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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC10192

Sampling Date: 10/03/23

Report to:

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

Total number of pages in report: 686



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A handwritten signature in black ink that reads "Norm Farmer".

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)

DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),

AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC10192

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC10192-1	10/03/23	10:10 AA	10/05/23	AQ	Ground Water	AF-HDMW225303-WGN01LF-2310
FC10192-2	10/03/23	12:40 AA	10/05/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2310
FC10192-3	10/03/23	12:40 AA	10/05/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2310

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC10192

Site: N6274223F0104 RH Fire Suppression System

Report Date: 10/11/2023 10:44:41 AM

On 10/05/2023, 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 4.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC10192 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: OP99404

Sample(s) FC10192-1MS, FC10192-2DUP 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: FC10192
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 10/03/23



Lab Sample ID	Client Sample ID	Result/ Analyte	LOQ	LOD	Units	Method
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FC10192-1 AF-HDMW225303-WGN01LF-2310

No hits reported in this sample.

FC10192-2 AF-RHMW12A-WGN01LF-2310

No hits reported in this sample.

FC10192-3 AF-RHMW12A-WGFD01LF-2310

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-HDMW225303-WGN01LF-2310		
Lab Sample ID:	FC10192-1	Date Sampled:	10/03/23
Matrix:	AQ - Ground Water	Date Received:	10/05/23
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	6Q25956.D	1	10/08/23 18:52	MV	10/07/23 08:10	OP99404	S6Q367
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	3.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.7	3.8	0.96	ng/l	
4151-50-2	EtFOSA	3.8 U	7.7	3.8	0.96	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-HDMW225303-WGN01LF-2310		
Lab Sample ID:	FC10192-1	Date Sampled:	10/03/23
Matrix:	AQ - Ground Water	Date Received:	10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.96	ng/l	
919005-14-4	ADONA	3.8 U	7.7	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.7	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	7.7	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.7	3.8	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.7	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.7	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.7	1.9	0.75	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	19	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	96	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	96	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	103%		20-150%
	13C5-PFPeA	103%		20-150%
	13C5-PFHxA	100%		20-150%
	13C4-PFHpA	100%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	95%		20-150%
	13C6-PFDA	105%		20-150%
	13C7-PFUnDA	106%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	84%		20-150%
	13C3-PFBS	103%		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-HDMW225303-WGN01LF-2310	
Lab Sample ID:	FC10192-1	Date Sampled: 10/03/23
Matrix:	AQ - Ground Water	Date Received: 10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	95%		20-150%
	13C8-FOSA	74%		20-150%
	d3-MeFOSA	81%		20-150%
	d5-EtFOSA	80%		20-150%
	d3-MeFOSAA	99%		20-150%
	d5-EtFOSAA	89%		20-150%
	d7-MeFOSE	77%		20-150%
	d9-EtFOSE	82%		20-150%
	13C2-4:2FTS	111%		20-180%
	13C2-6:2FTS	103%		20-180%
	13C2-8:2FTS	102%		20-180%
	13C3-HFPO-DA	106%		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-RHMW12A-WGN01LF-2310		
Lab Sample ID:	FC10192-2	Date Sampled:	10/03/23
Matrix:	AQ - Ground Water	Date Received:	10/05/23
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	6Q25958.D	1	10/08/23 19:21	MV	10/07/23 08:10	OP99404	S6Q367
Run #2							

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

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

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2310	
Lab Sample ID:	FC10192-2	Date Sampled: 10/03/23
Matrix:	AQ - Ground Water	Date Received: 10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

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

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

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

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

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

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

PER and POLYFLUOROETHER SULFONIC ACIDS

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

FLUOROTELOMER CARBOXYLIC ACIDS

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

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	40%		20-150%
	13C5-PFPeA	105%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	101%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	91%		20-150%
	13C2-PFTeDA	78%		20-150%
	13C3-PFBS	109%		20-150%
	13C3-PFHxS	114%		20-150%

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

4.2
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Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2310	
Lab Sample ID:	FC10192-2	Date Sampled: 10/03/23
Matrix:	AQ - Ground Water	Date Received: 10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	99%		20-150%
	13C8-FOSA	75%		20-150%
	d3-MeFOSA	81%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	91%		20-150%
	d7-MeFOSE	75%		20-150%
	d9-EtFOSE	81%		20-150%
	13C2-4:2FTS	116%		20-180%
	13C2-6:2FTS	116%		20-180%
	13C2-8:2FTS	105%		20-180%
	13C3-HFPO-DA	106%		20-150%

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

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW12A-WGFD01LF-2310		
Lab Sample ID:	FC10192-3	Date Sampled:	10/03/23
Matrix:	AQ - Ground Water	Date Received:	10/05/23
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	6Q25960.D	1	10/08/23 19:49	MV	10/07/23 08:10	OP99404	S6Q367
Run #2							

Run #	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	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	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	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	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	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	0.64	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	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2310		
Lab Sample ID:	FC10192-3	Date Sampled:	10/03/23
Matrix:	AQ - Ground Water	Date Received:	10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

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

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	42%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	105%		20-150%
	13C4-PFHpA	106%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	98%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	75%		20-150%
	13C3-PFBS	105%		20-150%
	13C3-PFHxS	103%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2310	
Lab Sample ID:	FC10192-3	Date Sampled: 10/03/23
Matrix:	AQ - Ground Water	Date Received: 10/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	105%		20-150%
	13C8-FOSA	76%		20-150%
	d3-MeFOSA	86%		20-150%
	d5-EtFOSA	85%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	99%		20-150%
	d7-MeFOSE	74%		20-150%
	d9-EtFOSE	79%		20-150%
	13C2-4:2FTS	119%		20-180%
	13C2-6:2FTS	114%		20-180%
	13C2-8:2FTS	115%		20-180%
	13C3-HFPO-DA	103%		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

QC Evaluation: DOD QSM5.x Limits

Job Number: FC10192
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 10/03/23

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 FC10192

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-IBLK	6Q25948.D	1	10/08/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-IBLK	6Q25948.D	1	10/08/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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	100% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	99% 20-150%
	13C4-PFHpA	98% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	98% 20-150%
	13C6-PFDA	98% 20-150%
	13C7-PFUnDA	99% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	98% 20-150%
	d3-MeFOSA	99% 20-150%
	d5-EtFOSA	96% 20-150%
	d3-MeFOSAA	100% 20-150%
	d5-EtFOSAA	103% 20-150%
	d7-MeFOSE	99% 20-150%
	d9-EtFOSE	99% 20-150%
	13C2-4:2FTS	102% 20-180%
	13C2-6:2FTS	103% 20-180%
	13C2-8:2FTS	99% 20-180%
	13C3-HFPO-DA	97% 20-150%

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Instrument Blank

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-IBLK	6Q26048.D	1	10/09/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-IBLK	6Q26048.D	1	10/09/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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	102% 20-150%
	13C4-PFHpA	101% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	107% 20-150%
	13C6-PFDA	109% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	106% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	101% 20-150%
	d5-EtFOSAA	100% 20-150%
	d7-MeFOSE	97% 20-150%
	d9-EtFOSE	96% 20-150%
	13C2-4:2FTS	116% 20-180%
	13C2-6:2FTS	104% 20-180%
	13C2-8:2FTS	106% 20-180%
	13C3-HFPO-DA	103% 20-150%

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Method Blank Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-MB	6Q25955.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-MB	6Q25955.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

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	106% 20-150%
	13C5-PFPeA	110% 20-150%
	13C5-PFHxA	109% 20-150%
	13C4-PFHpA	103% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	111% 20-150%
	13C2-PFDoDA	104% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	107% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	95% 20-150%
	13C8-FOSA	69% 20-150%
	d3-MeFOSA	80% 20-150%
	d5-EtFOSA	78% 20-150%
	d3-MeFOSAA	92% 20-150%
	d5-EtFOSAA	95% 20-150%
	d7-MeFOSE	70% 20-150%
	d9-EtFOSE	75% 20-150%
	13C2-4:2FTS	118% 20-180%
	13C2-6:2FTS	109% 20-180%
	13C2-8:2FTS	97% 20-180%
	13C3-HFPO-DA	106% 20-150%

6.1.3
6

Continuing Calibration Blank

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-ICCB	6Q26044.D	1	10/09/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q367-IBLK

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

Continuing Calibration Blank

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q367-ICCB	6Q26044.D	1	10/09/23	MV	n/a	n/a	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q367-IBLK

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	97% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	98% 20-150%
	13C2-PFDoDA	97% 20-150%
	13C2-PFTeDA	102% 20-150%
	13C3-PFBS	102% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	98% 20-150%
	13C8-FOSA	99% 20-150%
	d3-MeFOSAA	109% 20-150%
	d5-EtFOSAA	107% 20-150%
	13C2-4:2FTS	109% 20-180%
	13C2-6:2FTS	108% 20-180%
	13C2-8:2FTS	108% 20-180%

Blank Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-LLBS	6Q25954.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0298	99	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0146	97	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0077	103	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0071	95	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0071	95	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0078	104	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0074	99	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0078	104	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0072	96	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0071	95	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0070	93	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0068	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0069	98	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0063	92	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0069	97	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0066	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0067	93	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0066	91	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0069	95	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0268	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0286	100	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0293	102	40-150
754-91-6	PFOSA	0.0075	0.0086	115	40-150
31506-32-8	MeFOSA	0.015	0.0161	107	40-150
4151-50-2	EtFOSA	0.015	0.0150	100	40-150
2355-31-9	MeFOSAA	0.0075	0.0074	99	40-150
2991-50-6	EtFOSAA	0.0075	0.0075	100	40-150
24448-09-7	MeFOSE	0.0375	0.0362	97	40-150
1691-99-2	EtFOSE	0.0375	0.0374	100	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0147	98	40-150
919005-14-4	ADONA	0.0142	0.0142	100	40-150
377-73-1	PFMPA	0.015	0.0153	102	40-150
863090-89-5	PFMBA	0.015	0.0151	101	40-150
151772-58-6	NFDHA	0.015	0.0163	109	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0136	97	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0134	95	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-LLBS	6Q25954.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0127	95	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0299	80	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.175	93	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.183	98	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	108%	20-150%
	13C5-PFPeA	107%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	100%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	106%	20-150%
	13C2-PFDoDA	104%	20-150%
	13C2-PFTeDA	99%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	107%	20-150%
	13C8-PFOS	110%	20-150%
	13C8-FOSA	69%	20-150%
	d3-MeFOSA	70%	20-150%
	d5-EtFOSA	72%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	67%	20-150%
	d9-EtFOSE	72%	20-150%
	13C2-4:2FTS	121%	20-180%
	13C2-6:2FTS	106%	20-180%
	13C2-8:2FTS	105%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-BS	6Q25953.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0993	99	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0506	101	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0246	98	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0252	101	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0236	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0251	100	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0253	101	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0249	100	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0283	113	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0265	106	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0265	106	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0227	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0236	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0214	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0222	93	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0225	97	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0230	96	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0210	87	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0225	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0898	96	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.101	106	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0919	96	40-150
754-91-6	PFOSA	0.025	0.0257	103	40-150
31506-32-8	MeFOSA	0.05	0.0530	106	40-150
4151-50-2	EtFOSA	0.05	0.0517	103	40-150
2355-31-9	MeFOSAA	0.025	0.0258	103	40-150
2991-50-6	EtFOSAA	0.025	0.0240	96	40-150
24448-09-7	MeFOSE	0.125	0.126	101	40-150
1691-99-2	EtFOSE	0.125	0.131	105	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0515	103	40-150
919005-14-4	ADONA	0.0473	0.0489	103	40-150
377-73-1	PFMPA	0.05	0.0332	66	40-150
863090-89-5	PFMBA	0.05	0.0517	103	40-150
151772-58-6	NFDHA	0.05	0.0496	99	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0471	101	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0473	100	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-BS	6Q25953.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0440	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.171	137	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.563	90	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.575	92	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	36%	20-150%
	13C5-PFPeA	98%	20-150%
	13C5-PFHxA	103%	20-150%
	13C4-PFHpA	99%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	101%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	93%	20-150%
	13C2-PFTeDA	91%	20-150%
	13C3-PFBS	102%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	109%	20-150%
	13C8-FOSA	73%	20-150%
	d3-MeFOSA	75%	20-150%
	d5-EtFOSA	81%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	70%	20-150%
	d9-EtFOSE	73%	20-150%
	13C2-4:2FTS	112%	20-180%
	13C2-6:2FTS	103%	20-180%
	13C2-8:2FTS	101%	20-180%
	13C3-HFPO-DA	98%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-MS	6Q25957.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367
FC10192-1	6Q25956.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	FC10192-1 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0962	0.0905	94	40-150
2706-90-3	Perfluoropentanoic acid	0.0077 U	0.0481	0.0447	93	40-150
307-24-4	Perfluorohexanoic acid	0.0038 U	0.024	0.0225	94	40-150
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.024	0.0241	100	40-150
335-67-1	Perfluorooctanoic acid	0.0038 U	0.024	0.0229	95	40-150
375-95-1	Perfluorononanoic acid	0.0038 U	0.024	0.0237	99	40-150
335-76-2	Perfluorodecanoic acid	0.0038 U	0.024	0.0221	92	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.024	0.0226	94	40-150
307-55-1	Perfluorododecanoic acid	0.0038 U	0.024	0.0224	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.024	0.0224	93	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.024	0.0220	92	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0213	0.0206	97	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U	0.0226	0.0202	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.022	0.0192	87	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	0.0229	0.0249	109	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038 U	0.0223	0.0211	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	0.0231	0.0187	81	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	0.0232	0.0196	84	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U	0.0233	0.0192	82	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	0.0901	0.0840	93	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	0.0913	0.0977	107	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	0.0923	0.0873	95	40-150
754-91-6	PFOSA	0.0038 U	0.024	0.0280	116	40-150
31506-32-8	MeFOSA	0.0077 U	0.0481	0.0474	99	40-150
4151-50-2	EtFOSA	0.0077 U	0.0481	0.0456	95	40-150
2355-31-9	MeFOSAA	0.0048 U	0.024	0.0217	90	40-150
2991-50-6	EtFOSAA	0.0048 U	0.024	0.0222	92	40-150
24448-09-7	MeFOSE	0.038 U	0.12	0.117	97	40-150
1691-99-2	EtFOSE	0.038 U	0.12	0.116	97	40-150
13252-13-6	HFPO-DA (GenX)	0.0038 U	0.0481	0.0483	100	40-150
919005-14-4	ADONA	0.0077 U	0.0454	0.0443	98	40-150
377-73-1	PFMPA	0.0077 U	0.0481	0.0465	97	40-150
863090-89-5	PFMBA	0.0077 U	0.0481	0.0448	93	40-150
151772-58-6	NFDHA	0.0077 U	0.0481	0.0459	95	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0077 U	0.045	0.0375	83	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0077 U	0.0454	0.0358	79	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-MS	6Q25957.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367
FC10192-1	6Q25956.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	FC10192-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0077 U	0.0428	0.0407	95	40-150	
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.12	0.0919	76	40-150	
914637-49-35:3	Fluorotelomer carboxylate	0.096 U	0.601	0.536	89	40-150	
812-70-4	7:3 Fluorotelomer carboxylate	0.096 U	0.601	0.559	93	40-150	

CAS No.	ID Standard Recoveries	MS	FC10192-1	Limits
	13C4-PFBA	106%	103%	20-150%
	13C5-PFPeA	105%	103%	20-150%
	13C5-PFHxA	106%	100%	20-150%
	13C4-PFHpA	100%	100%	20-150%
	13C8-PFOA	104%	105%	20-150%
	13C9-PFNA	95%	95%	20-150%
	13C6-PFDA	95%	105%	20-150%
	13C7-PFUnDA	88%	106%	20-150%
	13C2-PFDoDA	84%	89%	20-150%
	13C2-PFTeDA	78%	84%	20-150%
	13C3-PFBS	105%	103%	20-150%
	13C3-PFHxS	109%	104%	20-150%
	13C8-PFOS	89%	95%	20-150%
	13C8-FOSA	71%	74%	20-150%
	d3-MeFOSA	74%	81%	20-150%
	d5-EtFOSA	75%	80%	20-150%
	d3-MeFOSAA	93%	99%	20-150%
	d5-EtFOSAA	84%	89%	20-150%
	d7-MeFOSE	73%	77%	20-150%
	d9-EtFOSE	74%	82%	20-150%
	13C2-4:2FTS	115%	111%	20-180%
	13C2-6:2FTS	100%	103%	20-180%
	13C2-8:2FTS	97%	102%	20-180%
	13C3-HFPO-DA	101%	106%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-DUP	6Q25959.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367
FC10192-2	6Q25958.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	FC10192-2 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	0.0070 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0035 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0035 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0035 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0035 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0035 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0035 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0035 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0035 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0035 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0035 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0035 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0035 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0035 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0035 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0035 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0044 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	0.0035 U	ND		nc		30
31506-32-8	MeFOSA	0.0070 U	ND		nc		30
4151-50-2	EtFOSA	0.0070 U	ND		nc		30
2355-31-9	MeFOSAA	0.0044 U	ND		nc		30
2991-50-6	EtFOSAA	0.0044 U	ND		nc		30
24448-09-7	MeFOSE	0.035 U	ND		nc		30
1691-99-2	EtFOSE	0.035 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.0035 U	ND		nc		30
919005-14-4	ADONA	0.0070 U	ND		nc		30
377-73-1	PFMPA	0.0070 U	ND		nc		30
863090-89-5	PFMBA	0.0070 U	ND		nc		30
151772-58-6	NFDHA	0.0070 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0070 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0070 U	ND		nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99404-DUP	6Q25959.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367
FC10192-2	6Q25958.D	1	10/08/23	MV	10/07/23	OP99404	S6Q367

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC10192-1, FC10192-2, FC10192-3

CAS No.	Compound	FC10192-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0070 U	ND			nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND			nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.088 U	ND			nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.088 U	ND			nc	30

CAS No.	ID Standard Recoveries	DUP	FC10192-2	Limits
	13C4-PFBA	41%	40%	20-150%
	13C5-PFPeA	103%	105%	20-150%
	13C5-PFHxA	104%	103%	20-150%
	13C4-PFHpA	104%	101%	20-150%
	13C8-PFOA	104%	106%	20-150%
	13C9-PFNA	103%	98%	20-150%
	13C6-PFDA	101%	102%	20-150%
	13C7-PFUnDA	101%	102%	20-150%
	13C2-PFDoDA	83%	91%	20-150%
	13C2-PFTeDA	79%	78%	20-150%
	13C3-PFBS	105%	109%	20-150%
	13C3-PFHxS	109%	114%	20-150%
	13C8-PFOS	102%	99%	20-150%
	13C8-FOSA	82%	75%	20-150%
	d3-MeFOSA	83%	81%	20-150%
	d5-EtFOSA	80%	84%	20-150%
	d3-MeFOSAA	90%	102%	20-150%
	d5-EtFOSAA	87%	91%	20-150%
	d7-MeFOSE	76%	75%	20-150%
	d9-EtFOSE	76%	81%	20-150%
	13C2-4:2FTS	110%	116%	20-180%
	13C2-6:2FTS	105%	116%	20-180%
	13C2-8:2FTS	98%	105%	20-180%
	13C3-HFPO-DA	105%	106%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q367-CC367	Injection Date:	10/08/23
Lab File ID:	6Q25951.D	Injection Time:	17:40
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	61663	2.95	46783	5.58	72449	7.16	25680	7.68	25916	8.16
Check Std ^c	63043	2.95	46465	5.58	69829	7.15	25556	7.68	25902	8.15
Upper Limit ^d	123326	3.35	93566	5.98	144898	7.55	51360	8.08	51832	8.55
Lower Limit ^e	24665	2.55	18713	5.18	28980	6.75	10272	7.28	10366	7.75

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF ^a
OP99404-BS	53446	2.98	39113	5.59	58858	7.16	20757	7.68	20314	8.16	1
OP99404-LLBS	51196	2.98	37872	5.59	58813	7.16	21013	7.68	20385	8.16	1
OP99404-MB	52096	2.98	37734	5.59	60429	7.16	21488	7.68	20533	8.16	1
FC10192-1	51742	2.98	38408	5.59	58147	7.16	21472	7.68	18921	8.16	1
OP99404-MS	51696	2.98	38532	5.59	58053	7.16	21630	7.68	20610	8.16	1
FC10192-2	51398	2.98	37834	5.59	58724	7.16	22176	7.68	20788	8.16	1
OP99404-DUP	52431	2.98	38781	5.59	59586	7.16	21432	7.68	20767	8.16	1
FC10192-3	51896	2.98	37289	5.59	57027	7.16	21059	7.68	21120	8.16	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: S6Q367-ICC367 6Q25943.D 10/08/23 15:46. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -60 to + 100% of initial cal area.
- (d) Upper Limit = + 100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1
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Injection Standard Area Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q367-CC367	Injection Date:	10/08/23
Lab File ID:	6Q25951.D	Injection Time:	17:40
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	7679	7.26	11341	8.31
Check Std ^c	7526	7.26	10746	8.30
Upper Limit ^d	15358	7.66	22682	8.70
Lower Limit ^e	3072	6.86	4536	7.90

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
OP99404-BS	6296	7.26	9035	8.31	1
OP99404-LLBS	6279	7.26	9076	8.31	1
OP99404-MB	6290	7.26	9596	8.31	1
FC10192-1	6277	7.26	9031	8.31	1
OP99404-MS	6116	7.26	9280	8.31	1
FC10192-2	5936	7.26	9378	8.31	1
OP99404-DUP	6253	7.26	9317	8.31	1
FC10192-3	6121	7.26	8677	8.31	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q367-ICC367 6Q25943.D 10/08/23 15:46. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -60 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1
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TDCA Retention Time Check

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q367-RT	Injection Date:	10/08/23
Lab File ID:	6Q25937.D	Injection Time:	14:04
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.300	--	--
TDCA	6.873	1.427	1.000
TCDCA	6.737	1.563	1.000
TUDCA	5.898	2.402	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
S6Q367-IC367	6Q25939.D	10/08/23	14:49	00:45	Mass Calibration Verification
S6Q367-IC367	6Q25940.D	10/08/23	15:03	00:59	Initial cal 1
S6Q367-IC367	6Q25941.D	10/08/23	15:17	01:13	Initial cal 2
S6Q367-IC367	6Q25942.D	10/08/23	15:32	01:28	Initial cal 3
S6Q367-ICC367	6Q25943.D	10/08/23	15:46	01:42	Initial cal 4
S6Q367-IC367	6Q25944.D	10/08/23	16:00	01:56	Initial cal 5
S6Q367-IC367	6Q25945.D	10/08/23	16:15	02:11	Initial cal 6
S6Q367-IC367	6Q25946.D	10/08/23	16:29	02:25	Initial cal 7
S6Q367-IC367	6Q25947.D	10/08/23	16:43	02:39	Initial cal 8
S6Q367-IBLK	6Q25948.D	10/08/23	16:57	02:53	Instrument Blank
S6Q367-IBLK	6Q25948.D	10/08/23	16:57	02:53	Instrument Blank
S6Q367-ICV367	6Q25949.D	10/08/23	17:12	03:08	Initial cal verification 4
S6Q367-ICV367	6Q25950.D	10/08/23	17:26	03:22	Initial cal verification 20
S6Q367-CC367	6Q25951.D	10/08/23	17:40	03:36	Continuing cal 4
S6Q367-CC367	6Q25952.D	10/08/23	17:55	03:51	Continuing cal 1.0LL
OP99404-BS	6Q25953.D	10/08/23	18:09	04:05	Blank Spike
OP99404-LLBS	6Q25954.D	10/08/23	18:23	04:19	Blank Spike
OP99404-MB	6Q25955.D	10/08/23	18:38	04:34	Method Blank
FC10192-1	6Q25956.D	10/08/23	18:52	04:48	AF-HDMW225303-WGN01LF-2310
OP99404-MS	6Q25957.D	10/08/23	19:06	05:02	Matrix Spike
FC10192-2	6Q25958.D	10/08/23	19:21	05:17	AF-RHMW12A-WGN01LF-2310
OP99404-DUP	6Q25959.D	10/08/23	19:35	05:31	Duplicate
FC10192-3	6Q25960.D	10/08/23	19:49	05:45	AF-RHMW12A-WGFD01LF-2310
S6Q367-CC367	6Q25961.D	10/08/23	20:04	06:00	Continuing cal 4
S6Q367-ICCB	6Q25962.D	10/08/23	20:18	06:14	Continuing Calibration Blank
OP99393-BS	6Q25963.D	10/08/23	20:32	06:28	Blank Spike
OP99393-LLBS	6Q25964.D	10/08/23	20:47	06:43	Blank Spike
OP99393-MB	6Q25965.D	10/08/23	21:01	06:57	Method Blank
ZZZZZZ	6Q25966.D	10/08/23	21:15	07:11	(unrelated sample)
ZZZZZZ	6Q25967.D	10/08/23	21:30	07:26	(unrelated sample)
ZZZZZZ	6Q25968.D	10/08/23	21:44	07:40	(unrelated sample)
ZZZZZZ	6Q25969.D	10/08/23	21:58	07:54	(unrelated sample)
ZZZZZZ	6Q25970.D	10/08/23	22:13	08:09	(unrelated sample)
ZZZZZZ	6Q25971.D	10/08/23	22:27	08:23	(unrelated sample)

TDCA Retention Time Check

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q367-RT	Injection Date:	10/08/23
Lab File ID:	6Q25937.D	Injection Time:	14:04
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q367-CC367	6Q25972.D	10/08/23	22:41	08:37	Continuing cal 4
S6Q367-ICCB	6Q25973.D	10/08/23	22:56	08:52	Continuing Calibration Blank
S6Q367-CC367	6Q25992.D	10/09/23	01:33	11:29	Continuing cal 4
S6Q367-ICCB	6Q25993.D	10/09/23	01:47	11:43	Continuing Calibration Blank
OP99269-BS	6Q25994.D	10/09/23	02:02	11:58	Blank Spike
OP99269-LLBS	6Q25995.D	10/09/23	02:16	12:12	Blank Spike
OP99269-MB	6Q25996.D	10/09/23	02:30	12:26	Method Blank
ZZZZZZ	6Q25997.D	10/09/23	02:45	12:41	(unrelated sample)
ZZZZZZ	6Q25998.D	10/09/23	02:59	12:55	(unrelated sample)
ZZZZZZ	6Q25999.D	10/09/23	03:13	13:09	(unrelated sample)
ZZZZZZ	6Q26000.D	10/09/23	03:28	13:24	(unrelated sample)
FC9870-3	6Q26001.D	10/09/23	03:42	13:38	(used for QC only; not part of job FC10192)
OP99269-MS	6Q26002.D	10/09/23	03:56	13:52	Matrix Spike
OP99269-MSD	6Q26003.D	10/09/23	04:11	14:07	Matrix Spike Duplicate
S6Q367-CC367	6Q26004.D	10/09/23	04:25	14:21	Continuing cal 4
S6Q367-ICCB	6Q26005.D	10/09/23	04:39	14:35	Continuing Calibration Blank
ZZZZZZ	6Q26006.D	10/09/23	04:54	14:50	(unrelated sample)
ZZZZZZ	6Q26007.D	10/09/23	05:08	15:04	(unrelated sample)
ZZZZZZ	6Q26008.D	10/09/23	05:22	15:18	(unrelated sample)
ZZZZZZ	6Q26009.D	10/09/23	05:37	15:33	(unrelated sample)
S6Q367-CC367	6Q26010.D	10/09/23	05:51	15:47	Continuing cal 4
S6Q367-ICCB	6Q26011.D	10/09/23	06:05	16:01	Continuing Calibration Blank
OP99272-BS	6Q26012.D	10/09/23	06:20	16:16	Blank Spike
OP99272-LLBS	6Q26013.D	10/09/23	06:34	16:30	Blank Spike
OP99272-MB	6Q26014.D	10/09/23	06:48	16:44	Method Blank
ZZZZZZ	6Q26015.D	10/09/23	07:03	16:59	(unrelated sample)
ZZZZZZ	6Q26016.D	10/09/23	07:17	17:13	(unrelated sample)
ZZZZZZ	6Q26017.D	10/09/23	07:31	17:27	(unrelated sample)
ZZZZZZ	6Q26018.D	10/09/23	07:45	17:41	(unrelated sample)
FC9871-5	6Q26019.D	10/09/23	08:00	17:56	(used for QC only; not part of job FC10192)
OP99272-MS	6Q26020.D	10/09/23	08:14	18:10	Matrix Spike
OP99272-MSD	6Q26021.D	10/09/23	08:29	18:25	Matrix Spike Duplicate
S6Q367-CC367	6Q26022.D	10/09/23	08:43	18:39	Continuing cal 4
S6Q367-ICCB	6Q26023.D	10/09/23	08:57	18:53	Continuing Calibration Blank
ZZZZZZ	6Q26024.D	10/09/23	09:36	19:32	(unrelated sample)
OP99405-BS	6Q26025.D	10/09/23	09:52	19:48	Blank Spike
OP99405-LLBS	6Q26026.D	10/09/23	10:07	20:03	Blank Spike
OP99405-MB	6Q26027.D	10/09/23	10:21	20:17	Method Blank
FC10063-2	6Q26028.D	10/09/23	10:35	20:31	(used for QC only; not part of job FC10192)
OP99405-MS	6Q26029.D	10/09/23	10:50	20:46	Matrix Spike
FC10063-3	6Q26030.D	10/09/23	11:04	21:00	(used for QC only; not part of job FC10192)
OP99405-DUP	6Q26031.D	10/09/23	11:18	21:14	Duplicate
ZZZZZZ	6Q26032.D	10/09/23	11:33	21:29	(unrelated sample)
ZZZZZZ	6Q26033.D	10/09/23	11:47	21:43	(unrelated sample)

6.6.1

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TDCA Retention Time Check

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q367-RT	Injection Date:	10/08/23
Lab File ID:	6Q25937.D	Injection Time:	14:04
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q367-CC367	6Q26034.D	10/09/23	12:01	21:57	Continuing cal 4
S6Q367-ICCB	6Q26035.D	10/09/23	12:16	22:12	Continuing Calibration Blank
OP99394-BS	6Q26036.D	10/09/23	12:30	22:26	Blank Spike
OP99394-LLBS	6Q26037.D	10/09/23	12:44	22:40	Blank Spike
OP99394-MB	6Q26038.D	10/09/23	13:04	23:00	Method Blank
ZZZZZ	6Q26039.D	10/09/23	13:19	23:15	(unrelated sample)
FC9961-3	6Q26040.D	10/09/23	13:33	23:29	(used for QC only; not part of job FC10192)
OP99394-MS	6Q26041.D	10/09/23	13:47	23:43	Matrix Spike
OP99394-MSD	6Q26042.D	10/09/23	14:02	23:58	Matrix Spike Duplicate
S6Q367-CC367	6Q26043.D	10/09/23	14:16	24:12	Continuing cal 4
S6Q367-ICCB	6Q26044.D	10/09/23	14:30	24:26	Continuing Calibration Blank

6.6.1

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TDCA Retention Time Check

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q367-RT	Injection Date:	10/09/23
Lab File ID:	6Q26045.D	Injection Time:	14:45
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.300	--	--
TDCA	6.873	1.427	1.000
TCDCA	6.725	1.575	1.000
TUDCA	5.898	2.402	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
S6Q367-IBLK	6Q26048.D	10/09/23	15:28	00:43	Instrument Blank
S6Q367-IBLK	6Q26048.D	10/09/23	15:28	00:43	Instrument Blank
S6Q367-CC367	6Q26049.D	10/09/23	15:42	00:57	Continuing cal 4
S6Q367-CC367	6Q26050.D	10/09/23	15:56	01:11	Continuing cal 1.0LL
ZZZZZZ	6Q26051.D	10/09/23	16:11	01:26	(unrelated sample)
ZZZZZZ	6Q26052.D	10/09/23	16:25	01:40	(unrelated sample)
ZZZZZZ	6Q26053.D	10/09/23	16:39	01:54	(unrelated sample)
ZZZZZZ	6Q26054.D	10/09/23	16:54	02:09	(unrelated sample)
ZZZZZZ	6Q26055.D	10/09/23	17:08	02:23	(unrelated sample)
ZZZZZZ	6Q26056.D	10/09/23	17:22	02:37	(unrelated sample)
ZZZZZZ	6Q26057.D	10/09/23	17:37	02:52	(unrelated sample)
ZZZZZZ	6Q26058.D	10/09/23	17:51	03:06	(unrelated sample)
ZZZZZZ	6Q26059.D	10/09/23	18:05	03:20	(unrelated sample)
S6Q367-CC367	6Q26060.D	10/09/23	18:20	03:35	Continuing cal 4
S6Q367-ICCB	6Q26061.D	10/09/23	18:34	03:49	Continuing Calibration Blank
ZZZZZZ	6Q26062.D	10/09/23	18:48	04:03	(unrelated sample)
ZZZZZZ	6Q26063.D	10/09/23	19:03	04:18	(unrelated sample)
ZZZZZZ	6Q26064.D	10/09/23	19:17	04:32	(unrelated sample)
ZZZZZZ	6Q26065.D	10/09/23	19:31	04:46	(unrelated sample)
ZZZZZZ	6Q26066.D	10/09/23	19:46	05:01	(unrelated sample)
S6Q367-CC367	6Q26067.D	10/09/23	20:00	05:15	Continuing cal 4
S6Q367-ICCB	6Q26068.D	10/09/23	20:14	05:29	Continuing Calibration Blank
S6Q367-ICCB	6Q26068.D	10/09/23	20:14	05:29	Continuing Calibration Blank
ZZZZZZ	6Q26069.D	10/09/23	20:28	05:43	(unrelated sample)
ZZZZZZ	6Q26070.D	10/09/23	20:43	05:58	(unrelated sample)
ZZZZZZ	6Q26071.D	10/09/23	20:57	06:12	(unrelated sample)
ZZZZZZ	6Q26072.D	10/09/23	21:11	06:26	(unrelated sample)
ZZZZZZ	6Q26073.D	10/09/23	21:26	06:41	(unrelated sample)
ZZZZZZ	6Q26074.D	10/09/23	21:40	06:55	(unrelated sample)
ZZZZZZ	6Q26075.D	10/09/23	21:54	07:09	(unrelated sample)
ZZZZZZ	6Q26076.D	10/09/23	22:09	07:24	(unrelated sample)
ZZZZZZ	6Q26077.D	10/09/23	22:23	07:38	(unrelated sample)
ZZZZZZ	6Q26078.D	10/09/23	22:37	07:52	(unrelated sample)
S6Q367-CC367	6Q26079.D	10/09/23	22:52	08:07	Continuing cal 4

TDCA Retention Time Check

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q367-RT	Injection Date:	10/09/23
Lab File ID:	6Q26045.D	Injection Time:	14:45
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q367-ICCB	6Q26080.D	10/09/23	23:06	08:21	Continuing Calibration Blank
S6Q367-ICCB	6Q26080.D	10/09/23	23:06	08:21	Continuing Calibration Blank
ZZZZZZ	6Q26081.D	10/09/23	23:20	08:35	(unrelated sample)
ZZZZZZ	6Q26082.D	10/09/23	23:35	08:50	(unrelated sample)
ZZZZZZ	6Q26083.D	10/09/23	23:49	09:04	(unrelated sample)
ZZZZZZ	6Q26084.D	10/10/23	00:03	09:18	(unrelated sample)
ZZZZZZ	6Q26085.D	10/10/23	00:18	09:33	(unrelated sample)
ZZZZZZ	6Q26086.D	10/10/23	00:32	09:47	(unrelated sample)
ZZZZZZ	6Q26087.D	10/10/23	00:46	10:01	(unrelated sample)
ZZZZZZ	6Q26088.D	10/10/23	01:01	10:16	(unrelated sample)
S6Q367-ECC367	6Q26089.D	10/10/23	01:15	10:30	Ending cal 4
S6Q367-ICCB	6Q26090.D	10/10/23	01:29	10:44	Continuing Calibration Blank
S6Q367-ICCB	6Q26090.D	10/10/23	01:29	10:44	Continuing Calibration Blank

6.6.2
6

Isotope Dilution Standard Recovery Summary

Job Number: FC10192
 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
FC10192-1	6Q25956.D	103	103	100	100	105	95	105	106
FC10192-2	6Q25958.D	40	105	103	101	106	98	102	102
FC10192-3	6Q25960.D	42	107	105	106	107	104	98	99
OP99404-BS	6Q25953.D	36	98	103	99	102	102	101	103
OP99404-DUP	6Q25959.D	41	103	104	104	104	103	101	101
OP99404-LLBS	6Q25954.D	108	107	107	107	103	100	108	106
OP99404-MB	6Q25955.D	106	110	109	103	105	102	106	111
OP99404-MS	6Q25957.D	106	105	106	100	104	95	95	88
S6Q367-IBLK	6Q25948.D	100	101	99	98	97	98	98	99
S6Q367-IBLK	6Q26048.D	99	101	102	101	102	107	109	106
S6Q367-ICCB	6Q26044.D	99	100	100	97	100	102	102	98

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%

Isotope Dilution Standard Recovery Summary

Job Number: FC10192
 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
FC10192-1	6Q25956.D	89	84	103	104	95	74	81	80
FC10192-2	6Q25958.D	91	78	109	114	99	75	81	84
FC10192-3	6Q25960.D	84	75	105	103	105	76	86	85
OP99404-BS	6Q25953.D	93	91	102	102	109	73	75	81
OP99404-DUP	6Q25959.D	83	79	105	109	102	82	83	80
OP99404-LLBS	6Q25954.D	104	99	105	107	110	69	70	72
OP99404-MB	6Q25955.D	104	97	107	102	95	69	80	78
OP99404-MS	6Q25957.D	84	78	105	109	89	71	74	75
S6Q367-IBLK	6Q25948.D	93	100	101	102	97	98	99	96
S6Q367-IBLK	6Q26048.D	98	106	103	102	98	101	95	99
S6Q367-ICCB	6Q26044.D	97	102	102	104	98	99		

Isotope Dilution Standards

Recovery Limits

S9 = 13C2-PFDoDA	20-150%
S10 = 13C2-PFTeDA	20-150%
S11 = 13C3-PFBS	20-150%
S12 = 13C3-PFHxS	20-150%
S13 = 13C8-PFOS	20-150%
S14 = 13C8-FOSA	20-150%
S15 = d3-MeFOSA	20-150%
S16 = d5-EtFOSA	20-150%

6.7.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC10192
 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
FC10192-1	6Q25956.D	99	89	77	82	111	103	102	106
FC10192-2	6Q25958.D	102	91	75	81	116	116	105	106
FC10192-3	6Q25960.D	102	99	74	79	119	114	115	103
OP99404-BS	6Q25953.D	100	103	70	73	112	103	101	98
OP99404-DUP	6Q25959.D	90	87	76	76	110	105	98	105
OP99404-LLBS	6Q25954.D	105	99	67	72	121	106	105	108
OP99404-MB	6Q25955.D	92	95	70	75	118	109	97	106
OP99404-MS	6Q25957.D	93	84	73	74	115	100	97	101
S6Q367-IBLK	6Q25948.D	100	103	99	99	102	103	99	97
S6Q367-IBLK	6Q26048.D	101	100	97	96	116	104	106	103
S6Q367-ICCB	6Q26044.D	109	107			109	108	108	

Isotope Dilution Standards **Recovery Limits**

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

6.7.1

6

Initial Calibration Summary

Job Number: FC10192
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICC367
Lab FileID: 6Q25943.D

Initial Calibration Report

Method Path	Method File	Batch Name	Last Calib Update	Calibration Files	Level Name	Acq. Date-Time	Level Last Update Time	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD	
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	1	10/8/2023 3:03:21 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	2	10/8/2023 3:17:40 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	3	10/8/2023 3:32:01 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	4	10/8/2023 3:46:20 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	5	10/8/2023 4:00:41 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	6	10/8/2023 4:15:00 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	7	10/8/2023 4:29:19 PM	10/9/2023 9:08:36 AM												
D:\MassHunter\Methods	1633_100823_S6Q367.quantmethod.xml	D:\MassHunter\Data\100823_1633_S6Q367	10/9/2023 9:08:36 AM	D:\MassHunter\Data\100823_1633_S6Q367\QuantResults\S6Q367.batch.bin	8	10/8/2023 4:43:38 PM	10/9/2023 9:08:36 AM												
Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD								
I M4-PFBA	Avg RF	0.3866	0.3790	0.3551	0.3623	0.3591	0.3818	0.3793	0.3771	0.3725	3.176								
T PFBA	Avg RF	0.0536	0.0551	0.0503	0.0509	0.0501	0.0537	0.0556	0.0600	0.0537	6.200								
T 3:3FTCA																			
I M5-PFPeA	Avg RF	0.6884	0.7133	0.6482	0.6696	0.6373	0.7010	0.6880	0.6821	0.6785	3.782								
T PFMPA	Avg RF	1.1263	1.1449	1.0226	1.0608	1.0028	1.1148	1.0868	1.0700	1.0786	4.611								
T PFPeA	Avg RF	0.8371	0.8613	0.7937	0.8214	0.7663	0.8465	0.8308	0.8176	0.8219	3.671								
T PFMBA																			
I M5-PFHxA	Avg RF	0.1082	0.1240	0.1102	0.1152	0.1057	0.1146	0.1122	0.1082	0.1123	5.152								
T NFDHA	Avg RF	0.9160	0.9204	0.8332	0.8690	0.8288	0.9330	0.9208	0.9280	0.8936	4.850								
T PFHxA	Avg RF	1.2465	1.1470	1.0927	1.1274	1.0534	1.1920	1.1672	1.1715	1.1497	5.197								
T PFEEA	Avg RF	0.1751	0.1714	0.1588	0.1720	0.1508	0.1730	0.1724	0.1668	0.1675	5.052								
T 5:3FTCA	Avg RF	0.1103	0.1038	0.1003	0.1019	0.0936	0.1061	0.1012	0.1016	0.1023	4.693								
T 7:3FTCA																			
I M4-PFHpA	Avg RF	1.3210	1.4361	1.2988	1.2996	1.3080	1.4449	1.3546	1.3889	1.3565	4.440								
T PFHpA																			
I M8-PFOA	Avg RF	1.2031	1.1485	1.0425	0.9782	1.0122	1.0402	1.1077	1.0507	1.0729	6.959								
T PFOA																			
I M9-PFNA	Avg RF	0.8311	0.8140	0.6976	0.7183	0.7644	0.8150	0.7638	0.7597	0.7705	6.163								
T PFNA																			
I M6-PFDA	Avg RF	1.0914	0.9867	0.9276	0.9924	0.9379	0.9894	0.9424	0.9459	0.9767	5.432								
T PFDA																			
I M7-PFUnDA	Avg RF	0.9000	0.8438	0.8214	0.9183	0.8387	0.8994	0.9076	0.9169	0.8807	4.462								
T PFUnDA																			
I M2-PFDdA																			

Initial Calibration Summary

Job Number: FC10192
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICC367
 Lab FileID: 6Q25943.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9518	0.9738	0.8943	0.9340	0.9012	0.9694	0.8965	0.9142	0.9294	3.506
T PFTfDA	Avg RF	0.7789	0.7649	0.6790	0.7388	0.7148	0.7389	0.7438	0.6857	0.7306	4.838
I M2-PFTeDA	Avg RF	1.9097	1.6636	1.6205	1.5067	1.6260	1.6953	1.4983	1.4895	1.6262	8.570
T PFTeDA	Avg RF					ISTD					
I M8-FOSA	Avg RF	1.0216	1.0132	0.9535	0.8903	0.9022	0.9557	0.9276	0.9945	0.9573	5.157
T FOSA	Avg RF					ISTD					
I M3-PFBS	Avg RF	0.7422	0.7898	0.7461	0.7135	0.7181	0.7617	0.7746	0.7480	0.7493	3.478
T PFBS	Avg RF					ISTD					
I M3-PFHxS	Avg RF	1.4422	1.3496	1.3490	1.3353	1.3127	1.4048	1.2801	1.3245	1.3498	3.823
T PFPeS	Avg RF	1.1903	1.1533	0.9913	0.9731	1.0039	1.0501	0.9611	1.0361	1.0449	8.066
T PFHxS	Avg RF					ISTD					
I M8-PFOS	Avg RF	1.0526	1.0735	1.0894	0.9180	0.9579	1.0572	1.0688	1.0394	1.0321	5.902
T PFHpS	Avg RF	1.0577	1.0705	1.2369	0.9831	1.0142	1.0565	1.0390	1.0859	1.0680	7.081
T PFOS	Avg RF	0.9764	0.9936	0.9884	0.8029	0.8420	0.8903	0.8749	0.9253	0.9117	7.808
T PFNS	Avg RF	0.6660	0.6961	0.6642	0.6053	0.5886	0.6587	0.6035	0.6332	0.6395	5.907
T PFDS	Avg RF	0.3267	0.3506	0.3412	0.3114	0.3177	0.3430	0.3252	0.3408	0.3321	4.154
T PFDoDS	Avg RF					ISTD					
I M2-4:2FTS	Avg RF	8.9245	8.4980	7.8526	8.3928	8.4266	8.6910	7.9604	7.5969	8.2928	5.424
T 4:2FTS	Avg RF					ISTD					
I M2-6:2FTS	Avg RF	4.7826	5.2431	4.3586	5.1275	4.1057	4.3768	4.4165	3.9518	4.5453	10.210
T 6:2FTS	Avg RF					ISTD					
I M2-8:2FTS	Avg RF	3.7748	3.4657	3.2963	3.7842	3.2603	3.7467	3.5928	2.9455	3.4833	8.620
T 8:2FTS	Avg RF					ISTD					
I M3-MeFOSAA	Avg RF	1.0153	0.9432	0.9047	0.8848	0.8702	0.9330	0.9316	0.9889	0.9340	5.289
T MeFOSAA	Avg RF					ISTD					
I M3-HFO-DA	Avg RF	1.0284	1.0684	0.9800	0.9488	0.9150	0.9766	1.0335	0.9775	0.9910	5.012
T HFO-DA	Avg RF	14.81	14.13	13.50	13.08	12.46	14.20	13.96	13.74	13.74	5.276
T ADONA	Avg RF	5.7183	5.6995	5.0011	5.0675	4.8841	5.5151	5.2672	4.9633	5.2645	6.428
T 9Cl-PF3ONS	Avg RF	3.1245	3.0883	2.9091	2.8061	2.8358	3.1482	2.9479	2.8740	2.9667	4.555
T 11Cl-PF3OUds	Avg RF					ISTD					
I M5-EFOSAA	Avg RF	0.8329	0.8637	0.7425	0.8466	0.7201	0.8037	0.8940	0.7963	0.8125	7.297
T EFOSAA	Avg RF					ISTD					
I M7-MeFOSE	Avg RF	1.1260	1.1226	1.0666	1.0349	1.0308	1.1329	1.1379	1.1869	1.1048	4.984
T MeFOSE	Avg RF					ISTD					
I M9-EFOSE	Avg RF	1.0292	1.0696	1.0035	0.9650	0.9938	0.9978	0.9963	0.9926	1.0060	3.089
T EFOSE	Avg RF					ISTD					

Generated at 9:09 AM on 10/9/2023

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Initial Calibration Summary

Job Number: FC10192
 Account: AECOM AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICC367
 Lab FileID: 6Q25943.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA	Avg RF	1.2633	1.3167	1.1871	1.1290	1.1505	1.2583	1.2258	1.2866	1.2272	5.418
T EFOSA											
I M3-MeFOSA	Avg RF	1.1343	1.3434	1.1220	1.2169	1.1343	1.1762	1.1231	1.0208	1.1589	8.032
T MeFOSA											
I 13C4-PFOS											
S d3-MeFOSAA	Avg RF	1.1585	1.0334	1.1533	1.1623	1.1277	1.1373	1.0322	0.9924	1.0996	6.237
S 13C8-PFOS	Avg RF	1.1078	1.0613	0.9846	1.1683	1.0939	1.0996	1.0847	1.0798	1.0798	4.997
S d5-EFOSAA	Avg RF	1.0143	0.8942	0.9366	0.9289	0.9518	0.9775	0.8779	0.9566	0.9422	4.642
S 13C8-FOSA	Avg RF	2.0727	2.0395	1.9587	2.1619	2.0597	2.0462	2.1124	2.0631	2.0631	2.844
S d7-MeFOSE	Avg RF	0.6733	0.6637	0.6499	0.7074	0.6764	0.6659	0.6502	0.6403	0.6659	3.133
S d3-MeFOSA	Avg RF	0.5782	0.5554	0.5713	0.5903	0.5868	0.6092	0.6109	0.6837	0.5982	6.551
S d9-EFOSE	Avg RF	0.8220	0.7832	0.7715	0.8196	0.7745	0.7902	0.7833	0.7874	0.7915	2.417
S d5-EFOSA	Avg RF	0.6496	0.6061	0.6208	0.6925	0.6495	0.6306	0.6430	0.6257	0.6397	4.076
I 13C3-PFBA											
S 13C4-PFBA	Avg RF	1.2064	1.2144	1.2065	1.2059	1.2098	1.2109	1.2061	1.1954	1.2069	0.460
I 18O2-PFHxS											
S 13C2-4:2FTS	Avg RF	0.1411	0.1492	0.1470	0.1498	0.1422	0.1337	0.1346	0.1292	0.1408	5.468
S 13C3-PFBS	Avg RF	2.7580	2.7838	2.7472	3.0933	2.8948	2.8603	2.8087	2.7155	2.8327	4.263
S 13C2-6:2FTS	Avg RF	0.2117	0.2077	0.2201	0.2138	0.2224	0.2139	0.1971	0.1895	0.2095	5.348
S 13C3-PFHxS	Avg RF	1.5027	1.5160	1.5286	1.7103	1.5949	1.5824	1.7043	1.5697	1.5886	5.039
S 13C2-8:2FTS	Avg RF	0.2236	0.2193	0.2237	0.2194	0.2360	0.1933	0.1979	0.2122	0.2157	6.557
I 13C4-PFOA											
S 13C8-PFOA	Avg RF	0.8716	0.8580	0.8631	0.8880	0.8058	0.9024	0.8739	0.8724	0.8669	3.273
I 13C2-PFDA											
S 13C6-PFDA	Avg RF	1.0481	1.0831	0.9568	1.0546	0.9917	1.1312	1.1144	1.0415	1.0527	5.559
S 13C7-PFUnDA	Avg RF	1.1675	1.2305	1.1154	1.1302	1.0906	1.1812	1.1464	1.0423	1.1380	5.074
S 13C2-PFDODA	Avg RF	1.1989	1.2241	1.2111	1.2543	1.1771	1.3452	1.3009	1.2550	1.2458	4.467
S 13C2-PFTDA	Avg RF	0.3998	0.4371	0.3918	0.4336	0.3972	0.4387	0.4455	0.4363	0.4225	5.228
I 13C5-PFNA											
S 13C9-PFNA	Avg RF	0.9948	0.9899	1.1108	1.0039	0.9858	1.0018	1.0919	1.0474	1.0283	4.780
I 13C2-PFHxA											
S 13C5-PPFA	Avg RF	0.5680	0.5643	0.5882	0.5617	0.5829	0.5809	0.5654	0.5446	0.5657	2.169
S 13C5-PFHxA	Avg RF	1.0163	1.0537	1.0117	1.0040	1.0870	1.0690	1.0349	0.9932	1.0337	3.229
S 13C3-HFPO-DA	Avg RF	0.1693	0.1723	0.1654	0.1770	0.1806	0.1860	0.1748	0.1699	0.1744	3.833
S 13C4-PFHxA	Avg RF	1.0560	1.0136	0.9777	1.0336	1.0163	1.0186	1.0274	0.9501	1.0117	3.282

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

Initial Calibration Verification

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICV367
 Lab FileID: 6Q25949.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q25949
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.366	7.3	107.3
13C2-6:2FTS	5.000	5.153	3.1	103.1
13C2-8:2FTS	5.000	4.959	-0.8	99.2
13C2-PFDoDA	1.250	1.252	0.1	100.1
13C2-PFTeDA	1.250	1.233	-1.3	98.7
13C3-PFBS	2.500	2.483	-0.7	99.3
13C3-PFHxS	2.500	2.513	0.5	100.5
13C4-PFBA	10.000	9.919	-0.8	99.2
13C4-PFHpA	2.500	2.586	3.5	103.5
13C5-PFHxA	2.500	2.468	-1.3	98.7
13C5-PFPeA	5.000	5.080	1.6	101.6
13C6-PFDA	1.250	1.202	-3.9	96.1
13C7-PFUnDA	1.250	1.285	2.8	102.8
13C8-FOSA	2.500	2.498	-0.1	99.9
13C8-PFOA	2.500	2.626	5.0	105.0
13C8-PFOS	2.500	2.385	-4.6	95.4
13C9-PFNA	1.250	1.350	8.0	108.0
4:2FTS	9.375	9.504	1.4	101.4
6:2FTS	9.500	9.907	4.3	104.3
8:2FTS	9.600	10.108	5.3	105.3
d3-MeFOSAA	5.000	4.782	-4.4	95.6
EtFOSAA	2.500	2.418	-3.3	96.7
FOSA	2.500	2.541	1.6	101.6
MeFOSAA	2.500	2.632	5.3	105.3
PFBA	10.000	10.187	1.9	101.9
PFBS	2.218	2.296	3.5	103.5
PFDA	2.500	2.674	7.0	107.0
PFDoDA	2.500	2.569	2.7	102.7
PFDS	2.413	2.593	7.5	107.5
PFHpA	2.500	2.440	-2.4	97.6
PFHpS	2.383	2.562	7.5	107.5
PFHxA	2.500	2.598	3.9	103.9
PFHxS	2.285	2.246	-1.7	98.3
PFNA	2.500	2.454	-1.9	98.1
PFNS	2.405	2.399	-0.3	99.7
PFOA	2.500	2.392	-4.3	95.7
PFOS	2.320	2.360	1.7	101.7

Initial Calibration Verification

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICV367
 Lab FileID: 6Q25949.D

PFPeA	5.000	4.980	-0.4	99.6
PFPeS	2.353	2.376	1.0	101.0
PFTeDA	2.500	2.668	6.7	106.7
PFTrDA	2.500	2.601	4.0	104.0
PFUnDA	2.500	2.435	-2.6	97.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.644	-1.7	98.3
13C3-HFPO-DA	10.000	10.328	3.3	103.3
9C1-PF3ONS	4.675	4.764	1.9	101.9
ADONA	4.725	4.621	-2.2	97.8
HFPO-DA	5.000	5.021	0.4	100.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.197	-2.3	97.7
5:3FTCA	62.400	64.794	3.8	103.8
7:3FTCA	62.400	62.089	-0.5	99.5
d3-MeFOSA	2.500	2.351	-6.0	94.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.887	-2.3	97.7
EtFOSE	12.500	13.004	4.0	104.0
MeFOSA	5.000	5.411	8.2	108.2
MeFOSE	12.500	12.241	-2.1	97.9
PFDoDS	2.425	2.543	4.9	104.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.006	0.1	100.1
d7-MeFOSE	25.000	24.760	-1.0	99.0
d9-EtFOSE	25.000	23.821	-4.7	95.3
d5-EtFOSA	2.500	2.517	0.7	100.7
NFDHA	5.000	5.034	0.7	100.7
PFMBA	5.000	5.025	0.5	100.5
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	4.582	3.0	103.0

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICV367
 Lab FileID: 6Q25950.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q25950
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.584	11.7	111.7
13C2-6:2FTS	5.000	5.340	6.8	106.8
13C2-8:2FTS	5.000	5.456	9.1	109.1
13C2-PFDoDA	1.250	1.266	1.3	101.3
13C2-PFTeDA	1.250	1.221	-2.3	97.7
13C3-PFBS	2.500	2.592	3.7	103.7
13C3-PFHxS	2.500	2.550	2.0	102.0
13C4-PFBA	10.000	10.042	0.4	100.4
13C4-PFHpA	2.500	2.395	-4.2	95.8
13C5-PFHxA	2.500	2.530	1.2	101.2
13C5-PFPeA	5.000	5.077	1.5	101.5
13C6-PFDA	1.250	1.197	-4.3	95.7
13C7-PFUnDA	1.250	1.219	-2.4	97.6
13C8-FOSA	2.500	2.290	-8.4	91.6
13C8-PFOA	2.500	2.430	-2.8	97.2
13C8-PFOS	2.500	2.358	-5.7	94.3
13C9-PFNA	1.250	1.200	-4.0	96.0
4:2FTS	20.000	19.915	-0.4	99.6
6:2FTS	20.000	21.019	5.1	105.1
8:2FTS	20.000	18.532	-7.3	92.7
d3-MeFOSAA	5.000	4.830	-3.4	96.6
EtFOSAA	20.000	18.532	-7.3	92.7
FOSA	20.000	19.359	-3.2	96.8
MeFOSAA	20.000	19.320	-3.4	96.6
PFBA	20.000	18.444	-7.8	92.2
PFBS	20.000	19.421	-2.9	97.1
PFDA	20.000	19.624	-1.9	98.1
PFDoDA	20.000	17.396	-13.0	87.0
PFDS	20.000	18.869	-5.7	94.3
PFHpA	20.000	19.656	-1.7	98.3
PFHpS	20.000	19.298	-3.5	96.5
PFHxA	20.000	19.475	-2.6	97.4
PFHxS	20.000	19.554	-2.2	97.8
PFNA	20.000	20.428	2.1	102.1
PFNS	20.000	18.435	-7.8	92.2
PFOA	20.000	17.913	-10.4	89.6
PFOS	20.000	17.686	-11.6	88.4

Initial Calibration Verification

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-ICV367
 Lab FileID: 6Q25950.D

PFPeA	20.000	19.260	-3.7	96.3
PFPeS	20.000	20.604	3.0	103.0
PFTeDA	20.000	19.028	-4.9	95.1
PFTTrDA	20.000	16.858	-15.7	84.3
PFUnDA	20.000	17.791	-11.0	89.0
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	20.000	20.437	2.2	102.2
13C3-HFPO-DA	10.000	9.720	-2.8	97.2
9C1-PF3ONS	20.000	18.749	-6.3	93.7
ADONA	20.000	18.266	-8.7	91.3
HFPO-DA	20.000	18.361	-8.2	91.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	17.879	-10.6	89.4
5:3FTCA	20.000	19.412	-2.9	97.1
7:3FTCA	20.000	17.743	-11.3	88.7
d3-MeFOSA	2.500	2.253	-9.9	90.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	16.107	-19.5	80.5
EtFOSE	100.000	99.581	-0.4	99.6
MeFOSA	20.000	18.375	-8.1	91.9
MeFOSE	100.000	108.172	8.2	108.2
PFDoDS	20.000	17.615	-11.9	88.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.779	-4.4	95.6
d7-MeFOSE	25.000	22.302	-10.8	89.2
d9-EtFOSE	25.000	23.709	-5.2	94.8
d5-EtFOSA	2.500	2.359	-5.6	94.4
NFDHA	20.000	18.862	-5.7	94.3
PFMBA	20.000	18.092	-9.5	90.5
PFMPA	20.000	17.931	-10.3	89.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	16.023	-19.9	80.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25951.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q25951
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.280	5.6	105.6
13C2-6:2FTS	5.000	5.301	6.0	106.0
13C2-8:2FTS	5.000	5.455	9.1	109.1
13C2-PFDoDA	1.250	1.229	-1.7	98.3
13C2-PFTeDA	1.250	1.277	2.2	102.2
13C3-PFBS	2.500	2.471	-1.2	98.8
13C3-PFHxS	2.500	2.562	2.5	102.5
13C4-PFBA	10.000	9.928	-0.7	99.3
13C4-PFHpA	2.500	2.534	1.4	101.4
13C5-PFHxA	2.500	2.459	-1.7	98.3
13C5-PFPeA	5.000	4.975	-0.5	99.5
13C6-PFDA	1.250	1.229	-1.7	98.3
13C7-PFUnDA	1.250	1.210	-3.2	96.8
13C8-FOSA	2.500	2.718	8.7	108.7
13C8-PFOA	2.500	2.530	1.2	101.2
13C8-PFOS	2.500	2.517	0.7	100.7
13C9-PFNA	1.250	1.305	4.4	104.4
4:2FTS	9.375	9.088	-3.1	96.9
6:2FTS	9.500	9.081	-4.4	95.6
8:2FTS	9.600	8.596	-10.5	89.5
d3-MeFOSAA	5.000	5.371	7.4	107.4
EtFOSAA	2.500	2.378	-4.9	95.1
FOSA	2.500	2.306	-7.8	92.2
MeFOSAA	2.500	2.384	-4.6	95.4
PFBA	10.000	9.736	-2.6	97.4
PFBS	2.218	2.330	5.1	105.1
PFDA	2.500	2.475	-1.0	99.0
PFDoDA	2.500	2.409	-3.6	96.4
PFDS	2.413	2.433	0.8	100.8
PFHpA	2.500	2.373	-5.1	94.9
PFHpS	2.383	2.417	1.4	101.4
PFHxA	2.500	2.494	-0.2	99.8
PFHxS	2.285	2.172	-5.0	95.0
PFNA	2.500	2.305	-7.8	92.2
PFNS	2.405	2.411	0.2	100.2
PFOA	2.500	2.534	1.4	101.4
PFOS	2.320	2.536	9.3	109.3

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25951.D

PFPeA	5.000	4.852	-3.0	97.0
PFPeS	2.353	2.329	-1.0	99.0
PFTeDA	2.500	2.322	-7.1	92.9
PFTTrDA	2.500	2.585	3.4	103.4
PFUnDA	2.500	2.642	5.7	105.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.614	-2.4	97.6
13C3-HFPO-DA	10.000	10.120	1.2	101.2
9C1-PF3ONS	4.675	4.390	-6.1	93.9
ADONA	4.725	4.692	-0.7	99.3
HFPO-DA	5.000	4.936	-1.3	98.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.822	-5.3	94.7
5:3FTCA	62.400	63.400	1.6	101.6
7:3FTCA	62.400	59.244	-5.1	94.9
d3-MeFOSA	2.500	2.503	0.1	100.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.144	2.9	102.9
EtFOSE	12.500	11.766	-5.9	94.1
MeFOSA	5.000	5.117	2.3	102.3
MeFOSE	12.500	12.224	-2.2	97.8
PFDoDS	2.425	2.463	1.6	101.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.147	2.9	102.9
d7-MeFOSE	25.000	25.626	2.5	102.5
d9-EtFOSE	25.000	26.377	5.5	105.5
d5-EtFOSA	2.500	2.552	2.1	102.1
NFDHA	5.000	4.998	0.0	100.0
PFMBA	5.000	4.935	-1.3	98.7
PFMPA	5.000	4.880	-2.4	97.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.410	-0.9	99.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25952.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q25952
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.128	2.6	102.6
13C2-6:2FTS	5.000	5.323	6.5	106.5
13C2-8:2FTS	5.000	4.930	-1.4	98.6
13C2-PFDoDA	1.250	1.202	-3.8	96.2
13C2-PFTeDA	1.250	1.283	2.6	102.6
13C3-PFBS	2.500	2.450	-2.0	98.0
13C3-PFHxS	2.500	2.384	-4.7	95.3
13C4-PFBA	10.000	10.011	0.1	100.1
13C4-PFHpA	2.500	2.477	-0.9	99.1
13C5-PFHxA	2.500	2.491	-0.4	99.6
13C5-PFPeA	5.000	4.898	-2.0	98.0
13C6-PFDA	1.250	1.301	4.1	104.1
13C7-PFUnDA	1.250	1.307	4.6	104.6
13C8-FOSA	2.500	2.393	-4.3	95.7
13C8-PFOA	2.500	2.689	7.6	107.6
13C8-PFOS	2.500	2.515	0.6	100.6
13C9-PFNA	1.250	1.259	0.7	100.7
4:2FTS	0.750	0.829	10.6	110.6
6:2FTS	0.760	0.804	5.8	105.8
8:2FTS	0.768	0.861	12.1	112.1
d3-MeFOSAA	5.000	4.973	-0.5	99.5
EtFOSAA	0.200	0.188	-6.0	94.0
FOSA	0.200	0.198	-0.8	99.2
MeFOSAA	0.200	0.225	12.7	112.7
PFBA	0.800	0.818	2.2	102.2
PFBS	0.177	0.186	5.2	105.2
PFDA	0.200	0.215	7.5	107.5
PFDoDA	0.200	0.241	20.6	120.6
PFDS	0.193	0.205	6.2	106.2
PFHpA	0.200	0.207	3.7	103.7
PFHpS	0.191	0.185	-3.4	96.6
PFHxA	0.200	0.209	4.6	104.6
PFHxS	0.183	0.211	15.3	115.3
PFNA	0.200	0.195	-2.6	97.4
PFNS	0.192	0.200	4.4	104.4
PFOA	0.200	0.220	9.8	109.8
PFOS	0.186	0.197	6.0	106.0

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25952.D

PFPeA	0.400	0.431	7.6	107.6
PFPeS	0.188	0.204	8.5	108.5
PFTeDA	0.200	0.203	1.3	101.3
PFTTrDA	0.200	0.224	11.9	111.9
PFUnDA	0.200	0.212	6.1	106.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.422	11.6	111.6
13C3-HFPO-DA	10.000	9.479	-5.2	94.8
9C1-PF3ONS	0.374	0.395	5.6	105.6
ADONA	0.378	0.399	5.5	105.5
HFPO-DA	0.400	0.472	17.9	117.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.999	0.0	100.0
5:3FTCA	4.992	5.136	2.9	102.9
7:3FTCA	4.992	4.784	-4.2	95.8
d3-MeFOSA	2.500	2.377	-4.9	95.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.412	3.0	103.0
EtFOSE	1.000	1.034	3.4	103.4
MeFOSA	0.400	0.427	6.8	106.8
MeFOSE	1.000	0.986	-1.4	98.6
PFDoDS	0.194	0.207	6.6	106.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.656	-6.9	93.1
d7-MeFOSE	25.000	23.697	-5.2	94.8
d9-EtFOSE	25.000	23.671	-5.3	94.7
d5-EtFOSA	2.500	2.327	-6.9	93.1
NFDHA	0.400	0.467	16.7	116.7
PFMBA	0.400	0.409	2.2	102.2
PFMPA	0.400	0.421	5.3	105.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.365	2.6	102.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25961.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q25961
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.374	7.5	107.5
13C2-6:2FTS	5.000	5.215	4.3	104.3
13C2-8:2FTS	5.000	5.274	5.5	105.5
13C2-PFDoDA	1.250	1.182	-5.4	94.6
13C2-PFTeDA	1.250	1.209	-3.3	96.7
13C3-PFBS	2.500	2.560	2.4	102.4
13C3-PFHxS	2.500	2.549	1.9	101.9
13C4-PFBA	10.000	9.983	-0.2	99.8
13C4-PFHpA	2.500	2.479	-0.9	99.1
13C5-PFHxA	2.500	2.502	0.1	100.1
13C5-PFPeA	5.000	5.148	3.0	103.0
13C6-PFDA	1.250	1.245	-0.4	99.6
13C7-PFUnDA	1.250	1.204	-3.7	96.3
13C8-FOSA	2.500	2.401	-4.0	96.0
13C8-PFOA	2.500	2.402	-3.9	96.1
13C8-PFOS	2.500	2.524	1.0	101.0
13C9-PFNA	1.250	1.283	2.6	102.6
4:2FTS	9.375	8.861	-5.5	94.5
6:2FTS	9.500	9.079	-4.4	95.6
8:2FTS	9.600	9.692	1.0	101.0
d3-MeFOSAA	5.000	5.060	1.2	101.2
EtFOSAA	2.500	2.584	3.4	103.4
FOSA	2.500	2.335	-6.6	93.4
MeFOSAA	2.500	2.269	-9.2	90.8
PFBA	10.000	9.707	-2.9	97.1
PFBS	2.218	2.162	-2.5	97.5
PFDA	2.500	2.422	-3.1	96.9
PFDoDA	2.500	2.615	4.6	104.6
PFDS	2.413	2.161	-10.4	89.6
PFHpA	2.500	2.424	-3.0	97.0
PFHpS	2.383	2.254	-5.4	94.6
PFHxA	2.500	2.562	2.5	102.5
PFHxS	2.285	2.153	-5.8	94.2
PFNA	2.500	2.522	0.9	100.9
PFNS	2.405	2.158	-10.3	89.7
PFOA	2.500	2.399	-4.1	95.9
PFOS	2.320	2.054	-11.4	88.6

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q25961.D

PFPeA	5.000	4.774	-4.5	95.5
PFPeS	2.353	2.314	-1.7	98.3
PFTeDA	2.500	2.367	-5.3	94.7
PFTTrDA	2.500	2.537	1.5	101.5
PFUnDA	2.500	2.443	-2.3	97.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.809	1.8	101.8
13C3-HFPO-DA	10.000	9.790	-2.1	97.9
9C1-PF3ONS	4.675	4.569	-2.3	97.7
ADONA	4.725	4.738	0.3	100.3
HFPO-DA	5.000	4.794	-4.1	95.9
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.823	-5.3	94.7
5:3FTCA	62.400	60.314	-3.3	96.7
7:3FTCA	62.400	62.382	0.0	100.0
d3-MeFOSA	2.500	2.321	-7.2	92.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.755	-4.9	95.1
EtFOSE	12.500	11.714	-6.3	93.7
MeFOSA	5.000	5.081	1.6	101.6
MeFOSE	12.500	11.617	-7.1	92.9
PFDoDS	2.425	2.341	-3.5	96.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.731	-5.4	94.6
d7-MeFOSE	25.000	24.830	-0.7	99.3
d9-EtFOSE	25.000	24.575	-1.7	98.3
d5-EtFOSA	2.500	2.452	-1.9	98.1
NFDHA	5.000	4.948	-1.0	99.0
PFMBA	5.000	4.787	-4.3	95.7
PFMPA	5.000	4.856	-2.9	97.1
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.327	-2.8	97.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26043.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q26043
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.685	13.7	113.7
13C2-6:2FTS	5.000	4.986	-0.3	99.7
13C2-8:2FTS	5.000	5.343	6.9	106.9
13C2-PFDoDA	1.250	1.323	5.8	105.8
13C2-PFTeDA	1.250	1.349	7.9	107.9
13C3-PFBS	2.500	2.659	6.3	106.3
13C3-PFHxS	2.500	2.592	3.7	103.7
13C4-PFBA	10.000	10.013	0.1	100.1
13C4-PFHpA	2.500	2.417	-3.3	96.7
13C5-PFHxA	2.500	2.461	-1.6	98.4
13C5-PFPeA	5.000	4.948	-1.0	99.0
13C6-PFDA	1.250	1.413	13.0	113.0
13C7-PFUnDA	1.250	1.351	8.0	108.0
13C8-FOSA	2.500	2.452	-1.9	98.1
13C8-PFOA	2.500	2.605	4.2	104.2
13C8-PFOS	2.500	2.501	0.0	100.0
13C9-PFNA	1.250	1.271	1.7	101.7
4:2FTS	9.375	9.239	-1.5	98.5
6:2FTS	9.500	10.605	11.6	111.6
8:2FTS	9.600	9.281	-3.3	96.7
d3-MeFOSAA	5.000	4.857	-2.9	97.1
EtFOSAA	2.500	2.212	-11.5	88.5
FOSA	2.500	2.384	-4.6	95.4
MeFOSAA	2.500	2.396	-4.2	95.8
PFBA	10.000	9.643	-3.6	96.4
PFBS	2.218	2.155	-2.8	97.2
PFDA	2.500	2.289	-8.4	91.6
PFDoDA	2.500	2.369	-5.2	94.8
PFDS	2.413	2.325	-3.7	96.3
PFHpA	2.500	2.394	-4.2	95.8
PFHpS	2.383	2.372	-0.5	99.5
PFHxA	2.500	2.430	-2.8	97.2
PFHxS	2.285	2.144	-6.2	93.8
PFNA	2.500	2.184	-12.7	87.3
PFNS	2.405	2.178	-9.4	90.6
PFOA	2.500	2.468	-1.3	98.7
PFOS	2.320	2.231	-3.8	96.2

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26043.D

PFPeA	5.000	4.745	-5.1	94.9
PFPeS	2.353	2.362	0.4	100.4
PFTeDA	2.500	2.235	-10.6	89.4
PFTTrDA	2.500	2.448	-2.1	97.9
PFUnDA	2.500	2.422	-3.1	96.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.581	-3.0	97.0
13C3-HFPO-DA	10.000	9.326	-6.7	93.3
9C1-PF3ONS	4.675	4.710	0.7	100.7
ADONA	4.725	4.606	-2.5	97.5
HFPO-DA	5.000	5.155	3.1	103.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.729	-6.0	94.0
5:3FTCA	62.400	57.945	-7.1	92.9
7:3FTCA	62.400	59.446	-4.7	95.3
d3-MeFOSA	2.500	2.316	-7.4	92.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.960	-0.8	99.2
EtFOSE	12.500	12.015	-3.9	96.1
MeFOSA	5.000	5.197	3.9	103.9
MeFOSE	12.500	12.241	-2.1	97.9
PFDODS	2.425	2.200	-9.3	90.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.964	-0.7	99.3
d7-MeFOSE	25.000	23.778	-4.9	95.1
d9-EtFOSE	25.000	23.688	-5.2	94.8
d5-EtFOSA	2.500	2.376	-5.0	95.0
NFDHA	5.000	5.240	4.8	104.8
PFMBA	5.000	4.812	-3.8	96.2
PFMPA	5.000	4.799	-4.0	96.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.177	-6.1	93.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26049.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q26049
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.884	-2.3	97.7
13C2-6:2FTS	5.000	5.071	1.4	101.4
13C2-8:2FTS	5.000	5.075	1.5	101.5
13C2-PFDoDA	1.250	1.306	4.5	104.5
13C2-PFTeDA	1.250	1.233	-1.3	98.7
13C3-PFBS	2.500	2.493	-0.3	99.7
13C3-PFHxS	2.500	2.328	-6.9	93.1
13C4-PFBA	10.000	9.961	-0.4	99.6
13C4-PFHpA	2.500	2.381	-4.7	95.3
13C5-PFHxA	2.500	2.616	4.6	104.6
13C5-PFPeA	5.000	4.950	-1.0	99.0
13C6-PFDA	1.250	1.215	-2.8	97.2
13C7-PFUnDA	1.250	1.240	-0.8	99.2
13C8-FOSA	2.500	2.431	-2.8	97.2
13C8-PFOA	2.500	2.500	0.0	100.0
13C8-PFOS	2.500	2.297	-8.1	91.9
13C9-PFNA	1.250	1.179	-5.7	94.3
4:2FTS	9.375	9.504	1.4	101.4
6:2FTS	9.500	9.696	2.1	102.1
8:2FTS	9.600	9.557	-0.5	99.5
d3-MeFOSAA	5.000	4.983	-0.3	99.7
EtFOSAA	2.500	2.179	-12.8	87.2
FOSA	2.500	2.310	-7.6	92.4
MeFOSAA	2.500	2.369	-5.2	94.8
PFBA	10.000	9.771	-2.3	97.7
PFBS	2.218	2.118	-4.5	95.5
PFDA	2.500	2.378	-4.9	95.1
PFDoDA	2.500	2.354	-5.8	94.2
PFDS	2.413	2.376	-1.5	98.5
PFHpA	2.500	2.477	-0.9	99.1
PFHpS	2.383	2.554	7.2	107.2
PFHxA	2.500	2.317	-7.3	92.7
PFHxS	2.285	2.216	-3.0	97.0
PFNA	2.500	2.628	5.1	105.1
PFNS	2.405	2.356	-2.0	98.0
PFOA	2.500	2.379	-4.8	95.2
PFOS	2.320	2.353	1.4	101.4

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26049.D

PFPeA	5.000	4.824	-3.5	96.5
PFPeS	2.353	2.386	1.4	101.4
PFTeDA	2.500	2.305	-7.8	92.2
PFTTrDA	2.500	2.429	-2.8	97.2
PFUnDA	2.500	2.360	-5.6	94.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.187	-11.4	88.6
13C3-HFPO-DA	10.000	10.121	1.2	101.2
9C1-PF3ONS	4.675	4.362	-6.7	93.3
ADONA	4.725	4.562	-3.5	96.5
HFPO-DA	5.000	4.860	-2.8	97.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.724	-6.1	93.9
5:3FTCA	62.400	57.793	-7.4	92.6
7:3FTCA	62.400	57.120	-8.5	91.5
d3-MeFOSA	2.500	2.298	-8.1	91.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.835	-3.3	96.7
EtFOSE	12.500	12.955	3.6	103.6
MeFOSA	5.000	5.021	0.4	100.4
MeFOSE	12.500	12.219	-2.2	97.8
PFDoDS	2.425	2.447	0.9	100.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.835	-3.3	96.7
d7-MeFOSE	25.000	22.876	-8.5	91.5
d9-EtFOSE	25.000	21.795	-12.8	87.2
d5-EtFOSA	2.500	2.386	-4.6	95.4
NFDHA	5.000	4.771	-4.6	95.4
PFMBA	5.000	4.862	-2.8	97.2
PFMPA	5.000	4.923	-1.5	98.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.056	-8.8	91.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26050.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\100823_1633_S6Q367\S6Q367.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\100823_1633_S6Q367\6Q25940.d
 2:D:\MassHunter\Data\100823_1633_S6Q367\6Q25941.d
 3:D:\MassHunter\Data\100823_1633_S6Q367\6Q25942.d
 4:D:\MassHunter\Data\100823_1633_S6Q367\6Q25943.d
 5:D:\MassHunter\Data\100823_1633_S6Q367\6Q25944.d
 6:D:\MassHunter\Data\100823_1633_S6Q367\6Q25945.d
 7:D:\MassHunter\Data\100823_1633_S6Q367\6Q25946.d
 8:D:\MassHunter\Data\100823_1633_S6Q367\6Q25947.d

Data File: 6Q26050
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.210	4.2	104.2
13C2-6:2FTS	5.000	5.291	5.8	105.8
13C2-8:2FTS	5.000	5.261	5.2	105.2
13C2-PFDoDA	1.250	1.163	-7.0	93.0
13C2-PFTeDA	1.250	1.173	-6.2	93.8
13C3-PFBS	2.500	2.534	1.4	101.4
13C3-PFHxS	2.500	2.497	-0.1	99.9
13C4-PFBA	10.000	9.946	-0.5	99.5
13C4-PFHpA	2.500	2.445	-2.2	97.8
13C5-PFHxA	2.500	2.458	-1.7	98.3
13C5-PFPeA	5.000	4.984	-0.3	99.7
13C6-PFDA	1.250	1.230	-1.6	98.4
13C7-PFUnDA	1.250	1.295	3.6	103.6
13C8-FOSA	2.500	2.375	-5.0	95.0
13C8-PFOA	2.500	2.566	2.6	102.6
13C8-PFOS	2.500	2.463	-1.5	98.5
13C9-PFNA	1.250	1.304	4.3	104.3
4:2FTS	0.750	0.831	10.7	110.7
6:2FTS	0.760	0.825	8.6	108.6
8:2FTS	0.768	0.788	2.5	102.5
d3-MeFOSAA	5.000	4.744	-5.1	94.9
EtFOSAA	0.200	0.219	9.5	109.5
FOSA	0.200	0.191	-4.5	95.5
MeFOSAA	0.200	0.175	-12.6	87.4
PFBA	0.800	0.815	1.9	101.9
PFBS	0.177	0.191	8.0	108.0
PFDA	0.200	0.216	8.2	108.2
PFDoDA	0.200	0.211	5.6	105.6
PFDS	0.193	0.186	-3.6	96.4
PFHpA	0.200	0.205	2.4	102.4
PFHpS	0.191	0.195	2.3	102.3
PFHxA	0.200	0.211	5.4	105.4
PFHxS	0.183	0.200	9.5	109.5
PFNA	0.200	0.214	7.2	107.2
PFNS	0.192	0.183	-4.5	95.5
PFOA	0.200	0.209	4.4	104.4
PFOS	0.186	0.188	1.3	101.3

Continuing Calibration Summary

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q367-CC367
 Lab FileID: 6Q26050.D

PFPeA	0.400	0.412	3.0	103.0
PFPeS	0.188	0.200	6.5	106.5
PFTeDA	0.200	0.211	5.5	105.5
PFTTrDA	0.200	0.227	13.7	113.7
PFUnDA	0.200	0.189	-5.5	94.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.377	-0.3	99.7
13C3-HFPO-DA	10.000	9.892	-1.1	98.9
9C1-PF3ONS	0.374	0.341	-8.8	91.2
ADONA	0.378	0.378	0.1	100.1
HFPO-DA	0.400	0.392	-1.9	98.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.994	-0.5	99.5
5:3FTCA	4.992	5.148	3.1	103.1
7:3FTCA	4.992	5.065	1.5	101.5
d3-MeFOSA	2.500	2.325	-7.0	93.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.420	5.1	105.1
EtFOSE	1.000	1.008	0.8	100.8
MeFOSA	0.400	0.408	2.0	102.0
MeFOSE	1.000	1.034	3.4	103.4
PFDoDS	0.194	0.198	2.1	102.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.786	-4.3	95.7
d7-MeFOSE	25.000	22.072	-11.7	88.3
d9-EtFOSE	25.000	21.927	-12.3	87.7
d5-EtFOSA	2.500	2.264	-9.4	90.6
NFDHA	0.400	0.466	16.6	116.6
PFMBA	0.400	0.403	0.7	100.7
PFMPA	0.400	0.398	-0.6	99.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.338	-5.0	95.0

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q367	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q367-RT	6Q25937.D	10/08/23 14:04	n/a	Retention Time Marker
S6Q367-RT	6Q25938.D	10/08/23 14:34	n/a	Retention Time Marker
S6Q367-IC367	6Q25939.D	10/08/23 14:49	n/a	Mass Calibration Verification
S6Q367-IC367	6Q25940.D	10/08/23 15:03	n/a	Initial cal 1
S6Q367-IC367	6Q25941.D	10/08/23 15:17	n/a	Initial cal 2
S6Q367-IC367	6Q25942.D	10/08/23 15:32	n/a	Initial cal 3
S6Q367-ICC367	6Q25943.D	10/08/23 15:46	n/a	Initial cal 4
S6Q367-IC367	6Q25944.D	10/08/23 16:00	n/a	Initial cal 5
S6Q367-IC367	6Q25945.D	10/08/23 16:15	n/a	Initial cal 6
S6Q367-IC367	6Q25946.D	10/08/23 16:29	n/a	Initial cal 7
S6Q367-IC367	6Q25947.D	10/08/23 16:43	n/a	Initial cal 8
S6Q367-IBLK	6Q25948.D	10/08/23 16:57	n/a	Instrument Blank
S6Q367-IBLK	6Q25948.D	10/08/23 16:57	n/a	Instrument Blank
S6Q367-ICV367	6Q25949.D	10/08/23 17:12	n/a	Initial cal verification 4
S6Q367-ICV367	6Q25950.D	10/08/23 17:26	n/a	Initial cal verification 20
S6Q367-CC367	6Q25951.D	10/08/23 17:40	n/a	Continuing cal 4
S6Q367-CC367	6Q25952.D	10/08/23 17:55	n/a	Continuing cal 1.0LL
OP99404-BS	6Q25953.D	10/08/23 18:09	OP99404	Blank Spike
OP99404-LLBS	6Q25954.D	10/08/23 18:23	OP99404	Blank Spike
OP99404-MB	6Q25955.D	10/08/23 18:38	OP99404	Method Blank
FC10192-1	6Q25956.D	10/08/23 18:52	OP99404	AF-HDMW225303-WGN01LF-2310
OP99404-MS	6Q25957.D	10/08/23 19:06	OP99404	Matrix Spike
FC10192-2	6Q25958.D	10/08/23 19:21	OP99404	AF-RHMW12A-WGN01LF-2310
OP99404-DUP	6Q25959.D	10/08/23 19:35	OP99404	Duplicate
FC10192-3	6Q25960.D	10/08/23 19:49	OP99404	AF-RHMW12A-WGFD01LF-2310
S6Q367-CC367	6Q25961.D	10/08/23 20:04	n/a	Continuing cal 4
S6Q367-ICCB	6Q25962.D	10/08/23 20:18	n/a	Continuing Calibration Blank
OP99393-BS	6Q25963.D	10/08/23 20:32	OP99393	Blank Spike
OP99393-LLBS	6Q25964.D	10/08/23 20:47	OP99393	Blank Spike
OP99393-MB	6Q25965.D	10/08/23 21:01	OP99393	Method Blank
ZZZZZZ	6Q25966.D	10/08/23 21:15	OP99393	(unrelated sample)
ZZZZZZ	6Q25967.D	10/08/23 21:30	OP99393	(unrelated sample)
ZZZZZZ	6Q25968.D	10/08/23 21:44	OP99393	(unrelated sample)
ZZZZZZ	6Q25969.D	10/08/23 21:58	OP99393	(unrelated sample)
ZZZZZZ	6Q25970.D	10/08/23 22:13	OP99393	(unrelated sample)
ZZZZZZ	6Q25971.D	10/08/23 22:27	OP99393	(unrelated sample)
S6Q367-CC367	6Q25972.D	10/08/23 22:41	n/a	Continuing cal 4
S6Q367-ICCB	6Q25973.D	10/08/23 22:56	n/a	Continuing Calibration Blank
S6Q367-CC367	6Q25992.D	10/09/23 01:33	n/a	Continuing cal 4
S6Q367-ICCB	6Q25993.D	10/09/23 01:47	n/a	Continuing Calibration Blank
OP99269-BS	6Q25994.D	10/09/23 02:02	OP99269	Blank Spike
OP99269-LLBS	6Q25995.D	10/09/23 02:16	OP99269	Blank Spike
OP99269-MB	6Q25996.D	10/09/23 02:30	OP99269	Method Blank
ZZZZZZ	6Q25997.D	10/09/23 02:45	OP99269	(unrelated sample)
ZZZZZZ	6Q25998.D	10/09/23 02:59	OP99269	(unrelated sample)
ZZZZZZ	6Q25999.D	10/09/23 03:13	OP99269	(unrelated sample)

Run Sequence Report

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q367	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q26000.D	10/09/23 03:28	OP99269	(unrelated sample)
FC9870-3	6Q26001.D	10/09/23 03:42	OP99269	(used for QC only; not part of job FC10192)
OP99269-MS	6Q26002.D	10/09/23 03:56	OP99269	Matrix Spike
OP99269-MSD	6Q26003.D	10/09/23 04:11	OP99269	Matrix Spike Duplicate
S6Q367-CC367	6Q26004.D	10/09/23 04:25	n/a	Continuing cal 4
S6Q367-ICCB	6Q26005.D	10/09/23 04:39	n/a	Continuing Calibration Blank
ZZZZZZ	6Q26006.D	10/09/23 04:54	OP99269	(unrelated sample)
ZZZZZZ	6Q26007.D	10/09/23 05:08	OP99269	(unrelated sample)
ZZZZZZ	6Q26008.D	10/09/23 05:22	OP99269	(unrelated sample)
ZZZZZZ	6Q26009.D	10/09/23 05:37	OP99269	(unrelated sample)
S6Q367-CC367	6Q26010.D	10/09/23 05:51	n/a	Continuing cal 4
S6Q367-ICCB	6Q26011.D	10/09/23 06:05	n/a	Continuing Calibration Blank
OP99272-BS	6Q26012.D	10/09/23 06:20	OP99272	Blank Spike
OP99272-LLBS	6Q26013.D	10/09/23 06:34	OP99272	Blank Spike
OP99272-MB	6Q26014.D	10/09/23 06:48	OP99272	Method Blank
ZZZZZZ	6Q26015.D	10/09/23 07:03	OP99272	(unrelated sample)
ZZZZZZ	6Q26016.D	10/09/23 07:17	OP99272	(unrelated sample)
ZZZZZZ	6Q26017.D	10/09/23 07:31	OP99272	(unrelated sample)
ZZZZZZ	6Q26018.D	10/09/23 07:45	OP99272	(unrelated sample)
FC9871-5	6Q26019.D	10/09/23 08:00	OP99272	(used for QC only; not part of job FC10192)
OP99272-MS	6Q26020.D	10/09/23 08:14	OP99272	Matrix Spike
OP99272-MSD	6Q26021.D	10/09/23 08:29	OP99272	Matrix Spike Duplicate
S6Q367-CC367	6Q26022.D	10/09/23 08:43	n/a	Continuing cal 4
S6Q367-ICCB	6Q26023.D	10/09/23 08:57	n/a	Continuing Calibration Blank
ZZZZZZ	6Q26024.D	10/09/23 09:36	OP99272	(unrelated sample)
OP99405-BS	6Q26025.D	10/09/23 09:52	OP99405	Blank Spike
OP99405-LLBS	6Q26026.D	10/09/23 10:07	OP99405	Blank Spike
OP99405-MB	6Q26027.D	10/09/23 10:21	OP99405	Method Blank
FC10063-2	6Q26028.D	10/09/23 10:35	OP99405	(used for QC only; not part of job FC10192)
OP99405-MS	6Q26029.D	10/09/23 10:50	OP99405	Matrix Spike
FC10063-3	6Q26030.D	10/09/23 11:04	OP99405	(used for QC only; not part of job FC10192)
OP99405-DUP	6Q26031.D	10/09/23 11:18	OP99405	Duplicate
ZZZZZZ	6Q26032.D	10/09/23 11:33	OP99405	(unrelated sample)
ZZZZZZ	6Q26033.D	10/09/23 11:47	OP99405	(unrelated sample)
S6Q367-CC367	6Q26034.D	10/09/23 12:01	n/a	Continuing cal 4
S6Q367-ICCB	6Q26035.D	10/09/23 12:16	n/a	Continuing Calibration Blank
OP99394-BS	6Q26036.D	10/09/23 12:30	OP99394	Blank Spike
OP99394-LLBS	6Q26037.D	10/09/23 12:44	OP99394	Blank Spike
OP99394-MB	6Q26038.D	10/09/23 13:04	OP99394	Method Blank
ZZZZZZ	6Q26039.D	10/09/23 13:19	OP99394	(unrelated sample)
FC9961-3	6Q26040.D	10/09/23 13:33	OP99394	(used for QC only; not part of job FC10192)
OP99394-MS	6Q26041.D	10/09/23 13:47	OP99394	Matrix Spike
OP99394-MSD	6Q26042.D	10/09/23 14:02	OP99394	Matrix Spike Duplicate
S6Q367-CC367	6Q26043.D	10/09/23 14:16	n/a	Continuing cal 4
S6Q367-ICCB	6Q26044.D	10/09/23 14:30	n/a	Continuing Calibration Blank
S6Q367-RT	6Q26045.D	10/09/23 14:45	n/a	Retention Time Marker

Run Sequence Report

Job Number: FC10192
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q367	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
S6Q367-RT	6Q26046.D	10/09/23 14:59	n/a	Retention Time Marker
S6Q367-IBLK	6Q26048.D	10/09/23 15:28	n/a	Instrument Blank
S6Q367-IBLK	6Q26048.D	10/09/23 15:28	n/a	Instrument Blank
S6Q367-CC367	6Q26049.D	10/09/23 15:42	n/a	Continuing cal 4
S6Q367-CC367	6Q26050.D	10/09/23 15:56	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q26051.D	10/09/23 16:11	OP99272	(unrelated sample)
ZZZZZZ	6Q26052.D	10/09/23 16:25	OP99272	(unrelated sample)
ZZZZZZ	6Q26053.D	10/09/23 16:39	OP99272	(unrelated sample)
ZZZZZZ	6Q26054.D	10/09/23 16:54	OP99272	(unrelated sample)
ZZZZZZ	6Q26055.D	10/09/23 17:08	OP99272	(unrelated sample)
ZZZZZZ	6Q26056.D	10/09/23 17:22	OP99272	(unrelated sample)
ZZZZZZ	6Q26057.D	10/09/23 17:37	OP99272	(unrelated sample)
ZZZZZZ	6Q26058.D	10/09/23 17:51	OP99272	(unrelated sample)
ZZZZZZ	6Q26059.D	10/09/23 18:05	OP99272	(unrelated sample)
S6Q367-CC367	6Q26060.D	10/09/23 18:20	n/a	Continuing cal 4
S6Q367-ICCB	6Q26061.D	10/09/23 18:34	n/a	Continuing Calibration Blank
ZZZZZZ	6Q26062.D	10/09/23 18:48	OP99272	(unrelated sample)
ZZZZZZ	6Q26063.D	10/09/23 19:03	OP99272	(unrelated sample)
ZZZZZZ	6Q26064.D	10/09/23 19:17	OP99272	(unrelated sample)
ZZZZZZ	6Q26065.D	10/09/23 19:31	OP99272	(unrelated sample)
ZZZZZZ	6Q26066.D	10/09/23 19:46	OP99272	(unrelated sample)
S6Q367-CC367	6Q26067.D	10/09/23 20:00	n/a	Continuing cal 4
S6Q367-ICCB	6Q26068.D	10/09/23 20:14	n/a	Continuing Calibration Blank
S6Q367-ICCB	6Q26068.D	10/09/23 20:14	n/a	Continuing Calibration Blank
ZZZZZZ	6Q26069.D	10/09/23 20:28	OP99300	(unrelated sample)
ZZZZZZ	6Q26070.D	10/09/23 20:43	OP99300	(unrelated sample)
ZZZZZZ	6Q26071.D	10/09/23 20:57	OP99300	(unrelated sample)
ZZZZZZ	6Q26072.D	10/09/23 21:11	OP99227	(unrelated sample)
ZZZZZZ	6Q26073.D	10/09/23 21:26	OP99203	(unrelated sample)
ZZZZZZ	6Q26074.D	10/09/23 21:40	OP99251	(unrelated sample)
ZZZZZZ	6Q26075.D	10/09/23 21:54	OP99251	(unrelated sample)
ZZZZZZ	6Q26076.D	10/09/23 22:09	OP99251	(unrelated sample)
ZZZZZZ	6Q26077.D	10/09/23 22:23	OP99300	(unrelated sample)
ZZZZZZ	6Q26078.D	10/09/23 22:37	OP99300	(unrelated sample)
S6Q367-CC367	6Q26079.D	10/09/23 22:52	n/a	Continuing cal 4
S6Q367-ICCB	6Q26080.D	10/09/23 23:06	n/a	Continuing Calibration Blank
S6Q367-ICCB	6Q26080.D	10/09/23 23:06	n/a	Continuing Calibration Blank
ZZZZZZ	6Q26081.D	10/09/23 23:20	OP99300	(unrelated sample)
ZZZZZZ	6Q26082.D	10/09/23 23:35	OP99300	(unrelated sample)
ZZZZZZ	6Q26083.D	10/09/23 23:49	OP99300	(unrelated sample)
ZZZZZZ	6Q26084.D	10/10/23 00:03	OP99300	(unrelated sample)
ZZZZZZ	6Q26085.D	10/10/23 00:18	OP99300	(unrelated sample)
ZZZZZZ	6Q26086.D	10/10/23 00:32	OP99300	(unrelated sample)
ZZZZZZ	6Q26087.D	10/10/23 00:46	OP99203	(unrelated sample)
ZZZZZZ	6Q26088.D	10/10/23 01:01	OP99203	(unrelated sample)
S6Q367-ECC367	6Q26089.D	10/10/23 01:15	n/a	Ending cal 4

Run Sequence Report

Job Number: FC10192
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q367	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
S6Q367-ICCB	6Q26090.D	10/10/23 01:29	n/a	Continuing Calibration Blank
S6Q367-ICCB	6Q26090.D	10/10/23 01:29	n/a	Continuing Calibration Blank

6.9.1

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MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25956.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 6:52:36 PM
 Sample Name : FC10192-1
 Vial : P2-A4
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,520,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	128411	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	44885	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	39576	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	39047	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	53140	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	20988	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	20865	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	22811	1.25 µg/L	0.000
M2-PFDoDA	9.043	615.1 -> 570.0	21031	1.25 µg/L	0.012
M2-PFTeDA	9.747	715.2 -> 670.0	6697	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	13839	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18352	2.50 µg/L	0.012
M3-PFHxS	7.264	402.1 -> 79.9	10397	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	9240	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	1958	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	2722	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	2764	5.00 µg/L	0.012
M3-MeFOSAA	8.219	573.2 -> 419.0	19653	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	28350	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	15079	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	46604	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	58567	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4639	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	4356	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	9031	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	51742	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6277	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	58147	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	18921	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21472	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	38408	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	1958	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2722	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-8:2FTS	7.962	529.1 -> 80.9	2764	5.10 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-PFDoDA	9.043	615.1 -> 570.0	21031	1.12 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 89.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	6697	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.8%		
13C3-PFBS	5.510	302.1 -> 79.9	18352	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.264	402.1 -> 79.9	10397	2.61 µg/L	0.000

7.1.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFBA	2.972	216.8 -> 171.9	128411	10.28 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C4-PFHpA	6.531	367.1 -> 322.0	39047	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFHxA	5.592	318.0 -> 273.0	39576	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	4.384	268.3 -> 223.0	44885	5.16 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.161	519.1 -> 474.1	20865	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C7-PFUnDA	8.614	570.0 -> 525.1	22811	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-FOSA	9.657	506.1 -> 77.8	13839	1.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.3%	
13C8-PFOA	7.161	421.1 -> 376.0	53140	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.311	507.1 -> 79.9	9240	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C9-PFNA	7.680	472.1 -> 427.0	20988	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.1%	
d3-MeFOSAA	8.219	573.2 -> 419.0	19653	4.95 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	28350	10.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
d3-MeFOSA	10.757	515.0 -> 219.0	4356	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.6%	
d5-EtFOSAA	8.415	589.2 -> 419.0	15079	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	46604	19.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 77.5%	
d9-EtFOSE	10.911	639.2 -> 58.9	58567	20.48 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 81.9%	
d5-EtFOSA	10.976	531.1 -> 219.0	4639	2.01 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.3%	

Target Compounds

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

Perfluorinated Compounds by LC/MS/MS

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

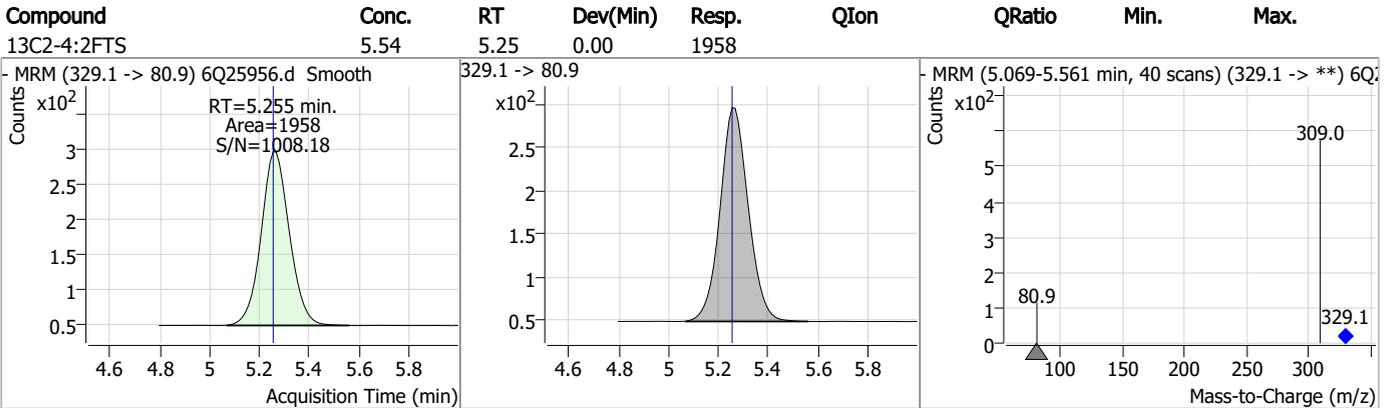
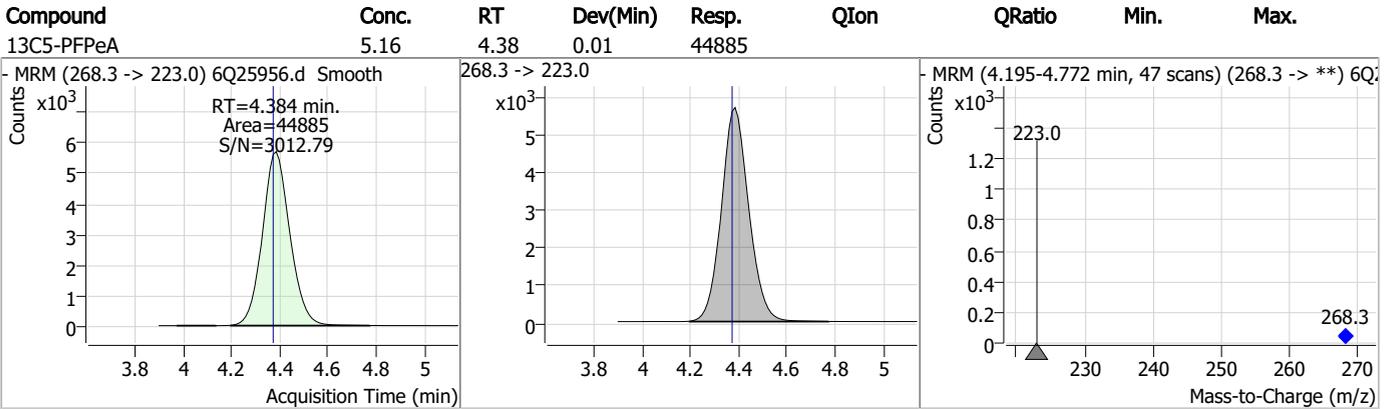
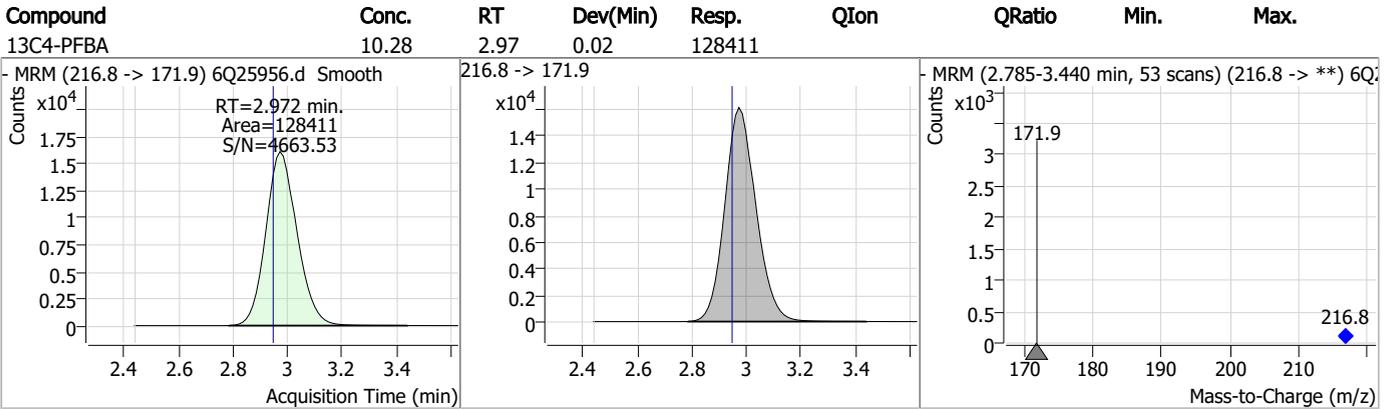
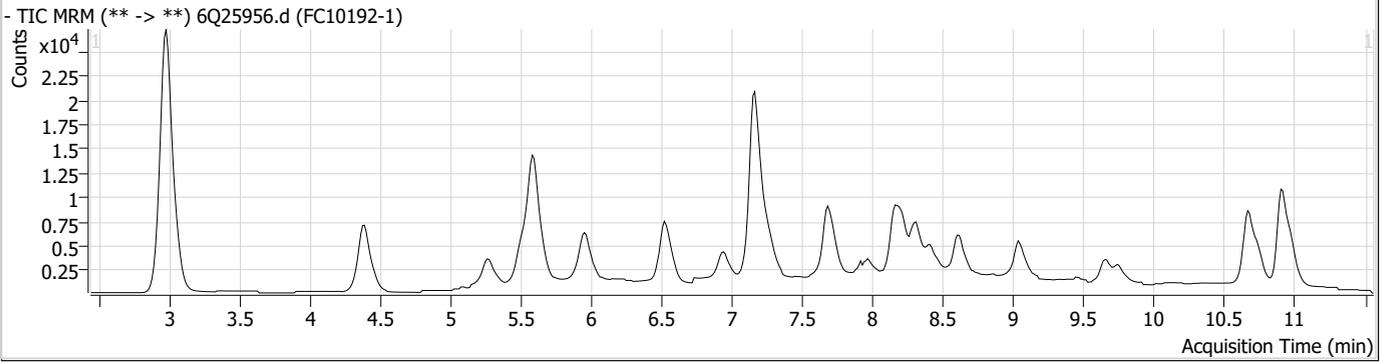
Perfluorinated Compounds by LC/MS/MS

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



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.58	5.51	0.01	18352				
13C5-PFHxA	2.49	5.59	0.01	39576				
13C3-HFPO-DA	10.58	5.96	0.00	28350				
13C4-PFHpA	2.51	6.53	0.01	39047				

Perfluorinated Compounds by LC/MS/MS

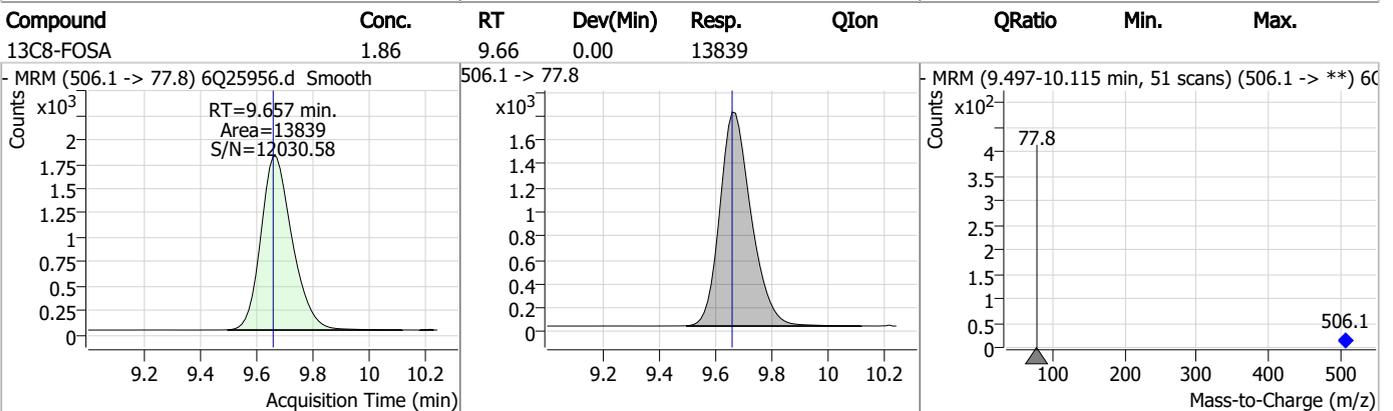
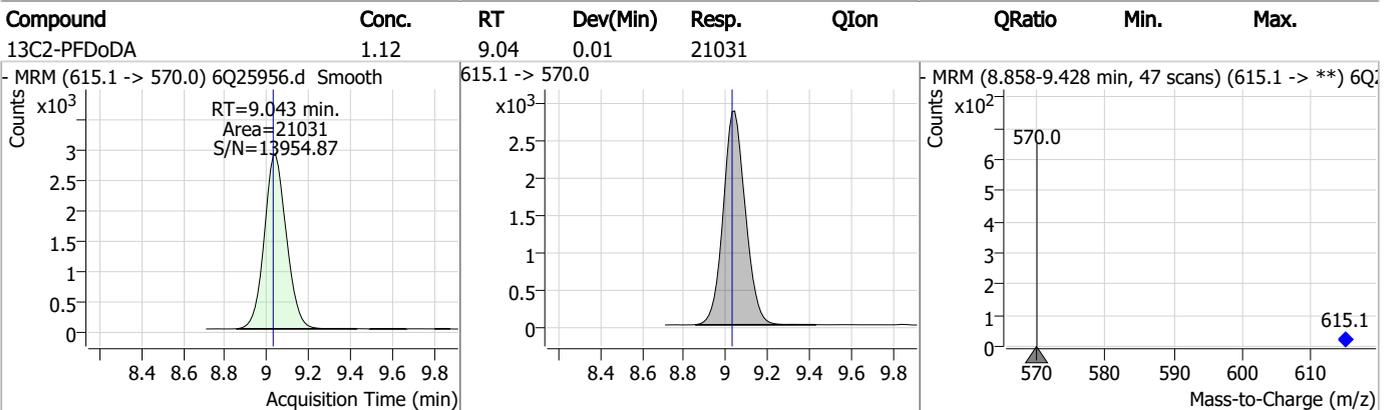
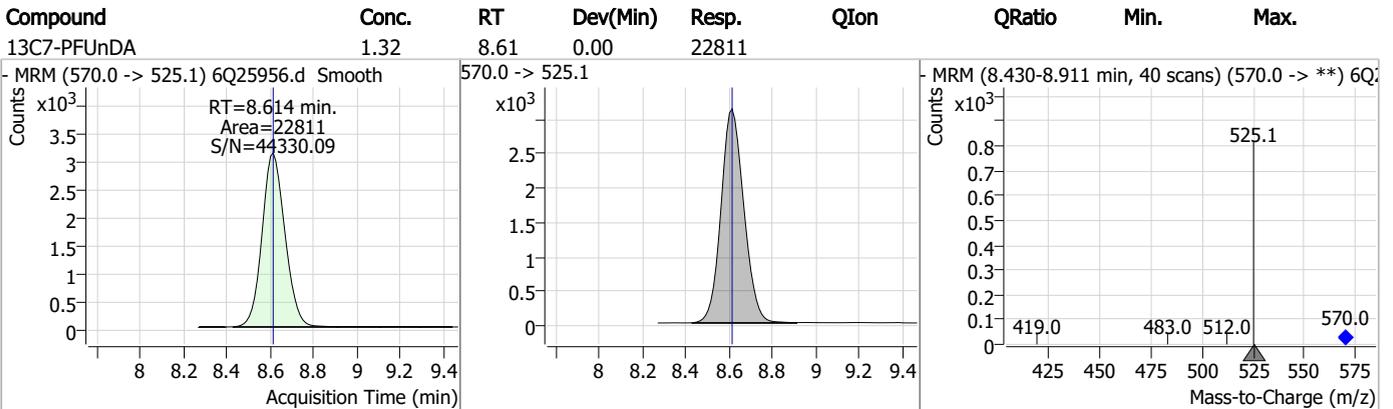
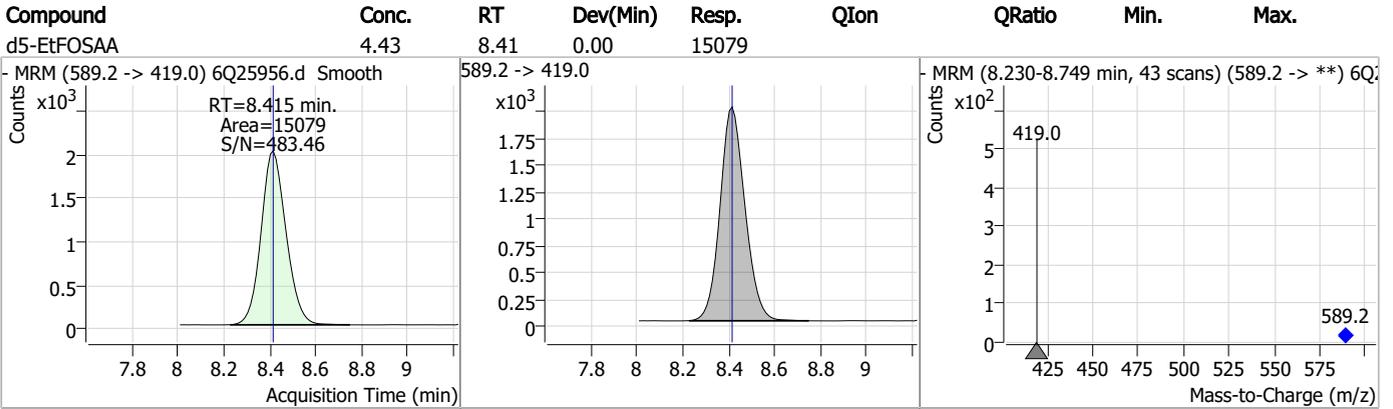
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.17	6.94	0.00	2722				
13C8-PFOA	2.64	7.16	0.00	53140				
13C3-PFHxS	2.61	7.26	0.00	10397				
13C9-PFNA	1.19	7.68	0.00	20988				

Perfluorinated Compounds by LC/MS/MS

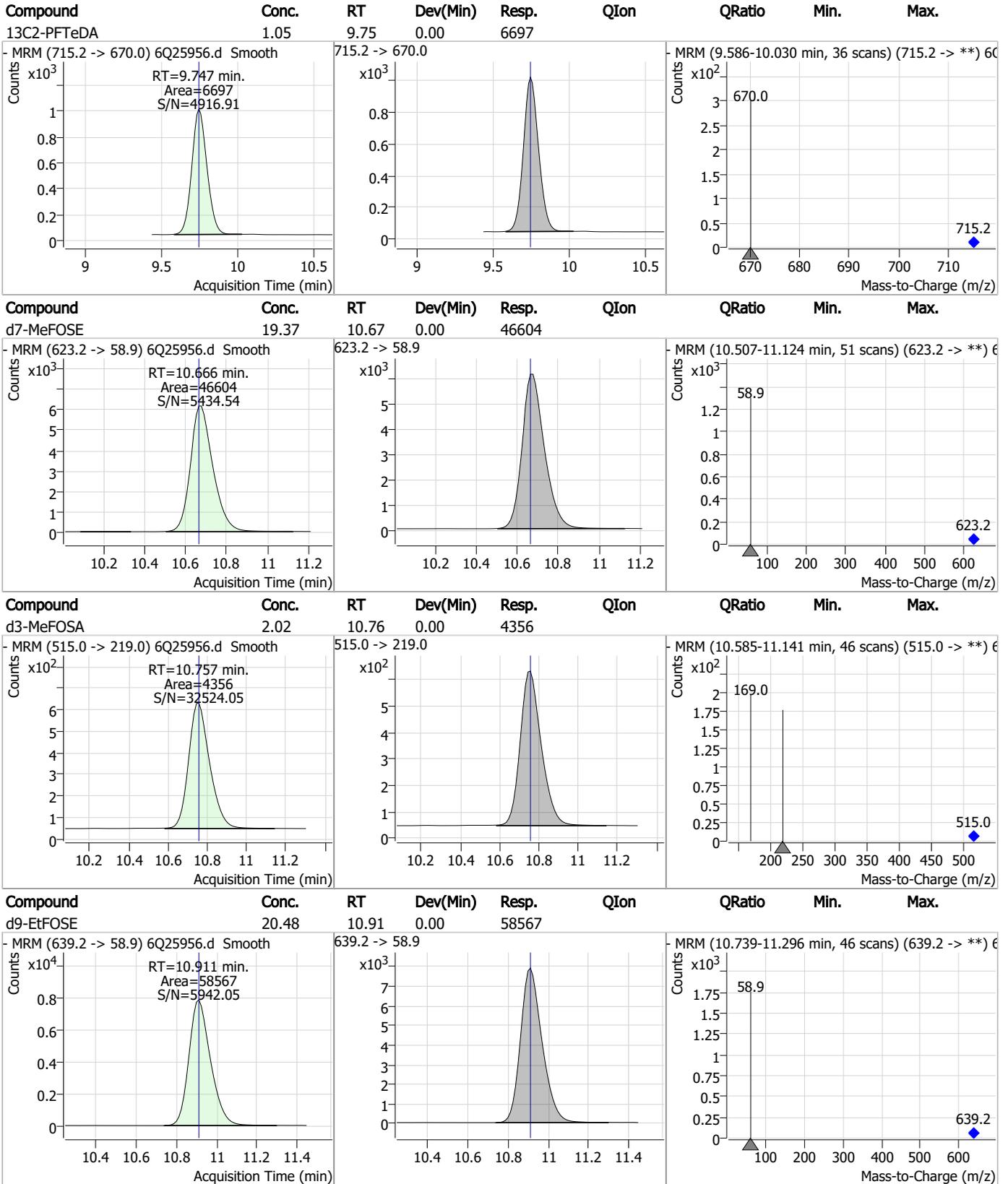
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.10	7.96	0.01	2764				
13C6-PFDA	1.31	8.16	0.00	20865				
d3-MeFOSAA	4.95	8.22	0.01	19653				
13C8-PFOS	2.37	8.31	0.00	9240				

7.1.1
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Perfluorinated Compounds by LC/MS/MS



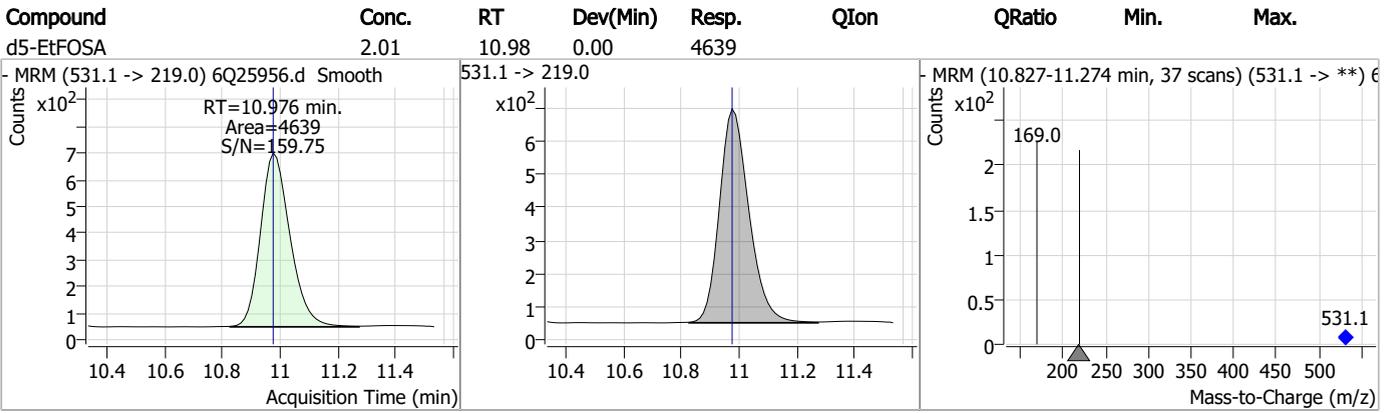
Perfluorinated Compounds by LC/MS/MS



7.1.1

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Perfluorinated Compounds by LC/MS/MS



7.1.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25958.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 7:21:15 PM
 Sample Name : FC10192-2
 Vial : P2-A6
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,570,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	49167	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	44938	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	40100	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	38816	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	54095	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	22271	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	22410	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	24085	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	23573	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	6872	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	14506	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18296	2.50 µg/L	0.012
M3-PFHxS	7.264	402.1 -> 79.9	10718	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	10071	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	1940	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	2883	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	2696	5.00 µg/L	0.012
M3-MeFOSAA	8.207	573.2 -> 419.0	21083	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	27924	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	16018	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	46785	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	59770	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	5041	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	4560	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	9378	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	51398	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	5936	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	58724	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20788	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	22176	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	37834	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	1940	5.80 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2883	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.9%		
13C2-8:2FTS	7.962	529.1 -> 80.9	2696	5.26 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-PFDoDA	9.030	615.1 -> 570.0	23573	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.0%		
13C2-PFTeDA	9.747	715.2 -> 670.0	6872	0.98 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 78.2%		
13C3-PFBS	5.510	302.1 -> 79.9	18296	2.72 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C3-PFHxS	7.264	402.1 -> 79.9	10718	2.84 µg/L	0.000

7.12
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C4-PFBA	2.972	216.8 -> 171.9	49167	3.96 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 39.6%	
13C4-PFHpA	6.519	367.1 -> 322.0	38816	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.592	318.0 -> 273.0	40100	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C5-PFPeA	4.384	268.3 -> 223.0	44938	5.25 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C6-PFDA	8.161	519.1 -> 474.1	22410	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C7-PFUnDA	8.614	570.0 -> 525.1	24085	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-FOSA	9.657	506.1 -> 77.8	14506	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.0%	
13C8-PFOA	7.161	421.1 -> 376.0	54095	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C8-PFOS	8.311	507.1 -> 79.9	10071	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C9-PFNA	7.680	472.1 -> 427.0	22271	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSAA	8.207	573.2 -> 419.0	21083	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	27924	10.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
d3-MeFOSA	10.744	515.0 -> 219.0	4560	2.03 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.3%	
d5-EtFOSAA	8.415	589.2 -> 419.0	16018	4.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	46785	18.73 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.9%	
d9-EtFOSE	10.911	639.2 -> 58.9	59770	20.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
d5-EtFOSA	10.976	531.1 -> 219.0	5041	2.10 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 84.0%	

7.12
7

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



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	8.117	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	-	548.8 -> 98.9	-	N.D.		
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.1.2

7

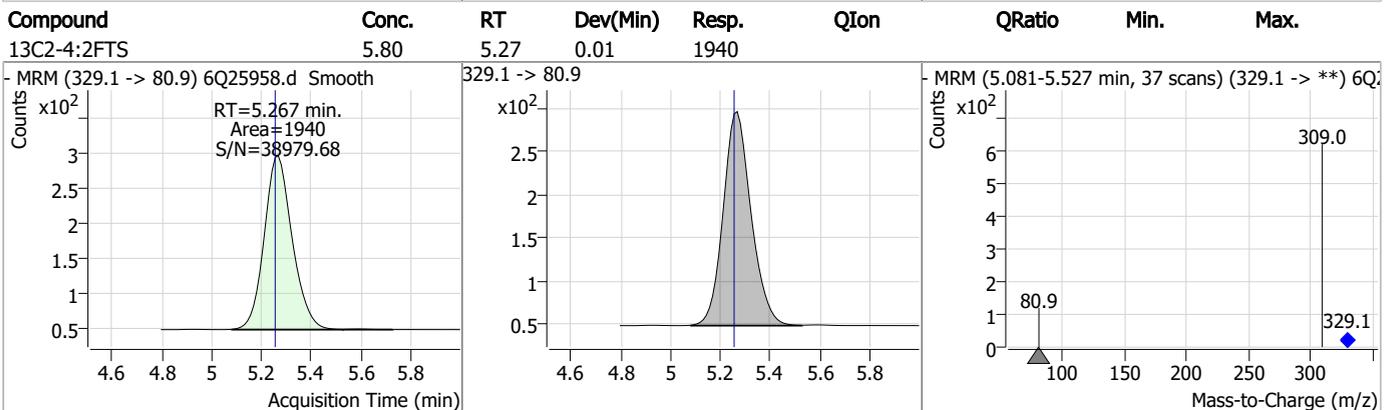
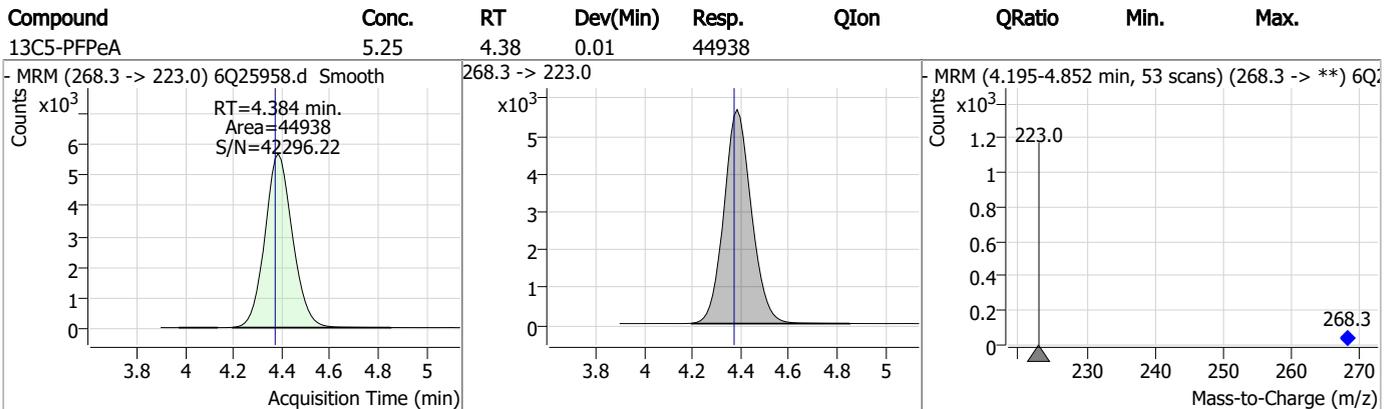
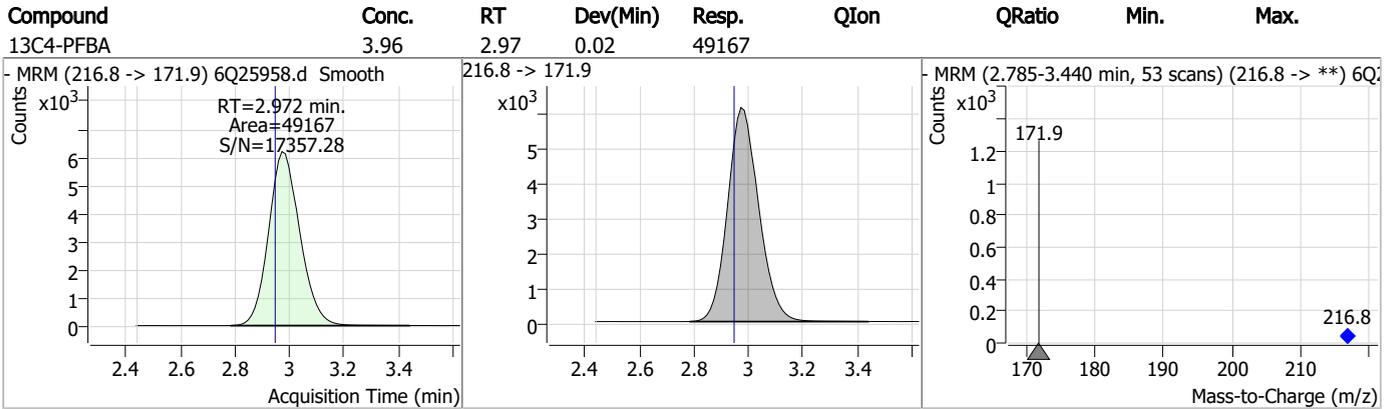
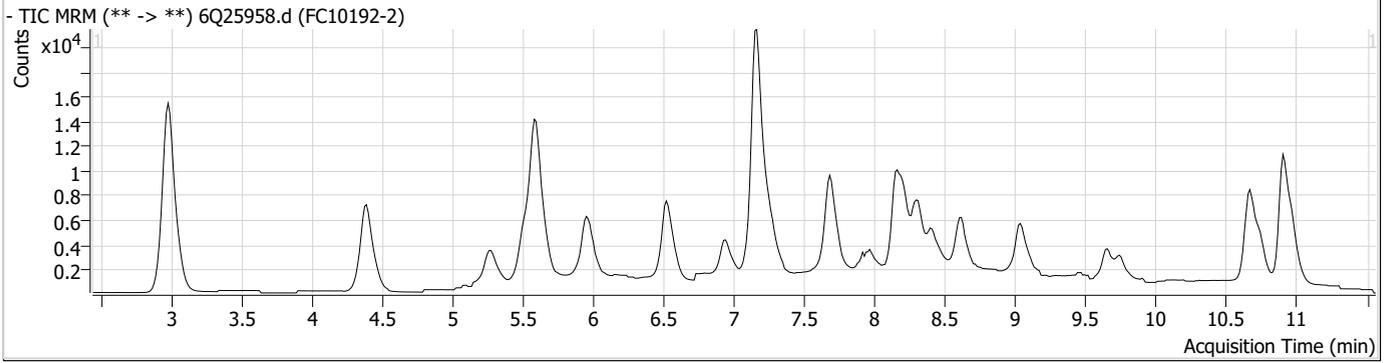
Perfluorinated Compounds by LC/MS/MS

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

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.72	5.51	0.01	18296				
13C5-PFHxA	2.56	5.59	0.01	40100				
13C3-HFPO-DA	10.58	5.96	0.00	27924				
13C4-PFHpA	2.54	6.52	0.00	38816				

7.1.2

7

Perfluorinated Compounds by LC/MS/MS

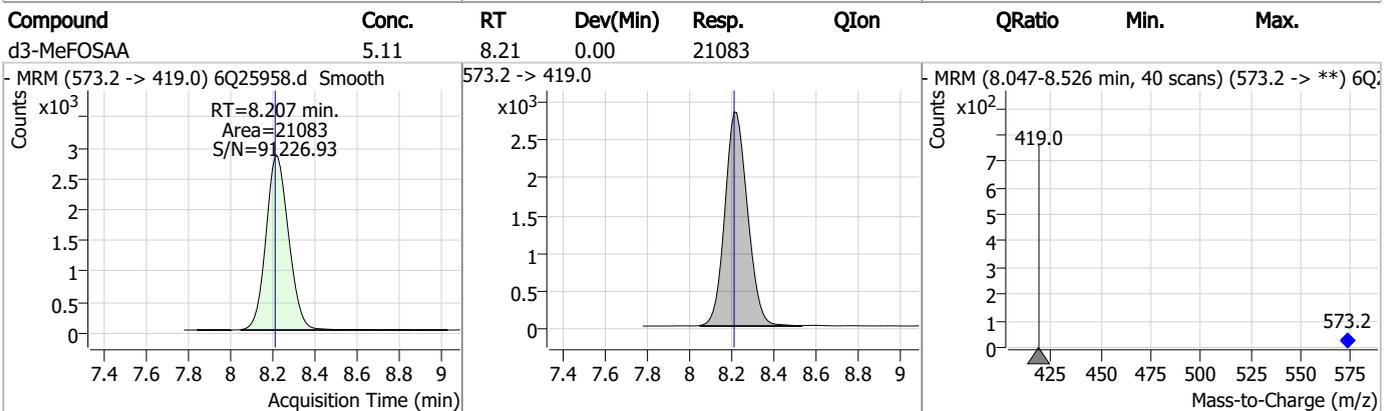
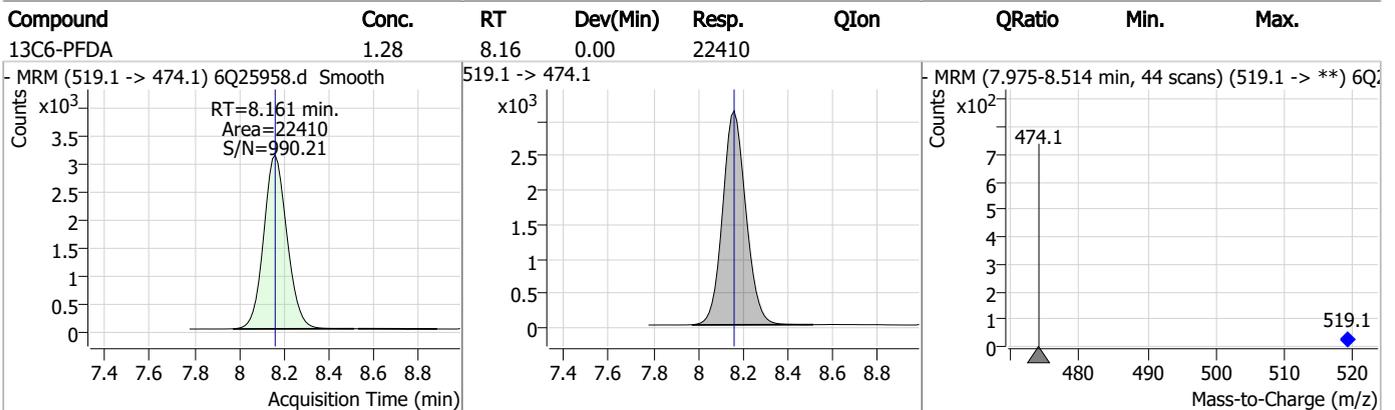
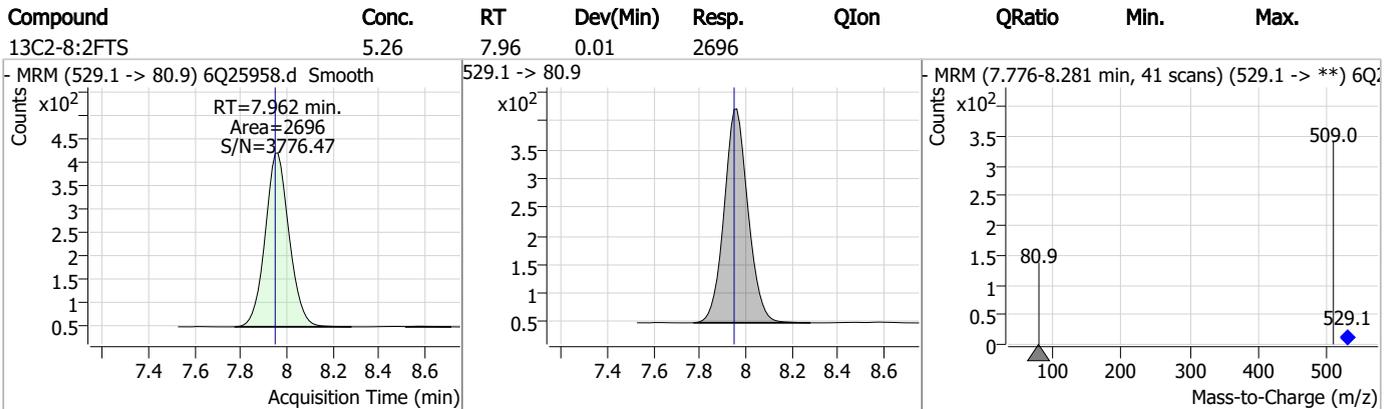
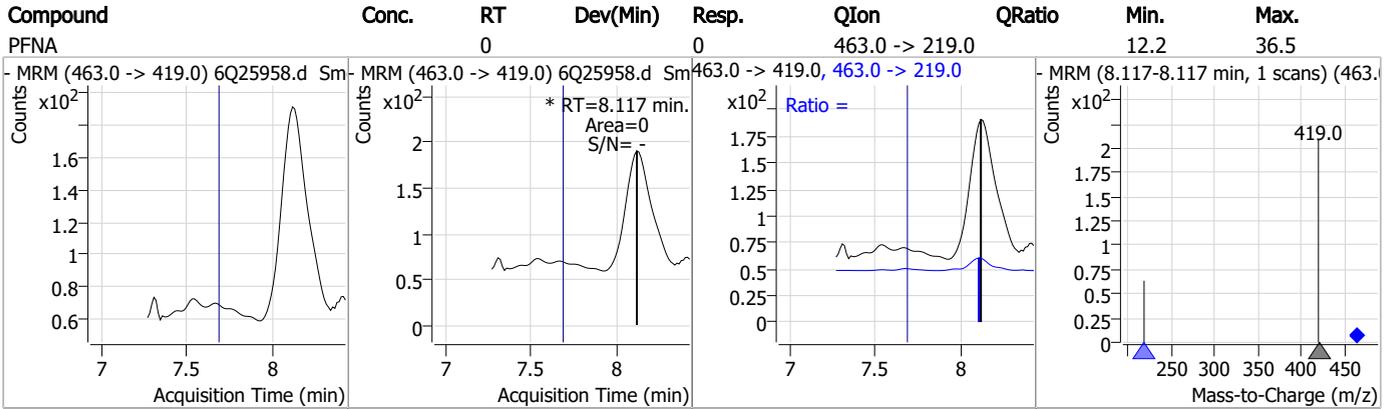
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.80	6.94	0.00	2883				
13C8-PFOA	2.66	7.16	0.00	54095				
13C3-PFHxS	2.84	7.26	0.00	10718				
13C9-PFNA	1.22	7.68	0.00	22271				

7.1.2

7



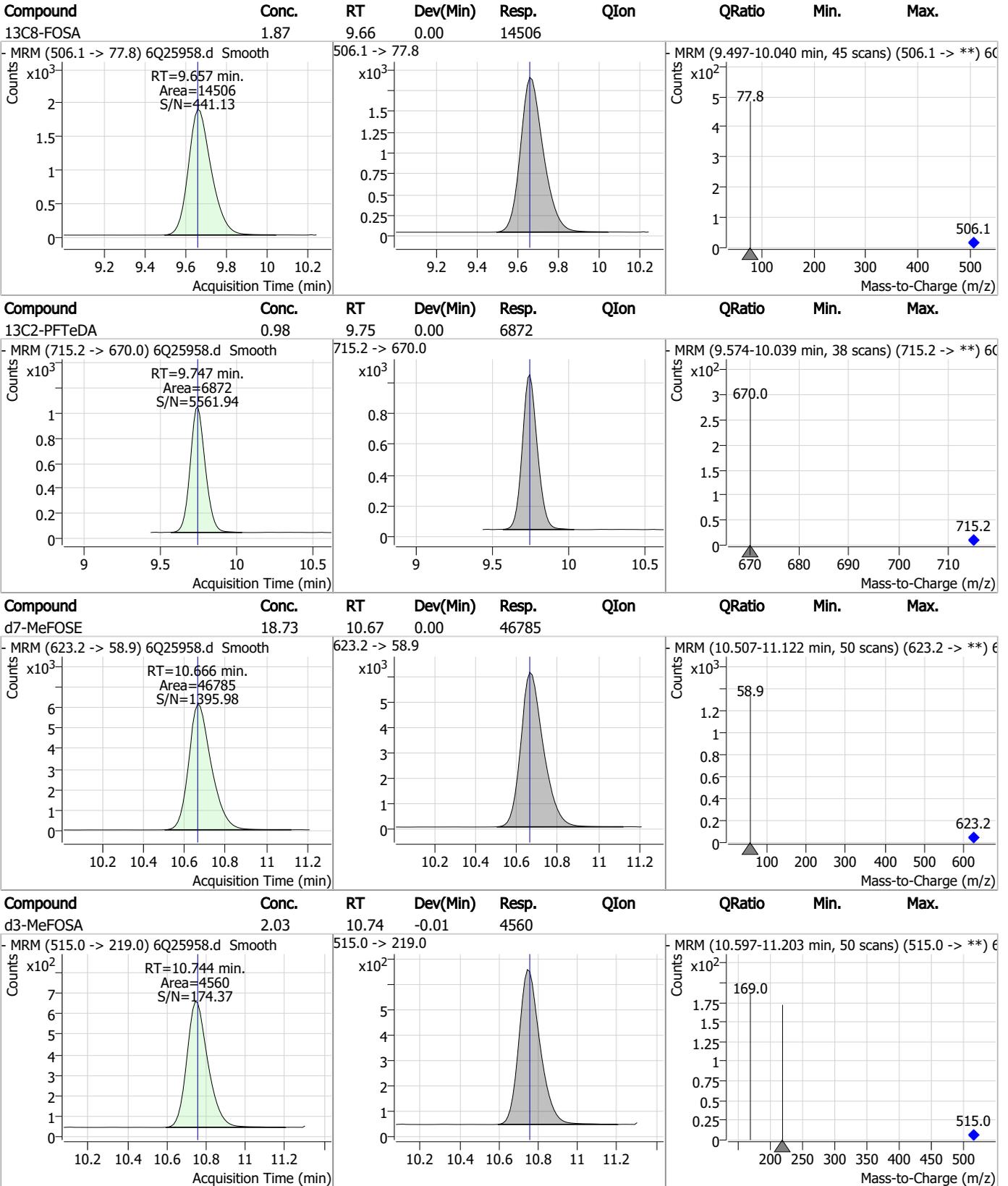
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

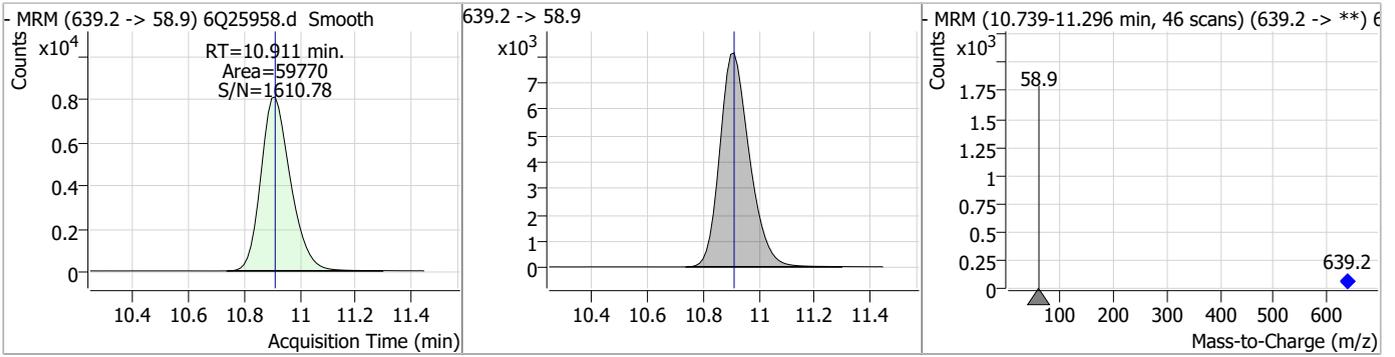
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.49	8.31	0.00	10071				
d5-EtFOSAA	4.53	8.41	0.00	16018				
13C7-PFUnDA	1.27	8.61	0.00	24085				
13C2-PFDoDA	1.14	9.03	0.00	23573				

Perfluorinated Compounds by LC/MS/MS

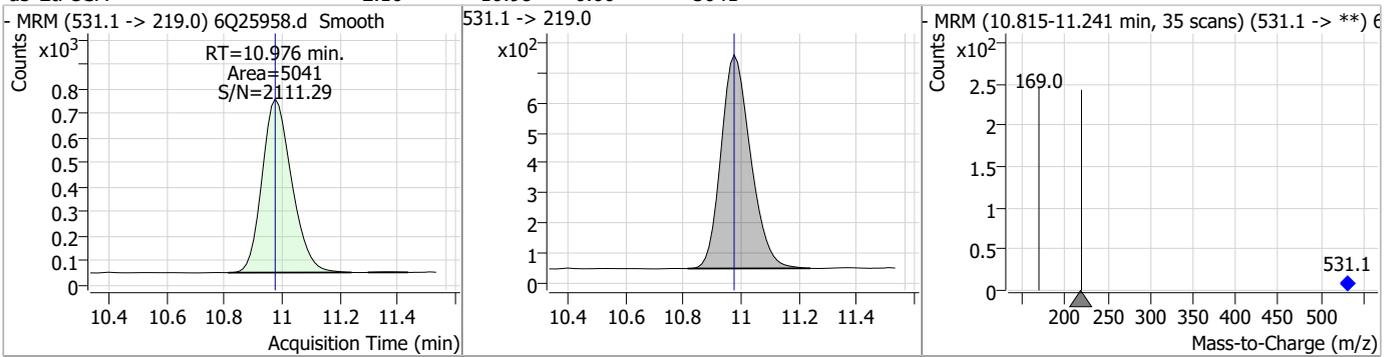


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.13	10.91	0.00	59770				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.10	10.98	0.00	5041				



7.1.2

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25960.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 7:49:54 PM
 Sample Name : FC10192-3
 Vial : P2-A8
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	52883	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	45130	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	40645	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	39880	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	52779	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	22482	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	21888	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	23826	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	22205	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	6678	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	13679	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18197	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	10002	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	9871	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	2055	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	2936	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3024	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	19409	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	26802	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	16118	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	42604	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	54530	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4724	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	4487	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	8677	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	51896	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6121	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	57027	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	21120	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21059	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	37289	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	2055	5.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.2%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2936	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3024	5.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.5%		
13C2-PFDoDA	9.030	615.1 -> 570.0	22205	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 84.4%		
13C2-PFTeDA	9.747	715.2 -> 670.0	6678	0.94 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 74.8%		
13C3-PFBS	5.510	302.1 -> 79.9	18197	2.62 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C3-PFHxS	7.263	402.1 -> 79.9	10002	2.57 µg/L	0.000

7.1.3
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C4-PFBA	2.972	216.8 -> 171.9	52883	4.22 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 42.2%	
13C4-PFHpA	6.531	367.1 -> 322.0	39880	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C5-PFHxA	5.592	318.0 -> 273.0	40645	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C5-PFPeA	4.384	268.3 -> 223.0	45130	5.35 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C6-PFDA	8.161	519.1 -> 474.1	21888	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.601	570.0 -> 525.1	23826	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-FOSA	9.657	506.1 -> 77.8	13679	1.91 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.4%	
13C8-PFOA	7.161	421.1 -> 376.0	52779	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-PFOS	8.311	507.1 -> 79.9	9871	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C9-PFNA	7.680	472.1 -> 427.0	22482	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%	
d3-MeFOSAA	8.207	573.2 -> 419.0	19409	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	26802	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d3-MeFOSA	10.744	515.0 -> 219.0	4487	2.16 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 86.4%	
d5-EtFOSAA	8.415	589.2 -> 419.0	16118	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	42604	18.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.7%	
d9-EtFOSE	10.911	639.2 -> 58.9	54530	19.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 79.4%	
d5-EtFOSA	10.976	531.1 -> 219.0	4724	2.13 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.1%	

Target Compounds

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



7.1.3

7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	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

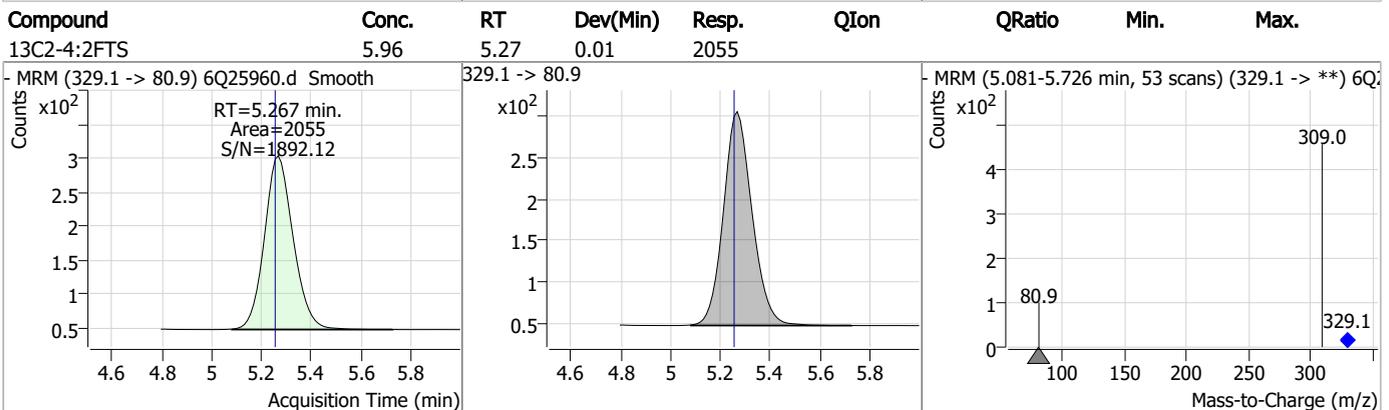
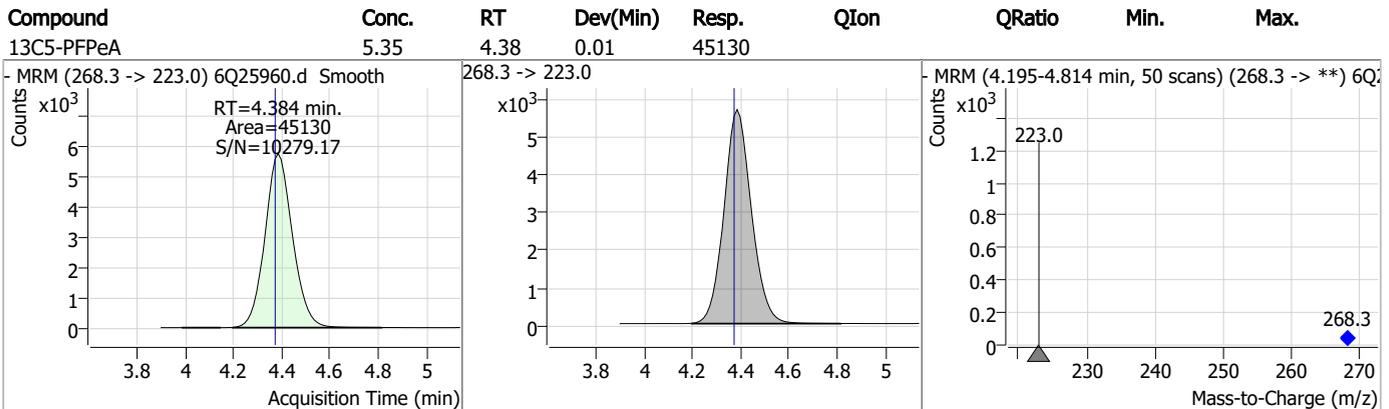
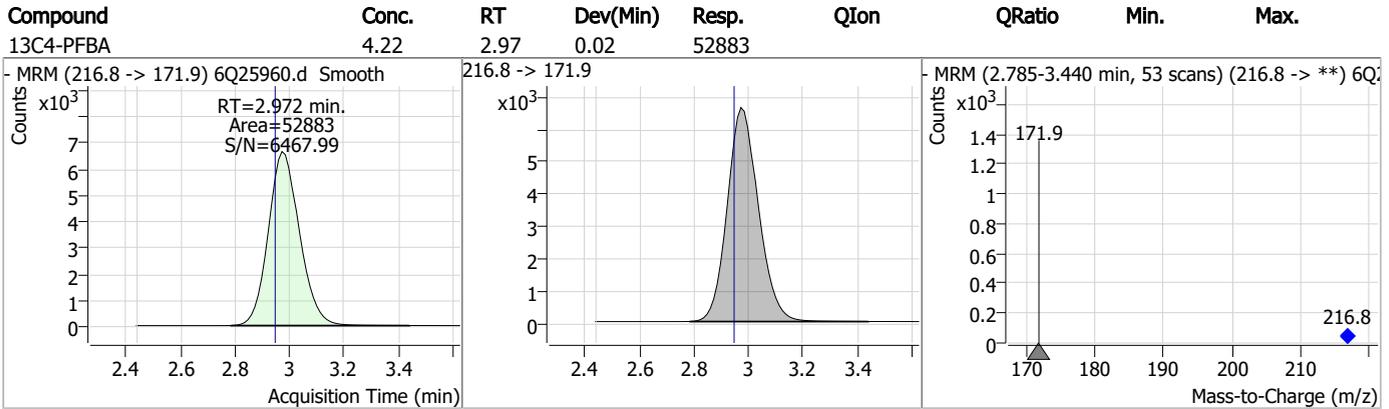
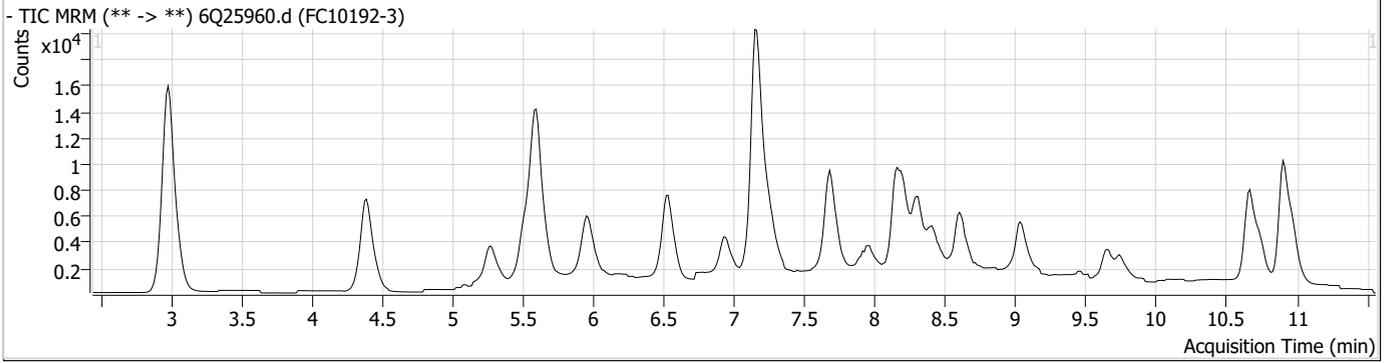
Perfluorinated Compounds by LC/MS/MS

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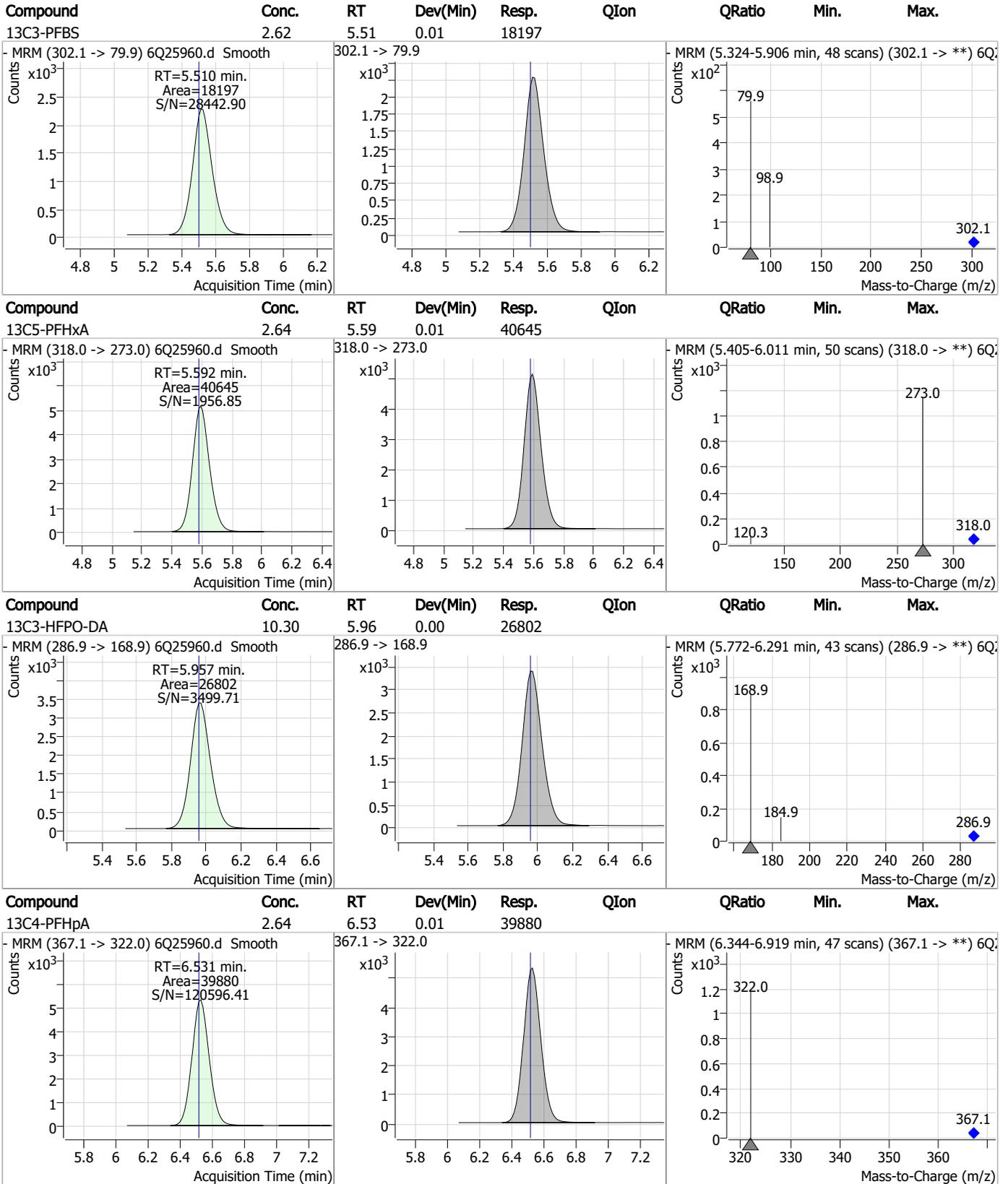
7.1.3
7



Perfluorinated Compounds by LC/MS/MS



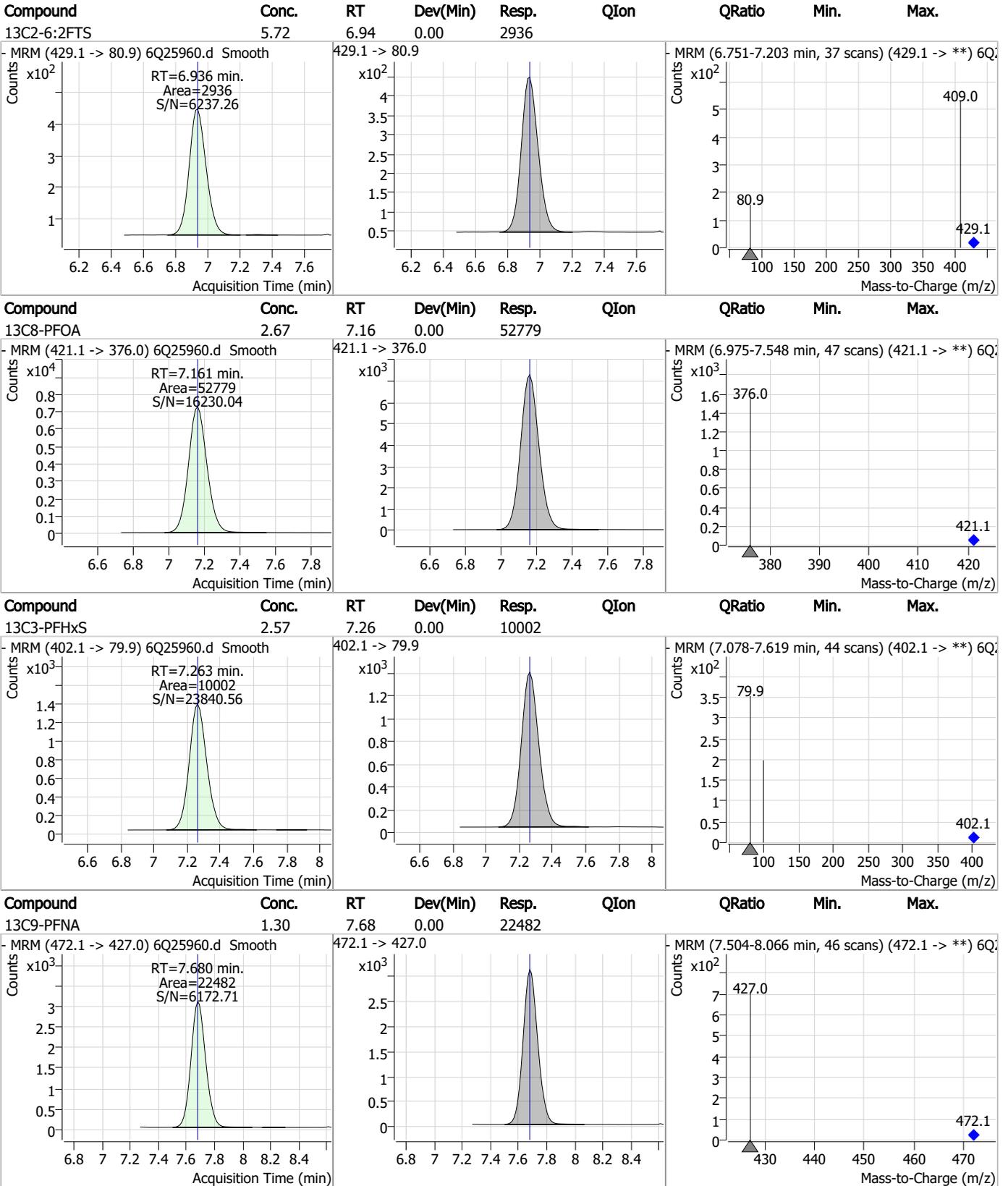
Perfluorinated Compounds by LC/MS/MS



7.1.3

7

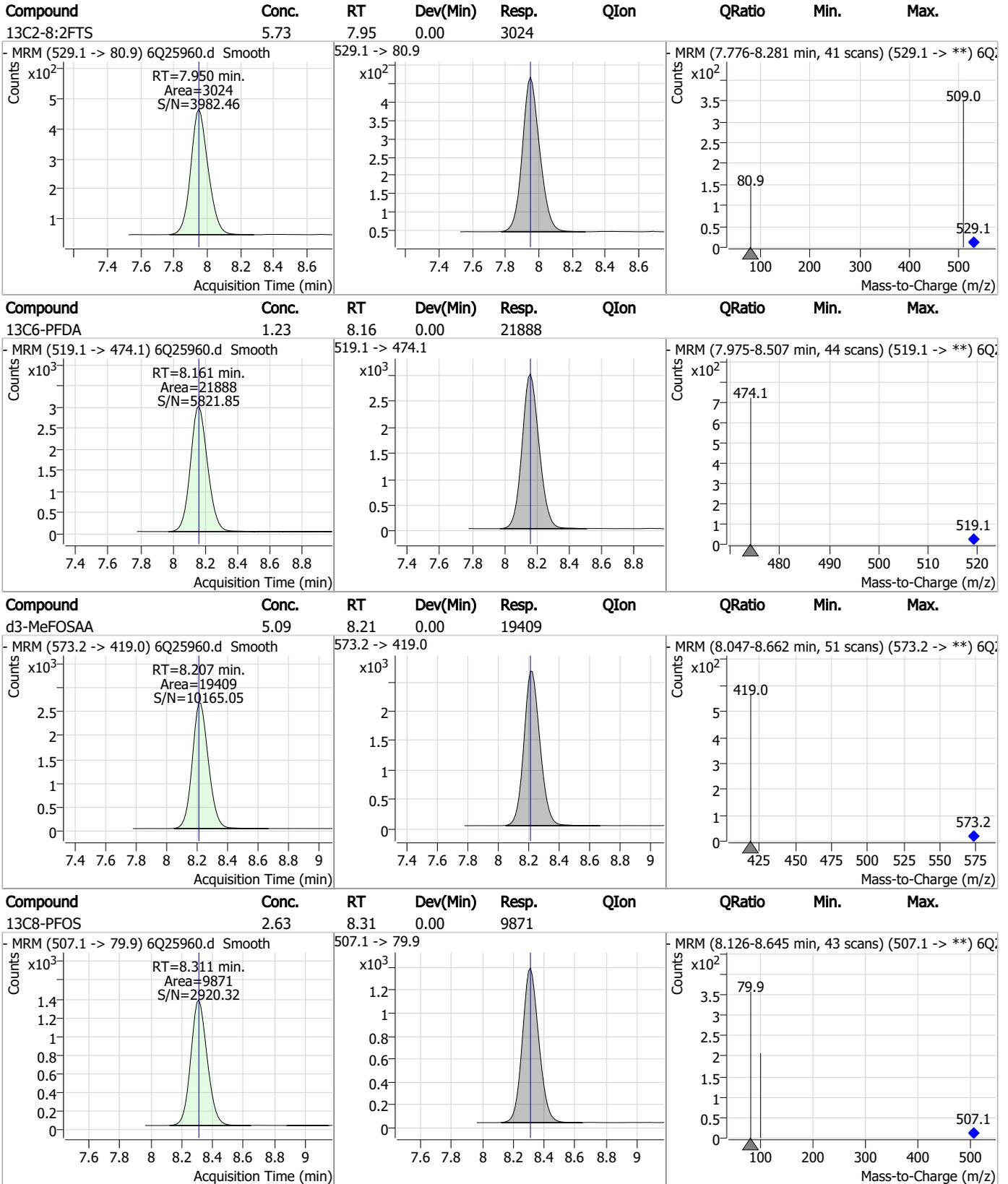
Perfluorinated Compounds by LC/MS/MS



7.1.3

7

Perfluorinated Compounds by LC/MS/MS



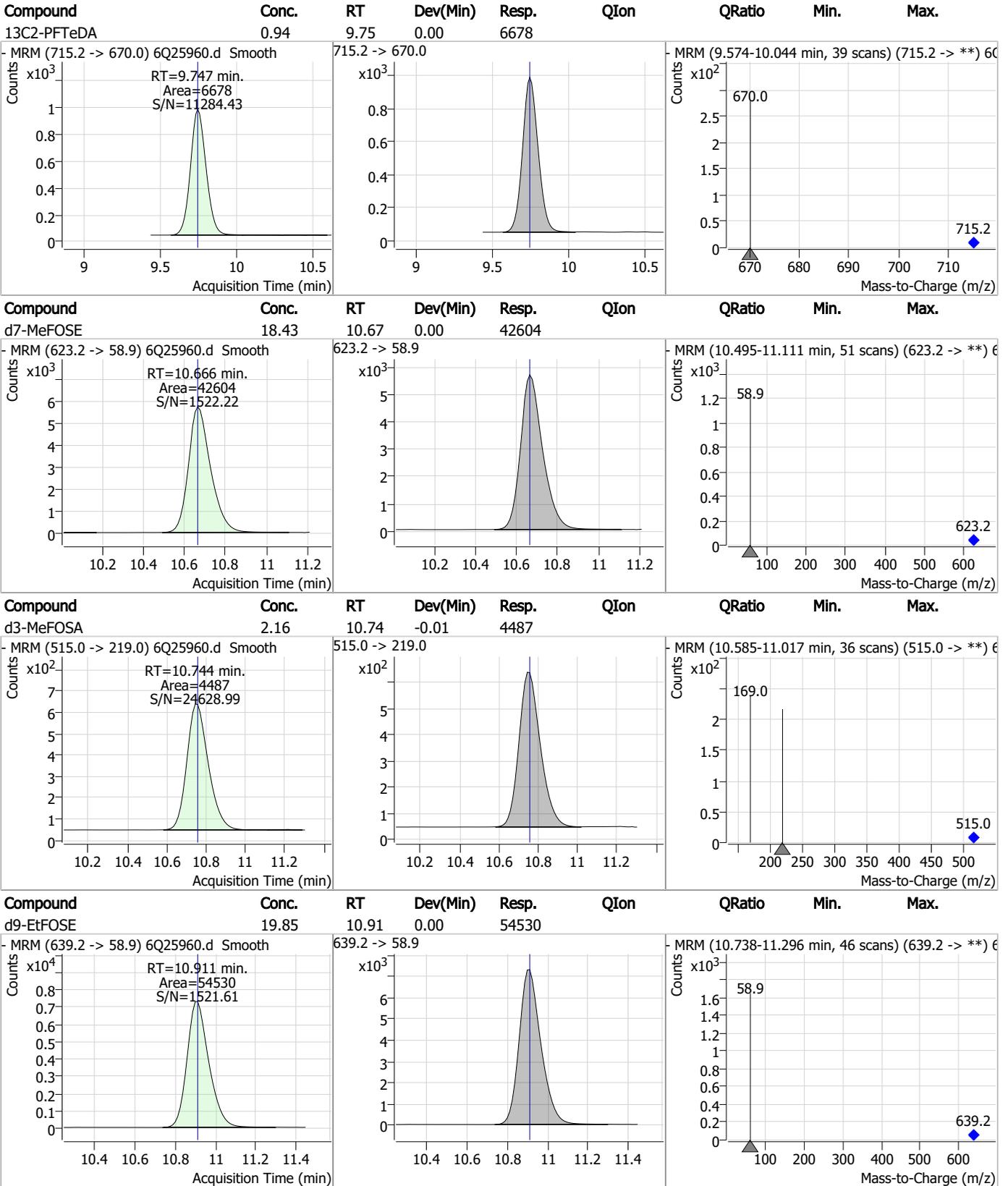
7.1.3

7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.93	8.41	0.00	16118				
13C7-PFUnDA	1.24	8.60	-0.01	23826				
13C2-PFDoDA	1.05	9.03	0.00	22205				
13C8-FOSA	1.91	9.66	0.00	13679				

Perfluorinated Compounds by LC/MS/MS

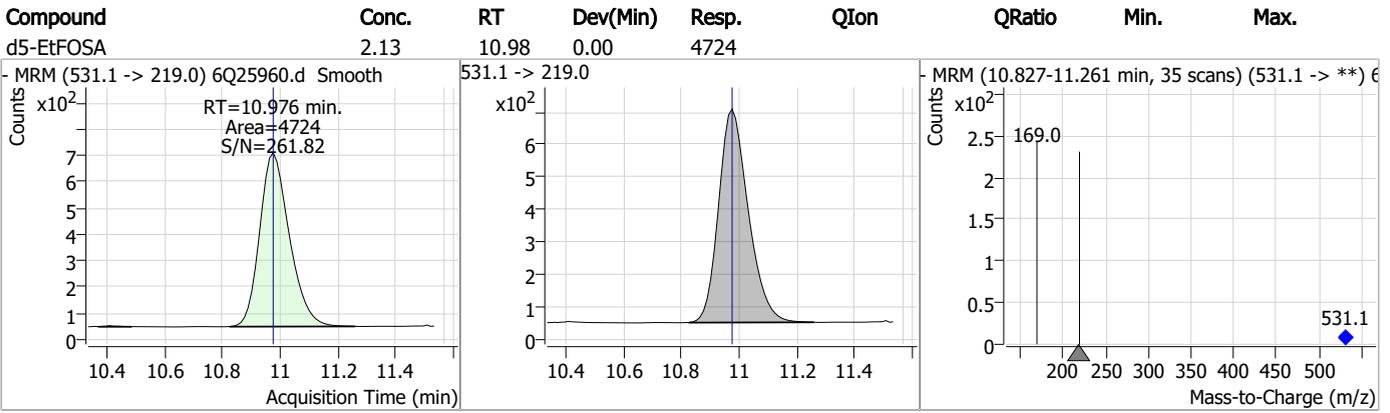


7.1.3

7



Perfluorinated Compounds by LC/MS/MS



7.1.3
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25955.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 6:38:16 PM
 Sample Name : OP99404-MB
 Vial : P2-A3
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	133610	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	47063	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	42710	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	39359	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	54911	2.50 µg/L	0.000
M9-PFNA	7.692	472.1 -> 427.0	22515	1.25 µg/L	0.012
M6-PFDA	8.161	519.1 -> 474.1	22853	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	25922	1.25 µg/L	0.000
M2-PFDoDA	9.043	615.1 -> 570.0	26514	1.25 µg/L	0.012
M2-PFTeDA	9.747	715.2 -> 670.0	8405	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	13630	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	19136	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	10222	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	9825	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	2099	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	2871	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2633	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	19424	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	28035	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	17192	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	44535	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	56941	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4818	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	4579	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	9596	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	52096	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6290	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	60429	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20533	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21488	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	37734	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	2099	5.92 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2871	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.9%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2633	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C2-PFDoDA	9.043	615.1 -> 570.0	26514	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.6%		
13C2-PFTeDA	9.747	715.2 -> 670.0	8405	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.510	302.1 -> 79.9	19136	2.69 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C3-PFHxS	7.263	402.1 -> 79.9	10222	2.56 µg/L	0.000

7.2.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFBA	2.972	216.8 -> 171.9	133610	10.62 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C4-PFHpA	6.531	367.1 -> 322.0	39359	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C5-PFHxA	5.592	318.0 -> 273.0	42710	2.74 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C5-PFPeA	4.384	268.3 -> 223.0	47063	5.51 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C6-PFDA	8.161	519.1 -> 474.1	22853	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C7-PFUnDA	8.614	570.0 -> 525.1	25922	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C8-FOSA	9.657	506.1 -> 77.8	13630	1.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 68.9%	
13C8-PFOA	7.161	421.1 -> 376.0	54911	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOS	8.311	507.1 -> 79.9	9825	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C9-PFNA	7.692	472.1 -> 427.0	22515	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSAA	8.219	573.2 -> 419.0	19424	4.60 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	28035	10.65 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
d3-MeFOSA	10.744	515.0 -> 219.0	4579	1.99 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 79.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	17192	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d7-MeFOSE	10.666	623.2 -> 58.9	44535	17.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 69.7%	
d9-EtFOSE	10.911	639.2 -> 58.9	56941	18.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.0%	
d5-EtFOSA	10.976	531.1 -> 219.0	4818	1.96 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.5%	

7.2.1
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	-	449.0 -> 98.9	-	N.D.	
		313.0 -> 269.0			
PFHxS	-	313.0 -> 118.9	-	N.D.	
		398.7 -> 79.9			
PFNA	-	398.7 -> 98.9	-	N.D.	
		463.0 -> 419.0			
PFNS	-	463.0 -> 219.0	-	N.D.	
		548.8 -> 79.9			
PFOA	-	548.8 -> 98.9	-	N.D.	
		413.0 -> 369.0			
PFOS	-	413.0 -> 169.0	-	N.D.	
		498.9 -> 79.9			
PFPeA	-	498.9 -> 98.8	-	N.D.	
		263.0 -> 219.0			
PFPeS	-	349.1 -> 79.9	-	N.D.	
		349.1 -> 98.9			
PFTeDA	-	713.1 -> 669.0	-	N.D.	
		713.1 -> 168.9			
PFTrDA	-	663.0 -> 619.0	-	N.D.	
		663.0 -> 168.9			
PFUnDA	-	563.1 -> 519.0	-	N.D.	
		563.1 -> 269.1			
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.	
		632.9 -> 452.9			
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.	
		532.8 -> 353.0			
ADONA	-	376.9 -> 250.9	-	N.D.	
		376.9 -> 84.8			
HFPO-DA	-	284.9 -> 168.9	-	N.D.	
		284.9 -> 184.9			
3:3FTCA	-	241.0 -> 177.0	-	N.D.	
		241.0 -> 117.0			
5:3FTCA	-	341.0 -> 237.1	-	N.D.	
		341.0 -> 217.0			
7:3FTCA	-	441.0 -> 316.9	-	N.D.	
		441.0 -> 336.9			
EtFOSA	-	526.0 -> 219.0	-	N.D.	
		526.0 -> 169.0			
EtFOSE	-	630.0 -> 58.9	-	N.D.	
		511.9 -> 219.0			
MeFOSA	-	511.9 -> 169.0	-	N.D.	
		616.1 -> 58.9			
MeFOSE	-	699.1 -> 79.9	-	N.D.	
		699.1 -> 98.8			
PFDoDS	-	295.0 -> 201.0	-	N.D.	
		295.0 -> 84.9			
NFDHA	-	279.0 -> 85.1	-	N.D.	
		229.0 -> 84.9			
PFMBA	-	314.8 -> 134.9	-	N.D.	
		314.8 -> 82.9			

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

7.2.1
7

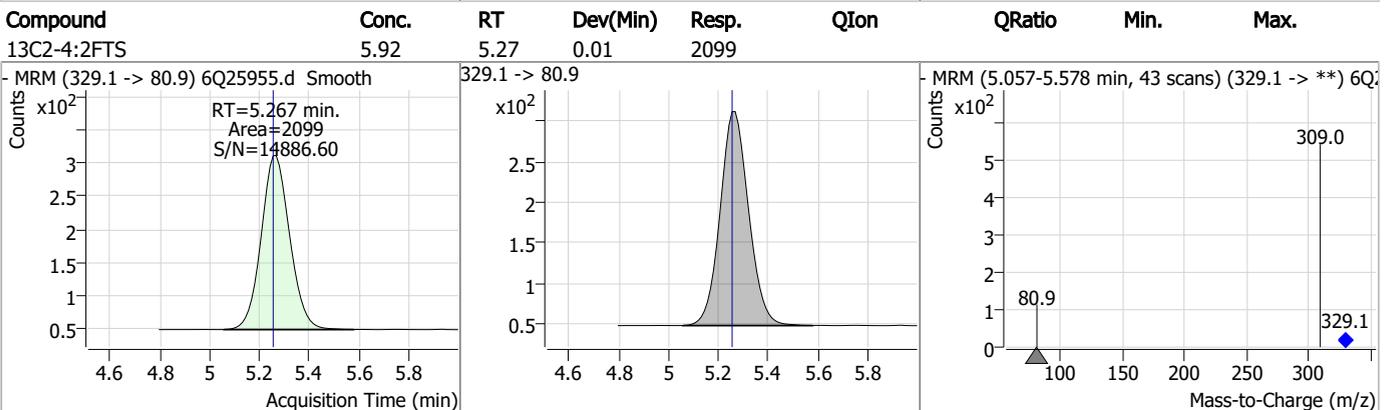
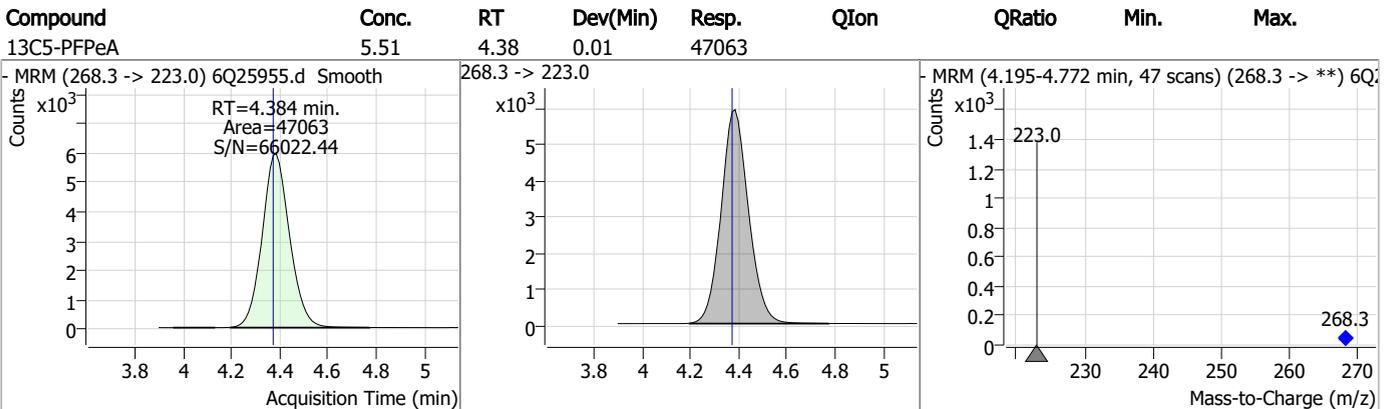
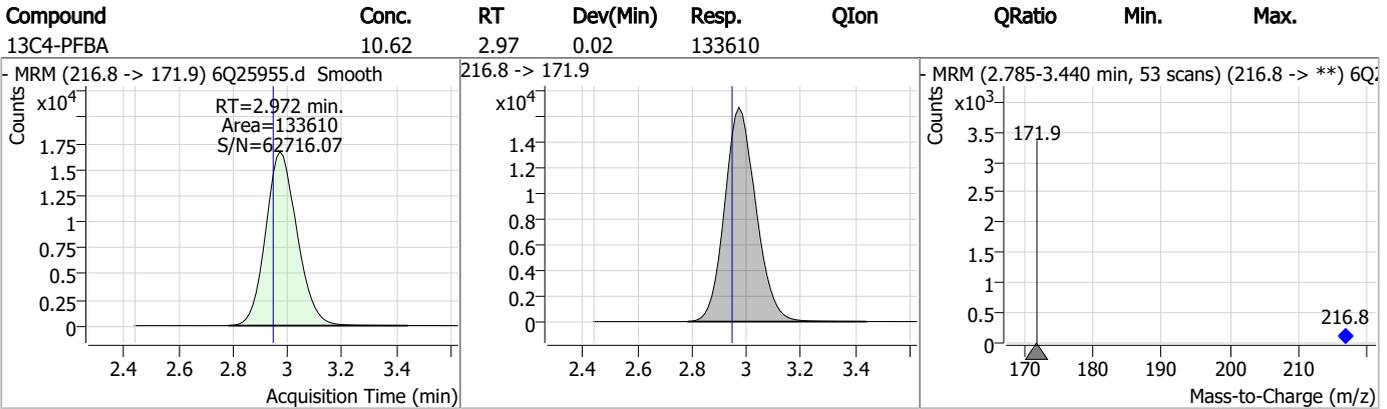
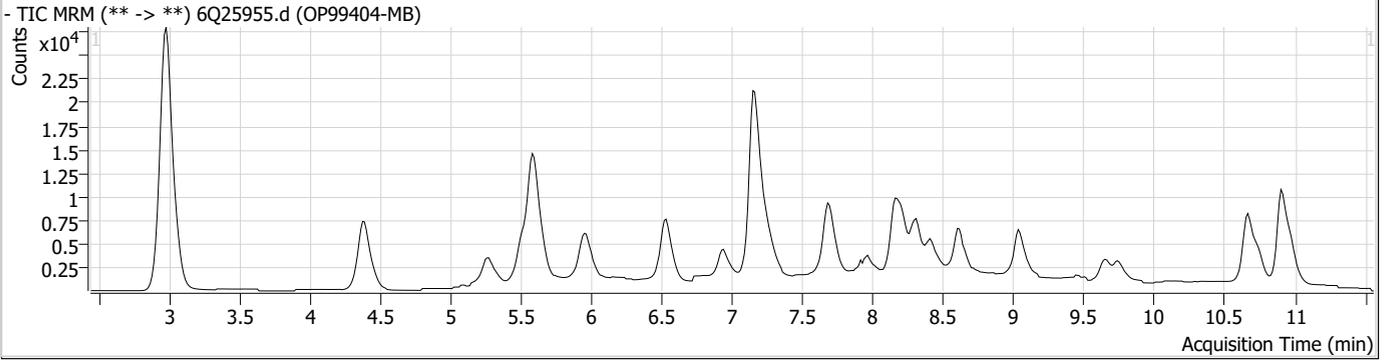
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS

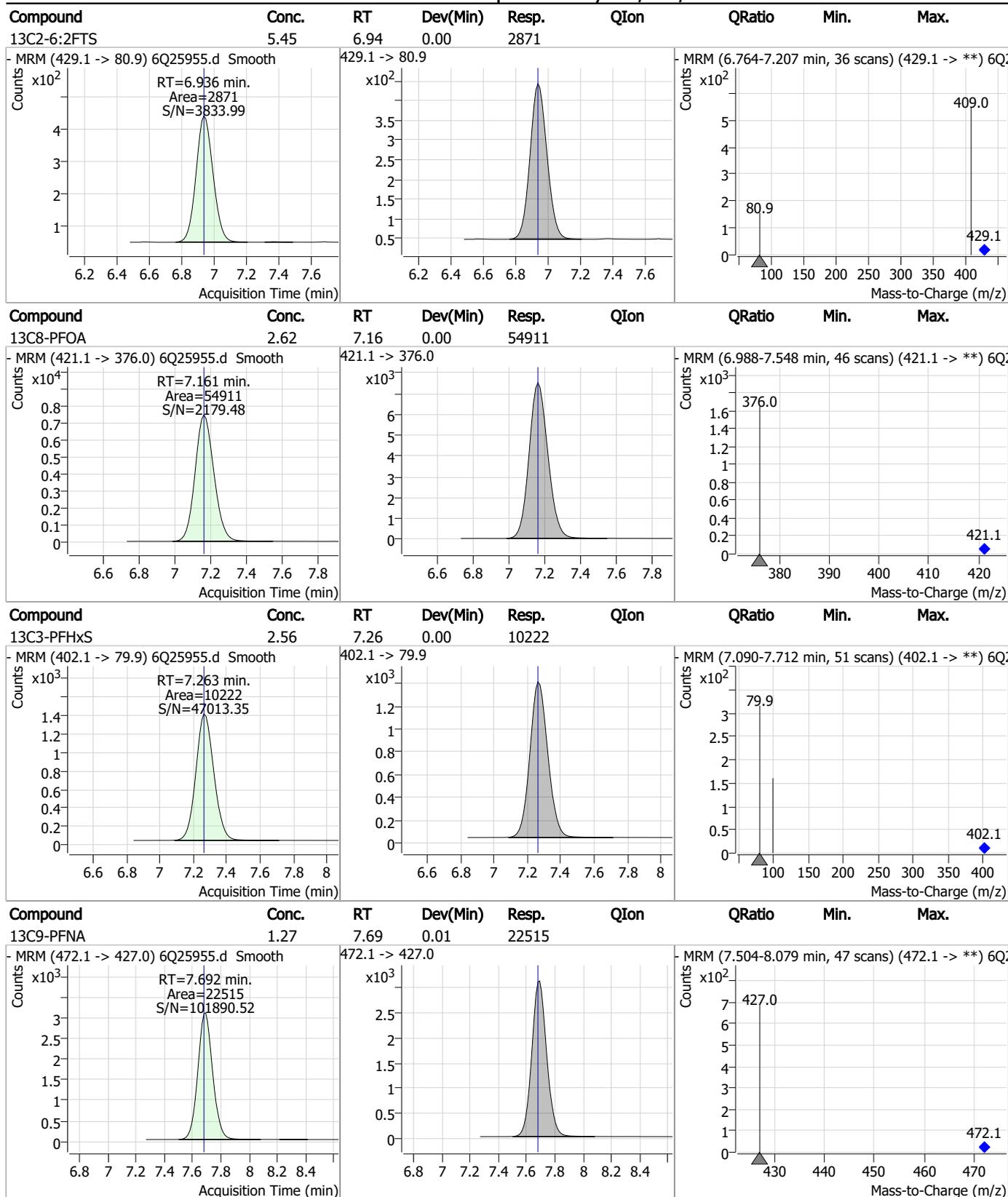


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.69	5.51	0.01	19136				
13C5-PFHxA	2.74	5.59	0.01	42710				
13C3-HFPO-DA	10.65	5.96	0.00	28035				
13C4-PFHpA	2.58	6.53	0.01	39359				

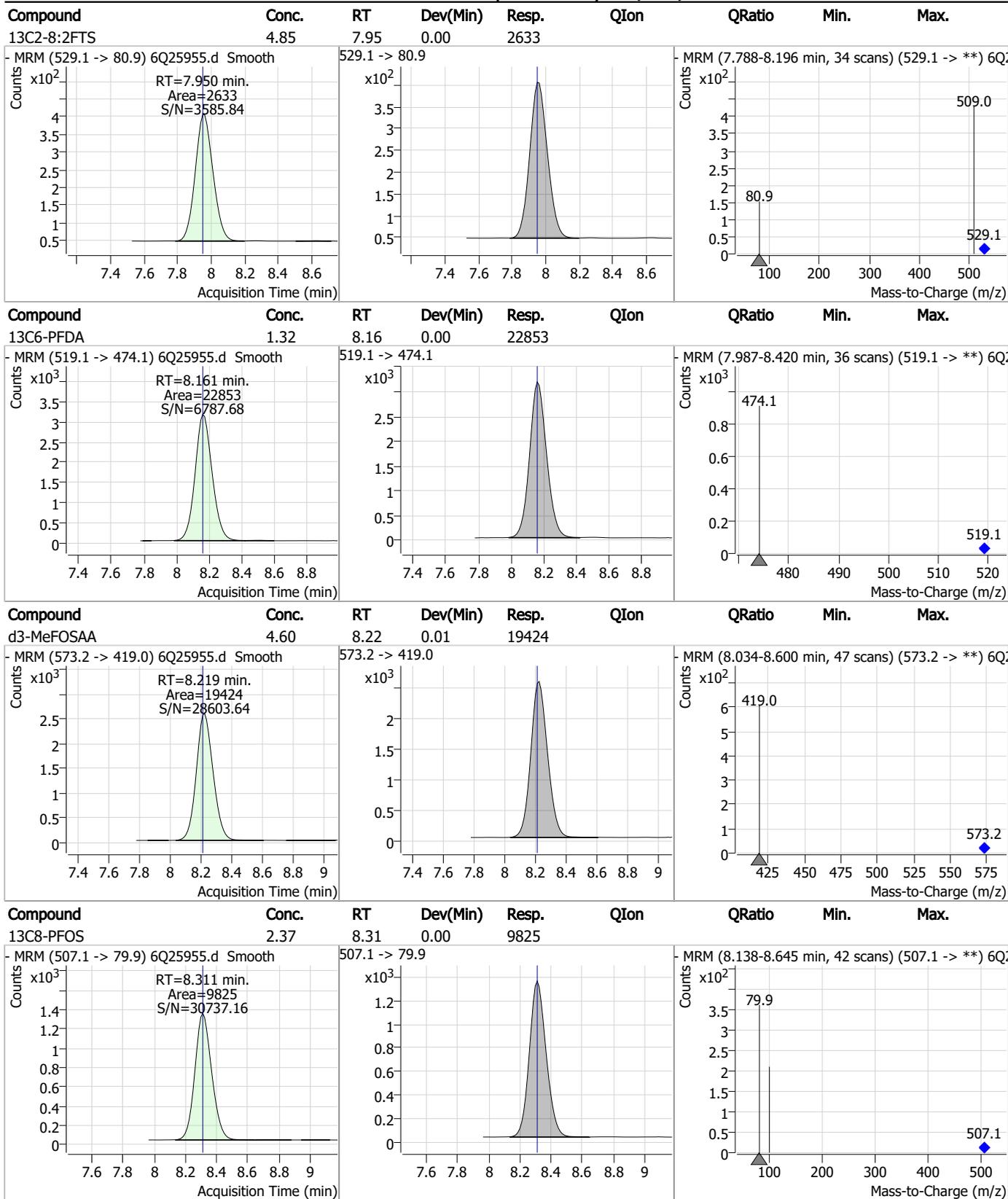
7.2.1
7

Perfluorinated Compounds by LC/MS/MS



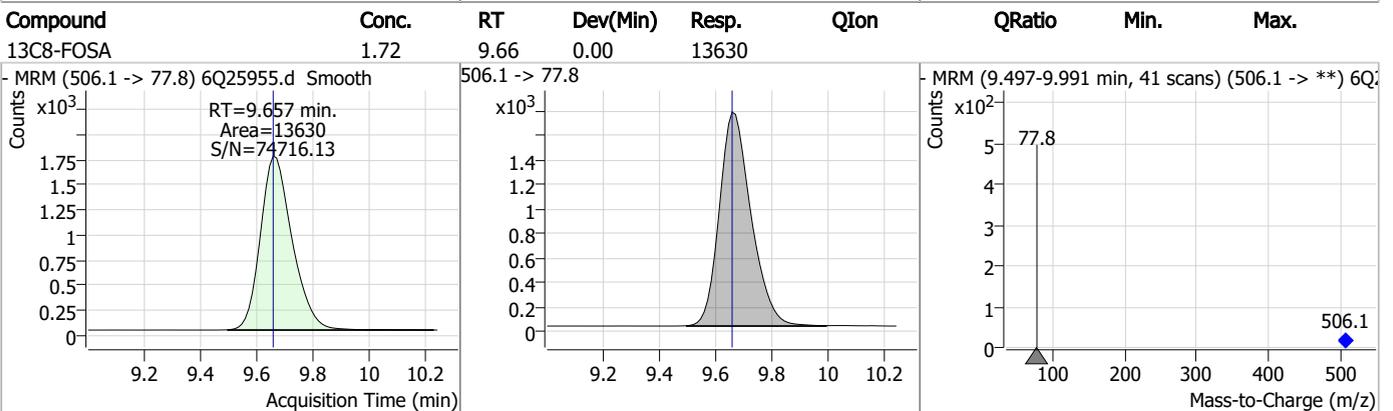
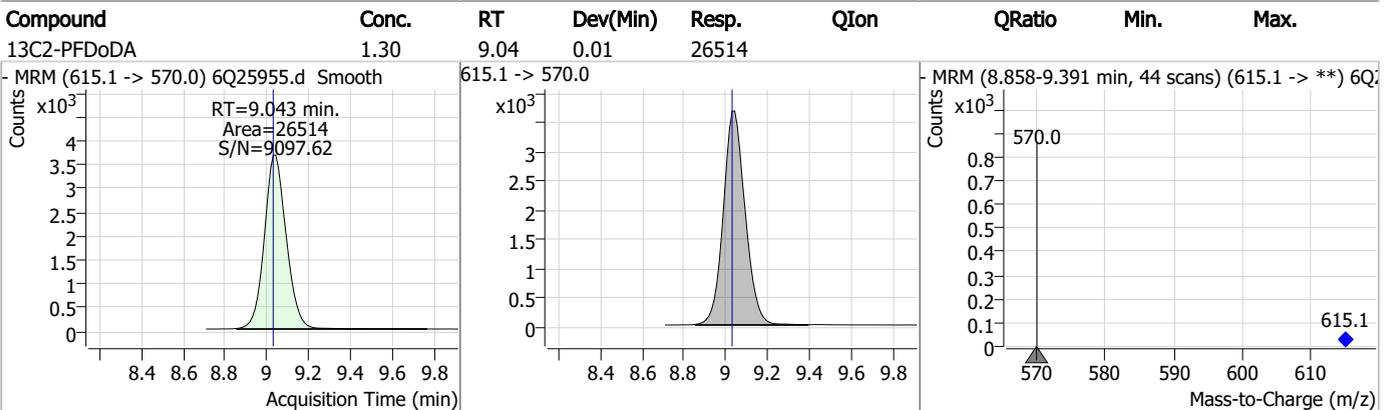
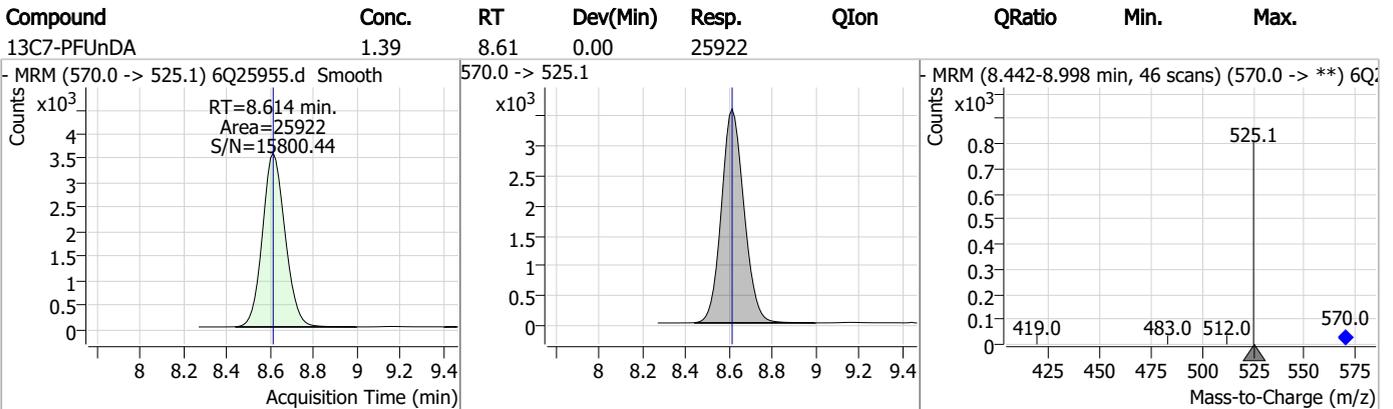
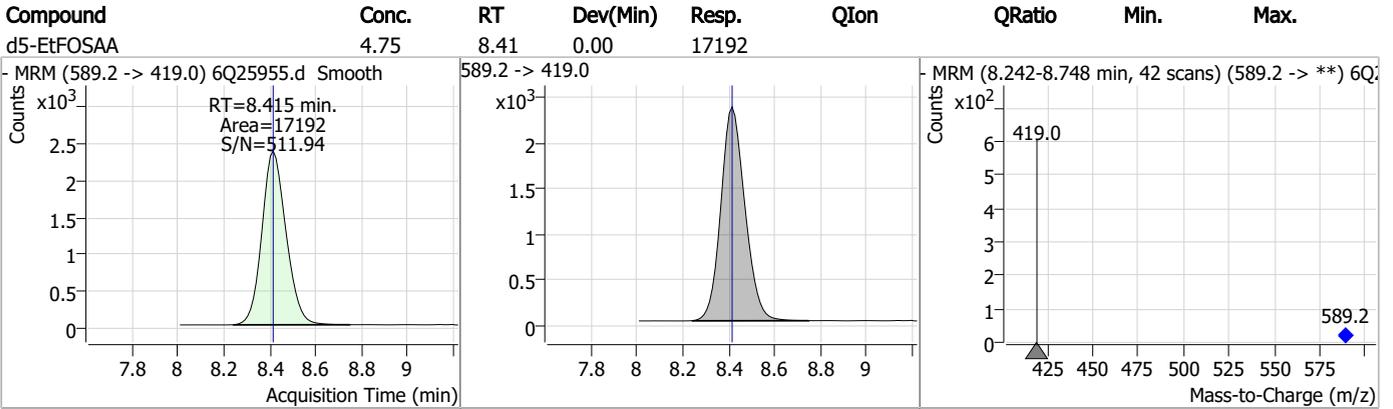
7.2.1
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Perfluorinated Compounds by LC/MS/MS

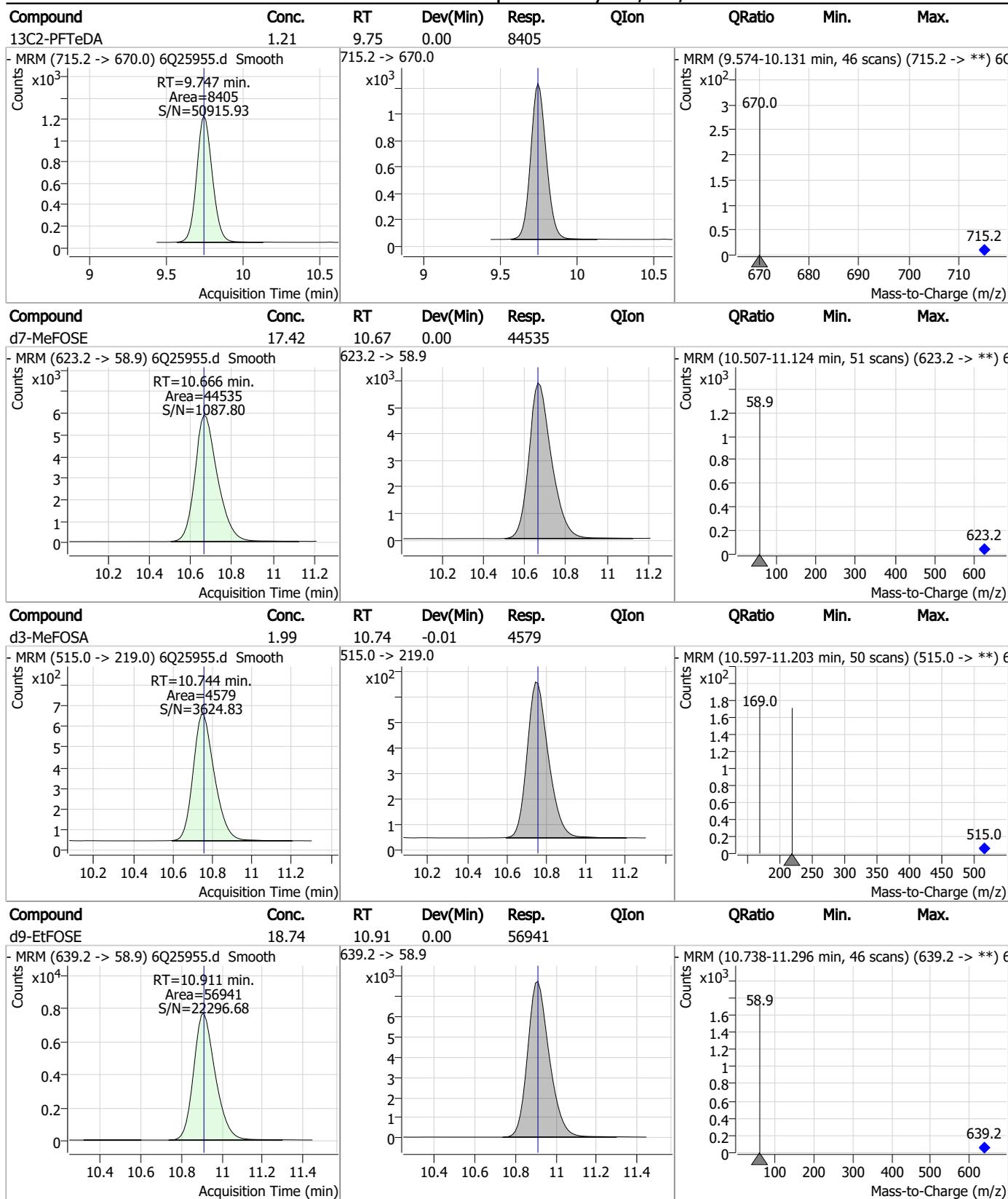


7.2.1
7

Perfluorinated Compounds by LC/MS/MS



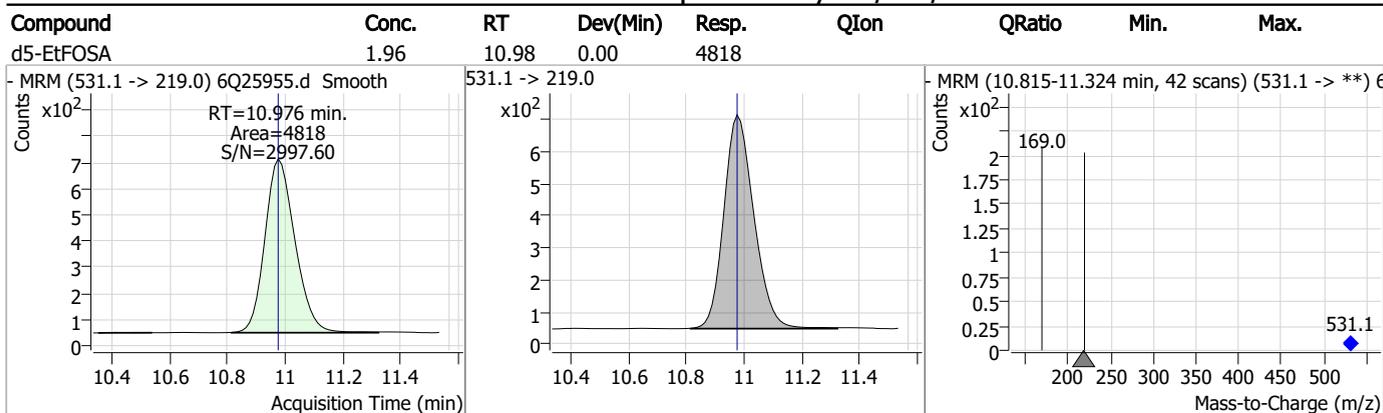
Perfluorinated Compounds by LC/MS/MS



7.2.1
7



Perfluorinated Compounds by LC/MS/MS



7.2.1
7

Perfluorinated Compounds by LC/MS/MS

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 Acq. Date-Time : 10/8/2023 4:57:58 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	149963	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	53969	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	47949	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	46566	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	62754	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	27665	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	26518	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	29084	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	29921	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10893	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	22999	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	22004	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12542	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	11982	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2219	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3320	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3279	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	24998	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	31848	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	22102	5.00 µg/L	0.000
M7-MeFOSE	10.665	623.2 -> 58.9	75346	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	89518	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	6979	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6765	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	11385	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	62112	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7715	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	74958	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	25764	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	27314	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	47018	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2219	5.11 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3320	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.7%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3279	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-PFDoDA	9.030	615.1 -> 570.0	29921	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10893	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFBS	5.510	302.1 -> 79.9	22004	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C3-PFHxS	7.263	402.1 -> 79.9	12542	2.56 µg/L	0.000

7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C4-PFBA	2.947	216.8 -> 171.9	149963	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.519	367.1 -> 322.0	46566	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFHxA	5.580	318.0 -> 273.0	47949	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFPeA	4.372	268.3 -> 223.0	53969	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	8.161	519.1 -> 474.1	26518	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C7-PFUnDA	8.614	570.0 -> 525.1	29084	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-FOSA	9.657	506.1 -> 77.8	22999	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOA	7.161	421.1 -> 376.0	62754	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C8-PFOS	8.311	507.1 -> 79.9	11982	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C9-PFNA	7.680	472.1 -> 427.0	27665	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%	
d3-MeFOSAA	8.219	573.2 -> 419.0	24998	4.99 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	31848	9.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d3-MeFOSA	10.757	515.0 -> 219.0	6765	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSAA	8.415	589.2 -> 419.0	22102	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
d7-MeFOSE	10.665	623.2 -> 58.9	75346	24.85 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d9-EtFOSE	10.911	639.2 -> 58.9	89518	24.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d5-EtFOSA	10.976	531.1 -> 219.0	6979	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	

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.	



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

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

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

7.2.2
7

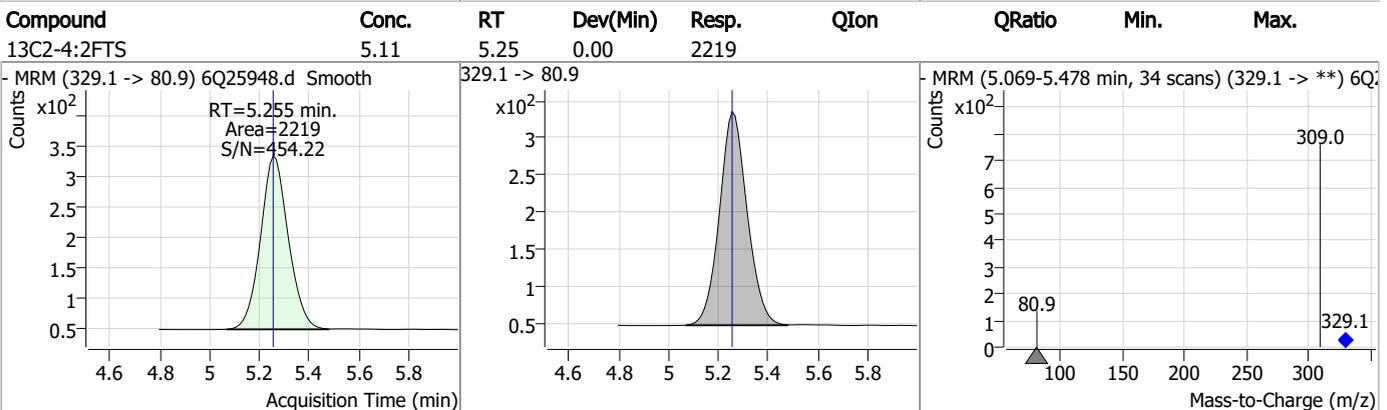
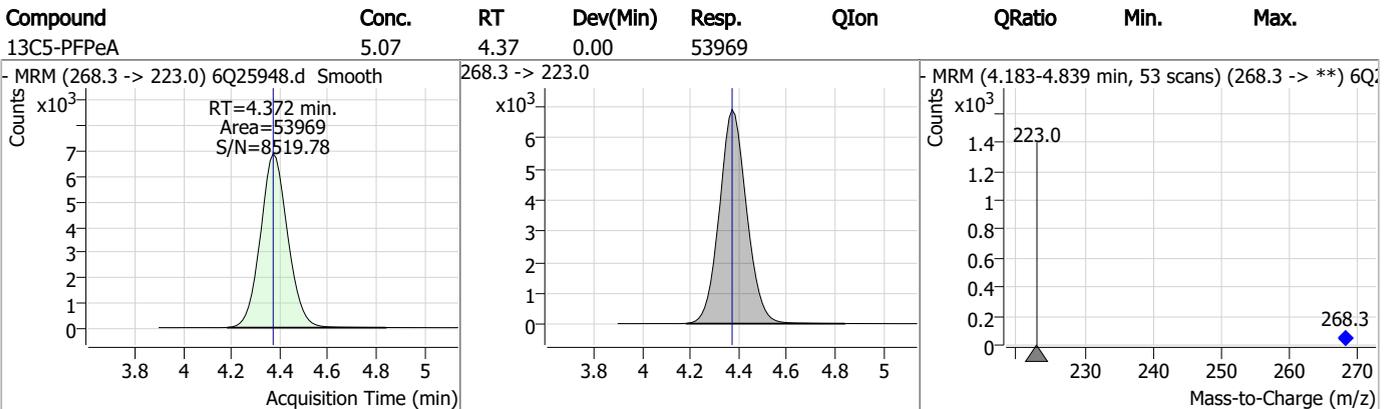
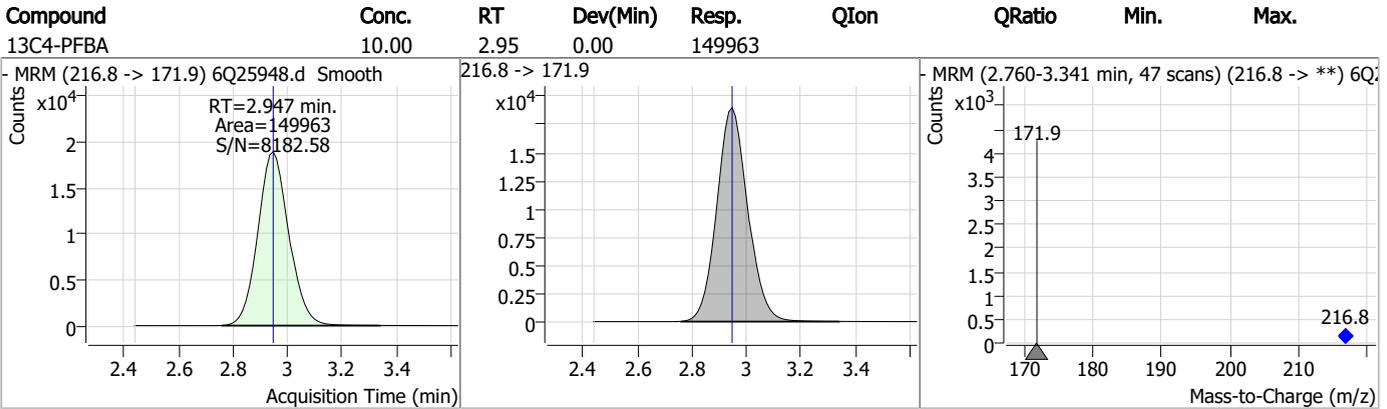
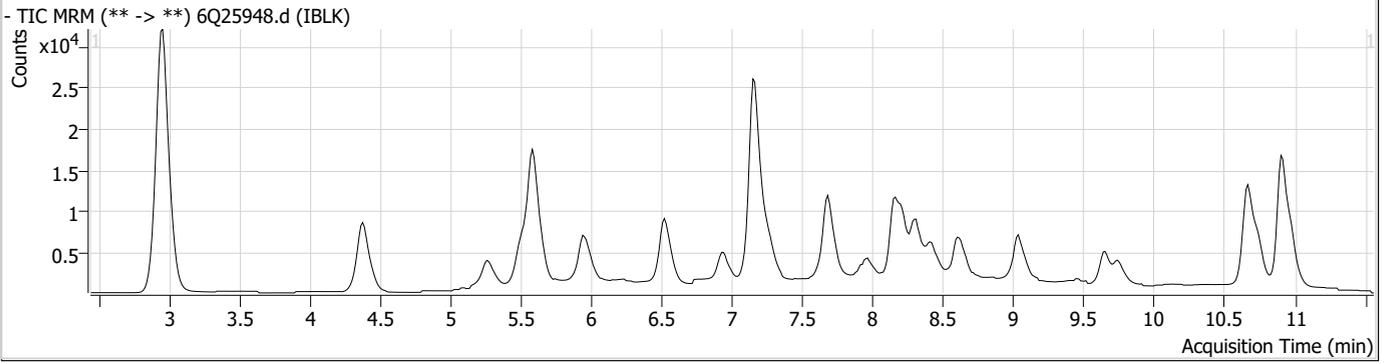
Perfluorinated Compounds by LC/MS/MS

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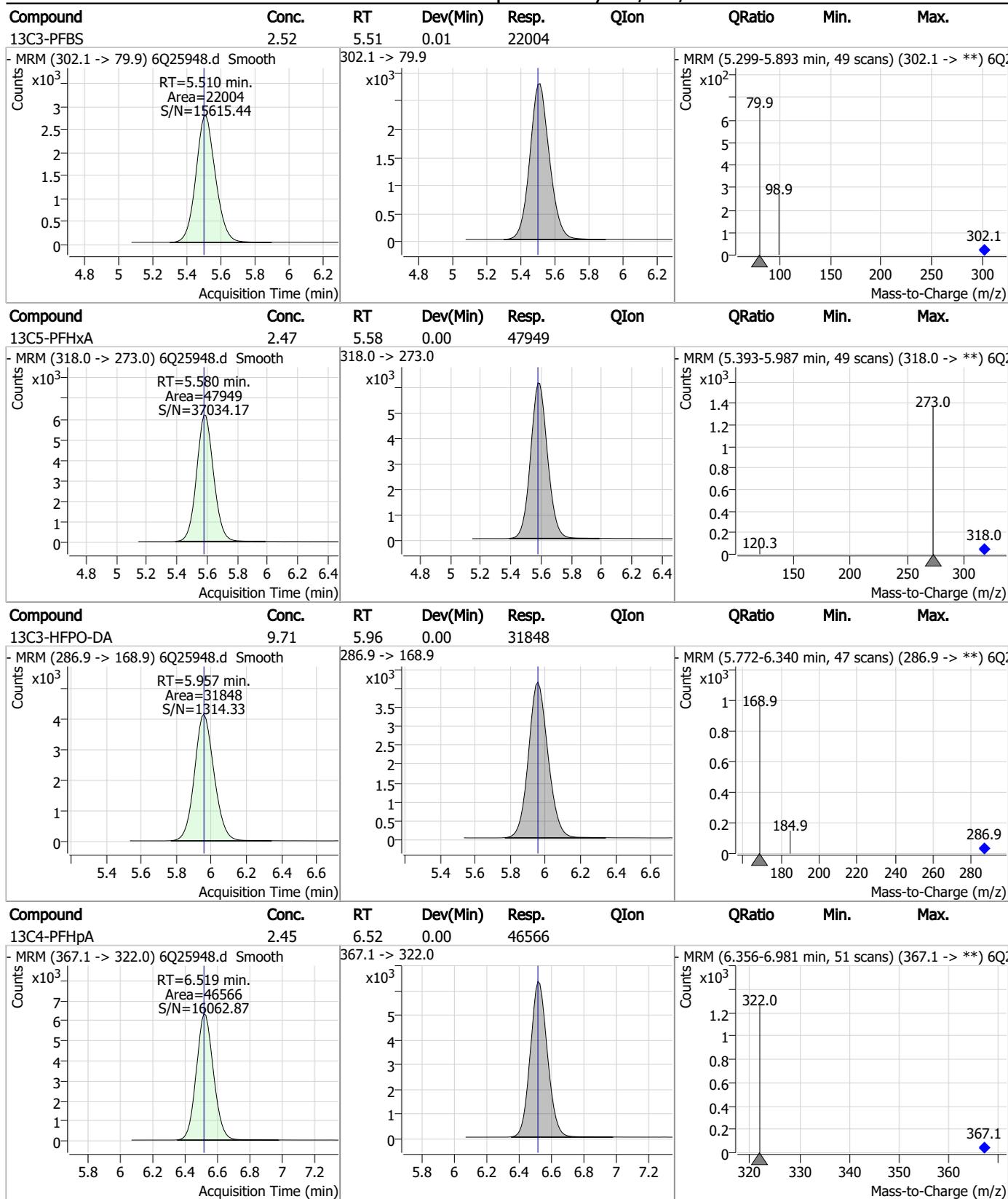
7.2.2

7

Perfluorinated Compounds by LC/MS/MS



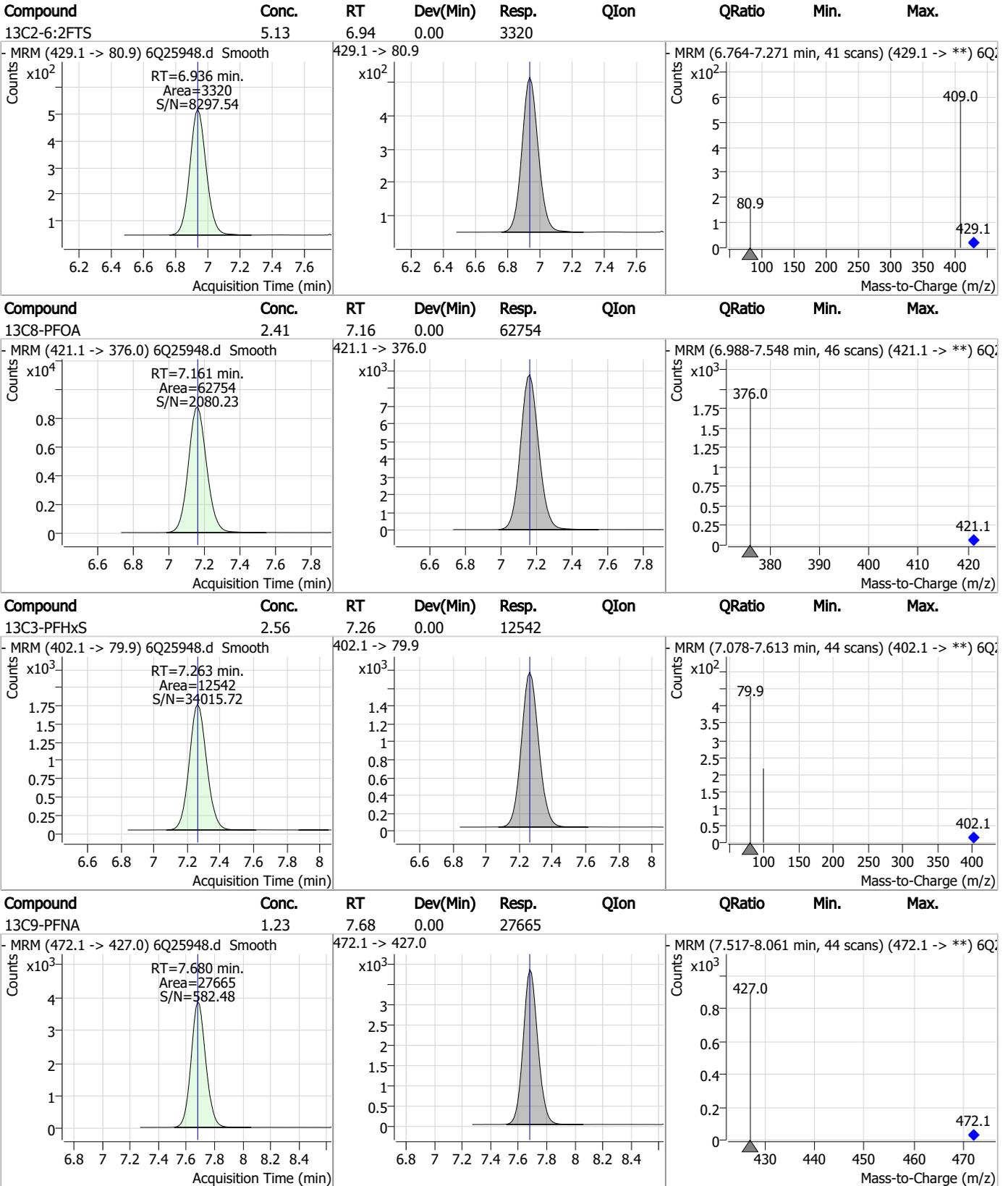
Perfluorinated Compounds by LC/MS/MS



7.22
7



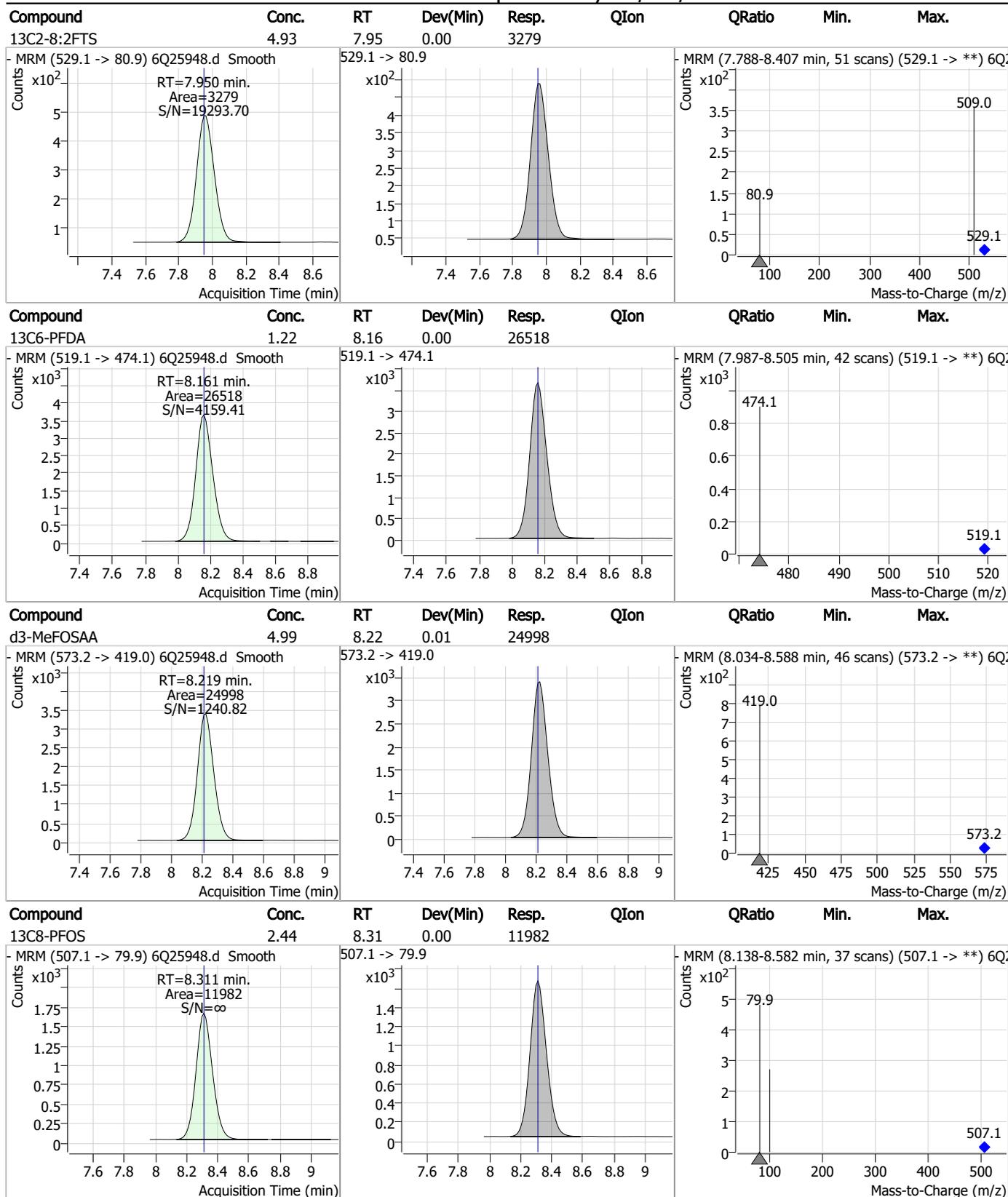
Perfluorinated Compounds by LC/MS/MS



7.2.2

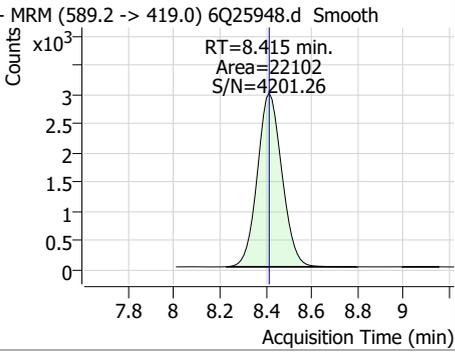
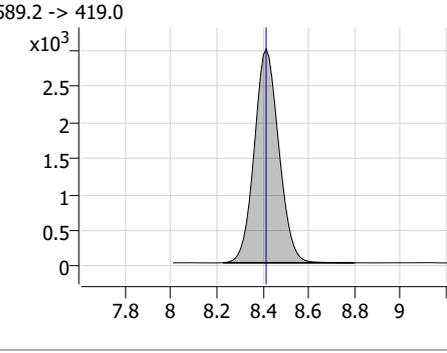
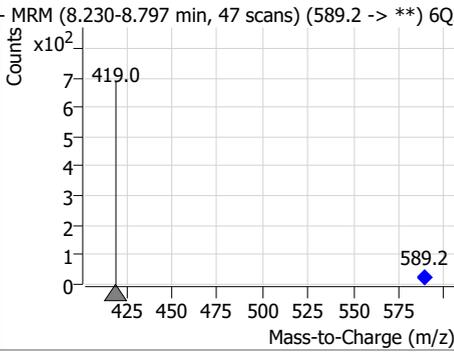
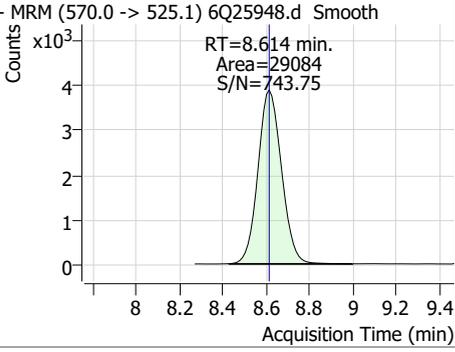
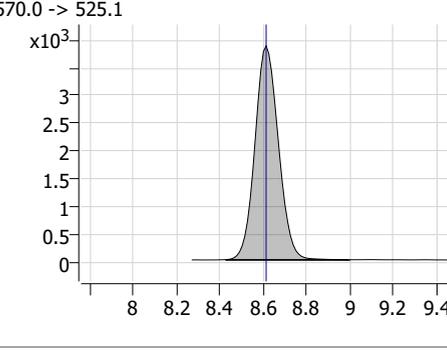
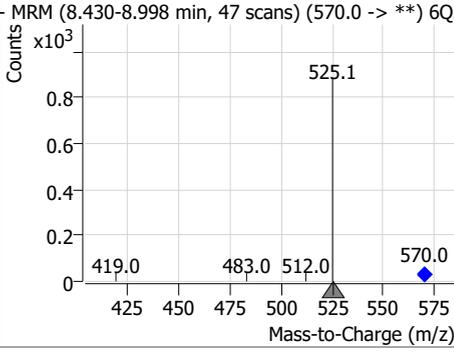
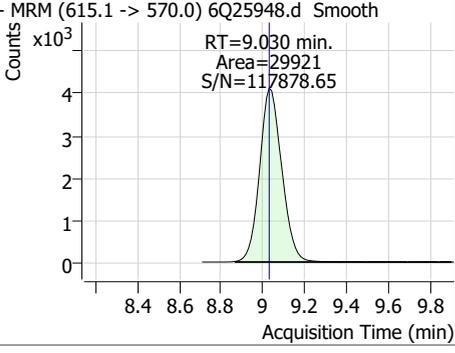
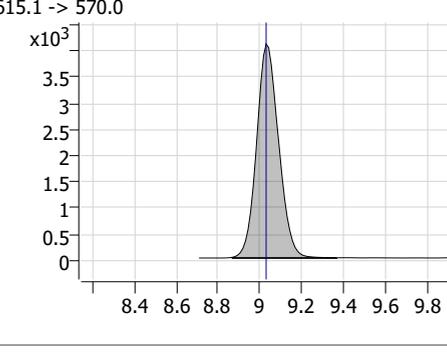
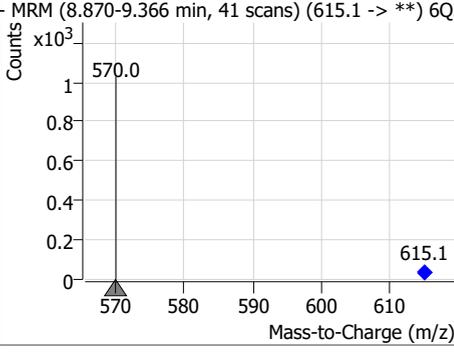
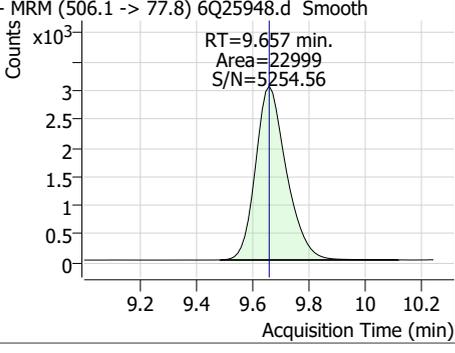
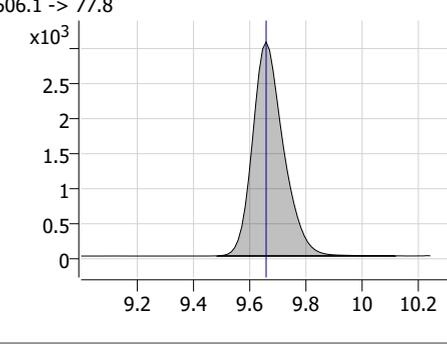
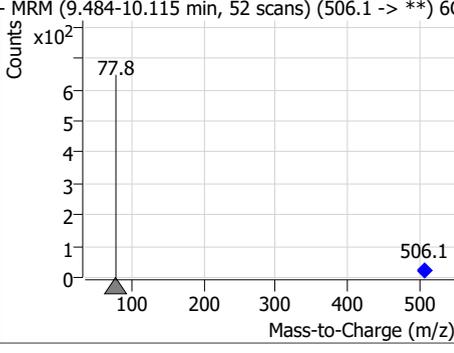
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.15	8.41	0.00	22102				
- MRM (589.2 -> 419.0) 6Q25948.d Smooth 			589.2 -> 419.0 			- MRM (8.230-8.797 min, 47 scans) (589.2 -> **) 6Q25948.d 		
13C7-PFUnDA	1.24	8.61	0.00	29084				
- MRM (570.0 -> 525.1) 6Q25948.d Smooth 			570.0 -> 525.1 			- MRM (8.430-8.998 min, 47 scans) (570.0 -> **) 6Q25948.d 		
13C2-PFDoDA	1.17	9.03	0.00	29921				
- MRM (615.1 -> 570.0) 6Q25948.d Smooth 			615.1 -> 570.0 			- MRM (8.870-9.366 min, 41 scans) (615.1 -> **) 6Q25948.d 		
13C8-FOSA	2.45	9.66	0.00	22999				
- MRM (506.1 -> 77.8) 6Q25948.d Smooth 			506.1 -> 77.8 			- MRM (9.484-10.115 min, 52 scans) (506.1 -> **) 6Q25948.d 		

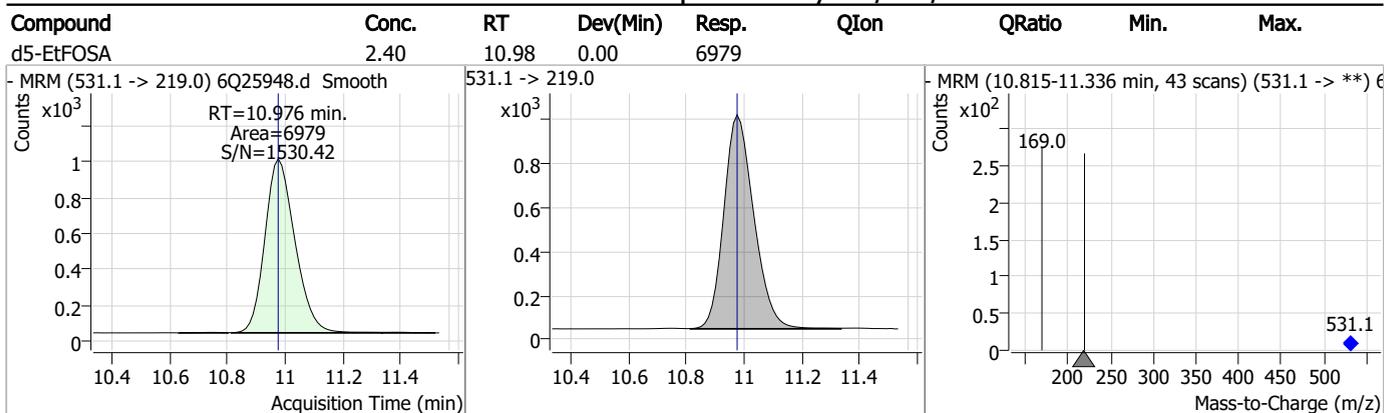
7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.75	0.00	10893				
d7-MeFOSE	24.85	10.67	0.00	75346				
d3-MeFOSA	2.48	10.76	0.00	6765				
d9-EtFOSE	24.84	10.91	0.00	89518				

7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26048.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 3:28:12 PM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	155910	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	55633	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	51652	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	50197	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	67237	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	28244	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	28495	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	29939	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30376	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11166	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23964	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22691	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12588	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12230	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2547	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3386	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3558	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25578	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	35211	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	21705	5.00 µg/L	-0.012
M7-MeFOSE	10.666	623.2 -> 58.9	74511	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	87453	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7269	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6538	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	11507	2.50 µg/L	0.000
13C3-PFBA	2.939	216.0 -> 172.0	65325	5.00 µg/L	-0.013
18O2-PFHxS	7.263	403.0 -> 83.9	7796	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	76371	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	24871	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	25573	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	48916	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2547	5.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.0%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3386	5.18 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3558	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30376	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11166	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C3-PFBS	5.497	302.1 -> 79.9	22691	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.8%		
13C3-PFHxS	7.263	402.1 -> 79.9	12588	2.54 µg/L	0.000

7.2.3
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFBA	2.947	216.8 -> 171.9	155910	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.519	367.1 -> 322.0	50197	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C5-PFHxA	5.580	318.0 -> 273.0	51652	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	55633	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C6-PFDA	8.161	519.1 -> 474.1	28495	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C7-PFUnDA	8.601	570.0 -> 525.1	29939	1.32 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C8-FOSA	9.657	506.1 -> 77.8	23964	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C8-PFOA	7.161	421.1 -> 376.0	67237	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C8-PFOS	8.311	507.1 -> 79.9	12230	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C9-PFNA	7.680	472.1 -> 427.0	28244	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25578	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	35211	10.32 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d3-MeFOSA	10.744	515.0 -> 219.0	6538	2.37 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
d5-EtFOSAA	8.402	589.2 -> 419.0	21705	5.00 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d7-MeFOSE	10.666	623.2 -> 58.9	74511	24.31 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d9-EtFOSE	10.911	639.2 -> 58.9	87453	24.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
d5-EtFOSA	10.976	531.1 -> 219.0	7269	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	

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.	



