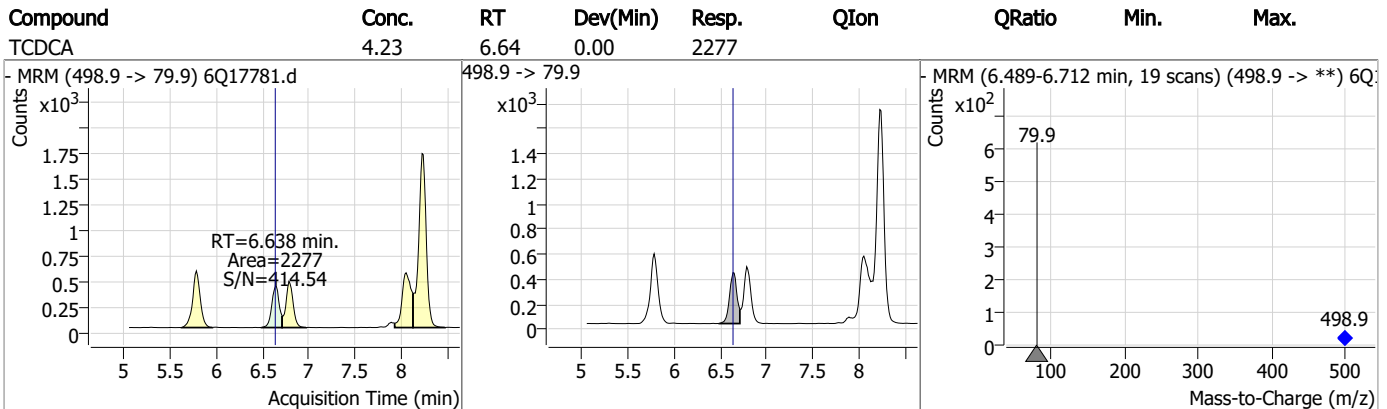
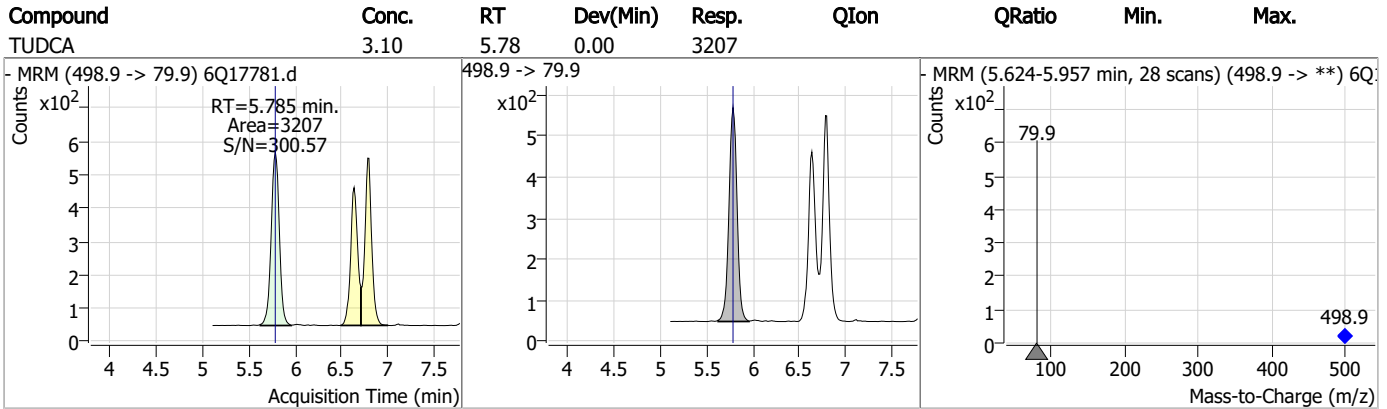
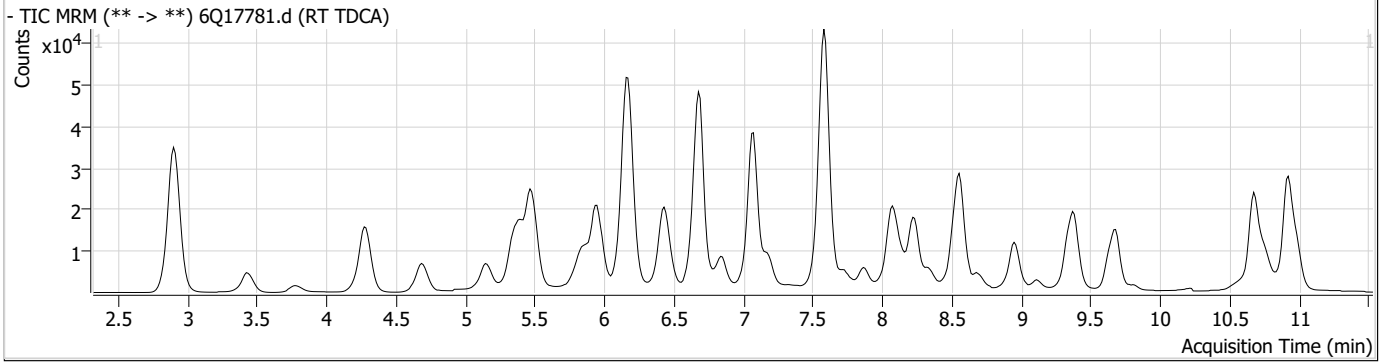
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.226	507.1 -> 79.9	11662	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	16538	2.50 µg/L	0.000
System Monitoring Compounds					
13C8-PFOS	8.226	507.1 -> 79.9	11662	1.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 71.5%		
Target Compounds					
PFOS	8.240	498.9 -> 79.9 498.9 -> 98.8	14628 6634	3.67 µg/L #m	75
TCDCa	6.638	498.9 -> 79.9	2277	4.23 ng/ml	100
TDCA	6.787	498.9 -> 79.9	2644	5.43 ng/ml	100
TUDCA	5.785	498.9 -> 79.9	3207	3.10 ng/ml	100

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

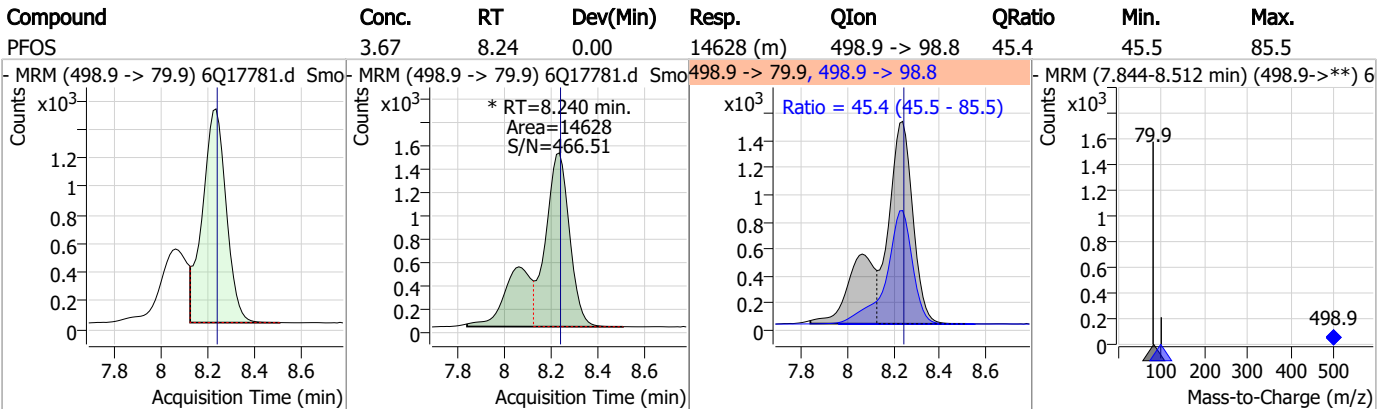
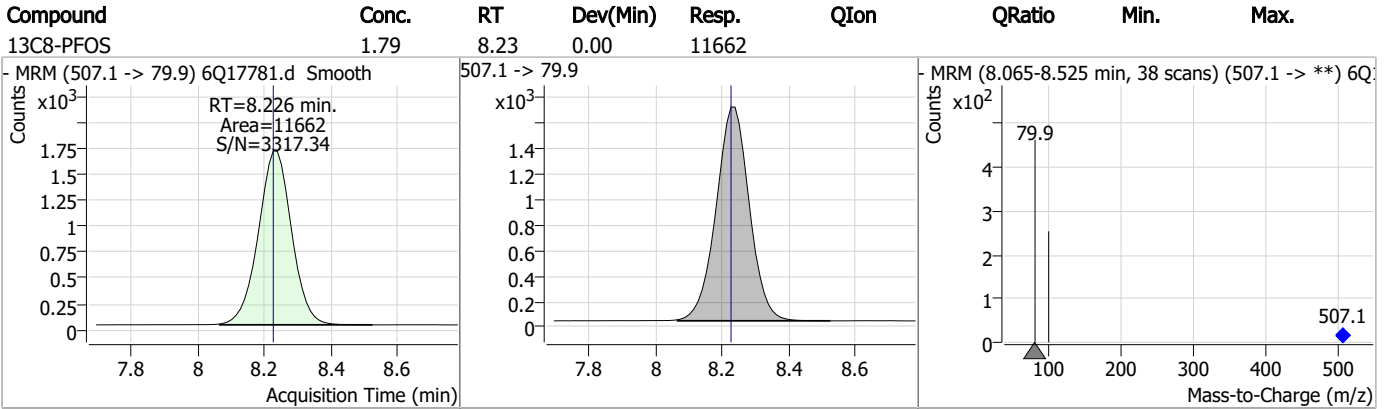
7.6.3

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.3

7

Manual Integration Approval Summary

Sample Number: S6Q269-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17781.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/15/23 13:19 Supervisor approved: 05/17/23 08:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.24	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17782.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 1:33:49 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	125995	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	42033	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	48706	2.50 µg/L	0.000
M4-PFHpA	6.432	367.1 -> 322.0	41213	2.50 µg/L	0.012
M8-PFOA	7.077	421.1 -> 376.0	58862	2.50 µg/L	0.012
M9-PFNA	7.595	472.1 -> 427.0	18852	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	16170	1.25 µg/L	0.012
M7-PFUnDA	8.530	570.0 -> 525.1	19508	1.25 µg/L	0.012
M2-PFDoDA	8.949	615.1 -> 570.0	19544	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	12717	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	19840	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	16599	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	9981	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9096	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1260	5.00 µg/L	0.000
M2-6:2FTS	6.850	429.1 -> 80.9	1618	5.00 µg/L	0.012
M2-8:2FTS	7.864	529.1 -> 80.9	1696	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	14779	5.00 µg/L	-0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	29729	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	12463	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	76692	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	102387	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8003	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	6982	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	11181	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	54066	5.00 µg/L	0.000
18O2-PFHxS	7.191	403.0 -> 83.9	7831	2.50 µg/L	0.025
13C4-PFOA	7.077	417.1 -> 372.0	59728	2.50 µg/L	0.012
13C2-PFDA	8.076	515.1 -> 470.1	16666	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	22781	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	39640	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1260	4.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.5%		
13C2-6:2FTS	6.850	429.1 -> 80.9	1618	4.21 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.2%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1696	4.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 82.0%		
13C2-PFDoDA	8.949	615.1 -> 570.0	19544	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	12717	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C3-PFBS	5.397	302.1 -> 79.9	16599	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	9981	2.39 µg/L	0.012

7.64
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFBA	2.901	216.8 -> 171.9	125995	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C4-PFHpA	6.432	367.1 -> 322.0	41213	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFHxA	5.466	318.0 -> 273.0	48706	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C5-PFPeA	4.272	268.3 -> 223.0	42033	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	8.076	519.1 -> 474.1	16170	1.48 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.4%	
13C7-PFUnDA	8.530	570.0 -> 525.1	19508	1.39 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.3%	
13C8-FOSA	9.648	506.1 -> 77.8	19840	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C8-PFOA	7.077	421.1 -> 376.0	58862	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C8-PFOS	8.226	507.1 -> 79.9	9096	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C9-PFNA	7.595	472.1 -> 427.0	18852	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.5%	
d3-MeFOSAA	8.121	573.2 -> 419.0	14779	4.22 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.4%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	29729	10.25 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
d3-MeFOSA	10.752	515.0 -> 219.0	6982	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.3%	
d5-EtFOSAA	8.329	589.2 -> 419.0	12463	4.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.0%	
d7-MeFOSE	10.672	623.2 -> 58.9	76692	27.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	102387	30.77 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 123.1%	
d5-EtFOSA	10.984	531.1 -> 219.0	8003	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	89953	47.49 µg/L	97
		327.1 -> 80.9	35423		
6:2FTS	6.838	427.1 -> 407.0	80999	46.00 µg/L	92
		427.1 -> 80.9	30103		
8:2FTS	7.865	527.1 -> 507.0	44312	46.00 µg/L	94
		527.1 -> 80.8	19851		
EtFOSAA	8.330	584.2 -> 419.1	27406	11.81 µg/L	98
		584.2 -> 526.0	14056		
FOSA	9.639	498.1 -> 77.9	209424	28.20 µg/L	99
		498.1 -> 478.0	5988		
MeFOSAA	8.134	570.1 -> 419.0	34546	12.08 µg/L	97
		570.1 -> 483.0	6349		
PFBA	2.907	212.8 -> 168.9	216365	47.87 µg/L	100
PFBS	5.398	298.7 -> 79.9	88970	10.98 µg/L	99
		298.7 -> 98.8	32956		
PFDA	8.076	512.9 -> 469.0	230701	11.53 µg/L	98
		512.9 -> 219.0	35688		
PFDoDA	8.950	613.1 -> 569.0	190555	12.24 µg/L	99
		613.1 -> 319.0	27070		
PFDS	9.113	599.0 -> 79.9	33541	11.36 µg/L	93

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	15506			
PFHpA	6.433	363.1 -> 319.0	265399	12.89	µg/L	99
		363.1 -> 169.0	41905			
PFHpS	7.735	449.0 -> 79.9	52725	10.86	µg/L	96
		449.0 -> 98.9	26024			
PFHxA	5.469	313.0 -> 269.0	239383	12.41	µg/L	99
		313.0 -> 118.9	10750			
PFHxS	7.180	398.7 -> 79.9	61972	11.22	µg/L	m 98
		398.7 -> 98.9	30116			
PFNA	7.471	463.0 -> 419.0	453650	32.39	µg/L	m 98
		463.0 -> 219.0	89308			
PFNS	8.693	548.8 -> 79.9	53920	12.26	µg/L	89
		548.8 -> 98.9	26681			
PFOA	7.078	413.0 -> 369.0	728932	24.89	µg/L	m 95
		413.0 -> 169.0	136860			
PFOS	8.228	498.9 -> 79.9	51220	10.74	µg/L	m 94
		498.9 -> 98.8	25130			
PFPeA	4.274	263.0 -> 219.0	293547	24.18	µg/L	100
PFPeS	6.484	349.1 -> 79.9	65926	12.03	µg/L	96
		349.1 -> 98.9	27969			
PFTeDA	9.677	713.1 -> 669.0	168409	12.93	µg/L	99
		713.1 -> 168.9	12330			
PFTrDA	9.333	663.0 -> 619.0	223857	12.40	µg/L	96
		663.0 -> 168.9	20318			
PFUnDA	8.518	563.1 -> 519.0	167193	11.80	µg/L	99
		563.1 -> 269.1	25362			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	247424	22.02	µg/L	90
		632.9 -> 452.9	81123			
9Cl-PF3ONS	8.557	530.8 -> 351.0	405372	22.59	µg/L	95
		532.8 -> 353.0	127486			
ADONA	6.683	376.9 -> 250.9	1069372	22.59	µg/L	93
		376.9 -> 84.8	293034			
HFPO-DA	5.845	284.9 -> 168.9	69527	24.19	µg/L	99
		284.9 -> 184.9	9113			
3:3FTCA	3.790	241.0 -> 177.0	44973	59.79	µg/L	98
		241.0 -> 117.0	5596			
5:3FTCA	6.161	341.0 -> 237.1	927204	277.37	µg/L	99
		341.0 -> 217.0	684767			
7:3FTCA	7.586	441.0 -> 316.9	452155	298.15	µg/L	93
		441.0 -> 336.9	897584			
EtFOSA	10.986	526.0 -> 219.0	157736	45.53	µg/L	99
		526.0 -> 169.0	193477			
EtFOSE	10.932	630.0 -> 58.9	352403	78.98	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	140106	43.58	µg/L	98
		511.9 -> 169.0	180411			
MeFOSE	10.686	616.1 -> 58.9	293140	81.71	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	18237	11.68	µg/L	100
		699.1 -> 98.8	10349			
NFDHA	5.348	295.0 -> 201.0	53485	25.11	µg/L	97
		295.0 -> 84.9	13804			
PFMBA	4.688	279.0 -> 85.1	213872	24.69	µg/L	100
PFMPA	3.442	229.0 -> 84.9	154259	24.73	µg/L	100
PFEESA	5.938	314.8 -> 134.9	577928	22.31	µg/L	100
		314.8 -> 82.9	20783			

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

7.6.4
7

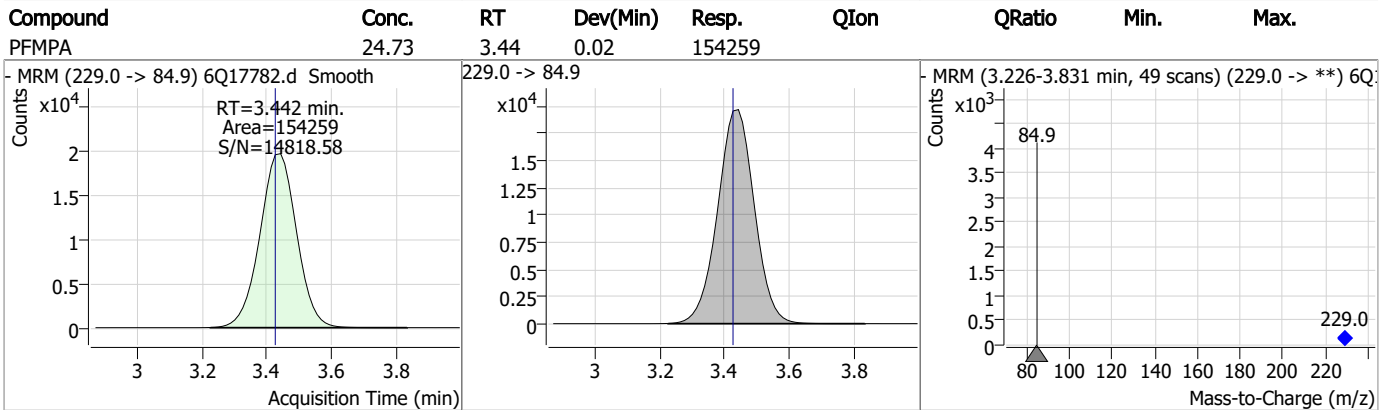
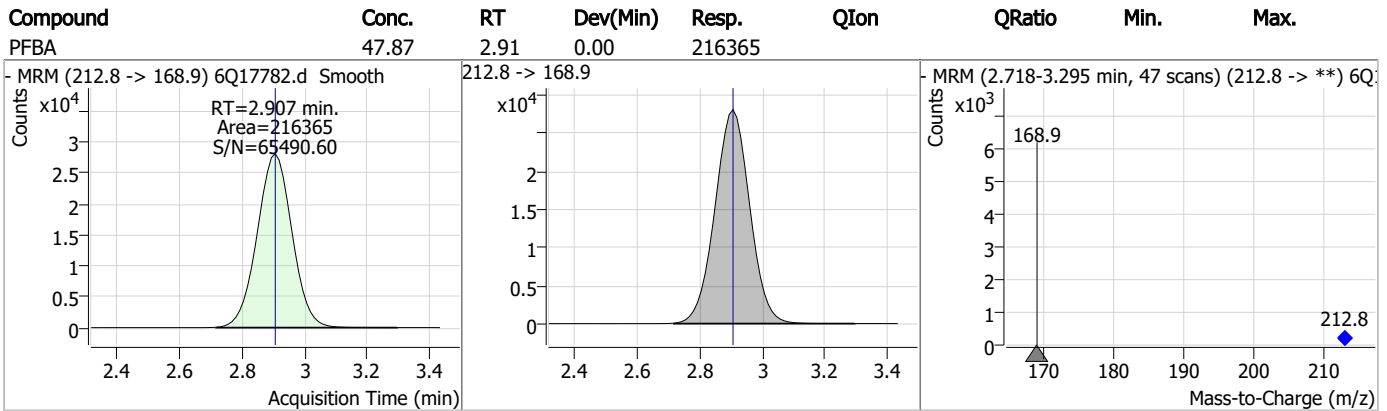
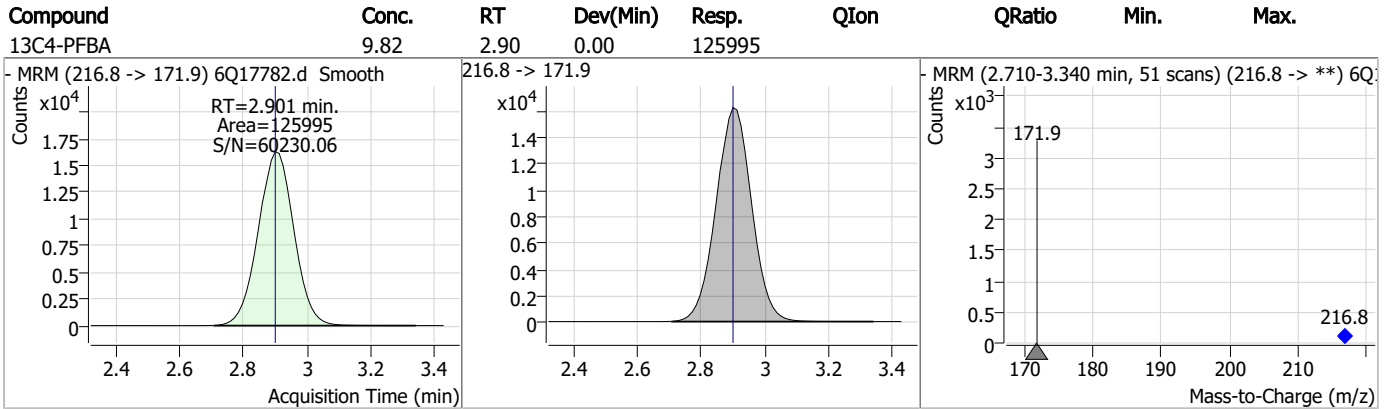
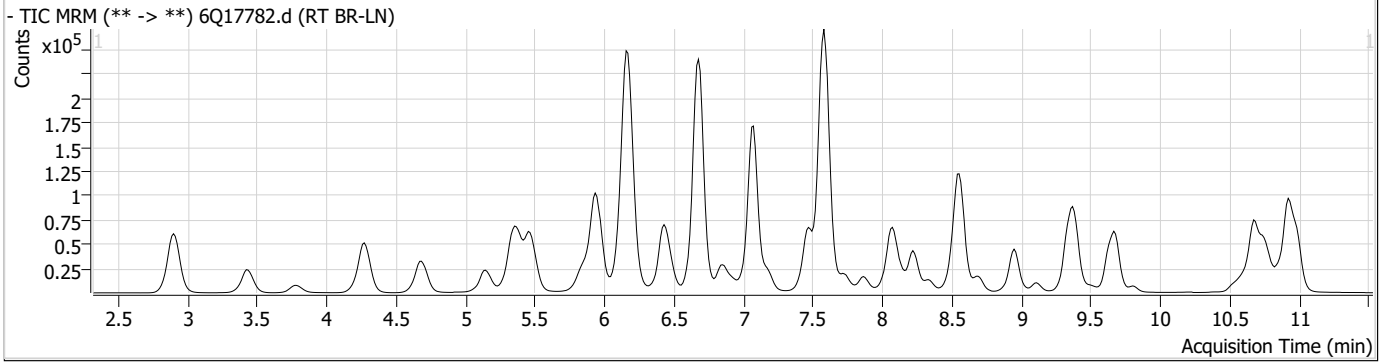
Perfluorinated Compounds by LC/MS/MS

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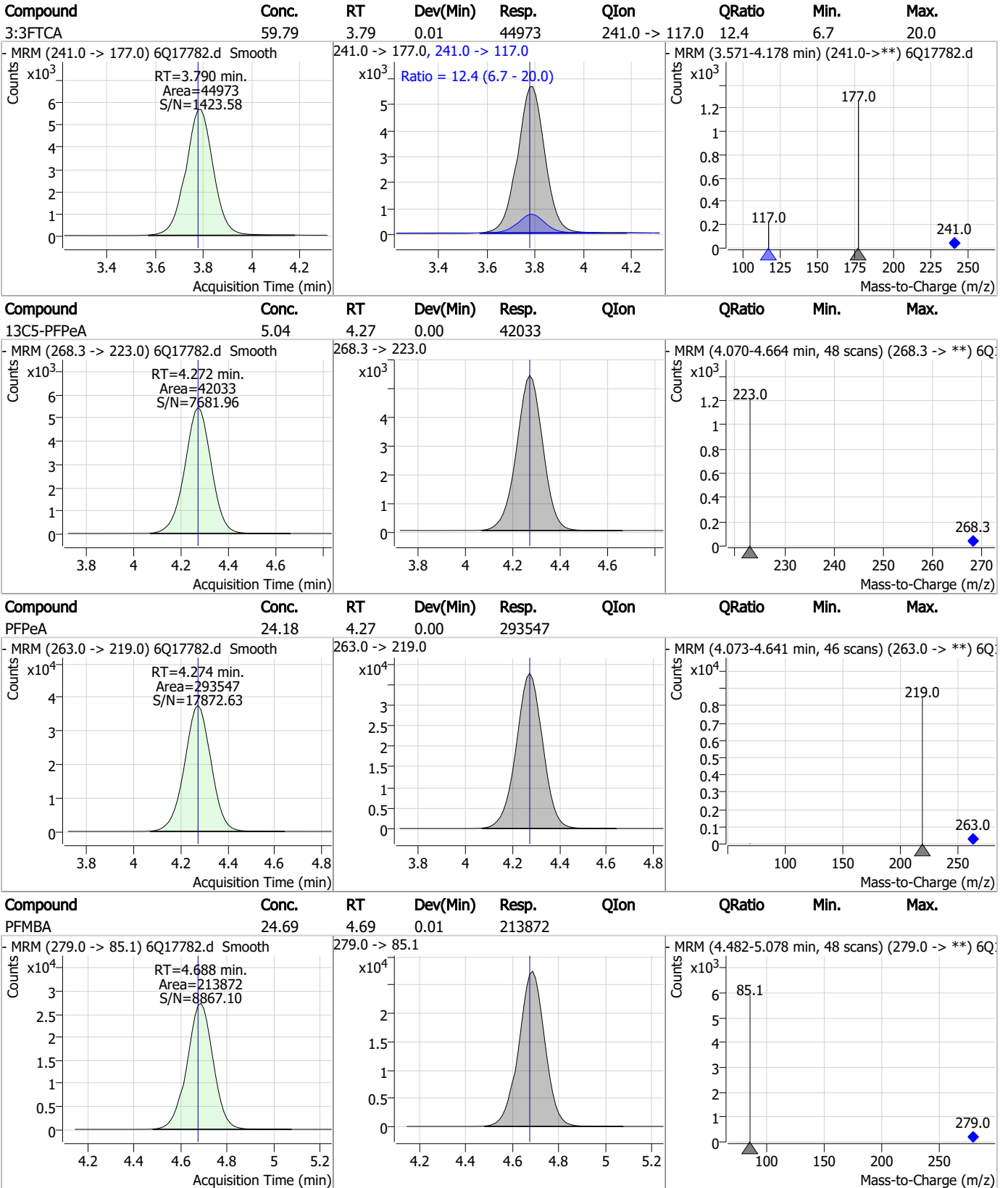
7.6.4

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

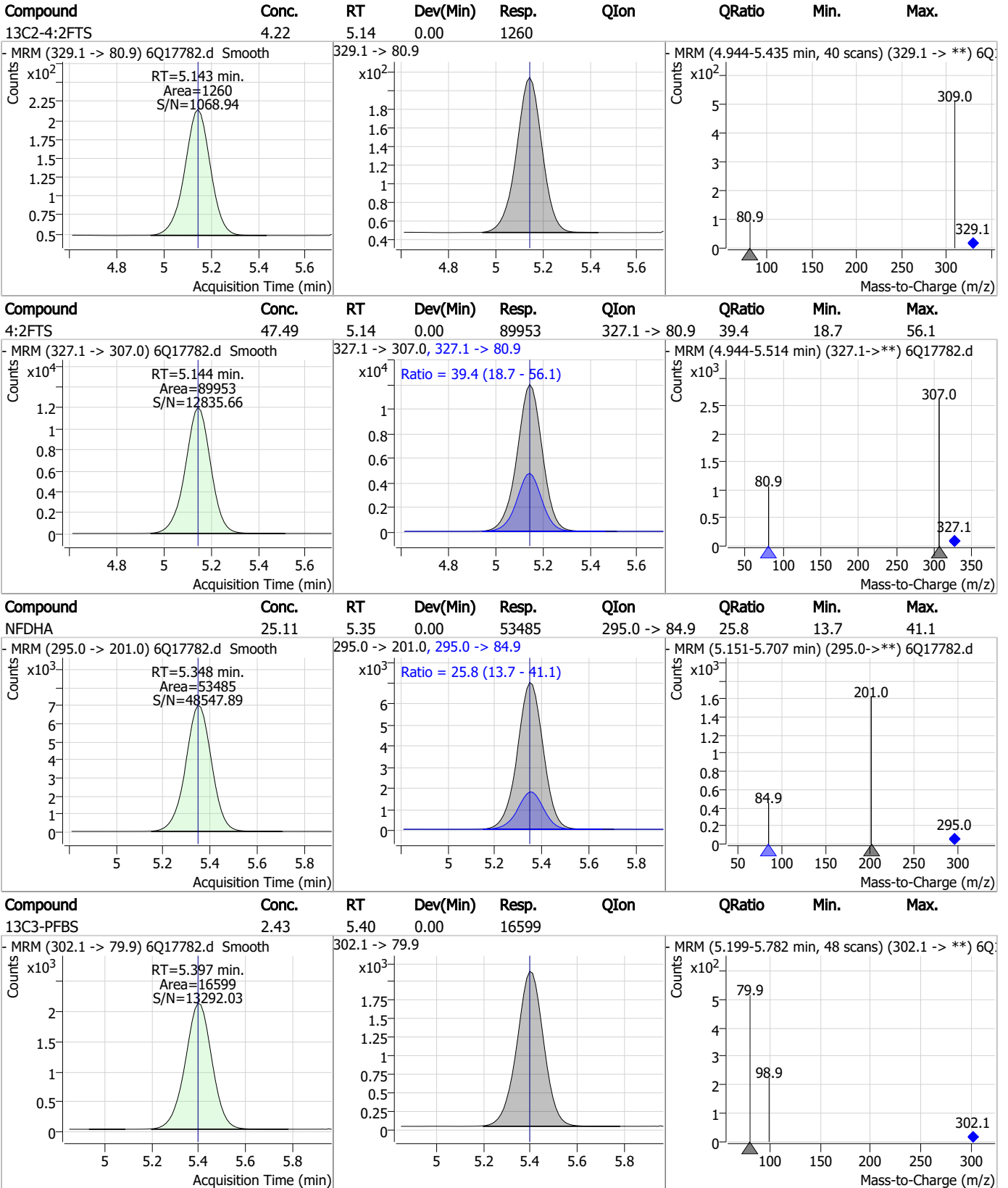


7.6.4

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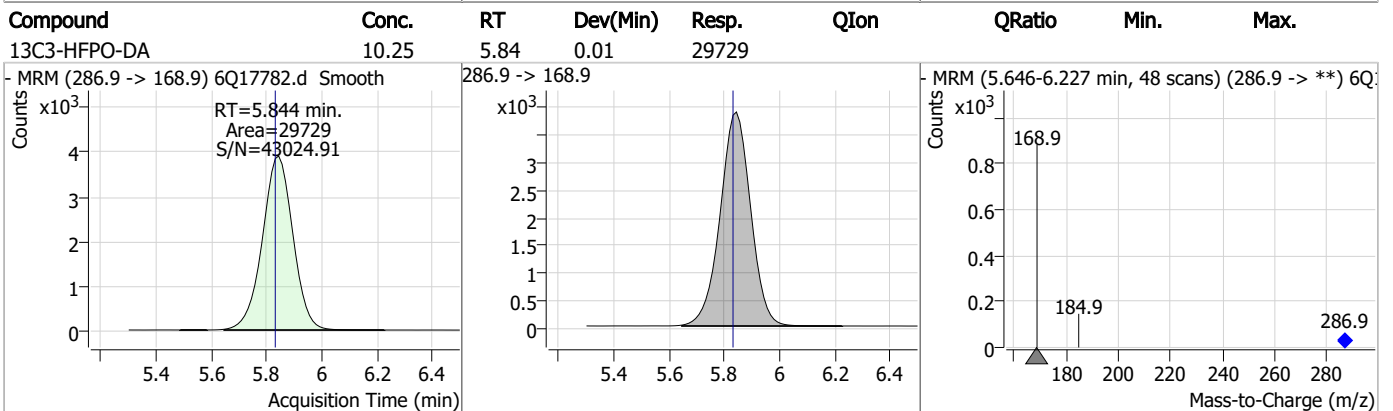
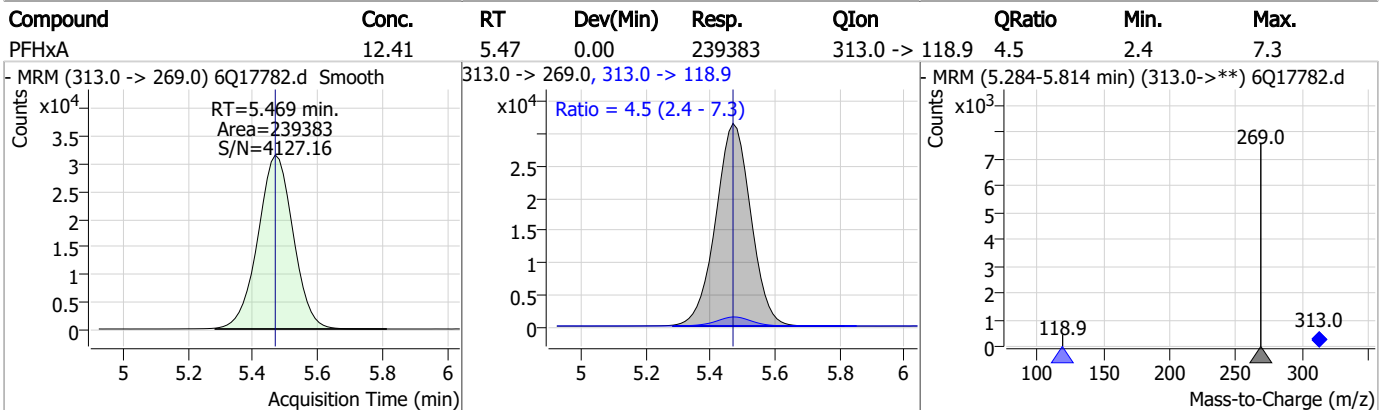
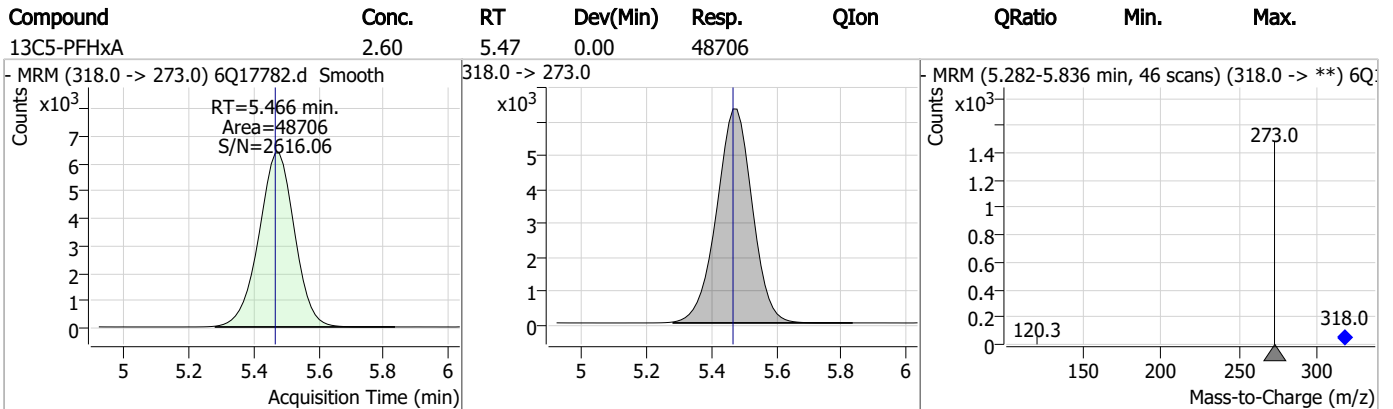
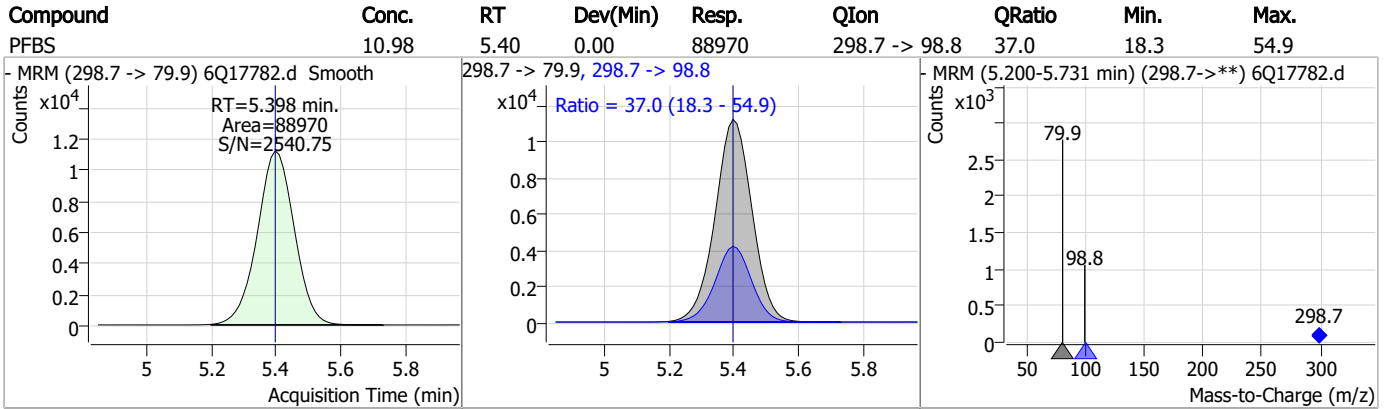
Perfluorinated Compounds by LC/MS/MS



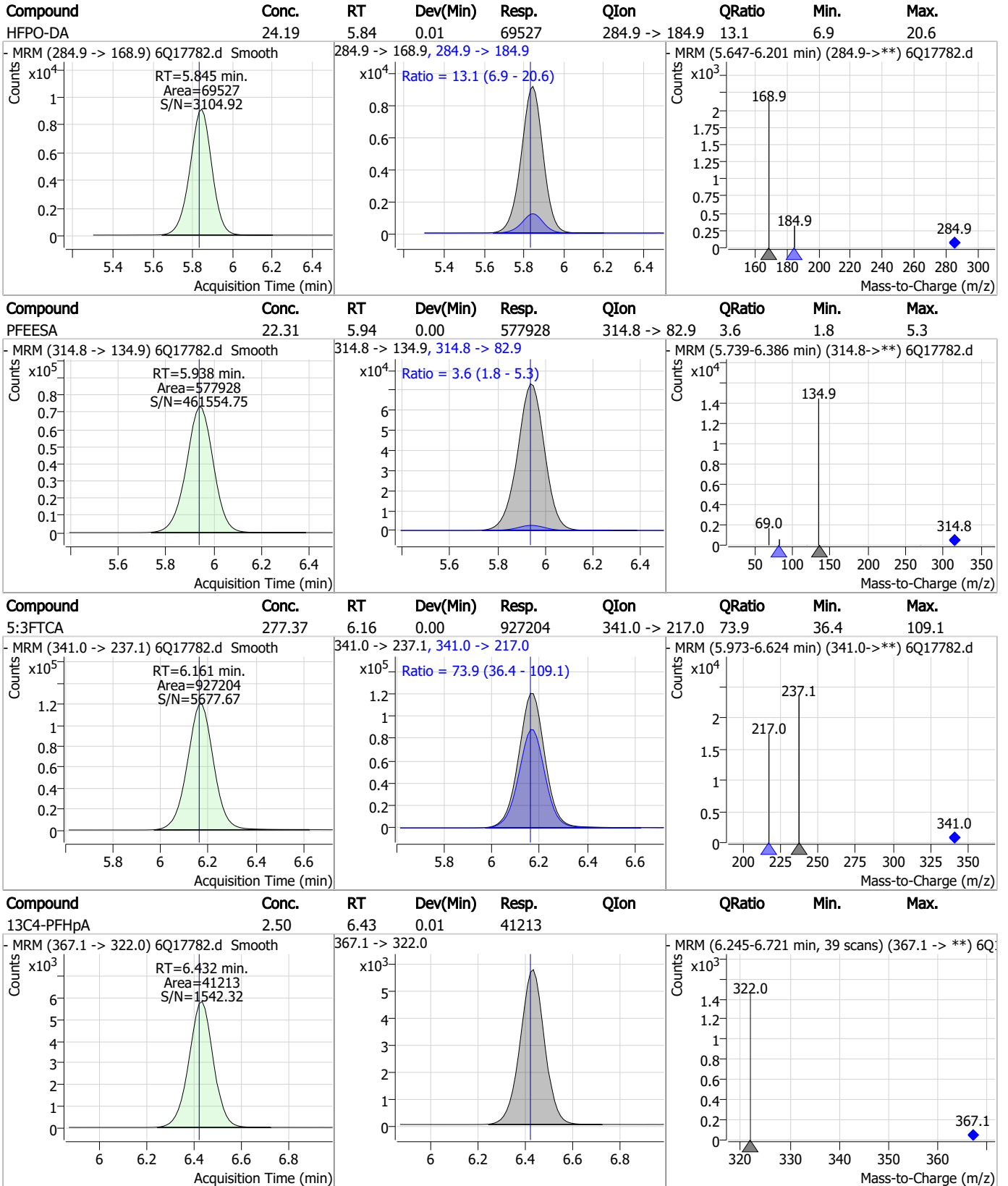
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Perfluorinated Compounds by LC/MS/MS



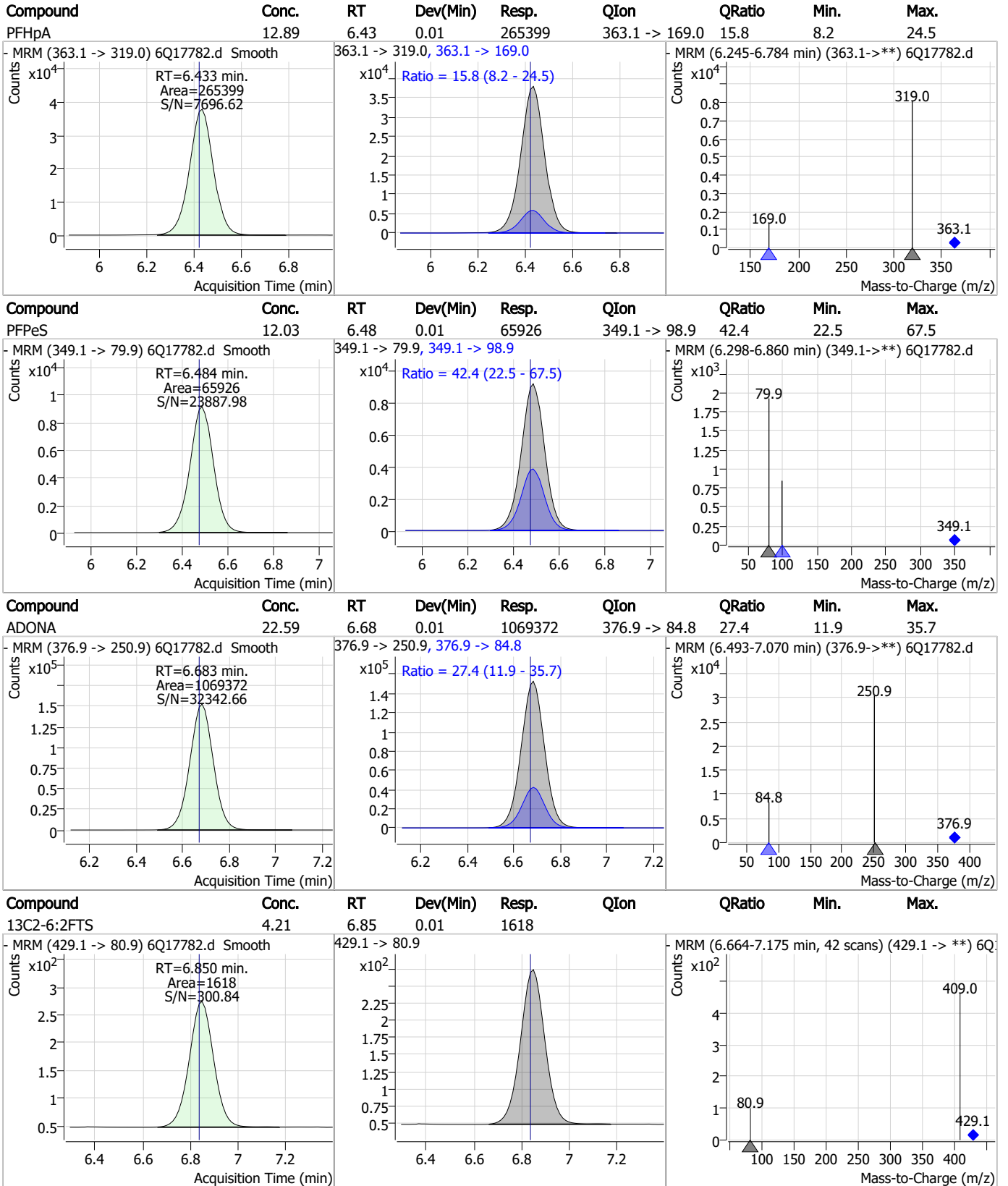
Perfluorinated Compounds by LC/MS/MS



7.6.4

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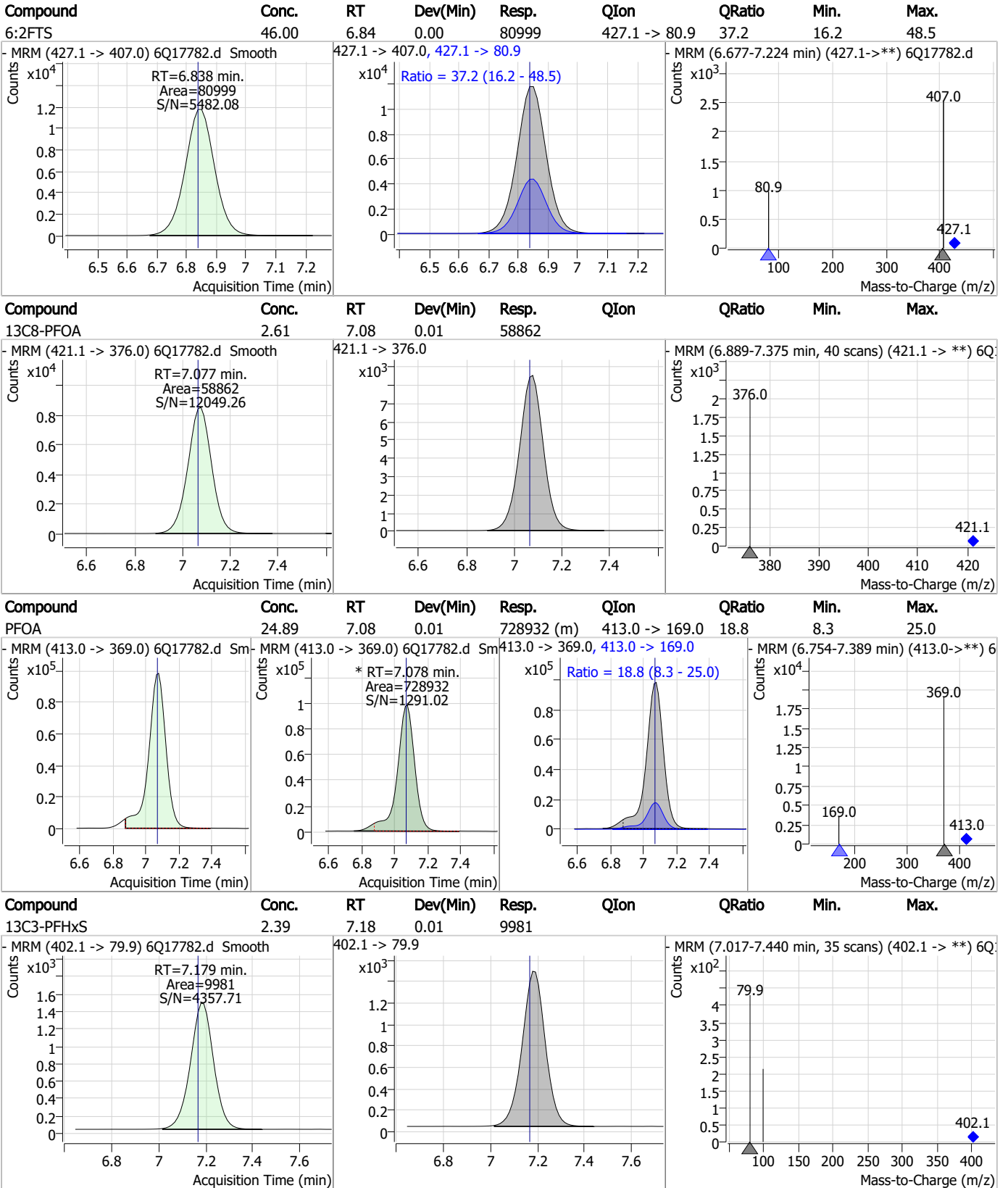
Perfluorinated Compounds by LC/MS/MS



7.6.4

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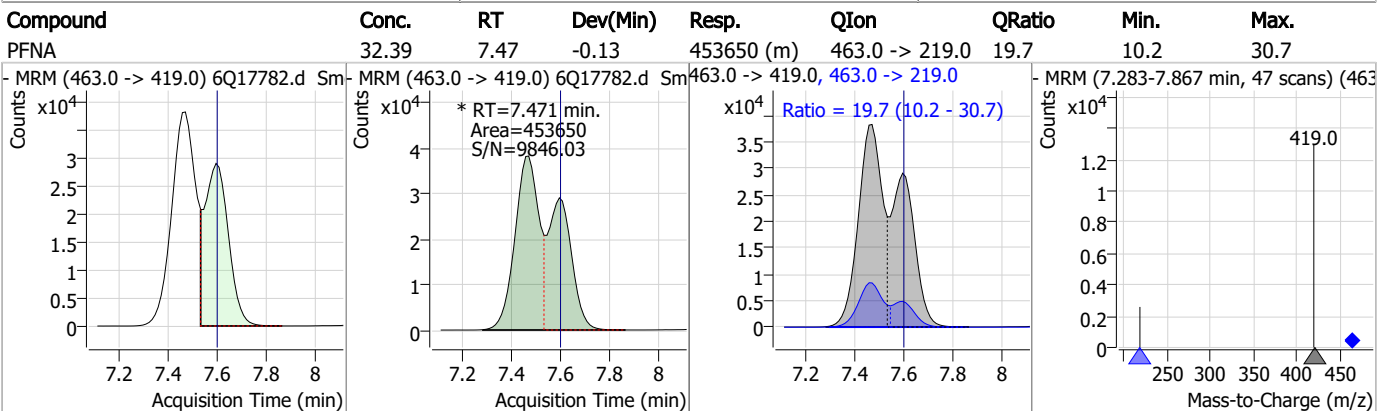
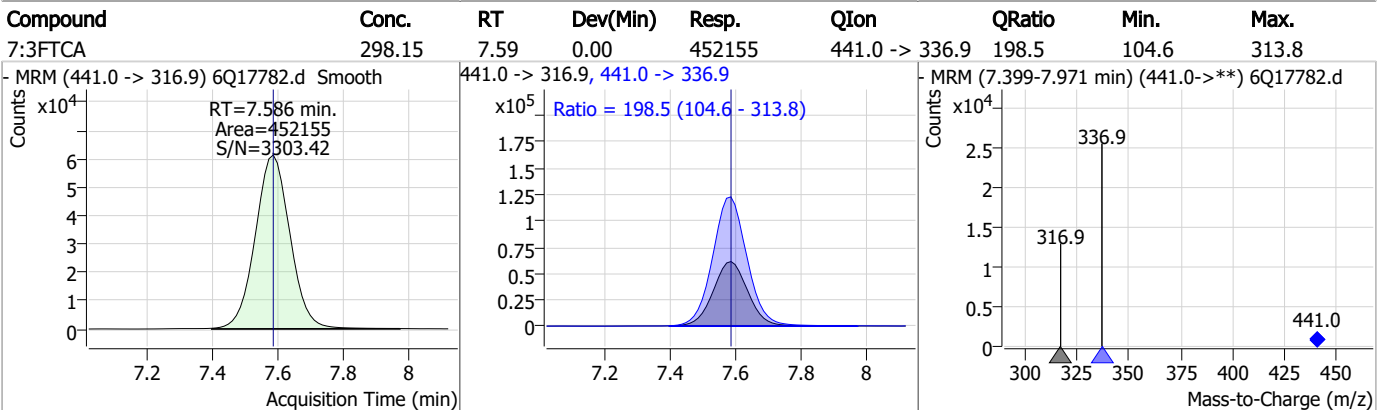
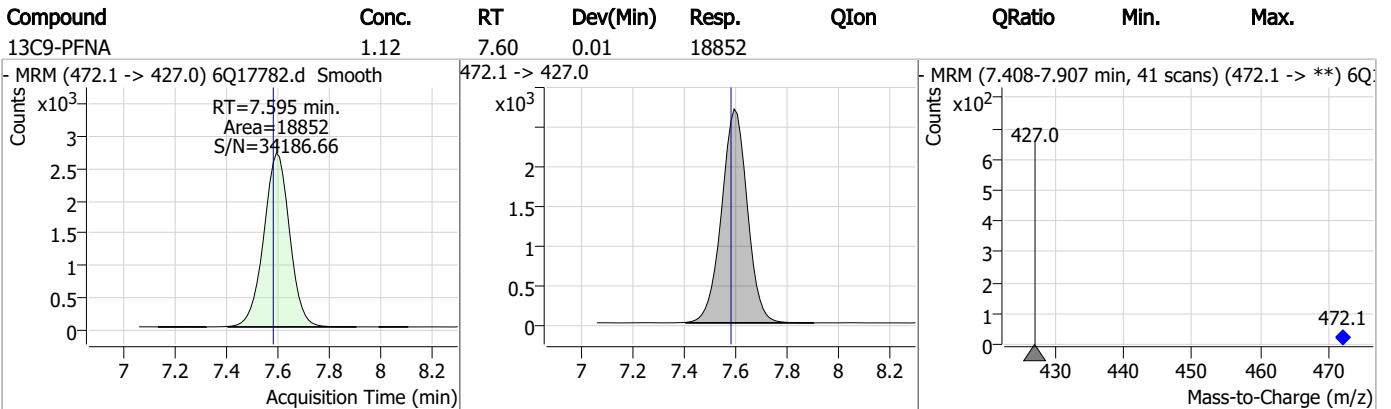
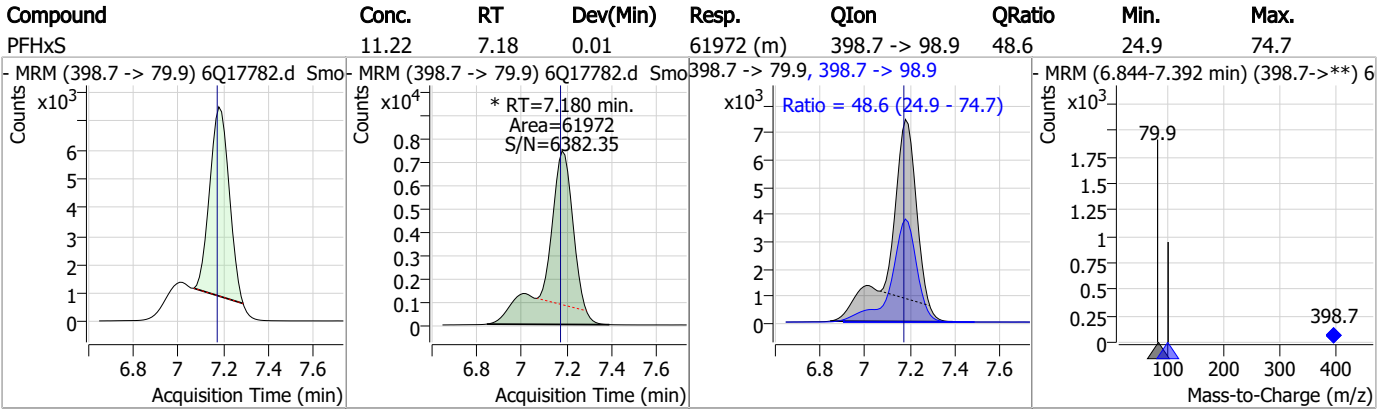
Perfluorinated Compounds by LC/MS/MS



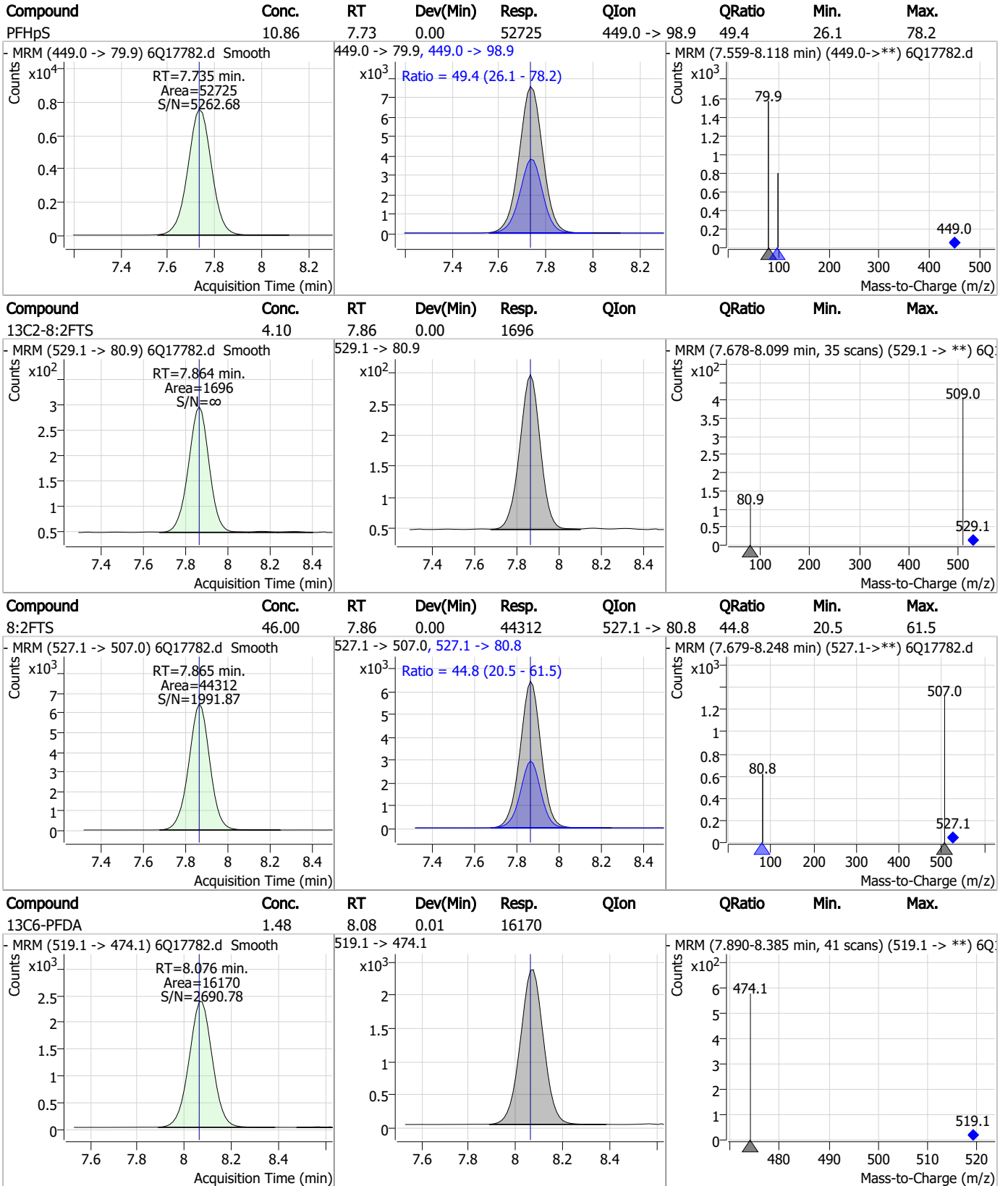
7.6.4

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Perfluorinated Compounds by LC/MS/MS



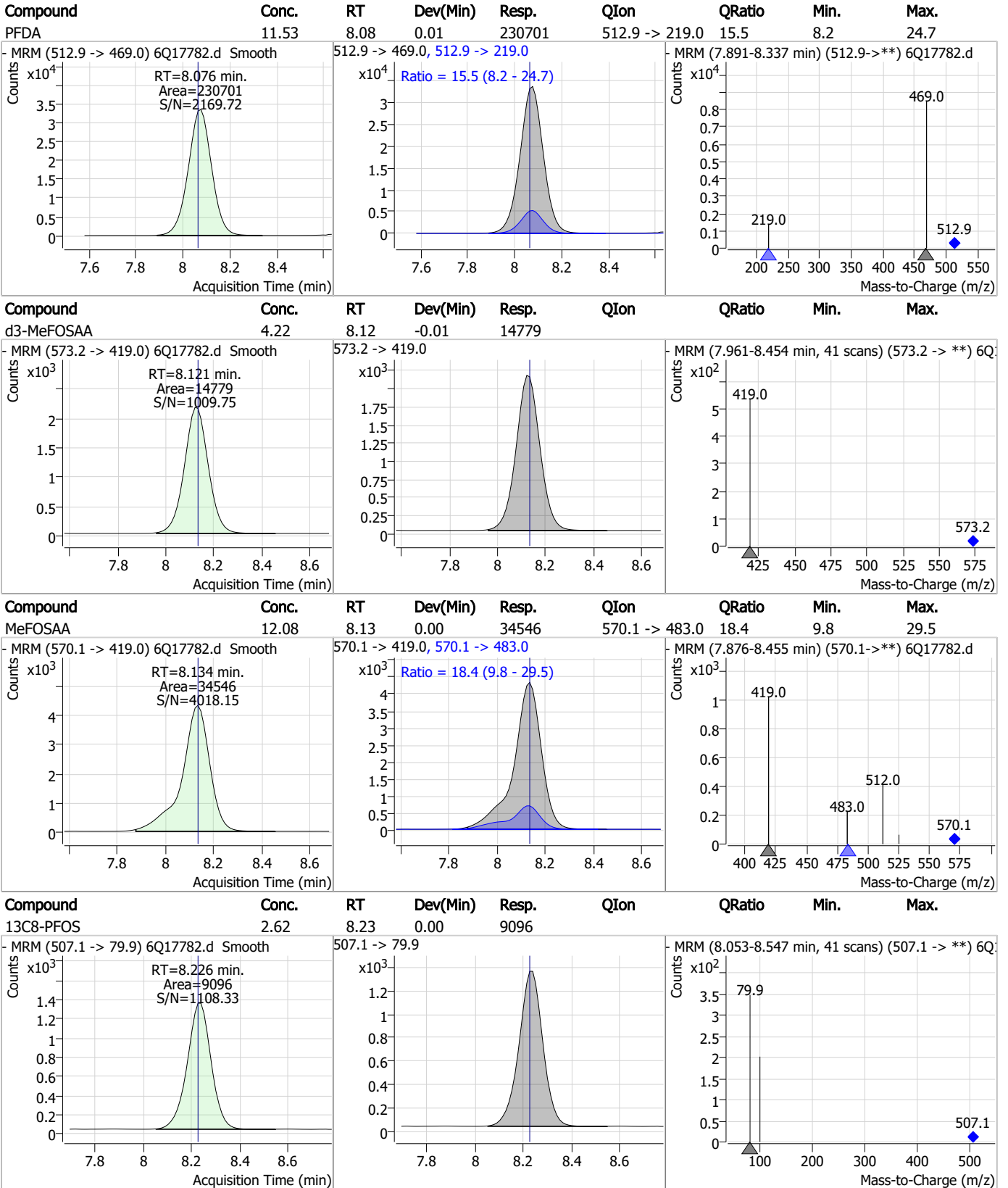
Perfluorinated Compounds by LC/MS/MS



7.6.4

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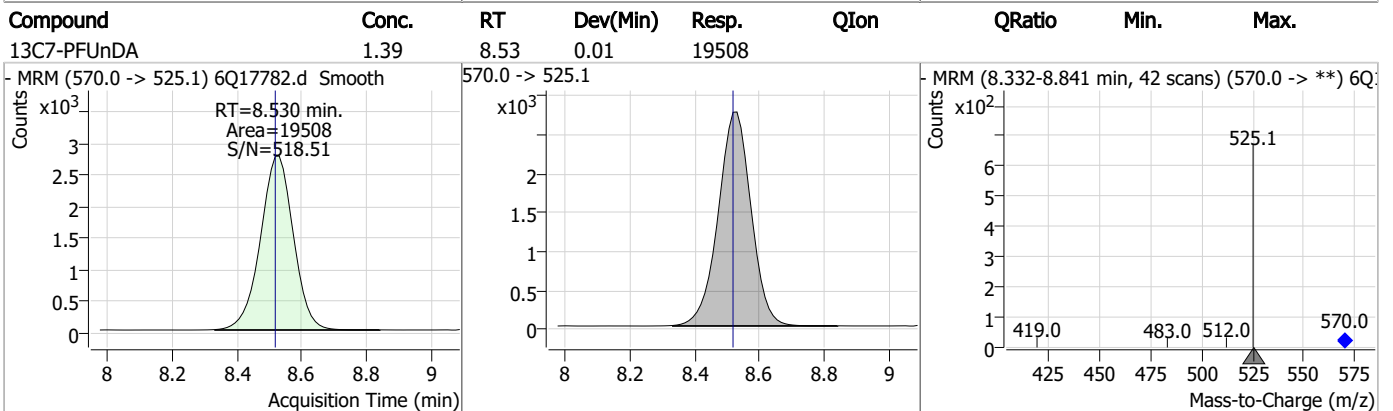
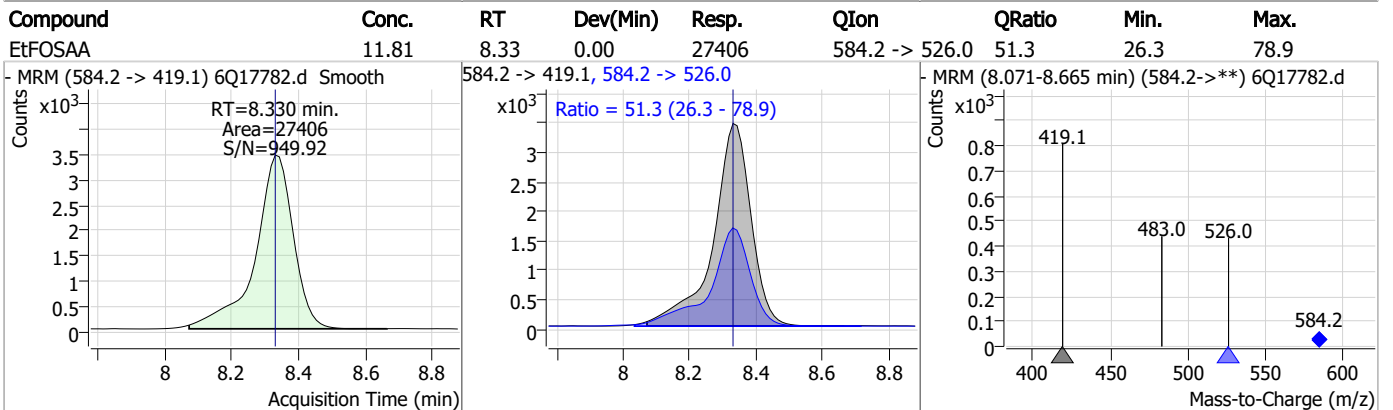
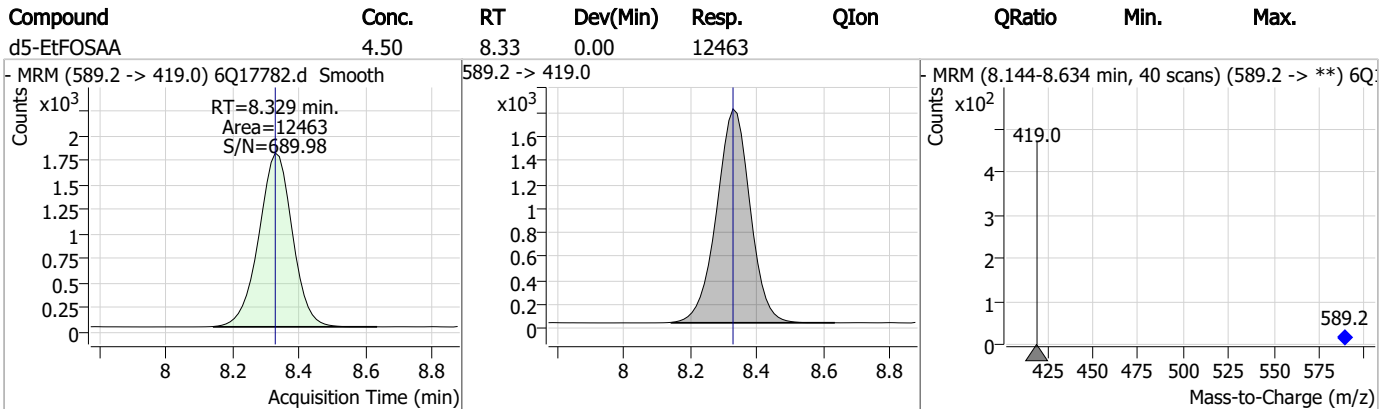
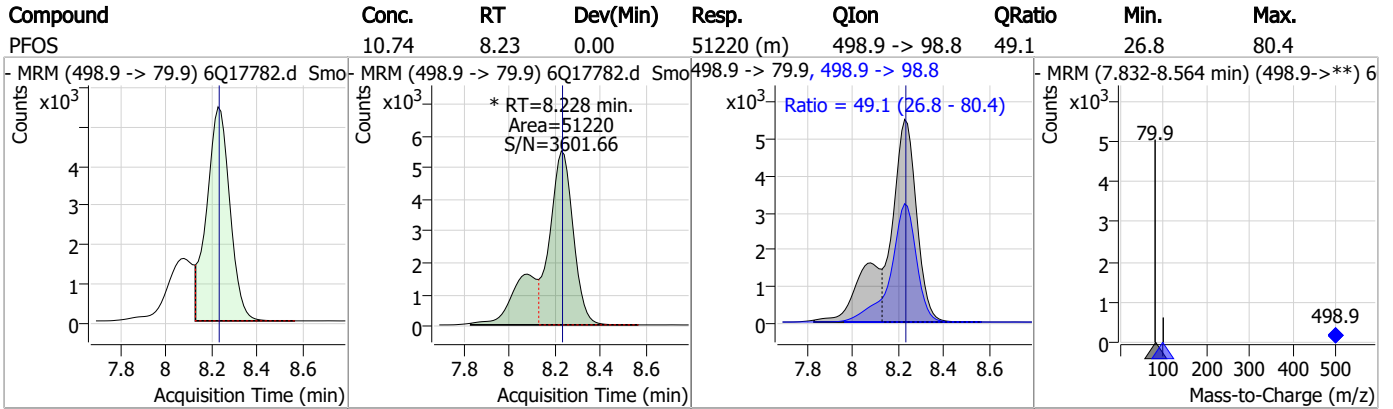
Perfluorinated Compounds by LC/MS/MS



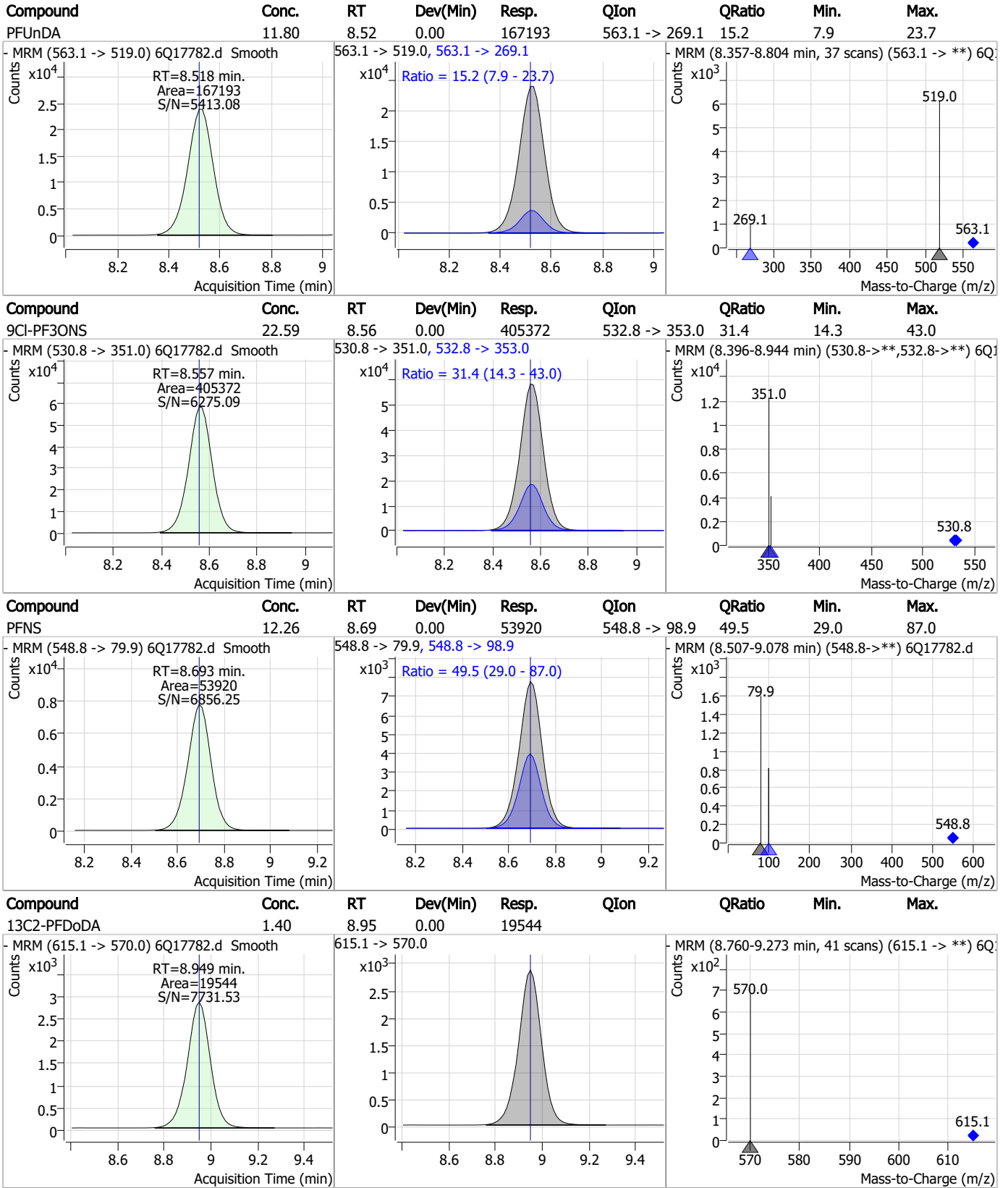
7.6.4

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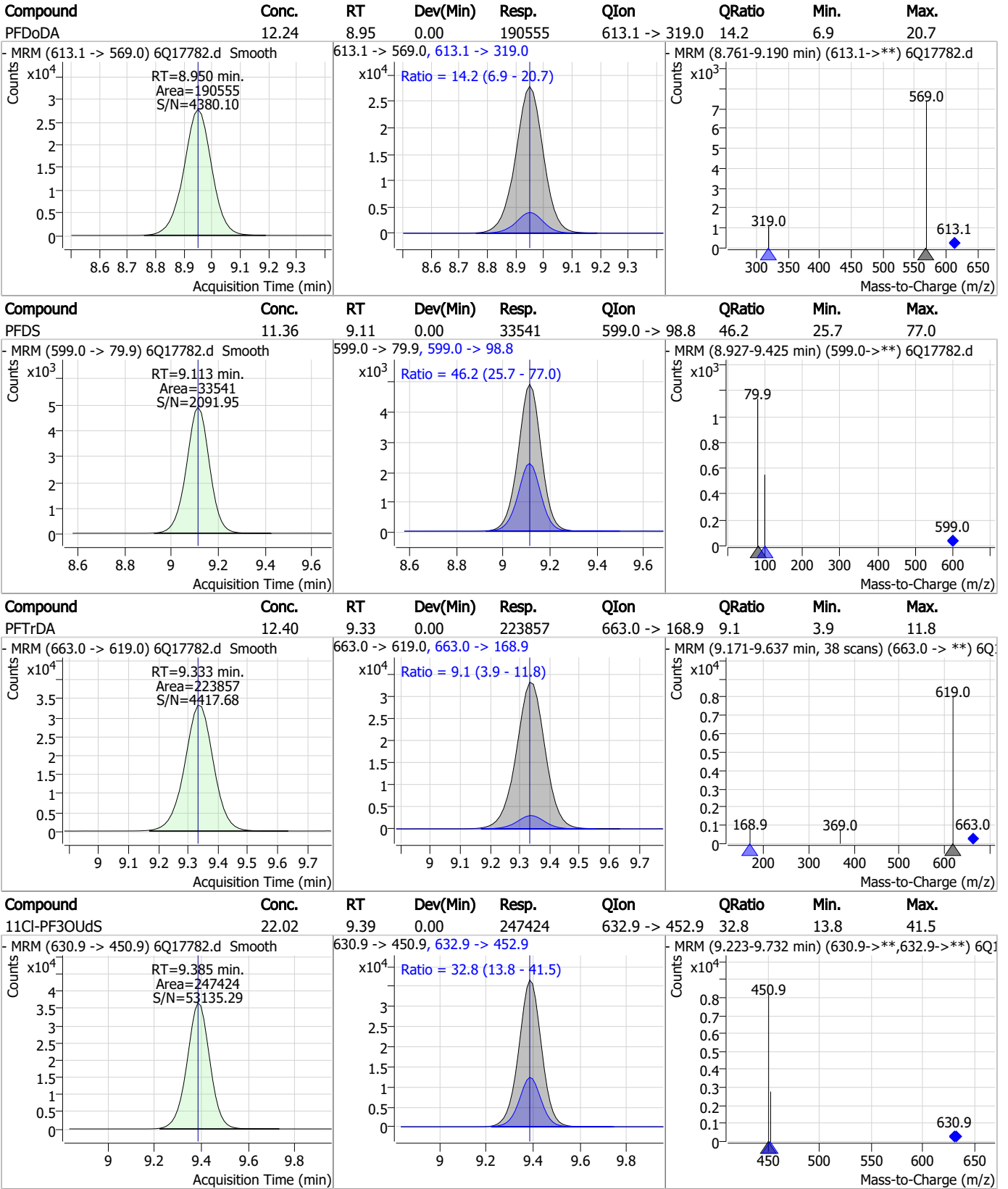
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

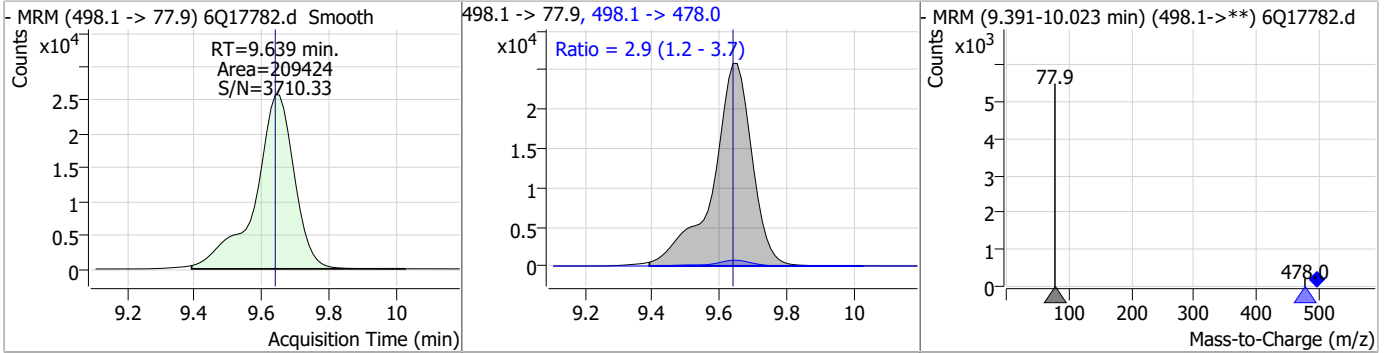


7.6.4

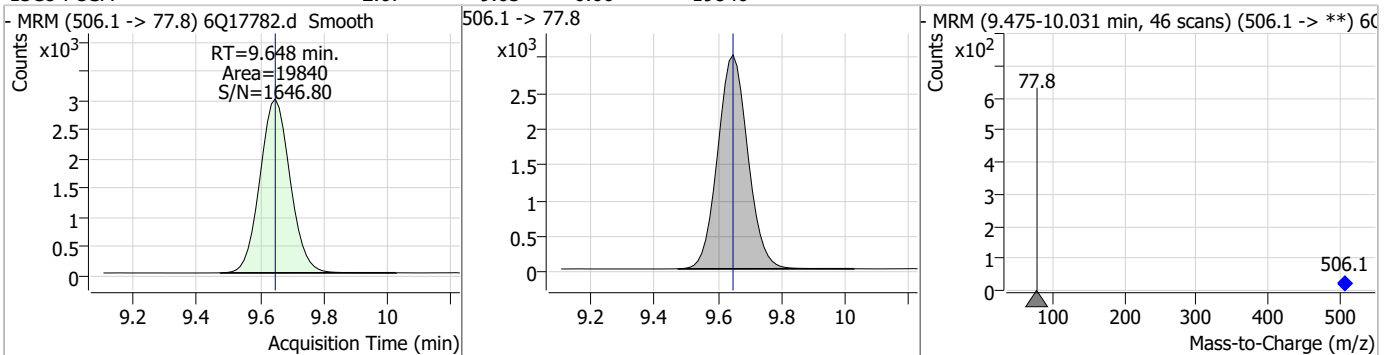
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Perfluorinated Compounds by LC/MS/MS

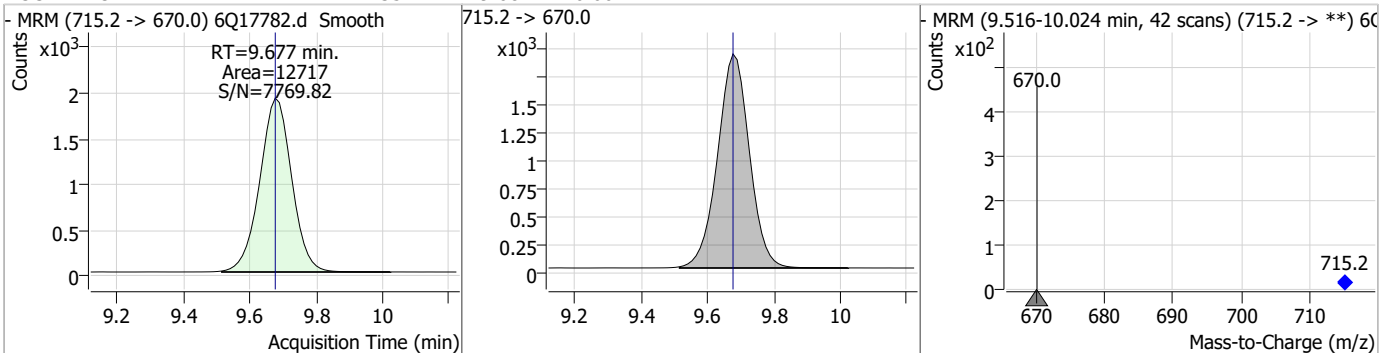
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	28.20	9.64	0.00	209424	498.1 -> 478.0	2.9	1.2	3.7



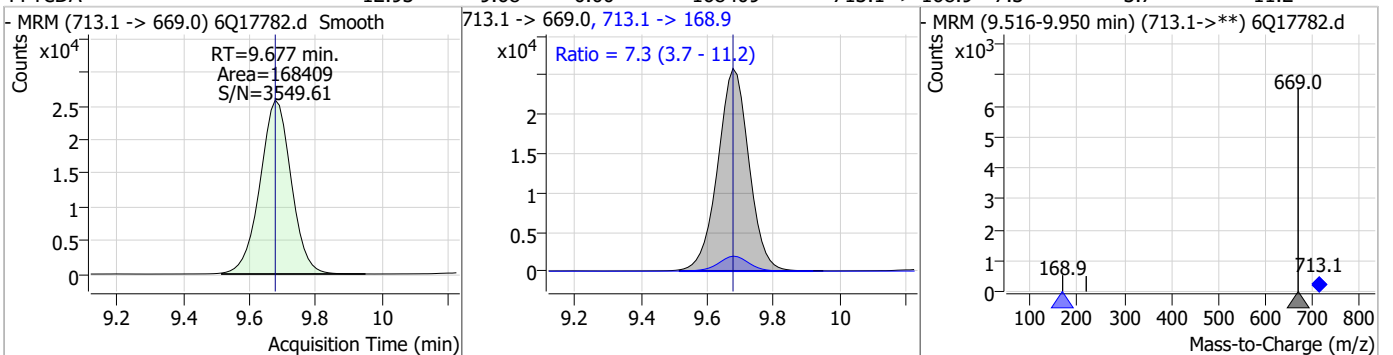
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.67	9.65	0.00	19840				



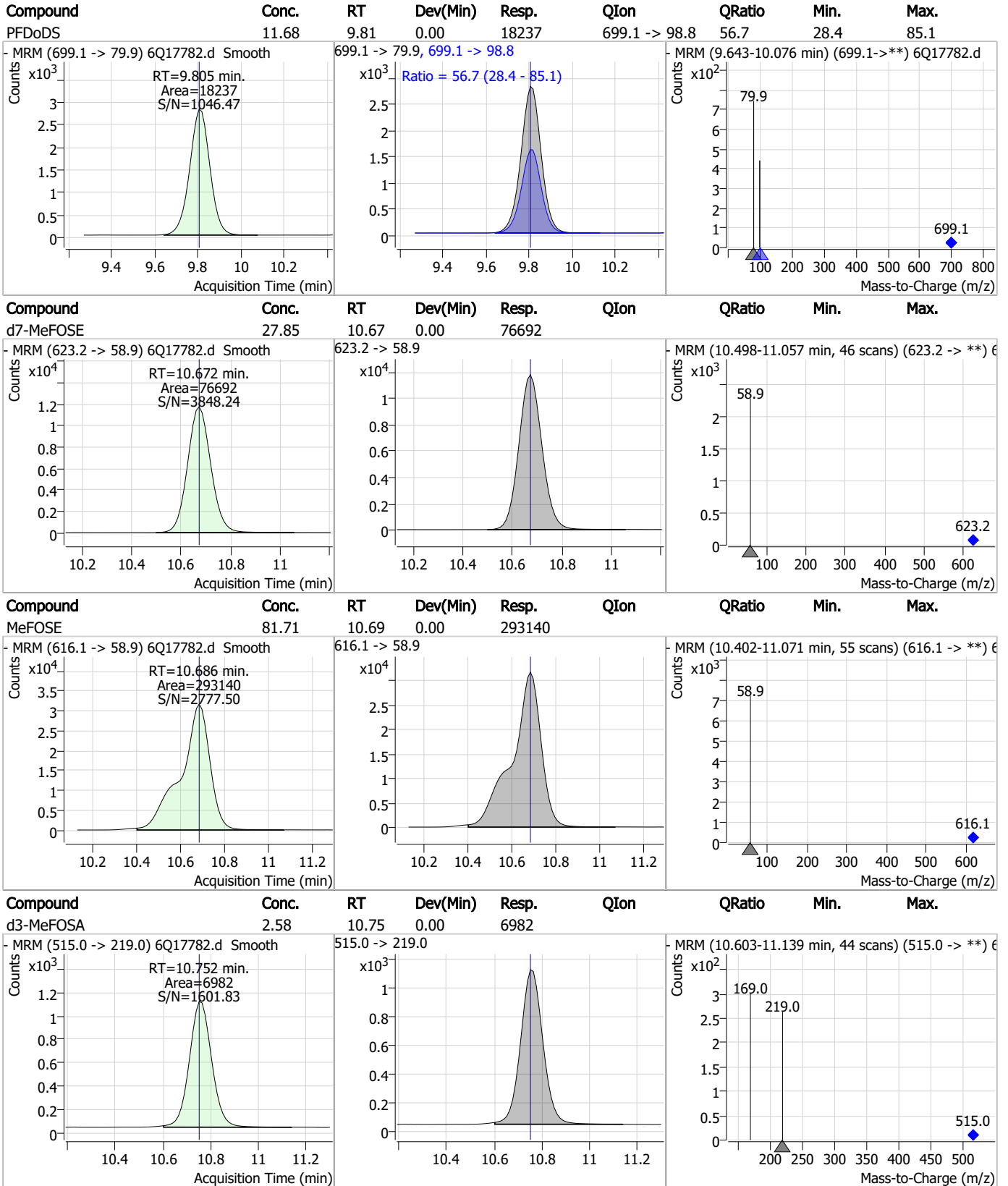
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.35	9.68	0.00	12717				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.93	9.68	0.00	168409	713.1 -> 168.9	7.3	3.7	11.2



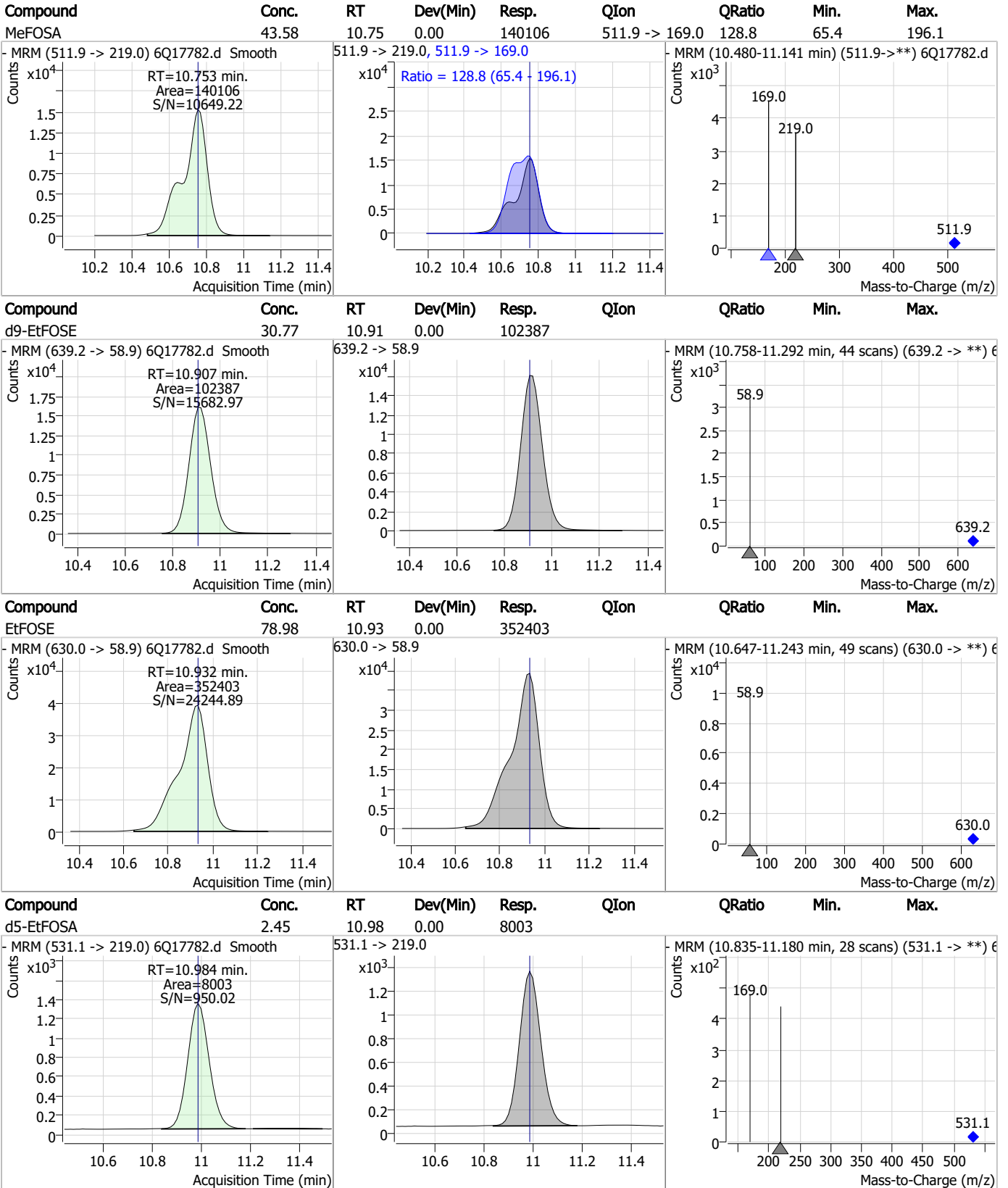
Perfluorinated Compounds by LC/MS/MS



7.6.4

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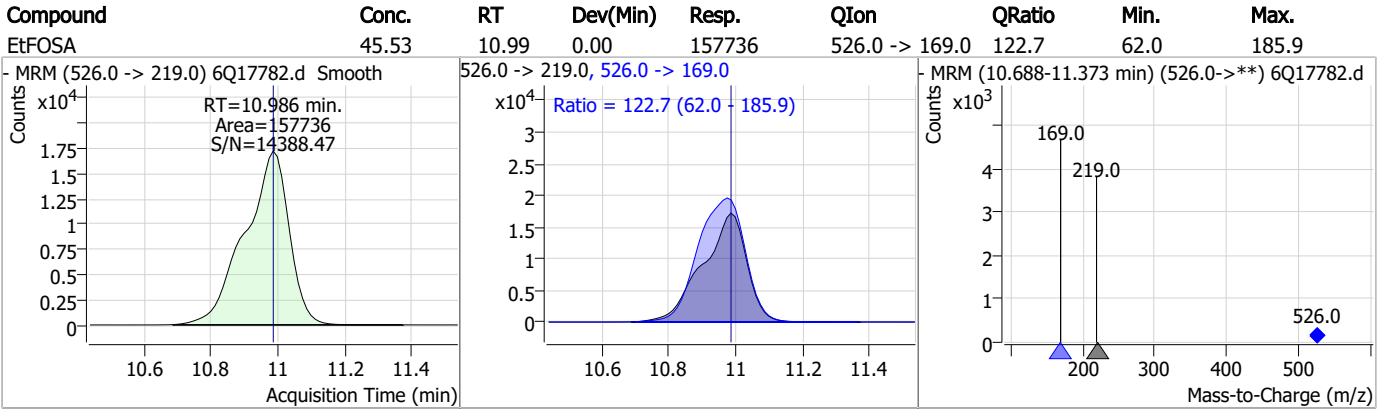
Perfluorinated Compounds by LC/MS/MS



7.6.4

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Perfluorinated Compounds by LC/MS/MS



7.6.4

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Manual Integration Approval Summary

Sample Number: S6Q269-RT Method: EPA DRAFT 1633
Lab FileID: 6Q17782.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/15/23 13:33 Supervisor approved: 05/17/23 08:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.08	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorononanoic acid	375-95-1		7.47	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.6.4.1

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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 08 May 2023 11:20:06
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.78E+0 [R] (Torr); 2.89E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	220
Gas Flow (l/min)	14
Nebulizer (psi)	20
Capillary (V)	3000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	11

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.91	-0.08	Pass	0.70	0.72	0.02	Pass	516372
302.00	301.93	-0.07	Pass	0.70	0.70	0.00	Pass	1505403
601.98	601.91	-0.07	Pass	0.70	0.70	0.00	Pass	3546345
1033.99	1033.91	-0.08	Pass	0.70	0.67	-0.03	Pass	1119463
1633.95	1633.76	-0.19	Pass	0.70	0.66	-0.04	Pass	945818
2233.91	2233.62	-0.29	Pass	0.70	0.70	0.00	Pass	381101

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	0.70	0.72	0.02	Pass	135245
112.99	112.97	-0.02	Pass	0.70	0.75	0.05	Pass	523602
302.00	301.94	-0.06	Pass	0.70	0.65	-0.05	Pass	1126783
601.98	601.94	-0.04	Pass	0.70	0.62	-0.08	Pass	2605917
1033.99	1033.85	-0.14	Pass	0.70	0.76	0.06	Pass	662914
1633.95	1633.75	-0.20	Pass	0.70	0.77	0.07	Pass	773365
2233.91	2233.63	-0.28	Pass	0.70	0.79	0.09	Pass	309345

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	1.20	1.32	0.12	Pass	599995
302.00	301.91	-0.09	Pass	1.20	1.48	0.28	Pass	1925067
601.98	601.92	-0.06	Pass	1.20	1.66	0.46	Pass	4768833
1033.99	1033.90	-0.09	Pass	1.20	1.53	0.33	Pass	1976669
1633.95	1633.66	-0.29	Pass	1.20	1.45	0.25	Pass	2196261
2233.91	2233.81	-0.10	Pass	1.20	1.63	0.43	Pass	1010126

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	1.20	1.15	-0.05	Pass	177581
112.99	113.01	0.02	Pass	1.20	1.23	0.03	Pass	689078
302.00	301.97	-0.03	Pass	1.20	1.24	0.04	Pass	1407633
601.98	601.98	0.00	Pass	1.20	1.43	0.23	Pass	4109819
1033.99	1033.91	-0.08	Pass	1.20	1.27	0.07	Pass	1290979
1633.95	1633.84	-0.11	Pass	1.20	1.31	0.11	Pass	1324536
2233.91	2233.64	-0.27	Pass	1.20	1.11	-0.09	Pass	557784

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.06	0.07	Pass	2.50	2.35	-0.15	Pass	635850
302.00	301.94	-0.06	Pass	2.50	2.42	-0.08	Pass	2094027
601.98	601.91	-0.07	Pass	2.50	2.45	-0.05	Pass	5897513
1033.99	1033.93	-0.06	Pass	2.50	2.26	-0.24	Pass	2763390
1633.95	1633.83	-0.12	Pass	2.50	2.06	-0.44	Pass	3082145
2233.91	2233.42	-0.49	Pass	2.50	1.78	-0.72	Pass	1770384

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.92	-0.08	Pass	2.50	2.48	-0.02	Pass	223632
112.99	112.90	-0.09	Pass	2.50	2.61	0.11	Pass	937832
302.00	301.95	-0.05	Pass	2.50	2.45	-0.05	Pass	2259618
601.98	601.93	-0.05	Pass	2.50	2.50	0.00	Pass	5449902
1033.99	1033.78	-0.21	Pass	2.50	2.36	-0.14	Pass	2075378
1633.95	1633.72	-0.23	Pass	2.50	2.40	-0.10	Pass	3128484
2233.91	2233.40	-0.51	Pass	2.50	2.09	-0.41	Pass	1513389

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17738.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 12:15:25 PM
 Sample Name : ic268-1
 Vial : P1-A2
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	161464	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	52007	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	58906	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	50693	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	68777	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	24320	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	17806	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	24685	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	23238	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	16444	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	22033	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	19040	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11863	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	10107	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1711	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2162	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2222	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	21829	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	34363	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	17237	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	80728	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	102609	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9635	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7390	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	14169	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	68065	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8897	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	79996	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	21648	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	28487	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	47474	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1711	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2162	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2222	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFDoDA	8.949	615.1 -> 570.0	23238	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16444	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C3-PFBS	5.397	302.1 -> 79.9	19040	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	11863	2.50 µg/L	0.012

7.7.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFBA	2.901	216.8 -> 171.9	161464	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.420	367.1 -> 322.0	50693	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFHxA	5.466	318.0 -> 273.0	58906	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C5-PFPeA	4.272	268.3 -> 223.0	52007	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C6-PFDA	8.076	519.1 -> 474.1	17806	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C7-PFUnDA	8.518	570.0 -> 525.1	24685	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C8-FOSA	9.648	506.1 -> 77.8	22033	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
13C8-PFOA	7.064	421.1 -> 376.0	68777	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	
13C8-PFOS	8.226	507.1 -> 79.9	10107	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C9-PFNA	7.595	472.1 -> 427.0	24320	1.15 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.4%	
d3-MeFOSAA	8.121	573.2 -> 419.0	21829	4.92 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	34363	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSA	10.752	515.0 -> 219.0	7390	2.16 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.3%	
d5-EtFOSAA	8.329	589.2 -> 419.0	17237	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d7-MeFOSE	10.672	623.2 -> 58.9	80728	23.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.5%	
d9-EtFOSE	10.907	639.2 -> 58.9	102609	24.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSA	10.984	531.1 -> 219.0	9635	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.3%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	1822	0.71 µg/L	99
		327.1 -> 80.9	695		
6:2FTS	6.838	427.1 -> 407.0	1735	0.74 µg/L	98
		427.1 -> 80.9	579		
8:2FTS	7.865	527.1 -> 507.0	1107	0.88 µg/L	95
		527.1 -> 80.8	417		
EtFOSAA	8.330	584.2 -> 419.1	762	0.24 µg/L	m 87
		584.2 -> 526.0	333		
FOSA	9.639	498.1 -> 77.9	1622	0.20 µg/L	# 96
		498.1 -> 478.0	61		
MeFOSAA	8.134	570.1 -> 419.0	717	0.17 µg/L	96
		570.1 -> 483.0	154		
PFBA	2.907	212.8 -> 168.9	4409	0.76 µg/L	100
PFBS	5.398	298.7 -> 79.9	1596	0.17 µg/L	95
		298.7 -> 98.8	633		
PFDA	8.064	512.9 -> 469.0	4257	0.19 µg/L	96
		512.9 -> 219.0	626		
PFDODA	8.950	613.1 -> 569.0	3839	0.21 µg/L	98
		613.1 -> 319.0	495		
PFDS	9.113	599.0 -> 79.9	665	0.20 µg/L	95

7.7.2
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	320			
PFHpA	6.420	363.1 -> 319.0	4990	0.20	µg/L	100
		363.1 -> 169.0	822			
PFHpS	7.735	449.0 -> 79.9	995	0.18	µg/L	88
		449.0 -> 98.9	602			
PFHxA	5.469	313.0 -> 269.0	4704	0.20	µg/L	100
		313.0 -> 118.9	231			
PFHxS	7.180	398.7 -> 79.9	1202	0.18	µg/L	m 94
		398.7 -> 98.9	545			
PFNA	7.584	463.0 -> 419.0	3536	0.20	µg/L	98
		463.0 -> 219.0	750			
PFNS	8.693	548.8 -> 79.9	966	0.20	µg/L	88
		548.8 -> 98.9	478			
PFOA	7.066	413.0 -> 369.0	6591	0.19	µg/L	99
		413.0 -> 169.0	1074			
PFOS	8.228	498.9 -> 79.9	955	0.18	µg/L	m 91
		498.9 -> 98.8	450			
PFPeA	4.274	263.0 -> 219.0	5732	0.38	µg/L	100
PFPeS	6.471	349.1 -> 79.9	1104	0.17	µg/L	99
		349.1 -> 98.9	506			
PFTeDA	9.677	713.1 -> 669.0	3323	0.20	µg/L	98
		713.1 -> 168.9	269			
PFTrDA	9.333	663.0 -> 619.0	3986	0.19	µg/L	95
		663.0 -> 168.9	385			
PFUnDA	8.518	563.1 -> 519.0	3179	0.18	µg/L	95
		563.1 -> 269.1	574			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	4649	0.36	µg/L	85
		632.9 -> 452.9	1650			
9Cl-PF3ONS	8.557	530.8 -> 351.0	7138	0.34	µg/L	84
		532.8 -> 353.0	2652			
ADONA	6.671	376.9 -> 250.9	19995	0.37	µg/L	94
		376.9 -> 84.8	5300			
HFPO-DA	5.845	284.9 -> 168.9	1392	0.42	µg/L	98
		284.9 -> 184.9	204			
3:3FTCA	3.777	241.0 -> 177.0	894	0.96	µg/L	m 99
		241.0 -> 117.0	118			
5:3FTCA	6.161	341.0 -> 237.1	21287	5.27	µg/L	87
		341.0 -> 217.0	13178			
7:3FTCA	7.586	441.0 -> 316.9	8962	4.89	µg/L	97
		441.0 -> 336.9	19170			
EtFOSA	10.986	526.0 -> 219.0	1703	0.41	µg/L	98
		526.0 -> 169.0	2072			
EtFOSE	10.932	630.0 -> 58.9	4227	0.95	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	1441	0.42	µg/L	m 99
		511.9 -> 169.0	1907			
MeFOSE	10.686	616.1 -> 58.9	3843	1.02	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	306	0.18	µg/L	78
		699.1 -> 98.8	223			
NFDHA	5.348	295.0 -> 201.0	1028	0.40	µg/L	96
		295.0 -> 84.9	306			
PFMBA	4.688	279.0 -> 85.1	4050	0.38	µg/L	100
PFMPA	3.442	229.0 -> 84.9	2931	0.38	µg/L	100
PFEESA	5.938	314.8 -> 134.9	10632	0.34	µg/L	98
		314.8 -> 82.9	319			

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

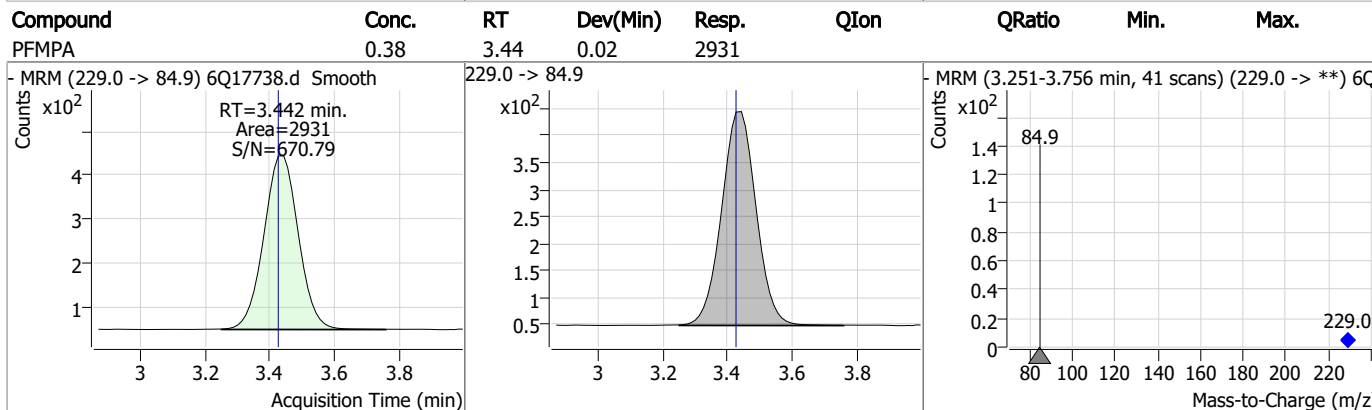
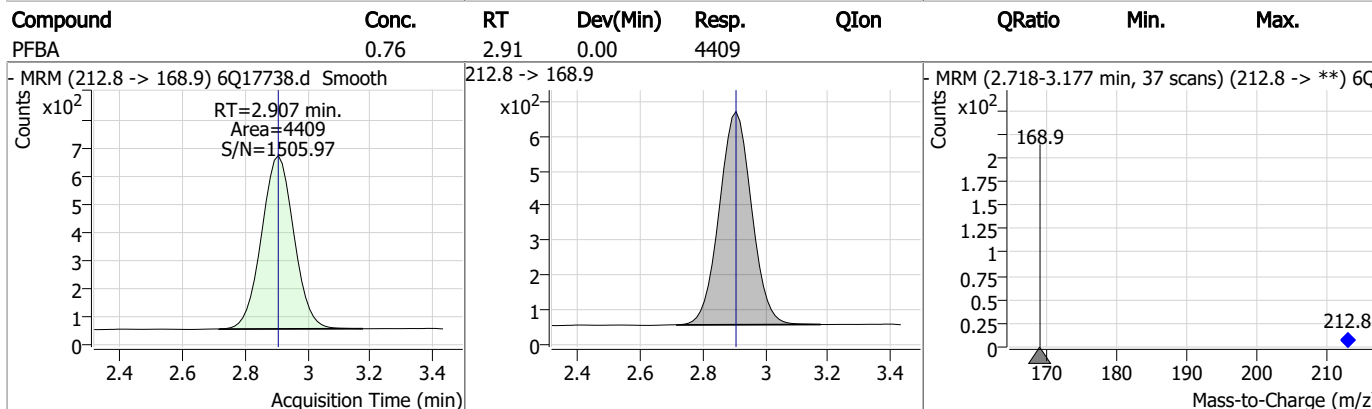
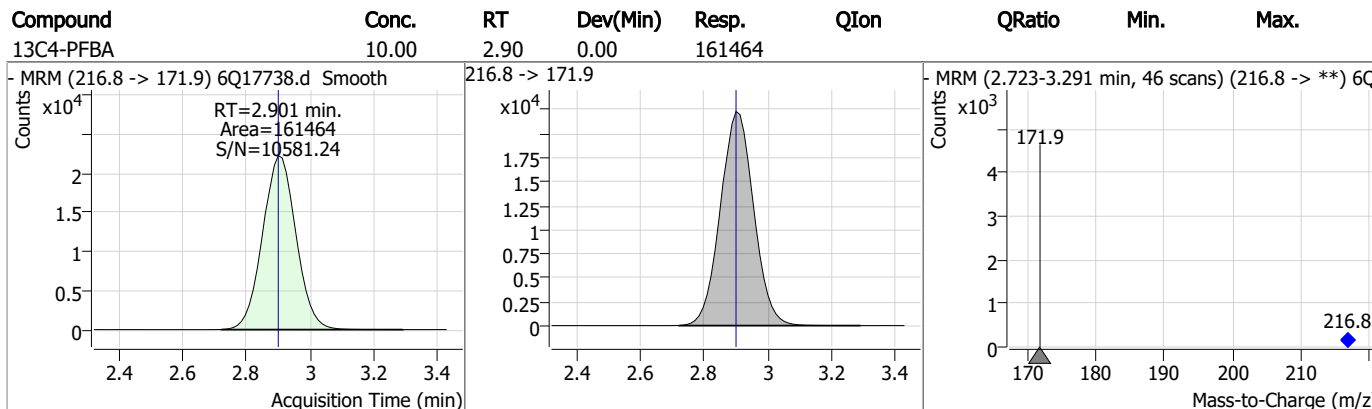
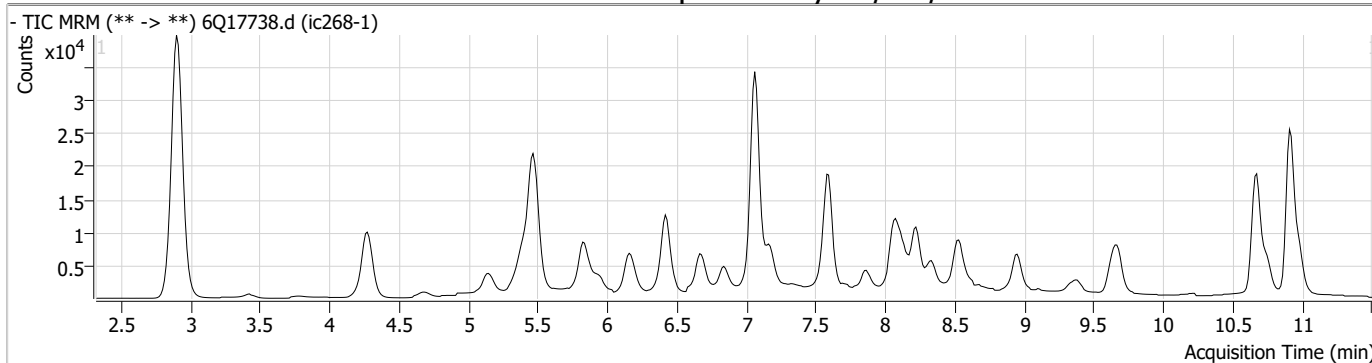
Perfluorinated Compounds by LC/MS/MS

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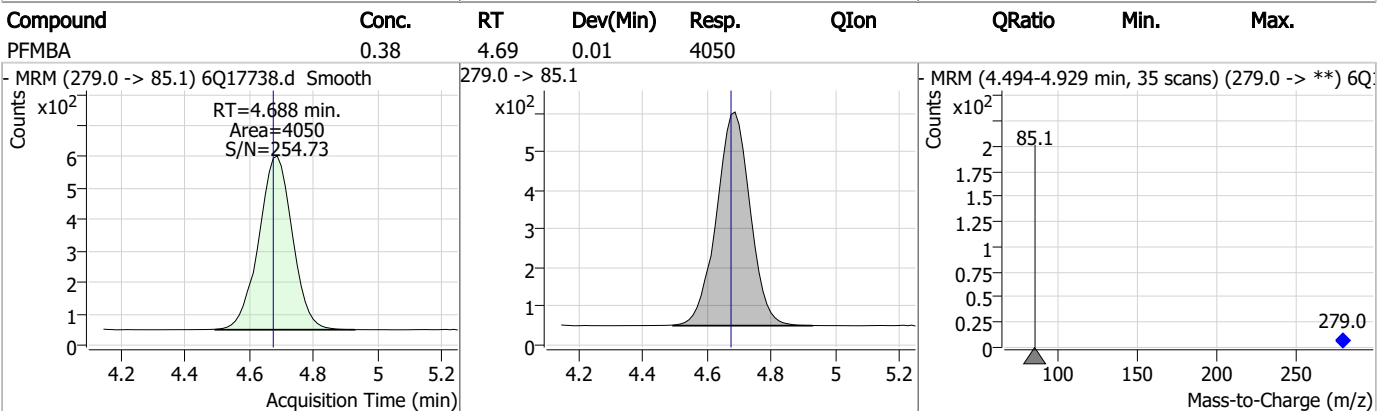
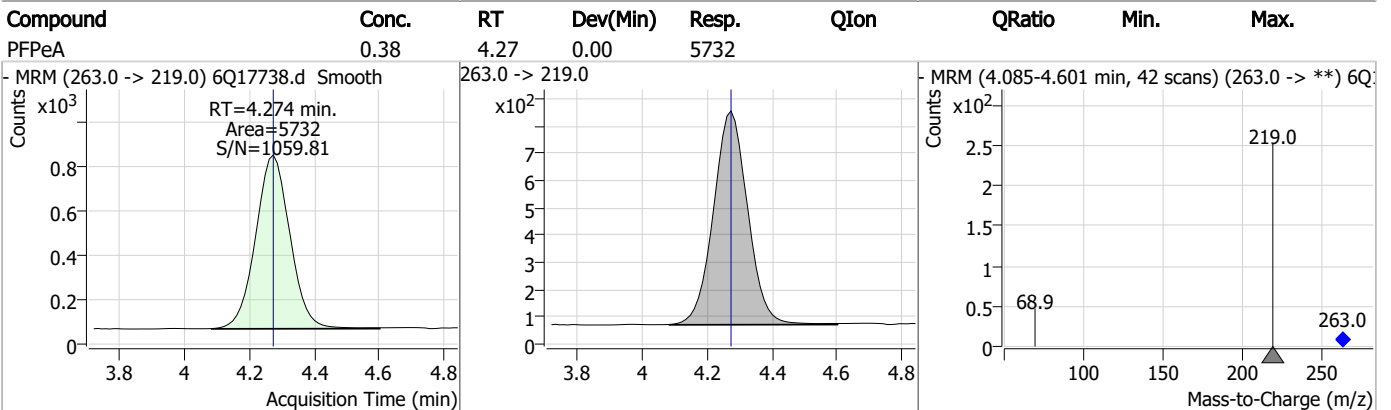
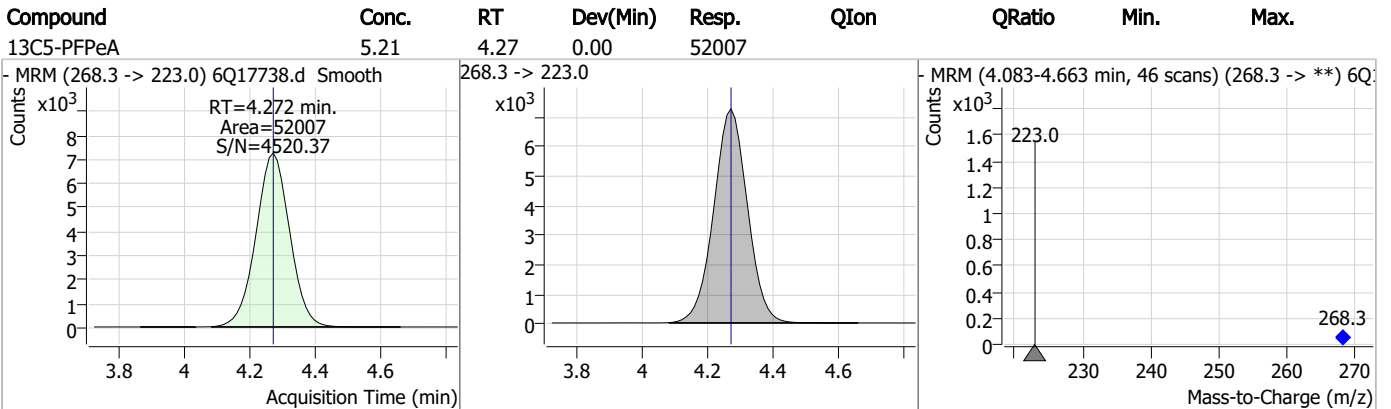
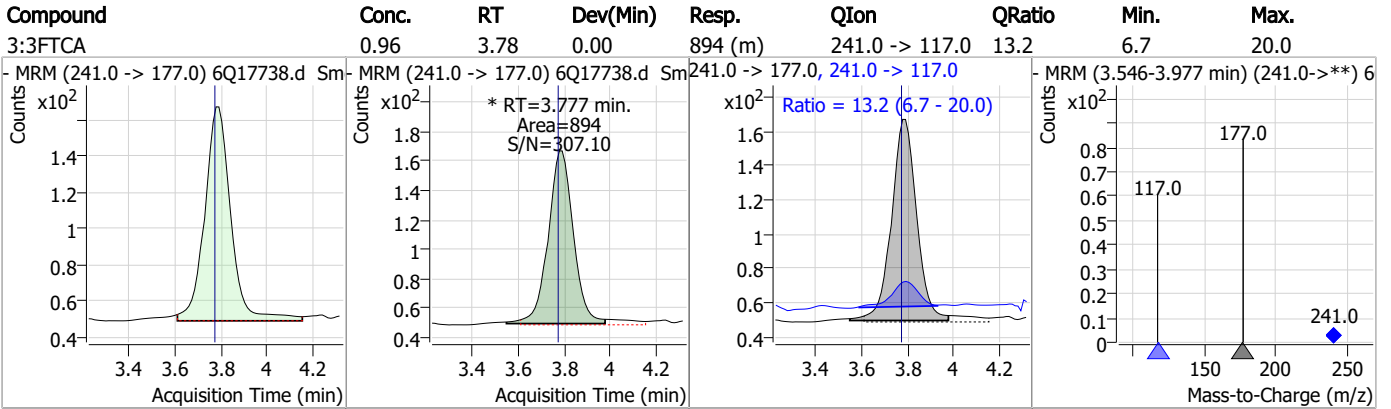


Perfluorinated Compounds by LC/MS/MS

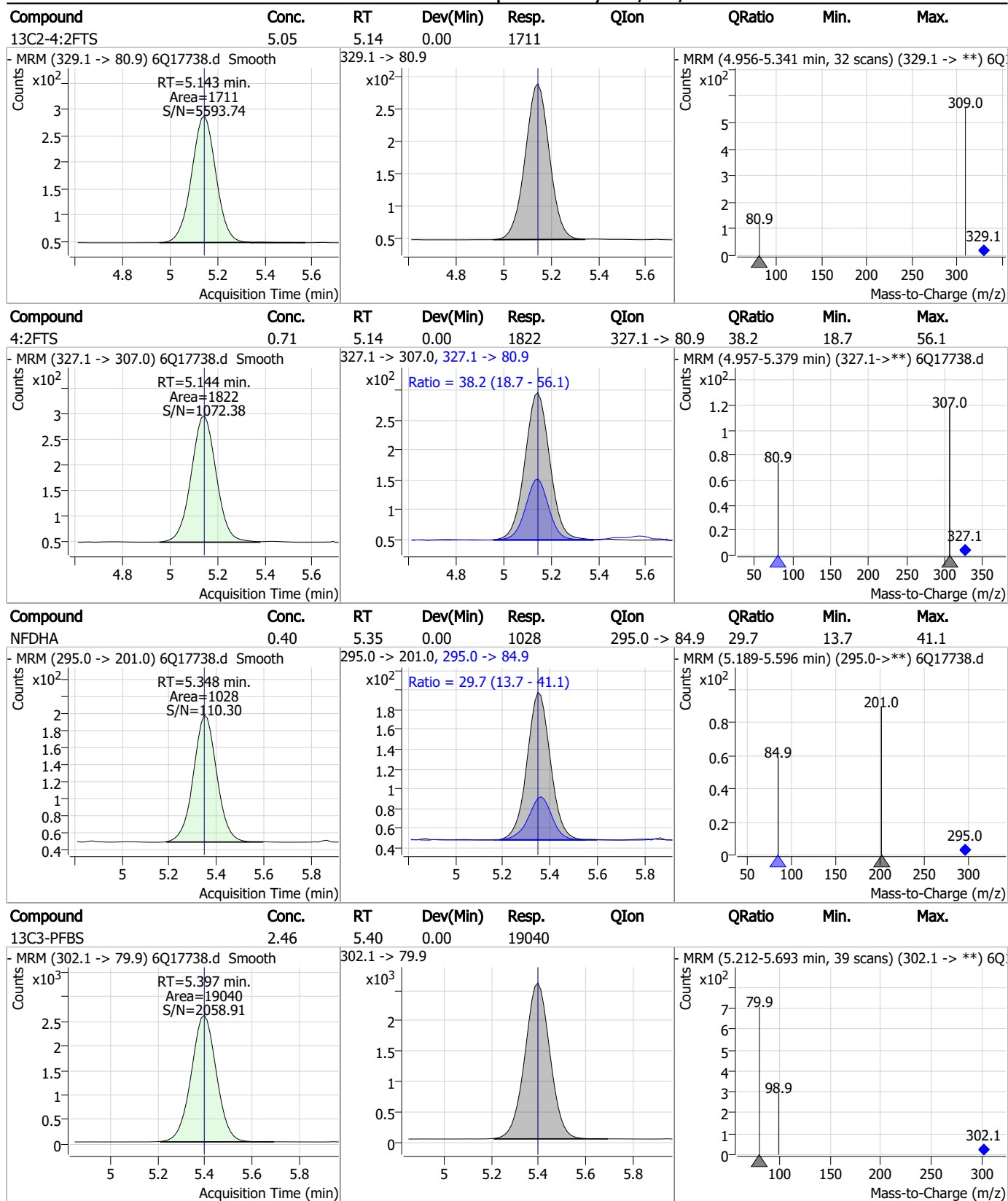


7.7.2
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

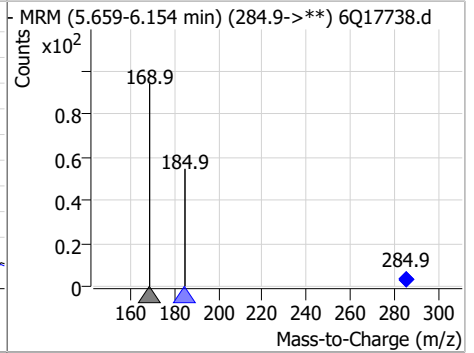
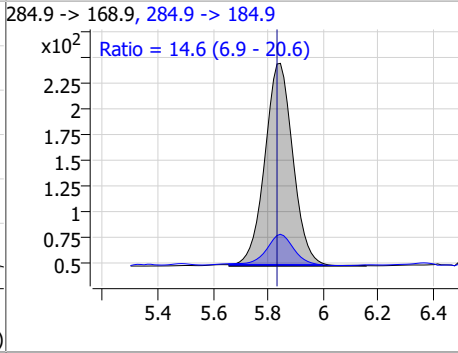
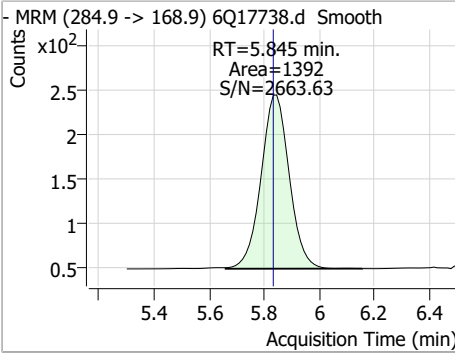
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.40	0.00	1596	298.7 -> 98.8	39.7	18.3	54.9
13C5-PFHxA	2.62	5.47	0.00	58906				
PFHxA	0.20	5.47	0.00	4704	313.0 -> 118.9	4.9	2.4	7.3
13C3-HFPO-DA	9.89	5.83	0.00	34363				

7.7.2
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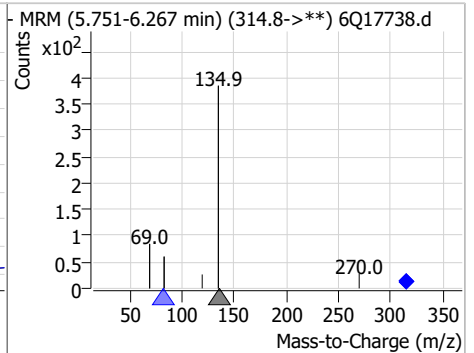
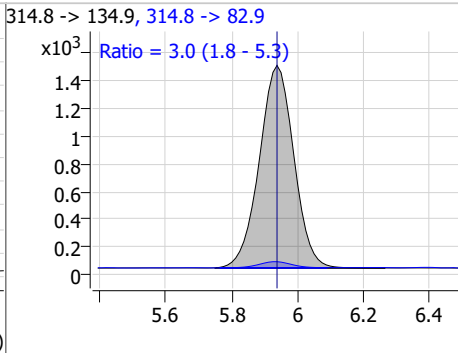
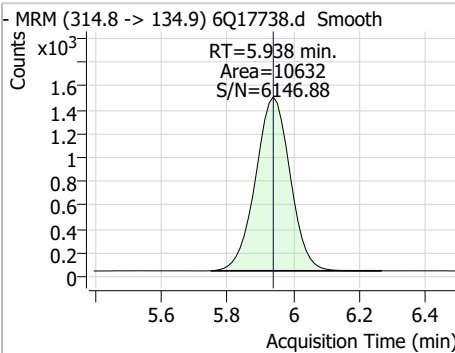


Perfluorinated Compounds by LC/MS/MS

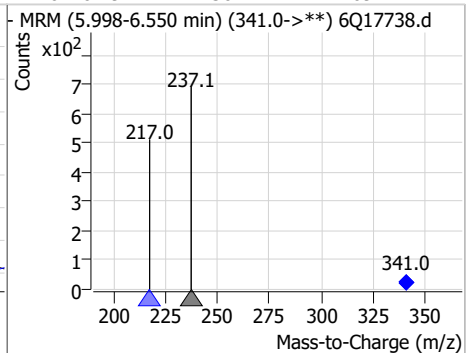
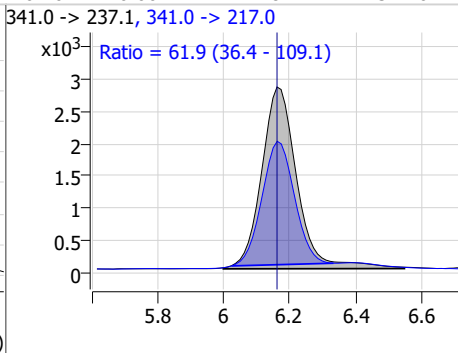
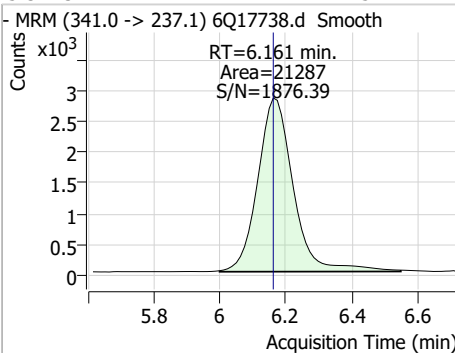
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.42	5.84	0.01	1392	284.9 -> 184.9	14.6	6.9	20.6



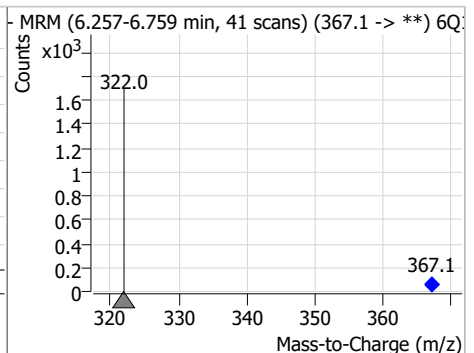
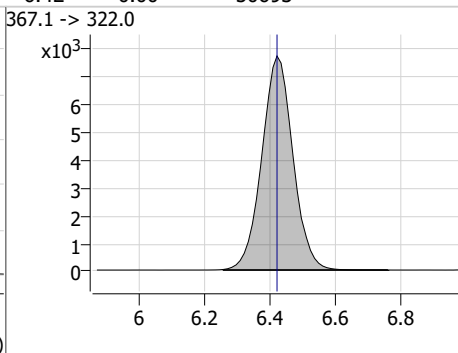
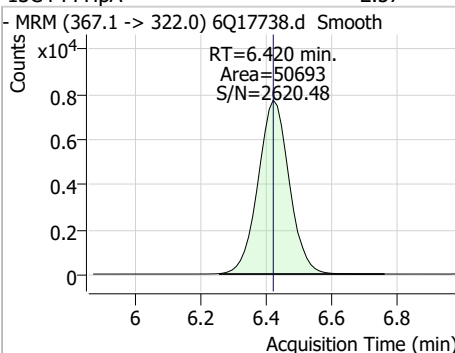
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.34	5.94	0.00	10632	314.8 -> 82.9	3.0	1.8	5.3



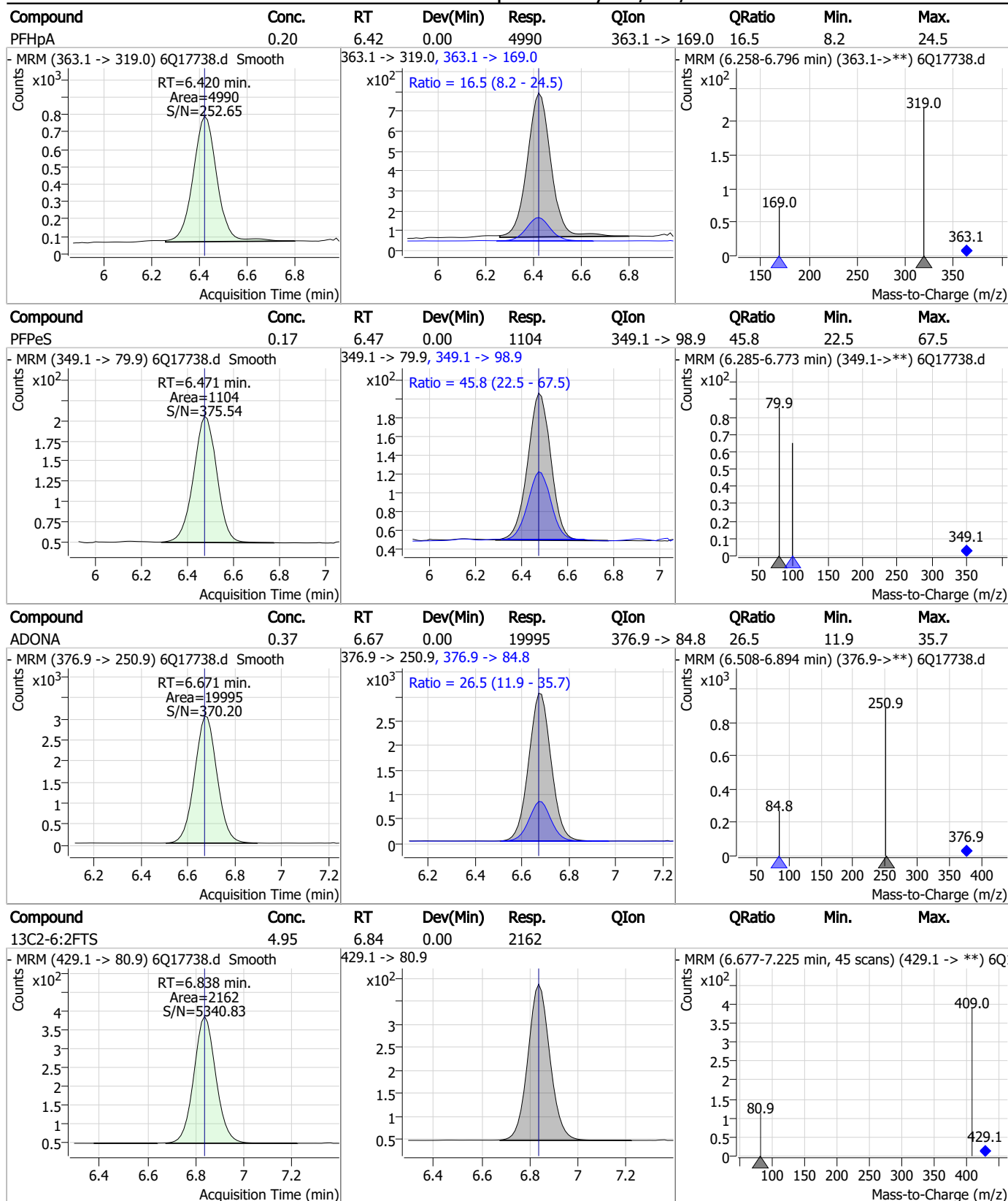
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.27	6.16	0.00	21287	341.0 -> 217.0	61.9	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	6.42	0.00	50693	367.1 -> 322.0			

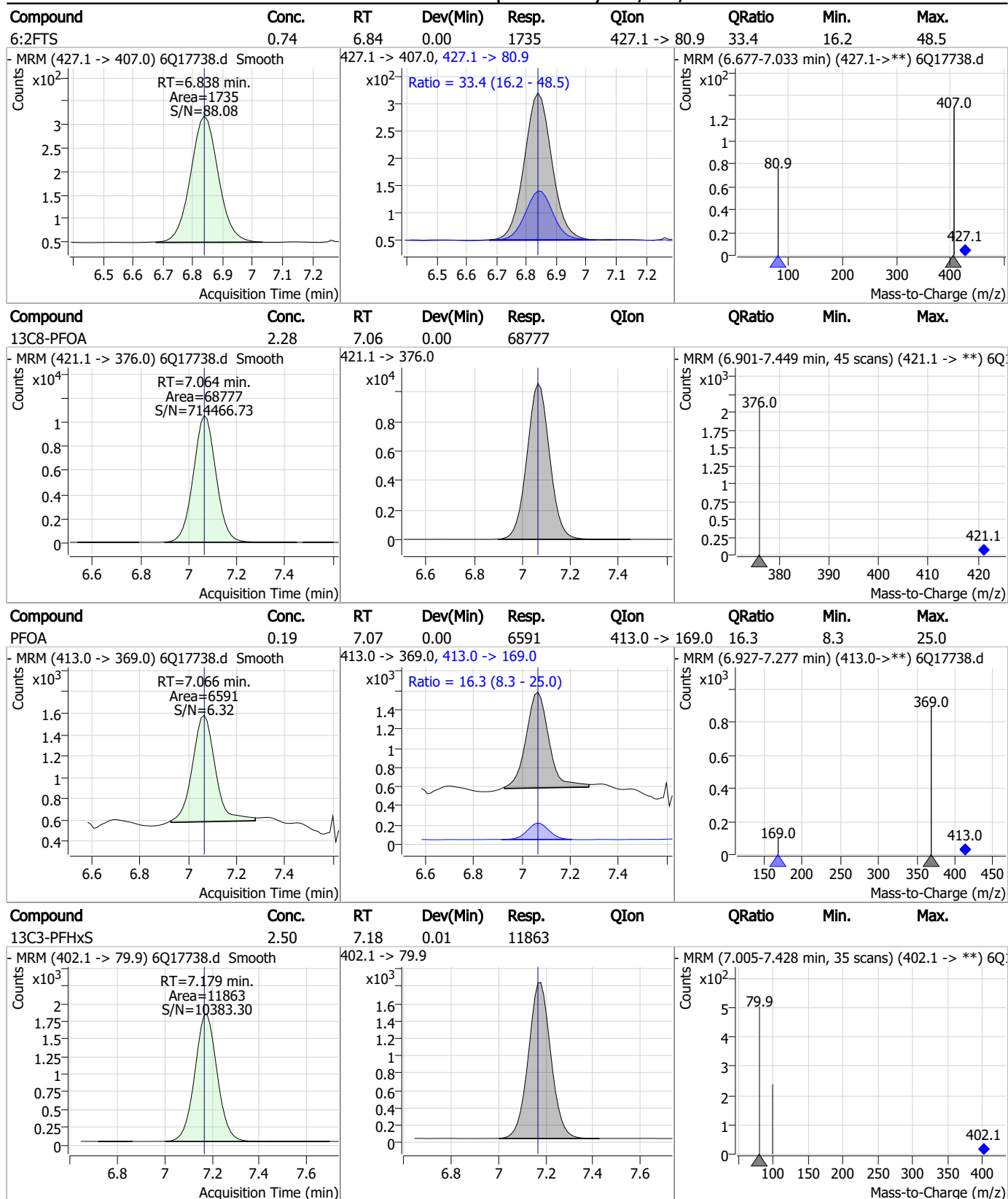


Perfluorinated Compounds by LC/MS/MS



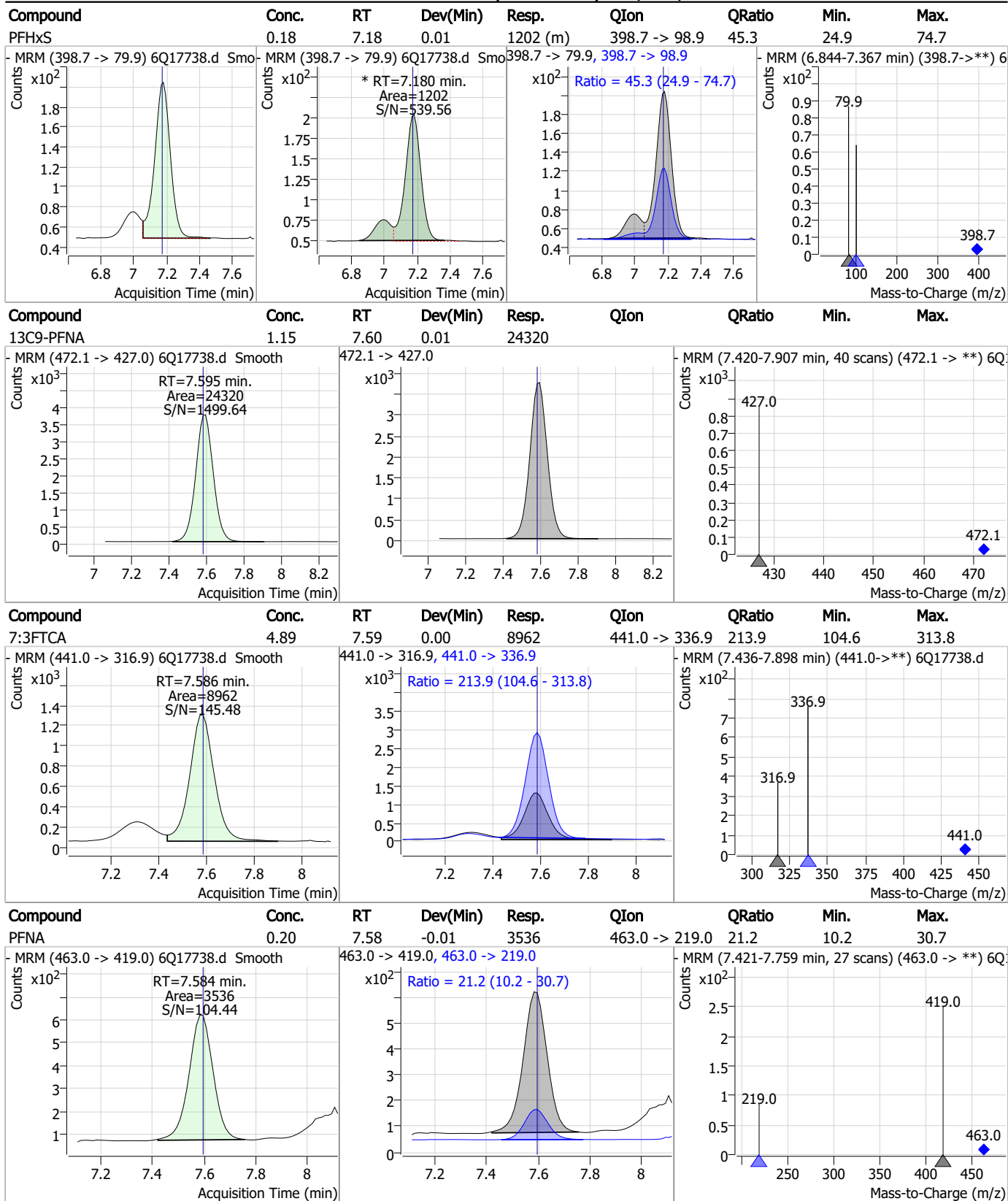
7.7.2
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Perfluorinated Compounds by LC/MS/MS



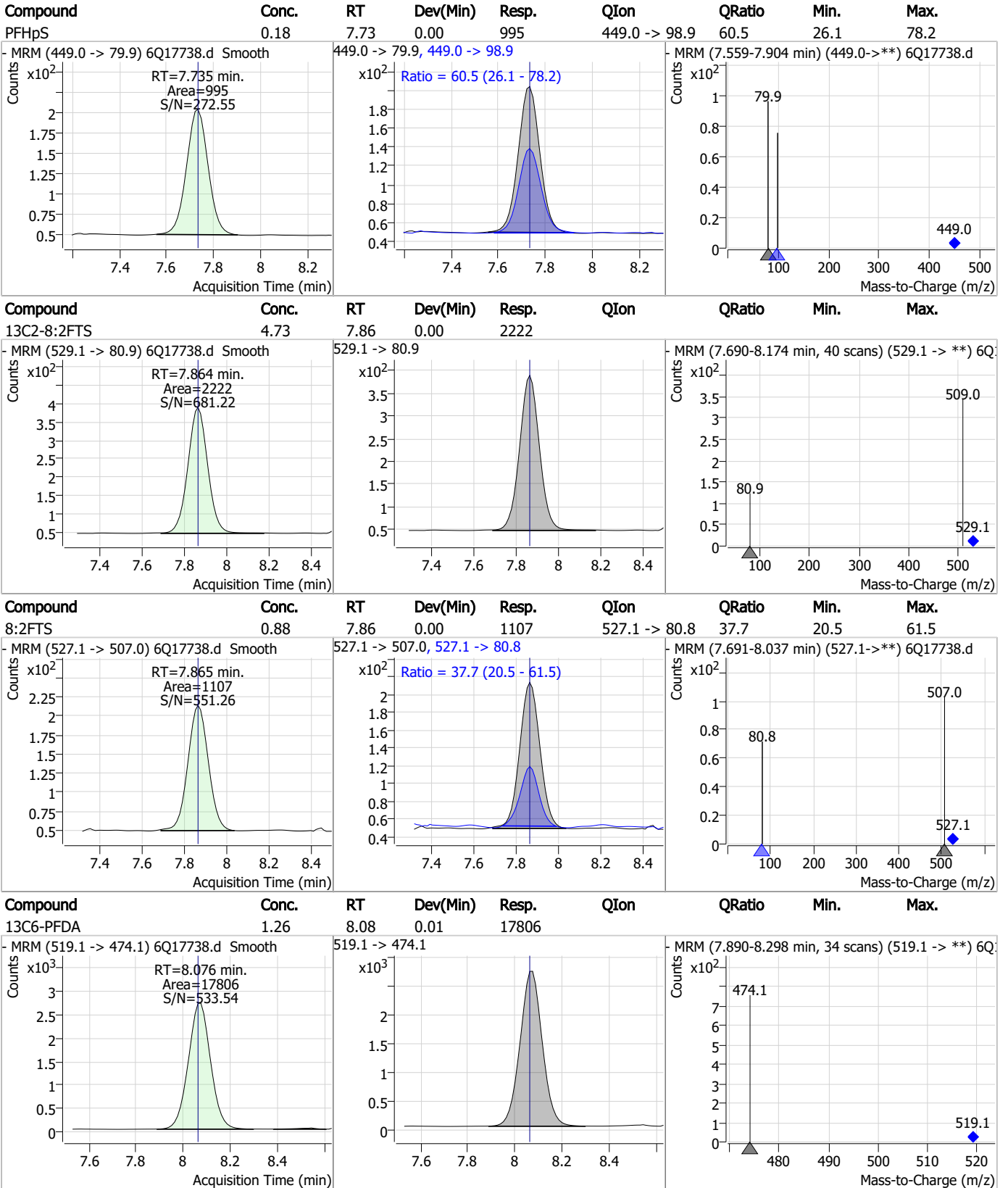
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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Perfluorinated Compounds by LC/MS/MS

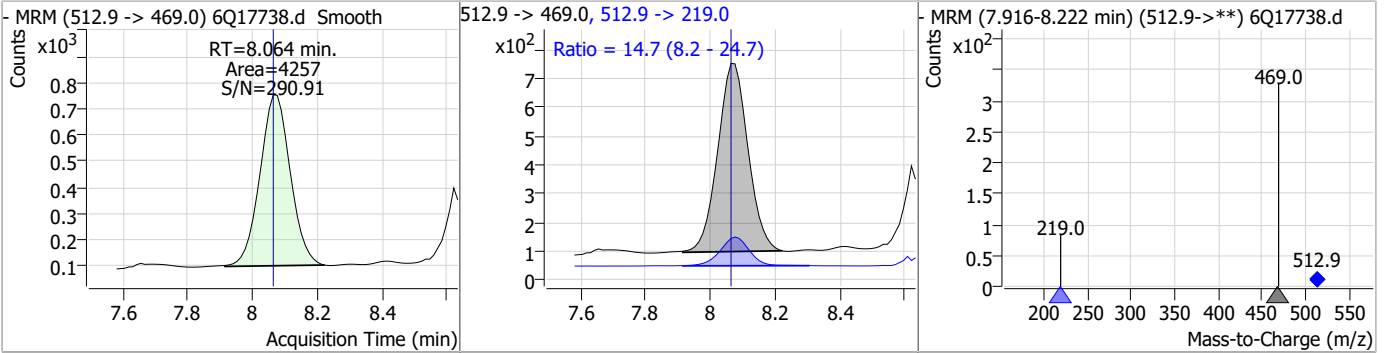


7.7.2

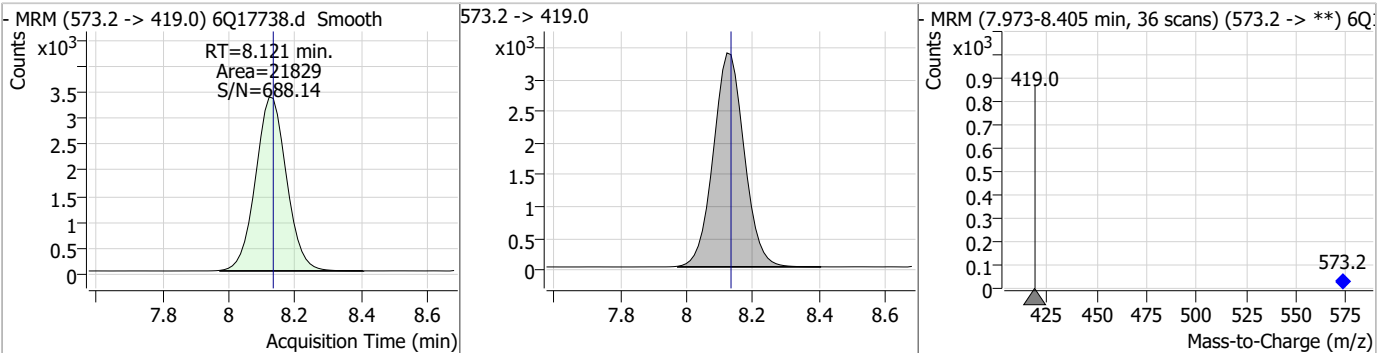
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Perfluorinated Compounds by LC/MS/MS

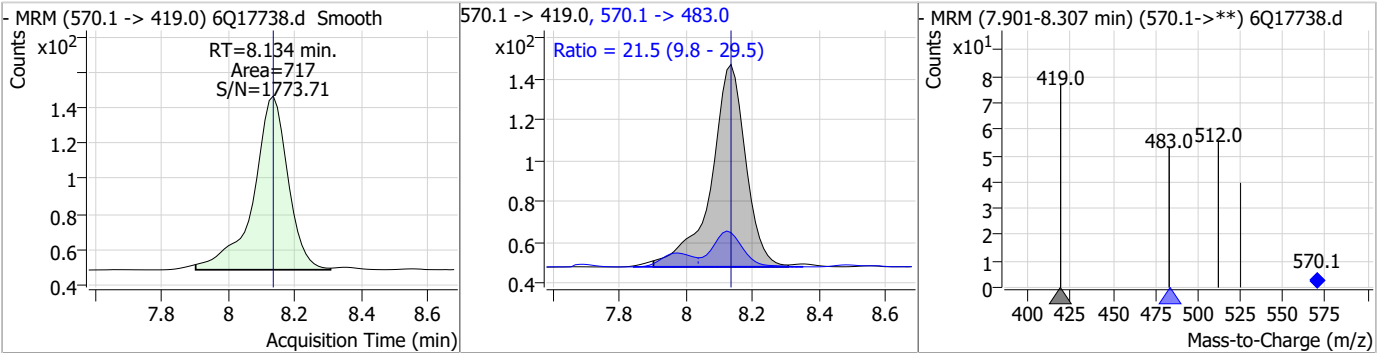
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.19	8.06	0.00	4257	512.9 -> 219.0	14.7	8.2	24.7



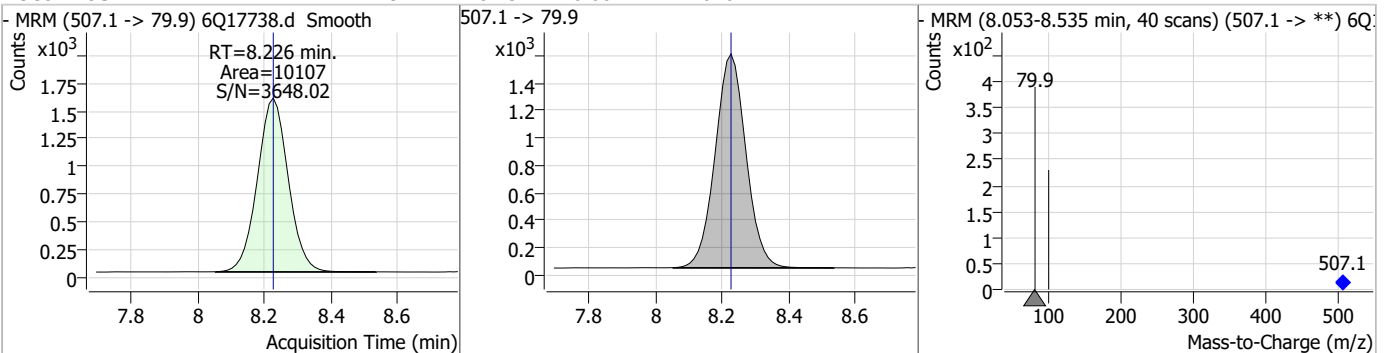
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.92	8.12	-0.01	21829				



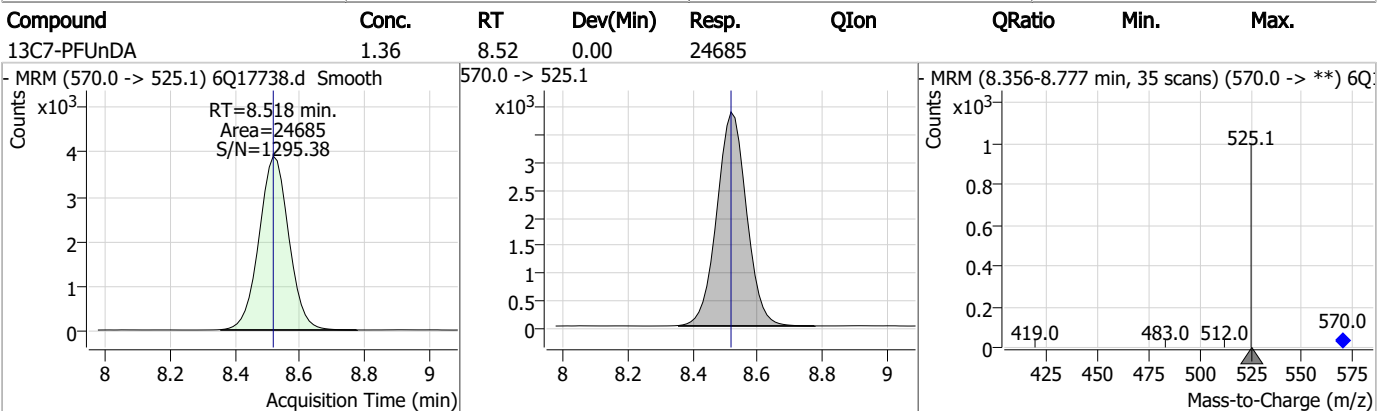
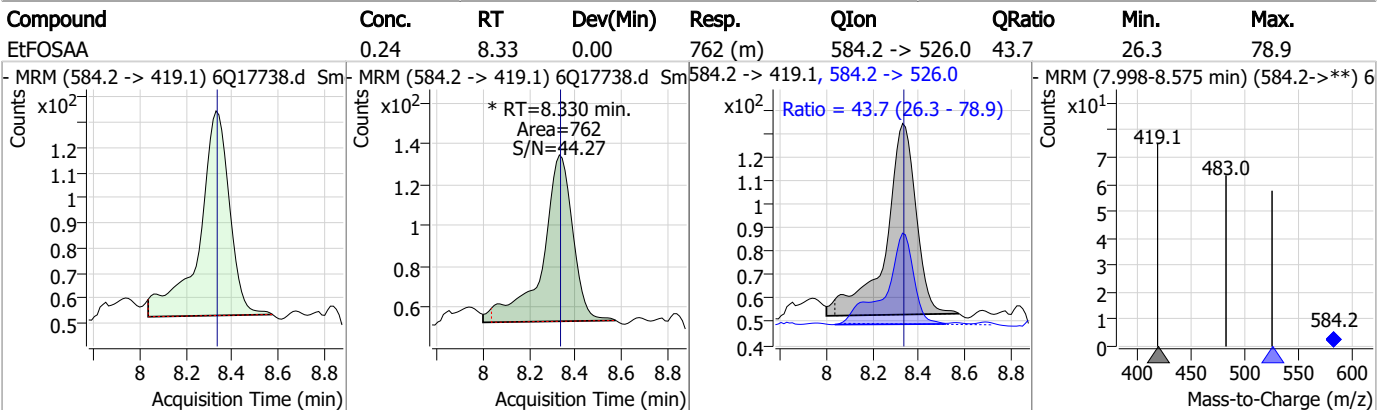
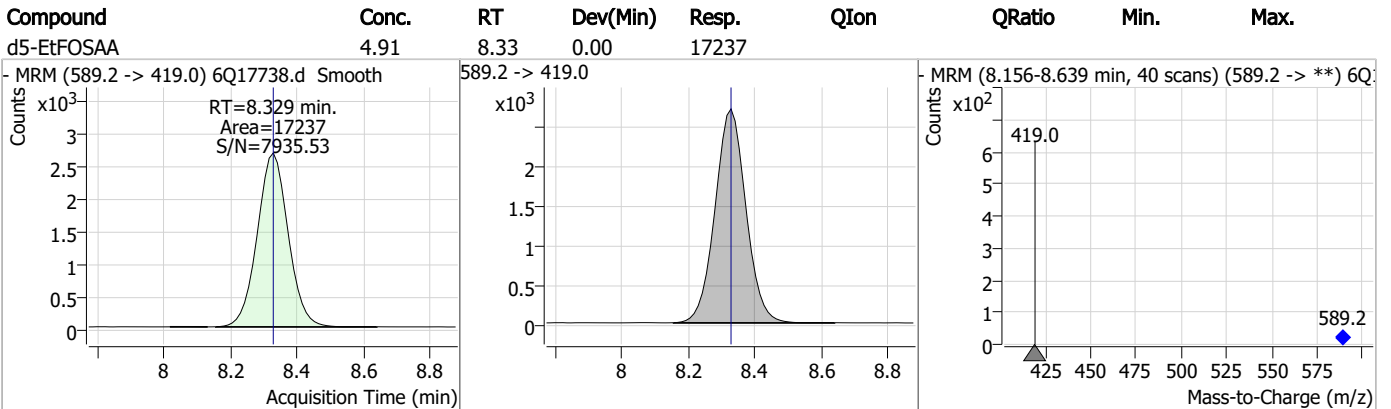
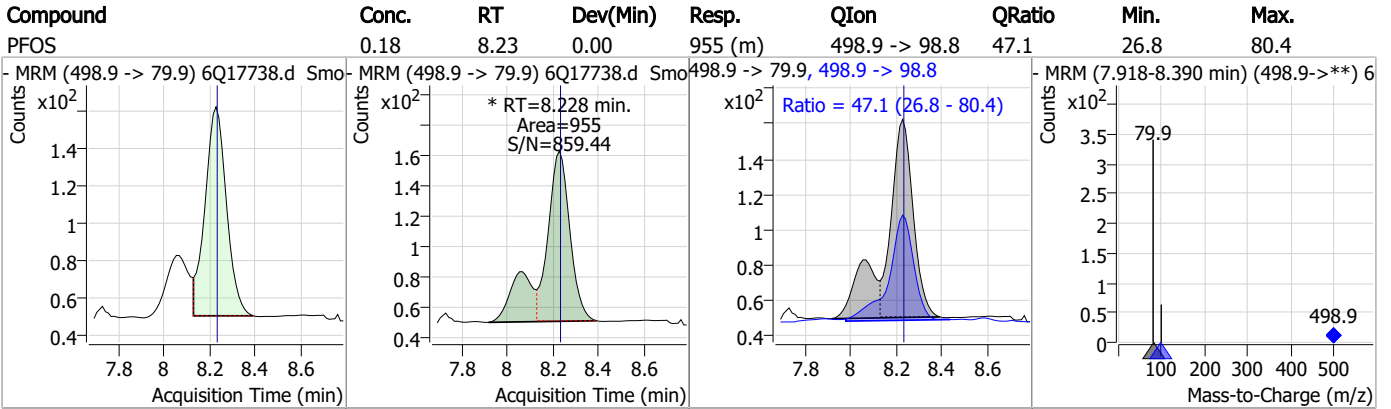
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.17	8.13	0.00	717	570.1 -> 483.0	21.5	9.8	29.5



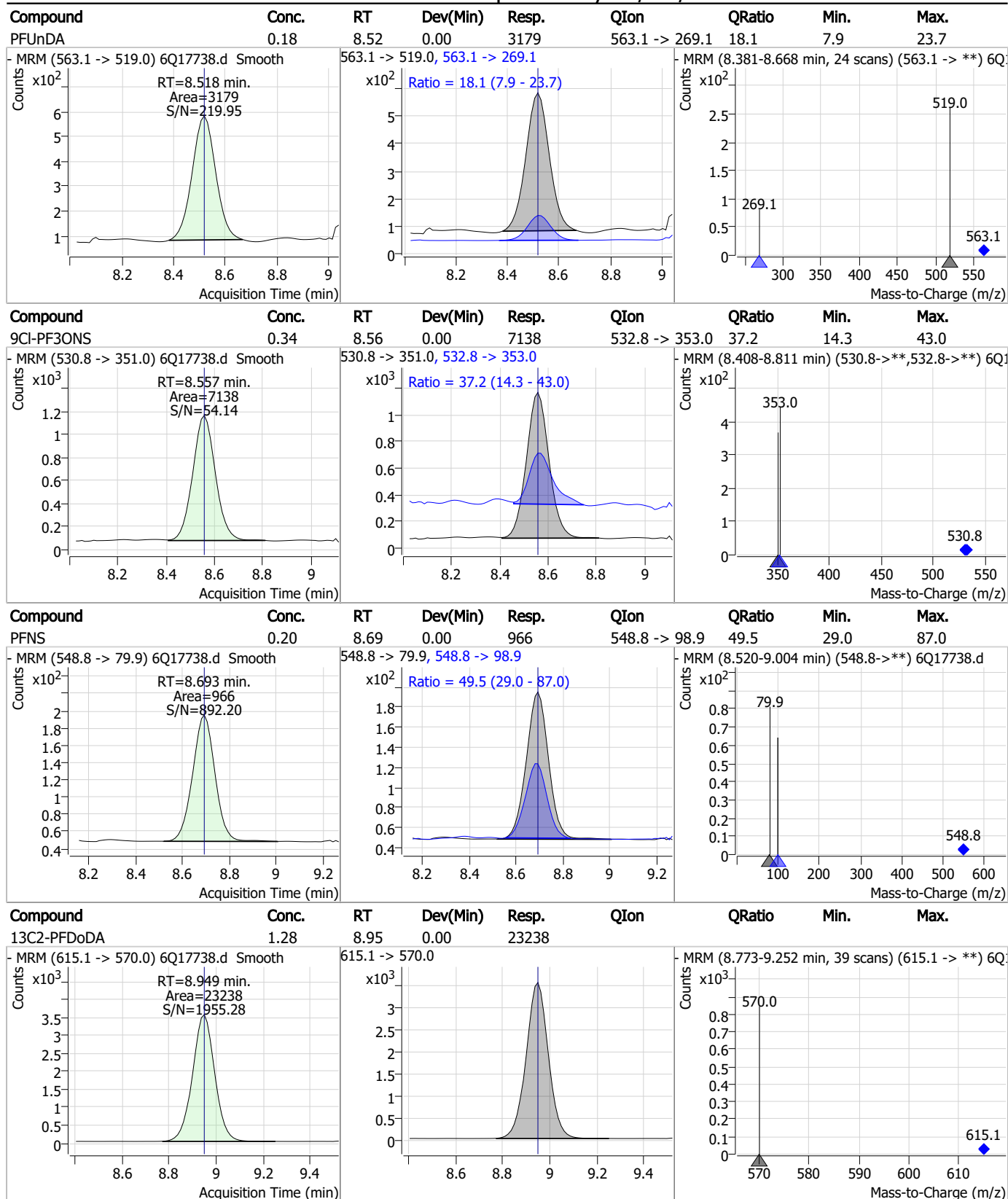
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.29	8.23	0.00	10107				



Perfluorinated Compounds by LC/MS/MS

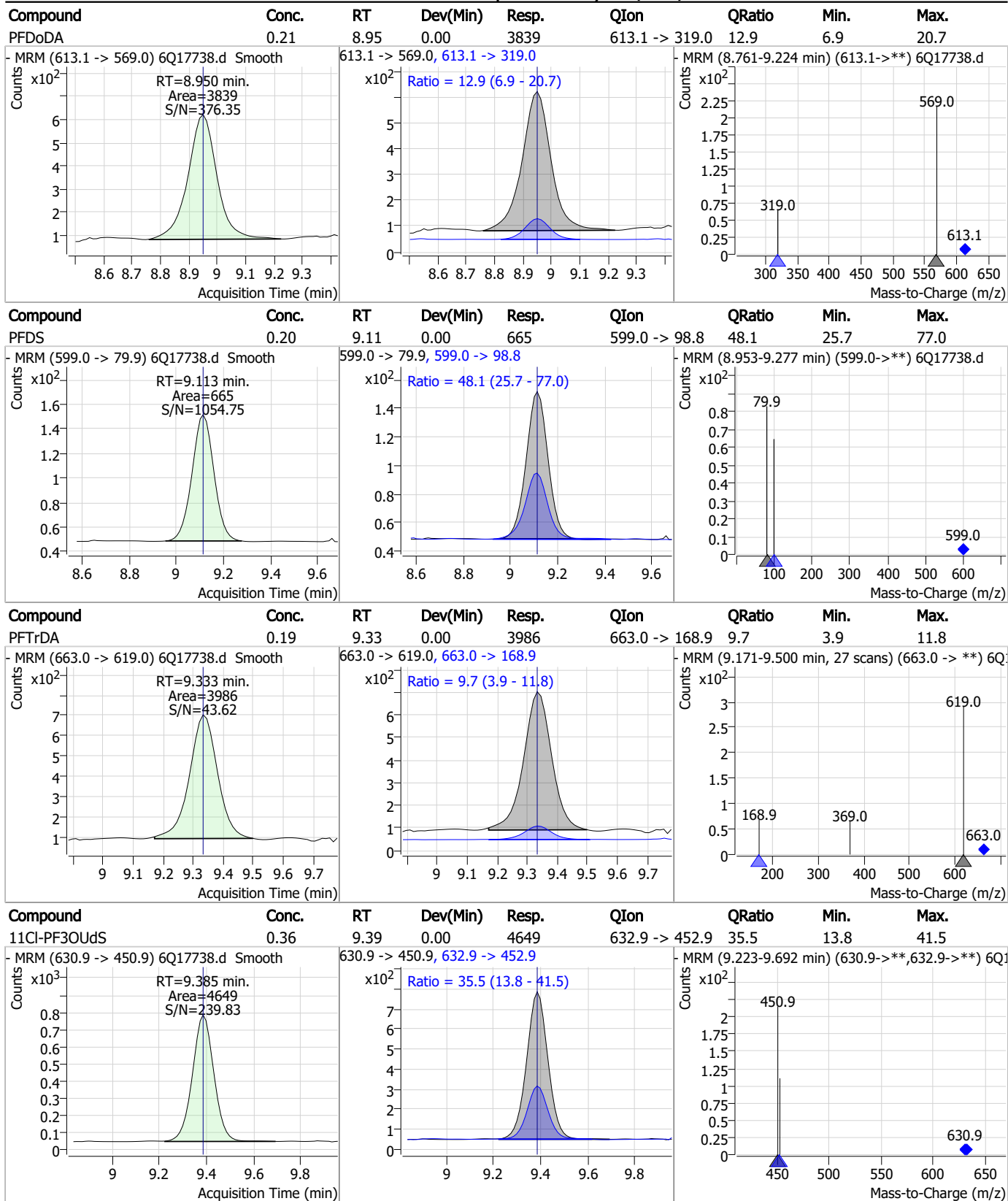


Perfluorinated Compounds by LC/MS/MS



7.7.2
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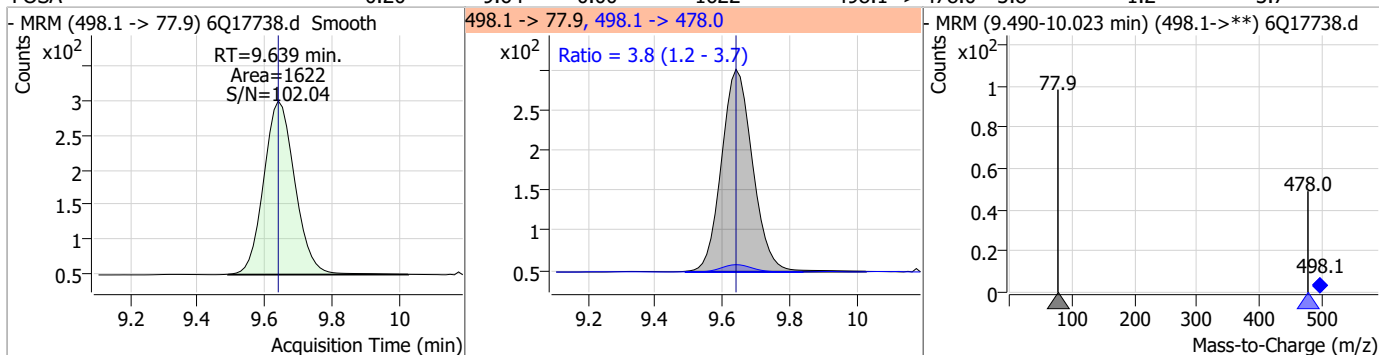
Perfluorinated Compounds by LC/MS/MS



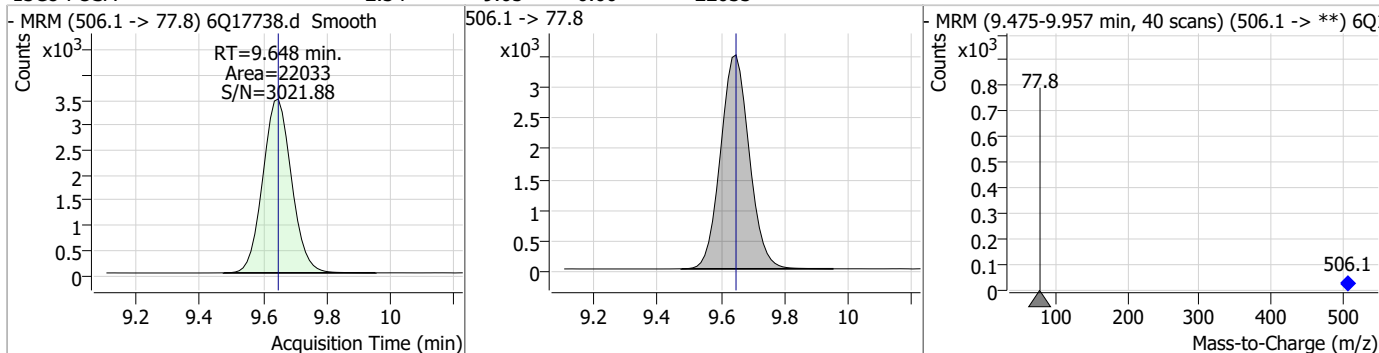
7.7.2
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Perfluorinated Compounds by LC/MS/MS

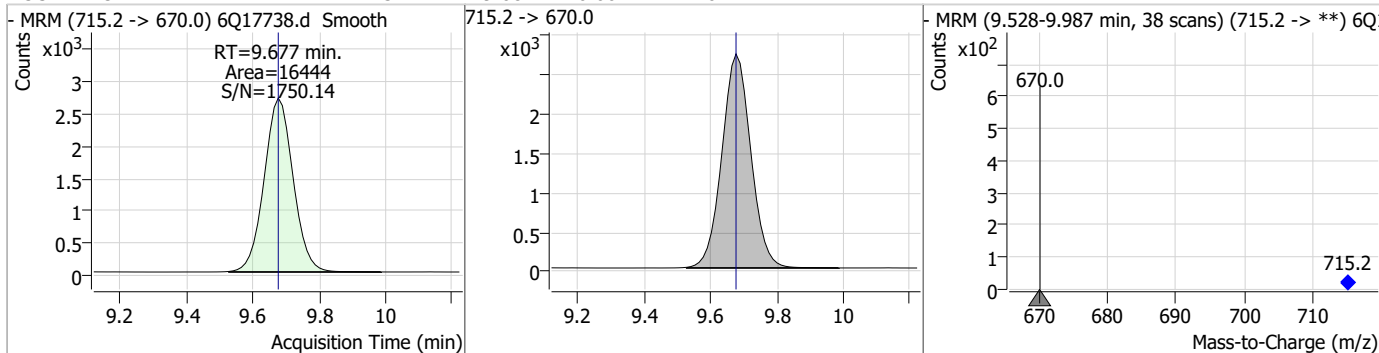
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.20	9.64	0.00	1622	498.1 -> 478.0	3.8	1.2	3.7



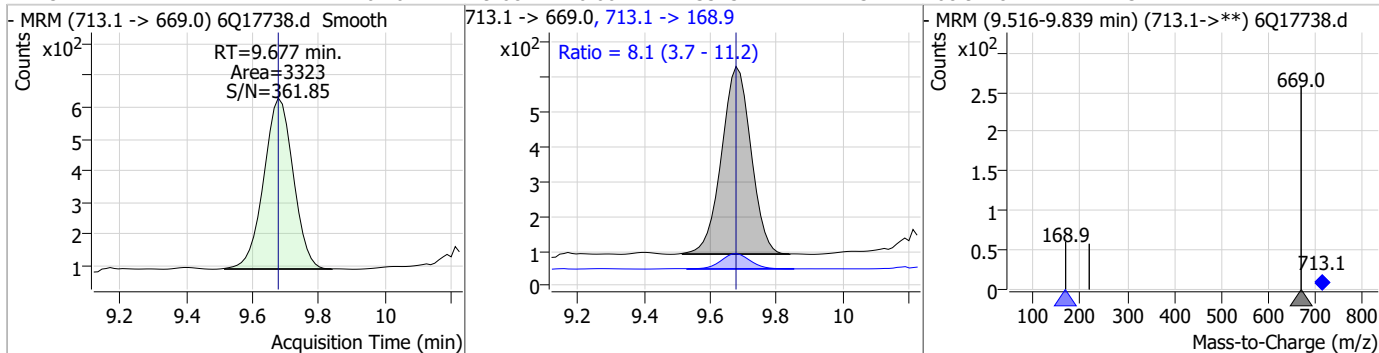
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.34	9.65	0.00	22033				



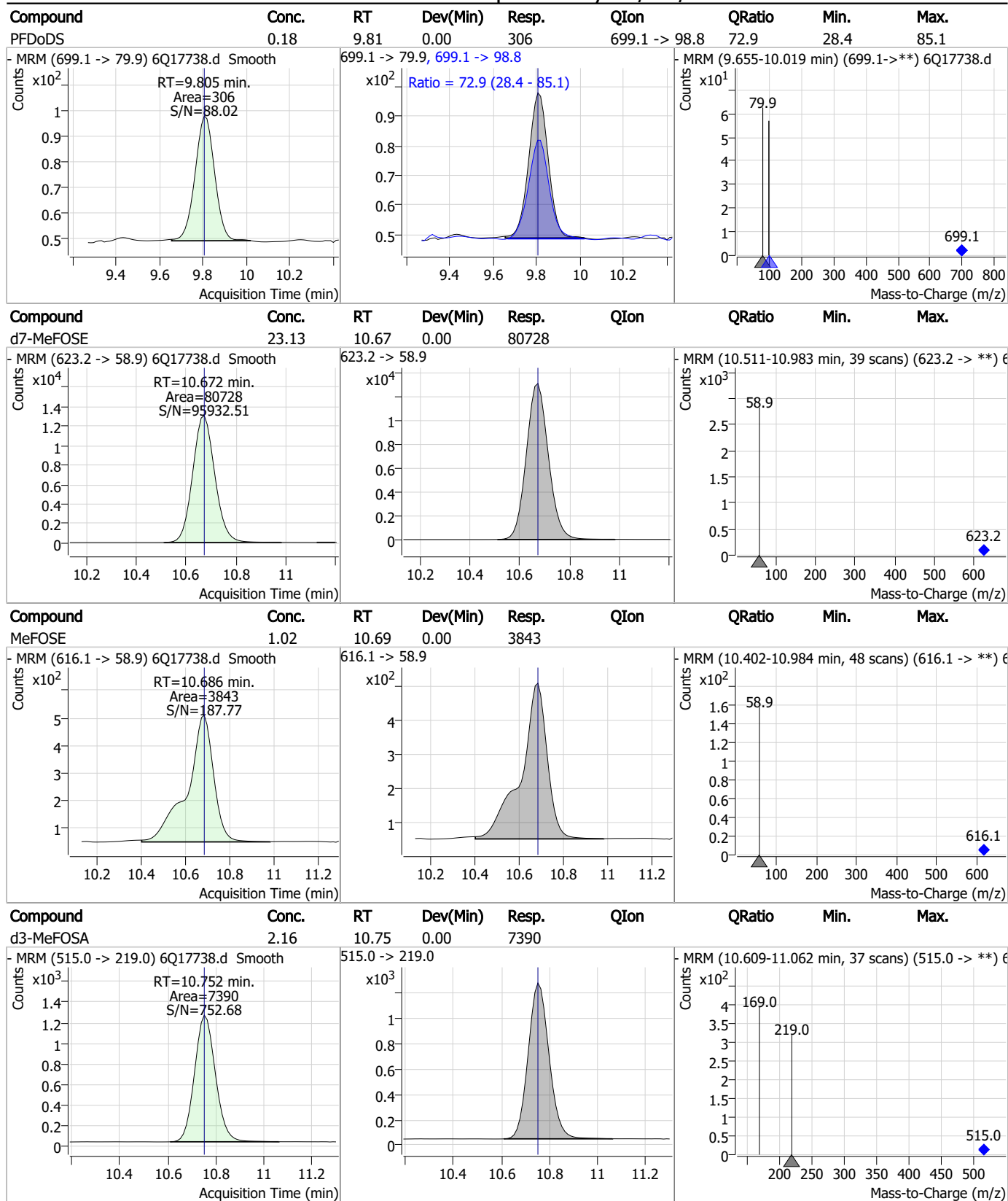
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.34	9.68	0.00	16444				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.20	9.68	0.00	3323	713.1 -> 168.9	8.1	3.7	11.2



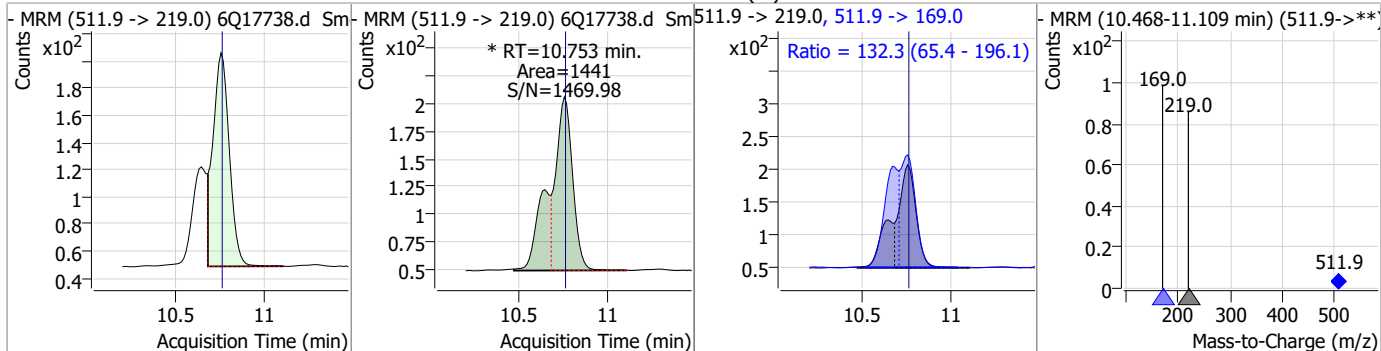
Perfluorinated Compounds by LC/MS/MS



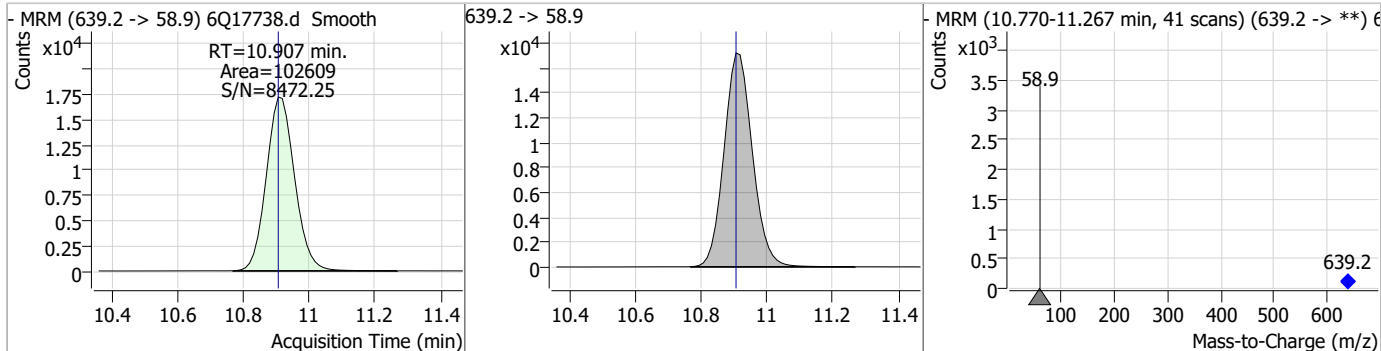
7.7.2
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Perfluorinated Compounds by LC/MS/MS

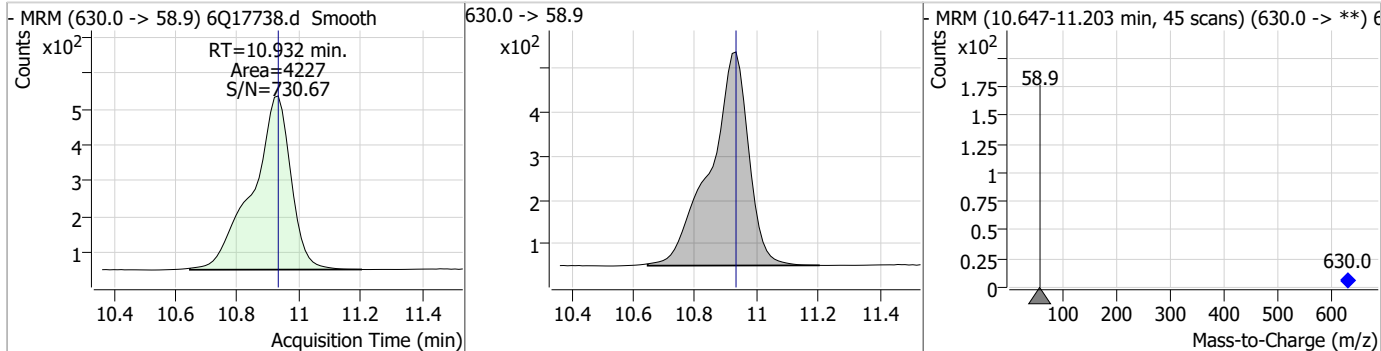
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.42	10.75	0.00	1441 (m)	511.9 -> 169.0	132.3	65.4	196.1



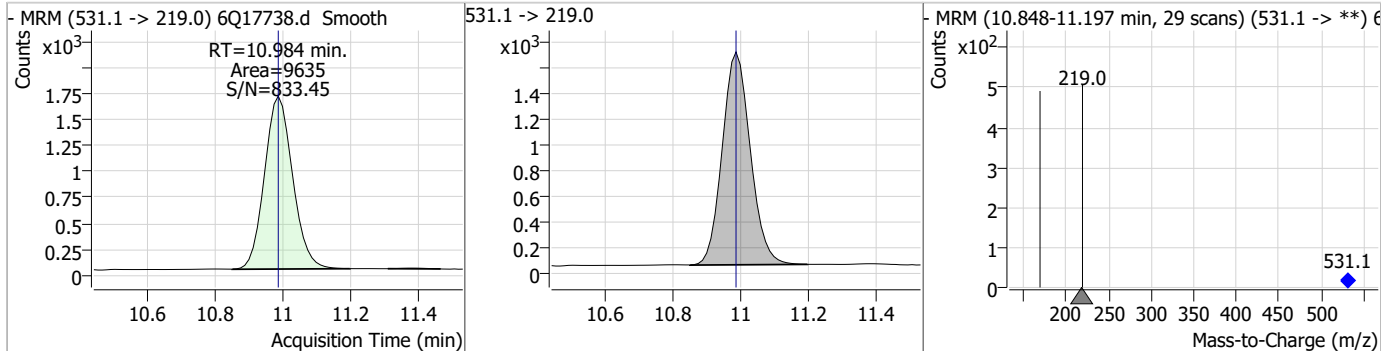
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.33	10.91	0.00	102609				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.95	10.93	0.00	4227				

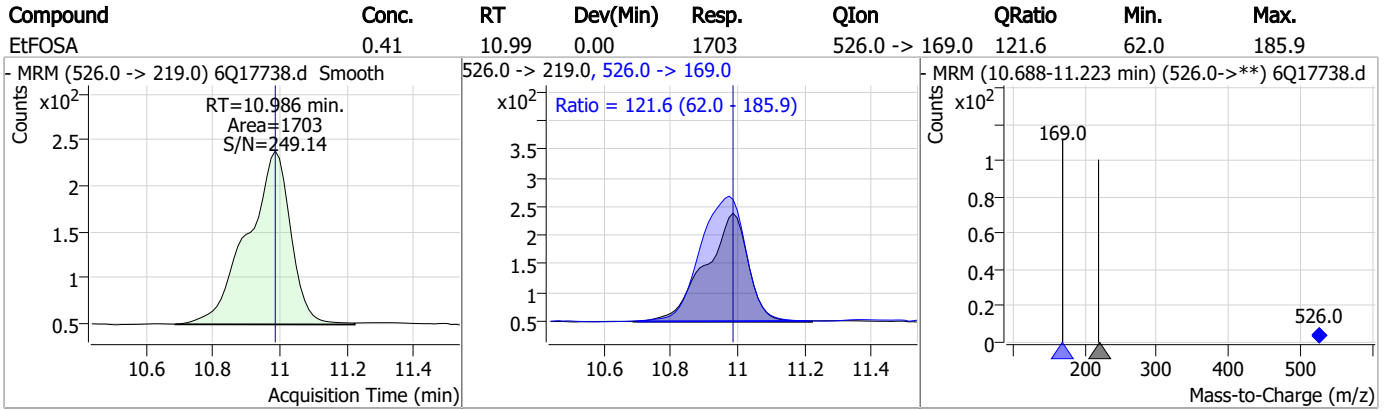


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.33	10.98	0.00	9635				



7.7.2
7

Perfluorinated Compounds by LC/MS/MS



7.7.2

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Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17738.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 12:15 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
3:3 Fluorotelomer carboxylate	356-02-5		3.78	Poor instrument integration
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.33	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17739.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 12:29:54 PM
 Sample Name : ic268-2
 Vial : P1-A3
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	161988	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51716	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	61571	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	50162	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	74494	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	25597	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	19626	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	23117	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	23515	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14776	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	22164	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	19763	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11570	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9725	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1732	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2229	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2402	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	21103	5.00 µg/L	0.000
M3-HFPO-DA	5.844	286.9 -> 168.9	35535	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	17181	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	85281	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	106065	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9191	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7638	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12478	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	67951	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	9218	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	78010	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	21881	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	26380	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	47402	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1732	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2229	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2402	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-PFDoDA	8.949	615.1 -> 570.0	23515	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14776	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C3-PFBS	5.397	302.1 -> 79.9	19763	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C3-PFHxS	7.179	402.1 -> 79.9	11570	2.36 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C4-PFBA	2.901	216.8 -> 171.9	161988	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.420	367.1 -> 322.0	50162	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFHxA	5.466	318.0 -> 273.0	61571	2.75 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C5-PFPeA	4.272	268.3 -> 223.0	51716	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C6-PFDA	8.076	519.1 -> 474.1	19626	1.37 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C7-PFUnDA	8.518	570.0 -> 525.1	23117	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-FOSA	9.648	506.1 -> 77.8	22164	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C8-PFOA	7.064	421.1 -> 376.0	74494	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-PFOS	8.226	507.1 -> 79.9	9725	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C9-PFNA	7.595	472.1 -> 427.0	25597	1.31 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSAA	8.133	573.2 -> 419.0	21103	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	35535	10.24 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	7638	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSAA	8.329	589.2 -> 419.0	17181	5.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
d7-MeFOSE	10.672	623.2 -> 58.9	85281	27.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	106065	28.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 114.2%	
d5-EtFOSA	10.984	531.1 -> 219.0	9191	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	3807	1.46 µg/L	91
		327.1 -> 80.9	1633		
6:2FTS	6.838	427.1 -> 407.0	3700	1.53 µg/L	95
		427.1 -> 80.9	1295		
8:2FTS	7.865	527.1 -> 507.0	2023	1.48 µg/L	94
		527.1 -> 80.8	755		
EtFOSAA	8.330	584.2 -> 419.1	1123	0.35 µg/L	99
		584.2 -> 526.0	600		
FOSA	9.639	498.1 -> 77.9	3092	0.37 µg/L	98
		498.1 -> 478.0	99		
MeFOSAA	8.134	570.1 -> 419.0	1525	0.37 µg/L	97
		570.1 -> 483.0	321		
PFBA	2.907	212.8 -> 168.9	8849	1.52 µg/L	100
PFBS	5.398	298.7 -> 79.9	3315	0.34 µg/L	92
		298.7 -> 98.8	1365		
PFDA	8.076	512.9 -> 469.0	7808	0.32 µg/L	99
		512.9 -> 219.0	1244		
PFDODA	8.950	613.1 -> 569.0	7542	0.40 µg/L	97
		613.1 -> 319.0	942		
PFDS	9.113	599.0 -> 79.9	1320	0.42 µg/L	88

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	567			
PFHpA	6.420	363.1 -> 319.0	10070	0.40	µg/L	97
		363.1 -> 169.0	1508			
PFHpS	7.735	449.0 -> 79.9	2131	0.41	µg/L	95
		449.0 -> 98.9	1028			
PFHxA	5.469	313.0 -> 269.0	9102	0.37	µg/L	99
		313.0 -> 118.9	480			
PFHxS	7.180	398.7 -> 79.9	2332	0.36	µg/L	m 98
		398.7 -> 98.9	1123			
PFNA	7.596	463.0 -> 419.0	6533	0.34	µg/L	100
		463.0 -> 219.0	1343			
PFNS	8.693	548.8 -> 79.9	1943	0.41	µg/L	92
		548.8 -> 98.9	1009			
PFOA	7.066	413.0 -> 369.0	16807	0.45	µg/L	95
		413.0 -> 169.0	2479			
PFOS	8.228	498.9 -> 79.9	1949	0.38	µg/L	m 94
		498.9 -> 98.8	1130			
PFPeA	4.274	263.0 -> 219.0	11488	0.77	µg/L	100
PFPeS	6.471	349.1 -> 79.9	2370	0.37	µg/L	92
		349.1 -> 98.9	1189			
PFTeDA	9.677	713.1 -> 669.0	6067	0.40	µg/L	97
		713.1 -> 168.9	521			
PFTrDA	9.346	663.0 -> 619.0	8408	0.39	µg/L	99
		663.0 -> 168.9	697			
PFUnDA	8.518	563.1 -> 519.0	6566	0.39	µg/L	99
		563.1 -> 269.1	1053			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	10283	0.77	µg/L	96
		632.9 -> 452.9	3057			
9Cl-PF3ONS	8.557	530.8 -> 351.0	15052	0.70	µg/L	90
		532.8 -> 353.0	5090			
ADONA	6.683	376.9 -> 250.9	40018	0.71	µg/L	92
		376.9 -> 84.8	11196			
HFPO-DA	5.845	284.9 -> 168.9	2669	0.78	µg/L	97
		284.9 -> 184.9	335			
3:3FTCA	3.790	241.0 -> 177.0	1754	1.90	µg/L	100
		241.0 -> 117.0	235			
5:3FTCA	6.161	341.0 -> 237.1	38920	9.21	µg/L	97
		341.0 -> 217.0	29283			
7:3FTCA	7.586	441.0 -> 316.9	18360	9.58	µg/L	100
		441.0 -> 336.9	38417			
EtFOSA	10.986	526.0 -> 219.0	3361	0.84	µg/L	100
		526.0 -> 169.0	4168			
EtFOSE	10.932	630.0 -> 58.9	8534	1.85	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	2963	0.84	µg/L	m 94
		511.9 -> 169.0	4087			
MeFOSE	10.686	616.1 -> 58.9	7510	1.88	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	718	0.43	µg/L	93
		699.1 -> 98.8	369			
NFDHA	5.348	295.0 -> 201.0	2012	0.75	µg/L	97
		295.0 -> 84.9	519			
PFMBA	4.675	279.0 -> 85.1	8317	0.78	µg/L	100
PFMPA	3.426	229.0 -> 84.9	5863	0.76	µg/L	100
PFEESA	5.938	314.8 -> 134.9	21078	0.64	µg/L	100
		314.8 -> 82.9	752			

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

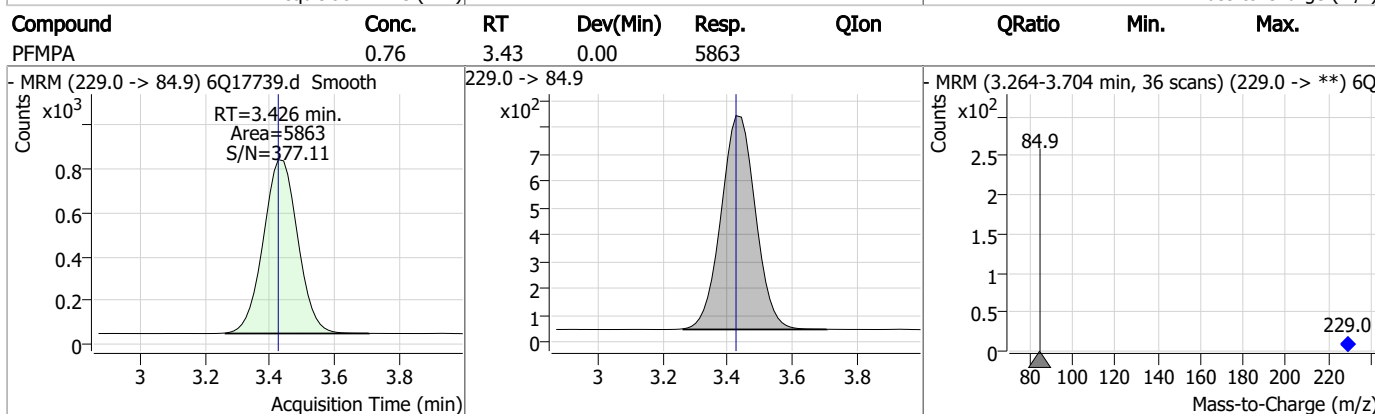
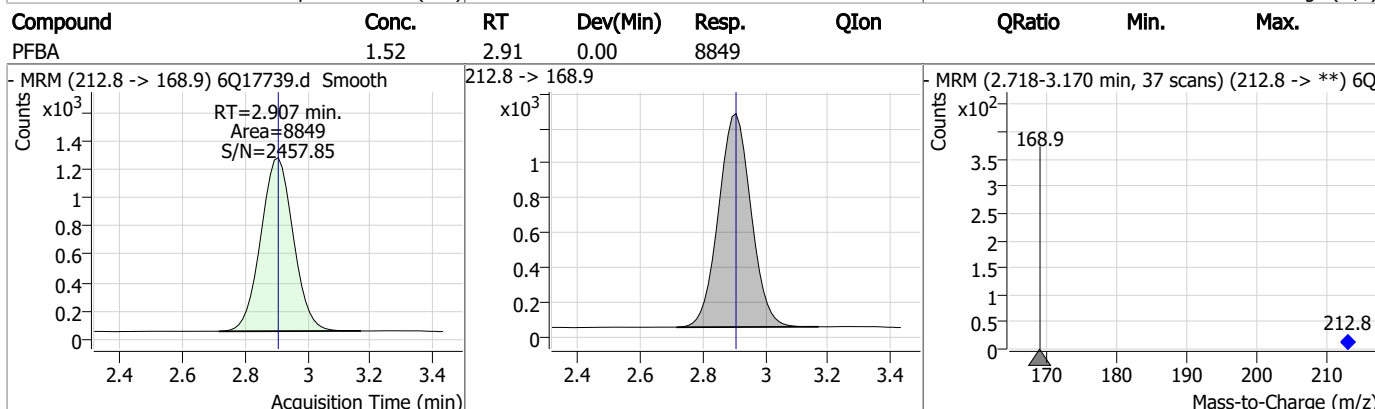
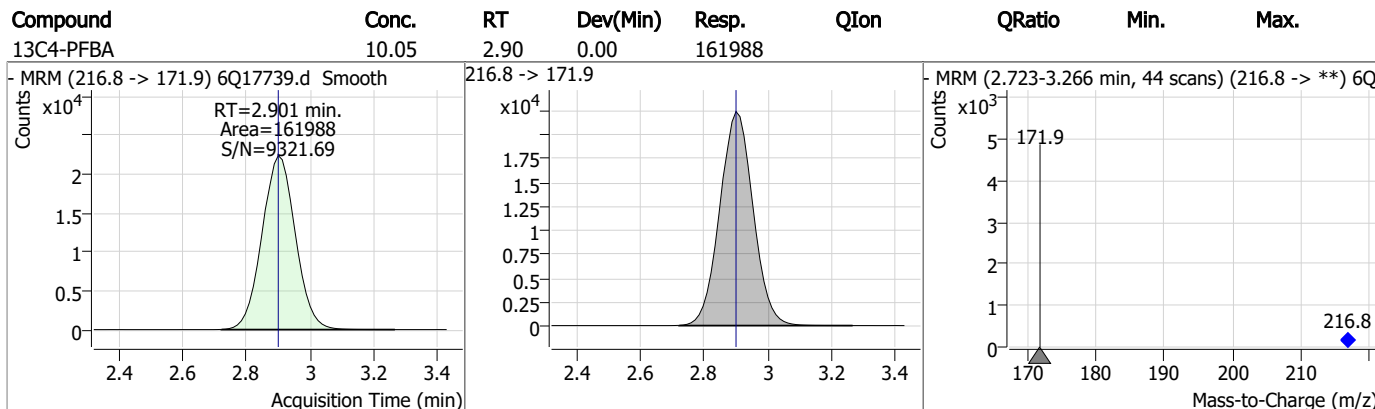
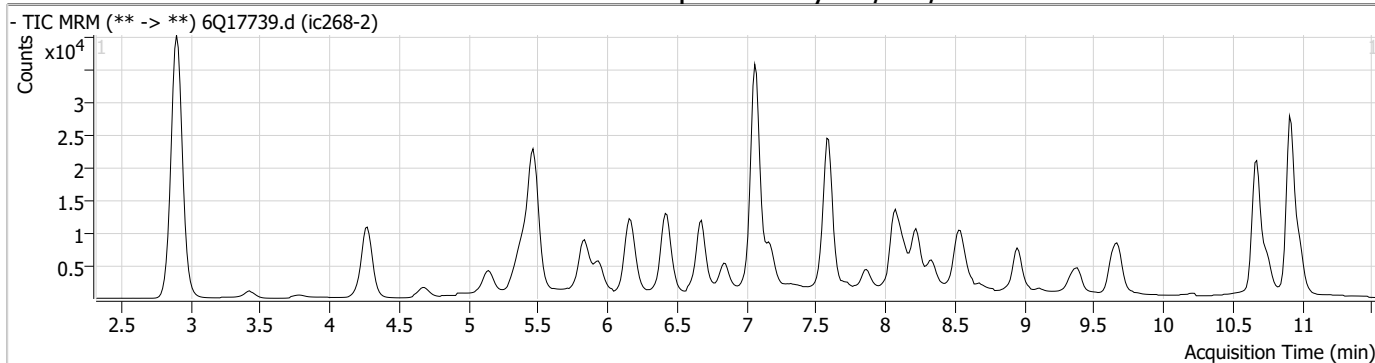
Perfluorinated Compounds by LC/MS/MS

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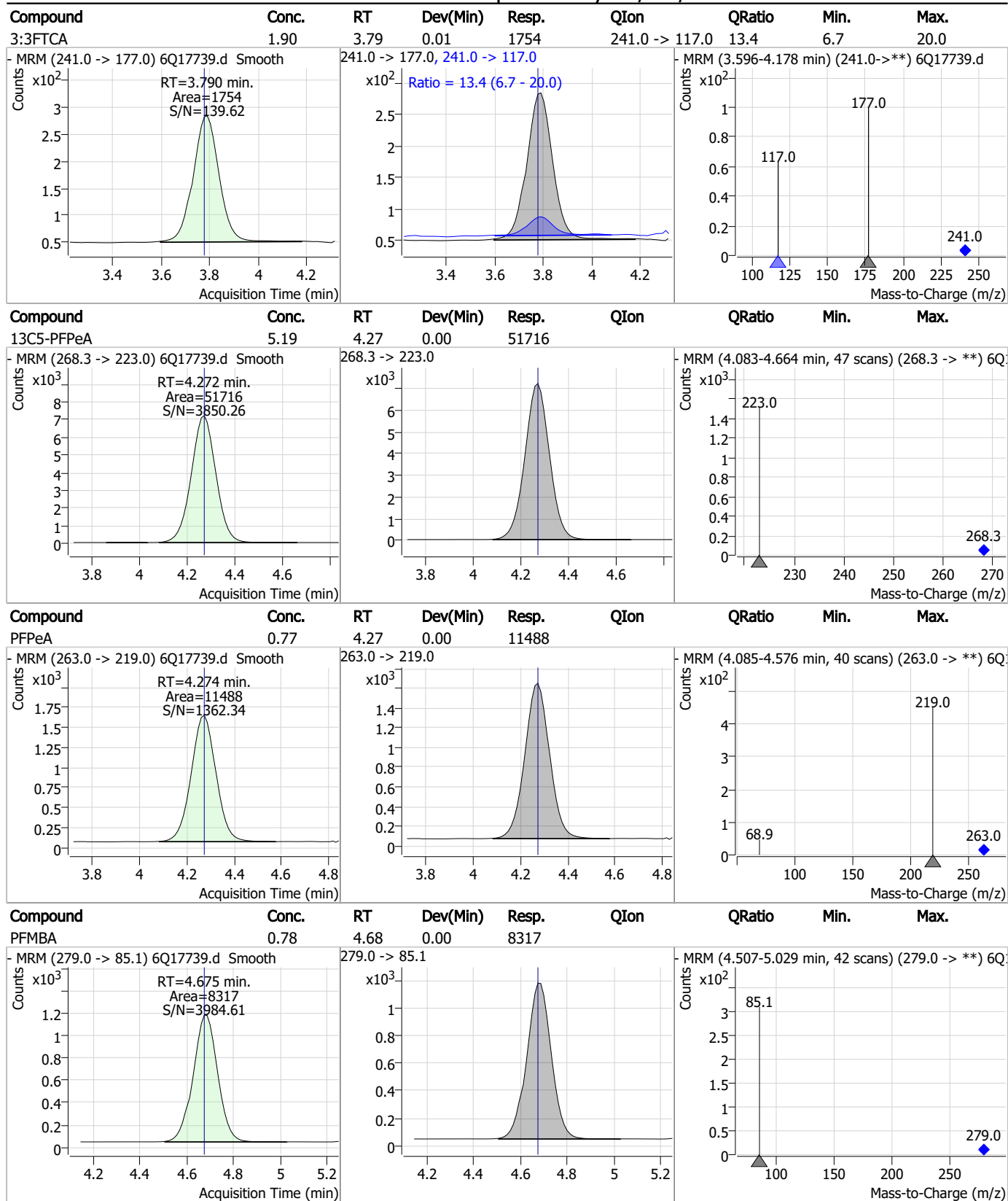
7.7.3

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Perfluorinated Compounds by LC/MS/MS



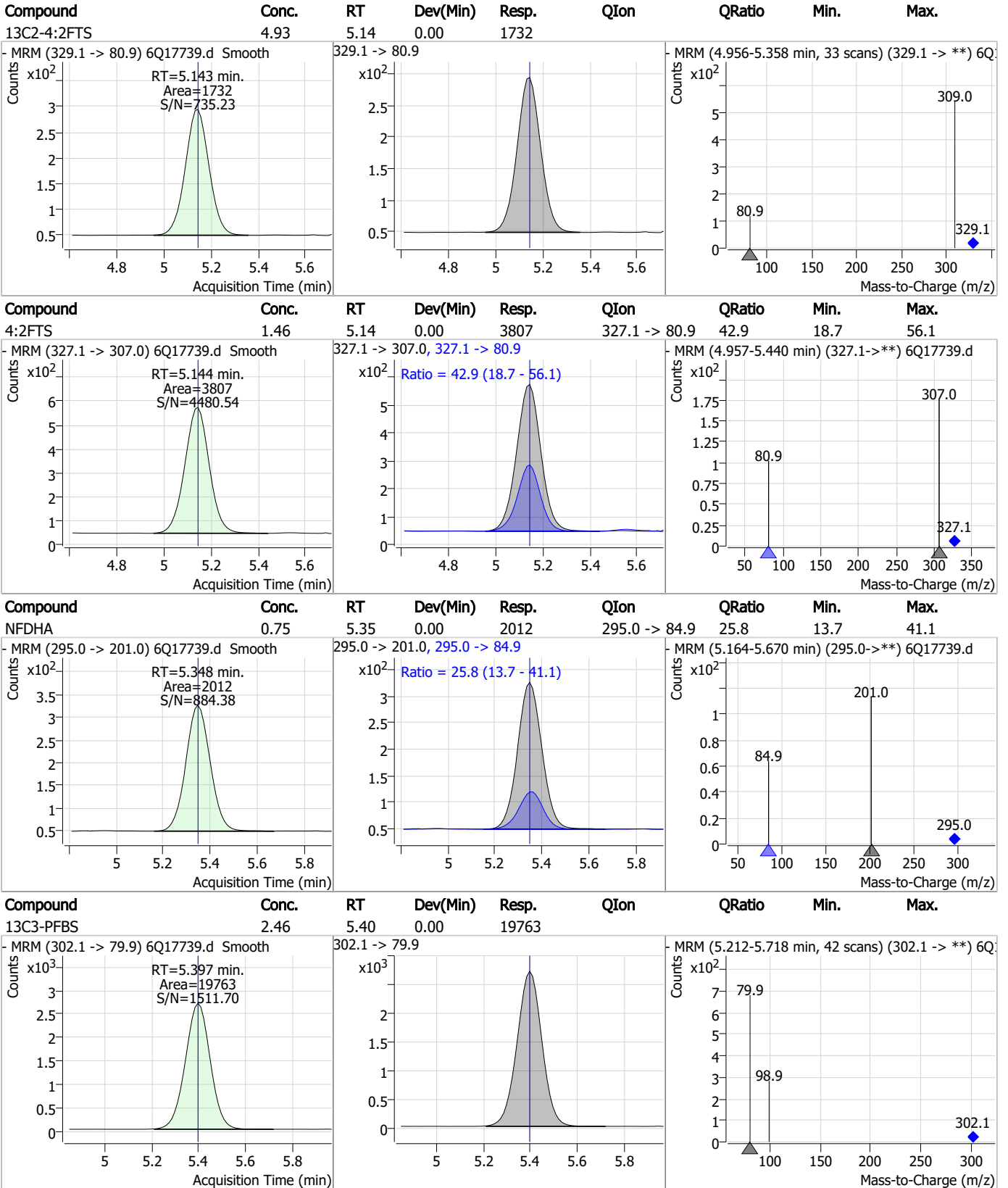
Perfluorinated Compounds by LC/MS/MS



7.7.3

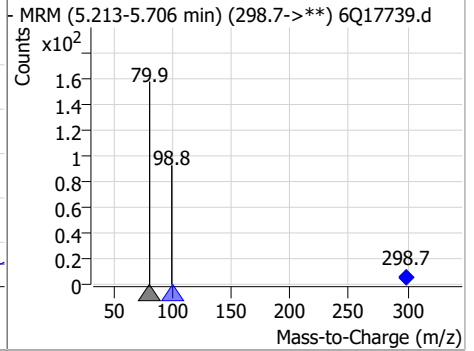
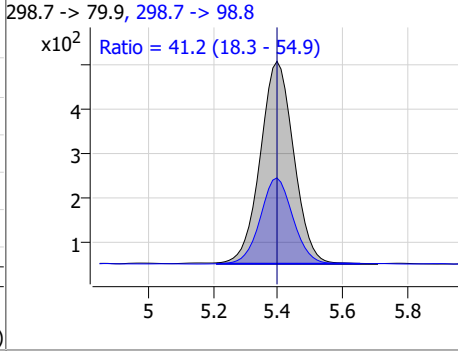
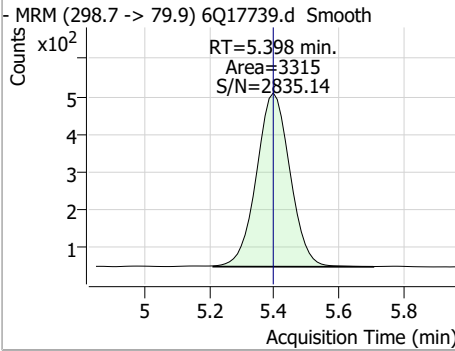
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Perfluorinated Compounds by LC/MS/MS

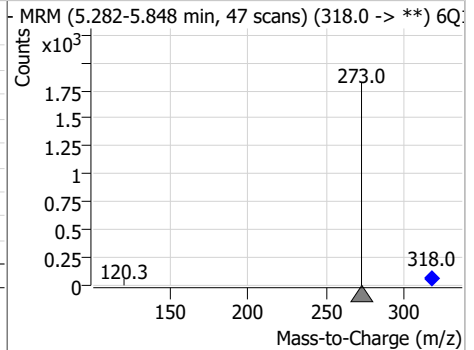
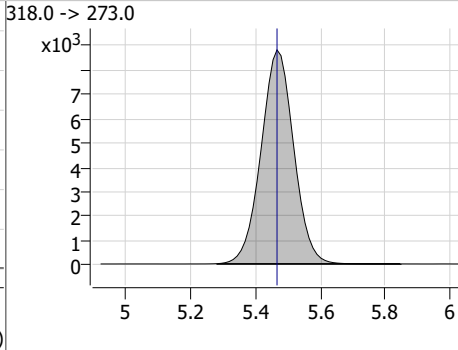
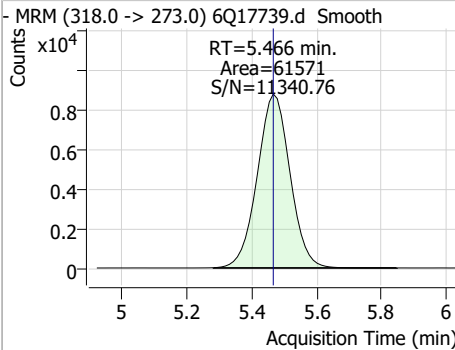


Perfluorinated Compounds by LC/MS/MS

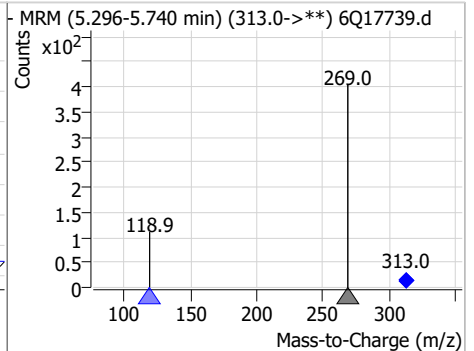
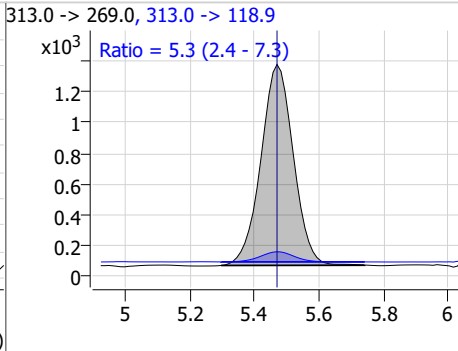
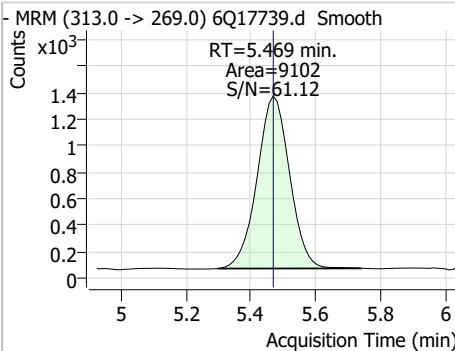
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.34	5.40	0.00	3315	298.7 -> 98.8	41.2	18.3	54.9



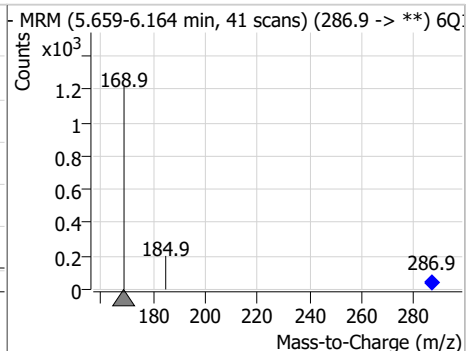
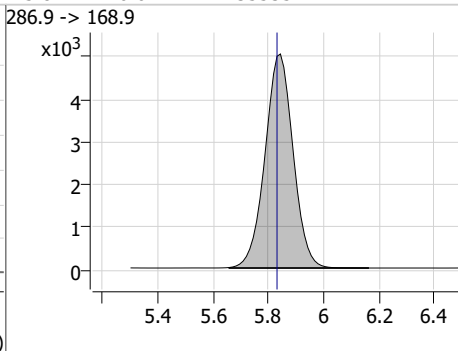
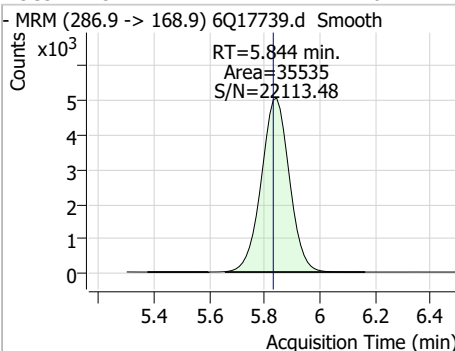
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.75	5.47	0.00	61571				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.37	5.47	0.00	9102	313.0 -> 118.9	5.3	2.4	7.3

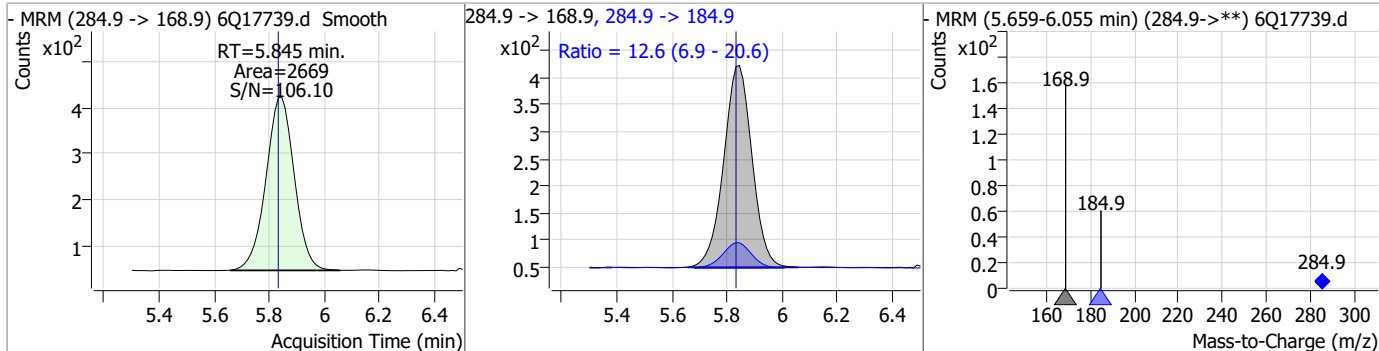


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.24	5.84	0.01	35535				

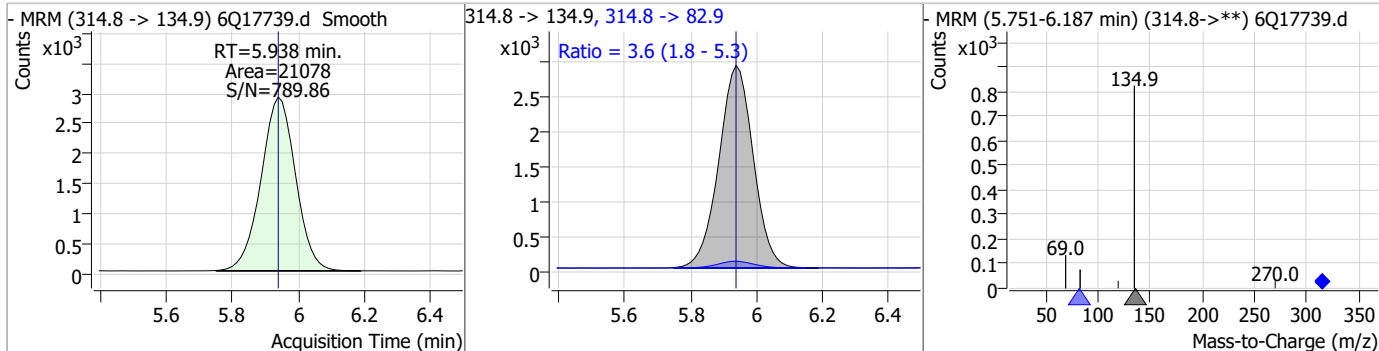


Perfluorinated Compounds by LC/MS/MS

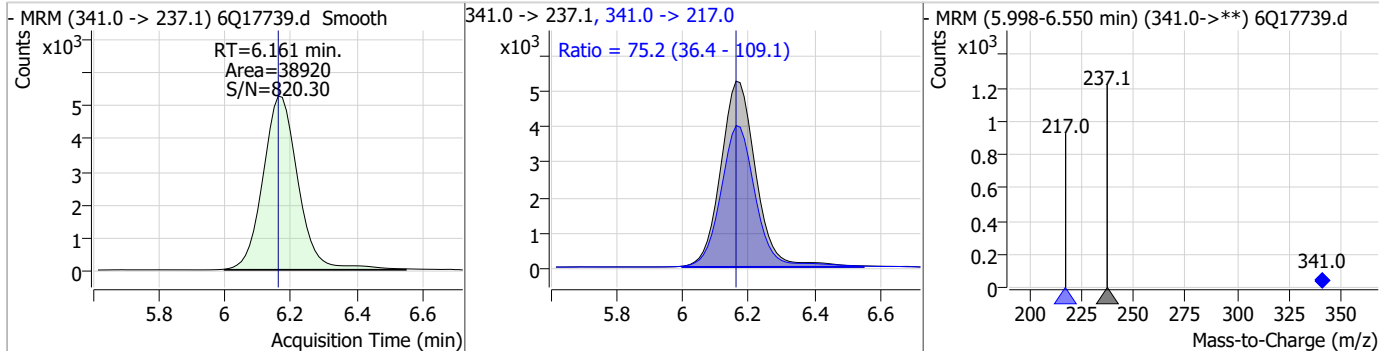
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.78	5.84	0.01	2669	284.9 -> 184.9	12.6	6.9	20.6



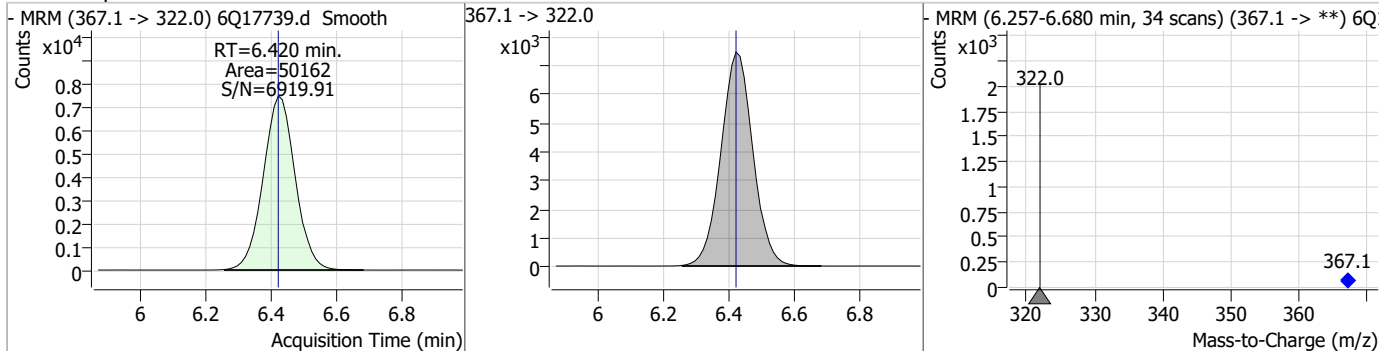
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.64	5.94	0.00	21078	314.8 -> 82.9	3.6	1.8	5.3



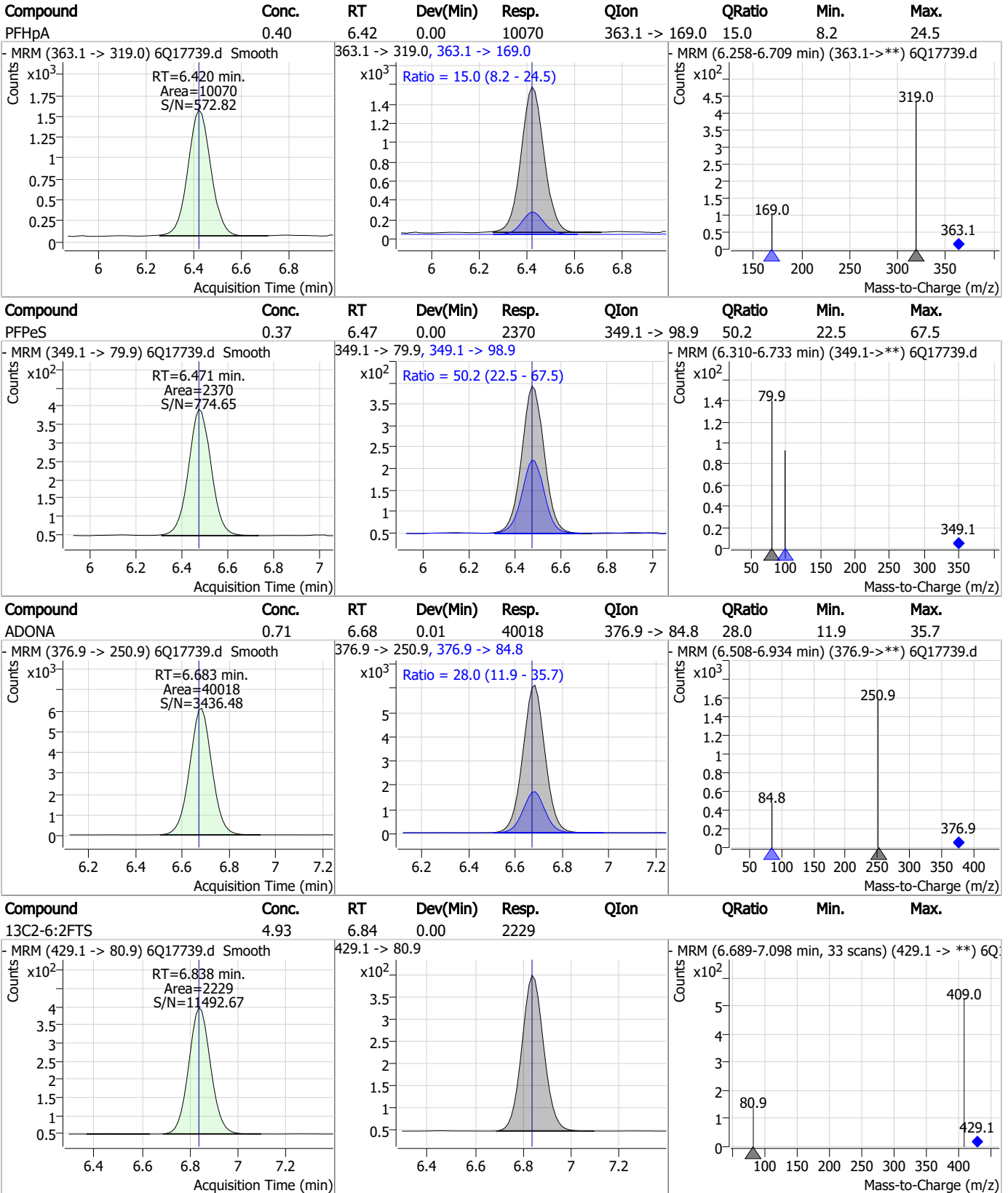
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	9.21	6.16	0.00	38920	341.0 -> 217.0	75.2	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.42	0.00	50162	367.1 -> 322.0			



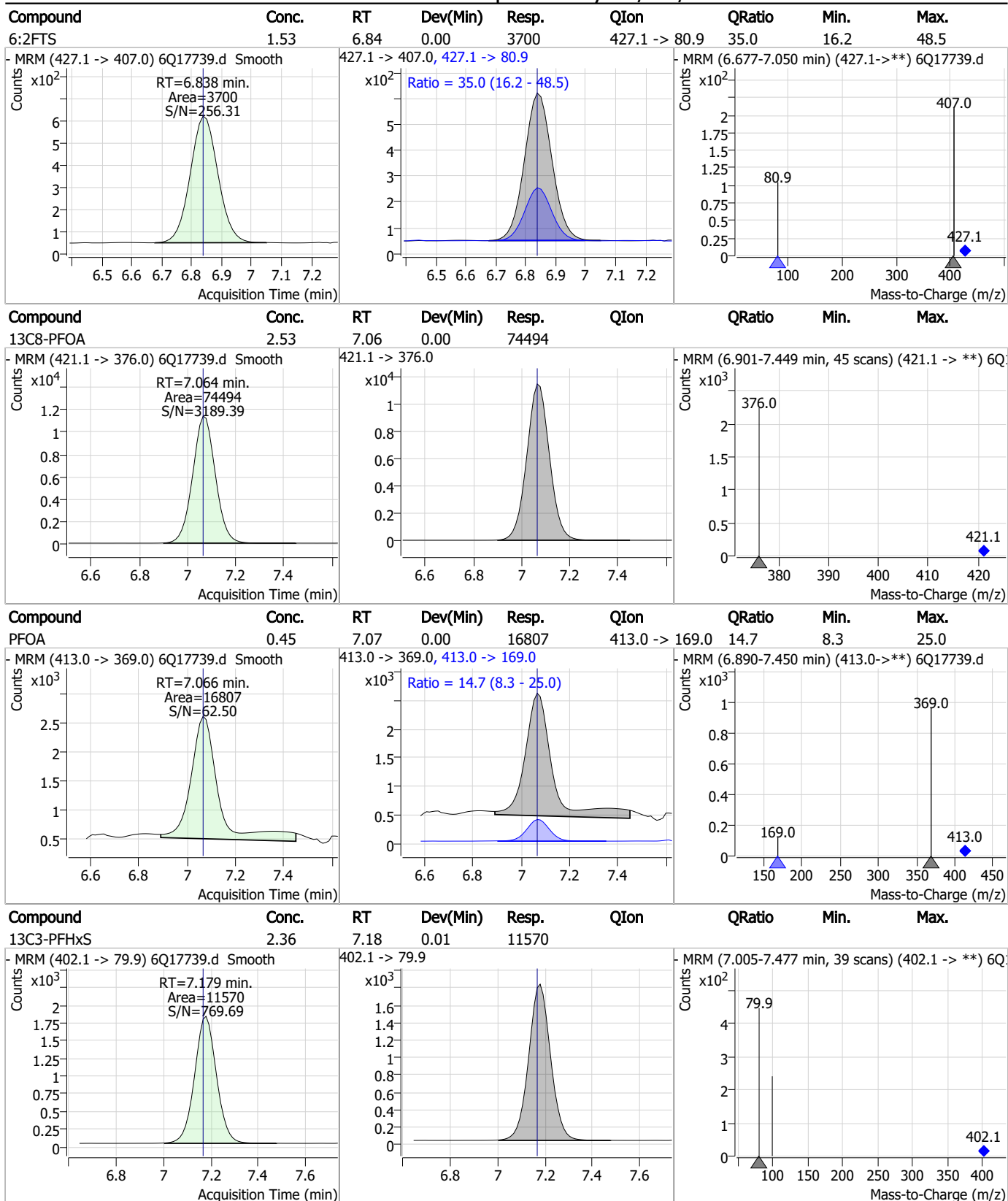
Perfluorinated Compounds by LC/MS/MS



7.7.3

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Perfluorinated Compounds by LC/MS/MS

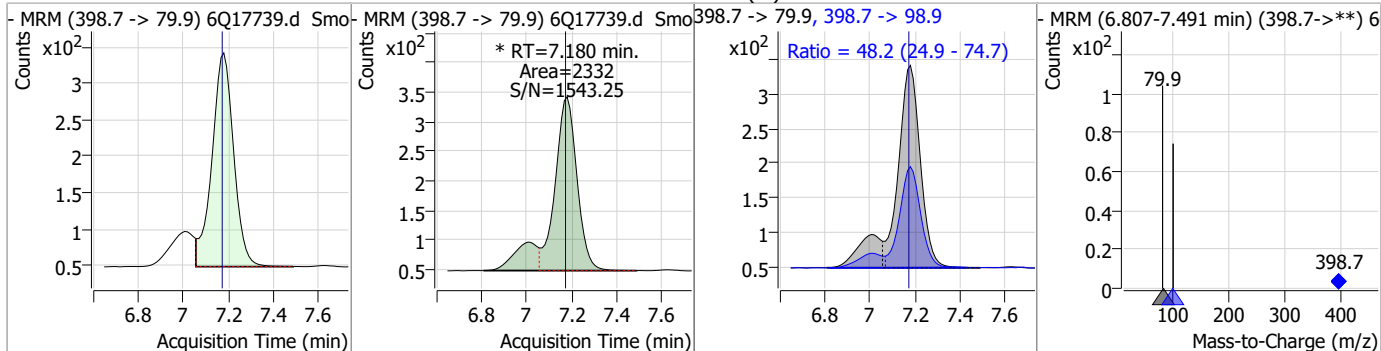


7.7.3

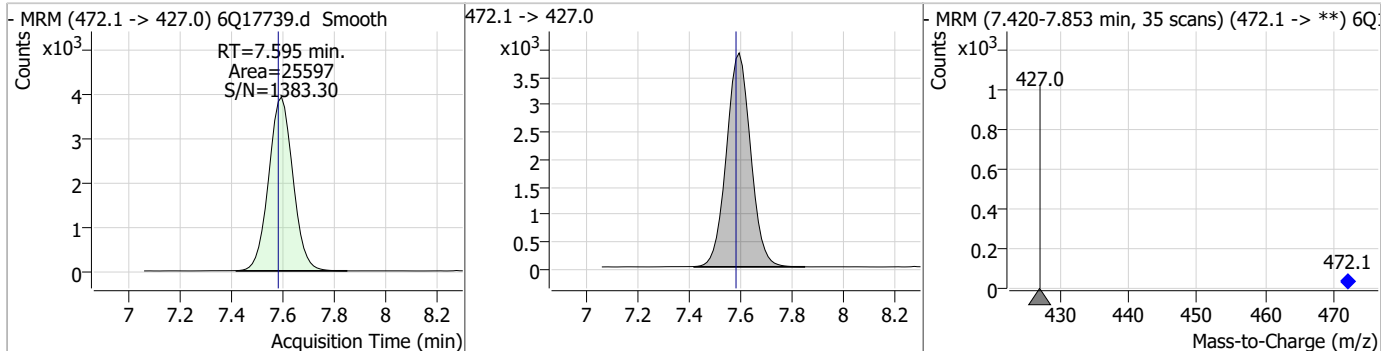
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Perfluorinated Compounds by LC/MS/MS

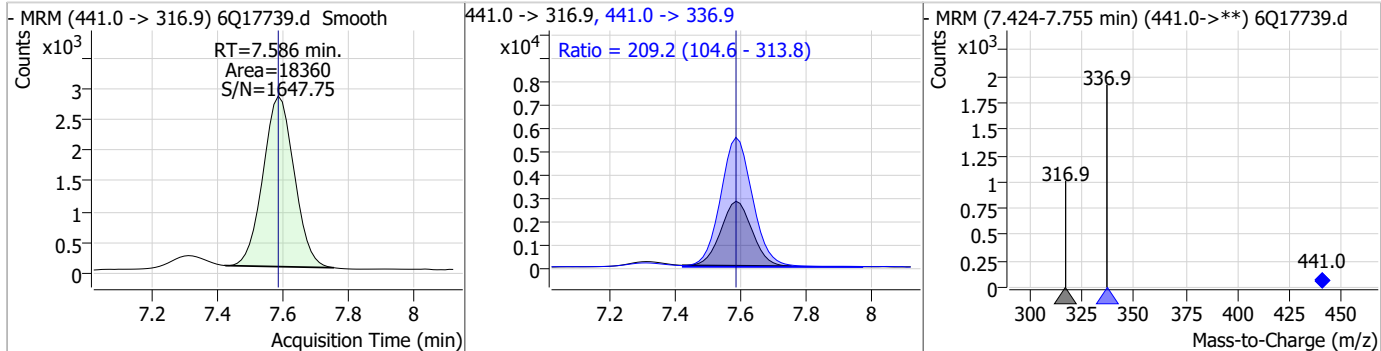
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.36	7.18	0.01	2332 (m)	398.7 -> 98.9	48.2	24.9	74.7



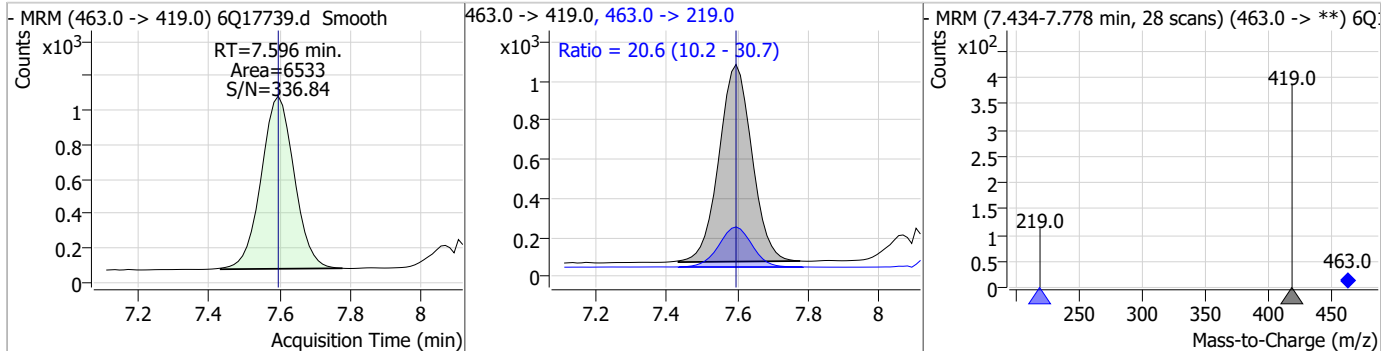
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	7.60	0.01	25597				



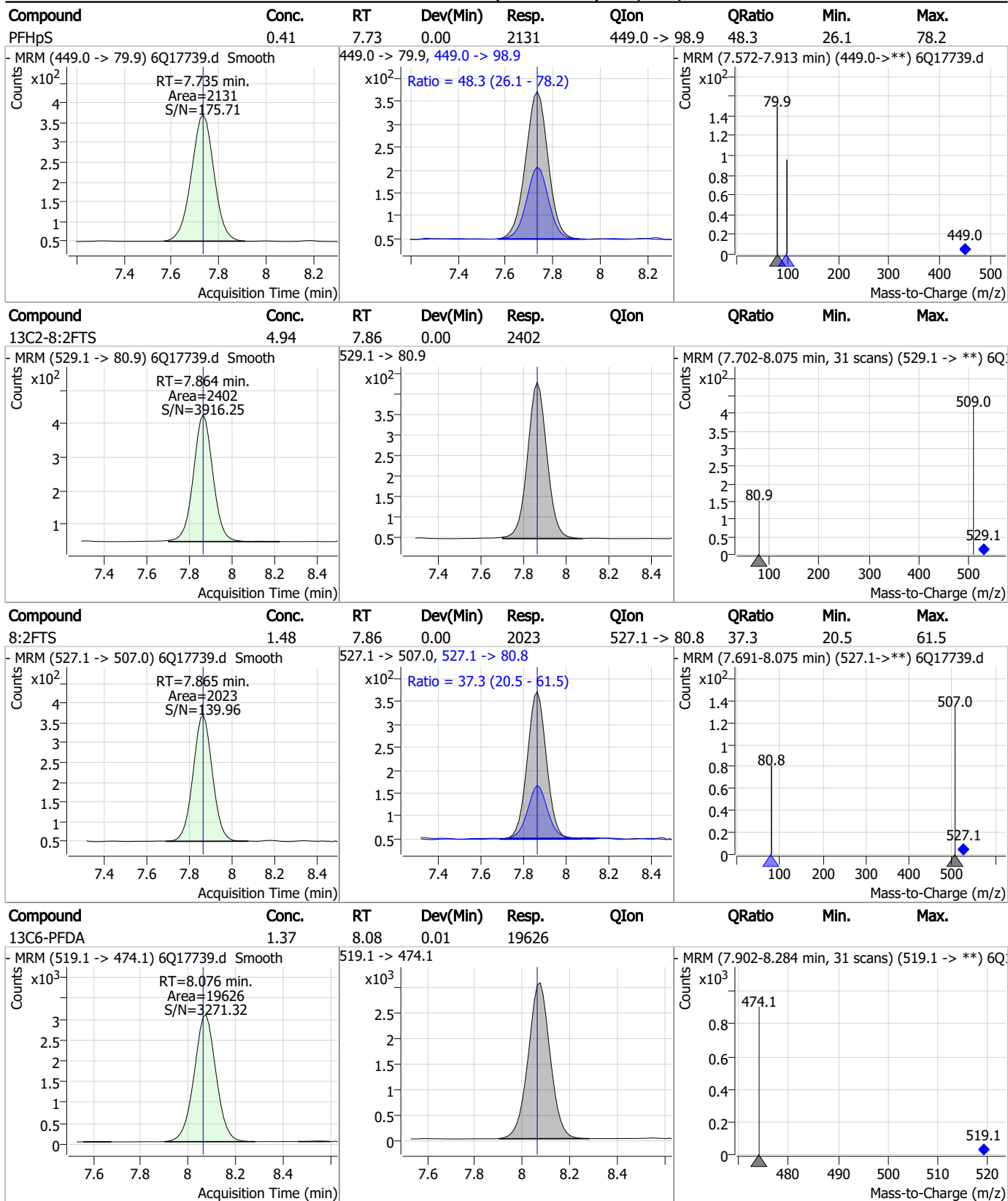
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	9.58	7.59	0.00	18360	441.0 -> 336.9	209.2	104.6	313.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.34	7.60	0.00	6533	463.0 -> 219.0	20.6	10.2	30.7

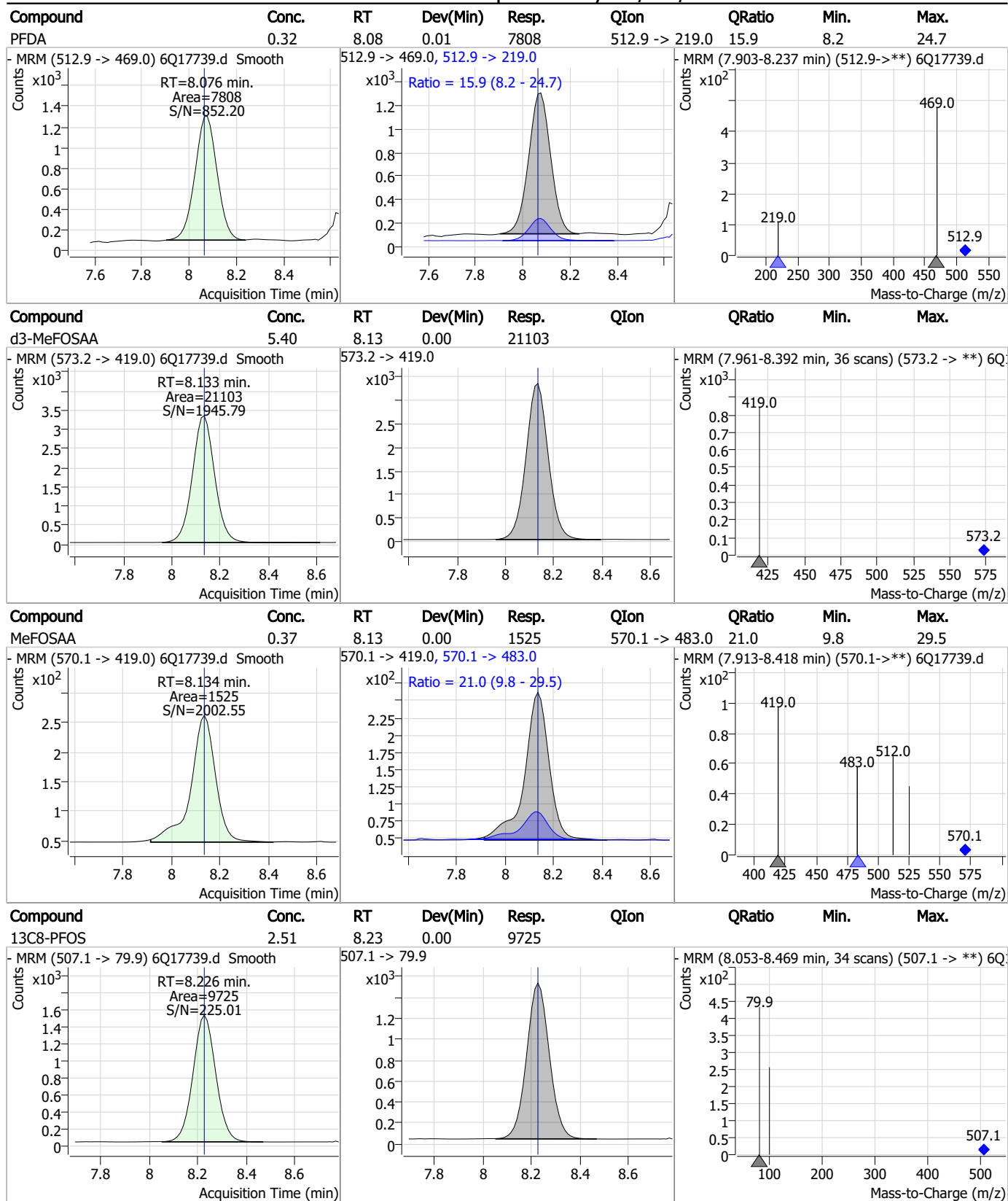


Perfluorinated Compounds by LC/MS/MS



7.7.3
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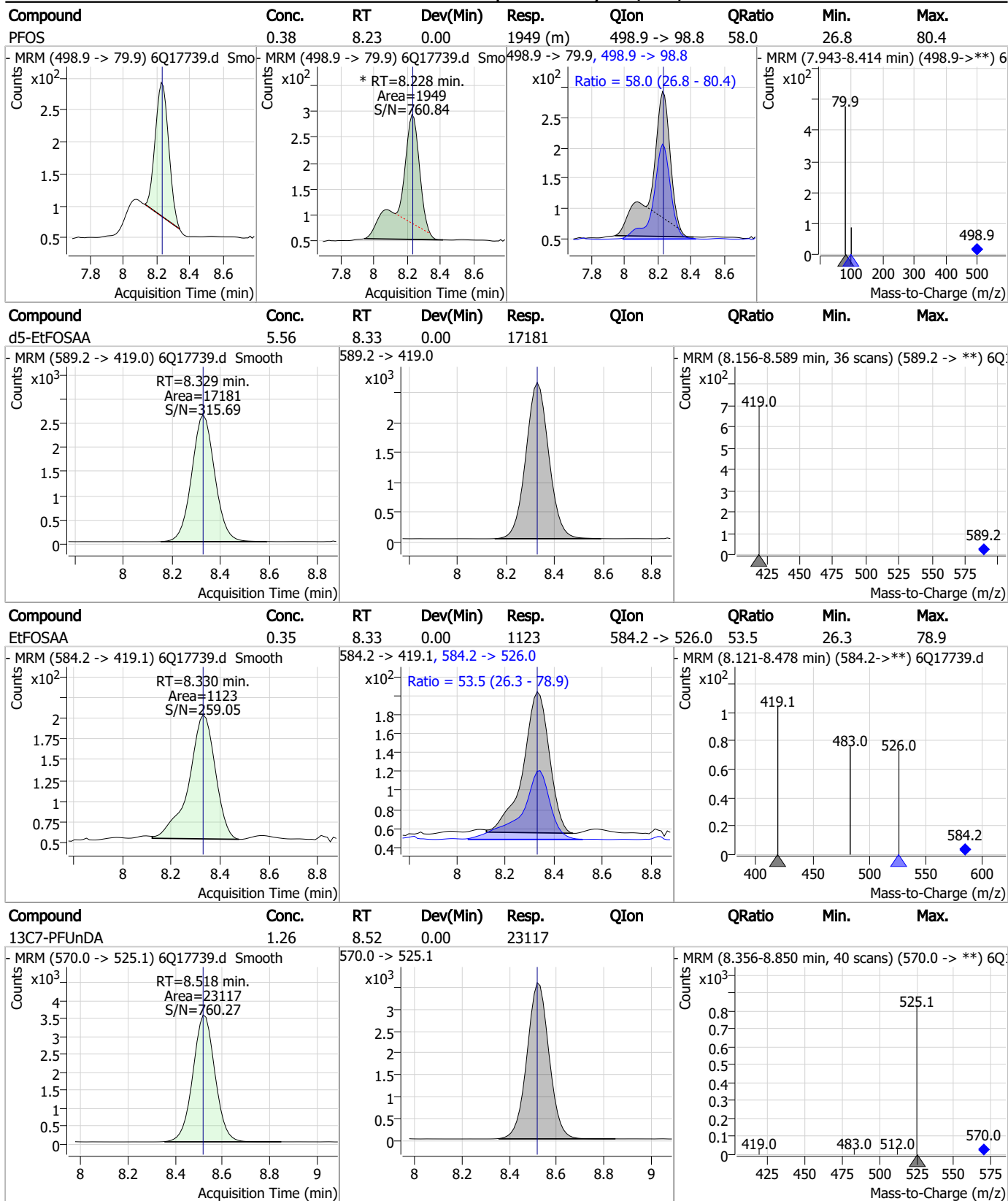
Perfluorinated Compounds by LC/MS/MS



7.7.3

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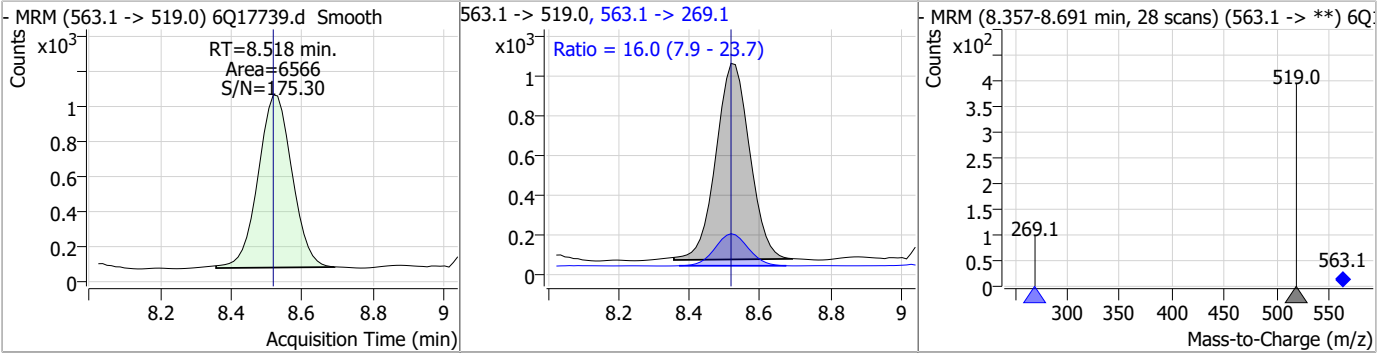
Perfluorinated Compounds by LC/MS/MS



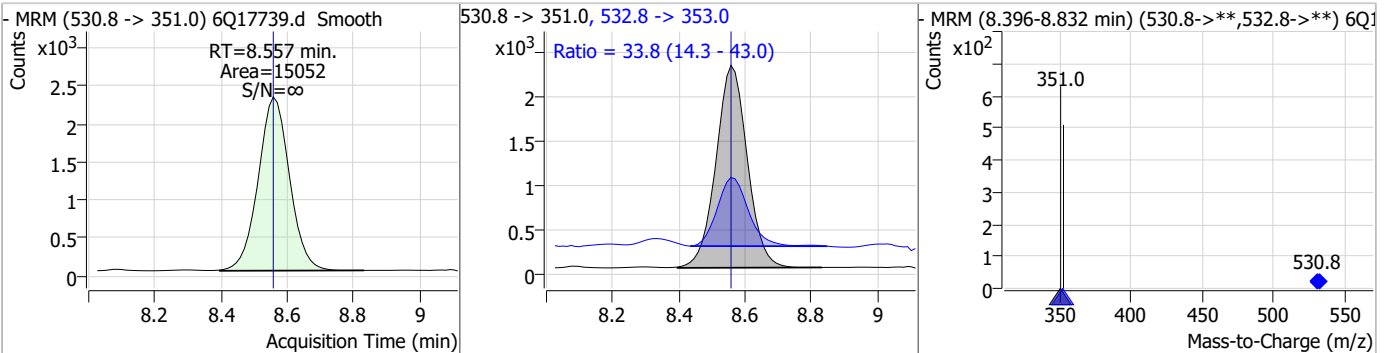
7.7.3
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Perfluorinated Compounds by LC/MS/MS

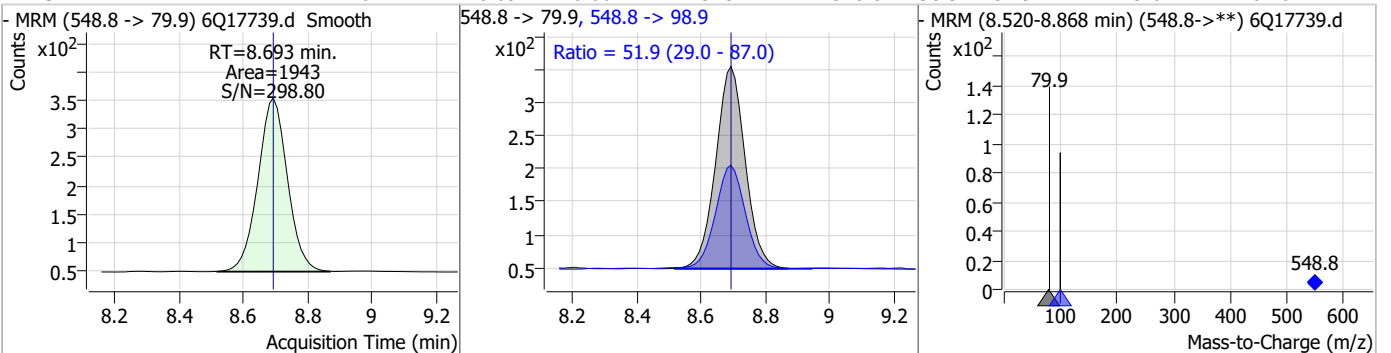
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.39	8.52	0.00	6566	563.1 -> 269.1	16.0	7.9	23.7



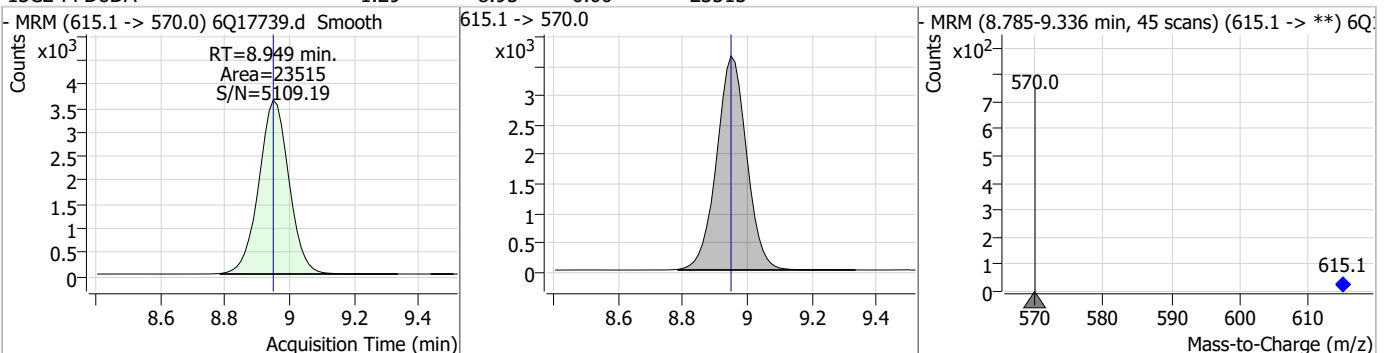
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.70	8.56	0.00	15052	532.8 -> 353.0	33.8	14.3	43.0



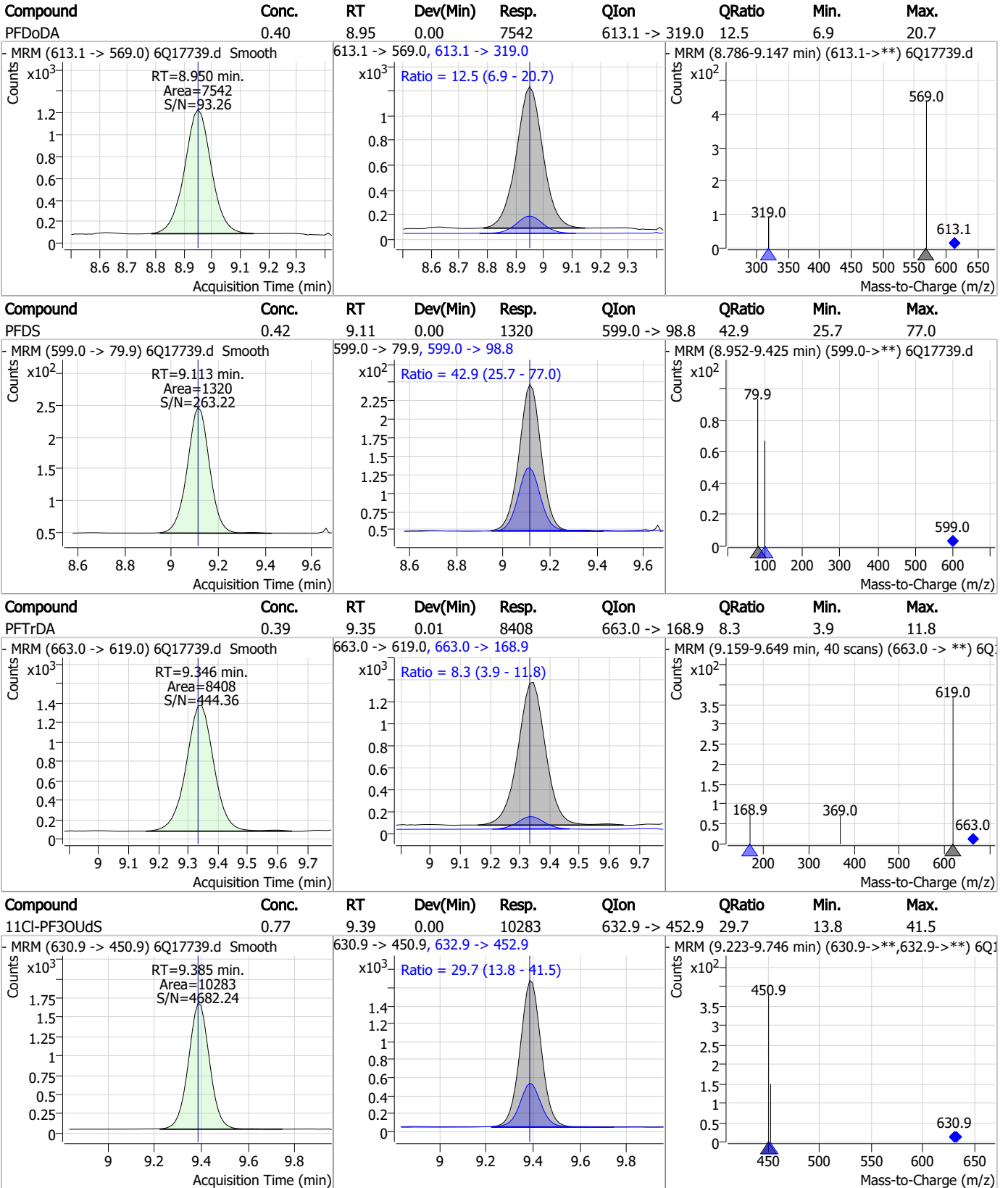
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.41	8.69	0.00	1943	548.8 -> 98.9	51.9	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.29	8.95	0.00	23515	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

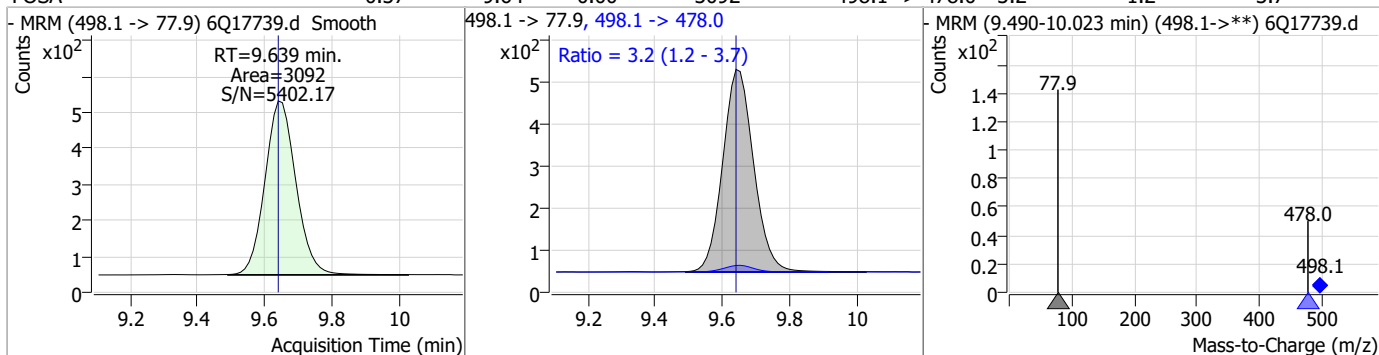


7.7.3

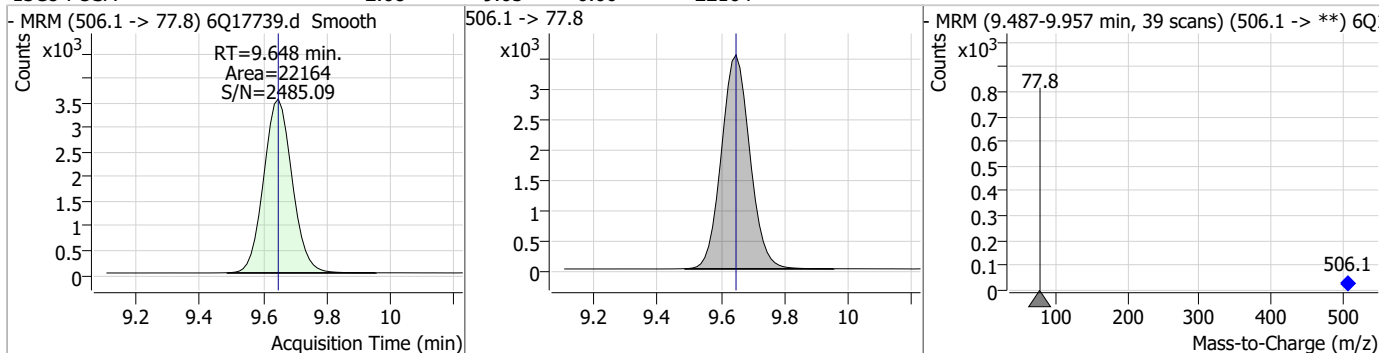
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Perfluorinated Compounds by LC/MS/MS

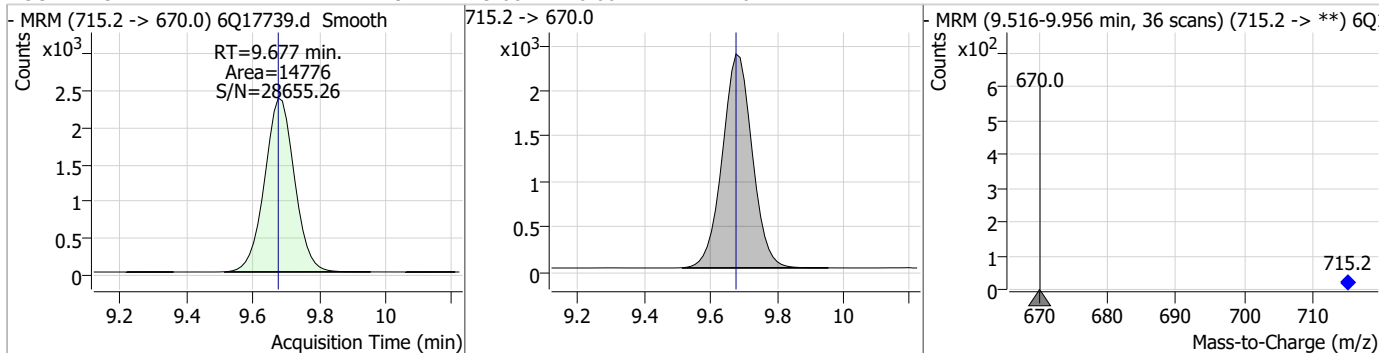
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.37	9.64	0.00	3092	498.1 -> 478.0	3.2	1.2	3.7



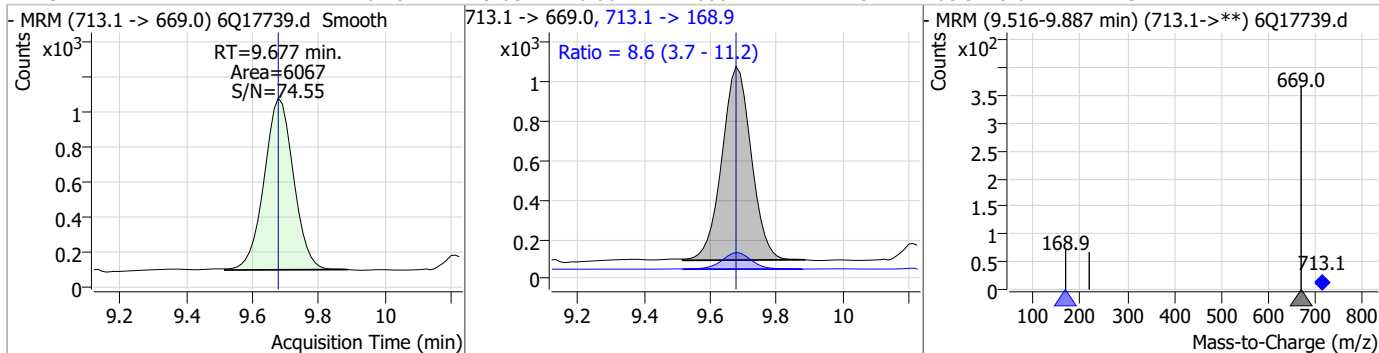
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.68	9.65	0.00	22164				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.19	9.68	0.00	14776				

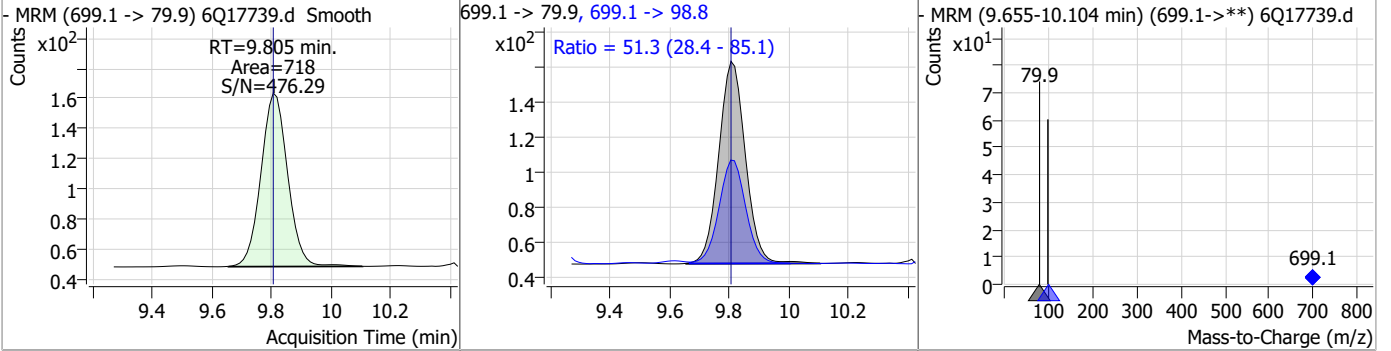


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.40	9.68	0.00	6067	713.1 -> 168.9	8.6	3.7	11.2

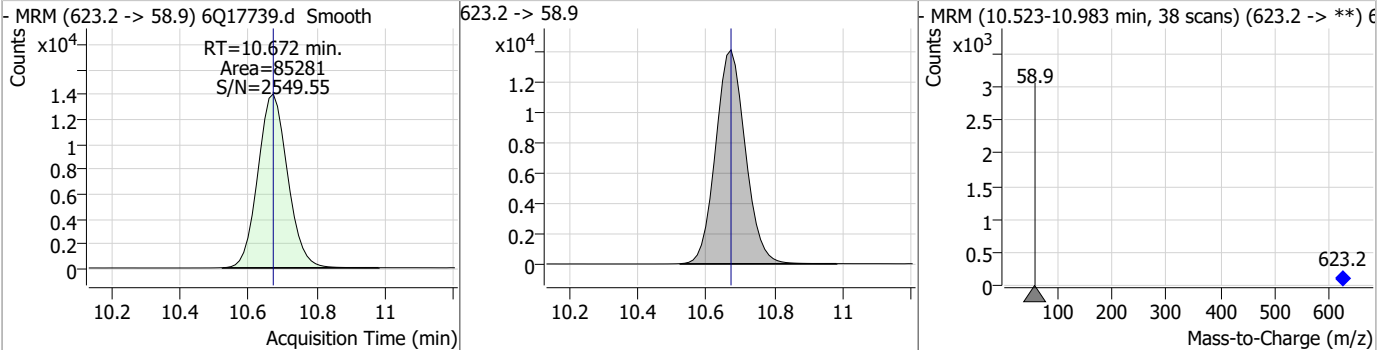


Perfluorinated Compounds by LC/MS/MS

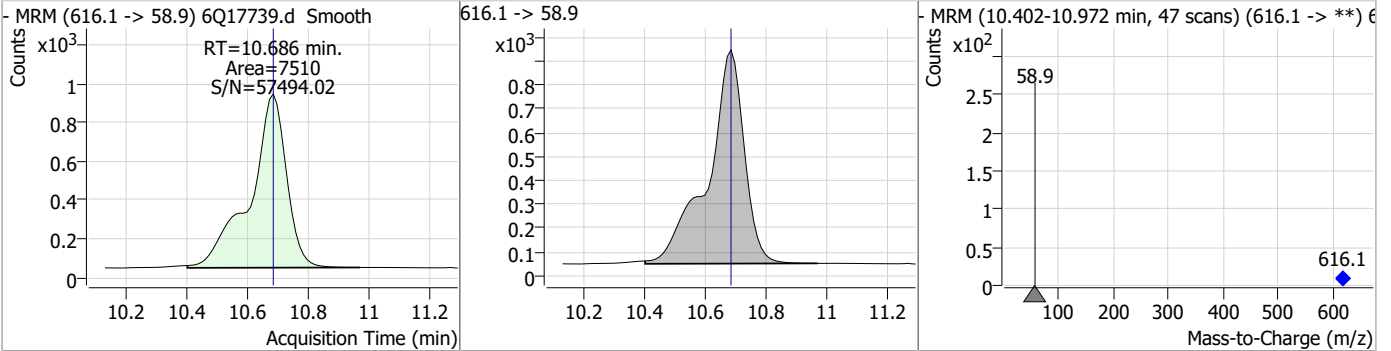
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.43	9.81	0.00	718	699.1 -> 98.8	51.3	28.4	85.1



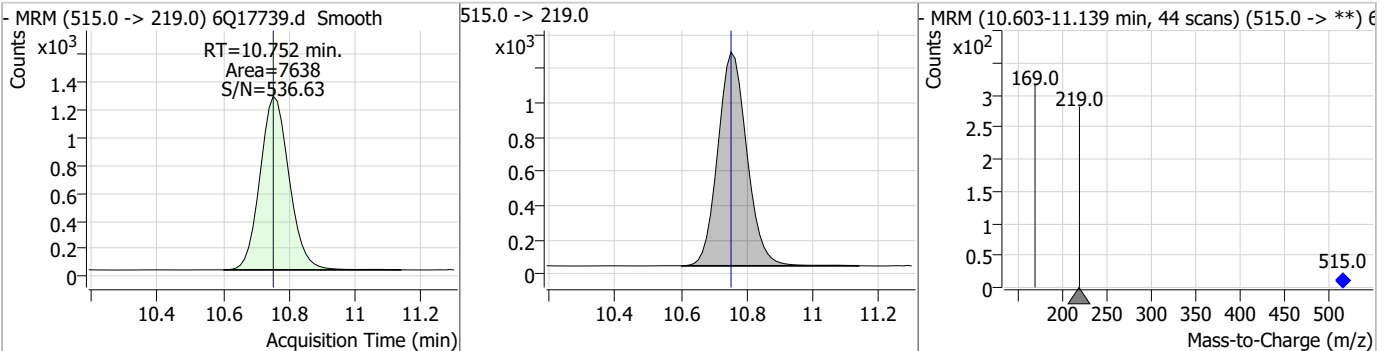
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.74	10.67	0.00	85281				



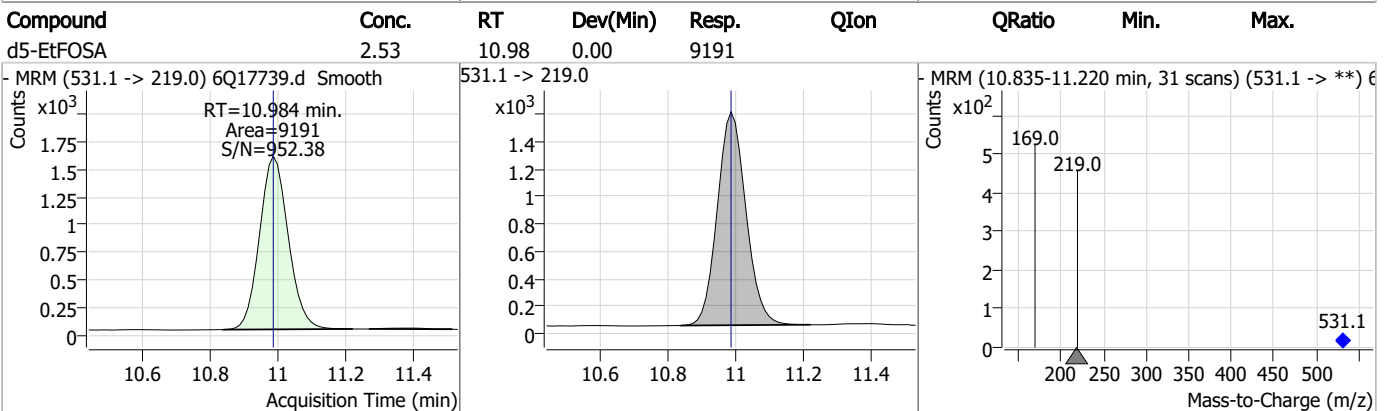
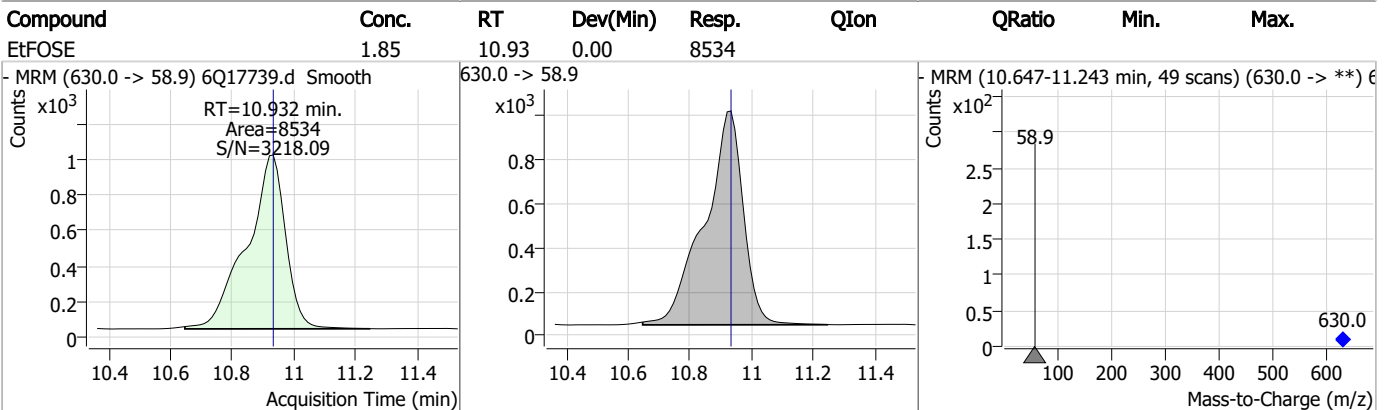
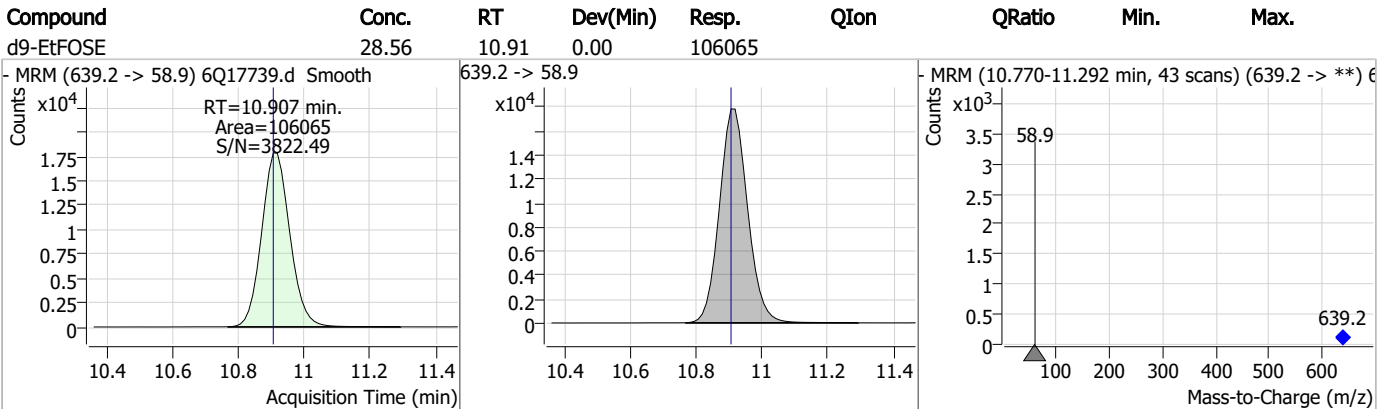
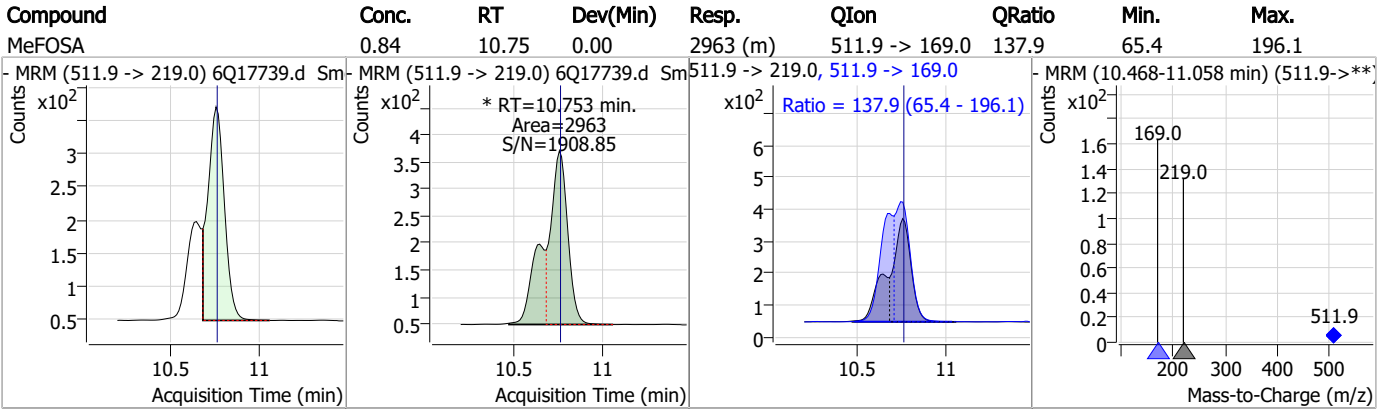
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.88	10.69	0.00	7510				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.53	10.75	0.00	7638				



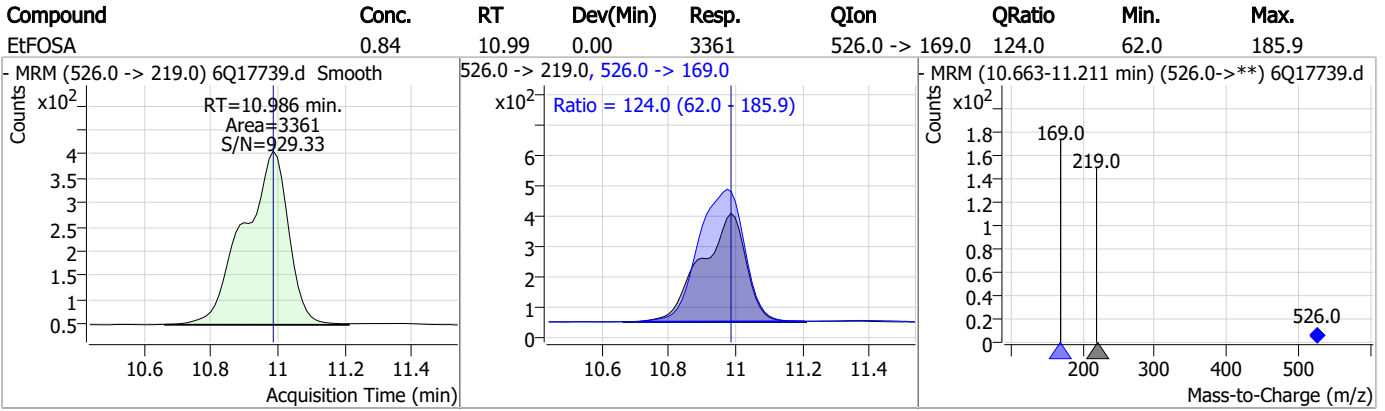
Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17739.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 12:29 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17740.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 12:44:26 PM
 Sample Name : ic268-3
 Vial : P1-A4
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	160561	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	51573	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	56374	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	51124	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	70967	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	22586	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	17688	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	21481	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	22513	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	16017	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	21589	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	19483	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10989	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	10801	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1632	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2120	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2338	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	20728	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	34873	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	15397	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	81971	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	98955	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9744	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	8192	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	13924	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	67840	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8679	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	77139	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	19854	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	26164	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	47955	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1632	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2120	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2338	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFDoDA	8.949	615.1 -> 570.0	22513	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-PFTeDA	9.677	715.2 -> 670.0	16017	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.8%		
13C3-PFBS	5.397	302.1 -> 79.9	19483	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	10989	2.38 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C4-PFBA	2.901	216.8 -> 171.9	160561	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.420	367.1 -> 322.0	51124	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFHxA	5.466	318.0 -> 273.0	56374	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFPeA	4.272	268.3 -> 223.0	51573	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.064	519.1 -> 474.1	17688	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C7-PFUnDA	8.518	570.0 -> 525.1	21481	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-FOSA	9.648	506.1 -> 77.8	21589	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C8-PFOA	7.064	421.1 -> 376.0	70967	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C8-PFOS	8.226	507.1 -> 79.9	10801	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C9-PFNA	7.583	472.1 -> 427.0	22586	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.4%	
d3-MeFOSAA	8.121	573.2 -> 419.0	20728	4.75 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	34873	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	8192	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSAA	8.329	589.2 -> 419.0	15397	4.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
d7-MeFOSE	10.672	623.2 -> 58.9	81971	23.90 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
d9-EtFOSE	10.907	639.2 -> 58.9	98955	23.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
d5-EtFOSA	10.984	531.1 -> 219.0	9744	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	11443	4.66 µg/L	93
		327.1 -> 80.9	4755		
6:2FTS	6.838	427.1 -> 407.0	11291	4.89 µg/L	97
		427.1 -> 80.9	3866		
8:2FTS	7.865	527.1 -> 507.0	5893	4.44 µg/L	91
		527.1 -> 80.8	2753		
EtFOSAA	8.330	584.2 -> 419.1	3550	1.24 µg/L	93
		584.2 -> 526.0	2042		
FOSA	9.639	498.1 -> 77.9	9772	1.21 µg/L	98
		498.1 -> 478.0	305		
MeFOSAA	8.134	570.1 -> 419.0	5363	1.34 µg/L	95
		570.1 -> 483.0	944		
PFBA	2.907	212.8 -> 168.9	27878	4.84 µg/L	100
PFBS	5.398	298.7 -> 79.9	10353	1.09 µg/L	99
		298.7 -> 98.8	3723		
PFDA	8.064	512.9 -> 469.0	28654	1.31 µg/L	97
		512.9 -> 219.0	4337		
PFDODA	8.950	613.1 -> 569.0	22608	1.26 µg/L	99
		613.1 -> 319.0	3042		
PFDS	9.113	599.0 -> 79.9	3829	1.09 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2059			
PFHpA	6.420	363.1 -> 319.0	29724	1.16	µg/L	99
		363.1 -> 169.0	5019			
PFHpS	7.735	449.0 -> 79.9	6165	1.07	µg/L	99
		449.0 -> 98.9	3250			
PFHxA	5.469	313.0 -> 269.0	26239	1.17	µg/L	99
		313.0 -> 118.9	1317			
PFHxS	7.168	398.7 -> 79.9	7075	1.16	µg/L	m 98
		398.7 -> 98.9	3633			
PFNA	7.584	463.0 -> 419.0	21002	1.25	µg/L	100
		463.0 -> 219.0	4315			
PFNS	8.693	548.8 -> 79.9	5897	1.13	µg/L	93
		548.8 -> 98.9	3092			
PFOA	7.066	413.0 -> 369.0	45111	1.28	µg/L	99
		413.0 -> 169.0	7401			
PFOS	8.228	498.9 -> 79.9	6210	1.10	µg/L	m 94
		498.9 -> 98.8	3066			
PFPeA	4.274	263.0 -> 219.0	35988	2.42	µg/L	100
PFPeS	6.471	349.1 -> 79.9	7402	1.23	µg/L	97
		349.1 -> 98.9	3480			
PFTeDA	9.677	713.1 -> 669.0	19101	1.16	µg/L	100
		713.1 -> 168.9	1426			
PFTrDA	9.333	663.0 -> 619.0	26856	1.29	µg/L	98
		663.0 -> 168.9	2289			
PFUnDA	8.518	563.1 -> 519.0	21308	1.37	µg/L	98
		563.1 -> 269.1	3197			
11CI-PF3OUdS	9.385	630.9 -> 450.9	30662	2.33	µg/L	91
		632.9 -> 452.9	9976			
9CI-PF3ONS	8.557	530.8 -> 351.0	50546	2.40	µg/L	95
		532.8 -> 353.0	15818			
ADONA	6.671	376.9 -> 250.9	132264	2.38	µg/L	95
		376.9 -> 84.8	34712			
HFPO-DA	5.832	284.9 -> 168.9	8273	2.45	µg/L	97
		284.9 -> 184.9	1220			
3:3FTCA	3.790	241.0 -> 177.0	5511	5.97	µg/L	99
		241.0 -> 117.0	722			
5:3FTCA	6.161	341.0 -> 237.1	117640	30.40	µg/L	98
		341.0 -> 217.0	83266			
7:3FTCA	7.586	441.0 -> 316.9	55568	31.66	µg/L	97
		441.0 -> 336.9	113851			
EtFOSA	10.986	526.0 -> 219.0	9637	2.28	µg/L	86
		526.0 -> 169.0	13426			
EtFOSE	10.920	630.0 -> 58.9	26175	6.07	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	8644	2.29	µg/L	m 87
		511.9 -> 169.0	12581			
MeFOSE	10.686	616.1 -> 58.9	22674	5.91	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	2186	1.18	µg/L	99
		699.1 -> 98.8	1227			
NFDHA	5.348	295.0 -> 201.0	6034	2.45	µg/L	99
		295.0 -> 84.9	1684			
PFMBA	4.675	279.0 -> 85.1	25376	2.39	µg/L	100
PFMPA	3.426	229.0 -> 84.9	18401	2.40	µg/L	100
PFEESA	5.938	314.8 -> 134.9	66798	2.23	µg/L	100
		314.8 -> 82.9	2263			

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

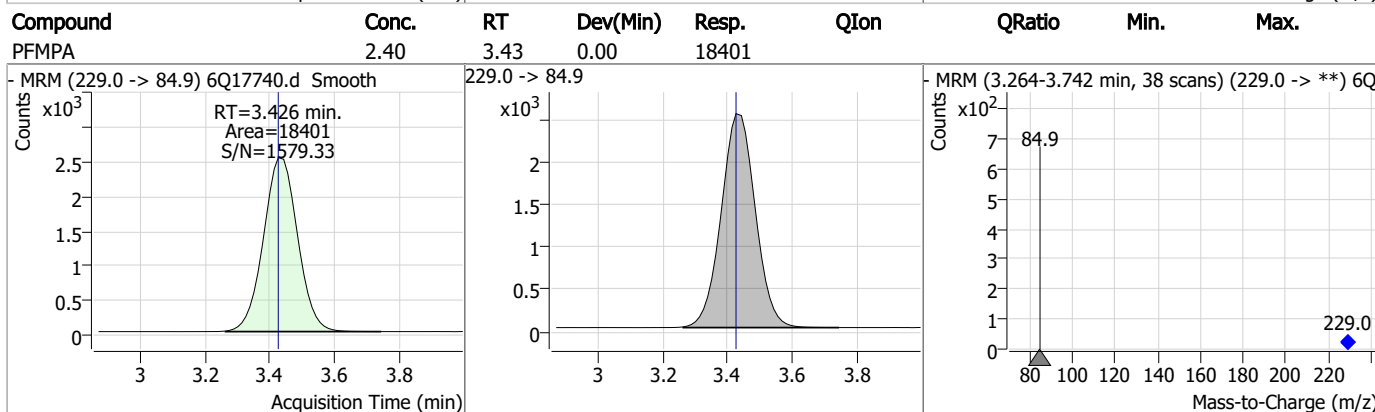
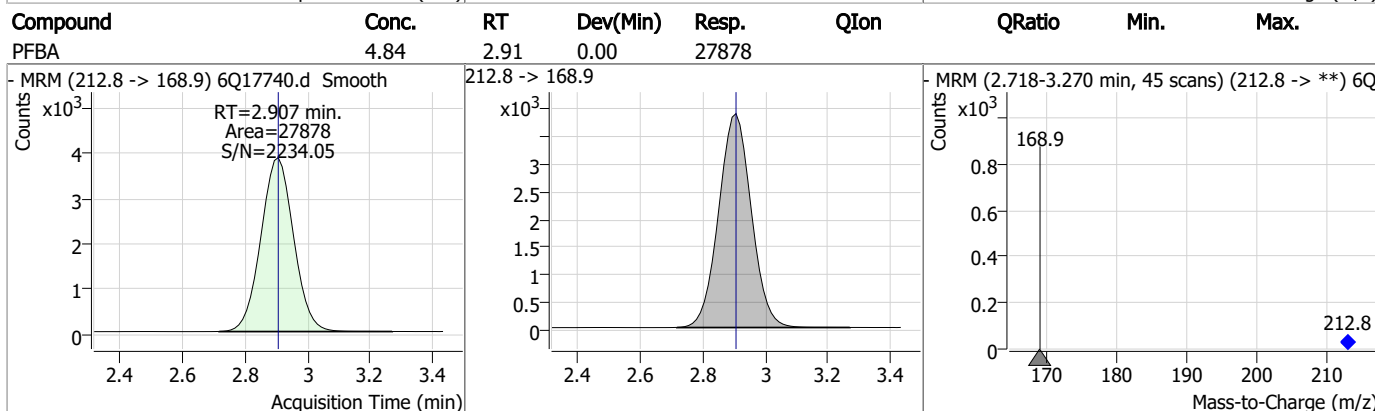
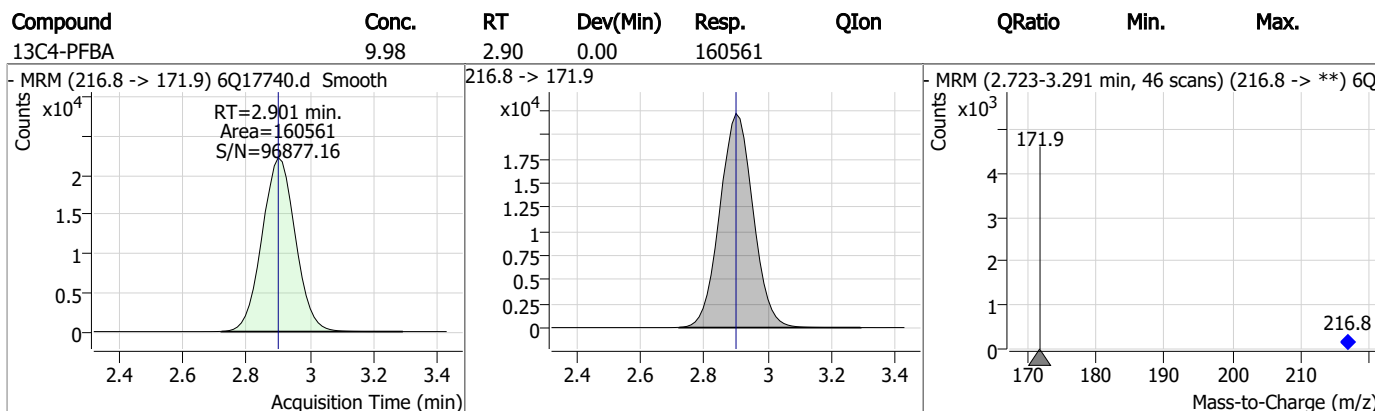
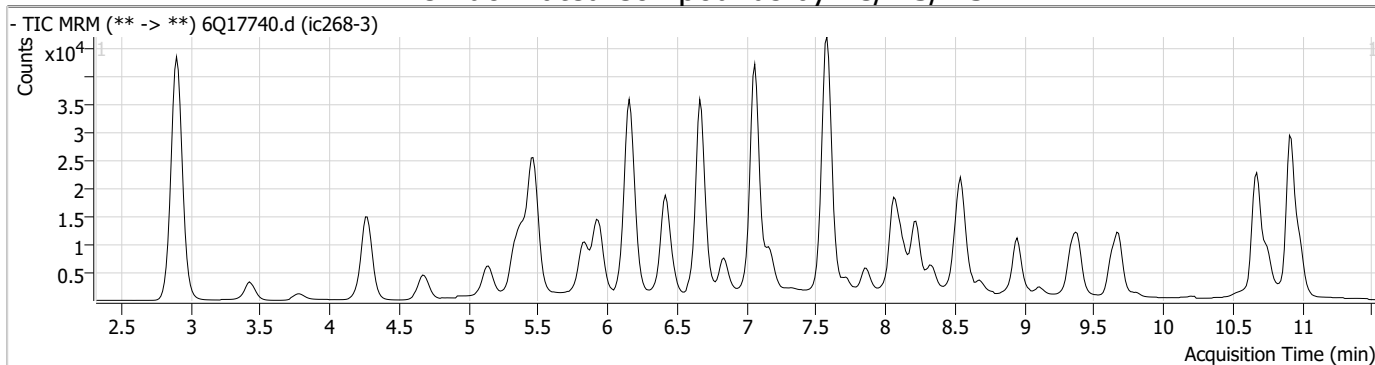
Perfluorinated Compounds by LC/MS/MS

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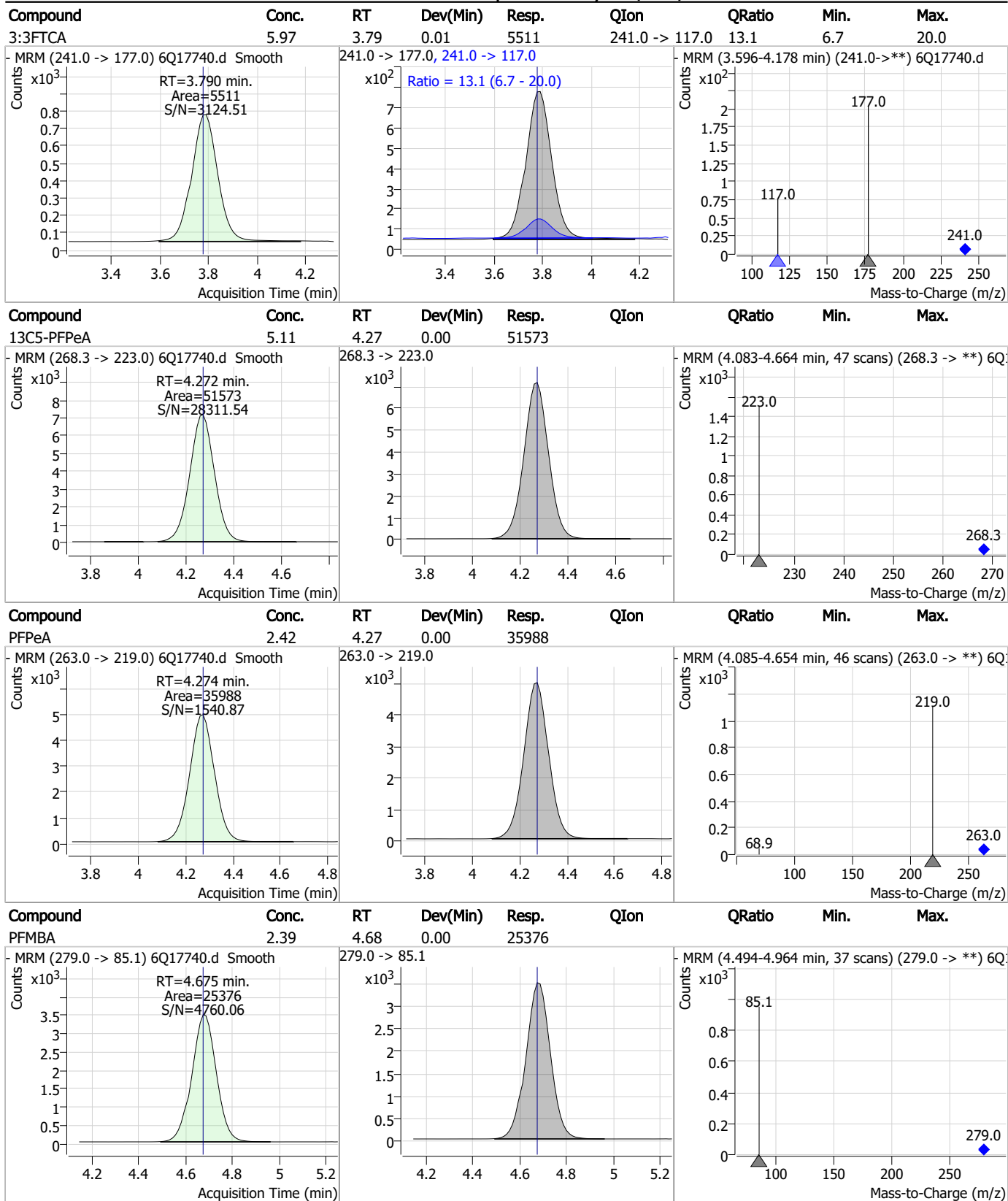
7.7.4

7

Perfluorinated Compounds by LC/MS/MS

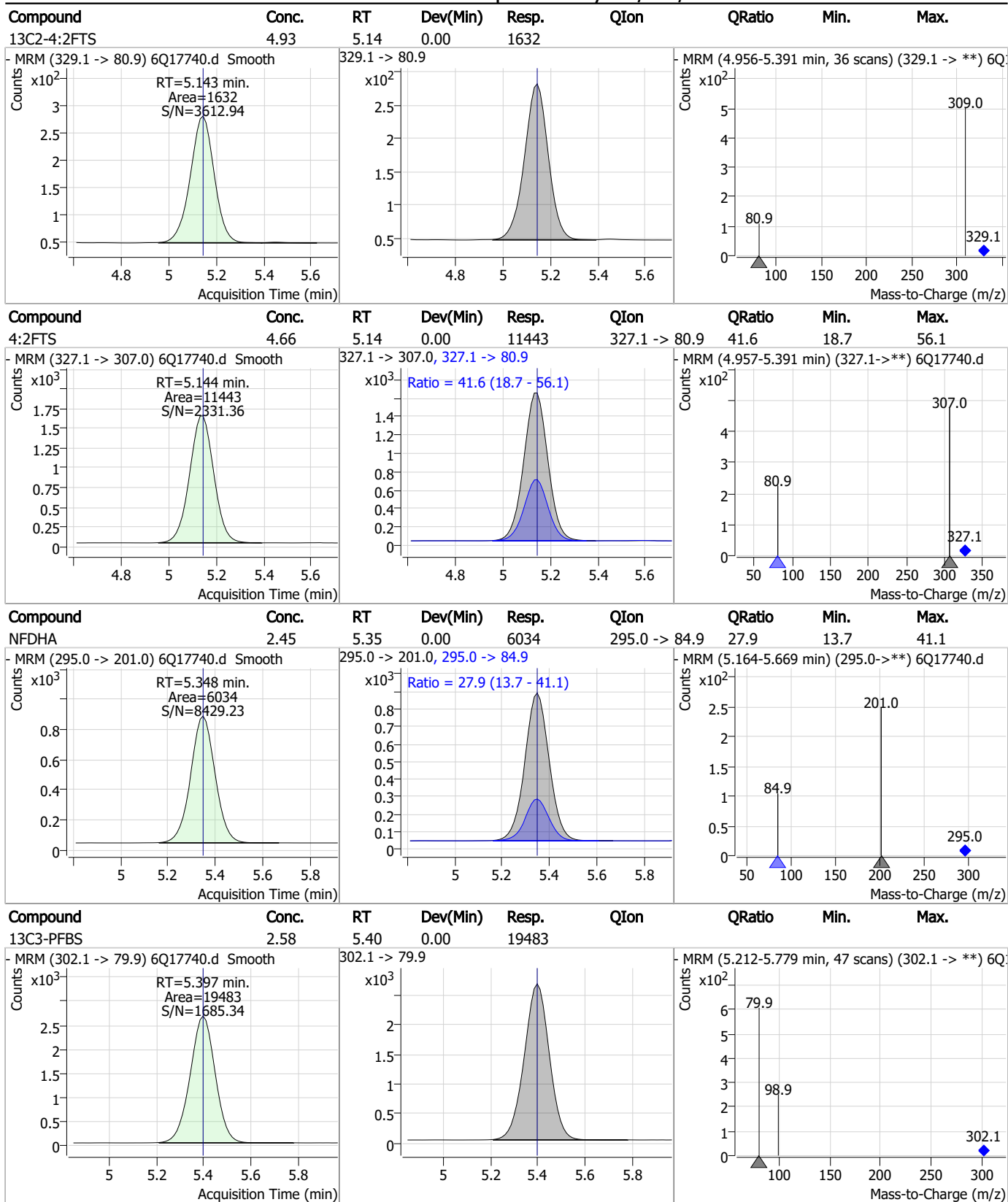


Perfluorinated Compounds by LC/MS/MS



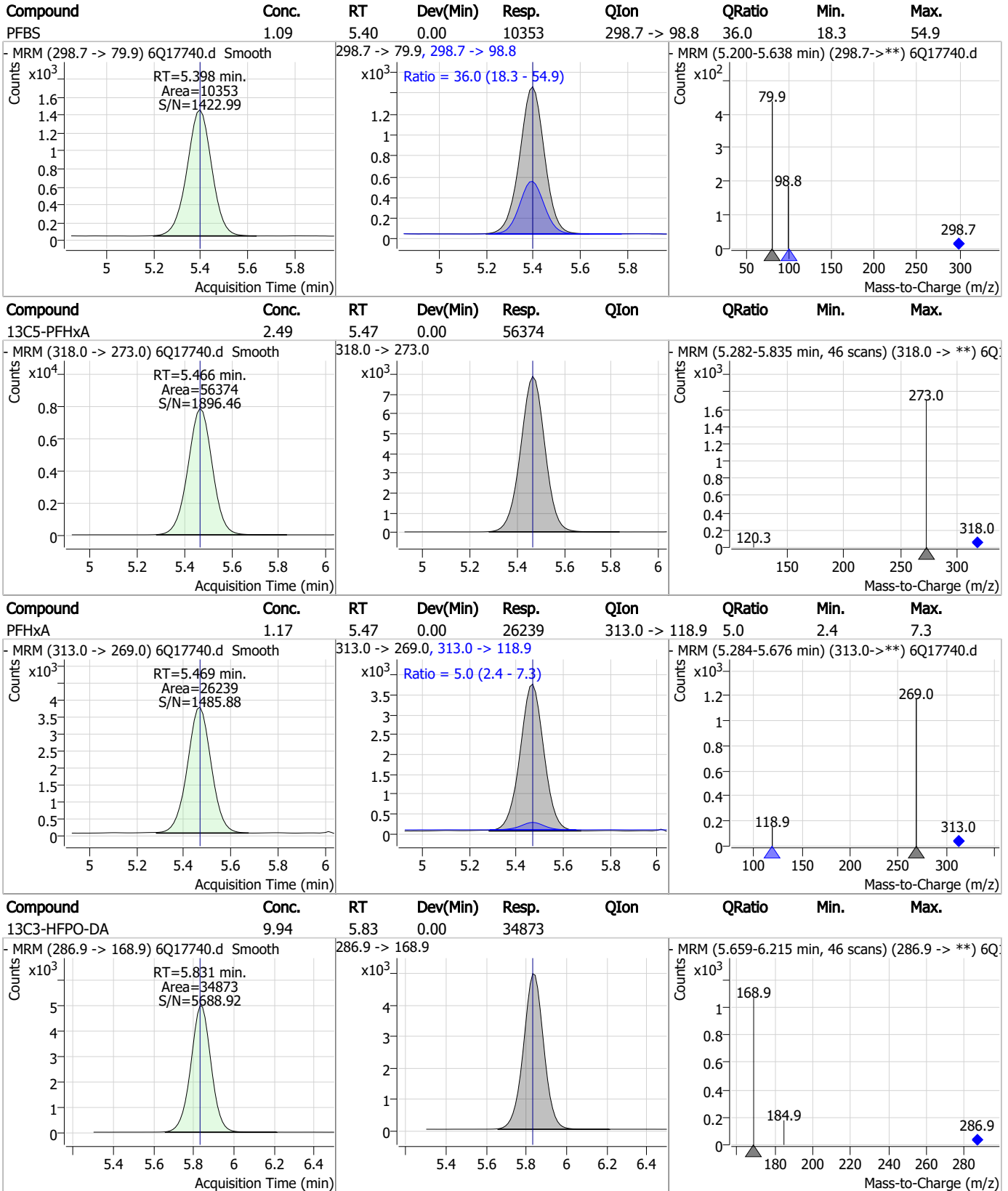
7.7.4
7

Perfluorinated Compounds by LC/MS/MS



7.7.4
7

Perfluorinated Compounds by LC/MS/MS

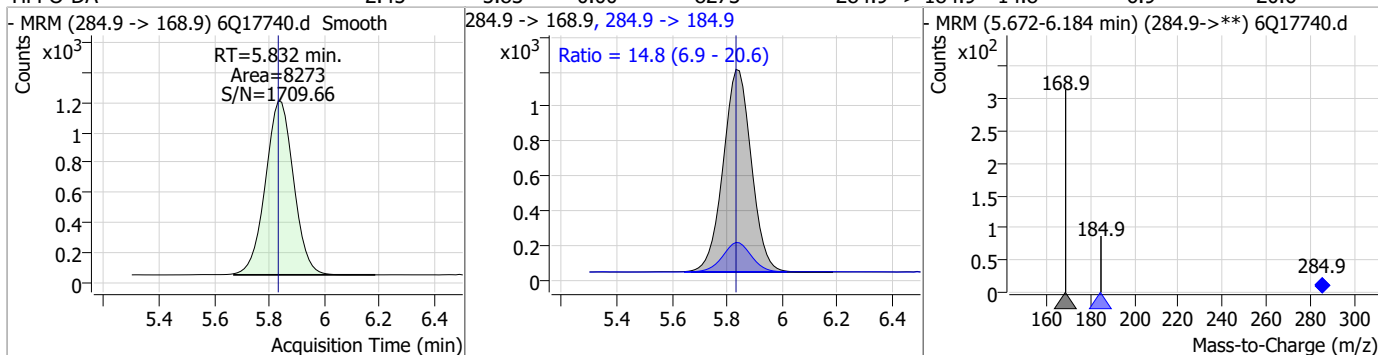


7.7.4

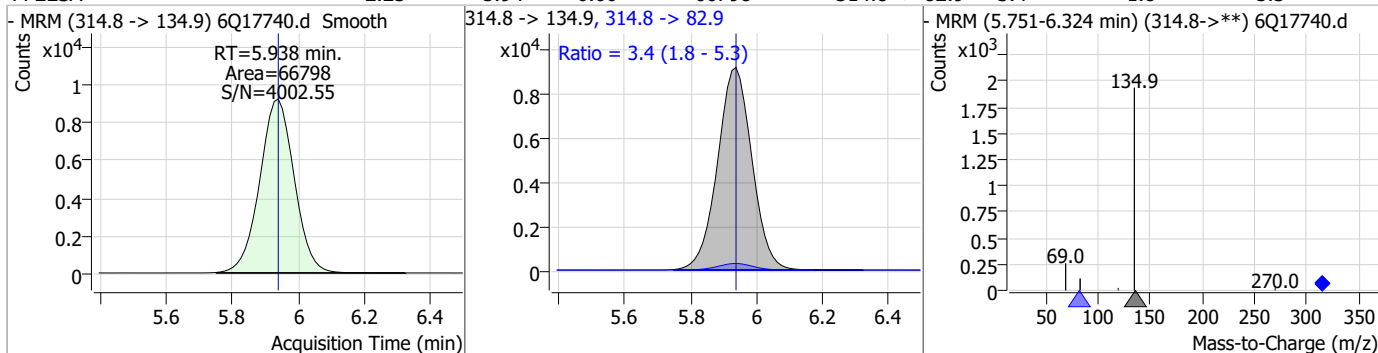
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Perfluorinated Compounds by LC/MS/MS

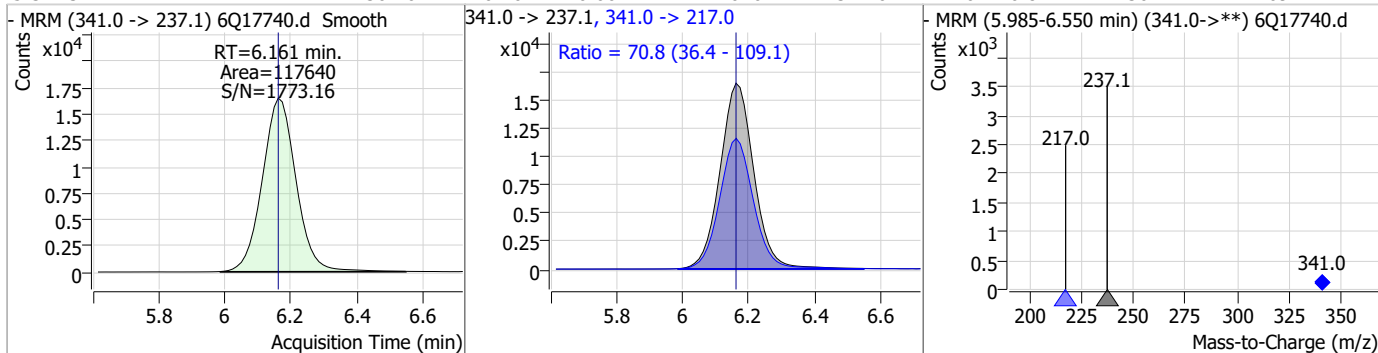
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.45	5.83	0.00	8273	284.9 -> 184.9	14.8	6.9	20.6



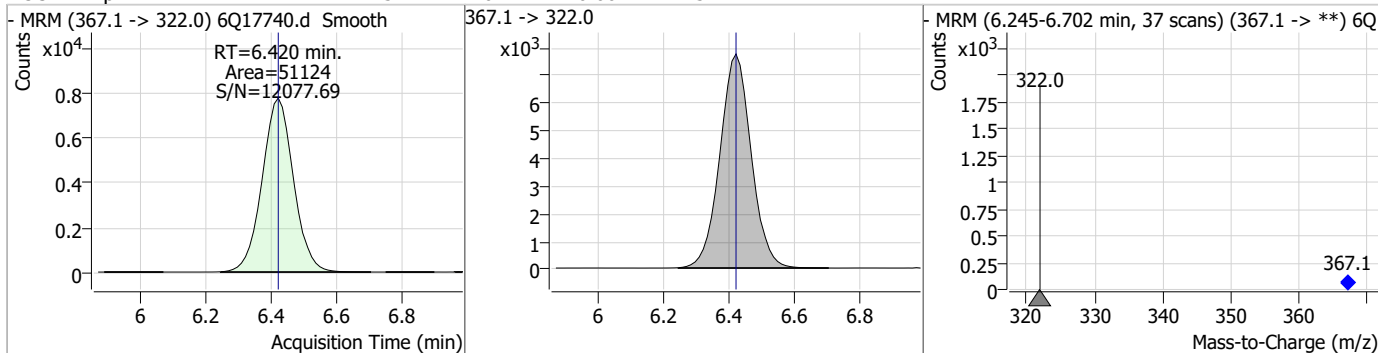
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.23	5.94	0.00	66798	314.8 -> 82.9	3.4	1.8	5.3



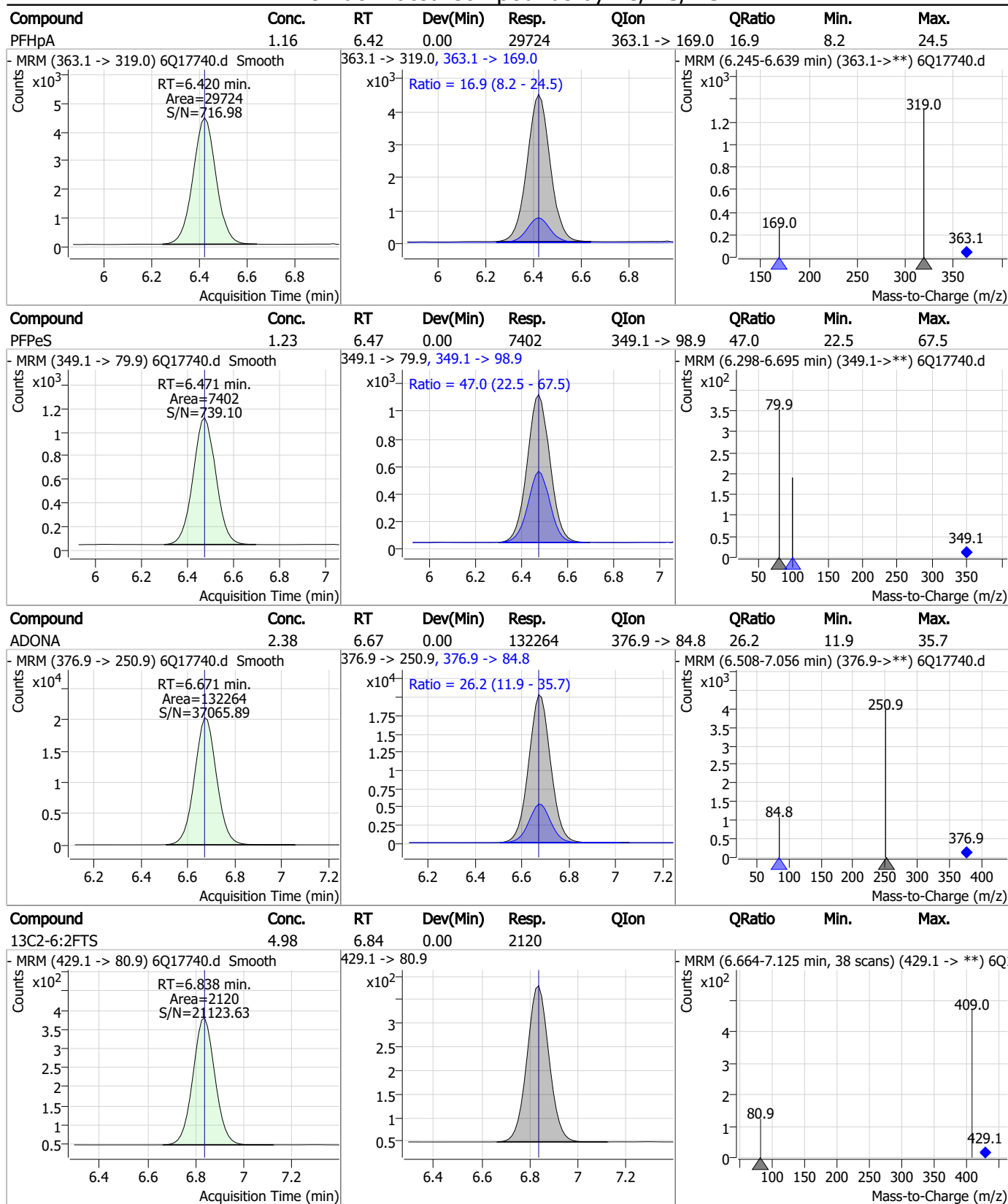
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	30.40	6.16	0.00	117640	341.0 -> 217.0	70.8	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.57	6.42	0.00	51124	367.1 -> 322.0			

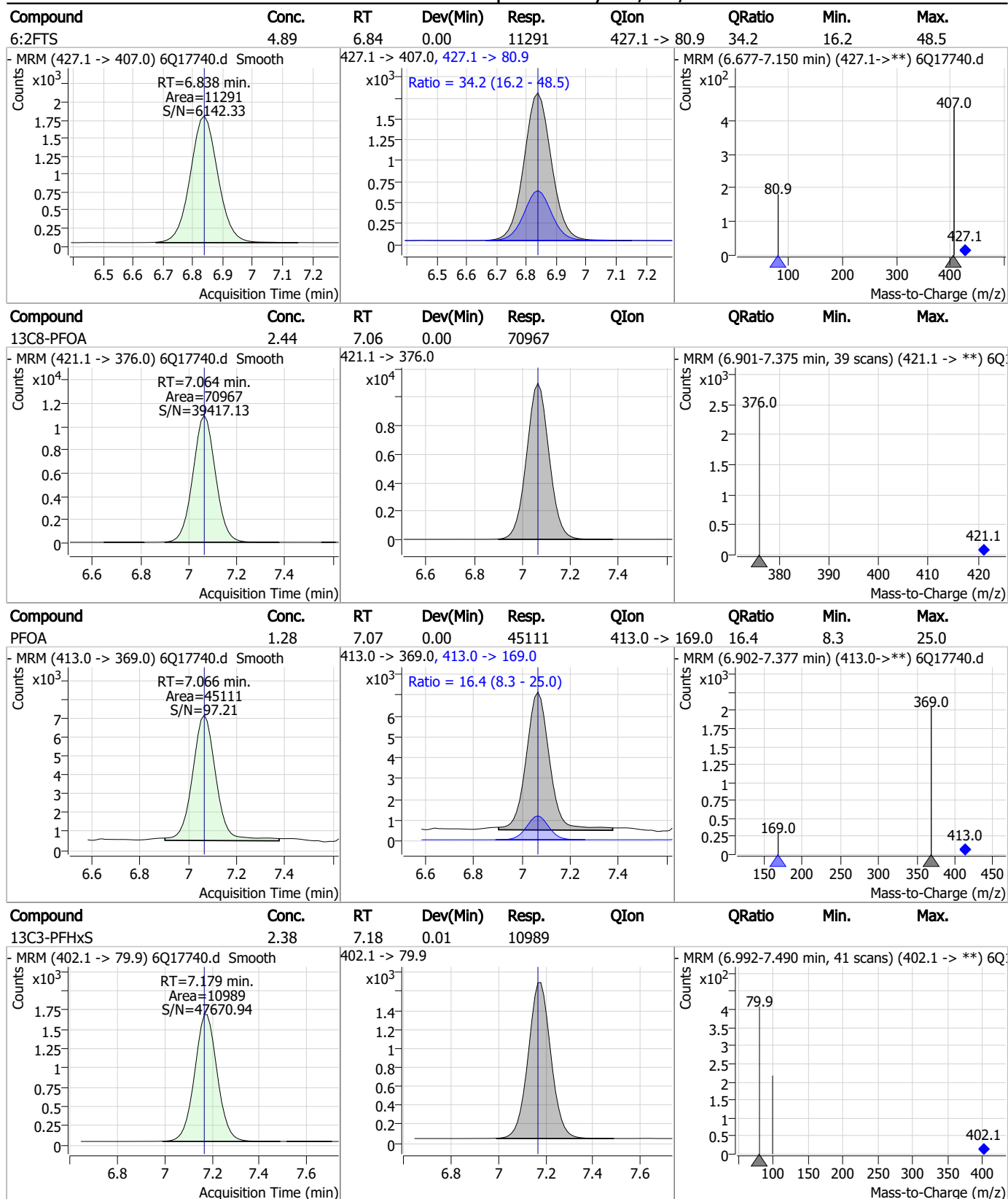


Perfluorinated Compounds by LC/MS/MS



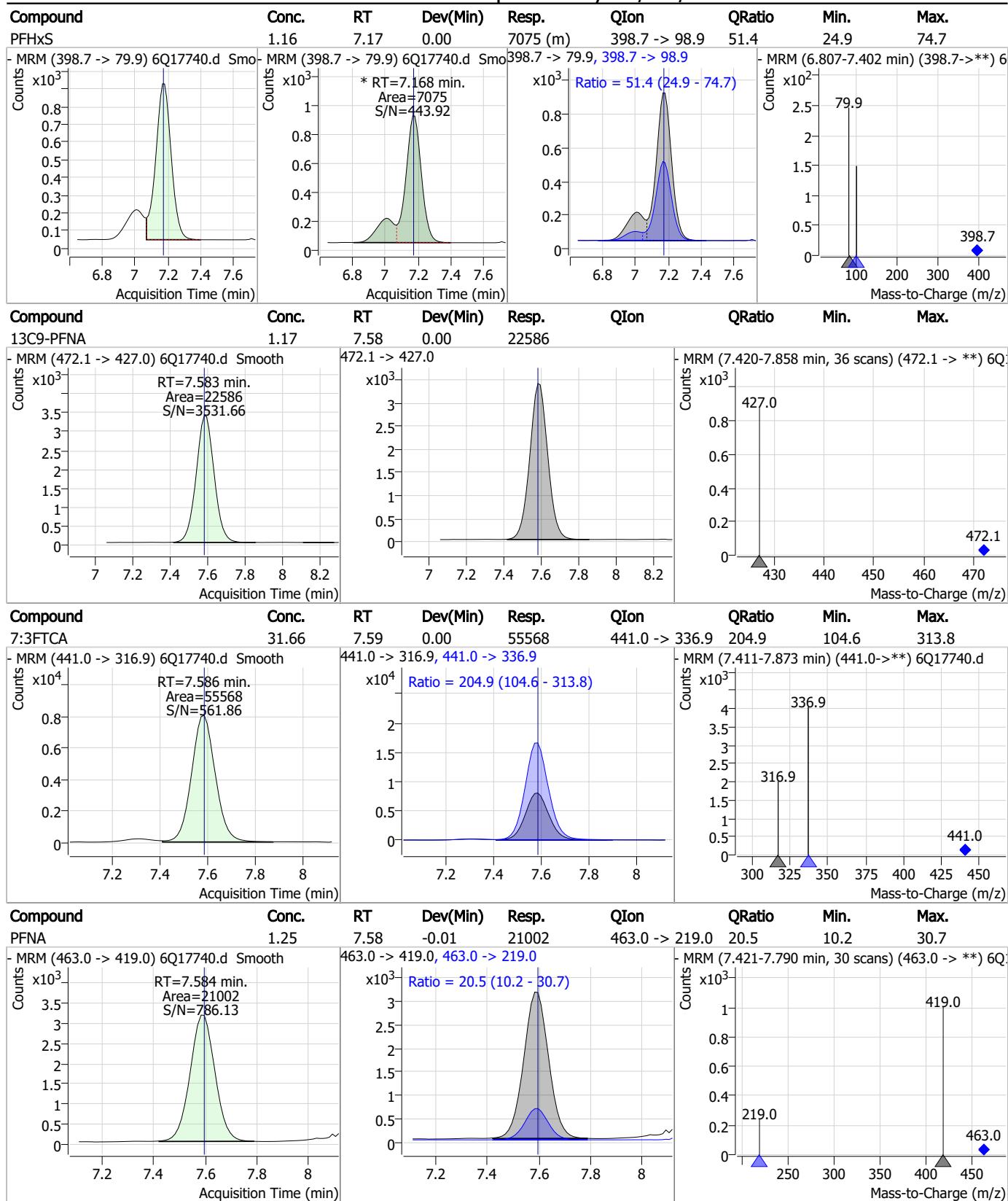
7.7.4
7

Perfluorinated Compounds by LC/MS/MS



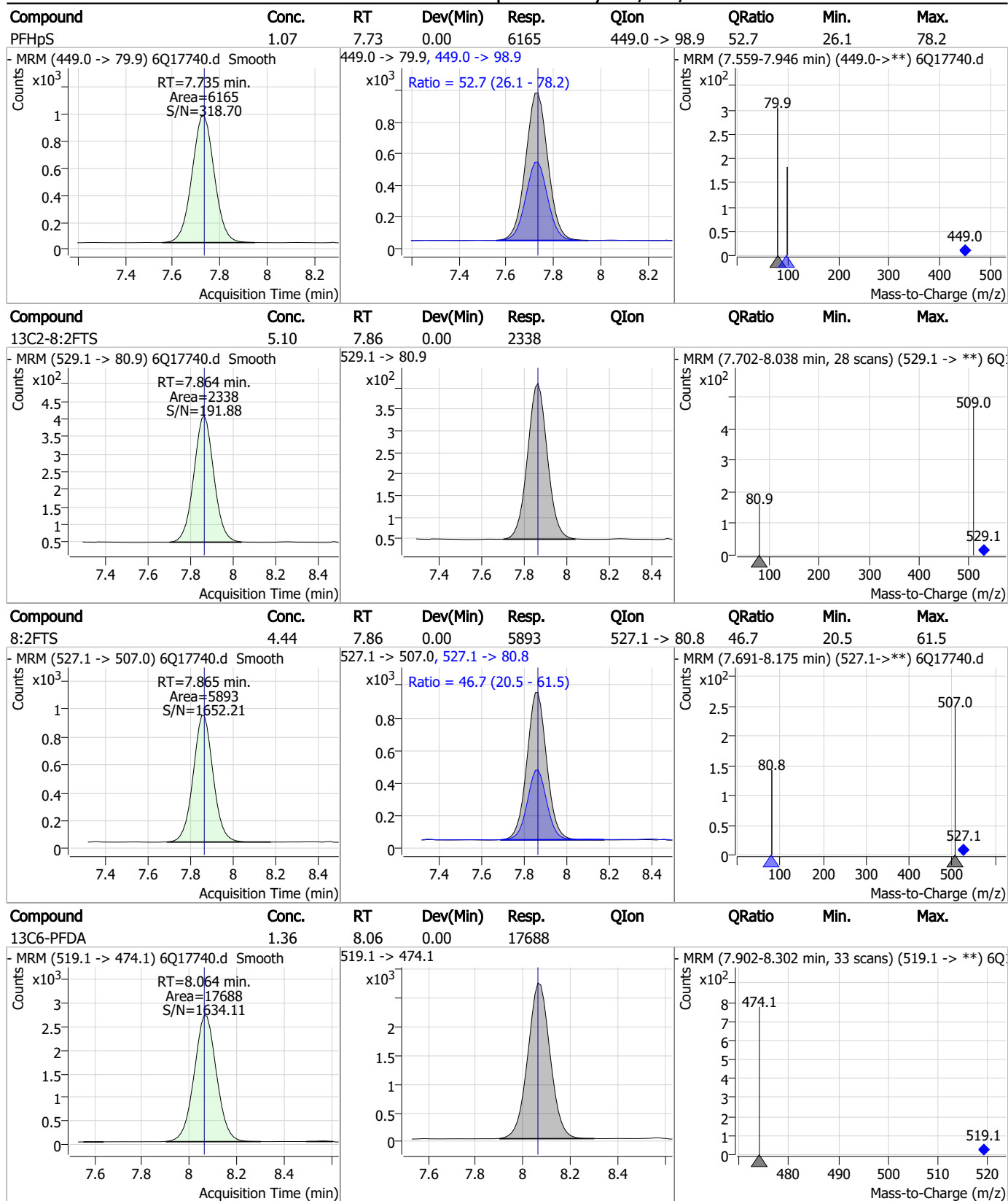
7.7.4
7

Perfluorinated Compounds by LC/MS/MS



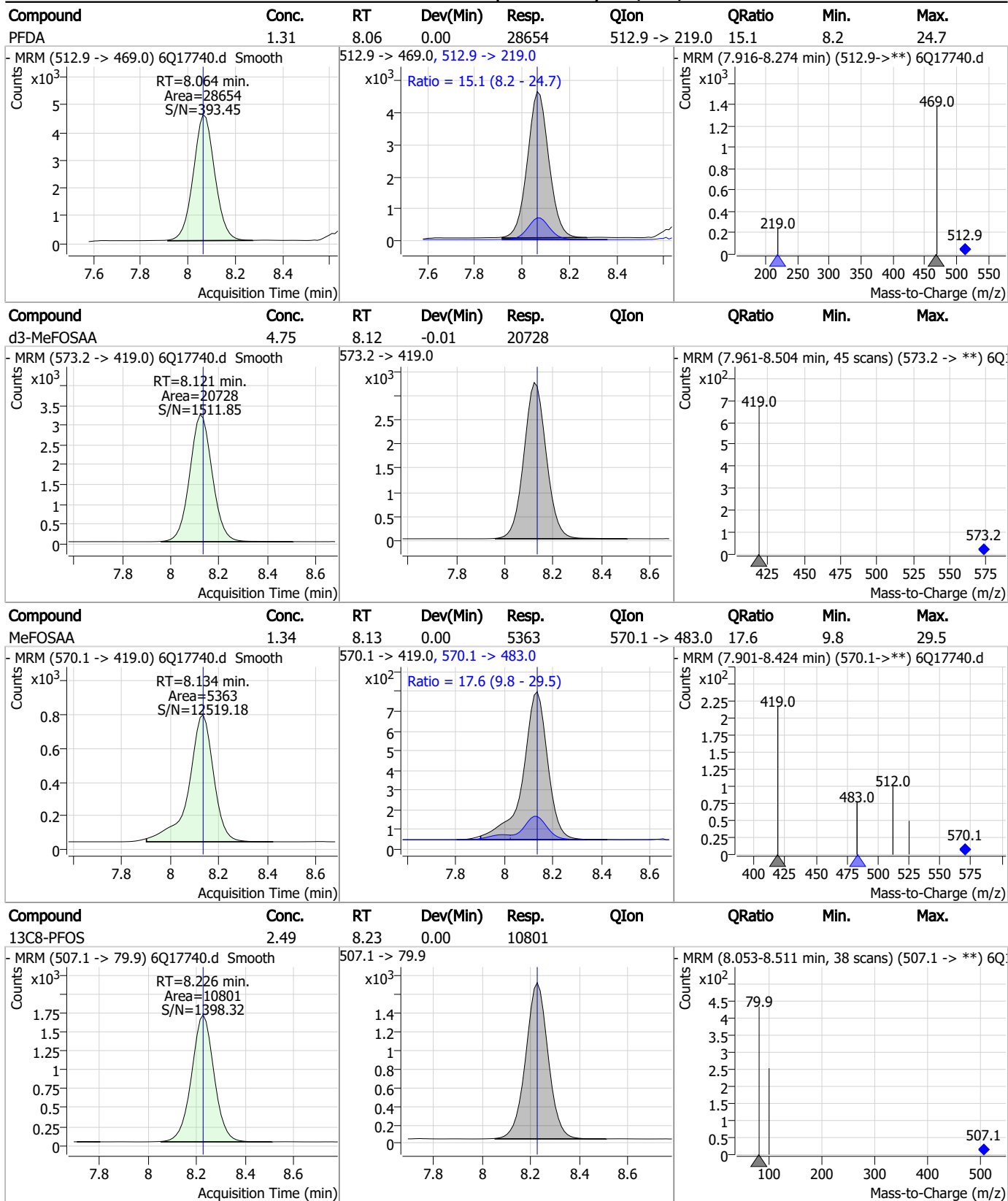
7.7.4
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Perfluorinated Compounds by LC/MS/MS



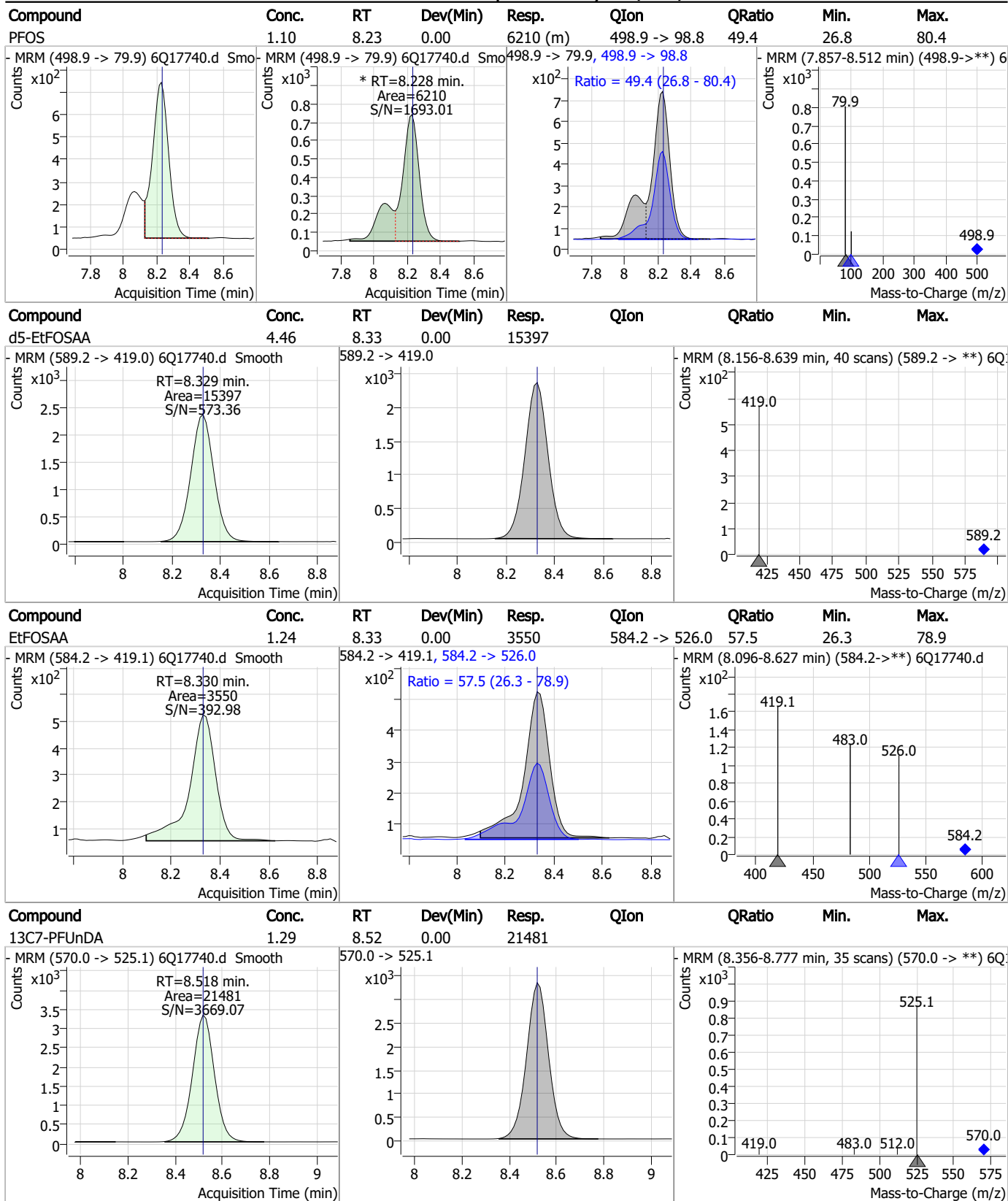
7.7.4
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Perfluorinated Compounds by LC/MS/MS



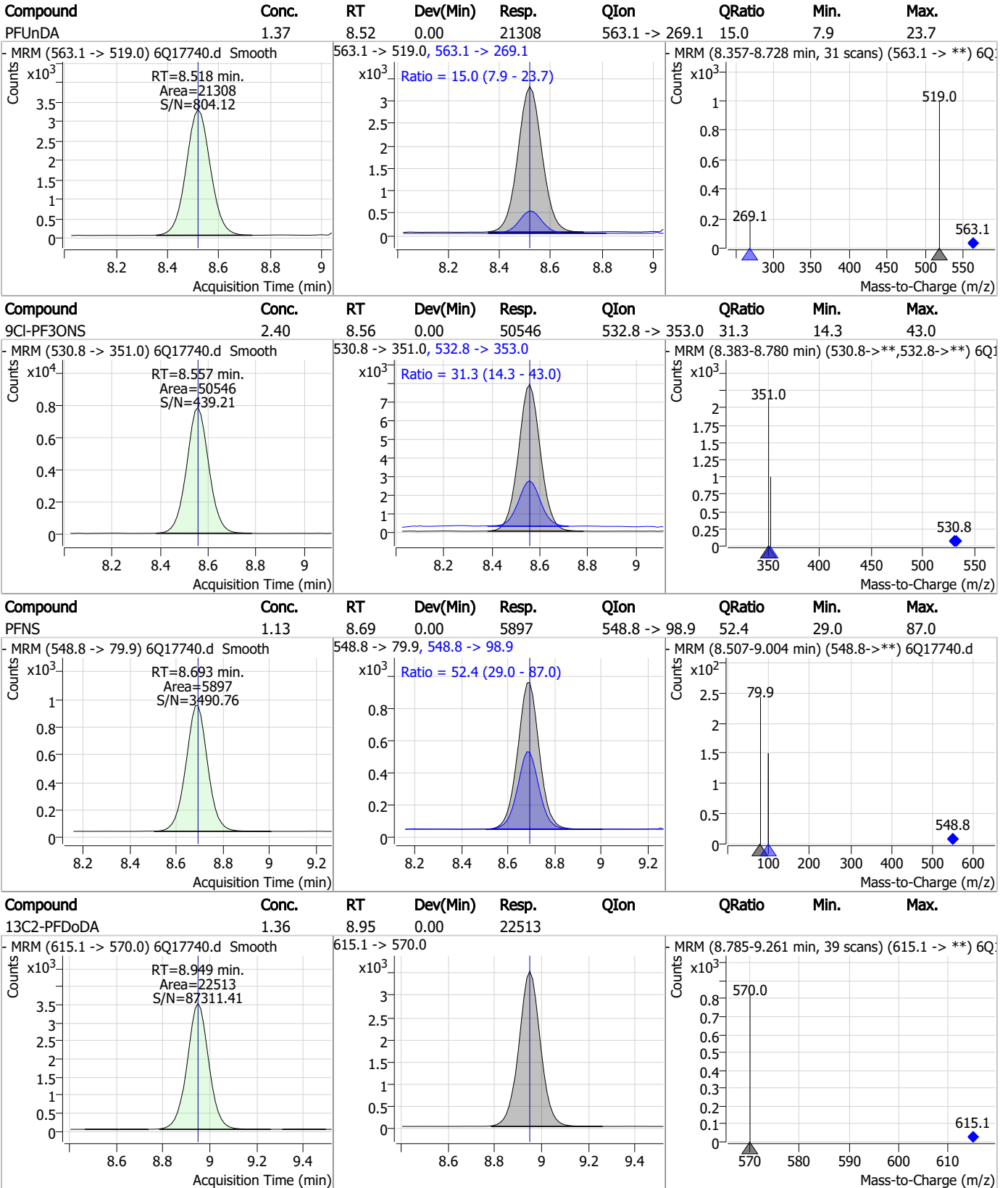
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

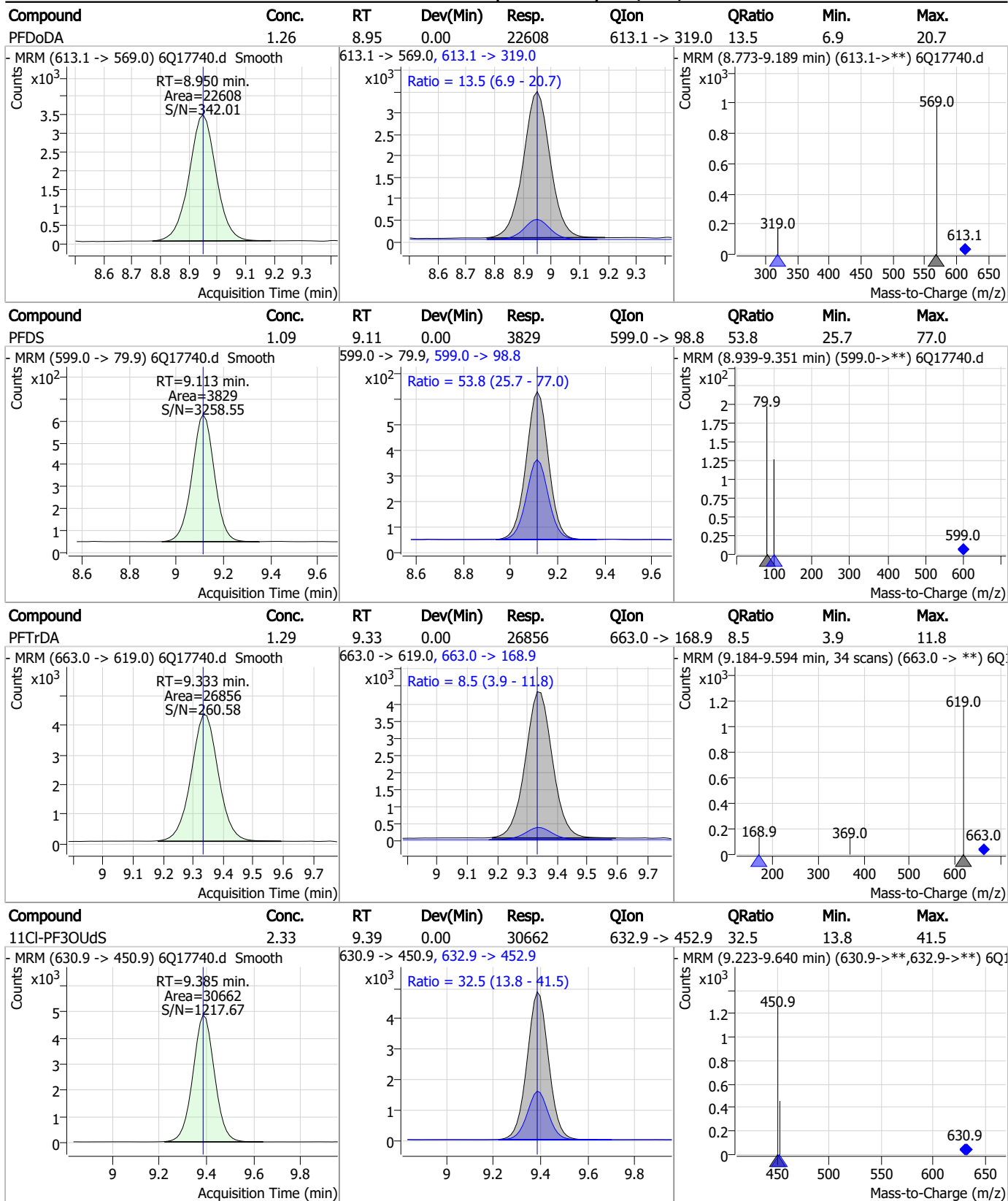
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

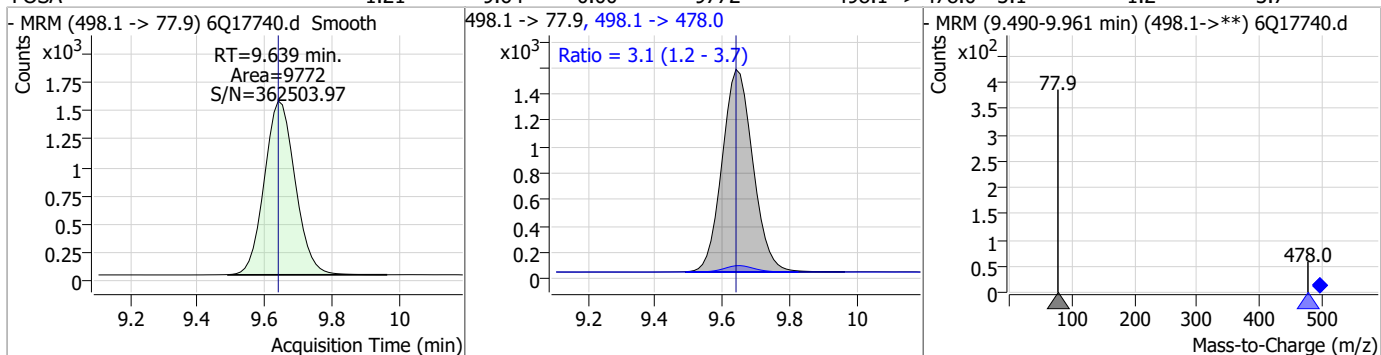
Perfluorinated Compounds by LC/MS/MS



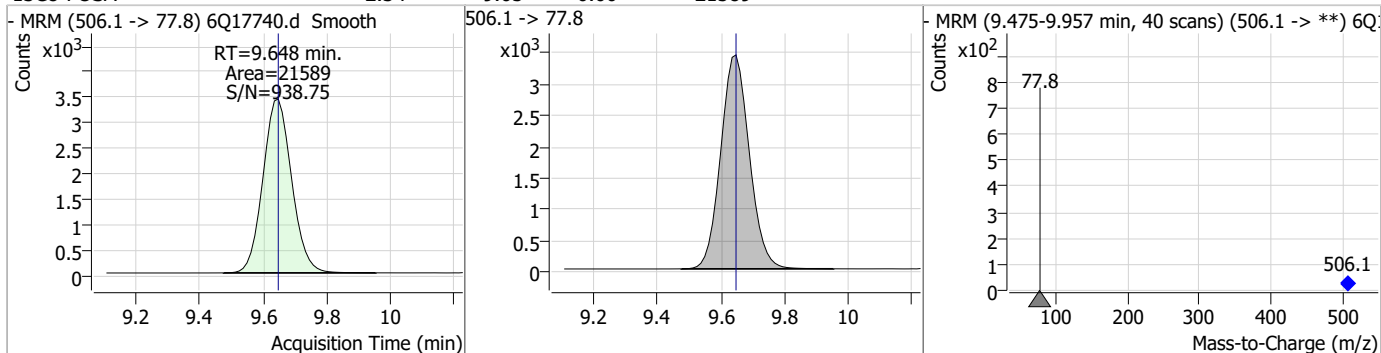
7.7.4
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Perfluorinated Compounds by LC/MS/MS

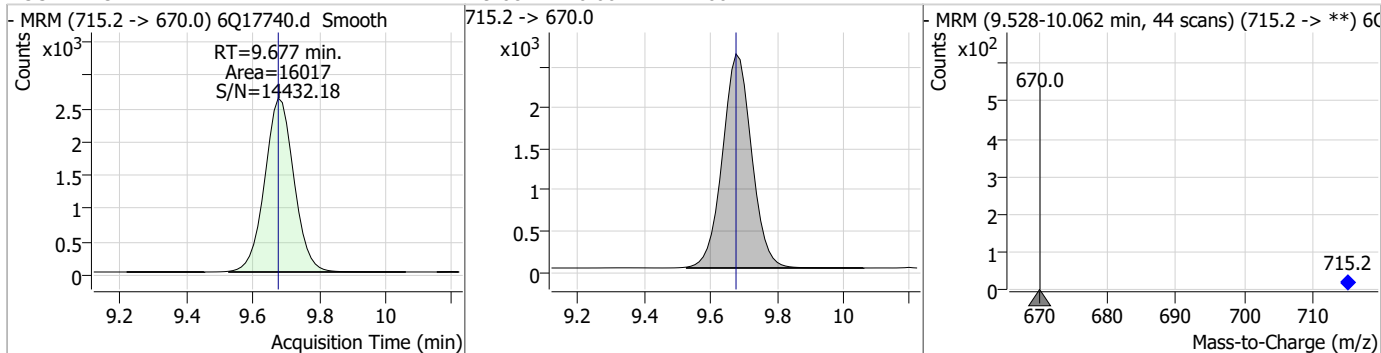
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.21	9.64	0.00	9772	498.1 -> 478.0	3.1	1.2	3.7



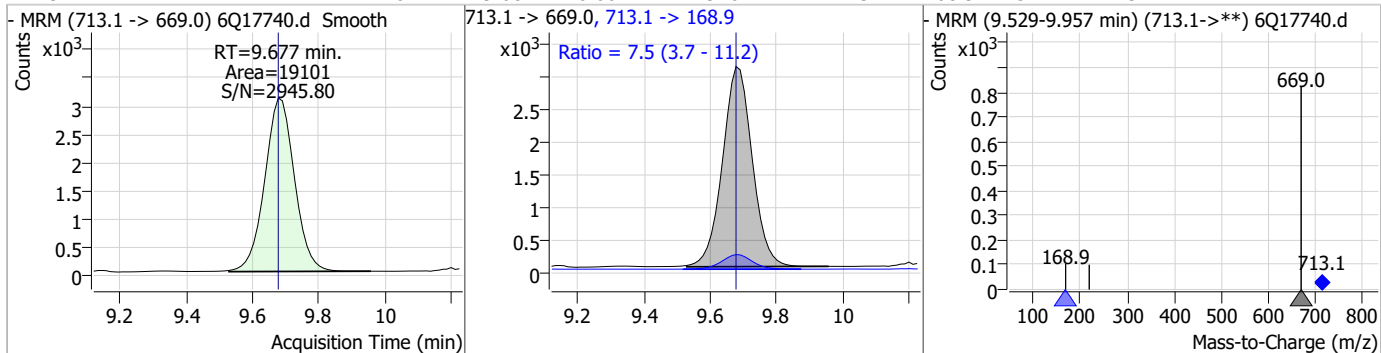
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.34	9.65	0.00	21589				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.42	9.68	0.00	16017				