7.2.3
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	7.081	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
PFHpS	-	363.1 -> 169.0	0			
		449.0 -> 79.9	-	N.D.		
PFHxA	-	449.0 -> 98.9				
		313.0 -> 269.0	-	N.D.		
PFHxS	-	313.0 -> 118.9				
		398.7 -> 79.9	-	N.D.		
PFNA	8.105	398.7 -> 98.9				
		463.0 -> 419.0	0	µg/L	m	1
PFNS	-	463.0 -> 219.0	0			
		548.8 -> 79.9	-	N.D.		
PFOA	7.611	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				
PFMPA	-					
PFEESA	-					

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



7.2.3
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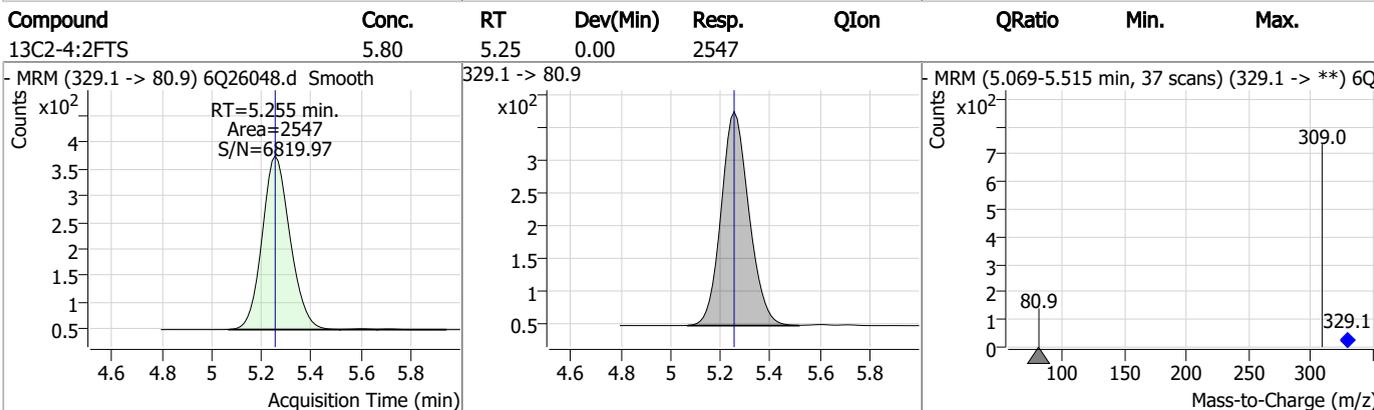
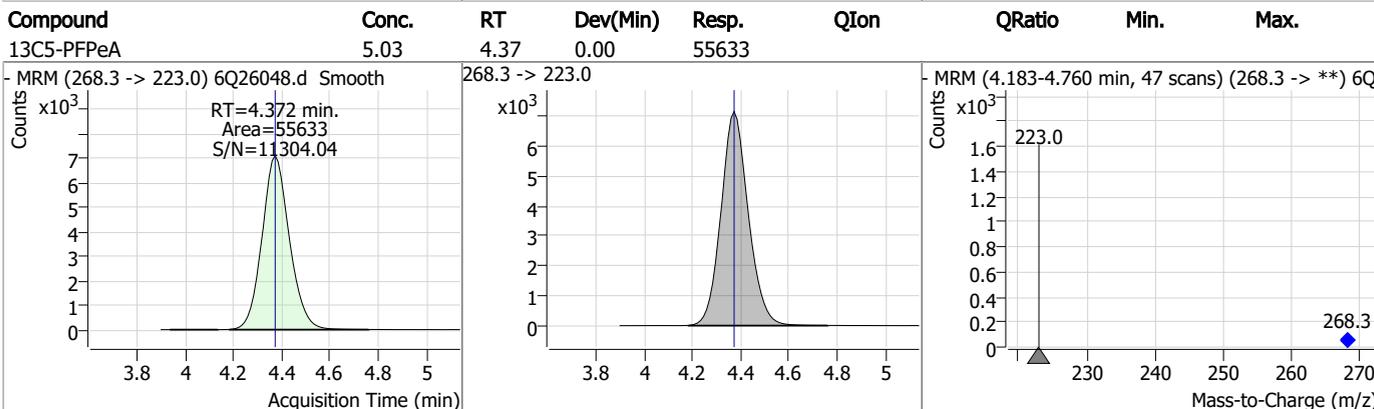
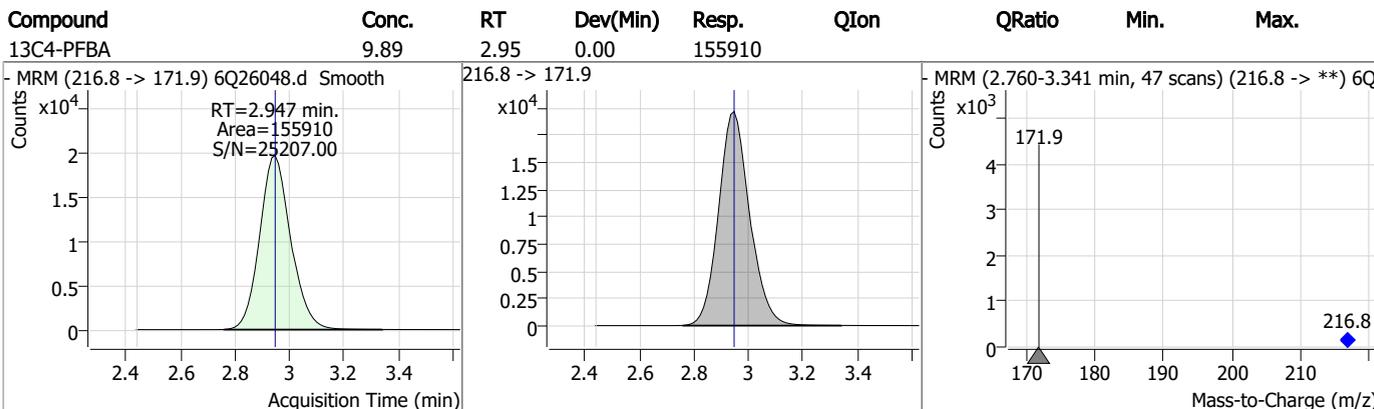
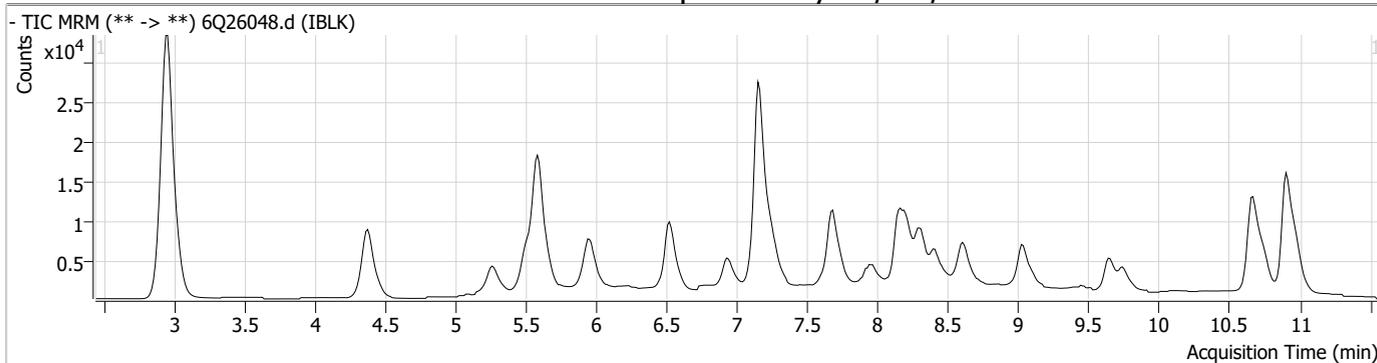
Perfluorinated Compounds by LC/MS/MS

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

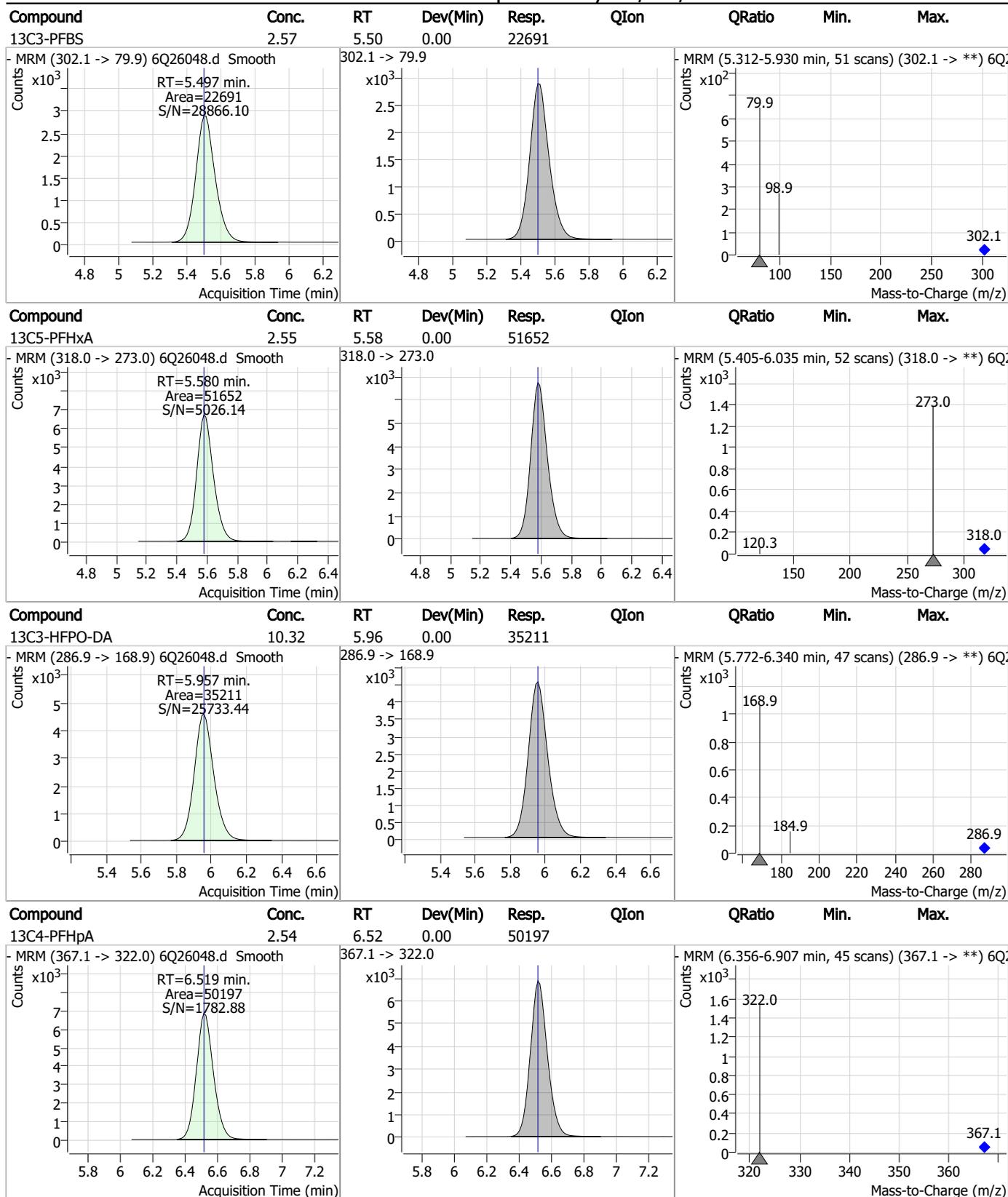
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Perfluorinated Compounds by LC/MS/MS



7.2.3
7

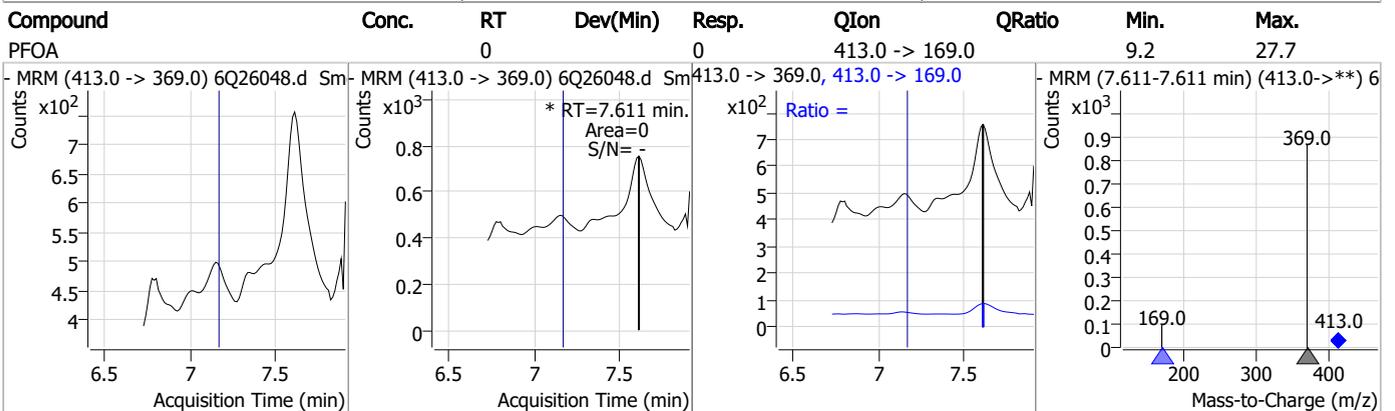
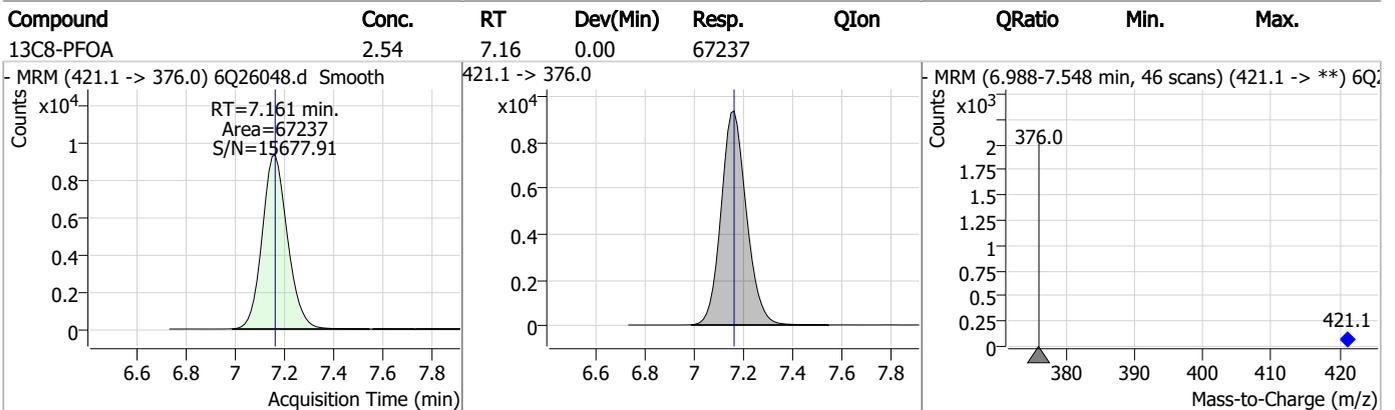
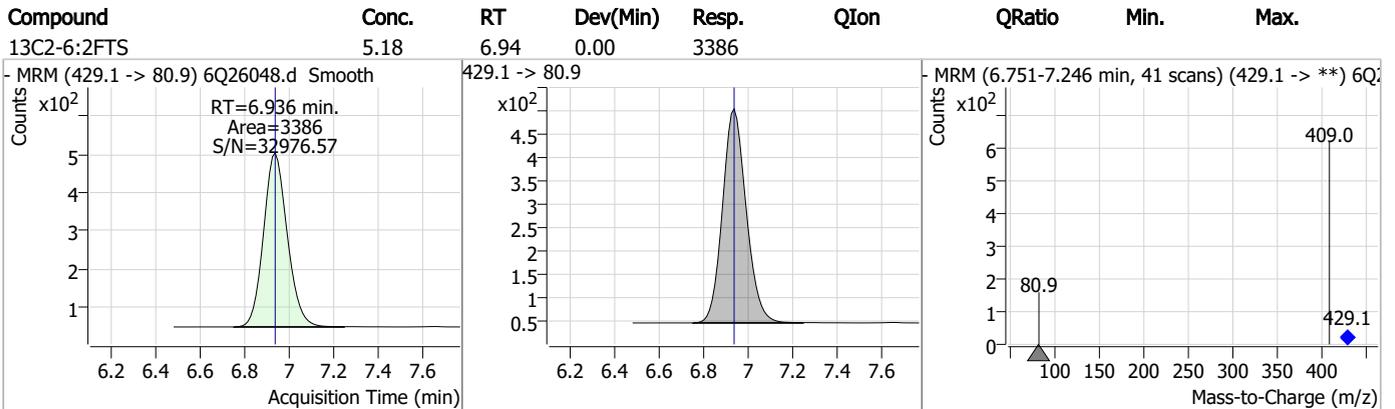
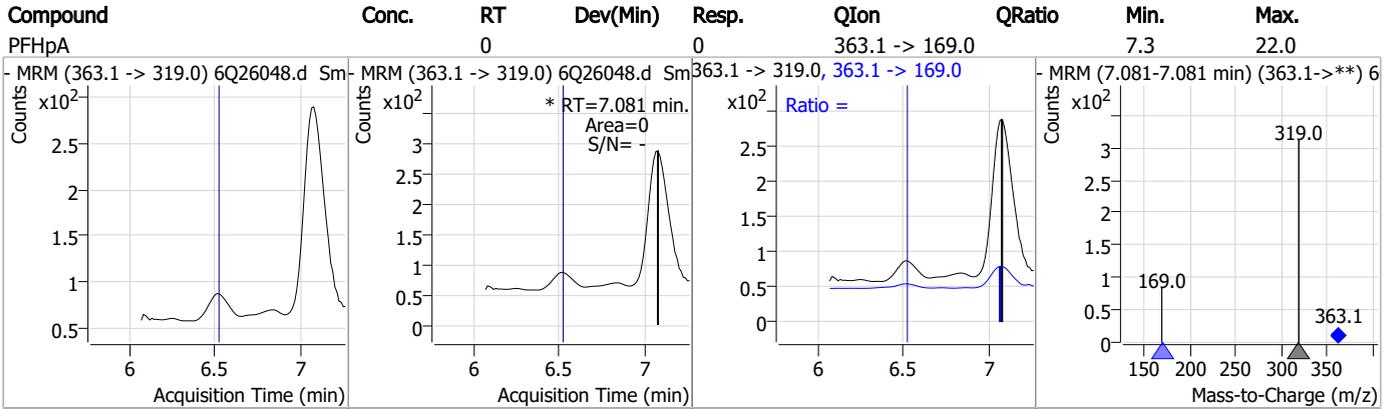
Perfluorinated Compounds by LC/MS/MS



7.2.3
7



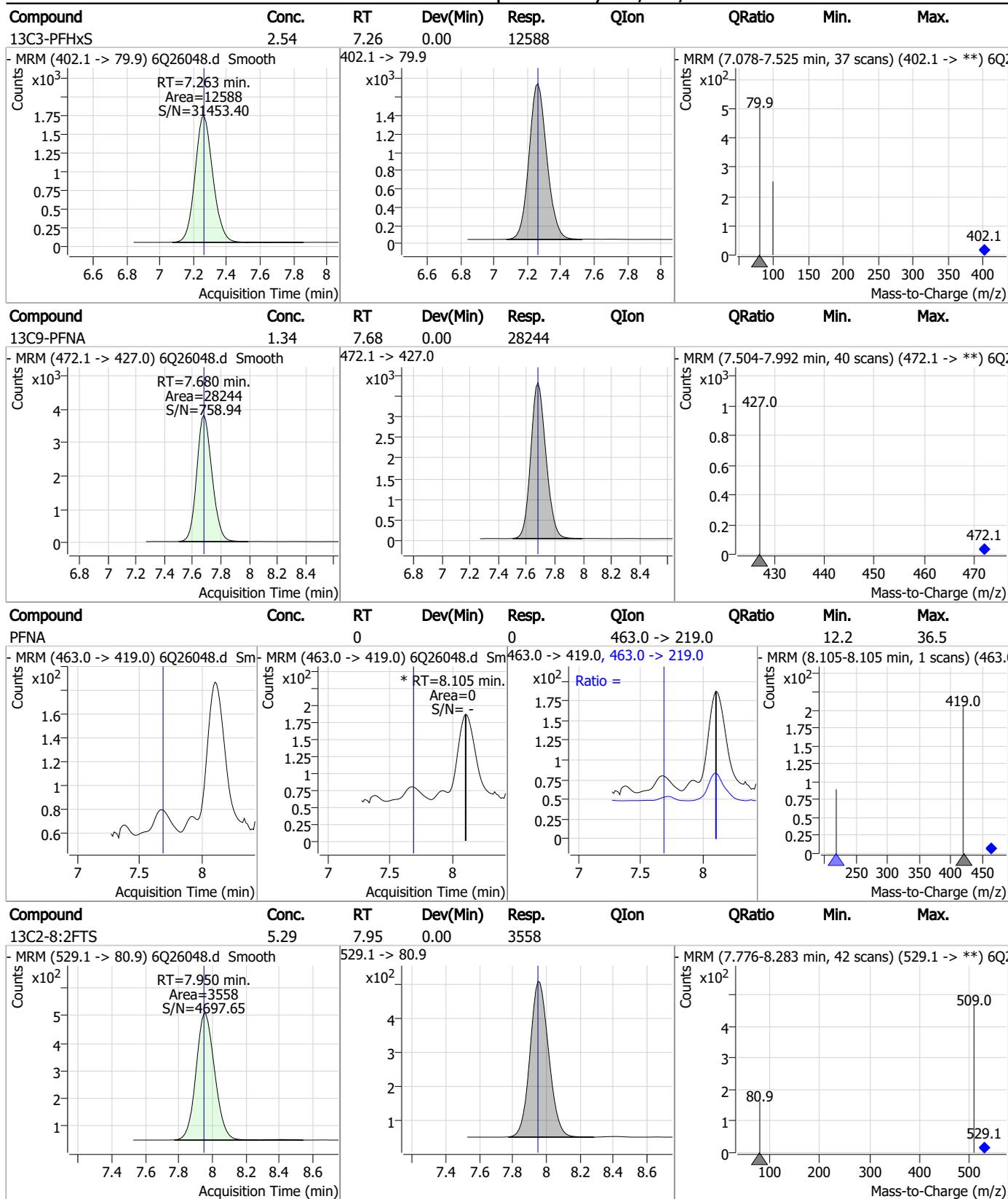
Perfluorinated Compounds by LC/MS/MS



7.2.3

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Perfluorinated Compounds by LC/MS/MS



7.2.3
7

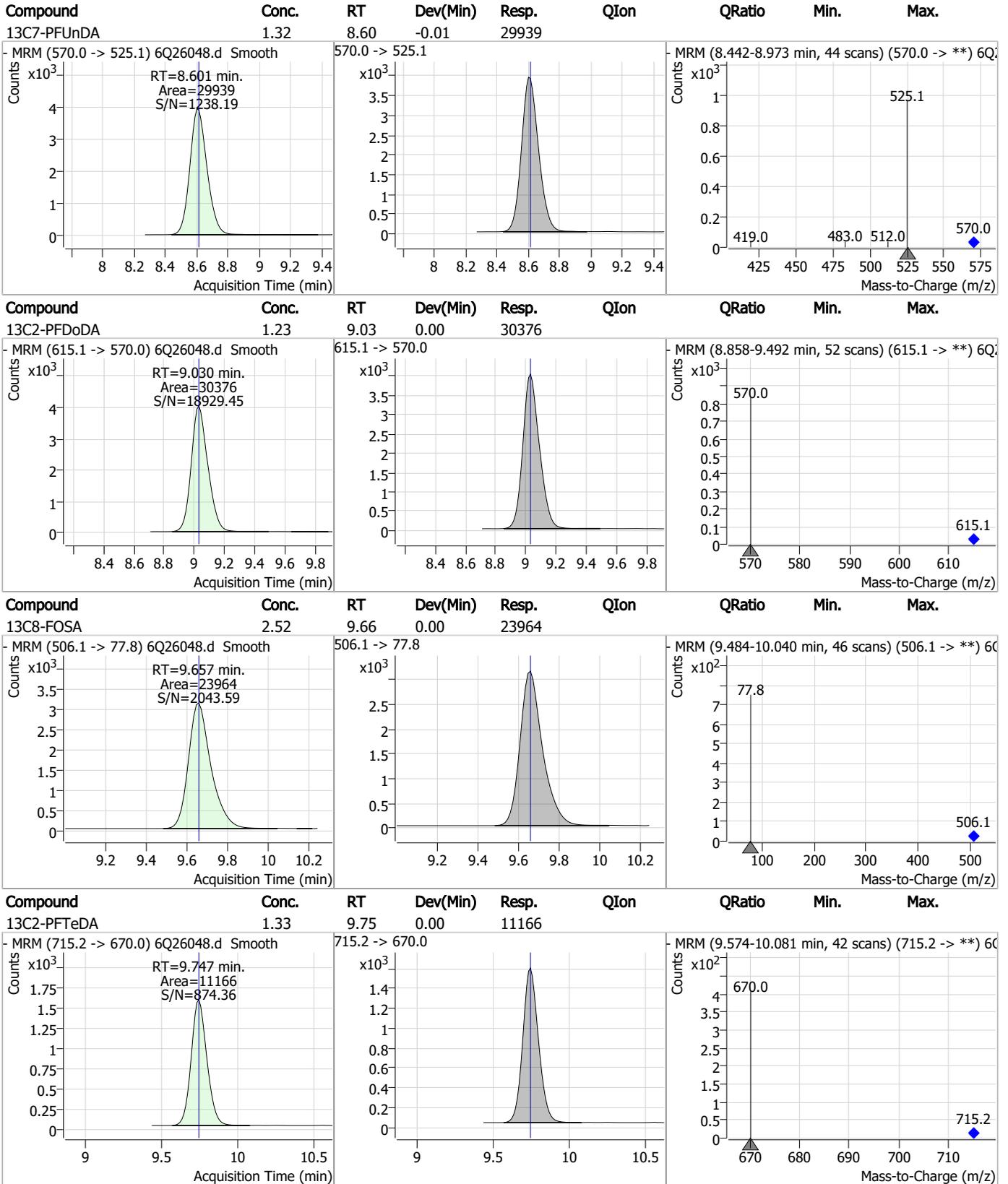
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.36	8.16	0.00	28495				
d3-MeFOSAA	5.05	8.21	0.00	25578				
13C8-PFOS	2.46	8.31	0.00	12230				
d5-EtFOSAA	5.00	8.40	-0.01	21705				

7.2.3

7

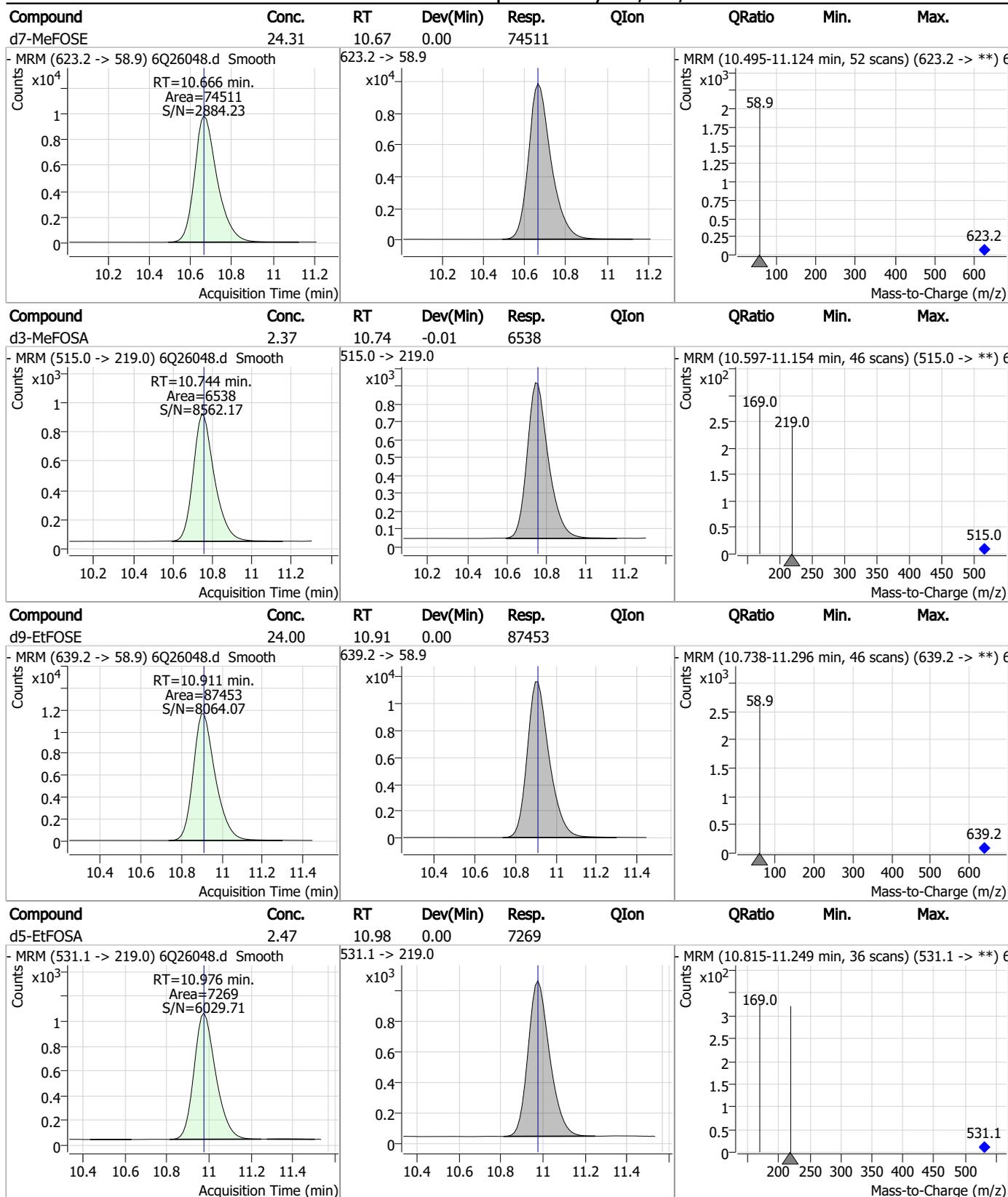
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

Perfluorinated Compounds by LC/MS/MS



7.2.3
7



Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 2:30:54 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99081,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	159694	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	56496	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	51729	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	48875	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	65162	2.50 µg/L	-0.012
M9-PFNA	7.680	472.1 -> 427.0	28853	1.25 µg/L	0.000
M6-PFDA	8.148	519.1 -> 474.1	27530	1.25 µg/L	-0.012
M7-PFUnDA	8.601	570.0 -> 525.1	28635	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30994	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11071	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23175	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22057	2.50 µg/L	0.000
M3-PFHxS	7.251	402.1 -> 79.9	12681	2.50 µg/L	-0.012
M8-PFOS	8.311	507.1 -> 79.9	12094	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2337	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3452	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3572	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	27258	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	34053	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	23023	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	73962	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	87017	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7207	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6610	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	11399	2.50 µg/L	-0.013
13C3-PFBA	2.952	216.0 -> 172.0	66571	5.00 µg/L	0.000
18O2-PFHxS	7.250	403.0 -> 83.9	7645	2.50 µg/L	-0.012
13C4-PFOA	7.150	417.1 -> 372.0	74839	2.50 µg/L	-0.012
13C2-PFDA	8.149	515.1 -> 470.1	25672	1.25 µg/L	-0.012
13C5-PFNA	7.680	468.0 -> 423.0	27534	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49969	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2337	5.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3452	5.39 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3572	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.3%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30994	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11071	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C3-PFBS	5.497	302.1 -> 79.9	22057	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.9%		
13C3-PFHxS	7.251	402.1 -> 79.9	12681	2.61 µg/L	-0.012

7.2.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C4-PFBA	2.947	216.8 -> 171.9	159694	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.519	367.1 -> 322.0	48875	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFHxA	5.580	318.0 -> 273.0	51729	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	56496	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	8.148	519.1 -> 474.1	27530	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C7-PFUnDA	8.601	570.0 -> 525.1	28635	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-FOSA	9.657	506.1 -> 77.8	23175	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOA	7.149	421.1 -> 376.0	65162	2.51 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOS	8.311	507.1 -> 79.9	12094	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C9-PFNA	7.680	472.1 -> 427.0	28853	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSAA	8.207	573.2 -> 419.0	27258	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	34053	9.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSA	10.744	515.0 -> 219.0	6610	2.42 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSAA	8.415	589.2 -> 419.0	23023	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
d7-MeFOSE	10.666	623.2 -> 58.9	73962	24.36 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d9-EtFOSE	10.911	639.2 -> 58.9	87017	24.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d5-EtFOSA	10.976	531.1 -> 219.0	7207	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	

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	7.081	599.0 -> 98.8				
		363.1 -> 319.0	0	µg/L	m	1
PFHpS	-	363.1 -> 169.0	0			
		449.0 -> 79.9	-	N.D.		
PFHxA	-	449.0 -> 98.9				
		313.0 -> 269.0	-	N.D.		
PFHxS	-	313.0 -> 118.9				
		398.7 -> 79.9	-	N.D.		
PFNA	-	398.7 -> 98.9				
		463.0 -> 419.0	-	N.D.		
PFNS	-	463.0 -> 219.0				
		548.8 -> 79.9	-	N.D.		
PFOA	7.611	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				
PFMPA	-					
PFEESA	-					

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

7.24
7

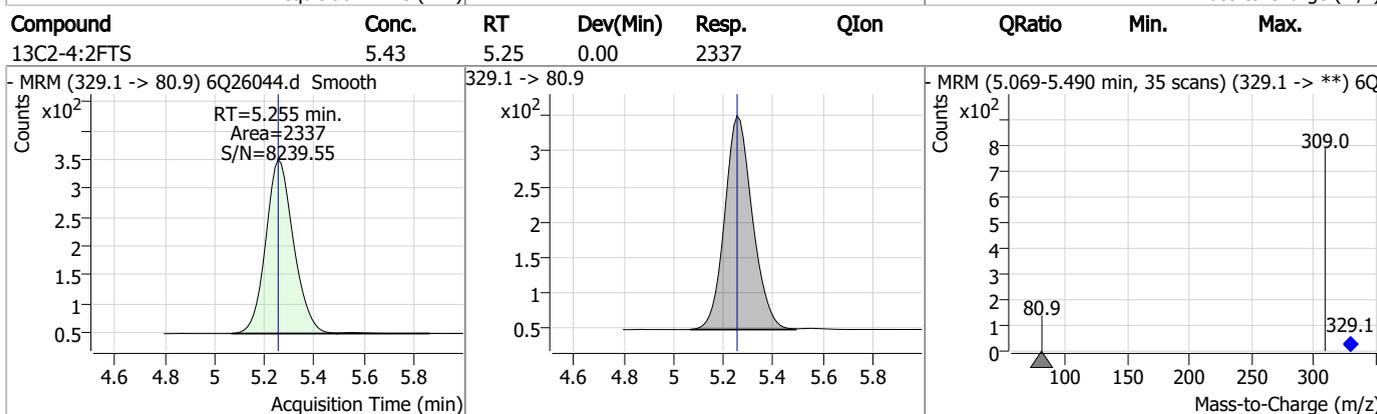
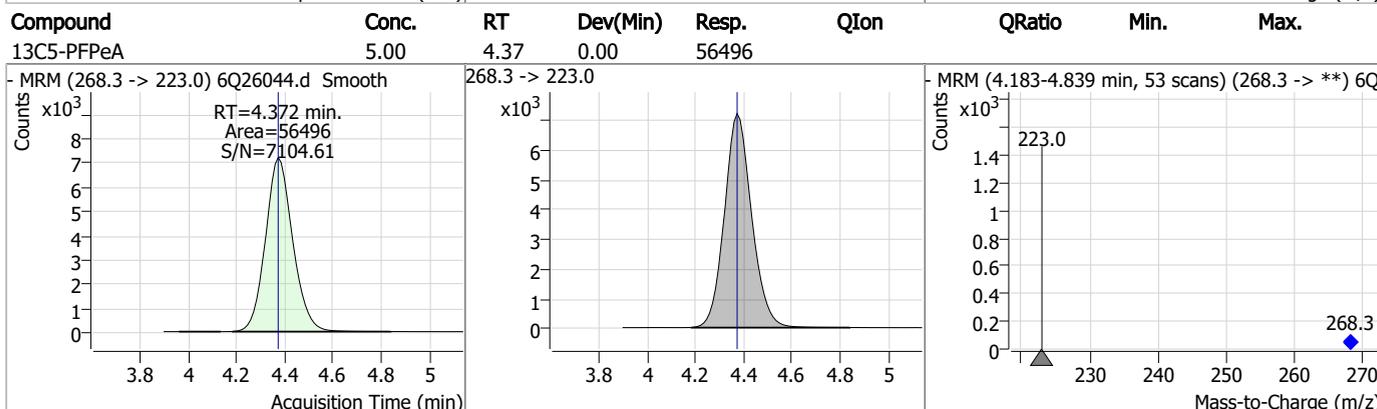
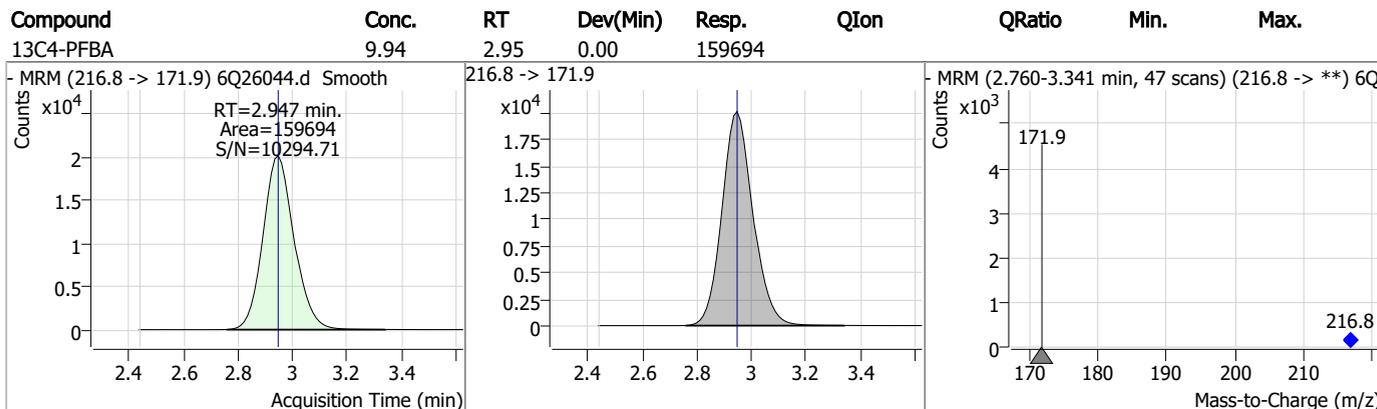
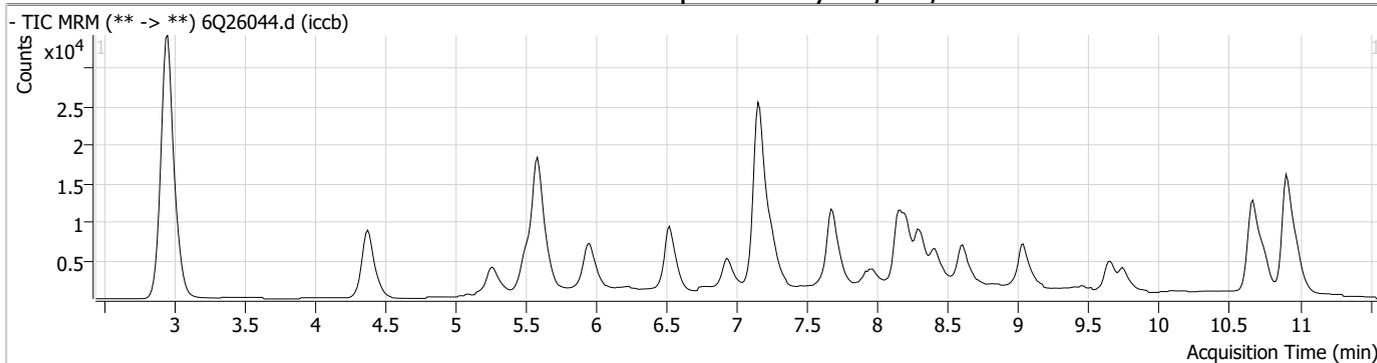
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



7.2.4
7

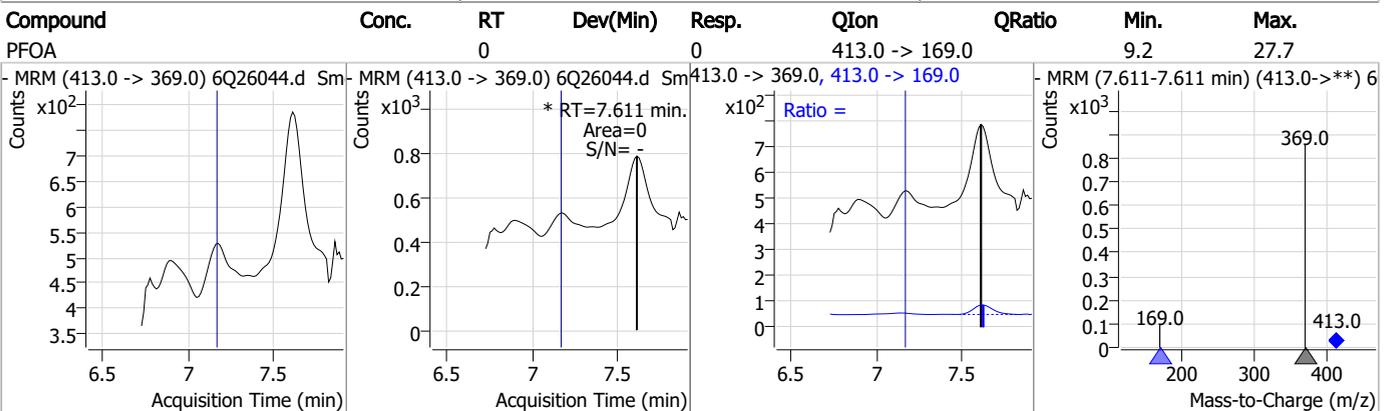
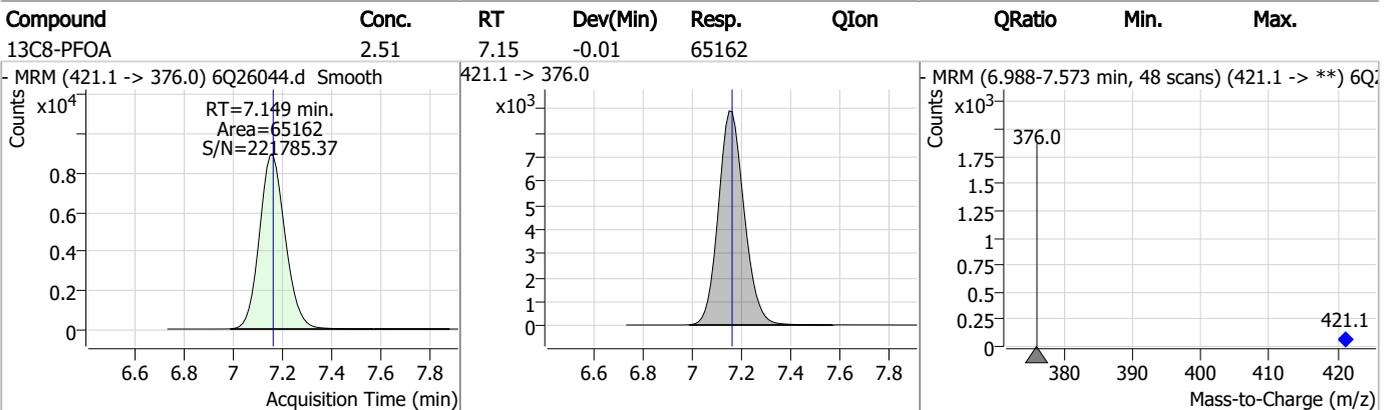
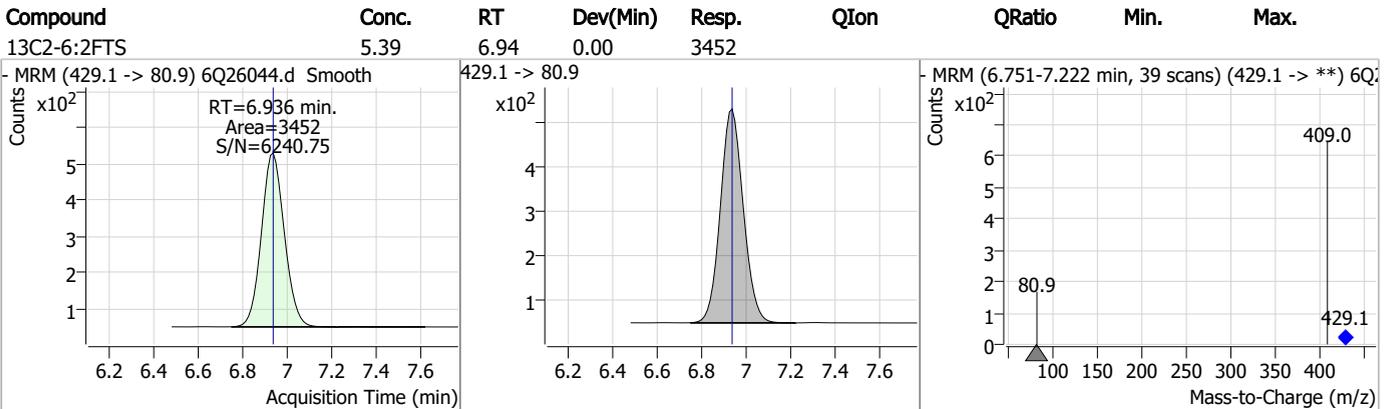
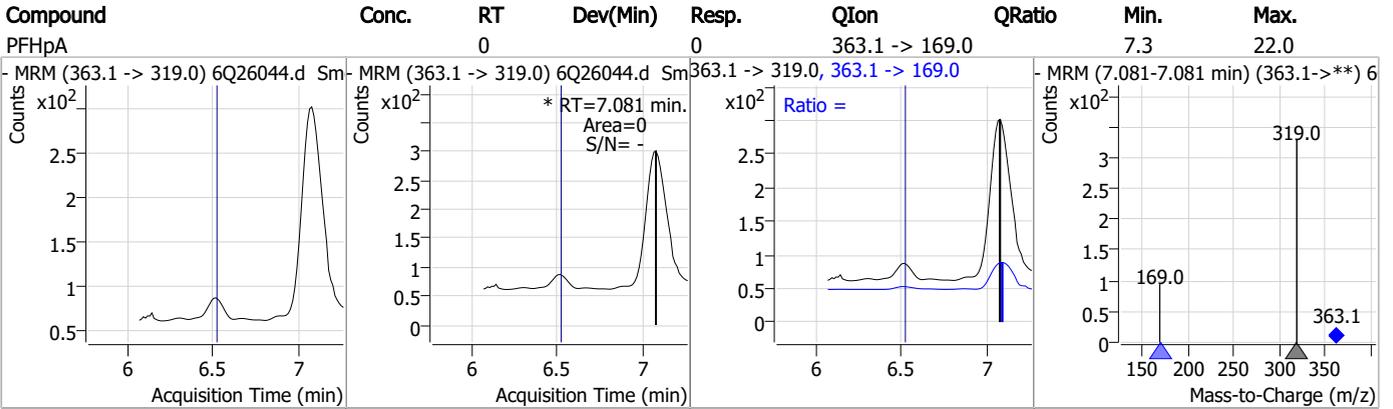
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.55	5.50	0.00	22057				
13C5-PFHxA	2.50	5.58	0.00	51729				
13C3-HFPO-DA	9.77	5.96	0.00	34053				
13C4-PFHpA	2.42	6.52	0.00	48875				

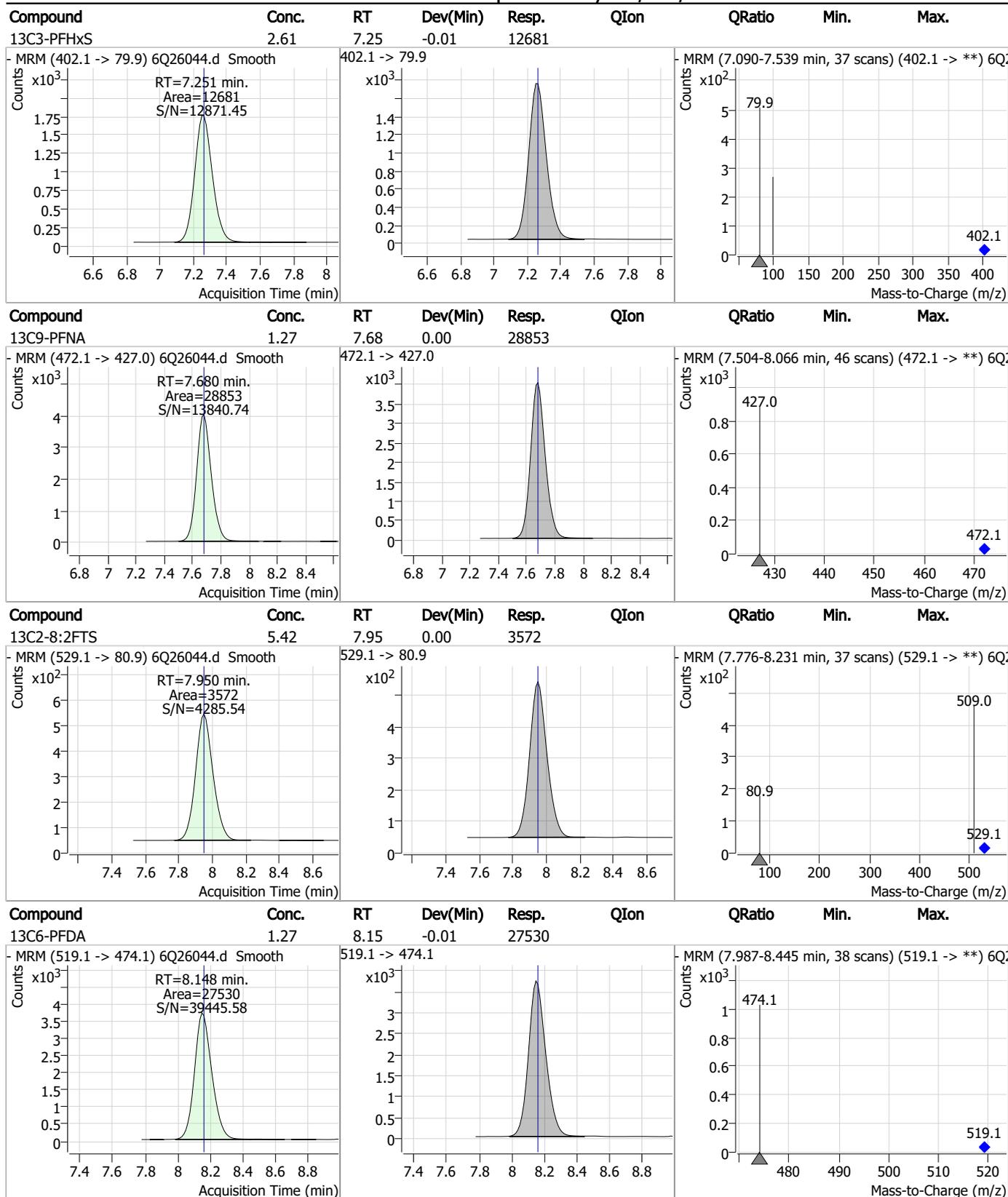
7.2.4
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



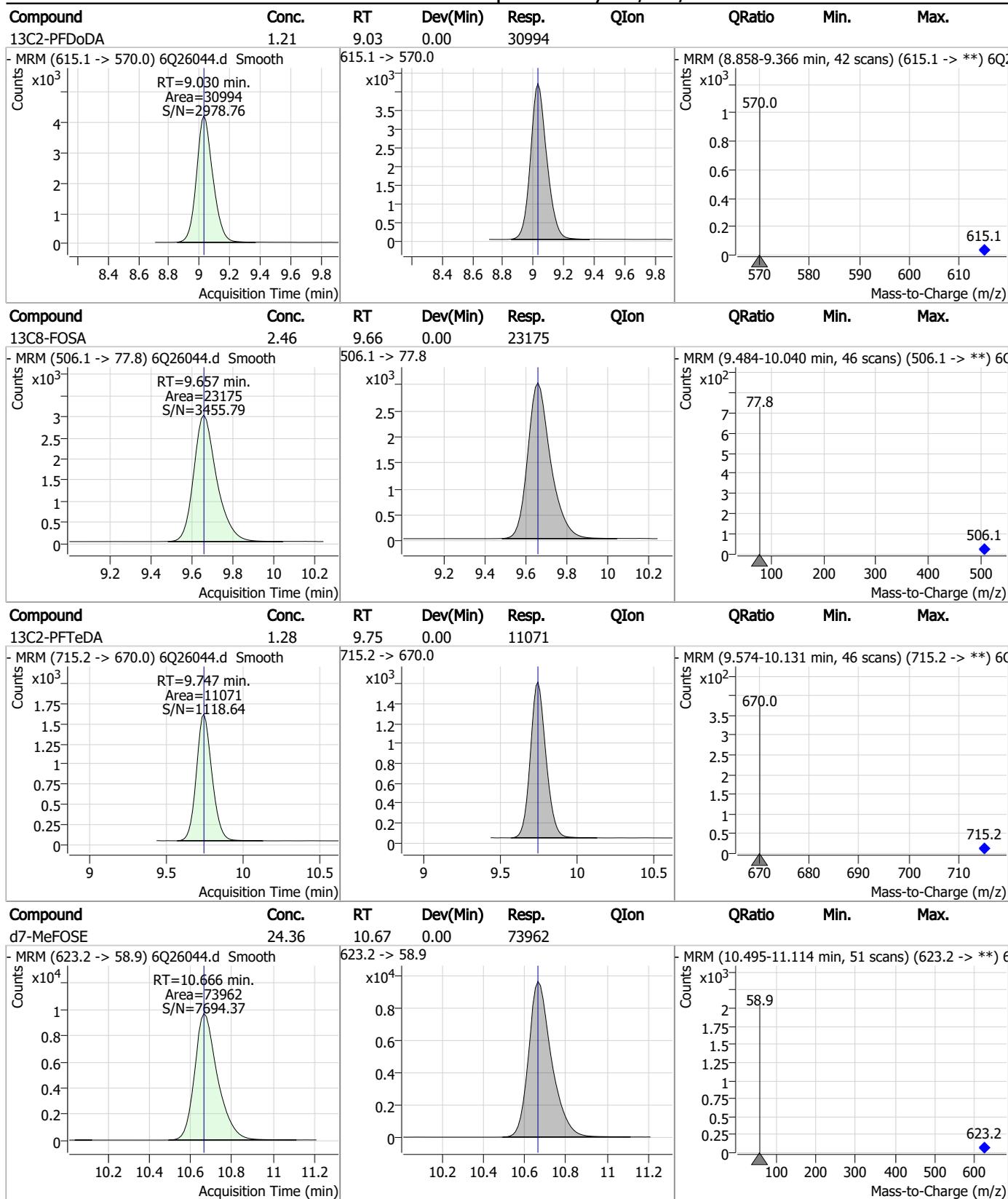
7.2.4

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.44	8.21	0.00	27258				
13C8-PFOS	2.46	8.31	0.00	12094				
d5-EtFOSAA	5.36	8.41	0.00	23023				
13C7-PFUnDA	1.23	8.60	-0.01	28635				

7.2.4
7

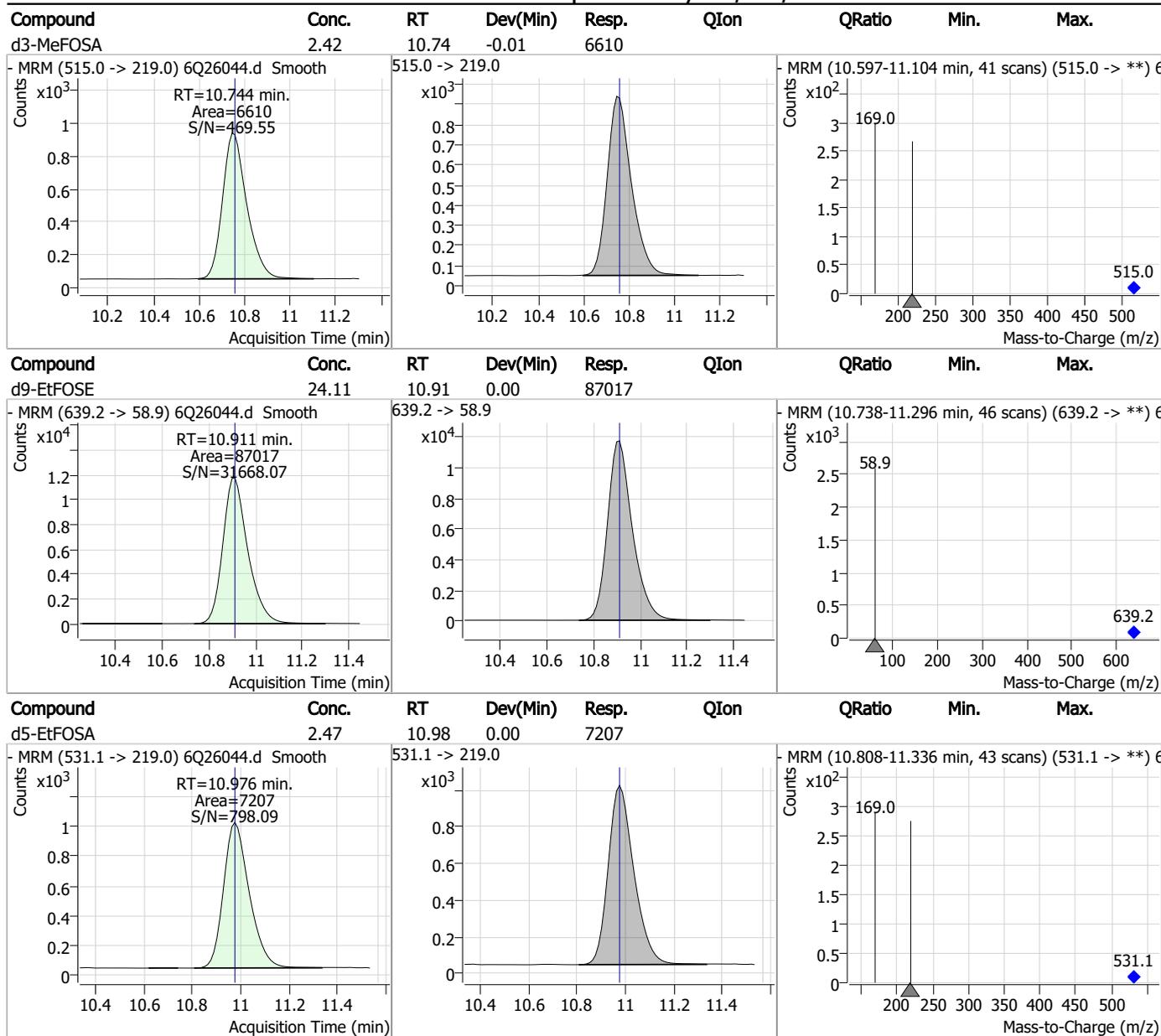
Perfluorinated Compounds by LC/MS/MS



7.2.4
7



Perfluorinated Compounds by LC/MS/MS



7.2.4
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25953.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 6:09:38 PM
 Sample Name : OP99404-BS
 Vial : P2-A1
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	45839	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	43420	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	41580	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	39082	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	52208	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	21797	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	21701	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	23733	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	23433	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	7850	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	13523	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18121	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	10182	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	10670	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	1994	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	2718	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2751	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	19944	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	26777	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	17564	5.00 µg/L	-0.012
M7-MeFOSE	10.666	623.2 -> 58.9	42126	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	52104	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4660	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	4055	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	9035	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	53446	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6296	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	58858	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20314	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	20757	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	39113	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	1994	5.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.5%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2718	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.0%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2751	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFDoDA	9.030	615.1 -> 570.0	23433	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-PFTeDA	9.747	715.2 -> 670.0	7850	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.5%		
13C3-PFBS	5.510	302.1 -> 79.9	18121	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.6%		
13C3-PFHxS	7.263	402.1 -> 79.9	10182	2.55 µg/L	0.000

7.31
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C4-PFBA	2.972	216.8 -> 171.9	45839	3.55 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 35.5%	
13C4-PFHpA	6.519	367.1 -> 322.0	39082	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFHxA	5.592	318.0 -> 273.0	41580	2.57 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFPeA	4.384	268.3 -> 223.0	43420	4.91 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C6-PFDA	8.161	519.1 -> 474.1	21701	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C7-PFUnDA	8.614	570.0 -> 525.1	23733	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-FOSA	9.657	506.1 -> 77.8	13523	1.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.5%	
13C8-PFOA	7.161	421.1 -> 376.0	52208	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C8-PFOS	8.311	507.1 -> 79.9	10670	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C9-PFNA	7.680	472.1 -> 427.0	21797	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
d3-MeFOSAA	8.207	573.2 -> 419.0	19944	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	26777	9.81 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSA	10.744	515.0 -> 219.0	4055	1.88 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.0%	
d5-EtFOSAA	8.402	589.2 -> 419.0	17564	5.16 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
d7-MeFOSE	10.666	623.2 -> 58.9	42126	17.50 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 70.0%	
d9-EtFOSE	10.911	639.2 -> 58.9	52104	18.22 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 72.9%	
d5-EtFOSA	10.976	531.1 -> 219.0	4660	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.6%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	29703	8.98 µg/L	98
		327.1 -> 80.9	11998		
6:2FTS	6.937	427.1 -> 407.0	24877	10.07 µg/L	99
		427.1 -> 80.9	9734		
8:2FTS	7.950	527.1 -> 507.0	17613	9.19 µg/L	94
		527.1 -> 80.8	6840		
EtFOSAA	8.416	584.2 -> 419.1	6841	2.40 µg/L	98
		584.2 -> 526.0	4387		
FOSA	9.660	498.1 -> 77.9	13298	2.57 µg/L	100
		498.1 -> 478.0	385		
MeFOSAA	8.220	570.1 -> 419.0	9605	2.58 µg/L	98
		570.1 -> 483.0	2120		
PFBA	2.981	212.8 -> 168.9	16964	9.93 µg/L	100
PFBS	5.511	298.7 -> 79.9	12322	2.27 µg/L	99
		298.7 -> 98.8	4452		
PFDA	8.161	512.9 -> 469.0	42829	2.53 µg/L	98
		512.9 -> 219.0	6978		
PFDODA	9.031	613.1 -> 569.0	49230	2.83 µg/L	98
		613.1 -> 319.0	6062		
PFDS	9.183	599.0 -> 79.9	5727	2.10 µg/L	93

7.3.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	2784			
PFHpA	6.532	363.1 -> 319.0	53541	2.52	µg/L	99
		363.1 -> 169.0	7597			
PFHpS	7.819	449.0 -> 79.9	9759	2.22	µg/L	99
		449.0 -> 98.9	4690			
PFHxA	5.594	313.0 -> 269.0	36520	2.46	µg/L	100
		313.0 -> 118.9	1848			
PFHxS	7.264	398.7 -> 79.9	9102	2.14	µg/L	m 96
		398.7 -> 98.9	4576			
PFNA	7.680	463.0 -> 419.0	33703	2.51	µg/L	97
		463.0 -> 219.0	7686			
PFNS	8.765	548.8 -> 79.9	8930	2.30	µg/L	90
		548.8 -> 98.9	4134			
PFOA	7.163	413.0 -> 369.0	52983	2.36	µg/L	99
		413.0 -> 169.0	9552			
PFOS	8.300	498.9 -> 79.9	10237	2.25	µg/L	m 80
		498.9 -> 98.8	4907			
PFPeA	4.386	263.0 -> 219.0	47402	5.06	µg/L	100
PFPeS	6.571	349.1 -> 79.9	12977	2.36	µg/L	96
		349.1 -> 98.9	6033			
PFTeDA	9.747	713.1 -> 669.0	27066	2.65	µg/L	99
		713.1 -> 168.9	2055			
PFTrDA	9.413	663.0 -> 619.0	36342	2.65	µg/L	100
		663.0 -> 168.9	2937			
PFUnDA	8.602	563.1 -> 519.0	41690	2.49	µg/L	97
		563.1 -> 269.1	6679			
11CI-PF3OUdS	9.454	630.9 -> 450.9	37538	4.73	µg/L	98
		632.9 -> 452.9	11598			
9CI-PF3ONS	8.641	530.8 -> 351.0	66366	4.71	µg/L	91
		532.8 -> 353.0	22949			
ADONA	6.767	376.9 -> 250.9	179791	4.89	µg/L	98
		376.9 -> 84.8	47403			
HFPO-DA	5.958	284.9 -> 168.9	13664	5.15	µg/L	96
		284.9 -> 184.9	1465			
3:3FTCA	3.846	241.0 -> 177.0	4214	17.13	µg/L	100
		241.0 -> 117.0	572			
5:3FTCA	6.246	341.0 -> 237.1	156956	56.33	µg/L	99
		341.0 -> 217.0	112960			
7:3FTCA	7.632	441.0 -> 316.9	97875	57.50	µg/L	93
		441.0 -> 336.9	207259			
EtFOSA	10.978	526.0 -> 219.0	11823	5.17	µg/L	98
		526.0 -> 169.0	15323			
EtFOSE	10.912	630.0 -> 58.9	27462	13.10	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	9961	5.30	µg/L	95
		511.9 -> 169.0	13865			
MeFOSE	10.679	616.1 -> 58.9	23453	12.60	µg/L	100
PFDoDS	9.861	699.1 -> 79.9	3182	2.25	µg/L	98
		699.1 -> 98.8	1763			
NFDHA	5.475	295.0 -> 201.0	9257	4.96	µg/L	100
		295.0 -> 84.9	2562			
PFMBA	4.800	279.0 -> 85.1	36906	5.17	µg/L	100
PFMPA	3.526	229.0 -> 84.9	19583	3.32	µg/L	100
PFEESA	6.050	314.8 -> 134.9	84203	4.40	µg/L	99
		314.8 -> 82.9	2807			

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

7.3.1
7

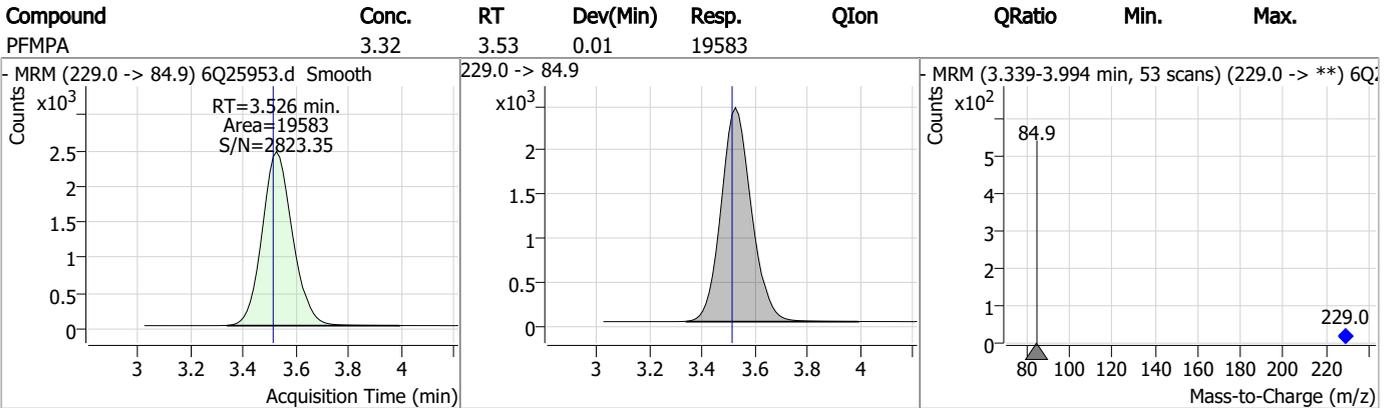
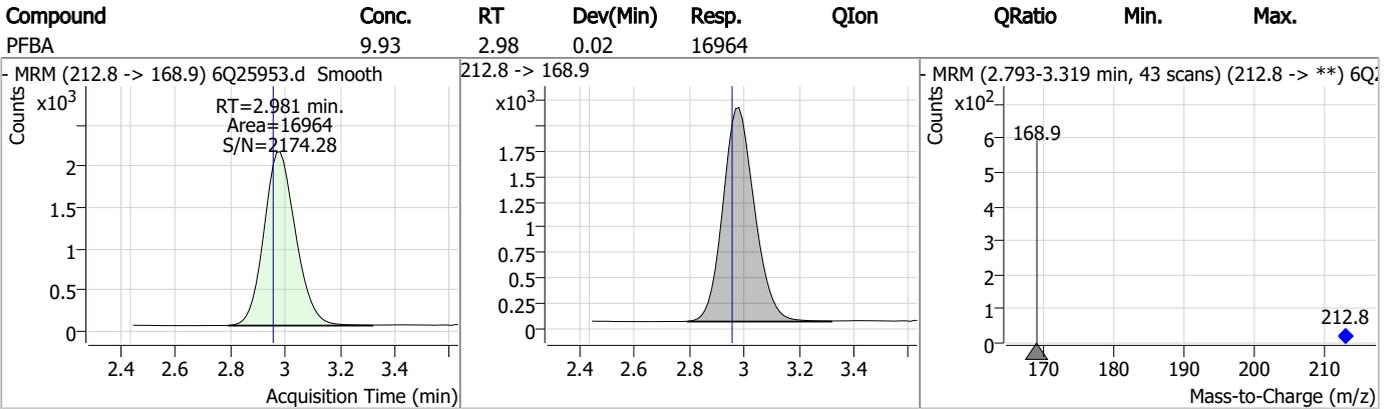
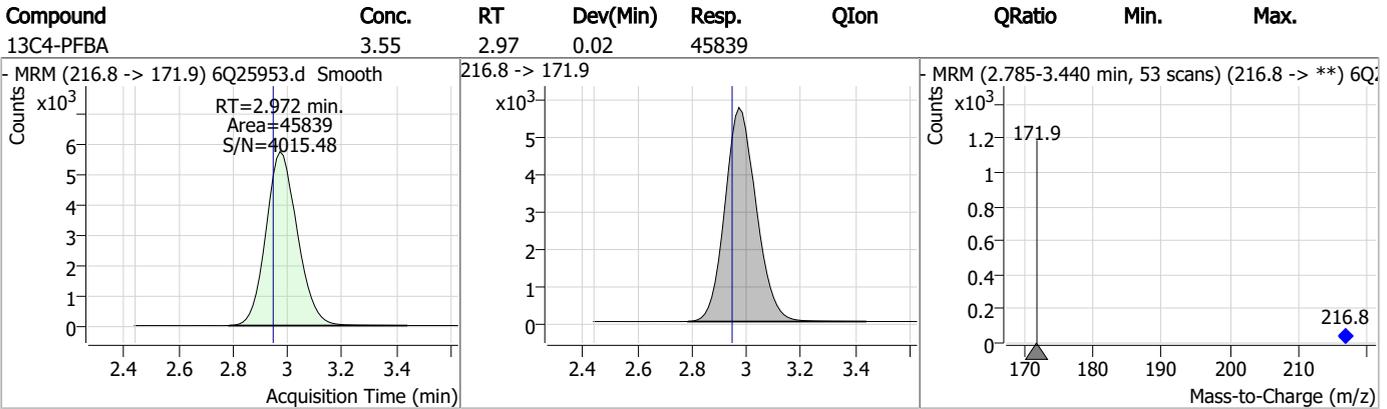
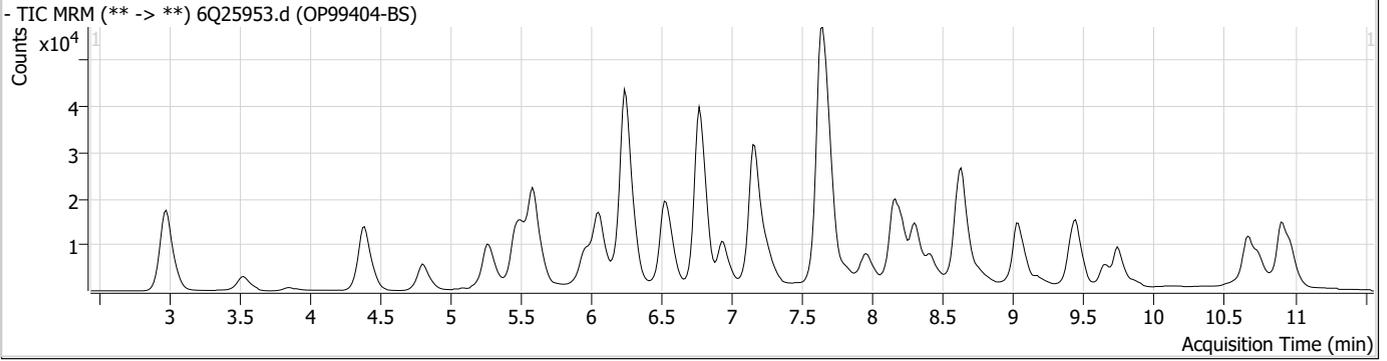
Perfluorinated Compounds by LC/MS/MS

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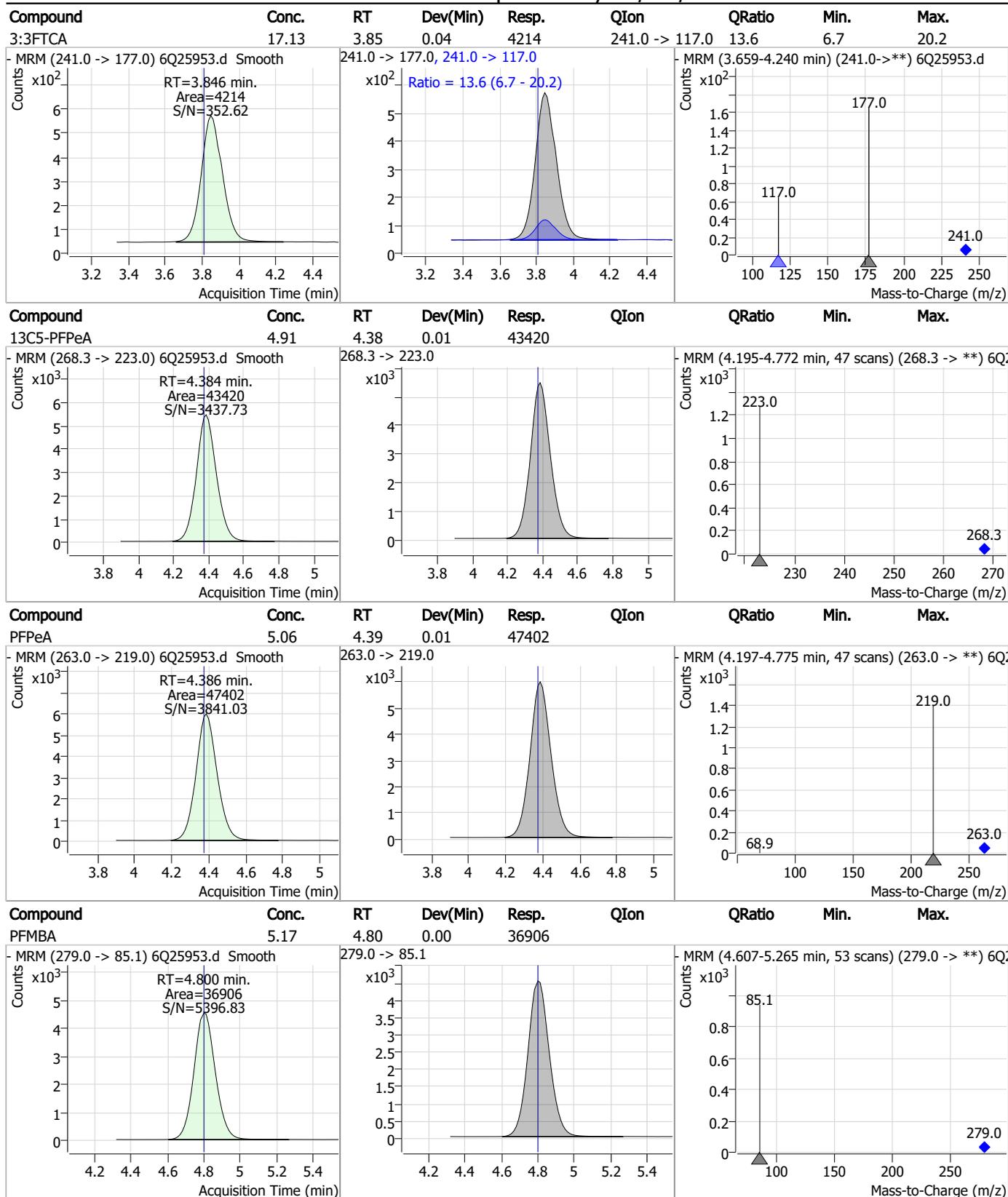
7.3.1

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Perfluorinated Compounds by LC/MS/MS



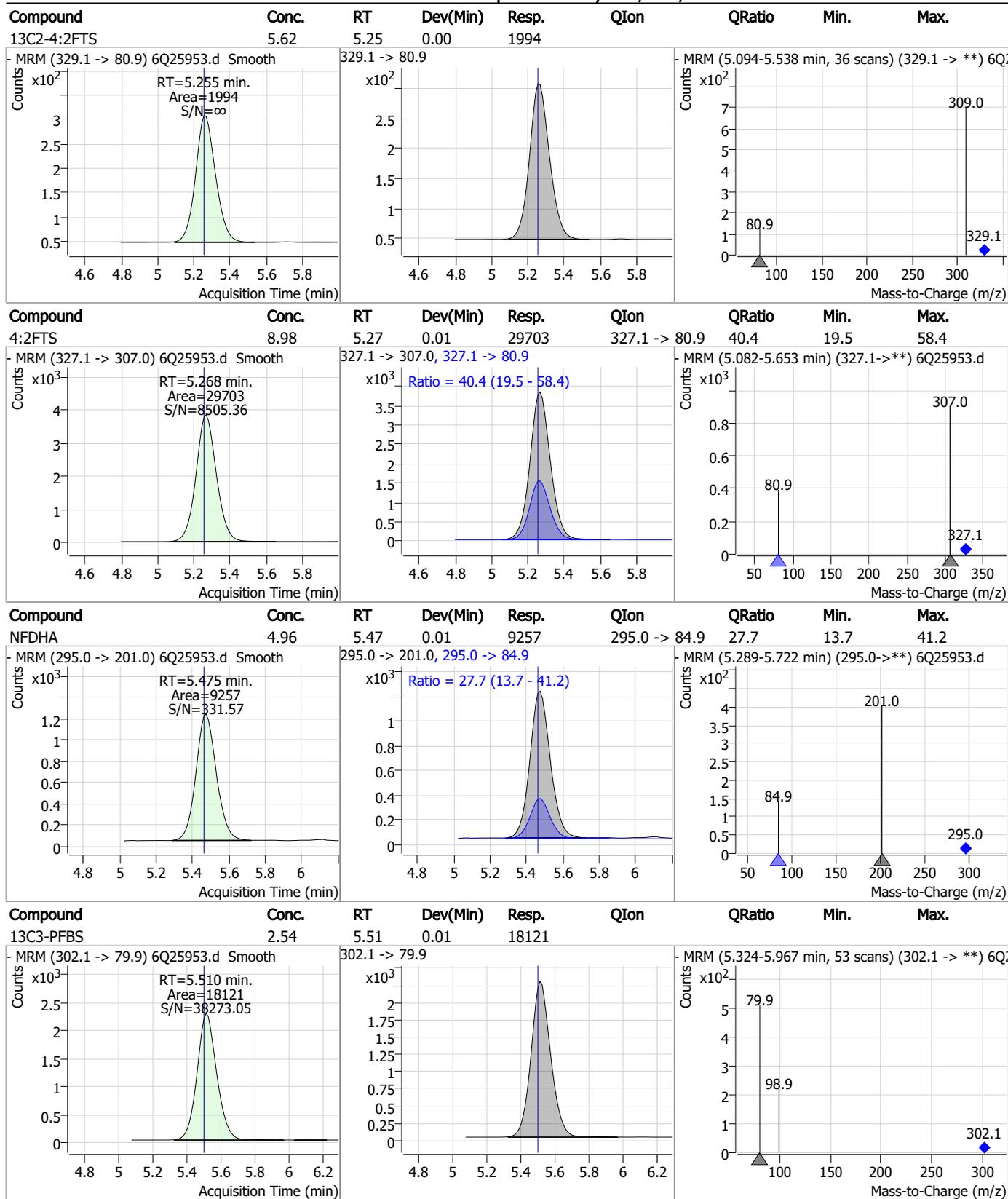
Perfluorinated Compounds by LC/MS/MS



7.3.1
7



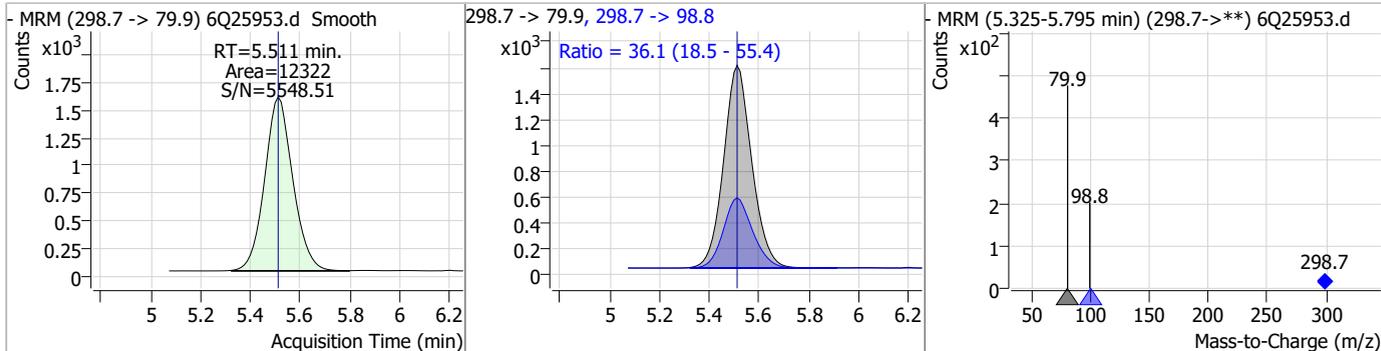
Perfluorinated Compounds by LC/MS/MS



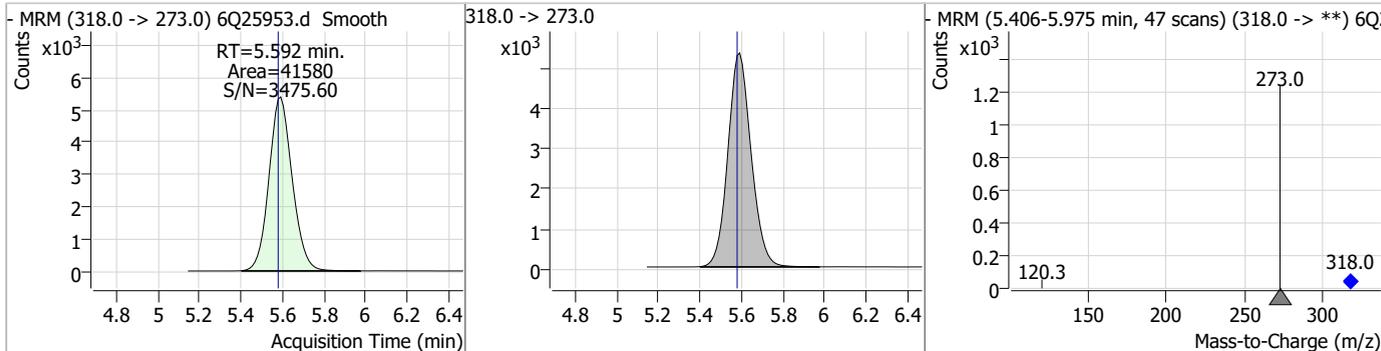
7.3.1
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Perfluorinated Compounds by LC/MS/MS

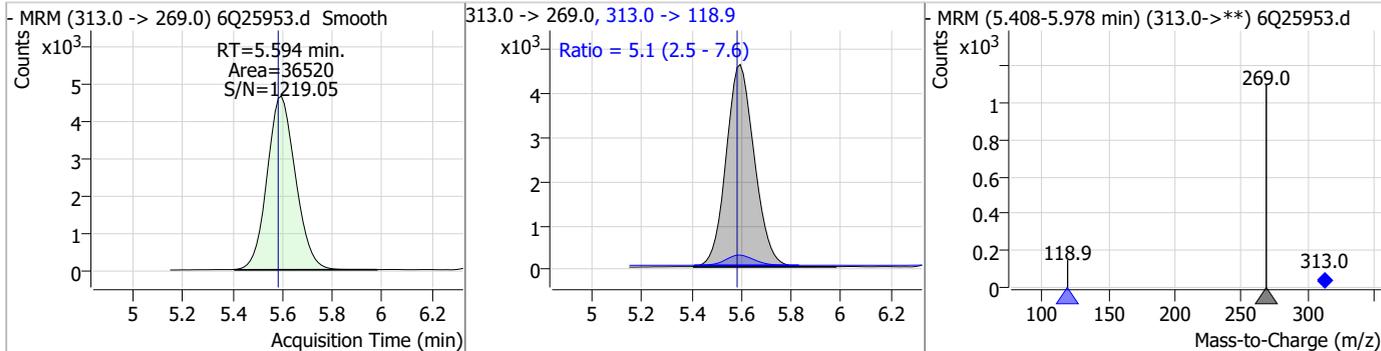
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.27	5.51	0.00	12322	298.7 -> 98.8	36.1	18.5	55.4



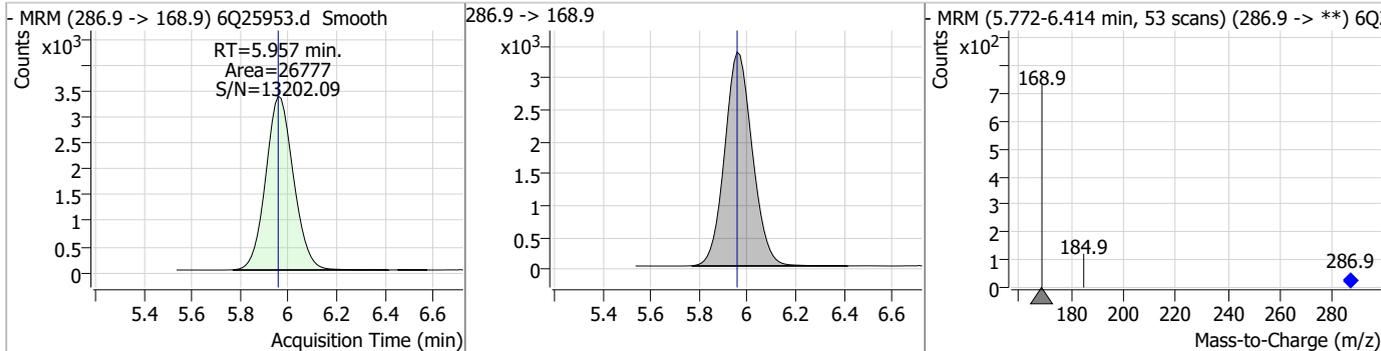
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.57	5.59	0.01	41580				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.46	5.59	0.01	36520	313.0 -> 118.9	5.1	2.5	7.6

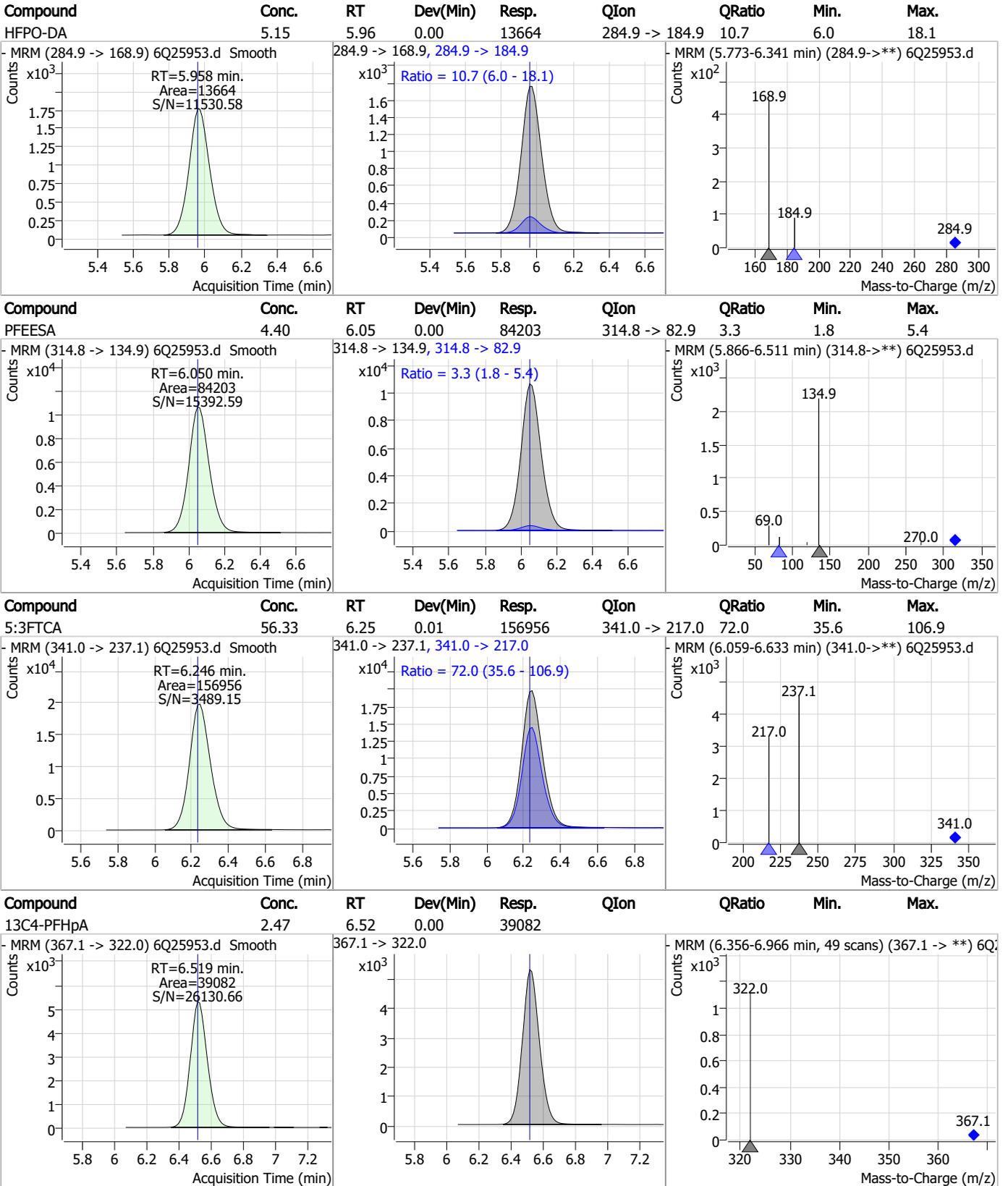


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	5.96	0.00	26777				



7.3.1
7

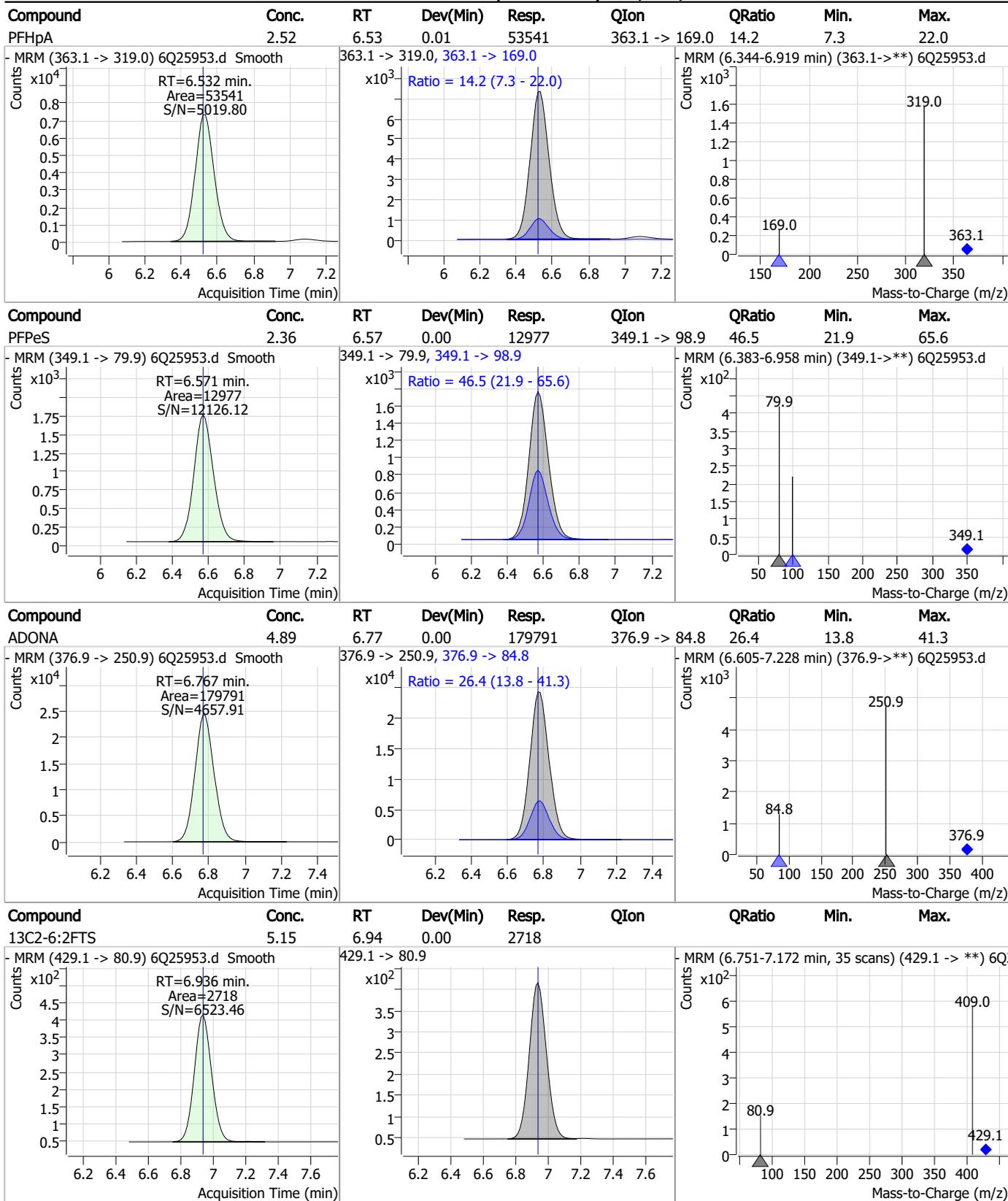
Perfluorinated Compounds by LC/MS/MS



7.3.1

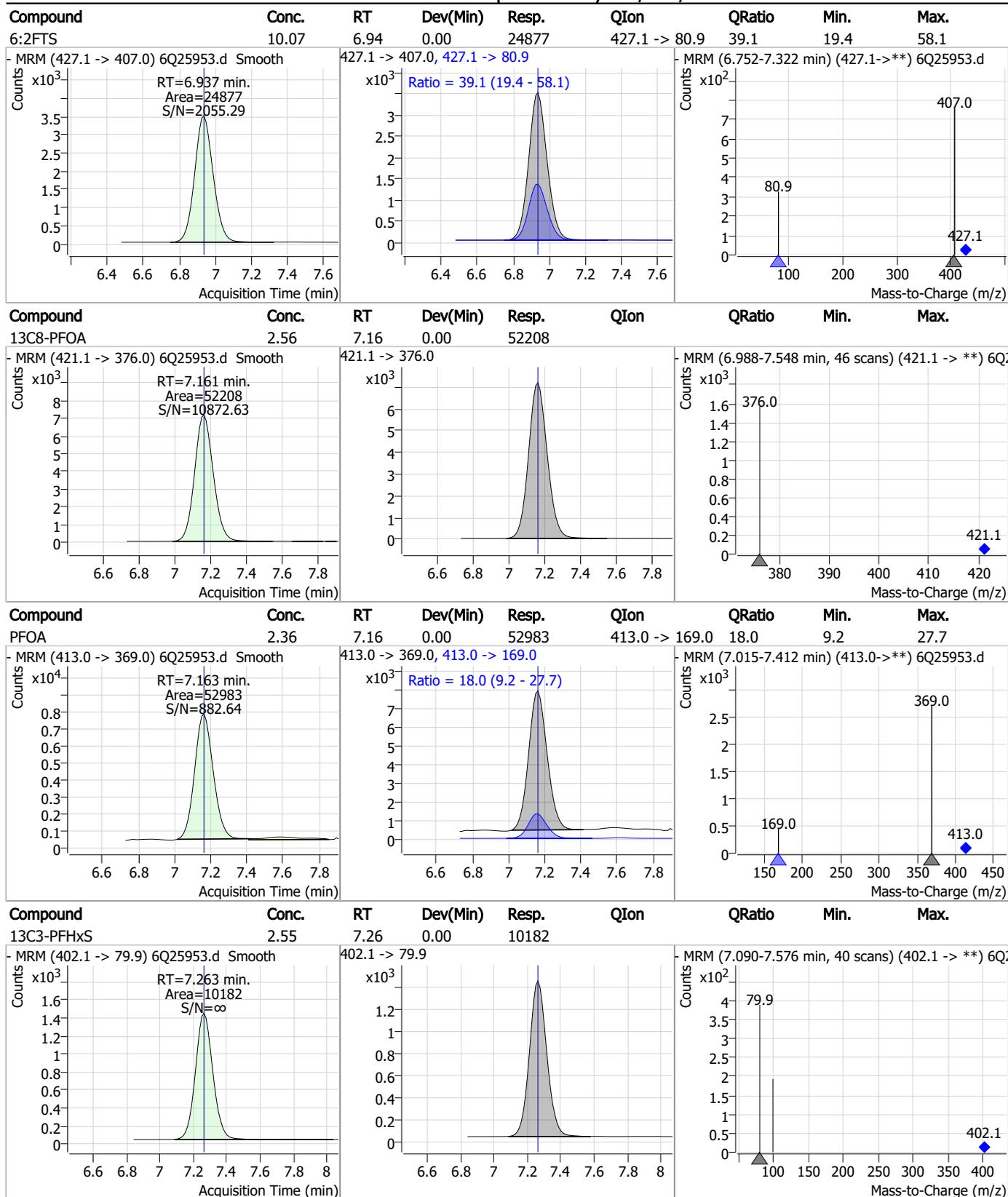
7

Perfluorinated Compounds by LC/MS/MS



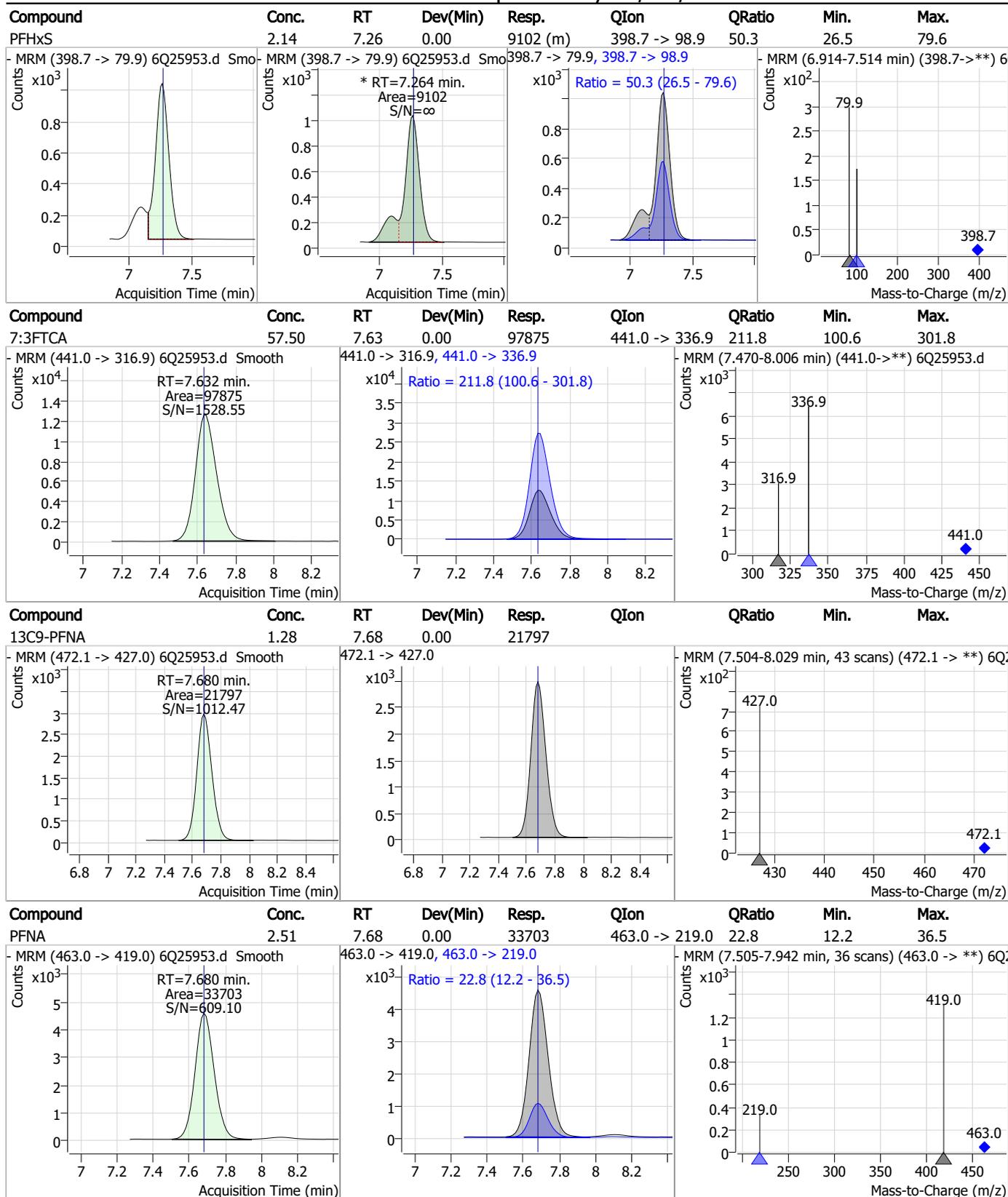
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Perfluorinated Compounds by LC/MS/MS



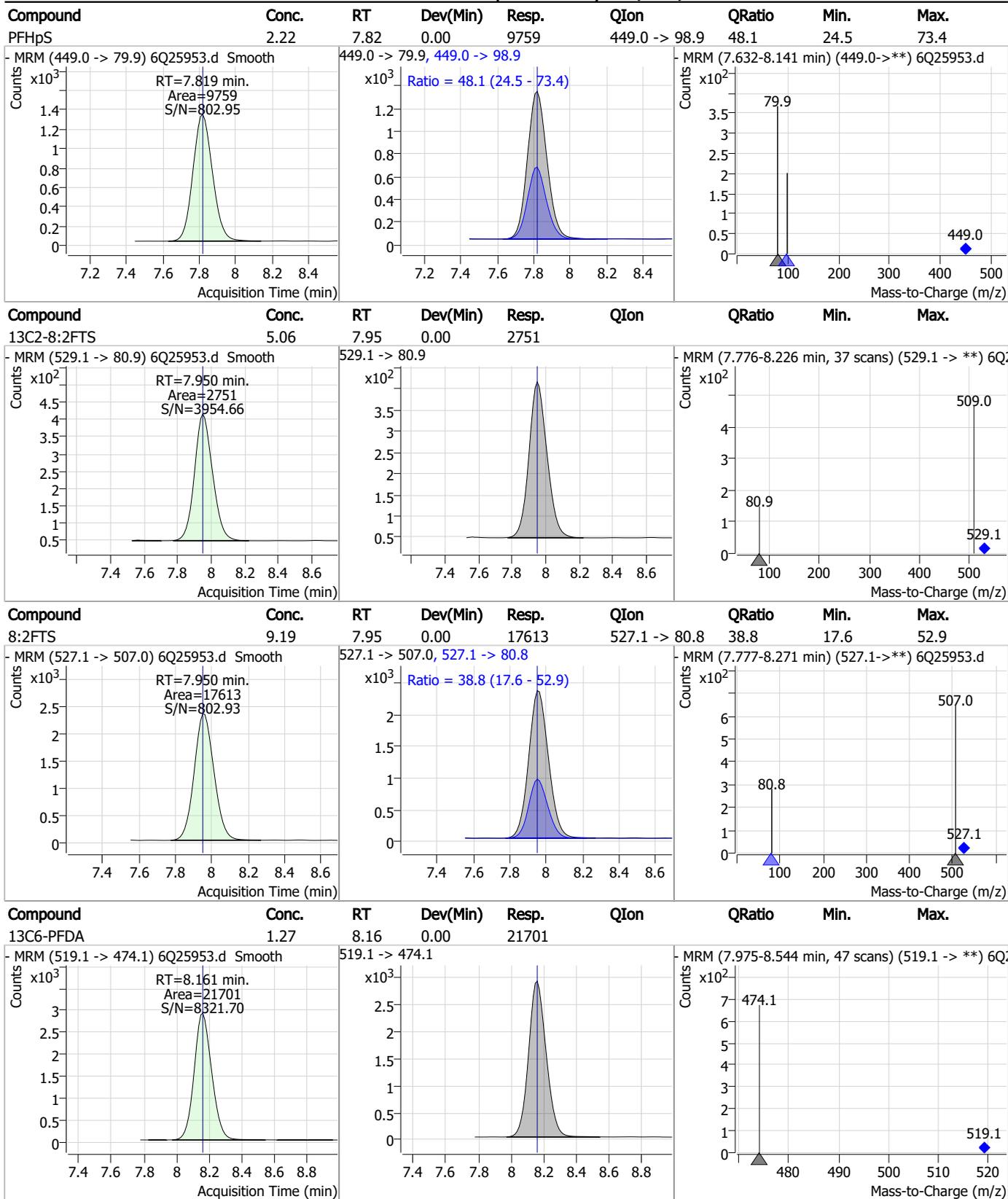
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Perfluorinated Compounds by LC/MS/MS



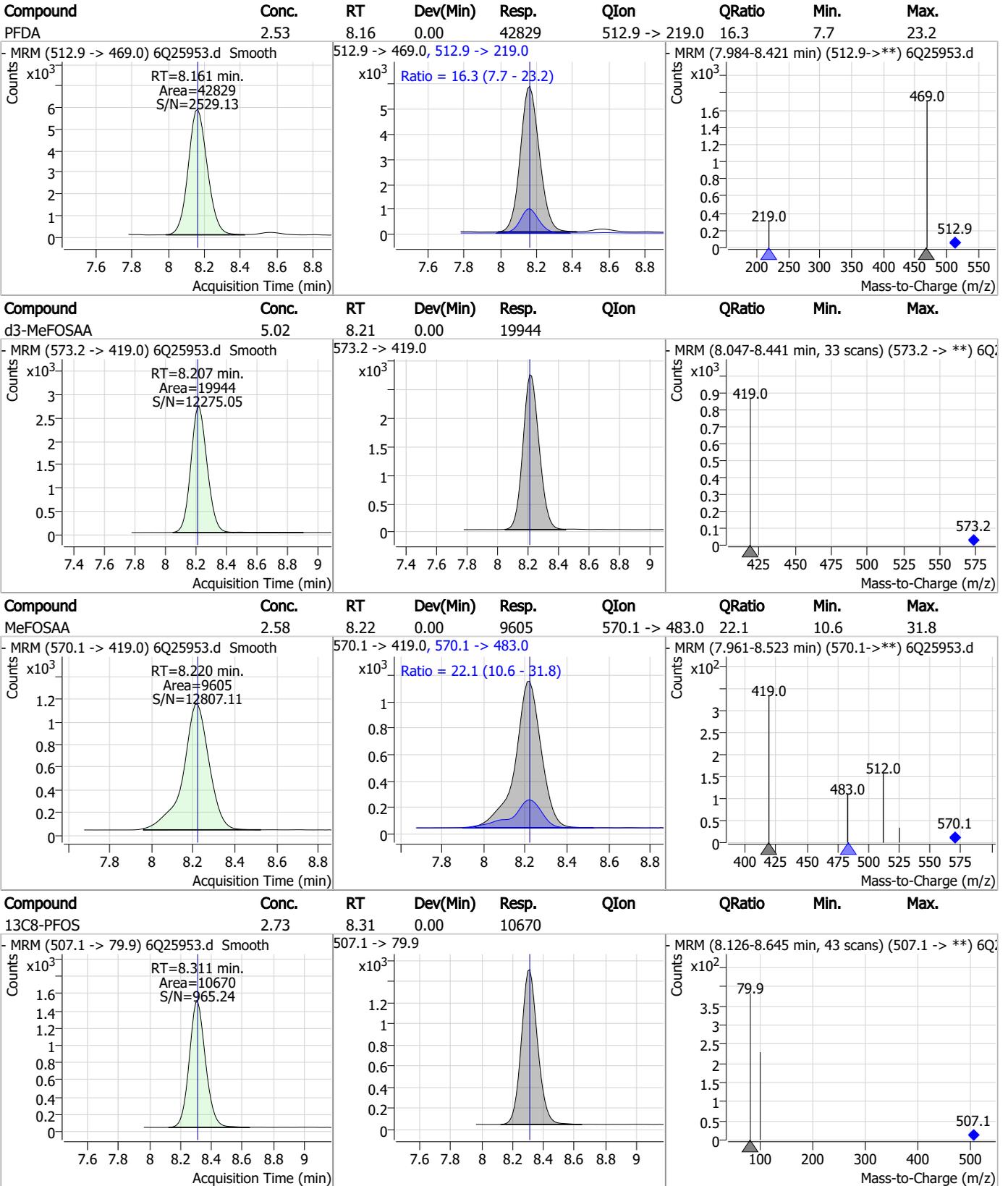
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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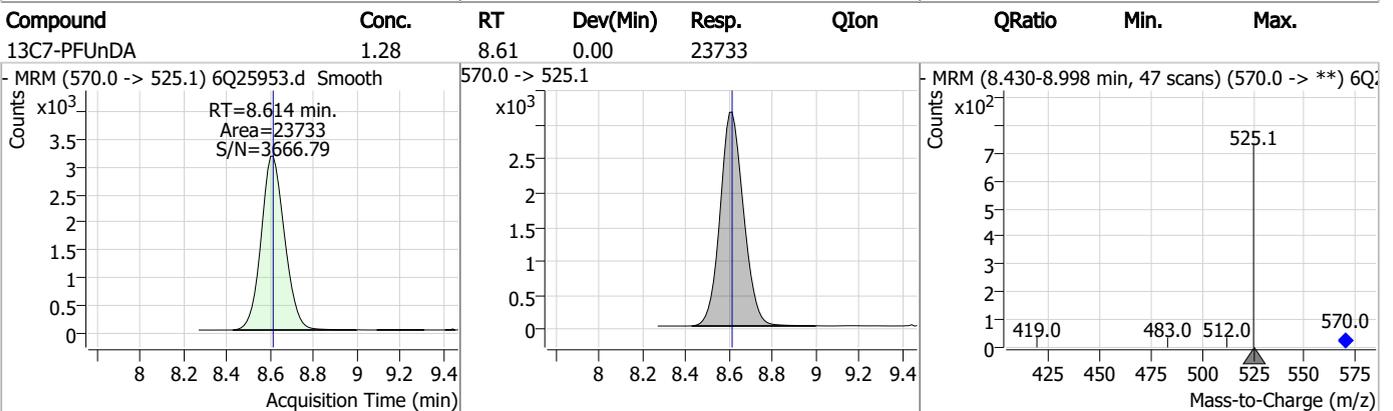
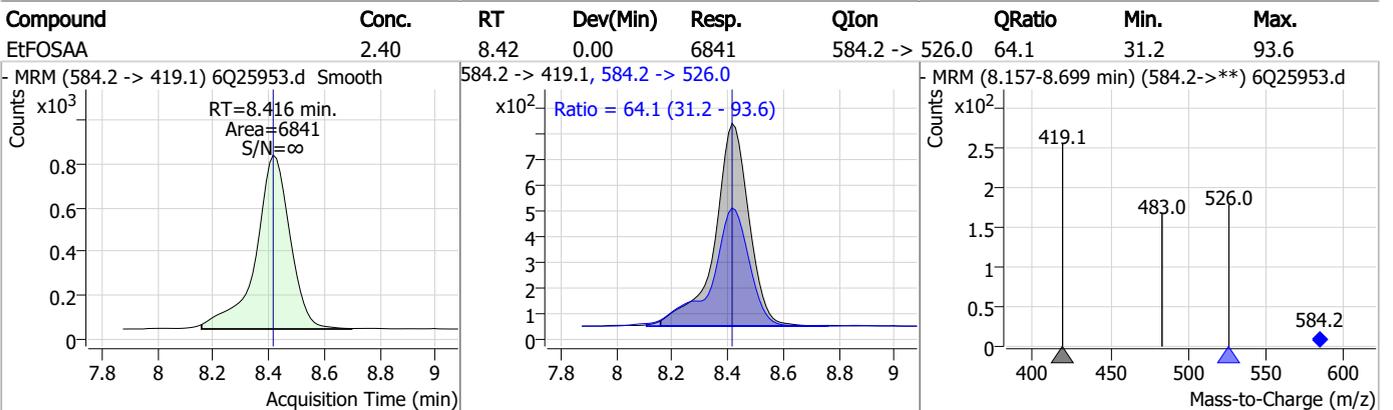
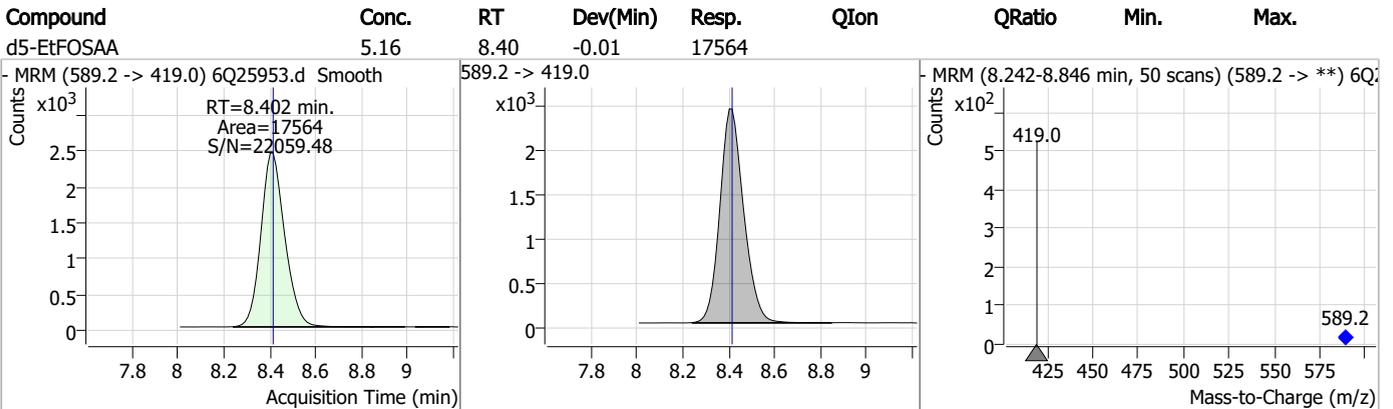
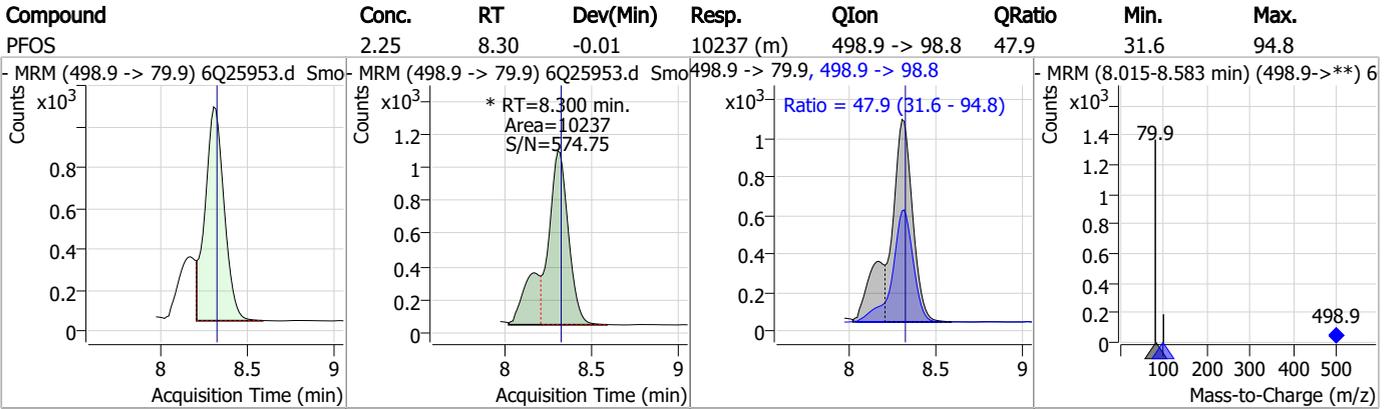
Perfluorinated Compounds by LC/MS/MS



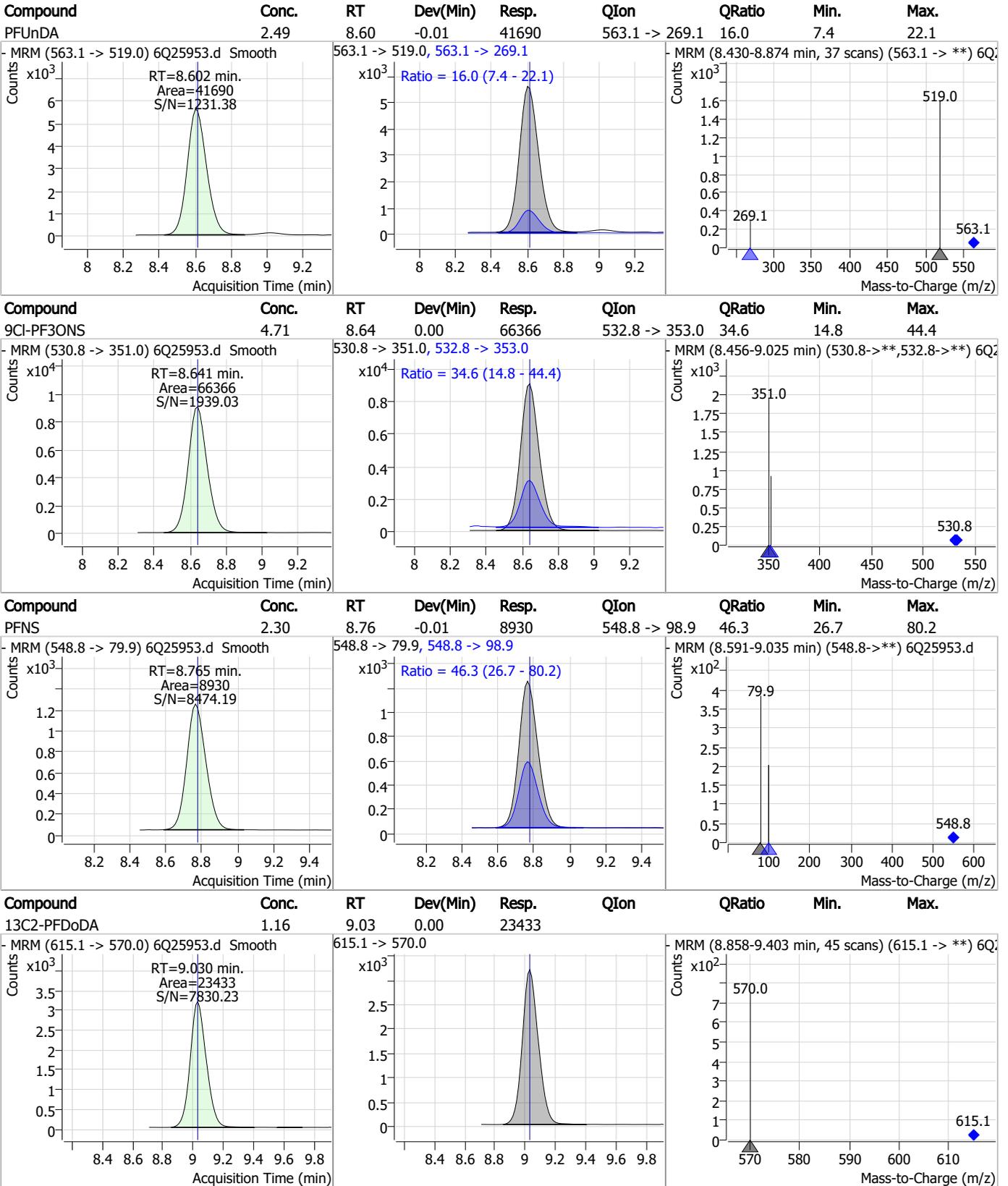
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Perfluorinated Compounds by LC/MS/MS



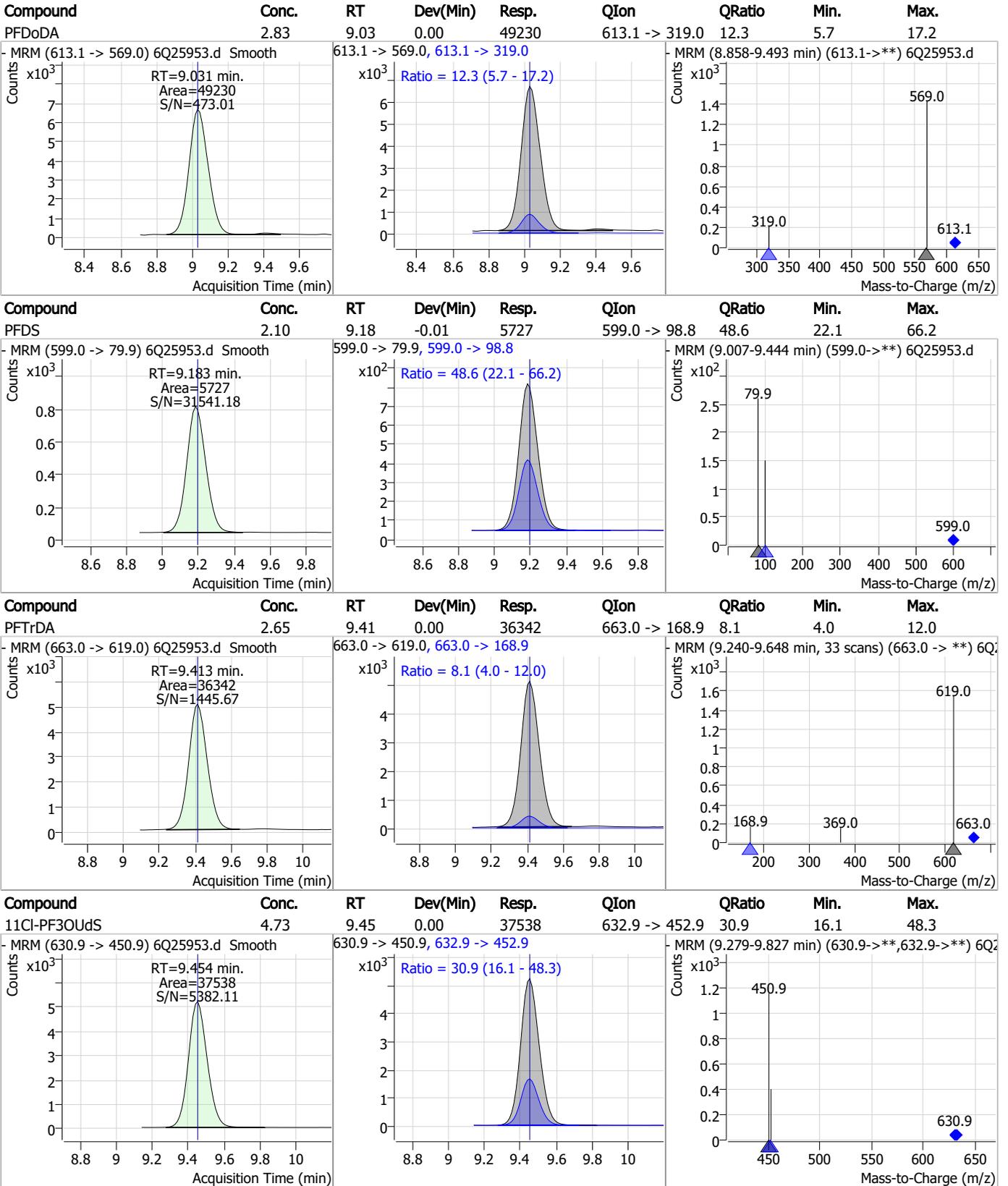
Perfluorinated Compounds by LC/MS/MS



7.3.1

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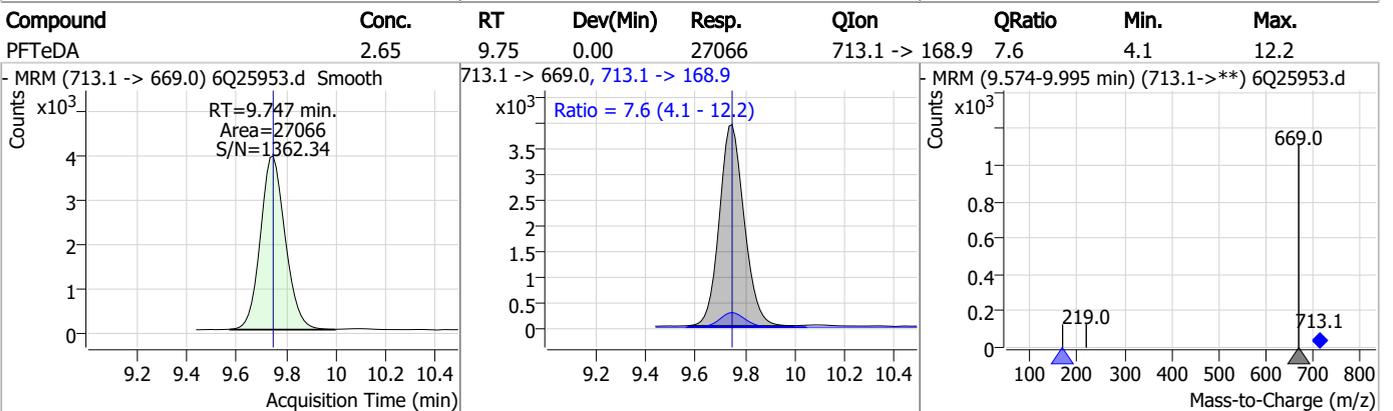
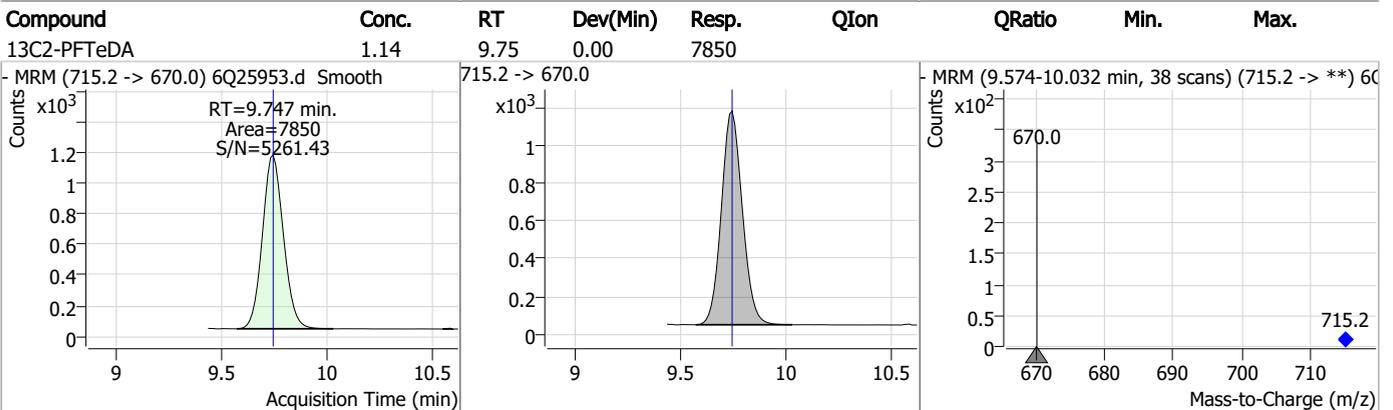
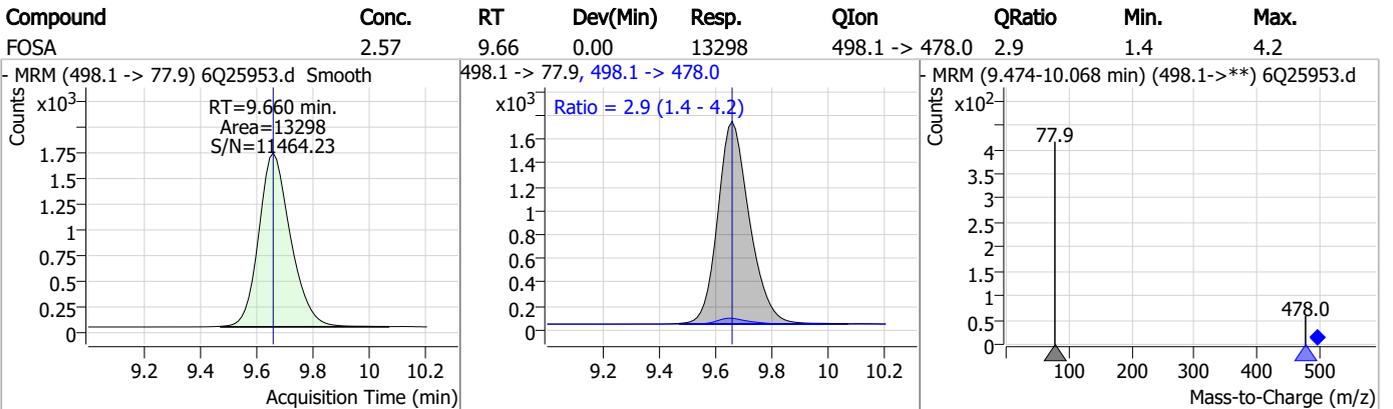
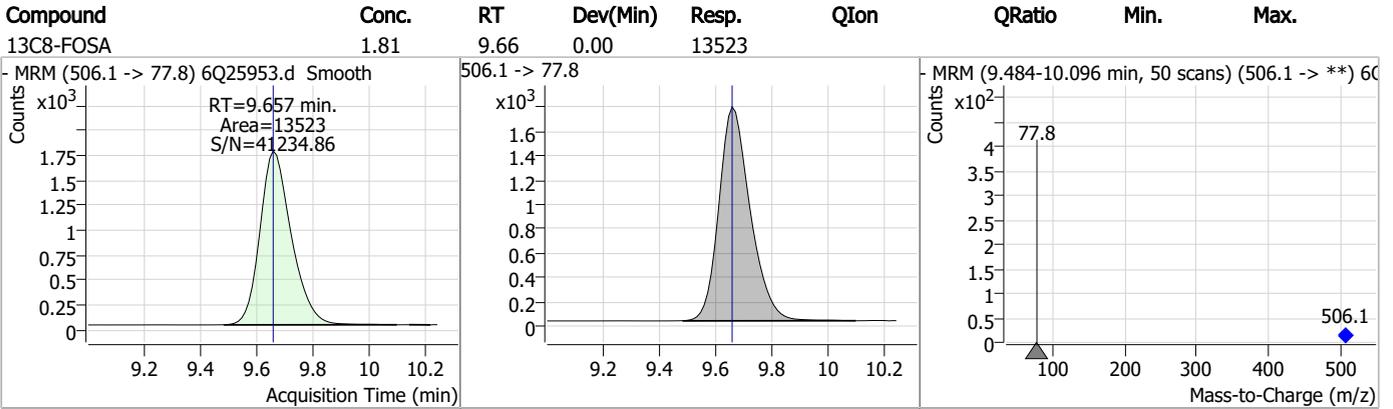
Perfluorinated Compounds by LC/MS/MS



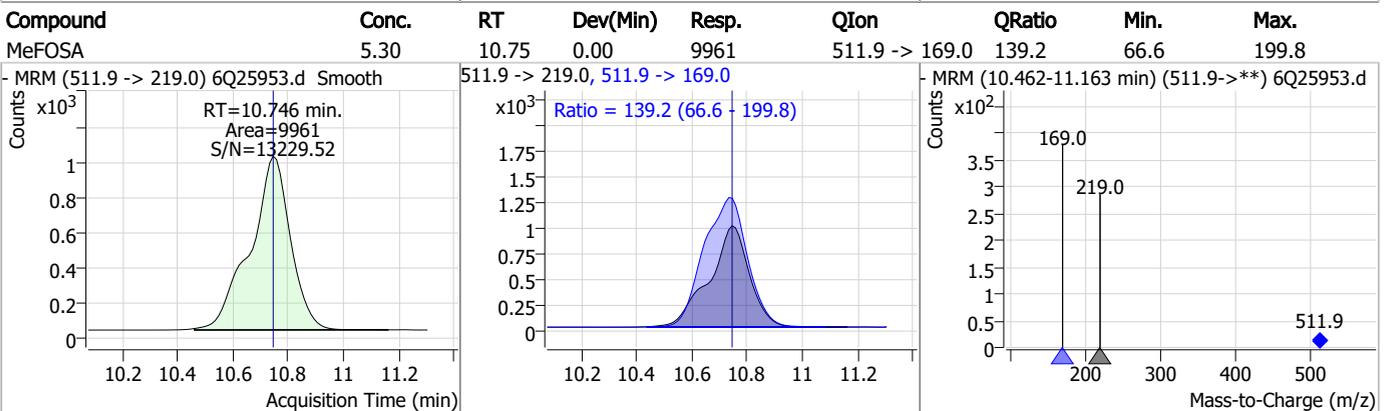
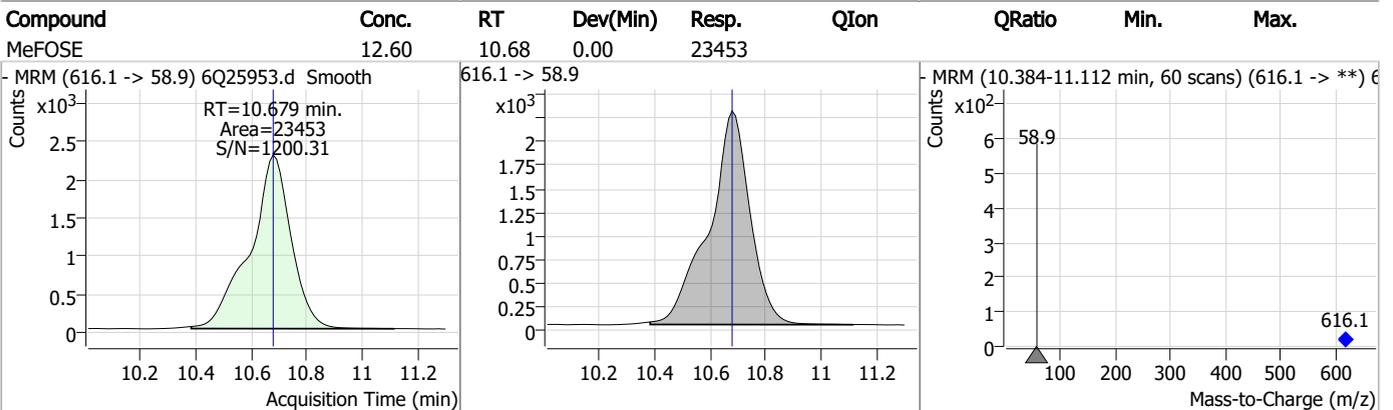
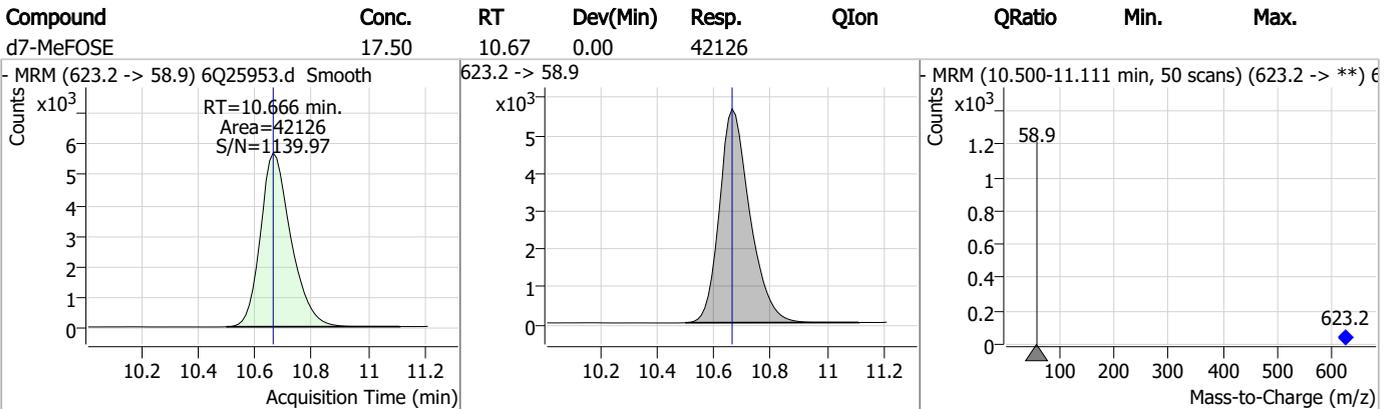
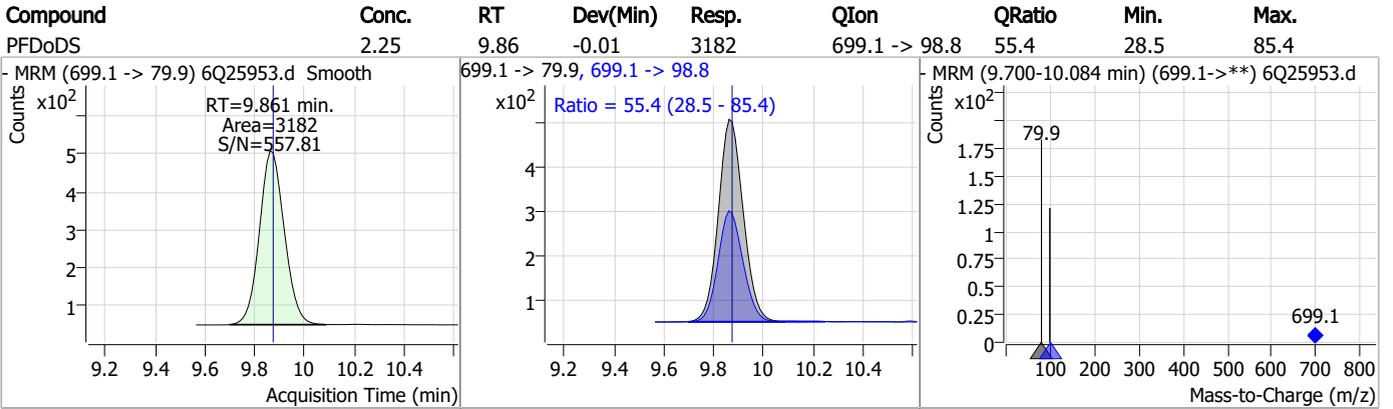
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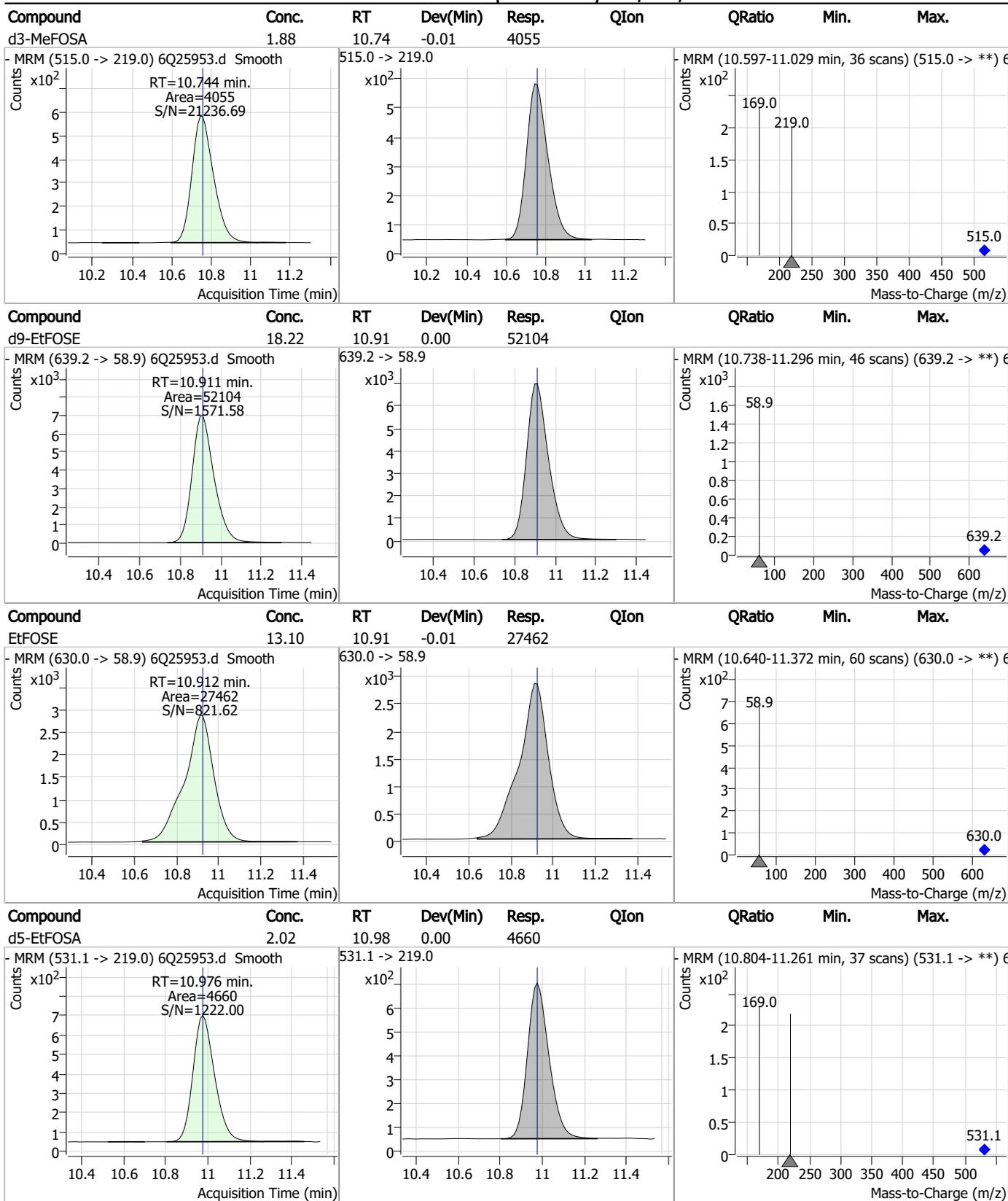
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



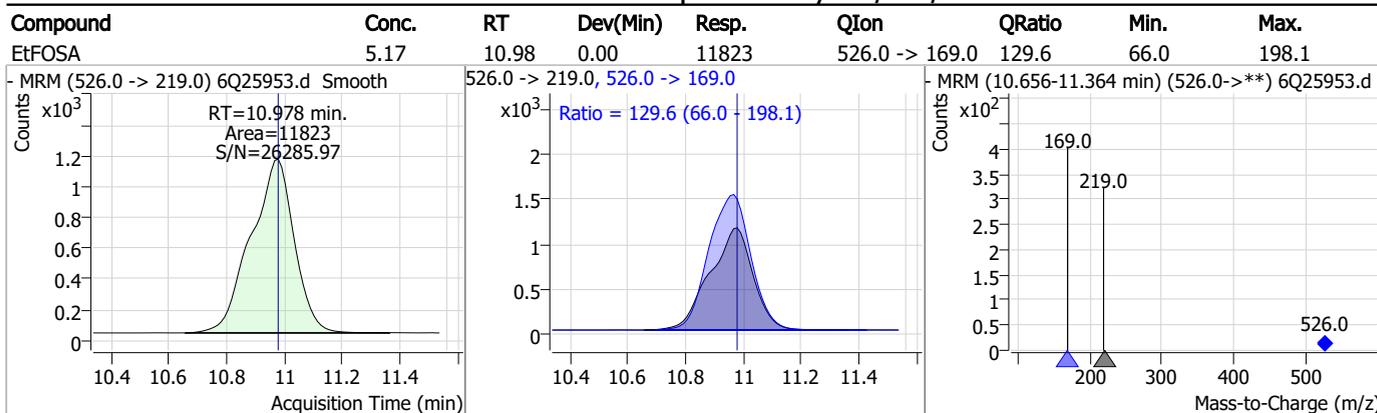
Perfluorinated Compounds by LC/MS/MS



7.3.1

7

Perfluorinated Compounds by LC/MS/MS



7.3.1
7

Manual Integration Approval Summary

Sample Number: OP99404-BS Method: EPA DRAFT 1633
Lab FileID: 6Q25953.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 18:09 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.3.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25954.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 6:23:57 PM
 Sample Name : OP99404-LLBS:3
 Vial : P2-A2
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	132911	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	45975	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	41975	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	40814	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	52514	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	21548	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	23171	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	24569	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	26459	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	8489	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	12922	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18619	2.50 µg/L	0.012
M3-PFHxS	7.264	402.1 -> 79.9	10641	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	10809	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2133	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	2799	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2855	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	21050	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	28616	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	16848	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	40394	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	51876	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4185	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	3788	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	9076	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	51196	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6279	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	58813	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20385	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21013	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	37872	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2133	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.6%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2799	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2855	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C2-PFDoDA	9.030	615.1 -> 570.0	26459	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	8489	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C3-PFBS	5.510	302.1 -> 79.9	18619	2.62 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.7%		
13C3-PFHxS	7.264	402.1 -> 79.9	10641	2.67 µg/L	0.000

7.32
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 = 106.7%	
13C4-PFBA	2.972	216.8 -> 171.9	132911	10.76 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C4-PFHpA	6.531	367.1 -> 322.0	40814	2.66 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C5-PFHxA	5.592	318.0 -> 273.0	41975	2.68 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C5-PFPeA	4.384	268.3 -> 223.0	45975	5.36 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C6-PFDA	8.161	519.1 -> 474.1	23171	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C7-PFUnDA	8.614	570.0 -> 525.1	24569	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-FOSA	9.657	506.1 -> 77.8	12922	1.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 69.0%	
13C8-PFOA	7.161	421.1 -> 376.0	52514	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-PFOS	8.311	507.1 -> 79.9	10809	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C9-PFNA	7.680	472.1 -> 427.0	21548	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSAA	8.219	573.2 -> 419.0	21050	5.27 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	28616	10.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
d3-MeFOSA	10.744	515.0 -> 219.0	3788	1.74 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 69.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	16848	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
d7-MeFOSE	10.666	623.2 -> 58.9	40394	16.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 66.8%	
d9-EtFOSE	10.911	639.2 -> 58.9	51876	18.05 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 72.2%	
d5-EtFOSA	10.976	531.1 -> 219.0	4185	1.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.1%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	9496	2.68 µg/L	96
		327.1 -> 80.9	3927		
6:2FTS	6.937	427.1 -> 407.0	7267	2.86 µg/L	90
		427.1 -> 80.9	3252		
8:2FTS	7.962	527.1 -> 507.0	5837	2.93 µg/L	99
		527.1 -> 80.8	2043		
EtFOSAA	8.416	584.2 -> 419.1	2065	0.75 µg/L	86
		584.2 -> 526.0	1515		
FOSA	9.660	498.1 -> 77.9	4243	0.86 µg/L	99
		498.1 -> 478.0	134		
MeFOSAA	8.220	570.1 -> 419.0	2899	0.74 µg/L	99
		570.1 -> 483.0	596		
PFBA	2.981	212.8 -> 168.9	14754	2.98 µg/L	100
PFBS	5.511	298.7 -> 79.9	3808	0.68 µg/L	97
		298.7 -> 98.8	1329		
PFDA	8.161	512.9 -> 469.0	13427	0.74 µg/L	96
		512.9 -> 219.0	2292		
PFDODA	9.031	613.1 -> 569.0	14249	0.72 µg/L	98
		613.1 -> 319.0	1745		
PFDS	9.183	599.0 -> 79.9	1817	0.66 µg/L	92

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	899	0.71	µg/L	99
		363.1 -> 319.0	15775			
PFHpS	7.819	363.1 -> 169.0	2337	0.69	µg/L	98
		449.0 -> 79.9	3057			
PFHxA	5.594	449.0 -> 98.9	1447	0.77	µg/L	100
		313.0 -> 269.0	11582			
PFHxS	7.264	313.0 -> 118.9	589	0.63	µg/L	99
		398.7 -> 79.9	2792			
PFNA	7.680	398.7 -> 98.9	1454	0.78	µg/L	96
		463.0 -> 419.0	10343			
PFNS	8.777	463.0 -> 219.0	2726	0.67	µg/L	98
		548.8 -> 79.9	2644			
PFOA	7.163	548.8 -> 98.9	1381	0.71	µg/L	99
		413.0 -> 369.0	15968			
PFOS	8.312	413.0 -> 169.0	3042	0.66	µg/L	85
		498.9 -> 79.9	3026			
PFPeA	4.386	498.9 -> 98.8	1556	1.46	µg/L	100
		263.0 -> 219.0	14460			
PFPeS	6.571	349.1 -> 79.9	3964	0.69	µg/L	95
		349.1 -> 98.9	1852			
PFTeDA	9.747	713.1 -> 669.0	7772	0.70	µg/L	100
		713.1 -> 168.9	622			
PFTrDA	9.413	663.0 -> 619.0	11056	0.71	µg/L	100
		663.0 -> 168.9	893			
PFUnDA	8.614	563.1 -> 519.0	13435	0.78	µg/L	100
		563.1 -> 269.1	1963			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	11342	1.34	µg/L	97
		632.9 -> 452.9	3483			
9Cl-PF3ONS	8.641	530.8 -> 351.0	20517	1.36	µg/L	92
		532.8 -> 353.0	6979			
ADONA	6.780	376.9 -> 250.9	55985	1.42	µg/L	98
		376.9 -> 84.8	14808			
HFPO-DA	5.958	284.9 -> 168.9	4166	1.47	µg/L	95
		284.9 -> 184.9	590			
3:3FTCA	3.846	241.0 -> 177.0	2129	2.99	µg/L	100
		241.0 -> 117.0	291			
5:3FTCA	6.246	341.0 -> 237.1	49250	17.51	µg/L	99
		341.0 -> 217.0	34827			
7:3FTCA	7.645	441.0 -> 316.9	31387	18.27	µg/L	96
		441.0 -> 336.9	61421			
EtFOSA	10.978	526.0 -> 219.0	3087	1.50	µg/L	97
		526.0 -> 169.0	4193			
EtFOSE	10.912	630.0 -> 58.9	7801	3.74	µg/L	100
		511.9 -> 219.0	2826			
MeFOSA	10.746	511.9 -> 169.0	3850	1.61	µg/L	97
		616.1 -> 58.9	6468			
MeFOSE	10.679	699.1 -> 79.9	995	3.62	µg/L	100
		699.1 -> 98.8	488			
PFDoDS	9.861	295.0 -> 201.0	3080	0.69	µg/L	89
		295.0 -> 84.9	870			
NFDHA	5.475	279.0 -> 85.1	11423	1.63	µg/L	99
		229.0 -> 84.9	9527			
PFMBA	4.800	314.8 -> 134.9	24603	1.51	µg/L	100
PFMPA	3.526	314.8 -> 82.9	912	1.53	µg/L	100
PFEESA	6.050			1.27	µg/L	100

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

7.3.2
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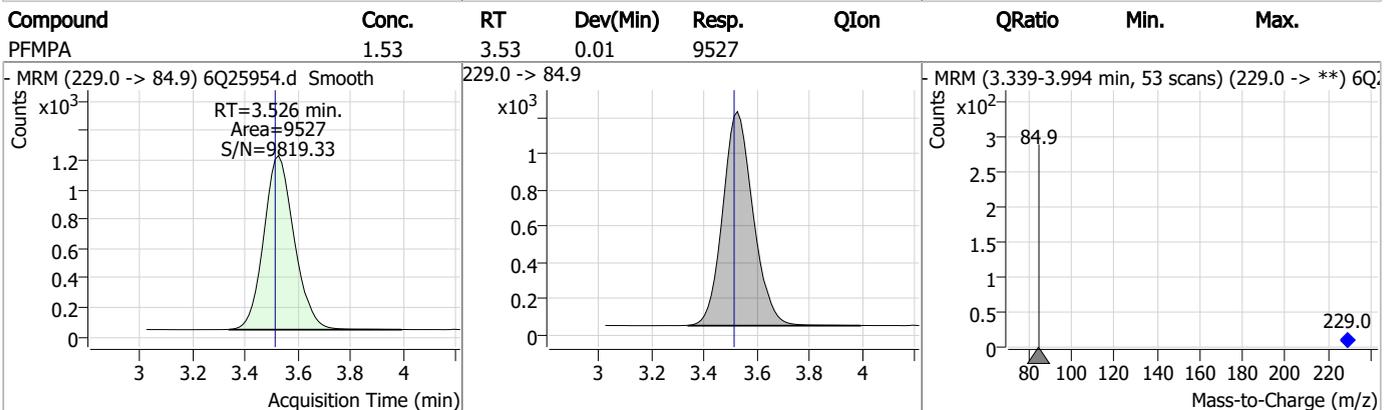
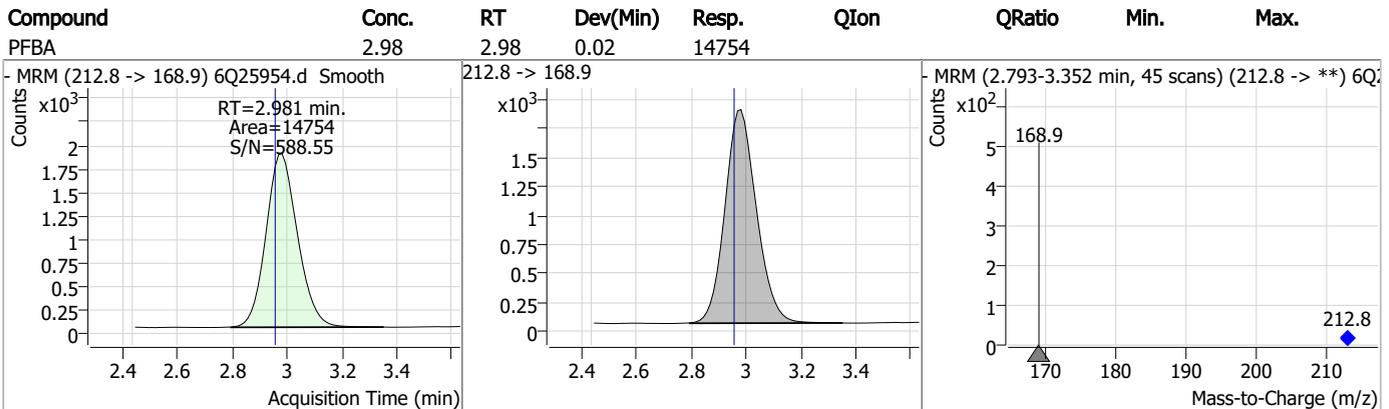
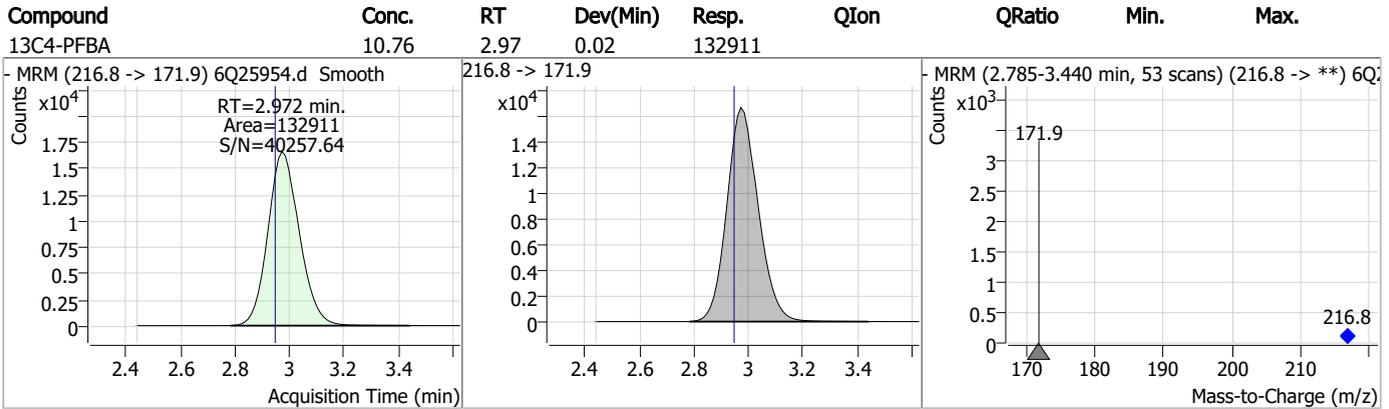
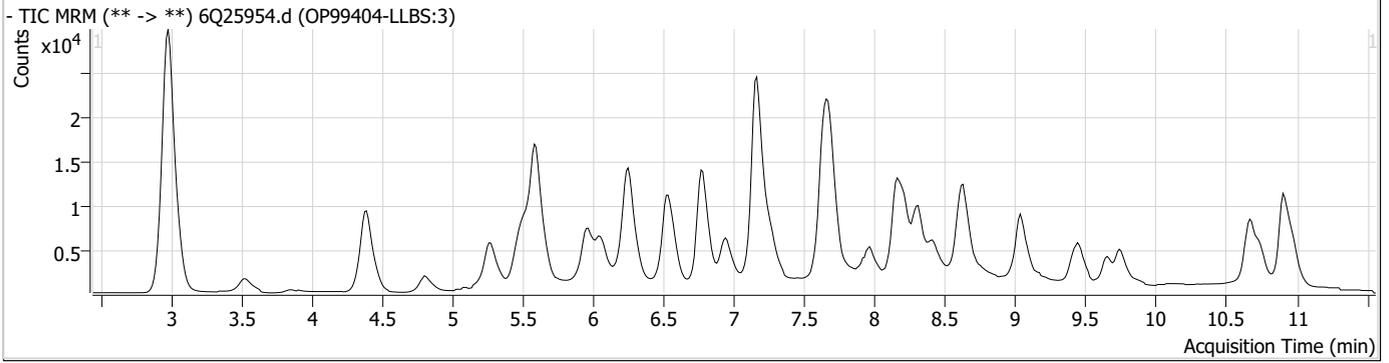
Perfluorinated Compounds by LC/MS/MS

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

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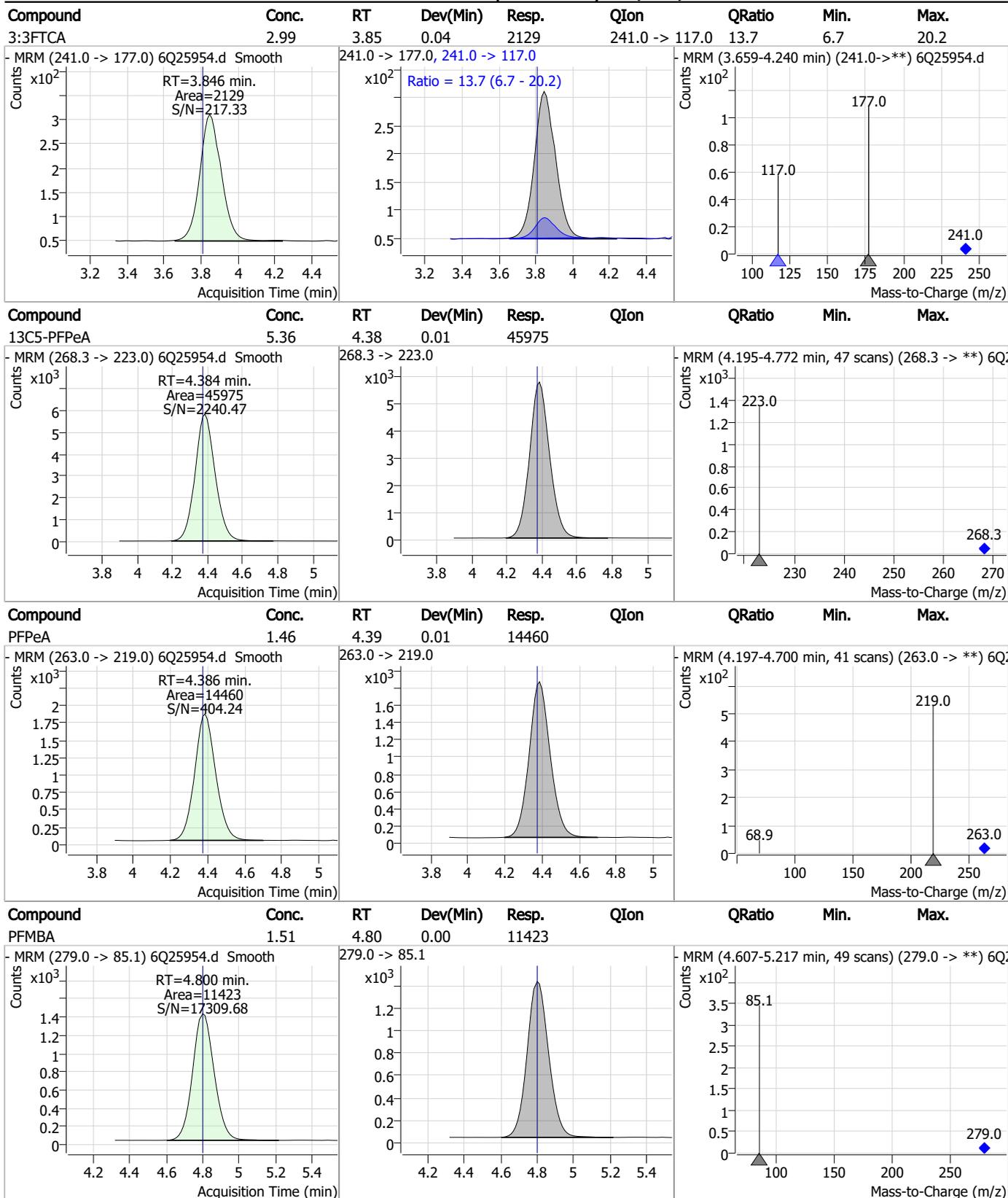
Perfluorinated Compounds by LC/MS/MS



7.3.2

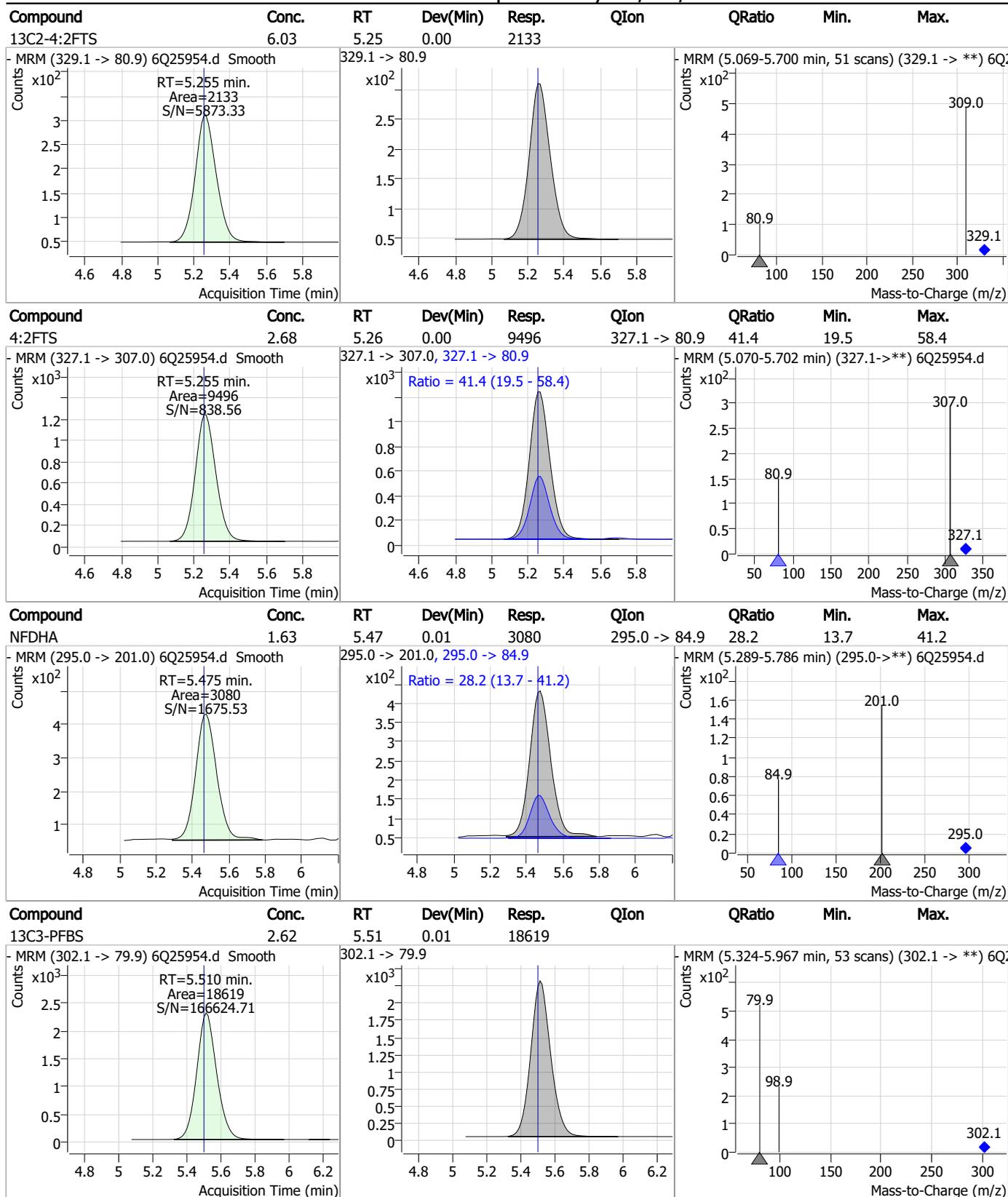
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Perfluorinated Compounds by LC/MS/MS



7.3.2
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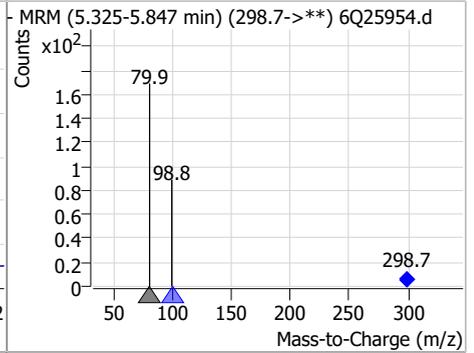
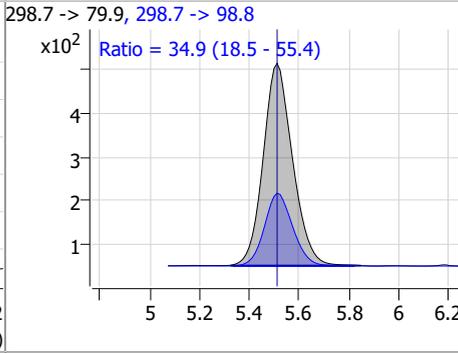
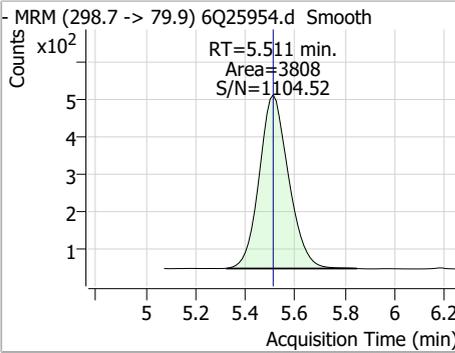
Perfluorinated Compounds by LC/MS/MS



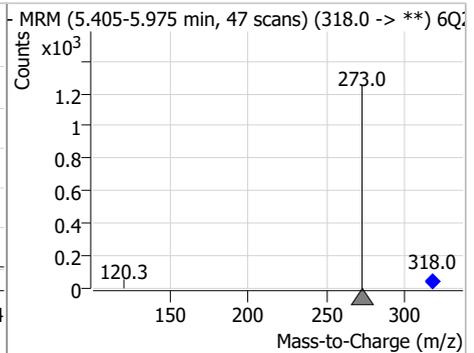
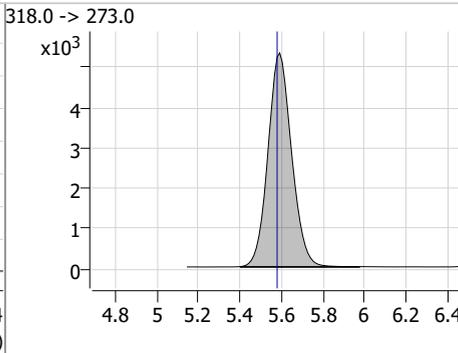
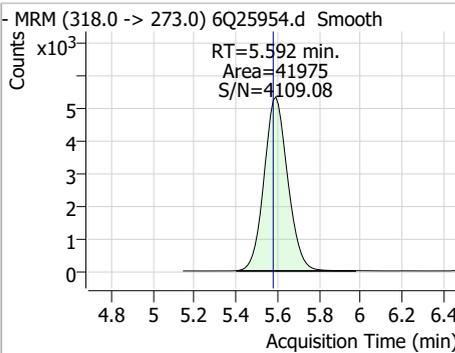
7.3.2
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Perfluorinated Compounds by LC/MS/MS

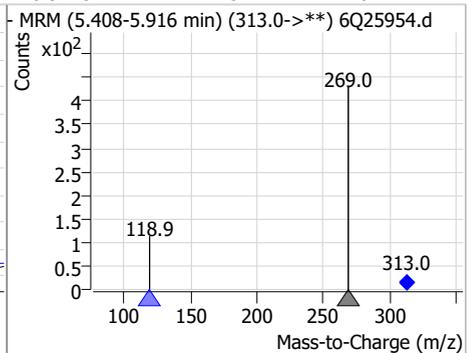
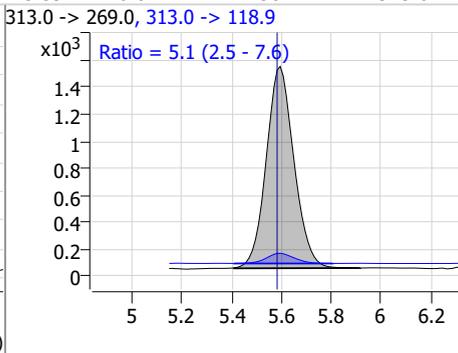
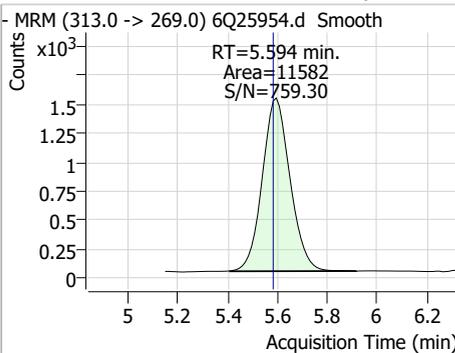
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.68	5.51	0.00	3808	298.7 -> 98.8	34.9	18.5	55.4



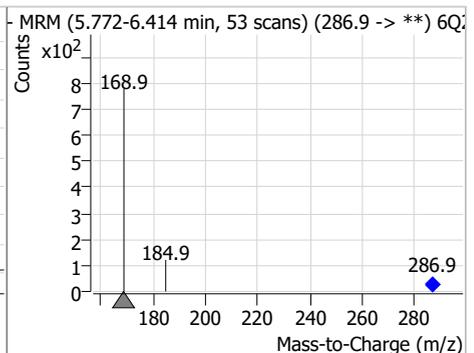
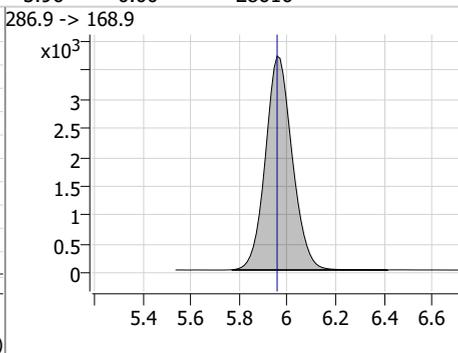
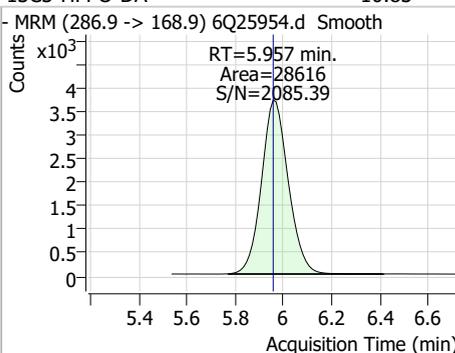
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.68	5.59	0.01	41975				



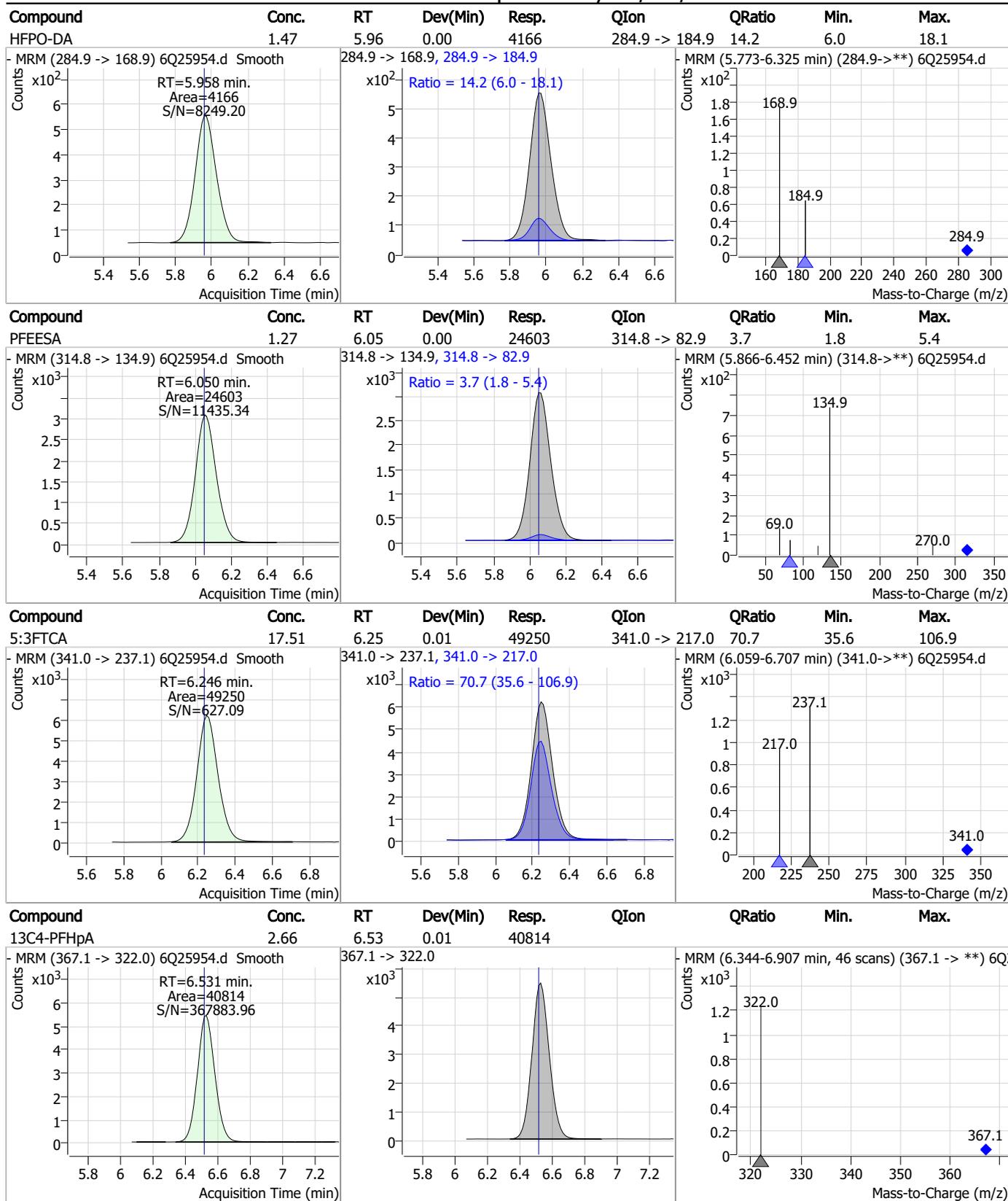
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.77	5.59	0.01	11582	313.0 -> 118.9	5.1	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.83	5.96	0.00	28616				

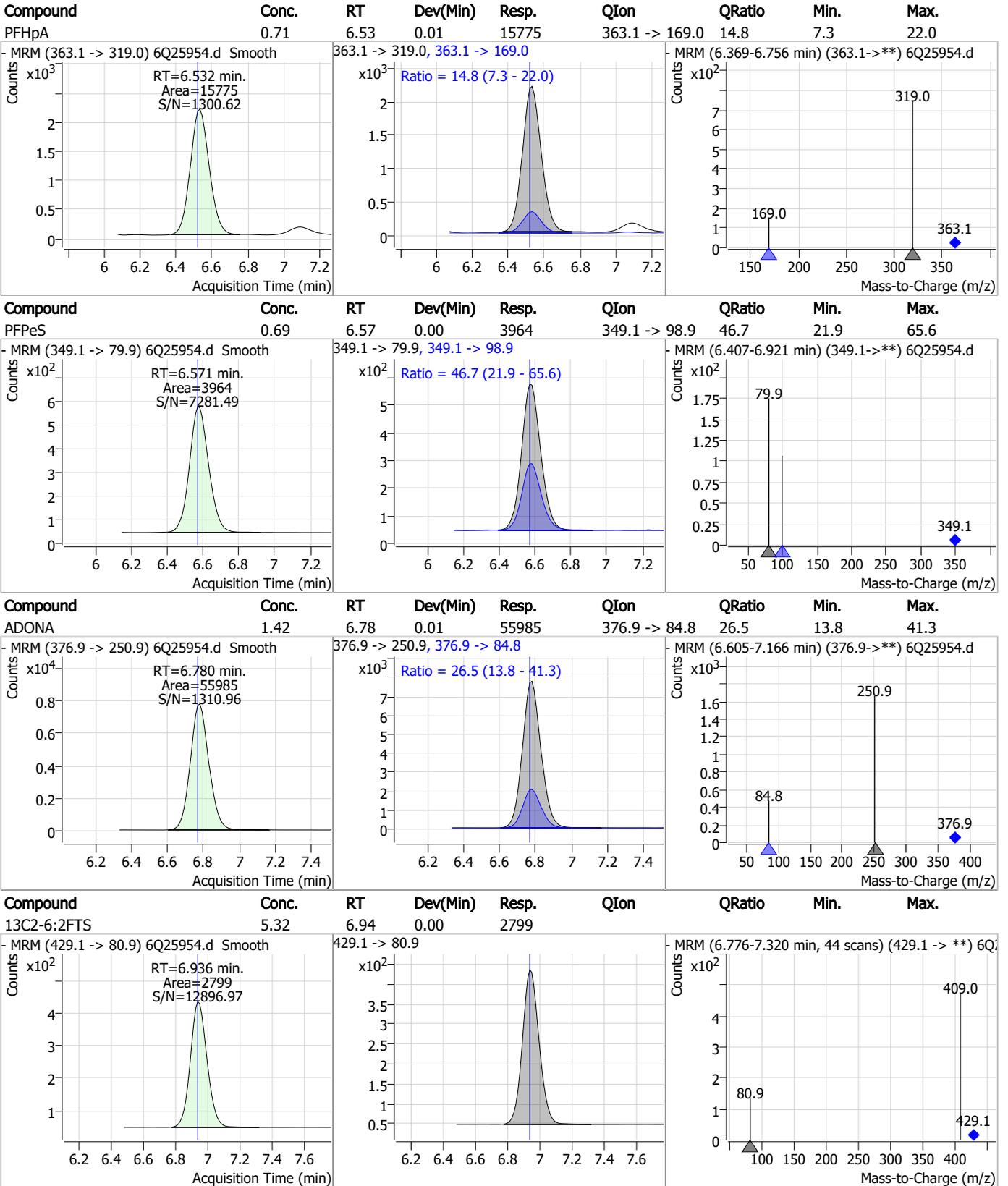


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

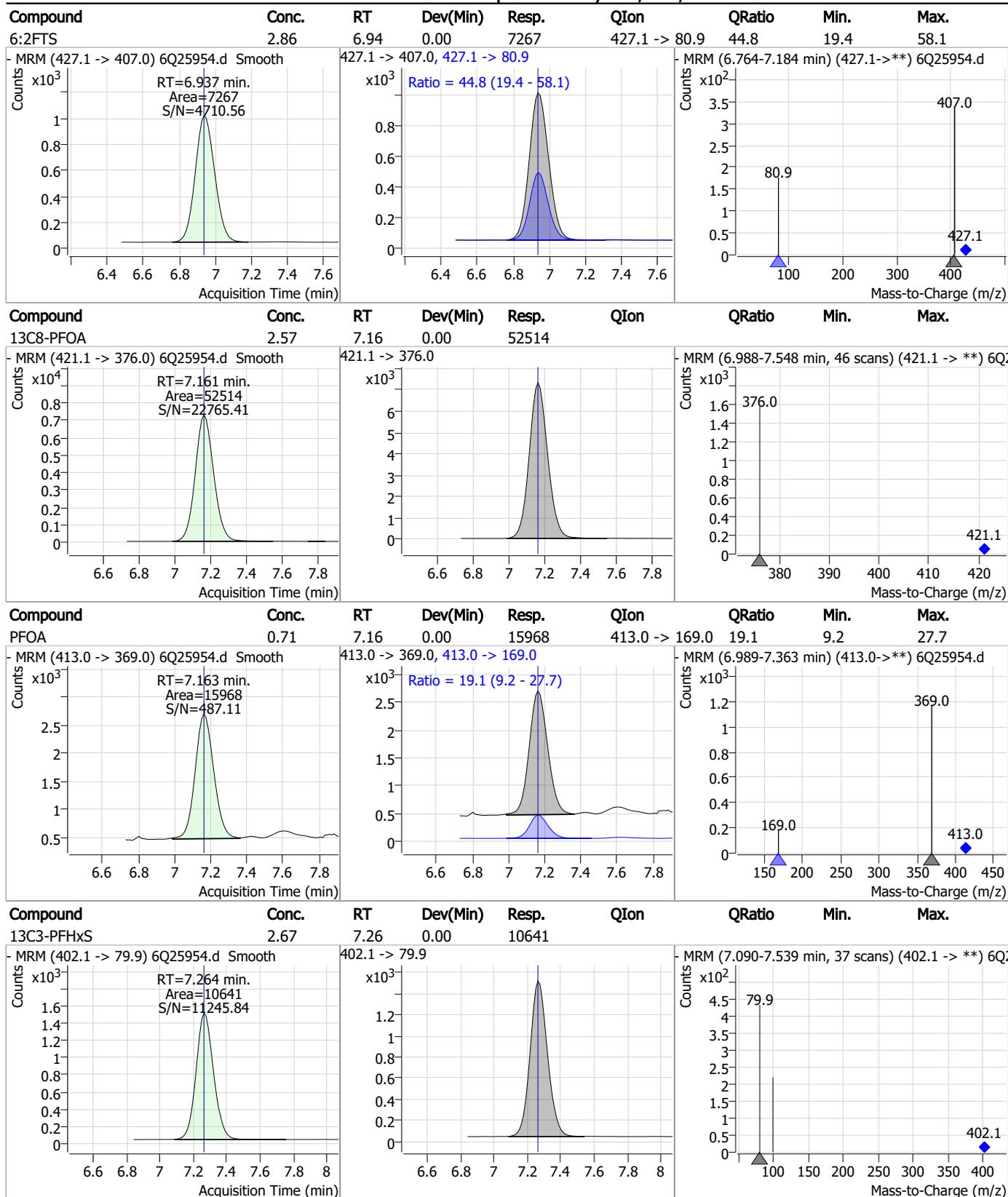
Perfluorinated Compounds by LC/MS/MS



7.3.2
7

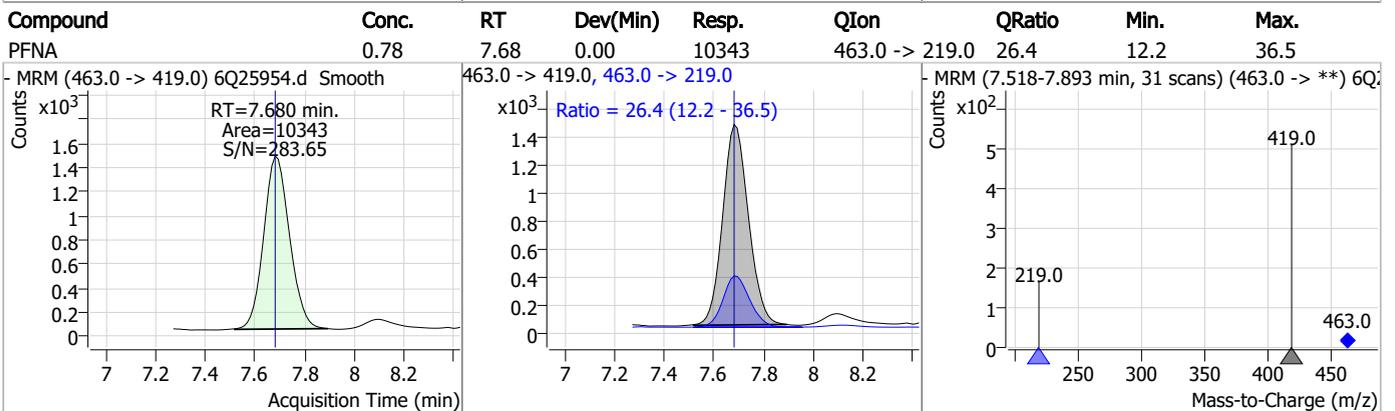
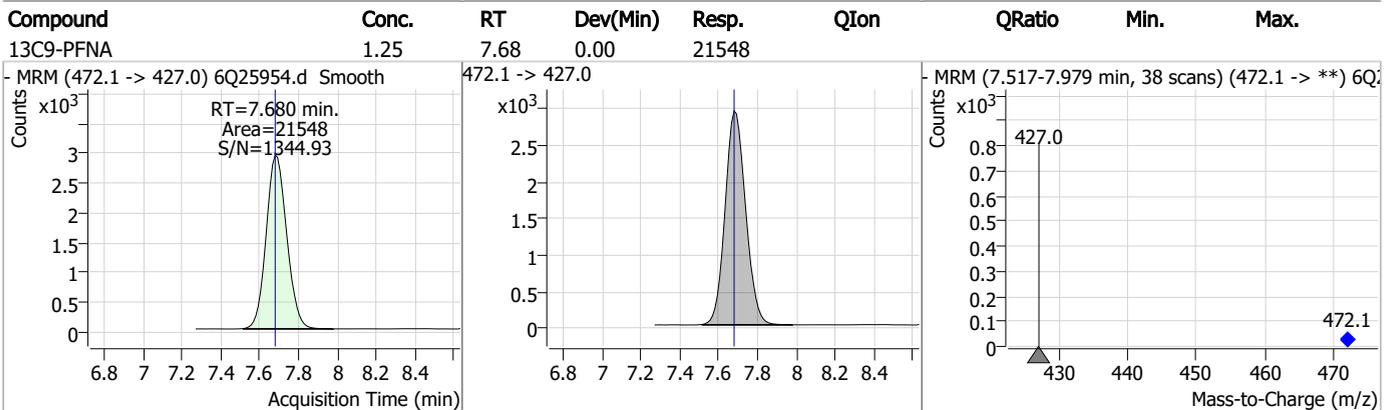
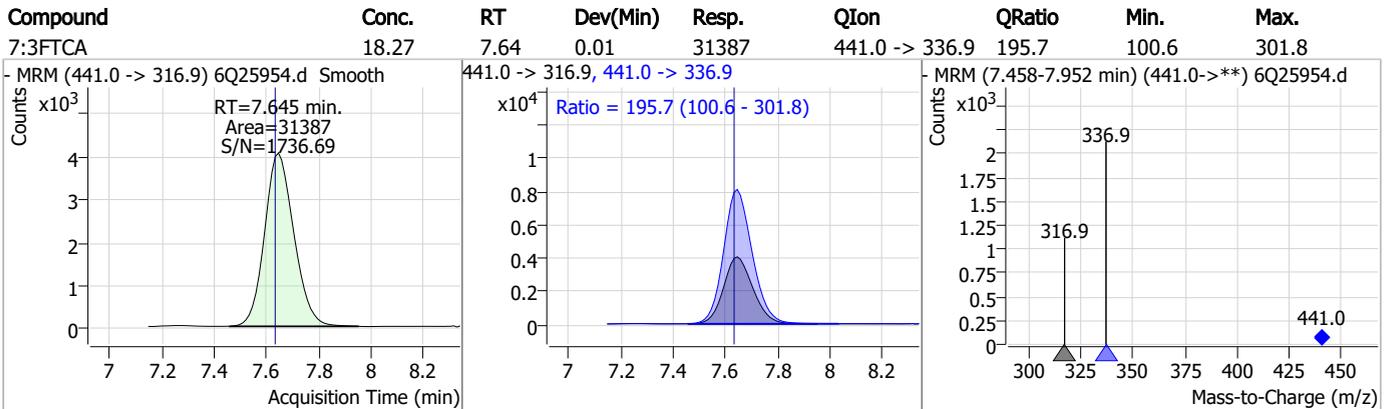
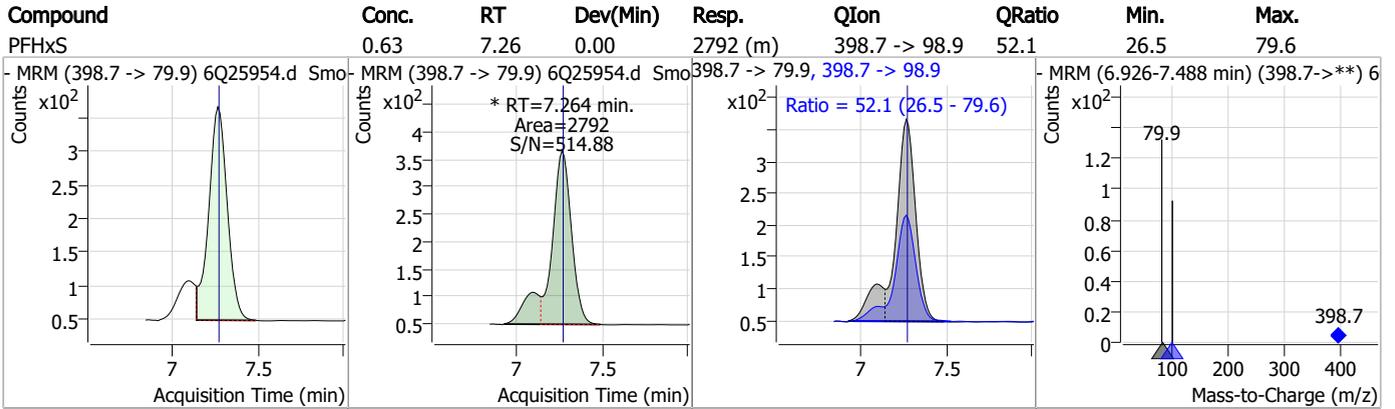


Perfluorinated Compounds by LC/MS/MS

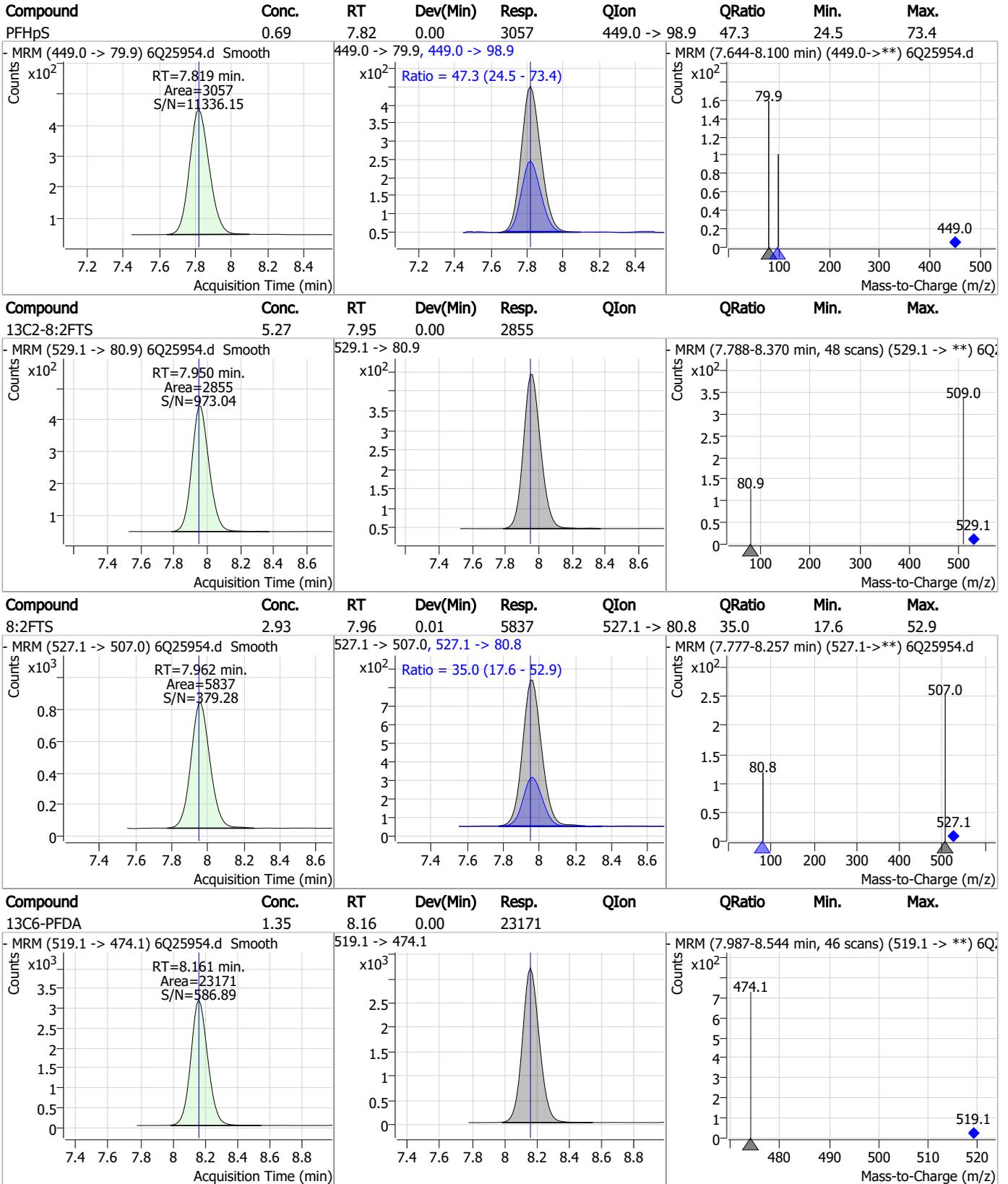


7.3.2
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Perfluorinated Compounds by LC/MS/MS



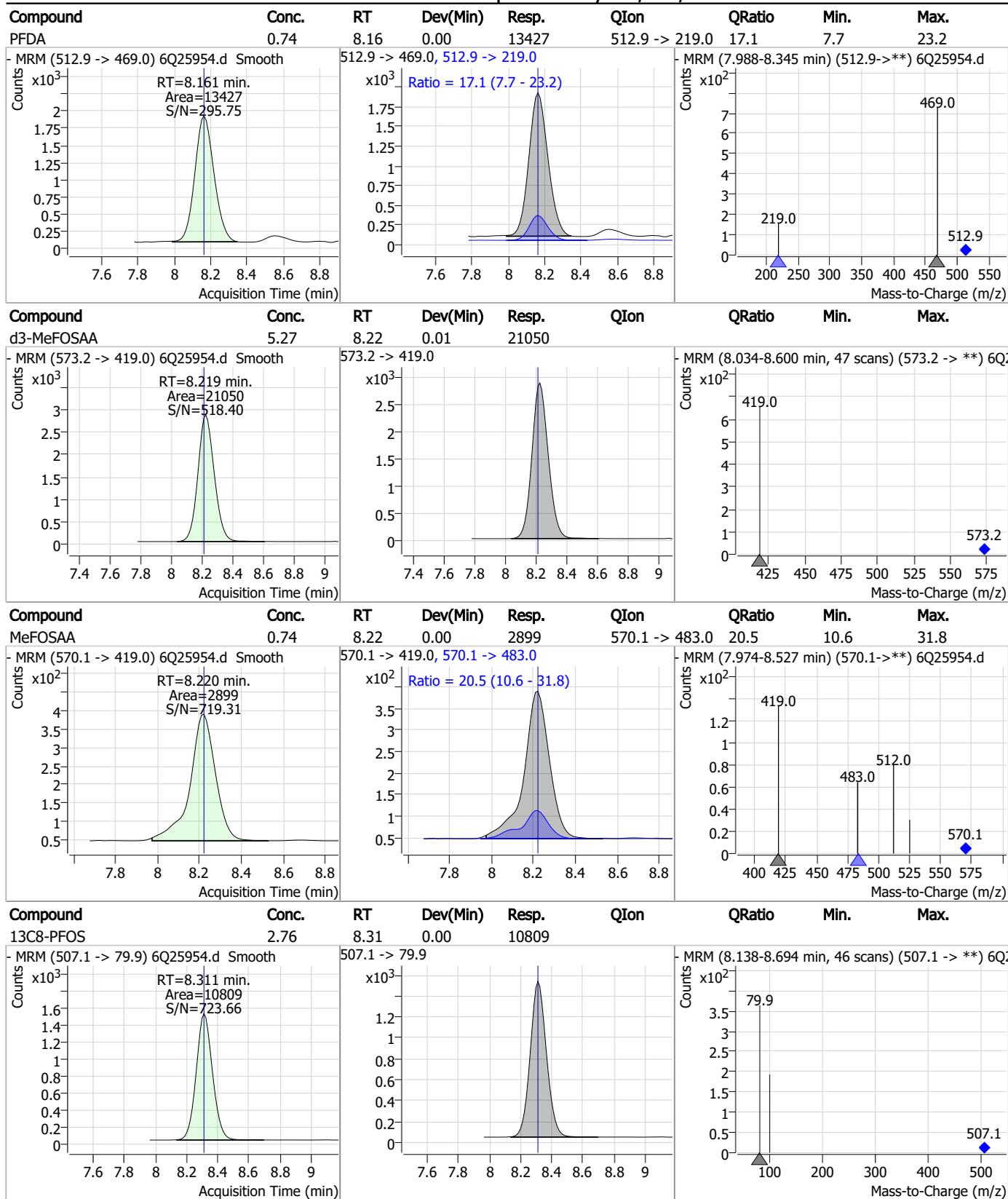
Perfluorinated Compounds by LC/MS/MS



7.3.2
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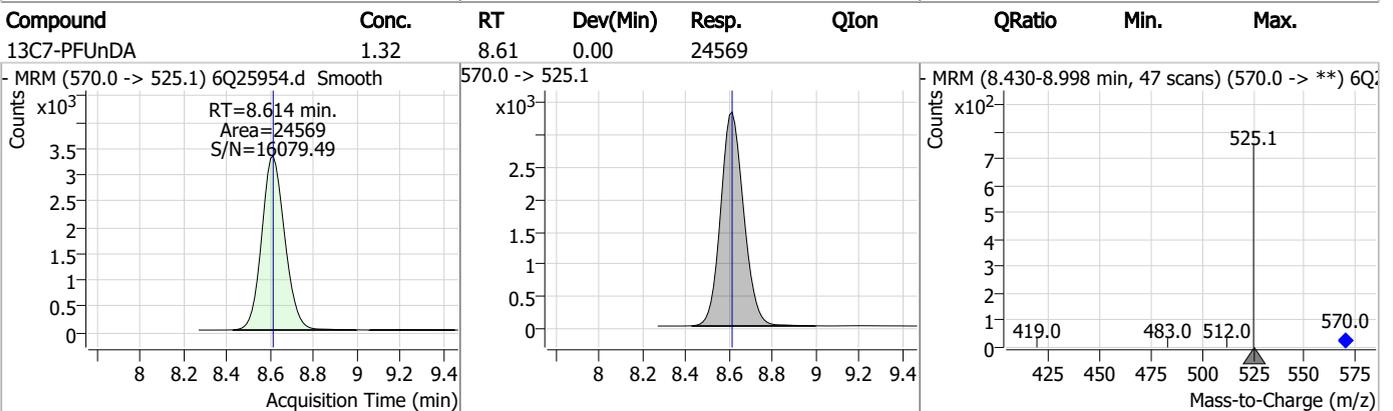
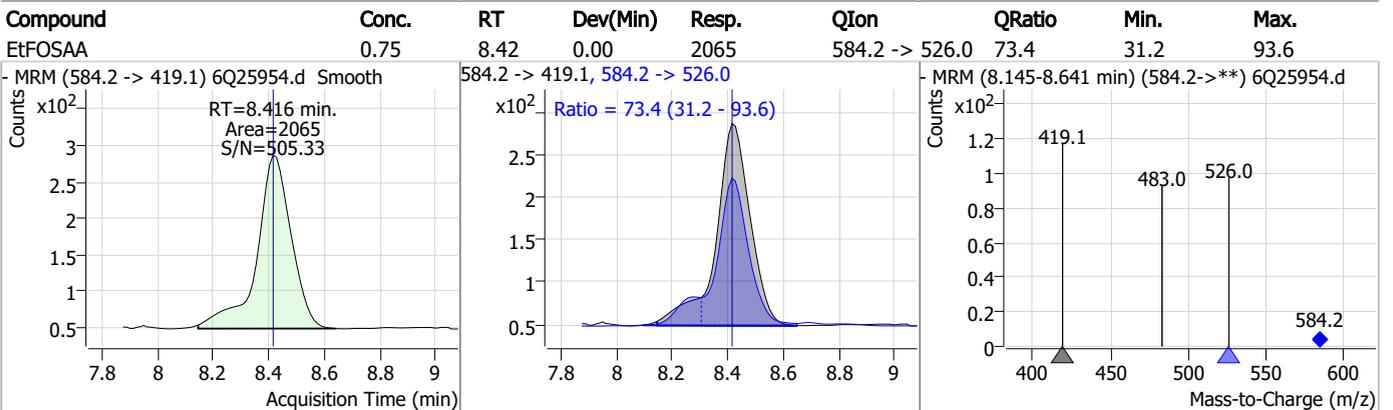
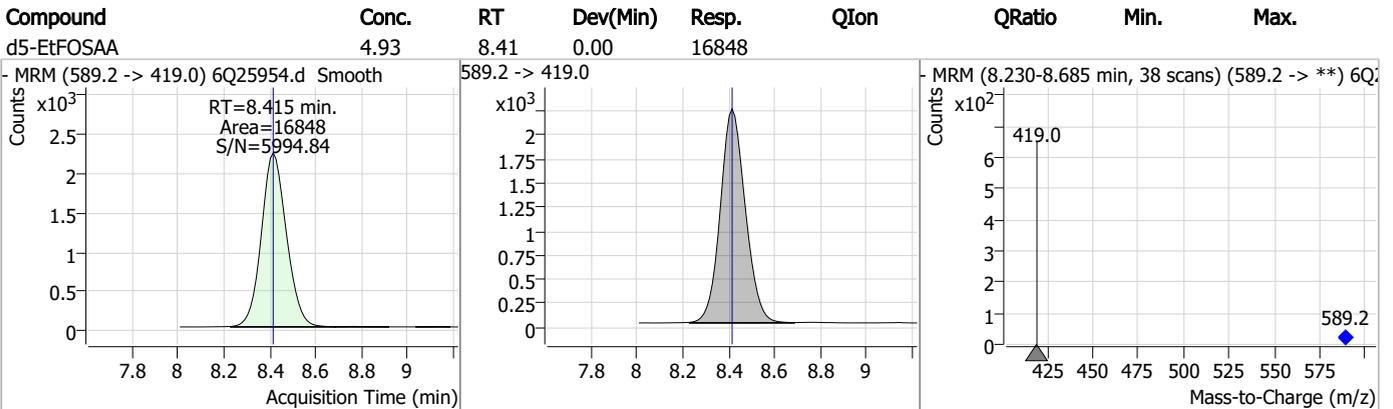
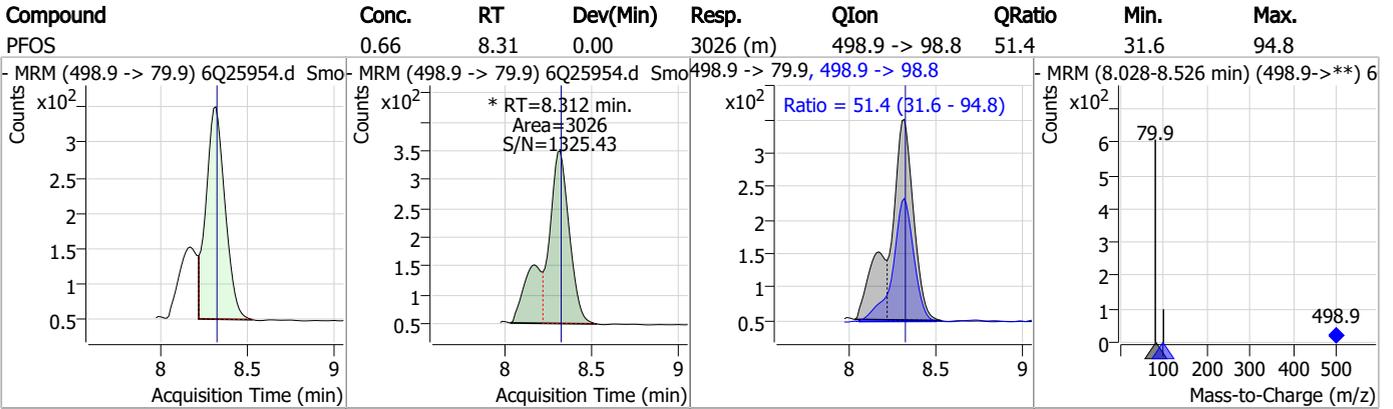


Perfluorinated Compounds by LC/MS/MS



7.3.2
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Perfluorinated Compounds by LC/MS/MS



7.3.2

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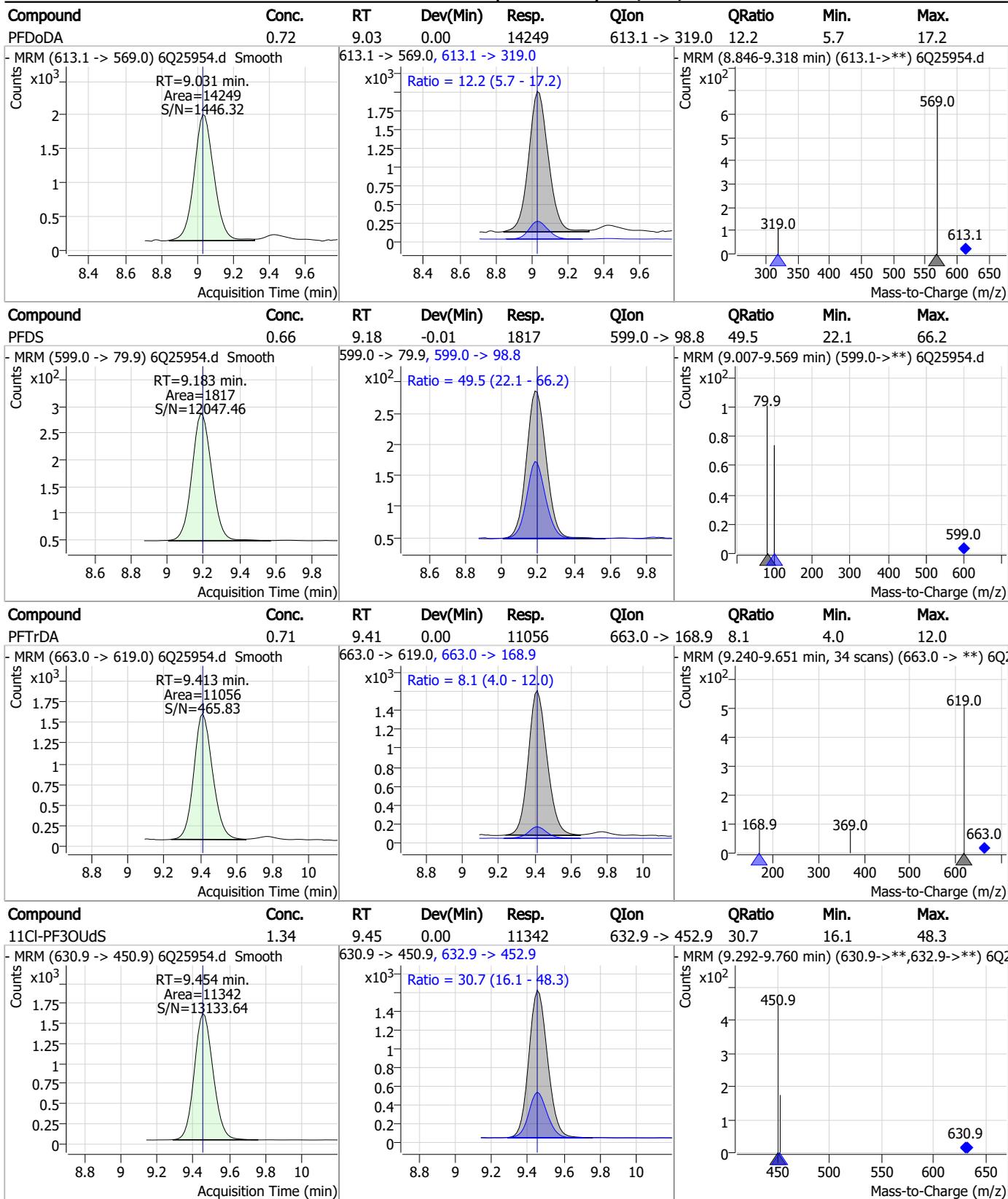
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.78	8.61	0.00	13435	563.1 -> 269.1	14.6	7.4	22.1
9CI-PF3ONS	1.36	8.64	0.00	20517	532.8 -> 353.0	34.0	14.8	44.4
PFNS	0.67	8.78	0.00	2644	548.8 -> 98.9	52.2	26.7	80.2
13C2-PFDoDA	1.30	9.03	0.00	26459	615.1 -> 570.0			

7.3.2
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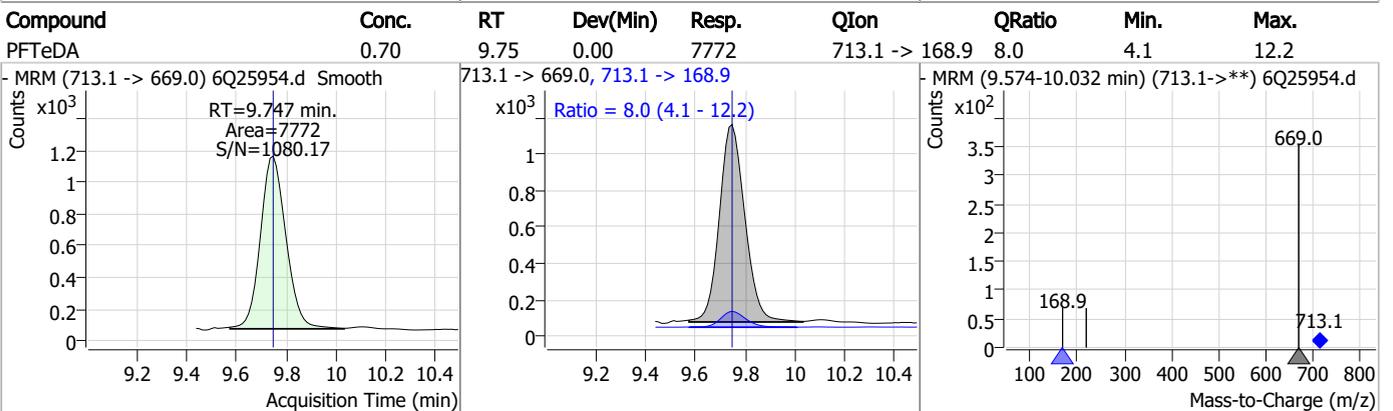
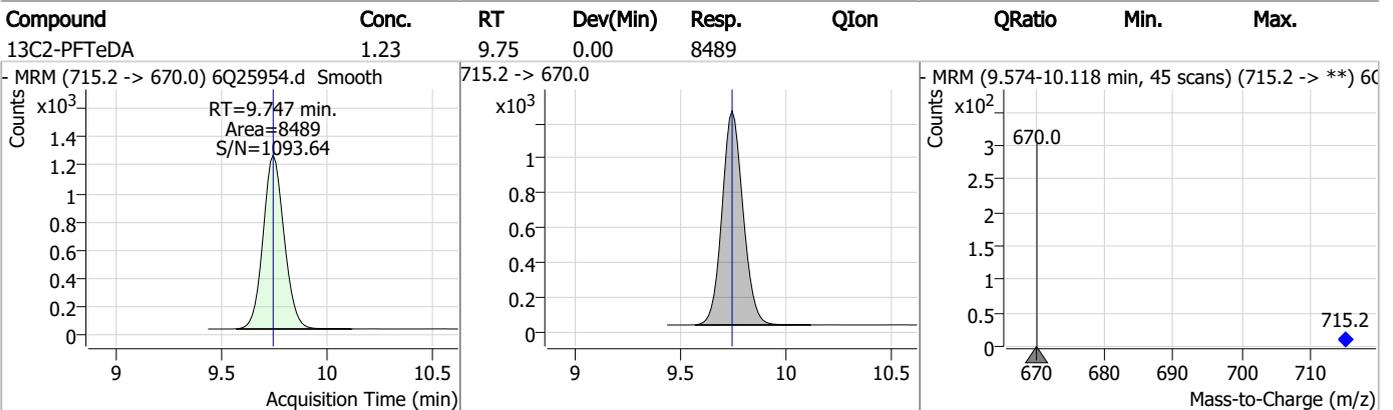
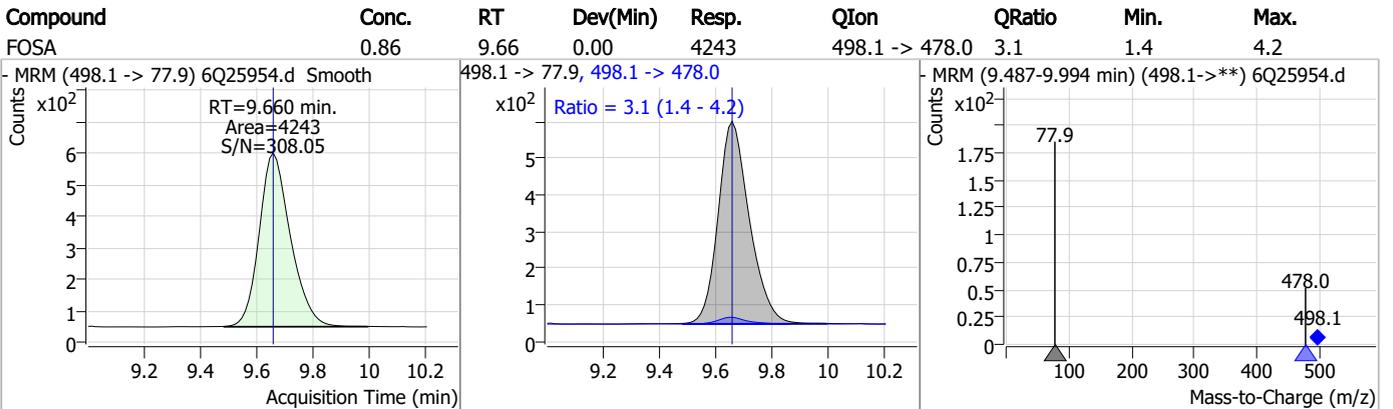
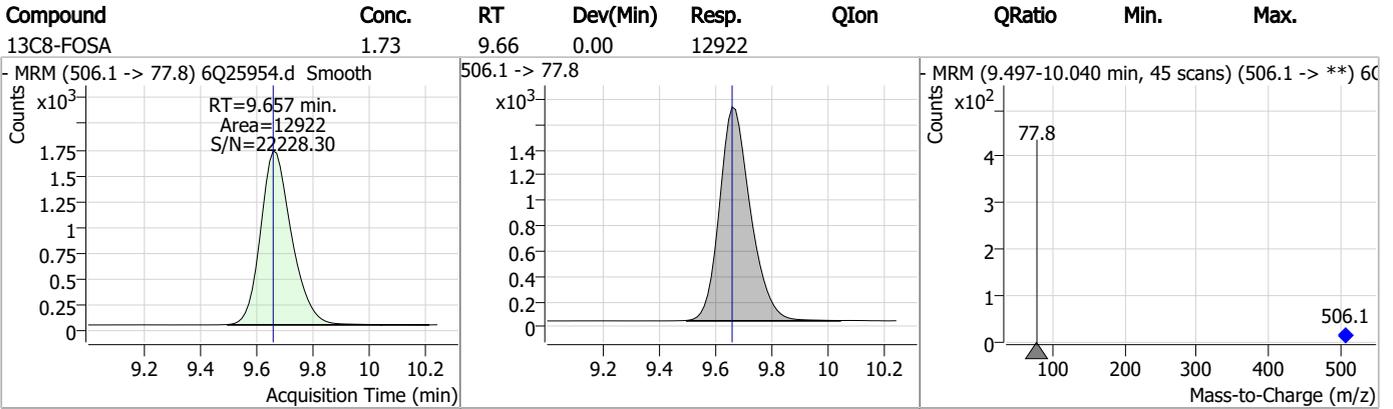


Perfluorinated Compounds by LC/MS/MS



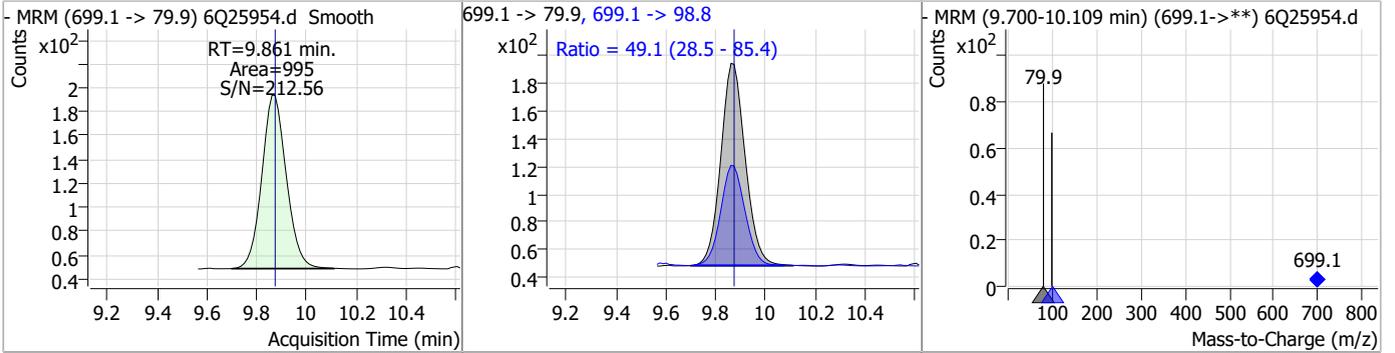
7.3.2
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Perfluorinated Compounds by LC/MS/MS

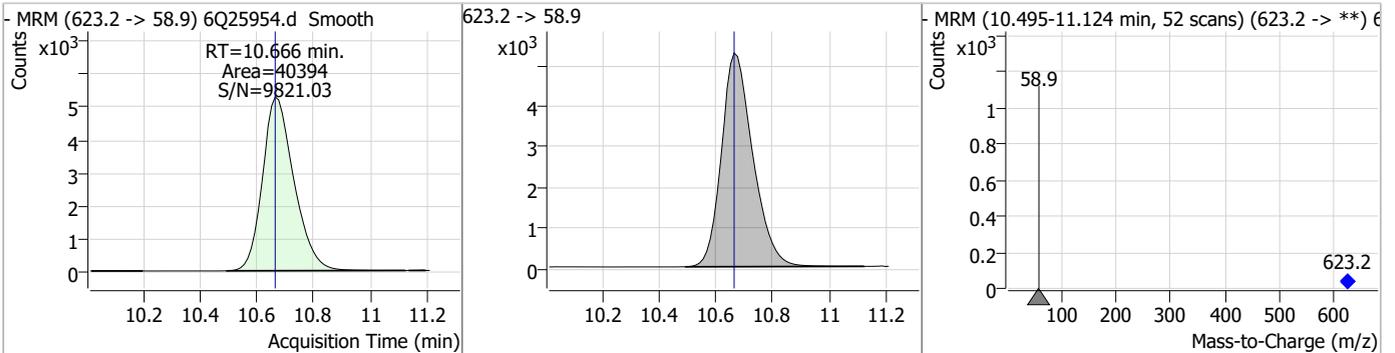


Perfluorinated Compounds by LC/MS/MS

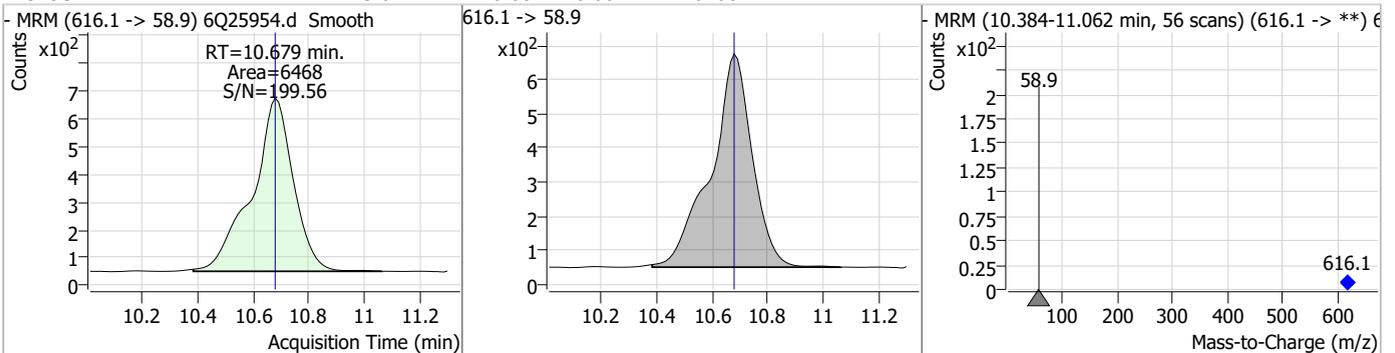
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.69	9.86	-0.01	995	699.1 -> 98.8	49.1	28.5	85.4



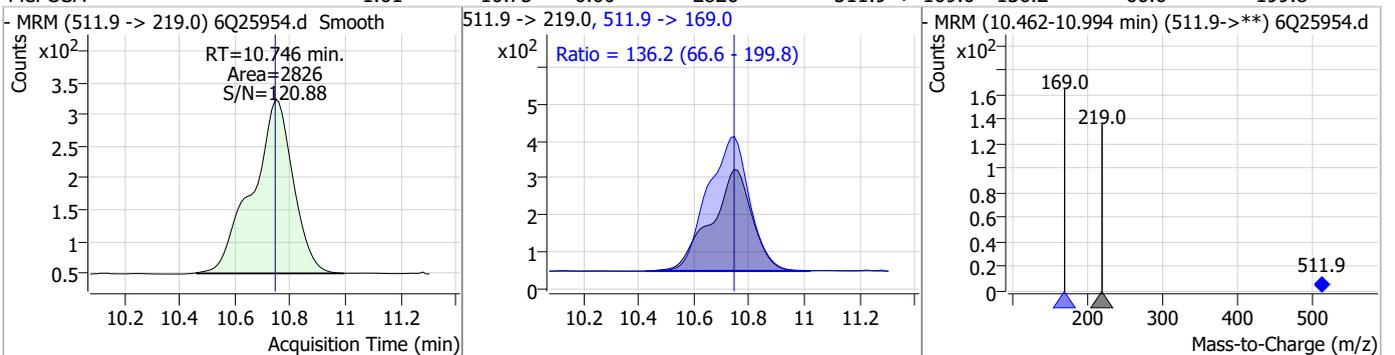
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	16.71	10.67	0.00	40394				



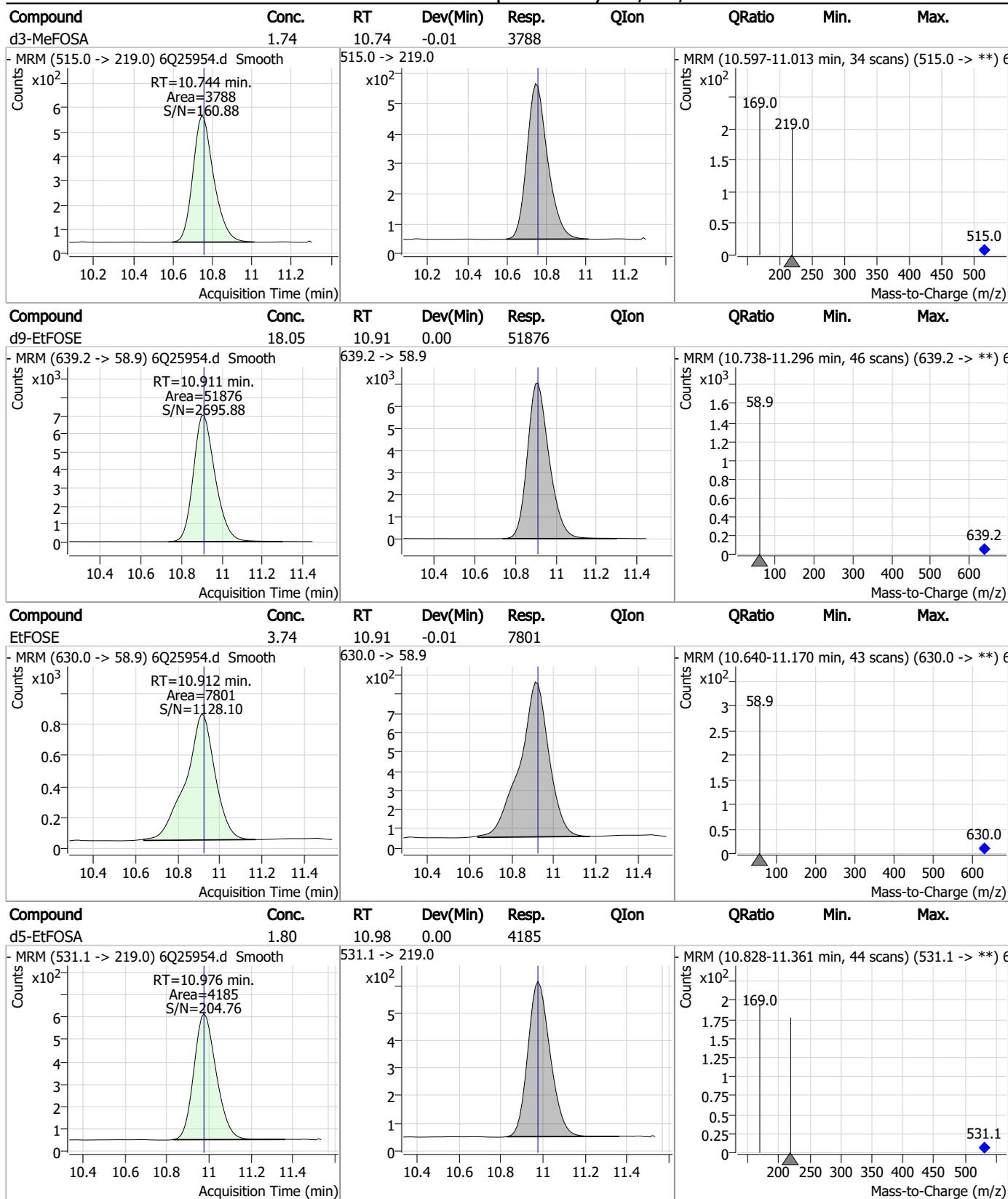
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	3.62	10.68	0.00	6468				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.61	10.75	0.00	2826	511.9 -> 169.0	136.2	66.6	199.8



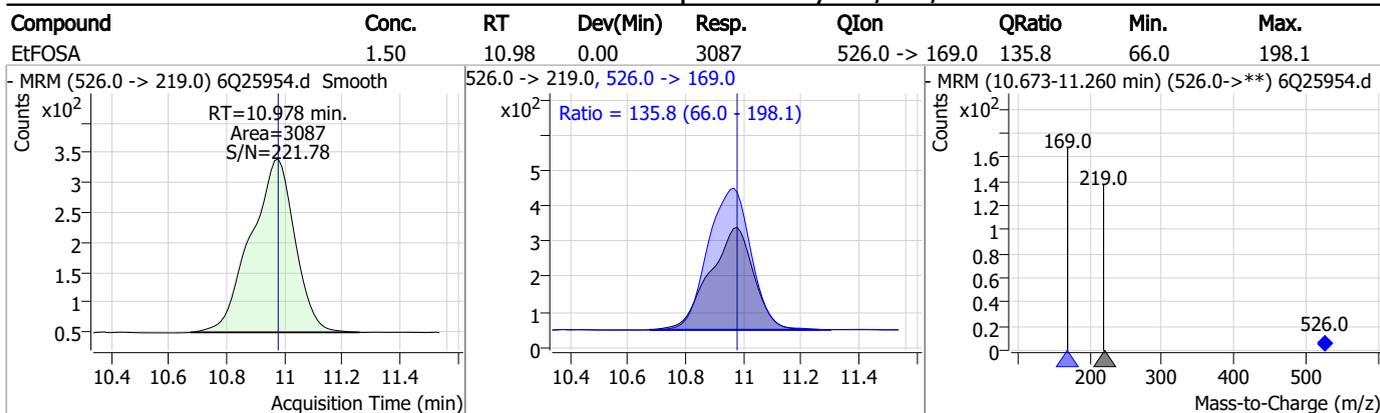
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Manual Integration Approval Summary

Sample Number: OP99404-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q25954.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 18:23 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.3.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25957.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 7:06:56 PM
 Sample Name : OP99404-MS
 Vial : P2-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,520,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	131887	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	45708	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	42054	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	38824	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	52485	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	21042	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	20713	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	20737	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	21515	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	6761	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	13541	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18265	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	10607	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	8961	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	1976	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	2558	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2554	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	19024	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	27163	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	14698	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	45087	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	54095	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4447	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	4094	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	9280	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	51696	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6116	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	58053	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20610	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21630	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	38532	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	1976	5.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2558	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2554	4.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C2-PFDoDA	9.030	615.1 -> 570.0	21515	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 83.8%		
13C2-PFTeDA	9.747	715.2 -> 670.0	6761	0.97 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 77.6%		
13C3-PFBS	5.510	302.1 -> 79.9	18265	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFHxS	7.263	402.1 -> 79.9	10607	2.73 µg/L	0.000

7.4.1
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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 = 109.2%	
13C4-PFBA	2.972	216.8 -> 171.9	131887	10.57 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C4-PFHpA	6.531	367.1 -> 322.0	38824	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFHxA	5.592	318.0 -> 273.0	42054	2.64 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C5-PFPeA	4.384	268.3 -> 223.0	45708	5.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C6-PFDA	8.161	519.1 -> 474.1	20713	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C7-PFUnDA	8.614	570.0 -> 525.1	20737	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.4%	
13C8-FOSA	9.657	506.1 -> 77.8	13541	1.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 70.7%	
13C8-PFOA	7.161	421.1 -> 376.0	52485	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOS	8.311	507.1 -> 79.9	8961	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.4%	
13C9-PFNA	7.680	472.1 -> 427.0	21042	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.6%	
d3-MeFOSAA	8.219	573.2 -> 419.0	19024	4.66 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	27163	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.757	515.0 -> 219.0	4094	1.84 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	14698	4.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.1%	
d7-MeFOSE	10.666	623.2 -> 58.9	45087	18.24 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.0%	
d9-EtFOSE	10.911	639.2 -> 58.9	54095	18.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.7%	
d5-EtFOSA	10.976	531.1 -> 219.0	4447	1.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.9%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	28627	8.73 µg/L	99
		327.1 -> 80.9	11237		
6:2FTS	6.937	427.1 -> 407.0	23643	10.17 µg/L	100
		427.1 -> 80.9	9097		
8:2FTS	7.950	527.1 -> 507.0	16161	9.08 µg/L	93
		527.1 -> 80.8	6319		
EtFOSAA	8.416	584.2 -> 419.1	5507	2.31 µg/L	98
		584.2 -> 526.0	3530		
FOSA	9.660	498.1 -> 77.9	15114	2.91 µg/L	100
		498.1 -> 478.0	413		
MeFOSAA	8.220	570.1 -> 419.0	8008	2.25 µg/L	96
		570.1 -> 483.0	1833		
PFBA	2.981	212.8 -> 168.9	46243	9.41 µg/L	100
PFBS	5.511	298.7 -> 79.9	11749	2.15 µg/L	99
		298.7 -> 98.8	4392		
PFDA	8.161	512.9 -> 469.0	37268	2.30 µg/L	97
		512.9 -> 219.0	6187		
PFDODA	9.031	613.1 -> 569.0	37348	2.33 µg/L	99
		613.1 -> 319.0	4471		
PFDS	9.195	599.0 -> 79.9	4668	2.04 µg/L	95

7.4.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	2210	2.50	µg/L	99
		363.1 -> 319.0	52708			
PFHpS	7.819	363.1 -> 169.0	7410	2.59	µg/L	94
		449.0 -> 79.9	9581			
PFHxA	5.594	449.0 -> 98.9	4324	2.34	µg/L	99
		313.0 -> 269.0	35196			
PFHxS	7.264	313.0 -> 118.9	1691	1.99	µg/L	m
		398.7 -> 79.9	8831			
PFNA	7.680	398.7 -> 98.9	4023	2.46	µg/L	95
		463.0 -> 419.0	31926			
PFNS	8.777	463.0 -> 219.0	7019	1.94	µg/L	94
		548.8 -> 79.9	6355			
PFOA	7.163	548.8 -> 98.9	3652	2.38	µg/L	96
		413.0 -> 369.0	53673			
PFOS	8.312	413.0 -> 169.0	8871	2.20	µg/L	m
		498.9 -> 79.9	8413			
PFPeA	4.386	498.9 -> 98.8	4758	4.65	µg/L	100
		263.0 -> 219.0	45847			
PFPeS	6.571	349.1 -> 79.9	12005	2.10	µg/L	94
		349.1 -> 98.9	5699			
PFTeDA	9.748	713.1 -> 669.0	20122	2.29	µg/L	99
		713.1 -> 168.9	1708			
PFTrDA	9.413	663.0 -> 619.0	29248	2.33	µg/L	99
		663.0 -> 168.9	2480			
PFUnDA	8.614	563.1 -> 519.0	34348	2.35	µg/L	97
		563.1 -> 269.1	5487			
11CI-PF3OUdS	9.454	630.9 -> 450.9	30013	3.72	µg/L	99
		632.9 -> 452.9	9460			
9CI-PF3ONS	8.641	530.8 -> 351.0	55765	3.90	µg/L	92
		532.8 -> 353.0	18797			
ADONA	6.767	376.9 -> 250.9	172022	4.61	µg/L	98
		376.9 -> 84.8	45958			
HFPO-DA	5.958	284.9 -> 168.9	13521	5.02	µg/L	98
		284.9 -> 184.9	1507			
3:3FTCA	3.846	241.0 -> 177.0	6766	9.56	µg/L	98
		241.0 -> 117.0	959			
5:3FTCA	6.246	341.0 -> 237.1	157227	55.79	µg/L	98
		341.0 -> 217.0	109745			
7:3FTCA	7.645	441.0 -> 316.9	100088	58.14	µg/L	96
		441.0 -> 336.9	195486			
EtFOSA	10.978	526.0 -> 219.0	10356	4.74	µg/L	98
		526.0 -> 169.0	13930			
EtFOSE	10.924	630.0 -> 58.9	26345	12.10	µg/L	100
		511.9 -> 219.0	9360			
MeFOSA	10.746	511.9 -> 169.0	13256	4.93	µg/L	93
		616.1 -> 58.9	24330			
MeFOSE	10.679	699.1 -> 79.9	2374	12.21	µg/L	100
		699.1 -> 98.8	1397			
PFDoDS	9.873	295.0 -> 201.0	9013	4.77	µg/L	98
		295.0 -> 84.9	2559			
NFDHA	5.475	279.0 -> 85.1	35032	4.66	µg/L	100
		229.0 -> 84.9	29969			
PFMBA	3.526	314.8 -> 134.9	81926	4.83	µg/L	100
		314.8 -> 82.9	2870			
PFEESA	6.050			4.24	µg/L	100

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

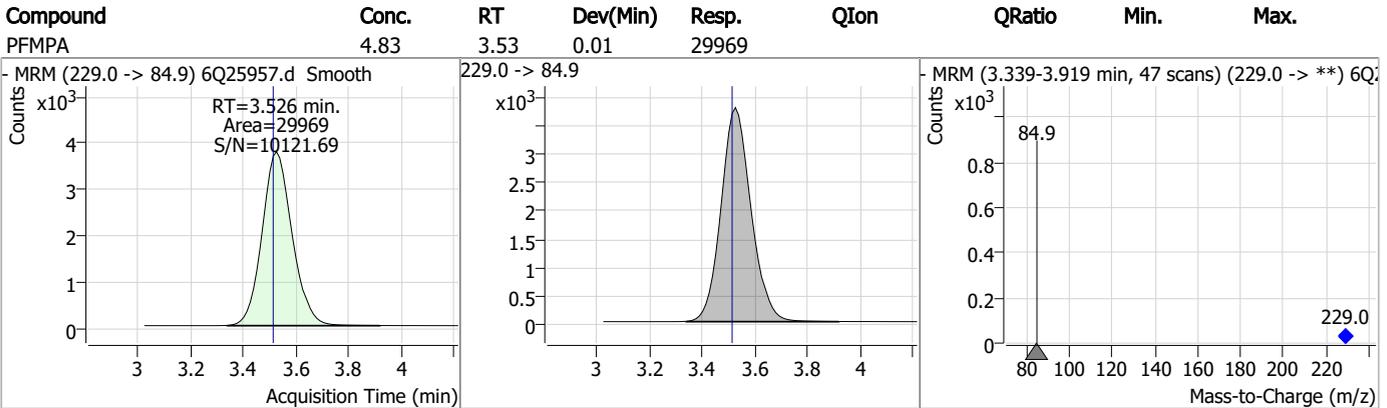
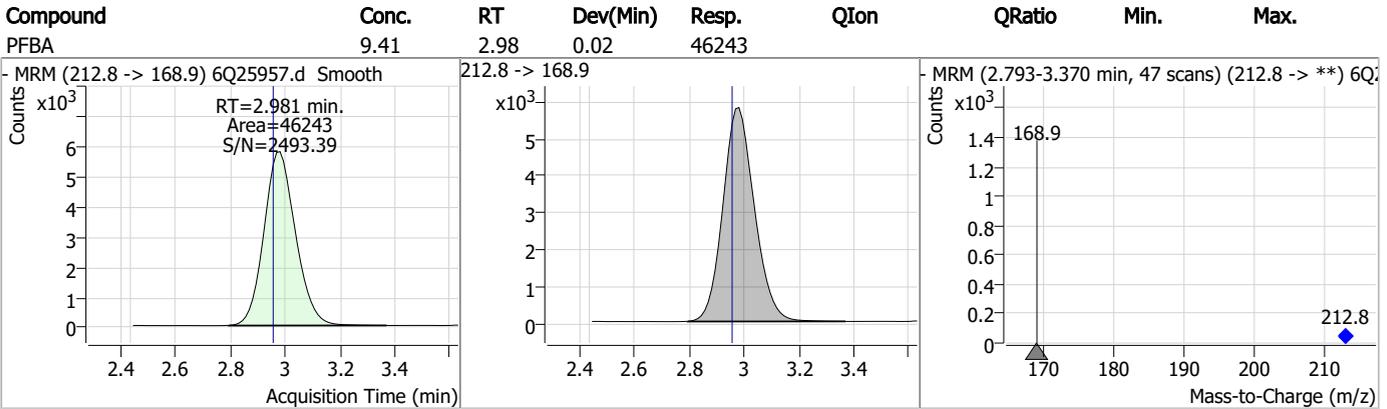
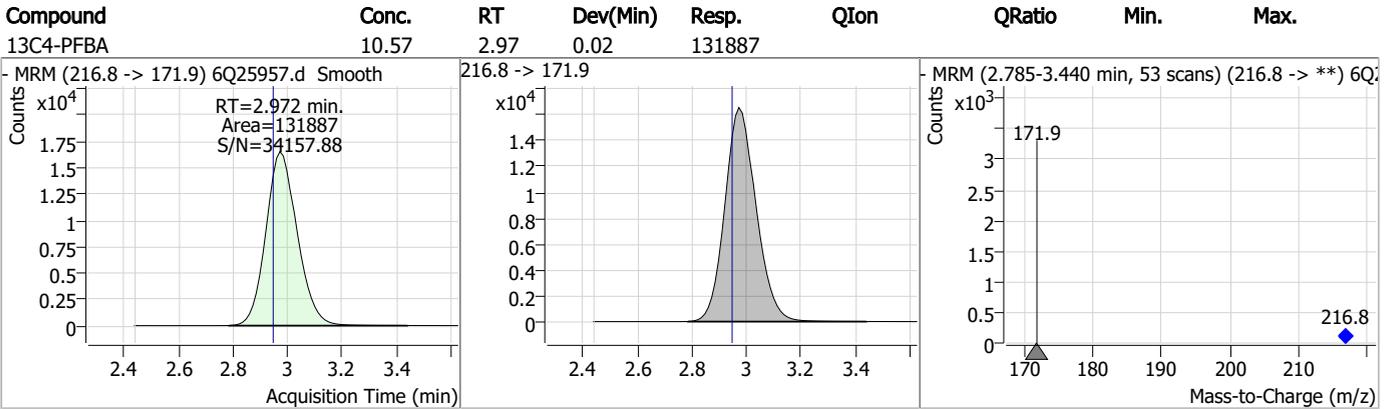
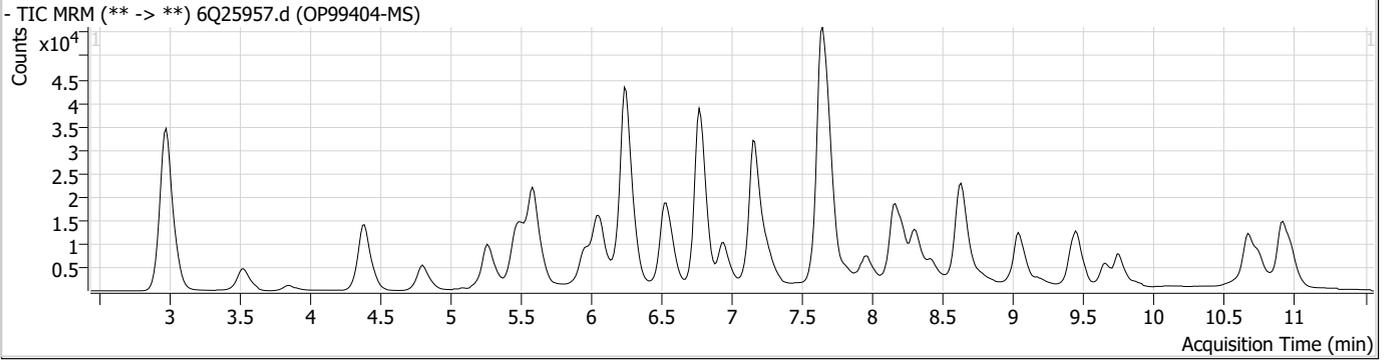
Perfluorinated Compounds by LC/MS/MS

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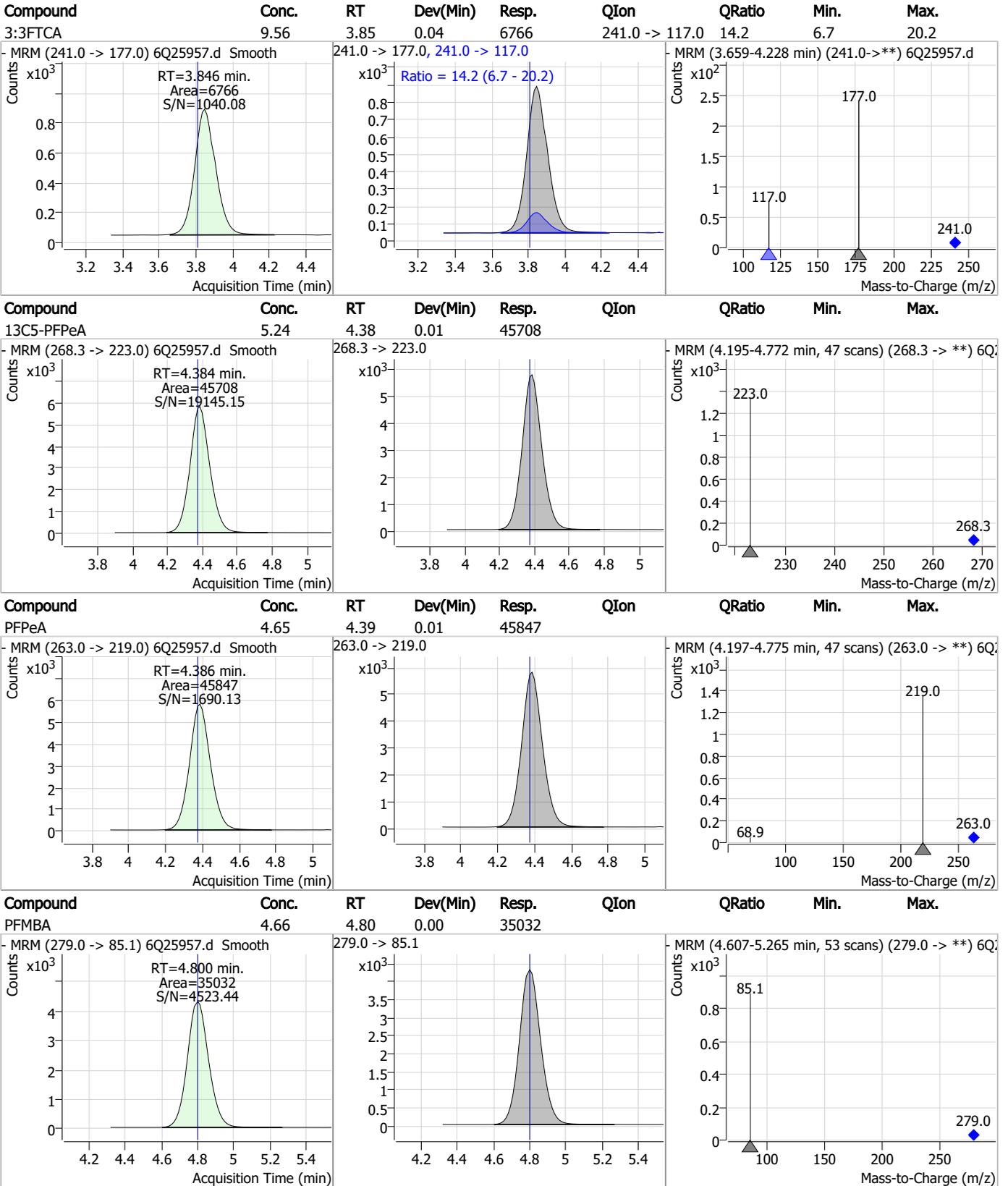
7.4.1

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Perfluorinated Compounds by LC/MS/MS



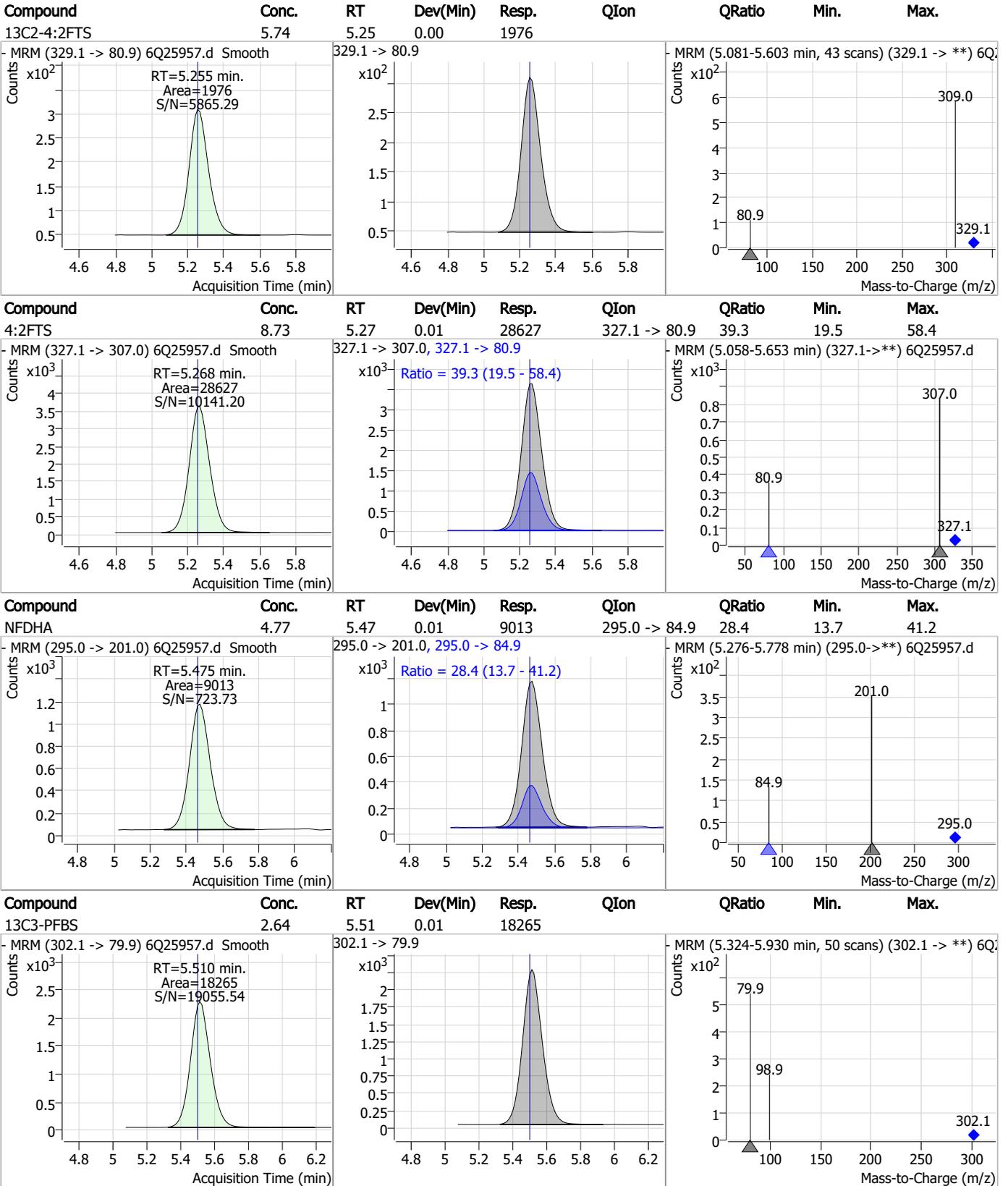
Perfluorinated Compounds by LC/MS/MS



7.4.1

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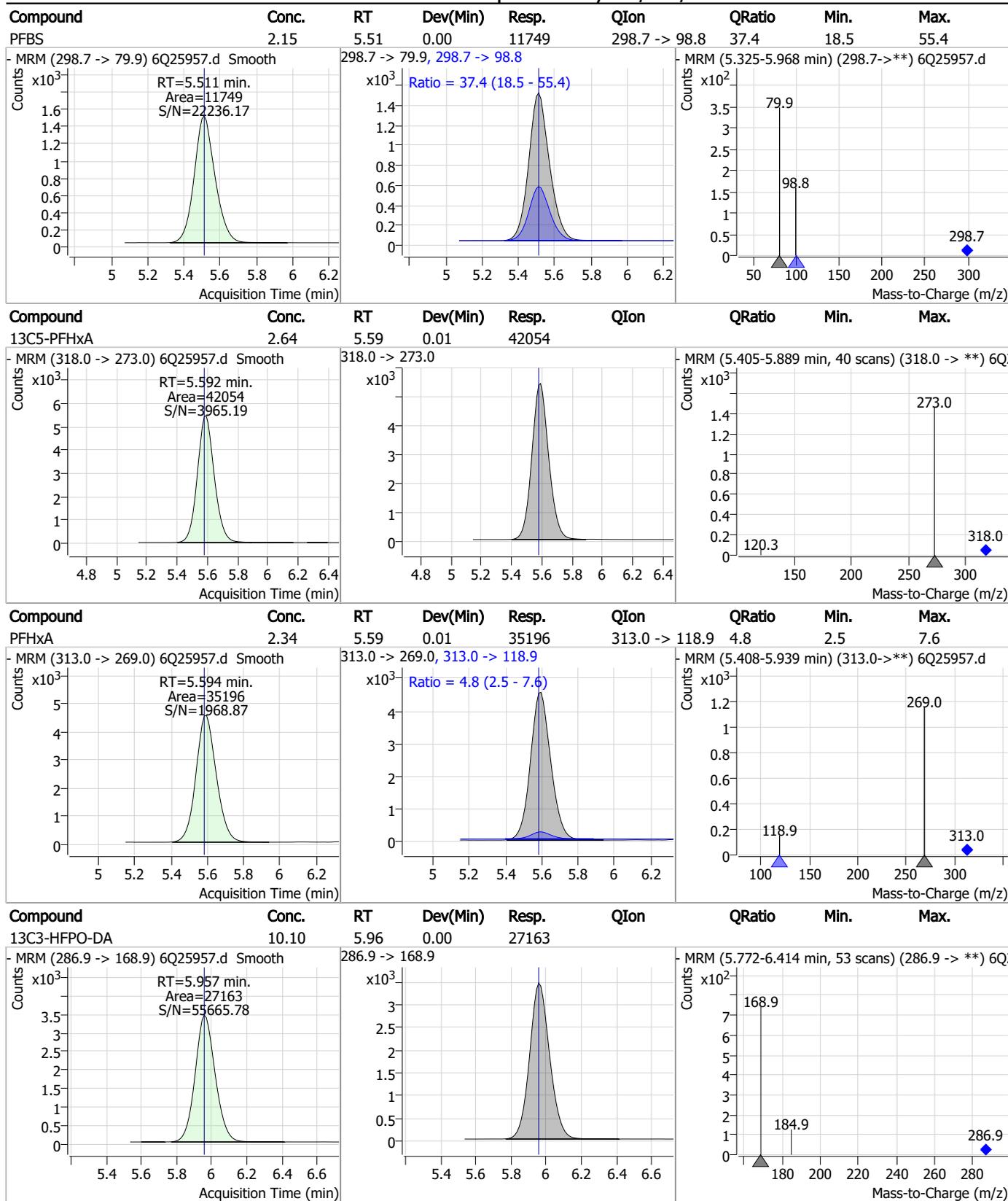
Perfluorinated Compounds by LC/MS/MS



7.4.1

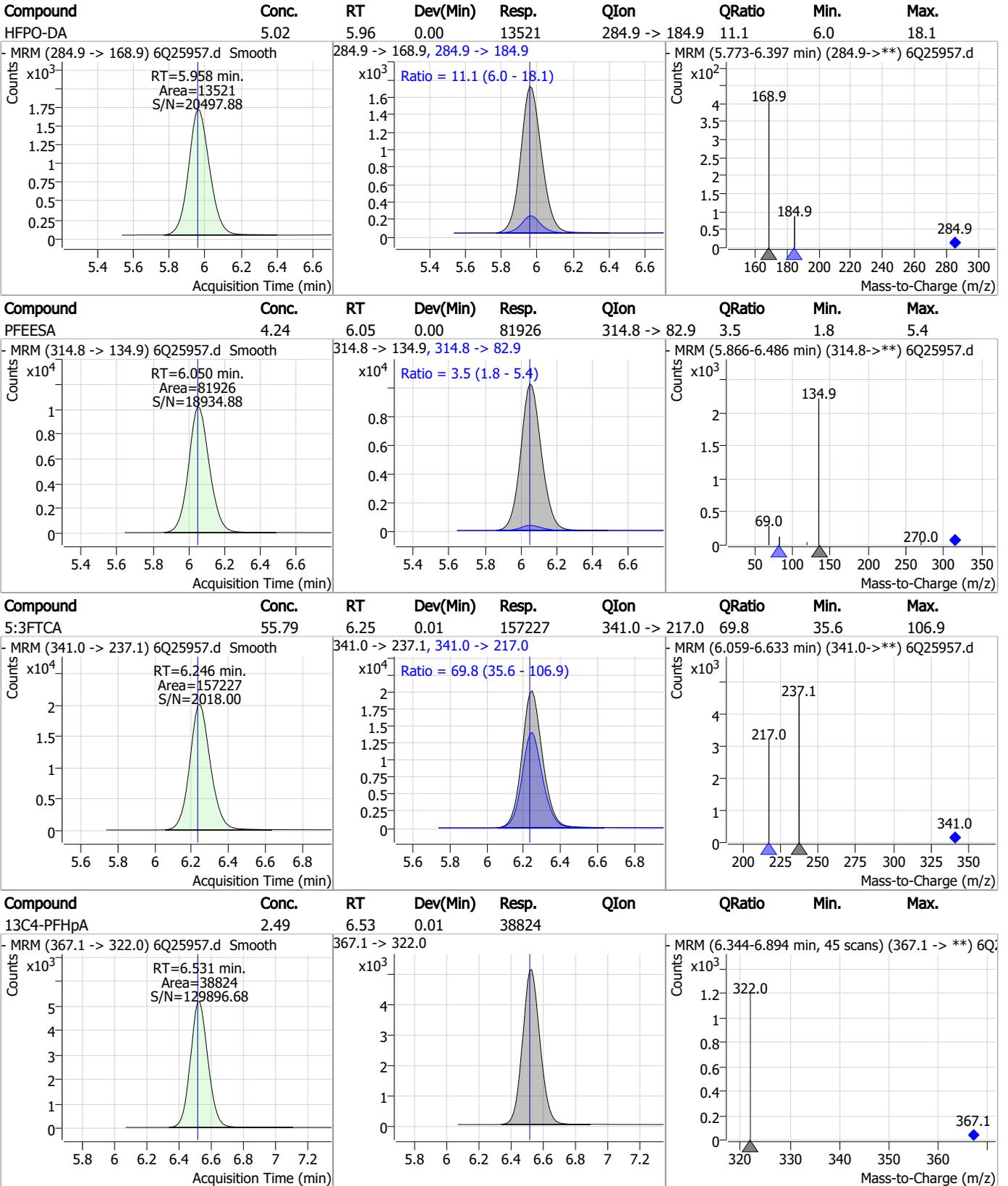
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Perfluorinated Compounds by LC/MS/MS



7.4.1
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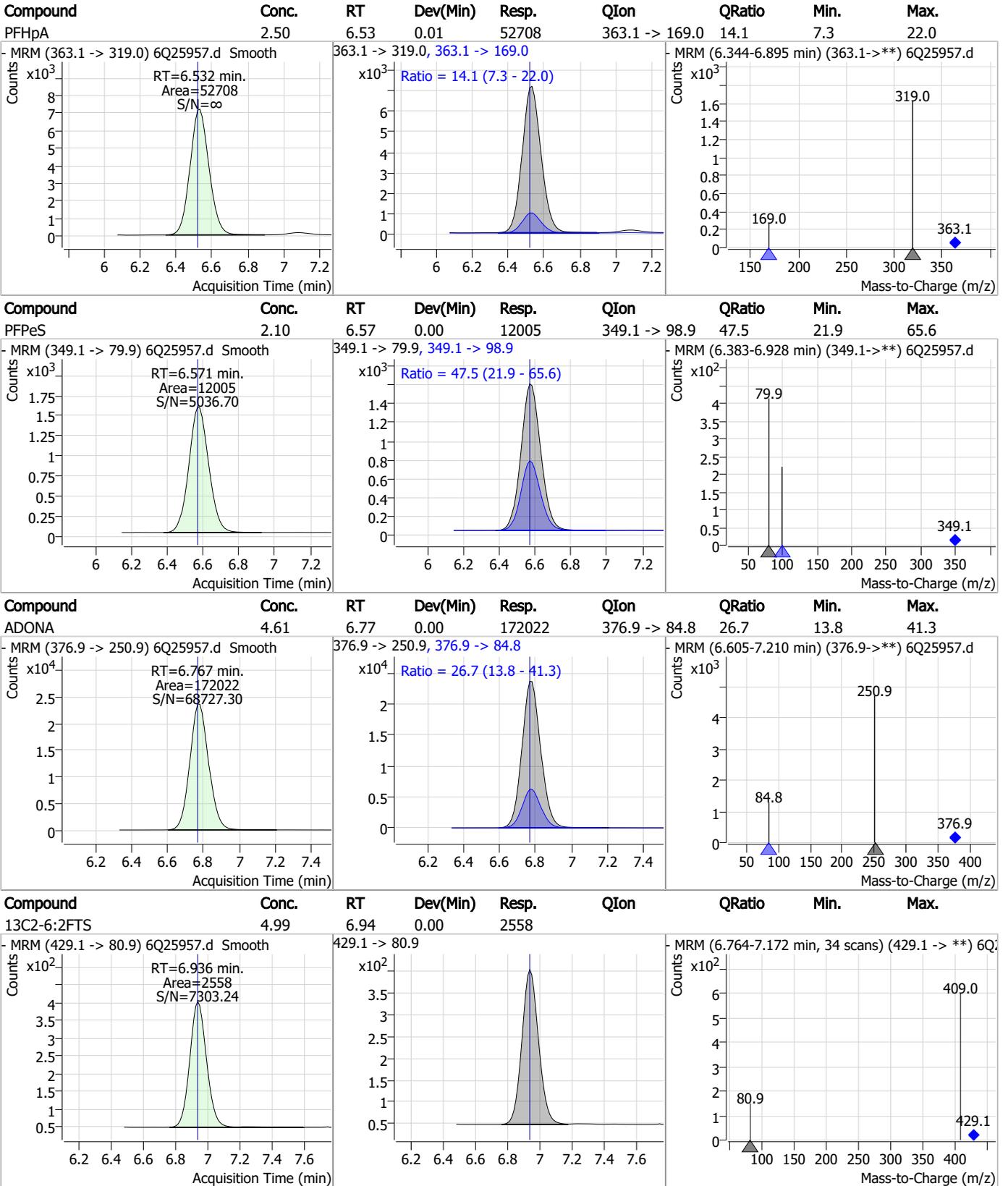
Perfluorinated Compounds by LC/MS/MS



7.4.1

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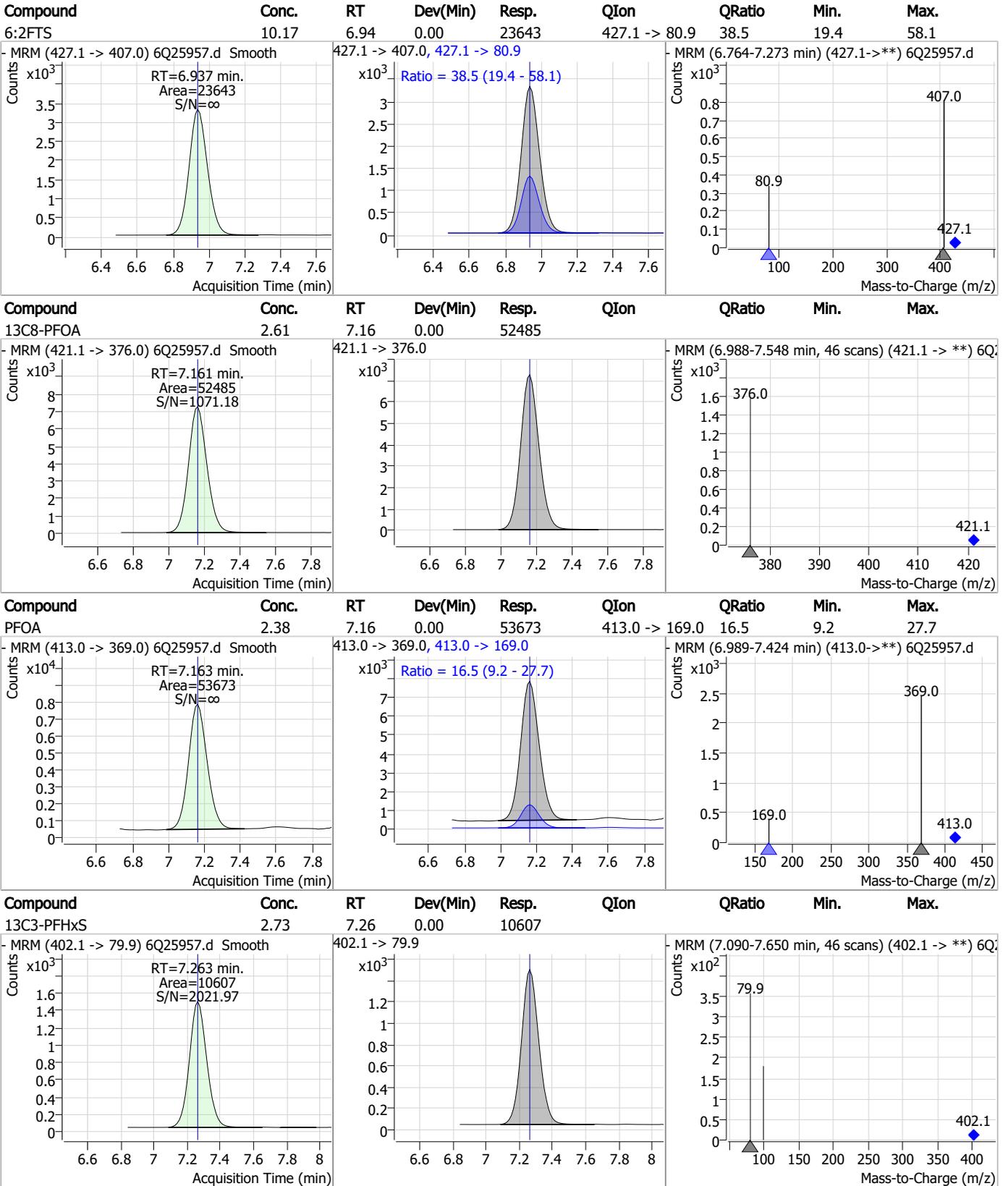
Perfluorinated Compounds by LC/MS/MS



7.4.1

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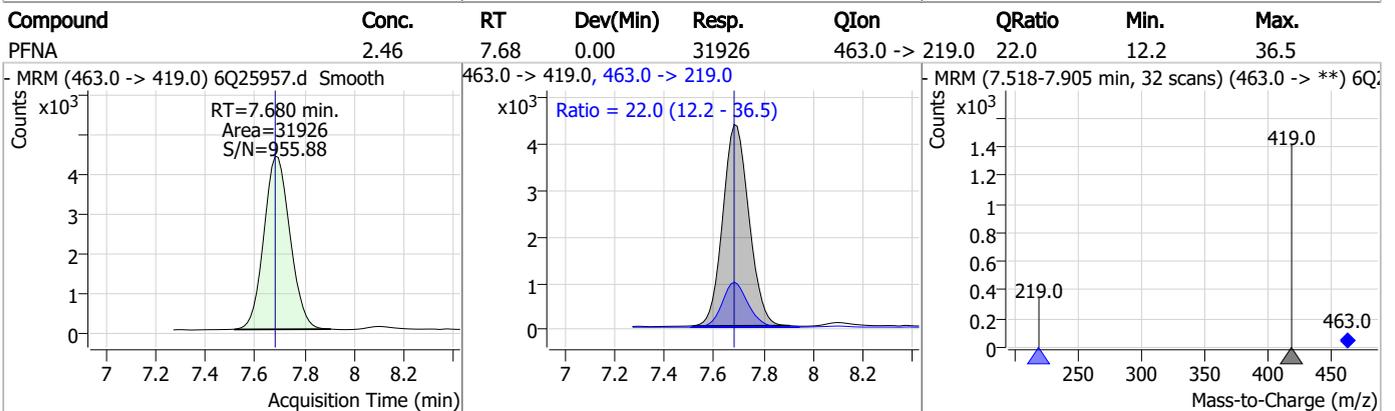
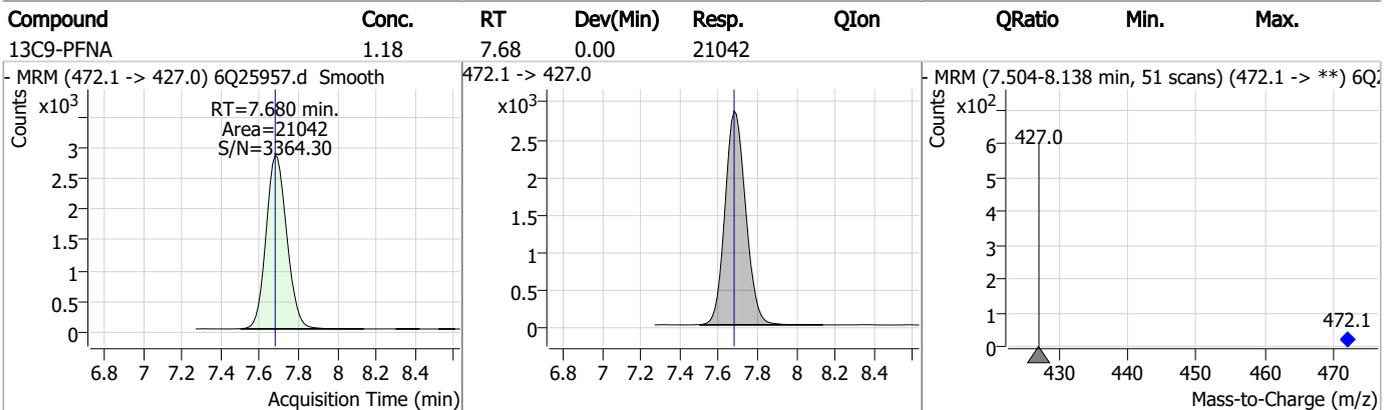
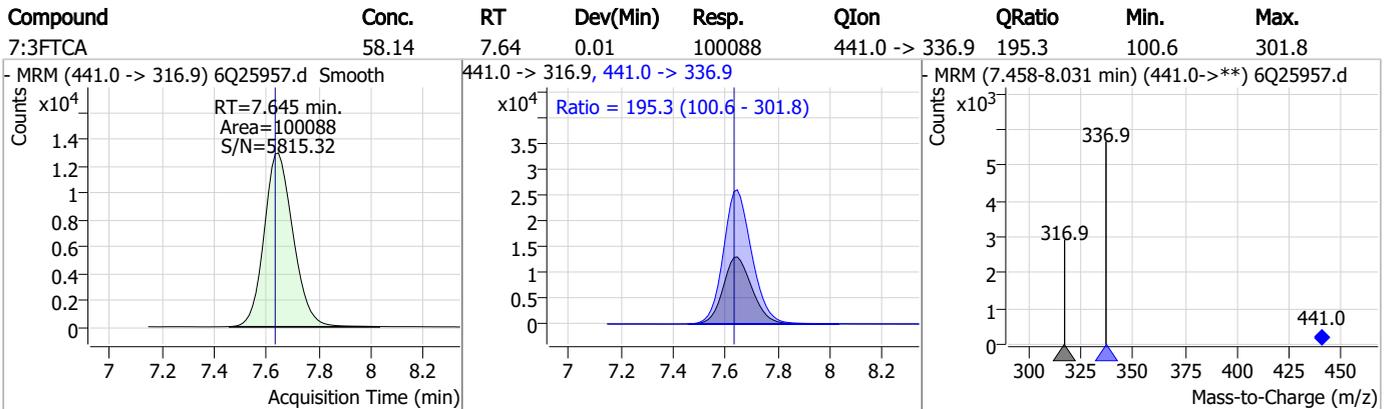
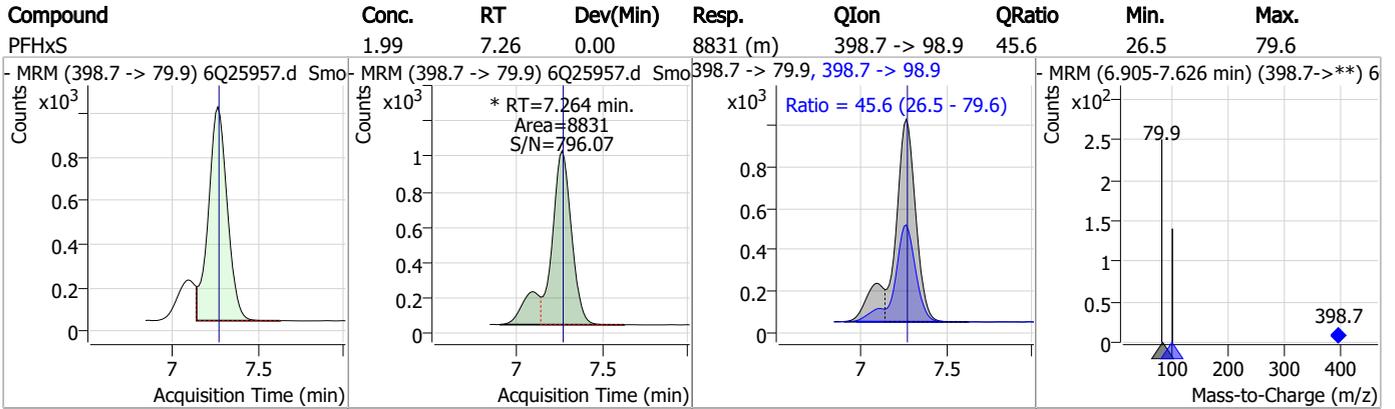
Perfluorinated Compounds by LC/MS/MS



7.4.1

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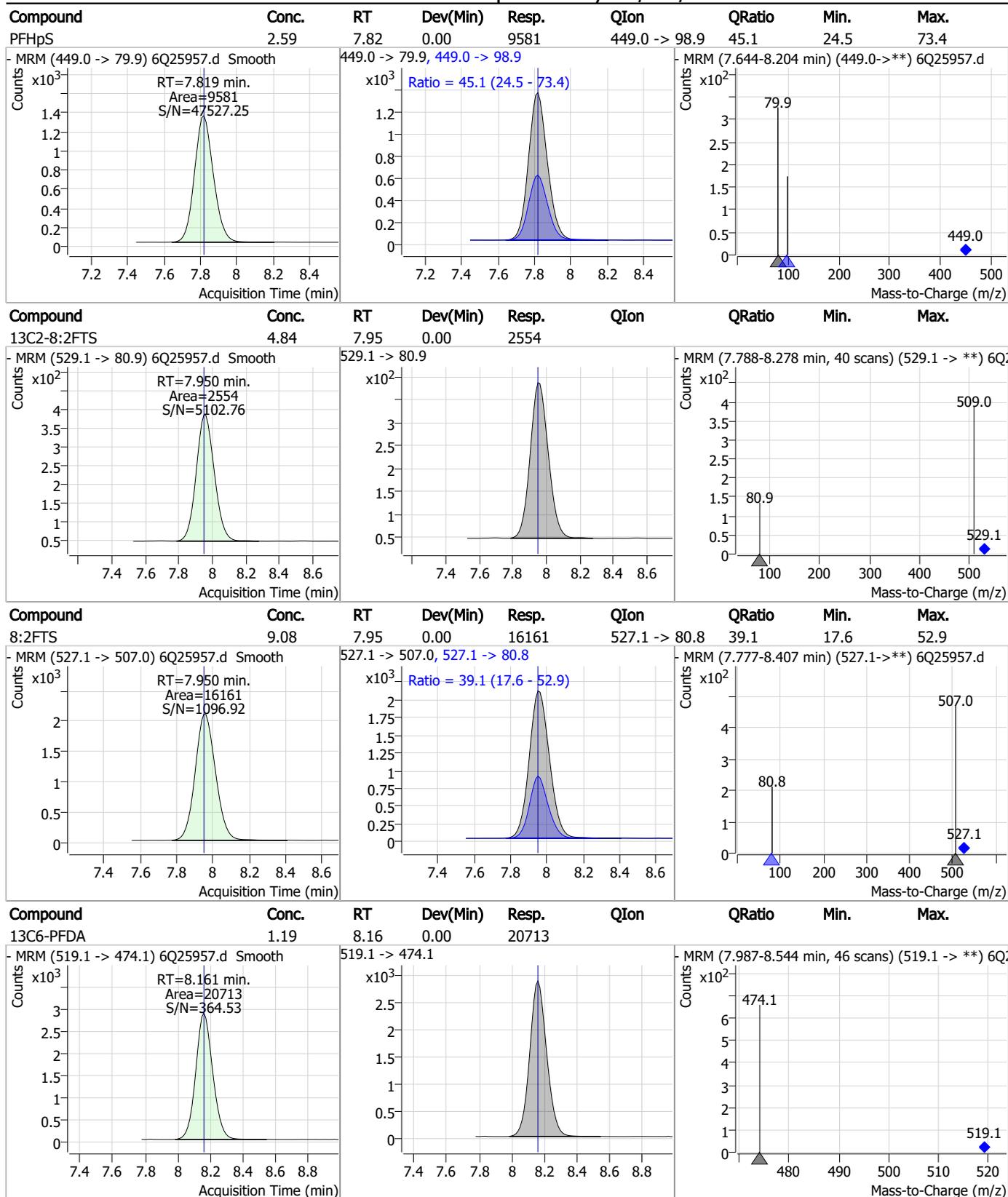
Perfluorinated Compounds by LC/MS/MS



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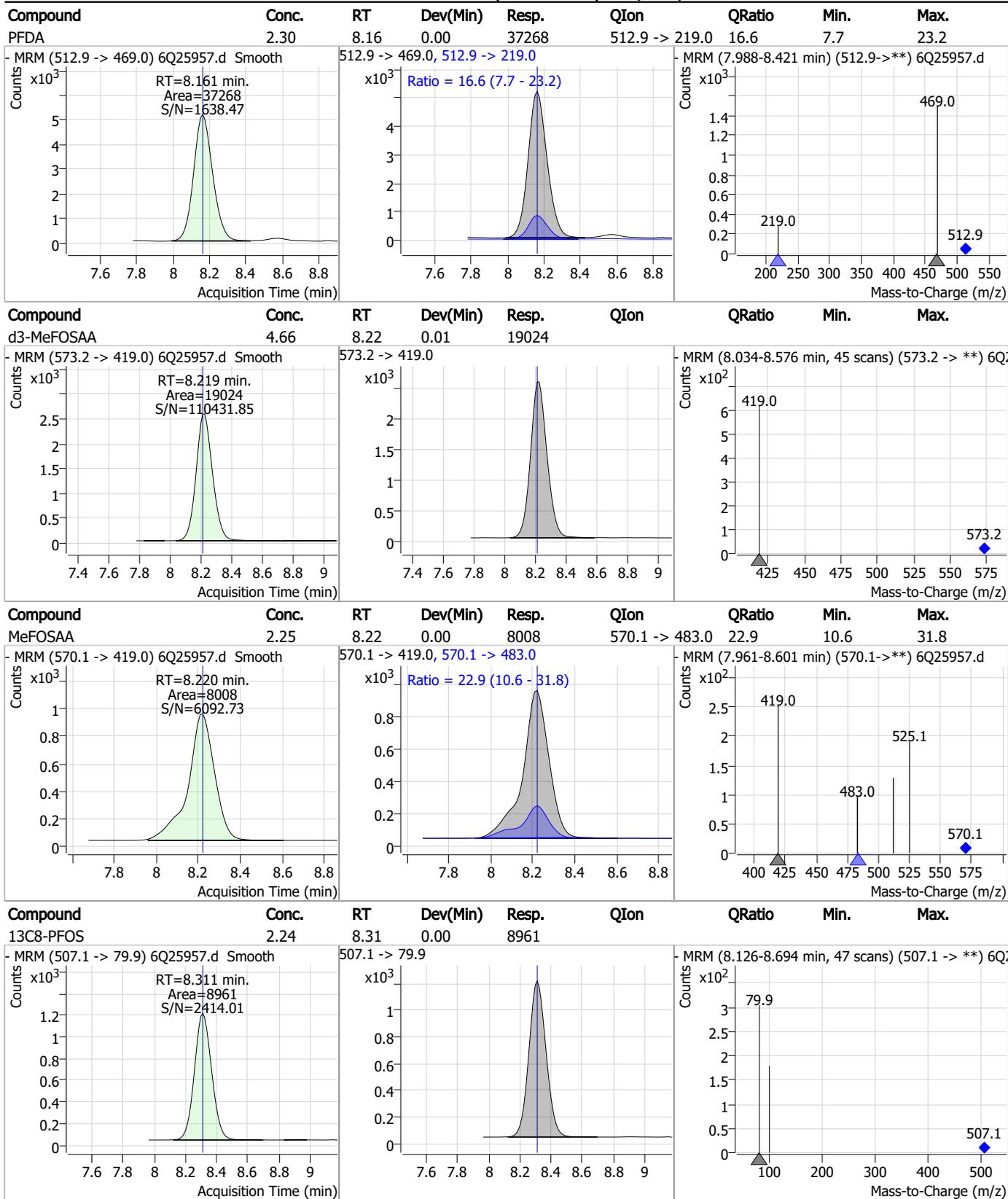
Perfluorinated Compounds by LC/MS/MS



7.4.1
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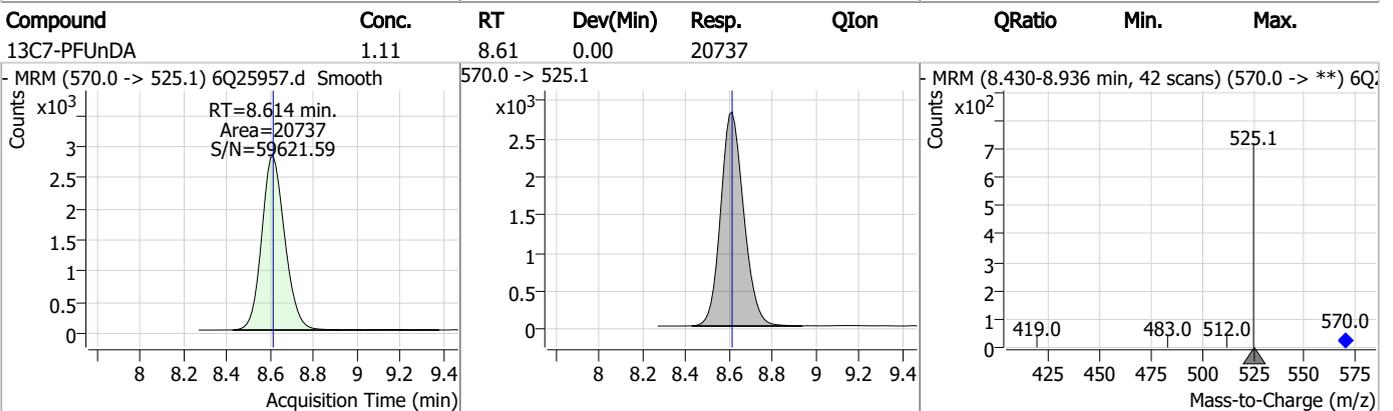
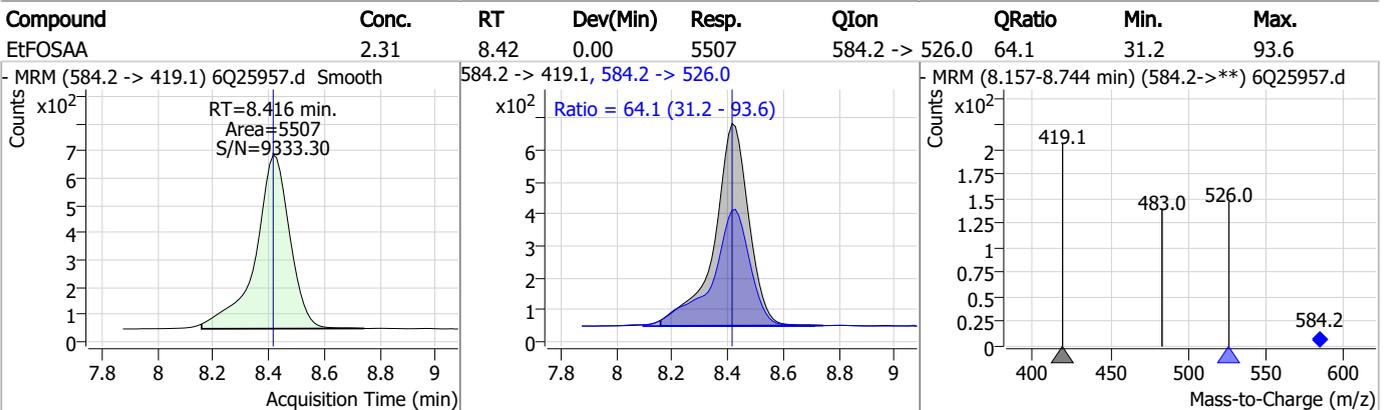
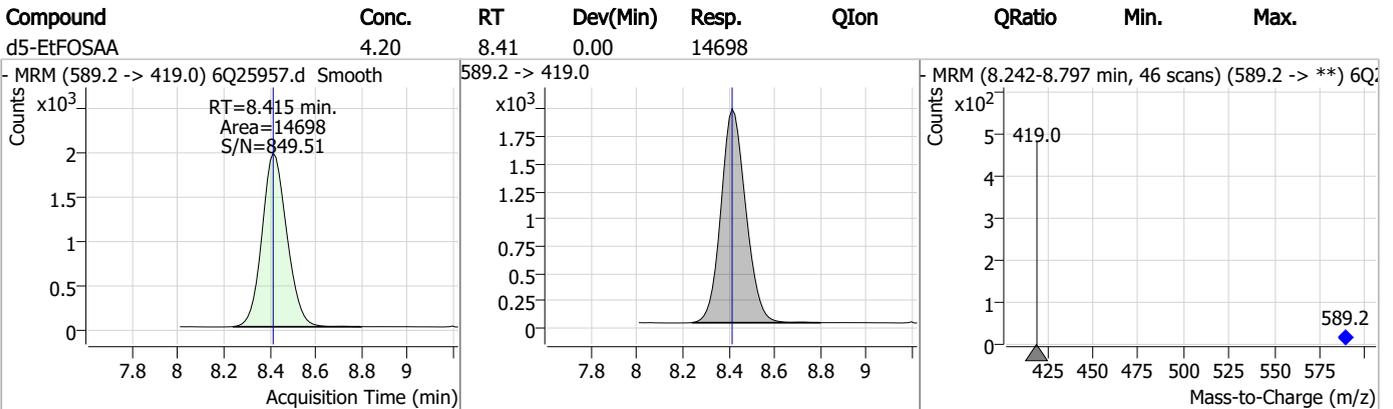
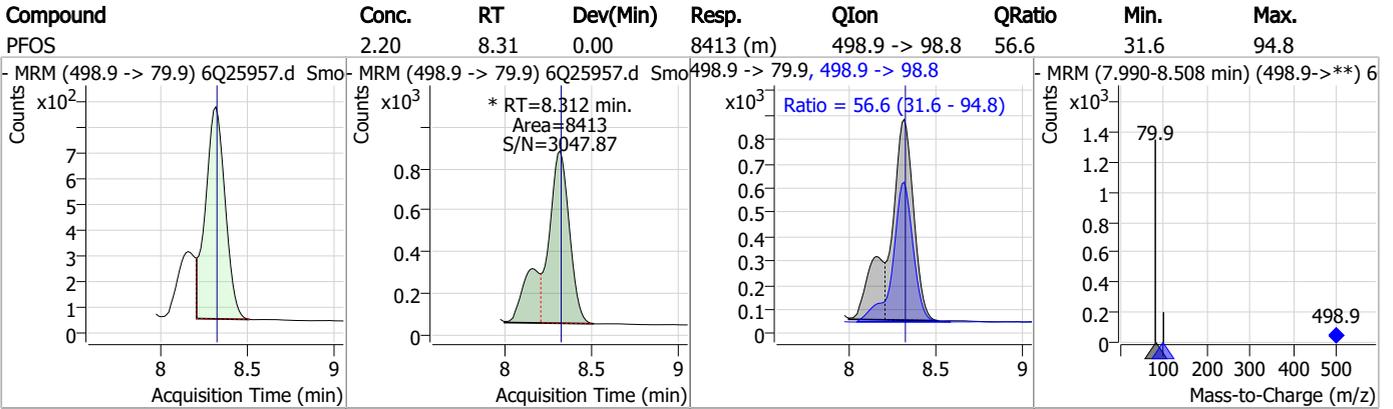


Perfluorinated Compounds by LC/MS/MS

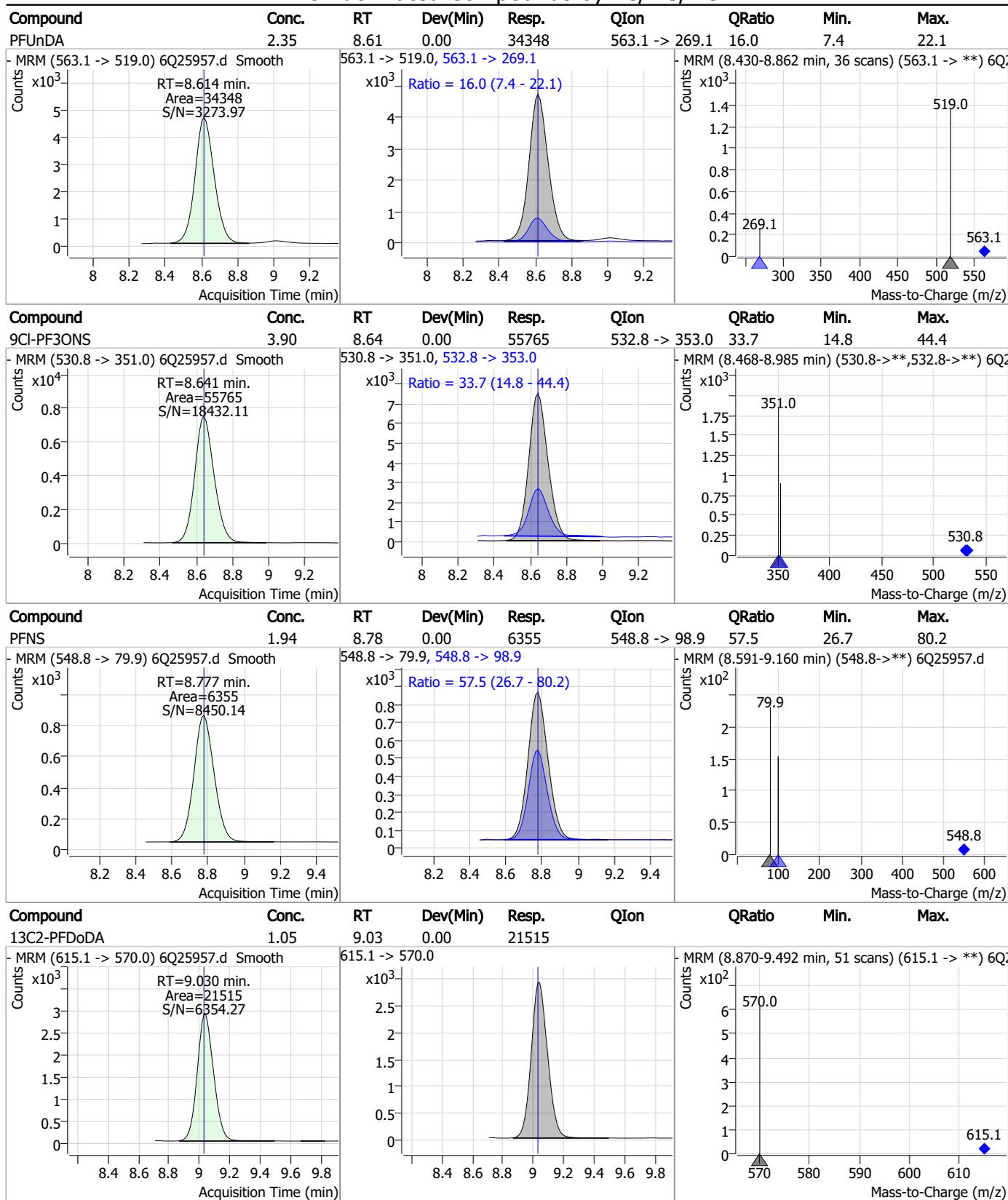


7.4.1
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Perfluorinated Compounds by LC/MS/MS

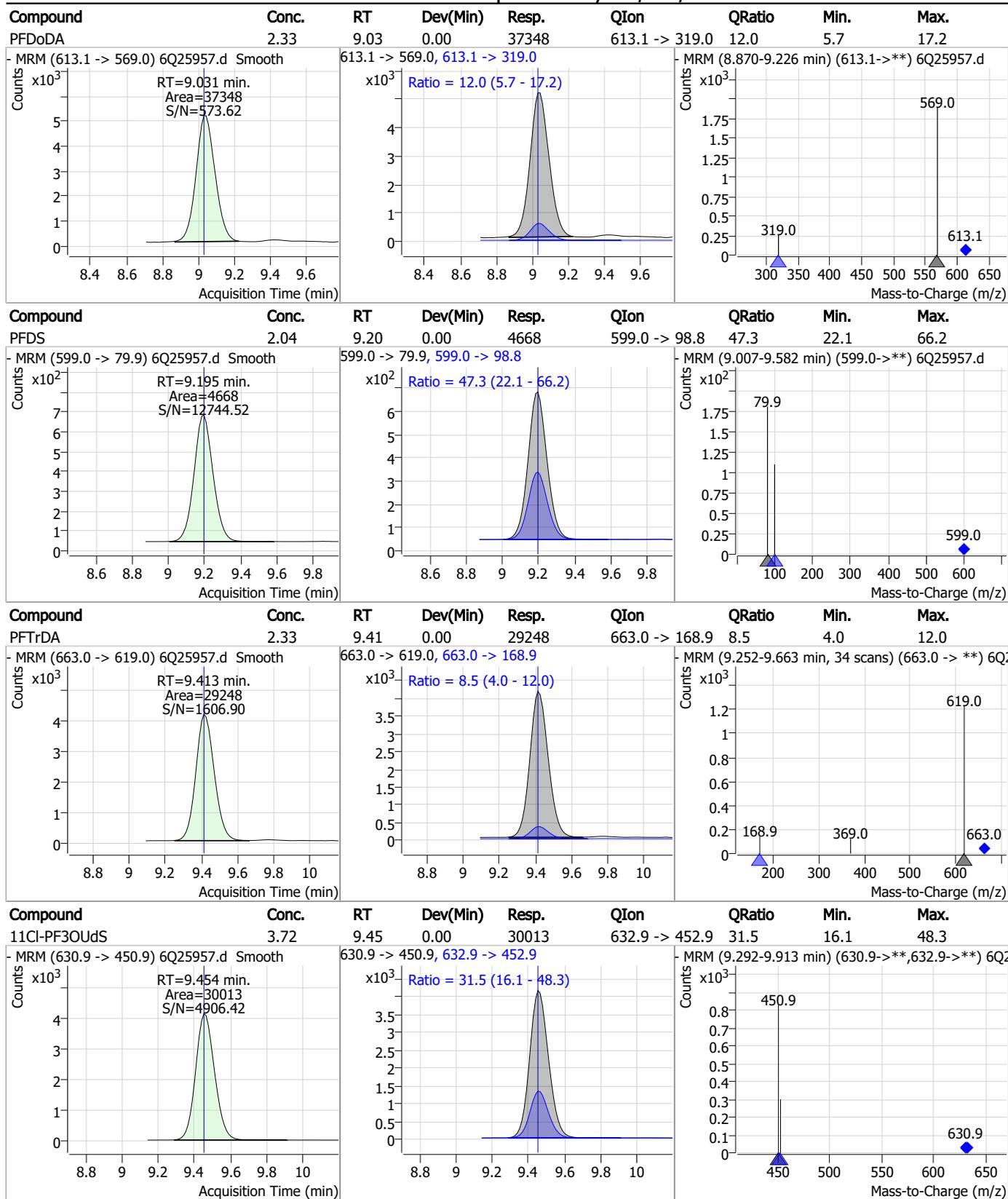


Perfluorinated Compounds by LC/MS/MS



7.4.1
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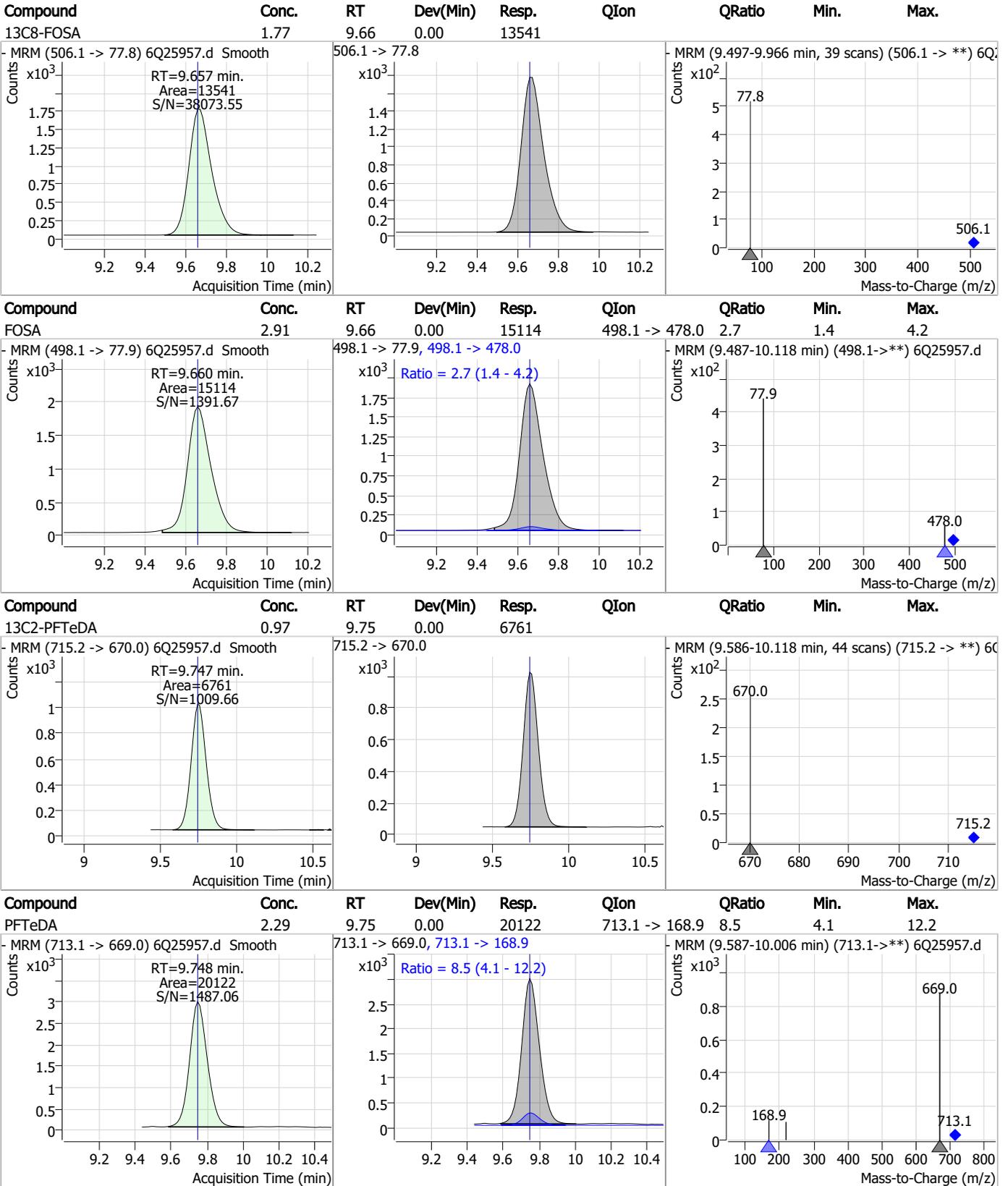
Perfluorinated Compounds by LC/MS/MS



7.4.1

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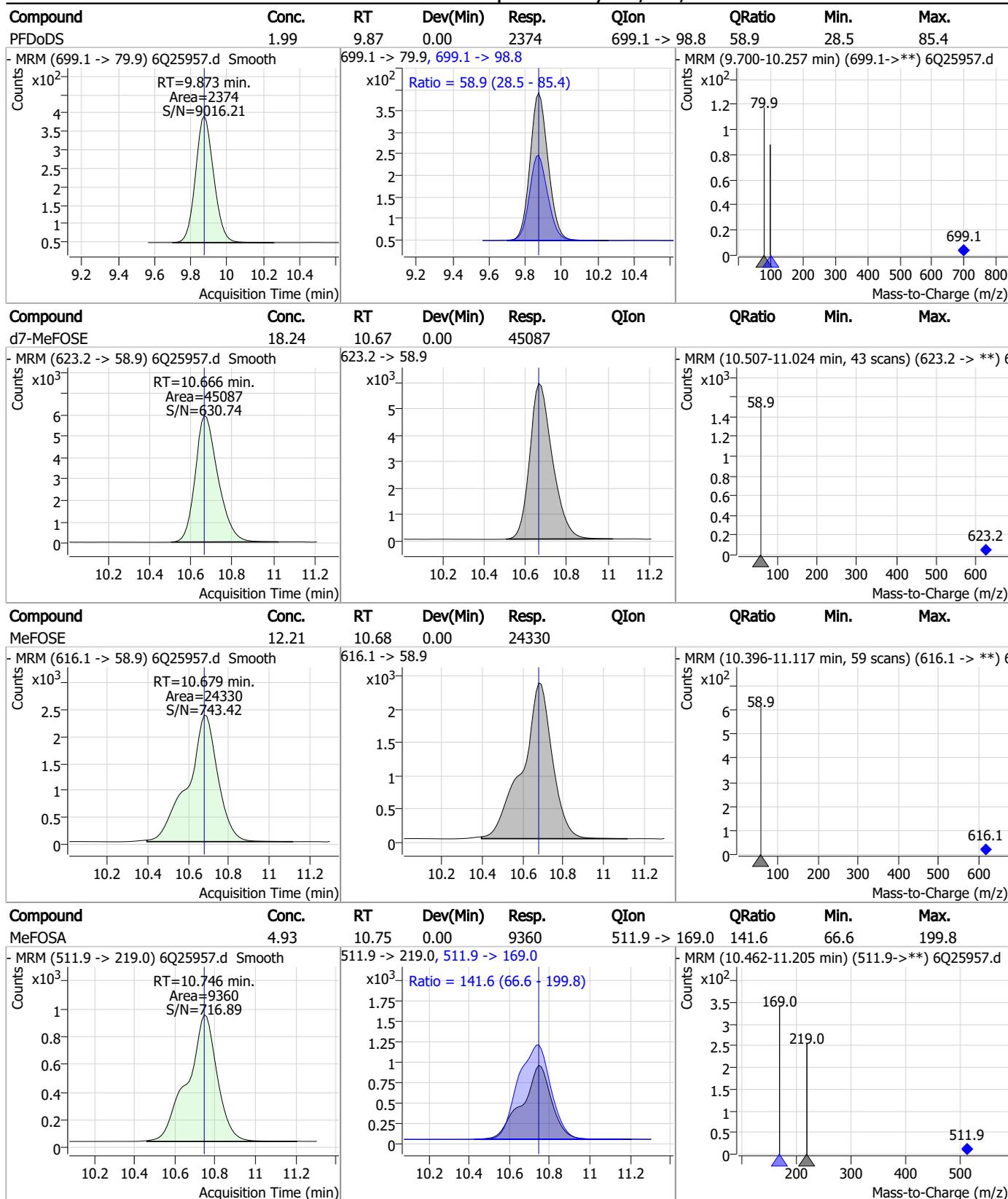
Perfluorinated Compounds by LC/MS/MS



7.4.1

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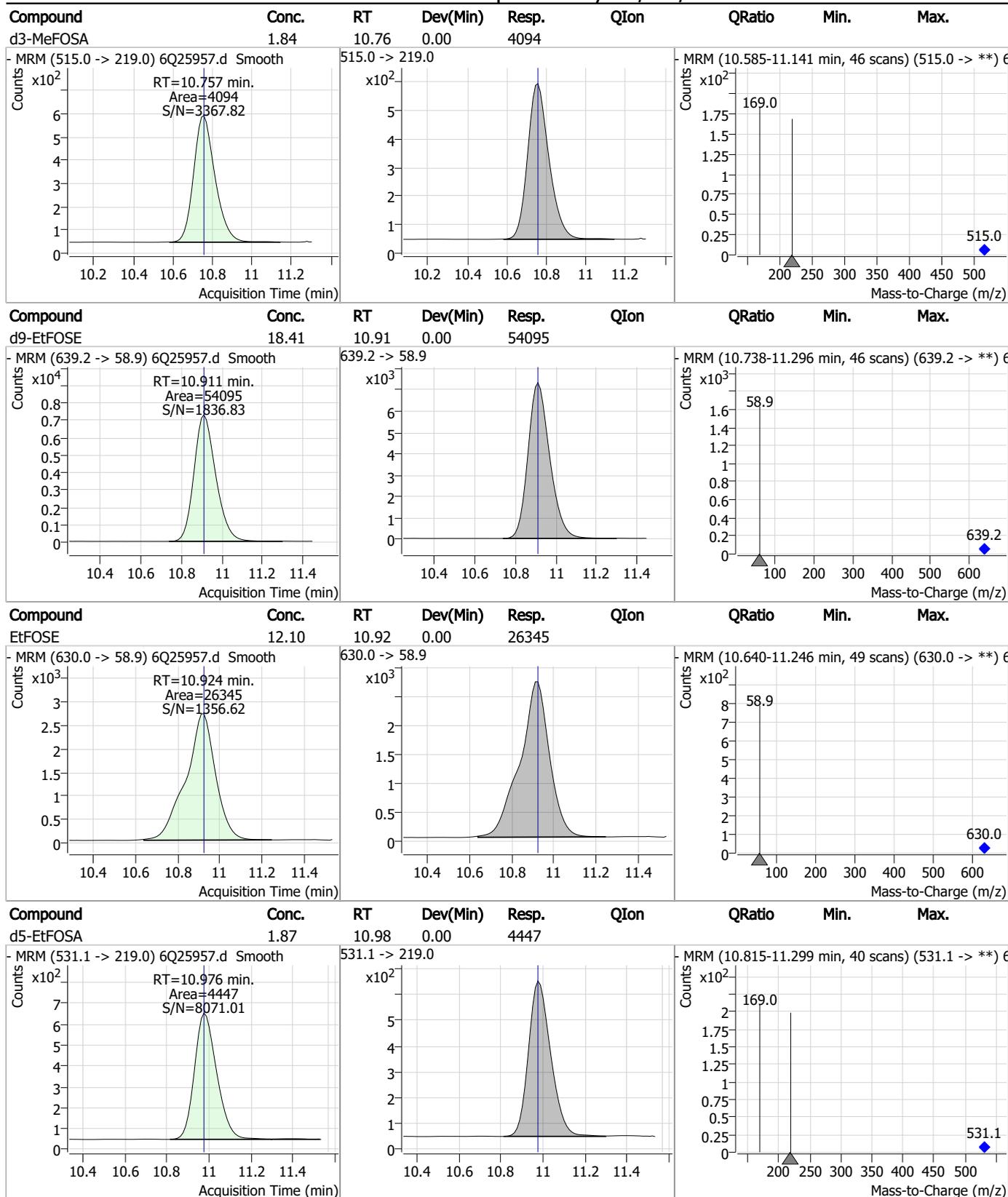
Perfluorinated Compounds by LC/MS/MS



7.4.1

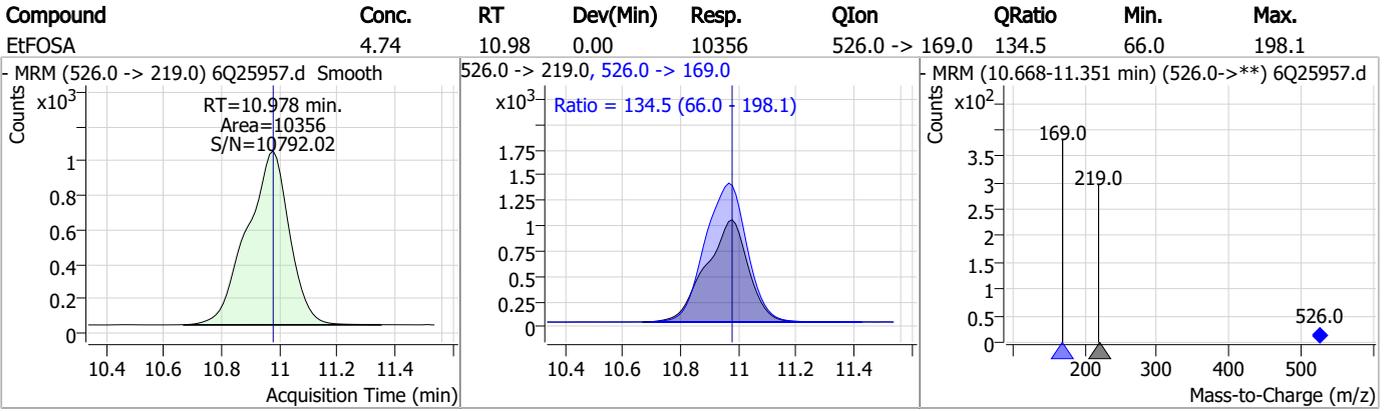
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Perfluorinated Compounds by LC/MS/MS



7.4.1
7

Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP99404-MS Method: EPA DRAFT 1633
Lab FileID: 6Q25957.D Analyst approved: 10/09/23 13:42 Martha Valls
Injection Time: 10/08/23 19:06 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.4.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25959.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 7:35:34 PM
 Sample Name : OP99404-DUP
 Vial : P2-A7
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99404,S6Q367,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	52384	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	45328	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	41674	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	40687	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	53856	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	22652	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	22048	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	23927	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	21370	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	6933	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	15806	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	18533	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	10779	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	10263	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	1929	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	2748	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2646	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	18348	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	28466	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	15231	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	47159	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	55846	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	4769	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	4646	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	9317	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	52431	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	6253	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	59586	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	20767	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	21432	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	38781	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	1929	5.48 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2748	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2646	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFDoDA	9.030	615.1 -> 570.0	21370	1.03 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 82.6%		
13C2-PFTeDA	9.747	715.2 -> 670.0	6933	0.99 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 79.0%		
13C3-PFBS	5.510	302.1 -> 79.9	18533	2.62 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C3-PFHxS	7.263	402.1 -> 79.9	10779	2.71 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 = 108.5%	
13C4-PFBA	2.972	216.8 -> 171.9	52384	4.14 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 41.4%	
13C4-PFHpA	6.531	367.1 -> 322.0	40687	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C5-PFHxA	5.592	318.0 -> 273.0	41674	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C5-PFPeA	4.384	268.3 -> 223.0	45328	5.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C6-PFDA	8.161	519.1 -> 474.1	22048	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C7-PFUnDA	8.601	570.0 -> 525.1	23927	1.27 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C8-FOSA	9.657	506.1 -> 77.8	15806	2.06 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.2%	
13C8-PFOA	7.161	421.1 -> 376.0	53856	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOS	8.311	507.1 -> 79.9	10263	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C9-PFNA	7.680	472.1 -> 427.0	22652	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
d3-MeFOSAA	8.207	573.2 -> 419.0	18348	4.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.5%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	28466	10.52 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
d3-MeFOSA	10.744	515.0 -> 219.0	4646	2.08 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.4%	
d5-EtFOSAA	8.415	589.2 -> 419.0	15231	4.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 86.8%	
d7-MeFOSE	10.666	623.2 -> 58.9	47159	19.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 76.0%	
d9-EtFOSE	10.911	639.2 -> 58.9	55846	18.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.7%	
d5-EtFOSA	10.976	531.1 -> 219.0	4769	2.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.0%	

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.	