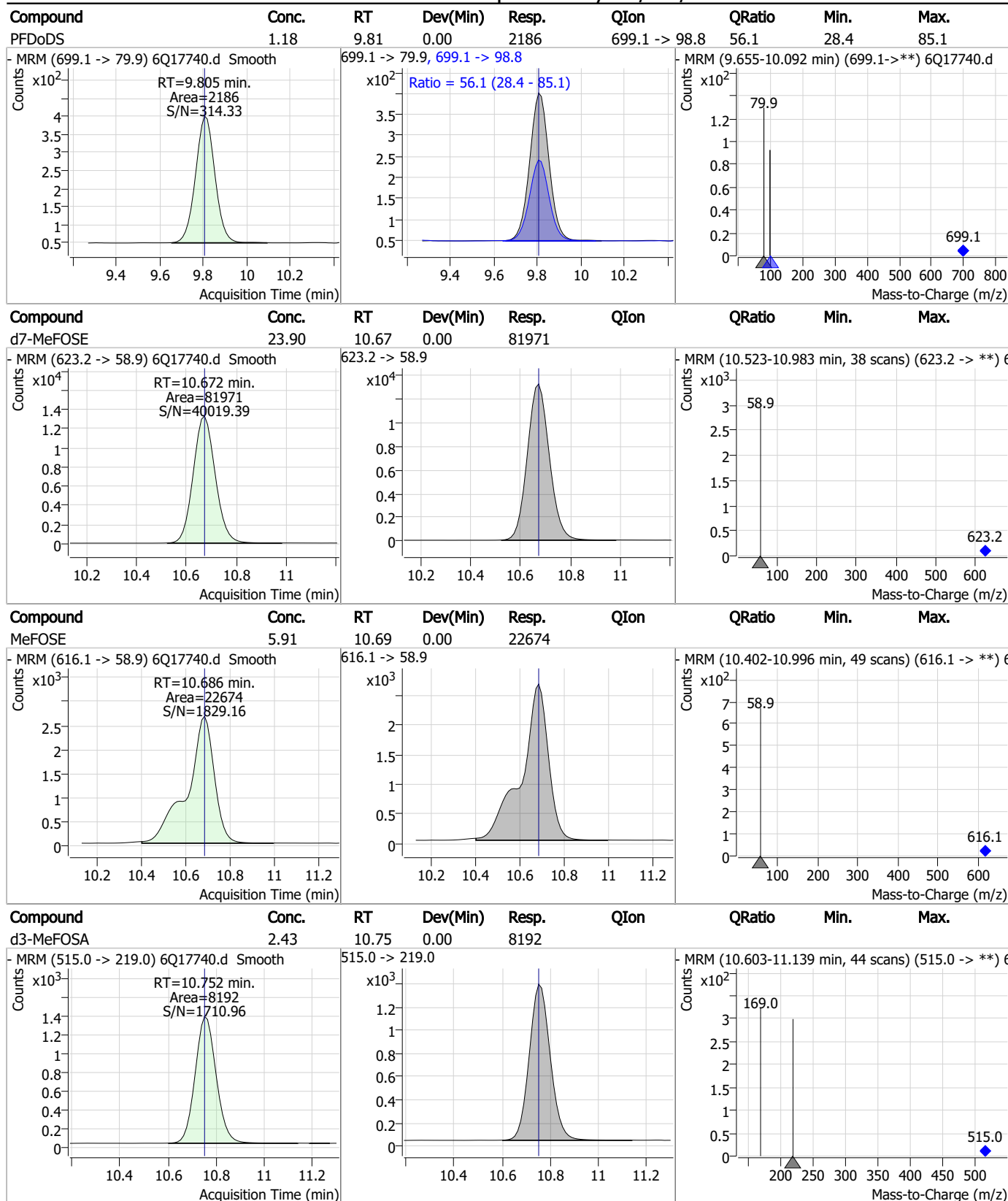


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.16	9.68	0.00	19101	713.1 -> 168.9	7.5	3.7	11.2



7.7.4
7

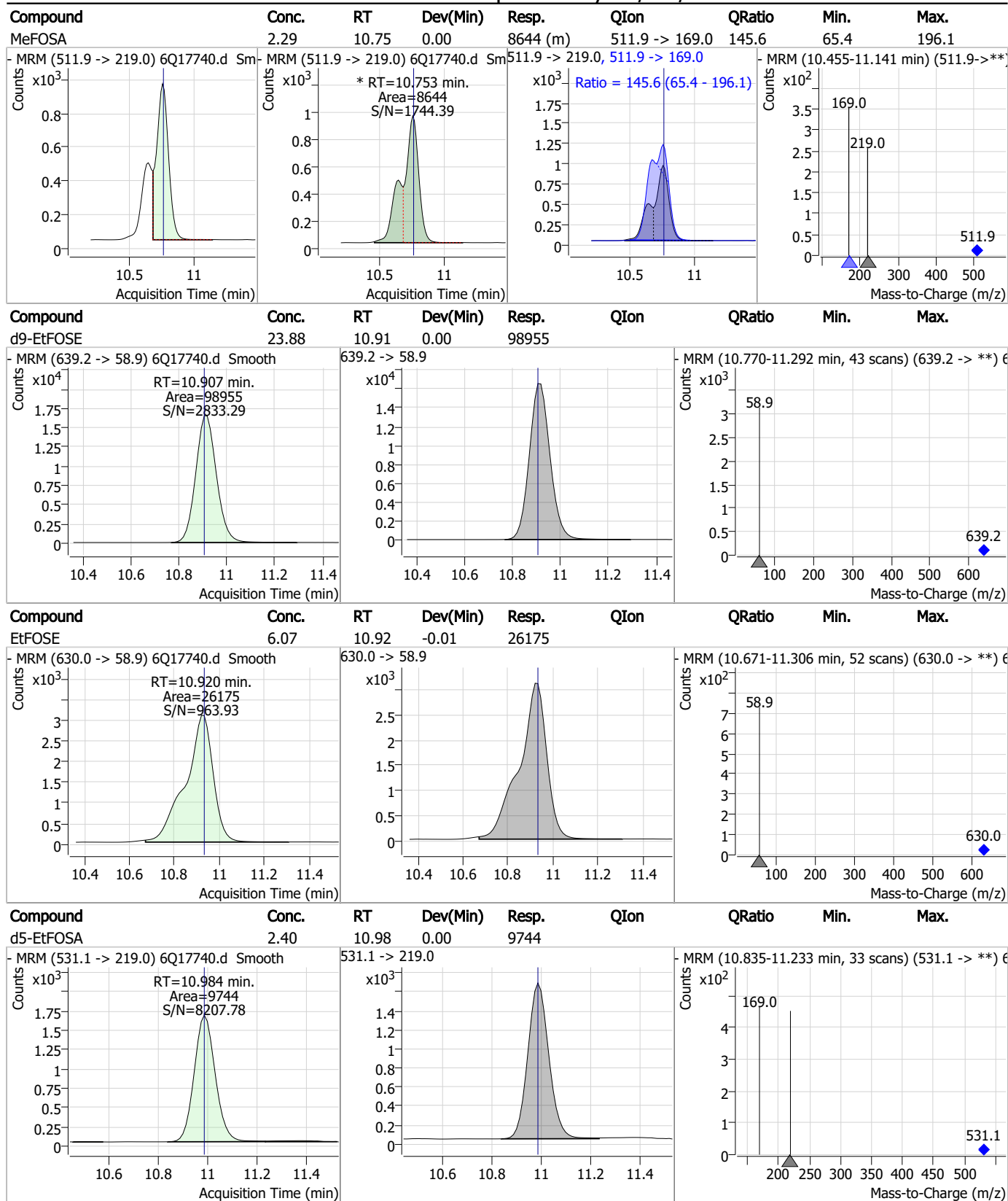
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

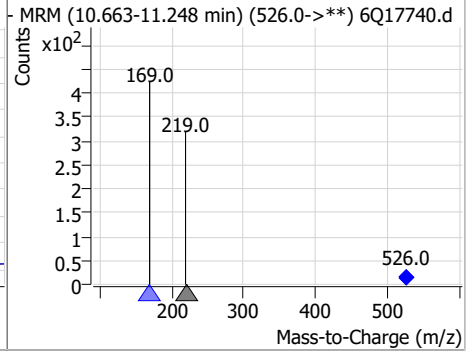
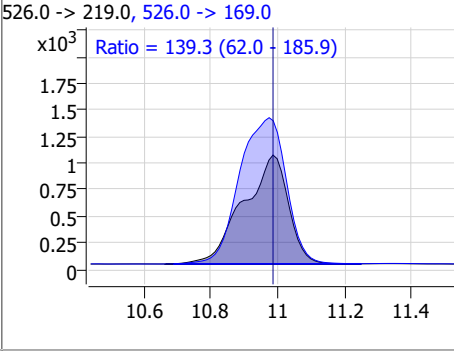
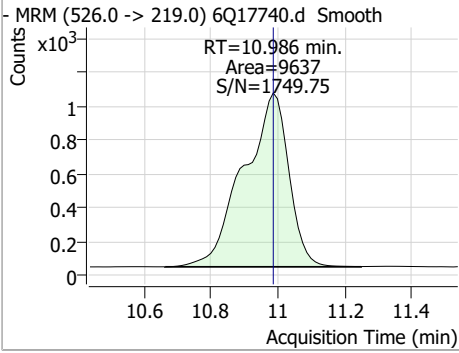
Perfluorinated Compounds by LC/MS/MS



7.7.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.28	10.99	0.00	9637	526.0 -> 169.0	139.3	62.0	185.9



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17740.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 12:44 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.4.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17741.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 12:58:55 PM
 Sample Name : icc268-4
 Vial : P1-A5
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	159107	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	50197	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	55453	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	50653	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	73845	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	22325	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	18873	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	24468	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	23277	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	15804	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	21412	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	18722	2.50 µg/L	0.000
M3-PFHxS	7.167	402.1 -> 79.9	11888	2.50 µg/L	0.000
M8-PFOS	8.226	507.1 -> 79.9	10531	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1640	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2242	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2051	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	20391	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	33885	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	16070	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	80163	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	99980	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9595	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	8130	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12722	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	66168	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	8564	2.50 µg/L	0.000
13C4-PFOA	7.065	417.1 -> 372.0	77104	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	22066	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	24847	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	51206	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1640	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.5%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2242	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2051	4.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C2-PFDoDA	8.949	615.1 -> 570.0	23277	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFTeDA	9.677	715.2 -> 670.0	15804	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFBS	5.397	302.1 -> 79.9	18722	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.167	402.1 -> 79.9	11888	2.61 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C4-PFBA	2.901	216.8 -> 171.9	159107	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFHpA	6.420	367.1 -> 322.0	50653	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C5-PFHxA	5.466	318.0 -> 273.0	55453	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	50197	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C6-PFDA	8.064	519.1 -> 474.1	18873	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C7-PFUnDA	8.518	570.0 -> 525.1	24468	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-FOSA	9.648	506.1 -> 77.8	21412	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-PFOA	7.064	421.1 -> 376.0	73845	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C8-PFOS	8.226	507.1 -> 79.9	10531	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C9-PFNA	7.583	472.1 -> 427.0	22325	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSAA	8.133	573.2 -> 419.0	20391	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	33885	9.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	8130	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
d5-EtFOSAA	8.329	589.2 -> 419.0	16070	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
d7-MeFOSE	10.672	623.2 -> 58.9	80163	25.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
d9-EtFOSE	10.907	639.2 -> 58.9	99980	26.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d5-EtFOSA	10.984	531.1 -> 219.0	9595	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	23394	9.49 µg/L	100
		327.1 -> 80.9	8755		
6:2FTS	6.838	427.1 -> 407.0	21921	8.98 µg/L	100
		427.1 -> 80.9	7092		
8:2FTS	7.865	527.1 -> 507.0	12129	10.41 µg/L	100
		527.1 -> 80.8	4971		
EtFOSAA	8.330	584.2 -> 419.1	7227	2.42 µg/L	100
		584.2 -> 526.0	3804		
FOSA	9.639	498.1 -> 77.9	20458	2.55 µg/L	100
		498.1 -> 478.0	510		
MeFOSAA	8.134	570.1 -> 419.0	9691	2.46 µg/L	100
		570.1 -> 483.0	1908		
PFBA	2.907	212.8 -> 168.9	54996	9.64 µg/L	100
PFBS	5.398	298.7 -> 79.9	20024	2.19 µg/L	100
		298.7 -> 98.8	7331		
PFDA	8.064	512.9 -> 469.0	51596	2.21 µg/L	100
		512.9 -> 219.0	8498		
PFDODA	8.950	613.1 -> 569.0	43839	2.36 µg/L	100
		613.1 -> 319.0	6062		
PFDS	9.113	599.0 -> 79.9	7319	2.14 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3755	2.37	µg/L	100
		363.1 -> 319.0	60123			
PFHpS	7.735	363.1 -> 169.0	9818	2.20	µg/L	100
		449.0 -> 79.9	12344			
PFHxA	5.469	449.0 -> 98.9	6434	2.32	µg/L	100
		313.0 -> 269.0	50888			
PFHxS	7.168	313.0 -> 118.9	2461	2.07	µg/L	100
		398.7 -> 79.9	13619			
PFNA	7.596	398.7 -> 98.9	6780	2.47	µg/L	100
		463.0 -> 419.0	40955			
PFNS	8.693	463.0 -> 219.0	8388	2.13	µg/L	100
		548.8 -> 79.9	10822			
PFOA	7.066	548.8 -> 98.9	6278	2.27	µg/L	100
		413.0 -> 369.0	83569			
PFOS	8.228	413.0 -> 169.0	13951	2.13	µg/L	100
		498.9 -> 79.9	11765			
PFPeA	4.274	498.9 -> 98.8	6303	4.89	µg/L	100
		263.0 -> 219.0	70914			
PFPeS	6.471	349.1 -> 79.9	14740	2.26	µg/L	100
		349.1 -> 98.9	6632			
PFTeDA	9.677	713.1 -> 669.0	36435	2.25	µg/L	100
		713.1 -> 168.9	2721			
PFTrDA	9.333	663.0 -> 619.0	54198	2.52	µg/L	100
		663.0 -> 168.9	4252			
PFUnDA	8.518	563.1 -> 519.0	40846	2.30	µg/L	100
		563.1 -> 269.1	6449			
11CI-PF3OUdS	9.385	630.9 -> 450.9	64170	5.01	µg/L	100
		632.9 -> 452.9	17748			
9CI-PF3ONS	8.557	530.8 -> 351.0	101218	4.95	µg/L	100
		532.8 -> 353.0	29000			
ADONA	6.671	376.9 -> 250.9	262341	4.86	µg/L	100
		376.9 -> 84.8	62519			
HFPO-DA	5.832	284.9 -> 168.9	15379	4.69	µg/L	100
		284.9 -> 184.9	2108			
3:3FTCA	3.777	241.0 -> 177.0	10659	11.87	µg/L	100
		241.0 -> 117.0	1424			
5:3FTCA	6.161	341.0 -> 237.1	231848	60.92	µg/L	100
		341.0 -> 217.0	168573			
7:3FTCA	7.586	441.0 -> 316.9	108613	62.91	µg/L	100
		441.0 -> 336.9	227192			
EtFOSA	10.986	526.0 -> 219.0	19221	4.63	µg/L	100
		526.0 -> 169.0	23822			
EtFOSE	10.932	630.0 -> 58.9	52051	11.95	µg/L	100
		511.9 -> 219.0	17460			
MeFOSA	10.753	511.9 -> 169.0	22823	4.66	µg/L	100
		616.1 -> 58.9	43365			
MeFOSE	10.686	699.1 -> 79.9	4119	11.56	µg/L	100
		699.1 -> 98.8	2337			
PFDoDS	9.805	295.0 -> 201.0	11990	2.28	µg/L	100
		295.0 -> 84.9	3289			
NFDHA	5.348	279.0 -> 85.1	50472	4.94	µg/L	100
		229.0 -> 84.9	36012			
PFMBA	4.675	314.8 -> 134.9	127223	4.88	µg/L	100
		314.8 -> 82.9	4504			
PFMPA	3.426			4.83	µg/L	100
PFEESA	5.938			4.31	µg/L	100

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

7.7.5
7

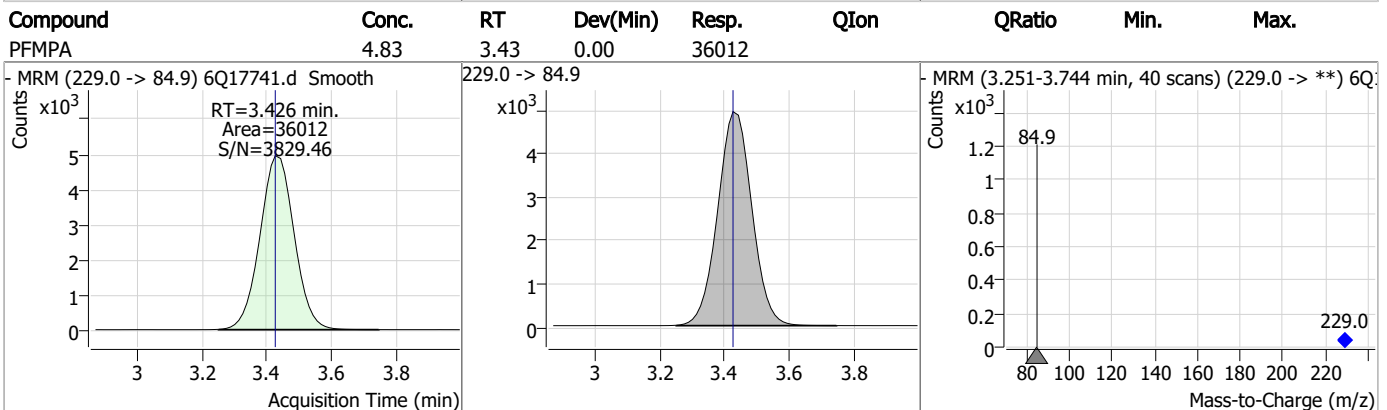
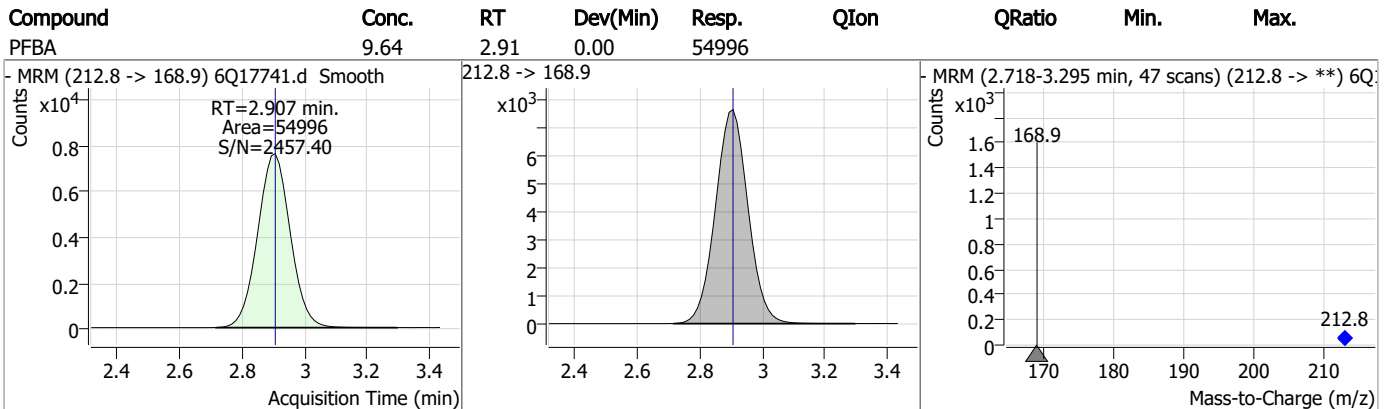
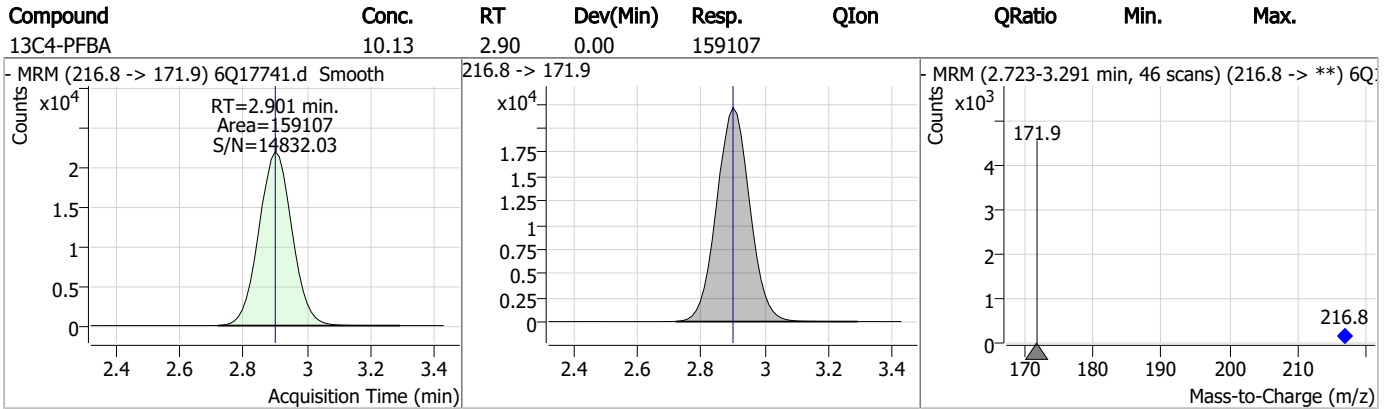
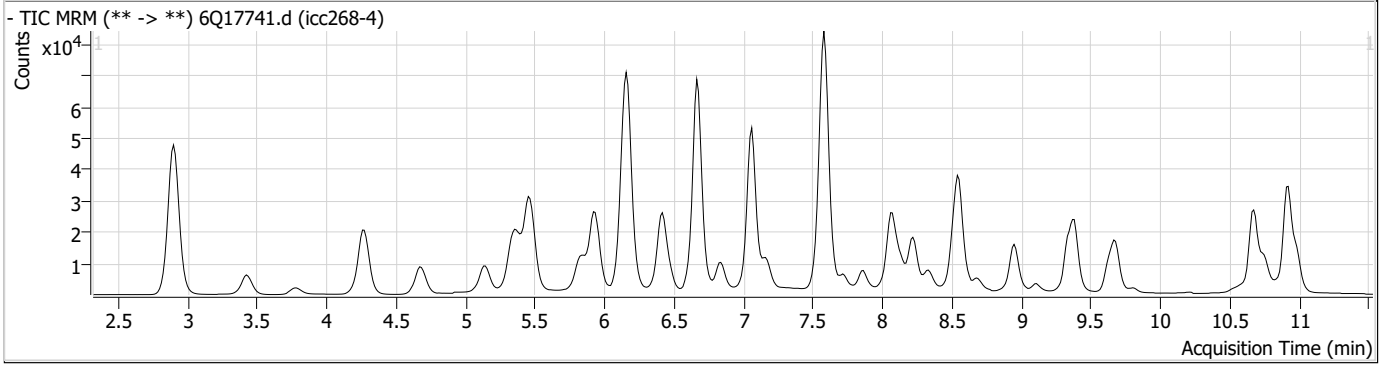
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.7.5
7

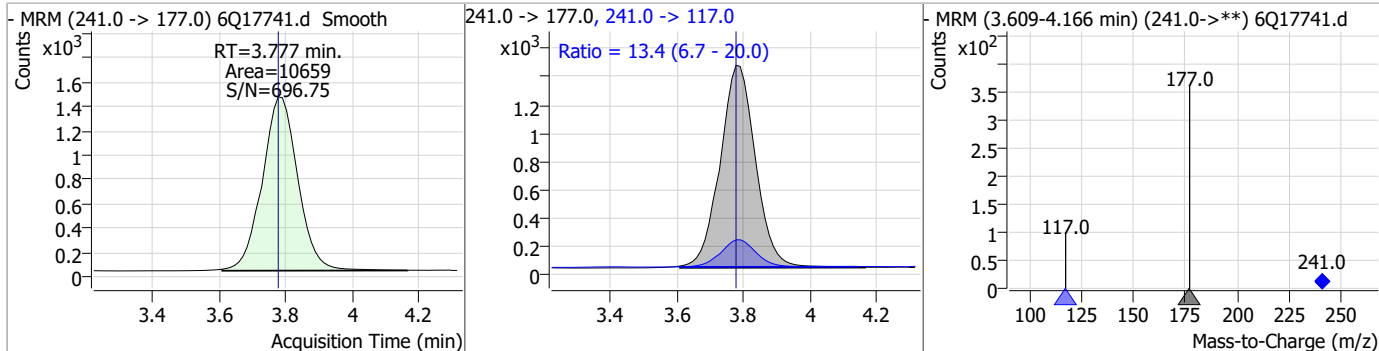


Perfluorinated Compounds by LC/MS/MS

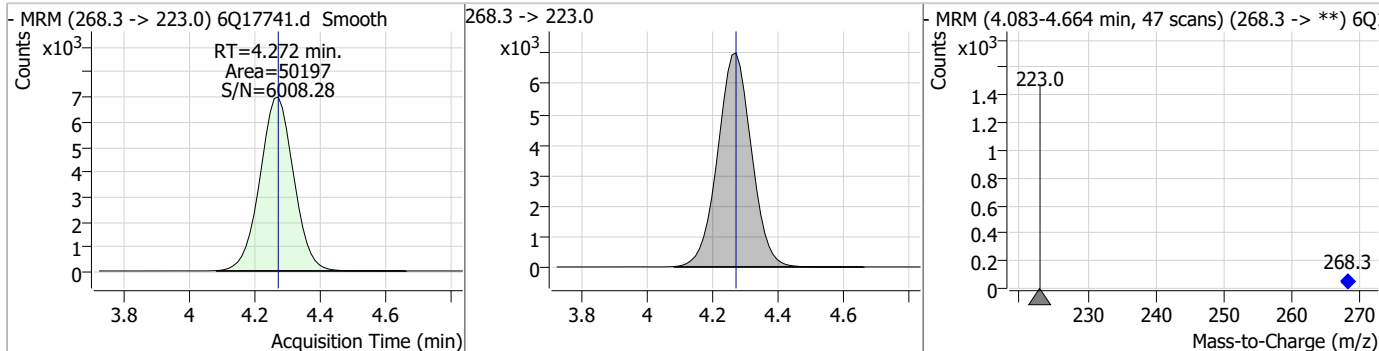


Perfluorinated Compounds by LC/MS/MS

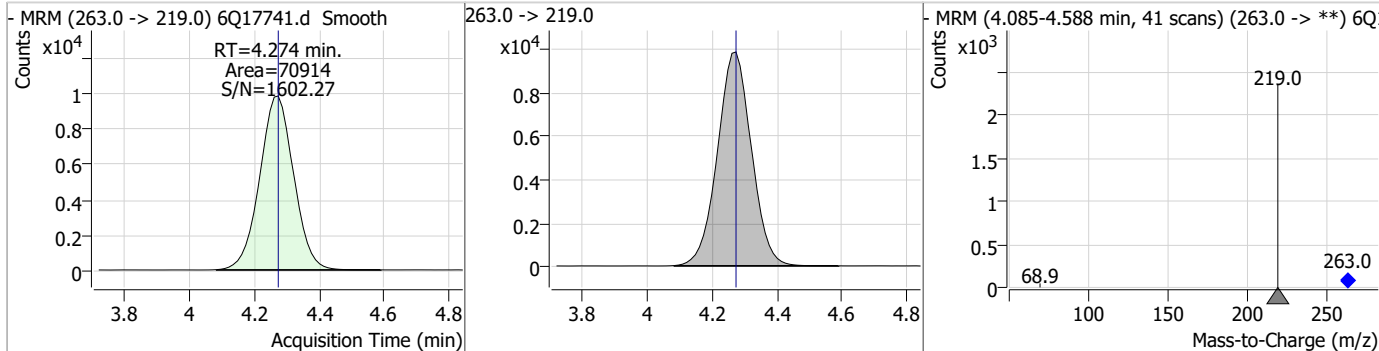
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.87	3.78	0.00	10659	241.0 -> 117.0	13.4	6.7	20.0



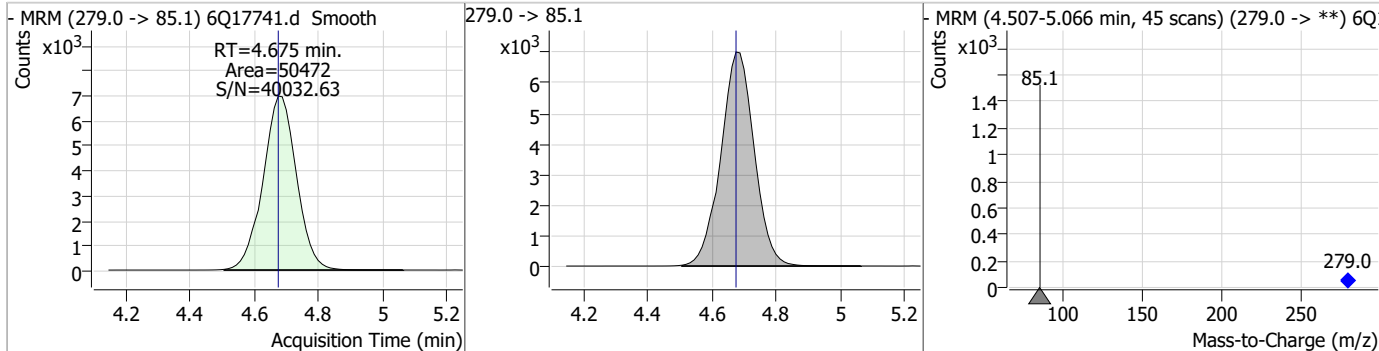
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.66	4.27	0.00	50197				



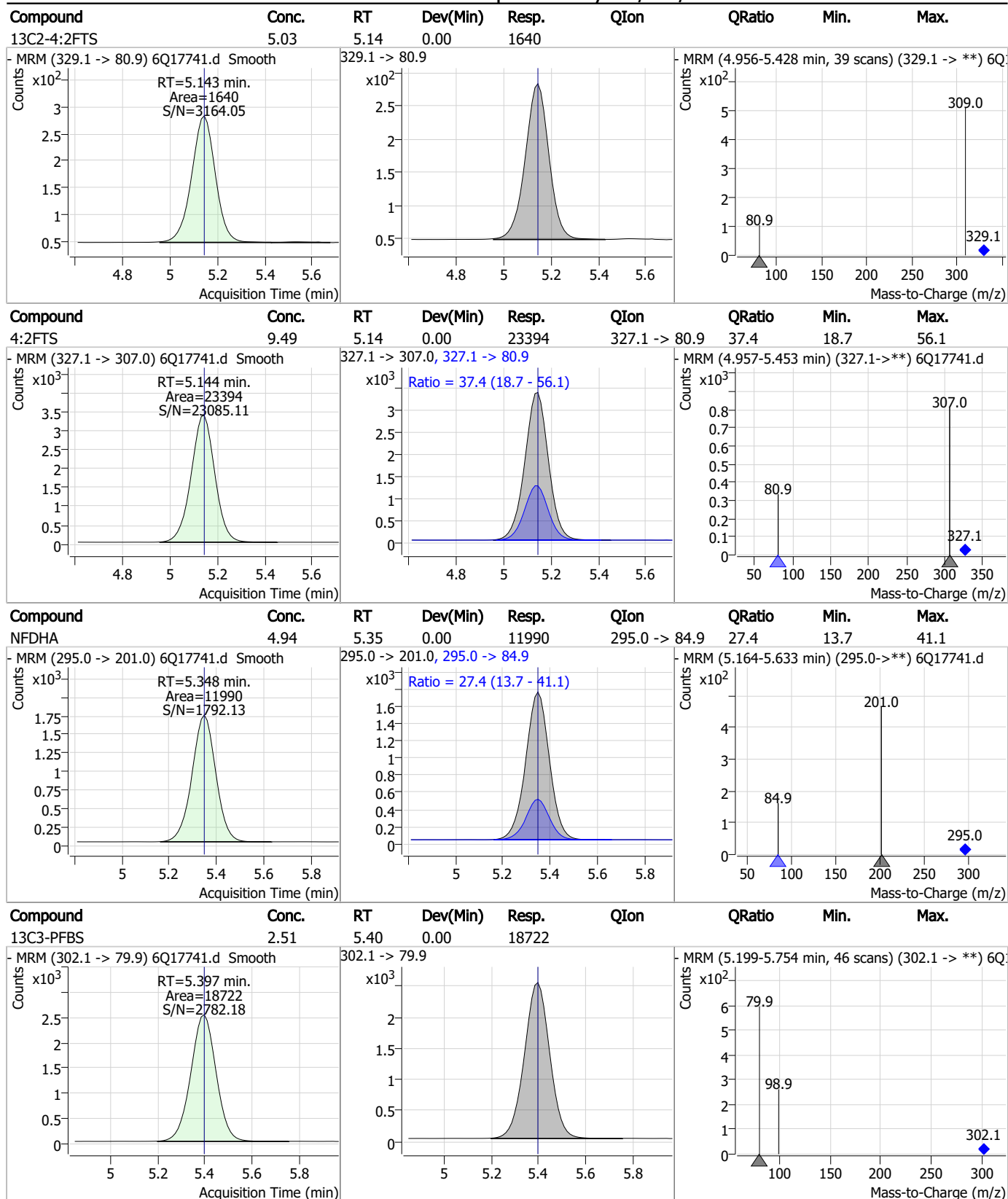
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.89	4.27	0.00	70914				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.88	4.68	0.00	50472				

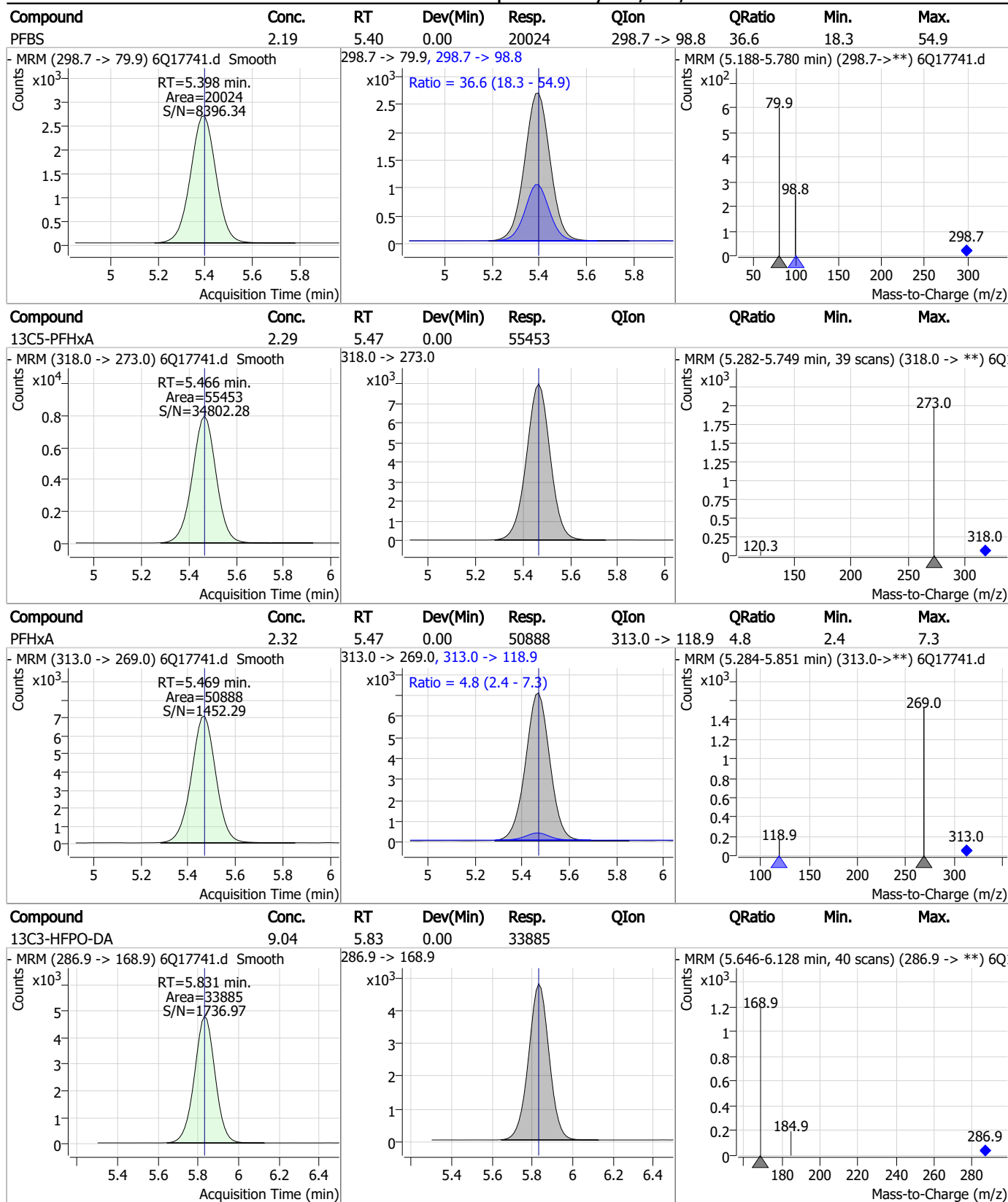


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

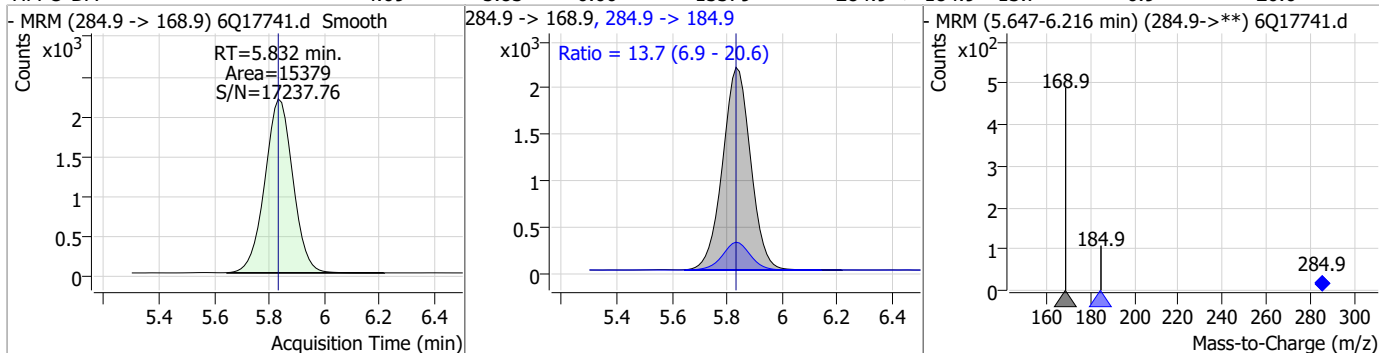
Perfluorinated Compounds by LC/MS/MS



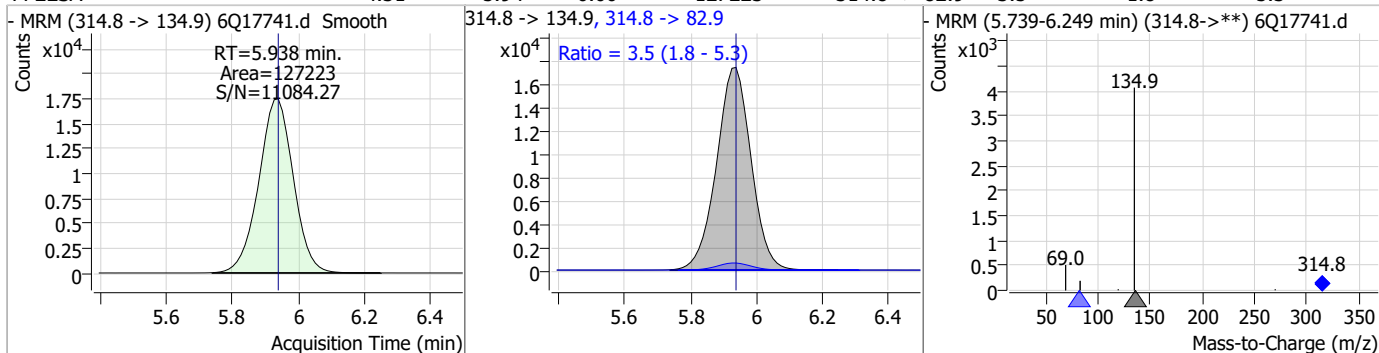
7.7.5
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Perfluorinated Compounds by LC/MS/MS

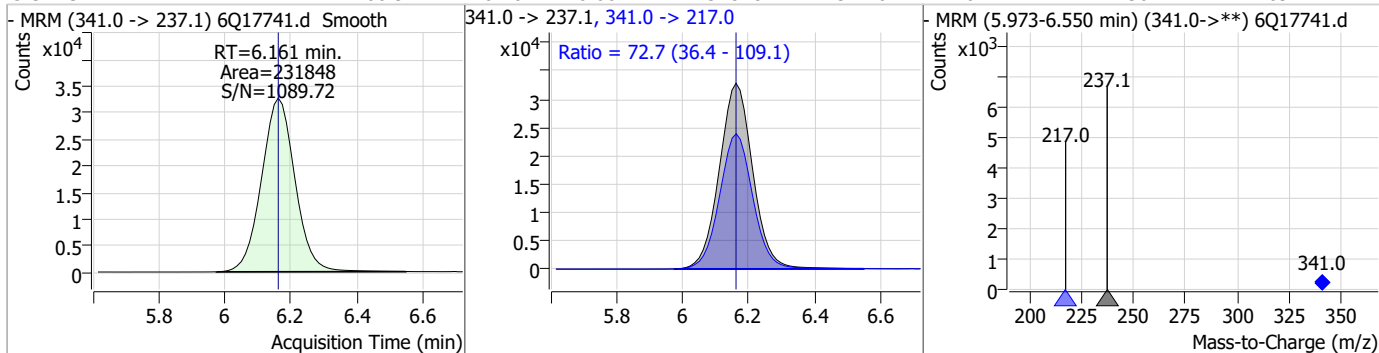
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.69	5.83	0.00	15379	284.9 -> 184.9	13.7	6.9	20.6



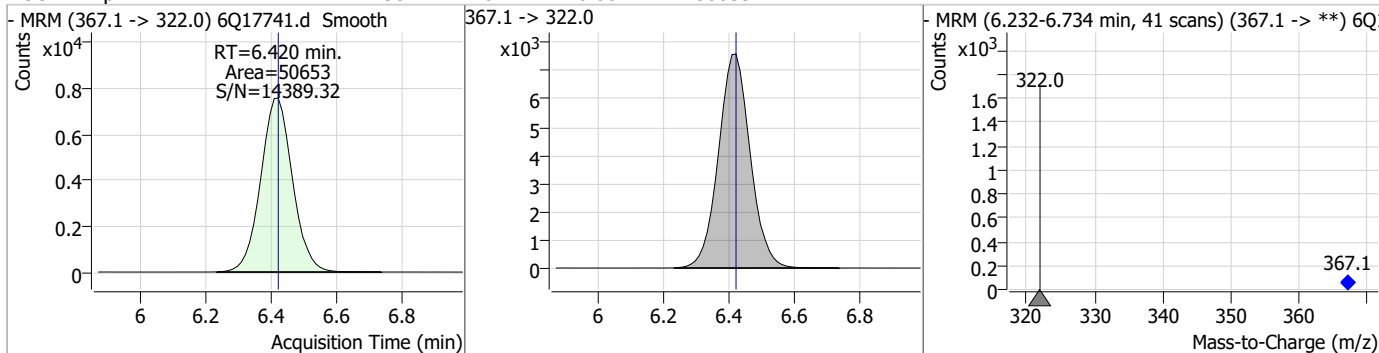
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.31	5.94	0.00	127223	314.8 -> 82.9	3.5	1.8	5.3



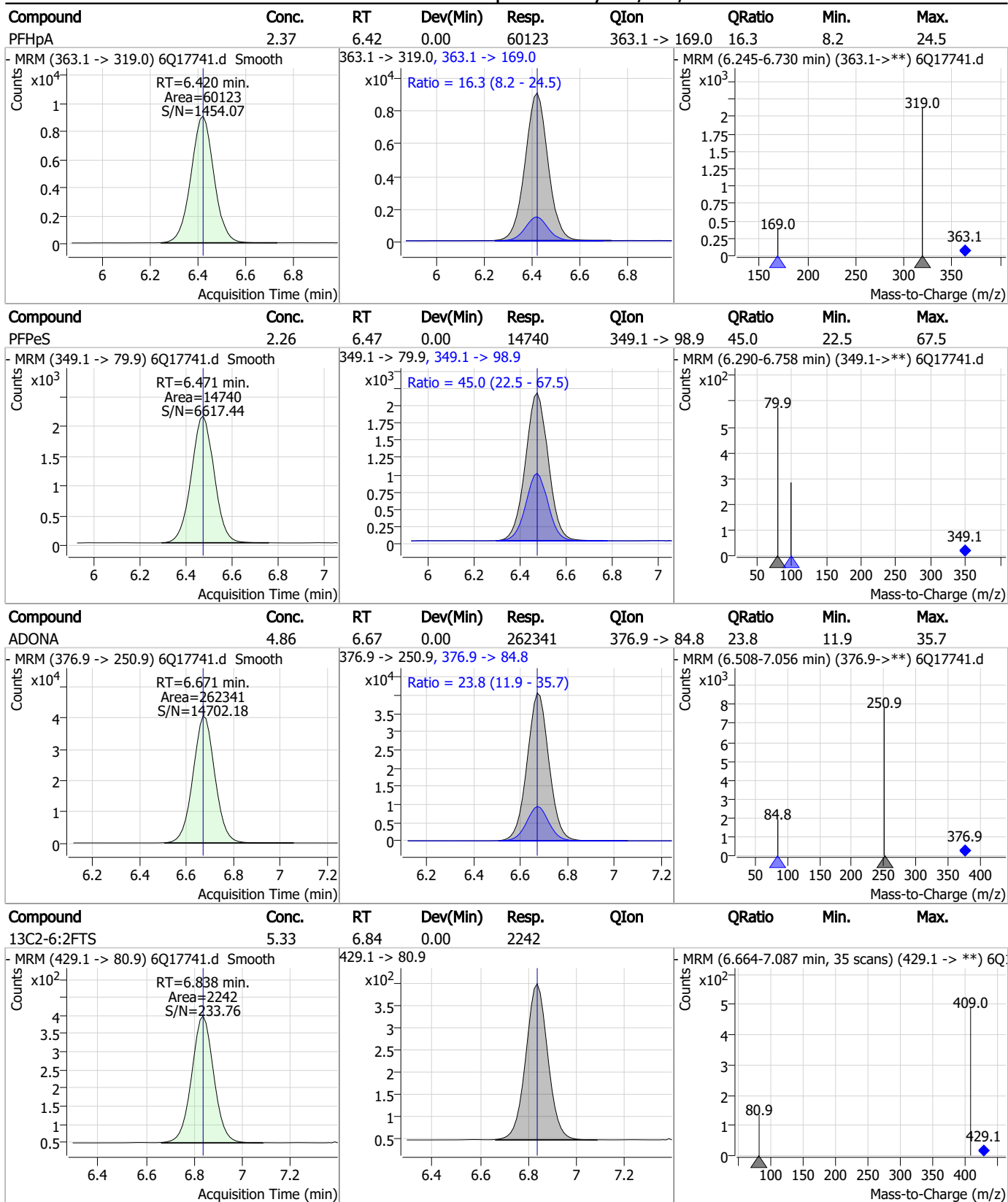
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.92	6.16	0.00	231848	341.0 -> 217.0	72.7	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.38	6.42	0.00	50653	367.1 -> 322.0			

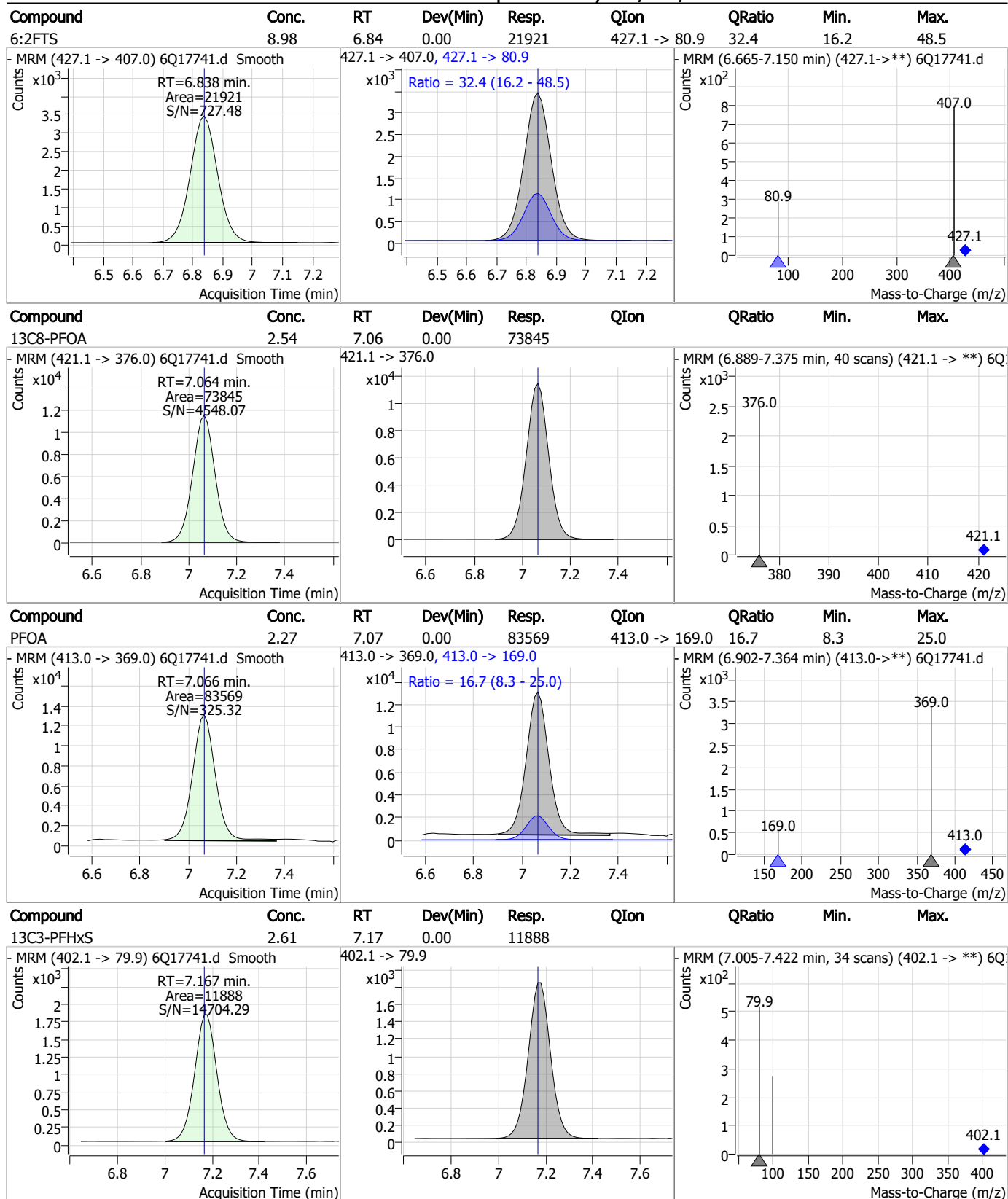


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

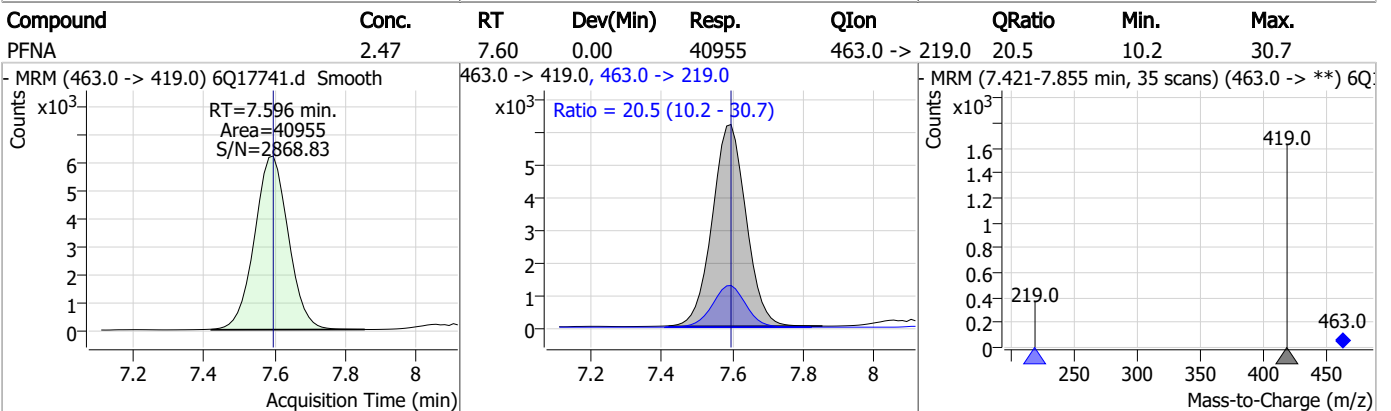
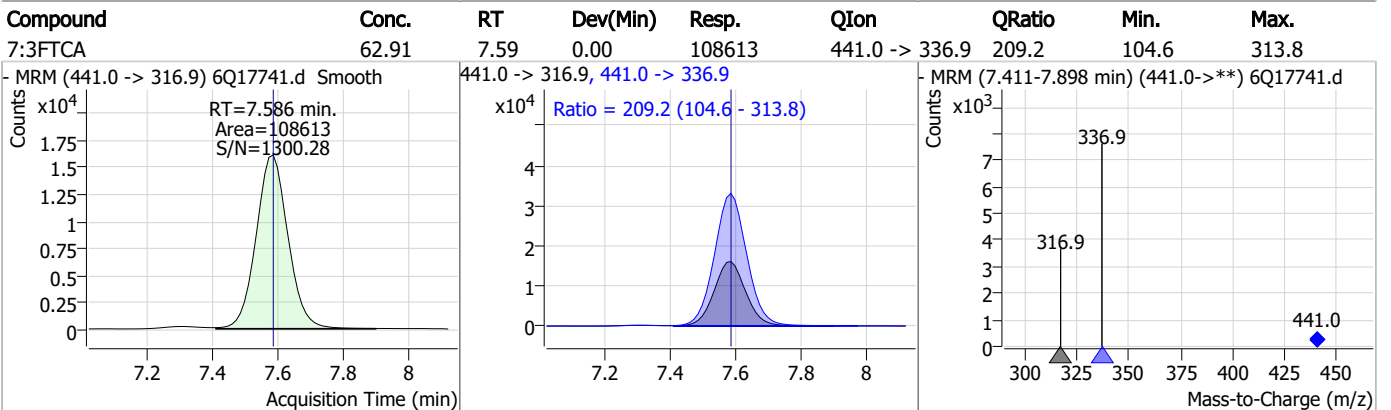
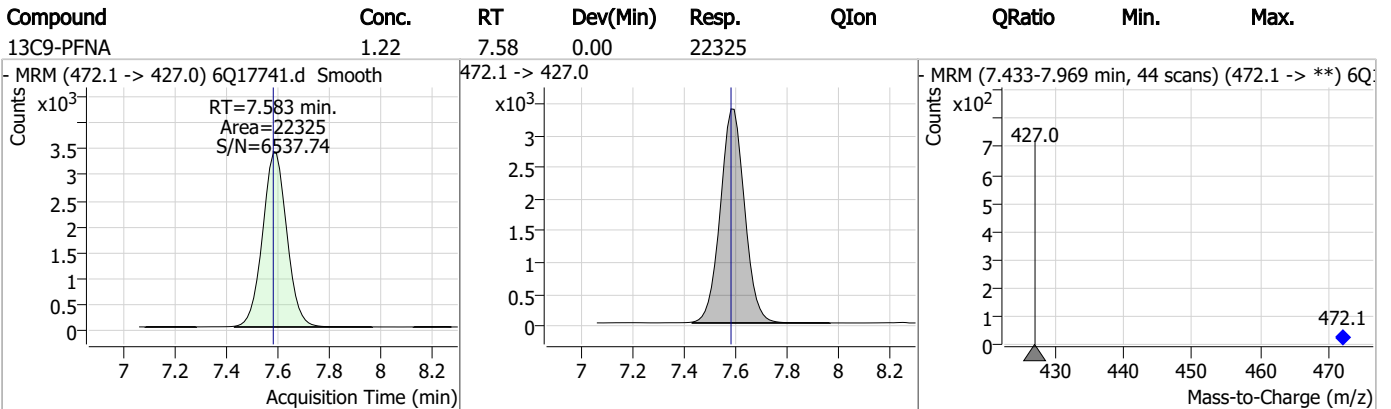
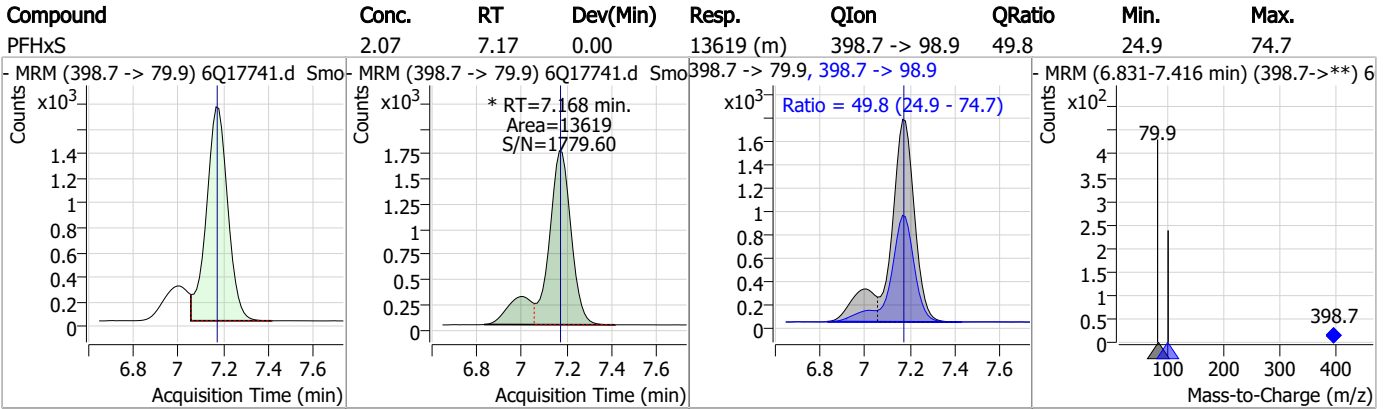
Perfluorinated Compounds by LC/MS/MS



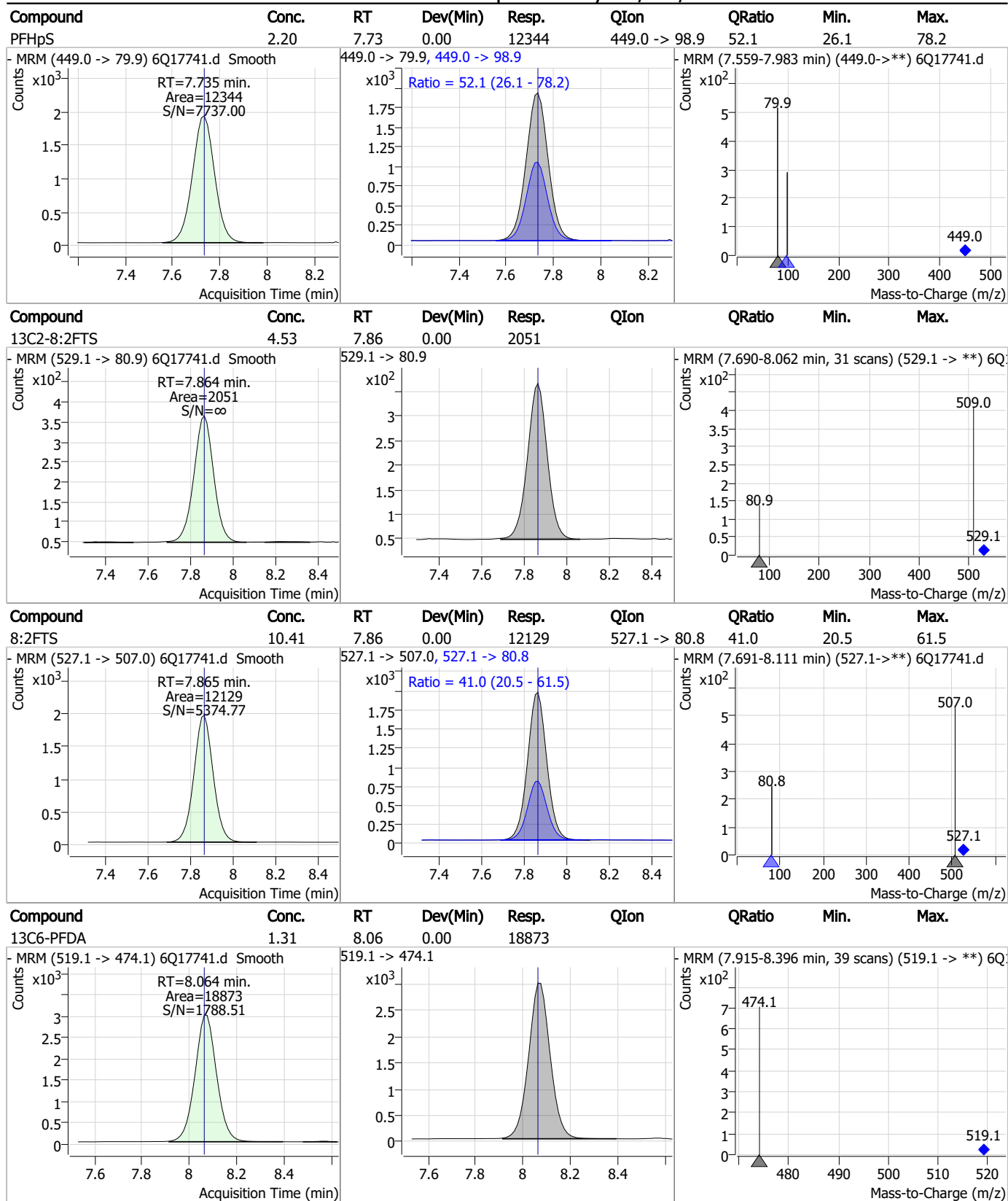
7.7.5

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Perfluorinated Compounds by LC/MS/MS



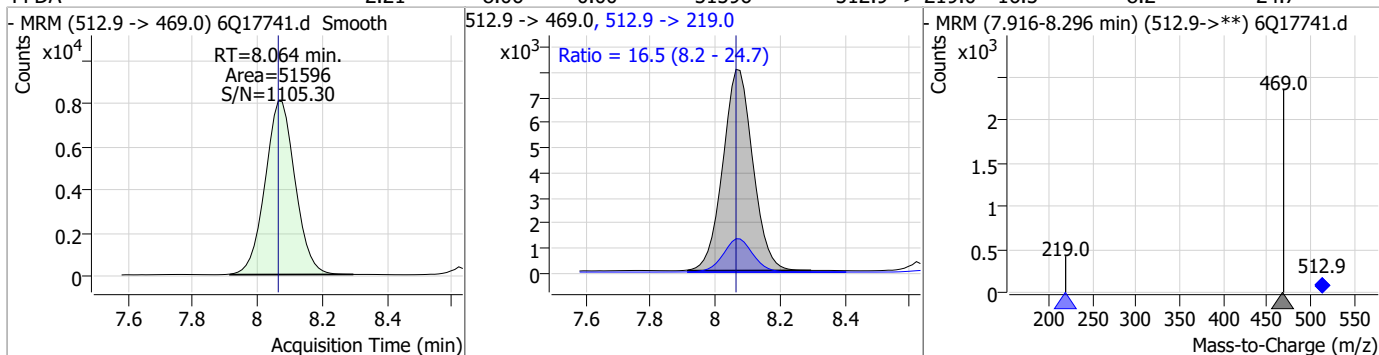
Perfluorinated Compounds by LC/MS/MS



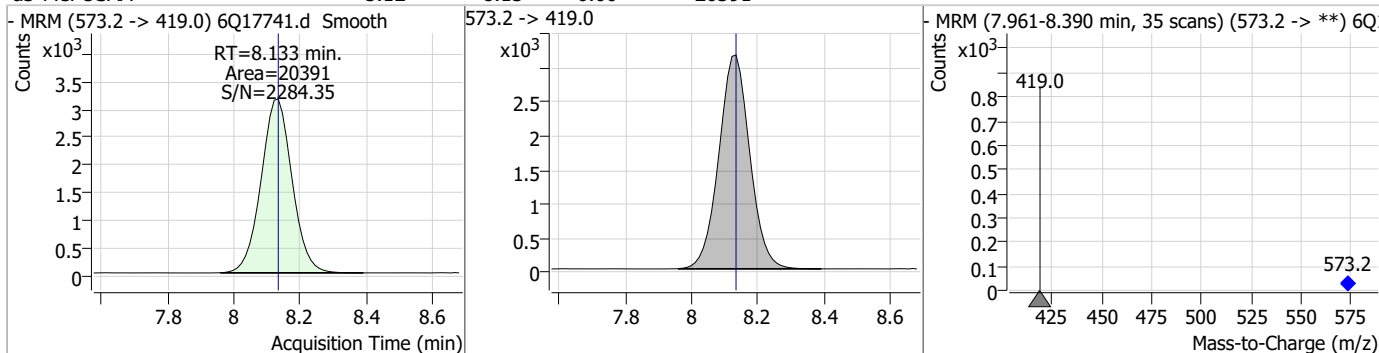
7.7.5
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Perfluorinated Compounds by LC/MS/MS

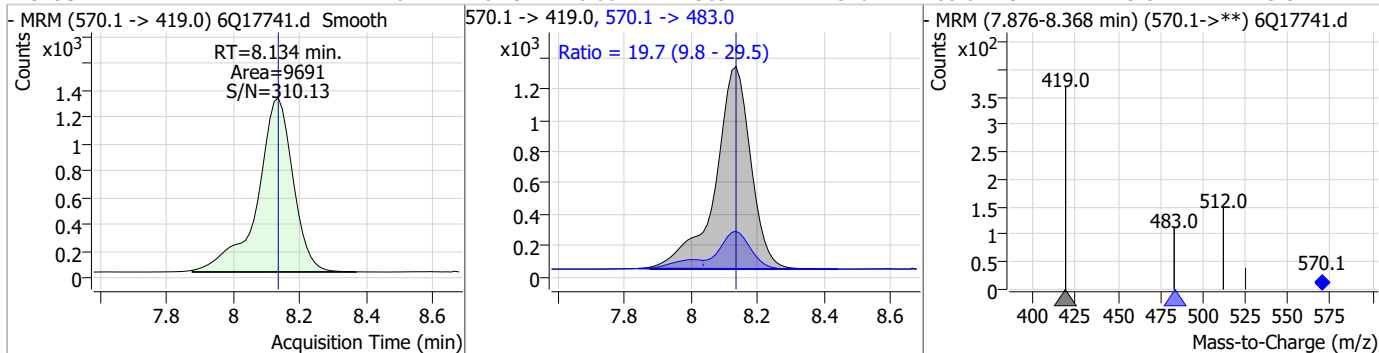
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.21	8.06	0.00	51596	512.9 -> 219.0	16.5	8.2	24.7



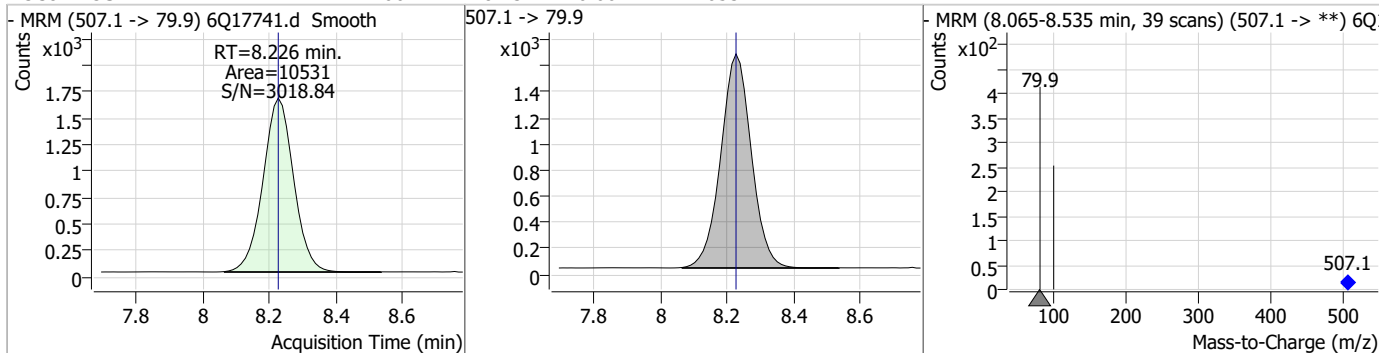
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.12	8.13	0.00	20391				



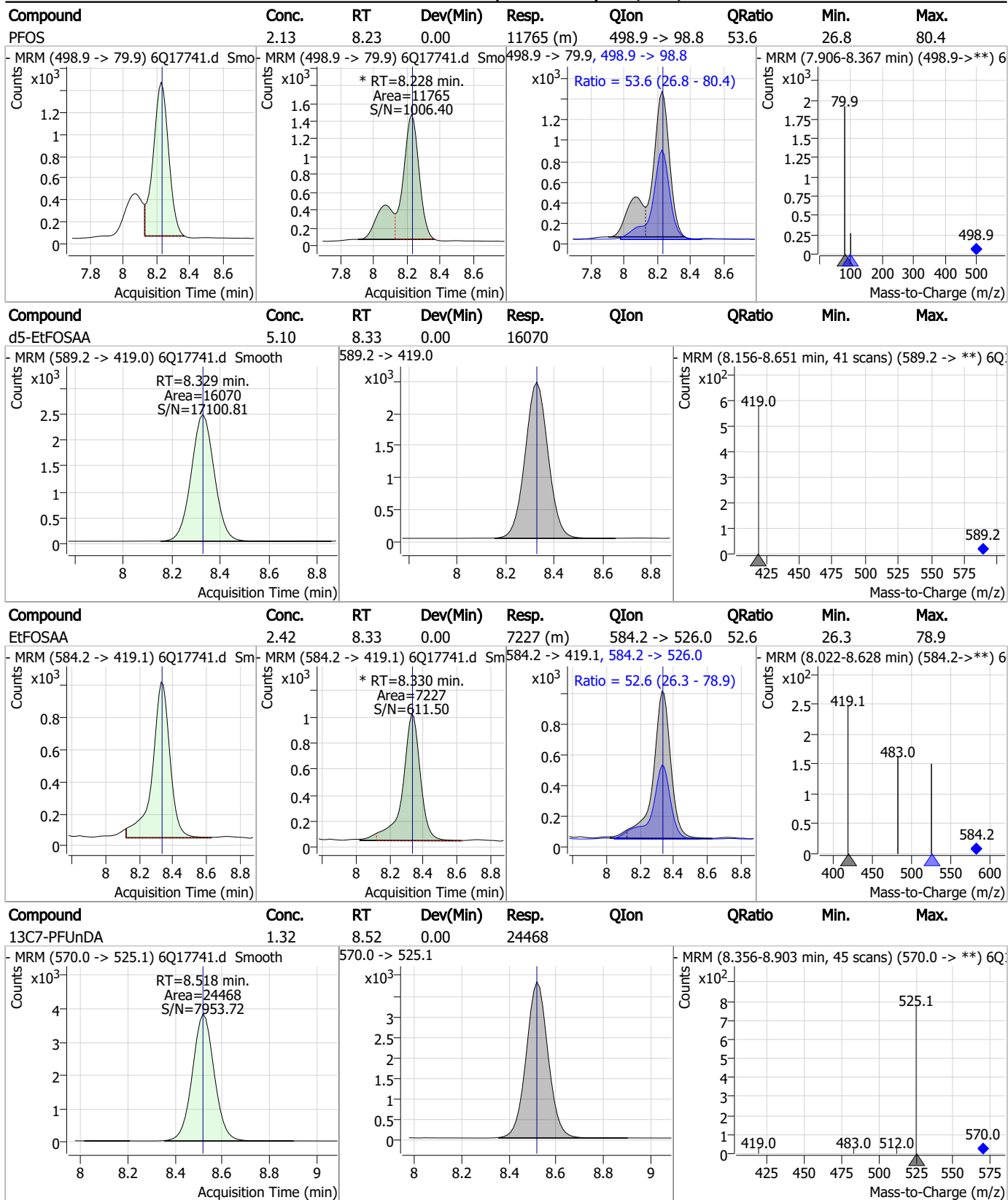
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.46	8.13	0.00	9691	570.1 -> 483.0	19.7	9.8	29.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.66	8.23	0.00	10531				

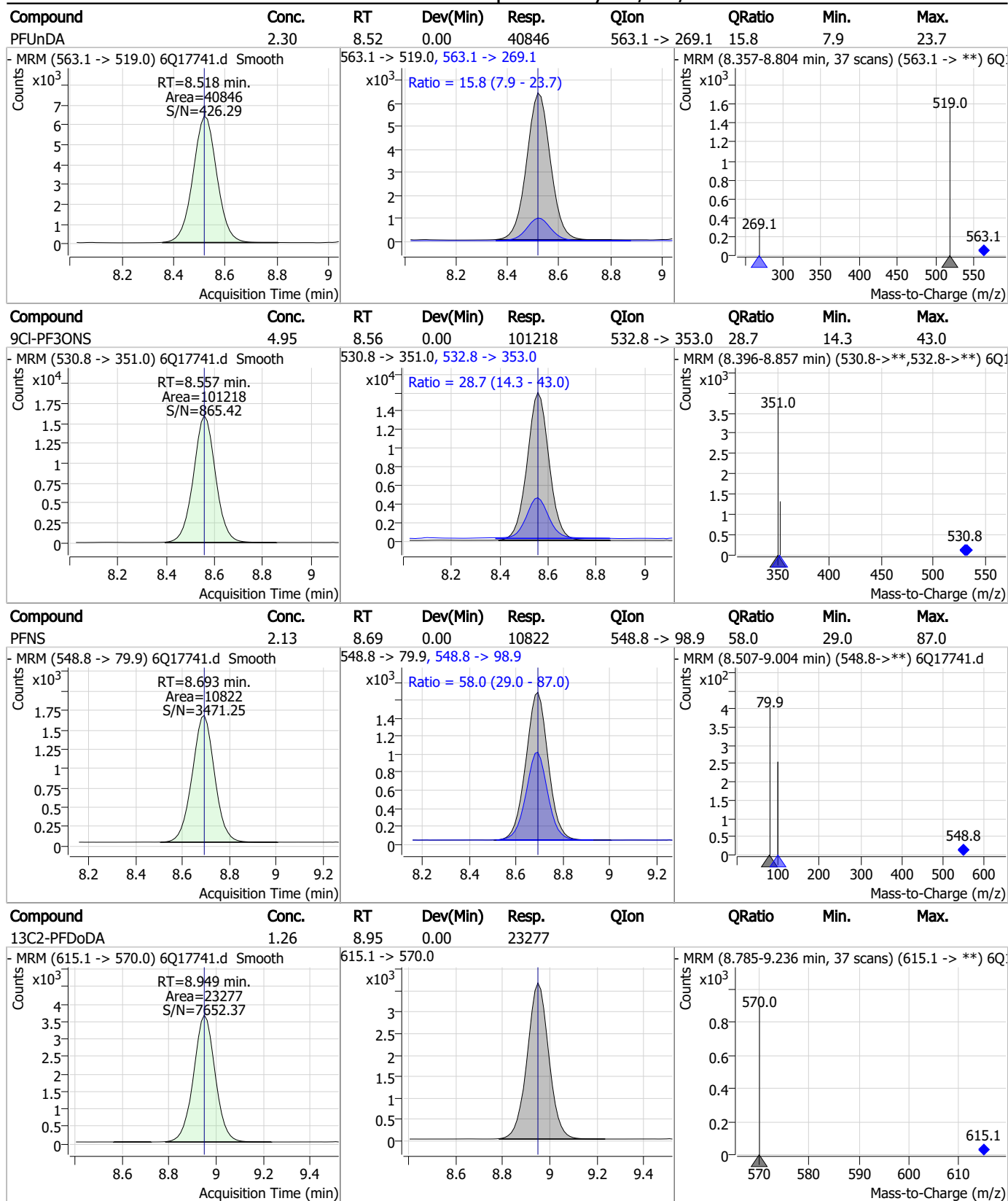


Perfluorinated Compounds by LC/MS/MS



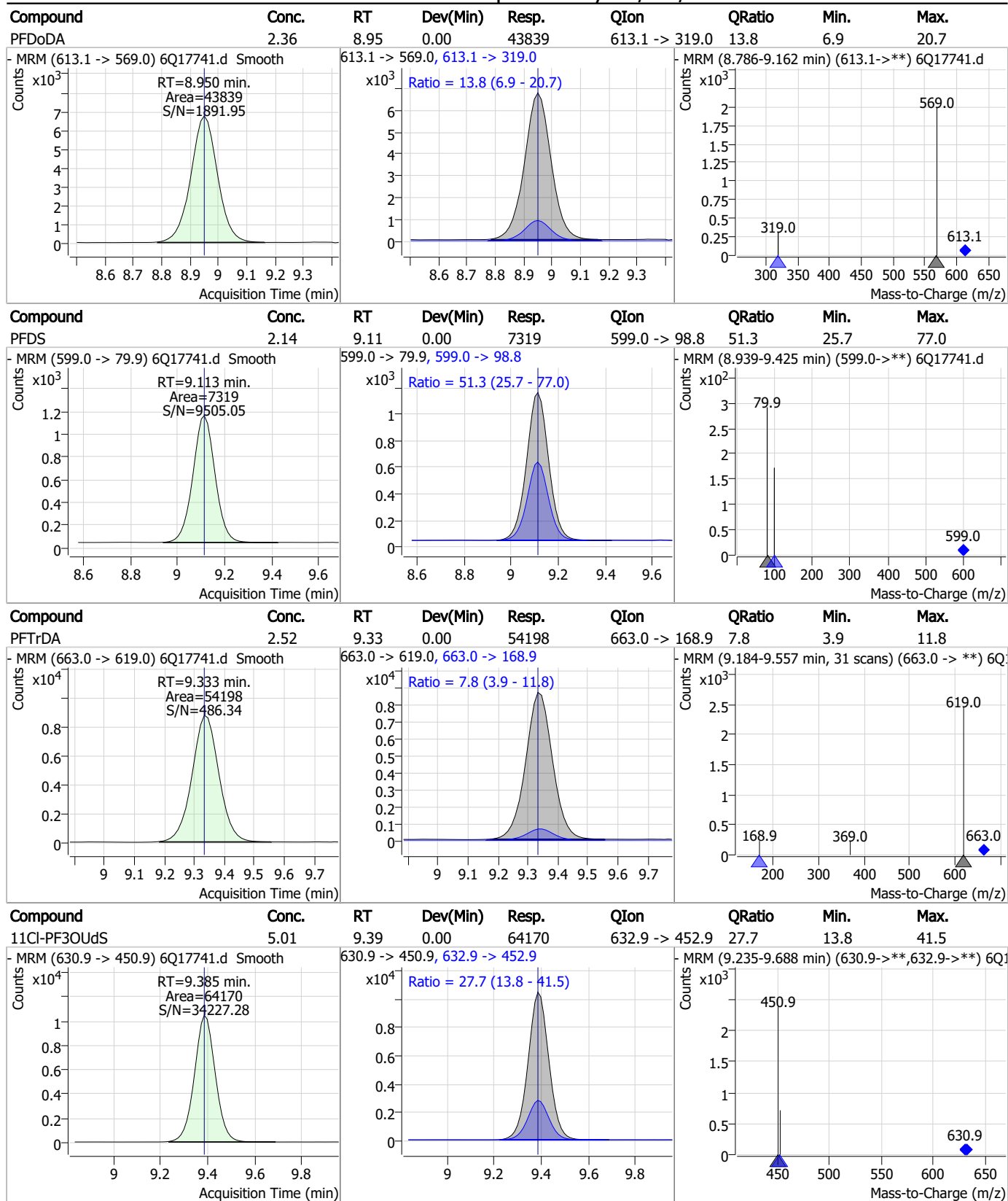
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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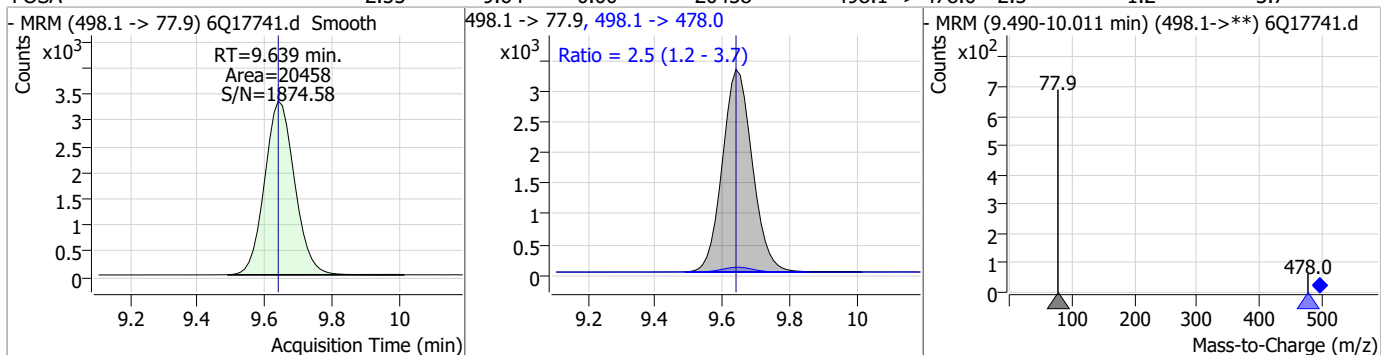
Perfluorinated Compounds by LC/MS/MS



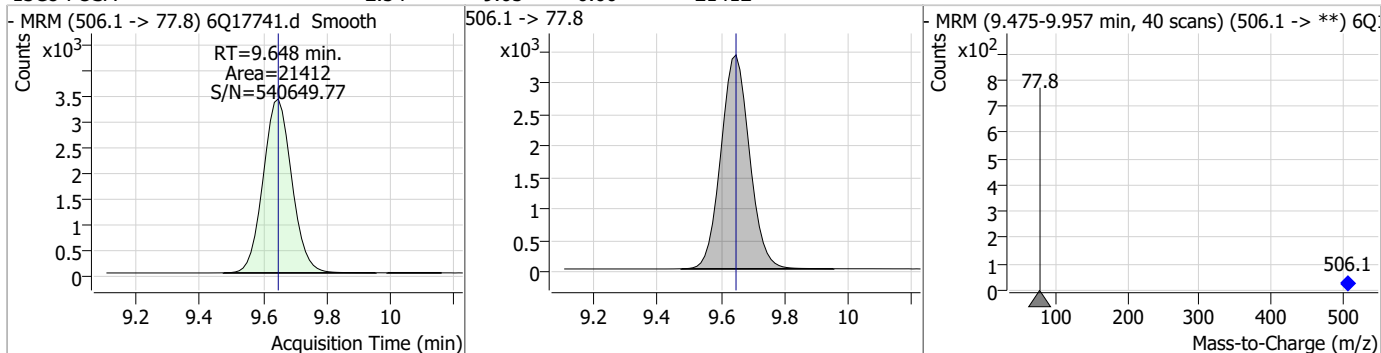
7.7.5
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Perfluorinated Compounds by LC/MS/MS

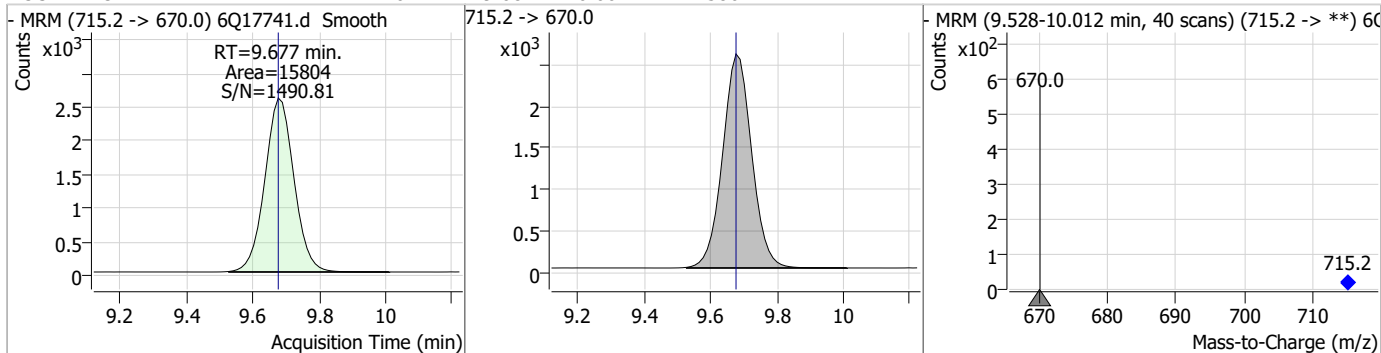
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.55	9.64	0.00	20458	498.1 -> 478.0	2.5	1.2	3.7



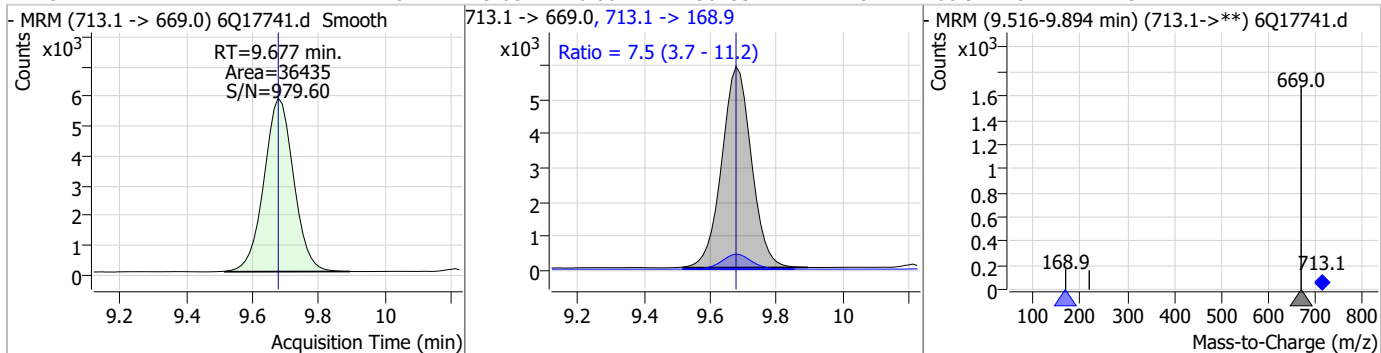
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.54	9.65	0.00	21412				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.68	0.00	15804				

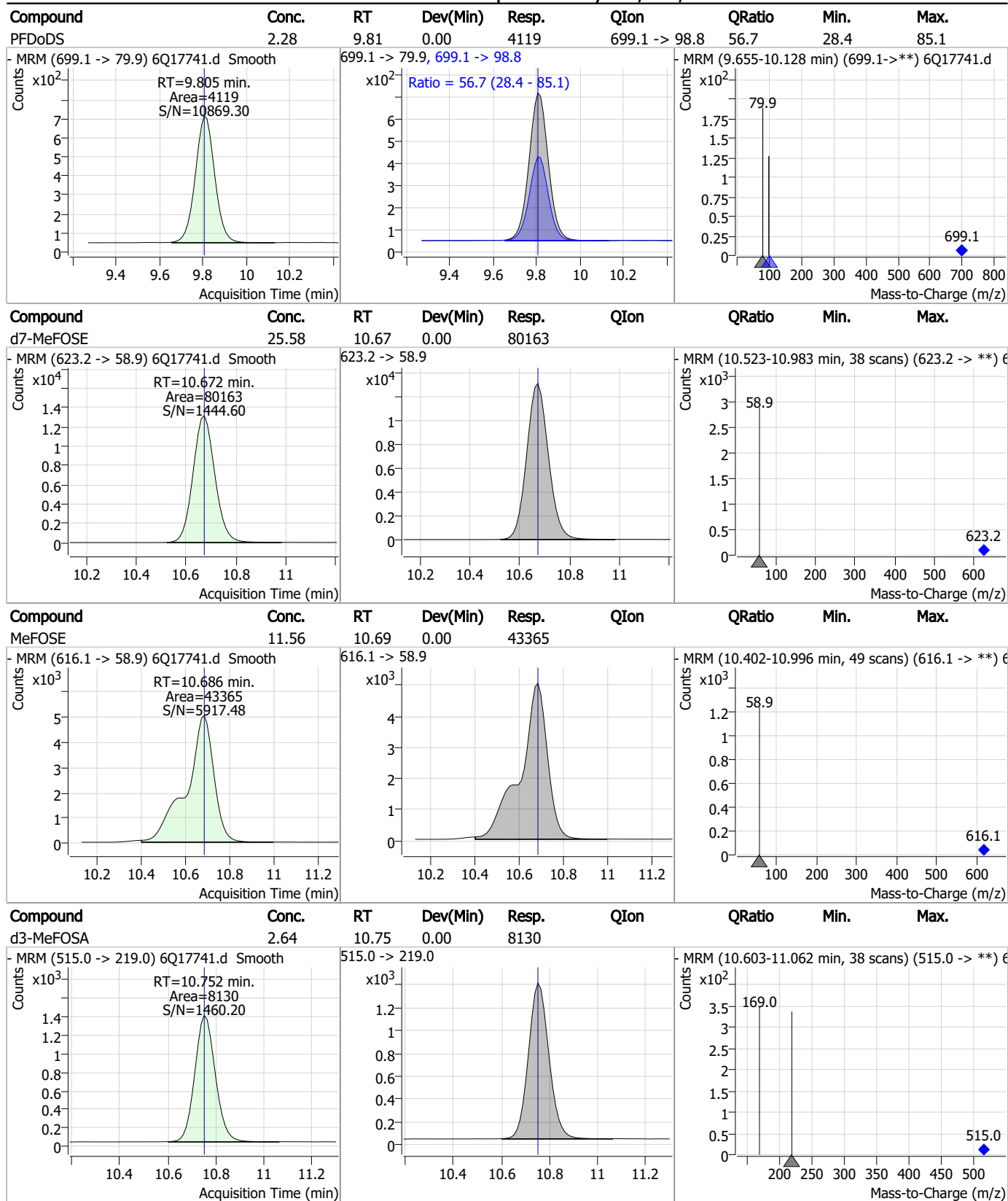


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.25	9.68	0.00	36435	713.1 -> 168.9	7.5	3.7	11.2



7.7.5
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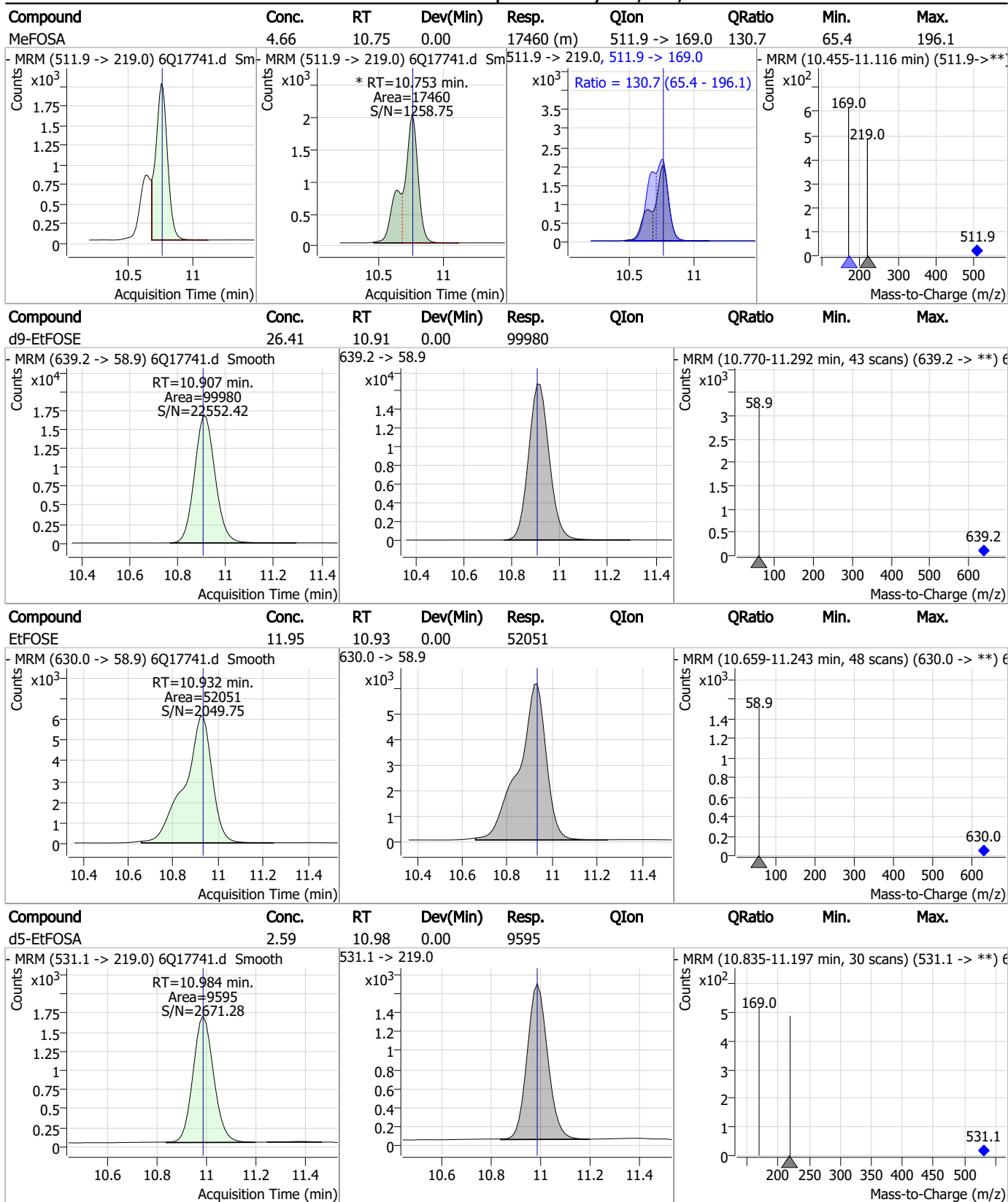
Perfluorinated Compounds by LC/MS/MS



7.7.5

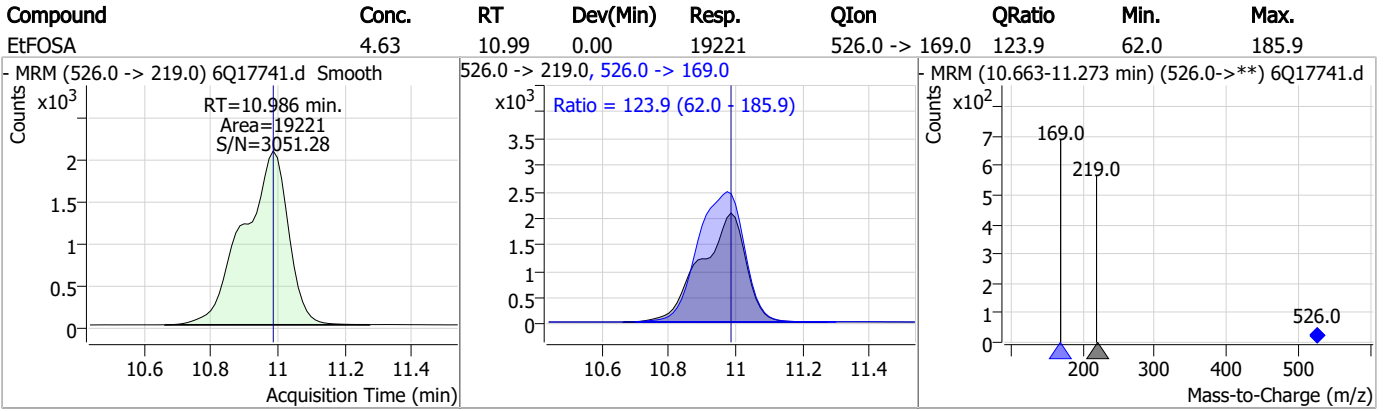
7

Perfluorinated Compounds by LC/MS/MS



7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5

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Manual Integration Approval Summary

Sample Number: S6Q268-ICC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17741.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 12:58 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.33	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.5.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 05/16/23 09:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17742.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 1:13:23 PM
 Sample Name : ic268-5
 Vial : P1-A6
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	154979	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	49652	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	56080	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	47814	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	70761	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	22087	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	16704	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	23286	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	22026	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14624	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	21051	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	18944	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11385	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9861	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1625	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2105	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2209	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	20168	5.00 µg/L	-0.012
M3-HFPO-DA	5.844	286.9 -> 168.9	33470	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	15713	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	81306	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	93296	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8862	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7580	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12734	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	64783	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8613	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	71510	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	21963	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	26438	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	45411	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1625	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2105	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2209	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.1%		
13C2-PFDoDA	8.949	615.1 -> 570.0	22026	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14624	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.9%		
13C3-PFBS	5.397	302.1 -> 79.9	18944	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFHxS	7.179	402.1 -> 79.9	11385	2.48 µg/L	0.012

7.7.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFBA	2.901	216.8 -> 171.9	154979	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.420	367.1 -> 322.0	47814	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.466	318.0 -> 273.0	56080	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFPeA	4.272	268.3 -> 223.0	49652	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C6-PFDA	8.064	519.1 -> 474.1	16704	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C7-PFUnDA	8.518	570.0 -> 525.1	23286	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-FOSA	9.648	506.1 -> 77.8	21051	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-PFOA	7.064	421.1 -> 376.0	70761	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C8-PFOS	8.226	507.1 -> 79.9	9861	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C9-PFNA	7.595	472.1 -> 427.0	22087	1.13 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.4%	
d3-MeFOSAA	8.121	573.2 -> 419.0	20168	5.05 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	33470	10.07 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSA	10.752	515.0 -> 219.0	7580	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSAA	8.329	589.2 -> 419.0	15713	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d7-MeFOSE	10.672	623.2 -> 58.9	81306	25.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	93296	24.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d5-EtFOSA	10.984	531.1 -> 219.0	8862	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	46464	19.01 µg/L	96
		327.1 -> 80.9	18442		
6:2FTS	6.838	427.1 -> 407.0	45907	20.04 µg/L	98
		427.1 -> 80.9	15427		
8:2FTS	7.865	527.1 -> 507.0	25595	20.39 µg/L	97
		527.1 -> 80.8	10085		
EtFOSAA	8.330	584.2 -> 419.1	14404	4.92 µg/L	98
		584.2 -> 526.0	7826		
FOSA	9.639	498.1 -> 77.9	40782	5.18 µg/L	99
		498.1 -> 478.0	1202		
MeFOSAA	8.134	570.1 -> 419.0	20449	5.24 µg/L	94
		570.1 -> 483.0	3498		
PFBA	2.907	212.8 -> 168.9	117567	21.15 µg/L	100
PFBS	5.398	298.7 -> 79.9	42082	4.55 µg/L	99
		298.7 -> 98.8	15763		
PFDA	8.064	512.9 -> 469.0	122031	5.90 µg/L	94
		512.9 -> 219.0	17166		
PFDoDA	8.950	613.1 -> 569.0	88721	5.06 µg/L	99
		613.1 -> 319.0	12530		
PFDS	9.113	599.0 -> 79.9	16397	5.12 µg/L	94

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	7725			
PFHpA	6.420	363.1 -> 319.0	129162	5.41	µg/L	99
		363.1 -> 169.0	21414			
PFHpS	7.735	449.0 -> 79.9	26529	5.04	µg/L	91
		449.0 -> 98.9	12200			
PFHxA	5.469	313.0 -> 269.0	111647	5.03	µg/L	99
		313.0 -> 118.9	5629			
PFHxS	7.168	398.7 -> 79.9	30746	4.88	µg/L	m 93
		398.7 -> 98.9	13867			
PFNA	7.596	463.0 -> 419.0	91442	5.57	µg/L	99
		463.0 -> 219.0	18250			
PFNS	8.693	548.8 -> 79.9	23308	4.89	µg/L	97
		548.8 -> 98.9	13048			
PFOA	7.066	413.0 -> 369.0	184090	5.23	µg/L	100
		413.0 -> 169.0	30371			
PFOS	8.228	498.9 -> 79.9	26487	5.12	µg/L	m 93
		498.9 -> 98.8	12809			
PFPeA	4.274	263.0 -> 219.0	152376	10.63	µg/L	100
PFPeS	6.471	349.1 -> 79.9	29887	4.78	µg/L	95
		349.1 -> 98.9	14517			
PFTeDA	9.677	713.1 -> 669.0	83618	5.58	µg/L	99
		713.1 -> 168.9	5857			
PFTrDA	9.333	663.0 -> 619.0	112031	5.51	µg/L	98
		663.0 -> 168.9	9557			
PFUnDA	8.518	563.1 -> 519.0	89058	5.27	µg/L	97
		563.1 -> 269.1	12942			
11CI-PF3OUdS	9.385	630.9 -> 450.9	127693	10.10	µg/L	93
		632.9 -> 452.9	40305			
9CI-PF3ONS	8.557	530.8 -> 351.0	206005	10.20	µg/L	98
		532.8 -> 353.0	61324			
ADONA	6.671	376.9 -> 250.9	560569	10.52	µg/L	98
		376.9 -> 84.8	138528			
HFPO-DA	5.845	284.9 -> 168.9	34922	10.79	µg/L	100
		284.9 -> 184.9	4757			
3:3FTCA	3.790	241.0 -> 177.0	23041	25.93	µg/L	100
		241.0 -> 117.0	3048			
5:3FTCA	6.161	341.0 -> 237.1	502344	130.51	µg/L	96
		341.0 -> 217.0	346578			
7:3FTCA	7.586	441.0 -> 316.9	220712	126.40	µg/L	95
		441.0 -> 336.9	479959			
EtFOSA	10.986	526.0 -> 219.0	40843	10.65	µg/L	94
		526.0 -> 169.0	53457			
EtFOSE	10.920	630.0 -> 58.9	104491	25.70	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	37768	10.82	µg/L	m 96
		511.9 -> 169.0	50953			
MeFOSE	10.686	616.1 -> 58.9	96015	25.24	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	8719	5.15	µg/L	96
		699.1 -> 98.8	4713			
NFDHA	5.348	295.0 -> 201.0	25308	10.32	µg/L	99
		295.0 -> 84.9	6739			
PFMBA	4.675	279.0 -> 85.1	109014	10.65	µg/L	100
PFMPA	3.426	229.0 -> 84.9	78625	10.67	µg/L	100
PFEESA	5.938	314.8 -> 134.9	284595	9.54	µg/L	100
		314.8 -> 82.9	9680			

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

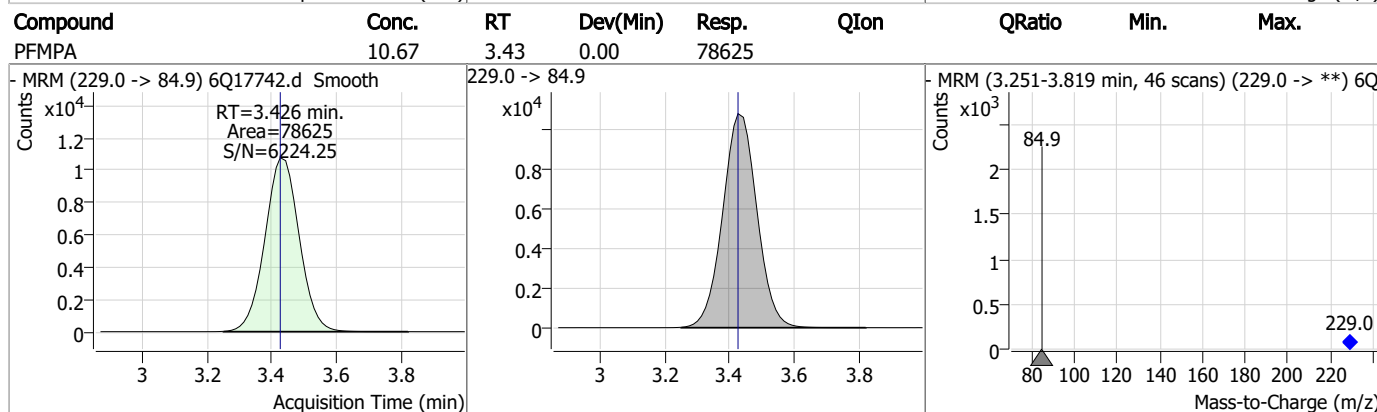
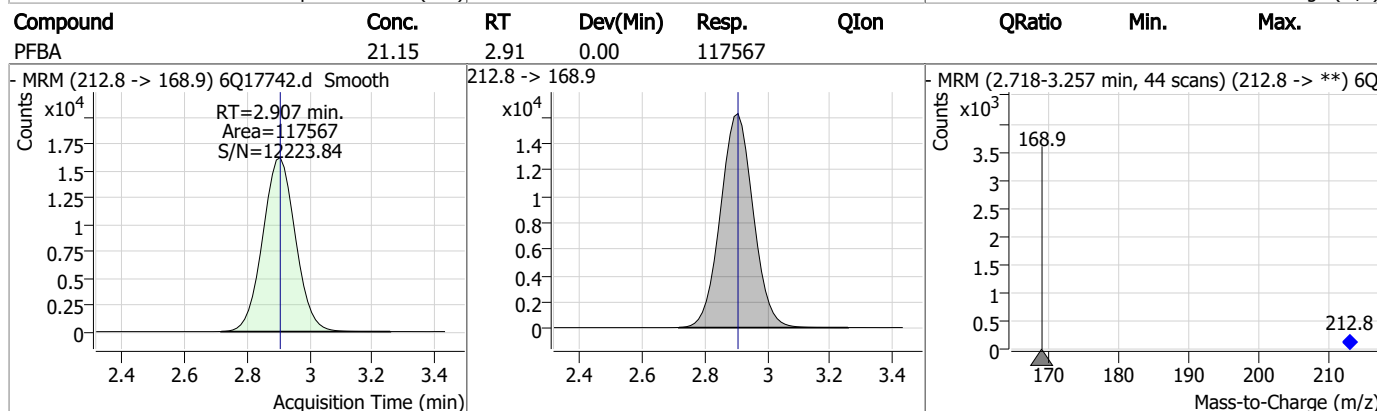
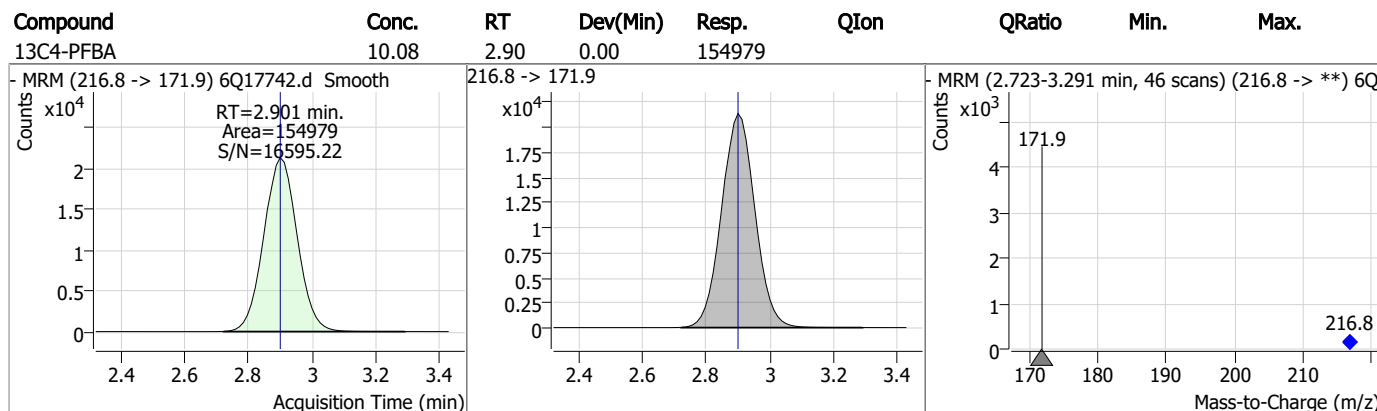
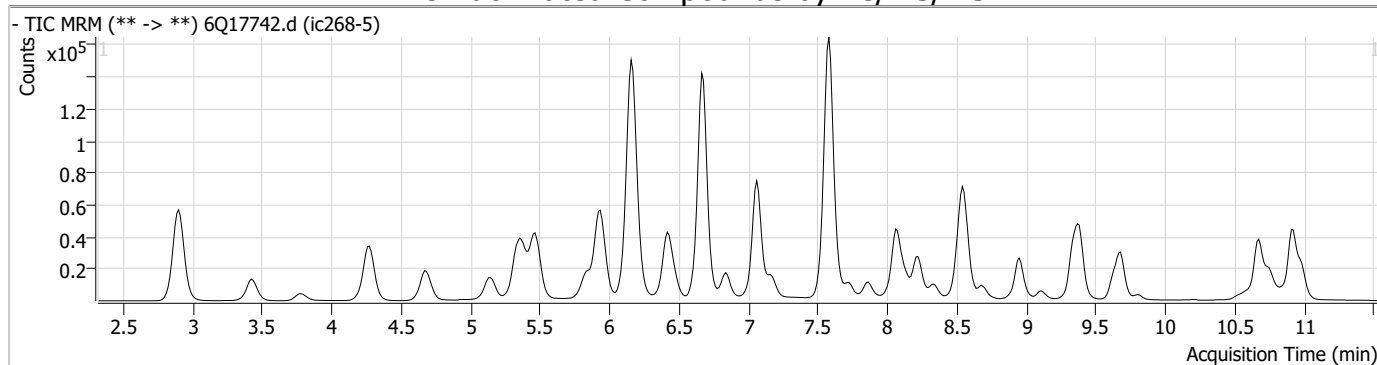
Perfluorinated Compounds by LC/MS/MS

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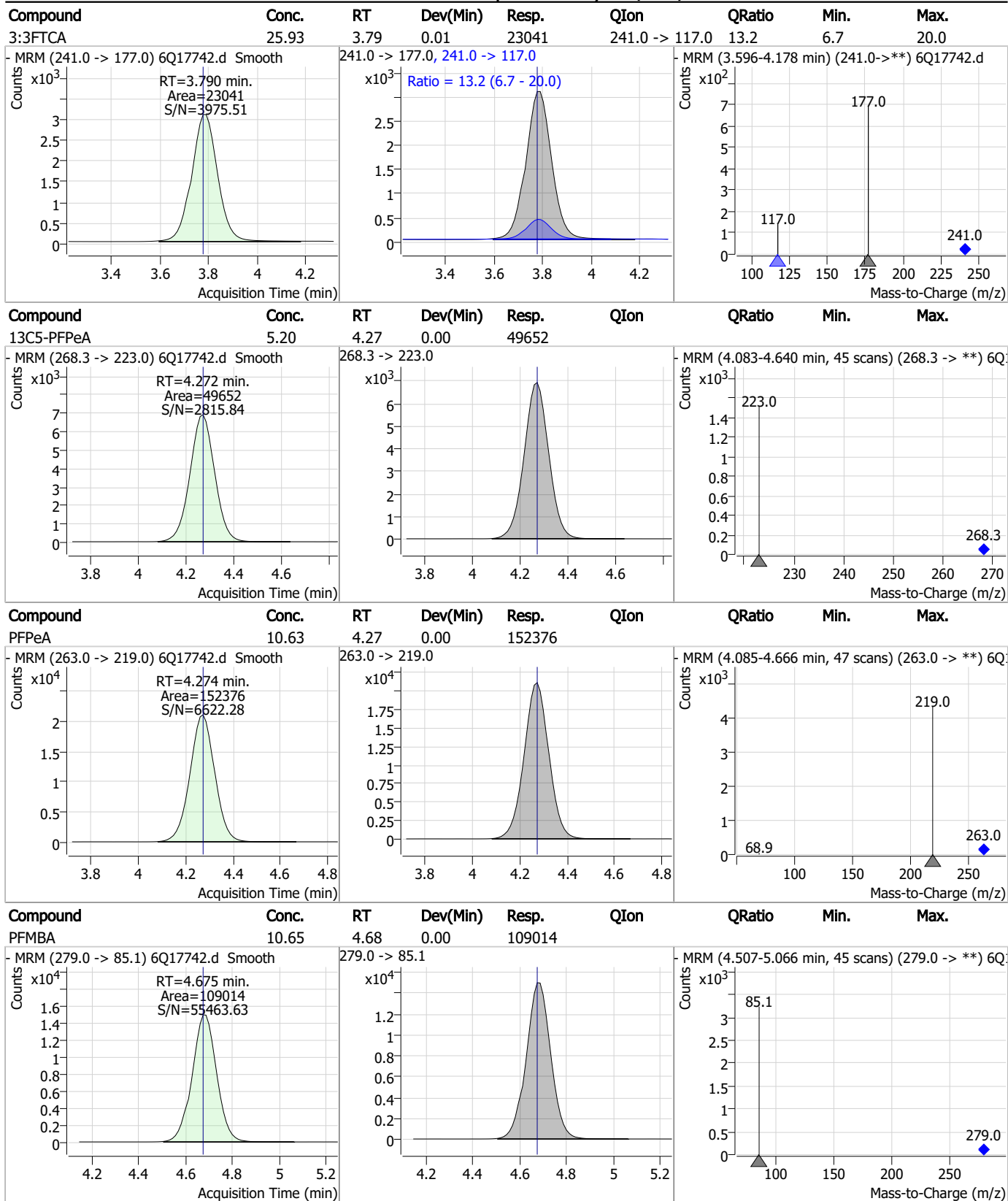
7.7.6
7



Perfluorinated Compounds by LC/MS/MS

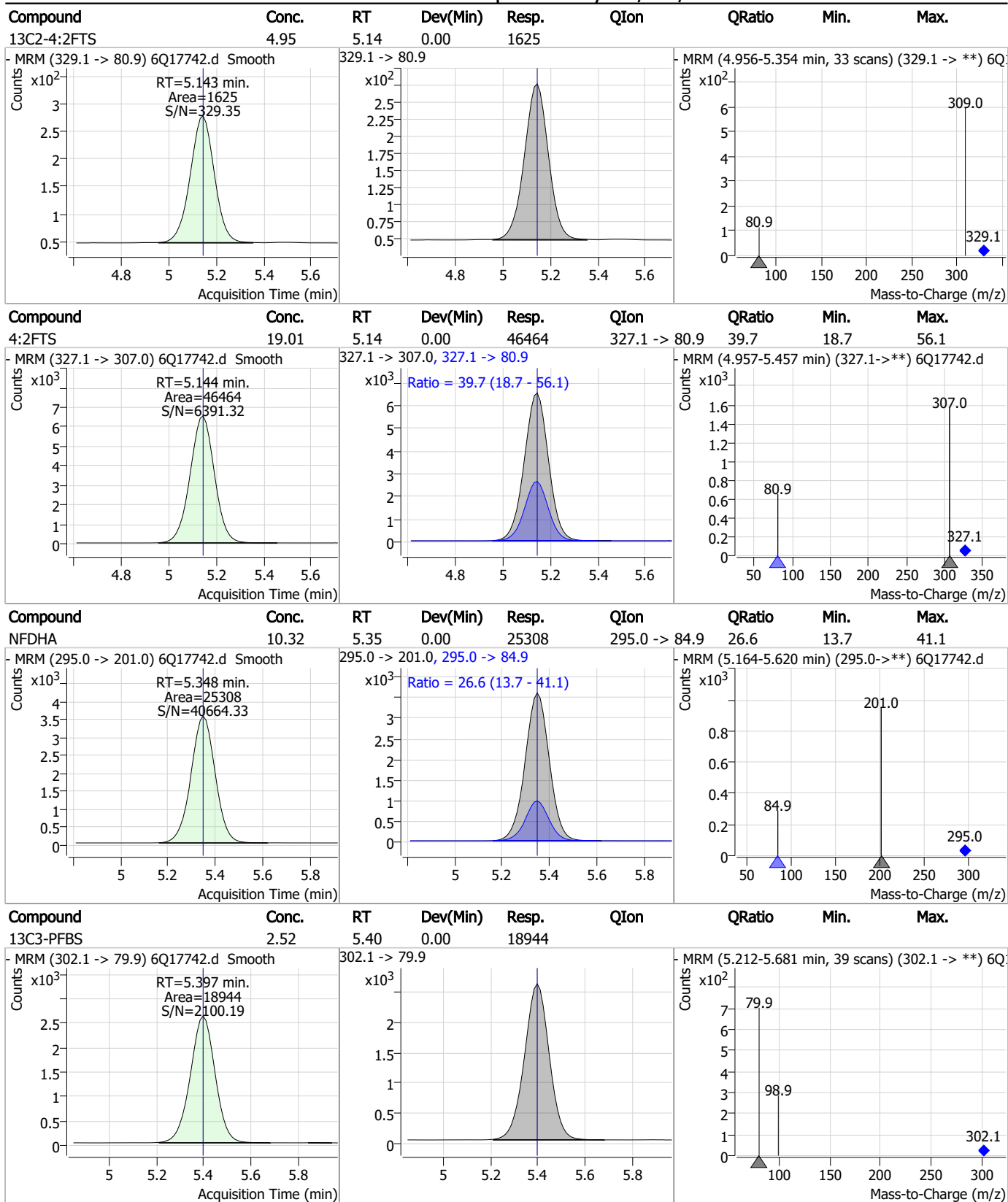


Perfluorinated Compounds by LC/MS/MS



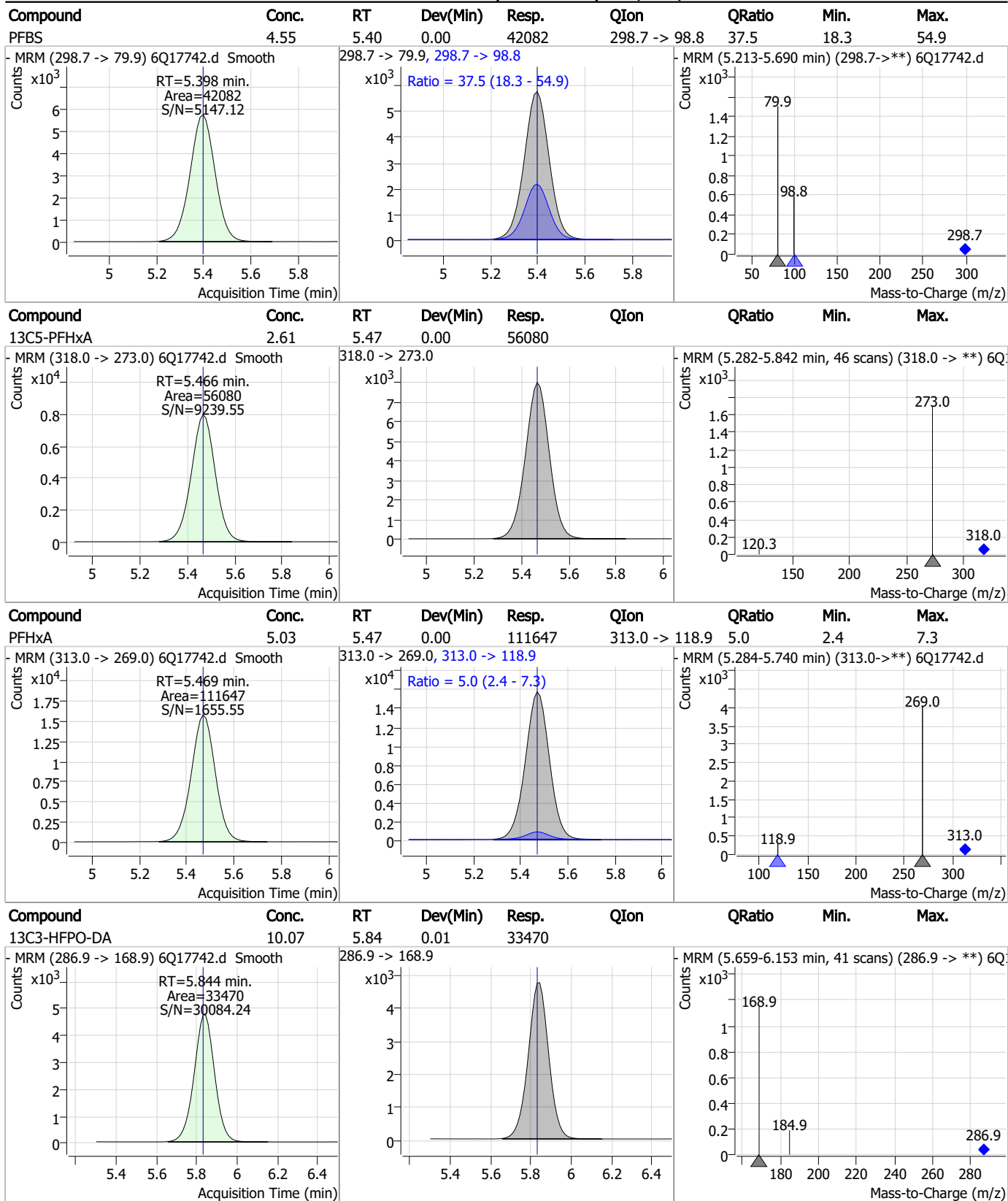
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

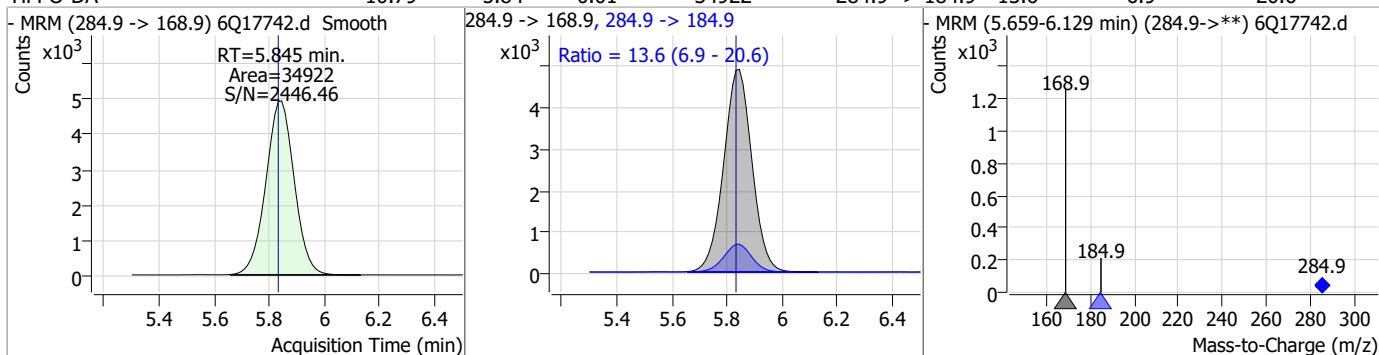
Perfluorinated Compounds by LC/MS/MS



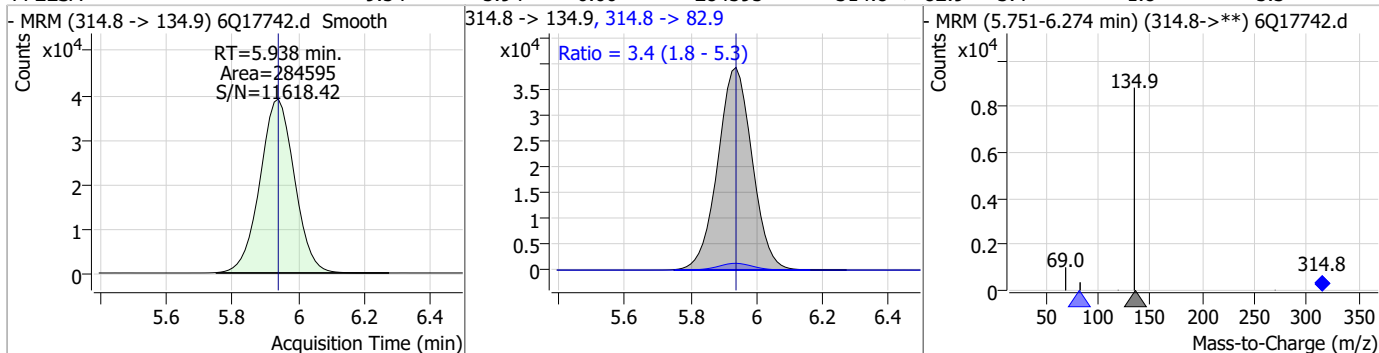
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

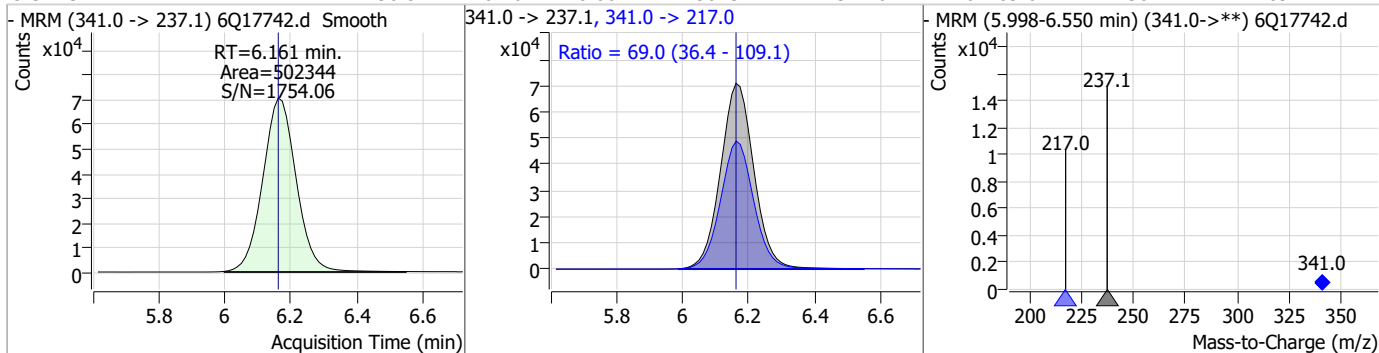
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.79	5.84	0.01	34922	284.9 -> 184.9	13.6	6.9	20.6



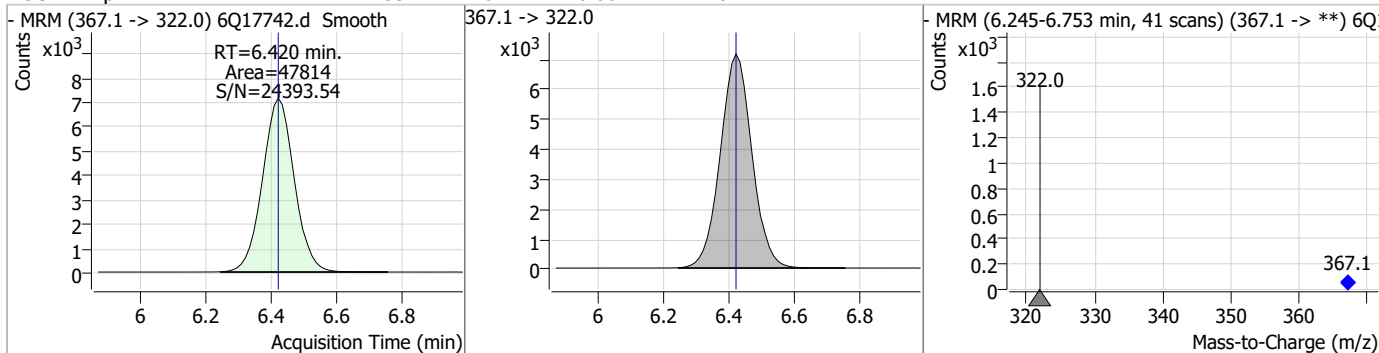
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	9.54	5.94	0.00	284595	314.8 -> 82.9	3.4	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	130.51	6.16	0.00	502344	341.0 -> 217.0	69.0	36.4	109.1

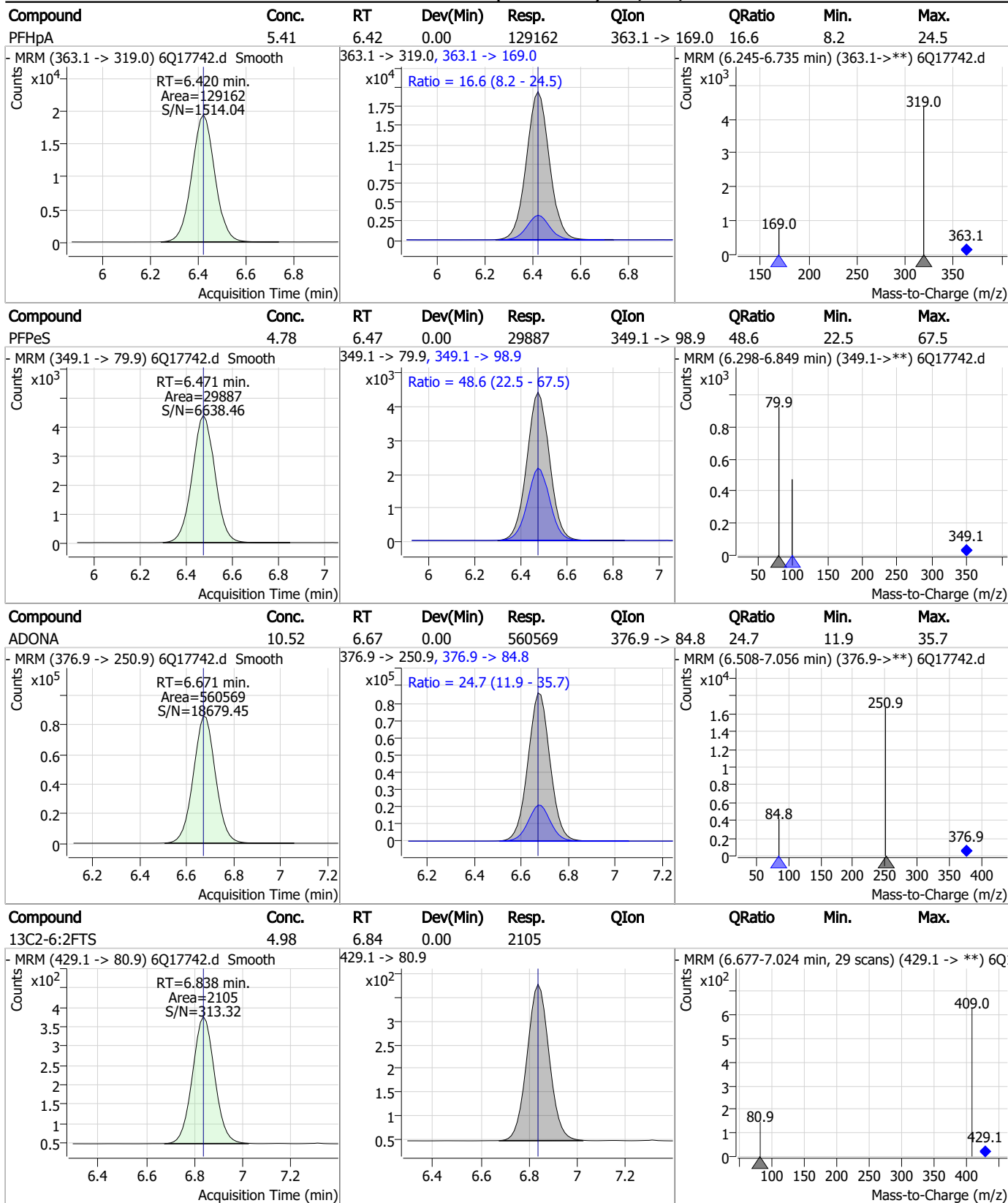


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.42	0.00	47814	367.1 -> 322.0			



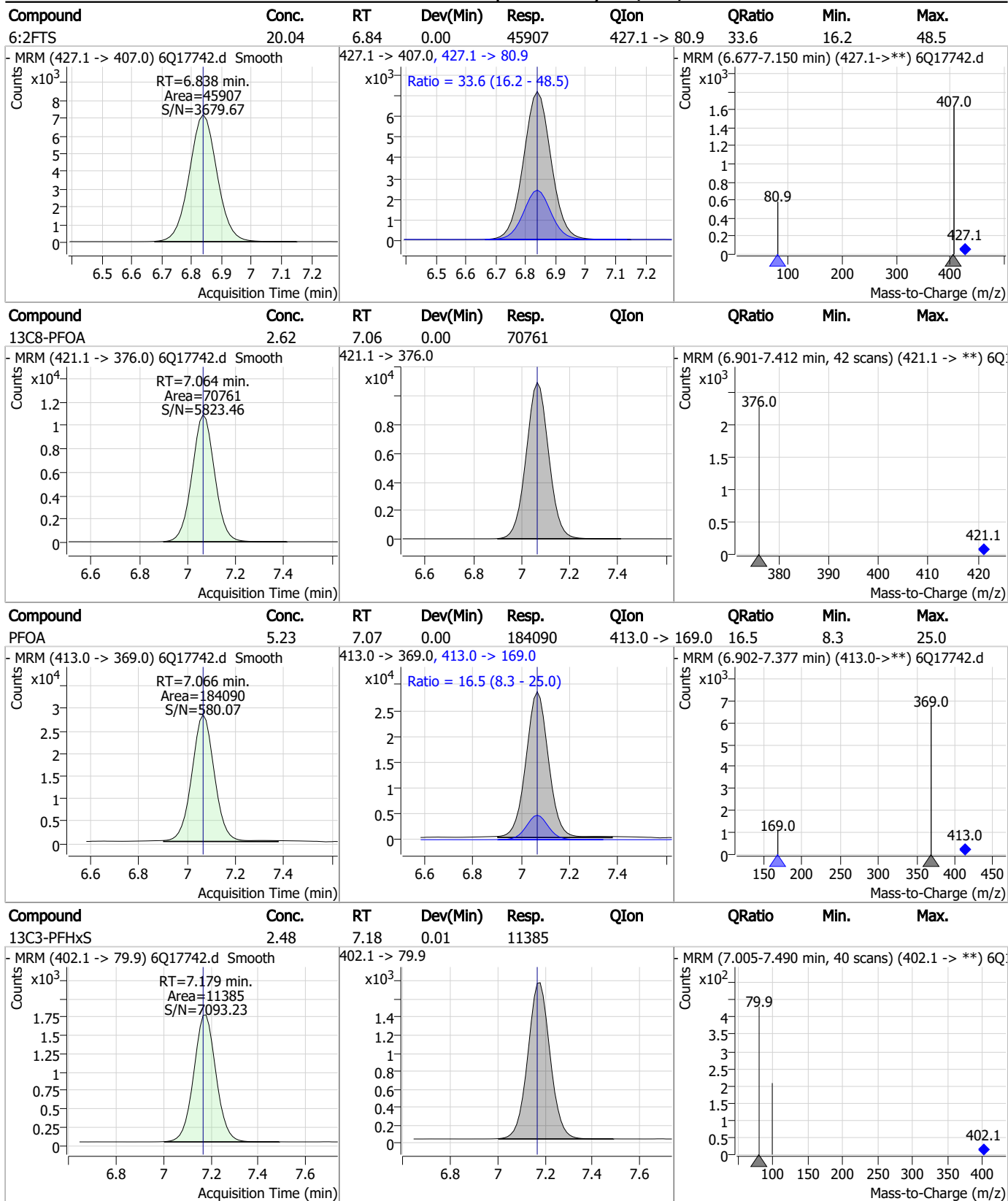
7.7.6
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Perfluorinated Compounds by LC/MS/MS



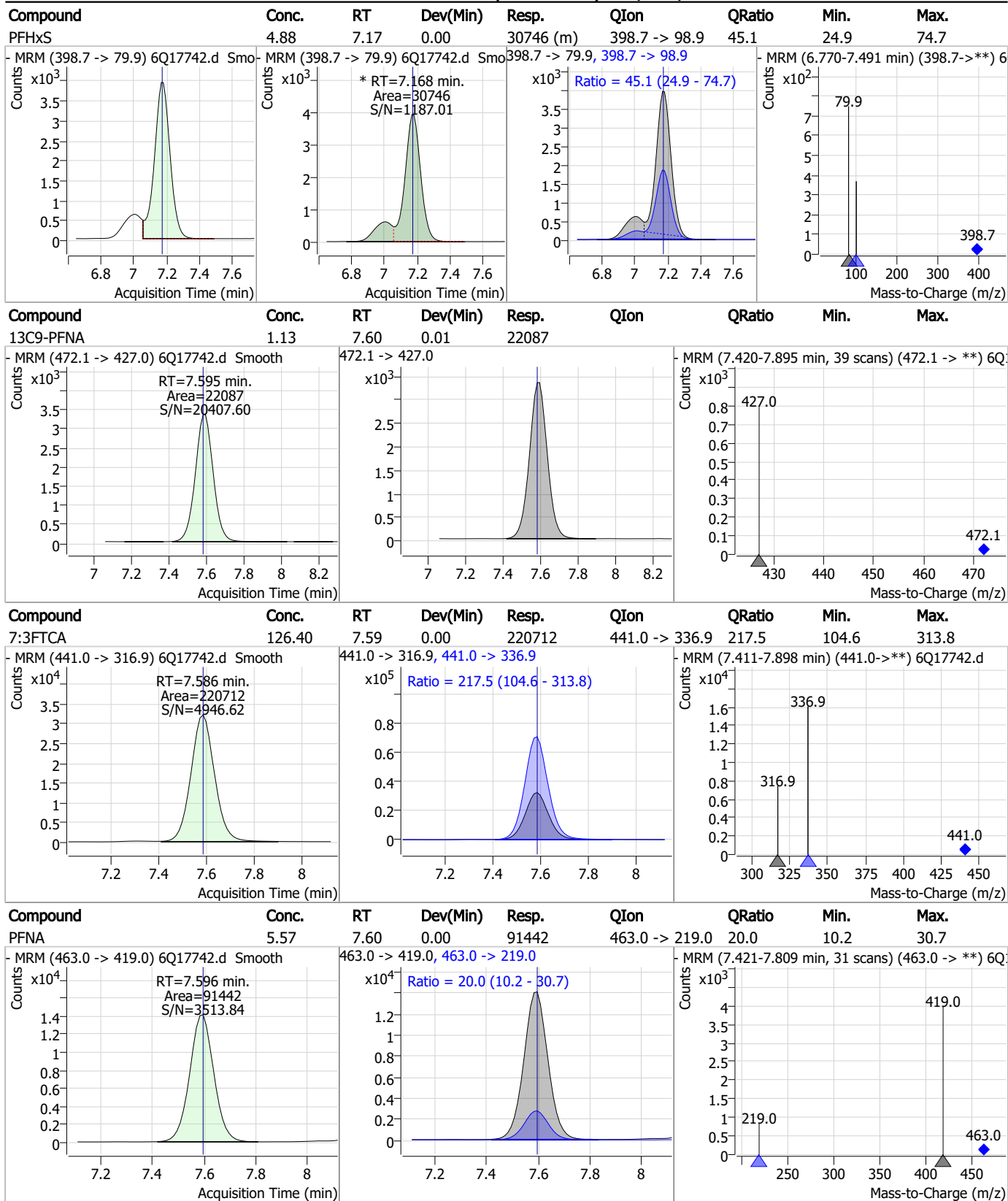
7.7.6
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Perfluorinated Compounds by LC/MS/MS



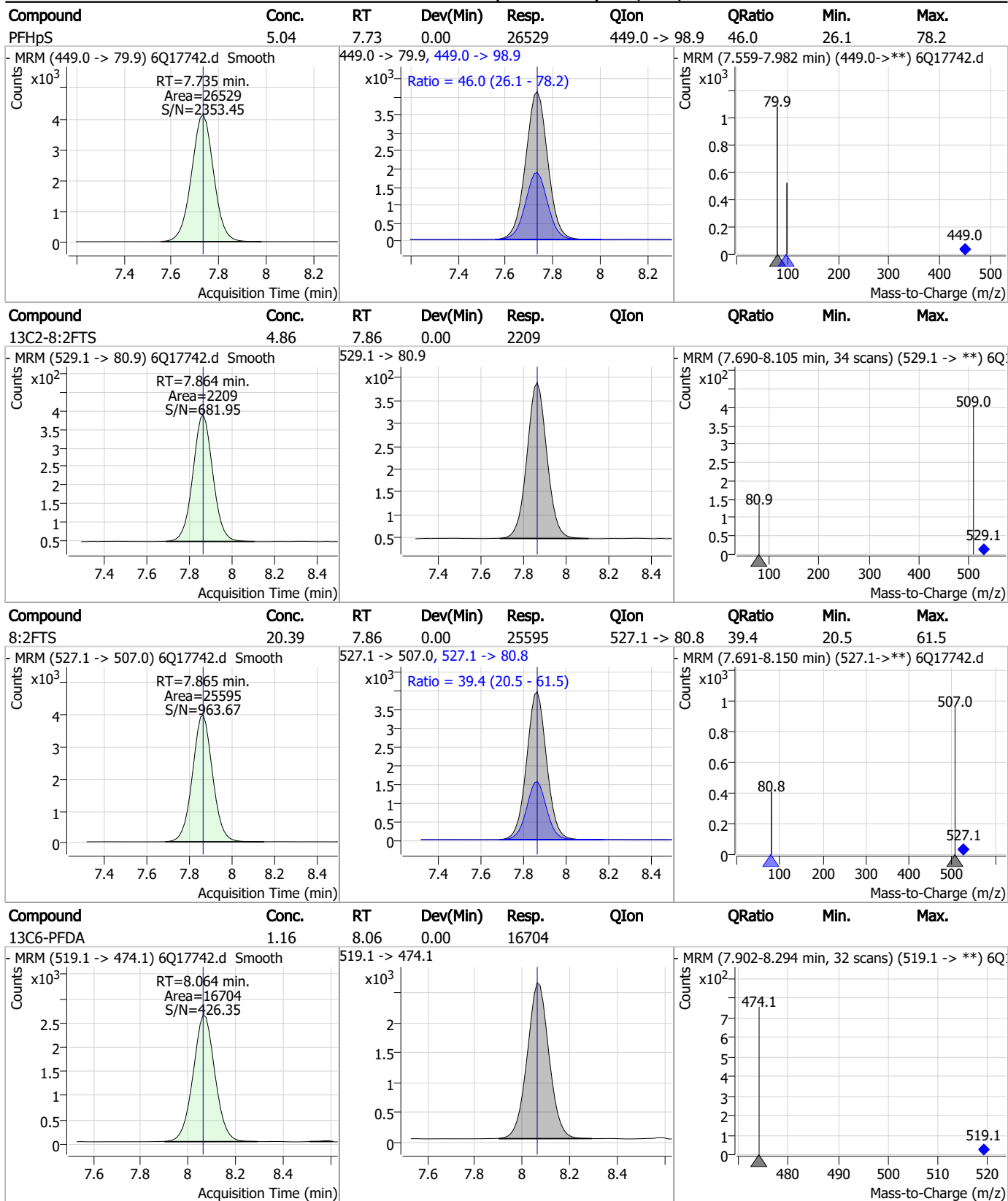
7.7.6
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Perfluorinated Compounds by LC/MS/MS



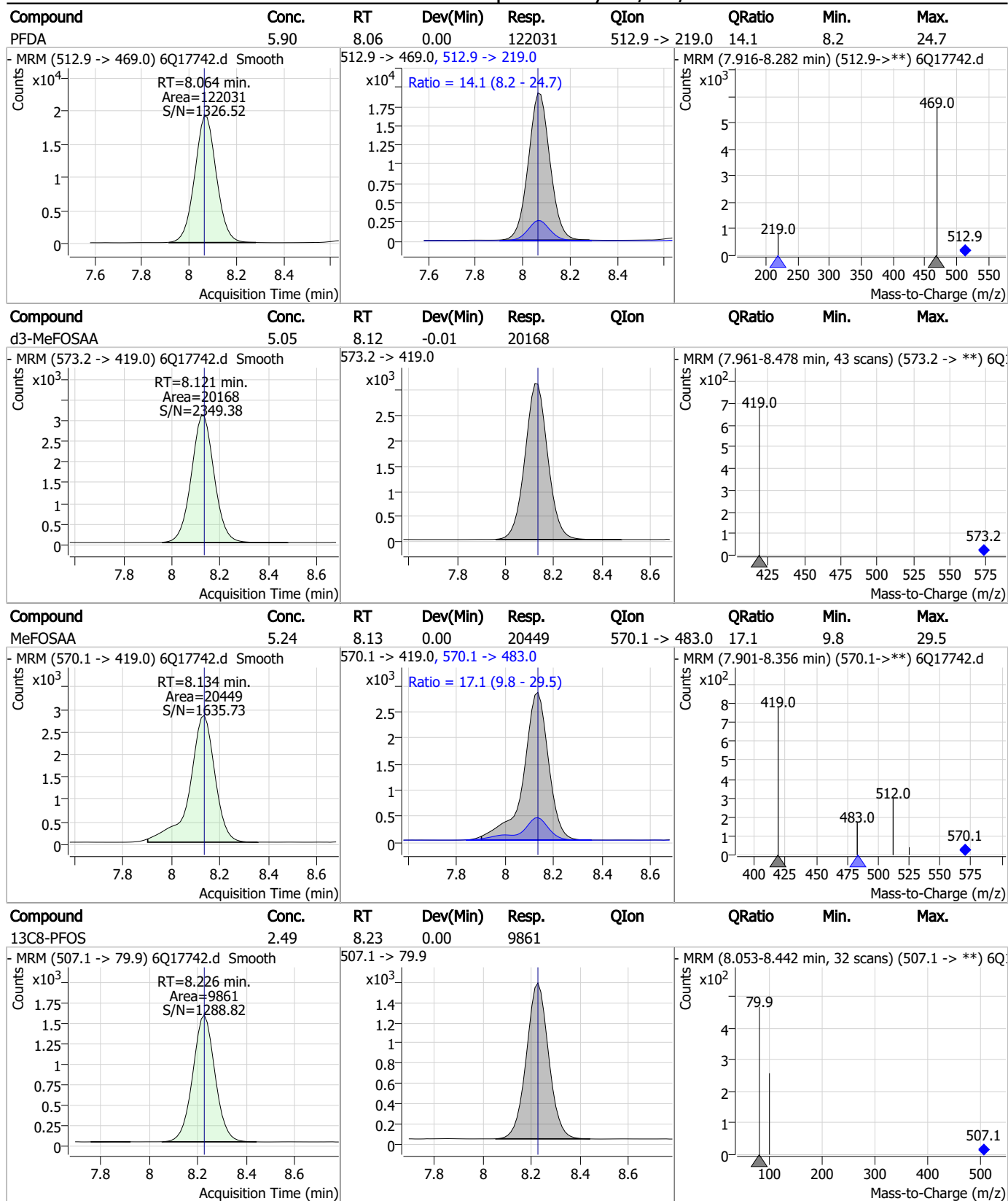
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

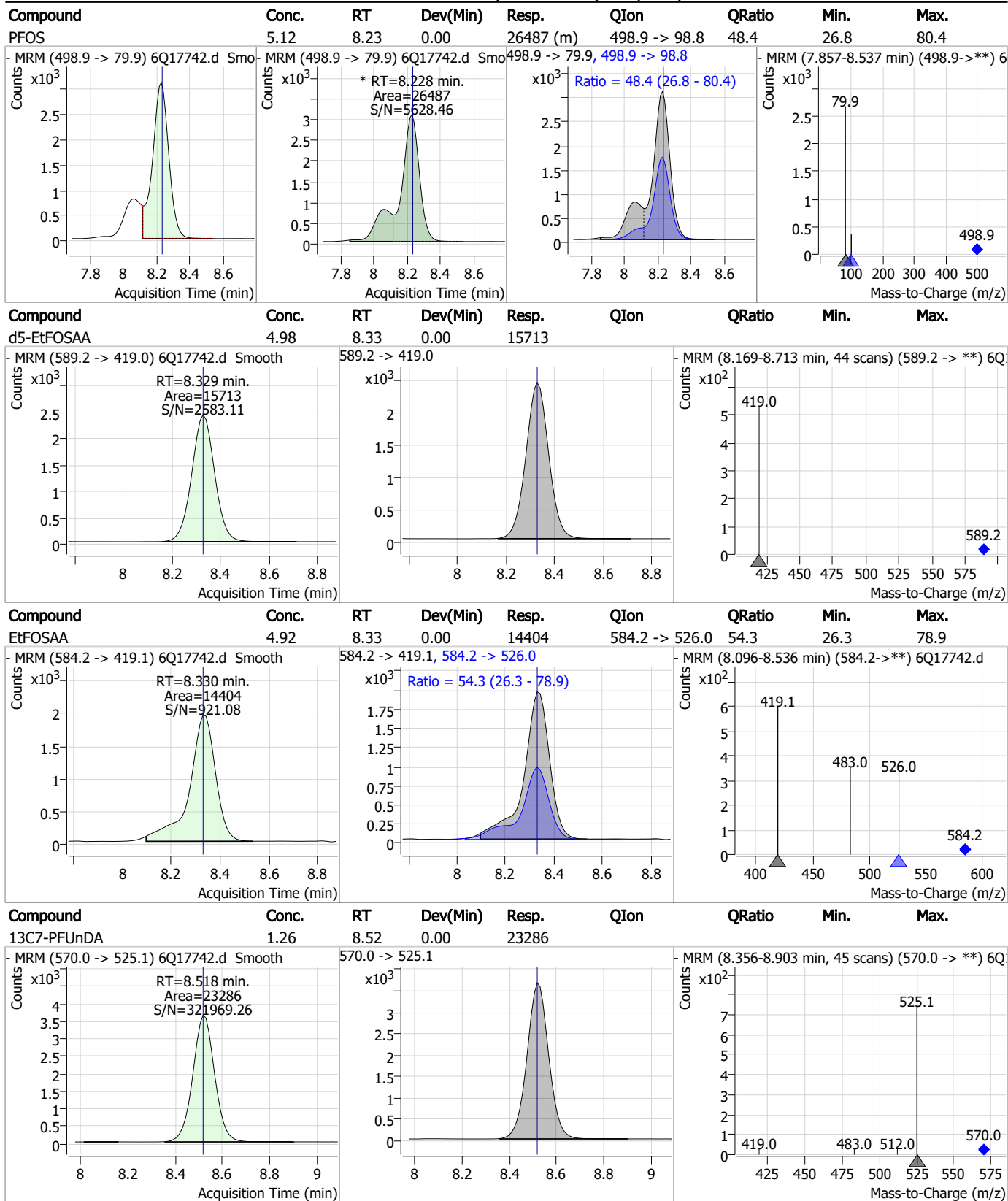
Perfluorinated Compounds by LC/MS/MS



7.7.6

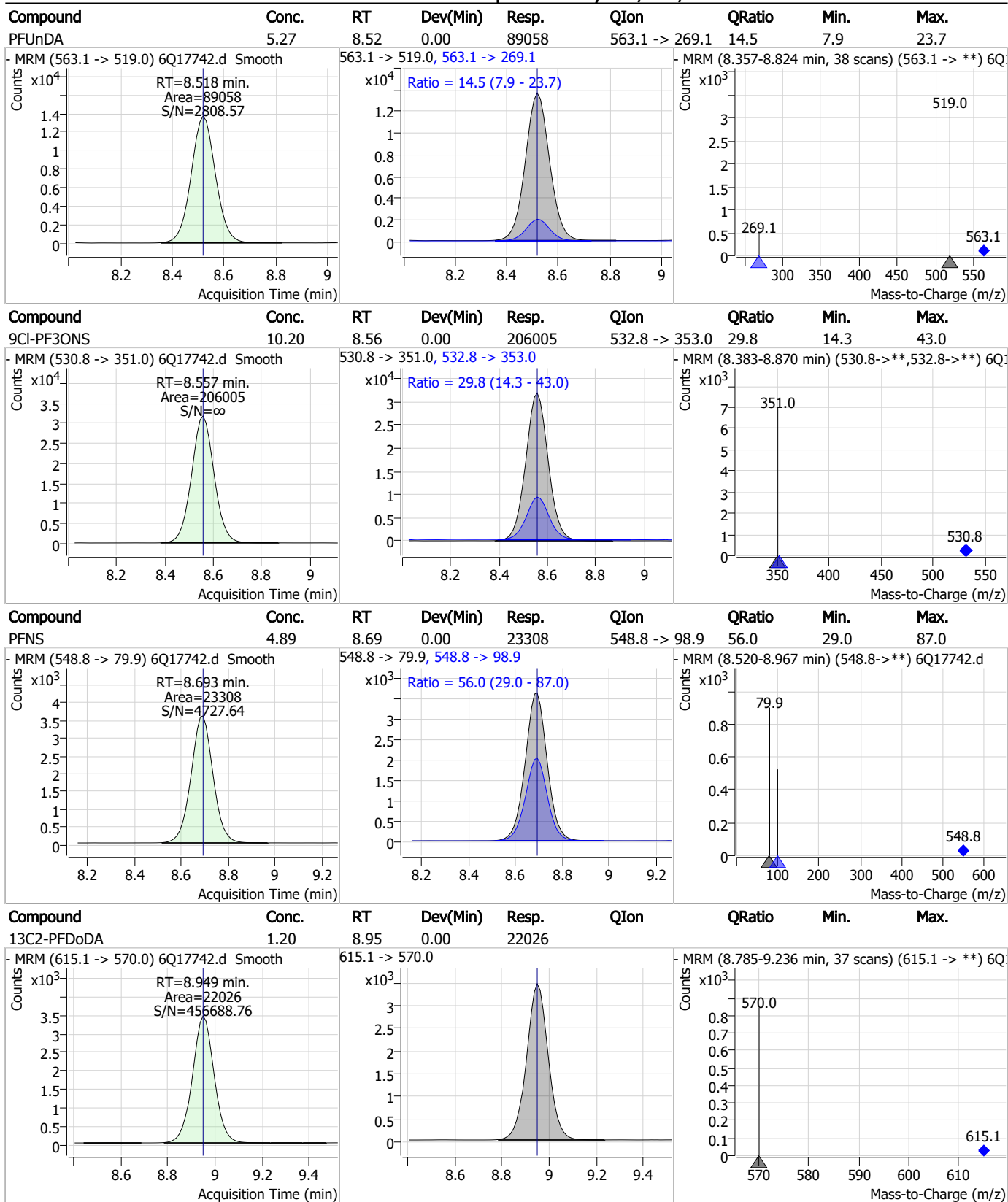
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

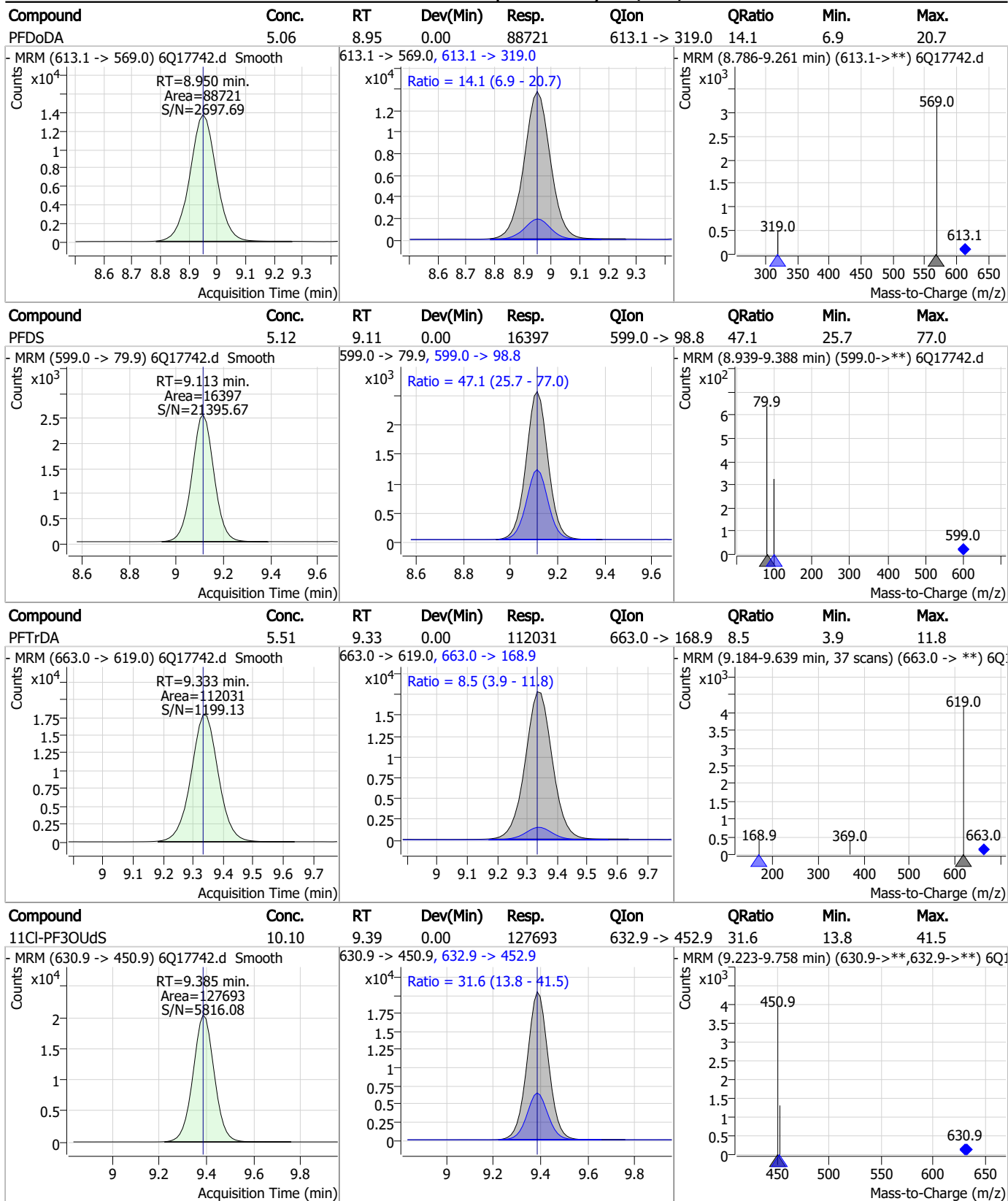
Perfluorinated Compounds by LC/MS/MS



7.7.6

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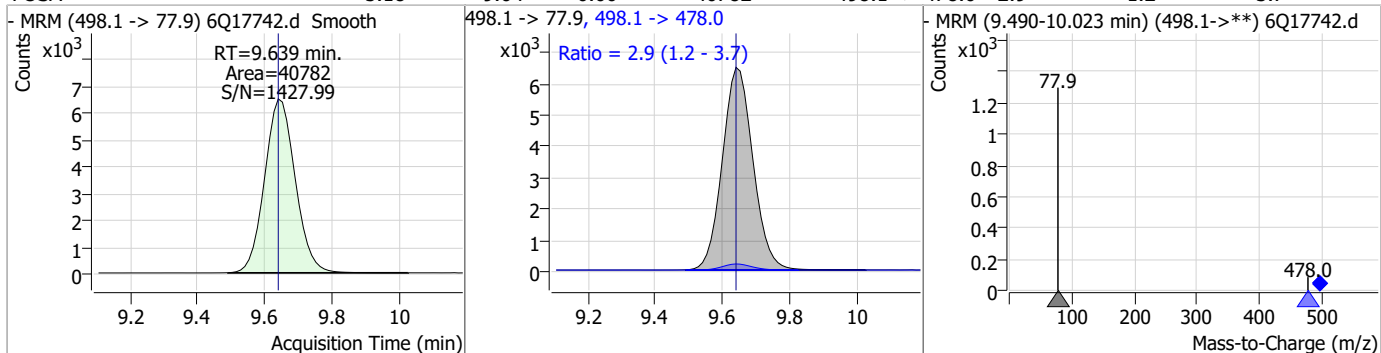
Perfluorinated Compounds by LC/MS/MS



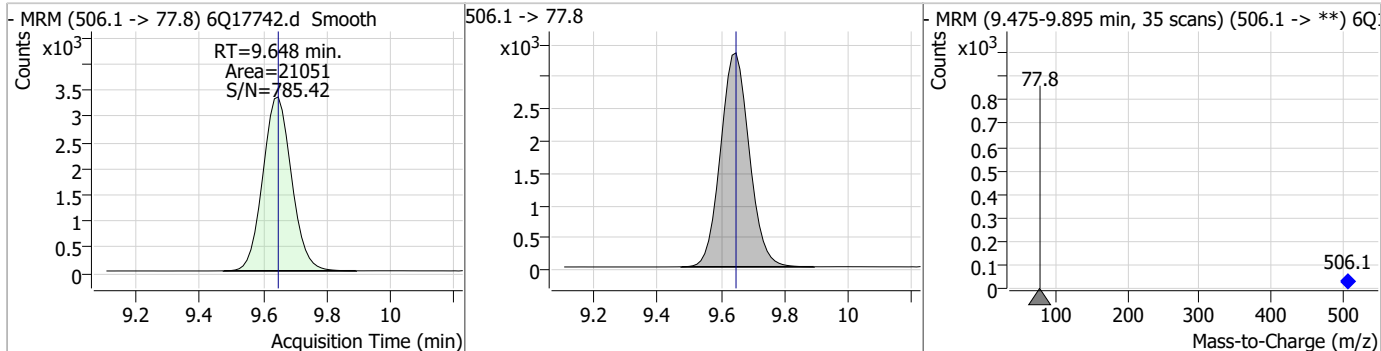
7.7.6
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Perfluorinated Compounds by LC/MS/MS

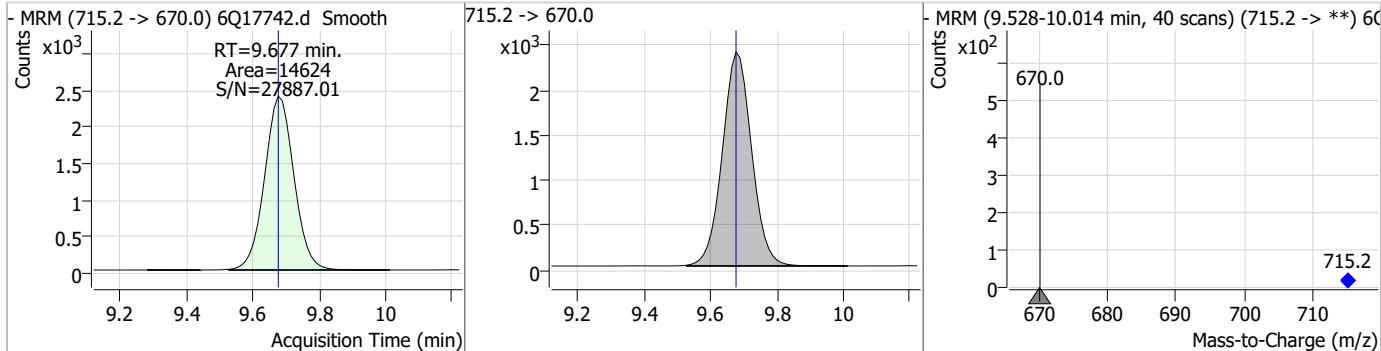
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.18	9.64	0.00	40782	498.1 -> 478.0	2.9	1.2	3.7



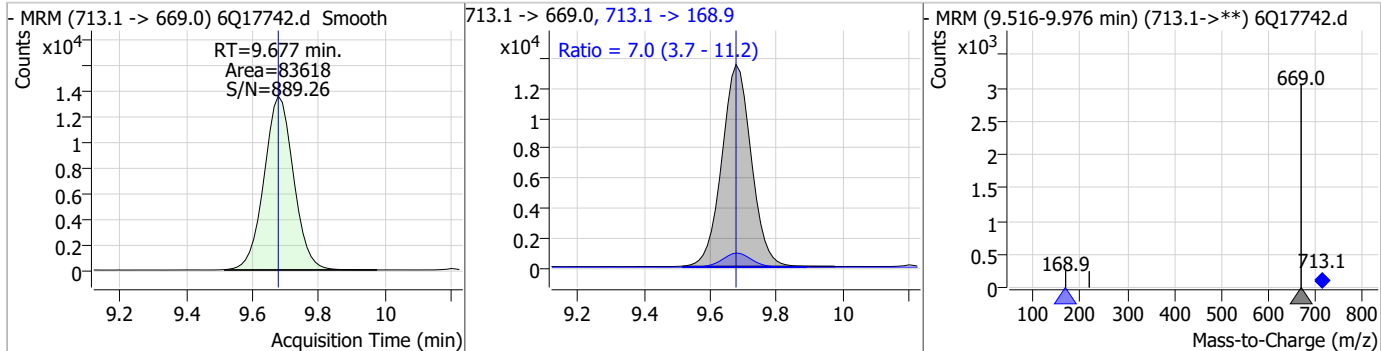
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.49	9.65	0.00	21051				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.17	9.68	0.00	14624				

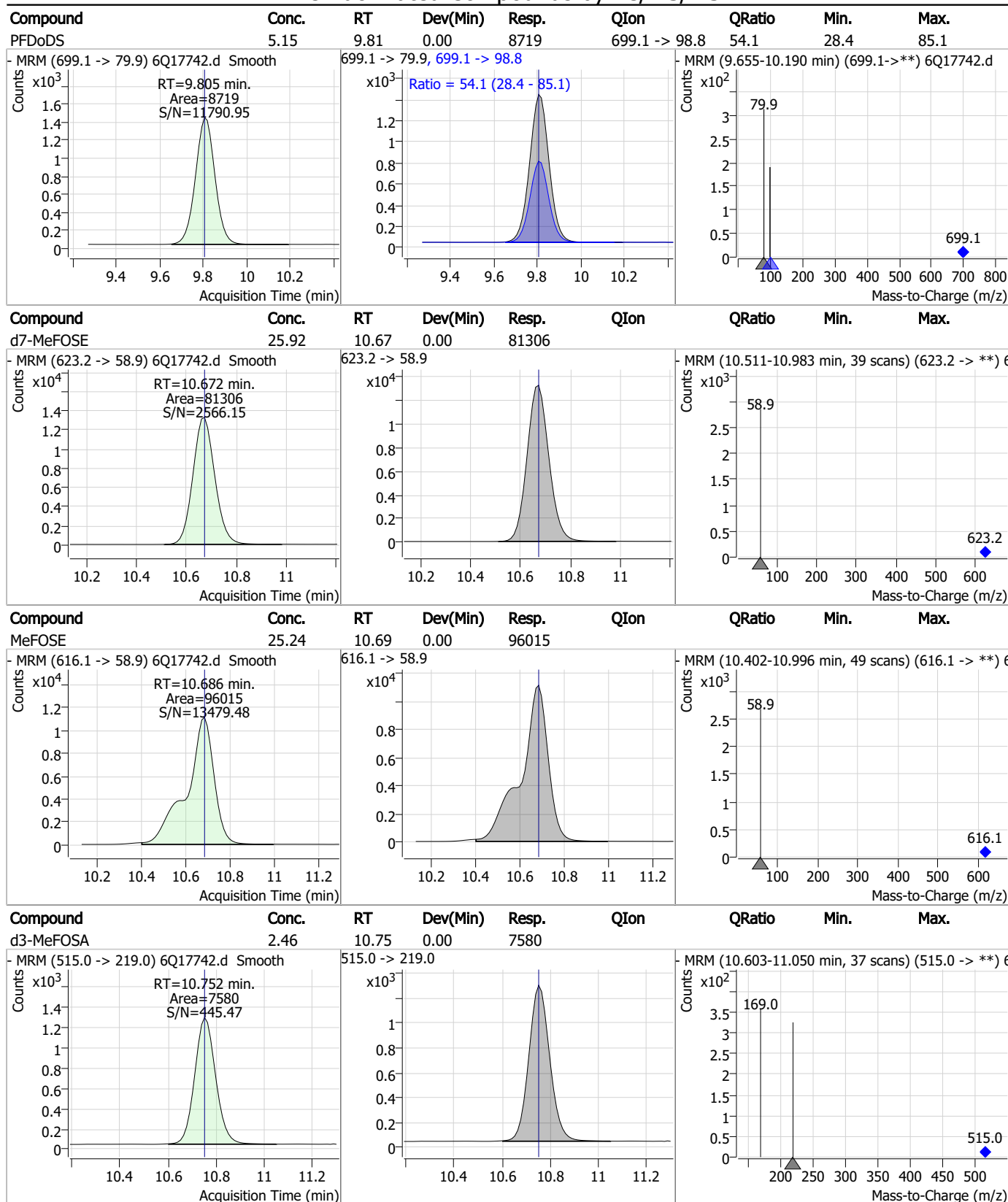


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.58	9.68	0.00	83618	713.1 -> 168.9	7.0	3.7	11.2



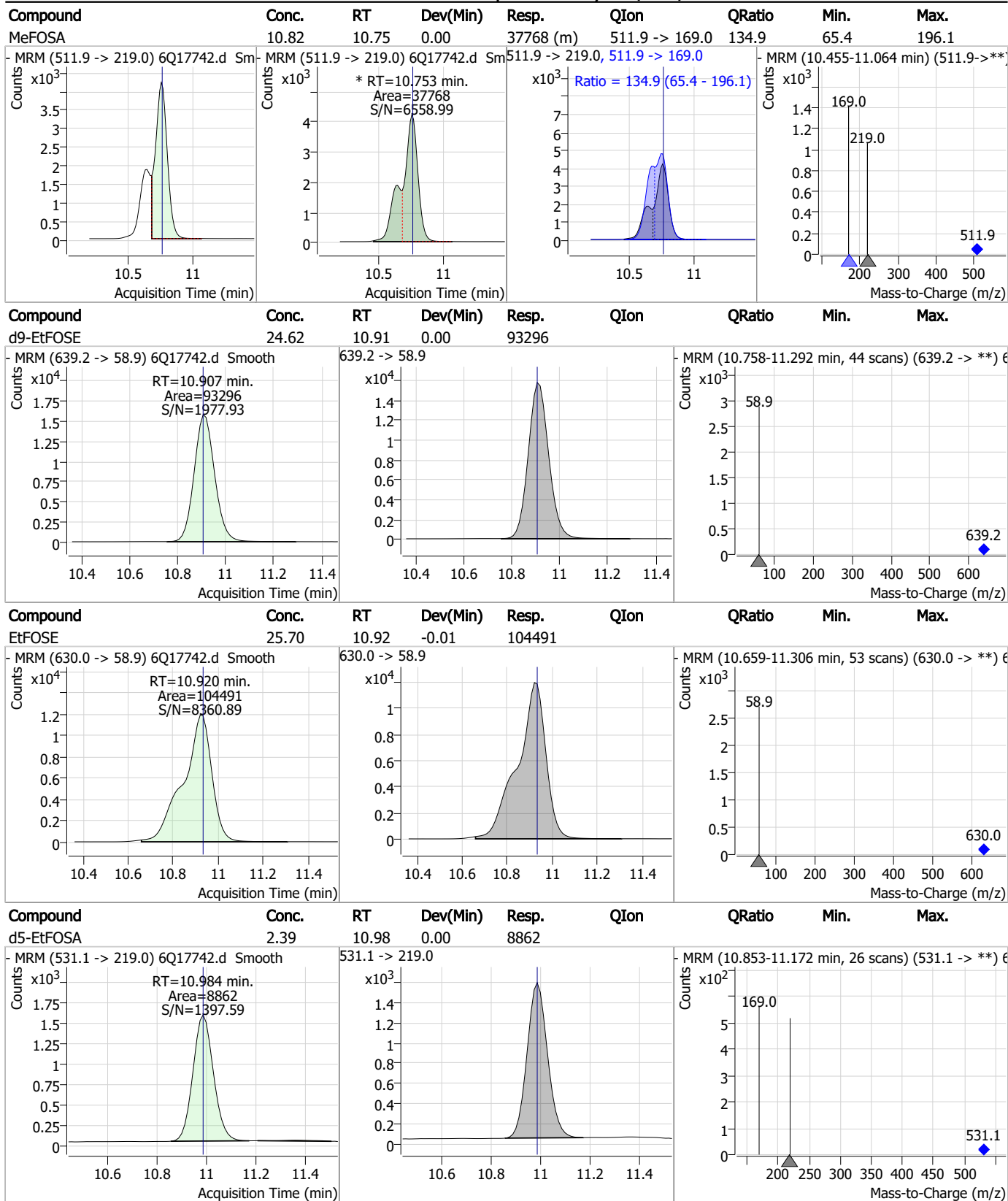
7.7.6
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Perfluorinated Compounds by LC/MS/MS



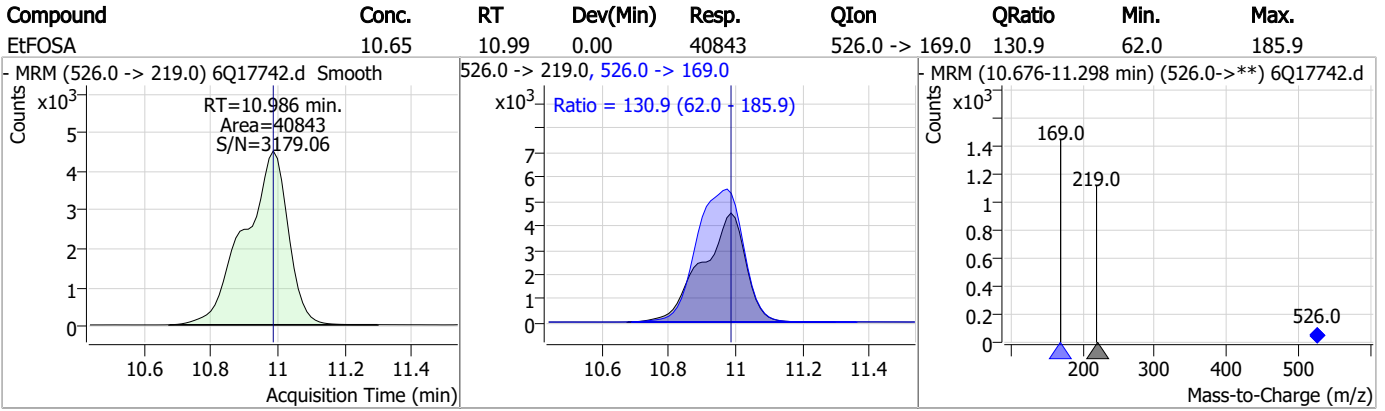
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17742.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 13:13 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.17	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.6.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 05/16/23 09:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17743.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 1:27:52 PM
 Sample Name : ic268-6
 Vial : P1-A7
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	144328	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	46920	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	52694	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	46592	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	66712	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	22402	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	16992	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	20744	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	20356	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13532	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	20157	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	17779	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11339	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9204	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1583	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1958	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2235	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	18661	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	32779	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	14793	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	75882	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	88028	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9139	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	6959	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	11774	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	61115	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7769	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	67677	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	21632	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	22287	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	44392	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1583	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.0%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1958	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2235	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-PFDoDA	8.949	615.1 -> 570.0	20356	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13532	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 88.2%		
13C3-PFBS	5.397	302.1 -> 79.9	17779	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	11339	2.74 µg/L	0.012

7.7.7
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C4-PFBA	2.901	216.8 -> 171.9	144328	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.420	367.1 -> 322.0	46592	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFHxA	5.466	318.0 -> 273.0	52694	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFPeA	4.272	268.3 -> 223.0	46920	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.064	519.1 -> 474.1	16992	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C7-PFUnDA	8.518	570.0 -> 525.1	20744	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C8-FOSA	9.648	506.1 -> 77.8	20157	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-PFOA	7.064	421.1 -> 376.0	66712	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C8-PFOS	8.226	507.1 -> 79.9	9204	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C9-PFNA	7.595	472.1 -> 427.0	22402	1.36 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
d3-MeFOSAA	8.133	573.2 -> 419.0	18661	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	32779	10.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSA	10.752	515.0 -> 219.0	6959	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
d5-EtFOSAA	8.329	589.2 -> 419.0	14793	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	75882	26.16 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.907	639.2 -> 58.9	88028	25.12 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
d5-EtFOSA	10.984	531.1 -> 219.0	9139	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	113779	47.80 µg/L	98
		327.1 -> 80.9	41057		
6:2FTS	6.838	427.1 -> 407.0	108590	50.96 µg/L	100
		427.1 -> 80.9	35396		
8:2FTS	7.865	527.1 -> 507.0	60260	47.45 µg/L	96
		527.1 -> 80.8	26164		
EtFOSAA	8.330	584.2 -> 419.1	35373	12.84 µg/L	97
		584.2 -> 526.0	19332		
FOSA	9.639	498.1 -> 77.9	97191	12.88 µg/L	99
		498.1 -> 478.0	2890		
MeFOSAA	8.134	570.1 -> 419.0	47536	13.16 µg/L	96
		570.1 -> 483.0	8463		
PFBA	2.907	212.8 -> 168.9	271819	52.50 µg/L	100
PFBS	5.398	298.7 -> 79.9	95381	10.99 µg/L	95
		298.7 -> 98.8	37505		
PFDA	8.064	512.9 -> 469.0	250887	11.93 µg/L	100
		512.9 -> 219.0	41119		
PFDoDA	8.950	613.1 -> 569.0	215309	13.28 µg/L	98
		613.1 -> 319.0	31127		
PFDS	9.113	599.0 -> 79.9	38234	12.79 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	18657			
PFHpA	6.420	363.1 -> 319.0	302664	13.00	µg/L	99
		363.1 -> 169.0	47461			
PFHpS	7.723	449.0 -> 79.9	62613	12.75	µg/L	94
		449.0 -> 98.9	30195			
PFHxA	5.469	313.0 -> 269.0	264948	12.69	µg/L	100
		313.0 -> 118.9	12368			
PFHxS	7.180	398.7 -> 79.9	69961	11.15	µg/L	m 95
		398.7 -> 98.9	32563			
PFNA	7.596	463.0 -> 419.0	213821	12.85	µg/L	96
		463.0 -> 219.0	39829			
PFNS	8.693	548.8 -> 79.9	57259	12.86	µg/L	91
		548.8 -> 98.9	29324			
PFOA	7.066	413.0 -> 369.0	423077	12.75	µg/L	100
		413.0 -> 169.0	71366			
PFOS	8.228	498.9 -> 79.9	60109	12.46	µg/L	m 95
		498.9 -> 98.8	30220			
PFPeA	4.274	263.0 -> 219.0	349471	25.79	µg/L	100
PFPeS	6.471	349.1 -> 79.9	71730	11.53	µg/L	97
		349.1 -> 98.9	33565			
PFTeDA	9.677	713.1 -> 669.0	187285	13.52	µg/L	99
		713.1 -> 168.9	13652			
PFTrDA	9.333	663.0 -> 619.0	257028	13.67	µg/L	98
		663.0 -> 168.9	21614			
PFUnDA	8.518	563.1 -> 519.0	198126	13.15	µg/L	98
		563.1 -> 269.1	32749			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	300037	24.22	µg/L	88
		632.9 -> 452.9	102145			
9Cl-PF3ONS	8.557	530.8 -> 351.0	481733	24.35	µg/L	97
		532.8 -> 353.0	146642			
ADONA	6.671	376.9 -> 250.9	1262550	24.19	µg/L	95
		376.9 -> 84.8	330623			
HFPO-DA	5.832	284.9 -> 168.9	78784	24.86	µg/L	99
		284.9 -> 184.9	10994			
3:3FTCA	3.777	241.0 -> 177.0	53826	64.11	µg/L	98
		241.0 -> 117.0	6786			
5:3FTCA	6.161	341.0 -> 237.1	1129573	312.33	µg/L	100
		341.0 -> 217.0	824681			
7:3FTCA	7.573	441.0 -> 316.9	513398	312.91	µg/L	94
		441.0 -> 336.9	1124128			
EtFOSA	10.986	526.0 -> 219.0	100215	25.33	µg/L	98
		526.0 -> 169.0	122290			
EtFOSE	10.920	630.0 -> 58.9	257156	67.04	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	85915	26.81	µg/L	m 93
		511.9 -> 169.0	119466			
MeFOSE	10.686	616.1 -> 58.9	229541	64.66	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	19656	12.44	µg/L	98
		699.1 -> 98.8	10843			
NFDHA	5.348	295.0 -> 201.0	60493	26.25	µg/L	96
		295.0 -> 84.9	15215			
PFMBA	4.675	279.0 -> 85.1	252941	26.16	µg/L	100
PFMPA	3.426	229.0 -> 84.9	180948	25.99	µg/L	100
PFEESA	5.938	314.8 -> 134.9	655961	23.41	µg/L	100
		314.8 -> 82.9	22549			

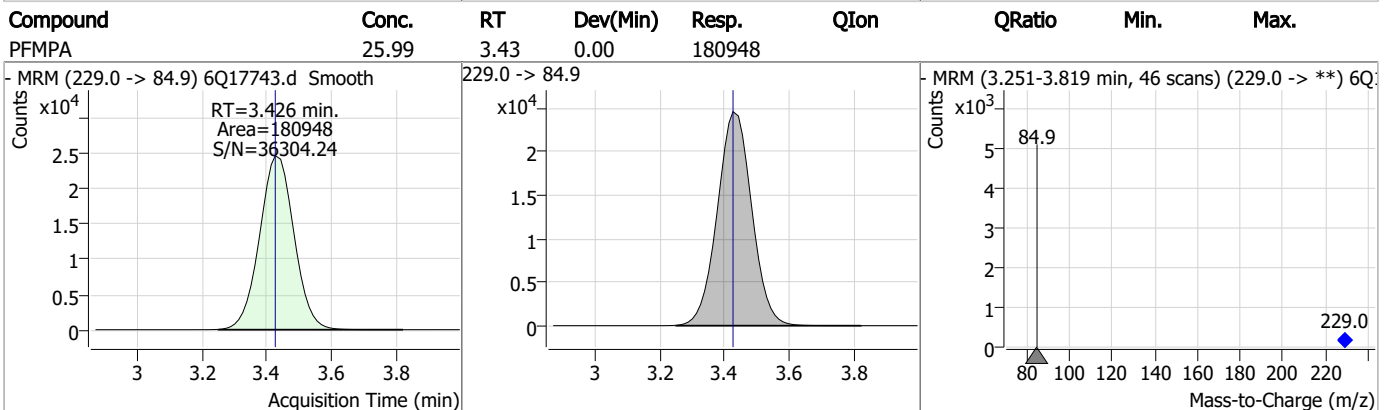
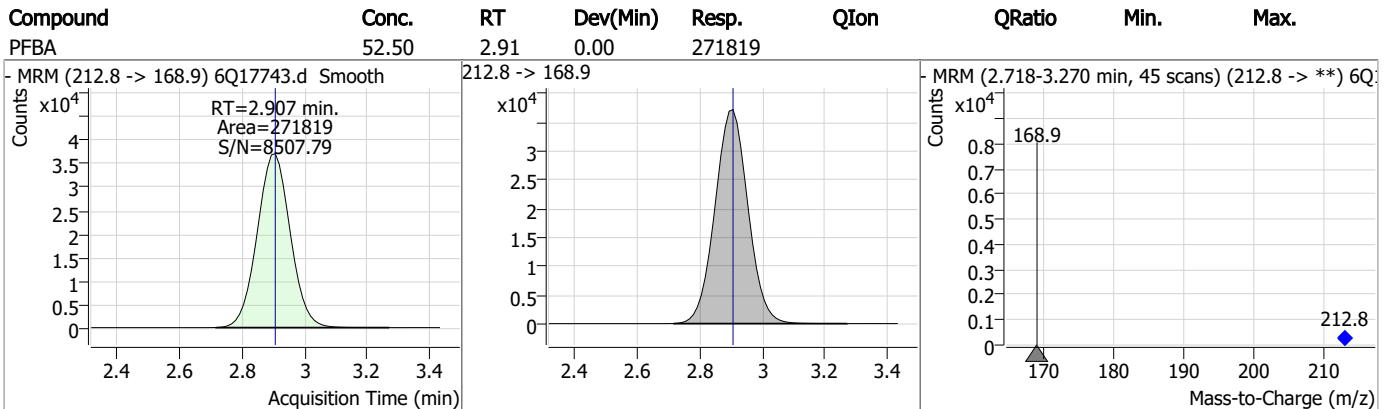
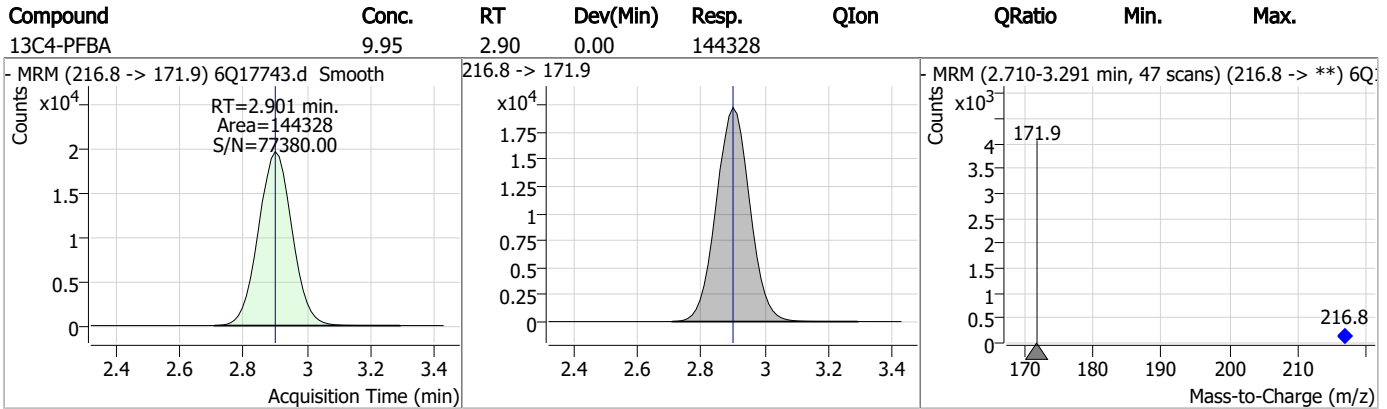
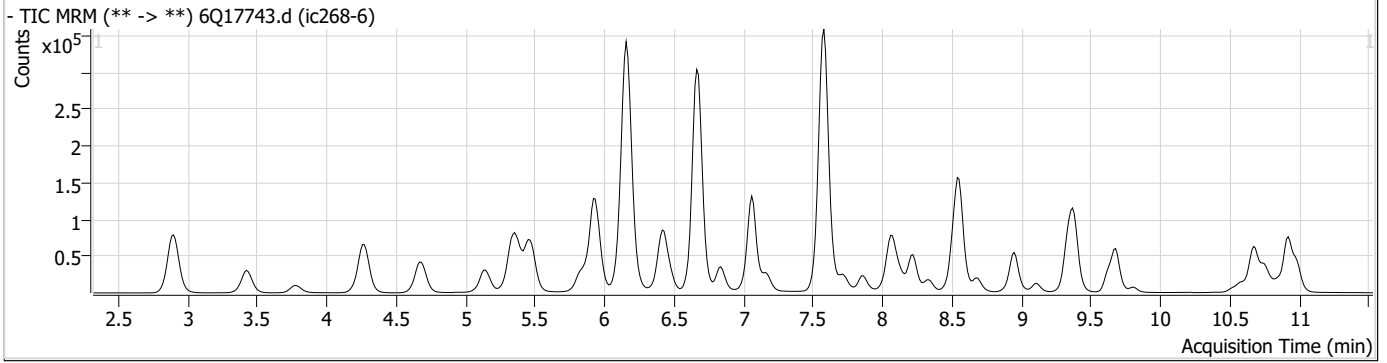
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

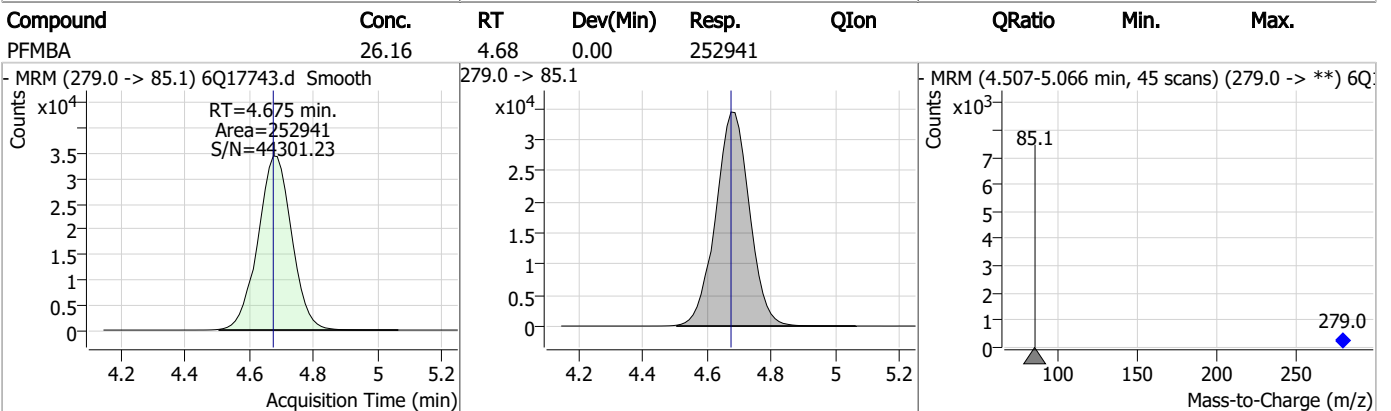
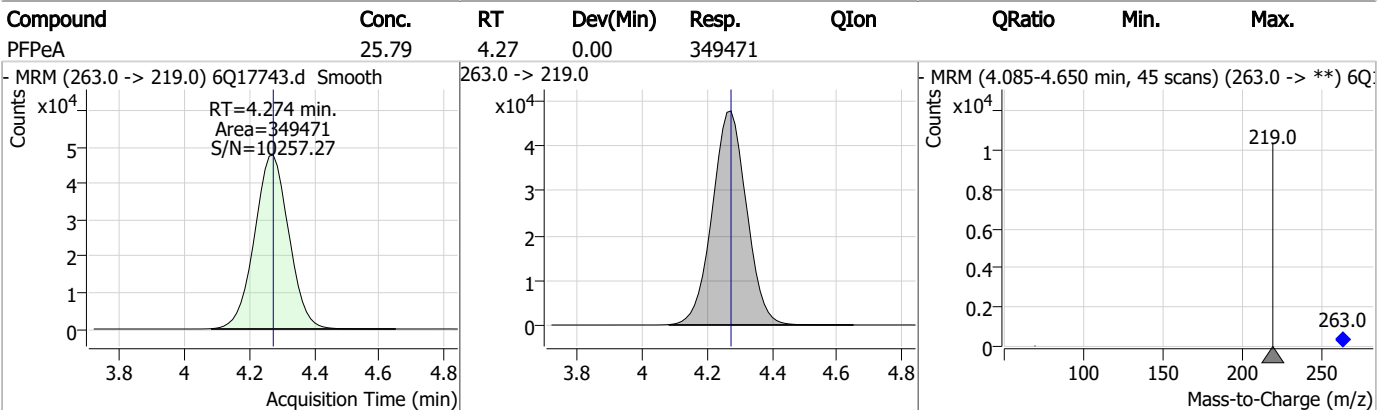
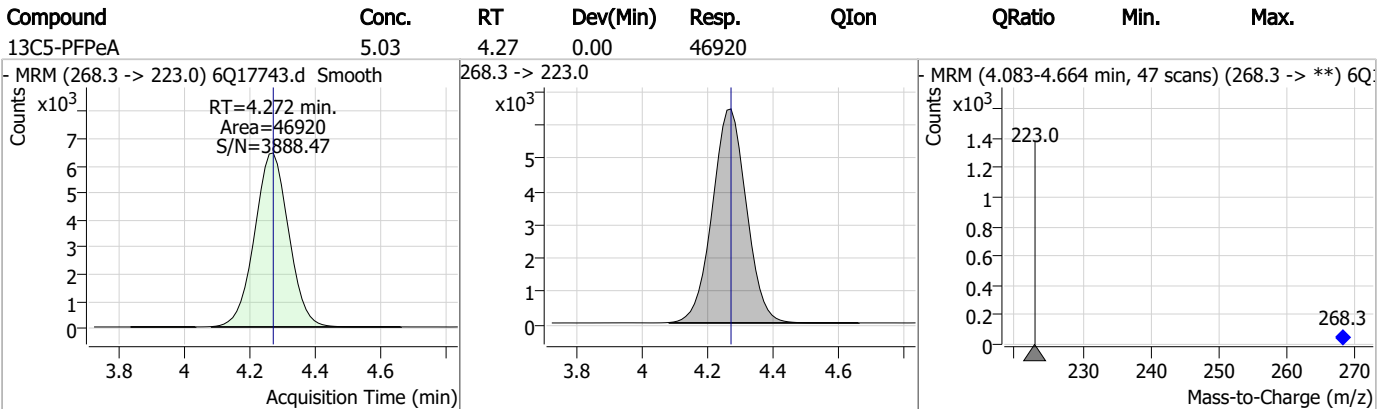
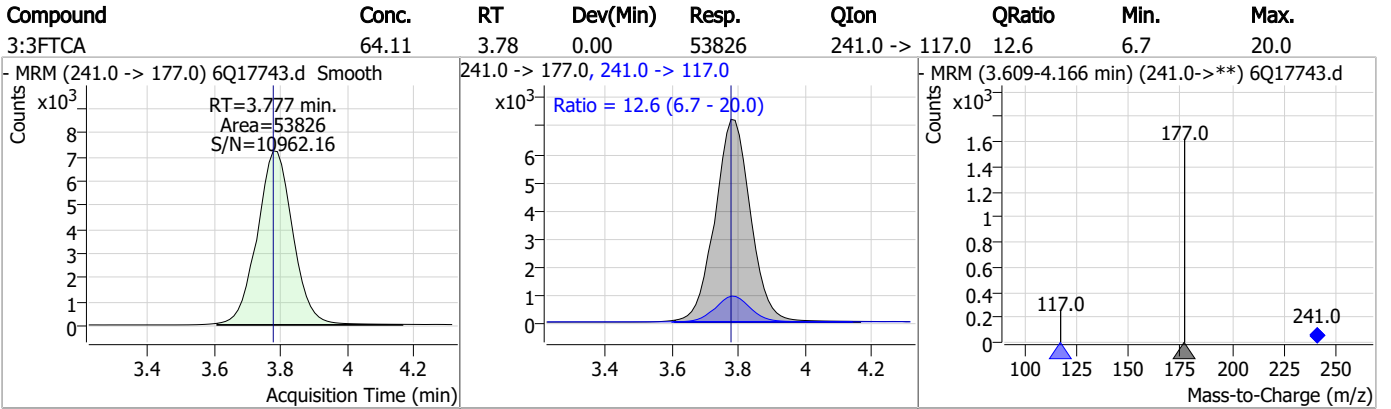
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.7.7
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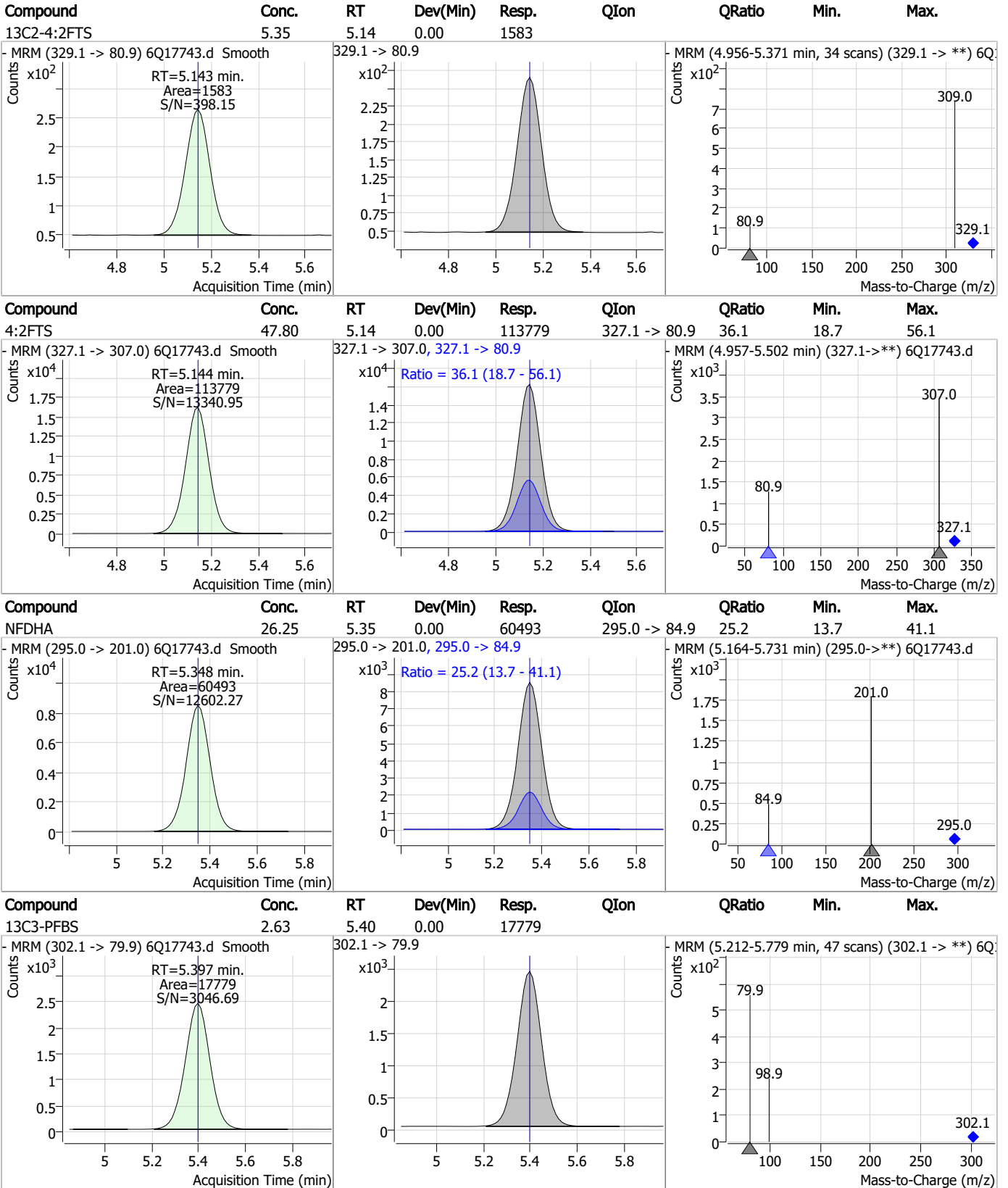
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



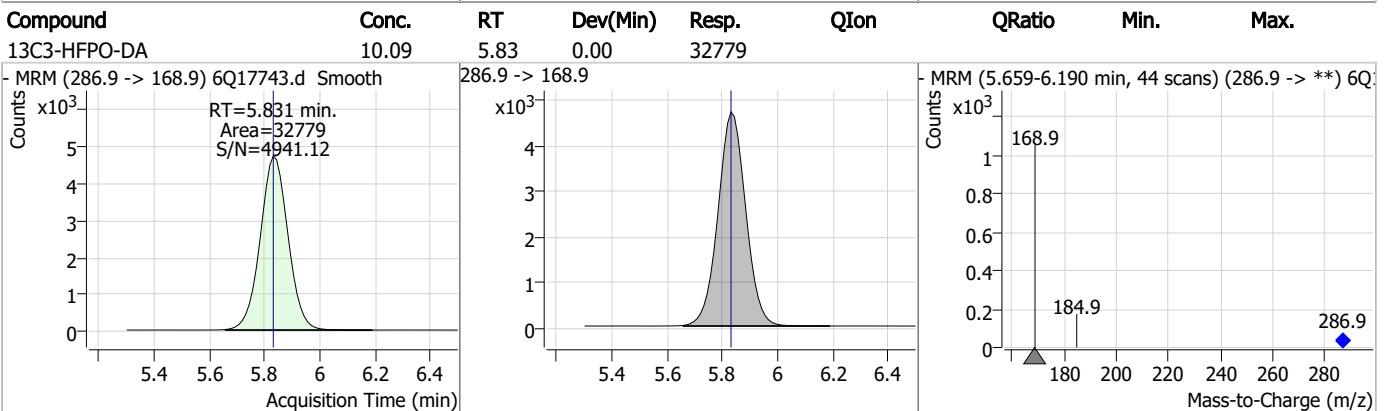
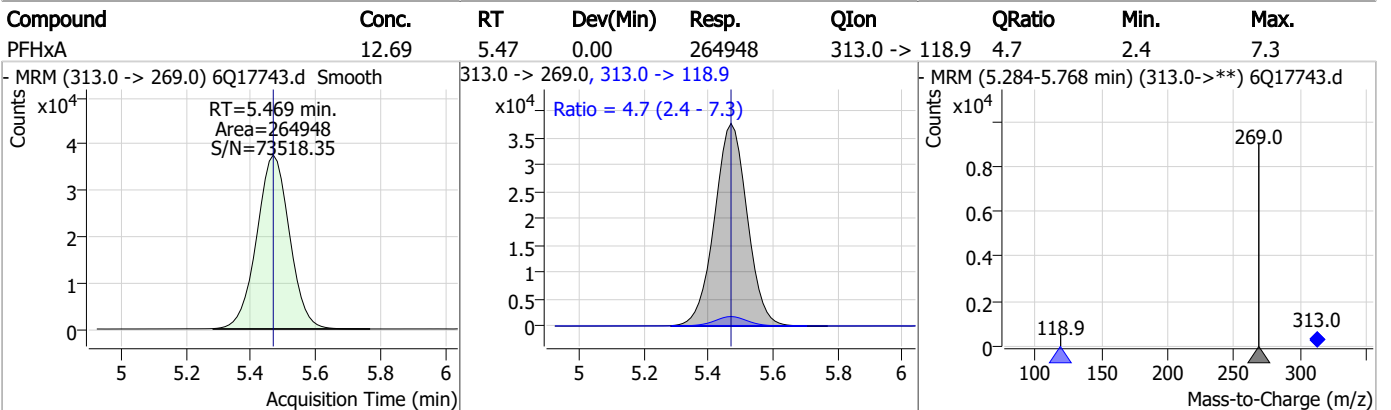
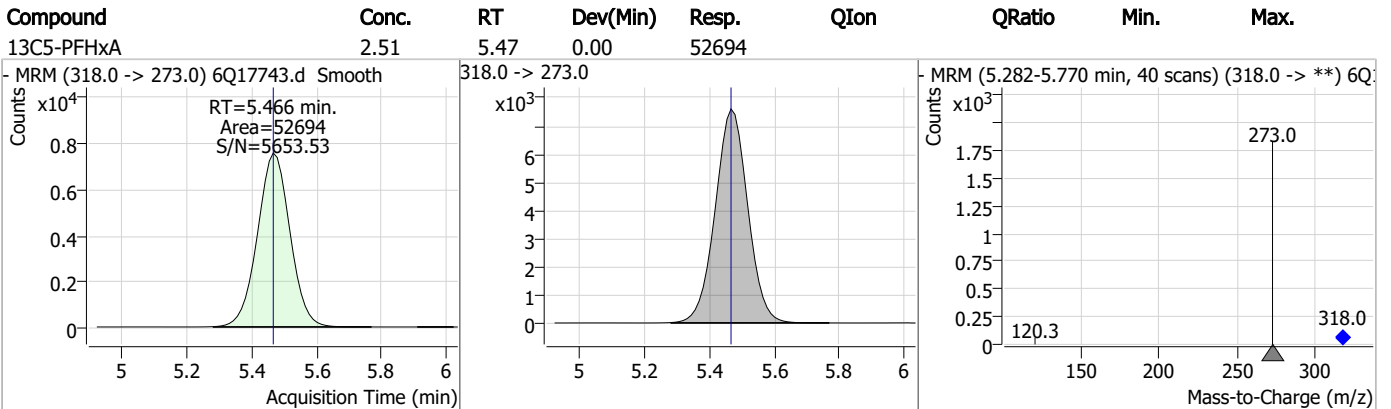
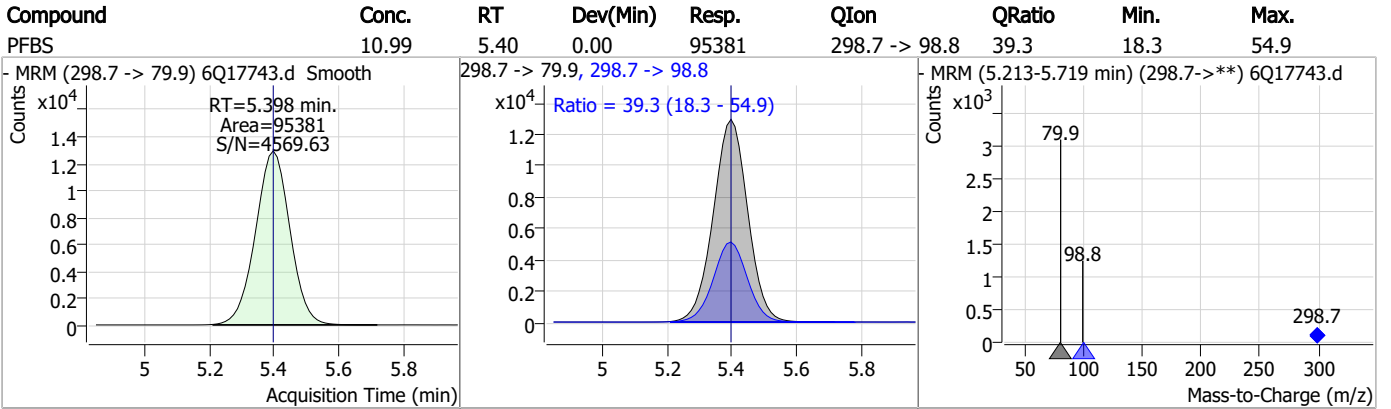
Perfluorinated Compounds by LC/MS/MS



7.7.7
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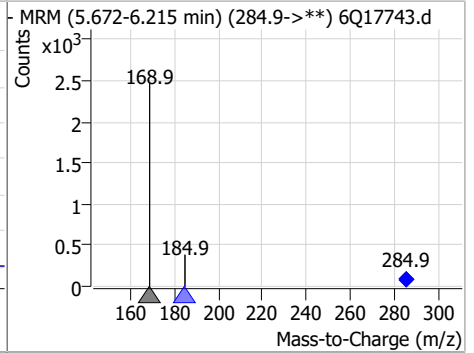
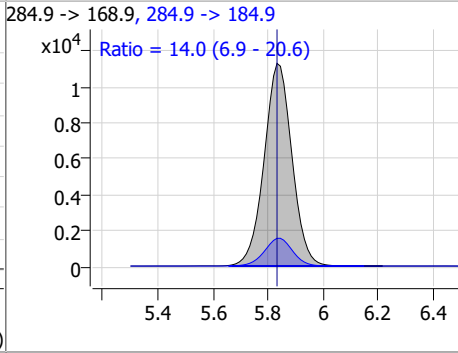
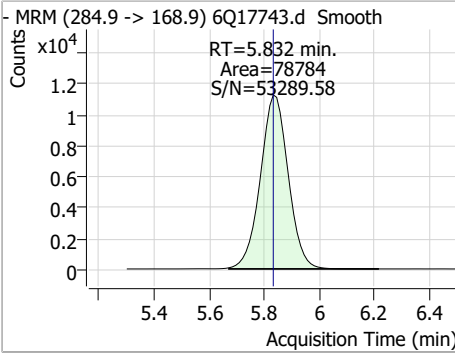


Perfluorinated Compounds by LC/MS/MS

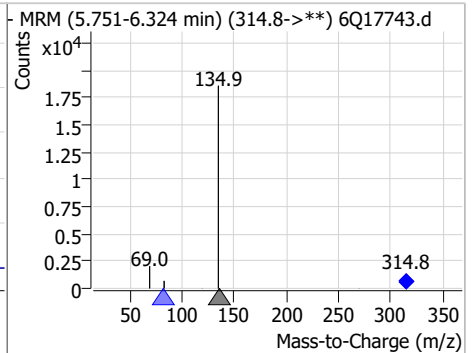
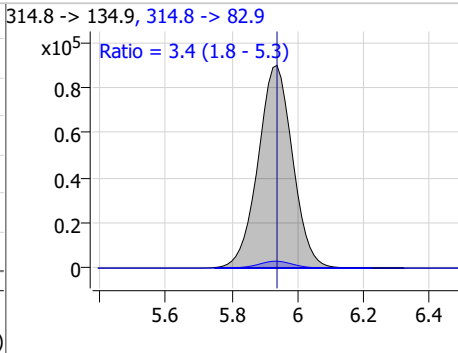
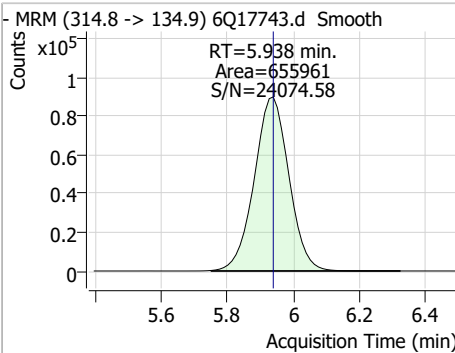


Perfluorinated Compounds by LC/MS/MS

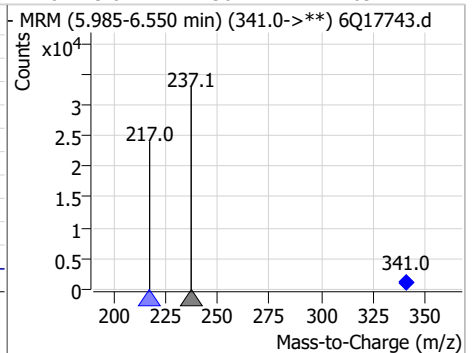
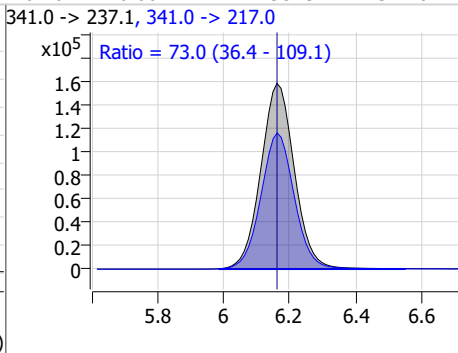
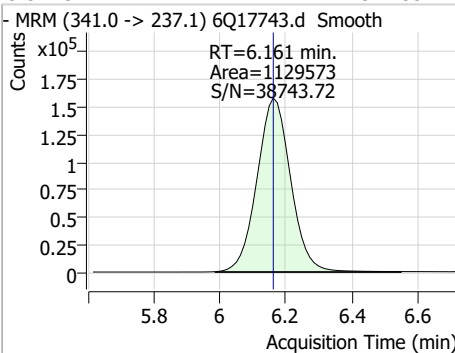
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	24.86	5.83	0.00	78784	284.9 -> 184.9	14.0	6.9	20.6



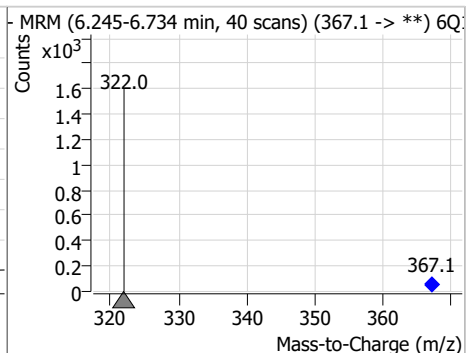
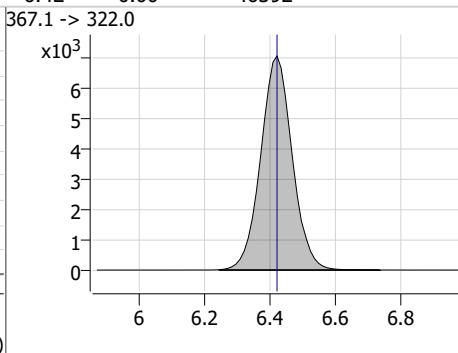
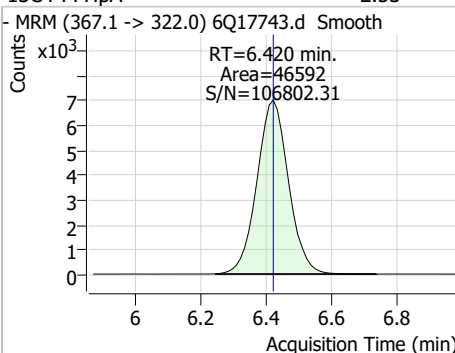
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	23.41	5.94	0.00	655961	314.8 -> 82.9	3.4	1.8	5.3



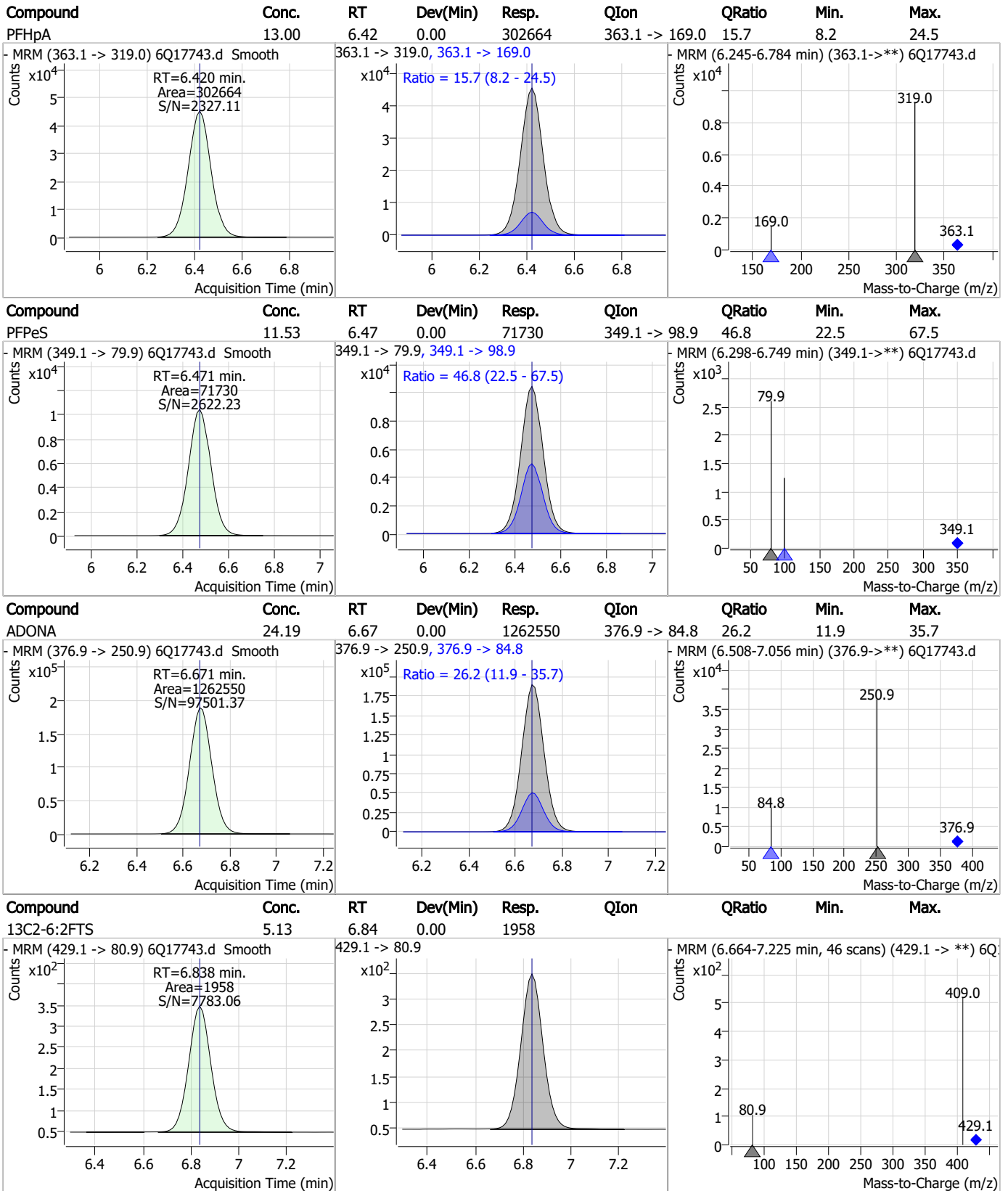
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	312.33	6.16	0.00	1129573	341.0 -> 217.0	73.0	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.42	0.00	46592	367.1 -> 322.0			

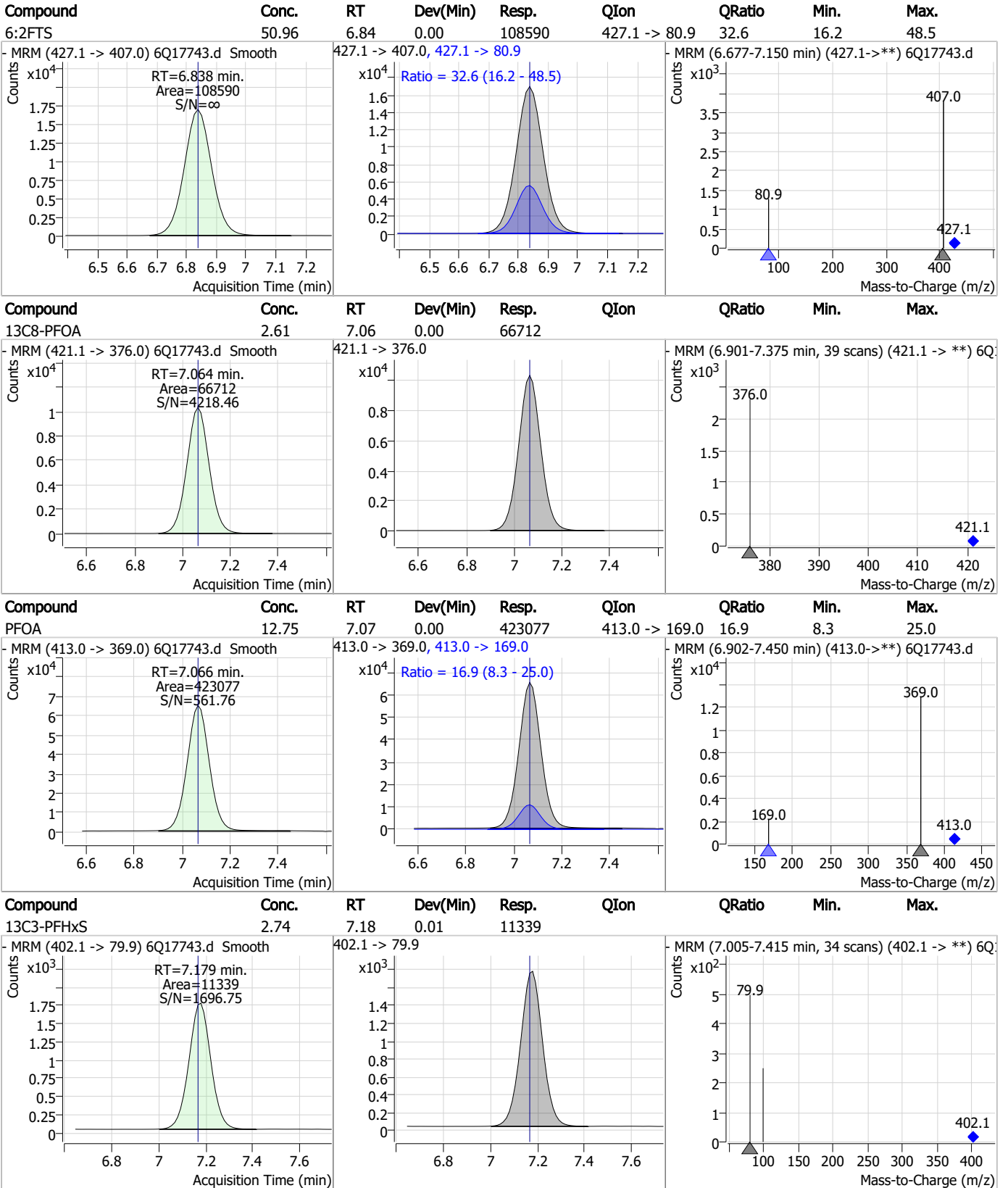


Perfluorinated Compounds by LC/MS/MS



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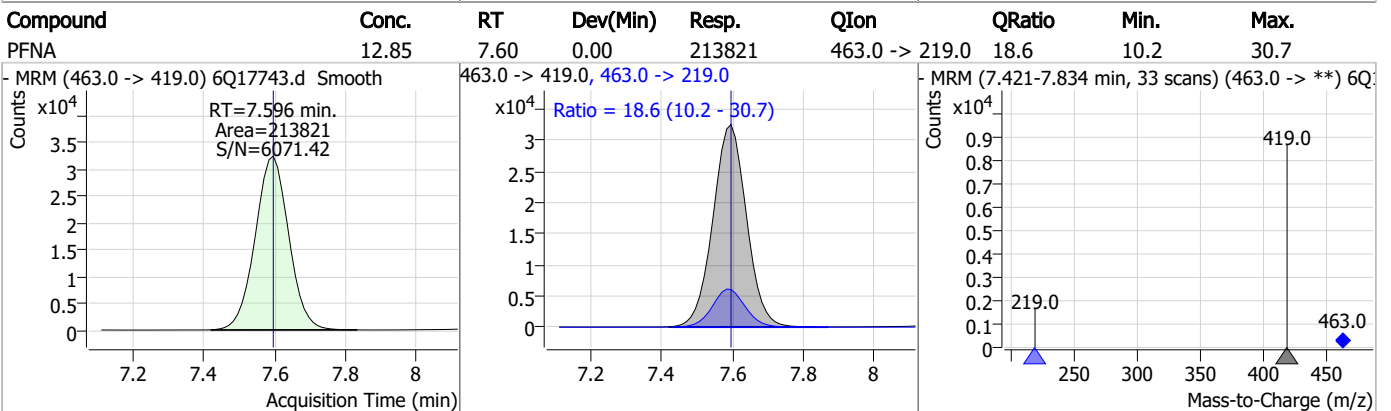
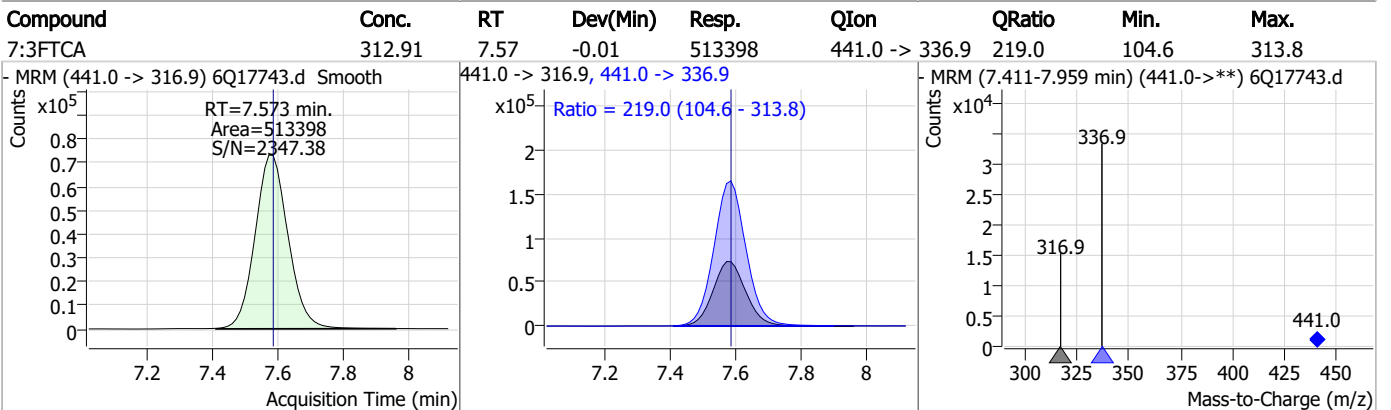
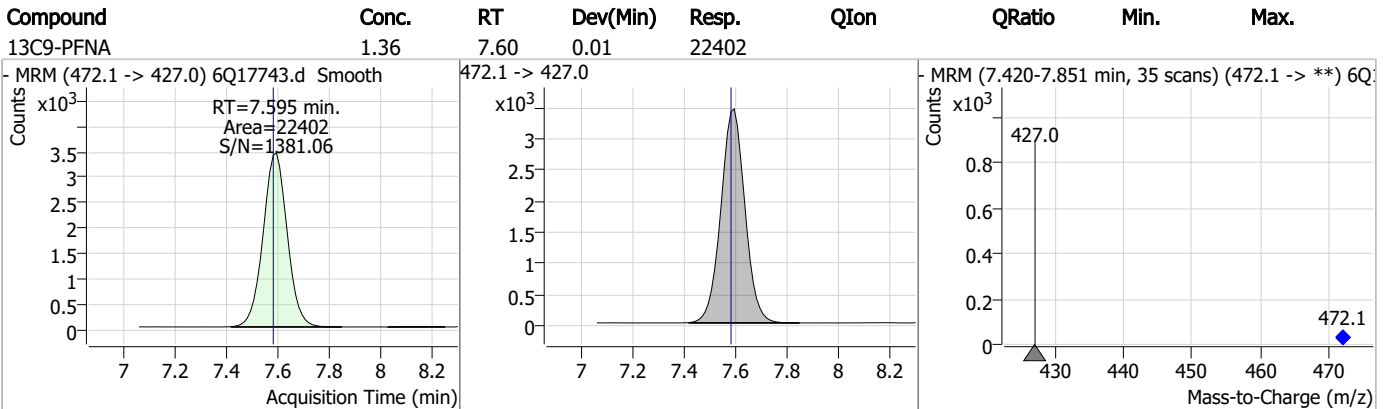
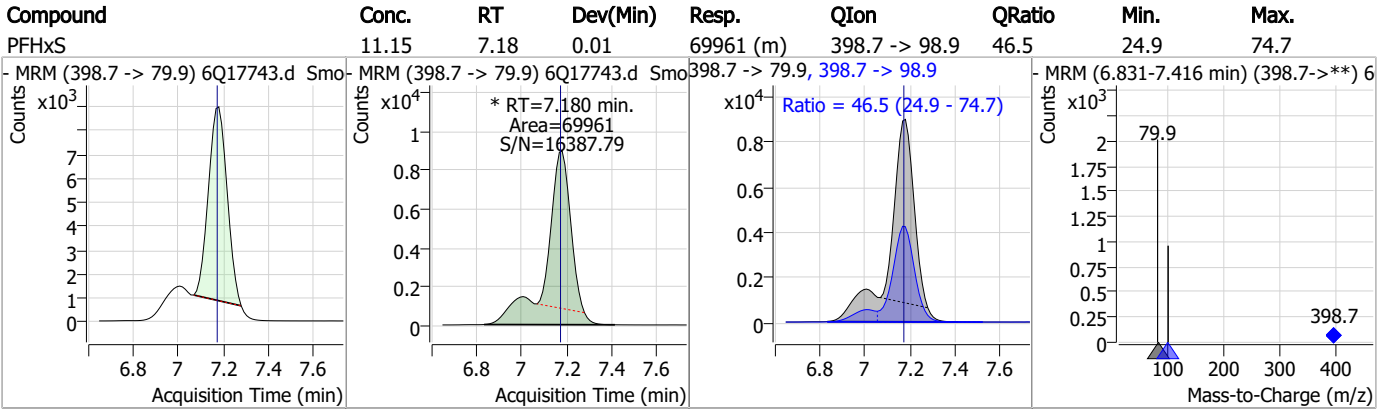
Perfluorinated Compounds by LC/MS/MS



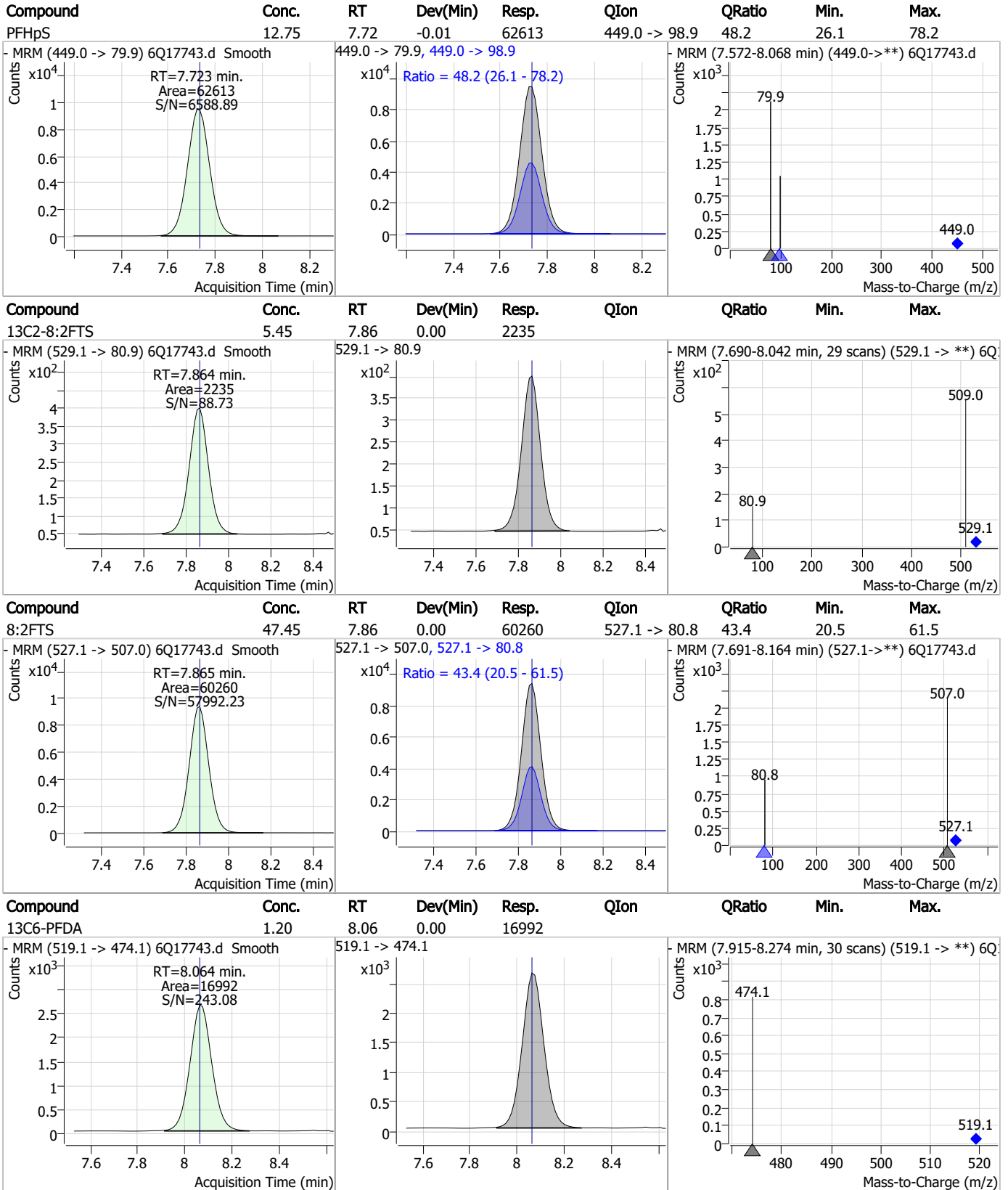
7.7.7

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Perfluorinated Compounds by LC/MS/MS



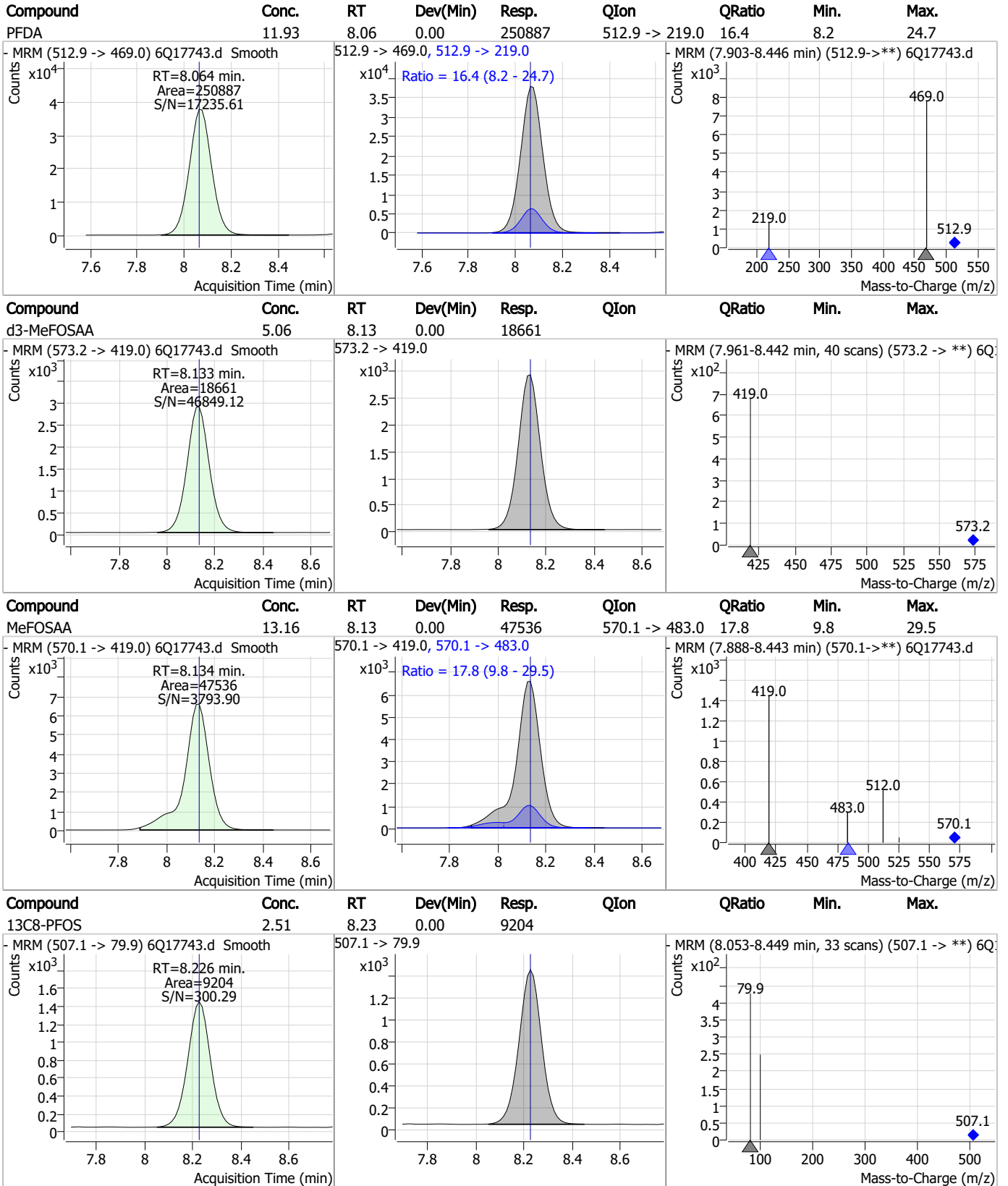
Perfluorinated Compounds by LC/MS/MS



7.7.7

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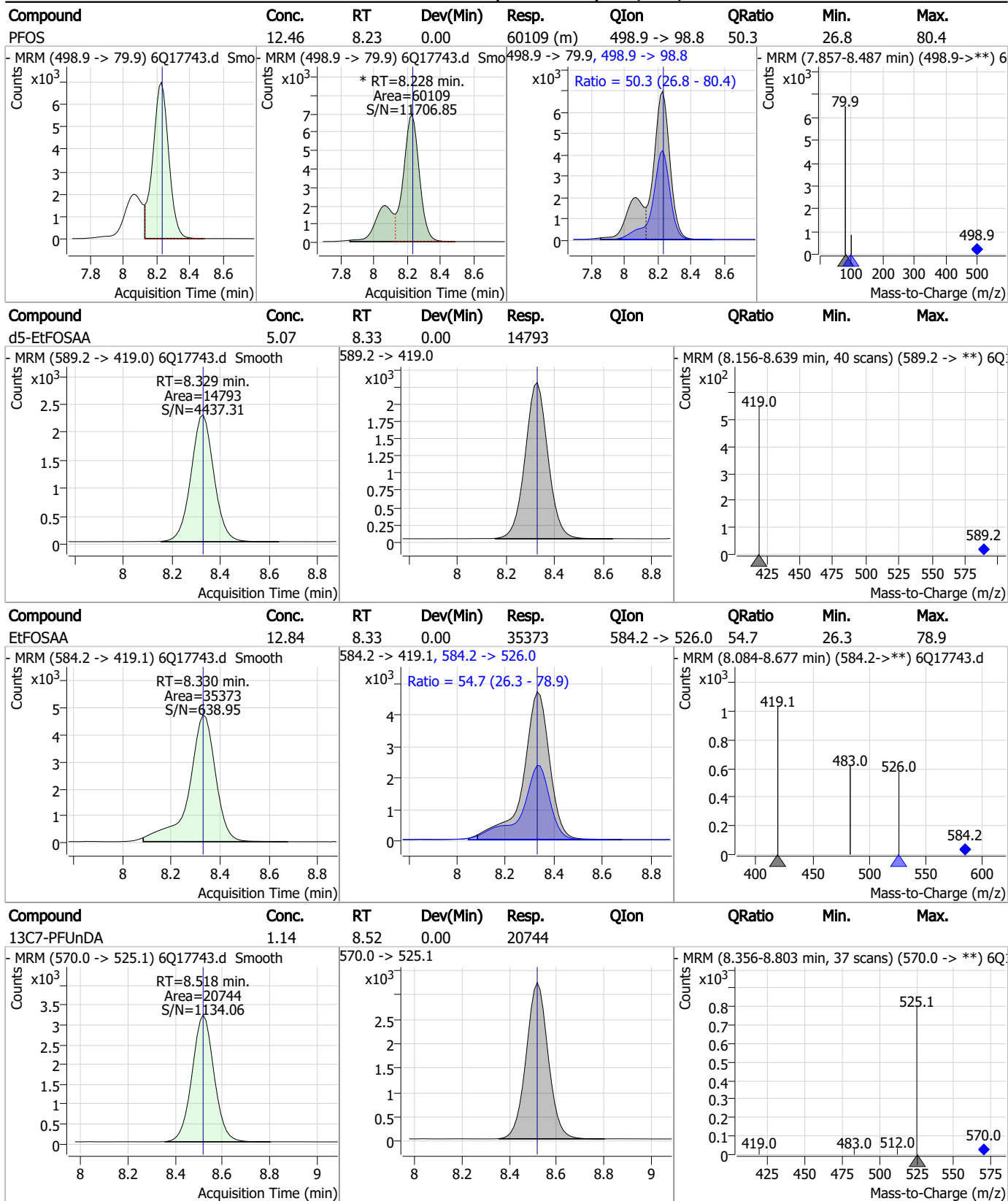
Perfluorinated Compounds by LC/MS/MS



7.7.7

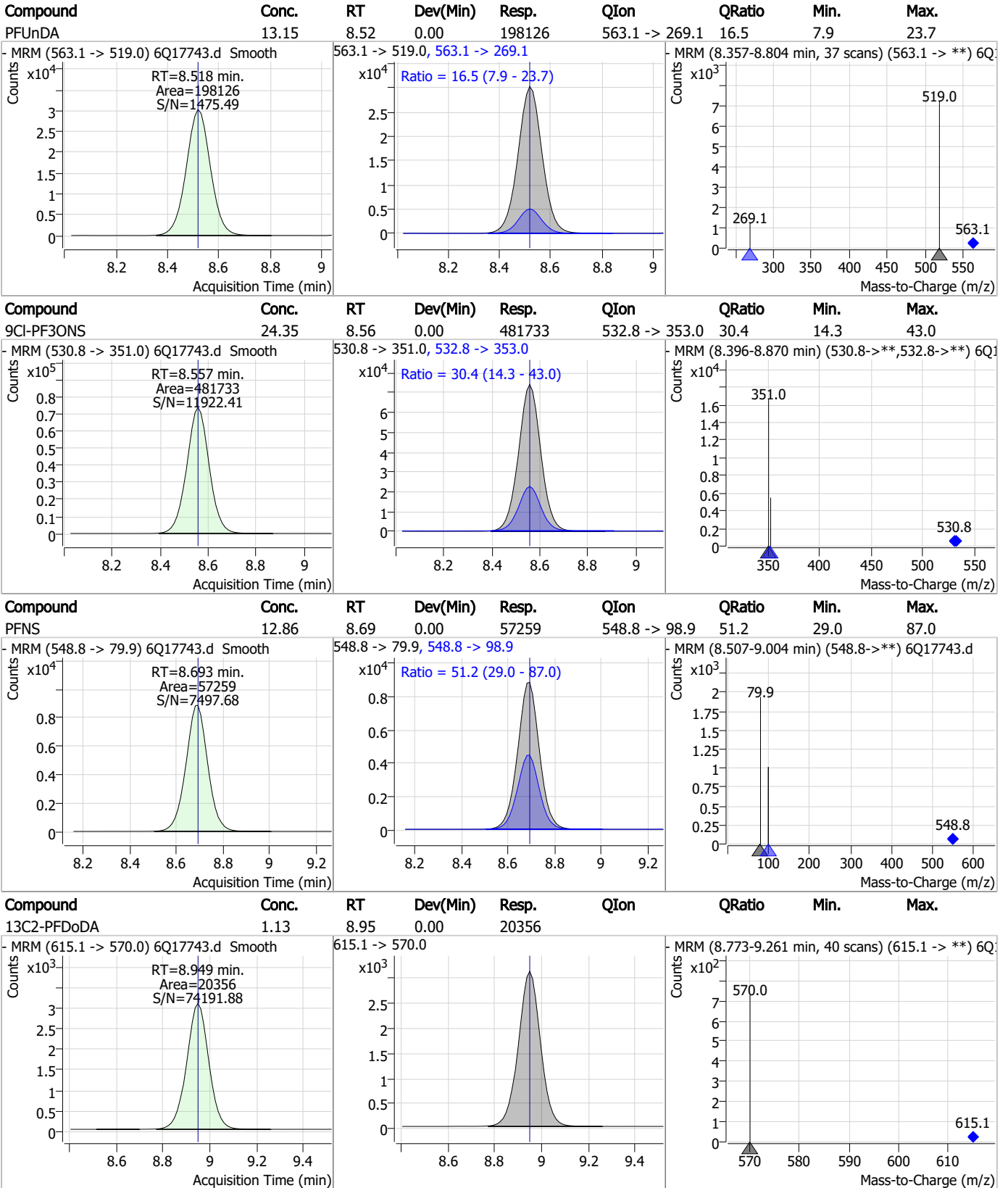
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Perfluorinated Compounds by LC/MS/MS



7.7.7

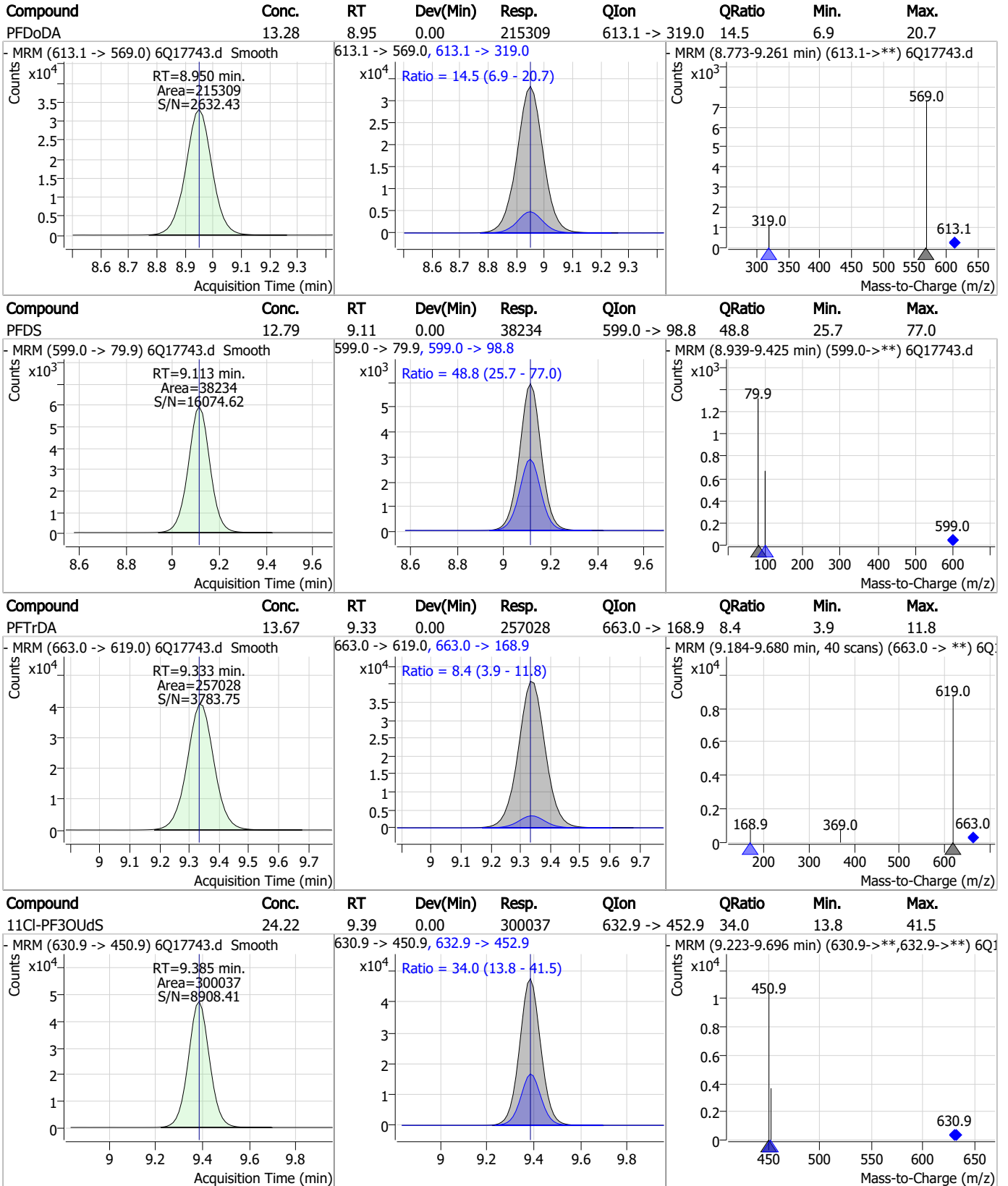
Perfluorinated Compounds by LC/MS/MS



7.7.7

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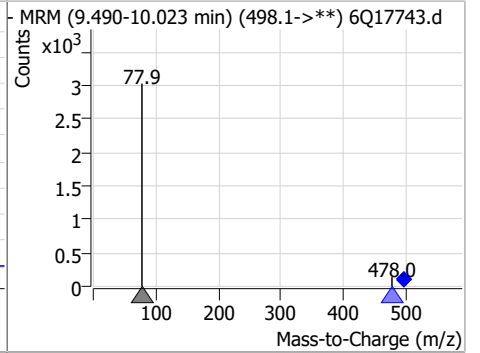
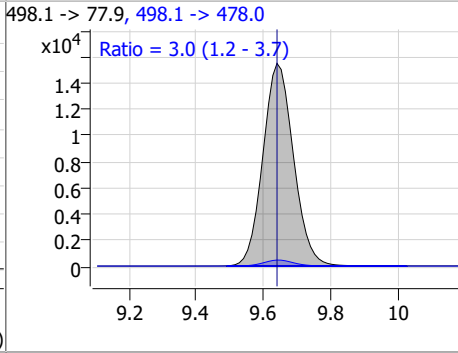
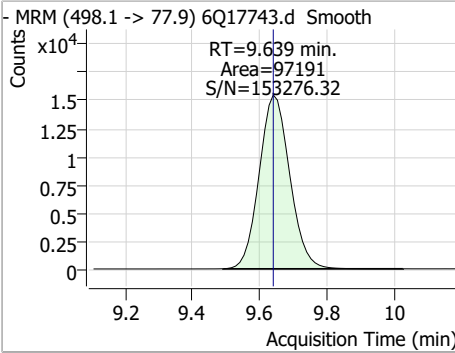
Perfluorinated Compounds by LC/MS/MS



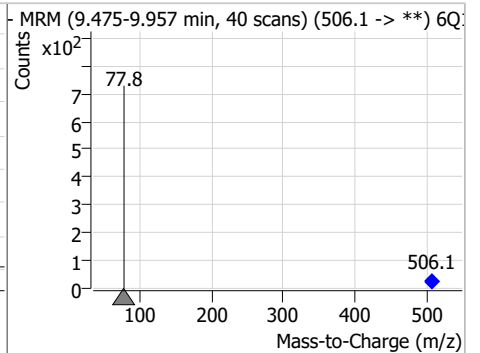
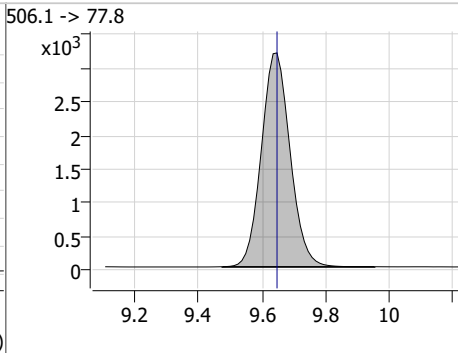
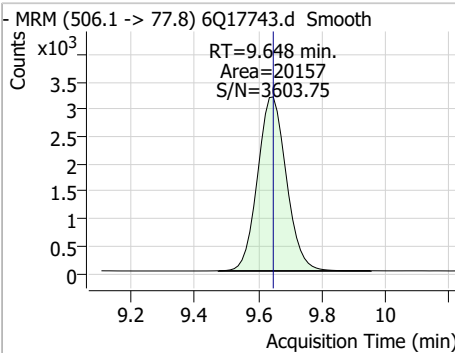
7.7.7
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Perfluorinated Compounds by LC/MS/MS

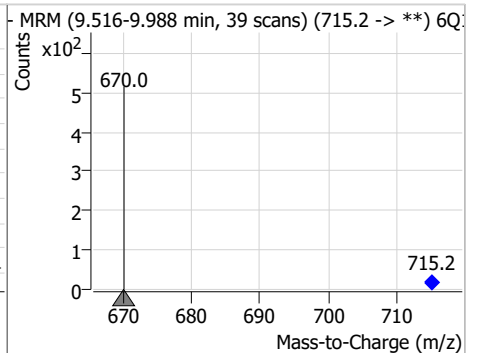
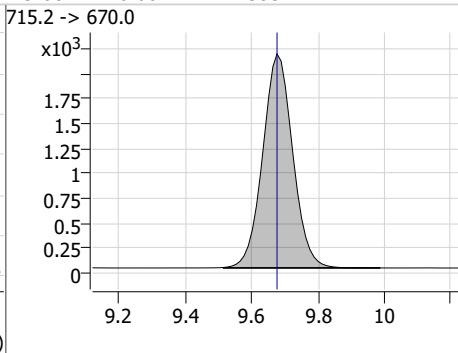
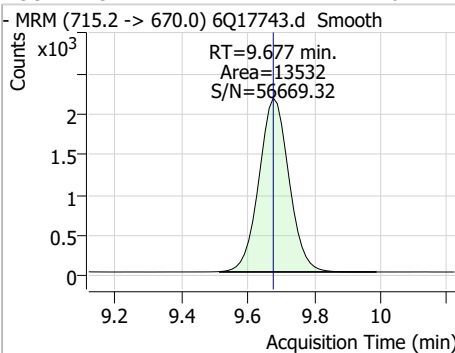
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	12.88	9.64	0.00	97191	498.1 -> 478.0	3.0	1.2	3.7



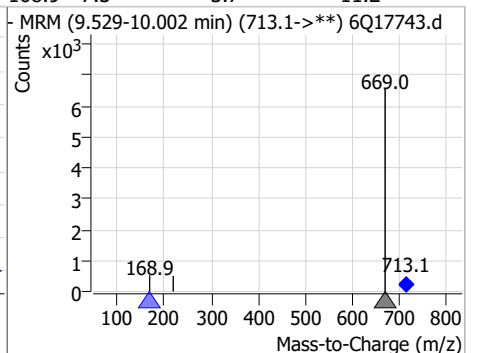
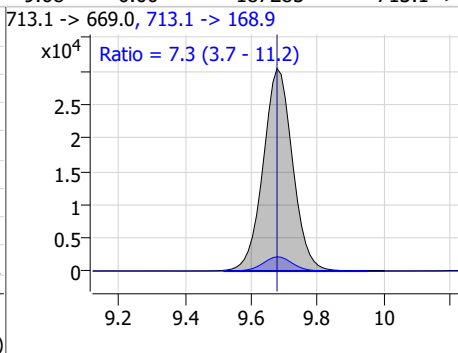
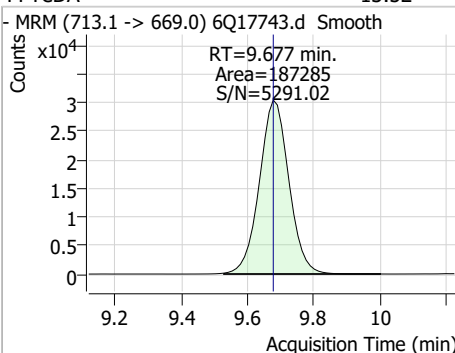
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.58	9.65	0.00	20157				



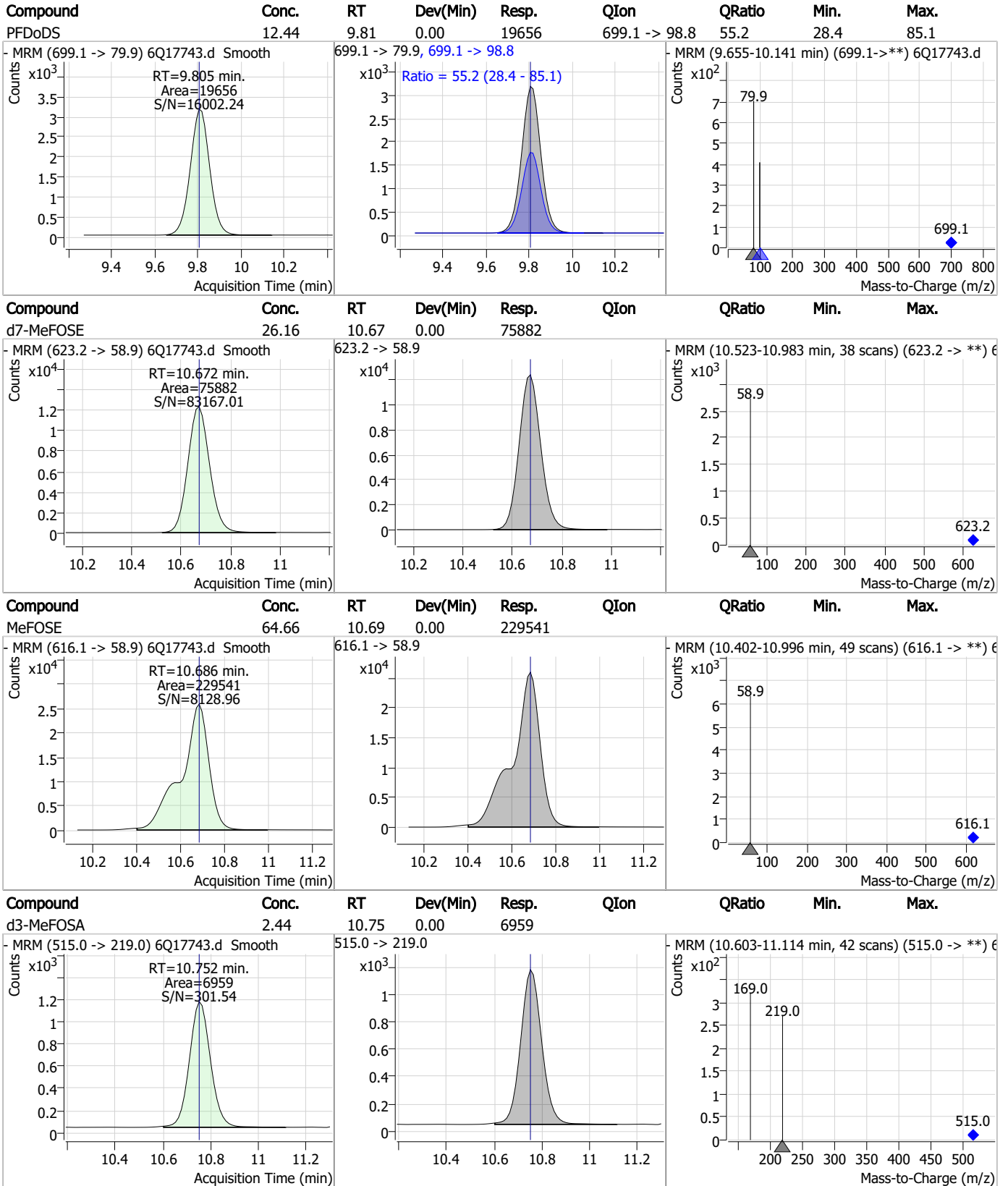
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.10	9.68	0.00	13532				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.52	9.68	0.00	187285	713.1 -> 168.9	7.3	3.7	11.2



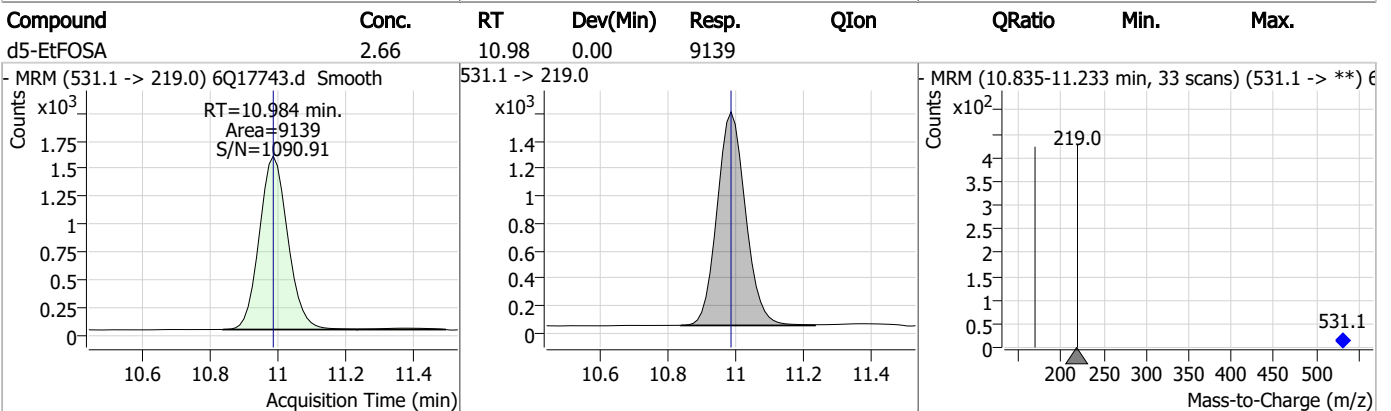
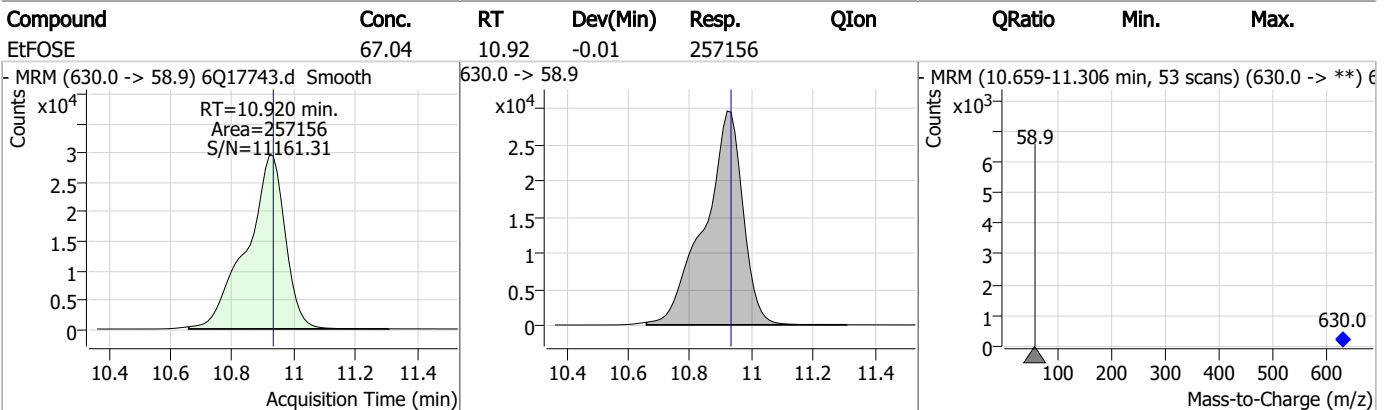
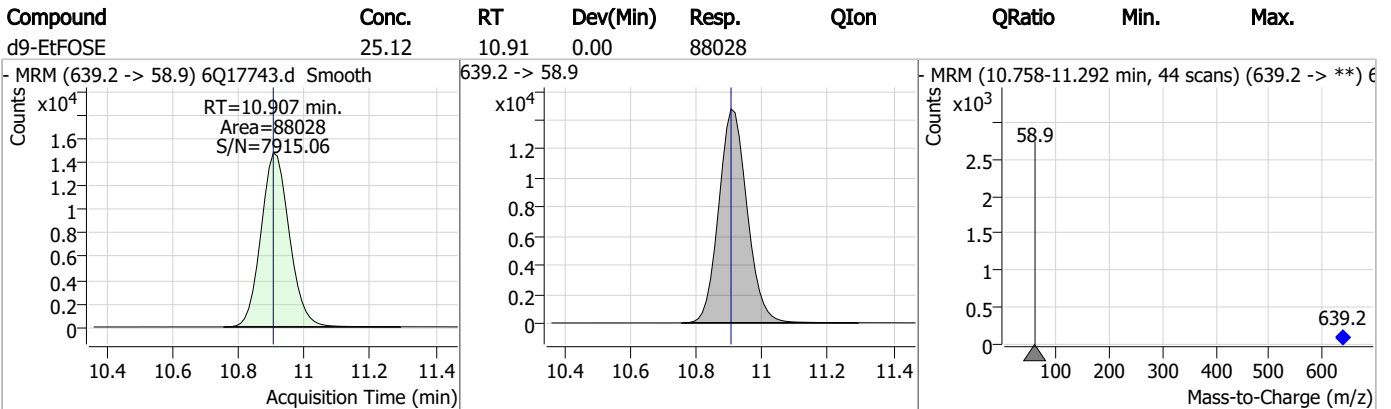
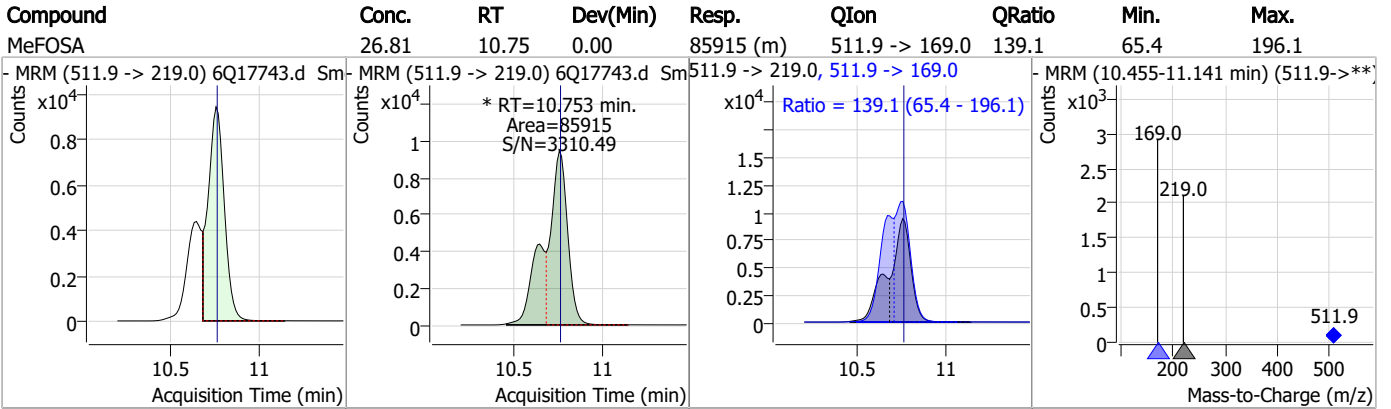
Perfluorinated Compounds by LC/MS/MS



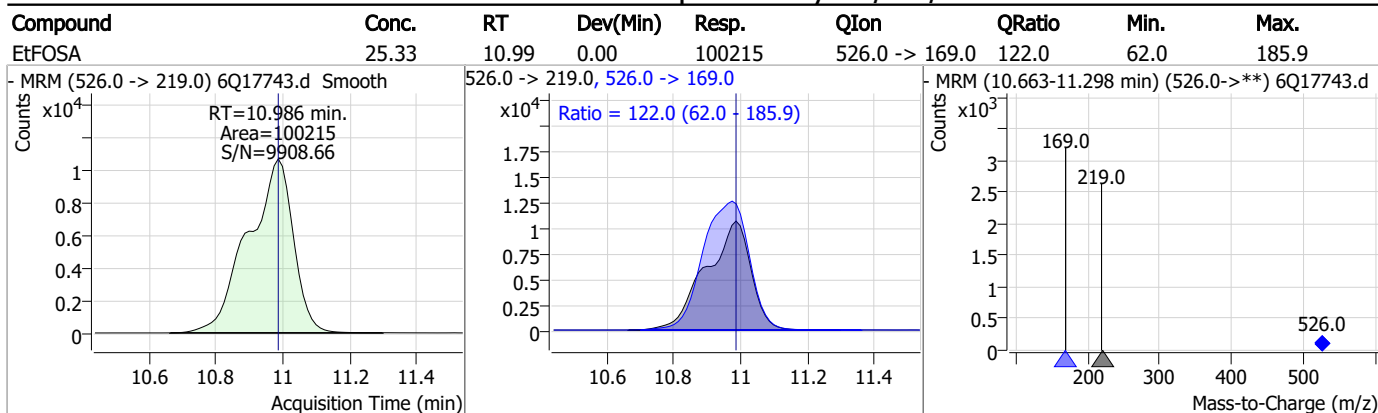
7.7.7

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17743.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 13:27 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 05/16/23 09:33

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17744.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 1:42:21 PM
 Sample Name : ic268-7
 Vial : P1-A8
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	137182	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	44819	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	50550	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	45443	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	69241	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	22152	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	15553	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	21998	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	21688	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14541	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	19986	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	17585	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10459	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9901	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1562	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1816	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2056	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	19068	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	33086	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	15266	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	74091	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	89291	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8863	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7410	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12478	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	58309	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7766	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	71142	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	20343	1.25 µg/L	0.000
13C5-PFNA	7.596	468.0 -> 423.0	21332	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	43894	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1562	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1816	4.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2056	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.3%		
13C2-PFDoDA	8.949	615.1 -> 570.0	21688	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.0%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14541	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFBS	5.397	302.1 -> 79.9	17585	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C3-PFHxS	7.179	402.1 -> 79.9	10459	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 = 101.1%	
13C4-PFBA	2.901	216.8 -> 171.9	137182	9.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.420	367.1 -> 322.0	45443	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.466	318.0 -> 273.0	50550	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C5-PFPeA	4.272	268.3 -> 223.0	44819	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C6-PFDA	8.064	519.1 -> 474.1	15553	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C7-PFUnDA	8.518	570.0 -> 525.1	21998	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C8-FOSA	9.648	506.1 -> 77.8	19986	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-PFOA	7.064	421.1 -> 376.0	69241	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-PFOS	8.226	507.1 -> 79.9	9901	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C9-PFNA	7.595	472.1 -> 427.0	22152	1.40 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.4%	
d3-MeFOSAA	8.121	573.2 -> 419.0	19068	4.88 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	33086	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSA	10.752	515.0 -> 219.0	7410	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
d5-EtFOSAA	8.329	589.2 -> 419.0	15266	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	74091	24.10 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d9-EtFOSE	10.907	639.2 -> 58.9	89291	24.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d5-EtFOSA	10.984	531.1 -> 219.0	8863	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	224885	95.79 µg/L	96
		327.1 -> 80.9	79093		
6:2FTS	6.838	427.1 -> 407.0	199712	101.04 µg/L	97
		427.1 -> 80.9	67791		
8:2FTS	7.865	527.1 -> 507.0	119478	102.30 µg/L	97
		527.1 -> 80.8	46818		
EtFOSAA	8.330	584.2 -> 419.1	71393	25.12 µg/L	m 97
		584.2 -> 526.0	36019		
FOSA	9.639	498.1 -> 77.9	195651	26.15 µg/L	99
		498.1 -> 478.0	5405		
MeFOSAA	8.134	570.1 -> 419.0	94349	25.57 µg/L	97
		570.1 -> 483.0	17376		
PFBA	2.907	212.8 -> 168.9	511180	103.87 µg/L	100
PFBS	5.398	298.7 -> 79.9	198391	23.12 µg/L	96
		298.7 -> 98.8	76841		
PFDA	8.064	512.9 -> 469.0	506238	26.31 µg/L	99
		512.9 -> 219.0	80664		
PFDoDA	8.950	613.1 -> 569.0	414049	23.97 µg/L	97
		613.1 -> 319.0	62812		
PFDS	9.113	599.0 -> 79.9	73360	22.82 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	36042			
PFHpA	6.420	363.1 -> 319.0	578802	25.48	µg/L	99
		363.1 -> 169.0	96366			
PFHpS	7.735	449.0 -> 79.9	117935	22.33	µg/L	94
		449.0 -> 98.9	66804			
PFHxA	5.469	313.0 -> 269.0	530861	26.51	µg/L	99
		313.0 -> 118.9	24120			
PFHxS	7.180	398.7 -> 79.9	136702	23.61	µg/L	m 98
		398.7 -> 98.9	66009			
PFNA	7.596	463.0 -> 419.0	416537	25.31	µg/L	100
		463.0 -> 219.0	85704			
PFNS	8.693	548.8 -> 79.9	108047	22.57	µg/L	96
		548.8 -> 98.9	59142			
PFOA	7.066	413.0 -> 369.0	806699	23.41	µg/L	99
		413.0 -> 169.0	139830			
PFOS	8.228	498.9 -> 79.9	113729	21.91	µg/L	m 97
		498.9 -> 98.8	58374			
PFPeA	4.274	263.0 -> 219.0	687931	53.15	µg/L	100
PFPeS	6.471	349.1 -> 79.9	147387	25.67	µg/L	96
		349.1 -> 98.9	62680			
PFTeDA	9.677	713.1 -> 669.0	371936	24.98	µg/L	99
		713.1 -> 168.9	26426			
PFTrDA	9.333	663.0 -> 619.0	480250	23.98	µg/L	96
		663.0 -> 168.9	43633			
PFUnDA	8.518	563.1 -> 519.0	386419	24.19	µg/L	99
		563.1 -> 269.1	62457			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	564837	45.18	µg/L	90
		632.9 -> 452.9	185837			
9Cl-PF3ONS	8.557	530.8 -> 351.0	961377	48.14	µg/L	100
		532.8 -> 353.0	273734			
ADONA	6.671	376.9 -> 250.9	2480089	47.07	µg/L	96
		376.9 -> 84.8	640339			
HFPO-DA	5.832	284.9 -> 168.9	165277	51.67	µg/L	98
		284.9 -> 184.9	21400			
3:3FTCA	3.777	241.0 -> 177.0	107068	133.50	µg/L	98
		241.0 -> 117.0	13439			
5:3FTCA	6.161	341.0 -> 237.1	2116542	610.06	µg/L	95
		341.0 -> 217.0	1631222			
7:3FTCA	7.586	441.0 -> 316.9	988688	628.17	µg/L	92
		441.0 -> 336.9	2194148			
EtFOSA	10.986	526.0 -> 219.0	202563	52.80	µg/L	98
		526.0 -> 169.0	247317			
EtFOSE	10.932	630.0 -> 58.9	510030	131.08	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	174067	51.02	µg/L	m 89
		511.9 -> 169.0	249004			
MeFOSE	10.686	616.1 -> 58.9	459983	132.71	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	40306	23.72	µg/L	100
		699.1 -> 98.8	22918			
NFDHA	5.348	295.0 -> 201.0	113127	51.17	µg/L	98
		295.0 -> 84.9	30010			
PFMBA	4.675	279.0 -> 85.1	476472	51.59	µg/L	100
PFMPA	3.426	229.0 -> 84.9	353125	53.09	µg/L	100
PFEESA	5.938	314.8 -> 134.9	1223978	45.53	µg/L	100
		314.8 -> 82.9	43766			

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

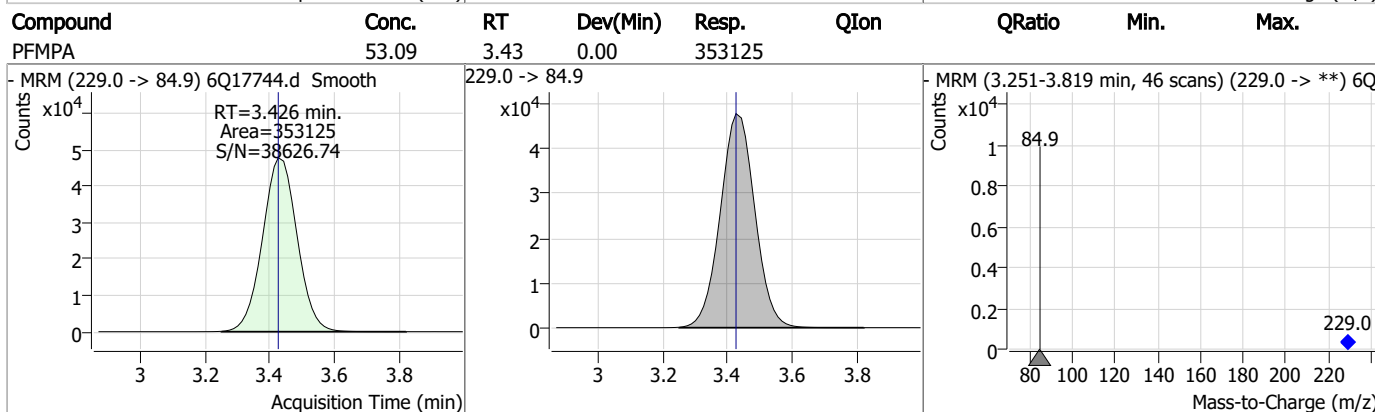
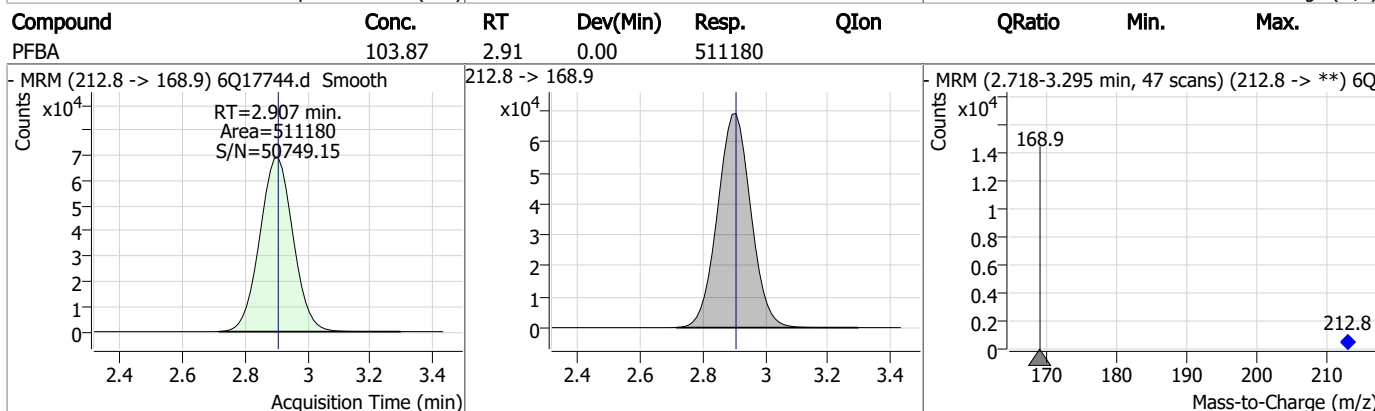
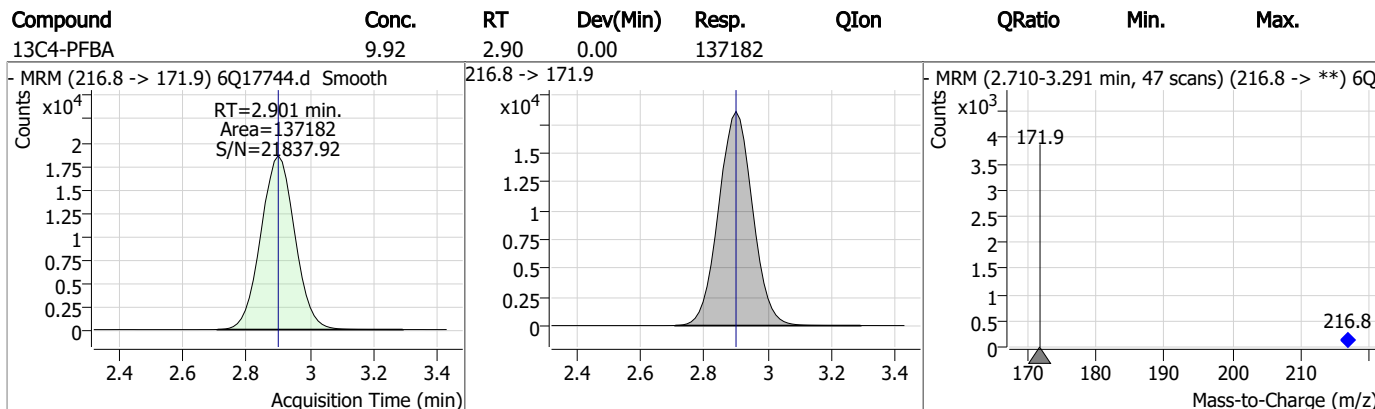
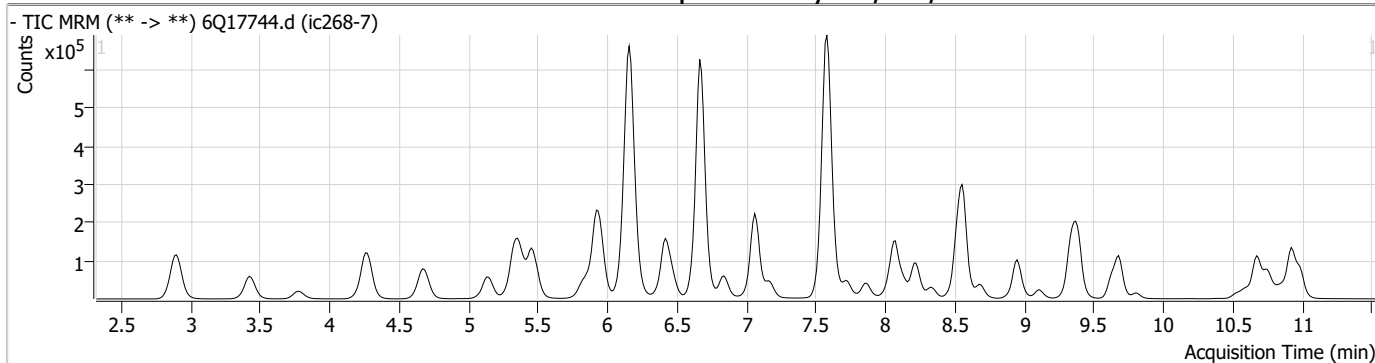
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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7.7.8
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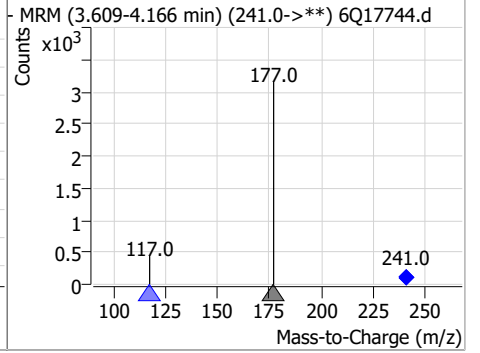
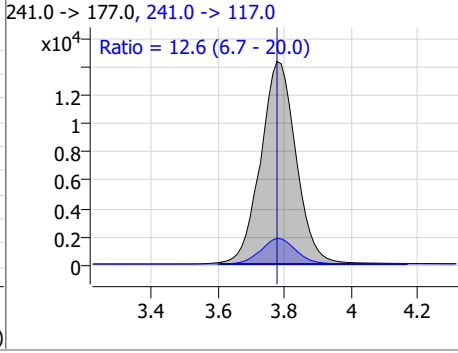
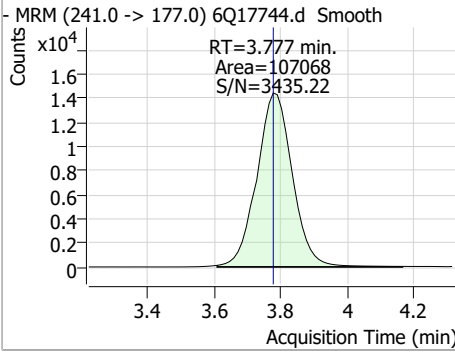


Perfluorinated Compounds by LC/MS/MS

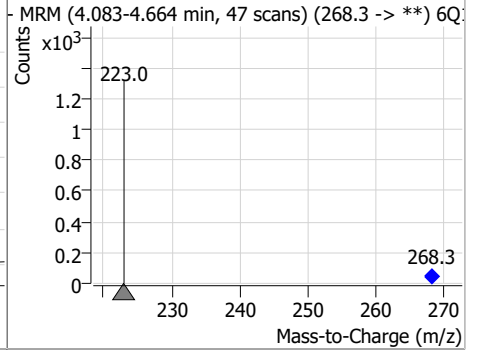
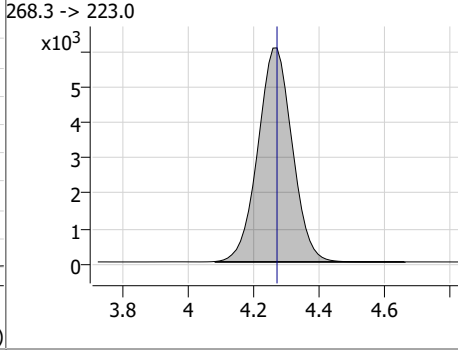
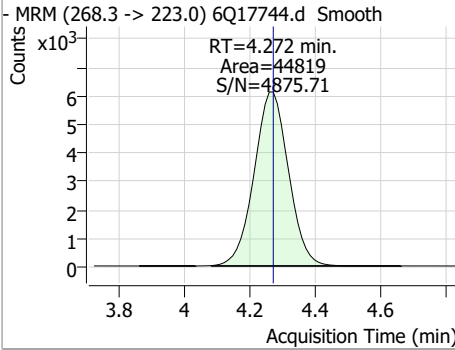


Perfluorinated Compounds by LC/MS/MS

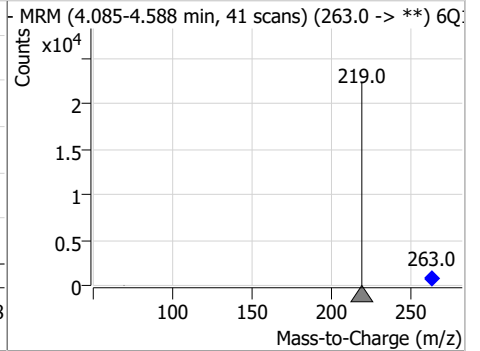
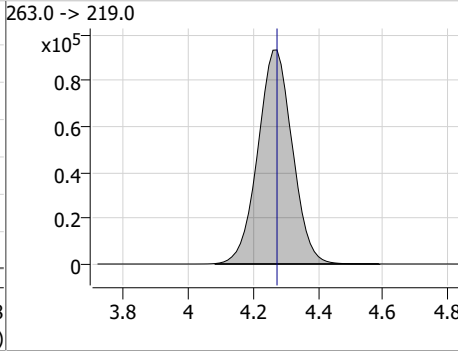
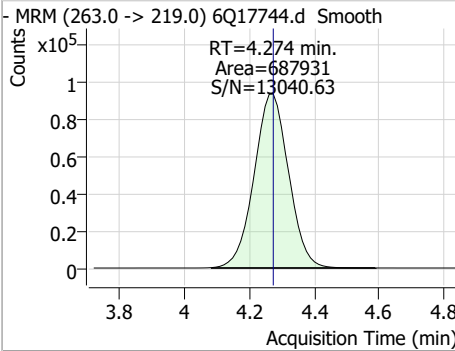
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	133.50	3.78	0.00	107068	241.0 -> 117.0	12.6	6.7	20.0



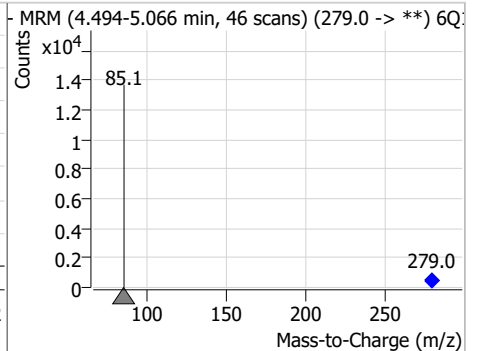
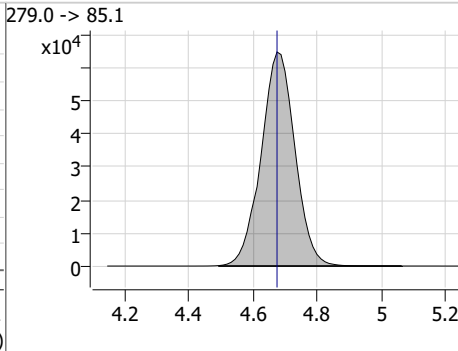
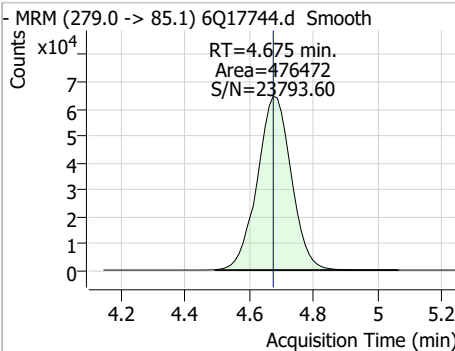
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.85	4.27	0.00	44819				



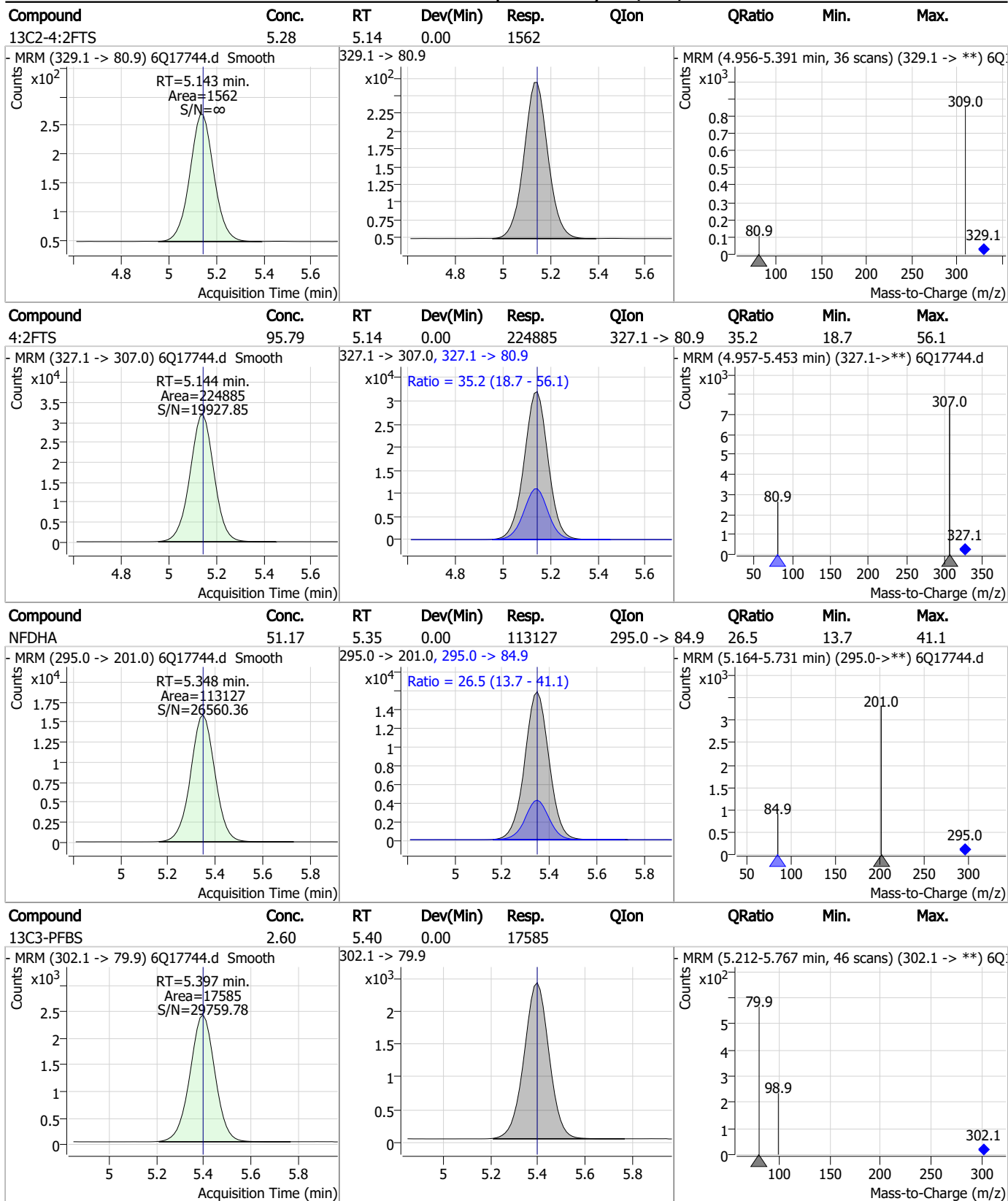
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	53.15	4.27	0.00	687931				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	51.59	4.68	0.00	476472				

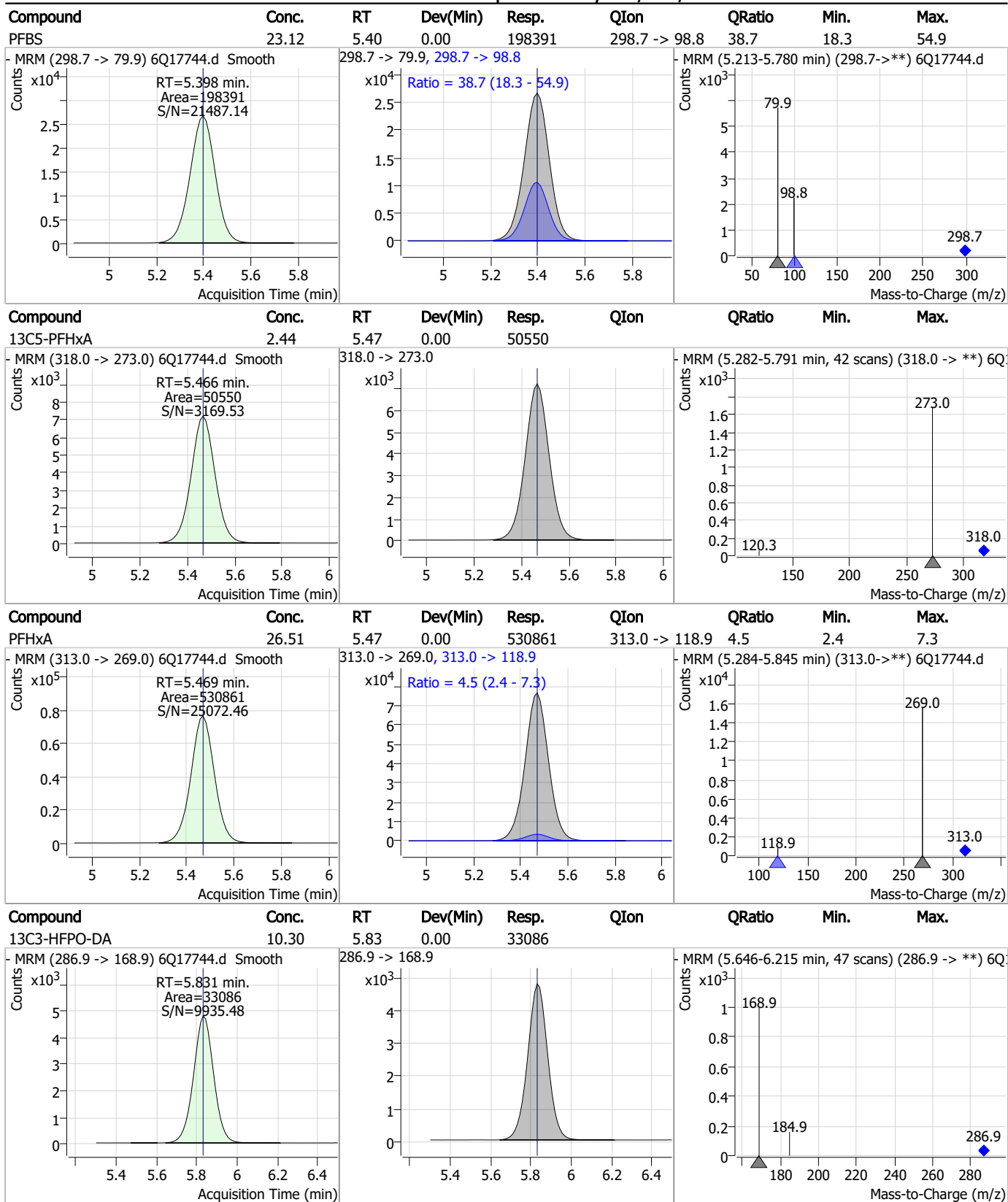


Perfluorinated Compounds by LC/MS/MS



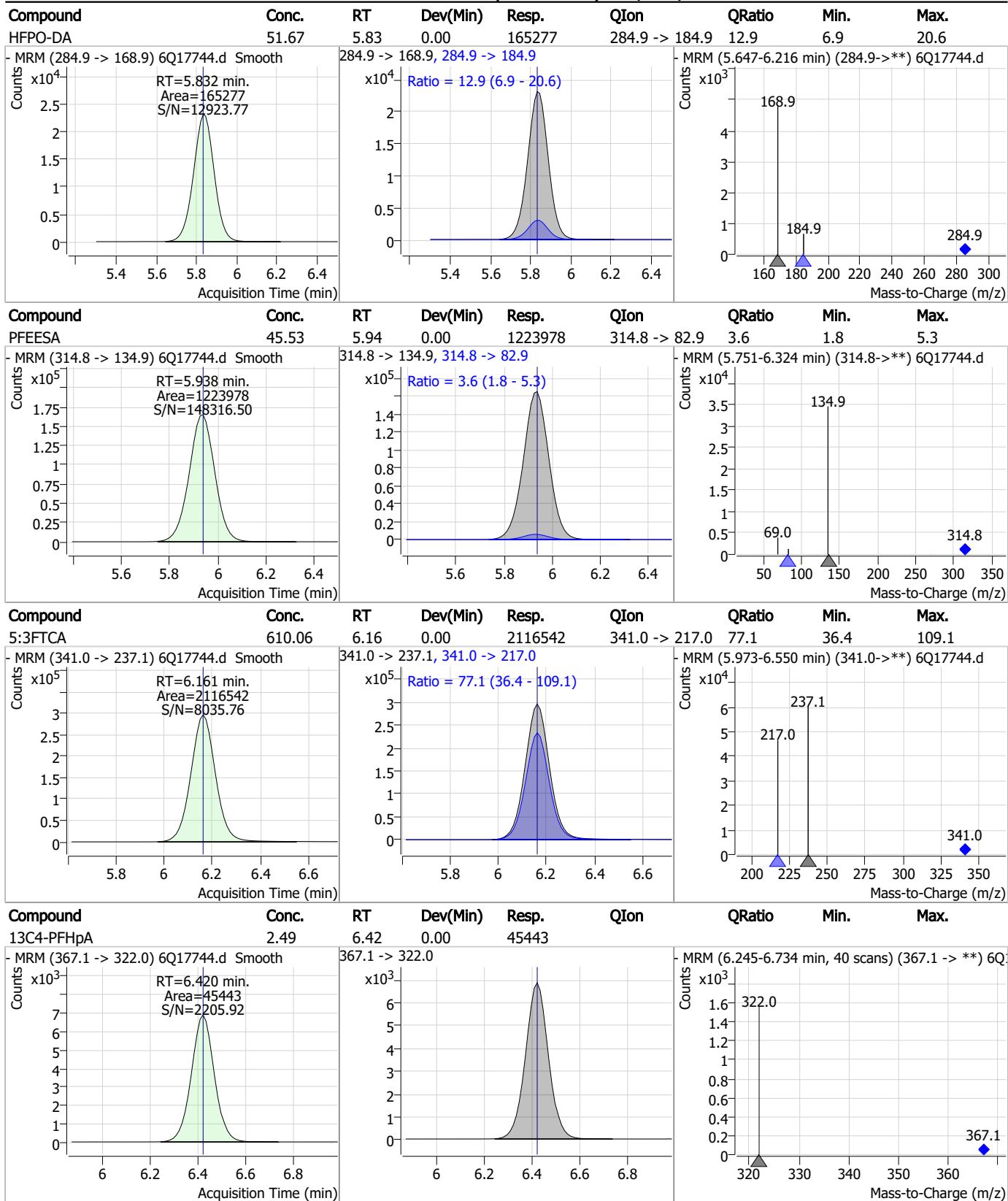
7.7.8
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Perfluorinated Compounds by LC/MS/MS



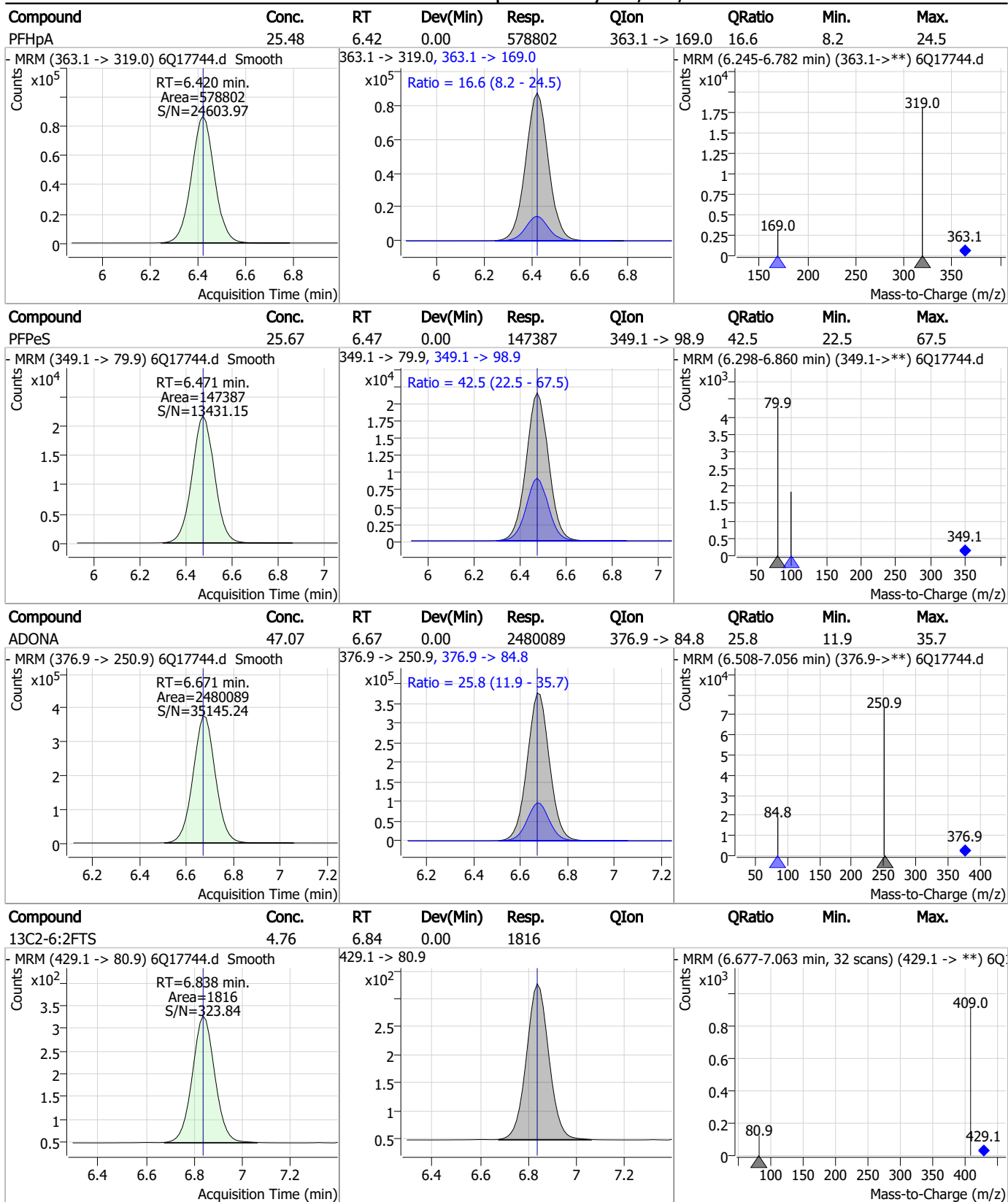
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Perfluorinated Compounds by LC/MS/MS



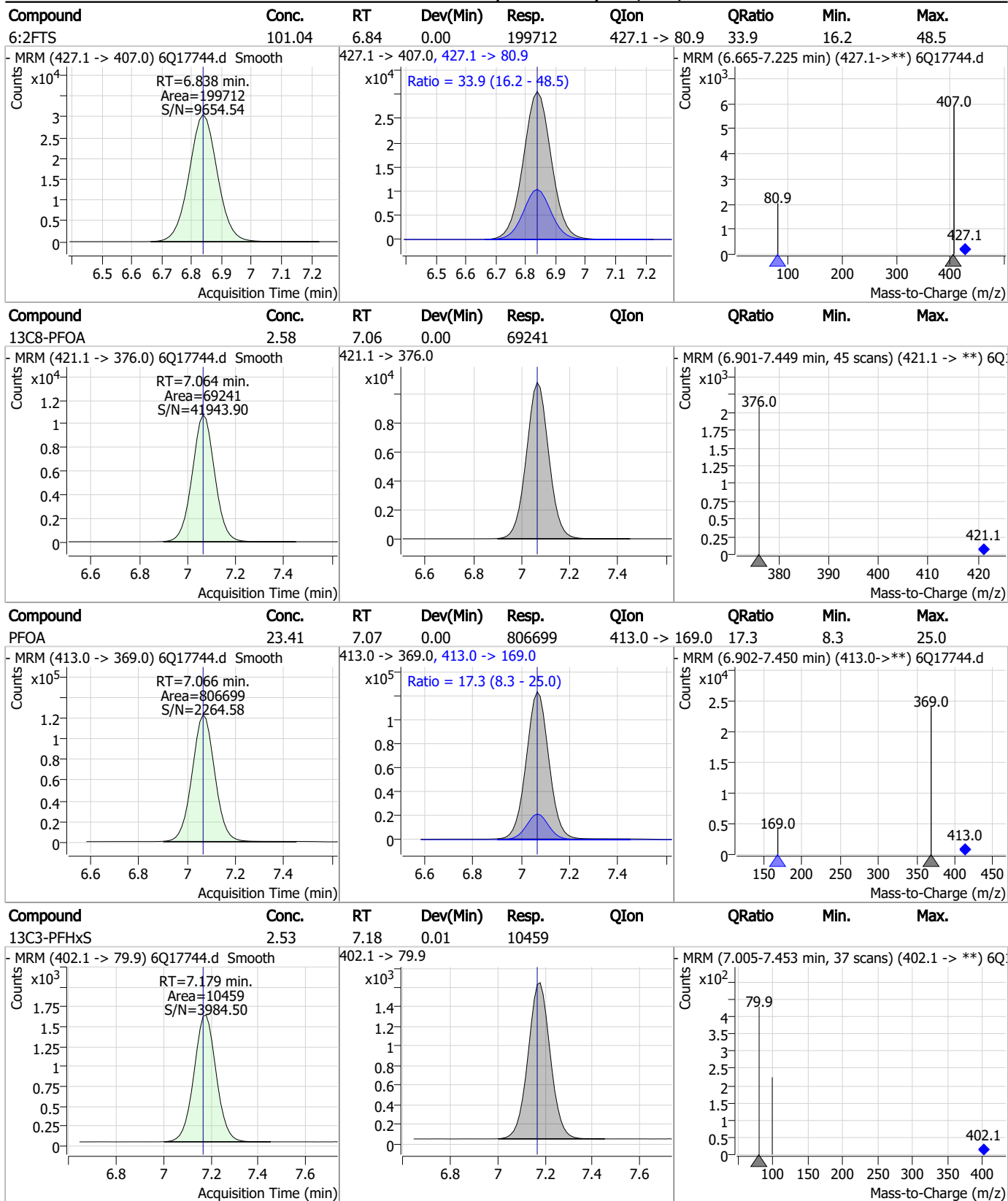
7.7.8
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Perfluorinated Compounds by LC/MS/MS



7.7.8
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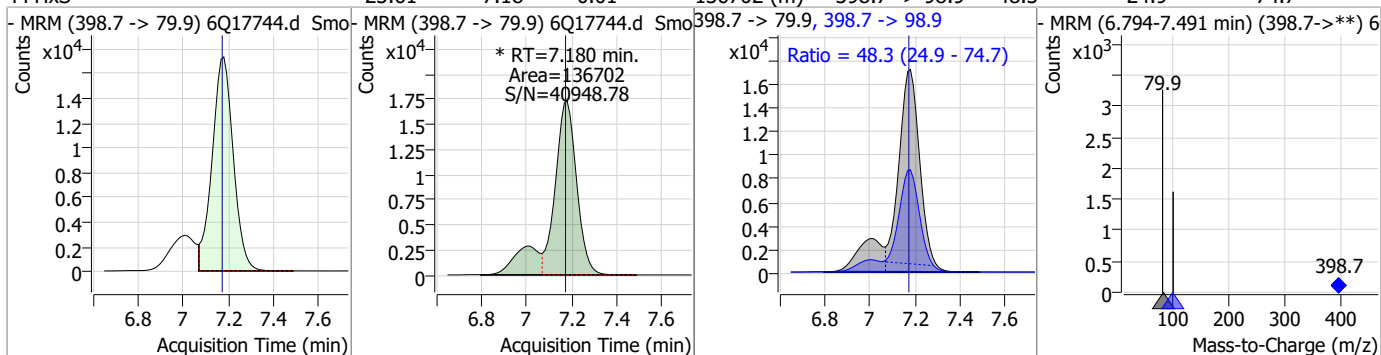
Perfluorinated Compounds by LC/MS/MS



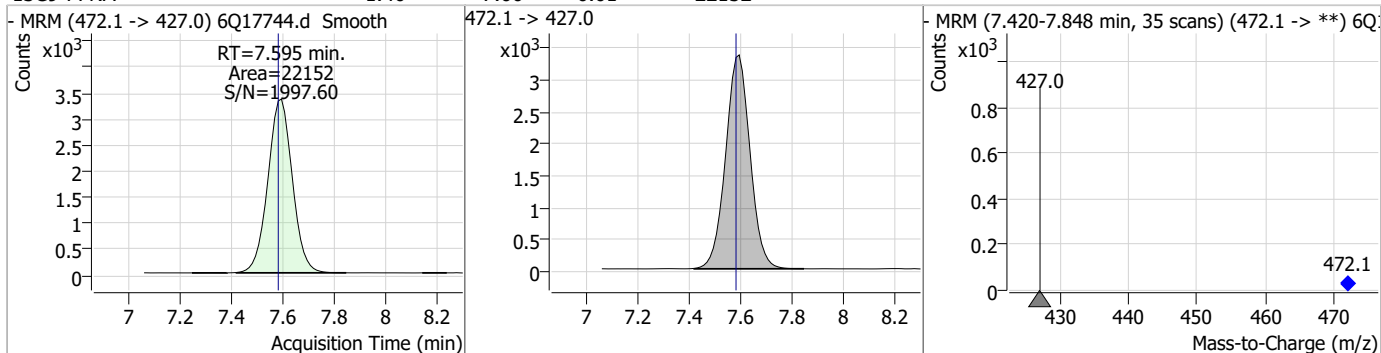
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Perfluorinated Compounds by LC/MS/MS

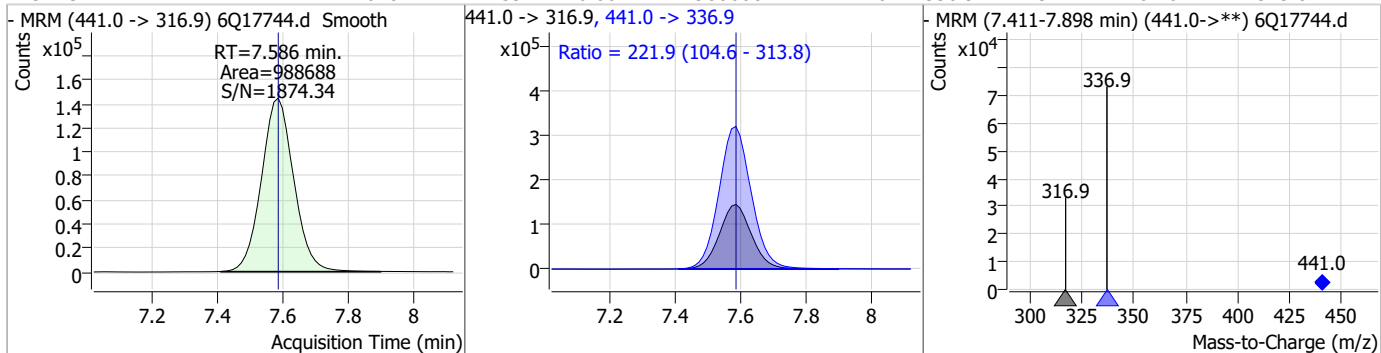
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	23.61	7.18	0.01	136702 (m)	398.7 -> 98.9	48.3	24.9	74.7



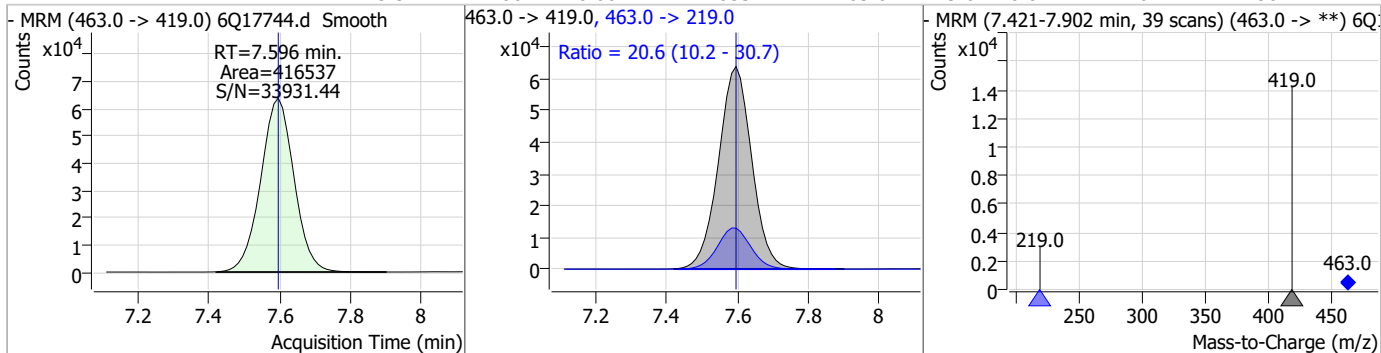
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.40	7.60	0.01	22152				



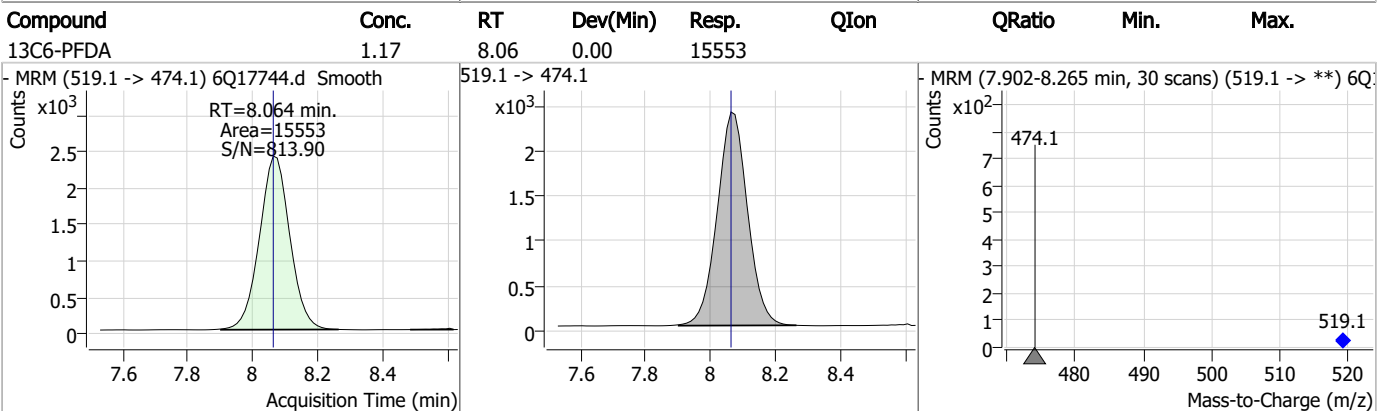
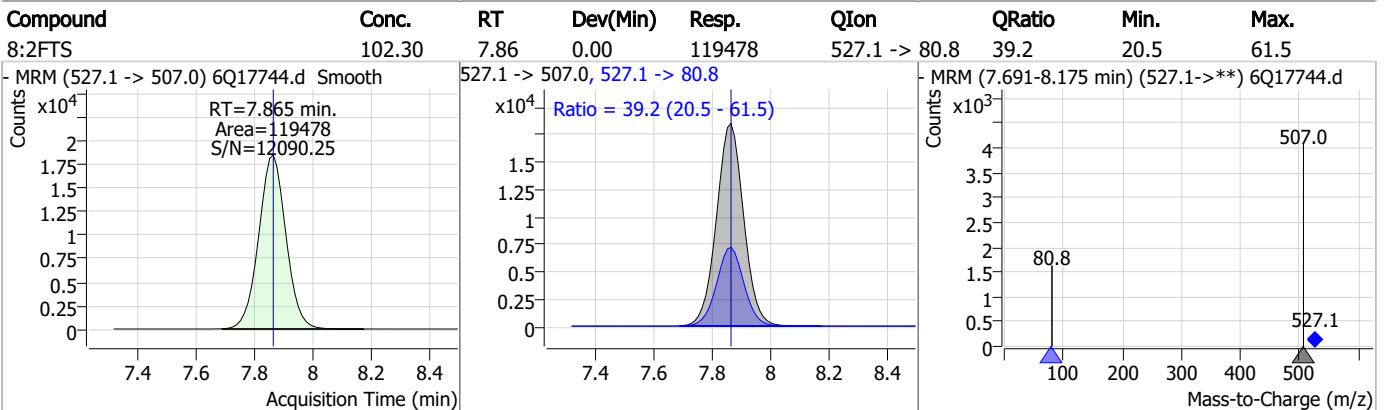
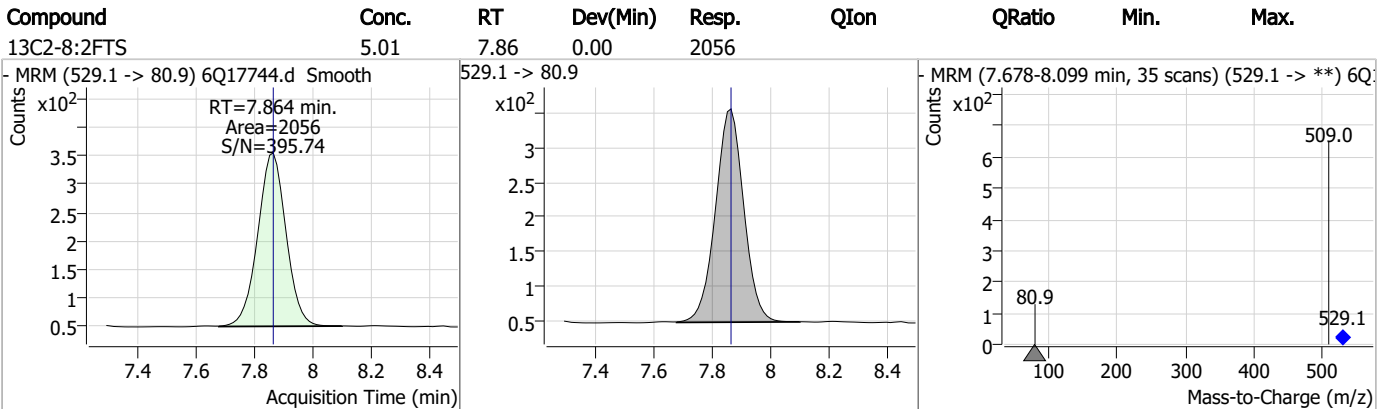
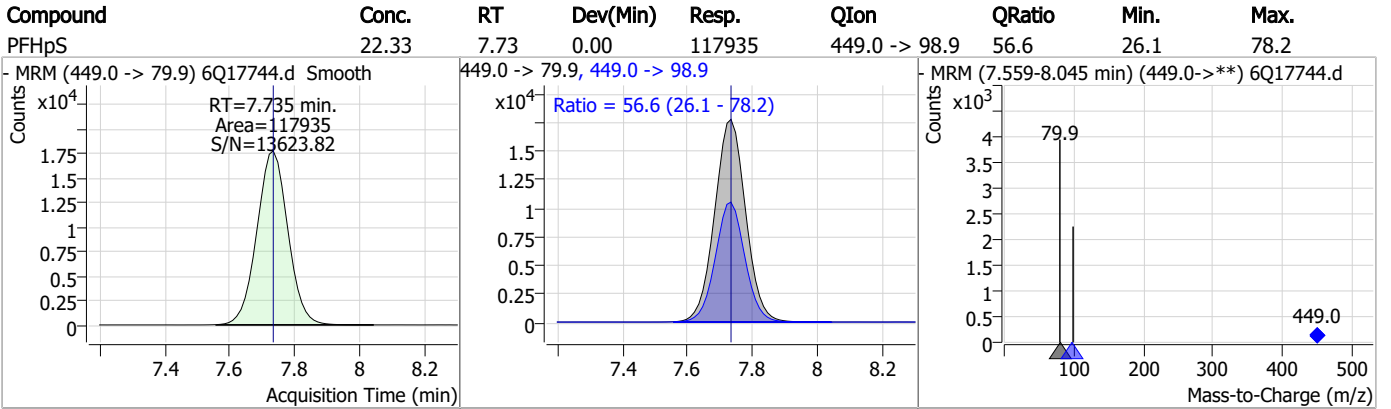
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	628.17	7.59	0.00	988688	441.0 -> 336.9	221.9	104.6	313.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	25.31	7.60	0.00	416537	463.0 -> 219.0	20.6	10.2	30.7



Perfluorinated Compounds by LC/MS/MS

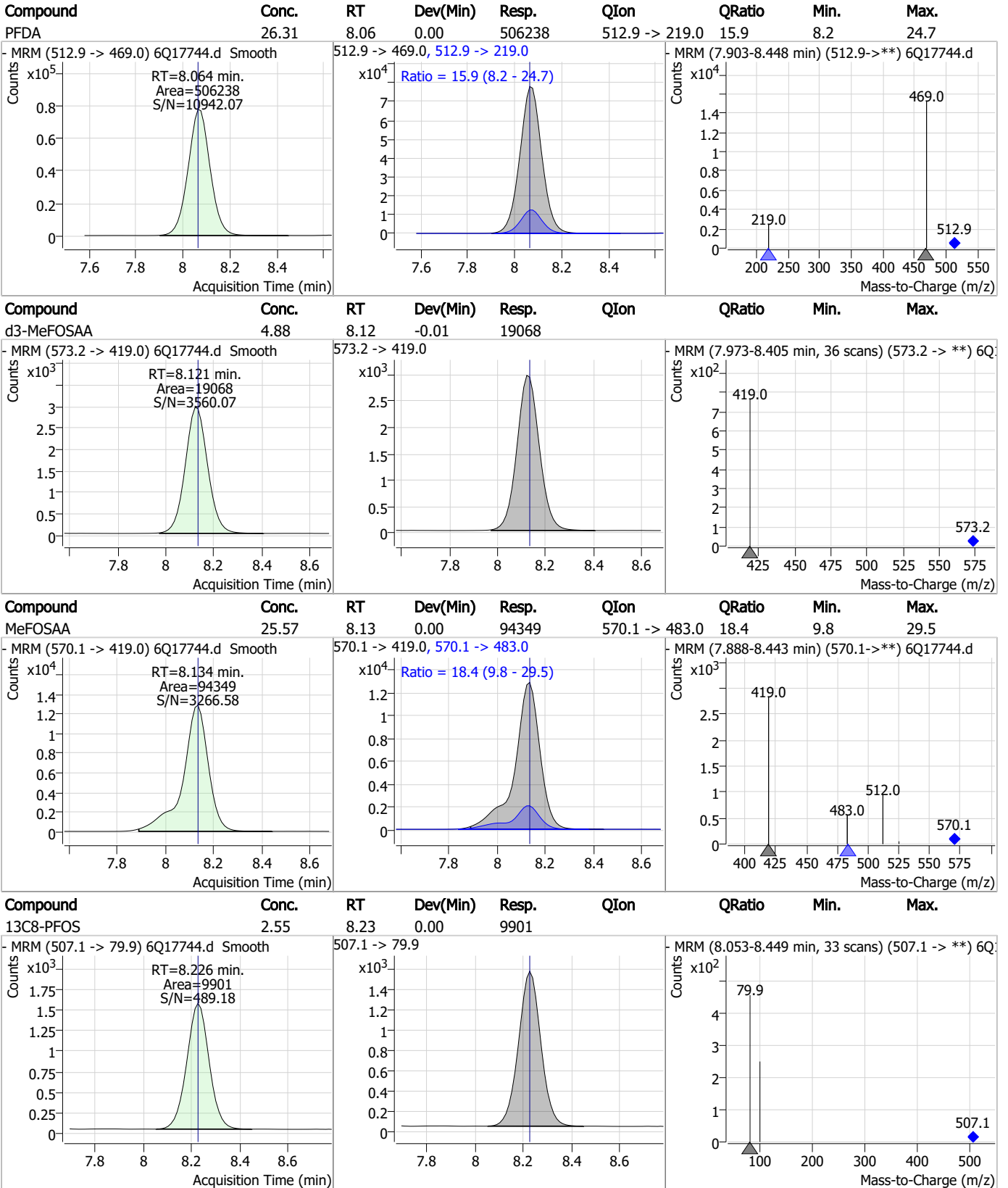


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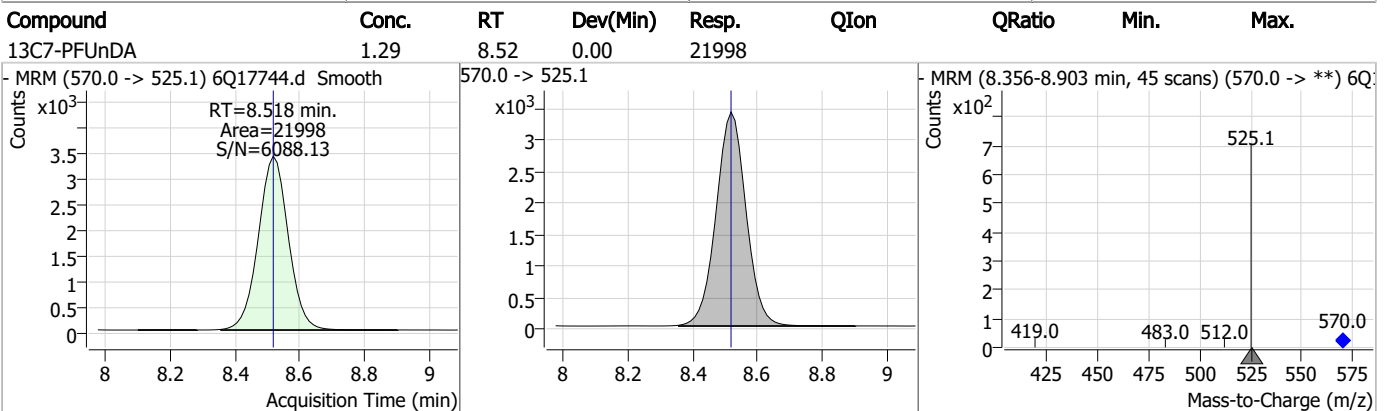
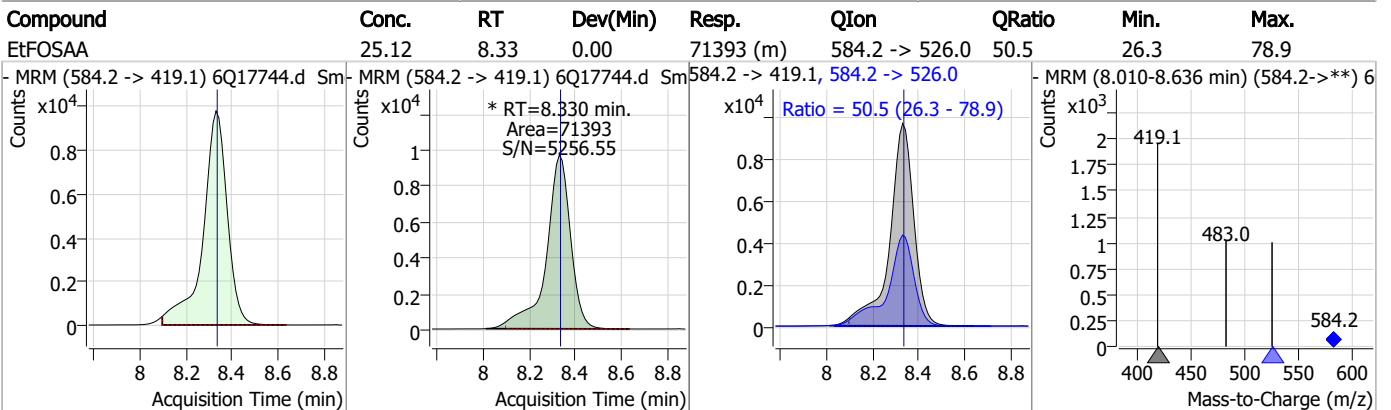
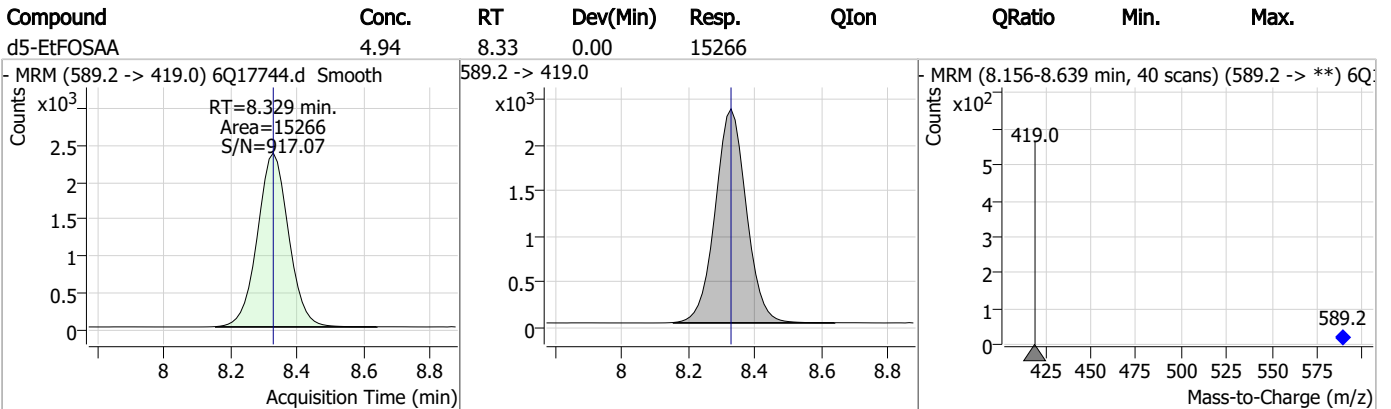
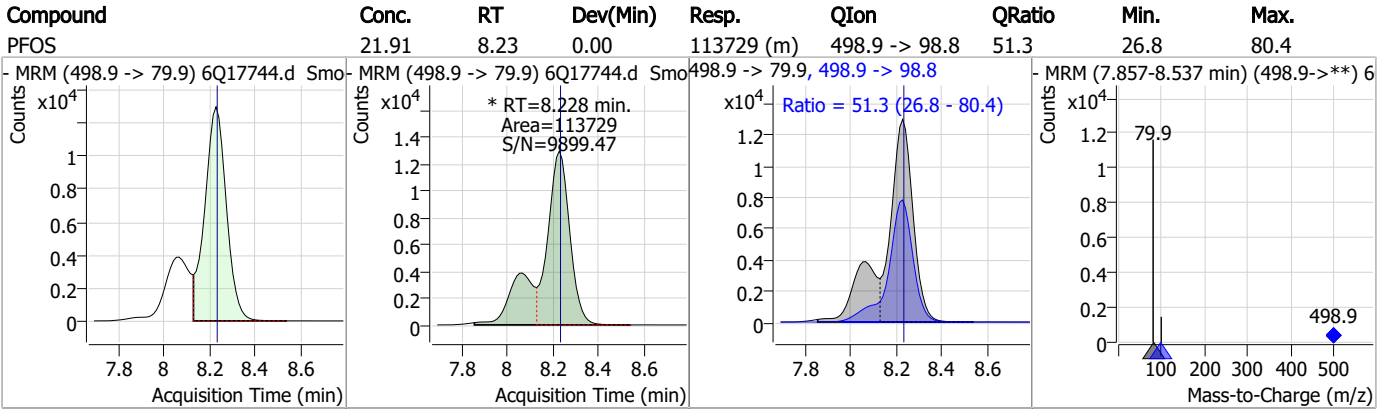
Perfluorinated Compounds by LC/MS/MS



7.7.8

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Perfluorinated Compounds by LC/MS/MS

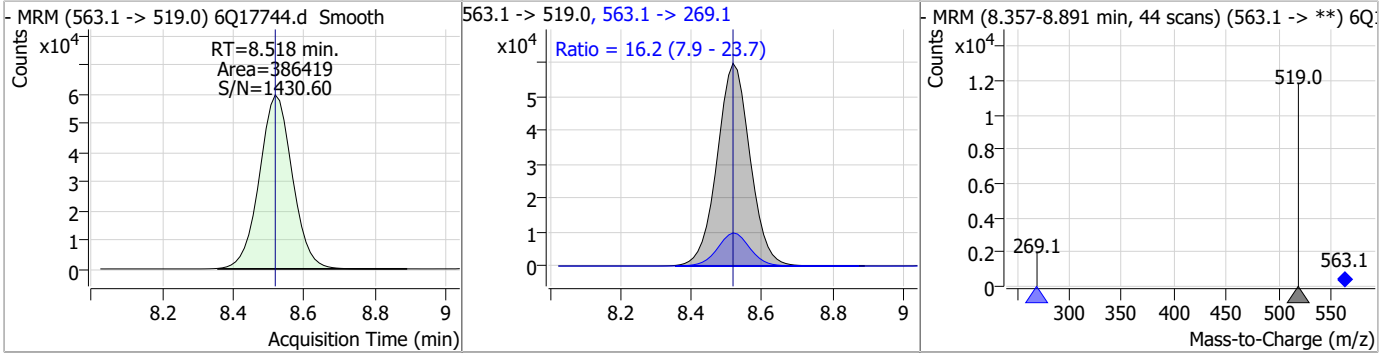


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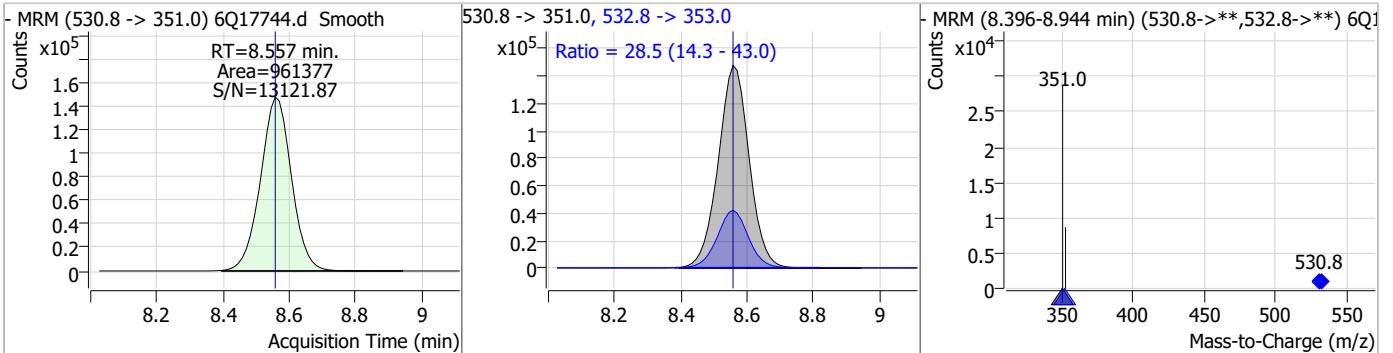
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Perfluorinated Compounds by LC/MS/MS

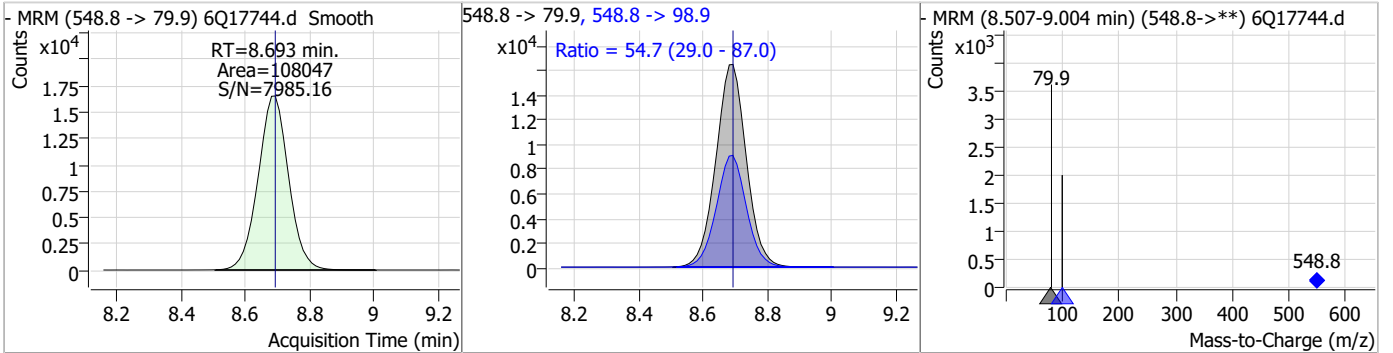
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	24.19	8.52	0.00	386419	563.1 -> 269.1	16.2	7.9	23.7



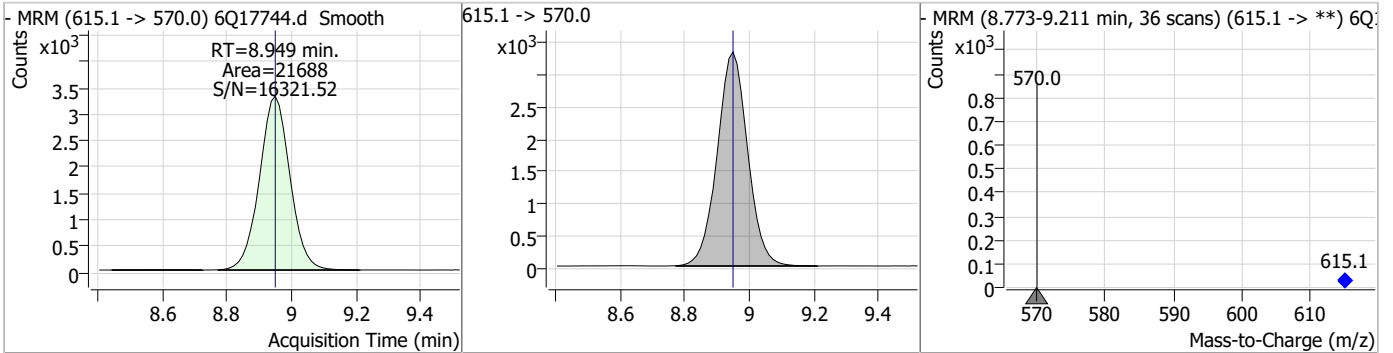
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	48.14	8.56	0.00	961377	532.8 -> 353.0	28.5	14.3	43.0



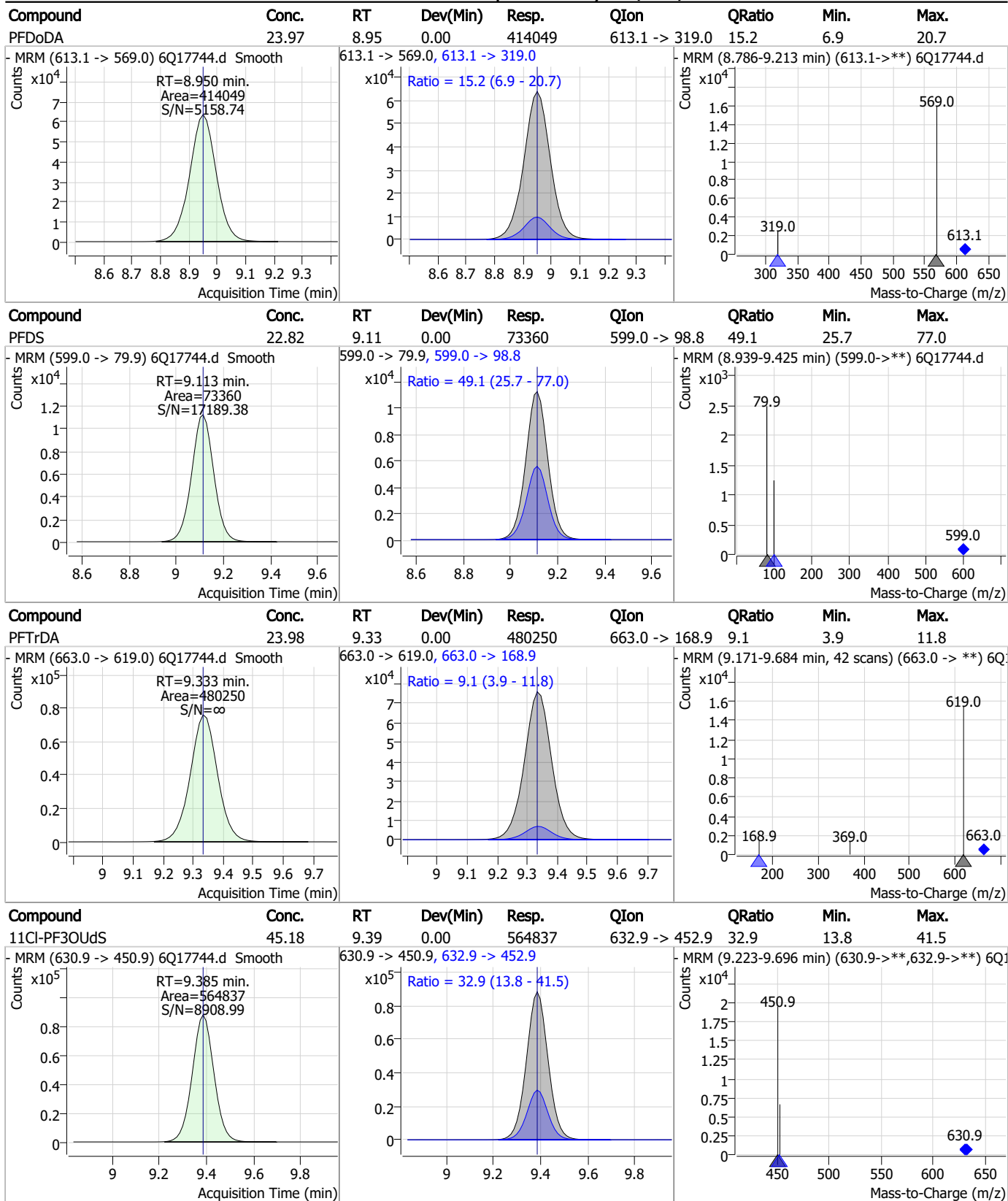
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.57	8.69	0.00	108047	548.8 -> 98.9	54.7	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	8.95	0.00	21688	615.1 -> 570.0			



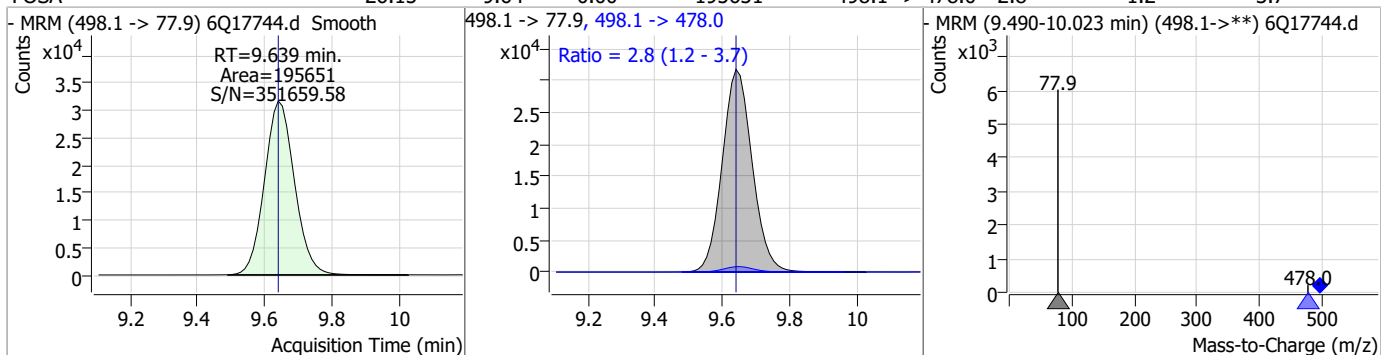
Perfluorinated Compounds by LC/MS/MS



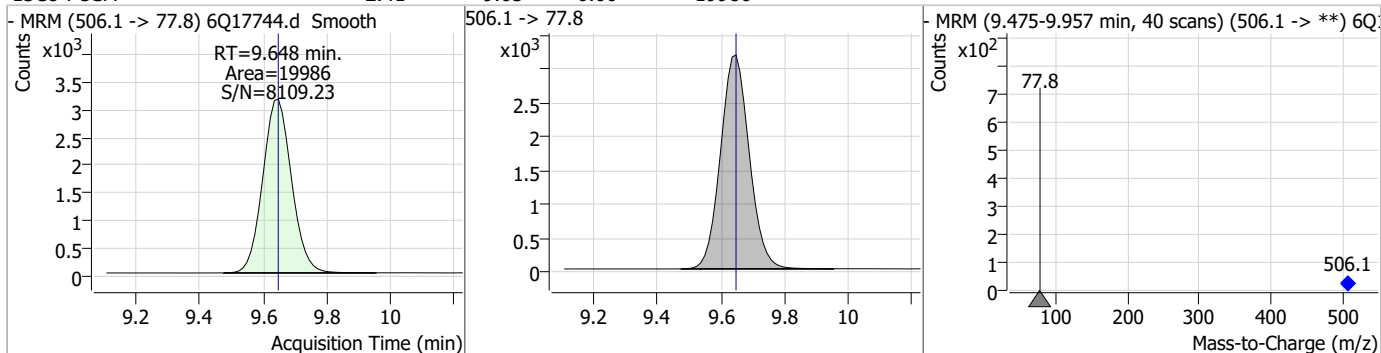
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Perfluorinated Compounds by LC/MS/MS

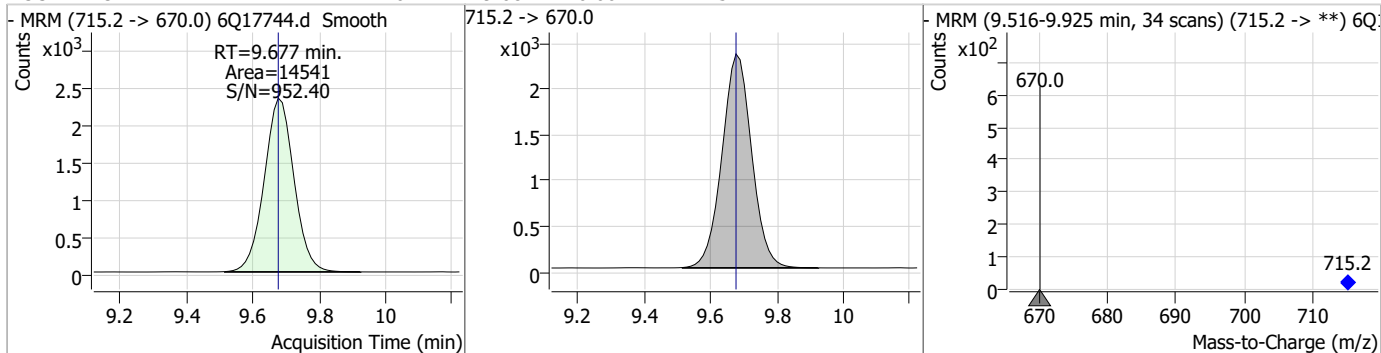
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	26.15	9.64	0.00	195651	498.1 -> 478.0	2.8	1.2	3.7