7.5.1
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	8.129	463.0 -> 419.0	0	µg/L	m	1
		463.0 -> 219.0	0			
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	7.599	413.0 -> 369.0	0	µg/L	m	1
		413.0 -> 169.0	0			
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.5.1
7

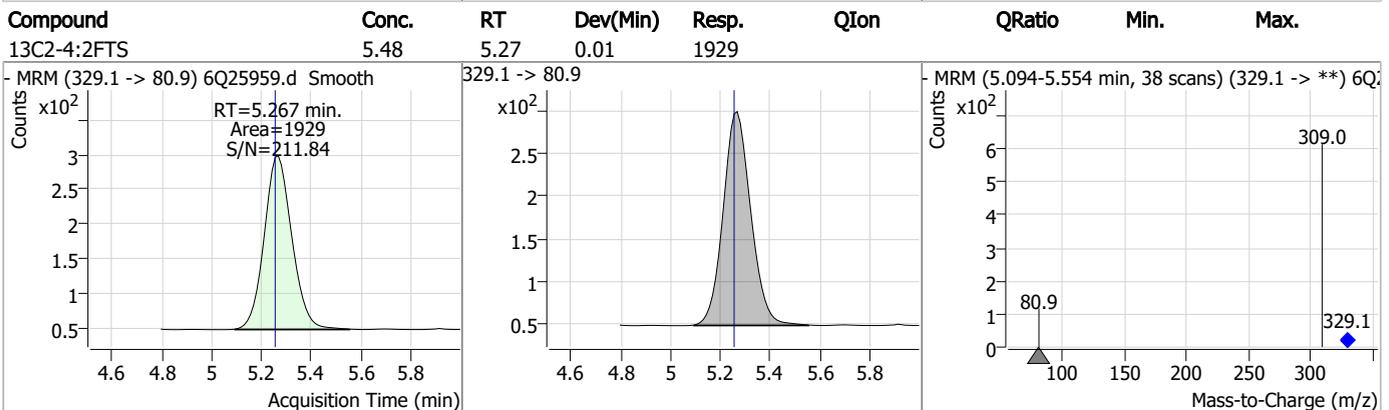
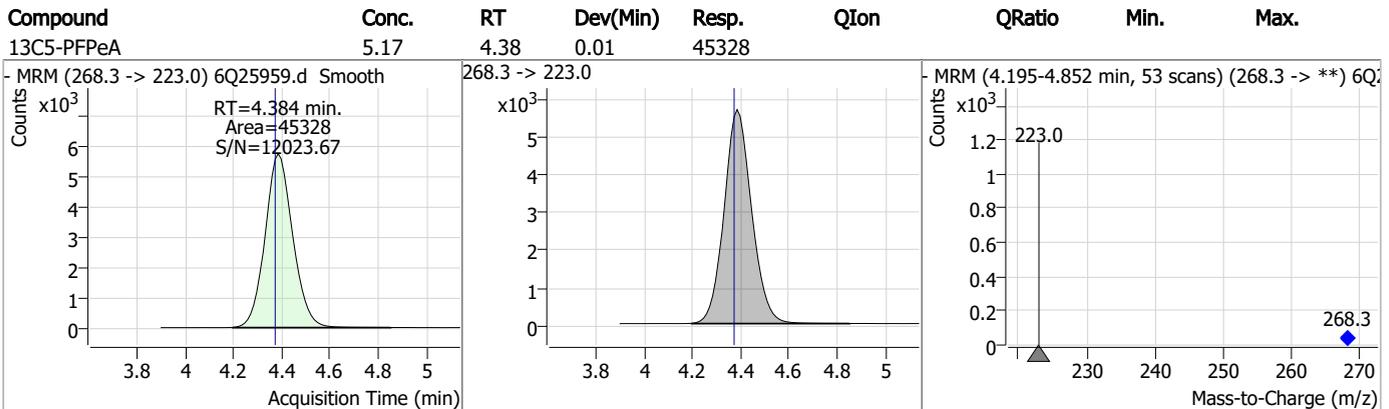
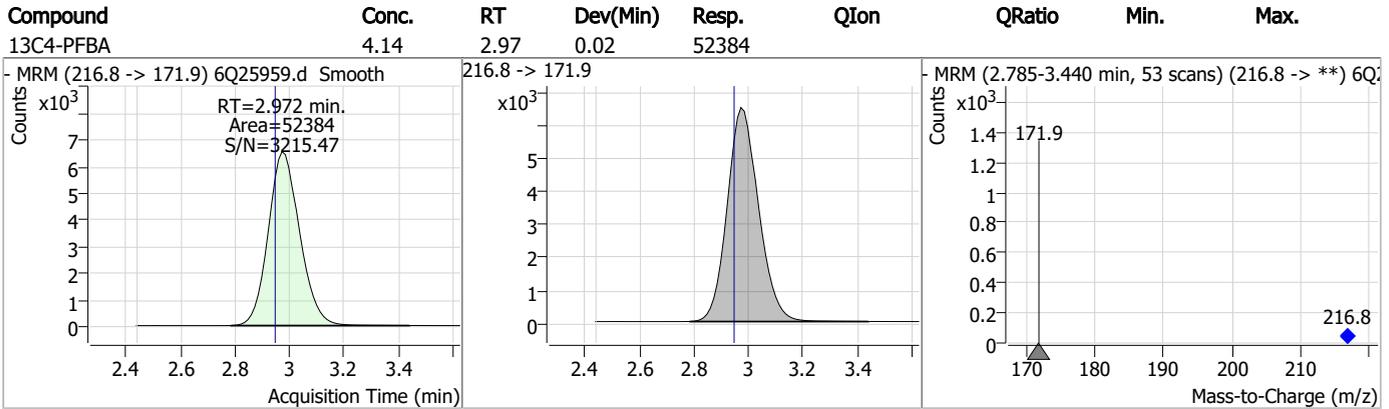
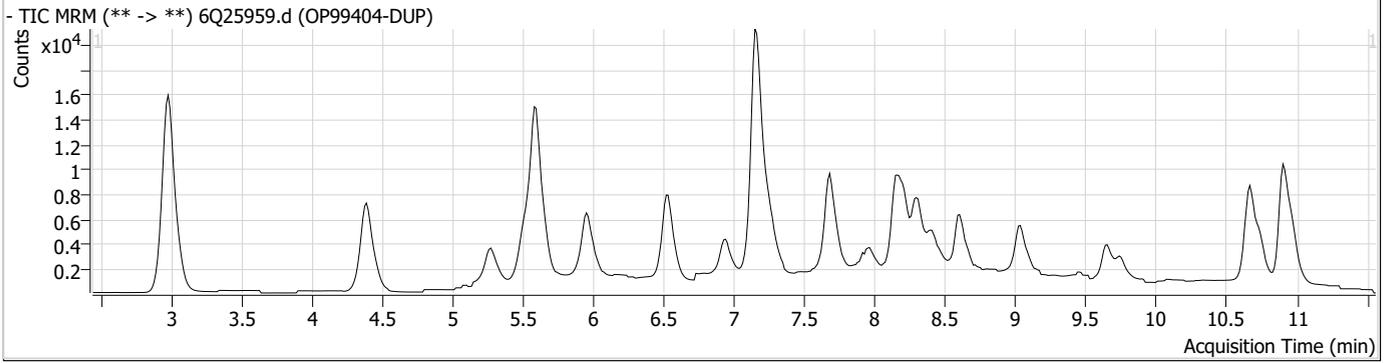
Perfluorinated Compounds by LC/MS/MS

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

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Perfluorinated Compounds by LC/MS/MS

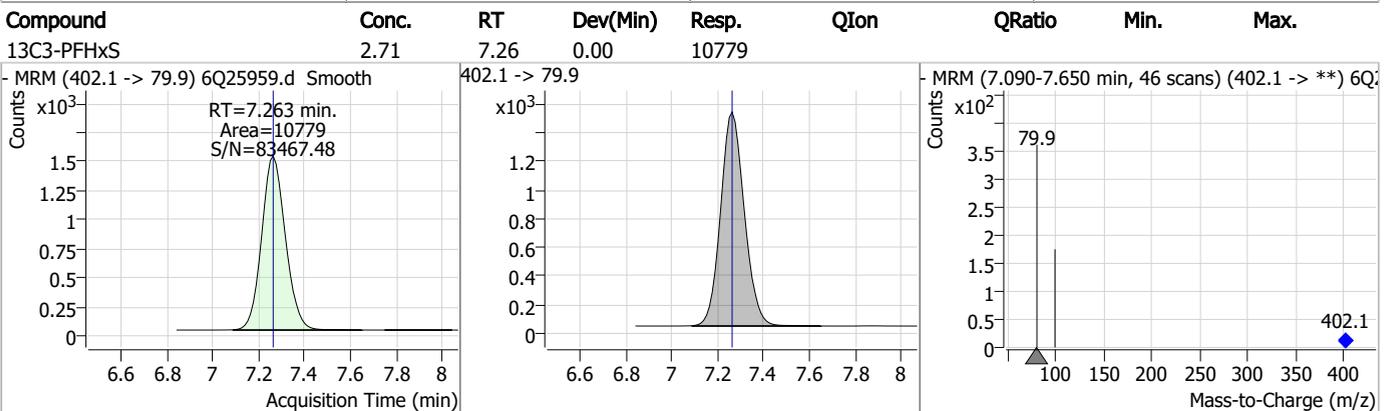
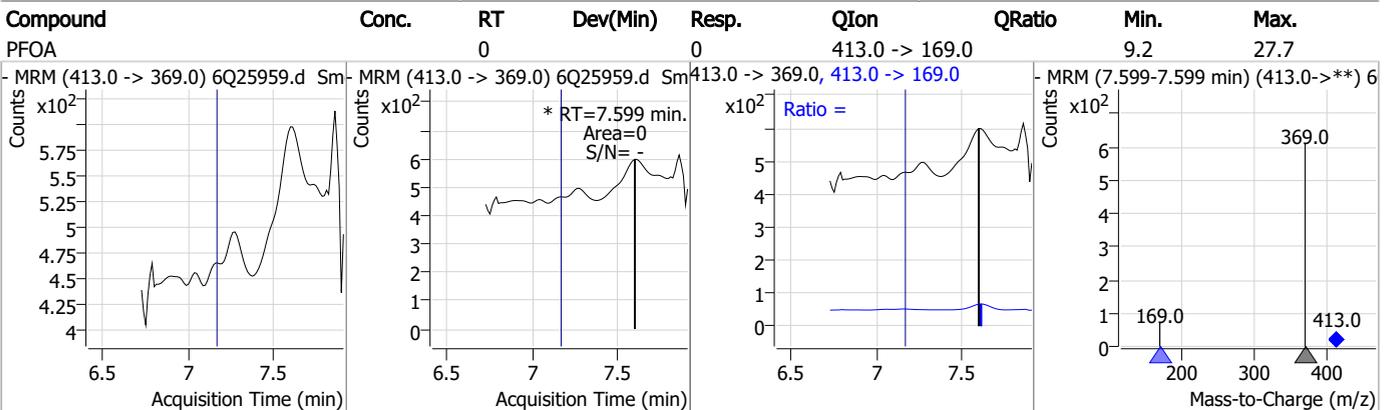
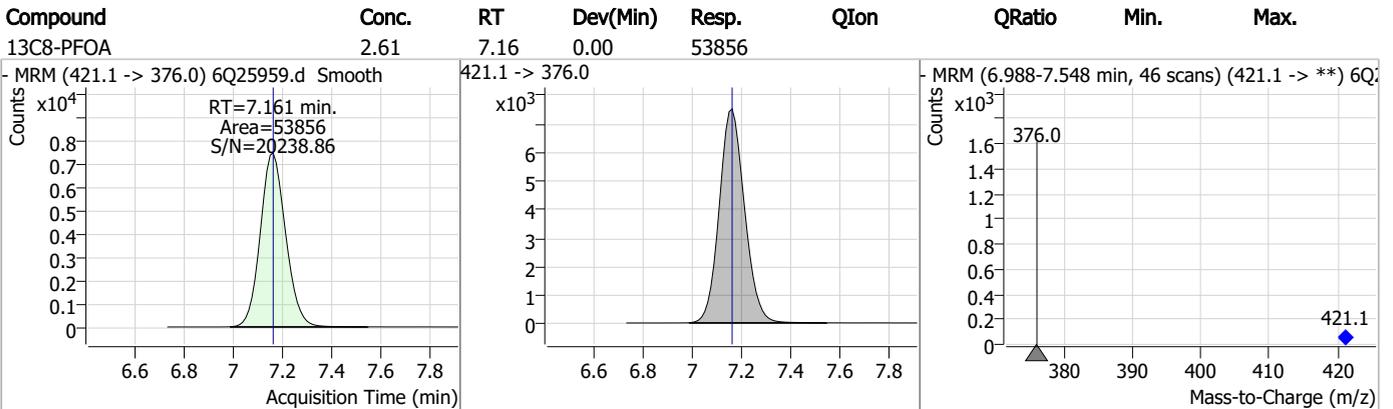
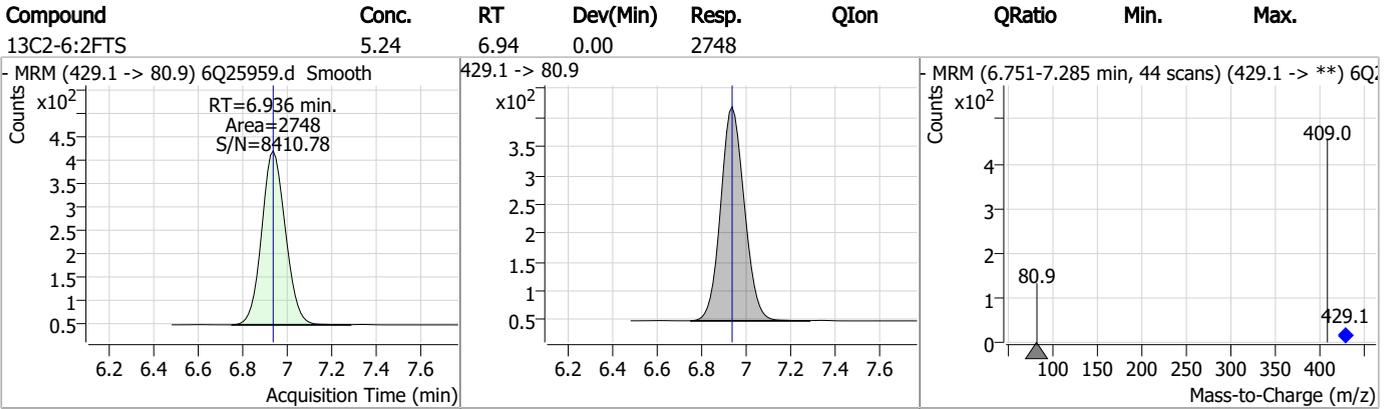


Perfluorinated Compounds by LC/MS/MS

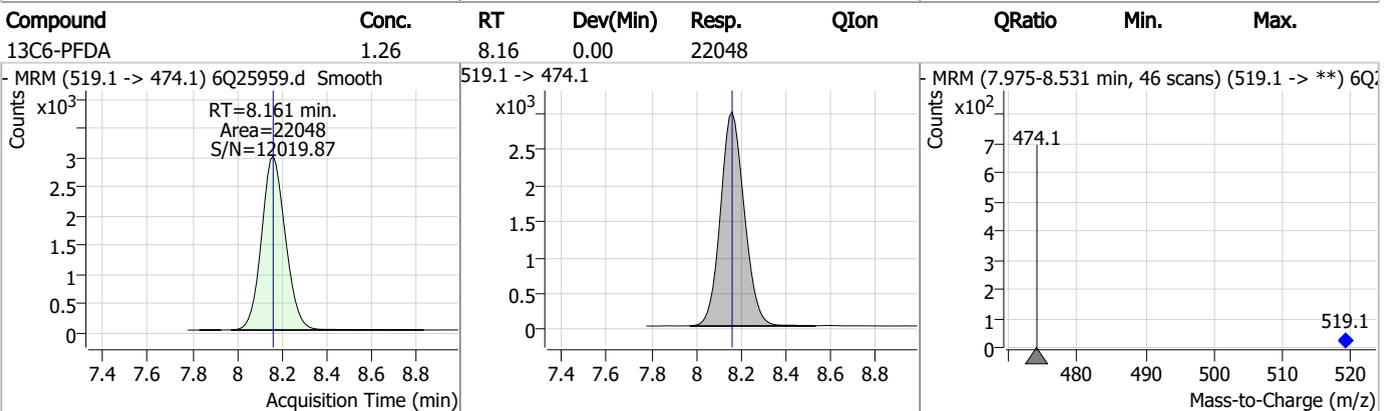
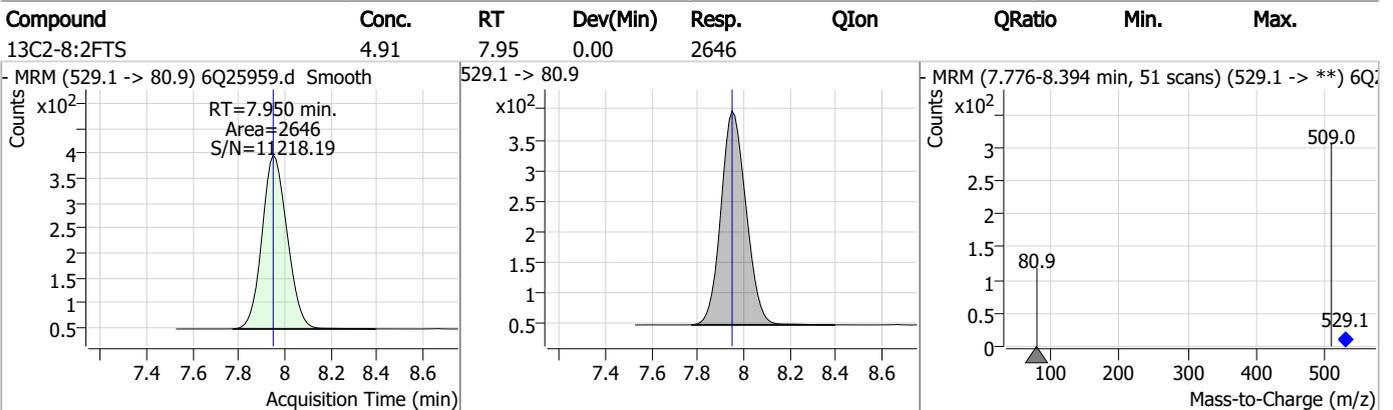
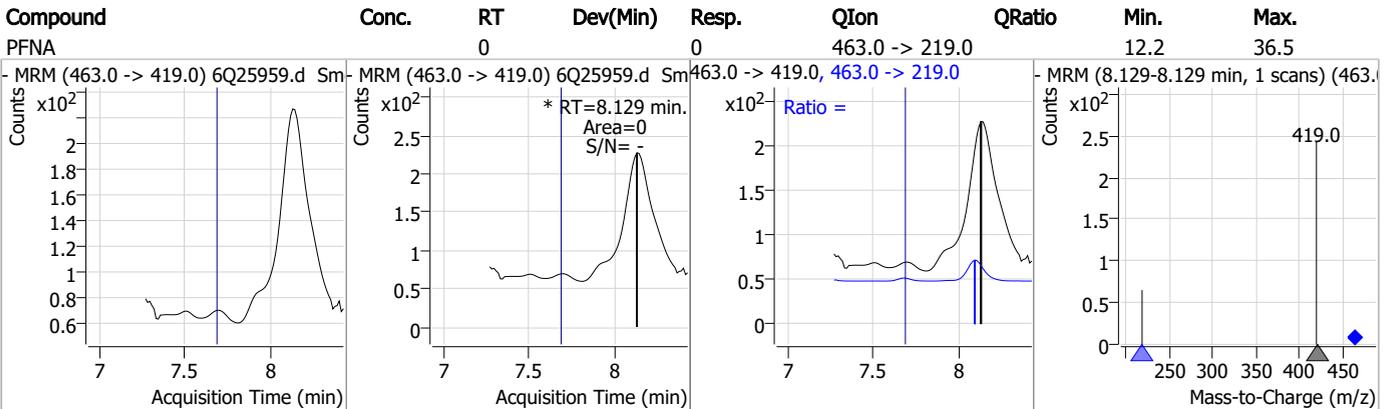
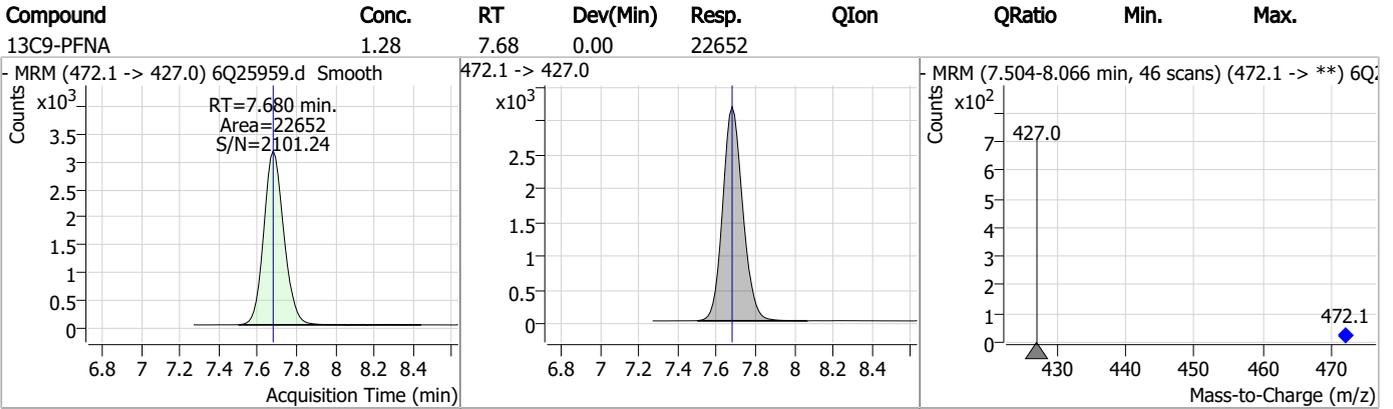
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.62	5.51	0.01	18533				
13C5-PFHxA	2.60	5.59	0.01	41674				
13C3-HFPO-DA	10.52	5.96	0.00	28466				
13C4-PFHpA	2.59	6.53	0.01	40687				

7.5.1
7

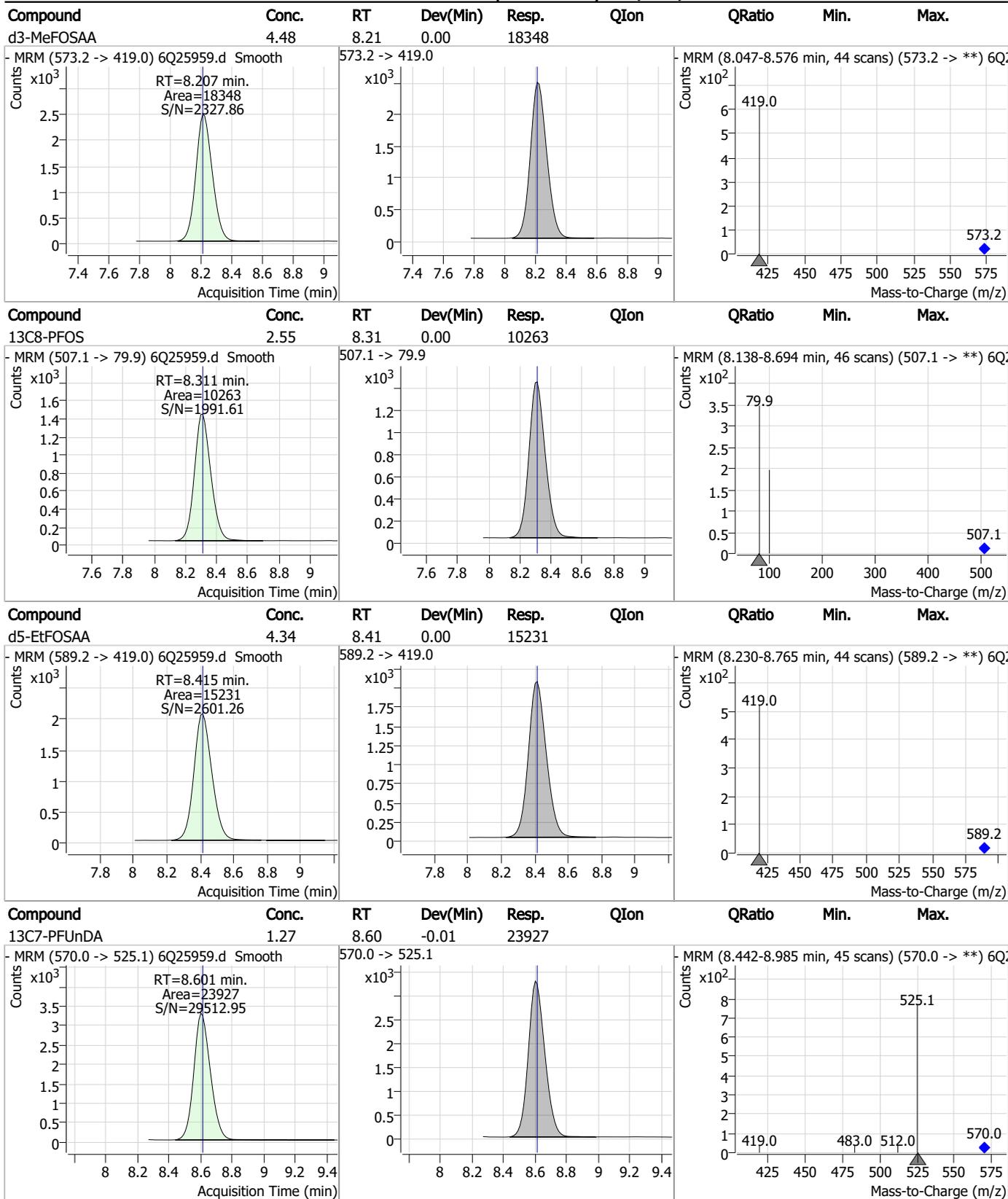
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.5.1
7



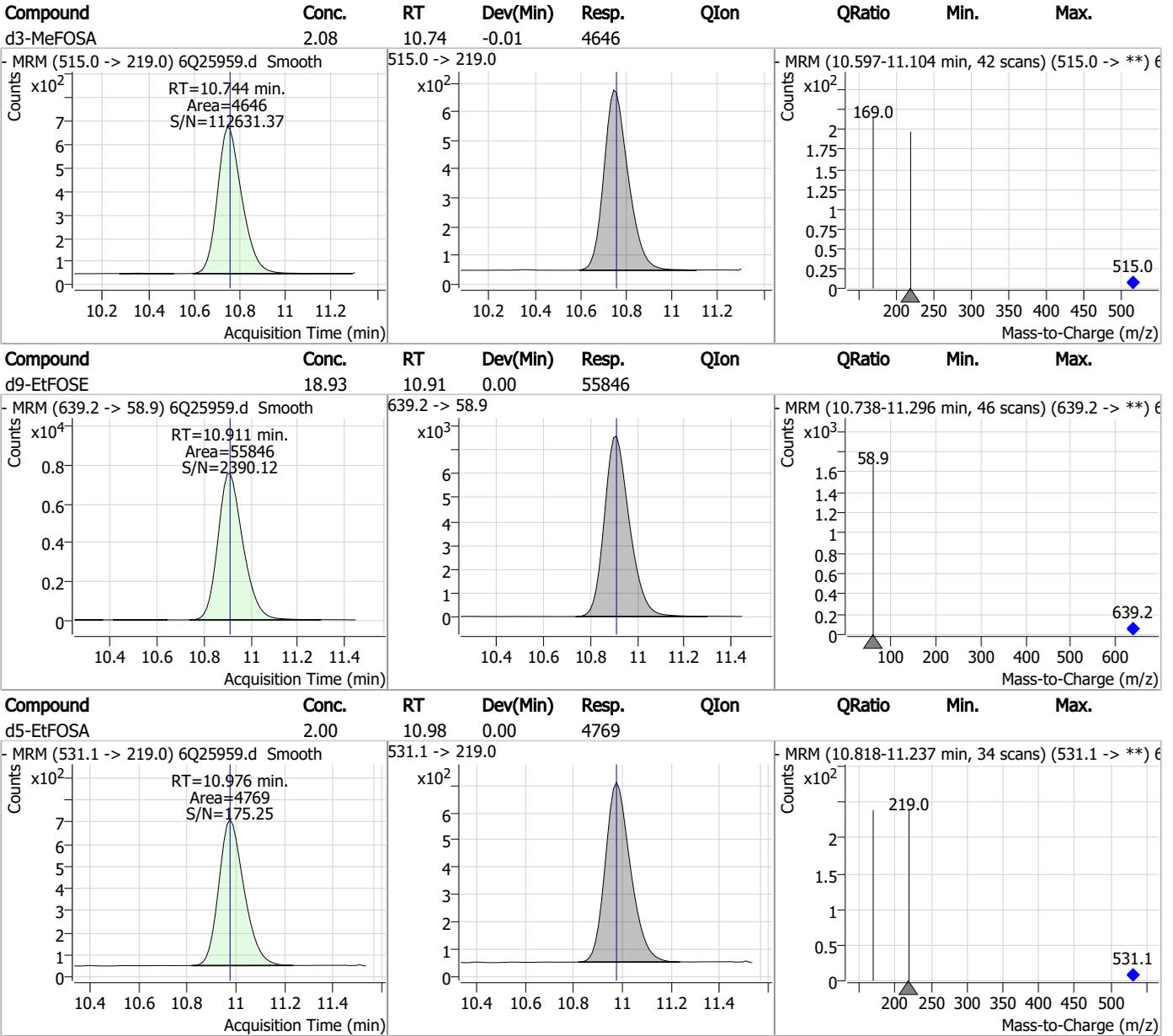
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.03	9.03	0.00	21370				
13C8-FOSA	2.06	9.66	0.00	15806				
13C2-PFTeDA	0.99	9.75	0.00	6933				
d7-MeFOSE	19.00	10.67	0.00	47159				

7.5.1
7



Perfluorinated Compounds by LC/MS/MS



7.5.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Natasha Gumtie
 10/09/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25937.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 2:04:18 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q367 TDCA.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

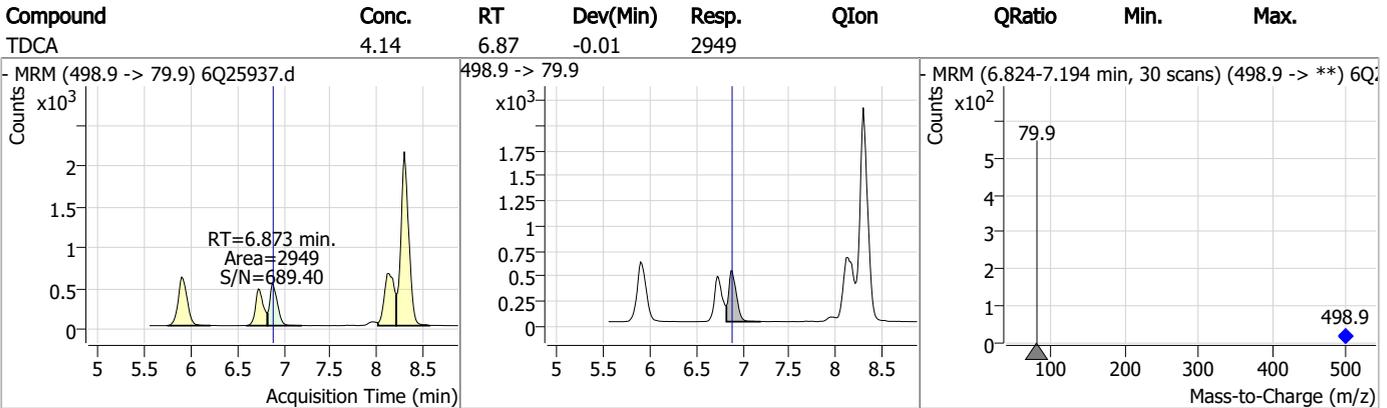
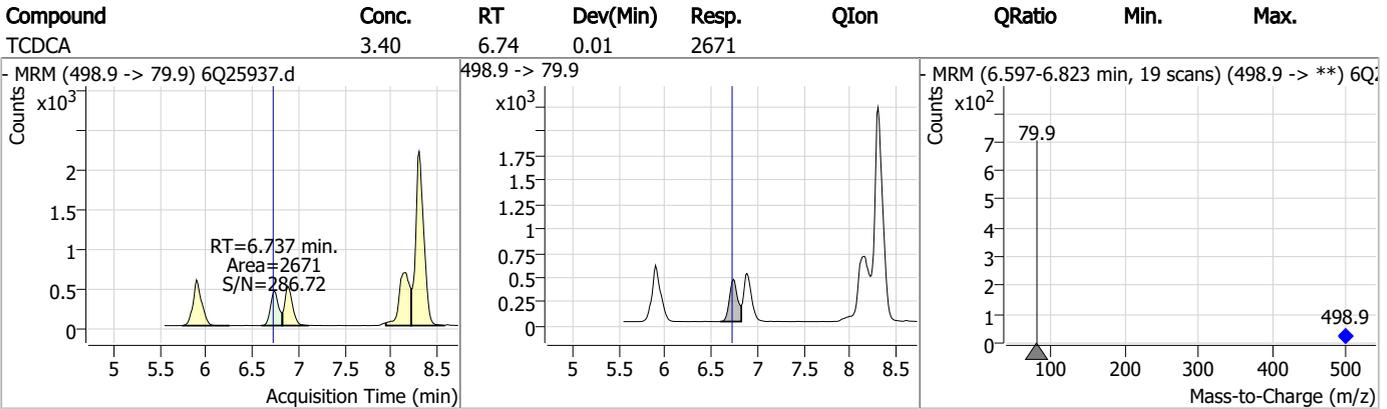
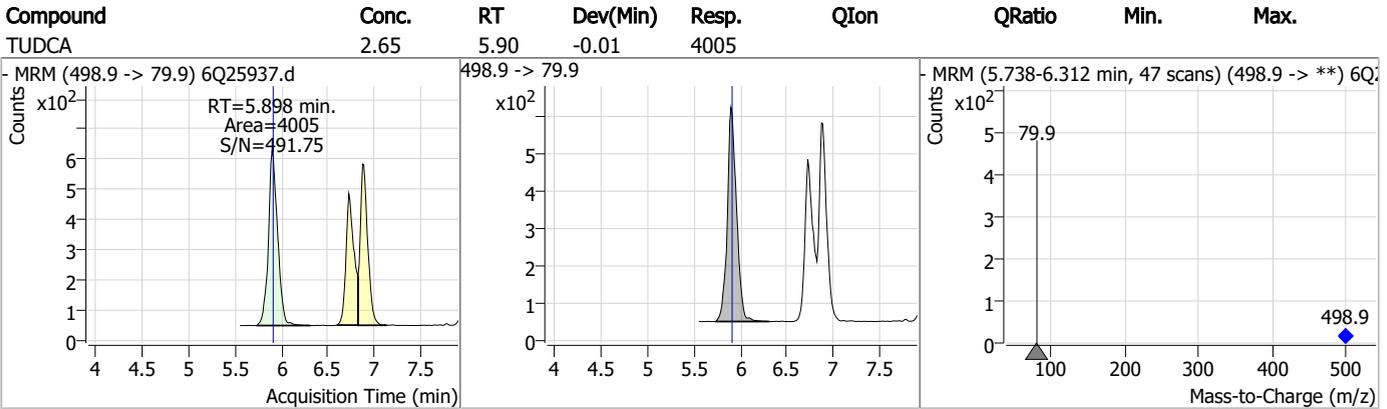
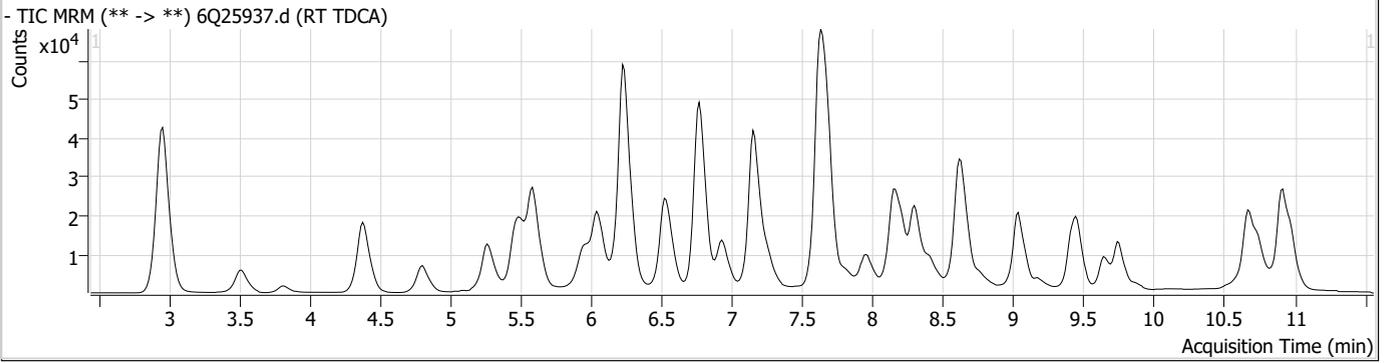
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.311	507.1 -> 79.9	17039	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	16928	2.50 µg/L	-0.025
System Monitoring Compounds					
13C8-PFOS	8.311	507.1 -> 79.9	17039	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.1%		
Target Compounds					
PFOS	8.300	498.9 -> 79.9 498.9 -> 98.8	17310 8205	2.97 µg/L #m	73
TCDCa	6.737	498.9 -> 79.9	2671	3.40 ng/ml	100
TDCA	6.873	498.9 -> 79.9	2949	4.14 ng/ml	100
TUDCA	5.898	498.9 -> 79.9	4005	2.65 ng/ml	100

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

7.6.1
7

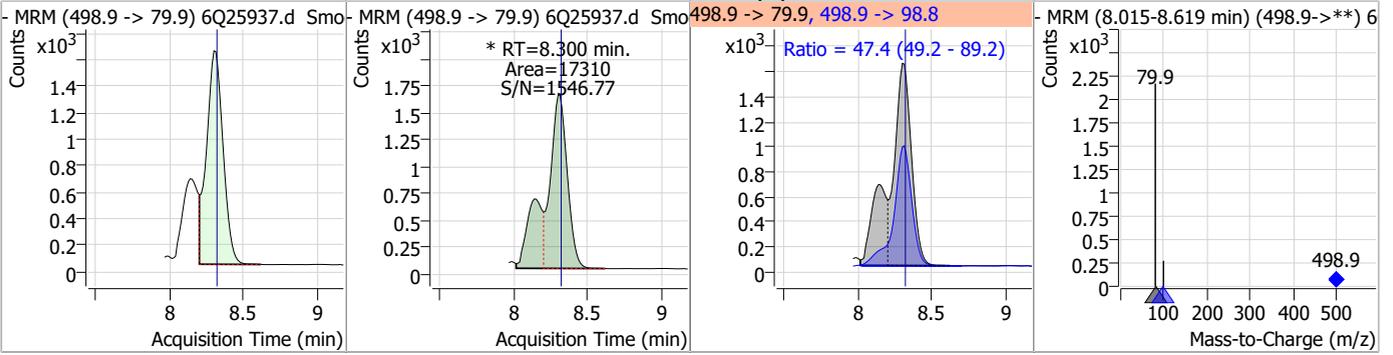


Perfluorinated Compounds by LC/MS/MS

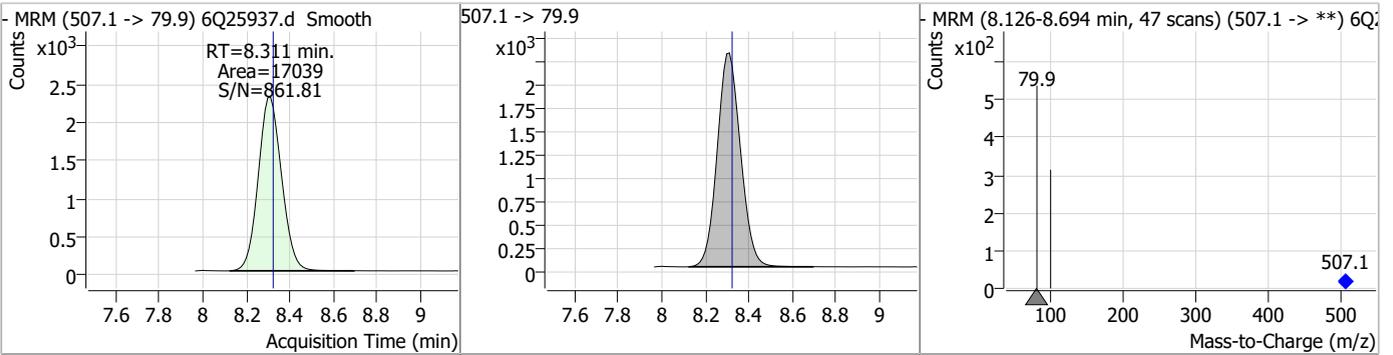


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.97	8.30	-0.01	17310 (m)	498.9 -> 98.8	47.4	49.2	89.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.31	-0.01	17039				



7.6.1

7

Manual Integration Approval Summary

Sample Number: S6Q367-RT Method: EPA DRAFT 1633
Lab FileID: 6Q25937.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 14:04 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.6.1.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25938.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 2:34:43 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.972	216.8 -> 171.9	145218	10.00 µg/L	0.025
M5-PFPeA	4.384	268.3 -> 223.0	45891	5.00 µg/L	0.012
M5-PFHxA	5.592	318.0 -> 273.0	45283	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	42388	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	58085	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	24682	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	25853	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	28374	1.25 µg/L	0.000
M2-PFDoDA	9.043	615.1 -> 570.0	30639	1.25 µg/L	0.012
M2-PFTeDA	9.747	715.2 -> 670.0	11065	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23528	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	20977	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12082	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	11827	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	2324	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	3016	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	3415	5.00 µg/L	0.012
M3-MeFOSAA	8.219	573.2 -> 419.0	22597	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	32041	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	17971	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	75626	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	91793	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7081	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6783	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	10766	2.50 µg/L	0.000
13C3-PFBA	2.976	216.0 -> 172.0	59560	5.00 µg/L	0.025
18O2-PFHxS	7.263	403.0 -> 83.9	7295	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	68670	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	25607	1.25 µg/L	0.000
13C5-PFNA	7.692	468.0 -> 423.0	24415	1.25 µg/L	0.012
13C2-PFHxA	5.593	315.1 -> 270.0	46242	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	2324	5.66 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.1%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3016	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C2-8:2FTS	7.962	529.1 -> 80.9	3415	5.43 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.5%		
13C2-PFDoDA	9.043	615.1 -> 570.0	30639	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.0%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11065	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.3%		
13C3-PFBS	5.510	302.1 -> 79.9	20977	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.263	402.1 -> 79.9	12082	2.61 µg/L	0.000

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFBA	2.972	216.8 -> 171.9	145218	10.10 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA	6.531	367.1 -> 322.0	42388	2.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C5-PFHxA	5.592	318.0 -> 273.0	45283	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C5-PFPeA	4.384	268.3 -> 223.0	45891	4.39 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
13C6-PFDA	8.161	519.1 -> 474.1	25853	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C7-PFUnDA	8.614	570.0 -> 525.1	28374	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-FOSA	9.657	506.1 -> 77.8	23528	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-PFOA	7.161	421.1 -> 376.0	58085	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-PFOS	8.311	507.1 -> 79.9	11827	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C9-PFNA	7.680	472.1 -> 427.0	24682	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.3%	
d3-MeFOSAA	8.219	573.2 -> 419.0	22597	4.77 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	32041	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d3-MeFOSA	10.744	515.0 -> 219.0	6783	2.63 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%	
d5-EtFOSAA	8.415	589.2 -> 419.0	17971	4.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	75626	26.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d9-EtFOSE	10.911	639.2 -> 58.9	91793	26.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d5-EtFOSA	10.976	531.1 -> 219.0	7081	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	191986	49.80 µg/L	99
		327.1 -> 80.9	76143		
6:2FTS	6.937	427.1 -> 407.0	143786	52.44 µg/L	98
		427.1 -> 80.9	54071		
8:2FTS	7.950	527.1 -> 507.0	100670	42.31 µg/L	100
		527.1 -> 80.8	35467		
EtFOSAA	8.428	584.2 -> 419.1	39033	13.37 µg/L	97
		584.2 -> 526.0	25314		
FOSA	9.660	498.1 -> 77.9	282046	31.30 µg/L	100
		498.1 -> 478.0	8157		
MeFOSAA	8.220	570.1 -> 419.0	57663	13.66 µg/L	99
		570.1 -> 483.0	12628		
PFBA	2.981	212.8 -> 168.9	287820	53.20 µg/L	100
PFBS	5.511	298.7 -> 79.9	74854	11.91 µg/L	99
		298.7 -> 98.8	27356		
PFDA	8.161	512.9 -> 469.0	265891	13.16 µg/L	98
		512.9 -> 219.0	43730		
PFDoDA	9.043	613.1 -> 569.0	325093	14.27 µg/L	98
		613.1 -> 319.0	39042		
PFDS	9.195	599.0 -> 79.9	37382	12.36 µg/L	92

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	18336	14.45	µg/L	98
		363.1 -> 319.0	332289			
PFHpS	7.819	363.1 -> 169.0	46140	12.81	µg/L	97
		449.0 -> 79.9	62561			
PFHxA	5.594	449.0 -> 98.9	29513	13.25	µg/L	100
		313.0 -> 269.0	214503			
PFHxS	7.264	313.0 -> 118.9	10814	11.37	µg/L	91
		398.7 -> 79.9	57435			
PFNA	7.556	398.7 -> 98.9	26908	29.61	µg/L	99
		463.0 -> 419.0	450430			
PFNS	8.777	463.0 -> 219.0	112257	12.41	µg/L	94
		548.8 -> 79.9	53546			
PFOA	7.163	548.8 -> 98.9	26207	30.02	µg/L	100
		413.0 -> 369.0	748287			
PFOS	8.312	413.0 -> 169.0	138195	11.92	µg/L	84
		498.9 -> 79.9	60208			
PFPeA	4.386	498.9 -> 98.8	30510	27.07	µg/L	100
		263.0 -> 219.0	268016			
PFPeS	6.583	349.1 -> 79.9	80459	12.33	µg/L	98
		349.1 -> 98.9	36214			
PFTeDA	9.748	713.1 -> 669.0	183697	12.76	µg/L	99
		713.1 -> 168.9	14460			
PFTrDA	9.413	663.0 -> 619.0	257079	14.36	µg/L	100
		663.0 -> 168.9	20478			
PFUnDA	8.614	563.1 -> 519.0	258375	12.92	µg/L	97
		563.1 -> 269.1	40860			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	241547	25.41	µg/L	98
		632.9 -> 452.9	74428			
9Cl-PF3ONS	8.641	530.8 -> 351.0	414136	24.55	µg/L	97
		532.8 -> 353.0	130384			
ADONA	6.780	376.9 -> 250.9	1094419	24.87	µg/L	98
		376.9 -> 84.8	287989			
HFPO-DA	5.970	284.9 -> 168.9	86777	27.33	µg/L	96
		284.9 -> 184.9	9219			
3:3FTCA	3.846	241.0 -> 177.0	44618	57.25	µg/L	99
		241.0 -> 117.0	6123			
5:3FTCA	6.246	341.0 -> 237.1	1044097	344.05	µg/L	97
		341.0 -> 217.0	774714			
7:3FTCA	7.645	441.0 -> 316.9	638887	344.67	µg/L	95
		441.0 -> 336.9	1333615			
EtFOSA	10.978	526.0 -> 219.0	165937	47.74	µg/L	93
		526.0 -> 169.0	206234			
EtFOSE	10.912	630.0 -> 58.9	314463	85.14	µg/L	100
		511.9 -> 219.0	144164			
MeFOSA	10.746	511.9 -> 169.0	203685	45.85	µg/L	93
		616.1 -> 58.9	294115			
MeFOSE	10.679	699.1 -> 79.9	19783	88.00	µg/L	100
		699.1 -> 98.8	11290			
PFDoDS	9.873	295.0 -> 201.0	51307	12.59	µg/L	100
		295.0 -> 84.9	14081			
NFDHA	5.475	279.0 -> 85.1	216627	25.23	µg/L	100
		229.0 -> 84.9	172754			
PFMBA	4.813	314.8 -> 134.9	524120	27.74	µg/L	100
		314.8 -> 82.9	18706			
PFMPA	3.526			25.17	µg/L	100
PFEESA	6.050					

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

7.6.2
7

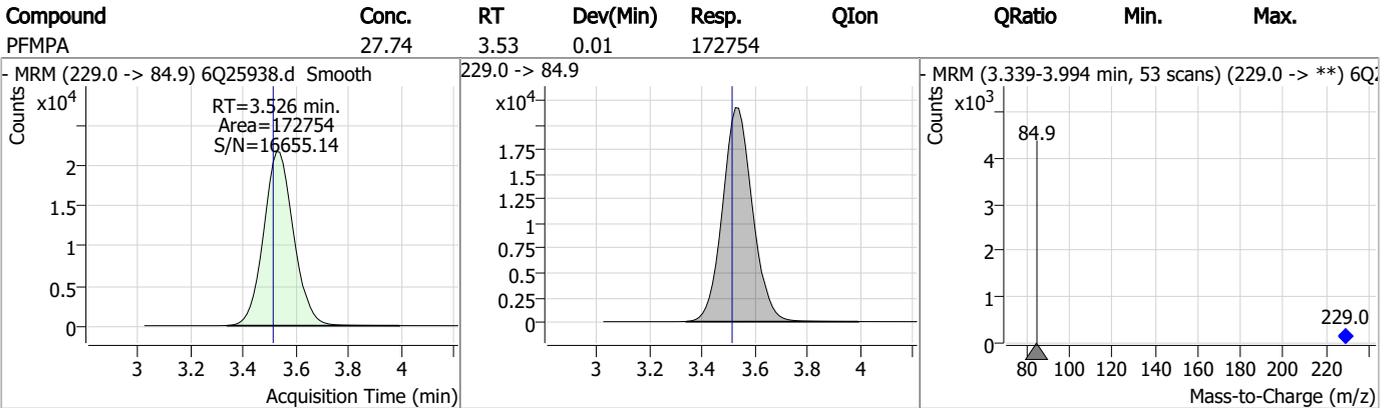
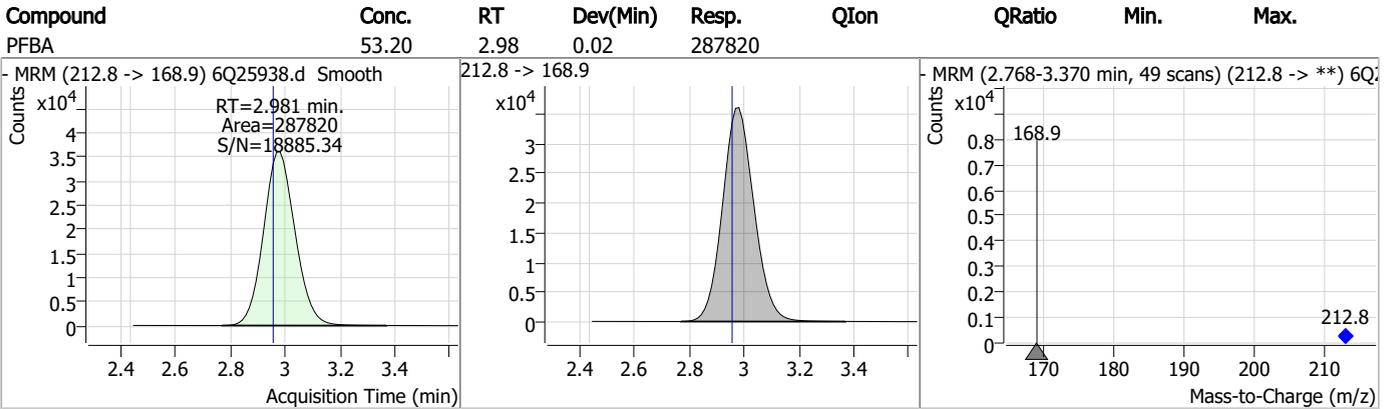
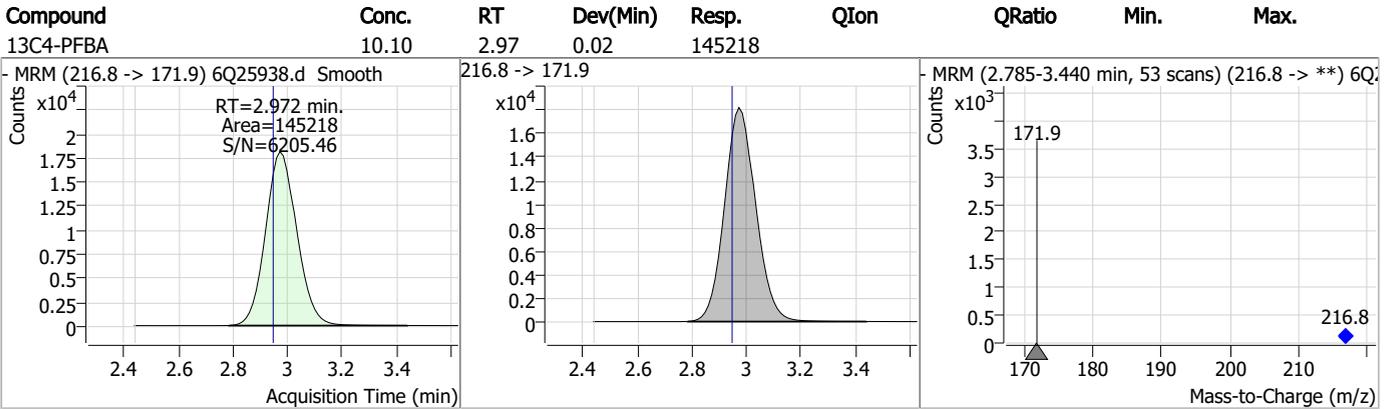
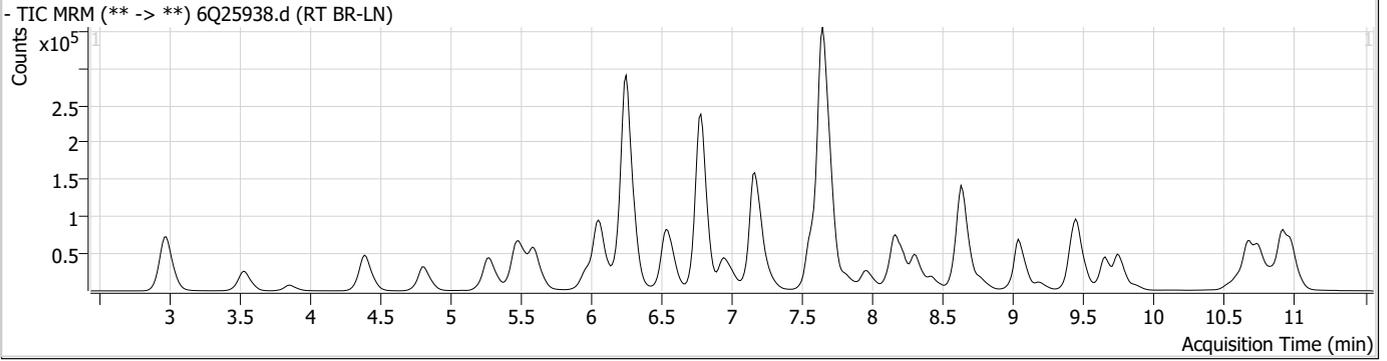
Perfluorinated Compounds by LC/MS/MS

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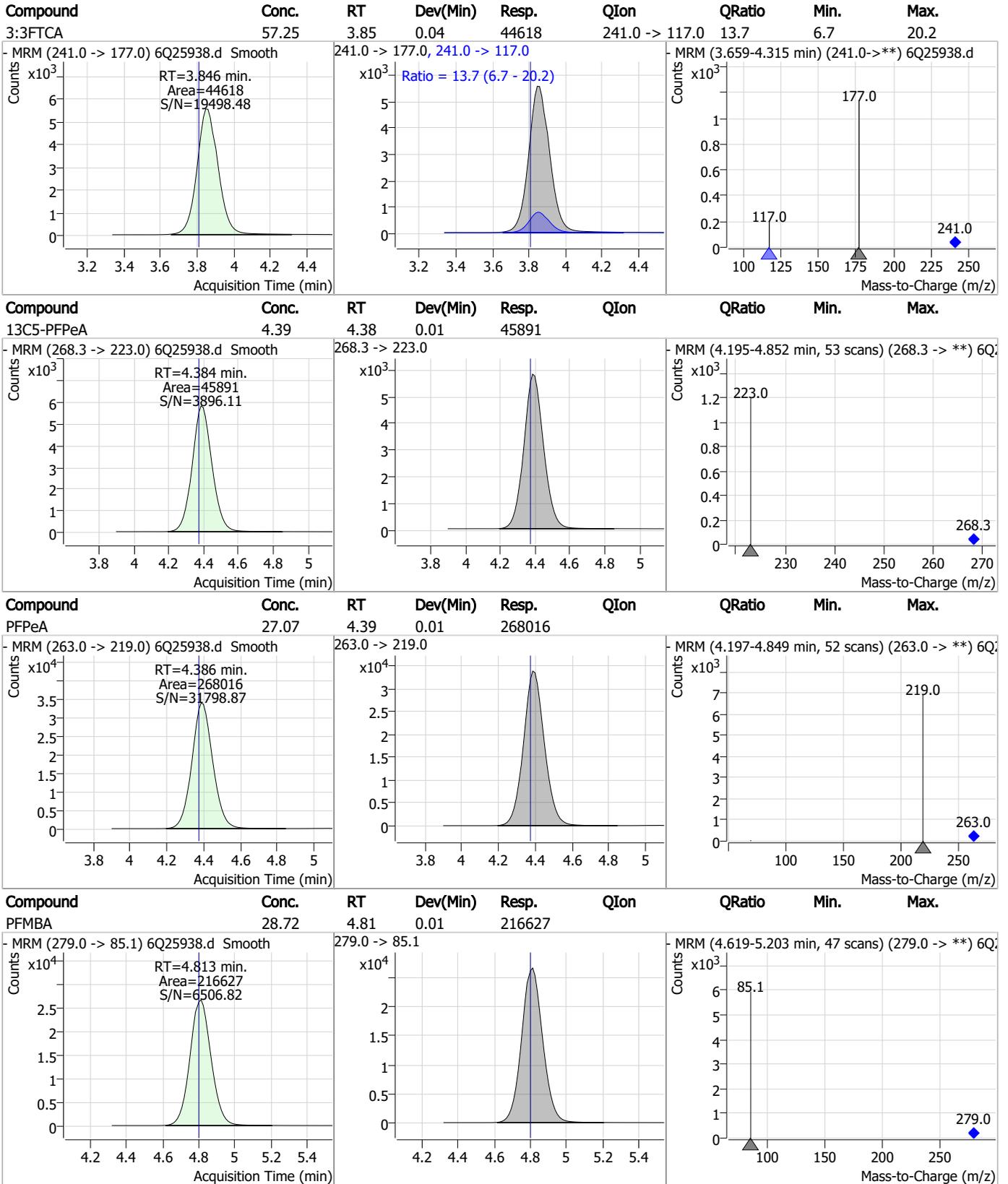
7.6.2

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Perfluorinated Compounds by LC/MS/MS



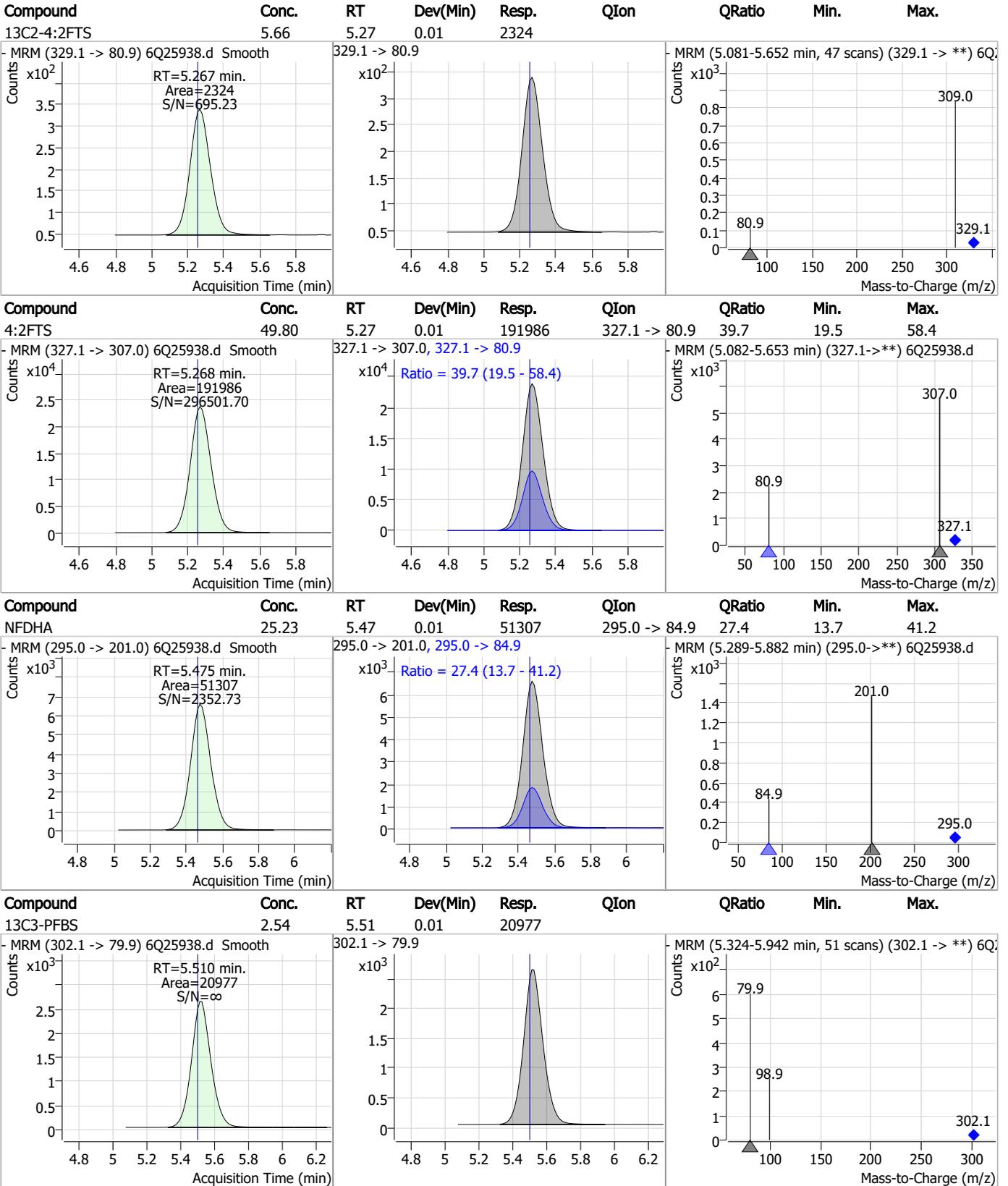
Perfluorinated Compounds by LC/MS/MS



7.6.2

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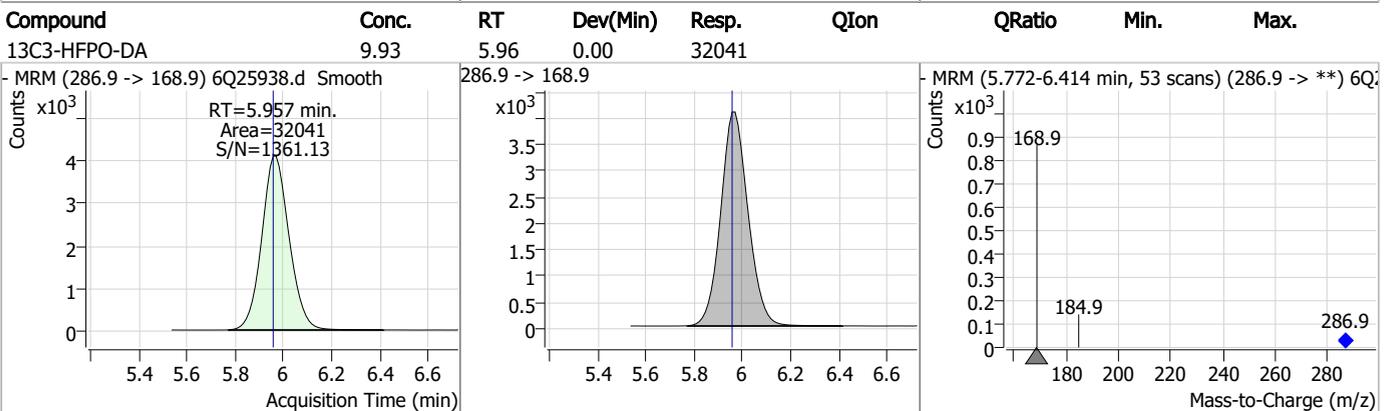
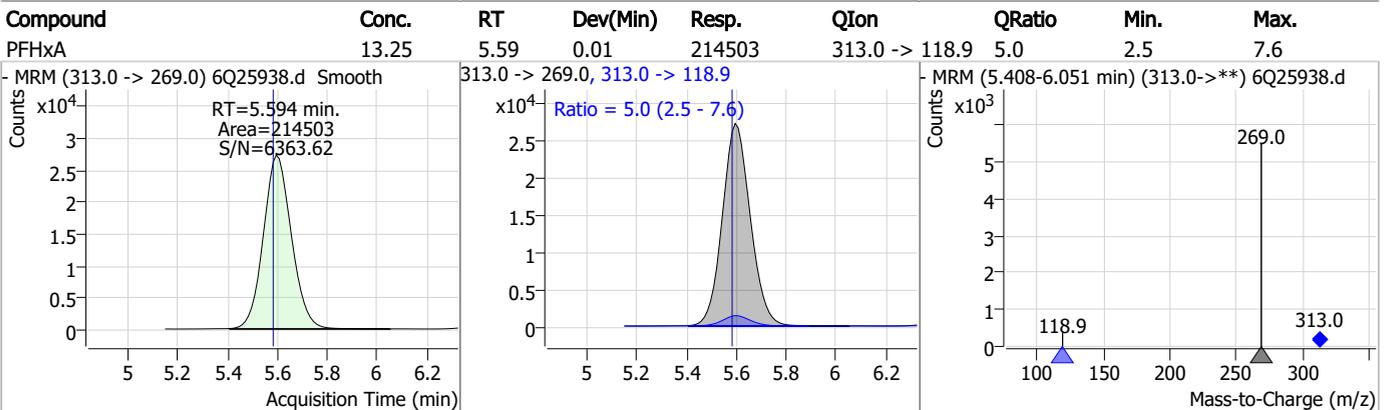
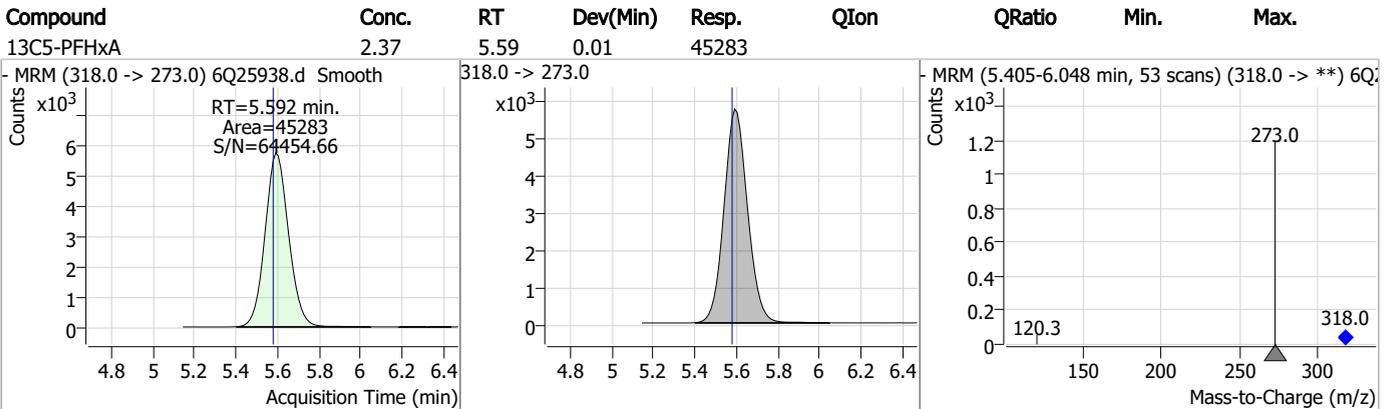
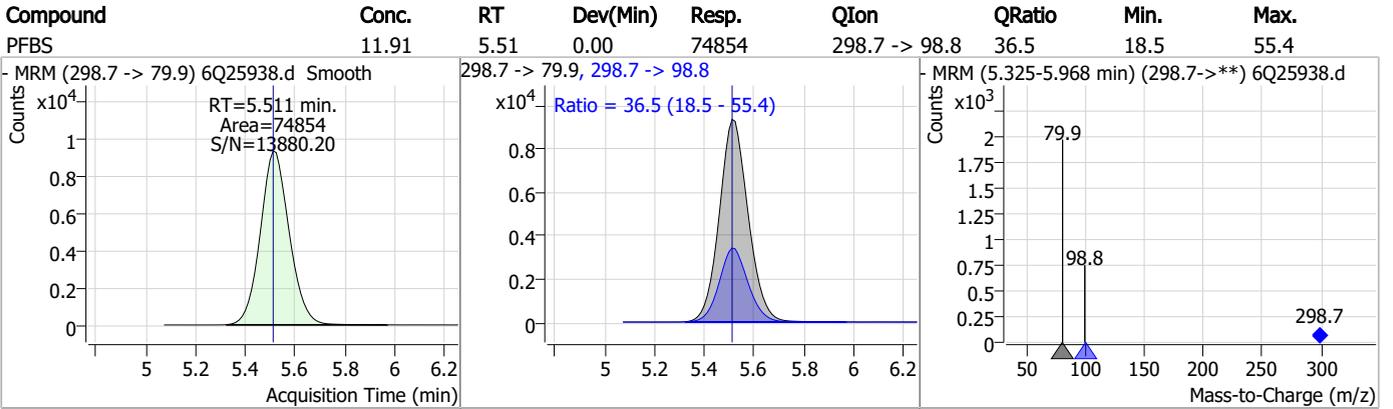
Perfluorinated Compounds by LC/MS/MS



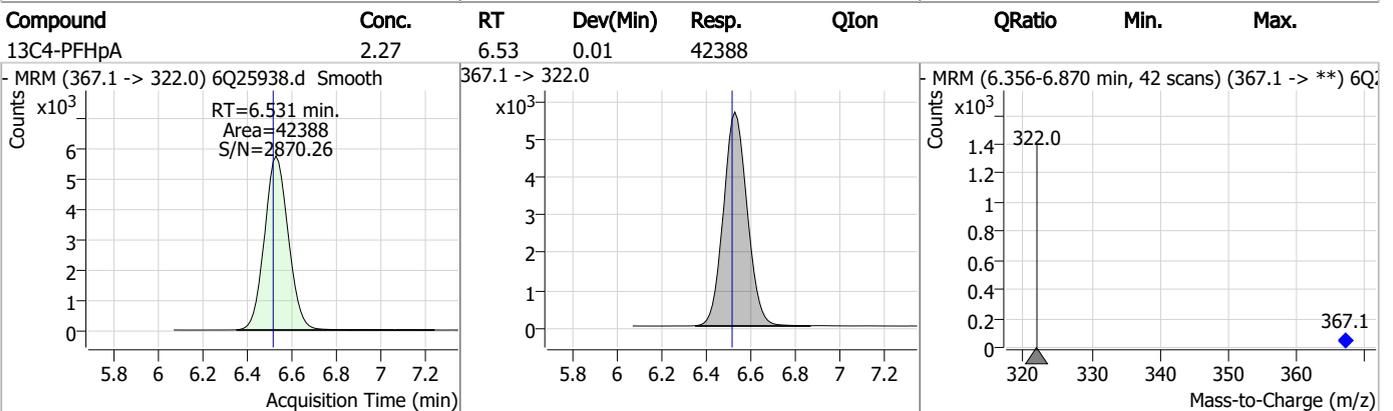
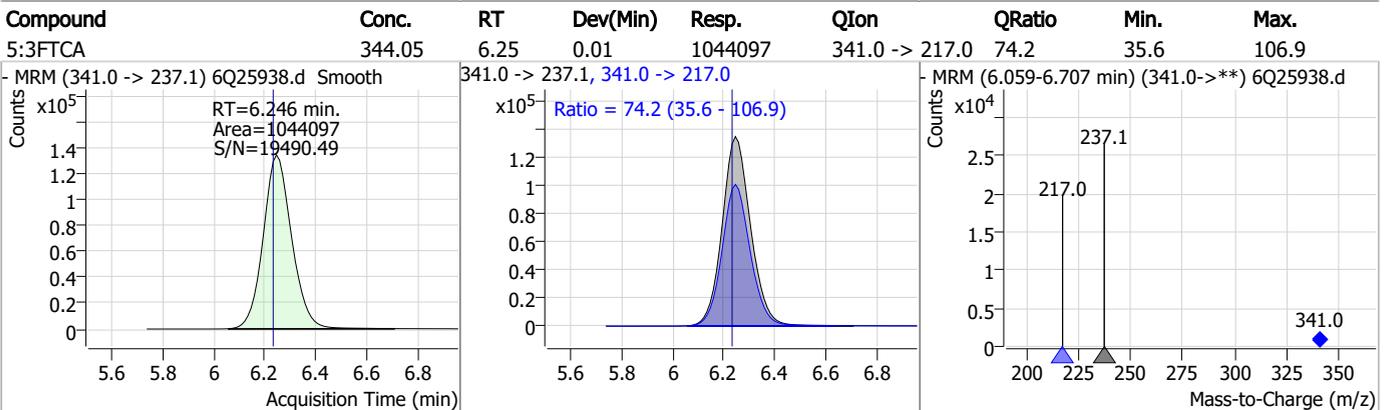
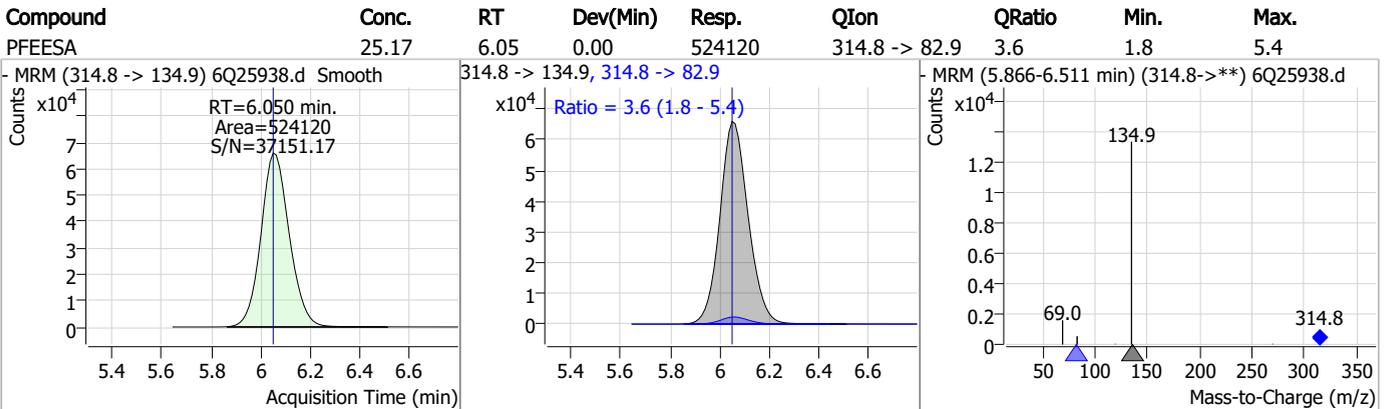
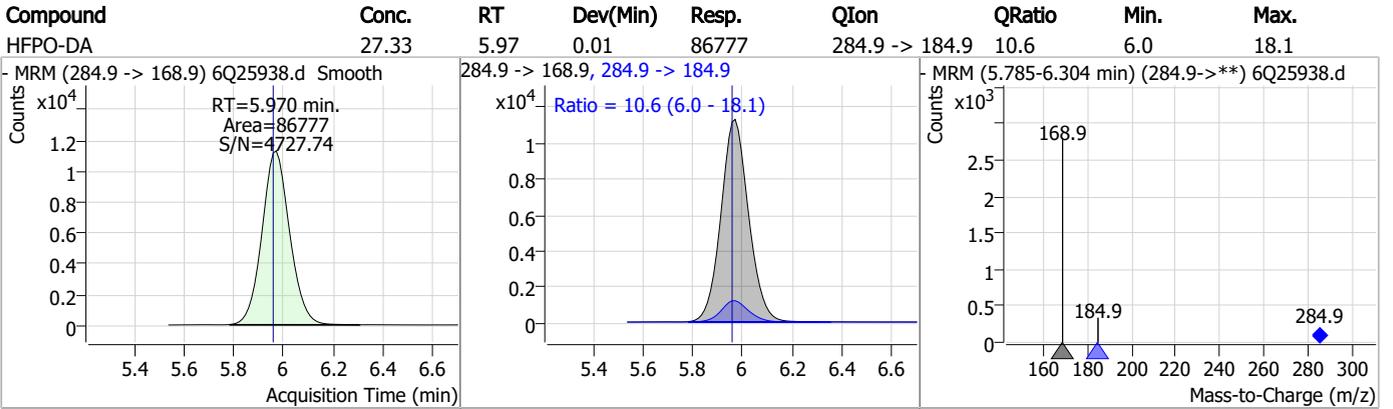
7.6.2

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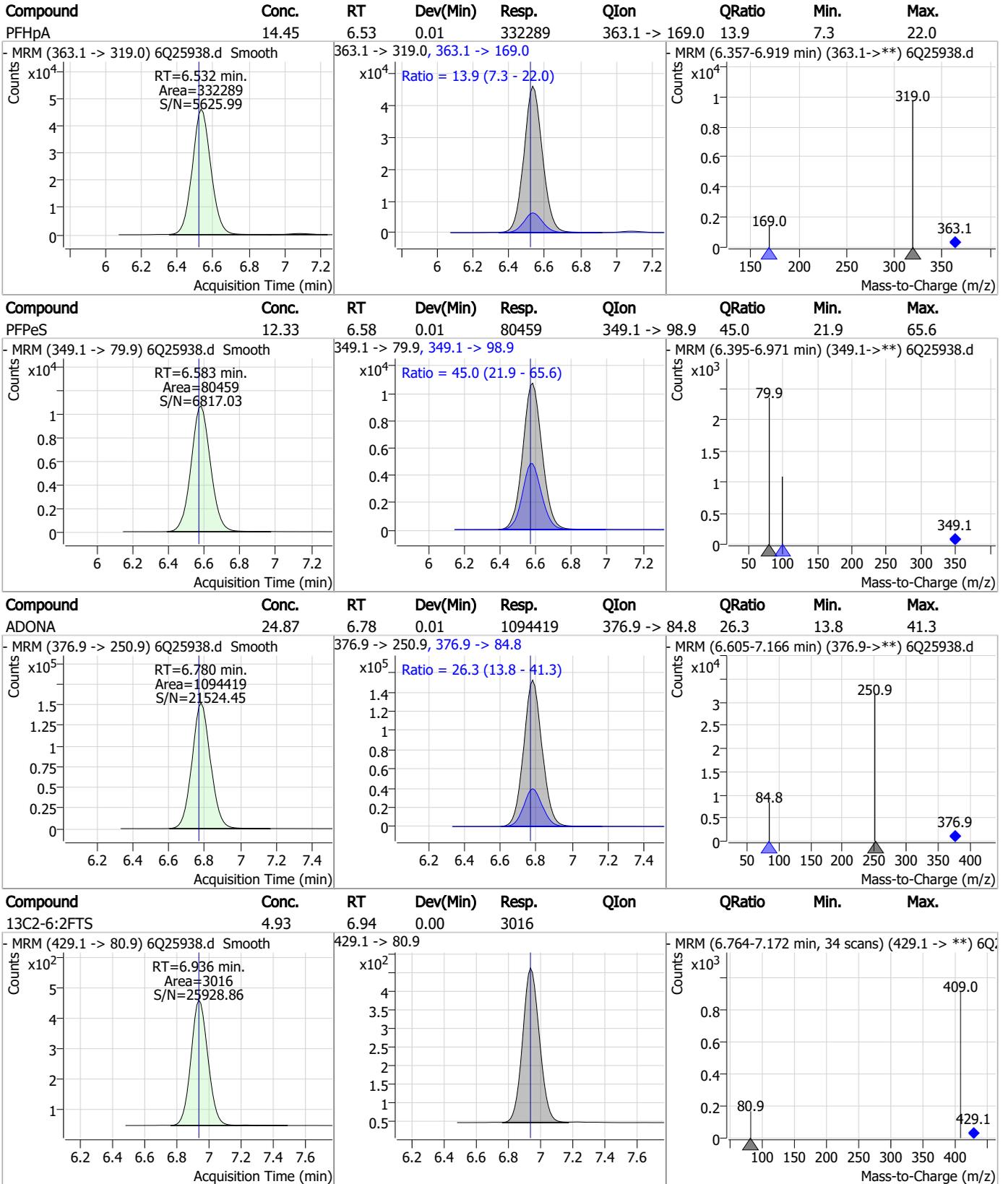
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



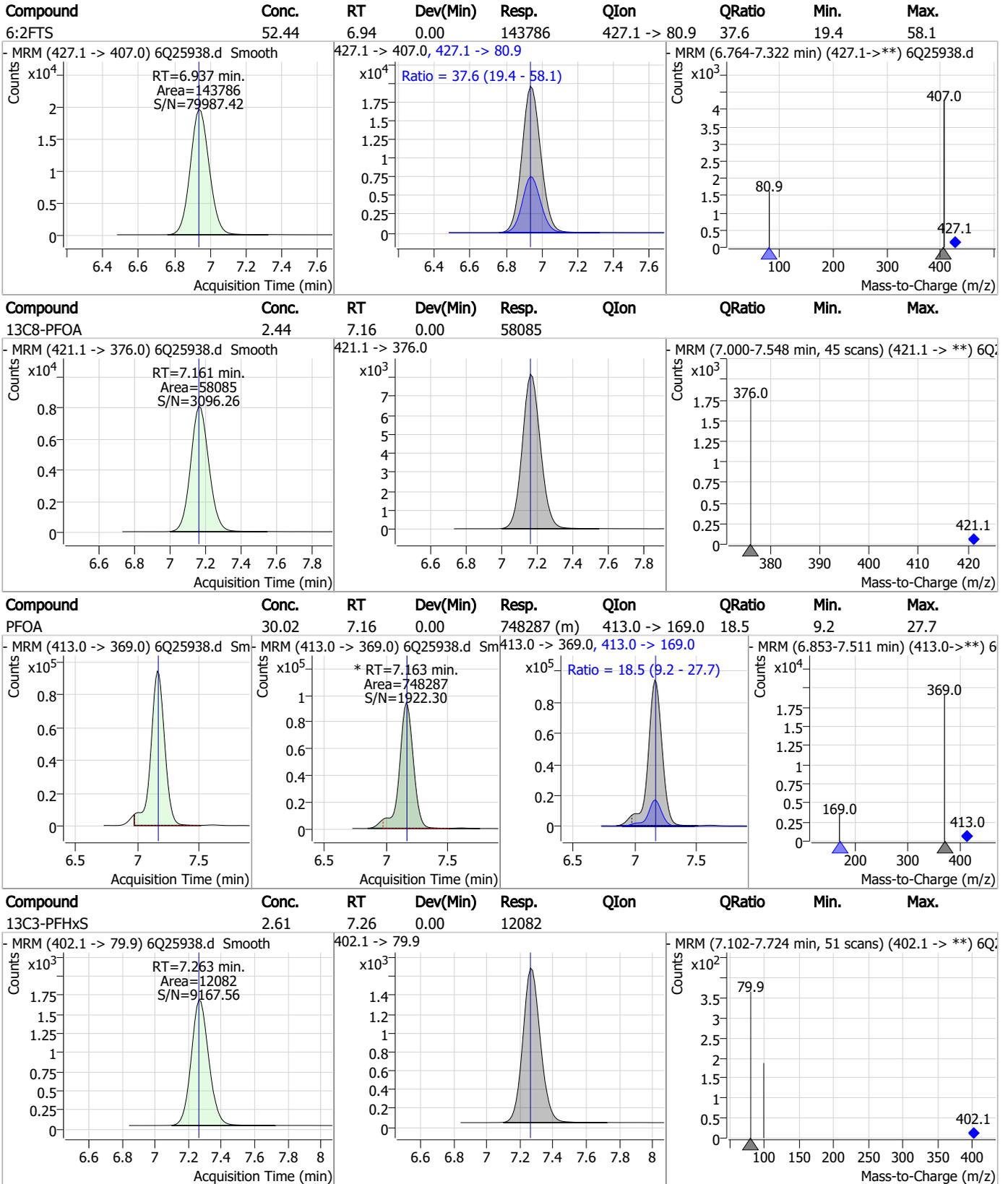
Perfluorinated Compounds by LC/MS/MS



7.6.2

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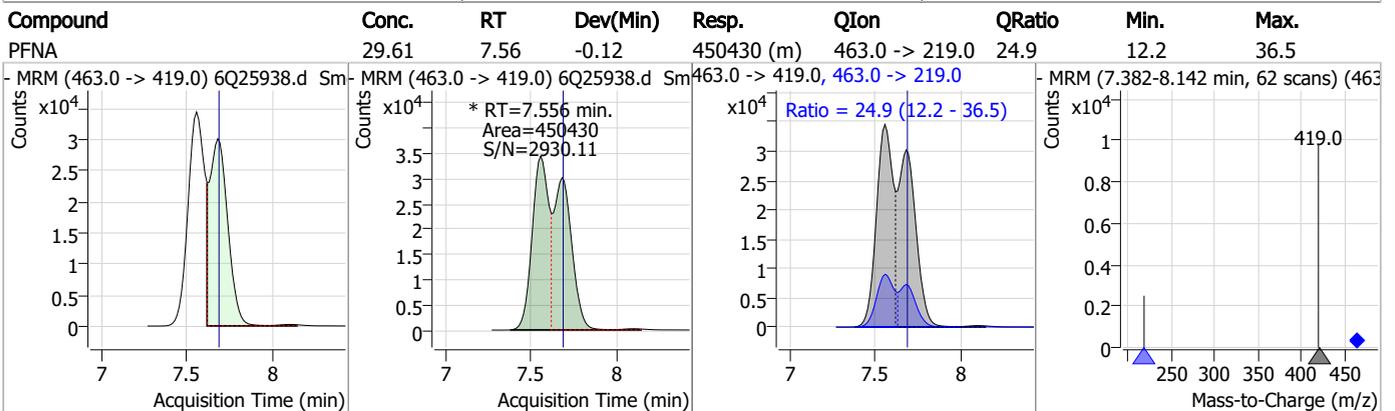
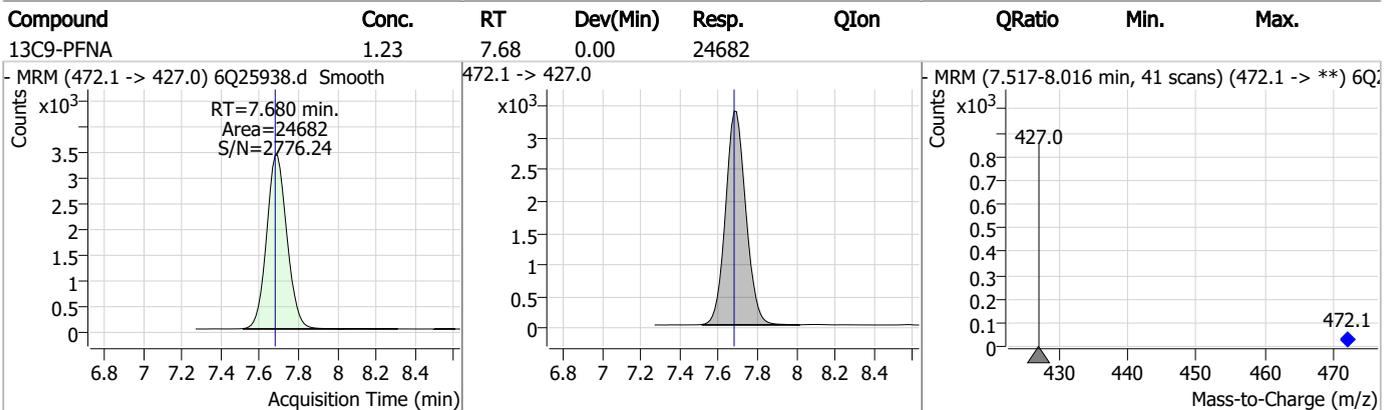
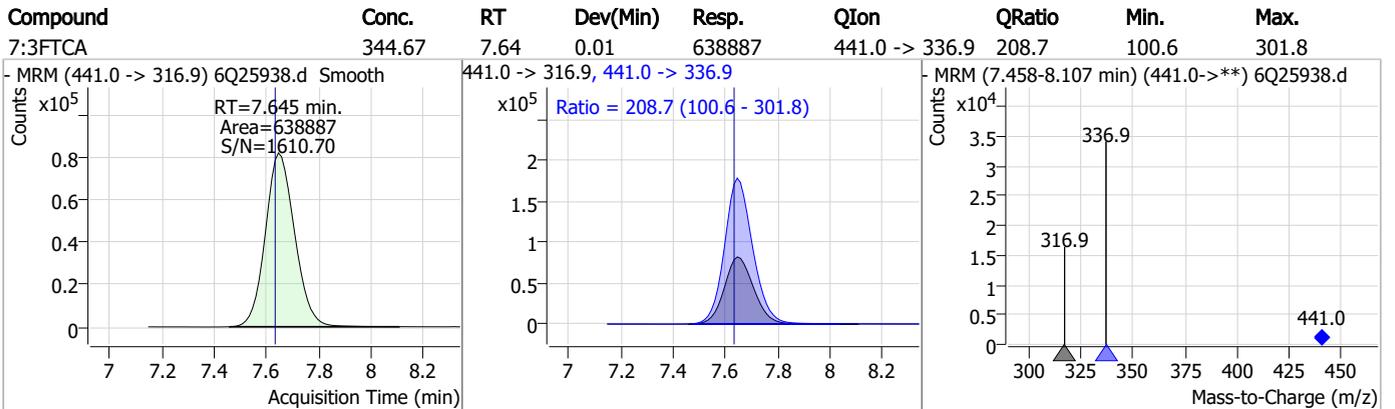
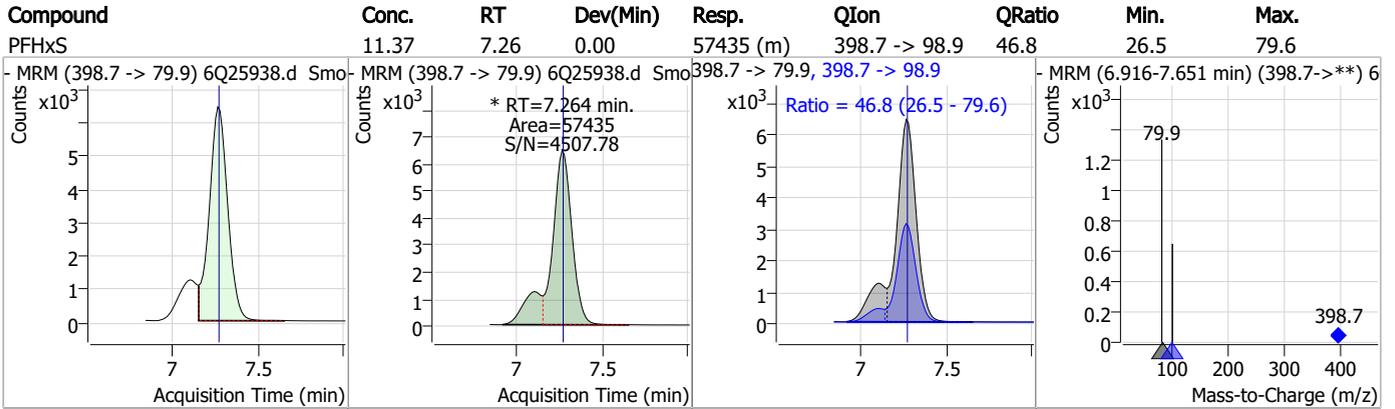
Perfluorinated Compounds by LC/MS/MS



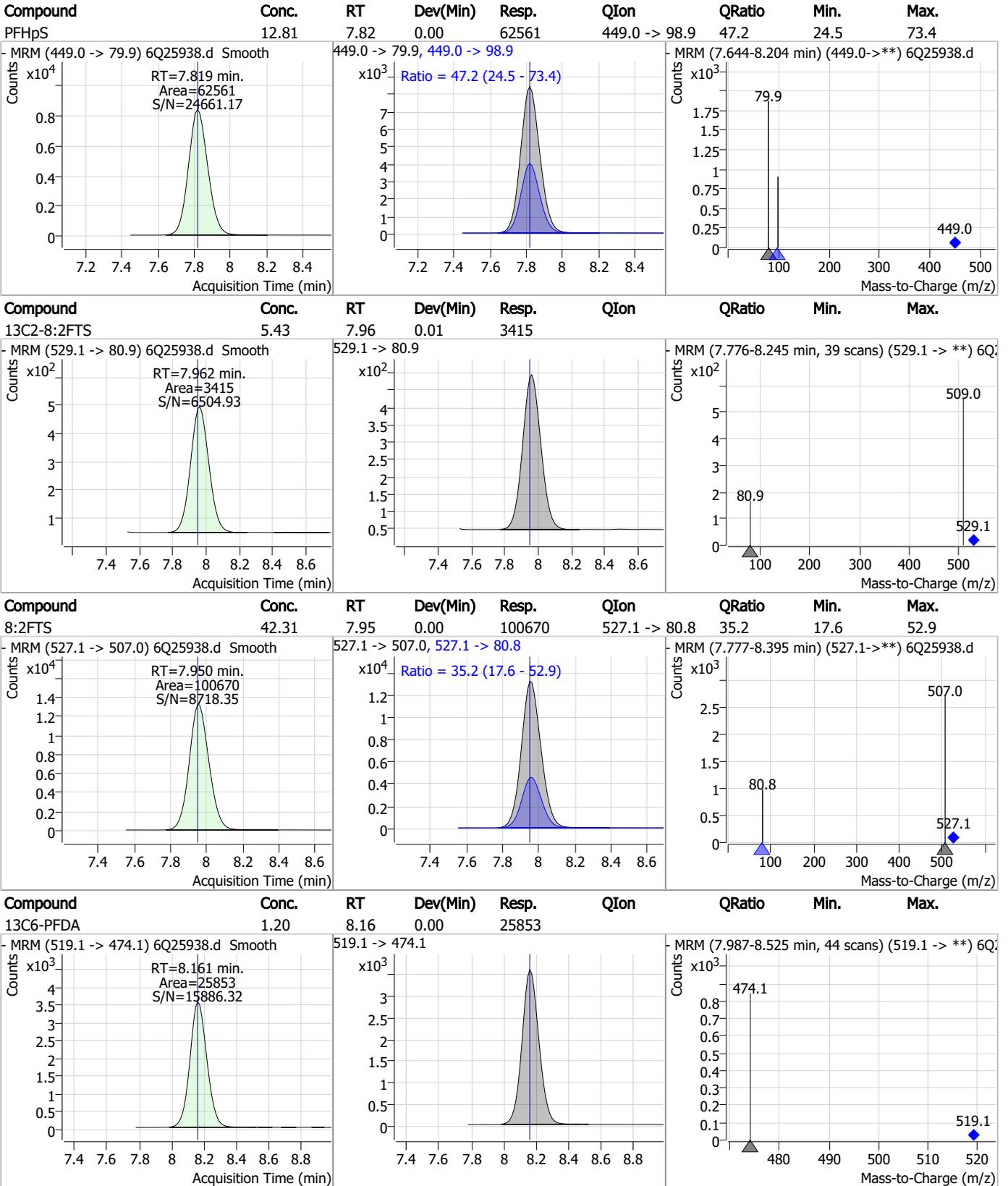
7.6.2

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Perfluorinated Compounds by LC/MS/MS



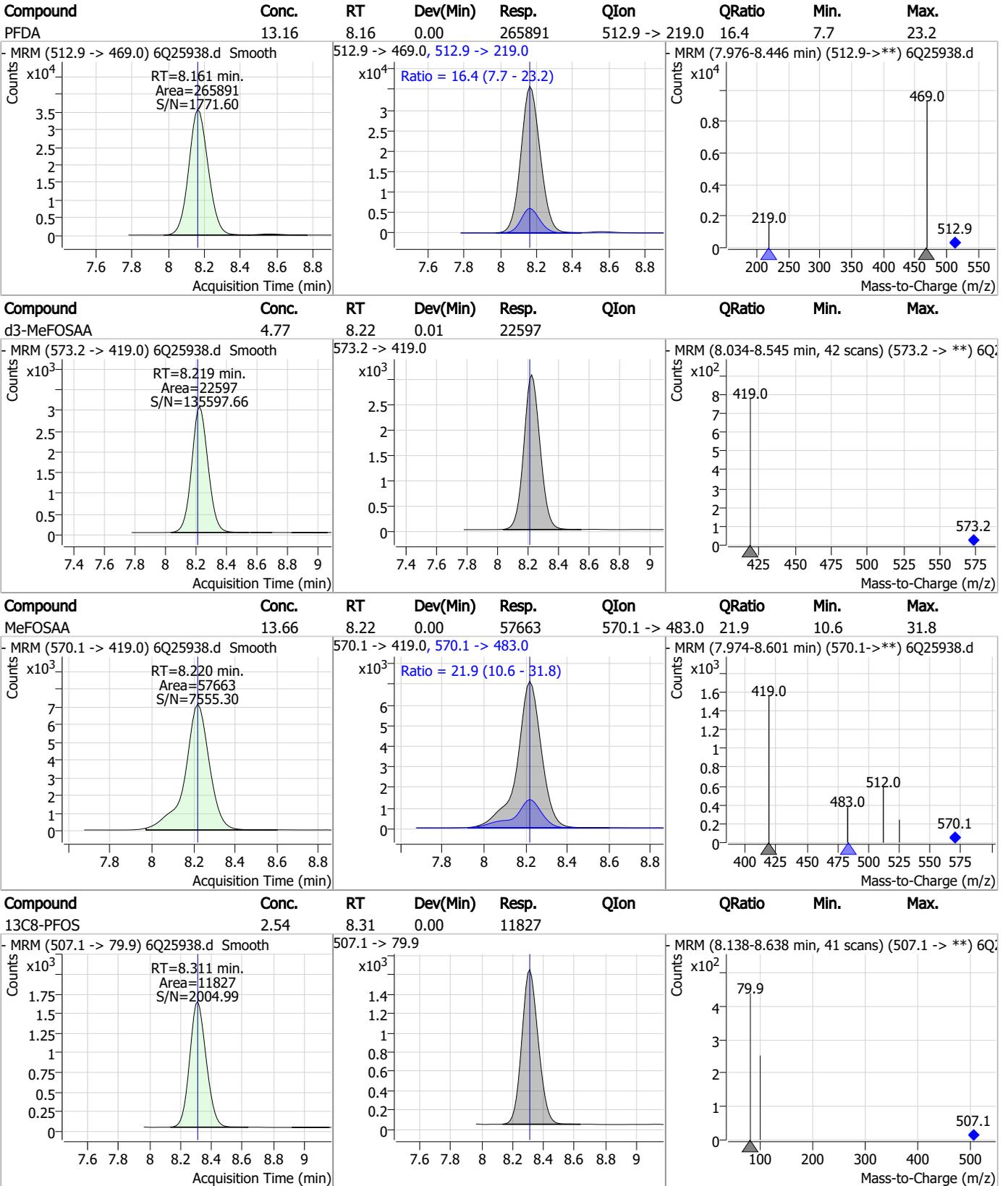
Perfluorinated Compounds by LC/MS/MS



7.6.2

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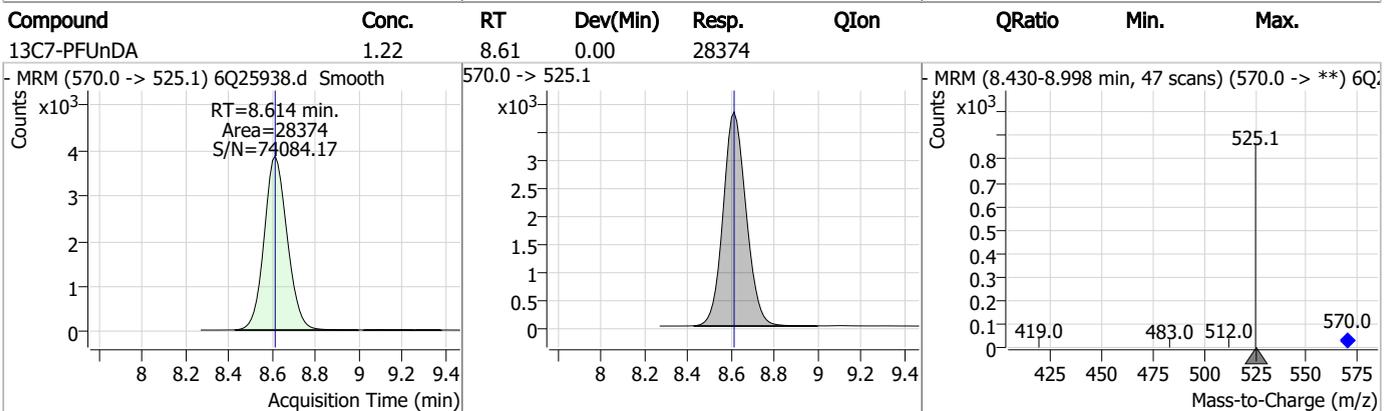
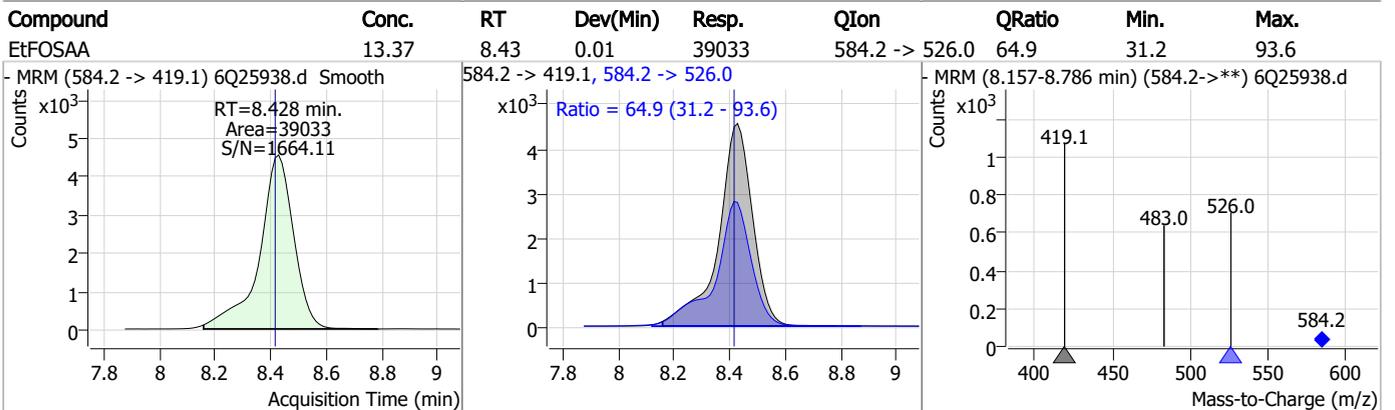
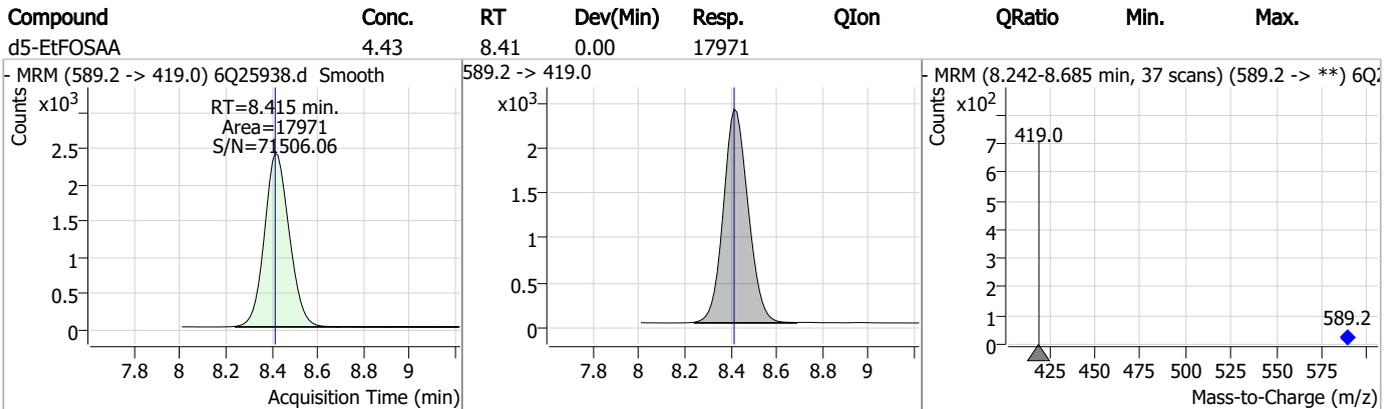
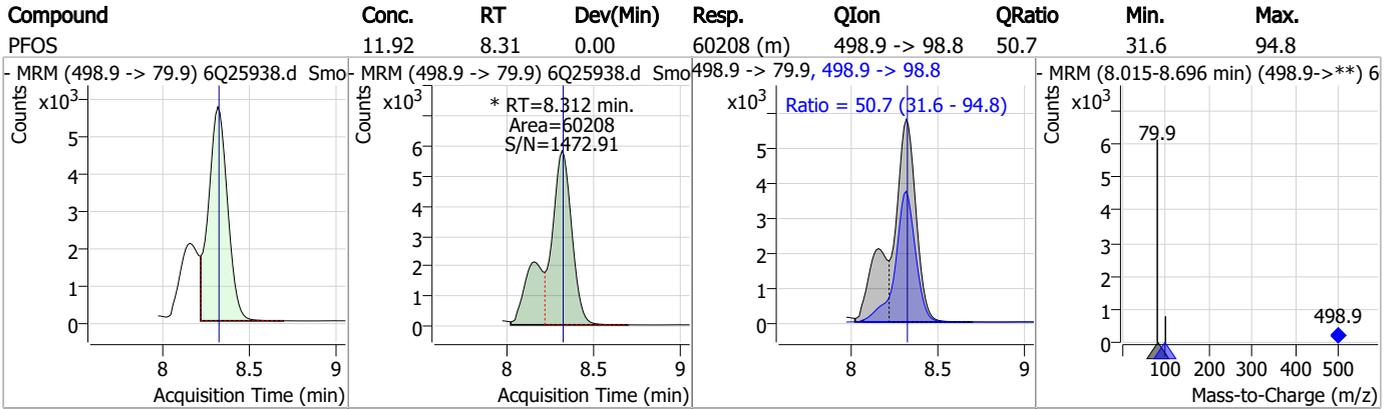
Perfluorinated Compounds by LC/MS/MS



7.6.2

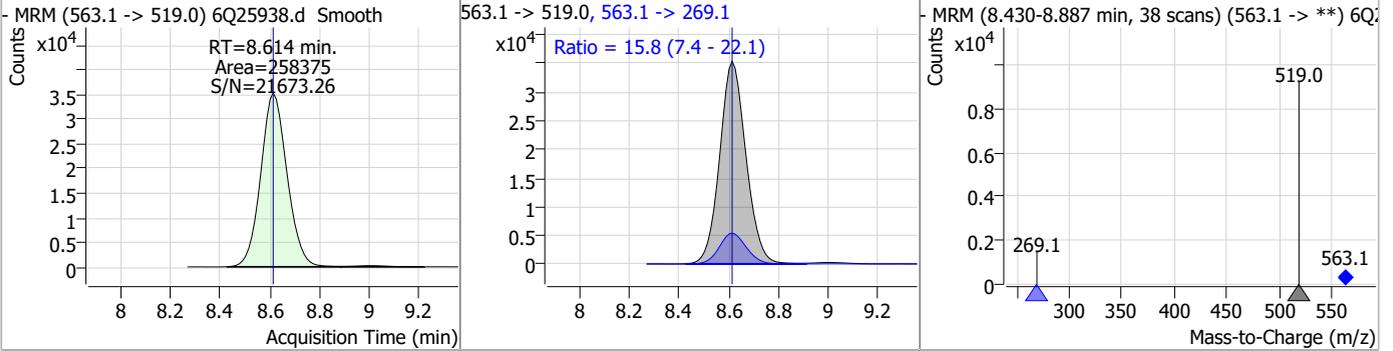
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Perfluorinated Compounds by LC/MS/MS

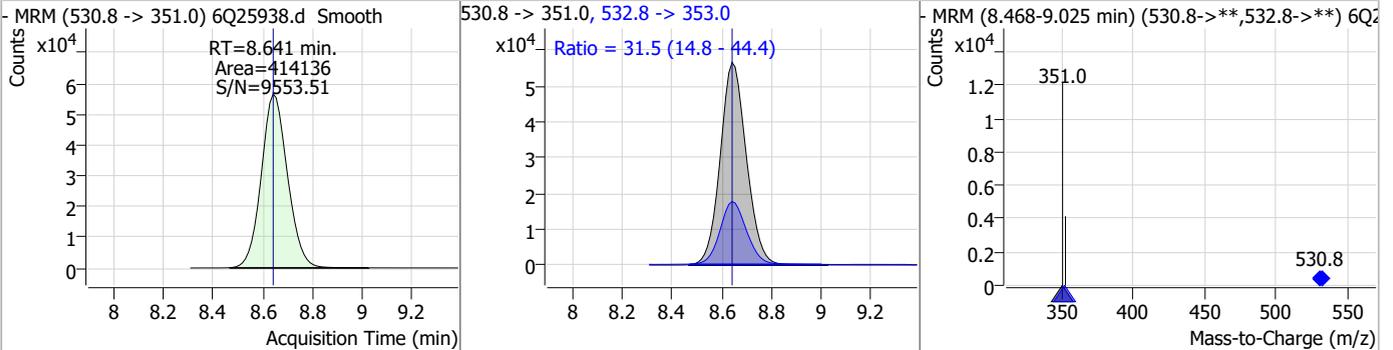


Perfluorinated Compounds by LC/MS/MS

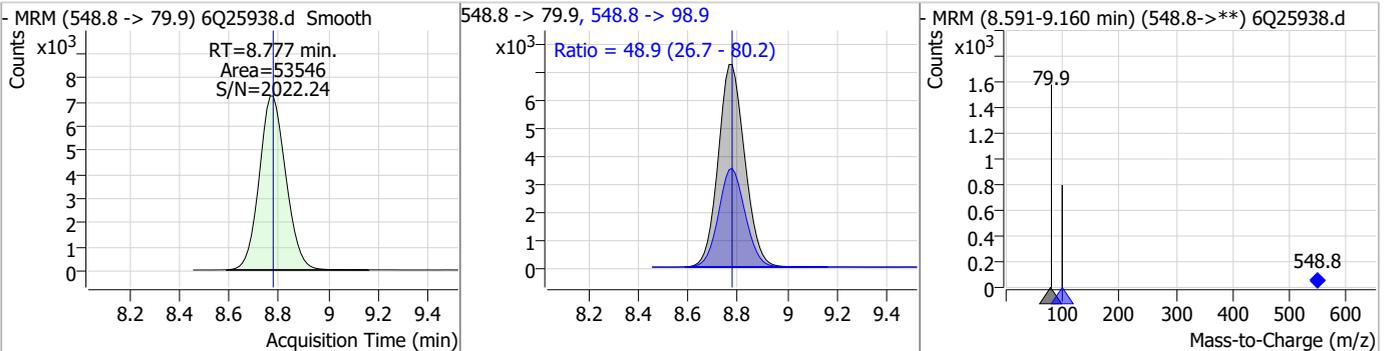
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.92	8.61	0.00	258375	563.1 -> 269.1	15.8	7.4	22.1



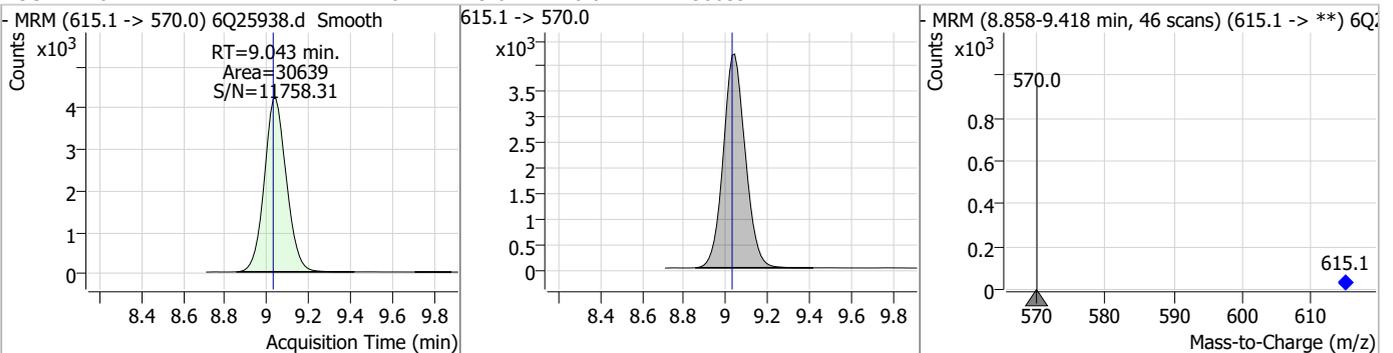
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	24.55	8.64	0.00	414136	532.8 -> 353.0	31.5	14.8	44.4



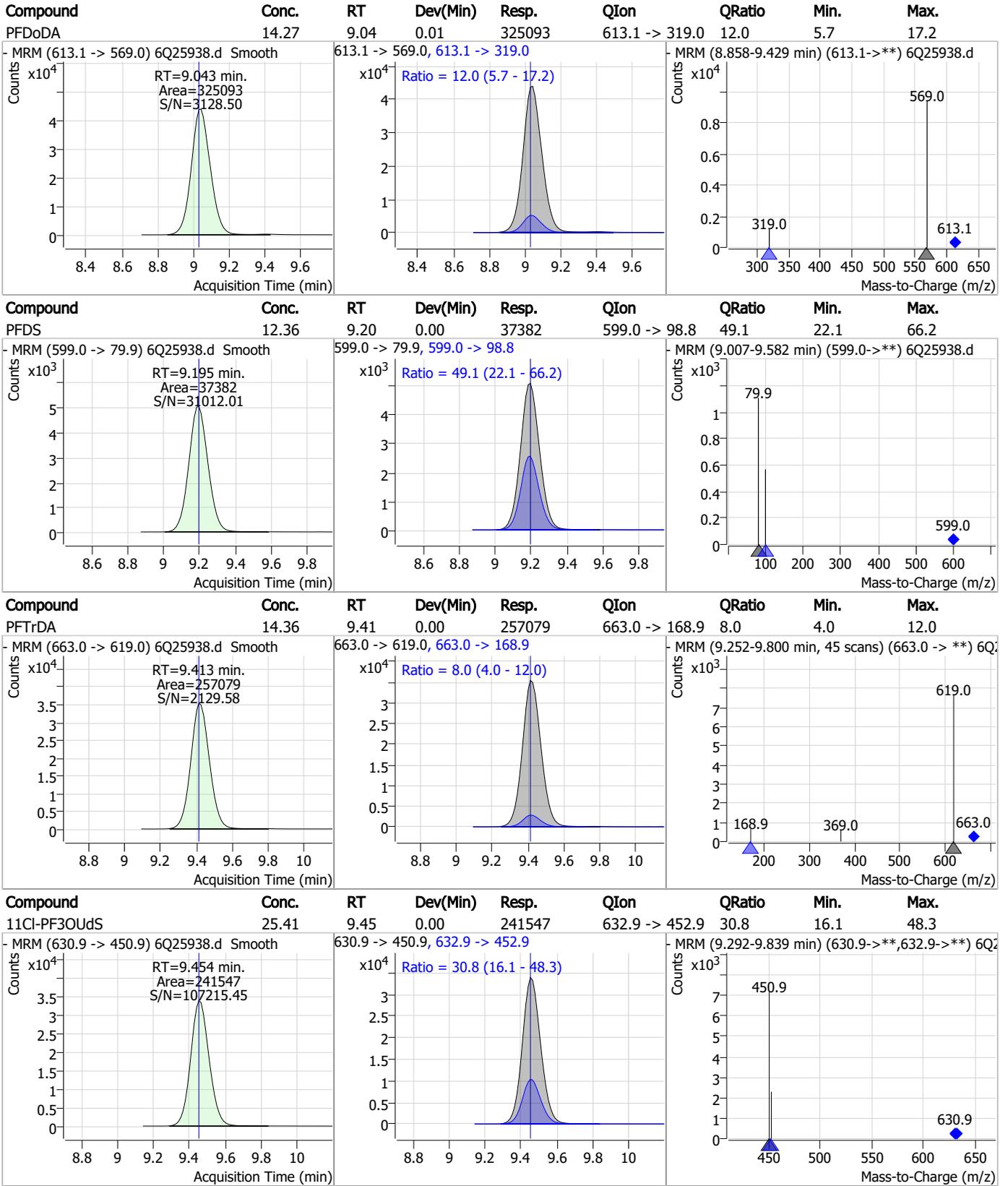
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.41	8.78	0.00	53546	548.8 -> 98.9	48.9	26.7	80.2



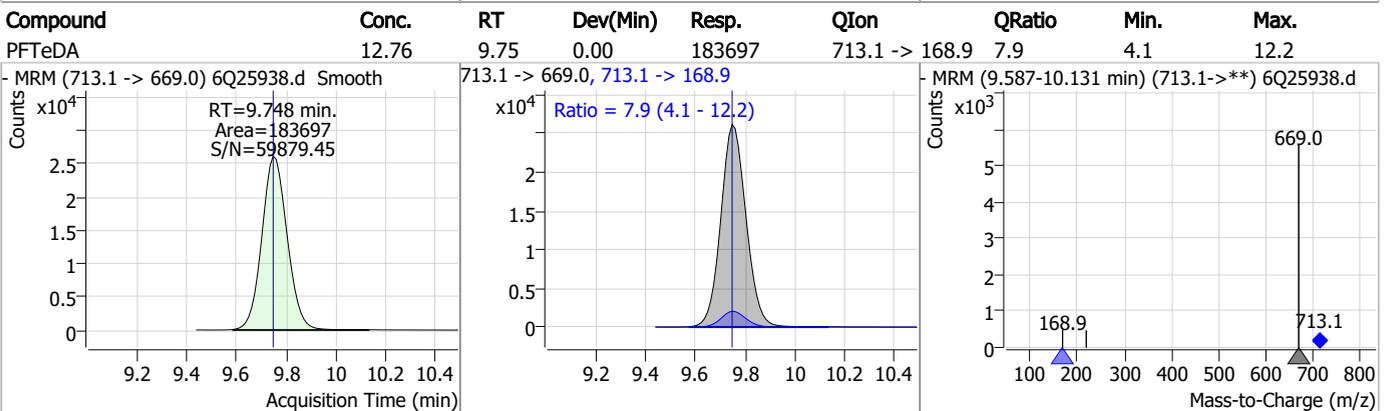
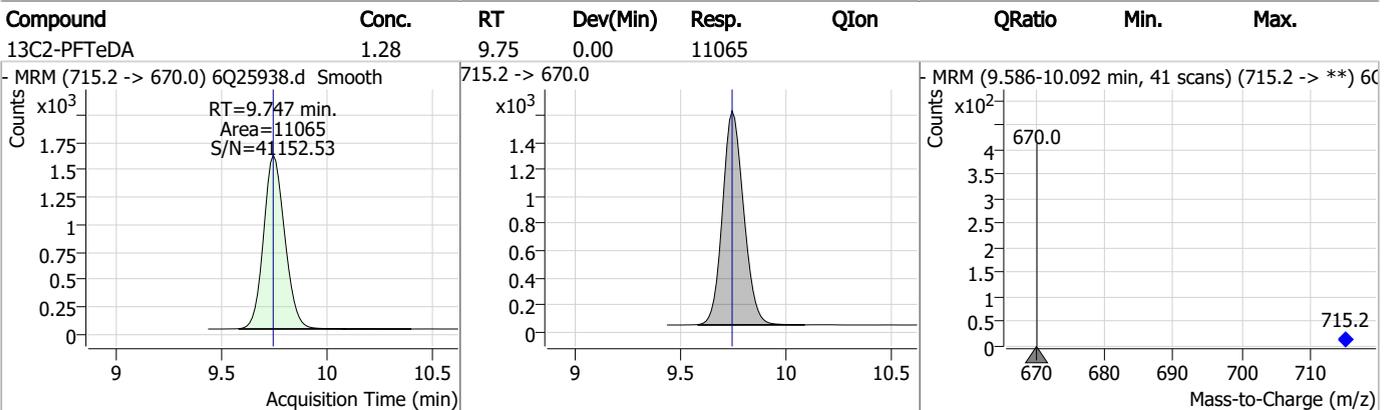
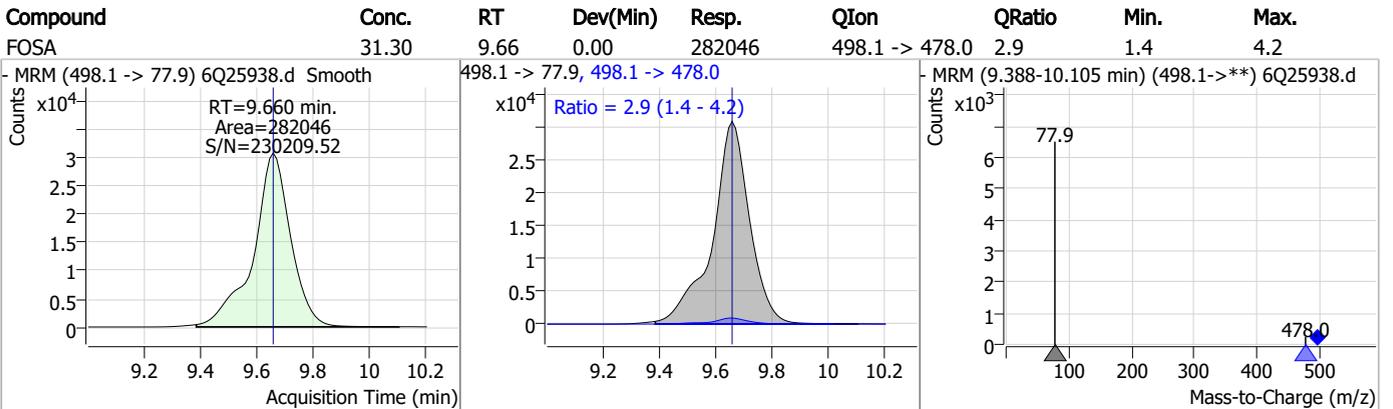
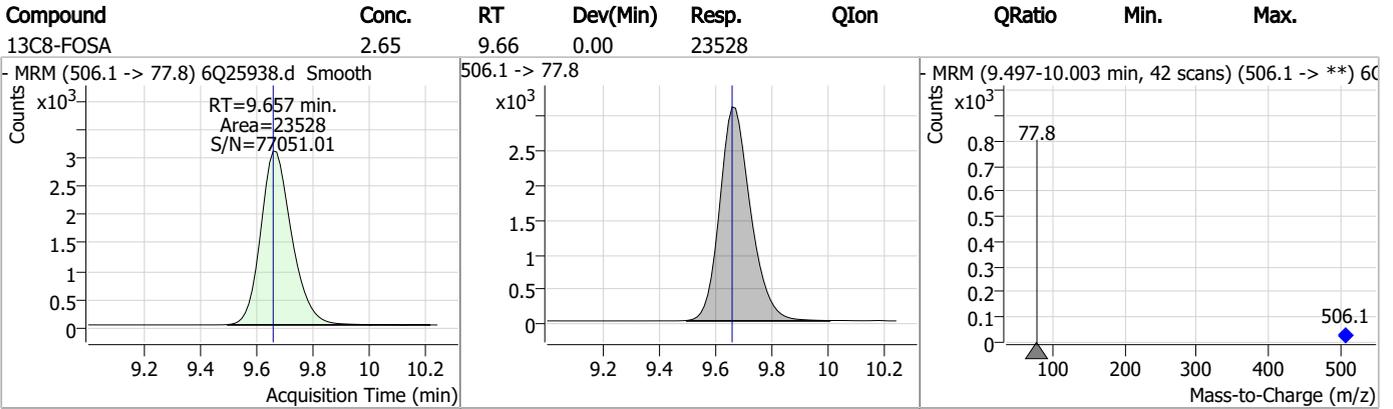
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.04	0.01	30639	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS

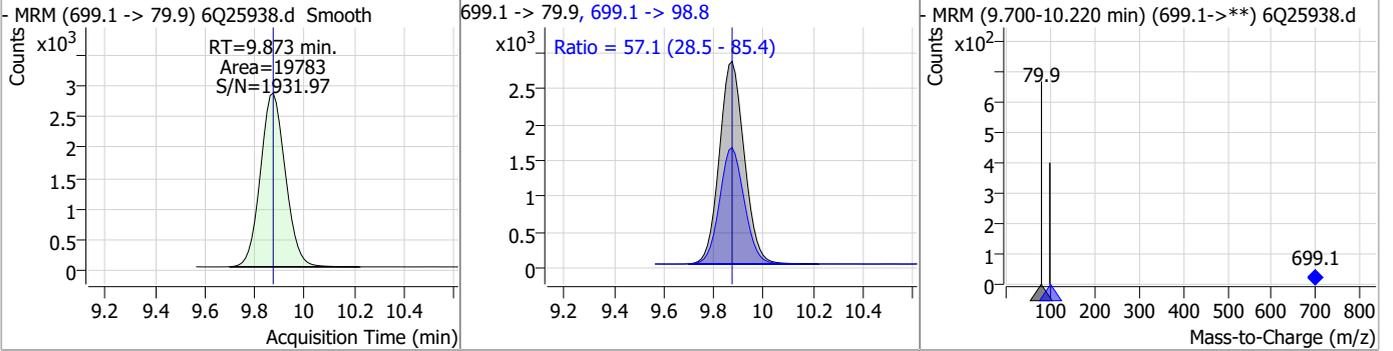


Perfluorinated Compounds by LC/MS/MS

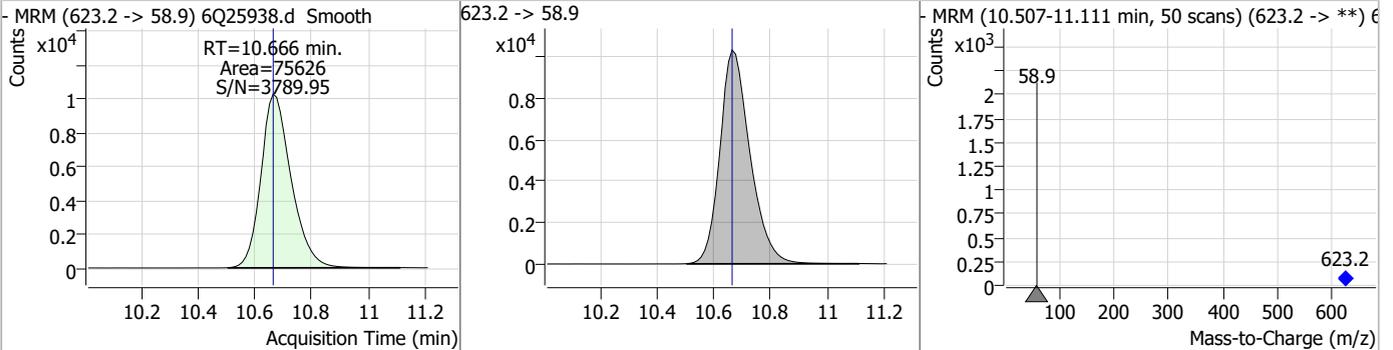


Perfluorinated Compounds by LC/MS/MS

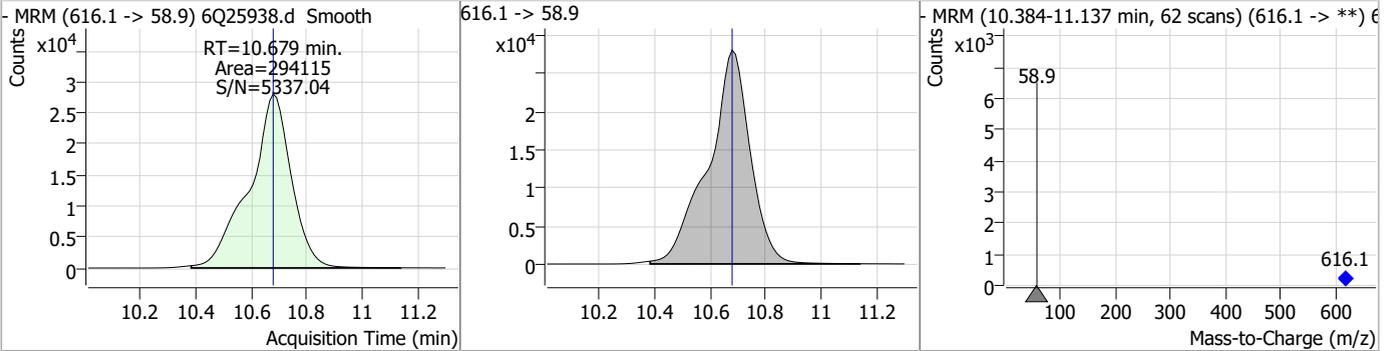
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	12.59	9.87	0.00	19783	699.1 -> 98.8	57.1	28.5	85.4



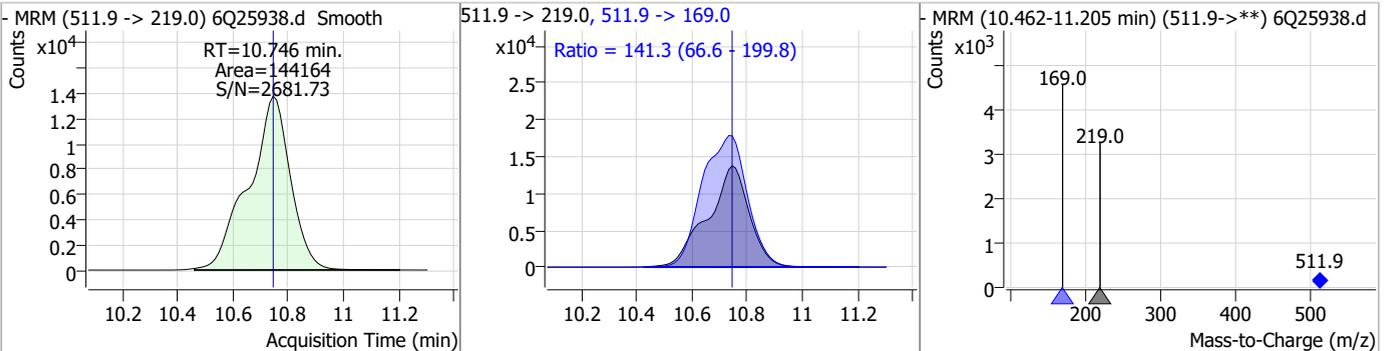
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.37	10.67	0.00	75626				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	88.00	10.68	0.00	294115				



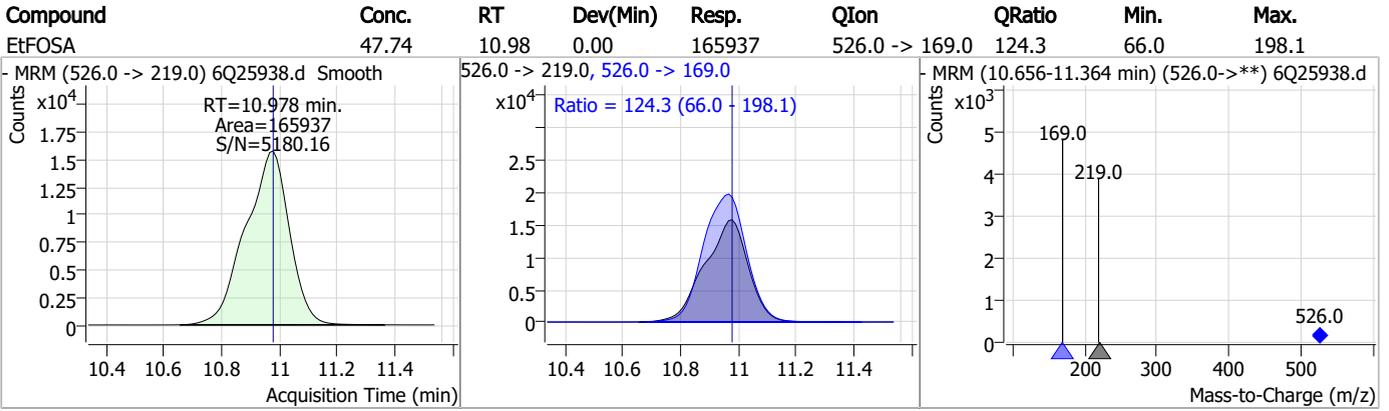
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	45.85	10.75	0.00	144164	511.9 -> 169.0	141.3	66.6	199.8



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.63	10.74	-0.01	6783				
- MRM (515.0 -> 219.0) 6Q25938.d Smooth			515.0 -> 219.0			- MRM (10.585-11.141 min, 46 scans) (515.0 -> **) €		
d9-EtFOSE	26.93	10.91	0.00	91793				
- MRM (639.2 -> 58.9) 6Q25938.d Smooth			639.2 -> 58.9			- MRM (10.739-11.296 min, 46 scans) (639.2 -> **) €		
EtFOSE	85.14	10.91	-0.01	314463				
- MRM (630.0 -> 58.9) 6Q25938.d Smooth			630.0 -> 58.9			- MRM (10.640-11.372 min, 60 scans) (630.0 -> **) €		
d5-EtFOSA	2.57	10.98	0.00	7081				
- MRM (531.1 -> 219.0) 6Q25938.d Smooth			531.1 -> 219.0			- MRM (10.815-11.361 min, 45 scans) (531.1 -> **) €		

Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q367-RT Method: EPA DRAFT 1633
Lab FileID: 6Q25938.D Analyst approved: 10/09/23 16:24 Martha Valls
Injection Time: 10/08/23 14:34 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorononanoic acid	375-95-1		7.56	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak

7.6.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26045.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 2:45:14 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q367 TDCA.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

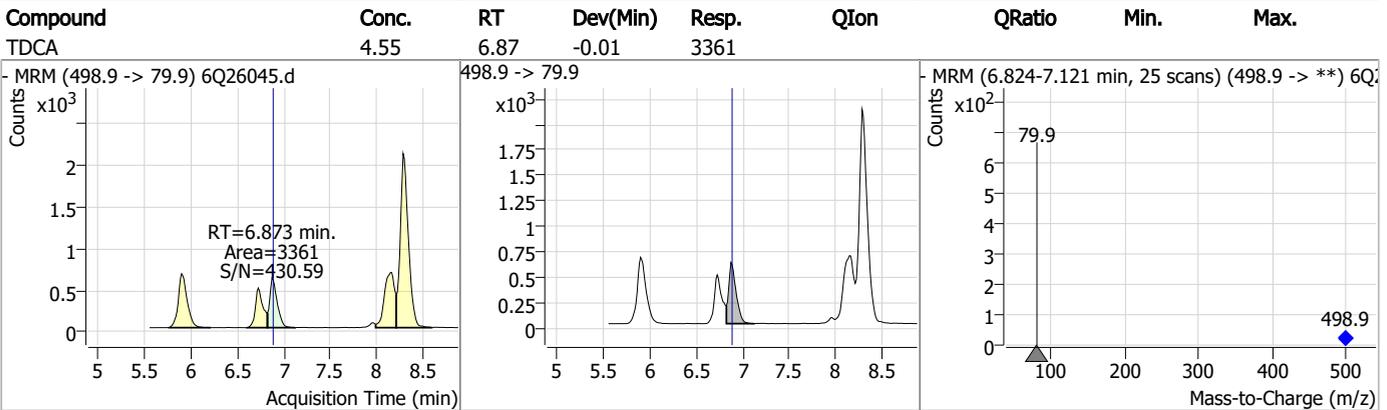
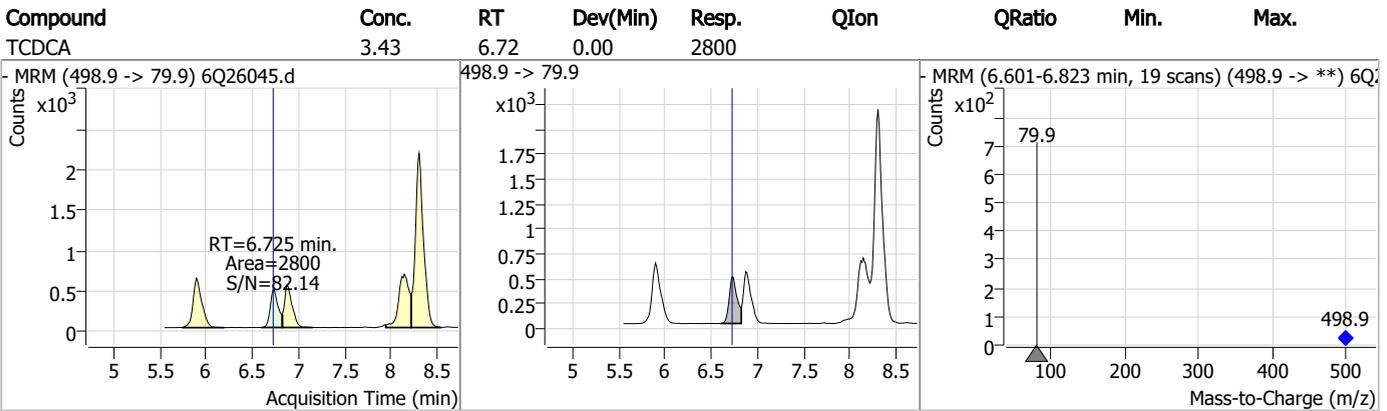
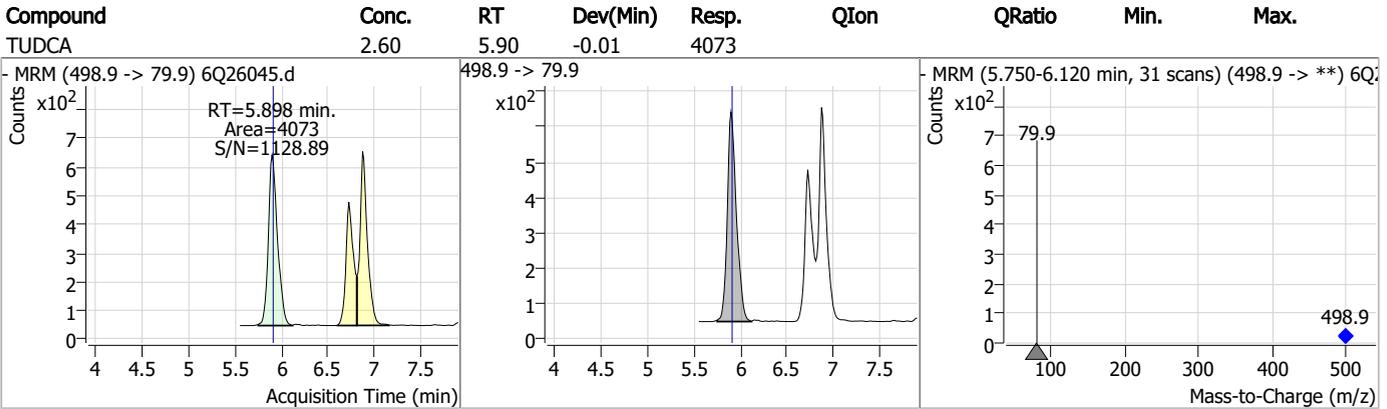
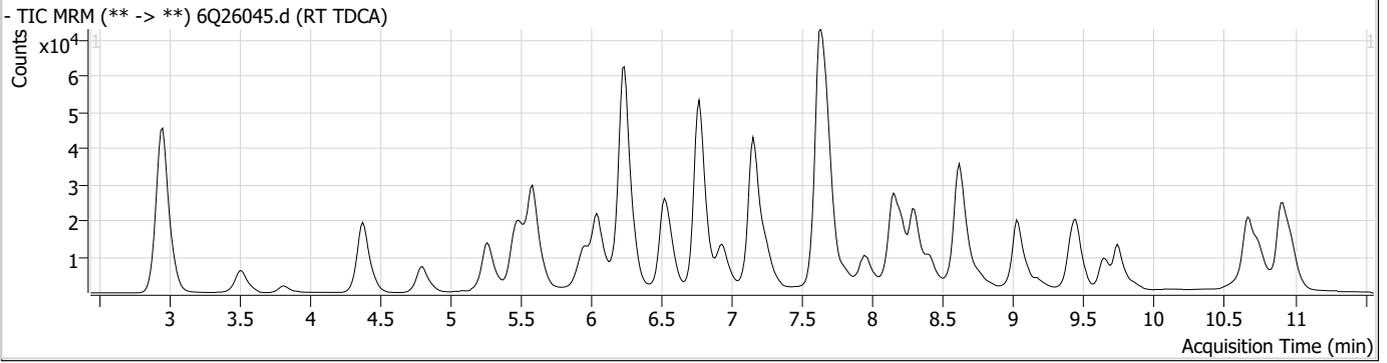
Compound	RT	Transition	Response	Conc. Units	Dev(Min)	
Internal Standards						
M8-PFOS	8.298	507.1 -> 79.9	17678	2.50 µg/L	-0.025	
13C4-PFOS	8.299	502.8 -> 79.9	16887	2.50 µg/L	-0.025	
System Monitoring Compounds						
13C8-PFOS	8.298	507.1 -> 79.9	17678	2.66 µg/L	-0.025	
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.2%			
Target Compounds						
PFOS	8.300	498.9 -> 79.9	17795	2.95 µg/L	#m	QValue 74
		498.9 -> 98.8	8477			
TCDCa	6.725	498.9 -> 79.9	2800	3.43 ng/ml		100
TDCA	6.873	498.9 -> 79.9	3361	4.55 ng/ml		100
TUDCA	5.898	498.9 -> 79.9	4073	2.60 ng/ml		100

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

7.6.3

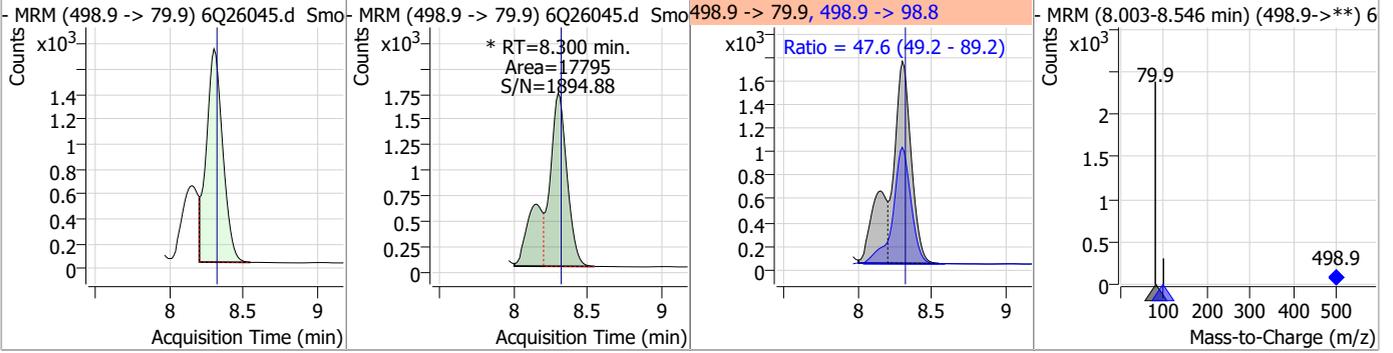
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Perfluorinated Compounds by LC/MS/MS

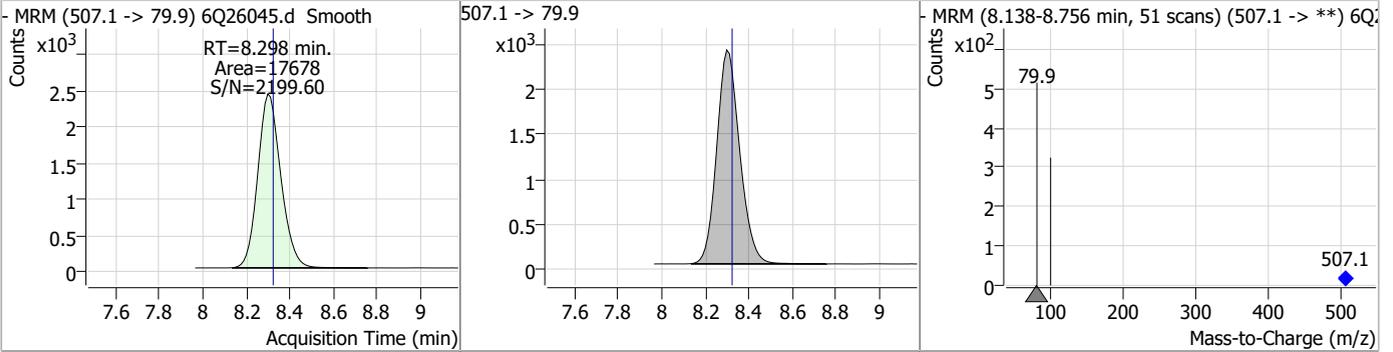


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.95	8.30	-0.01	17795 (m)	498.9 -> 98.8	47.6	49.2	89.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.66	8.30	-0.02	17678				



7.6.3
7



Manual Integration Approval Summary

Sample Number: S6Q367-RT Method: EPA DRAFT 1633
Lab FileID: 6Q26045.D Analyst approved: 10/10/23 11:54 Martha Valls
Injection Time: 10/09/23 14:45 Supervisor approved: 10/10/23 13:55 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.6.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26046.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 2:59:33 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	155065	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	55152	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	51140	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	50311	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	64914	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	27341	1.25 µg/L	0.000
M6-PFDA	8.148	519.1 -> 474.1	28710	1.25 µg/L	-0.012
M7-PFUnDA	8.601	570.0 -> 525.1	29523	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	33065	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11625	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23794	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	21834	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12349	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	12320	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2161	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3266	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3641	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	24999	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	34963	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	22236	5.00 µg/L	-0.012
M7-MeFOSE	10.666	623.2 -> 58.9	75774	25.00 µg/L	0.000
M9-EtFOSE	10.898	639.2 -> 58.9	85242	25.00 µg/L	-0.012
M5-EtFOSA	10.976	531.1 -> 219.0	6976	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6891	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	12273	2.50 µg/L	-0.013
13C3-PFBA	2.952	216.0 -> 172.0	65078	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7761	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	72820	2.50 µg/L	0.000
13C2-PFDA	8.149	515.1 -> 470.1	27616	1.25 µg/L	-0.012
13C5-PFNA	7.680	468.0 -> 423.0	26904	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49354	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2161	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3266	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3641	5.44 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-PFDoDA	9.030	615.1 -> 570.0	33065	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11625	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C3-PFBS	5.510	302.1 -> 79.9	21834	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFHxS	7.263	402.1 -> 79.9	12349	2.50 µg/L	0.000

7.6.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFBA	2.947	216.8 -> 171.9	155065	9.87 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C4-PFHpA	6.519	367.1 -> 322.0	50311	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C5-PFHxA	5.592	318.0 -> 273.0	51140	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.372	268.3 -> 223.0	55152	4.94 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C6-PFDA	8.148	519.1 -> 474.1	28710	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C7-PFUnDA	8.601	570.0 -> 525.1	29523	1.17 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C8-FOSA	9.657	506.1 -> 77.8	23794	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C8-PFOA	7.161	421.1 -> 376.0	64914	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C8-PFOS	8.298	507.1 -> 79.9	12320	2.32 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
13C9-PFNA	7.680	472.1 -> 427.0	27341	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSAA	8.207	573.2 -> 419.0	24999	4.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	34963	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSA	10.744	515.0 -> 219.0	6891	2.35 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSAA	8.402	589.2 -> 419.0	22236	4.81 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
d7-MeFOSE	10.666	623.2 -> 58.9	75774	23.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
d9-EtFOSE	10.898	639.2 -> 58.9	85242	21.94 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
d5-EtFOSA	10.976	531.1 -> 219.0	6976	2.22 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.9%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	187344	52.28 µg/L	98
		327.1 -> 80.9	70401		
6:2FTS	6.937	427.1 -> 407.0	147559	49.71 µg/L	100
		427.1 -> 80.9	57268		
8:2FTS	7.950	527.1 -> 507.0	115501	45.53 µg/L	99
		527.1 -> 80.8	41405		
EtFOSAA	8.416	584.2 -> 419.1	48375	13.39 µg/L	94
		584.2 -> 526.0	28117		
FOSA	9.647	498.1 -> 77.9	296558	32.55 µg/L	100
		498.1 -> 478.0	8204		
MeFOSAA	8.208	570.1 -> 419.0	62641	13.41 µg/L	99
		570.1 -> 483.0	12973		
PFBA	2.943	212.8 -> 168.9	308983	53.49 µg/L	100
PFBS	5.499	298.7 -> 79.9	79600	12.16 µg/L	100
		298.7 -> 98.8	29346		
PFDA	8.149	512.9 -> 469.0	277188	12.36 µg/L	98
		512.9 -> 219.0	44825		
PFDoDA	9.031	613.1 -> 569.0	322814	13.13 µg/L	99
		613.1 -> 319.0	38001		
PFDS	9.183	599.0 -> 79.9	38794	12.31 µg/L	90

7.6.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	19743			
PFHpA	6.520	363.1 -> 319.0	353823	12.96	µg/L	99
		363.1 -> 169.0	52529			
PFHpS	7.807	449.0 -> 79.9	69788	13.72	µg/L	98
		449.0 -> 98.9	33346			
PFHxA	5.582	313.0 -> 269.0	241271	13.20	µg/L	99
		313.0 -> 118.9	11414			
PFHxS	7.264	398.7 -> 79.9	60490	11.72	µg/L	m 93
		398.7 -> 98.9	29301			
PFNA	7.543	463.0 -> 419.0	504792	29.95	µg/L	m 99
		463.0 -> 219.0	124659			
PFNS	8.765	548.8 -> 79.9	54576	12.15	µg/L	98
		548.8 -> 98.9	28431			
PFOA	7.163	413.0 -> 369.0	865040	31.05	µg/L	m 97
		413.0 -> 169.0	147310			
PFOS	8.300	498.9 -> 79.9	64352	12.23	µg/L	m 83
		498.9 -> 98.8	32213			
PFPeA	4.374	263.0 -> 219.0	314206	26.41	µg/L	100
PFPeS	6.571	349.1 -> 79.9	88280	13.24	µg/L	99
		349.1 -> 98.9	38074			
PFTeDA	9.747	713.1 -> 669.0	188907	12.49	µg/L	98
		713.1 -> 168.9	13927			
PFTrDA	9.401	663.0 -> 619.0	256919	13.29	µg/L	99
		663.0 -> 168.9	21144			
PFUnDA	8.602	563.1 -> 519.0	286254	13.76	µg/L	99
		563.1 -> 269.1	43783			
11CI-PF3OUdS	9.454	630.9 -> 450.9	239526	23.09	µg/L	100
		632.9 -> 452.9	77546			
9CI-PF3ONS	8.628	530.8 -> 351.0	440579	23.94	µg/L	98
		532.8 -> 353.0	134887			
ADONA	6.767	376.9 -> 250.9	1181626	24.60	µg/L	96
		376.9 -> 84.8	303866			
HFPO-DA	5.958	284.9 -> 168.9	90005	25.98	µg/L	98
		284.9 -> 184.9	10045			
3:3FTCA	3.808	241.0 -> 177.0	53653	64.47	µg/L	100
		241.0 -> 117.0	7239			
5:3FTCA	6.233	341.0 -> 237.1	1153334	336.52	µg/L	95
		341.0 -> 217.0	771995			
7:3FTCA	7.632	441.0 -> 316.9	690729	329.96	µg/L	94
		441.0 -> 336.9	1326435			
EtFOSA	10.978	526.0 -> 219.0	165096	48.21	µg/L	99
		526.0 -> 169.0	220288			
EtFOSE	10.912	630.0 -> 58.9	310950	90.65	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	156431	48.97	µg/L	99
		511.9 -> 169.0	205657			
MeFOSE	10.679	616.1 -> 58.9	294212	87.86	µg/L	100
PFDoDS	9.861	699.1 -> 79.9	21103	12.90	µg/L	92
		699.1 -> 98.8	10774			
NFDHA	5.462	295.0 -> 201.0	60008	26.12	µg/L	100
		295.0 -> 84.9	16440			
PFMBA	4.800	279.0 -> 85.1	235643	25.99	µg/L	100
PFMPA	3.513	229.0 -> 84.9	197083	26.33	µg/L	100
PFEESA	6.050	314.8 -> 134.9	529926	22.53	µg/L	100
		314.8 -> 82.9	19056			

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

7.6.4
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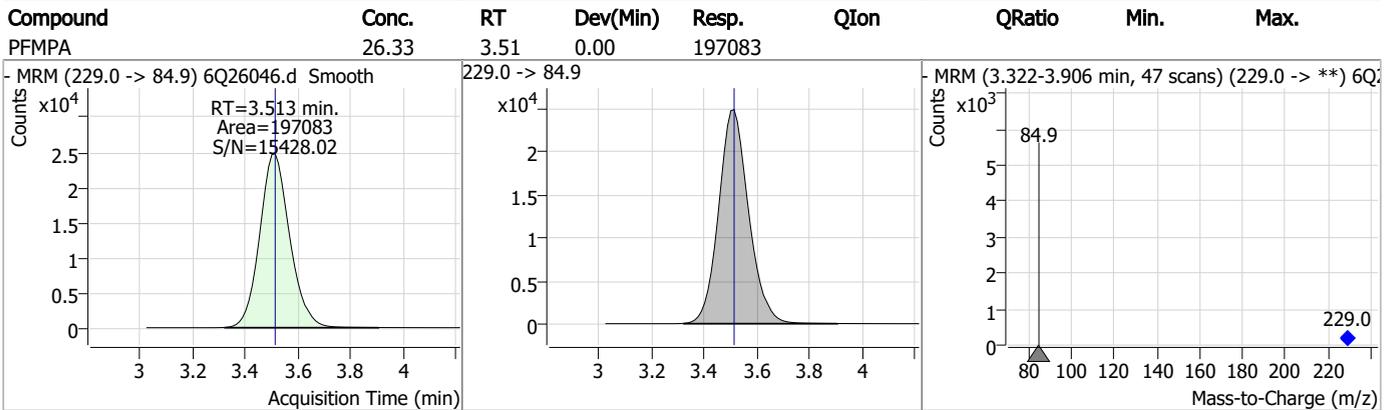
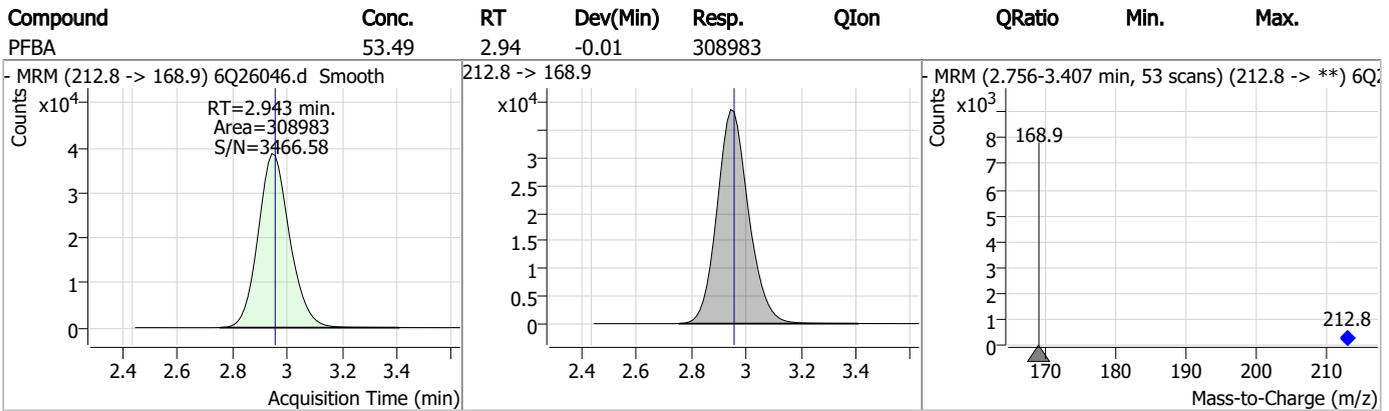
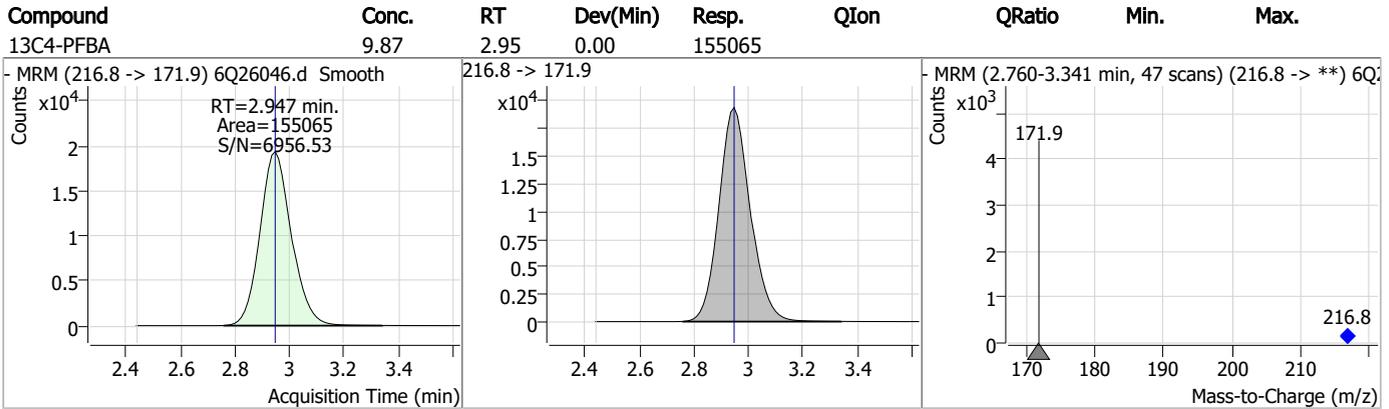
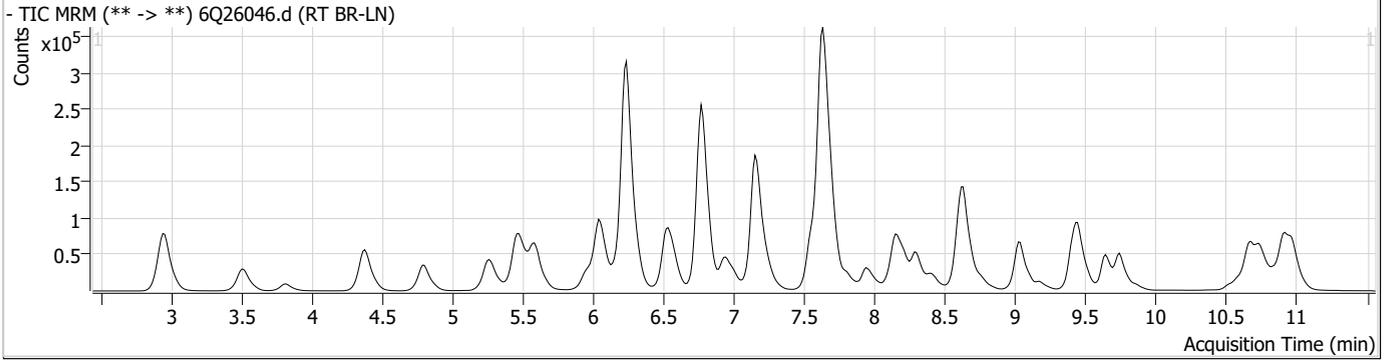
Perfluorinated Compounds by LC/MS/MS

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

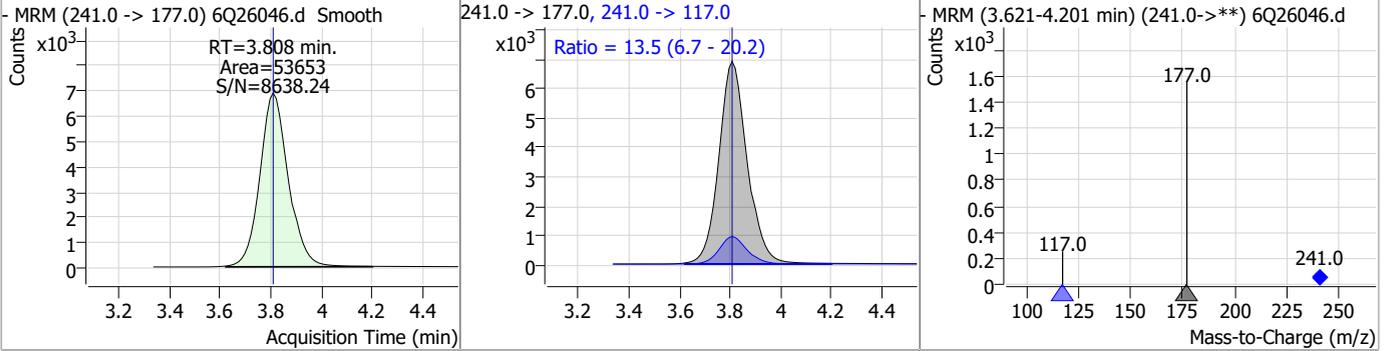
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Perfluorinated Compounds by LC/MS/MS

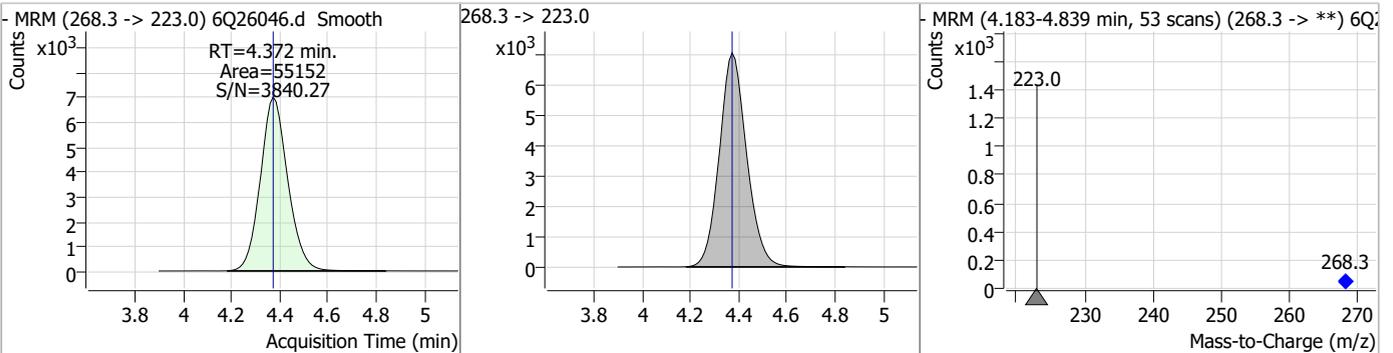


Perfluorinated Compounds by LC/MS/MS

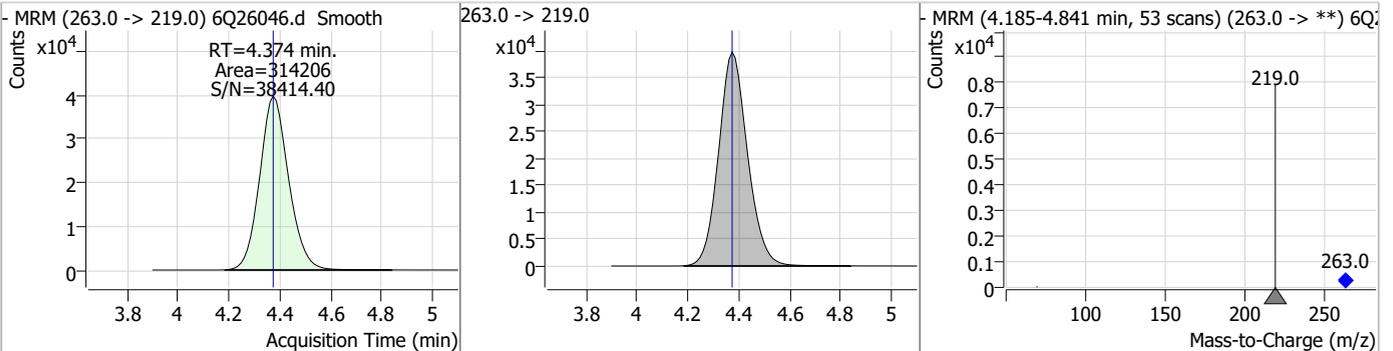
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.47	3.81	0.00	53653	241.0 -> 117.0	13.5	6.7	20.2



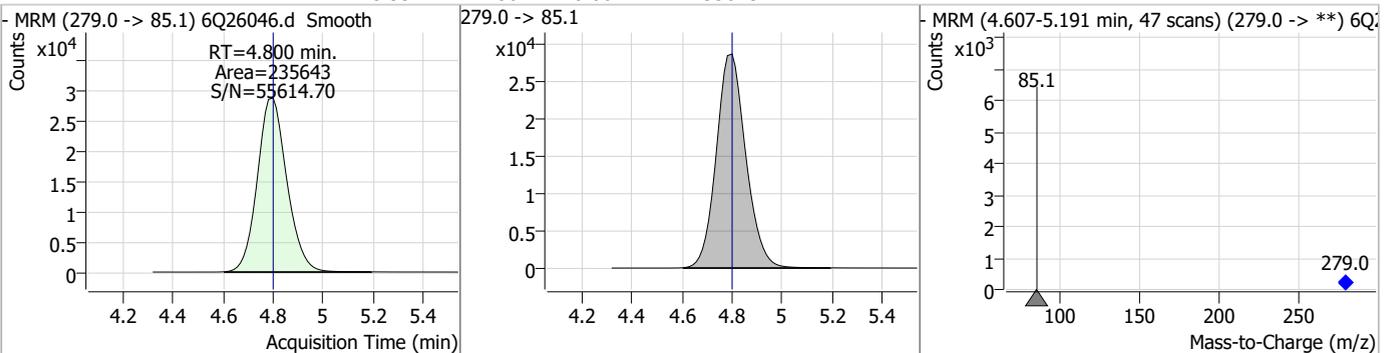
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.37	0.00	55152				



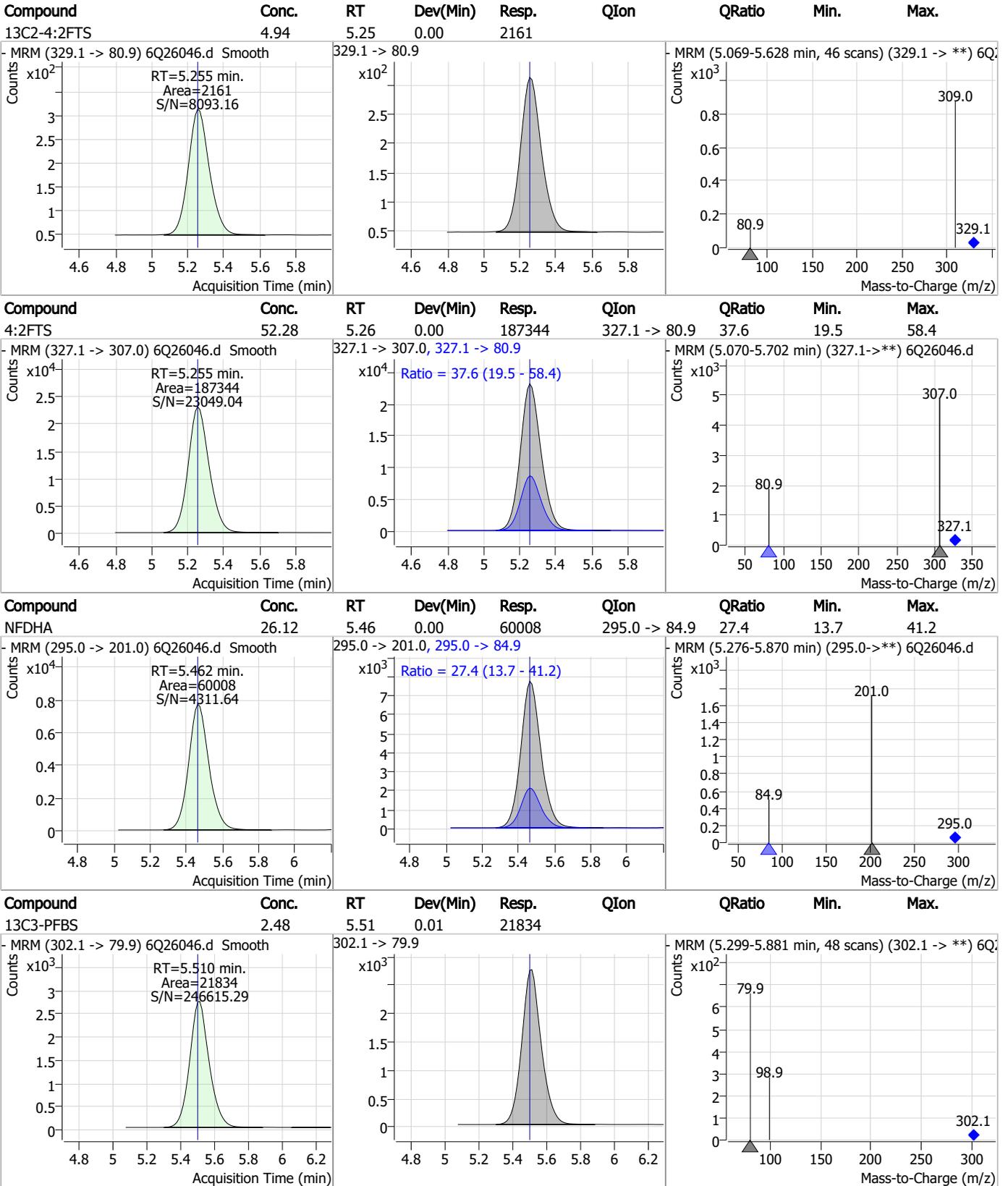
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	26.41	4.37	0.00	314206				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.99	4.80	0.00	235643				



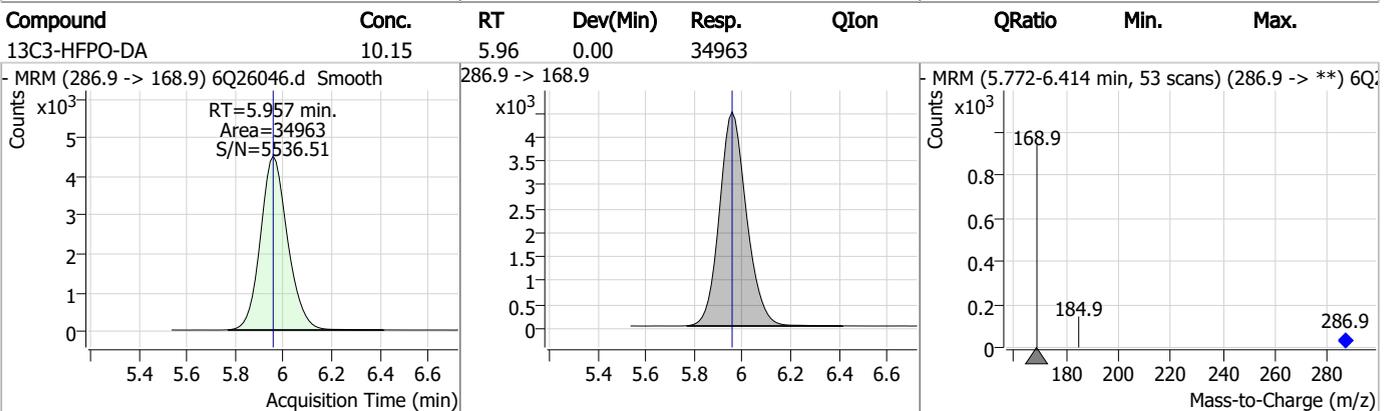
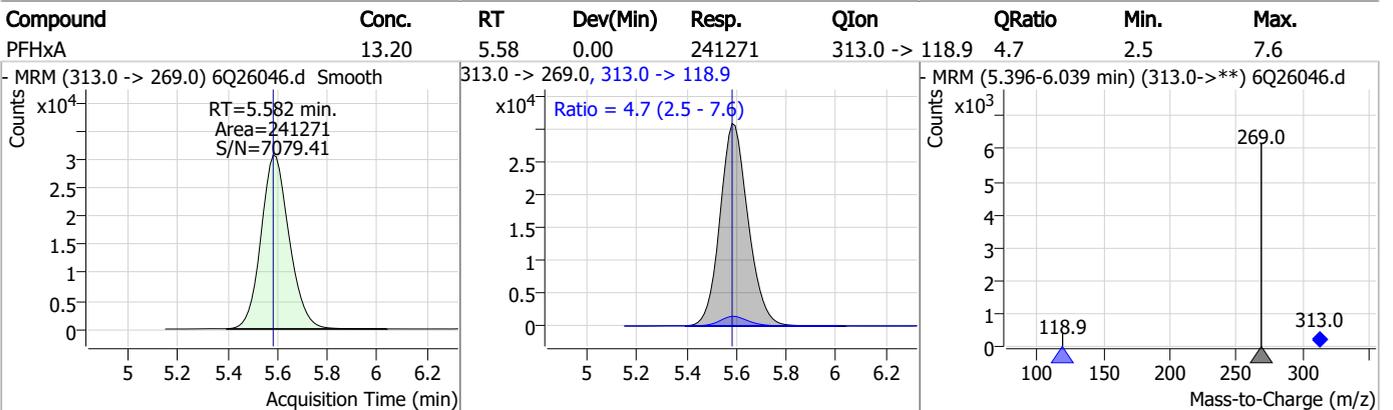
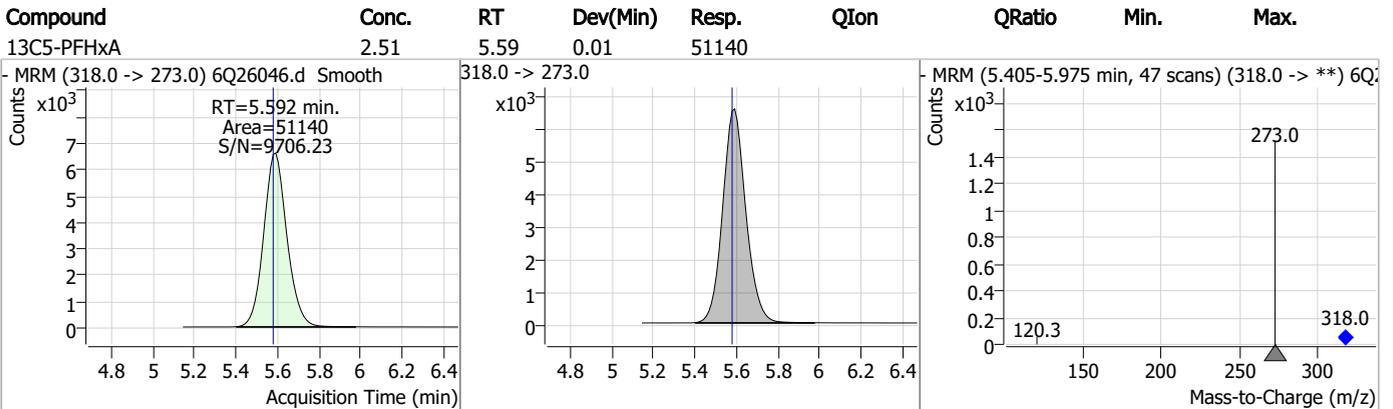
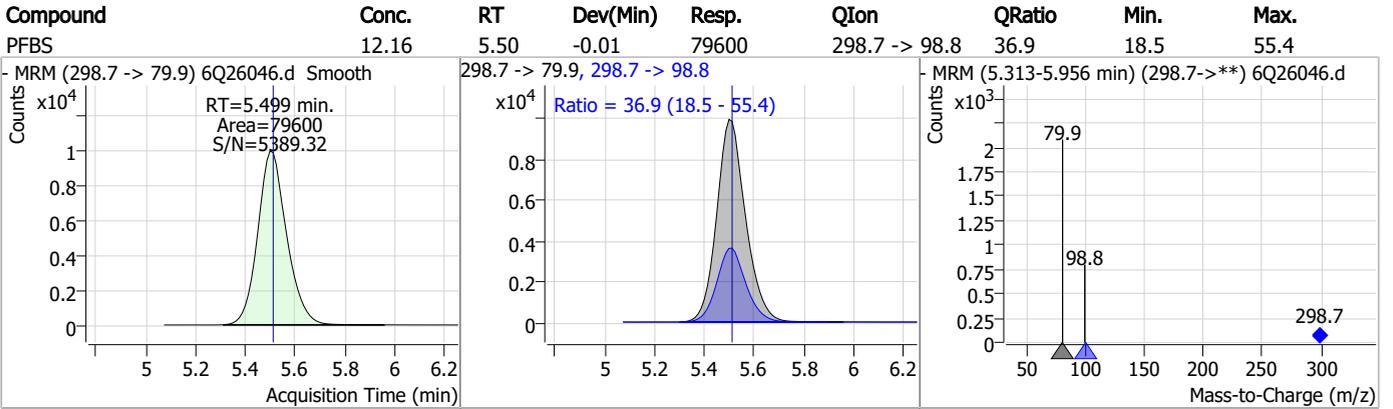
Perfluorinated Compounds by LC/MS/MS



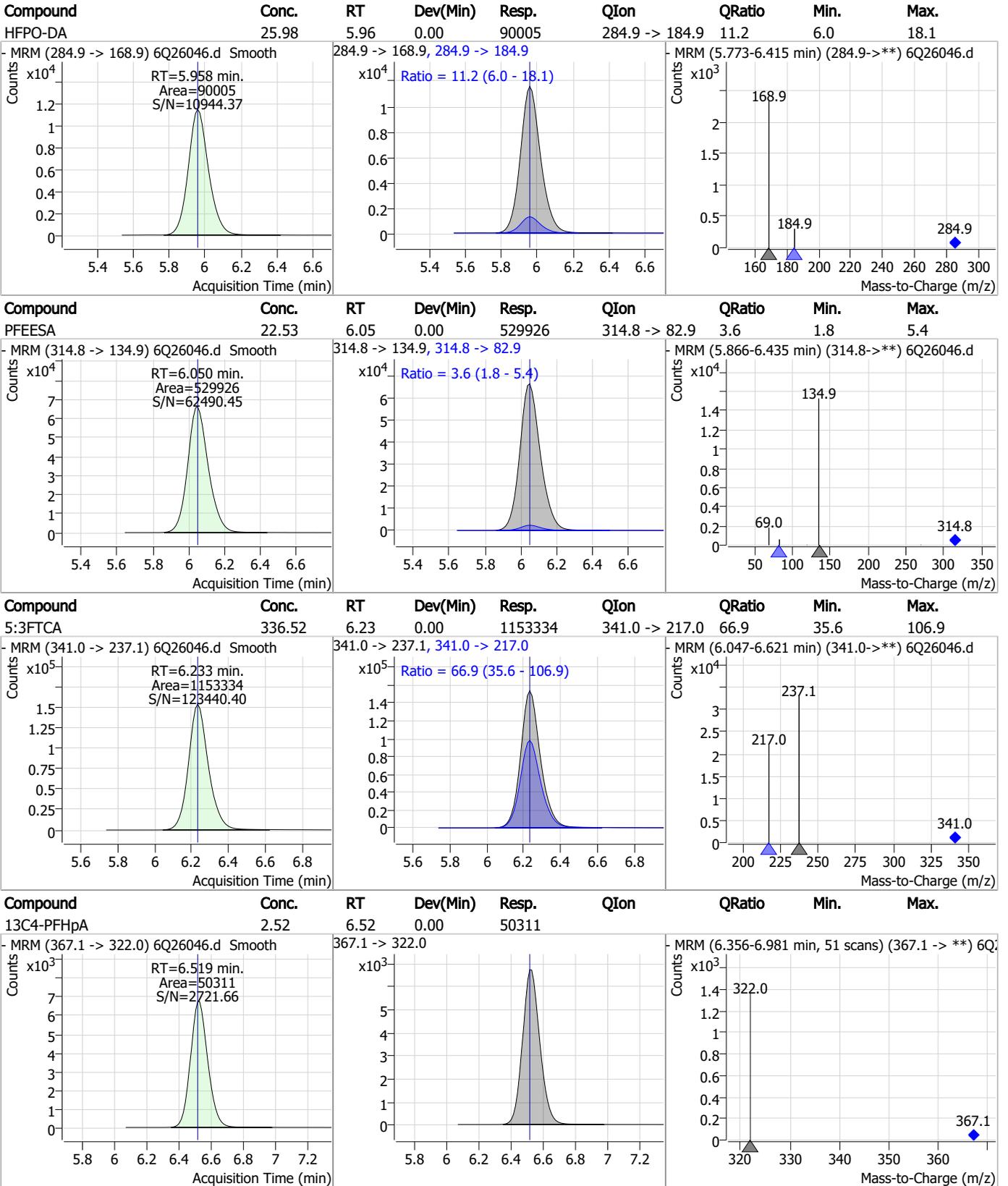
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Perfluorinated Compounds by LC/MS/MS



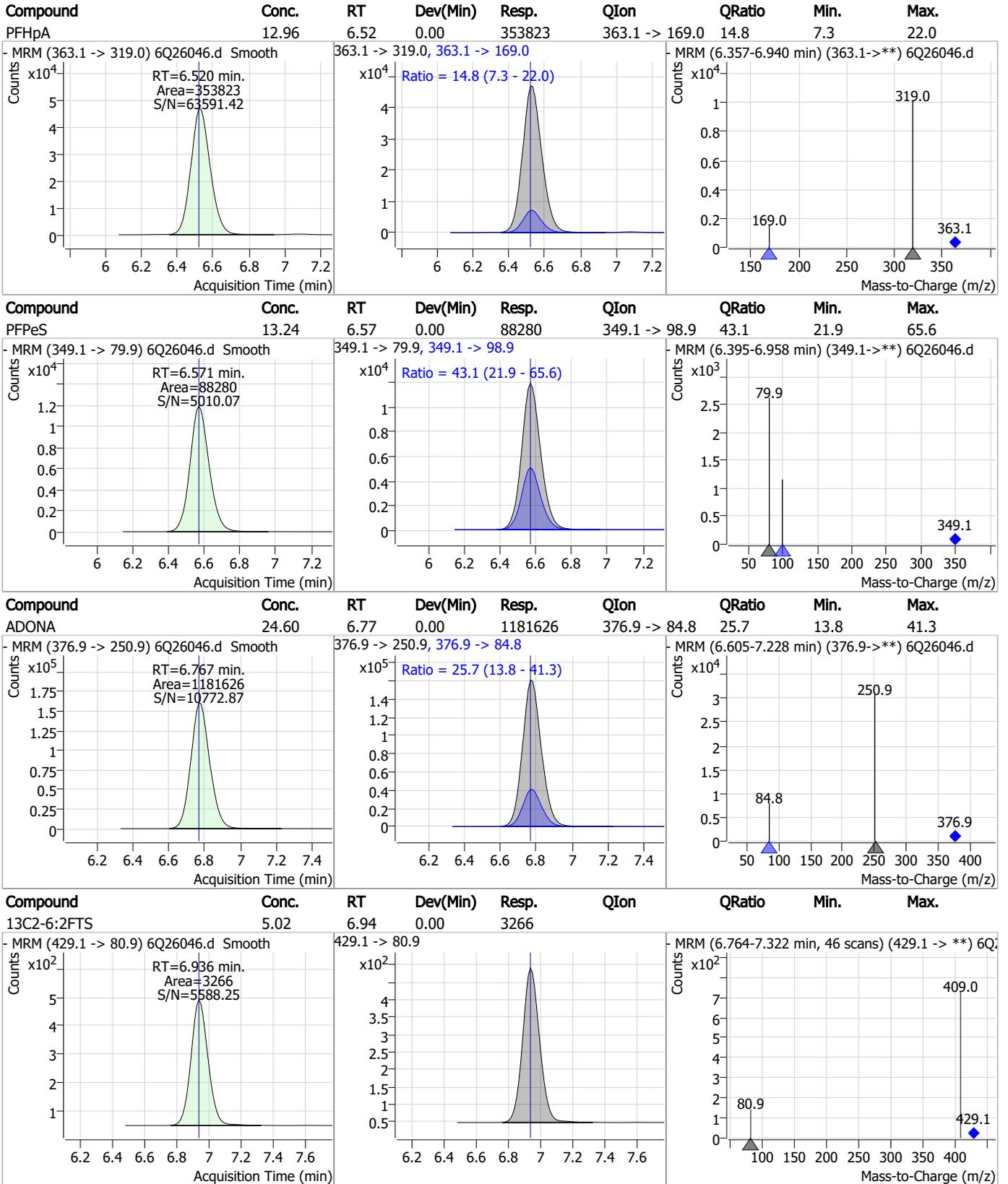
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

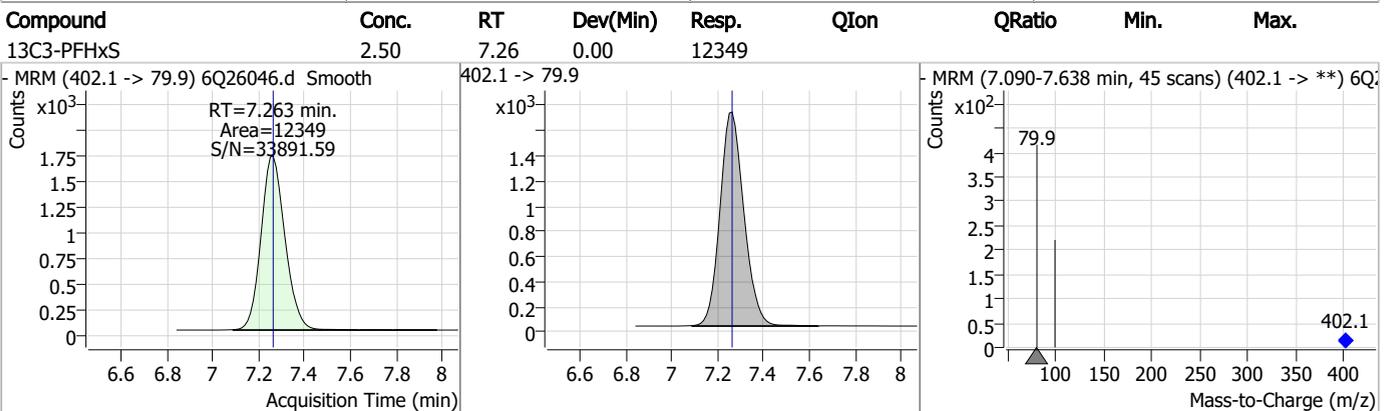
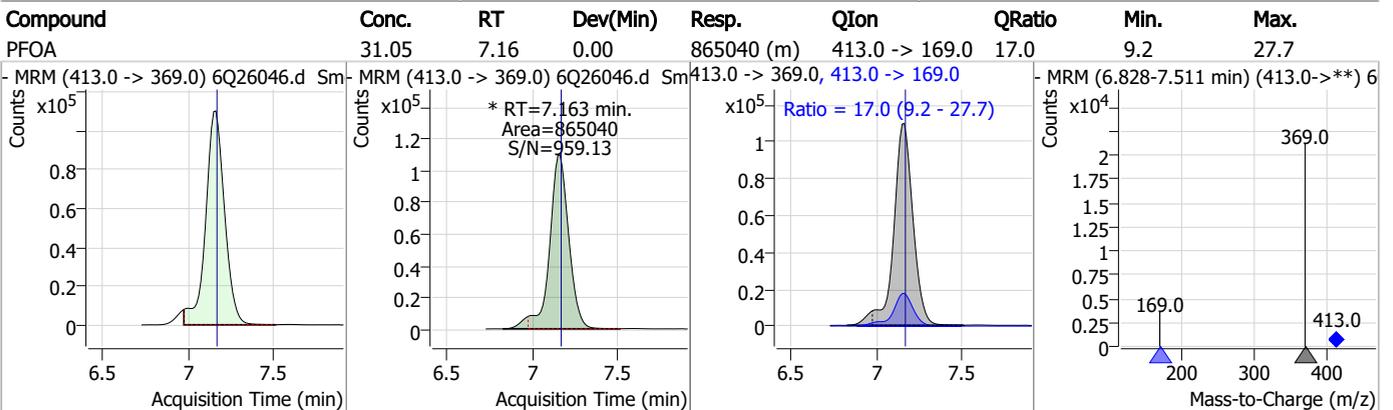
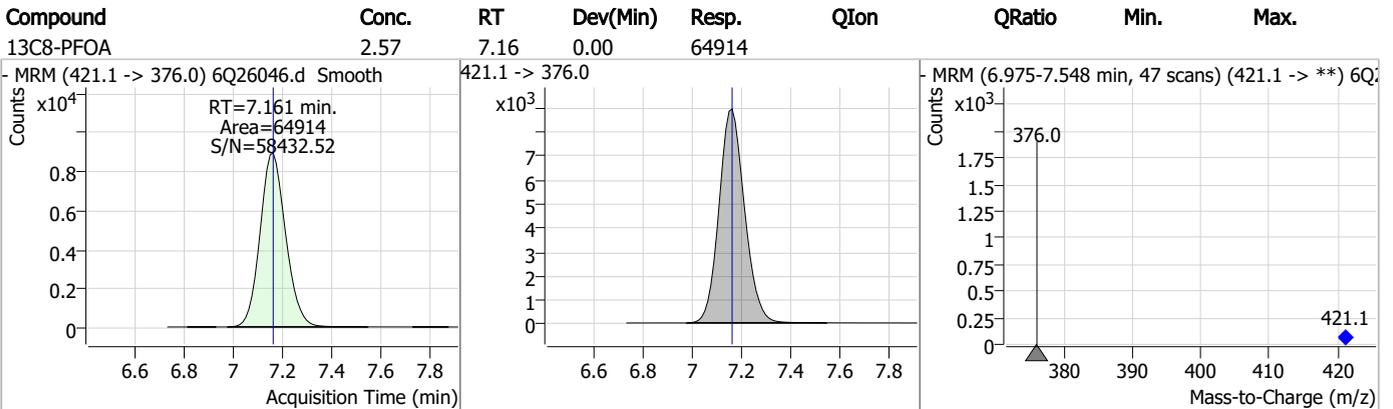
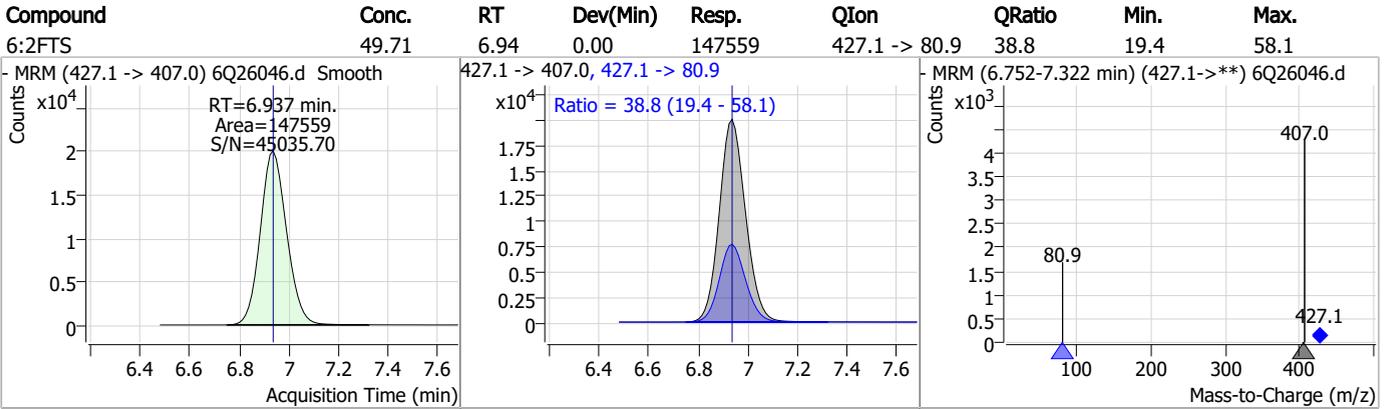


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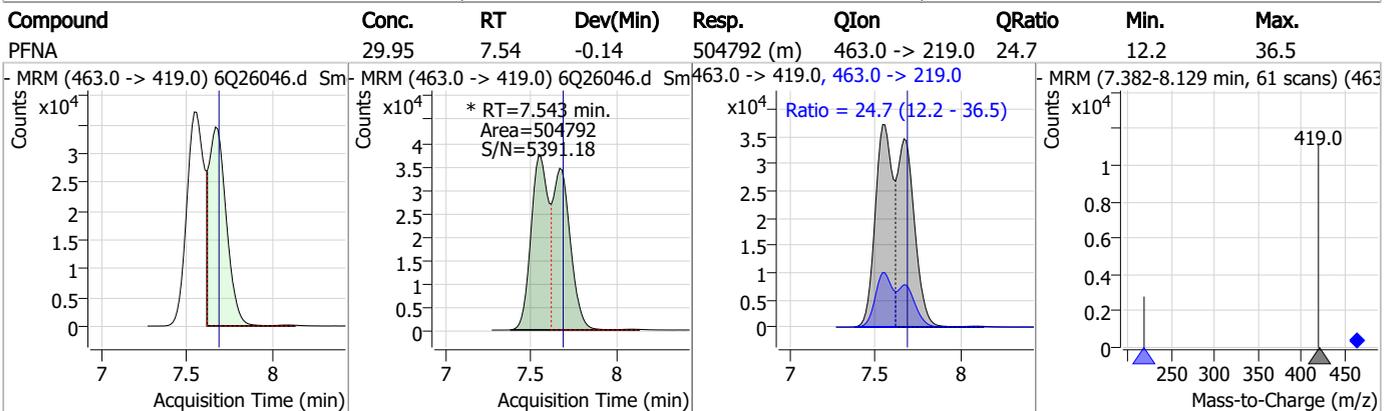
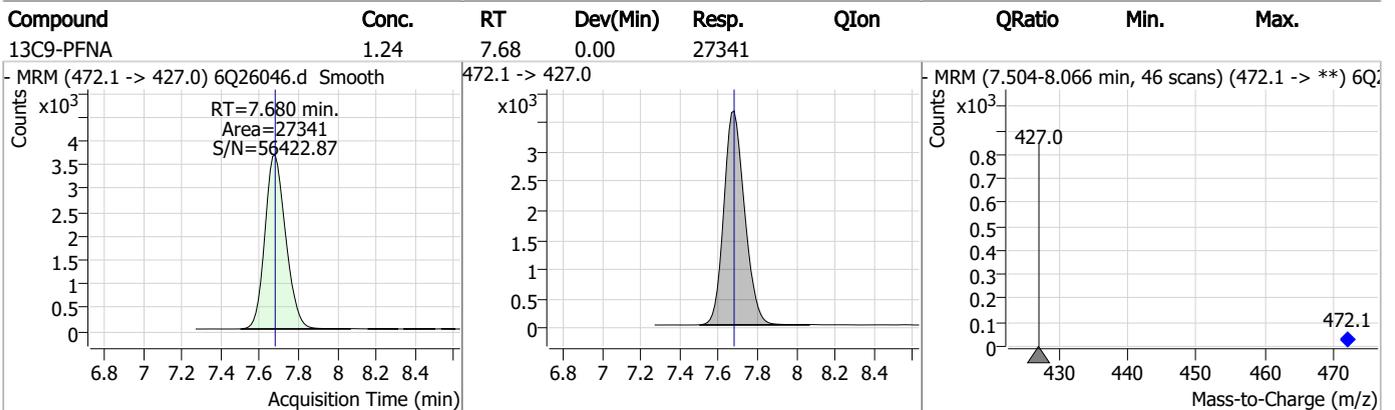
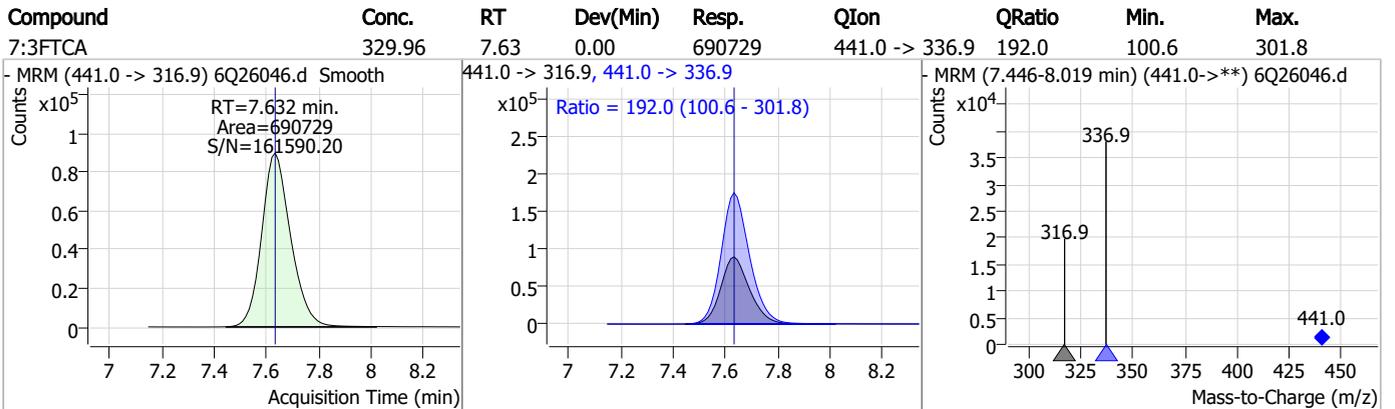
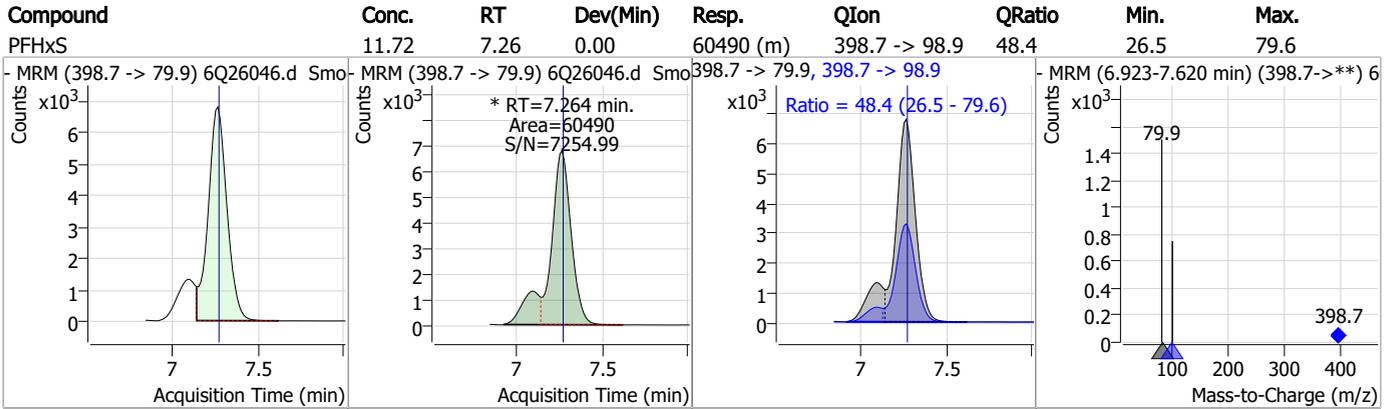
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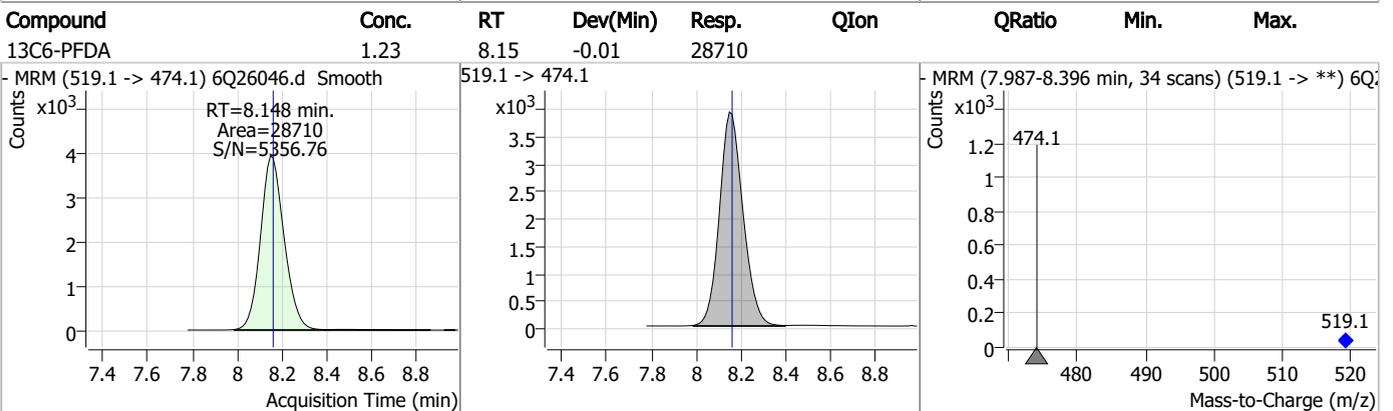
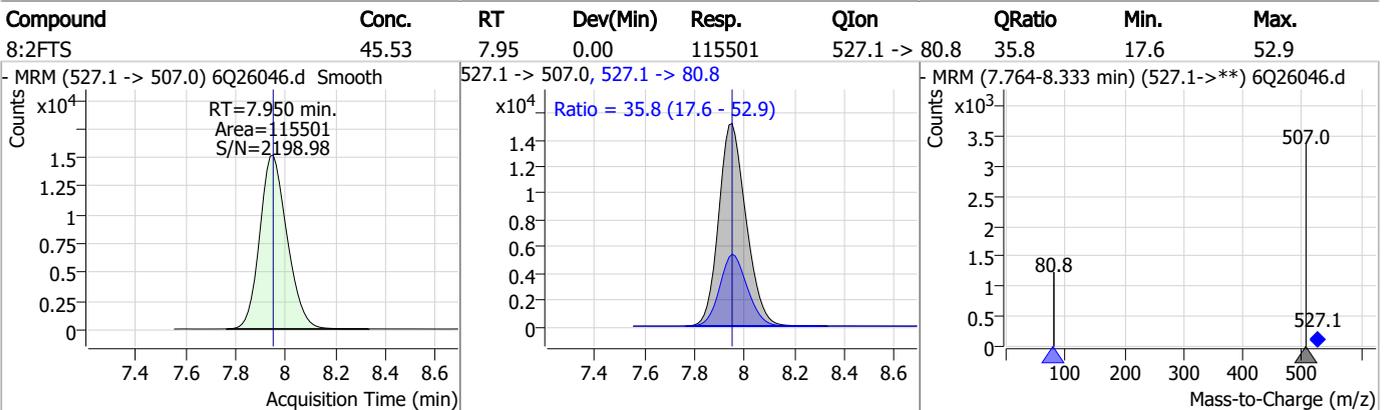
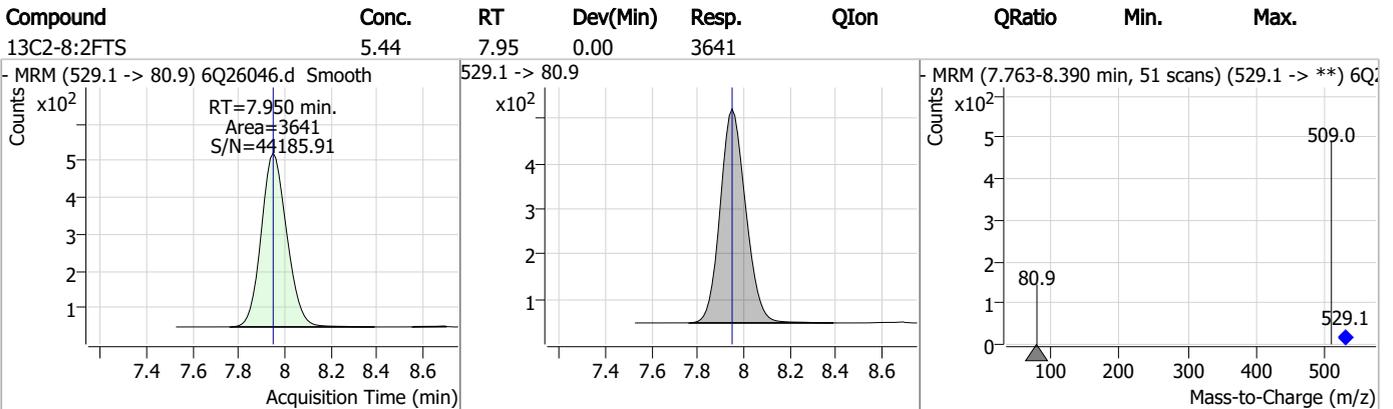
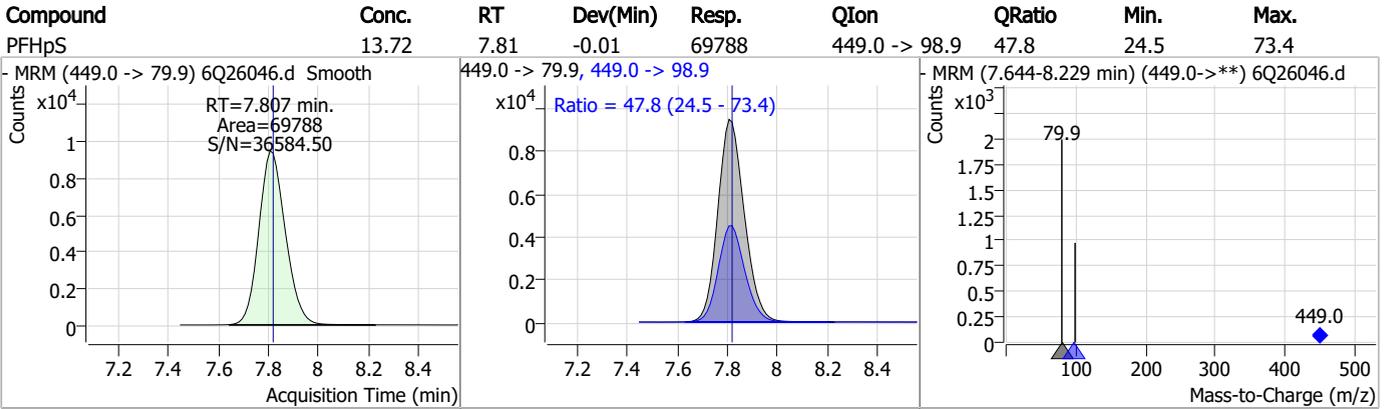
Perfluorinated Compounds by LC/MS/MS



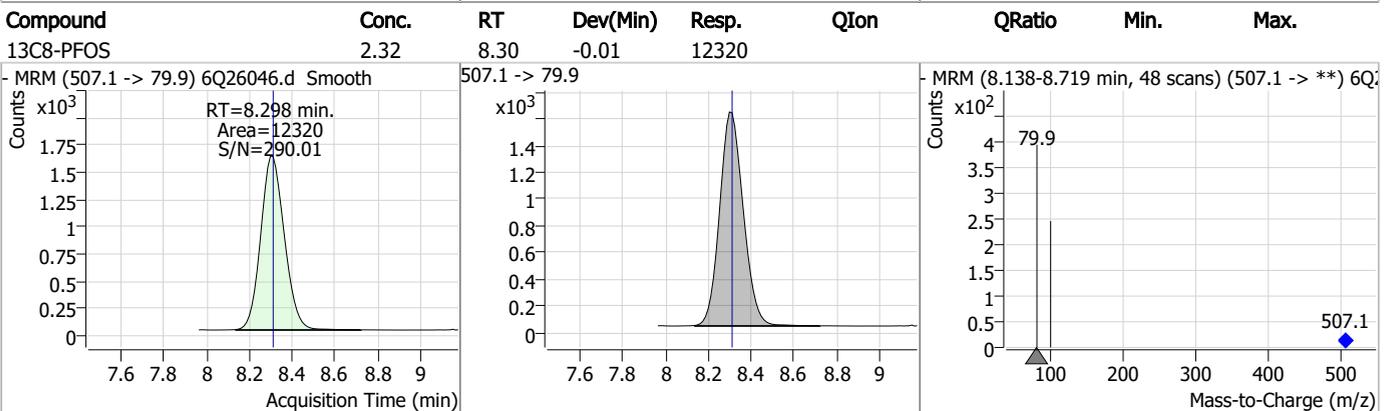
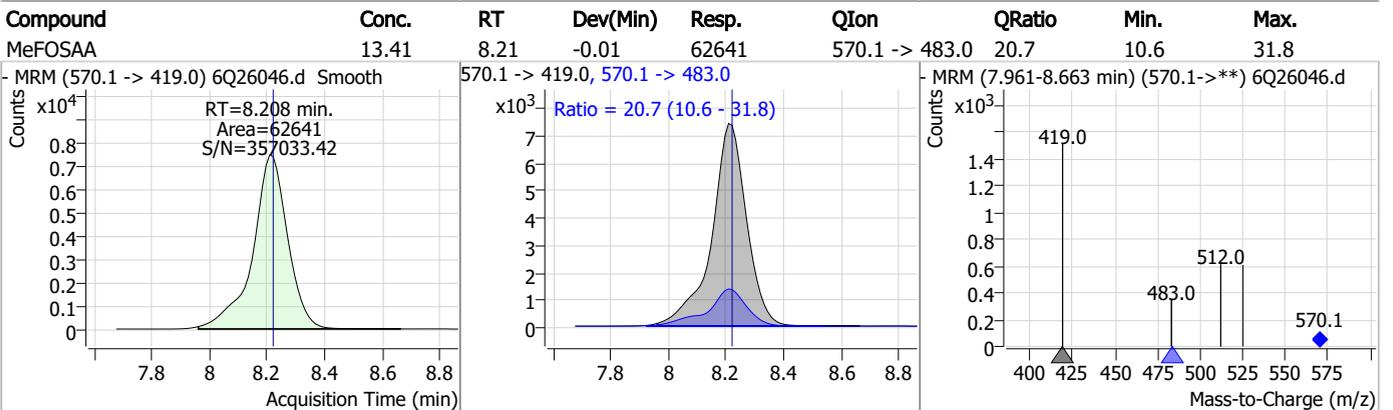
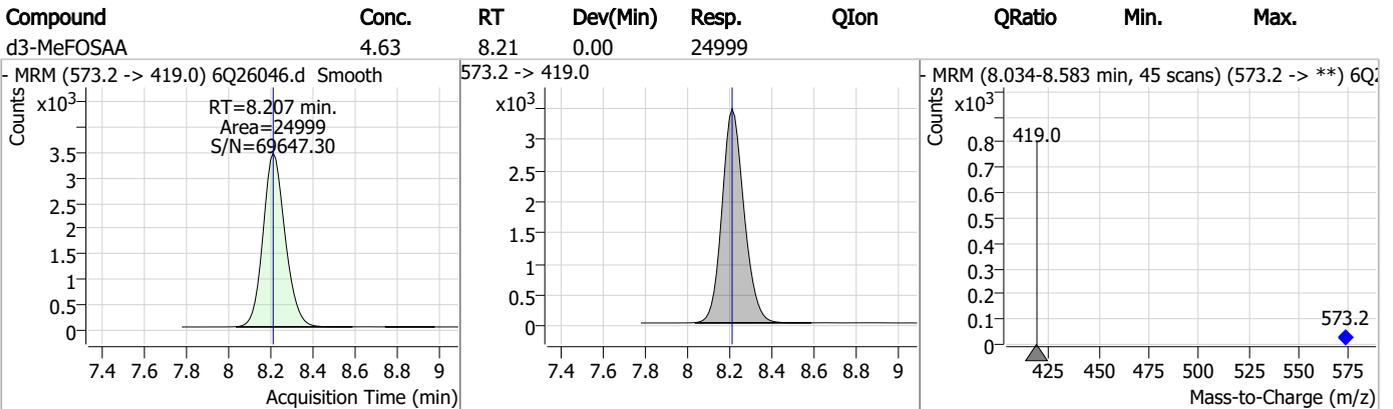
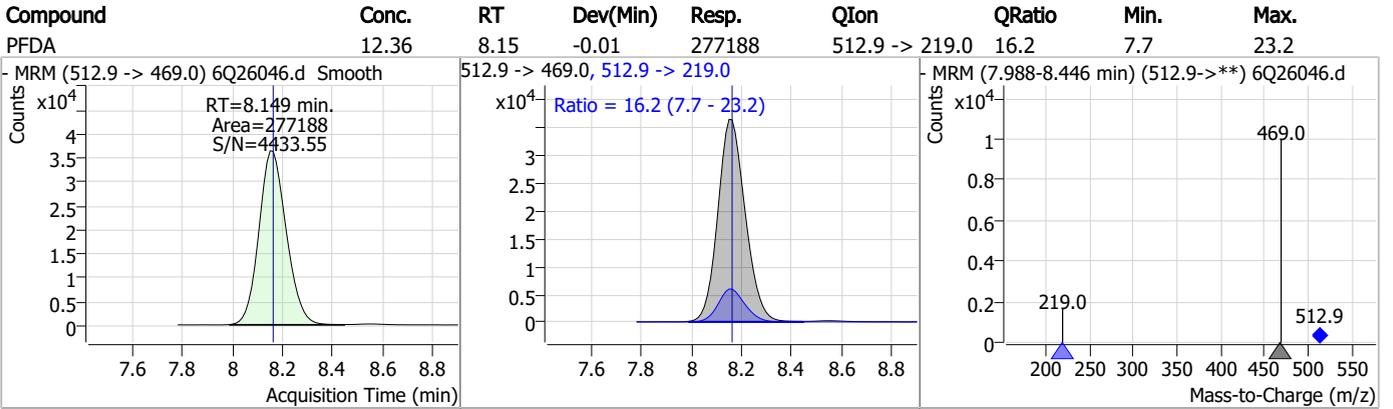
Perfluorinated Compounds by LC/MS/MS



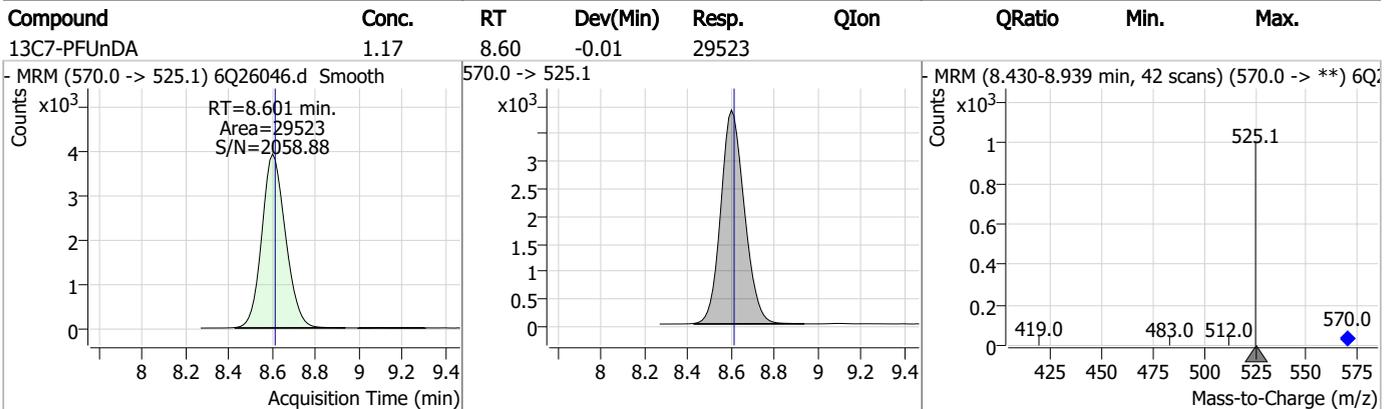
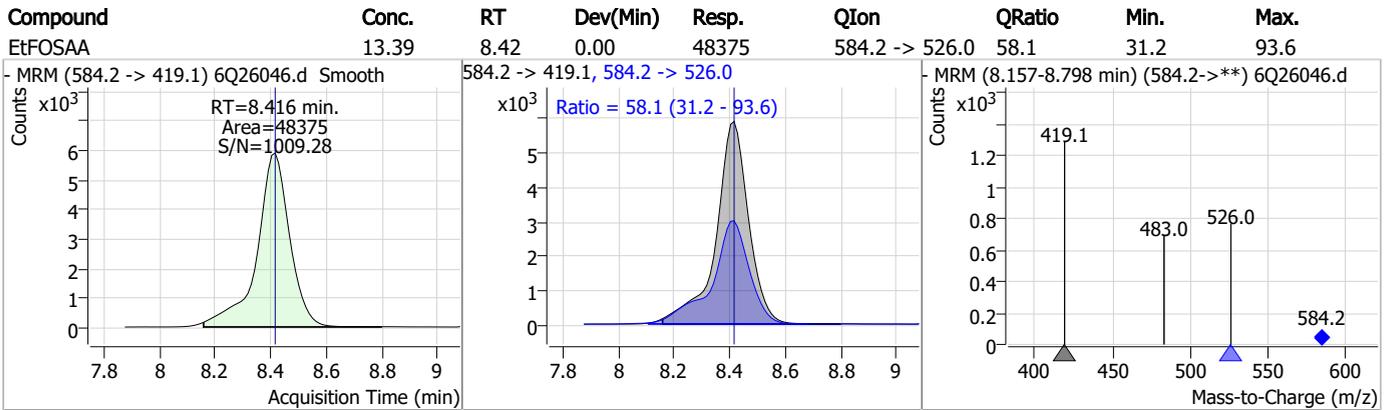
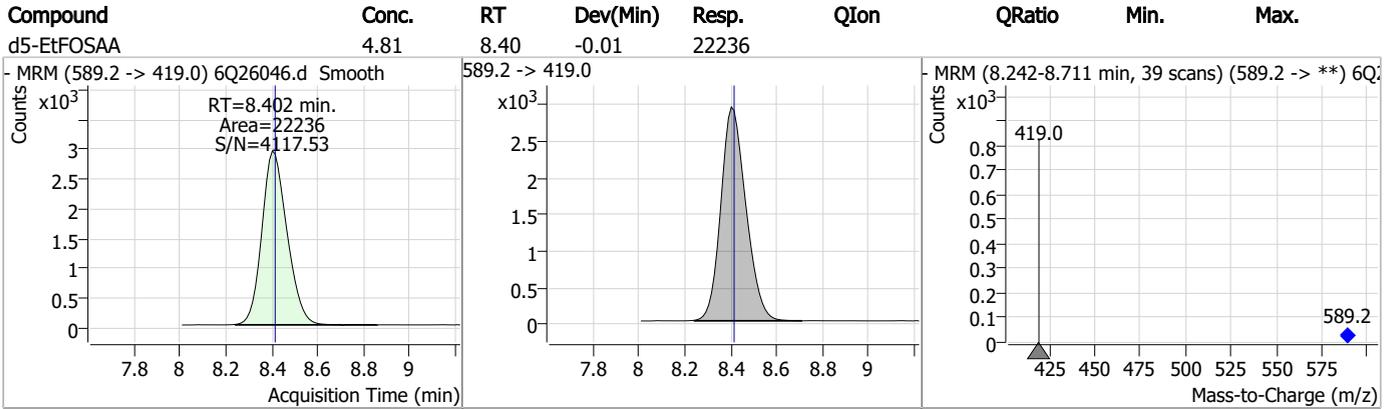
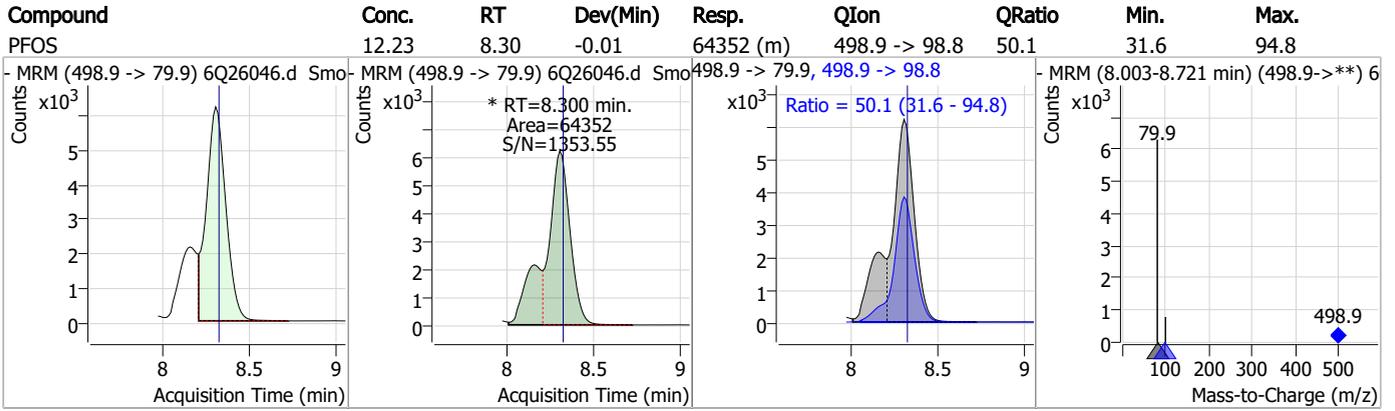
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



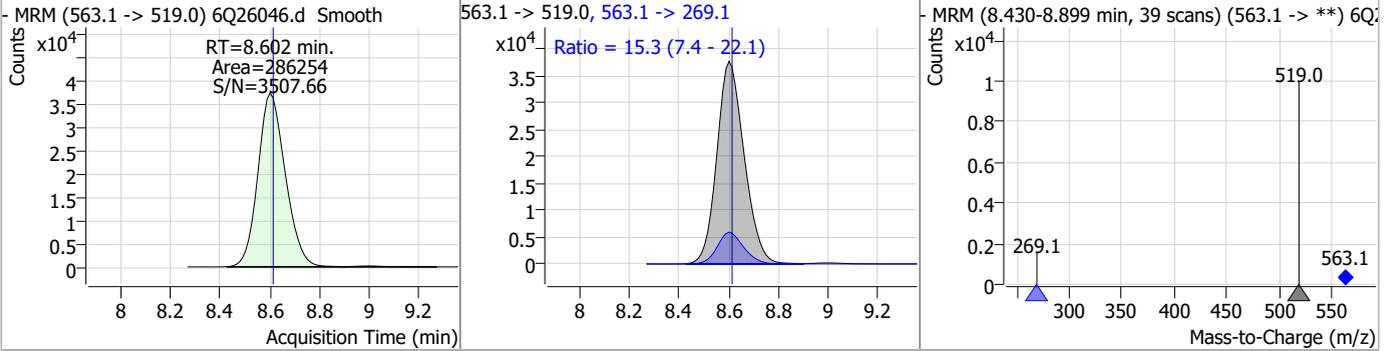
Perfluorinated Compounds by LC/MS/MS



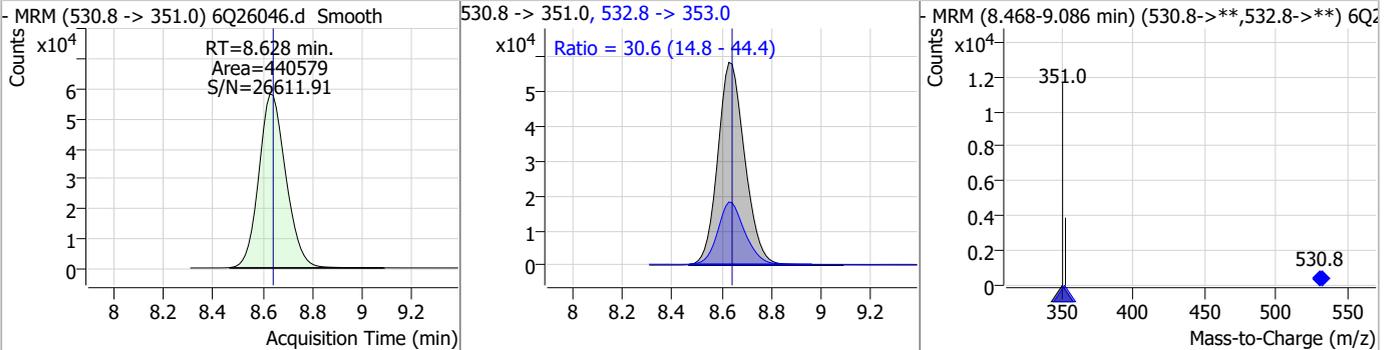
7.6.4 7

Perfluorinated Compounds by LC/MS/MS

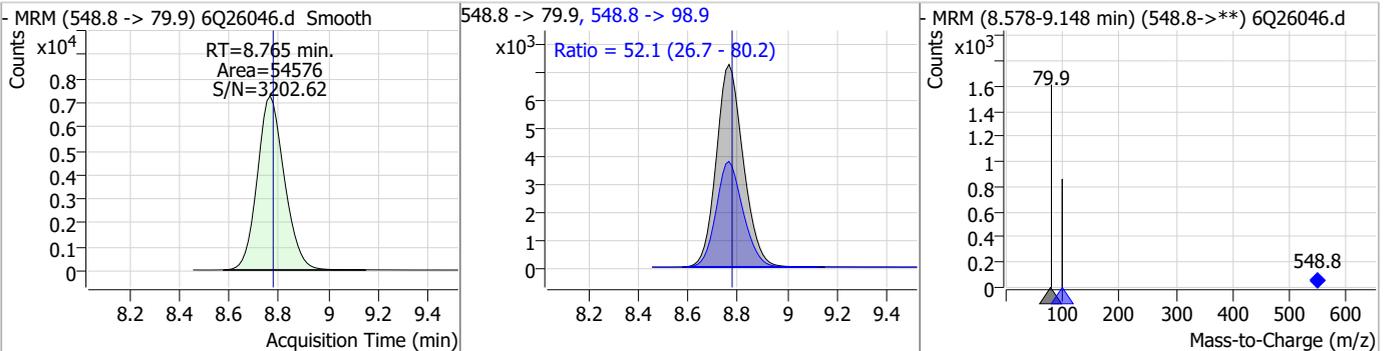
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.76	8.60	-0.01	286254	563.1 -> 269.1	15.3	7.4	22.1



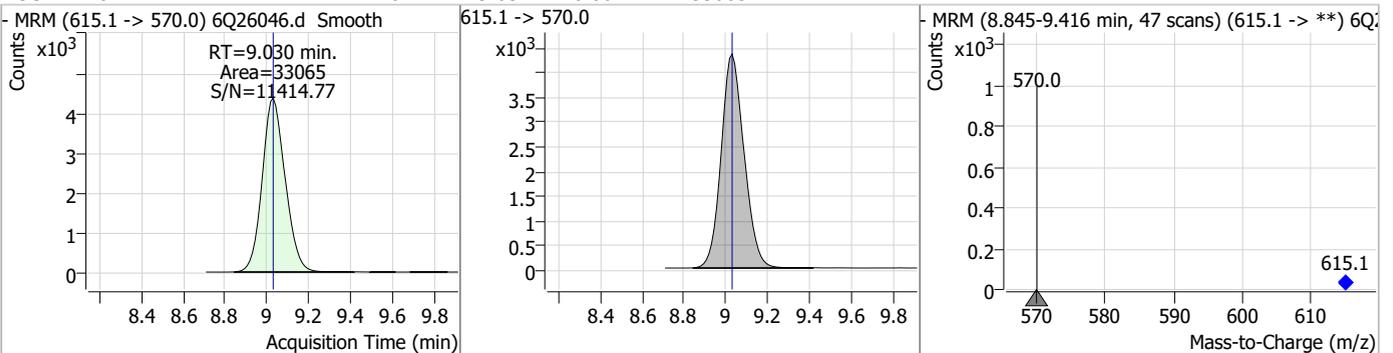
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	23.94	8.63	-0.01	440579	532.8 -> 353.0	30.6	14.8	44.4



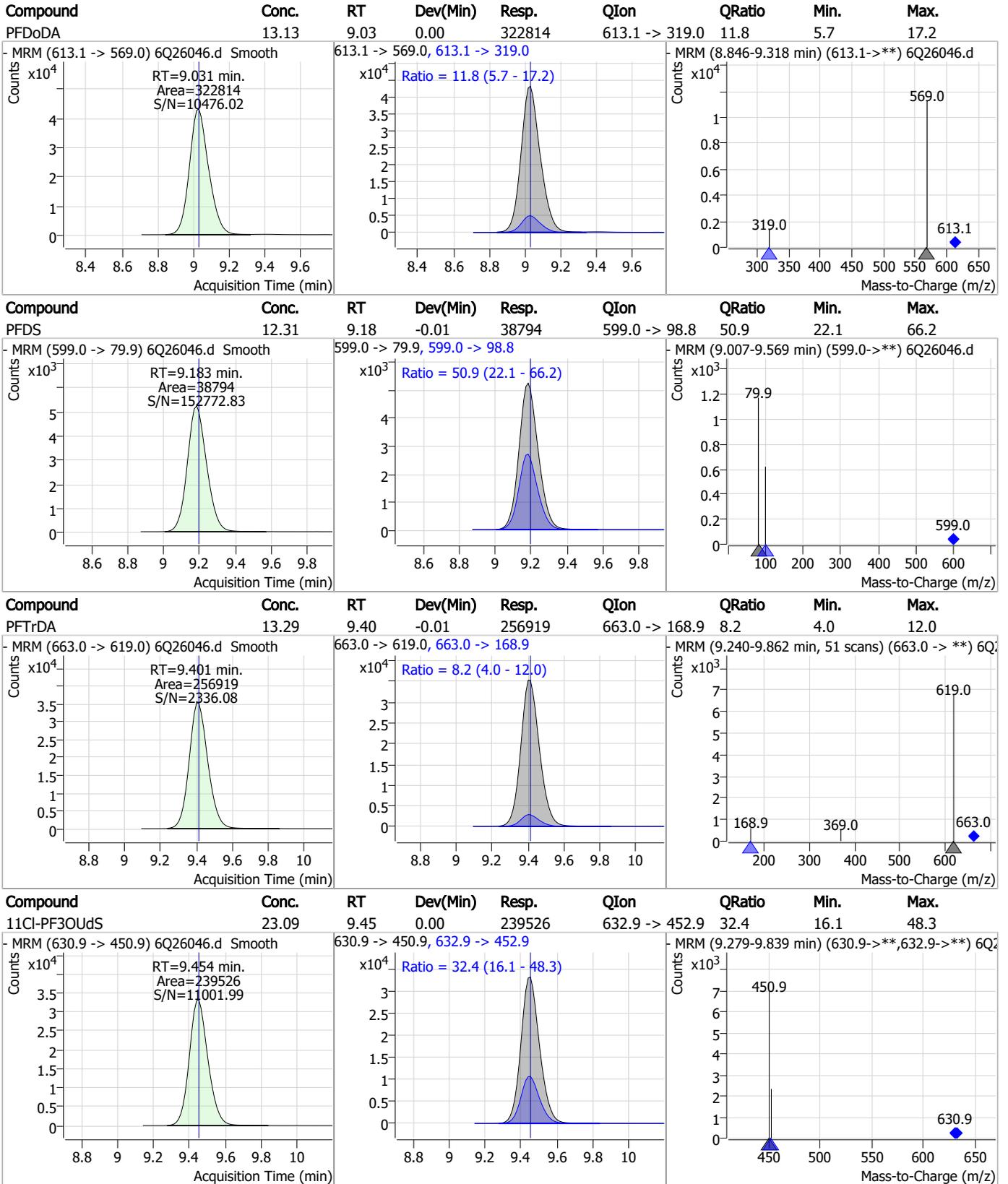
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	12.15	8.76	-0.01	54576	548.8 -> 98.9	52.1	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.03	0.00	33065	615.1 -> 570.0	-	-	-



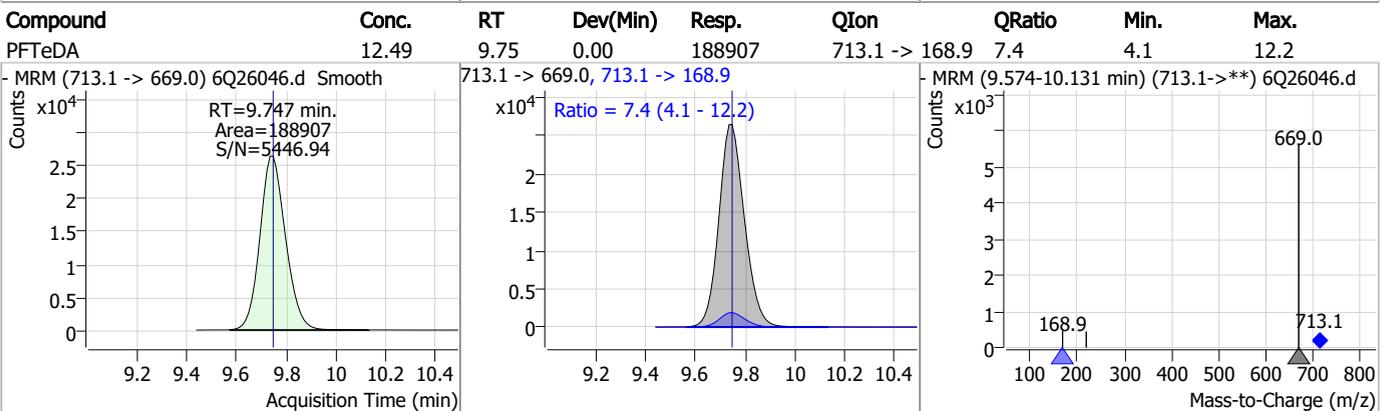
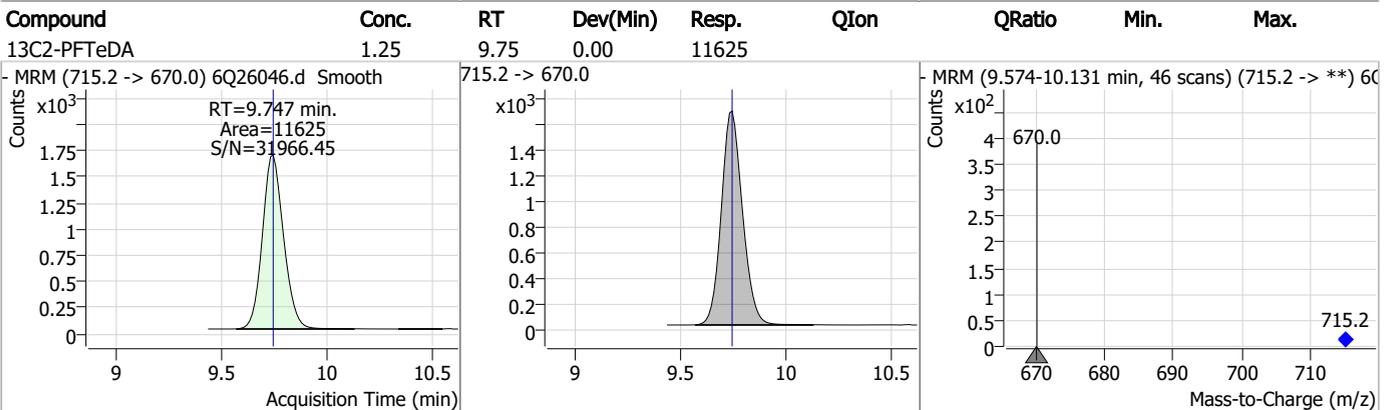
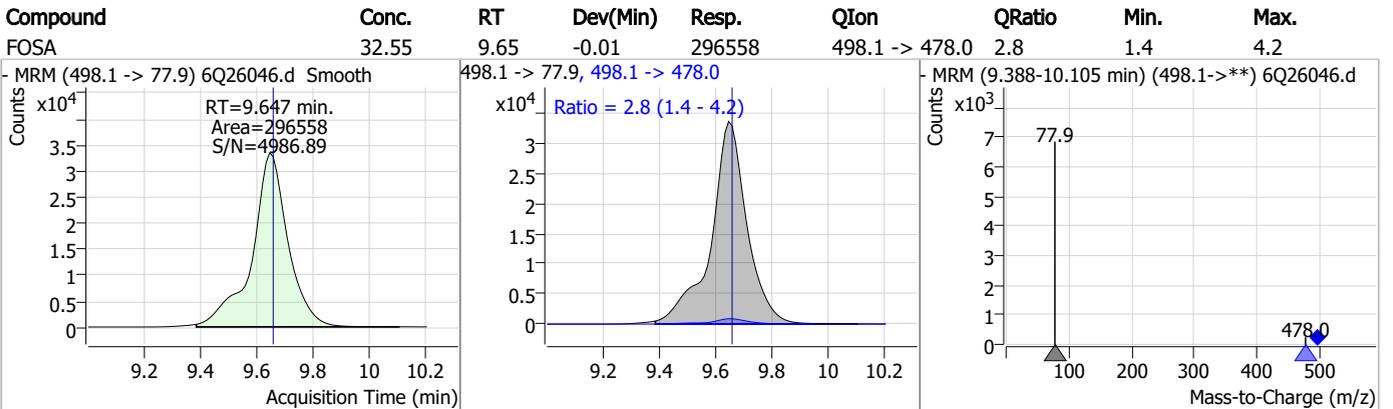
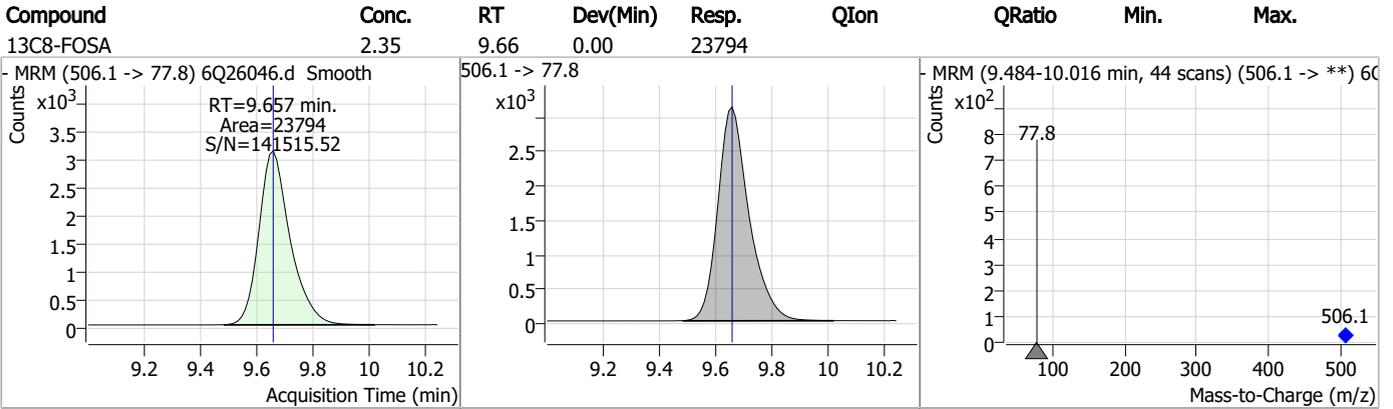
Perfluorinated Compounds by LC/MS/MS



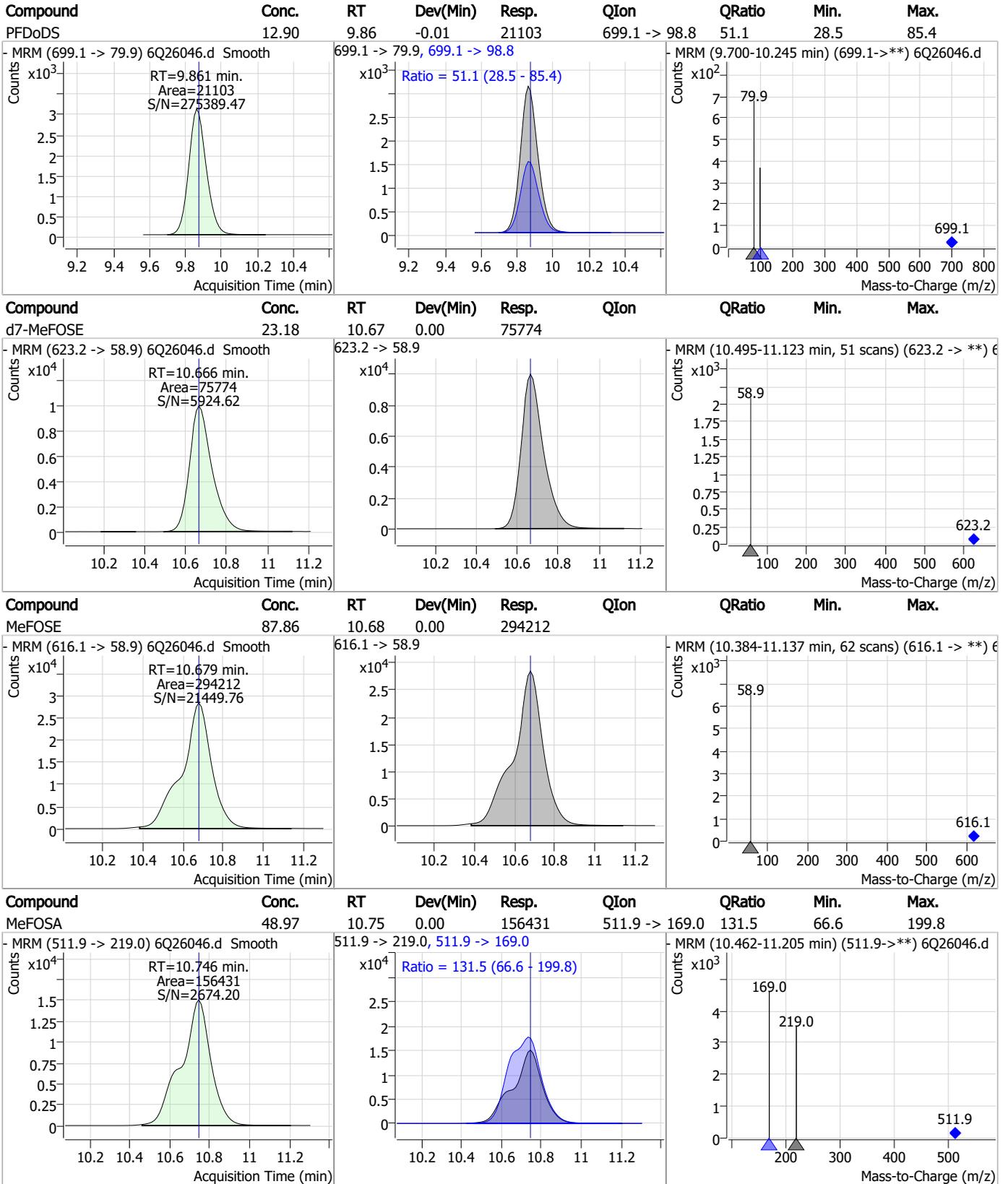
7.6.4

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Perfluorinated Compounds by LC/MS/MS



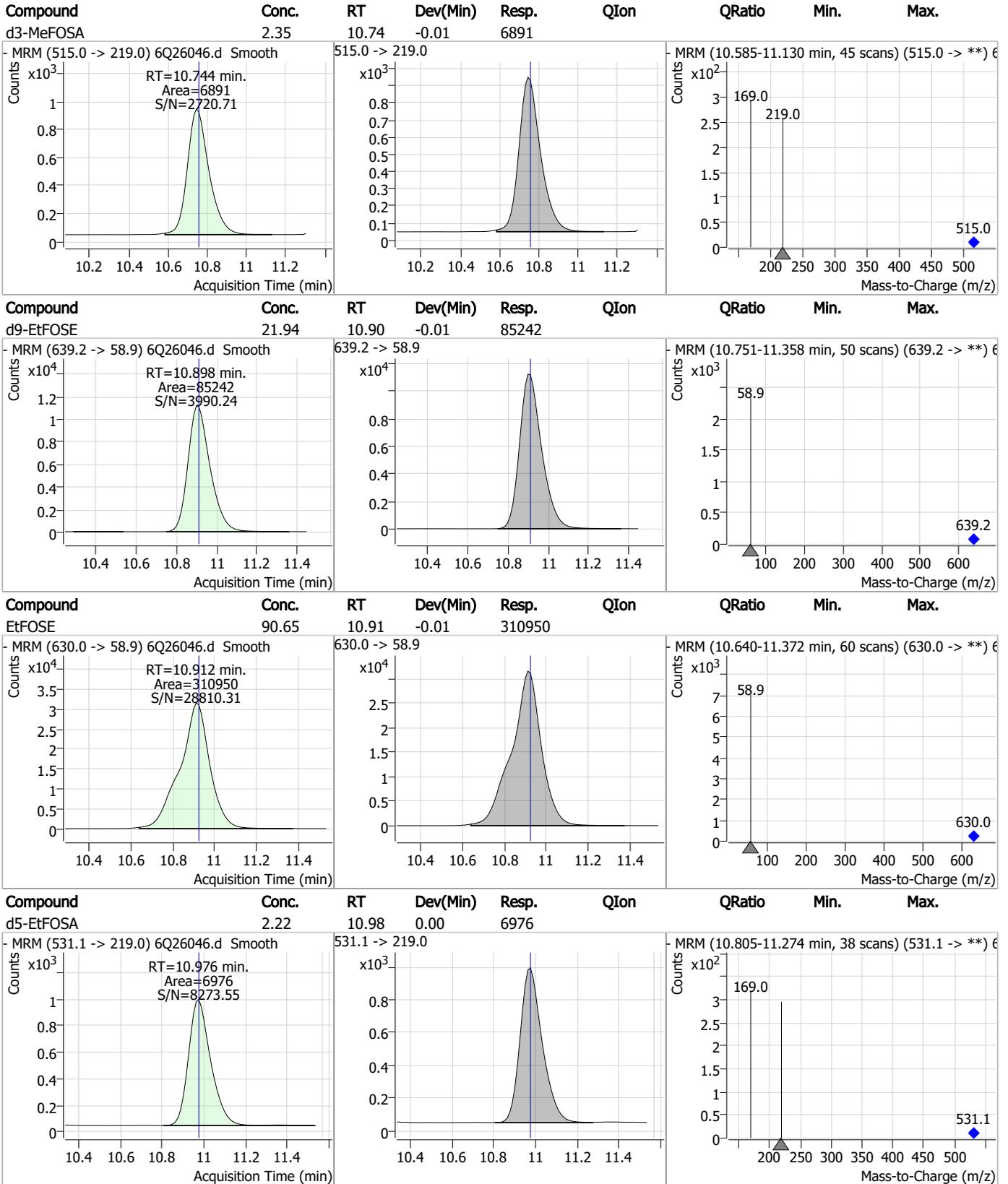
Perfluorinated Compounds by LC/MS/MS



7.6.4

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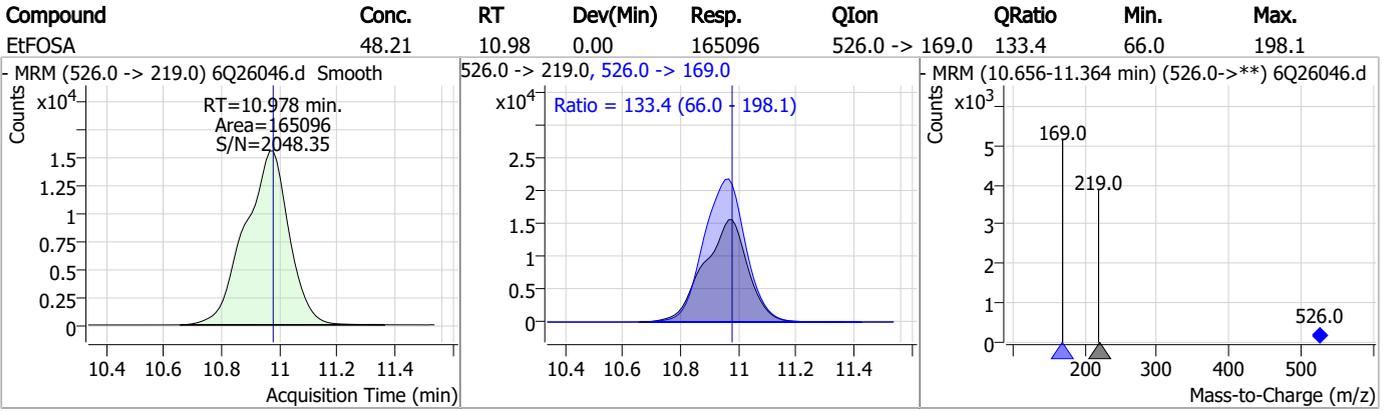
Perfluorinated Compounds by LC/MS/MS