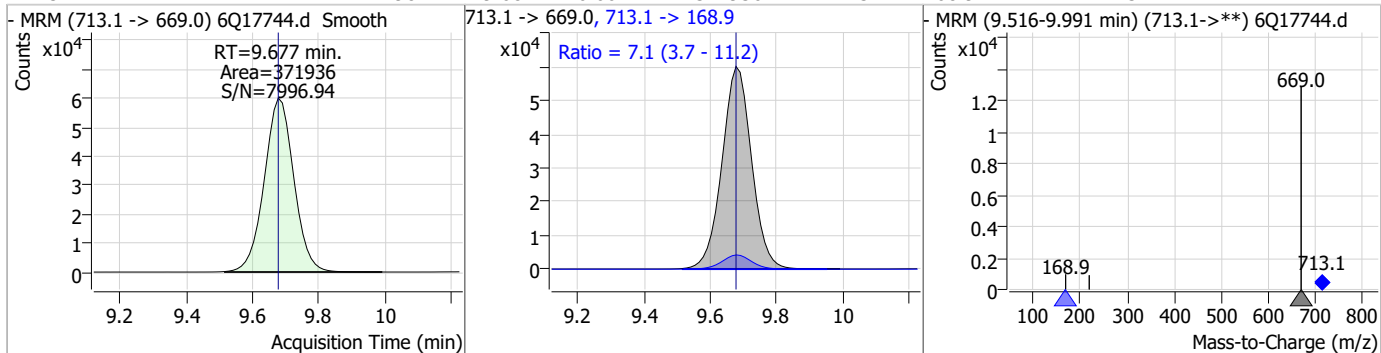
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.41	9.65	0.00	19986				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.26	9.68	0.00	14541				



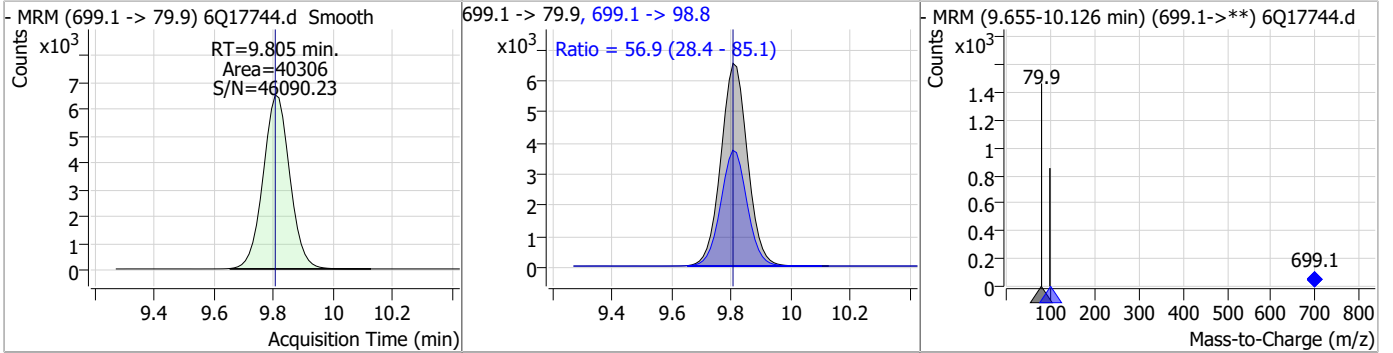
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	24.98	9.68	0.00	371936	713.1 -> 168.9	7.1	3.7	11.2



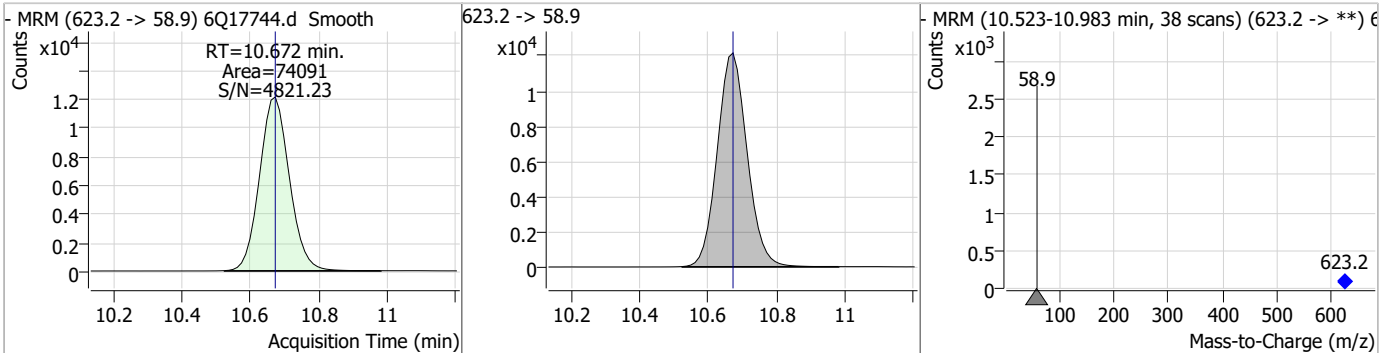
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Perfluorinated Compounds by LC/MS/MS

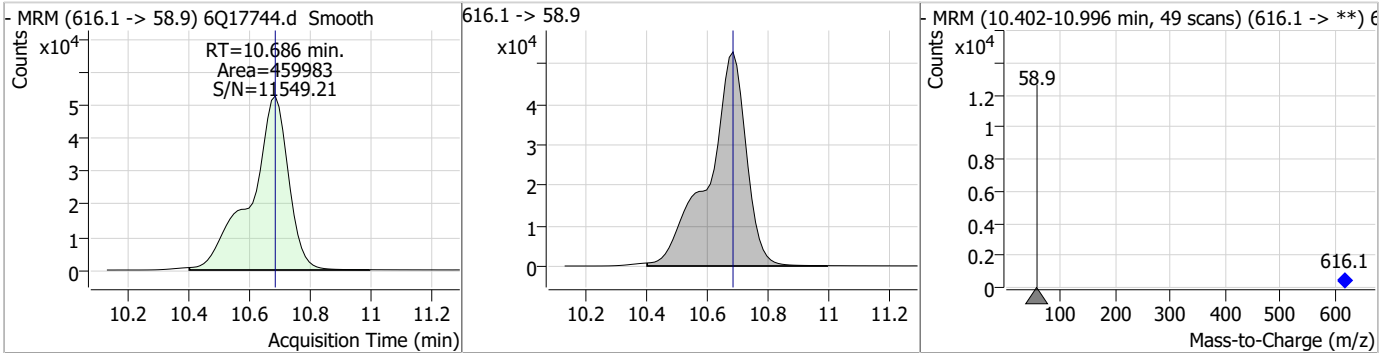
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	23.72	9.81	0.00	40306	699.1 -> 98.8	56.9	28.4	85.1



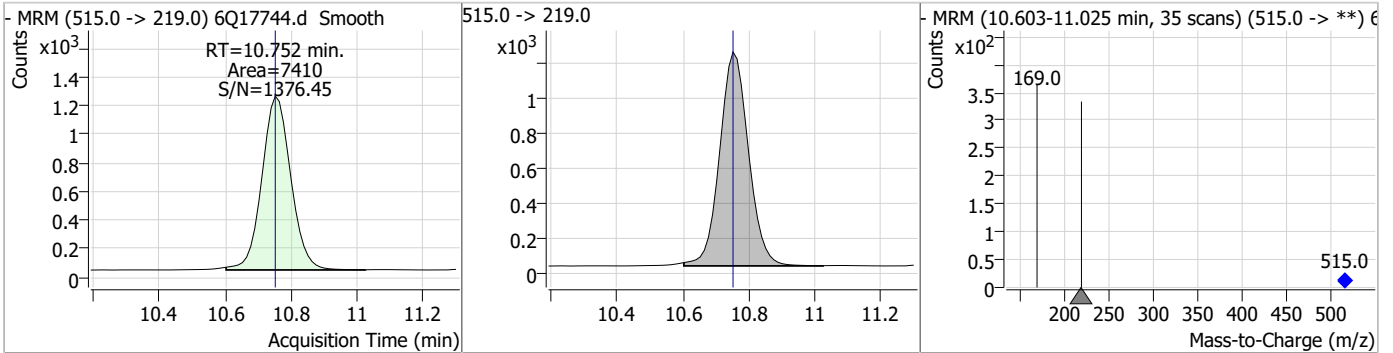
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.10	10.67	0.00	74091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	132.71	10.69	0.00	459983				

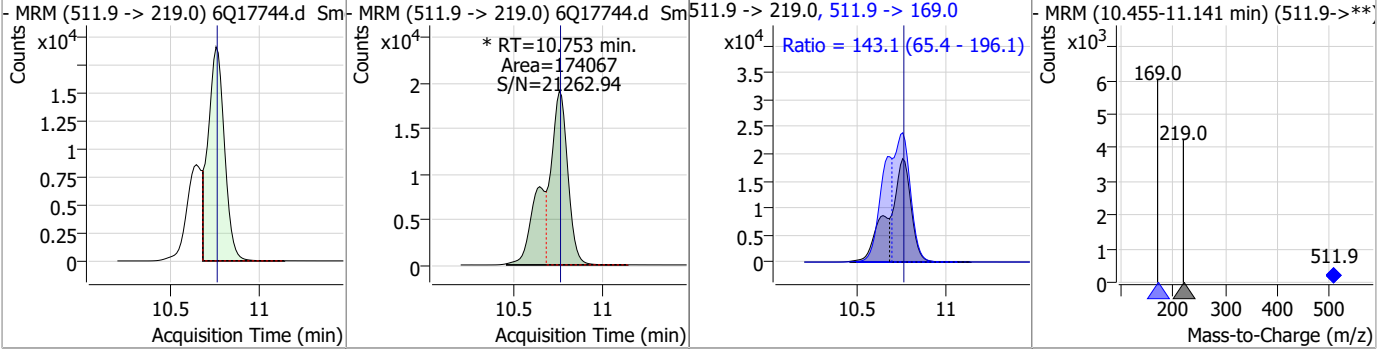


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	10.75	0.00	7410				

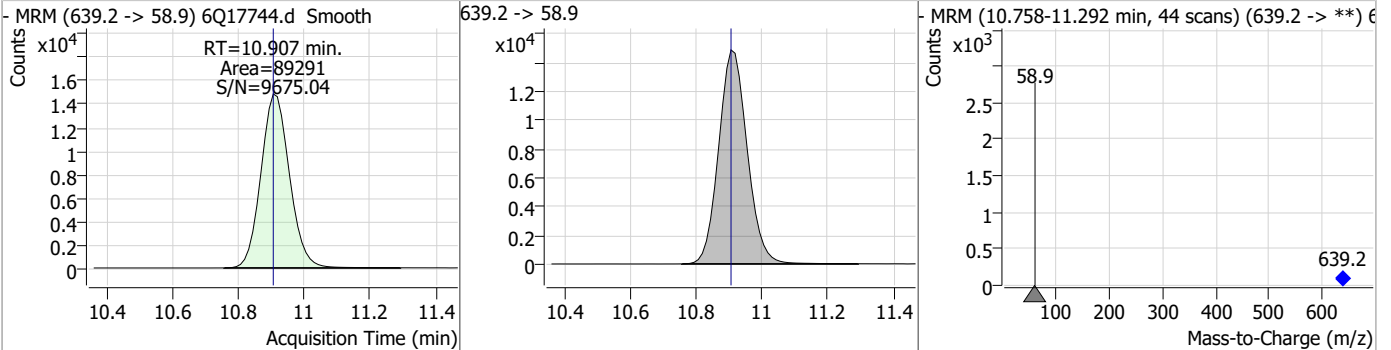


Perfluorinated Compounds by LC/MS/MS

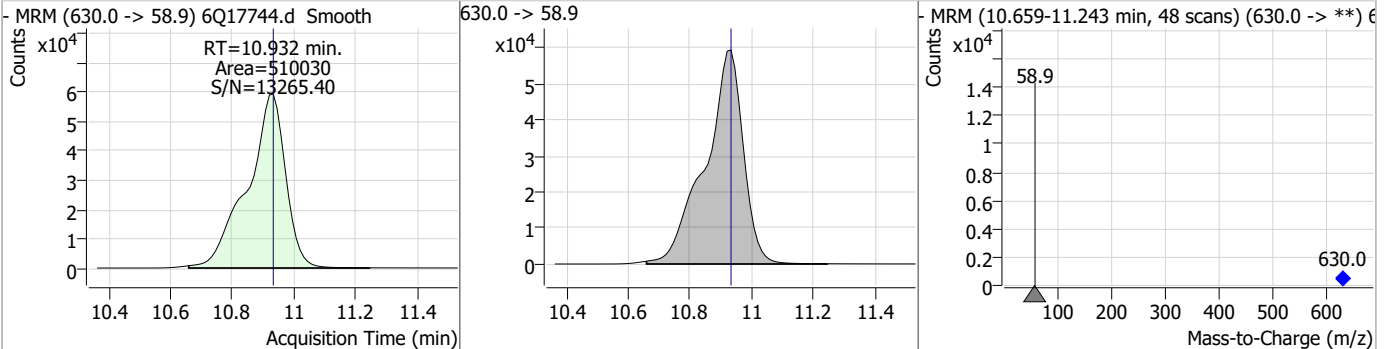
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	51.02	10.75	0.00	174067 (m)	511.9 -> 169.0	143.1	65.4	196.1



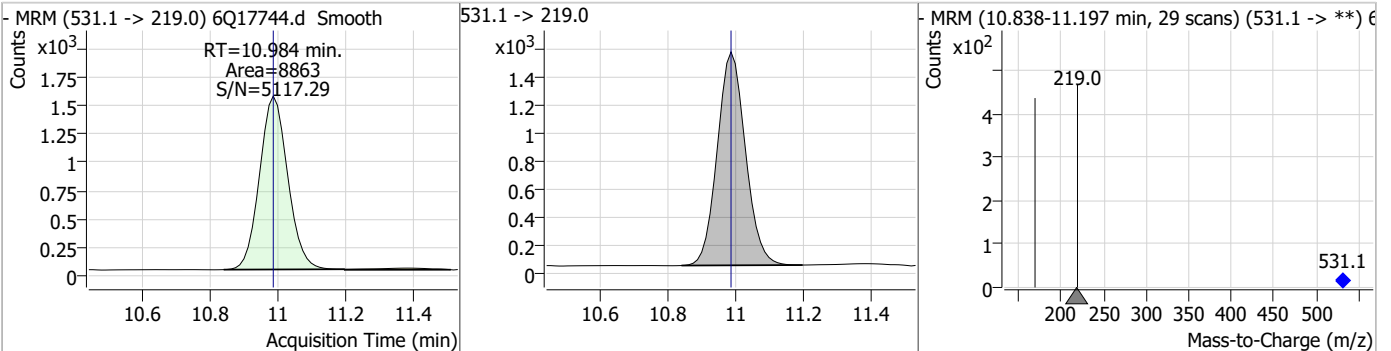
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.04	10.91	0.00	89291				



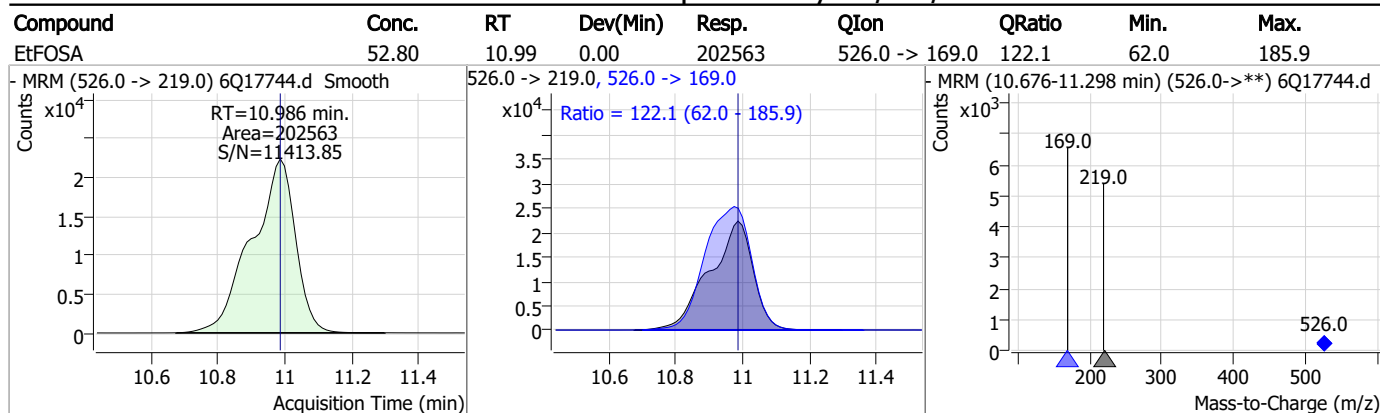
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	131.08	10.93	0.00	510030				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	10.98	0.00	8863				



Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17744.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 13:42 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
EtFOSAA	2991-50-6		8.33	Split peak
MeFOSA	31506-32-8		10.75	Split peak

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17745.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 1:56:51 PM
 Sample Name : ic268-8
 Vial : P1-A9
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.888	216.8 -> 171.9	122002	10.00 µg/L	-0.012
M5-PFPeA	4.272	268.3 -> 223.0	43862	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	47612	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	43396	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	62434	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	20280	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	16011	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	19016	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	20928	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14554	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	20351	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	15923	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10449	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9091	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1391	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1975	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2315	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	17730	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	33485	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	14467	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	67690	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	80315	25.00 µg/L	0.000
M5-EtFOSA	10.985	531.1 -> 219.0	9138	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	8146	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	11712	2.50 µg/L	0.000
13C3-PFBA	2.891	216.0 -> 172.0	51974	5.00 µg/L	-0.012
18O2-PFHxS	7.178	403.0 -> 83.9	8150	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	68901	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	20599	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	21845	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	43874	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1391	4.48 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.6%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1975	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2315	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C2-PFDoDA	8.949	615.1 -> 570.0	20928	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14554	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFBS	5.397	302.1 -> 79.9	15923	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 89.7%		
13C3-PFHxS	7.179	402.1 -> 79.9	10449	2.41 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C4-PFBA	2.888	216.8 -> 171.9	122002	9.89 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.420	367.1 -> 322.0	43396	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C5-PFHxA	5.466	318.0 -> 273.0	47612	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.8%	
13C5-PFPeA	4.272	268.3 -> 223.0	43862	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C6-PFDA	8.076	519.1 -> 474.1	16011	1.19 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C7-PFUnDA	8.518	570.0 -> 525.1	19016	1.10 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C8-FOSA	9.648	506.1 -> 77.8	20351	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOA	7.064	421.1 -> 376.0	62434	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOS	8.226	507.1 -> 79.9	9091	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C9-PFNA	7.595	472.1 -> 427.0	20280	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%	
d3-MeFOSAA	8.133	573.2 -> 419.0	17730	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	33485	10.43 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
d3-MeFOSA	10.752	515.0 -> 219.0	8146	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.0%	
d5-EtFOSAA	8.329	589.2 -> 419.0	14467	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	67690	23.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	80315	23.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
d5-EtFOSA	10.985	531.1 -> 219.0	9138	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	499063	238.63 µg/L	98
		327.1 -> 80.9	181220		
6:2FTS	6.838	427.1 -> 407.0	438658	204.02 µg/L	99
		427.1 -> 80.9	145739		
8:2FTS	7.865	527.1 -> 507.0	242846	184.61 µg/L	99
		527.1 -> 80.8	98583		
EtFOSAA	8.330	584.2 -> 419.1	162035	60.15 µg/L	99
		584.2 -> 526.0	86241		
FOSA	9.639	498.1 -> 77.9	469173	61.59 µg/L	99
		498.1 -> 478.0	12926		
MeFOSAA	8.134	570.1 -> 419.0	223254	65.08 µg/L	96
		570.1 -> 483.0	40199		
PFBA	2.894	212.8 -> 168.9	1115112	254.79 µg/L	100
PFBS	5.398	298.7 -> 79.9	444156	57.16 µg/L	95
		298.7 -> 98.8	174835		
PFDA	8.076	512.9 -> 469.0	1375915	69.45 µg/L	93
		512.9 -> 219.0	184224		
PFDoDA	8.950	613.1 -> 569.0	1010195	60.60 µg/L	99
		613.1 -> 319.0	142616		
PFDS	9.113	599.0 -> 79.9	179294	60.74 µg/L	94

7.7.9
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	84157	61.88	µg/L	100
		363.1 -> 319.0	1342085			
PFHpS	7.735	363.1 -> 169.0	218427	63.72	µg/L	88
		449.0 -> 79.9	309088			
PFHxA	5.469	449.0 -> 98.9	134109	69.46	µg/L	99
		313.0 -> 269.0	1310023			
PFHxS	7.180	313.0 -> 118.9	57308	57.41	µg/L	96
		398.7 -> 79.9	332050			
PFNA	7.596	398.7 -> 98.9	156323	63.65	µg/L	94
		463.0 -> 419.0	958944			
PFNS	8.693	463.0 -> 219.0	170841	63.21	µg/L	89
		548.8 -> 79.9	277903			
PFOA	7.066	548.8 -> 98.9	139491	60.61	µg/L	98
		413.0 -> 369.0	1882721			
PFOS	8.228	413.0 -> 169.0	329213	58.82	µg/L	98
		498.9 -> 79.9	280382			
PFPeA	4.274	498.9 -> 98.8	145333	122.79	µg/L	100
		263.0 -> 219.0	1555403			
PFPeS	6.471	349.1 -> 79.9	342152	59.66	µg/L	94
		349.1 -> 98.9	140603			
PFTeDA	9.677	713.1 -> 669.0	914711	61.37	µg/L	99
		713.1 -> 168.9	64885			
PFTrDA	9.333	663.0 -> 619.0	1095527	56.68	µg/L	95
		663.0 -> 168.9	103206			
PFUnDA	8.518	563.1 -> 519.0	907437	65.70	µg/L	100
		563.1 -> 269.1	142513			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	1411767	111.57	µg/L	96
		632.9 -> 452.9	422811			
9Cl-PF3ONS	8.557	530.8 -> 351.0	2072978	102.56	µg/L	93
		532.8 -> 353.0	676656			
ADONA	6.683	376.9 -> 250.9	5840896	109.55	µg/L	97
		376.9 -> 84.8	1468837			
HFPO-DA	5.832	284.9 -> 168.9	385658	119.14	µg/L	98
		284.9 -> 184.9	49494			
3:3FTCA	3.777	241.0 -> 177.0	256127	326.34	µg/L	98
		241.0 -> 117.0	32563			
5:3FTCA	6.161	341.0 -> 237.1	5309644	1624.84	µg/L	93
		341.0 -> 217.0	3541835			
7:3FTCA	7.586	441.0 -> 316.9	2336953	1576.39	µg/L	95
		441.0 -> 336.9	4716304			
EtFOSA	10.986	526.0 -> 219.0	469501	118.69	µg/L	100
		526.0 -> 169.0	581549			
EtFOSE	10.920	630.0 -> 58.9	1154315	329.81	µg/L	100
		511.9 -> 219.0	404958			
MeFOSA	10.753	511.9 -> 169.0	541497	107.96	µg/L	97
		616.1 -> 58.9	1052658			
MeFOSE	10.686	699.1 -> 79.9	94773	332.43	µg/L	100
		699.1 -> 98.8	55425			
PFDoDS	9.805	295.0 -> 201.0	259065	60.74	µg/L	98
		295.0 -> 84.9	67988			
NFDHA	5.348	279.0 -> 85.1	1135631	124.42	µg/L	98
		279.0 -> 85.1	1135631			
PFMBA	4.675	229.0 -> 84.9	812979	125.64	µg/L	100
		229.0 -> 84.9	812979			
PFMPA	3.426	314.8 -> 134.9	2888050	124.89	µg/L	100
		314.8 -> 82.9	102105			
PFEESA	5.938	314.8 -> 134.9	2888050	114.05	µg/L	100
		314.8 -> 82.9	102105			

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

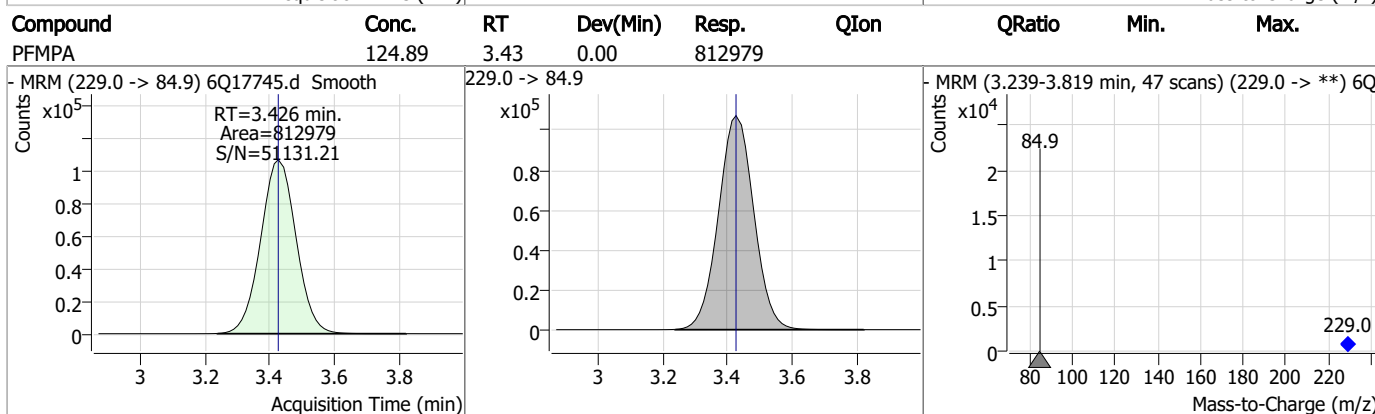
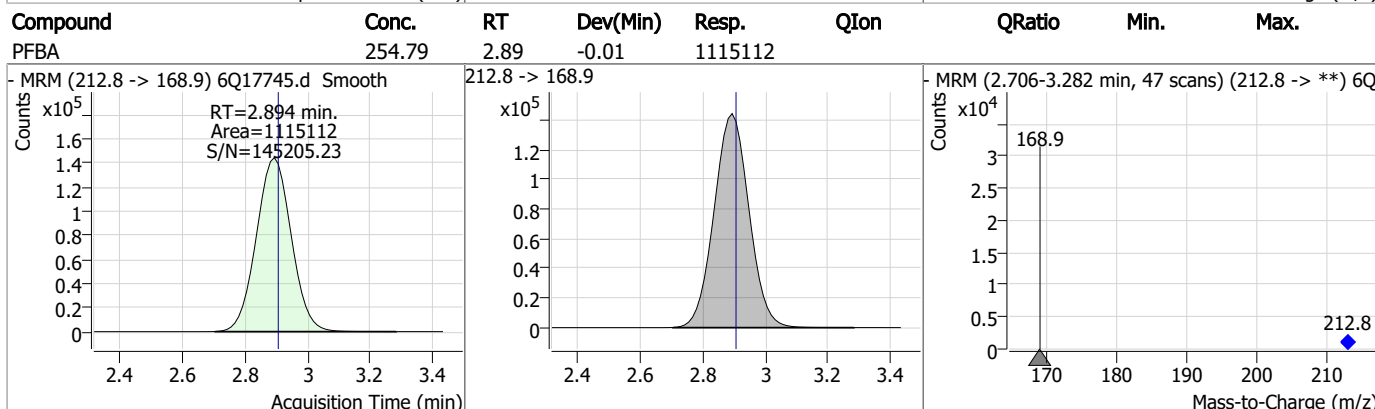
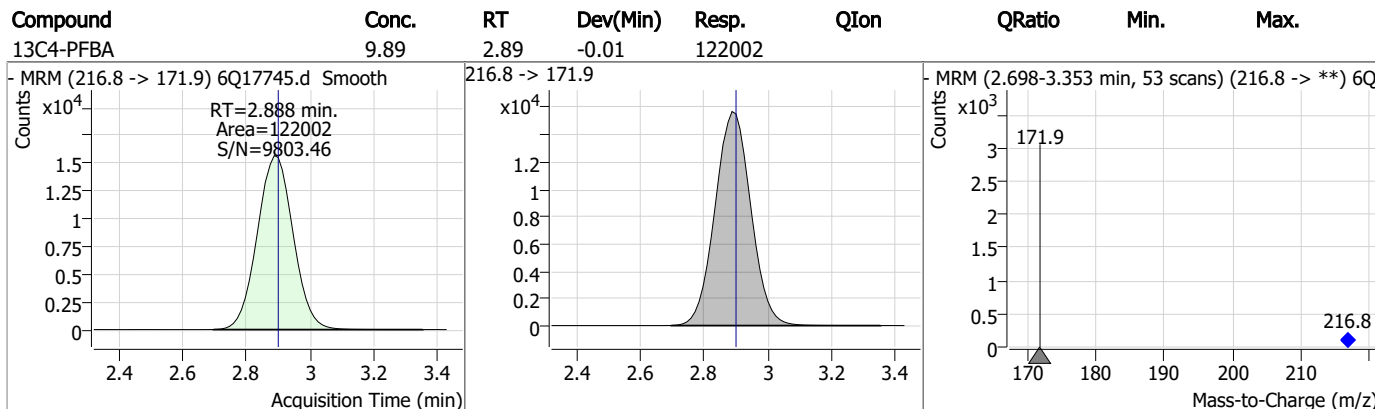
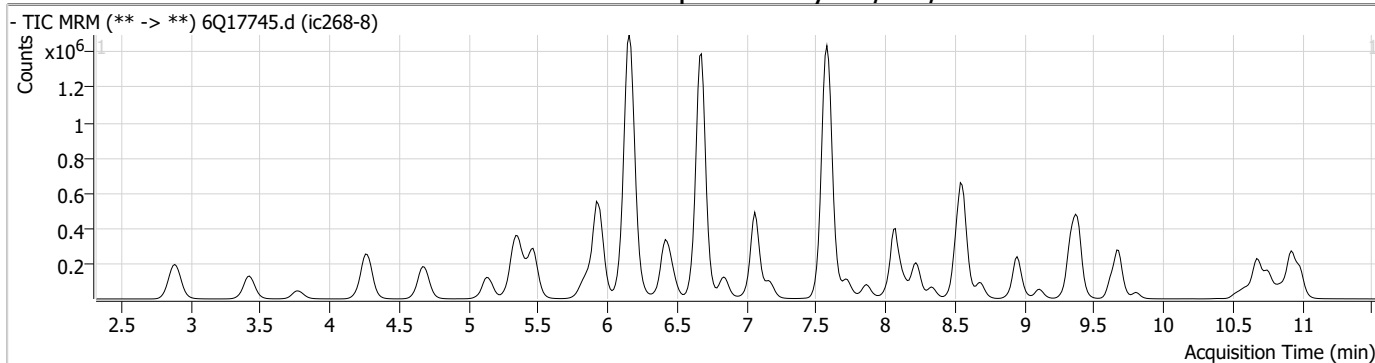
Perfluorinated Compounds by LC/MS/MS

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

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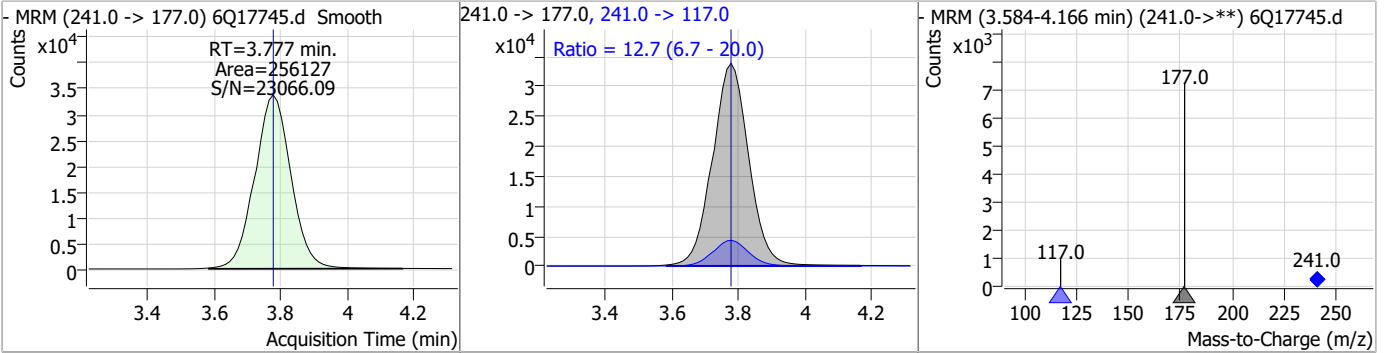
Perfluorinated Compounds by LC/MS/MS



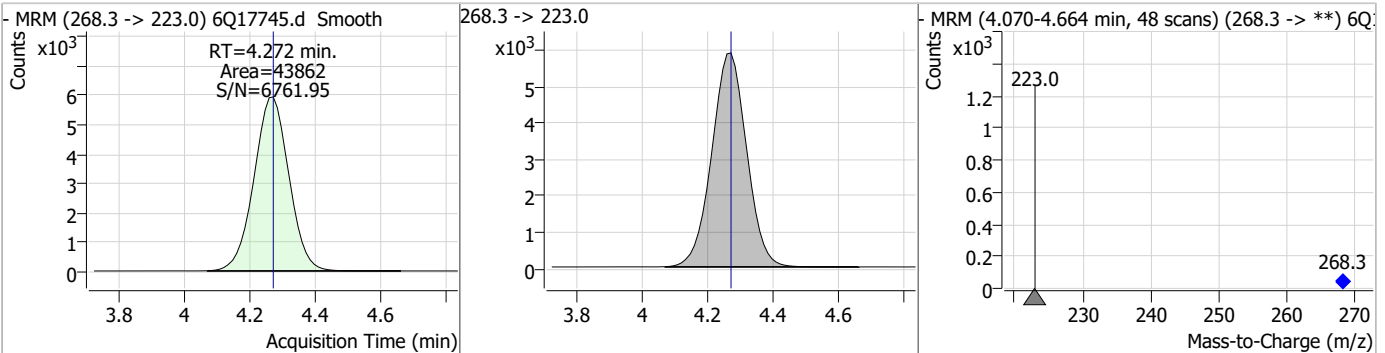
7.7.9
7

Perfluorinated Compounds by LC/MS/MS

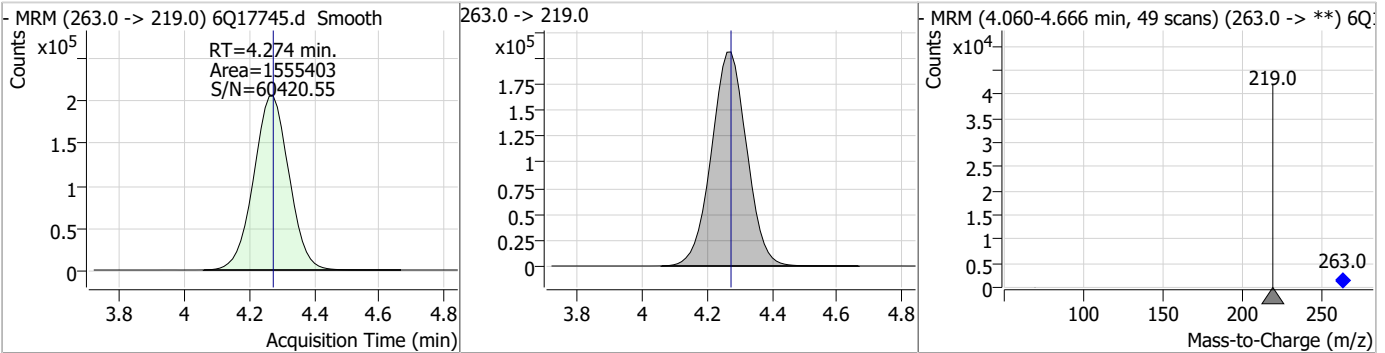
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	326.34	3.78	0.00	256127	241.0 -> 117.0	12.7	6.7	20.0



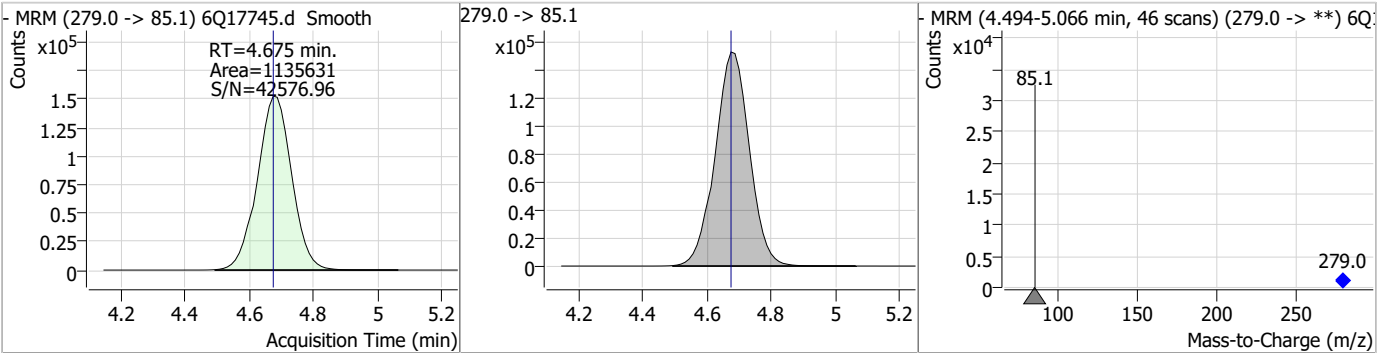
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.75	4.27	0.00	43862				



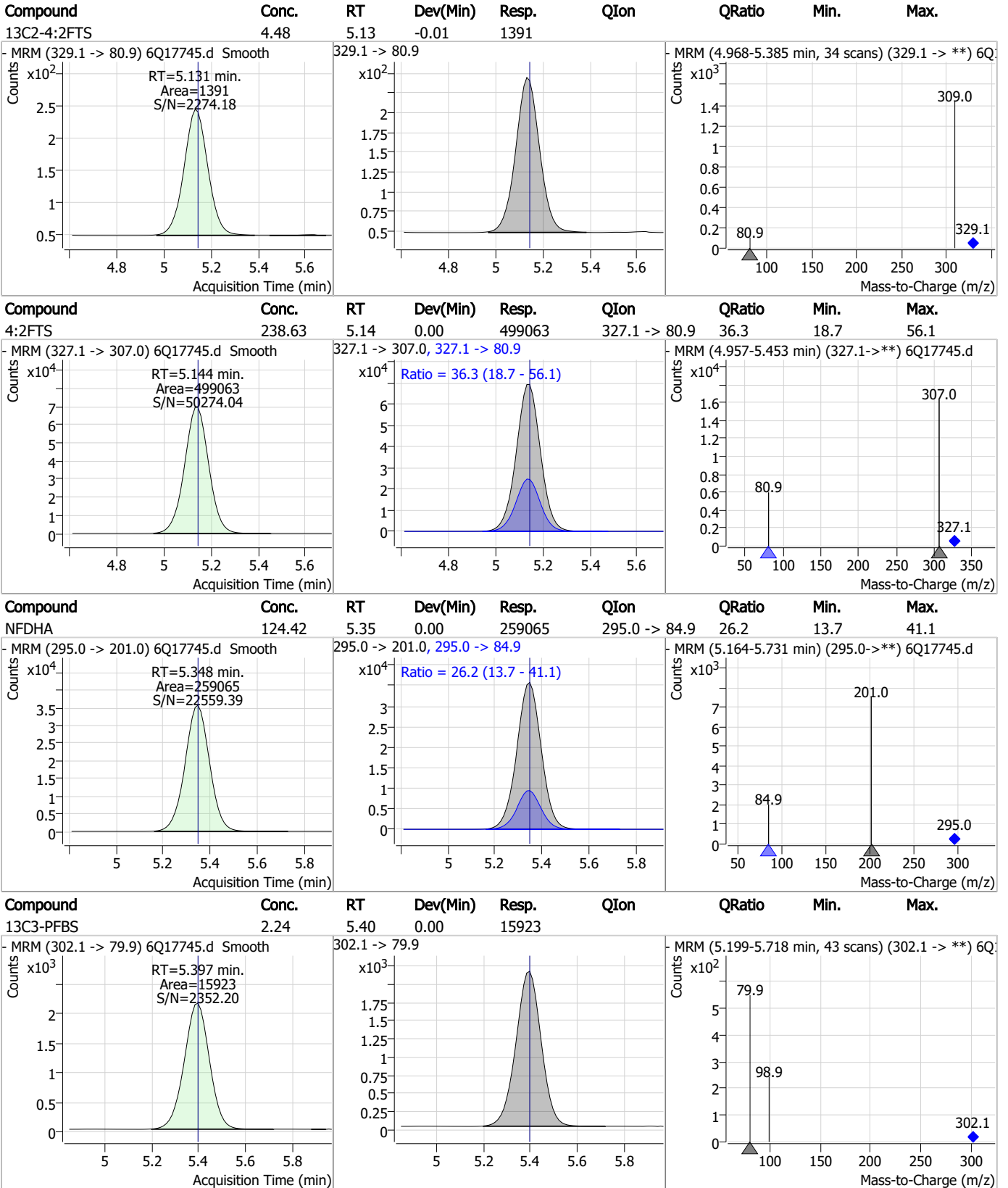
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	122.79	4.27	0.00	1555403				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	125.64	4.68	0.00	1135631				



Perfluorinated Compounds by LC/MS/MS

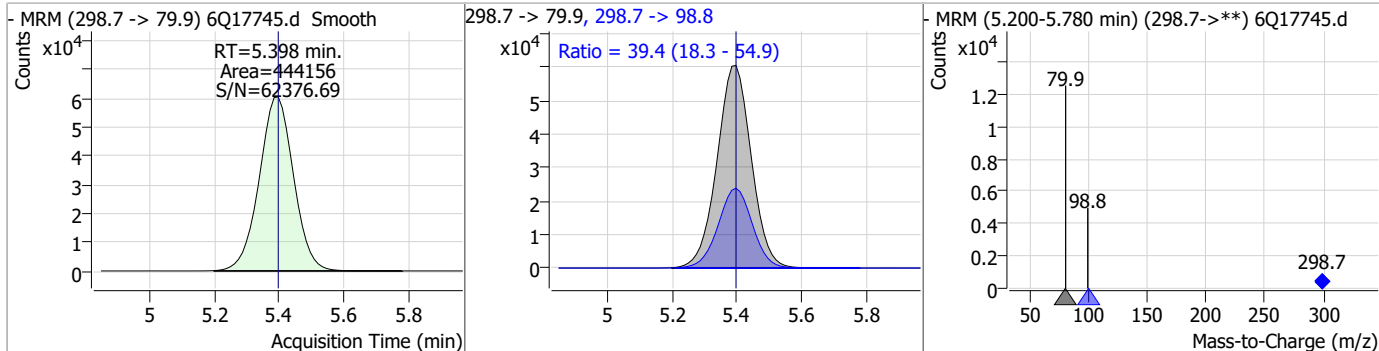


7.7.9

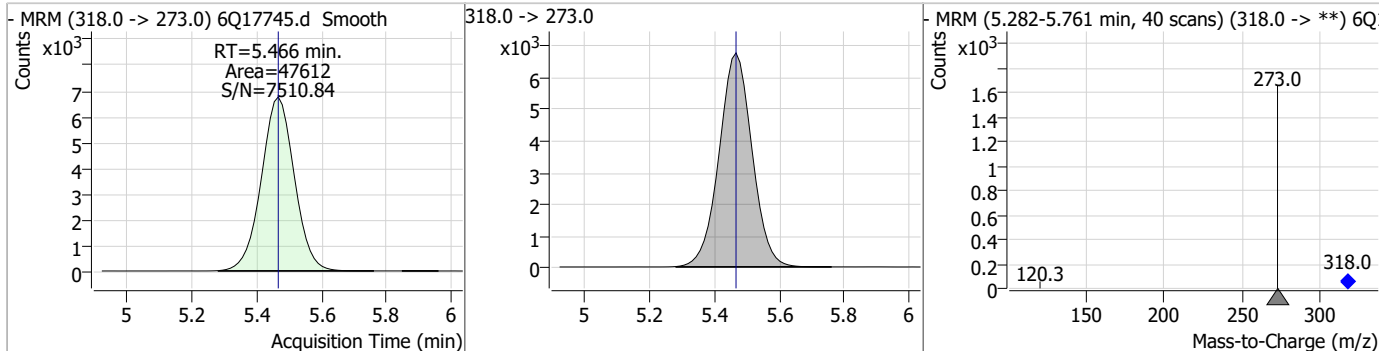
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Perfluorinated Compounds by LC/MS/MS

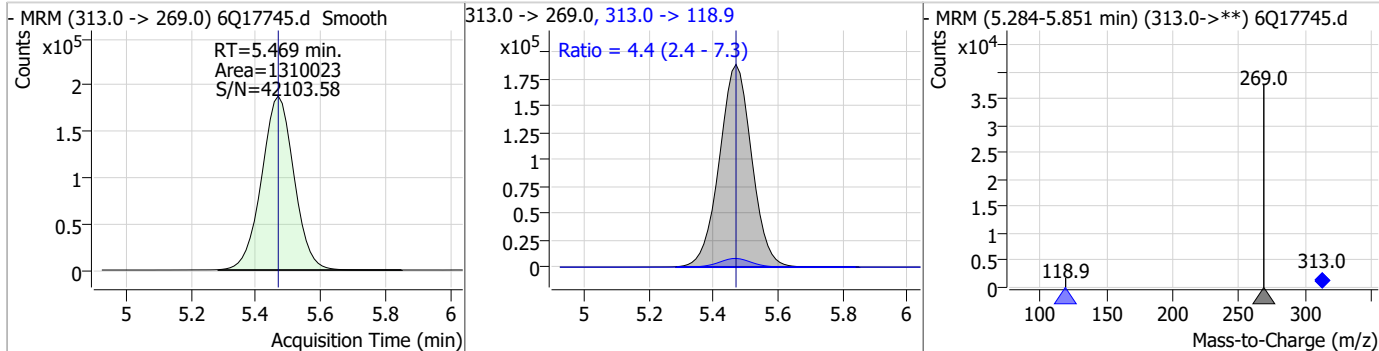
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	57.16	5.40	0.00	444156	298.7 -> 98.8	39.4	18.3	54.9



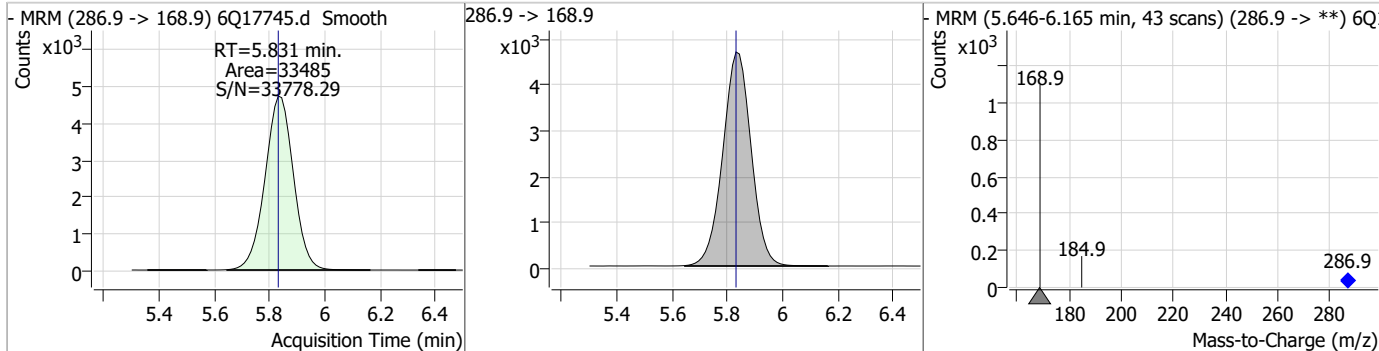
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.30	5.47	0.00	47612				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	69.46	5.47	0.00	1310023	313.0 -> 118.9	4.4	2.4	7.3

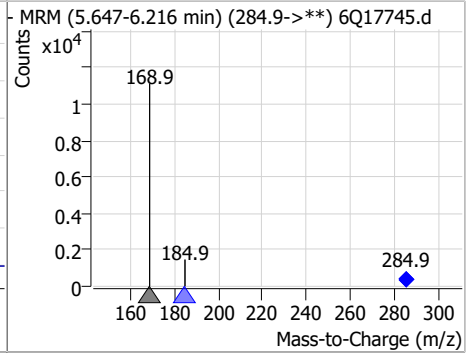
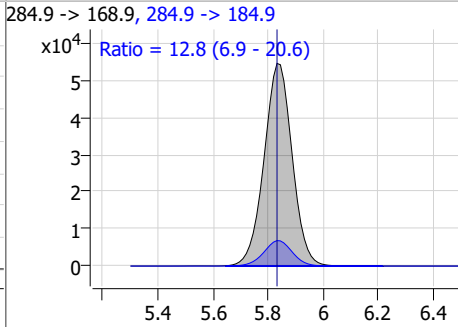
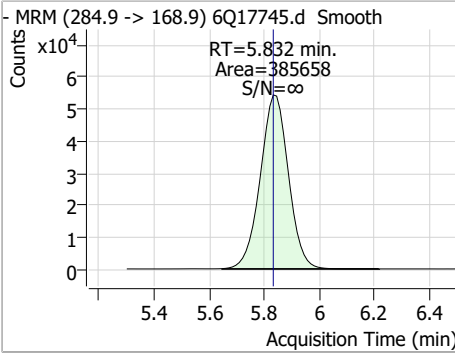


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.43	5.83	0.00	33485				

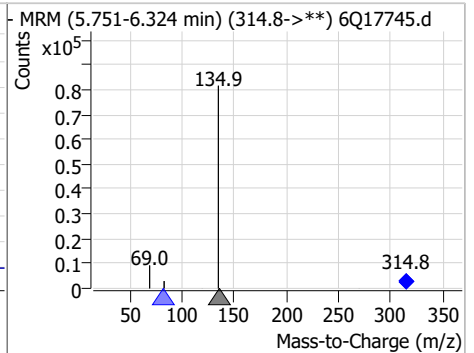
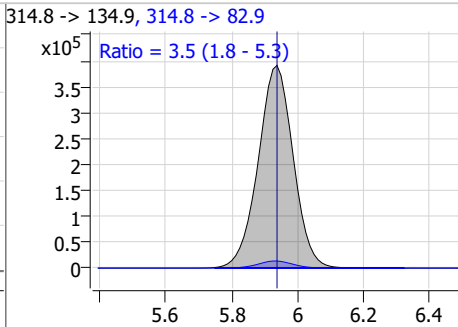
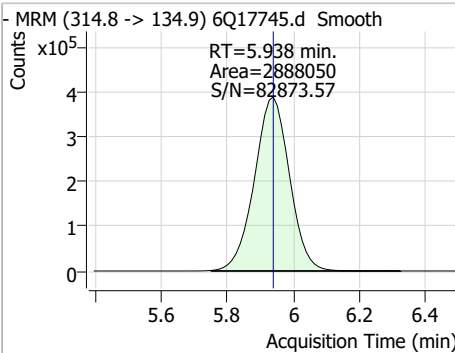


Perfluorinated Compounds by LC/MS/MS

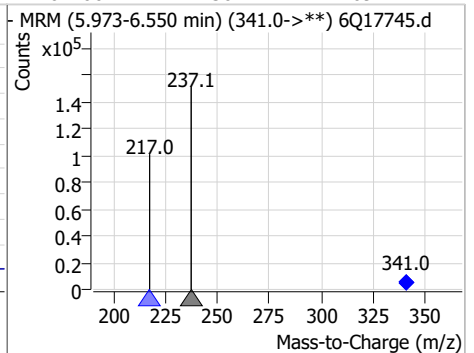
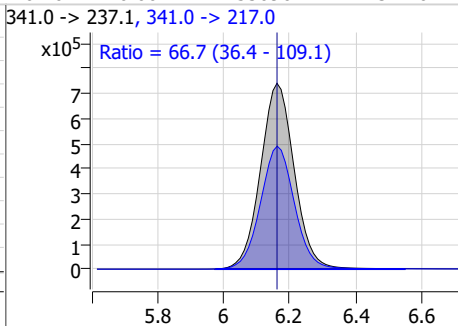
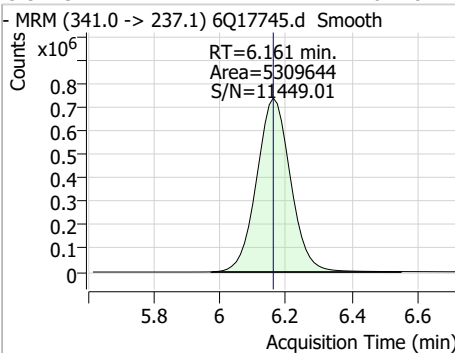
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	119.14	5.83	0.00	385658	284.9 -> 184.9	12.8	6.9	20.6



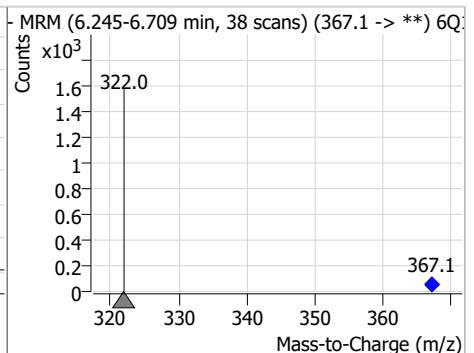
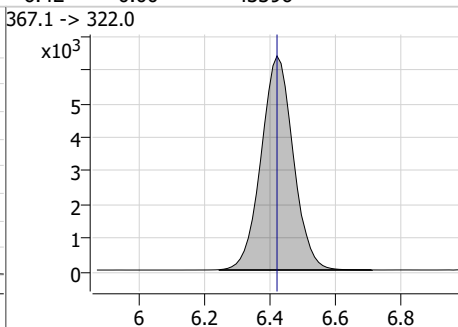
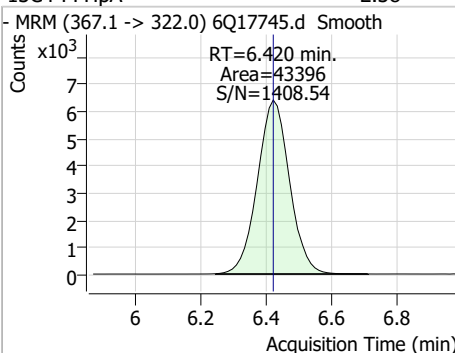
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	114.05	5.94	0.00	2888050	314.8 -> 82.9	3.5	1.8	5.3



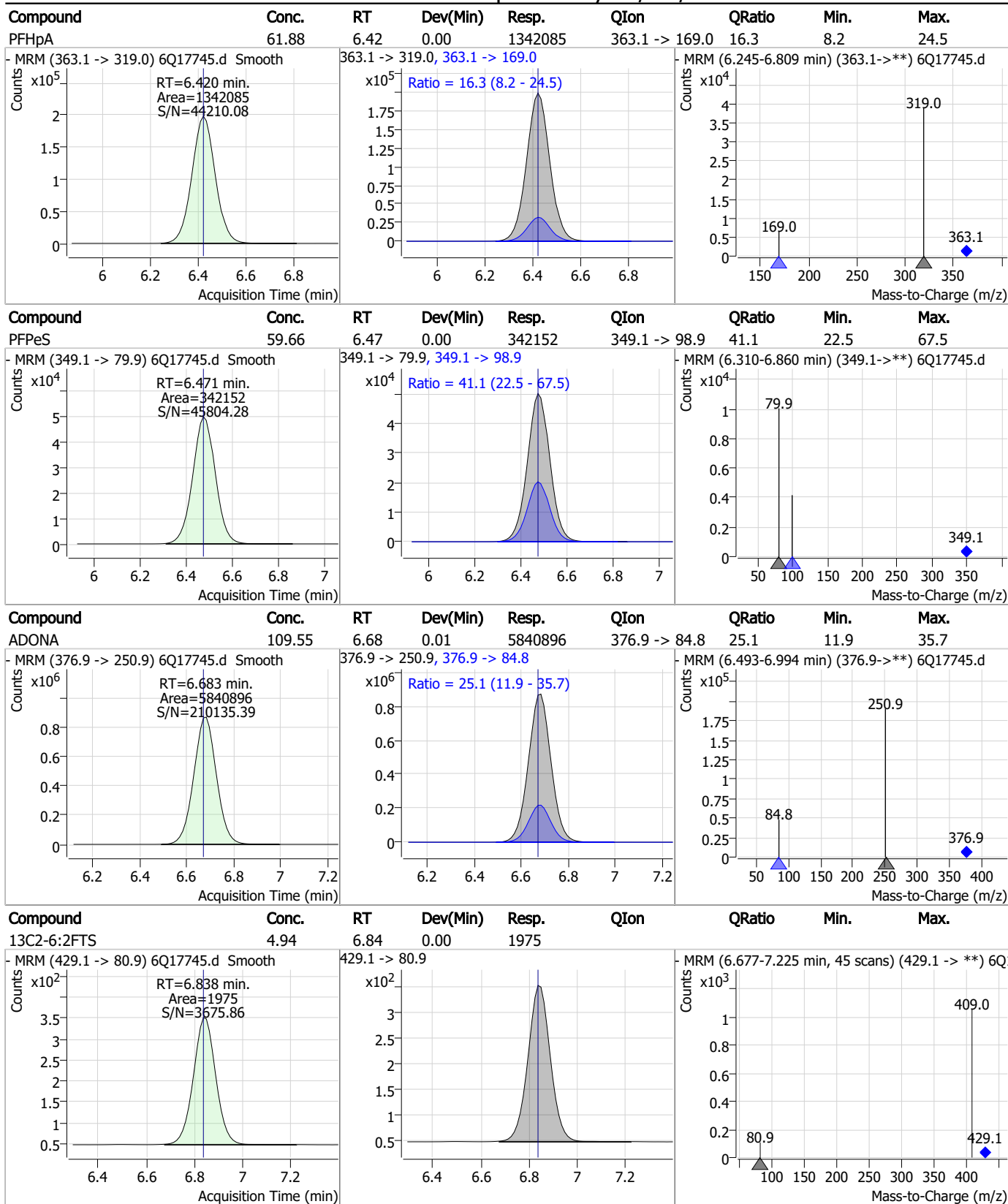
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1624.84	6.16	0.00	5309644	341.0 -> 217.0	66.7	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.38	6.42	0.00	43396	367.1 -> 322.0			

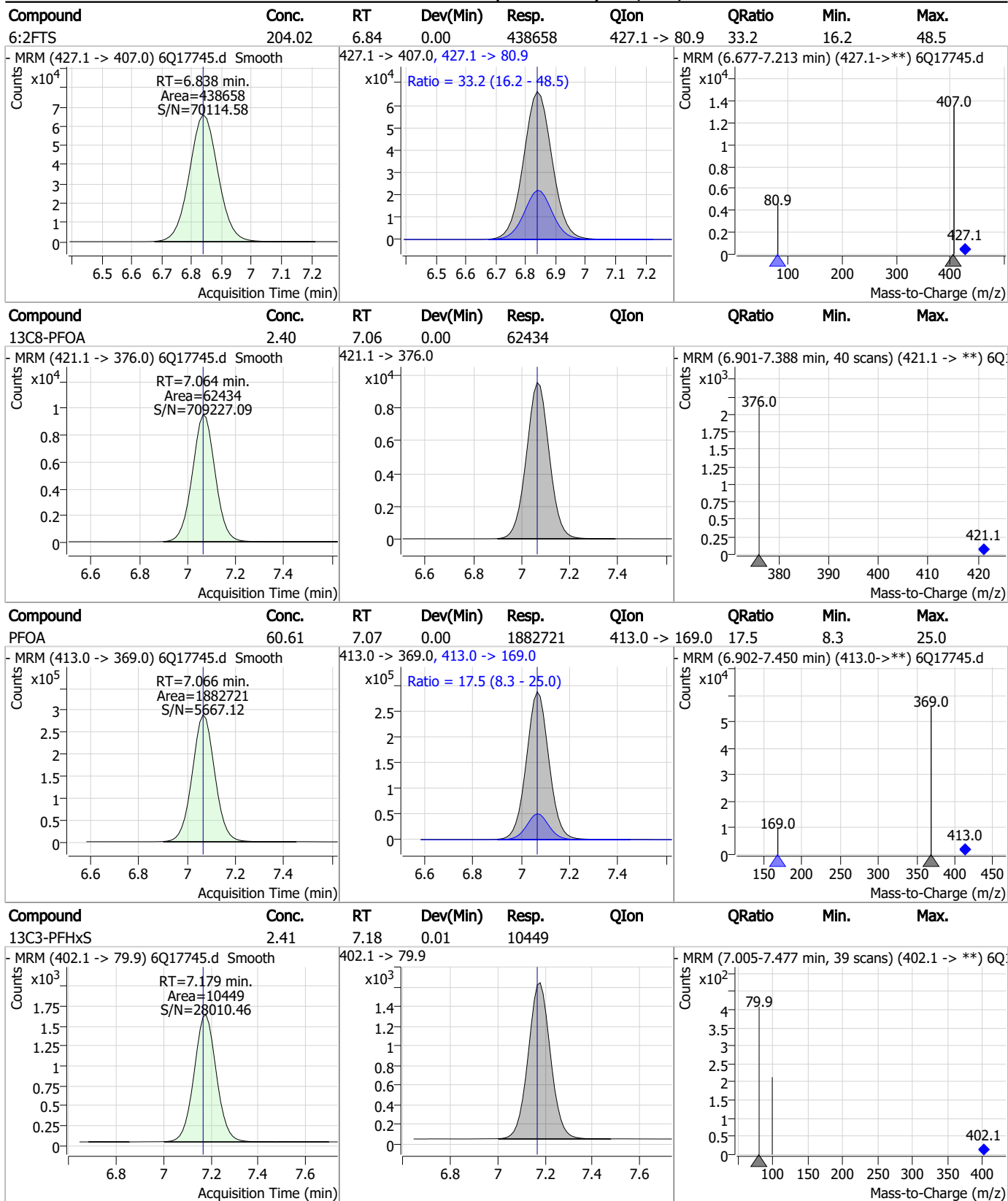


Perfluorinated Compounds by LC/MS/MS



7.7.9
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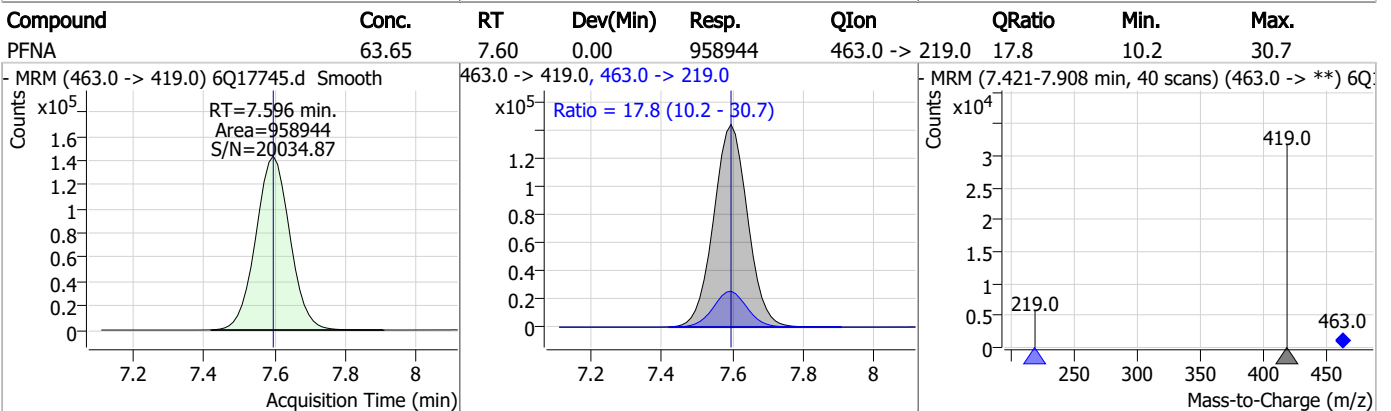
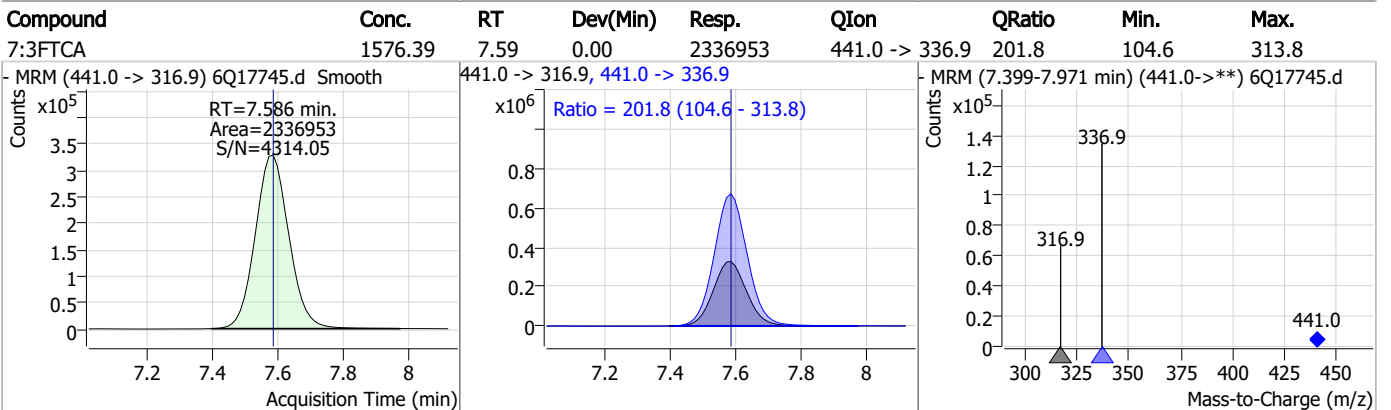
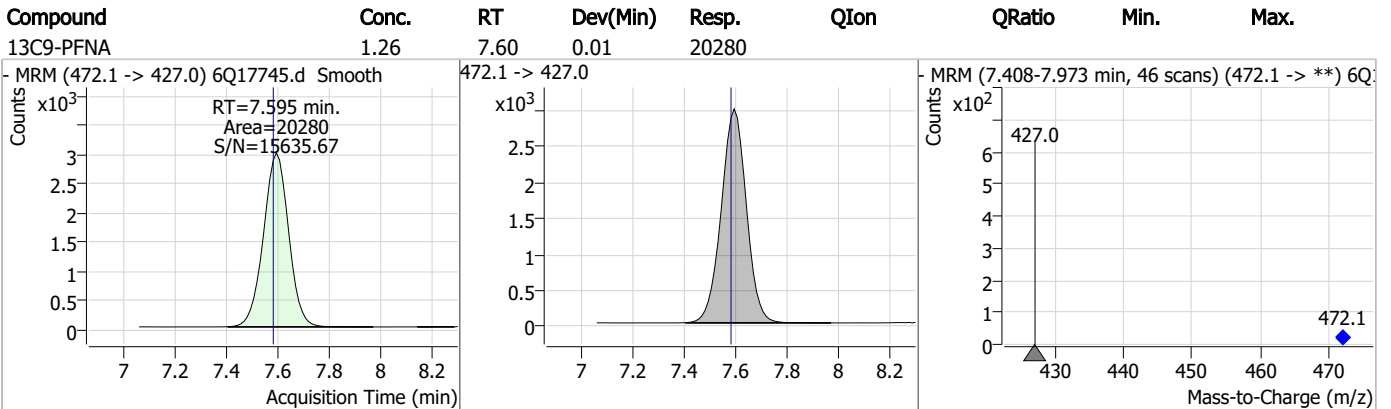
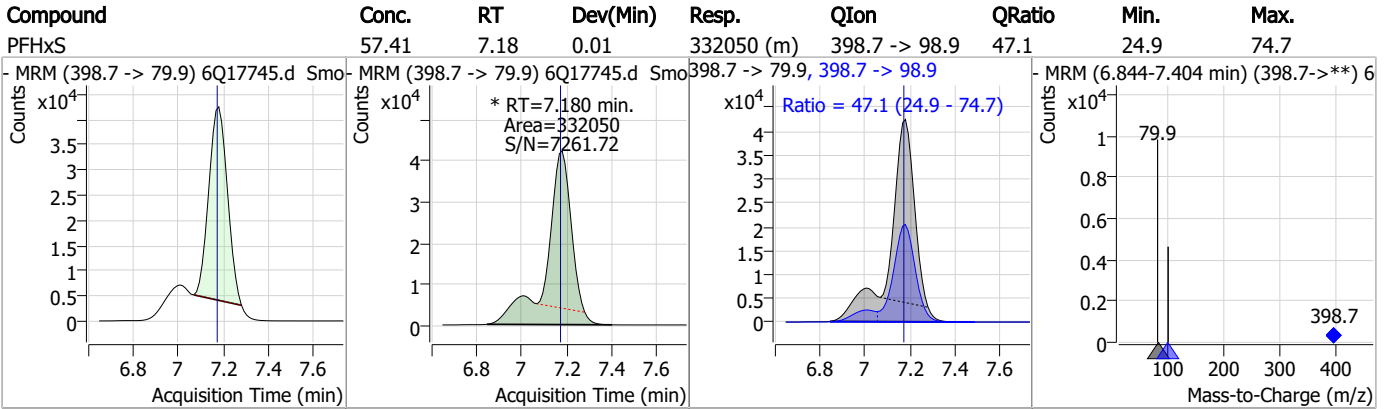
Perfluorinated Compounds by LC/MS/MS



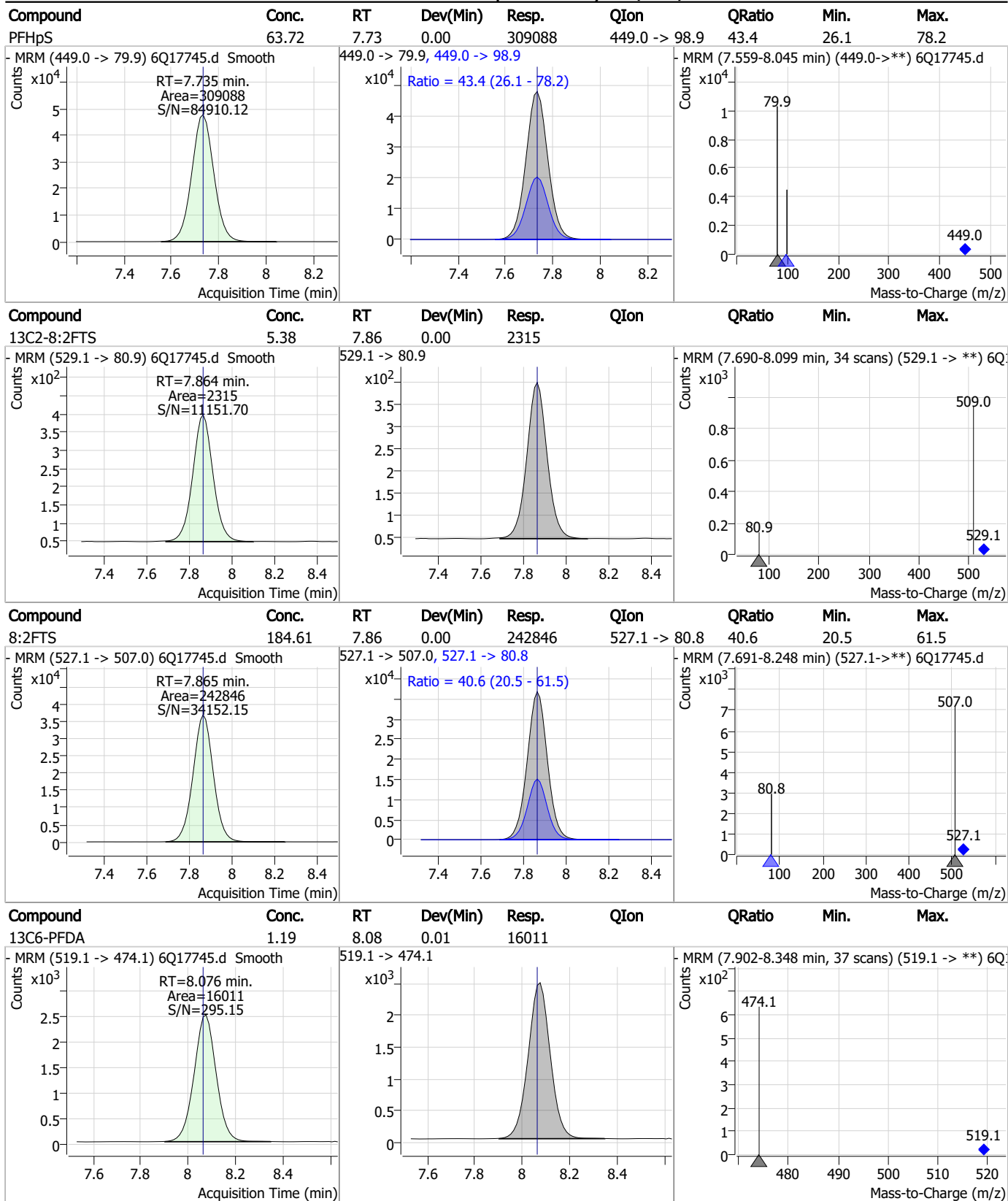
7.7.9
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Perfluorinated Compounds by LC/MS/MS



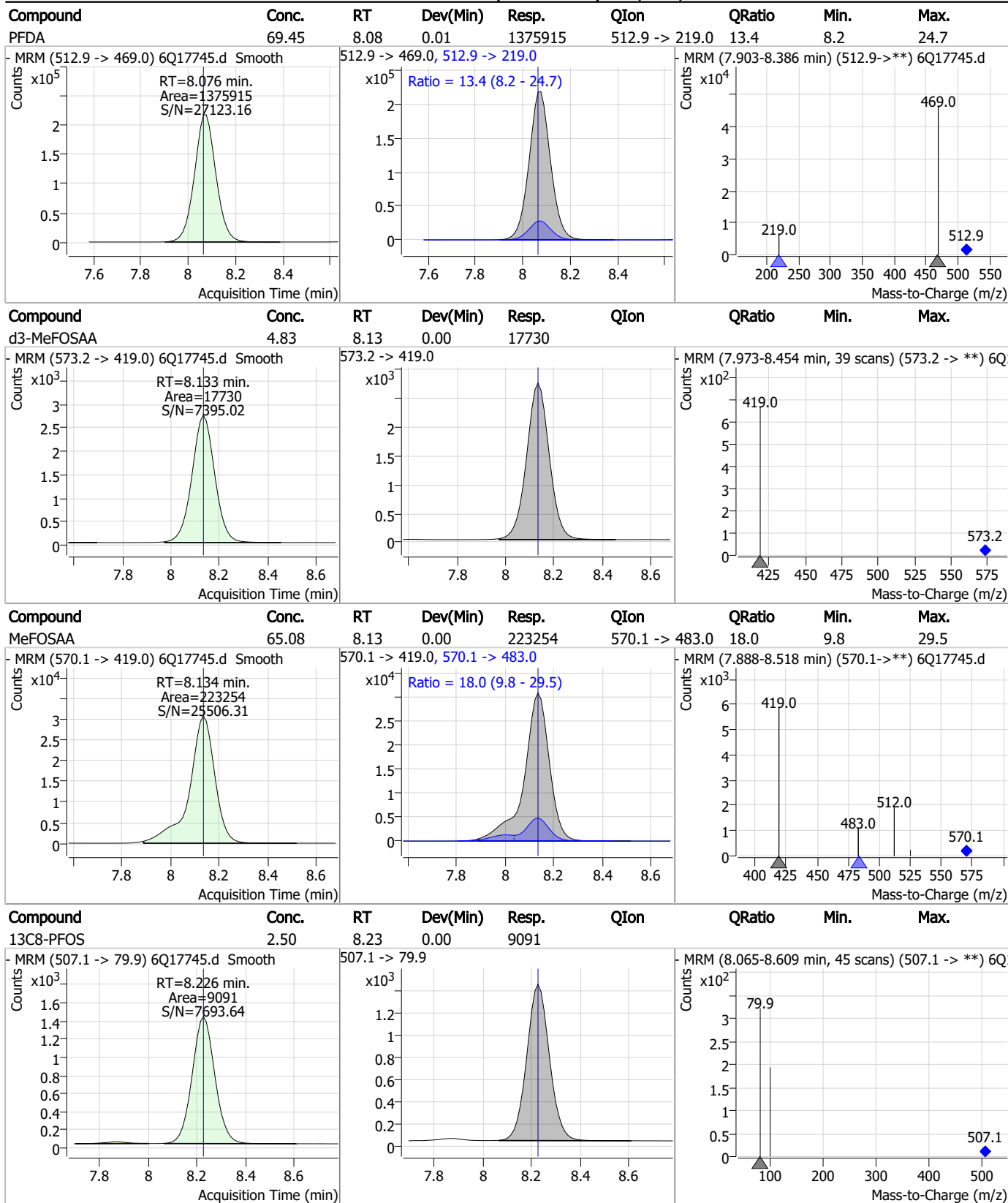
Perfluorinated Compounds by LC/MS/MS



7.7.9
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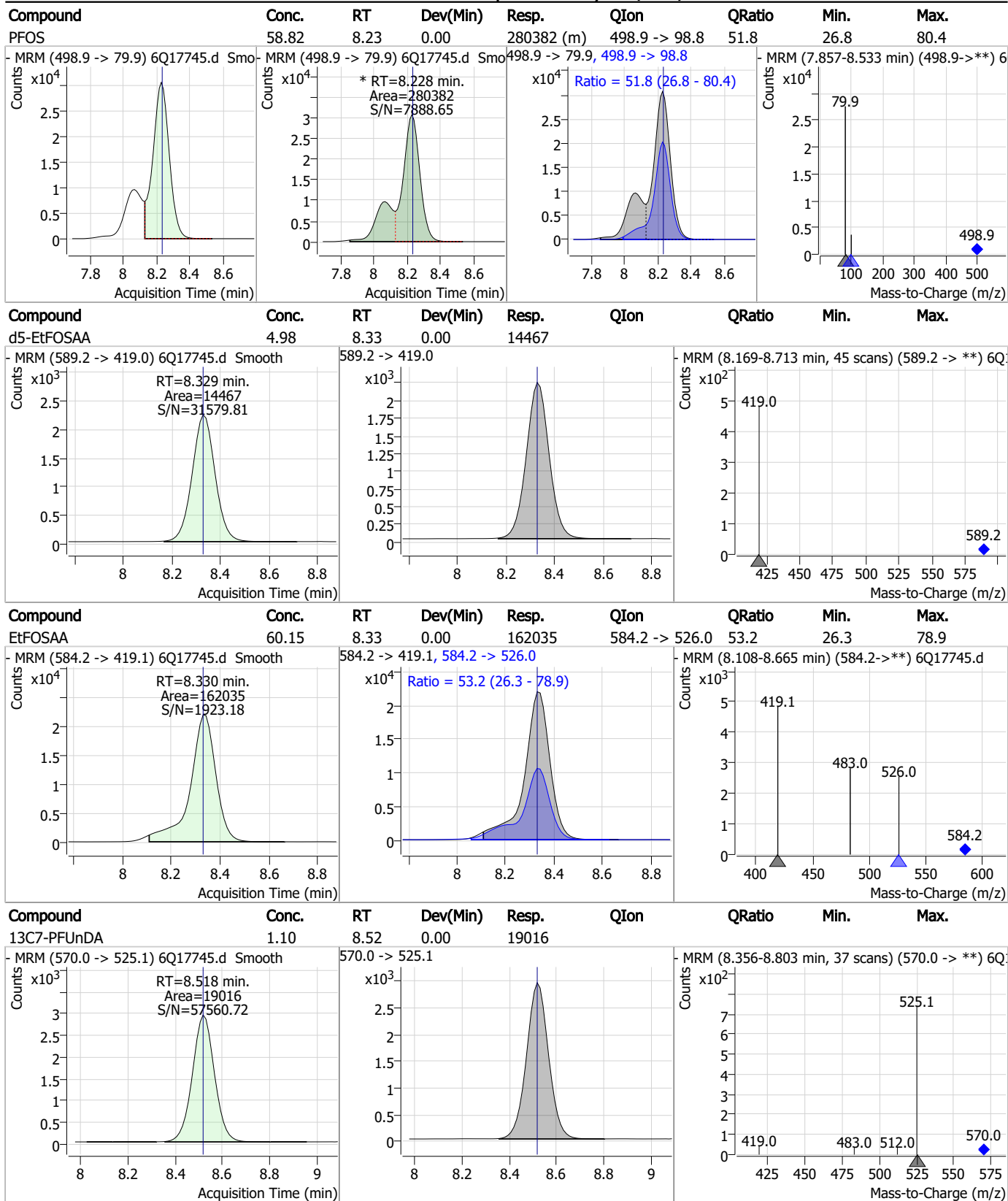


Perfluorinated Compounds by LC/MS/MS



7.7.9
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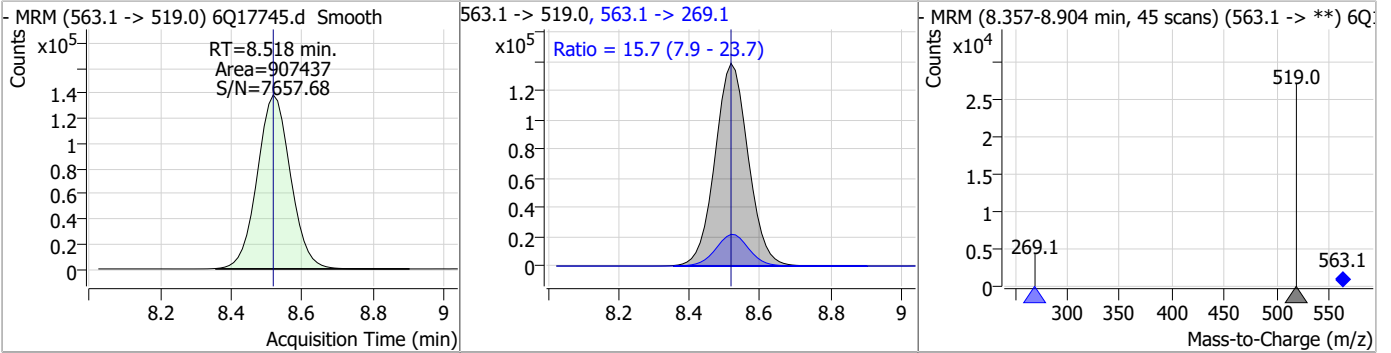
Perfluorinated Compounds by LC/MS/MS



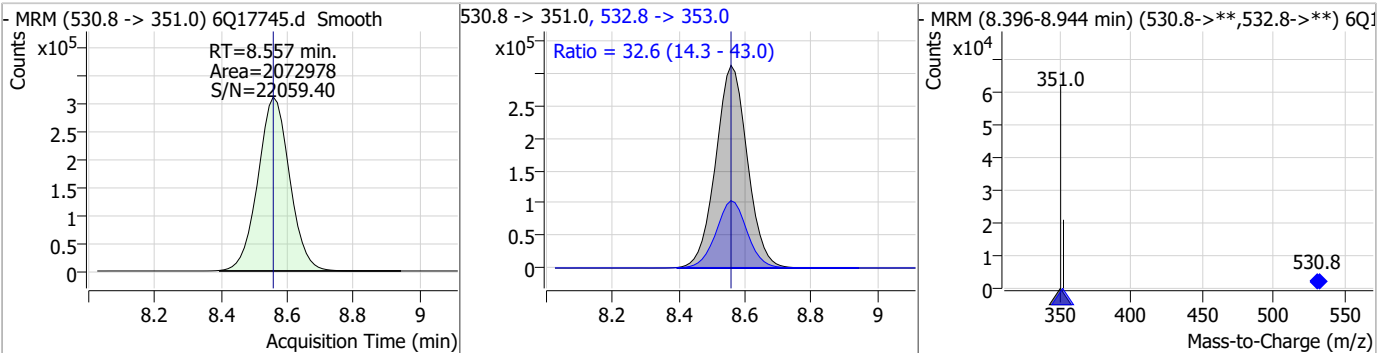
7.7.9
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Perfluorinated Compounds by LC/MS/MS

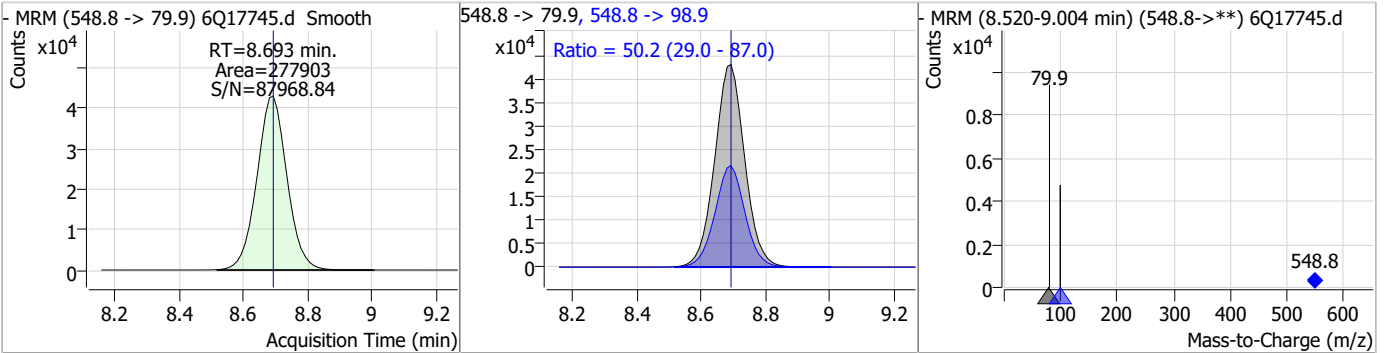
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	65.70	8.52	0.00	907437	563.1 -> 269.1	15.7	7.9	23.7



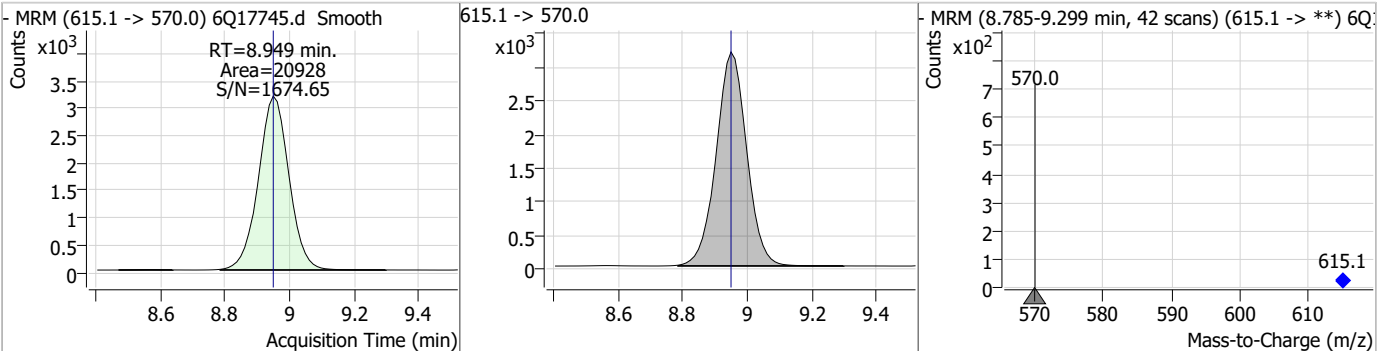
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	102.56	8.56	0.00	2072978	532.8 -> 353.0	32.6	14.3	43.0



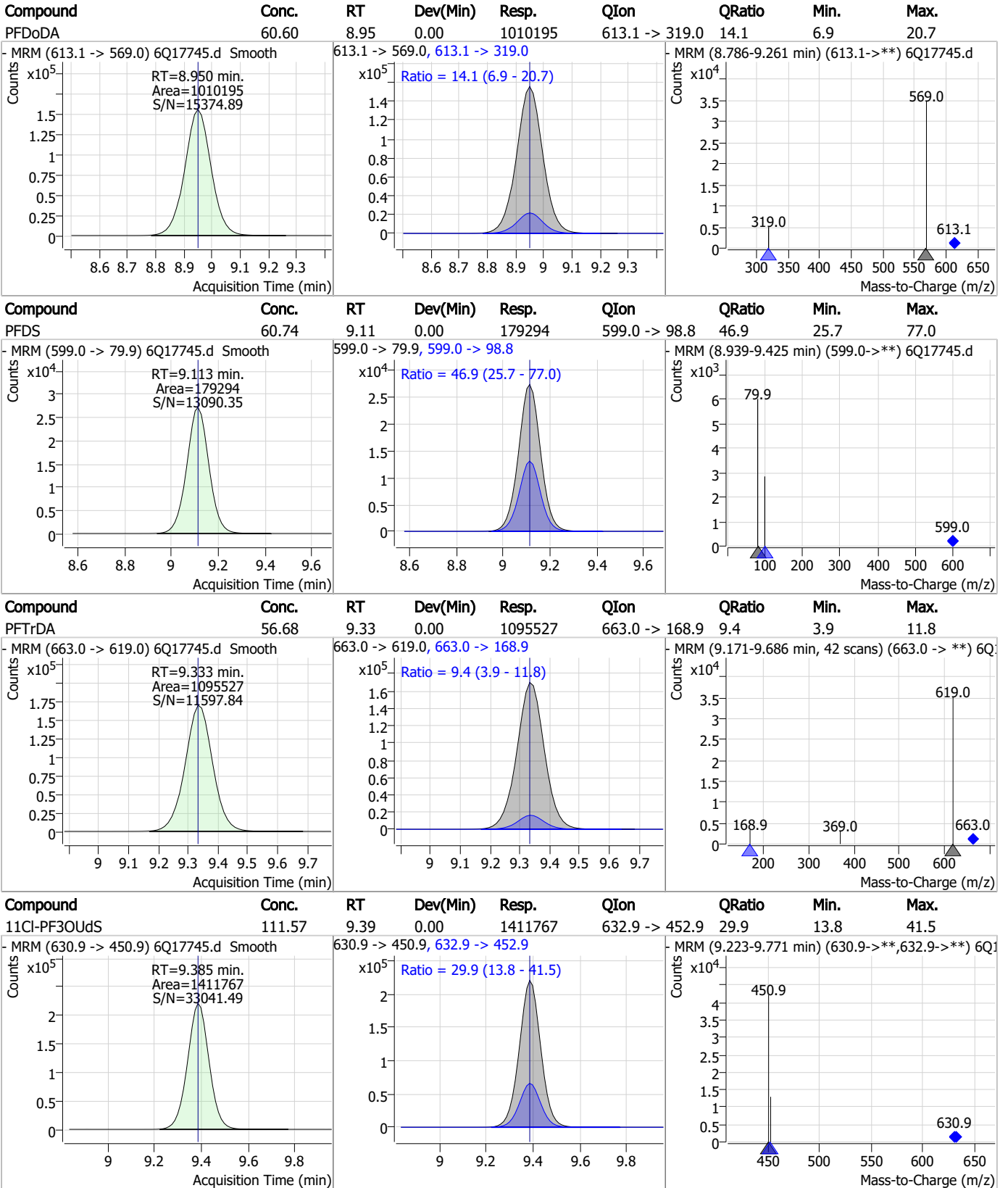
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	63.21	8.69	0.00	277903	548.8 -> 98.9	50.2	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.95	0.00	20928	615.1 -> 570.0	-	-	-



Perfluorinated Compounds by LC/MS/MS

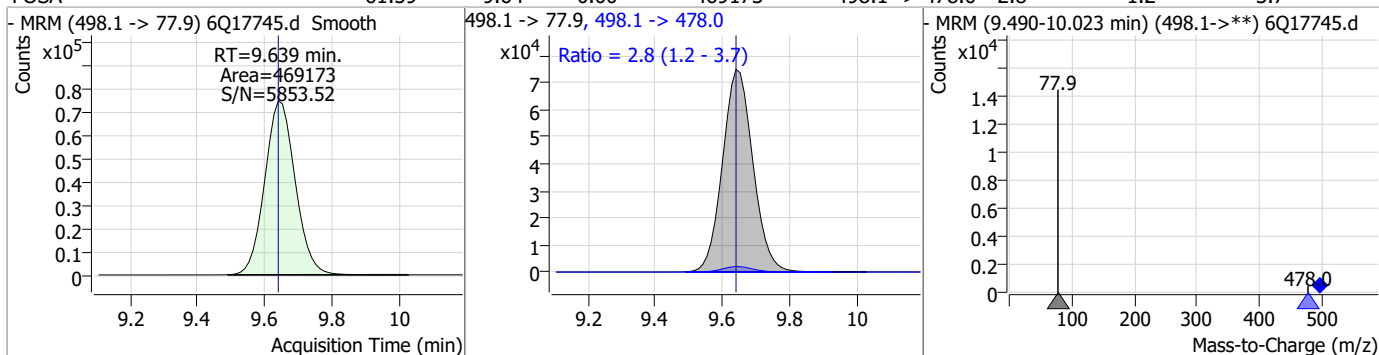


7.7.9

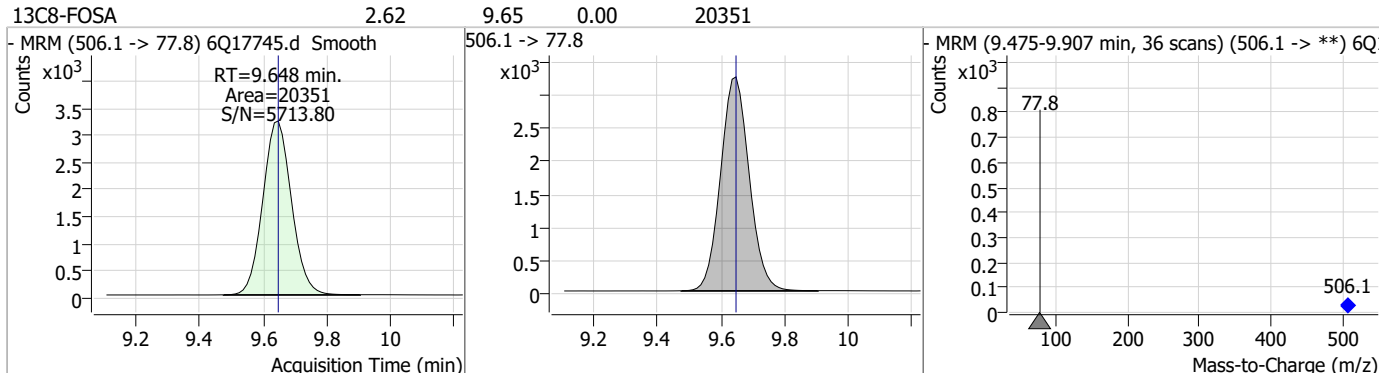
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Perfluorinated Compounds by LC/MS/MS

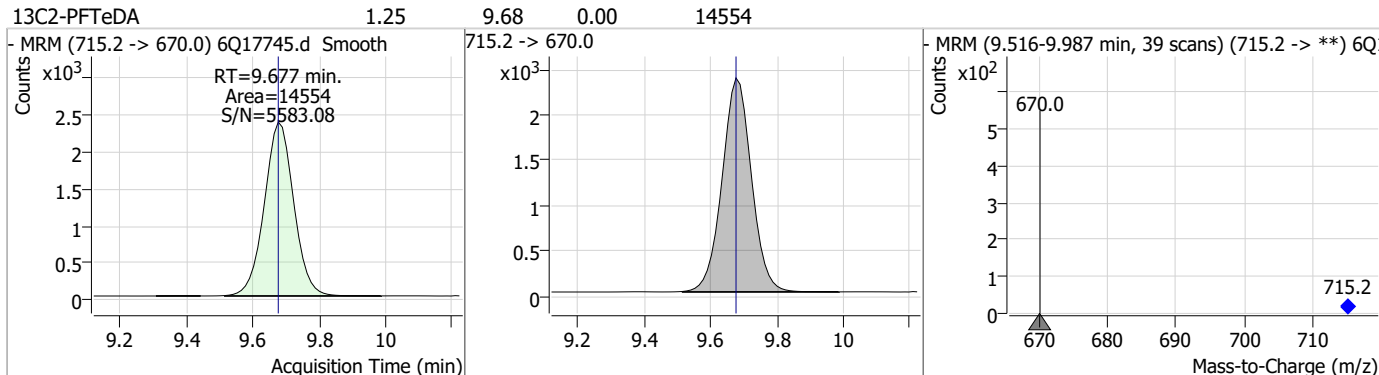
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	61.59	9.64	0.00	469173	498.1 -> 478.0	2.8	1.2	3.7



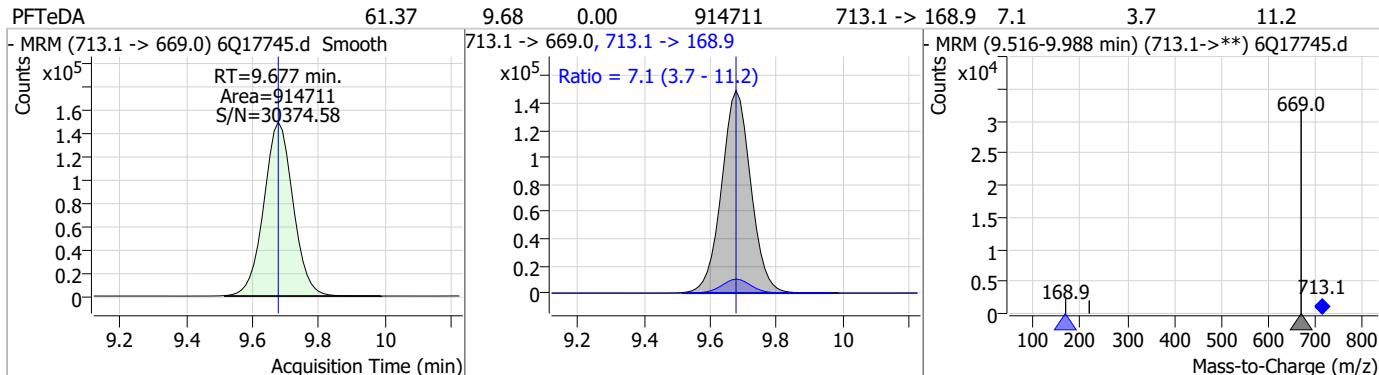
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	9.65	0.00	20351				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.68	0.00	14554				

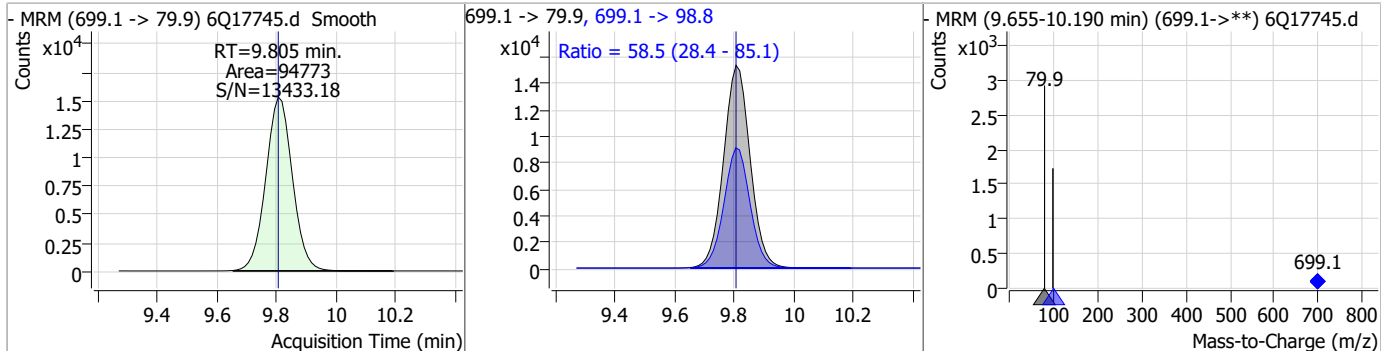


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	61.37	9.68	0.00	914711	713.1 -> 168.9	7.1	3.7	11.2

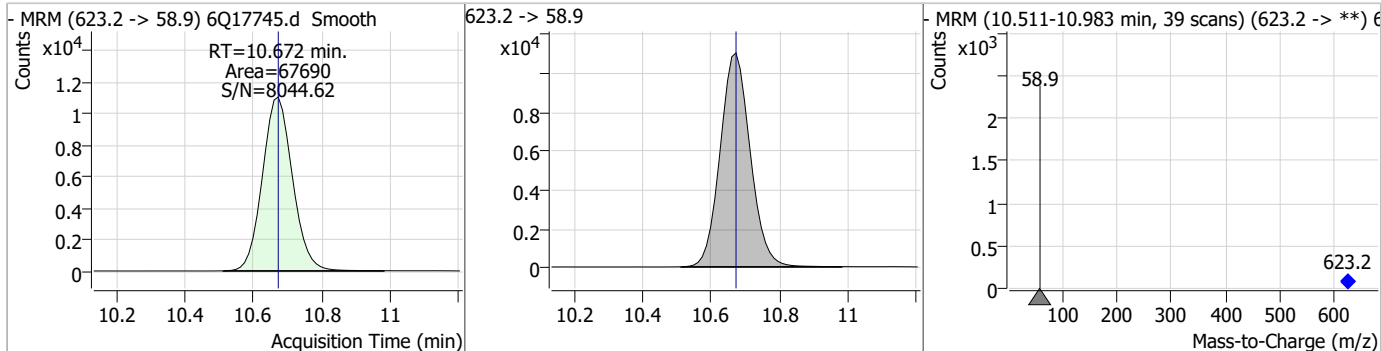


Perfluorinated Compounds by LC/MS/MS

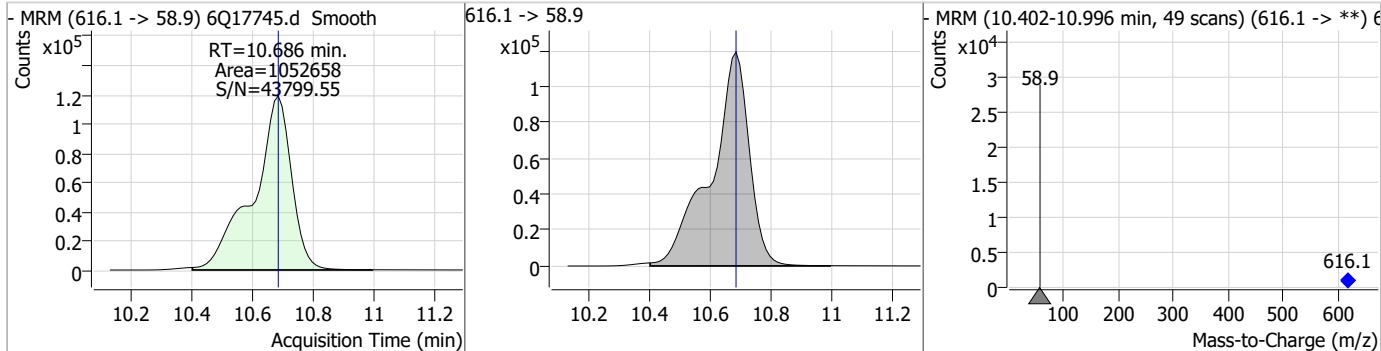
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	60.74	9.81	0.00	94773	699.1 -> 98.8	58.5	28.4	85.1



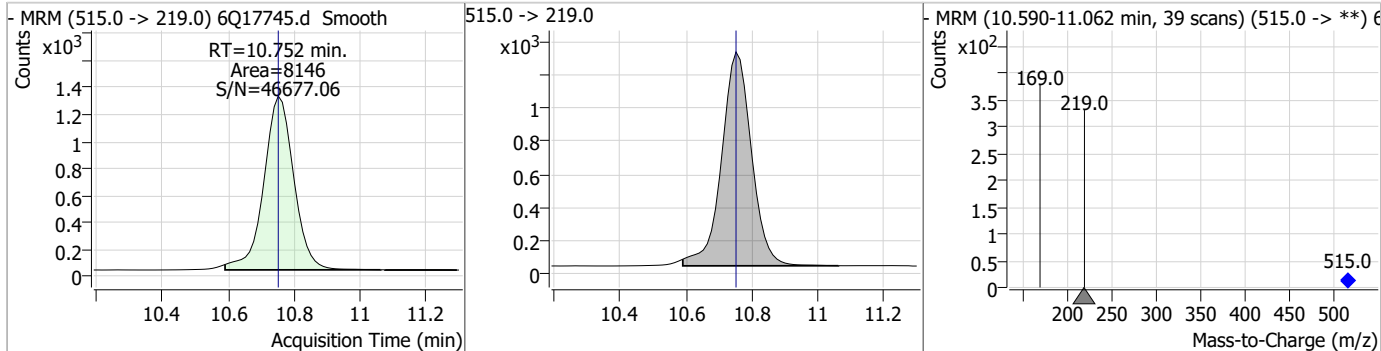
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.46	10.67	0.00	67690				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	332.43	10.69	0.00	1052658				



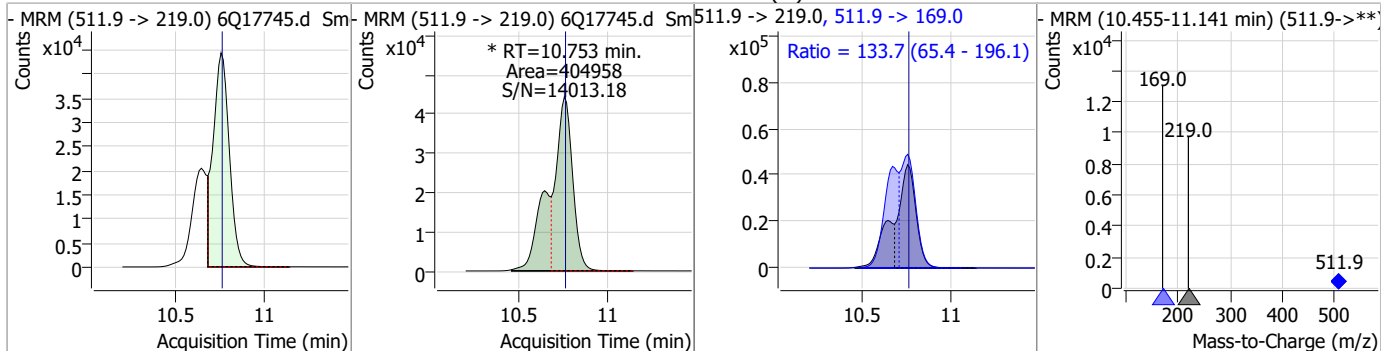
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.88	10.75	0.00	8146				



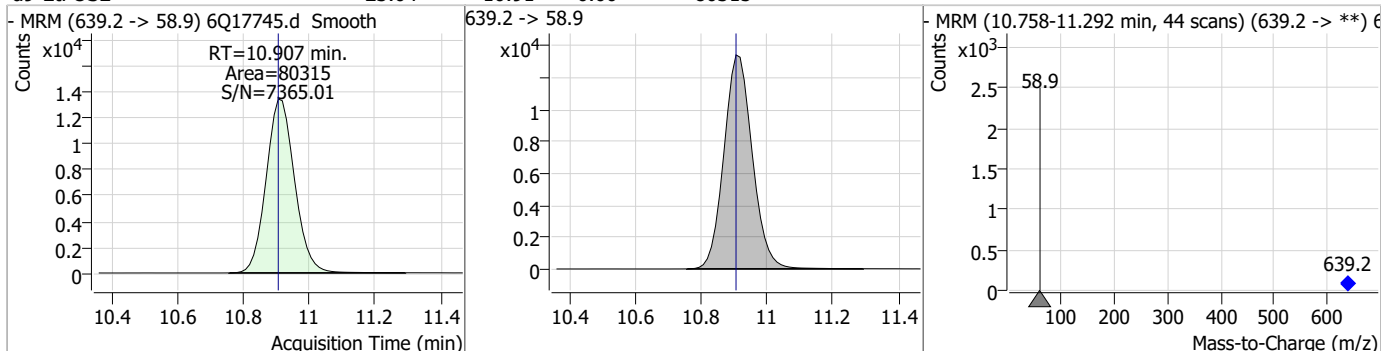
7.7.9
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Perfluorinated Compounds by LC/MS/MS

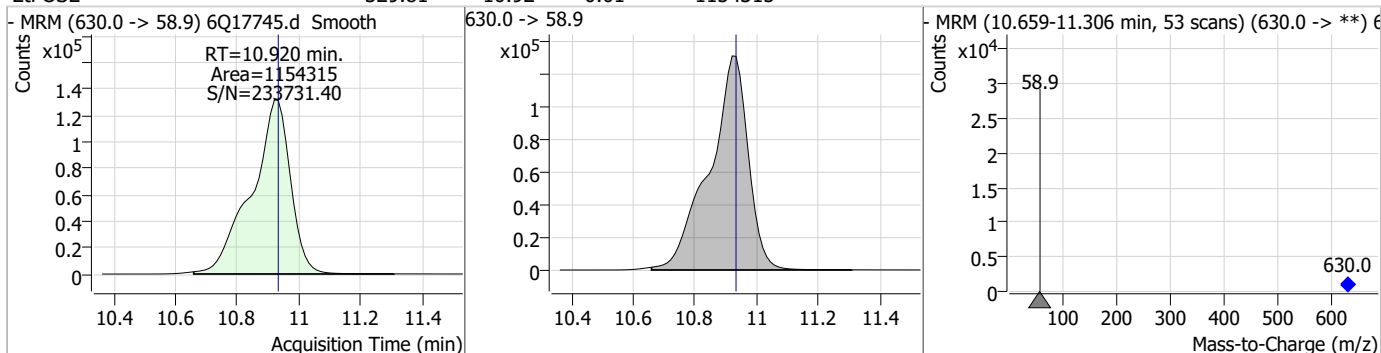
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	107.96	10.75	0.00	404958 (m)	511.9 -> 169.0	133.7	65.4	196.1



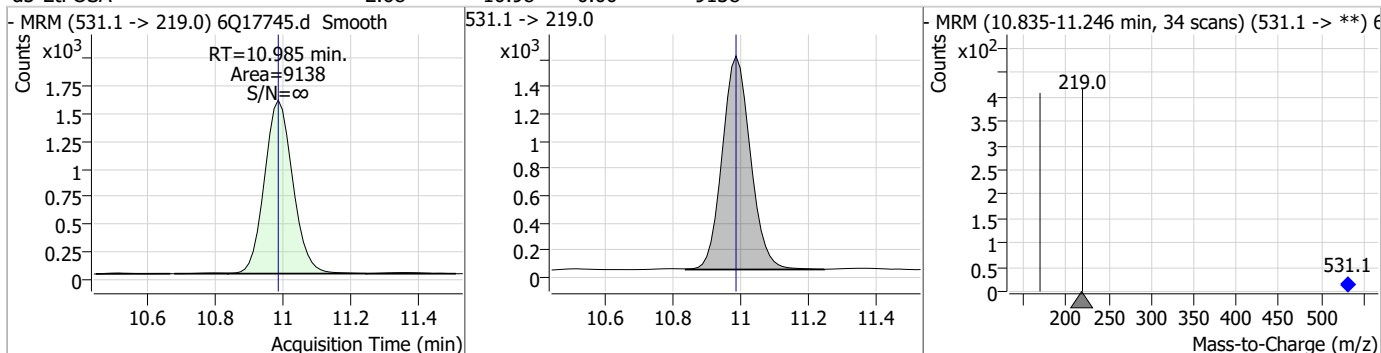
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.04	10.91	0.00	80315				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	329.81	10.92	-0.01	1154315				

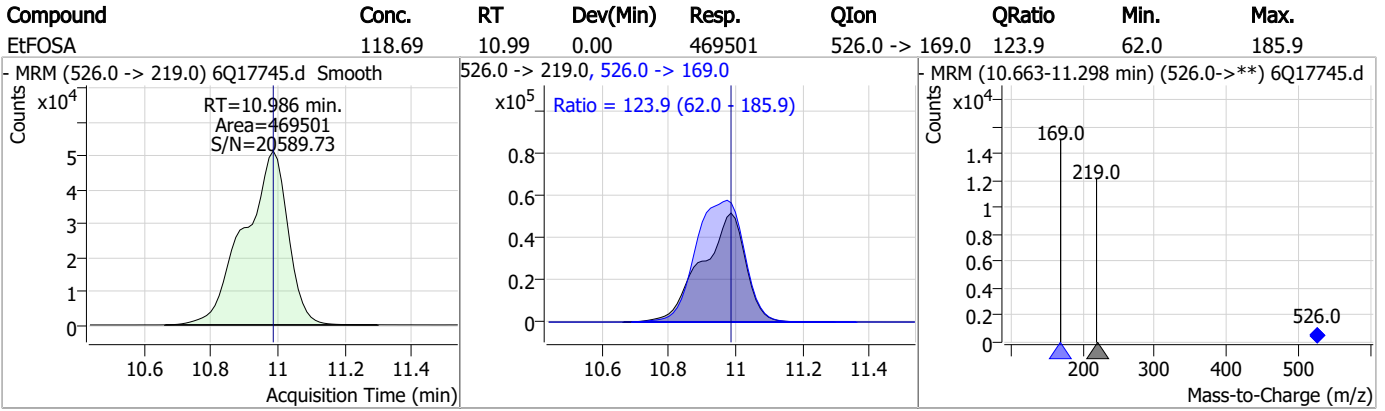


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.68	10.98	0.00	9138				



7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9

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Manual Integration Approval Summary

Sample Number: S6Q268-IC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17745.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 13:56 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17747.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 2:25:48 PM
 Sample Name : icv268-4
 Vial : P1-B1
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	157793	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	49124	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	56815	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	48361	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	70593	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	25116	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	16036	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	23458	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	22805	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14383	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	21336	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	18481	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	11322	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9961	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1510	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	2142	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2123	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	20167	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	33862	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	16059	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	78245	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	94746	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	9021	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7755	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12097	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	66700	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	8658	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	77916	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	21444	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	24536	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	47258	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1510	4.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.6%		
13C2-6:2FTS	6.838	429.1 -> 80.9	2142	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2123	4.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-PFDoDA	8.949	615.1 -> 570.0	22805	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14383	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C3-PFBS	5.397	302.1 -> 79.9	18481	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.179	402.1 -> 79.9	11322	2.45 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 = 98.2%	
13C4-PFBA	2.901	216.8 -> 171.9	157793	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.420	367.1 -> 322.0	48361	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C5-PFHxA	5.466	318.0 -> 273.0	56815	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	4.272	268.3 -> 223.0	49124	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.064	519.1 -> 474.1	16036	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C7-PFUnDA	8.518	570.0 -> 525.1	23458	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C8-FOSA	9.648	506.1 -> 77.8	21336	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-PFOA	7.064	421.1 -> 376.0	70593	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOS	8.226	507.1 -> 79.9	9961	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C9-PFNA	7.583	472.1 -> 427.0	25116	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.8%	
d3-MeFOSAA	8.121	573.2 -> 419.0	20167	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	33862	9.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSA	10.752	515.0 -> 219.0	7755	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.0%	
d5-EtFOSAA	8.329	589.2 -> 419.0	16059	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
d7-MeFOSE	10.672	623.2 -> 58.9	78245	26.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d9-EtFOSE	10.907	639.2 -> 58.9	94746	26.31 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d5-EtFOSA	10.984	531.1 -> 219.0	9021	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	22950	10.11 µg/L	98
		327.1 -> 80.9	8288		
6:2FTS	6.838	427.1 -> 407.0	21472	9.21 µg/L	98
		427.1 -> 80.9	7176		
8:2FTS	7.865	527.1 -> 507.0	12764	10.58 µg/L	99
		527.1 -> 80.8	5168		
EtFOSAA	8.330	584.2 -> 419.1	7500	2.51 µg/L	92
		584.2 -> 526.0	3499		
FOSA	9.639	498.1 -> 77.9	18882	2.36 µg/L	99
		498.1 -> 478.0	540		
MeFOSAA	8.134	570.1 -> 419.0	9520	2.44 µg/L	94
		570.1 -> 483.0	1632		
PFBA	2.907	212.8 -> 168.9	55301	9.77 µg/L	100
PFBS	5.398	298.7 -> 79.9	19811	2.20 µg/L	94
		298.7 -> 98.8	7987		
PFDA	8.064	512.9 -> 469.0	54604	2.75 µg/L	97
		512.9 -> 219.0	8340		
PFDoDA	8.950	613.1 -> 569.0	42572	2.34 µg/L	97
		613.1 -> 319.0	6421		
PFDS	9.113	599.0 -> 79.9	7802	2.41 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3720			
PFHpA	6.420	363.1 -> 319.0	63119	2.61	µg/L	97
		363.1 -> 169.0	9413			
PFHpS	7.735	449.0 -> 79.9	11714	2.20	µg/L	94
		449.0 -> 98.9	5632			
PFHxA	5.469	313.0 -> 269.0	56061	2.49	µg/L	99
		313.0 -> 118.9	2596			
PFHxS	7.180	398.7 -> 79.9	13974	2.23	µg/L	m 98
		398.7 -> 98.9	6739			
PFNA	7.596	463.0 -> 419.0	42196	2.26	µg/L	99
		463.0 -> 219.0	8543			
PFNS	8.681	548.8 -> 79.9	11671	2.42	µg/L	94
		548.8 -> 98.9	6247			
PFOA	7.066	413.0 -> 369.0	87008	2.48	µg/L	99
		413.0 -> 169.0	14291			
PFOS	8.228	498.9 -> 79.9	12550	2.40	µg/L	m 92
		498.9 -> 98.8	6054			
PFPeA	4.274	263.0 -> 219.0	71212	5.02	µg/L	100
PFPeS	6.471	349.1 -> 79.9	14338	2.31	µg/L	98
		349.1 -> 98.9	6598			
PFTeDA	9.677	713.1 -> 669.0	38604	2.62	µg/L	98
		713.1 -> 168.9	2639			
PFTrDA	9.333	663.0 -> 619.0	49815	2.37	µg/L	97
		663.0 -> 168.9	4406			
PFUnDA	8.518	563.1 -> 519.0	40894	2.40	µg/L	97
		563.1 -> 269.1	6014			
11CI-PF3OUdS	9.385	630.9 -> 450.9	58683	4.59	µg/L	87
		632.9 -> 452.9	20290			
9CI-PF3ONS	8.557	530.8 -> 351.0	94320	4.61	µg/L	97
		532.8 -> 353.0	28382			
ADONA	6.671	376.9 -> 250.9	249225	4.62	µg/L	93
		376.9 -> 84.8	67794			
HFPO-DA	5.832	284.9 -> 168.9	16929	5.17	µg/L	97
		284.9 -> 184.9	2081			
3:3FTCA	3.777	241.0 -> 177.0	10798	12.28	µg/L	100
		241.0 -> 117.0	1440			
5:3FTCA	6.161	341.0 -> 237.1	226576	58.11	µg/L	97
		341.0 -> 217.0	171261			
7:3FTCA	7.586	441.0 -> 316.9	108717	61.46	µg/L	95
		441.0 -> 336.9	236679			
EtFOSA	10.986	526.0 -> 219.0	20068	5.14	µg/L	97
		526.0 -> 169.0	24143			
EtFOSE	10.920	630.0 -> 58.9	49050	11.88	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	17371	4.86	µg/L	m 92
		511.9 -> 169.0	24234			
MeFOSE	10.686	616.1 -> 58.9	45883	12.54	µg/L	100
PFDoDS	9.805	699.1 -> 79.9	4310	2.52	µg/L	95
		699.1 -> 98.8	2301			
NFDHA	5.348	295.0 -> 201.0	12022	4.84	µg/L	98
		295.0 -> 84.9	3190			
PFMBA	4.675	279.0 -> 85.1	50744	5.01	µg/L	100
PFMPA	3.426	229.0 -> 84.9	36440	5.00	µg/L	100
PFEESA	5.938	314.8 -> 134.9	129453	4.28	µg/L	100
		314.8 -> 82.9	4721			

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



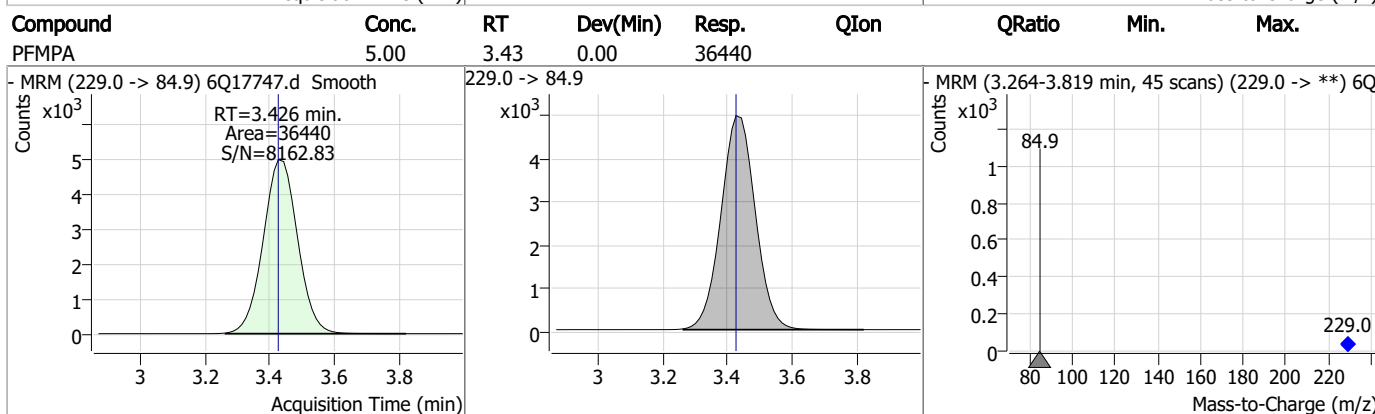
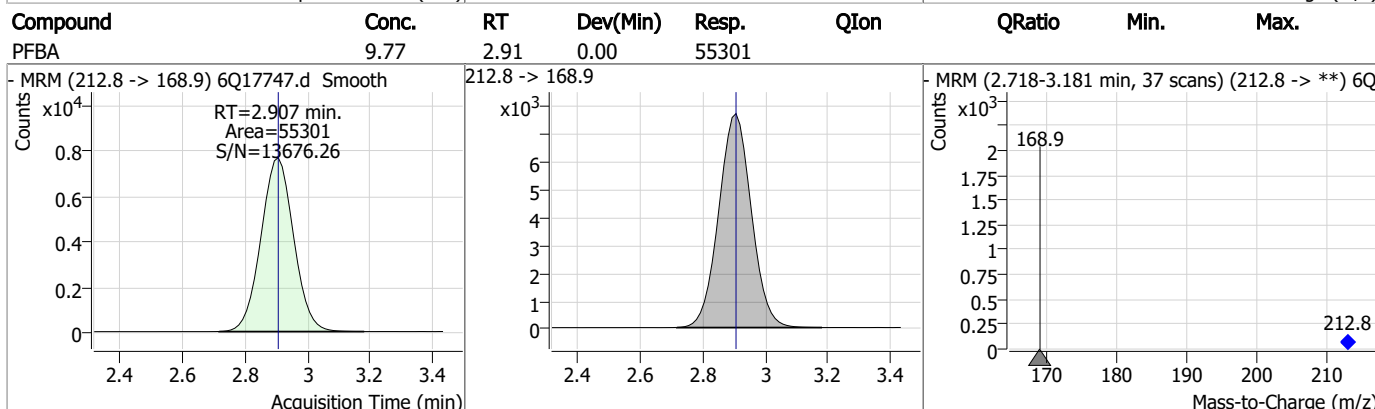
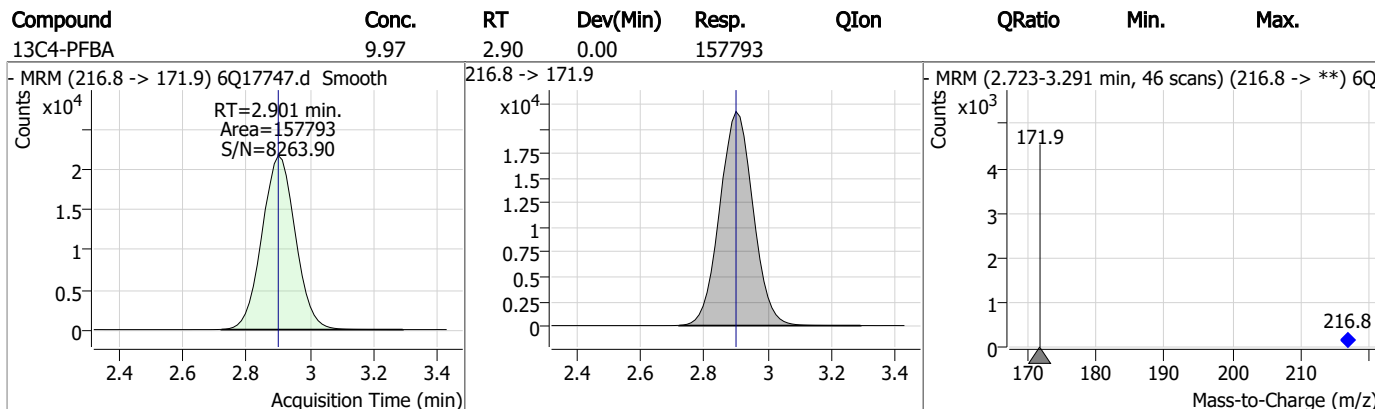
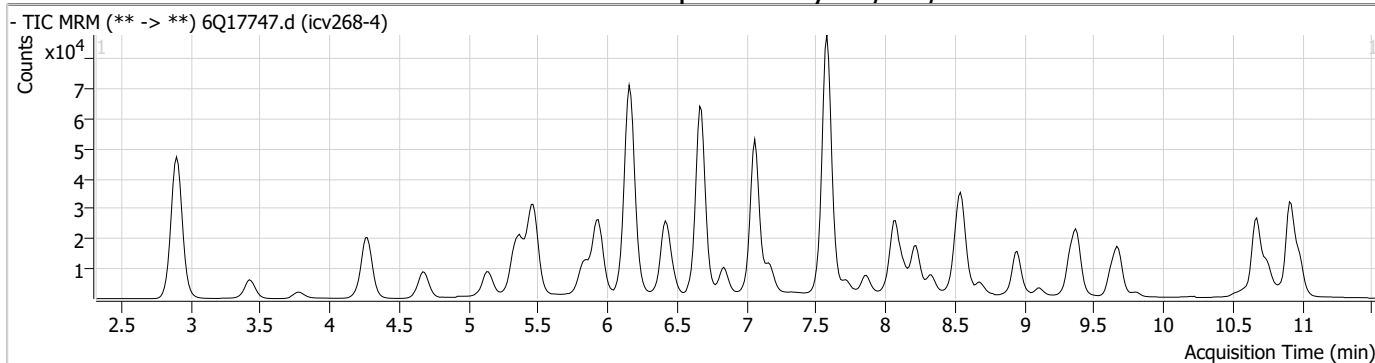
Perfluorinated Compounds by LC/MS/MS

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

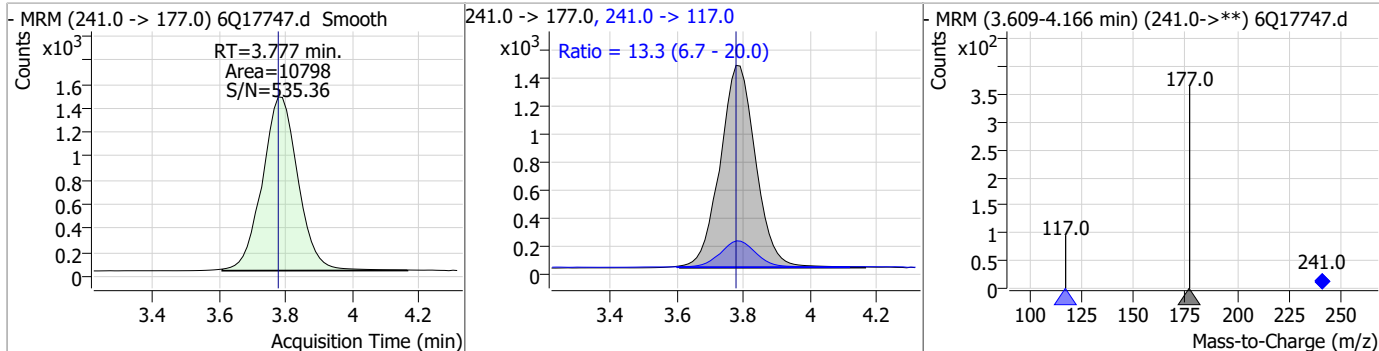
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Perfluorinated Compounds by LC/MS/MS

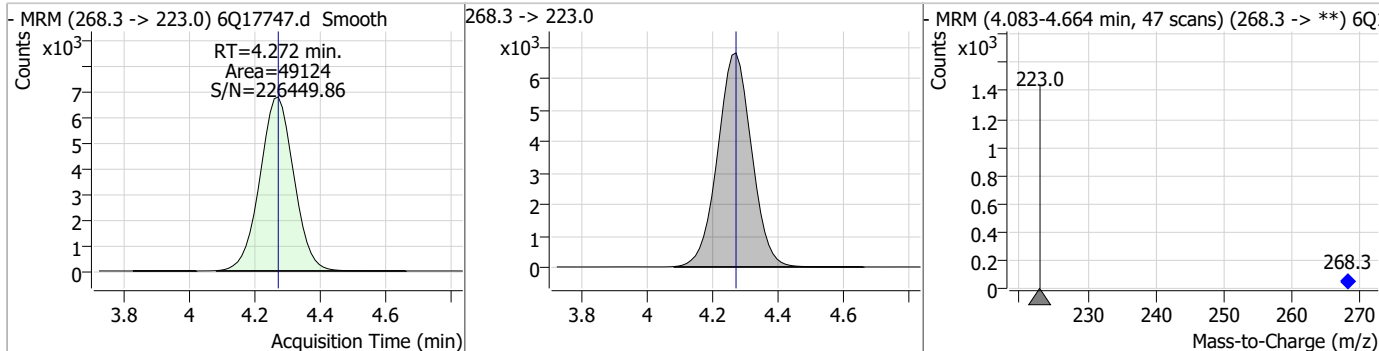


Perfluorinated Compounds by LC/MS/MS

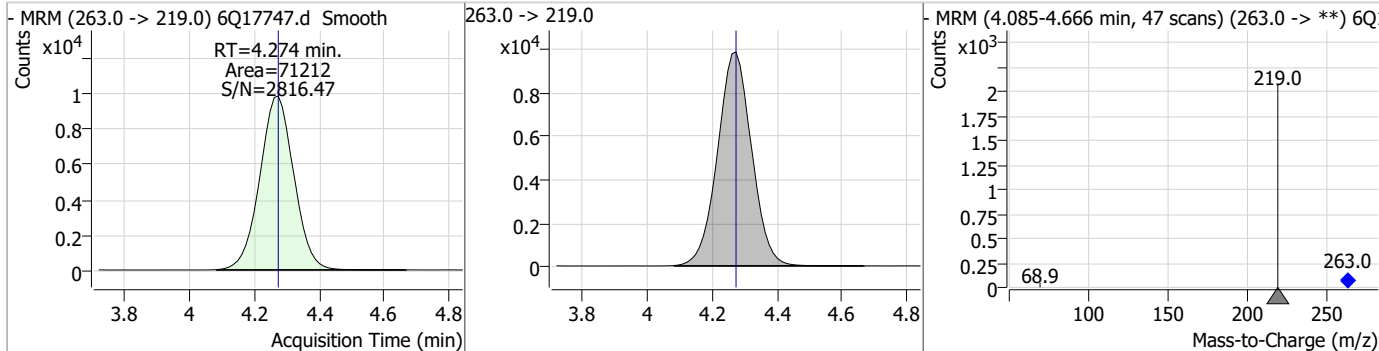
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.28	3.78	0.00	10798	241.0 -> 117.0	13.3	6.7	20.0



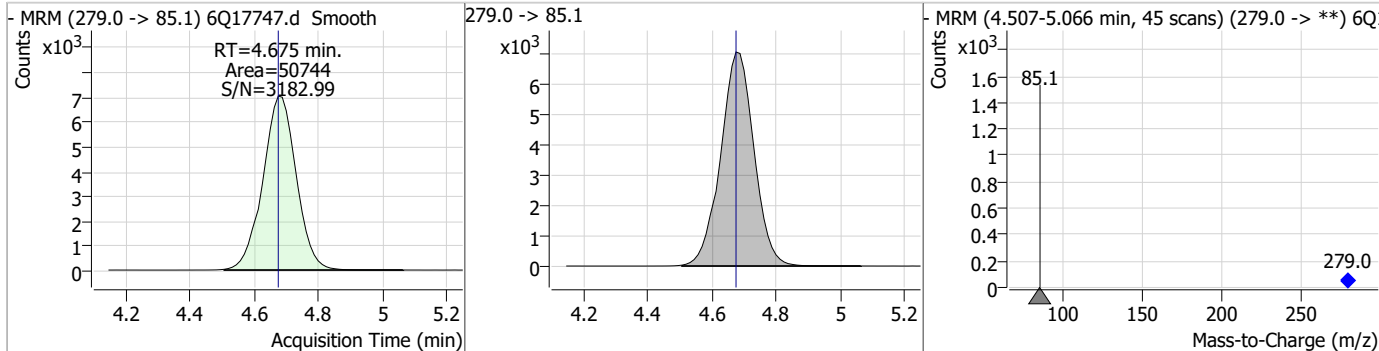
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.27	0.00	49124				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.02	4.27	0.00	71212				

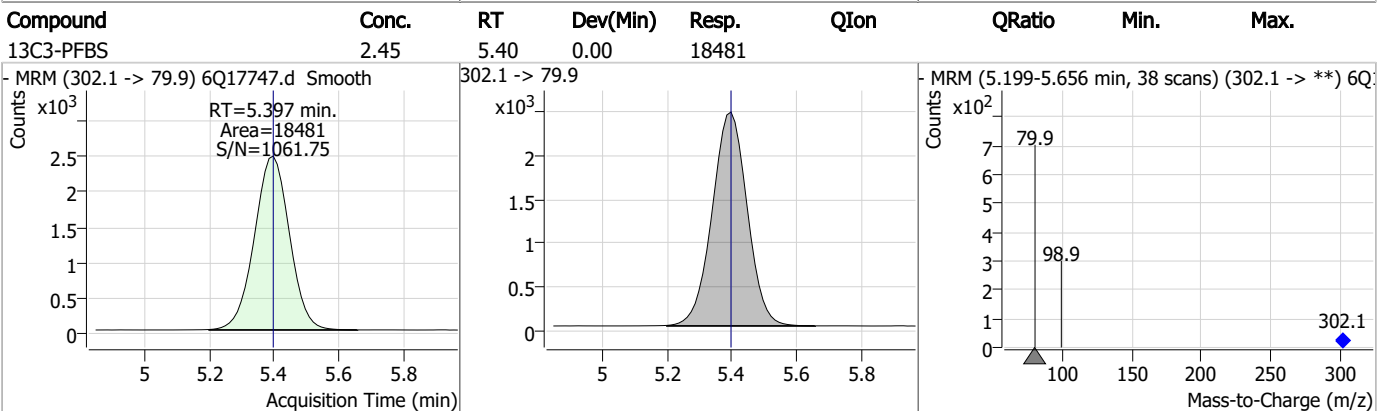
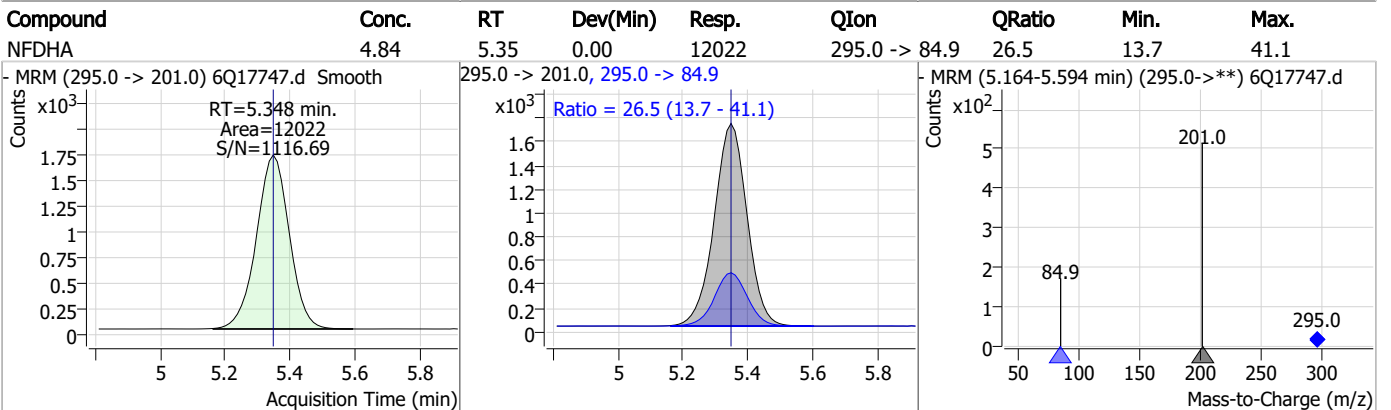
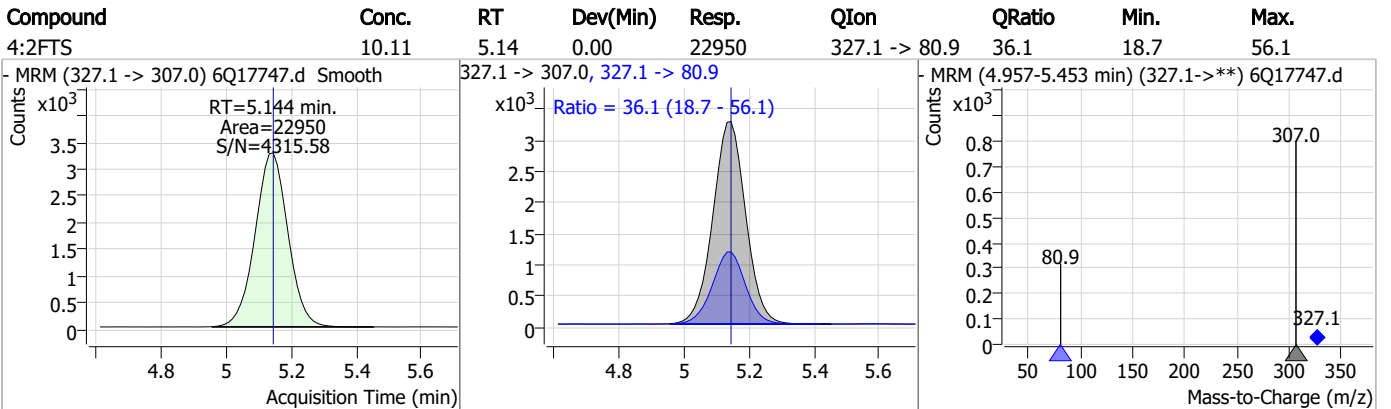
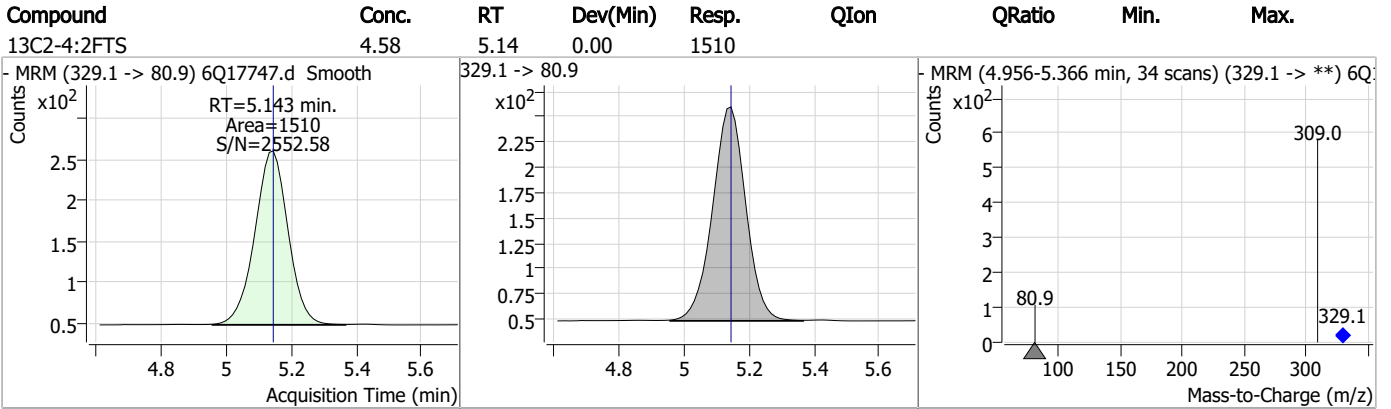


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.01	4.68	0.00	50744				

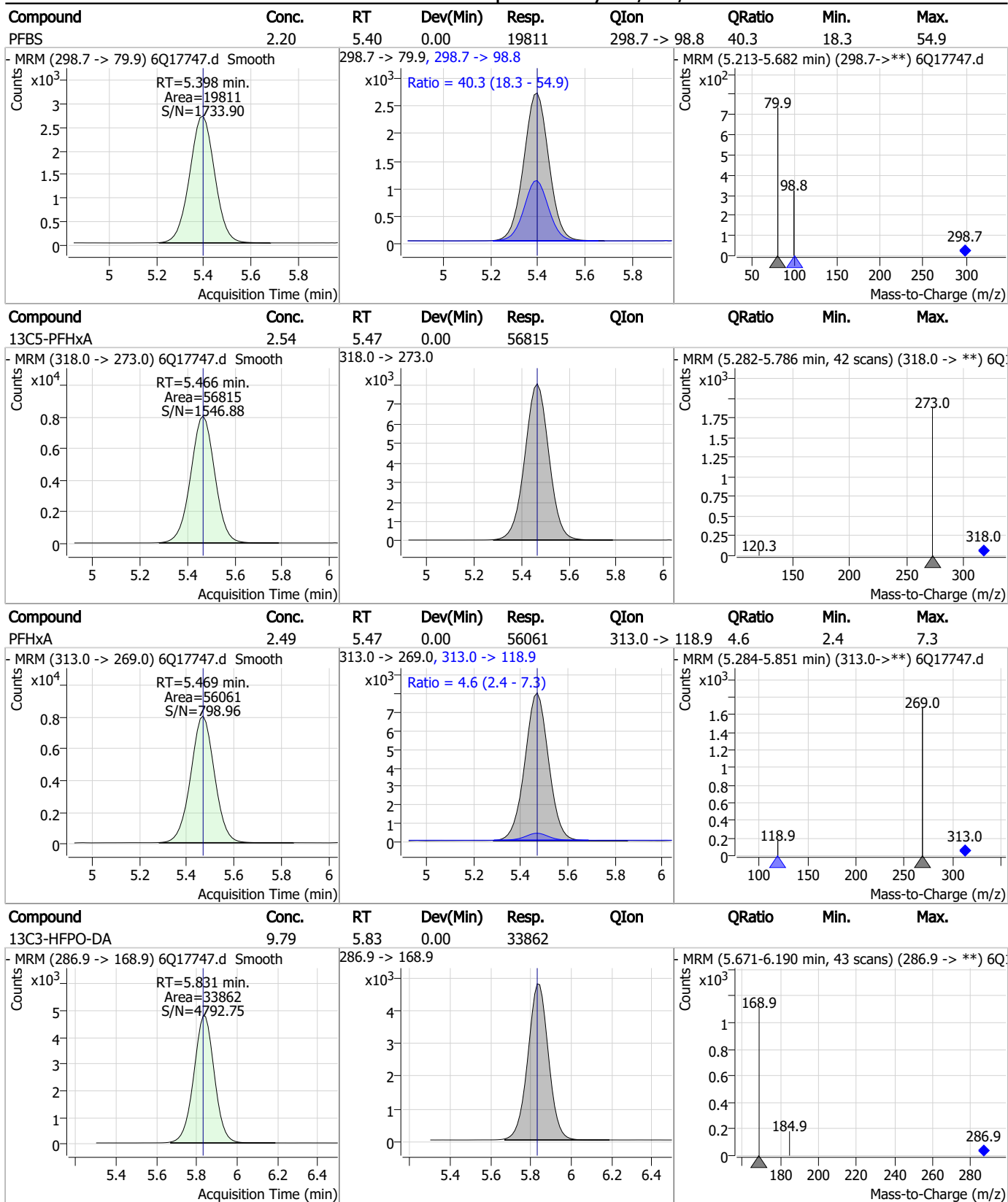


7.7.10
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Perfluorinated Compounds by LC/MS/MS



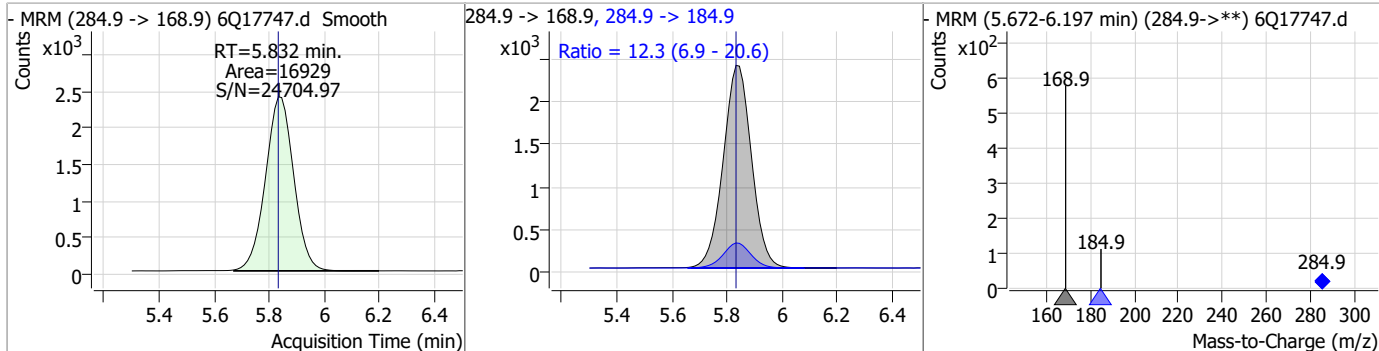
Perfluorinated Compounds by LC/MS/MS



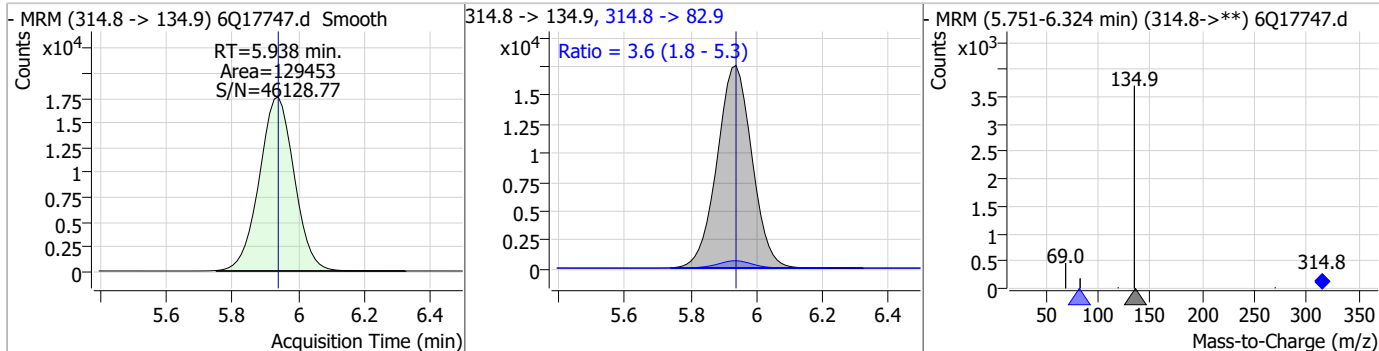
7.7.10
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Perfluorinated Compounds by LC/MS/MS

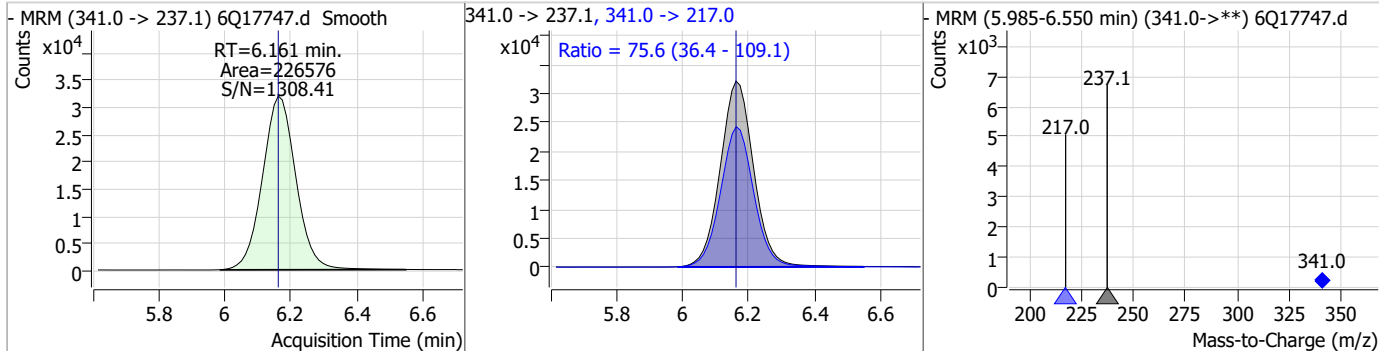
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.17	5.83	0.00	16929	284.9 -> 184.9	12.3	6.9	20.6



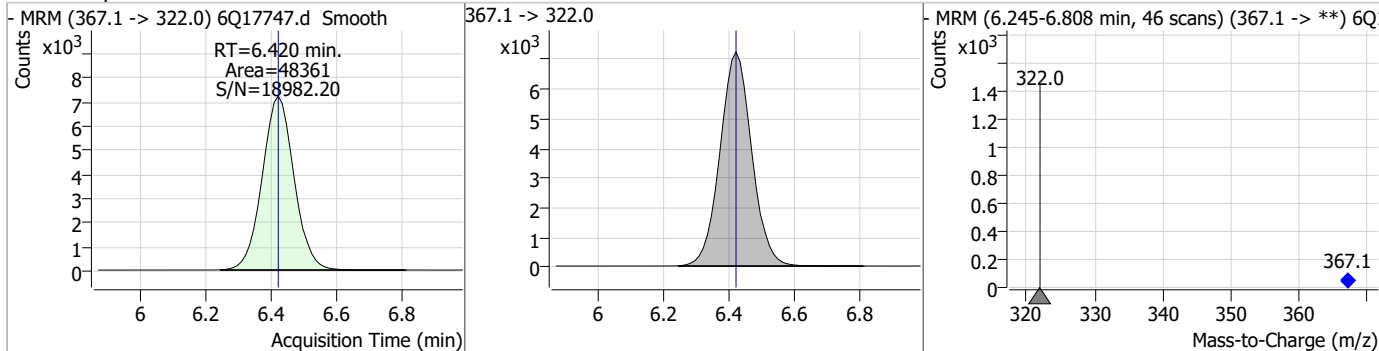
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.28	5.94	0.00	129453	314.8 -> 82.9	3.6	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.11	6.16	0.00	226576	341.0 -> 217.0	75.6	36.4	109.1

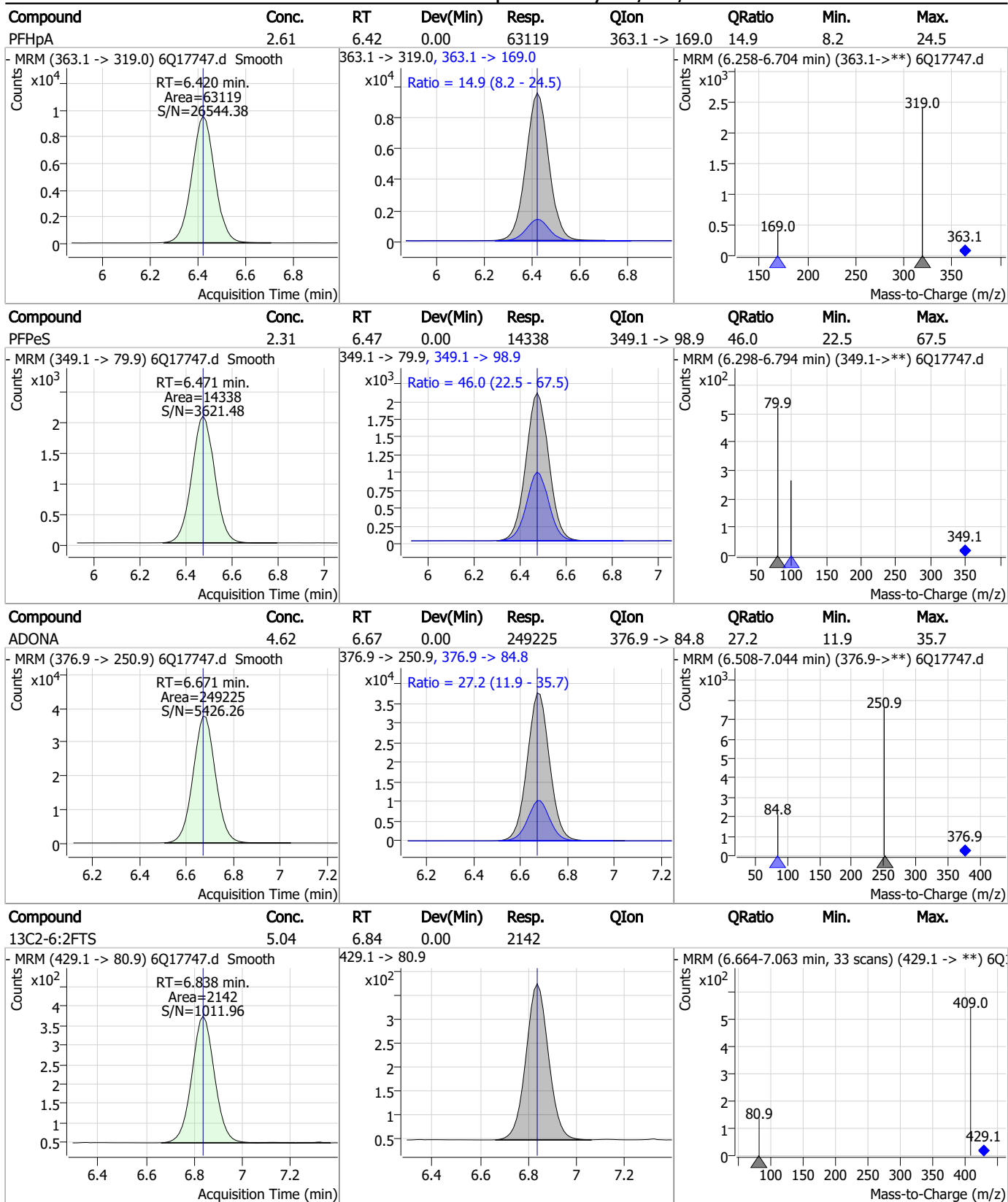


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.42	0.00	48361	367.1 -> 322.0			



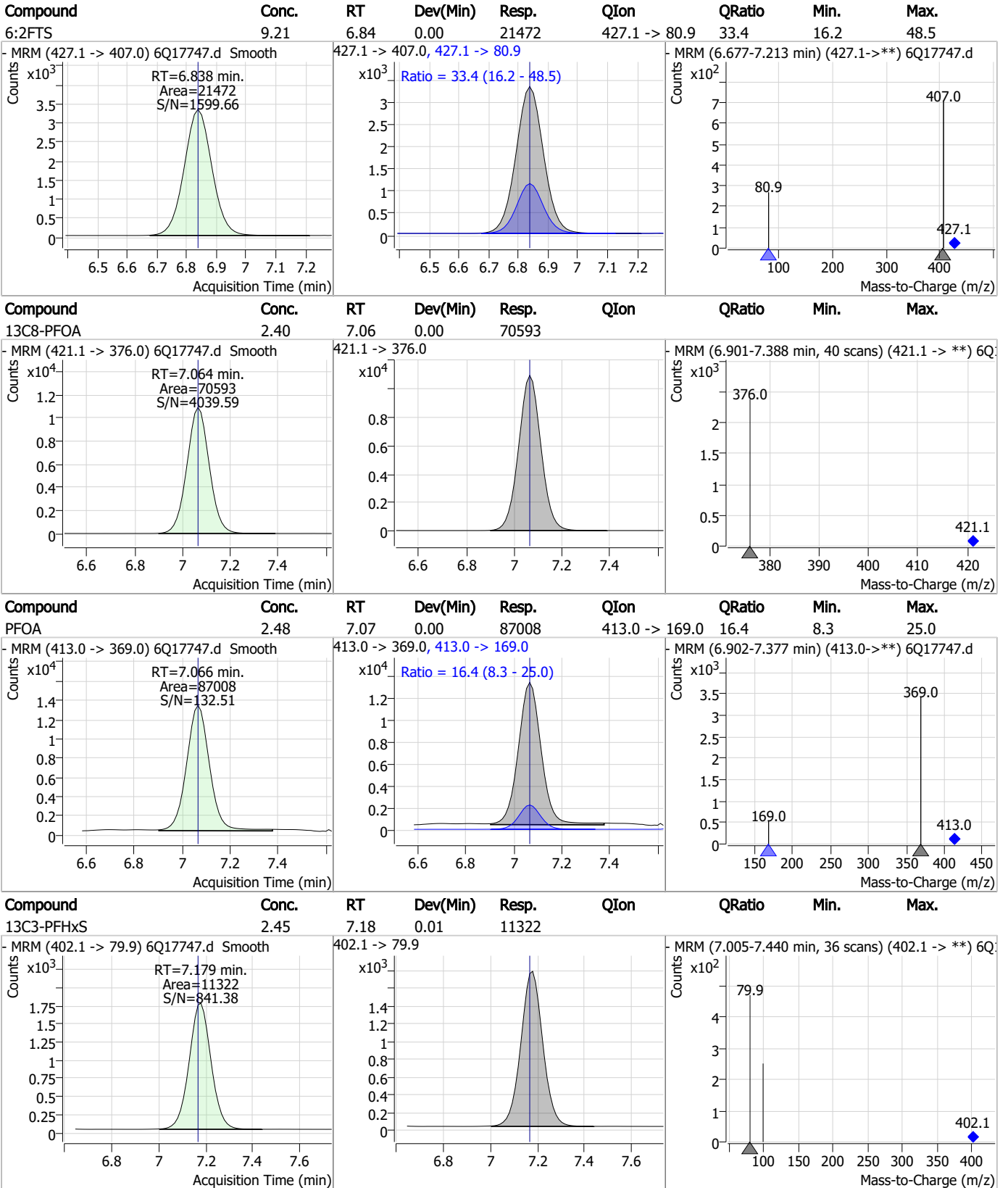
7.7.10
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Perfluorinated Compounds by LC/MS/MS



7.7.10
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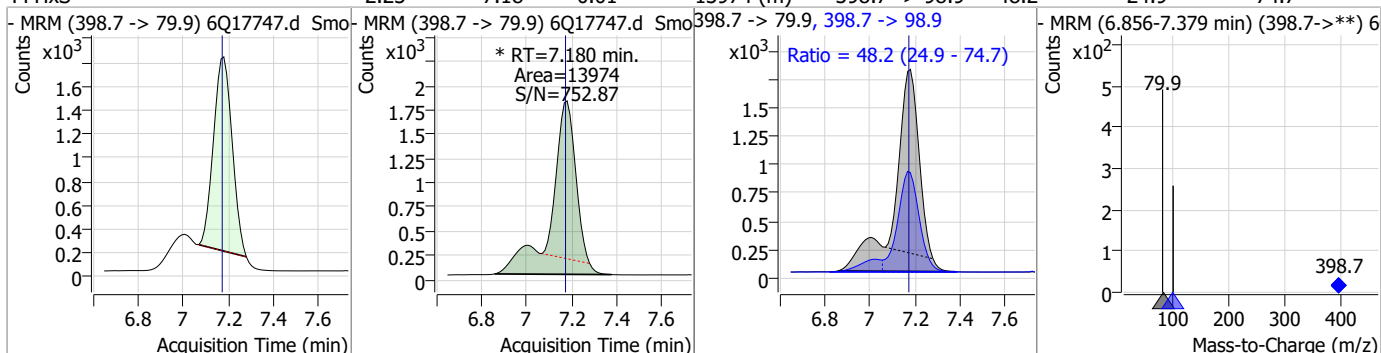
Perfluorinated Compounds by LC/MS/MS



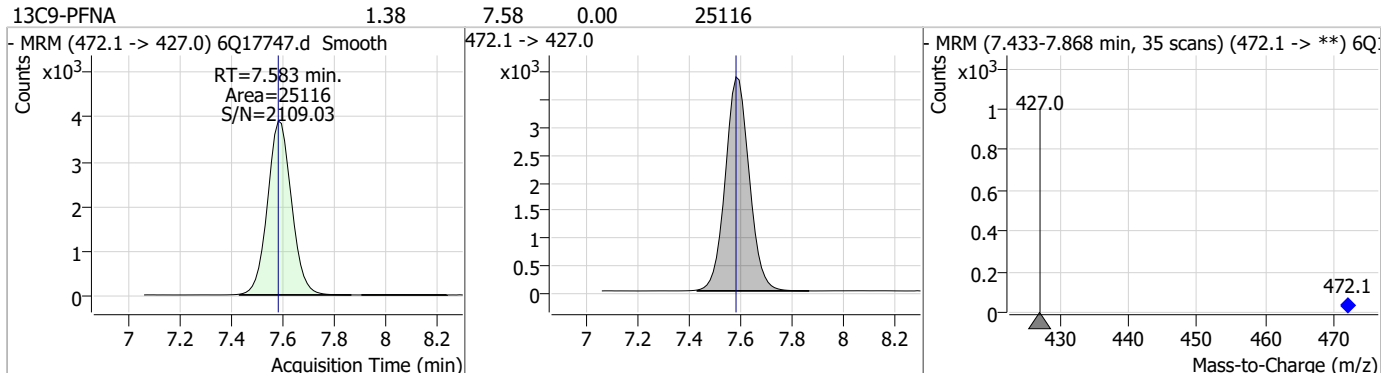
7.7.10 7

Perfluorinated Compounds by LC/MS/MS

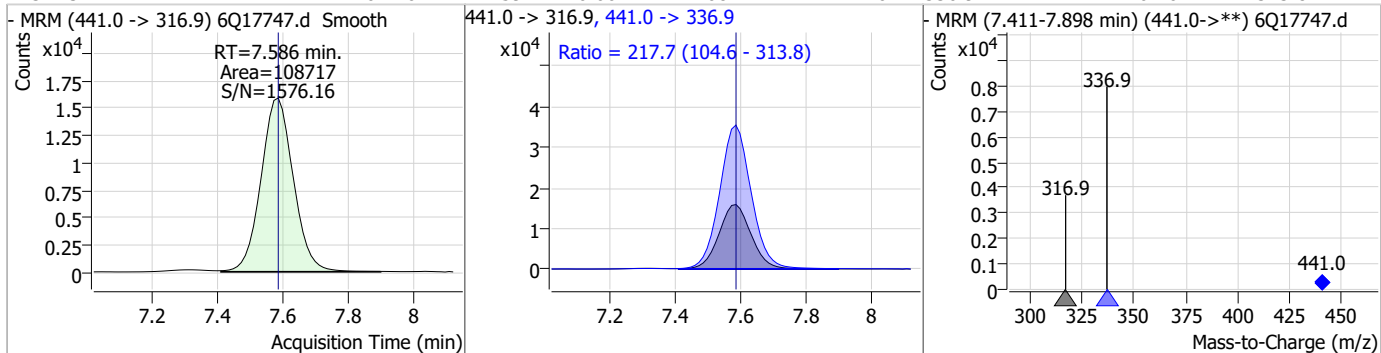
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.23	7.18	0.01	13974 (m)	398.7 -> 98.9	48.2	24.9	74.7



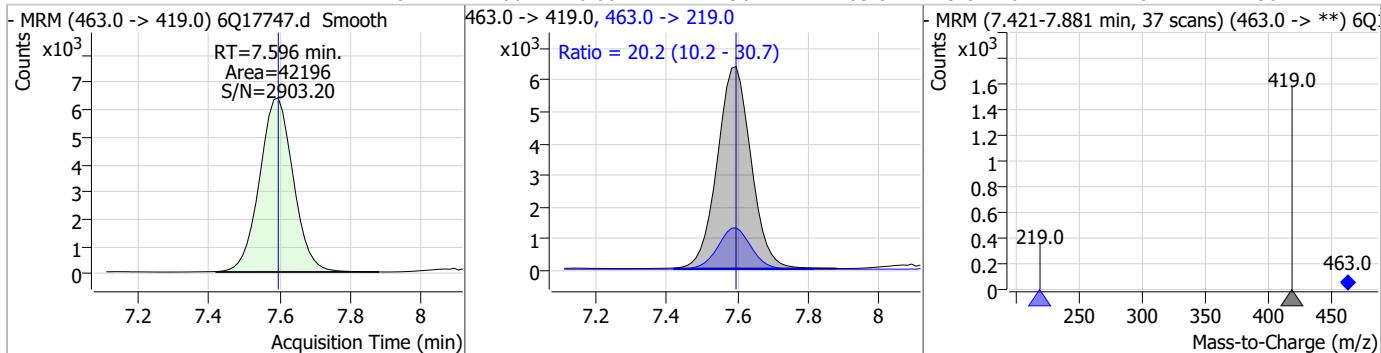
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.38	7.58	0.00	25116				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.46	7.59	0.00	108717	441.0 -> 336.9	217.7	104.6	313.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.26	7.60	0.00	42196	463.0 -> 219.0	20.2	10.2	30.7



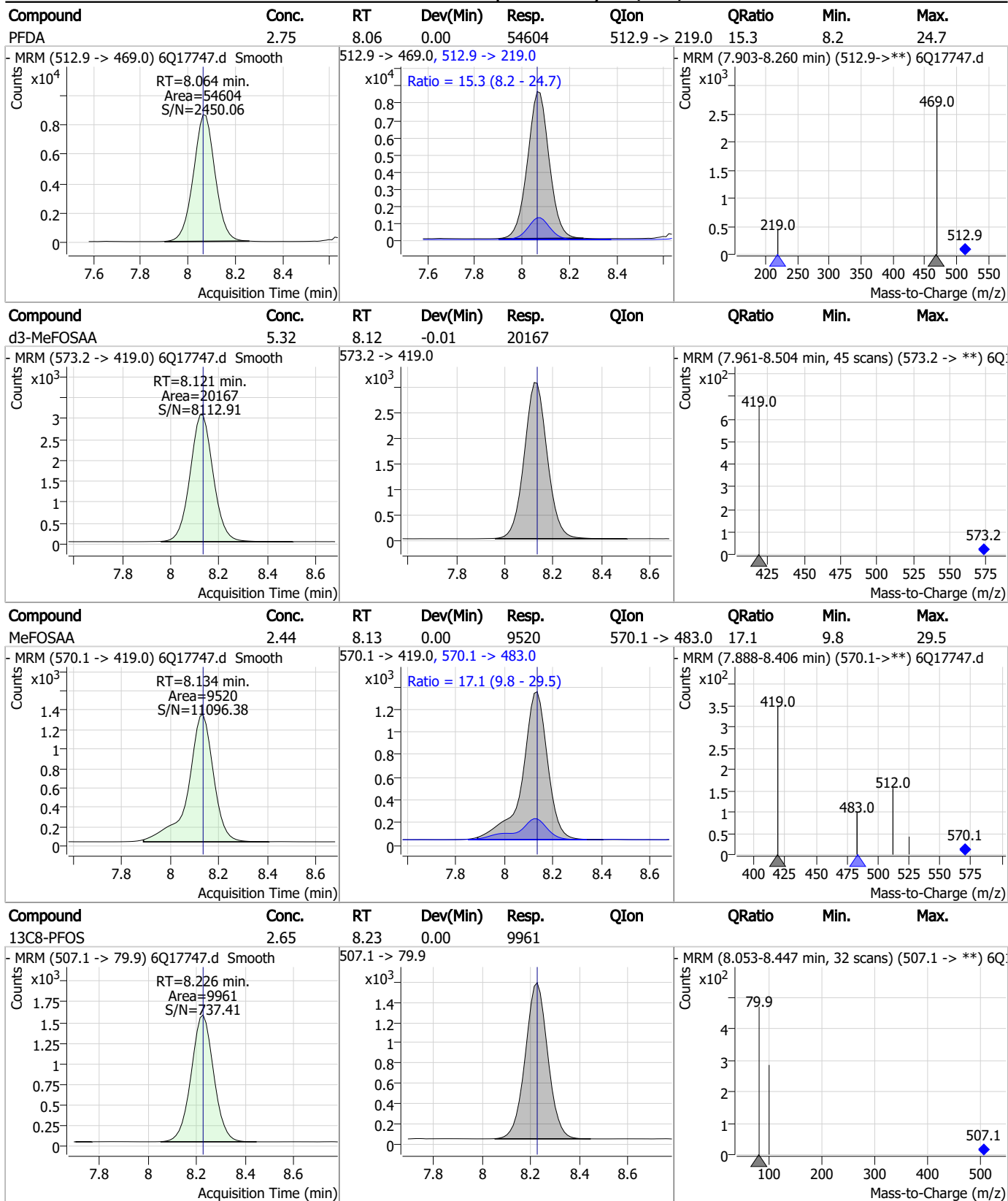
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.20	7.73	0.00	11714	449.0 -> 98.9	48.1	26.1	78.2
13C2-8:2FTS	4.64	7.86	0.00	2123	529.1 -> 80.9			
8:2FTS	10.58	7.86	0.00	12764	527.1 -> 80.8	40.5	20.5	61.5
13C6-PFDA	1.14	8.06	0.00	16036	519.1 -> 474.1			

7.7.10 7

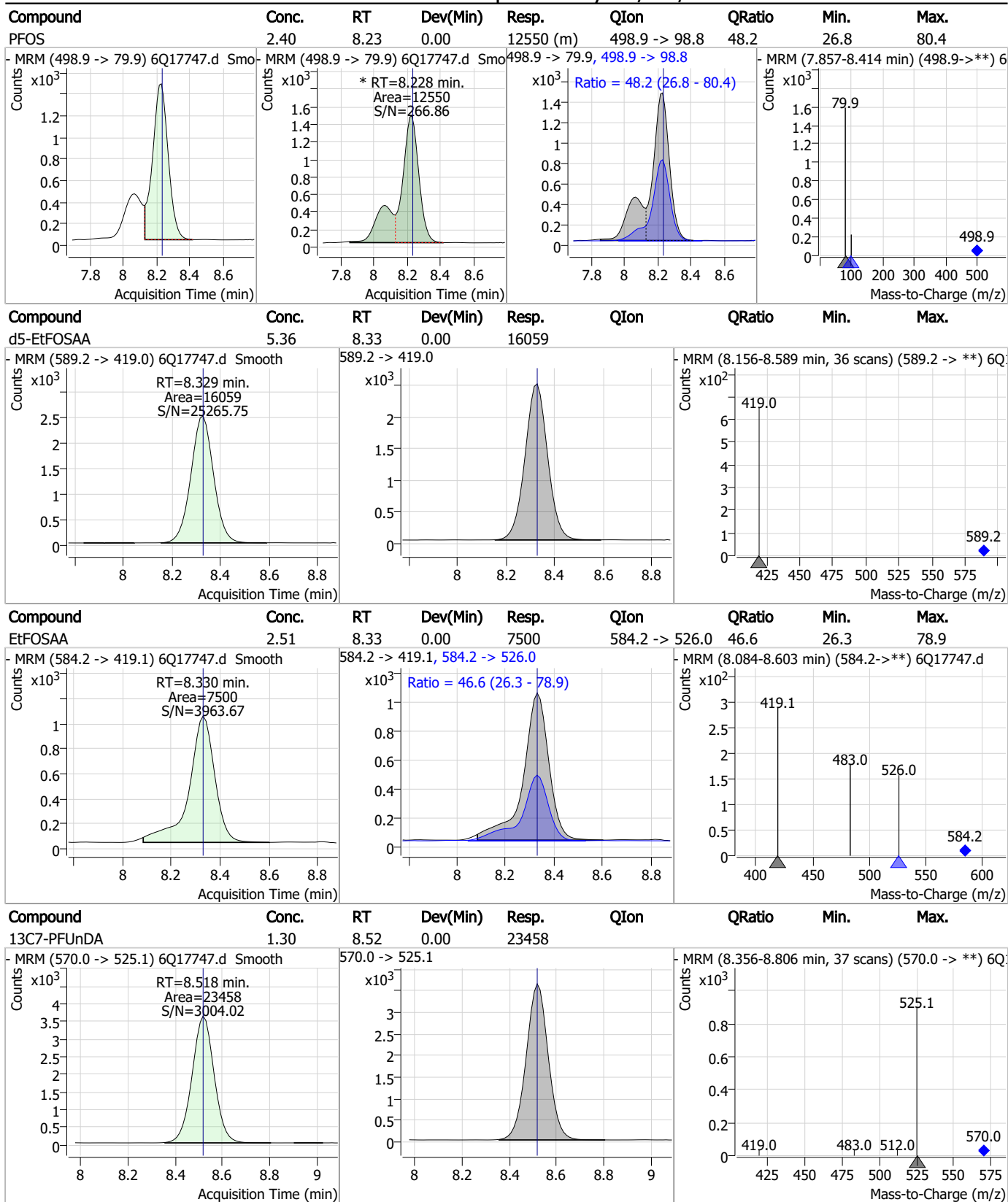


Perfluorinated Compounds by LC/MS/MS



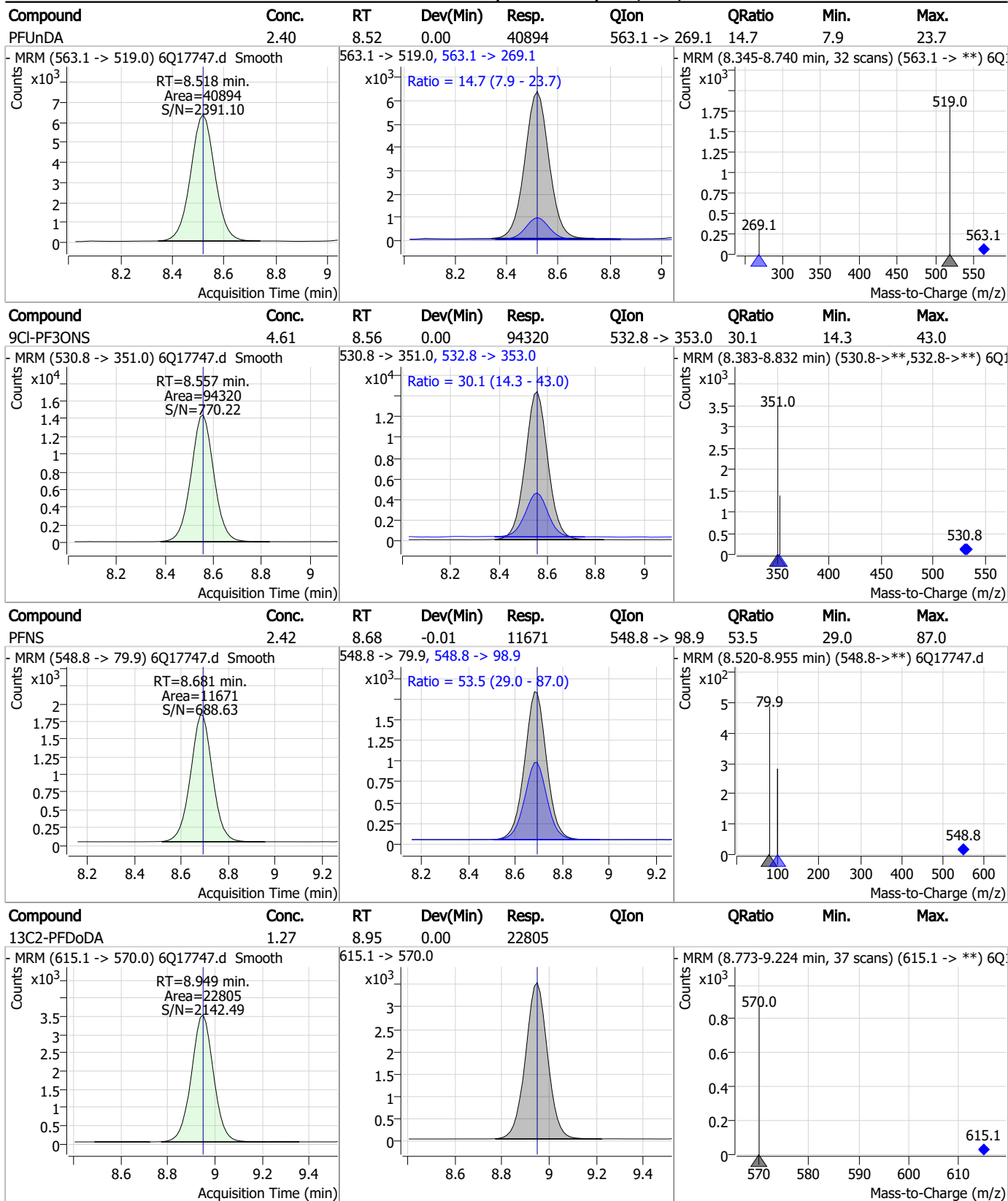
7.7.10
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Perfluorinated Compounds by LC/MS/MS