7.6.4

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Perfluorinated Compounds by LC/MS/MS



7.6.4

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Manual Integration Approval Summary

Sample Number: S6Q367-RT Method: EPA DRAFT 1633
Lab FileID: 6Q26046.D Analyst approved: 10/10/23 15:49 Martha Valls
Injection Time: 10/09/23 14:59 Supervisor approved: 10/10/23 17:22 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorononanoic acid	375-95-1		7.54	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.6.4.1
7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 08 October 2023 11:07:24
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.77E+0 [R] (Torr); 2.88E-5 [H] (Torr)

Source Parameters

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

QQQ Check Tune Report



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	112.99	0.00	Pass	0.70	0.66	-0.04	Pass	442488
302.00	301.99	-0.01	Pass	0.70	0.67	-0.03	Pass	1288433
601.98	601.98	0.00	Pass	0.70	0.70	0.00	Pass	2753643
1033.99	1033.99	0.00	Pass	0.70	0.70	0.00	Pass	986048
1633.95	1633.99	0.04	Pass	0.70	0.65	-0.05	Pass	427305
2233.91	2233.84	-0.07	Pass	0.70	0.63	-0.07	Pass	134315

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	0.70	0.65	-0.05	Pass	134525
112.99	113.00	0.01	Pass	0.70	0.71	0.01	Pass	552627
302.00	302.01	0.01	Pass	0.70	0.69	-0.01	Pass	1565351
601.98	602.02	0.04	Pass	0.70	0.71	0.01	Pass	1855074
1033.99	1034.02	0.03	Pass	0.70	0.66	-0.04	Pass	708286
1633.95	1634.00	0.05	Pass	0.70	0.67	-0.03	Pass	553053
2233.91	2233.90	-0.01	Pass	0.70	0.68	-0.02	Pass	200355

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.88	-0.11	Pass	1.20	1.29	0.09	Pass	515764
302.00	301.71	-0.29	Pass	1.20	1.70	0.50	Pass	2294900
601.98	601.72	-0.26	Pass	1.20	1.73	0.53	Pass	4109171
1033.99	1033.77	-0.22	Pass	1.20	1.66	0.46	Pass	2198357
1633.95	1633.71	-0.24	Pass	1.20	1.65	0.45	Pass	1371765
2233.91	2233.56	-0.35	Pass	1.20	1.41	0.21	Pass	534744

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	1.20	1.12	-0.08	Pass	193633
112.99	112.98	-0.01	Pass	1.20	1.26	0.06	Pass	784133
302.00	301.89	-0.11	Pass	1.20	1.30	0.10	Pass	2020136
601.98	602.03	0.05	Pass	1.20	1.23	0.03	Pass	2991019
1033.99	1033.96	-0.03	Pass	1.20	1.35	0.15	Pass	1336023
1633.95	1633.98	0.03	Pass	1.20	1.30	0.10	Pass	1287692
2233.91	2233.88	-0.03	Pass	1.20	1.11	-0.09	Pass	549388

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.80	-0.19	Pass	2.50	2.61	0.11	Pass	623484
302.00	301.75	-0.25	Pass	2.50	2.93	0.43	Pass	2293656
601.98	601.67	-0.31	Pass	2.50	3.25	0.75	Pass	5058698
1033.99	1033.67	-0.32	Pass	2.50	2.88	0.38	Pass	3588935
1633.95	1633.66	-0.29	Pass	2.50	2.66	0.16	Pass	2885700
2233.91	2233.63	-0.28	Pass	2.50	2.54	0.04	Pass	1295431

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.98	-0.02	Pass	2.50	2.52	0.02	Pass	224594
112.99	112.97	-0.02	Pass	2.50	2.52	0.02	Pass	945804
302.00	301.83	-0.17	Pass	2.50	2.54	0.04	Pass	3075361
601.98	602.04	0.06	Pass	2.50	2.82	0.32	Pass	3611926
1033.99	1034.00	0.01	Pass	2.50	2.54	0.04	Pass	2326775
1633.95	1633.96	0.01	Pass	2.50	2.78	0.28	Pass	2637574
2233.91	2233.88	-0.03	Pass	2.50	2.41	-0.09	Pass	1533682

7.7.1
7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25940.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 3:03:21 PM
 Sample Name : ic367-1
 Vial : P1-A2
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	150169	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	53448	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	47819	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	49685	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	61828	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	26054	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	26958	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	30029	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30837	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10285	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23164	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	22106	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12044	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12381	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2261	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3393	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	3584	5.00 µg/L	0.012
M3-MeFOSAA	8.207	573.2 -> 419.0	25895	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	31866	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	22672	5.00 µg/L	0.000
M7-MeFOSE	10.665	623.2 -> 58.9	75246	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	91865	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7260	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6462	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	11176	2.50 µg/L	0.000
13C3-PFBA	2.939	216.0 -> 172.0	62238	5.00 µg/L	-0.013
18O2-PFHxS	7.263	403.0 -> 83.9	8015	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	70940	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	25722	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	26191	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	47052	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2261	5.01 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3393	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-8:2FTS	7.962	529.1 -> 80.9	3584	5.18 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30837	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10285	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C3-PFBS	5.510	302.1 -> 79.9	22106	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C3-PFHxS	7.263	402.1 -> 79.9	12044	2.36 µg/L	0.000

7.7.2
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C4-PFBA	2.947	216.8 -> 171.9	150169	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.519	367.1 -> 322.0	49685	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C5-PFHxA	5.580	318.0 -> 273.0	47819	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.372	268.3 -> 223.0	53448	5.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	8.161	519.1 -> 474.1	26958	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C7-PFUnDA	8.601	570.0 -> 525.1	30029	1.28 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-FOSA	9.657	506.1 -> 77.8	23164	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOA	7.161	421.1 -> 376.0	61828	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C8-PFOS	8.311	507.1 -> 79.9	12381	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C9-PFNA	7.680	472.1 -> 427.0	26054	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.7%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25895	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	31866	9.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d3-MeFOSA	10.757	515.0 -> 219.0	6462	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
d5-EtFOSAA	8.415	589.2 -> 419.0	22672	5.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d7-MeFOSE	10.665	623.2 -> 58.9	75246	25.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d9-EtFOSE	10.911	639.2 -> 58.9	91865	25.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
d5-EtFOSA	10.976	531.1 -> 219.0	7260	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	3027	0.81 µg/L	100
		327.1 -> 80.9	1181		
6:2FTS	6.937	427.1 -> 407.0	2466	0.80 µg/L	99
		427.1 -> 80.9	943		
8:2FTS	7.950	527.1 -> 507.0	2078	0.83 µg/L	98
		527.1 -> 80.8	759		
EtFOSAA	8.428	584.2 -> 419.1	755	0.21 µg/L	85
		584.2 -> 526.0	557		
FOSA	9.647	498.1 -> 77.9	1893	0.21 µg/L	99
		498.1 -> 478.0	49		
MeFOSAA	8.220	570.1 -> 419.0	1052	0.22 µg/L	97
		570.1 -> 483.0	206		
PFBA	2.943	212.8 -> 168.9	4644	0.83 µg/L	100
PFBS	5.511	298.7 -> 79.9	1162	0.18 µg/L	97
		298.7 -> 98.8	449		
PFDA	8.161	512.9 -> 469.0	4708	0.22 µg/L	97
		512.9 -> 219.0	664		
PFDODA	9.031	613.1 -> 569.0	4696	0.20 µg/L	96
		613.1 -> 319.0	602		
PFDS	9.195	599.0 -> 79.9	637	0.20 µg/L	89

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	235			
PFHpA	6.532	363.1 -> 319.0	5251	0.19	µg/L	95
		363.1 -> 169.0	868			
PFHpS	7.819	449.0 -> 79.9	996	0.19	µg/L	95
		449.0 -> 98.9	454			
PFHxA	5.594	313.0 -> 269.0	3504	0.20	µg/L	98
		313.0 -> 118.9	151			
PFHxS	7.264	398.7 -> 79.9	1049	0.21	µg/L	94
		398.7 -> 98.9	514			
PFNA	7.680	463.0 -> 419.0	3465	0.22	µg/L	96
		463.0 -> 219.0	773			
PFNS	8.765	548.8 -> 79.9	928	0.21	µg/L	96
		548.8 -> 98.9	469			
PFOA	7.163	413.0 -> 369.0	5951	0.22	µg/L	97
		413.0 -> 169.0	1026			
PFOS	8.312	498.9 -> 79.9	974	0.18	µg/L	m
		498.9 -> 98.8	526			
PFPeA	4.374	263.0 -> 219.0	4816	0.42	µg/L	100
PFPeS	6.571	349.1 -> 79.9	1306	0.20	µg/L	92
		349.1 -> 98.9	638			
PFTeDA	9.747	713.1 -> 669.0	3143	0.23	µg/L	96
		713.1 -> 168.9	206			
PFTrDA	9.413	663.0 -> 619.0	3843	0.21	µg/L	96
		663.0 -> 168.9	362			
PFUnDA	8.614	563.1 -> 519.0	4324	0.20	µg/L	93
		563.1 -> 269.1	768			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	3764	0.40	µg/L	100
		632.9 -> 452.9	1216			
9Cl-PF3ONS	8.641	530.8 -> 351.0	6815	0.41	µg/L	m
		532.8 -> 353.0	2191			
ADONA	6.780	376.9 -> 250.9	17837	0.41	µg/L	96
		376.9 -> 84.8	4535			
HFPO-DA	5.958	284.9 -> 168.9	1311	0.42	µg/L	96
		284.9 -> 184.9	139			
3:3FTCA	3.808	241.0 -> 177.0	804	1.00	µg/L	97
		241.0 -> 117.0	120			
5:3FTCA	6.233	341.0 -> 237.1	16723	5.22	µg/L	98
		341.0 -> 217.0	12258			
7:3FTCA	7.632	441.0 -> 316.9	10531	5.38	µg/L	91
		441.0 -> 336.9	19749			
EtFOSA	10.978	526.0 -> 219.0	1467	0.41	µg/L	97
		526.0 -> 169.0	1981			
EtFOSE	10.924	630.0 -> 58.9	3782	1.02	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	1173	0.39	µg/L	84
		511.9 -> 169.0	1784			
MeFOSE	10.679	616.1 -> 58.9	3389	1.02	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	314	0.19	µg/L	92
		699.1 -> 98.8	160			
NFDHA	5.462	295.0 -> 201.0	828	0.39	µg/L	88
		295.0 -> 84.9	278			
PFMBA	4.800	279.0 -> 85.1	3579	0.41	µg/L	100
PFMPA	3.501	229.0 -> 84.9	2943	0.41	µg/L	100
PFEESA	6.050	314.8 -> 134.9	8488	0.39	µg/L	98
		314.8 -> 82.9	262			

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

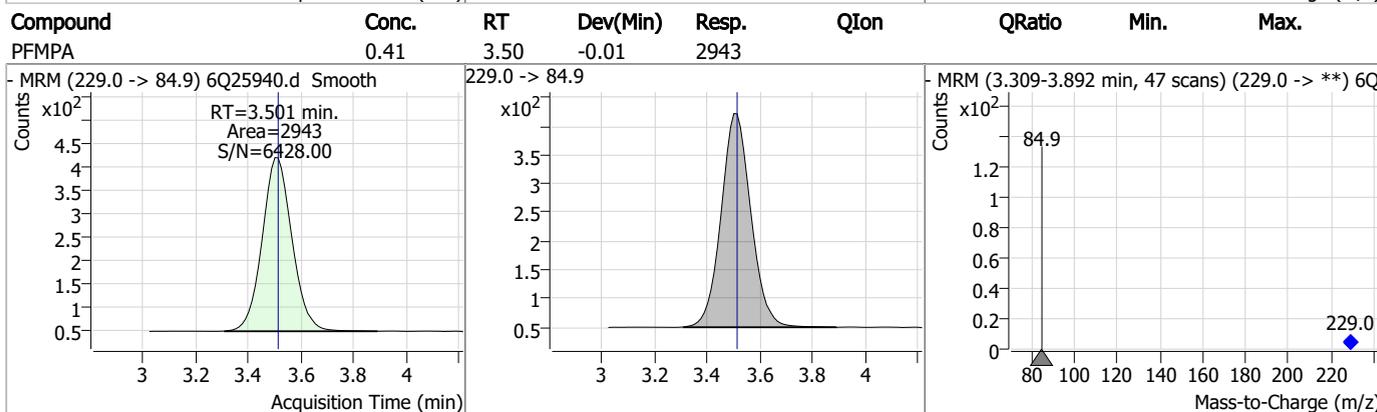
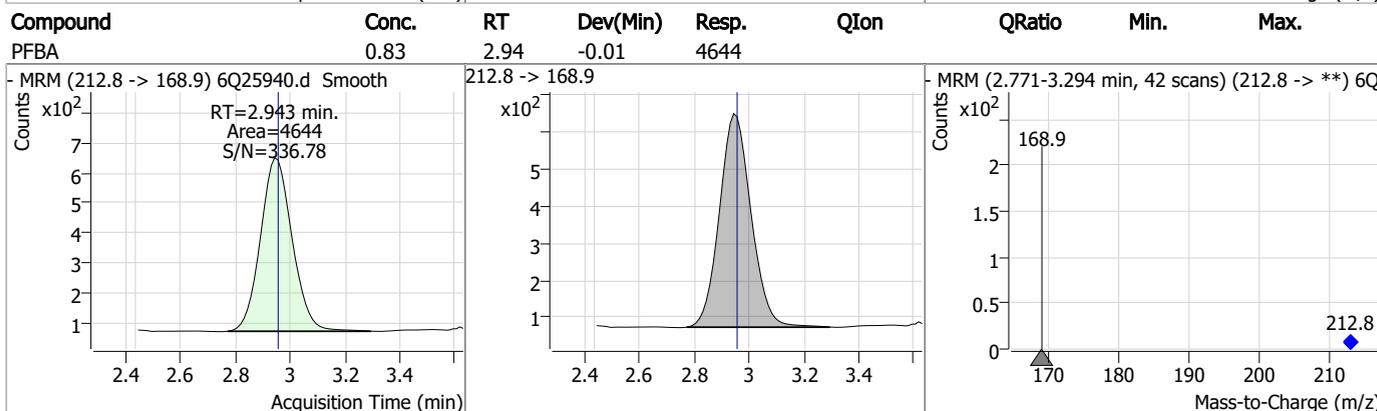
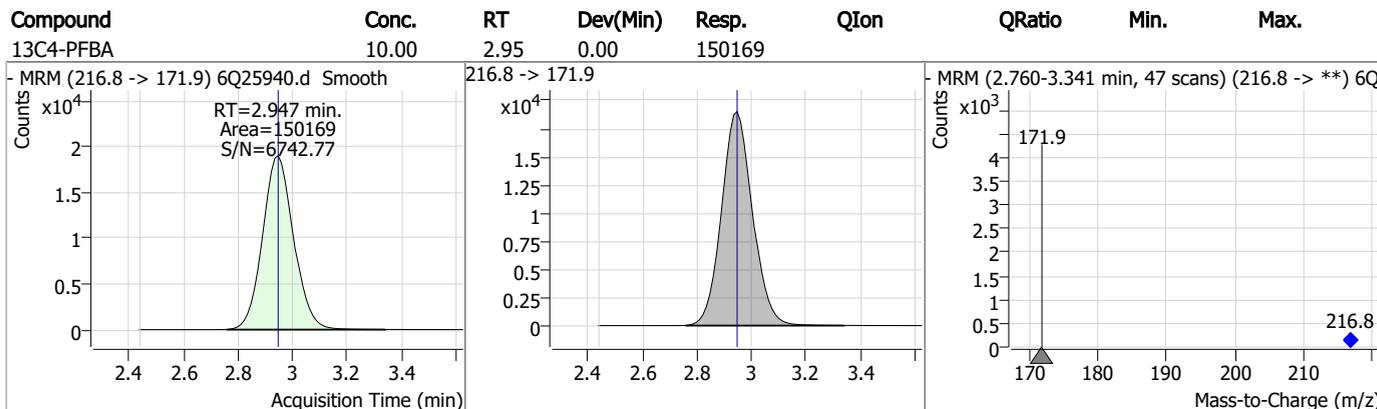
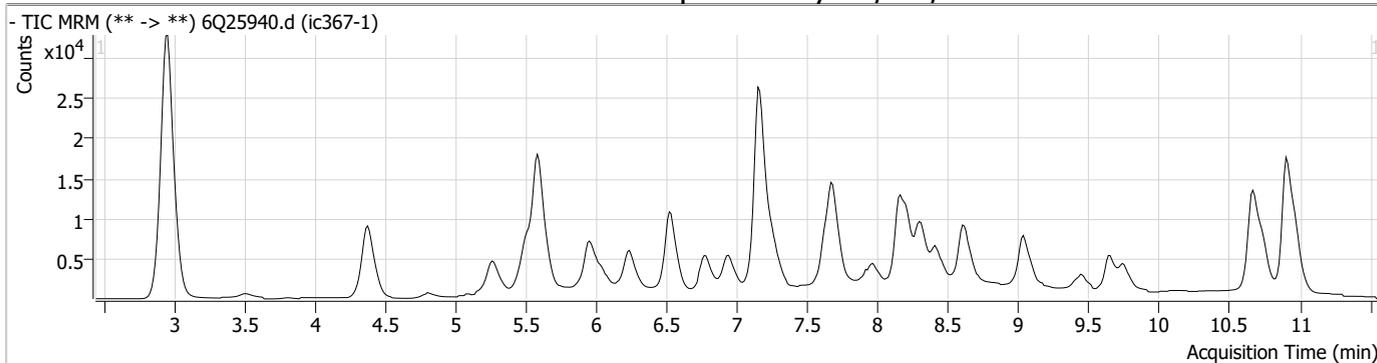
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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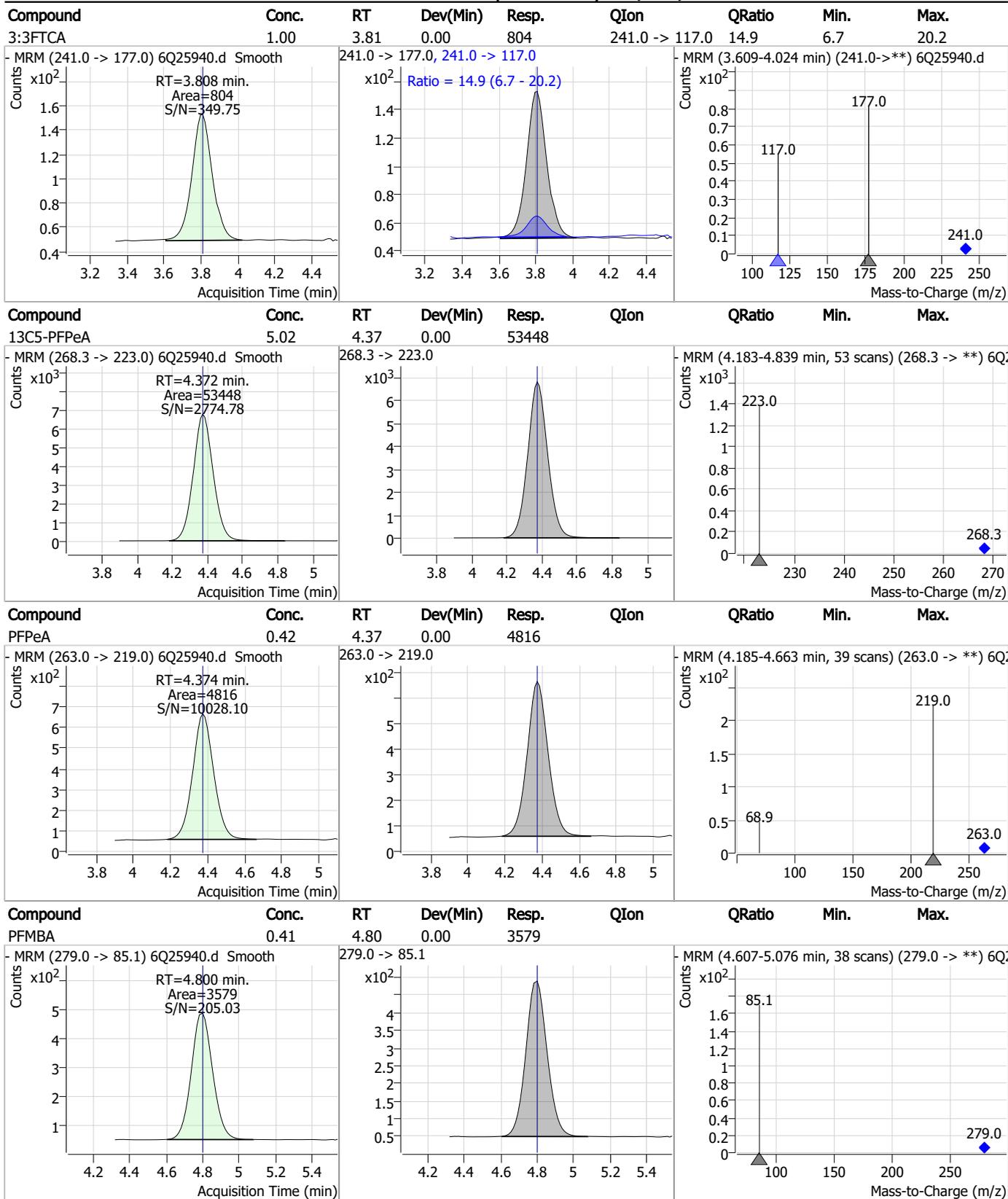
7.7.2
7



Perfluorinated Compounds by LC/MS/MS

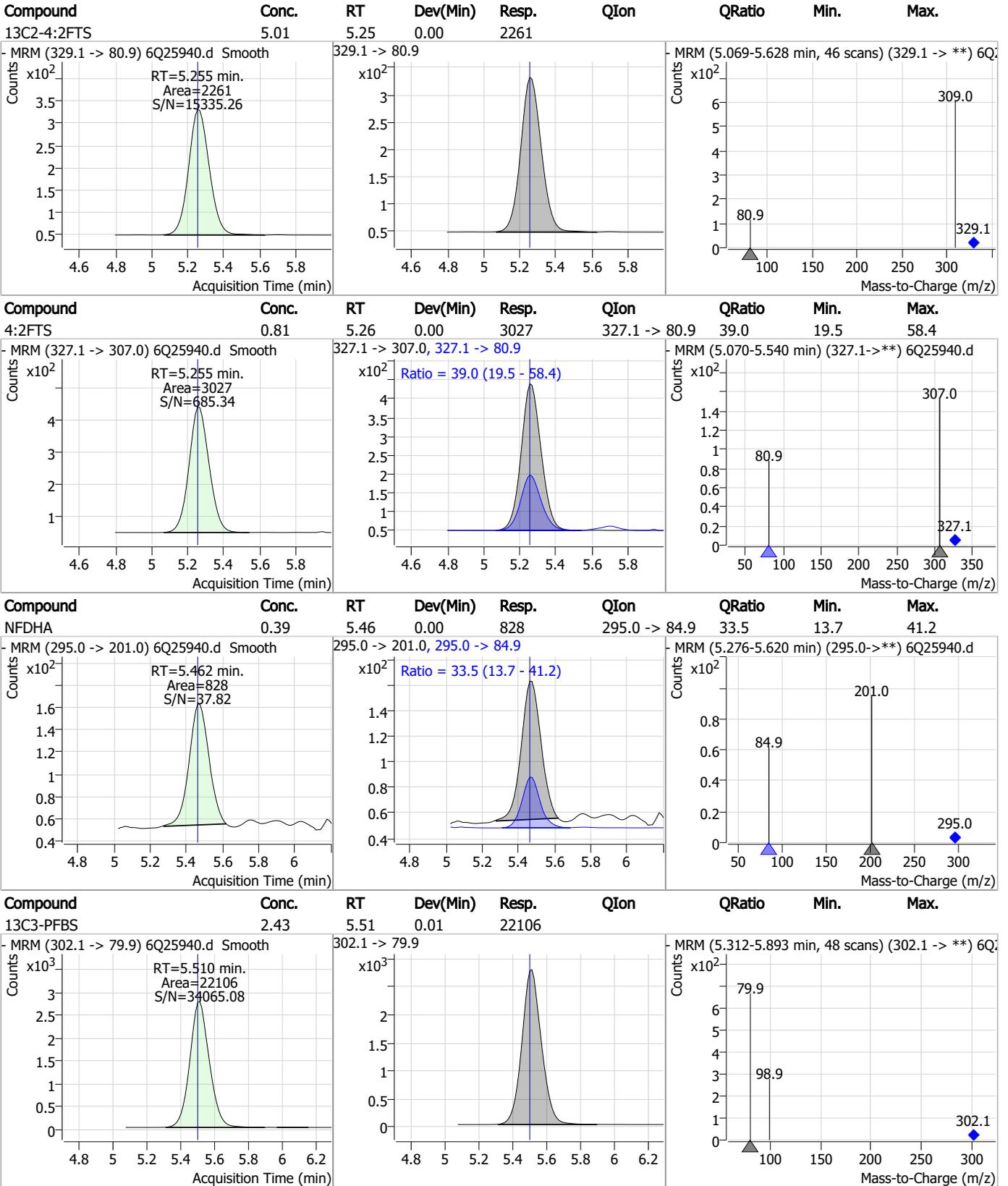


Perfluorinated Compounds by LC/MS/MS

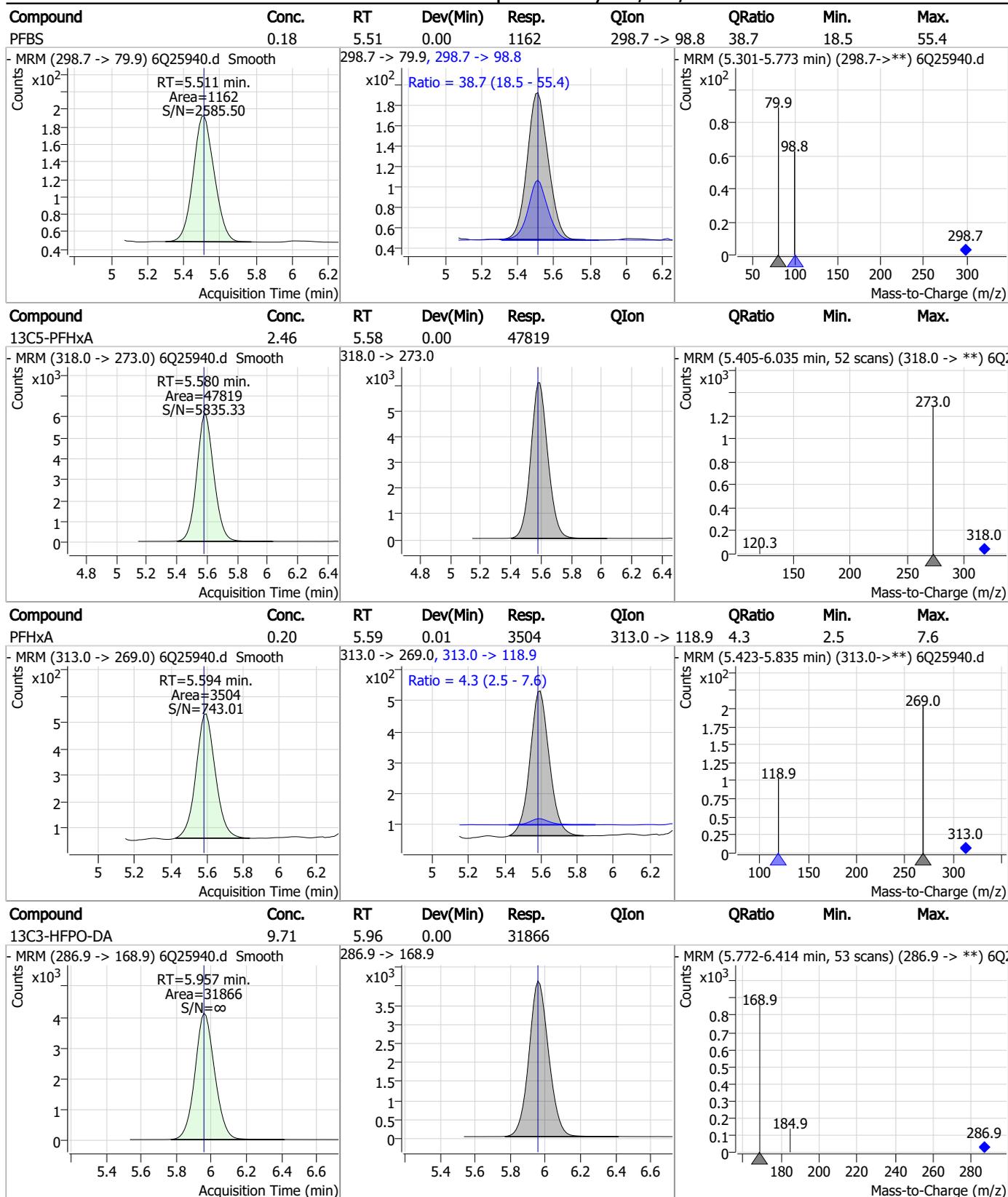


7.7.2
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Perfluorinated Compounds by LC/MS/MS



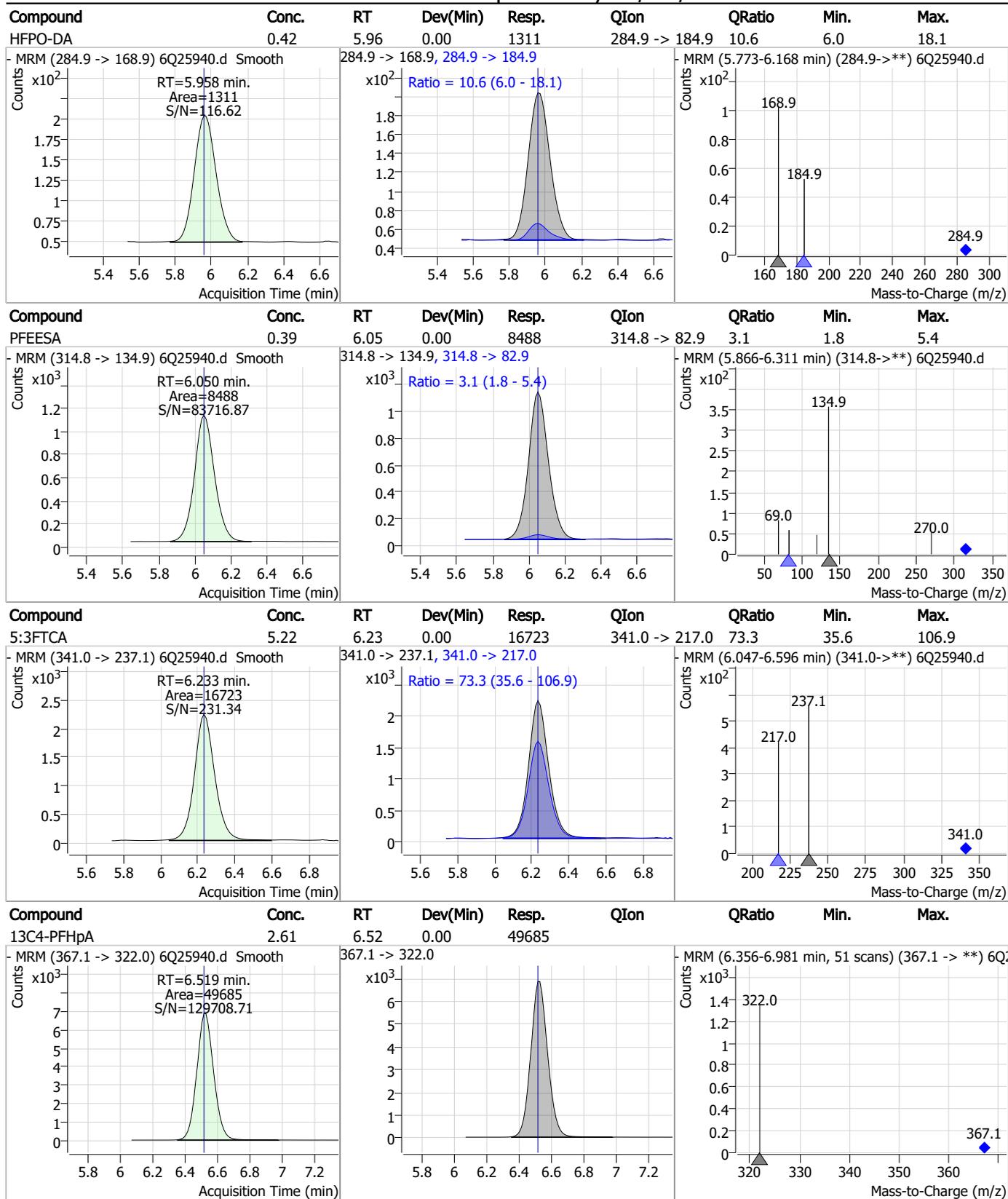
Perfluorinated Compounds by LC/MS/MS



7.7.2
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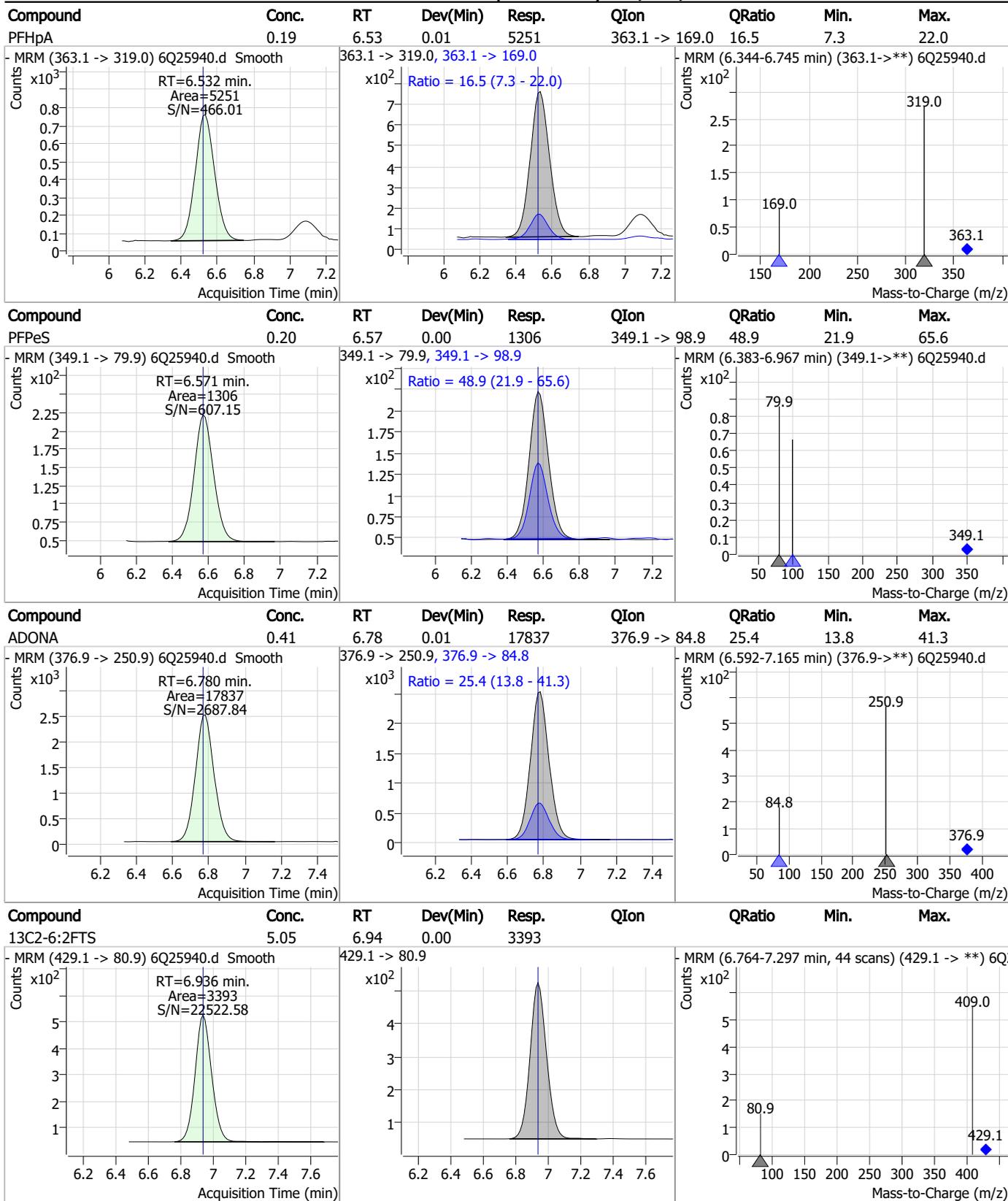
Perfluorinated Compounds by LC/MS/MS



7.7.2

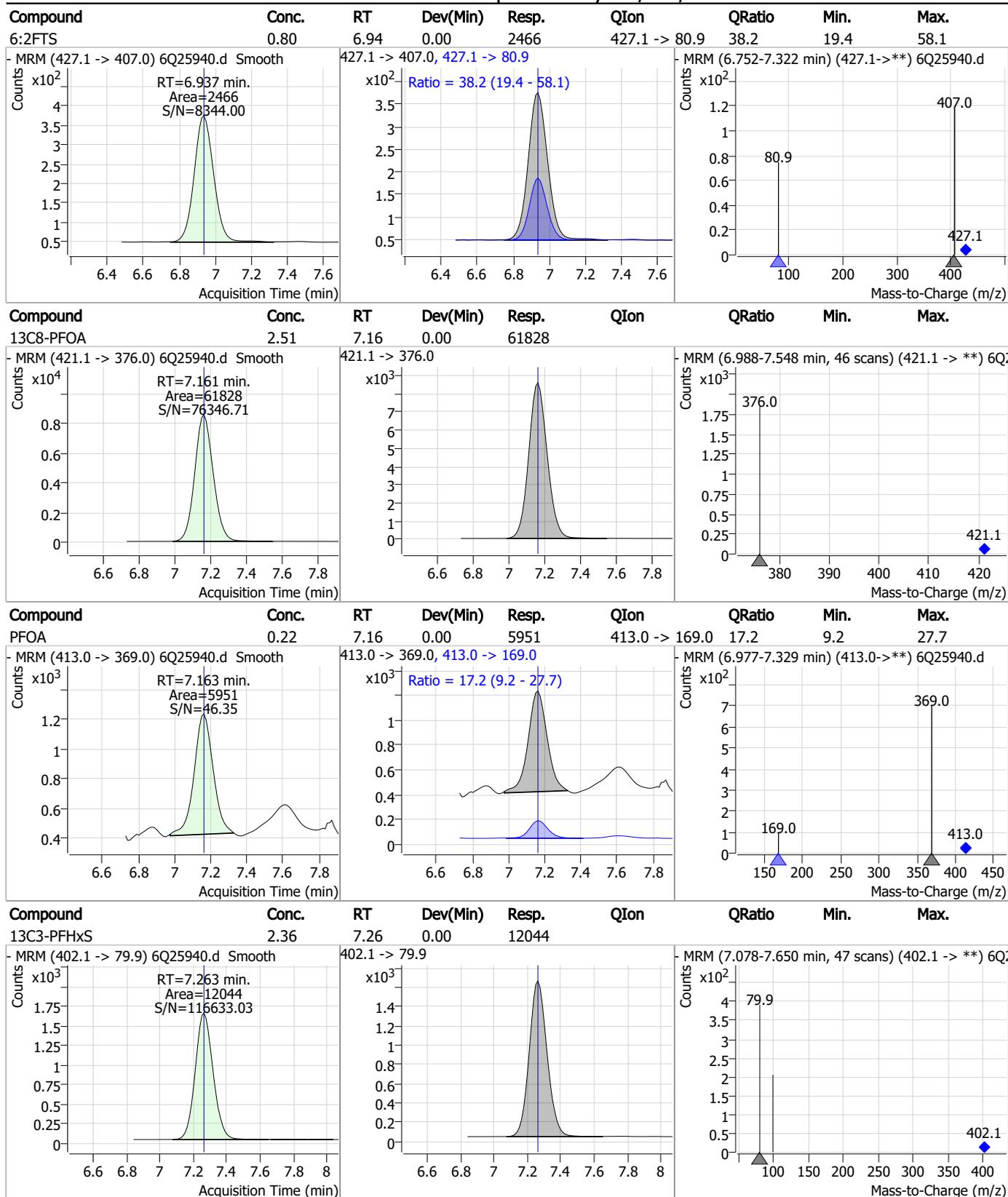
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Perfluorinated Compounds by LC/MS/MS



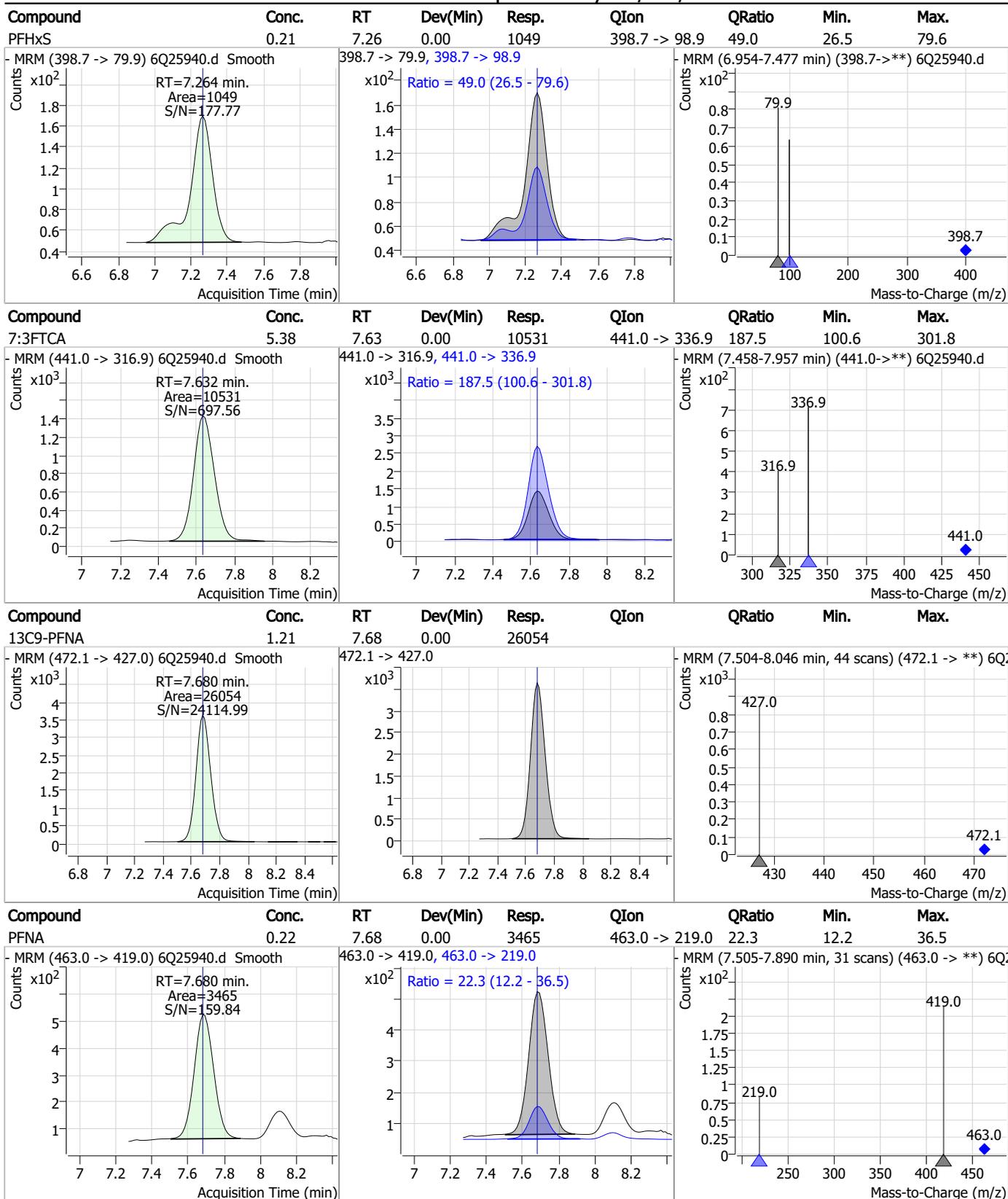
7.7.2
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Perfluorinated Compounds by LC/MS/MS



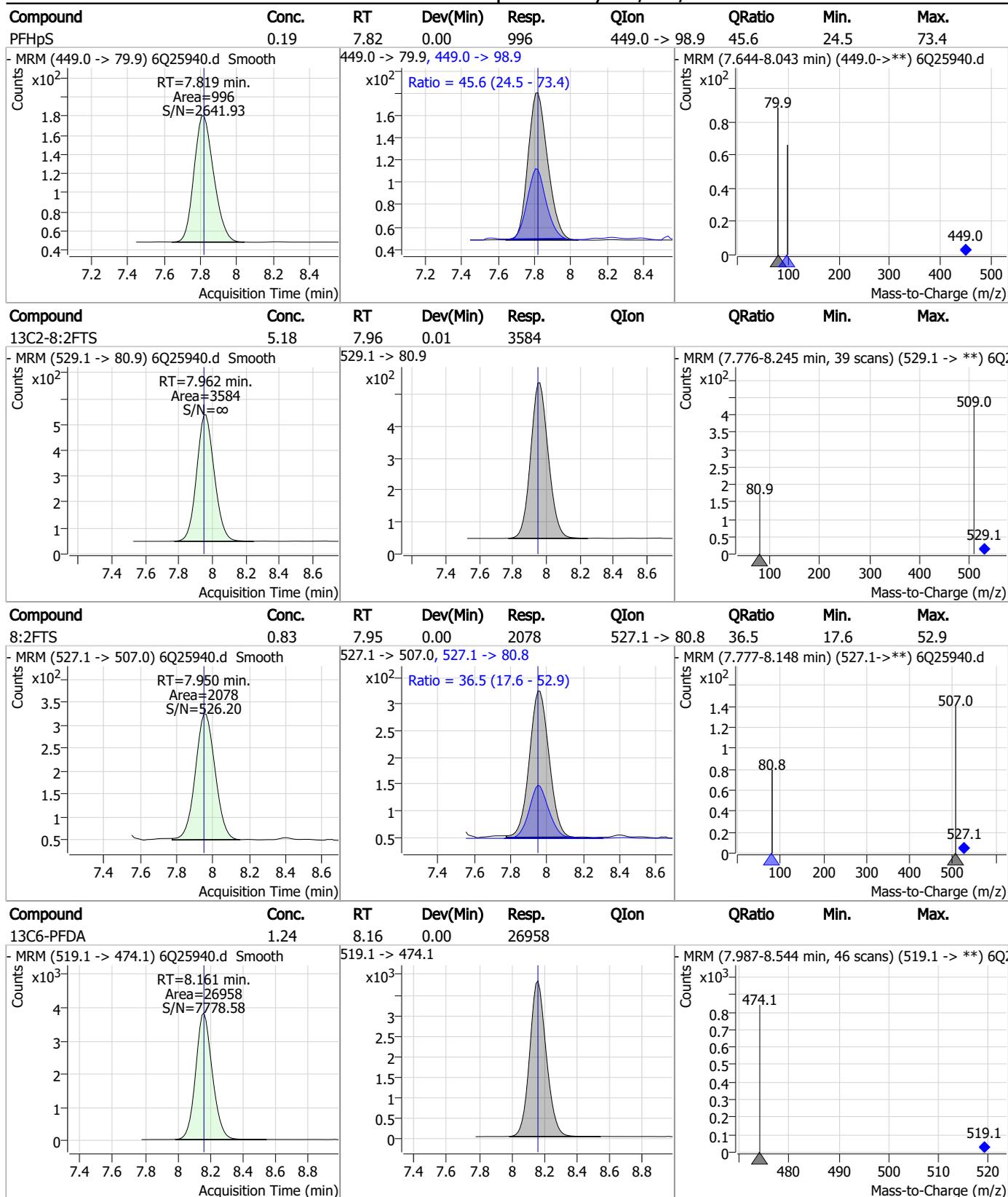
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Perfluorinated Compounds by LC/MS/MS



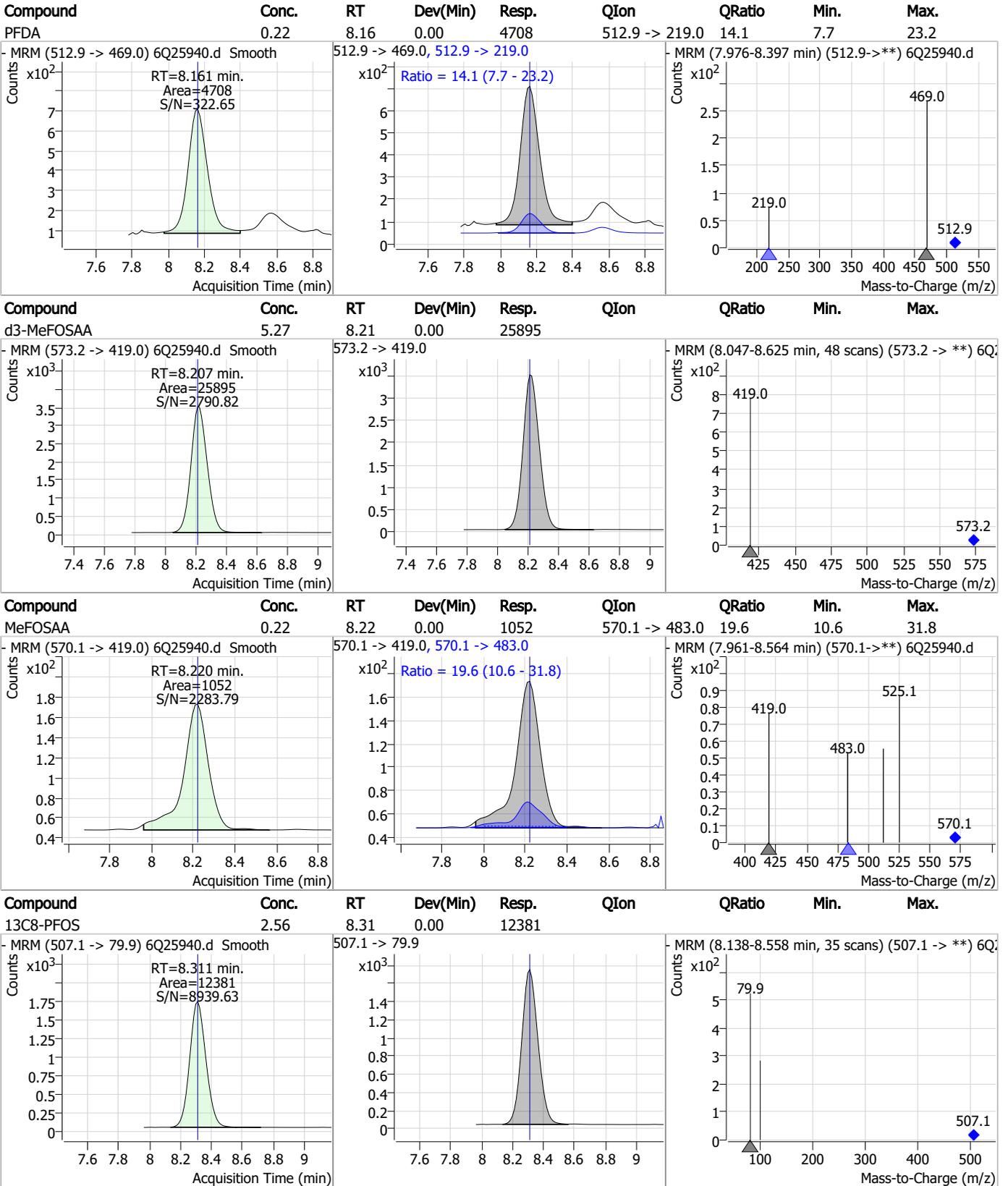
7.7.2
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Perfluorinated Compounds by LC/MS/MS

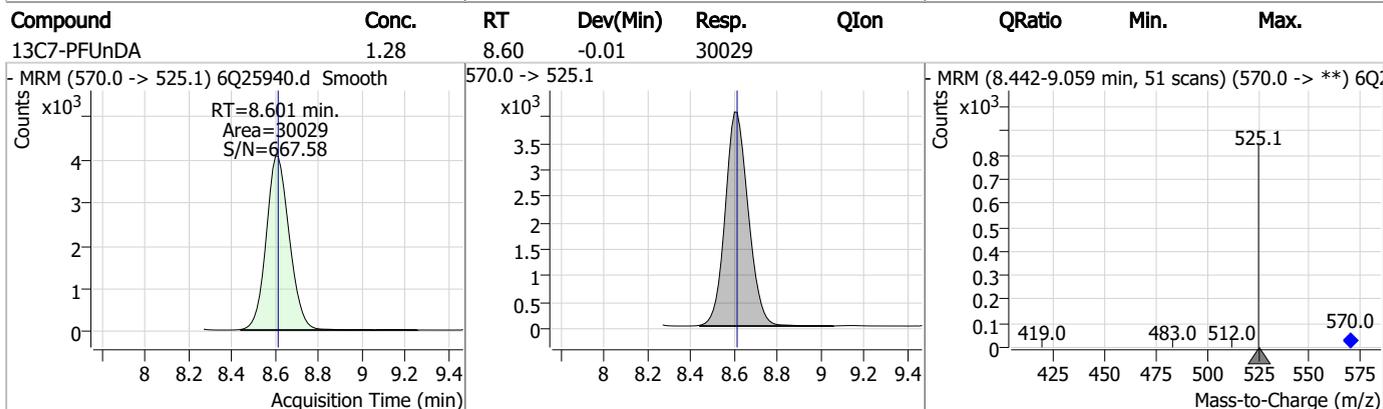
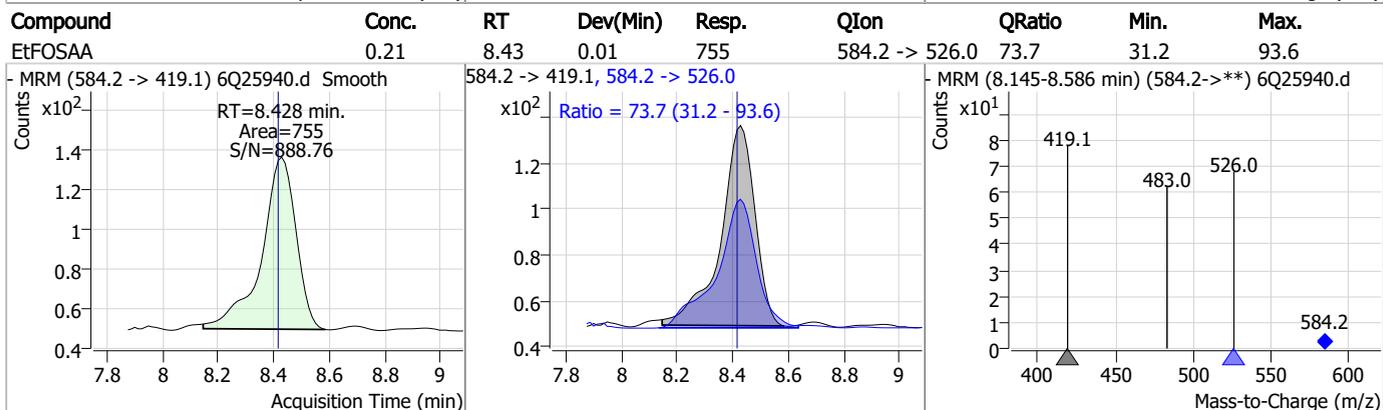
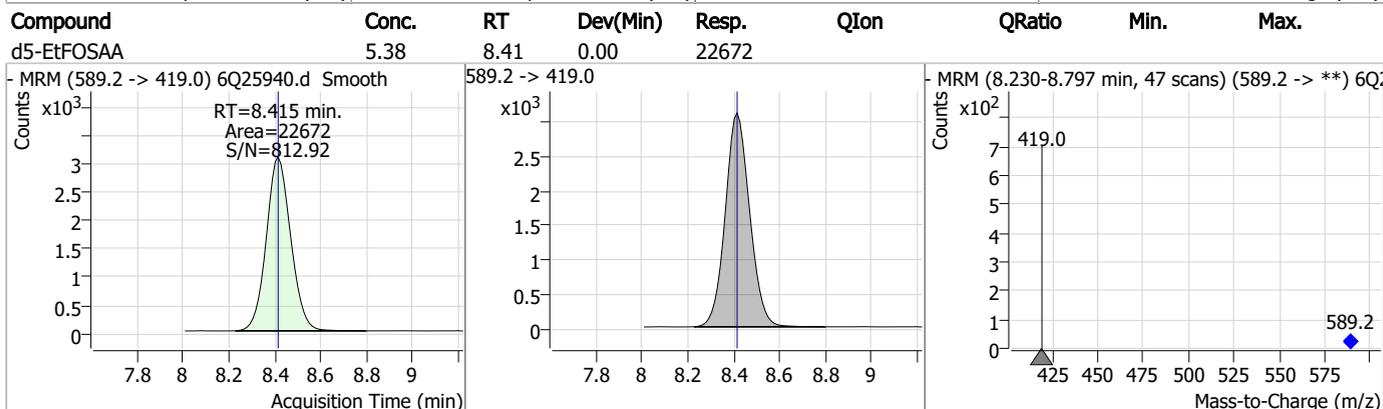
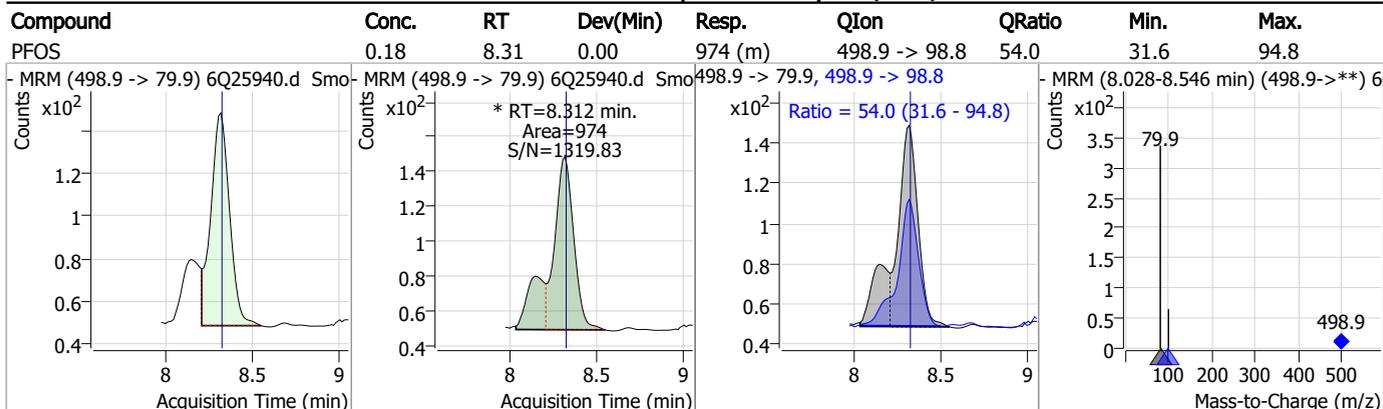


7.7.2
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Perfluorinated Compounds by LC/MS/MS



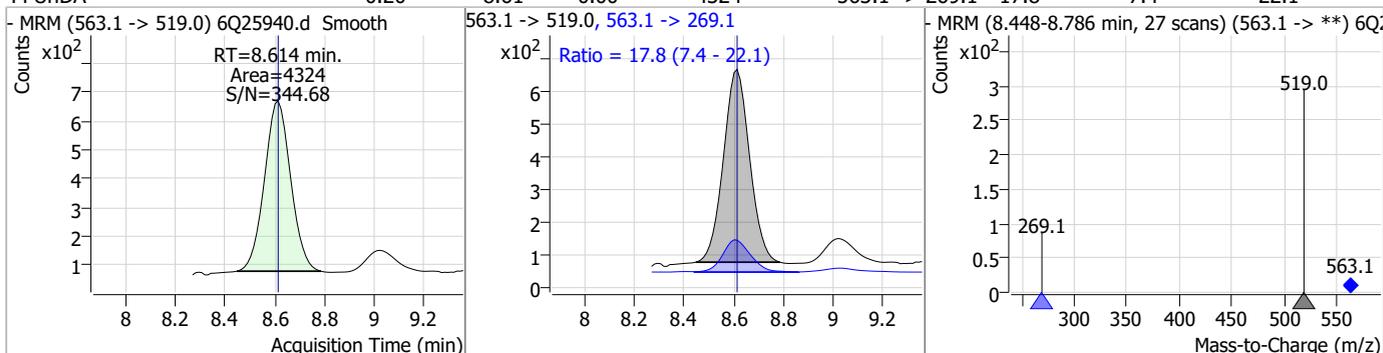
Perfluorinated Compounds by LC/MS/MS



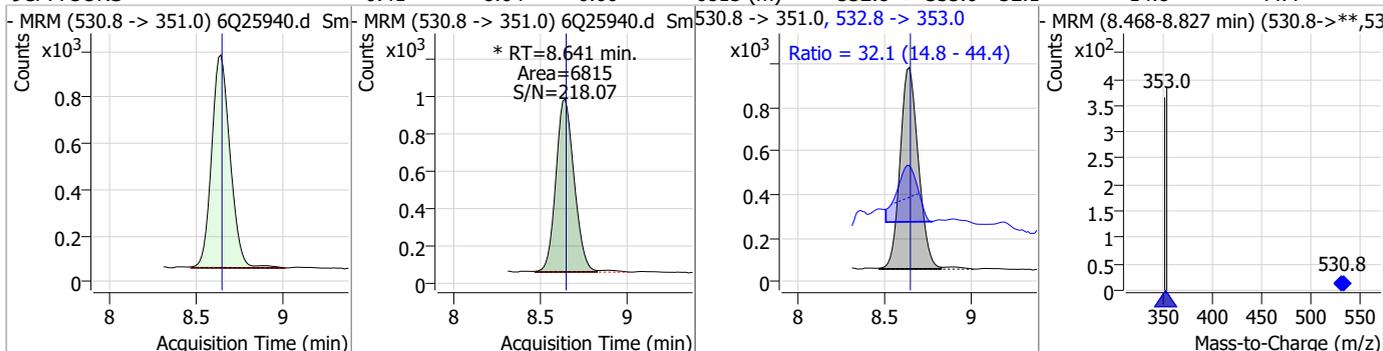
7.7.2
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Perfluorinated Compounds by LC/MS/MS

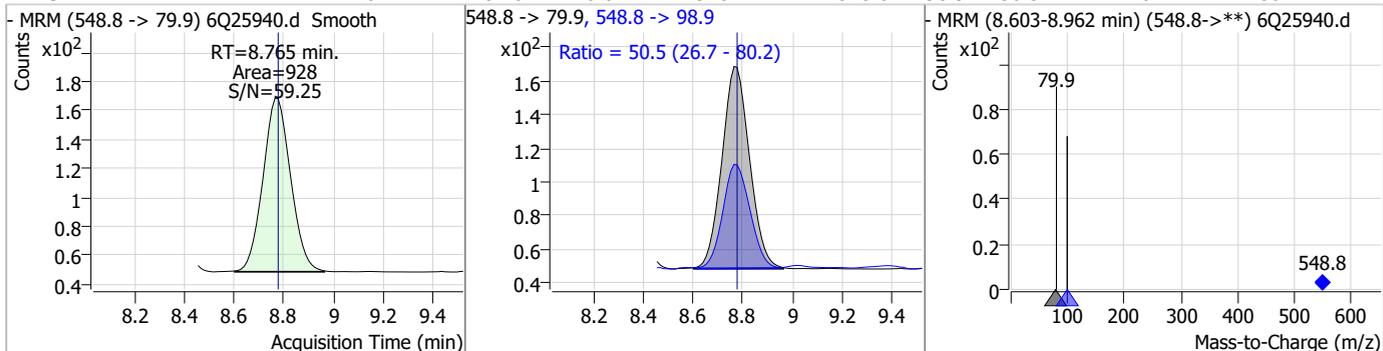
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.20	8.61	0.00	4324	563.1 -> 269.1	17.8	7.4	22.1



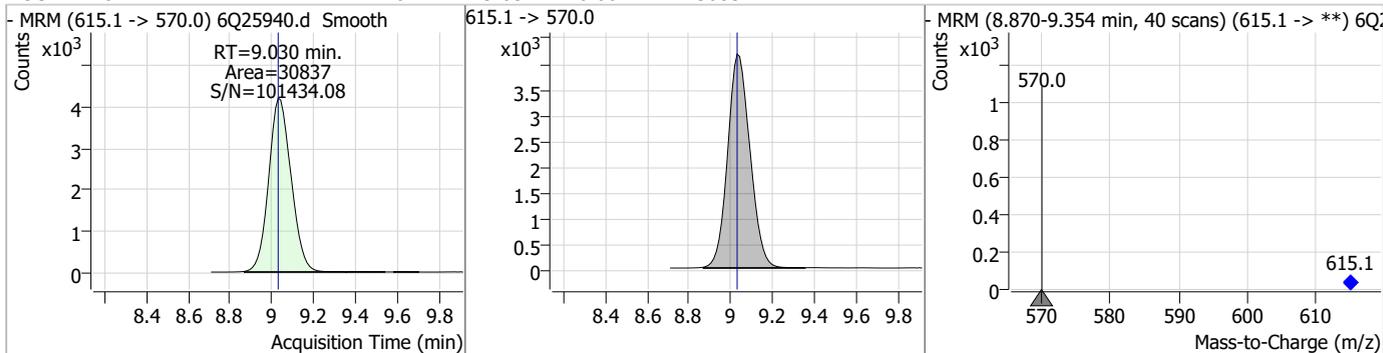
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	0.41	8.64	0.00	6815 (m)	532.8 -> 353.0	32.1	14.8	44.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.21	8.76	-0.01	928	548.8 -> 98.9	50.5	26.7	80.2

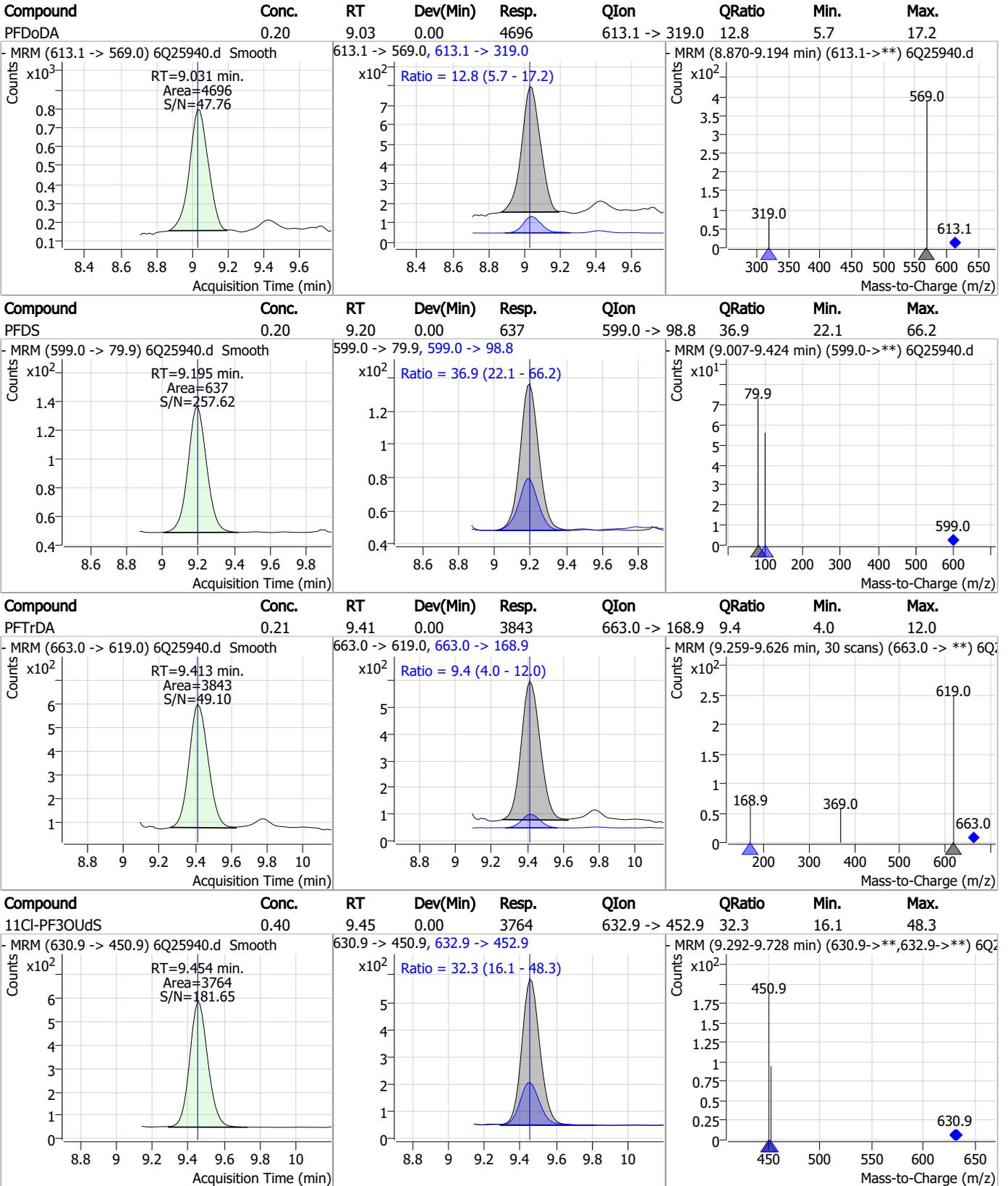


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	9.03	0.00	30837	615.1 -> 570.0			



7.7.2
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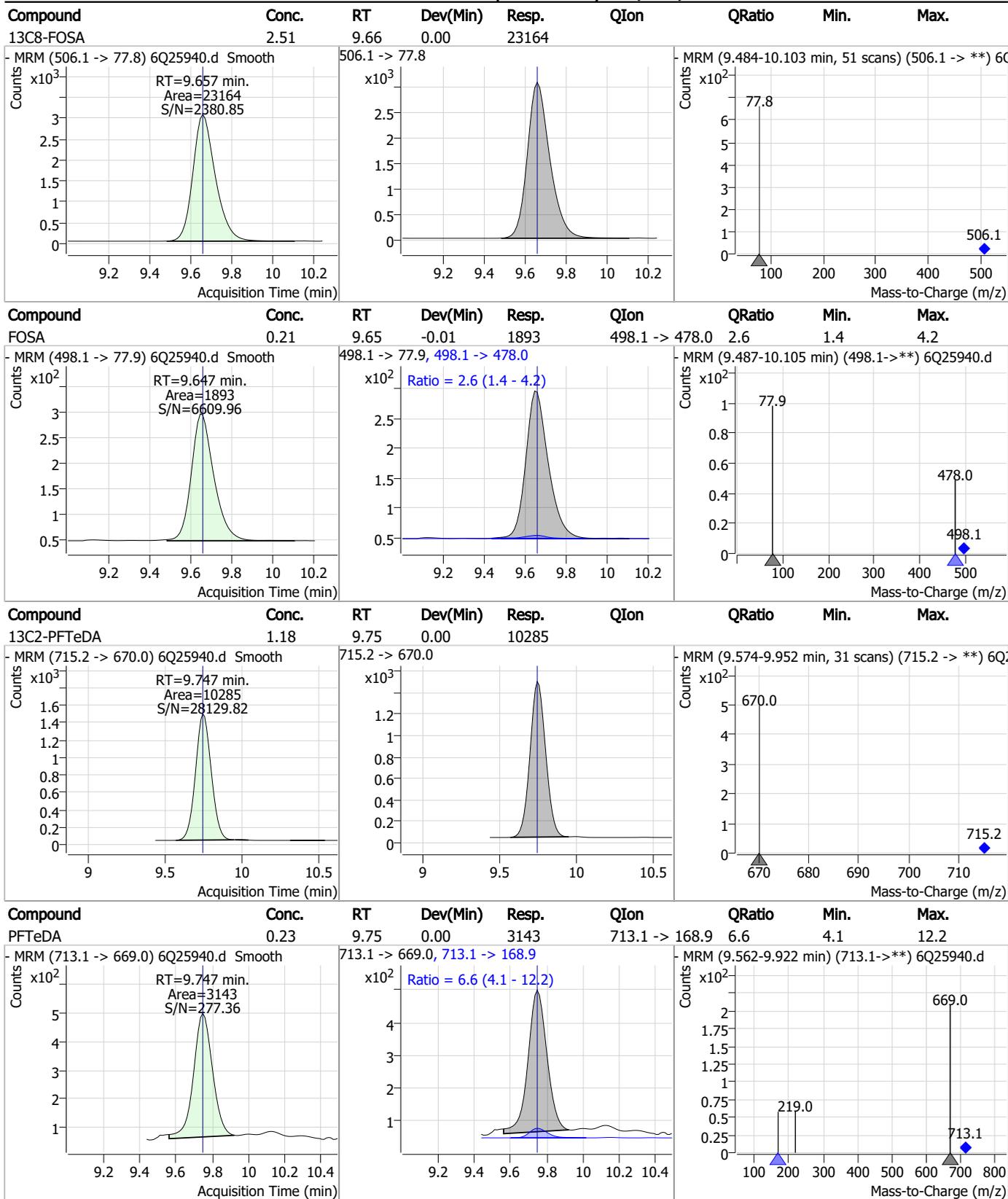
Perfluorinated Compounds by LC/MS/MS



7.7.2

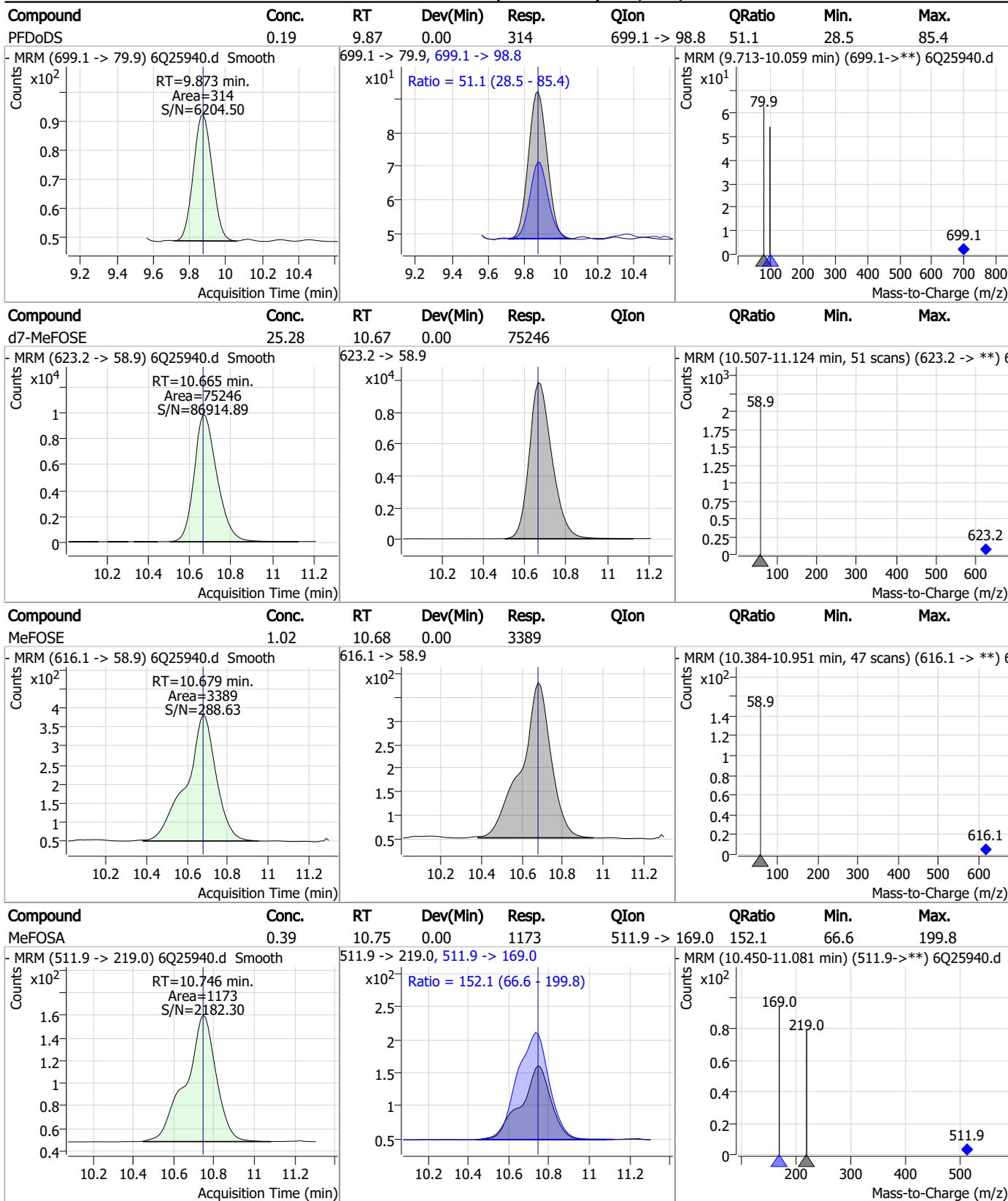
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Perfluorinated Compounds by LC/MS/MS



7.7.2
7

Perfluorinated Compounds by LC/MS/MS



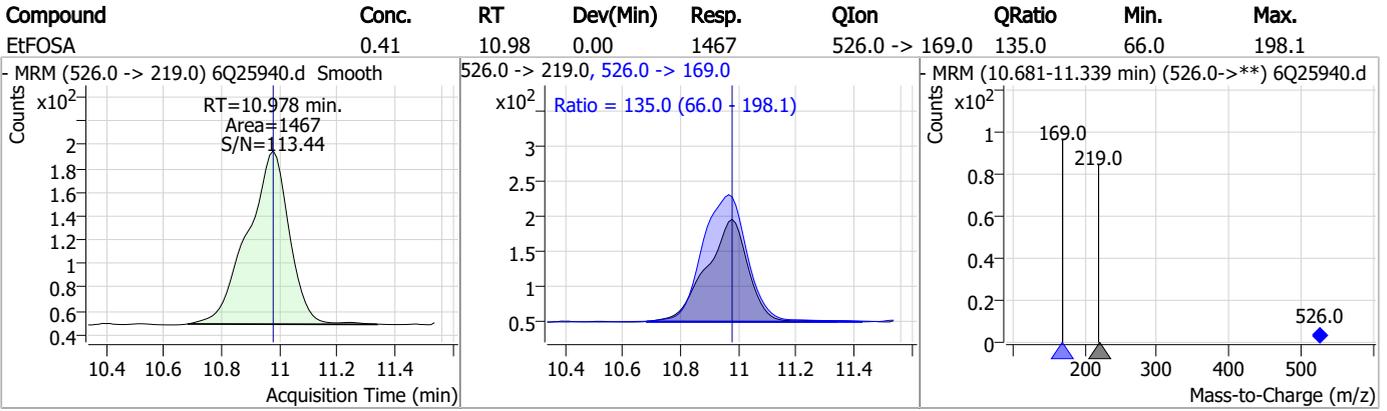
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	10.76	0.00	6462				
- MRM (515.0 -> 219.0) 6Q25940.d Smooth			515.0 -> 219.0		- MRM (10.585-11.129 min, 45 scans) (515.0 -> **) €			
d9-EtFOSE	25.96	10.91	0.00	91865				
- MRM (639.2 -> 58.9) 6Q25940.d Smooth			639.2 -> 58.9		- MRM (10.738-11.296 min, 46 scans) (639.2 -> **) €			
EtFOSE	1.02	10.92	0.00	3782				
- MRM (630.0 -> 58.9) 6Q25940.d Smooth			630.0 -> 58.9		- MRM (10.630-11.197 min, 47 scans) (630.0 -> **) €			
d5-EtFOSA	2.54	10.98	0.00	7260				
- MRM (531.1 -> 219.0) 6Q25940.d Smooth			531.1 -> 219.0		- MRM (10.802-11.411 min, 50 scans) (531.1 -> **) €			

7.7.2
7

Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25940.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 15:03 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
9CI-PF3ONS (F-53B Major)	756426-58-1		8.64	Poorly defined baseline

7.7.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25941.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 3:17:40 PM
 Sample Name : ic367-2
 Vial : P1-A3
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	156331	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	54388	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	50781	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	48851	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	63428	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	27161	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	29241	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	33221	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	33048	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11800	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	24485	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	22870	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12454	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12742	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2452	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3412	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3603	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	24813	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	33223	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	21472	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	79678	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	94033	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7276	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6667	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	12006	2.50 µg/L	0.000
13C3-PFBA	2.939	216.0 -> 172.0	64365	5.00 µg/L	-0.013
18O2-PFHxS	7.263	403.0 -> 83.9	8215	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	73922	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	26998	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	27440	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	48193	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2452	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3412	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.1%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3603	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFDoDA	9.030	615.1 -> 570.0	33048	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11800	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C3-PFBS	5.510	302.1 -> 79.9	22870	2.46 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C3-PFHxS	7.263	402.1 -> 79.9	12454	2.39 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C4-PFBA	2.947	216.8 -> 171.9	156331	10.06 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.519	367.1 -> 322.0	48851	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFHxA	5.592	318.0 -> 273.0	50781	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFPeA	4.372	268.3 -> 223.0	54388	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.161	519.1 -> 474.1	29241	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C7-PFUnDA	8.614	570.0 -> 525.1	33221	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C8-FOSA	9.657	506.1 -> 77.8	24485	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C8-PFOA	7.161	421.1 -> 376.0	63428	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.311	507.1 -> 79.9	12742	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C9-PFNA	7.680	472.1 -> 427.0	27161	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
d3-MeFOSAA	8.219	573.2 -> 419.0	24813	4.70 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	33223	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d3-MeFOSA	10.744	515.0 -> 219.0	6667	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	21472	4.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d7-MeFOSE	10.666	623.2 -> 58.9	79678	24.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d9-EtFOSE	10.911	639.2 -> 58.9	94033	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.976	531.1 -> 219.0	7276	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	6251	1.54 µg/L	100
		327.1 -> 80.9	2434		
6:2FTS	6.937	427.1 -> 407.0	5439	1.75 µg/L	99
		427.1 -> 80.9	2130		
8:2FTS	7.950	527.1 -> 507.0	3836	1.53 µg/L	93
		527.1 -> 80.8	1510		
EtFOSAA	8.416	584.2 -> 419.1	1484	0.43 µg/L	90
		584.2 -> 526.0	807		
FOSA	9.660	498.1 -> 77.9	3969	0.42 µg/L	100
		498.1 -> 478.0	116		
MeFOSAA	8.220	570.1 -> 419.0	1872	0.40 µg/L	92
		570.1 -> 483.0	465		
PFBA	2.943	212.8 -> 168.9	9480	1.63 µg/L	100
PFBS	5.511	298.7 -> 79.9	2565	0.37 µg/L	99
		298.7 -> 98.8	961		
PFDA	8.161	512.9 -> 469.0	9233	0.40 µg/L	99
		512.9 -> 219.0	1455		
PFDODA	9.031	613.1 -> 569.0	10299	0.42 µg/L	95
		613.1 -> 319.0	1385		
PFDS	9.183	599.0 -> 79.9	1370	0.42 µg/L	99

7.7.3
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	609			
PFHpA	6.532	363.1 -> 319.0	11225	0.42	µg/L	99
		363.1 -> 169.0	1585			
PFHpS	7.819	449.0 -> 79.9	2085	0.40	µg/L	98
		449.0 -> 98.9	1044			
PFHxA	5.582	313.0 -> 269.0	7478	0.41	µg/L	99
		313.0 -> 118.9	409			
PFHxS	7.264	398.7 -> 79.9	2103	0.40	µg/L	m 87
		398.7 -> 98.9	920			
PFNA	7.680	463.0 -> 419.0	7075	0.42	µg/L	96
		463.0 -> 219.0	1578			
PFNS	8.765	548.8 -> 79.9	1950	0.42	µg/L	88
		548.8 -> 98.9	877			
PFOA	7.163	413.0 -> 369.0	11655	0.43	µg/L	97
		413.0 -> 169.0	1979			
PFOS	8.312	498.9 -> 79.9	2024	0.37	µg/L	m 93
		498.9 -> 98.8	1171			
PFPeA	4.374	263.0 -> 219.0	9963	0.85	µg/L	100
PFPeS	6.571	349.1 -> 79.9	2528	0.38	µg/L	93
		349.1 -> 98.9	1215			
PFTeDA	9.747	713.1 -> 669.0	6282	0.41	µg/L	99
		713.1 -> 168.9	497			
PFTrDA	9.413	663.0 -> 619.0	8089	0.42	µg/L	97
		663.0 -> 168.9	732			
PFUnDA	8.614	563.1 -> 519.0	8971	0.38	µg/L	98
		563.1 -> 269.1	1385			
11CI-PF3OUdS	9.454	630.9 -> 450.9	7757	0.79	µg/L	99
		632.9 -> 452.9	2456			
9CI-PF3ONS	8.641	530.8 -> 351.0	14164	0.81	µg/L	82
		532.8 -> 353.0	5554			
ADONA	6.780	376.9 -> 250.9	35494	0.78	µg/L	99
		376.9 -> 84.8	9891			
HFPO-DA	5.958	284.9 -> 168.9	2840	0.86	µg/L	98
		284.9 -> 184.9	370			
3:3FTCA	3.808	241.0 -> 177.0	1720	2.05	µg/L	99
		241.0 -> 117.0	241			
5:3FTCA	6.233	341.0 -> 237.1	34542	10.15	µg/L	98
		341.0 -> 217.0	24148			
7:3FTCA	7.632	441.0 -> 316.9	20919	10.06	µg/L	99
		441.0 -> 336.9	41621			
EtFOSA	10.978	526.0 -> 219.0	3066	0.86	µg/L	99
		526.0 -> 169.0	4081			
EtFOSE	10.924	630.0 -> 58.9	8046	2.13	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	2866	0.93	µg/L	99
		511.9 -> 169.0	3767			
MeFOSE	10.679	616.1 -> 58.9	7156	2.03	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	693	0.41	µg/L	94
		699.1 -> 98.8	364			
NFDHA	5.462	295.0 -> 201.0	2016	0.88	µg/L	93
		295.0 -> 84.9	479			
PFMBA	4.800	279.0 -> 85.1	7495	0.84	µg/L	100
PFMPA	3.501	229.0 -> 84.9	6207	0.84	µg/L	100
PFEESA	6.050	314.8 -> 134.9	16588	0.71	µg/L	99
		314.8 -> 82.9	637			

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

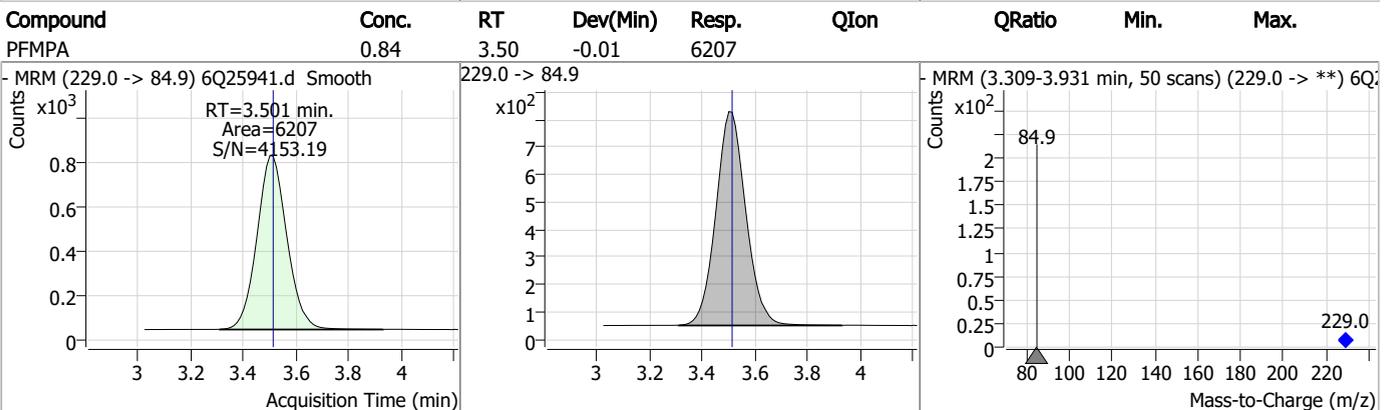
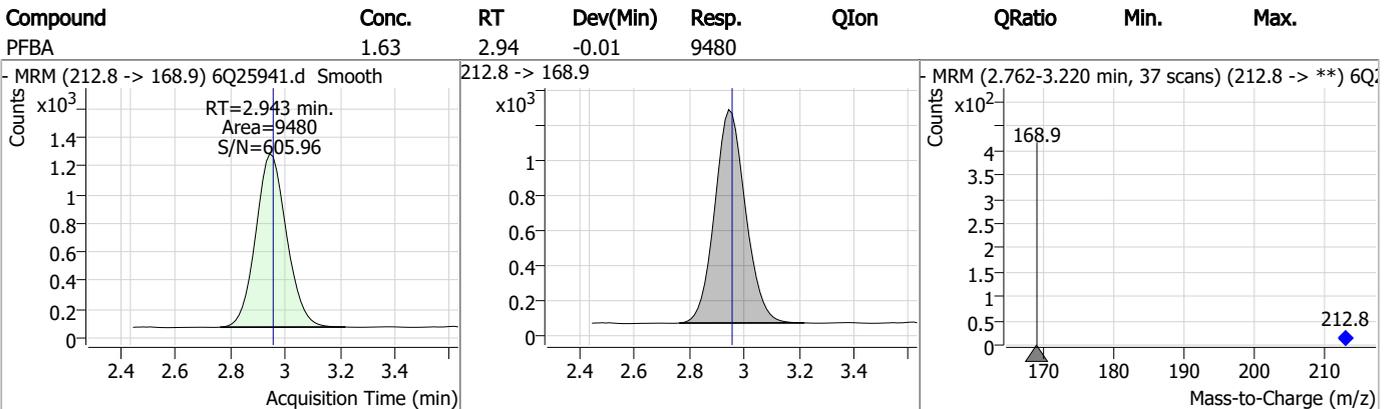
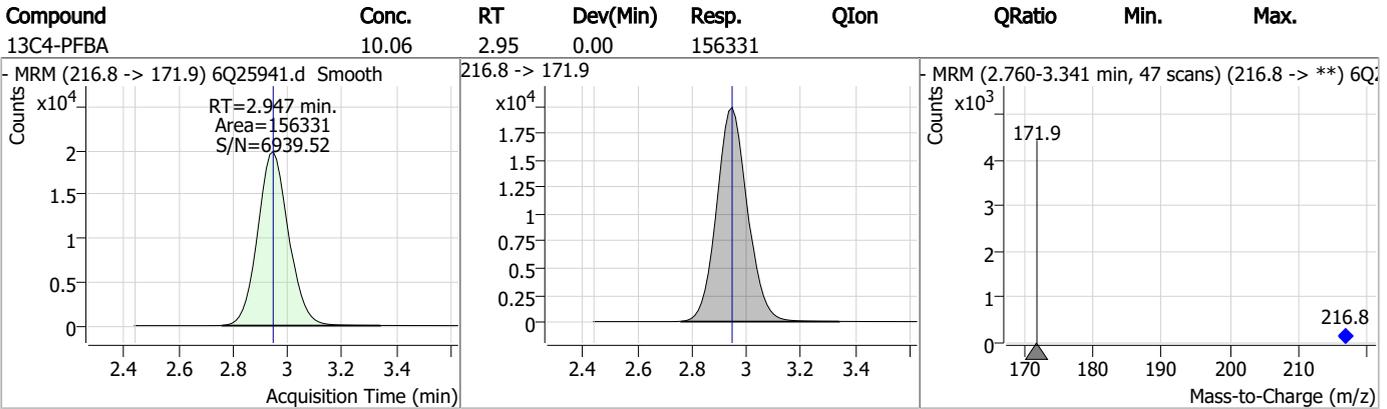
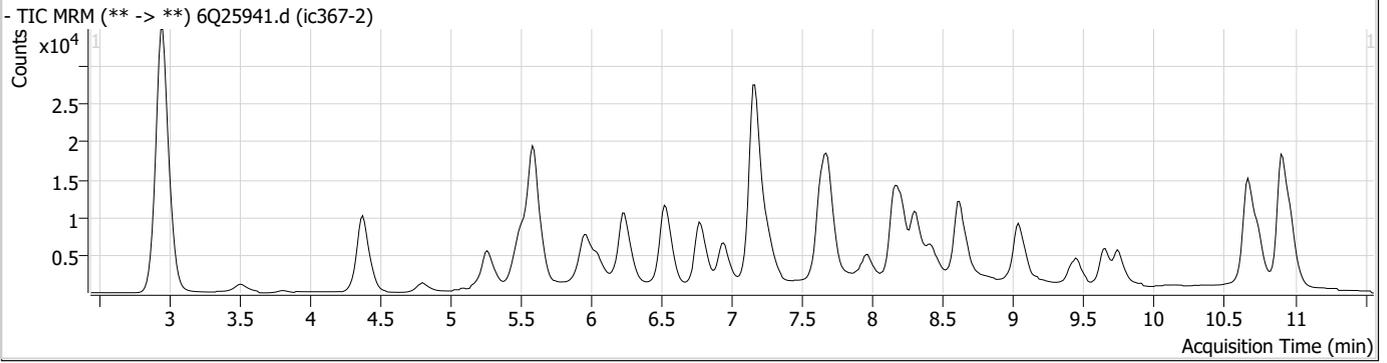
Perfluorinated Compounds by LC/MS/MS

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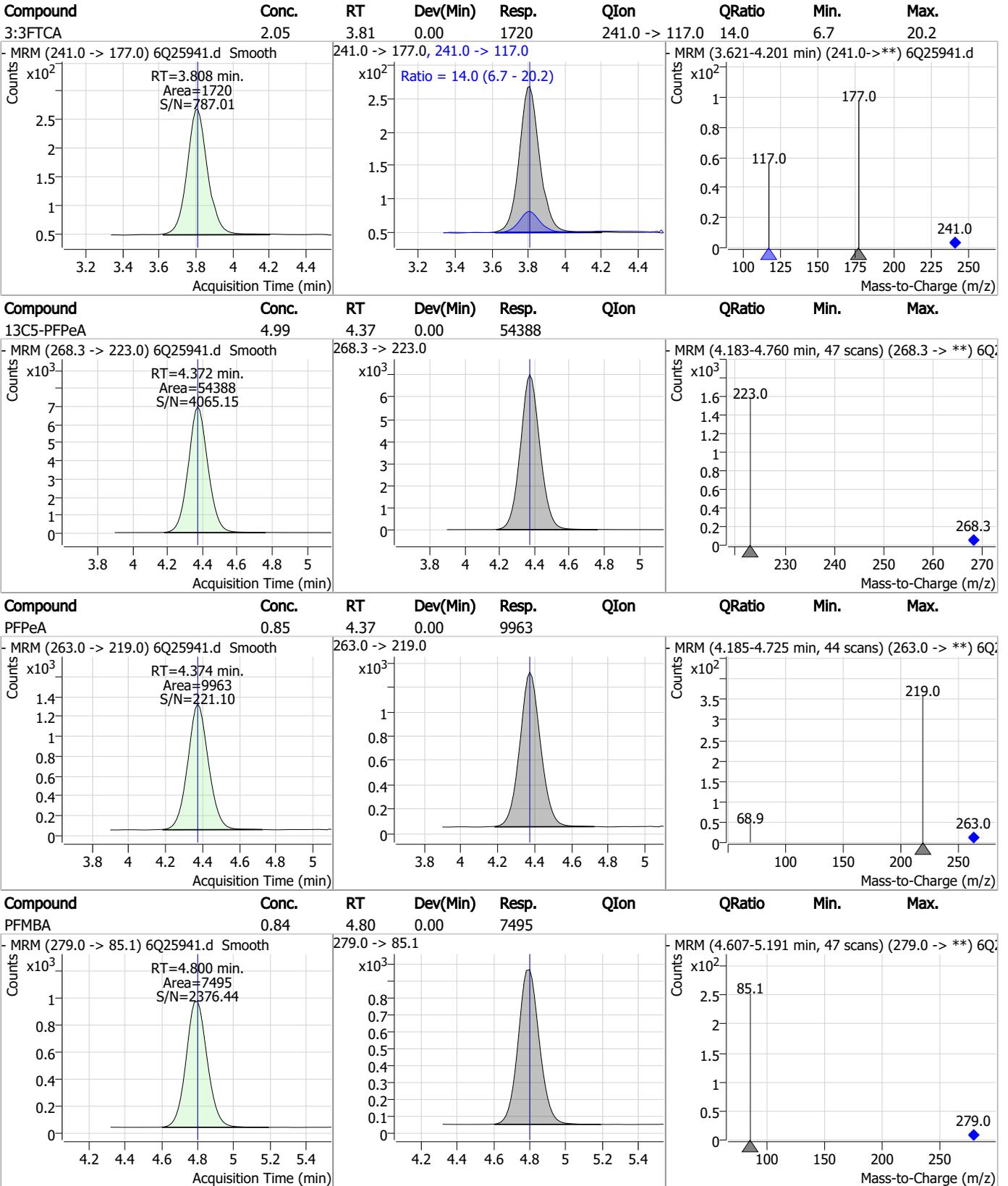
7.7.3

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

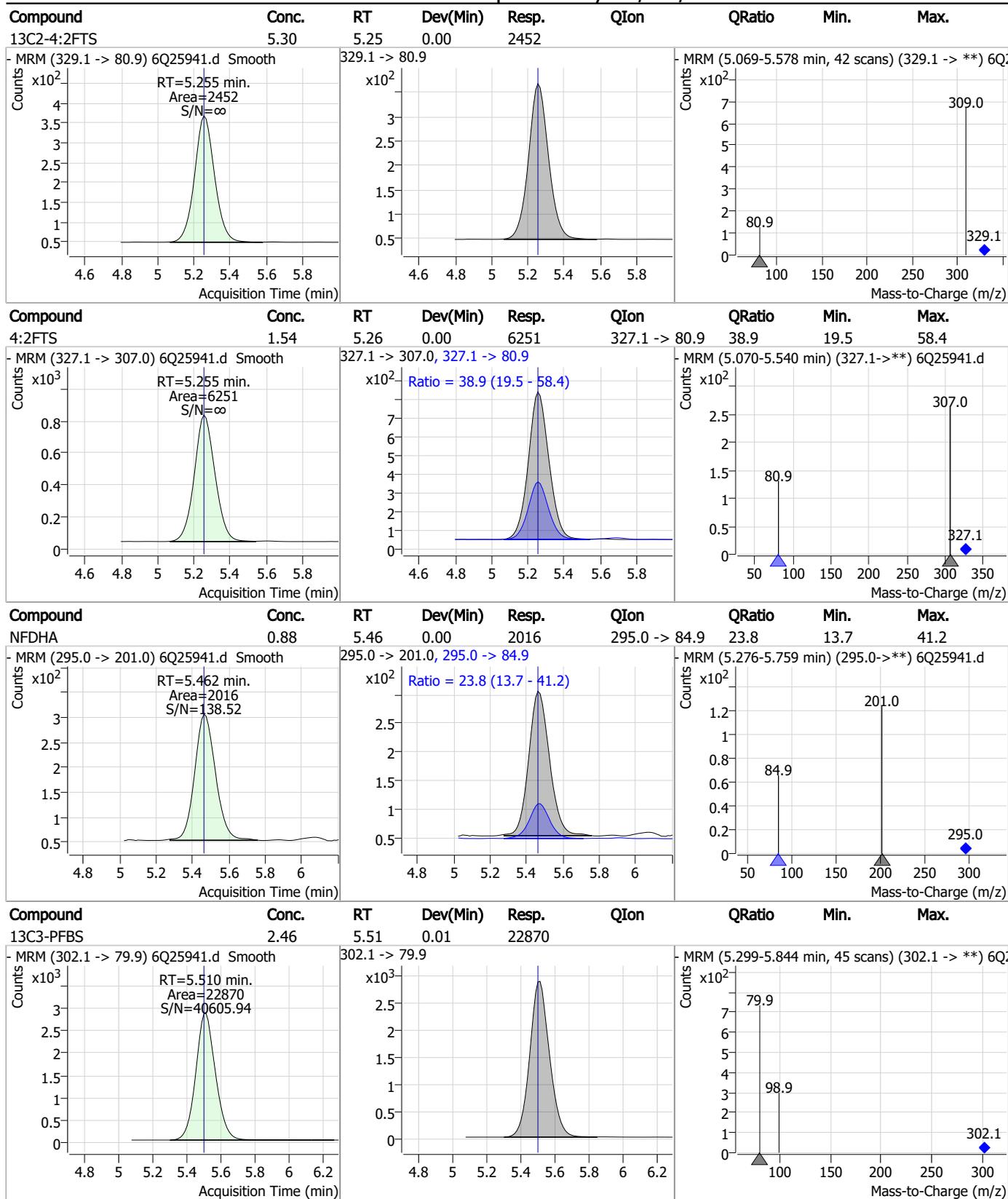


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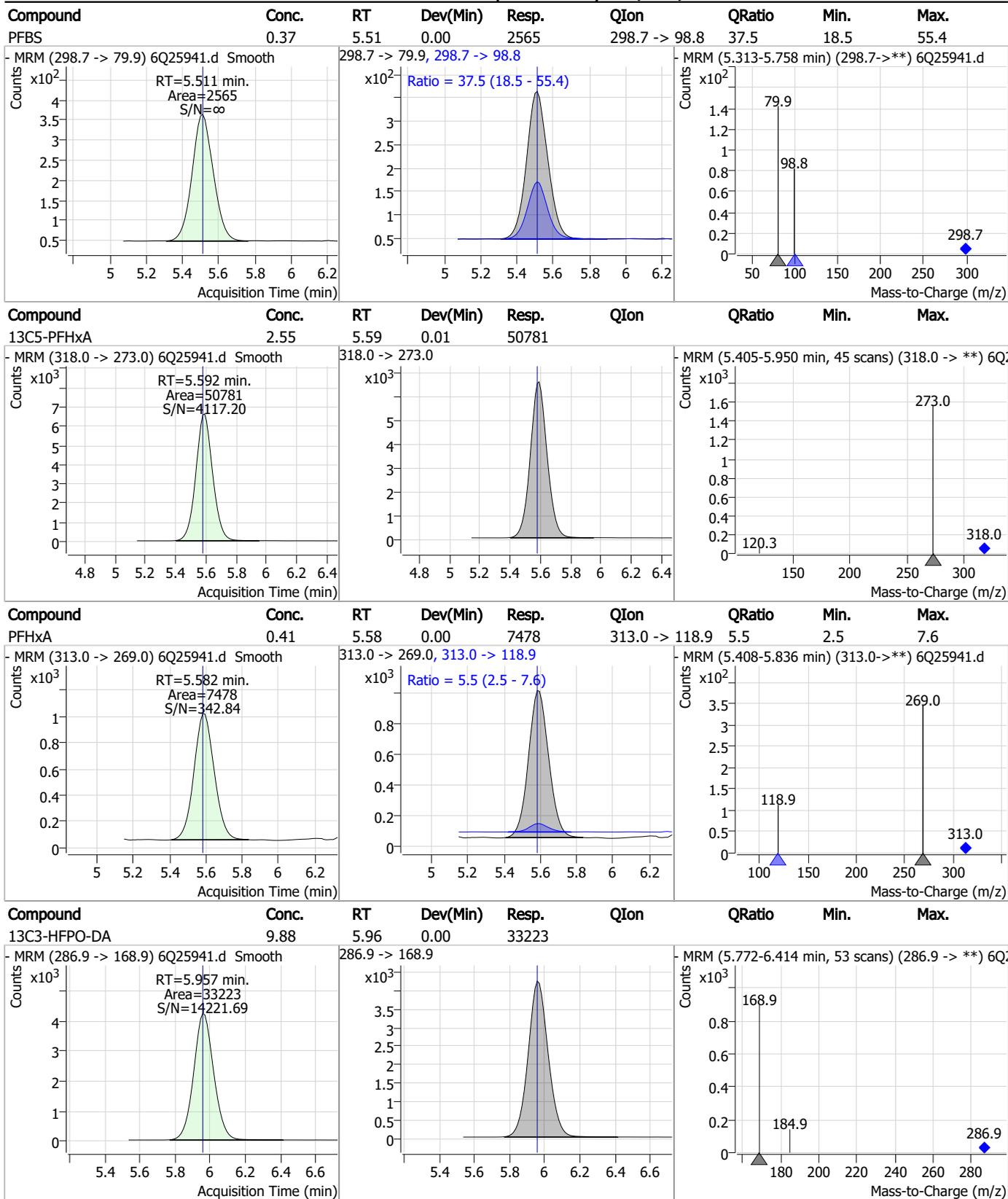
Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS

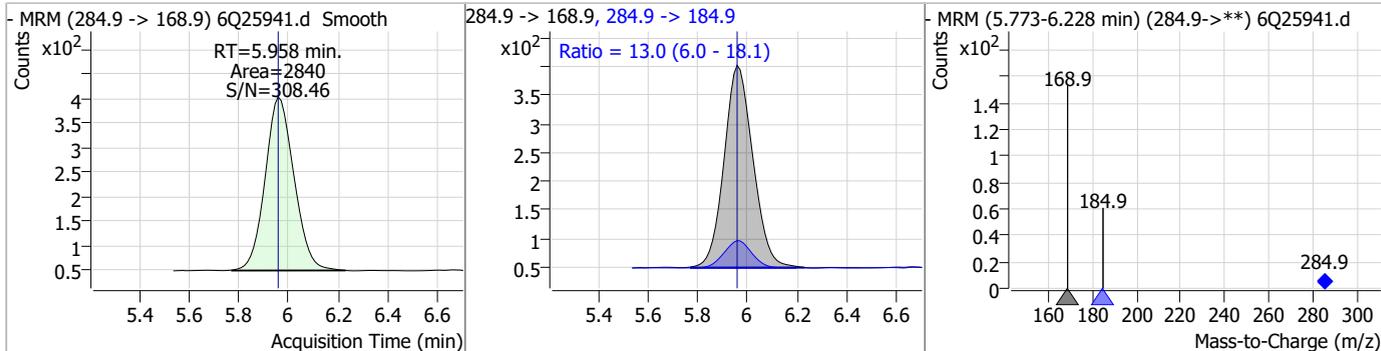


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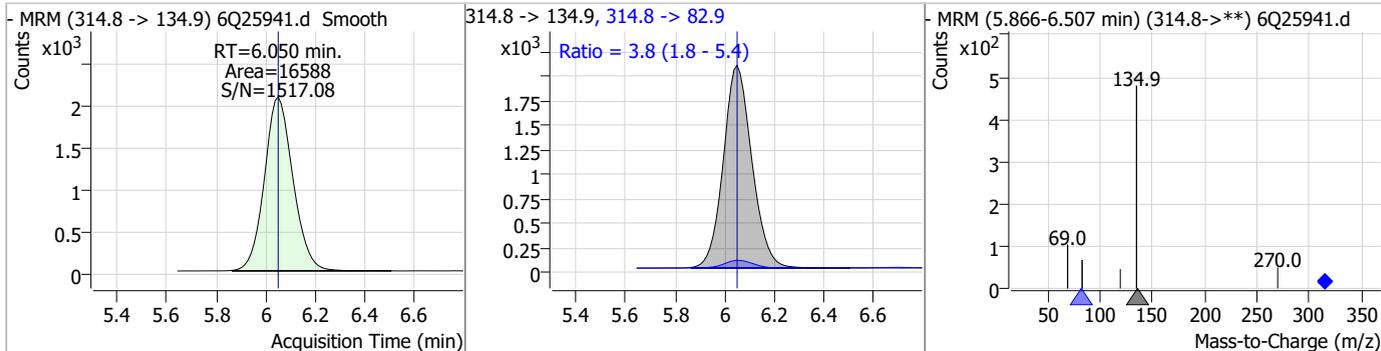
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Perfluorinated Compounds by LC/MS/MS

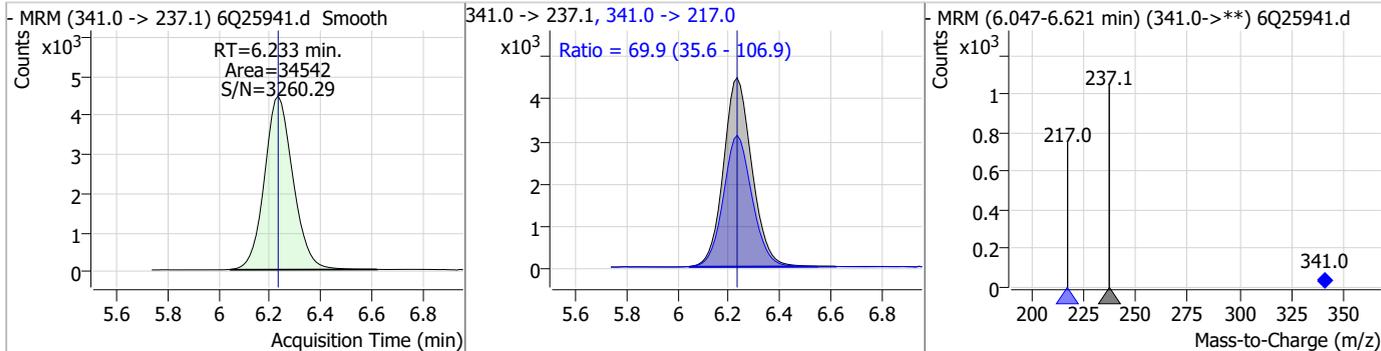
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.86	5.96	0.00	2840	284.9 -> 184.9	13.0	6.0	18.1



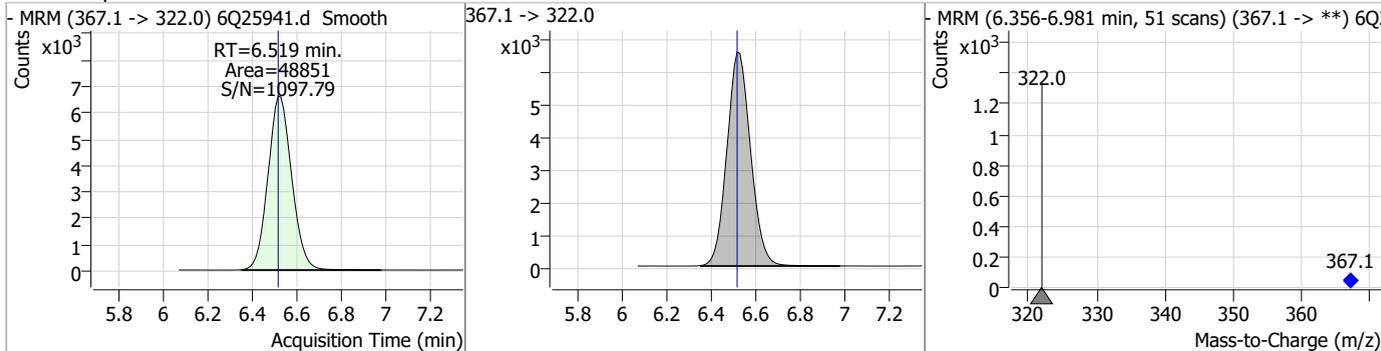
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.71	6.05	0.00	16588	314.8 -> 82.9	3.8	1.8	5.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	10.15	6.23	0.00	34542	341.0 -> 217.0	69.9	35.6	106.9

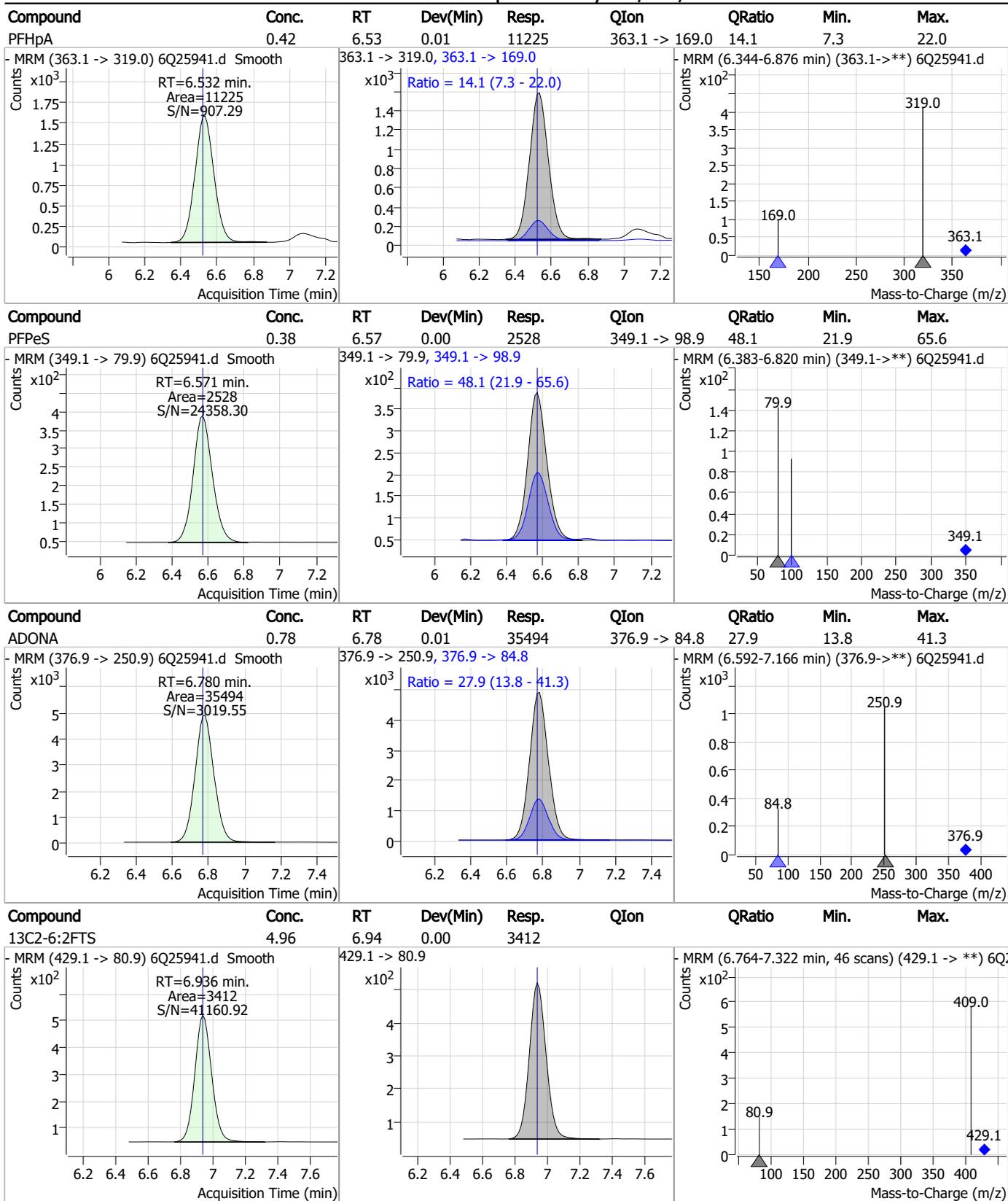


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.52	0.00	48851	367.1 -> 322.0			



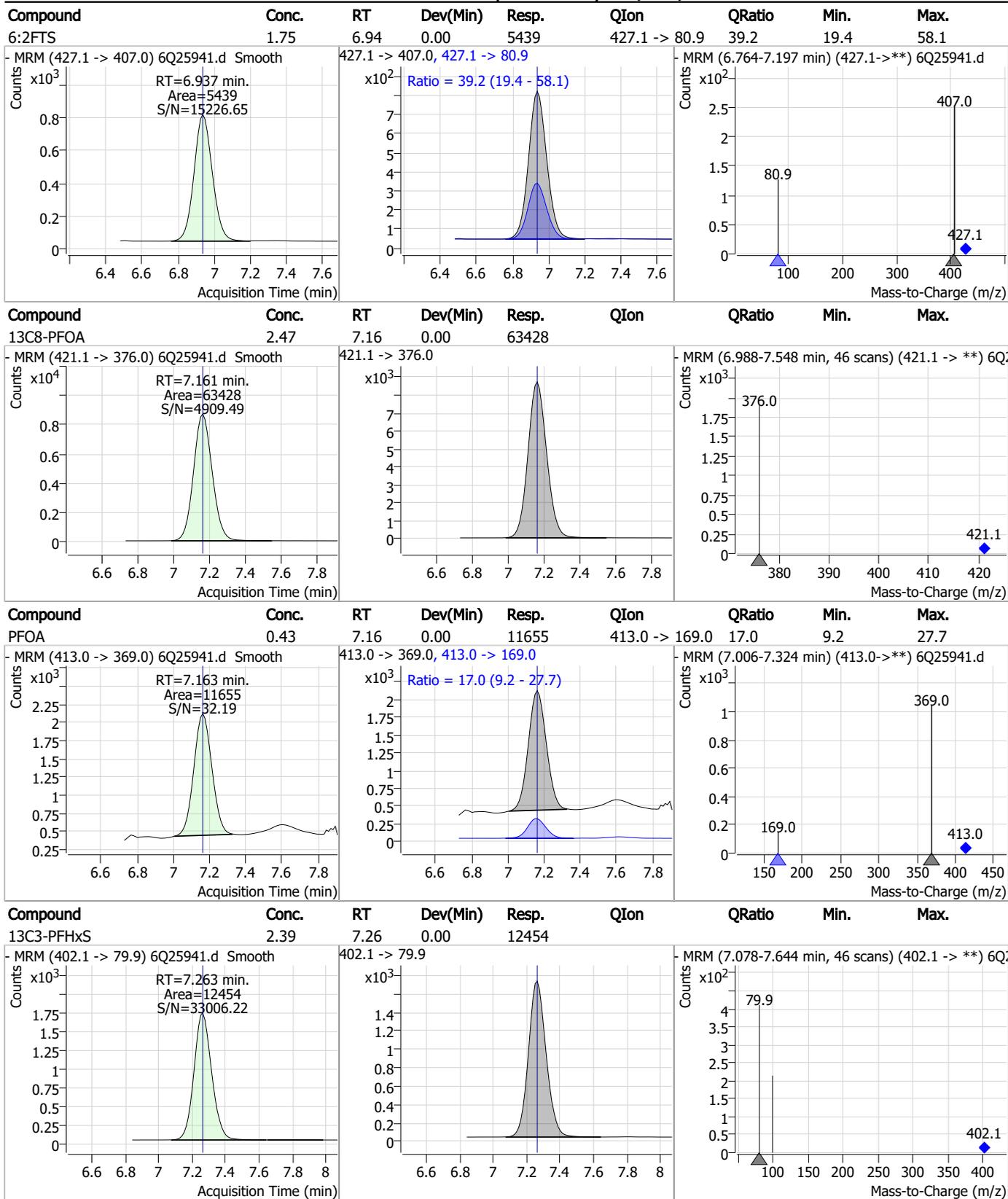
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Perfluorinated Compounds by LC/MS/MS



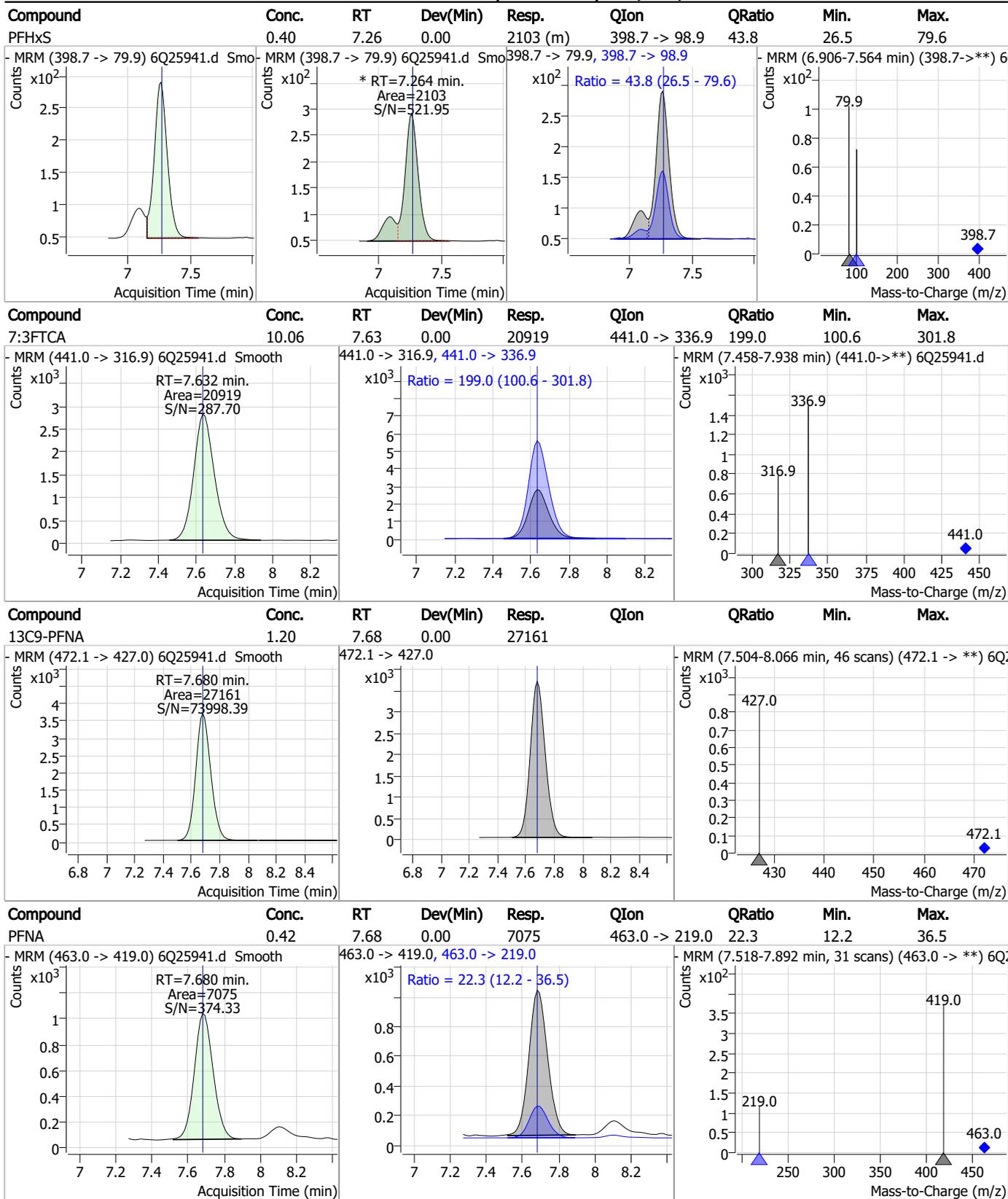
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Perfluorinated Compounds by LC/MS/MS



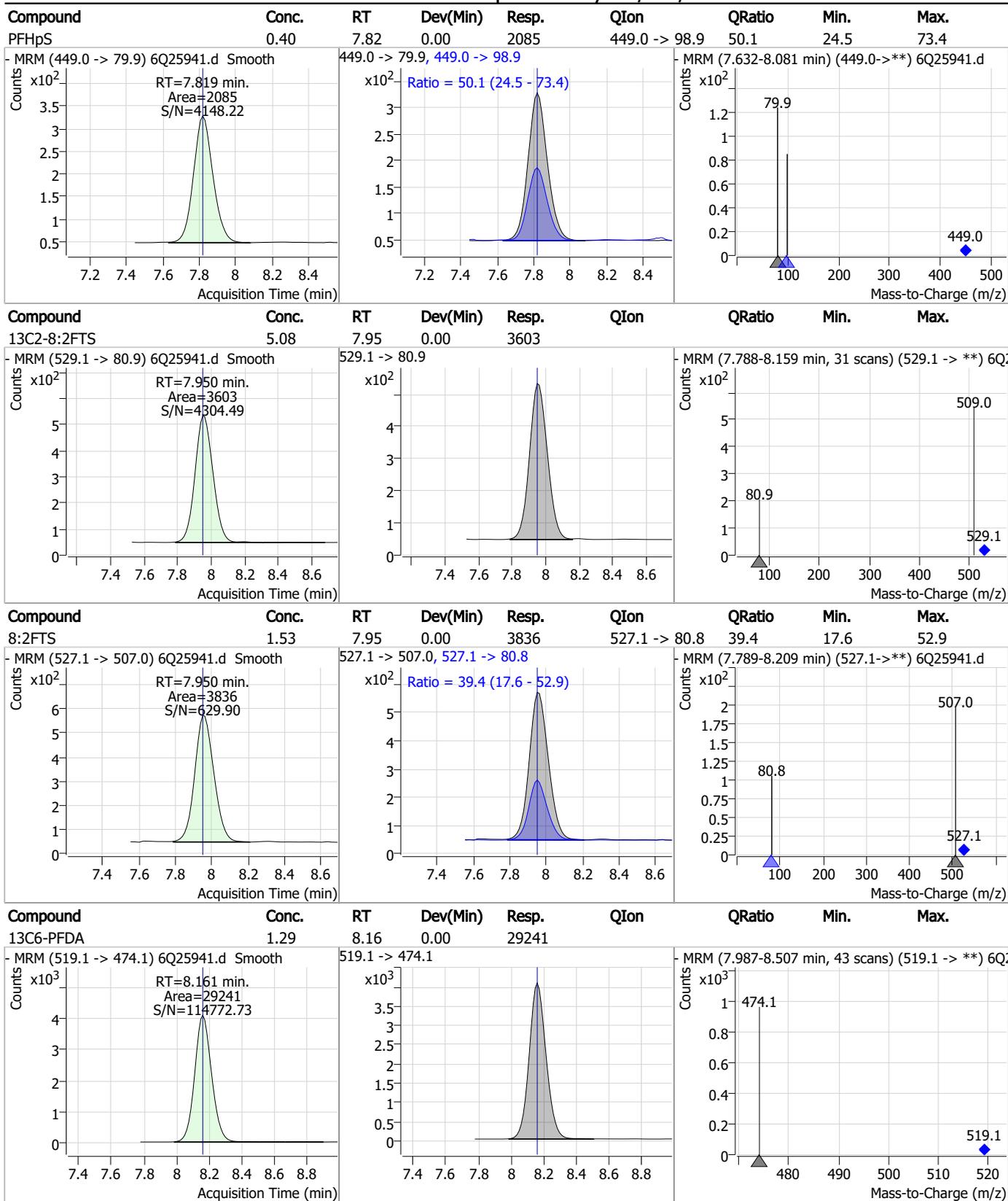
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Perfluorinated Compounds by LC/MS/MS



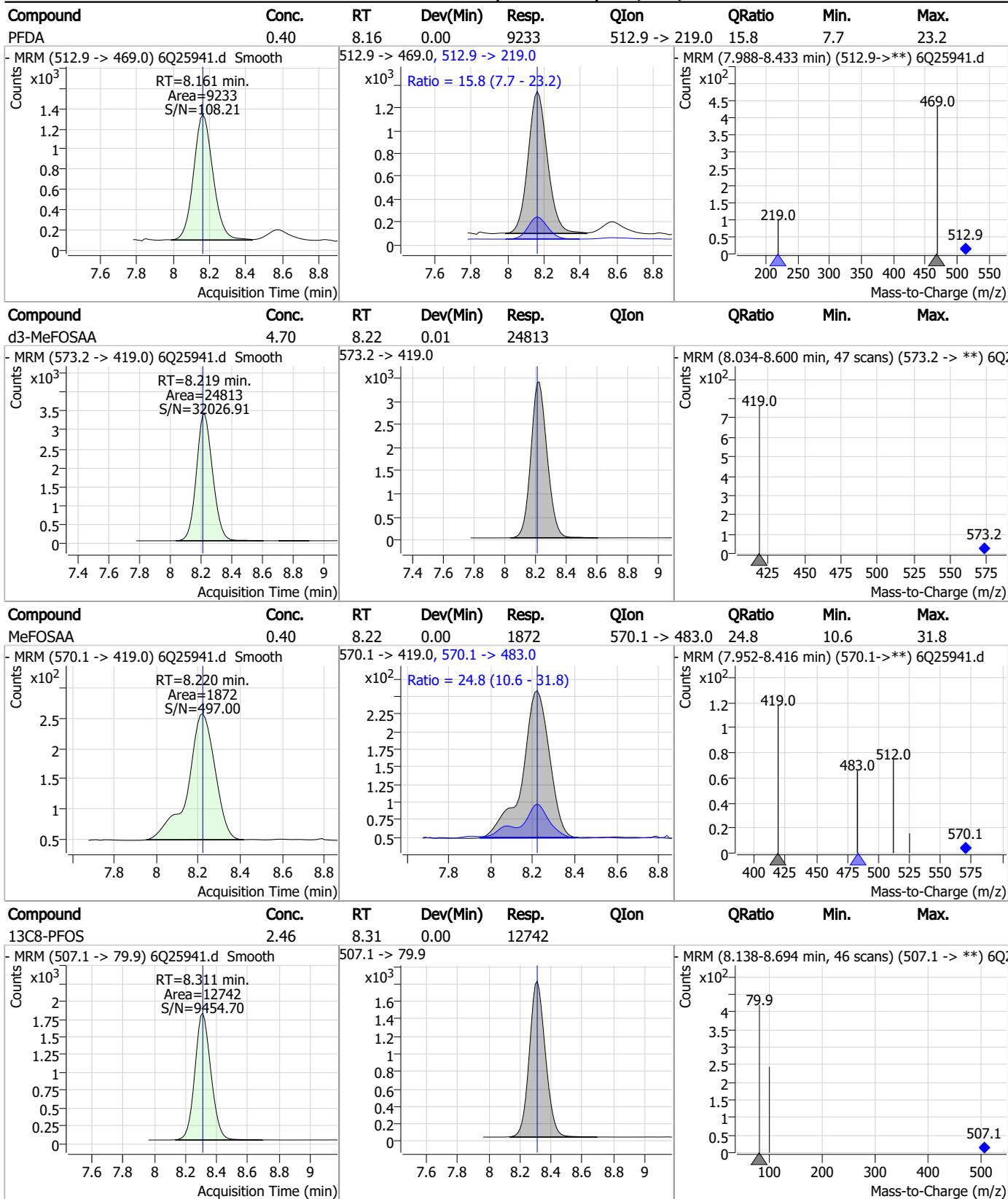
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Perfluorinated Compounds by LC/MS/MS



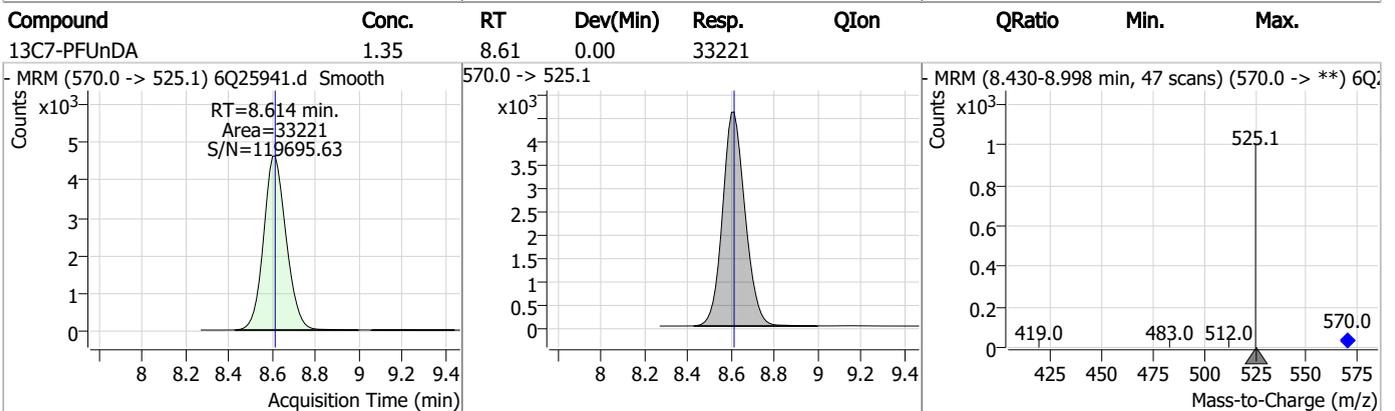
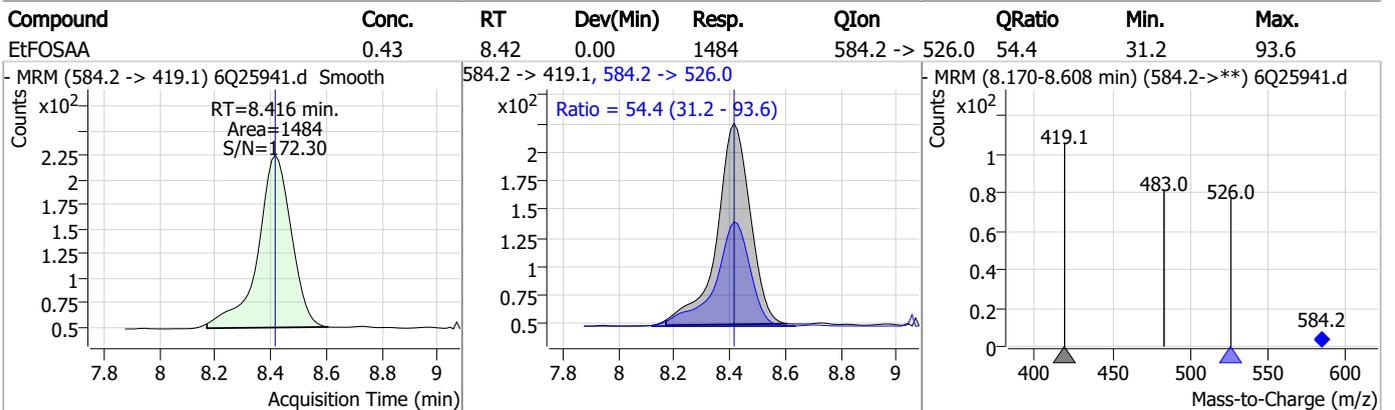
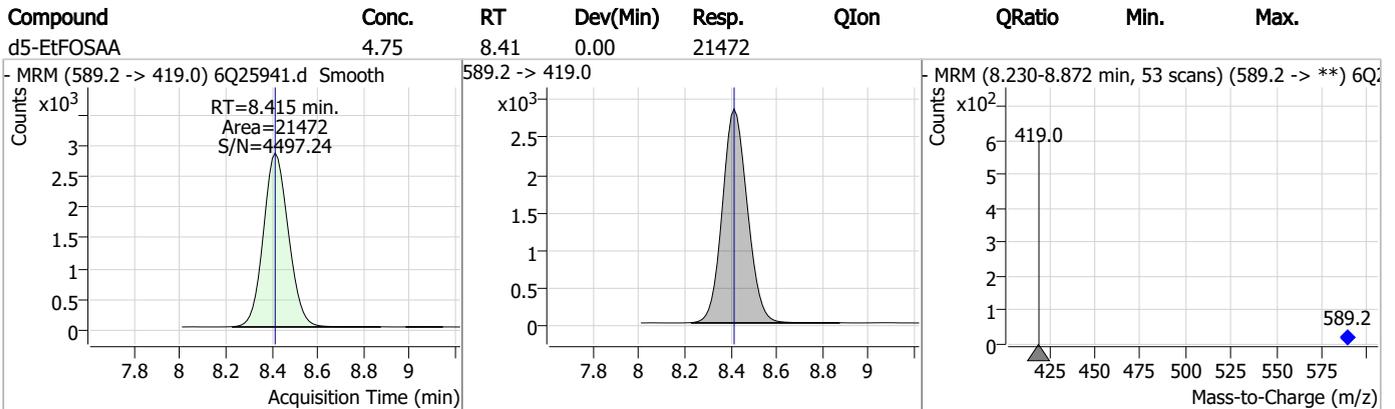
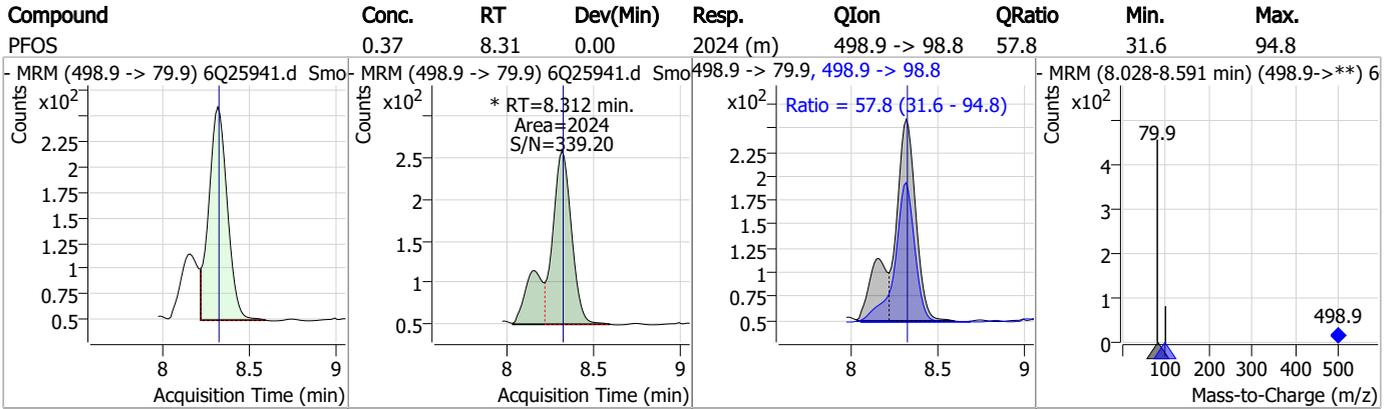
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Perfluorinated Compounds by LC/MS/MS

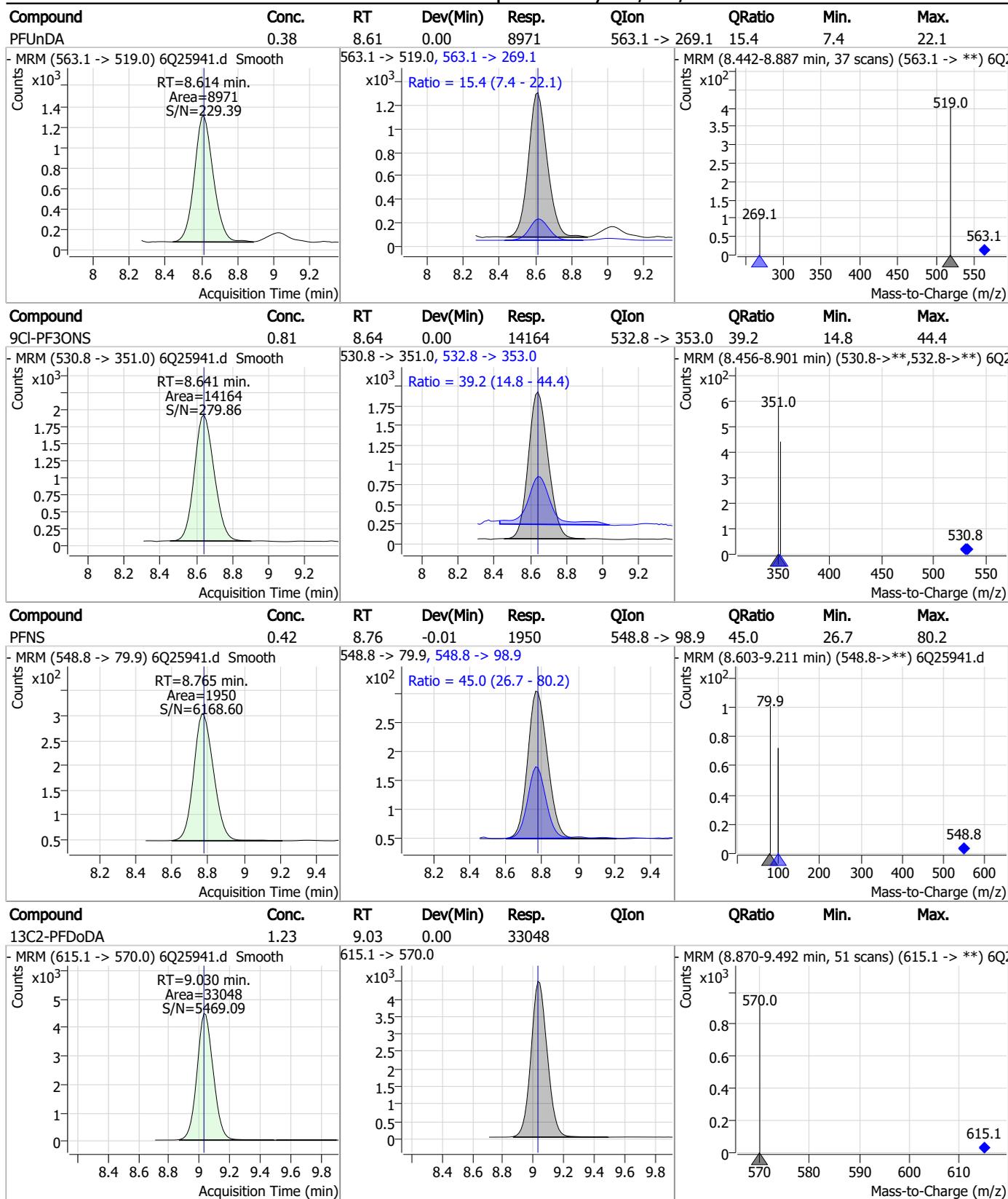


7.7.3
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Perfluorinated Compounds by LC/MS/MS



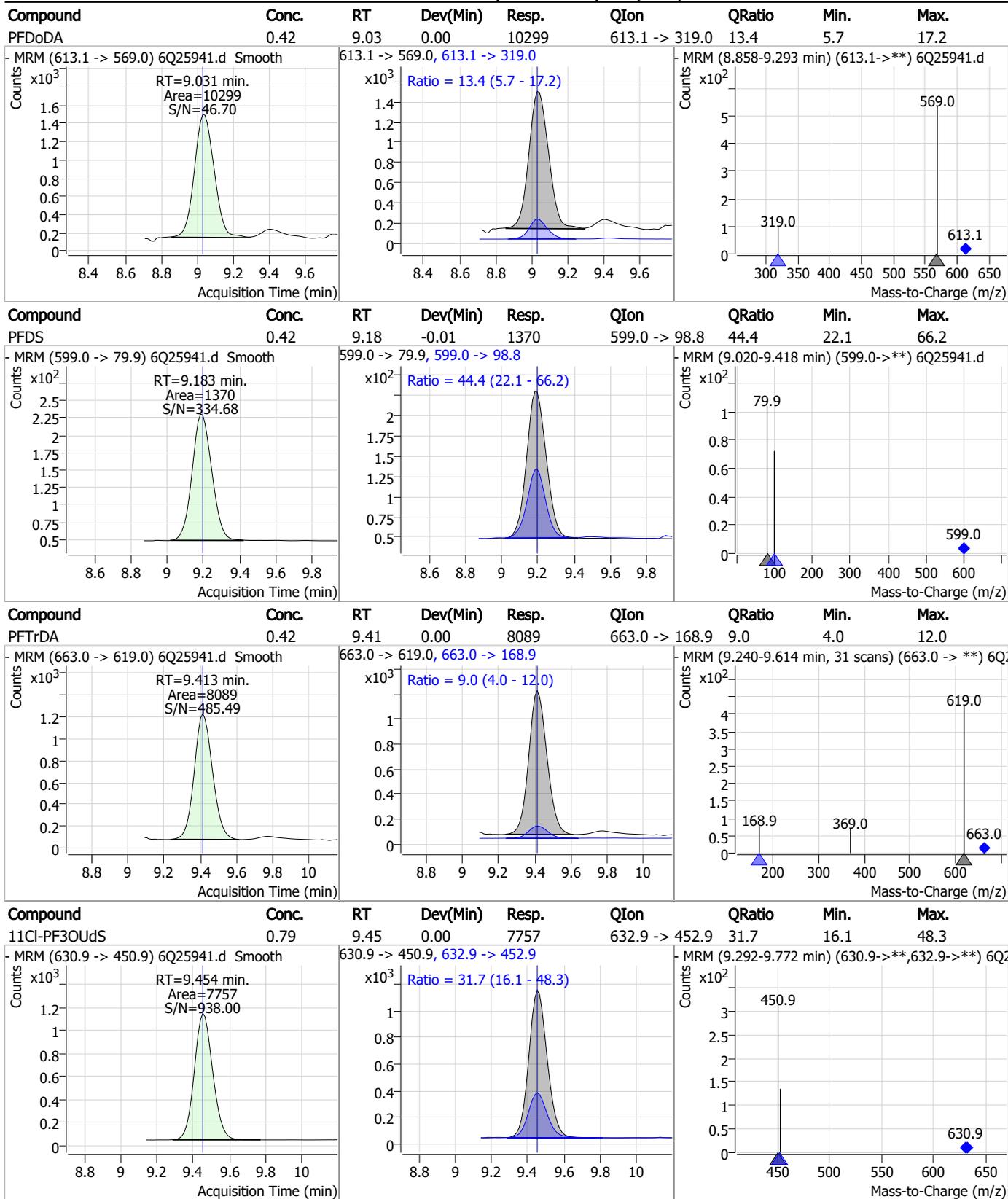
Perfluorinated Compounds by LC/MS/MS



7.7.3

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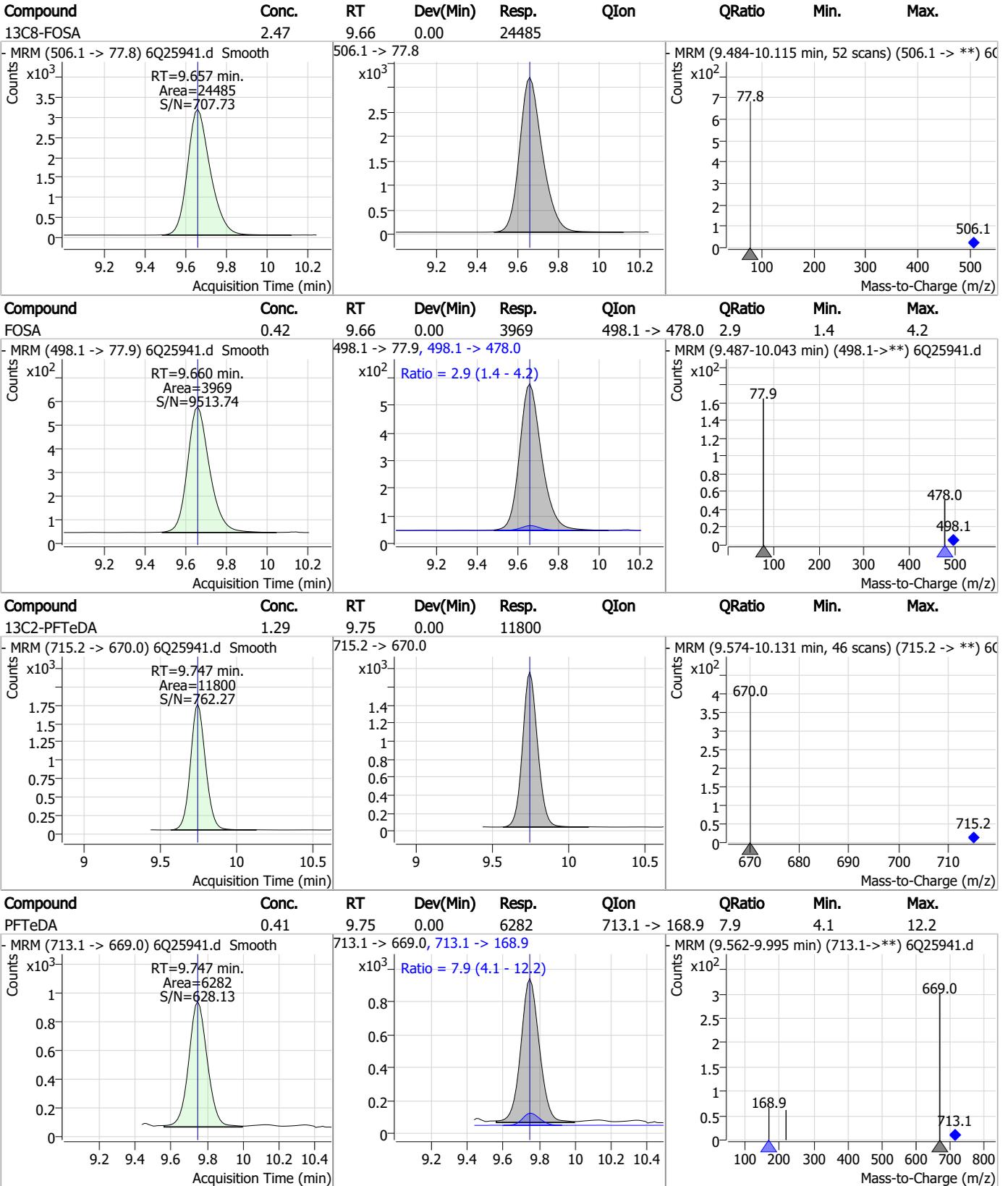
Perfluorinated Compounds by LC/MS/MS



7.7.3

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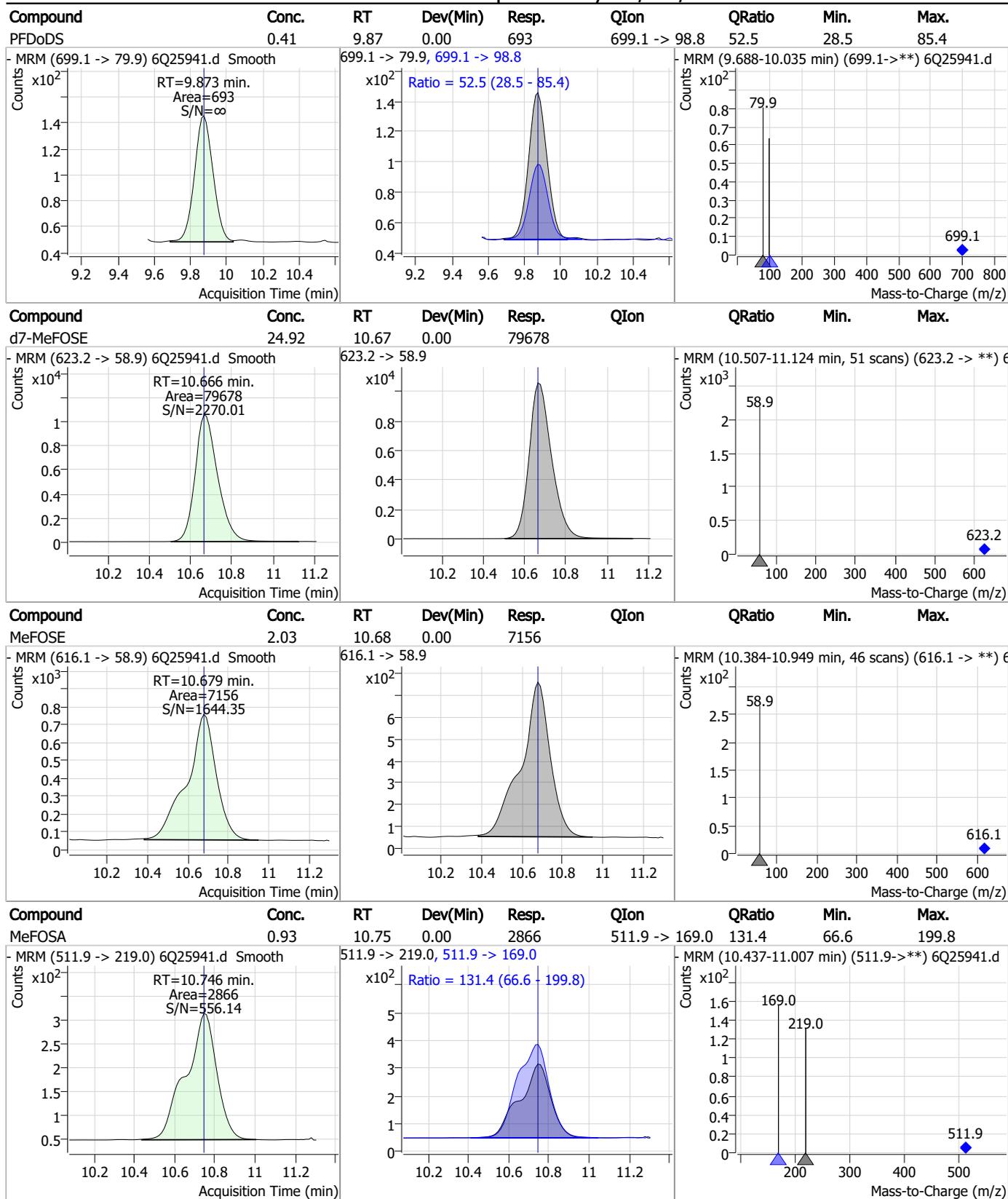
Perfluorinated Compounds by LC/MS/MS



7.7.3

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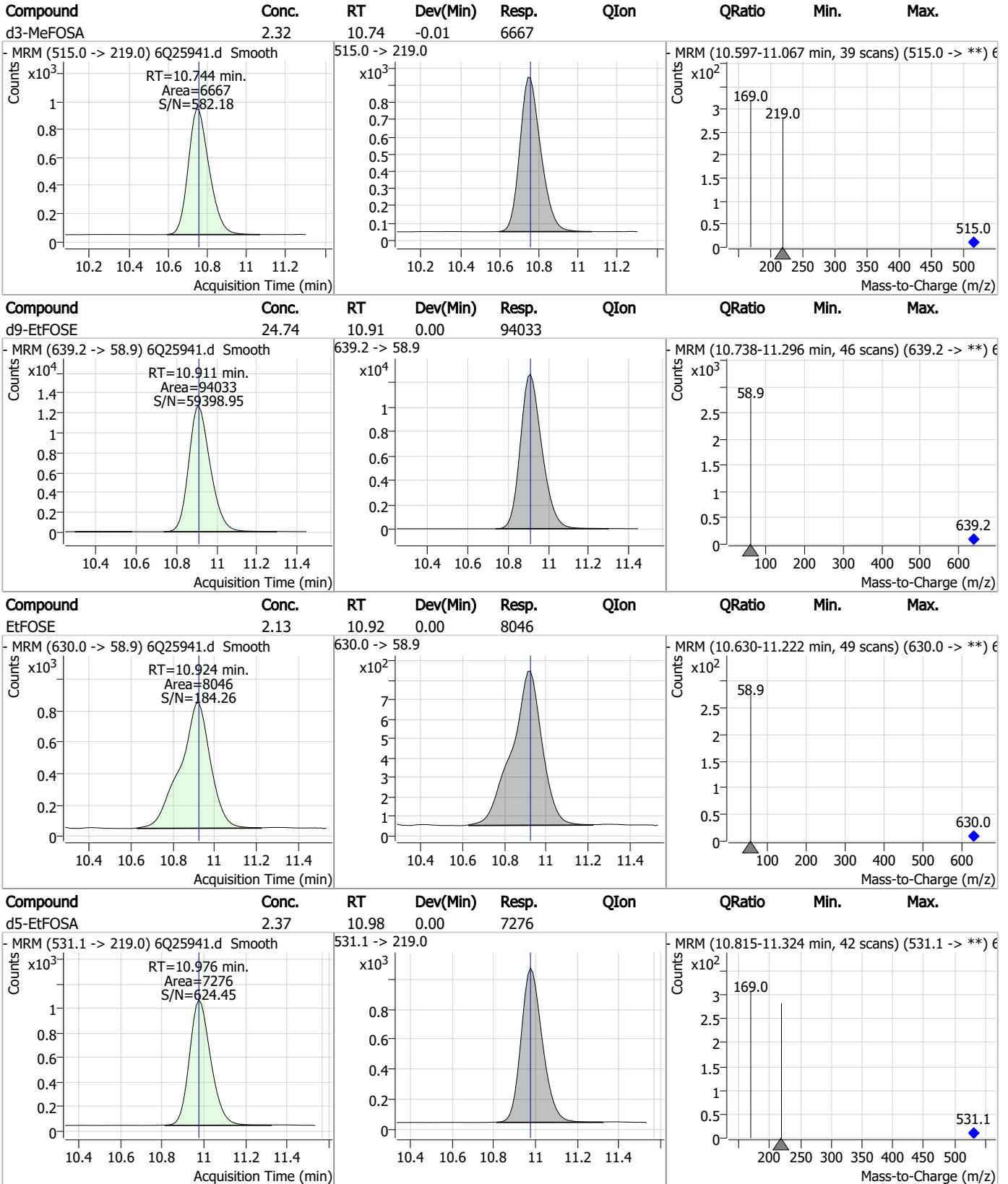
Perfluorinated Compounds by LC/MS/MS



7.7.3

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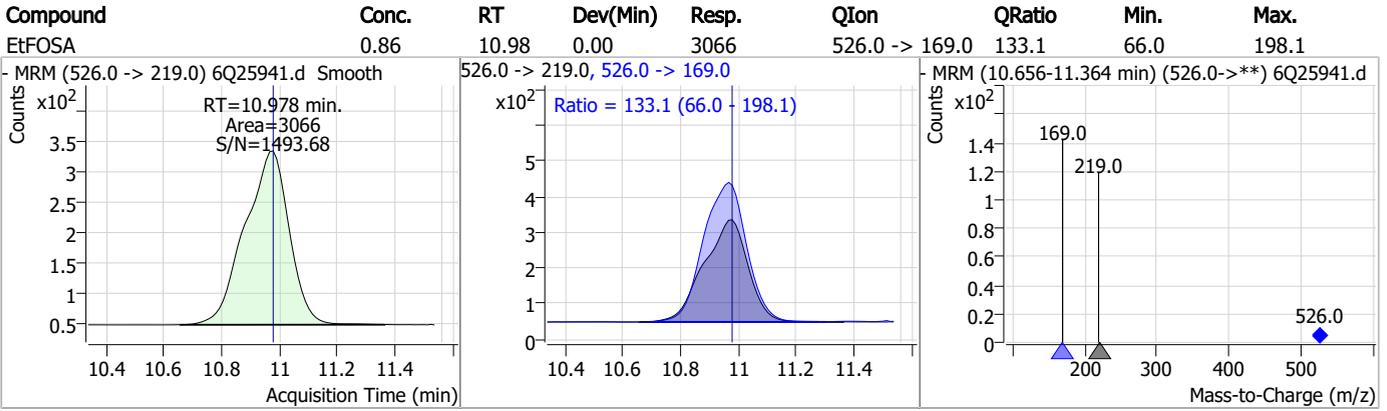
Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25941.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 15:17 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25942.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 3:32:01 PM
 Sample Name : ic367-3
 Vial : P1-A4
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	158629	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	55895	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	50655	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	48952	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	64774	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	29368	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	26961	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	31431	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	34128	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11040	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23332	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22497	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12518	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	11729	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2407	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3605	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3665	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	27476	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	33117	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	22312	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	77417	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	91902	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7395	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6805	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	11912	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	65737	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	8189	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	75051	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	28179	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	26439	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	50070	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2407	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3605	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3665	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C2-PFDoDA	9.030	615.1 -> 570.0	34128	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11040	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.7%		
13C3-PFBS	5.497	302.1 -> 79.9	22497	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.0%		
13C3-PFHxS	7.263	402.1 -> 79.9	12518	2.41 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C4-PFBA	2.947	216.8 -> 171.9	158629	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.519	367.1 -> 322.0	48952	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFHxA	5.580	318.0 -> 273.0	50655	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C5-PFPeA	4.372	268.3 -> 223.0	55895	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C6-PFDA	8.161	519.1 -> 474.1	26961	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.9%	
13C7-PFUnDA	8.614	570.0 -> 525.1	31431	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C8-FOSA	9.657	506.1 -> 77.8	23332	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C8-PFOA	7.161	421.1 -> 376.0	64774	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOS	8.311	507.1 -> 79.9	11729	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C9-PFNA	7.680	472.1 -> 427.0	29368	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSAA	8.219	573.2 -> 419.0	27476	5.24 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	33117	9.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d3-MeFOSA	10.744	515.0 -> 219.0	6805	2.39 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
d5-EtFOSAA	8.415	589.2 -> 419.0	22312	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d7-MeFOSE	10.666	623.2 -> 58.9	77417	24.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
d9-EtFOSE	10.911	639.2 -> 58.9	91902	24.37 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d5-EtFOSA	10.976	531.1 -> 219.0	7395	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	17720	4.44 µg/L	97
		327.1 -> 80.9	7180		
6:2FTS	6.937	427.1 -> 407.0	14927	4.55 µg/L	98
		427.1 -> 80.9	5993		
8:2FTS	7.950	527.1 -> 507.0	11596	4.54 µg/L	95
		527.1 -> 80.8	4448		
EtFOSAA	8.416	584.2 -> 419.1	4142	1.14 µg/L	93
		584.2 -> 526.0	2793		
FOSA	9.660	498.1 -> 77.9	11124	1.24 µg/L	99
		498.1 -> 478.0	362		
MeFOSAA	8.220	570.1 -> 419.0	6215	1.21 µg/L	99
		570.1 -> 483.0	1289		
PFBA	2.943	212.8 -> 168.9	28164	4.77 µg/L	100
PFBS	5.499	298.7 -> 79.9	7446	1.10 µg/L	97
		298.7 -> 98.8	2876		
PFDA	8.161	512.9 -> 469.0	25010	1.19 µg/L	98
		512.9 -> 219.0	4045		
PFDODA	9.031	613.1 -> 569.0	30522	1.20 µg/L	97
		613.1 -> 319.0	3779		
PFDS	9.195	599.0 -> 79.9	3758	1.25 µg/L	91

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1879			
PFHpA	6.532	363.1 -> 319.0	31790	1.20	µg/L	98
		363.1 -> 169.0	4840			
PFHpS	7.819	449.0 -> 79.9	6087	1.26	µg/L	99
		449.0 -> 98.9	3023			
PFHxA	5.582	313.0 -> 269.0	21104	1.17	µg/L	99
		313.0 -> 118.9	1123			
PFHxS	7.264	398.7 -> 79.9	5673	1.08	µg/L	m 99
		398.7 -> 98.9	2981			
PFNA	7.680	463.0 -> 419.0	20487	1.13	µg/L	99
		463.0 -> 219.0	5060			
PFNS	8.777	548.8 -> 79.9	5578	1.30	µg/L	96
		548.8 -> 98.9	2835			
PFOA	7.163	413.0 -> 369.0	33763	1.21	µg/L	97
		413.0 -> 169.0	5801			
PFOS	8.312	498.9 -> 79.9	6731	1.34	µg/L	m 77
		498.9 -> 98.8	3076			
PFPeA	4.374	263.0 -> 219.0	28579	2.37	µg/L	100
PFPeS	6.571	349.1 -> 79.9	7943	1.18	µg/L	99
		349.1 -> 98.9	3534			
PFTeDA	9.747	713.1 -> 669.0	17890	1.25	µg/L	98
		713.1 -> 168.9	1300			
PFTrDA	9.413	663.0 -> 619.0	23172	1.16	µg/L	99
		663.0 -> 168.9	1959			
PFUnDA	8.614	563.1 -> 519.0	25816	1.17	µg/L	94
		563.1 -> 269.1	4461			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	22761	2.32	µg/L	100
		632.9 -> 452.9	7376			
9Cl-PF3ONS	8.641	530.8 -> 351.0	38715	2.22	µg/L	94
		532.8 -> 353.0	12779			
ADONA	6.780	376.9 -> 250.9	105652	2.32	µg/L	99
		376.9 -> 84.8	28712			
HFPO-DA	5.958	284.9 -> 168.9	8113	2.47	µg/L	97
		284.9 -> 184.9	887			
3:3FTCA	3.808	241.0 -> 177.0	4983	5.85	µg/L	99
		241.0 -> 117.0	657			
5:3FTCA	6.233	341.0 -> 237.1	100421	29.58	µg/L	97
		341.0 -> 217.0	74430			
7:3FTCA	7.632	441.0 -> 316.9	63379	30.57	µg/L	99
		441.0 -> 336.9	126670			
EtFOSA	10.978	526.0 -> 219.0	8779	2.42	µg/L	100
		526.0 -> 169.0	11582			
EtFOSE	10.924	630.0 -> 58.9	23056	6.23	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	7635	2.42	µg/L	93
		511.9 -> 169.0	10778			
MeFOSE	10.679	616.1 -> 58.9	20643	6.03	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	1942	1.25	µg/L	99
		699.1 -> 98.8	1117			
NFDHA	5.462	295.0 -> 201.0	5582	2.45	µg/L	96
		295.0 -> 84.9	1421			
PFMBA	4.800	279.0 -> 85.1	22182	2.41	µg/L	100
PFMPA	3.501	229.0 -> 84.9	18116	2.39	µg/L	100
PFEESA	6.050	314.8 -> 134.9	49261	2.11	µg/L	99
		314.8 -> 82.9	1949			

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

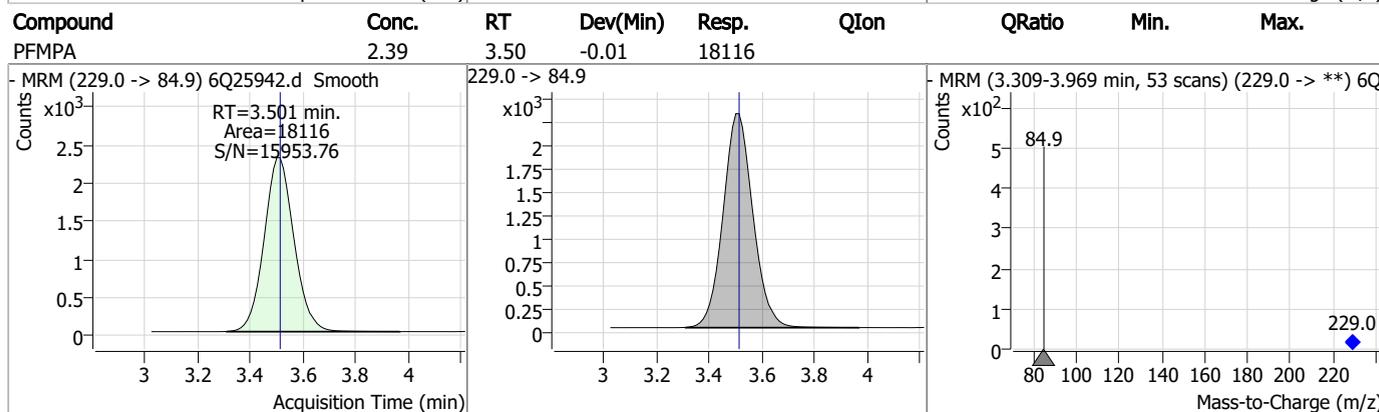
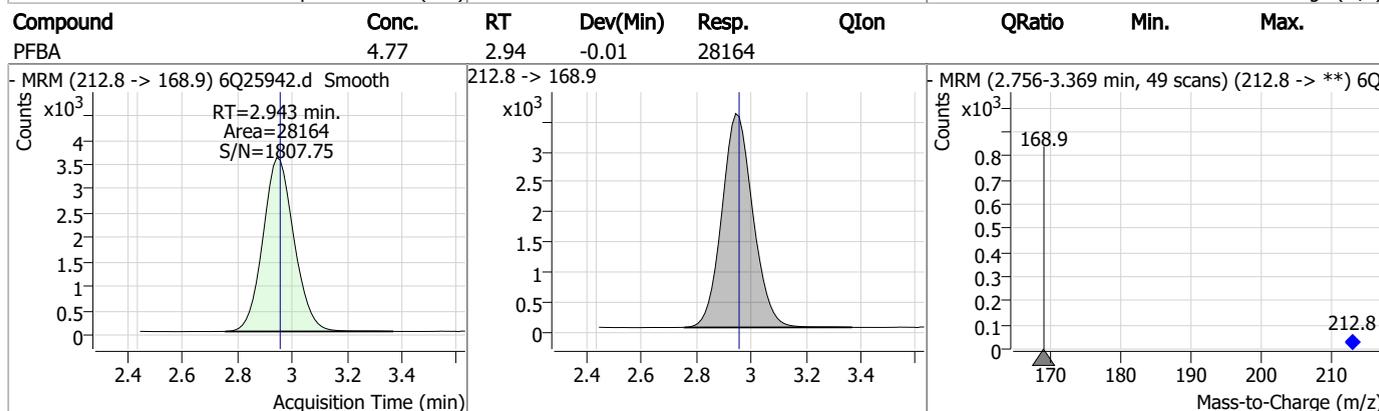
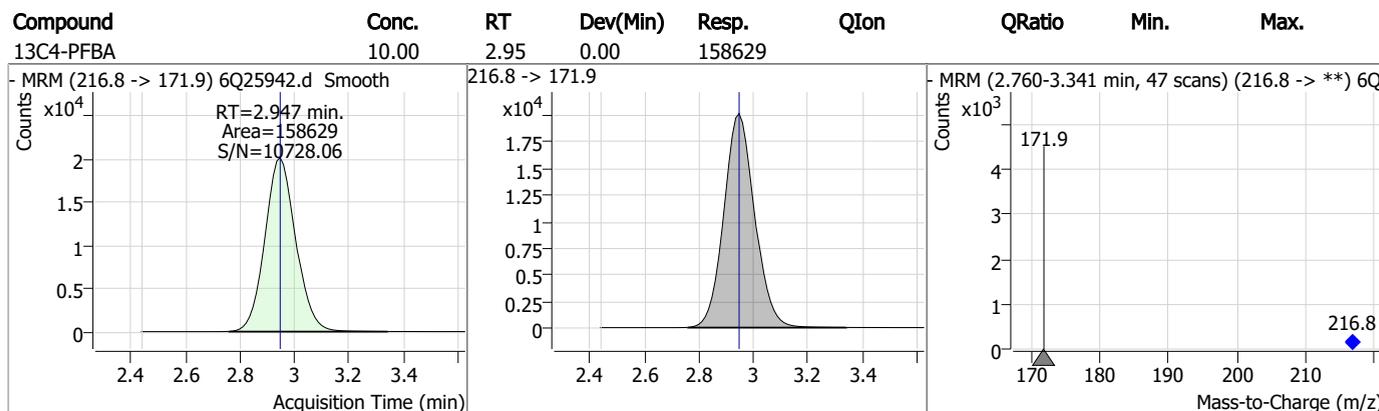
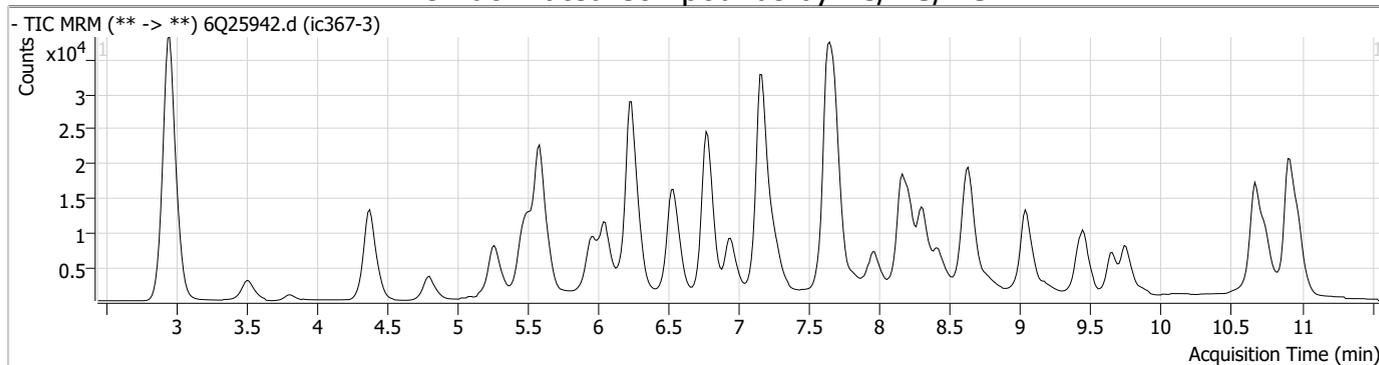
Perfluorinated Compounds by LC/MS/MS

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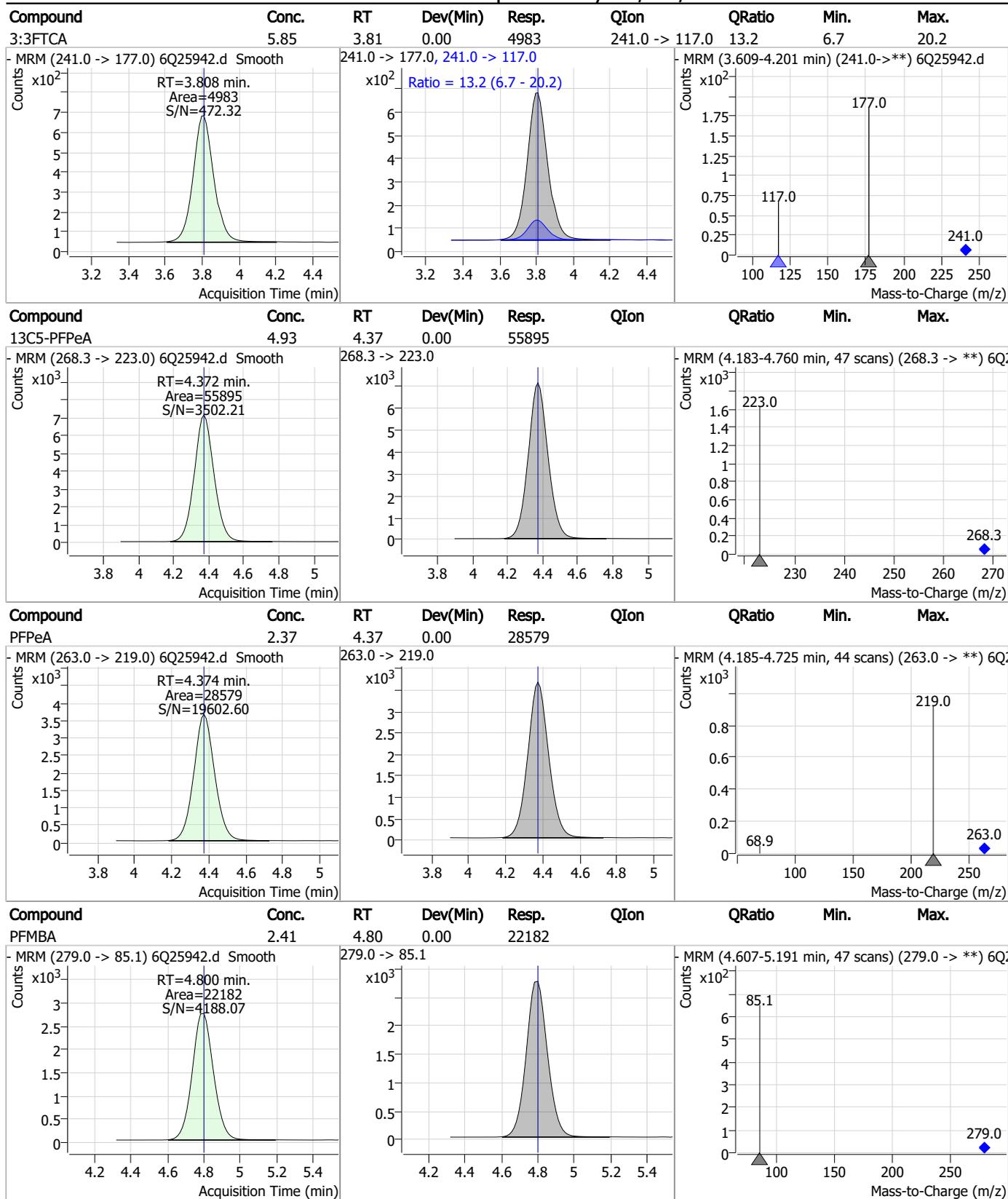
7.7.4

7

Perfluorinated Compounds by LC/MS/MS

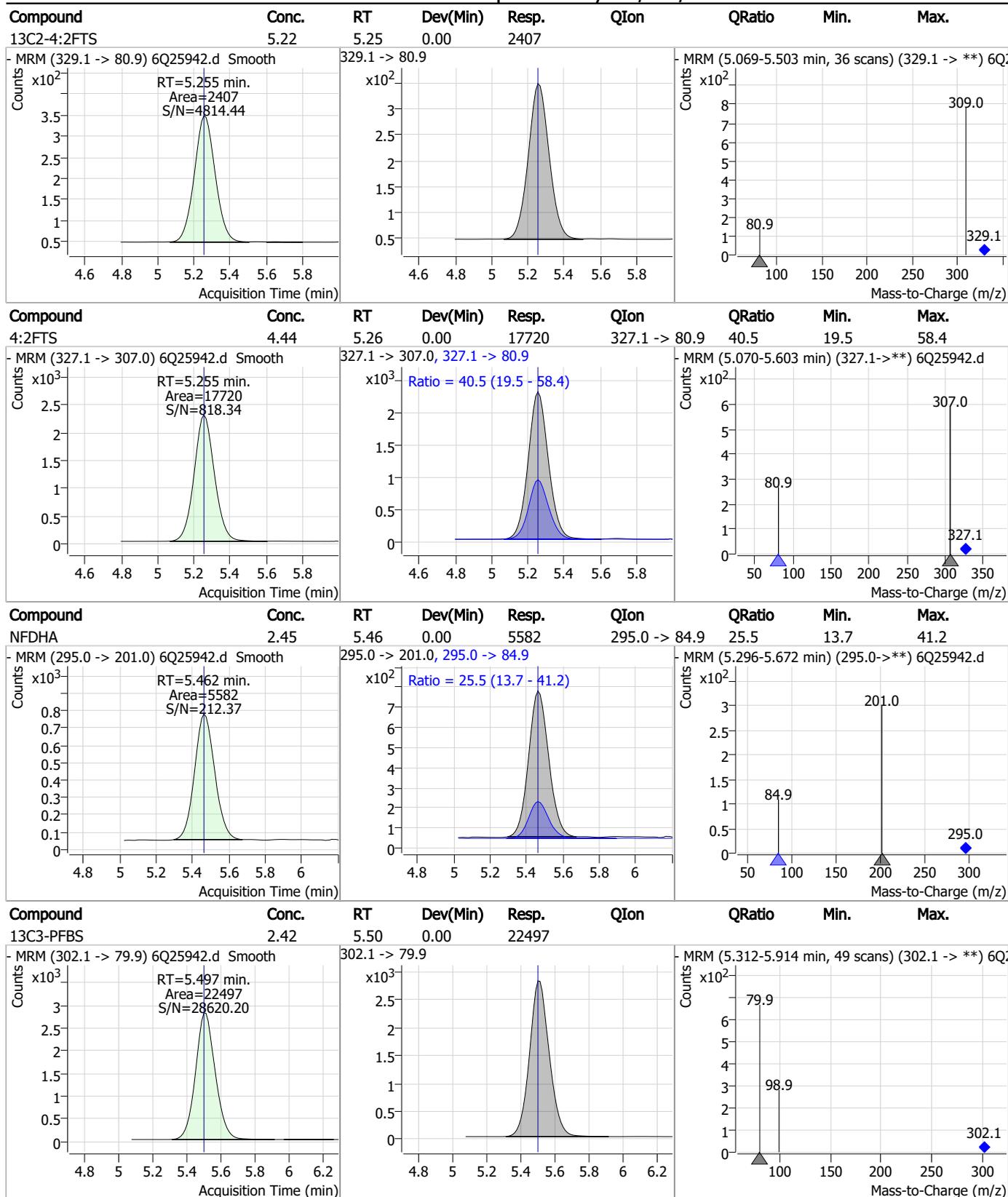


Perfluorinated Compounds by LC/MS/MS



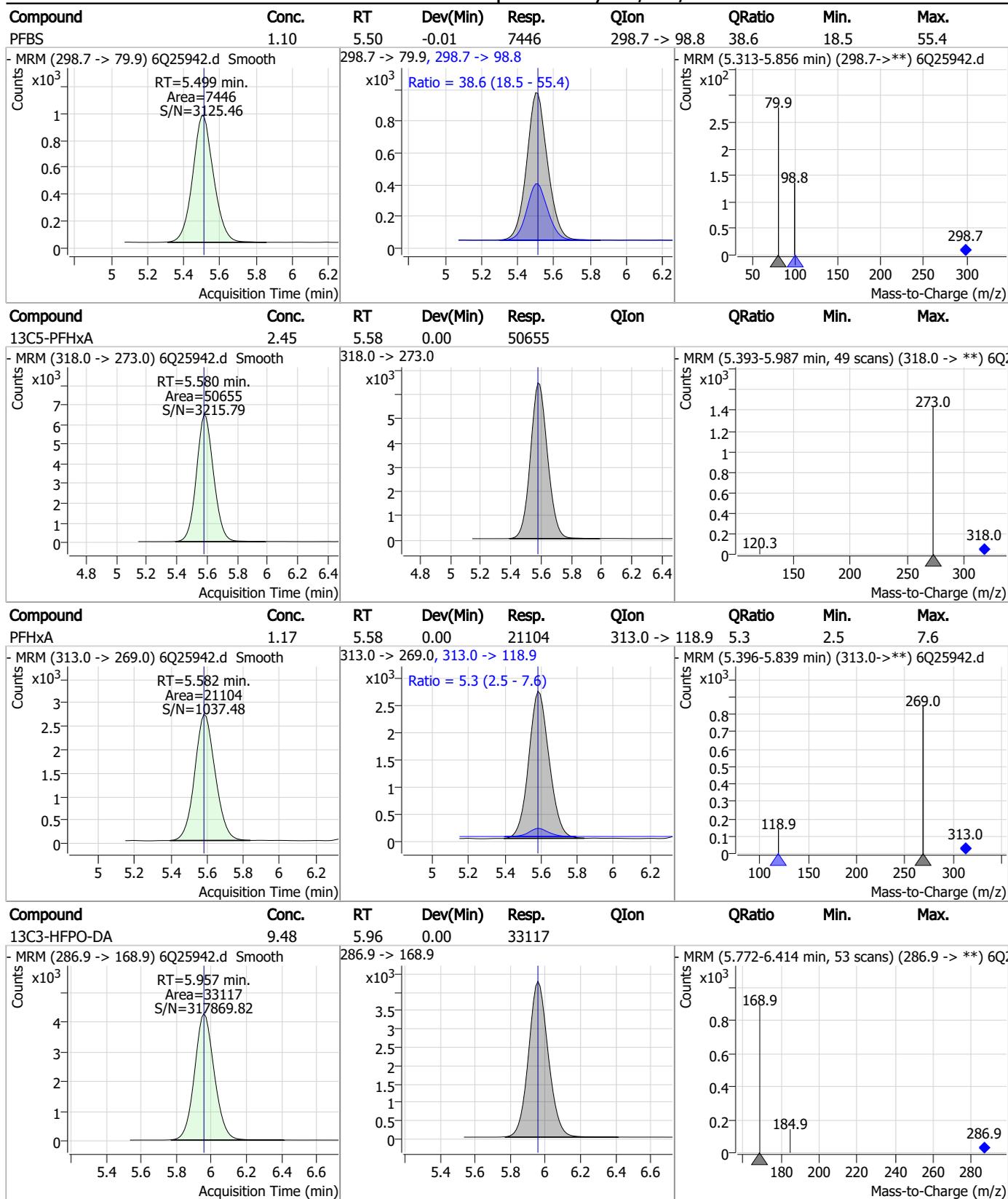
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Perfluorinated Compounds by LC/MS/MS



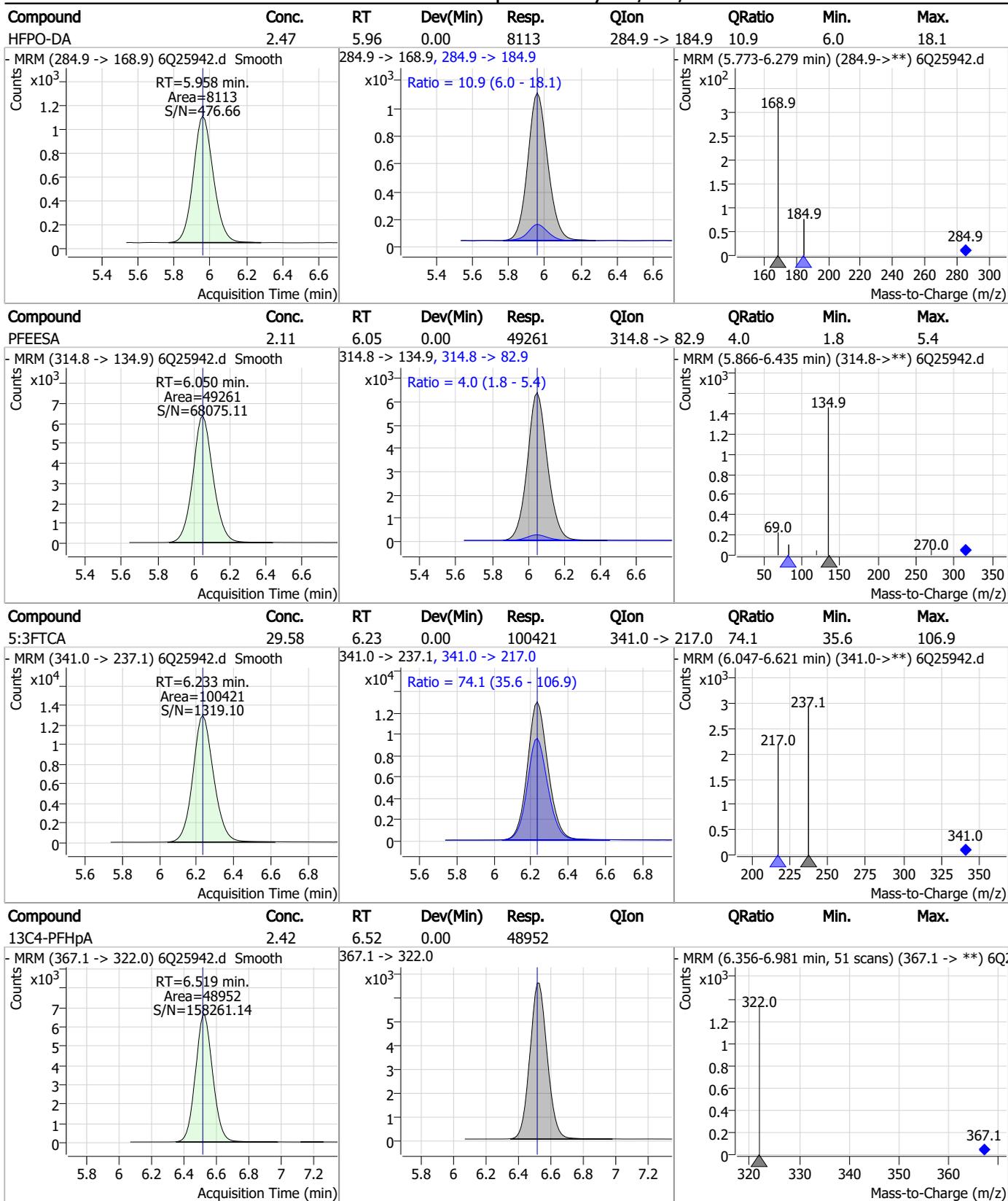
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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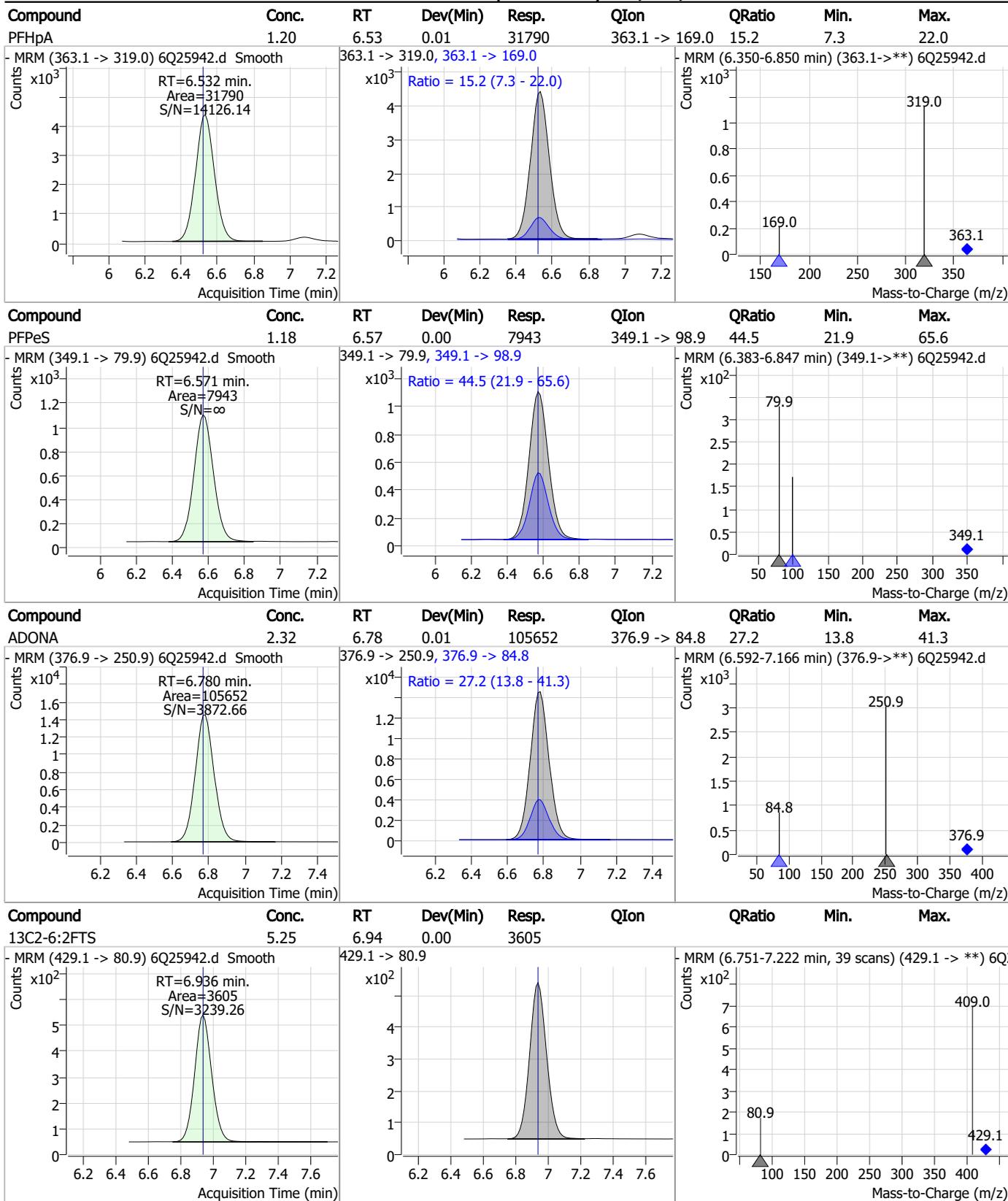
Perfluorinated Compounds by LC/MS/MS



7.7.4

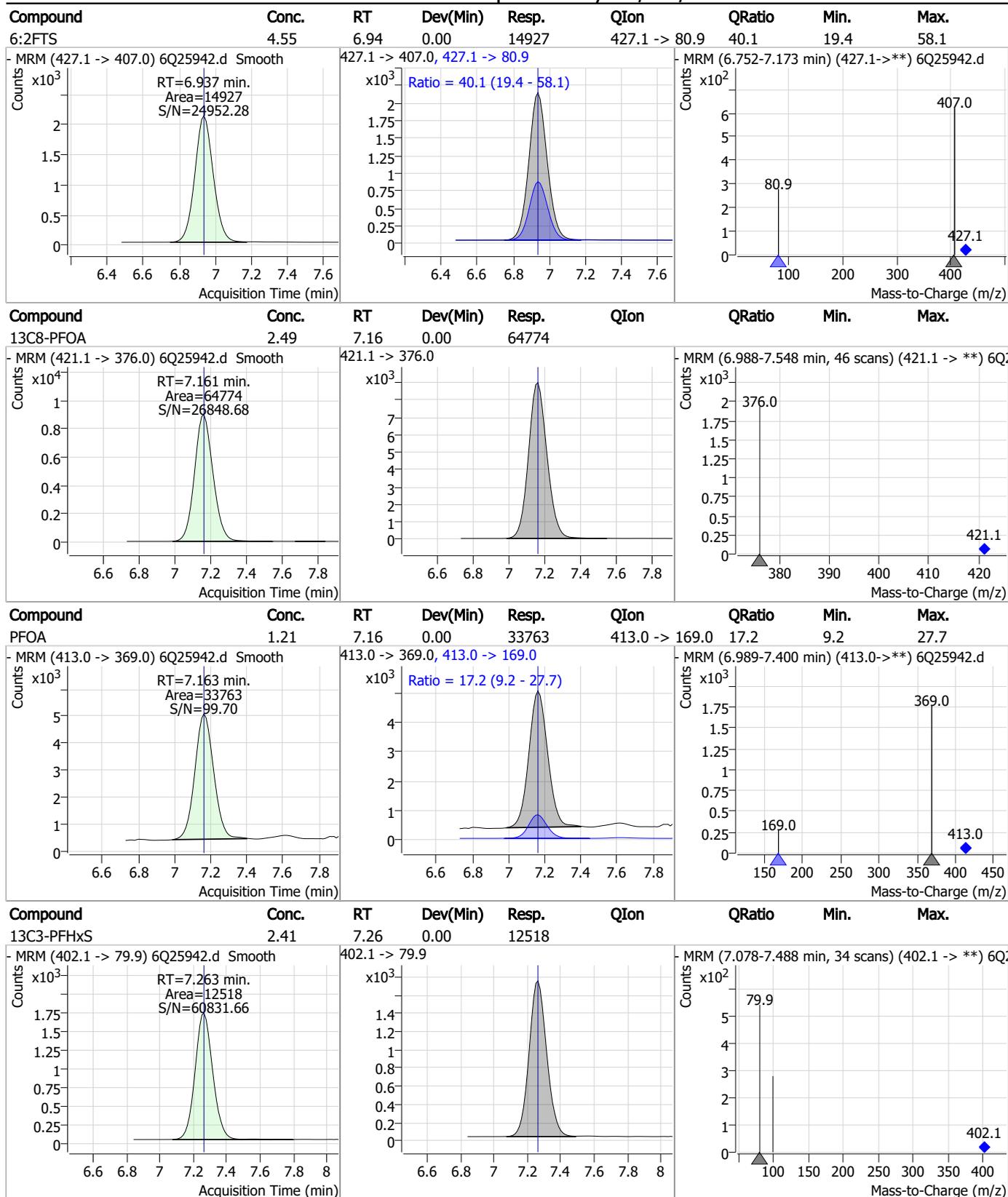
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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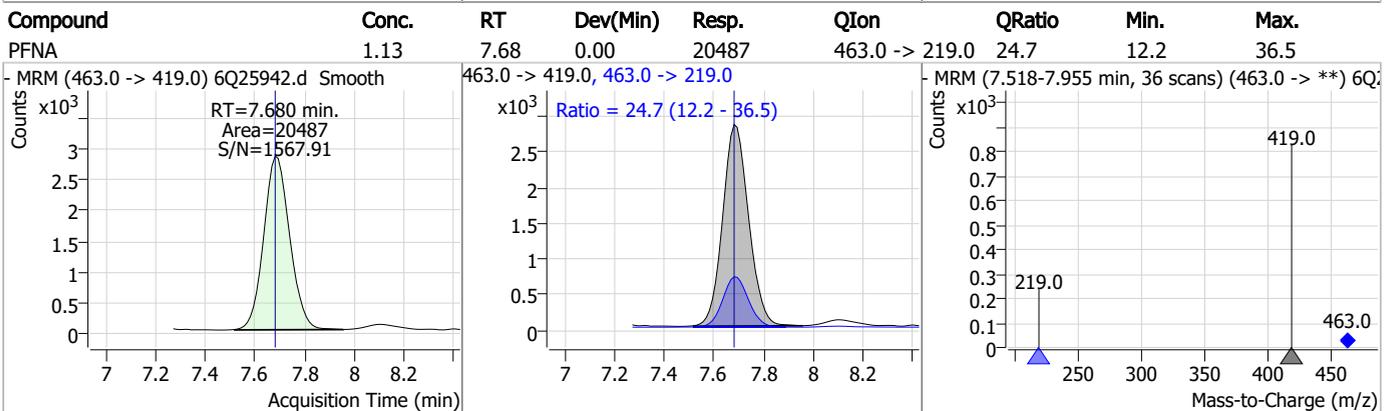
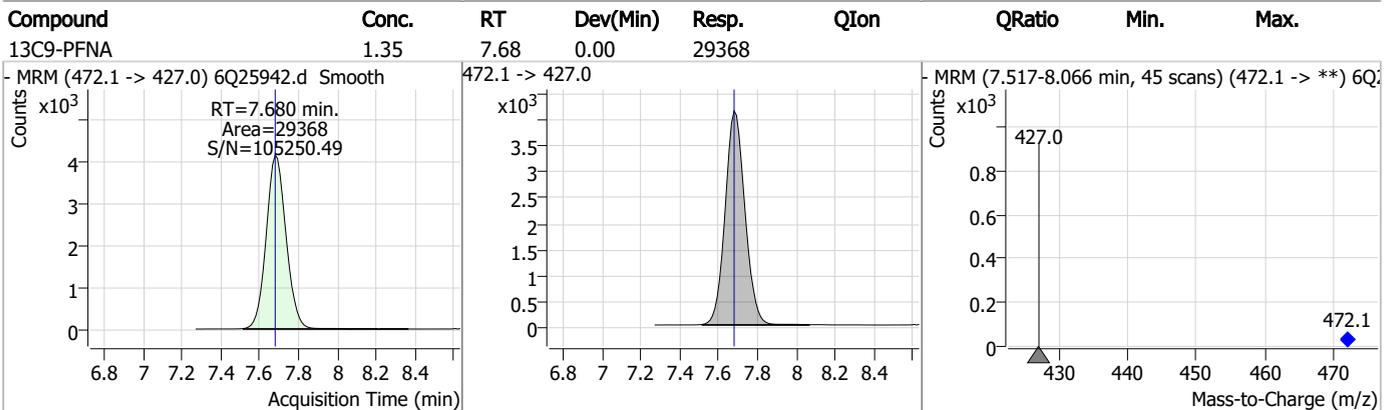
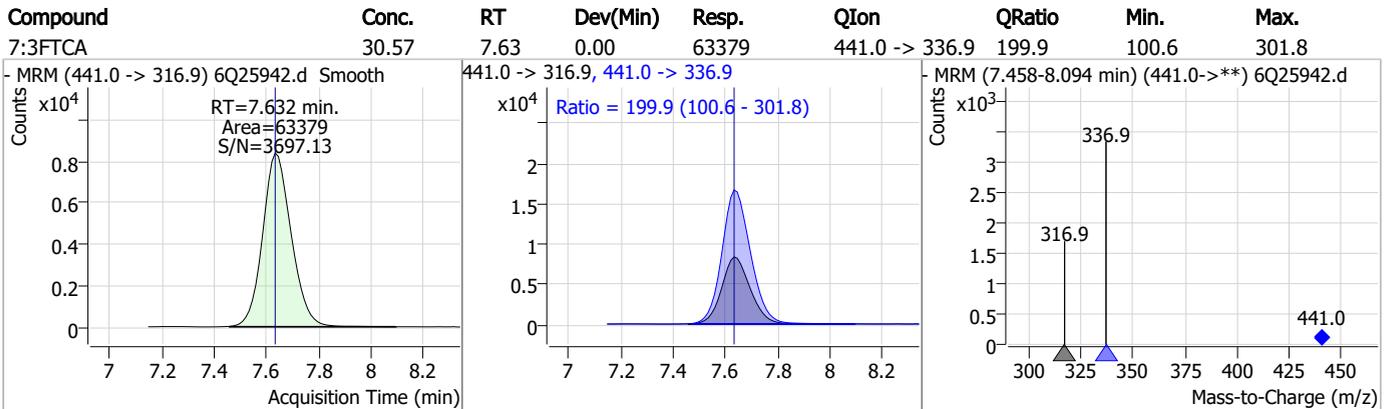
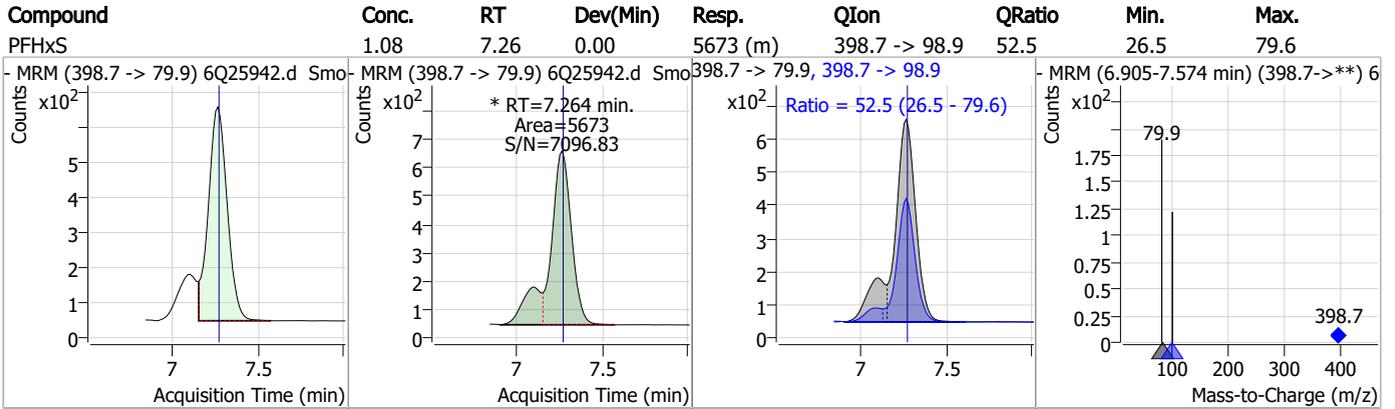
Perfluorinated Compounds by LC/MS/MS



7.7.4

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Perfluorinated Compounds by LC/MS/MS

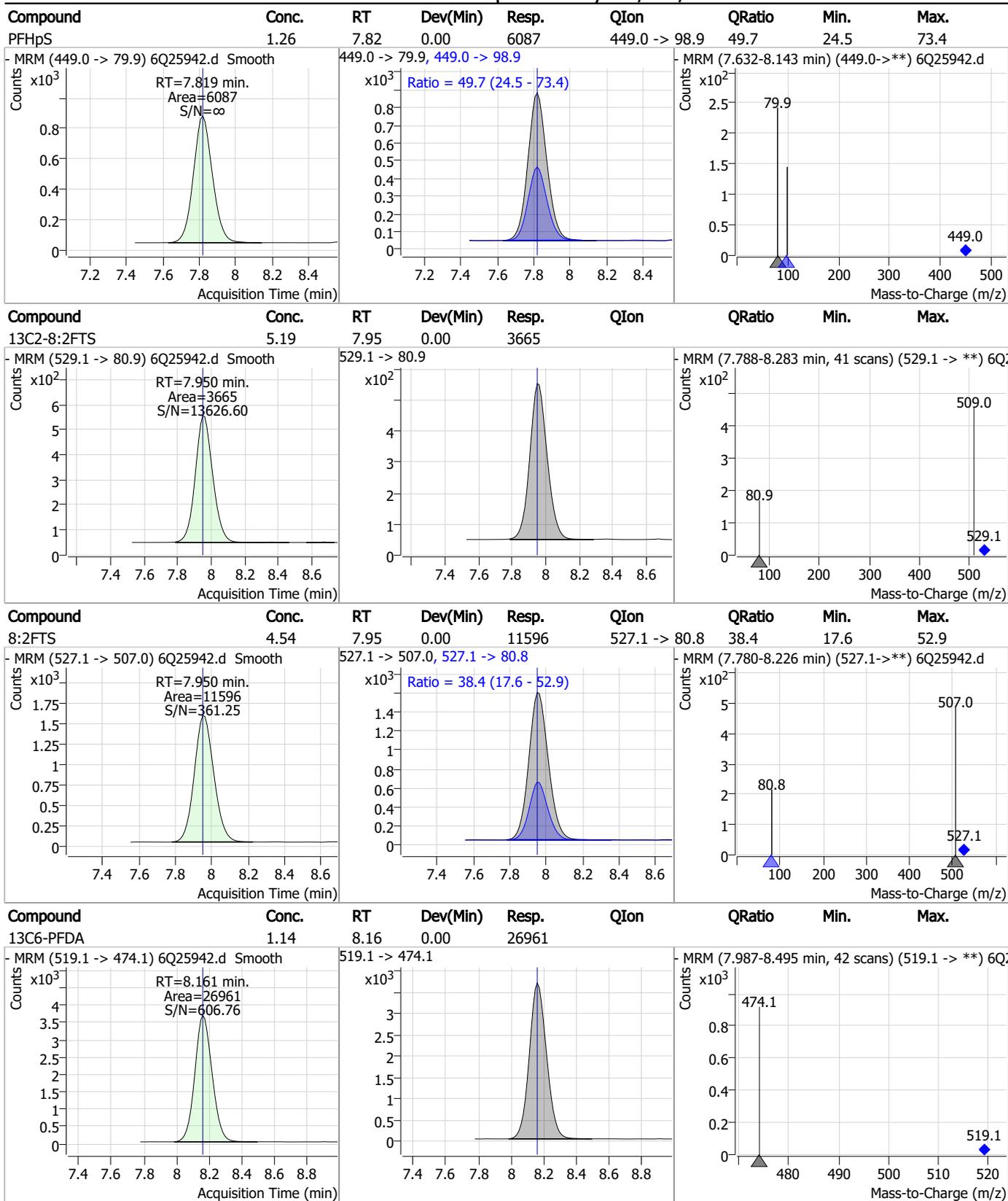


7.7.4

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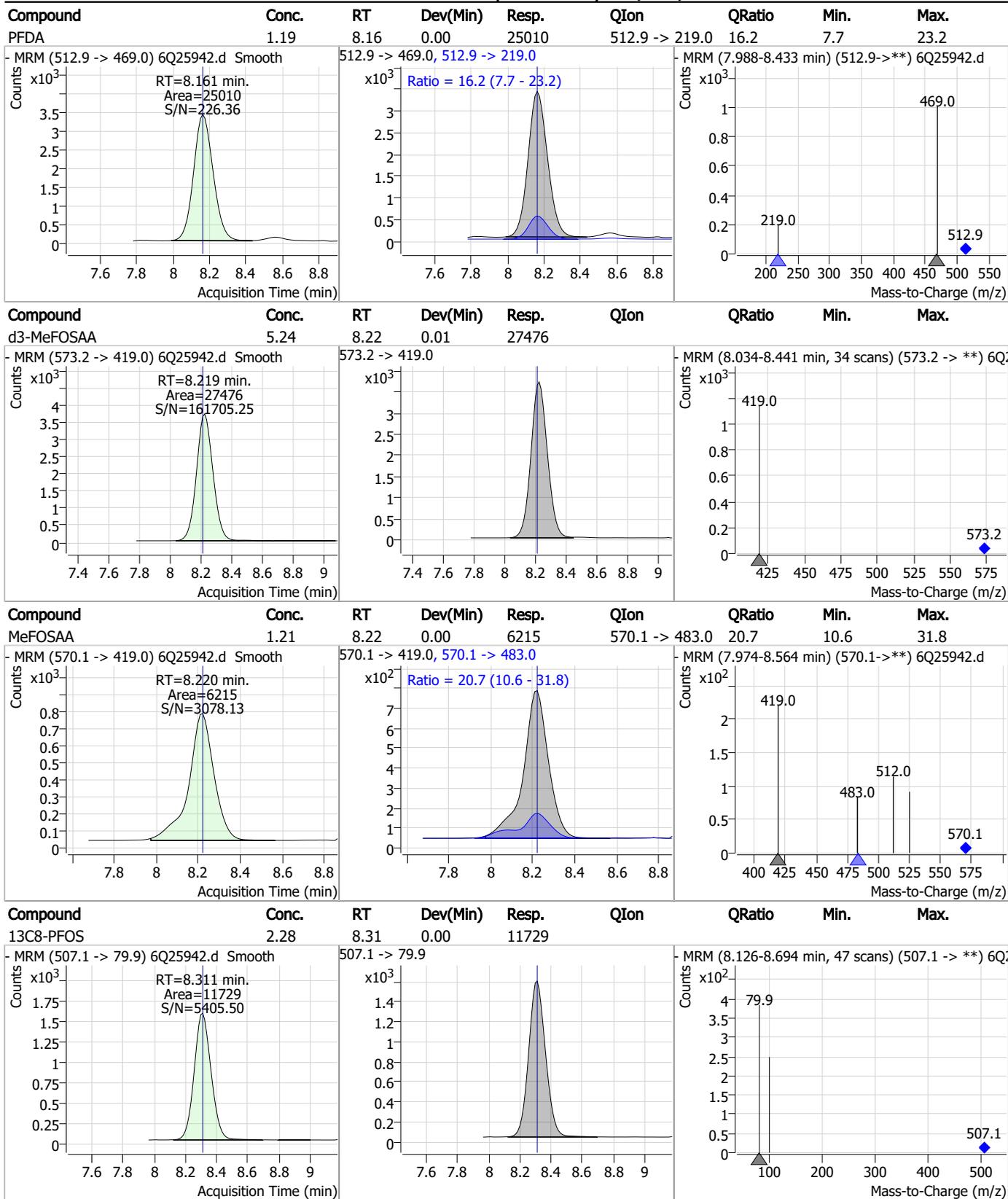


Perfluorinated Compounds by LC/MS/MS



7.7.4
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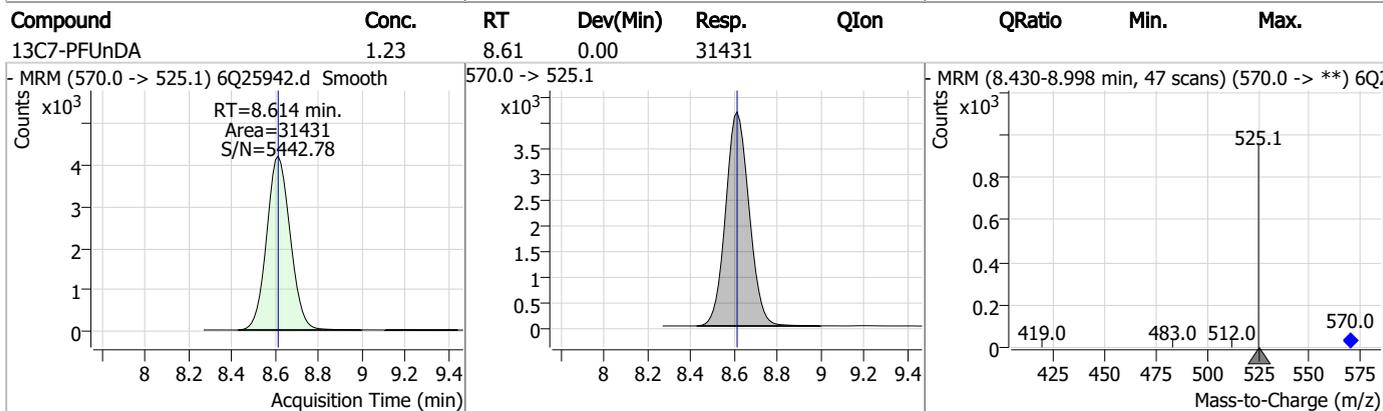
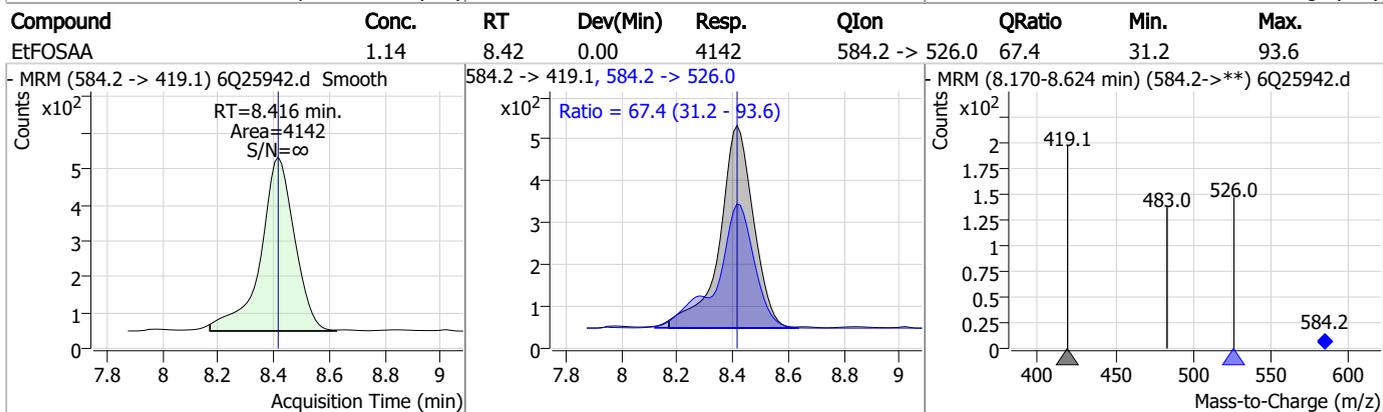
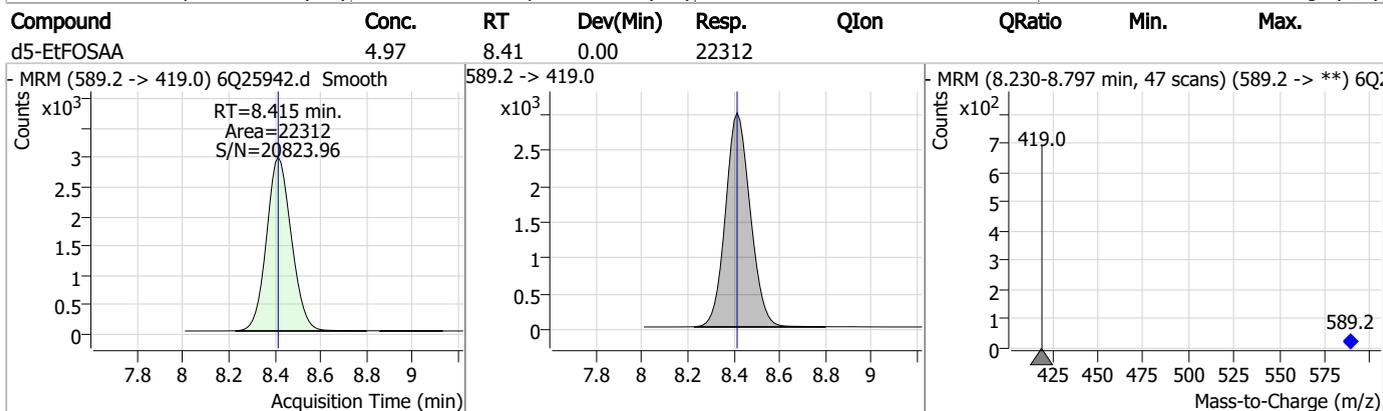
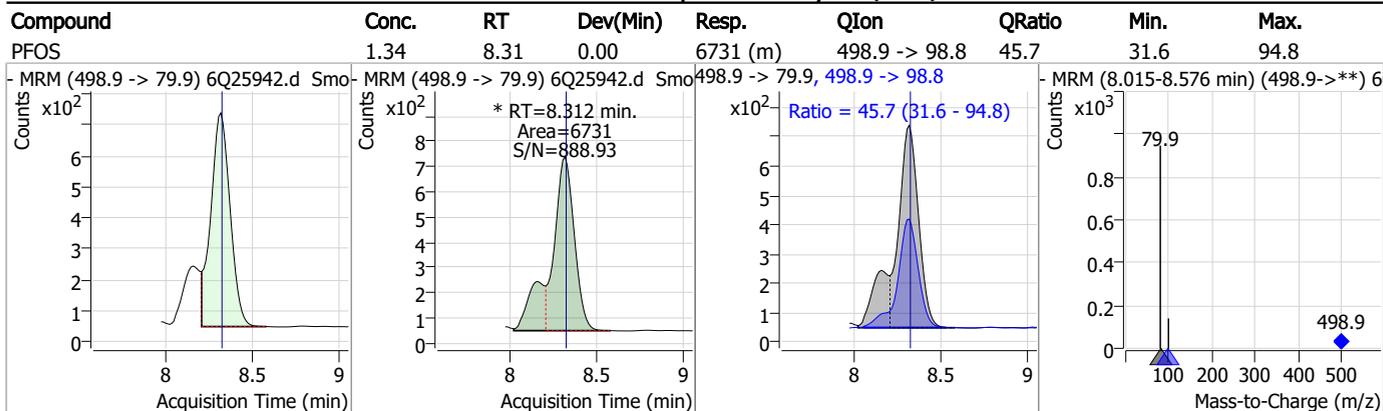
Perfluorinated Compounds by LC/MS/MS



7.7.4

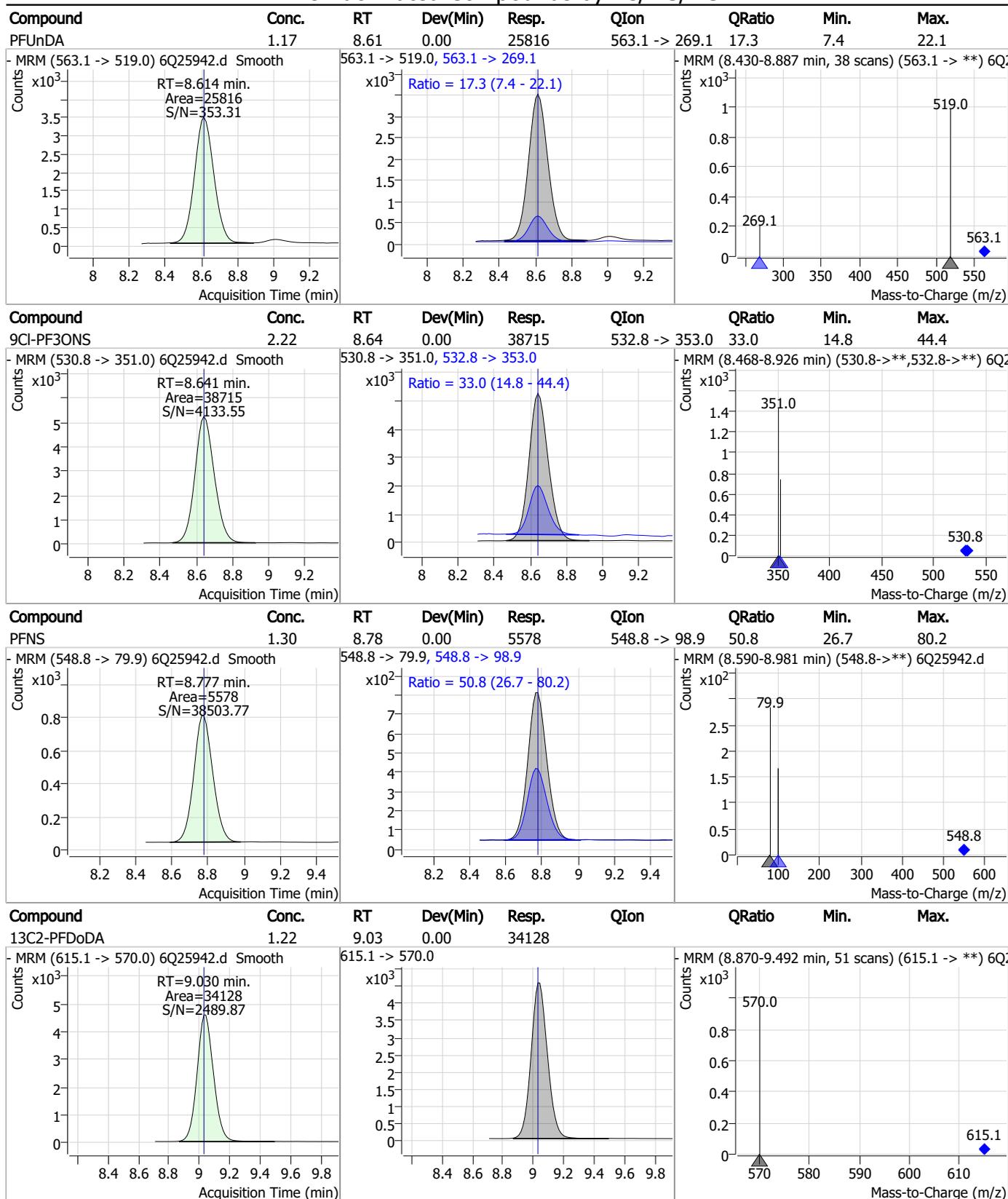
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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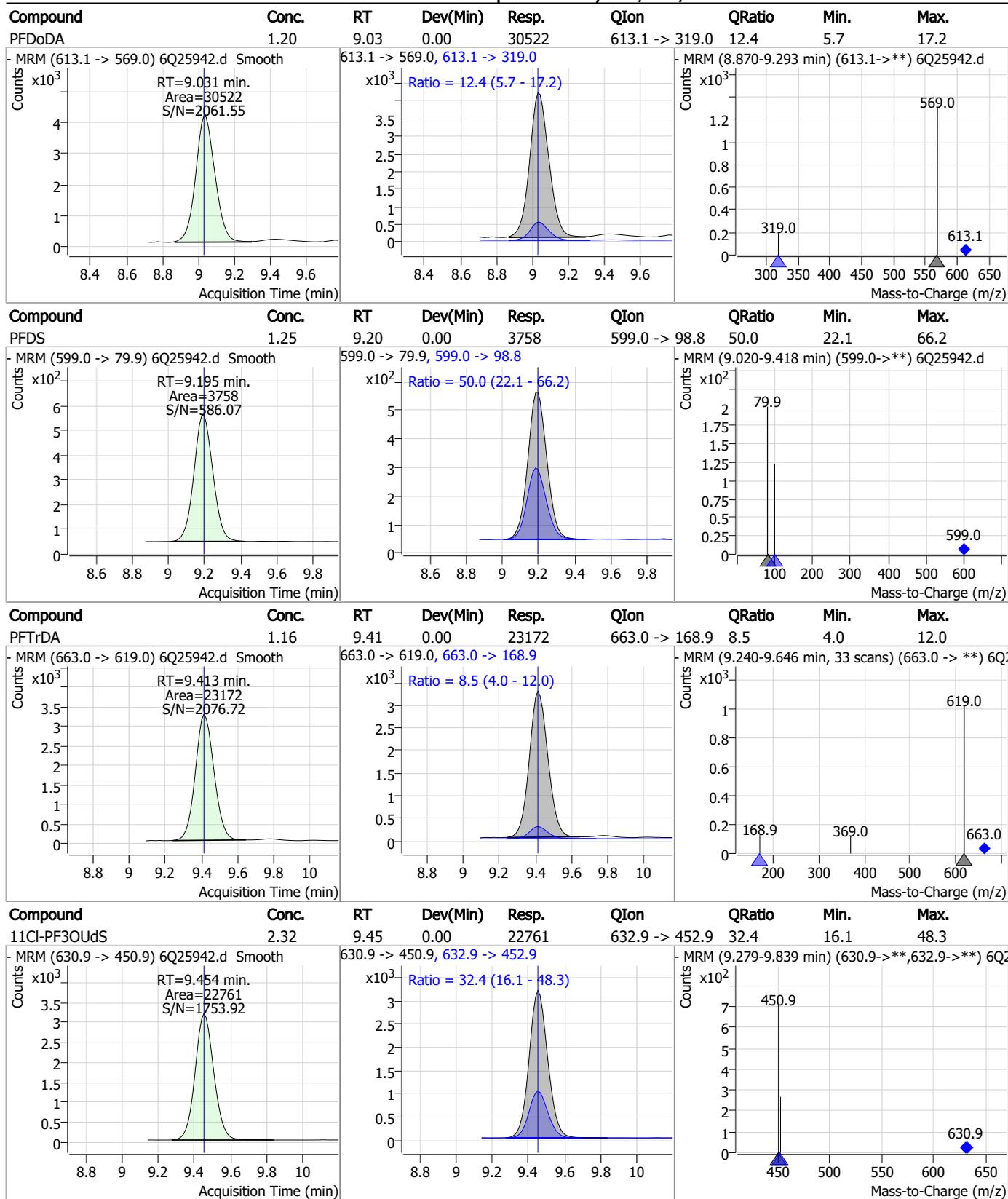
Perfluorinated Compounds by LC/MS/MS



7.7.4

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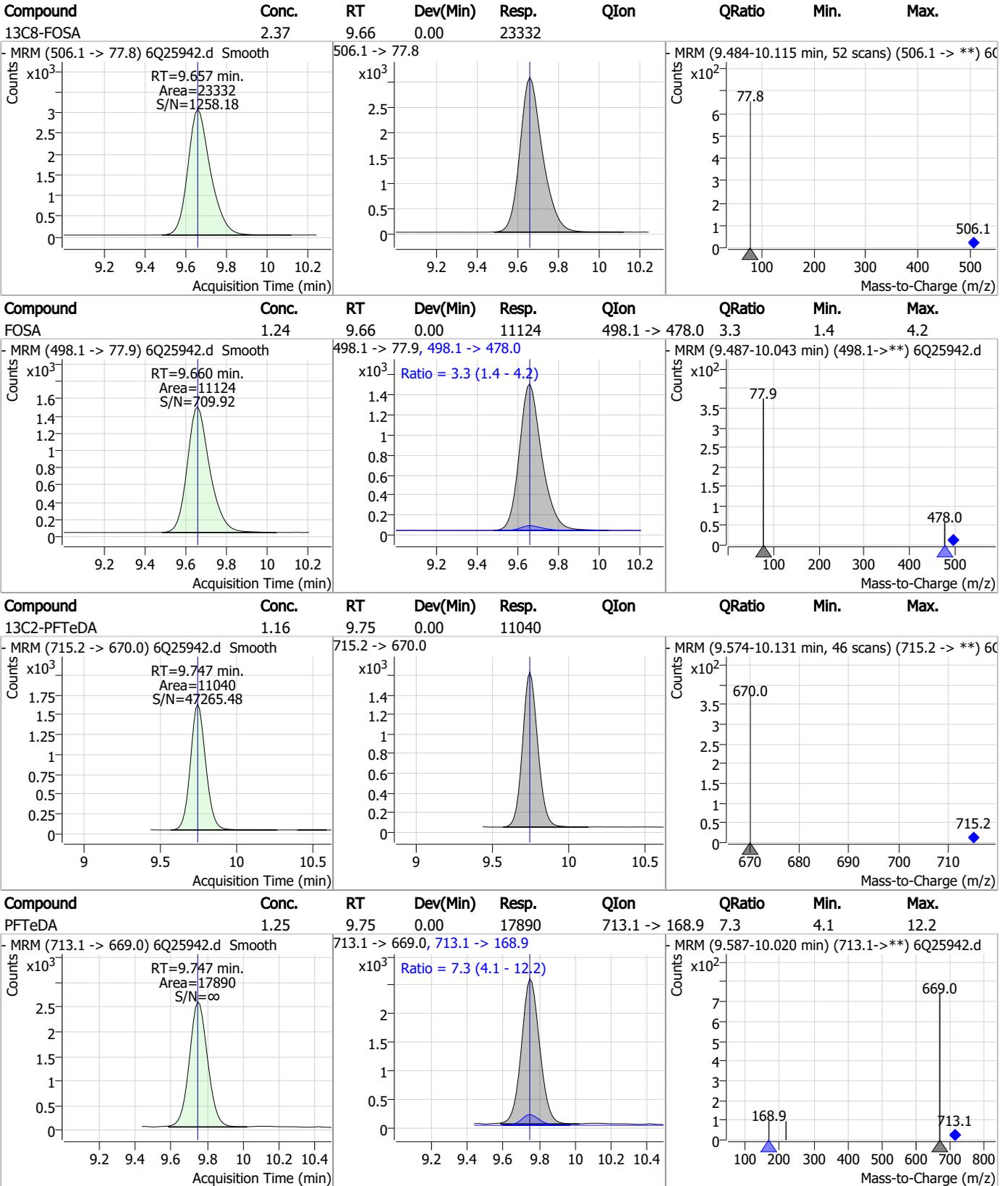
Perfluorinated Compounds by LC/MS/MS



7.7.4

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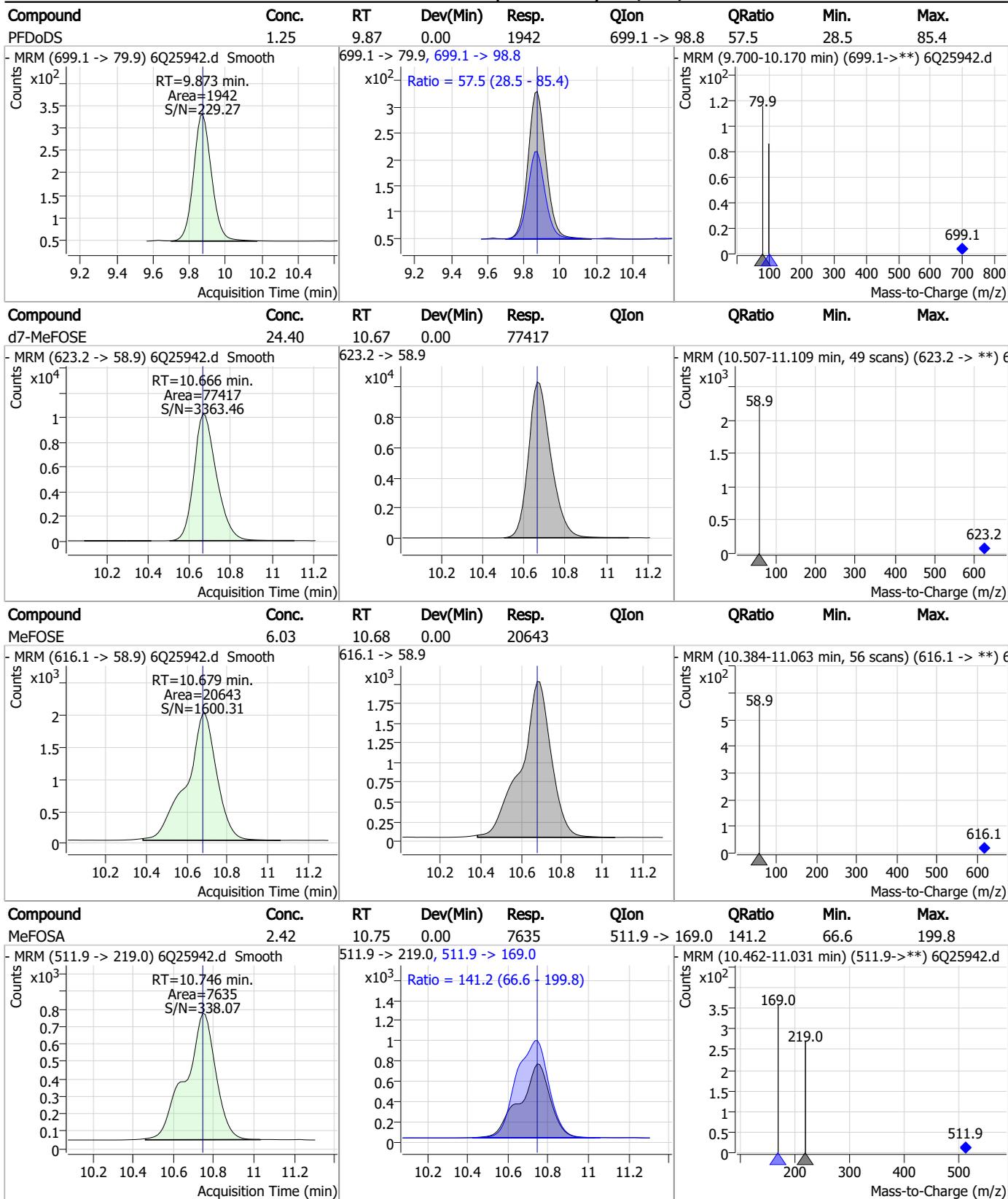
Perfluorinated Compounds by LC/MS/MS



7.7.4

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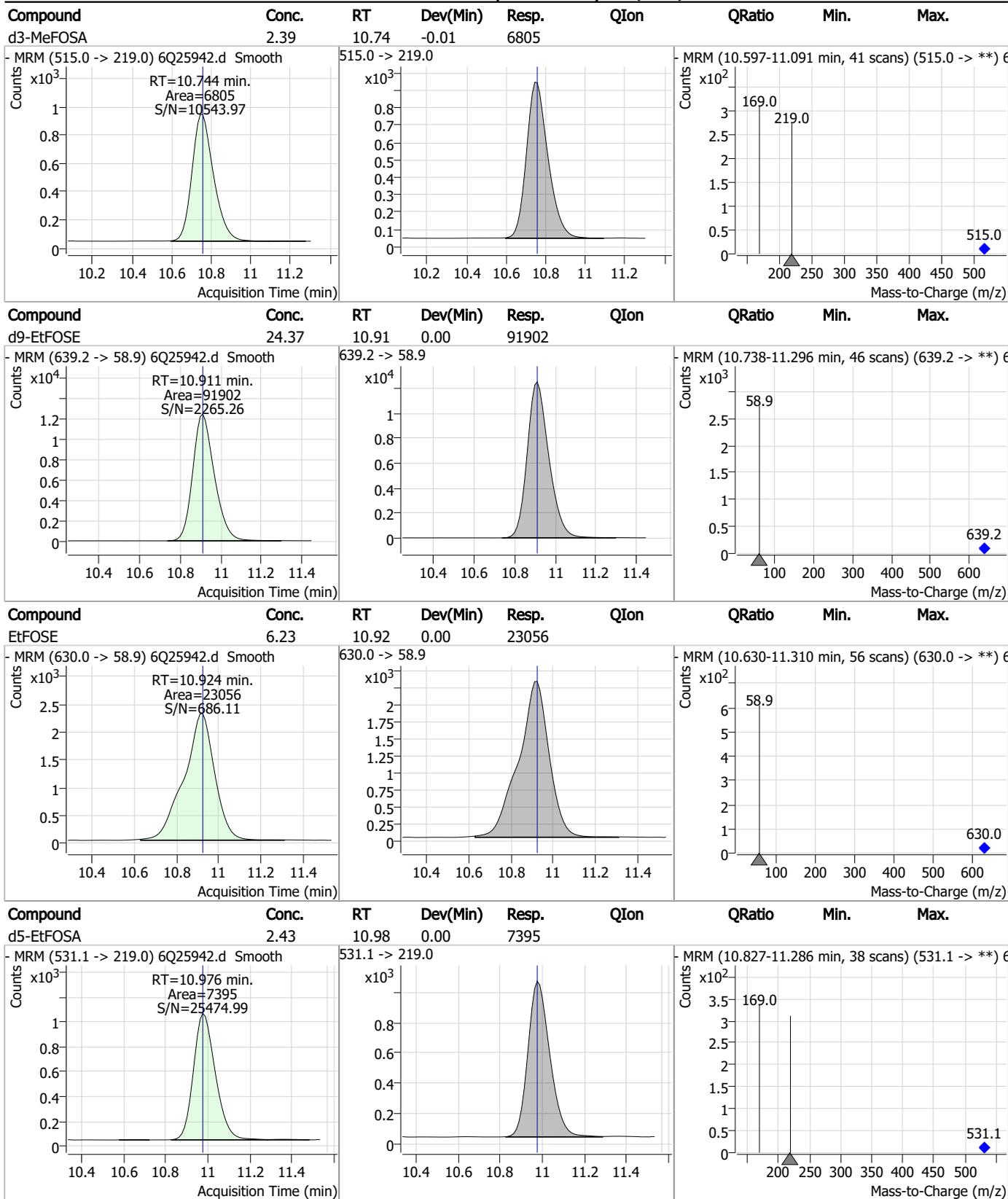
Perfluorinated Compounds by LC/MS/MS



7.7.4

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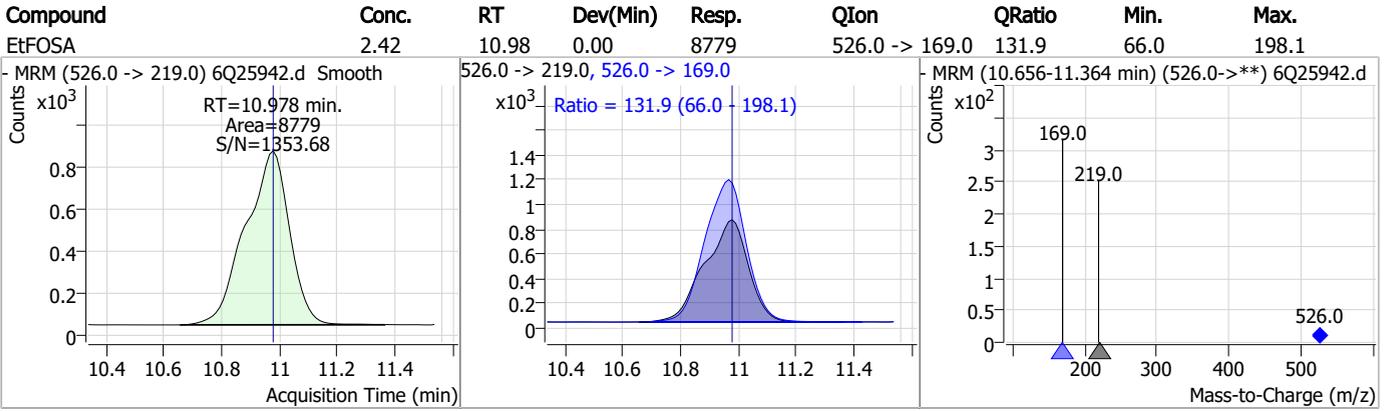
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25942.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 15:32 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.4.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25943.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 3:46:20 PM
 Sample Name : icc367-4
 Vial : P1-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	152074	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	52448	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	46878	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	48260	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	65453	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	26407	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	26972	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	28906	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	32080	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11090	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23752	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22107	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12223	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12836	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2141	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3056	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3137	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25539	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	33048	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	20411	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	77717	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	90051	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7609	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6485	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	10987	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	63052	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7147	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	73710	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	25576	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	26303	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	46690	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2141	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3056	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3137	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.7%		
13C2-PFDoDA	9.030	615.1 -> 570.0	32080	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11090	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFBS	5.497	302.1 -> 79.9	22107	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 109.2%		
13C3-PFHxS	7.263	402.1 -> 79.9	12223	2.69 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C4-PFBA	2.947	216.8 -> 171.9	152074	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.519	367.1 -> 322.0	48260	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	5.580	318.0 -> 273.0	46878	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	52448	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C6-PFDA	8.161	519.1 -> 474.1	26972	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C7-PFUnDA	8.614	570.0 -> 525.1	28906	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.657	506.1 -> 77.8	23752	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C8-PFOA	7.161	421.1 -> 376.0	65453	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOS	8.311	507.1 -> 79.9	12836	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C9-PFNA	7.680	472.1 -> 427.0	26407	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25539	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	33048	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d3-MeFOSA	10.757	515.0 -> 219.0	6485	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
d5-EtFOSAA	8.415	589.2 -> 419.0	20411	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	77717	26.56 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
d9-EtFOSE	10.911	639.2 -> 58.9	90051	25.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d5-EtFOSA	10.976	531.1 -> 219.0	7609	2.71 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	33690	9.49 µg/L	100
		327.1 -> 80.9	13122		
6:2FTS	6.937	427.1 -> 407.0	29775	10.72 µg/L	100
		427.1 -> 80.9	11534		
8:2FTS	7.950	527.1 -> 507.0	22791	10.43 µg/L	100
		527.1 -> 80.8	8039		
EtFOSAA	8.416	584.2 -> 419.1	8640	2.60 µg/L	m 99
		584.2 -> 526.0	5347		
FOSA	9.660	498.1 -> 77.9	21147	2.33 µg/L	100
		498.1 -> 478.0	591		
MeFOSAA	8.220	570.1 -> 419.0	11298	2.37 µg/L	100
		570.1 -> 483.0	2394		
PFBA	2.956	212.8 -> 168.9	55102	9.73 µg/L	100
PFBS	5.511	298.7 -> 79.9	13994	2.11 µg/L	100
		298.7 -> 98.8	5165		
PFDA	8.161	512.9 -> 469.0	53534	2.54 µg/L	100
		512.9 -> 219.0	8270		
PFDODA	9.031	613.1 -> 569.0	59924	2.51 µg/L	100
		613.1 -> 319.0	6861		
PFDS	9.195	599.0 -> 79.9	7498	2.28 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3310			
PFHpA	6.520	363.1 -> 319.0	62717	2.40	µg/L	100
		363.1 -> 169.0	9186			
PFHpS	7.819	449.0 -> 79.9	11231	2.12	µg/L	100
		449.0 -> 98.9	5497			
PFHxA	5.582	313.0 -> 269.0	40735	2.43	µg/L	100
		313.0 -> 118.9	2059			
PFHxS	7.264	398.7 -> 79.9	10871	2.13	µg/L	m 95
		398.7 -> 98.9	5425			
PFNA	7.680	463.0 -> 419.0	37937	2.33	µg/L	100
		463.0 -> 219.0	9235			
PFNS	8.777	548.8 -> 79.9	9913	2.12	µg/L	100
		548.8 -> 98.9	5302			
PFOA	7.163	413.0 -> 369.0	64026	2.28	µg/L	100
		413.0 -> 169.0	11828			
PFOS	8.312	498.9 -> 79.9	11710	2.14	µg/L	m 83
		498.9 -> 98.8	5848			
PFPeA	4.374	263.0 -> 219.0	55635	4.92	µg/L	100
PFPeS	6.571	349.1 -> 79.9	15362	2.33	µg/L	100
		349.1 -> 98.9	6719			
PFTeDA	9.747	713.1 -> 669.0	33418	2.32	µg/L	100
		713.1 -> 168.9	2717			
PFTrDA	9.413	663.0 -> 619.0	47404	2.53	µg/L	100
		663.0 -> 168.9	3786			
PFUnDA	8.614	563.1 -> 519.0	53091	2.61	µg/L	100
		563.1 -> 269.1	7818			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	43817	4.47	µg/L	100
		632.9 -> 452.9	14104			
9Cl-PF3ONS	8.641	530.8 -> 351.0	78291	4.50	µg/L	100
		532.8 -> 353.0	23178			
ADONA	6.767	376.9 -> 250.9	204174	4.50	µg/L	100
		376.9 -> 84.8	56251			
HFPO-DA	5.958	284.9 -> 168.9	15677	4.79	µg/L	100
		284.9 -> 184.9	1894			
3:3FTCA	3.808	241.0 -> 177.0	9667	11.85	µg/L	100
		241.0 -> 117.0	1301			
5:3FTCA	6.233	341.0 -> 237.1	201201	64.04	µg/L	100
		341.0 -> 217.0	143441			
7:3FTCA	7.632	441.0 -> 316.9	119228	62.13	µg/L	100
		441.0 -> 336.9	239856			
EtFOSA	10.978	526.0 -> 219.0	17180	4.60	µg/L	100
		526.0 -> 169.0	22686			
EtFOSE	10.924	630.0 -> 58.9	43451	11.99	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	15783	5.25	µg/L	100
		511.9 -> 169.0	21022			
MeFOSE	10.679	616.1 -> 58.9	40215	11.71	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	3877	2.27	µg/L	100
		699.1 -> 98.8	2207			
NFDHA	5.462	295.0 -> 201.0	10804	5.13	µg/L	100
		295.0 -> 84.9	2967			
PFMBA	4.800	279.0 -> 85.1	43080	5.00	µg/L	100
PFMPA	3.513	229.0 -> 84.9	35121	4.93	µg/L	100
PFEESA	6.050	314.8 -> 134.9	94071	4.36	µg/L	100
		314.8 -> 82.9	3388			

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

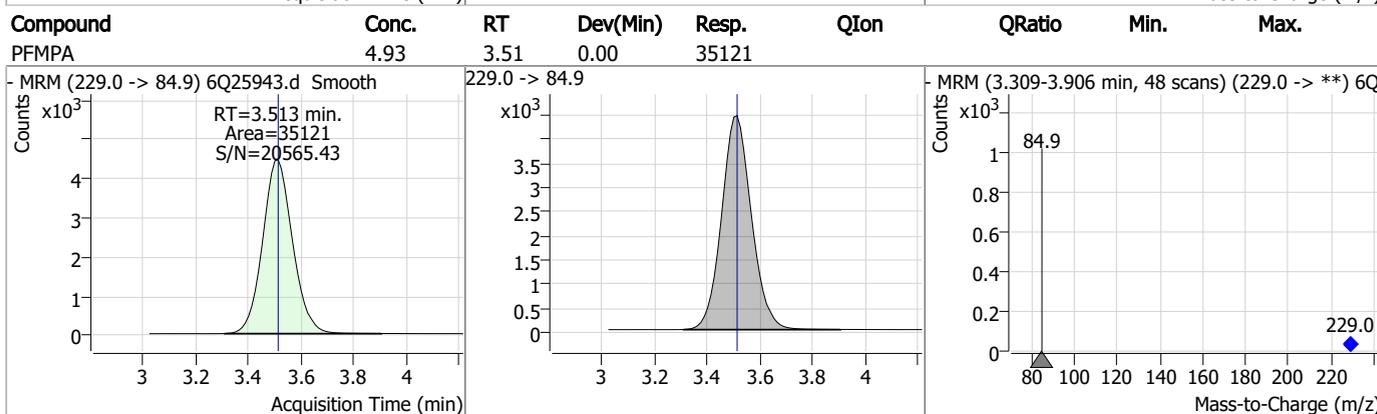
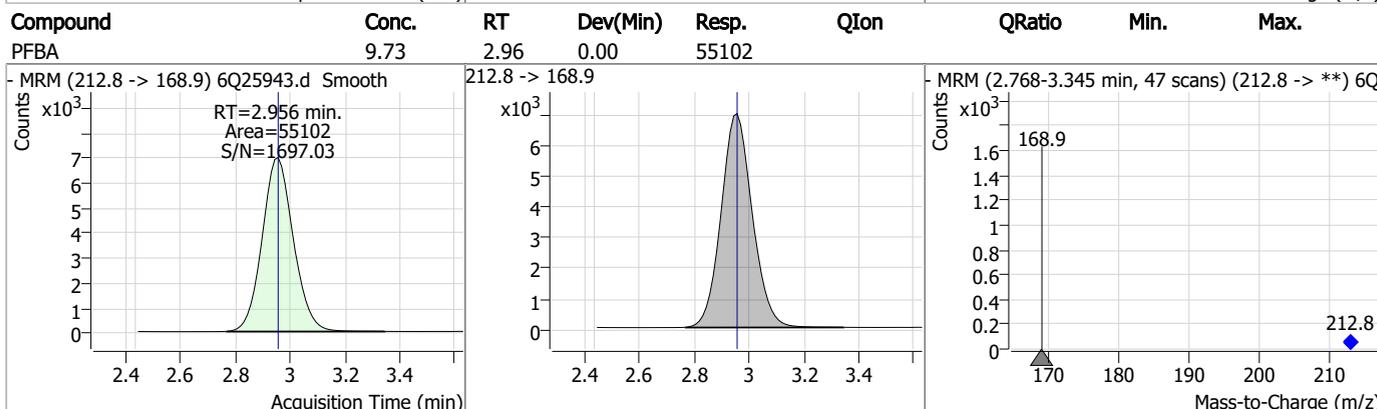
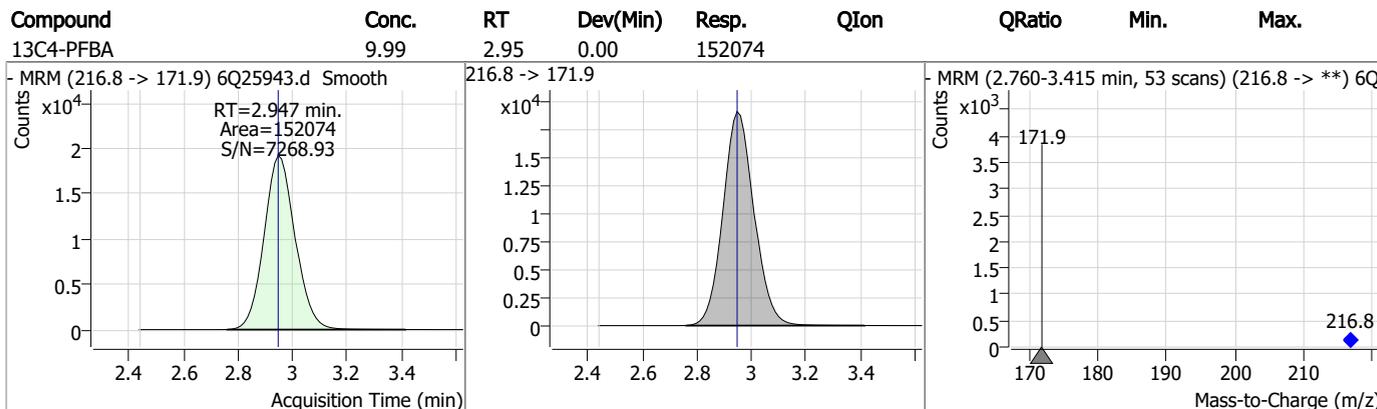
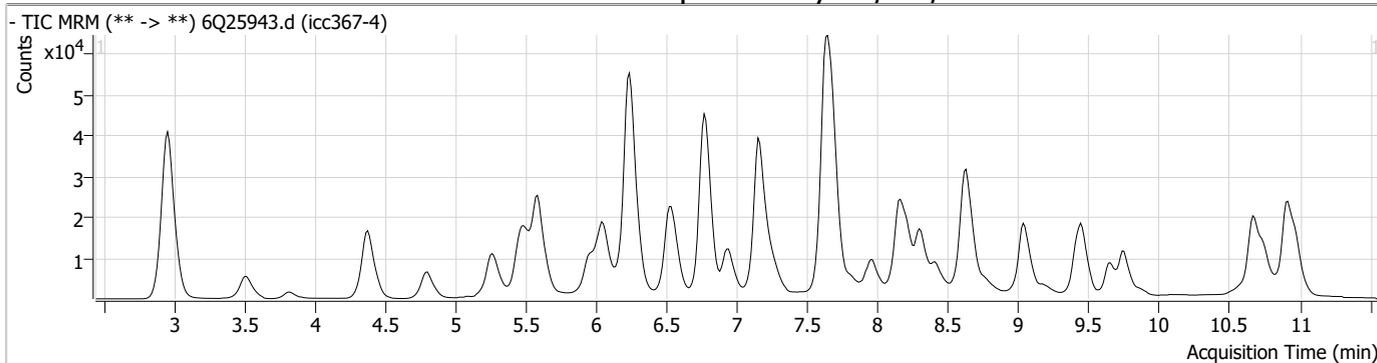
Perfluorinated Compounds by LC/MS/MS

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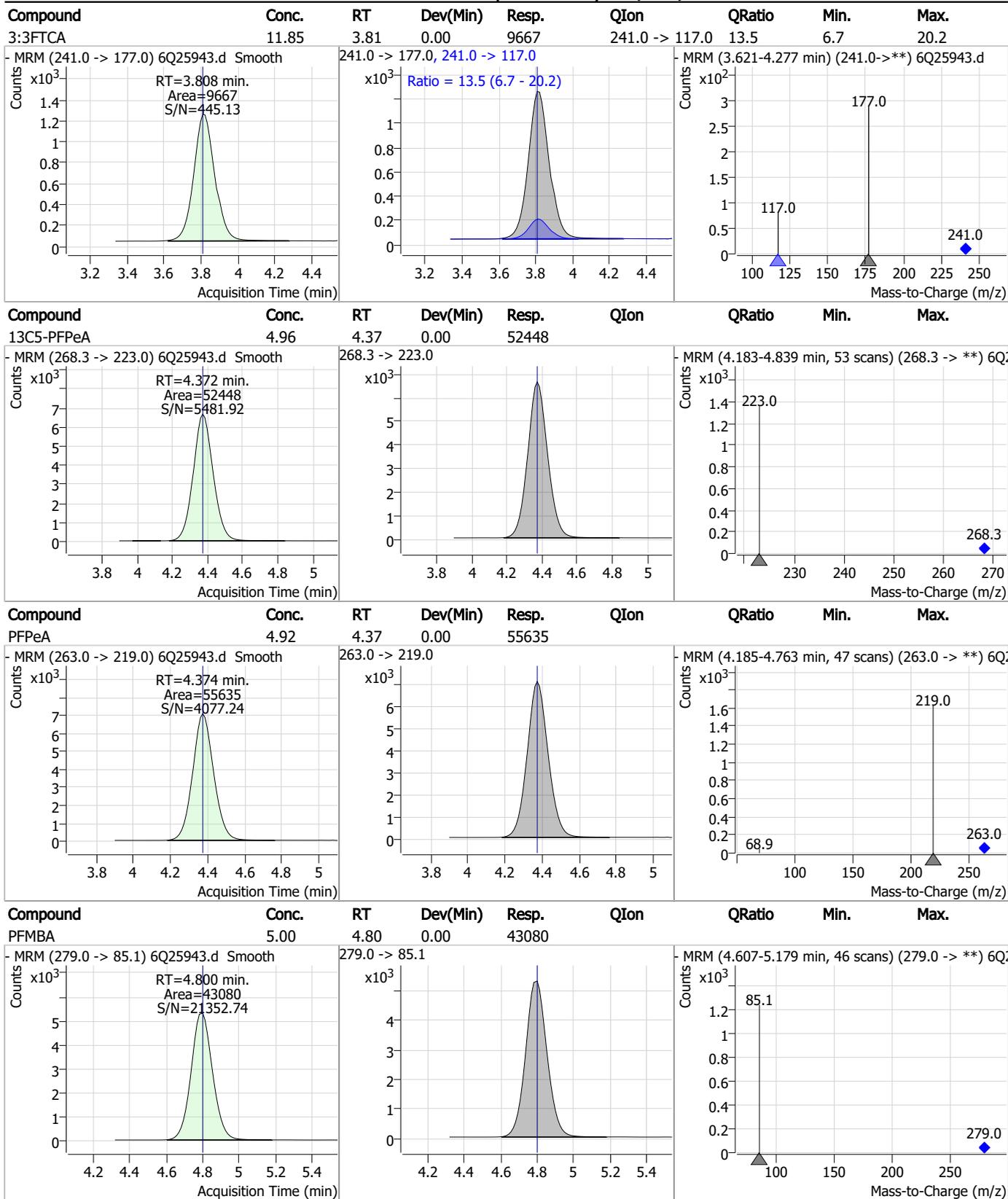
7.7.5

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Perfluorinated Compounds by LC/MS/MS

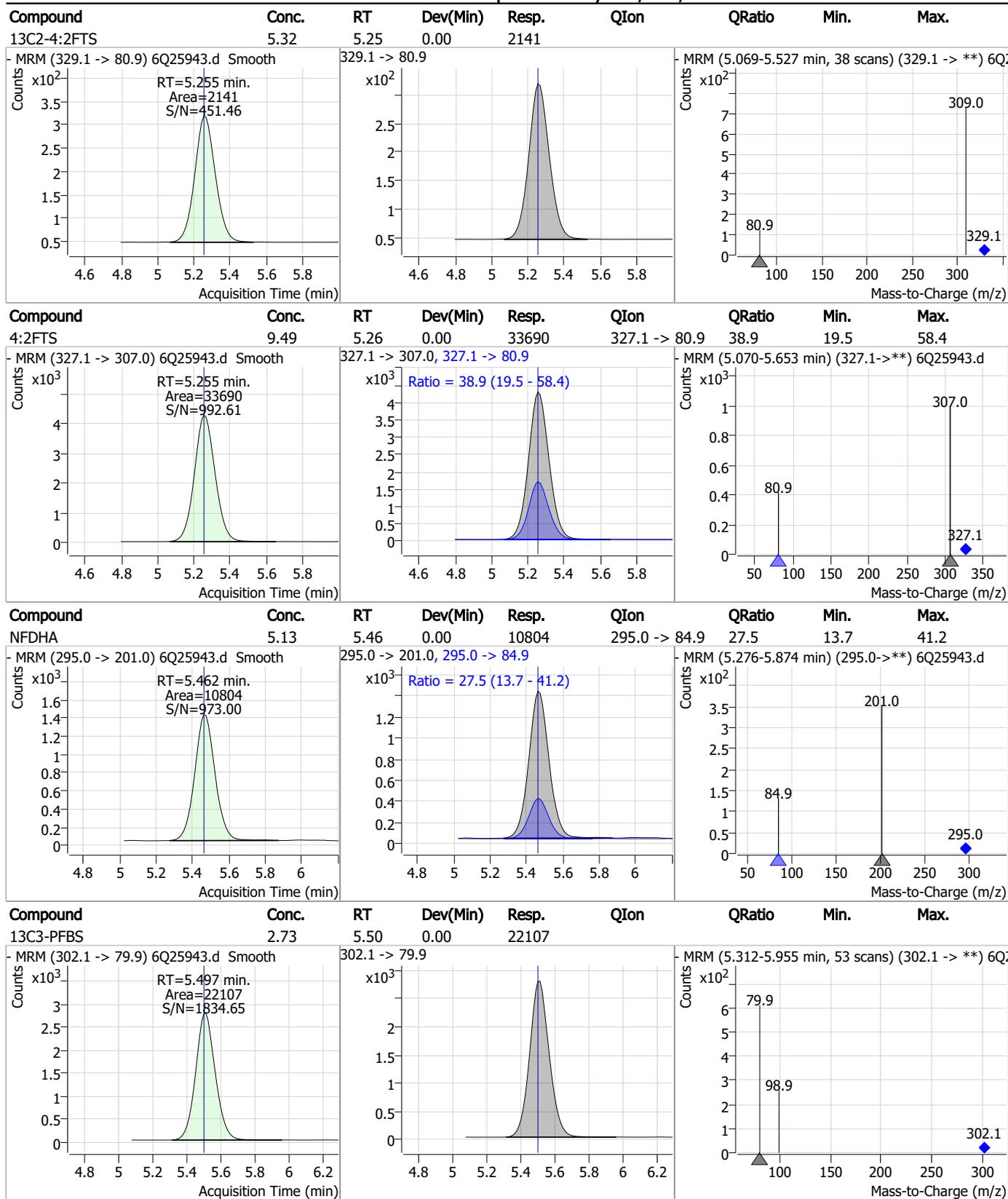


Perfluorinated Compounds by LC/MS/MS



7.7.5
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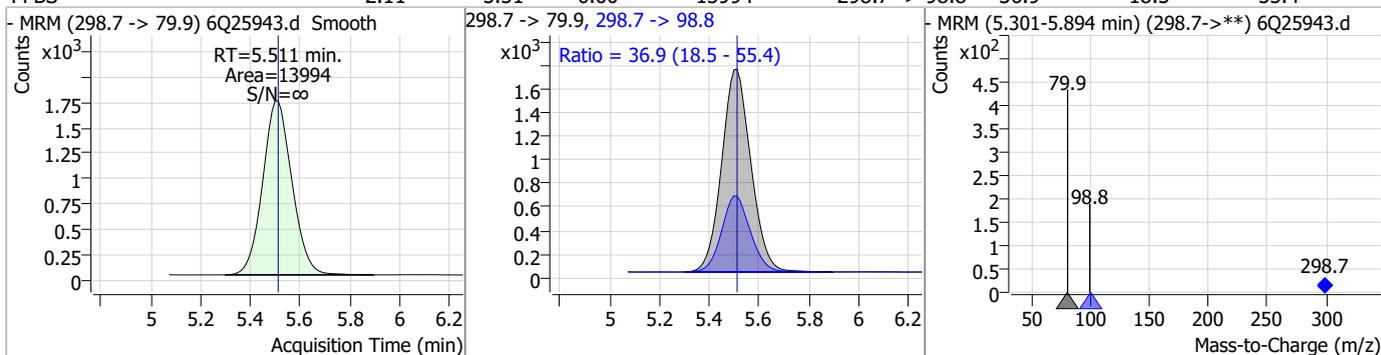
Perfluorinated Compounds by LC/MS/MS



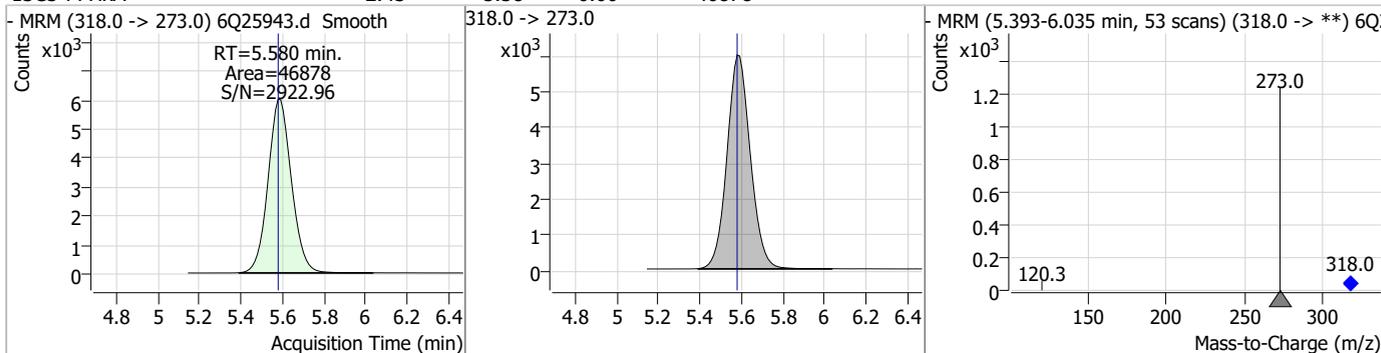
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Perfluorinated Compounds by LC/MS/MS

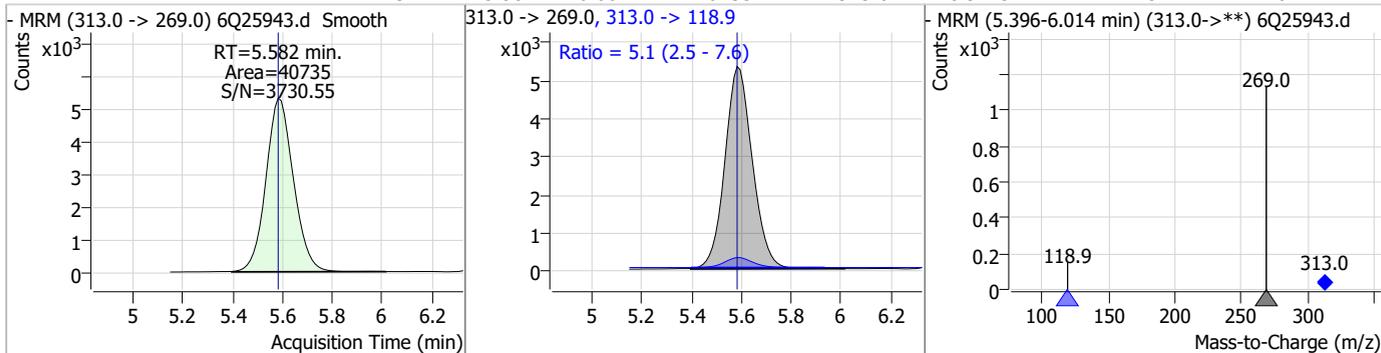
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.11	5.51	0.00	13994	298.7 -> 98.8	36.9	18.5	55.4



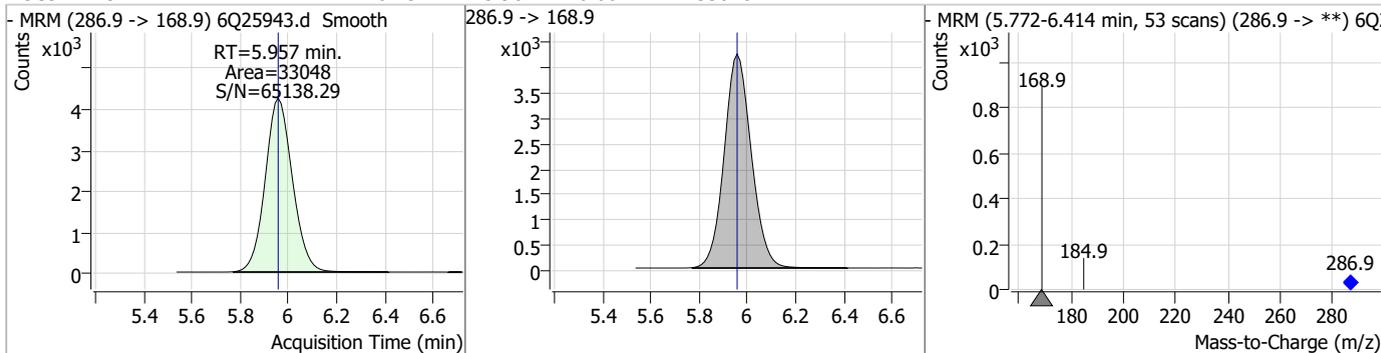
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	5.58	0.00	46878				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.43	5.58	0.00	40735	313.0 -> 118.9	5.1	2.5	7.6

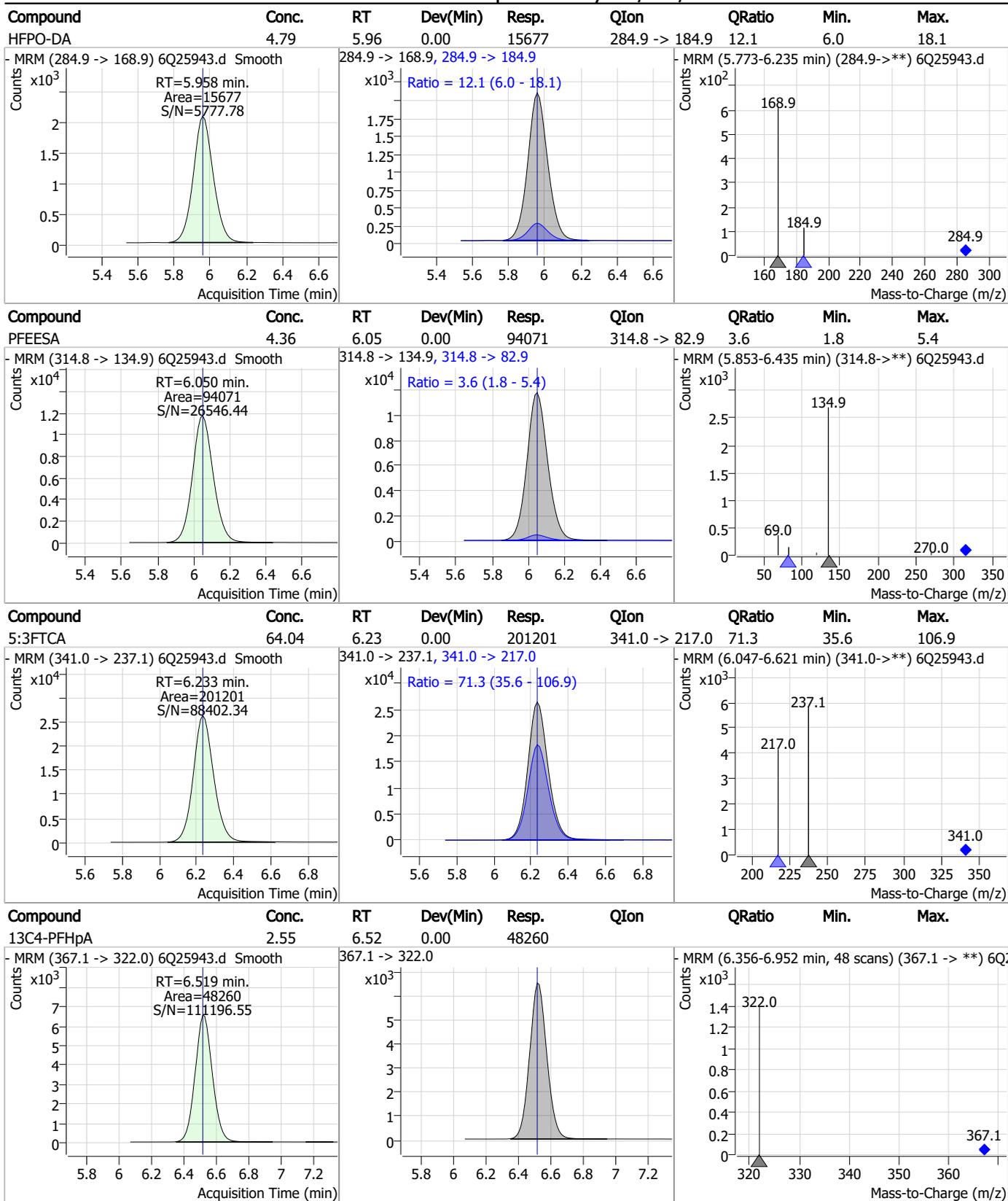


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.15	5.96	0.00	33048				



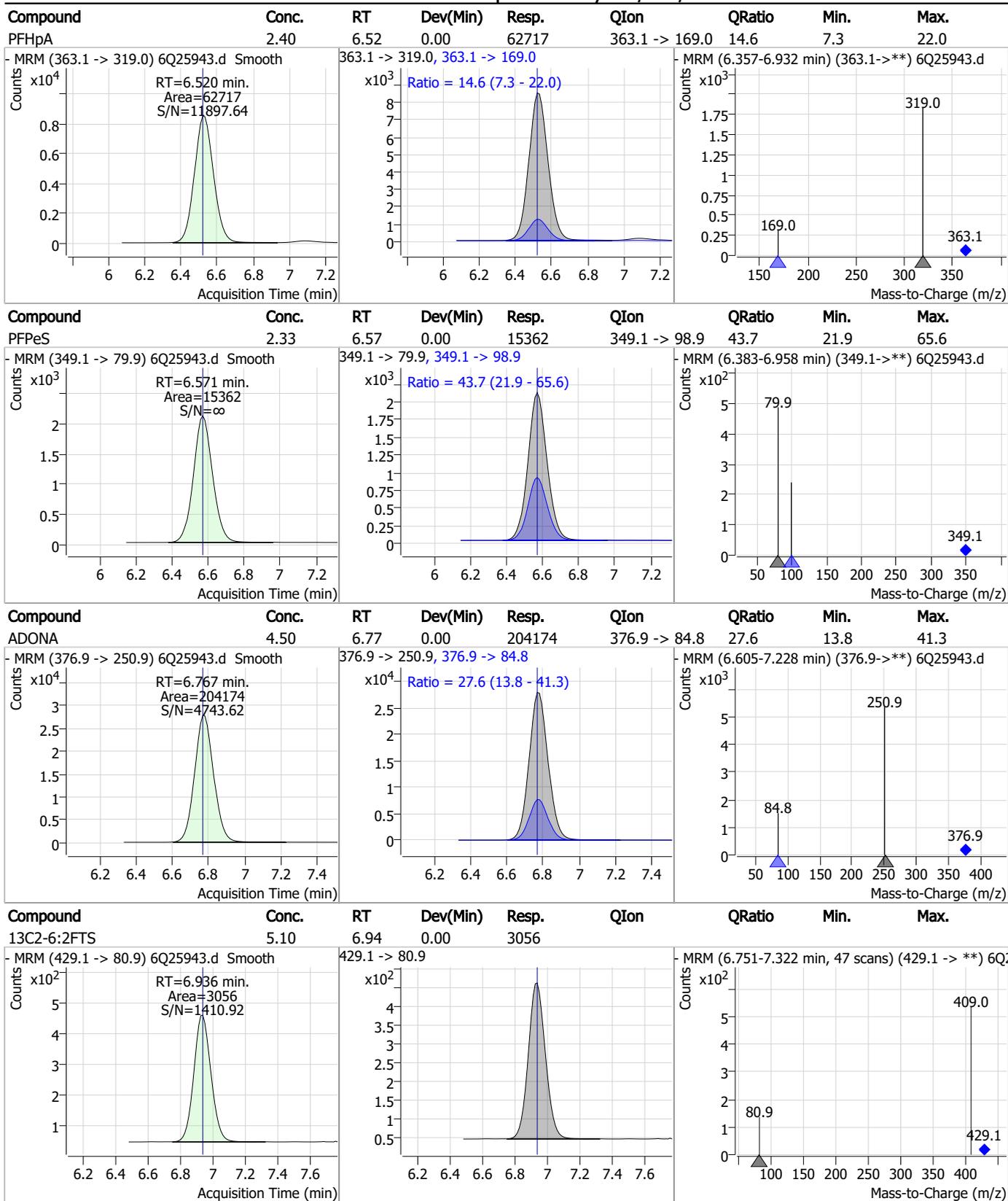
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Perfluorinated Compounds by LC/MS/MS



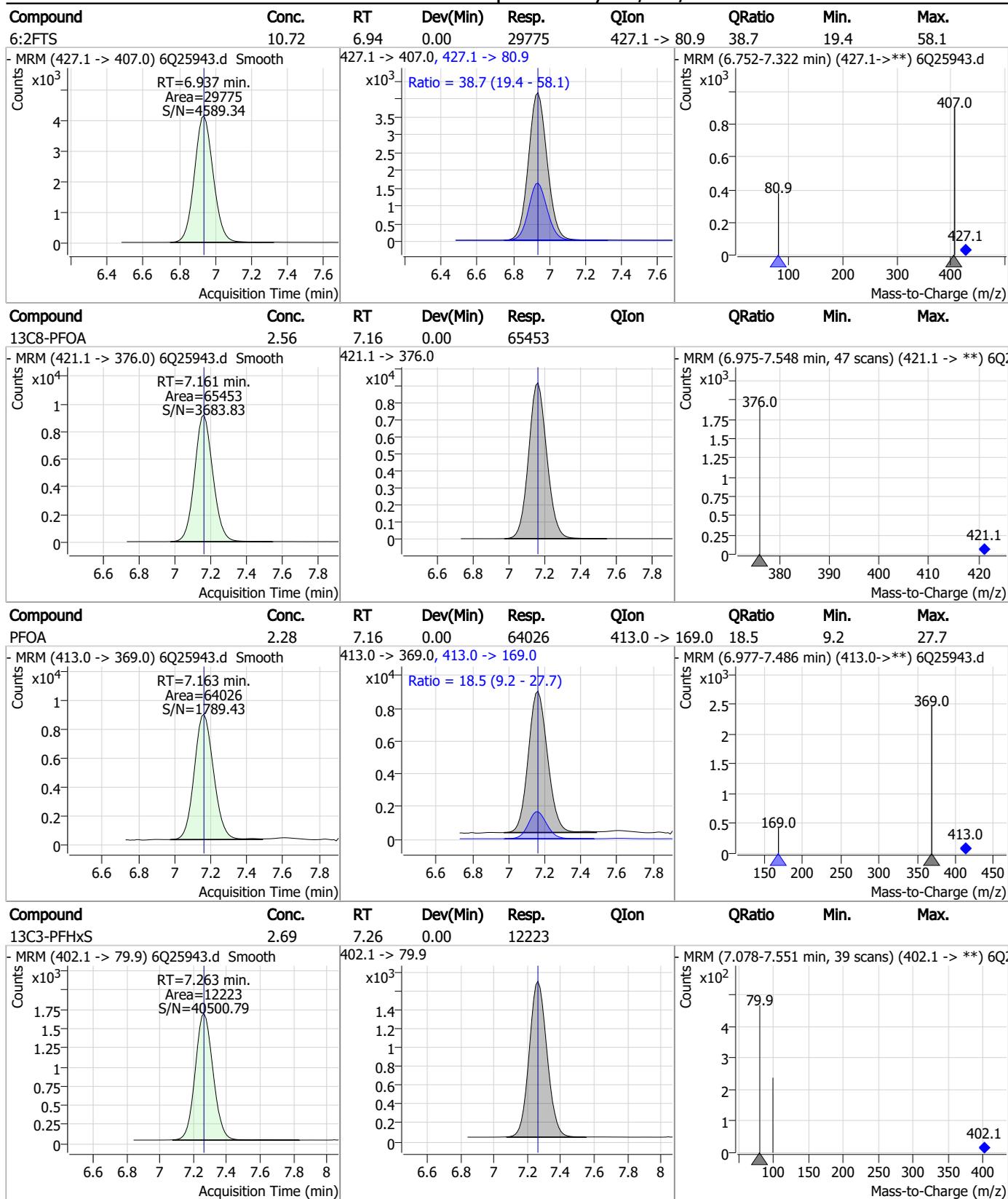
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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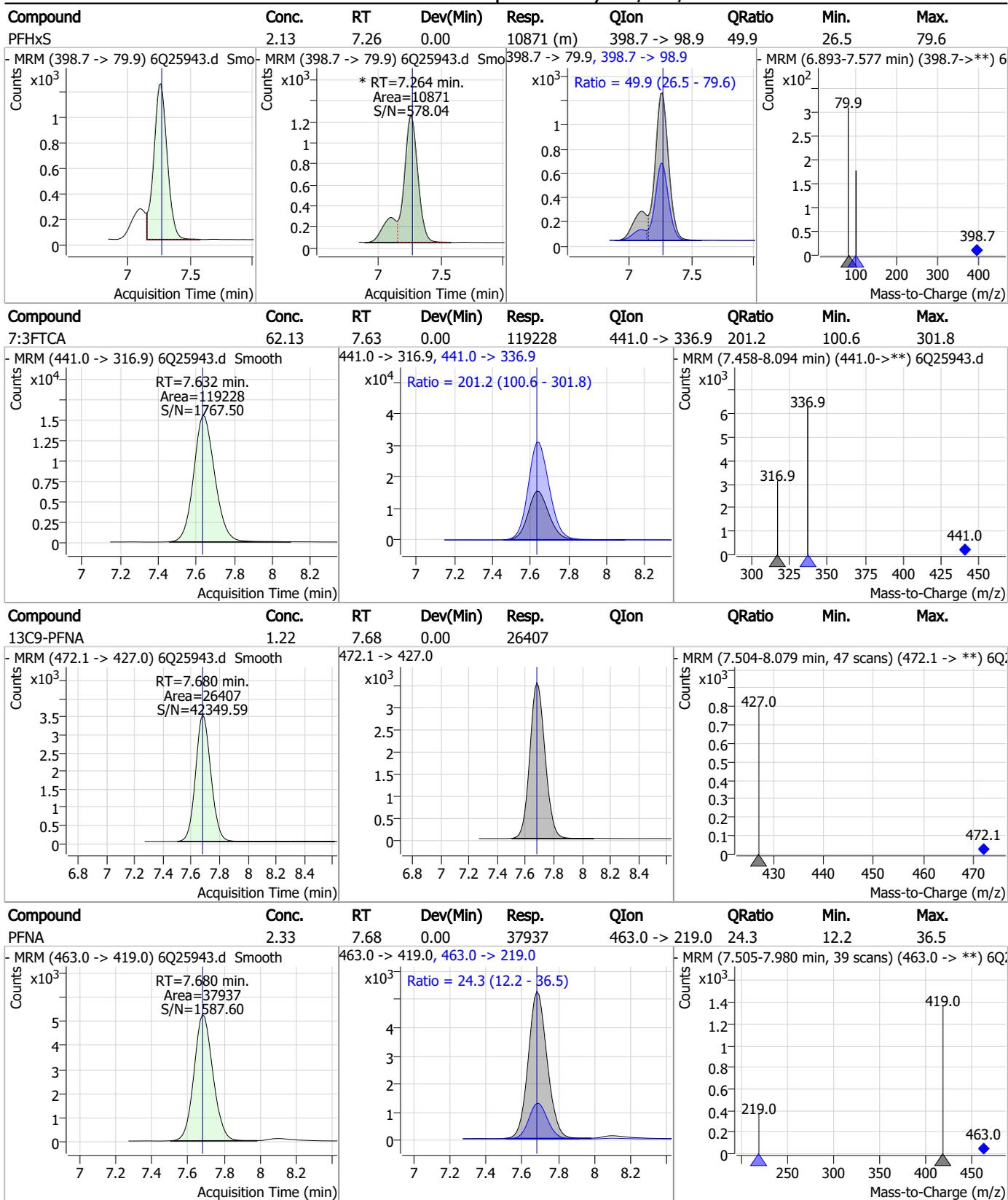
Perfluorinated Compounds by LC/MS/MS



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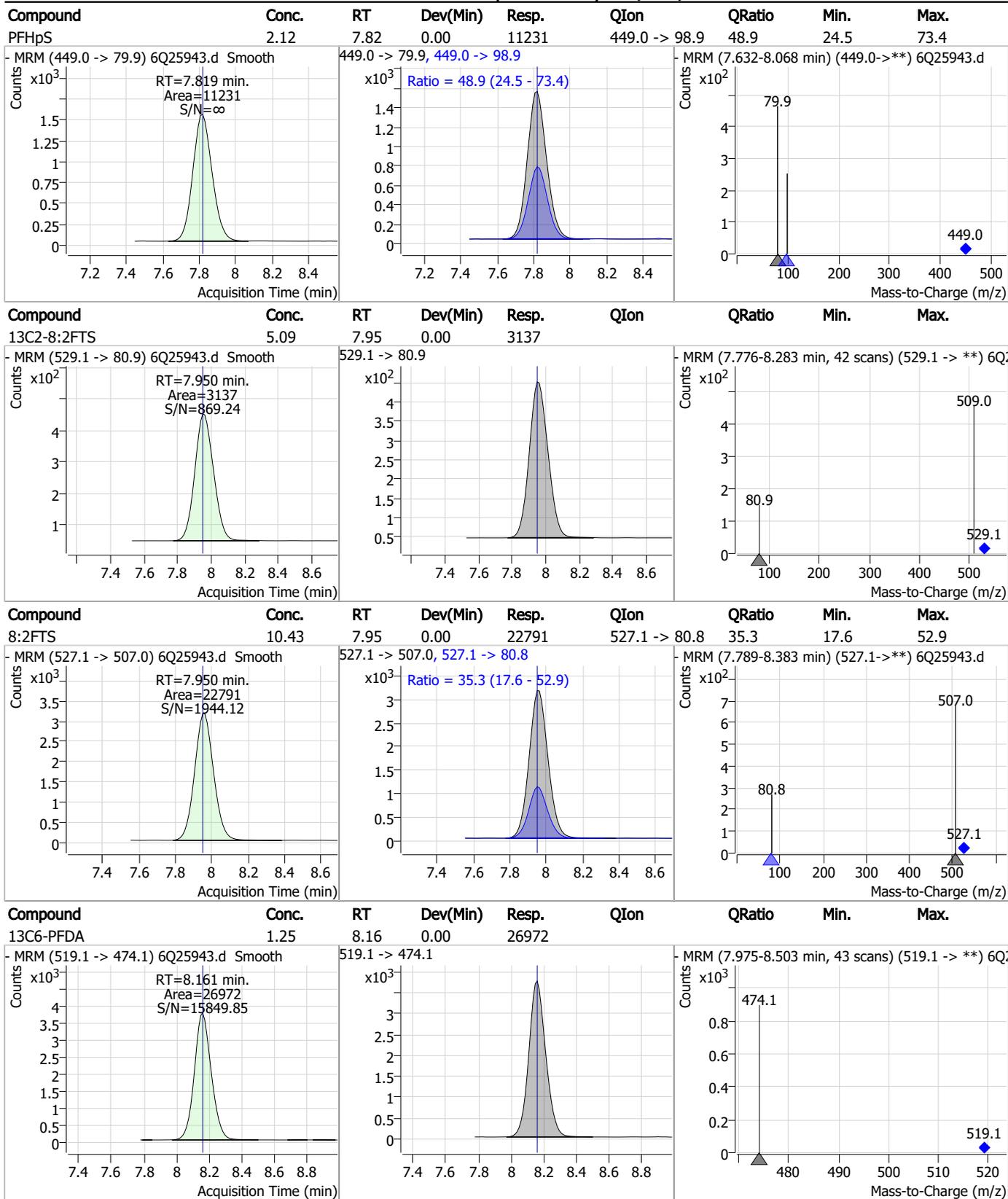
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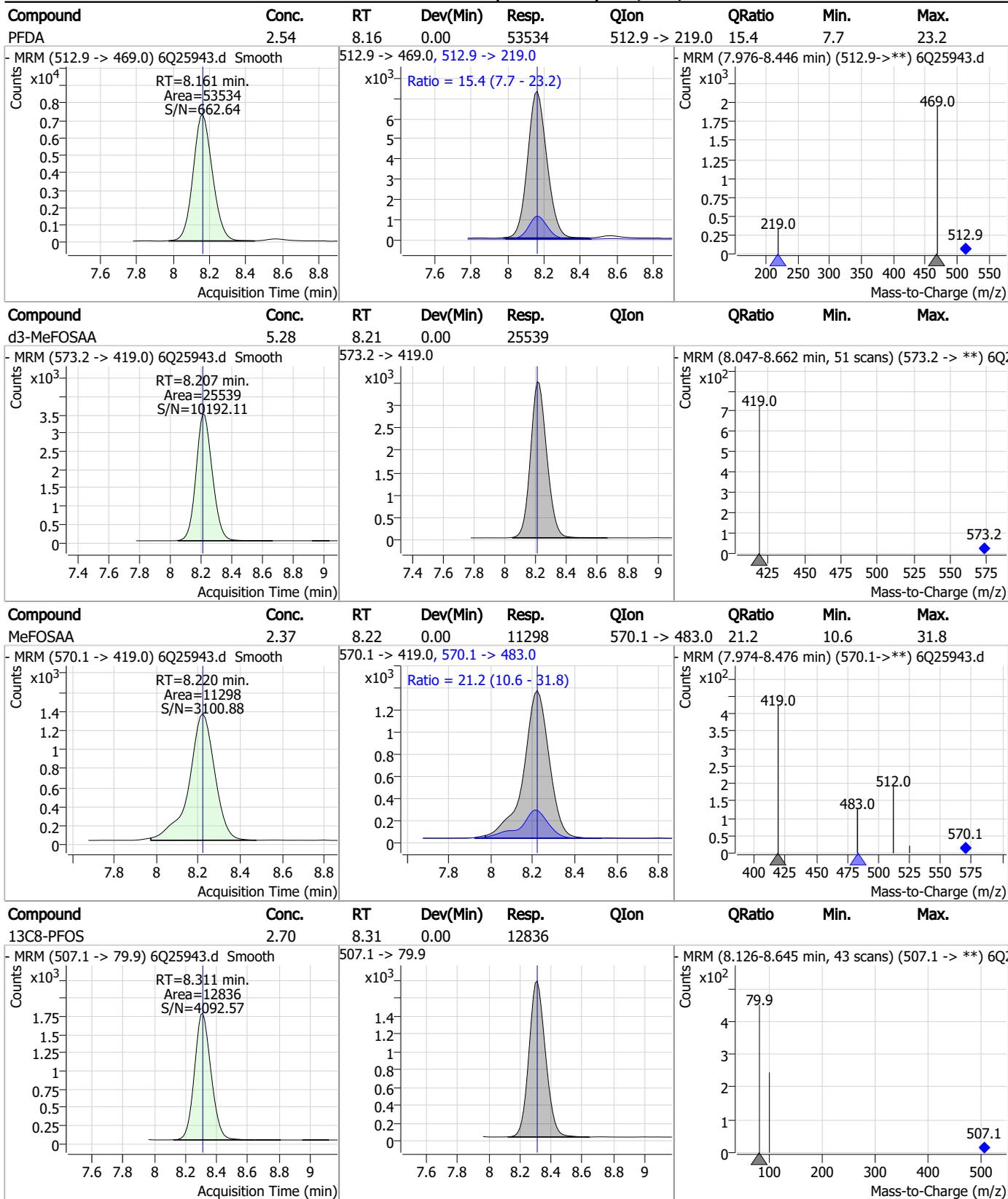
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Perfluorinated Compounds by LC/MS/MS



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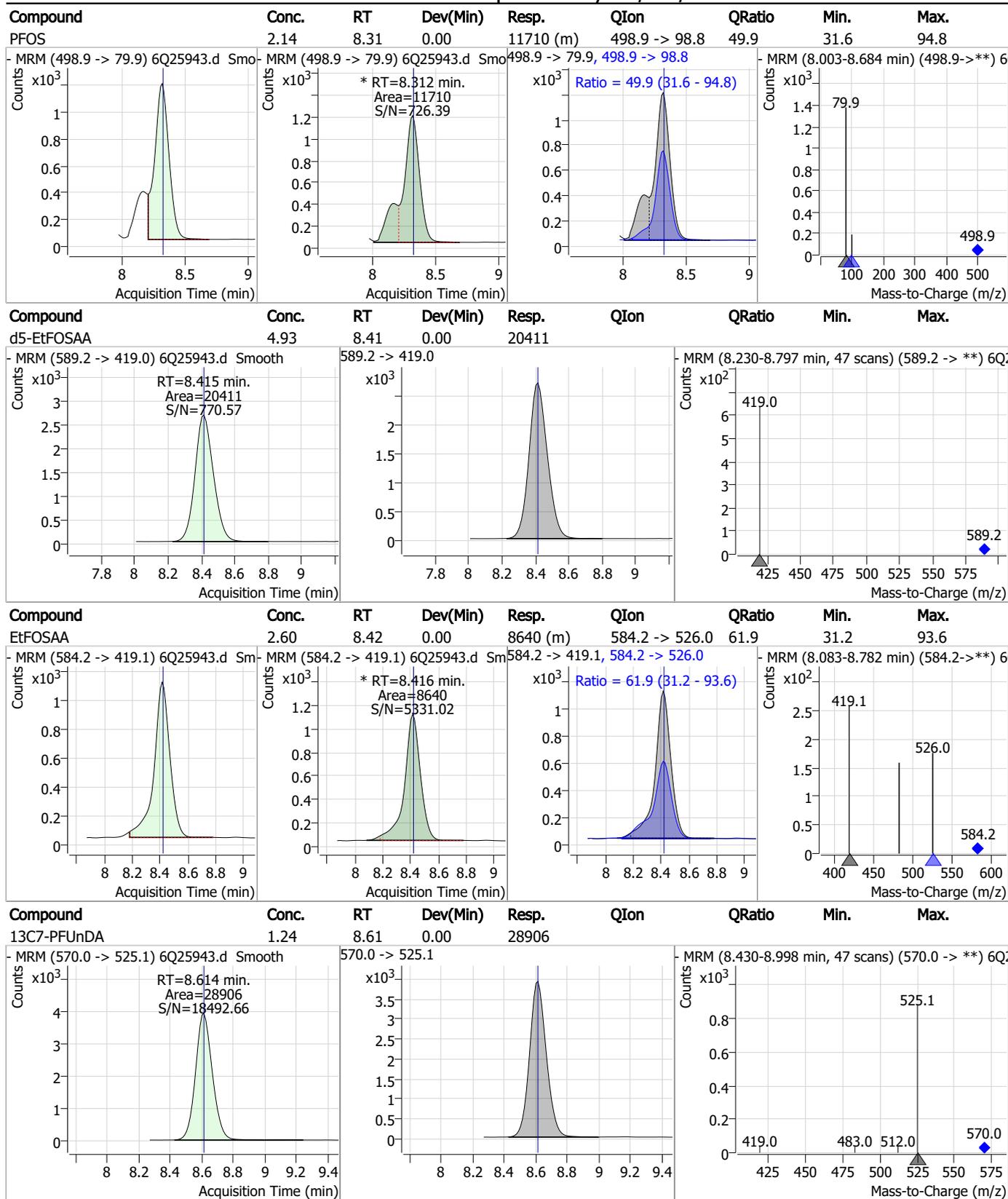
Perfluorinated Compounds by LC/MS/MS



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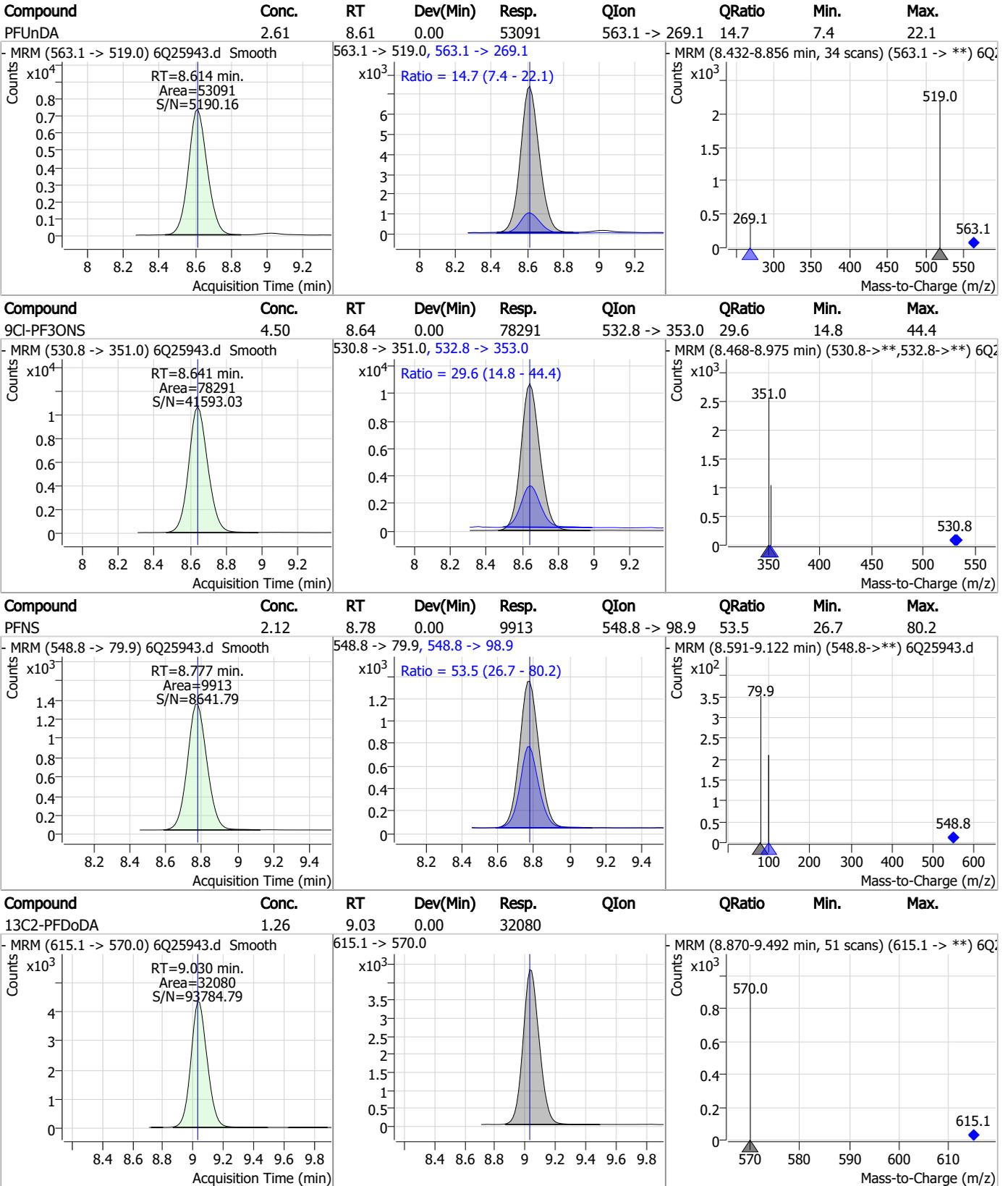
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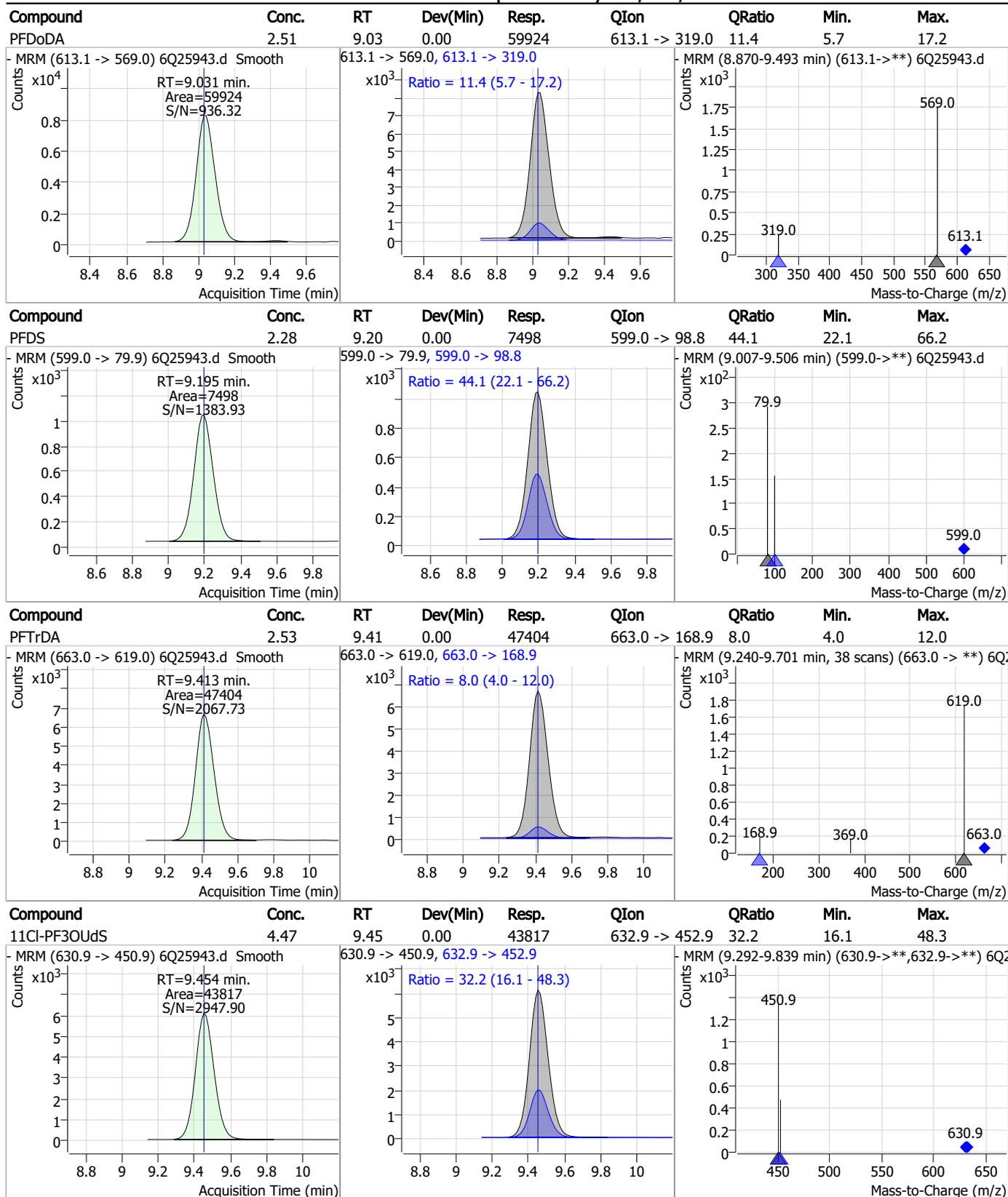
Perfluorinated Compounds by LC/MS/MS



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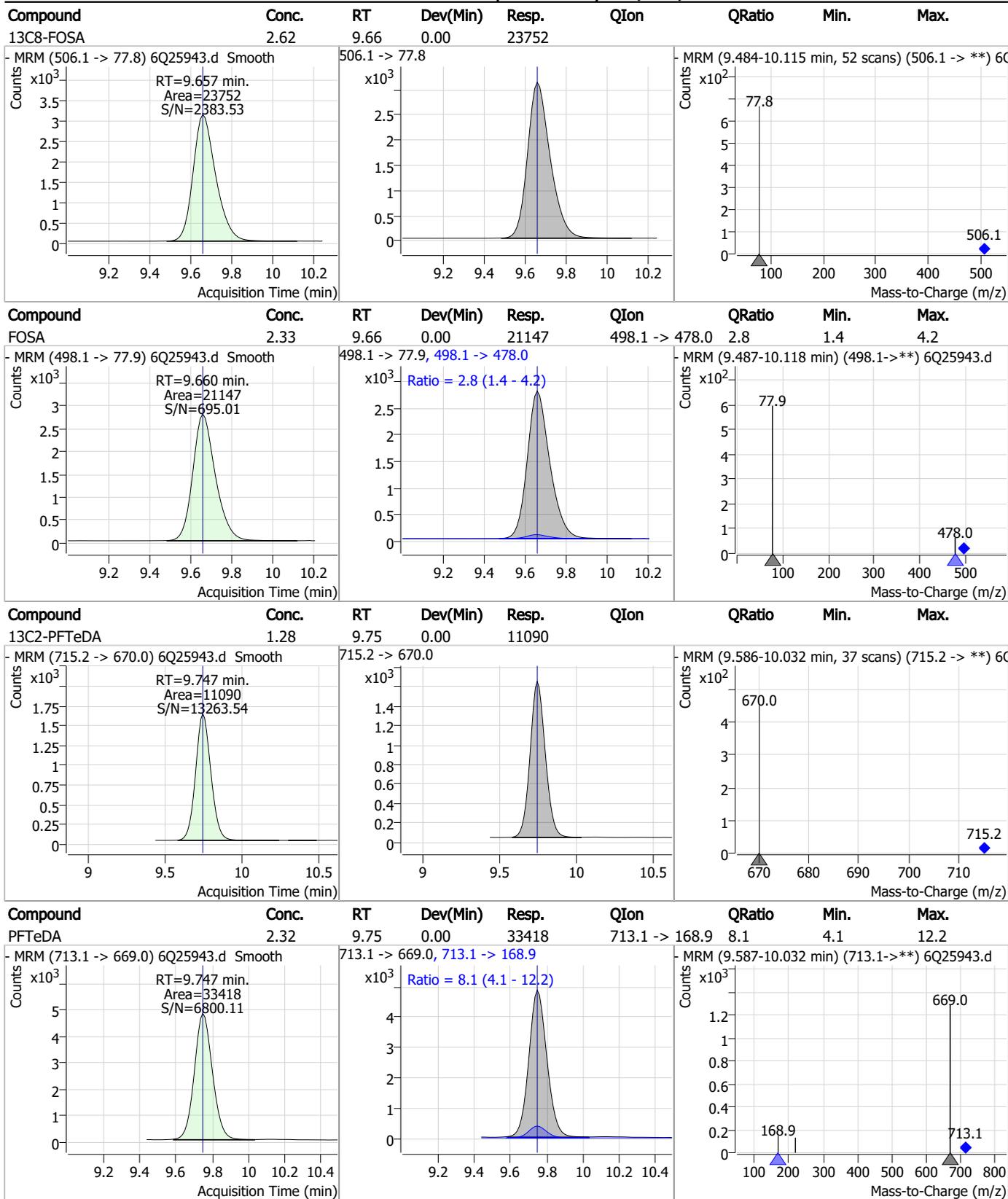
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Perfluorinated Compounds by LC/MS/MS



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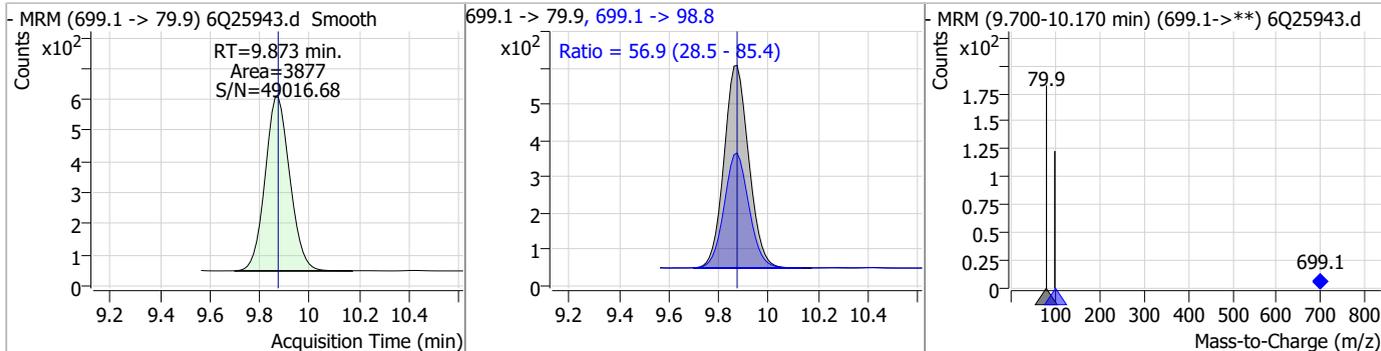
Perfluorinated Compounds by LC/MS/MS



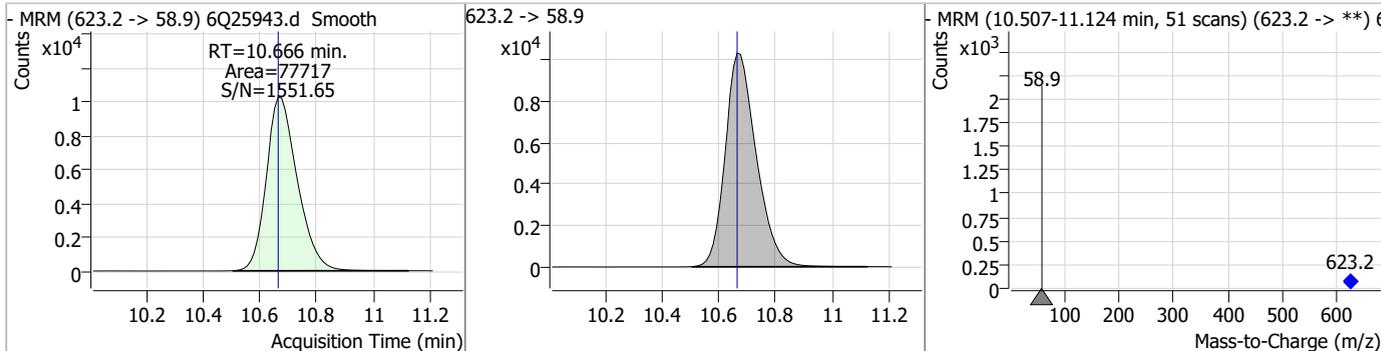
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Perfluorinated Compounds by LC/MS/MS

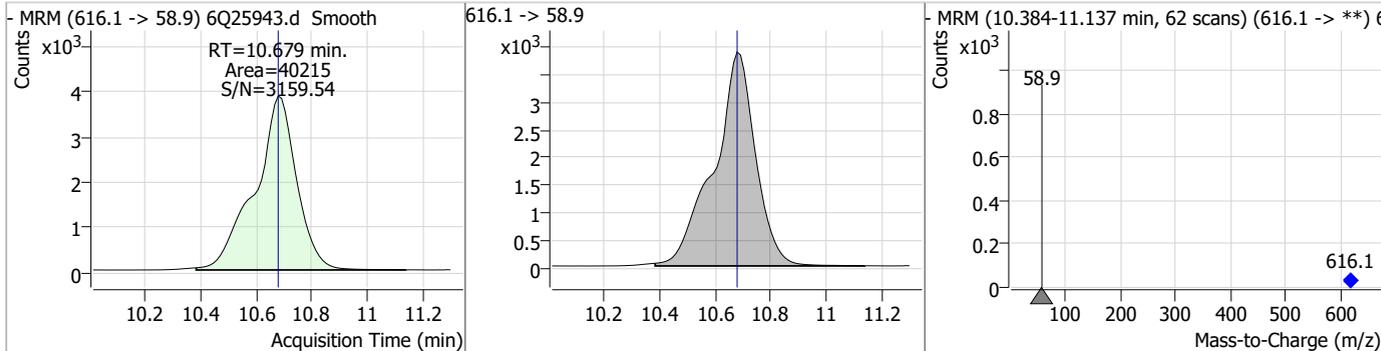
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.27	9.87	0.00	3877	699.1 -> 98.8	56.9	28.5	85.4



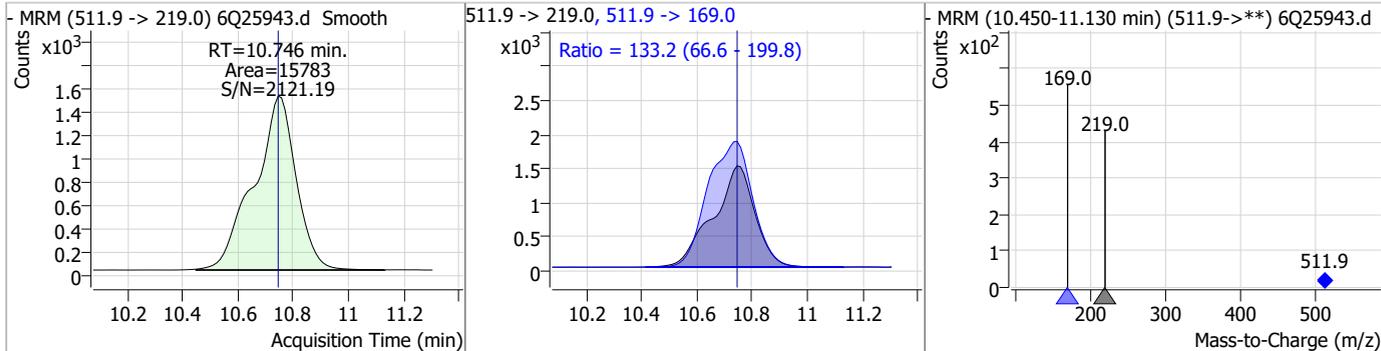
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.56	10.67	0.00	77717				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.71	10.68	0.00	40215				

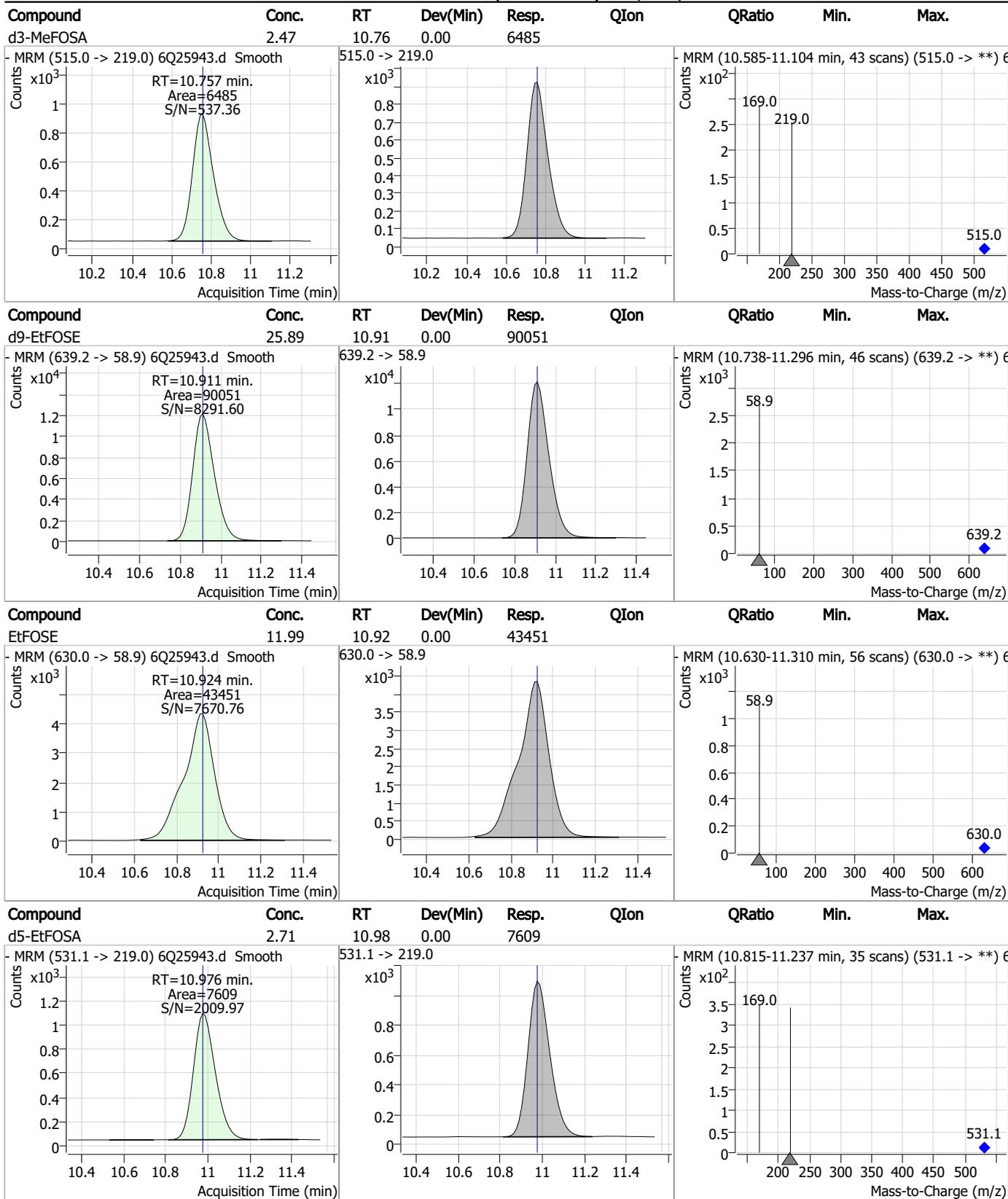


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOFA	5.25	10.75	0.00	15783	511.9 -> 169.0	133.2	66.6	199.8



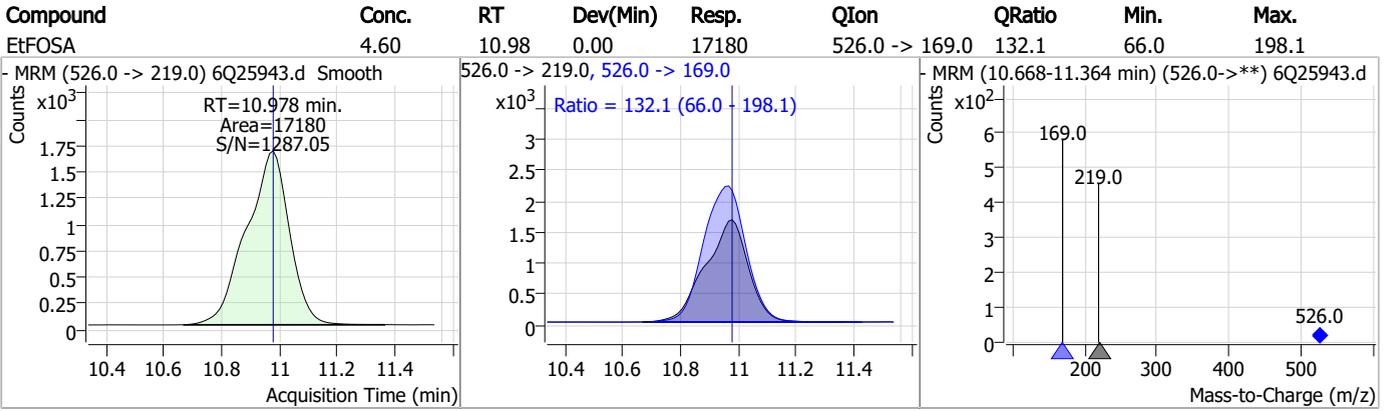
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Manual Integration Approval Summary

Sample Number: S6Q367-ICC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25943.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 15:46 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.31	Split peak
EtFOSAA	2991-50-6		8.42	Poorly defined baseline

7.7.5.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25944.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 4:00:41 PM
 Sample Name : ic367-5
 Vial : P1-A6
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	153322	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	54875	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	51169	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	47839	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	61585	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	25439	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	26887	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	29568	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	31913	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10769	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23579	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	22201	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12232	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12523	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2181	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3412	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3620	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25819	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	34012	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	21791	5.00 µg/L	0.000
M7-MeFOSE	10.665	623.2 -> 58.9	77433	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	88662	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7436	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6717	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	11448	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	63366	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7669	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	76431	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	27112	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	25806	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	47073	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2181	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3412	5.31 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.2%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3620	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C2-PFDoDA	9.030	615.1 -> 570.0	31913	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.5%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10769	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.0%		
13C3-PFBS	5.510	302.1 -> 79.9	22201	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFHxS	7.263	402.1 -> 79.9	12232	2.51 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFBA	2.947	216.8 -> 171.9	153322	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.519	367.1 -> 322.0	47839	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C5-PFHxA	5.580	318.0 -> 273.0	51169	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C5-PFPeA	4.372	268.3 -> 223.0	54875	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C6-PFDA	8.161	519.1 -> 474.1	26887	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C7-PFUnDA	8.601	570.0 -> 525.1	29568	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C8-FOSA	9.657	506.1 -> 77.8	23579	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOA	7.161	421.1 -> 376.0	61585	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C8-PFOS	8.311	507.1 -> 79.9	12523	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C9-PFNA	7.680	472.1 -> 427.0	25439	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25819	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	34012	10.36 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSA	10.757	515.0 -> 219.0	6717	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
d5-EtFOSAA	8.415	589.2 -> 419.0	21791	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d7-MeFOSE	10.665	623.2 -> 58.9	77433	25.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d9-EtFOSE	10.911	639.2 -> 58.9	88662	24.46 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSA	10.976	531.1 -> 219.0	7436	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	68930	19.05 µg/L	99
		327.1 -> 80.9	26331		
6:2FTS	6.937	427.1 -> 407.0	53227	17.16 µg/L	96
		427.1 -> 80.9	21995		
8:2FTS	7.950	527.1 -> 507.0	45325	17.97 µg/L	100
		527.1 -> 80.8	15970		
EtFOSAA	8.416	584.2 -> 419.1	15692	4.43 µg/L	92
		584.2 -> 526.0	10746		
FOSA	9.660	498.1 -> 77.9	42546	4.71 µg/L	99
		498.1 -> 478.0	1082		
MeFOSAA	8.208	570.1 -> 419.0	22467	4.66 µg/L	99
		570.1 -> 483.0	4818		
PFBA	2.943	212.8 -> 168.9	110105	19.28 µg/L	100
PFBS	5.511	298.7 -> 79.9	28282	4.25 µg/L	99
		298.7 -> 98.8	10311		
PFDA	8.161	512.9 -> 469.0	100874	4.80 µg/L	100
		512.9 -> 219.0	15544		
PFDoDA	9.031	613.1 -> 569.0	115043	4.85 µg/L	98
		613.1 -> 319.0	14115		
PFDS	9.195	599.0 -> 79.9	14225	4.44 µg/L	97

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	6572			
PFHpA	6.520	363.1 -> 319.0	125143	4.82	µg/L	100
		363.1 -> 169.0	18128			
PFHpS	7.819	449.0 -> 79.9	22864	4.42	µg/L	98
		449.0 -> 98.9	11554			
PFHxA	5.582	313.0 -> 269.0	84814	4.64	µg/L	99
		313.0 -> 118.9	4084			
PFHxS	7.264	398.7 -> 79.9	22447	4.39	µg/L	m 90
		398.7 -> 98.9	10345			
PFNA	7.680	463.0 -> 419.0	77785	4.96	µg/L	100
		463.0 -> 219.0	18905			
PFNS	8.777	548.8 -> 79.9	20287	4.44	µg/L	99
		548.8 -> 98.9	10665			
PFOA	7.163	413.0 -> 369.0	124677	4.72	µg/L	98
		413.0 -> 169.0	21876			
PFOS	8.300	498.9 -> 79.9	23572	4.41	µg/L	m 83
		498.9 -> 98.8	11702			
PFPeA	4.374	263.0 -> 219.0	110055	9.30	µg/L	100
PFPeS	6.571	349.1 -> 79.9	30218	4.58	µg/L	99
		349.1 -> 98.9	13333			
PFTeDA	9.747	713.1 -> 669.0	70041	5.00	µg/L	97
		713.1 -> 168.9	5038			
PFTrDA	9.413	663.0 -> 619.0	91240	4.89	µg/L	100
		663.0 -> 168.9	7438			
PFUnDA	8.614	563.1 -> 519.0	99190	4.76	µg/L	97
		563.1 -> 269.1	16013			
11CI-PF3OUdS	9.454	630.9 -> 450.9	91144	9.03	µg/L	97
		632.9 -> 452.9	27695			
9CI-PF3ONS	8.641	530.8 -> 351.0	155320	8.67	µg/L	98
		532.8 -> 353.0	47858			
ADONA	6.780	376.9 -> 250.9	400618	8.58	µg/L	98
		376.9 -> 84.8	114609			
HFPO-DA	5.958	284.9 -> 168.9	31119	9.23	µg/L	99
		284.9 -> 184.9	3589			
3:3FTCA	3.808	241.0 -> 177.0	19160	23.29	µg/L	99
		241.0 -> 117.0	2526			
5:3FTCA	6.233	341.0 -> 237.1	385185	112.32	µg/L	100
		341.0 -> 217.0	274999			
7:3FTCA	7.632	441.0 -> 316.9	239196	114.20	µg/L	99
		441.0 -> 336.9	485953			
EtFOSA	10.978	526.0 -> 219.0	34219	9.38	µg/L	96
		526.0 -> 169.0	43563			
EtFOSE	10.924	630.0 -> 58.9	88113	24.70	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	30477	9.79	µg/L	96
		511.9 -> 169.0	42108			
MeFOSE	10.679	616.1 -> 58.9	79820	23.33	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	7718	4.64	µg/L	94
		699.1 -> 98.8	4075			
NFDHA	5.462	295.0 -> 201.0	21628	9.41	µg/L	99
		295.0 -> 84.9	5823			
PFMBA	4.800	279.0 -> 85.1	84104	9.32	µg/L	100
PFMPA	3.501	229.0 -> 84.9	69944	9.39	µg/L	100
PFEESA	6.050	314.8 -> 134.9	191886	8.15	µg/L	100
		314.8 -> 82.9	6698			

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

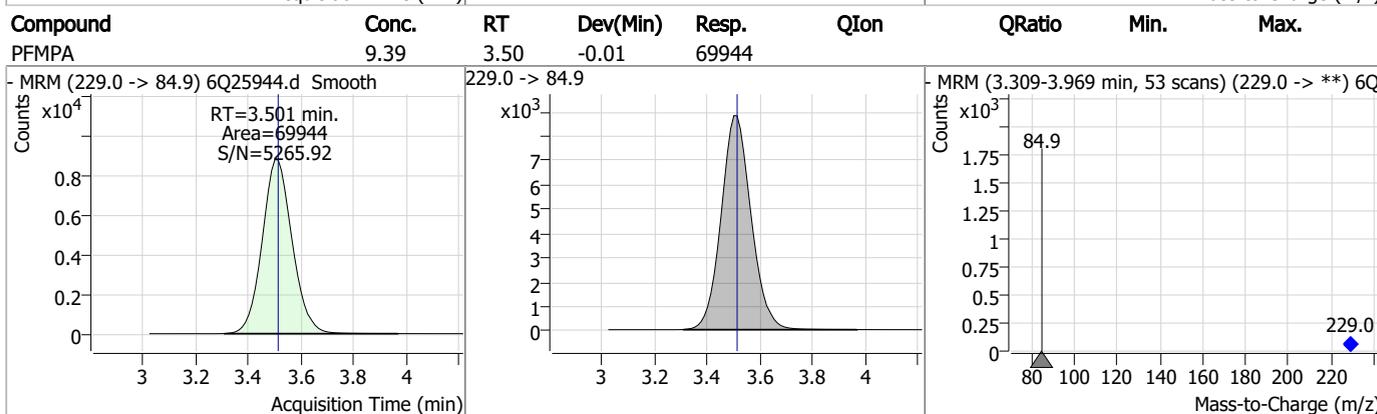
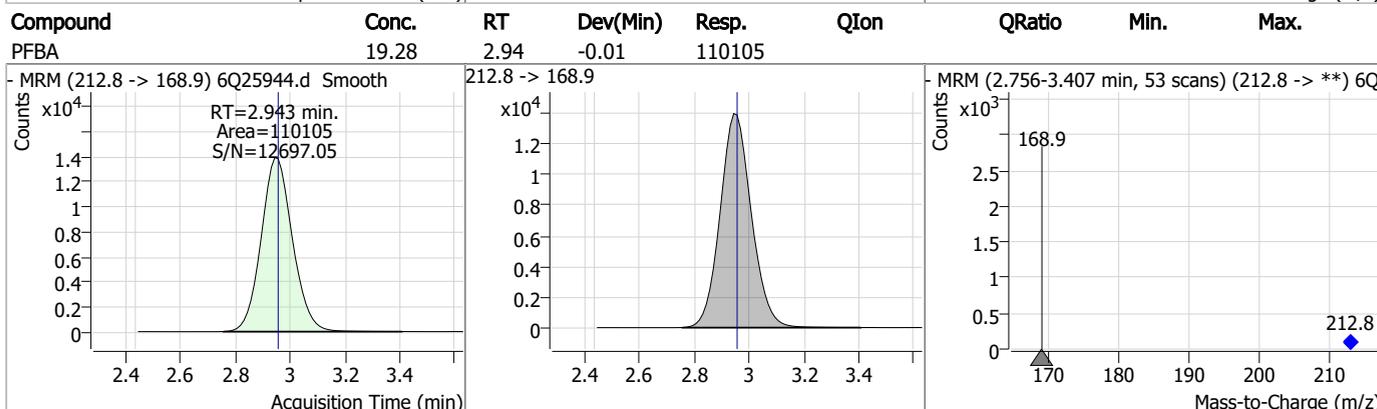
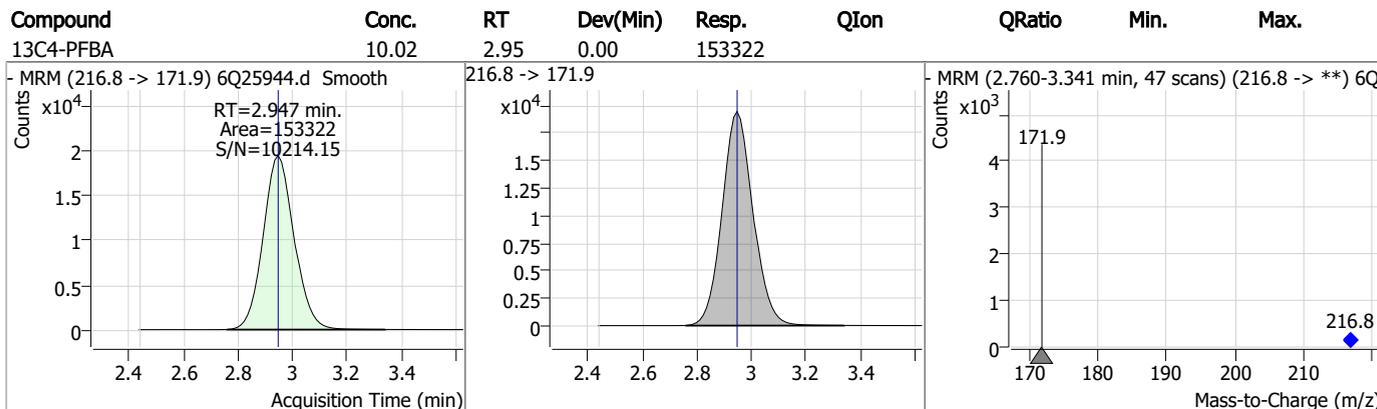
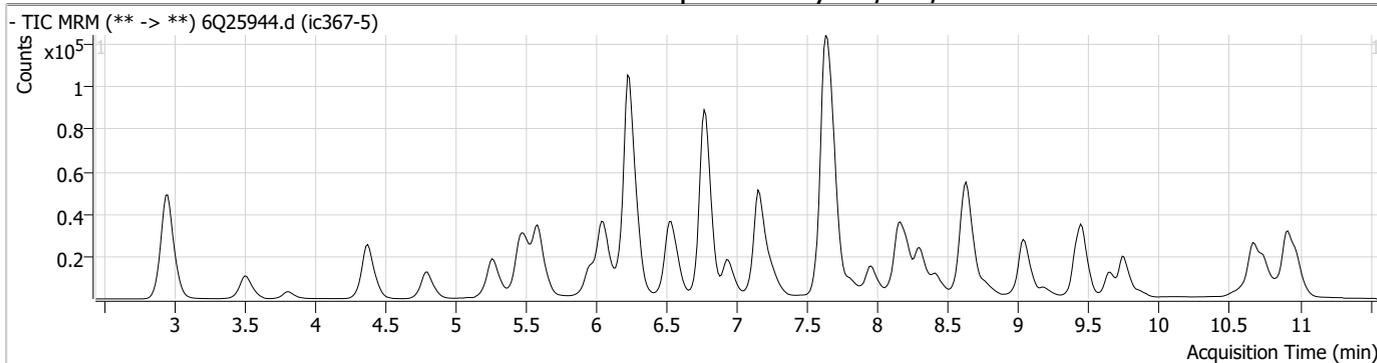
Perfluorinated Compounds by LC/MS/MS

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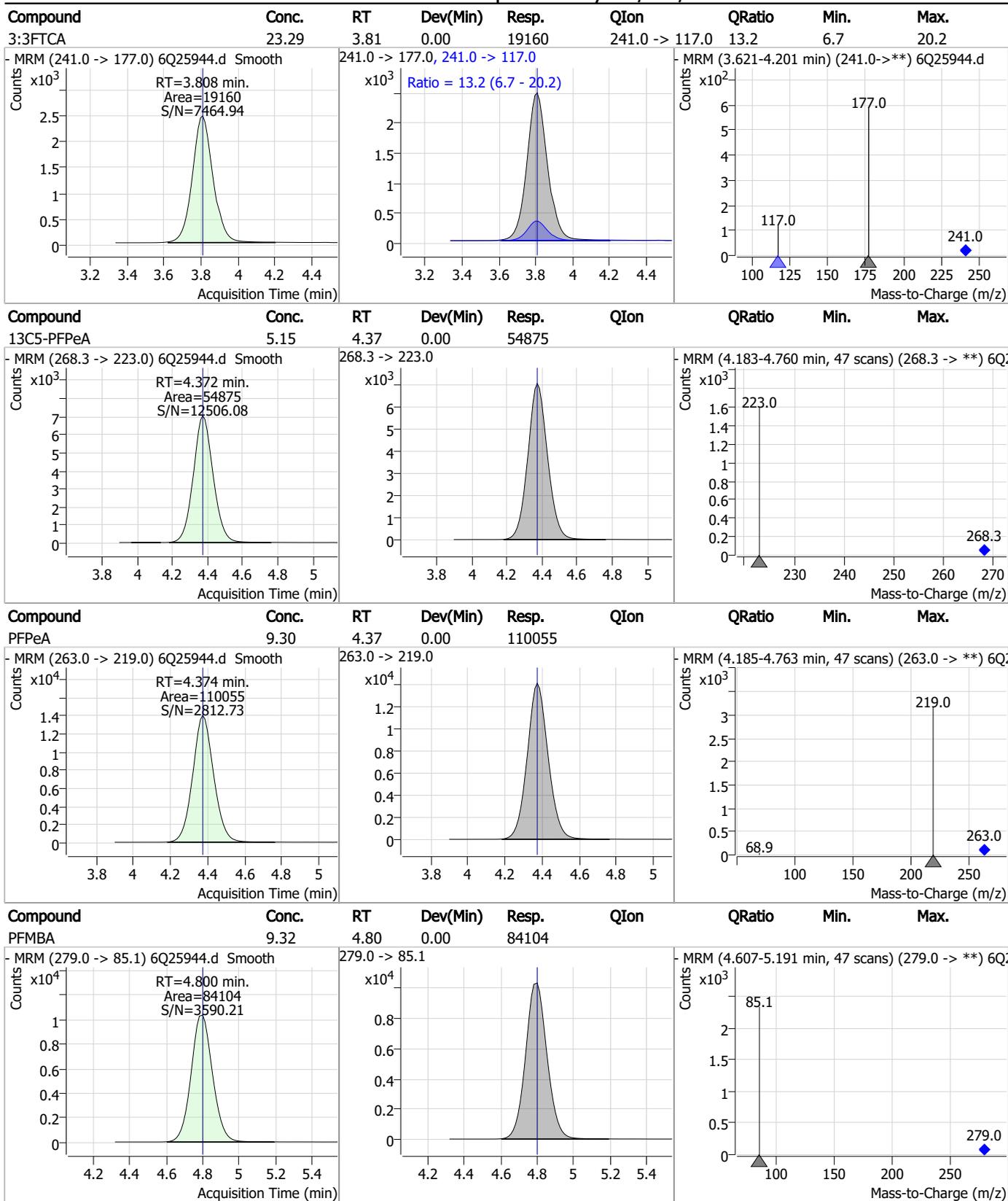
7.7.6

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Perfluorinated Compounds by LC/MS/MS

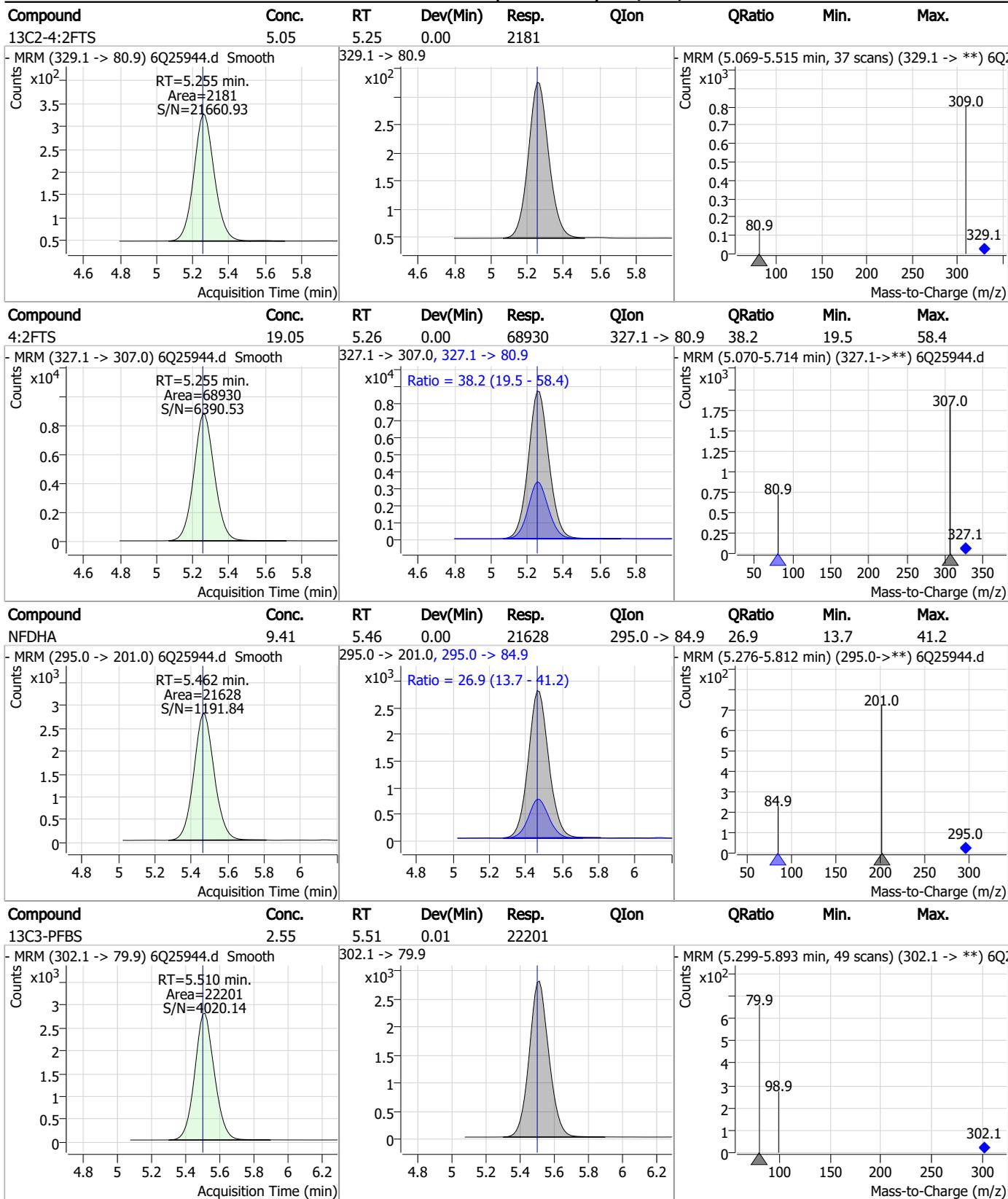


Perfluorinated Compounds by LC/MS/MS



7.7.6
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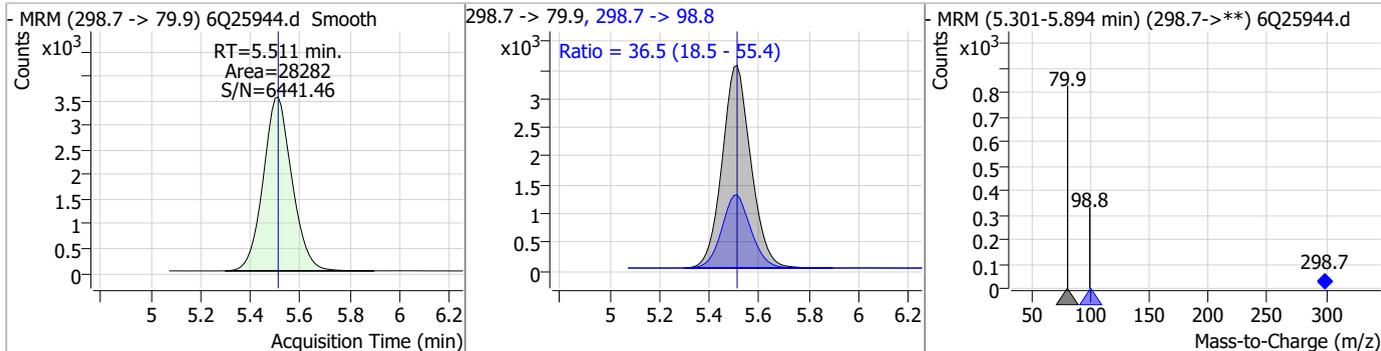
Perfluorinated Compounds by LC/MS/MS



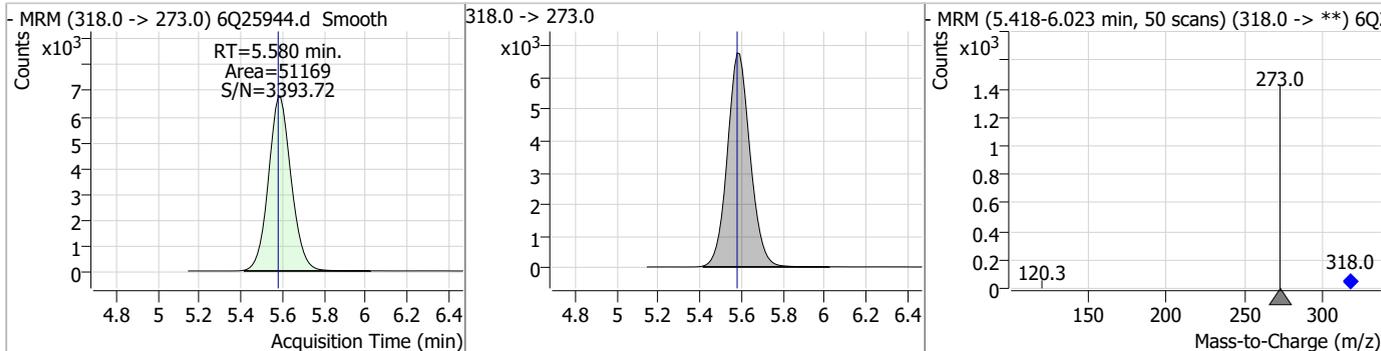
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Perfluorinated Compounds by LC/MS/MS

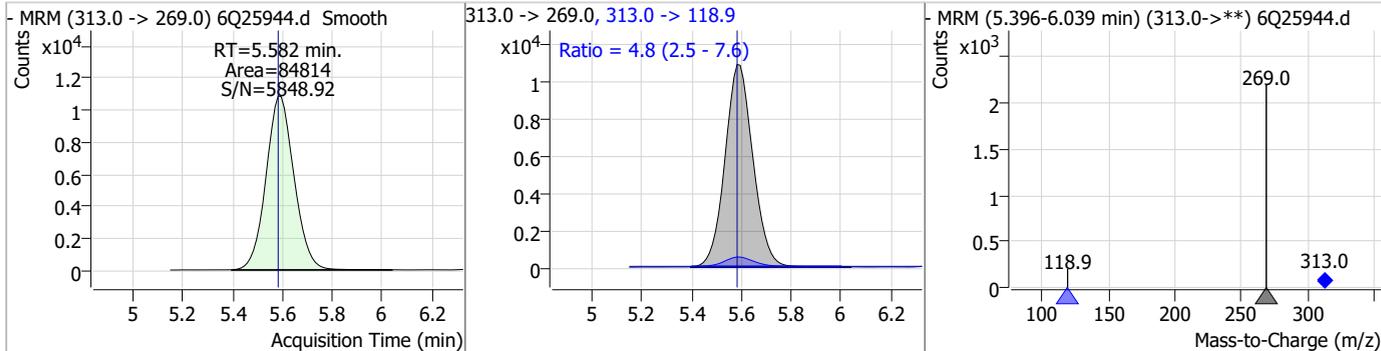
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.25	5.51	0.00	28282	298.7 -> 98.8	36.5	18.5	55.4



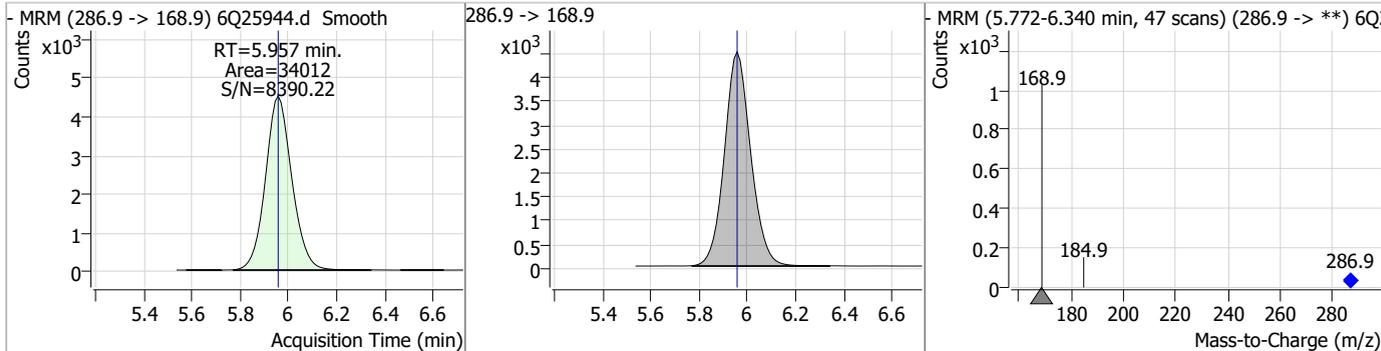
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.63	5.58	0.00	51169				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.64	5.58	0.00	84814	313.0 -> 118.9	4.8	2.5	7.6

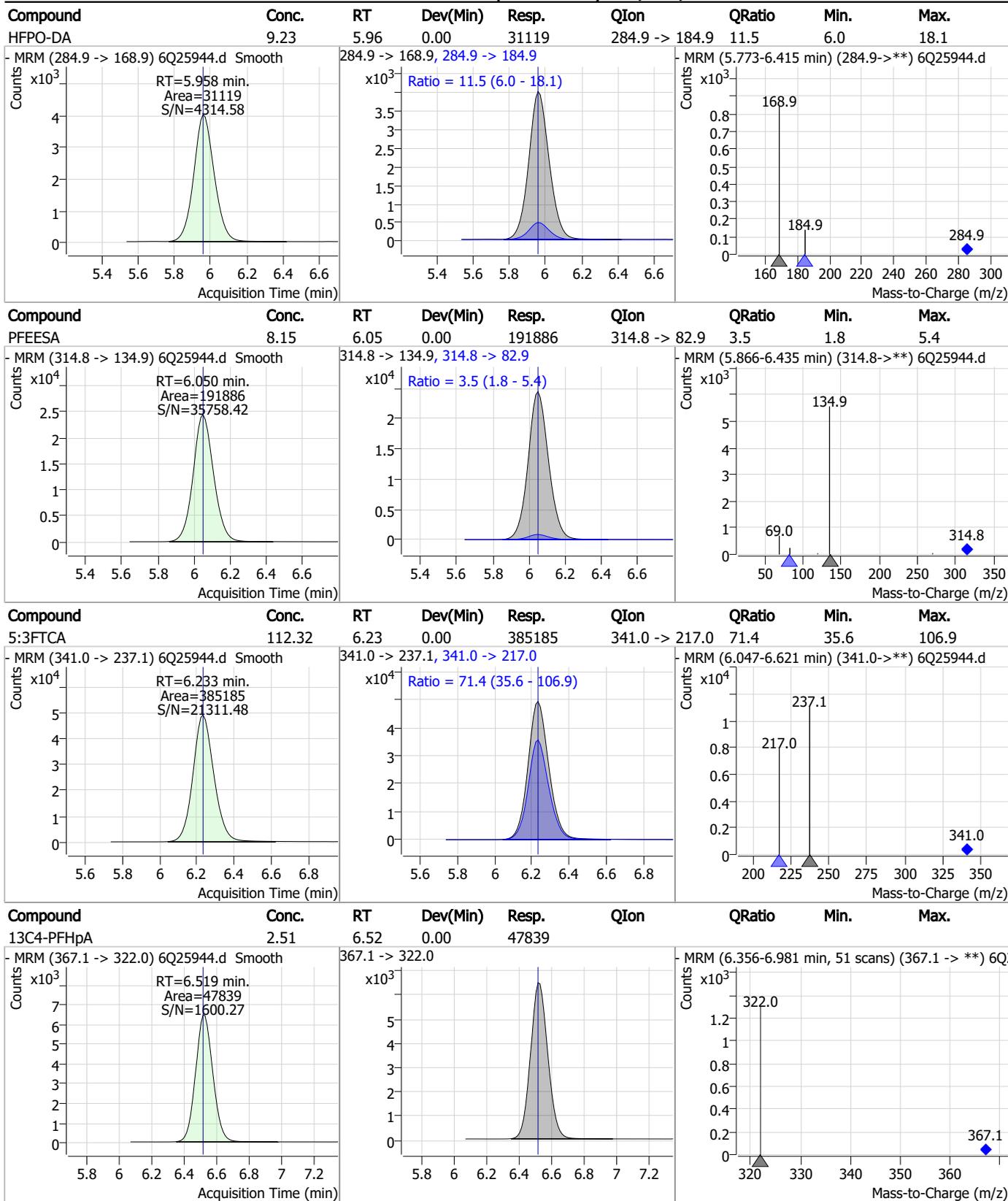


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.36	5.96	0.00	34012				



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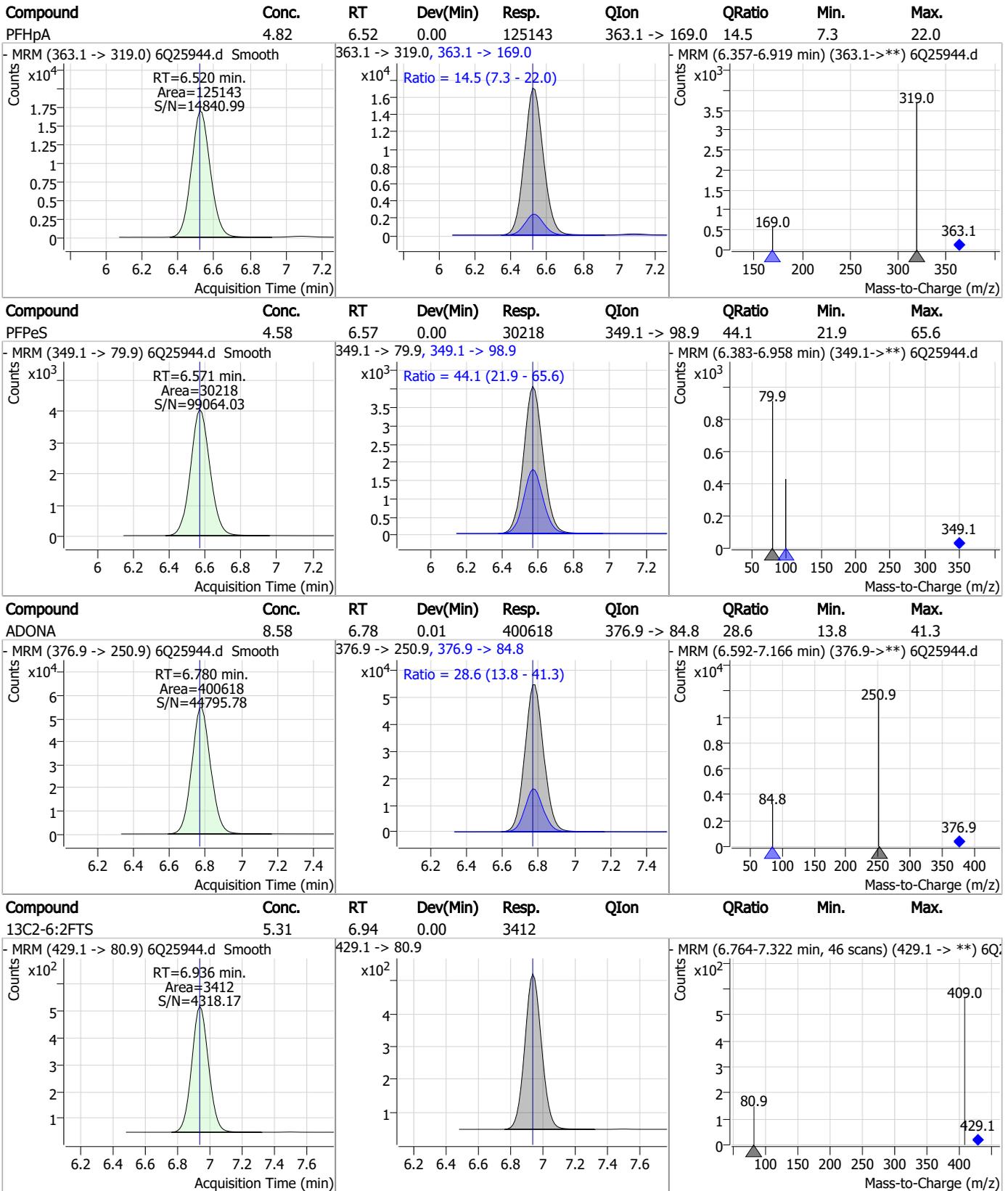
Perfluorinated Compounds by LC/MS/MS



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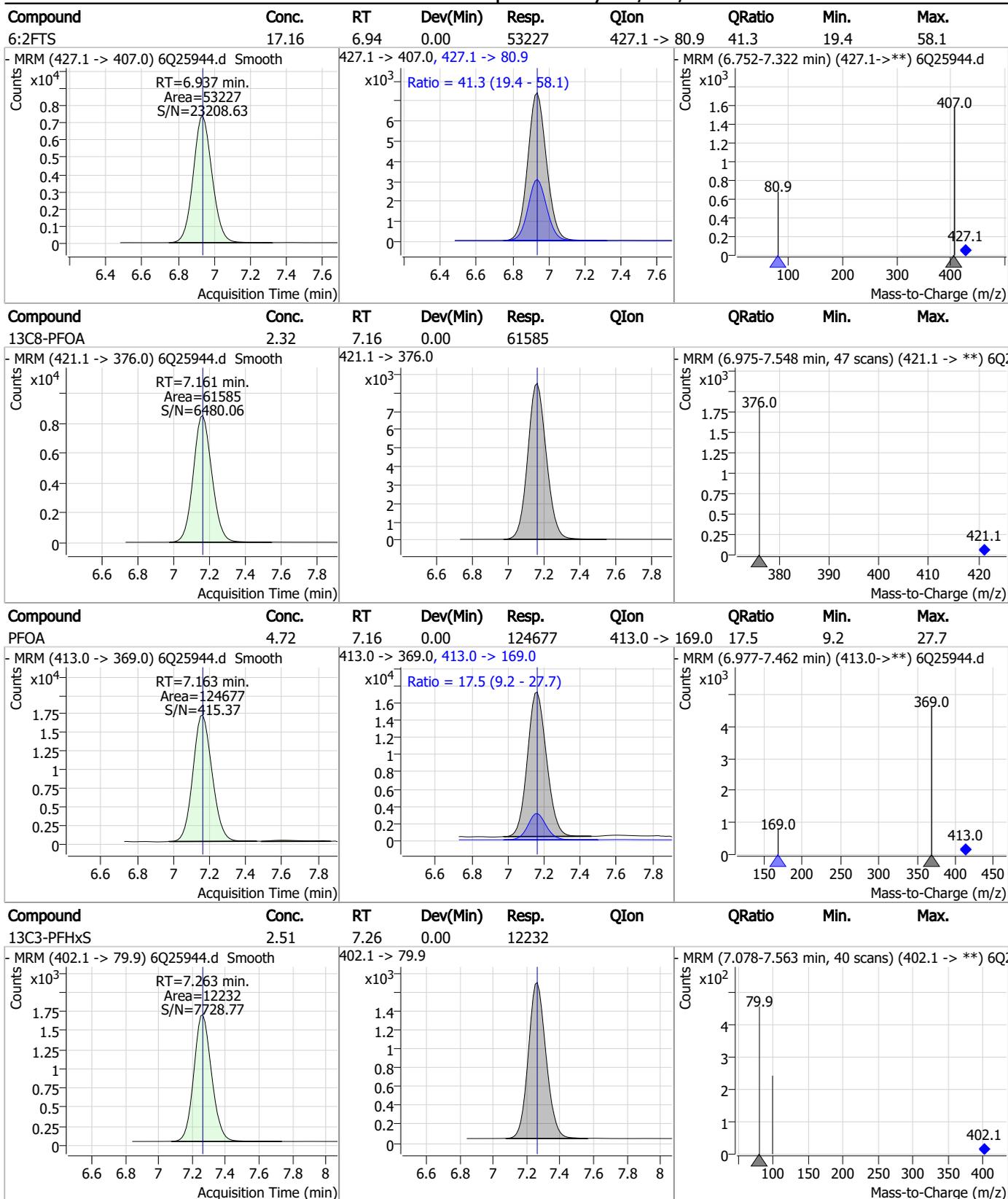
Perfluorinated Compounds by LC/MS/MS



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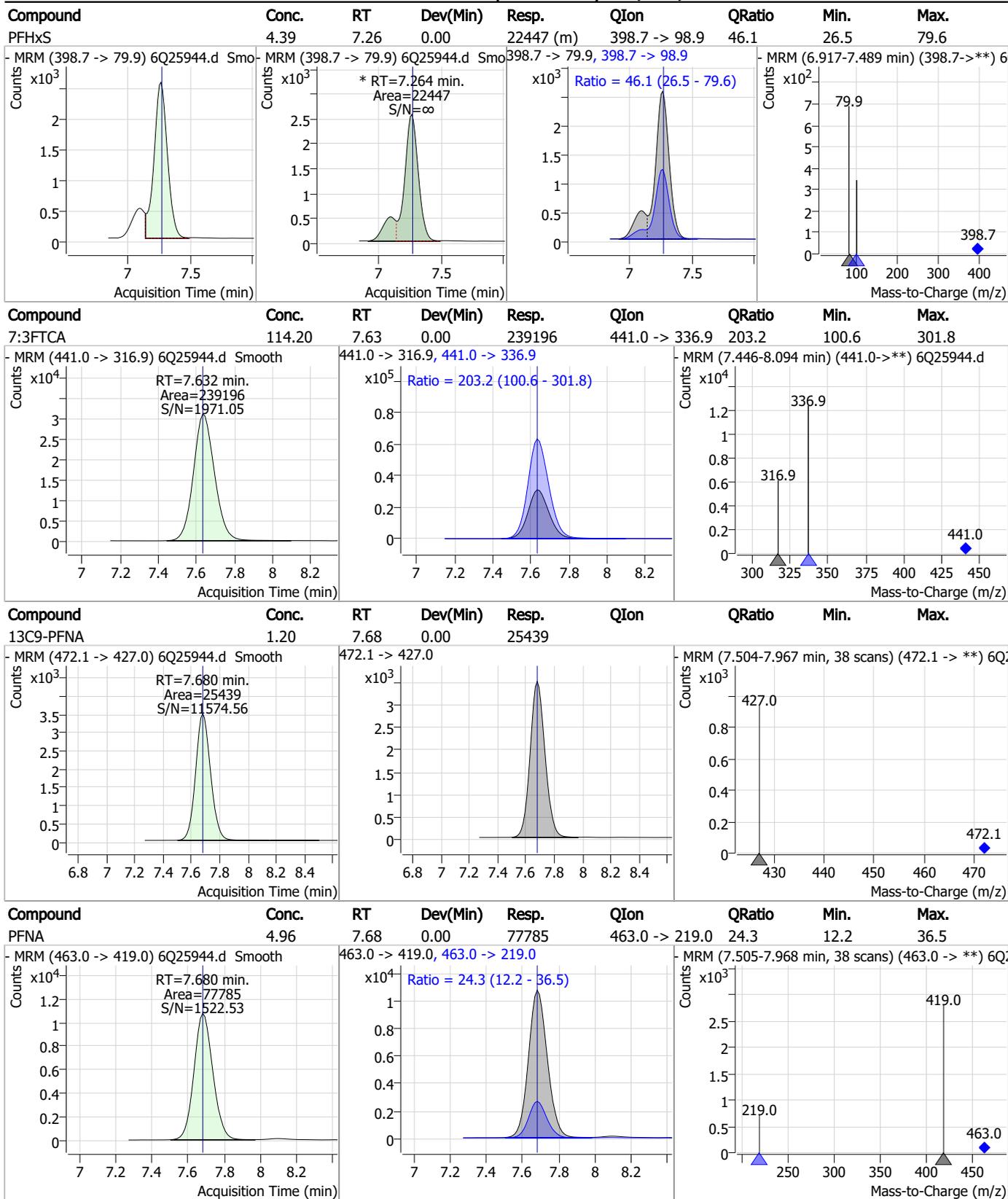
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Perfluorinated Compounds by LC/MS/MS



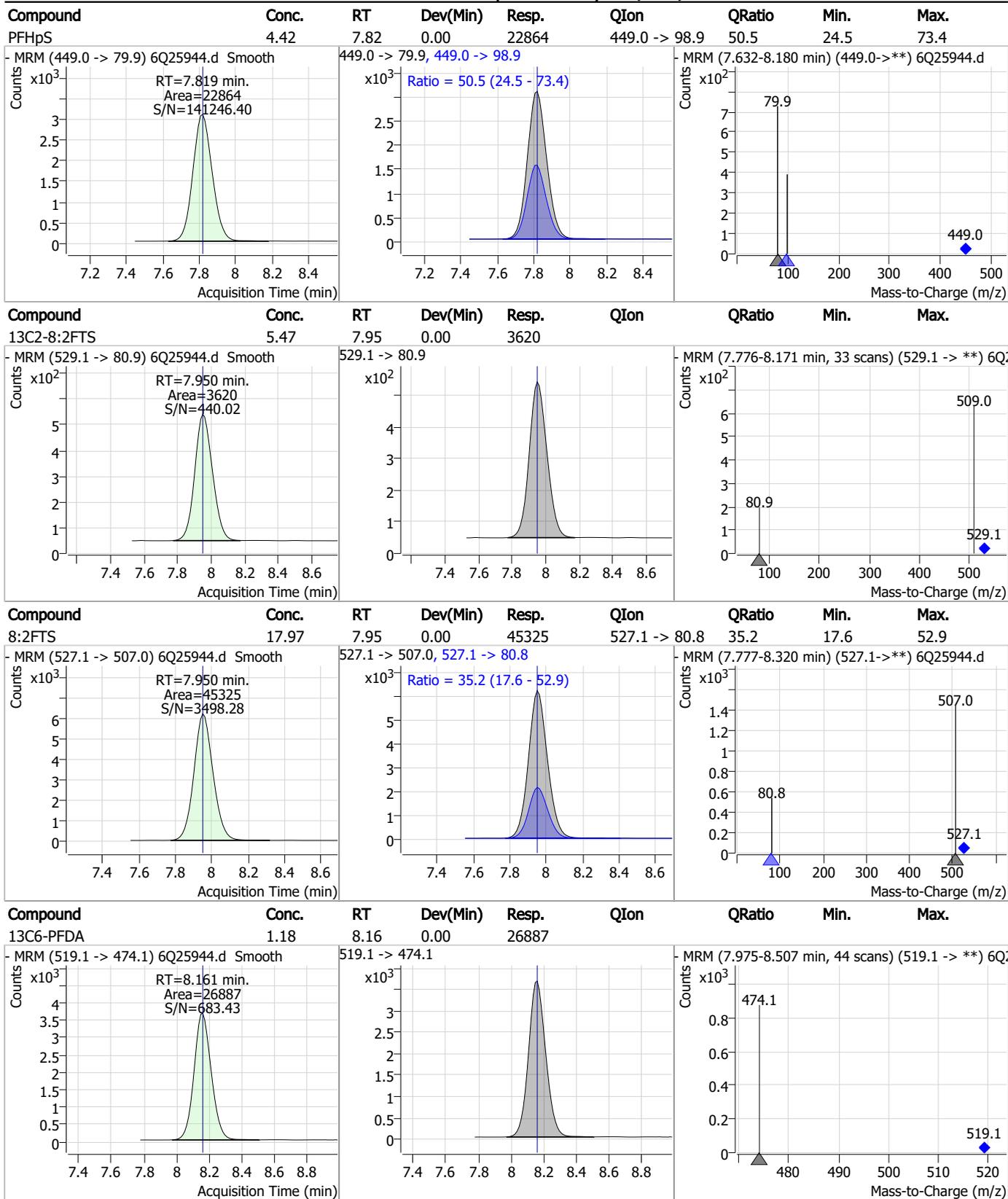
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Perfluorinated Compounds by LC/MS/MS



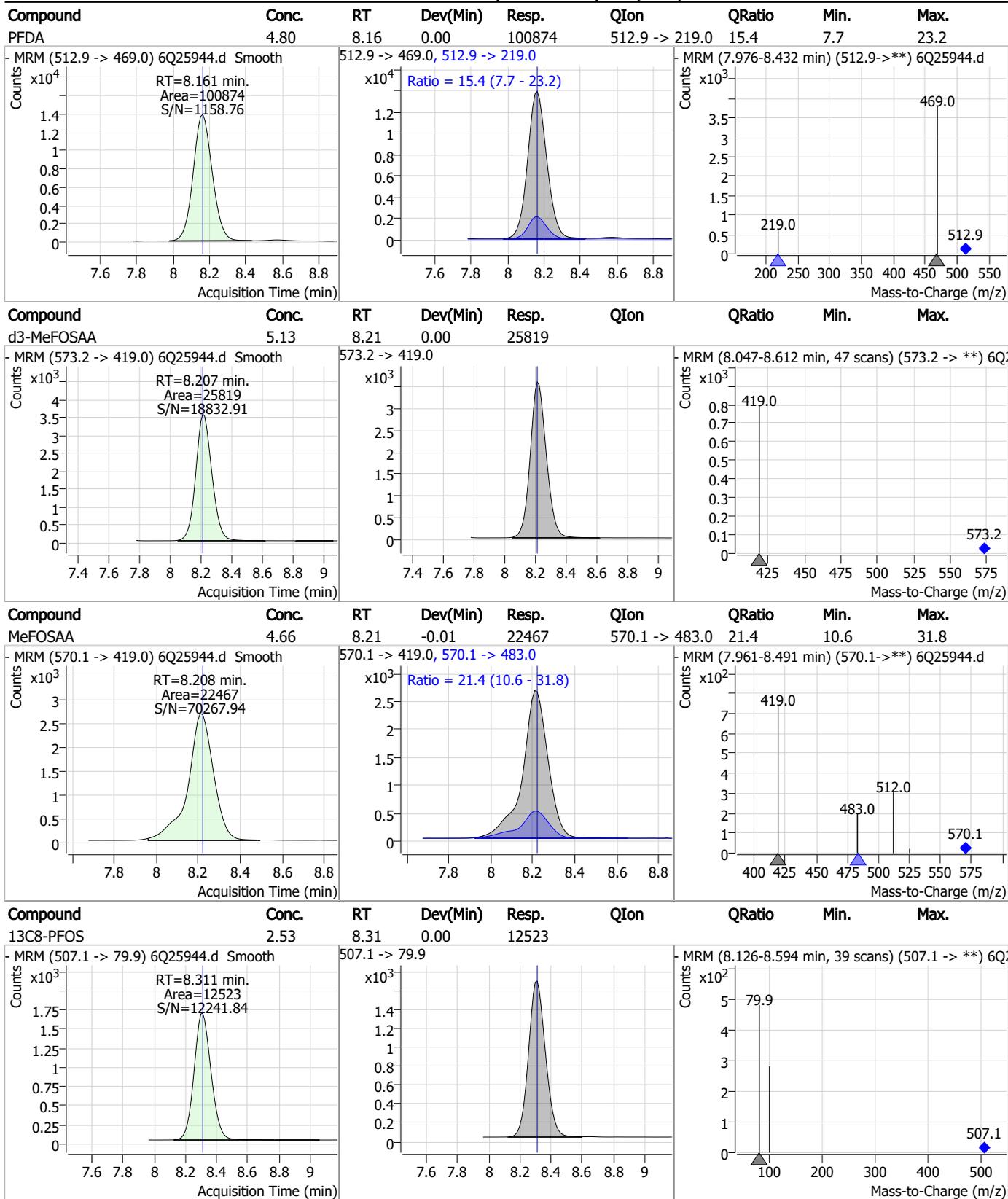
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Perfluorinated Compounds by LC/MS/MS



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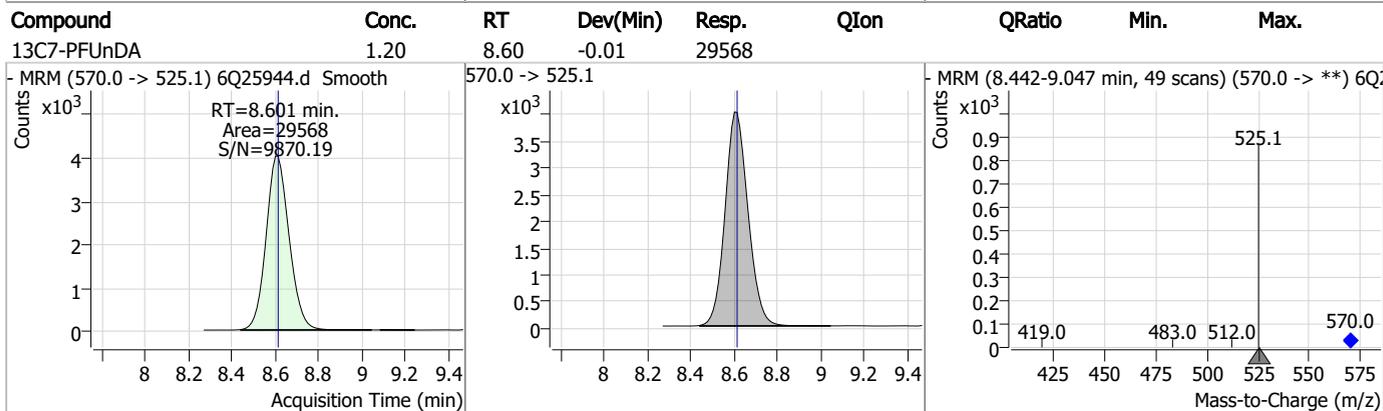
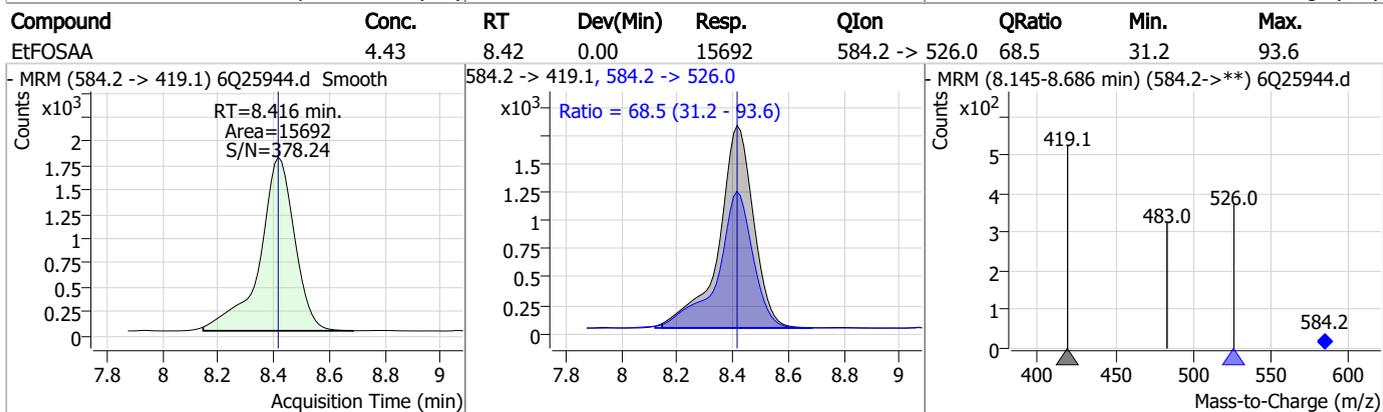
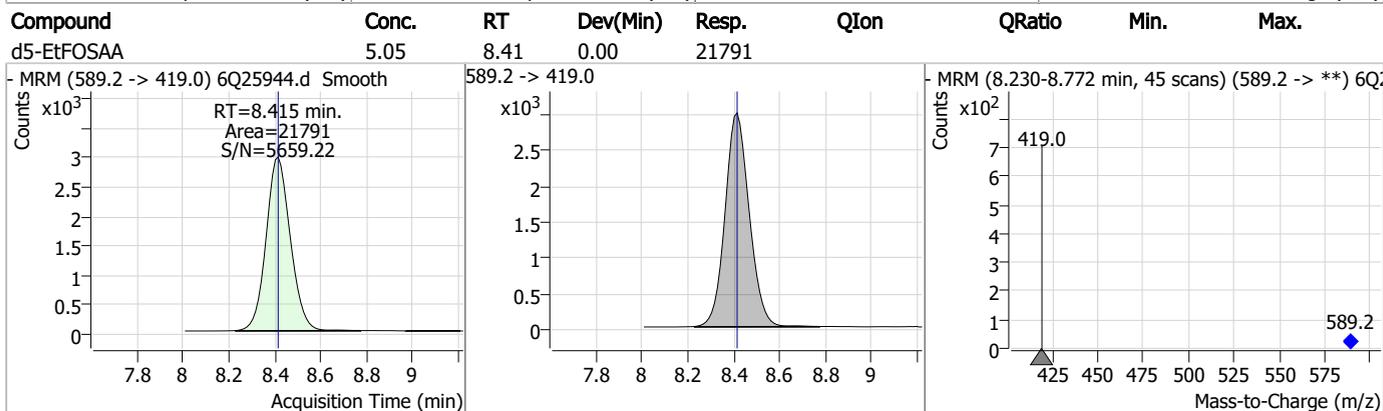
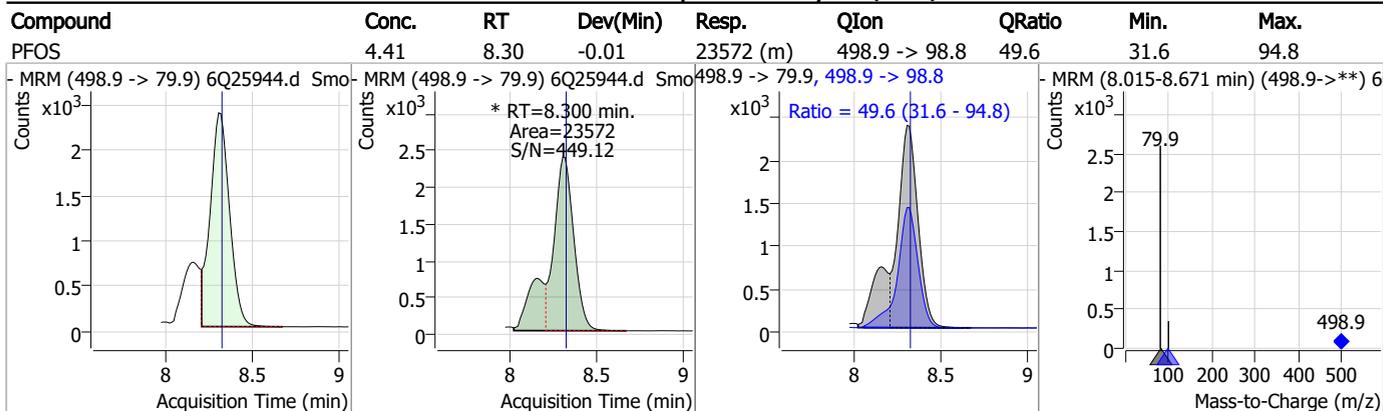
Perfluorinated Compounds by LC/MS/MS



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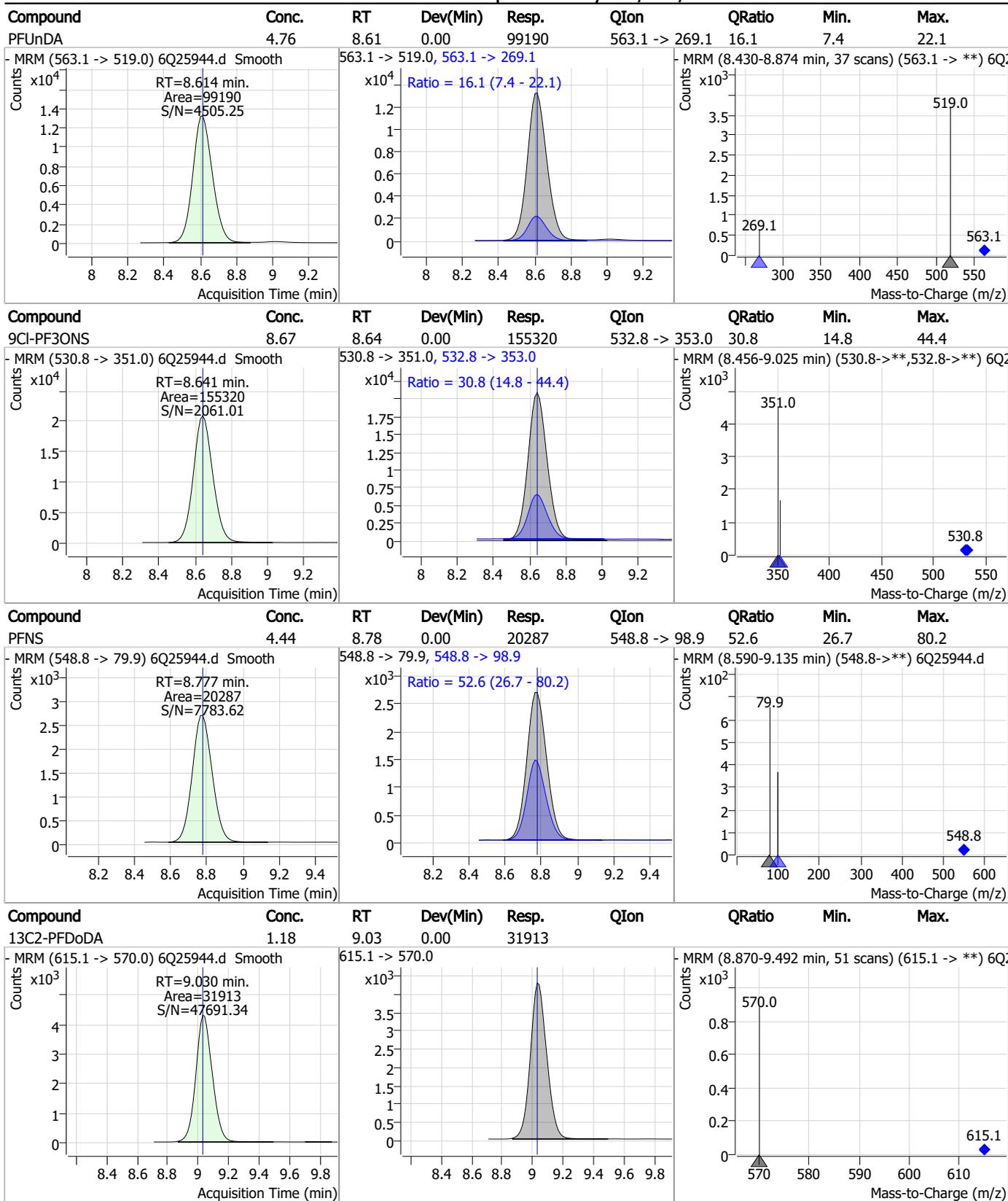
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Perfluorinated Compounds by LC/MS/MS



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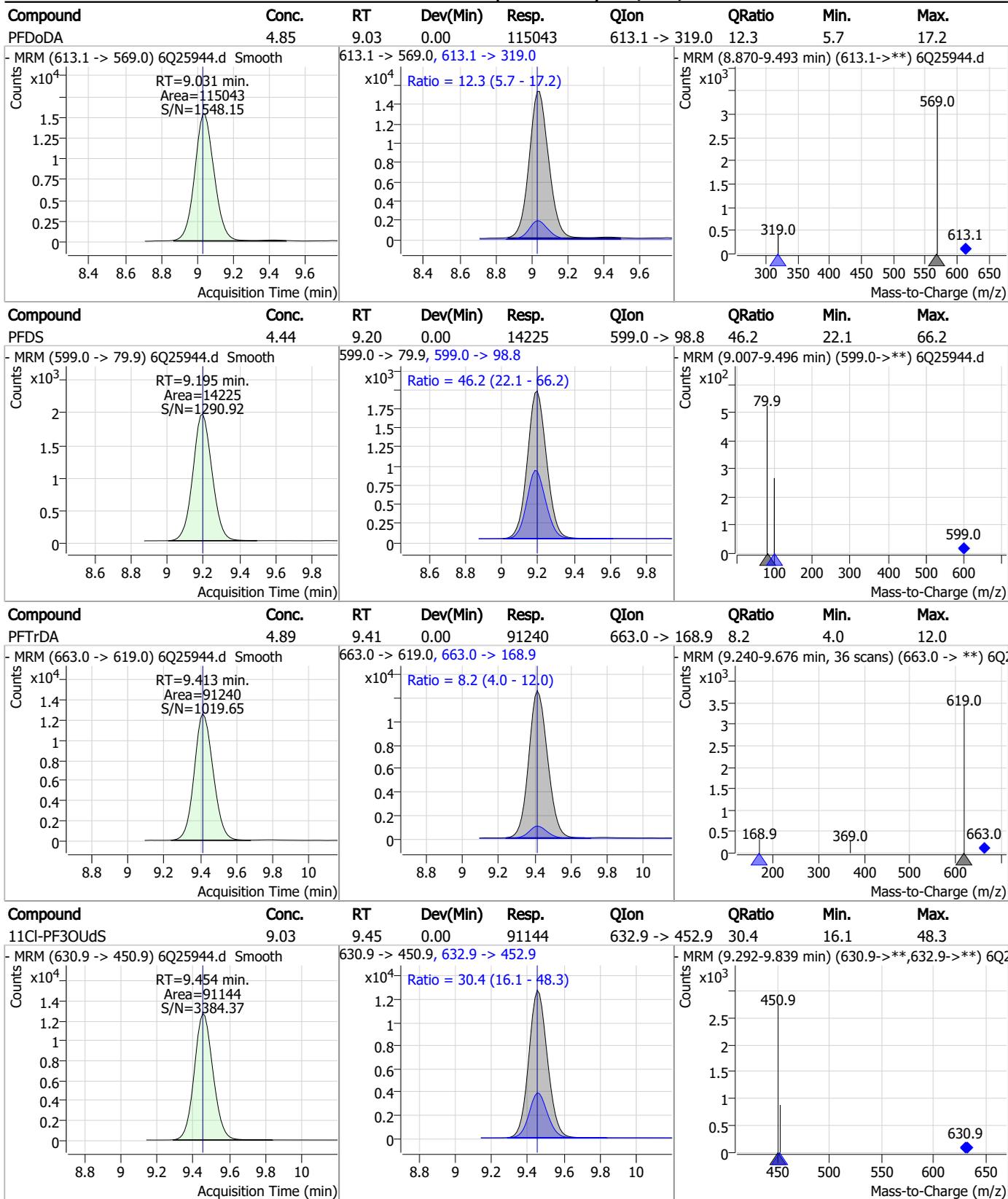
Perfluorinated Compounds by LC/MS/MS



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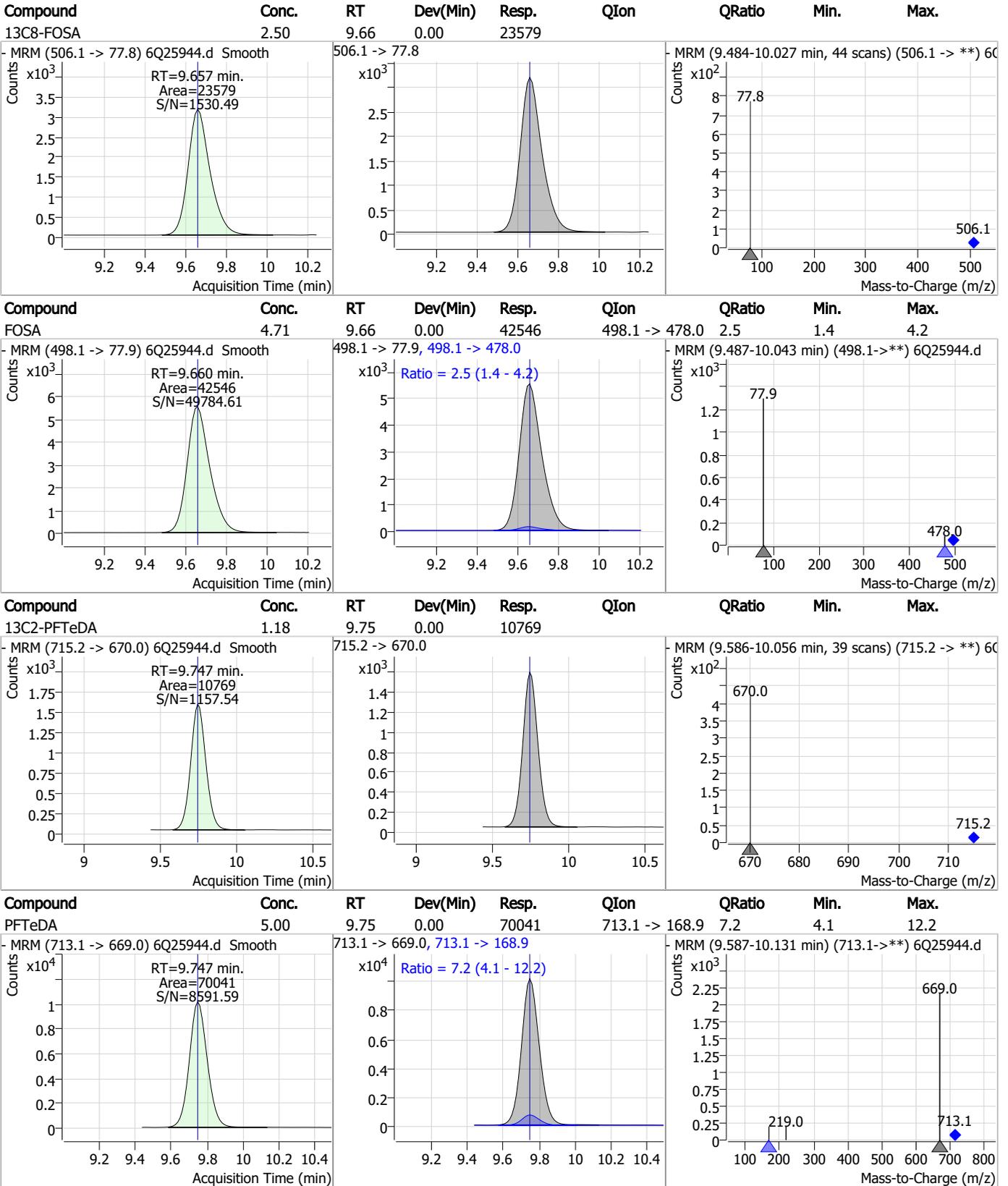
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Perfluorinated Compounds by LC/MS/MS



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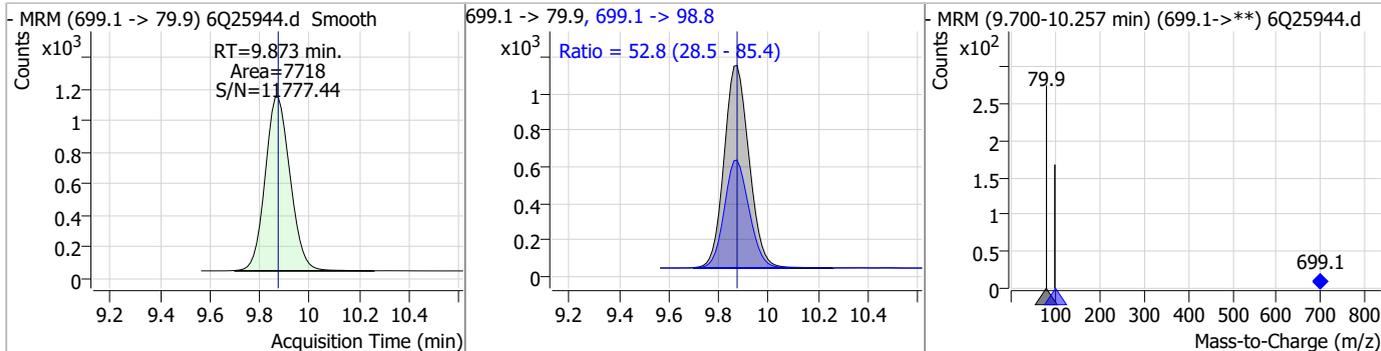


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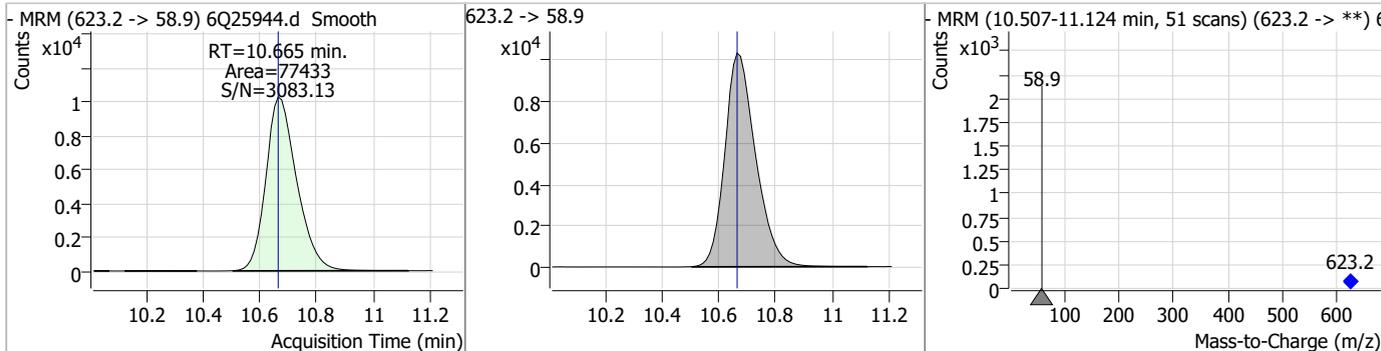
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Perfluorinated Compounds by LC/MS/MS

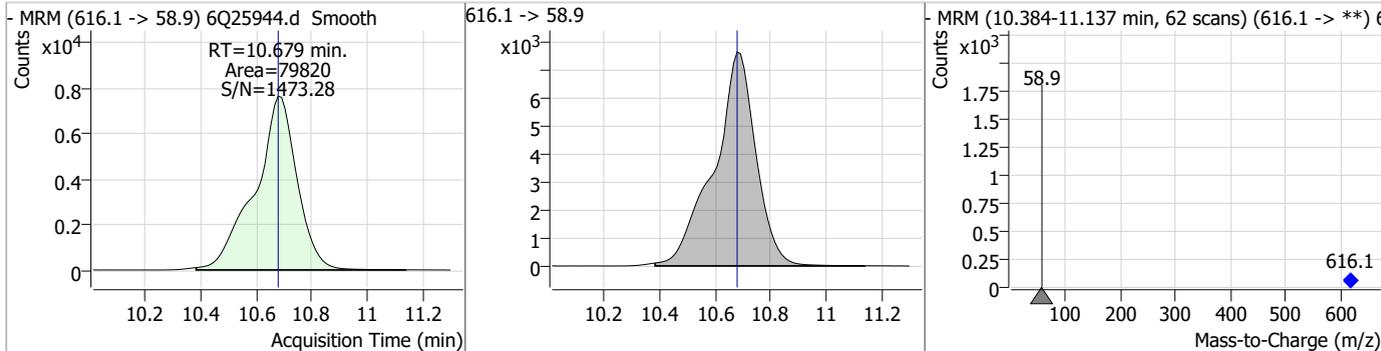
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	4.64	9.87	0.00	7718	699.1 -> 98.8	52.8	28.5	85.4



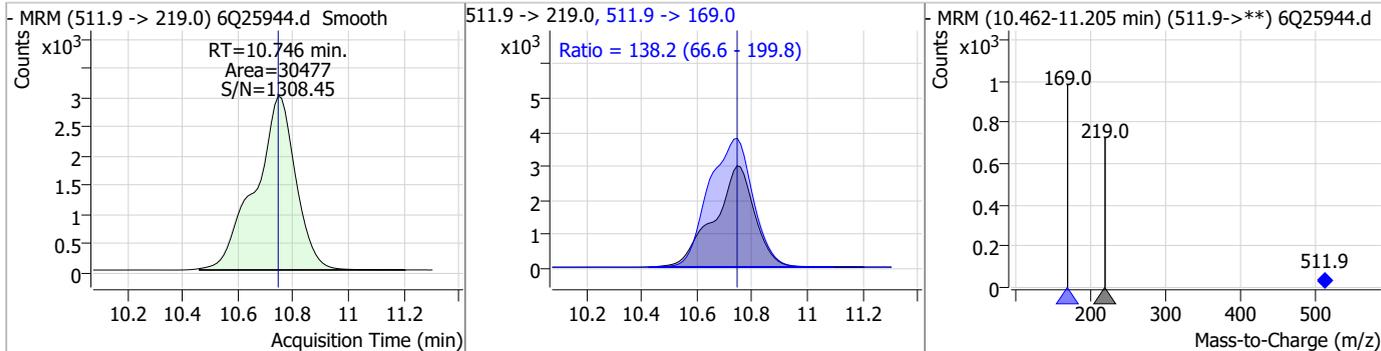
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.40	10.67	0.00	77433				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	23.33	10.68	0.00	79820				

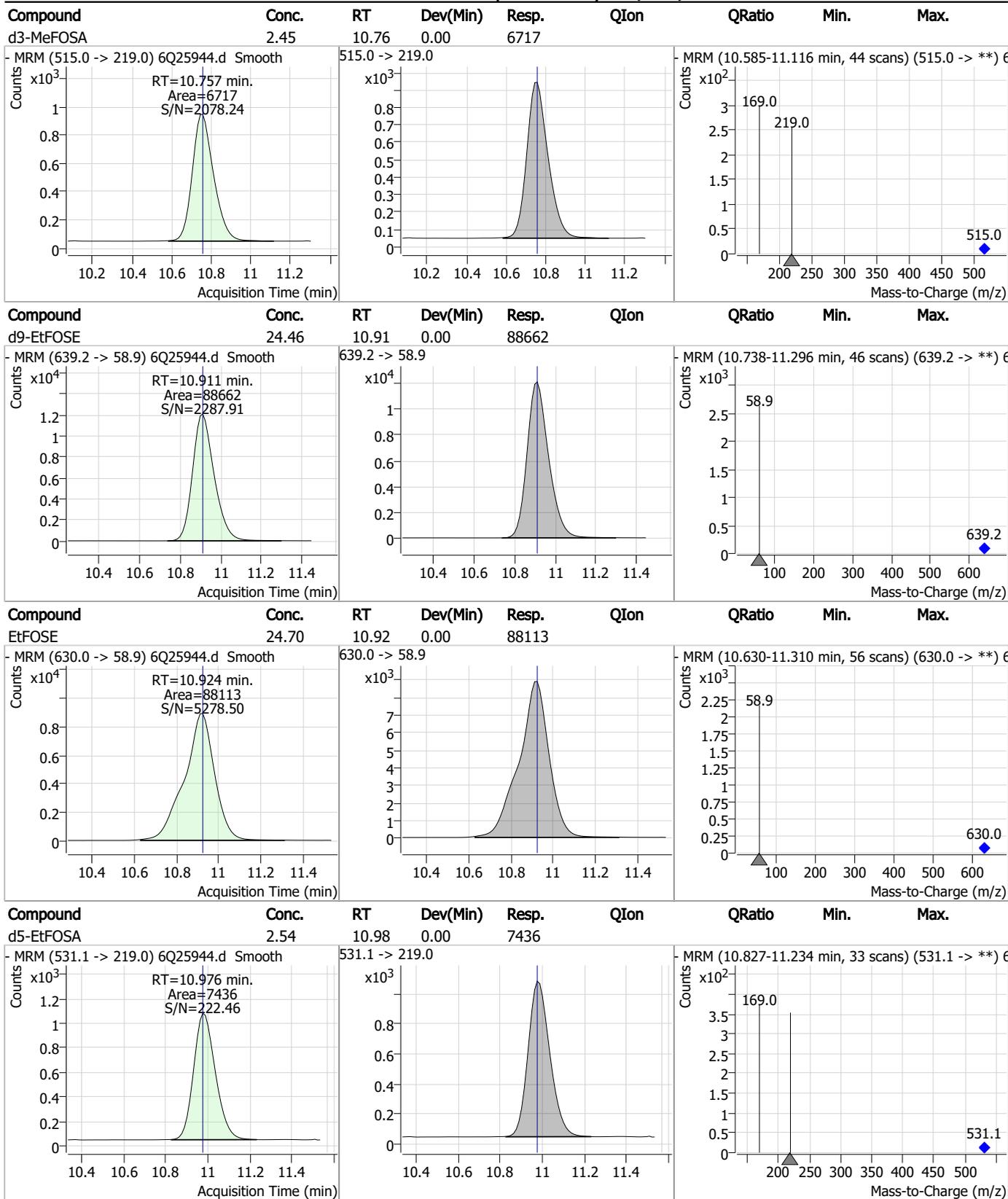


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.79	10.75	0.00	30477	511.9 -> 169.0	138.2	66.6	199.8



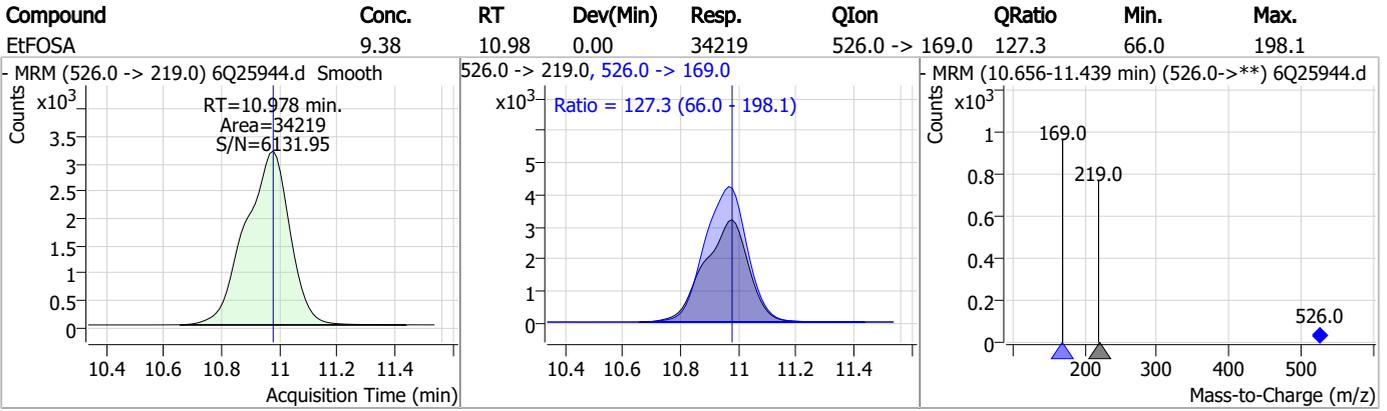
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6

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Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25944.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 16:00 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.7.6.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25945.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 4:15:00 PM
 Sample Name : ic367-6
 Vial : P1-A7
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	148446	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	51708	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	47577	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	45332	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	63280	2.50 µg/L	-0.012
M9-PFNA	7.680	472.1 -> 427.0	26000	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27322	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	28530	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	32492	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10596	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	22931	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	21850	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12088	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	12322	2.50 µg/L	-0.013
M2-4:2FTS	5.267	329.1 -> 80.9	2043	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	3268	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	2953	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25491	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	33116	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	21909	5.00 µg/L	0.000
M7-MeFOSE	10.665	623.2 -> 58.9	74623	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	88557	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7067	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6827	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	11207	2.50 µg/L	-0.013
13C3-PFBA	2.952	216.0 -> 172.0	61297	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7639	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	70126	2.50 µg/L	-0.012
13C2-PFDA	8.149	515.1 -> 470.1	24153	1.25 µg/L	-0.012
13C5-PFNA	7.680	468.0 -> 423.0	25952	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	44504	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	2043	4.75 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.9%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3268	5.10 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.1%		
13C2-8:2FTS	7.950	529.1 -> 80.9	2953	4.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 89.6%		
13C2-PFDoDA	9.030	615.1 -> 570.0	32492	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.0%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10596	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFBS	5.510	302.1 -> 79.9	21850	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFHxS	7.263	402.1 -> 79.9	12088	2.49 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFBA	2.947	216.8 -> 171.9	148446	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.519	367.1 -> 322.0	45332	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFHxA	5.592	318.0 -> 273.0	47577	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C5-PFPeA	4.372	268.3 -> 223.0	51708	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.161	519.1 -> 474.1	27322	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C7-PFUnDA	8.601	570.0 -> 525.1	28530	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C8-FOSA	9.657	506.1 -> 77.8	22931	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	7.149	421.1 -> 376.0	63280	2.60 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOS	8.298	507.1 -> 79.9	12322	2.55 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.680	472.1 -> 427.0	26000	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25491	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	33116	10.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
d3-MeFOSA	10.744	515.0 -> 219.0	6827	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	21909	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d7-MeFOSE	10.665	623.2 -> 58.9	74623	25.00 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d9-EtFOSE	10.911	639.2 -> 58.9	88557	24.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
d5-EtFOSA	10.976	531.1 -> 219.0	7067	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	166464	49.13 µg/L	99
		327.1 -> 80.9	65408		
6:2FTS	6.937	427.1 -> 407.0	135880	45.74 µg/L	98
		427.1 -> 80.9	54334		
8:2FTS	7.950	527.1 -> 507.0	106200	51.63 µg/L	91
		527.1 -> 80.8	42895		
EtFOSAA	8.416	584.2 -> 419.1	44023	12.37 µg/L	m 98
		584.2 -> 526.0	26687		
FOSA	9.660	498.1 -> 77.9	109582	12.48 µg/L	99
		498.1 -> 478.0	3286		
MeFOSAA	8.208	570.1 -> 419.0	59456	12.49 µg/L	99
		570.1 -> 483.0	12816		
PFBA	2.943	212.8 -> 168.9	283359	51.24 µg/L	100
PFBS	5.511	298.7 -> 79.9	73816	11.27 µg/L	99
		298.7 -> 98.8	26891		
PFDA	8.149	512.9 -> 469.0	270317	12.66 µg/L	100
		512.9 -> 219.0	42053		
PFDoDA	9.031	613.1 -> 569.0	314985	13.04 µg/L	99
		613.1 -> 319.0	37176		
PFDS	9.183	599.0 -> 79.9	39168	12.43 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	17436			
PFHpA	6.520	363.1 -> 319.0	327498	13.31	µg/L	100
		363.1 -> 169.0	47301			
PFHpS	7.807	449.0 -> 79.9	62077	12.20	µg/L	94
		449.0 -> 98.9	27930			
PFHxA	5.594	313.0 -> 269.0	221936	13.05	µg/L	99
		313.0 -> 118.9	10375			
PFHxS	7.252	398.7 -> 79.9	58009	11.48	µg/L	m 91
		398.7 -> 98.9	27044			
PFNA	7.680	463.0 -> 419.0	211890	13.22	µg/L	96
		463.0 -> 219.0	47583			
PFNS	8.765	548.8 -> 79.9	52771	11.74	µg/L	97
		548.8 -> 98.9	27121			
PFOA	7.150	413.0 -> 369.0	329113	12.12	µg/L	98
		413.0 -> 169.0	57778			
PFOS	8.300	498.9 -> 79.9	60408	11.48	µg/L	m 86
		498.9 -> 98.8	31414			
PFPeA	4.374	263.0 -> 219.0	288235	25.84	µg/L	100
PFPeS	6.571	349.1 -> 79.9	79899	12.24	µg/L	99
		349.1 -> 98.9	35537			
PFTeDA	9.747	713.1 -> 669.0	179644	13.03	µg/L	98
		713.1 -> 168.9	13419			
PFTrDA	9.413	663.0 -> 619.0	240071	12.64	µg/L	99
		663.0 -> 168.9	19738			
PFUnDA	8.602	563.1 -> 519.0	256592	12.76	µg/L	97
		563.1 -> 269.1	41404			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	246308	25.07	µg/L	93
		632.9 -> 452.9	69064			
9Cl-PF3ONS	8.641	530.8 -> 351.0	426916	24.49	µg/L	98
		532.8 -> 353.0	121199			
ADONA	6.767	376.9 -> 250.9	1110596	24.42	µg/L	97
		376.9 -> 84.8	286448			
HFPO-DA	5.958	284.9 -> 168.9	80855	24.64	µg/L	98
		284.9 -> 184.9	9282			
3:3FTCA	3.808	241.0 -> 177.0	49715	62.41	µg/L	100
		241.0 -> 117.0	6661			
5:3FTCA	6.233	341.0 -> 237.1	1026946	322.08	µg/L	98
		341.0 -> 217.0	753151			
7:3FTCA	7.632	441.0 -> 316.9	629740	323.35	µg/L	99
		441.0 -> 336.9	1257362			
EtFOSA	10.978	526.0 -> 219.0	88920	25.63	µg/L	98
		526.0 -> 169.0	119610			
EtFOSE	10.912	630.0 -> 58.9	220896	61.99	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	80294	25.37	µg/L	96
		511.9 -> 169.0	110351			
MeFOSE	10.679	616.1 -> 58.9	211349	64.09	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	20501	12.53	µg/L	96
		699.1 -> 98.8	11075			
NFDHA	5.475	295.0 -> 201.0	54518	25.51	µg/L	99
		295.0 -> 84.9	15320			
PFMBA	4.800	279.0 -> 85.1	218859	25.75	µg/L	100
PFMPA	3.513	229.0 -> 84.9	181241	25.83	µg/L	100
PFEESA	6.050	314.8 -> 134.9	504743	23.07	µg/L	100
		314.8 -> 82.9	17809			

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

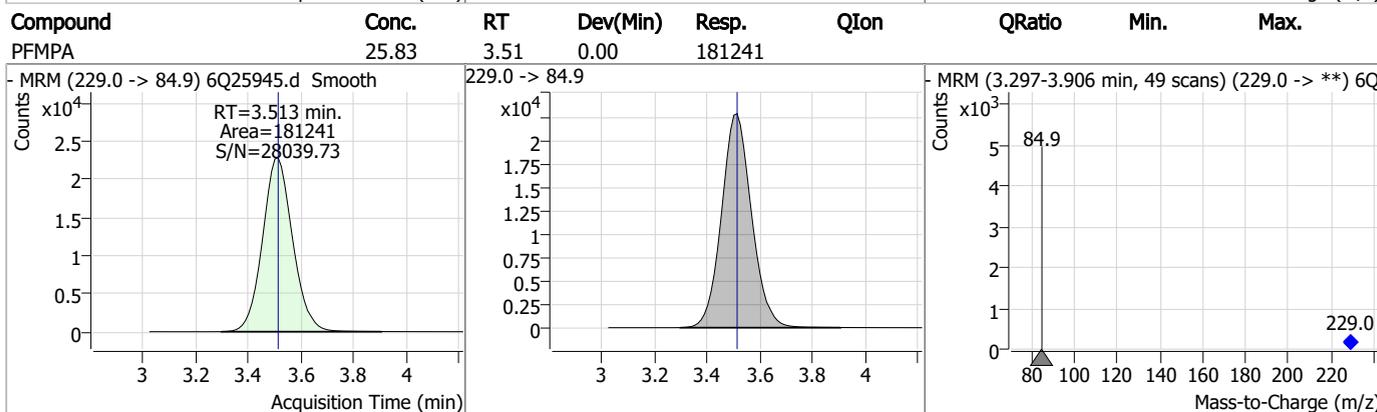
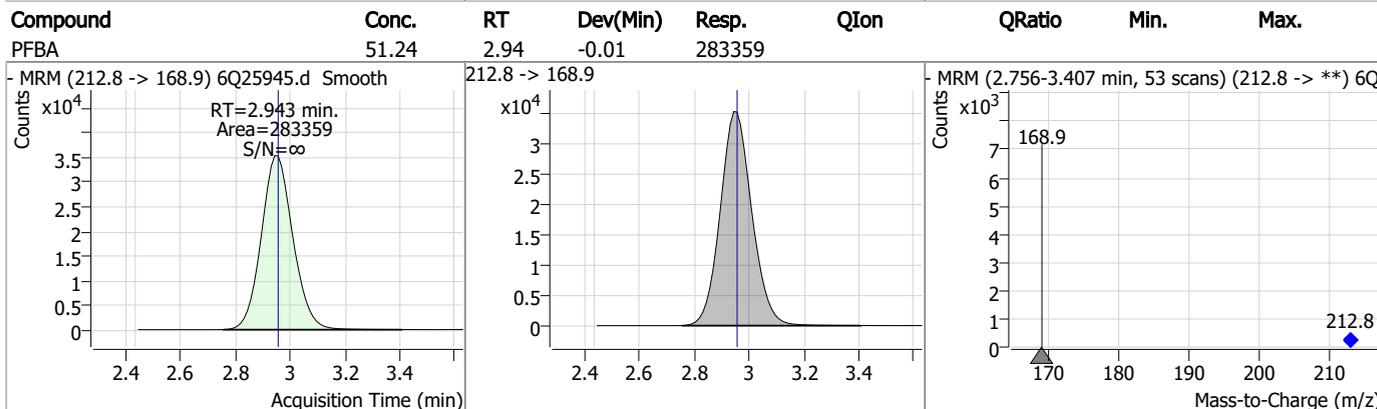
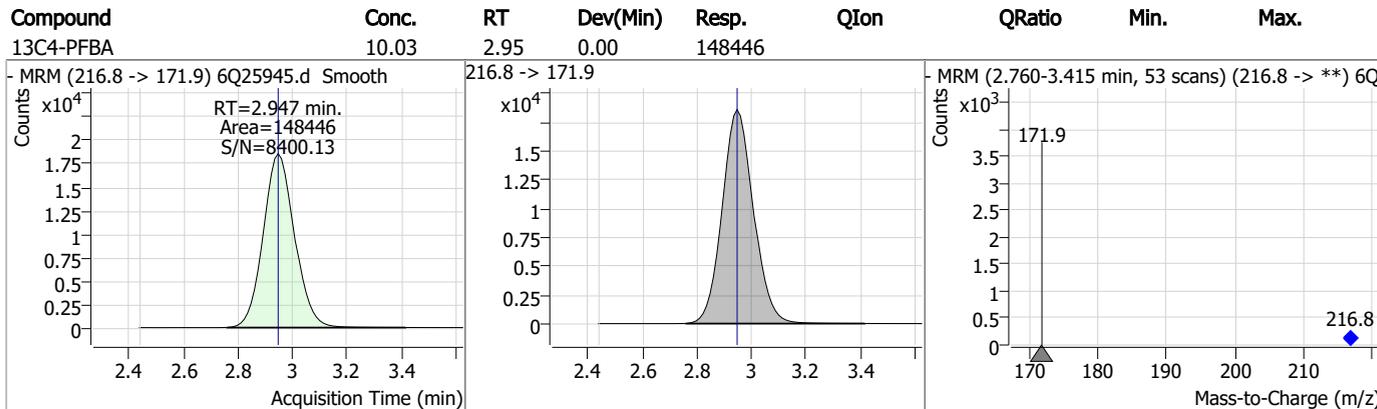
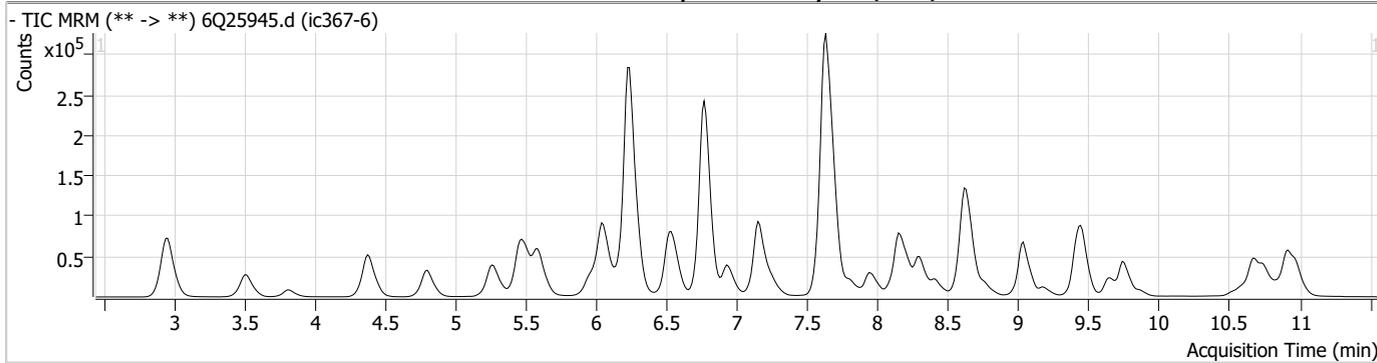
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
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7.7.7

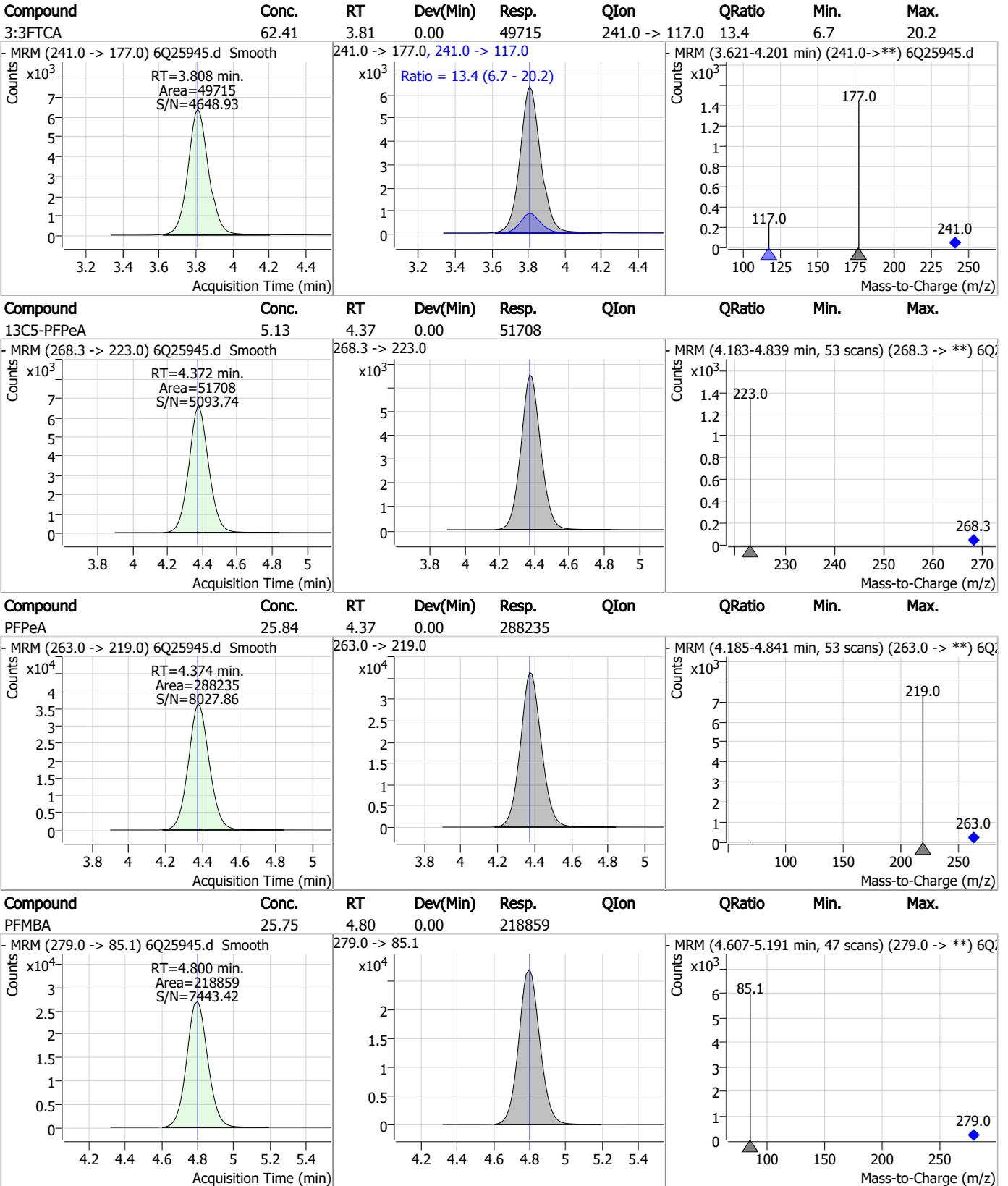
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Perfluorinated Compounds by LC/MS/MS



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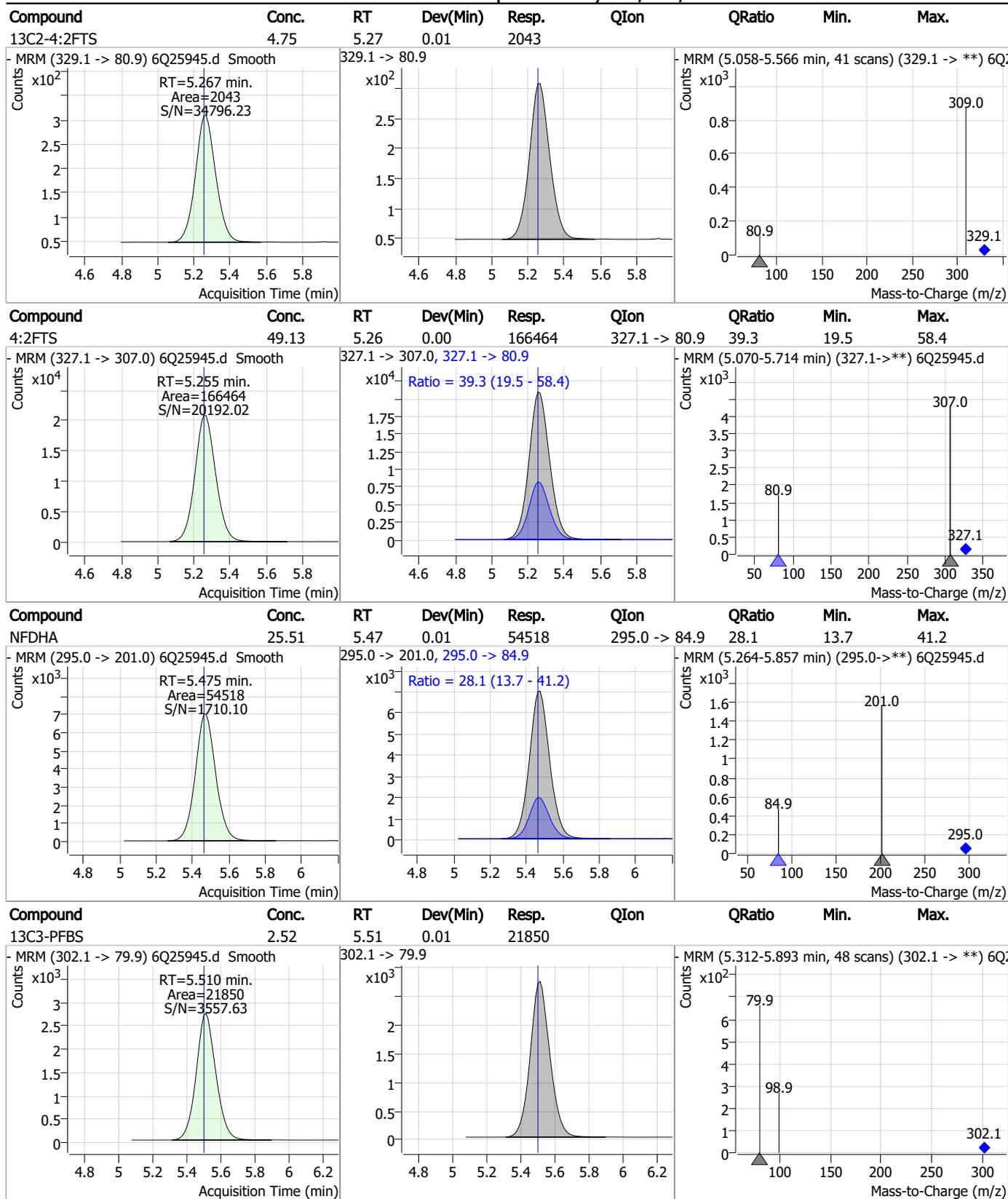
Perfluorinated Compounds by LC/MS/MS



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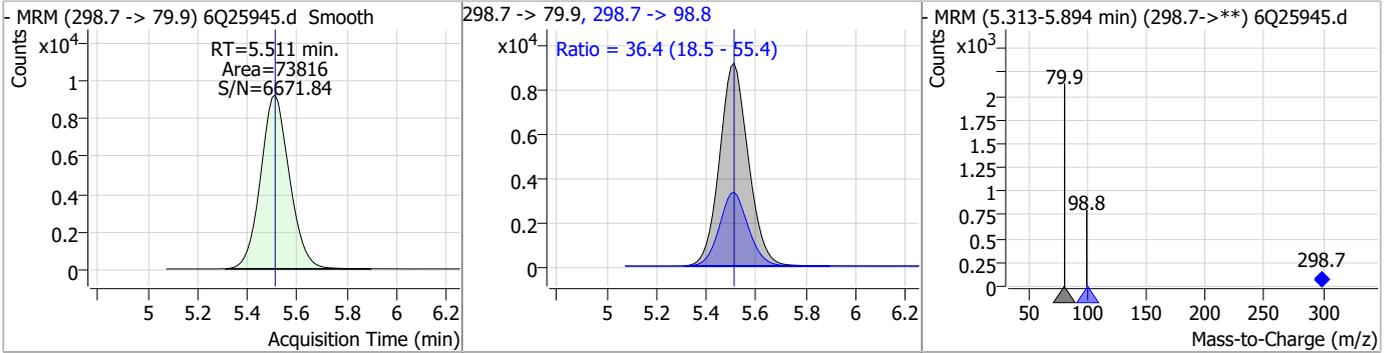
Perfluorinated Compounds by LC/MS/MS



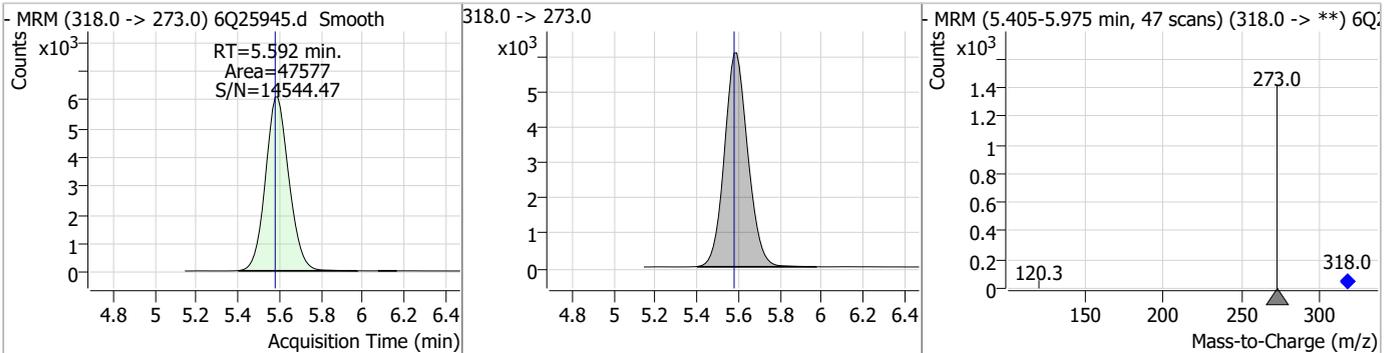
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Perfluorinated Compounds by LC/MS/MS

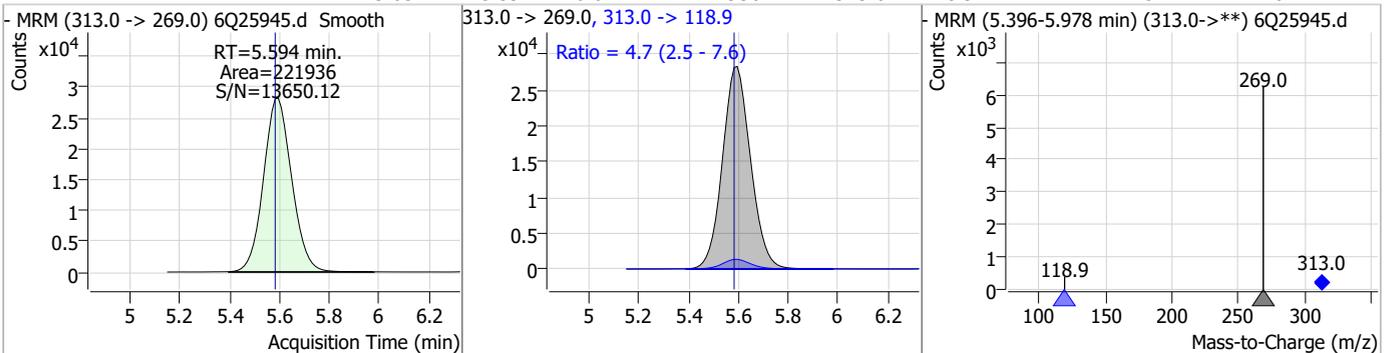
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.27	5.51	0.00	73816	298.7 -> 98.8	36.4	18.5	55.4



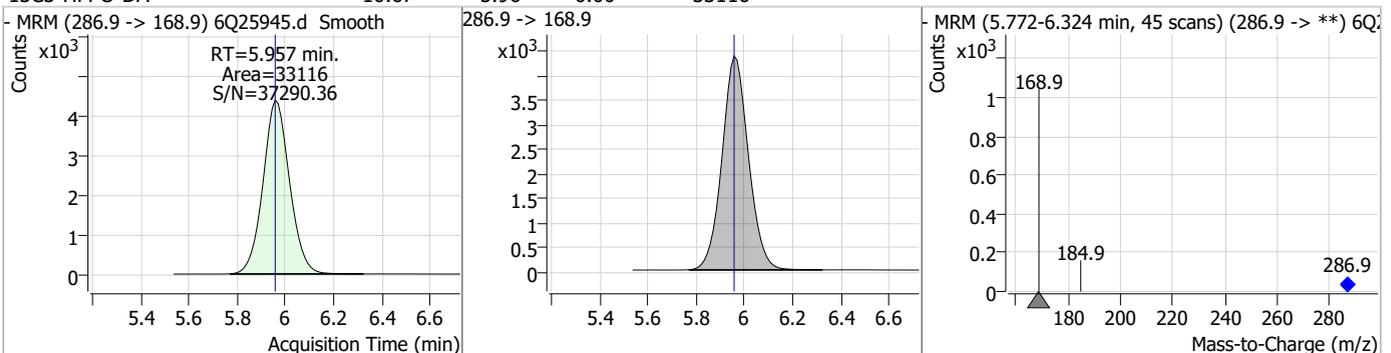
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.59	5.59	0.01	47577				



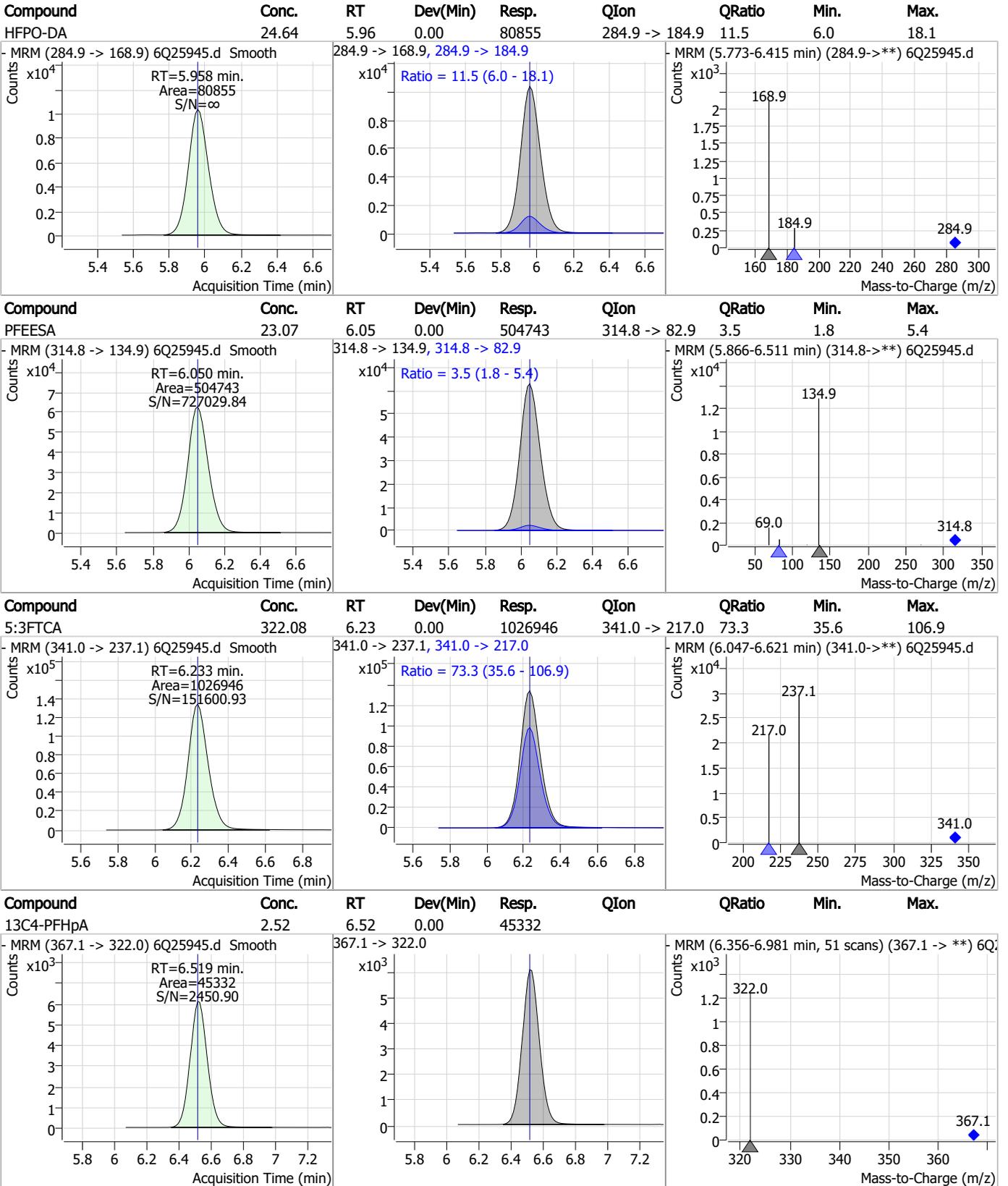
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.05	5.59	0.01	221936	313.0 -> 118.9	4.7	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	5.96	0.00	33116				



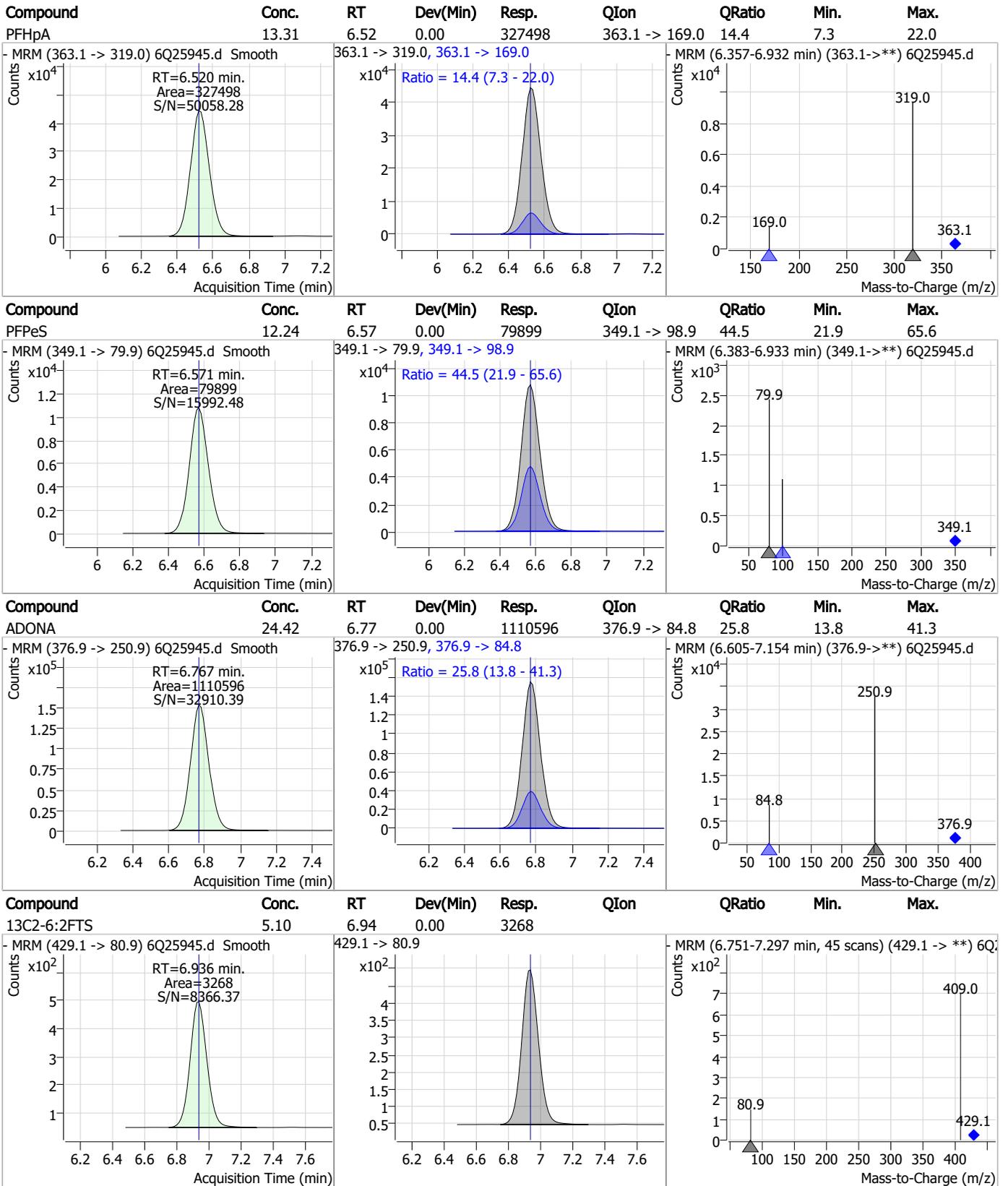
Perfluorinated Compounds by LC/MS/MS



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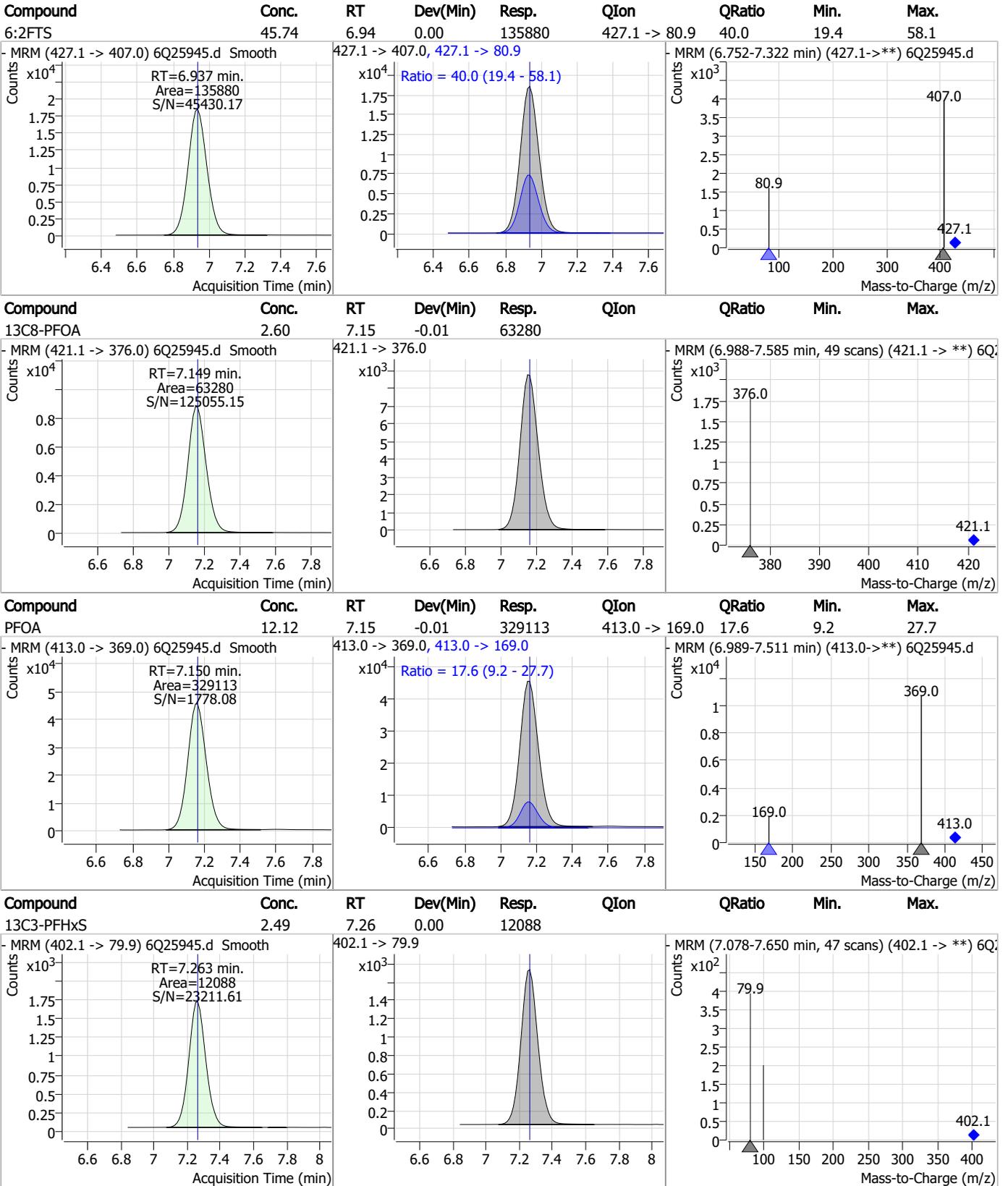
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

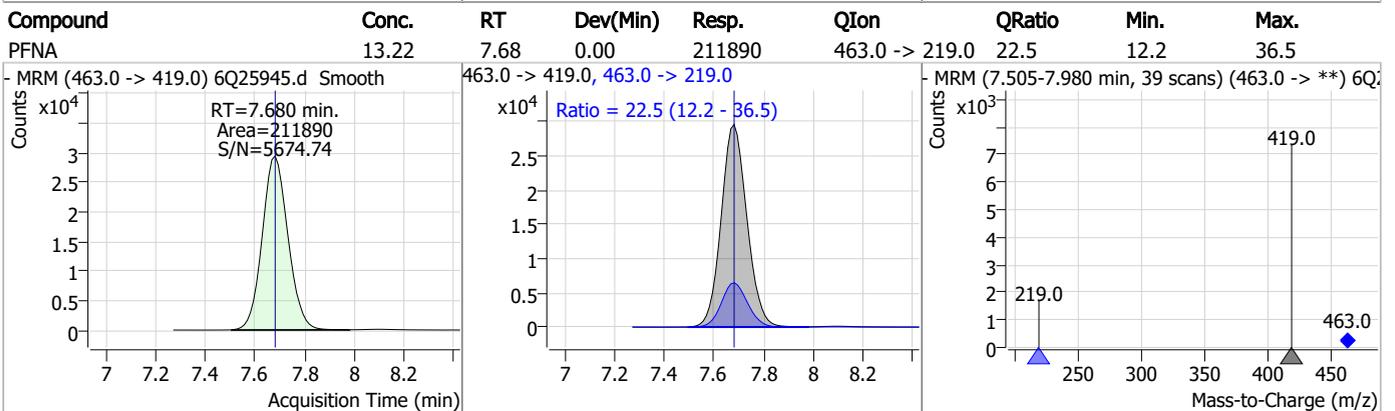
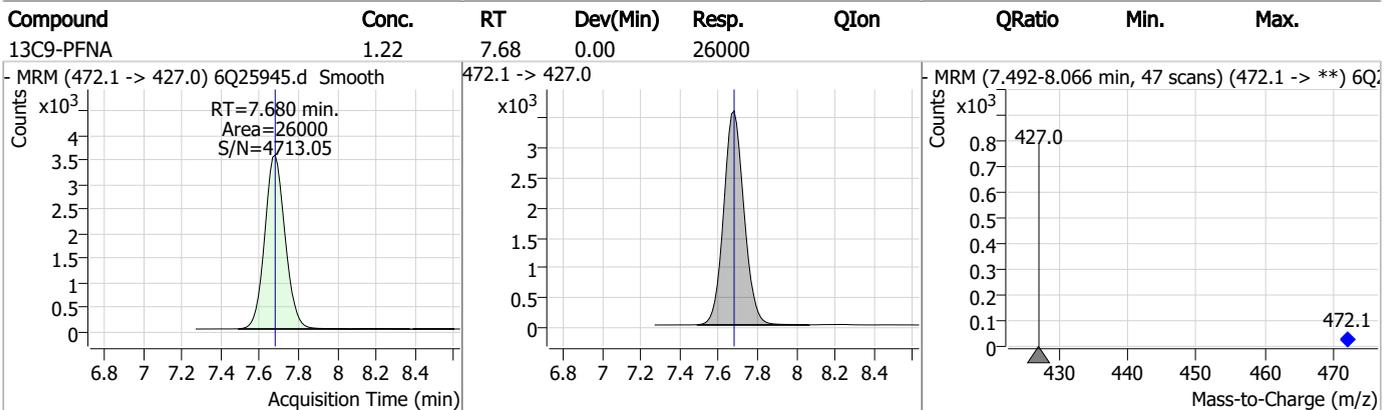
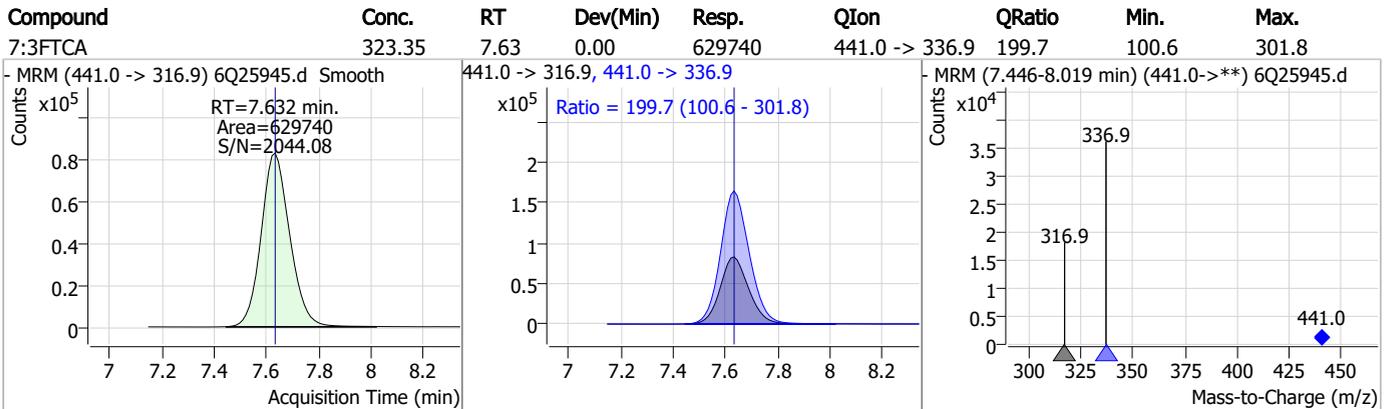
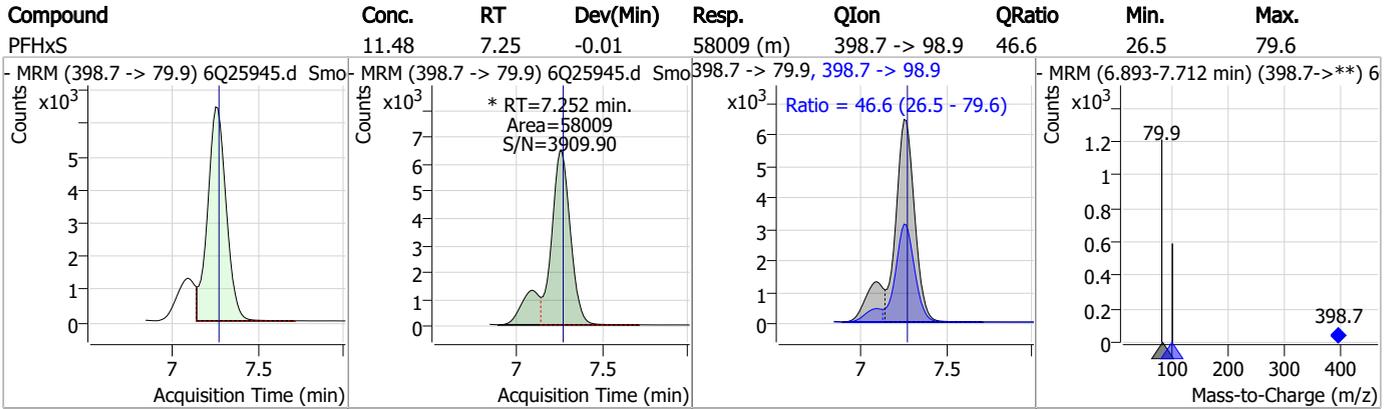


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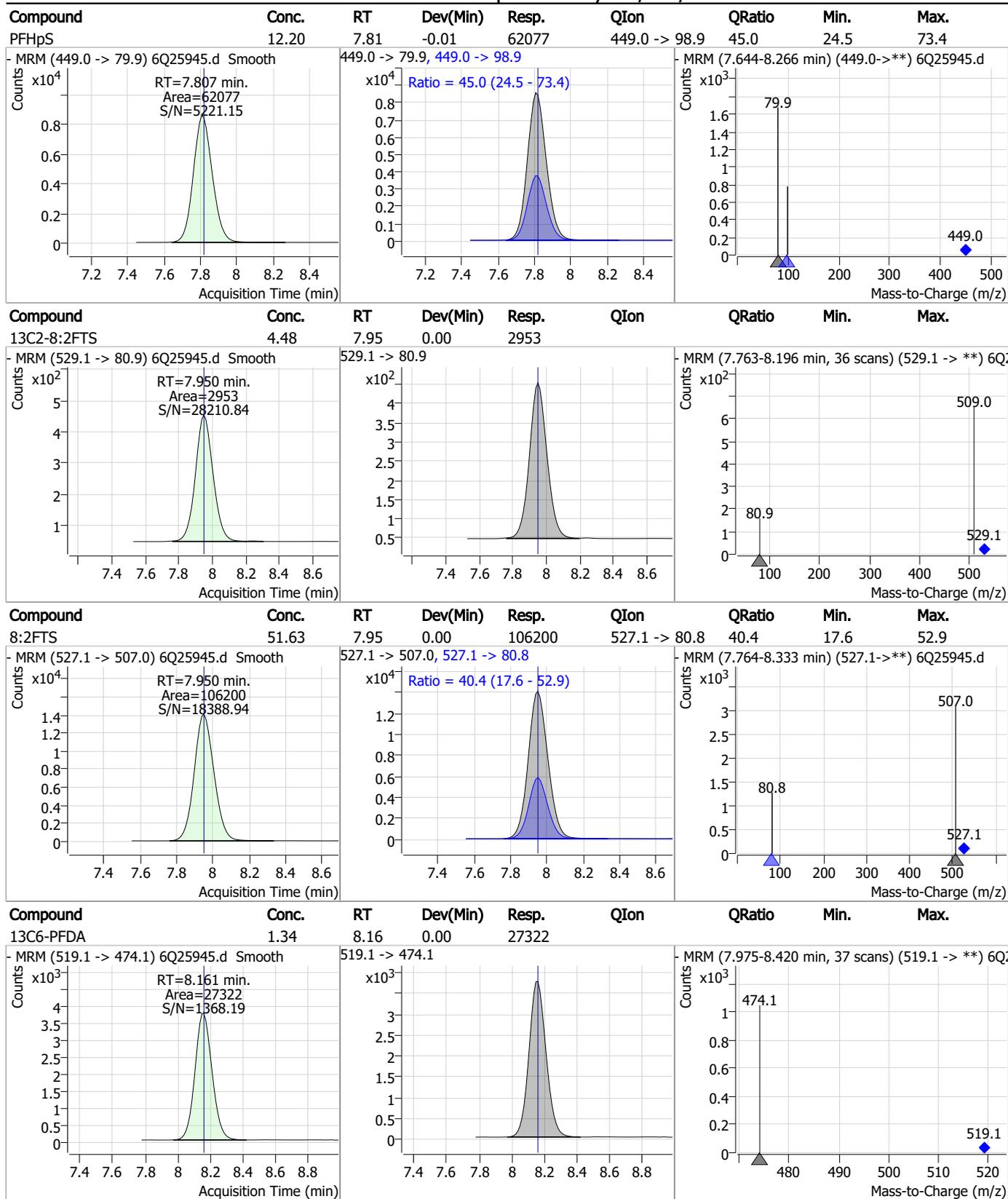
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Perfluorinated Compounds by LC/MS/MS

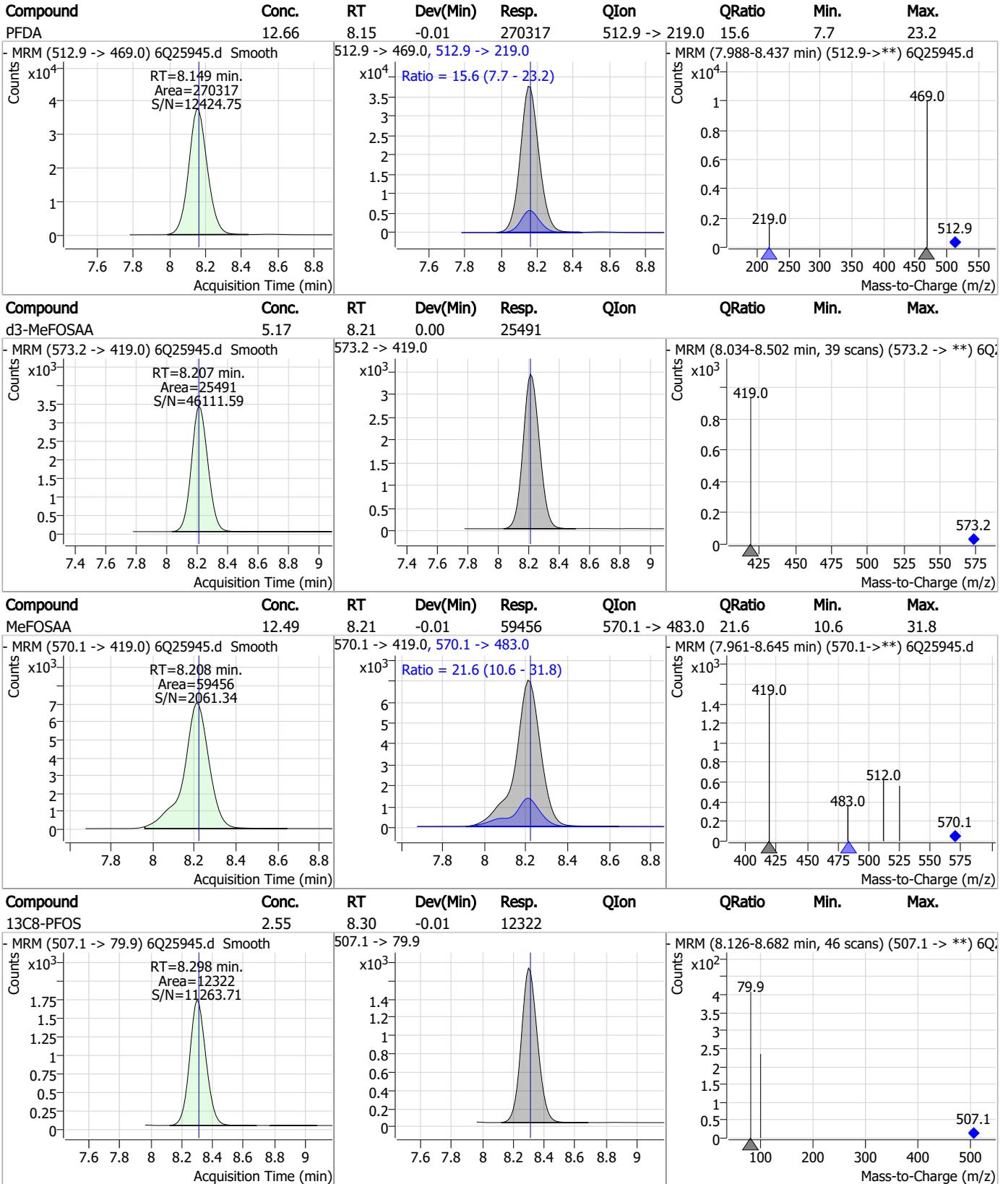


Perfluorinated Compounds by LC/MS/MS



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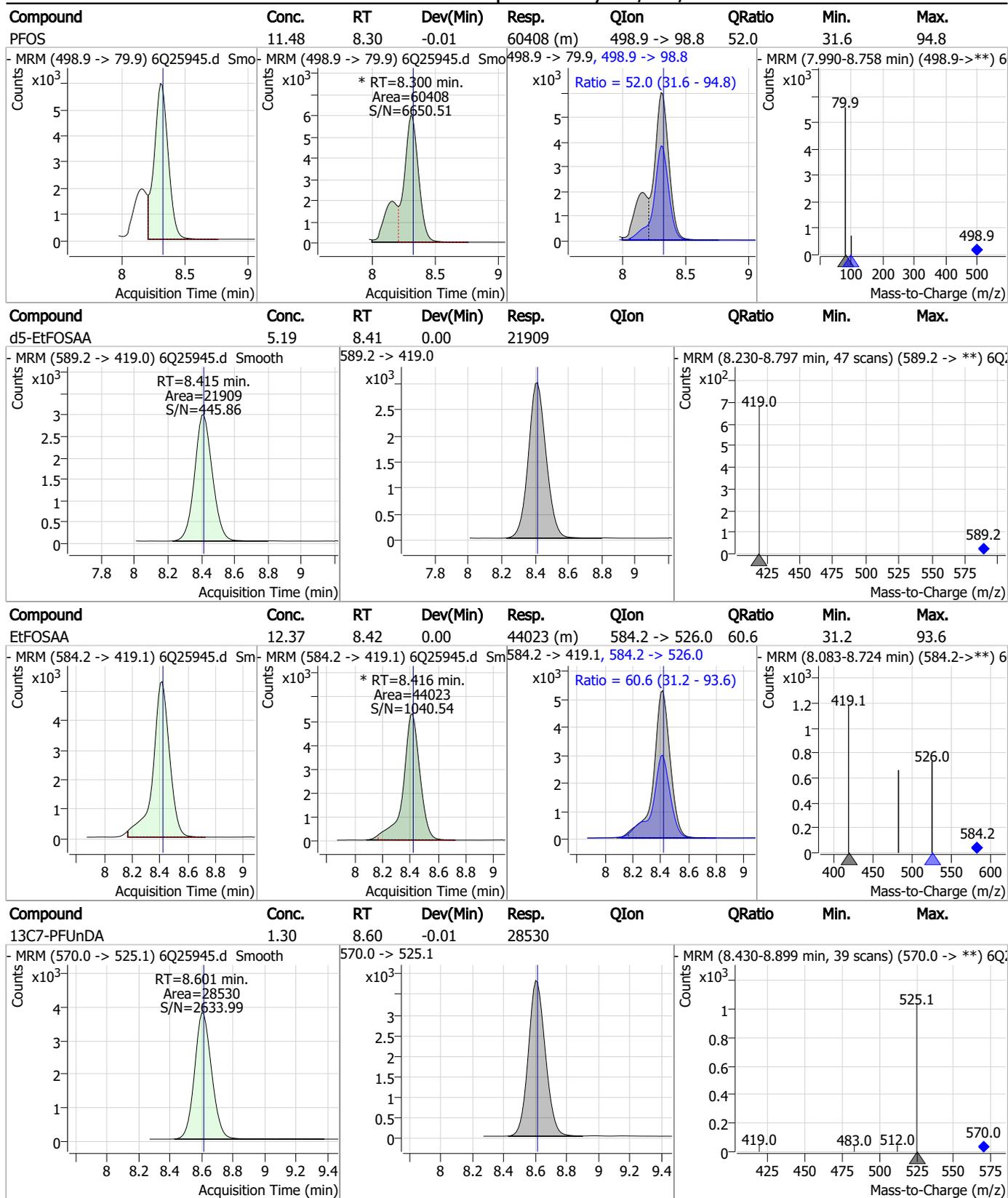
Perfluorinated Compounds by LC/MS/MS



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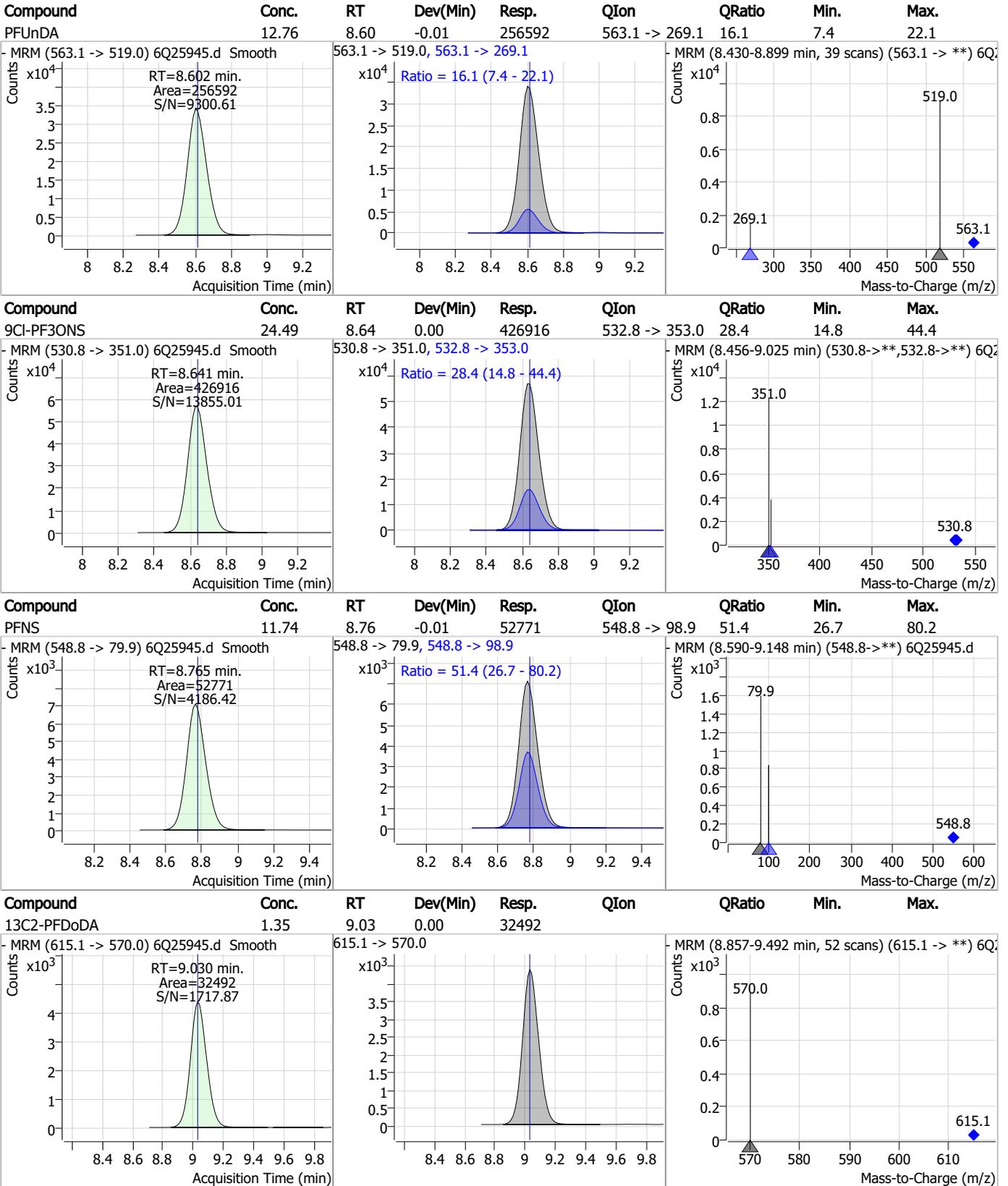
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Perfluorinated Compounds by LC/MS/MS



7.7.7

Perfluorinated Compounds by LC/MS/MS



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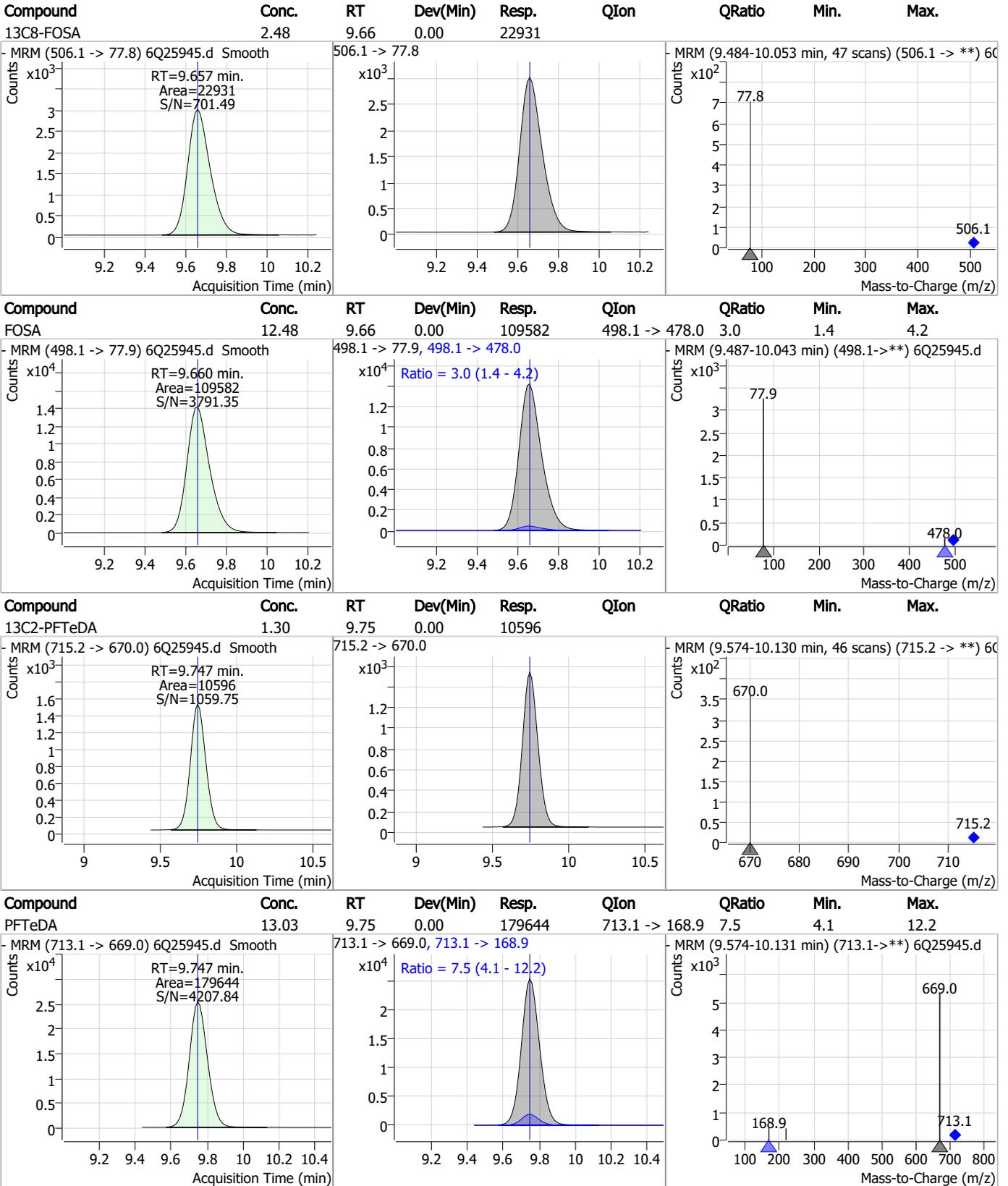
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDODA	13.04	9.03	0.00	314985	613.1 -> 319.0	11.8	5.7	17.2
PFD5	12.43	9.18	-0.01	39168	599.0 -> 98.8	44.5	22.1	66.2
PFTrDA	12.64	9.41	0.00	240071	663.0 -> 168.9	8.2	4.0	12.0
11Cl-PF3OUds	25.07	9.45	0.00	246308	632.9 -> 452.9	28.0	16.1	48.3

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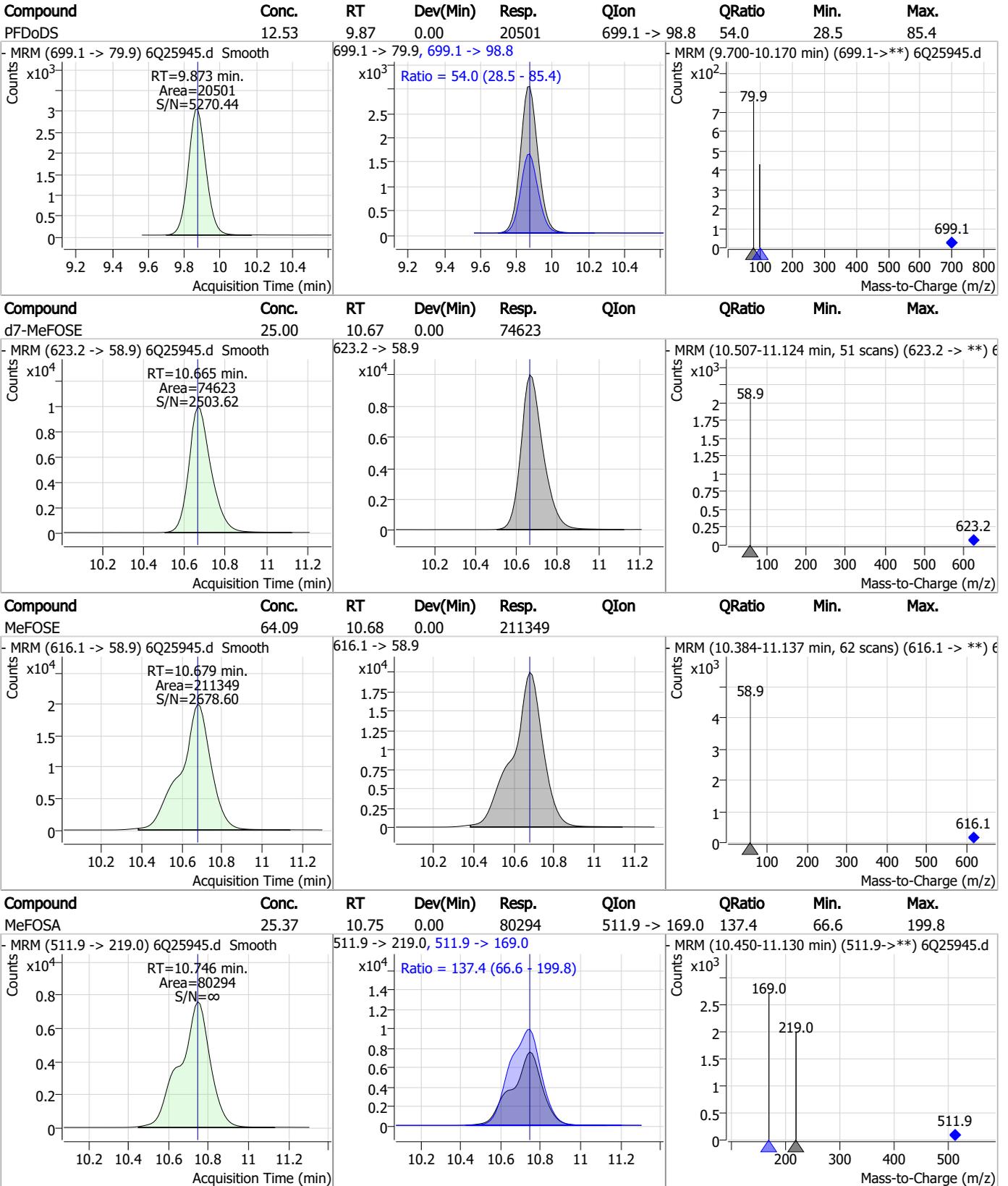
Perfluorinated Compounds by LC/MS/MS



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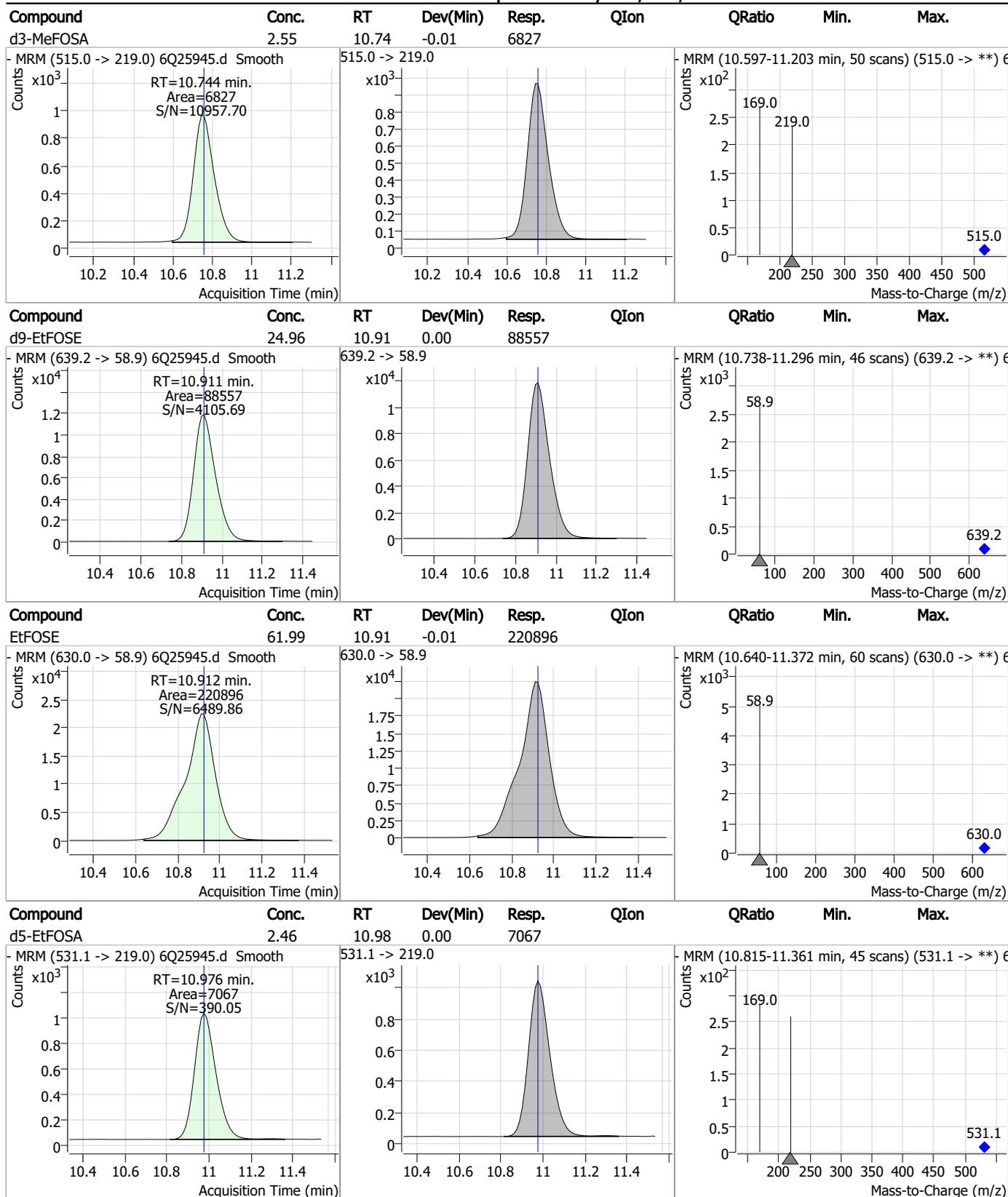
Perfluorinated Compounds by LC/MS/MS



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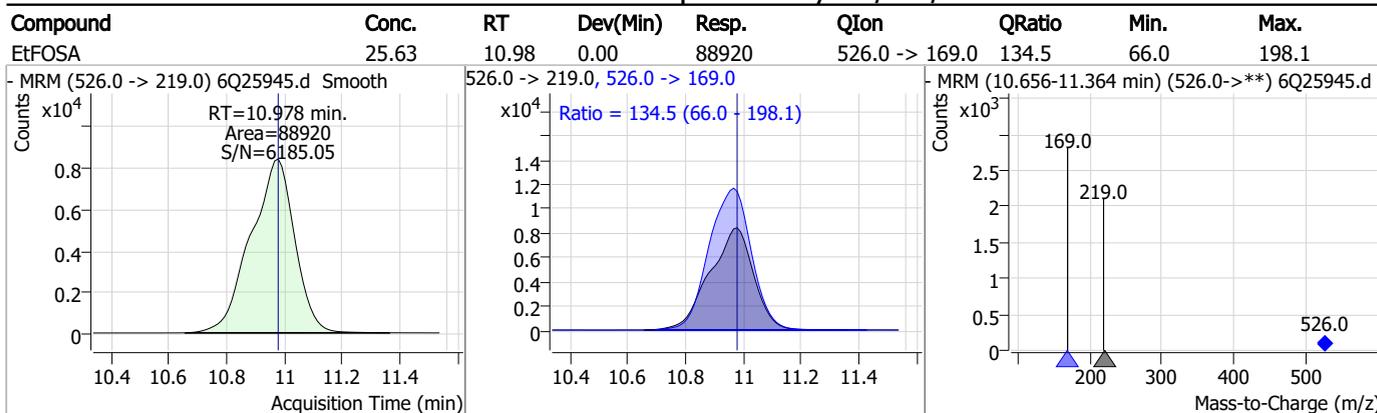
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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Perfluorinated Compounds by LC/MS/MS



7.7.7
7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25945.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 16:15 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak
EtFOSAA	2991-50-6		8.42	Split peak

7.7.7.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Natasha Gumtje
 10/09/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25946.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 4:29:19 PM
 Sample Name : ic367-7
 Vial : P1-A8
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	143807	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	51817	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	47422	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	47079	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	62339	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	26286	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27847	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	28646	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	32507	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11132	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23832	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	20925	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12697	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12237	2.50 µg/L	0.000
M2-4:2FTS	5.267	329.1 -> 80.9	2006	5.00 µg/L	0.012
M2-6:2FTS	6.936	429.1 -> 80.9	2937	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	2948	5.00 µg/L	0.012
M3-MeFOSAA	8.207	573.2 -> 419.0	23289	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	32033	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	19808	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	73359	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	88372	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7254	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6893	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	11282	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	59619	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7450	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	71336	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	24987	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	24074	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	45822	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.267	329.1 -> 80.9	2006	4.78 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.6%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2937	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C2-8:2FTS	7.962	529.1 -> 80.9	2948	4.59 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-PFDoDA	9.030	615.1 -> 570.0	32507	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11132	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.4%		
13C3-PFBS	5.510	302.1 -> 79.9	20925	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C3-PFHxS	7.263	402.1 -> 79.9	12697	2.68 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 = 107.3%	
13C4-PFBA	2.947	216.8 -> 171.9	143807	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.519	367.1 -> 322.0	47079	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C5-PFHxA	5.592	318.0 -> 273.0	47422	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	51817	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	8.161	519.1 -> 474.1	27847	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C7-PFUnDA	8.601	570.0 -> 525.1	28646	1.26 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C8-FOSA	9.657	506.1 -> 77.8	23832	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C8-PFOA	7.161	421.1 -> 376.0	62339	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C8-PFOS	8.311	507.1 -> 79.9	12237	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C9-PFNA	7.680	472.1 -> 427.0	26286	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
d3-MeFOSAA	8.207	573.2 -> 419.0	23289	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	32033	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
d3-MeFOSA	10.744	515.0 -> 219.0	6893	2.55 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
d5-EtFOSAA	8.415	589.2 -> 419.0	19808	4.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
d7-MeFOSE	10.666	623.2 -> 58.9	73359	24.41 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d9-EtFOSE	10.911	639.2 -> 58.9	88372	24.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.976	531.1 -> 219.0	7254	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	299388	89.99 µg/L	98
		327.1 -> 80.9	120628		
6:2FTS	6.937	427.1 -> 407.0	246466	92.31 µg/L	97
		427.1 -> 80.9	99575		
8:2FTS	7.950	527.1 -> 507.0	203375	99.02 µg/L	98
		527.1 -> 80.8	73649		
EtFOSAA	8.416	584.2 -> 419.1	88544	27.51 µg/L	99
		584.2 -> 526.0	54308		
FOSA	9.660	498.1 -> 77.9	221067	24.22 µg/L	100
		498.1 -> 478.0	6378		
MeFOSAA	8.208	570.1 -> 419.0	108481	24.94 µg/L	95
		570.1 -> 483.0	25452		
PFBA	2.956	212.8 -> 168.9	545402	101.81 µg/L	100
PFBS	5.511	298.7 -> 79.9	143775	22.93 µg/L	99
		298.7 -> 98.8	51801		
PFDA	8.161	512.9 -> 469.0	524845	24.12 µg/L	99
		512.9 -> 219.0	83703		
PFDoDA	9.031	613.1 -> 569.0	582858	24.12 µg/L	98
		613.1 -> 319.0	71231		
PFDS	9.183	599.0 -> 79.9	71272	22.77 µg/L	89

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	36404			
PFHpA	6.532	363.1 -> 319.0	637741	24.97	µg/L	98
		363.1 -> 169.0	88329			
PFHpS	7.819	449.0 -> 79.9	124642	24.67	µg/L	97
		449.0 -> 98.9	58068			
PFHxA	5.594	313.0 -> 269.0	436689	25.76	µg/L	99
		313.0 -> 118.9	20942			
PFHxS	7.264	398.7 -> 79.9	111537	21.02	µg/L	m 93
		398.7 -> 98.9	54028			
PFNA	7.680	463.0 -> 419.0	401525	24.78	µg/L	99
		463.0 -> 219.0	94833			
PFNS	8.765	548.8 -> 79.9	102995	23.08	µg/L	94
		548.8 -> 98.9	50434			
PFOA	7.163	413.0 -> 369.0	690537	25.81	µg/L	95
		413.0 -> 169.0	112516			
PFOS	8.300	498.9 -> 79.9	117988	22.57	µg/L	m 85
		498.9 -> 98.8	60780			
PFPeA	4.374	263.0 -> 219.0	563152	50.38	µg/L	100
PFPeS	6.571	349.1 -> 79.9	152945	22.31	µg/L	96
		349.1 -> 98.9	70620			
PFTeDA	9.747	713.1 -> 669.0	333585	23.03	µg/L	99
		713.1 -> 168.9	26356			
PFTrDA	9.413	663.0 -> 619.0	483579	25.45	µg/L	100
		663.0 -> 168.9	37973			
PFUnDA	8.602	563.1 -> 519.0	519955	25.76	µg/L	100
		563.1 -> 269.1	76024			
11CI-PF3OUdS	9.454	630.9 -> 450.9	446188	46.95	µg/L	100
		632.9 -> 452.9	142765			
9CI-PF3ONS	8.641	530.8 -> 351.0	788798	46.77	µg/L	98
		532.8 -> 353.0	241622			
ADONA	6.780	376.9 -> 250.9	2113602	48.04	µg/L	96
		376.9 -> 84.8	543600			
HFPO-DA	5.958	284.9 -> 168.9	165529	52.14	µg/L	96
		284.9 -> 184.9	17758			
3:3FTCA	3.808	241.0 -> 177.0	99761	129.26	µg/L	99
		241.0 -> 117.0	13085			
5:3FTCA	6.233	341.0 -> 237.1	2040408	642.02	µg/L	98
		341.0 -> 217.0	1417577			
7:3FTCA	7.632	441.0 -> 316.9	1197504	616.89	µg/L	91
		441.0 -> 336.9	2582112			
EtFOSA	10.978	526.0 -> 219.0	177837	49.94	µg/L	96
		526.0 -> 169.0	225694			
EtFOSE	10.912	630.0 -> 58.9	440231	123.80	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	154817	48.46	µg/L	93
		511.9 -> 169.0	219349			
MeFOSE	10.679	616.1 -> 58.9	417383	128.74	µg/L	100
PFDoS	9.873	699.1 -> 79.9	38602	23.75	µg/L	96
		699.1 -> 98.8	20726			
NFDHA	5.475	295.0 -> 201.0	106456	49.98	µg/L	99
		295.0 -> 84.9	28487			
PFMBA	4.800	279.0 -> 85.1	430516	50.55	µg/L	100
PFMPA	3.513	229.0 -> 84.9	356493	50.70	µg/L	100
PFEESA	6.050	314.8 -> 134.9	985292	45.18	µg/L	100
		314.8 -> 82.9	34398			

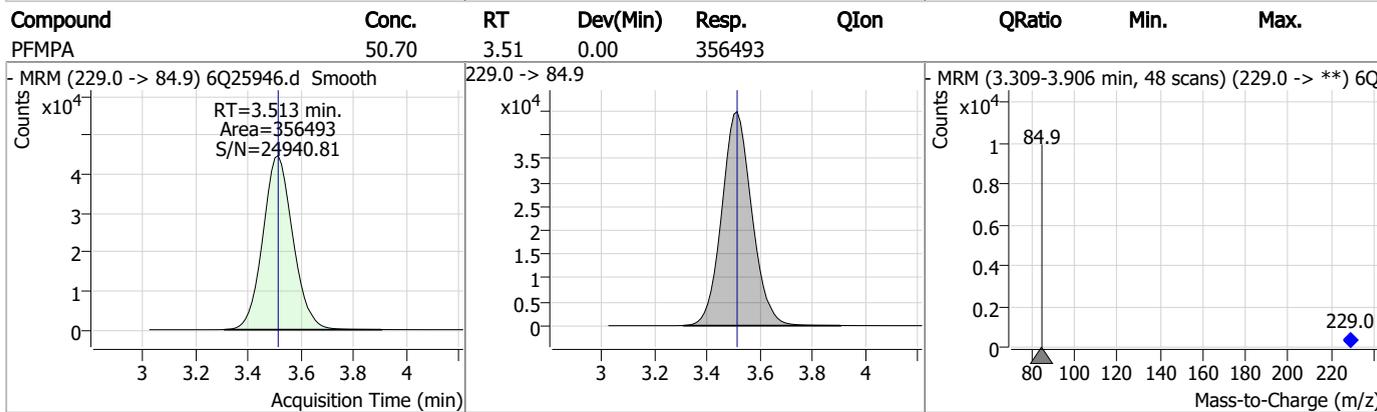
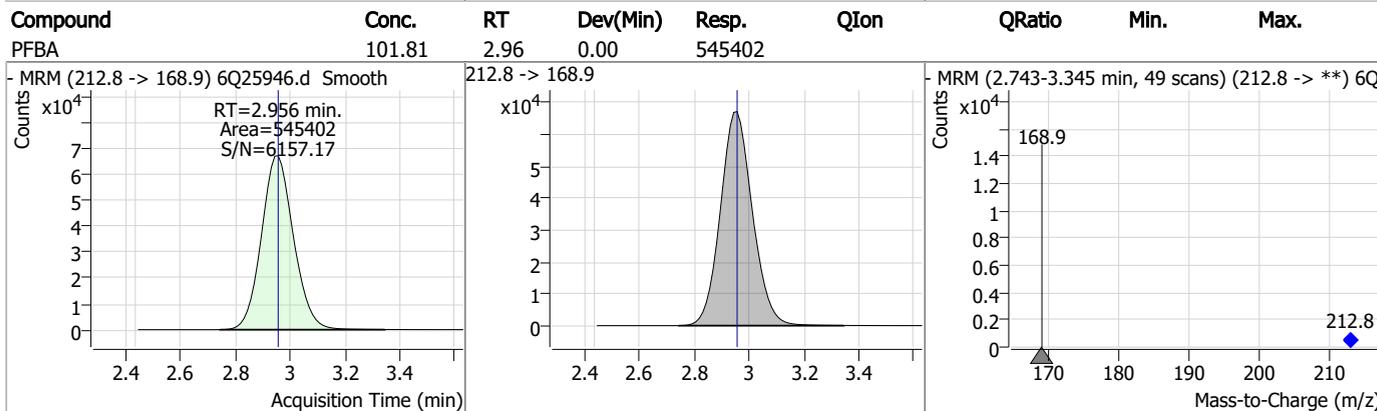
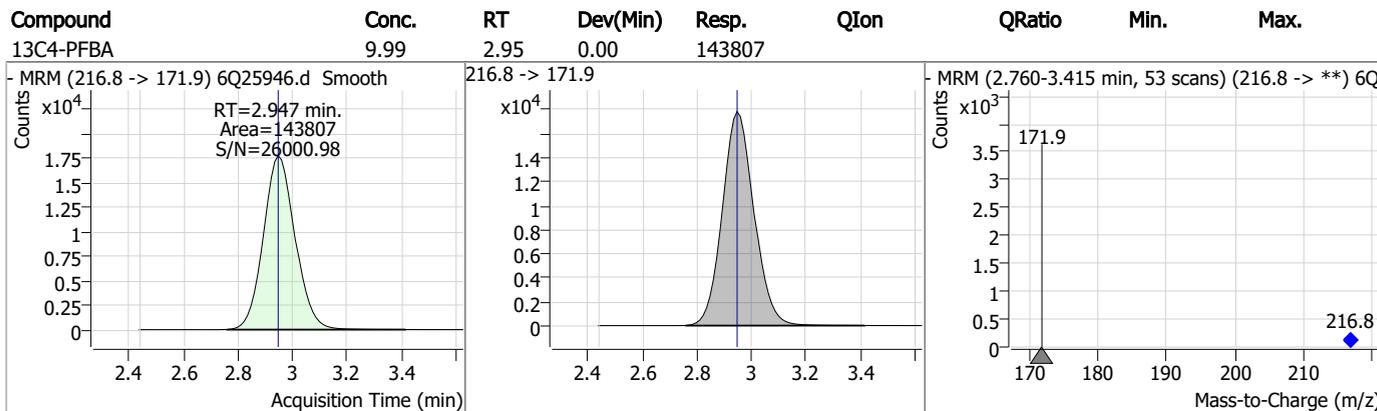
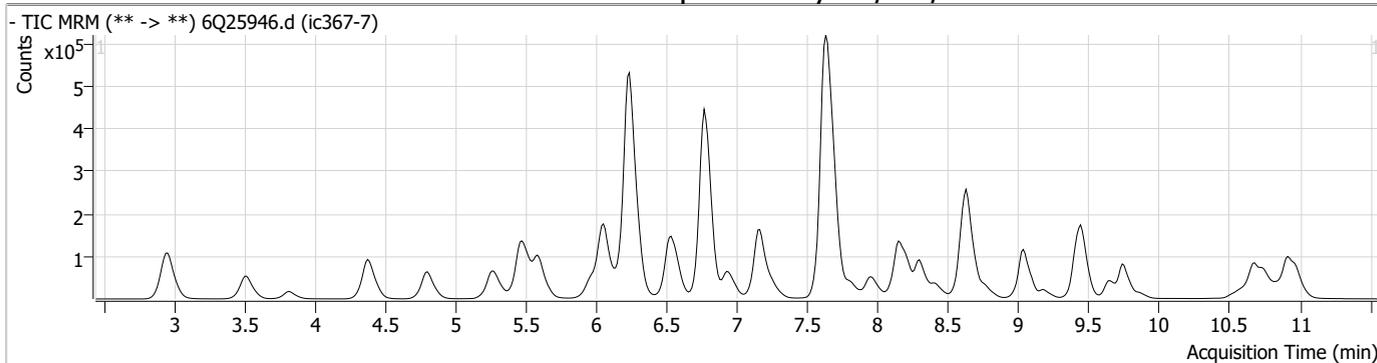
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

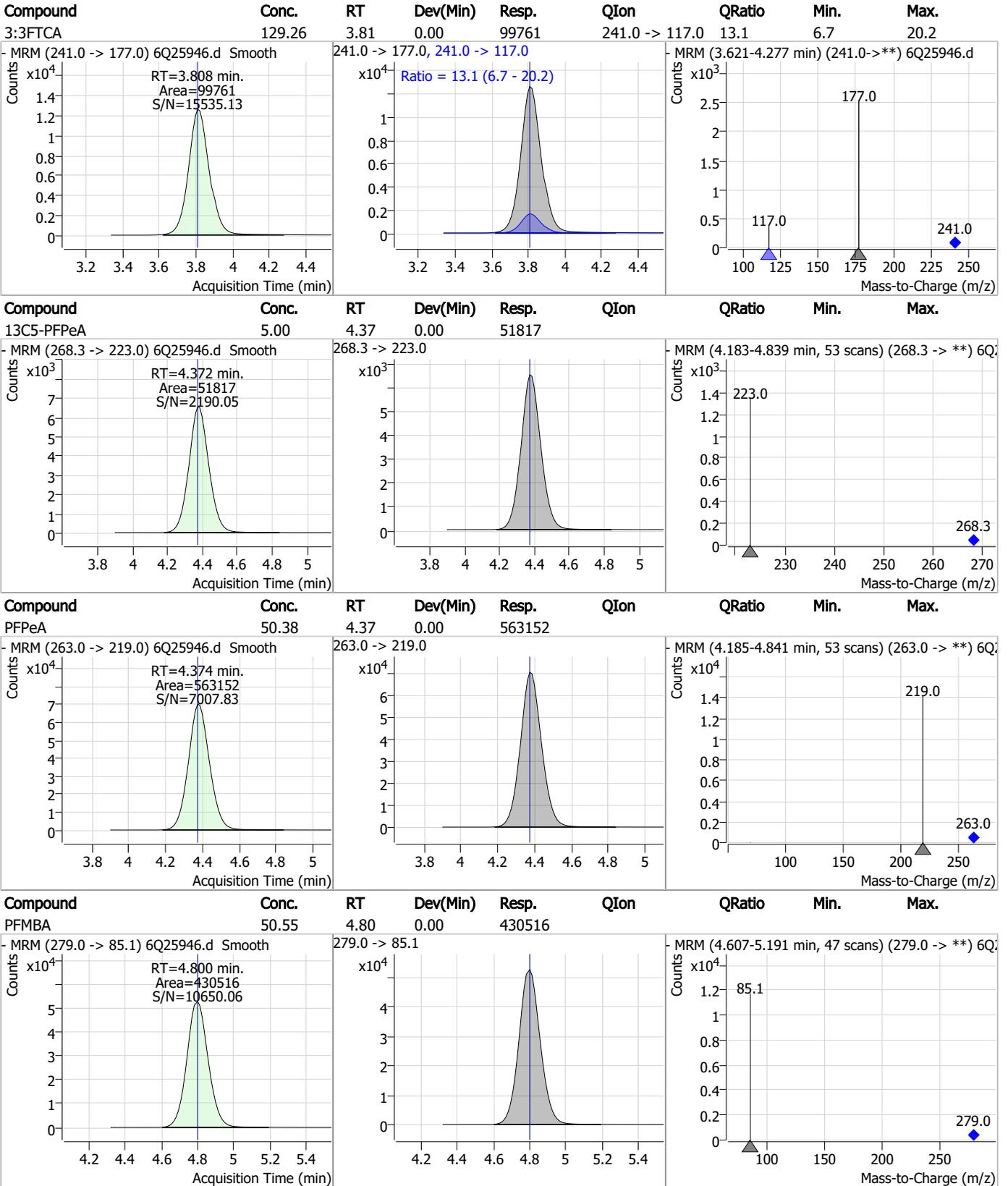
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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Perfluorinated Compounds by LC/MS/MS



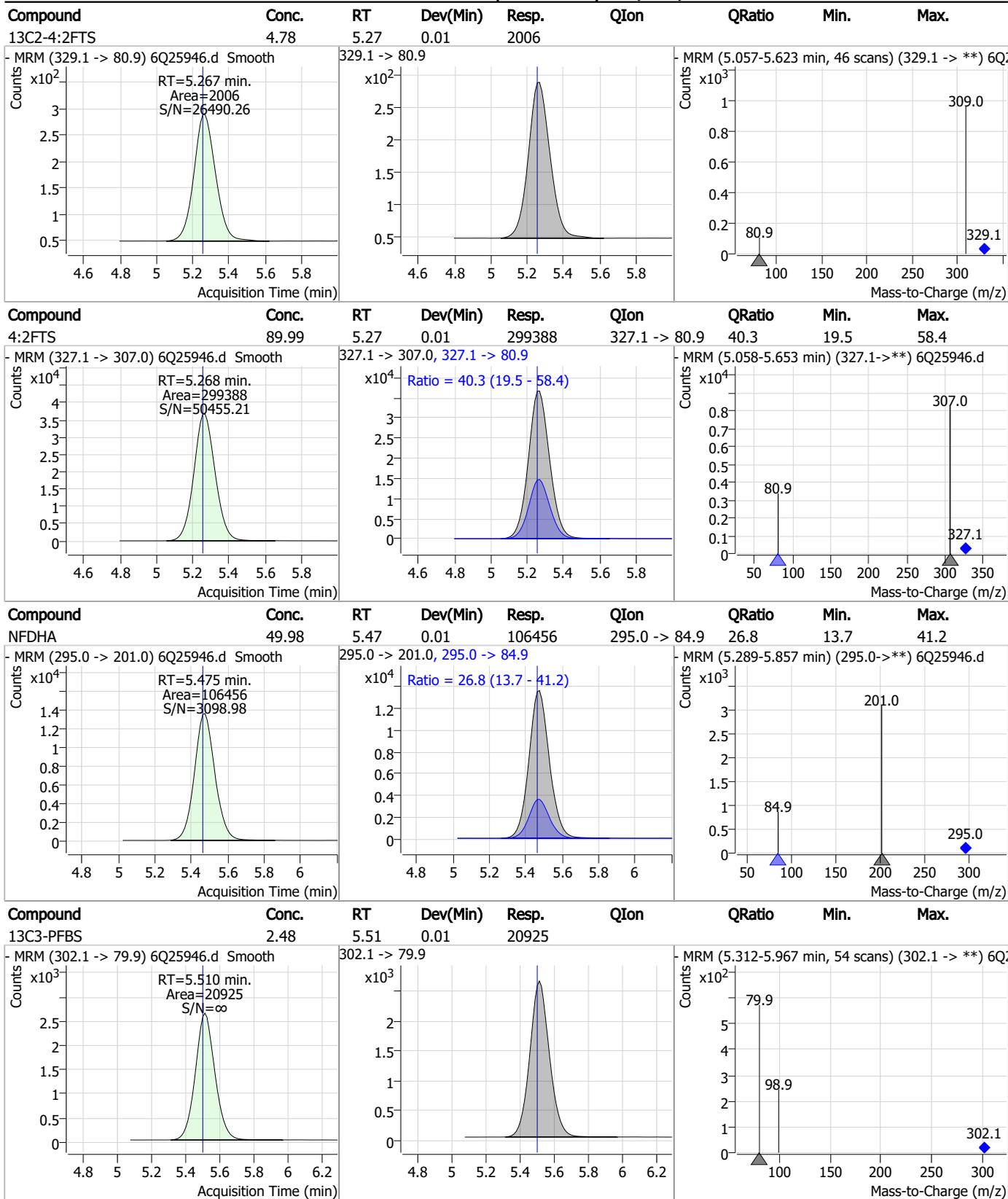
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



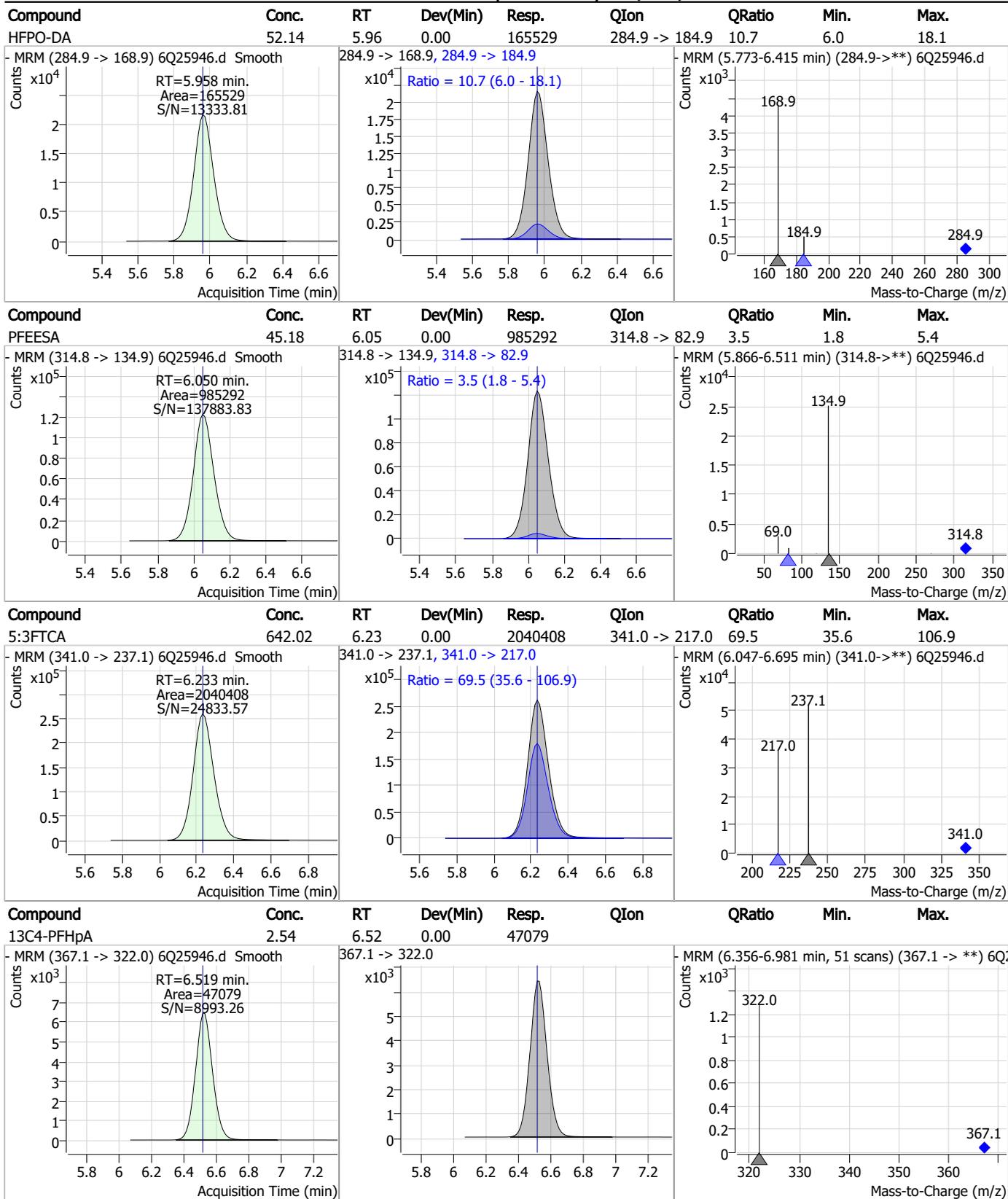
7.7.8
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	22.93	5.51	0.00	143775	298.7 -> 98.8	36.0	18.5	55.4
13C5-PFHxA	2.50	5.59	0.01	47422	318.0 -> 273.0			
PFHxA	25.76	5.59	0.01	436689	313.0 -> 118.9	4.8	2.5	7.6
13C3-HFPO-DA	10.02	5.96	0.00	32033	286.9 -> 168.9			

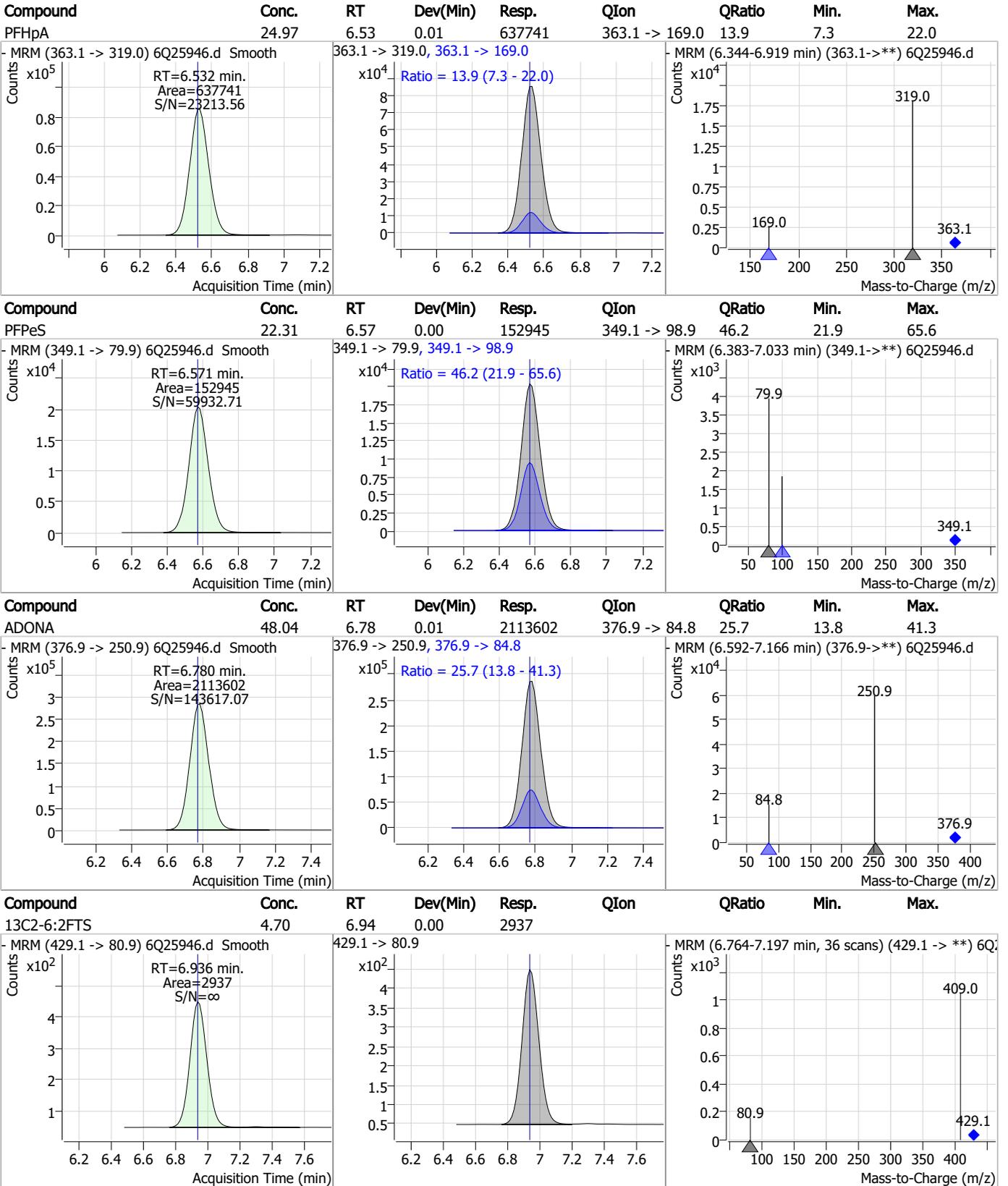
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

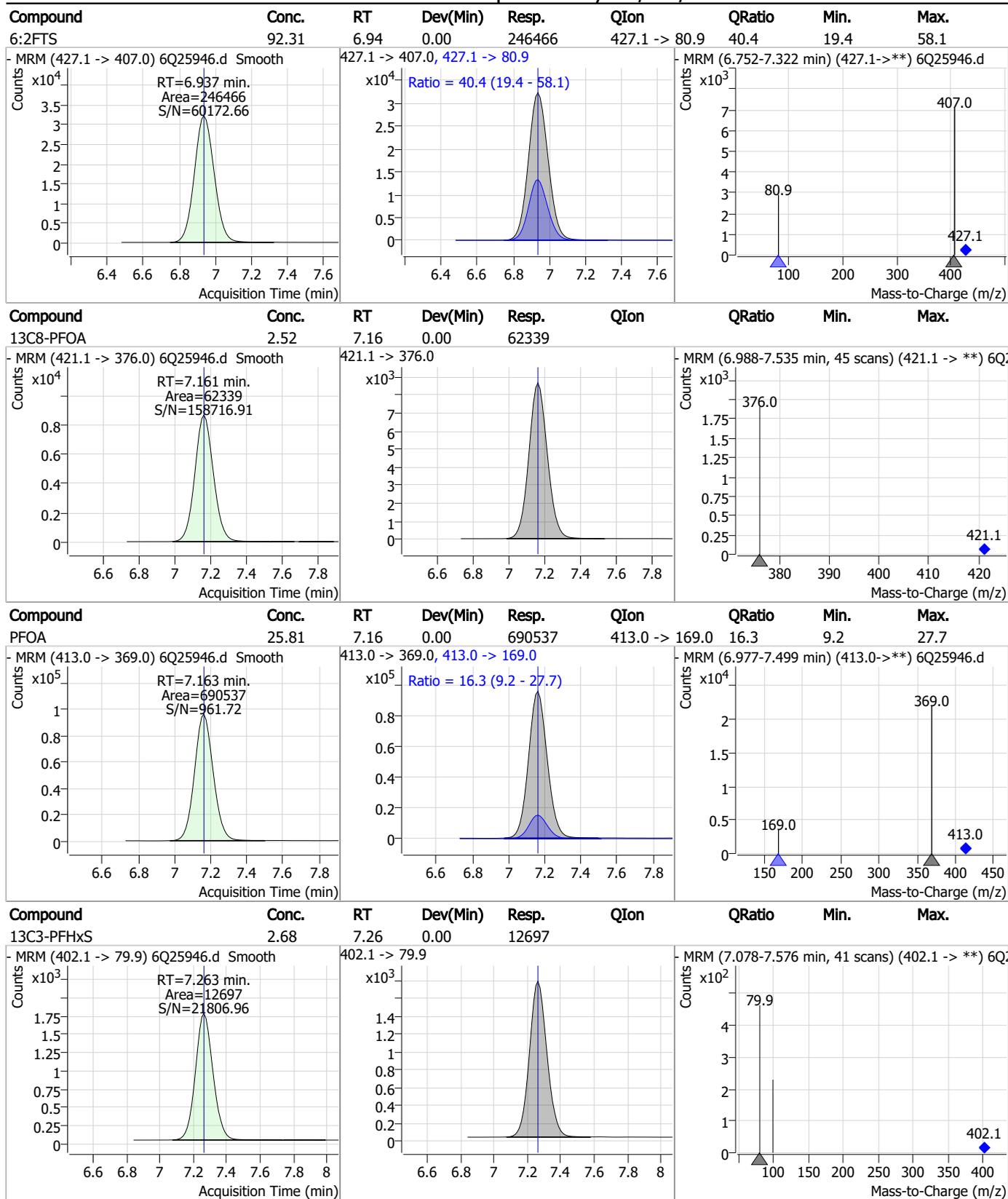


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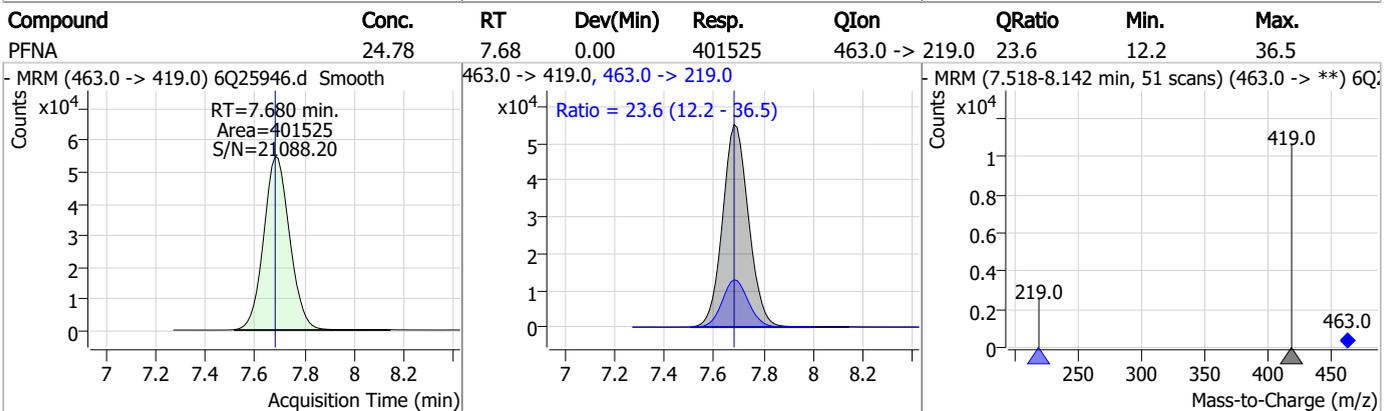
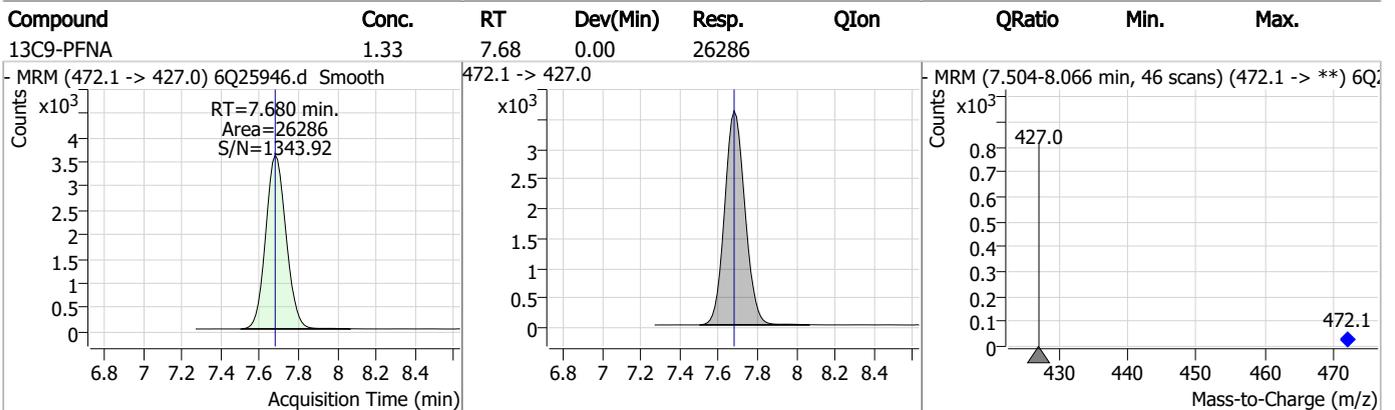
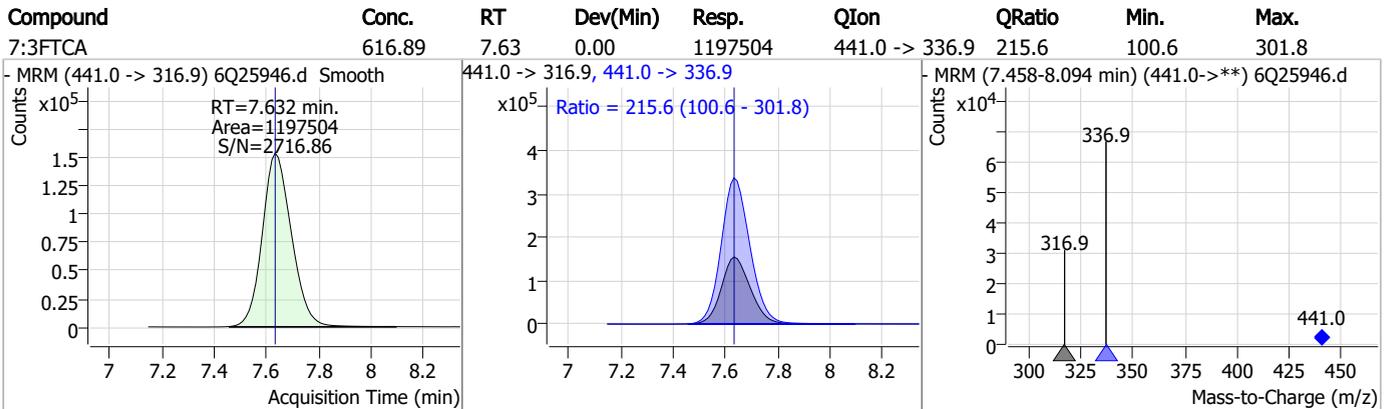
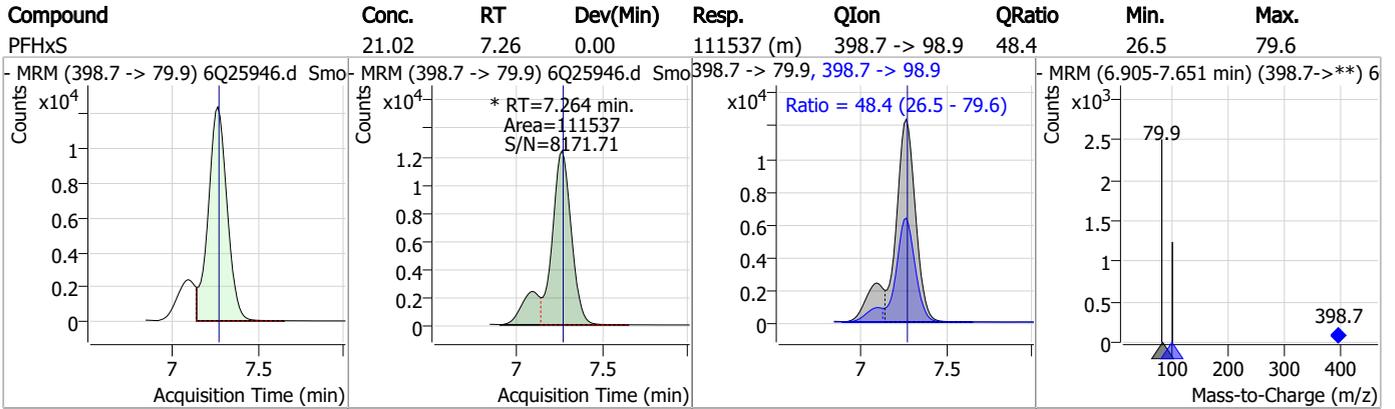
Perfluorinated Compounds by LC/MS/MS



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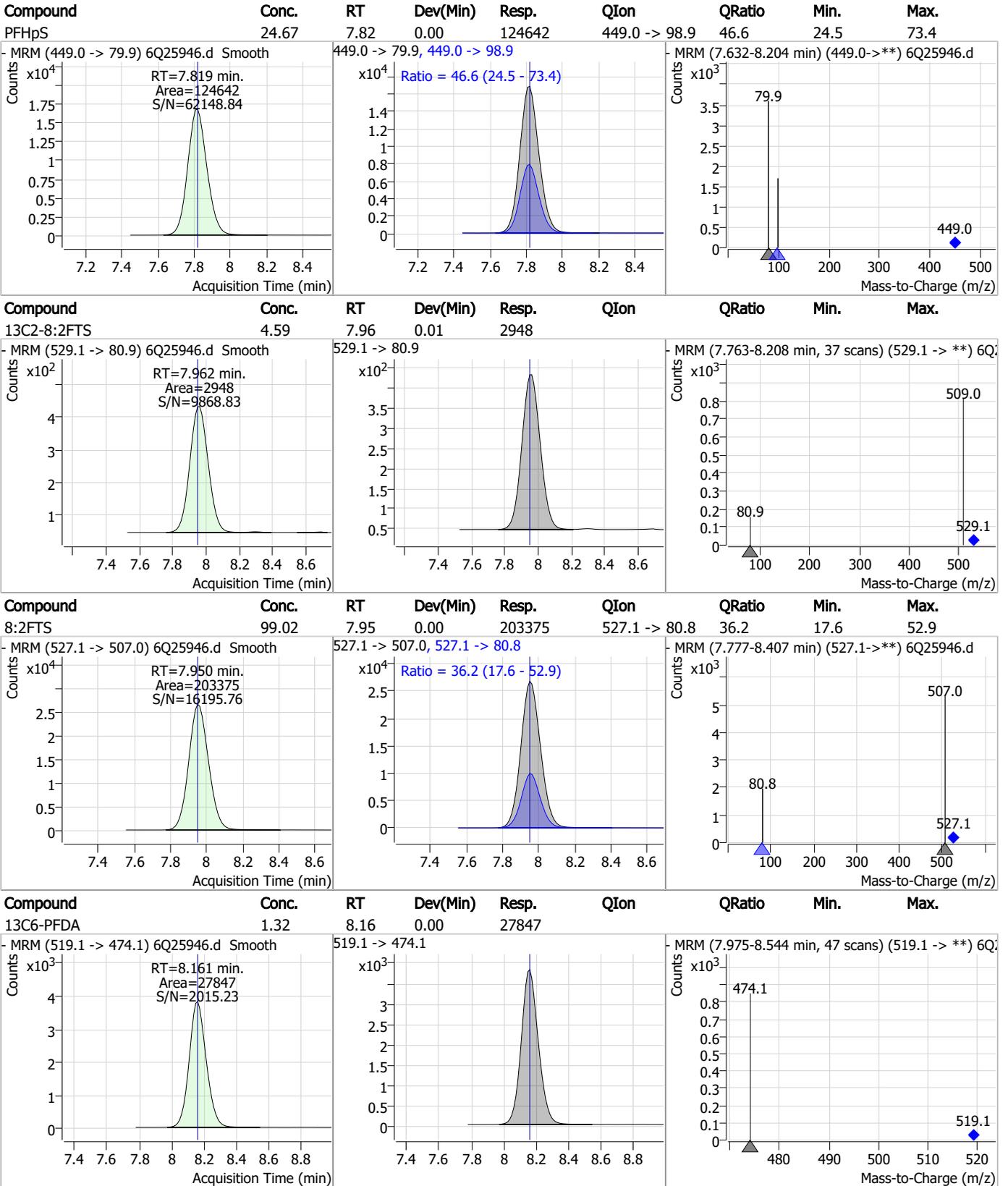
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

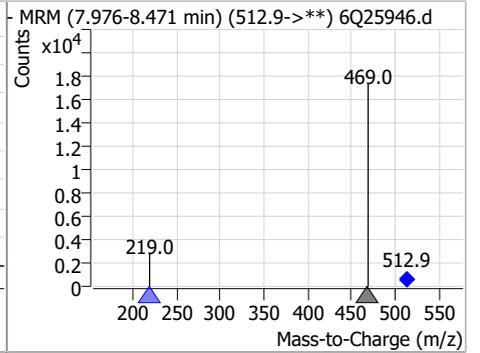
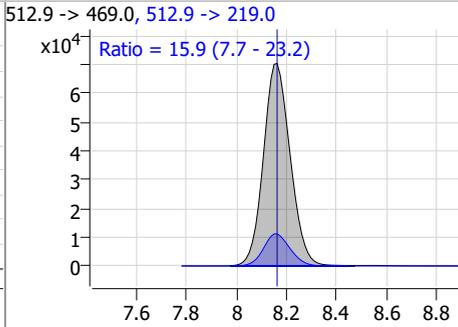
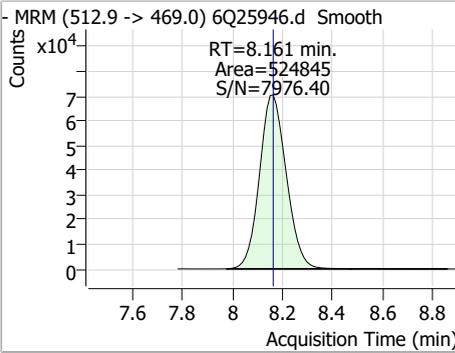


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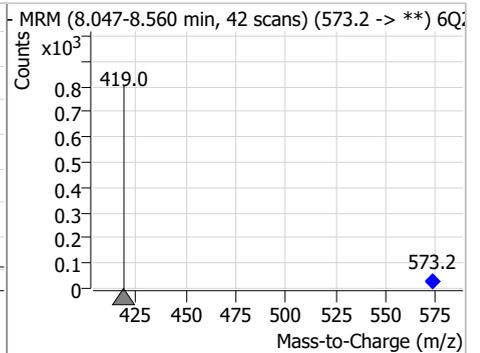
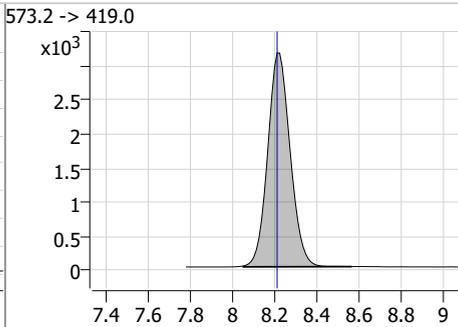
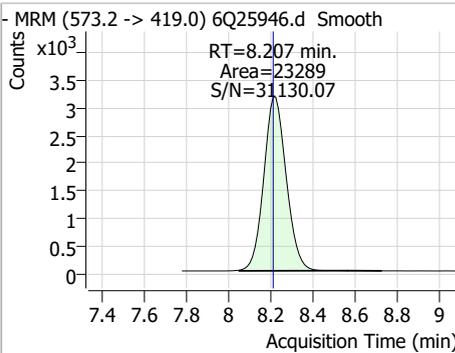
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Perfluorinated Compounds by LC/MS/MS

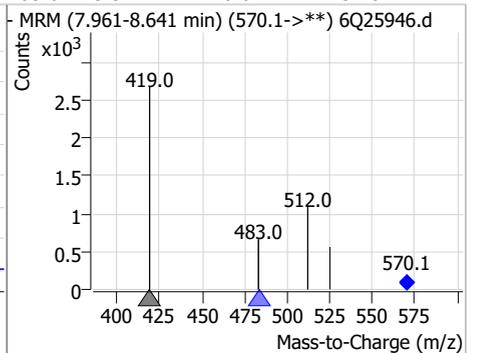
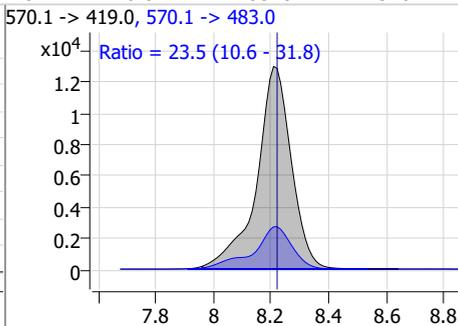
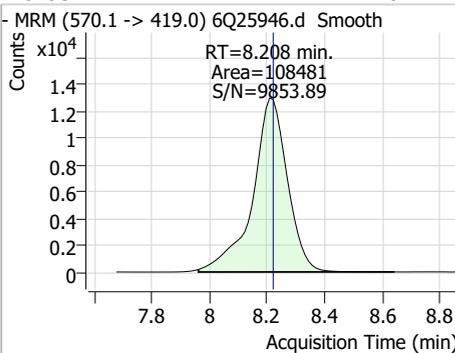
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	24.12	8.16	0.00	524845	512.9 -> 219.0	15.9	7.7	23.2



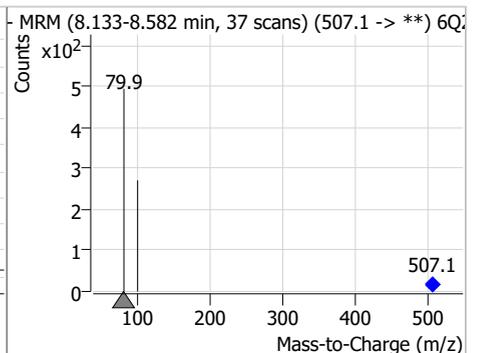
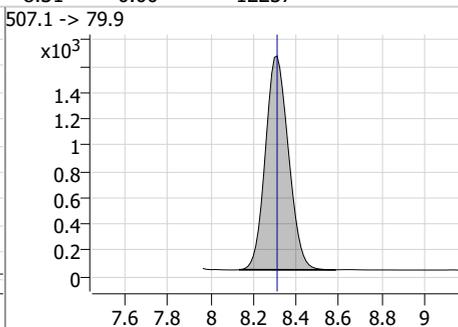
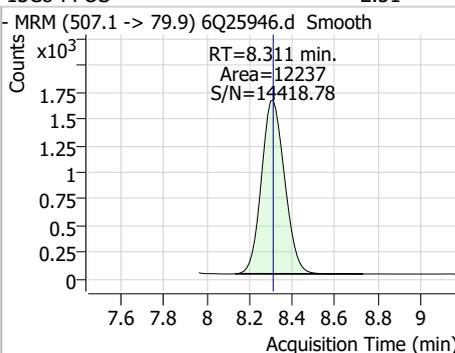
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.69	8.21	0.00	23289				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	24.94	8.21	-0.01	108481	570.1 -> 483.0	23.5	10.6	31.8

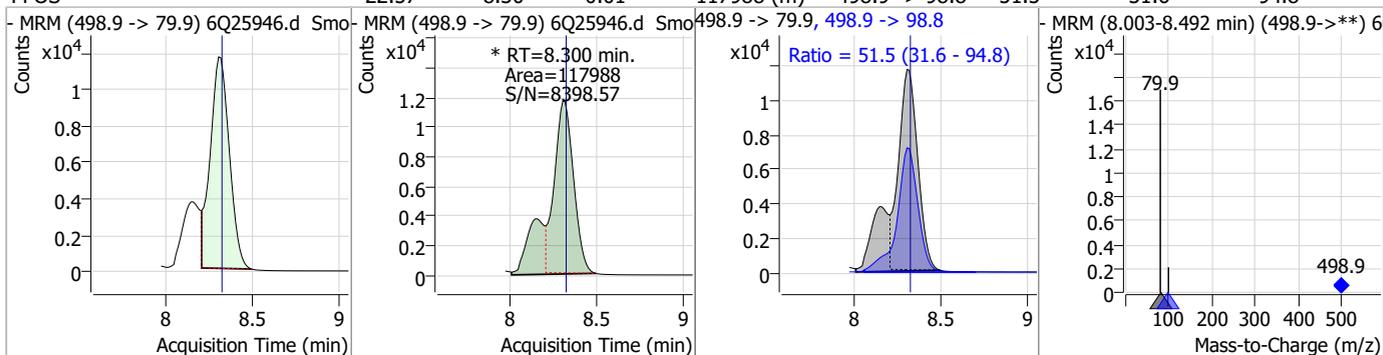


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.51	8.31	0.00	12237				

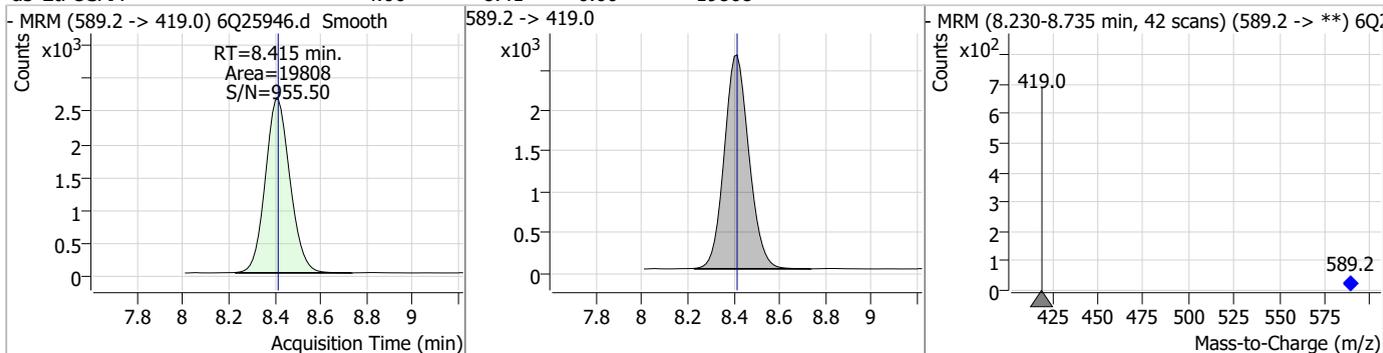


Perfluorinated Compounds by LC/MS/MS

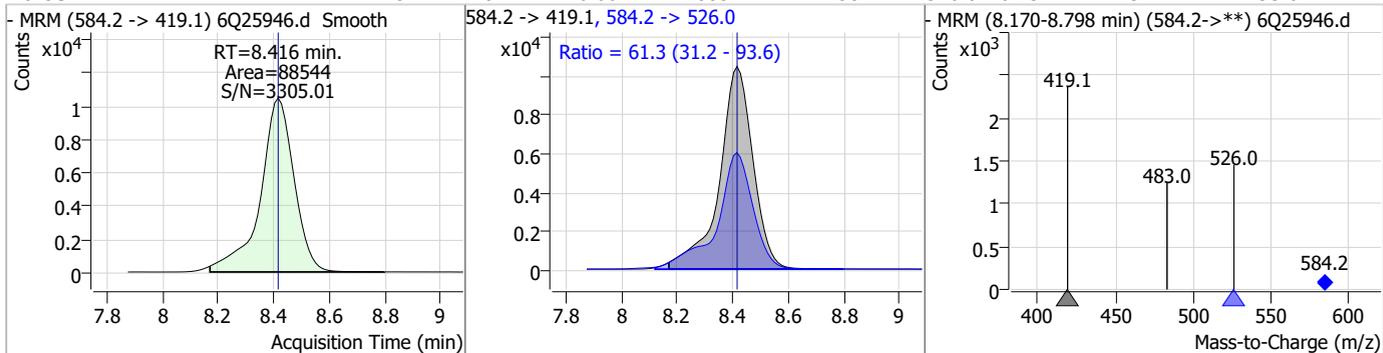
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.57	8.30	-0.01	117988 (m)	498.9 -> 98.8	51.5	31.6	94.8