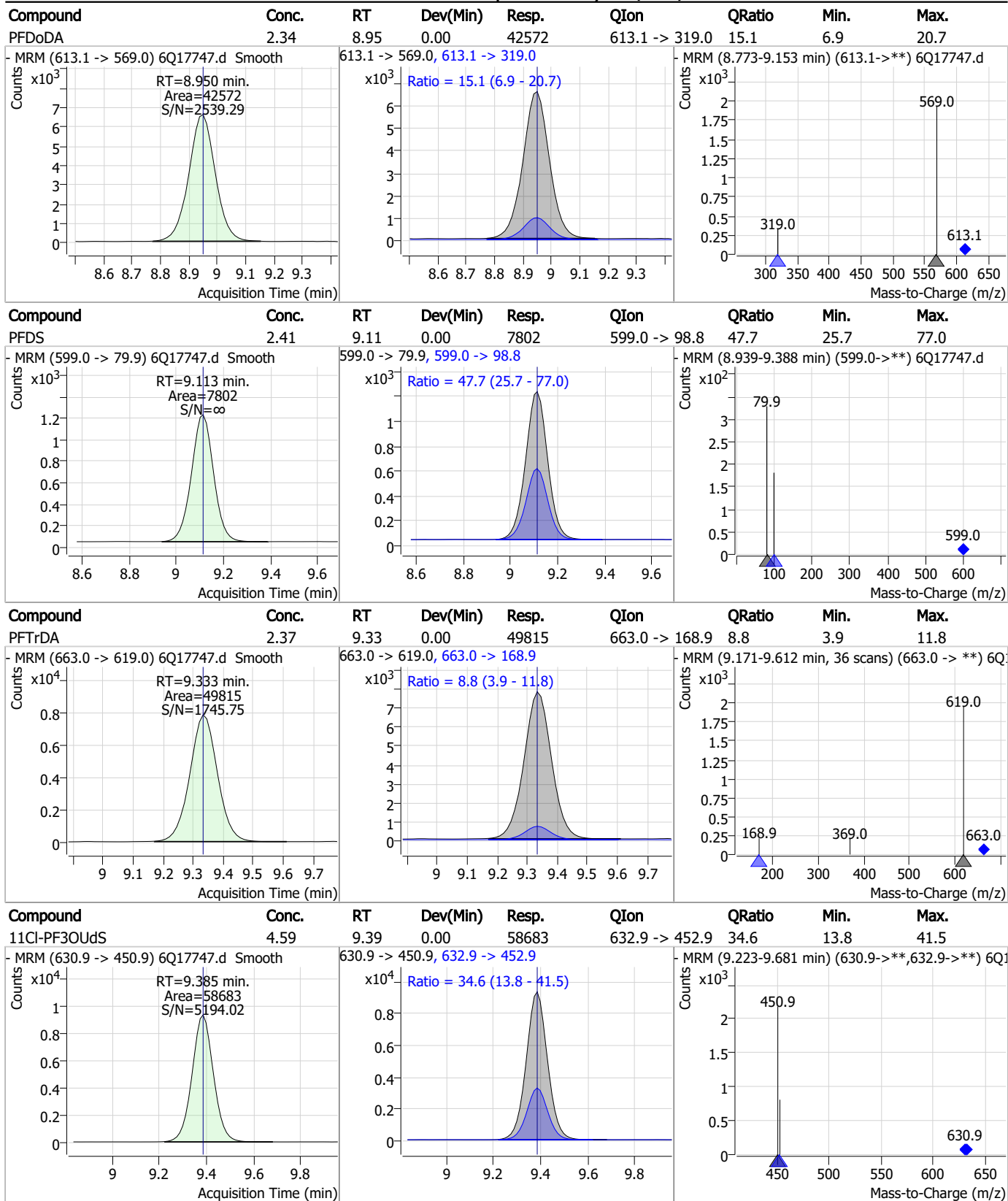
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

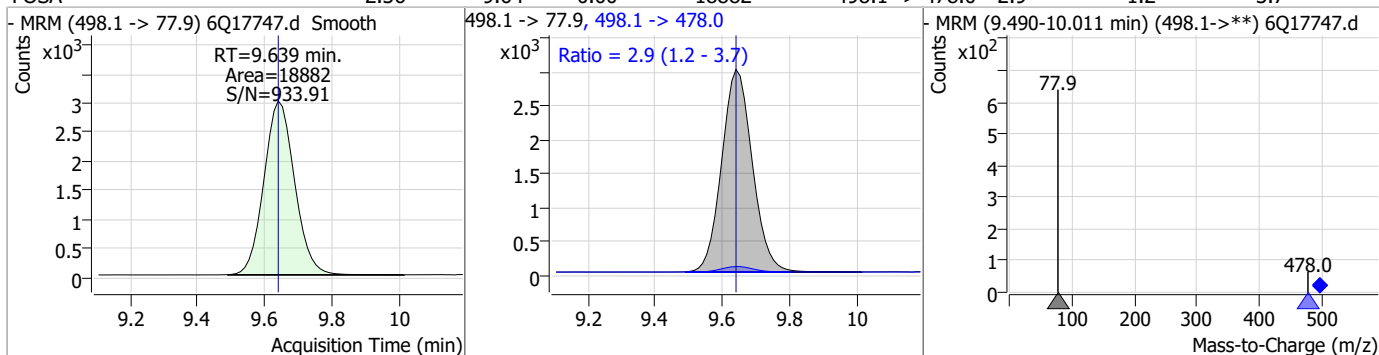


7.7.10 7

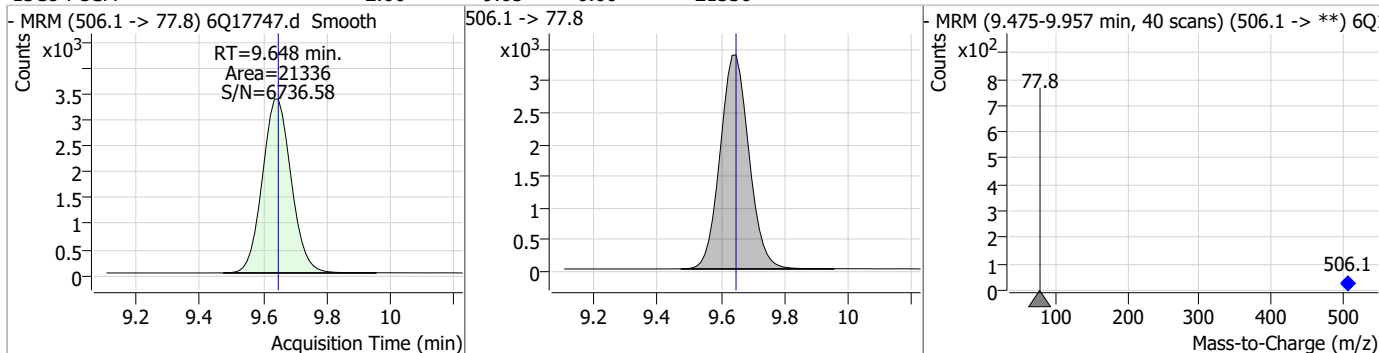


Perfluorinated Compounds by LC/MS/MS

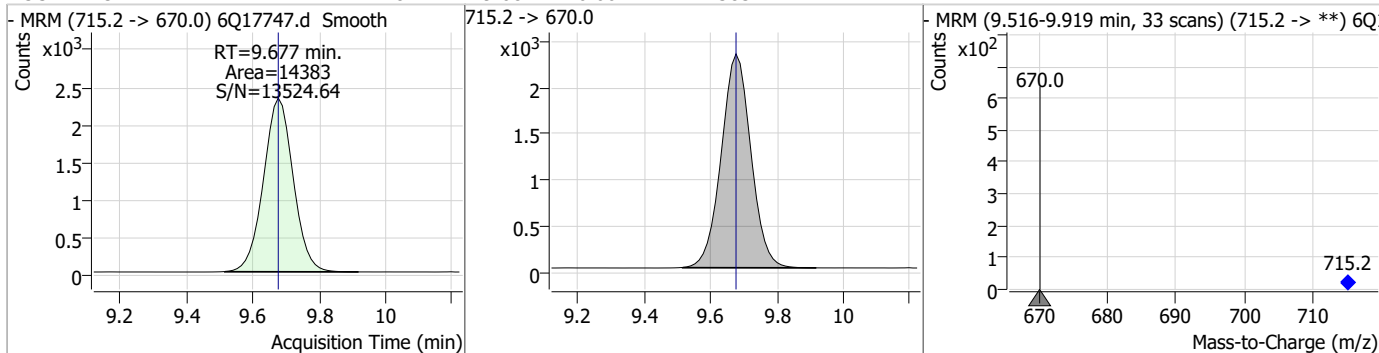
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.36	9.64	0.00	18882	498.1 -> 478.0	2.9	1.2	3.7



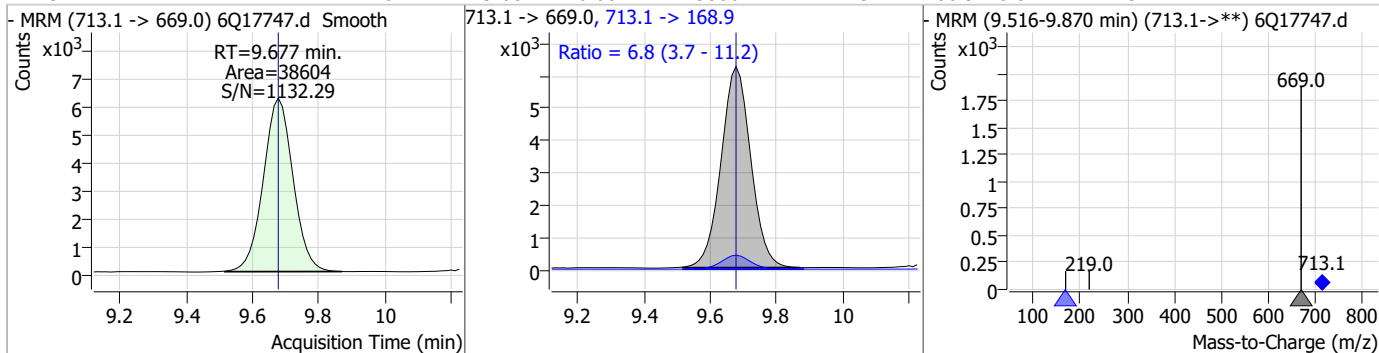
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.66	9.65	0.00	21336				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.68	0.00	14383				

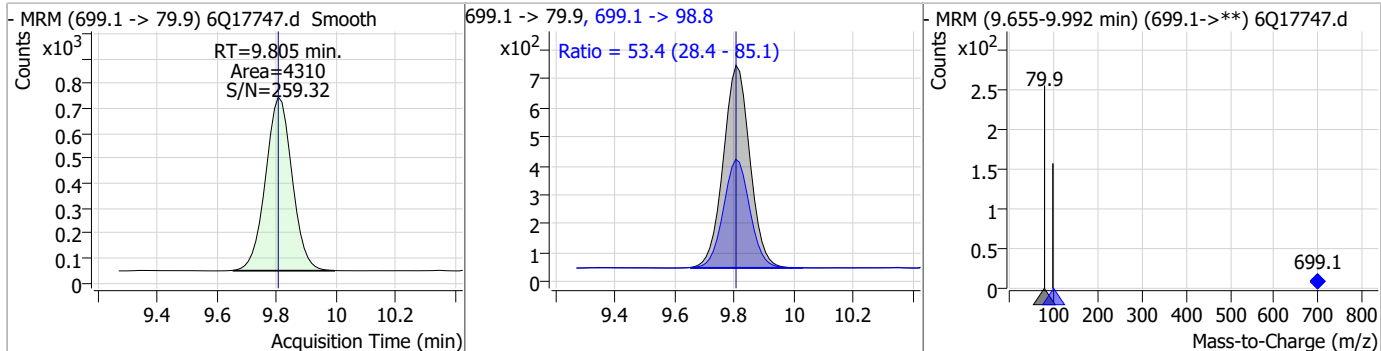


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.62	9.68	0.00	38604	713.1 -> 168.9	6.8	3.7	11.2

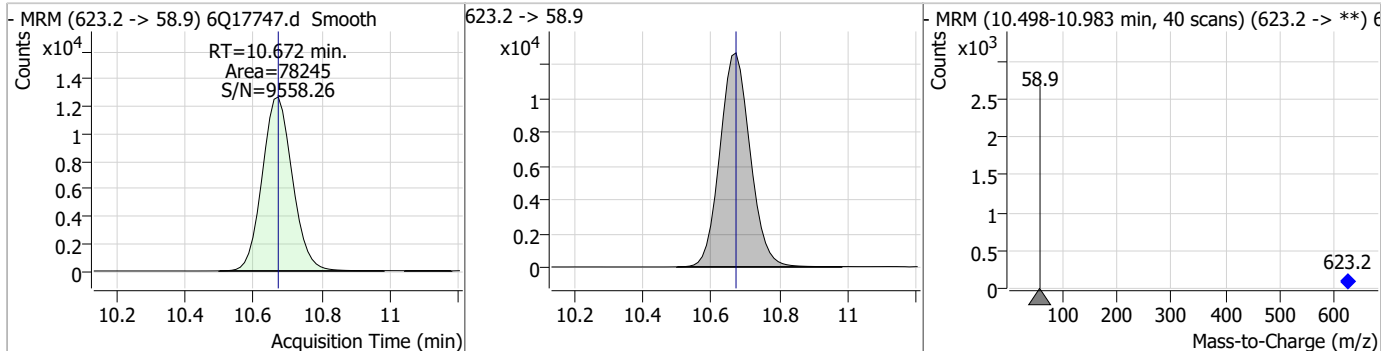


Perfluorinated Compounds by LC/MS/MS

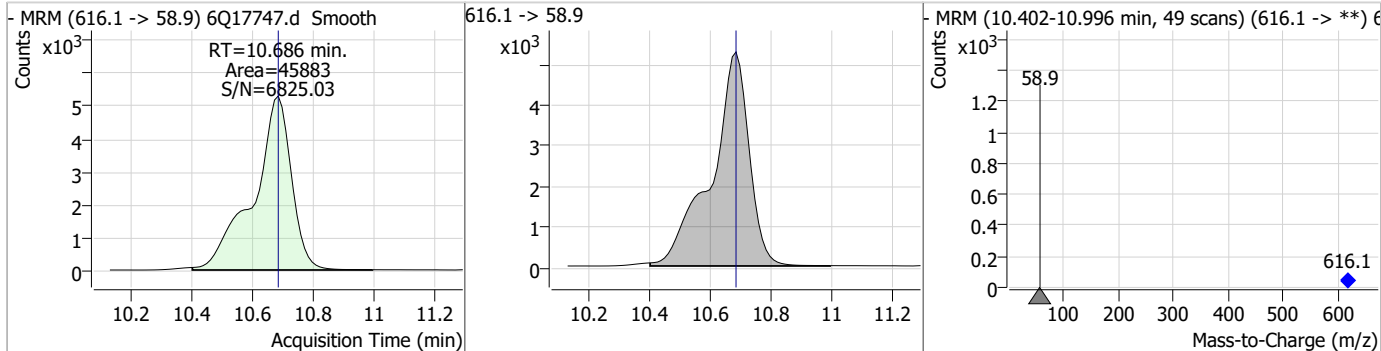
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.52	9.81	0.00	4310	699.1 -> 98.8	53.4	28.4	85.1



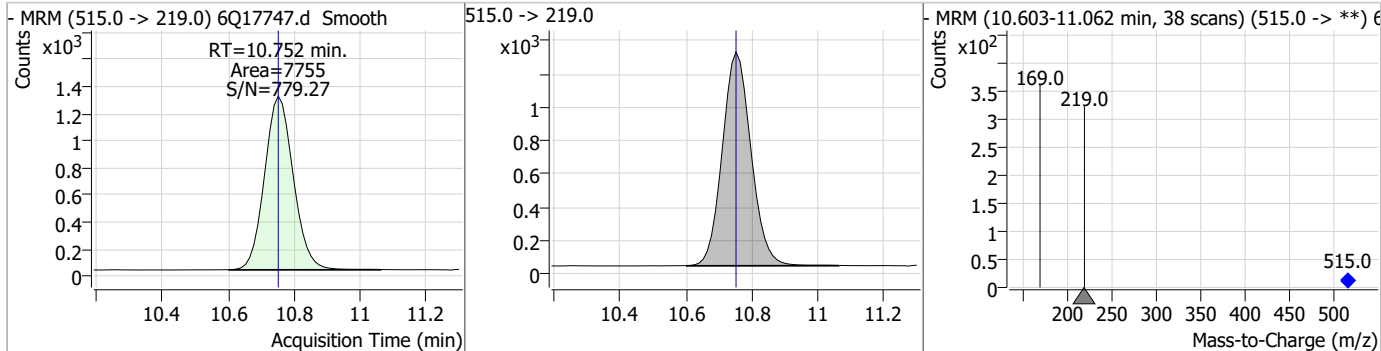
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.26	10.67	0.00	78245				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.54	10.69	0.00	45883				

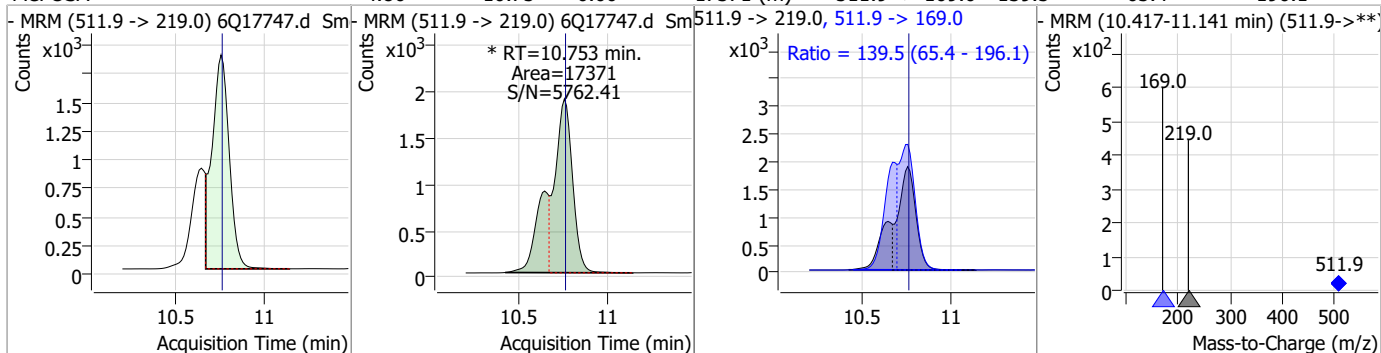


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.65	10.75	0.00	7755				

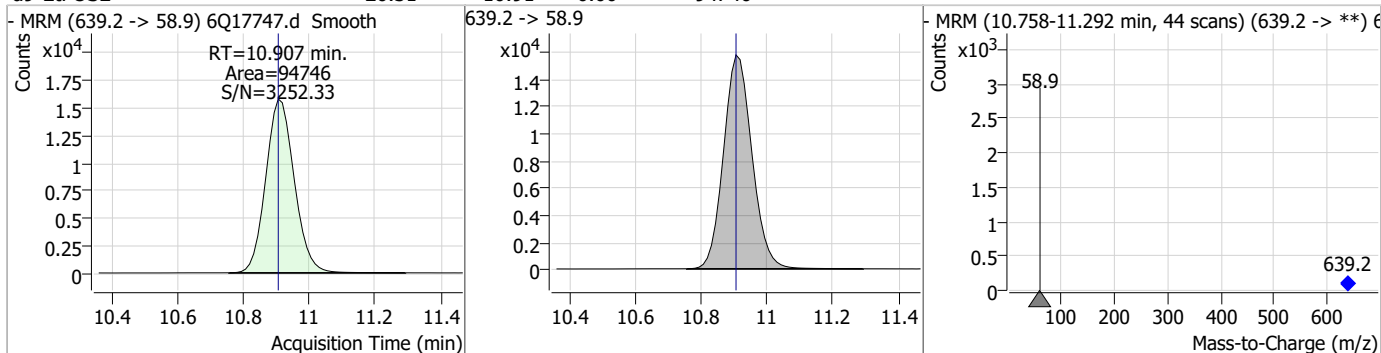


Perfluorinated Compounds by LC/MS/MS

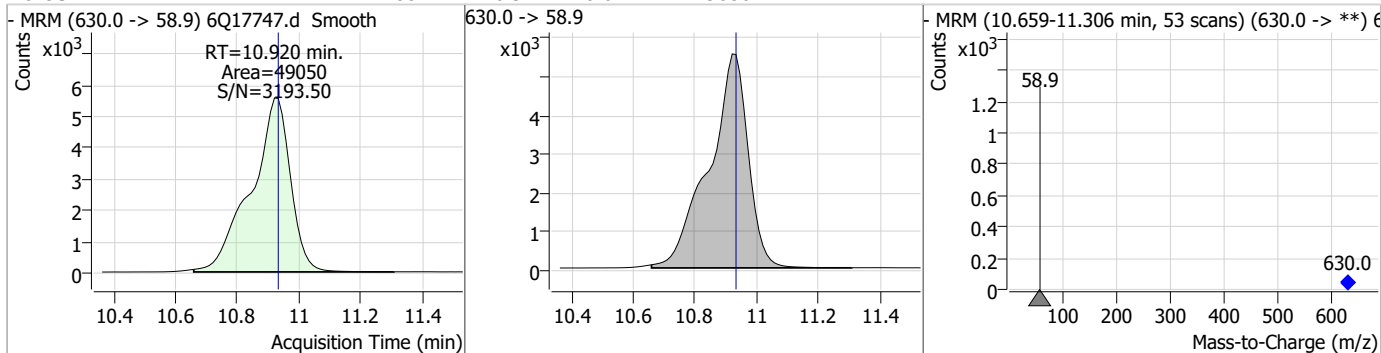
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.86	10.75	0.00	17371 (m)	511.9 -> 169.0	139.5	65.4	196.1



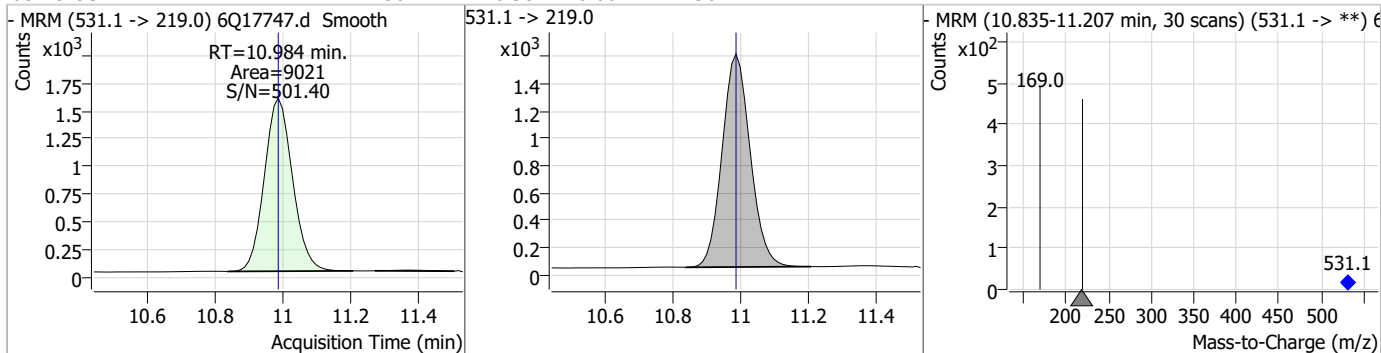
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.31	10.91	0.00	94746				



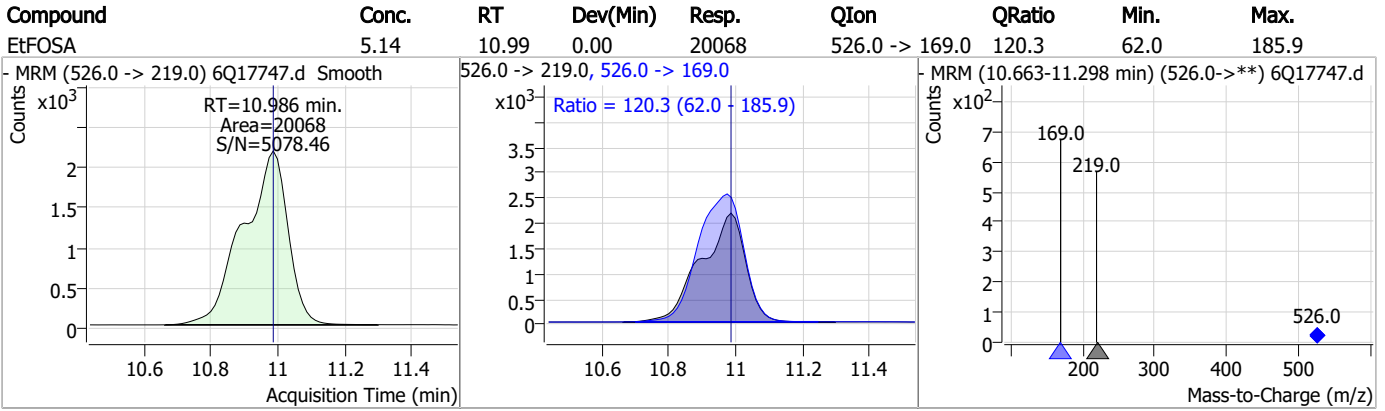
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.88	10.92	-0.01	49050				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.56	10.98	0.00	9021				



Perfluorinated Compounds by LC/MS/MS



7.7.10
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Manual Integration Approval Summary

Sample Number: S6Q268-ICV268 Method: EPA DRAFT 1633
Lab FileID: 6Q17747.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 14:25 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak
MeFOSA	31506-32-8		10.75	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17748.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/12/2023 2:40:17 PM
 Sample Name : icv268-20
 Vial : P1-B2
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q268.batch.bin
 Sample Information : OP96663,S6Q268,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	134228	10.00 µg/L	0.000
M5-PFPeA	4.259	268.3 -> 223.0	41658	5.00 µg/L	-0.012
M5-PFHxA	5.466	318.0 -> 273.0	48748	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	41967	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	60991	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	20539	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	15727	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	19149	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	19311	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	12965	1.25 µg/L	0.000
M8-FOSA	9.648	506.1 -> 77.8	17056	2.50 µg/L	0.000
M3-PFBS	5.397	302.1 -> 79.9	16809	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	9328	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	8539	2.50 µg/L	0.000
M2-4:2FTS	5.143	329.1 -> 80.9	1526	5.00 µg/L	0.000
M2-6:2FTS	6.838	429.1 -> 80.9	1830	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1818	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	16595	5.00 µg/L	0.000
M3-HFPO-DA	5.844	286.9 -> 168.9	29817	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	14034	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	61723	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	78299	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	7340	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	6515	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	10046	2.50 µg/L	0.000
13C3-PFBA	2.891	216.0 -> 172.0	56729	5.00 µg/L	-0.012
18O2-PFHxS	7.178	403.0 -> 83.9	7085	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	64436	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	17341	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	22326	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	37254	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.143	329.1 -> 80.9	1526	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.1%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1830	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1818	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-PFDoDA	8.949	615.1 -> 570.0	19311	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-PFTeDA	9.677	715.2 -> 670.0	12965	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C3-PFBS	5.397	302.1 -> 79.9	16809	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C3-PFHxS	7.179	402.1 -> 79.9	9328	2.47 µg/L	0.012

7.7.11
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFBA	2.901	216.8 -> 171.9	134228	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.420	367.1 -> 322.0	41967	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C5-PFHxA	5.466	318.0 -> 273.0	48748	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C5-PFPeA	4.259	268.3 -> 223.0	41658	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C6-PFDA	8.076	519.1 -> 474.1	15727	1.38 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C7-PFUnDA	8.518	570.0 -> 525.1	19149	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C8-FOSA	9.648	506.1 -> 77.8	17056	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOA	7.064	421.1 -> 376.0	60991	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-PFOS	8.226	507.1 -> 79.9	8539	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C9-PFNA	7.595	472.1 -> 427.0	20539	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
d3-MeFOSAA	8.133	573.2 -> 419.0	16595	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C3-HFPO-DA	5.844	286.9 -> 168.9	29817	10.94 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
d3-MeFOSA	10.752	515.0 -> 219.0	6515	2.68 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
d5-EtFOSAA	8.329	589.2 -> 419.0	14034	5.64 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
d7-MeFOSE	10.672	623.2 -> 58.9	61723	24.94 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	78299	26.19 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d5-EtFOSA	10.984	531.1 -> 219.0	7340	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	46955	20.47 µg/L	99
		327.1 -> 80.9	17359		
6:2FTS	6.838	427.1 -> 407.0	43329	21.76 µg/L	97
		427.1 -> 80.9	13273		
8:2FTS	7.865	527.1 -> 507.0	22843	22.12 µg/L	97
		527.1 -> 80.8	9727		
EtFOSAA	8.330	584.2 -> 419.1	49331	18.88 µg/L	95
		584.2 -> 526.0	27704		
FOSA	9.639	498.1 -> 77.9	146681	22.97 µg/L	99
		498.1 -> 478.0	4288		
MeFOSAA	8.134	570.1 -> 419.0	73972	23.04 µg/L	95
		570.1 -> 483.0	13034		
PFBA	2.894	212.8 -> 168.9	101686	21.12 µg/L	100
PFBS	5.398	298.7 -> 79.9	173909	21.20 µg/L	99
		298.7 -> 98.8	64979		
PFDA	8.076	512.9 -> 469.0	416281	21.39 µg/L	96
		512.9 -> 219.0	61482		
PFDoDA	8.950	613.1 -> 569.0	309033	20.09 µg/L	98
		613.1 -> 319.0	39520		
PFDS	9.113	599.0 -> 79.9	60387	21.78 µg/L	92

7.7.11
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	27733	21.33	µg/L	98
		363.1 -> 319.0	447334			
PFHpS	7.735	363.1 -> 169.0	69085	21.42	µg/L	97
		449.0 -> 79.9	97568			
PFHxA	5.469	449.0 -> 98.9	48905	20.34	µg/L	100
		313.0 -> 269.0	392860			
PFHxS	7.180	313.0 -> 118.9	19063	23.66	µg/L	92
		398.7 -> 79.9	122164			
PFNA	7.596	398.7 -> 98.9	53968	24.84	µg/L	91
		463.0 -> 419.0	379013			
PFNS	8.681	463.0 -> 219.0	61428	23.00	µg/L	88
		548.8 -> 79.9	94985			
PFOA	7.066	548.8 -> 98.9	46685	20.01	µg/L	98
		413.0 -> 369.0	607139			
PFOS	8.228	413.0 -> 169.0	106004	16.36	µg/L	97
		498.9 -> 79.9	73233			
PFPeA	4.262	498.9 -> 98.8	40594	23.58	µg/L	100
		263.0 -> 219.0	283724			
PFPeS	6.471	349.1 -> 79.9	119990	23.44	µg/L	97
		349.1 -> 98.9	56205			
PFTeDA	9.677	713.1 -> 669.0	298228	22.46	µg/L	99
		713.1 -> 168.9	21389			
PFTrDA	9.333	663.0 -> 619.0	328675	18.43	µg/L	97
		663.0 -> 168.9	29298			
PFUnDA	8.518	563.1 -> 519.0	289958	20.85	µg/L	97
		563.1 -> 269.1	41676			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	257330	22.84	µg/L	99
		632.9 -> 452.9	73270			
9Cl-PF3ONS	8.557	530.8 -> 351.0	368637	20.48	µg/L	92
		532.8 -> 353.0	121331			
ADONA	6.683	376.9 -> 250.9	986876	20.79	µg/L	93
		376.9 -> 84.8	266947			
HFPO-DA	5.845	284.9 -> 168.9	59984	20.81	µg/L	99
		284.9 -> 184.9	8440			
3:3FTCA	3.790	241.0 -> 177.0	15808	21.21	µg/L	99
		241.0 -> 117.0	2062			
5:3FTCA	6.161	341.0 -> 237.1	71771	21.45	µg/L	99
		341.0 -> 217.0	52629			
7:3FTCA	7.586	441.0 -> 316.9	30530	20.11	µg/L	95
		441.0 -> 336.9	66281			
EtFOSA	10.986	526.0 -> 219.0	66958	21.07	µg/L	91
		526.0 -> 169.0	75827			
EtFOSE	10.932	630.0 -> 58.9	420300	123.18	µg/L	100
		511.9 -> 219.0	62290			
MeFOSA	10.753	511.9 -> 169.0	65153	20.76	µg/L	78
		616.1 -> 58.9	329621			
MeFOSE	10.686	699.1 -> 79.9	28807	114.16	µg/L	100
		699.1 -> 98.8	15636			
PFDoDS	9.805	295.0 -> 201.0	44922	19.66	µg/L	97
		295.0 -> 84.9	11491			
NFDHA	5.348	279.0 -> 85.1	188295	21.07	µg/L	97
		229.0 -> 84.9	137337			
PFMBA	4.675	314.8 -> 134.9	475035	21.93	µg/L	100
		314.8 -> 82.9	17118			
PFMPA	3.426			22.21	µg/L	100
PFEESA	5.938			18.32	µg/L	100

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

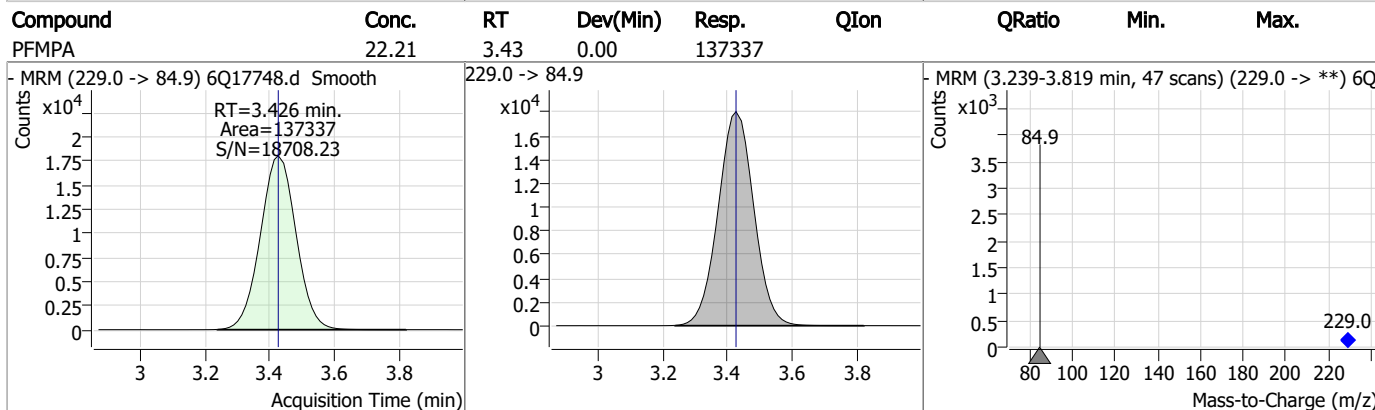
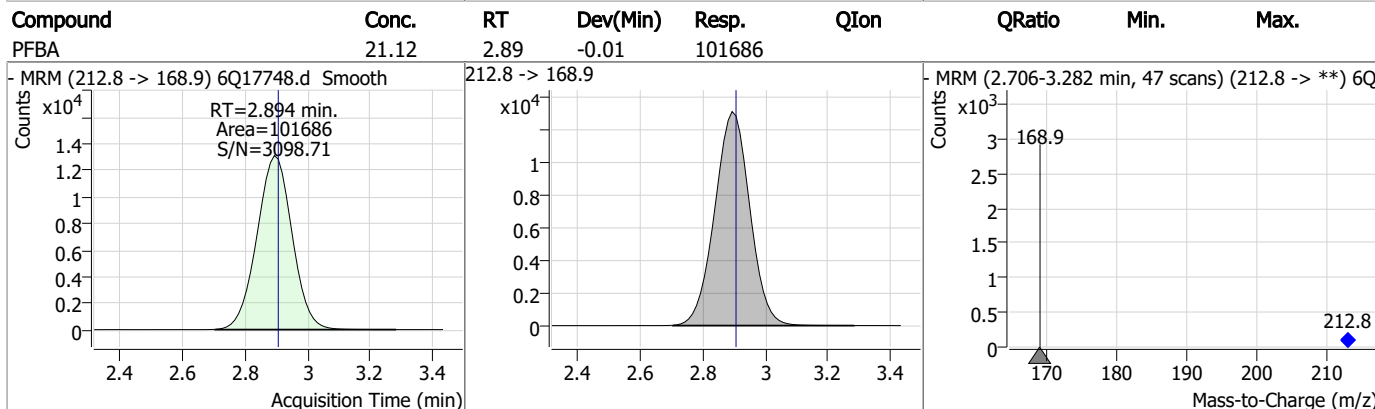
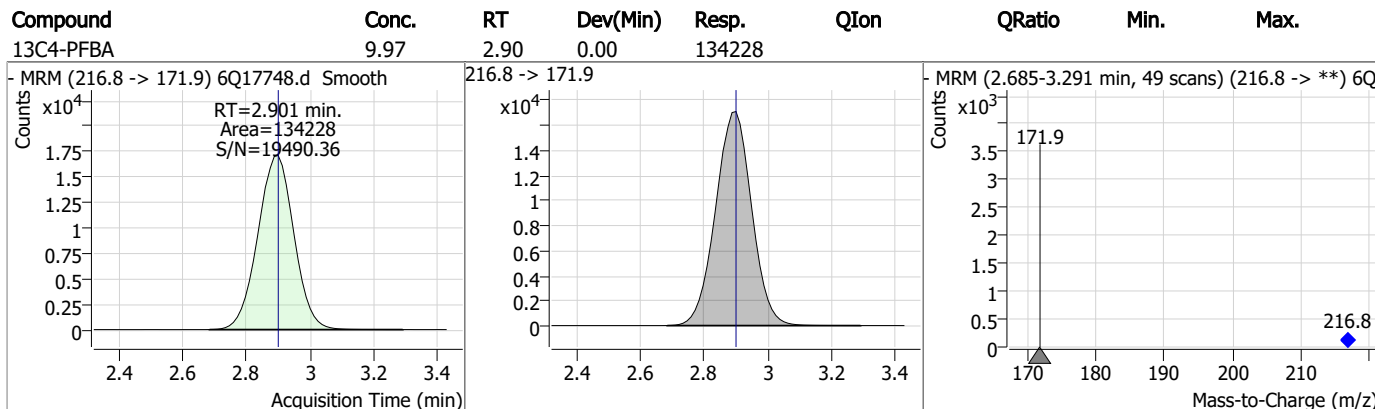
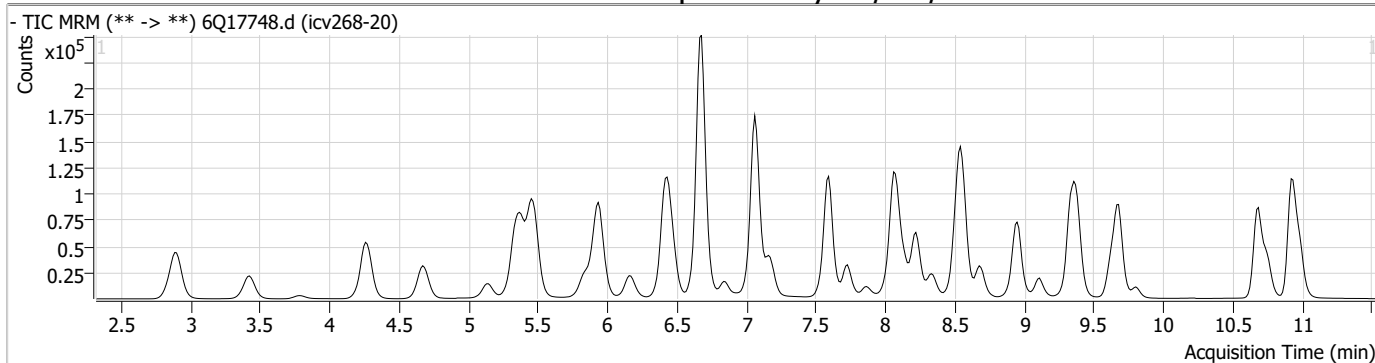
Perfluorinated Compounds by LC/MS/MS

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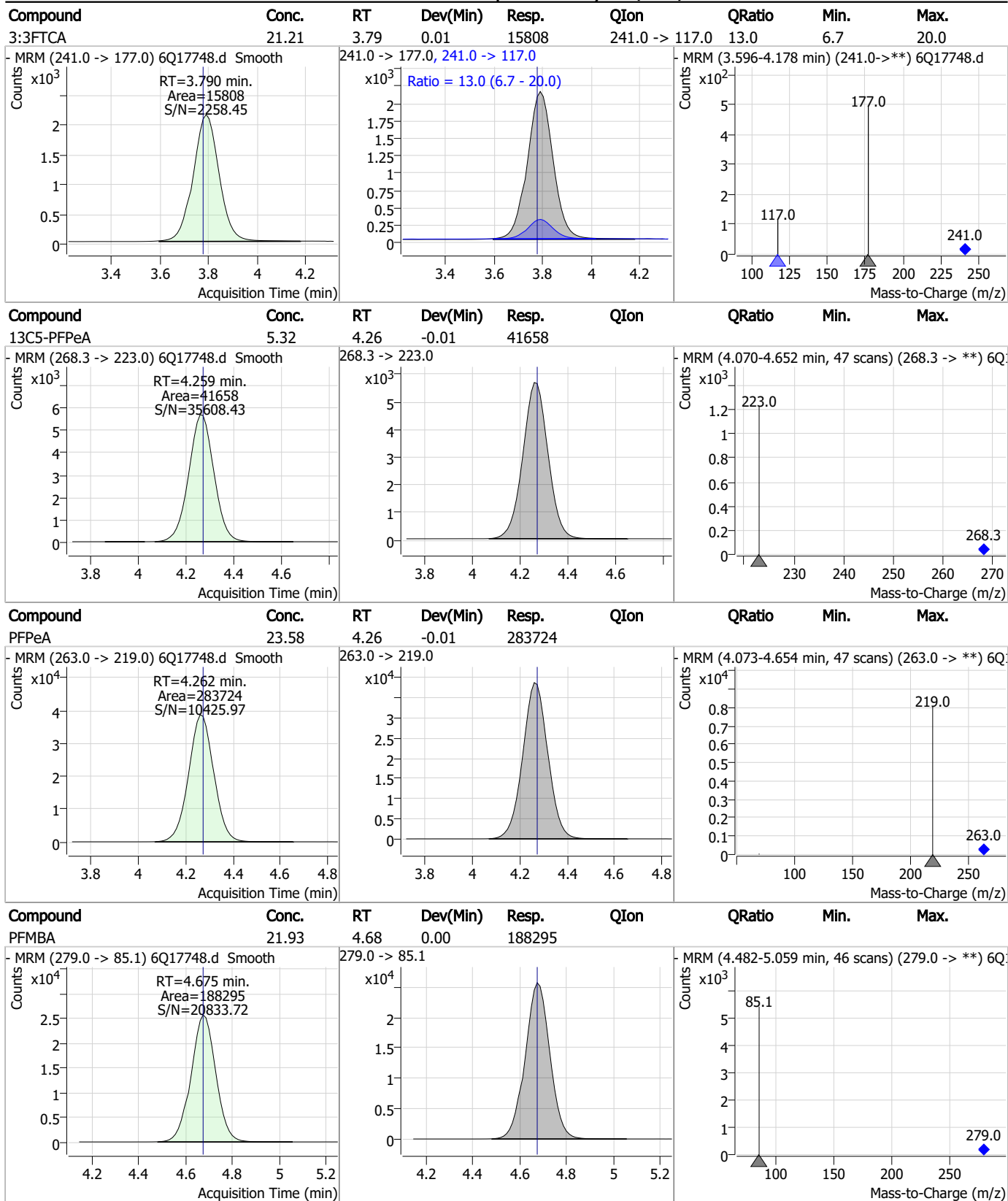
7.7.11

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Perfluorinated Compounds by LC/MS/MS

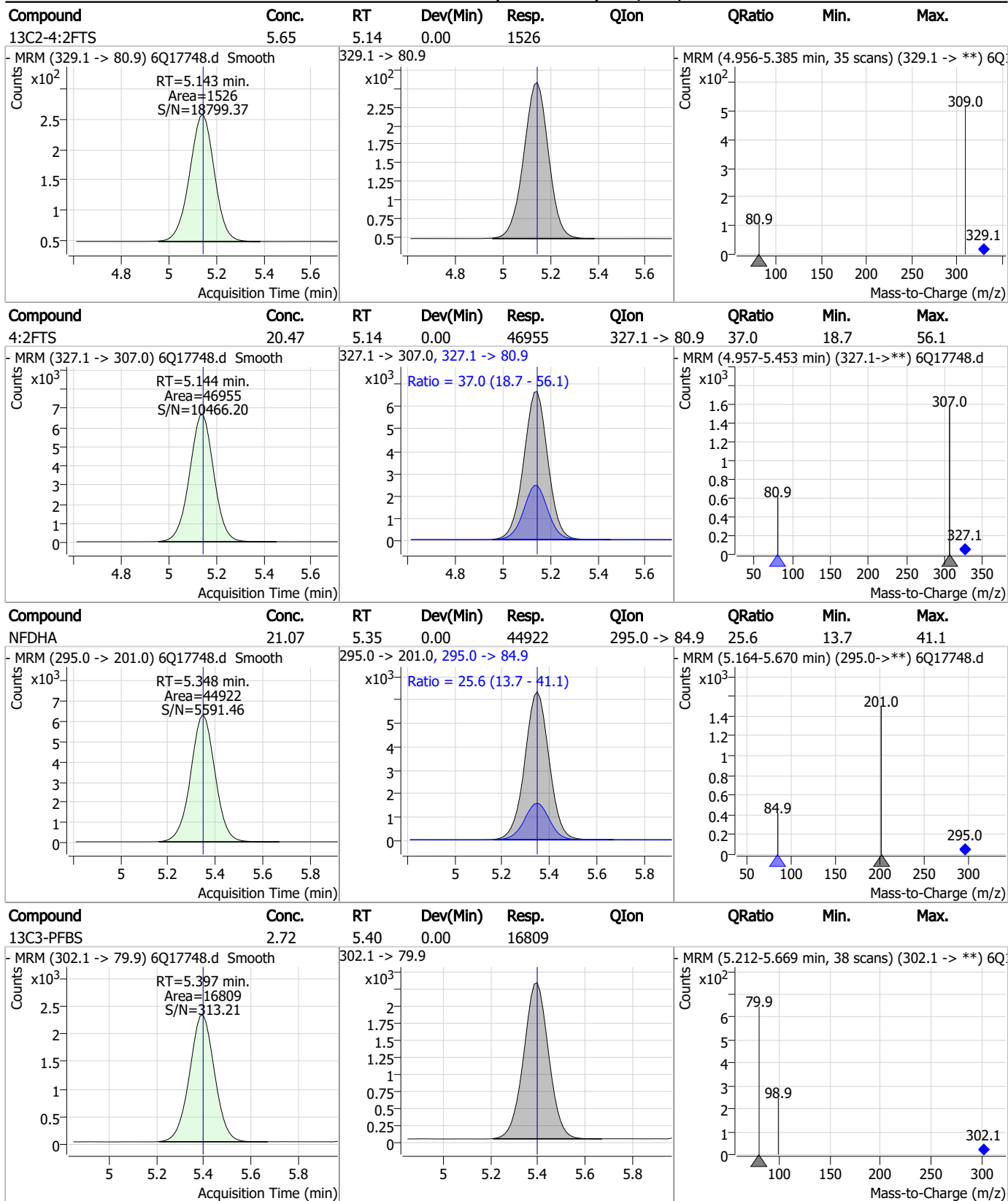


Perfluorinated Compounds by LC/MS/MS



7.7.11
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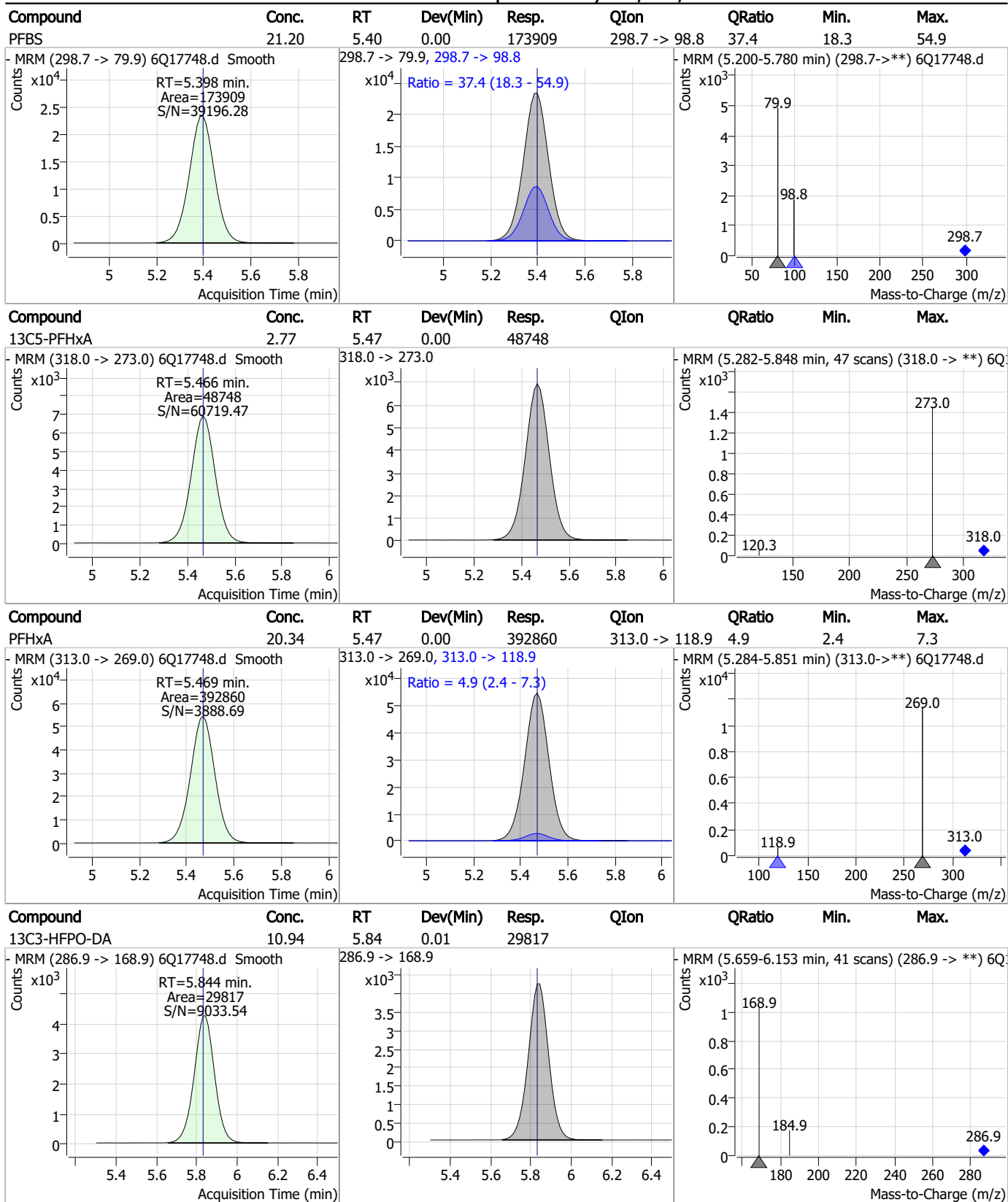
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

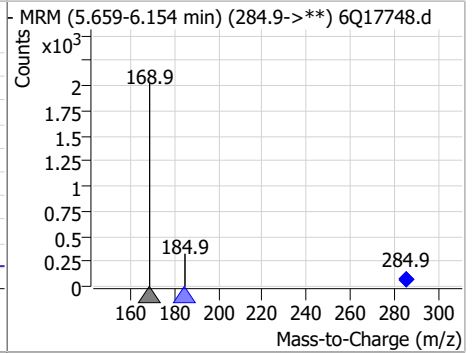
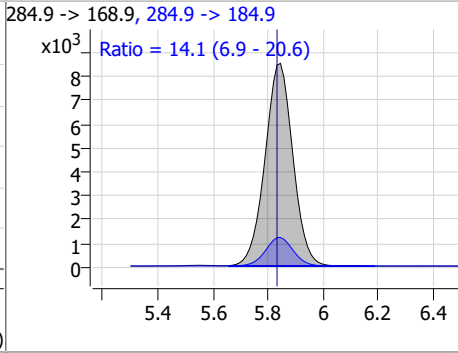
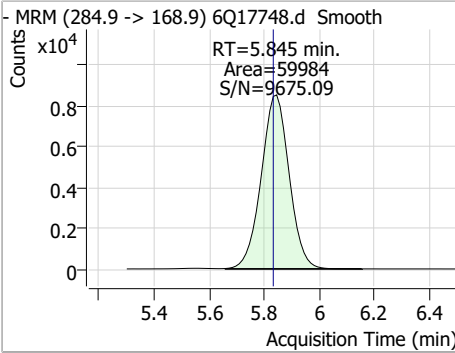


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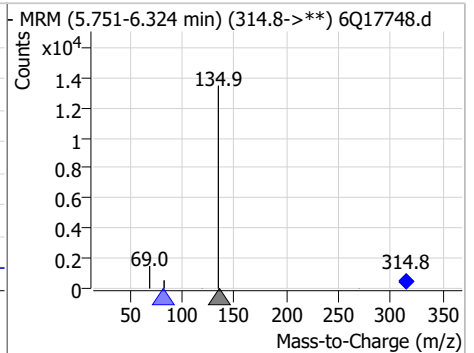
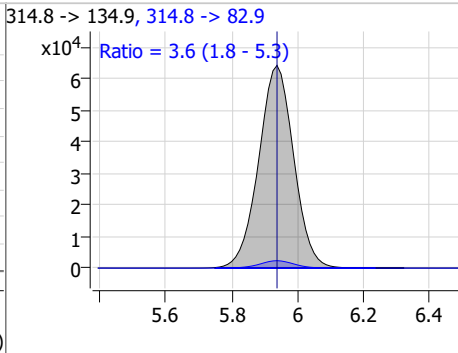
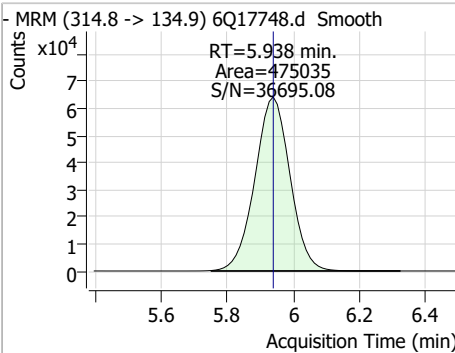
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Perfluorinated Compounds by LC/MS/MS

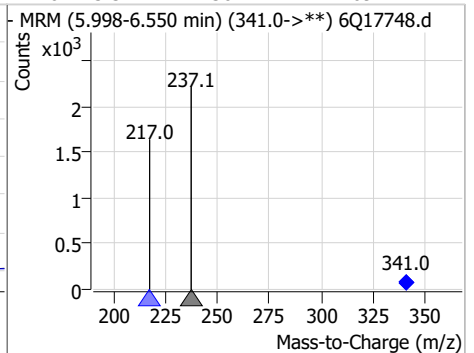
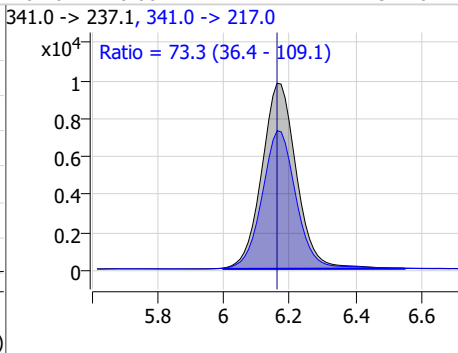
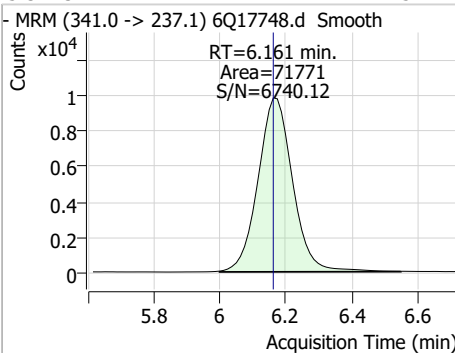
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.81	5.84	0.01	59984	284.9 -> 184.9	14.1	6.9	20.6



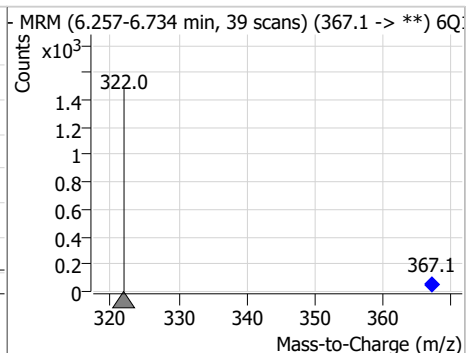
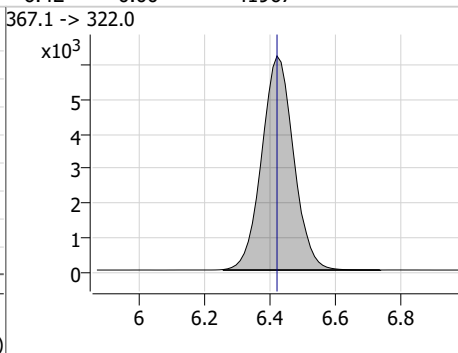
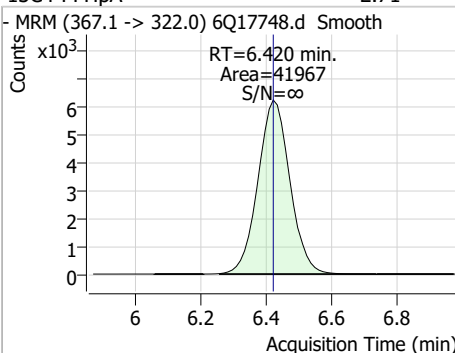
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	18.32	5.94	0.00	475035	314.8 -> 82.9	3.6	1.8	5.3



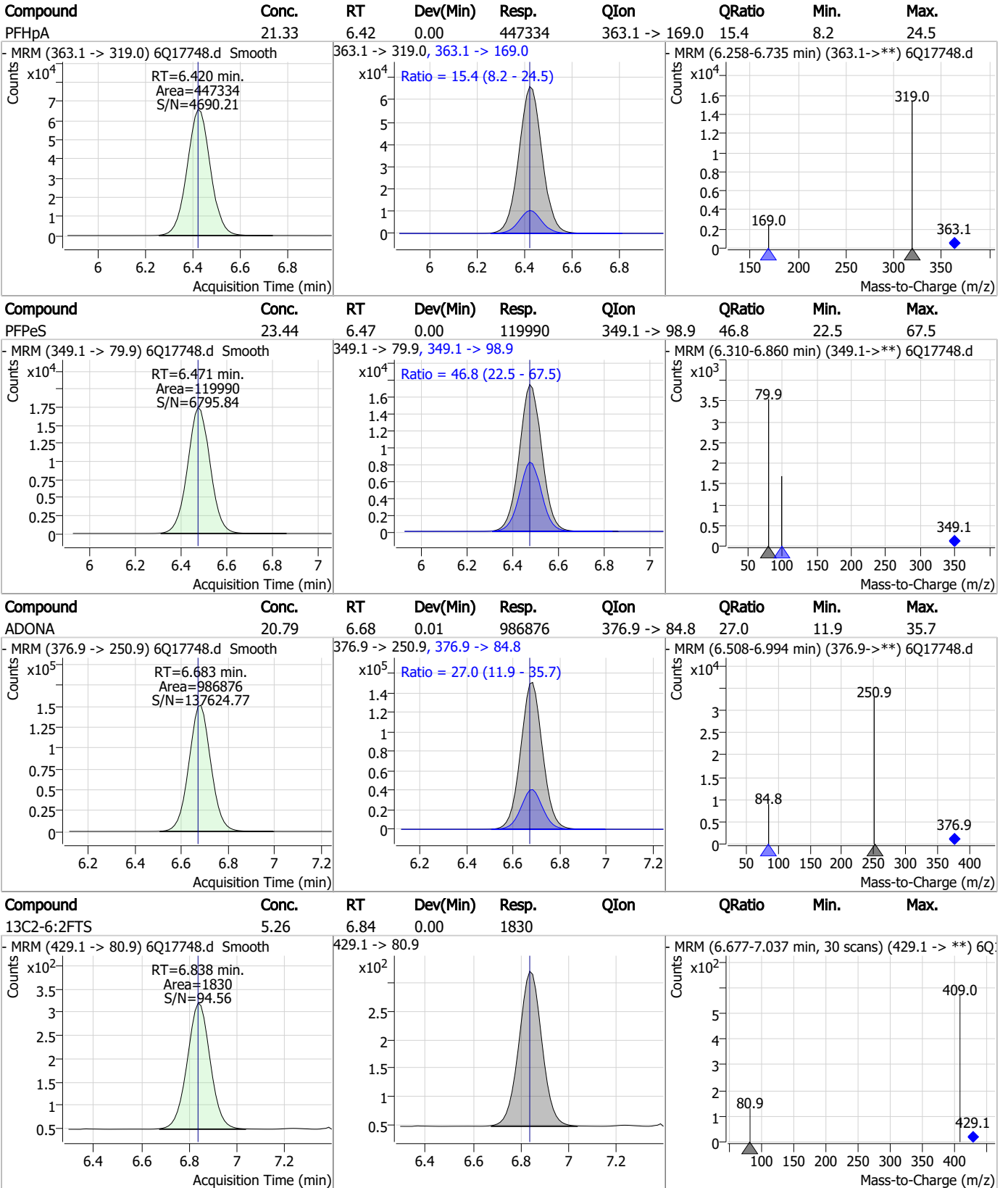
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	21.45	6.16	0.00	71771	341.0 -> 217.0	73.3	36.4	109.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.71	6.42	0.00	41967	367.1 -> 322.0			



Perfluorinated Compounds by LC/MS/MS

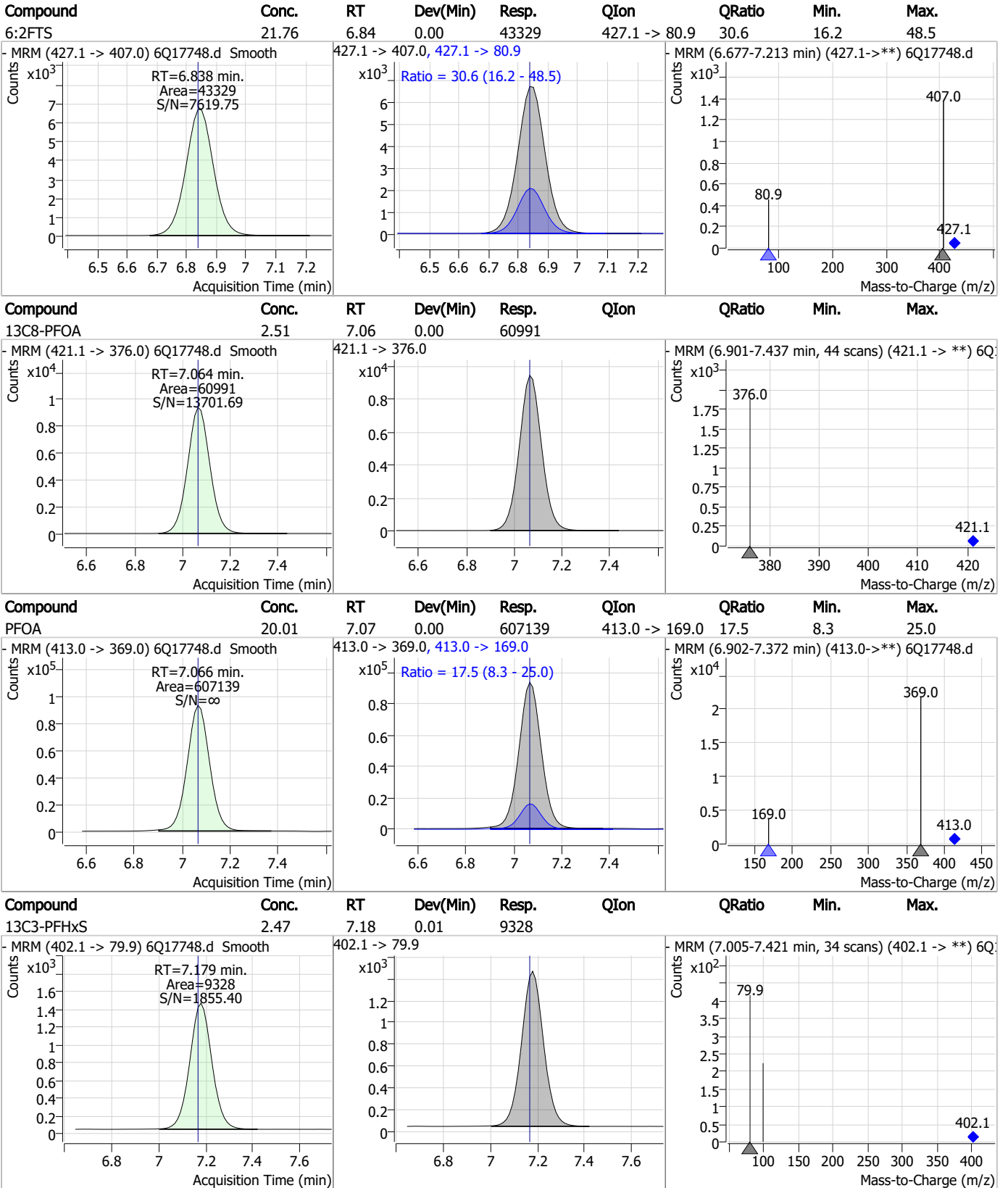


7.7.11

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Perfluorinated Compounds by LC/MS/MS

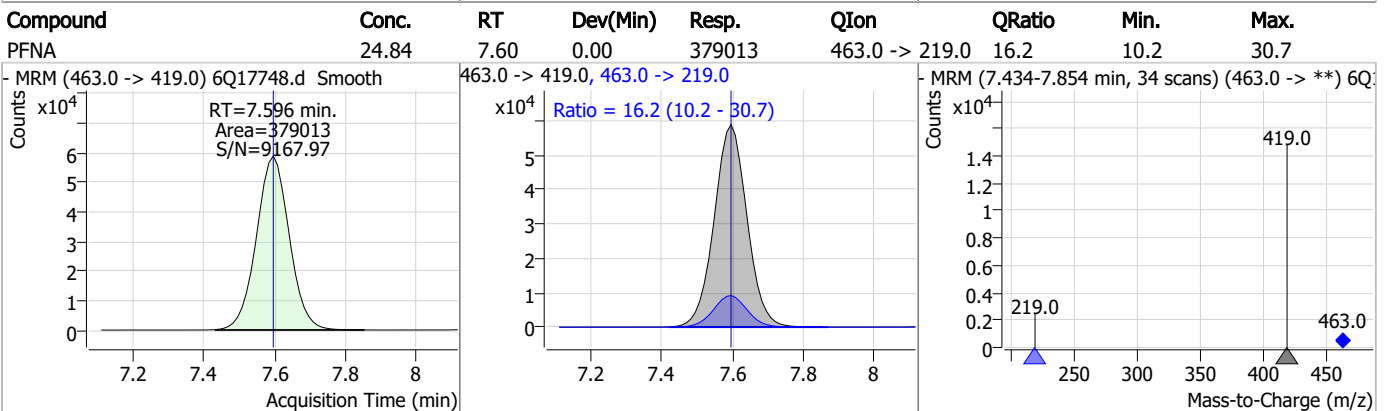
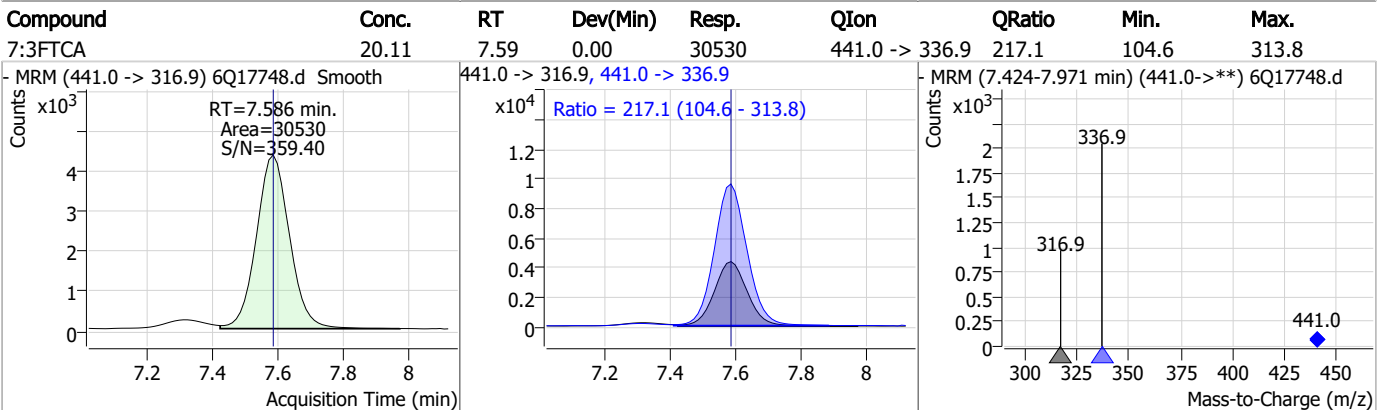
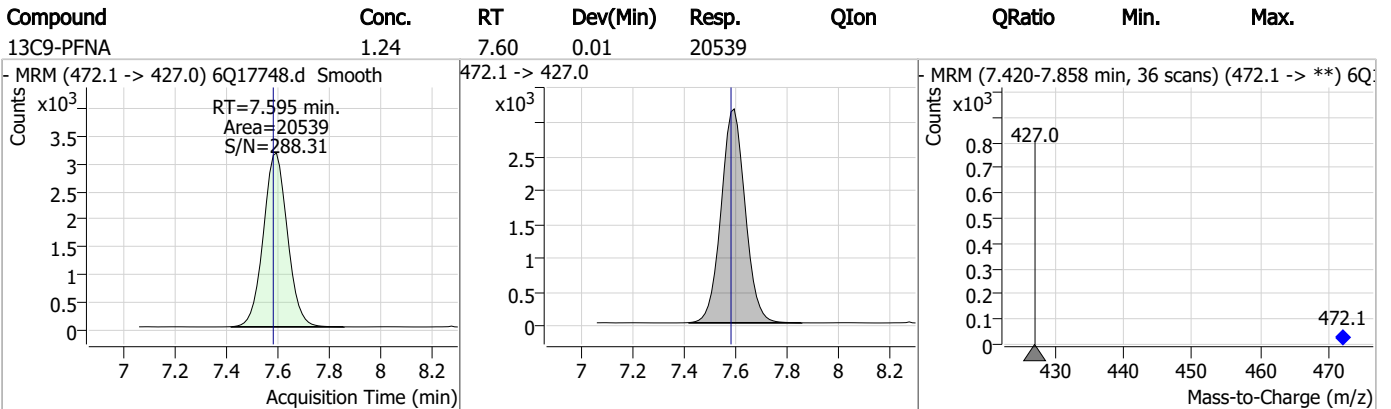
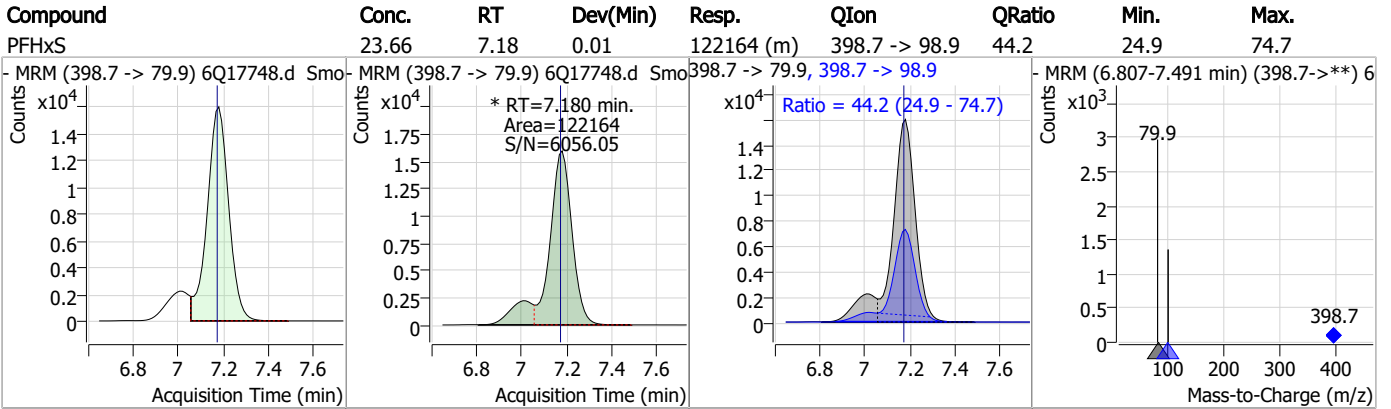


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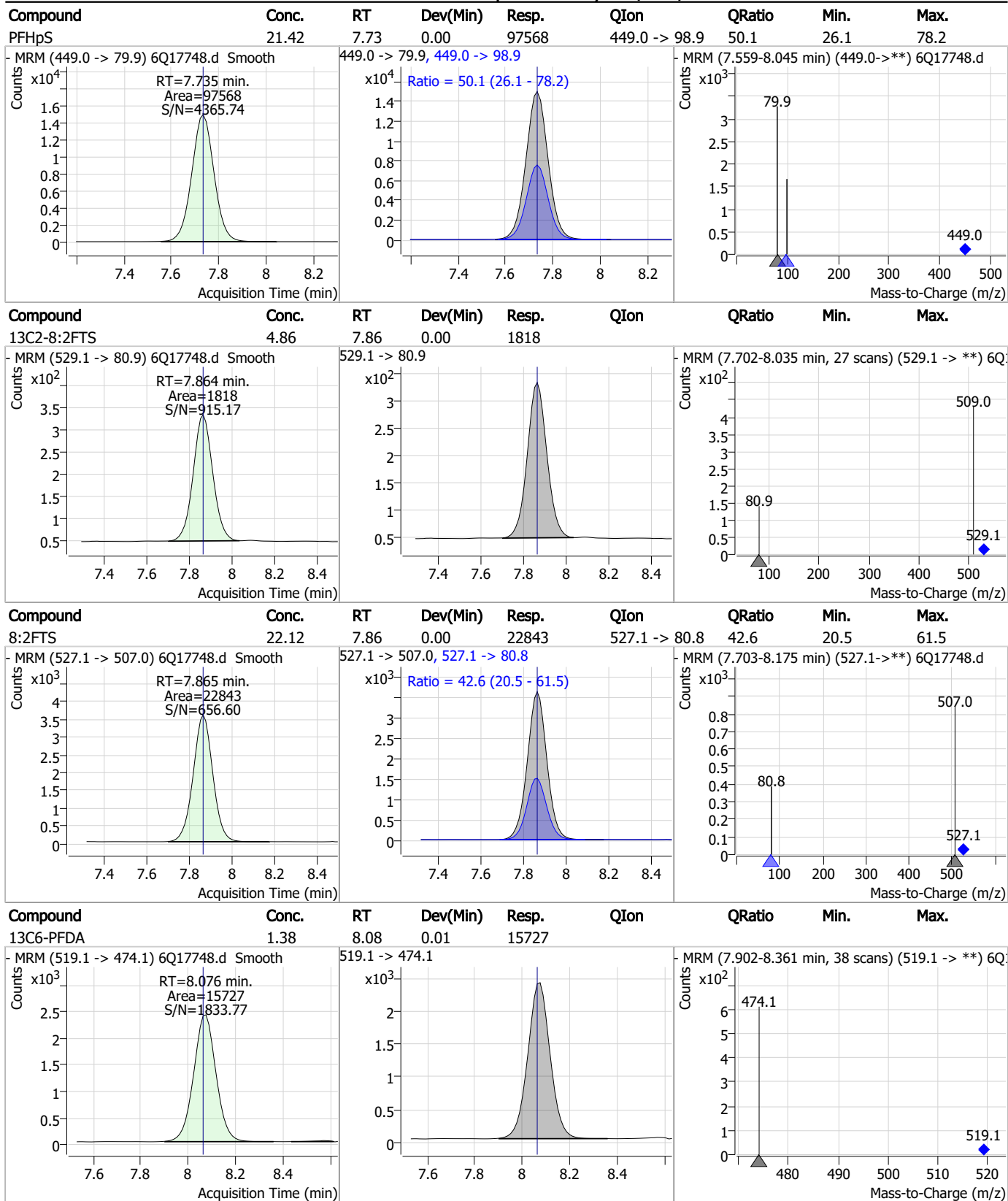
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Perfluorinated Compounds by LC/MS/MS



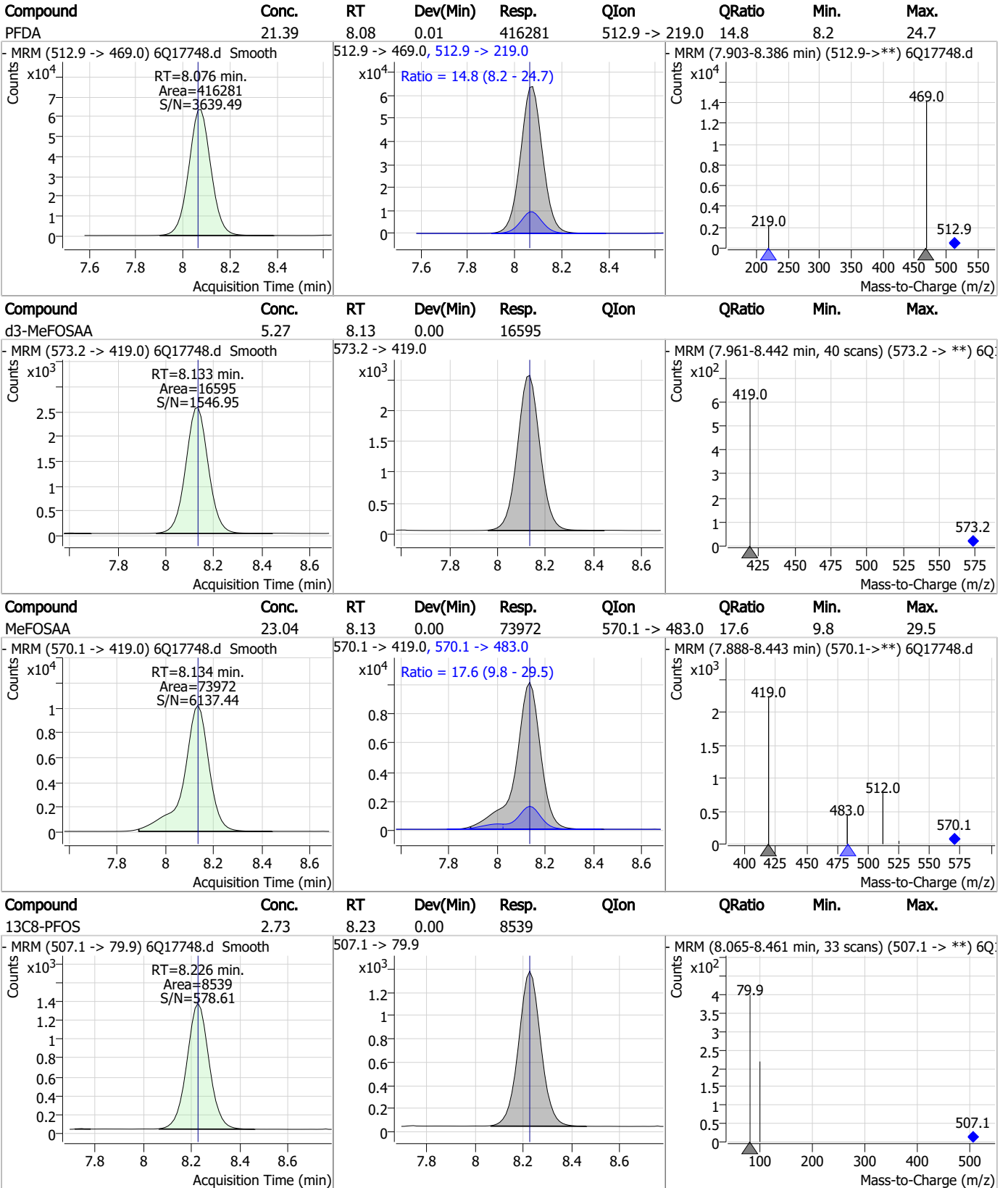
Perfluorinated Compounds by LC/MS/MS



7.7.11



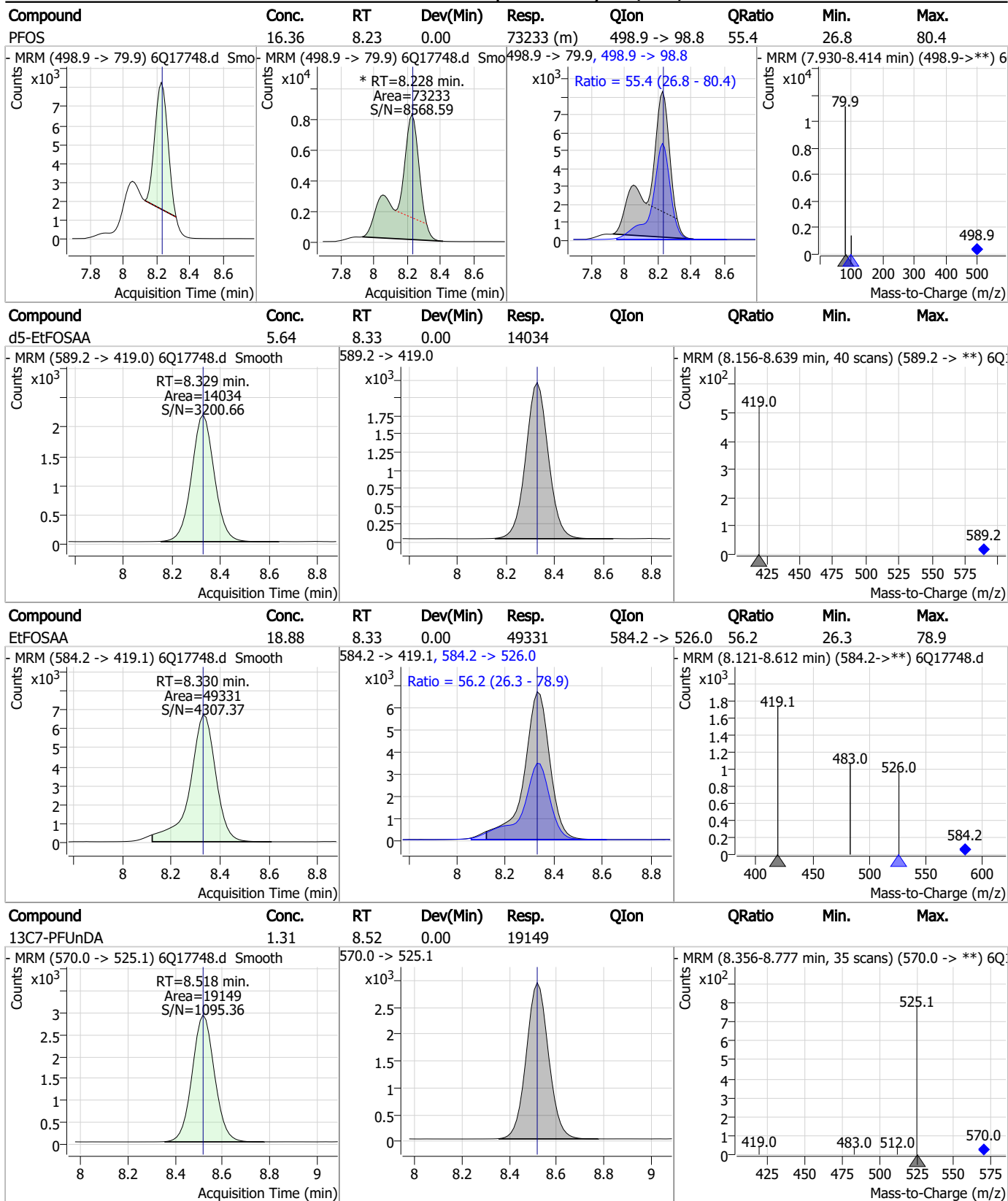
Perfluorinated Compounds by LC/MS/MS



7.7.11

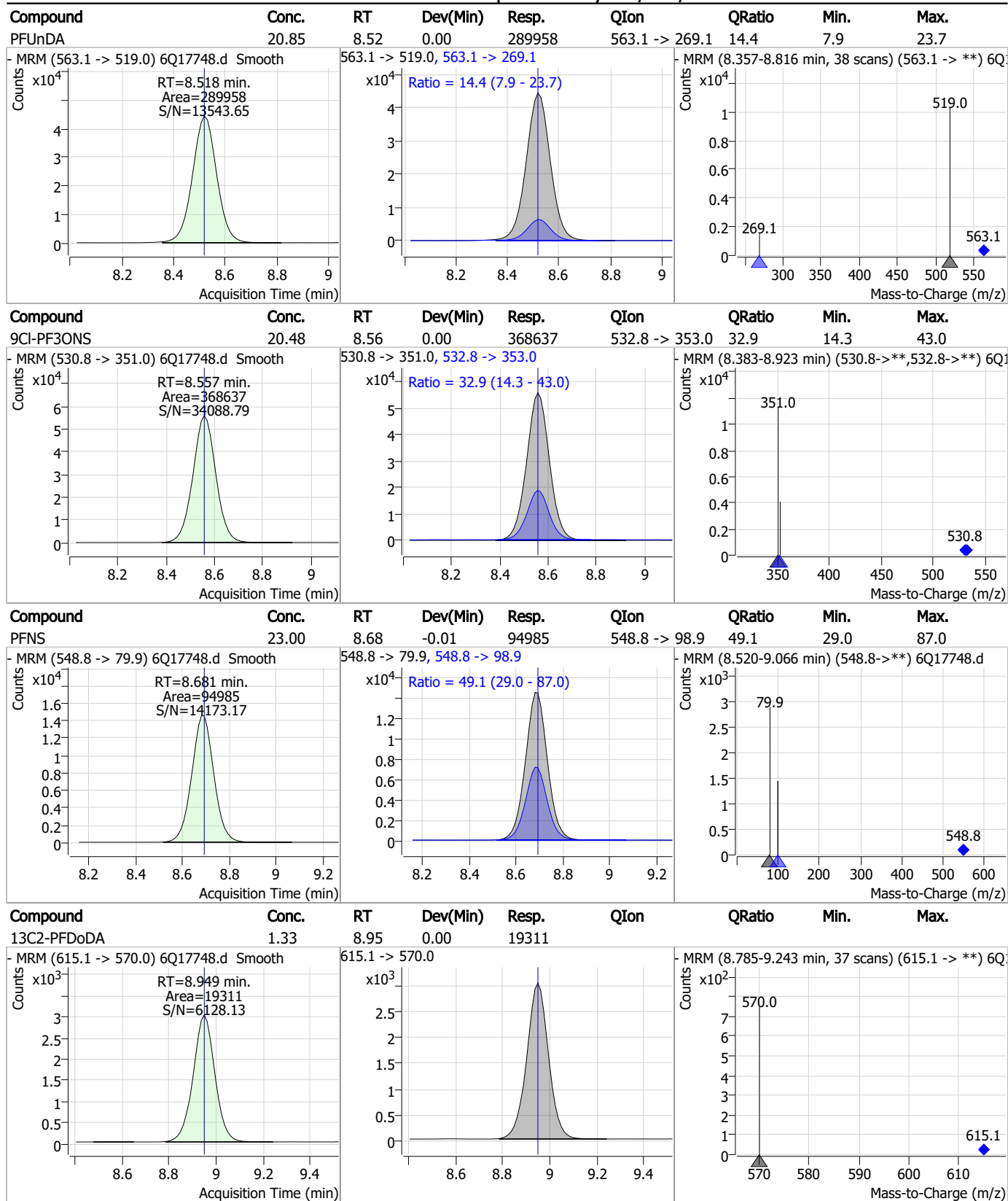
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Perfluorinated Compounds by LC/MS/MS



7.7.11
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Perfluorinated Compounds by LC/MS/MS

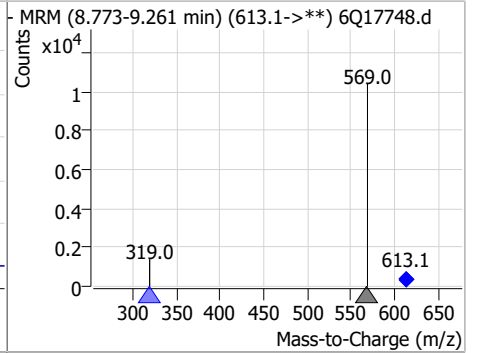
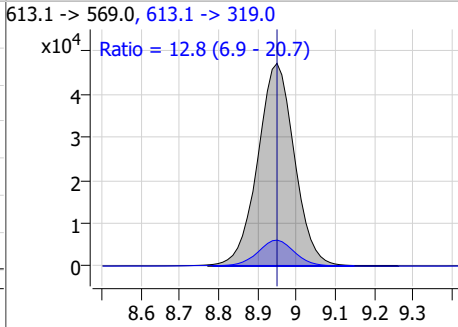
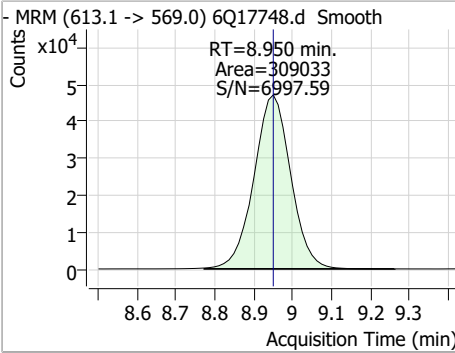


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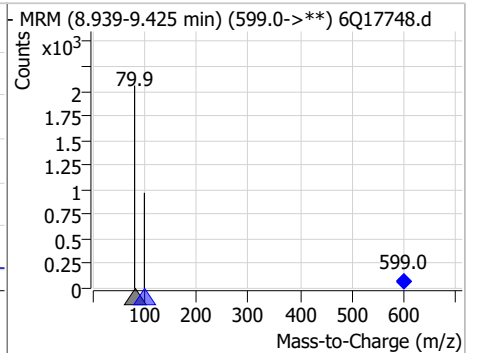
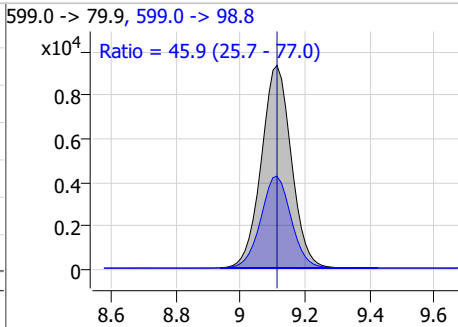
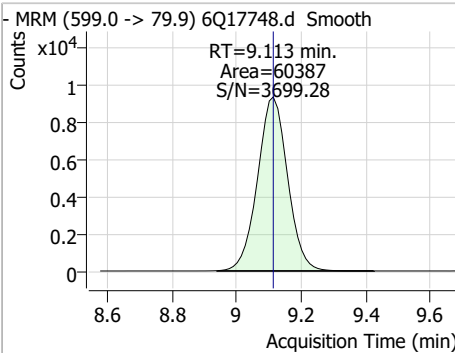


Perfluorinated Compounds by LC/MS/MS

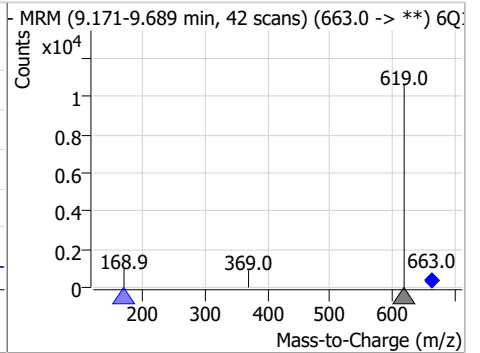
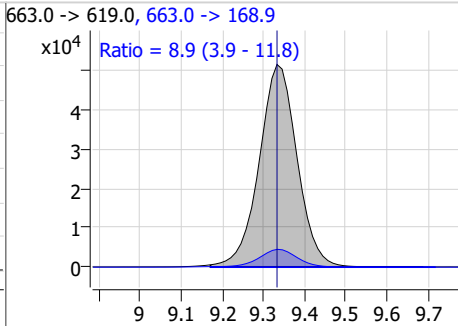
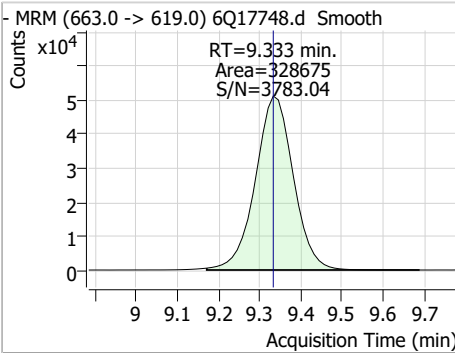
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	20.09	8.95	0.00	309033	613.1 -> 319.0	12.8	6.9	20.7



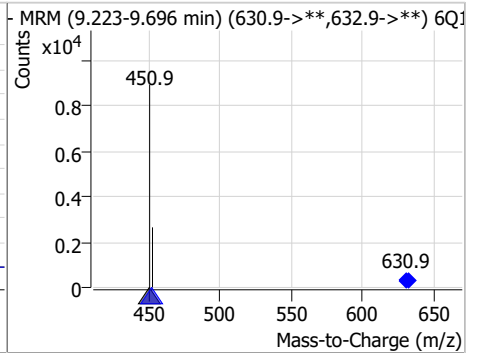
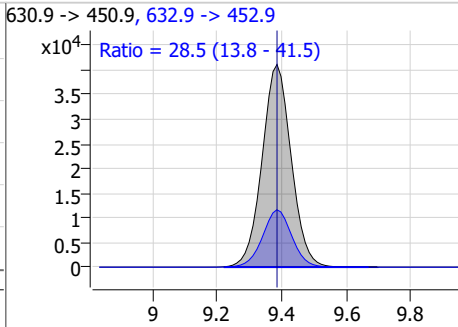
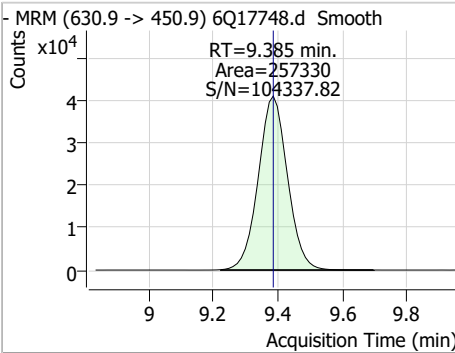
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.78	9.11	0.00	60387	599.0 -> 98.8	45.9	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.43	9.33	0.00	328675	663.0 -> 168.9	8.9	3.9	11.8

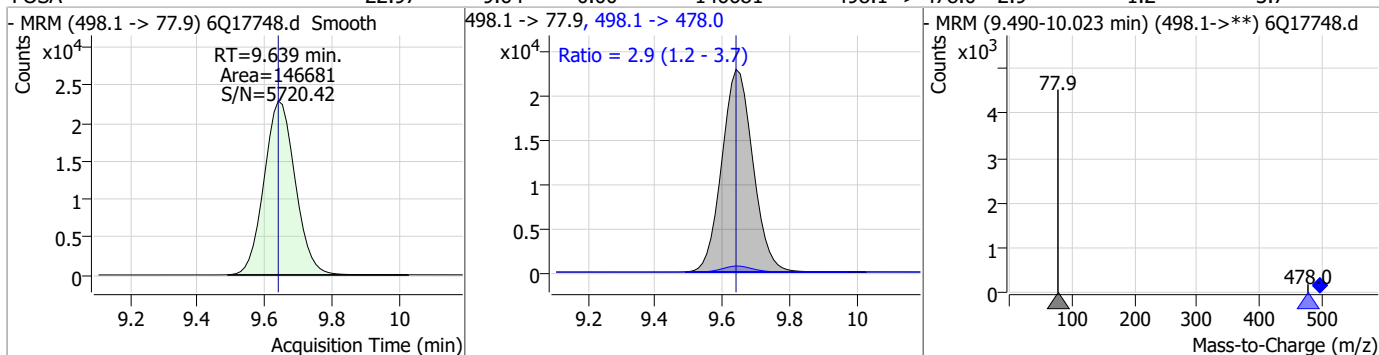


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	22.84	9.39	0.00	257330	632.9 -> 452.9	28.5	13.8	41.5

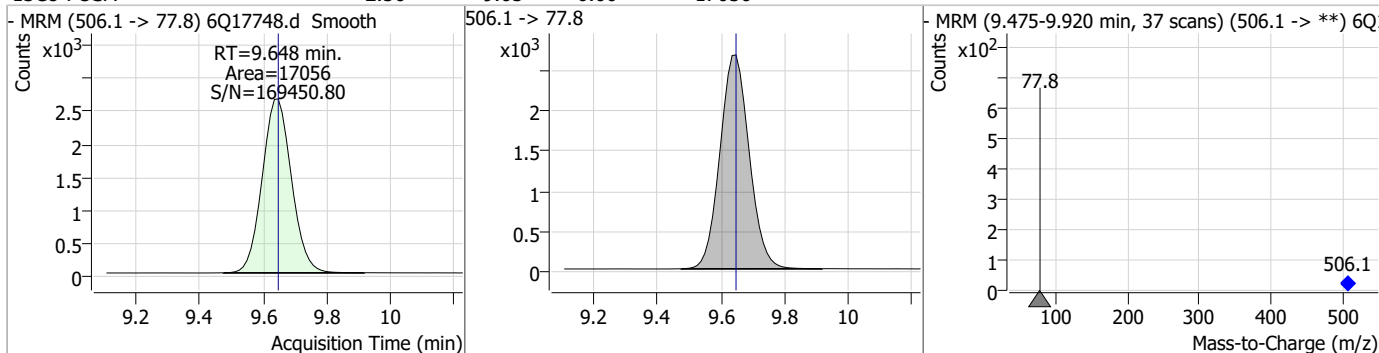


Perfluorinated Compounds by LC/MS/MS

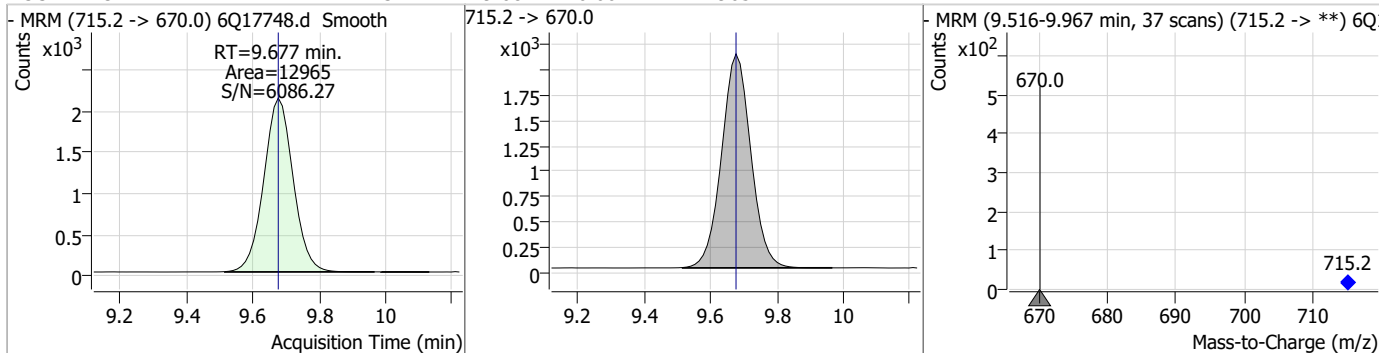
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.97	9.64	0.00	146681	498.1 -> 478.0	2.9	1.2	3.7



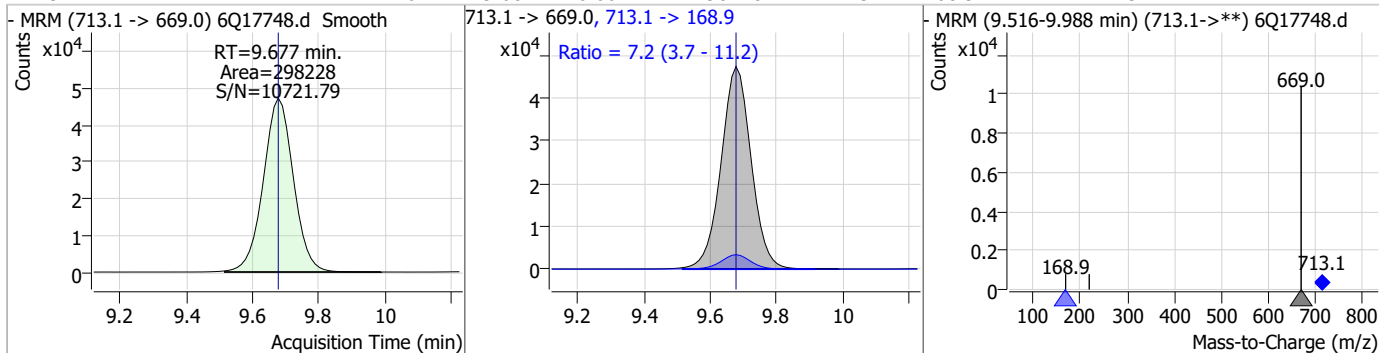
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	9.65	0.00	17056	506.1 -> 77.8			



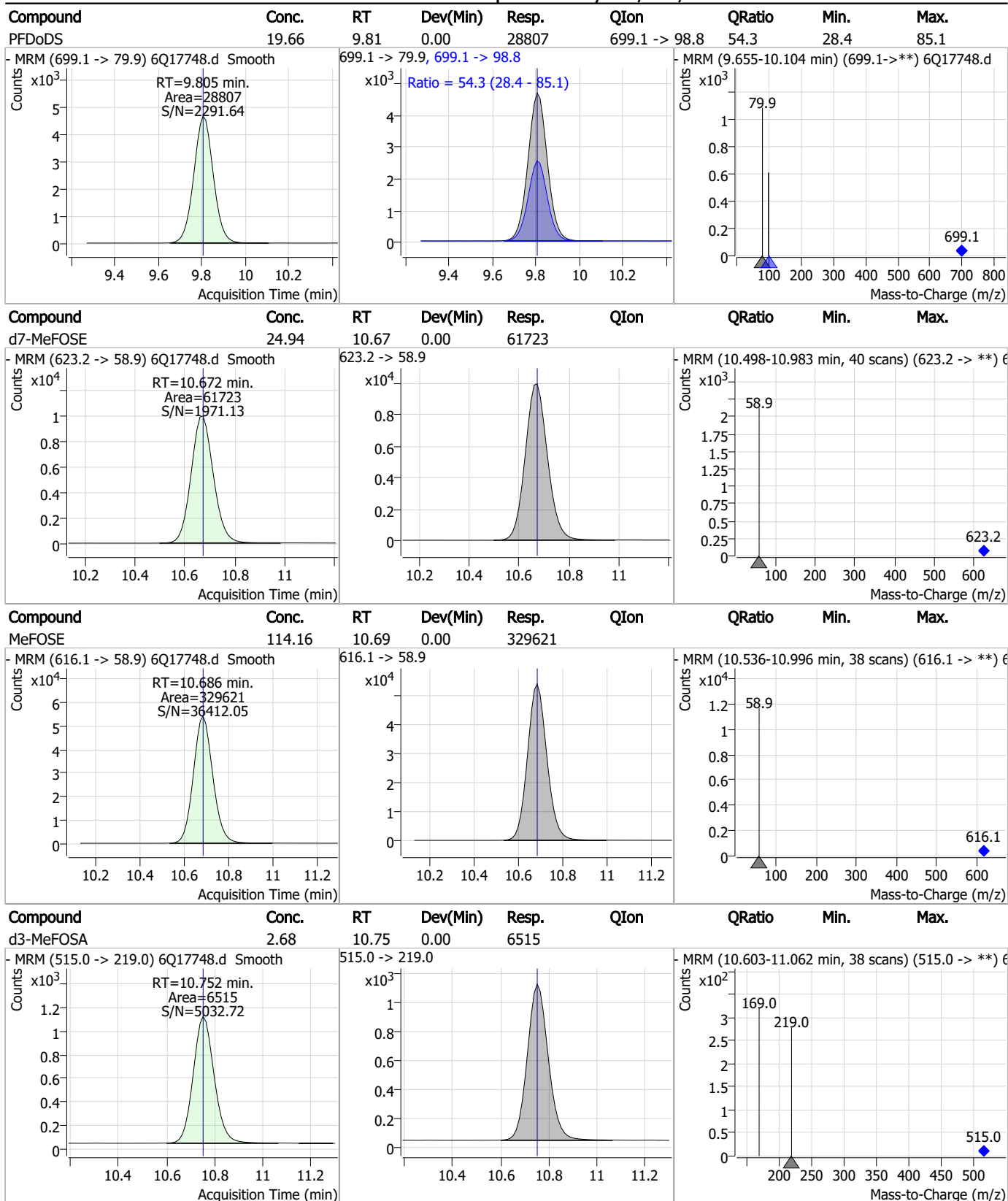
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.32	9.68	0.00	12965	715.2 -> 670.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.46	9.68	0.00	298228	713.1 -> 168.9	7.2	3.7	11.2



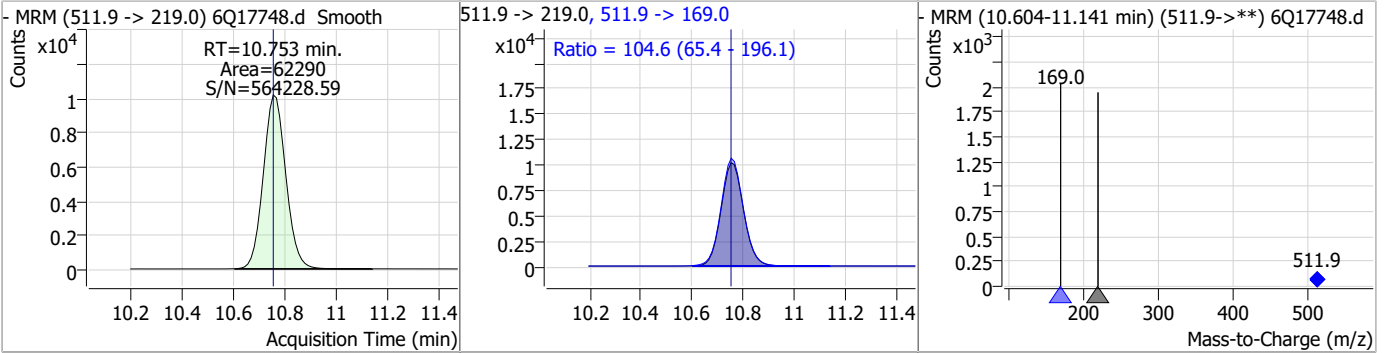
Perfluorinated Compounds by LC/MS/MS



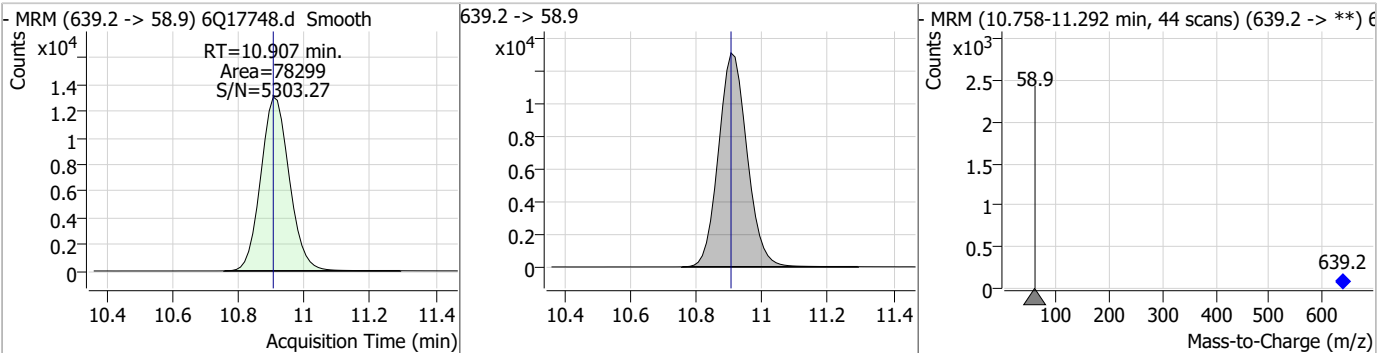
7.7.11
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Perfluorinated Compounds by LC/MS/MS

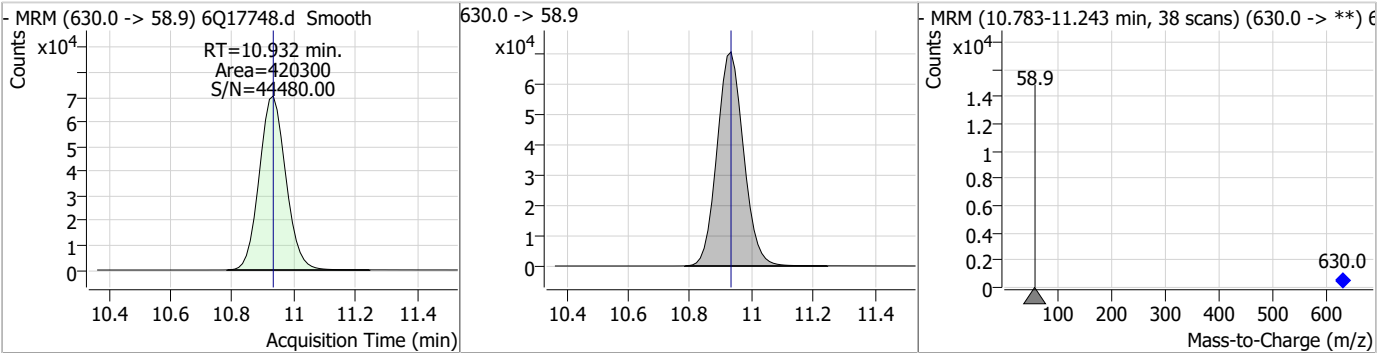
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.76	10.75	0.00	62290	511.9 -> 169.0	104.6	65.4	196.1



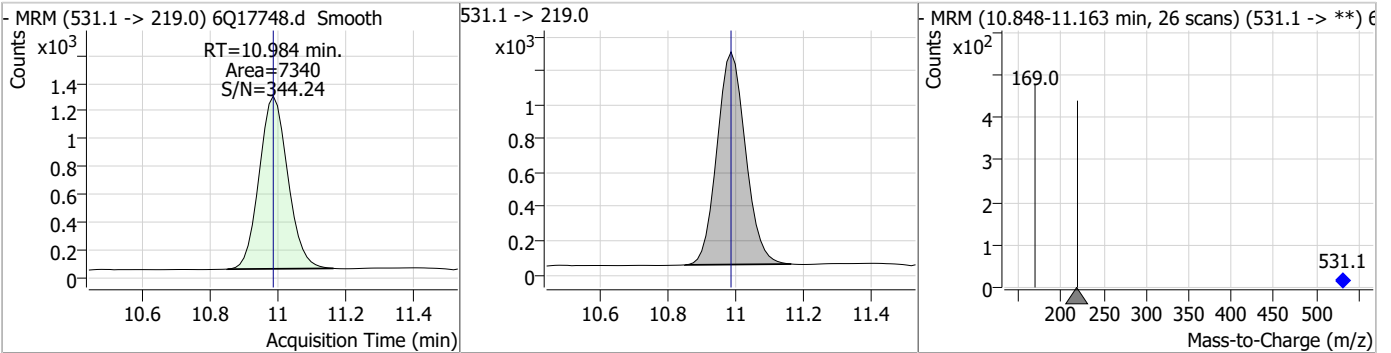
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.19	10.91	0.00	78299				



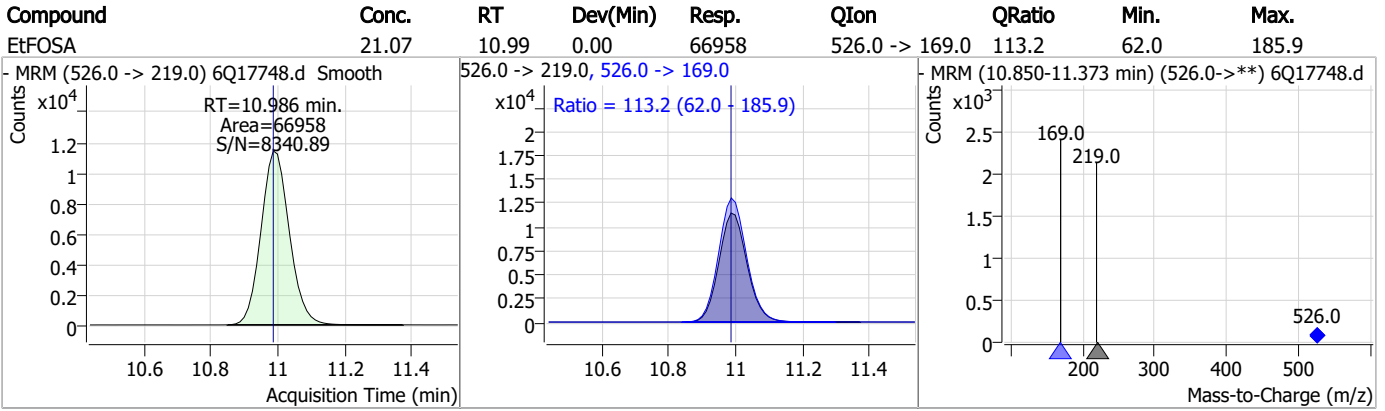
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	123.18	10.93	0.00	420300				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.51	10.98	0.00	7340				



Perfluorinated Compounds by LC/MS/MS



7.7.11

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Manual Integration Approval Summary

Sample Number: S6Q268-ICV268 Method: EPA DRAFT 1633
Lab FileID: 6Q17748.D Analyst approved: 05/15/23 12:43 Martha Valls
Injection Time: 05/12/23 14:40 Supervisor approved: 05/16/23 09:33 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.11.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17820.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 11:09:26 PM
 Sample Name : cc268-4
 Vial : P1-A5
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	142894	10.00 µg/L	0.000
M5-PFPeA	4.259	268.3 -> 223.0	46457	5.00 µg/L	-0.012
M5-PFHxA	5.466	318.0 -> 273.0	55222	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	45640	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	62503	2.50 µg/L	0.000
M9-PFNA	7.583	472.1 -> 427.0	21073	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	16506	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	20853	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	19578	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13661	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	21553	2.50 µg/L	-0.012
M3-PFBS	5.384	302.1 -> 79.9	18536	2.50 µg/L	-0.013
M3-PFHxS	7.179	402.1 -> 79.9	10616	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	10327	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1502	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1829	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1992	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	18368	5.00 µg/L	0.000
M3-HFPO-DA	5.831	286.9 -> 168.9	30925	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	14469	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	82639	25.00 µg/L	0.000
M9-EtFOSE	10.907	639.2 -> 58.9	94760	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8876	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7084	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12135	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	60743	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	8260	2.50 µg/L	0.000
13C4-PFOA	7.065	417.1 -> 372.0	69792	2.50 µg/L	0.000
13C2-PFDA	8.064	515.1 -> 470.1	19657	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	24315	1.25 µg/L	0.000
13C2-PFHxA	5.454	315.1 -> 270.0	42978	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1502	4.77 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1829	4.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1992	4.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C2-PFDoDA	8.949	615.1 -> 570.0	19578	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.3%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13661	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFBS	5.384	302.1 -> 79.9	18536	2.58 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C3-PFHxS	7.179	402.1 -> 79.9	10616	2.41 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C4-PFBA	2.901	216.8 -> 171.9	142894	9.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C4-PFHpA	6.420	367.1 -> 322.0	45640	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	5.466	318.0 -> 273.0	55222	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C5-PFPeA	4.259	268.3 -> 223.0	46457	5.14 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C6-PFDA	8.064	519.1 -> 474.1	16506	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C7-PFUnDA	8.518	570.0 -> 525.1	20853	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-FOSA	9.636	506.1 -> 77.8	21553	2.68 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C8-PFOA	7.064	421.1 -> 376.0	62503	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C8-PFOS	8.226	507.1 -> 79.9	10327	2.74 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C9-PFNA	7.583	472.1 -> 427.0	21073	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%	
d3-MeFOSAA	8.133	573.2 -> 419.0	18368	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	30925	9.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSA	10.752	515.0 -> 219.0	7084	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSAA	8.329	589.2 -> 419.0	14469	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d7-MeFOSE	10.672	623.2 -> 58.9	82639	27.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
d9-EtFOSE	10.907	639.2 -> 58.9	94760	26.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
d5-EtFOSA	10.984	531.1 -> 219.0	8876	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
Target Compounds					QValue
4:2FTS	5.132	327.1 -> 307.0	19036	8.43 µg/L	94
		327.1 -> 80.9	7834		
6:2FTS	6.838	427.1 -> 407.0	18885	9.48 µg/L	97
		427.1 -> 80.9	6428		
8:2FTS	7.865	527.1 -> 507.0	10835	9.58 µg/L	94
		527.1 -> 80.8	4830		
EtFOSAA	8.330	584.2 -> 419.1	6205	2.30 µg/L	99
		584.2 -> 526.0	3295		
FOSA	9.639	498.1 -> 77.9	18923	2.35 µg/L	99
		498.1 -> 478.0	554		
MeFOSAA	8.122	570.1 -> 419.0	7816	2.20 µg/L	99
		570.1 -> 483.0	1495		
PFBA	2.907	212.8 -> 168.9	49661	9.69 µg/L	100
PFBS	5.385	298.7 -> 79.9	18768	2.07 µg/L	100
		298.7 -> 98.8	6878		
PFDA	8.064	512.9 -> 469.0	49626	2.43 µg/L	93
		512.9 -> 219.0	6751		
PFDODA	8.950	613.1 -> 569.0	39614	2.54 µg/L	99
		613.1 -> 319.0	5351		
PFDS	9.101	599.0 -> 79.9	7237	2.16 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3431	2.45	µg/L	97
		363.1 -> 319.0	55886			
PFHpS	7.723	363.1 -> 169.0	8501	2.13	µg/L	94
		449.0 -> 79.9	11757			
PFHxA	5.457	449.0 -> 98.9	5649	2.29	µg/L	99
		313.0 -> 269.0	50087			
PFHxS	7.180	313.0 -> 118.9	2200	2.34	µg/L	96
		398.7 -> 79.9	13734			
PFNA	7.584	398.7 -> 98.9	6509	2.35	µg/L	98
		463.0 -> 419.0	36831			
PFNS	8.681	463.0 -> 219.0	7833	2.31	µg/L	94
		548.8 -> 79.9	11517			
PFOA	7.066	548.8 -> 98.9	6209	2.49	µg/L	100
		413.0 -> 369.0	77473			
PFOS	8.228	413.0 -> 169.0	12927	2.08	µg/L	93
		498.9 -> 79.9	11244			
PFPeA	4.274	498.9 -> 98.8	5446	4.70	µg/L	100
		263.0 -> 219.0	63101			
PFPeS	6.471	349.1 -> 79.9	14350	2.46	µg/L	94
		349.1 -> 98.9	5926			
PFTeDA	9.677	713.1 -> 669.0	36550	2.61	µg/L	99
		713.1 -> 168.9	2619			
PFTrDA	9.333	663.0 -> 619.0	44781	2.48	µg/L	94
		663.0 -> 168.9	4370			
PFUnDA	8.518	563.1 -> 519.0	36185	2.39	µg/L	98
		563.1 -> 269.1	6055			
11CI-PF3OUdS	9.385	630.9 -> 450.9	55257	4.73	µg/L	97
		632.9 -> 452.9	16136			
9CI-PF3ONS	8.557	530.8 -> 351.0	90516	4.85	µg/L	98
		532.8 -> 353.0	27008			
ADONA	6.671	376.9 -> 250.9	227764	4.63	µg/L	92
		376.9 -> 84.8	63210			
HFPO-DA	5.832	284.9 -> 168.9	14681	4.91	µg/L	96
		284.9 -> 184.9	1796			
3:3FTCA	3.777	241.0 -> 177.0	9944	11.96	µg/L	100
		241.0 -> 117.0	1323			
5:3FTCA	6.161	341.0 -> 237.1	221860	58.54	µg/L	97
		341.0 -> 217.0	155831			
7:3FTCA	7.573	441.0 -> 316.9	100862	58.66	µg/L	98
		441.0 -> 336.9	207269			
EtFOSA	10.986	526.0 -> 219.0	17601	4.58	µg/L	99
		526.0 -> 169.0	22077			
EtFOSE	10.920	630.0 -> 58.9	51933	12.58	µg/L	100
		511.9 -> 219.0	15860			
MeFOSA	10.753	511.9 -> 169.0	22438	4.86	µg/L	91
		616.1 -> 58.9	46789			
MeFOSE	10.686	699.1 -> 79.9	4172	12.10	µg/L	100
		699.1 -> 98.8	2150			
PFDoDS	9.805	295.0 -> 201.0	10759	2.35	µg/L	93
		295.0 -> 84.9	2874			
NFDHA	5.348	279.0 -> 85.1	47117	4.46	µg/L	99
		229.0 -> 84.9	33309			
PFMBA	4.675	314.8 -> 134.9	120917	4.83	µg/L	100
		314.8 -> 82.9	4522			
PFMPA	3.426			4.12	µg/L	99
PFEESA	5.926					

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

7.7.12
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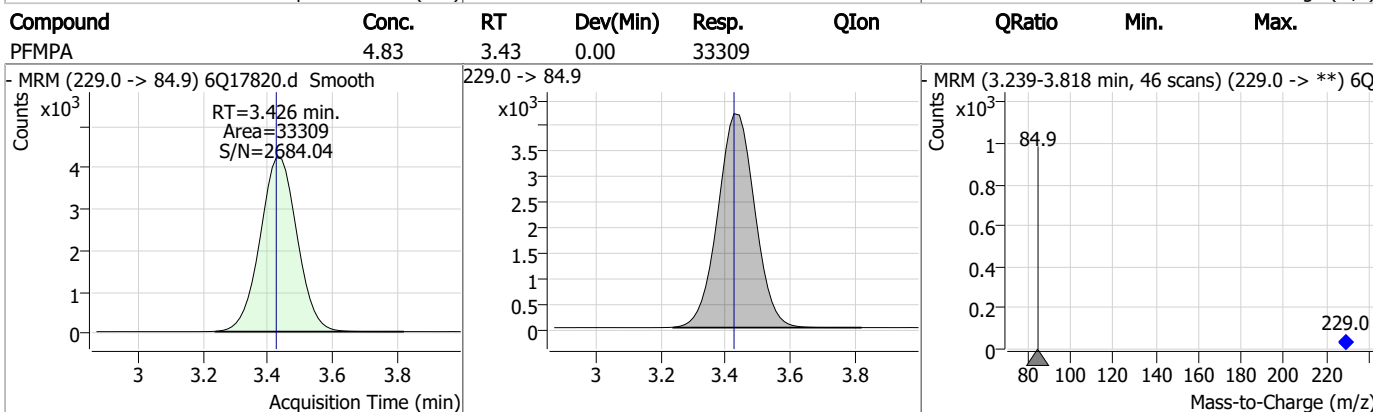
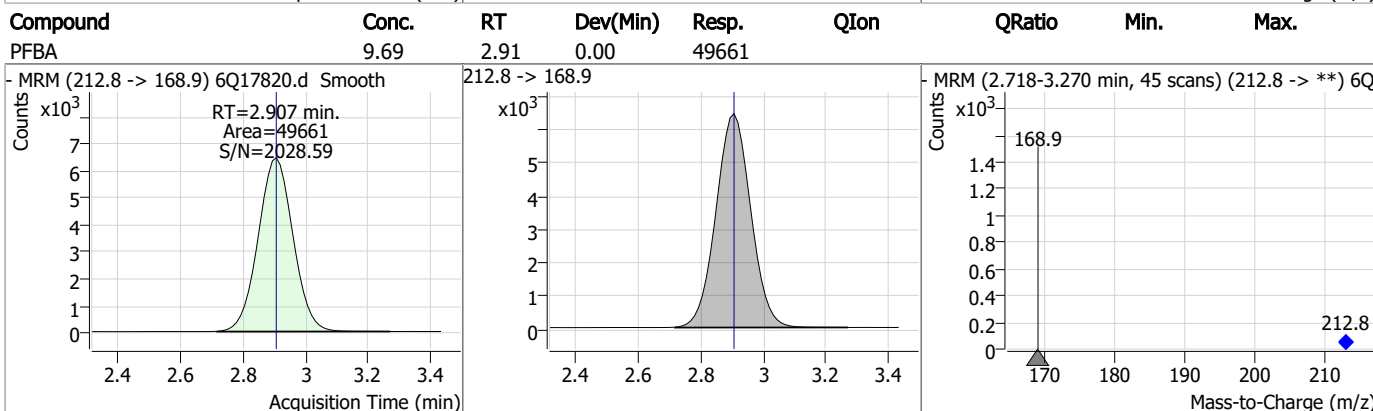
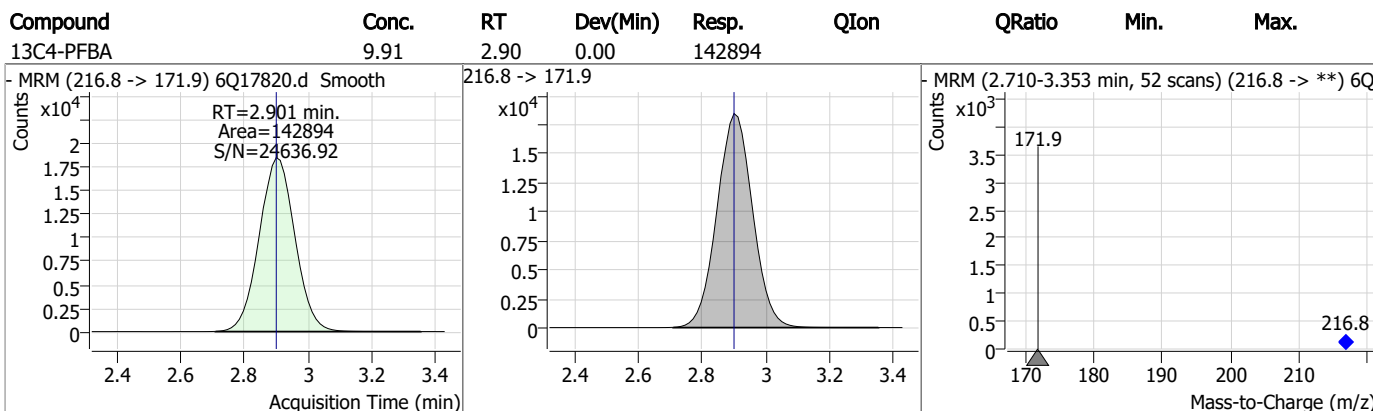
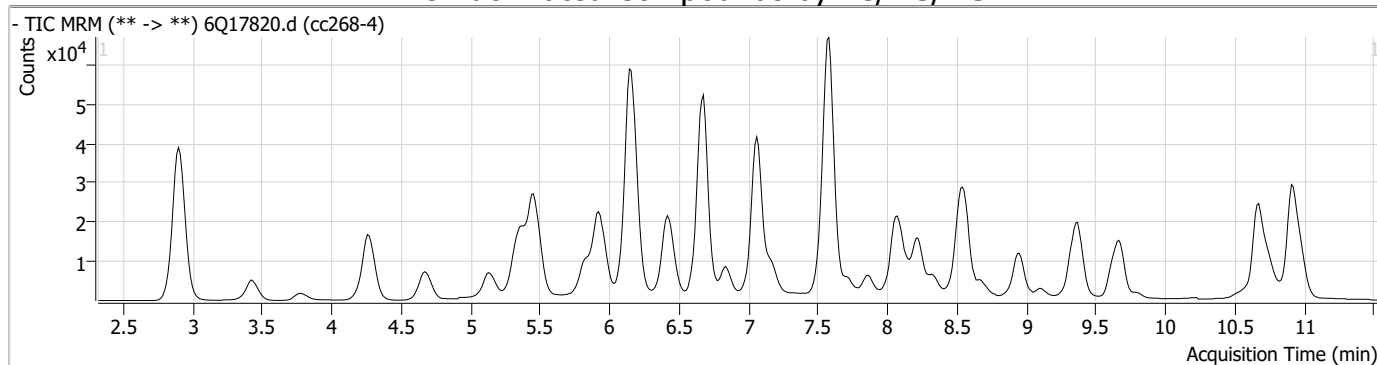
Perfluorinated Compounds by LC/MS/MS

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

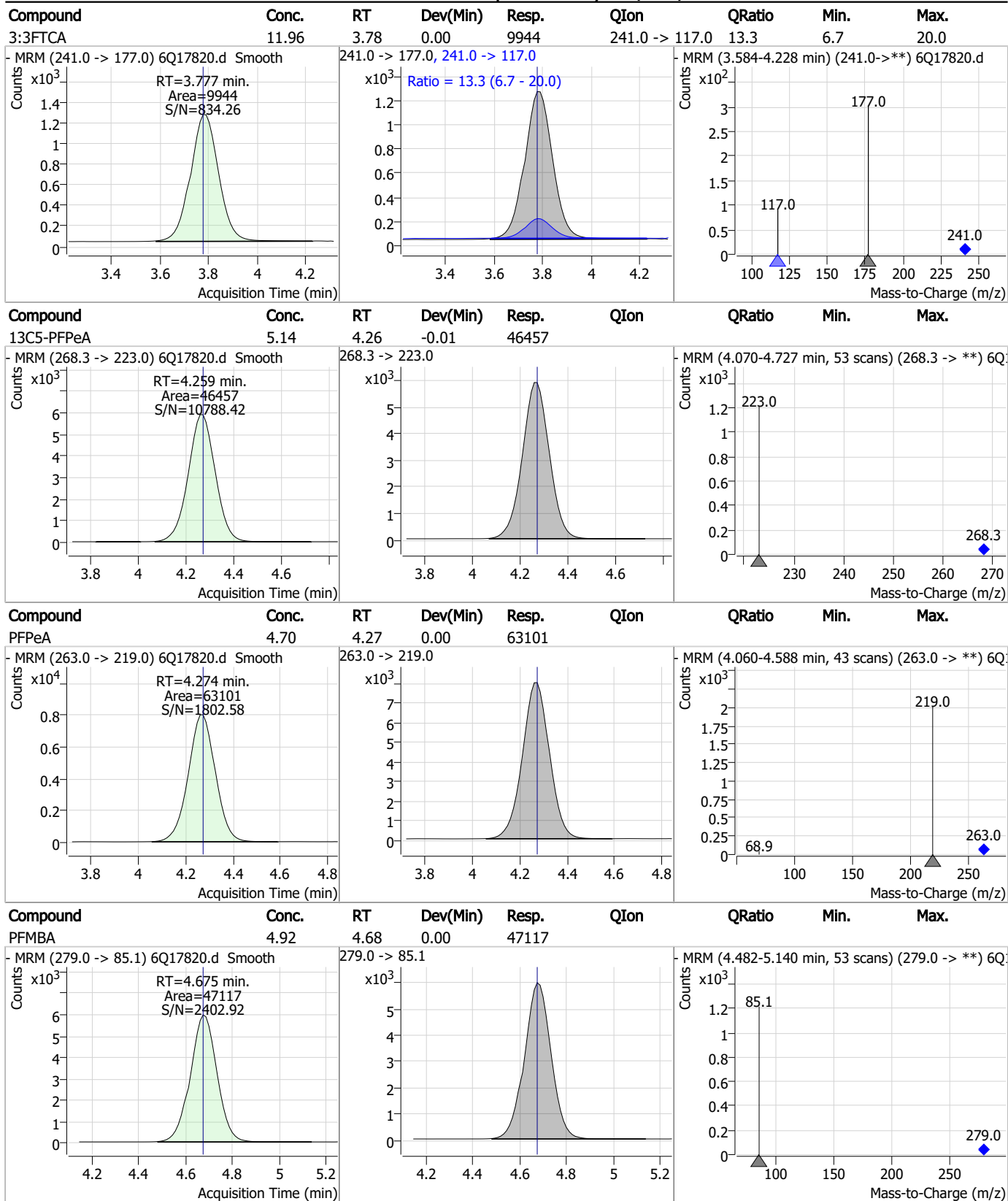
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Perfluorinated Compounds by LC/MS/MS



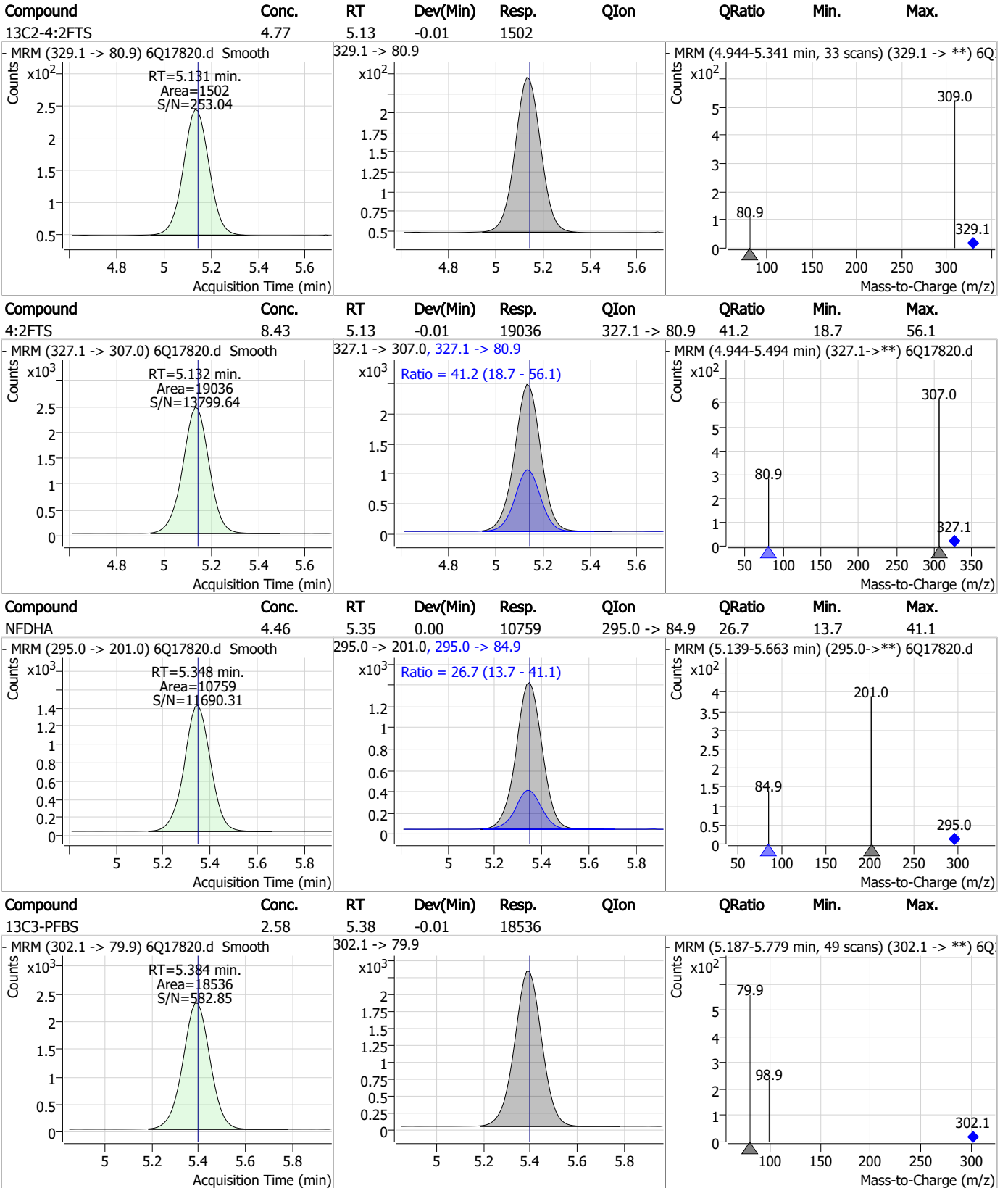
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Perfluorinated Compounds by LC/MS/MS



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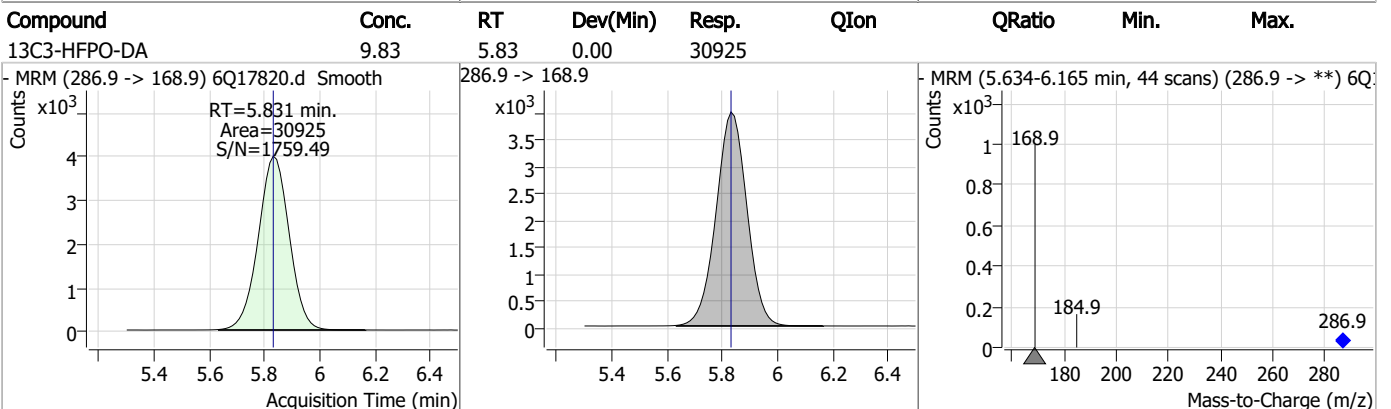
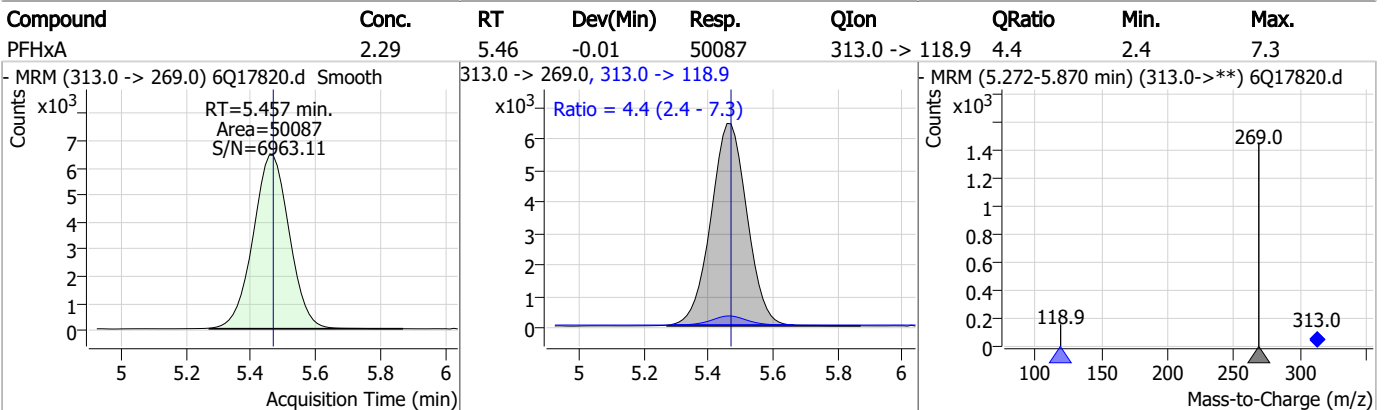
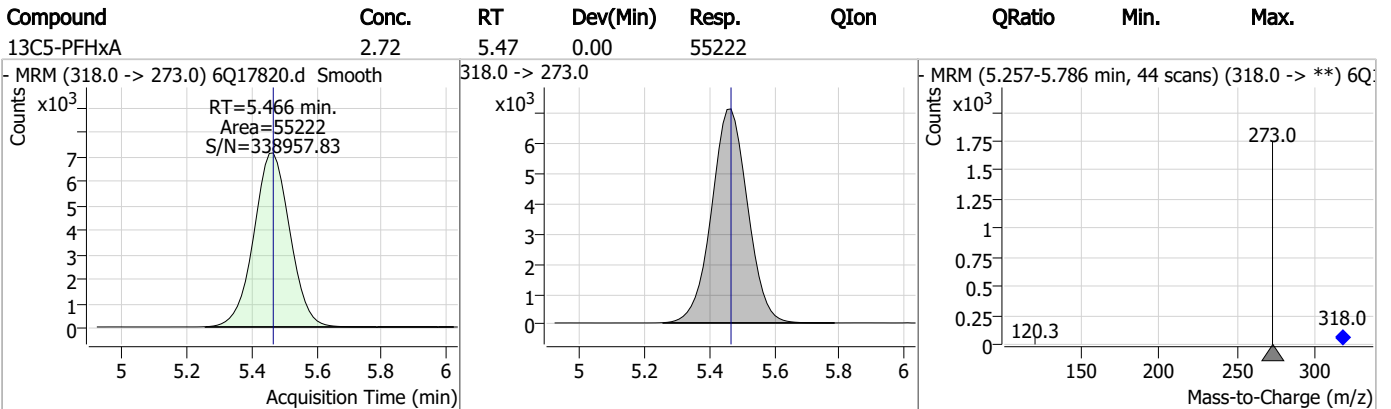
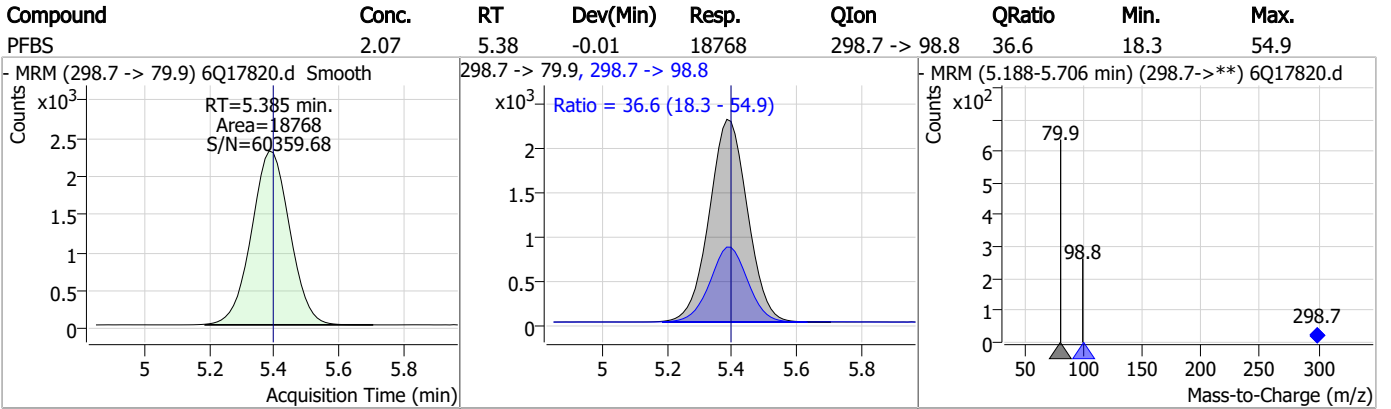
Perfluorinated Compounds by LC/MS/MS



7.7.12 7

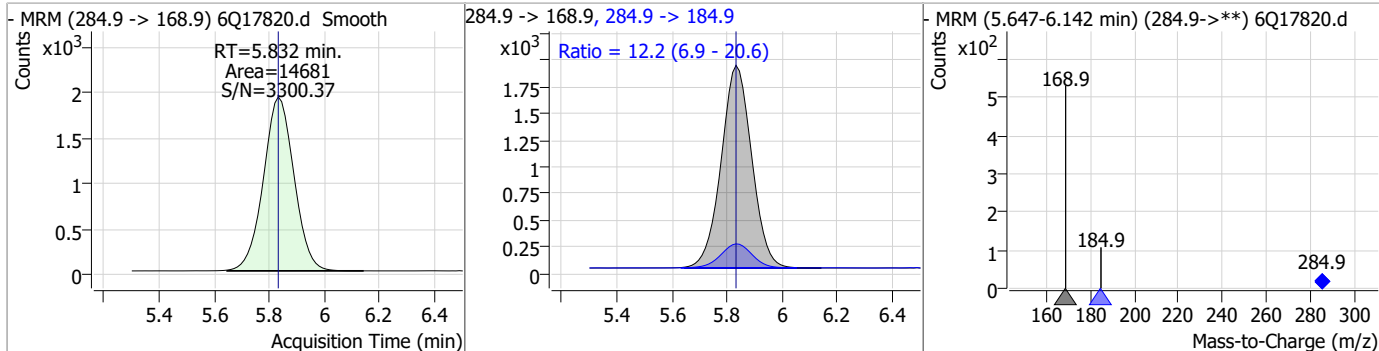


Perfluorinated Compounds by LC/MS/MS

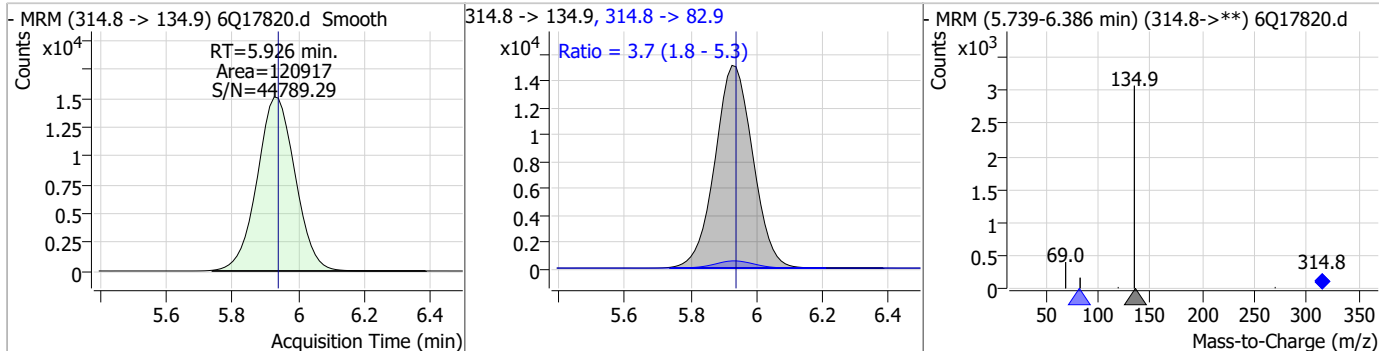


Perfluorinated Compounds by LC/MS/MS

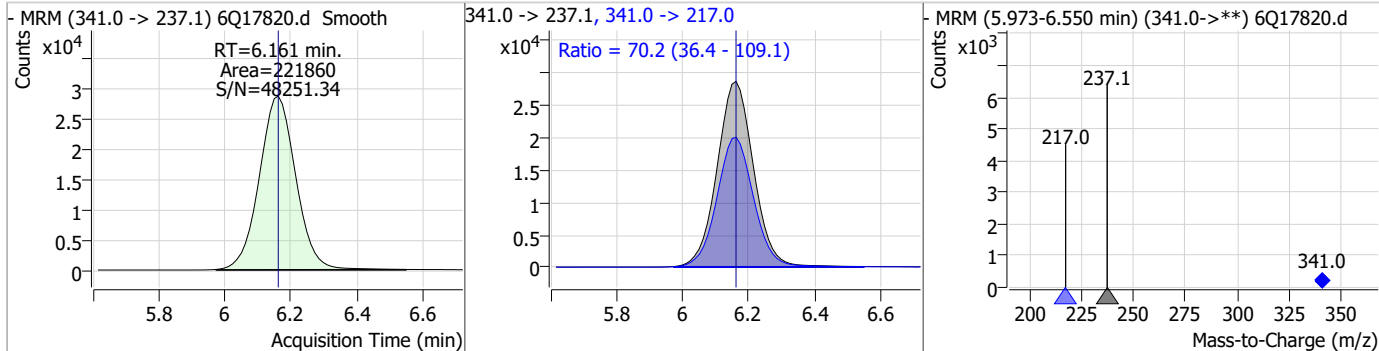
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.91	5.83	0.00	14681	284.9 -> 184.9	12.2	6.9	20.6



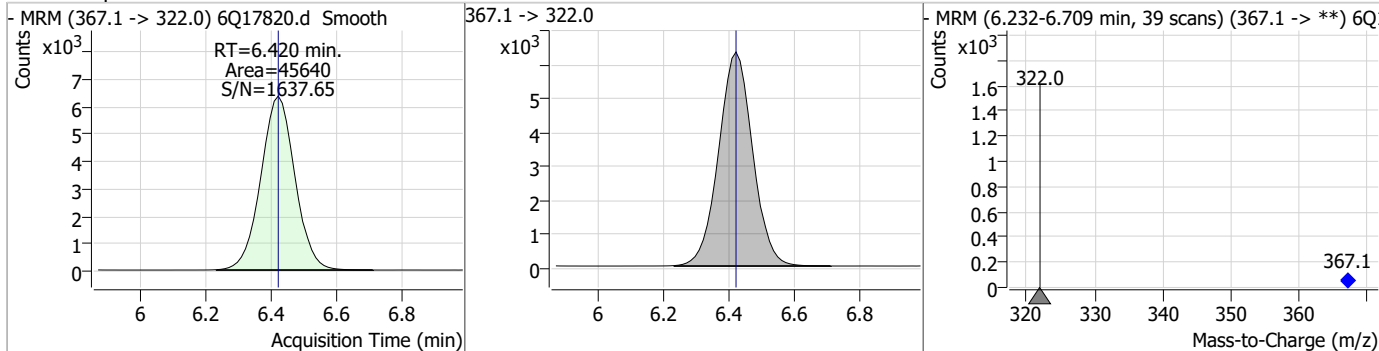
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.12	5.93	-0.01	120917	314.8 -> 82.9	3.7	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	58.54	6.16	0.00	221860	341.0 -> 217.0	70.2	36.4	109.1

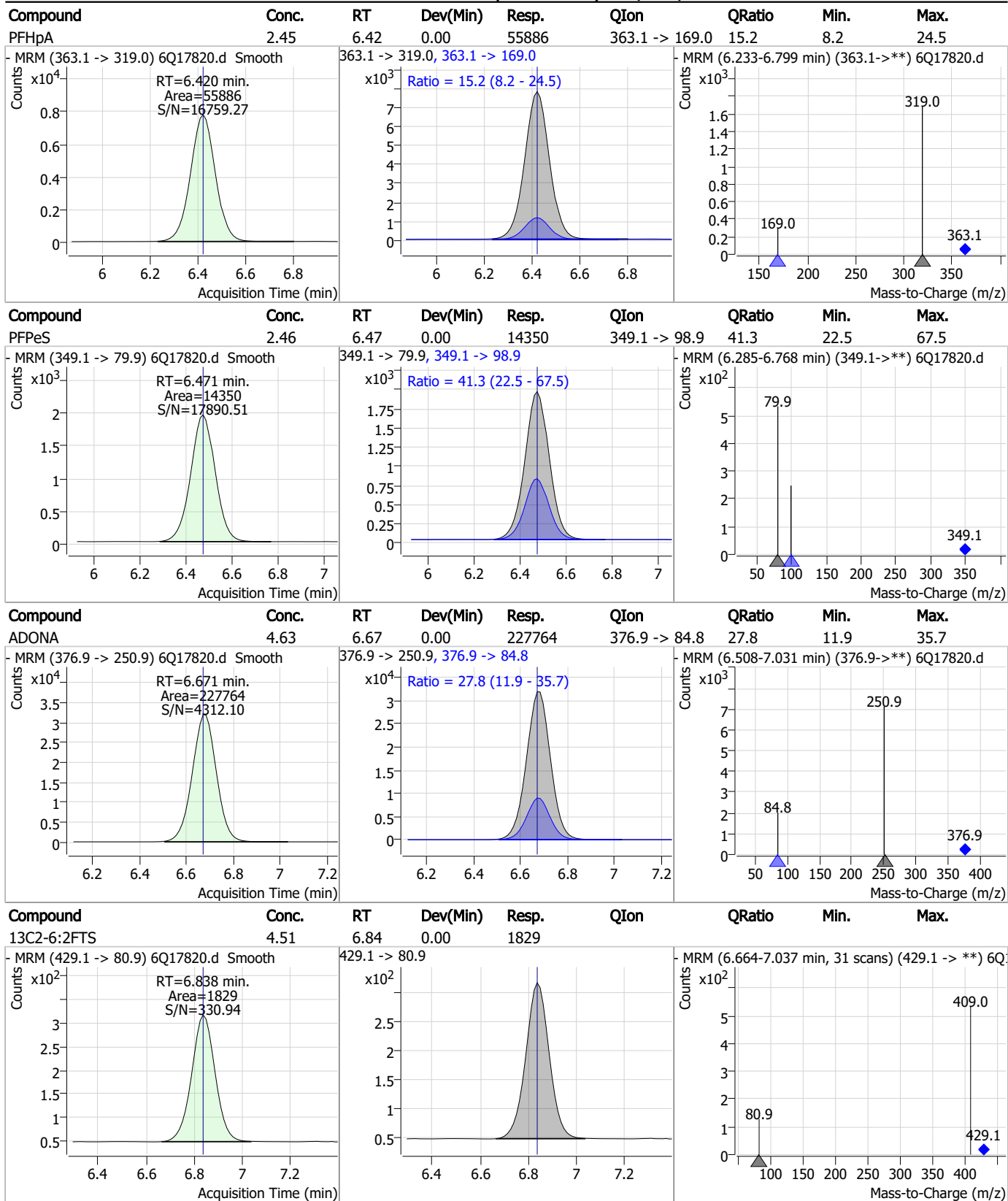


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.56	6.42	0.00	45640	367.1 -> 322.0			



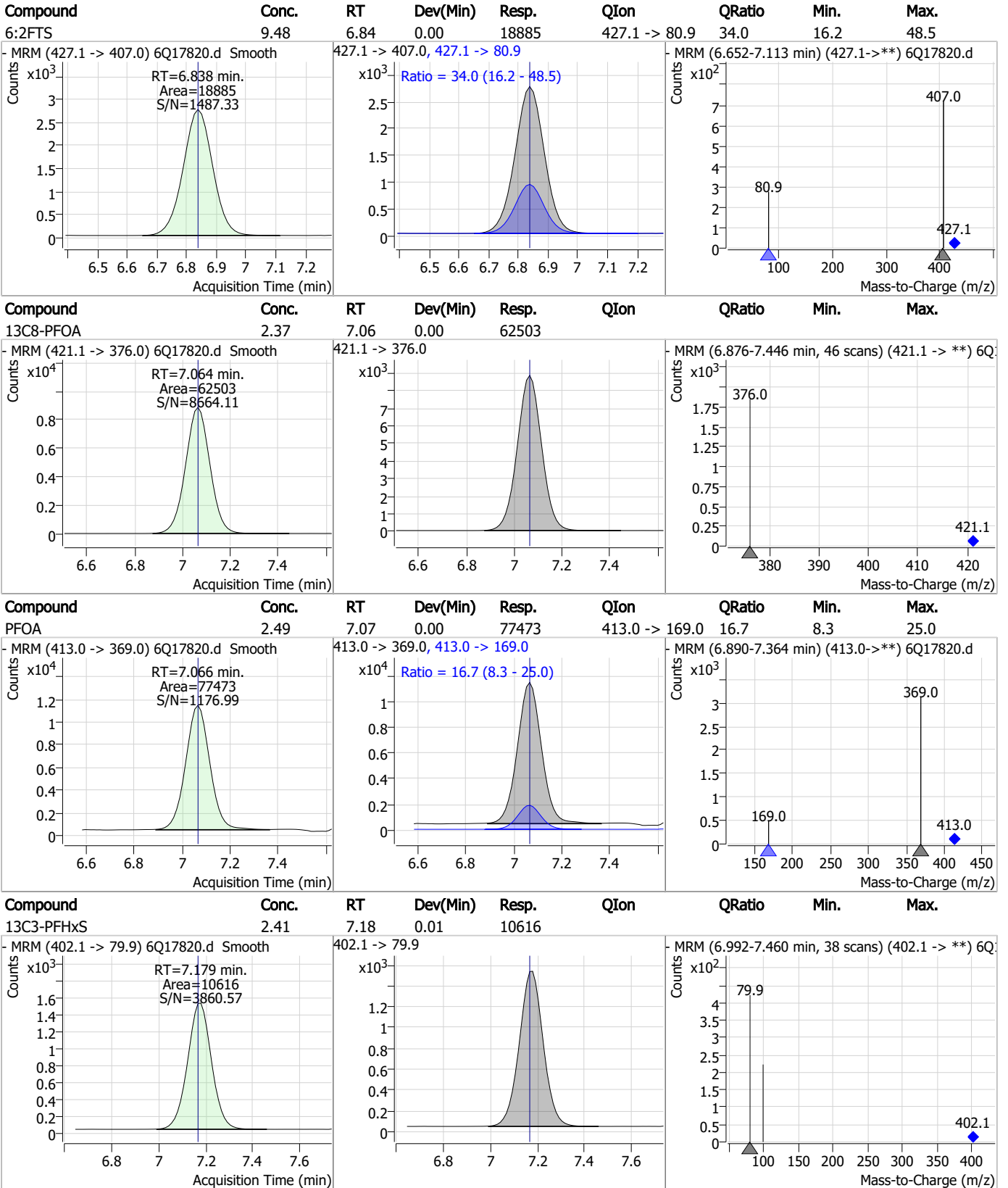
7.7.12
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Perfluorinated Compounds by LC/MS/MS



7.7.12
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Perfluorinated Compounds by LC/MS/MS

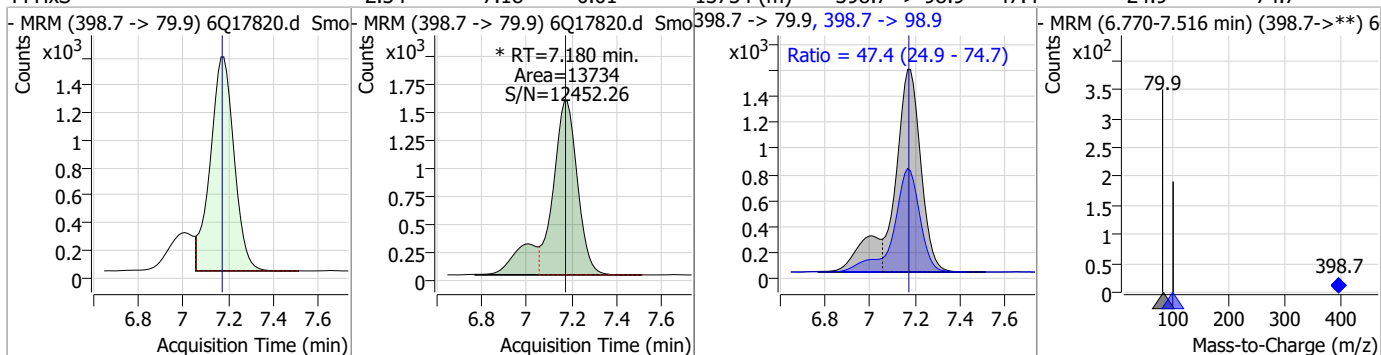


7.7.12

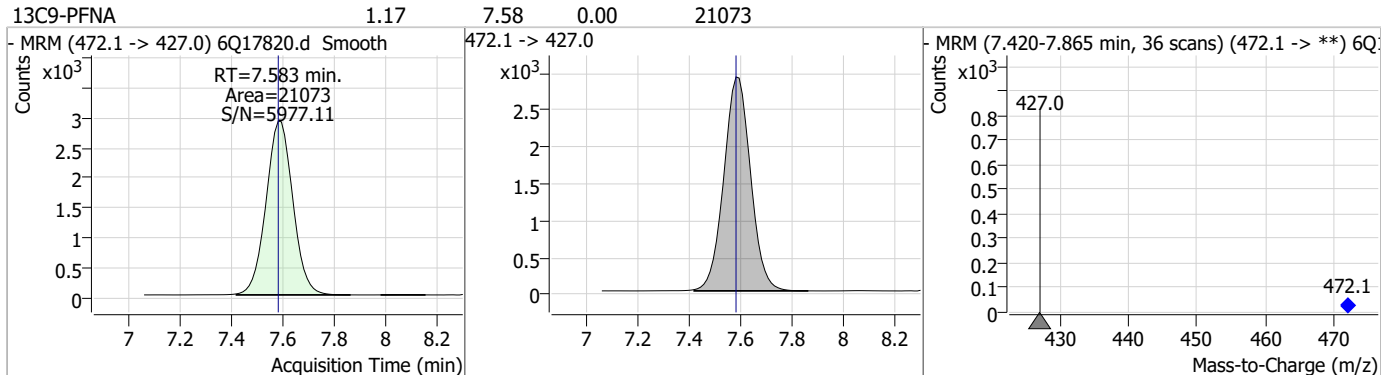


Perfluorinated Compounds by LC/MS/MS

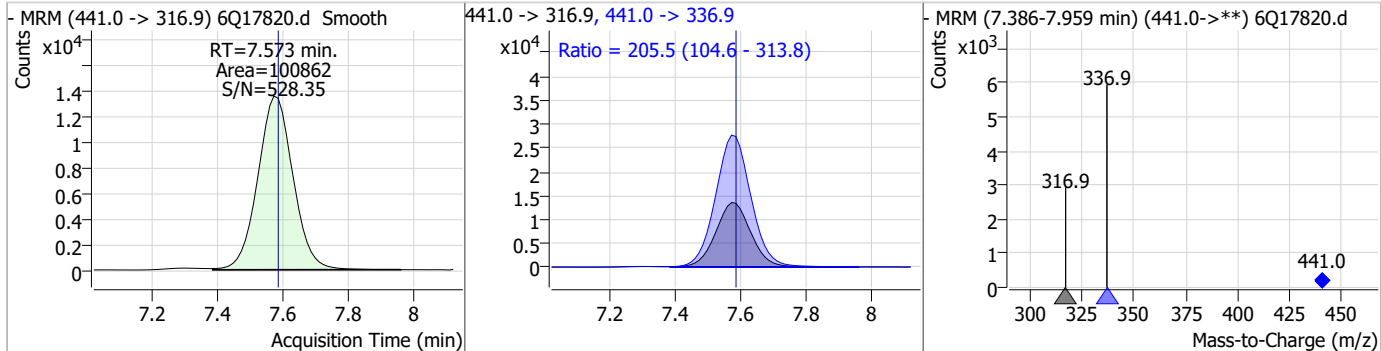
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.34	7.18	0.01	13734 (m)	398.7 -> 98.9	47.4	24.9	74.7



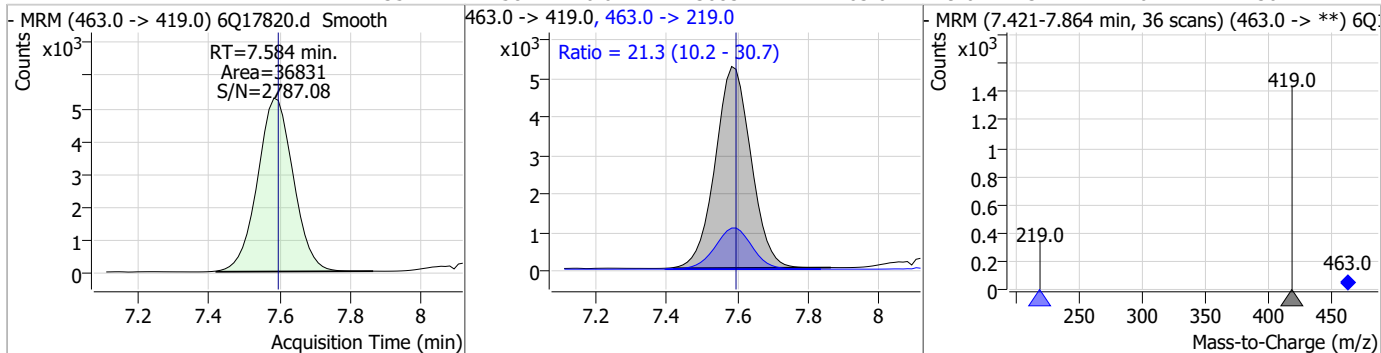
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.17	7.58	0.00	21073				



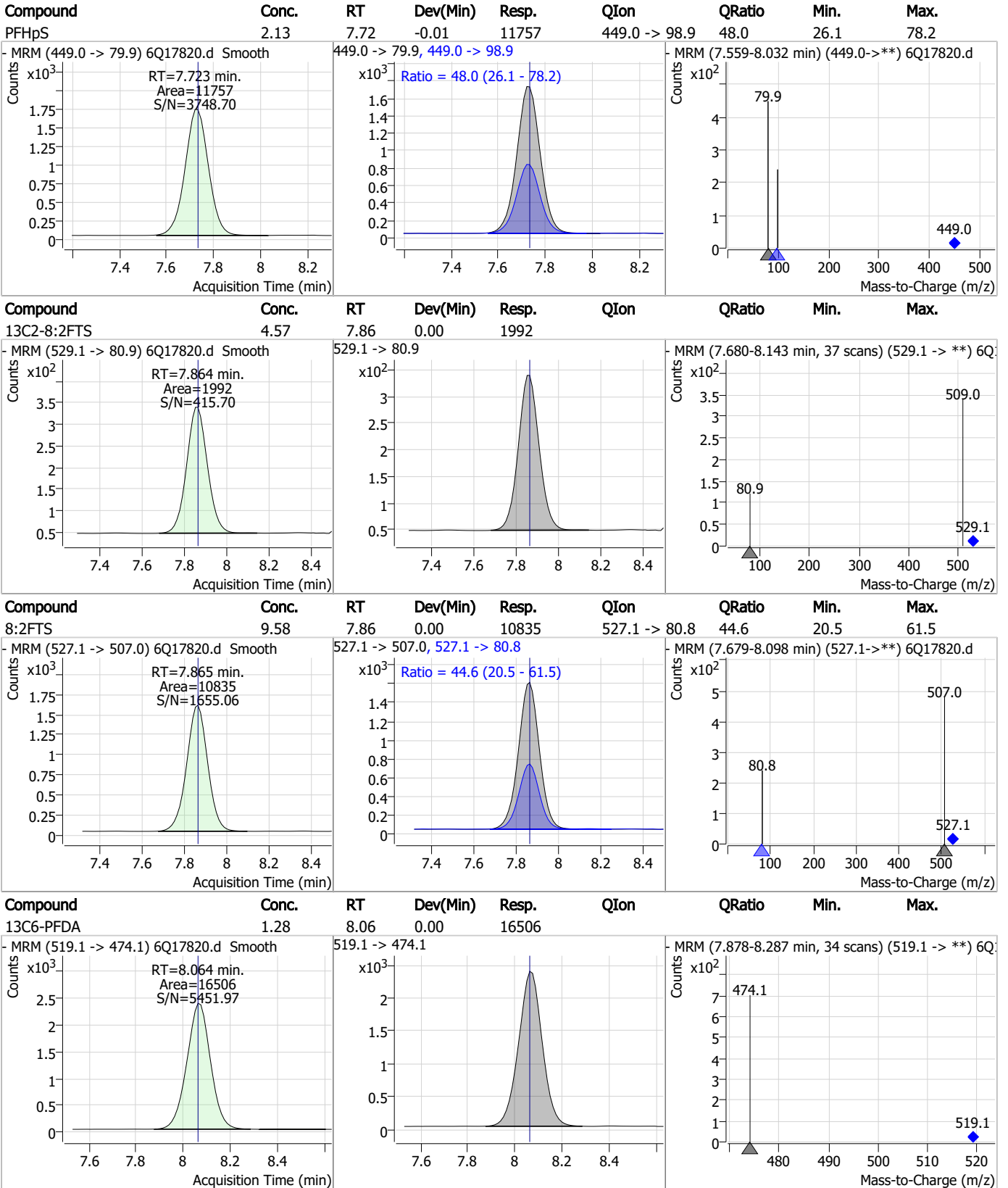
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	58.66	7.57	-0.01	100862	441.0 -> 336.9	205.5	104.6	313.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.35	7.58	-0.01	36831	463.0 -> 219.0	21.3	10.2	30.7