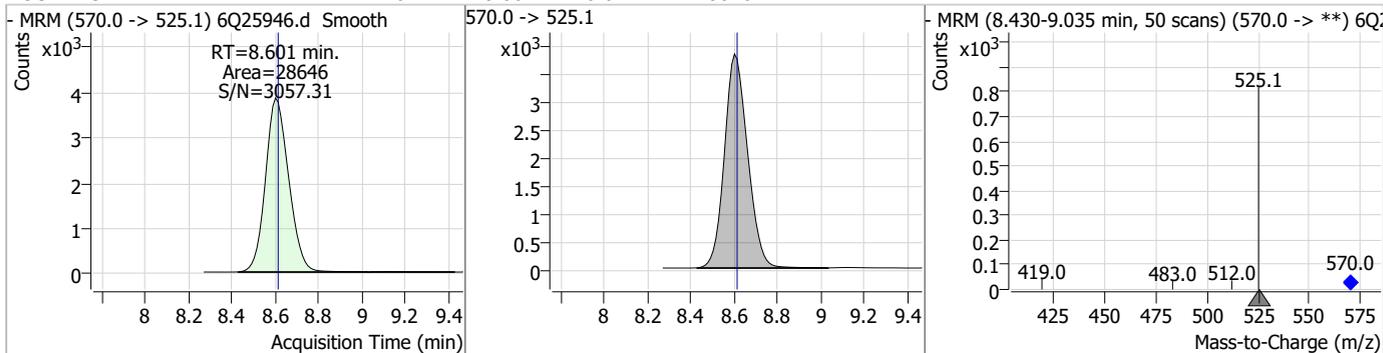
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.66	8.41	0.00	19808				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	27.51	8.42	0.00	88544	584.2 -> 526.0	61.3	31.2	93.6

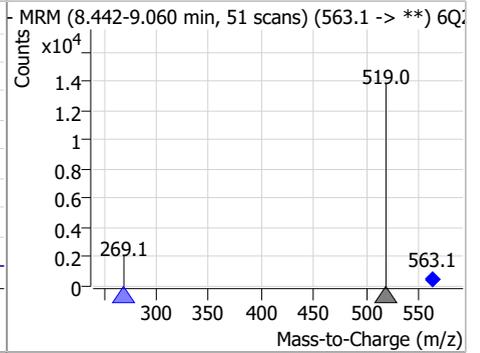
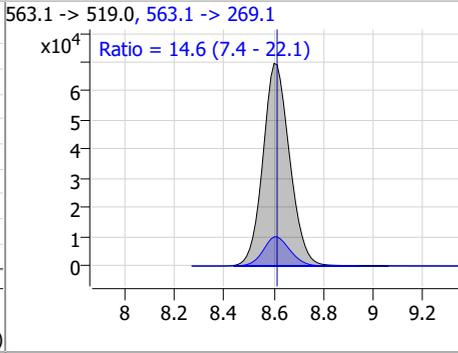
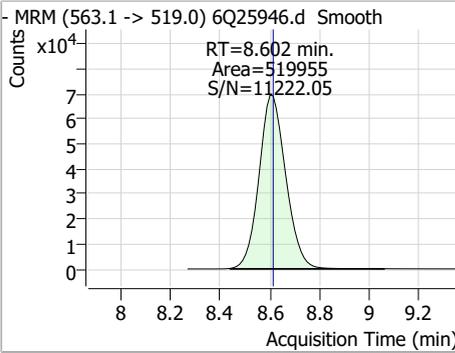


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.60	-0.01	28646				

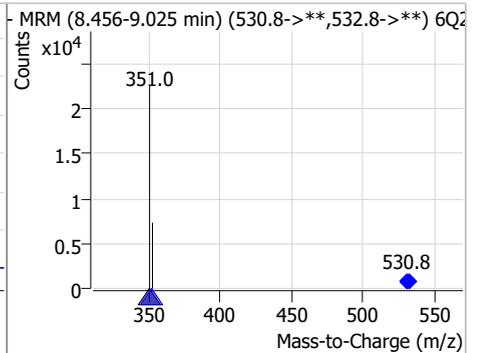
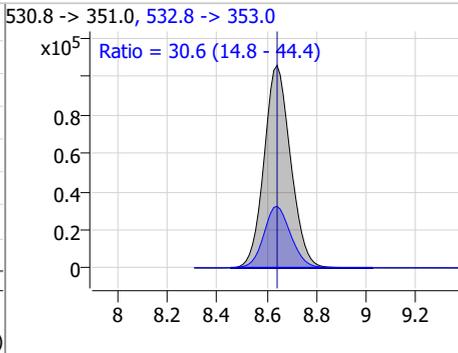
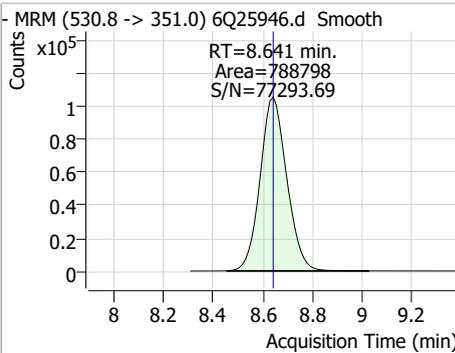


Perfluorinated Compounds by LC/MS/MS

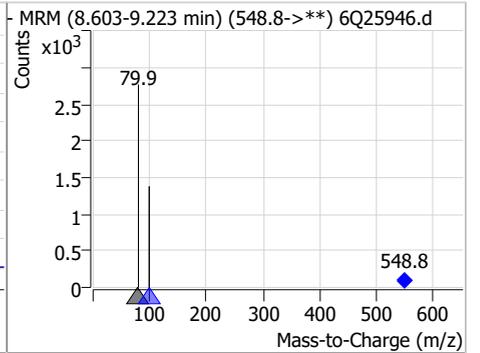
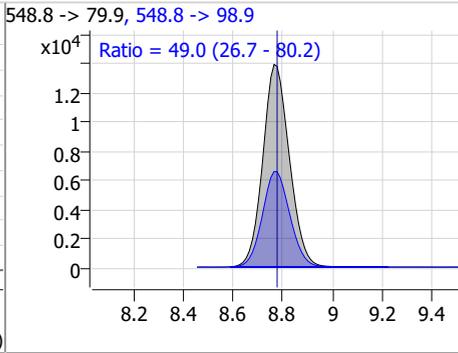
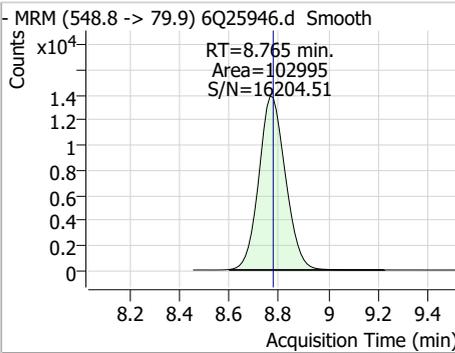
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	25.76	8.60	-0.01	519955	563.1 -> 269.1	14.6	7.4	22.1



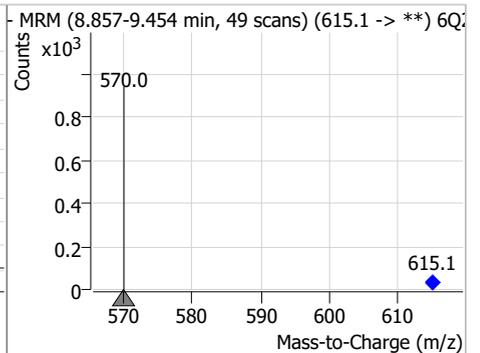
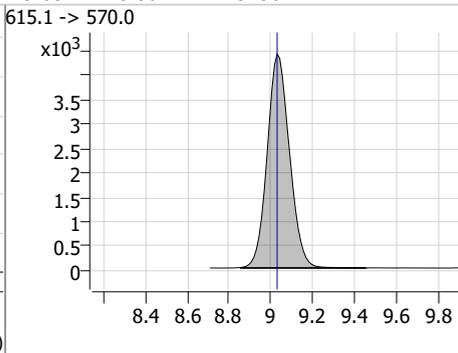
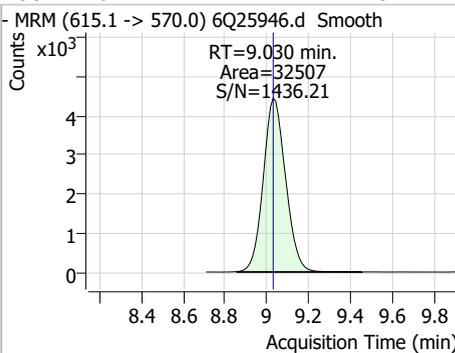
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	46.77	8.64	0.00	788798	532.8 -> 353.0	30.6	14.8	44.4



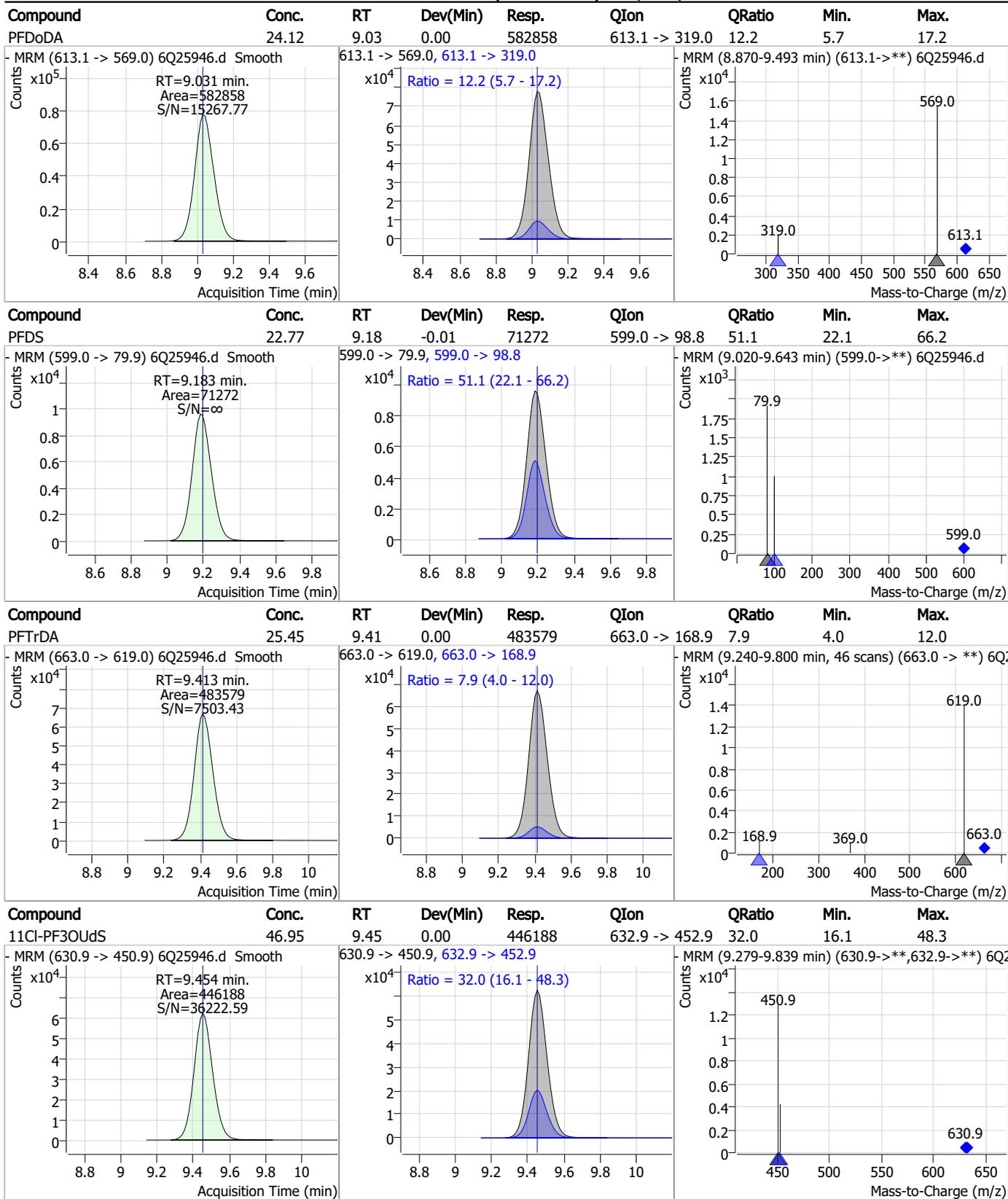
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	23.08	8.76	-0.01	102995	548.8 -> 98.9	49.0	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.31	9.03	0.00	32507	615.1 -> 570.0			



Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Perfluorinated Compounds by LC/MS/MS

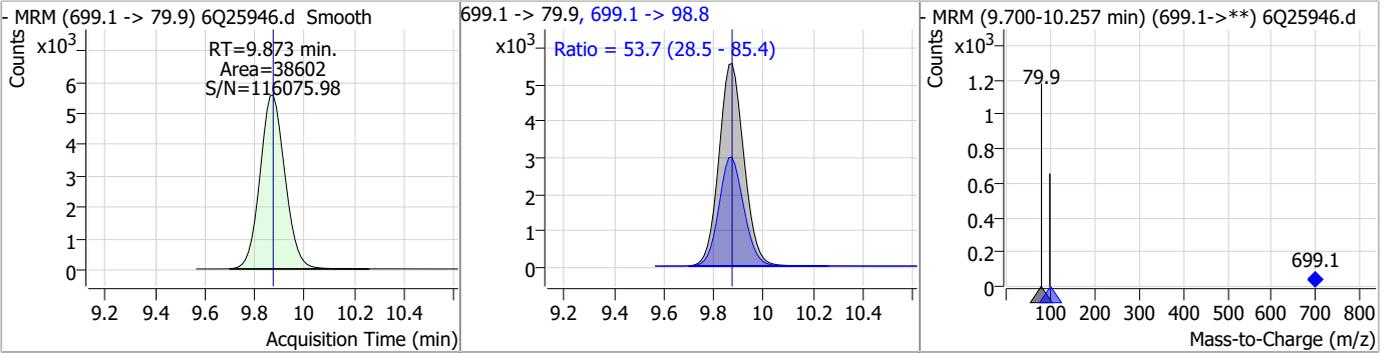
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	9.66	0.00	23832				
FOSA	24.22	9.66	0.00	221067	498.1 -> 478.0	2.9	1.4	4.2
13C2-PFTeDA	1.32	9.75	0.00	11132				
PFTeDA	23.03	9.75	0.00	333585	713.1 -> 168.9	7.9	4.1	12.2

7.7.8

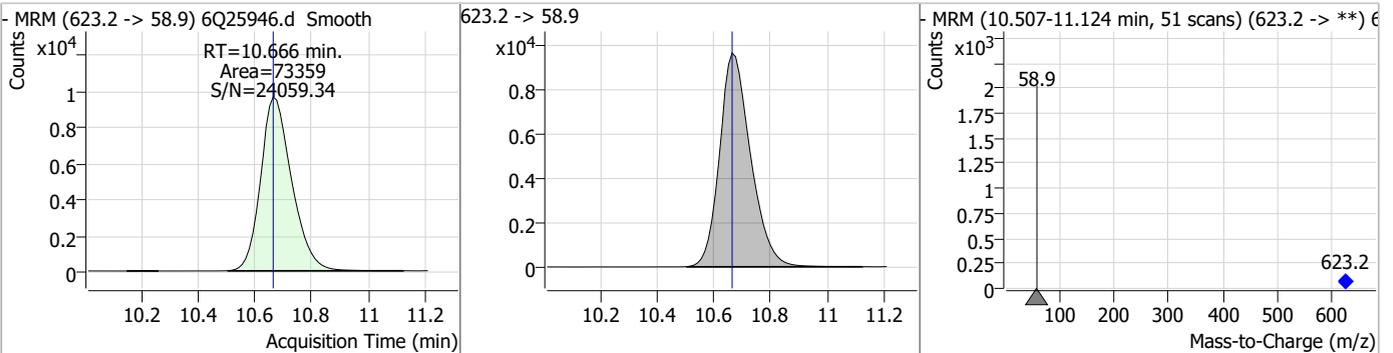
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Perfluorinated Compounds by LC/MS/MS

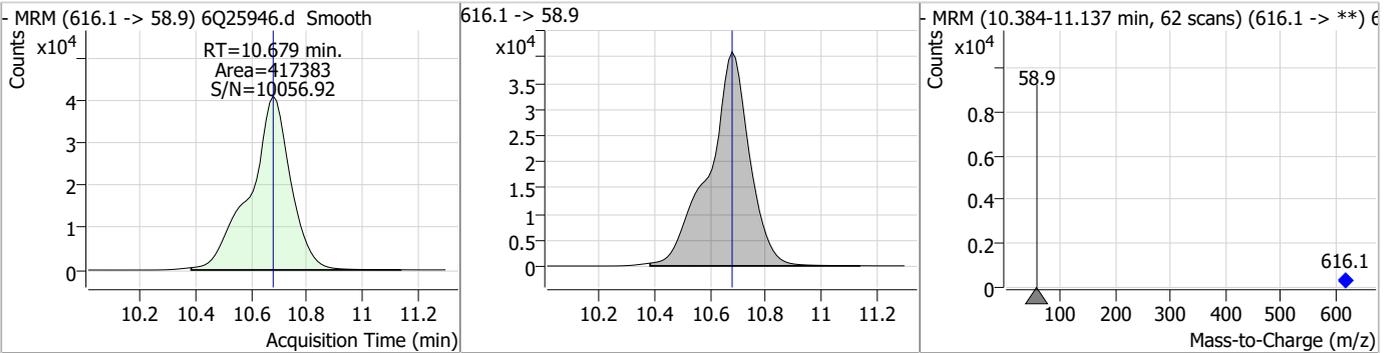
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	23.75	9.87	0.00	38602	699.1 -> 98.8	53.7	28.5	85.4



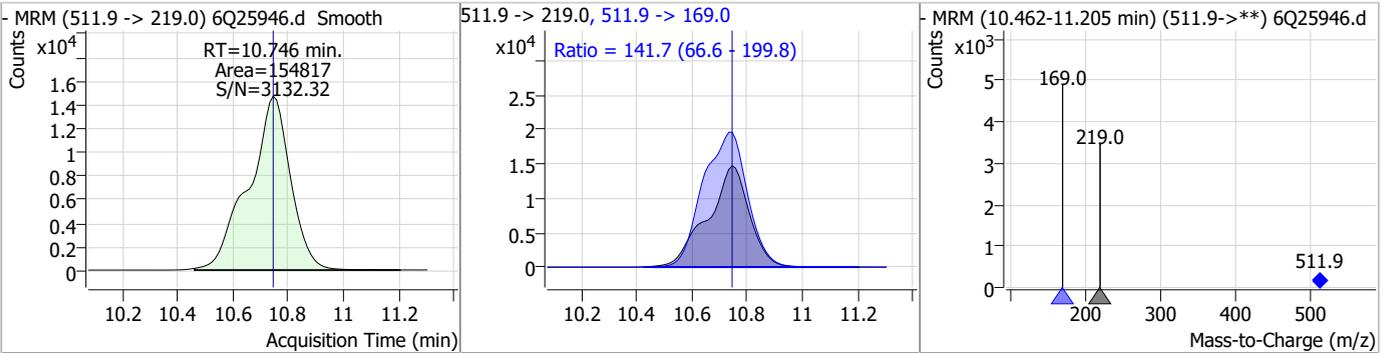
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.41	10.67	0.00	73359				



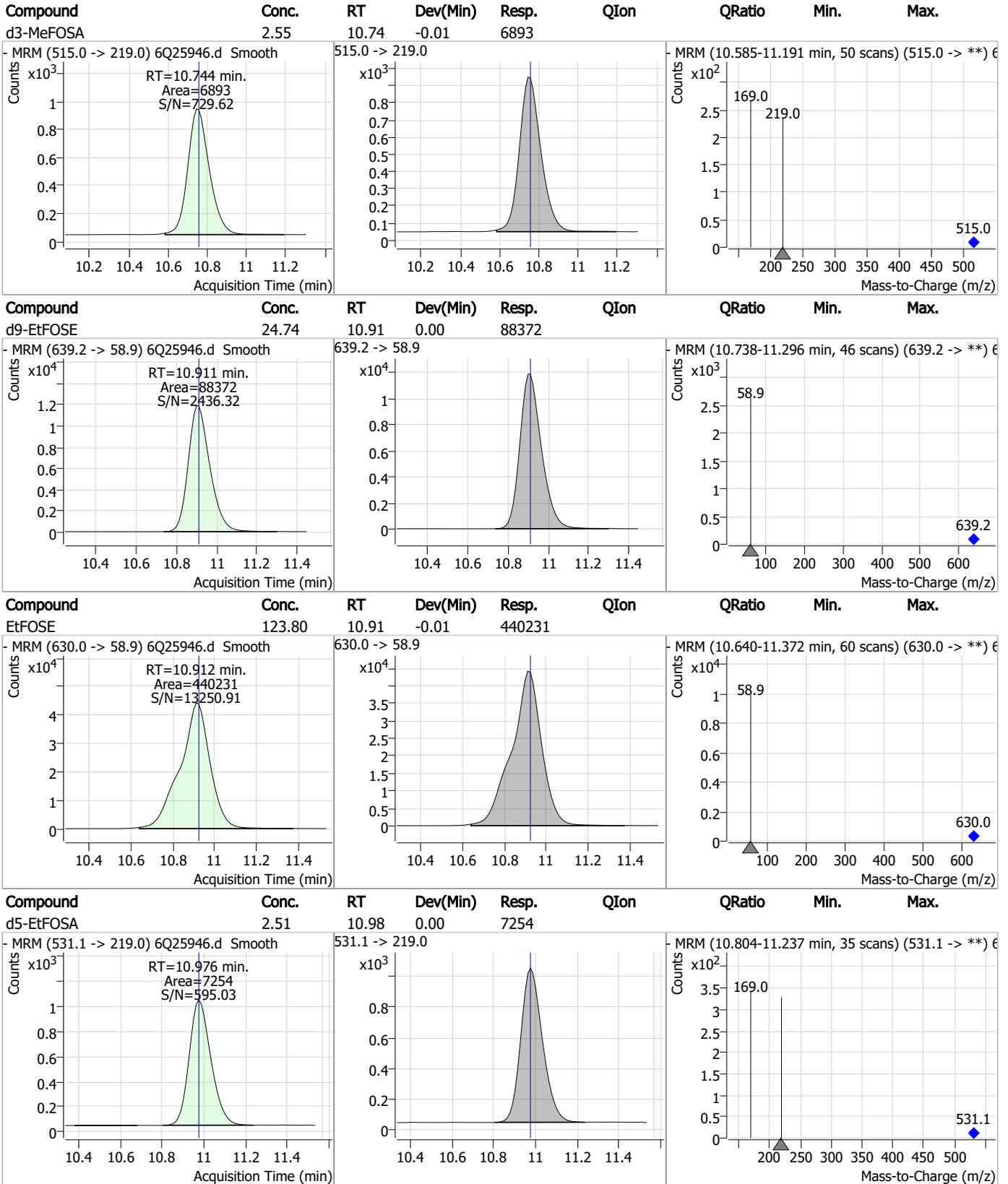
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	128.74	10.68	0.00	417383				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFO _{SA}	48.46	10.75	0.00	154817	511.9 -> 169.0	141.7	66.6	199.8



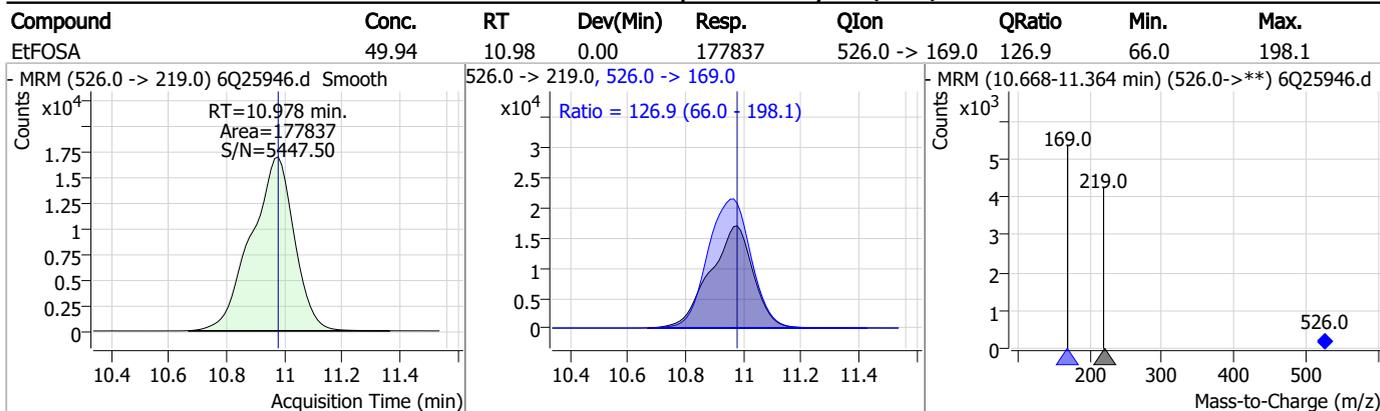
Perfluorinated Compounds by LC/MS/MS



7.7.8

7

Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25946.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 16:29 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25947.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 4:43:38 PM
 Sample Name : ic367-8
 Vial : P1-A9
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	128222	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	48854	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	44552	2.50 µg/L	0.012
M4-PFHpA	6.519	367.1 -> 322.0	42615	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	59388	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	24335	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	25619	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	25638	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30869	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10731	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	21988	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	19302	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	11157	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	11113	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	1836	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	2694	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3017	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	21249	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	30484	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	20482	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	68552	25.00 µg/L	0.000
M9-EtFOSE	10.898	639.2 -> 58.9	84301	25.00 µg/L	-0.012
M5-EtFOSA	10.976	531.1 -> 219.0	6699	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	7320	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	10706	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	53633	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7108	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	68074	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	24598	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	23234	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	44856	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	1836	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	2694	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.4%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3017	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.4%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30869	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10731	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFBS	5.510	302.1 -> 79.9	19302	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.9%		
13C3-PFHxS	7.263	402.1 -> 79.9	11157	2.47 µg/L	0.000

7.7.9
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 = 98.8%	
13C4-PFBA	2.947	216.8 -> 171.9	128222	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.519	367.1 -> 322.0	42615	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C5-PFHxA	5.592	318.0 -> 273.0	44552	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	48854	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C6-PFDA	8.161	519.1 -> 474.1	25619	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C7-PFUnDA	8.601	570.0 -> 525.1	25638	1.14 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C8-FOSA	9.657	506.1 -> 77.8	21988	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C8-PFOA	7.161	421.1 -> 376.0	59388	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C8-PFOS	8.311	507.1 -> 79.9	11113	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C9-PFNA	7.680	472.1 -> 427.0	24335	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSAA	8.207	573.2 -> 419.0	21249	4.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.2%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	30484	9.74 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSA	10.757	515.0 -> 219.0	7320	2.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.3%	
d5-EtFOSAA	8.415	589.2 -> 419.0	20482	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
d7-MeFOSE	10.666	623.2 -> 58.9	68552	24.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
d9-EtFOSE	10.898	639.2 -> 58.9	84301	24.87 µg/L	-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
d5-EtFOSA	10.976	531.1 -> 219.0	6699	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	653882	214.71 µg/L	99
		327.1 -> 80.9	251393		
6:2FTS	6.937	427.1 -> 407.0	505650	206.49 µg/L	98
		427.1 -> 80.9	201625		
8:2FTS	7.950	527.1 -> 507.0	426591	202.95 µg/L	98
		527.1 -> 80.8	155520		
EtFOSAA	8.416	584.2 -> 419.1	203888	61.26 µg/L	99
		584.2 -> 526.0	125213		
FOSA	9.660	498.1 -> 77.9	546690	64.93 µg/L	100
		498.1 -> 478.0	15406		
MeFOSAA	8.220	570.1 -> 419.0	262672	66.18 µg/L	100
		570.1 -> 483.0	56114		
PFBA	2.943	212.8 -> 168.9	1208910	253.09 µg/L	100
PFBS	5.511	298.7 -> 79.9	320167	55.35 µg/L	98
		298.7 -> 98.8	122140		
PFDA	8.161	512.9 -> 469.0	1211660	60.53 µg/L	98
		512.9 -> 219.0	195610		
PFDoDA	9.031	613.1 -> 569.0	1411075	61.48 µg/L	97
		613.1 -> 319.0	176788		
PFDS	9.183	599.0 -> 79.9	169774	59.73 µg/L	92

7.7.9
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	83815	63.99	µg/L	99
		363.1 -> 319.0	1479718			
PFHpS	7.819	363.1 -> 169.0	211412	59.98	µg/L	99
		449.0 -> 79.9	275203			
PFHxA	5.594	449.0 -> 98.9	132480	64.91	µg/L	99
		313.0 -> 269.0	1033659			
PFHxS	7.264	313.0 -> 118.9	47967	56.64	µg/L	m
		398.7 -> 79.9	264130			
PFNA	7.680	398.7 -> 98.9	127056	61.62	µg/L	100
		463.0 -> 419.0	924343			
PFNS	8.765	463.0 -> 219.0	224137	61.02	µg/L	92
		548.8 -> 79.9	247289			
PFOA	7.163	548.8 -> 98.9	117890	61.21	µg/L	96
		413.0 -> 369.0	1559923			
PFOS	8.312	413.0 -> 169.0	260830	58.97	µg/L	m
		498.9 -> 79.9	279965			
PFPeA	4.374	498.9 -> 98.8	138881	124.00	µg/L	100
		263.0 -> 219.0	1306803			
PFPeS	6.571	349.1 -> 79.9	347632	57.71	µg/L	95
		349.1 -> 98.9	163329			
PFTeDA	9.748	713.1 -> 669.0	799175	57.24	µg/L	99
		713.1 -> 168.9	62291			
PFTrDA	9.413	663.0 -> 619.0	1058326	58.66	µg/L	100
		663.0 -> 168.9	85888			
PFUnDA	8.602	563.1 -> 519.0	1175327	65.06	µg/L	99
		563.1 -> 269.1	179583			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	1034917	114.43	µg/L	99
		632.9 -> 452.9	324646			
9Cl-PF3ONS	8.641	530.8 -> 351.0	1768353	110.19	µg/L	93
		532.8 -> 353.0	592192			
ADONA	6.780	376.9 -> 250.9	4949141	118.19	µg/L	93
		376.9 -> 84.8	1196900			
HFPO-DA	5.958	284.9 -> 168.9	372486	123.30	µg/L	98
		284.9 -> 184.9	41977			
3:3FTCA	3.808	241.0 -> 177.0	240091	348.91	µg/L	99
		241.0 -> 117.0	31492			
5:3FTCA	6.233	341.0 -> 237.1	4638239	1553.46	µg/L	96
		341.0 -> 217.0	3460020			
7:3FTCA	7.632	441.0 -> 316.9	2823299	1548.11	µg/L	92
		441.0 -> 336.9	6010600			
EtFOSA	10.978	526.0 -> 219.0	430956	131.06	µg/L	98
		526.0 -> 169.0	557724			
EtFOSE	10.924	630.0 -> 58.9	1045981	308.35	µg/L	100
		511.9 -> 219.0	373615			
MeFOSA	10.746	511.9 -> 169.0	530963	110.11	µg/L	92
		616.1 -> 58.9	1017101			
MeFOSE	10.679	699.1 -> 79.9	91834	335.72	µg/L	100
		699.1 -> 98.8	48662			
PFDoDS	9.861	295.0 -> 201.0	241020	62.21	µg/L	95
		295.0 -> 84.9	64935			
NFDHA	5.462	279.0 -> 85.1	998607	124.36	µg/L	100
		229.0 -> 84.9	833048			
PFMBA	3.513	314.8 -> 134.9	2322660	125.66	µg/L	100
		314.8 -> 82.9	82554			
PFEESA	6.050			113.36	µg/L	100

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

7.7.9
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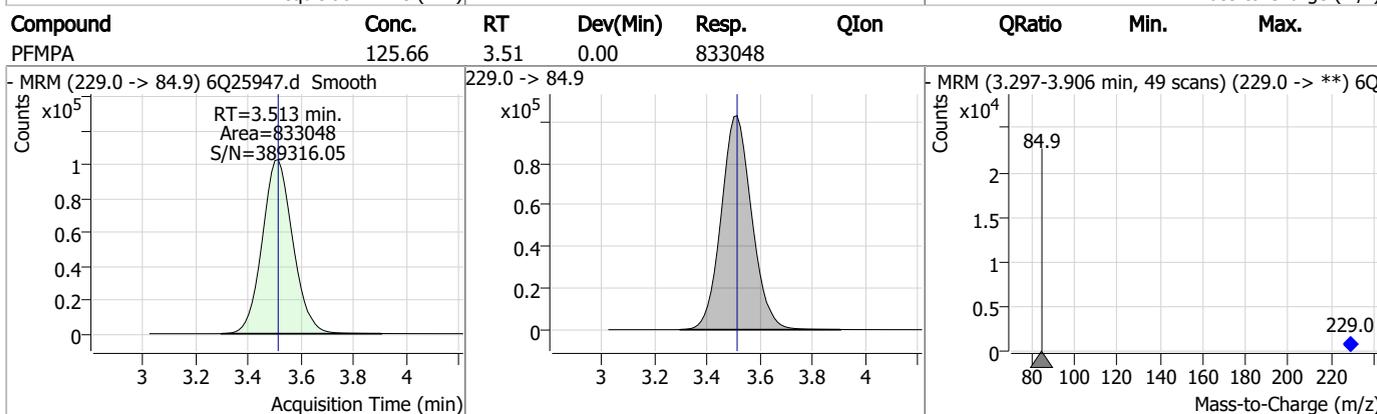
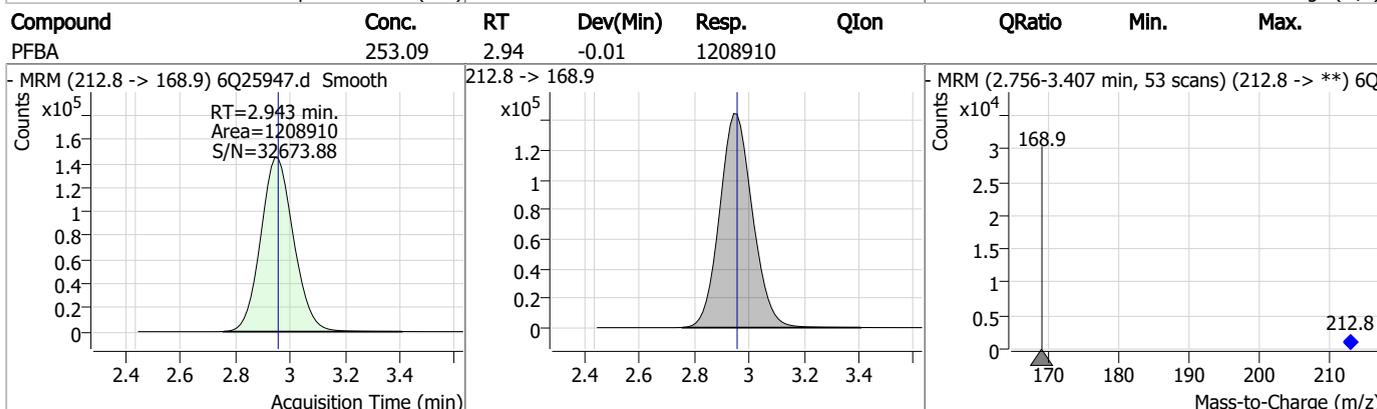
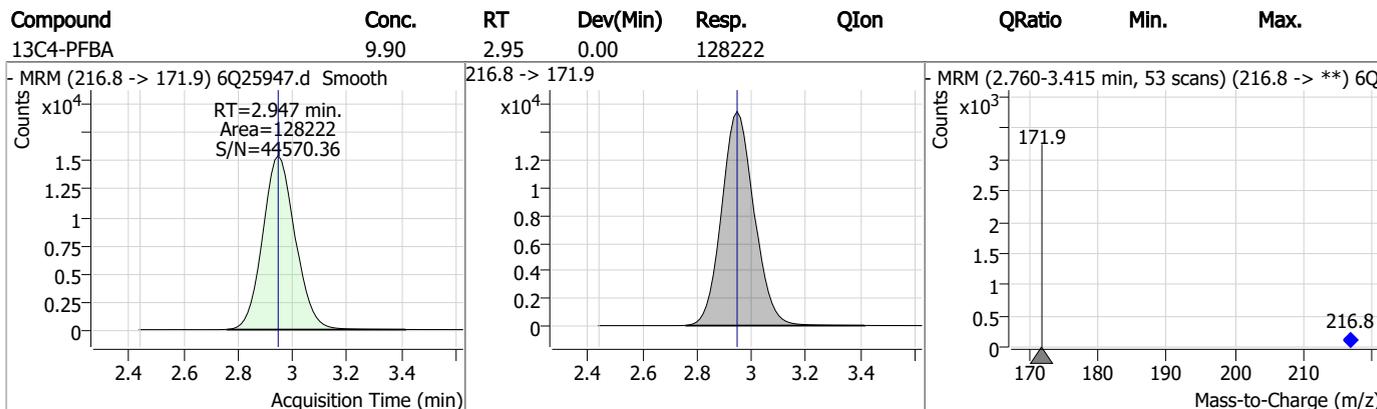
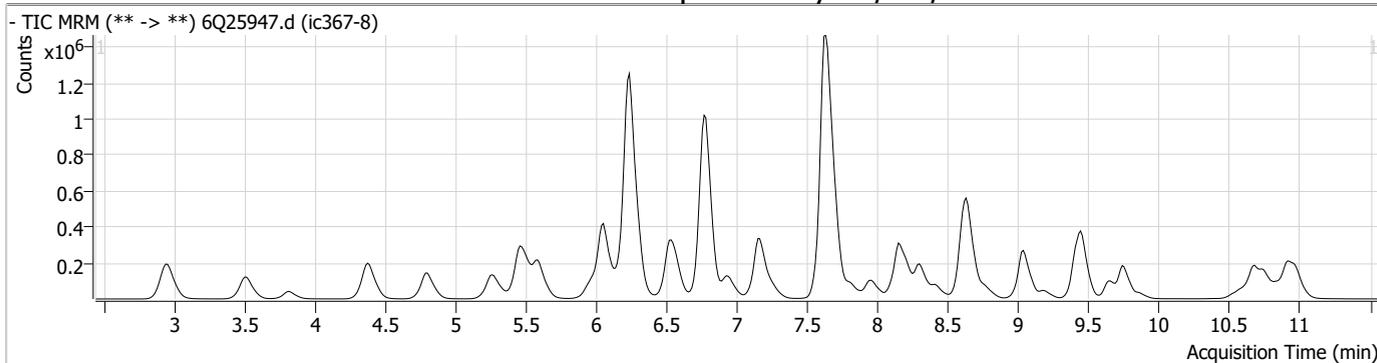
Perfluorinated Compounds by LC/MS/MS

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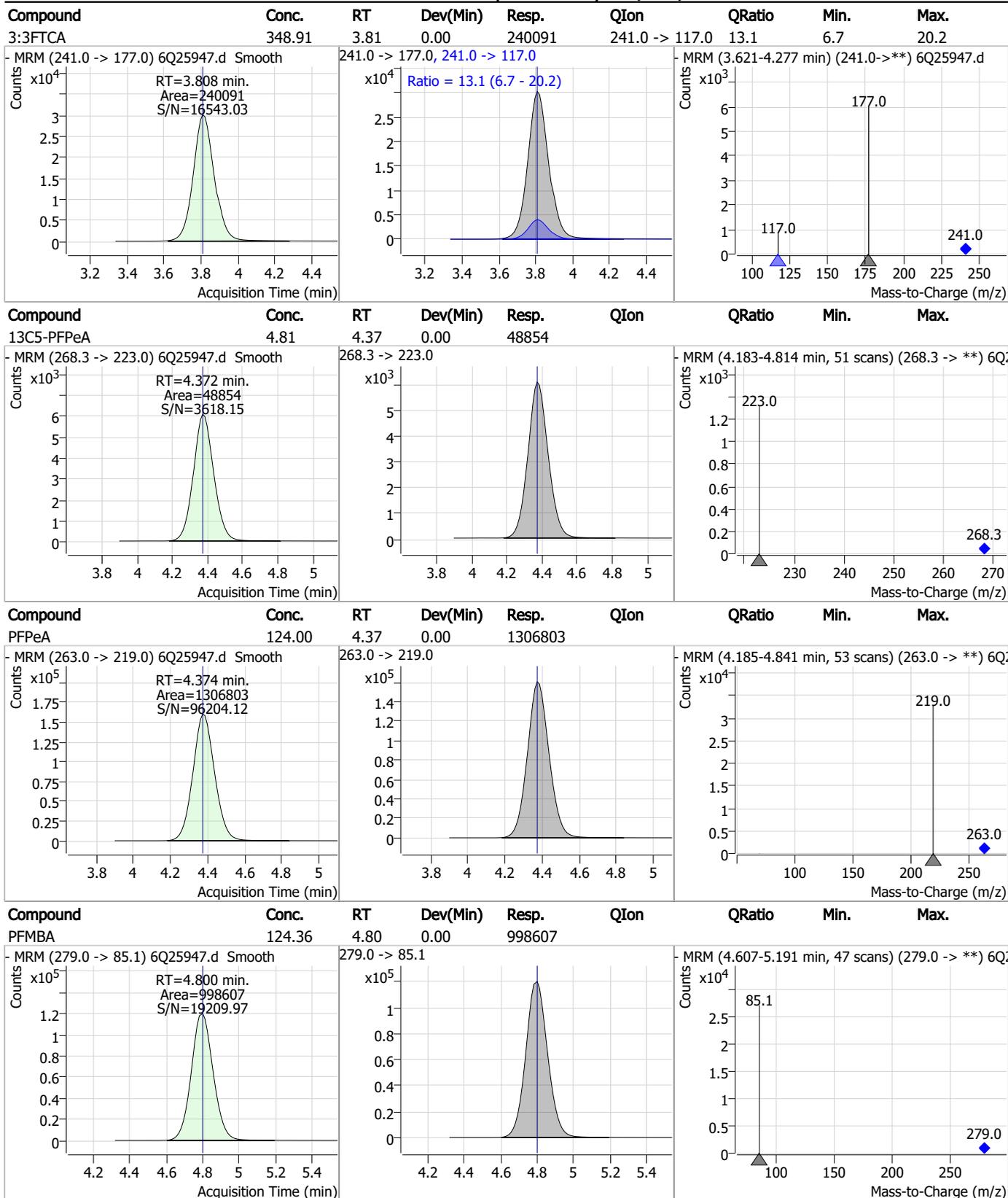
7.7.9

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Perfluorinated Compounds by LC/MS/MS

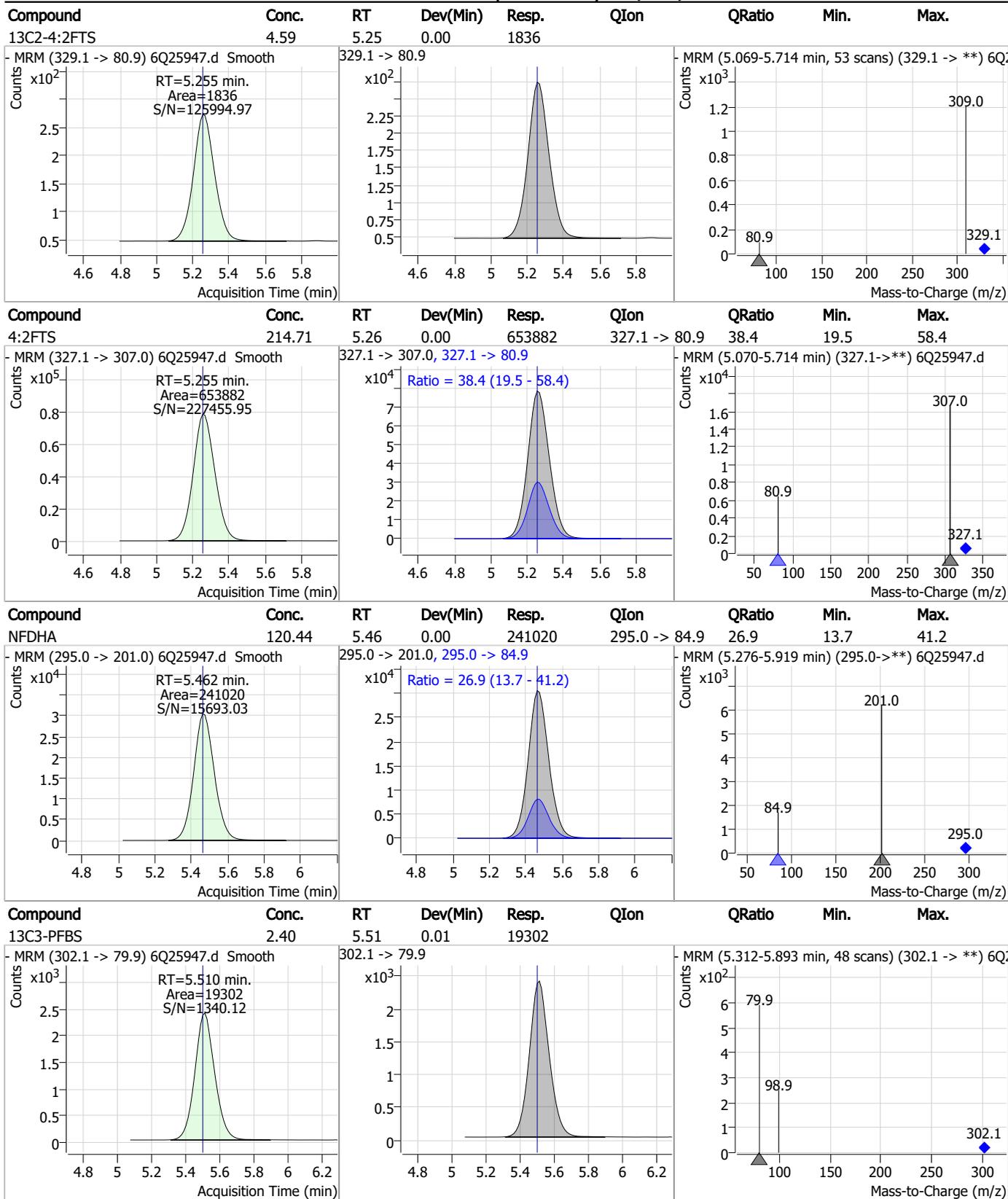


Perfluorinated Compounds by LC/MS/MS



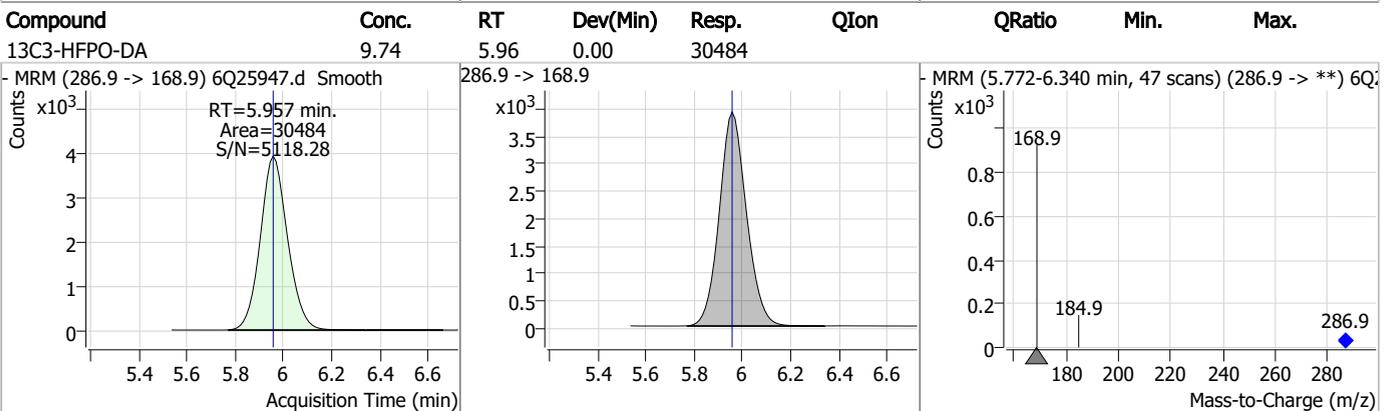
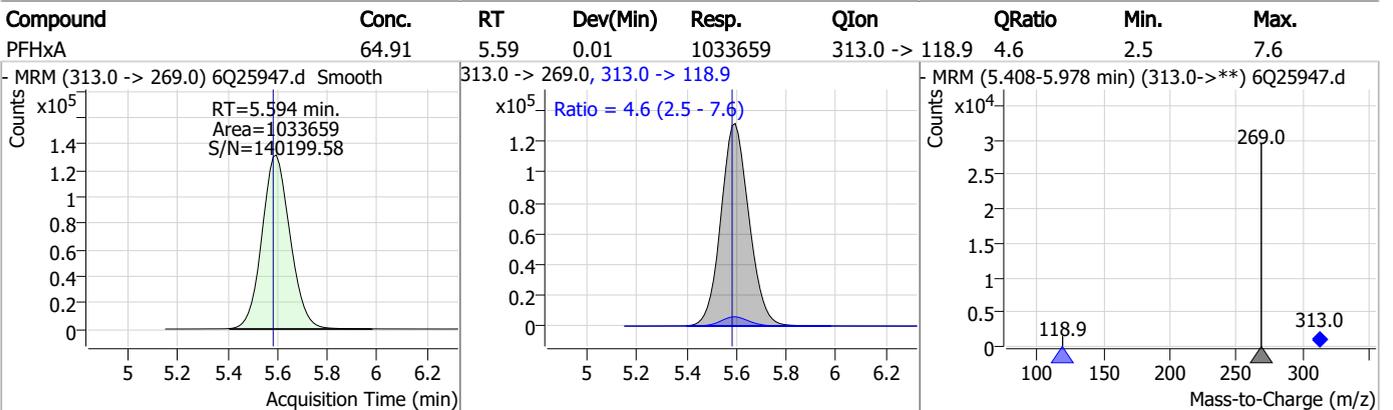
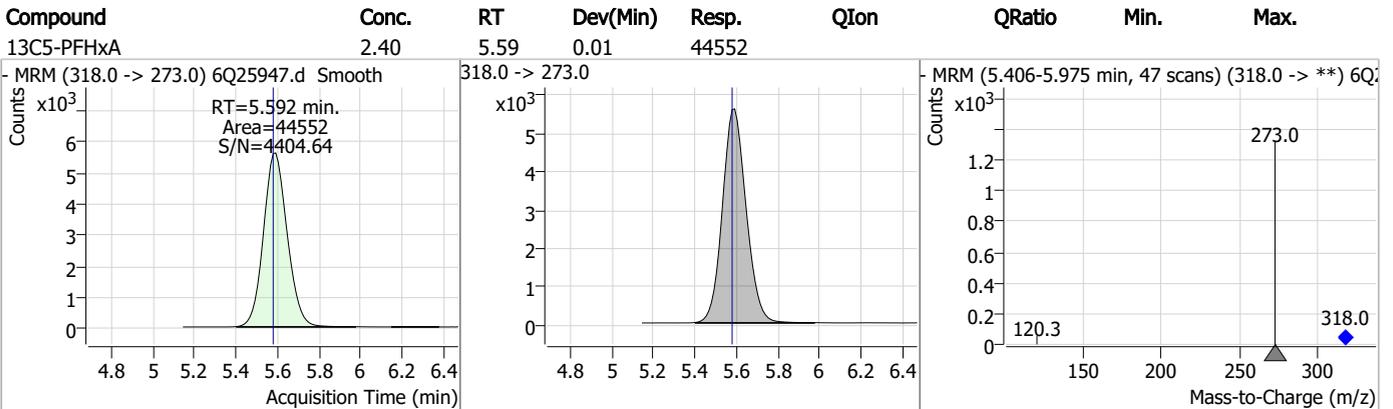
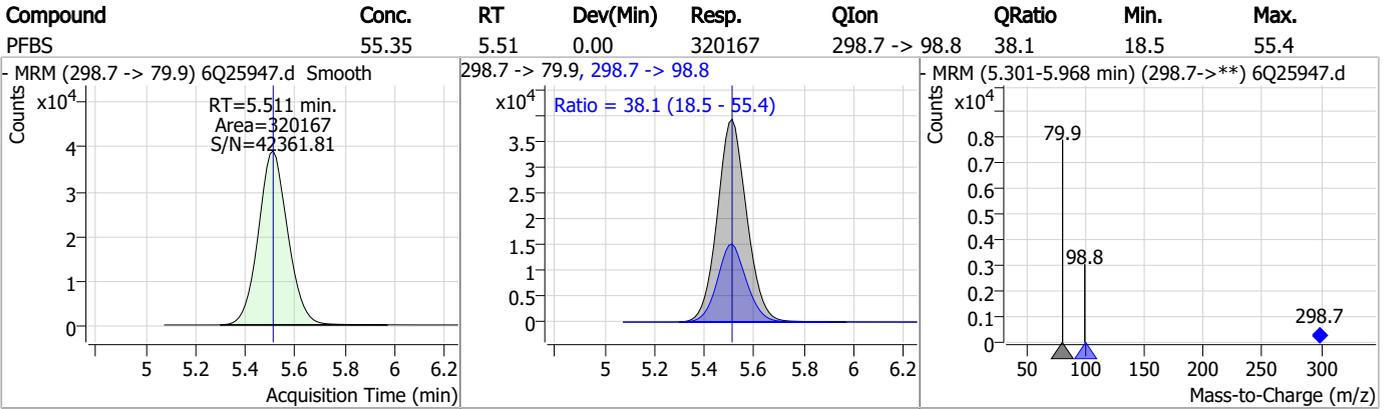
7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS

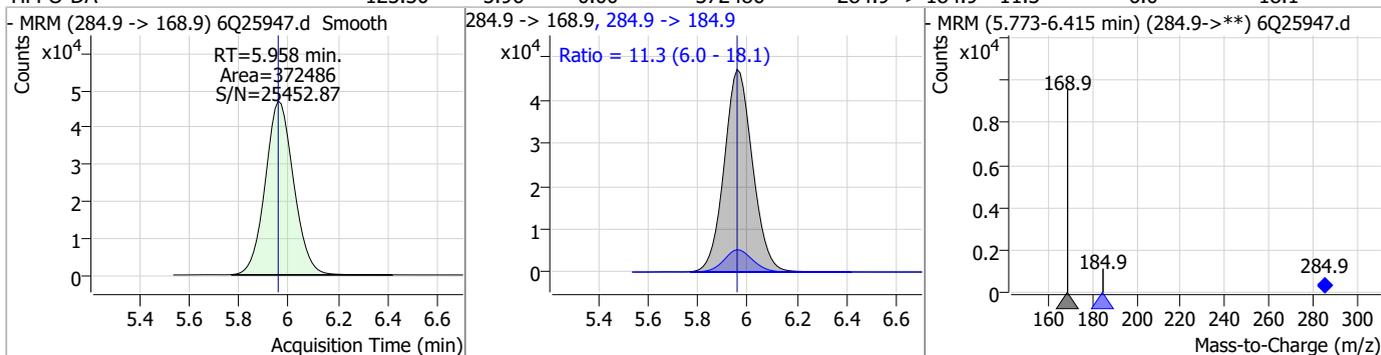


7.7.9

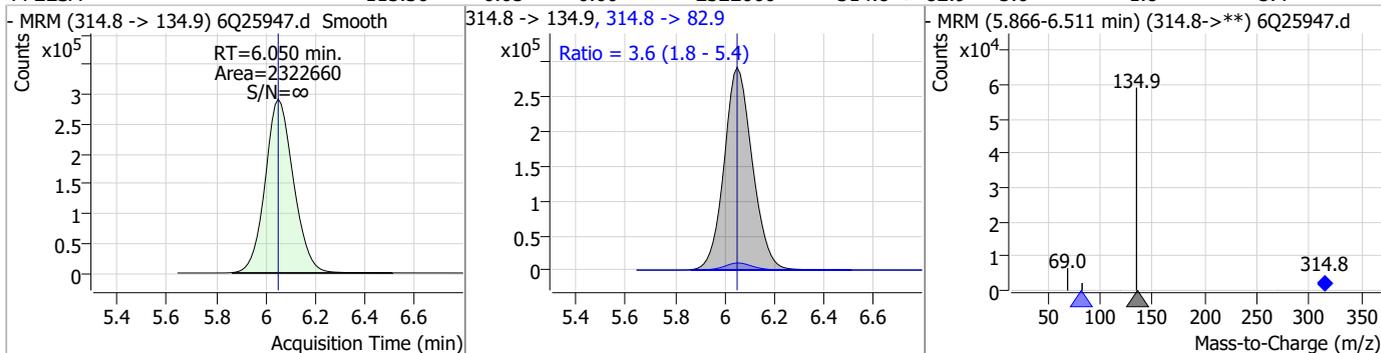
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Perfluorinated Compounds by LC/MS/MS

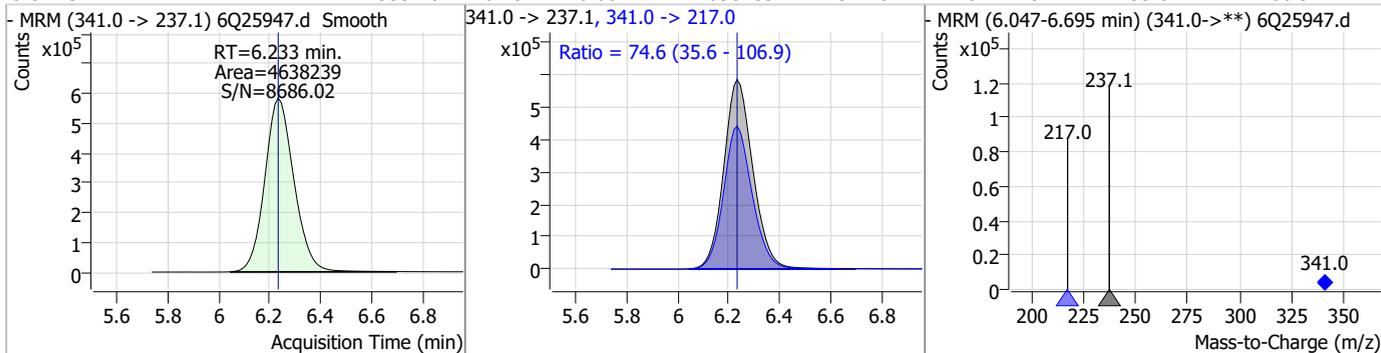
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	123.30	5.96	0.00	372486	284.9 -> 184.9	11.3	6.0	18.1



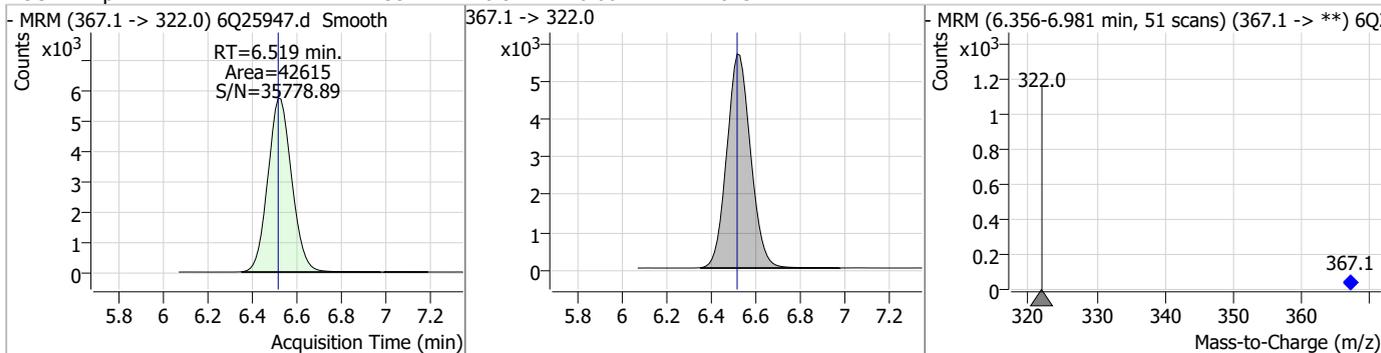
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	113.36	6.05	0.00	2322660	314.8 -> 82.9	3.6	1.8	5.4



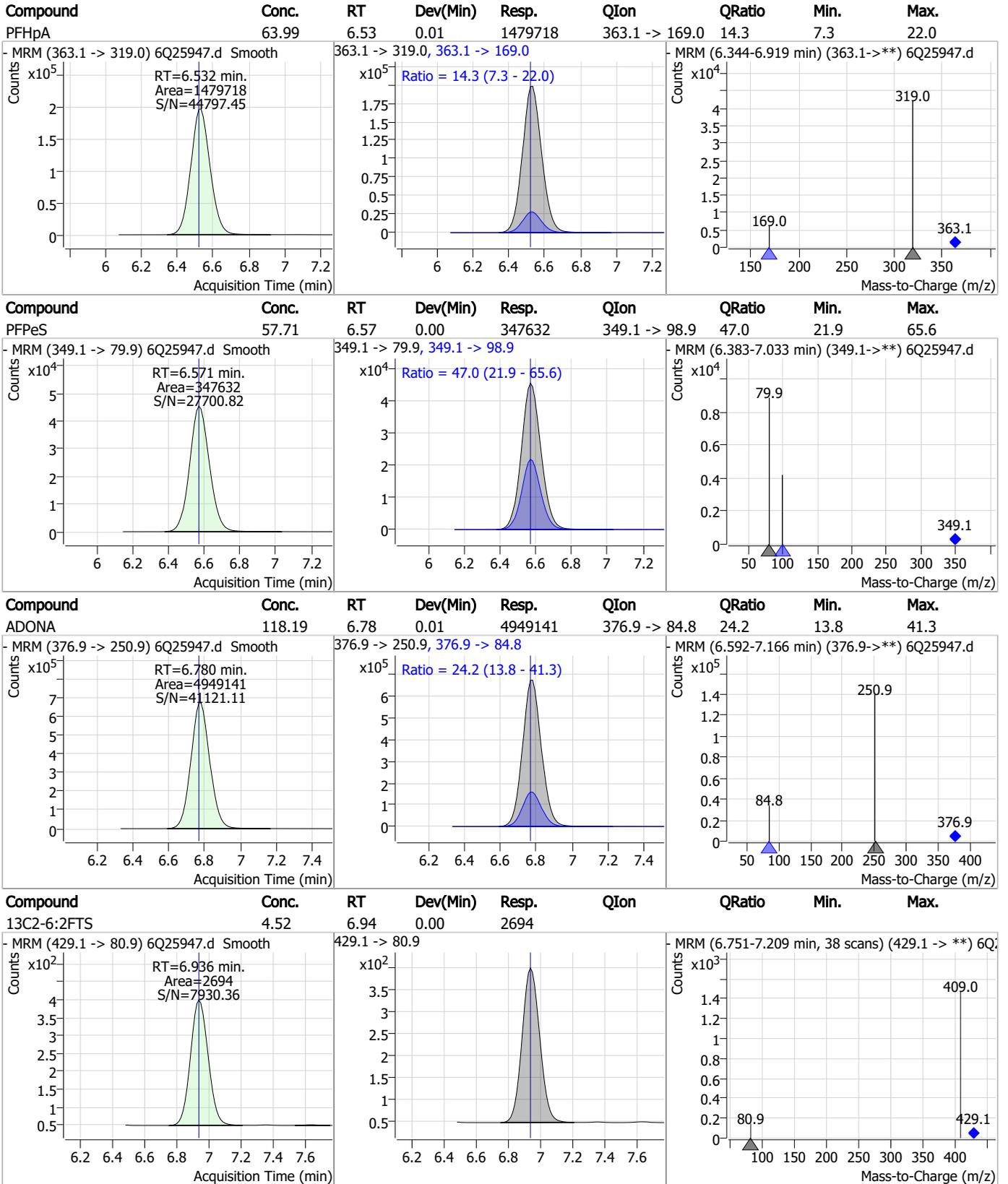
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1553.46	6.23	0.00	4638239	341.0 -> 217.0	74.6	35.6	106.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.35	6.52	0.00	42615	367.1 -> 322.0			



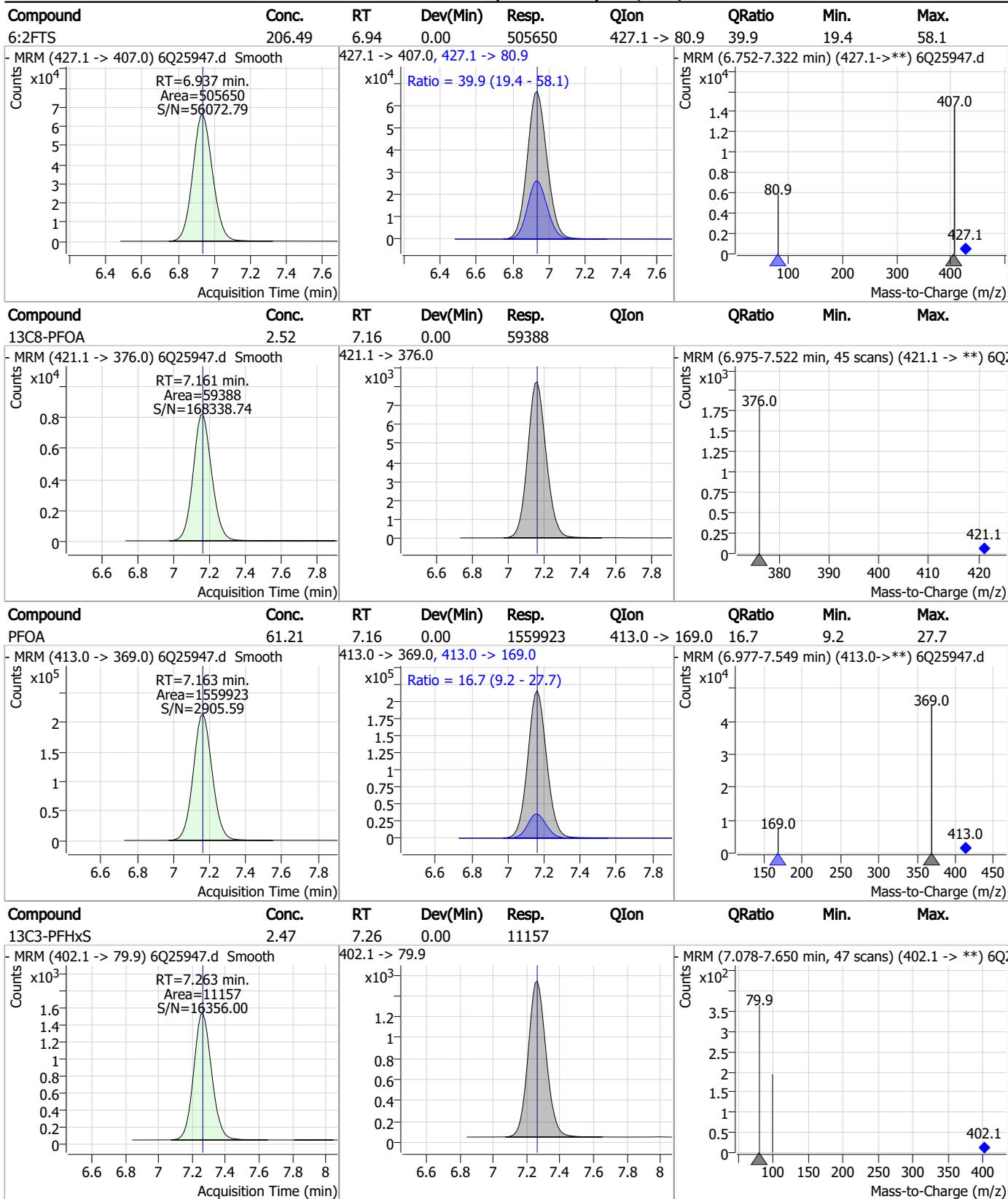
Perfluorinated Compounds by LC/MS/MS



7.7.9

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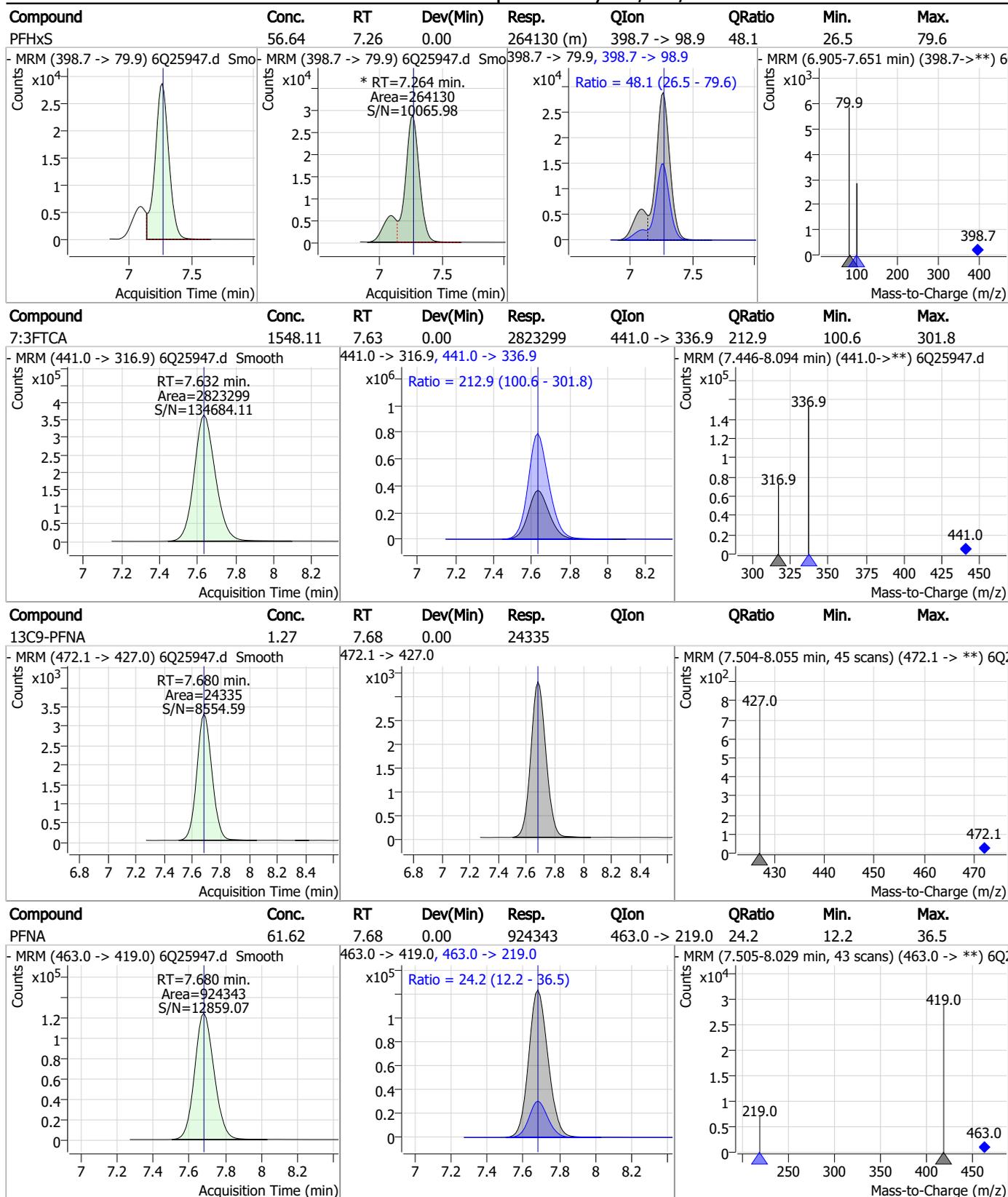
Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9
7

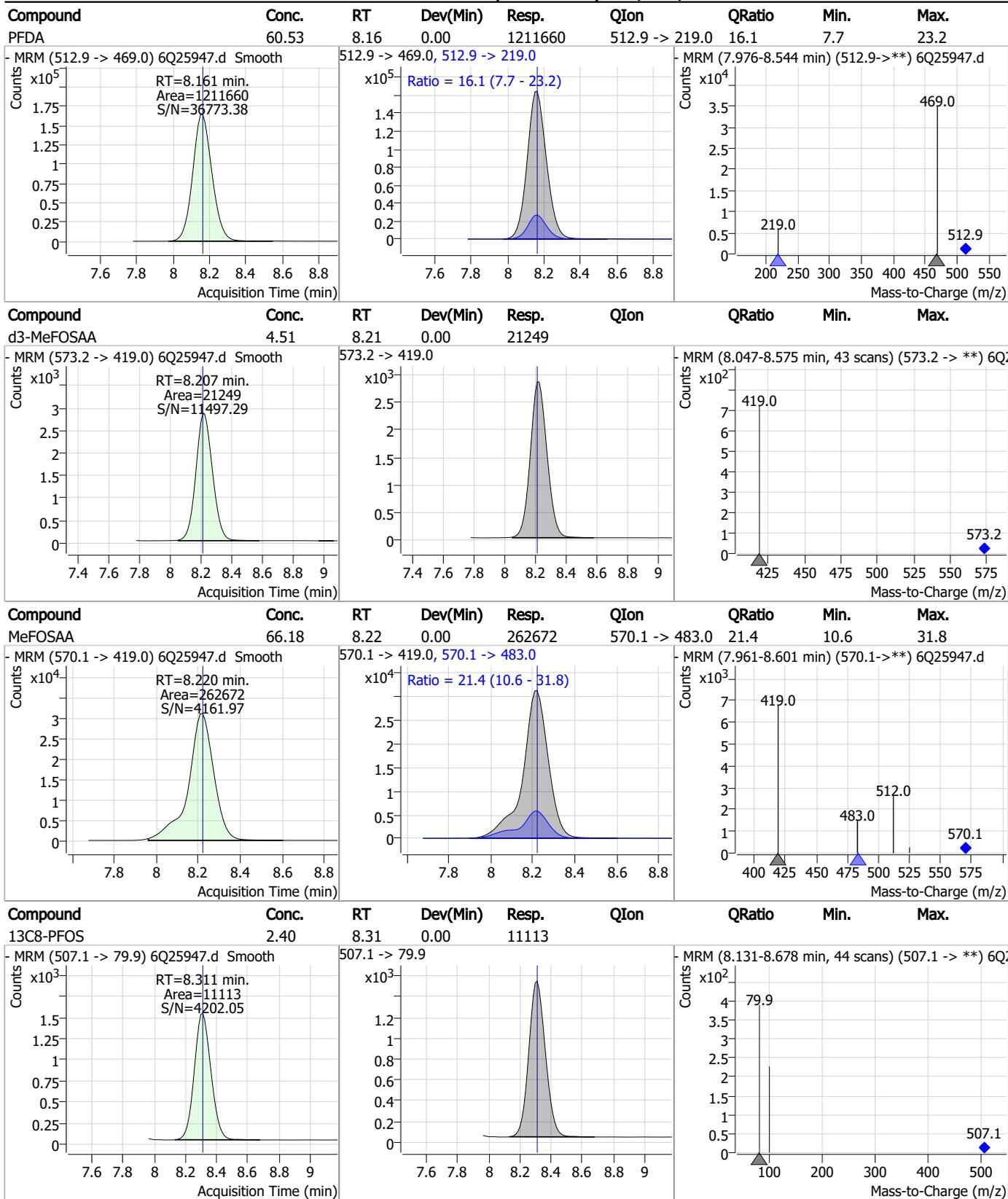
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	59.98	7.82	0.00	275203	449.0 -> 98.9	48.1	24.5	73.4
13C2-8:2FTS	4.92	7.95	0.00	3017	529.1 -> 80.9			
8:2FTS	202.95	7.95	0.00	426591	527.1 -> 80.8	36.5	17.6	52.9
13C6-PFDA	1.24	8.16	0.00	25619	519.1 -> 474.1			

7.7.9

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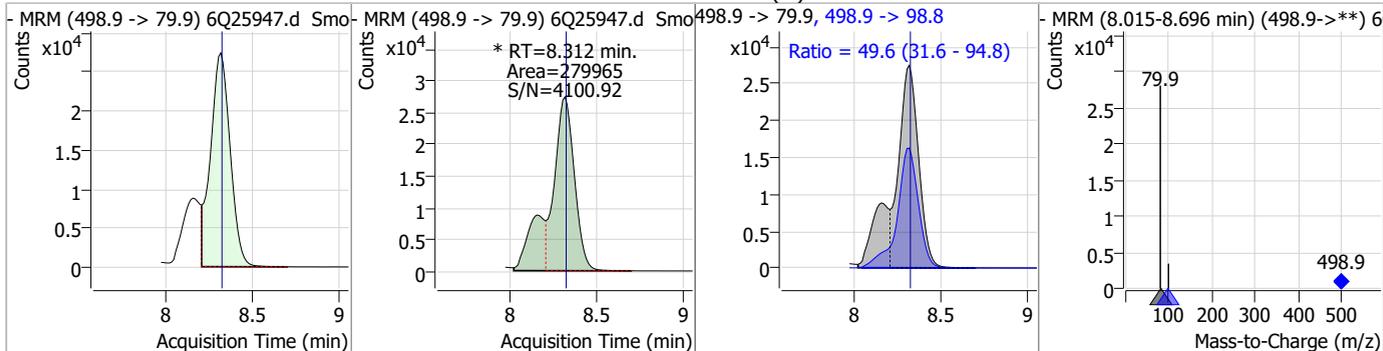
Perfluorinated Compounds by LC/MS/MS



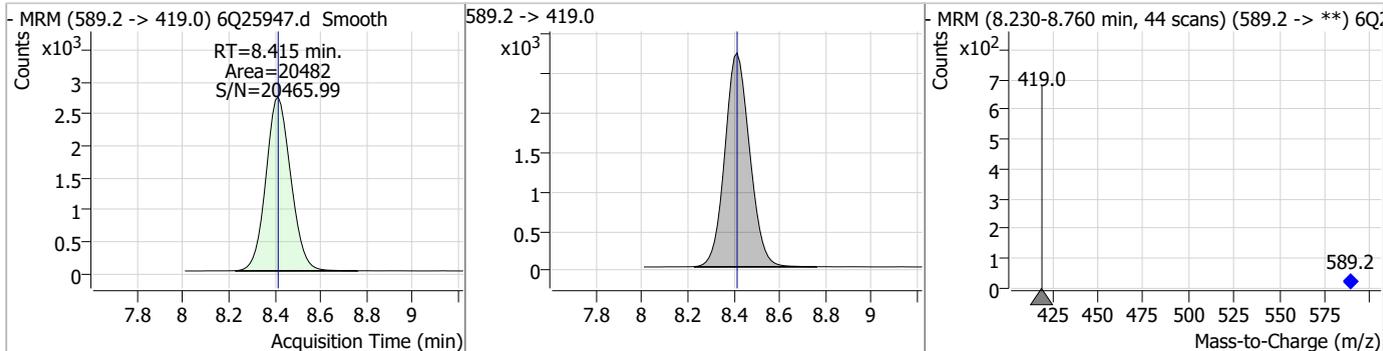
7.7.9
7

Perfluorinated Compounds by LC/MS/MS

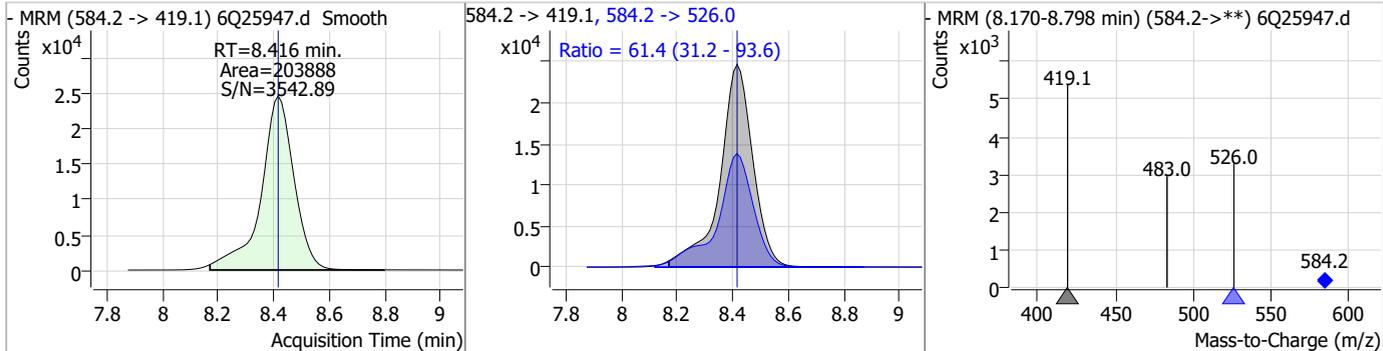
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	58.97	8.31	0.00	279965 (m)	498.9 -> 98.8	49.6	31.6	94.8



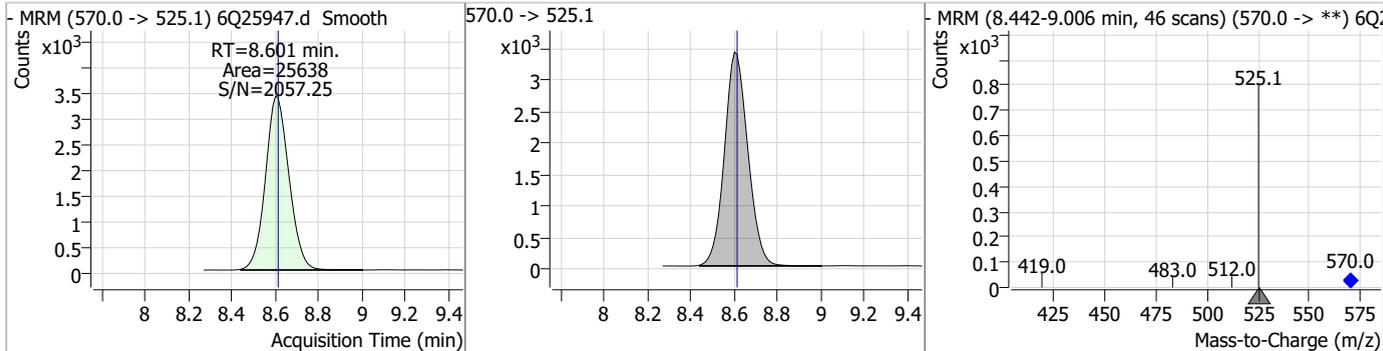
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.08	8.41	0.00	20482				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	61.26	8.42	0.00	203888	584.2 -> 526.0	61.4	31.2	93.6

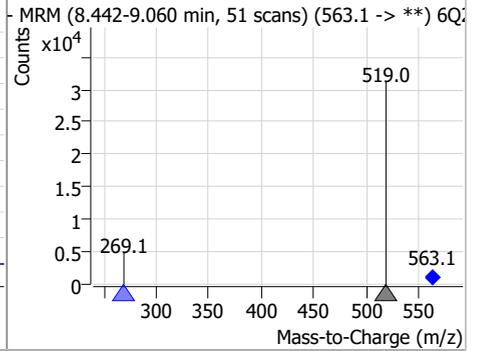
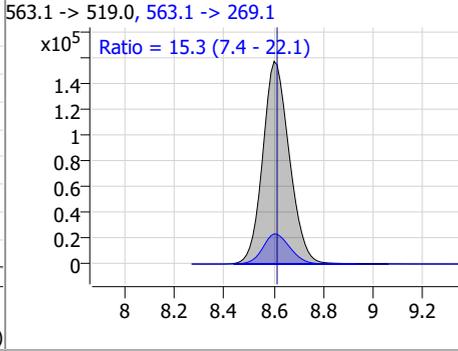
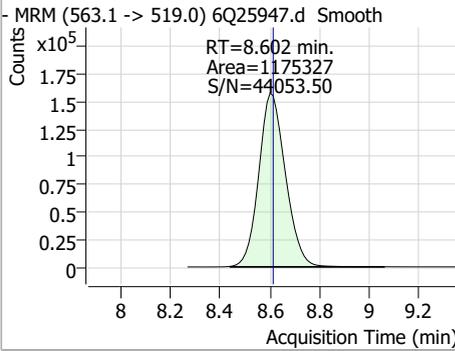


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.14	8.60	-0.01	25638				

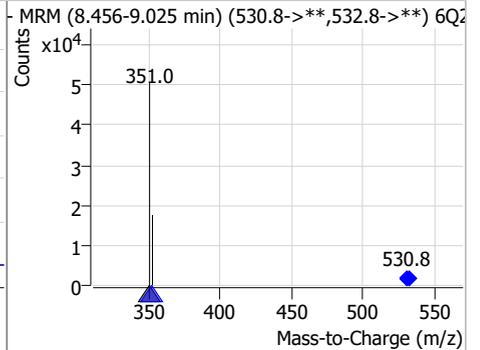
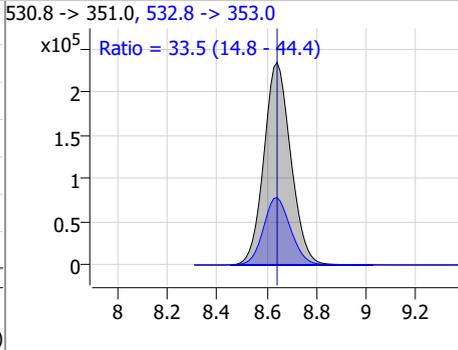
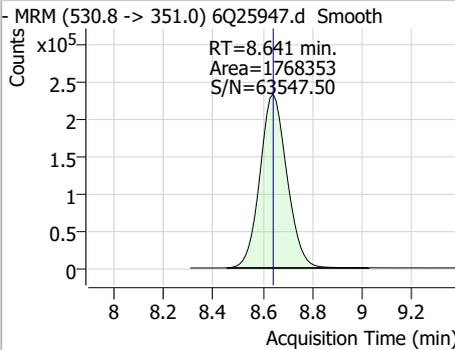


Perfluorinated Compounds by LC/MS/MS

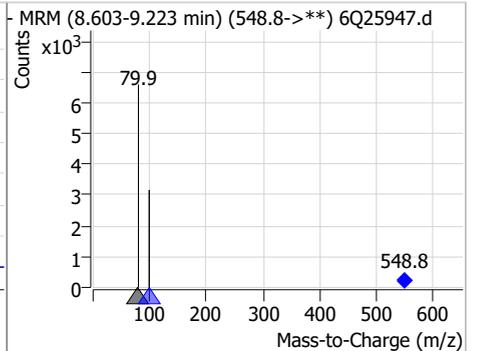
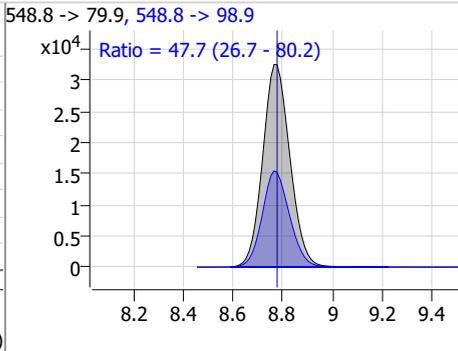
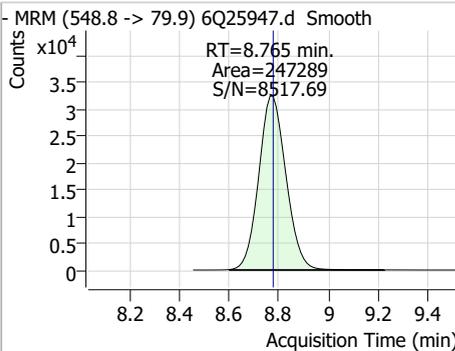
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	65.06	8.60	-0.01	1175327	563.1 -> 269.1	15.3	7.4	22.1



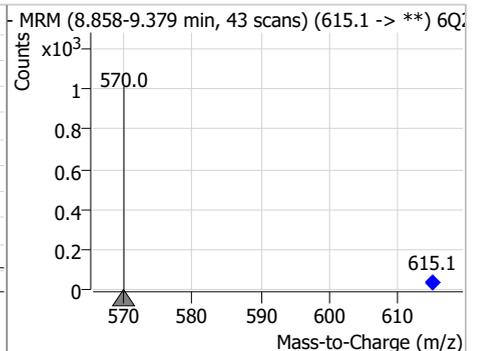
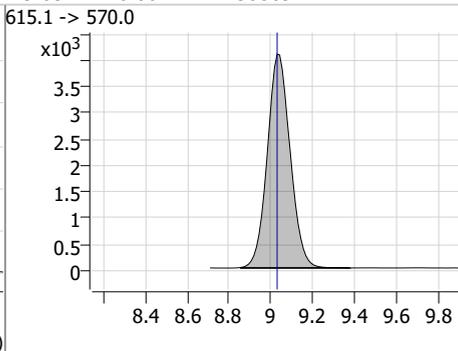
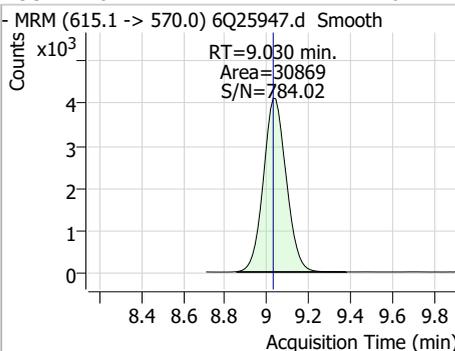
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	110.19	8.64	0.00	1768353	532.8 -> 353.0	33.5	14.8	44.4



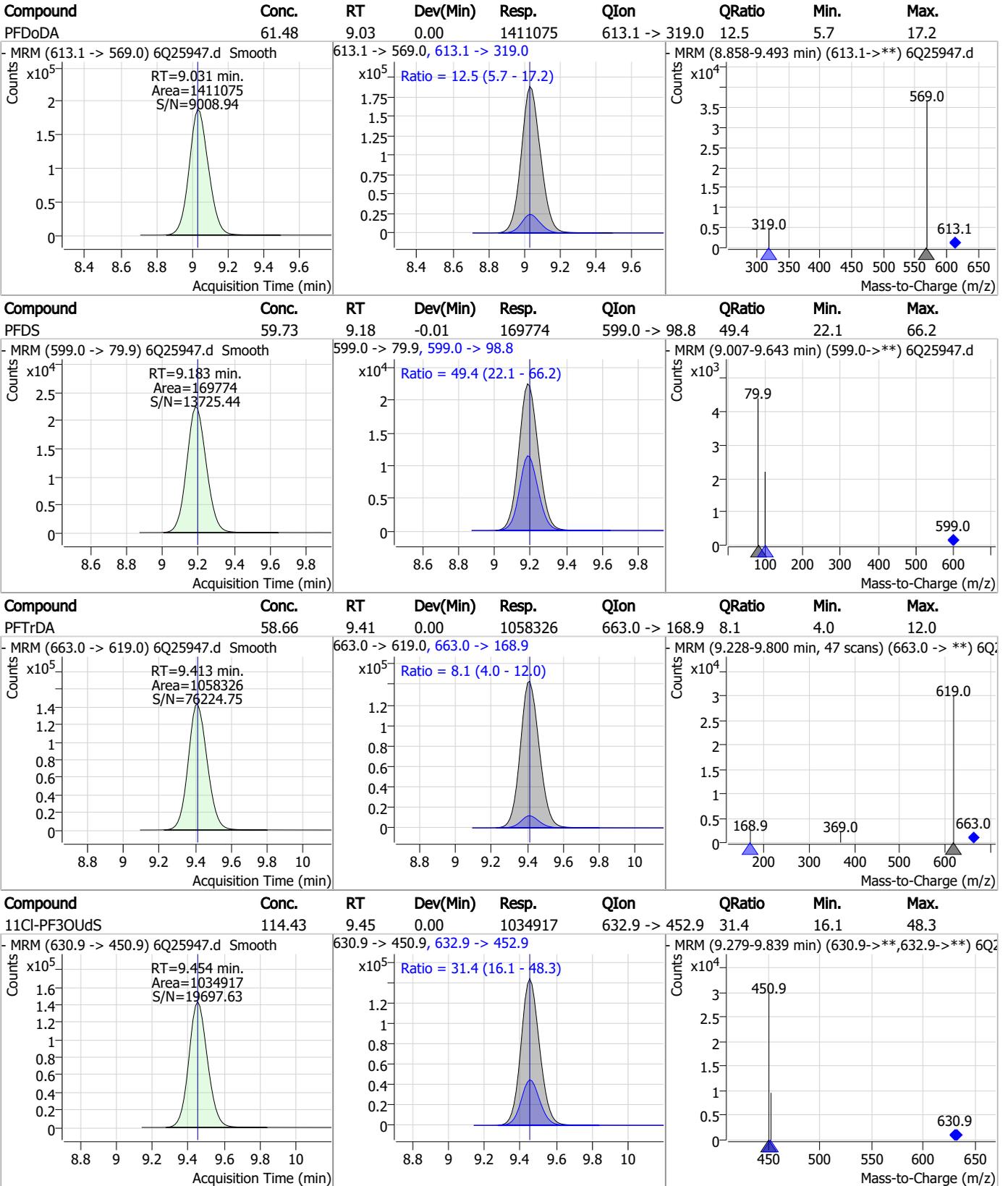
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	61.02	8.76	-0.01	247289	548.8 -> 98.9	47.7	26.7	80.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	9.03	0.00	30869	615.1 -> 570.0			



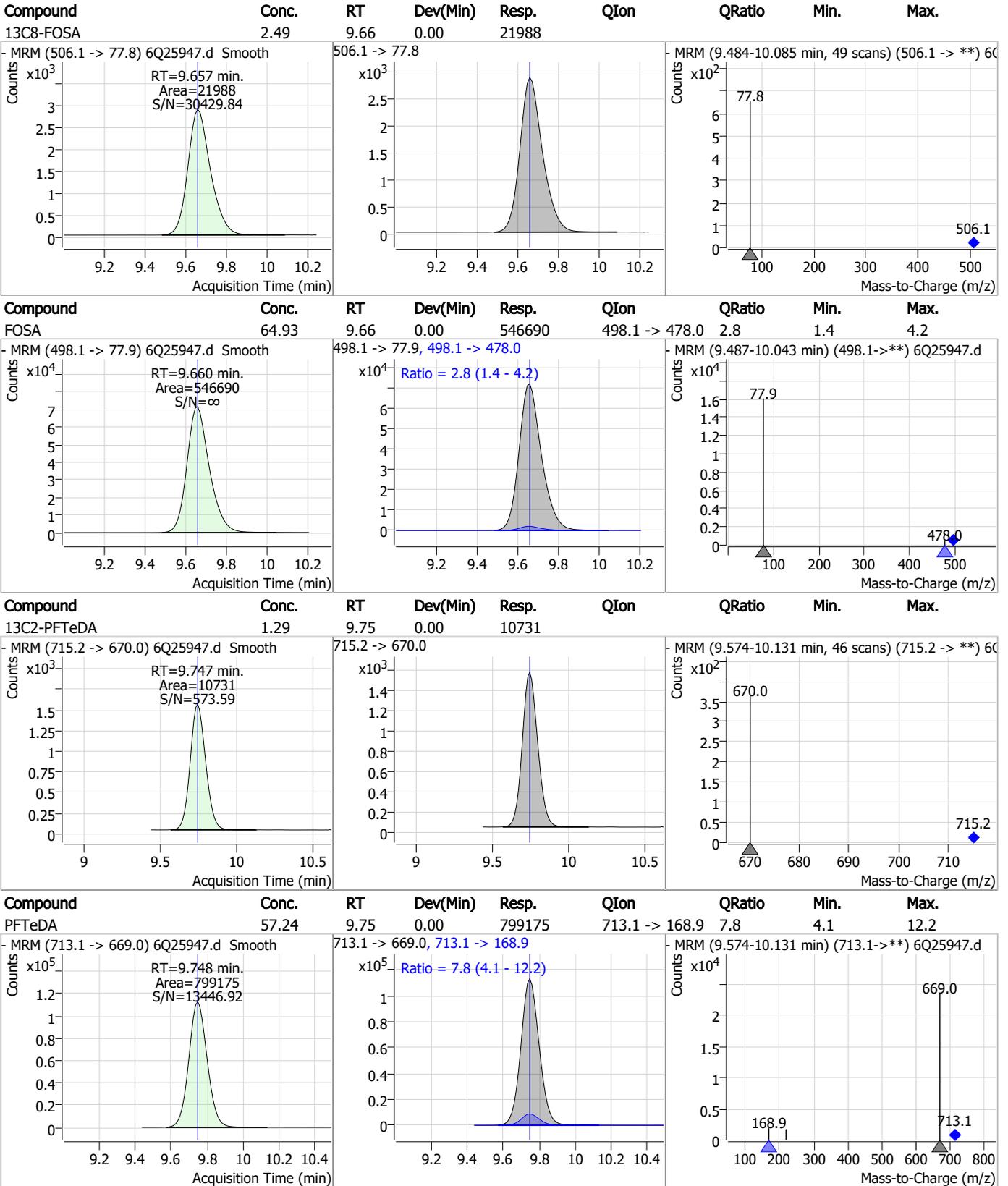
Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS

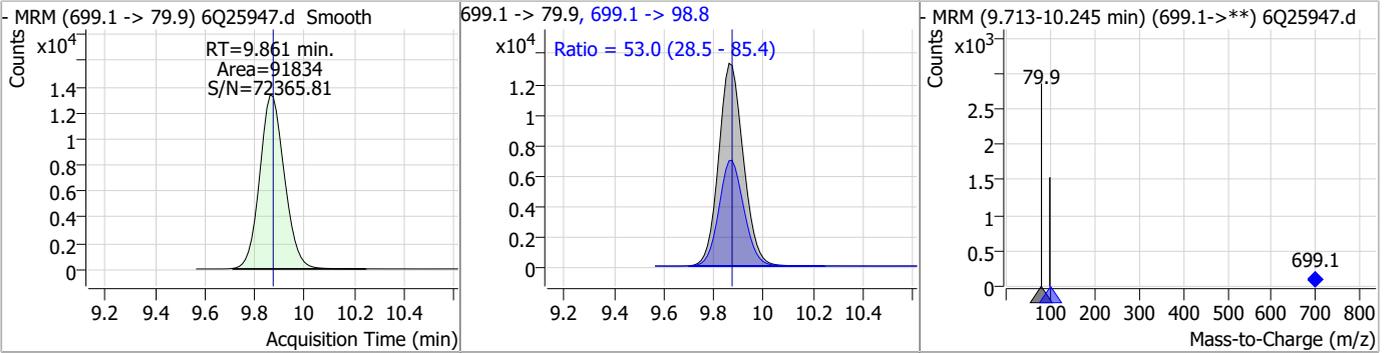


7.7.9

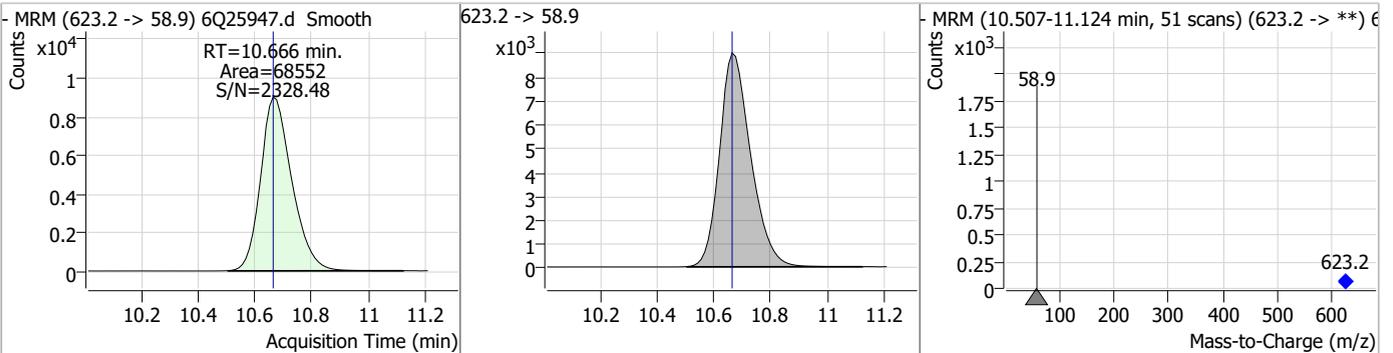
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Perfluorinated Compounds by LC/MS/MS

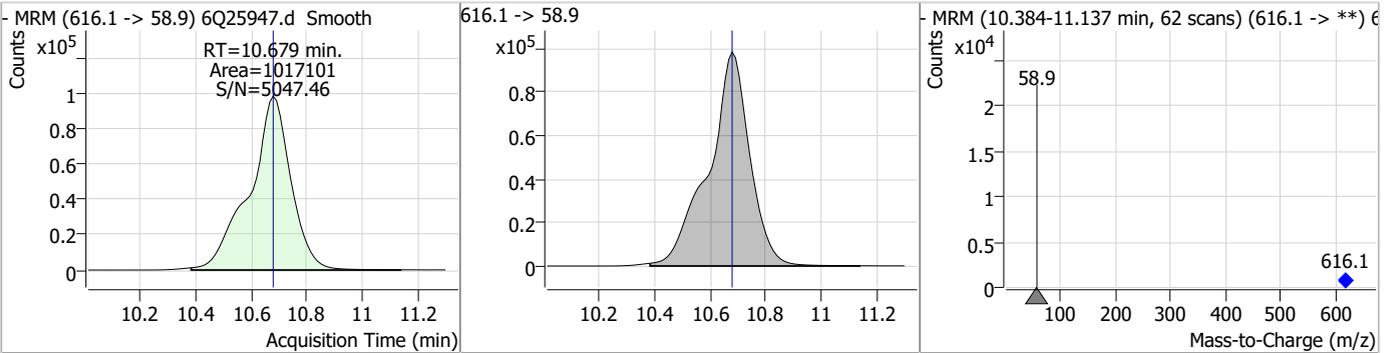
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	62.21	9.86	-0.01	91834	699.1 -> 98.8	53.0	28.5	85.4



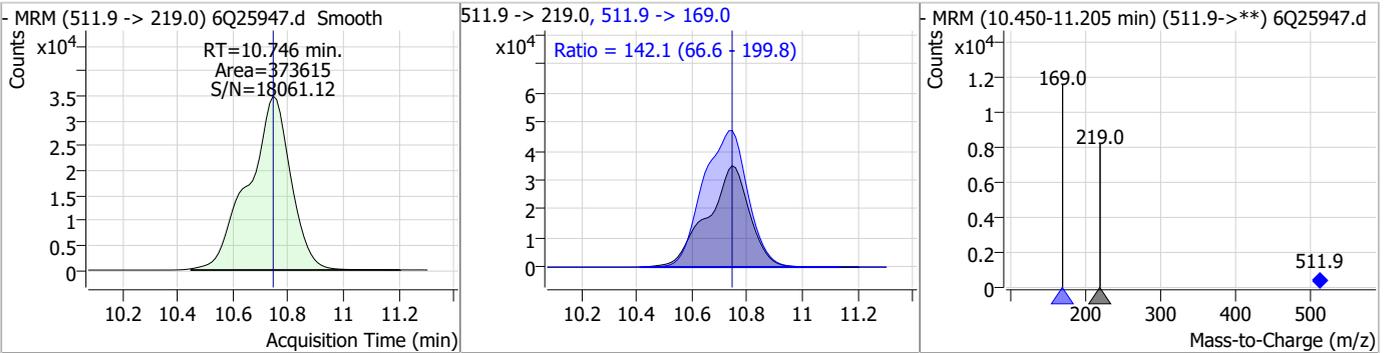
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.04	10.67	0.00	68552				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	335.72	10.68	0.00	1017101				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	110.11	10.75	0.00	373615	511.9 -> 169.0	142.1	66.6	199.8



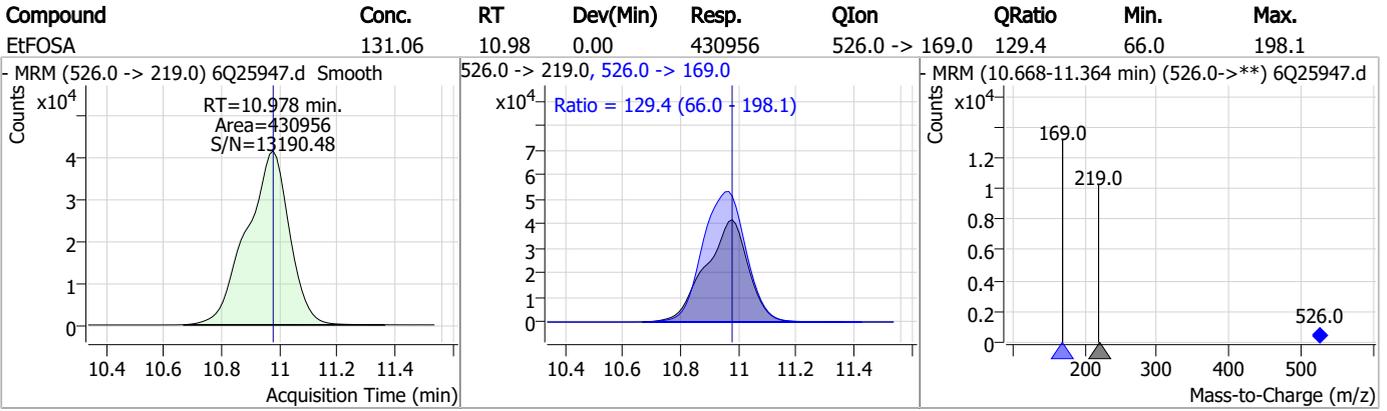
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.86	10.76	0.00	7320				
d9-EtFOSE	24.87	10.90	-0.01	84301				
EtFOSE	308.35	10.92	0.00	1045981				
d5-EtFOSA	2.45	10.98	0.00	6699				

7.7.9
7



Perfluorinated Compounds by LC/MS/MS



7.7.9

7

Manual Integration Approval Summary

Sample Number: S6Q367-IC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25947.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 16:43 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.9.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25949.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 5:12:19 PM
 Sample Name : icv367-4
 Vial : P1-B1
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	161350	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	57224	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	50802	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	52095	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	69388	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	30126	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27485	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	31782	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	33879	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11321	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	25224	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	22959	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	13033	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12604	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2467	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3525	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3492	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25734	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	35865	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	23082	5.00 µg/L	-0.012
M7-MeFOSE	10.665	623.2 -> 58.9	80688	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	92270	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7880	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6883	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	12235	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	67387	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	8162	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	76209	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	27161	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	27131	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49775	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2467	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.3%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3525	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.1%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3492	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.2%		
13C2-PFDoDA	9.030	615.1 -> 570.0	33879	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11321	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.510	302.1 -> 79.9	22959	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFHxS	7.263	402.1 -> 79.9	13033	2.51 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFBA	2.947	216.8 -> 171.9	161350	9.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.531	367.1 -> 322.0	52095	2.59 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	5.592	318.0 -> 273.0	50802	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C5-PFPeA	4.372	268.3 -> 223.0	57224	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C6-PFDA	8.161	519.1 -> 474.1	27485	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C7-PFUnDA	8.614	570.0 -> 525.1	31782	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C8-FOSA	9.657	506.1 -> 77.8	25224	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-PFOA	7.161	421.1 -> 376.0	69388	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C8-PFOS	8.311	507.1 -> 79.9	12604	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C9-PFNA	7.680	472.1 -> 427.0	30126	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25734	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	35865	10.33 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
d3-MeFOSA	10.757	515.0 -> 219.0	6883	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
d5-EtFOSAA	8.402	589.2 -> 419.0	23082	5.01 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d7-MeFOSE	10.665	623.2 -> 58.9	80688	24.76 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	10.911	639.2 -> 58.9	92270	23.82 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
d5-EtFOSA	10.976	531.1 -> 219.0	7880	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	38894	9.50 µg/L	99
		327.1 -> 80.9	14867		
6:2FTS	6.937	427.1 -> 407.0	31747	9.91 µg/L	97
		427.1 -> 80.9	12955		
8:2FTS	7.950	527.1 -> 507.0	24588	10.11 µg/L	96
		527.1 -> 80.8	9310		
EtFOSAA	8.416	584.2 -> 419.1	9070	2.42 µg/L	99
		584.2 -> 526.0	5741		
FOSA	9.660	498.1 -> 77.9	24541	2.54 µg/L	99
		498.1 -> 478.0	794		
MeFOSAA	8.220	570.1 -> 419.0	12650	2.63 µg/L	96
		570.1 -> 483.0	2904		
PFBA	2.943	212.8 -> 168.9	61230	10.19 µg/L	100
PFBS	5.499	298.7 -> 79.9	15796	2.30 µg/L	96
		298.7 -> 98.8	6187		
PFDA	8.161	512.9 -> 469.0	57425	2.67 µg/L	100
		512.9 -> 219.0	8888		
PFDoDA	9.031	613.1 -> 569.0	64705	2.57 µg/L	98
		613.1 -> 319.0	7877		
PFDS	9.183	599.0 -> 79.9	8361	2.59 µg/L	97

7.7.10
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.520	599.0 -> 98.8	3842	2.44	µg/L	100
		363.1 -> 319.0	68972			
PFHpS	7.819	363.1 -> 169.0	10001	2.56	µg/L	97
		449.0 -> 79.9	13333			
PFHxA	5.582	449.0 -> 98.9	6212	2.60	µg/L	99
		313.0 -> 269.0	47179			
PFHxS	7.264	313.0 -> 118.9	2262	2.25	µg/L	m
		398.7 -> 79.9	12234			
PFNA	7.680	398.7 -> 98.9	5767	2.45	µg/L	97
		463.0 -> 419.0	45562			
PFNS	8.777	463.0 -> 219.0	10286	2.40	µg/L	96
		548.8 -> 79.9	11027			
PFOA	7.163	548.8 -> 98.9	5605	2.39	µg/L	98
		413.0 -> 369.0	71225			
PFOS	8.312	413.0 -> 169.0	12429	2.36	µg/L	m
		498.9 -> 79.9	12705			
PFPeA	4.374	498.9 -> 98.8	6650	4.98	µg/L	100
		263.0 -> 219.0	61479			
PFPeS	6.571	349.1 -> 79.9	16718	2.38	µg/L	100
		349.1 -> 98.9	7345			
PFTeDA	9.747	713.1 -> 669.0	39299	2.67	µg/L	99
		713.1 -> 168.9	3000			
PFTrDA	9.413	663.0 -> 619.0	51502	2.60	µg/L	99
		663.0 -> 168.9	4260			
PFUnDA	8.614	563.1 -> 519.0	54526	2.43	µg/L	94
		563.1 -> 269.1	9280			
11CI-PF3OUdS	9.454	630.9 -> 450.9	49412	4.64	µg/L	98
		632.9 -> 452.9	15305			
9CI-PF3ONS	8.641	530.8 -> 351.0	89957	4.76	µg/L	99
		532.8 -> 353.0	27272			
ADONA	6.767	376.9 -> 250.9	227649	4.62	µg/L	100
		376.9 -> 84.8	62593			
HFPO-DA	5.958	284.9 -> 168.9	17848	5.02	µg/L	97
		284.9 -> 184.9	1956			
3:3FTCA	3.808	241.0 -> 177.0	10562	12.20	µg/L	99
		241.0 -> 117.0	1402			
5:3FTCA	6.233	341.0 -> 237.1	220601	64.79	µg/L	99
		341.0 -> 217.0	158987			
7:3FTCA	7.632	441.0 -> 316.9	129119	62.09	µg/L	96
		441.0 -> 336.9	268101			
EtFOSA	10.978	526.0 -> 219.0	18904	4.89	µg/L	98
		526.0 -> 169.0	24445			
EtFOSE	10.912	630.0 -> 58.9	48282	13.00	µg/L	100
		511.9 -> 219.0	17266			
MeFOSA	10.746	511.9 -> 169.0	23073	5.41	µg/L	100
		616.1 -> 58.9	43650			
MeFOSE	10.679	699.1 -> 79.9	4258	12.24	µg/L	100
		699.1 -> 98.8	2129			
PFDoDS	9.873	295.0 -> 201.0	11486	2.54	µg/L	91
		295.0 -> 84.9	3348			
NFDHA	5.462	279.0 -> 85.1	47268	5.03	µg/L	100
		229.0 -> 84.9	38810			
PFMBA	4.800	314.8 -> 134.9	107043	5.00	µg/L	100
		314.8 -> 82.9	3828			
PFMPA	3.513			4.58	µg/L	100
PFEESA	6.050					

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



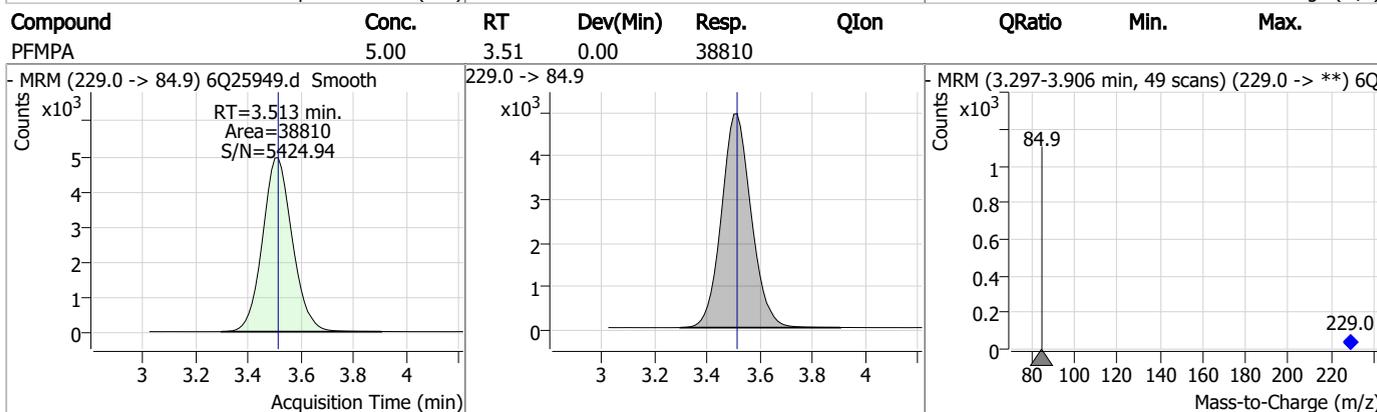
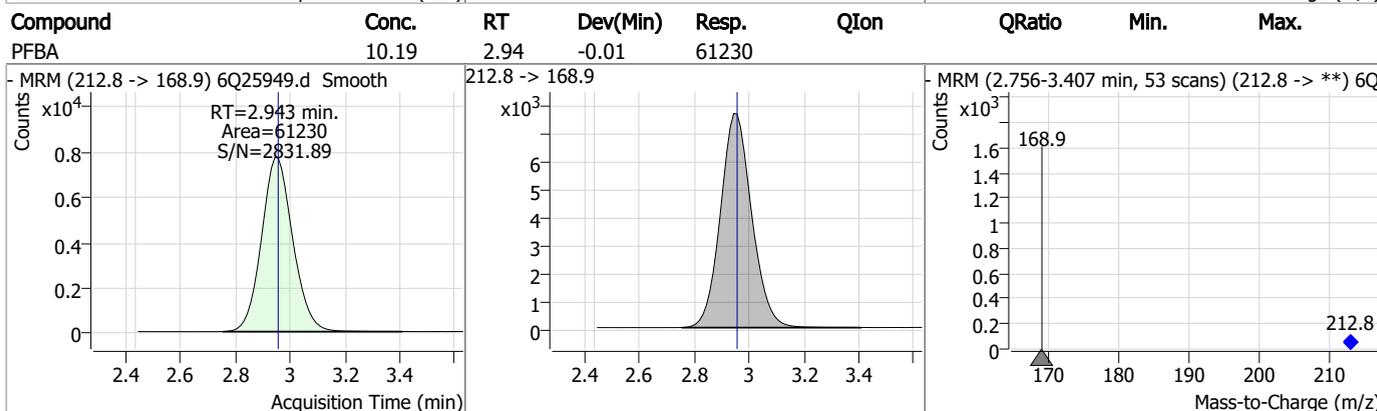
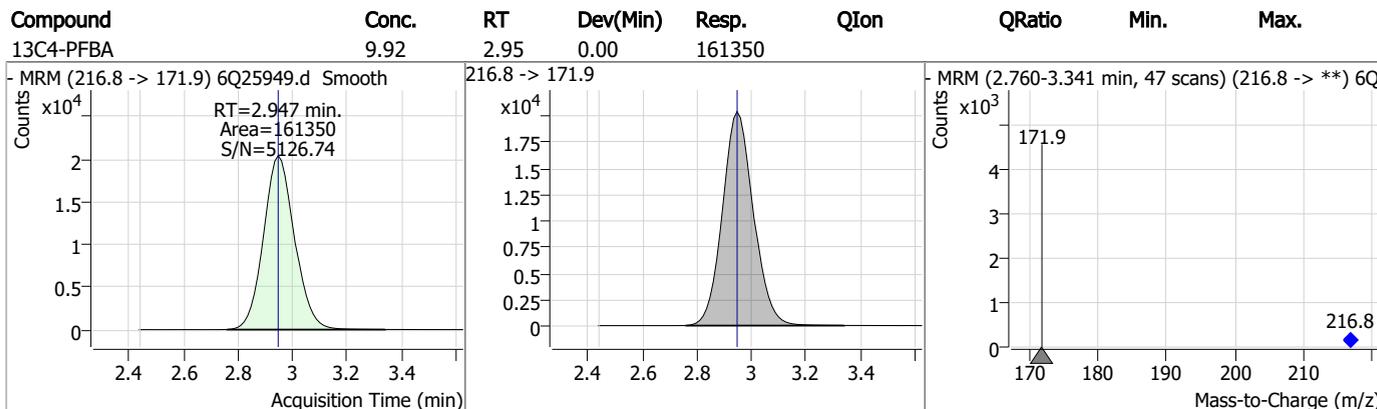
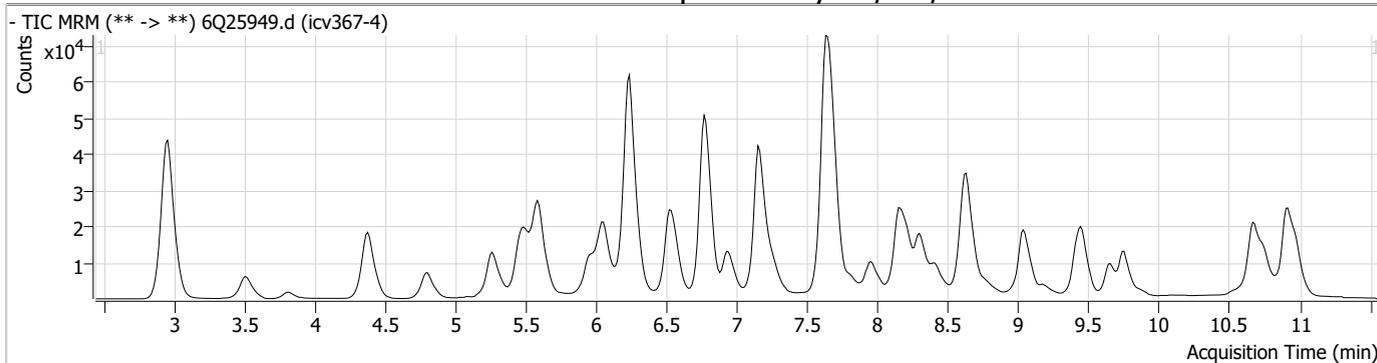
Perfluorinated Compounds by LC/MS/MS

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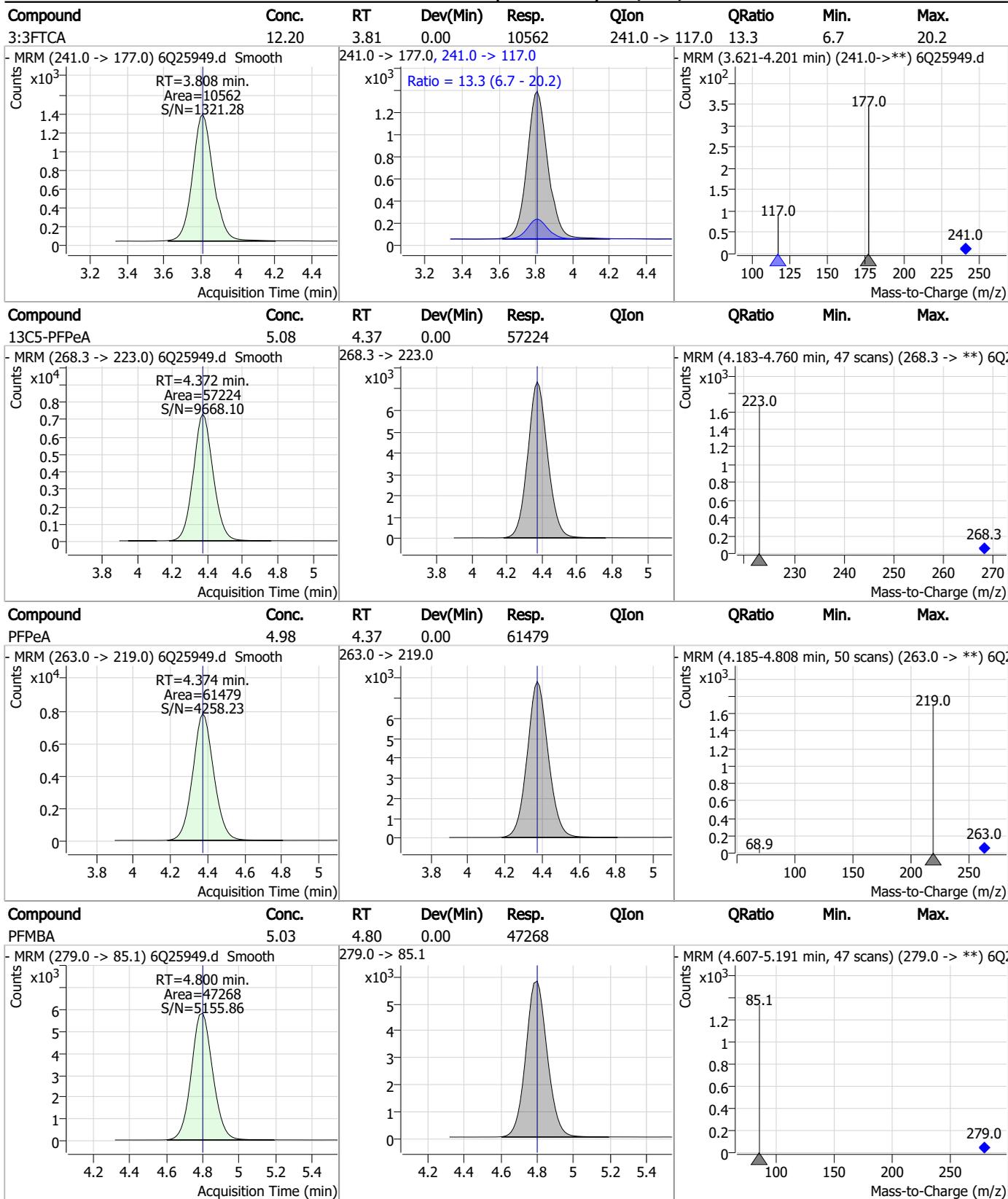
7.7.10

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Perfluorinated Compounds by LC/MS/MS

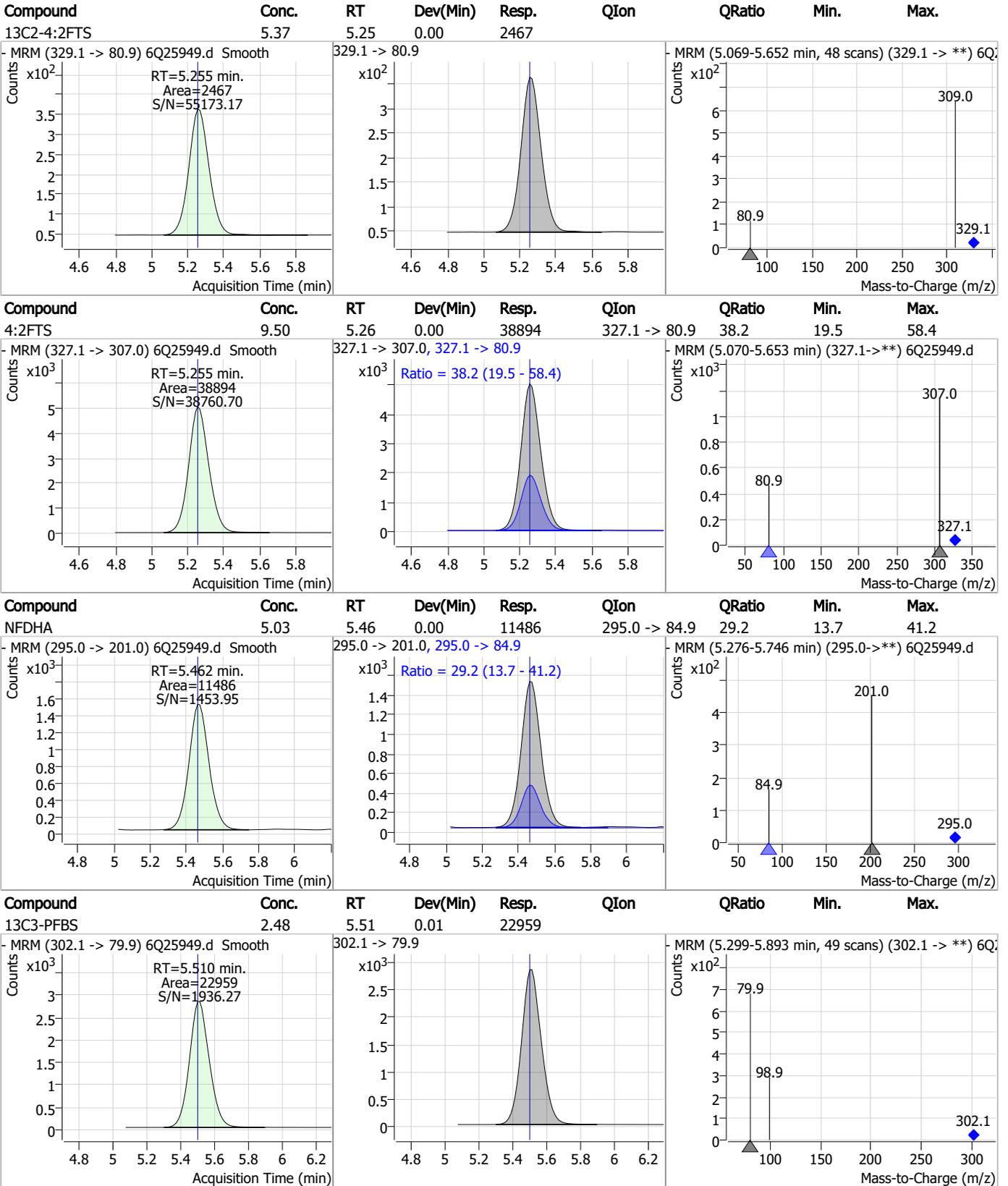


Perfluorinated Compounds by LC/MS/MS



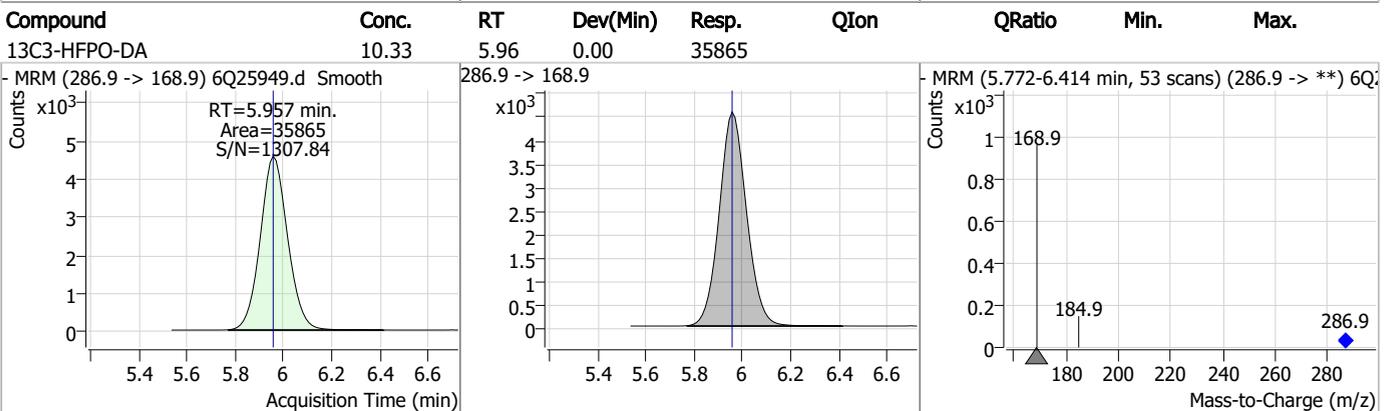
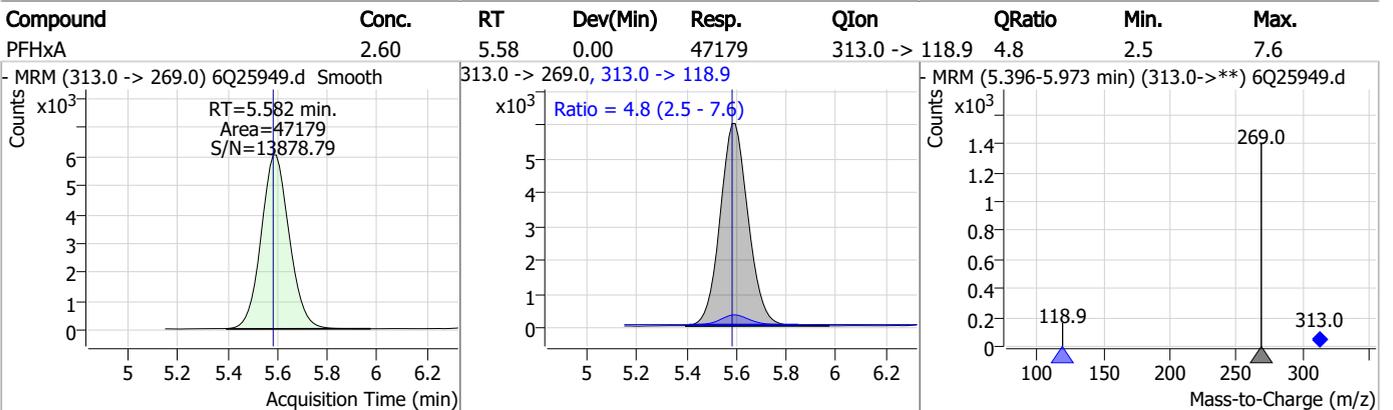
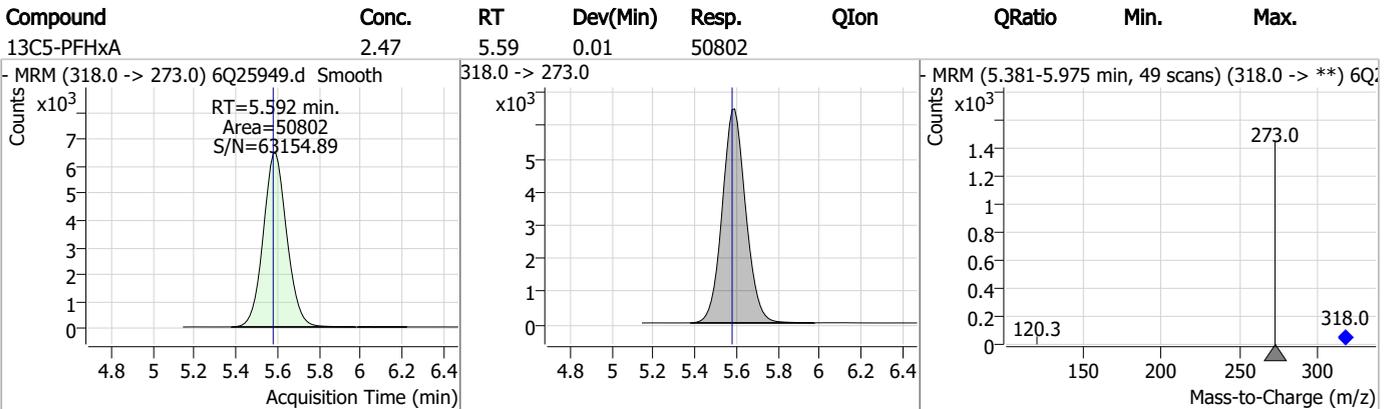
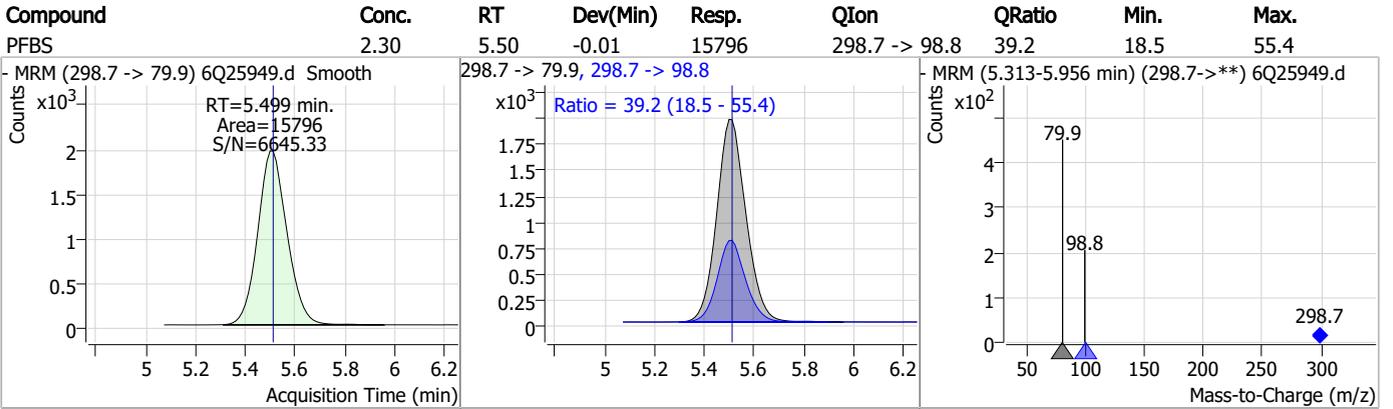
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



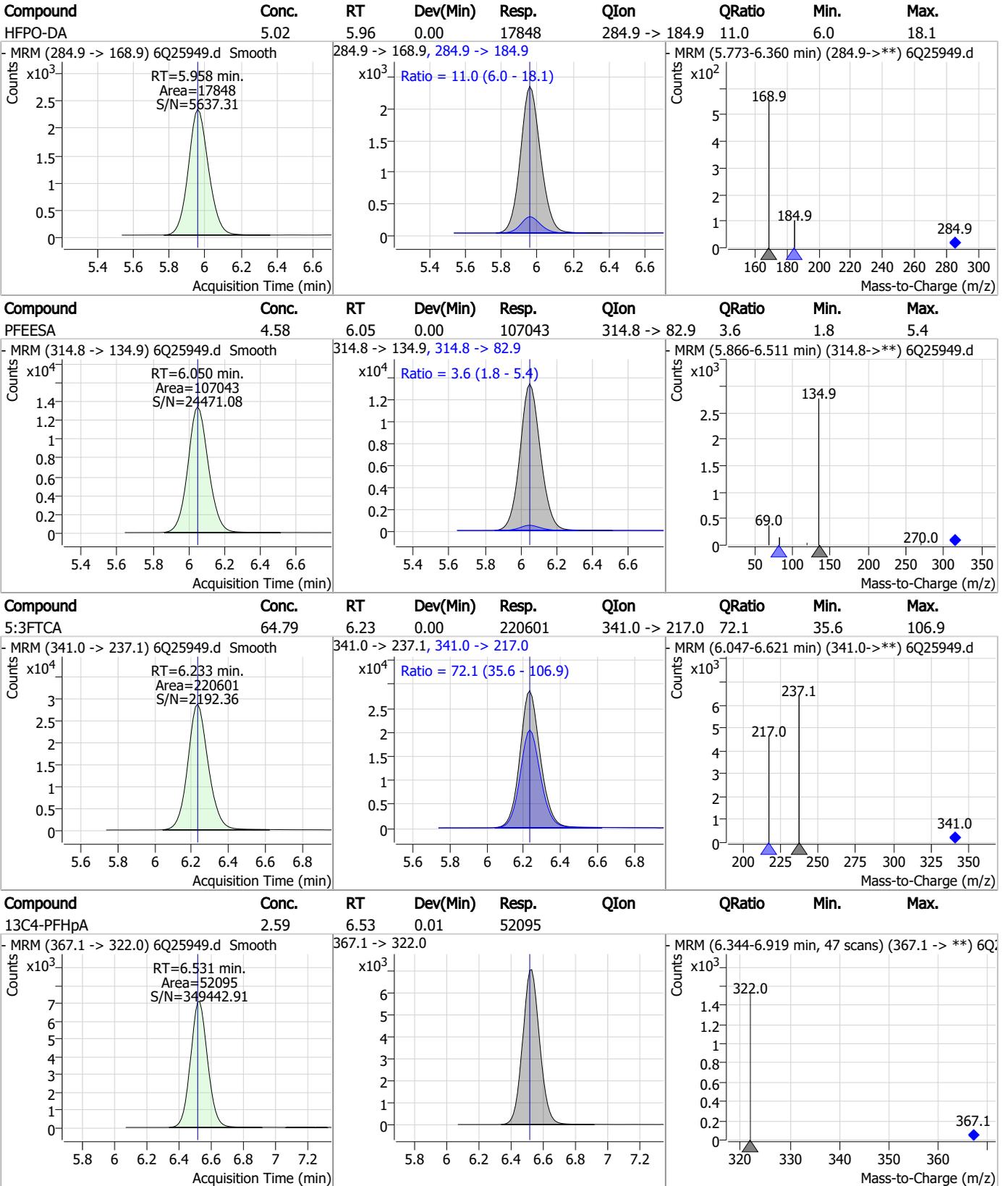
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

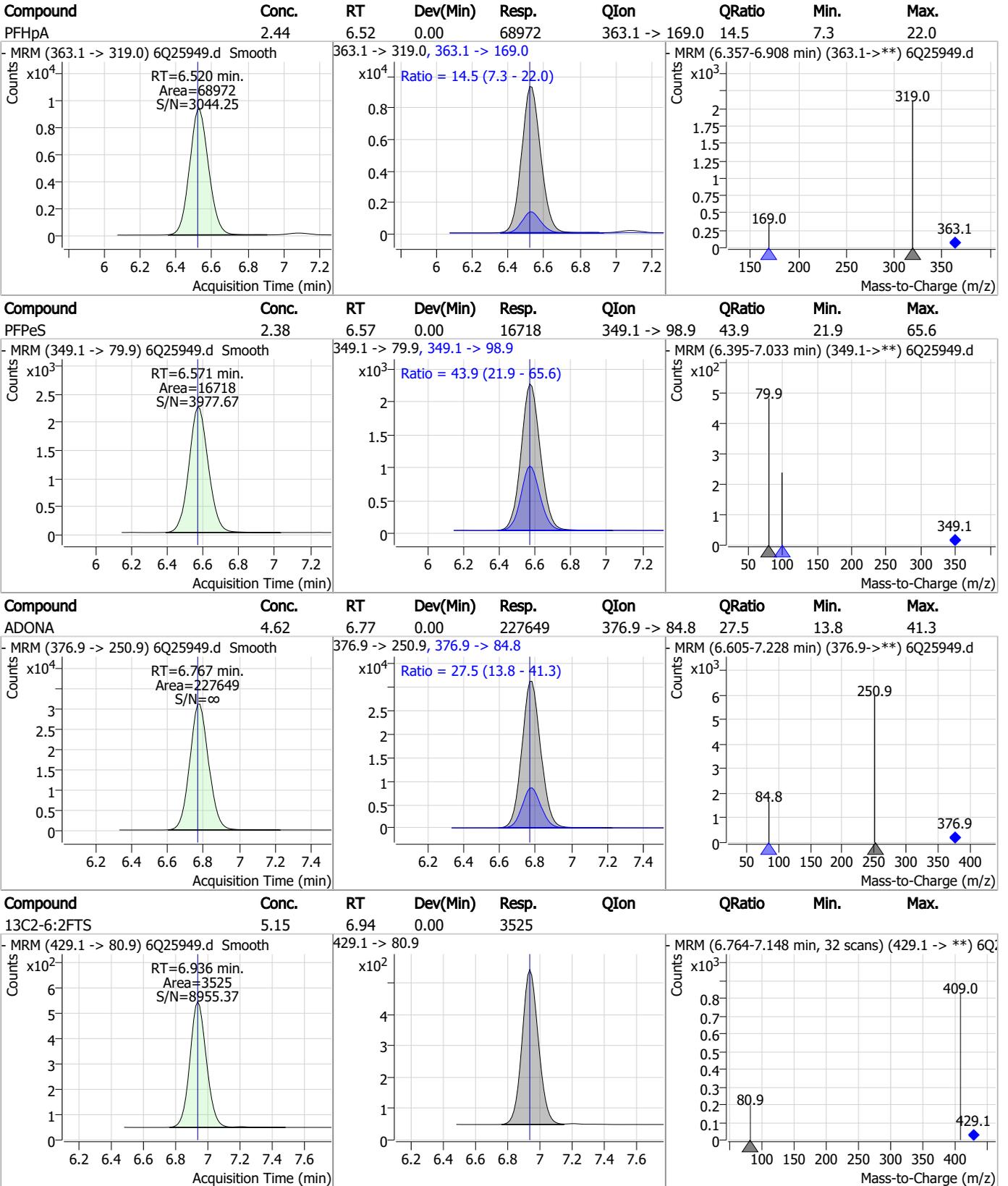
Perfluorinated Compounds by LC/MS/MS



7.7.10
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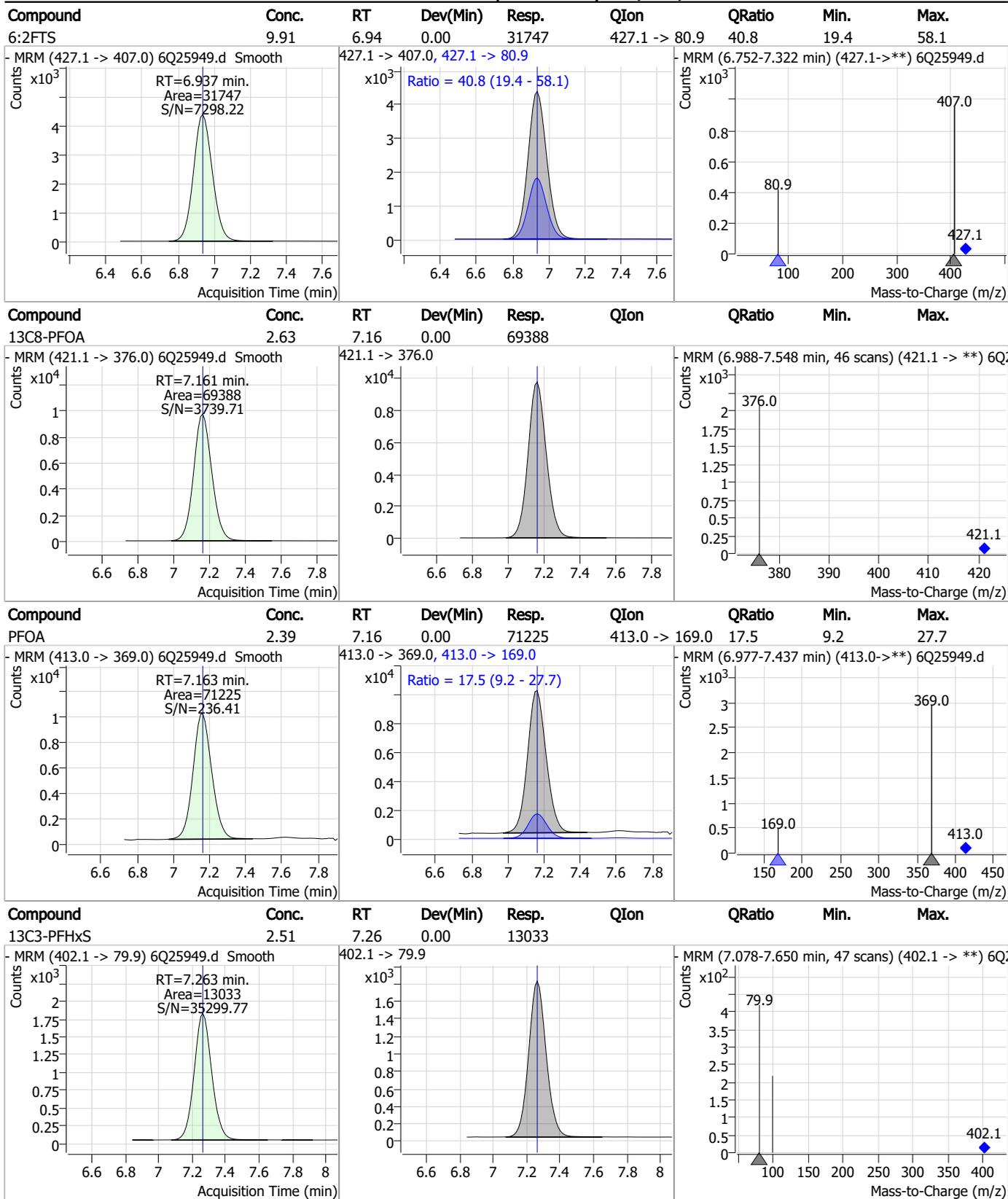
Perfluorinated Compounds by LC/MS/MS



7.7.10 7

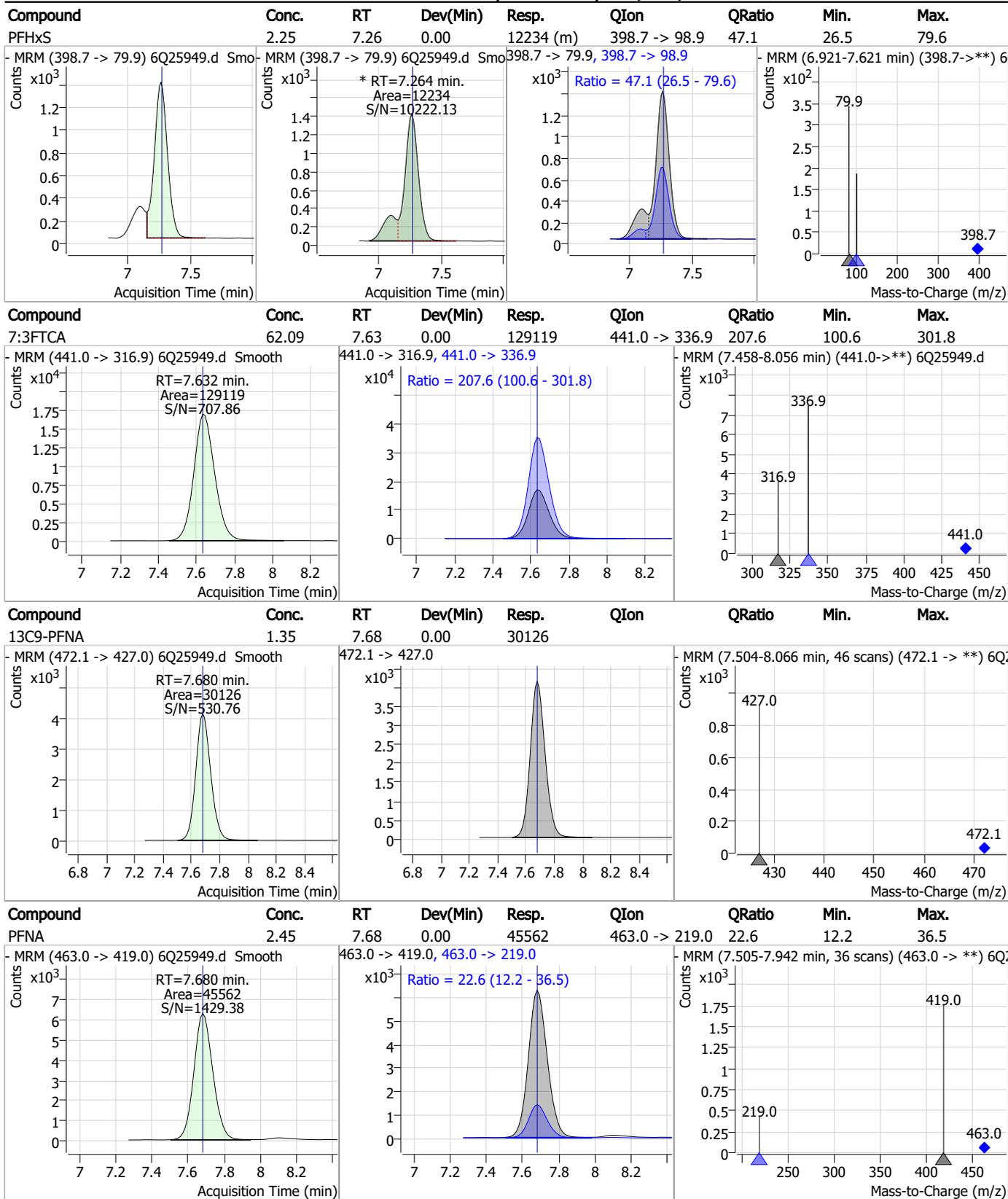


Perfluorinated Compounds by LC/MS/MS



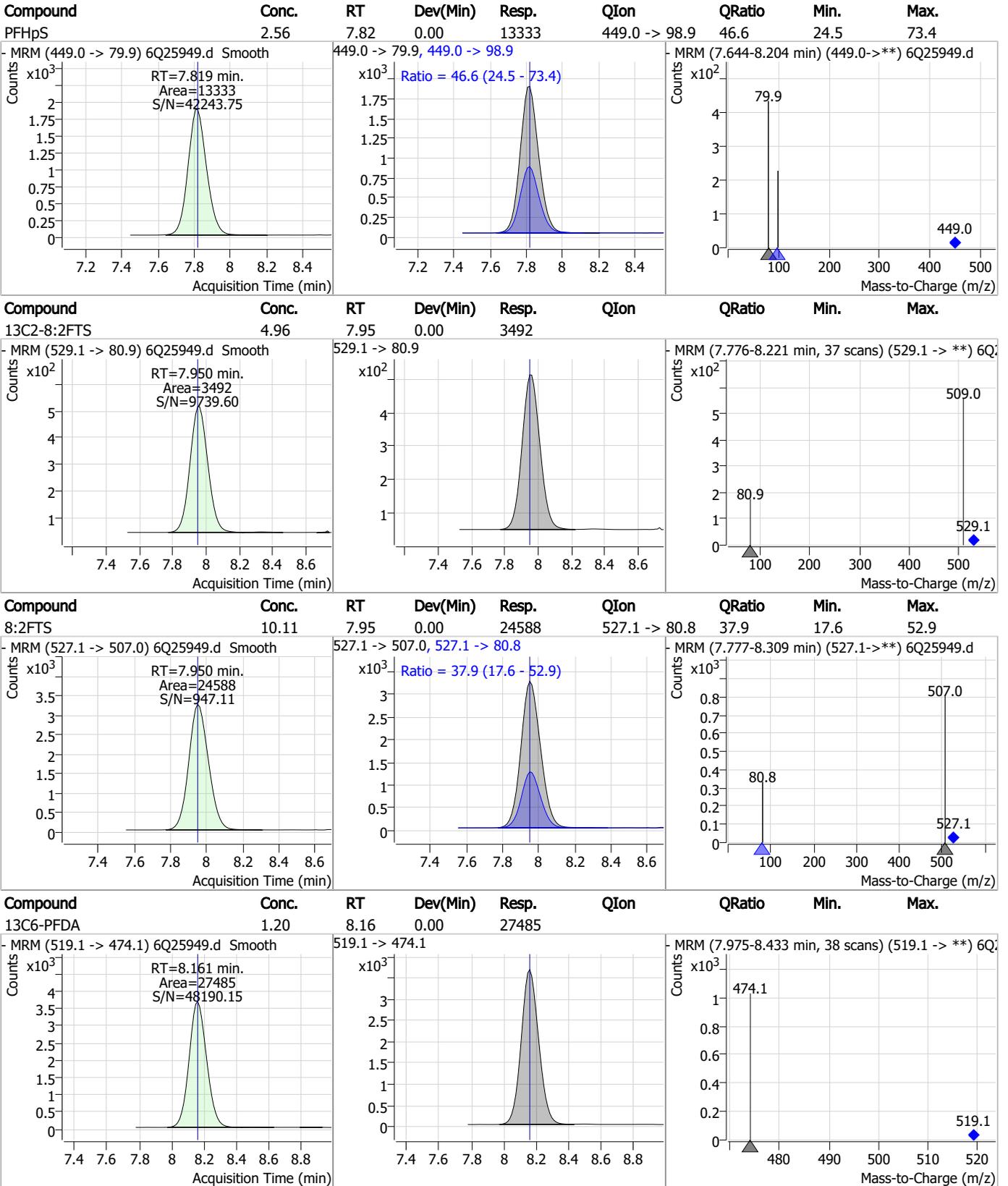
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10
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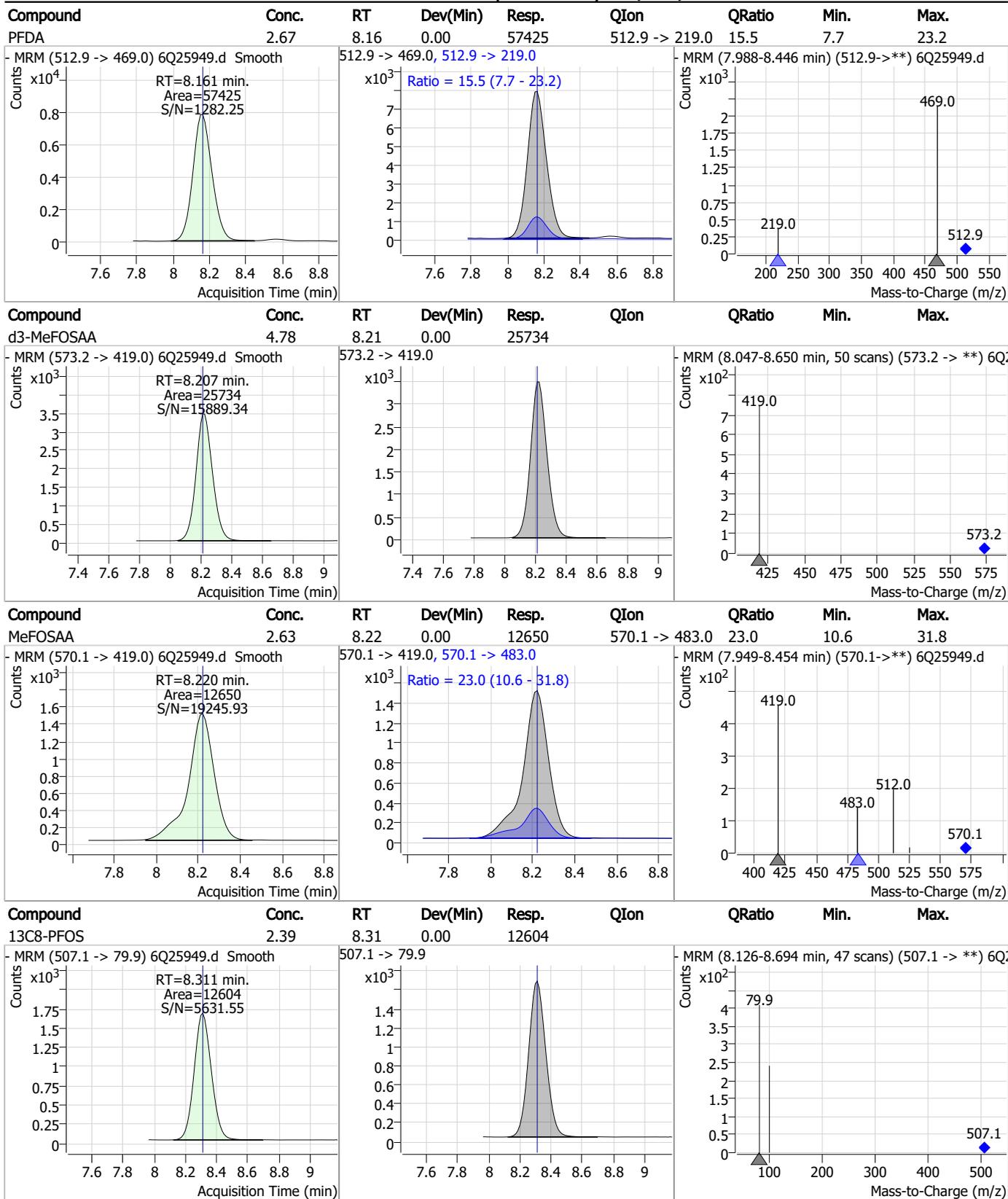
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



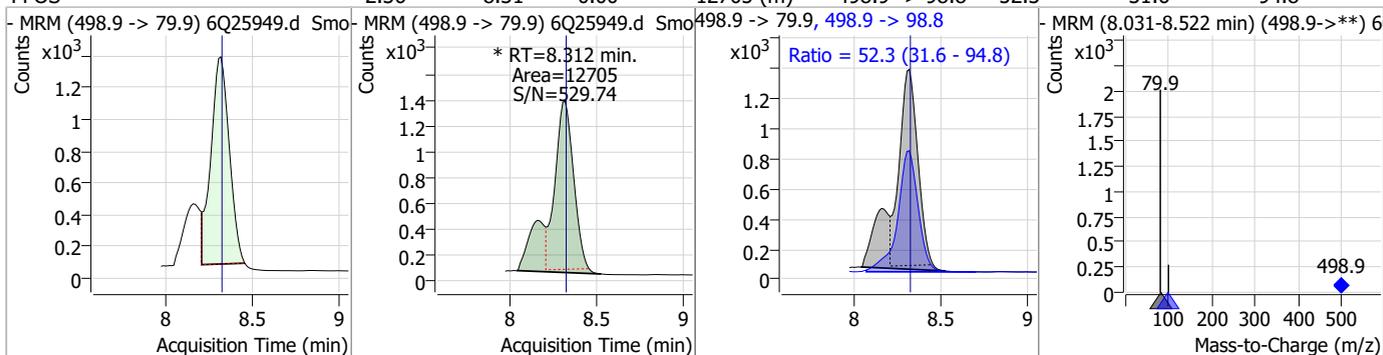
Perfluorinated Compounds by LC/MS/MS



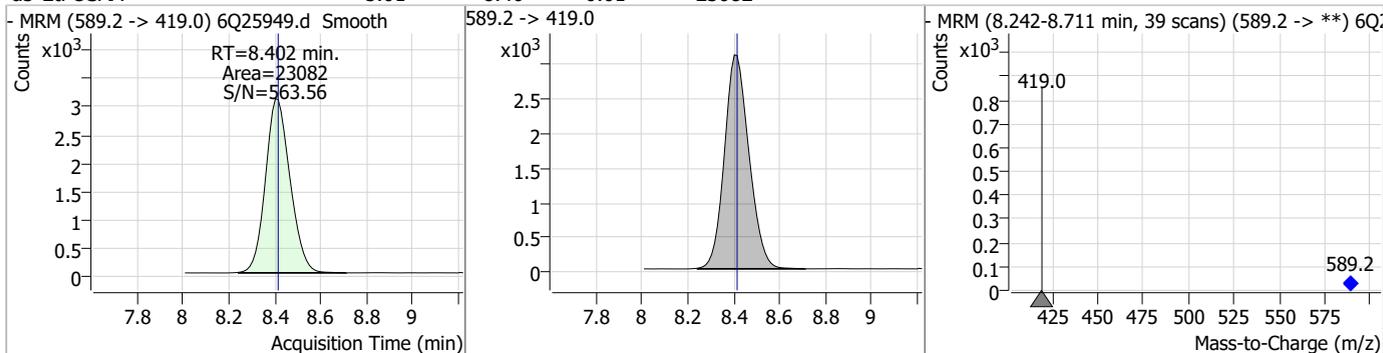
7.7.10
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Perfluorinated Compounds by LC/MS/MS

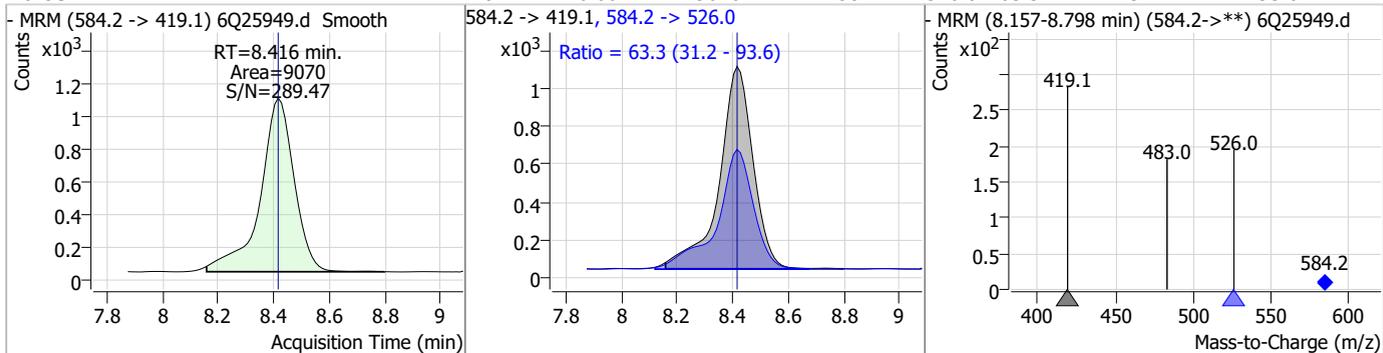
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.36	8.31	0.00	12705 (m)	498.9 -> 98.8	52.3	31.6	94.8



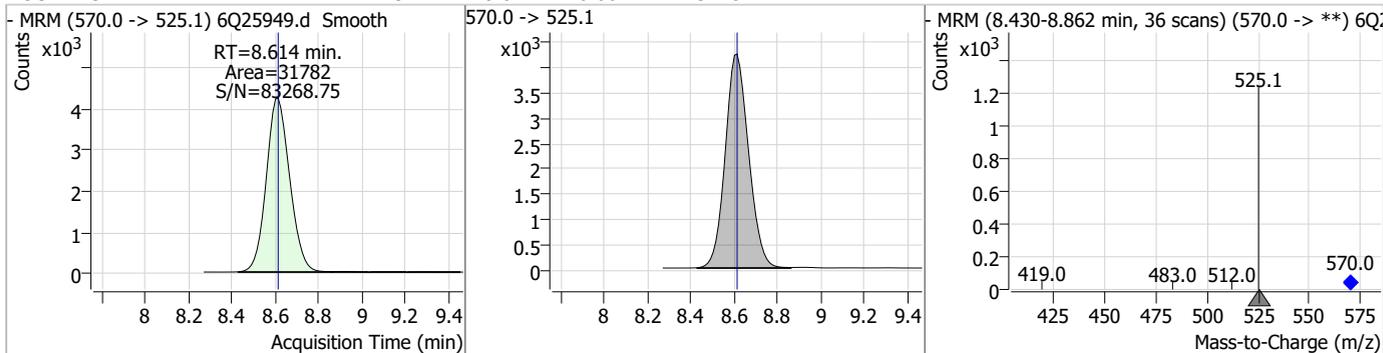
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.01	8.40	-0.01	23082				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.42	8.42	0.00	9070	584.2 -> 526.0	63.3	31.2	93.6

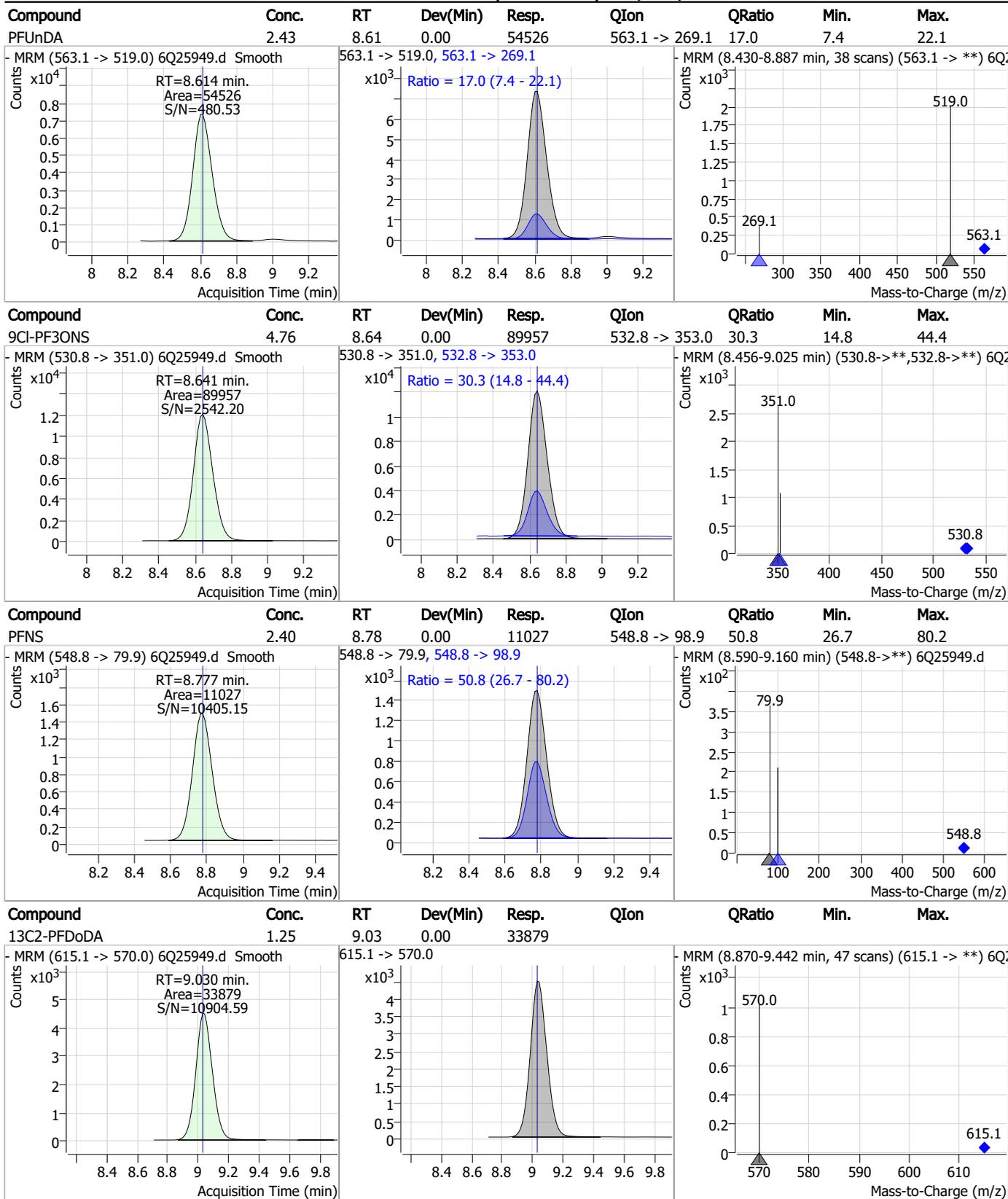


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.61	0.00	31782				



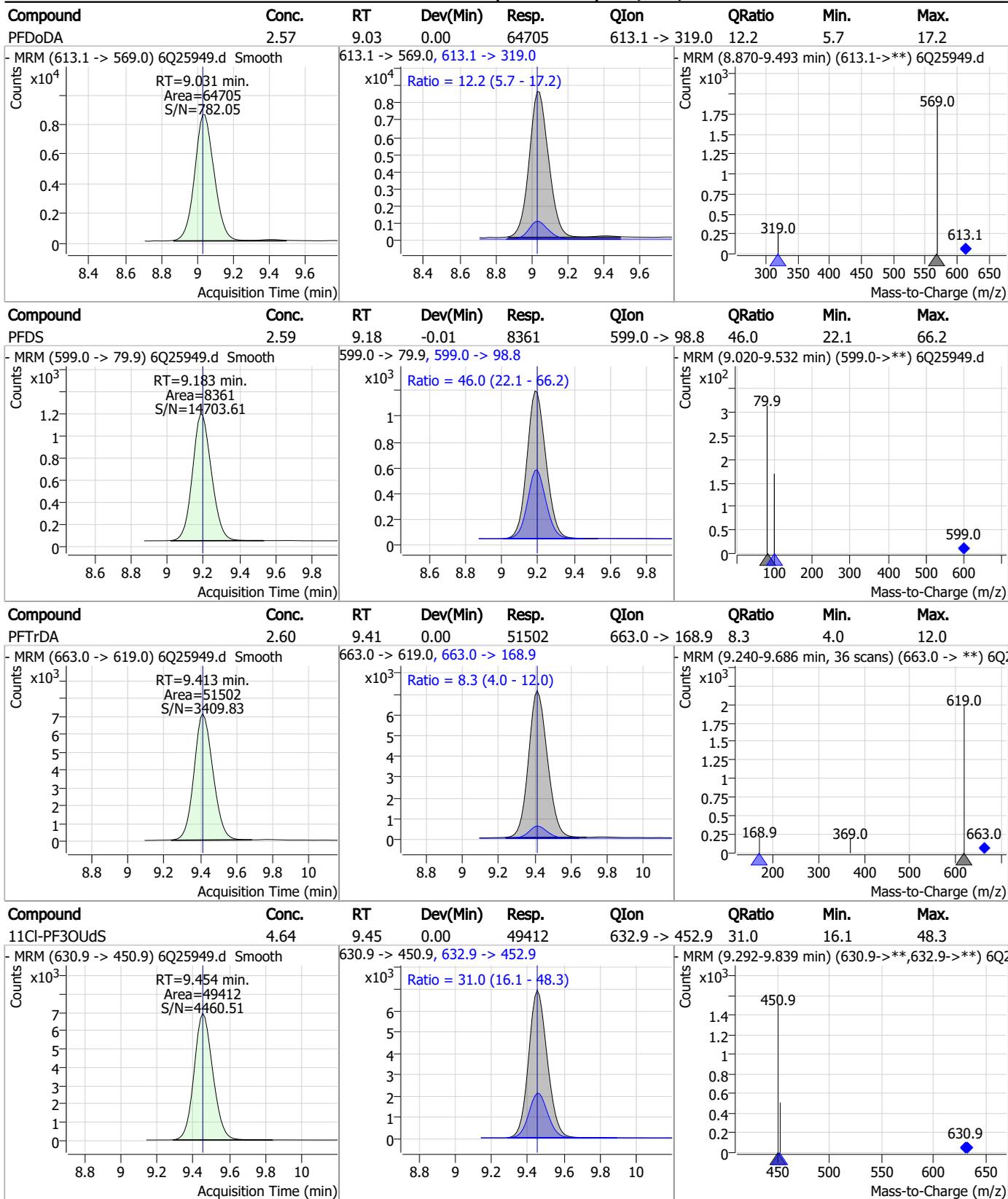
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



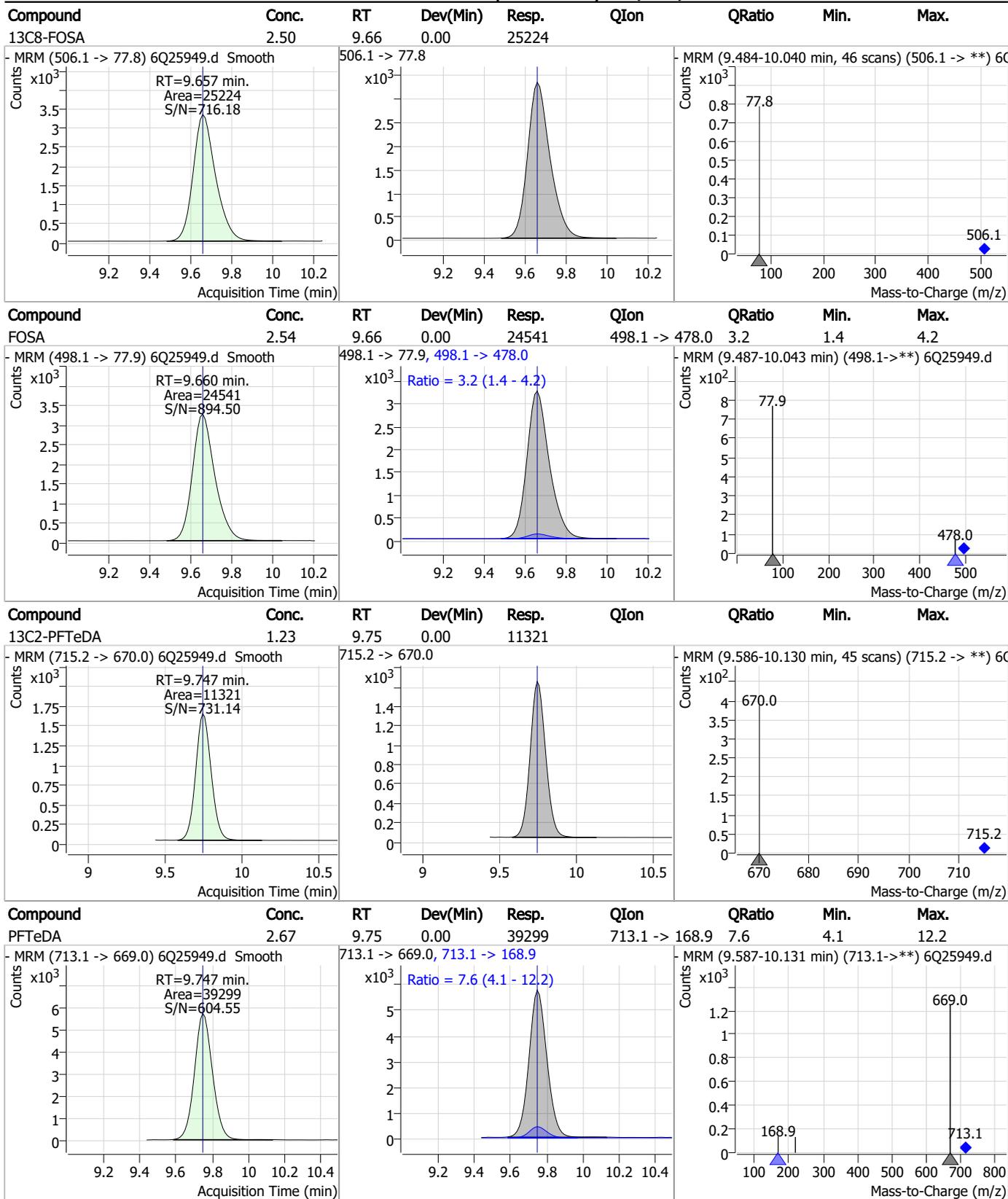
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS



7.7.10
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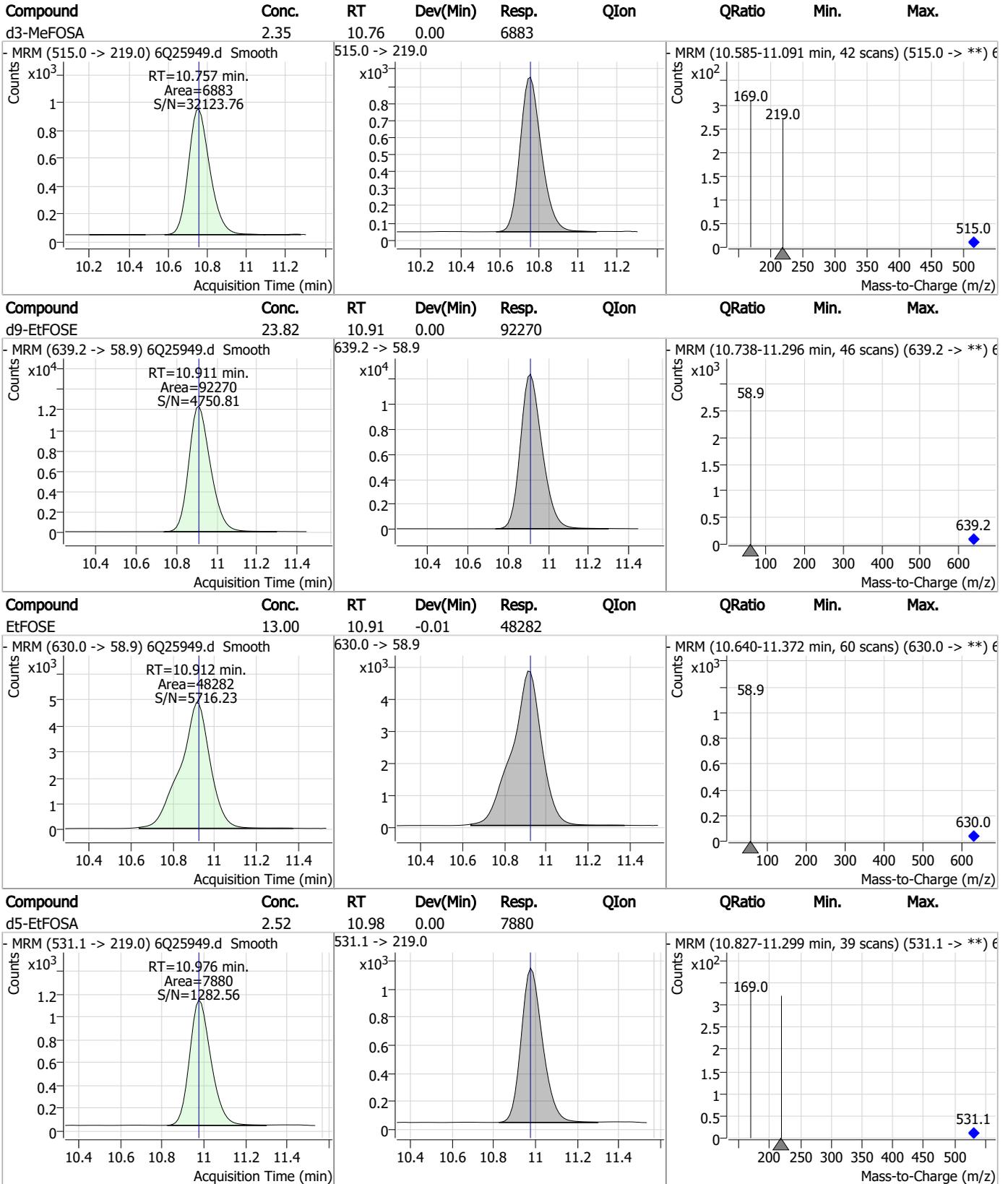
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.54	9.87	0.00	4258	699.1 -> 98.8	50.0	28.5	85.4
d7-MeFOSE	24.76	10.67	0.00	80688	623.2 -> 58.9			
MeFOSE	12.24	10.68	0.00	43650	616.1 -> 58.9			
MeFOSA	5.41	10.75	0.00	17266	511.9 -> 169.0	133.6	66.6	199.8

7.7.10 7



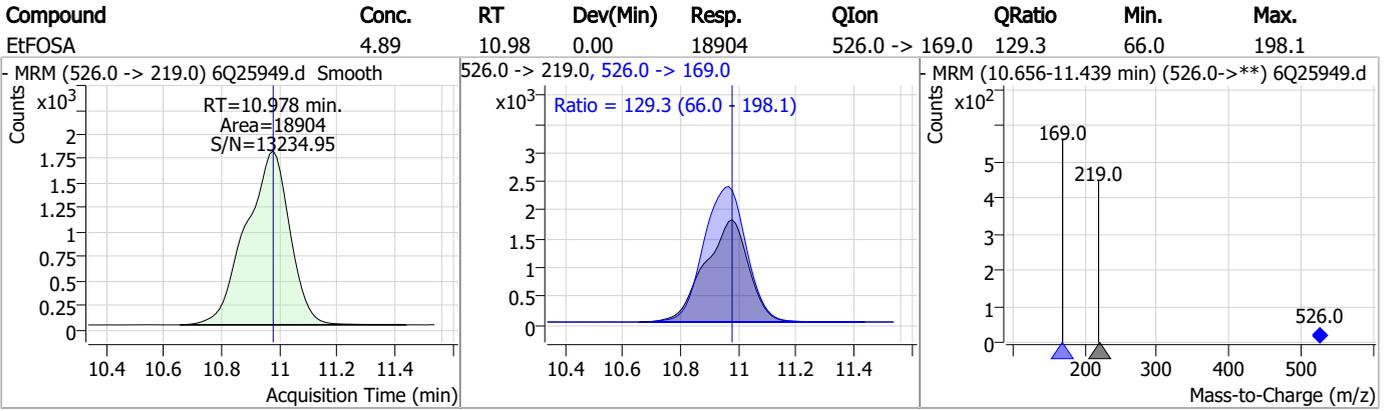
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Perfluorinated Compounds by LC/MS/MS



7.7.10
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Manual Integration Approval Summary

Sample Number: S6Q367-ICV367 Method: EPA DRAFT 1633
Lab FileID: 6Q25949.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 17:12 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.10.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25950.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 5:26:37 PM
 Sample Name : icv367-20
 Vial : P1-B2
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	162431	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	56743	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	51660	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	47861	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	64412	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	27285	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27770	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	30589	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	34778	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11368	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23568	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22633	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12484	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	12699	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2424	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3449	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3627	5.00 µg/L	0.000
M3-MeFOSAA	8.219	573.2 -> 419.0	26497	5.00 µg/L	0.012
M3-HFPO-DA	5.957	286.9 -> 168.9	33488	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	22465	5.00 µg/L	-0.012
M7-MeFOSE	10.665	623.2 -> 58.9	74082	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	93609	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7528	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6722	2.50 µg/L	0.000
13C4-PFOS	8.312	502.8 -> 79.9	12471	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	67012	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7706	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	76443	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	27554	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	27640	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49385	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2424	5.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3449	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.8%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3627	5.46 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	9.030	615.1 -> 570.0	34778	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11368	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFBS	5.497	302.1 -> 79.9	22633	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.7%		
13C3-PFHxS	7.263	402.1 -> 79.9	12484	2.55 µg/L	0.000

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 = 102.0%	
13C4-PFBA	2.947	216.8 -> 171.9	162431	10.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.519	367.1 -> 322.0	47861	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C5-PFHxA	5.580	318.0 -> 273.0	51660	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFPeA	4.372	268.3 -> 223.0	56743	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C6-PFDA	8.161	519.1 -> 474.1	27770	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C7-PFUnDA	8.601	570.0 -> 525.1	30589	1.22 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C8-FOSA	9.657	506.1 -> 77.8	23568	2.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C8-PFOA	7.161	421.1 -> 376.0	64412	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-PFOS	8.298	507.1 -> 79.9	12699	2.36 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C9-PFNA	7.680	472.1 -> 427.0	27285	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%	
d3-MeFOSAA	8.219	573.2 -> 419.0	26497	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	33488	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSA	10.757	515.0 -> 219.0	6722	2.25 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.1%	
d5-EtFOSAA	8.402	589.2 -> 419.0	22465	4.78 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
d7-MeFOSE	10.665	623.2 -> 58.9	74082	22.30 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.2%	
d9-EtFOSE	10.911	639.2 -> 58.9	93609	23.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d5-EtFOSA	10.976	531.1 -> 219.0	7528	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	80072	19.91 µg/L	98
		327.1 -> 80.9	30107		
6:2FTS	6.937	427.1 -> 407.0	65897	21.02 µg/L	100
		427.1 -> 80.9	25376		
8:2FTS	7.950	527.1 -> 507.0	46825	18.53 µg/L	100
		527.1 -> 80.8	16550		
EtFOSAA	8.416	584.2 -> 419.1	67649	18.53 µg/L	98
		584.2 -> 526.0	41185		
FOSA	9.660	498.1 -> 77.9	174716	19.36 µg/L	100
		498.1 -> 478.0	4668		
MeFOSAA	8.208	570.1 -> 419.0	95624	19.32 µg/L	99
		570.1 -> 483.0	19623		
PFBA	2.943	212.8 -> 168.9	111603	18.44 µg/L	100
PFBS	5.499	298.7 -> 79.9	131741	19.42 µg/L	99
		298.7 -> 98.8	48059		
PFDA	8.161	512.9 -> 469.0	425832	19.62 µg/L	98
		512.9 -> 219.0	69736		
PFDoDA	9.031	613.1 -> 569.0	449845	17.40 µg/L	97
		613.1 -> 319.0	56424		
PFDS	9.183	599.0 -> 79.9	61292	18.87 µg/L	94



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	29473			
PFHpA	6.520	363.1 -> 319.0	510457	19.66	µg/L	99
		363.1 -> 169.0	72436			
PFHpS	7.819	449.0 -> 79.9	101174	19.30	µg/L	98
		449.0 -> 98.9	51195			
PFHxA	5.582	313.0 -> 269.0	359633	19.48	µg/L	99
		313.0 -> 118.9	16803			
PFHxS	7.264	398.7 -> 79.9	102029	19.55	µg/L	m 90
		398.7 -> 98.9	46722			
PFNA	7.680	463.0 -> 419.0	343566	20.43	µg/L	99
		463.0 -> 219.0	81932			
PFNS	8.765	548.8 -> 79.9	85375	18.43	µg/L	97
		548.8 -> 98.9	43577			
PFOA	7.163	413.0 -> 369.0	495171	17.91	µg/L	99
		413.0 -> 169.0	89690			
PFOS	8.312	498.9 -> 79.9	95947	17.69	µg/L	m 79
		498.9 -> 98.8	45072			
PFPeA	4.374	263.0 -> 219.0	235758	19.26	µg/L	100
PFPeS	6.571	349.1 -> 79.9	138877	20.60	µg/L	100
		349.1 -> 98.9	60800			
PFTeDA	9.747	713.1 -> 669.0	281415	19.03	µg/L	100
		713.1 -> 168.9	22611			
PFTrDA	9.413	663.0 -> 619.0	342668	16.86	µg/L	100
		663.0 -> 168.9	27601			
PFUnDA	8.614	563.1 -> 519.0	383445	17.79	µg/L	95
		563.1 -> 269.1	64433			
11CI-PF3OUdS	9.454	630.9 -> 450.9	203042	20.44	µg/L	96
		632.9 -> 452.9	61221			
9CI-PF3ONS	8.641	530.8 -> 351.0	330533	18.75	µg/L	93
		532.8 -> 353.0	110095			
ADONA	6.767	376.9 -> 250.9	840201	18.27	µg/L	97
		376.9 -> 84.8	217633			
HFPO-DA	5.958	284.9 -> 168.9	60935	18.36	µg/L	99
		284.9 -> 184.9	7553			
3:3FTCA	3.808	241.0 -> 177.0	15585	17.88	µg/L	100
		241.0 -> 117.0	2080			
5:3FTCA	6.233	341.0 -> 237.1	67206	19.41	µg/L	98
		341.0 -> 217.0	49043			
7:3FTCA	7.632	441.0 -> 316.9	37520	17.74	µg/L	98
		441.0 -> 336.9	76751			
EtFOSA	10.978	526.0 -> 219.0	59522	16.11	µg/L	78
		526.0 -> 169.0	63510			
EtFOSE	10.924	630.0 -> 58.9	375098	99.58	µg/L	100
MeFOSA	10.758	511.9 -> 219.0	57256	18.38	µg/L	82
		511.9 -> 169.0	64081			
MeFOSE	10.691	616.1 -> 58.9	354149	108.17	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	29713	17.61	µg/L	97
		699.1 -> 98.8	16147			
NFDHA	5.462	295.0 -> 201.0	43769	18.86	µg/L	99
		295.0 -> 84.9	11897			
PFMBA	4.800	279.0 -> 85.1	168746	18.09	µg/L	100
PFMPA	3.501	229.0 -> 84.9	138063	17.93	µg/L	100
PFEESA	6.050	314.8 -> 134.9	380675	16.02	µg/L	100
		314.8 -> 82.9	13751			

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

7.7.11
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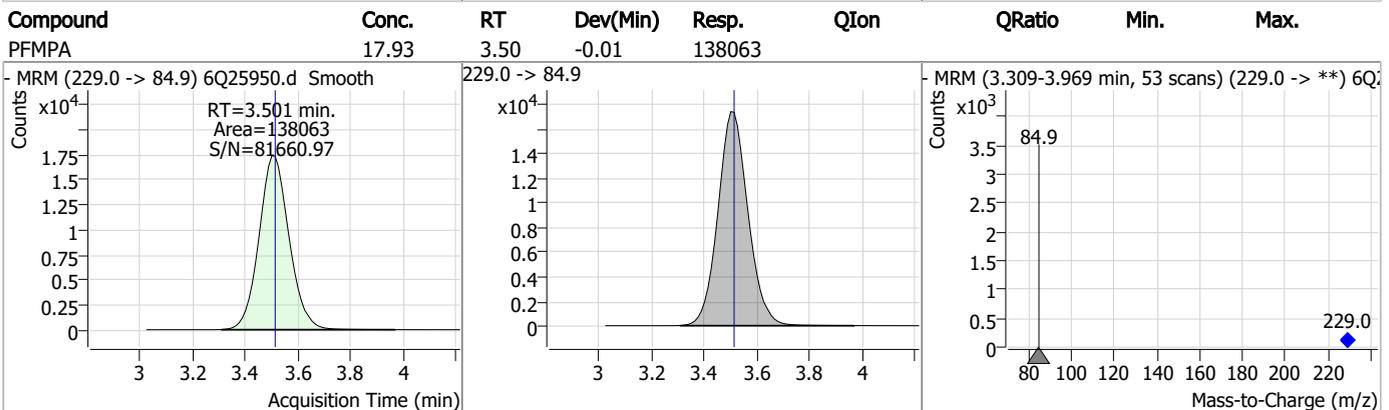
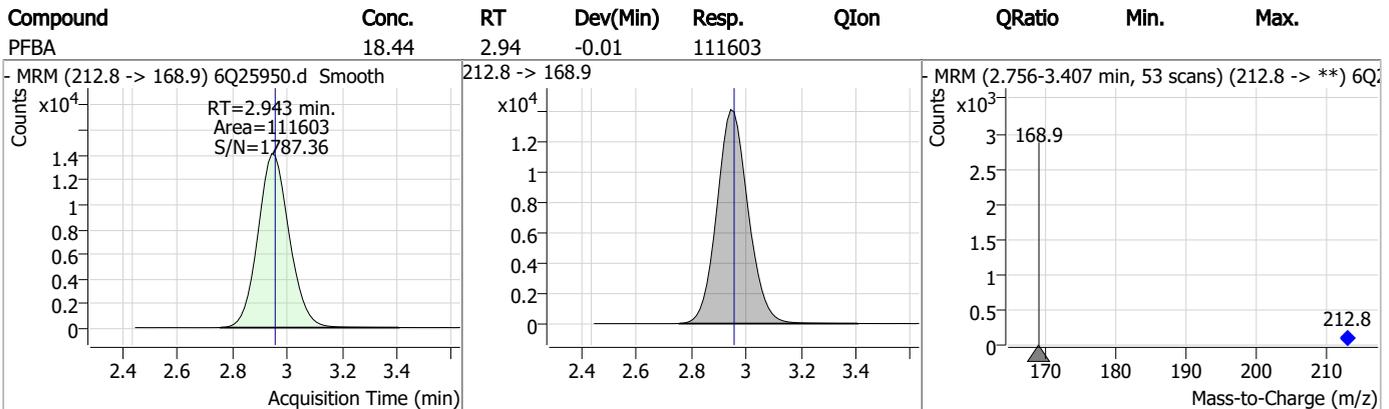
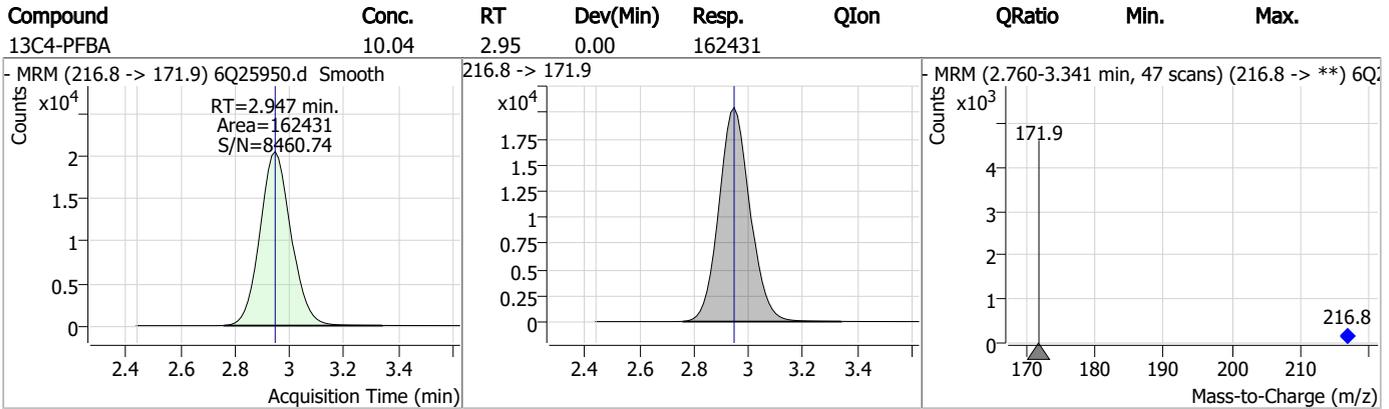
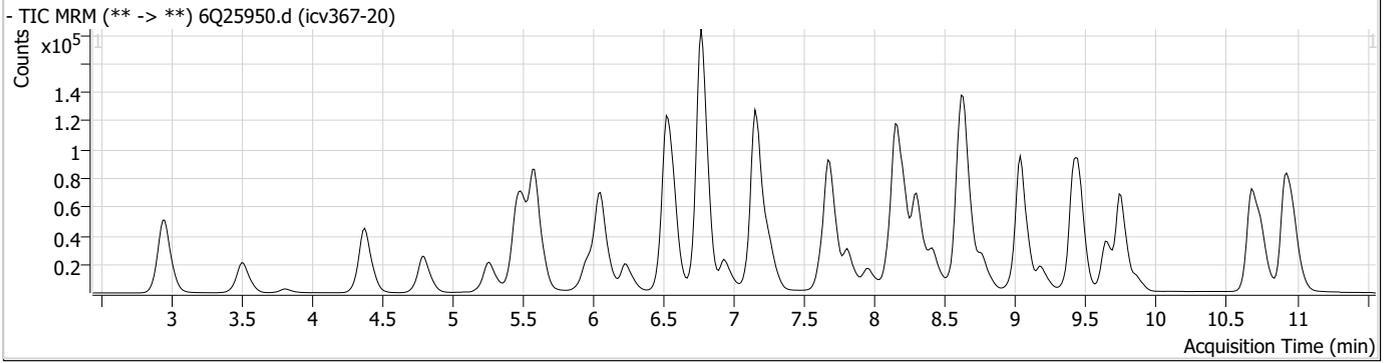
Perfluorinated Compounds by LC/MS/MS

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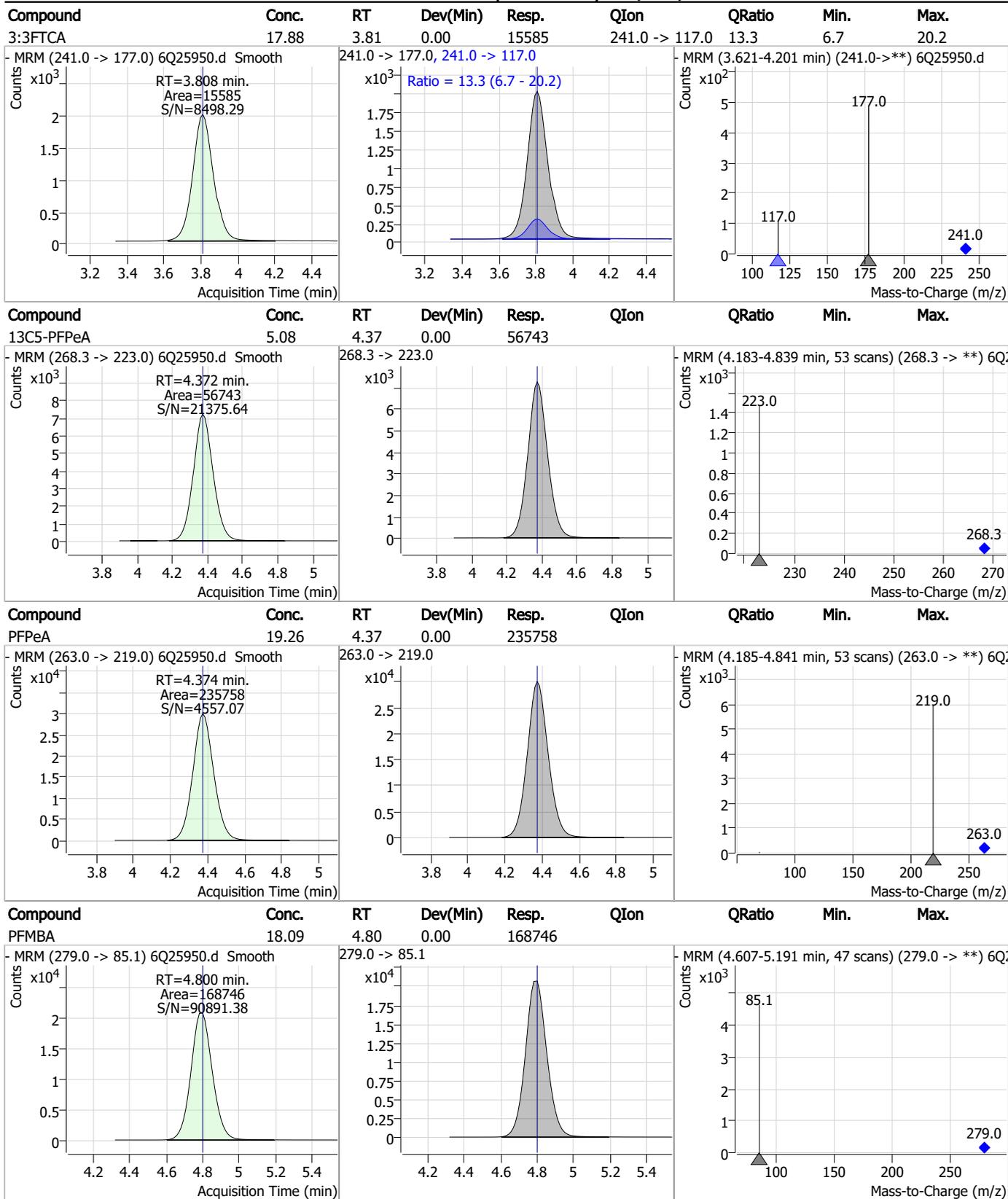
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Perfluorinated Compounds by LC/MS/MS



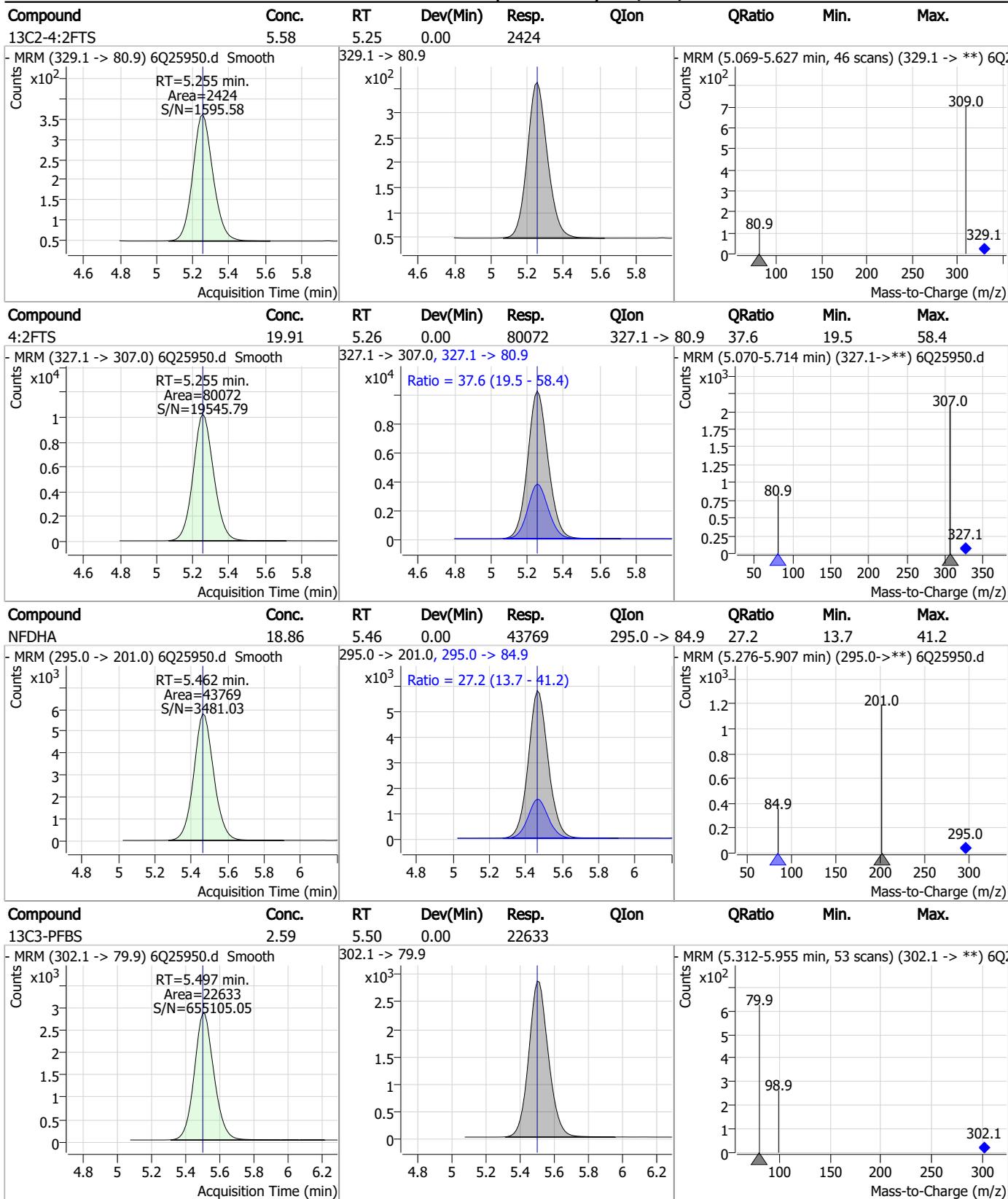
Perfluorinated Compounds by LC/MS/MS



7.7.11

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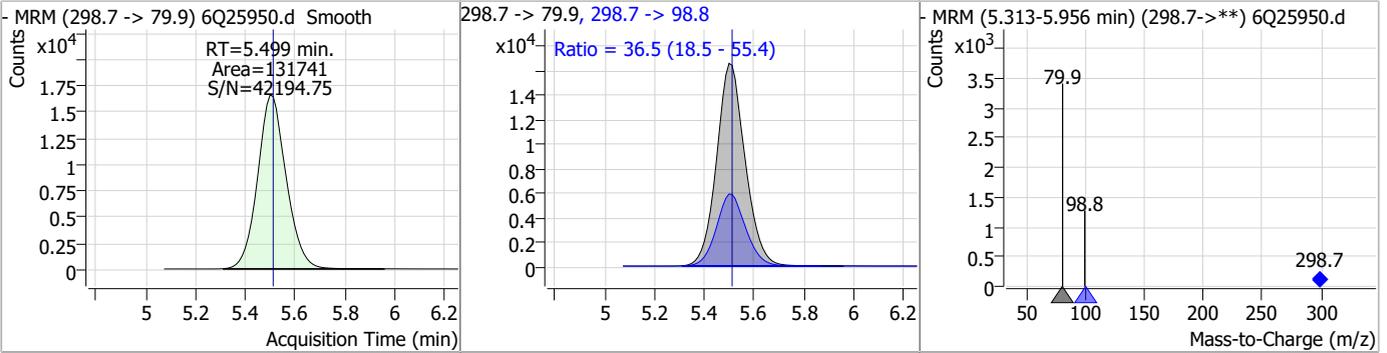
Perfluorinated Compounds by LC/MS/MS



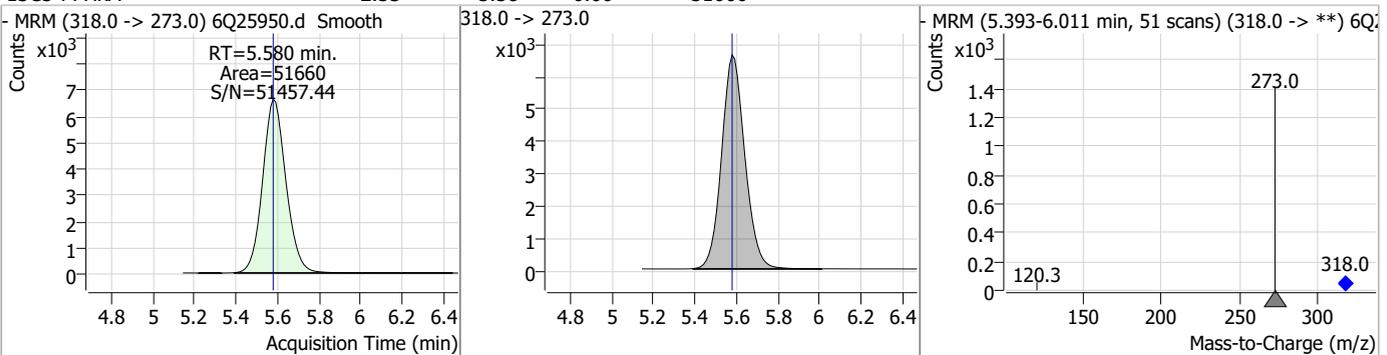
7.7.11
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Perfluorinated Compounds by LC/MS/MS

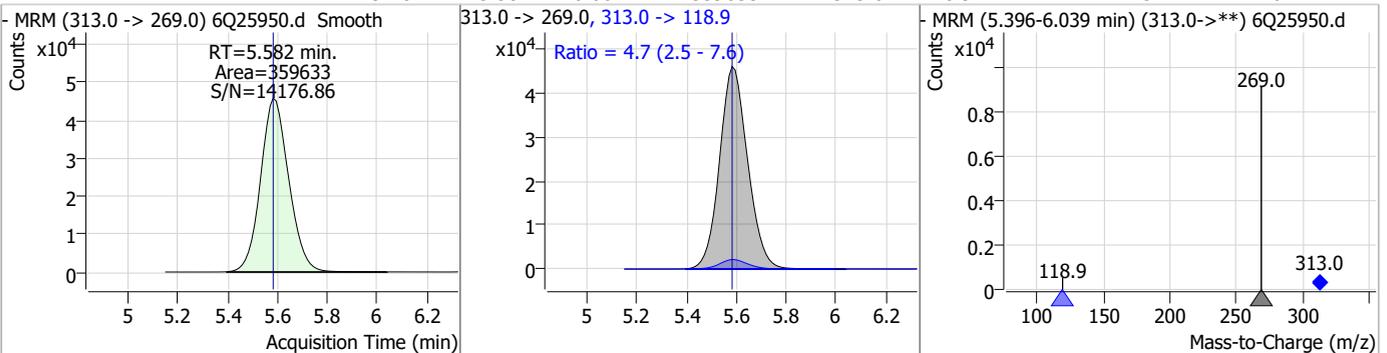
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.42	5.50	-0.01	131741	298.7 -> 98.8	36.5	18.5	55.4



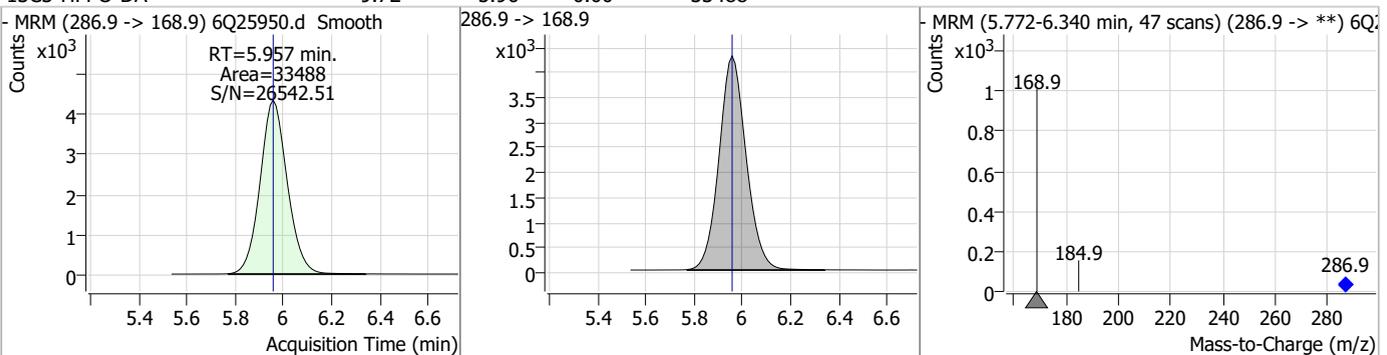
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.58	0.00	51660				



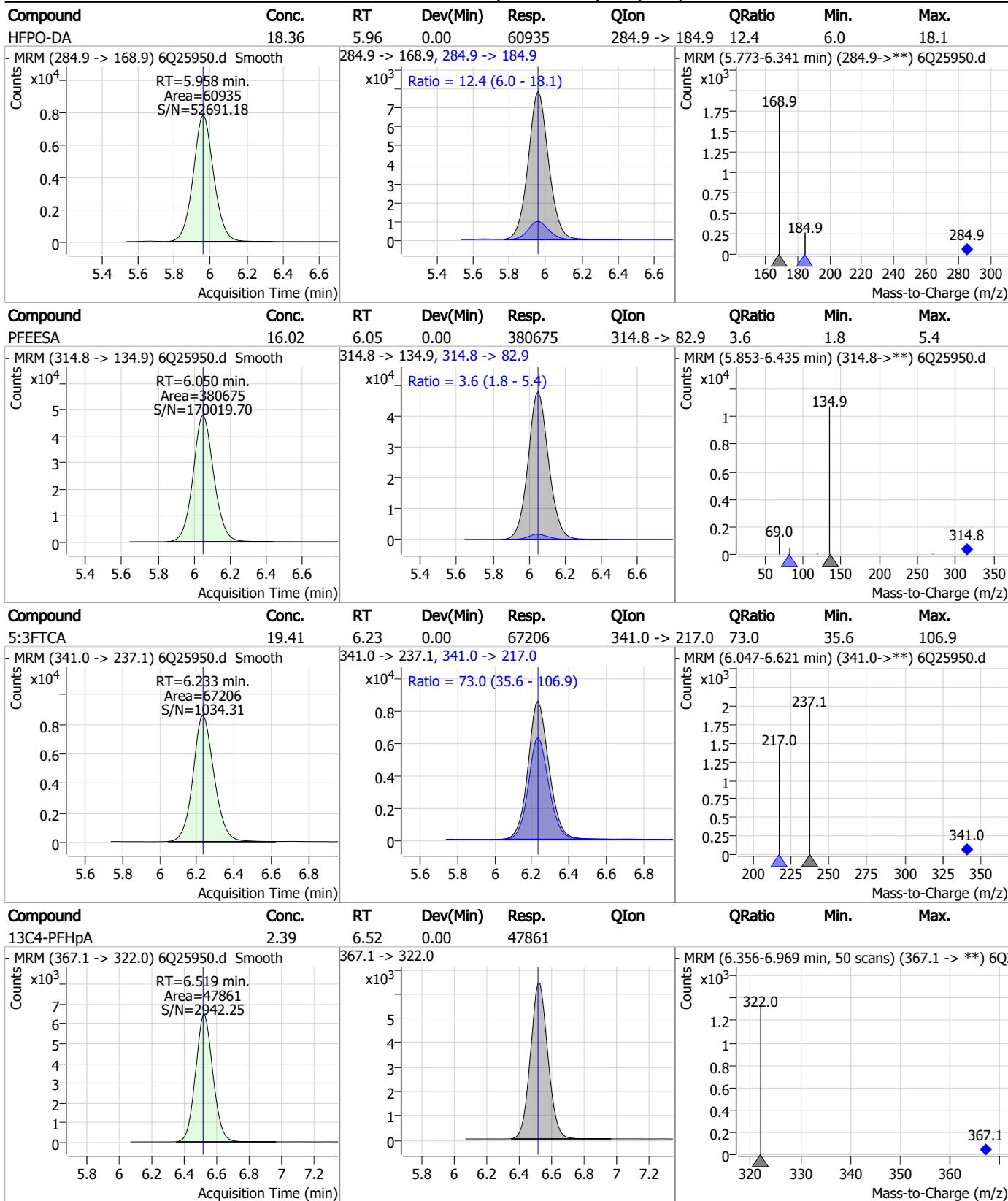
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.48	5.58	0.00	359633	313.0 -> 118.9	4.7	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.72	5.96	0.00	33488				



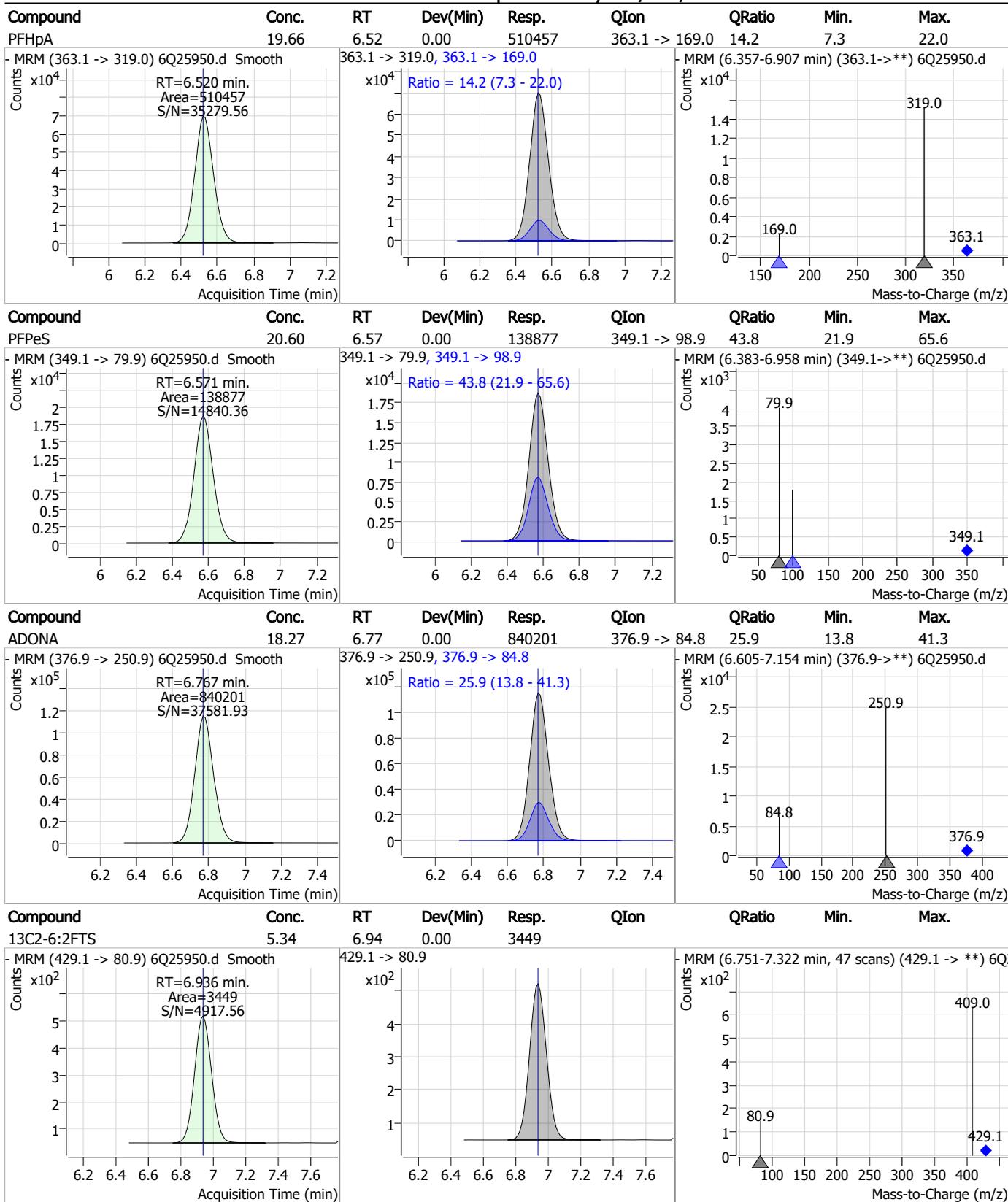
Perfluorinated Compounds by LC/MS/MS



7.7.11

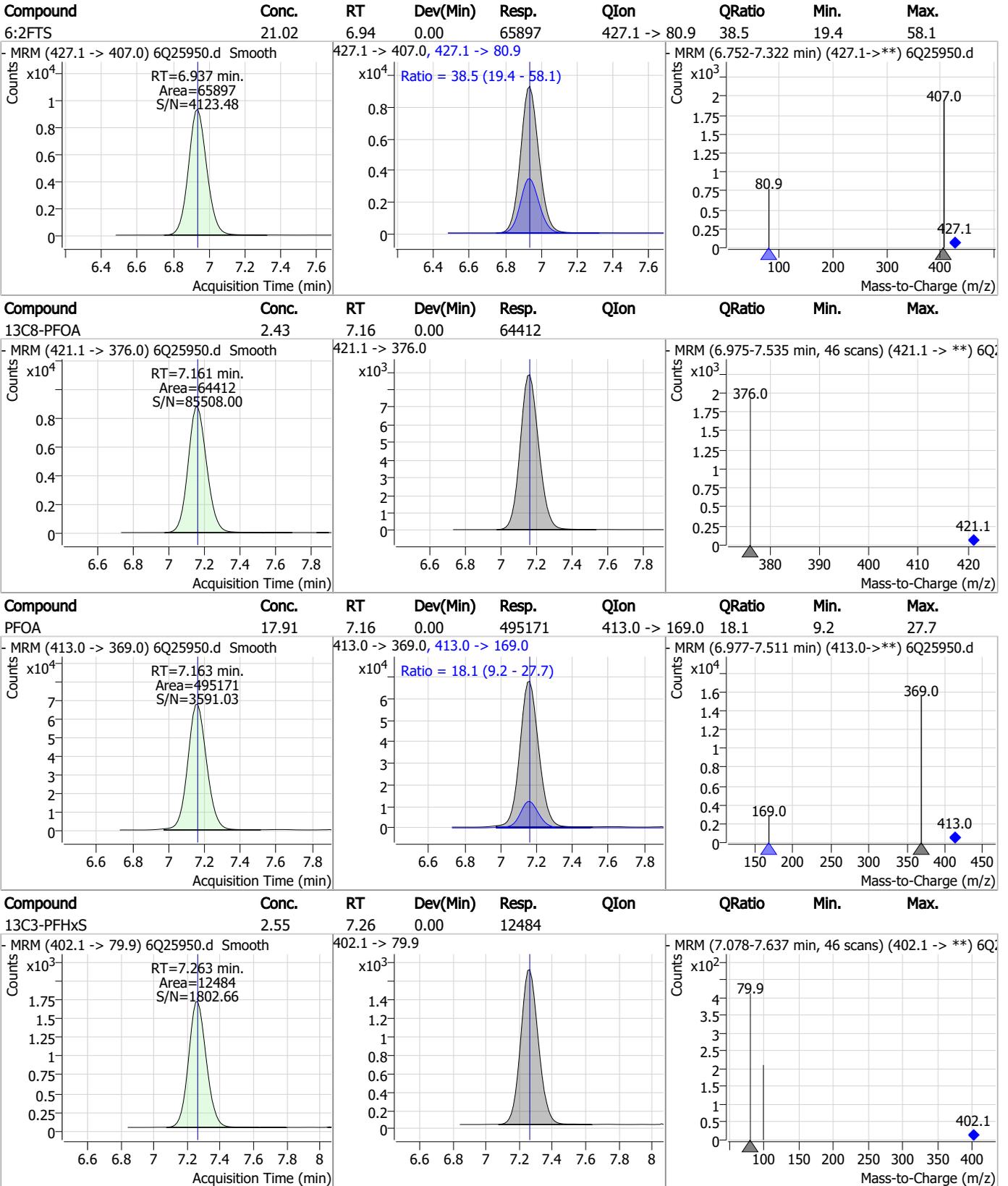
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Perfluorinated Compounds by LC/MS/MS



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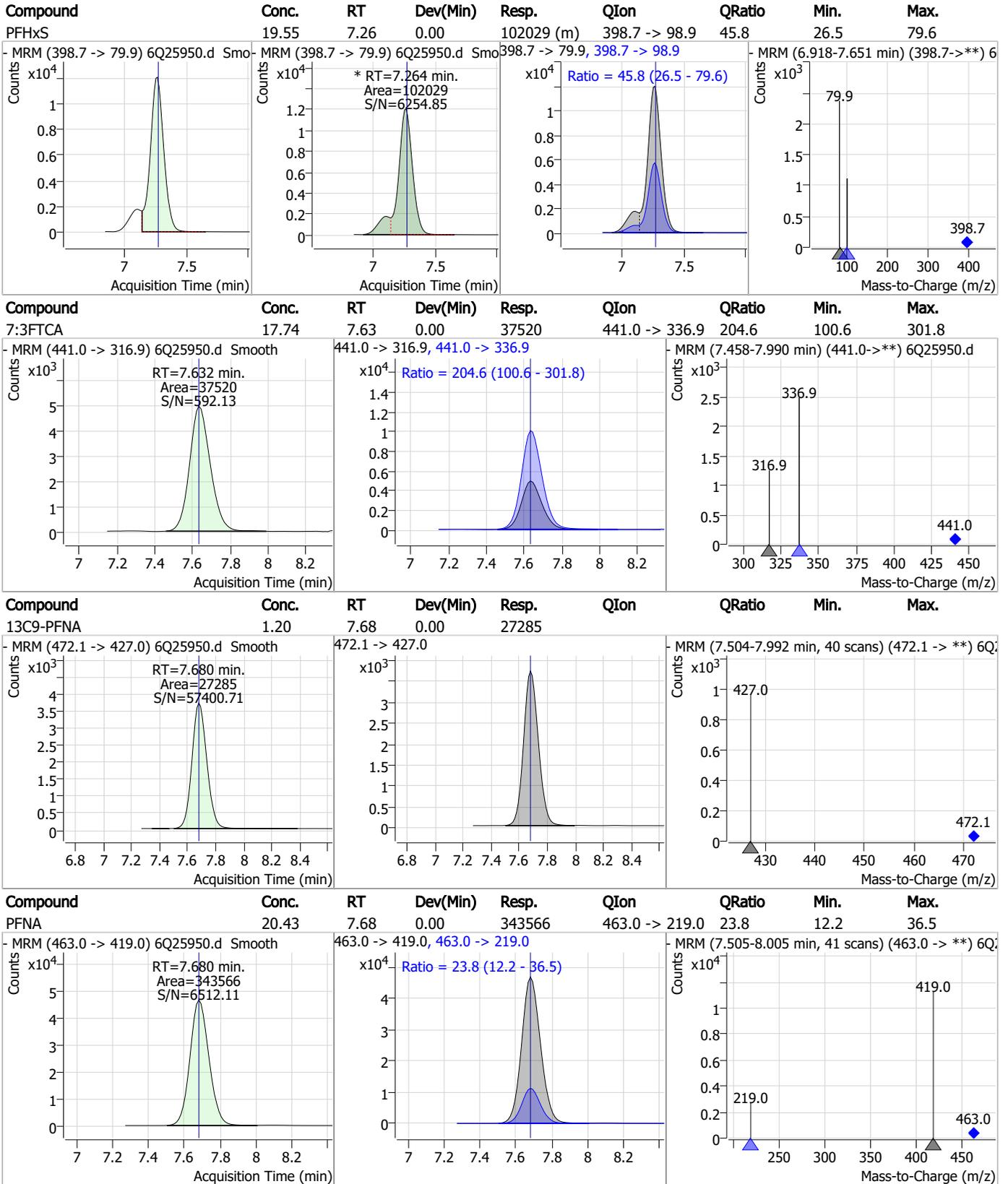
Perfluorinated Compounds by LC/MS/MS



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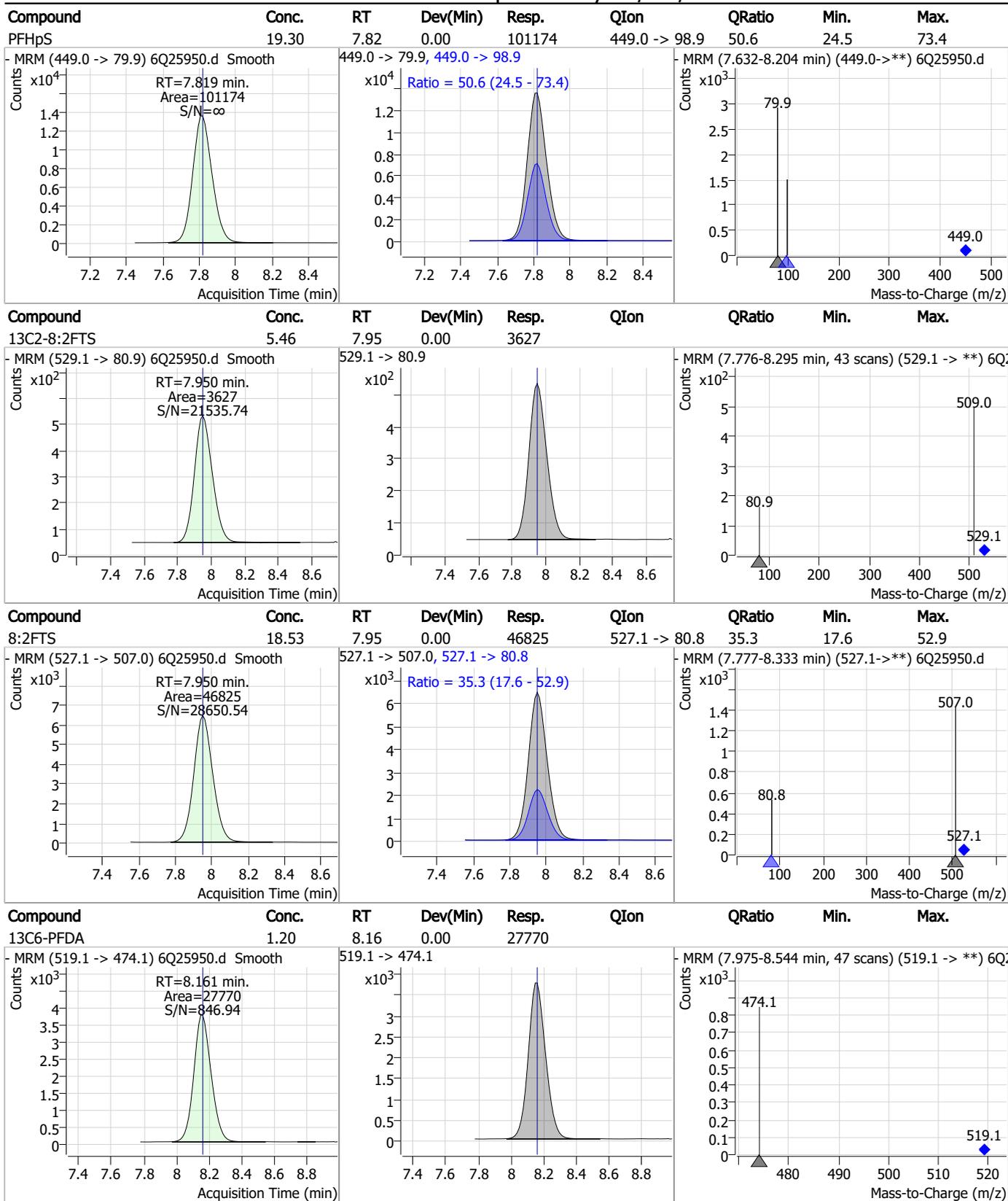
Perfluorinated Compounds by LC/MS/MS



7.7.11

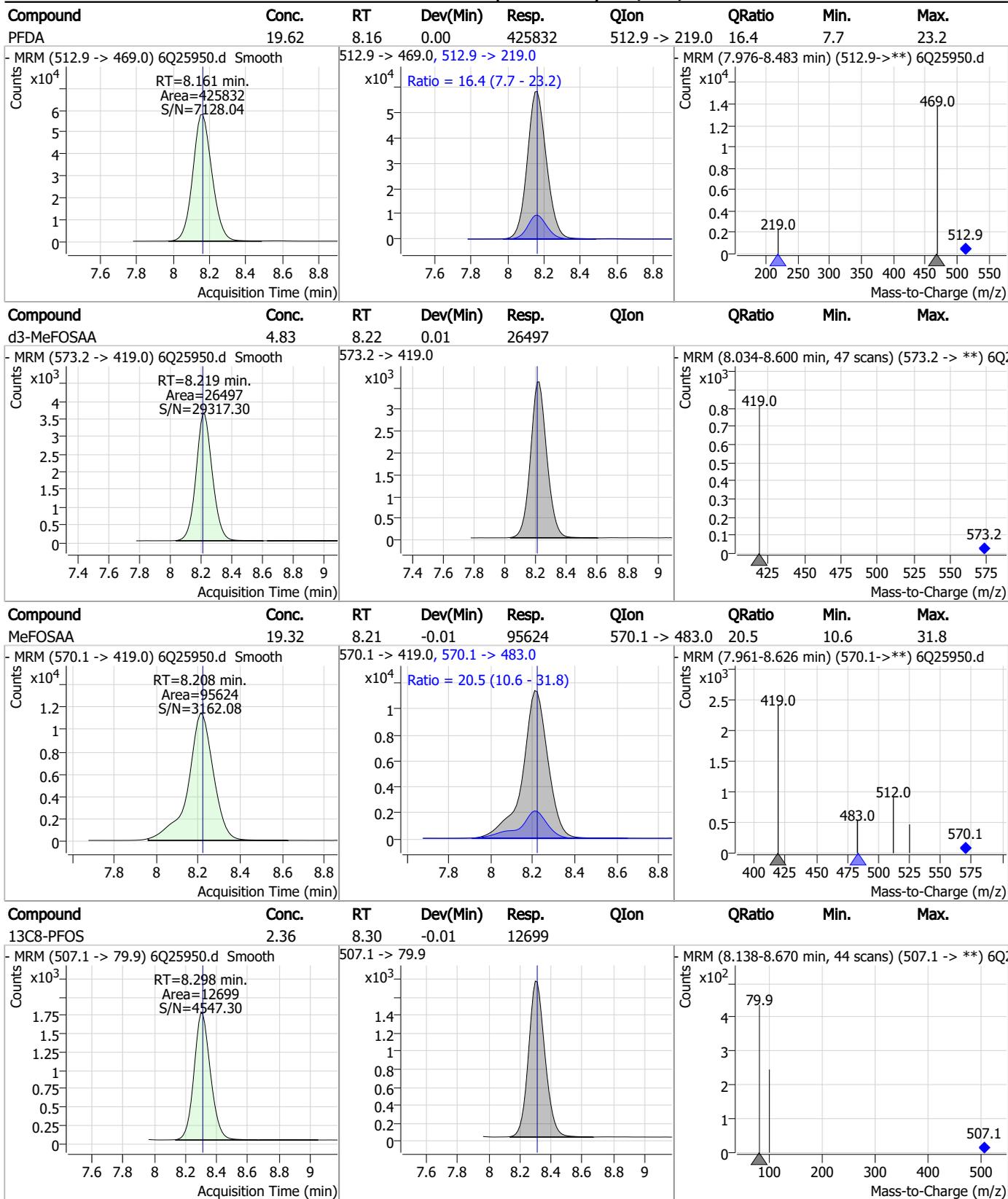
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Perfluorinated Compounds by LC/MS/MS



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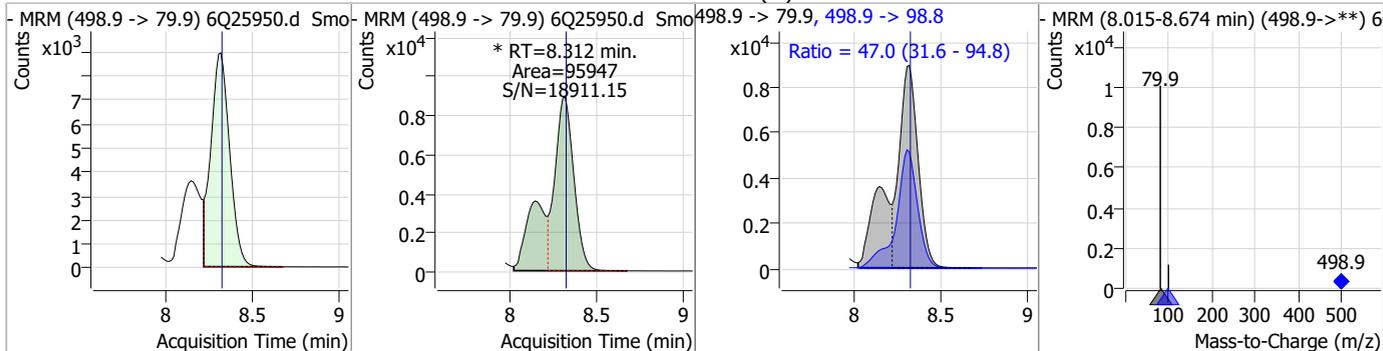
Perfluorinated Compounds by LC/MS/MS



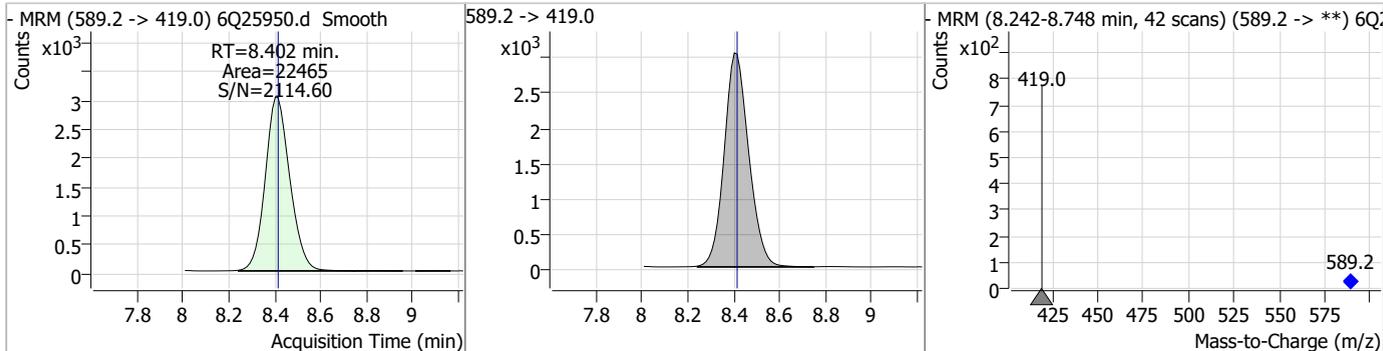
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Perfluorinated Compounds by LC/MS/MS

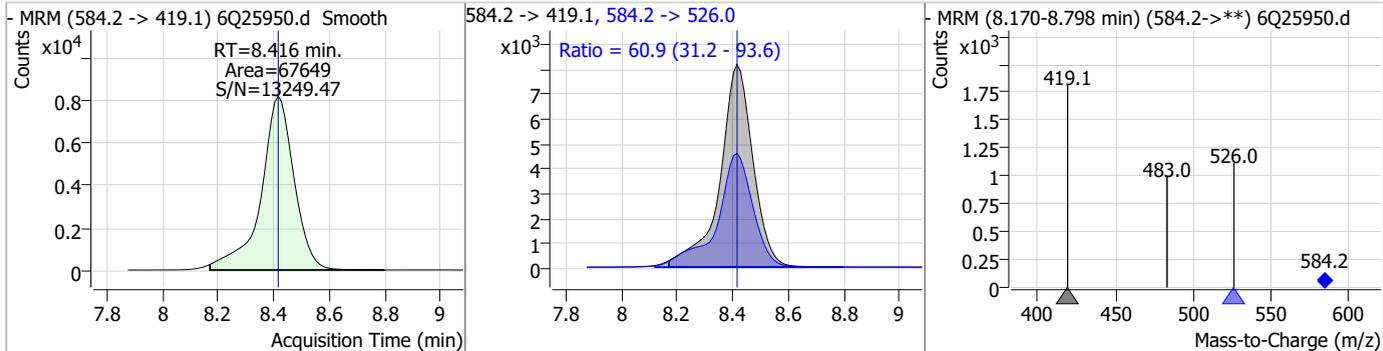
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.69	8.31	0.00	95947 (m)	498.9 -> 98.8	47.0	31.6	94.8



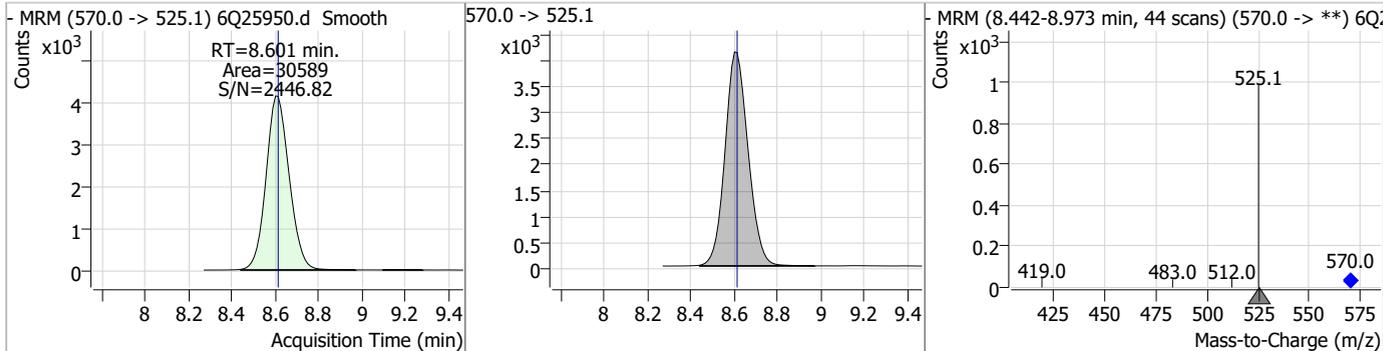
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.78	8.40	-0.01	22465				



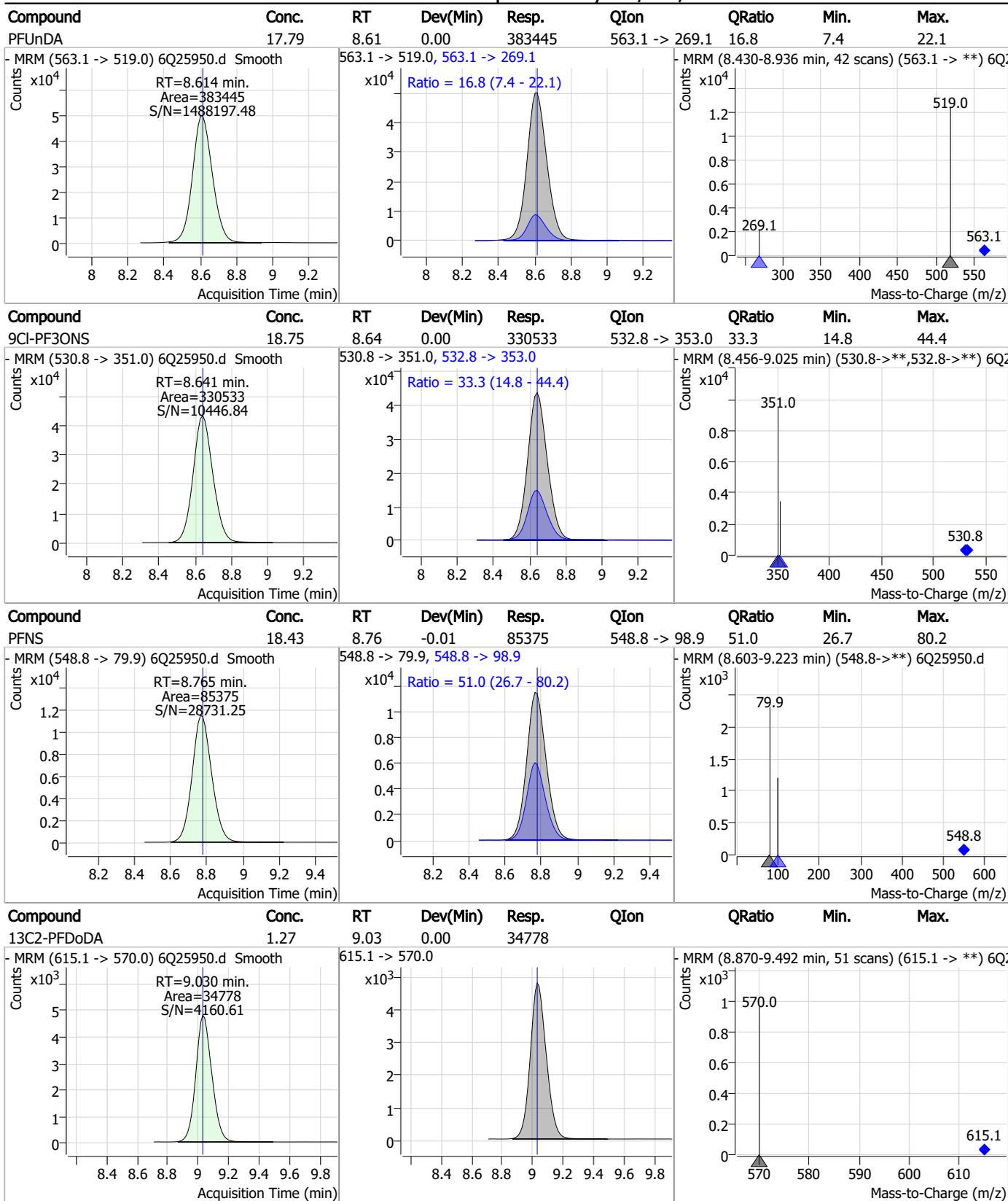
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.53	8.42	0.00	67649	584.2 -> 526.0	60.9	31.2	93.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.22	8.60	-0.01	30589				



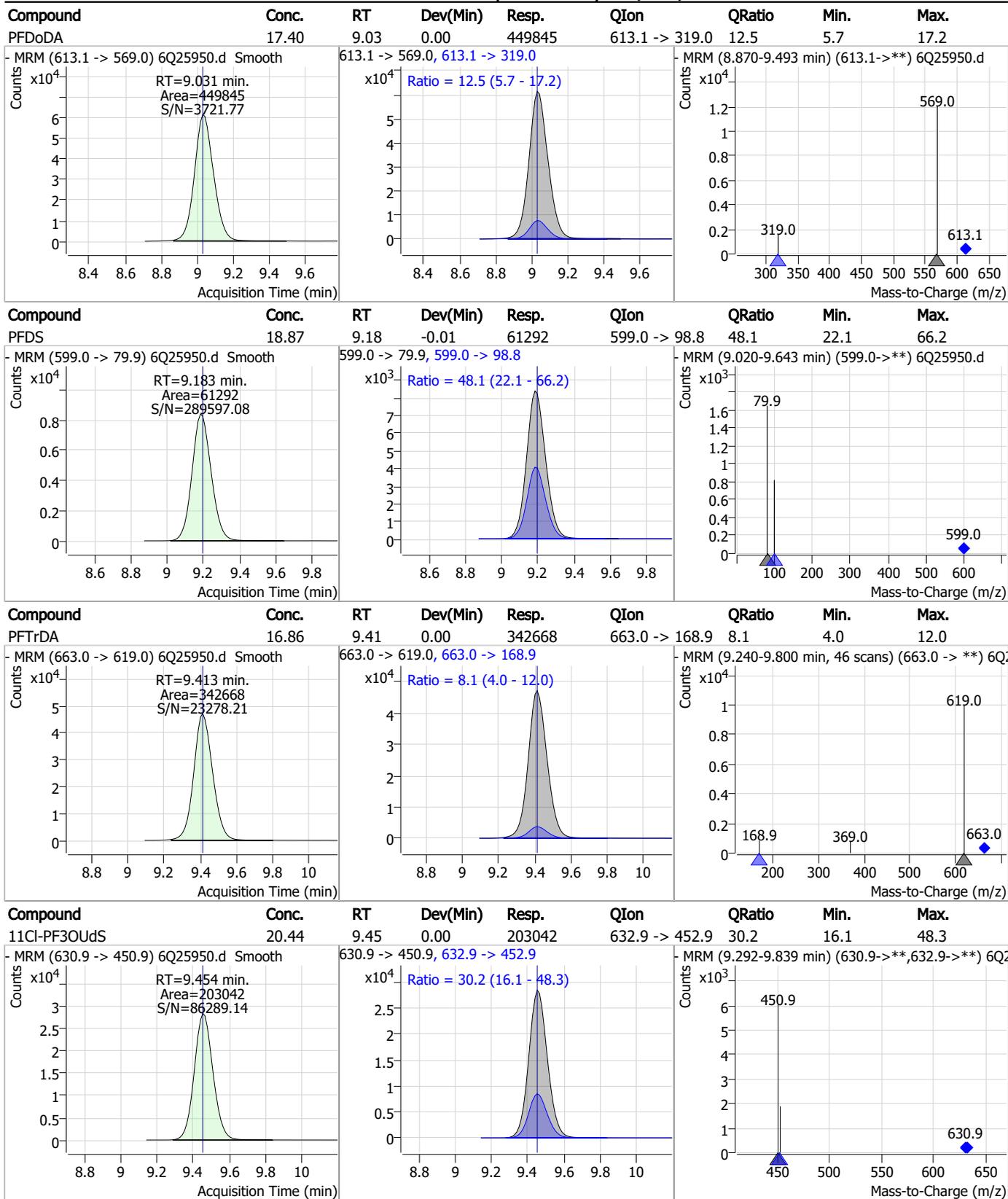
Perfluorinated Compounds by LC/MS/MS



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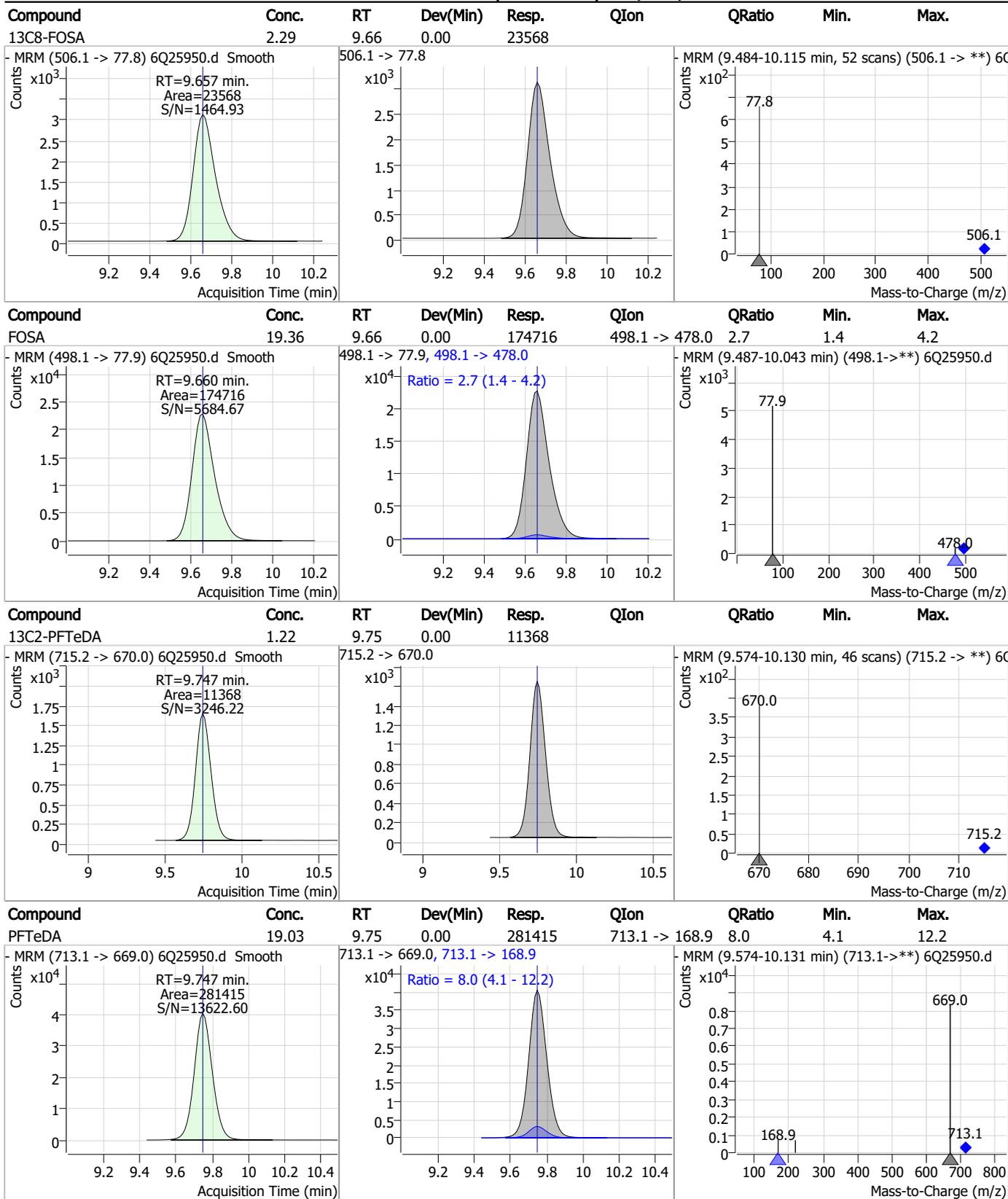
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

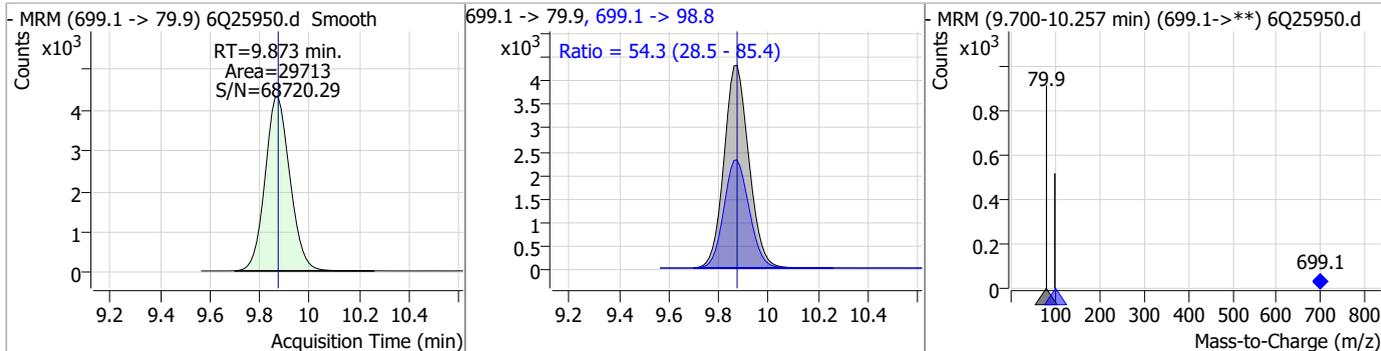


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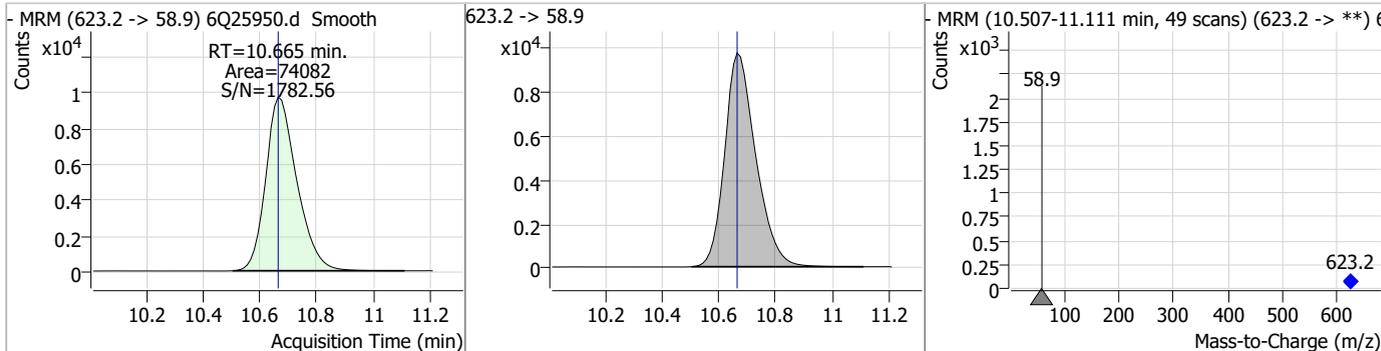


Perfluorinated Compounds by LC/MS/MS

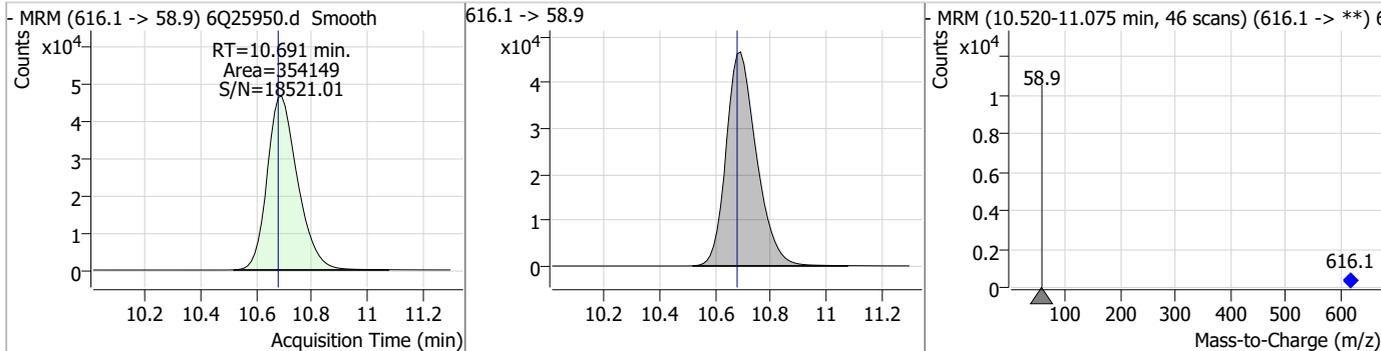
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	17.61	9.87	0.00	29713	699.1 -> 98.8	54.3	28.5	85.4



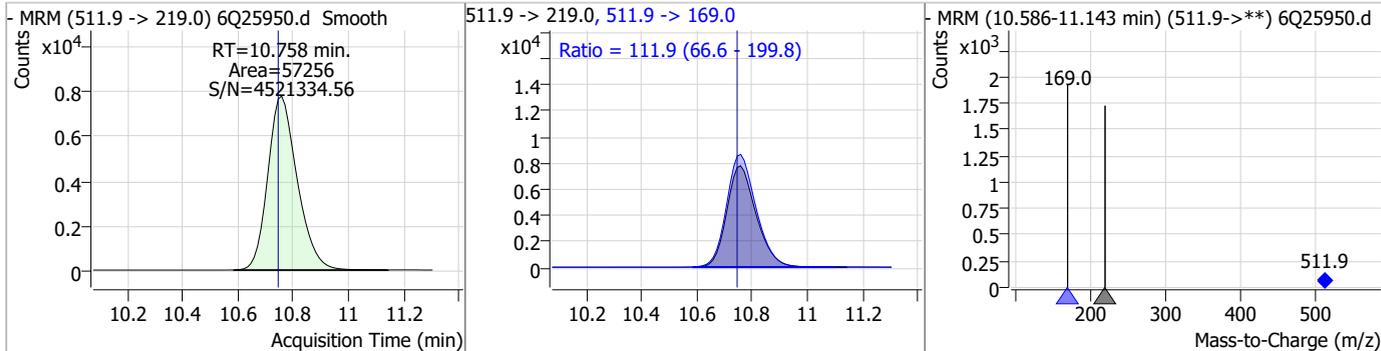
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.30	10.67	0.00	74082				



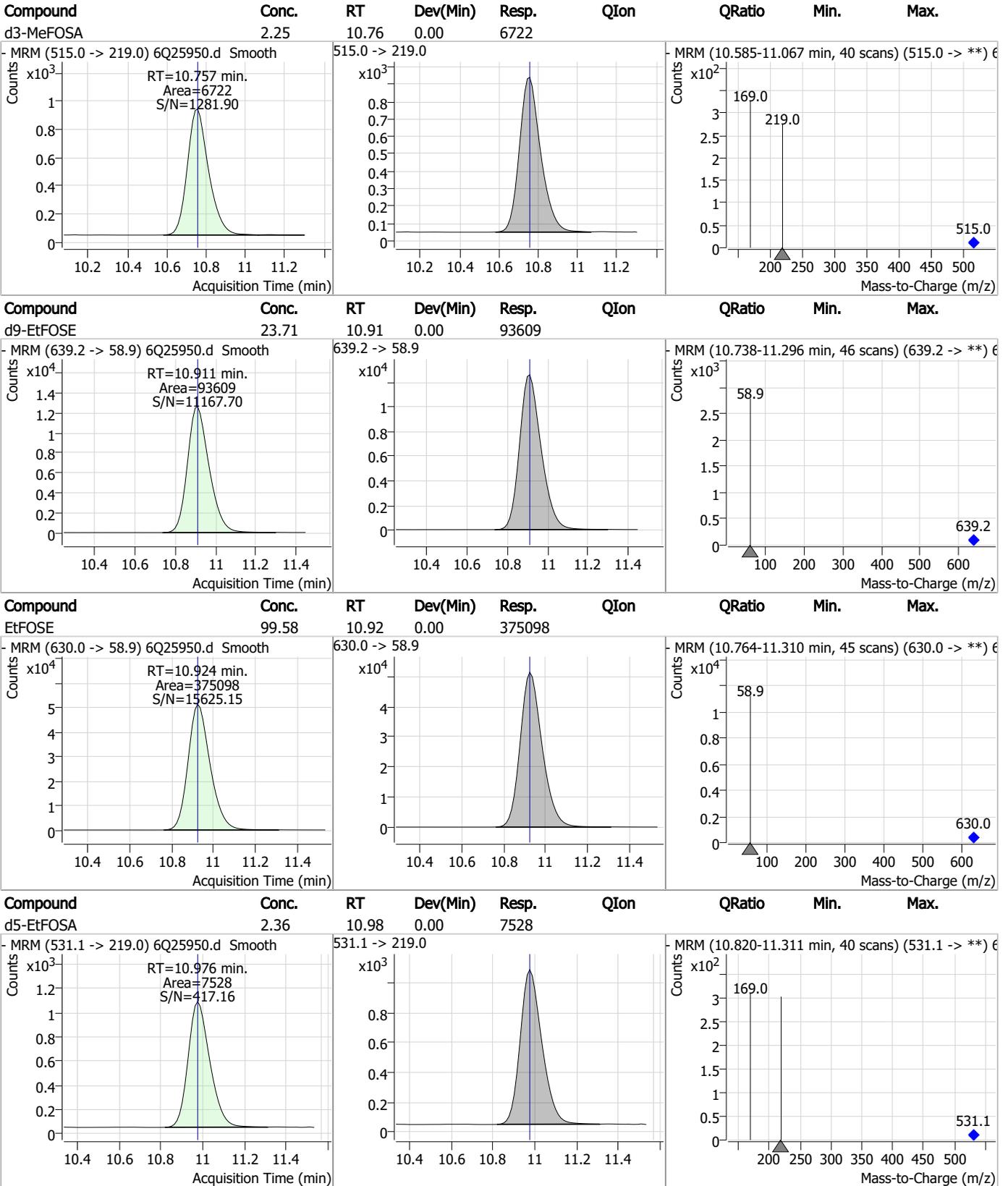
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	108.17	10.69	0.01	354149				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.38	10.76	0.01	57256	511.9 -> 169.0	111.9	66.6	199.8



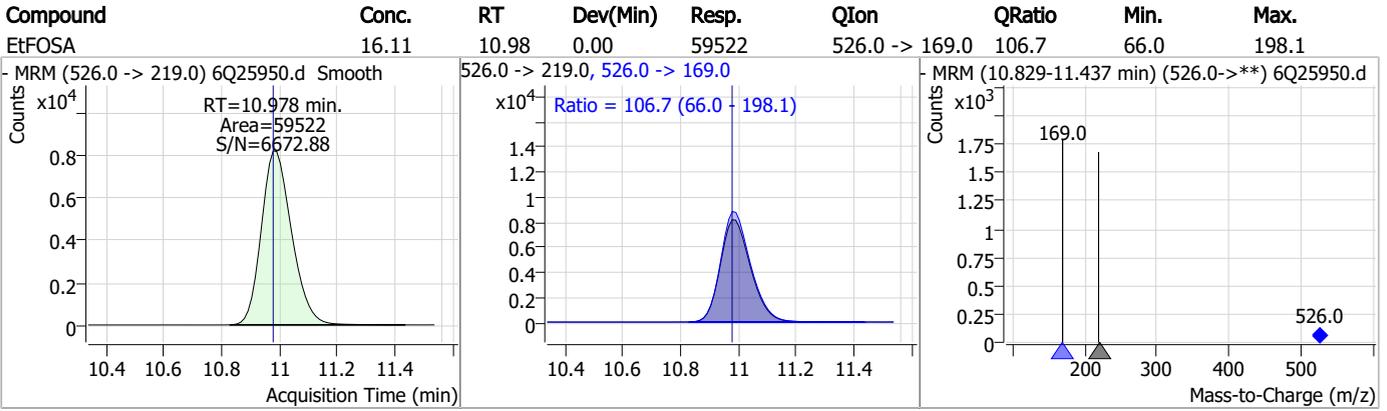
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q367-ICV367 Method: EPA DRAFT 1633
Lab FileID: 6Q25950.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 17:26 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.11.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25951.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 5:40:56 PM
 Sample Name : cc367-4
 Vial : P1-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	151080	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	52313	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	47237	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	47653	2.50 µg/L	0.000
M8-PFOA	7.149	421.1 -> 376.0	61268	2.50 µg/L	-0.012
M9-PFNA	7.680	472.1 -> 427.0	27430	1.25 µg/L	0.000
M6-PFDA	8.148	519.1 -> 474.1	26806	1.25 µg/L	-0.012
M7-PFUnDA	8.601	570.0 -> 525.1	28545	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	31715	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11180	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	24106	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	21068	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	12252	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	11681	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2239	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3343	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3541	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25386	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	32804	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	20846	5.00 µg/L	-0.012
M7-MeFOSE	10.666	623.2 -> 58.9	73345	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	89734	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7017	2.50 µg/L	0.000
M3-MeFOSA	10.757	515.0 -> 219.0	6435	2.50 µg/L	0.000
13C4-PFOS	8.299	502.8 -> 79.9	10746	2.50 µg/L	-0.013
13C3-PFBA	2.952	216.0 -> 172.0	63043	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7526	2.50 µg/L	0.000
13C4-PFOA	7.150	417.1 -> 372.0	69829	2.50 µg/L	-0.012
13C2-PFDA	8.149	515.1 -> 470.1	25902	1.25 µg/L	-0.012
13C5-PFNA	7.680	468.0 -> 423.0	25556	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	46465	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2239	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3343	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3541	5.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.1%		
13C2-PFDoDA	9.030	615.1 -> 570.0	31715	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11180	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.2%		
13C3-PFBS	5.510	302.1 -> 79.9	21068	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.263	402.1 -> 79.9	12252	2.56 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C4-PFBA	2.947	216.8 -> 171.9	151080	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C4-PFHpA	6.519	367.1 -> 322.0	47653	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C5-PFHxA	5.580	318.0 -> 273.0	47237	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C5-PFPeA	4.372	268.3 -> 223.0	52313	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C6-PFDA	8.148	519.1 -> 474.1	26806	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C7-PFUnDA	8.601	570.0 -> 525.1	28545	1.21 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.8%		
13C8-FOSA	9.657	506.1 -> 77.8	24106	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C8-PFOA	7.149	421.1 -> 376.0	61268	2.53 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.2%		
13C8-PFOS	8.298	507.1 -> 79.9	11681	2.52 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.7%		
13C9-PFNA	7.680	472.1 -> 427.0	27430	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.4%		
d3-MeFOSAA	8.207	573.2 -> 419.0	25386	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.4%		
13C3-HFPO-DA	5.957	286.9 -> 168.9	32804	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 101.2%		
d3-MeFOSA	10.757	515.0 -> 219.0	6435	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
d5-EtFOSAA	8.402	589.2 -> 419.0	20846	5.15 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.9%		
d7-MeFOSE	10.666	623.2 -> 58.9	73345	25.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 102.5%		
d9-EtFOSE	10.911	639.2 -> 58.9	89734	26.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
d5-EtFOSA	10.976	531.1 -> 219.0	7017	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.1%		
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	33741	9.09 µg/L	98
		327.1 -> 80.9	13544		
6:2FTS	6.937	427.1 -> 407.0	27600	9.08 µg/L	95
		427.1 -> 80.9	11467		
8:2FTS	7.950	527.1 -> 507.0	21209	8.60 µg/L	95
		527.1 -> 80.8	8051		
EtFOSAA	8.416	584.2 -> 419.1	8054	2.38 µg/L	97
		584.2 -> 526.0	5219		
FOSA	9.660	498.1 -> 77.9	21288	2.31 µg/L	99
		498.1 -> 478.0	662		
MeFOSAA	8.208	570.1 -> 419.0	11306	2.38 µg/L	100
		570.1 -> 483.0	2374		
PFBA	2.956	212.8 -> 168.9	54794	9.74 µg/L	100
PFBS	5.511	298.7 -> 79.9	14714	2.33 µg/L	98
		298.7 -> 98.8	5280		
PFDA	8.161	512.9 -> 469.0	51833	2.47 µg/L	97
		512.9 -> 219.0	8592		
PFDODA	9.031	613.1 -> 569.0	56807	2.41 µg/L	98
		613.1 -> 319.0	6936		
PFDS	9.183	599.0 -> 79.9	7269	2.43 µg/L	97

7.7.12
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.520	599.0 -> 98.8	3355	2.37	µg/L	99
		363.1 -> 319.0	61364			
PFHpS	7.807	363.1 -> 169.0	8598	2.42	µg/L	99
		449.0 -> 79.9	11655			
PFHxA	5.582	449.0 -> 98.9	5623	2.49	µg/L	100
		313.0 -> 269.0	42119			
PFHxS	7.264	313.0 -> 118.9	2163	2.17	µg/L	m
		398.7 -> 79.9	11120			
PFNA	7.680	398.7 -> 98.9	5050	2.31	µg/L	99
		463.0 -> 419.0	38978			
PFNS	8.765	463.0 -> 219.0	9224	2.41	µg/L	94
		548.8 -> 79.9	10269			
PFOA	7.150	548.8 -> 98.9	5030	2.53	µg/L	95
		413.0 -> 369.0	66628			
PFOS	8.300	413.0 -> 169.0	10930	2.54	µg/L	m
		498.9 -> 79.9	12655			
PFPeA	4.374	498.9 -> 98.8	5803	4.85	µg/L	100
		263.0 -> 219.0	54755			
PFPeS	6.571	349.1 -> 79.9	15409	2.33	µg/L	99
		349.1 -> 98.9	6870			
PFTeDA	9.747	713.1 -> 669.0	33773	2.32	µg/L	100
		713.1 -> 168.9	2676			
PFTrDA	9.413	663.0 -> 619.0	47910	2.58	µg/L	100
		663.0 -> 168.9	3797			
PFUnDA	8.602	563.1 -> 519.0	53130	2.64	µg/L	99
		563.1 -> 269.1	7942			
11CI-PF3OUdS	9.454	630.9 -> 450.9	44899	4.61	µg/L	95
		632.9 -> 452.9	13205			
9CI-PF3ONS	8.641	530.8 -> 351.0	75807	4.39	µg/L	92
		532.8 -> 353.0	25739			
ADONA	6.767	376.9 -> 250.9	211404	4.69	µg/L	96
		376.9 -> 84.8	54284			
HFPO-DA	5.958	284.9 -> 168.9	16046	4.94	µg/L	99
		284.9 -> 184.9	1994			
3:3FTCA	3.821	241.0 -> 177.0	9585	11.82	µg/L	100
		241.0 -> 117.0	1309			
5:3FTCA	6.233	341.0 -> 237.1	200708	63.40	µg/L	98
		341.0 -> 217.0	139800			
7:3FTCA	7.632	441.0 -> 316.9	114557	59.24	µg/L	94
		441.0 -> 336.9	240792			
EtFOSA	10.978	526.0 -> 219.0	17718	5.14	µg/L	94
		526.0 -> 169.0	22255			
EtFOSE	10.924	630.0 -> 58.9	42484	11.77	µg/L	100
		511.9 -> 219.0	15264			
MeFOSA	10.746	511.9 -> 169.0	20779	5.12	µg/L	98
		616.1 -> 58.9	39624			
MeFOSE	10.679	699.1 -> 79.9	3822	12.22	µg/L	100
		699.1 -> 98.8	2152			
PFDoDS	9.873	295.0 -> 201.0	10605	2.46	µg/L	99
		295.0 -> 84.9	3085			
NFDHA	5.462	279.0 -> 85.1	42439	5.00	µg/L	97
		229.0 -> 84.9	34643			
PFMBA	4.800	314.8 -> 134.9	95806	4.41	µg/L	100
PFMPA	3.513	314.8 -> 82.9	3537	4.41	µg/L	100
PFEESA	6.050					

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



7.7.12
7

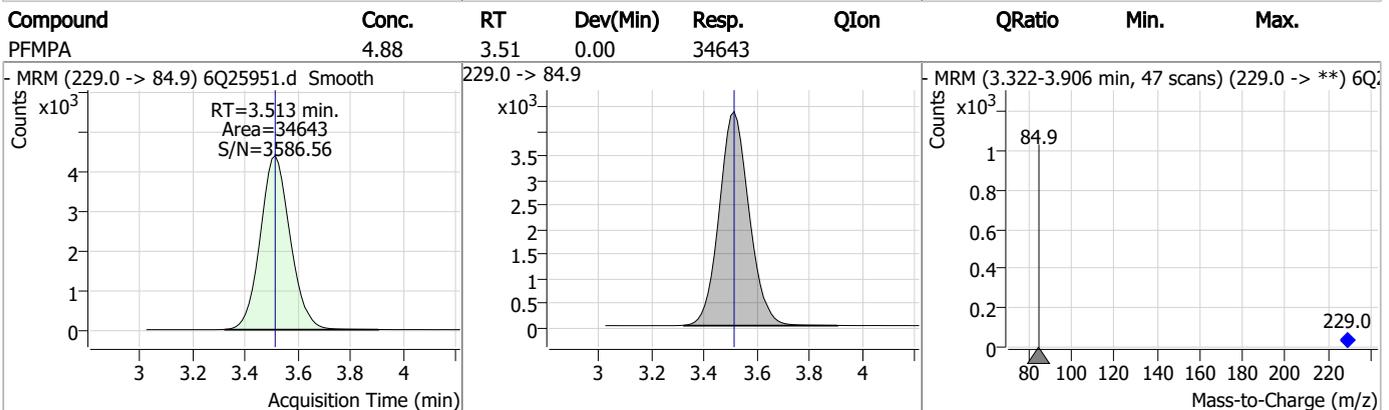
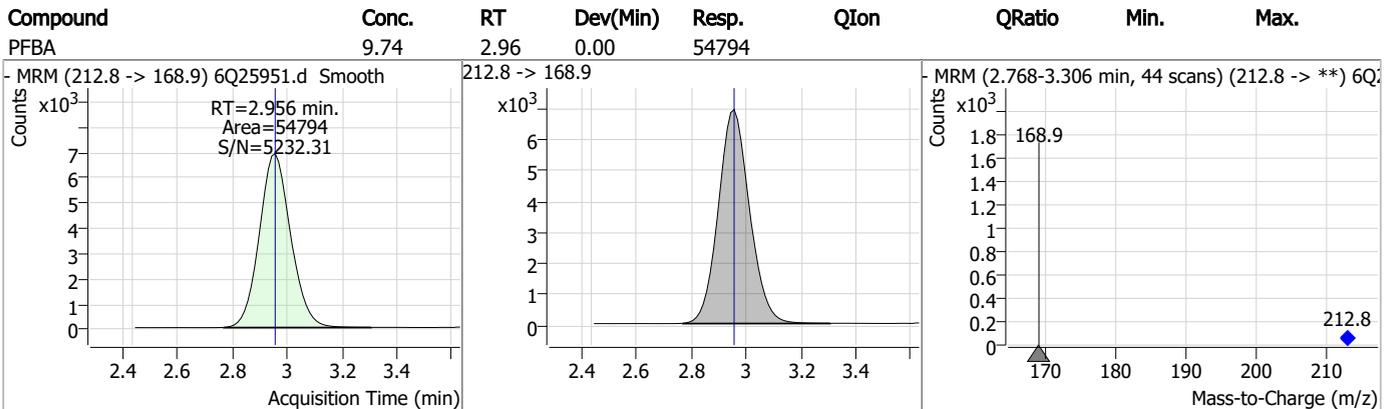
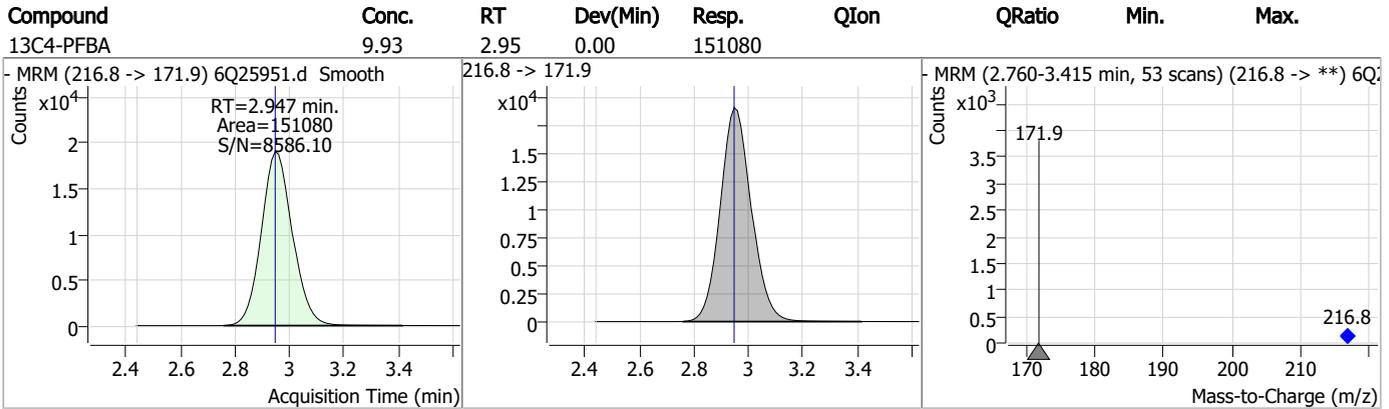
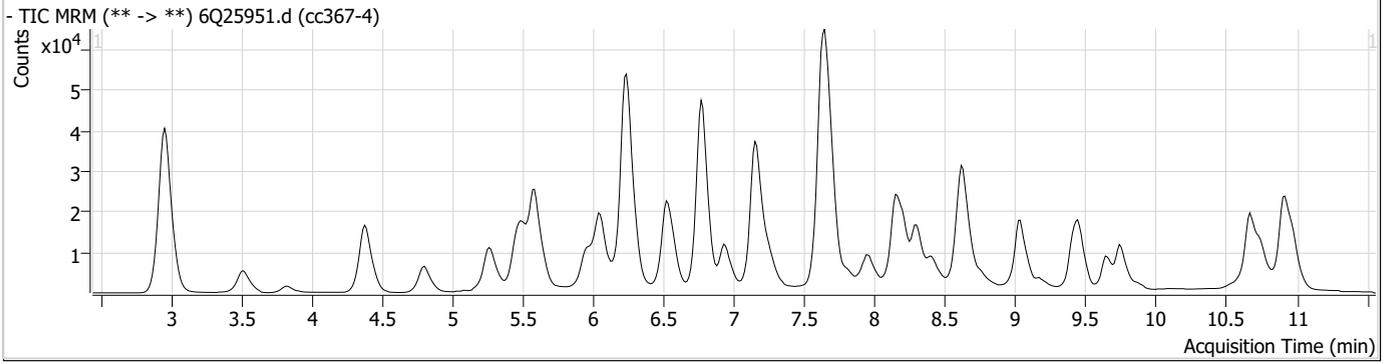
Perfluorinated Compounds by LC/MS/MS

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

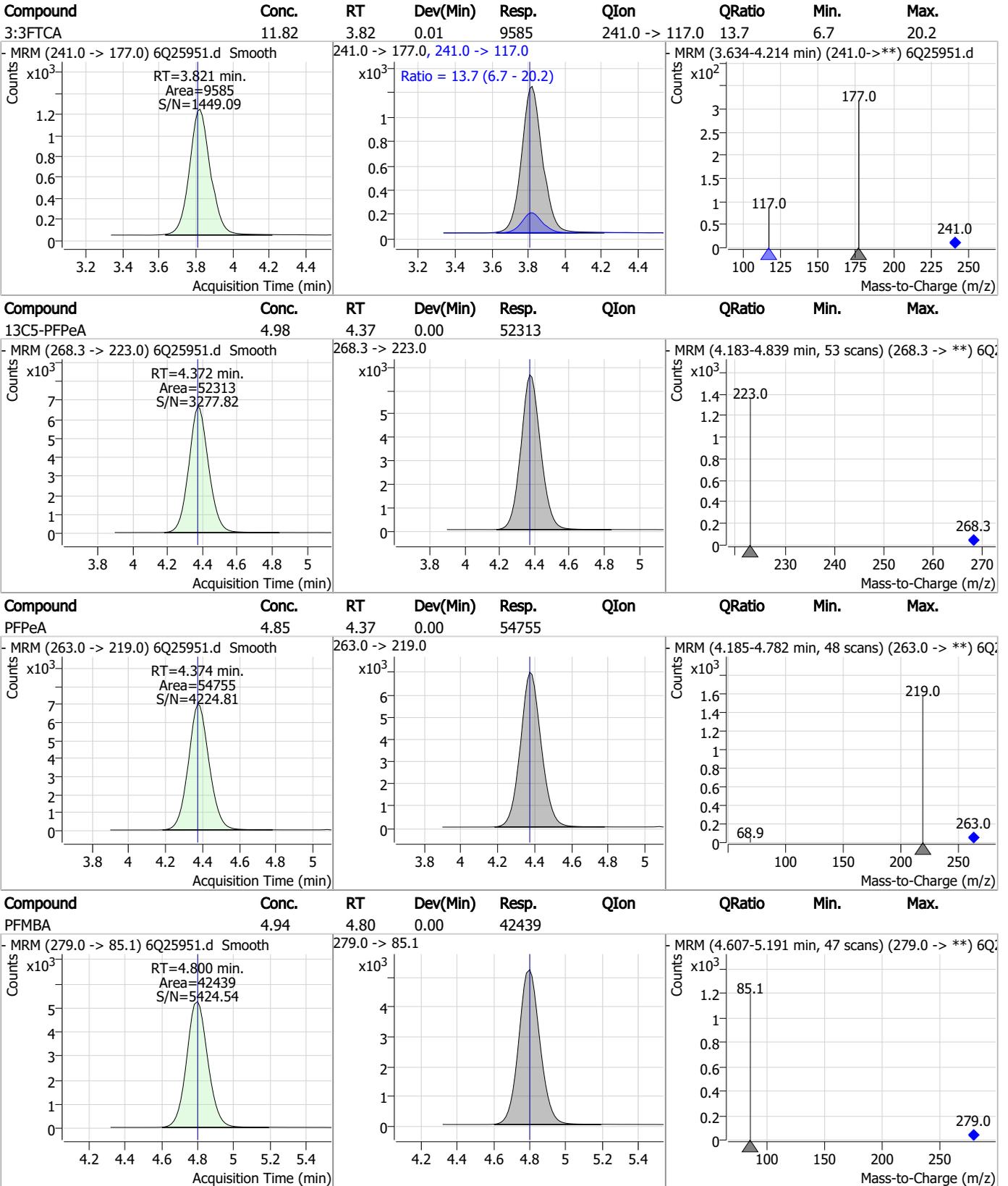
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Perfluorinated Compounds by LC/MS/MS



7.7.12
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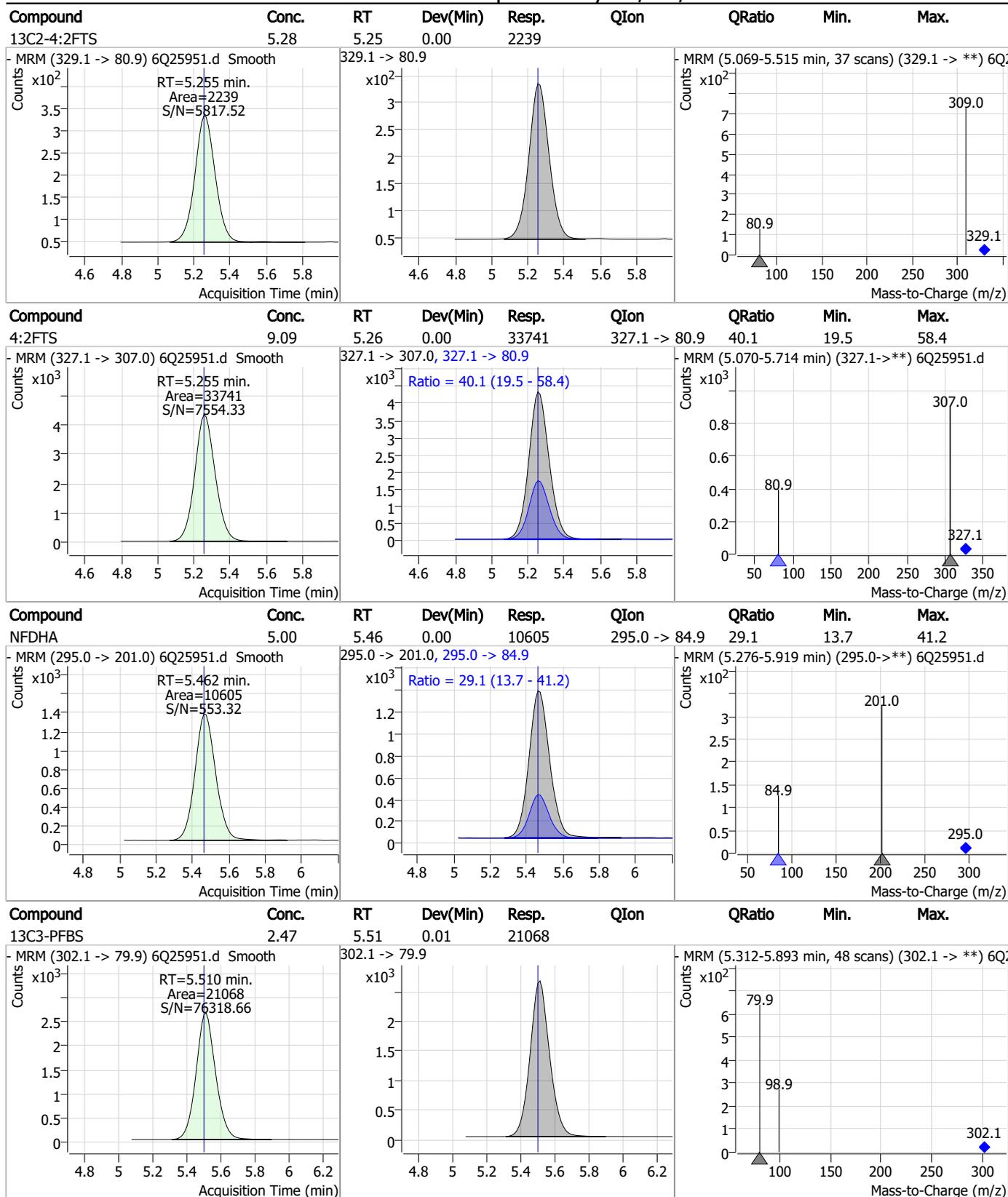
Perfluorinated Compounds by LC/MS/MS



7.7.12



Perfluorinated Compounds by LC/MS/MS

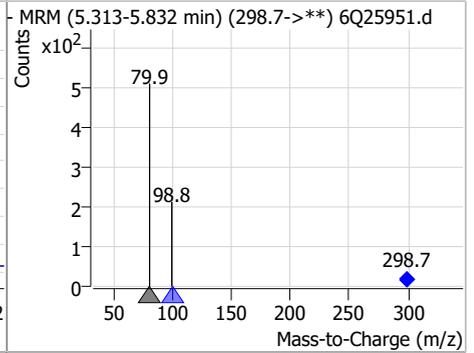
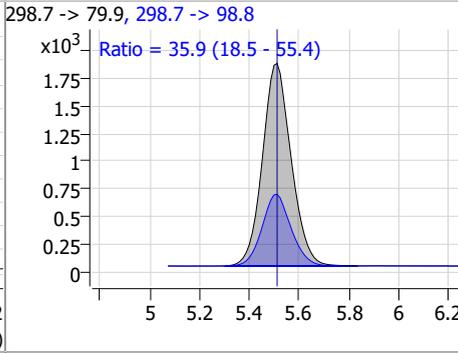
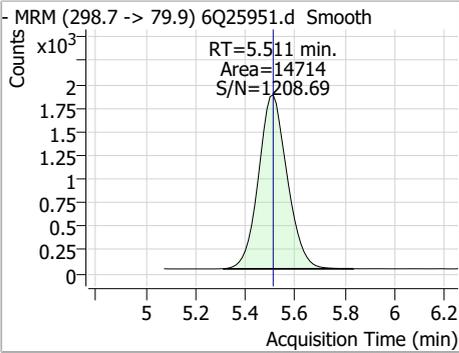


7.7.12
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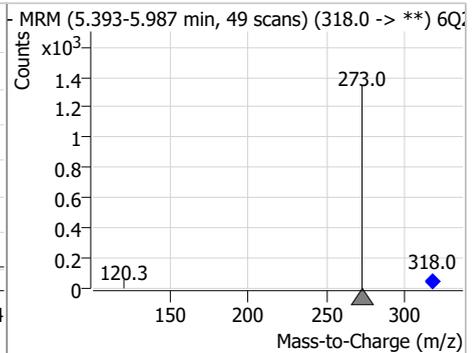
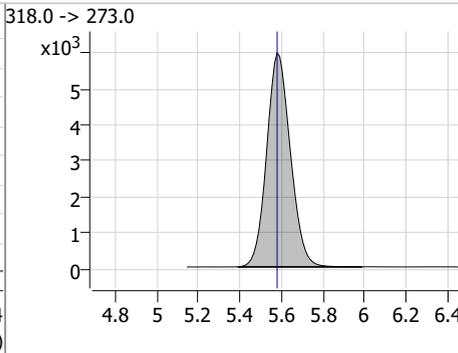
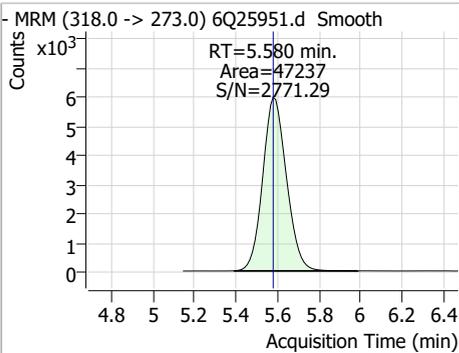


Perfluorinated Compounds by LC/MS/MS

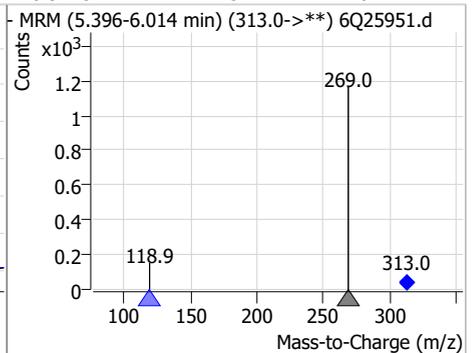
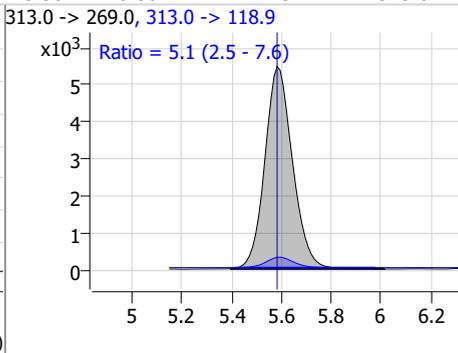
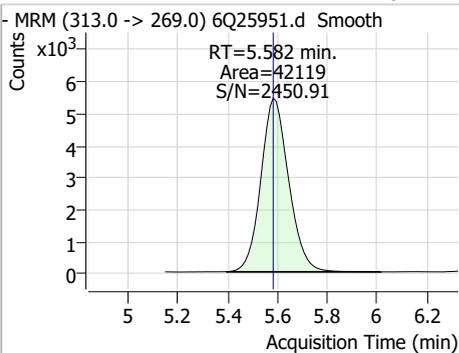
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.33	5.51	0.00	14714	298.7 -> 98.8	35.9	18.5	55.4



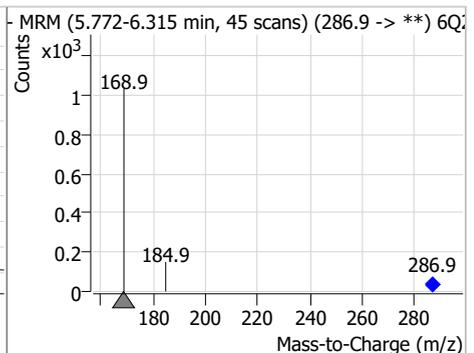
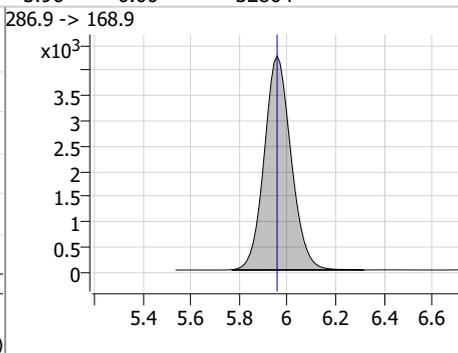
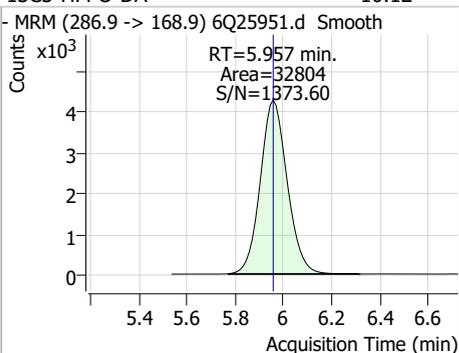
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.58	0.00	47237	318.0 -> 273.0	5.1	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.49	5.58	0.00	42119	313.0 -> 118.9	5.1	2.5	7.6

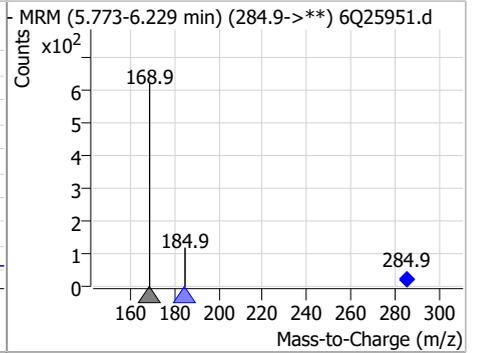
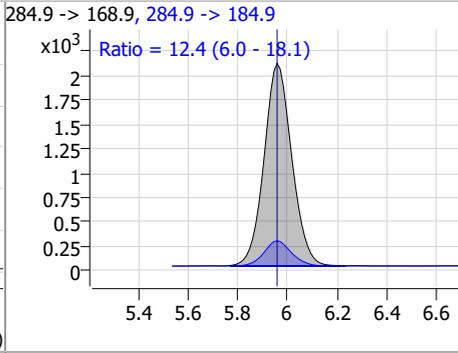
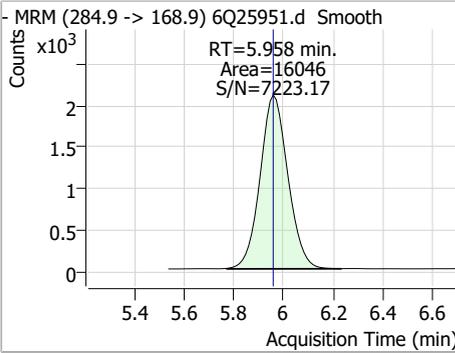


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.12	5.96	0.00	32804	286.9 -> 168.9	5.1	2.5	7.6

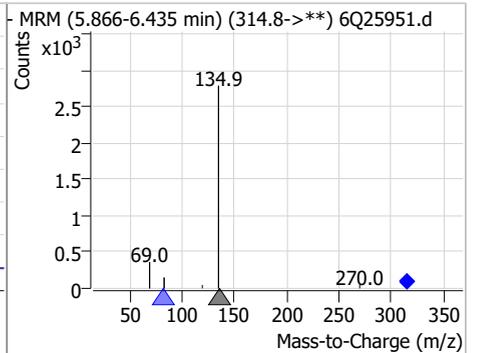
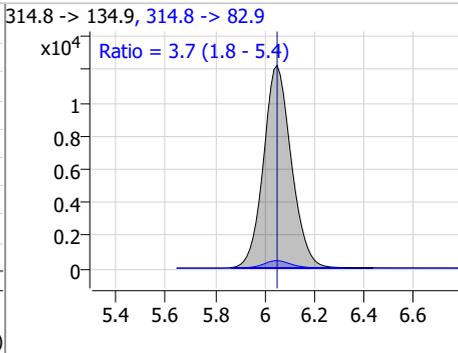
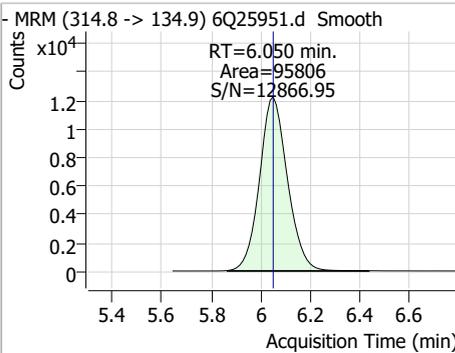


Perfluorinated Compounds by LC/MS/MS

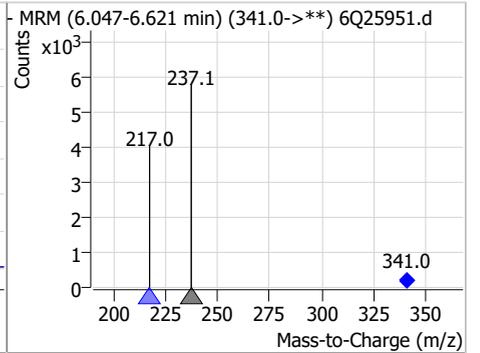
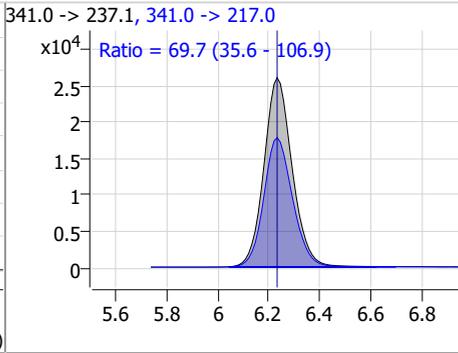
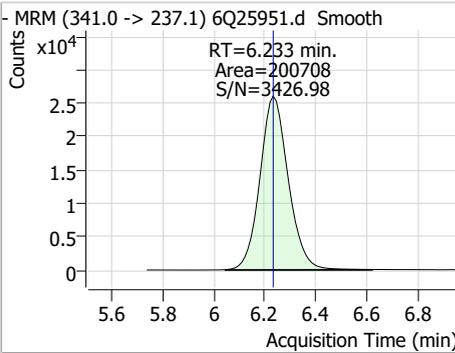
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.94	5.96	0.00	16046	284.9 -> 184.9	12.4	6.0	18.1



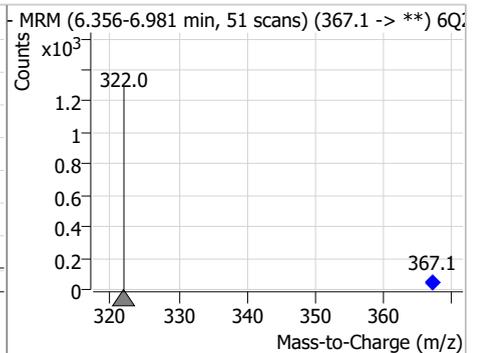
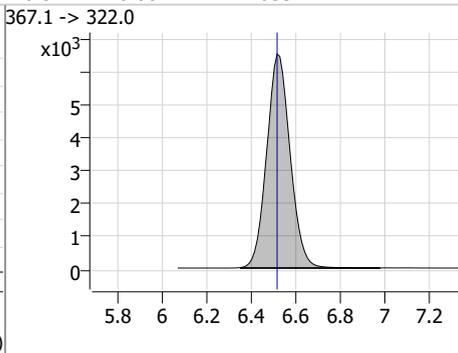
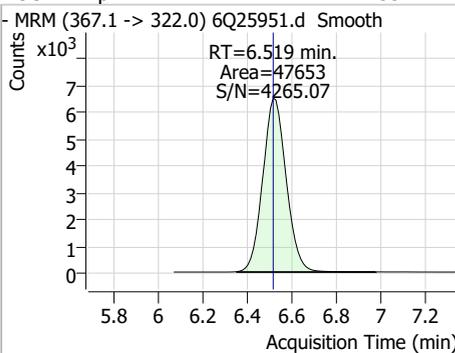
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.41	6.05	0.00	95806	314.8 -> 82.9	3.7	1.8	5.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.40	6.23	0.00	200708	341.0 -> 217.0	69.7	35.6	106.9

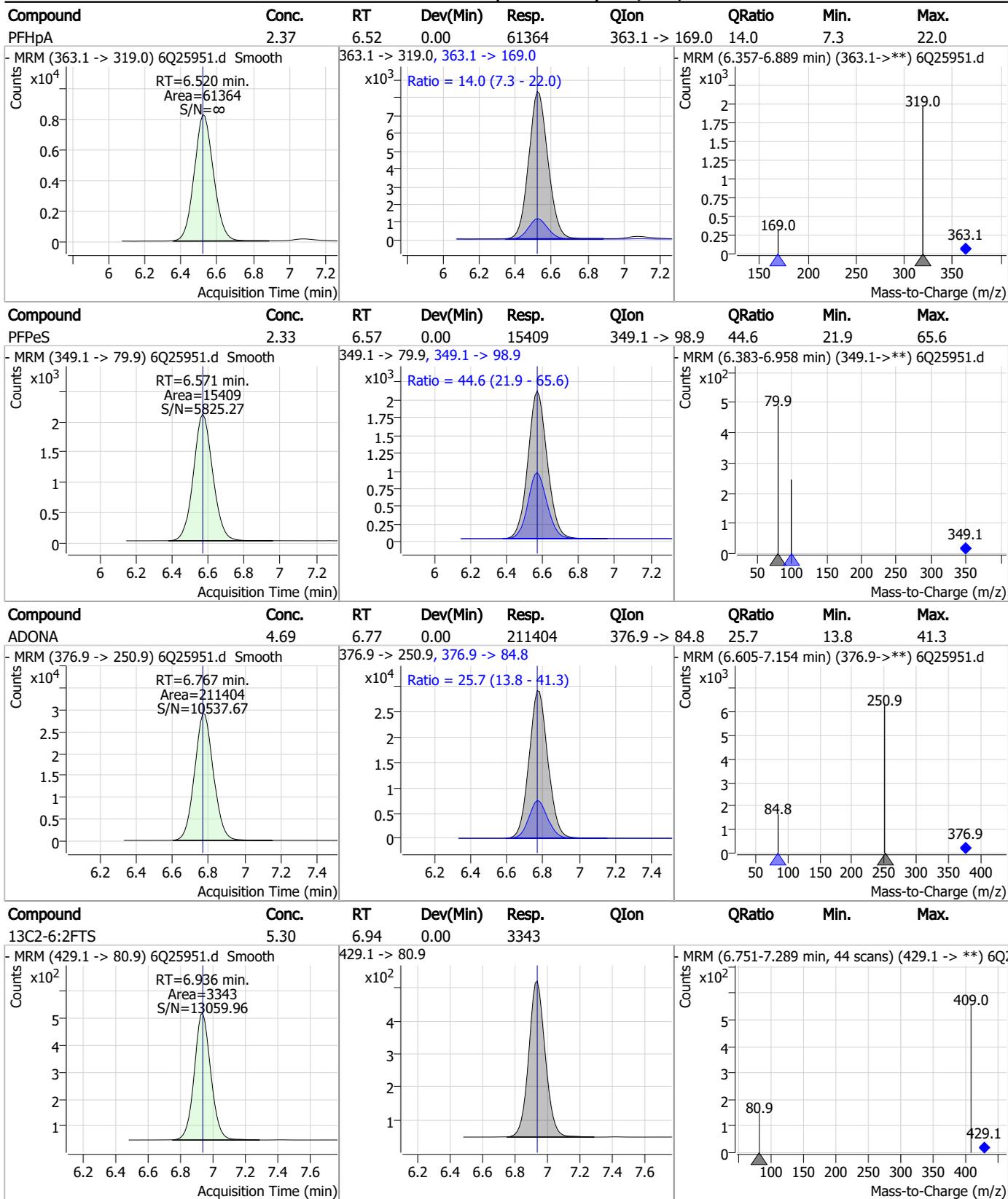


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.52	0.00	47653	367.1 -> 322.0			



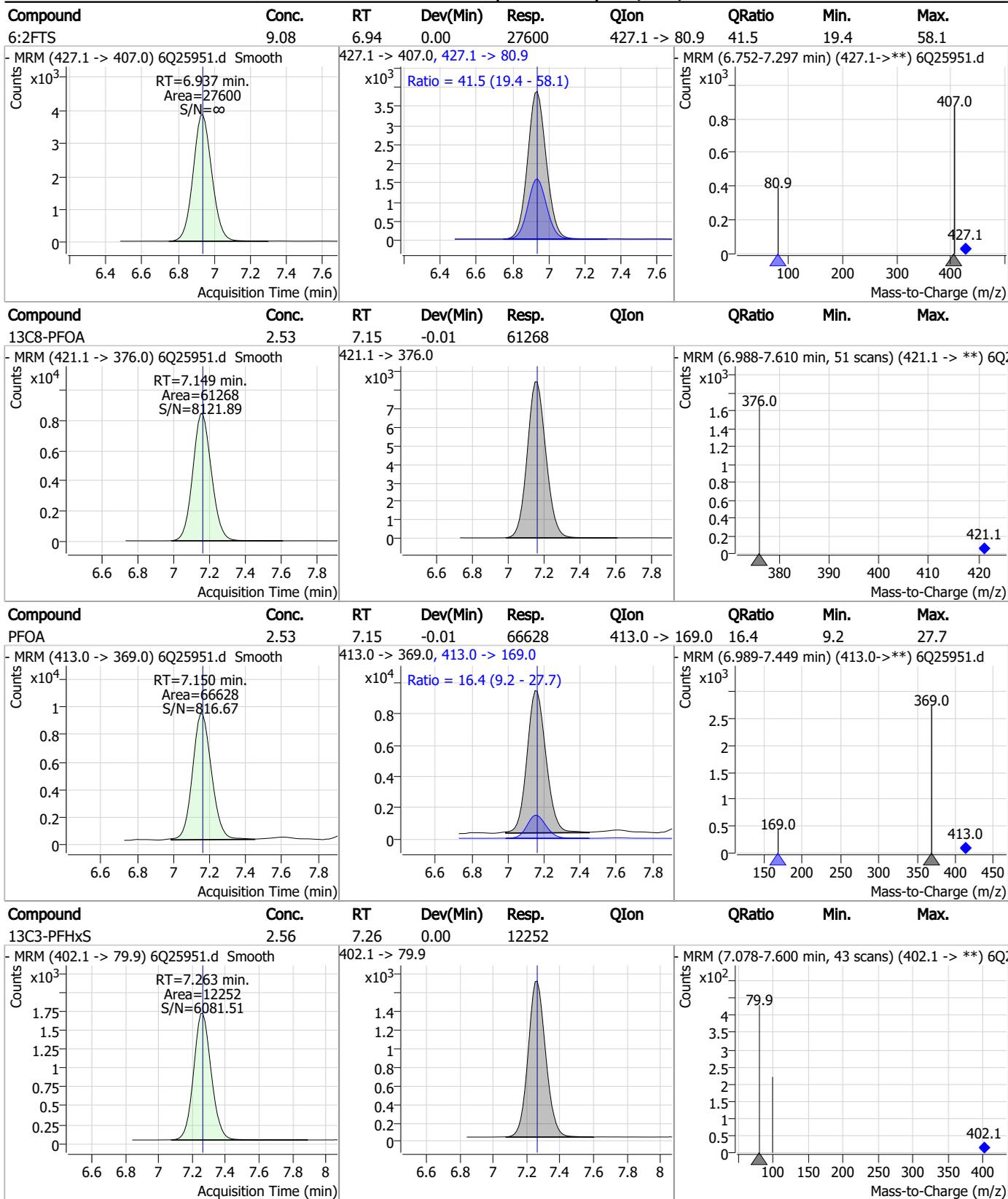
7.7.12
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Perfluorinated Compounds by LC/MS/MS



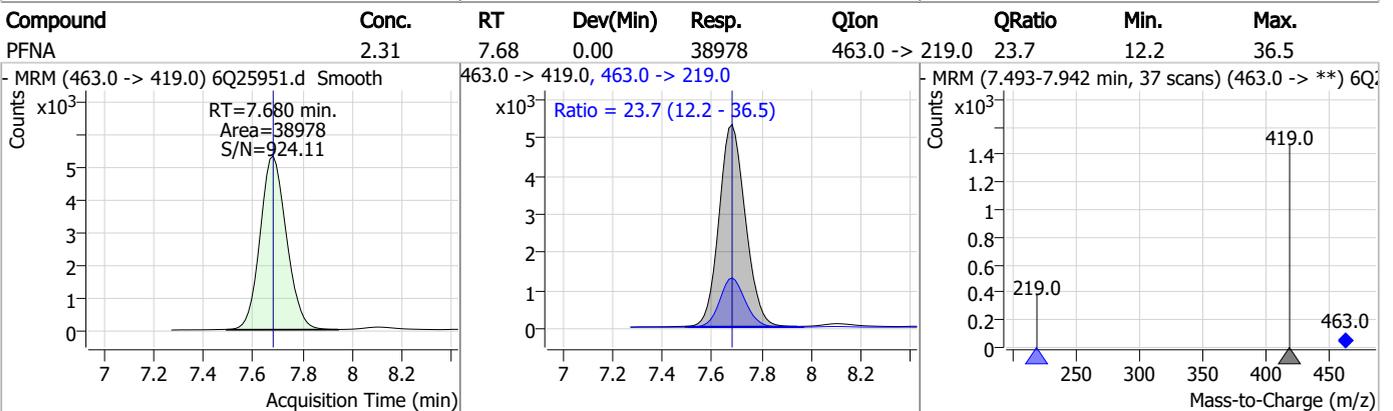
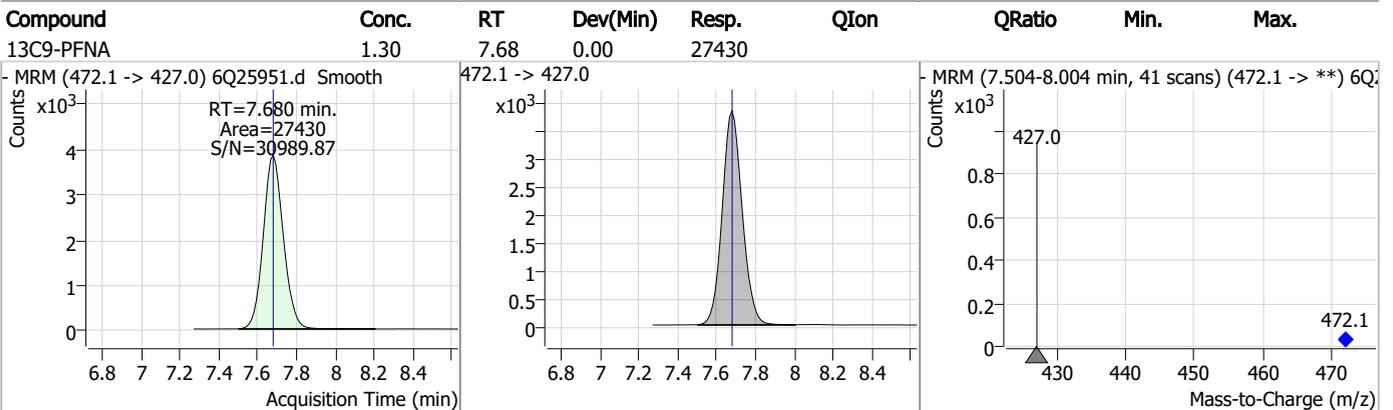
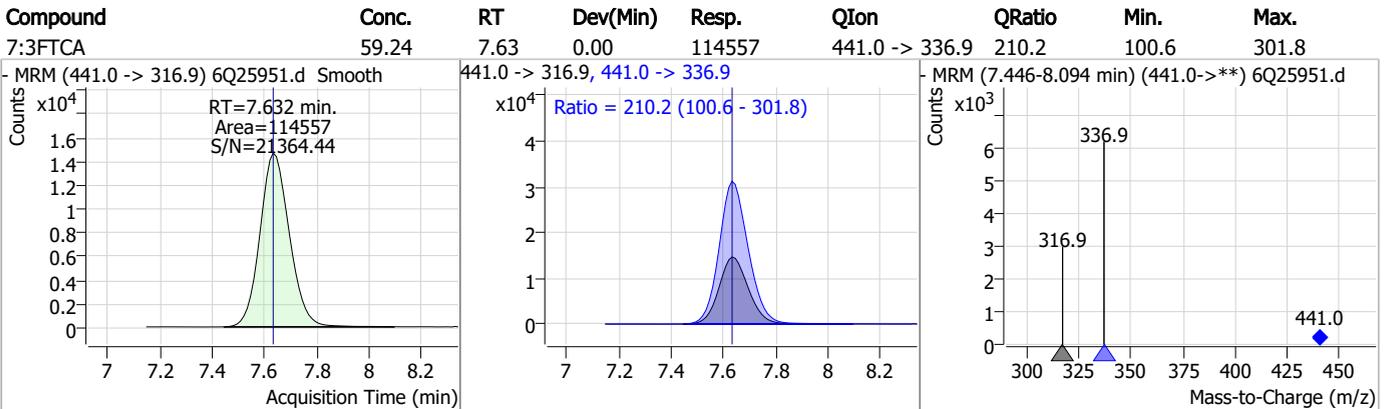
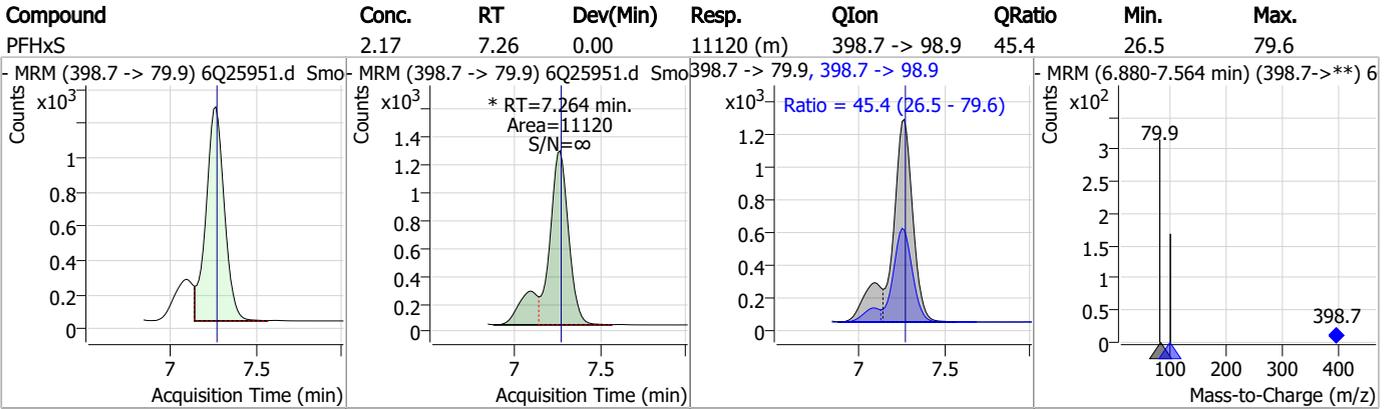
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Perfluorinated Compounds by LC/MS/MS



7.7.12

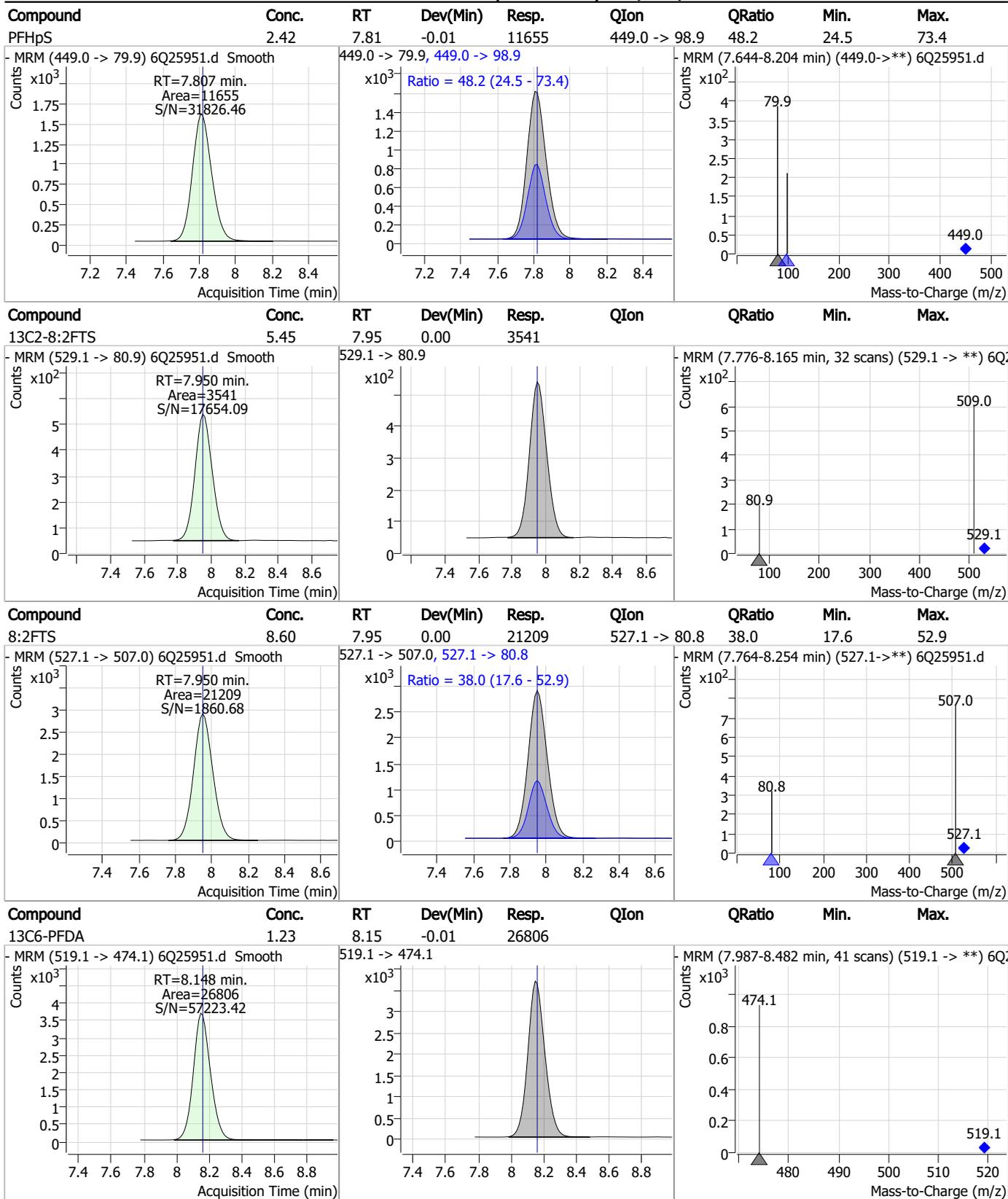
Perfluorinated Compounds by LC/MS/MS



7.7.12
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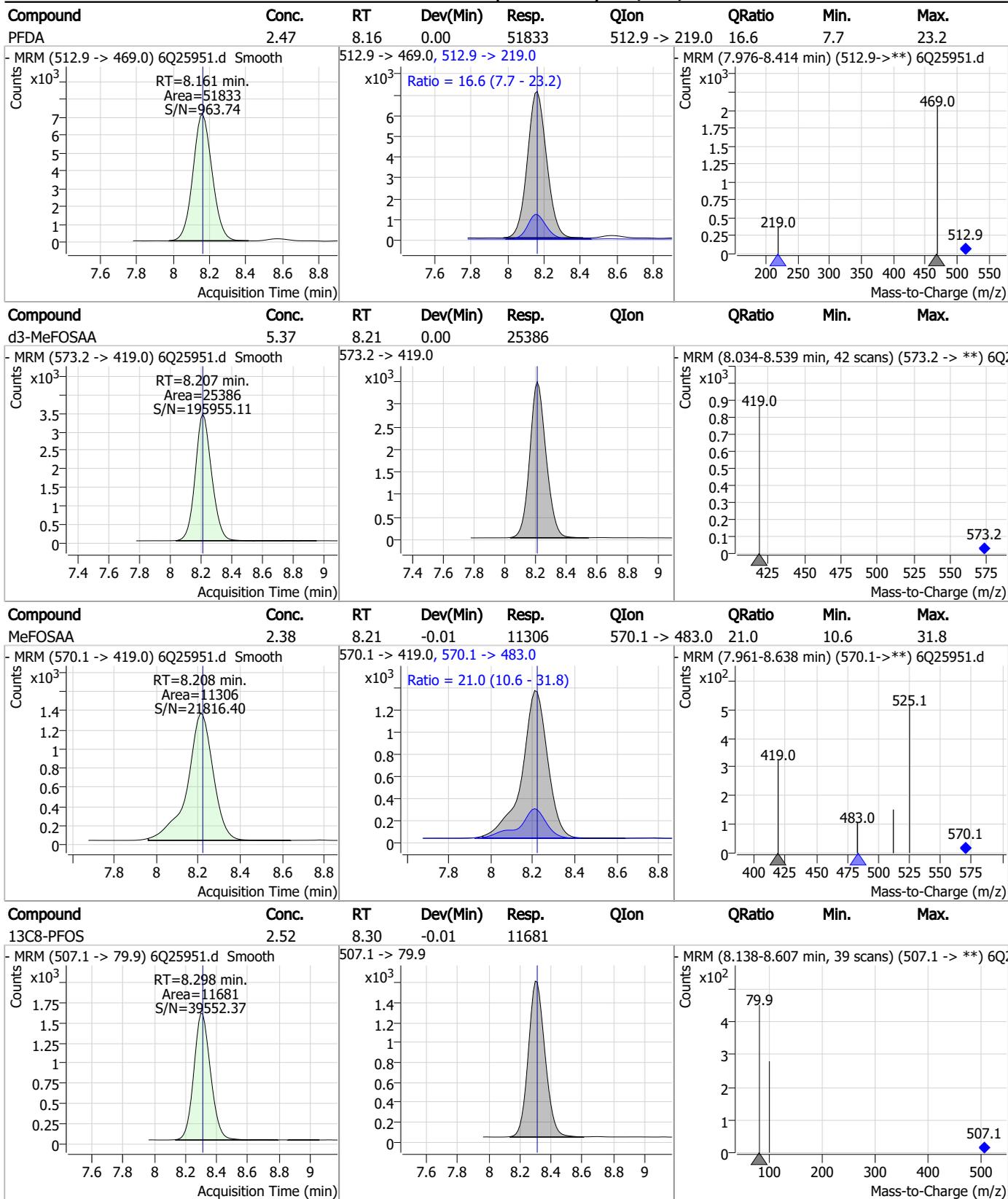
Perfluorinated Compounds by LC/MS/MS



7.7.12

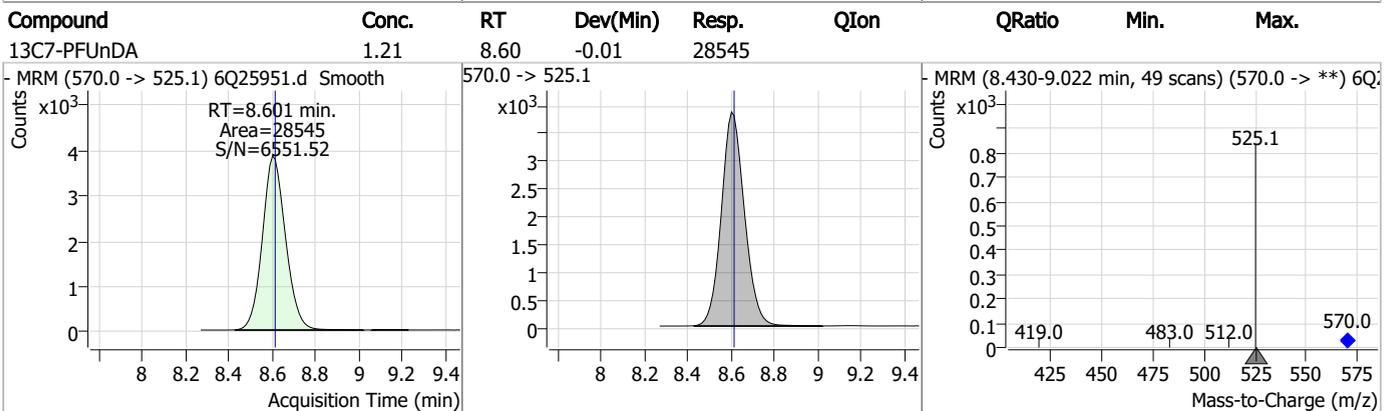
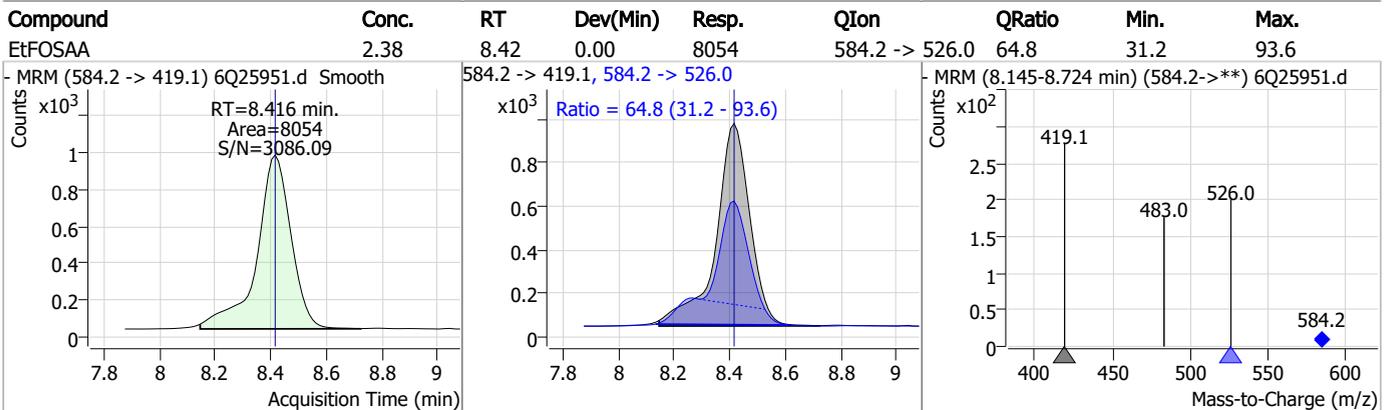
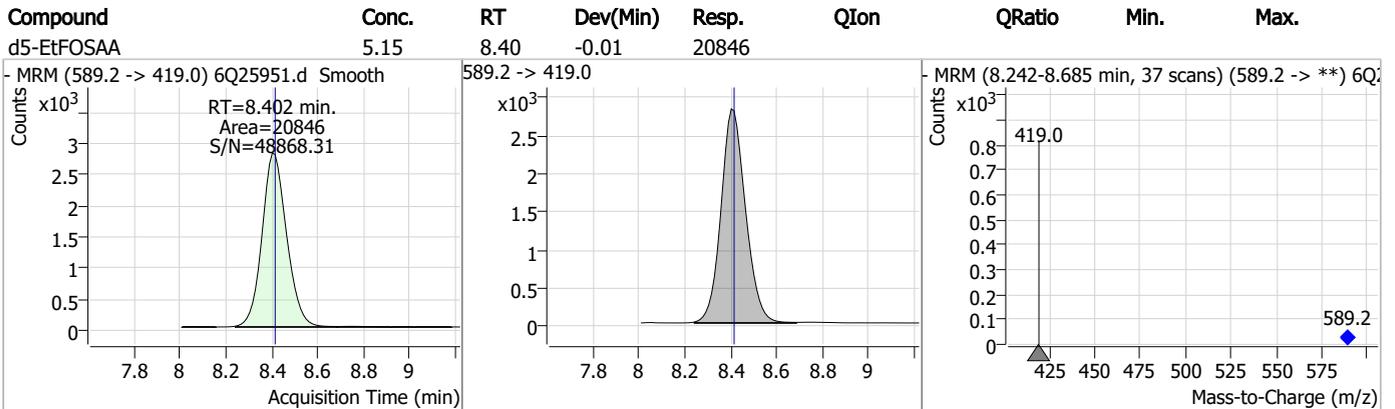
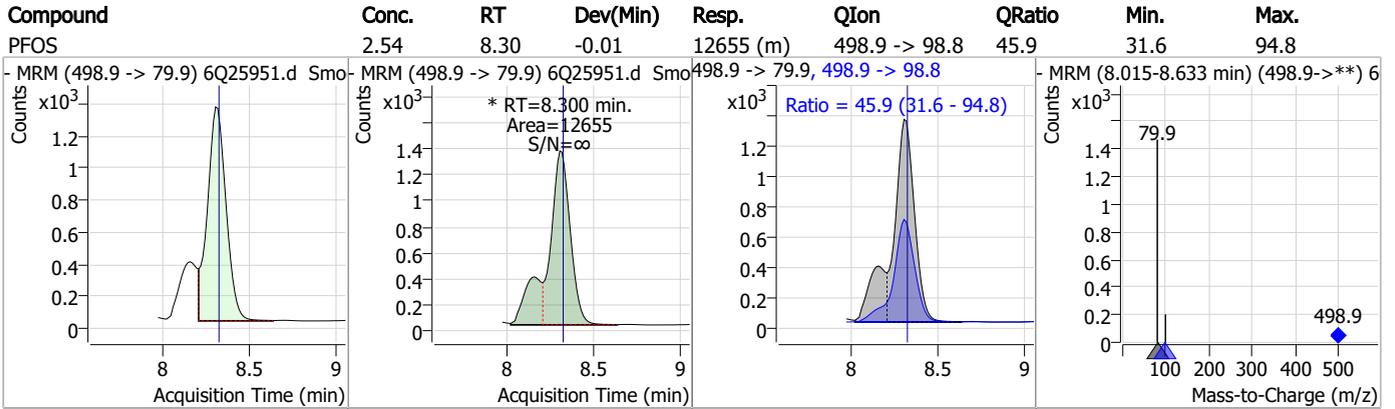


Perfluorinated Compounds by LC/MS/MS



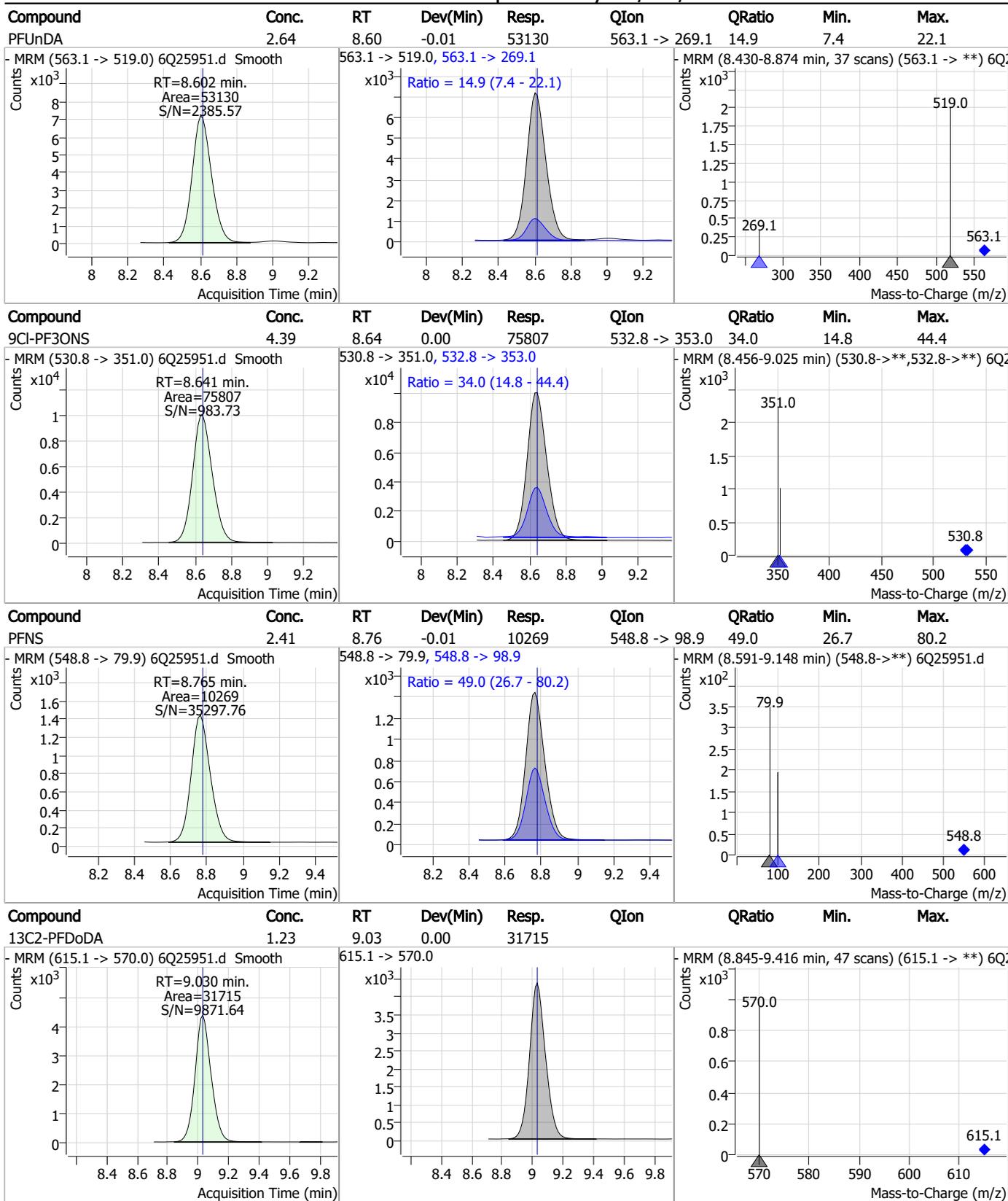
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Perfluorinated Compounds by LC/MS/MS



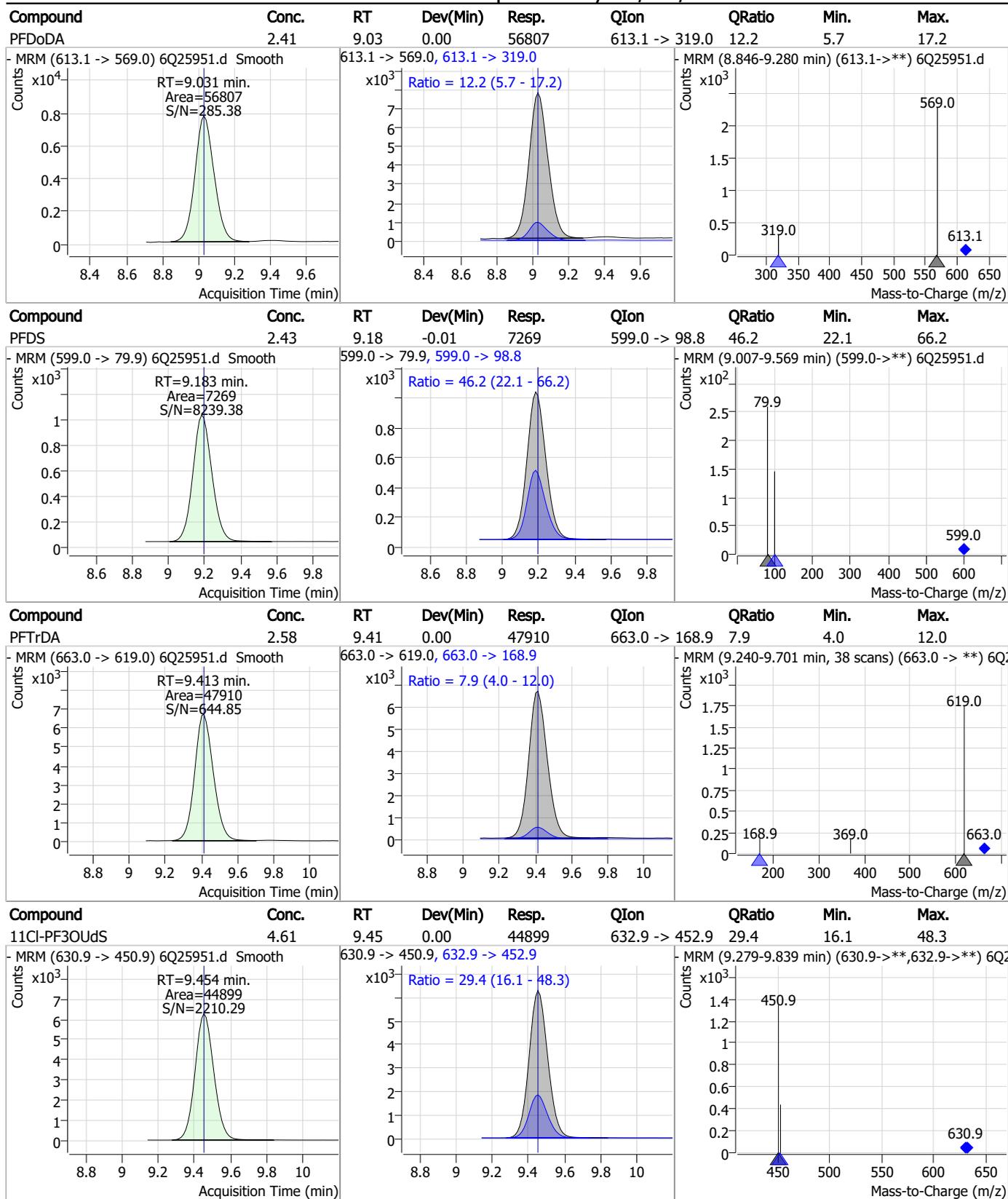
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Perfluorinated Compounds by LC/MS/MS



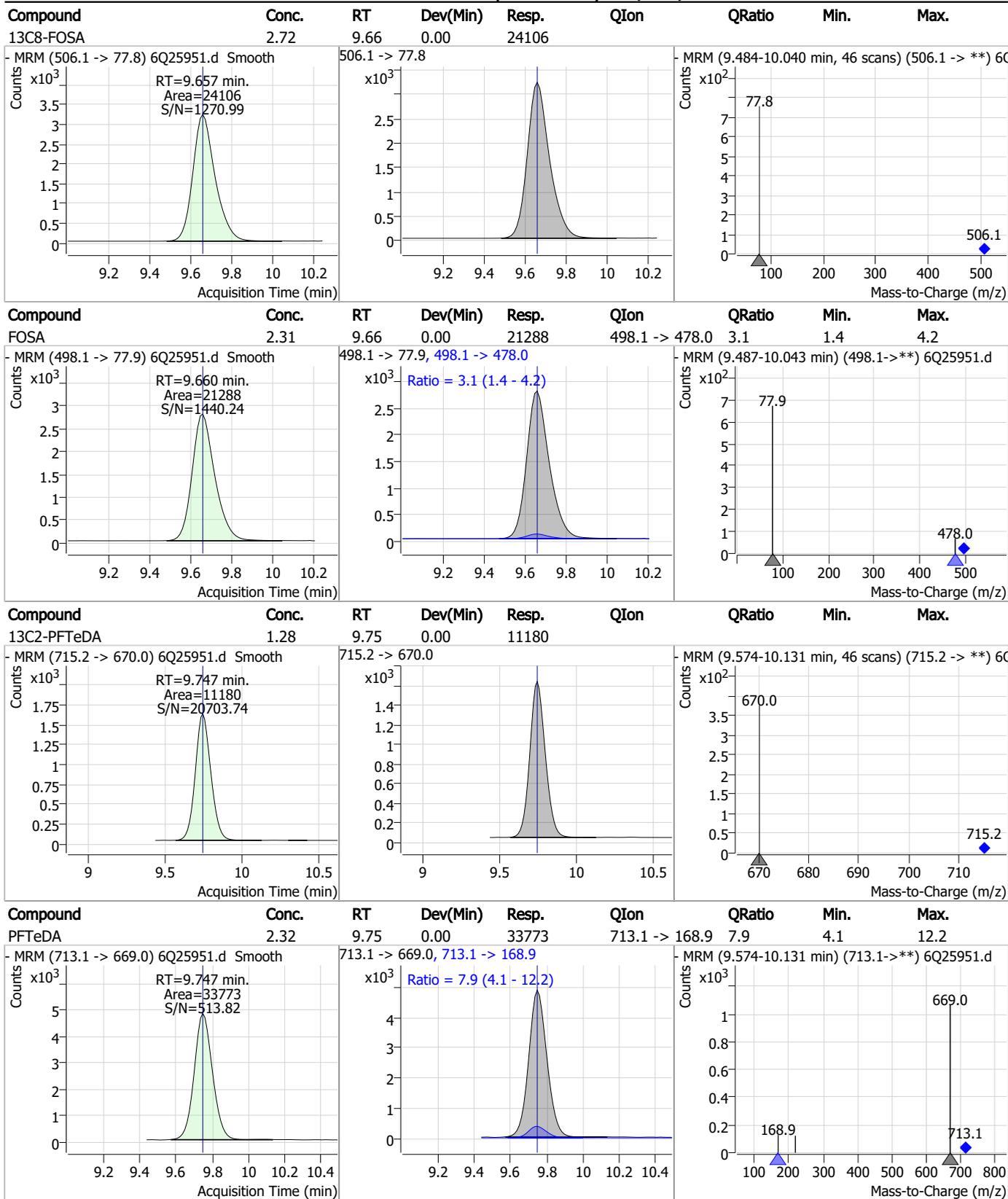
7.7.12 7

Perfluorinated Compounds by LC/MS/MS



7.7.12

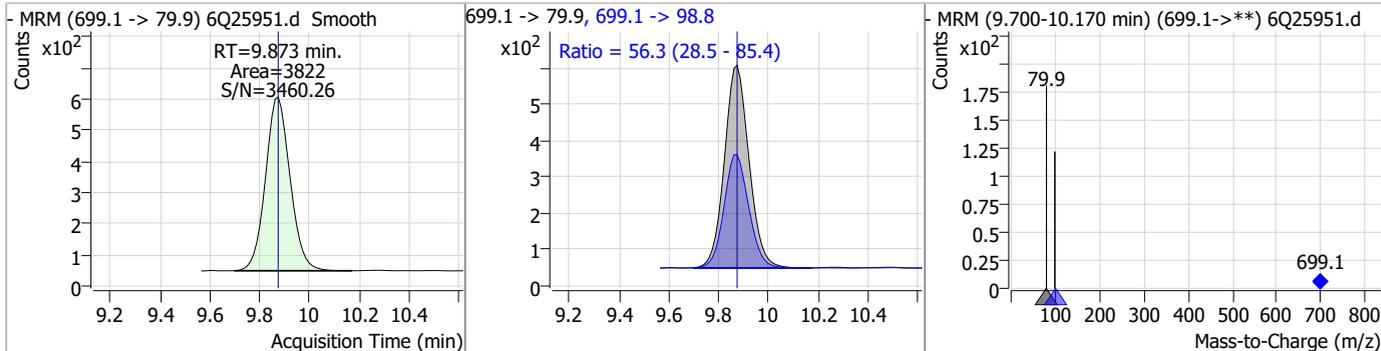
Perfluorinated Compounds by LC/MS/MS



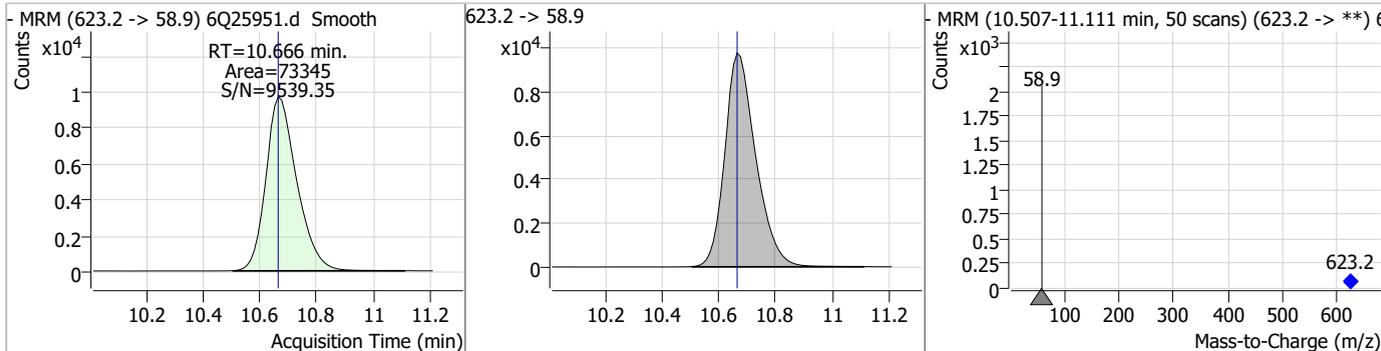
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Perfluorinated Compounds by LC/MS/MS

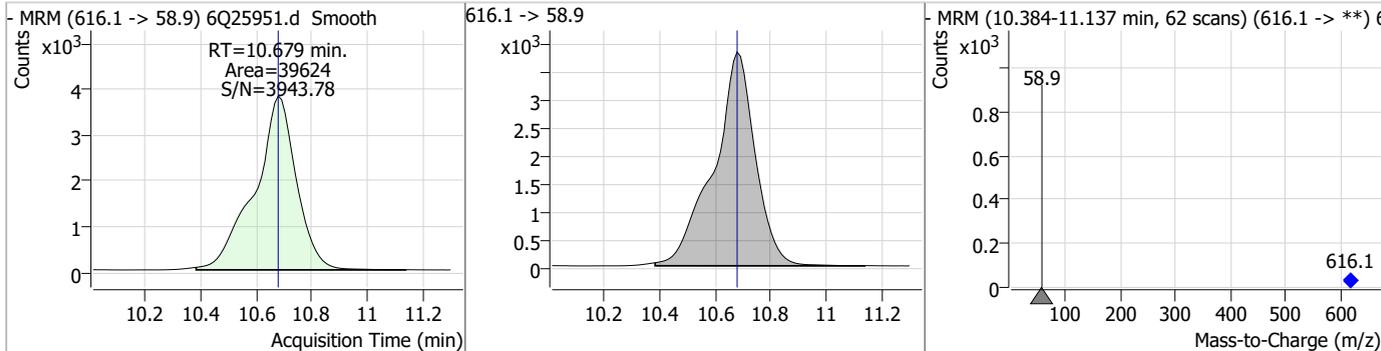
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.46	9.87	0.00	3822	699.1 -> 98.8	56.3	28.5	85.4



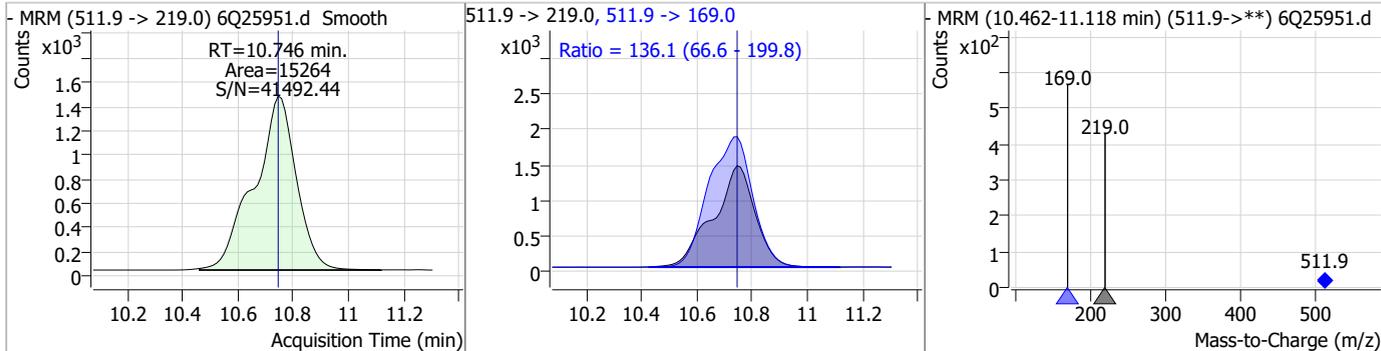
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.63	10.67	0.00	73345				



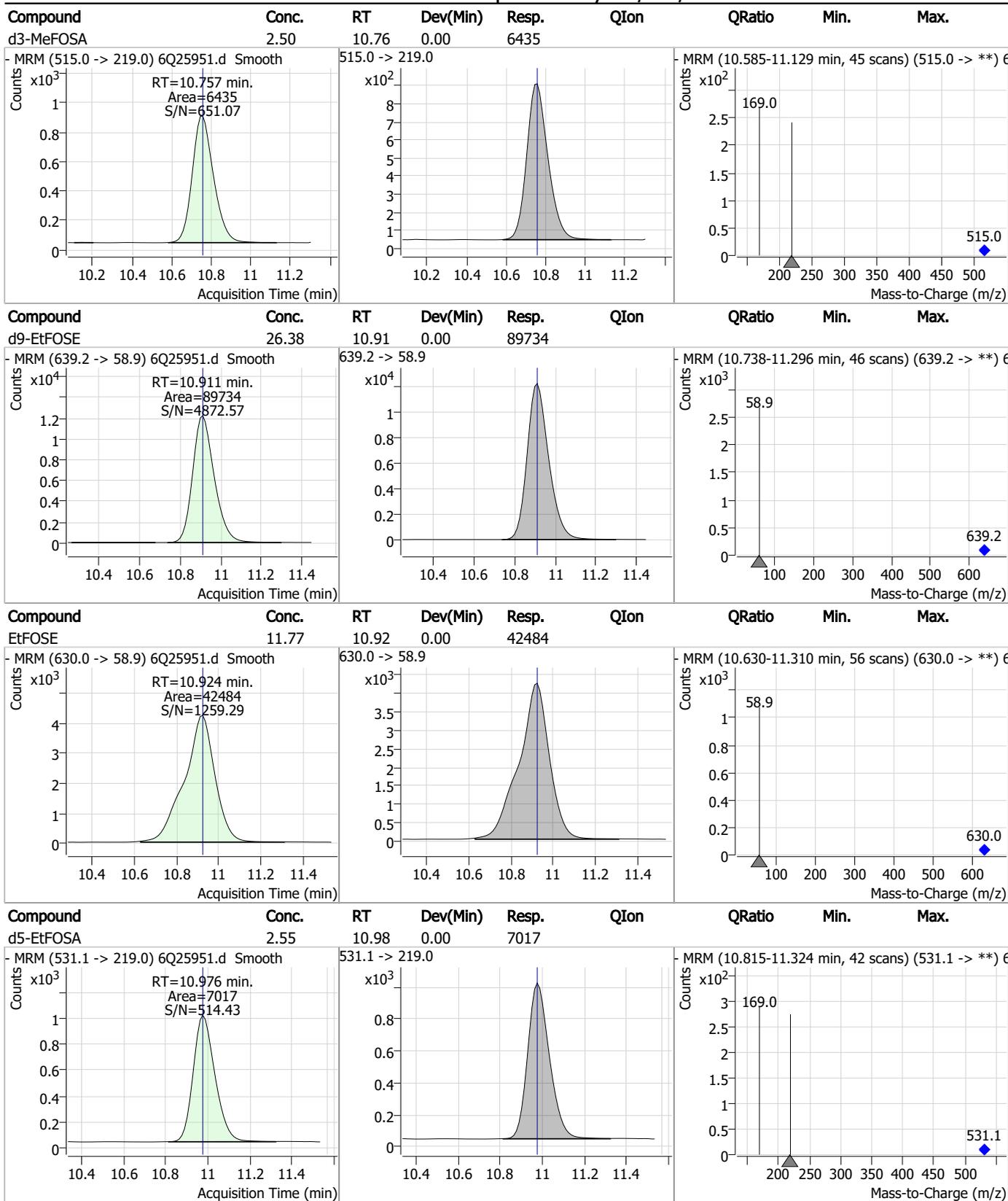
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.22	10.68	0.00	39624				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.12	10.75	0.00	15264	511.9 -> 169.0	136.1	66.6	199.8



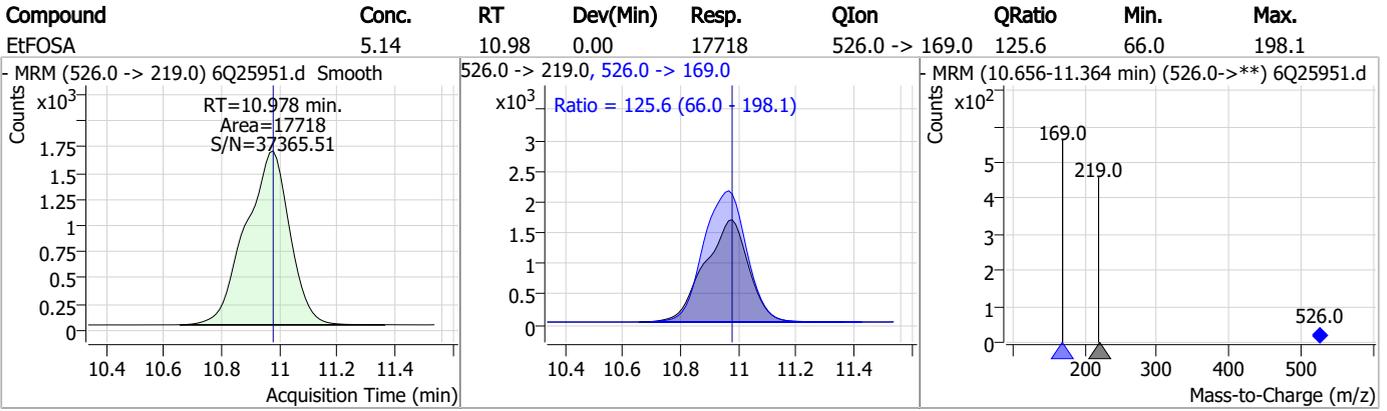
Perfluorinated Compounds by LC/MS/MS



7.7.12



Perfluorinated Compounds by LC/MS/MS



7.7.12

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Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25951.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 17:40 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25952.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 5:55:18 PM
 Sample Name : cc367-1.0LL
 Vial : P1-A2
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	150020	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	52356	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	48647	2.50 µg/L	0.012
M4-PFHpA	6.531	367.1 -> 322.0	47338	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	64711	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	27113	1.25 µg/L	0.000
M6-PFDA	8.148	519.1 -> 474.1	27672	1.25 µg/L	-0.012
M7-PFUnDA	8.601	570.0 -> 525.1	30051	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30246	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10946	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23088	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	21576	2.50 µg/L	0.012
M3-PFHxS	7.263	402.1 -> 79.9	11773	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	12697	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2245	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3467	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3306	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25574	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	31234	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	20514	5.00 µg/L	-0.012
M7-MeFOSE	10.665	623.2 -> 58.9	73791	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	87609	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	6961	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6648	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	11691	2.50 µg/L	-0.013
13C3-PFBA	2.952	216.0 -> 172.0	62082	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7773	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	69403	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	25249	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	26175	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	47233	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2245	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3467	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3306	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.6%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30246	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10946	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C3-PFBS	5.510	302.1 -> 79.9	21576	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.0%		
13C3-PFHxS	7.263	402.1 -> 79.9	11773	2.38 µg/L	0.000

7.7.13
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C4-PFBA	2.947	216.8 -> 171.9	150020	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.531	367.1 -> 322.0	47338	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFHxA	5.592	318.0 -> 273.0	48647	2.49 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	4.372	268.3 -> 223.0	52356	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C6-PFDA	8.148	519.1 -> 474.1	27672	1.30 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C7-PFUnDA	8.601	570.0 -> 525.1	30051	1.31 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-FOSA	9.657	506.1 -> 77.8	23088	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C8-PFOA	7.161	421.1 -> 376.0	64711	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C8-PFOS	8.298	507.1 -> 79.9	12697	2.51 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C9-PFNA	7.680	472.1 -> 427.0	27113	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25574	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	31234	9.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d3-MeFOSA	10.744	515.0 -> 219.0	6648	2.38 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSAA	8.402	589.2 -> 419.0	20514	4.66 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
d7-MeFOSE	10.665	623.2 -> 58.9	73791	23.70 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d9-EtFOSE	10.911	639.2 -> 58.9	87609	23.67 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d5-EtFOSA	10.976	531.1 -> 219.0	6961	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	3089	0.83 µg/L	98
		327.1 -> 80.9	1240		
6:2FTS	6.937	427.1 -> 407.0	2534	0.80 µg/L	99
		427.1 -> 80.9	1000		
8:2FTS	7.950	527.1 -> 507.0	1983	0.86 µg/L	97
		527.1 -> 80.8	730		
EtFOSAA	8.403	584.2 -> 419.1	627	0.19 µg/L	m 97
		584.2 -> 526.0	403		
FOSA	9.647	498.1 -> 77.9	1754	0.20 µg/L	97
		498.1 -> 478.0	69		
MeFOSAA	8.208	570.1 -> 419.0	1076	0.23 µg/L	100
		570.1 -> 483.0	227		
PFBA	2.956	212.8 -> 168.9	4569	0.82 µg/L	100
PFBS	5.511	298.7 -> 79.9	1205	0.19 µg/L	100
		298.7 -> 98.8	444		
PFDA	8.149	512.9 -> 469.0	4648	0.21 µg/L	98
		512.9 -> 219.0	667		
PFDODA	9.031	613.1 -> 569.0	5425	0.24 µg/L	98
		613.1 -> 319.0	579		
PFDS	9.183	599.0 -> 79.9	665	0.20 µg/L	92

7.7.13
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	327	0.21	µg/L	100
		363.1 -> 319.0	5328			
PFHpS	7.807	363.1 -> 169.0	779	0.18	µg/L	93
		449.0 -> 79.9	967			
PFHxA	5.594	449.0 -> 98.9	517	0.21	µg/L	99
		313.0 -> 269.0	3637			
PFHxS	7.264	313.0 -> 118.9	174	0.21	µg/L	88
		398.7 -> 79.9	1038			
PFNA	7.680	398.7 -> 98.9	463	0.19	µg/L	96
		463.0 -> 419.0	3257			
PFNS	8.765	463.0 -> 219.0	724	0.20	µg/L	86
		548.8 -> 79.9	928			
PFOA	7.163	548.8 -> 98.9	404	0.22	µg/L	91
		413.0 -> 369.0	6097			
PFOS	8.300	413.0 -> 169.0	878	0.20	µg/L	81
		498.9 -> 79.9	1069			
PFPeA	4.374	498.9 -> 98.8	521	0.43	µg/L	100
		263.0 -> 219.0	4863			
PFPeS	6.571	349.1 -> 79.9	1297	0.20	µg/L	86
		349.1 -> 98.9	682			
PFTeDA	9.747	713.1 -> 669.0	2884	0.20	µg/L	100
		713.1 -> 168.9	236			
PFTrDA	9.413	663.0 -> 619.0	3955	0.22	µg/L	99
		663.0 -> 168.9	302			
PFUnDA	8.602	563.1 -> 519.0	4491	0.21	µg/L	100
		563.1 -> 269.1	668			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	3909	0.42	µg/L	95
		632.9 -> 452.9	1149			
9Cl-PF3ONS	8.641	530.8 -> 351.0	6496	0.40	µg/L	73
		532.8 -> 353.0	2861			
ADONA	6.767	376.9 -> 250.9	17104	0.40	µg/L	99
		376.9 -> 84.8	4640			
HFPO-DA	5.958	284.9 -> 168.9	1460	0.47	µg/L	93
		284.9 -> 184.9	217			
3:3FTCA	3.808	241.0 -> 177.0	804	1.00	µg/L	99
		241.0 -> 117.0	104			
5:3FTCA	6.233	341.0 -> 237.1	16746	5.14	µg/L	96
		341.0 -> 217.0	12477			
7:3FTCA	7.632	441.0 -> 316.9	9526	4.78	µg/L	93
		441.0 -> 336.9	20183			
EtFOSA	10.978	526.0 -> 219.0	1408	0.41	µg/L	98
		526.0 -> 169.0	1820			
EtFOSE	10.912	630.0 -> 58.9	3647	1.03	µg/L	100
		511.9 -> 219.0	1316			
MeFOSA	10.746	511.9 -> 169.0	1821	0.43	µg/L	96
		616.1 -> 58.9	3216			
MeFOSE	10.679	699.1 -> 79.9	349	0.99	µg/L	100
		699.1 -> 98.8	181			
PFDoDS	9.873	295.0 -> 201.0	1020	0.21	µg/L	93
		295.0 -> 84.9	250			
NFDHA	5.462	279.0 -> 85.1	3517	0.47	µg/L	94
		229.0 -> 84.9	2993			
PFMBA	4.800	314.8 -> 134.9	8170	0.41	µg/L	100
		314.8 -> 82.9	279			
PFMPA	3.513			0.42	µg/L	100
PFEESA	6.050			0.37	µg/L	99

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



7.7.13
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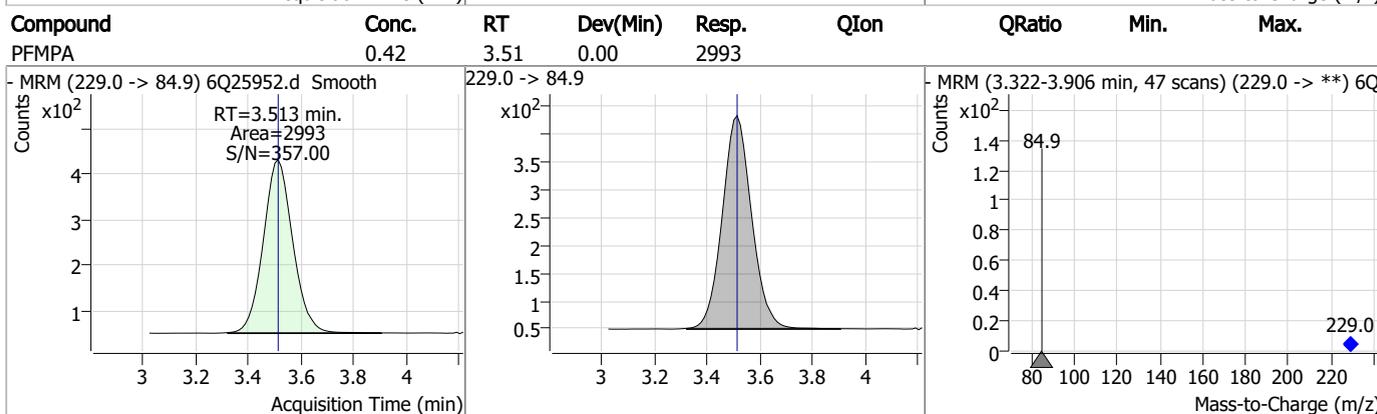
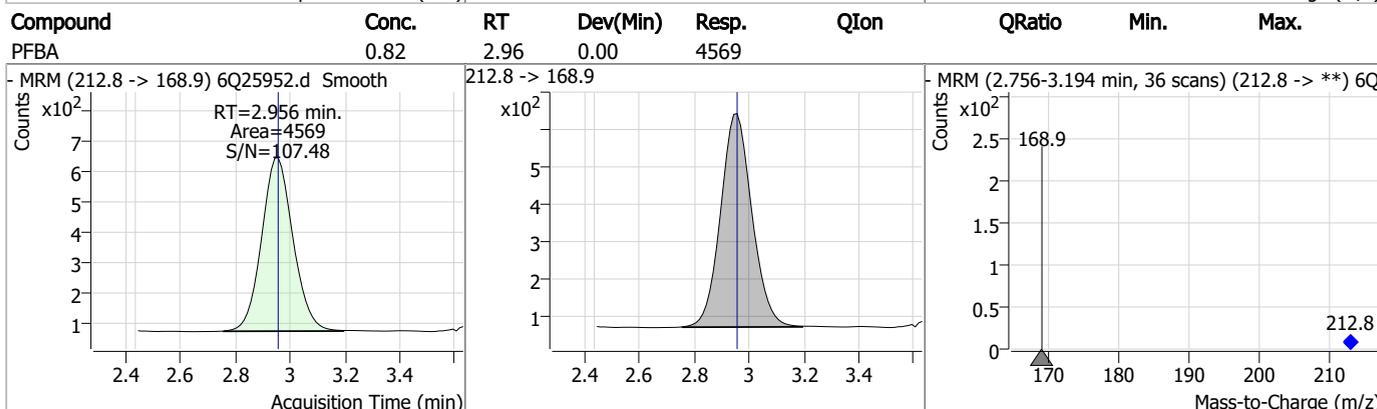
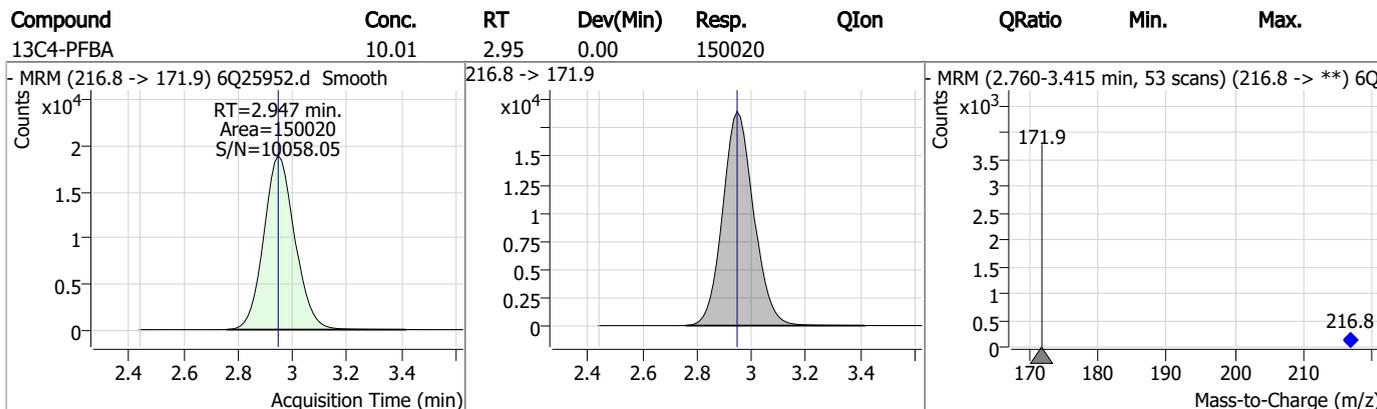
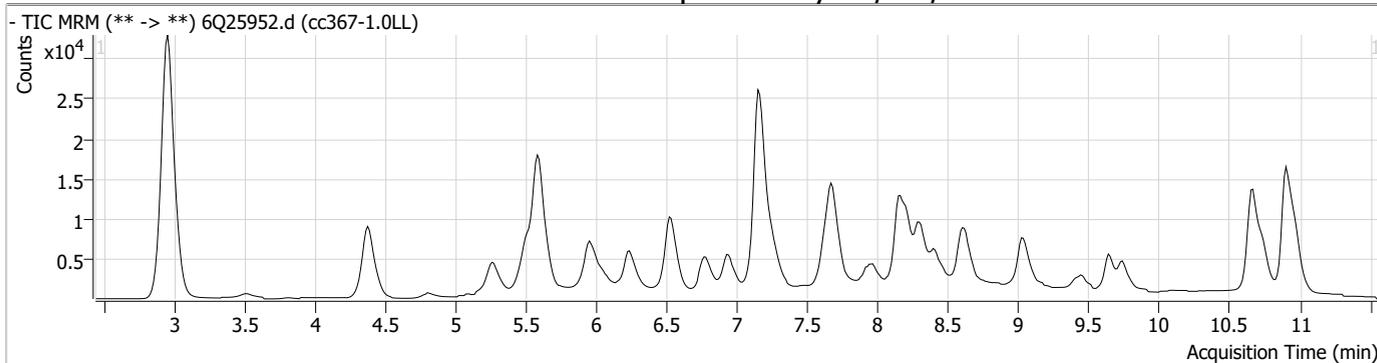
Perfluorinated Compounds by LC/MS/MS

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

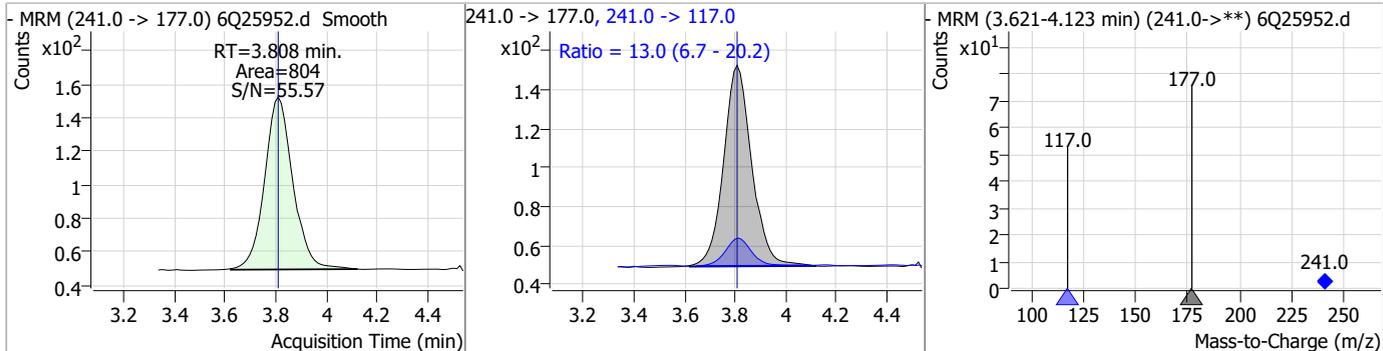
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Perfluorinated Compounds by LC/MS/MS

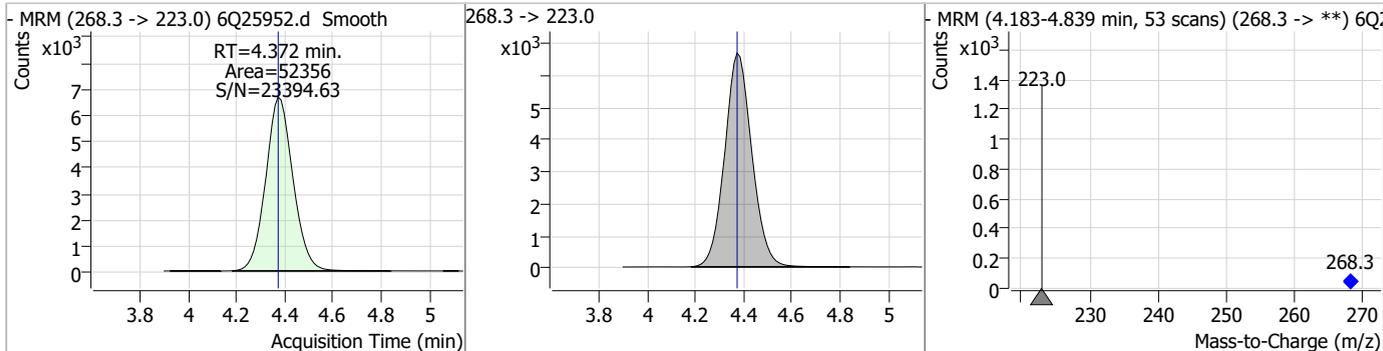


Perfluorinated Compounds by LC/MS/MS

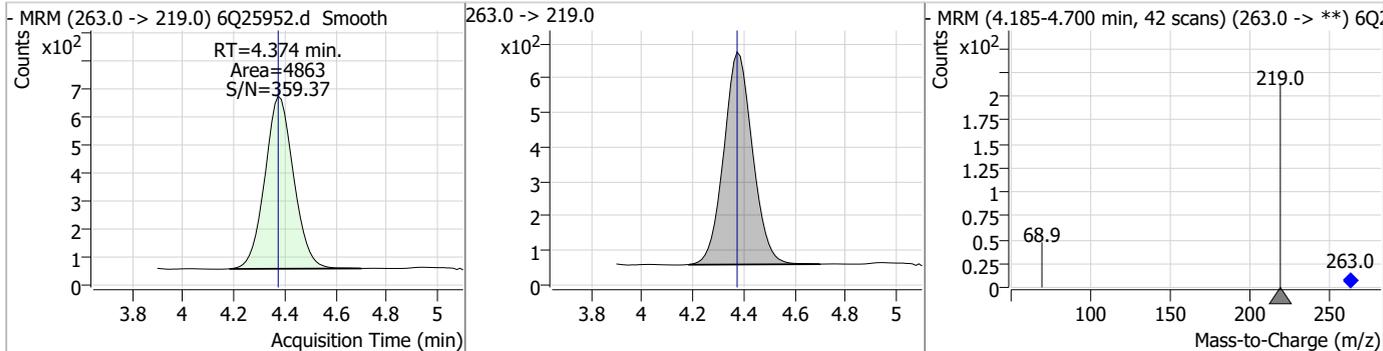
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.00	3.81	0.00	804	241.0 -> 117.0	13.0	6.7	20.2



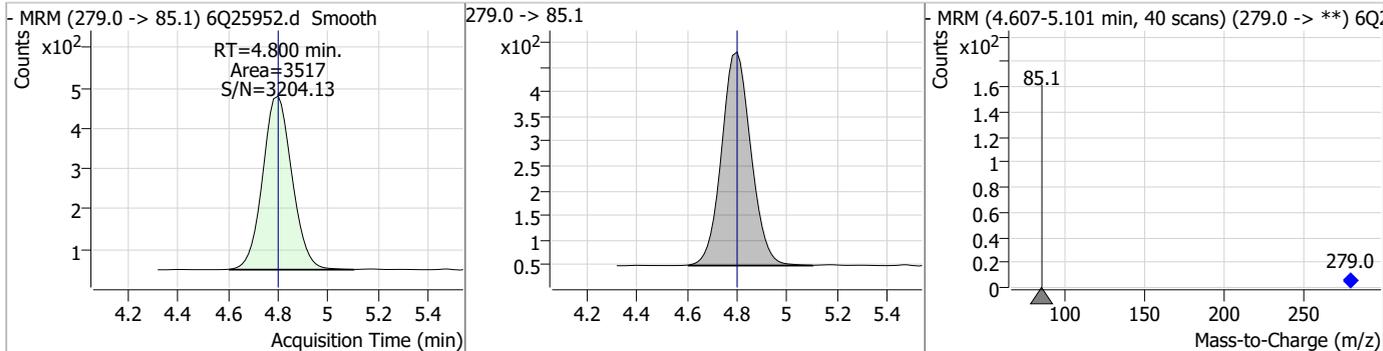
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.90	4.37	0.00	52356				



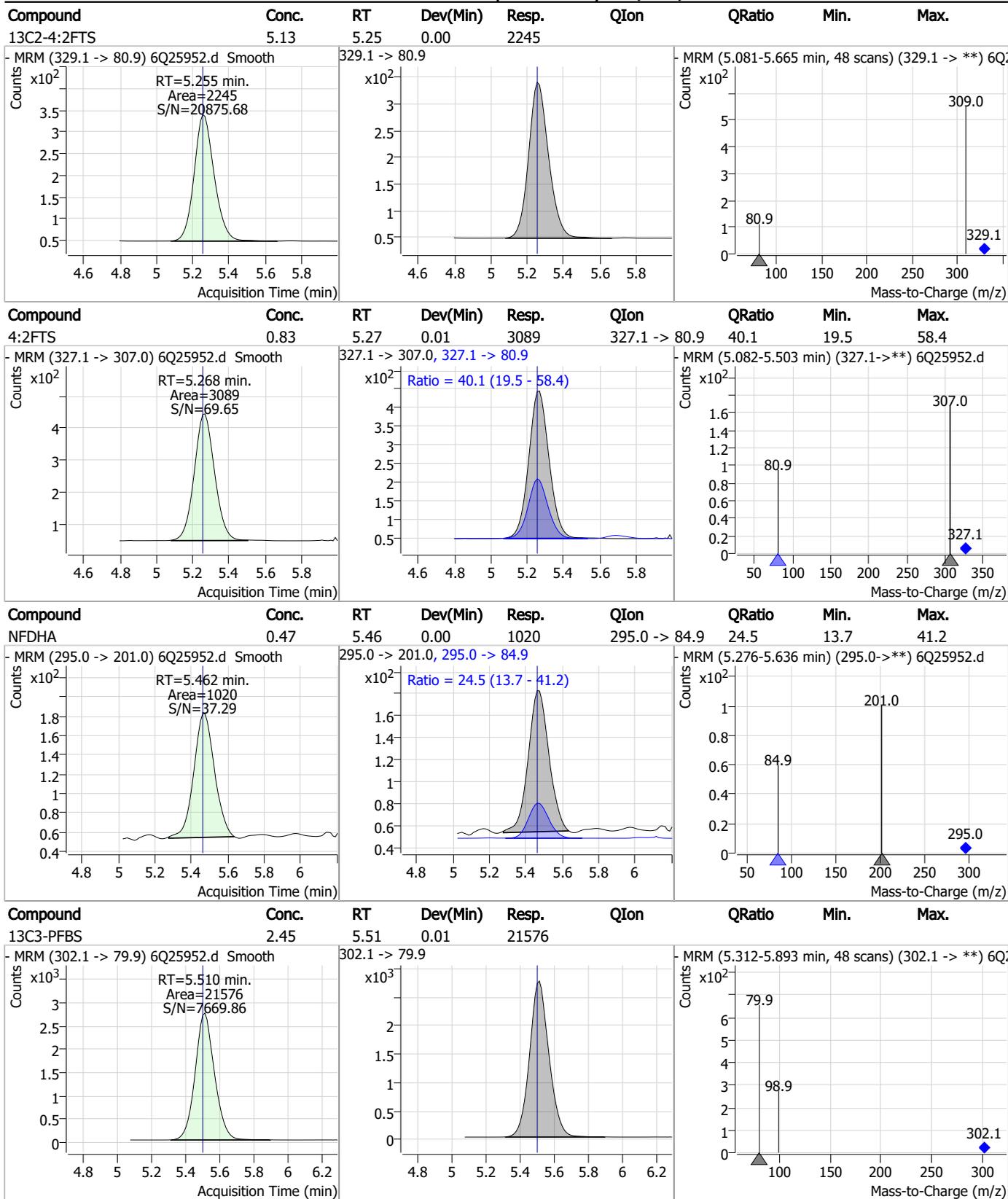
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.43	4.37	0.00	4863				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.41	4.80	0.00	3517				



Perfluorinated Compounds by LC/MS/MS

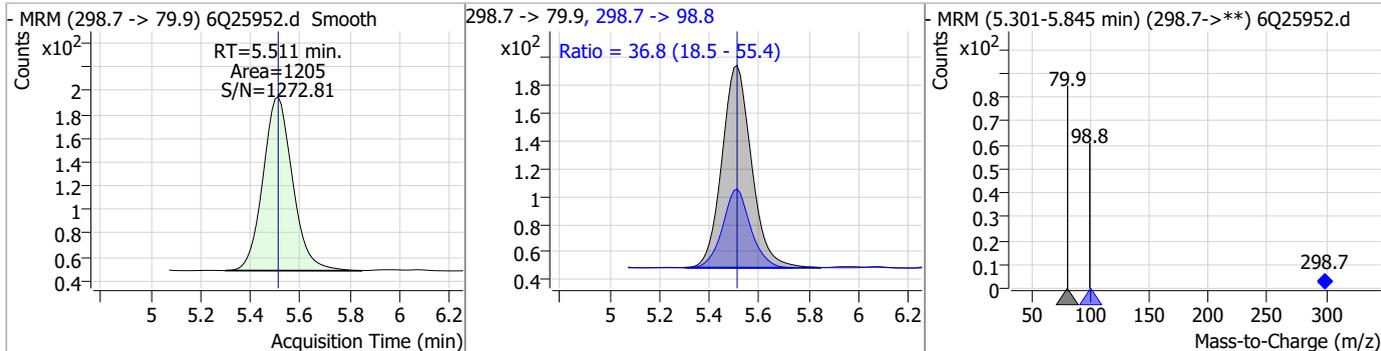


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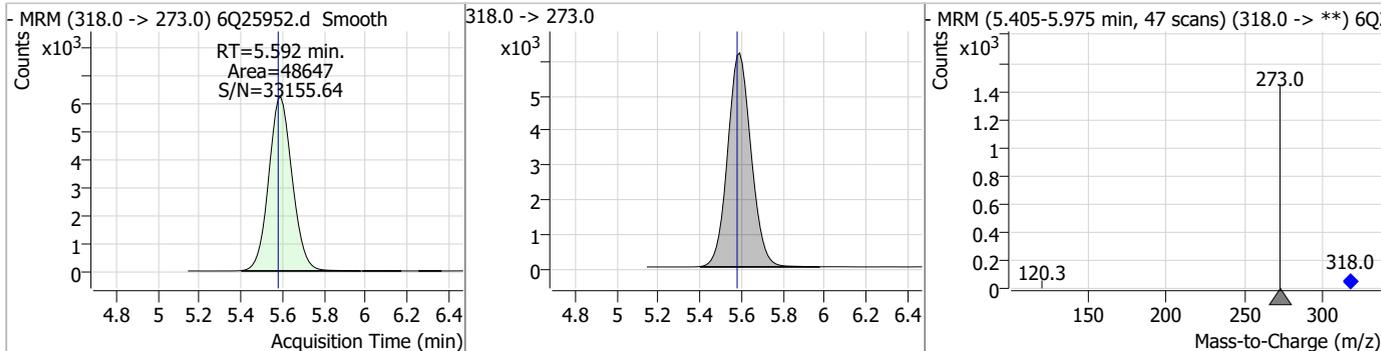
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Perfluorinated Compounds by LC/MS/MS

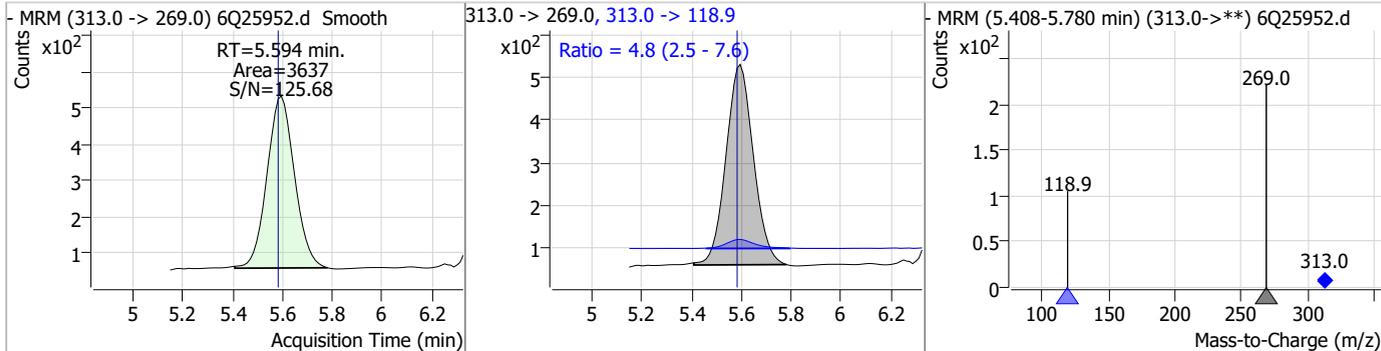
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.51	0.00	1205	298.7 -> 98.8	36.8	18.5	55.4



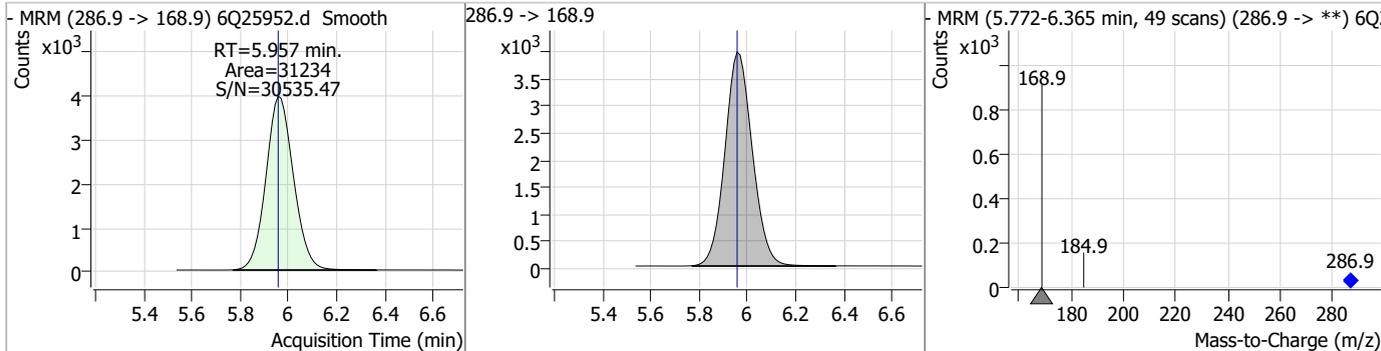
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.59	0.01	48647				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.59	0.01	3637	313.0 -> 118.9	4.8	2.5	7.6



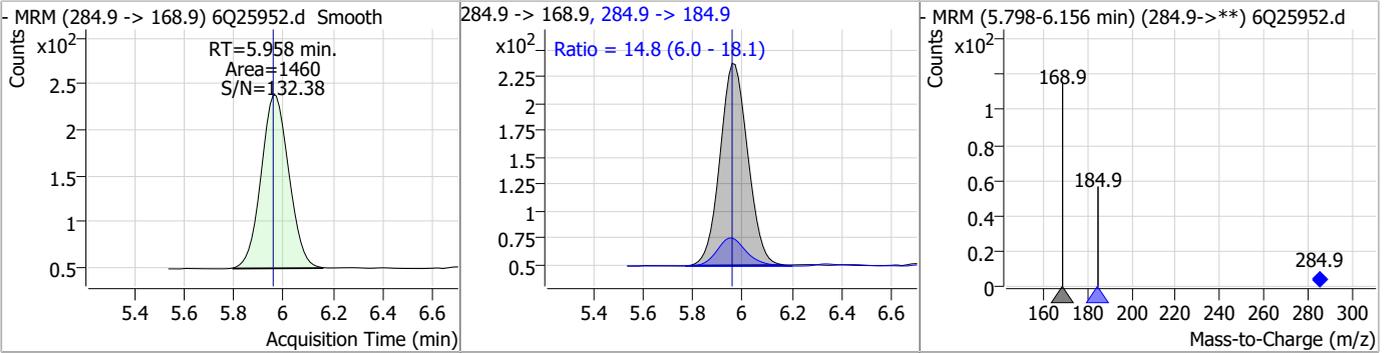
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.48	5.96	0.00	31234				



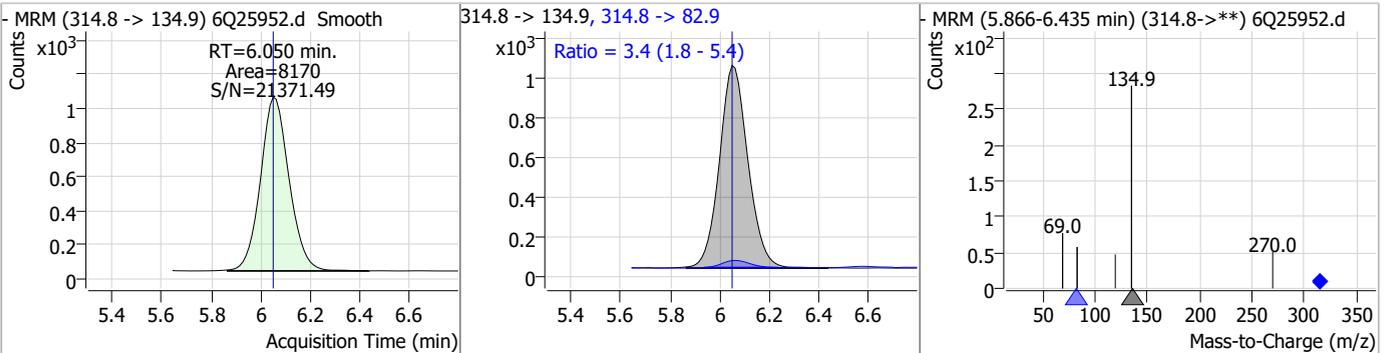
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Perfluorinated Compounds by LC/MS/MS

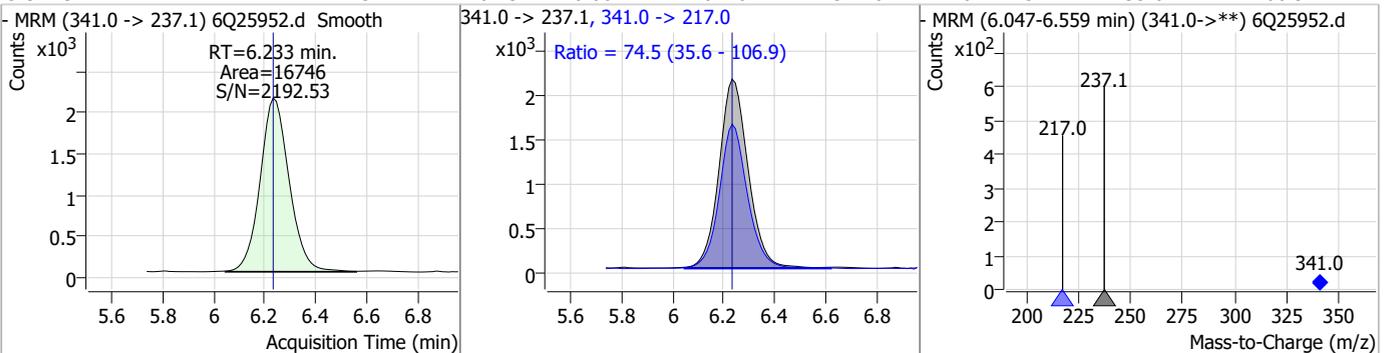
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.47	5.96	0.00	1460	284.9 -> 184.9	14.8	6.0	18.1



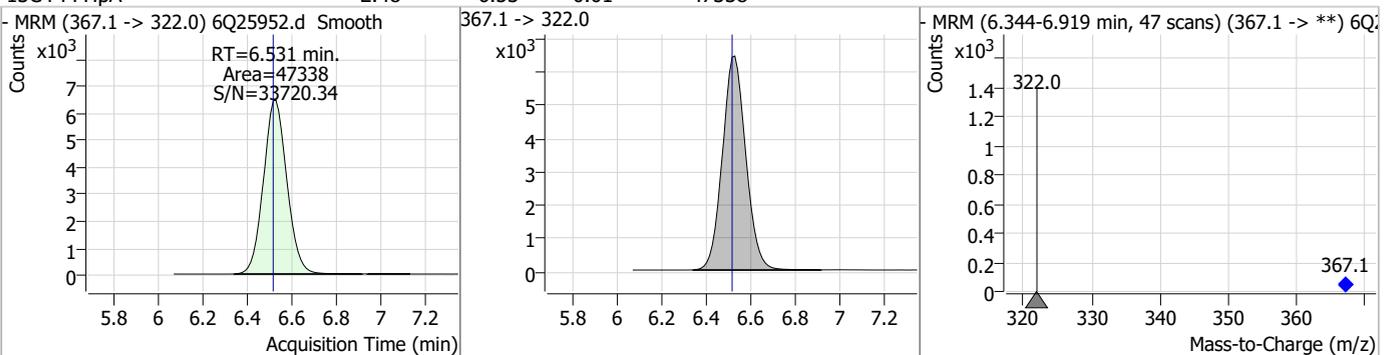
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.37	6.05	0.00	8170	314.8 -> 82.9	3.4	1.8	5.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	5.14	6.23	0.00	16746	341.0 -> 217.0	74.5	35.6	106.9

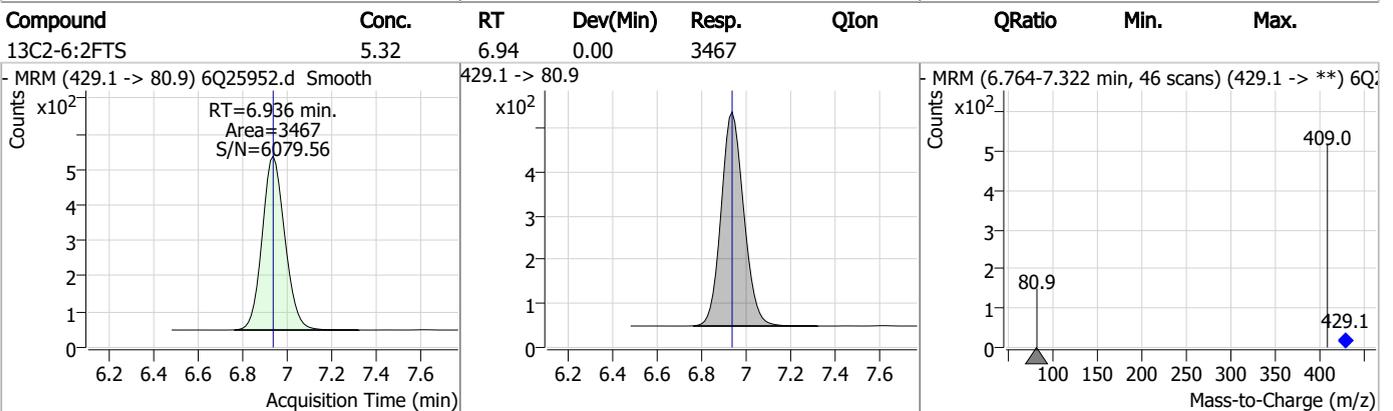
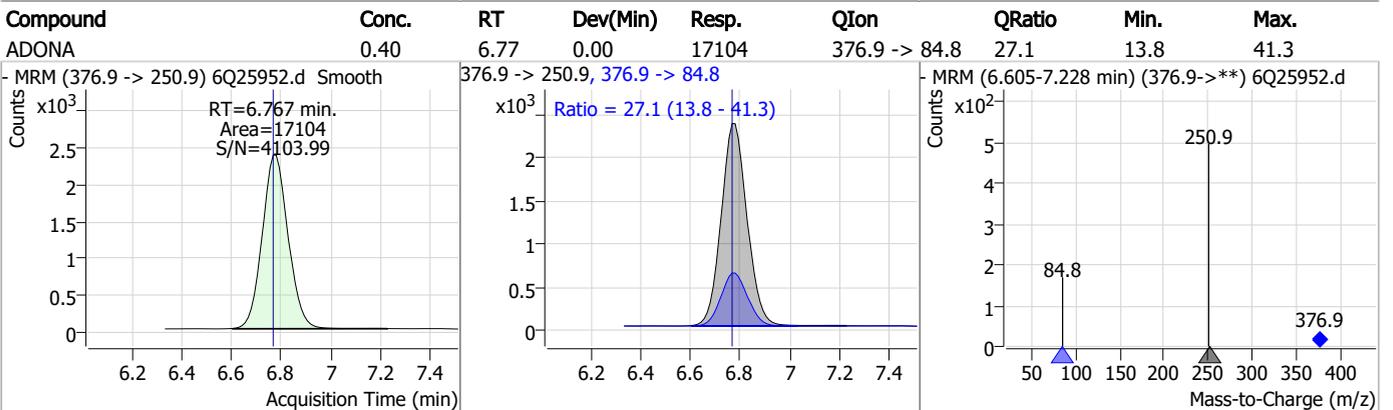
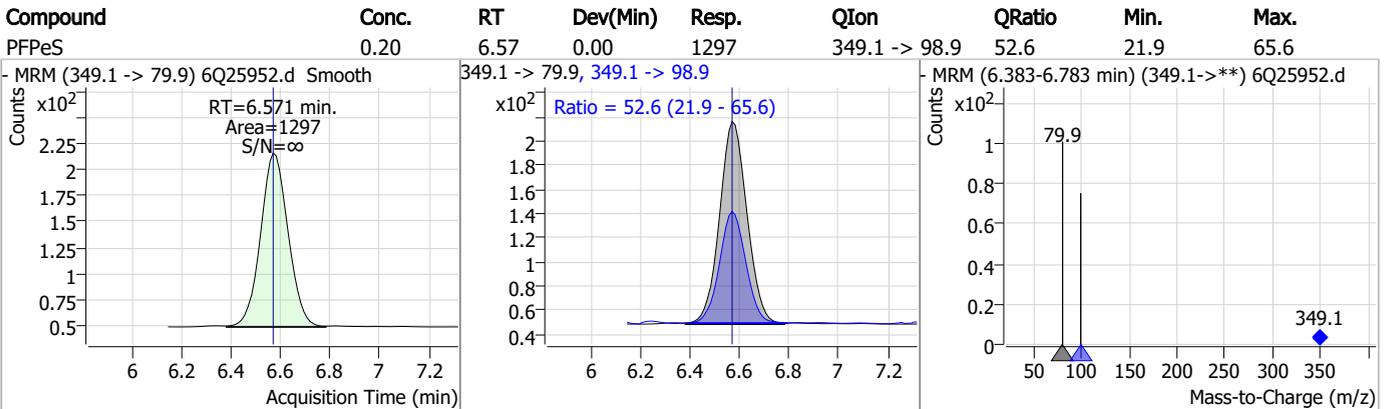
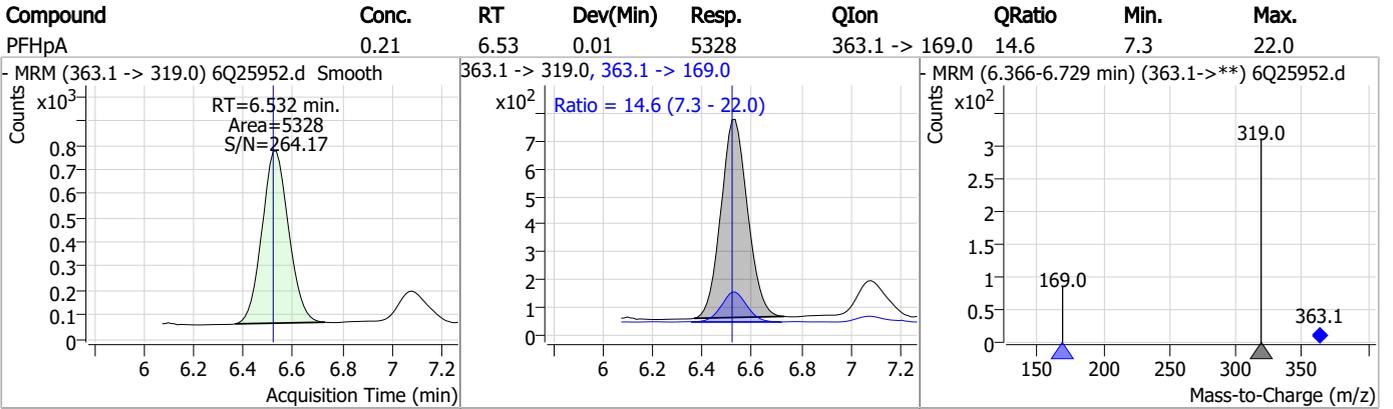


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.48	6.53	0.01	47338	367.1 -> 322.0	-	-	-



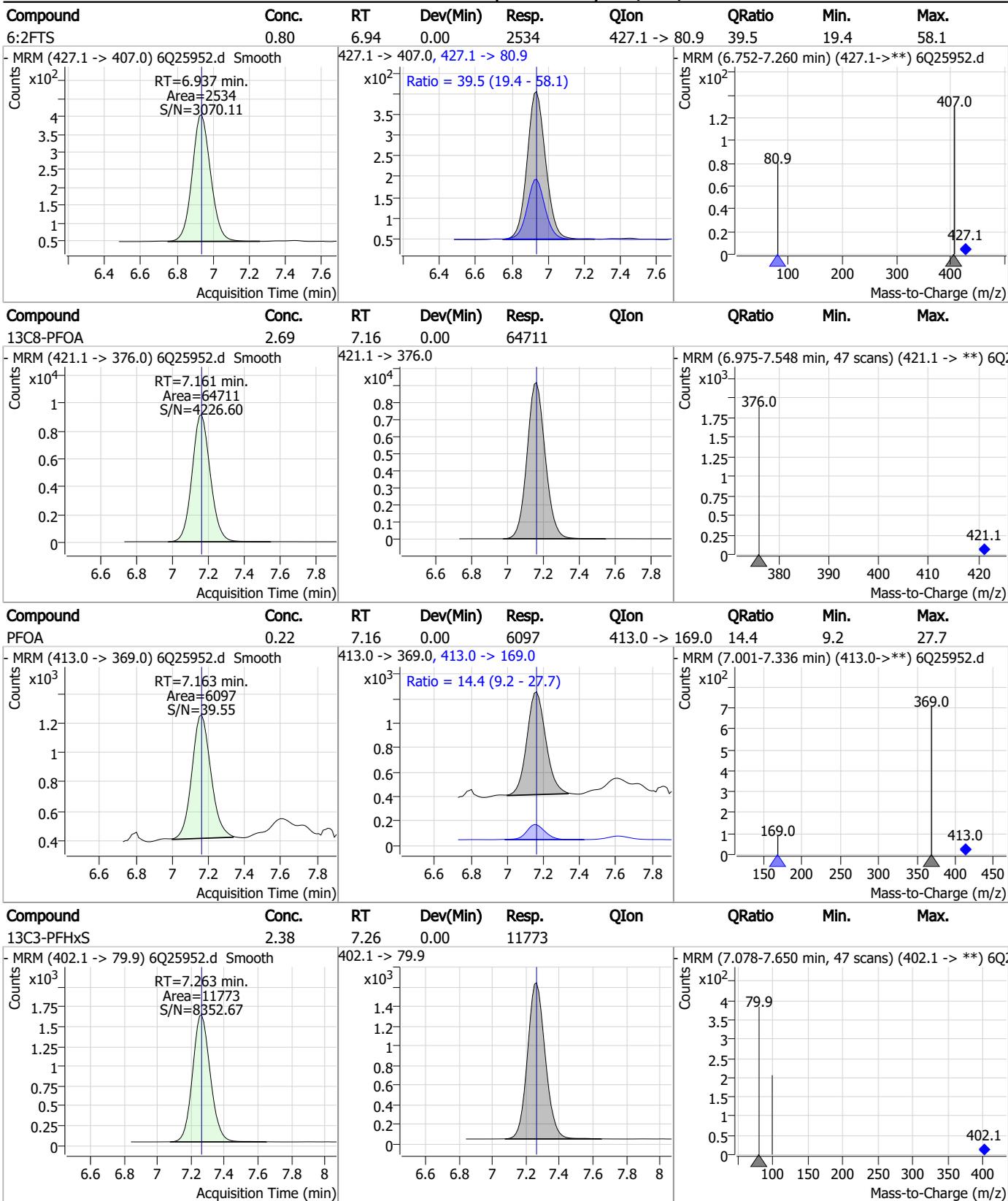
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Perfluorinated Compounds by LC/MS/MS



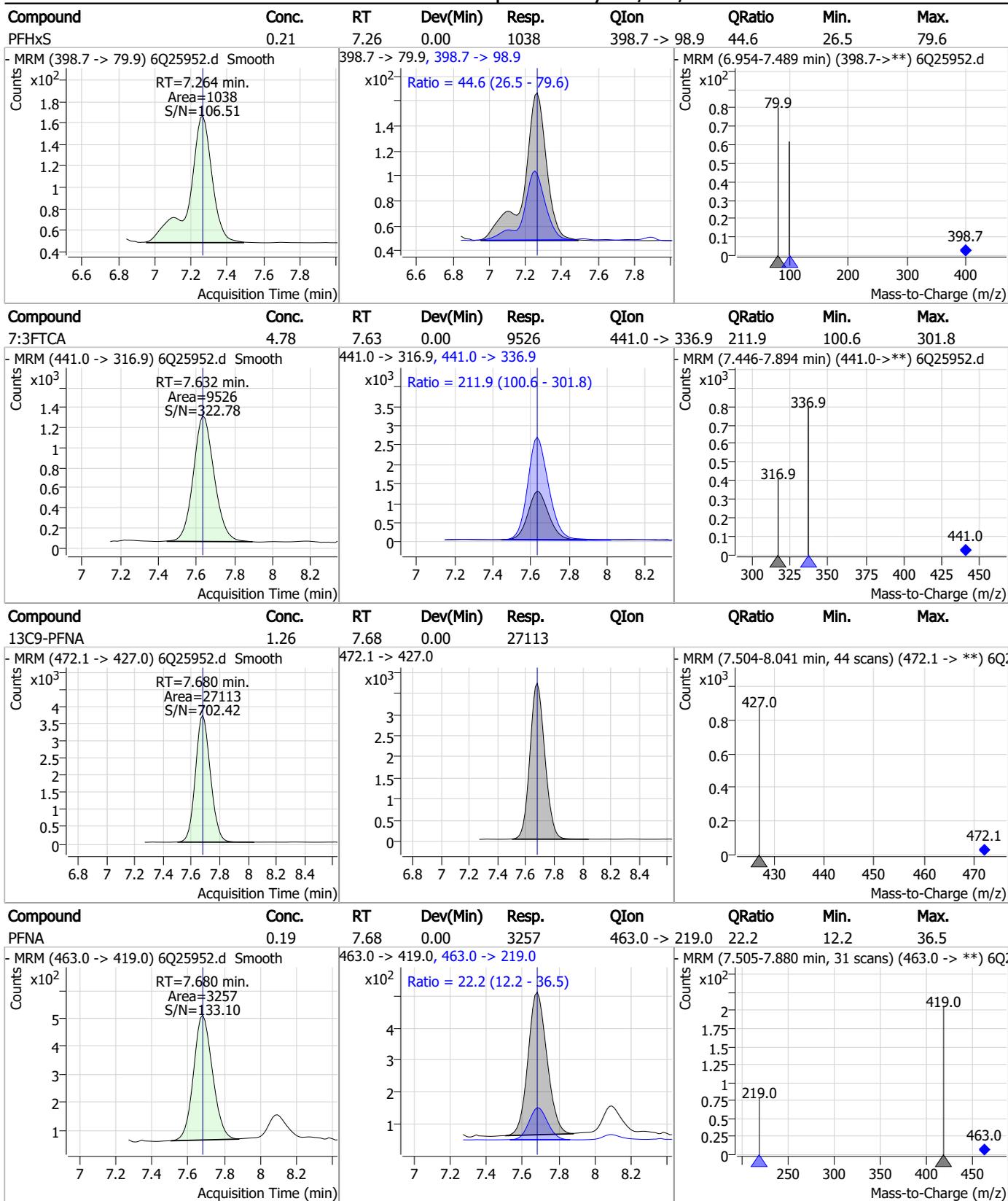
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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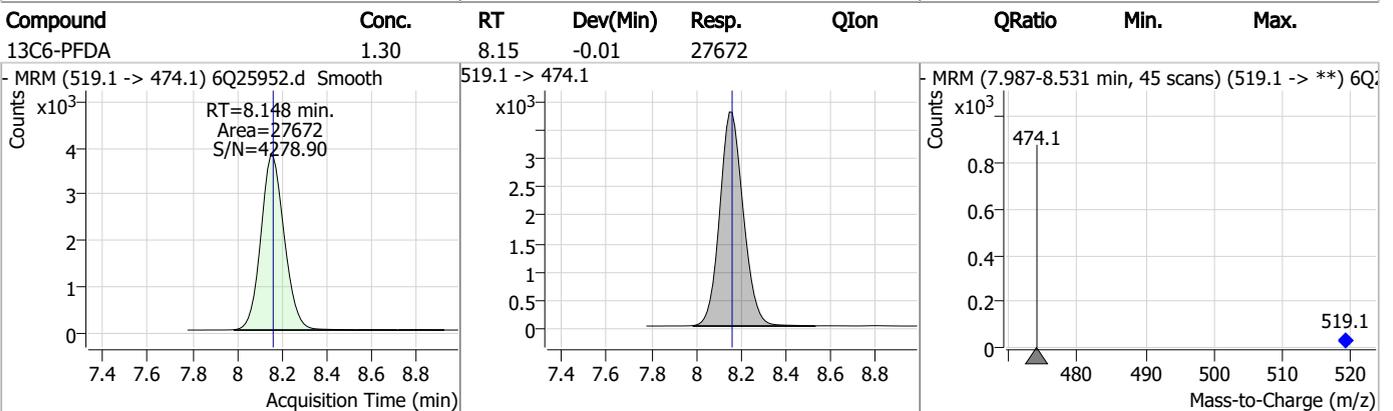
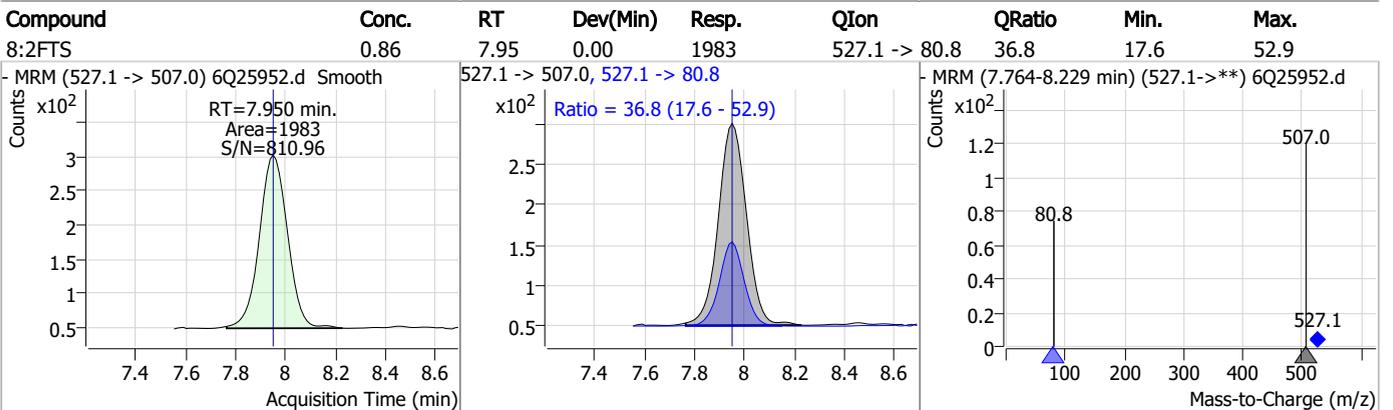
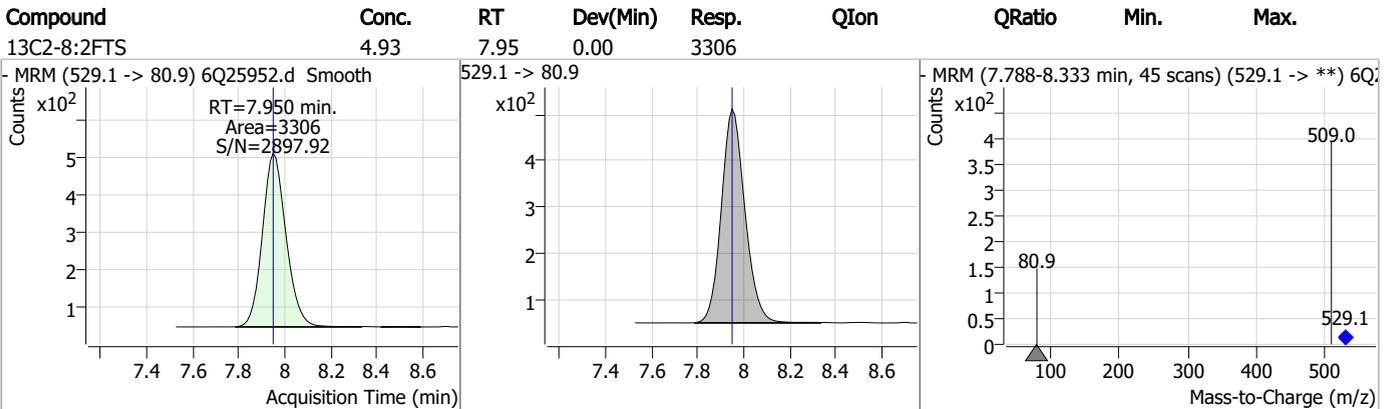
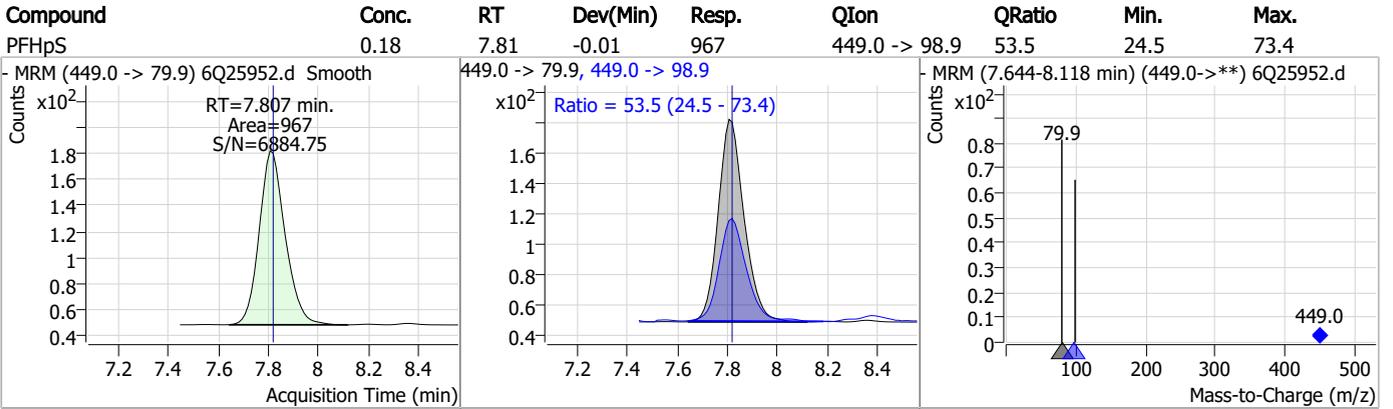
Perfluorinated Compounds by LC/MS/MS



7.7.13
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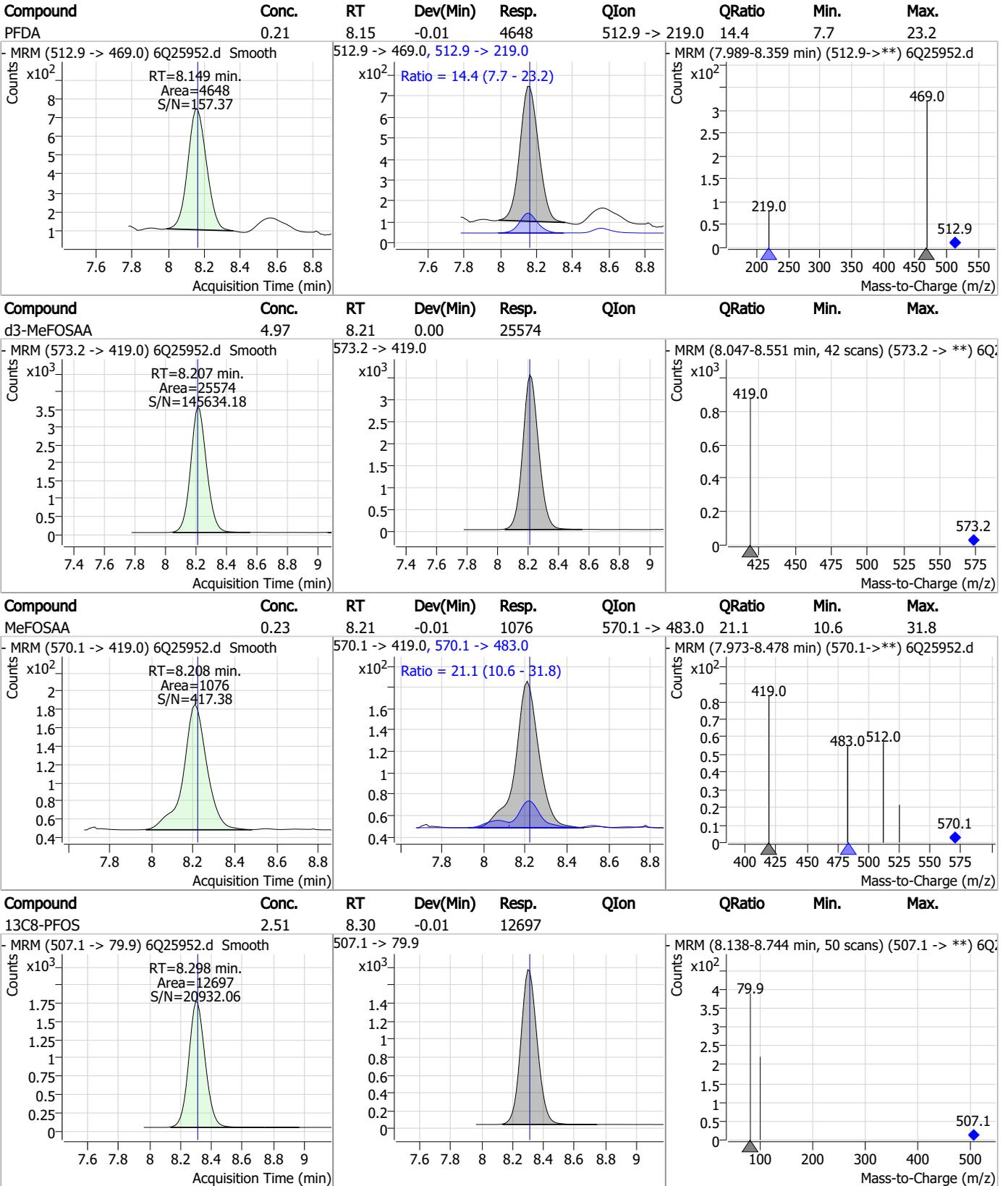
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

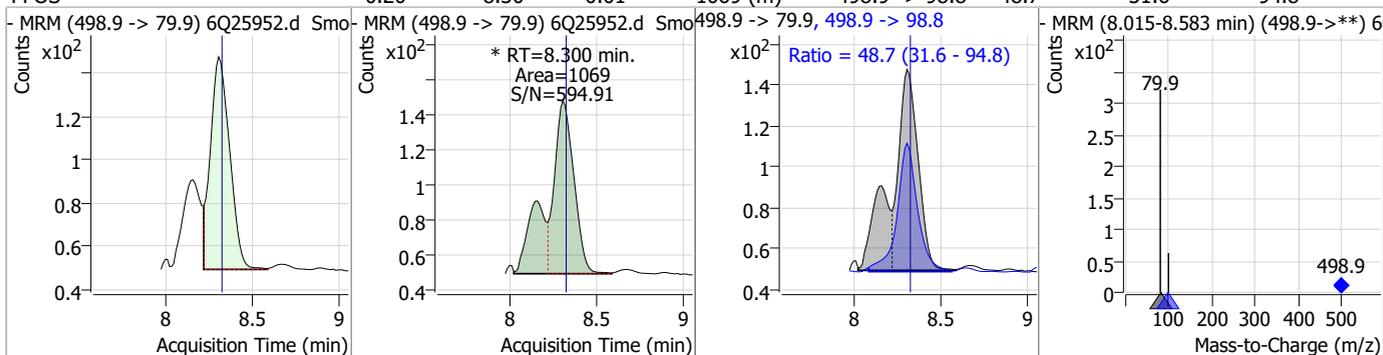


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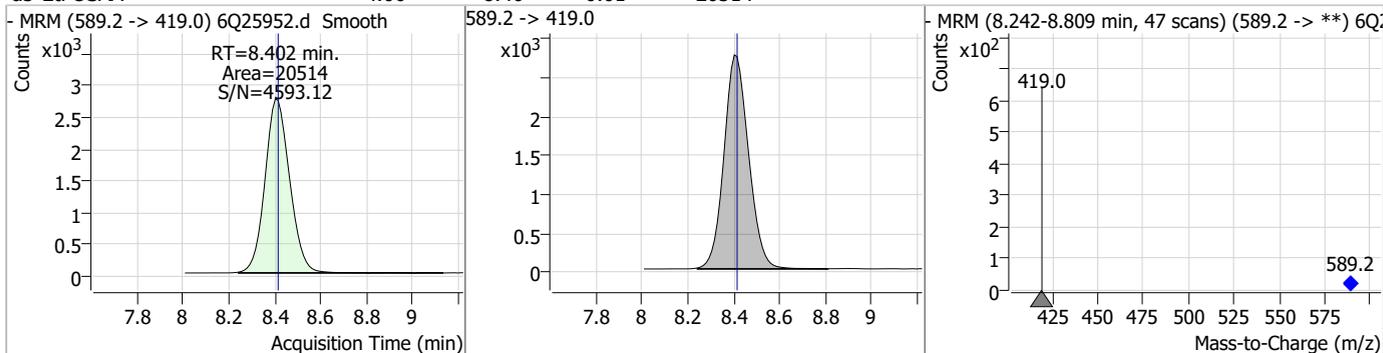
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Perfluorinated Compounds by LC/MS/MS

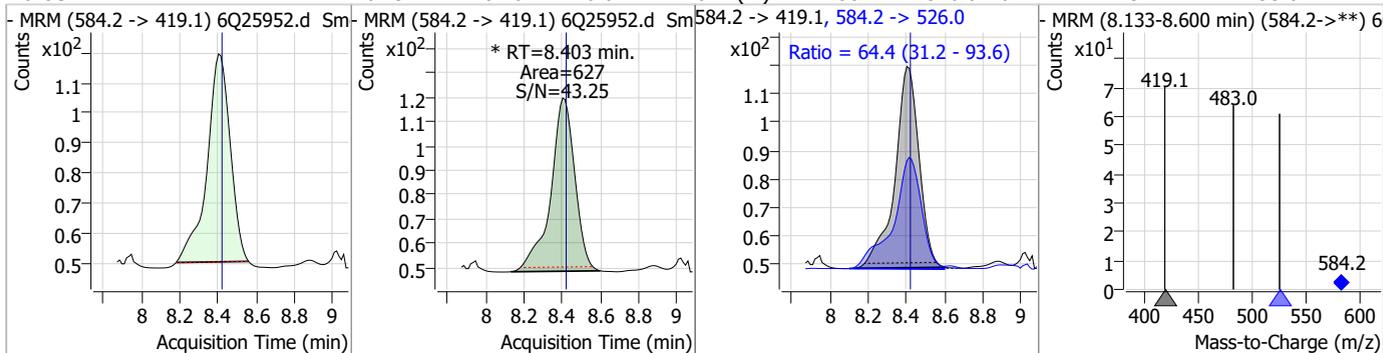
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.20	8.30	-0.01	1069 (m)	498.9 -> 98.8	48.7	31.6	94.8



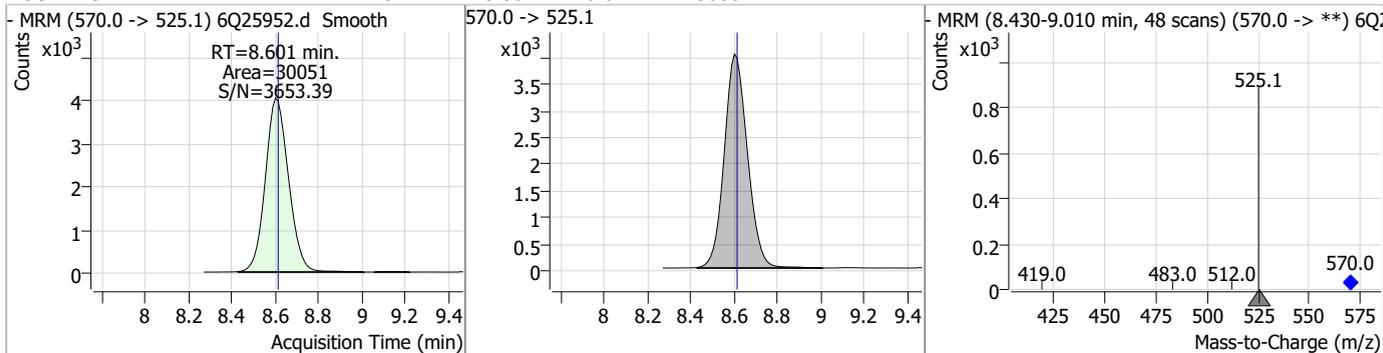
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.66	8.40	-0.01	20514				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.19	8.40	-0.01	627 (m)	584.2 -> 526.0	64.4	31.2	93.6

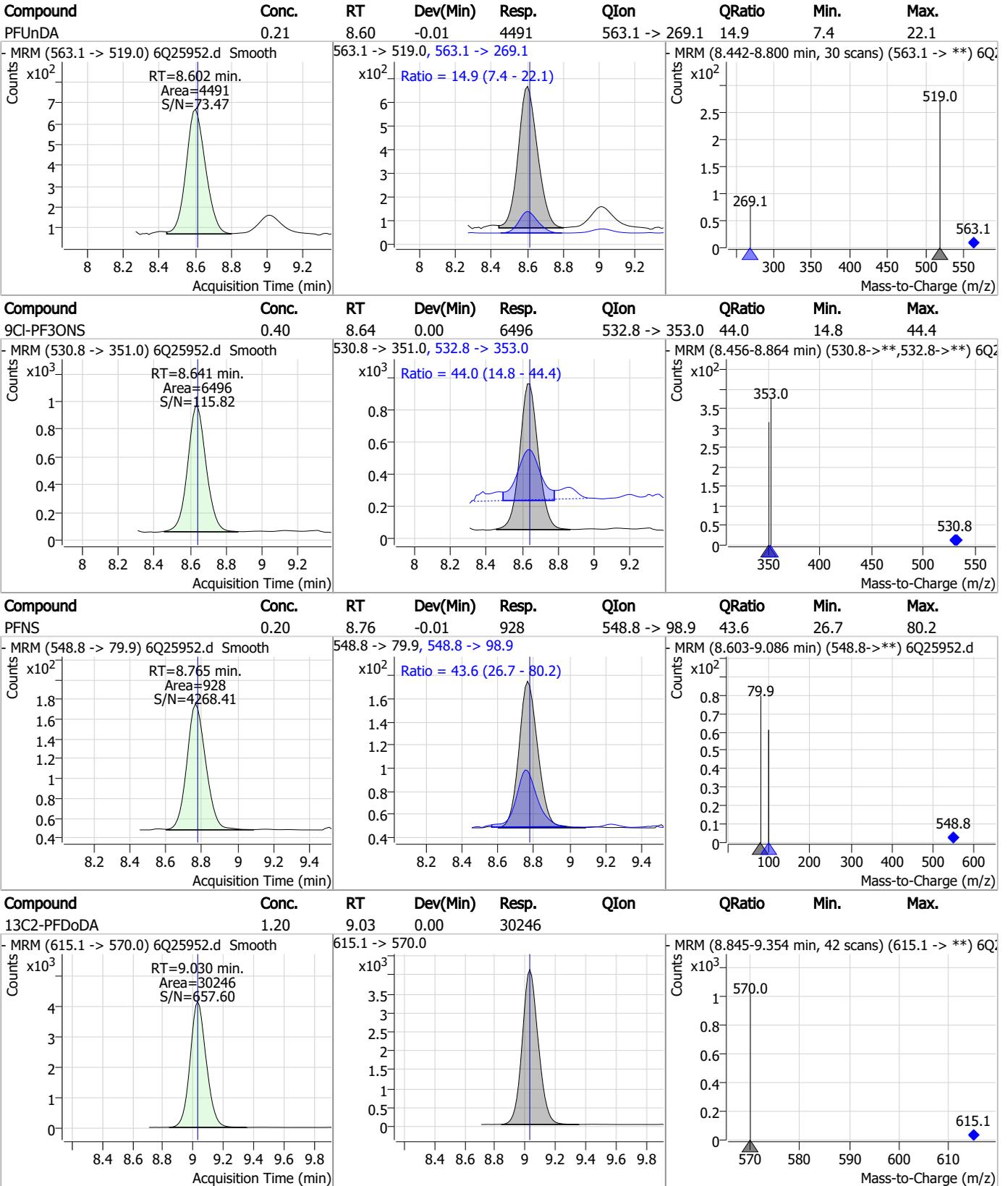


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.60	-0.01	30051				



7.7.13
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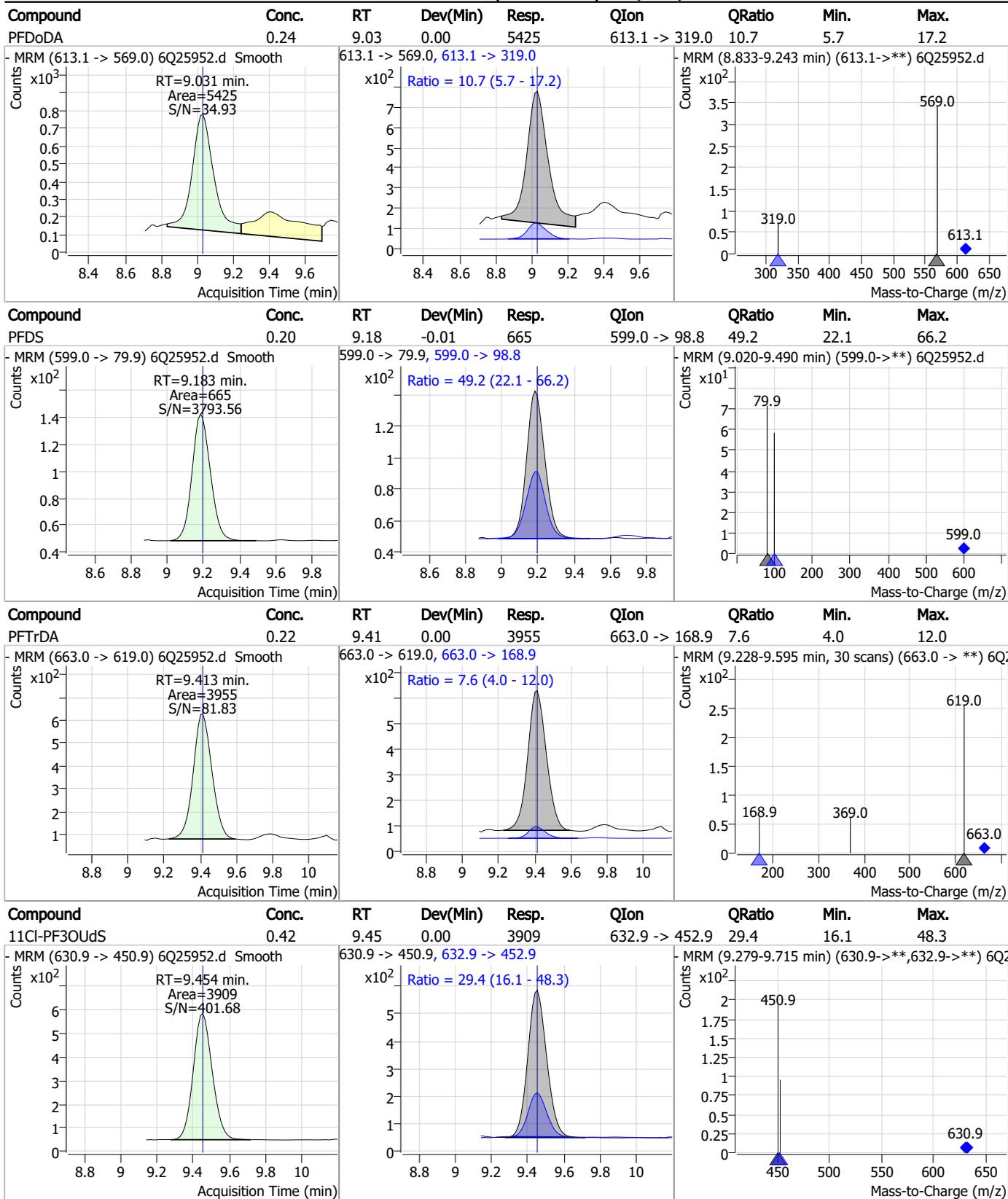
Perfluorinated Compounds by LC/MS/MS



7.7.13 7

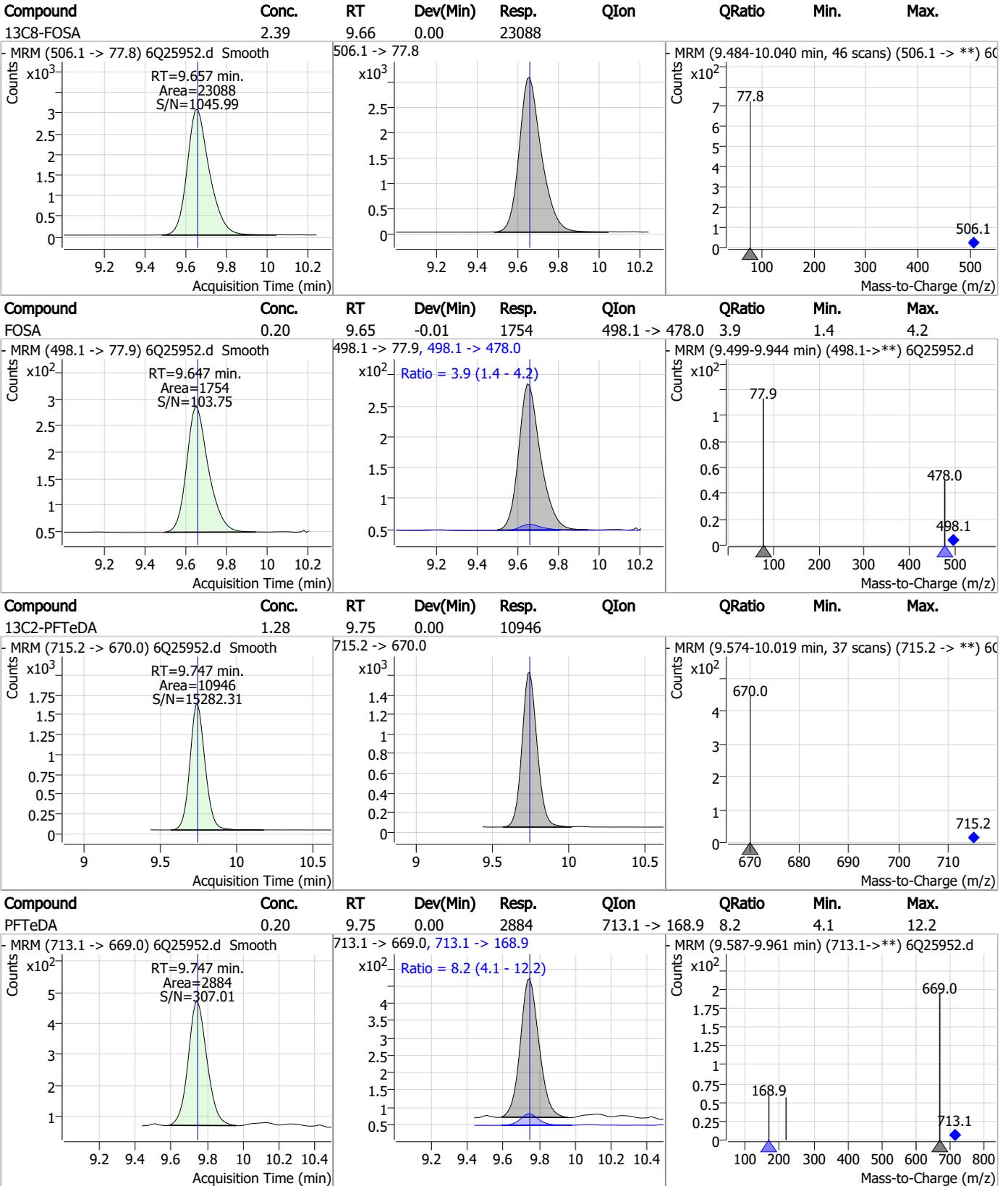


Perfluorinated Compounds by LC/MS/MS



7.7.13
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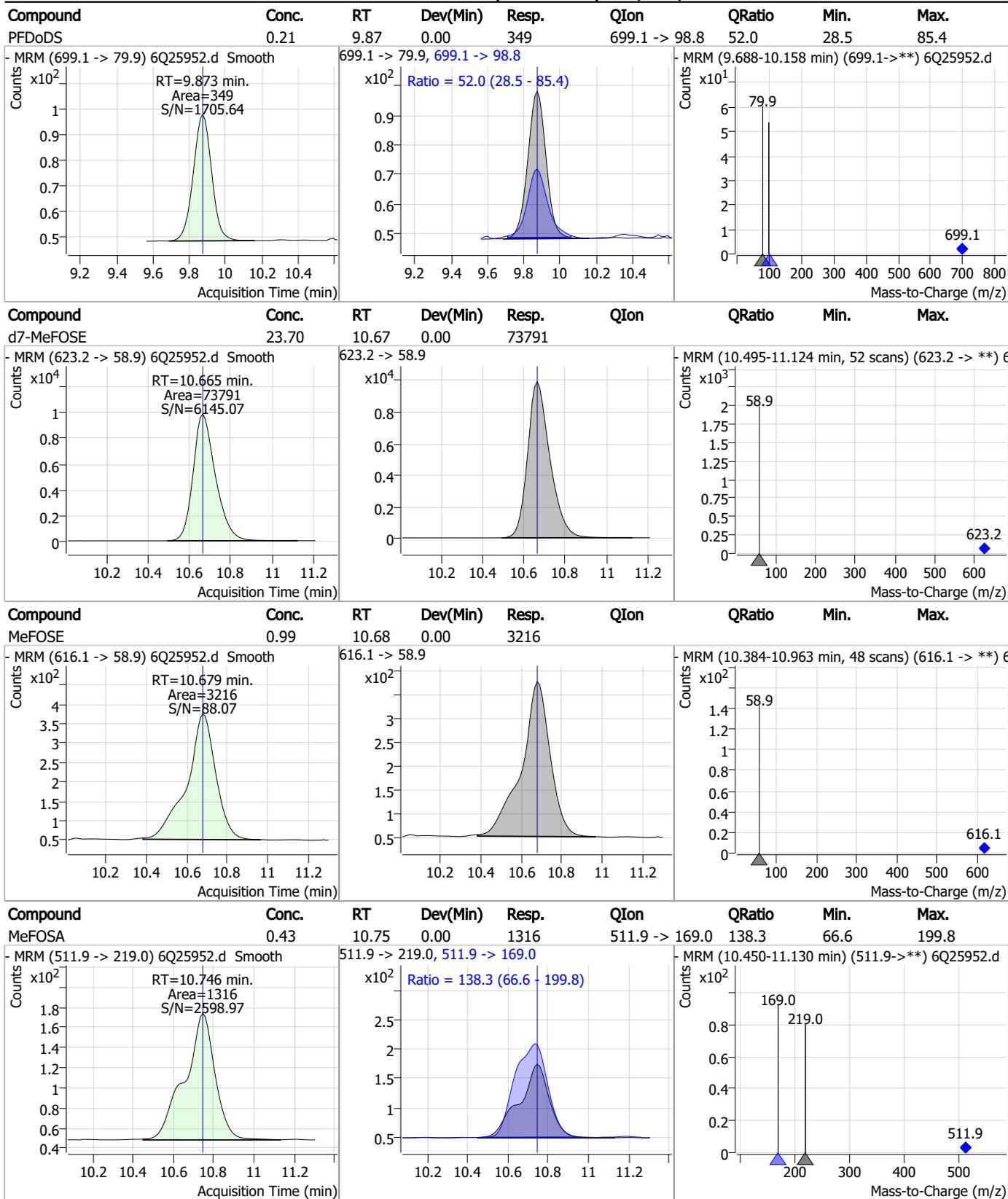
Perfluorinated Compounds by LC/MS/MS



7.7.13 7

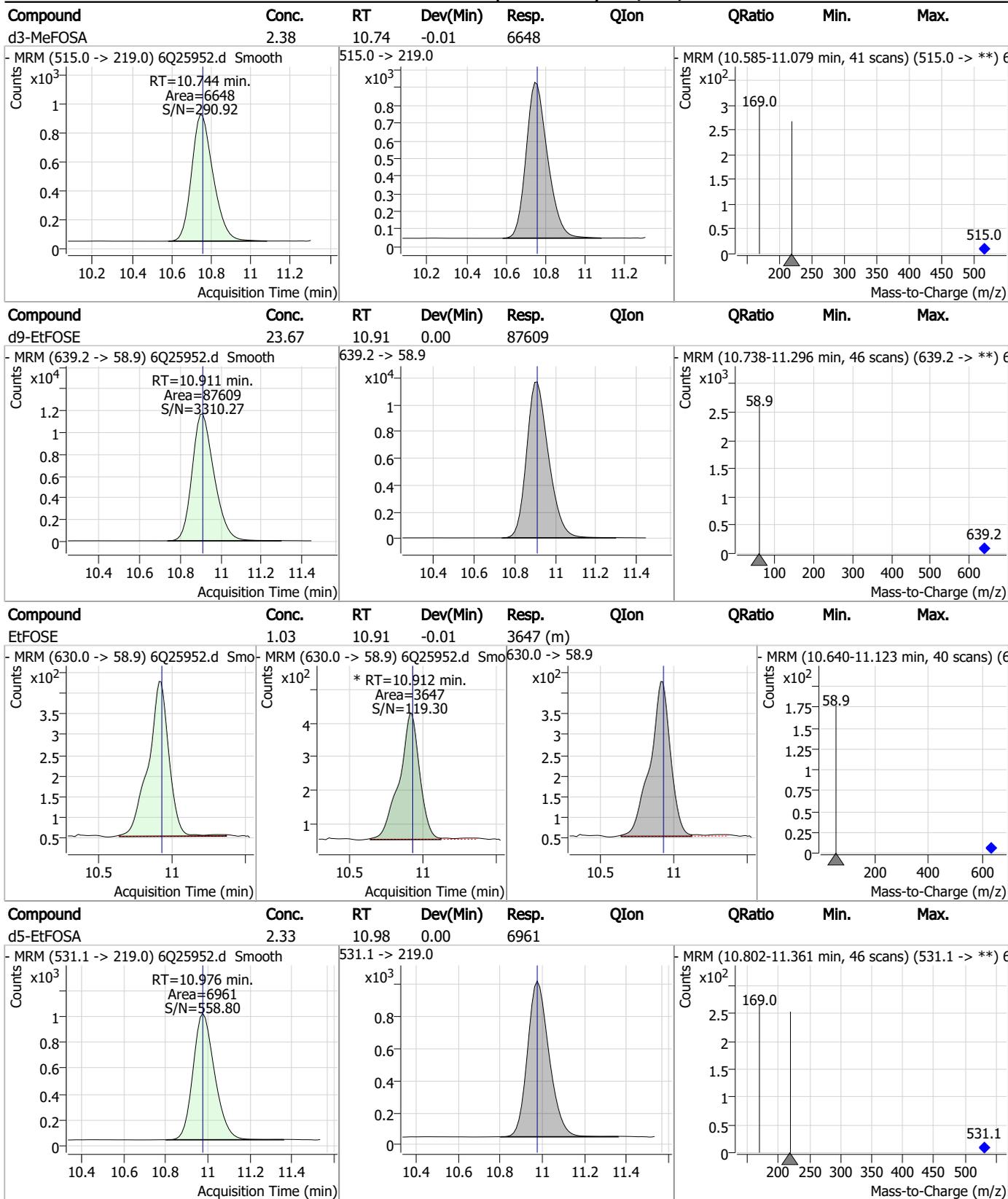


Perfluorinated Compounds by LC/MS/MS



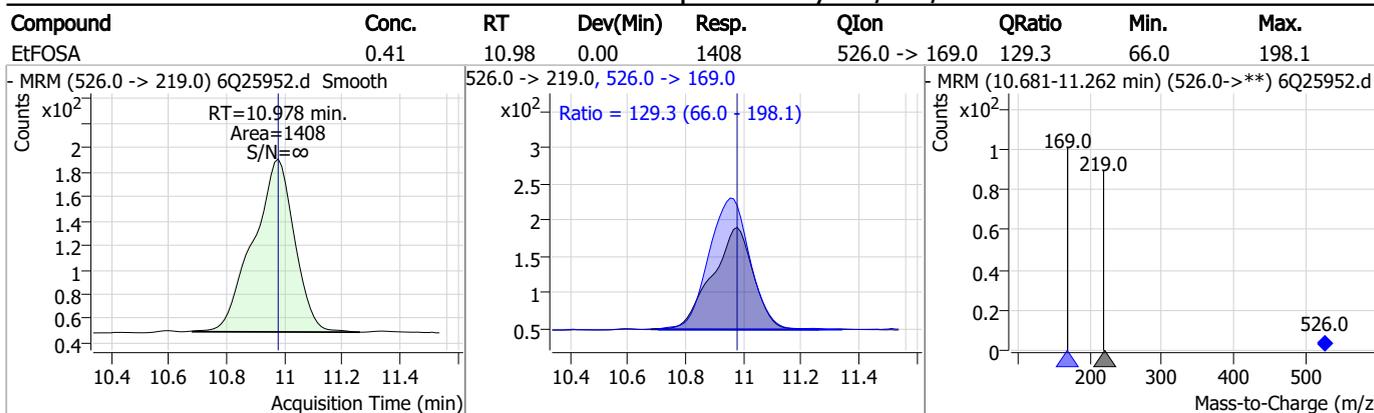
7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS



7.7.13
7

Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25952.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 17:55 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak
EtFOSAA	2991-50-6		8.40	Split peak
EtFOSE	1691-99-2		10.91	Split peak

7.7.13.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q25961.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/8/2023 8:04:13 PM
 Sample Name : cc367-4
 Vial : P1-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99081,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	154271	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	54483	5.00 µg/L	0.000
M5-PFHxA	5.592	318.0 -> 273.0	48374	2.50 µg/L	0.012
M4-PFHpA	6.532	367.1 -> 322.0	46909	2.50 µg/L	0.012
M8-PFOA	7.161	421.1 -> 376.0	62092	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	26896	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27334	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	28579	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30724	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10651	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	22971	2.50 µg/L	0.000
M3-PFBS	5.510	302.1 -> 79.9	21825	2.50 µg/L	0.012
M3-PFHxS	7.264	402.1 -> 79.9	12185	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12641	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2278	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3289	5.00 µg/L	0.000
M2-8:2FTS	7.962	529.1 -> 80.9	3424	5.00 µg/L	0.012
M3-MeFOSAA	8.207	573.2 -> 419.0	25803	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	31941	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	20670	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	76675	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	90202	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7273	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6437	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	11594	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	64019	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7524	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	74534	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	26072	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	25483	1.25 µg/L	0.000
13C2-PFHxA	5.593	315.1 -> 270.0	46766	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2278	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3289	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-8:2FTS	7.962	529.1 -> 80.9	3424	5.27 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30724	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 94.6%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10651	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C3-PFBS	5.510	302.1 -> 79.9	21825	2.56 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C3-PFHxS	7.264	402.1 -> 79.9	12185	2.55 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFBA	2.947	216.8 -> 171.9	154271	9.98 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.532	367.1 -> 322.0	46909	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C5-PFHxA	5.592	318.0 -> 273.0	48374	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C5-PFPeA	4.372	268.3 -> 223.0	54483	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C6-PFDA	8.161	519.1 -> 474.1	27334	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C7-PFUnDA	8.601	570.0 -> 525.1	28579	1.20 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C8-FOSA	9.657	506.1 -> 77.8	22971	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C8-PFOA	7.161	421.1 -> 376.0	62092	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C8-PFOS	8.311	507.1 -> 79.9	12641	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C9-PFNA	7.680	472.1 -> 427.0	26896	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25803	5.06 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	31941	9.79 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
d3-MeFOSA	10.744	515.0 -> 219.0	6437	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
d5-EtFOSAA	8.415	589.2 -> 419.0	20670	4.73 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
d7-MeFOSE	10.666	623.2 -> 58.9	76675	24.83 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d9-EtFOSE	10.911	639.2 -> 58.9	90202	24.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d5-EtFOSA	10.976	531.1 -> 219.0	7273	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
Target Compounds					QValue
4:2FTS	5.268	327.1 -> 307.0	33482	8.86 µg/L	96
		327.1 -> 80.9	13787		
6:2FTS	6.937	427.1 -> 407.0	27143	9.08 µg/L	92
		427.1 -> 80.9	11755		
8:2FTS	7.950	527.1 -> 507.0	23117	9.69 µg/L	100
		527.1 -> 80.8	8109		
EtFOSAA	8.416	584.2 -> 419.1	8680	2.58 µg/L	96
		584.2 -> 526.0	5154		
FOSA	9.660	498.1 -> 77.9	20543	2.34 µg/L	99
		498.1 -> 478.0	638		
MeFOSAA	8.220	570.1 -> 419.0	10936	2.27 µg/L	96
		570.1 -> 483.0	2530		
PFBA	2.956	212.8 -> 168.9	55785	9.71 µg/L	100
PFBS	5.511	298.7 -> 79.9	14141	2.16 µg/L	99
		298.7 -> 98.8	5300		
PFDA	8.161	512.9 -> 469.0	51727	2.42 µg/L	99
		512.9 -> 219.0	8096		
PFDoDA	9.031	613.1 -> 569.0	59741	2.62 µg/L	98
		613.1 -> 319.0	7353		
PFDS	9.183	599.0 -> 79.9	6988	2.16 µg/L	91

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.532	599.0 -> 98.8	3486	2.42	µg/L	100
		363.1 -> 319.0	61708			
PFHpS	7.819	363.1 -> 169.0	9088	2.25	µg/L	96
		449.0 -> 79.9	11762			
PFHxA	5.594	449.0 -> 98.9	5397	2.56	µg/L	99
		313.0 -> 269.0	44297			
PFHxS	7.264	313.0 -> 118.9	2096	2.15	µg/L	95
		398.7 -> 79.9	10964			
PFNA	7.680	398.7 -> 98.9	5437	2.52	µg/L	96
		463.0 -> 419.0	41810			
PFNS	8.765	463.0 -> 219.0	9349	2.16	µg/L	99
		548.8 -> 79.9	9947			
PFOA	7.163	548.8 -> 98.9	5259	2.40	µg/L	97
		413.0 -> 369.0	63917			
PFOS	8.300	413.0 -> 169.0	11107	2.05	µg/L	84
		498.9 -> 79.9	11094			
PFPeA	4.374	498.9 -> 98.8	5648	4.77	µg/L	100
		263.0 -> 219.0	56111			
PFPeS	6.571	349.1 -> 79.9	15222	2.31	µg/L	98
		349.1 -> 98.9	6840			
PFTeDA	9.747	713.1 -> 669.0	32799	2.37	µg/L	99
		713.1 -> 168.9	2509			
PFTrDA	9.413	663.0 -> 619.0	45549	2.54	µg/L	100
		663.0 -> 168.9	3660			
PFUnDA	8.614	563.1 -> 519.0	49203	2.44	µg/L	95
		563.1 -> 269.1	8210			
11CI-PF3OUdS	9.454	630.9 -> 450.9	45568	4.81	µg/L	95
		632.9 -> 452.9	13449			
9CI-PF3ONS	8.641	530.8 -> 351.0	76831	4.57	µg/L	93
		532.8 -> 353.0	25619			
ADONA	6.780	376.9 -> 250.9	207867	4.74	µg/L	97
		376.9 -> 84.8	53674			
HFPO-DA	5.958	284.9 -> 168.9	15174	4.79	µg/L	99
		284.9 -> 184.9	1869			
3:3FTCA	3.821	241.0 -> 177.0	9789	11.82	µg/L	100
		241.0 -> 117.0	1312			
5:3FTCA	6.233	341.0 -> 237.1	195531	60.31	µg/L	96
		341.0 -> 217.0	146380			
7:3FTCA	7.645	441.0 -> 316.9	123527	62.38	µg/L	93
		441.0 -> 336.9	234492			
EtFOSA	10.978	526.0 -> 219.0	16977	4.76	µg/L	99
		526.0 -> 169.0	22178			
EtFOSE	10.912	630.0 -> 58.9	42517	11.71	µg/L	100
		511.9 -> 219.0	15163			
MeFOSA	10.746	511.9 -> 169.0	21492	5.08	µg/L	93
		616.1 -> 58.9	39366			
MeFOSE	10.679	699.1 -> 79.9	3931	11.62	µg/L	100
		699.1 -> 98.8	1997			
PFDoDS	9.873	295.0 -> 201.0	10750	2.34	µg/L	92
		295.0 -> 84.9	3090			
NFDHA	5.475	279.0 -> 85.1	42869	4.95	µg/L	98
		229.0 -> 84.9	35899			
PFMBA	4.800	314.8 -> 134.9	96256	4.79	µg/L	100
		314.8 -> 82.9	3704			
PFMPA	3.513			4.86	µg/L	100
PFEESA	6.050			4.33	µg/L	99

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

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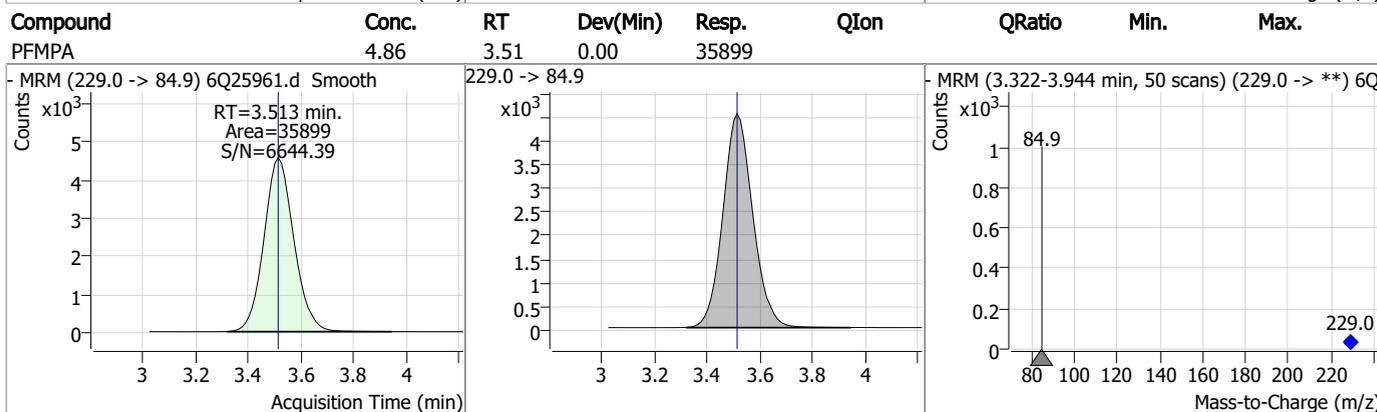
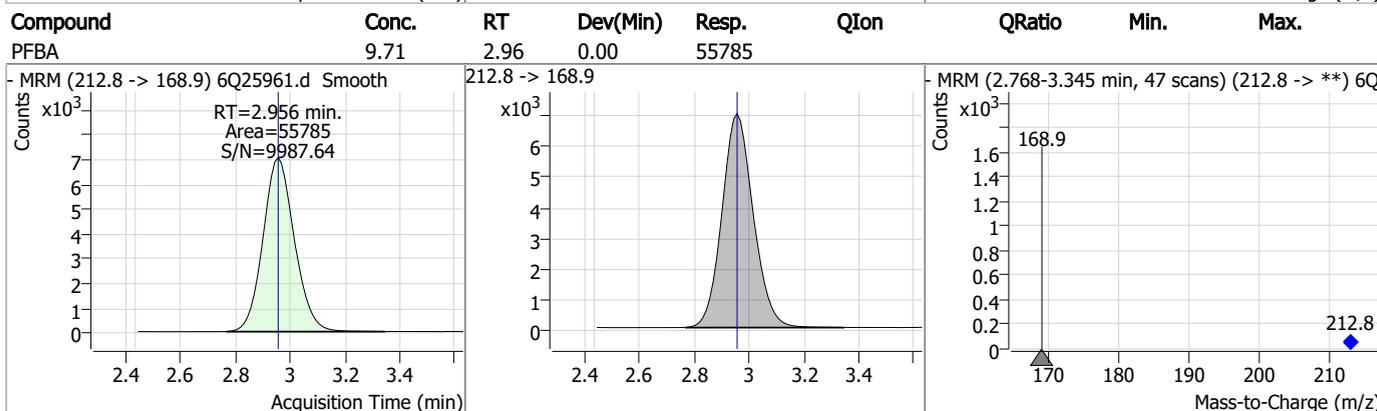
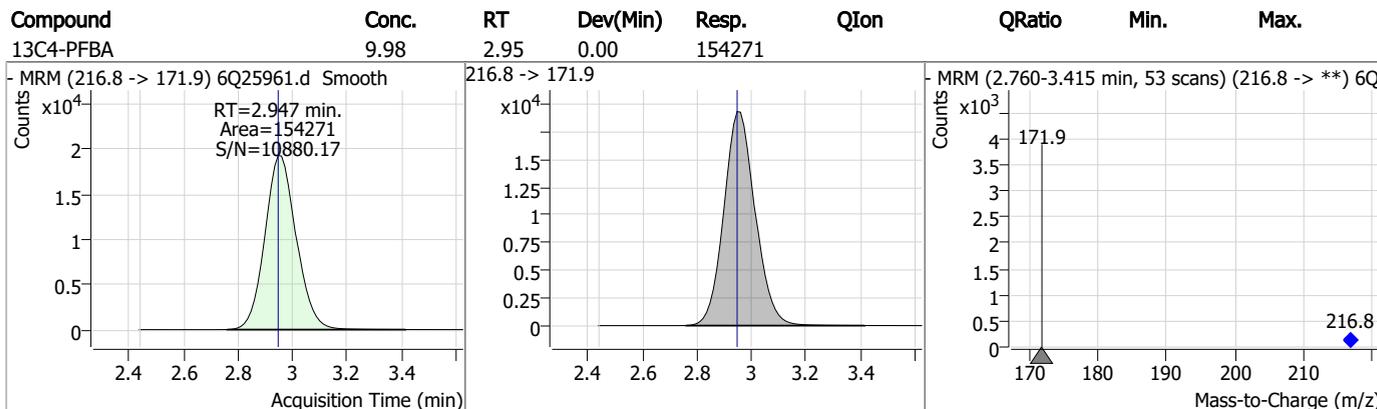
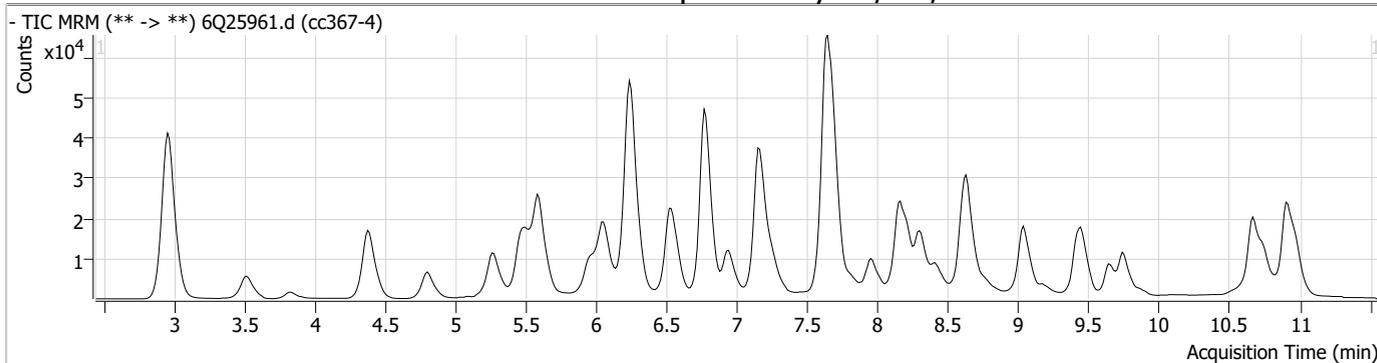
Perfluorinated Compounds by LC/MS/MS

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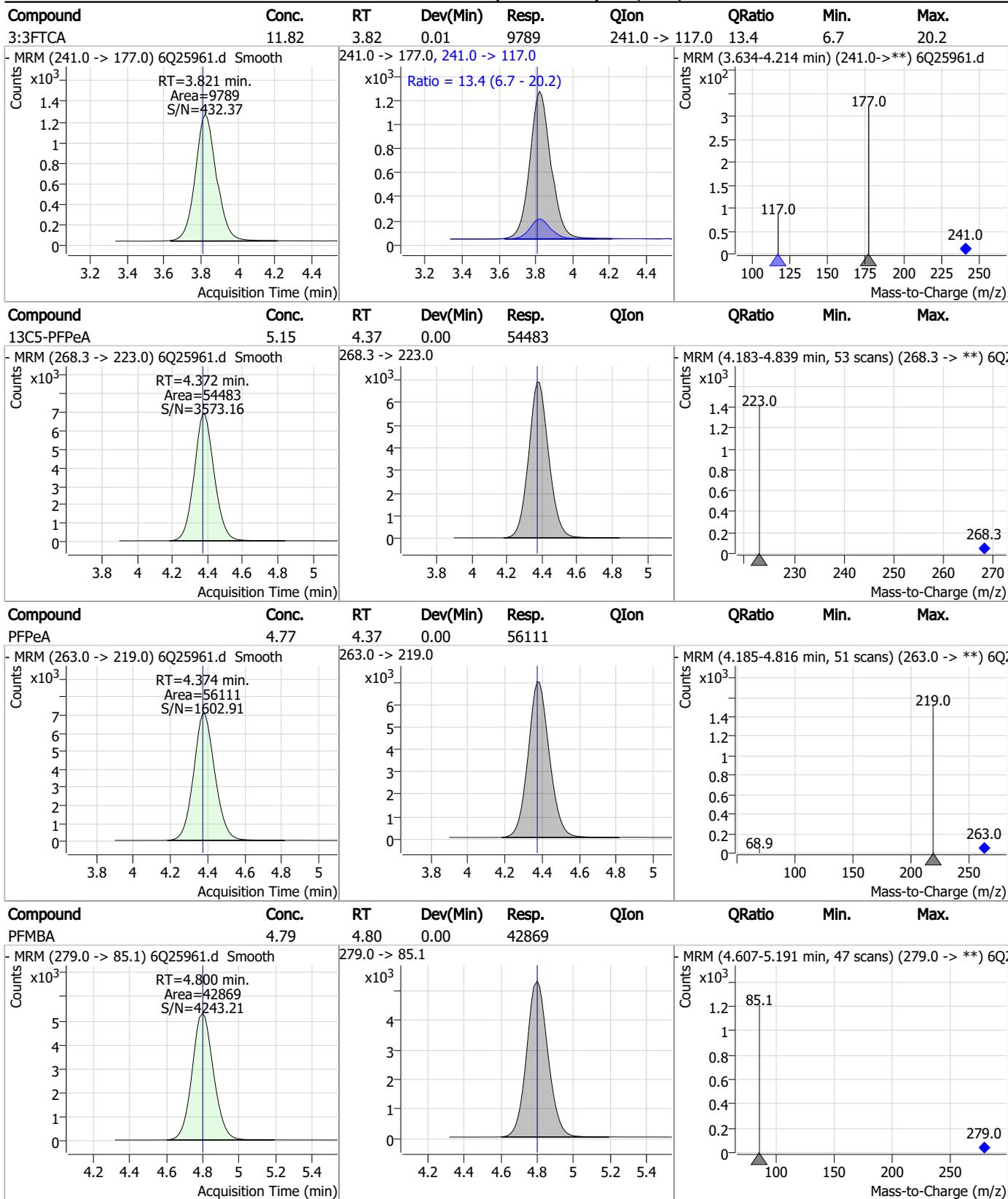
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Perfluorinated Compounds by LC/MS/MS



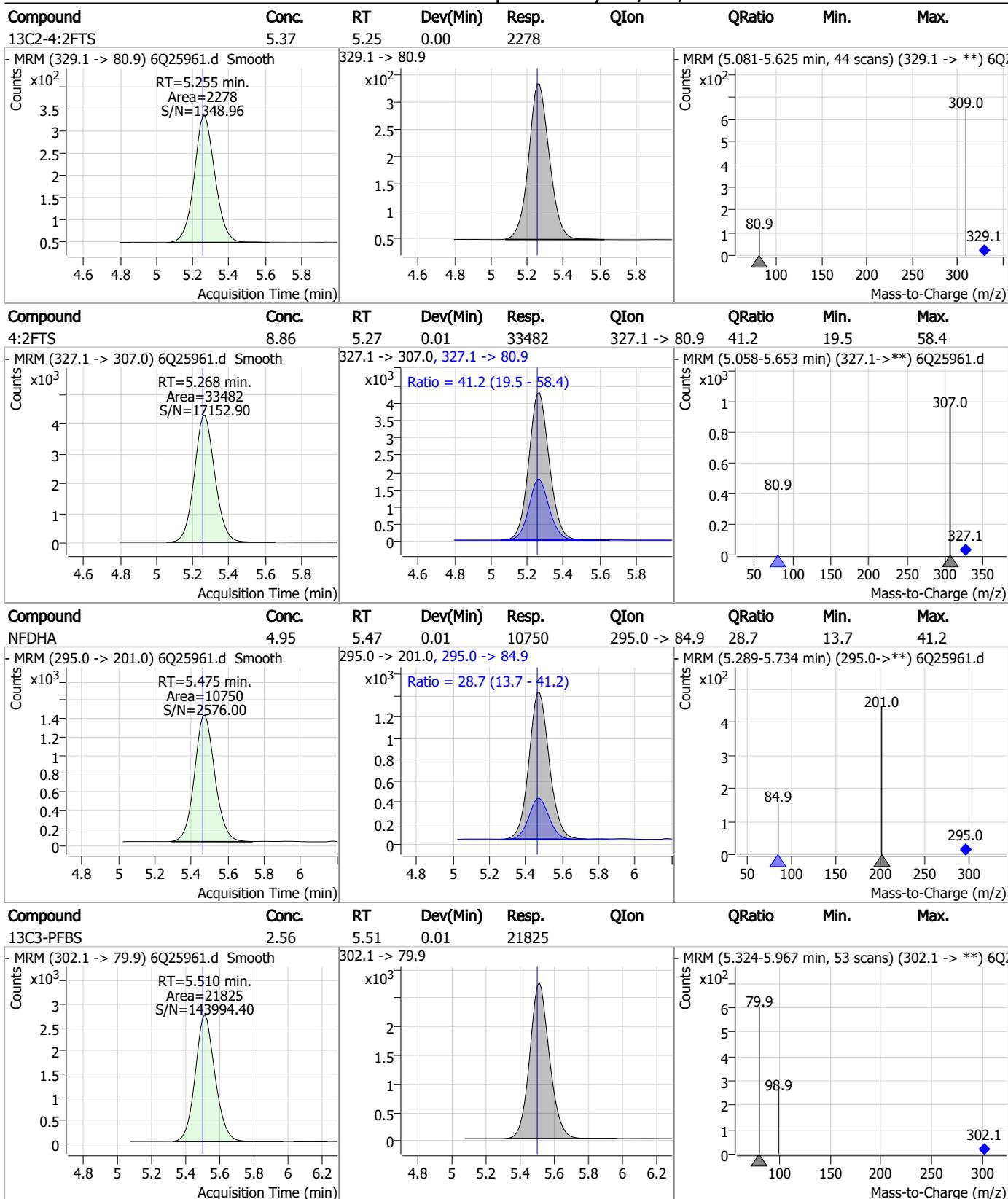
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Perfluorinated Compounds by LC/MS/MS



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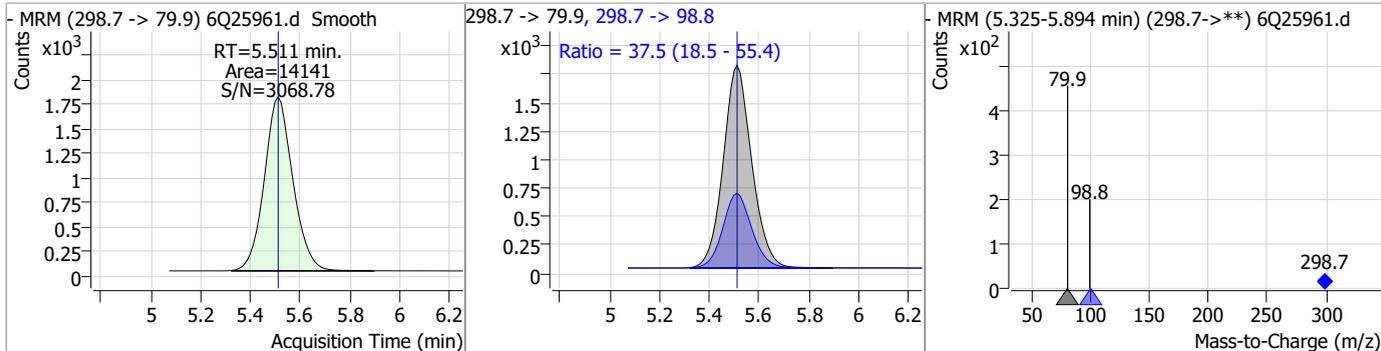
Perfluorinated Compounds by LC/MS/MS



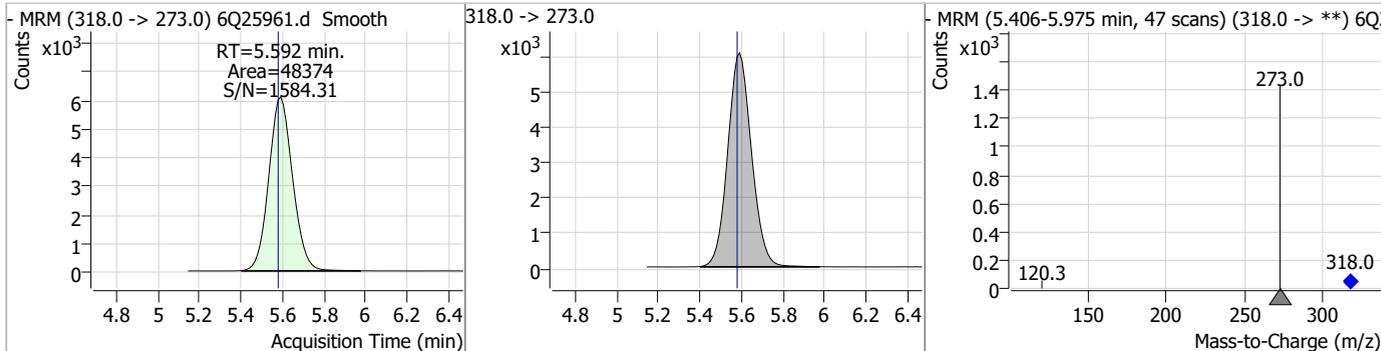
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Perfluorinated Compounds by LC/MS/MS

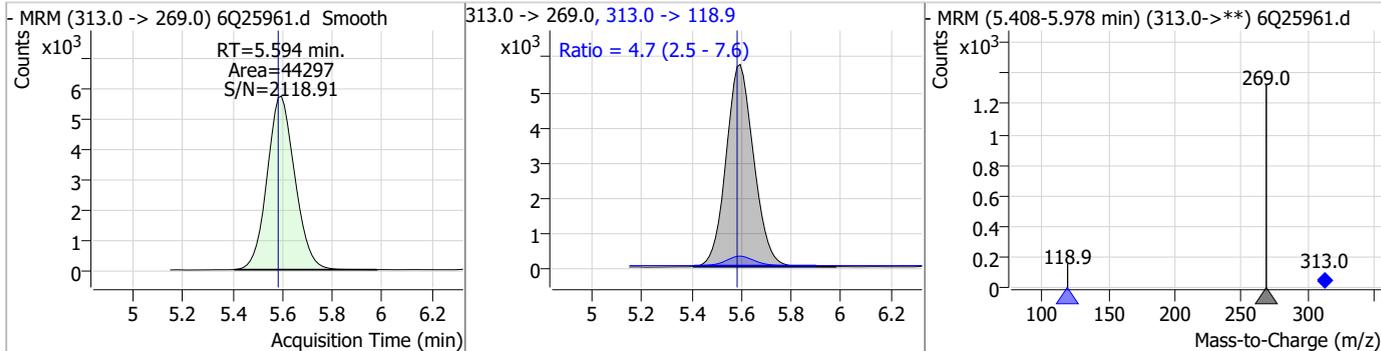
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.16	5.51	0.00	14141	298.7 -> 98.8	37.5	18.5	55.4



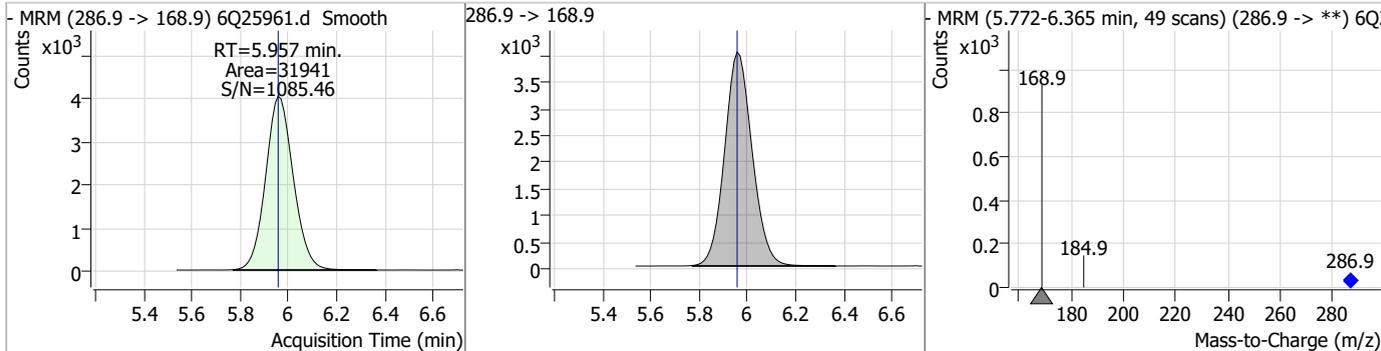
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.50	5.59	0.01	48374				



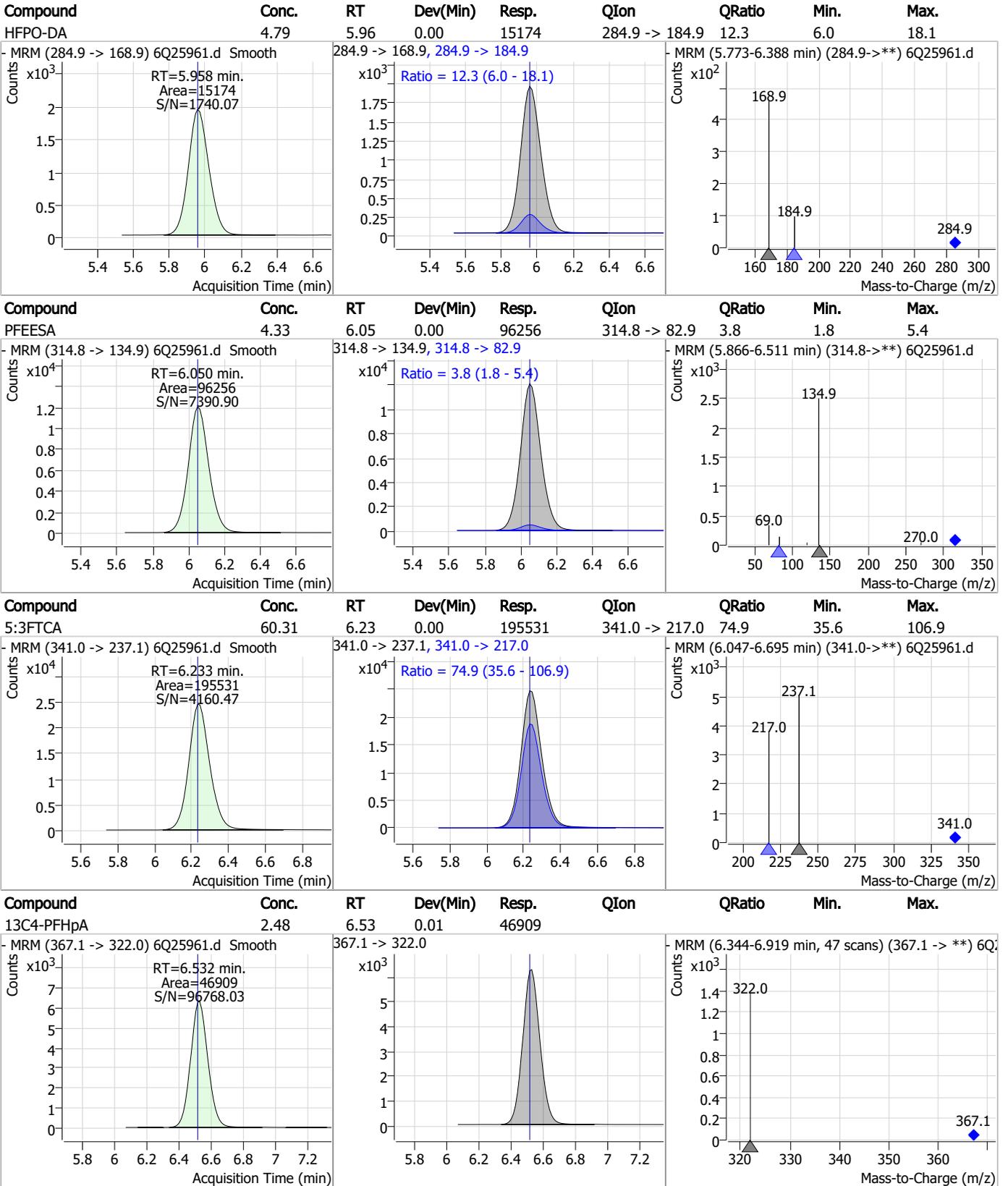
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.56	5.59	0.01	44297	313.0 -> 118.9	4.7	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.79	5.96	0.00	31941				

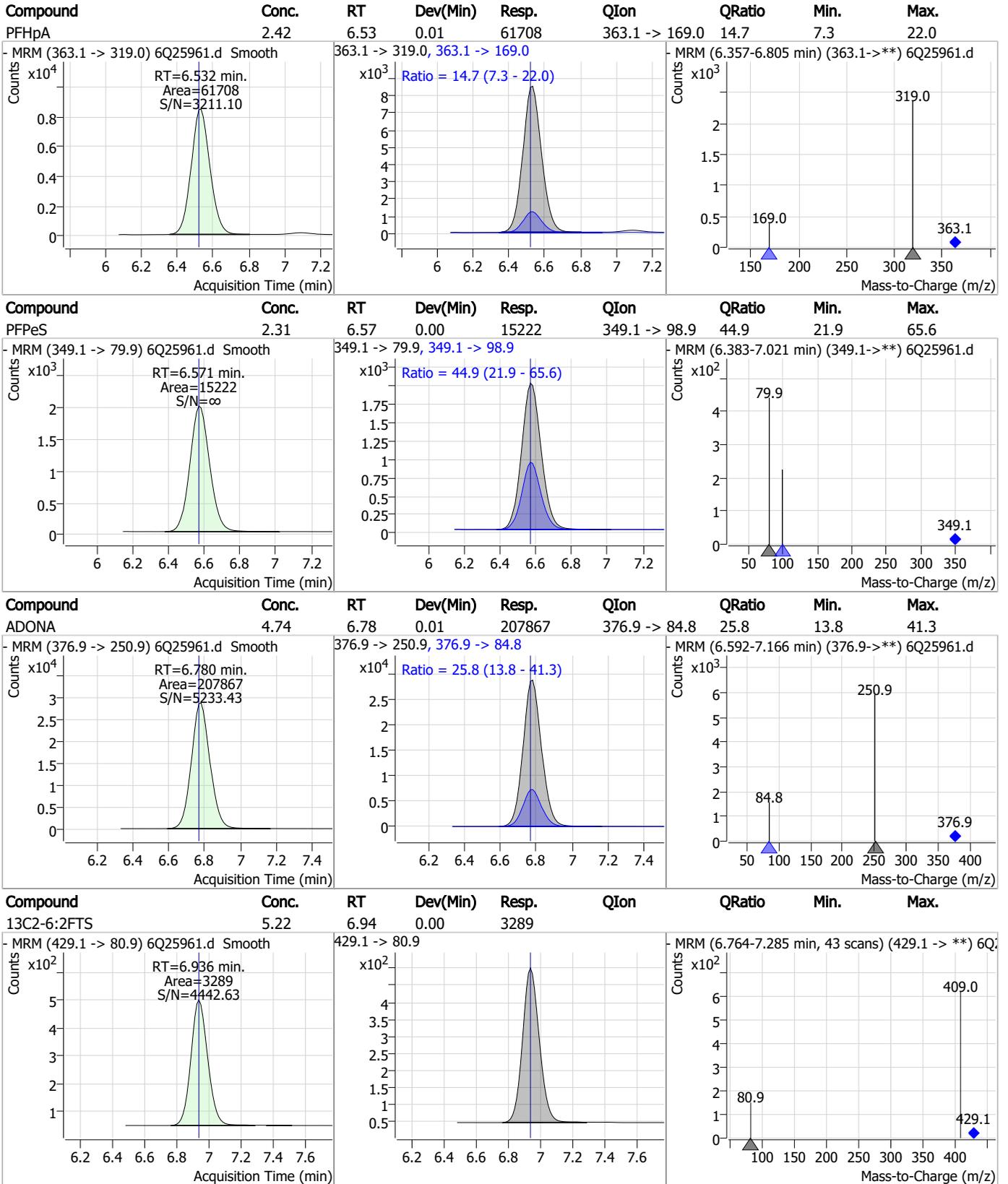


Perfluorinated Compounds by LC/MS/MS



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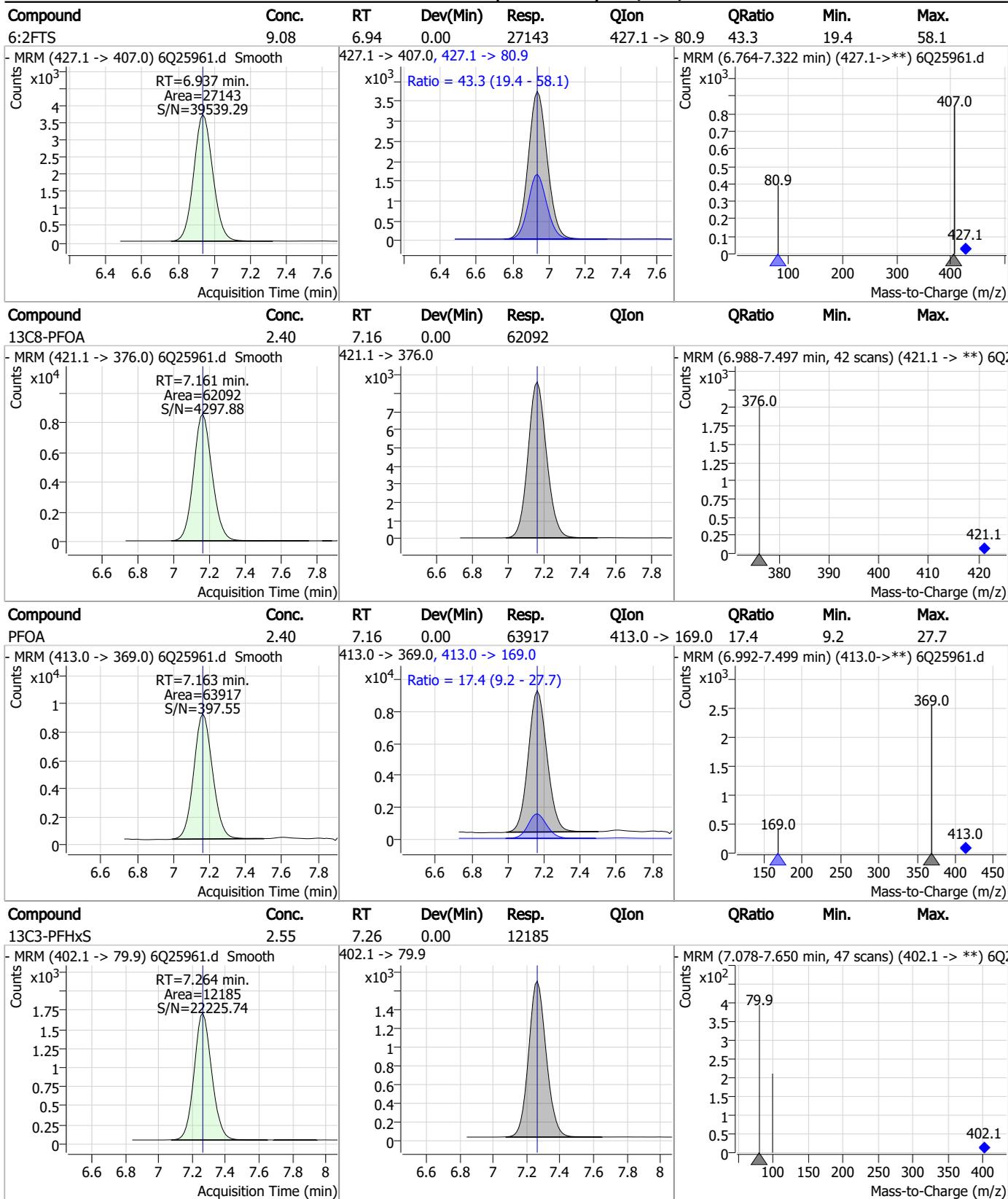
Perfluorinated Compounds by LC/MS/MS



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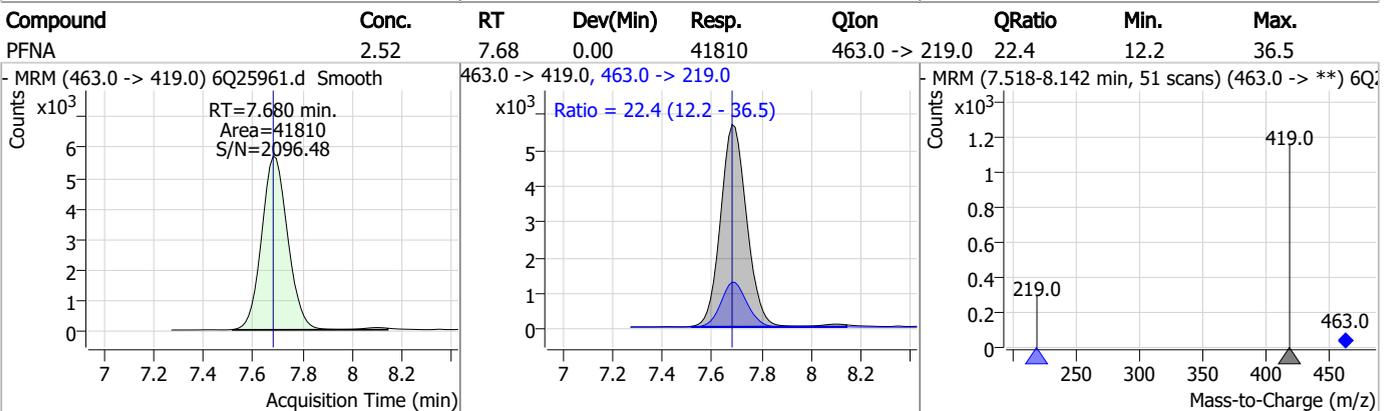
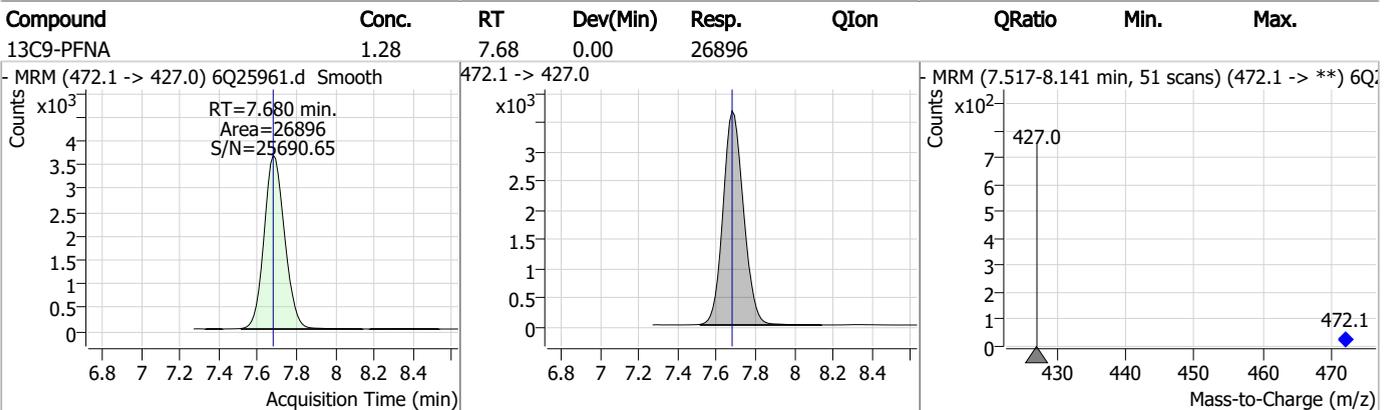
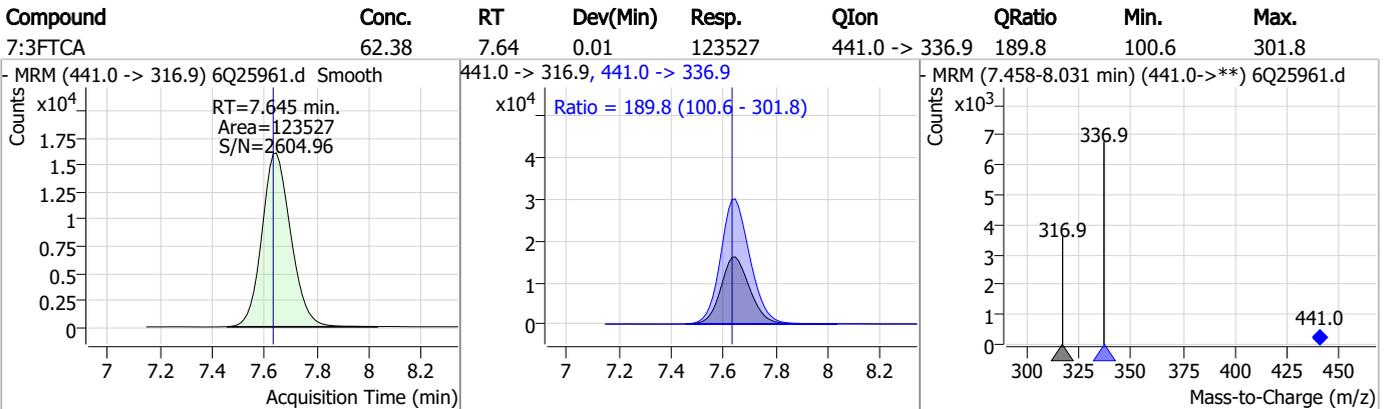
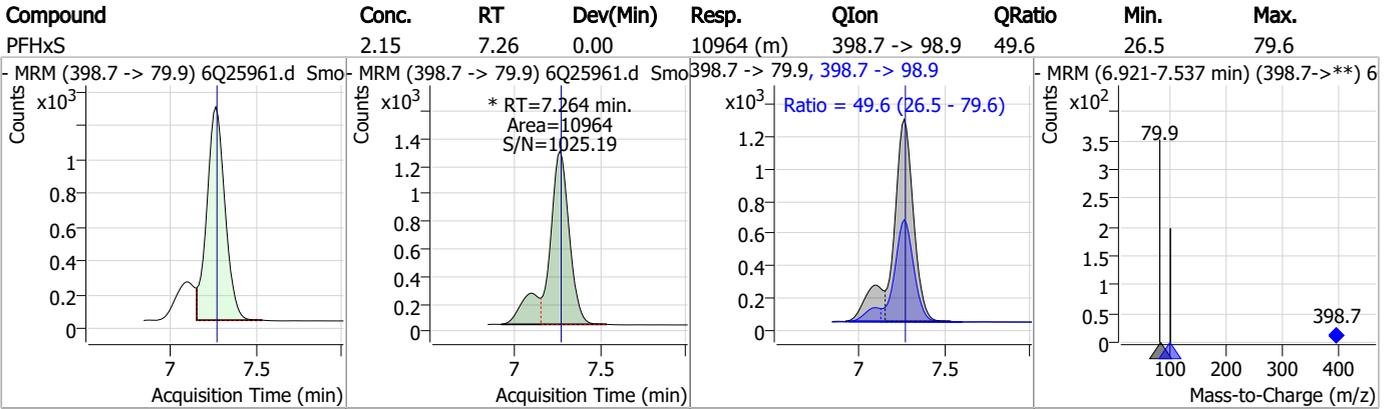


Perfluorinated Compounds by LC/MS/MS



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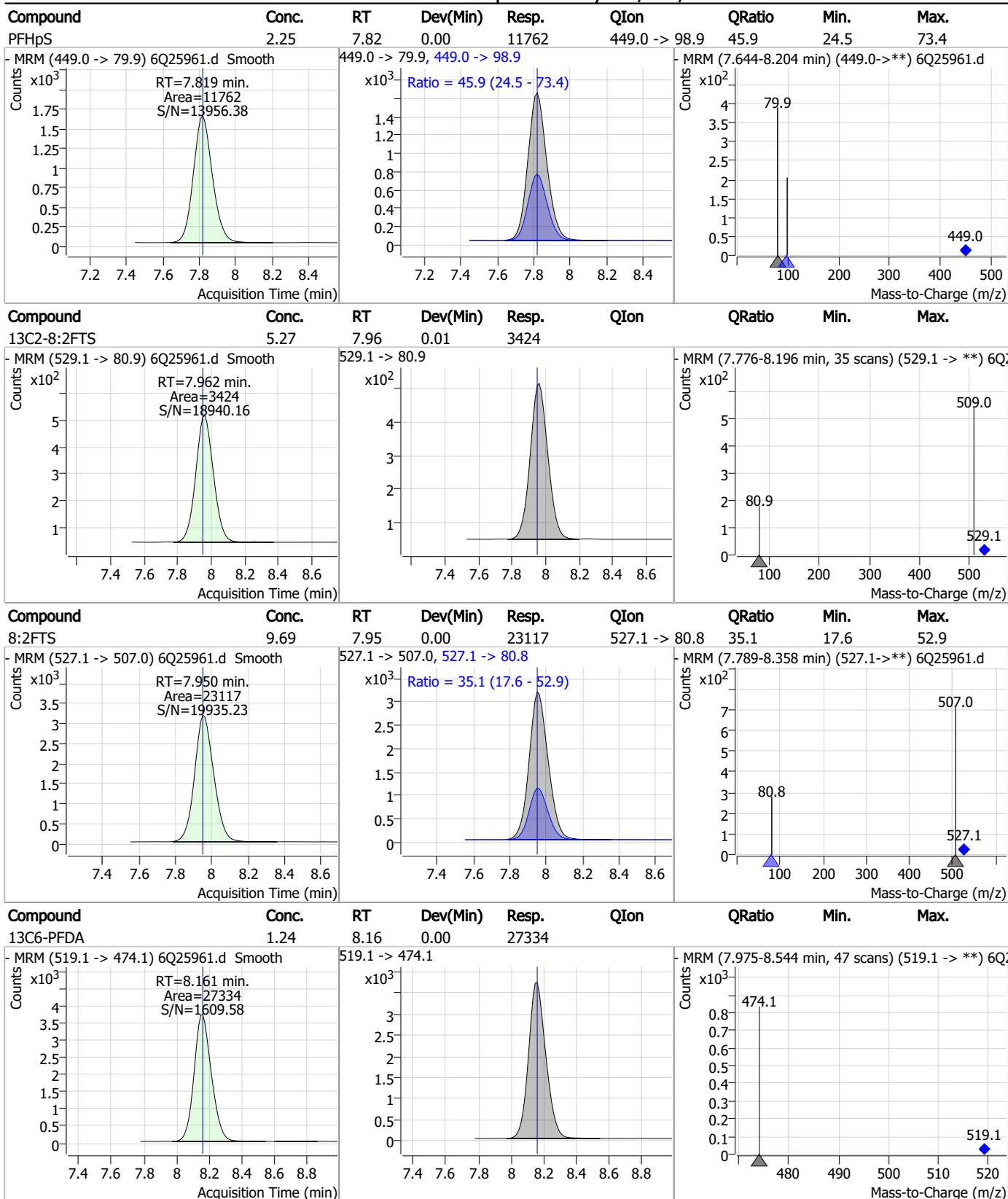
Perfluorinated Compounds by LC/MS/MS



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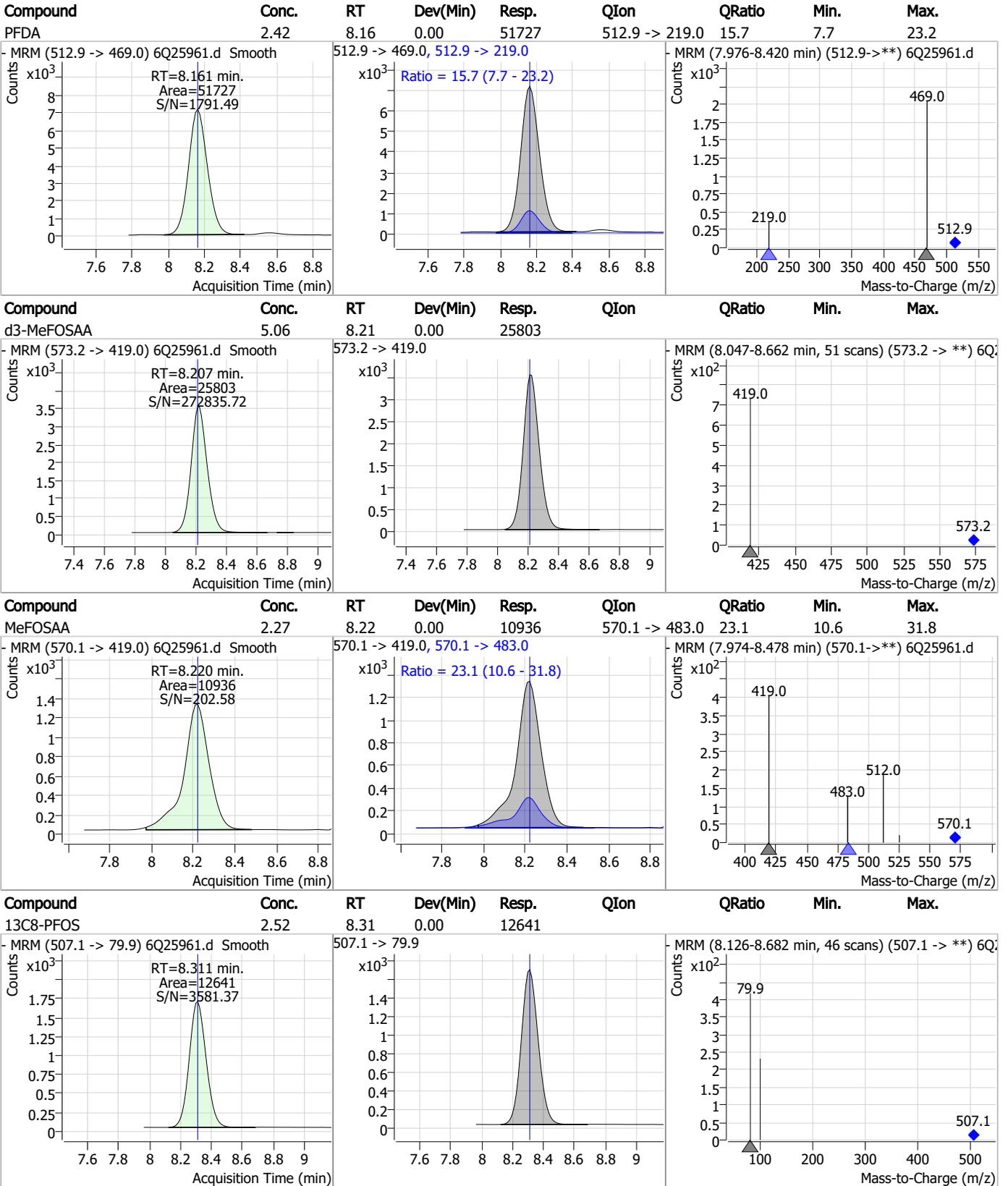
Perfluorinated Compounds by LC/MS/MS



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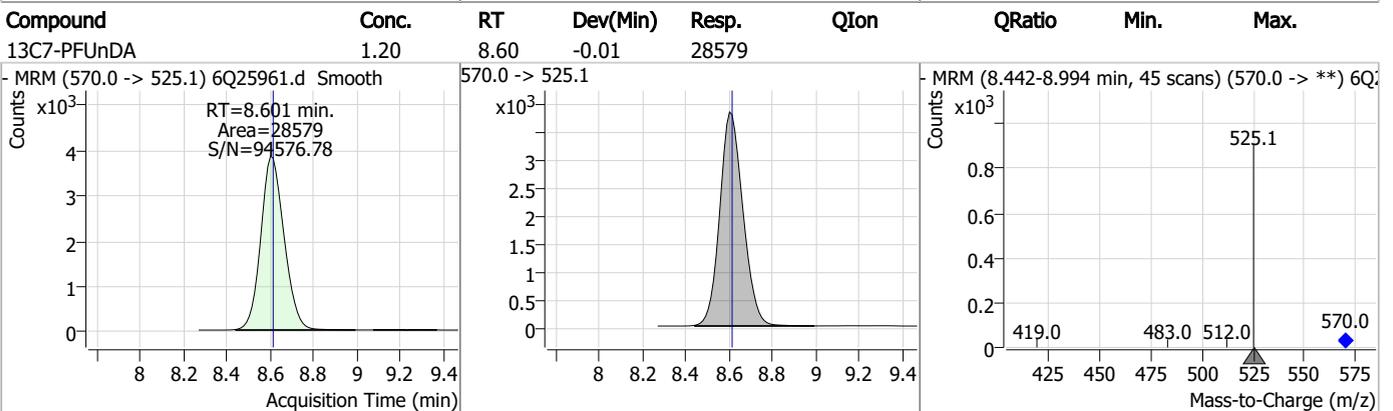
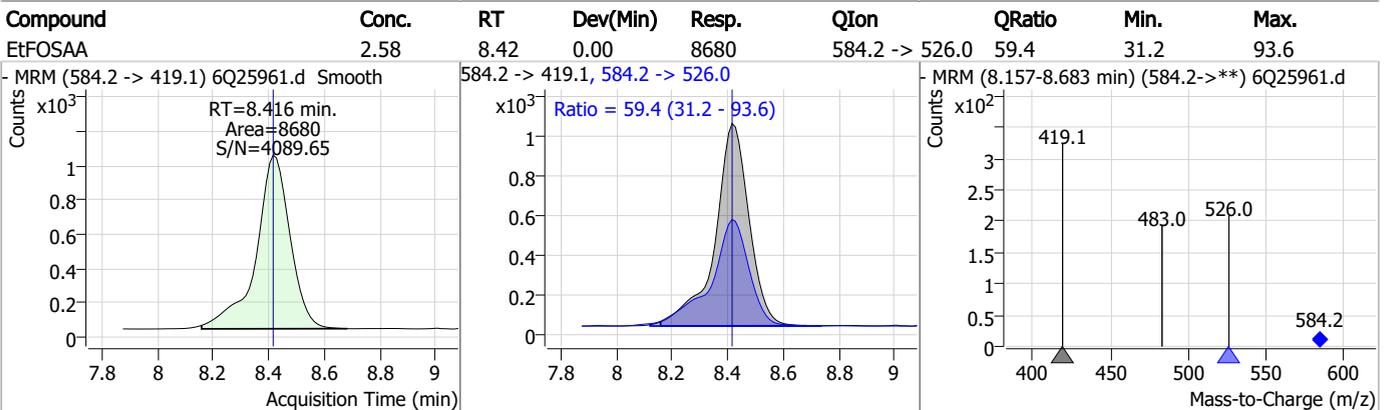
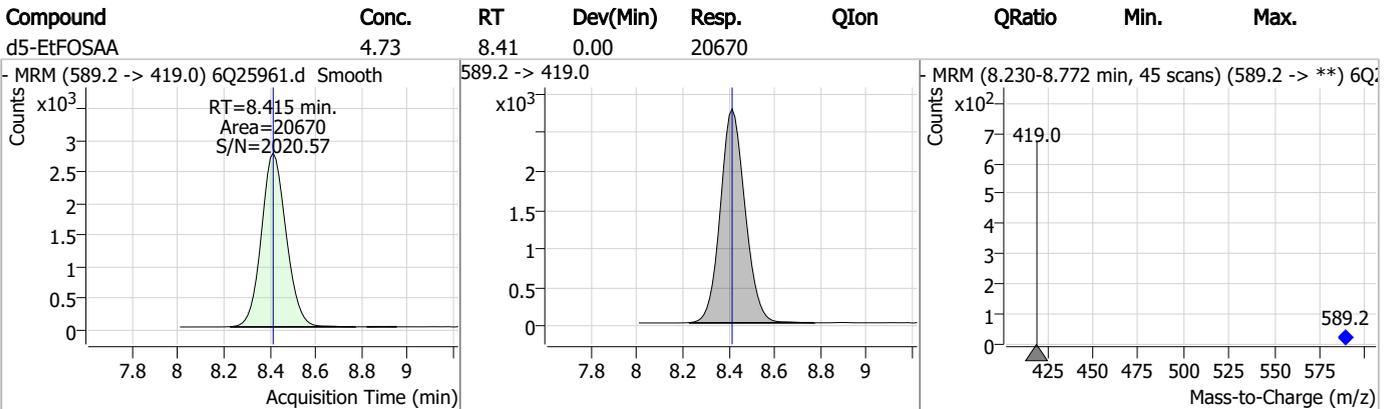
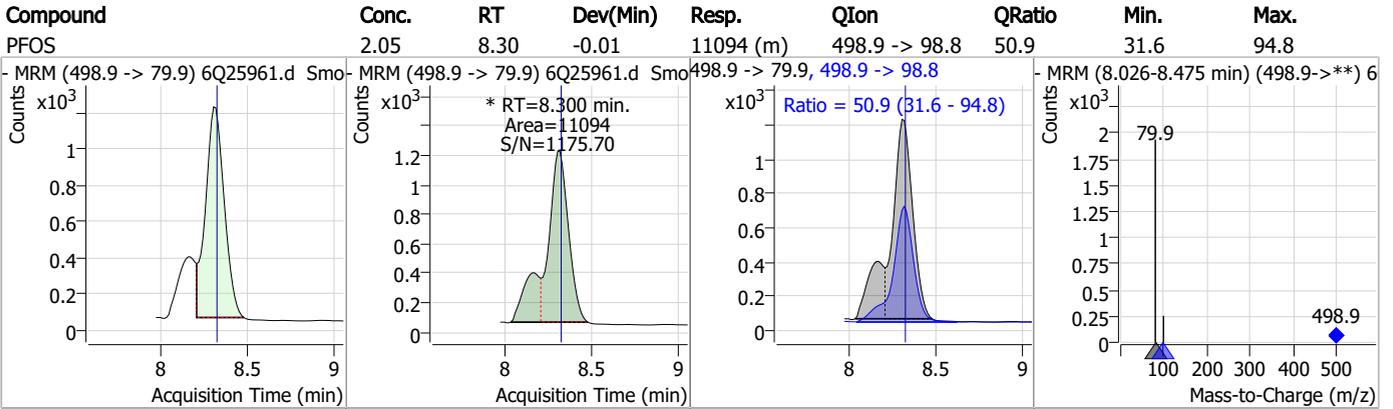


Perfluorinated Compounds by LC/MS/MS



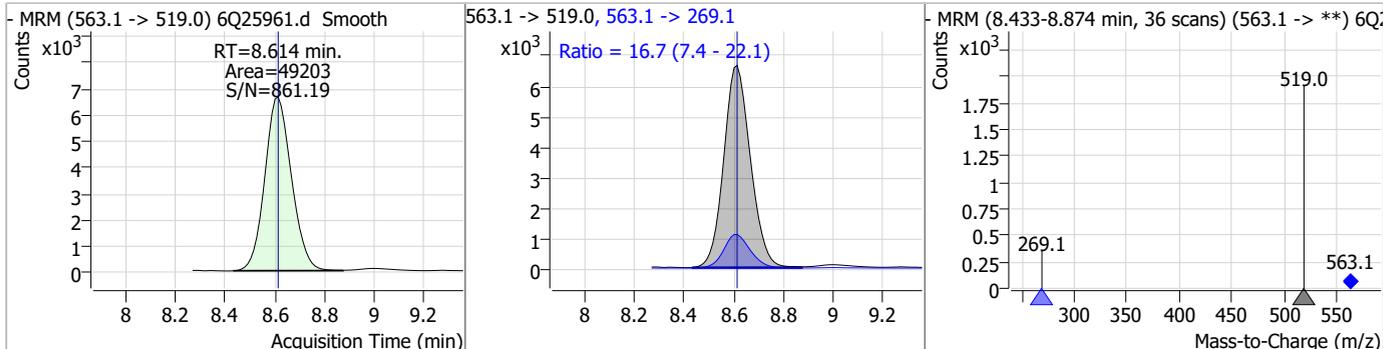
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Perfluorinated Compounds by LC/MS/MS

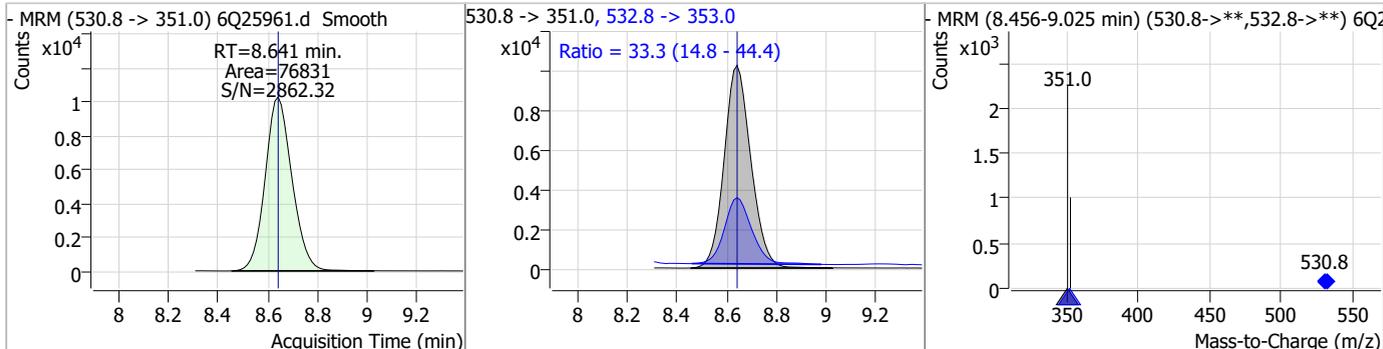


Perfluorinated Compounds by LC/MS/MS

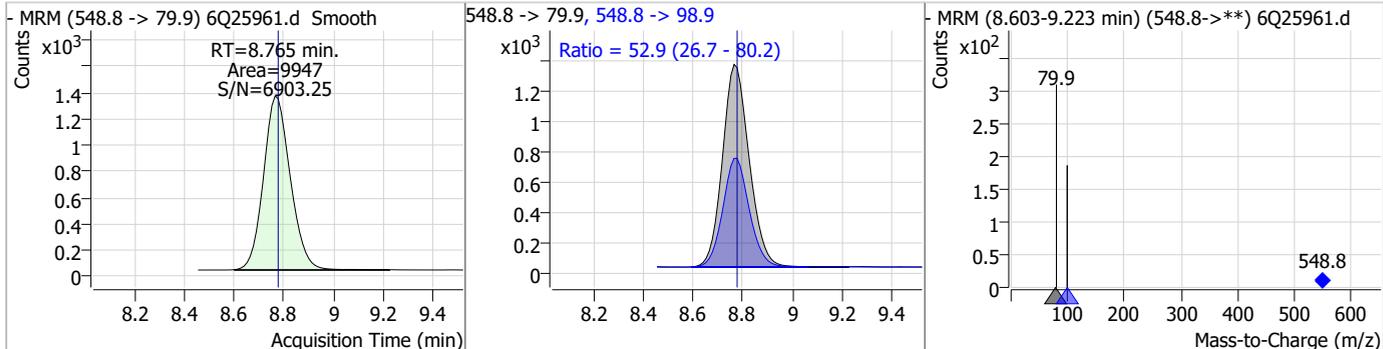
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.44	8.61	0.00	49203	563.1 -> 269.1	16.7	7.4	22.1



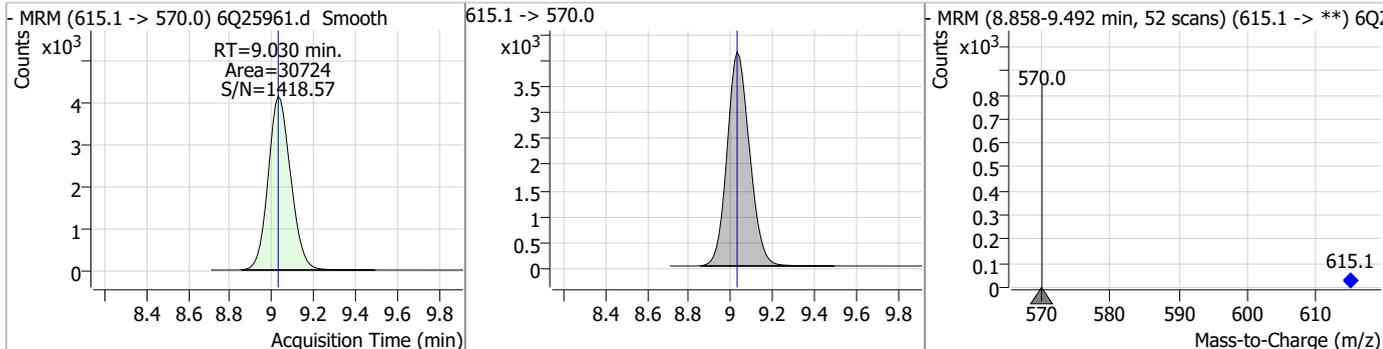
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	4.57	8.64	0.00	76831	532.8 -> 353.0	33.3	14.8	44.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.16	8.76	-0.01	9947	548.8 -> 98.9	52.9	26.7	80.2

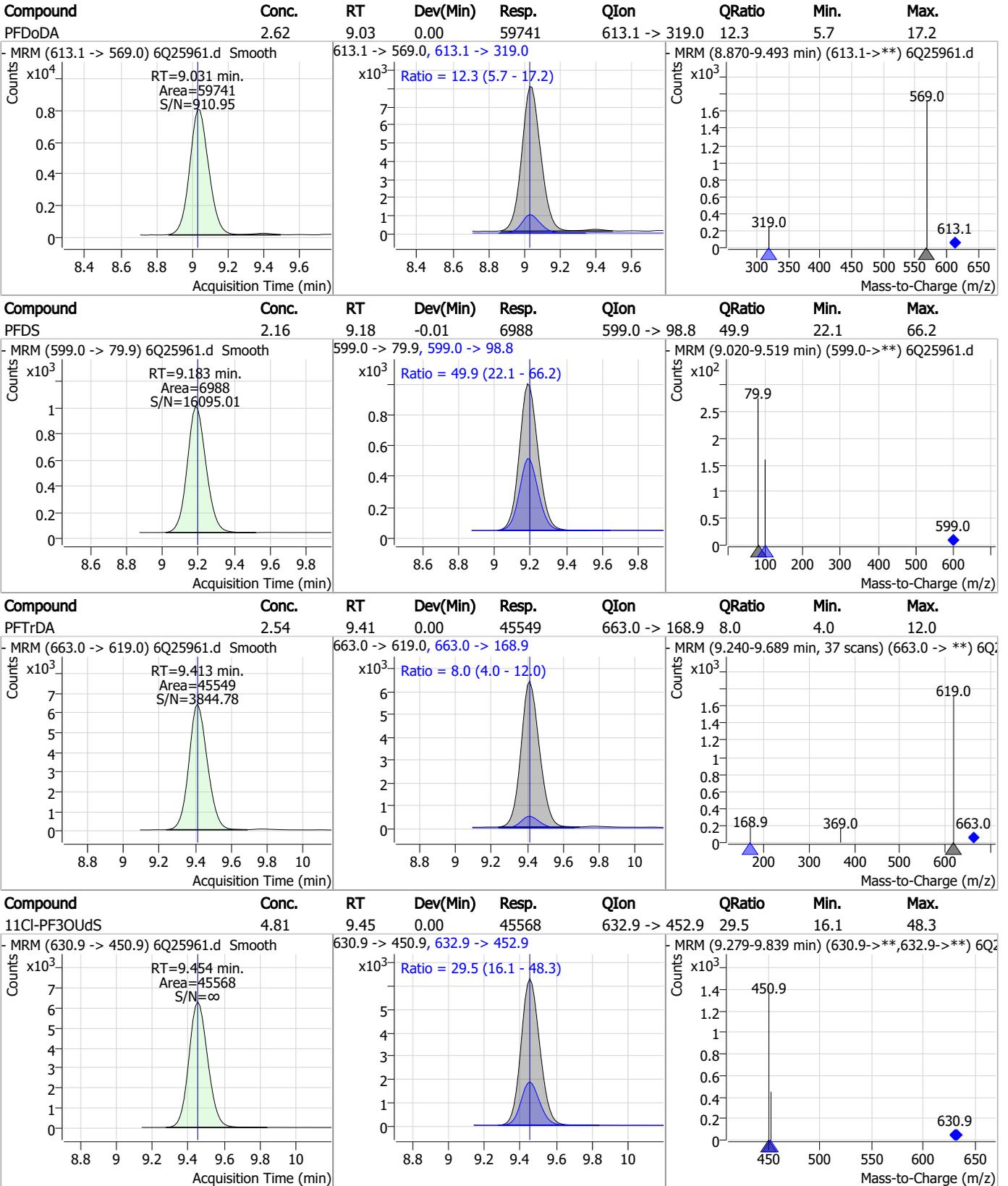


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	9.03	0.00	30724	615.1 -> 570.0			



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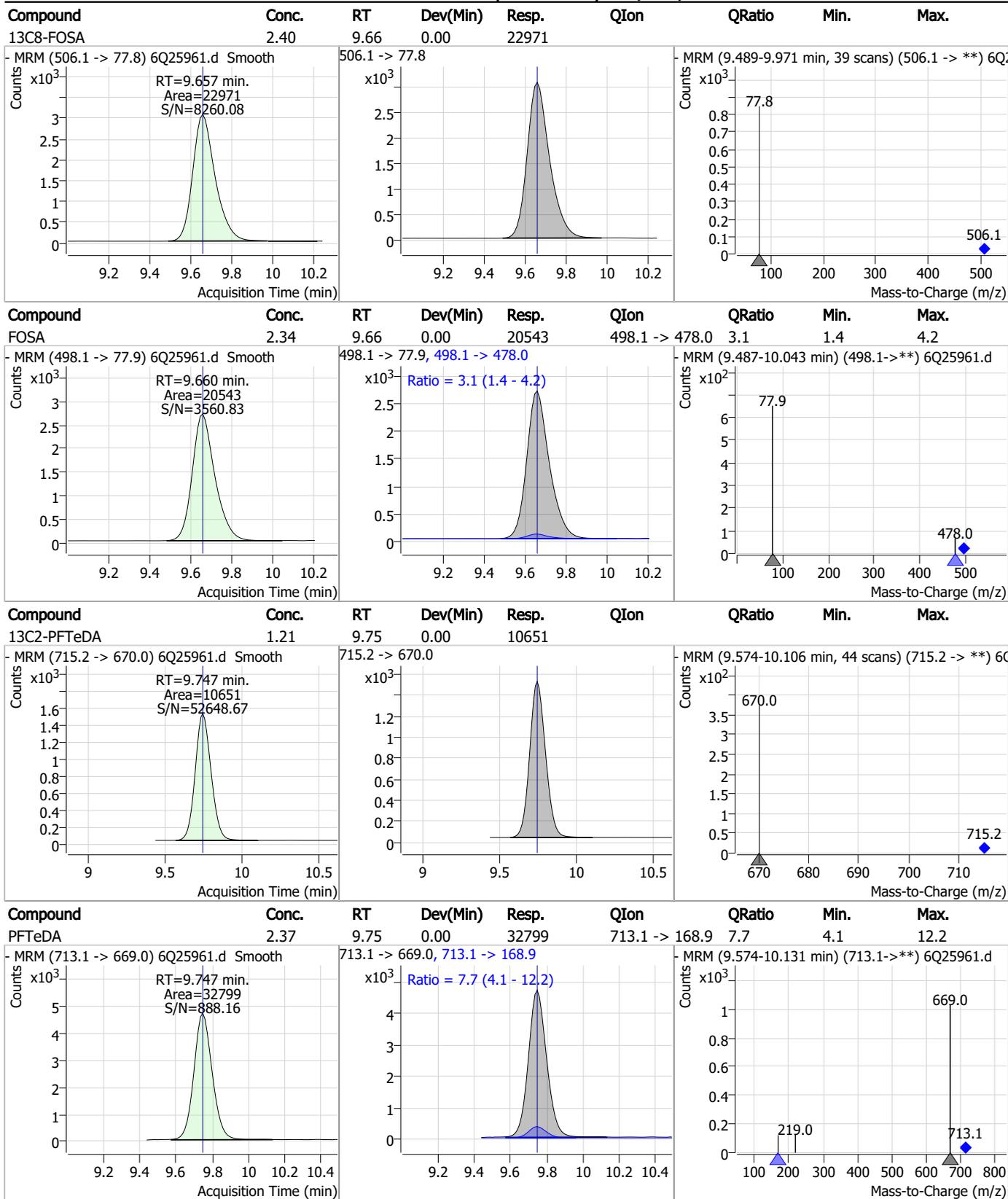
Perfluorinated Compounds by LC/MS/MS



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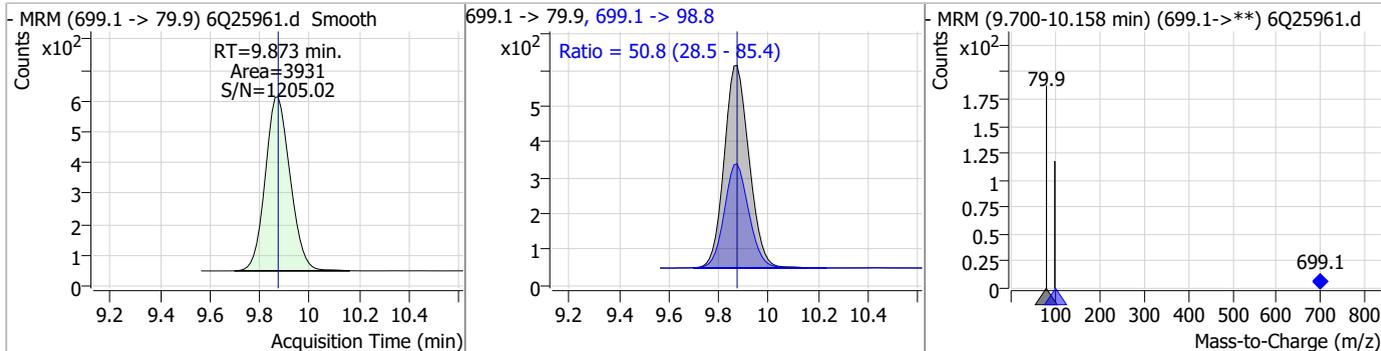
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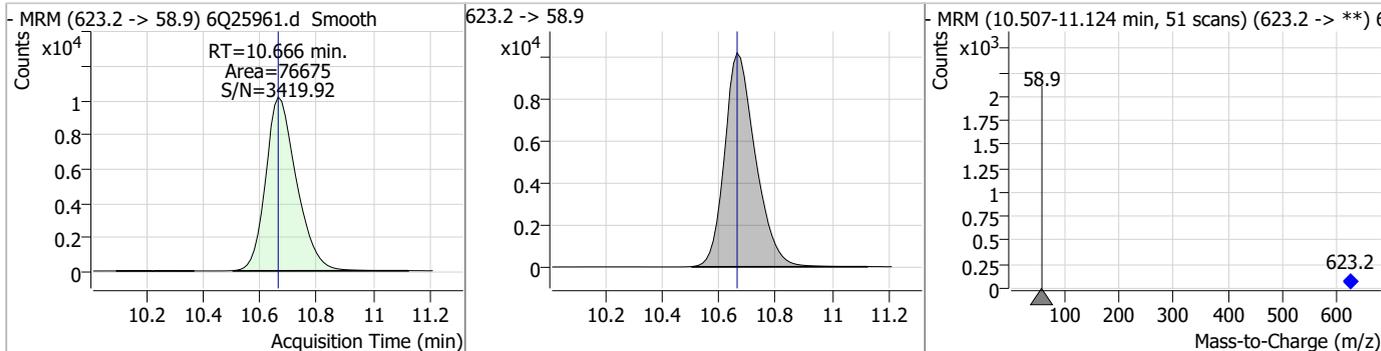
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Perfluorinated Compounds by LC/MS/MS

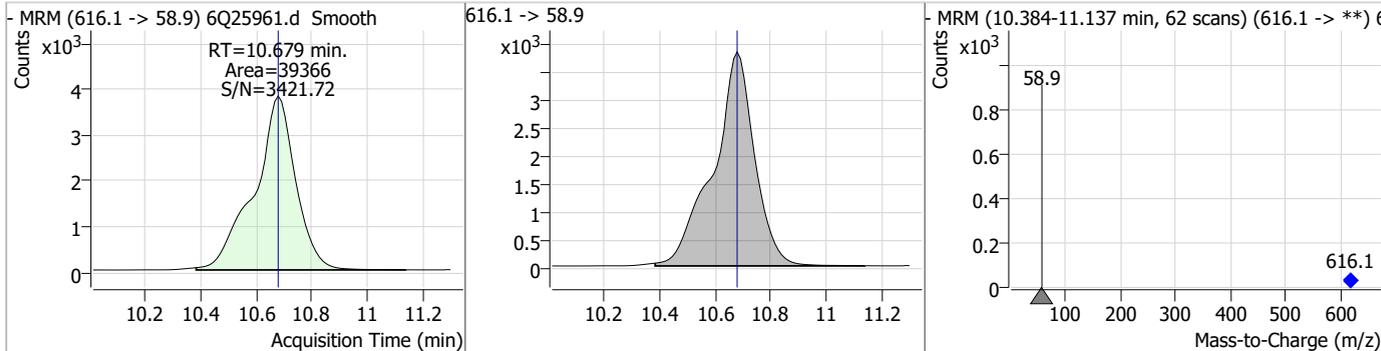
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.34	9.87	0.00	3931	699.1 -> 98.8	50.8	28.5	85.4



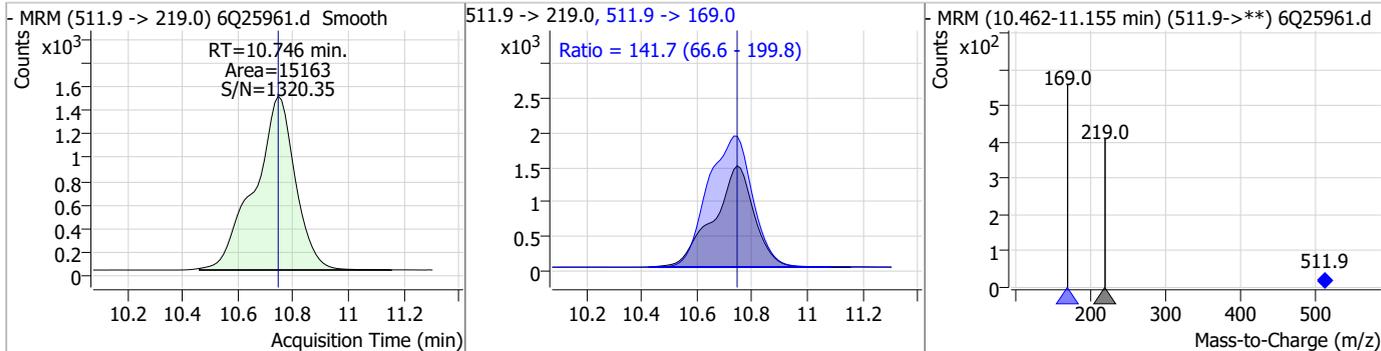
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.83	10.67	0.00	76675				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.62	10.68	0.00	39366				

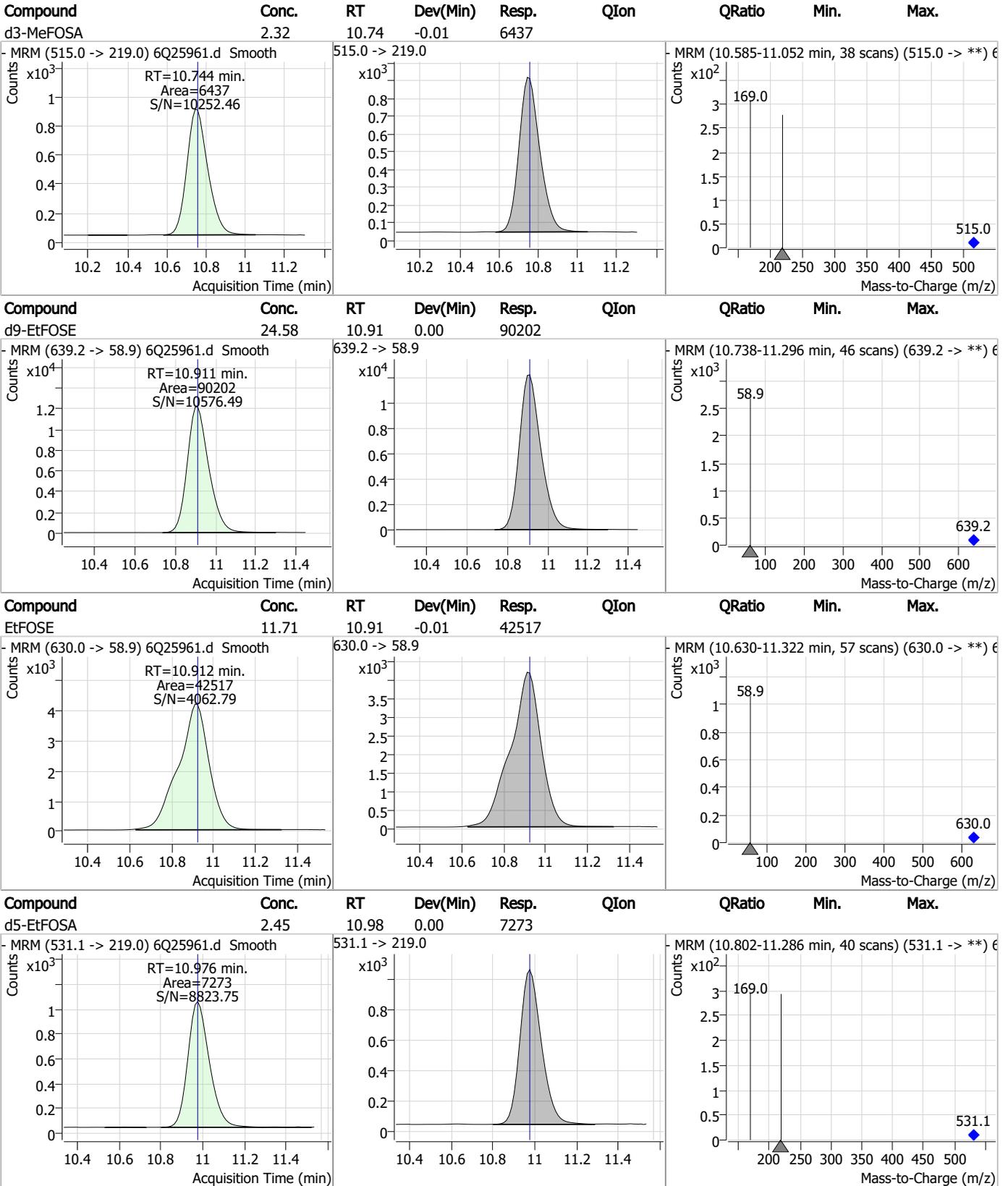


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.08	10.75	0.00	15163	511.9 -> 169.0	141.7	66.6	199.8