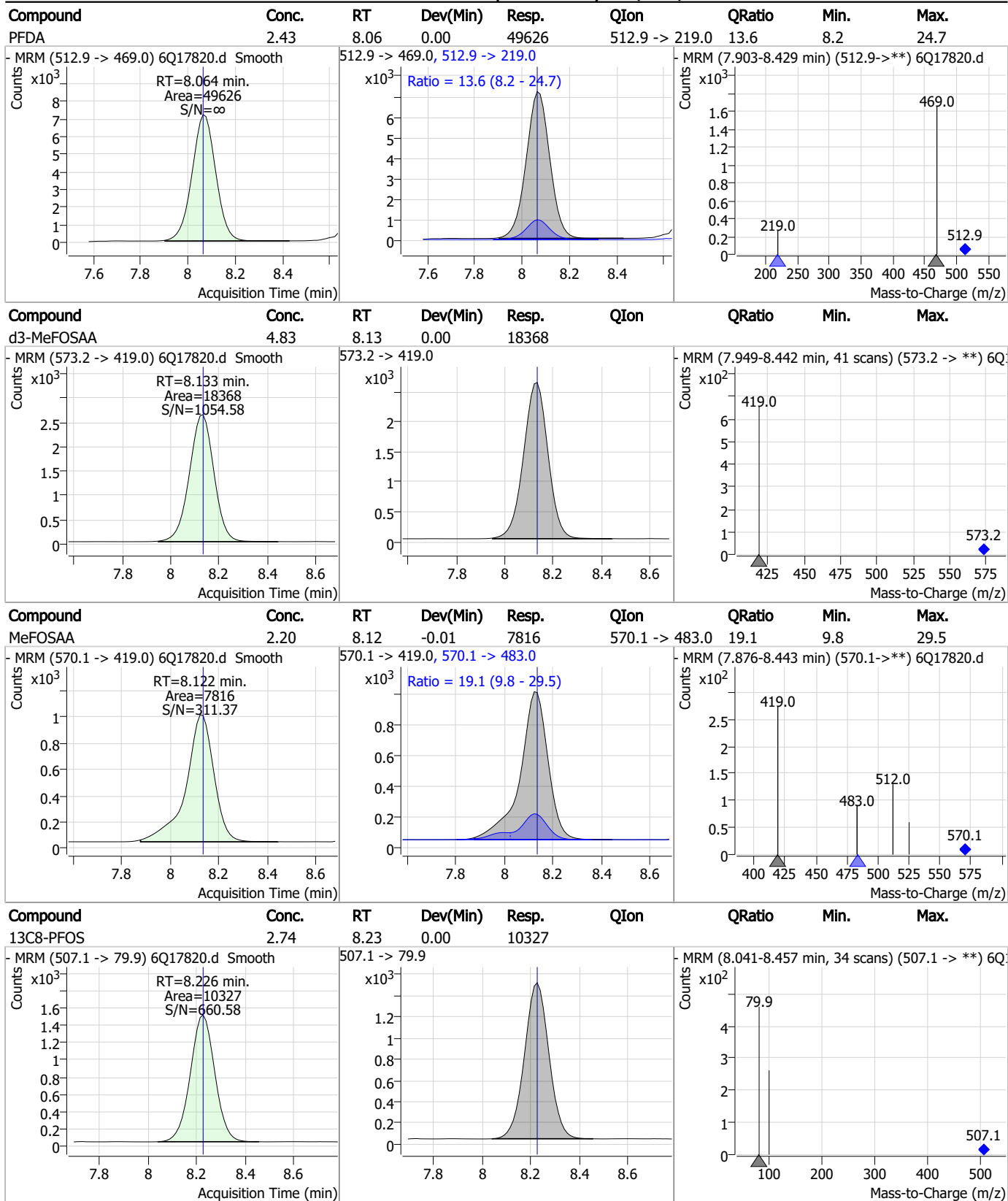
Perfluorinated Compounds by LC/MS/MS



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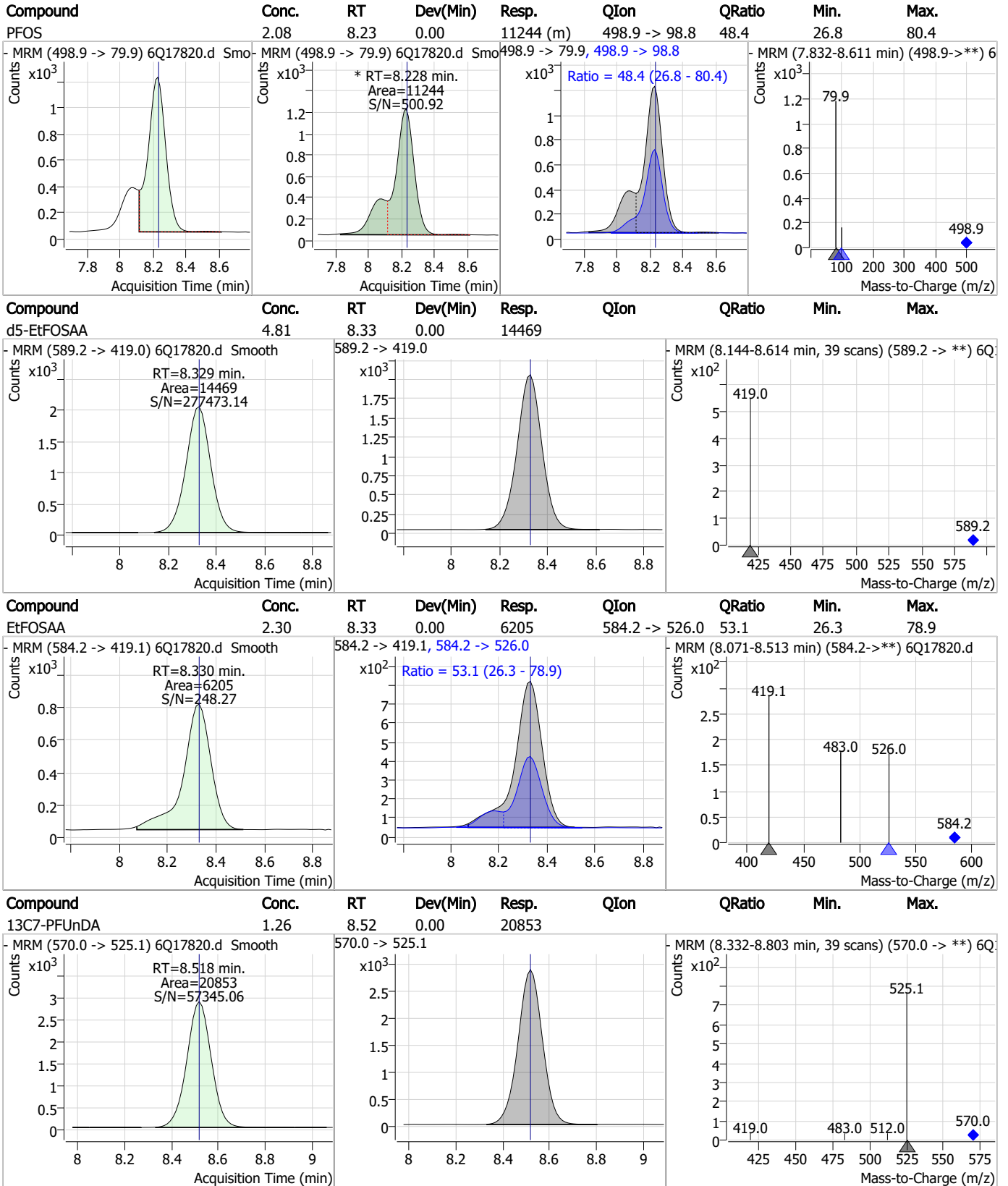
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

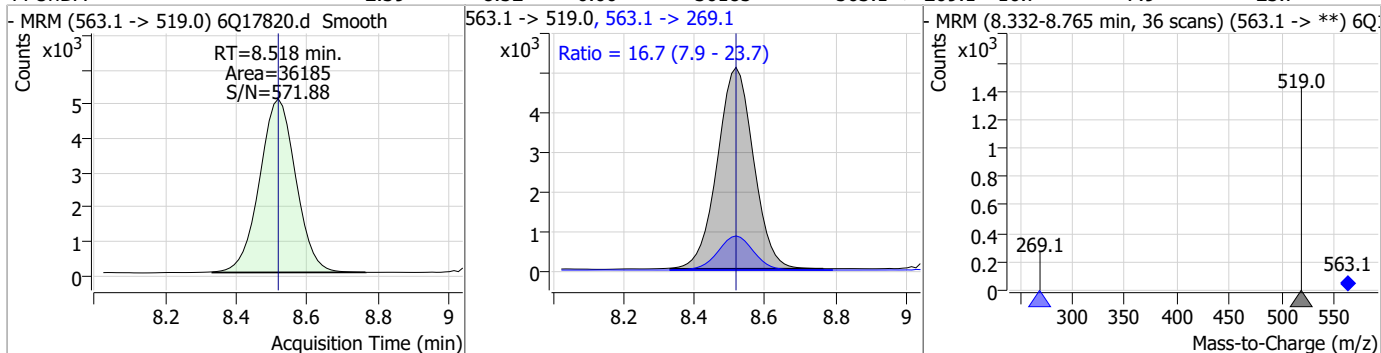


7.7.12
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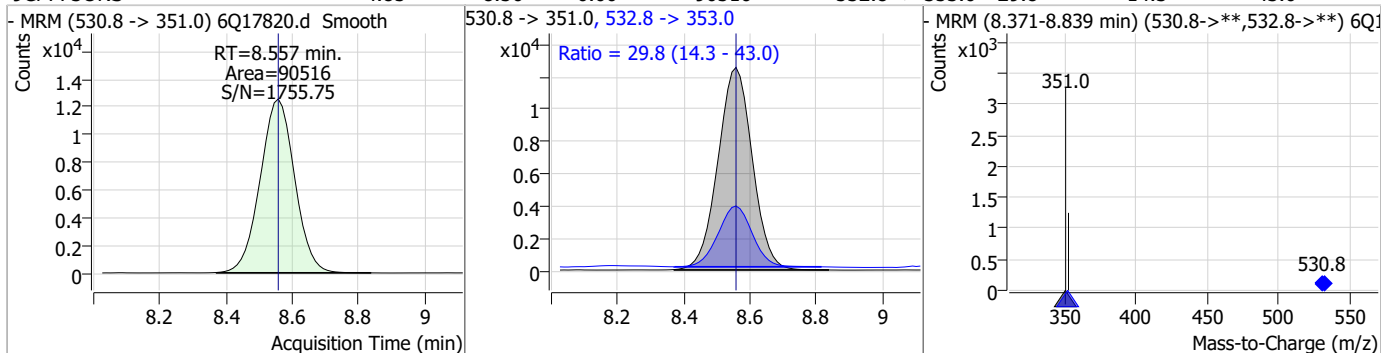


Perfluorinated Compounds by LC/MS/MS

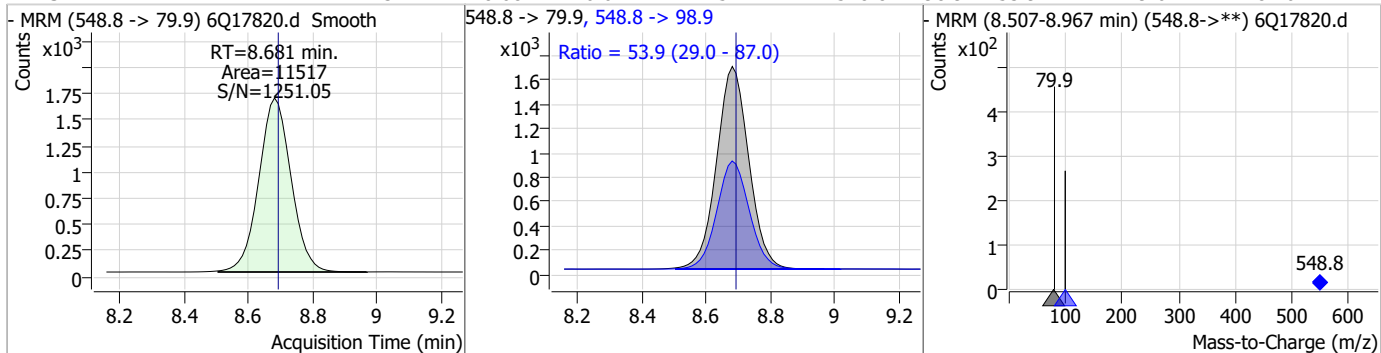
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.39	8.52	0.00	36185	563.1 -> 269.1	16.7	7.9	23.7



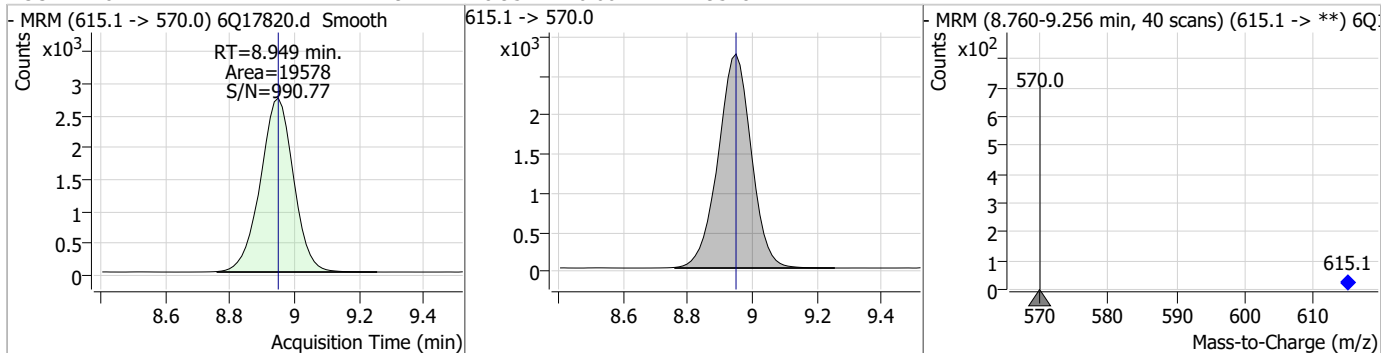
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.85	8.56	0.00	90516	532.8 -> 353.0	29.8	14.3	43.0



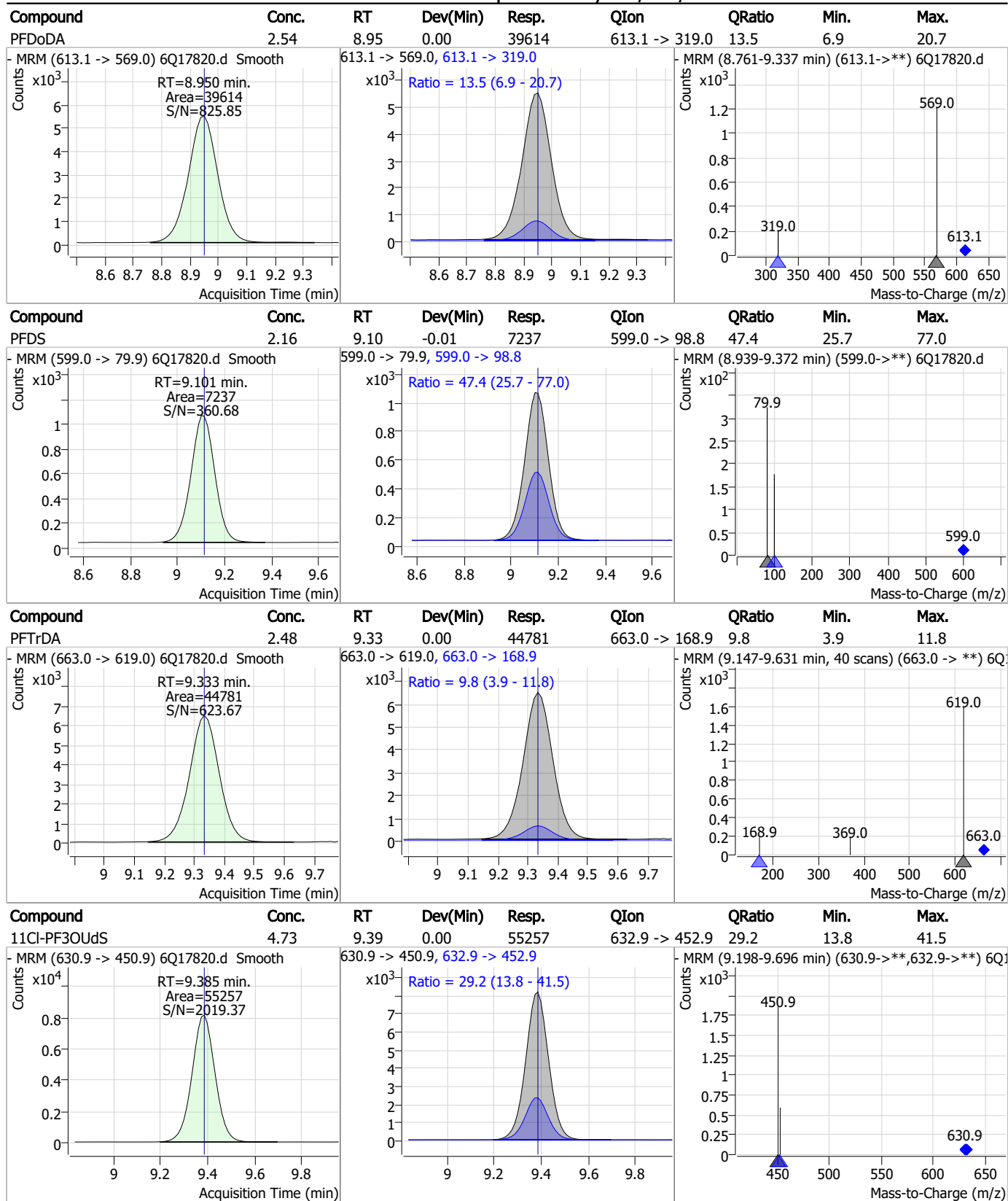
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.31	8.68	-0.01	11517	548.8 -> 98.9	53.9	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.95	0.00	19578	615.1 -> 570.0			



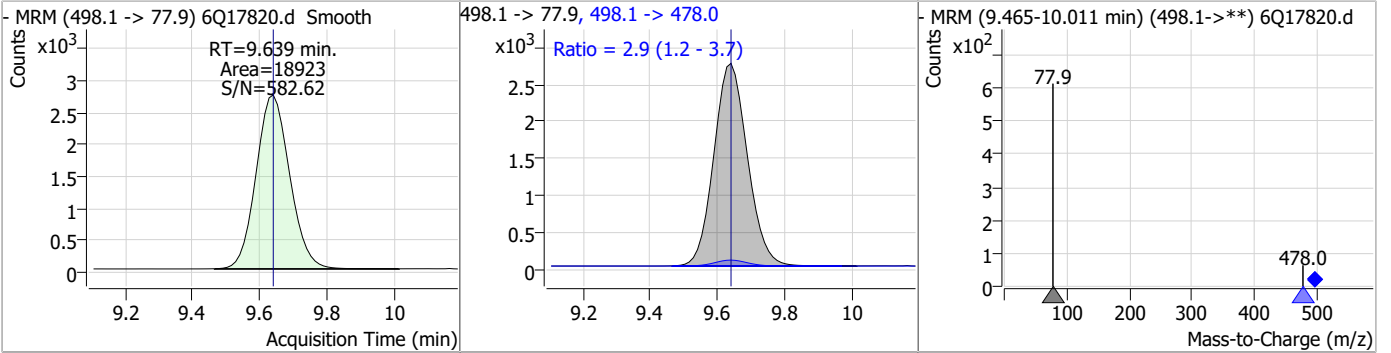
Perfluorinated Compounds by LC/MS/MS



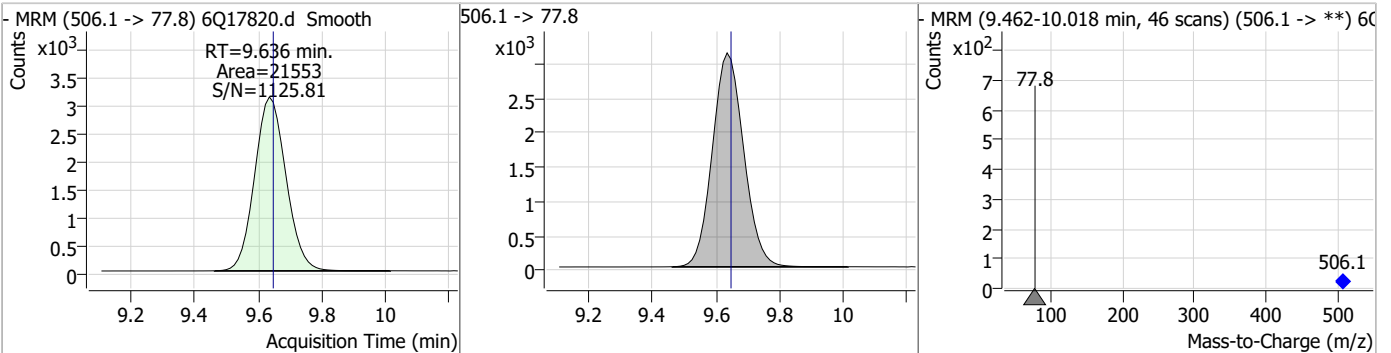
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Perfluorinated Compounds by LC/MS/MS

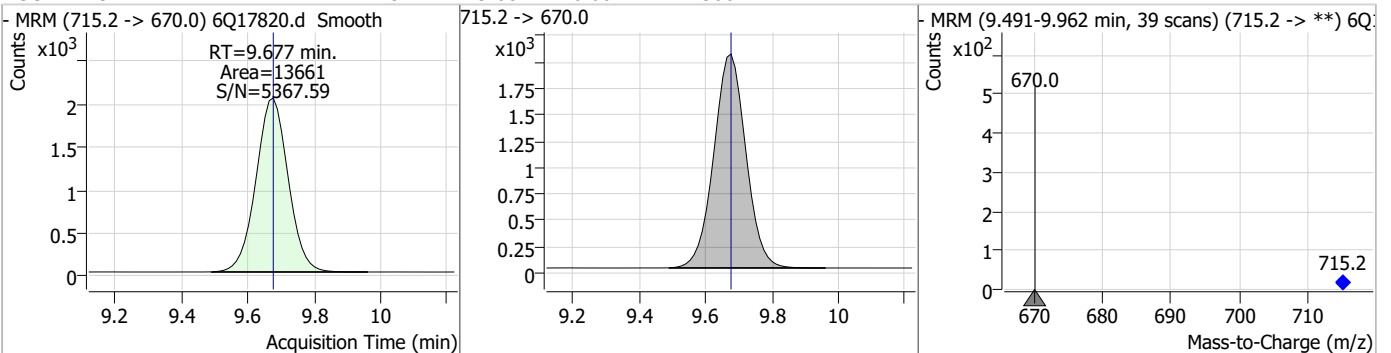
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.35	9.64	0.00	18923	498.1 -> 478.0	2.9	1.2	3.7



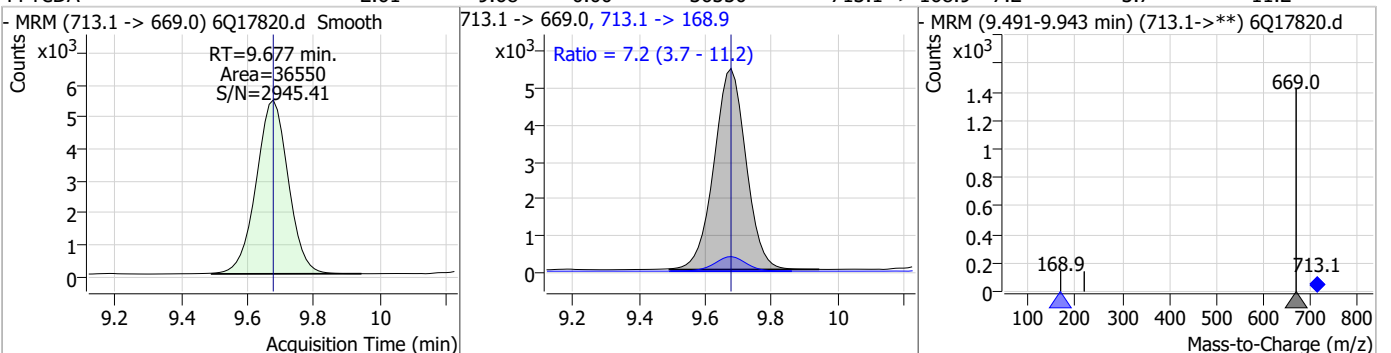
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.68	9.64	-0.01	21553				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.68	0.00	13661				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.61	9.68	0.00	36550	713.1 -> 168.9	7.2	3.7	11.2



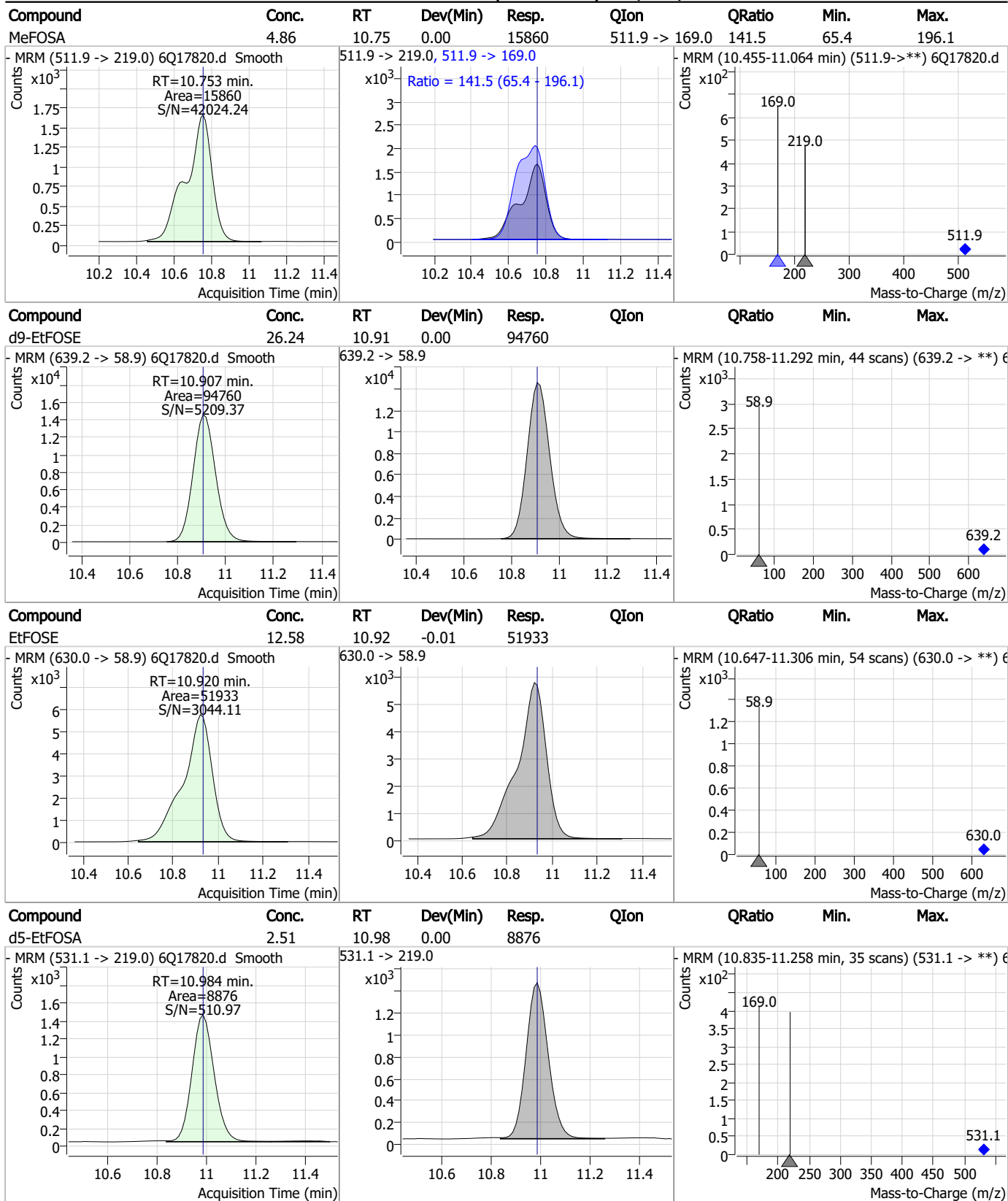
7.7.12
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.35	9.81	0.00	4172	699.1 -> 98.8	51.5	28.4	85.1
d7-MeFOSE	27.65	10.67	0.00	82639				
MeFOSE	12.10	10.69	0.00	46789				
d3-MeFOSA	2.41	10.75	0.00	7084				

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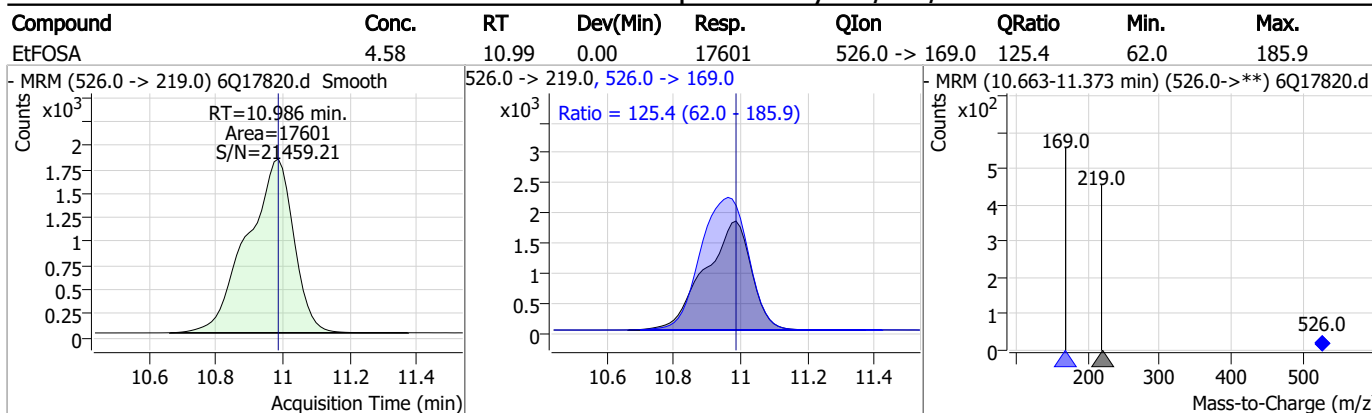
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q269-CC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17820.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/15/23 23:09 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17821.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/15/2023 11:23:56 PM
 Sample Name : cc268-1.0LL
 Vial : P1-A2
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	143017	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	45989	5.00 µg/L	0.000
M5-PFHxA	5.454	318.0 -> 273.0	55188	2.50 µg/L	-0.012
M4-PFHpA	6.407	367.1 -> 322.0	45752	2.50 µg/L	-0.012
M8-PFOA	7.051	421.1 -> 376.0	64973	2.50 µg/L	-0.013
M9-PFNA	7.583	472.1 -> 427.0	21546	1.25 µg/L	0.000
M6-PFDA	8.064	519.1 -> 474.1	17739	1.25 µg/L	0.000
M7-PFUnDA	8.506	570.0 -> 525.1	22187	1.25 µg/L	-0.012
M2-PFDoDA	8.937	615.1 -> 570.0	19238	1.25 µg/L	-0.012
M2-PFTeDA	9.677	715.2 -> 670.0	13927	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	20494	2.50 µg/L	-0.012
M3-PFBS	5.384	302.1 -> 79.9	17473	2.50 µg/L	-0.013
M3-PFHxS	7.167	402.1 -> 79.9	11075	2.50 µg/L	0.000
M8-PFOS	8.214	507.1 -> 79.9	10300	2.50 µg/L	-0.012
M2-4:2FTS	5.131	329.1 -> 80.9	1461	5.00 µg/L	-0.012
M2-6:2FTS	6.825	429.1 -> 80.9	1921	5.00 µg/L	-0.012
M2-8:2FTS	7.852	529.1 -> 80.9	1875	5.00 µg/L	-0.012
M3-MeFOSAA	8.121	573.2 -> 419.0	19134	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	31468	10.00 µg/L	0.000
M5-EtFOSAA	8.316	589.2 -> 419.0	14049	5.00 µg/L	-0.012
M7-MeFOSE	10.660	623.2 -> 58.9	84256	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	97367	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8862	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7343	2.50 µg/L	0.000
13C4-PFOS	8.215	502.8 -> 79.9	12681	2.50 µg/L	-0.012
13C3-PFBA	2.904	216.0 -> 172.0	61120	5.00 µg/L	0.000
18O2-PFHxS	7.166	403.0 -> 83.9	7958	2.50 µg/L	0.000
13C4-PFOA	7.051	417.1 -> 372.0	72069	2.50 µg/L	-0.014
13C2-PFDA	8.064	515.1 -> 470.1	18192	1.25 µg/L	0.000
13C5-PFNA	7.583	468.0 -> 423.0	23614	1.25 µg/L	0.000
13C2-PFHxA	5.454	315.1 -> 270.0	44228	2.50 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1461	4.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.4%		
13C2-6:2FTS	6.825	429.1 -> 80.9	1921	4.92 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-8:2FTS	7.852	529.1 -> 80.9	1875	4.46 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.2%		
13C2-PFDoDA	8.937	615.1 -> 570.0	19238	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13927	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C3-PFBS	5.384	302.1 -> 79.9	17473	2.52 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C3-PFHxS	7.167	402.1 -> 79.9	11075	2.61 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C4-PFBA	2.901	216.8 -> 171.9	143017	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.407	367.1 -> 322.0	45752	2.49 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFHxA	5.454	318.0 -> 273.0	55188	2.64 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C5-PFPeA	4.272	268.3 -> 223.0	45989	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C6-PFDA	8.064	519.1 -> 474.1	17739	1.49 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 119.0%	
13C7-PFUnDA	8.506	570.0 -> 525.1	22187	1.45 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.0%	
13C8-FOSA	9.636	506.1 -> 77.8	20494	2.44 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOA	7.051	421.1 -> 376.0	64973	2.39 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C8-PFOS	8.214	507.1 -> 79.9	10300	2.61 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C9-PFNA	7.583	472.1 -> 427.0	21546	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%	
d3-MeFOSAA	8.121	573.2 -> 419.0	19134	4.82 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	31468	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.752	515.0 -> 219.0	7343	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	8.316	589.2 -> 419.0	14049	4.47 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	84256	26.97 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
d9-EtFOSE	10.907	639.2 -> 58.9	97367	25.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d5-EtFOSA	10.984	531.1 -> 219.0	8862	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
Target Compounds					QValue
4:2FTS	5.132	327.1 -> 307.0	1599	0.73 µg/L	96
		327.1 -> 80.9	632		
6:2FTS	6.826	427.1 -> 407.0	1465	0.70 µg/L	93
		427.1 -> 80.9	533		
8:2FTS	7.852	527.1 -> 507.0	768	0.72 µg/L	73
		527.1 -> 80.8	444		
EtFOSAA	8.330	584.2 -> 419.1	526	0.20 µg/L	100
		584.2 -> 526.0	276		
FOSA	9.626	498.1 -> 77.9	1543	0.20 µg/L	# 96
		498.1 -> 478.0	58		
MeFOSAA	8.122	570.1 -> 419.0	687	0.19 µg/L	m 94
		570.1 -> 483.0	118		
PFBA	2.907	212.8 -> 168.9	3889	0.76 µg/L	100
PFBS	5.385	298.7 -> 79.9	1458	0.17 µg/L	93
		298.7 -> 98.8	591		
PFDA	8.064	512.9 -> 469.0	4187	0.19 µg/L	94
		512.9 -> 219.0	579		
PFDODA	8.938	613.1 -> 569.0	3448	0.23 µg/L	98
		613.1 -> 319.0	443		
PFDS	9.101	599.0 -> 79.9	630	0.19 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	299			
PFHpA	6.408	363.1 -> 319.0	4242	0.19	µg/L	99
		363.1 -> 169.0	715			
PFHpS	7.723	449.0 -> 79.9	999	0.18	µg/L	83
		449.0 -> 98.9	403			
PFHxA	5.457	313.0 -> 269.0	4061	0.19	µg/L	99
		313.0 -> 118.9	214			
PFHxS	7.168	398.7 -> 79.9	1116	0.18	µg/L	99
		398.7 -> 98.9	565			
PFNA	7.584	463.0 -> 419.0	3177	0.20	µg/L	99
		463.0 -> 219.0	659			
PFNS	8.681	548.8 -> 79.9	971	0.20	µg/L	80
		548.8 -> 98.9	420			
PFOA	7.052	413.0 -> 369.0	5626	0.17	µg/L m	95
		413.0 -> 169.0	1053			
PFOS	8.215	498.9 -> 79.9	1074	0.20	µg/L m	84
		498.9 -> 98.8	452			
PFPeA	4.274	263.0 -> 219.0	5047	0.38	µg/L	100
PFPeS	6.459	349.1 -> 79.9	1106	0.18	µg/L	99
		349.1 -> 98.9	490			
PFTeDA	9.677	713.1 -> 669.0	3010	0.21	µg/L	96
		713.1 -> 168.9	181			
PFTrDA	9.333	663.0 -> 619.0	3781	0.21	µg/L	94
		663.0 -> 168.9	370			
PFUnDA	8.518	563.1 -> 519.0	2896	0.18	µg/L	94
		563.1 -> 269.1	387			
11CI-PF3OUdS	9.385	630.9 -> 450.9	4509	0.38	µg/L	94
		632.9 -> 452.9	1382			
9CI-PF3ONS	8.557	530.8 -> 351.0	6912	0.36	µg/L	93
		532.8 -> 353.0	2223			
ADONA	6.671	376.9 -> 250.9	17360	0.35	µg/L	89
		376.9 -> 84.8	5063			
HFPO-DA	5.832	284.9 -> 168.9	1181	0.39	µg/L	94
		284.9 -> 184.9	135			
3:3FTCA	3.790	241.0 -> 177.0	818	0.99	µg/L	99
		241.0 -> 117.0	108			
5:3FTCA	6.149	341.0 -> 237.1	19314	5.10	µg/L	99
		341.0 -> 217.0	13898			
7:3FTCA	7.573	441.0 -> 316.9	8657	5.04	µg/L	99
		441.0 -> 336.9	17917			
EtFOSA	10.986	526.0 -> 219.0	1445	0.38	µg/L	99
		526.0 -> 169.0	1807			
EtFOSE	10.920	630.0 -> 58.9	4241	1.00	µg/L	100
MeFOSA	10.753	511.9 -> 219.0	1349	0.40	µg/L	95
		511.9 -> 169.0	1845			
MeFOSE	10.686	616.1 -> 58.9	3627	0.92	µg/L	100
PFDoDS	9.793	699.1 -> 79.9	359	0.20	µg/L	100
		699.1 -> 98.8	204			
NFDHA	5.336	295.0 -> 201.0	888	0.37	µg/L	94
		295.0 -> 84.9	271			
PFMBA	4.675	279.0 -> 85.1	3696	0.39	µg/L	100
PFMPA	3.426	229.0 -> 84.9	2642	0.39	µg/L	100
PFEESA	5.926	314.8 -> 134.9	9488	0.32	µg/L	99
		314.8 -> 82.9	360			

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

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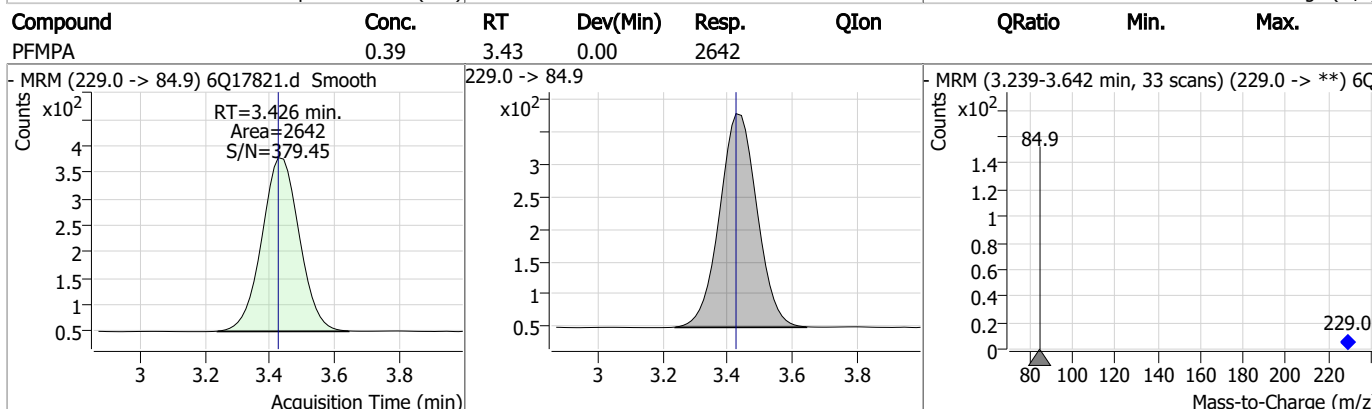
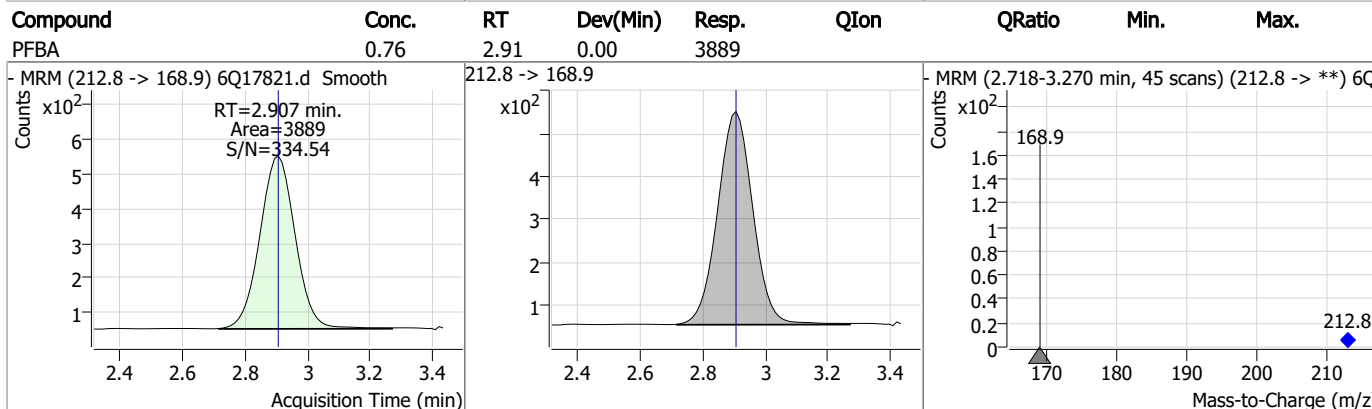
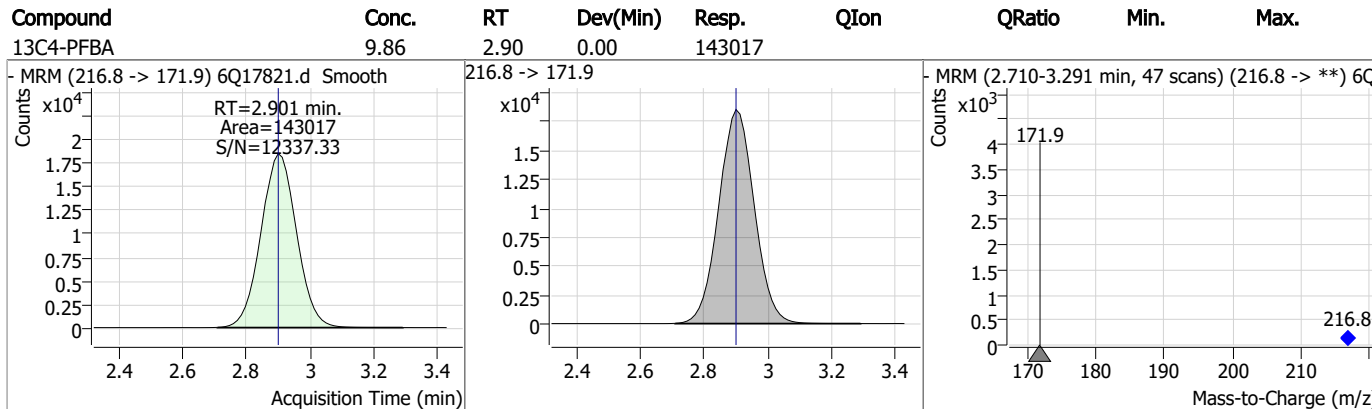
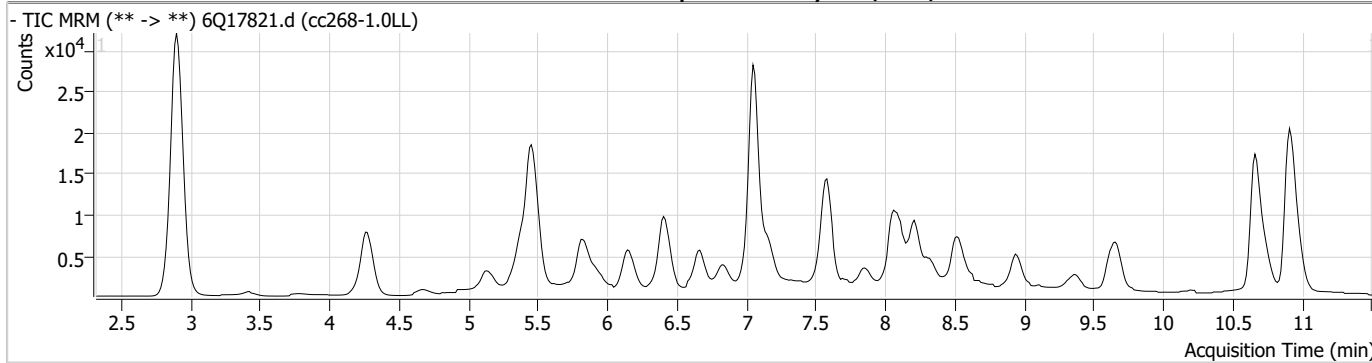
Perfluorinated Compounds by LC/MS/MS

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

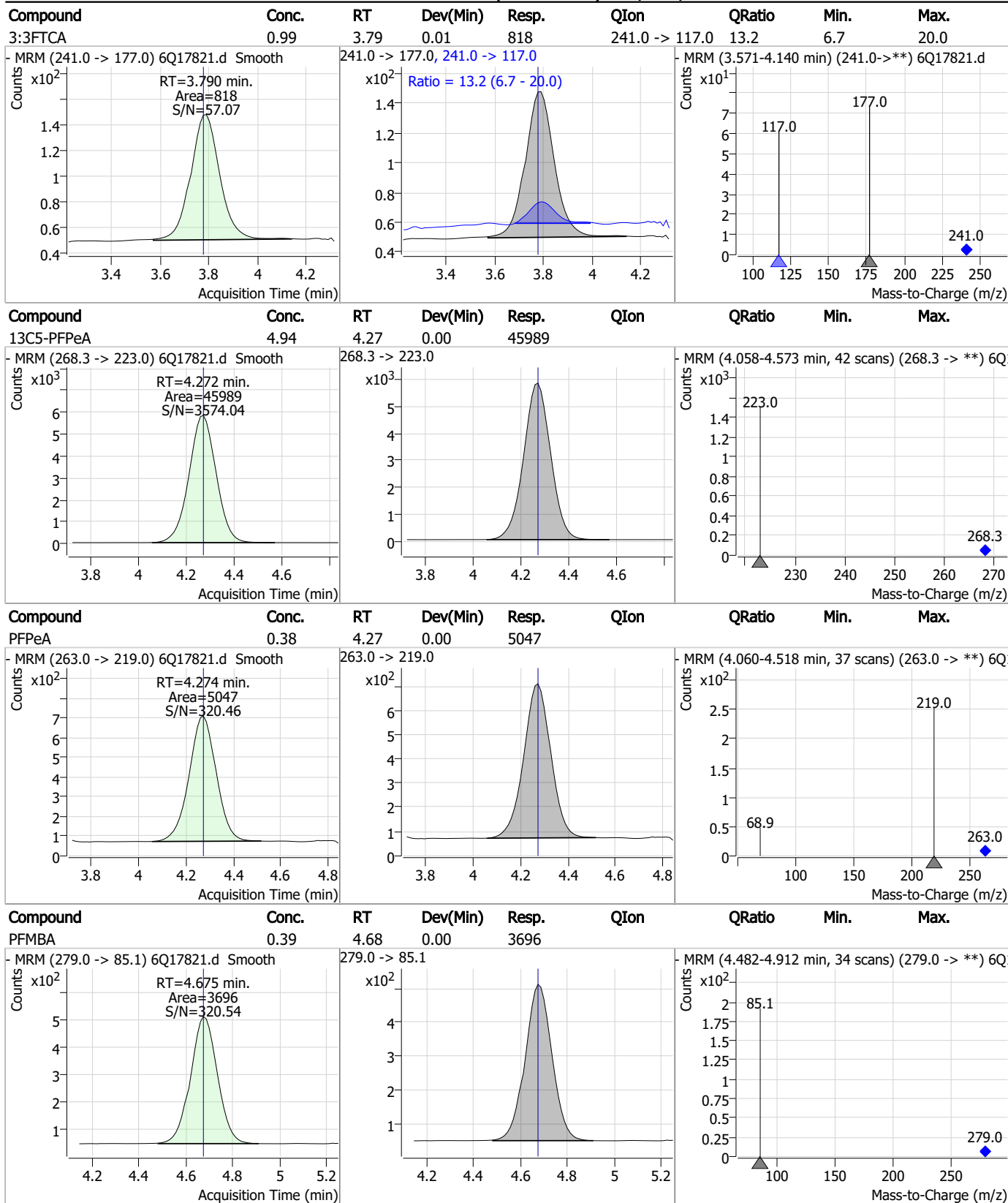
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Perfluorinated Compounds by LC/MS/MS



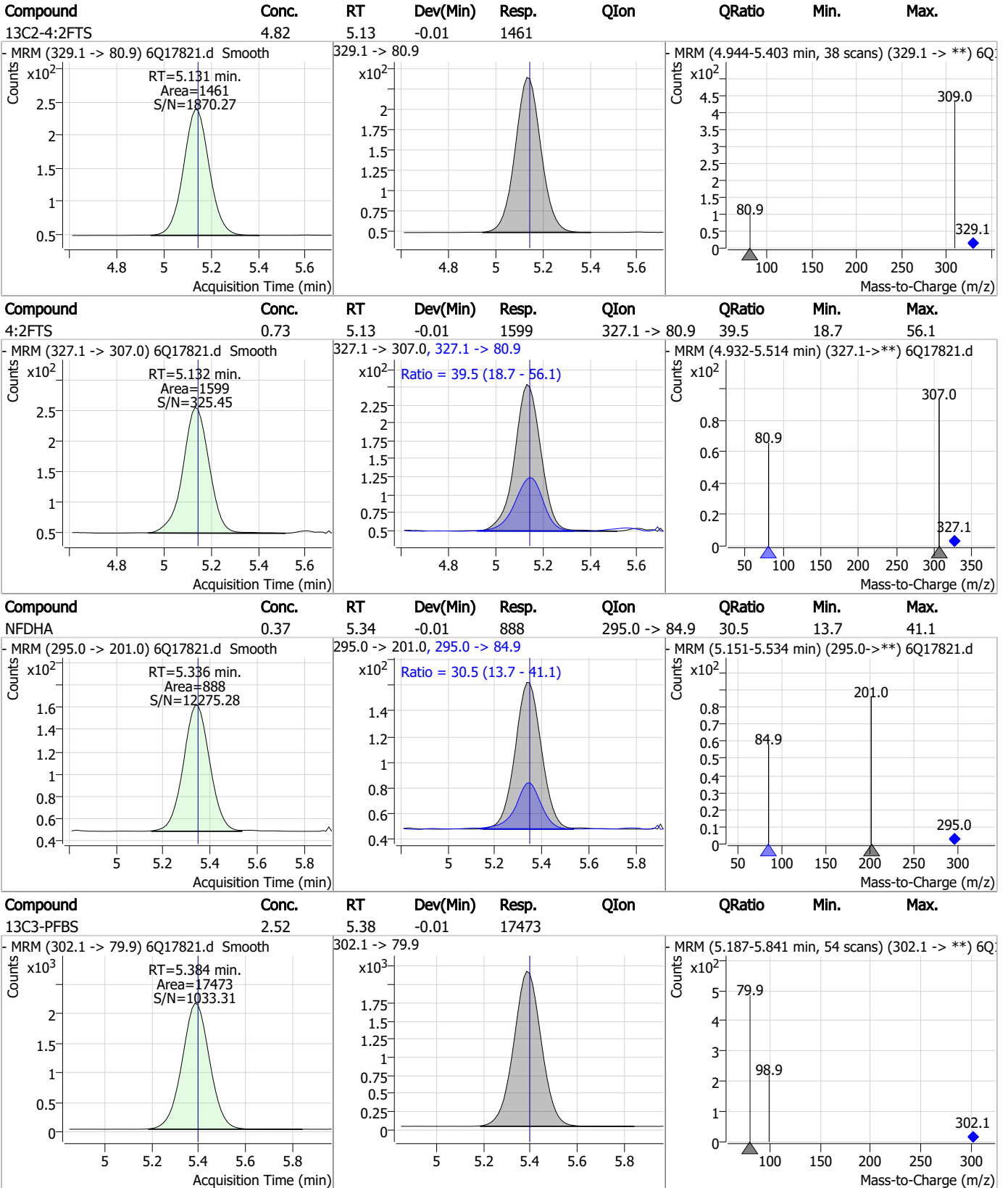
7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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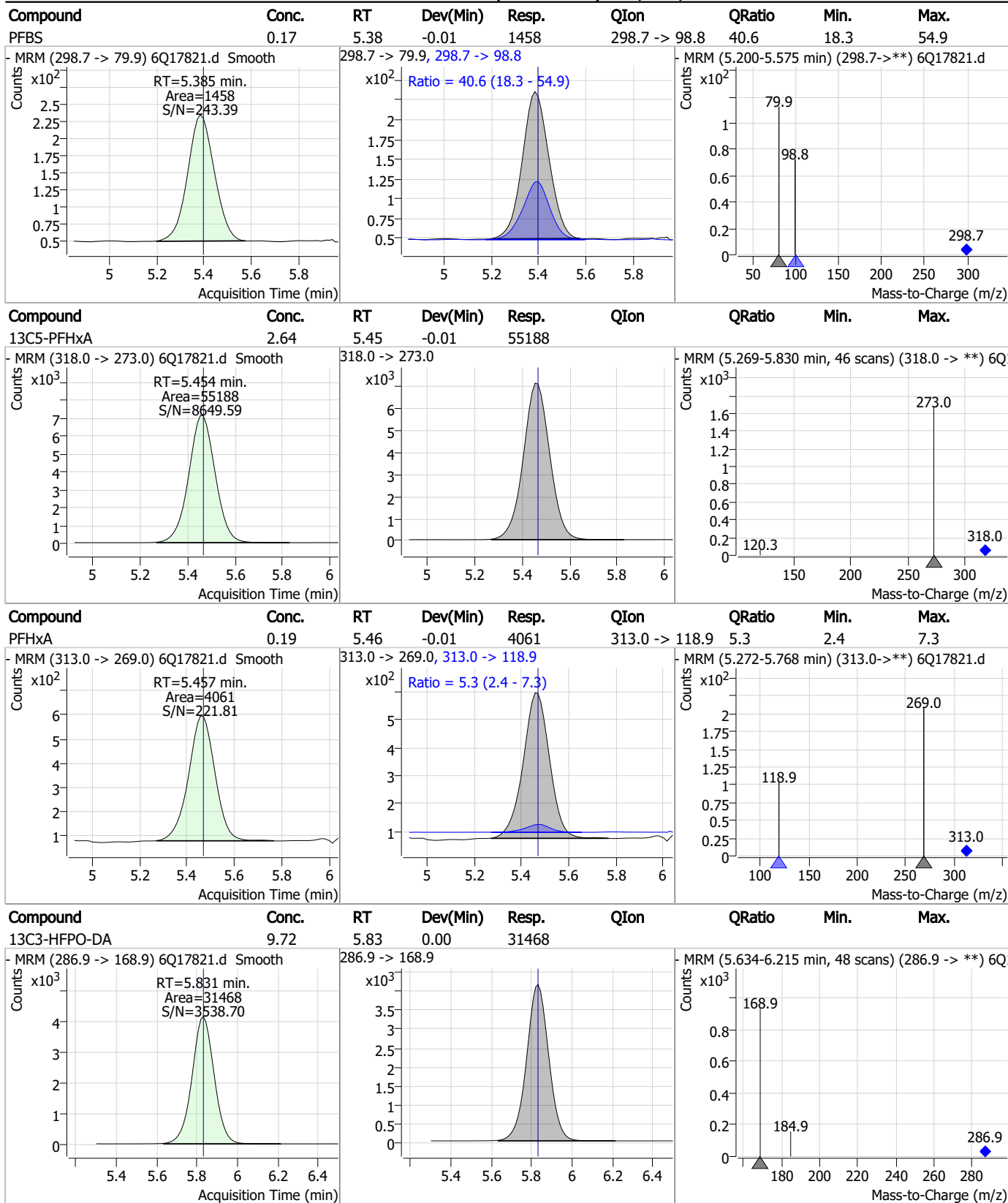
Perfluorinated Compounds by LC/MS/MS



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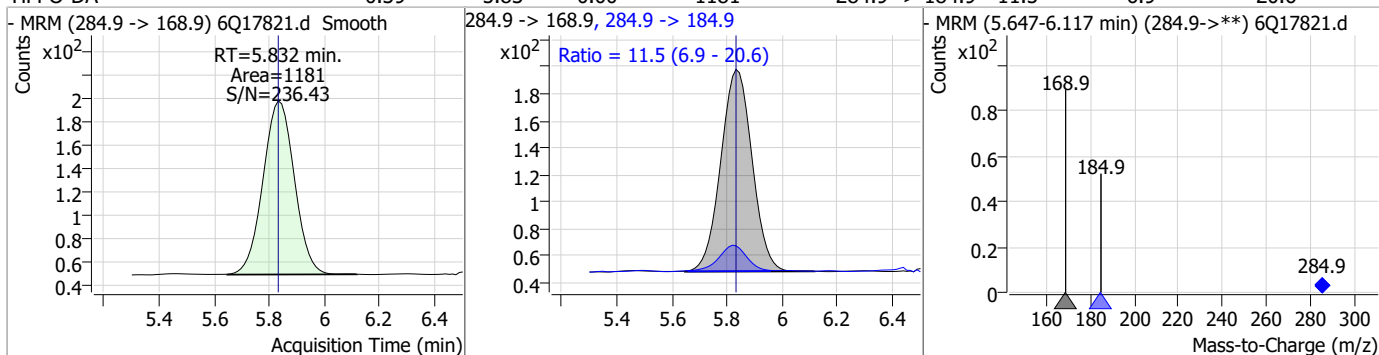
Perfluorinated Compounds by LC/MS/MS



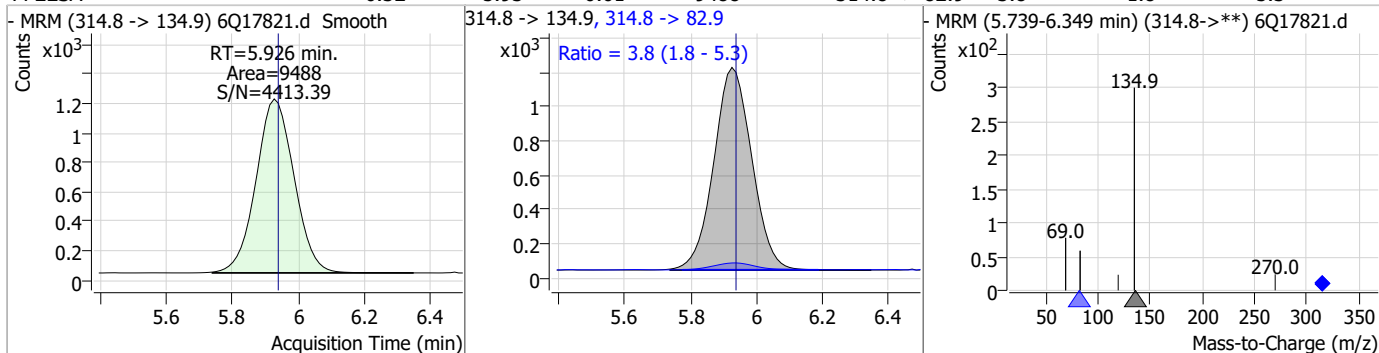
7.7.13
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Perfluorinated Compounds by LC/MS/MS

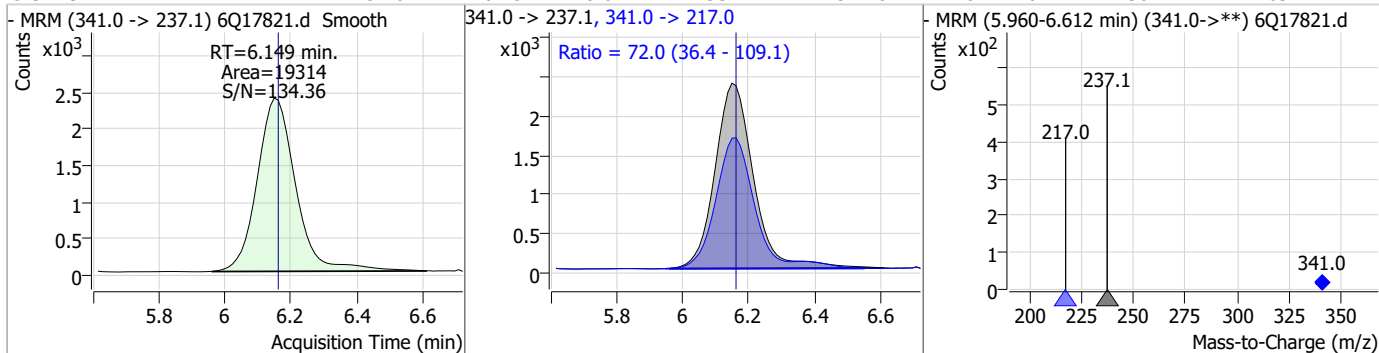
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.39	5.83	0.00	1181	284.9 -> 184.9	11.5	6.9	20.6



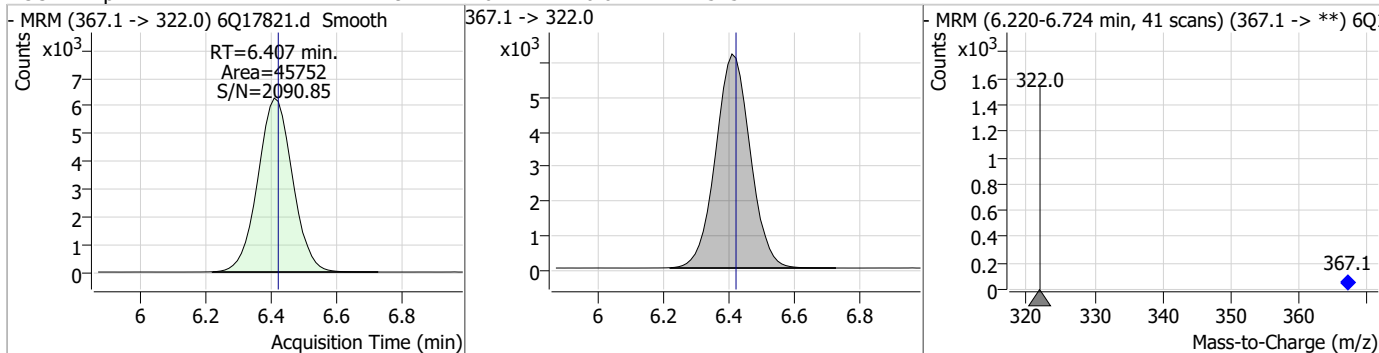
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.32	5.93	-0.01	9488	314.8 -> 82.9	3.8	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.10	6.15	-0.01	19314	341.0 -> 217.0	72.0	36.4	109.1

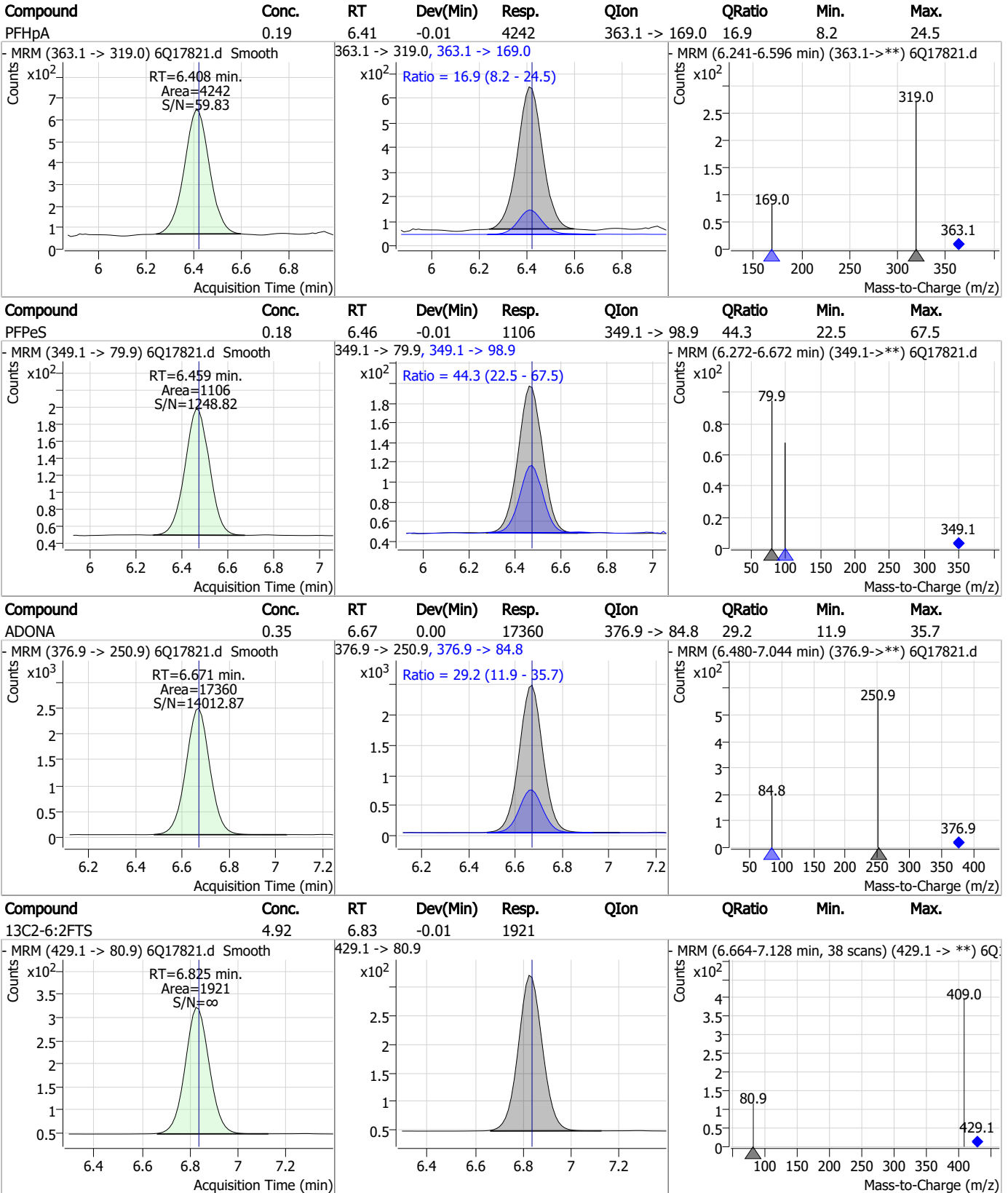


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.41	-0.01	45752	367.1 -> 322.0			



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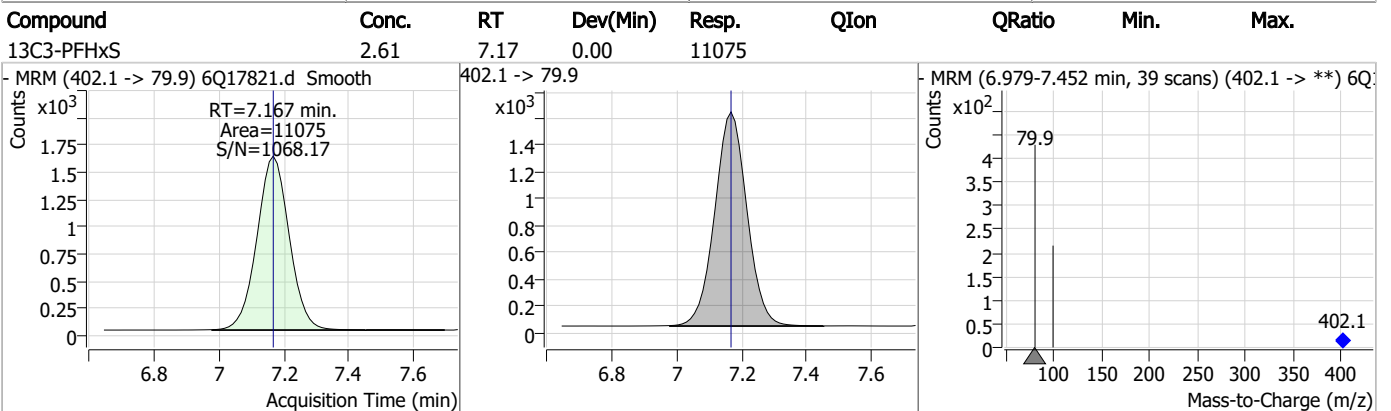
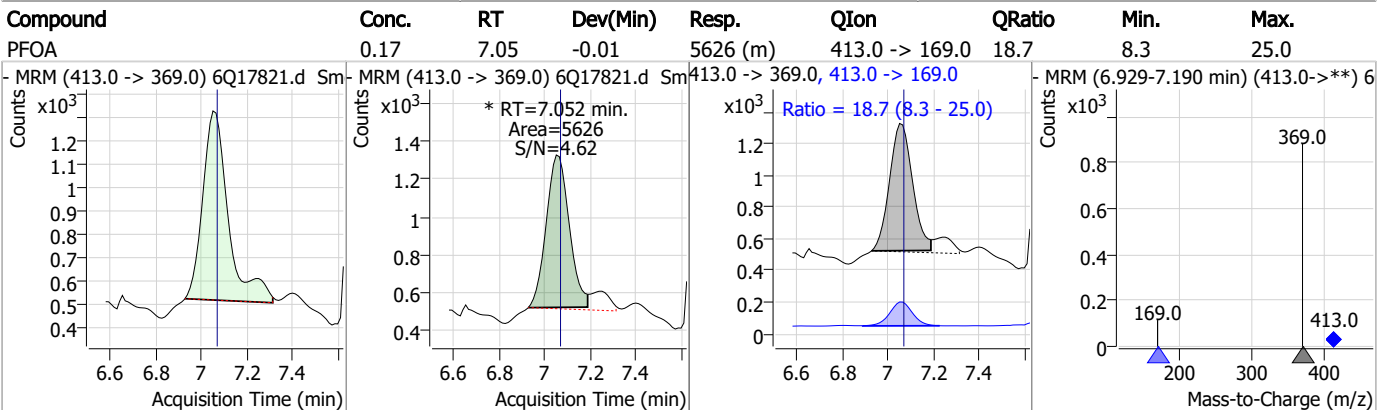
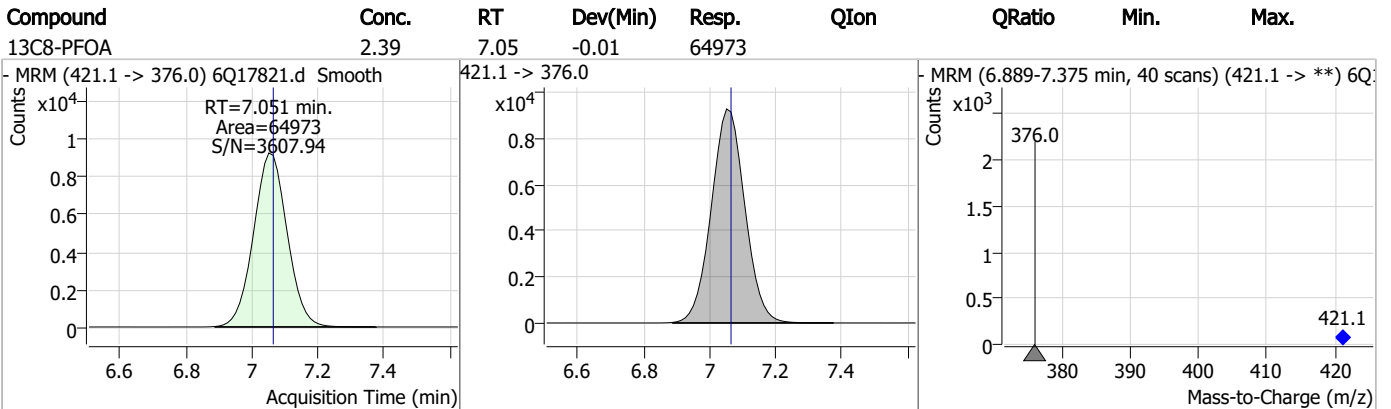
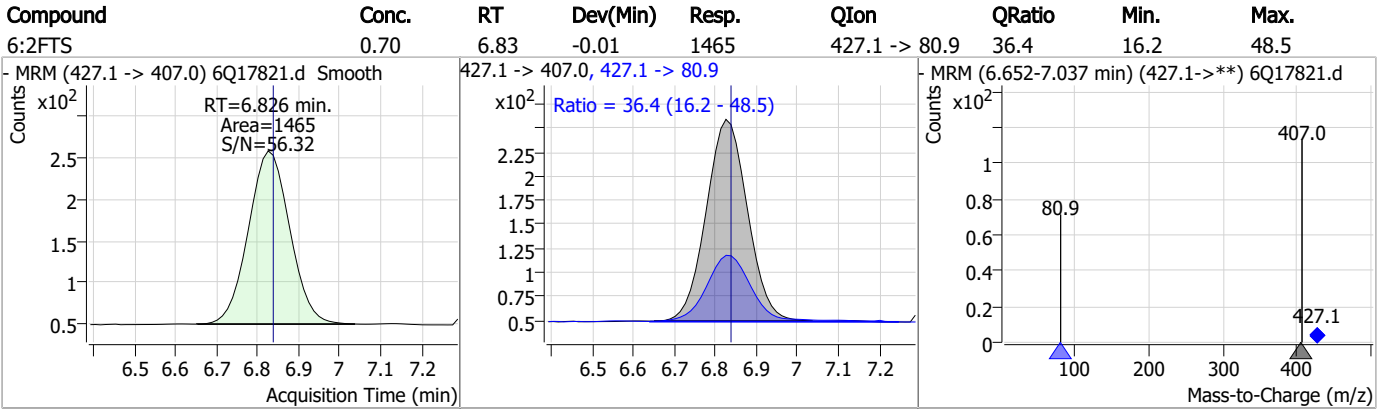
Perfluorinated Compounds by LC/MS/MS



7.7.13
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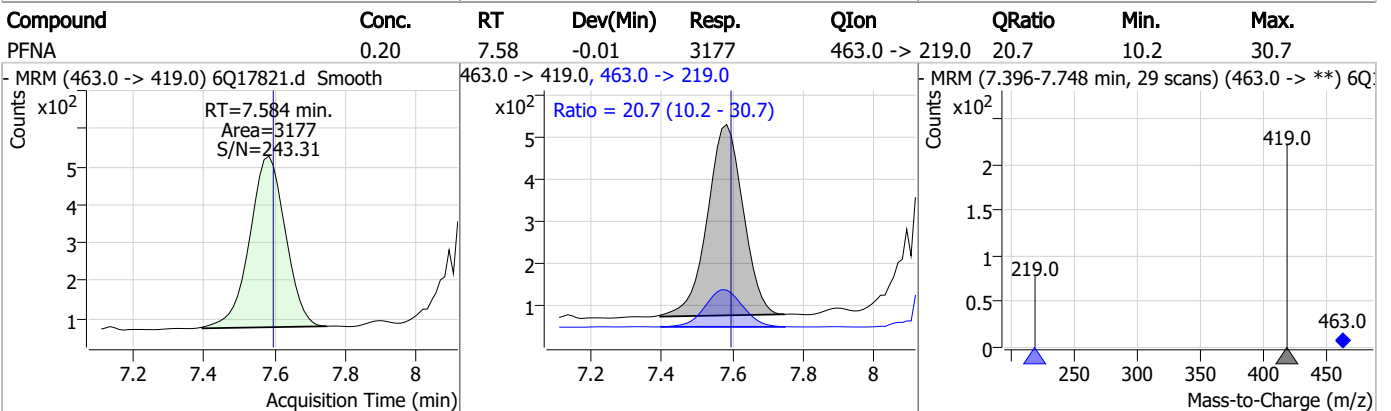
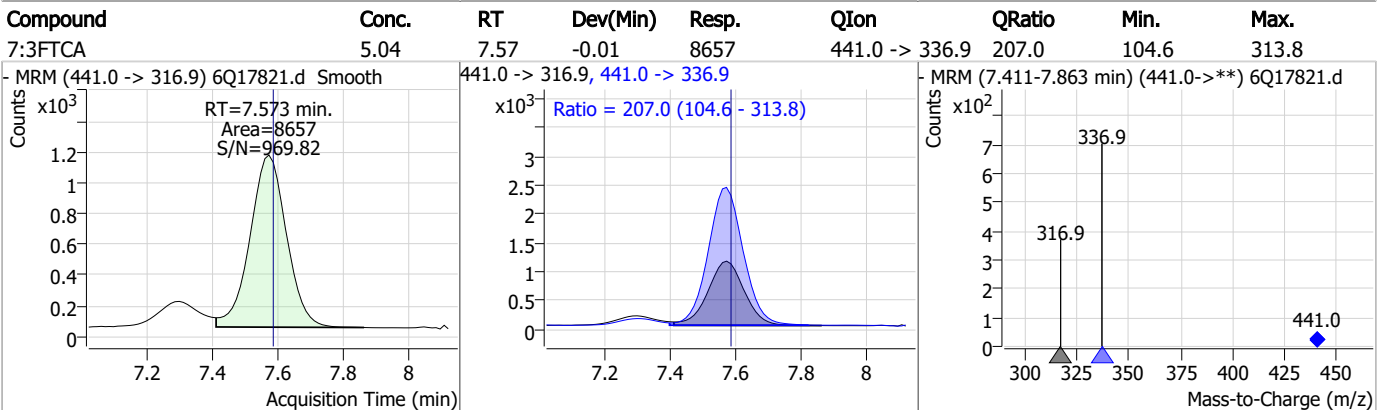
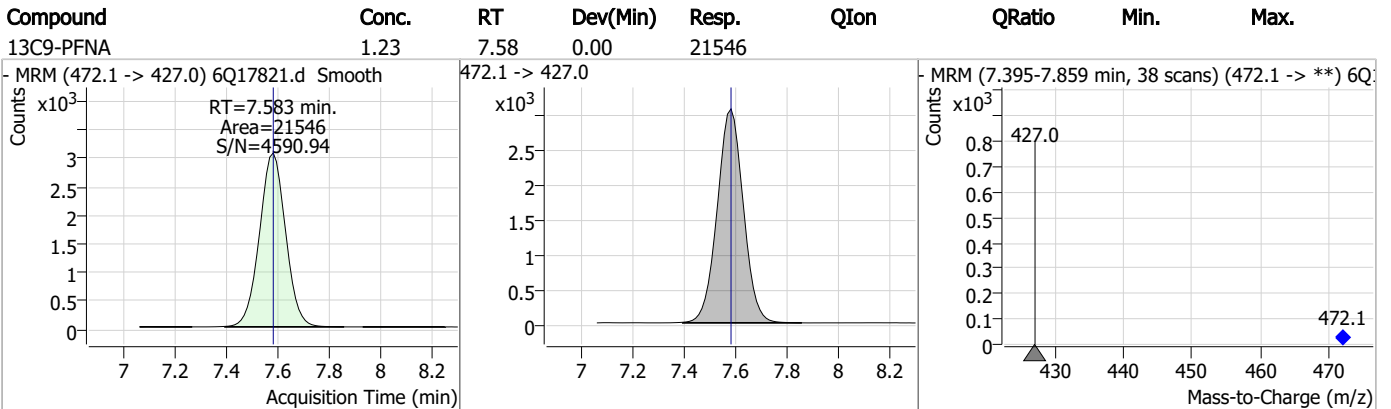
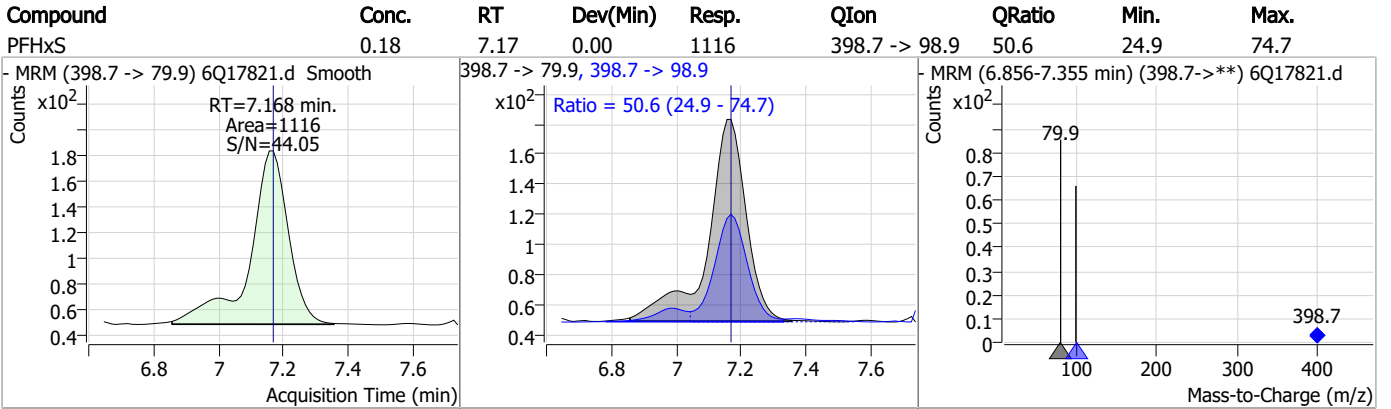


Perfluorinated Compounds by LC/MS/MS

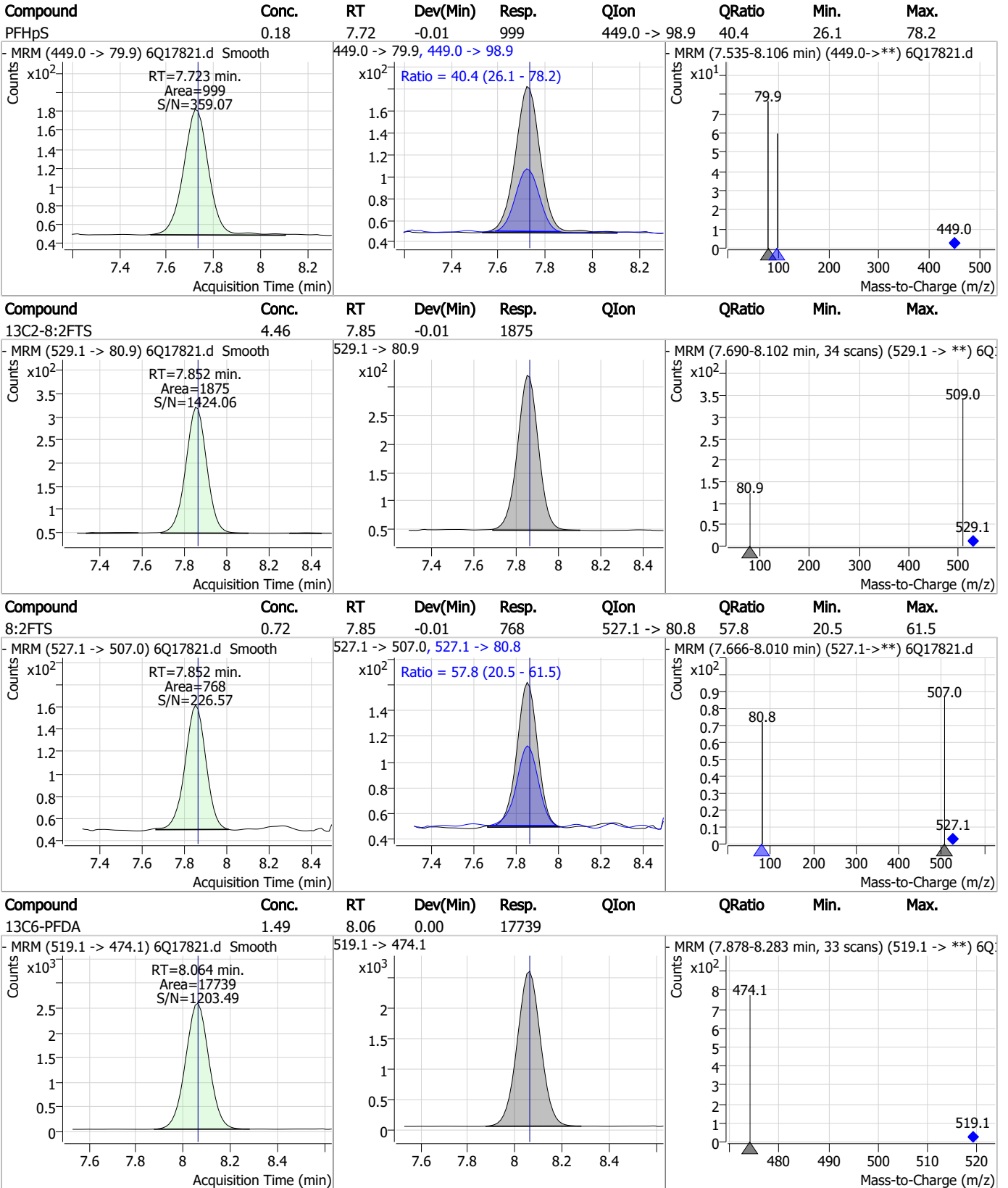


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

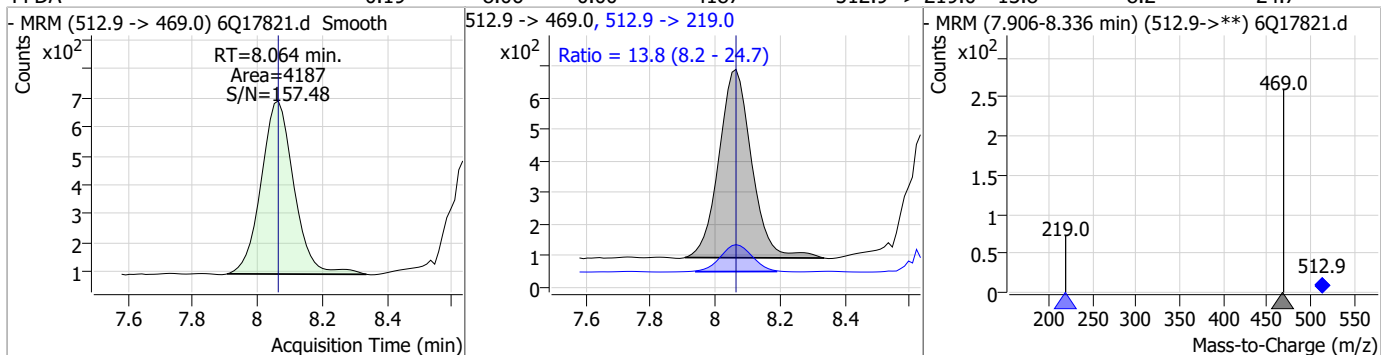


7.7.13
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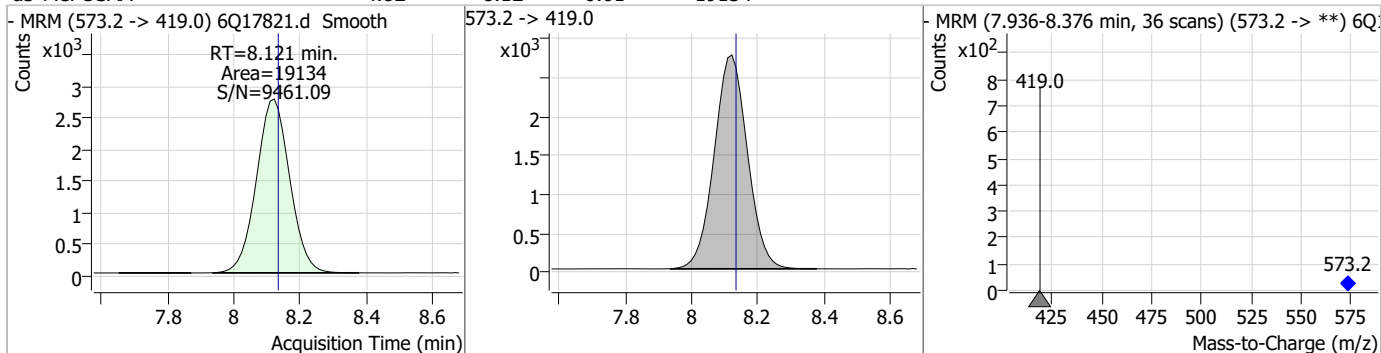


Perfluorinated Compounds by LC/MS/MS

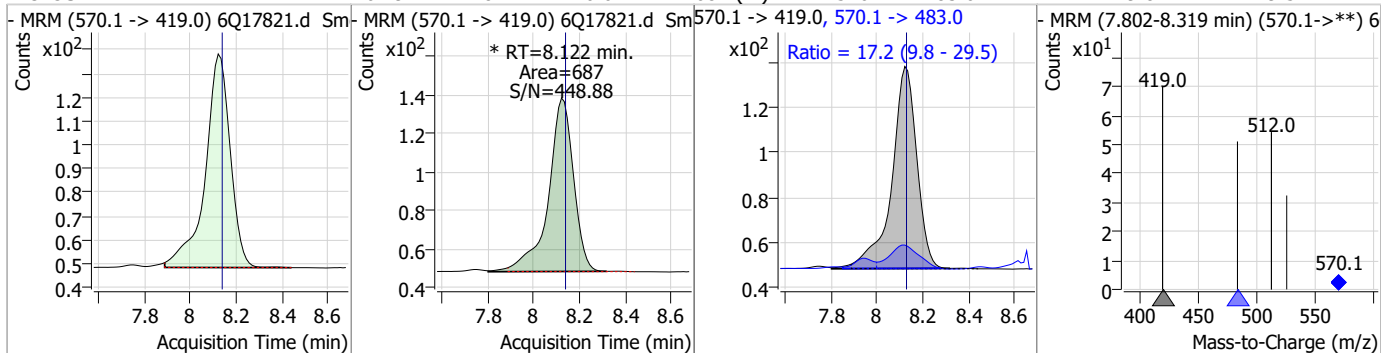
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.19	8.06	0.00	4187	512.9 -> 219.0	13.8	8.2	24.7



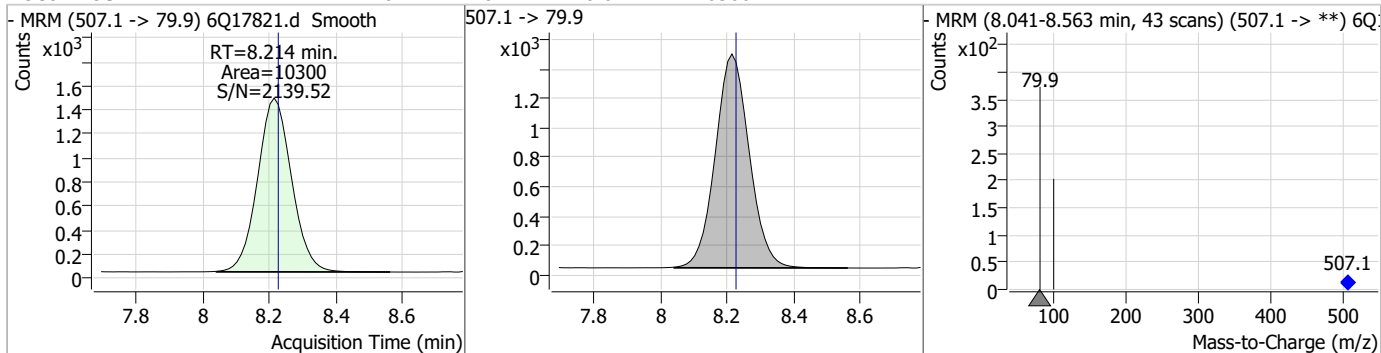
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.82	8.12	-0.01	19134				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.19	8.12	-0.01	687 (m)	570.1 -> 483.0	17.2	9.8	29.5

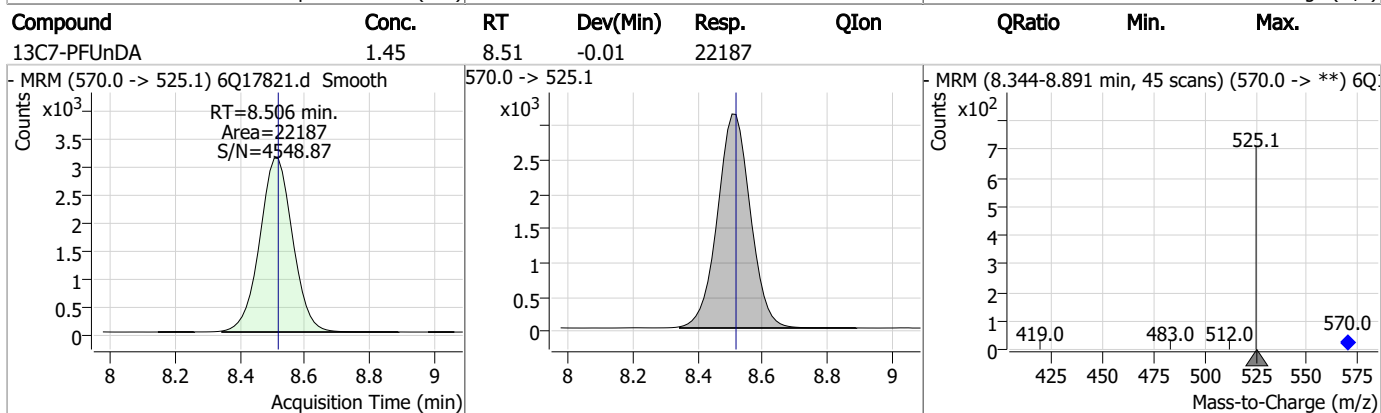
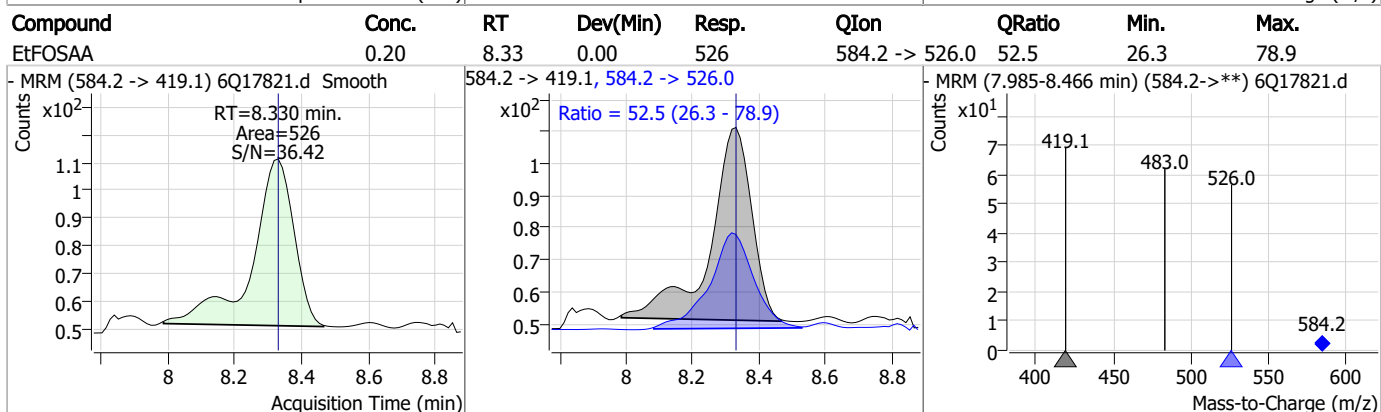
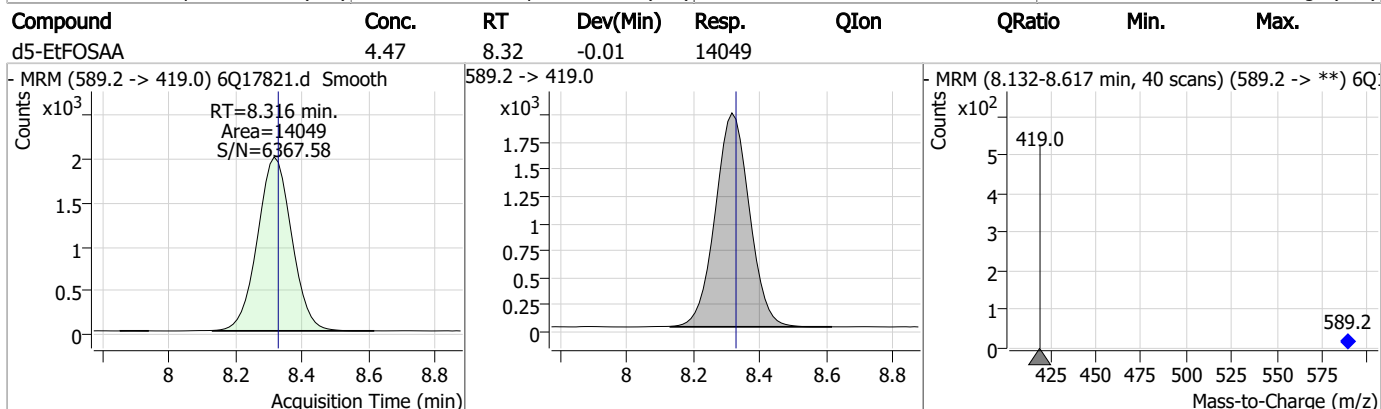
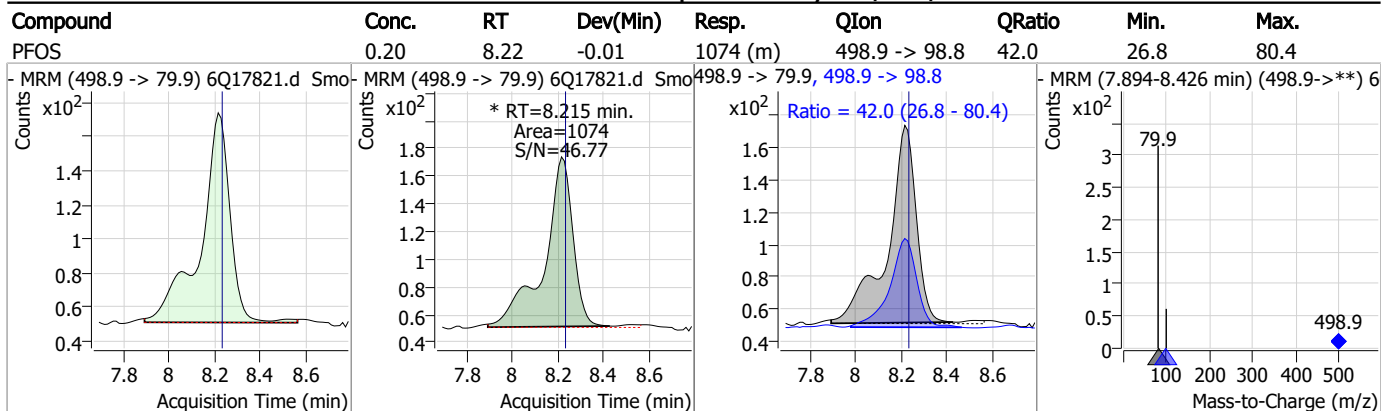


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.61	8.21	-0.01	10300				



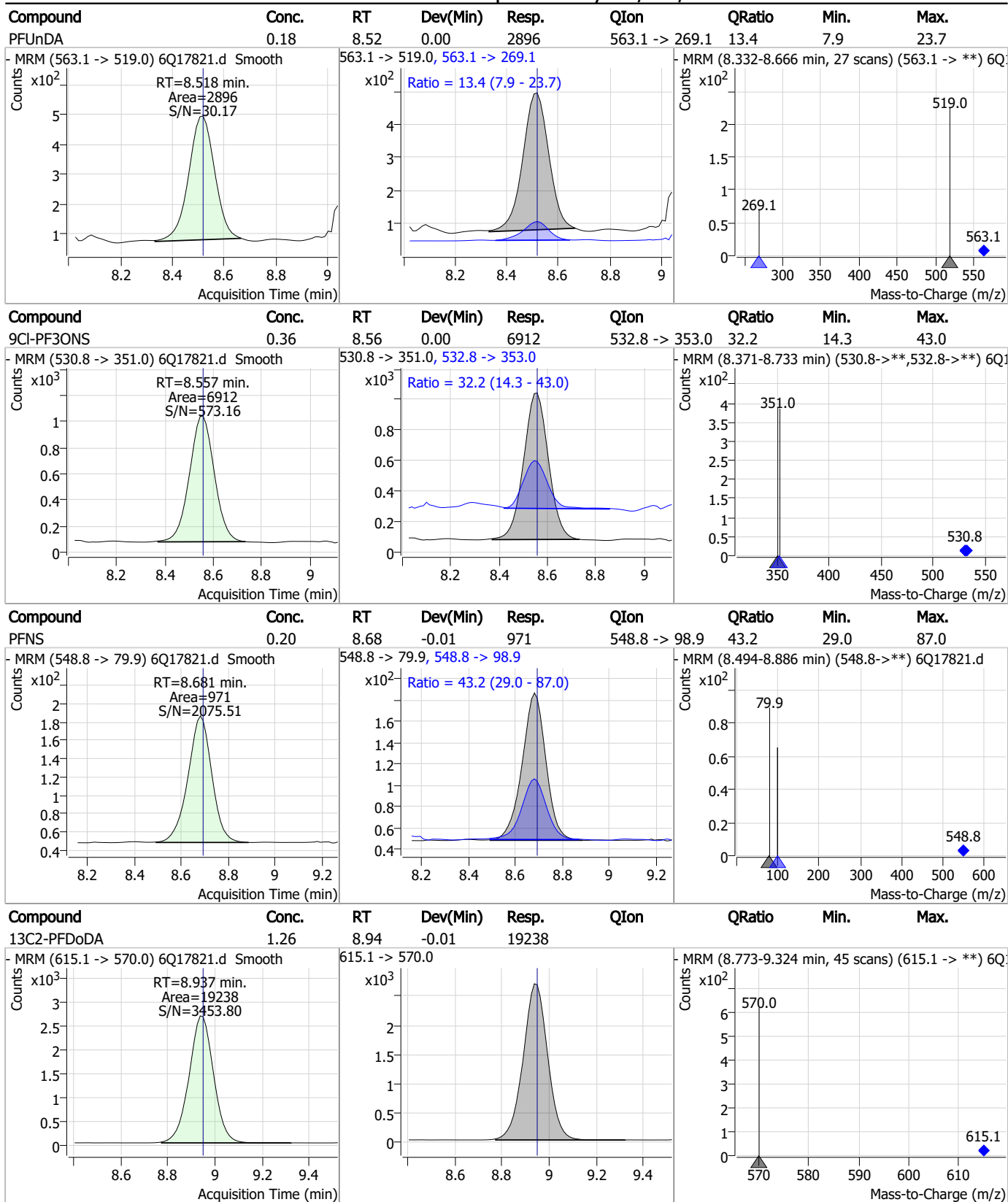
7.7.13
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Perfluorinated Compounds by LC/MS/MS



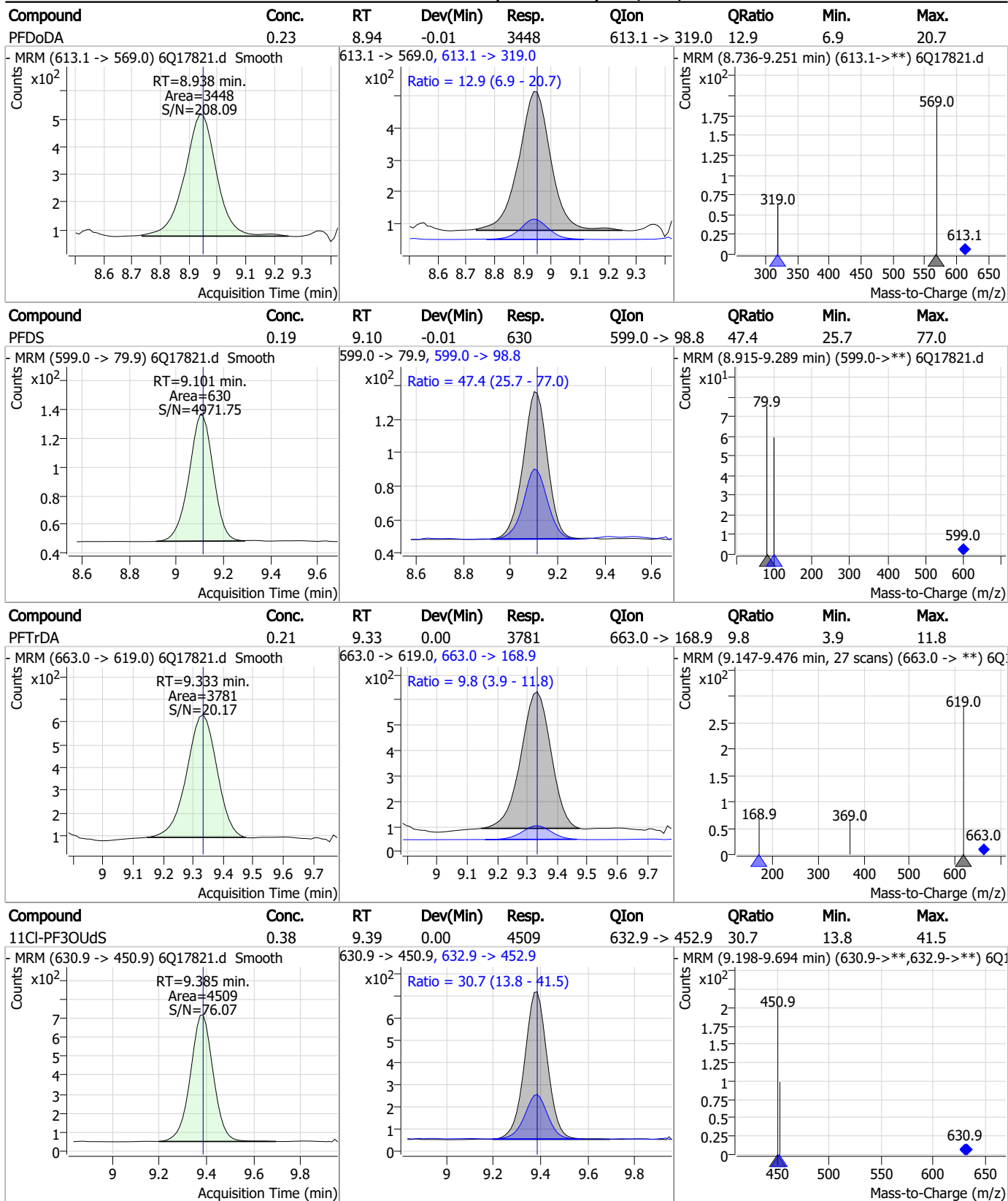
7.7.13
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



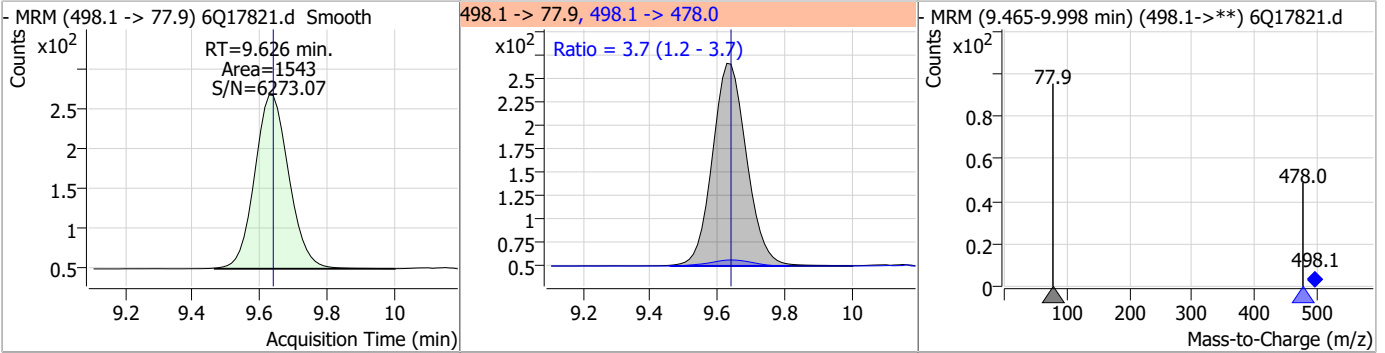
7.7.13

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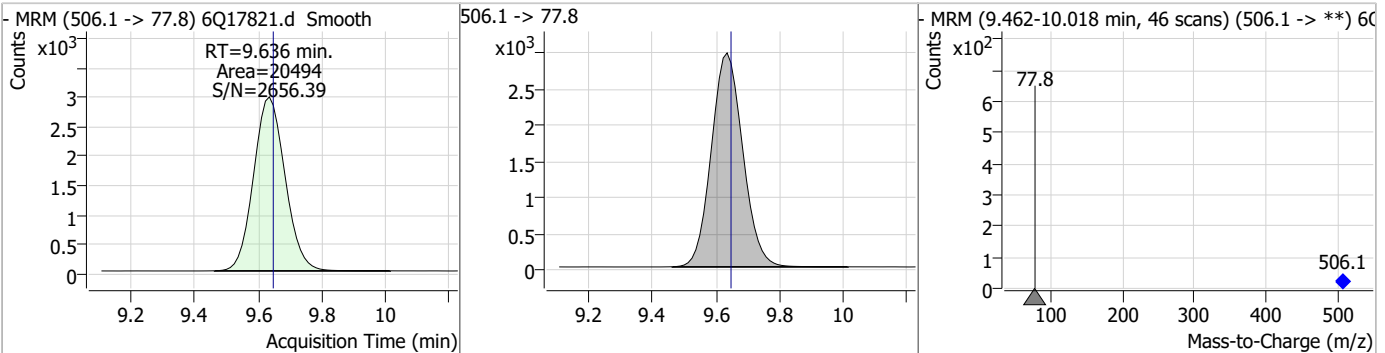


Perfluorinated Compounds by LC/MS/MS

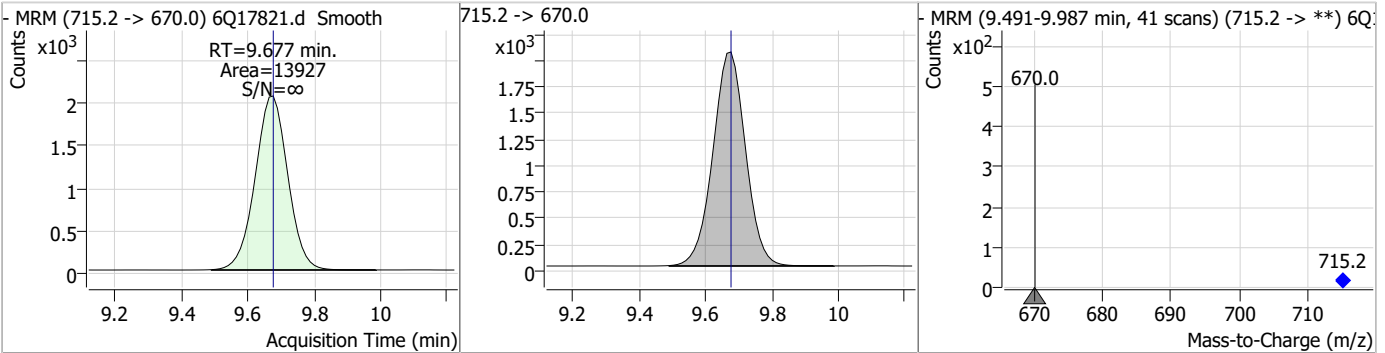
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.20	9.63	-0.01	1543	498.1 -> 478.0	3.7	1.2	3.7



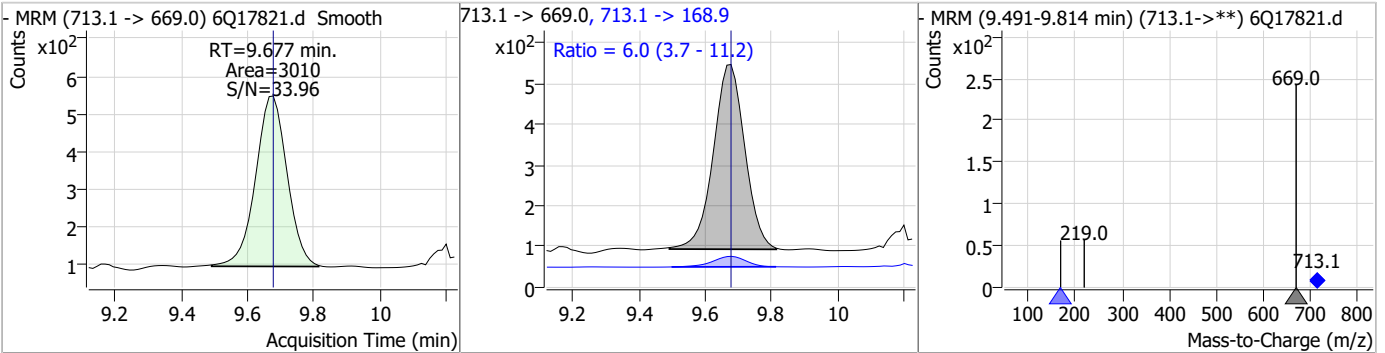
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.44	9.64	-0.01	20494				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.35	9.68	0.00	13927				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.21	9.68	0.00	3010	713.1 -> 168.9	6.0	3.7	11.2



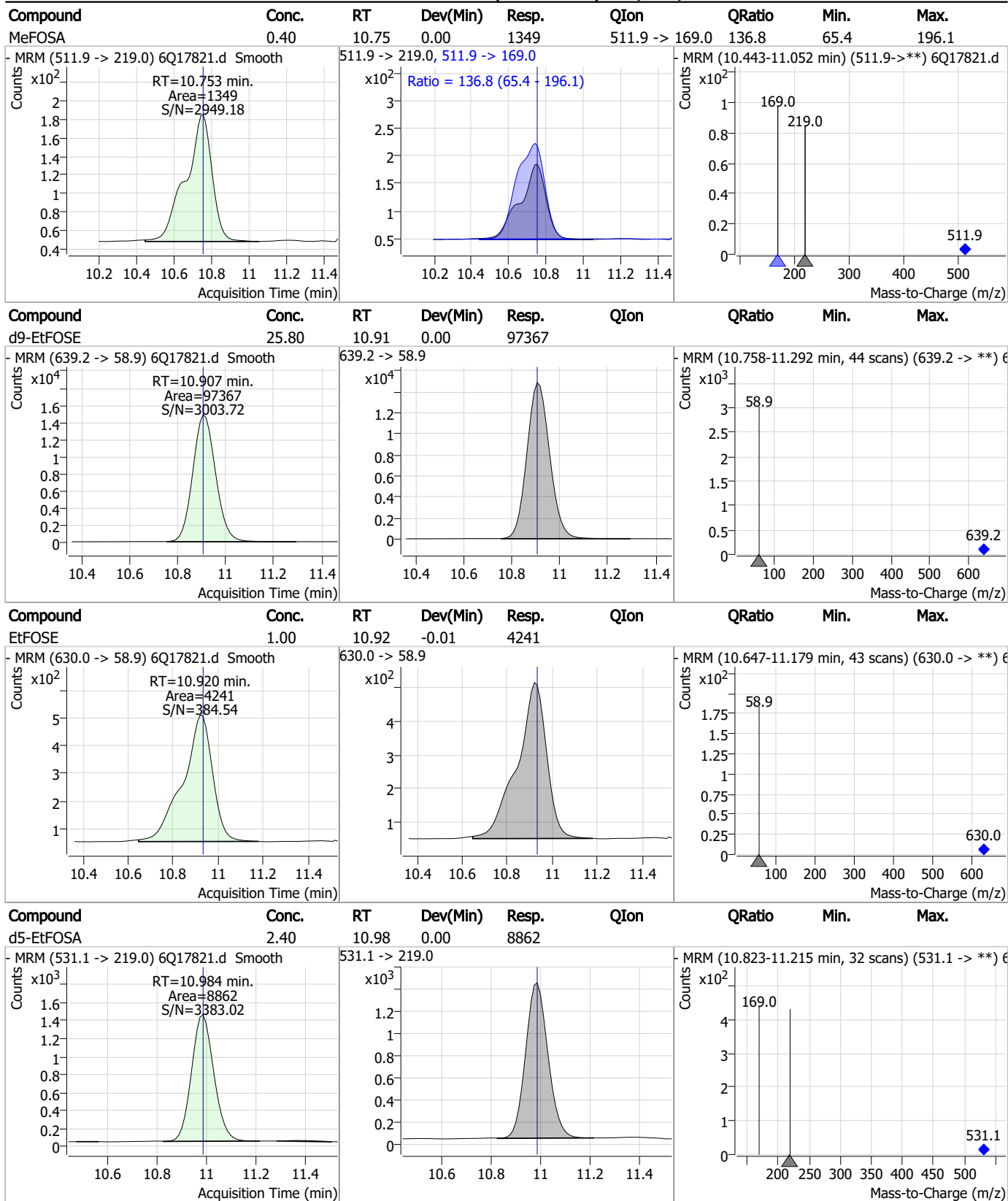
7.7.13
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.20	9.79	-0.01	359	699.1 -> 98.8	56.7	28.4	85.1
d7-MeFOSE	26.97	10.66	-0.01	84256				
MeFOSE	0.92	10.69	0.00	3627				
d3-MeFOSA	2.39	10.75	0.00	7343				

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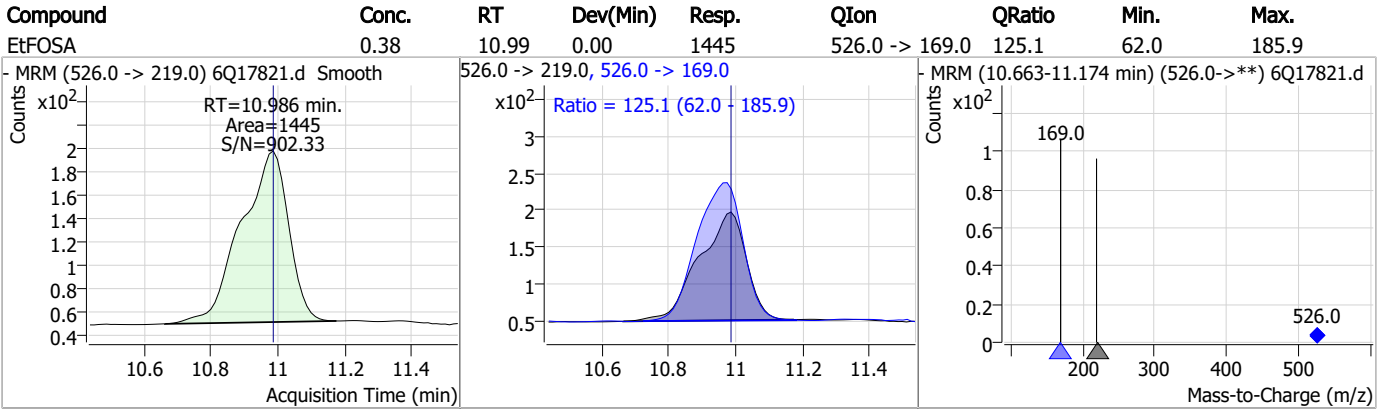
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q269-CC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17821.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/15/23 23:23 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.05	Poor instrument integration
MeFOSAA	2355-31-9		8.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.21	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17833.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 2:17:44 AM
 Sample Name : cc268-4
 Vial : P1-A5
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	141664	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	45844	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	53518	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	44689	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	66102	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	20800	1.25 µg/L	0.012
M6-PFDA	8.064	519.1 -> 474.1	17474	1.25 µg/L	0.000
M7-PFUnDA	8.518	570.0 -> 525.1	23094	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	20309	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	13728	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	21497	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	18612	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10851	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	10431	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1575	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1985	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	1993	5.00 µg/L	0.000
M3-MeFOSAA	8.121	573.2 -> 419.0	18474	5.00 µg/L	-0.012
M3-HFPO-DA	5.831	286.9 -> 168.9	31000	10.00 µg/L	0.000
M5-EtFOSAA	8.329	589.2 -> 419.0	14768	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	84390	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	93068	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8764	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7129	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	12363	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	61559	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7894	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	71539	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	19857	1.25 µg/L	0.012
13C5-PFNA	7.583	468.0 -> 423.0	23409	1.25 µg/L	0.000
13C2-PFHxA	5.467	315.1 -> 270.0	43324	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1575	5.24 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1985	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C2-8:2FTS	7.864	529.1 -> 80.9	1993	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-PFDoDA	8.949	615.1 -> 570.0	20309	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.8%		
13C2-PFTeDA	9.677	715.2 -> 670.0	13728	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.5%		
13C3-PFBS	5.397	302.1 -> 79.9	18612	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C3-PFHxS	7.179	402.1 -> 79.9	10851	2.58 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 = 103.2%	
13C4-PFBA	2.901	216.8 -> 171.9	141664	9.70 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C4-PFHpA	6.420	367.1 -> 322.0	44689	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	5.466	318.0 -> 273.0	53518	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C5-PFPeA	4.272	268.3 -> 223.0	45844	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.064	519.1 -> 474.1	17474	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C7-PFUnDA	8.518	570.0 -> 525.1	23094	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C8-FOSA	9.636	506.1 -> 77.8	21497	2.62 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOA	7.064	421.1 -> 376.0	66102	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOS	8.226	507.1 -> 79.9	10431	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C9-PFNA	7.595	472.1 -> 427.0	20800	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%	
d3-MeFOSAA	8.121	573.2 -> 419.0	18474	4.77 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C3-HFPO-DA	5.831	286.9 -> 168.9	31000	9.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
d3-MeFOSA	10.752	515.0 -> 219.0	7129	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
d5-EtFOSAA	8.329	589.2 -> 419.0	14768	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
d7-MeFOSE	10.660	623.2 -> 58.9	84390	27.71 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
d9-EtFOSE	10.907	639.2 -> 58.9	93068	25.29 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d5-EtFOSA	10.984	531.1 -> 219.0	8764	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
Target Compounds					QValue
4:2FTS	5.132	327.1 -> 307.0	20427	8.63 µg/L	96
		327.1 -> 80.9	8087		
6:2FTS	6.838	427.1 -> 407.0	18101	8.38 µg/L	89
		427.1 -> 80.9	6978		
8:2FTS	7.865	527.1 -> 507.0	10527	9.29 µg/L	90
		527.1 -> 80.8	4952		
EtFOSAA	8.330	584.2 -> 419.1	5702	2.07 µg/L	98
		584.2 -> 526.0	3071		
FOSA	9.639	498.1 -> 77.9	17977	2.23 µg/L	99
		498.1 -> 478.0	510		
MeFOSAA	8.134	570.1 -> 419.0	8871	2.48 µg/L	93
		570.1 -> 483.0	1460		
PFBA	2.907	212.8 -> 168.9	49366	9.71 µg/L	100
PFBS	5.385	298.7 -> 79.9	18028	1.98 µg/L	100
		298.7 -> 98.8	6634		
PFDA	8.064	512.9 -> 469.0	46924	2.17 µg/L	99
		512.9 -> 219.0	7904		
PFDoDA	8.938	613.1 -> 569.0	39275	2.43 µg/L	99
		613.1 -> 319.0	5626		
PFDS	9.101	599.0 -> 79.9	7389	2.18 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3526	2.46	µg/L	99
		363.1 -> 319.0	55006			
PFHpS	7.723	363.1 -> 169.0	8668	2.14	µg/L	99
		449.0 -> 79.9	11931			
PFHxA	5.469	449.0 -> 98.9	6152	2.39	µg/L	99
		313.0 -> 269.0	50731			
PFHxS	7.180	313.0 -> 118.9	2349	2.25	µg/L	93
		398.7 -> 79.9	13542			
PFNA	7.584	398.7 -> 98.9	6075	2.53	µg/L	100
		463.0 -> 419.0	39171			
PFNS	8.681	463.0 -> 219.0	7988	2.24	µg/L	89
		548.8 -> 79.9	11308			
PFOA	7.066	548.8 -> 98.9	5665	2.39	µg/L	98
		413.0 -> 369.0	78690			
PFOS	8.228	413.0 -> 169.0	12441	2.04	µg/L	97
		498.9 -> 79.9	11156			
PFPeA	4.274	498.9 -> 98.8	5760	4.76	µg/L	100
		263.0 -> 219.0	63021			
PFPeS	6.471	349.1 -> 79.9	14062	2.36	µg/L	98
		349.1 -> 98.9	6135			
PFTeDA	9.677	713.1 -> 669.0	35237	2.51	µg/L	98
		713.1 -> 168.9	2451			
PFTrDA	9.333	663.0 -> 619.0	46021	2.45	µg/L	97
		663.0 -> 168.9	4057			
PFUnDA	8.518	563.1 -> 519.0	36919	2.20	µg/L	98
		563.1 -> 269.1	5517			
11CI-PF3OUdS	9.385	630.9 -> 450.9	53405	4.56	µg/L	92
		632.9 -> 452.9	16978			
9CI-PF3ONS	8.557	530.8 -> 351.0	89576	4.79	µg/L	100
		532.8 -> 353.0	25537			
ADONA	6.671	376.9 -> 250.9	225943	4.58	µg/L	90
		376.9 -> 84.8	64386			
HFPO-DA	5.832	284.9 -> 168.9	14494	4.84	µg/L	100
		284.9 -> 184.9	1994			
3:3FTCA	3.777	241.0 -> 177.0	9923	12.10	µg/L	100
		241.0 -> 117.0	1331			
5:3FTCA	6.161	341.0 -> 237.1	219133	59.66	µg/L	99
		341.0 -> 217.0	158319			
7:3FTCA	7.573	441.0 -> 316.9	99211	59.54	µg/L	91
		441.0 -> 336.9	222103			
EtFOSA	10.986	526.0 -> 219.0	17866	4.71	µg/L	99
		526.0 -> 169.0	22394			
EtFOSE	10.920	630.0 -> 58.9	53016	13.07	µg/L	100
		511.9 -> 219.0	15369			
MeFOSA	10.753	511.9 -> 169.0	21462	4.68	µg/L	92
		616.1 -> 58.9	46130			
MeFOSE	10.673	699.1 -> 79.9	3883	11.69	µg/L	100
		699.1 -> 98.8	2162			
PFDoDS	9.805	295.0 -> 201.0	10248	2.17	µg/L	99
		295.0 -> 84.9	2963			
NFDHA	5.348	279.0 -> 85.1	46967	4.38	µg/L	97
		229.0 -> 84.9	33122			
PFMBA	4.675	314.8 -> 134.9	113958	4.97	µg/L	100
		314.8 -> 82.9	4031			
PFMPA	3.426			4.87	µg/L	100
PFEESA	5.926			4.00	µg/L	100

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

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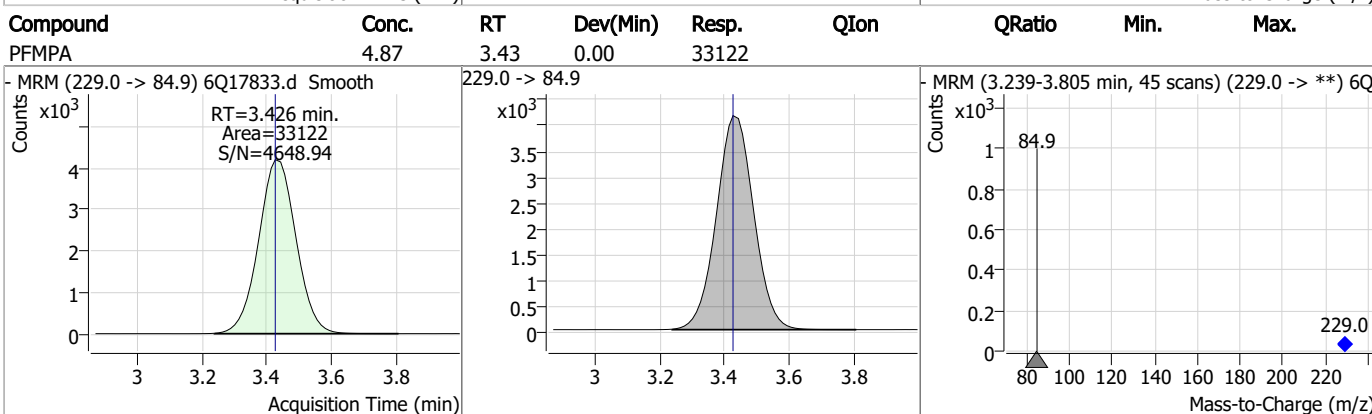
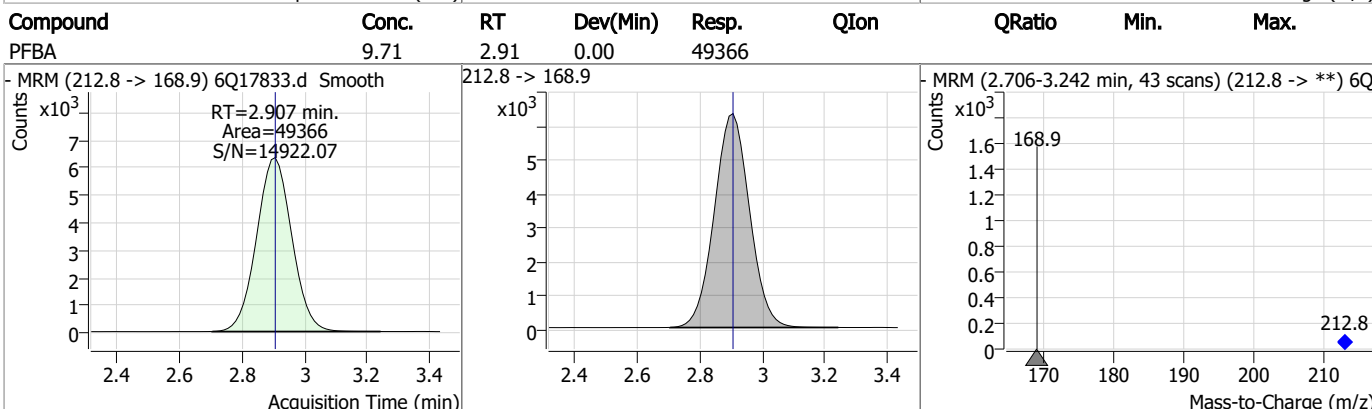
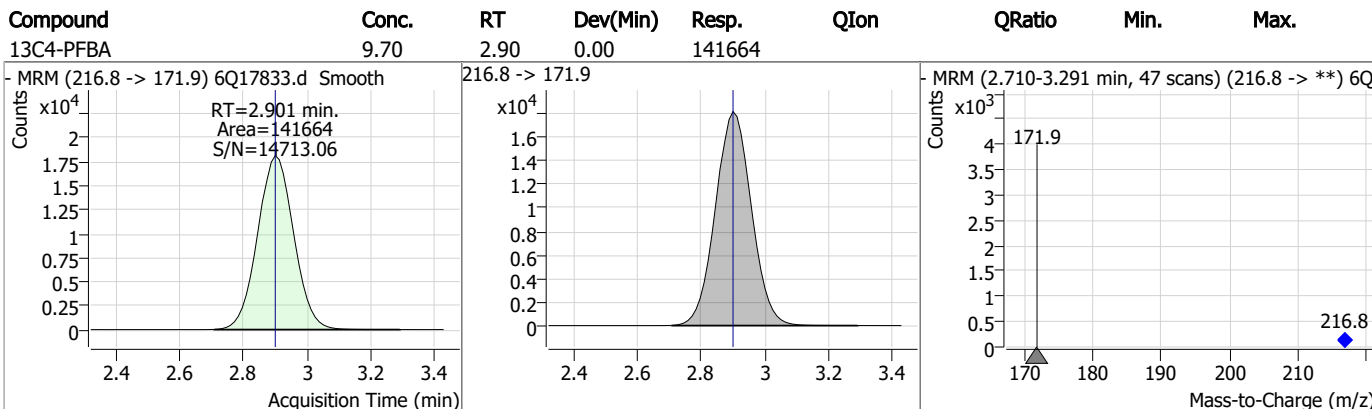
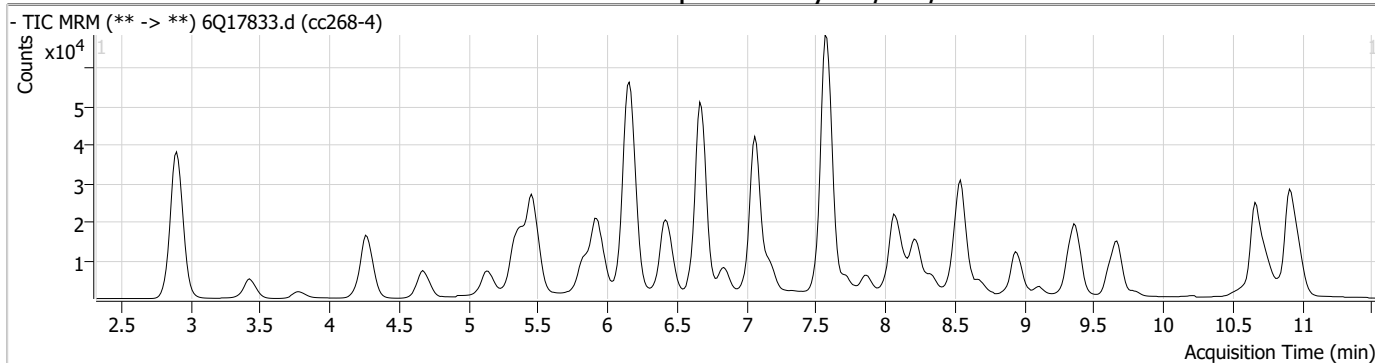
Perfluorinated Compounds by LC/MS/MS

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

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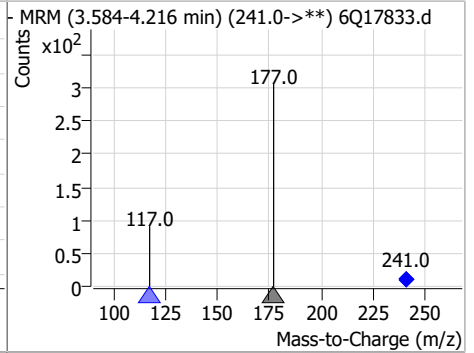
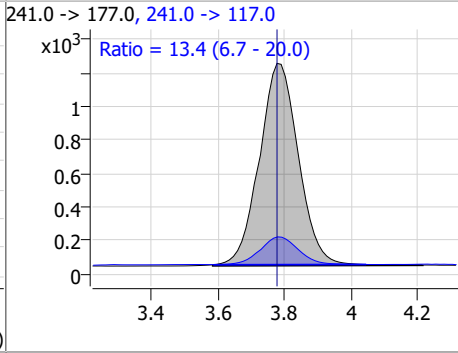
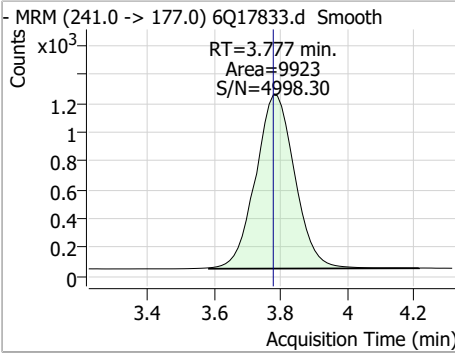
Perfluorinated Compounds by LC/MS/MS



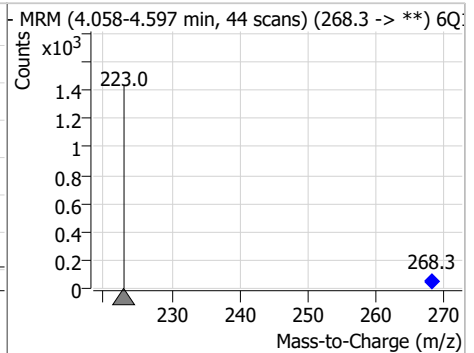
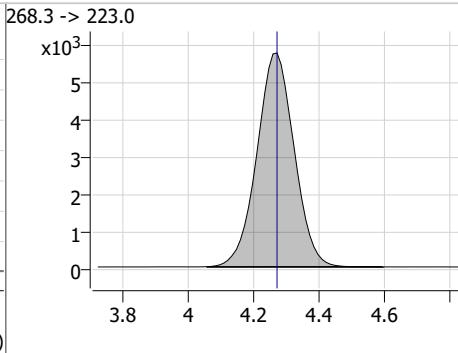
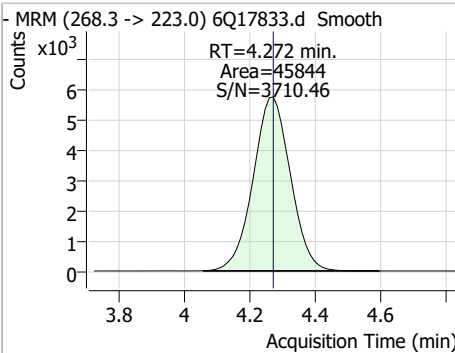
7.7.14
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Perfluorinated Compounds by LC/MS/MS

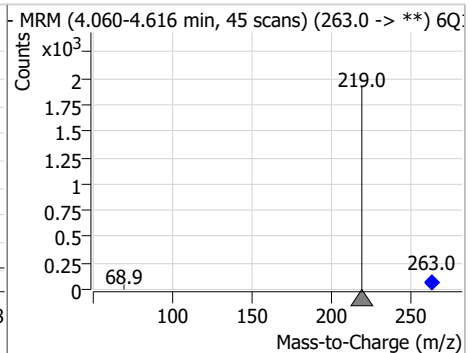
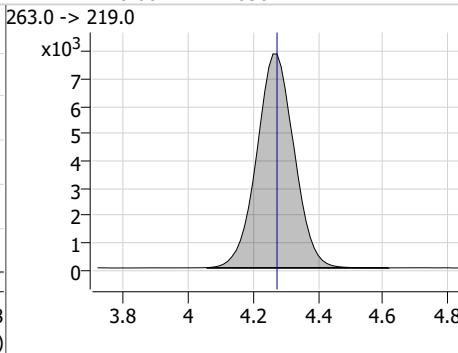
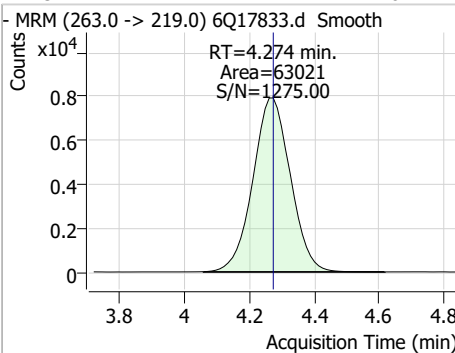
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.10	3.78	0.00	9923	241.0 -> 117.0	13.4	6.7	20.0



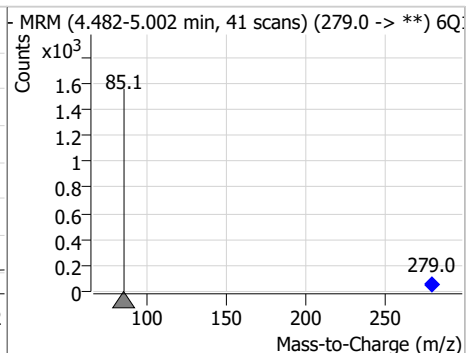
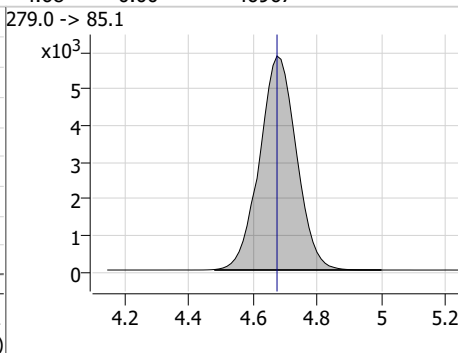
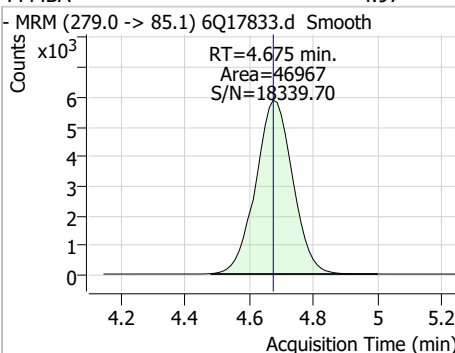
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.03	4.27	0.00	45844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.76	4.27	0.00	63021				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.97	4.68	0.00	46967				



Perfluorinated Compounds by LC/MS/MS

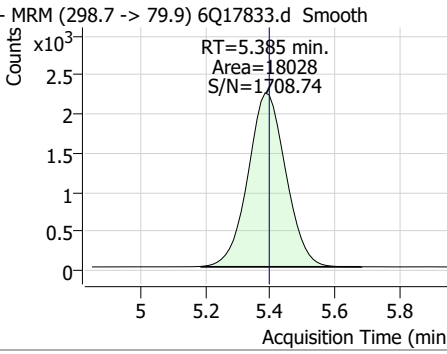
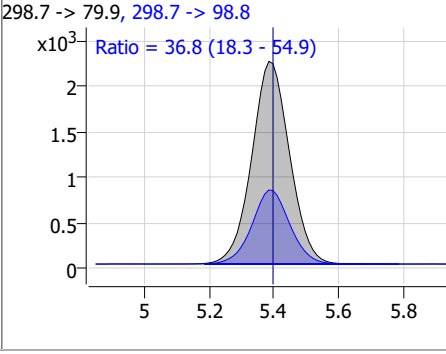
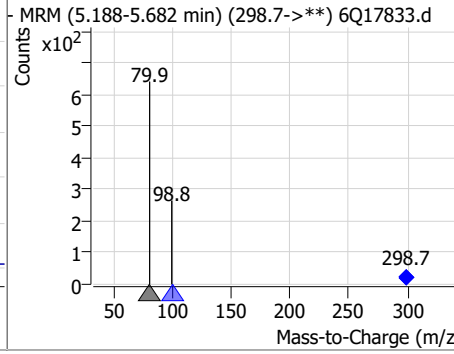
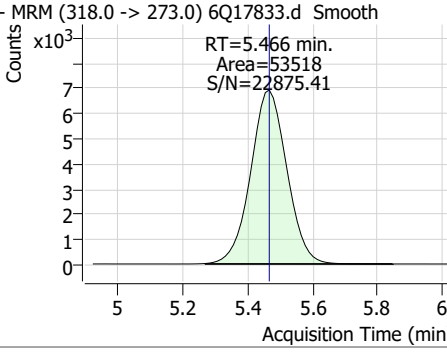
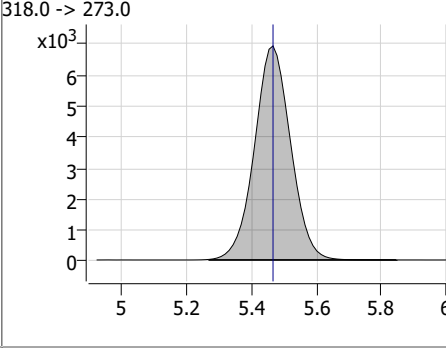
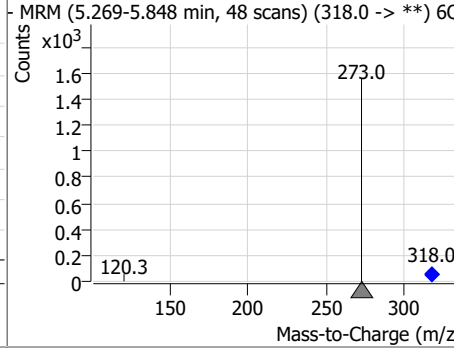
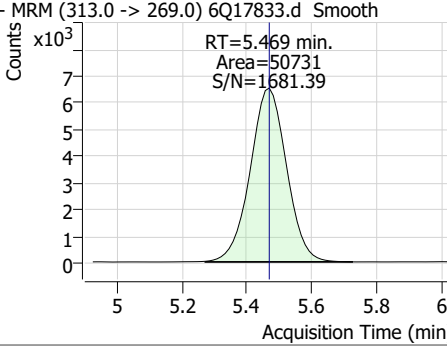
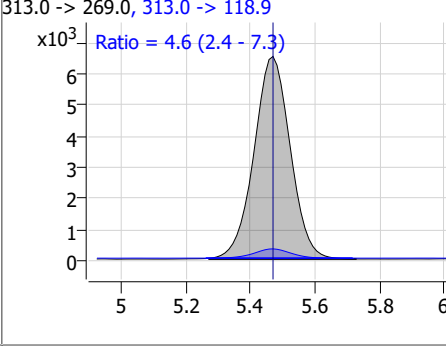
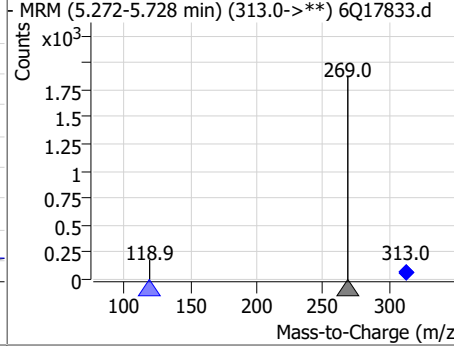
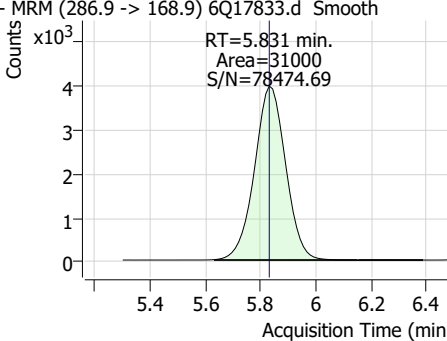
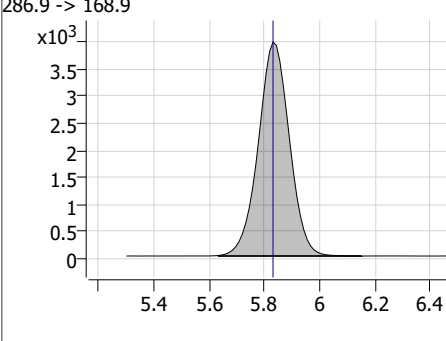
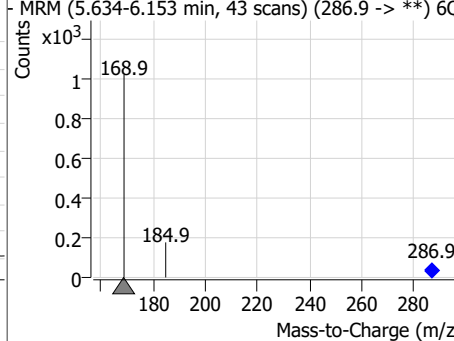
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.24	5.13	-0.01	1575				
4:2FTS	8.63	5.13	-0.01	20427	327.1 -> 80.9	39.6	18.7	56.1
NFDHA	4.38	5.35	0.00	10248	295.0 -> 84.9	28.9	13.7	41.1
13C3-PFBS	2.71	5.40	0.00	18612				

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Perfluorinated Compounds by LC/MS/MS

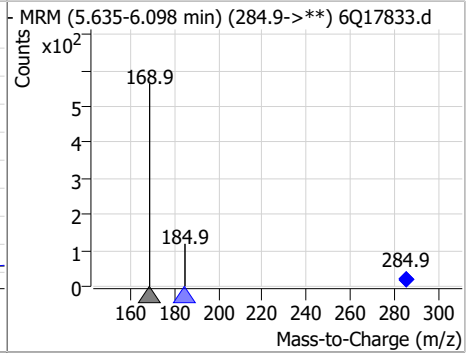
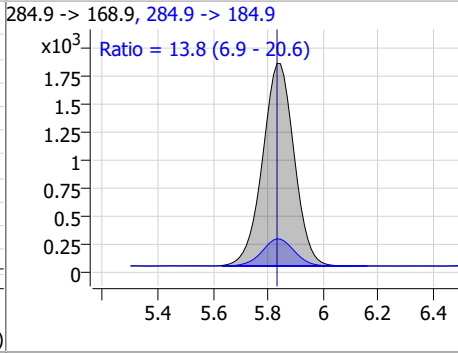
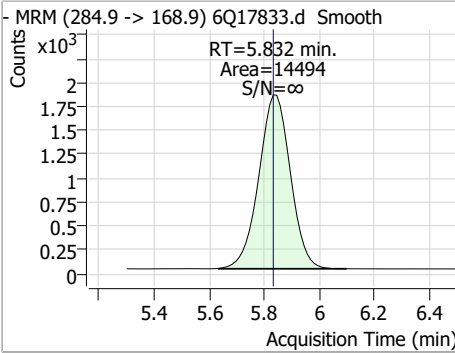
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.98	5.38	-0.01	18028	298.7 -> 98.8	36.8	18.3	54.9
- MRM (298.7 -> 79.9) 6Q17833.d Smooth 			298.7 -> 79.9, 298.7 -> 98.8 			- MRM (5.188-5.682 min) (298.7->**) 6Q17833.d 		
13C5-PFHxA	2.61	5.47	0.00	53518				
- MRM (318.0 -> 273.0) 6Q17833.d Smooth 			318.0 -> 273.0 			- MRM (5.269-5.848 min, 48 scans) (318.0 -> **) 6Q17833.d 		
PFHxA	2.39	5.47	0.00	50731	313.0 -> 118.9	4.6	2.4	7.3
- MRM (313.0 -> 269.0) 6Q17833.d Smooth 			313.0 -> 269.0, 313.0 -> 118.9 			- MRM (5.272-5.728 min) (313.0->**) 6Q17833.d 		
13C3-HFPO-DA	9.78	5.83	0.00	31000				
- MRM (286.9 -> 168.9) 6Q17833.d Smooth 			286.9 -> 168.9 			- MRM (5.634-6.153 min, 43 scans) (286.9 -> **) 6Q17833.d 		

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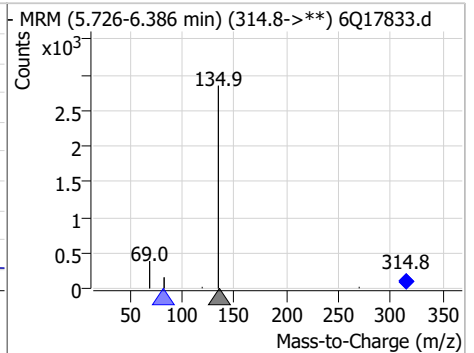
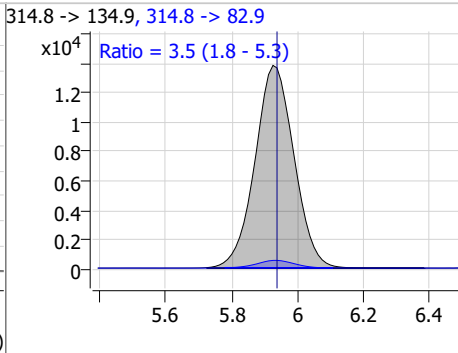
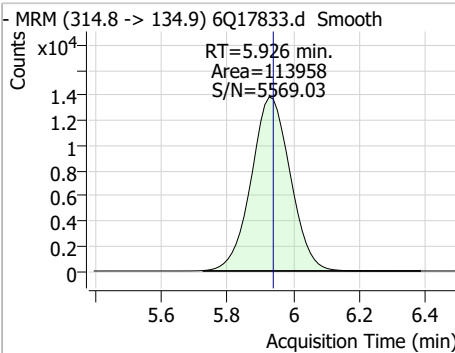


Perfluorinated Compounds by LC/MS/MS

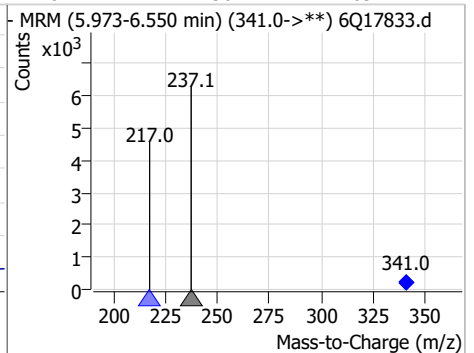
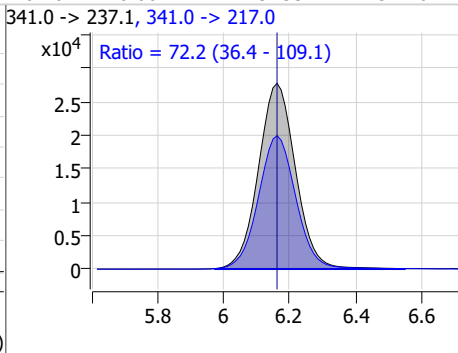
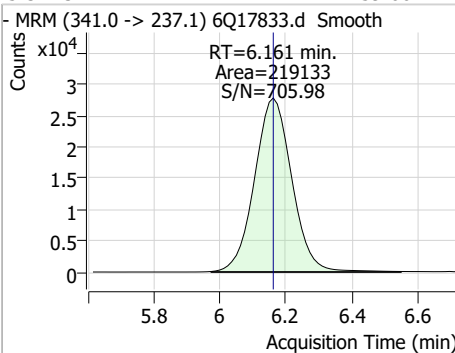
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.84	5.83	0.00	14494	284.9 -> 184.9	13.8	6.9	20.6



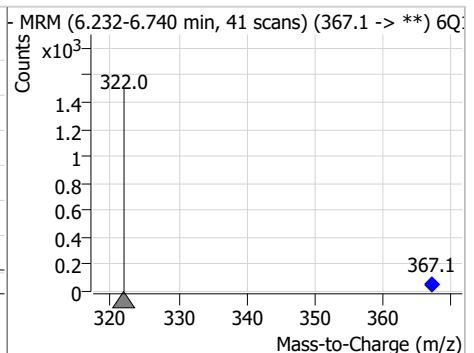
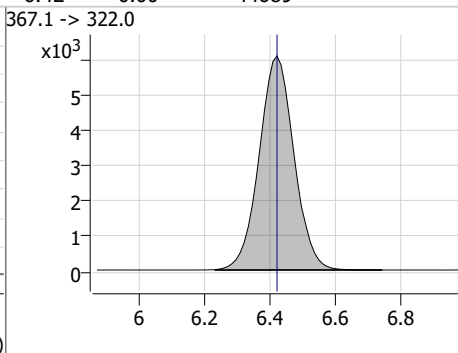
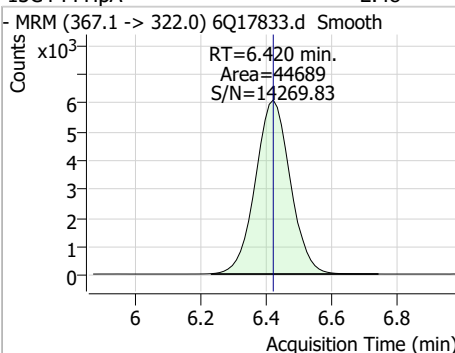
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.00	5.93	-0.01	113958	314.8 -> 82.9	3.5	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	59.66	6.16	0.00	219133	341.0 -> 217.0	72.2	36.4	109.1

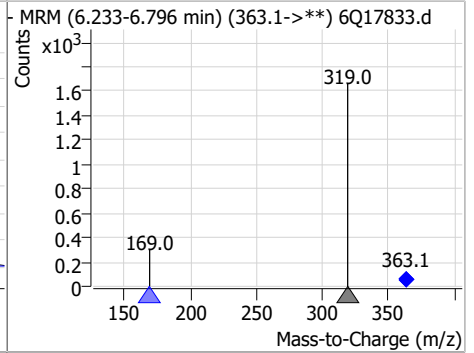
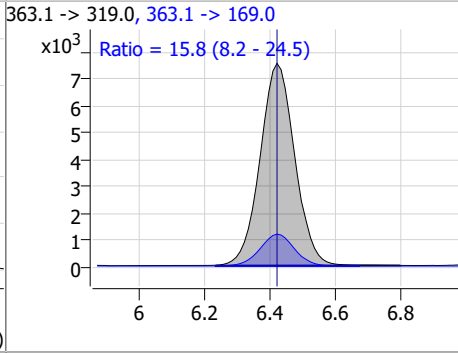
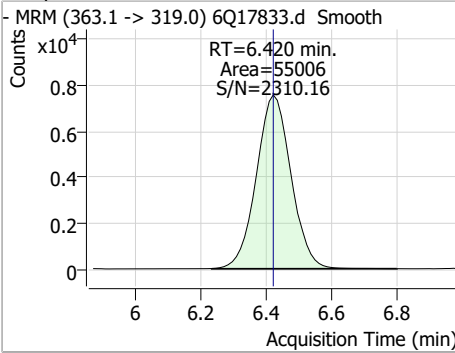


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.42	0.00	44689	367.1 -> 322.0			

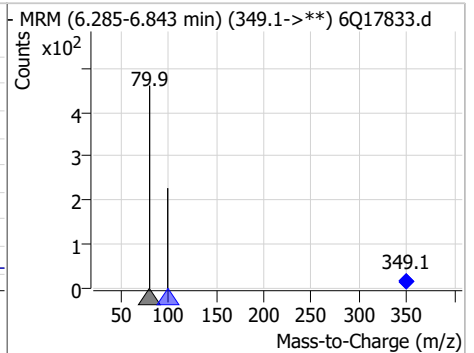
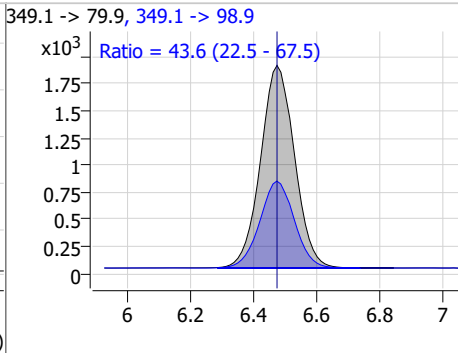
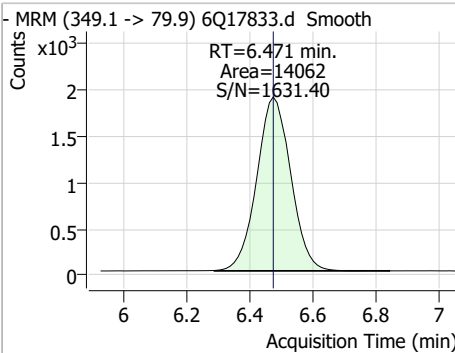


Perfluorinated Compounds by LC/MS/MS

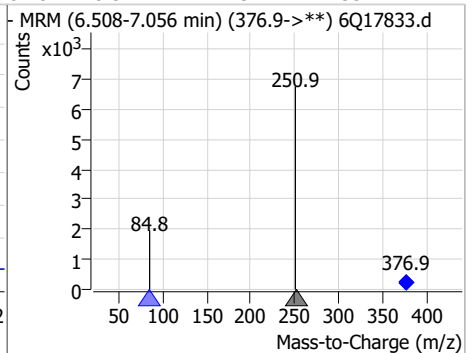
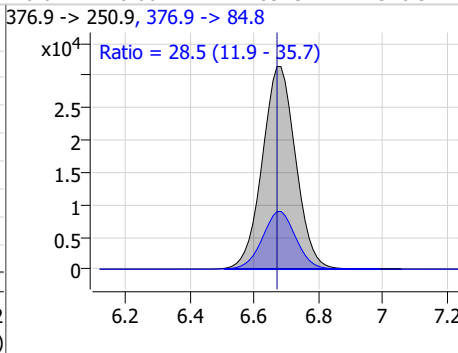
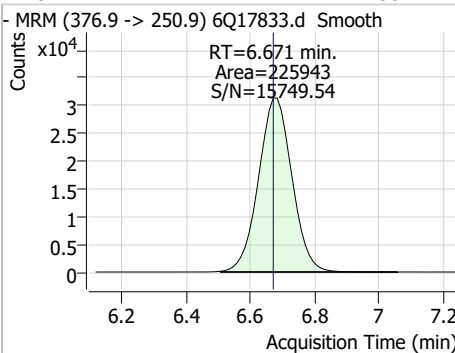
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.46	6.42	0.00	55006	363.1 -> 169.0	15.8	8.2	24.5



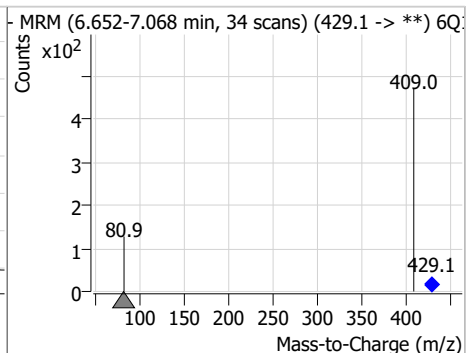
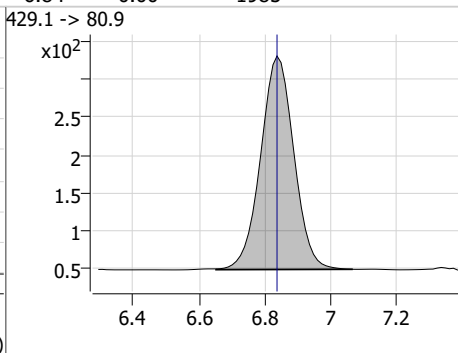
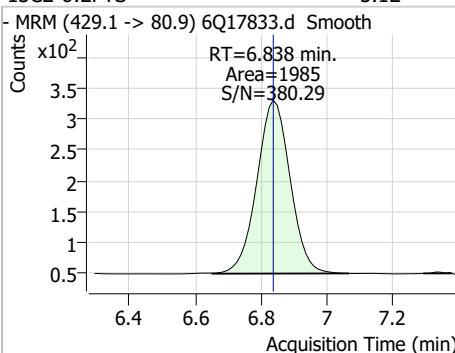
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.36	6.47	0.00	14062	349.1 -> 98.9	43.6	22.5	67.5



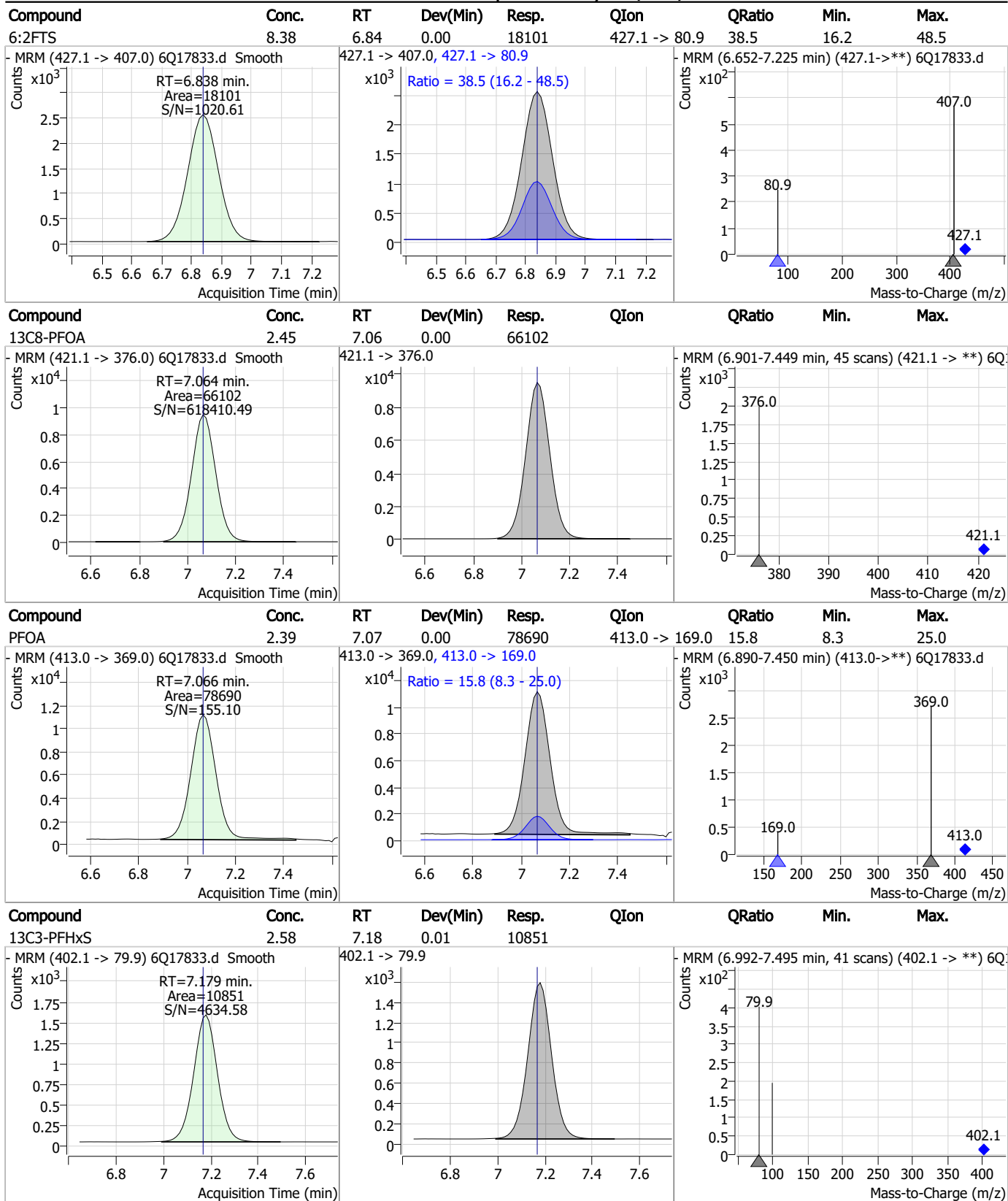
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.58	6.67	0.00	225943	376.9 -> 84.8	28.5	11.9	35.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.12	6.84	0.00	1985	429.1 -> 80.9			



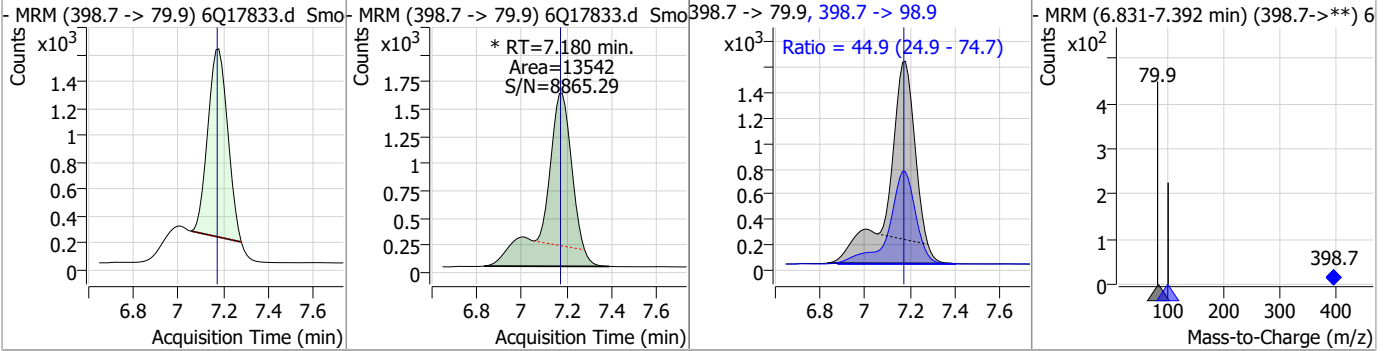
Perfluorinated Compounds by LC/MS/MS



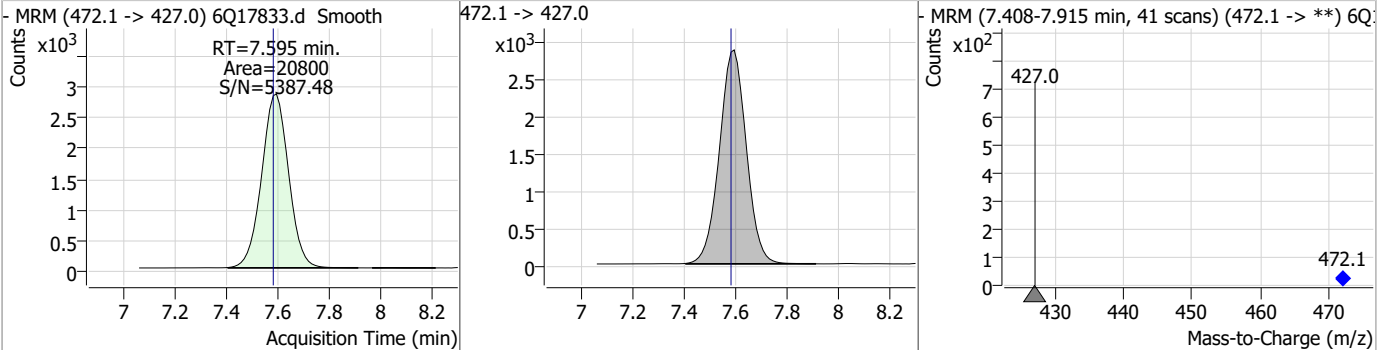
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Perfluorinated Compounds by LC/MS/MS

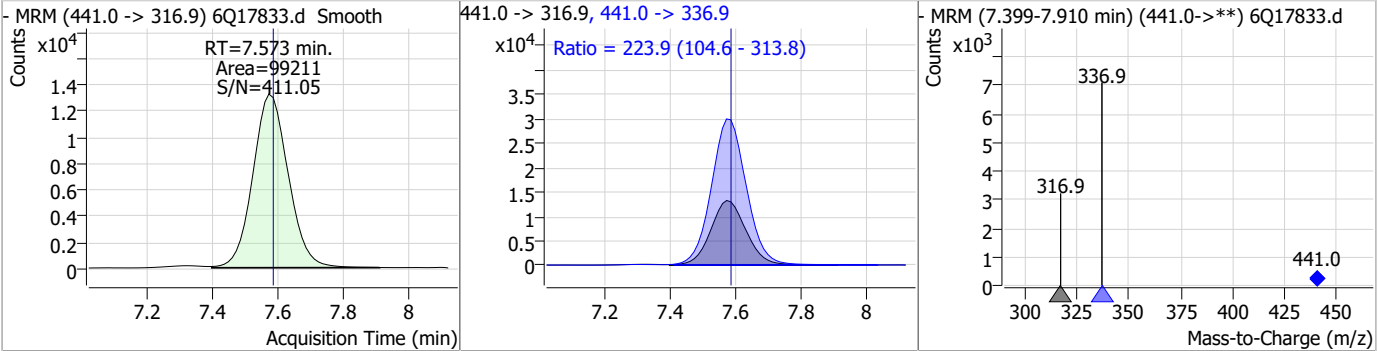
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.25	7.18	0.01	13542 (m)	398.7 -> 98.9	44.9	24.9	74.7



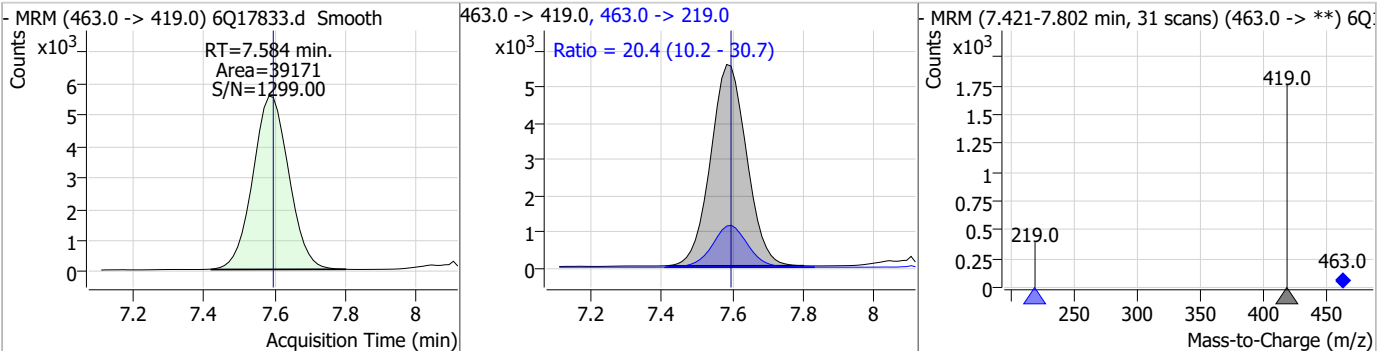
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.20	7.60	0.01	20800				



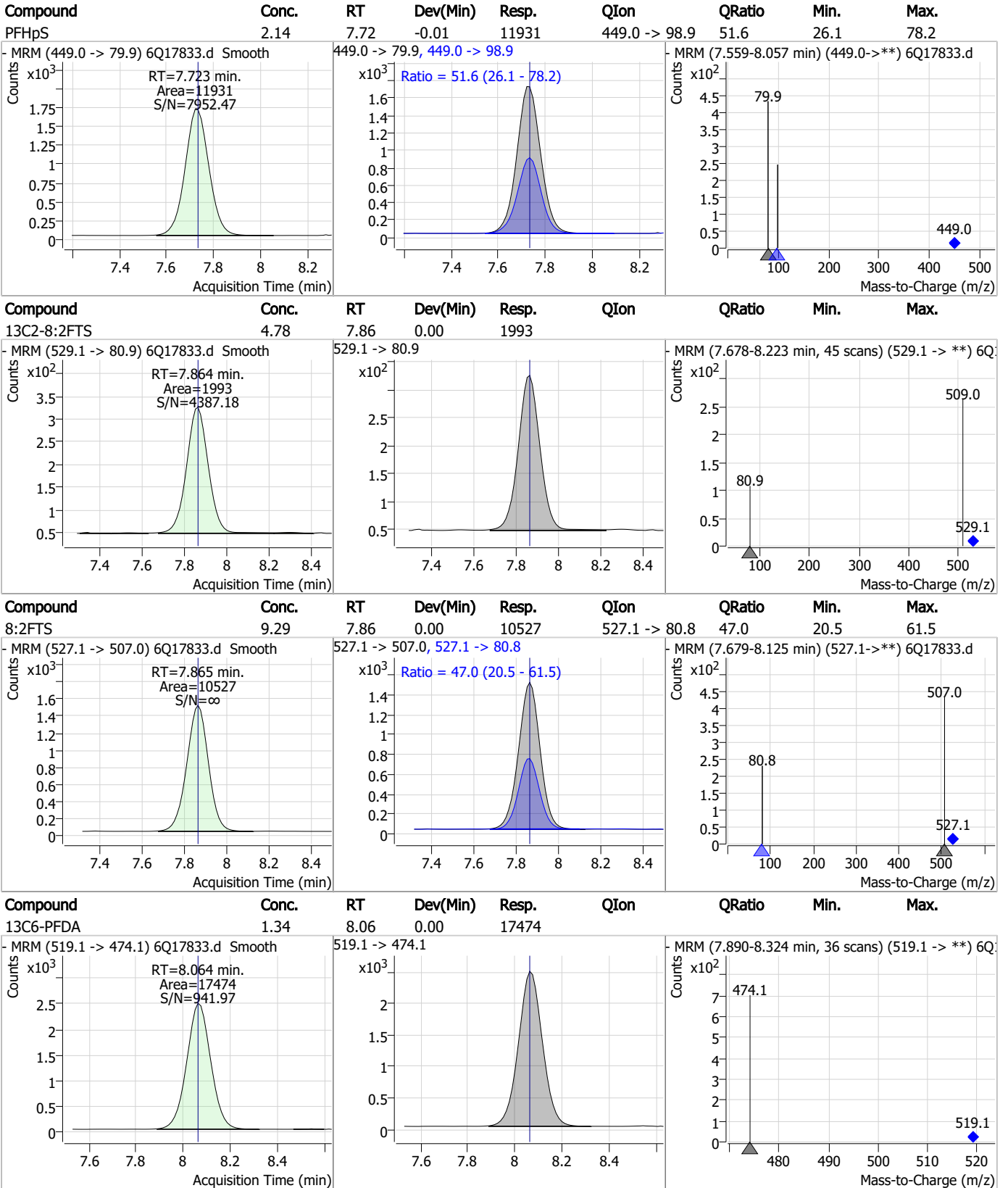
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	59.54	7.57	-0.01	99211	441.0 -> 336.9	223.9	104.6	313.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.53	7.58	-0.01	39171	463.0 -> 219.0	20.4	10.2	30.7



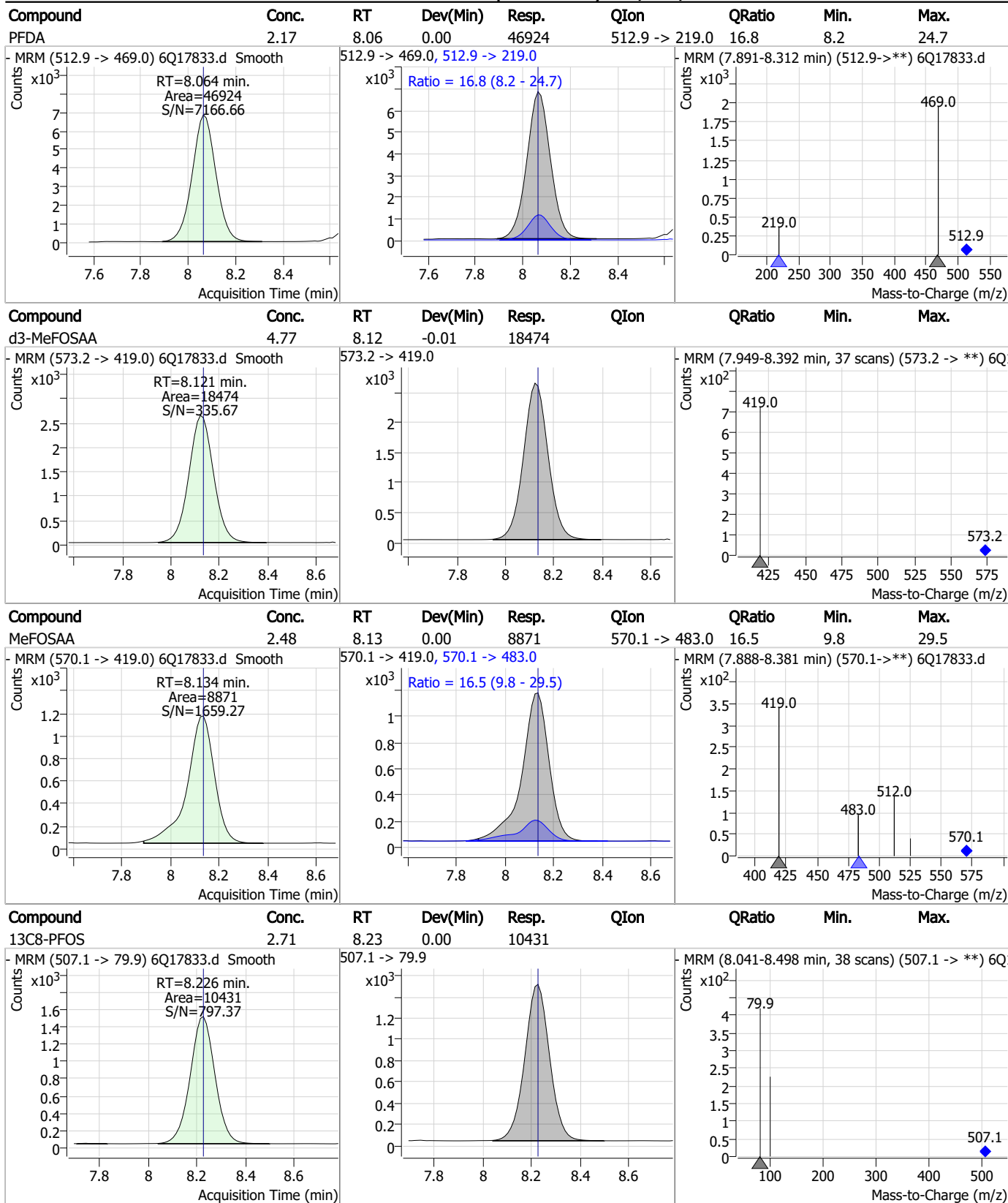
Perfluorinated Compounds by LC/MS/MS



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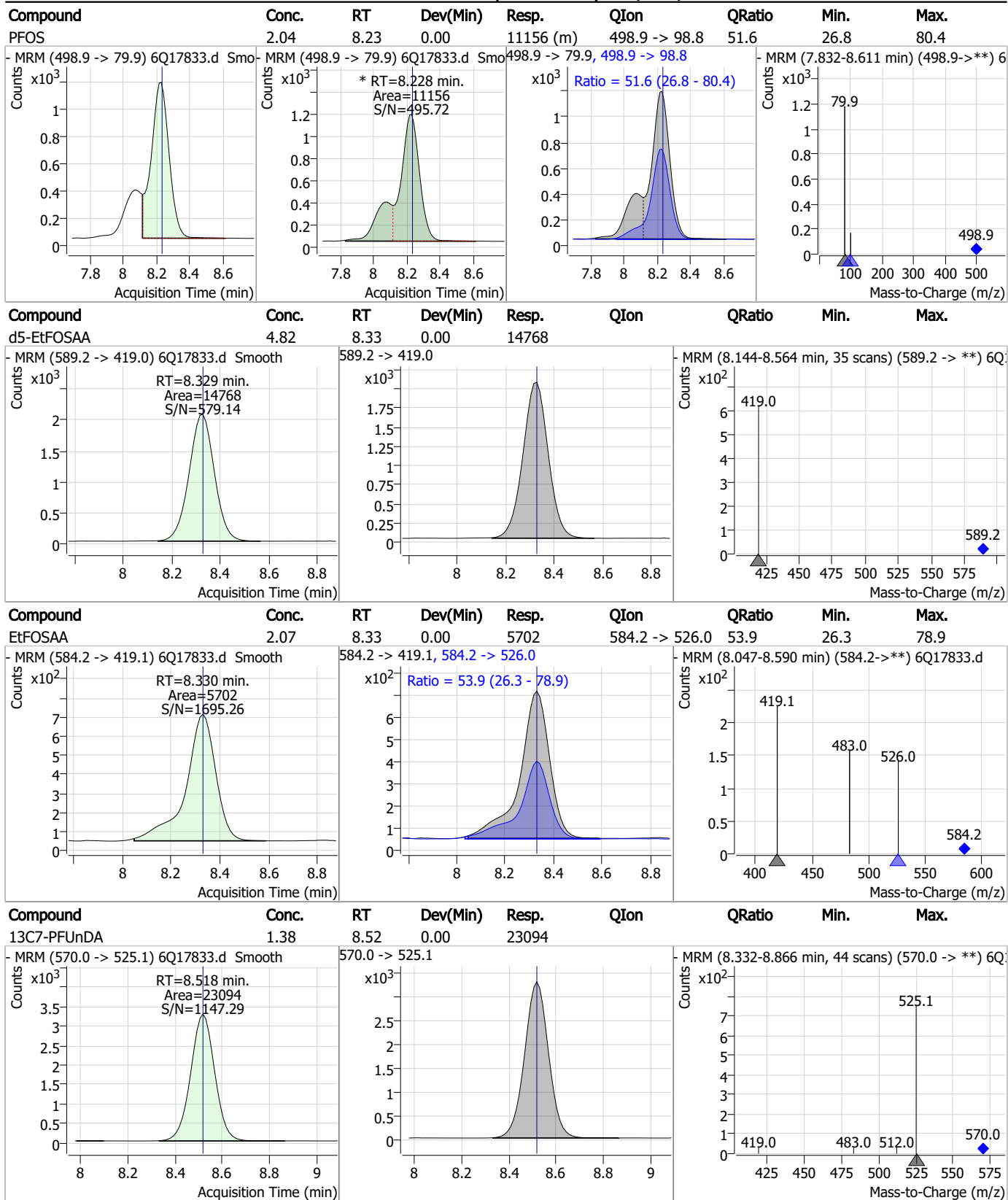
Perfluorinated Compounds by LC/MS/MS



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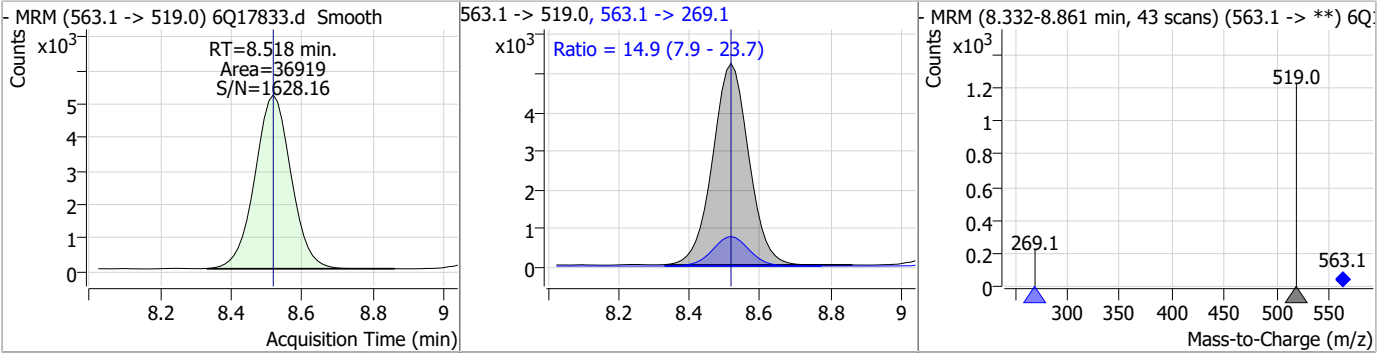
Perfluorinated Compounds by LC/MS/MS



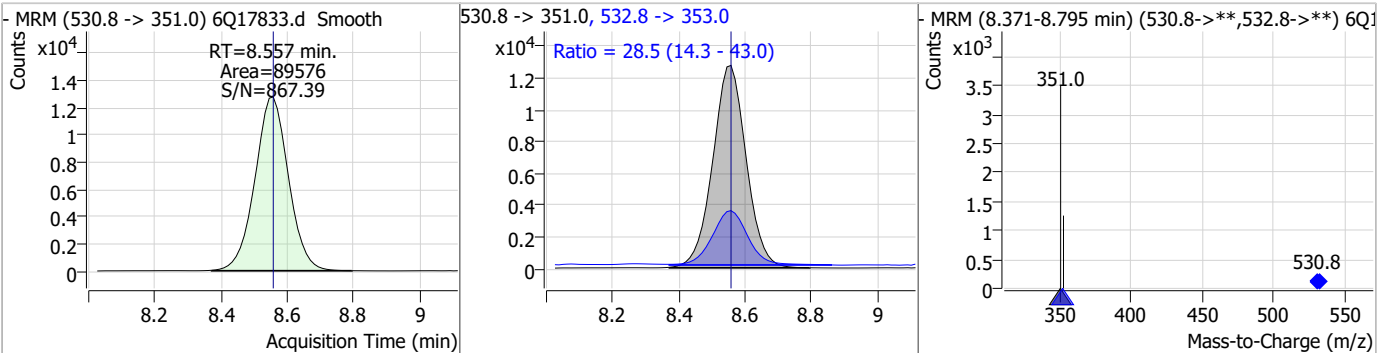
7.7.14
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Perfluorinated Compounds by LC/MS/MS

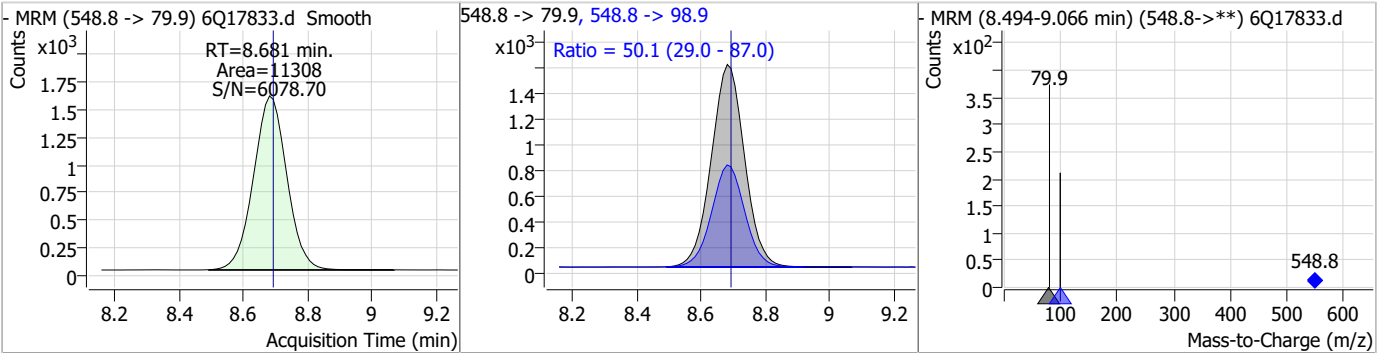
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.20	8.52	0.00	36919	563.1 -> 269.1	14.9	7.9	23.7



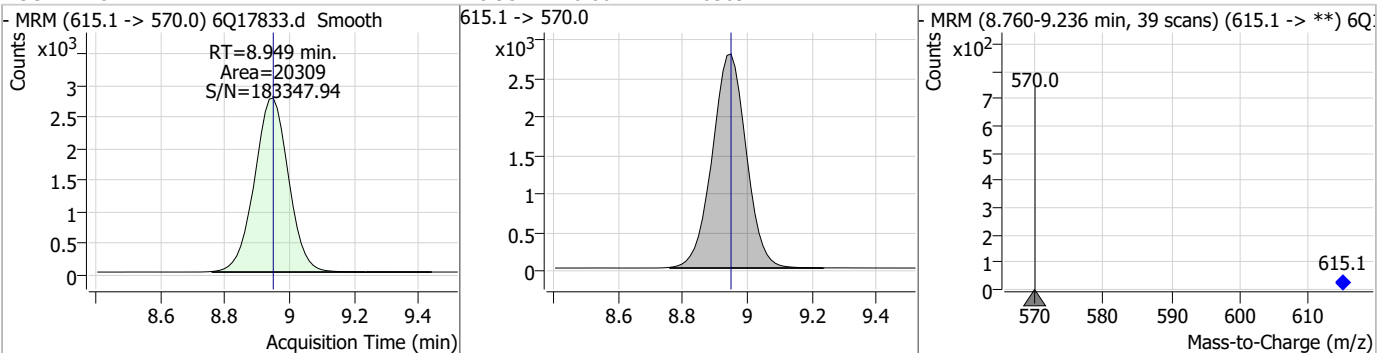
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.79	8.56	0.00	89576	532.8 -> 353.0	28.5	14.3	43.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.24	8.68	-0.01	11308	548.8 -> 98.9	50.1	29.0	87.0

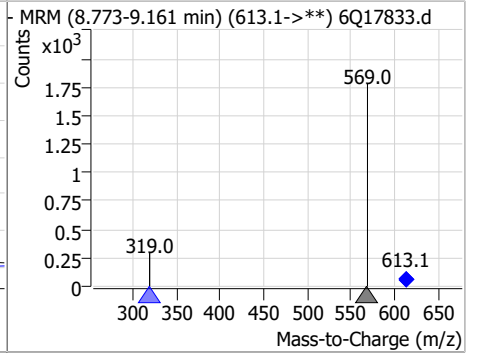
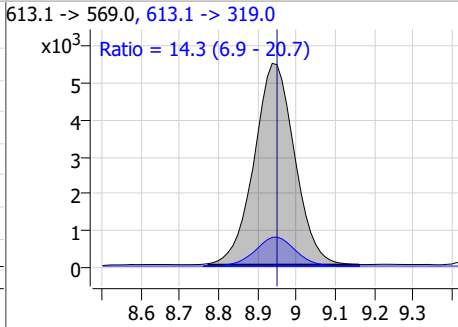
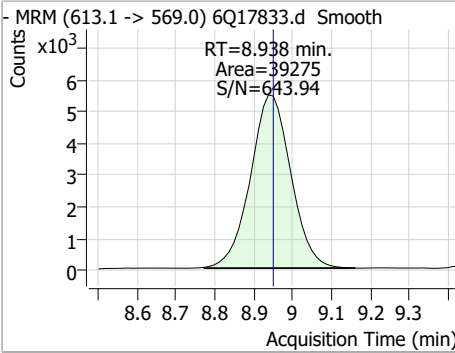


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	8.95	0.00	20309	615.1 -> 570.0			

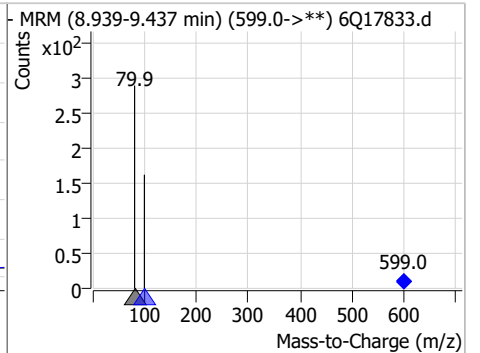
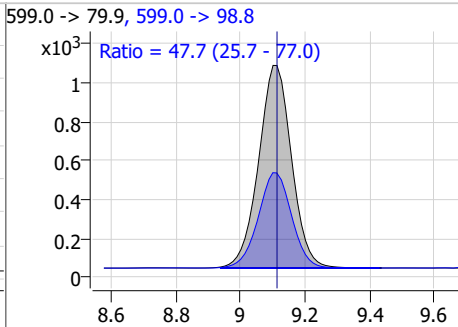
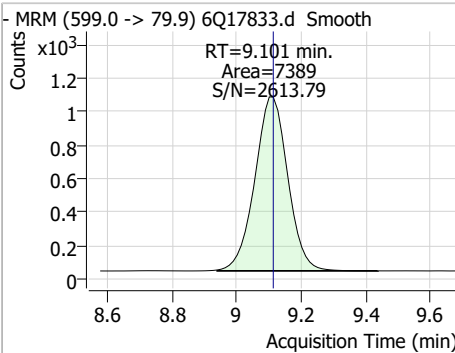


Perfluorinated Compounds by LC/MS/MS

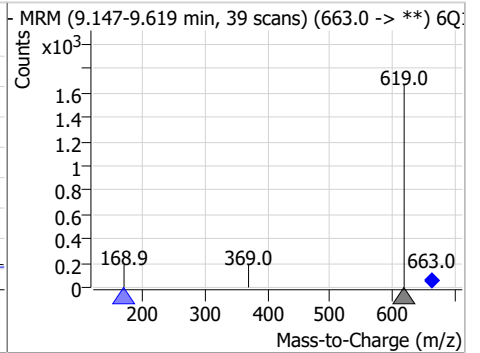
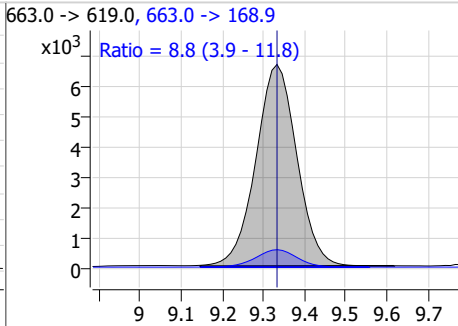
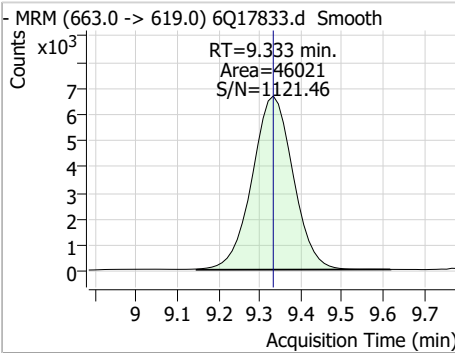
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	2.43	8.94	-0.01	39275	613.1 -> 319.0	14.3	6.9	20.7



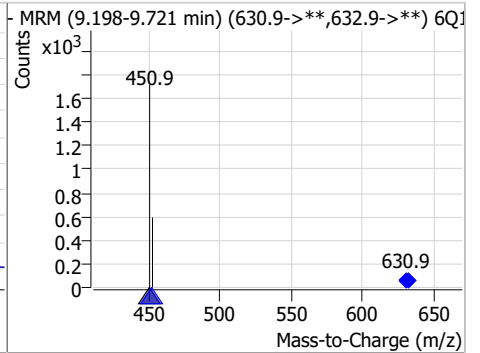
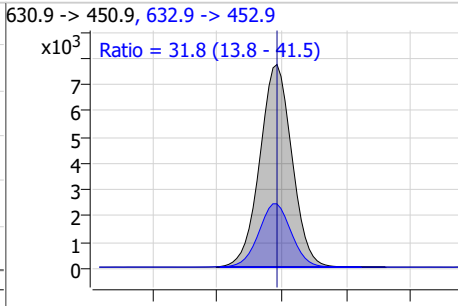
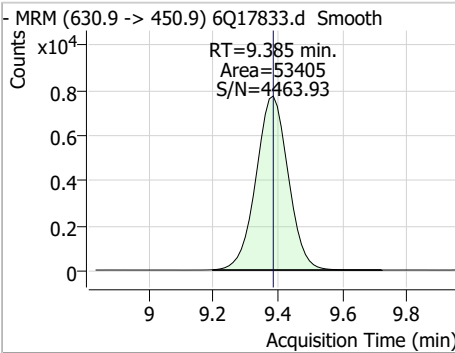
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.18	9.10	-0.01	7389	599.0 -> 98.8	47.7	25.7	77.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.45	9.33	0.00	46021	663.0 -> 168.9	8.8	3.9	11.8

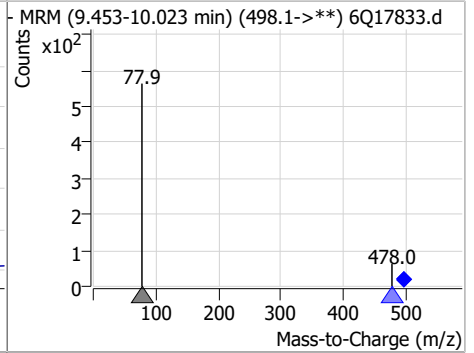
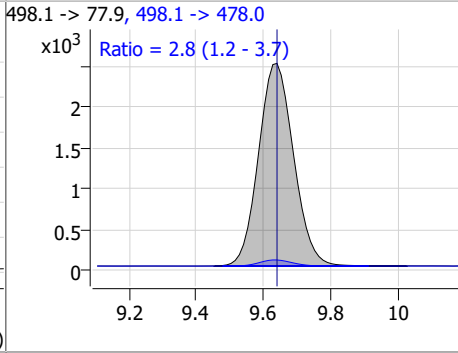
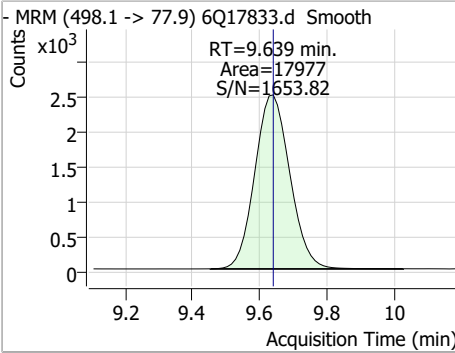


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUds	4.56	9.39	0.00	53405	632.9 -> 452.9	31.8	13.8	41.5

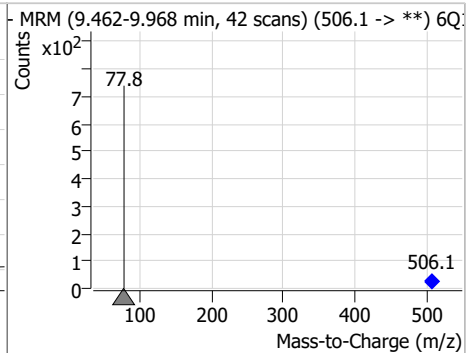
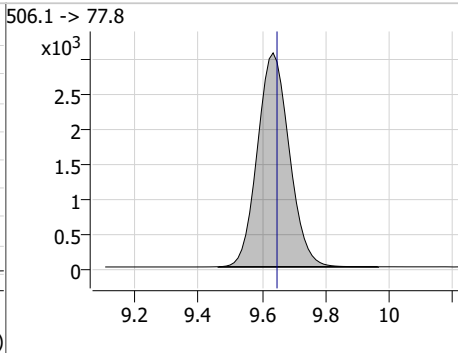
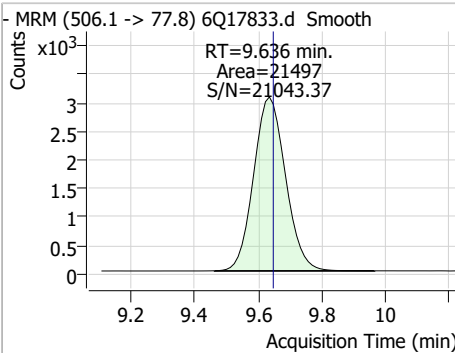


Perfluorinated Compounds by LC/MS/MS

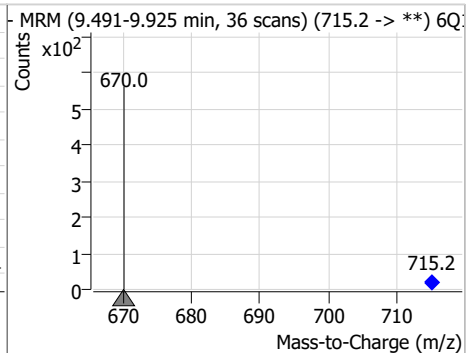
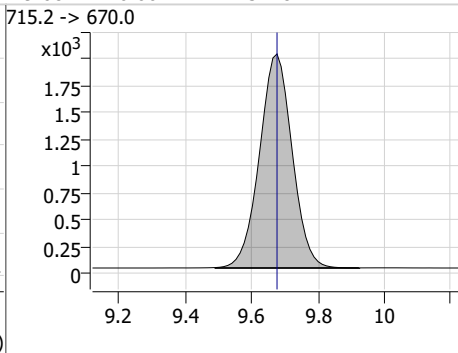
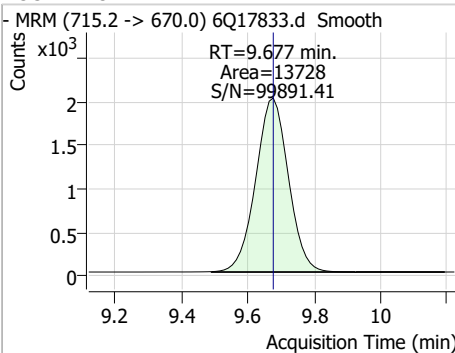
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.23	9.64	0.00	17977	498.1 -> 478.0	2.8	1.2	3.7



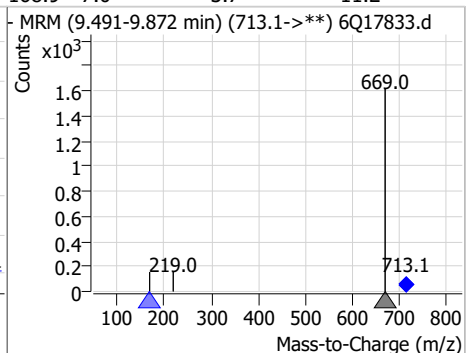
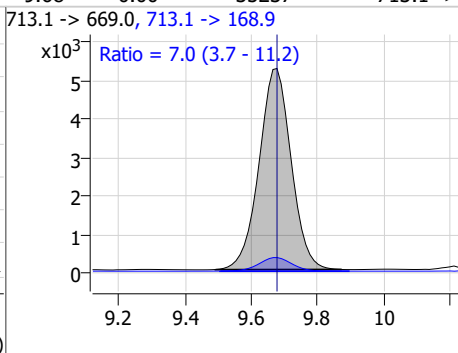
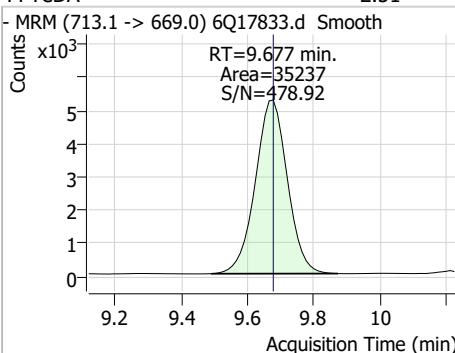
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.62	9.64	-0.01	21497				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.68	0.00	13728				

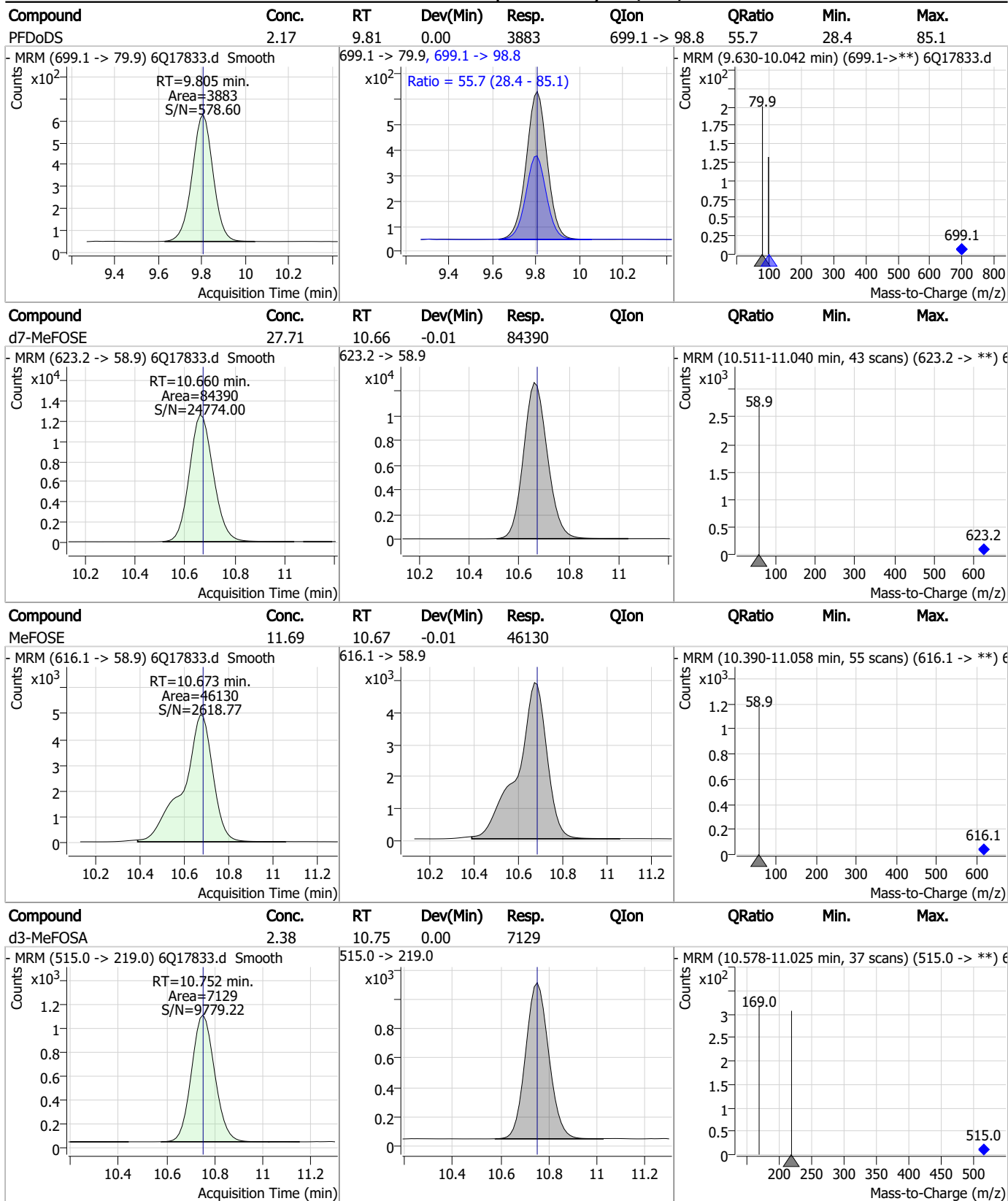


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.51	9.68	0.00	35237	713.1 -> 168.9	7.0	3.7	11.2



7.7.14
7

Perfluorinated Compounds by LC/MS/MS



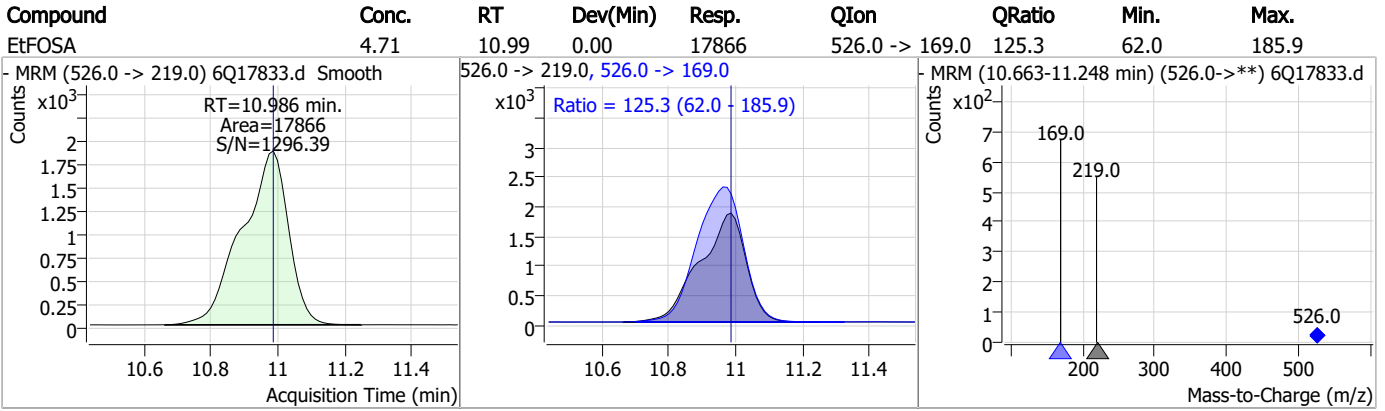
7.7.14
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.68	10.75	0.00	15369	511.9 -> 169.0	139.6	65.4	196.1
d9-EtFOSE	25.29	10.91	0.00	93068	639.2 -> 58.9	-	-	-
EtFOSE	13.07	10.92	-0.01	53016	630.0 -> 58.9	-	-	-
d5-EtFOSA	2.43	10.98	0.00	8764	531.1 -> 219.0	-	-	-

7.7.14
7

Perfluorinated Compounds by LC/MS/MS



7.7.14

7

Manual Integration Approval Summary

Sample Number: S6Q269-CC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17833.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/16/23 02:17 Supervisor approved: 05/17/23 08:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.14.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q17841.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/16/2023 4:13:37 AM
 Sample Name : cc268-4
 Vial : P1-A5
 DA Method File : 1633_051223_S6Q268.quantmethod.xml
 Batch Name : s6q269.batch.bin
 Sample Information : OP96663,S6Q269,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.901	216.8 -> 171.9	146302	10.00 µg/L	0.000
M5-PFPeA	4.272	268.3 -> 223.0	46755	5.00 µg/L	0.000
M5-PFHxA	5.466	318.0 -> 273.0	55378	2.50 µg/L	0.000
M4-PFHpA	6.420	367.1 -> 322.0	47541	2.50 µg/L	0.000
M8-PFOA	7.064	421.1 -> 376.0	65897	2.50 µg/L	0.000
M9-PFNA	7.595	472.1 -> 427.0	22149	1.25 µg/L	0.012
M6-PFDA	8.076	519.1 -> 474.1	17682	1.25 µg/L	0.012
M7-PFUnDA	8.518	570.0 -> 525.1	22498	1.25 µg/L	0.000
M2-PFDoDA	8.949	615.1 -> 570.0	20078	1.25 µg/L	0.000
M2-PFTeDA	9.677	715.2 -> 670.0	14050	1.25 µg/L	0.000
M8-FOSA	9.636	506.1 -> 77.8	21438	2.50 µg/L	-0.012
M3-PFBS	5.397	302.1 -> 79.9	18129	2.50 µg/L	0.000
M3-PFHxS	7.179	402.1 -> 79.9	10542	2.50 µg/L	0.012
M8-PFOS	8.226	507.1 -> 79.9	9537	2.50 µg/L	0.000
M2-4:2FTS	5.131	329.1 -> 80.9	1403	5.00 µg/L	-0.012
M2-6:2FTS	6.838	429.1 -> 80.9	1950	5.00 µg/L	0.000
M2-8:2FTS	7.864	529.1 -> 80.9	2103	5.00 µg/L	0.000
M3-MeFOSAA	8.133	573.2 -> 419.0	18199	5.00 µg/L	0.000
M3-HFPO-DA	5.844	286.9 -> 168.9	31586	10.00 µg/L	0.012
M5-EtFOSAA	8.329	589.2 -> 419.0	14204	5.00 µg/L	0.000
M7-MeFOSE	10.660	623.2 -> 58.9	82022	25.00 µg/L	-0.012
M9-EtFOSE	10.907	639.2 -> 58.9	98904	25.00 µg/L	0.000
M5-EtFOSA	10.984	531.1 -> 219.0	8615	2.50 µg/L	0.000
M3-MeFOSA	10.752	515.0 -> 219.0	7313	2.50 µg/L	0.000
13C4-PFOS	8.227	502.8 -> 79.9	14127	2.50 µg/L	0.000
13C3-PFBA	2.904	216.0 -> 172.0	61656	5.00 µg/L	0.000
18O2-PFHxS	7.178	403.0 -> 83.9	7971	2.50 µg/L	0.012
13C4-PFOA	7.065	417.1 -> 372.0	70119	2.50 µg/L	0.000
13C2-PFDA	8.076	515.1 -> 470.1	19885	1.25 µg/L	0.012
13C5-PFNA	7.596	468.0 -> 423.0	23731	1.25 µg/L	0.012
13C2-PFHxA	5.467	315.1 -> 270.0	42890	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.131	329.1 -> 80.9	1403	4.62 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C2-6:2FTS	6.838	429.1 -> 80.9	1950	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-8:2FTS	7.864	529.1 -> 80.9	2103	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C2-PFDoDA	8.949	615.1 -> 570.0	20078	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C2-PFTeDA	9.677	715.2 -> 670.0	14050	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFBS	5.397	302.1 -> 79.9	18129	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C3-PFHxS	7.179	402.1 -> 79.9	10542	2.48 µg/L	0.012

7.7.15
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C4-PFBA	2.901	216.8 -> 171.9	146302	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.0%		
13C4-PFHpA	6.420	367.1 -> 322.0	47541	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.7%		
13C5-PFHxA	5.466	318.0 -> 273.0	55378	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C5-PFPeA	4.272	268.3 -> 223.0	46755	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C6-PFDA	8.076	519.1 -> 474.1	17682	1.36 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C7-PFUnDA	8.518	570.0 -> 525.1	22498	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.6%		
13C8-FOSA	9.636	506.1 -> 77.8	21438	2.29 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.5%		
13C8-PFOA	7.064	421.1 -> 376.0	65897	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C8-PFOS	8.226	507.1 -> 79.9	9537	2.17 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 86.8%		
13C9-PFNA	7.595	472.1 -> 427.0	22149	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.0%		
d3-MeFOSAA	8.133	573.2 -> 419.0	18199	4.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 82.2%		
13C3-HFPO-DA	5.844	286.9 -> 168.9	31586	10.06 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 100.6%		
d3-MeFOSA	10.752	515.0 -> 219.0	7313	2.14 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 85.6%		
d5-EtFOSAA	8.329	589.2 -> 419.0	14204	4.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 81.2%		
d7-MeFOSE	10.660	623.2 -> 58.9	82022	23.57 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.3%		
d9-EtFOSE	10.907	639.2 -> 58.9	98904	23.52 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
d5-EtFOSA	10.984	531.1 -> 219.0	8615	2.09 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 83.6%		
Target Compounds					QValue
4:2FTS	5.144	327.1 -> 307.0	20086	9.52 µg/L	96
		327.1 -> 80.9	8005		
6:2FTS	6.838	427.1 -> 407.0	19323	9.10 µg/L	98
		427.1 -> 80.9	6439		
8:2FTS	7.865	527.1 -> 507.0	11326	9.48 µg/L	97
		527.1 -> 80.8	4432		
EtFOSAA	8.330	584.2 -> 419.1	5978	2.26 µg/L	94
		584.2 -> 526.0	3395		
FOSA	9.639	498.1 -> 77.9	19177	2.39 µg/L	99
		498.1 -> 478.0	562		
MeFOSAA	8.134	570.1 -> 419.0	8376	2.38 µg/L	99
		570.1 -> 483.0	1623		
PFBA	2.907	212.8 -> 168.9	50447	9.61 µg/L	100
PFBS	5.385	298.7 -> 79.9	18694	2.11 µg/L	97
		298.7 -> 98.8	7141		
PFDA	8.064	512.9 -> 469.0	49106	2.24 µg/L	96
		512.9 -> 219.0	7363		
PFDODA	8.950	613.1 -> 569.0	42344	2.65 µg/L	98
		613.1 -> 319.0	5490		
PFDS	9.113	599.0 -> 79.9	7562	2.44 µg/L	92

7.7.15
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.420	599.0 -> 98.8	3450	2.35	µg/L	100
		363.1 -> 319.0	55789			
PFHpS	7.735	363.1 -> 169.0	8982	2.34	µg/L	97
		449.0 -> 79.9	11912			
PFHxA	5.469	449.0 -> 98.9	5991	2.20	µg/L	99
		313.0 -> 269.0	48185			
PFHxS	7.180	313.0 -> 118.9	2427	2.21	µg/L	96
		398.7 -> 79.9	12869			
PFNA	7.596	398.7 -> 98.9	6799	2.56	µg/L	93
		463.0 -> 419.0	42154			
PFNS	8.681	463.0 -> 219.0	7305	2.48	µg/L	88
		548.8 -> 79.9	11449			
PFOA	7.066	548.8 -> 98.9	5615	2.54	µg/L	98
		413.0 -> 369.0	83337			
PFOS	8.228	413.0 -> 169.0	13069	2.39	µg/L	94
		498.9 -> 79.9	11950			
PFPeA	4.274	498.9 -> 98.8	5924	4.70	µg/L	100
		263.0 -> 219.0	63412			
PFPeS	6.471	349.1 -> 79.9	14189	2.45	µg/L	96
		349.1 -> 98.9	5997			
PFTeDA	9.677	713.1 -> 669.0	35048	2.44	µg/L	99
		713.1 -> 168.9	2478			
PFTrDA	9.333	663.0 -> 619.0	48541	2.62	µg/L	97
		663.0 -> 168.9	4242			
PFUnDA	8.518	563.1 -> 519.0	40571	2.48	µg/L	96
		563.1 -> 269.1	5791			
11Cl-PF3OUdS	9.385	630.9 -> 450.9	57134	4.79	µg/L	94
		632.9 -> 452.9	17743			
9Cl-PF3ONS	8.557	530.8 -> 351.0	89616	4.70	µg/L	97
		532.8 -> 353.0	27334			
ADONA	6.683	376.9 -> 250.9	220346	4.38	µg/L	90
		376.9 -> 84.8	62847			
HFPO-DA	5.845	284.9 -> 168.9	14395	4.71	µg/L	98
		284.9 -> 184.9	1860			
3:3FTCA	3.777	241.0 -> 177.0	10259	12.26	µg/L	98
		241.0 -> 117.0	1297			
5:3FTCA	6.161	341.0 -> 237.1	228965	60.24	µg/L	93
		341.0 -> 217.0	152890			
7:3FTCA	7.573	441.0 -> 316.9	103480	60.01	µg/L	100
		441.0 -> 336.9	216583			
EtFOSA	10.986	526.0 -> 219.0	17933	4.81	µg/L	99
		526.0 -> 169.0	22444			
EtFOSE	10.920	630.0 -> 58.9	52719	12.23	µg/L	100
		511.9 -> 219.0	16258			
MeFOSA	10.753	511.9 -> 169.0	21499	4.83	µg/L	99
		616.1 -> 58.9	45845			
MeFOSE	10.686	699.1 -> 79.9	3844	11.95	µg/L	100
		699.1 -> 98.8	2131			
PFDoDS	9.805	295.0 -> 201.0	11469	2.35	µg/L	98
		295.0 -> 84.9	2752			
NFDHA	5.348	279.0 -> 85.1	46904	4.74	µg/L	93
		229.0 -> 84.9	34121			
PFMBA	4.675	314.8 -> 134.9	118536	4.87	µg/L	100
		314.8 -> 82.9	4570			
PFMPA	3.426			4.92	µg/L	100
PFEESA	5.938			4.02	µg/L	99

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

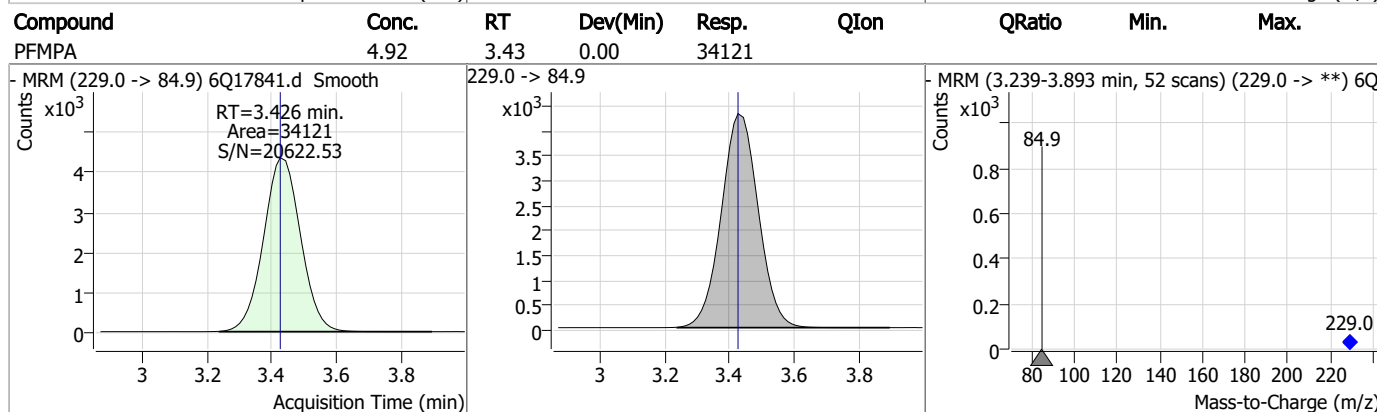
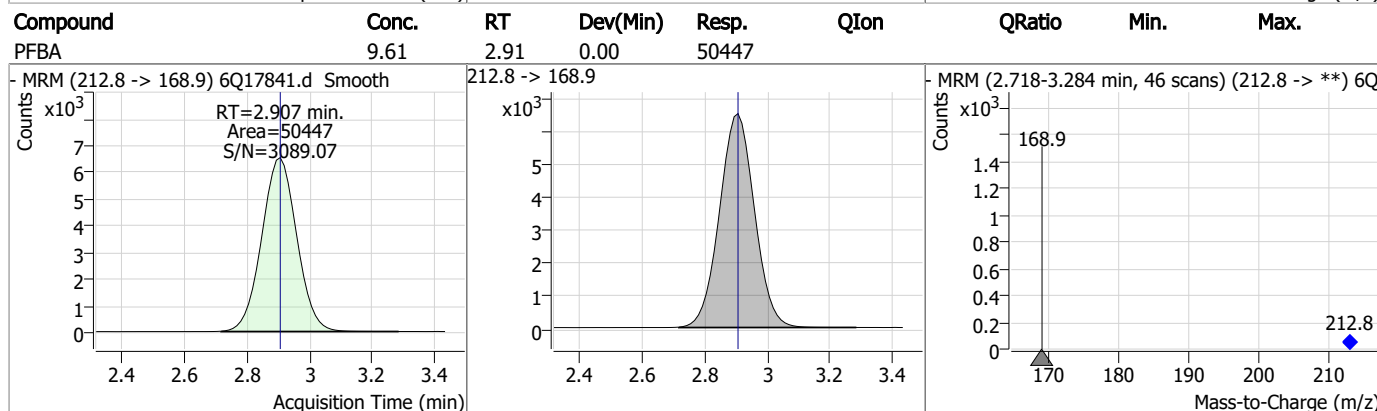
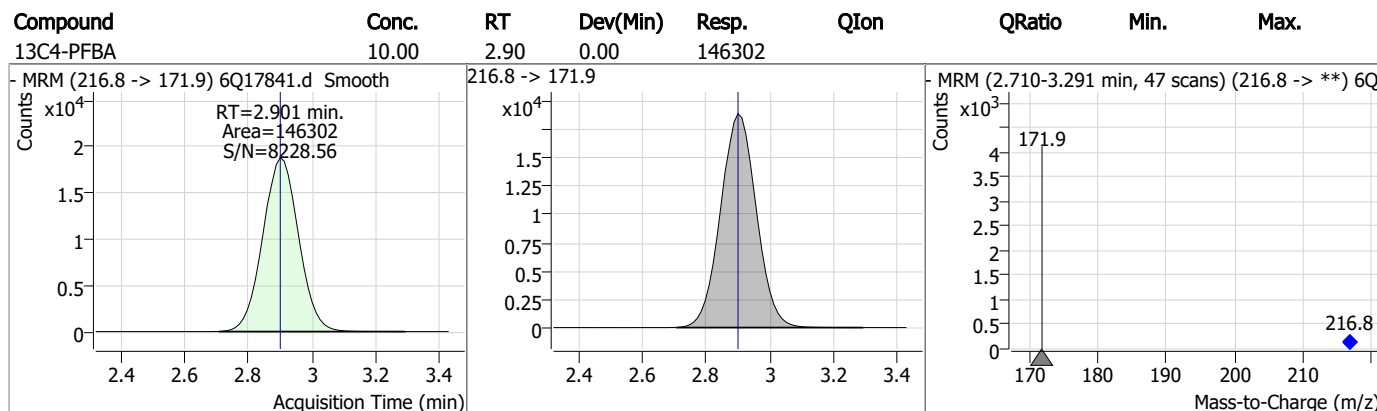
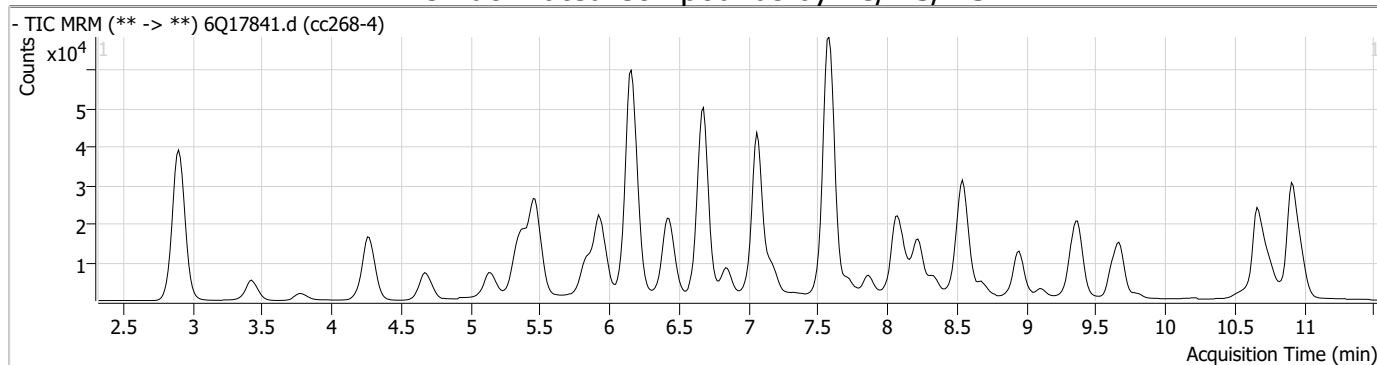
Perfluorinated Compounds by LC/MS/MS

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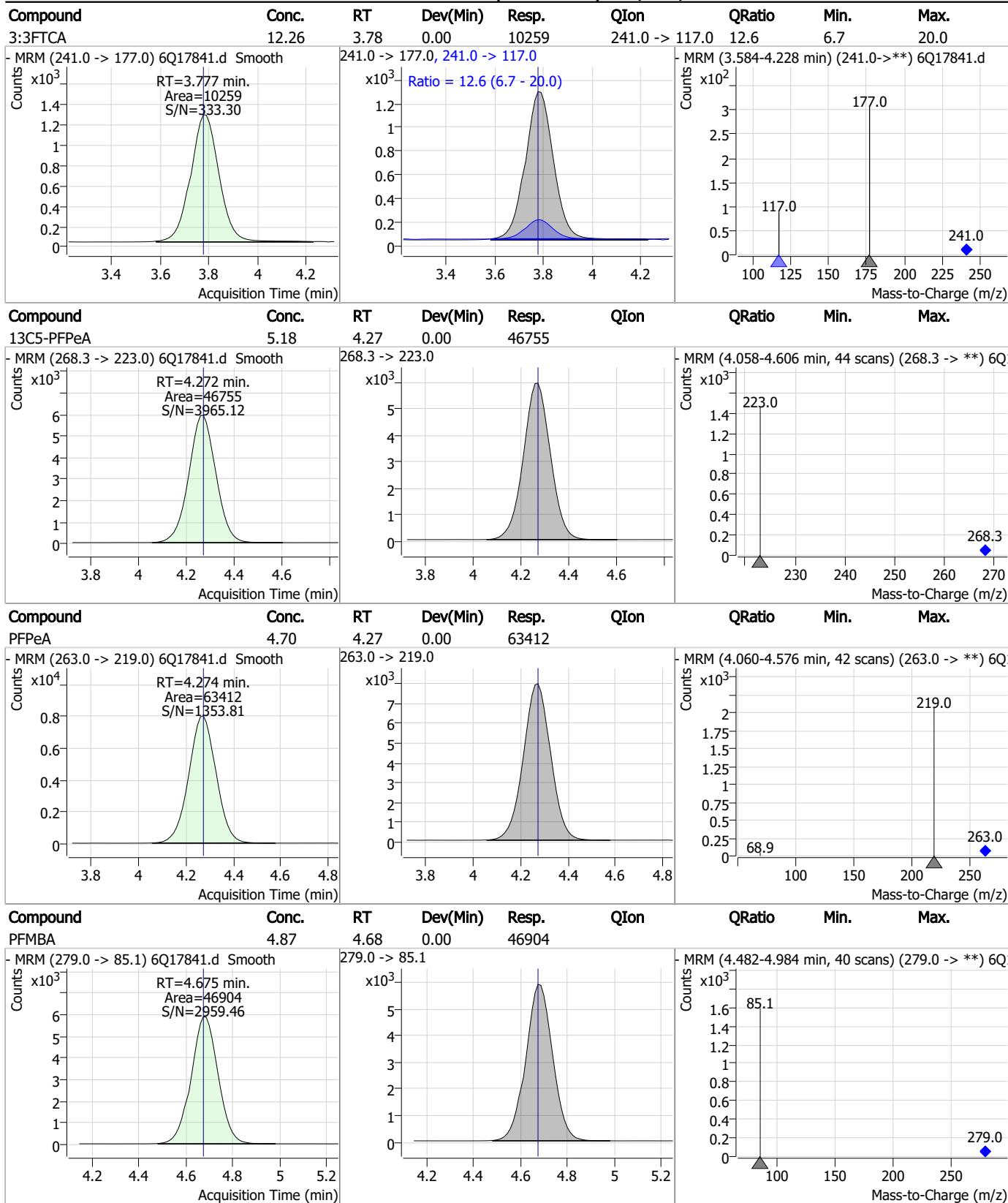
7.7.15

7

Perfluorinated Compounds by LC/MS/MS

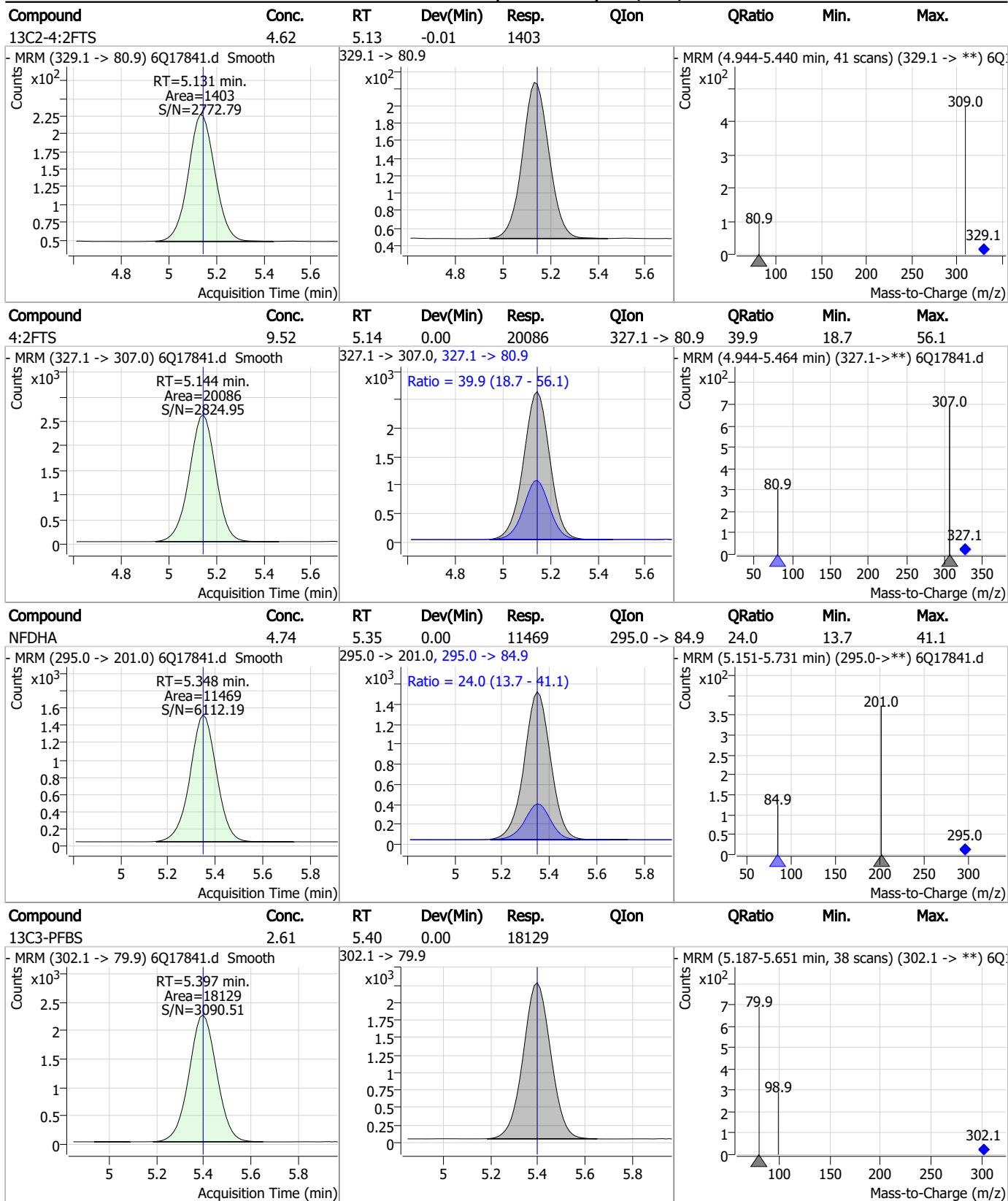


Perfluorinated Compounds by LC/MS/MS



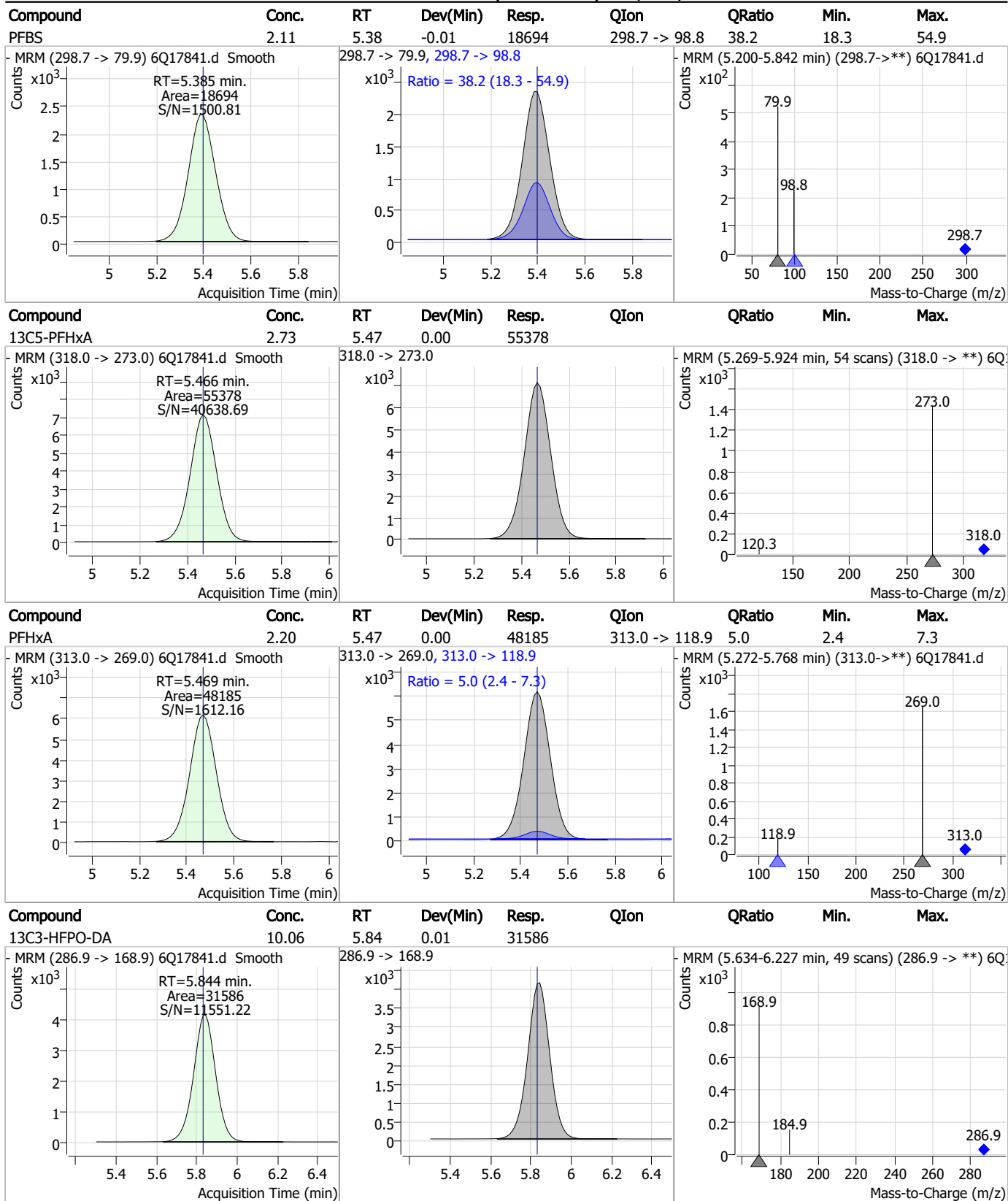
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15 7

Perfluorinated Compounds by LC/MS/MS

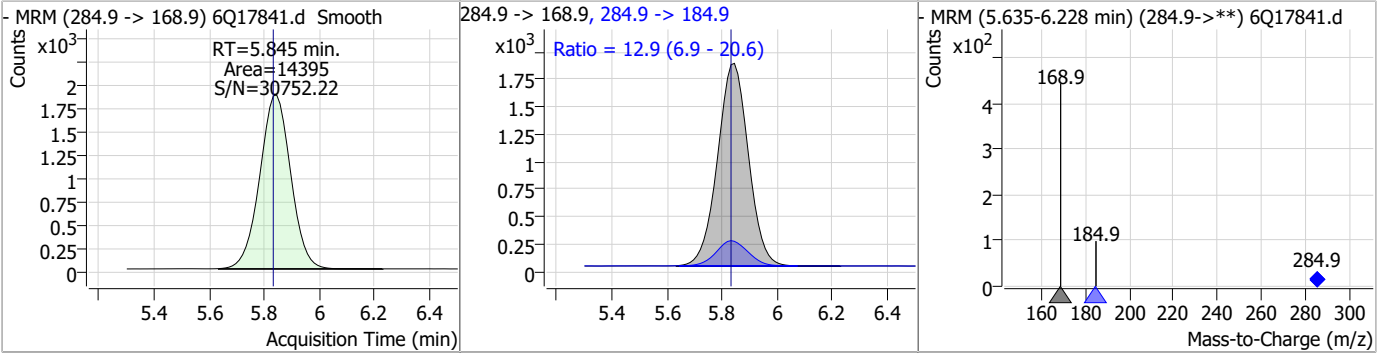


7.7.15

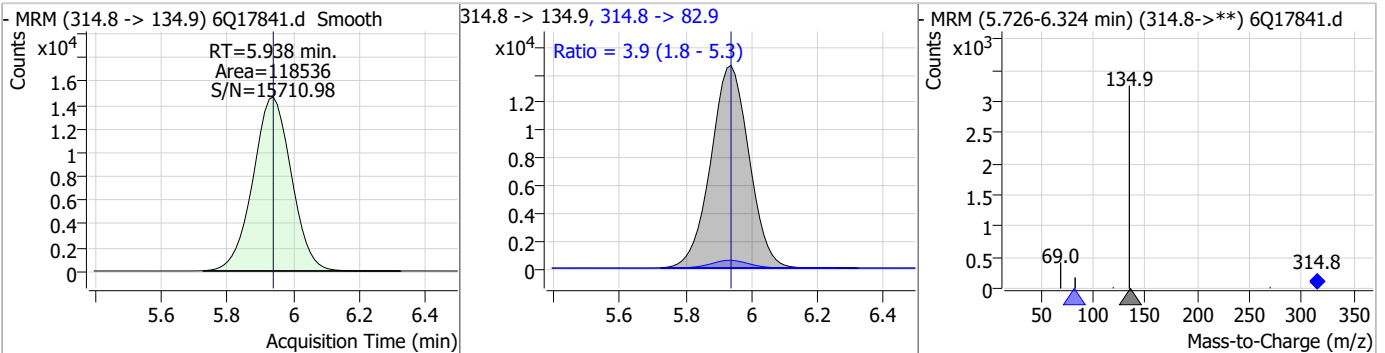
7

Perfluorinated Compounds by LC/MS/MS

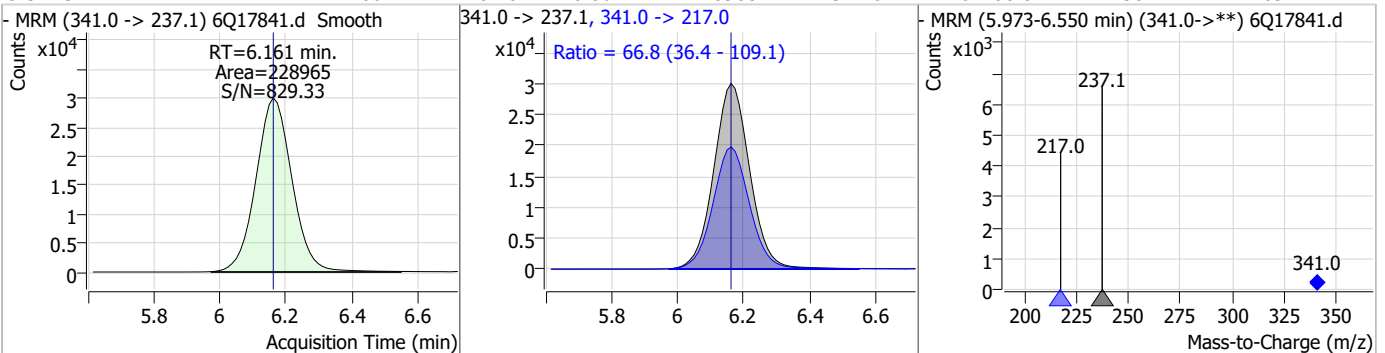
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.71	5.84	0.01	14395	284.9 -> 184.9	12.9	6.9	20.6



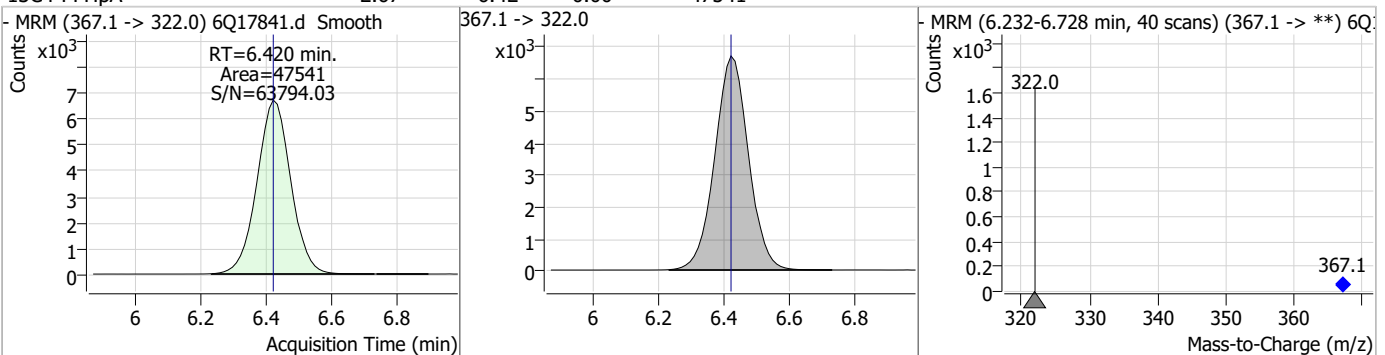
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.02	5.94	0.00	118536	314.8 -> 82.9	3.9	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.24	6.16	0.00	228965	341.0 -> 217.0	66.8	36.4	109.1

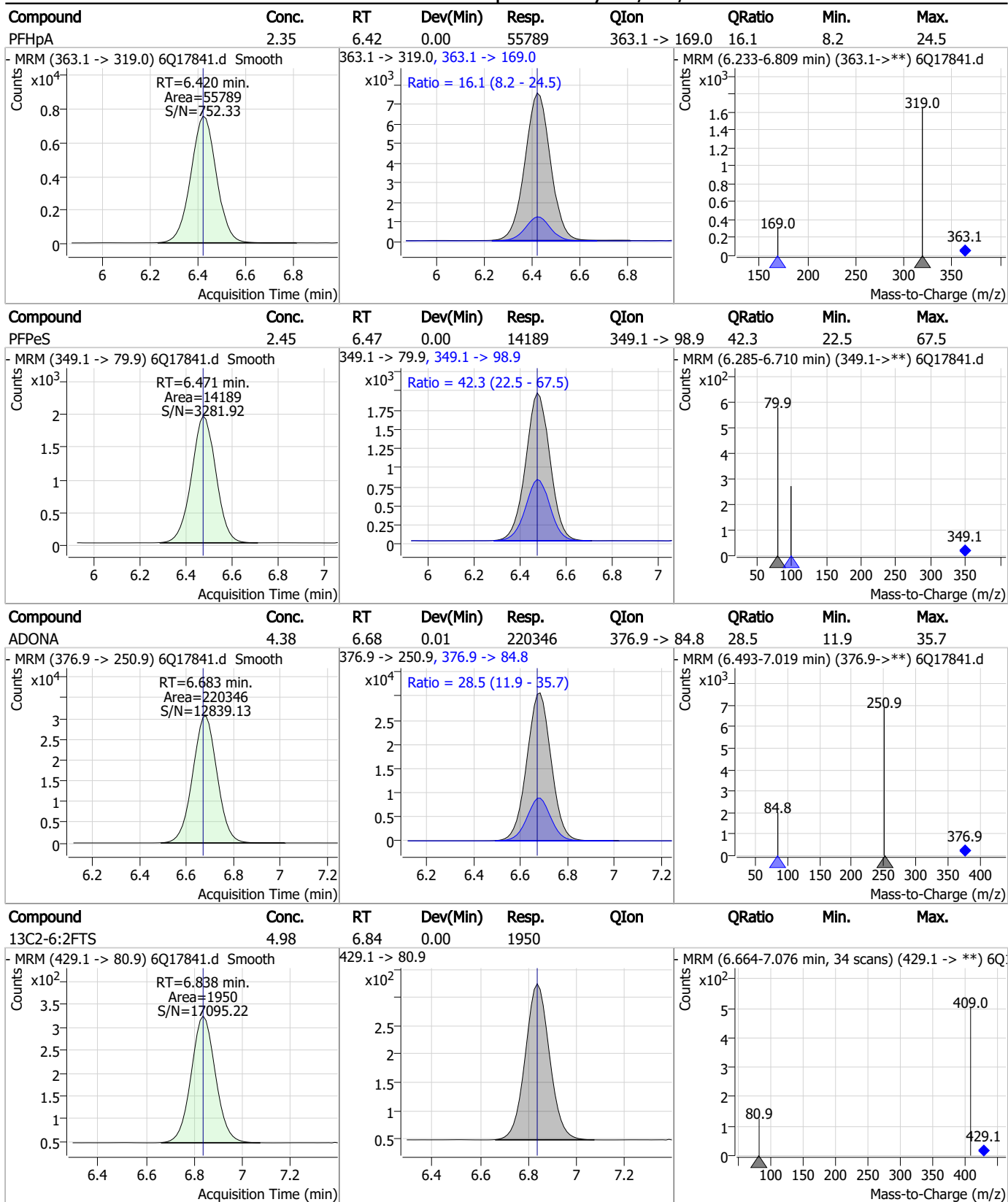


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.67	6.42	0.00	47541	367.1 -> 322.0			



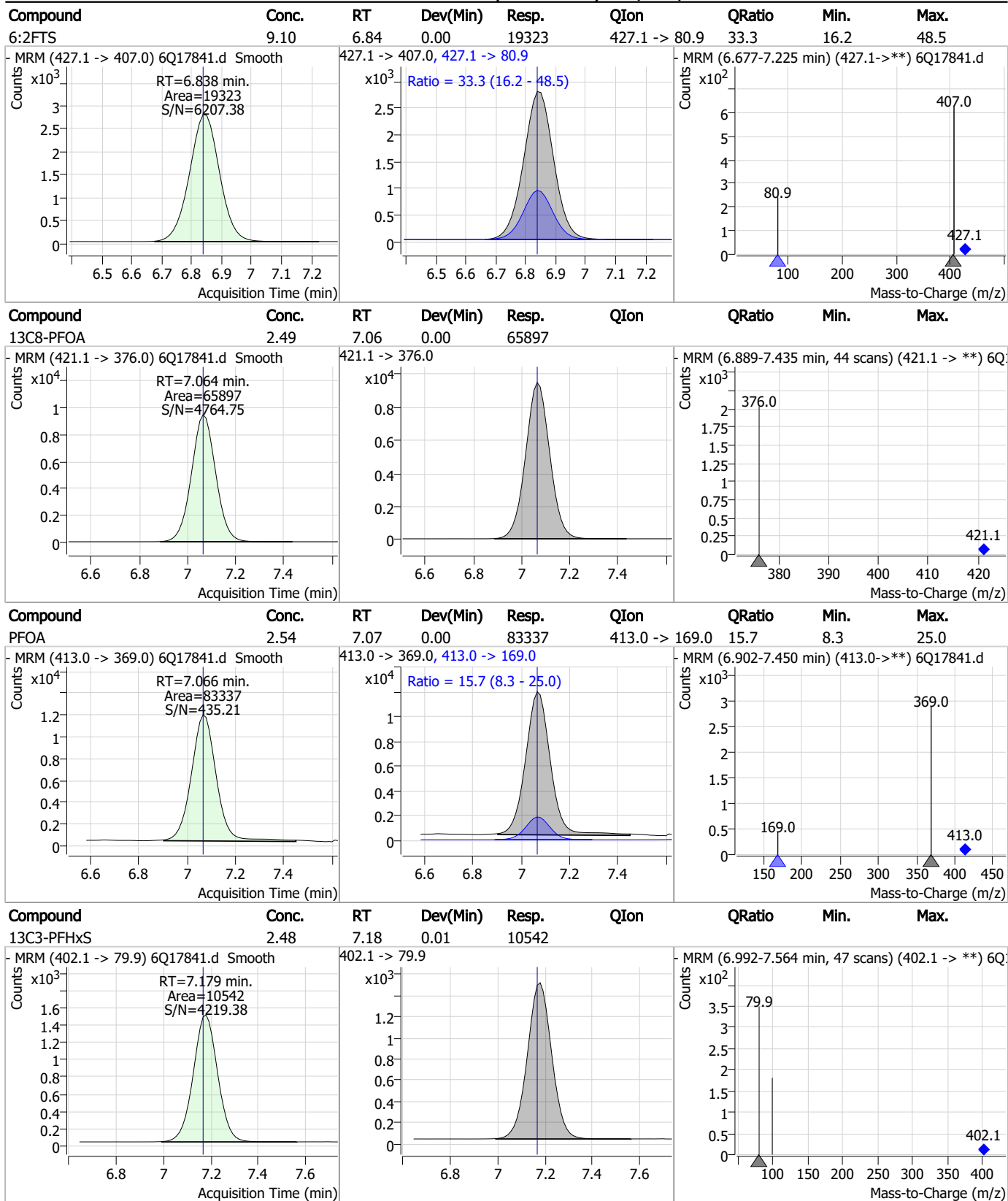
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



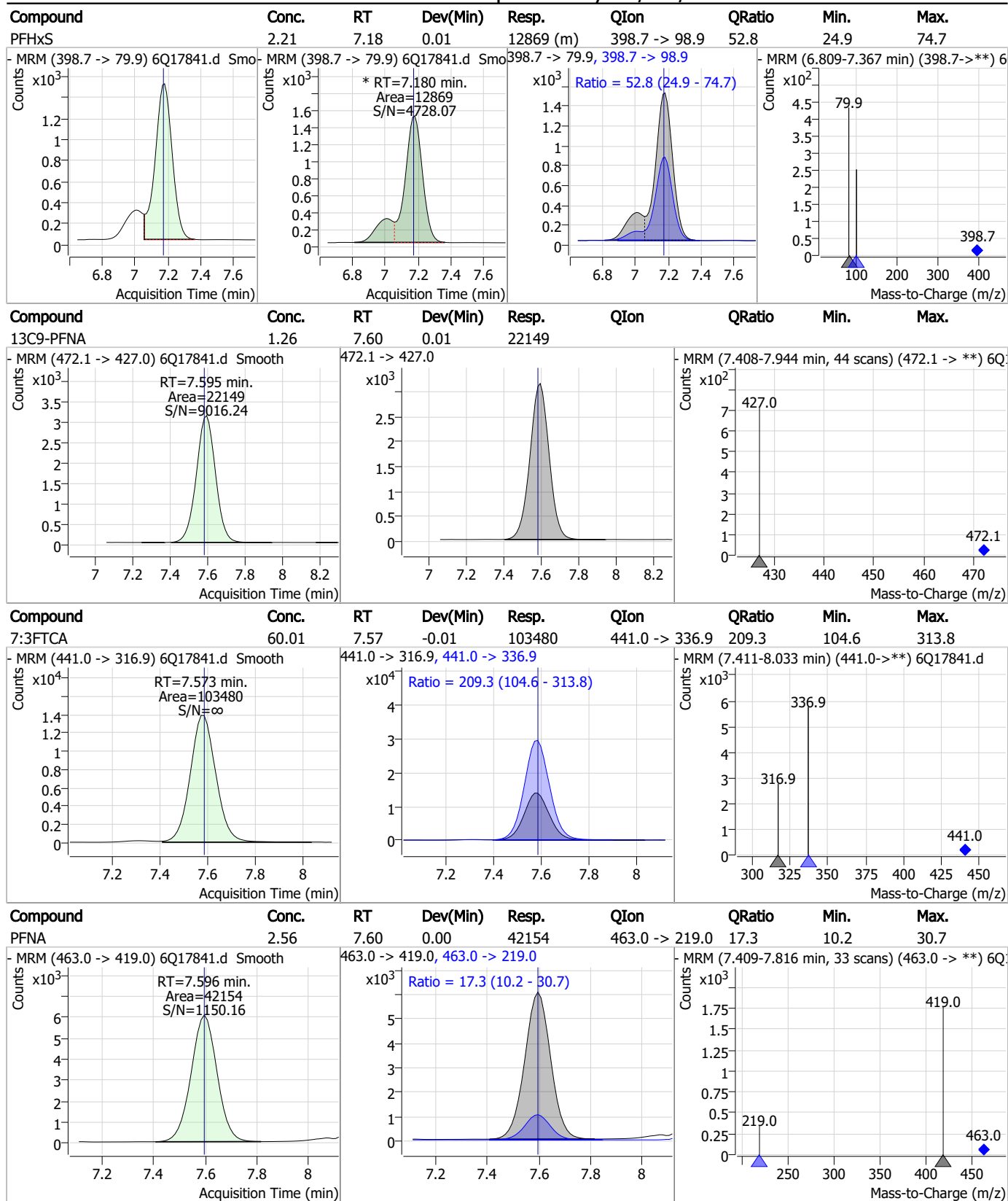
7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15
7

Perfluorinated Compounds by LC/MS/MS

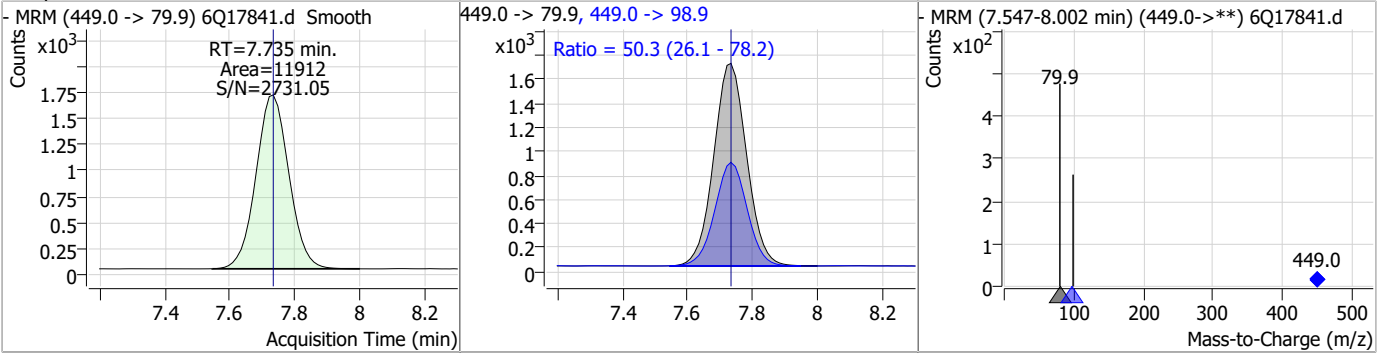


7.7.15

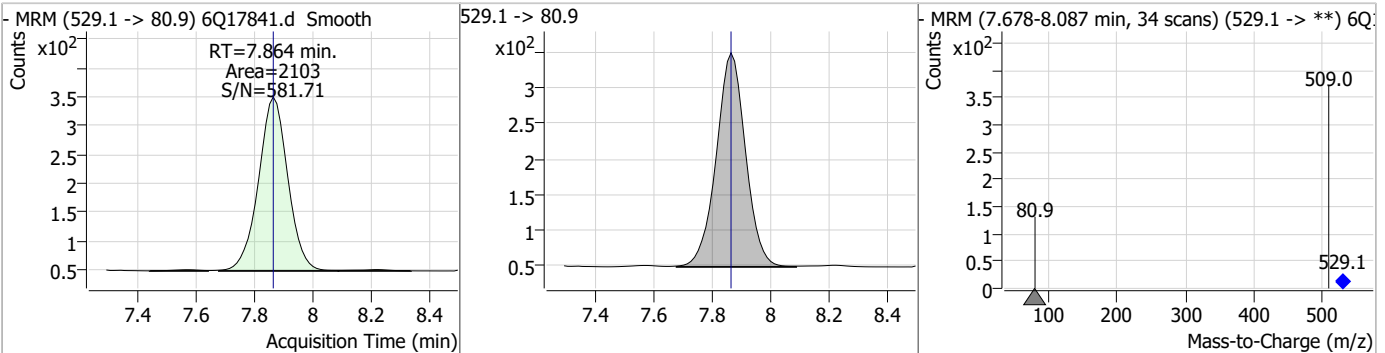
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Perfluorinated Compounds by LC/MS/MS

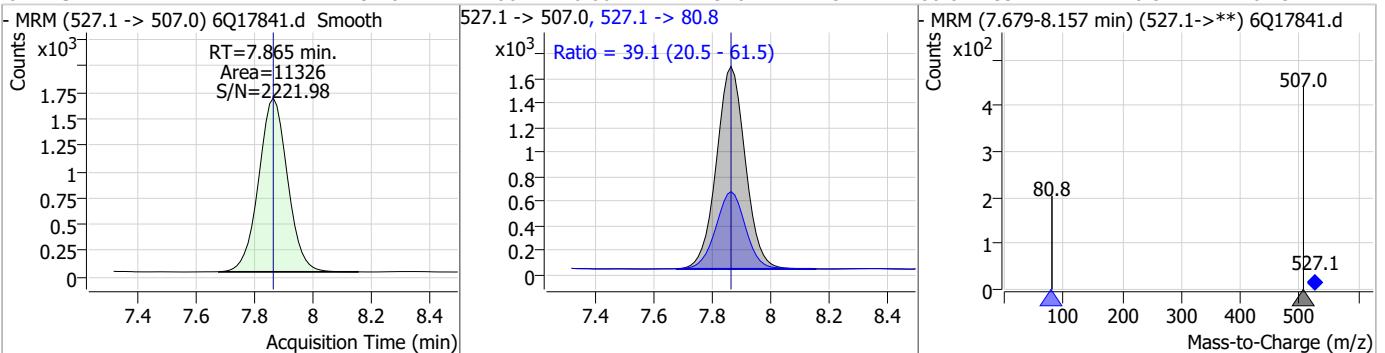
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.34	7.73	0.00	11912	449.0 -> 98.9	50.3	26.1	78.2



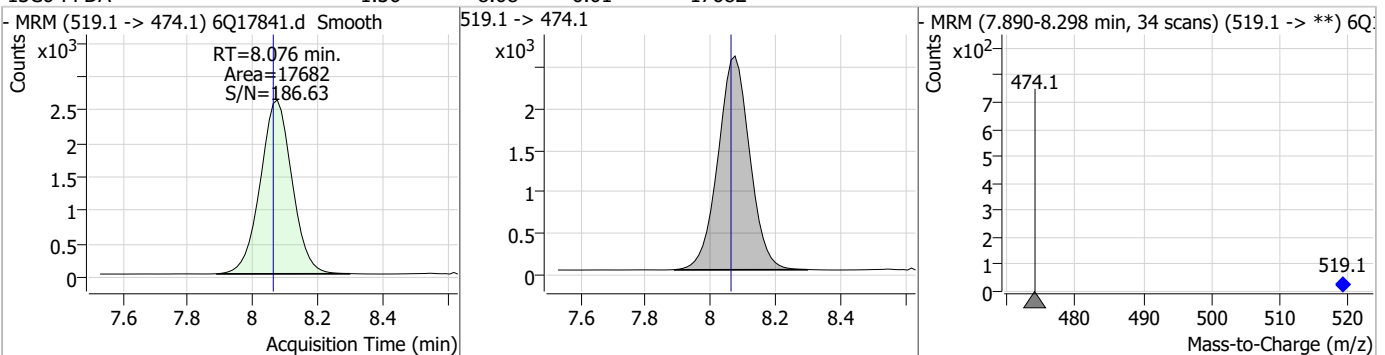
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.00	7.86	0.00	2103				



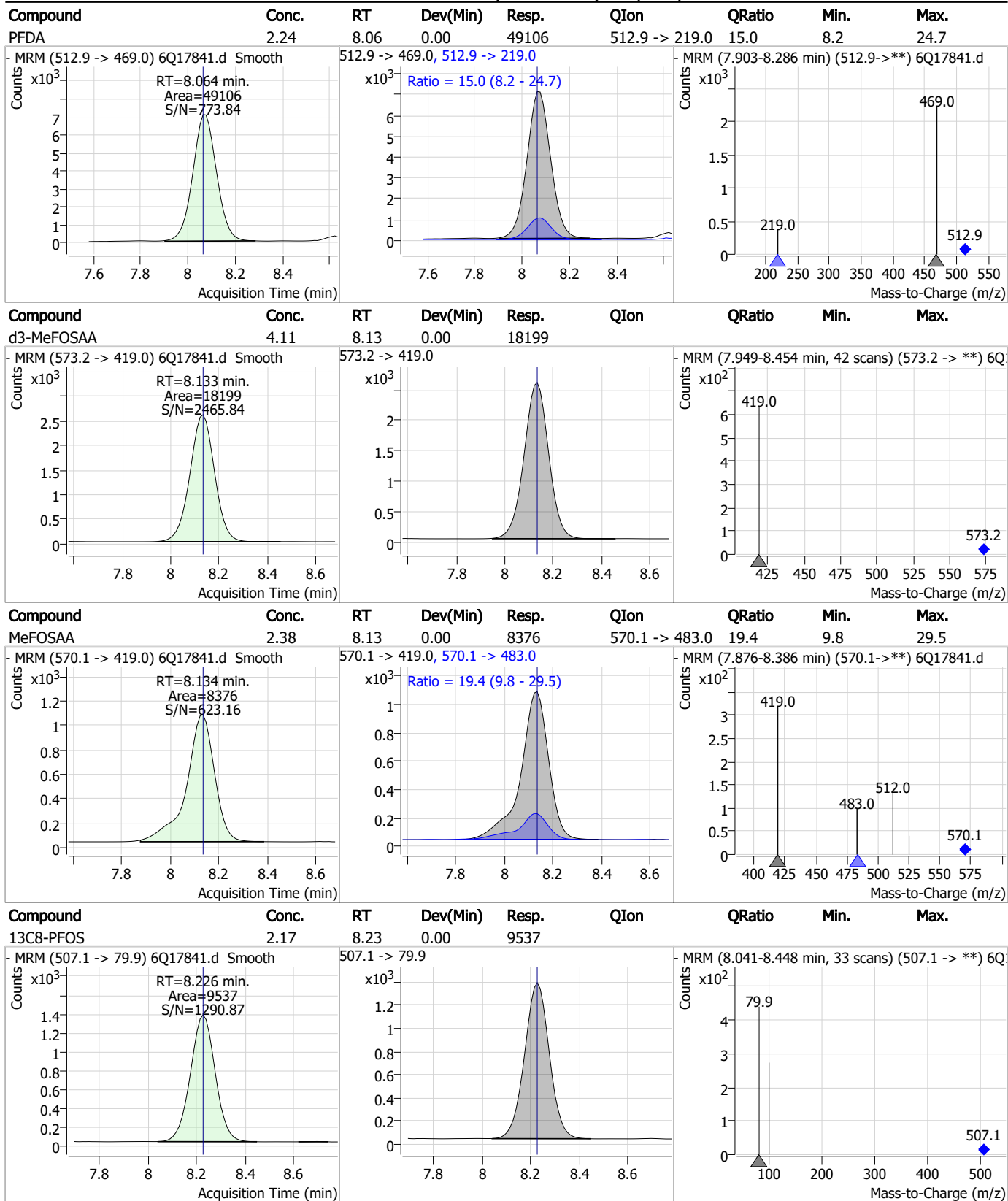
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.48	7.86	0.00	11326	527.1 -> 80.8	39.1	20.5	61.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.36	8.08	0.01	17682				



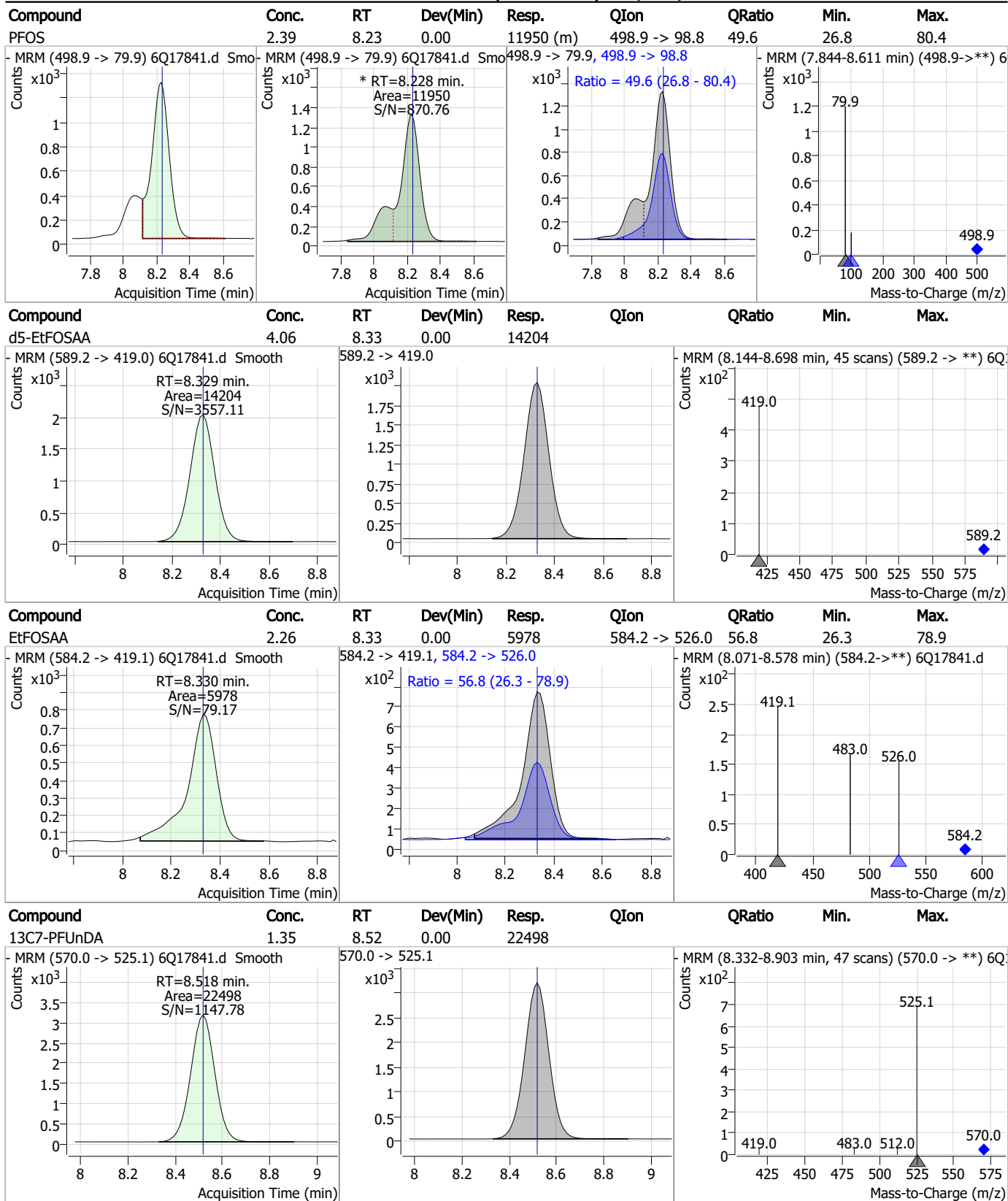
Perfluorinated Compounds by LC/MS/MS



7.7.15
7



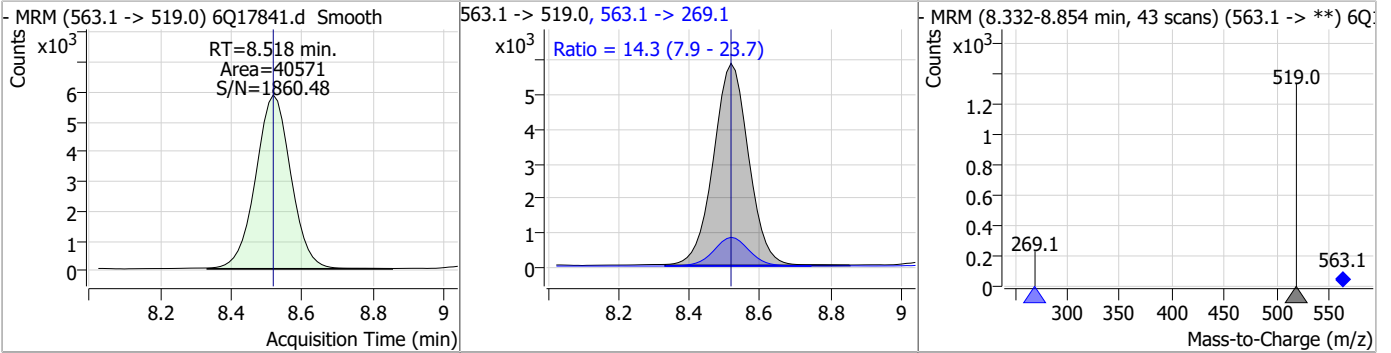
Perfluorinated Compounds by LC/MS/MS



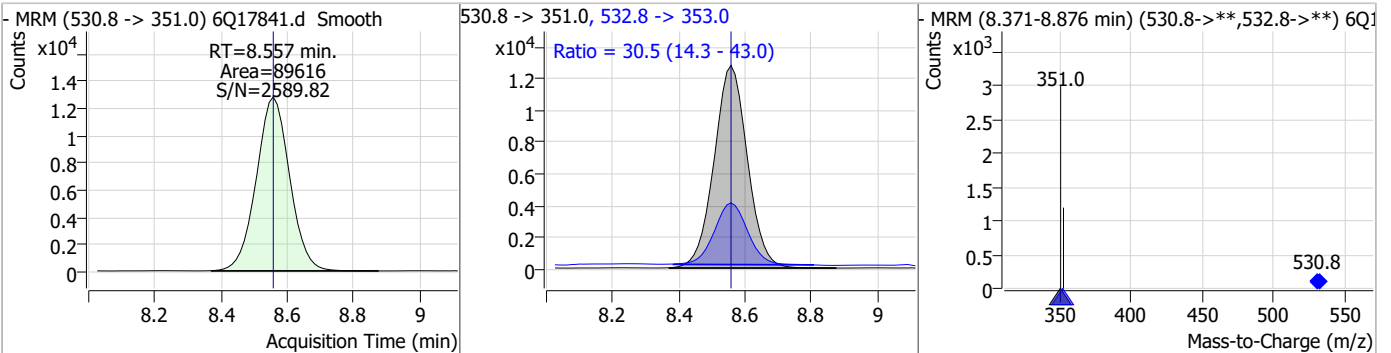
7.7.15

Perfluorinated Compounds by LC/MS/MS

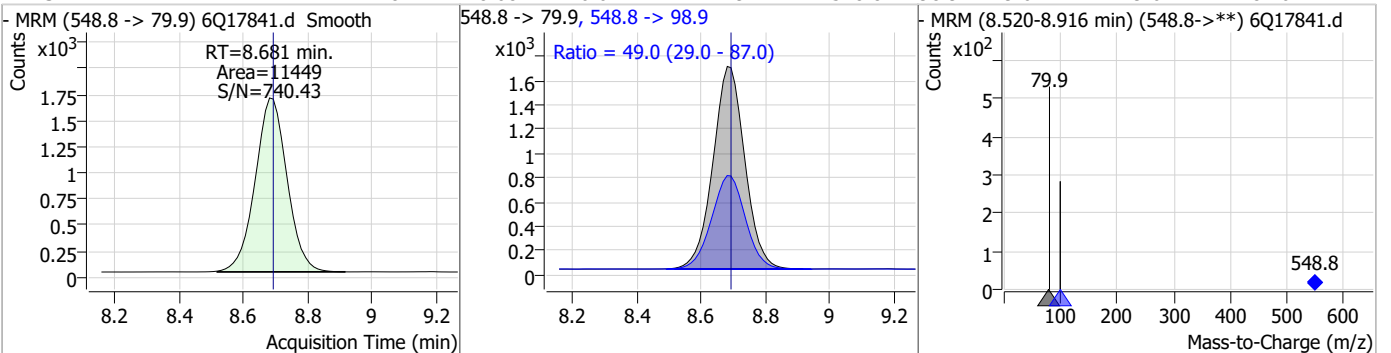
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.48	8.52	0.00	40571	563.1 -> 269.1	14.3	7.9	23.7



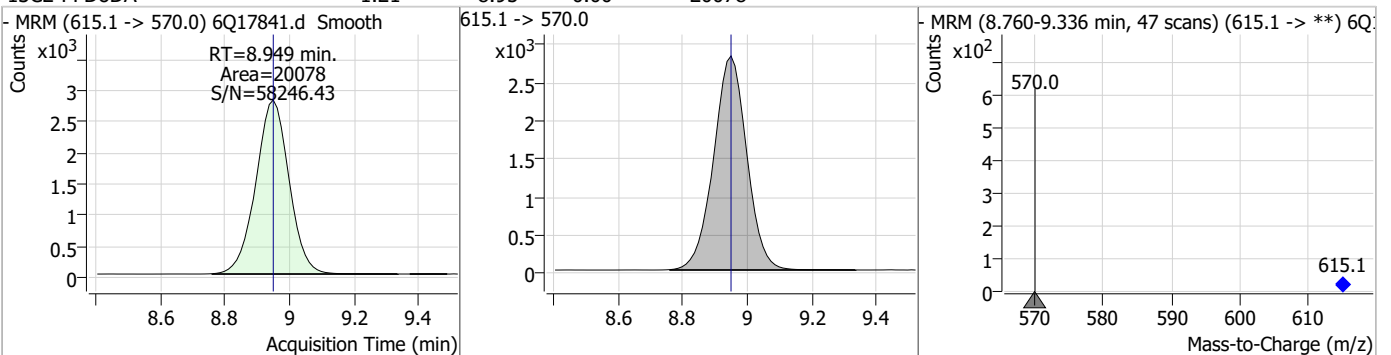
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.70	8.56	0.00	89616	532.8 -> 353.0	30.5	14.3	43.0



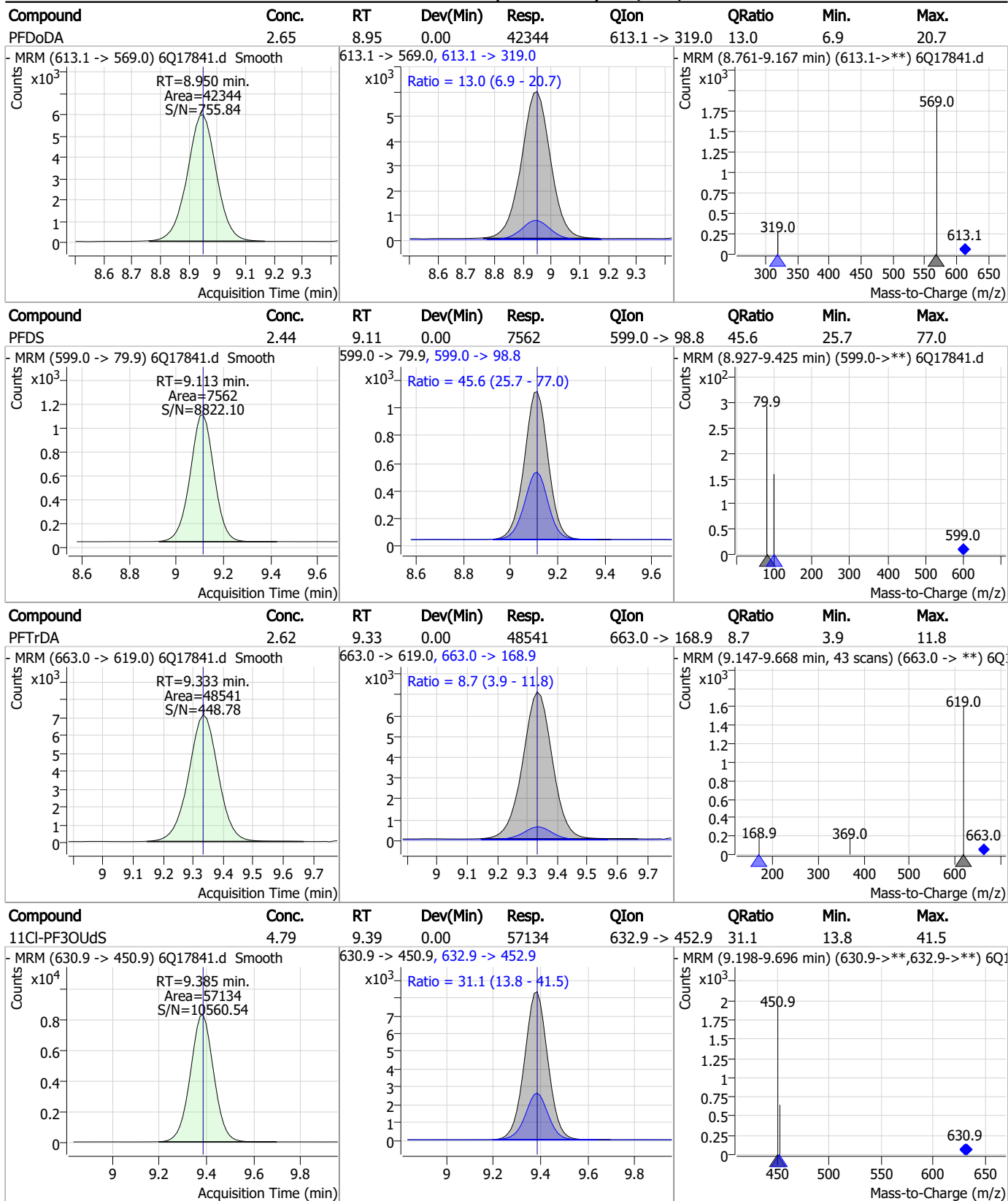
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.48	8.68	-0.01	11449	548.8 -> 98.9	49.0	29.0	87.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.95	0.00	20078	615.1 -> 570.0	-	-	-



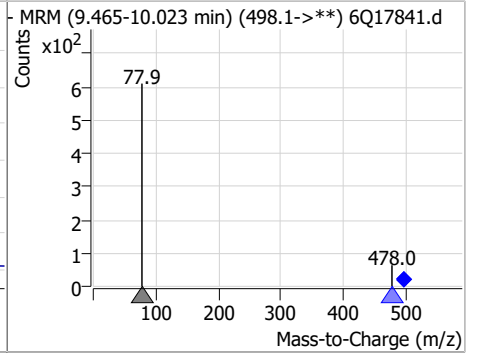
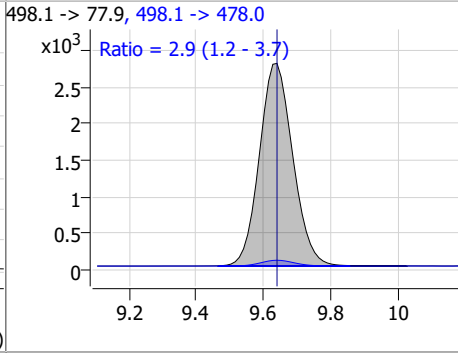
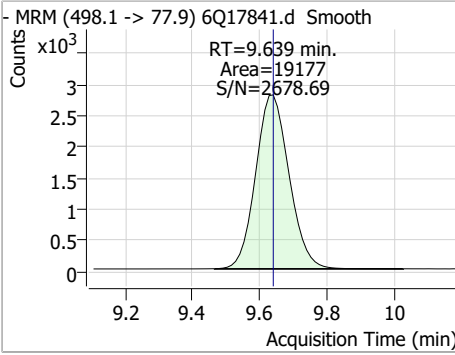
Perfluorinated Compounds by LC/MS/MS



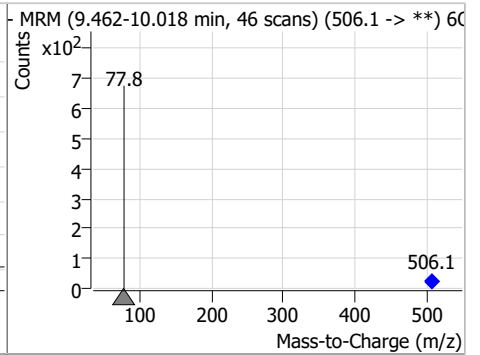
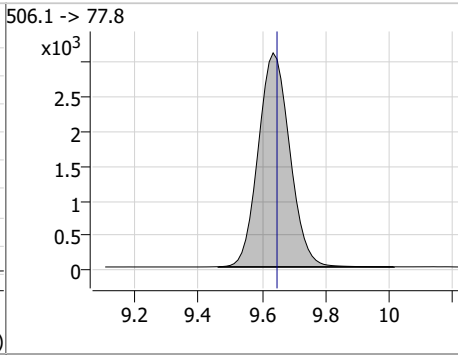
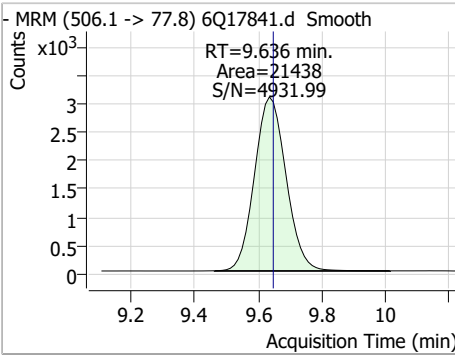
7.7.15
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Perfluorinated Compounds by LC/MS/MS

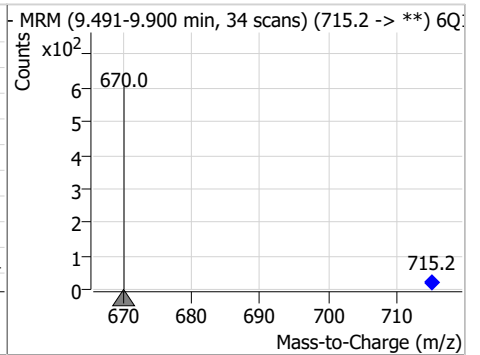
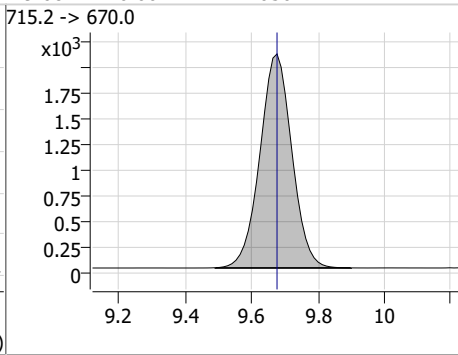
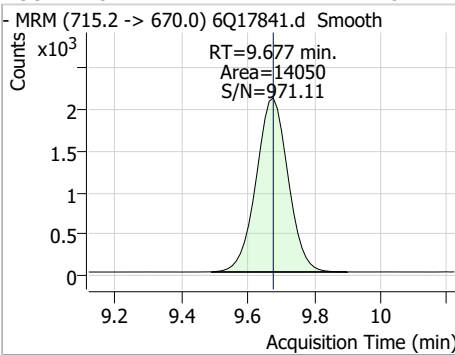
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.39	9.64	0.00	19177	498.1 -> 478.0	2.9	1.2	3.7



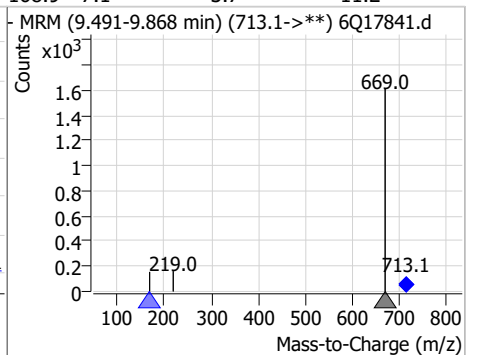
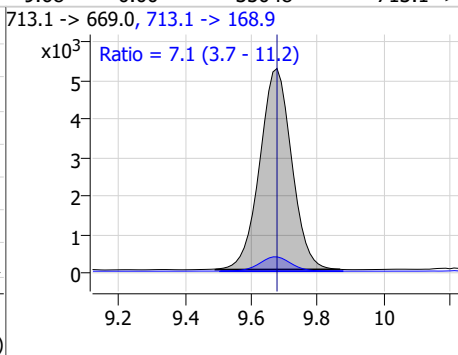
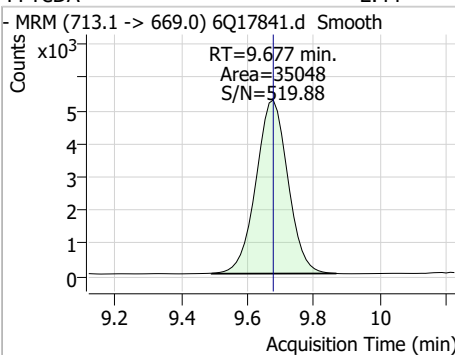
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.29	9.64	-0.01	21438				



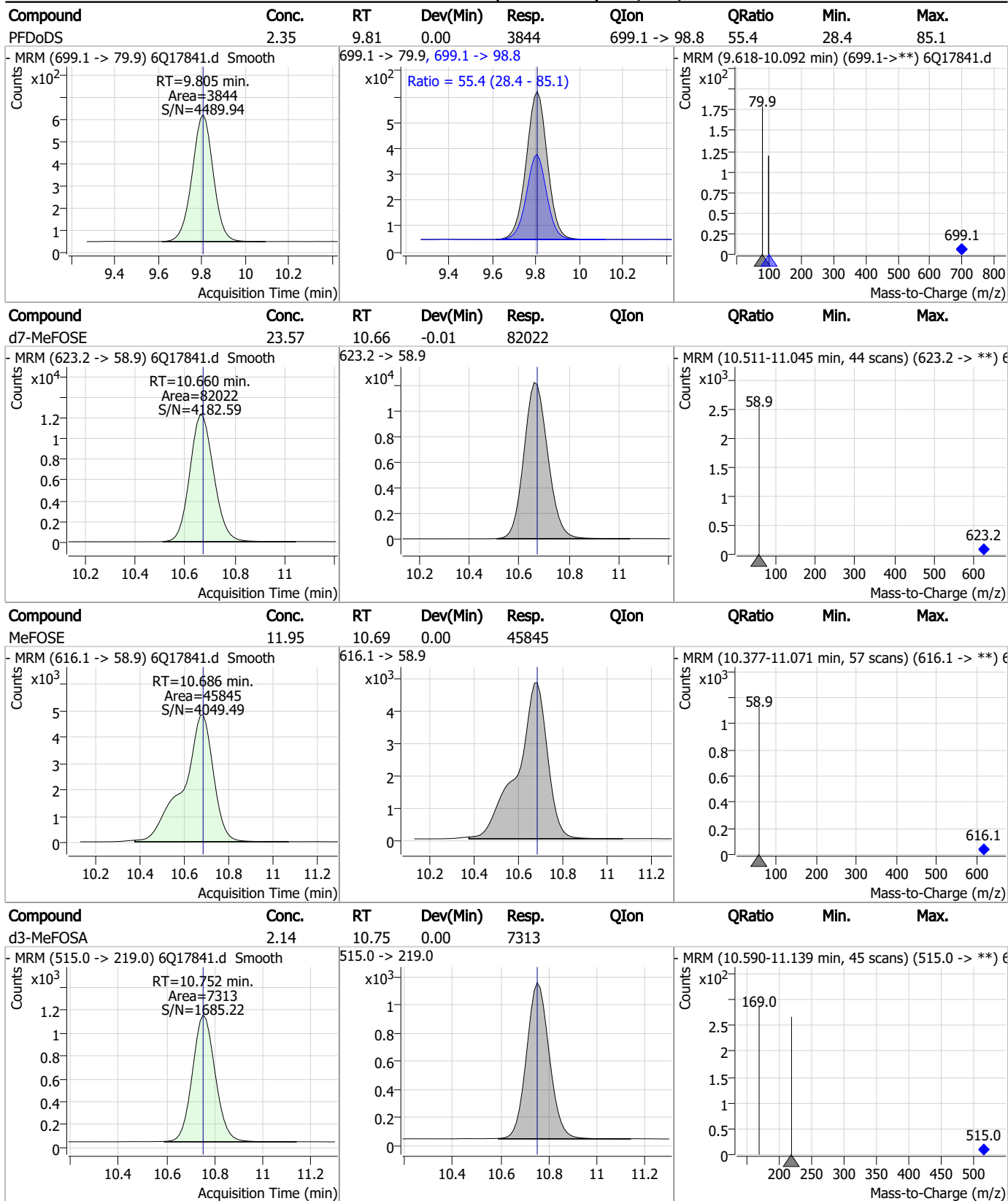
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.68	0.00	14050				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.44	9.68	0.00	35048	713.1 -> 168.9	7.1	3.7	11.2



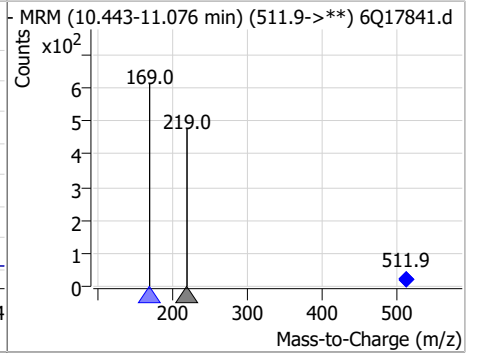
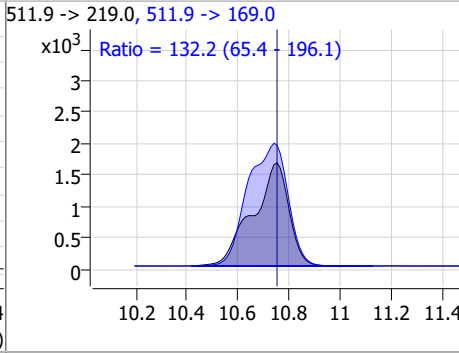
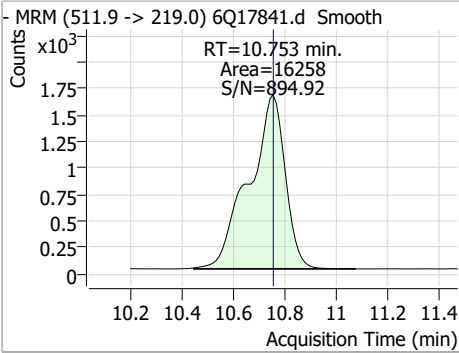
Perfluorinated Compounds by LC/MS/MS



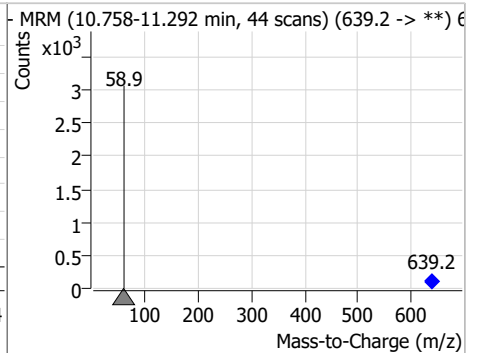
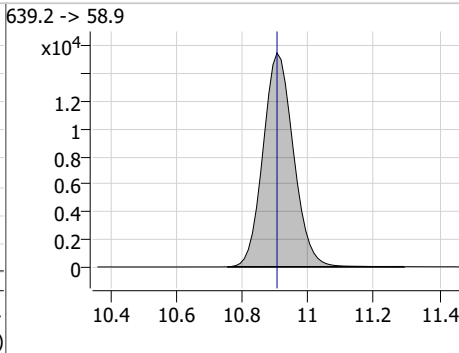
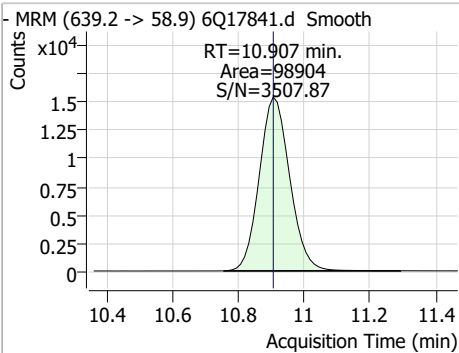
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Perfluorinated Compounds by LC/MS/MS

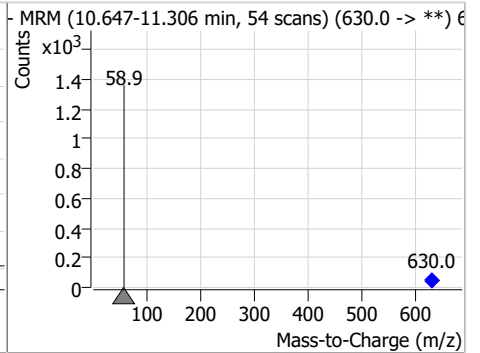
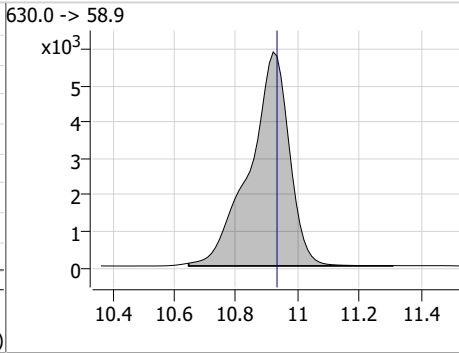
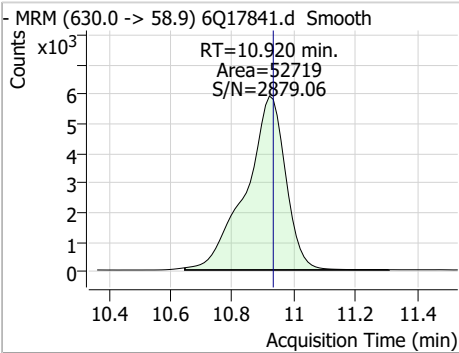
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.83	10.75	0.00	16258	511.9 -> 169.0	132.2	65.4	196.1



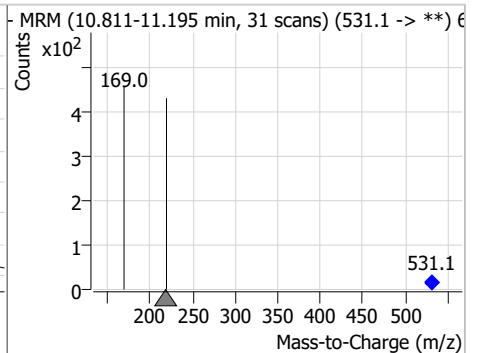
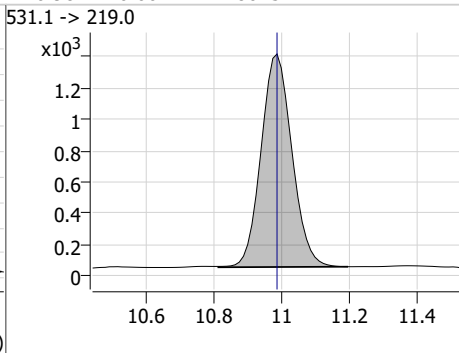
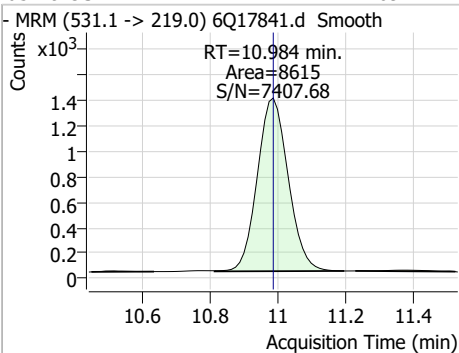
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.52	10.91	0.00	98904				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.23	10.92	-0.01	52719				

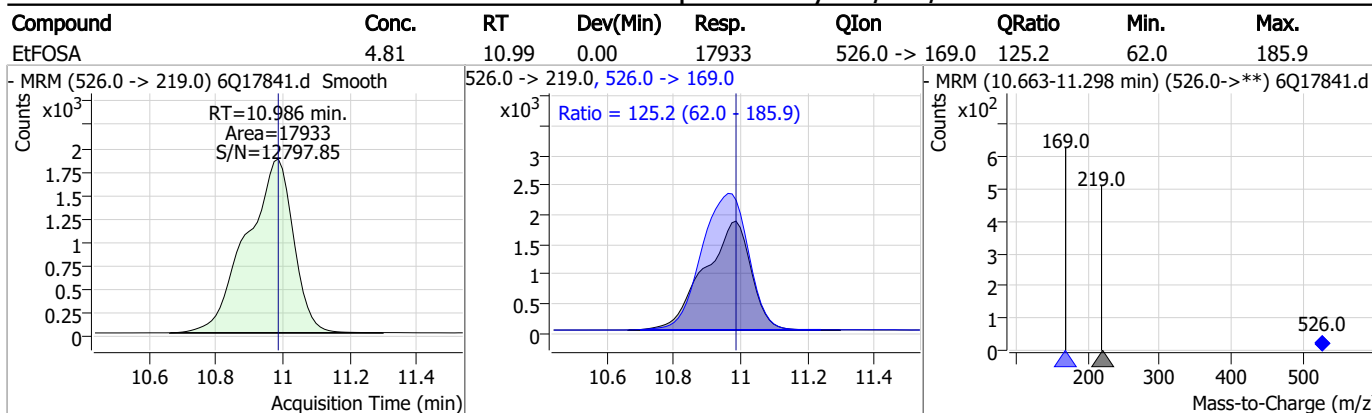


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.09	10.98	0.00	8615				



7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15
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Manual Integration Approval Summary

Sample Number: S6Q269-CC268 Method: EPA DRAFT 1633
Lab FileID: 6Q17841.D Analyst approved: 05/16/23 13:30 Martha Valls
Injection Time: 05/16/23 04:13 Supervisor approved: 05/17/23 08:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.18	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.23	Split peak

7.7.15.1

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SGS ORLANDO

DATE:	05/12/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_050823_S6Q265
CAL DATE:	05/08/23
ANALYST:	M. Valls
RUN BATCH:	S6Q268

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2107C
ICV STD LOT #:	LCMS 2107C/2100B
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q17732.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
2	6Q17733.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
3	6Q17734.d	P1-B9	CCB	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
4	6Q17735.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
5	6Q17736.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
6	6Q17737.d	P1-A1	ic268-0	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
7	6Q17738.d	P1-A2	ic268-1	1633full.m	Calibration	1.6/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
8	6Q17739.d	P1-A3	ic268-2	1633full.m	Calibration	3.2/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
9	6Q17740.d	P1-A4	ic268-3	1633full.m	Calibration	10/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
10	6Q17741.d	P1-A5	icc268-4	1633full.m	Calibration	20/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
11	6Q17742.d	P1-A6	ic268-5	1633full.m	Calibration	40/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
12	6Q17743.d	P1-A7	ic268-6	1633full.m	Calibration	100/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
13	6Q17744.d	P1-A8	ic268-7	1633full.m	Calibration	200/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
14	6Q17745.d	P1-A9	ic268-8	1633full.m	Calibration	1x	OP96663.S6Q268.500,,,5.0,1,,water	✓
15	6Q17746.d	P1-A1	iblk	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
16	6Q17747.d	P1-B1	icv268-4	1633full.m	QC	20/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
17	6Q17748.d	P1-B2	icv268-20	1633full.m	QC	100/500	OP96663.S6Q268.500,,,5.0,1,,water	made icv20 (NG)
18	6Q17749.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
19	6Q17750.d	P1-A2	cc268-1.0LL	1633full.m	QC	1.6/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
20	6Q17751.d	P4-A1	op96784-mb	1633full.m	Sample		OP96784.S6Q268.500,,,5.0,1,,water	✓
21	6Q17752.d	P4-A2	fc5890-1	1633full.m	Sample		OP96784.S6Q268.550,,,5.0,1,,water	✓
22	6Q17753.d	P4-A3	fc5890-1	1633full.m	Sample	50/500	OP96784.S6Q268.550,,,5.0,5,,water	✓
23	6Q17754.d	P4-A4	op96784-ms	1633full.m	Sample	50/500	OP96784.S6Q268.550,,,5.0,5,,water	✓
24	6Q17755.d	P4-A5	fc5890-2	1633full.m	Sample		OP96784.S6Q268.550,,,5.0,1,,water	✓
25	6Q17756.d	P4-A6	fc5890-2	1633full.m	Sample	50/500	OP96784.S6Q268.550,,,5.0,5,,water	✓
26	6Q17757.d	P4-A7	op96784-dup	1633full.m	Sample		OP96784.S6Q268.550,,,5.0,1,,water	✓
27	6Q17758.d	P4-A8	op96784-dup	1633full.m	Sample	50/500	OP96784.S6Q268.550,,,5.0,5,,water	✓
28	6Q17759.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
29	6Q17760.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
30	6Q17761.d	P4-B1	FC5481-3	1633full.m	Sample	50/500	OP96723.S6Q268.60,,,5.0,5,,water	✓
31	6Q17762.d	P4-B2	op96723-ms	1633full.m	Sample	50/500	OP96723.S6Q268.60,,,5.0,5,,water	✓
32	6Q17763.d	P4-B3	op96723-msd	1633full.m	Sample	50/500	OP96723.S6Q268.60,,,5.0,5,,water	✓
33	6Q17764.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663.S6Q268.500,,,5.0,1,,water	✓
34	6Q17765.d	P1-A1	iccb	1633full.m	Sample		OP96663.S6Q268.500,,,5.0,1,,water	✓
35	6Q17766.d	P4-B4	op96842-bs	1633full.m	Sample		OP96842.S6Q268.500,,,5.0,1,,water	✓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

36	6Q17767.d	P4-B5	op96842-llbs:3	1633full.m	Sample	OP96842,S6Q268,500,,,5.0,1,water	✓
37	6Q17768.d	P4-B6	op96842-mb	1633full.m	Sample	OP96842,S6Q268,500,,,5.0,1,water	✓
38	6Q17769.d	P4-B7	FC5443-1	1633full.m	Sample	OP96842,S6Q268,560,,,5.0,1,water	✓
39	6Q17770.d	P4-B8	FC5443-2	1633full.m	Sample	OP96842,S6Q268,570,,,5.0,1,water	✓
40	6Q17771.d	P4-B9	FC5443-3	1633full.m	Sample	OP96842,S6Q268,550,,,5.0,1,water	✓
41	6Q17772.d	P4-C1	FC5443-4	1633full.m	Sample	OP96842,S6Q268,540,,,5.0,1,water	RR2X
42	6Q17773.d	P4-C2	op96842-ms	1633full.m	Sample	OP96842,S6Q268,550,,,5.0,1,water	RR2X
43	6Q17774.d	P4-C3	op96842-msd	1633full.m	Sample	OP96842,S6Q268,540,,,5.0,1,water	RR2X
44	6Q17775.d	P4-C4	FC5443-5	1633full.m	Sample	OP96842,S6Q268,550,,,5.0,1,water	RR2X
45	6Q17776.d	P4-C5	FC5818-3	1633full.m	Sample	OP96842,S6Q268,60,,,5.0,1,water	✓
46	6Q17777.d	P1-A5	ecc268-4	1633full.m	QC	20/500	✓
47	6Q17778.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q268,500,,,5.0,1,water	✓

SGS ORLANDO

DATE:	05/15/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_050823_S6Q265
CAL DATE:	05/08/23
ANALYST:	M. Valls
RUN BATCH:	S6Q269

ELUENT A LOT #:	ACN 220228
ELUENT B LOT #:	HPLC WATER LOT: 224870 W15% ACN 220225 2mlM AMAC: 11387
IC/CC STD LOT #:	LCMS 2107C
ICV STD LOT #:	LCMS 2107C/2100B
ISTD/ID STD LOT #:	11765/11764

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q17779.d	P1-B9	CCB	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
2	6Q17780.d	P1-B9	CCB	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
3	6Q17781.d	P1-B3	RT TDCA	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
4	6Q17782.d	P1-B4	RT BR-LN	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
5	6Q17783.d	P1-A9	High Std	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
6	6Q17784.d	P1-A1	iblk	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
7	6Q17785.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663,S6Q269,500,,,5.0,1,water	✓
8	6Q17786.d	P1-A2	cc268-1,0LL	1633full.m	QC	1.6/500	OP96663,S6Q269,500,,,5.0,1,water	✓
9	6Q17787.d	P5-A1	op96847-bs	1633full.m	Sample		OP96847,S6Q269,500,,,5.0,1,water	✓
10	6Q17788.d	P5-A2	op96847-llbs:2	1633full.m	Sample		OP96847,S6Q269,500,,,5.0,1,water	✓
11	6Q17789.d	P5-A3	op96847-mb	1633full.m	Sample		OP96847,S6Q269,500,,,5.0,1,water	✓
12	6Q17790.d	P5-A4	FC5480-1	1633full.m	Sample		OP96847,S6Q269,60,,,5.0,1,water	✓
13	6Q17791.d	P5-A5	FC5480-1	1633full.m	Sample	100/500	OP96847,S6Q269,60,,,5.0,5,water	RR, wrong vial position
14	6Q17792.d	P5-A6	FC5481-1	1633full.m	Sample		OP96847,S6Q269,545,,,5.0,1,water	✓
15	6Q17793.d	P1-C1	Test spike A	1633full.m	QC	20/500	OP96663,S6Q269,500,,,5.0,1,water	LCMS 2122, PASS
16	6Q17794.d	P1-C2	Test spike b	1633full.m	QC	20/500	OP96663,S6Q269,500,,,5.0,1,water	LCMS 2122, PASS
17	6Q17795.d	P5-A7	FC5481-1	1633full.m	Sample	100/500	OP96847,S6Q269,545,,,5.0,5,water	✓
18	6Q17796.d	P5-A8	FC5481-2	1633full.m	Sample		OP96847,S6Q269,480,,,5.0,1,water	✓
19	6Q17797.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663,S6Q269,500,,,5.0,1,water	✓
20	6Q17798.d	P1-A1	iccb	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
21	6Q17799.d	P5-A9	FC5481-2	1633full.m	Sample	100/500	OP96847,S6Q269,480,,,5.0,5,water	✓
22	6Q17800.d	P5-B1	FC5481-3	1633full.m	Sample		OP96847,S6Q269,60,,,5.0,1,water	✓
23	6Q17801.d	P5-B2	FC5481-3	1633full.m	Sample	100/500	OP96847,S6Q269,60,,,5.0,5,water	✓
24	6Q17802.d	P5-B5	FC5481-4	1633full.m	Sample		OP96847,S6Q269,60,,,5.0,1,water	✓
25	6Q17803.d	P5-B6	FC5481-4	1633full.m	Sample	50/500	OP96847,S6Q269,60,,,5.0,10,water	✓
26	6Q17804.d	P5-B7	FC5481-5	1633full.m	Sample		OP96847,S6Q269,540,,,5.0,1,water	✓
27	6Q17805.d	P5-B8	FC5481-5	1633full.m	Sample	50/500	OP96847,S6Q269,540,,,5.0,10,water	✓
28	6Q17806.d	P5-B3	FC5481-4	1633full.m	Sample		OP96847,S6Q269,480,,,5.0,1,water	✓
29	6Q17807.d	P5-B4	FC5481-4	1633full.m	Sample	50/500	OP96847,S6Q269,480,,,5.0,10,water	✓
30	6Q17808.d	P1-A5	cc268-4	1633full.m	QC	20/500	OP96663,S6Q269,500,,,5.0,1,water	✓
31	6Q17809.d	P1-A1	iccb	1633full.m	Sample		OP96663,S6Q269,500,,,5.0,1,water	✓
32	6Q17810.d	P5-B9	FC5481-6	1633full.m	Sample		OP96847,S6Q269,505,,,5.0,1,water	✓
33	6Q17811.d	P5-C1	FC5481-6	1633full.m	Sample		OP96847,S6Q269,505,,,5.0,10,water	✓
34	6Q17812.d	P5-C2	FC5481-7	1633full.m	Sample		OP96847,S6Q269,545,,,5.0,1,water	✓
35	6Q17813.d	P5-C3	FC5481-8	1633full.m	Sample		OP96847,S6Q269,555,,,5.0,1,water	✓

SGS ORLANDO LCMS6-6Q ANALYSIS LOG

36	6Q17814.d	P5-C4	FC5481-9	1633full.m	Sample	OP96847,S6Q269,515,,,5.0,1,water	✓
37	6Q17815.d	P5-C5	FC5443-4	1633full.m	Sample	OP96842,S6Q269,540,,,5.0,2,water	✓
38	6Q17816.d	P5-C6	op96842-ms	1633full.m	Sample	OP96842,S6Q269,550,,,5.0,2,water	✓
39	6Q17817.d	P5-C7	op96842-msd	1633full.m	Sample	OP96842,S6Q269,540,,,5.0,2,water	✓
40	6Q17818.d	P5-C8	FC5443-5	1633full.m	Sample	OP96842,S6Q269,550,,,5.0,2,water	✓
41	6Q17819.d	P5-F6	FC5480-1	1633full.m	Sample	OP96847,S6Q269,60,,,5.0,1,water	✓
42	6Q17820.d	P1-A5	cc268-4	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	✓
43	6Q17821.d	P1-A2	cc268-1,0LL	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	✓
44	6Q17822.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q269,500,,,5.0,1,water	✓
45	6Q17823.d	P5-C9	op96871-bs	1633full.m	Sample	OP96871,S6Q269,500,,,5.0,1,water	✓
46	6Q17824.d	P5-D1	op96871-llbs:3	1633full.m	Sample	OP96871,S6Q269,500,,,5.0,1,water	✓
47	6Q17825.d	P5-D2	op96871-mb	1633full.m	Sample	OP96871,S6Q269,500,,,5.0,1,water	✓
48	6Q17826.d	P5-D3	FC5446-1	1633full.m	Sample	OP96871,S6Q269,560,,,5.0,1,water	✓
49	6Q17827.d	P5-D4	FC5446-2	1633full.m	Sample	OP96871,S6Q269,570,,,5.0,1,water	✓
50	6Q17828.d	P5-D5	FC5446-3	1633full.m	Sample	OP96871,S6Q269,540,,,5.0,1,water	✓
51	6Q17829.d	P5-D6	FC5930-1	1633full.m	Sample	OP96871,S6Q269,540,,,5.0,1,water	✓
52	6Q17830.d	P5-D7	FC5930-2	1633full.m	Sample	OP96871,S6Q269,540,,,5.0,1,water	✓
53	6Q17831.d	P5-D8	FC5930-3	1633full.m	Sample	OP96871,S6Q269,560,,,5.0,1,water	✓
54	6Q17832.d	P5-D9	FC5968-1	1633full.m	Sample	OP96871,S6Q269,550,,,5.0,1,water	✓
55	6Q17833.d	P1-A5	cc268-4	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	✓
56	6Q17834.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q269,500,,,5.0,1,water	✓
57	6Q17835.d	P5-E1	FC5968-2	1633full.m	Sample	OP96871,S6Q269,550,,,5.0,1,water	✓
58	6Q17836.d	P5-E2	op96871-ms	1633full.m	Sample	OP96871,S6Q269,530,,,5.0,1,water	✓
59	6Q17837.d	P5-E3	FC5968-3	1633full.m	Sample	OP96871,S6Q269,560,,,5.0,1,water	✓
60	6Q17838.d	P5-E4	op96871-dup	1633full.m	Sample	OP96871,S6Q269,530,,,5.0,1,water	✓
61	6Q17839.d	P5-E5	FC5968-4	1633full.m	Sample	OP96871,S6Q269,550,,,5.0,1,water	✓
62	6Q17840.d	P5-E6	FC5968-5	1633full.m	Sample	OP96871,S6Q269,530,,,5.0,1,water	✓
63	6Q17841.d	P1-A5	cc268-4	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	✓
64	6Q17842.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q269,500,,,5.0,1,water	✓
65	6Q17843.d	P5-F1	op96901-bs	1633full.m	Sample	OP96901,S6Q269,500,,,5.0,1,water	✓
66	6Q17844.d	P5-F2	op96901-llbs:2	1633full.m	Sample	OP96901,S6Q269,500,,,5.0,1,water	✓
67	6Q17845.d	P5-F3	op96901-mb	1633full.m	Sample	OP96901,S6Q269,500,,,5.0,1,water	✓
68	6Q17846.d	P5-F4	FC5391-10	1633full.m	Sample	OP96901,S6Q269,560,,,5.0,1,water	✓
69	6Q17847.d	P5-F5	FC5355-6	1633full.m	Sample	OP96901,S6Q269,550,,,5.0,1,water	✓
70	6Q17848.d	P1-A5	ecc268-4	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	✓
71	6Q17849.d	P1-A1	iccb	1633full.m	Sample	OP96663,S6Q269,500,,,5.0,1,water	✓
72	6Q17850.d	P1-C3	Test spike c	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	LCMS 2122, PASS
73	6Q17851.d	P1-C4	Test spike d	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	LCMS 2122, PASS
74	6Q17852.d	P1-C5	Test spike e	1633full.m	QC	OP96663,S6Q269,500,,,5.0,1,water	LCMS 2122, PASS

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 2106A-B	PFC SPIKE	11653	PF0A-100 (28 comps)	Absolute Wellington Labs	11/08/27	10/18/24	1.0ppm	2mL	5mL	400ppb	MS/MNH 5/14/20	01/18/23	10/18/23	NG
		11432	N-He-FOSA-m	Wellington Labs	02/18/27	03/13/24	50ppm	40uL						NG
		11513	FBSA-1		11/10/26	04/18/24								NG
		11514	FHSA-1		12/19/26	04/18/24								NG
		11332	PFERHS		03/18/27	10/18/24								NG
LCMS 2107A-C	1633-OPiKE Cal Std.	11734	PFAC MXH	Wellington	8/8/27	4/14/24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 MIX	4/19/23	10/19/23	MV
		11736	PFAC MXF	Wellington	11/11/25	4/14/24	2ppm	250uL		125ppb	2688mL			
		11676	PFAC MXG		12/11/27	4/11/24	2ppm	250uL		125ppb				
		11689	PFAC MXJ		9/11/26	4/19/24	4-20 ppm	250uL		125ppb				
LCMS 2108A-O	10PPb PFC ID SURT	11763	MPFAC-24-ES	Wellington Labs	01/18/28	04/18/24	1.0ppm	2.4mL	~50mL	312uL	95/MNH 5/14/20	04/24/23	10/24/23	NG
		11635A	M3HFO-DA		11/08/28	04/18/24	50ppm	48uL						NG
		11431	d-N-MADOSAM		05/06/27	03/13/24	50ppm	48uL						NG
LCMS-2109	537.1 DW STD.	11653	PF0A-D0D (28 comps)	Absolute	11/09/27	04/18/24	1.0ug/mL	4mL	100ppb	100ppb	90% MeOH 4/24/23	09/10/23	09/10/23	JR
		2080	DW SURT.		07/06/23		1.0/2.0 PPM	400uL	100/200 PPB					JR

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



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 20915A-E	(10ppb) PFC ID SURR	A-5 11669	PFAC-2YES	Wilmington Labs	01/16/18	03/18/24	10ppm	2.4mL	~50mL	0.5ppm	151mech 51420	03/18/23	09/18/23	NS
↓	↓	11585	MTHRO-DA	↓	11/08/15	01/26/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	d-N-METOSAM	↓	05/10/07	03/13/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 20916A-B	1033 spike Cal w/d.	11672	PFAC-MxH	Wilmington	8/8/17	3/23/24	1-4 ppm	250uL	4mL	02.5 125 250ppb	1033 MIX	3/30/23	9/30/23	MU
↓	↓	11686	PFAC-MxI	↓	2/27/28	3/30/24	170 ppm	250uL	↓	02.5 025ppb	↓	↓	↓	↓
↓	↓	11674A	PFAC-MxI	↓	11/1/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11674B	PFAC-MxI	↓	12/1/27	3/10/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11660	PFAC-MxG	↓	9/14/26	3/23/24	4-20 ppm	312uL	↓	312/100 ppb	↓	↓	↓	↓
↓	↓	11675	PFAC-MxG	↓	12/1/27	3/30/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11672B	PFAC-MxJ	↓	9/14/26	3/23/24	4-20 ppm	312uL	↓	312/100 ppb	↓	↓	↓	↓
LCMS 2097A-B	BR-LN metel for 1033	11497	br-N metosa	Wilmington	08/23/17	10/28/23	50ppm	200uL	5mL	2ppm 5ppm	1033 MIX	4/6/23	10/28/23	MU
↓	↓	11498	br-N Effosa	↓	10/6/17	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11495	br-N metosa	↓	10/6/17	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Effosa	↓	10/7/17	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓					4/6/24								

* tested & used on 3/30/24

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



Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2098A	1033 spike Cal std.	11672A	PFAC	Wellington	8/18/27	3/23/24	1-4 ppm	250uL	4mL	0.25 1.25 250ppb	1033 mix	4/6/23	10/6/23	MW
		LCMS 2097	Br-1n Et-Me	SGS Labo	NA	10/28/23	3ppm 5ppm	250uL		125ppb 312.5ppb				
		11674B	PFAC Mx F	Wellington	1/11/25	3/30/24	2ppm	250uL 500uL 750uL		125ppb				
		11675	PFAC Mx G		12/1/27	3/30/24	2ppm	250uL		125ppb				
		11672B	PFAC Mx J		9/14/26	3/23/24	4-20 ppm	312uL		312/100 ppb				
LCMS 2099	537.1 Du std. (Fumeral)	11670	M3P-PEA	Wellington Labs	07/08/25	04/06/24	50ppm	80uL	4mL	1.0ppm	0.10 MESH 41. H2O	04/06/23	05/15/23	NG
		10436A	Mx 2 FTS		11/05/25	04/06/24		80uL		1.0ppm				NG
		10522B	d3-N-NEOSAA		10/22/25	05/15/23		160uL		2.0ppm				NG
		10498A	M1FOS		11/02/25	03/22/24		80uL		1.0ppm				NG
		11069	M2RFA		12/01/26	03/22/24		80uL		1.0ppm				NG
LCMS 2100	Full List (40)	11626	PFOR 28 Comp.	Absolute	11/19/27	4/11/24	1.0ppm	400uL	4.0mL	100ppb	75% MeOH 5% H2O	4/11/23	7/24/23	MW
2101	List 40 spike (50)	LCMS 2067	40 List ADD #1	SGS Add.		8/23/23	1.0ppm	400uL			(2,40021)			
		LCMS 2070	40 List ADD #2			5/12/23	1.0ppm	400uL						
		LCMS 2054	FOSSE Std.			7/24/23	5.0ppm	400uL		50ppb				
LCMS 2101	Fose std.	11336	N-et Fose	Wellington	5/13/27	9/19/23	50ppm	200uL	2.0mL	5ppm	45% MeOH 5% H2O	9/11/23	9/19/23	MW
		11338	N-me fose		5/13/27	9/19/23	50ppm	200uL						

* based on date opened as specified in each SGS - Orlando SOP. (1,600)

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



Organic Standards Preparation Log

SGS - Orlando Std. #	Parent Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2067	40 List std. ADD-ON #1	10720A	10:2 FTS	Wellington	3/3/26	3/21/23	50 ppm	80 uL	4.0 mL	1 ppm	95% meth 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	L- PFDOS		7/9/26	10/18/23							8/23/23	
		10829	N- MCFOSA		8/3/26	8/23/23								
		10837	N- E-FOSA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFOBA		5/7/26	10/18/23								
		11116B	3:3FTCA PFAPA		2/3/27	2/8/24								
		10685A	5:3FTCA PFAPA		11/1/25	8/23/23								
		11116A	7:3FTCA FHPA		11/12/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/13/25	10/18/23								
		10763B	PFMBA		3/31/25	10/18/23								
		10764	PFMPA		3/31/25	2/8/24								
		10765B	NFHDA 3.6-OPAPA		3/31/25	10/18/23								
					NG 02/10/23									

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

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



Organic Standards Preparation Log

SGS - Orlando Sid. #	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 2074 A-B	PFC SPIKE	11613	PROA-DOD CASCOMP	Absolute Wellington Labs	11/09/23	02/23/24	1.0ppm	2mL	5mL	400ppb	95% MeOH 5% H2O	02/23/23	05/23/23	NG
		10829	N-Me-PBSA-M	Wellington Labs	08/23/26	08/23/23	50ppm	40uL						NG
		11250	PBSA-1		11/10/26	11/08/23								NG
		11249	PHSA-1		12/29/26	11/03/23								NG
		11322	PFCHS		02/28/27	10/18/23								NG
LCMS 2075A-F	(10 PPB) PFC ID SURF	11639	MPPAC-24ES	Wellington Labs	03/24/27	02/23/24	1.0ppm	2.4mL	~50 mL	0.5ppm	95% MeOH 5% H2O	02/23/23	05/23/23	NG
		11585	N2HFO-DA	Wellington Labs	11/08/26	01/26/24	50ppm	48uL						NG
		11385	B-N-NHFO-SA-M	Wellington Labs	05/10/27	01/01/24	50ppm	48uL						NG
LCMS 2076	40 List std. ADDON #2	11250	FBSA-1	Wellington Labs	11/10/26	11/8/23	50ppm	80uL	4.0mL	1ppm	95% MeOH 5% H2O	2/27/23	5/2/26	MW
		11249	FHSA-1		2/29/26	11/3/23	50ppm	80uL						
		11140	L-PFRG		7/12/26	5/26/23	50ppm	80uL						
LCMS 2077A-B	1633 Solvent B	11387	Ammonium Acetate	Sigmaaldrich		1/25/24	99.9%	0.62g	4L	2mM	95% MeOH 5% H2O	2/28/23	4/28/23	MW
		224870	HPLC water	Fisher		2/28/23		3,800ml		95%				
		220225	Acetoni trile			2/20/24		200mL		5%				
						aka new 2/28/23								
						Continue next page #1								

* added 2/23/23
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Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2052	1633 prep mix	Lot: 221044	MeOH	Fisher	—	1/4/24	99.9%	92 mL	100 mL	92%	N/A	1/19/23	2/19/23	MV
		Lot: 219481	NH4OH		—	9/19/23	100%	3.3 mL		1%				
		Lot: 224863	H2O		—	1/17/24	100%	1.7 mL		4%				
		Lot: 224297	Acetic Acid		—	6/24	99.7%	0.625 mL		.625%				
LCMS 2053	(spike) Full list std	11568	PF6A DOP 28	SGS Standards	11/9/27	11/10/24	1.0 ppm	400 nL	4.0 mL	100 ppb	95% MeOH 5% H2O	12/4/23	3/21/23	MV
		LCMS 1987	40 list Add on #1		—	3/21/23	1.0 ppm	400 nL						
		LCMS 1986	40 list Add on #2		—	4/18/23	1.0 ppm	400 nL						
		LCMS 2054	Fose std.		—	7/7/23	5.0 ppm	400 nL		500 ppb				
LCMS 2054	Fose std.	11336	N-Et-FOSE	Wellington	5/13/27	9/19/23	50 ppm	200 nL	2.0 mL	5 ppm	95% MeOH 5% H2O	12/4/23	7/24/23	MV
		11338	N-Me FOSE		5/13/27	9/19/23	50 ppm	200 nL						
LCMS 2055	1633 Cal std.	10855	PFAC MXH	Wellington	9/14/26	1/17/24	1-4 ppm	2.50 nL	4 mL	62.5 125 250 ppb	1633 MIX	1/24/23	7/24/23	MV
		10853J	PFAC MXI		9/14/26	1/11/24	1-10 ppm	2.50 nL		62.5 125 250 ppb				
		11549B	PFAC MXF		1/11/25	1/11/24	2 ppm	500 nL		250 ppb				
		11607A	PFAC MXG		3/4/25	1/24/24	2 ppm	250 nL		125 ppb				
		10854J	PFAC MXJ		9/14/26	1/11/24	4-20 ppm	312 nL		312/100 ppb				
		11492	PFAC MXJ		9/14/26	1/24/24	4-20 ppm	312 nL						
		11603	PFAC MXJ											

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

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



11494



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

PRODUCT CODE:	br-NMeFOSE
LOT NUMBER:	brNMeFOSE0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/02/2022
LAST TESTED: (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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

brNMeFOSE0922 (1 of 7)
rev1

7.9.1

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11495



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NEtFOSE
<u>LOT NUMBER:</u>	brNEtFOSE1022
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/12/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS Data (SIR)
- Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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brNEtFOSE1022 (1 of 7)
rev1

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

**N-Methylperfluorooctanesulfonamide
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NMeFOSA
<u>LOT NUMBER:</u>	brNMeFOSA0822
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/18/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/23/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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brNMeFOSA0822 (1 of 6)
rev1

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (SIR)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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brNEtFOSA0922 (1 of 6)
rev1

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11676
rec'd: 02/23/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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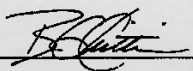
Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (1 of 5)
rev1

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Table A: PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 10/02/2021
(mm/dd/yyyy)

11688
rec'd 03/03/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG1122
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	11/30/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	12/01/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	12/01/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

PFACMXG1122 (1 of 5)
rev0

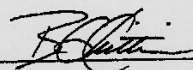
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Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11689
rec'd: 03/03/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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


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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
(mm/dd/yyyy)

11734
rec'd: 03/29/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXH
<u>LOT NUMBER:</u>	PFACMXH0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (2%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/05/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/08/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/08/2027
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₈, 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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Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUDA	1000		24
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNs	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

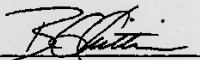
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/09/2022
(mm/dd/yyyy)

11736
rec'd: 03/29/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

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

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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Form# 13, Issued 2004-11-10
Revision# 3, Revised 2020-12-23

PFACMXF0122 (1 of 5)
rev0

7.9.1
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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-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 

B.G. Chittim, General Manager

Date: 01/12/2022

(mm/dd/yyyy)

11737
rec'd: 03/29/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

PRODUCT CODE: PFAC-MXG
LOT NUMBER: PFACMXG1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/30/2022
LAST TESTED: (mm/dd/yyyy) 12/01/2022
EXPIRY DATE: (mm/dd/yyyy) 12/01/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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PFACMXG1122 (1 of 5)
rev0

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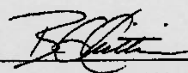
Table A:

PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By:



B.G. Chittim, General Manager

Date: 12/09/2022

(mm/dd/yyyy)

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10726 A

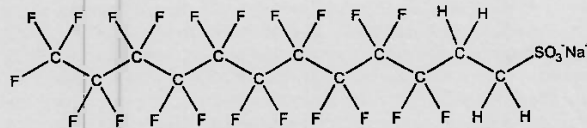


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

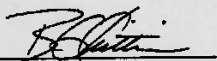
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:  **Date:** 03/05/2021
B.G. Chittim, General Manager (mm/dd/yyyy)

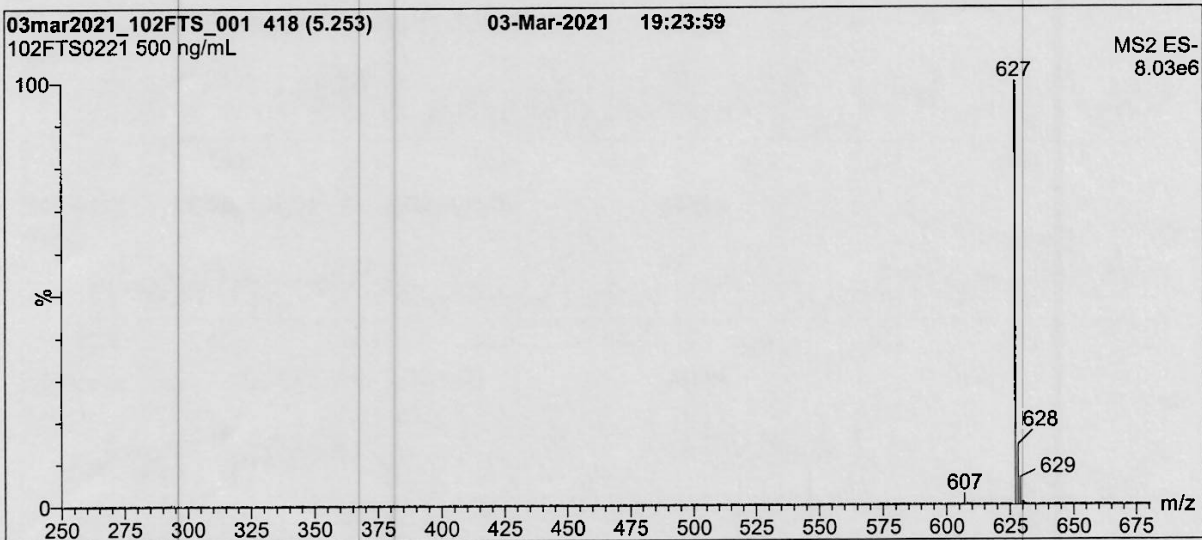
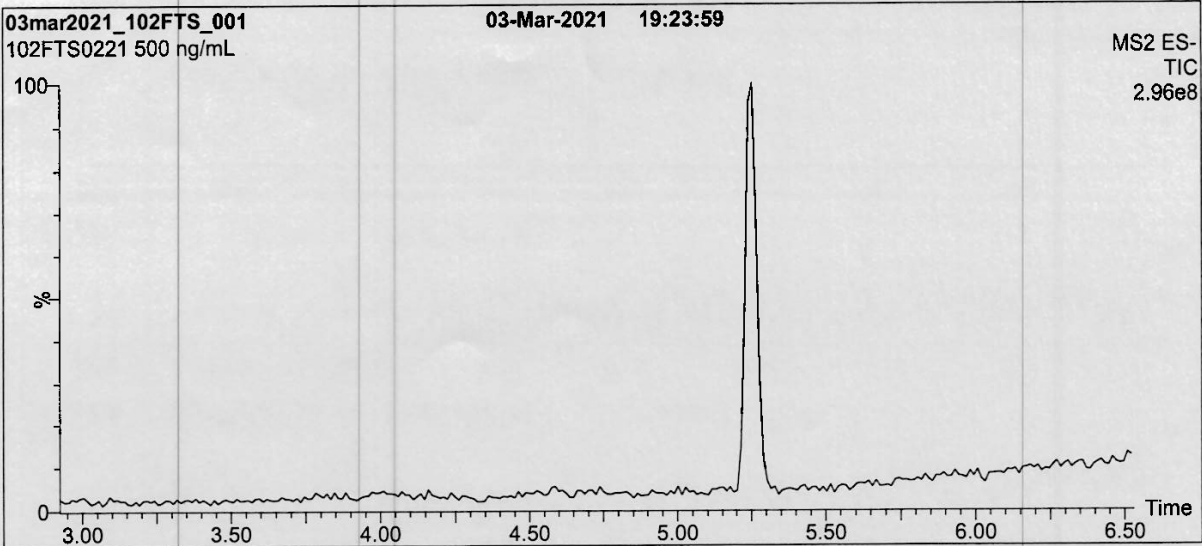
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Revision#: 9, Revised 2020-12-23

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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

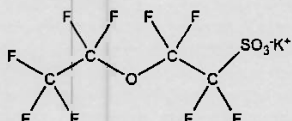


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *retd 8/20/21 WPH* **LOT NUMBER:** PFEESA0520
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₈SO₄K **MOLECULAR WEIGHT:** 354.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/13/2020
EXPIRY DATE: (mm/dd/yyyy) 05/13/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

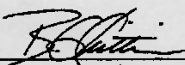
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

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Certified By:  **Date:** 05/29/2020
B.G. Chittim, General Manager (mm/dd/yyyy)

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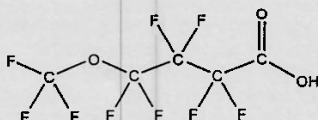
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

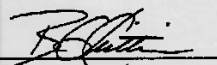
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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PF5OHxA0320 (1 of 4)
rev1

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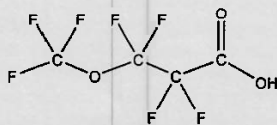
CERTIFICATE OF ANALYSIS DOCUMENTATION

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

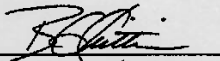
DOCUMENTATION/ DATA ATTACHED:

- 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.

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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

PF4OPeA0320 (1 of 4)
rev1

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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

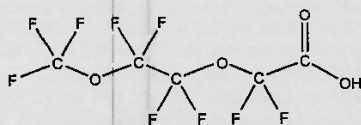
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₈O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

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Certified By:

B.G. Chittim
B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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10829



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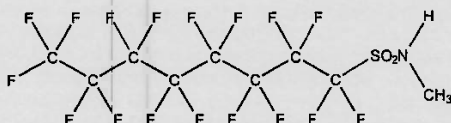
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



rec'd
WPA
10/5/21

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

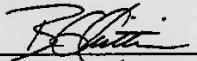
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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Revision#:9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

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7



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PRODUCT CODE:

N-EtFOSA-M

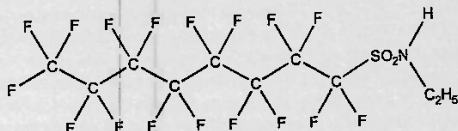
10837

LOT NUMBER: NEtFOSA0821M

COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:



CAS #: 4151-50-2

MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

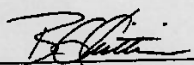
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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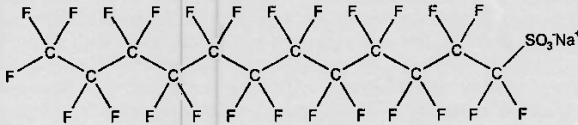
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol


DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 07/16/2021
(mm/dd/yyyy)

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Revision#: 9, Revised 2020-12-23

LPFDoS0721 (1 of 4)
rev0

7.9.1

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CERTIFICATE OF ANALYSIS DOCUMENTATION

10847 NG 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

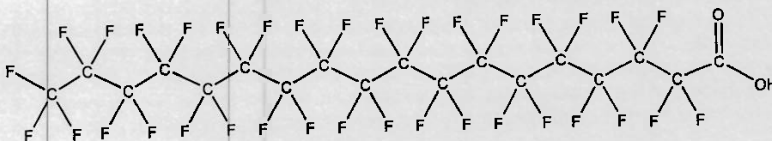
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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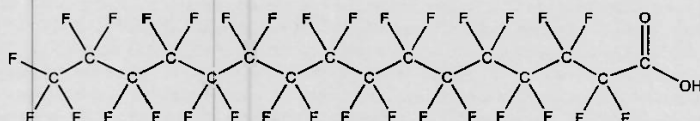


10842 * NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

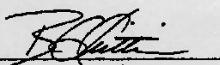
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

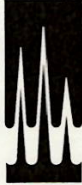
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Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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1116 A/B NW

1116B on the back NW



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

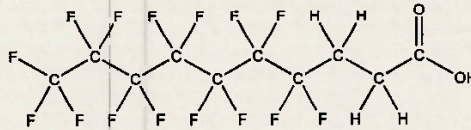
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

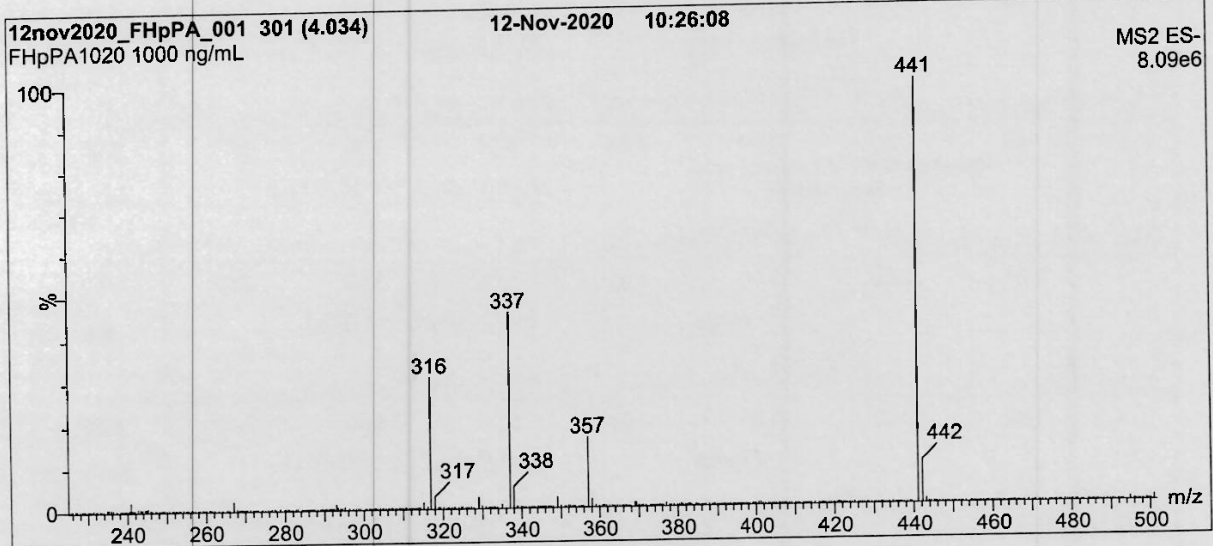
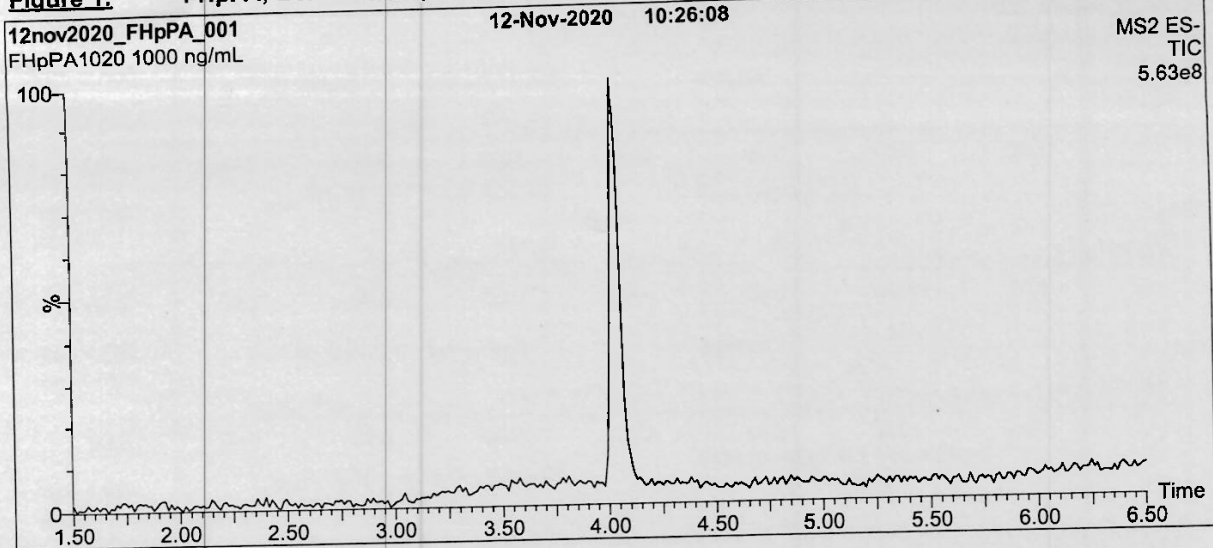
Date: 11/27/2020

(mm/dd/yyyy)

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

FHpPA1020 (1 of 4)
rev0

Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPrPA(3:3FTEA) 1116 B



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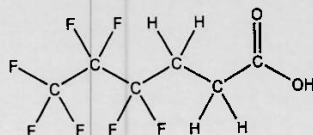
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

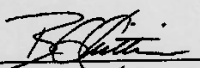
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

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Certified By: 
B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

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11332



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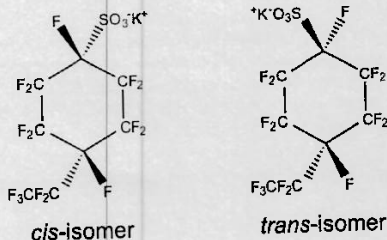
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

STRUCTURE:



CAS #: 335-24-0

MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

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Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

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7.9.1
7



11626
rec'd 01/26/23

CERTIFIED WEIGHT REPORT

Part Number: **64029A**
Lot Number: **110922**
Description: **PFOA - DOD**
28 components
Expiration Date: **110827**
Recommended Storage: **Freezer (0 °C)**
Nominal Concentration (µg/mL): **1.0**
NIST Test ID#: **6UTB**

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

Formulated By: <i>P. S. Chauhan</i>	110922
Prepared By: <i>Prashant Chauhan</i>	DATE
Reviewed By: <i>Prashant Chauhan</i>	110922
Reviewed By: <i>Pedro L. Rentas</i>	DATE

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									Free Acid CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid (PFBA)	99542	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid (PFPeA)	99543	050222	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid (PFHxA)	99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ipr-rat 189mg/kg
6. Perfluorononanoic acid (PFNA)	99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7. Perfluorodecanoic acid (PFDA)	99195	110922	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	rat 57mg/kg
8. Perfluoroundecanoic acid (PFUnA)	99205	071522	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9. Perfluorododecanoic acid (PFDoA)	99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid (PTTDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid (PFTeDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA03221	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic 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	0.01	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	29108-34-4	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3662	82FTS0822	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid (HFPO-DA)	99666	080522	0.02	2.00	0.017	50.1	1.00	0.02	13252-13-6	N/A	N/A
26. 11-Chlorooctadecafluoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0522	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27. 9-Chlorooctadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	4164	9ClPF3ONS0522	0.021	2.14	0.017	46.6	1.00	0.05	756426-56-1	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0922	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	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	6.3	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 Kaye, 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).

11140



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

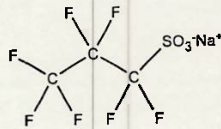
COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₃F₇SO₃Na

MOLECULAR WEIGHT:

272.07

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

46.0 ± 2.3 µg/mL (PFPrS acid)

45.8 ± 2.3 µg/mL (PFPrS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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7/1/22 KA



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

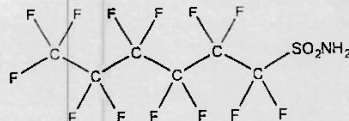
COMPOUND:

Perfluoro-1-hexanesulfonamide

STRUCTURE:

CAS #:

41997-13-1



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

MOLECULAR WEIGHT:

399.13

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

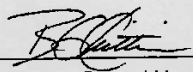
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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:

FBSA-I

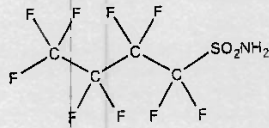
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₉NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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

FBSA11211 (1 of 4)
rev0

7.9.1

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

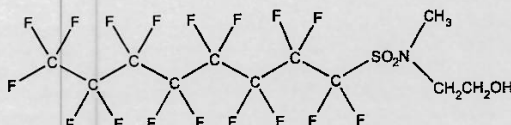
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₈F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

11764 A-5
rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection
Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/28/2022
LAST TESTED: (mm/dd/yyyy) 11/29/2022
EXPIRY DATE: (mm/dd/yyyy) 11/29/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

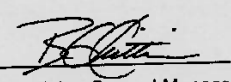
MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
7

Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By:  Date: 12/05/2022
(mm/dd/yyyy)
R.G. Chittim, General Manager

11765 A-J
Rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

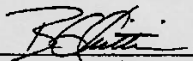
Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES1022 (1 of 7)
rev0

Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₂)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₃)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 ₅)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₆)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₇)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₇)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₈)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFD _o A	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₇)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ 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: 11/24/2022
(mm/dd/yyyy)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/12/23 11:00
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM)

Date/Time: 5/15/23 11:40
Finished (mm/dd/yy 24:00)

Balance ID: _____

Batch#: OP 96871 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 96871 MB	/	500	7	N/A	25				
OP 96871 BS	/	500	7	↓		200	5	A4	
OP 96871 LLBS	/	500	7	N/A		60			
FC5446-1A	2	560	6						
	2R	570							
	3R	540							
FC5930-1	2	540							
	2	540							
	3	560							
FC5968-1	2	550						↓	
	2	550						A4	
	3	560						A6	
	4	550							
	5	530	6	N/A	25		5	A6	
OPFC5968-2MS	3	530	6	N/A	25	200	5	A4	
OP MSD									
OPFC5968-3DUP	3	530	6	N/A	25		5	A4	

Comments:

EIS (SURR) ID: 11777F-H Conc: 250-5000 ng/ml Exp. Date: 05/01/24 Inj. By: GH Ver. By: CM
 SPIKE.1 ID: LCMS2107C Conc: VARIED Exp. Date: 10/27/23 Inj. By: GH Ver. By: CM
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11776I-J Conc: 250-1000 ng/ml Exp. Date: 5/9/24 Inj. By: MV Ver. By: AL

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 224231 1% NH4OH MeOH PF 394 SPE Lot # 6723930-02
 Water Lot# OP96255 0.3M Formic Acid PF 384 Syringe filter Lot # _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF 393 5% Formic Acid _____ Carbon Lot# 9668 99687
 GH
 5/12/23

Relinquished By: Yanilla Hodros
 Accepted By: MV

Date: 05/12/23
 Date: 5/15/23

7.10.1
7