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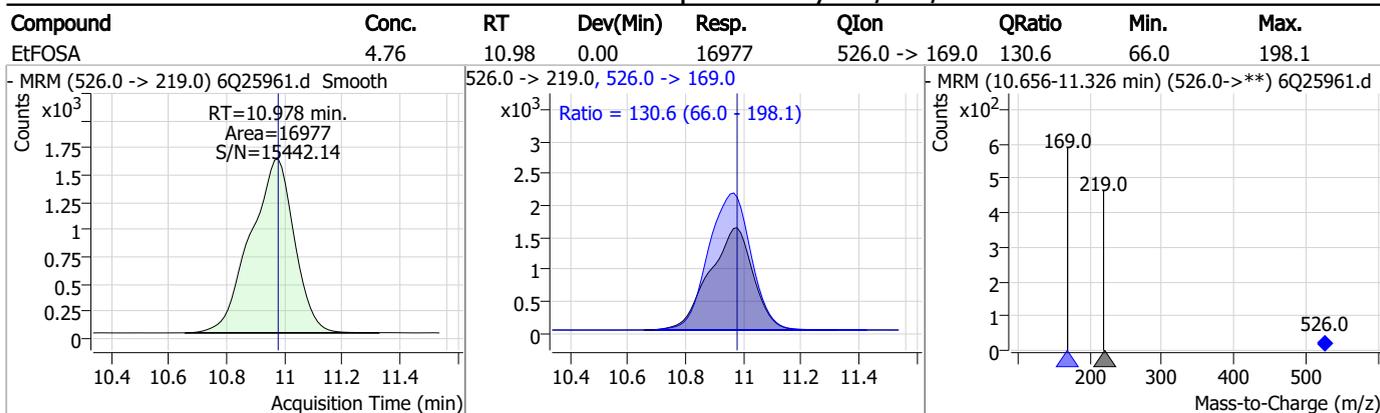
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q25961.D Analyst approved: 10/09/23 13:30 Martha Valls
Injection Time: 10/08/23 20:04 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.7.14.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26043.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 2:16:35 PM
 Sample Name : cc367-4
 Vial : P1-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99081,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	161389	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	56434	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	51277	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	49295	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	65933	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	28808	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	29703	1.25 µg/L	0.000
M7-PFUnDA	8.614	570.0 -> 525.1	30703	1.25 µg/L	0.000
M2-PFDoDA	9.030	615.1 -> 570.0	32926	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11387	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23944	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22969	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12561	2.50 µg/L	0.000
M8-PFOS	8.311	507.1 -> 79.9	12783	2.50 µg/L	0.000
M2-4:2FTS	5.255	329.1 -> 80.9	2442	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3186	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3514	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25283	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	32792	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	22140	5.00 µg/L	0.000
M7-MeFOSE	10.665	623.2 -> 58.9	74952	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	88754	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7195	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6558	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	11835	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	66773	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	7625	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	73003	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	24970	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	27558	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	50399	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2442	5.68 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3186	4.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3514	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.9%		
13C2-PFDoDA	9.030	615.1 -> 570.0	32926	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11387	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 107.9%		
13C3-PFBS	5.497	302.1 -> 79.9	22969	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 106.3%		
13C3-PFHxS	7.263	402.1 -> 79.9	12561	2.59 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C4-PFBA	2.947	216.8 -> 171.9	161389	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.519	367.1 -> 322.0	49295	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C5-PFHxA	5.580	318.0 -> 273.0	51277	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFPeA	4.372	268.3 -> 223.0	56434	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	8.161	519.1 -> 474.1	29703	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C7-PFUnDA	8.614	570.0 -> 525.1	30703	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C8-FOSA	9.657	506.1 -> 77.8	23944	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C8-PFOA	7.161	421.1 -> 376.0	65933	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-PFOS	8.311	507.1 -> 79.9	12783	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C9-PFNA	7.680	472.1 -> 427.0	28808	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25283	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	32792	9.33 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
d3-MeFOSA	10.744	515.0 -> 219.0	6558	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
d5-EtFOSAA	8.415	589.2 -> 419.0	22140	4.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d7-MeFOSE	10.665	623.2 -> 58.9	74952	23.78 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
d9-EtFOSE	10.911	639.2 -> 58.9	88754	23.69 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d5-EtFOSA	10.976	531.1 -> 219.0	7195	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	37417	9.24 µg/L	99
		327.1 -> 80.9	14324		
6:2FTS	6.937	427.1 -> 407.0	30716	10.61 µg/L	98
		427.1 -> 80.9	11587		
8:2FTS	7.950	527.1 -> 507.0	22723	9.28 µg/L	98
		527.1 -> 80.8	8340		
EtFOSAA	8.416	584.2 -> 419.1	7959	2.21 µg/L	85
		584.2 -> 526.0	5860		
FOSA	9.660	498.1 -> 77.9	21861	2.38 µg/L	100
		498.1 -> 478.0	587		
MeFOSAA	8.208	570.1 -> 419.0	11314	2.40 µg/L	100
		570.1 -> 483.0	2406		
PFBA	2.956	212.8 -> 168.9	57974	9.64 µg/L	100
PFBS	5.499	298.7 -> 79.9	14834	2.15 µg/L	100
		298.7 -> 98.8	5452		
PFDA	8.161	512.9 -> 469.0	53125	2.29 µg/L	95
		512.9 -> 219.0	9395		
PFDoDA	9.031	613.1 -> 569.0	58001	2.37 µg/L	97
		613.1 -> 319.0	7386		
PFDS	9.183	599.0 -> 79.9	7601	2.32 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	3607			
PFHpA	6.520	363.1 -> 319.0	64042	2.39	µg/L	99
		363.1 -> 169.0	9507			
PFHpS	7.819	449.0 -> 79.9	12519	2.37	µg/L	94
		449.0 -> 98.9	5631			
PFHxA	5.582	313.0 -> 269.0	44549	2.43	µg/L	99
		313.0 -> 118.9	2188			
PFHxS	7.264	398.7 -> 79.9	11254	2.14	µg/L	m 94
		398.7 -> 98.9	5504			
PFNA	7.680	463.0 -> 419.0	38773	2.18	µg/L	100
		463.0 -> 219.0	9442			
PFNS	8.765	548.8 -> 79.9	10153	2.18	µg/L	99
		548.8 -> 98.9	5469			
PFOA	7.163	413.0 -> 369.0	69828	2.47	µg/L	96
		413.0 -> 169.0	11627			
PFOS	8.312	498.9 -> 79.9	12184	2.23	µg/L	m 86
		498.9 -> 98.8	6330			
PFPeA	4.374	263.0 -> 219.0	57767	4.75	µg/L	100
PFPeS	6.571	349.1 -> 79.9	16016	2.36	µg/L	98
		349.1 -> 98.9	7210			
PFTeDA	9.747	713.1 -> 669.0	33113	2.24	µg/L	99
		713.1 -> 168.9	2823			
PFTrDA	9.413	663.0 -> 619.0	47111	2.45	µg/L	99
		663.0 -> 168.9	3920			
PFUnDA	8.614	563.1 -> 519.0	52407	2.42	µg/L	97
		563.1 -> 269.1	8376			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	44566	4.58	µg/L	100
		632.9 -> 452.9	14230			
9Cl-PF3ONS	8.641	530.8 -> 351.0	81304	4.71	µg/L	97
		532.8 -> 353.0	25479			
ADONA	6.767	376.9 -> 250.9	207460	4.61	µg/L	97
		376.9 -> 84.8	60945			
HFPO-DA	5.958	284.9 -> 168.9	16751	5.15	µg/L	100
		284.9 -> 184.9	2001			
3:3FTCA	3.821	241.0 -> 177.0	10159	11.73	µg/L	99
		241.0 -> 117.0	1311			
5:3FTCA	6.233	341.0 -> 237.1	199123	57.94	µg/L	92
		341.0 -> 217.0	155806			
7:3FTCA	7.632	441.0 -> 316.9	124777	59.45	µg/L	97
		441.0 -> 336.9	257221			
EtFOSA	10.978	526.0 -> 219.0	17516	4.96	µg/L	98
		526.0 -> 169.0	22813			
EtFOSE	10.924	630.0 -> 58.9	42910	12.01	µg/L	100
MeFOSA	10.746	511.9 -> 219.0	15796	5.20	µg/L	93
		511.9 -> 169.0	22277			
MeFOSE	10.679	616.1 -> 58.9	40547	12.24	µg/L	100
PFDoDS	9.873	699.1 -> 79.9	3736	2.20	µg/L	98
		699.1 -> 98.8	2068			
NFDHA	5.462	295.0 -> 201.0	12069	5.24	µg/L	97
		295.0 -> 84.9	3157			
PFMBA	4.800	279.0 -> 85.1	44640	4.81	µg/L	100
PFMPA	3.513	229.0 -> 84.9	36748	4.80	µg/L	100
PFEESA	6.050	314.8 -> 134.9	98500	4.18	µg/L	100
		314.8 -> 82.9	3573			

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



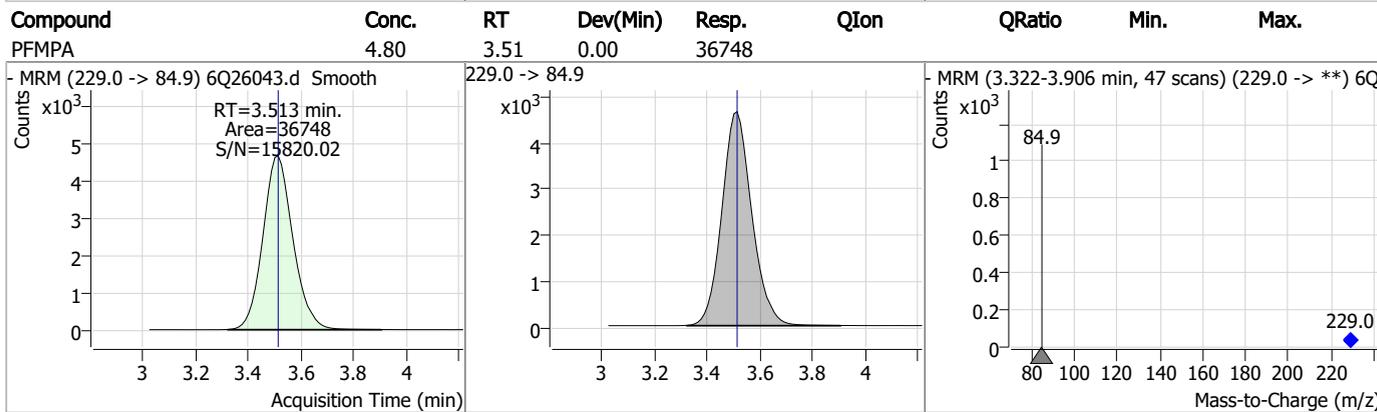
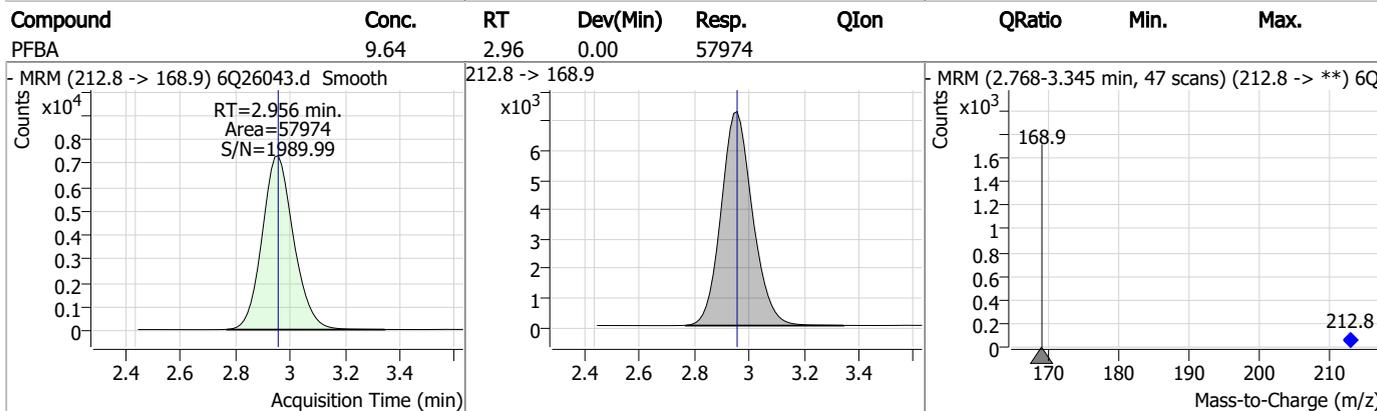
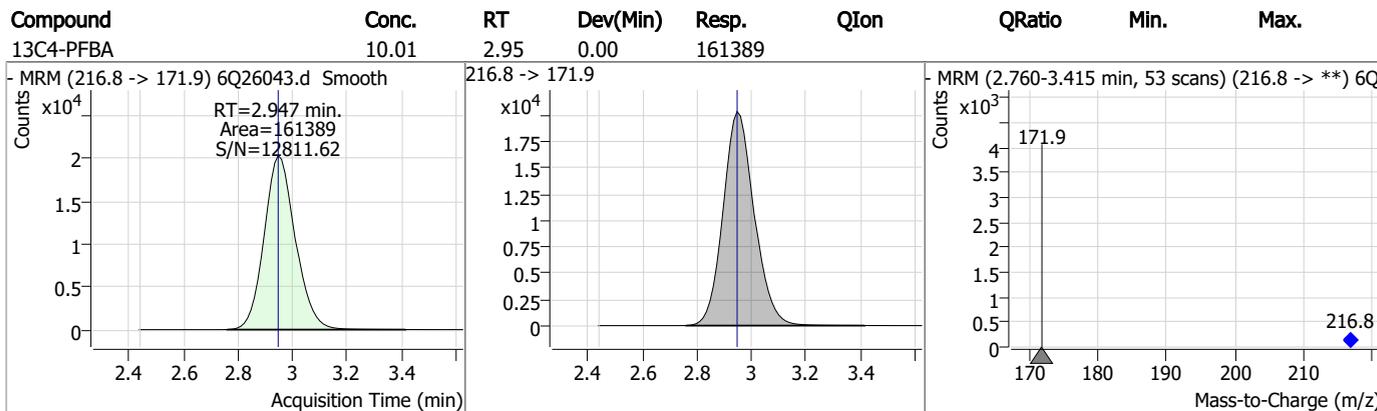
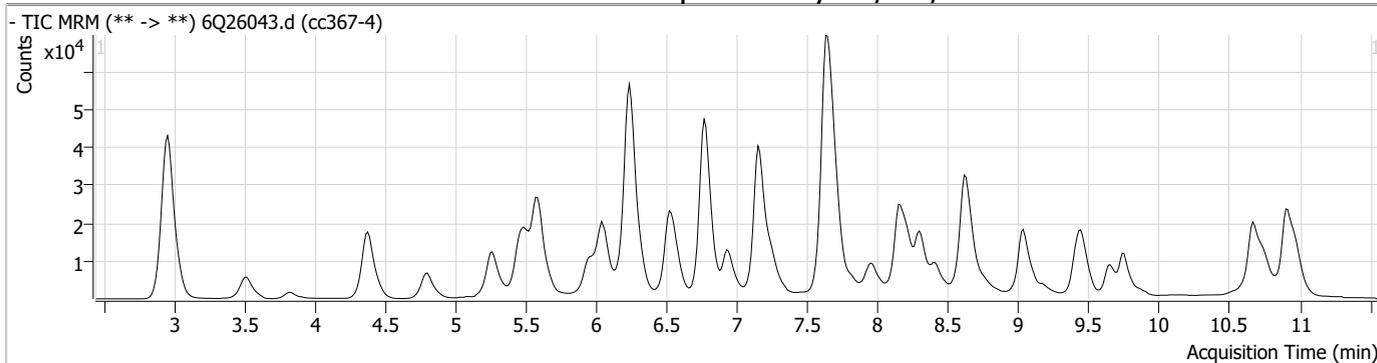
Perfluorinated Compounds by LC/MS/MS

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

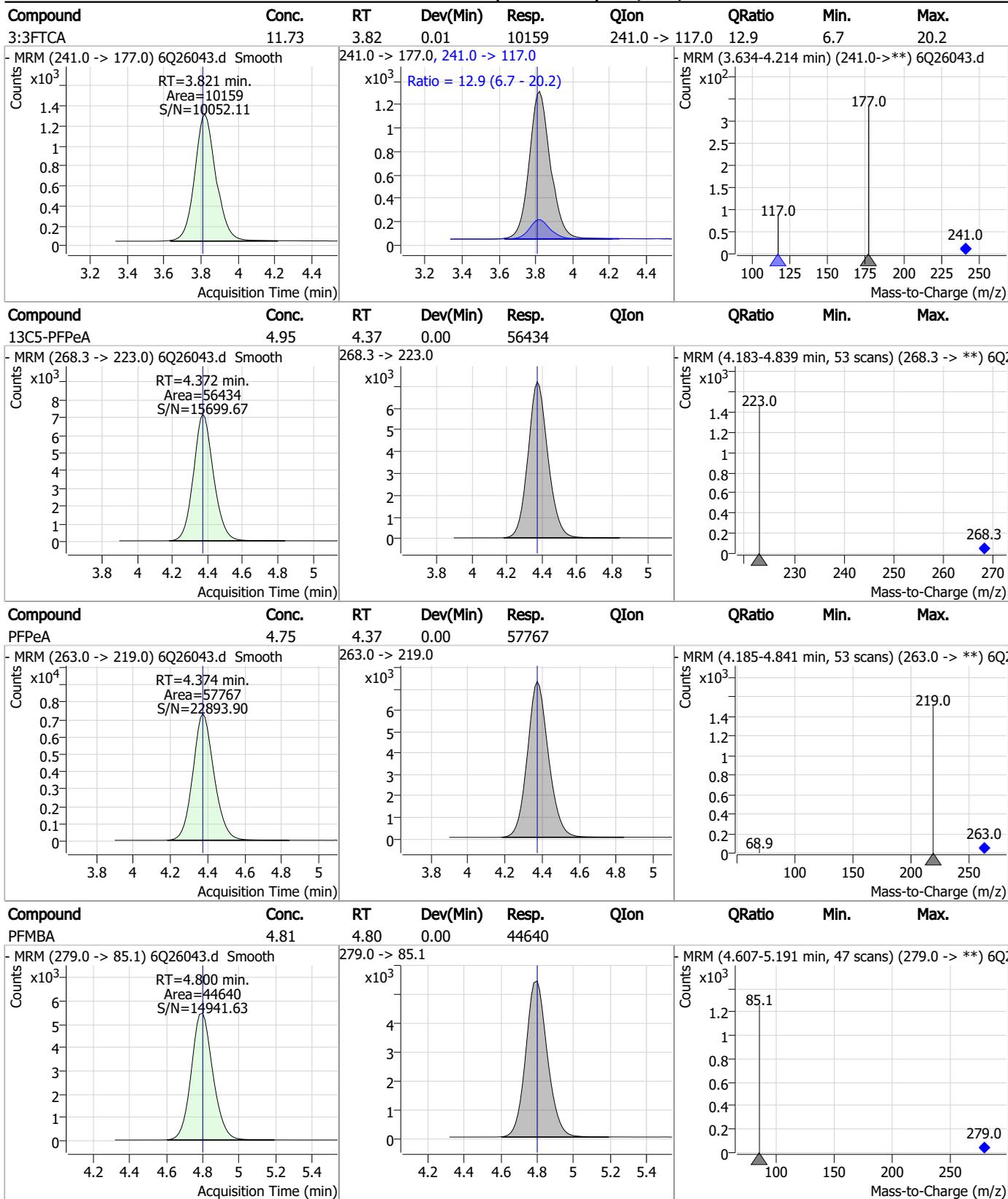
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Perfluorinated Compounds by LC/MS/MS



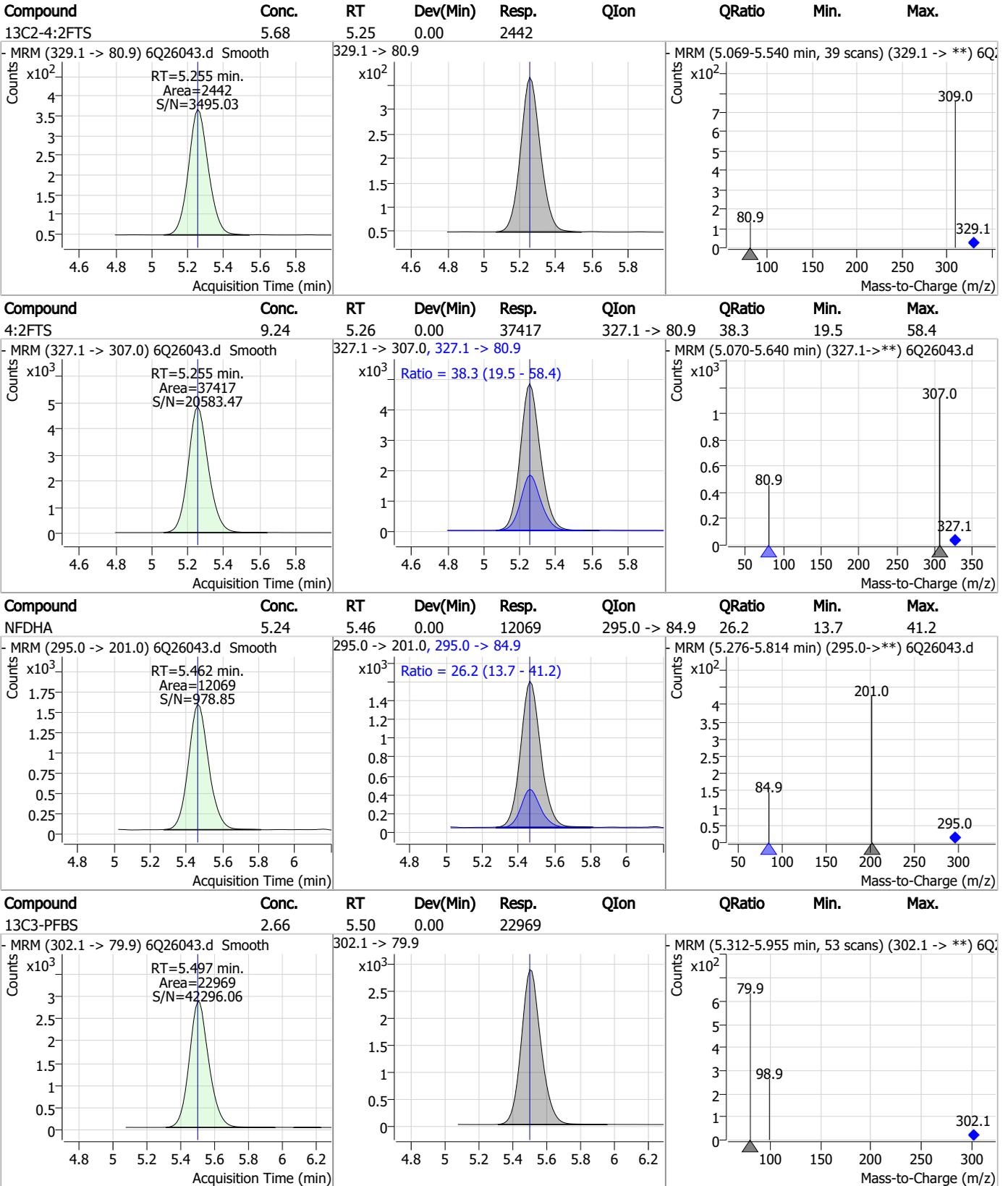
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Perfluorinated Compounds by LC/MS/MS



7.7.15

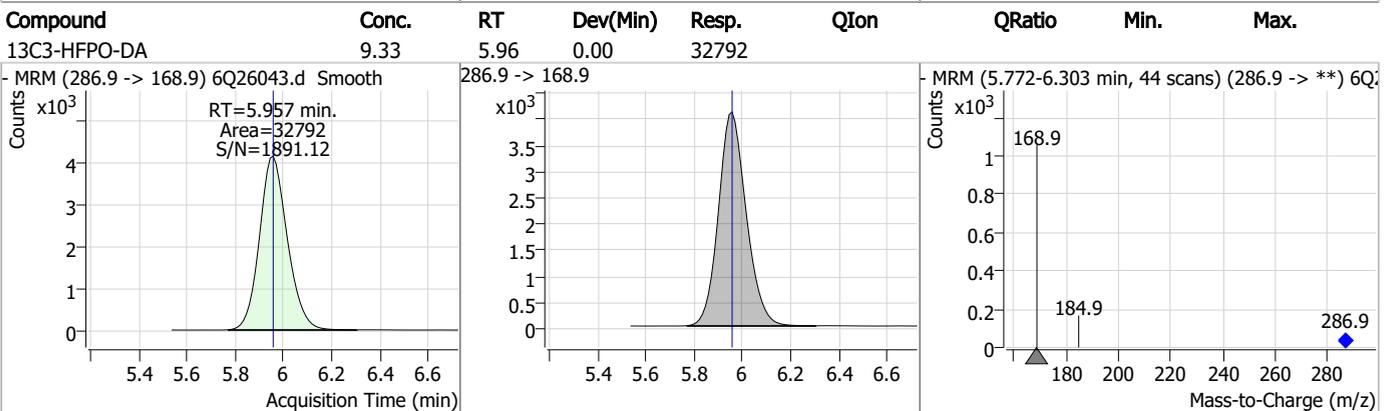
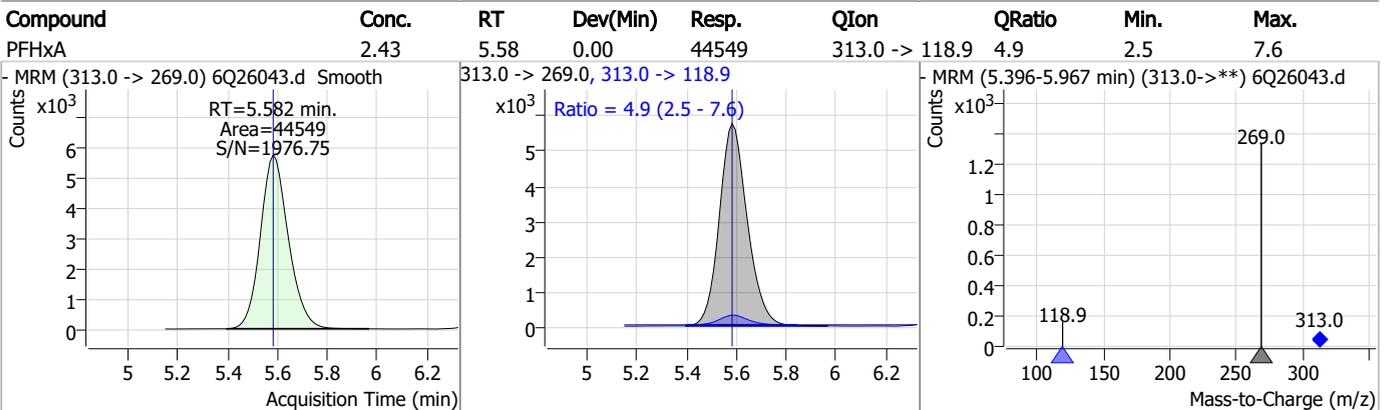
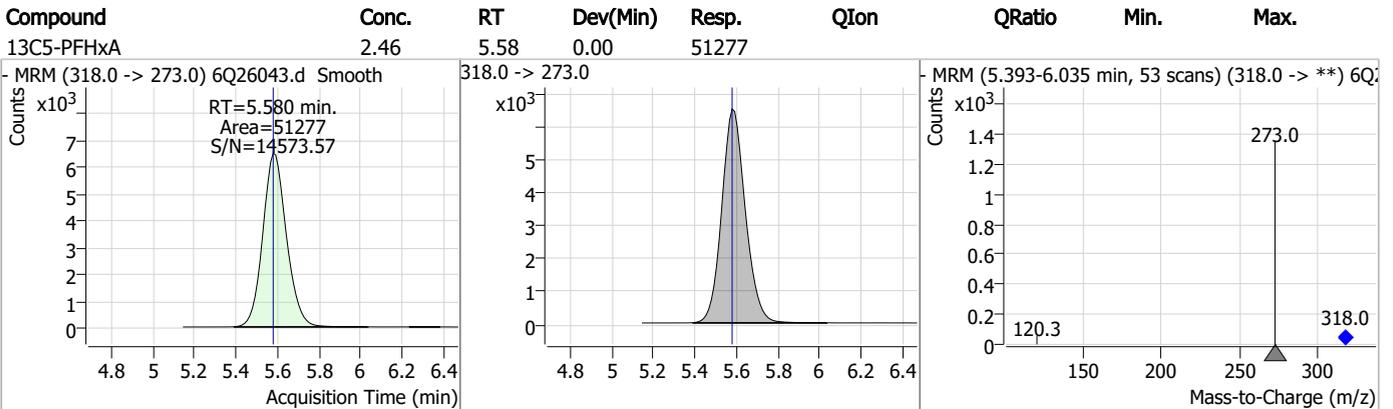
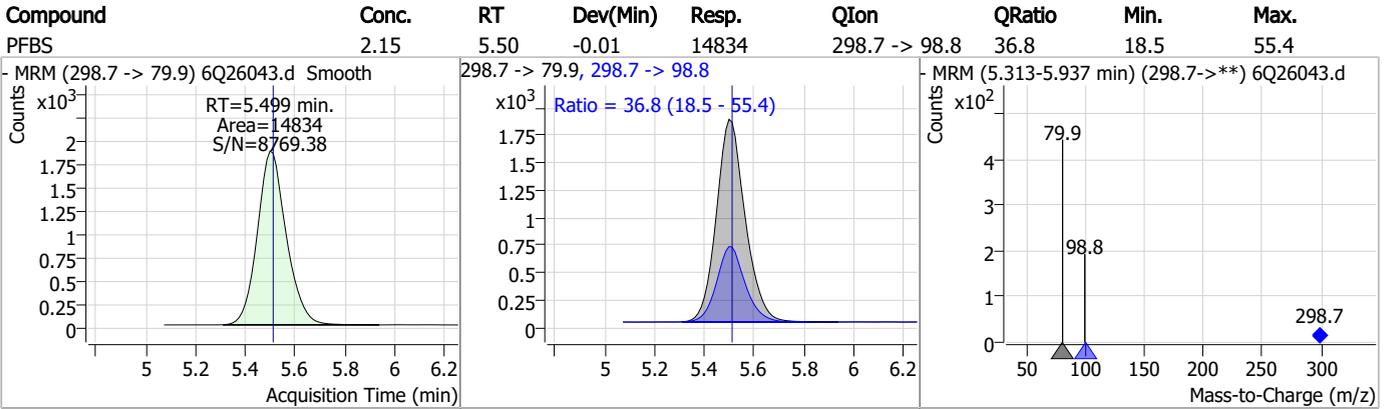
Perfluorinated Compounds by LC/MS/MS



7.7.15 7

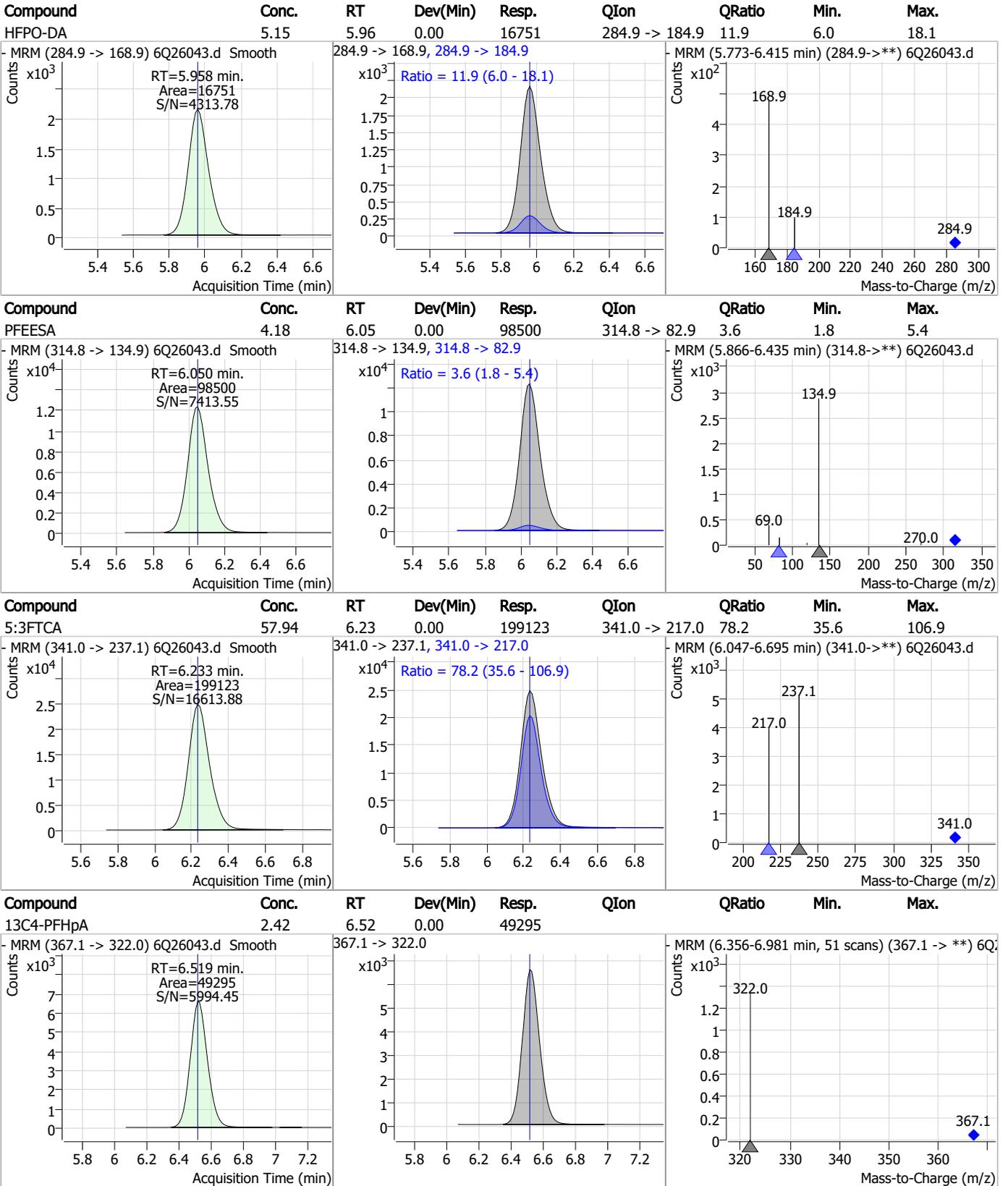


Perfluorinated Compounds by LC/MS/MS



7.7.15 7

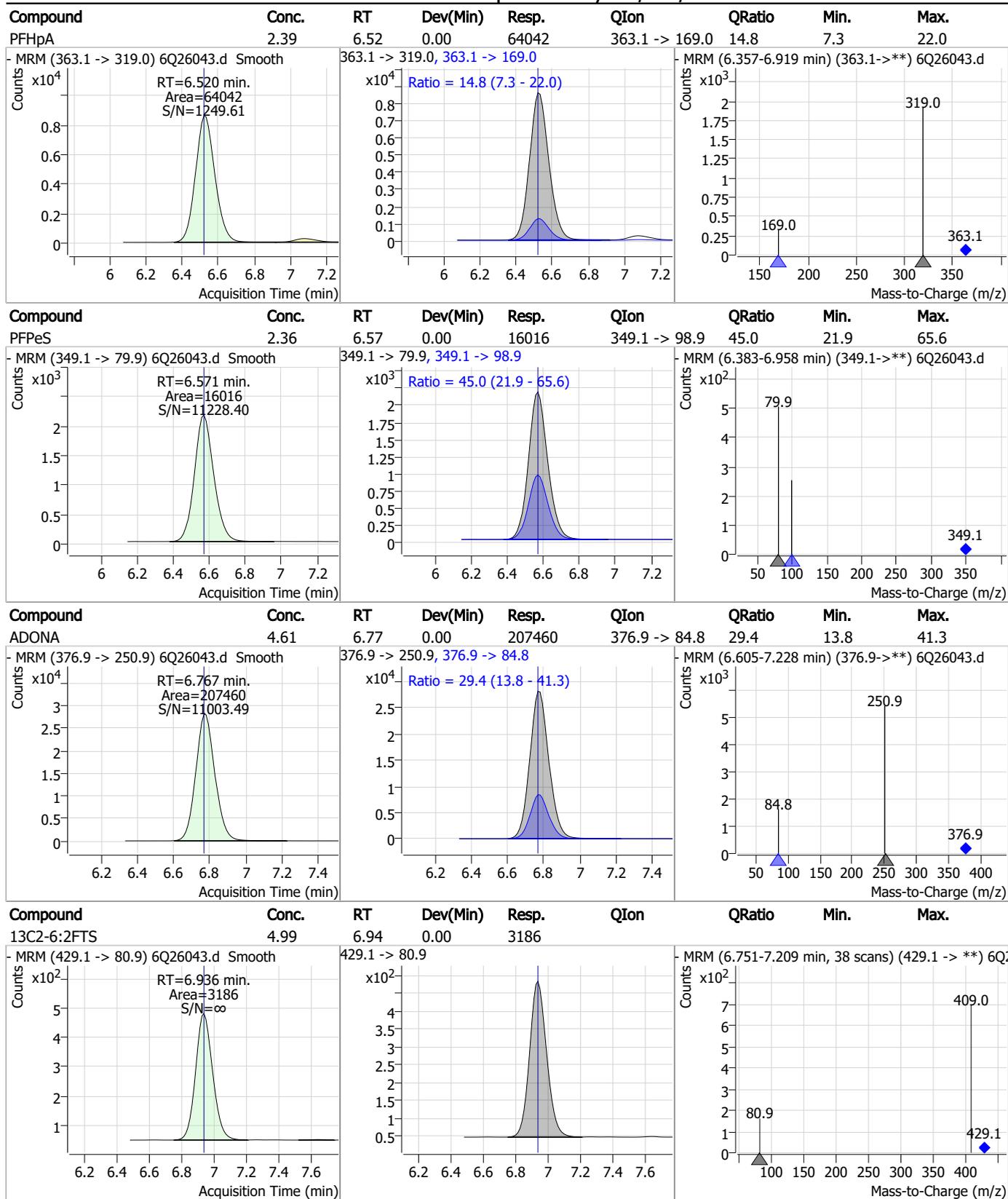
Perfluorinated Compounds by LC/MS/MS



7.7.15 7

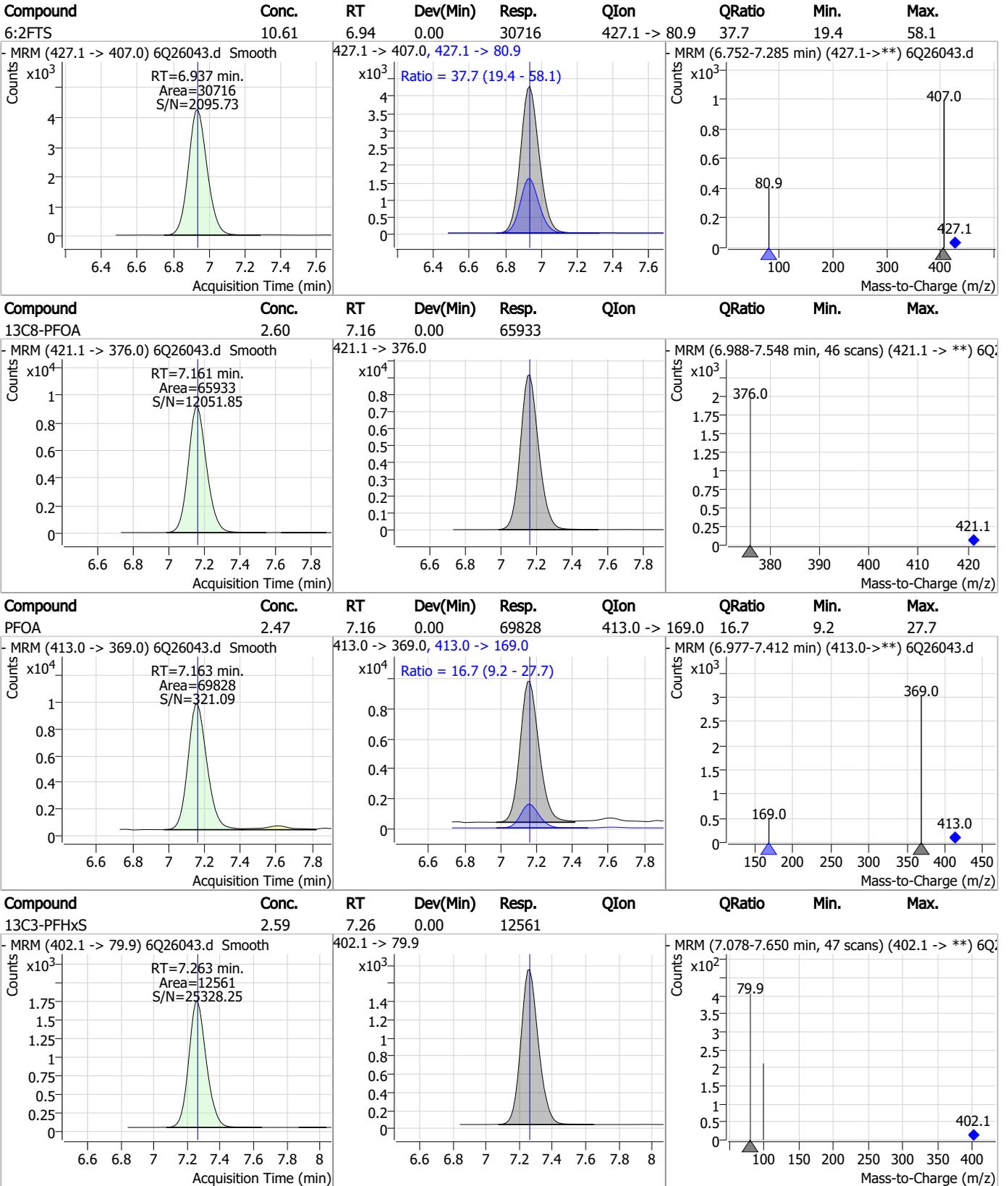


Perfluorinated Compounds by LC/MS/MS



7.7.15
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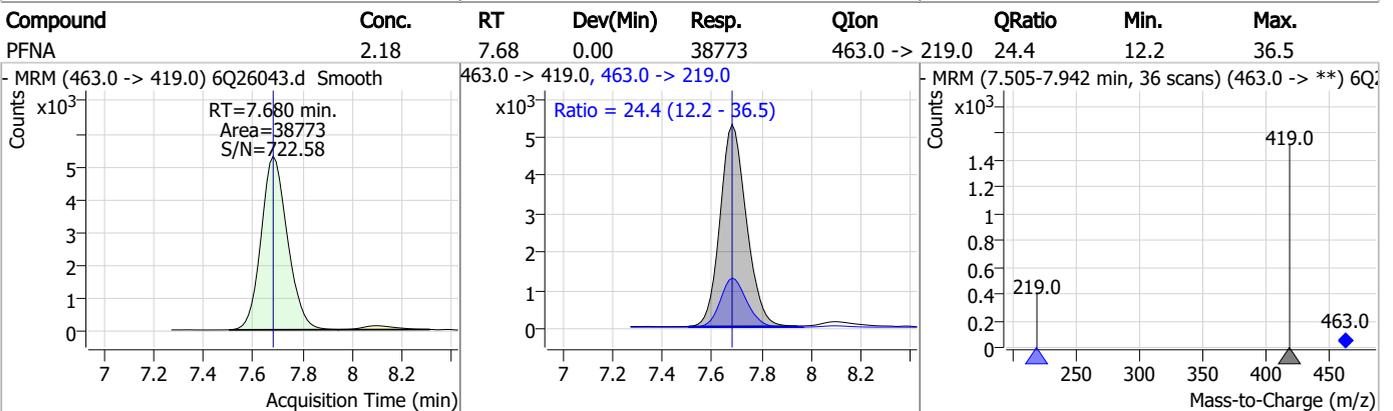
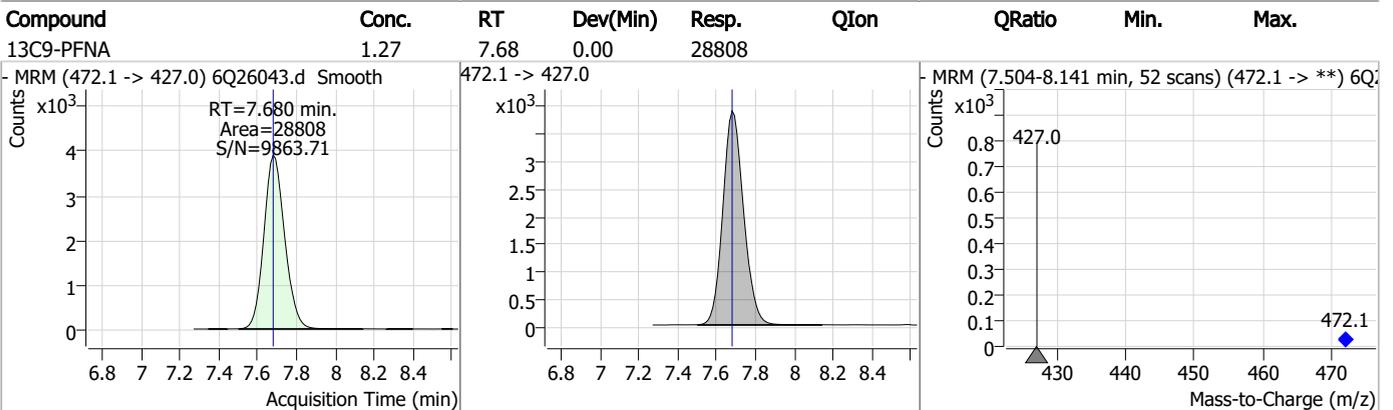
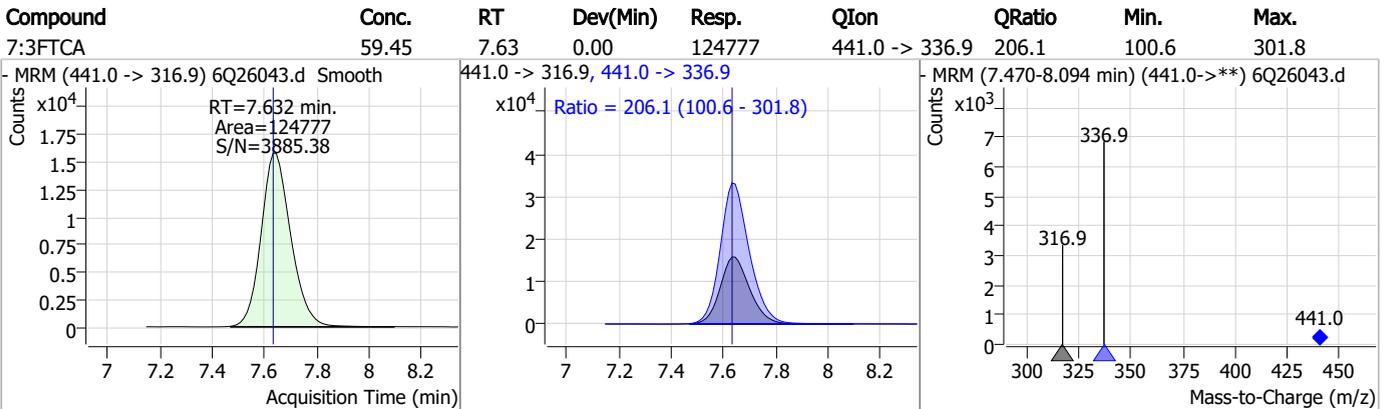
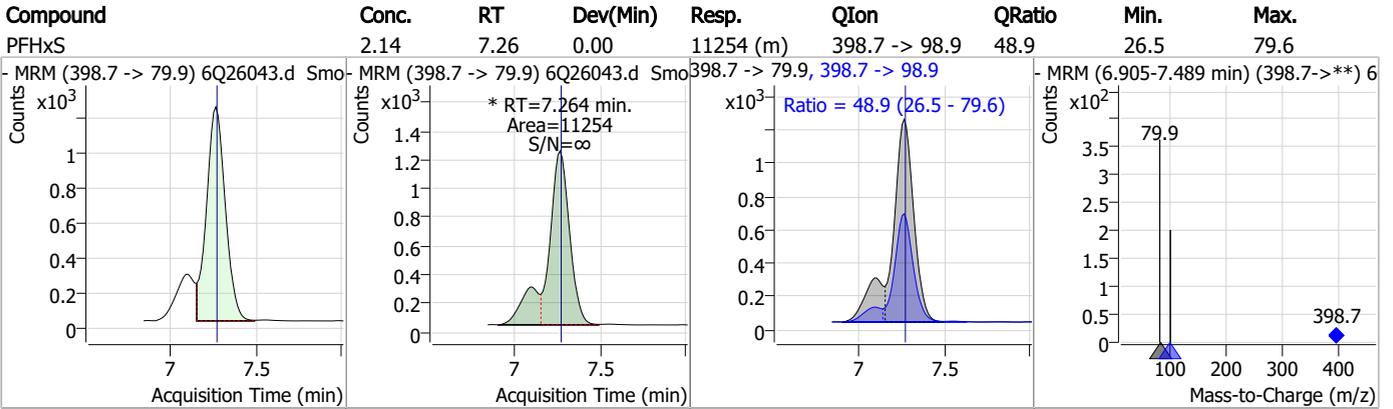
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

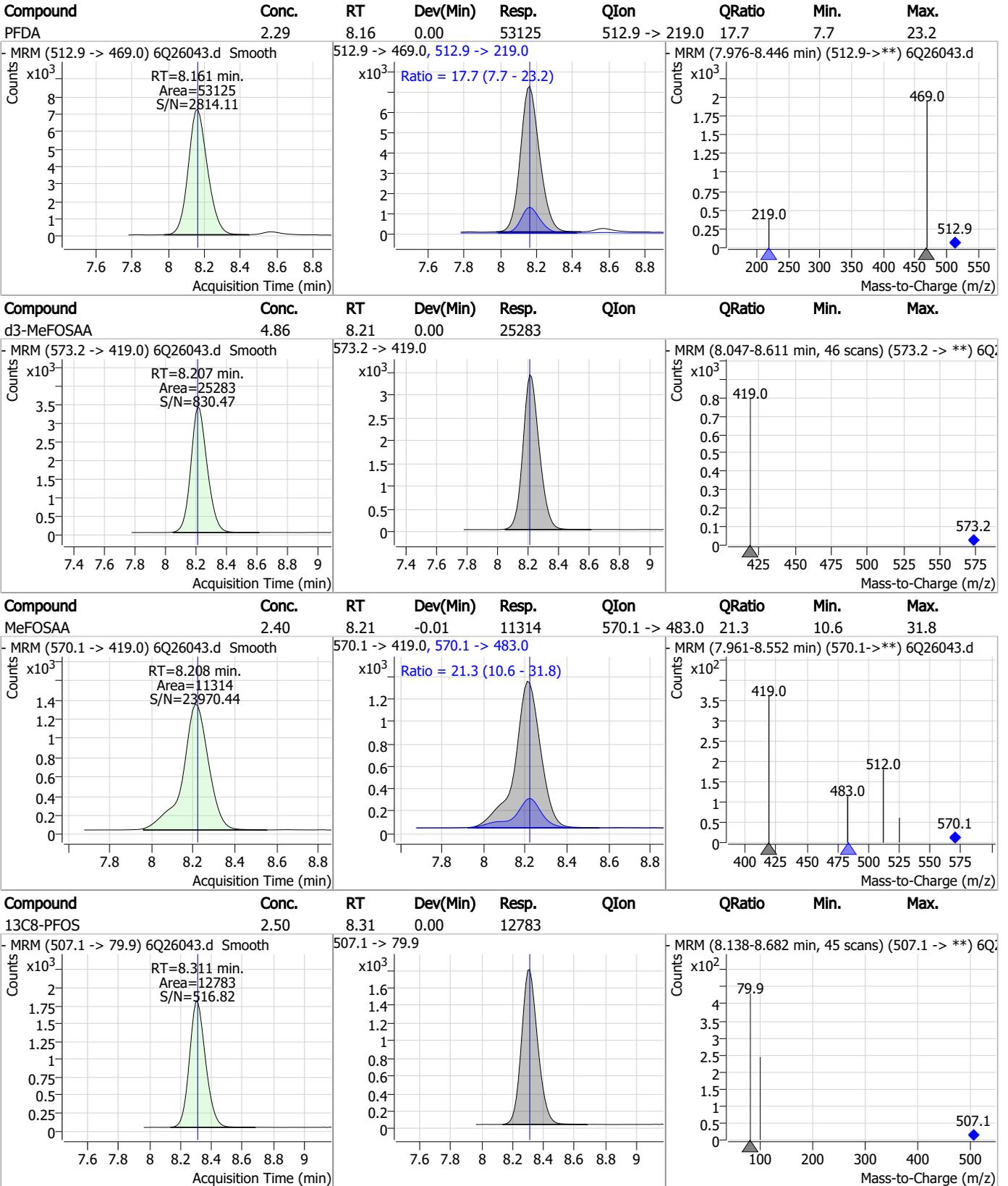
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.37	7.82	0.00	12519	449.0 -> 98.9	45.0	24.5	73.4
13C2-8:2FTS	5.34	7.95	0.00	3514	529.1 -> 80.9			
8:2FTS	9.28	7.95	0.00	22723	527.1 -> 80.8	36.7	17.6	52.9
13C6-PFDA	1.41	8.16	0.00	29703	519.1 -> 474.1			

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Perfluorinated Compounds by LC/MS/MS

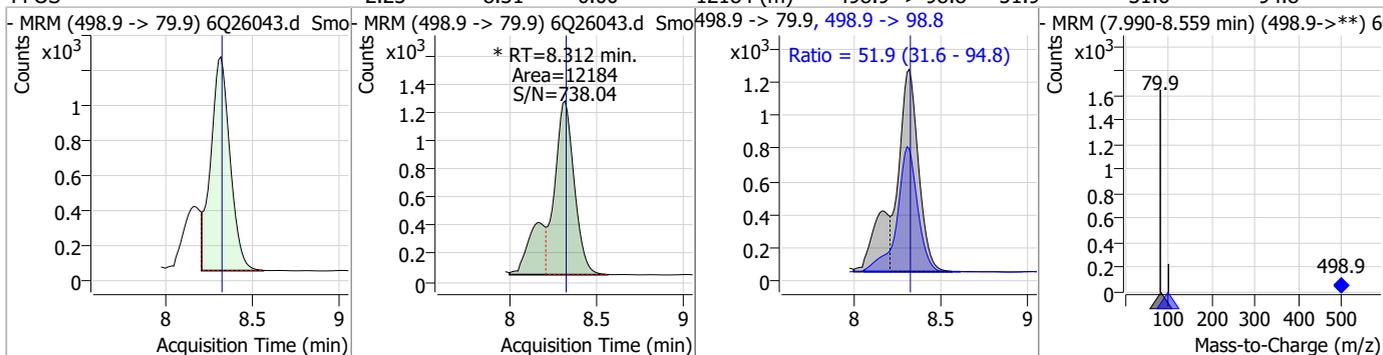


7.7.15 7

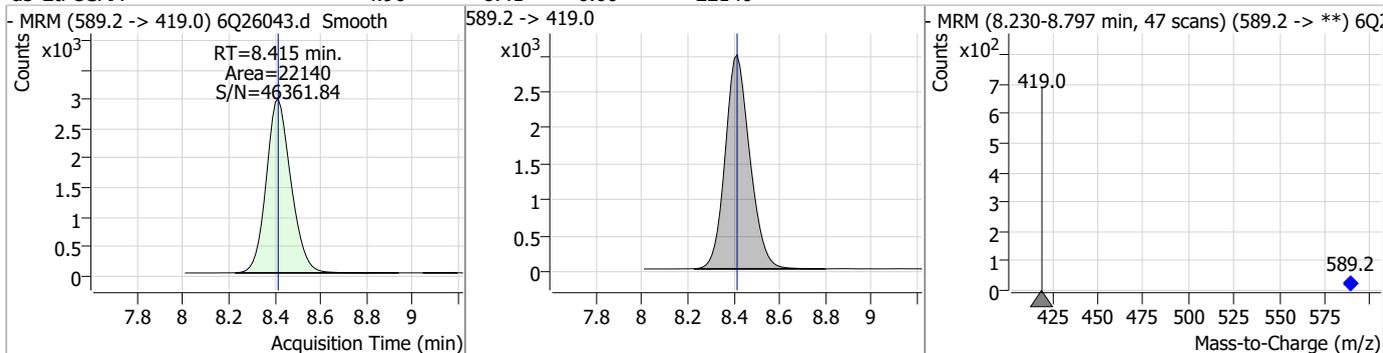


Perfluorinated Compounds by LC/MS/MS

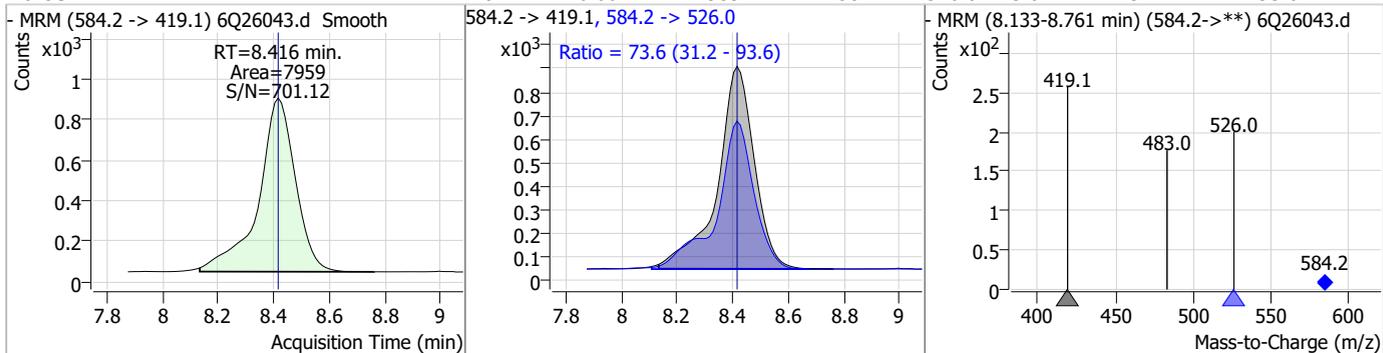
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.23	8.31	0.00	12184 (m)	498.9 -> 98.8	51.9	31.6	94.8



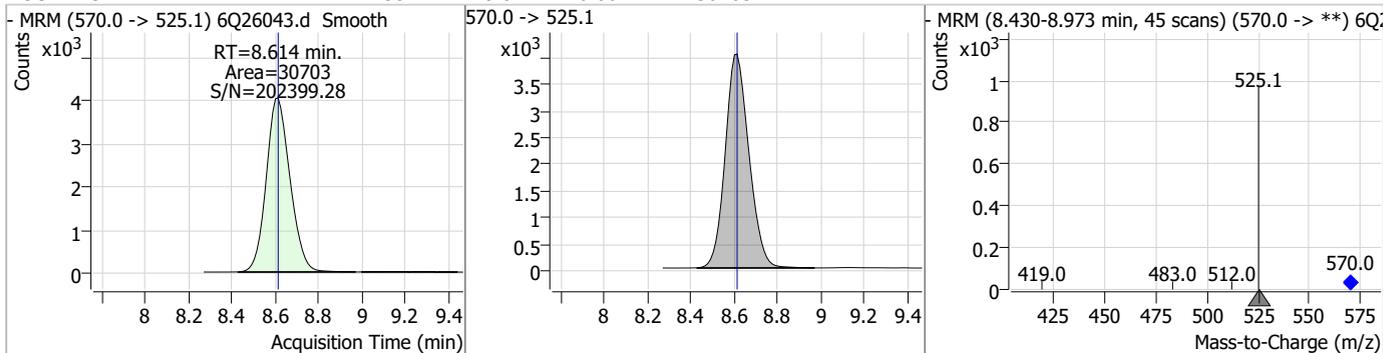
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.96	8.41	0.00	22140				



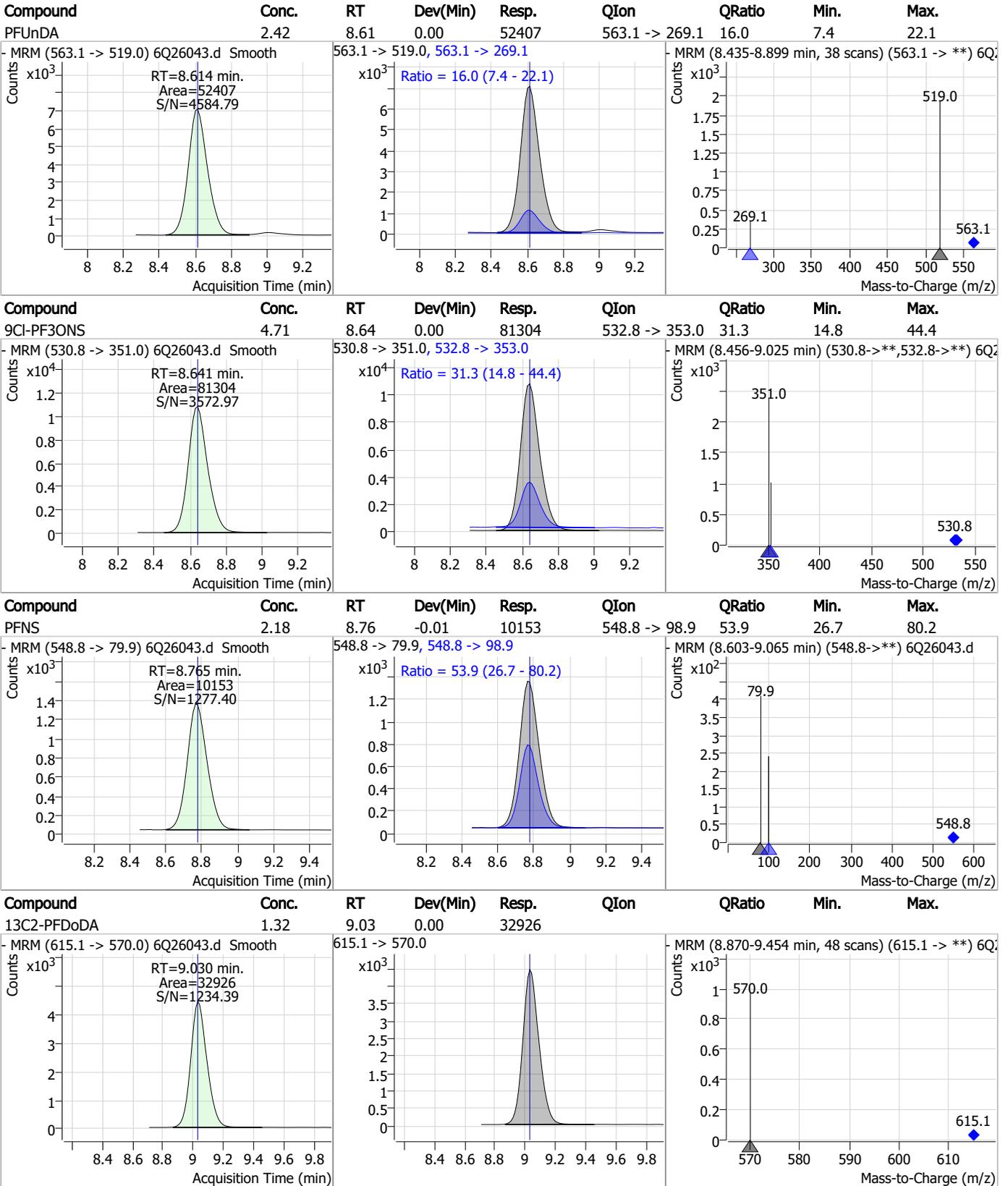
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.21	8.42	0.00	7959	584.2 -> 526.0	73.6	31.2	93.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.61	0.00	30703				



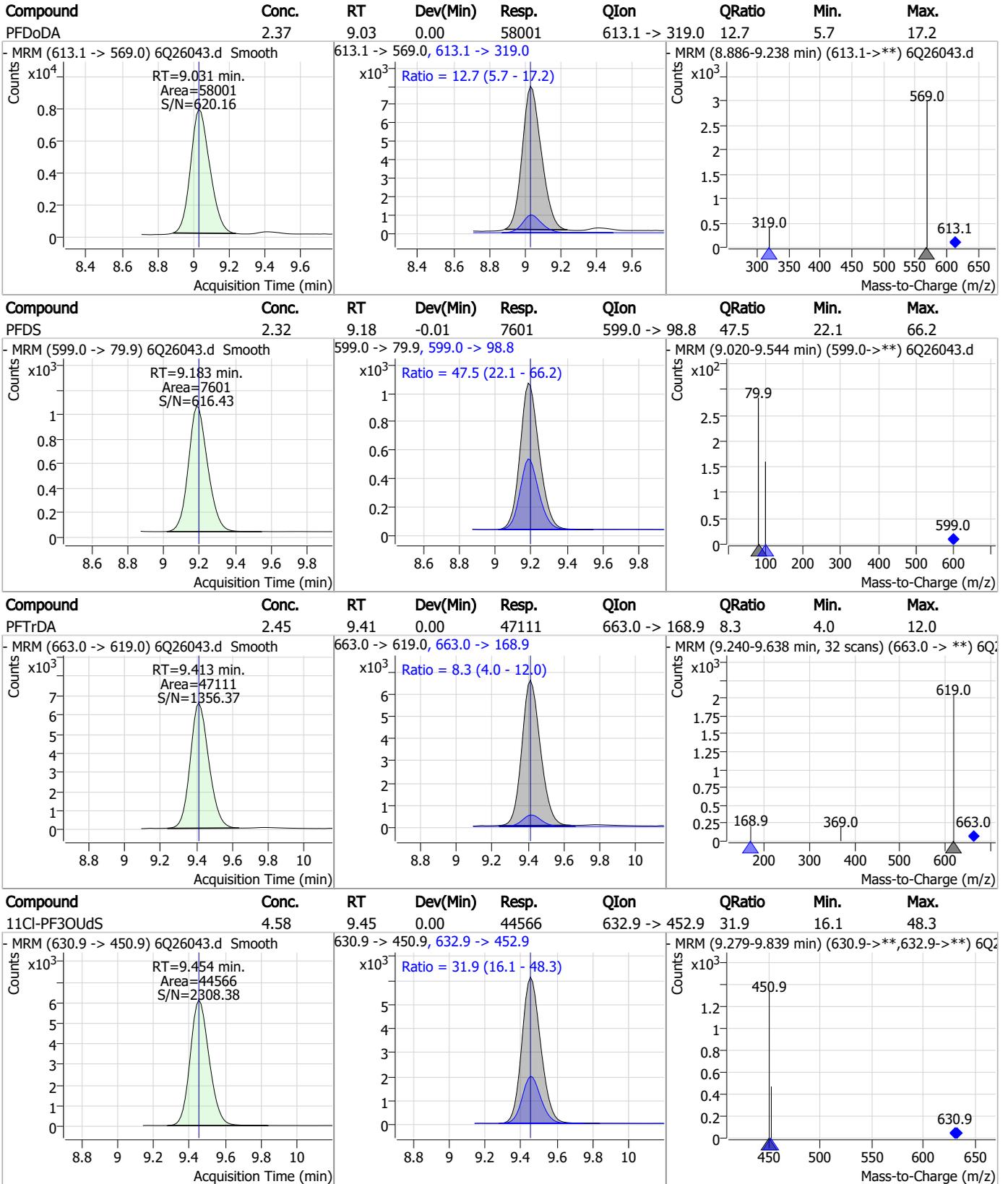
Perfluorinated Compounds by LC/MS/MS



7.7.15 7



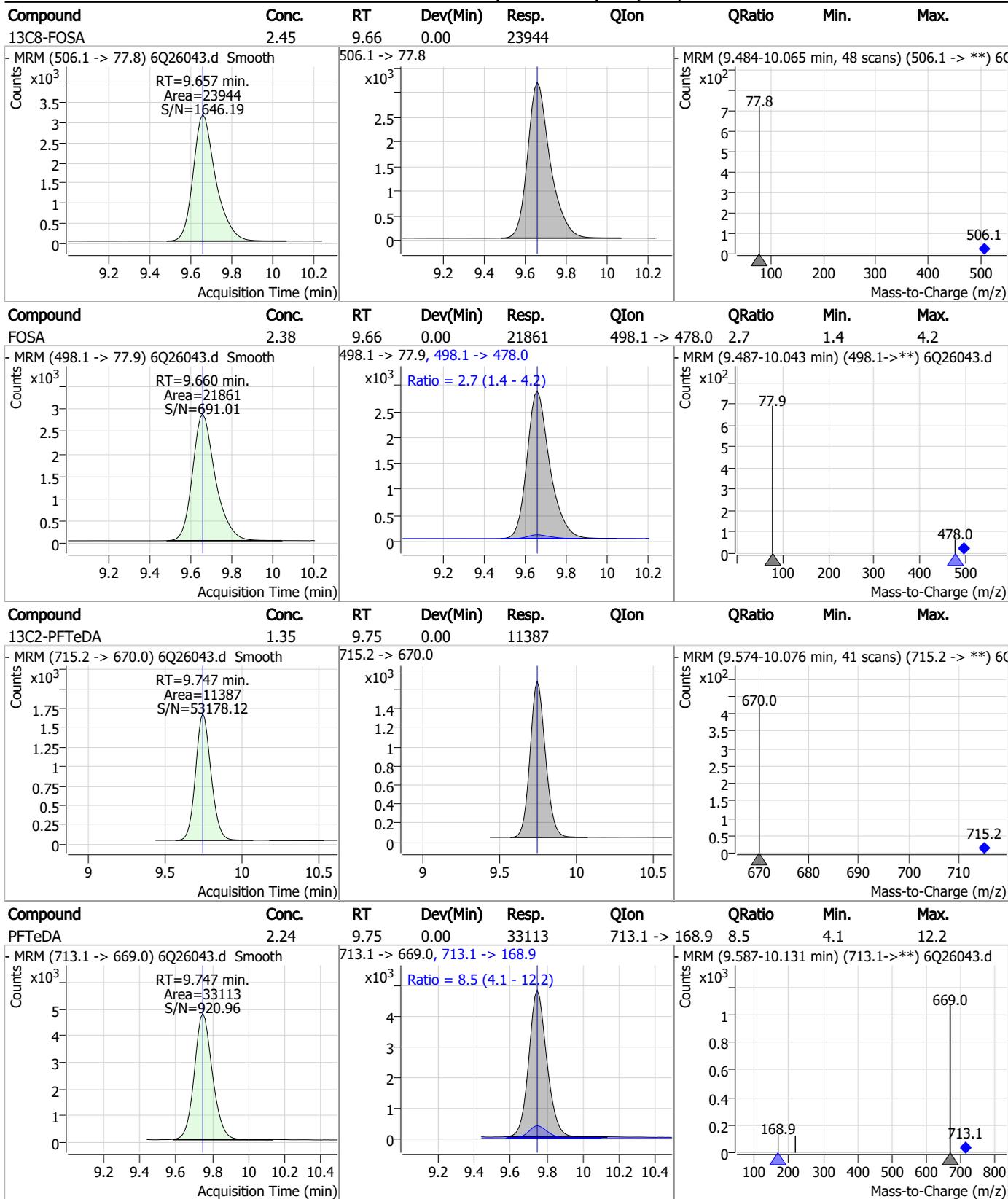
Perfluorinated Compounds by LC/MS/MS



7.7.15 7



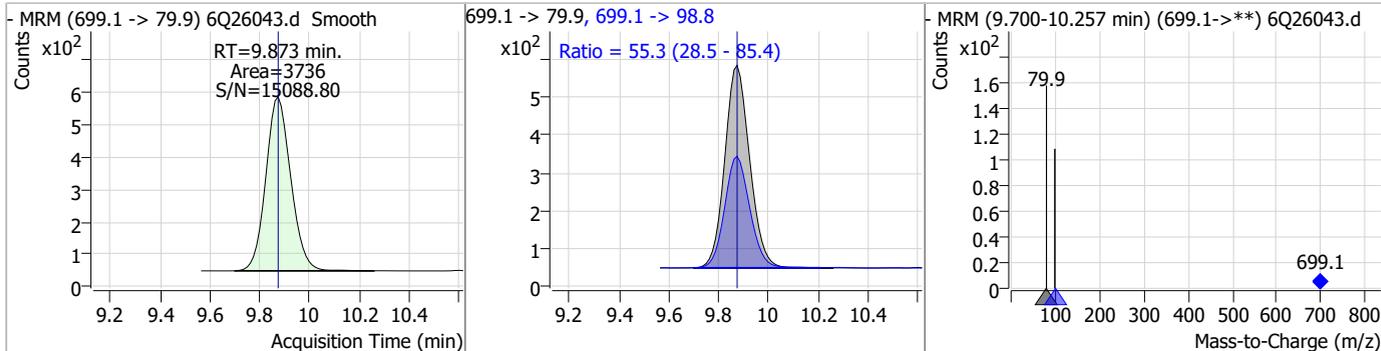
Perfluorinated Compounds by LC/MS/MS



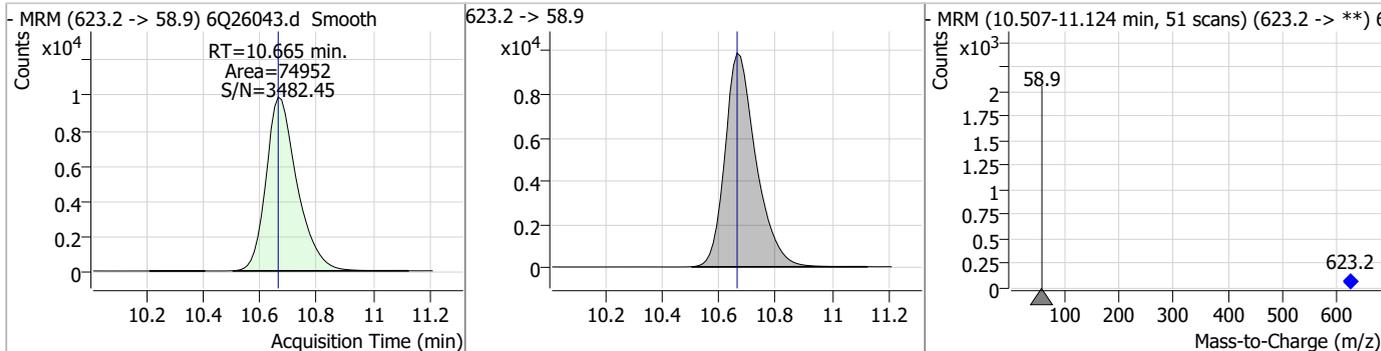
7.7.15
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Perfluorinated Compounds by LC/MS/MS

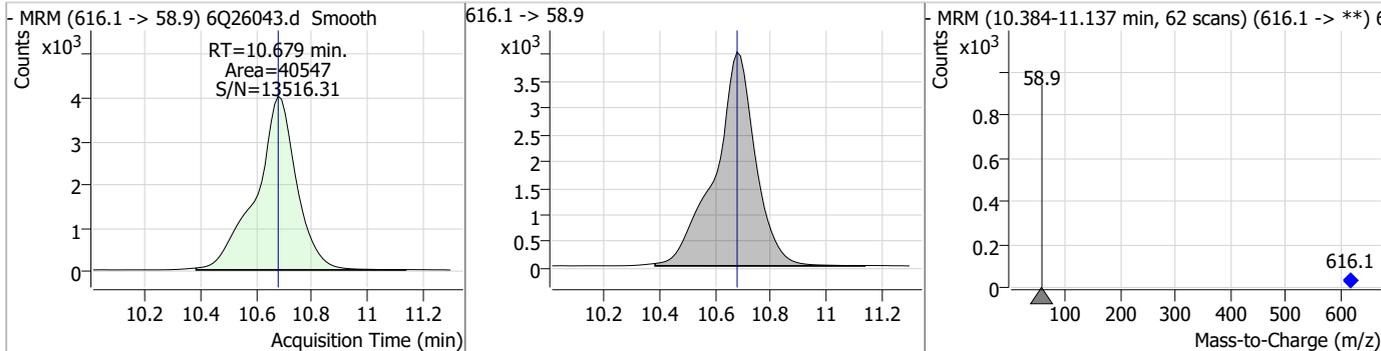
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.20	9.87	0.00	3736	699.1 -> 98.8	55.3	28.5	85.4



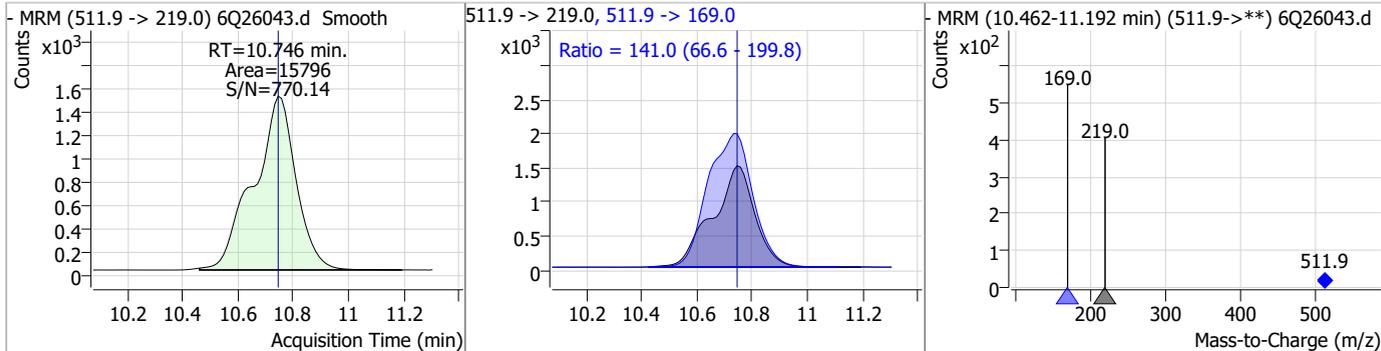
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.78	10.67	0.00	74952				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.24	10.68	0.00	40547				

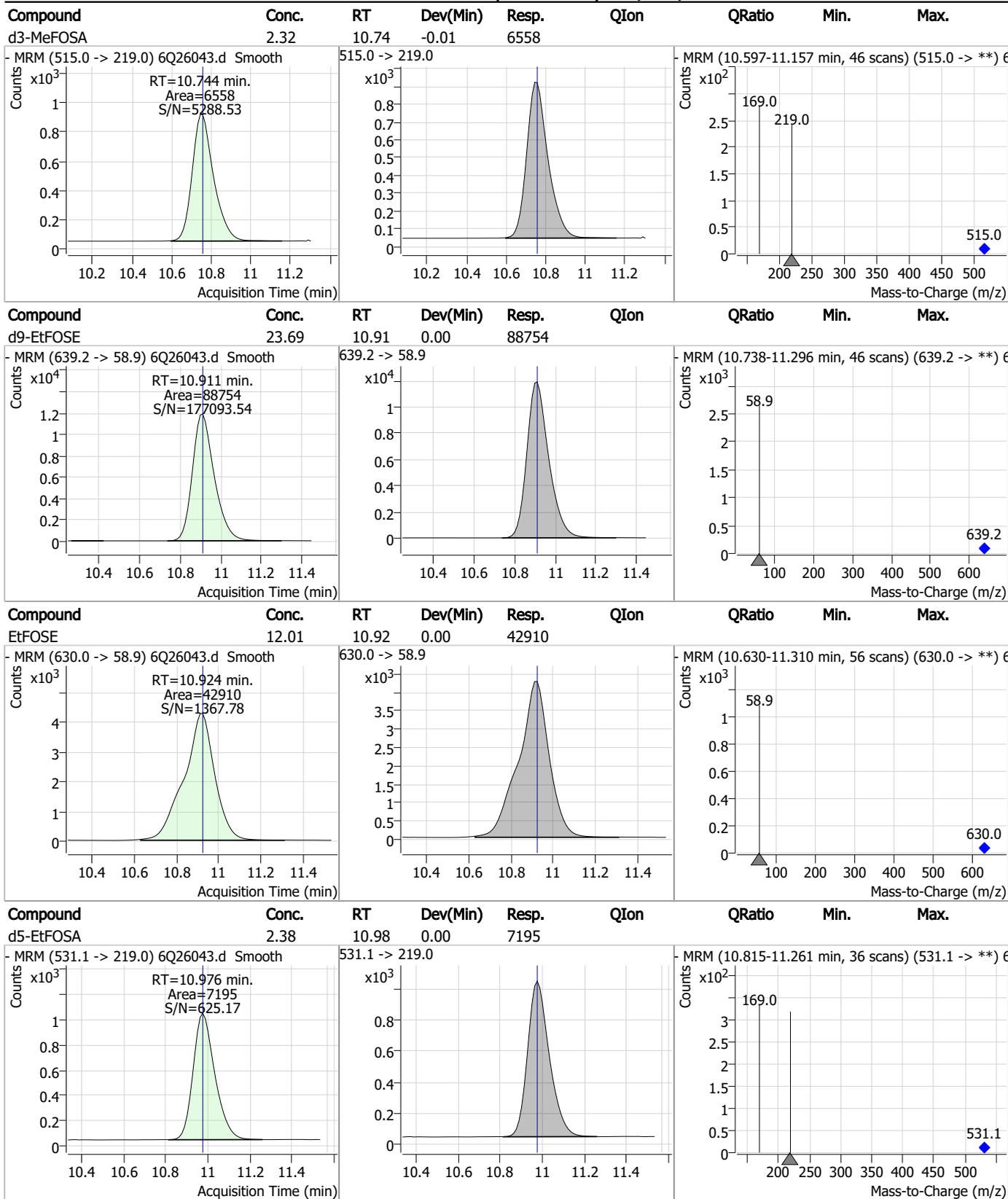


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.20	10.75	0.00	15796	511.9 -> 169.0	141.0	66.6	199.8



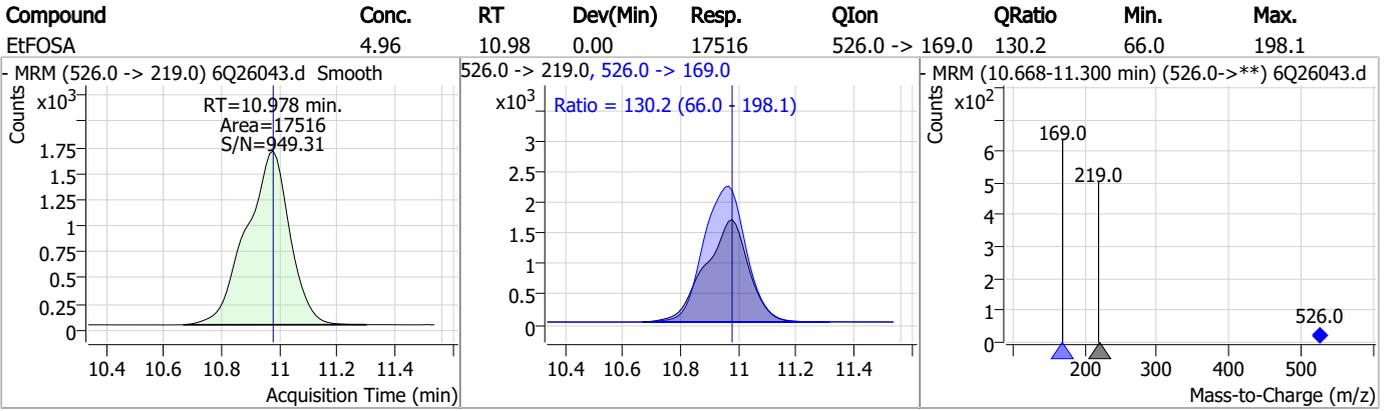
7.7.15
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Perfluorinated Compounds by LC/MS/MS



7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q26043.D Analyst approved: 10/09/23 15:18 Martha Valls
Injection Time: 10/09/23 14:16 Supervisor approved: 10/09/23 16:36 Natasha Gumtie

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

7.7.15.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26049.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 3:42:31 PM
 Sample Name : cc367-4
 Vial : P1-A5
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	158928	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	54997	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	53101	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	47315	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	65849	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	25883	1.25 µg/L	0.000
M6-PFDA	8.161	519.1 -> 474.1	27334	1.25 µg/L	0.000
M7-PFUnDA	8.601	570.0 -> 525.1	30163	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	34779	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	11134	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	24222	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22832	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	11959	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	11975	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2224	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3435	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3539	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	26462	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	34668	10.00 µg/L	0.000
M5-EtFOSAA	8.402	589.2 -> 419.0	22001	5.00 µg/L	-0.012
M7-MeFOSE	10.666	623.2 -> 58.9	73560	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	83304	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7370	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6640	2.50 µg/L	-0.012
13C4-PFOS	8.312	502.8 -> 79.9	12073	2.50 µg/L	0.000
13C3-PFBA	2.952	216.0 -> 172.0	66101	5.00 µg/L	0.000
18O2-PFHxS	7.263	403.0 -> 83.9	8083	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	75946	2.50 µg/L	0.000
13C2-PFDA	8.149	515.1 -> 470.1	26712	1.25 µg/L	-0.012
13C5-PFNA	7.680	468.0 -> 423.0	26693	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49099	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2224	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3435	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3539	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C2-PFDoDA	9.030	615.1 -> 570.0	34779	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.5%		
13C2-PFTeDA	9.747	715.2 -> 670.0	11134	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.497	302.1 -> 79.9	22832	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.263	402.1 -> 79.9	11959	2.33 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C4-PFBA	2.947	216.8 -> 171.9	158928	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.519	367.1 -> 322.0	47315	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C5-PFHxA	5.580	318.0 -> 273.0	53101	2.62 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFPeA	4.372	268.3 -> 223.0	54997	4.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	8.161	519.1 -> 474.1	27334	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C7-PFUnDA	8.601	570.0 -> 525.1	30163	1.24 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-FOSA	9.657	506.1 -> 77.8	24222	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-PFOA	7.161	421.1 -> 376.0	65849	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.298	507.1 -> 79.9	11975	2.30 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C9-PFNA	7.680	472.1 -> 427.0	25883	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
d3-MeFOSAA	8.207	573.2 -> 419.0	26462	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	34668	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
d3-MeFOSA	10.744	515.0 -> 219.0	6640	2.30 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
d5-EtFOSAA	8.402	589.2 -> 419.0	22001	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
d7-MeFOSE	10.666	623.2 -> 58.9	73560	22.88 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
d9-EtFOSE	10.911	639.2 -> 58.9	83304	21.80 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.2%	
d5-EtFOSA	10.976	531.1 -> 219.0	7370	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	35060	9.50 µg/L	97
		327.1 -> 80.9	14251		
6:2FTS	6.937	427.1 -> 407.0	30275	9.70 µg/L	96
		427.1 -> 80.9	10939		
8:2FTS	7.950	527.1 -> 507.0	23563	9.56 µg/L	97
		527.1 -> 80.8	8769		
EtFOSAA	8.416	584.2 -> 419.1	7791	2.18 µg/L	88
		584.2 -> 526.0	5584		
FOSA	9.660	498.1 -> 77.9	21427	2.31 µg/L	99
		498.1 -> 478.0	662		
MeFOSAA	8.220	570.1 -> 419.0	11712	2.37 µg/L	97
		570.1 -> 483.0	2334		
PFBA	2.956	212.8 -> 168.9	57851	9.77 µg/L	100
PFBS	5.499	298.7 -> 79.9	14492	2.12 µg/L	96
		298.7 -> 98.8	5650		
PFDA	8.149	512.9 -> 469.0	50792	2.38 µg/L	98
		512.9 -> 219.0	8346		
PFDoDA	9.031	613.1 -> 569.0	60884	2.35 µg/L	100
		613.1 -> 319.0	7017		
PFDS	9.183	599.0 -> 79.9	7278	2.38 µg/L	95

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.520	599.0 -> 98.8	3465	2.48	µg/L	100
		363.1 -> 319.0	63601			
PFHpS	7.807	363.1 -> 169.0	9335	2.55	µg/L	95
		449.0 -> 79.9	12628			
PFHxA	5.582	449.0 -> 98.9	5726	2.32	µg/L	99
		313.0 -> 269.0	43978			
PFHxS	7.252	313.0 -> 118.9	2139	2.22	µg/L	m
		398.7 -> 79.9	11077			
PFNA	7.680	398.7 -> 98.9	5430	2.63	µg/L	97
		463.0 -> 419.0	41932			
PFNS	8.765	463.0 -> 219.0	9489	2.36	µg/L	94
		548.8 -> 79.9	10289			
PFOA	7.163	548.8 -> 98.9	5040	2.38	µg/L	96
		413.0 -> 369.0	67232			
PFOS	8.300	413.0 -> 169.0	11087	2.35	µg/L	m
		498.9 -> 79.9	12037			
PFPeA	4.374	498.9 -> 98.8	5928	4.82	µg/L	100
		263.0 -> 219.0	57231			
PFPeS	6.571	349.1 -> 79.9	15407	2.39	µg/L	96
		349.1 -> 98.9	7092			
PFTeDA	9.747	713.1 -> 669.0	33383	2.30	µg/L	99
		713.1 -> 168.9	2810			
PFTrDA	9.413	663.0 -> 619.0	49371	2.43	µg/L	99
		663.0 -> 168.9	3807			
PFUnDA	8.602	563.1 -> 519.0	50166	2.36	µg/L	96
		563.1 -> 269.1	8255			
11CI-PF3OUdS	9.454	630.9 -> 450.9	43068	4.19	µg/L	97
		632.9 -> 452.9	14698			
9CI-PF3ONS	8.641	530.8 -> 351.0	79611	4.36	µg/L	98
		532.8 -> 353.0	24602			
ADONA	6.767	376.9 -> 250.9	217219	4.56	µg/L	97
		376.9 -> 84.8	56443			
HFPO-DA	5.958	284.9 -> 168.9	16696	4.86	µg/L	97
		284.9 -> 184.9	1833			
3:3FTCA	3.821	241.0 -> 177.0	10000	11.72	µg/L	100
		241.0 -> 117.0	1359			
5:3FTCA	6.233	341.0 -> 237.1	205669	57.79	µg/L	98
		341.0 -> 217.0	149618			
7:3FTCA	7.632	441.0 -> 316.9	124160	57.12	µg/L	100
		441.0 -> 336.9	250406			
EtFOSA	10.978	526.0 -> 219.0	17493	4.84	µg/L	96
		526.0 -> 169.0	22218			
EtFOSE	10.912	630.0 -> 58.9	43425	12.95	µg/L	100
		511.9 -> 219.0	15454			
MeFOSA	10.746	511.9 -> 169.0	21027	5.02	µg/L	98
		616.1 -> 58.9	39723			
MeFOSE	10.679	699.1 -> 79.9	3893	12.22	µg/L	100
		699.1 -> 98.8	1978			
PFDoDS	9.861	295.0 -> 201.0	11378	2.45	µg/L	92
		295.0 -> 84.9	2968			
NFDHA	5.462	279.0 -> 85.1	43948	4.77	µg/L	97
		229.0 -> 84.9	36738			
PFMBA	4.800	314.8 -> 134.9	99055	4.06	µg/L	99
PFMPA	3.513	314.8 -> 82.9	3385			
PFEESA	6.037					

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



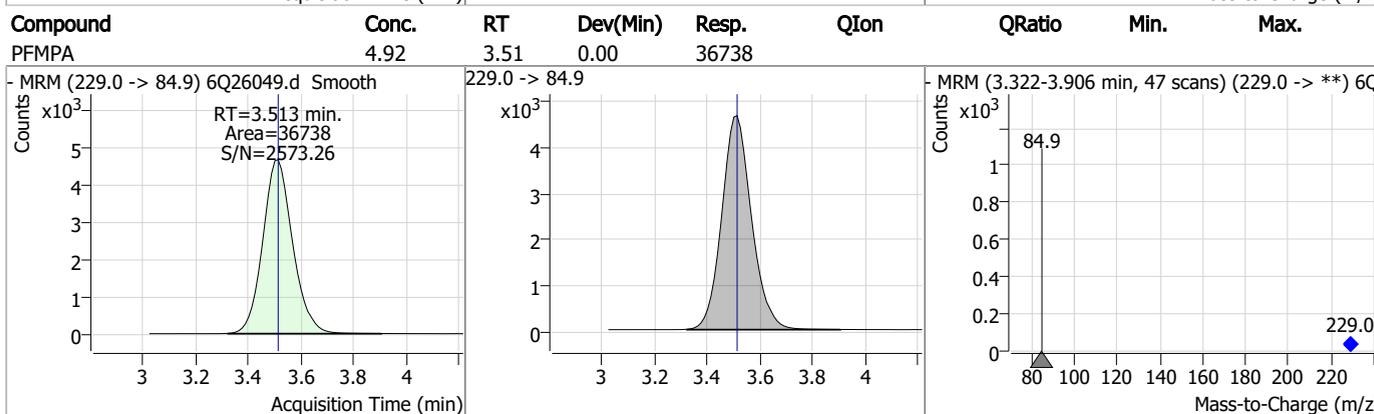
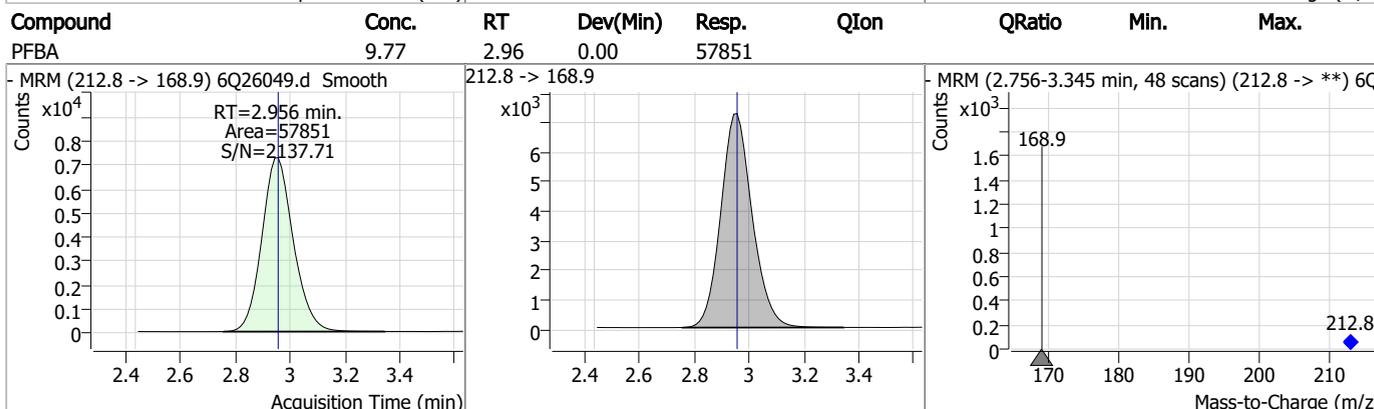
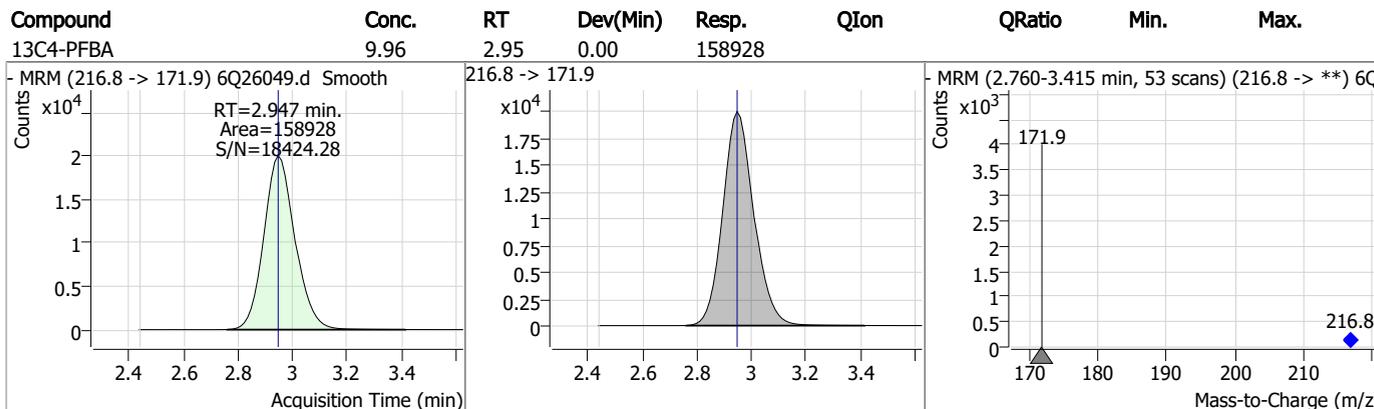
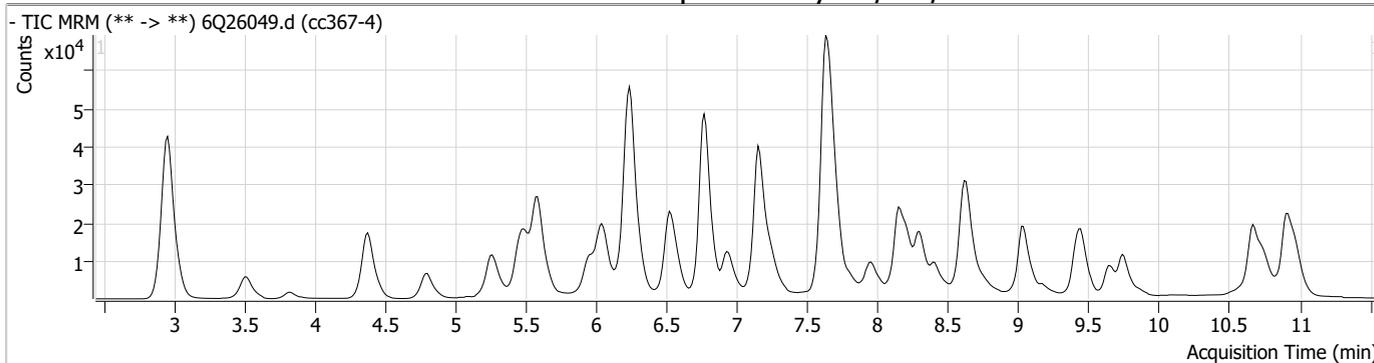
Perfluorinated Compounds by LC/MS/MS

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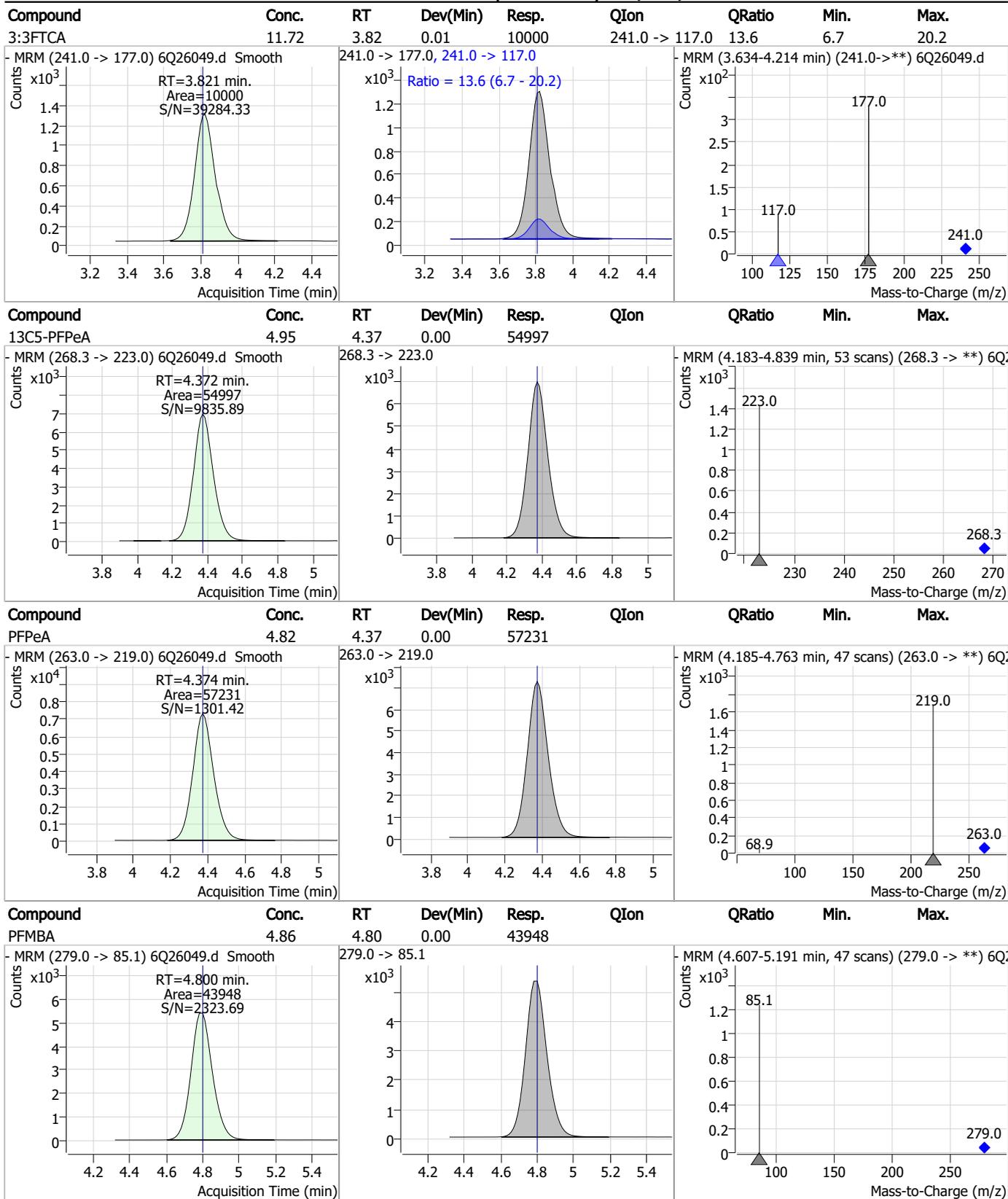
7.7.16

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Perfluorinated Compounds by LC/MS/MS

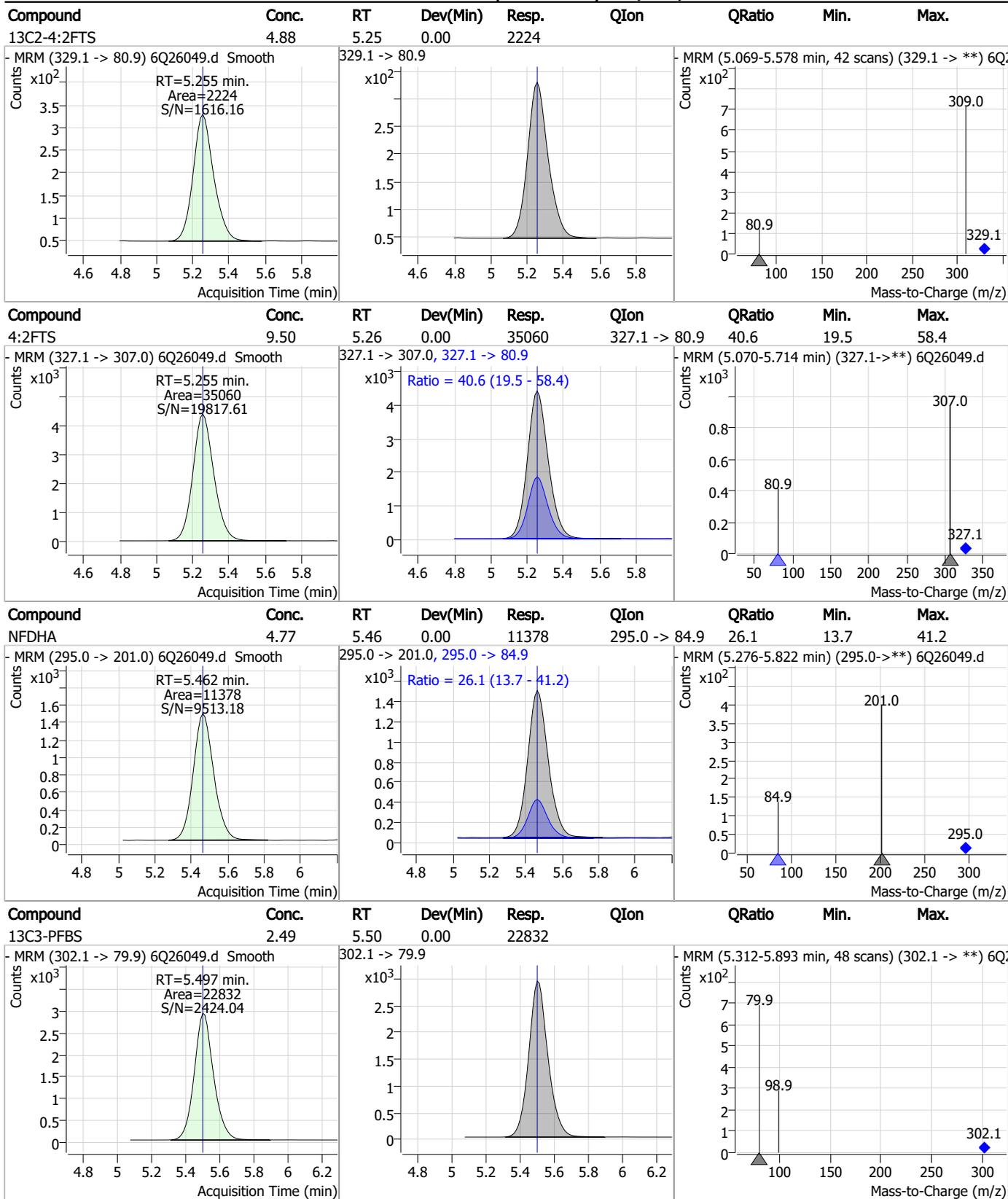


Perfluorinated Compounds by LC/MS/MS



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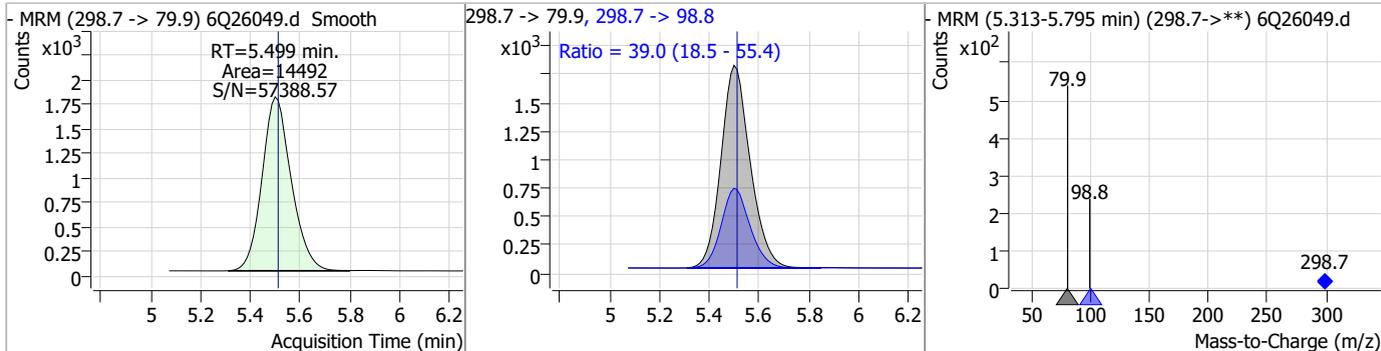
Perfluorinated Compounds by LC/MS/MS



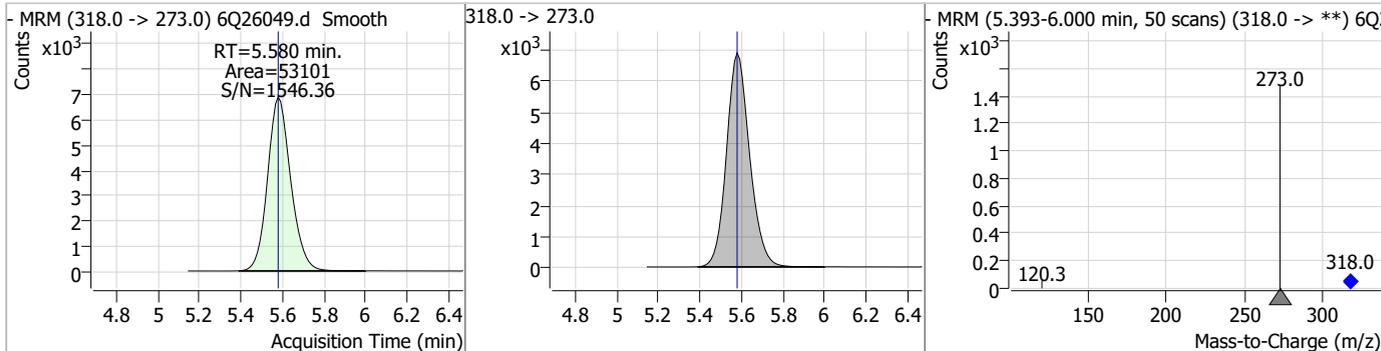
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Perfluorinated Compounds by LC/MS/MS

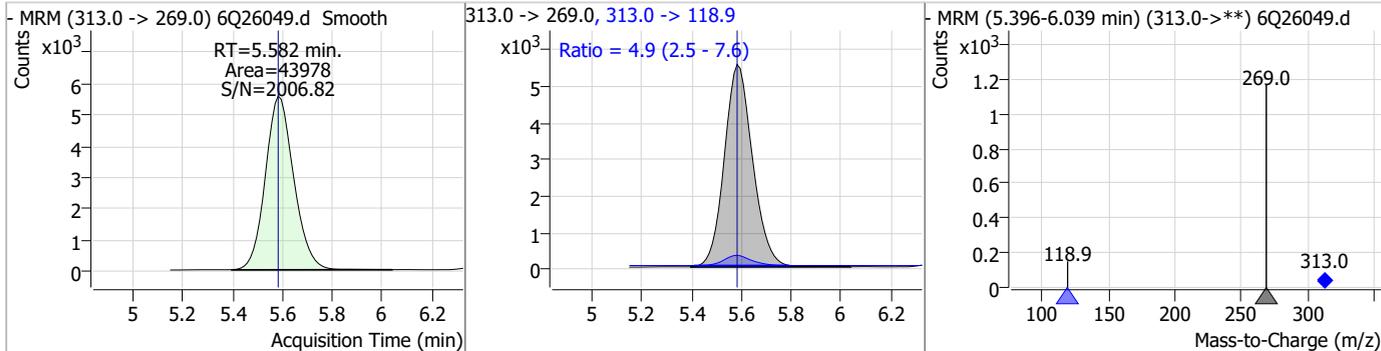
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.12	5.50	-0.01	14492	298.7 -> 98.8	39.0	18.5	55.4



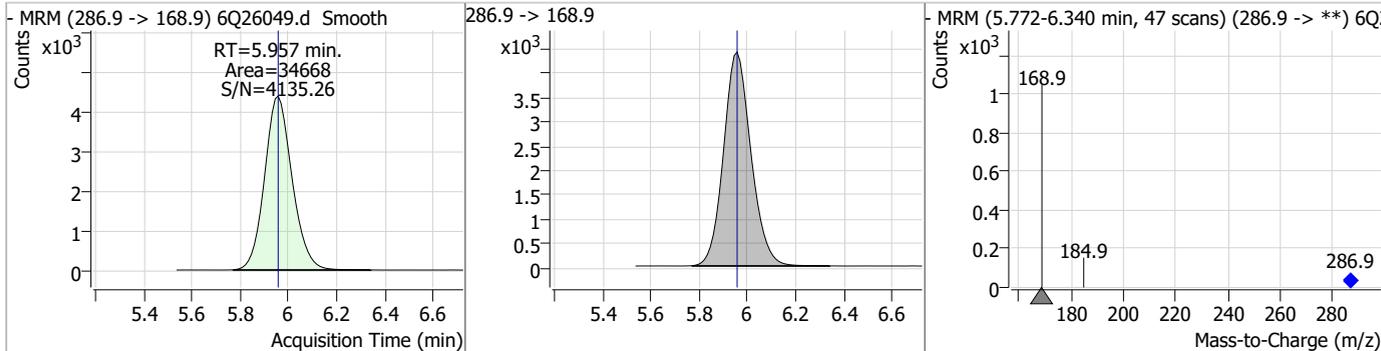
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.62	5.58	0.00	53101				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.32	5.58	0.00	43978	313.0 -> 118.9	4.9	2.5	7.6

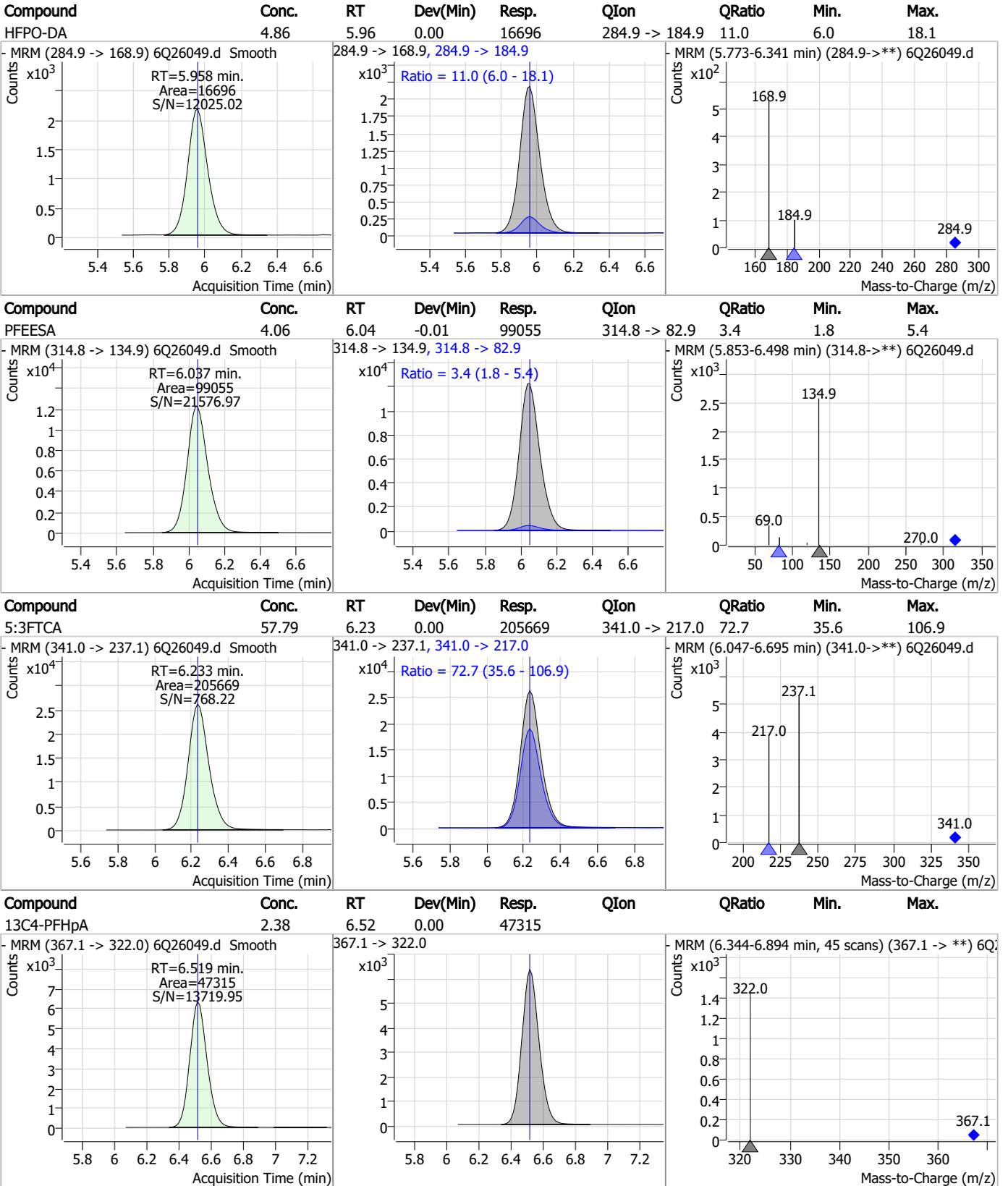


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.12	5.96	0.00	34668				



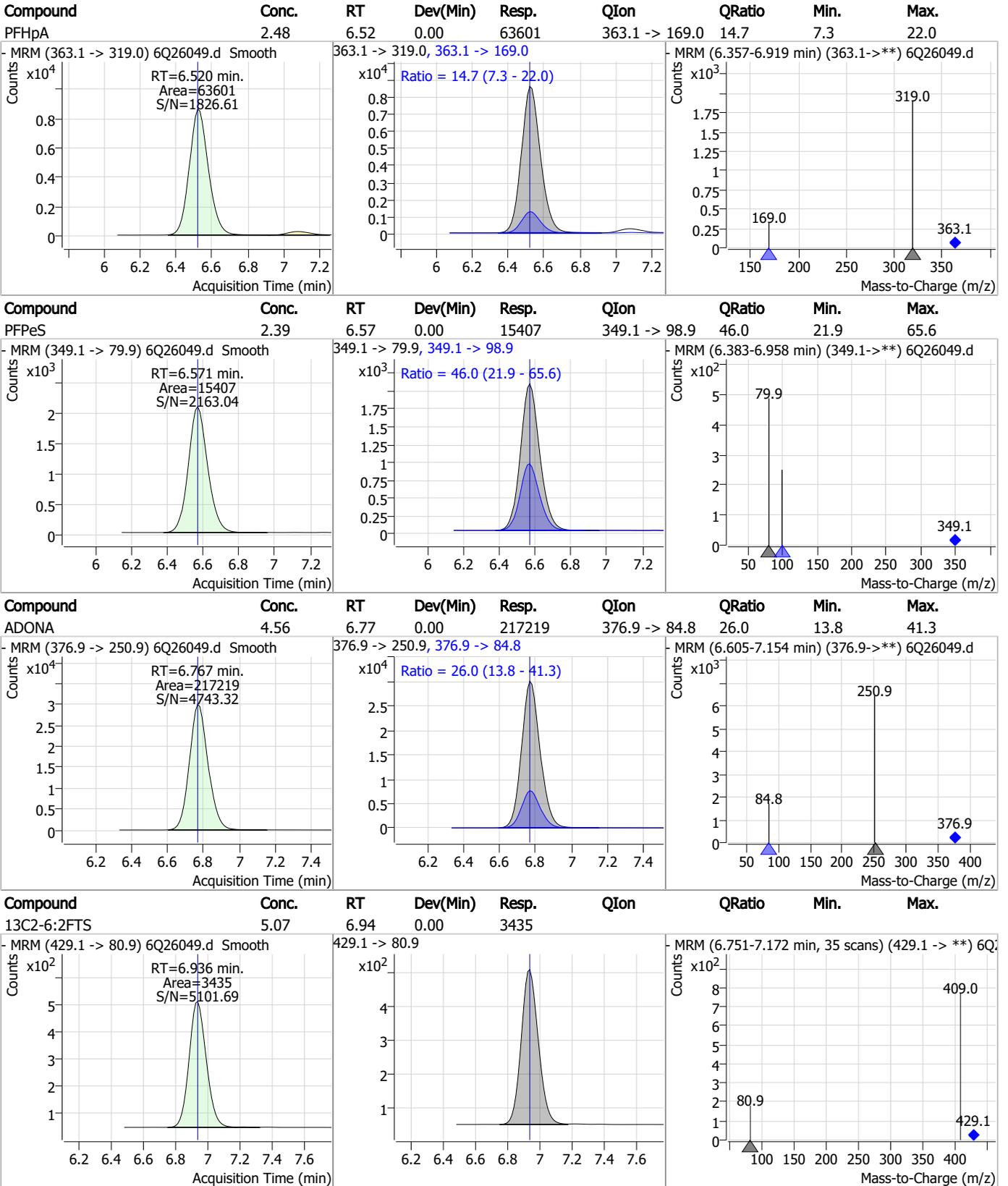
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Perfluorinated Compounds by LC/MS/MS



7.7.16 7

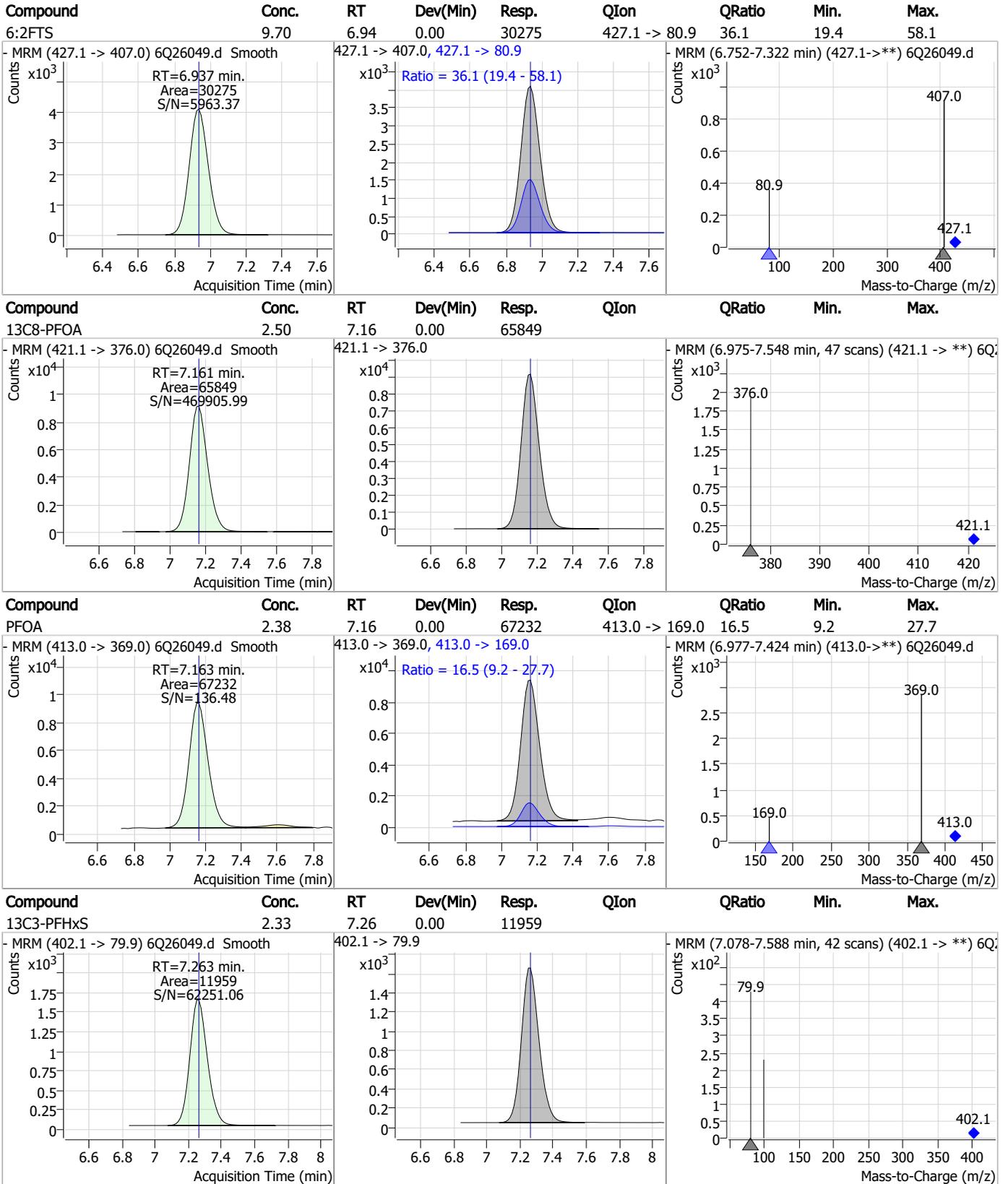
Perfluorinated Compounds by LC/MS/MS



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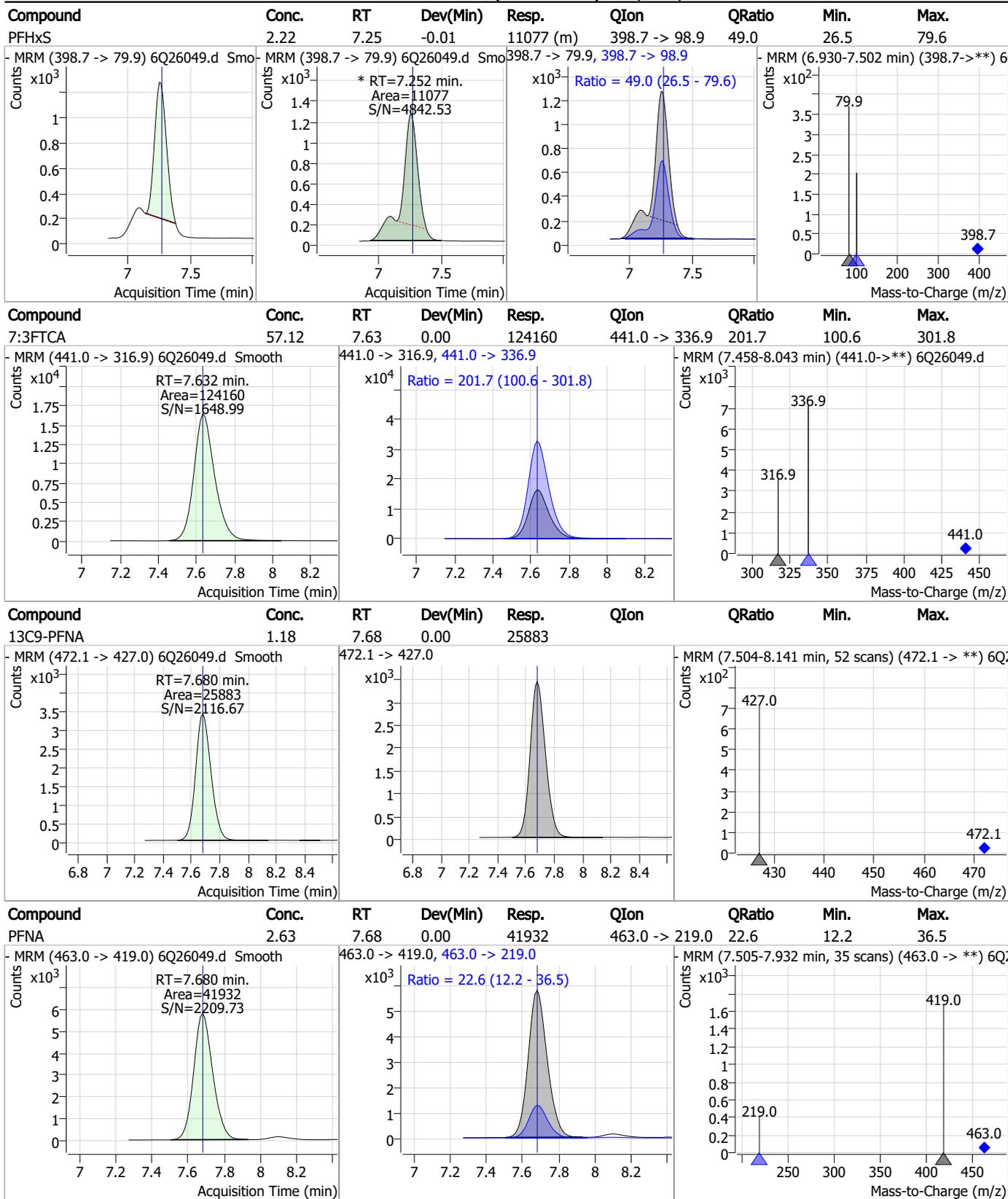


Perfluorinated Compounds by LC/MS/MS



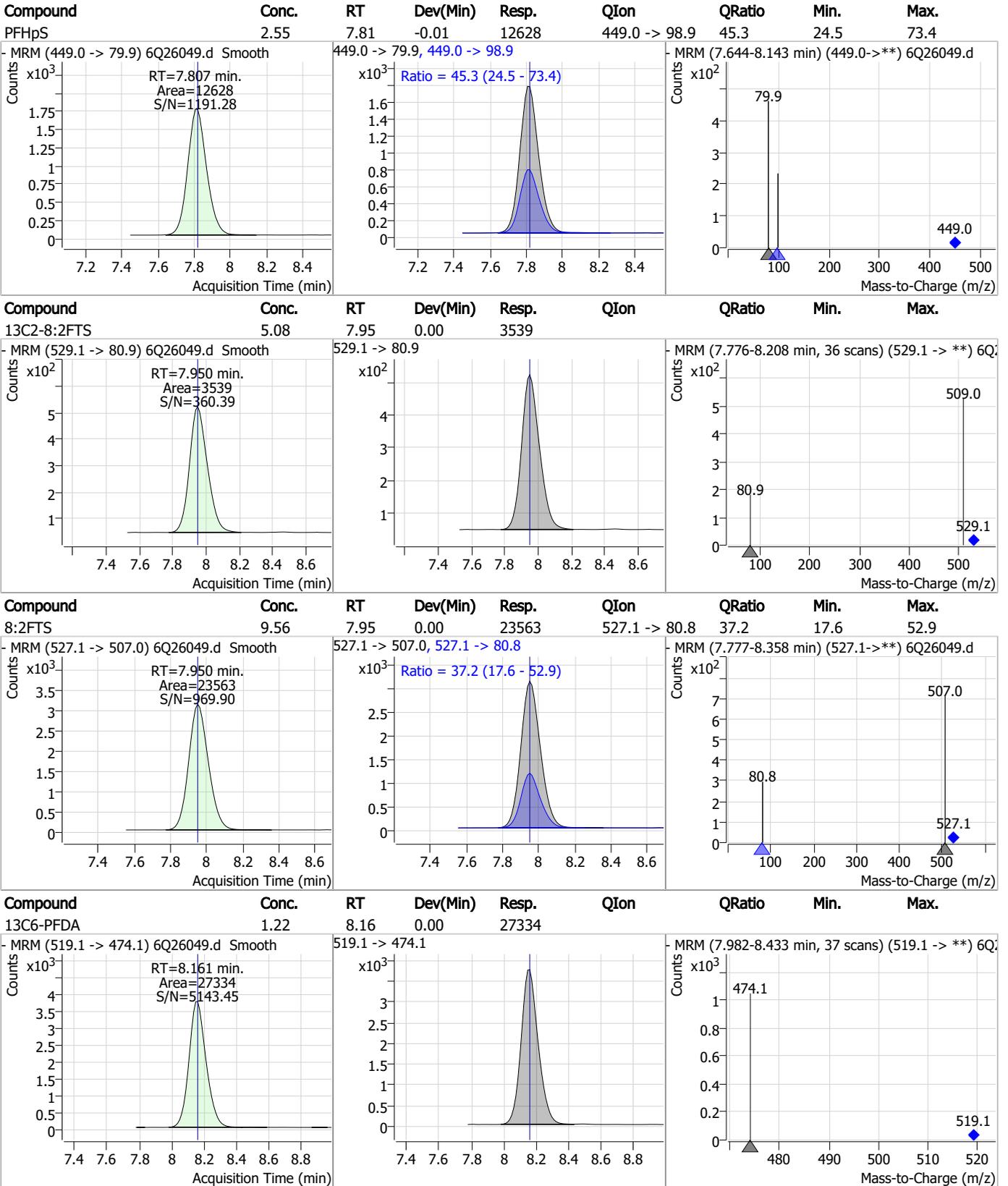
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Perfluorinated Compounds by LC/MS/MS



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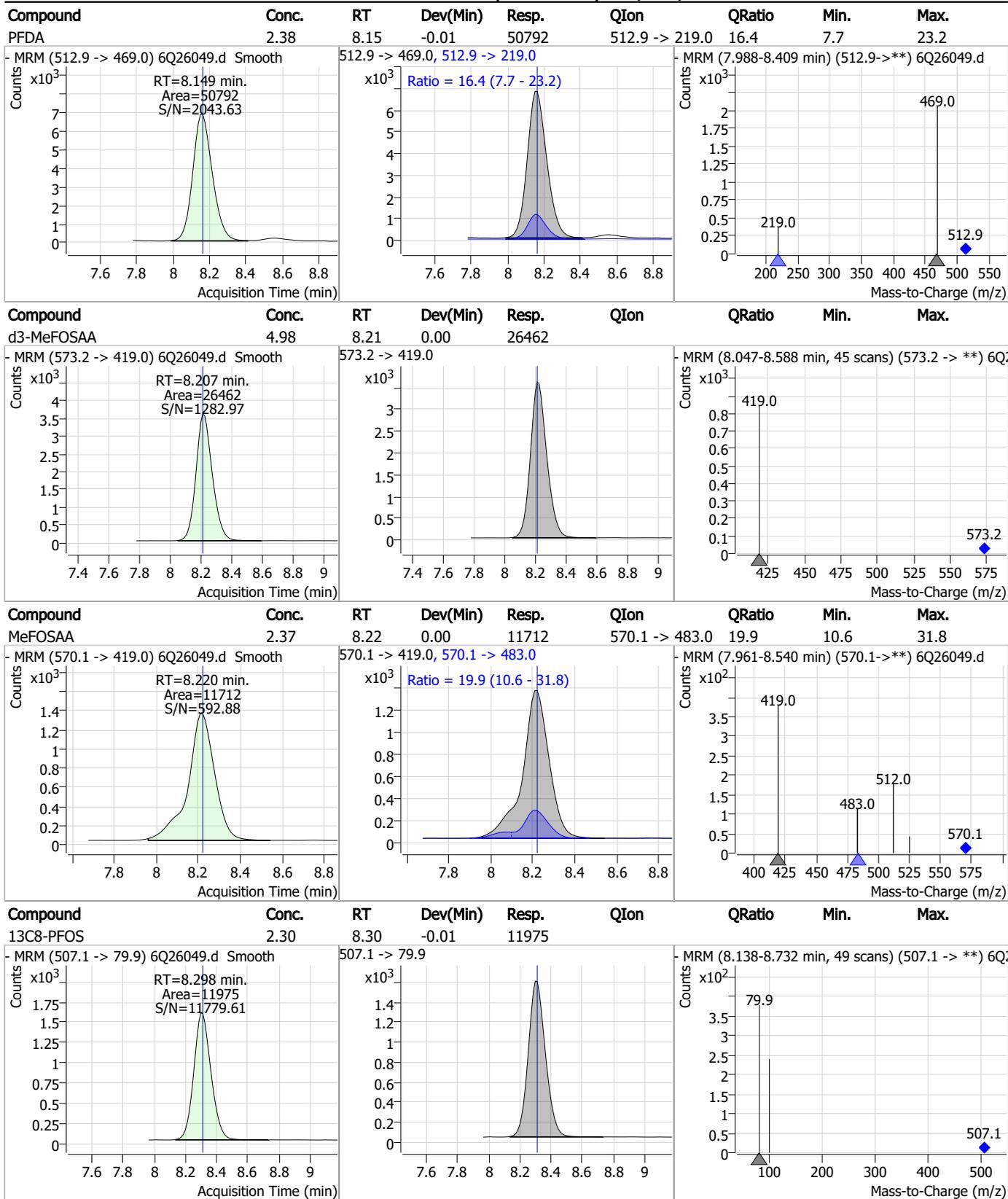
Perfluorinated Compounds by LC/MS/MS



7.7.16 7

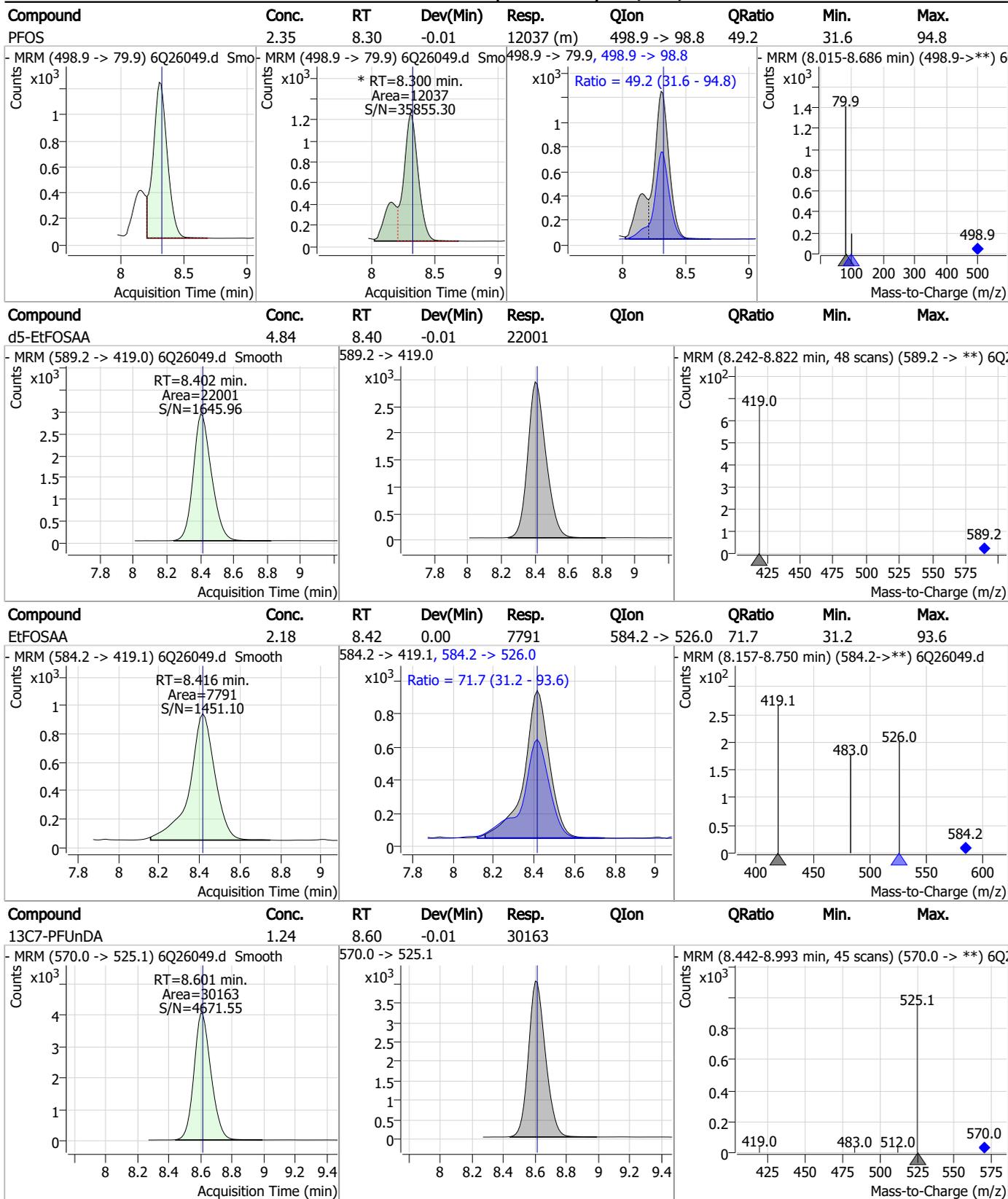


Perfluorinated Compounds by LC/MS/MS



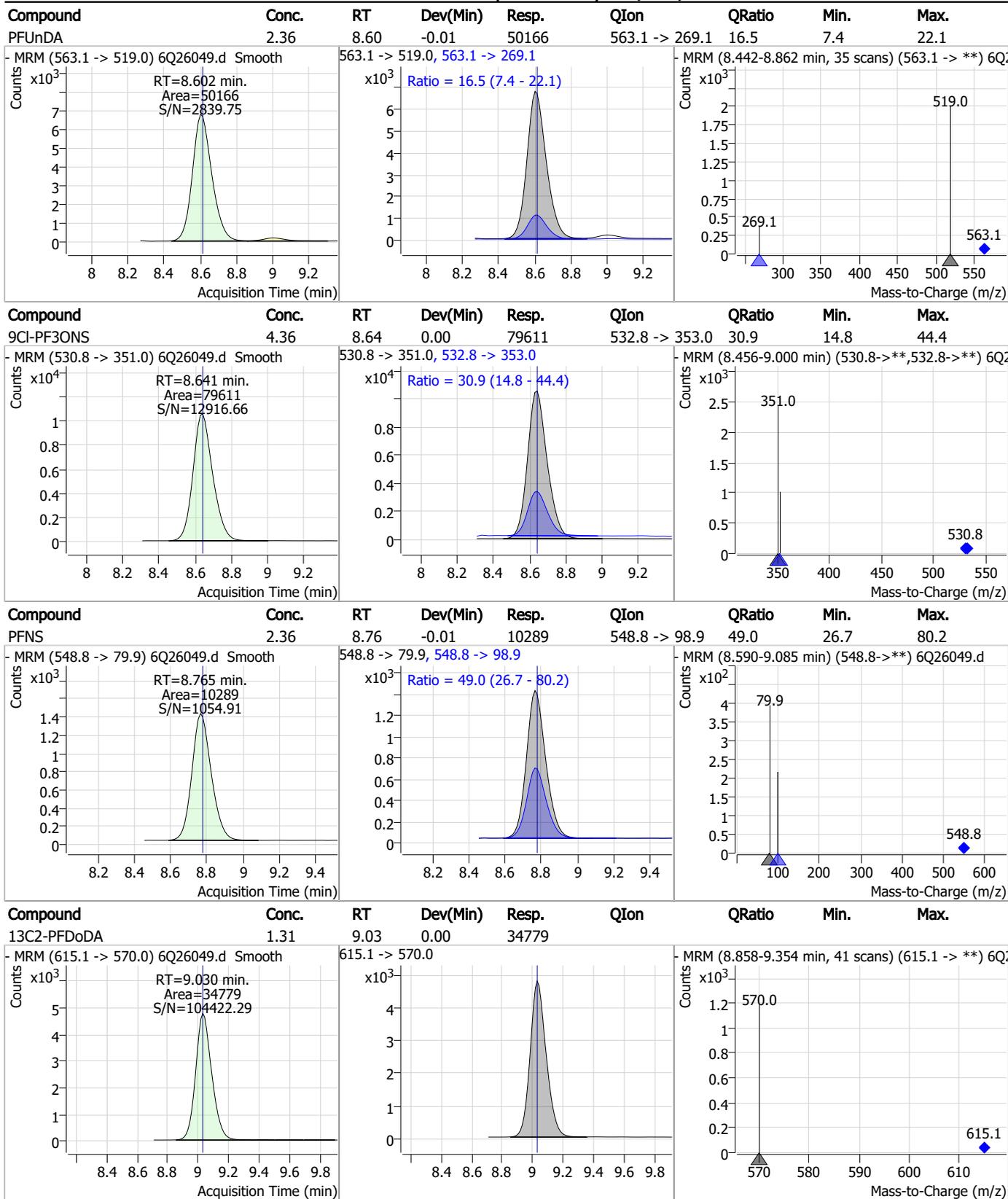
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Perfluorinated Compounds by LC/MS/MS



7.7.16
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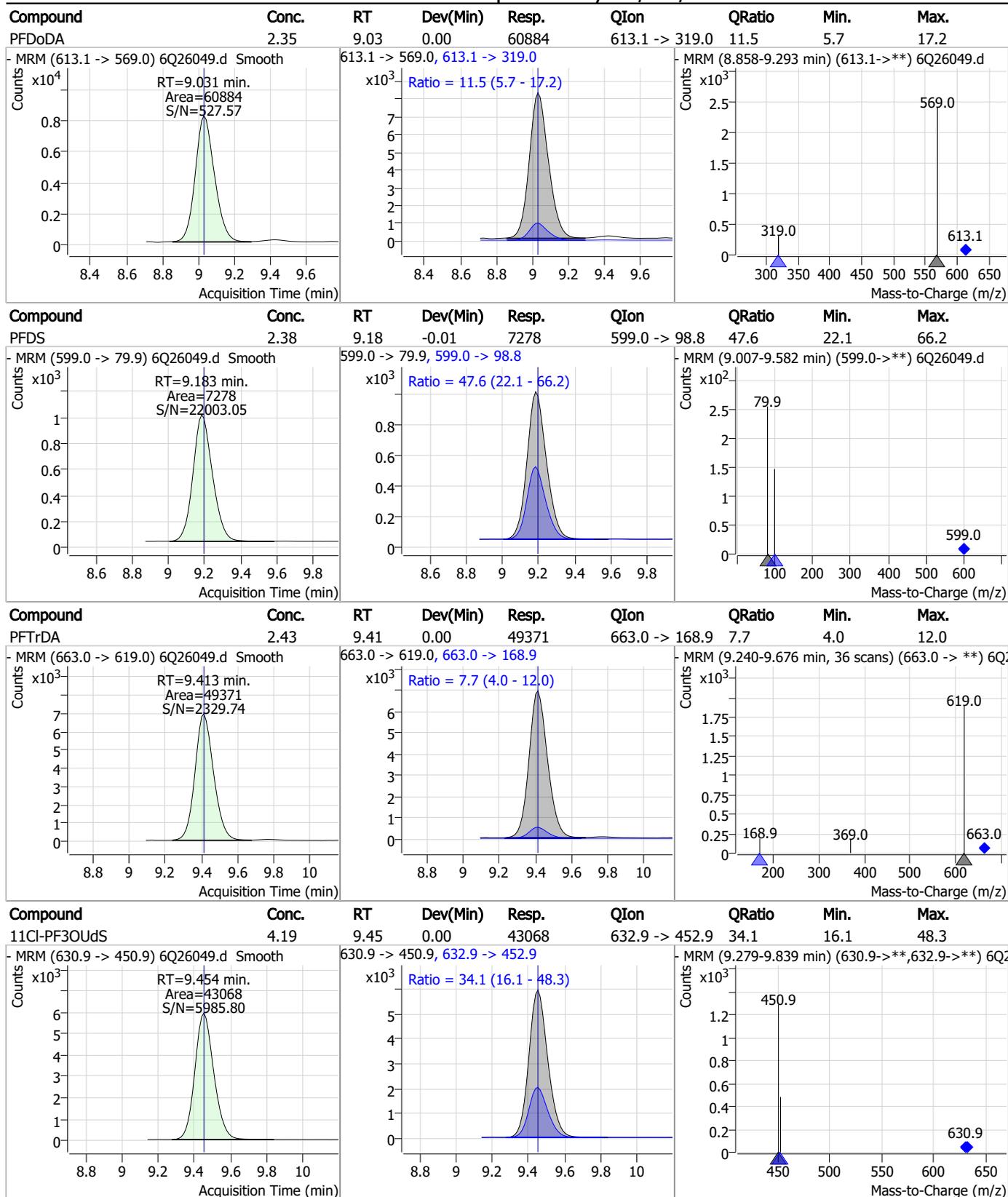
Perfluorinated Compounds by LC/MS/MS



7.7.16

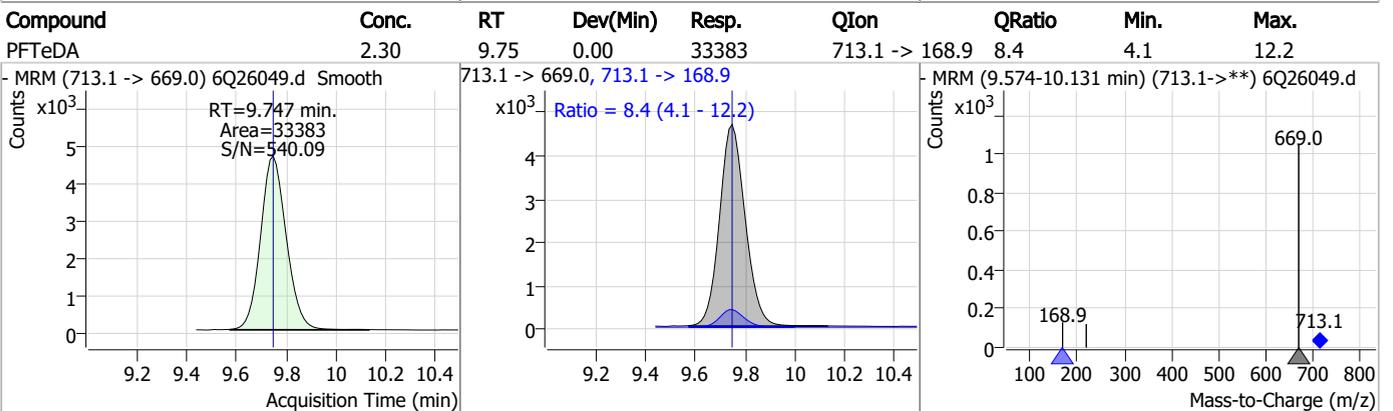
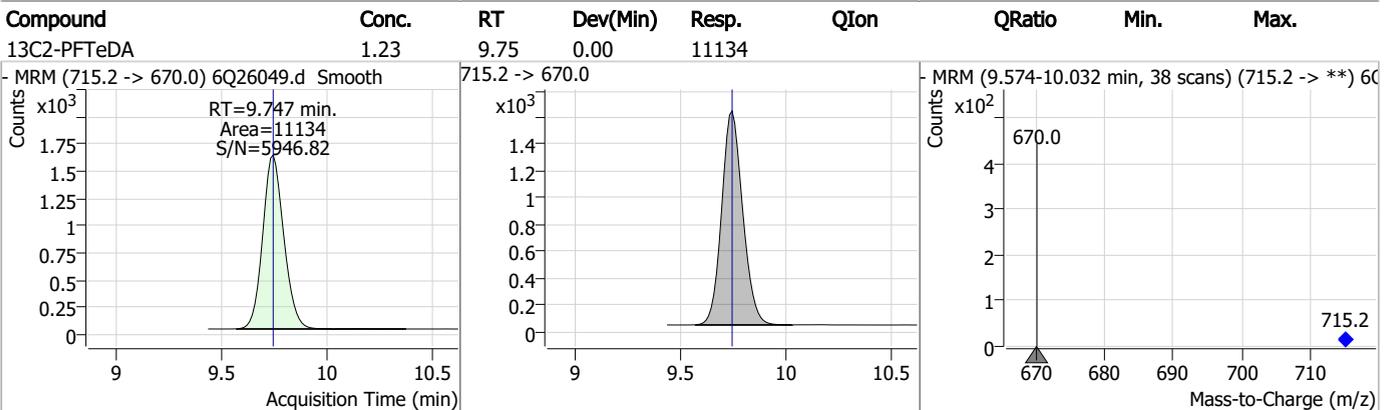
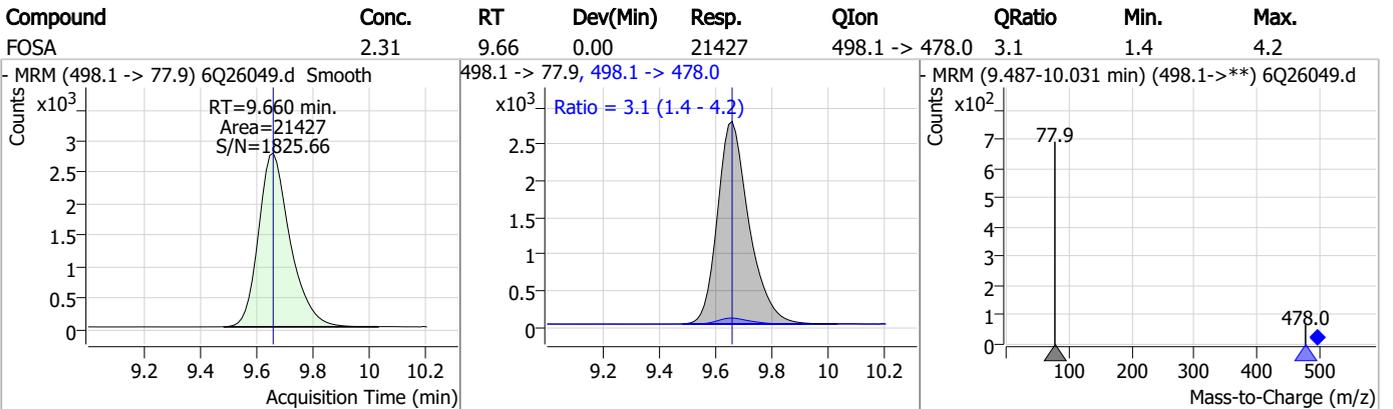
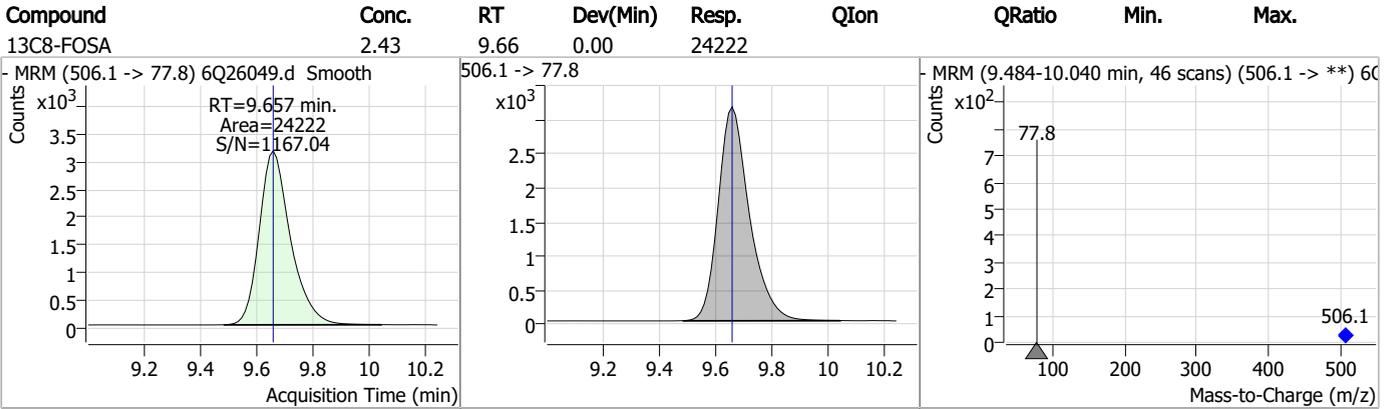
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Perfluorinated Compounds by LC/MS/MS



7.7.16
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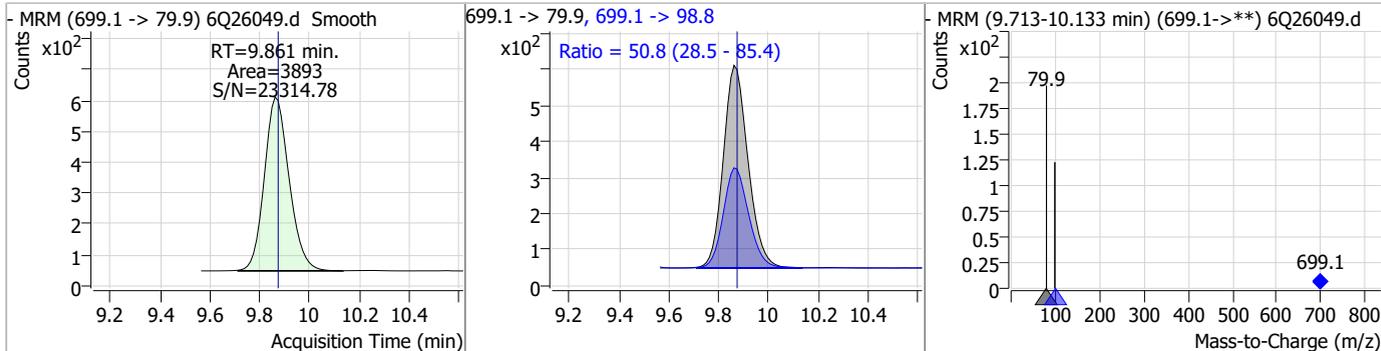
Perfluorinated Compounds by LC/MS/MS



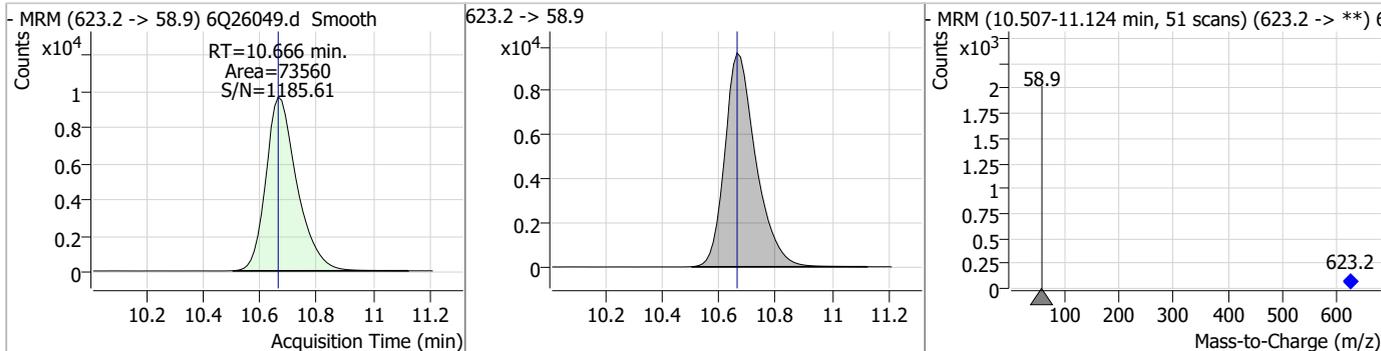
7.7.16 7

Perfluorinated Compounds by LC/MS/MS

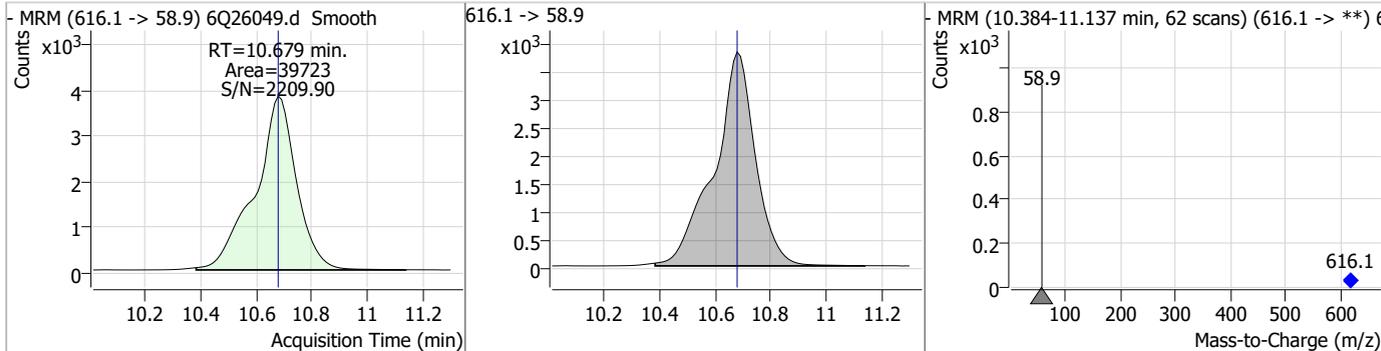
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.45	9.86	-0.01	3893	699.1 -> 98.8	50.8	28.5	85.4



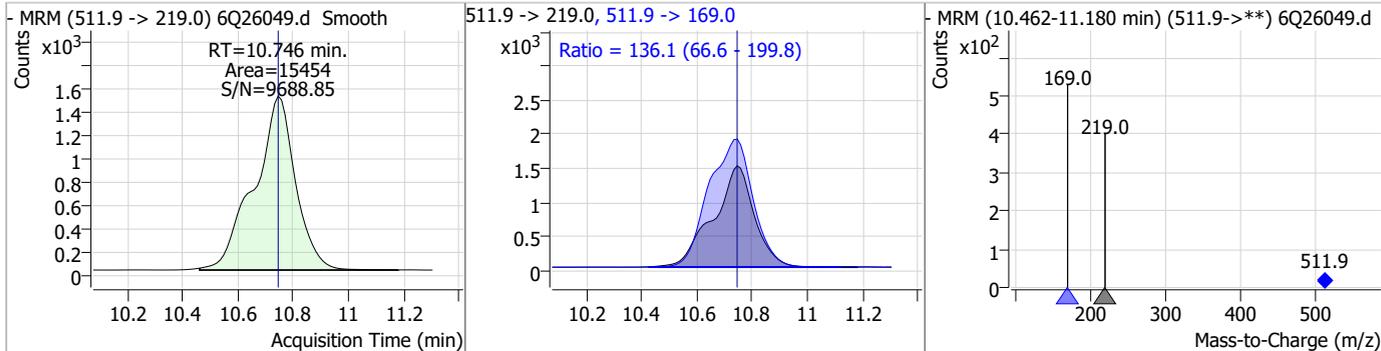
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.88	10.67	0.00	73560				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.22	10.68	0.00	39723				

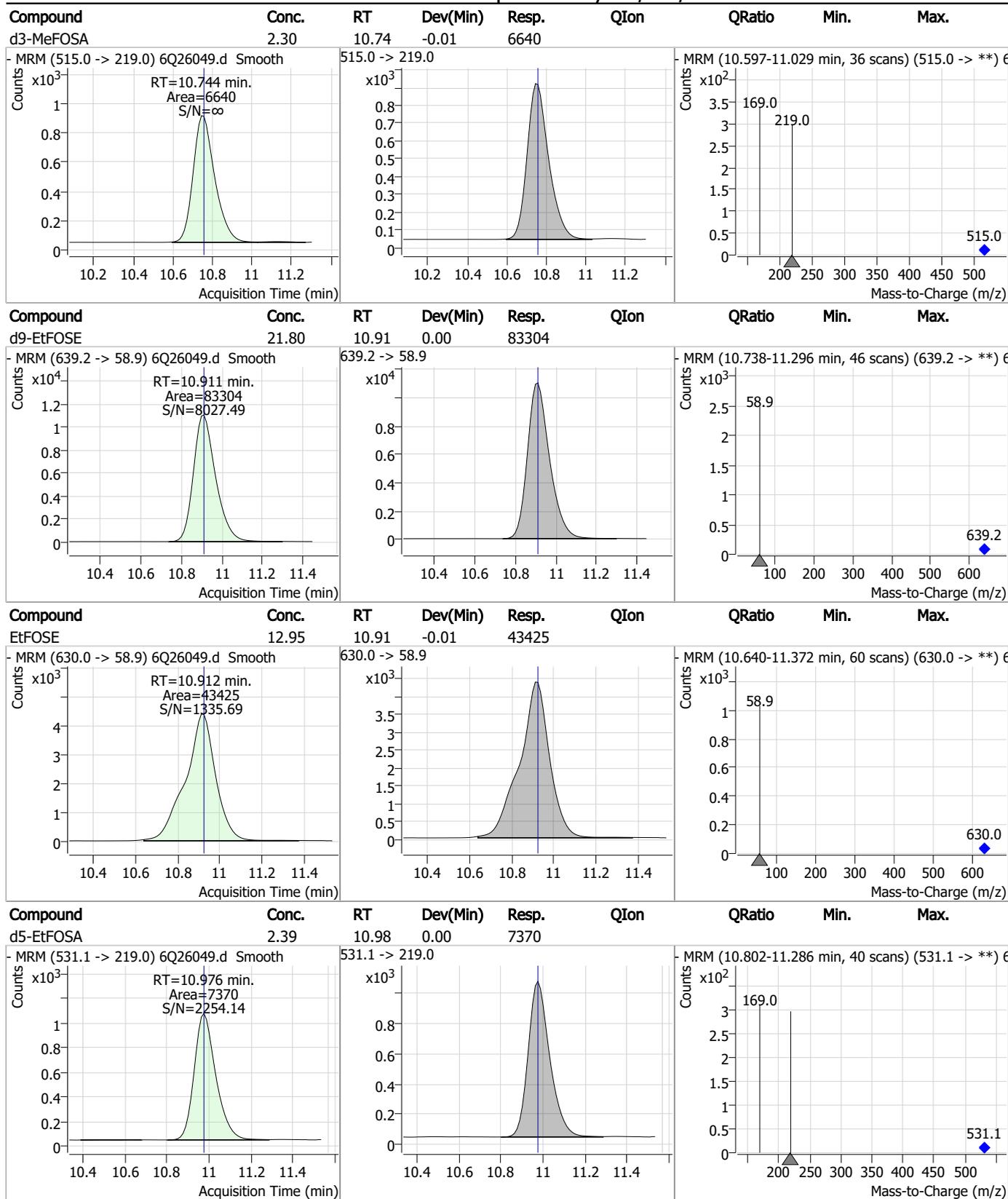


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.02	10.75	0.00	15454	511.9 -> 169.0	136.1	66.6	199.8



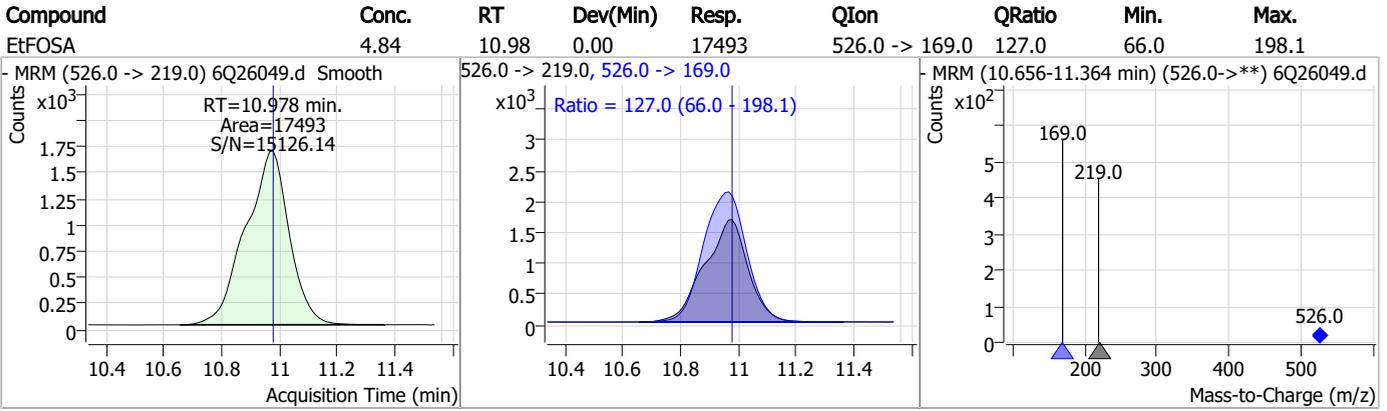
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



7.7.16
7

Perfluorinated Compounds by LC/MS/MS



7.7.16

7

Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q26049.D Analyst approved: 10/10/23 11:54 Martha Valls
Injection Time: 10/09/23 15:42 Supervisor approved: 10/10/23 13:55 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.25	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.30	Split peak

7.7.16.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q26050.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 10/9/2023 3:56:52 PM
 Sample Name : cc367-1.0LL
 Vial : P1-A2
 DA Method File : 1633_100823_S6Q367.quantmethod.xml
 Batch Name : S6Q367.batch.bin
 Sample Information : OP99308,S6Q367,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.947	216.8 -> 171.9	156968	10.00 µg/L	0.000
M5-PFPeA	4.372	268.3 -> 223.0	55715	5.00 µg/L	0.000
M5-PFHxA	5.580	318.0 -> 273.0	50206	2.50 µg/L	0.000
M4-PFHpA	6.519	367.1 -> 322.0	48868	2.50 µg/L	0.000
M8-PFOA	7.161	421.1 -> 376.0	66666	2.50 µg/L	0.000
M9-PFNA	7.680	472.1 -> 427.0	28601	1.25 µg/L	0.000
M6-PFDA	8.148	519.1 -> 474.1	27501	1.25 µg/L	-0.012
M7-PFUnDA	8.601	570.0 -> 525.1	31305	1.25 µg/L	-0.012
M2-PFDoDA	9.030	615.1 -> 570.0	30774	1.25 µg/L	0.000
M2-PFTeDA	9.747	715.2 -> 670.0	10526	1.25 µg/L	0.000
M8-FOSA	9.657	506.1 -> 77.8	23724	2.50 µg/L	0.000
M3-PFBS	5.497	302.1 -> 79.9	22577	2.50 µg/L	0.000
M3-PFHxS	7.263	402.1 -> 79.9	12477	2.50 µg/L	0.000
M8-PFOS	8.298	507.1 -> 79.9	12875	2.50 µg/L	-0.013
M2-4:2FTS	5.255	329.1 -> 80.9	2308	5.00 µg/L	0.000
M2-6:2FTS	6.936	429.1 -> 80.9	3487	5.00 µg/L	0.000
M2-8:2FTS	7.950	529.1 -> 80.9	3569	5.00 µg/L	0.000
M3-MeFOSAA	8.207	573.2 -> 419.0	25258	5.00 µg/L	0.000
M3-HFPO-DA	5.957	286.9 -> 168.9	34088	10.00 µg/L	0.000
M5-EtFOSAA	8.415	589.2 -> 419.0	21831	5.00 µg/L	0.000
M7-MeFOSE	10.666	623.2 -> 58.9	71160	25.00 µg/L	0.000
M9-EtFOSE	10.911	639.2 -> 58.9	84024	25.00 µg/L	0.000
M5-EtFOSA	10.976	531.1 -> 219.0	7014	2.50 µg/L	0.000
M3-MeFOSA	10.744	515.0 -> 219.0	6734	2.50 µg/L	-0.012
13C4-PFOS	8.299	502.8 -> 79.9	12104	2.50 µg/L	-0.013
13C3-PFBA	2.939	216.0 -> 172.0	65382	5.00 µg/L	-0.013
18O2-PFHxS	7.263	403.0 -> 83.9	7863	2.50 µg/L	0.000
13C4-PFOA	7.162	417.1 -> 372.0	74919	2.50 µg/L	0.000
13C2-PFDA	8.161	515.1 -> 470.1	26558	1.25 µg/L	0.000
13C5-PFNA	7.680	468.0 -> 423.0	26662	1.25 µg/L	0.000
13C2-PFHxA	5.581	315.1 -> 270.0	49394	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.255	329.1 -> 80.9	2308	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C2-6:2FTS	6.936	429.1 -> 80.9	3487	5.29 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C2-8:2FTS	7.950	529.1 -> 80.9	3569	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.2%		
13C2-PFDoDA	9.030	615.1 -> 570.0	30774	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.0%		
13C2-PFTeDA	9.747	715.2 -> 670.0	10526	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.8%		
13C3-PFBS	5.497	302.1 -> 79.9	22577	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.4%		
13C3-PFHxS	7.263	402.1 -> 79.9	12477	2.50 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	2.947	216.8 -> 171.9	156968	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.519	367.1 -> 322.0	48868	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.580	318.0 -> 273.0	50206	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.372	268.3 -> 223.0	55715	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	8.148	519.1 -> 474.1	27501	1.23 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C7-PFUnDA	8.601	570.0 -> 525.1	31305	1.29 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-FOSA	9.657	506.1 -> 77.8	23724	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-PFOA	7.161	421.1 -> 376.0	66666	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-PFOS	8.298	507.1 -> 79.9	12875	2.46 µg/L	-0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C9-PFNA	7.680	472.1 -> 427.0	28601	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.3%	
d3-MeFOSAA	8.207	573.2 -> 419.0	25258	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
13C3-HFPO-DA	5.957	286.9 -> 168.9	34088	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSA	10.744	515.0 -> 219.0	6734	2.32 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.0%	
d5-EtFOSAA	8.415	589.2 -> 419.0	21831	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
d7-MeFOSE	10.666	623.2 -> 58.9	71160	22.07 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 88.3%	
d9-EtFOSE	10.911	639.2 -> 58.9	84024	21.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
d5-EtFOSA	10.976	531.1 -> 219.0	7014	2.26 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.6%	
Target Compounds					QValue
4:2FTS	5.255	327.1 -> 307.0	3179	0.83 µg/L	95
		327.1 -> 80.9	1338		
6:2FTS	6.937	427.1 -> 407.0	2617	0.83 µg/L	96
		427.1 -> 80.9	1081		
8:2FTS	7.950	527.1 -> 507.0	1958	0.79 µg/L	95
		527.1 -> 80.8	753		
EtFOSAA	8.403	584.2 -> 419.1	777	0.22 µg/L	m 89
		584.2 -> 526.0	551		
FOSA	9.660	498.1 -> 77.9	1736	0.19 µg/L	96
		498.1 -> 478.0	72		
MeFOSAA	8.220	570.1 -> 419.0	824	0.17 µg/L	# 57
		570.1 -> 483.0	342		
PFBA	2.943	212.8 -> 168.9	4765	0.81 µg/L	100
PFBS	5.499	298.7 -> 79.9	1293	0.19 µg/L	97
		298.7 -> 98.8	499		
PFDA	8.149	512.9 -> 469.0	4651	0.22 µg/L	95
		512.9 -> 219.0	820		
PFDODA	9.031	613.1 -> 569.0	4831	0.21 µg/L	99
		613.1 -> 319.0	574		
PFDS	9.183	599.0 -> 79.9	613	0.19 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.520	599.0 -> 98.8	268	0.20	µg/L	100
		363.1 -> 319.0	5432			
PFHpS	7.807	363.1 -> 169.0	787	0.20	µg/L	87
		449.0 -> 79.9	1039			
PFHxA	5.582	449.0 -> 98.9	418	0.21	µg/L	99
		313.0 -> 269.0	3781			
PFHxS	7.264	313.0 -> 118.9	185	0.20	µg/L	100
		398.7 -> 79.9	1045			
PFNA	7.680	398.7 -> 98.9	553	0.21	µg/L	93
		463.0 -> 419.0	3779			
PFNS	8.765	463.0 -> 219.0	793	0.18	µg/L	97
		548.8 -> 79.9	861			
PFOA	7.163	548.8 -> 98.9	480	0.21	µg/L	95
		413.0 -> 369.0	5975			
PFOS	8.312	413.0 -> 169.0	959	0.19	µg/L	76
		498.9 -> 79.9	1036			
PFPeA	4.374	498.9 -> 98.8	460	0.41	µg/L	100
		263.0 -> 219.0	4953			
PFPeS	6.571	349.1 -> 79.9	1348	0.20	µg/L	90
		349.1 -> 98.9	677			
PFTeDA	9.747	713.1 -> 669.0	2889	0.21	µg/L	100
		713.1 -> 168.9	230			
PFTrDA	9.413	663.0 -> 619.0	4091	0.23	µg/L	99
		663.0 -> 168.9	344			
PFUnDA	8.602	563.1 -> 519.0	4167	0.19	µg/L	97
		563.1 -> 269.1	669			
11Cl-PF3OUdS	9.454	630.9 -> 450.9	3811	0.38	µg/L	98
		632.9 -> 452.9	1185			
9Cl-PF3ONS	8.641	530.8 -> 351.0	6122	0.34	µg/L	75
		532.8 -> 353.0	2629			
ADONA	6.767	376.9 -> 250.9	17719	0.38	µg/L	100
		376.9 -> 84.8	4903			
HFPO-DA	5.958	284.9 -> 168.9	1325	0.39	µg/L	89
		284.9 -> 184.9	215			
3:3FTCA	3.808	241.0 -> 177.0	837	0.99	µg/L	95
		241.0 -> 117.0	130			
5:3FTCA	6.233	341.0 -> 237.1	17321	5.15	µg/L	98
		341.0 -> 217.0	12623			
7:3FTCA	7.632	441.0 -> 316.9	10410	5.07	µg/L	96
		441.0 -> 336.9	21628			
EtFOSA	10.978	526.0 -> 219.0	1448	0.42	µg/L	97
		526.0 -> 169.0	1859			
EtFOSE	10.912	630.0 -> 58.9	3407	1.01	µg/L	100
		511.9 -> 219.0	1274			
MeFOSA	10.746	511.9 -> 169.0	1851	0.41	µg/L	90
		616.1 -> 58.9	3251			
MeFOSE	10.679	699.1 -> 79.9	339	1.03	µg/L	100
		699.1 -> 98.8	199			
PFDoDS	9.861	295.0 -> 201.0	1052	0.20	µg/L	97
		295.0 -> 84.9	262			
NFDHA	5.462	279.0 -> 85.1	3691	0.47	µg/L	95
		229.0 -> 84.9	3007			
PFMBA	4.781	314.8 -> 134.9	7806	0.40	µg/L	100
		314.8 -> 82.9	371			
PFMPA	3.501			0.40	µg/L	100
PFEESA	6.050			0.34	µg/L	96

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



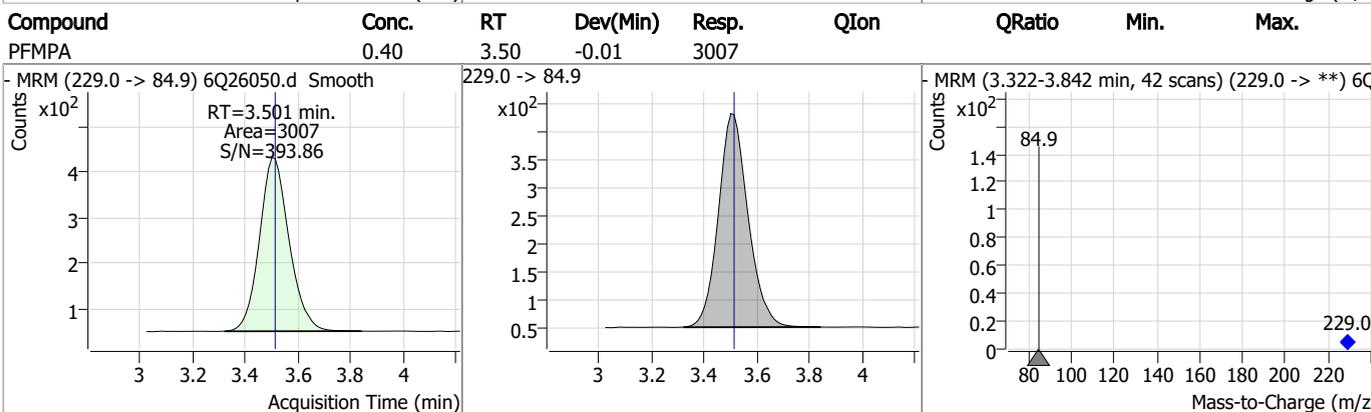
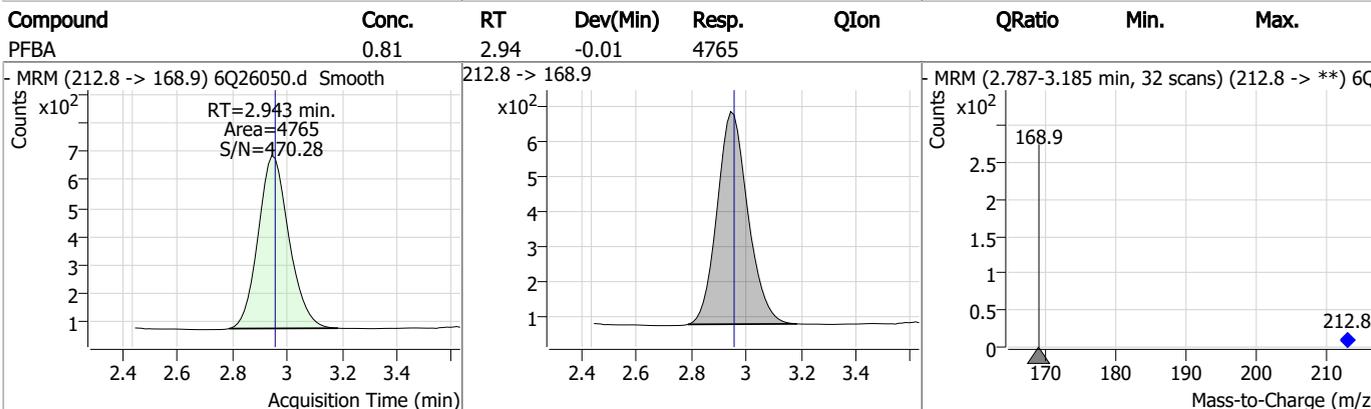
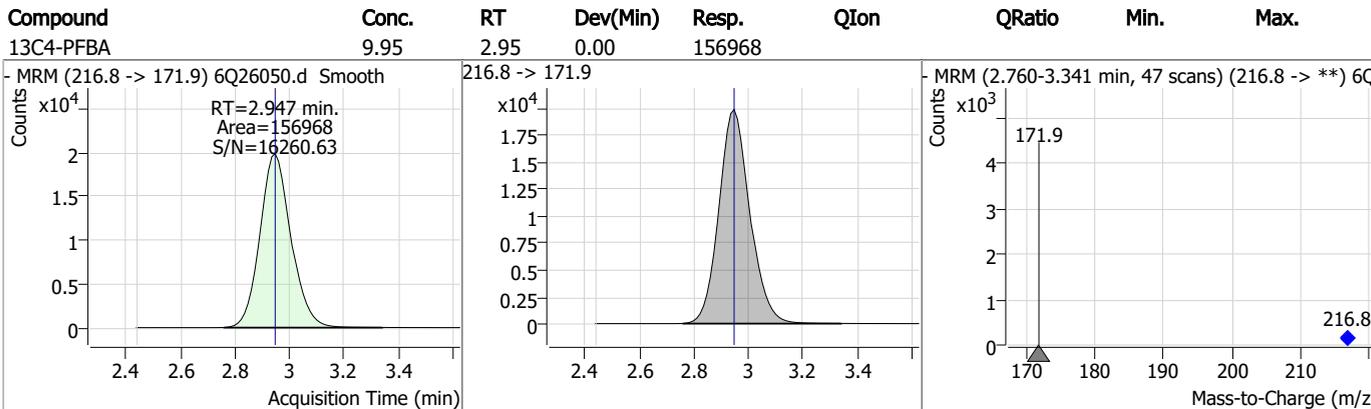
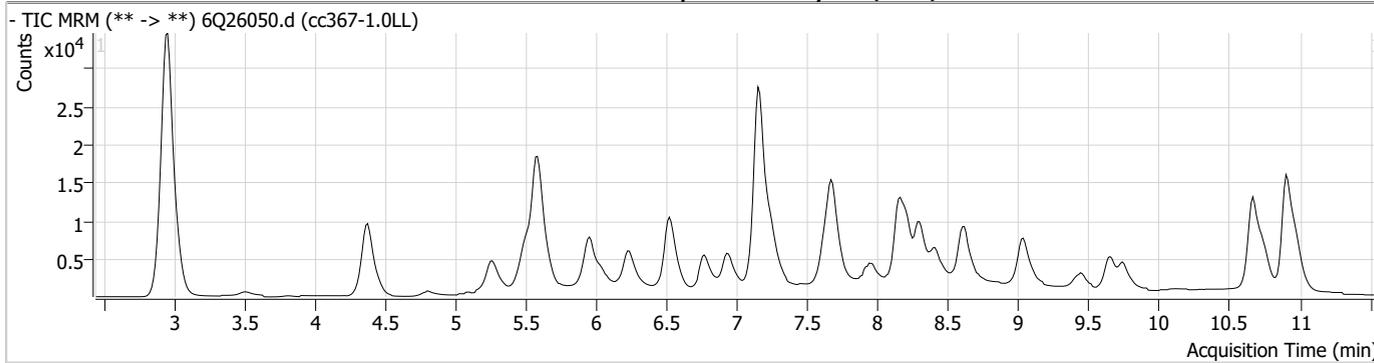
Perfluorinated Compounds by LC/MS/MS

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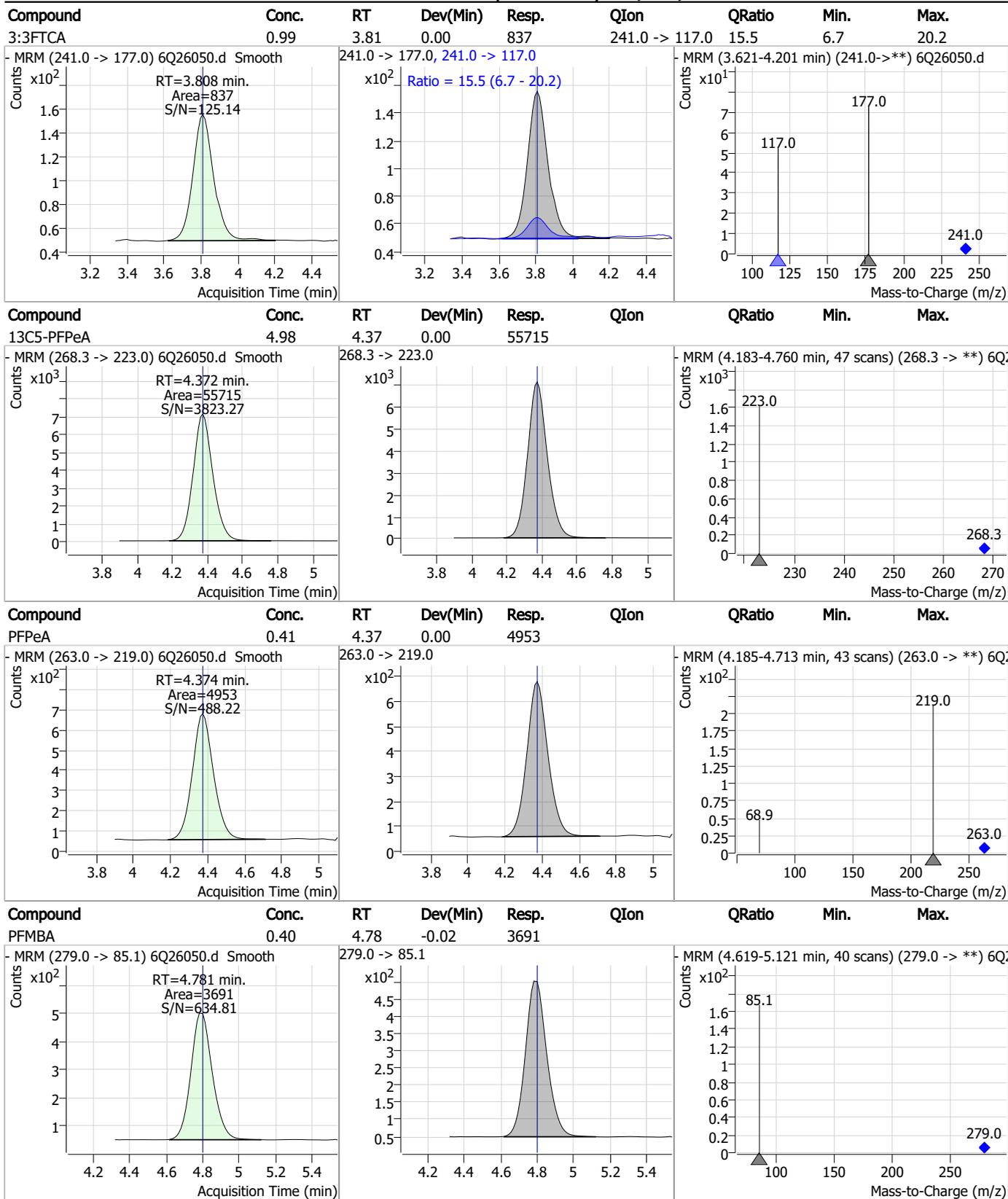
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Perfluorinated Compounds by LC/MS/MS



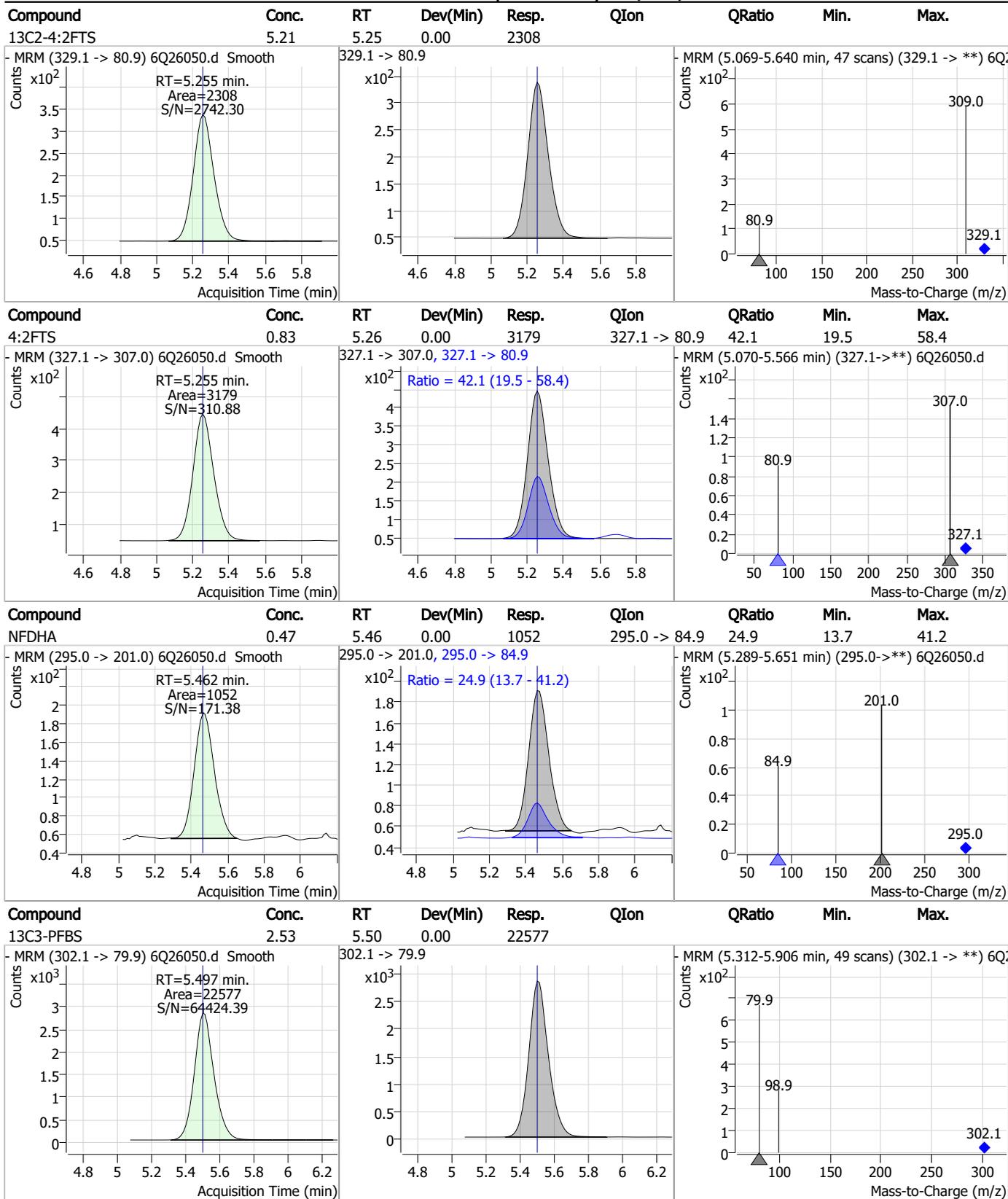
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Perfluorinated Compounds by LC/MS/MS



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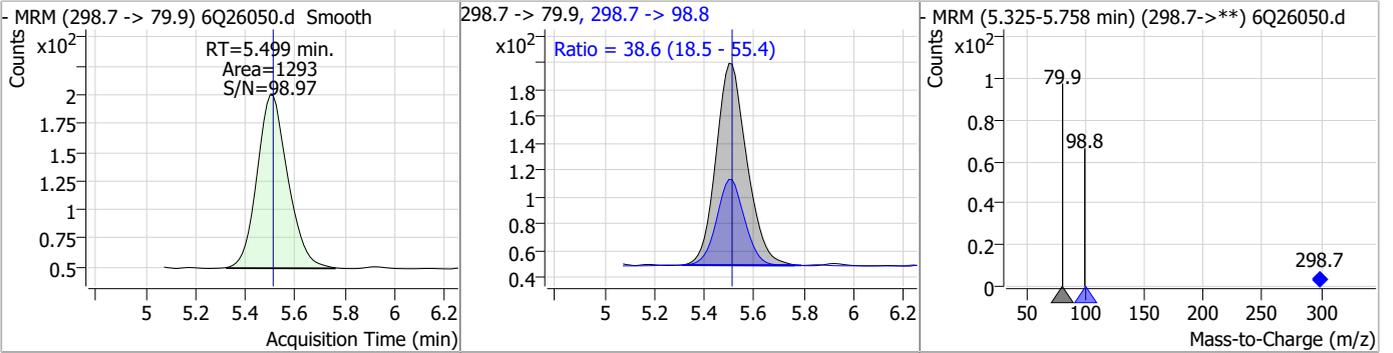
Perfluorinated Compounds by LC/MS/MS



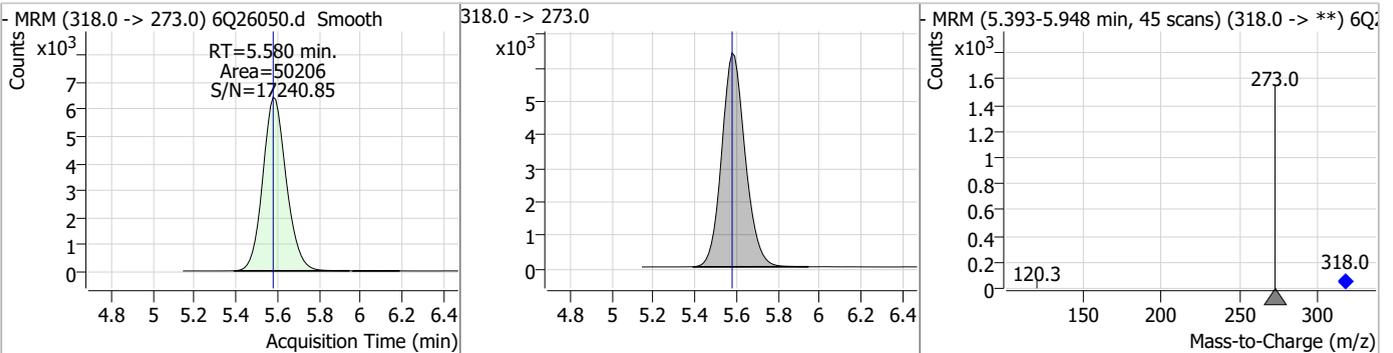
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Perfluorinated Compounds by LC/MS/MS

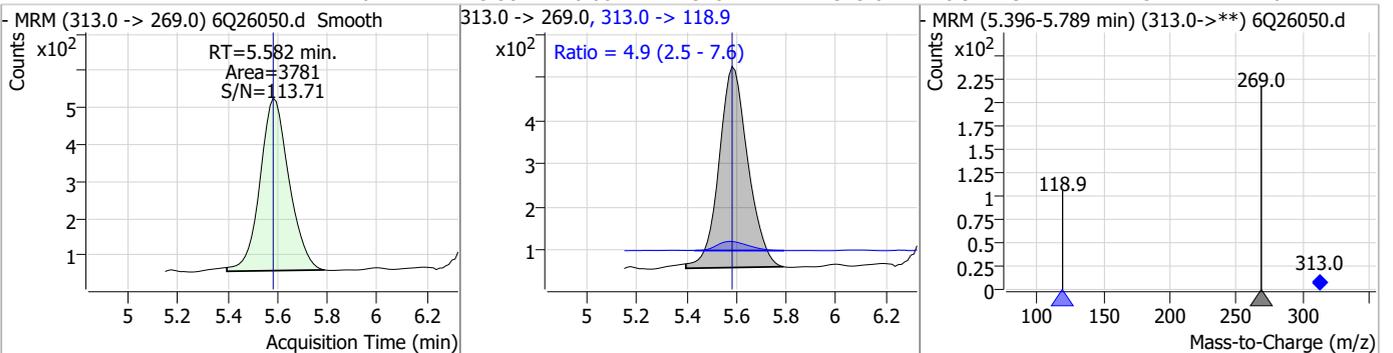
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.50	-0.01	1293	298.7 -> 98.8	38.6	18.5	55.4



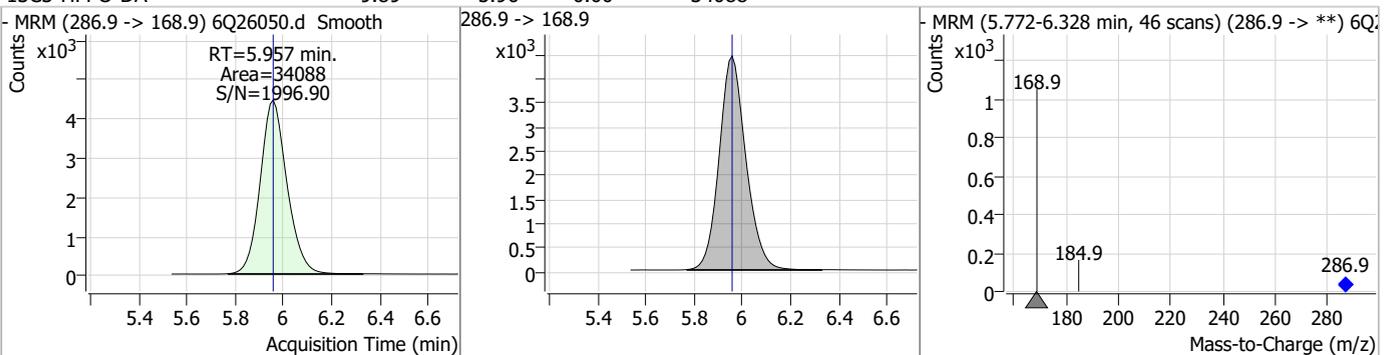
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.58	0.00	50206				



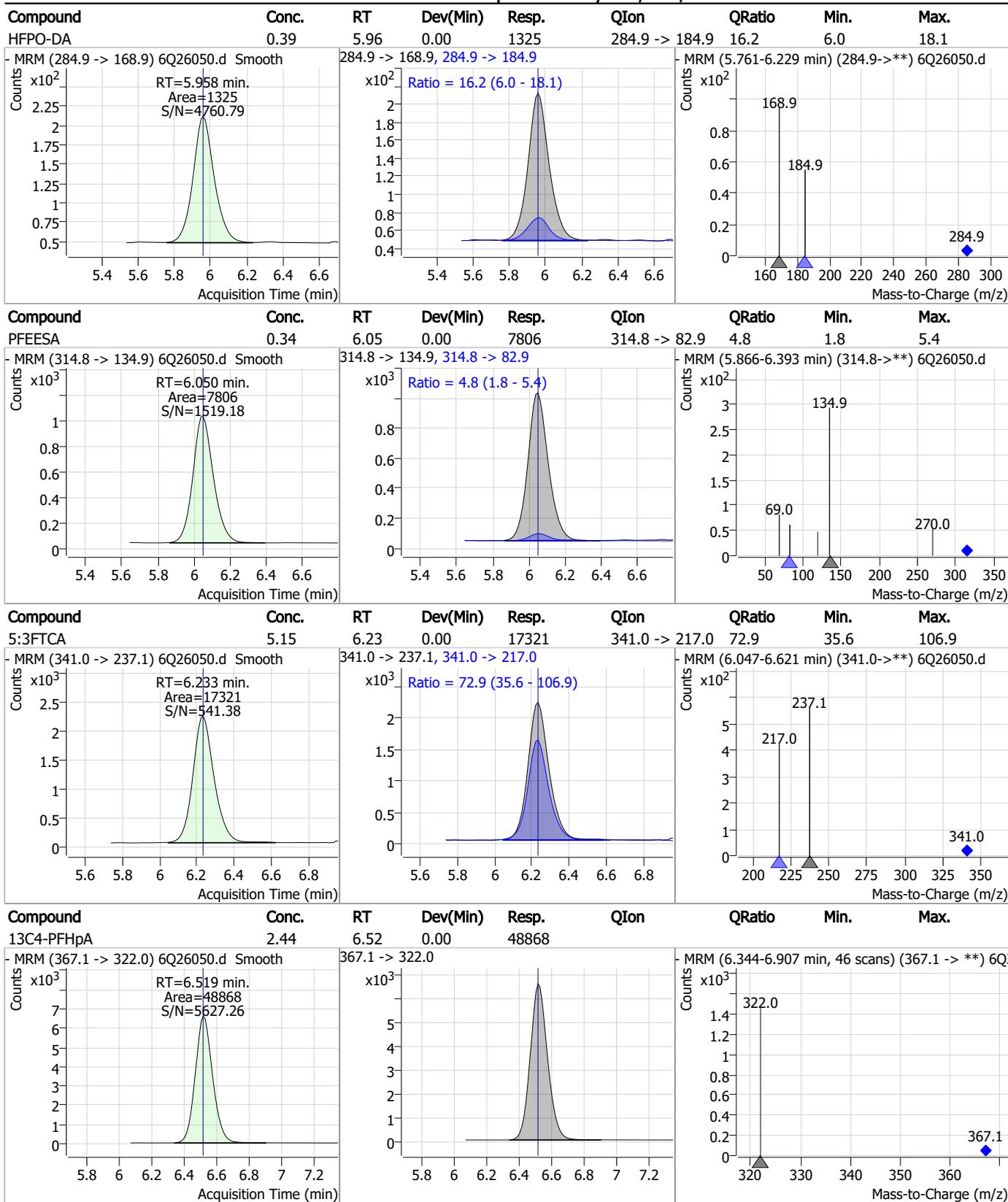
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.21	5.58	0.00	3781	313.0 -> 118.9	4.9	2.5	7.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.89	5.96	0.00	34088				

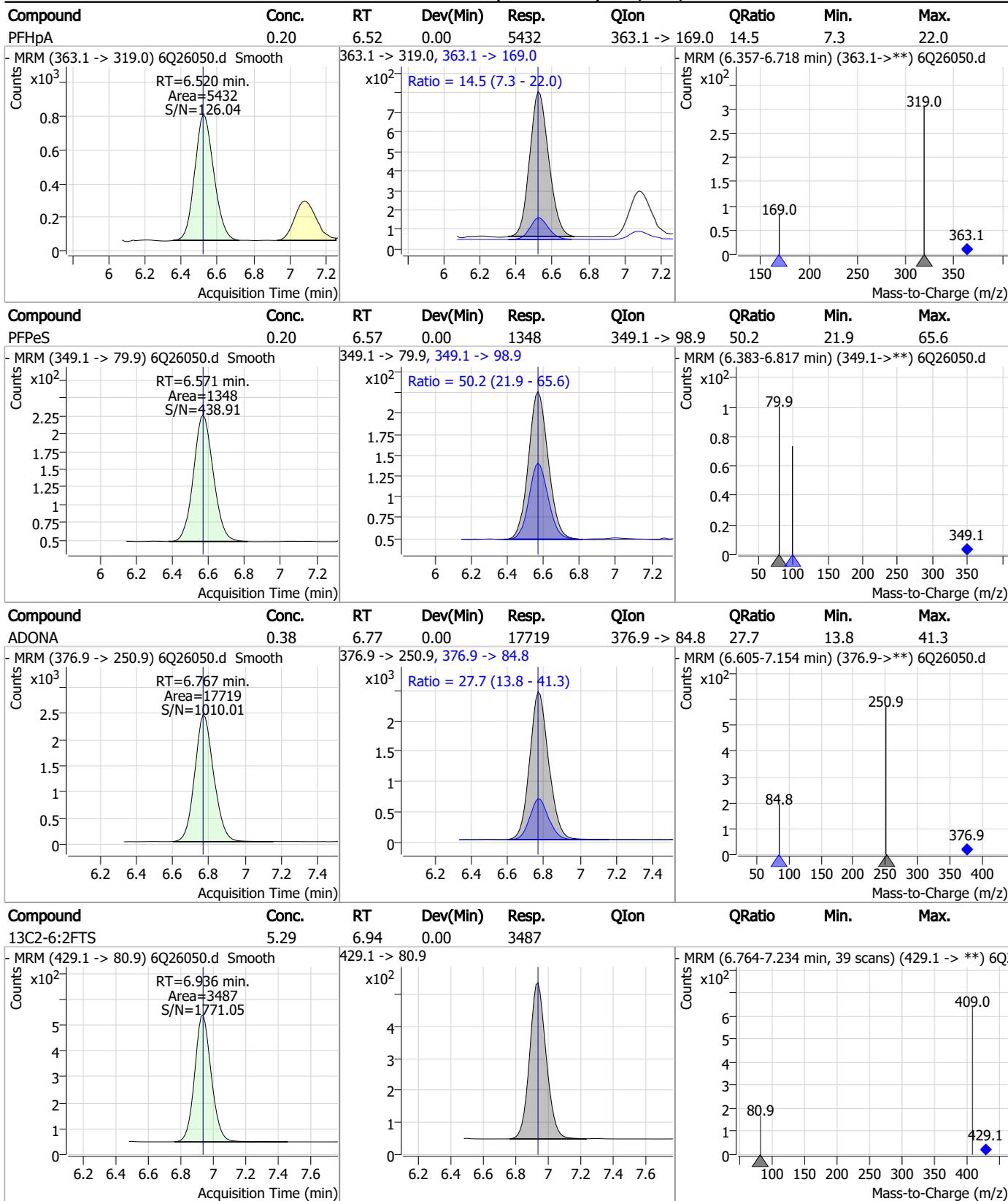


Perfluorinated Compounds by LC/MS/MS



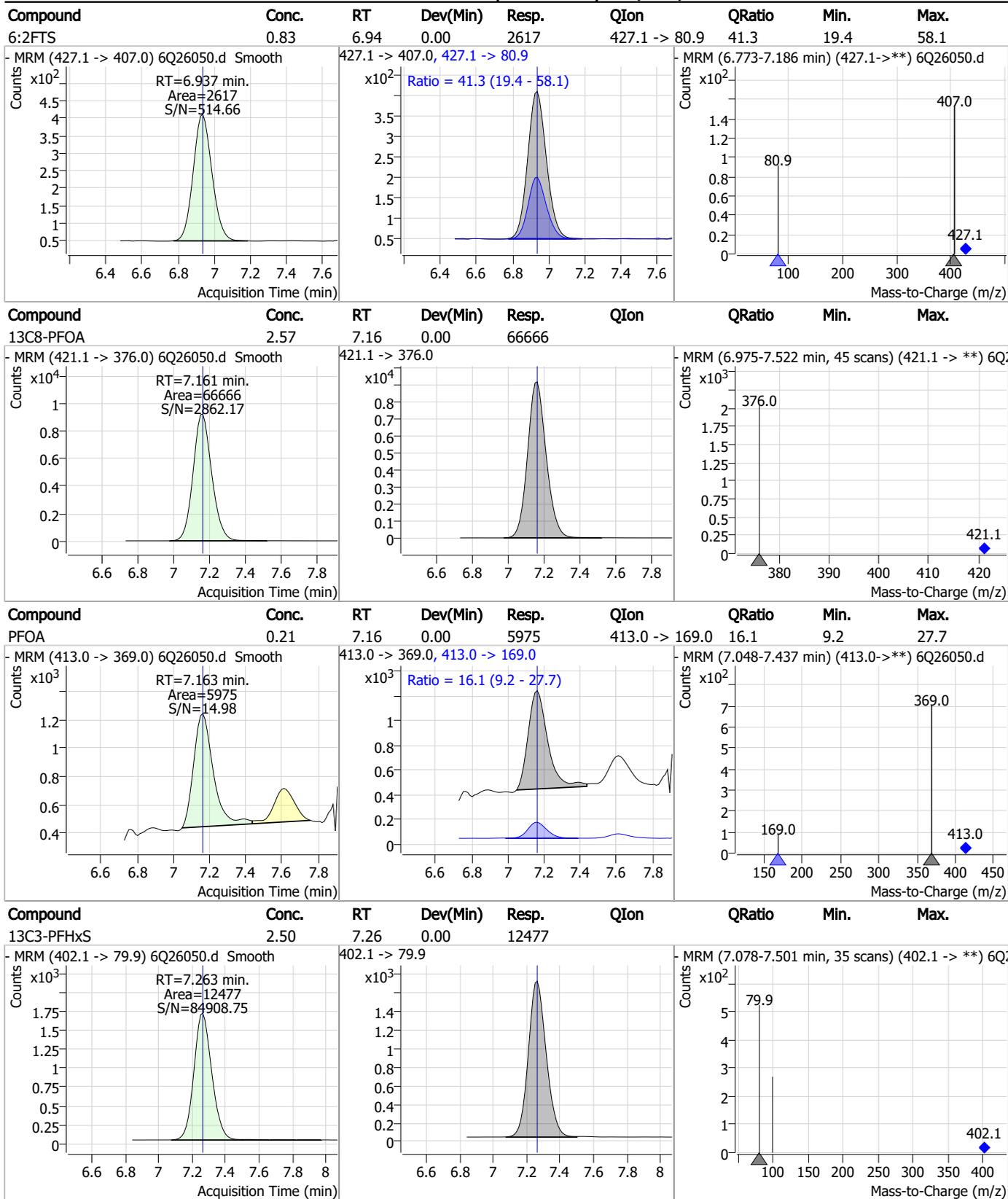
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Perfluorinated Compounds by LC/MS/MS



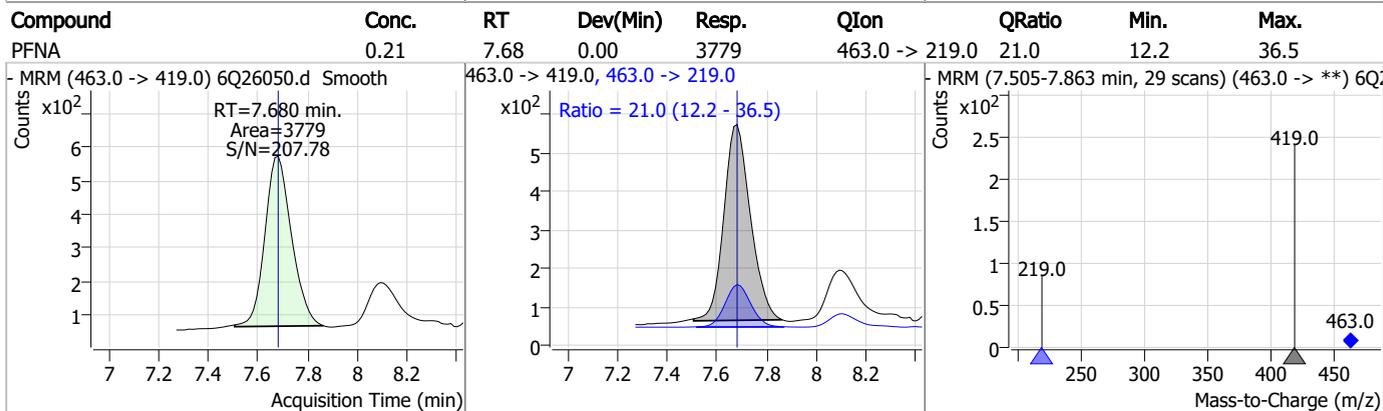
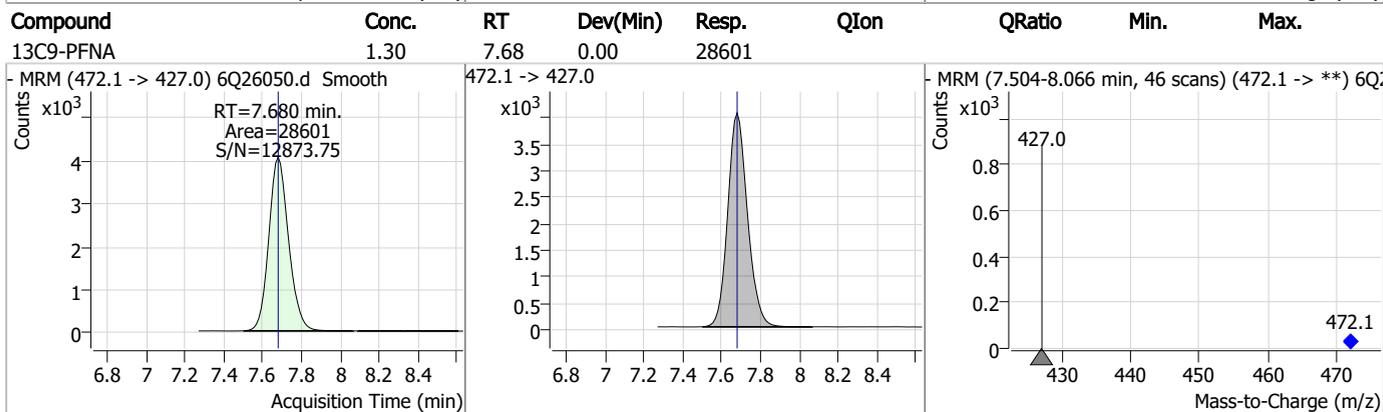
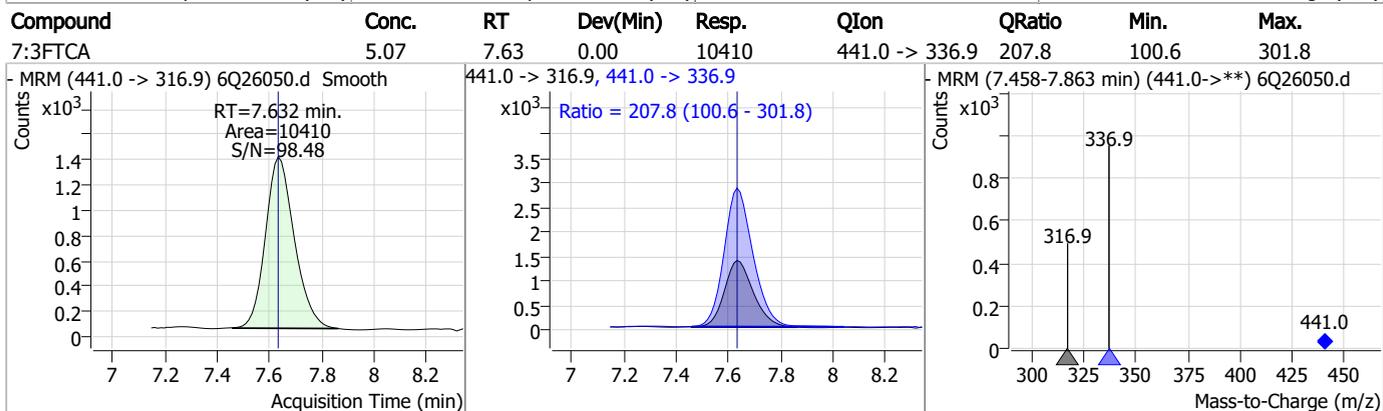
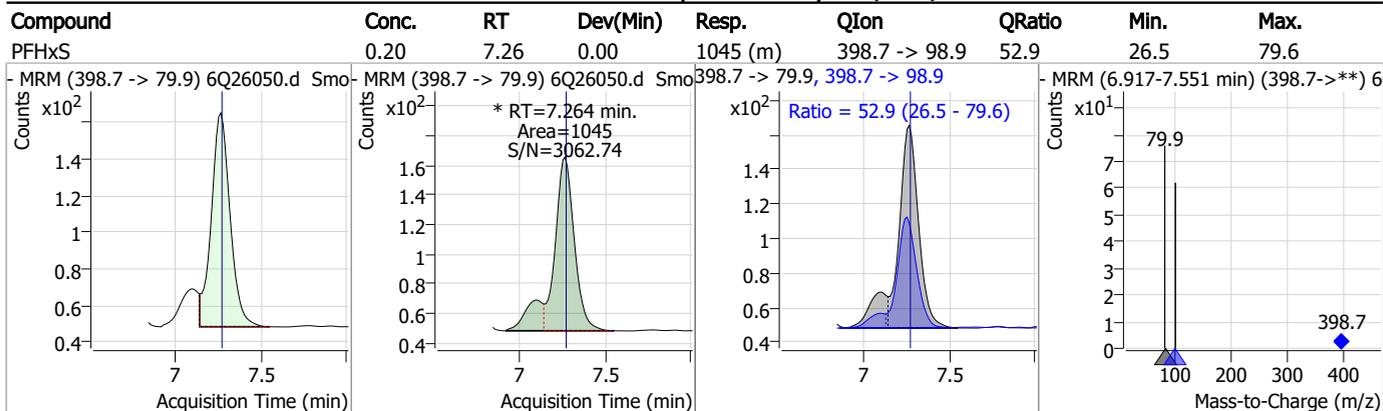
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Perfluorinated Compounds by LC/MS/MS



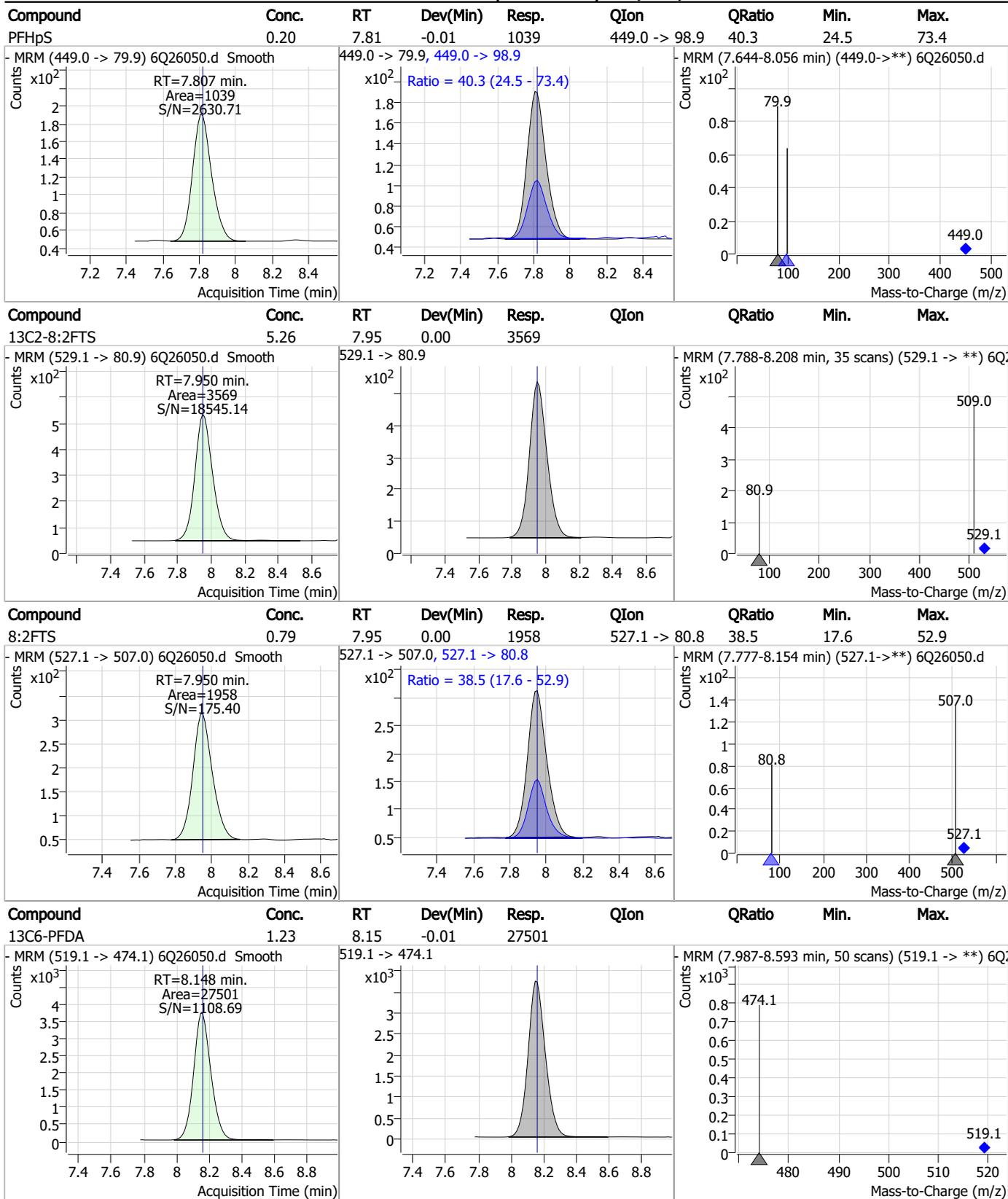
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Perfluorinated Compounds by LC/MS/MS



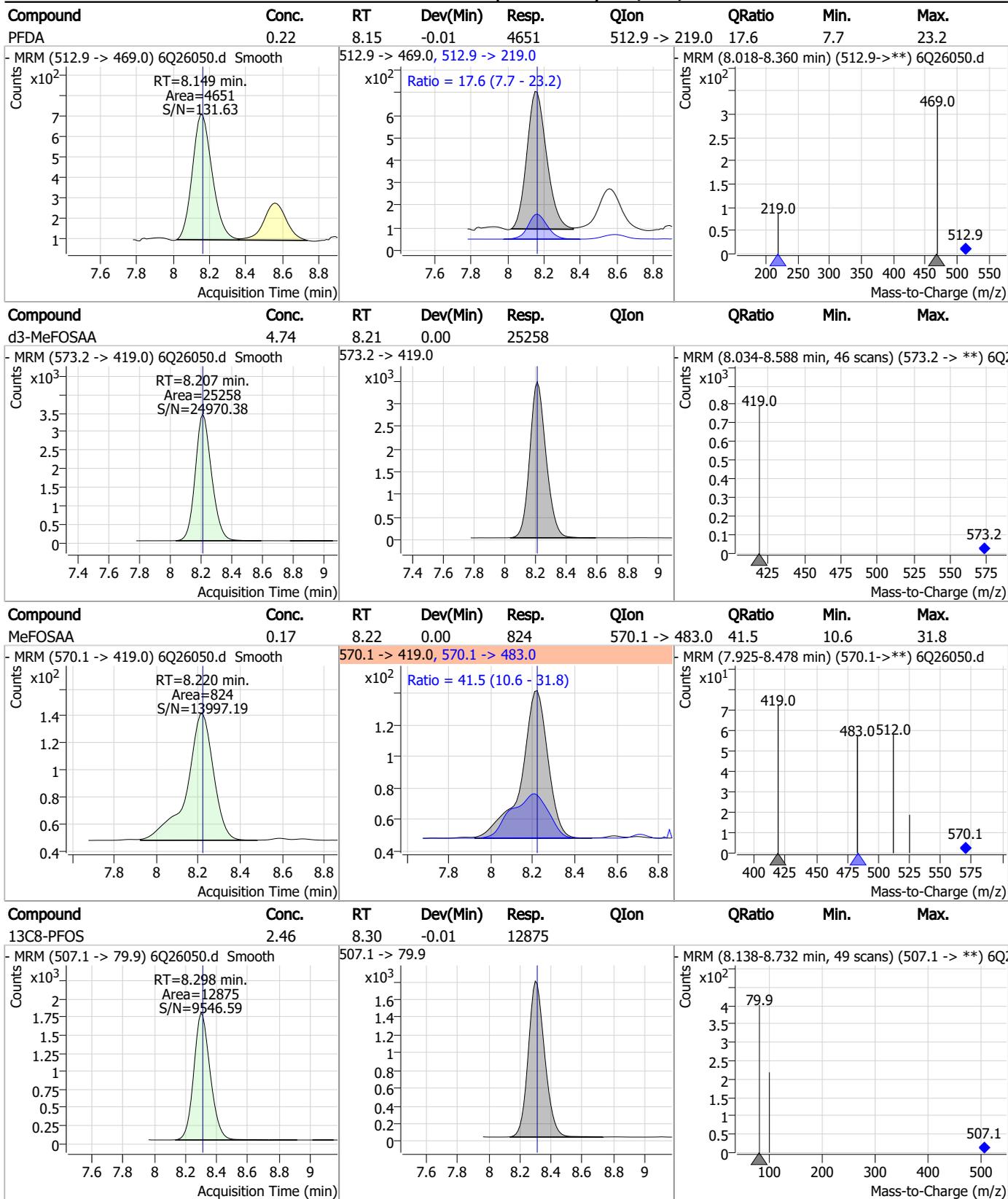
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Perfluorinated Compounds by LC/MS/MS



7.7.17

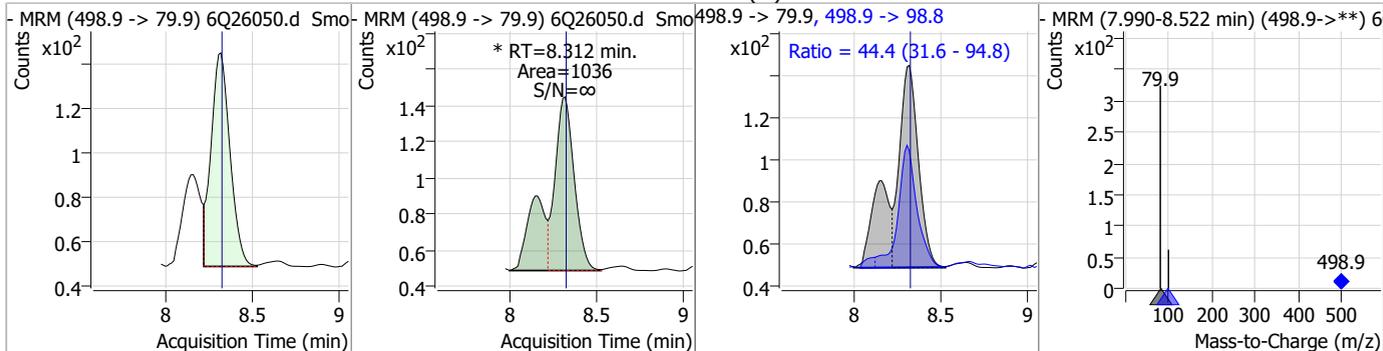
Perfluorinated Compounds by LC/MS/MS



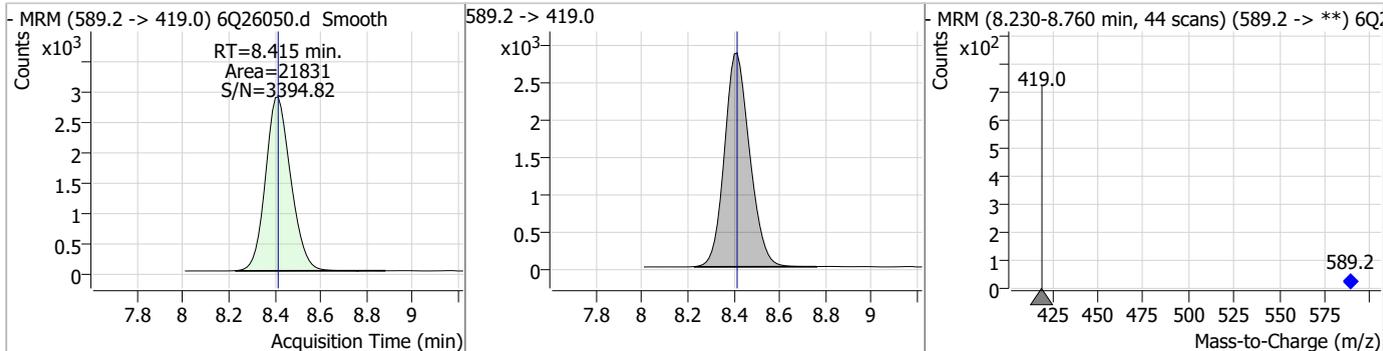
7.7.17

Perfluorinated Compounds by LC/MS/MS

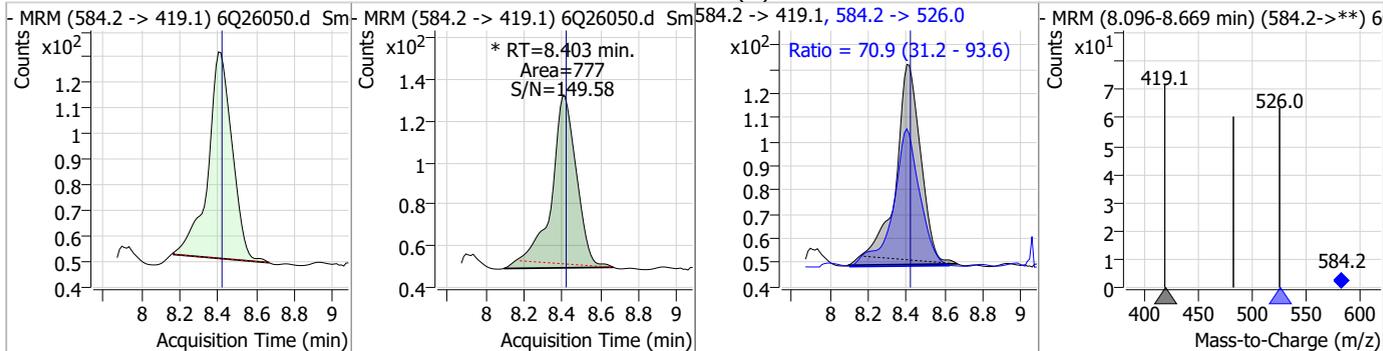
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.31	0.00	1036 (m)	498.9 -> 98.8	44.4	31.6	94.8



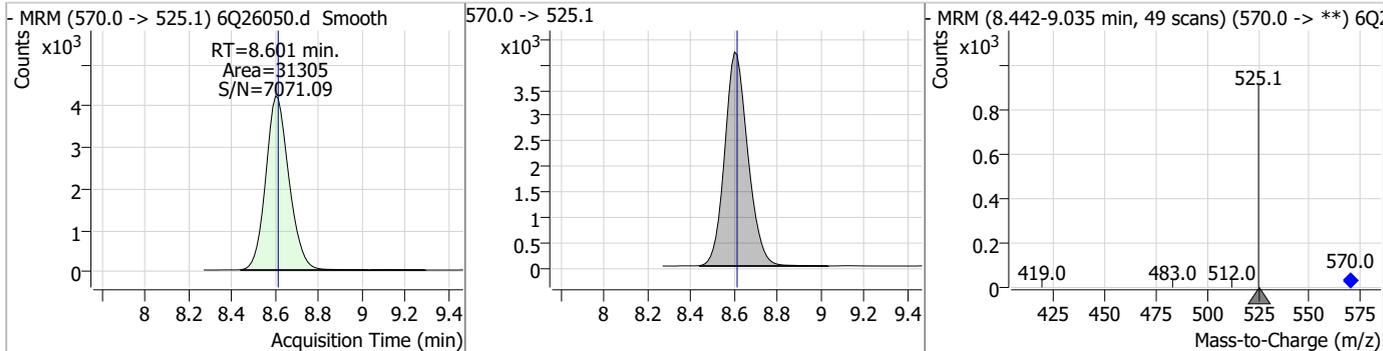
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.79	8.41	0.00	21831				



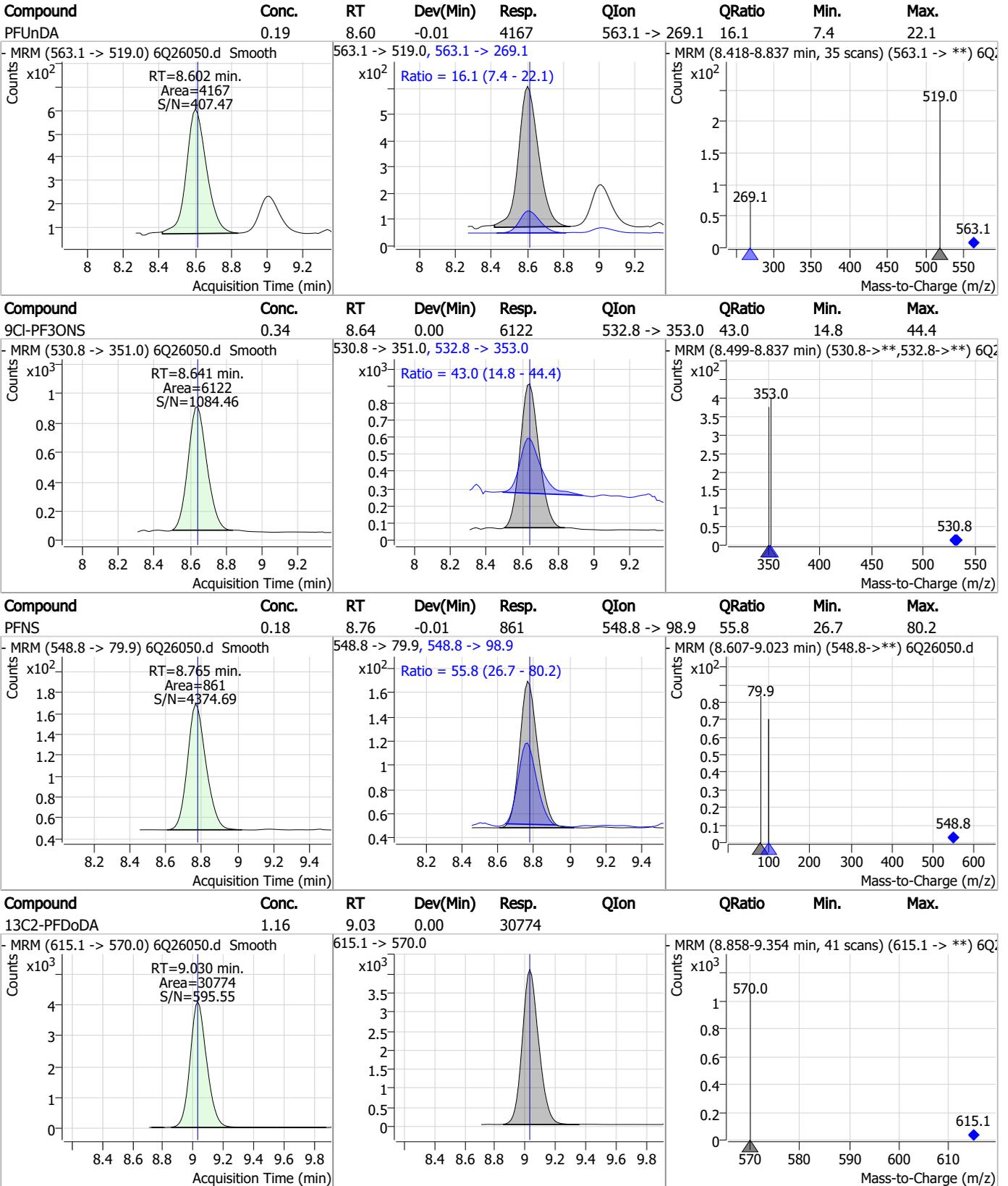
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.22	8.40	-0.01	777 (m)	584.2 -> 526.0	70.9	31.2	93.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.60	-0.01	31305				



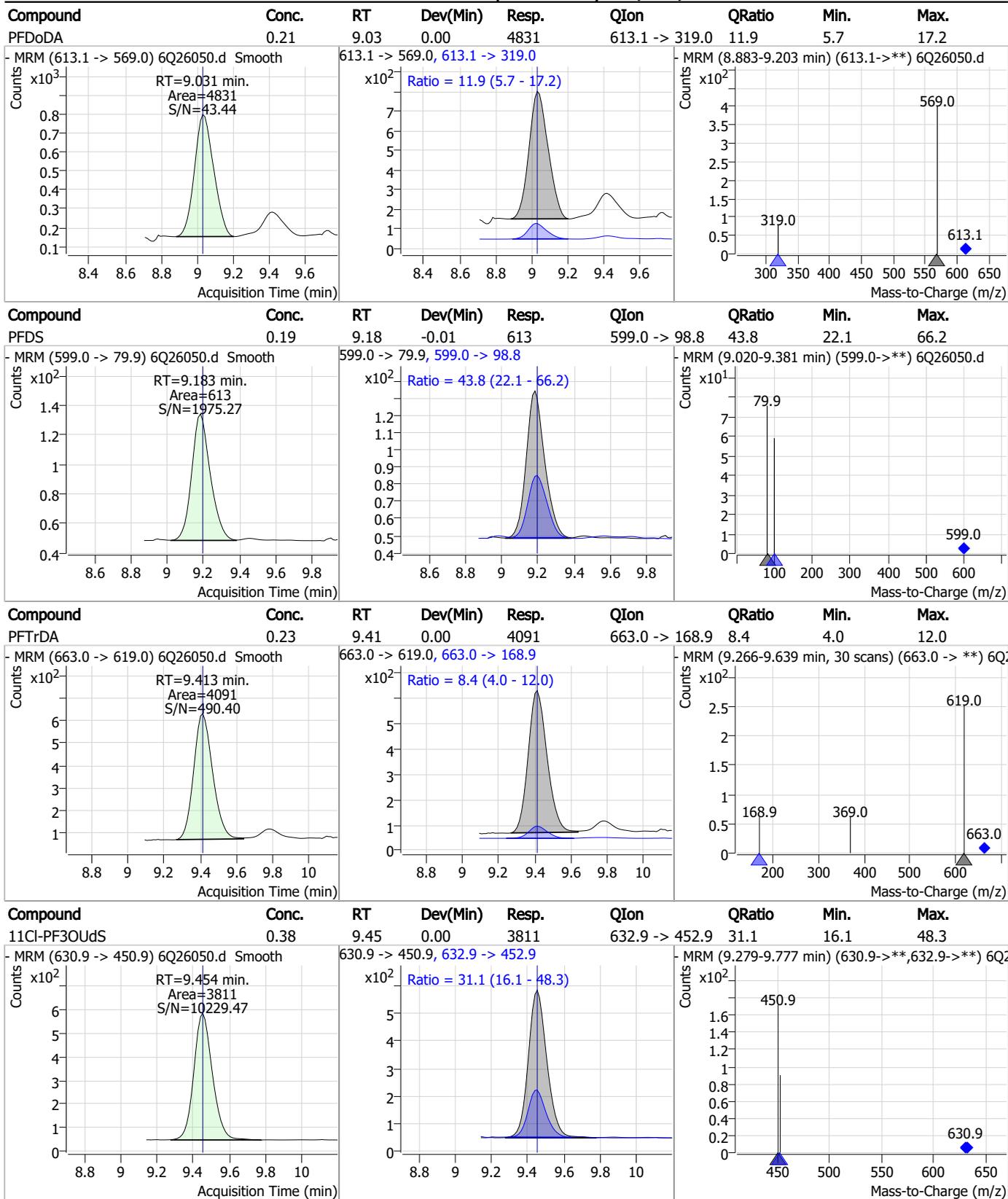
Perfluorinated Compounds by LC/MS/MS



7.7.17

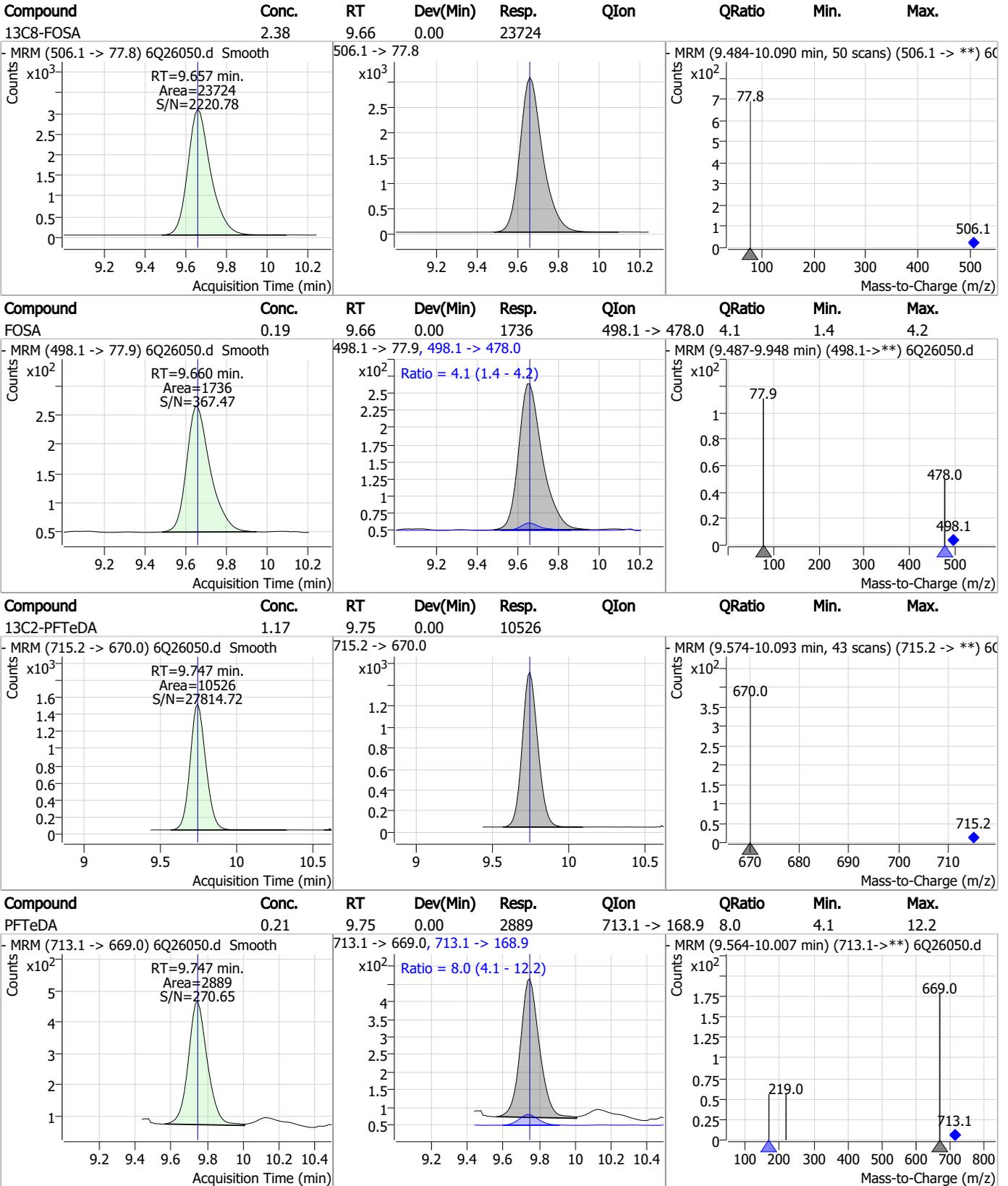


Perfluorinated Compounds by LC/MS/MS



7.7.17

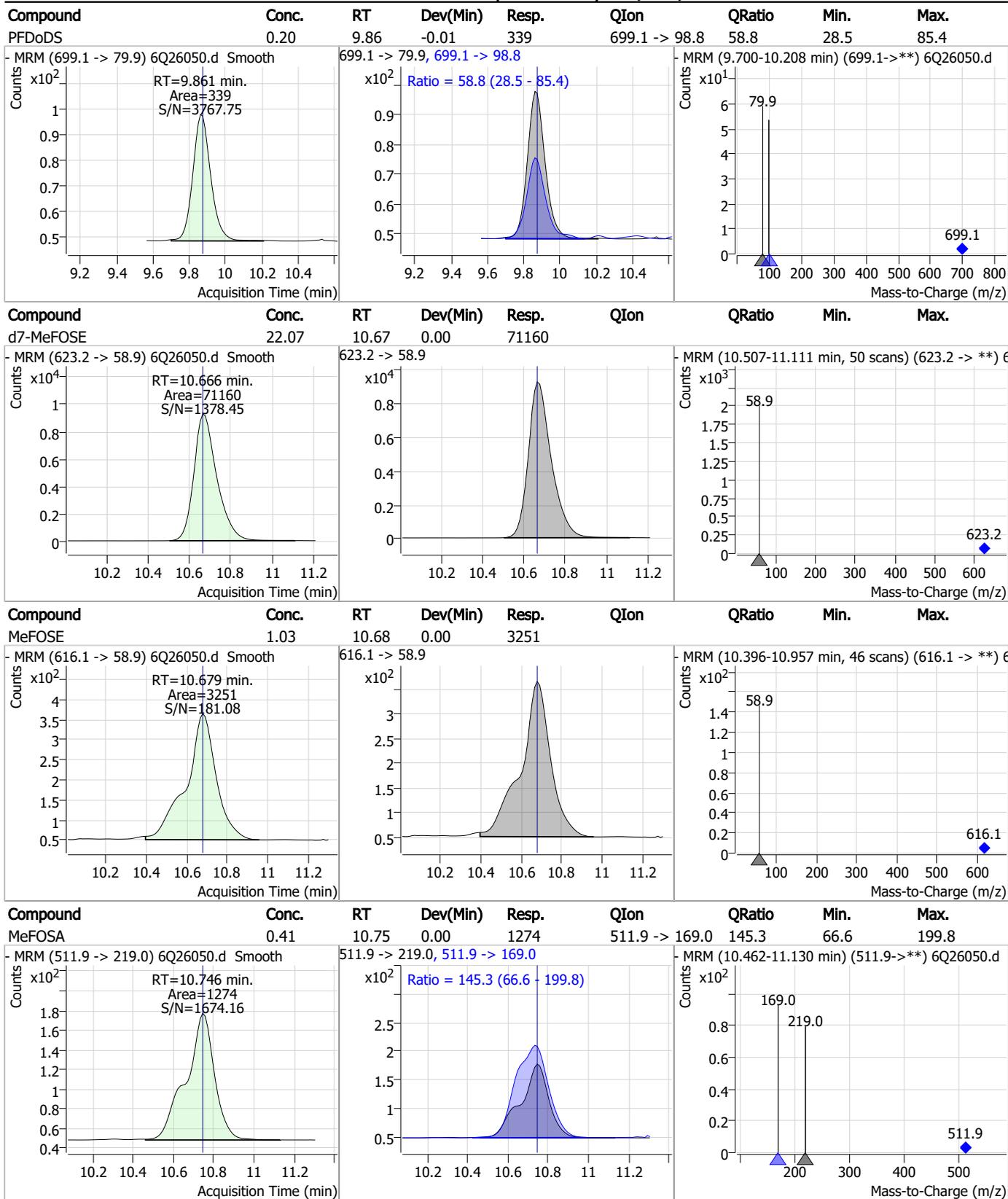
Perfluorinated Compounds by LC/MS/MS



7.7.17

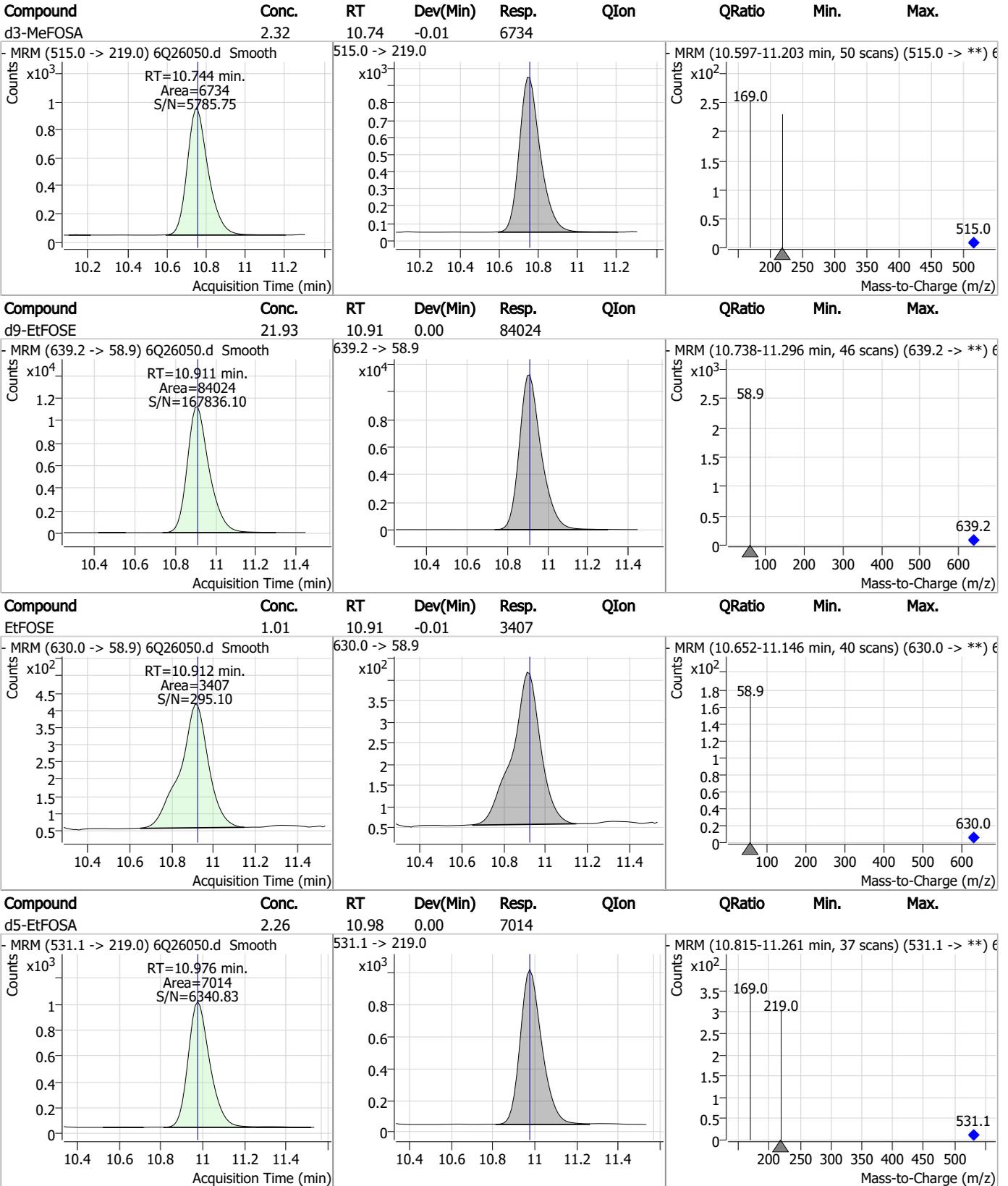


Perfluorinated Compounds by LC/MS/MS



7.7.17

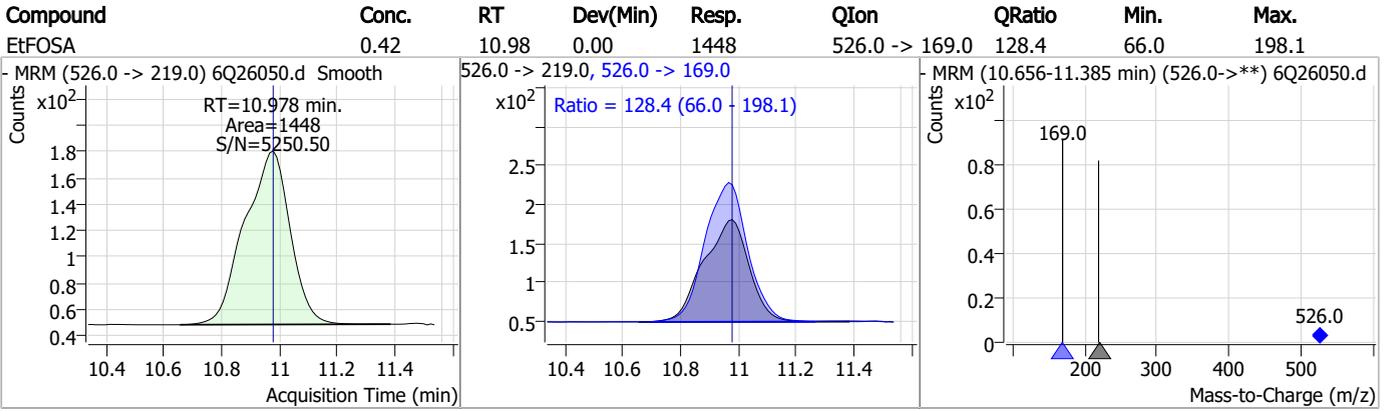
Perfluorinated Compounds by LC/MS/MS



7.7.17



Perfluorinated Compounds by LC/MS/MS



7.7.17

7



Manual Integration Approval Summary

Sample Number: S6Q367-CC367 Method: EPA DRAFT 1633
Lab FileID: 6Q26050.D Analyst approved: 10/10/23 11:54 Martha Valls
Injection Time: 10/09/23 15:56 Supervisor approved: 10/10/23 13:55 Natasha Gumtie

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

7.7.17.1

7

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DATE:	10/08/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_100823_S6Q367
CAL DATE:	10/08/23
ANALYST:	M. Valls
RUN BATCH:	S6Q367

ELUENT A LOT #:	ACN 232980
ELUENT B LOT #:	HPLC WATER: 232305 W5% Acetonitrile: 232980 2mM AMAC.
IC/CC STD LOT #:	LCMS 2192-E
ICV STD LOT #:	LCMS 2192E/2180
ISTD/D STD LOT #:	11987F/11988-I

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q25926.d	P1-B9	CCB	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
2	6Q25927.d	P1-A2	Test	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
3	6Q25928.d	P1-B9	CCB	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
4	6Q25929.d	P1-B3	RT TDCA	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
5	6Q25930.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
6	6Q25931.d	P1-A9	High Std	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
7	6Q25932.d	P1-A1	IBLK	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
8	6Q25933.d	P1-A5	cc361-4	1633full.m	QC	20/500	OP99308.S6Q367.500,,,5.0,1.,water	Recalibrate
9	6Q25934.d	P1-A2	cc361-1.0LL	1633full.m	QC	1.6/500	OP99308.S6Q367.500,,,5.0,1.,water	↓
10	6Q25935.d	P1-B9	CCB	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
11	6Q25936.d	P1-B9	CCB	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
12	6Q25937.d	P1-B3	RT TDCA	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
13	6Q25938.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
14	6Q25939.d	P1-A1	ic367-0	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
15	6Q25940.d	P1-A2	ic367-1	1633full.m	Calibration	1.6/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
16	6Q25941.d	P1-A3	ic367-2	1633full.m	Calibration	3.2/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
17	6Q25942.d	P1-A4	ic367-3	1633full.m	Calibration	10/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
18	6Q25943.d	P1-A5	ic367-4	1633full.m	Calibration	20/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
19	6Q25944.d	P1-A6	ic367-5	1633full.m	Calibration	40/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
20	6Q25945.d	P1-A7	ic367-6	1633full.m	Calibration	100/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
21	6Q25946.d	P1-A8	ic367-7	1633full.m	Calibration	200/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
22	6Q25947.d	P1-A9	ic367-8	1633full.m	Calibration	1x	OP99308.S6Q367.500,,,5.0,1.,water	✓
23	6Q25948.d	P1-A1	IBLK	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1.,water	✓
24	6Q25949.d	P1-B1	icv367-4	1633full.m	QC	20/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
25	6Q25950.d	P1-B2	icv367-20	1633full.m	QC	100/500	OP99308.S6Q367.500,,,5.0,1.,water	✓
26	6Q25951.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99308.S6Q367.500,,,5.0,1.,water	Pass
27	6Q25952.d	P1-A2	cc367-1.0LL	1633full.m	QC	1.6/500	OP99308.S6Q367.500,,,5.0,1.,water	Pass
28	6Q25953.d	P2-A1	OP99404-BS	1633full.m	Sample		OP99404.S6Q367.500,,,5.0,1.,water	✓
29	6Q25954.d	P2-A2	OP99404-LLBS:3	1633full.m	Sample		OP99404.S6Q367.500,,,5.0,1.,water	✓
30	6Q25955.d	P2-A3	OP99404-MB	1633full.m	Sample		OP99404.S6Q367.500,,,5.0,1.,water	✓
31	6Q25956.d	P2-A4	FC10192-1	1633full.m	Sample		OP99404.S6Q367.520,,,5.0,1.,water	✓
32	6Q25957.d	P2-A5	OP99404-MS	1633full.m	Sample		OP99404.S6Q367.520,,,5.0,1.,water	✓
33	6Q25958.d	P2-A6	FC10192-2	1633full.m	Sample		OP99404.S6Q367.570,,,5.0,1.,water	✓
34	6Q25959.d	P2-A7	OP99404-DUP	1633full.m	Sample		OP99404.S6Q367.550,,,5.0,1.,water	✓
35	6Q25960.d	P2-A8	FC10192-3	1633full.m	Sample		OP99404.S6Q367.550,,,5.0,1.,water	✓



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LCMS6-6Q ANALYSIS LOG

36	6Q25961.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
37	6Q25962.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
38	6Q25963.d	P2-B1	OP99393-BS	1633full.m	Sample		OP99393.S6Q367.500,,,5.0,1,water	✓
39	6Q25964.d	P2-B2	OP99393-LLBS:3	1633full.m	Sample		OP99393.S6Q367.500,,,5.0,1,water	✓
40	6Q25965.d	P2-B3	OP99393-MB	1633full.m	Sample		OP99393.S6Q367.500,,,5.0,1,water	✓
41	6Q25966.d	P2-B4	FC9772-1	1633full.m	Sample		OP99393.S6Q367.505,,,5.0,1,water	✓
42	6Q25967.d	P2-B5	FC9697-6	1633full.m	Sample		OP99393.S6Q367.515,,,5.0,1,water	cf
43	6Q25968.d	P2-B6	FC9701-5	1633full.m	Sample		OP99393.S6Q367.505,,,5.0,1,water	cf
44	6Q25969.d	P2-B7	FC9701-14	1633full.m	Sample		OP99393.S6Q367.510,,,5.0,1,water	cf
45	6Q25970.d	P2-B8	FC9741-1	1633full.m	Sample		OP99393.S6Q367.510,,,5.0,1,water	cf
46	6Q25971.d	P2-B9	FC9741-5	1633full.m	Sample		OP99393.S6Q367.510,,,5.0,1,water	cf
47	6Q25972.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
48	6Q25973.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
49	6Q25974.d	P3-C4	OP99405-BS	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	Data files skip, RR batch
50	6Q25975.d	P3-C5	OP99405-LLBS:2	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	↓
51	6Q25976.d	P3-C6	OP99405-MB	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	↓
52	6Q25977.d	P3-C7	FC10063-2	1633full.m	Sample		OP99405.S6Q367.550,,,5.0,1,water	↓
53	6Q25978.d	P3-C8	OP99405-MS	1633full.m	Sample		OP99405.S6Q367.510,,,5.0,1,water	↓
54	6Q25979.d	P3-C9	FC10063-3	1633full.m	Sample		OP99405.S6Q367.550,,,5.0,1,water	↓
55	6Q25980.d	P3-D1	OP99405-DUP	1633full.m	Sample		OP99405.S6Q367.550,,,5.0,1,water	↓
56	6Q25981.d	P3-D2	FC10134-1	1633full.m	Sample		OP99405.S6Q367.65,,,5.0,1,water	↓
57	6Q25982.d	P3-D3	FC10134-1	1633full.m	Sample	50/500	OP99405.S6Q367.65,,,5.0,10,water	↓
58	6Q25983.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	↓
59	6Q25984.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	↓
60	6Q25985.d	P3-D4	OP99394-BS	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	↓
61	6Q25986.d	P3-D5	OP99394-LLBS:3	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	↓
62	6Q25987.d	P3-D6	OP99394-MB	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	↓
63	6Q25988.d	P3-D7	FC10147-1	1633full.m	Sample		OP99394.S6Q367.525,,,5.0,1,water	↓
64	6Q25989.d	P3-D8	FC9961-3	1633full.m	Sample		OP99394.S6Q367.515,,,5.0,1,water	↓
65	6Q25990.d	P3-D9	OP99394-MS	1633full.m	Sample		OP99394.S6Q367.520,,,5.0,1,water	↓
66	6Q25991.d	P3-E1	OP99394-MSD	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	↓
67	6Q25992.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
68	6Q25993.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
69	6Q25994.d	P2-C1	OP99269-BS	1633full.m	Sample		OP99269.S6Q367.500,,,5.0,1,water	✓
70	6Q25995.d	P2-C2	OP99269-LLBS:3	1633full.m	Sample		OP99269.S6Q367.500,,,5.0,1,water	✓
71	6Q25996.d	P2-C3	OP99269-MB	1633full.m	Sample		OP99269.S6Q367.500,,,5.0,1,water	✓
72	6Q25997.d	P2-C4	FC9868-1	1633full.m	Sample		OP99269.S6Q367.515,,,5.0,1,water	✓
73	6Q25998.d	P2-C5	FC9869-1	1633full.m	Sample		OP99269.S6Q367.495,,,5.0,1,water	✓
74	6Q25999.d	P2-C6	FC9870-1	1633full.m	Sample		OP99269.S6Q367.530,,,5.0,1,water	✓
75	6Q26000.d	P2-C7	FC9870-2	1633full.m	Sample		OP99269.S6Q367.555,,,5.0,1,water	✓
76	6Q26001.d	P2-C8	FC9870-3	1633full.m	Sample		OP99269.S6Q367.550,,,5.0,1,water	✓
77	6Q26002.d	P2-C9	OP99269-MS	1633full.m	Sample		OP99269.S6Q367.545,,,5.0,1,water	✓
78	6Q26003.d	P2-D1	OP99269-MSD	1633full.m	Sample		OP99269.S6Q367.550,,,5.0,1,water	✓



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79	6Q26004.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	✓
80	6Q26005.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	✓
81	6Q26006.d	P2-D2	FC9870-4	1633full.m	Sample		OP99269.S6Q367.520,,,5.0,1,water	✓
82	6Q26007.d	P2-D3	FC9870-5	1633full.m	Sample		OP99269.S6Q367.510,,,5.0,1,water	✓
83	6Q26008.d	P2-D4	FC9870-6	1633full.m	Sample		OP99269.S6Q367.555,,,5.0,1,water	✓
84	6Q26009.d	P2-D5	FC9911-1	1633full.m	Sample		OP99269.S6Q367.420,,,5.0,1,water	rr5x pfba low
85	6Q26010.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
86	6Q26011.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
87	6Q26012.d	P2-D6	OP99272-BS	1633full.m	Sample		OP99272.S6Q367.500,,,5.0,1,water	✓
88	6Q26013.d	P2-D7	OP99272-LLBS:3	1633full.m	Sample		OP99272.S6Q367.500,,,5.0,1,water	✓
89	6Q26014.d	P2-D8	OP99272-MB	1633full.m	Sample		OP99272.S6Q367.500,,,5.0,1,water	✓
90	6Q26015.d	P2-D9	FC9871-1	1633full.m	Sample		OP99272.S6Q367.565,,,5.0,1,water	✓
91	6Q26016.d	P2-E1	FC9871-2	1633full.m	Sample		OP99272.S6Q367.485,,,5.0,1,water	✓
92	6Q26017.d	P2-E2	FC9871-3	1633full.m	Sample		OP99272.S6Q367.585,,,5.0,1,water	✓
93	6Q26018.d	P2-E3	FC9871-4	1633full.m	Sample		OP99272.S6Q367.560,,,5.0,1,water	✓ + rr10x
94	6Q26019.d	P2-E4	FC9871-5	1633full.m	Sample		OP99272.S6Q367.565,,,5.0,1,water	✓ + rr10x
95	6Q26020.d	P2-E5	OP99272-MS	1633full.m	Sample		OP99272.S6Q367.535,,,5.0,1,water	rr10x
96	6Q26021.d	P2-E6	OP99272-MSD	1633full.m	Sample		OP99272.S6Q367.585,,,5.0,1,water	rr10x
97	6Q26022.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
98	6Q26023.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
99	6Q26024.d	P2-E7	FC9871-6	1633full.m	Sample		OP99272.S6Q367.585,,,5.0,1,water	✓ + rr5x
100	6Q26025.d	P3-C4	OP99405-BS	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	✓
101	6Q26026.d	P3-C5	OP99405-LLBS:2	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	✓
102	6Q26027.d	P3-C6	OP99405-MB	1633full.m	Sample		OP99405.S6Q367.500,,,5.0,1,water	✓
103	6Q26028.d	P3-C7	FC10063-2	1633full.m	Sample		OP99405.S6Q367.560,,,5.0,1,water	✓
104	6Q26029.d	P3-C8	OP99405-MS	1633full.m	Sample		OP99405.S6Q367.510,,,5.0,1,water	✓
105	6Q26030.d	P3-C9	FC10063-3	1633full.m	Sample		OP99405.S6Q367.550,,,5.0,1,water	✓
106	6Q26031.d	P3-D1	OP99405-DUP	1633full.m	Sample		OP99405.S6Q367.550,,,5.0,1,water	✓
107	6Q26032.d	P3-D2	FC10134-1	1633full.m	Sample		OP99405.S6Q367.65,,,5.0,1,water	✓
108	6Q26033.d	P3-D3	FC10134-1	1633full.m	Sample		OP99405.S6Q367.65,,,5.0,1,water	✓
109	6Q26034.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
110	6Q26035.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
111	6Q26036.d	P3-D4	OP99394-BS	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	✓
112	6Q26037.d	P3-D5	OP99394-LLBS:3	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	✓
113	6Q26038.d	P3-D6	OP99394-MB	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	✓
114	6Q26039.d	P3-D7	FC10147-1	1633full.m	Sample		OP99394.S6Q367.525,,,5.0,1,water	✓
115	6Q26040.d	P3-D8	FC9961-3	1633full.m	Sample		OP99394.S6Q367.515,,,5.0,1,water	✓
116	6Q26041.d	P3-D9	OP99394-MS	1633full.m	Sample		OP99394.S6Q367.520,,,5.0,1,water	✓
117	6Q26042.d	P3-E1	OP99394-MSD	1633full.m	Sample		OP99394.S6Q367.500,,,5.0,1,water	✓
118	6Q26043.d	P1-A5	cc367-4	1633full.m	QC	20/500	OP99081.S6Q367.500,,,5.0,1,water	Pass
119	6Q26044.d	P1-A1	iccb	1633full.m	Sample		OP99081.S6Q367.500,,,5.0,1,water	ND
120	6Q26045.d	P1-B3	RT TDCA	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1,water	✓
121	6Q26046.d	P1-B4	RT BR-LN	1633full.m	Sample		OP99308.S6Q367.500,,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

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122	6Q26047.d	P1-A9	High Std	1633full.m	Sample	OP99308,S6Q367,500,,,5.0,1,water	✓
123	6Q26048.d	P1-A1	IBLK	1633full.m	Sample	OP99308,S6Q367,500,,,5.0,1,water	✓
124	6Q26049.d	P1-A5	cc367-4	1633full.m	QC	OP99308,S6Q367,500,,,5.0,1,water	Pass
125	6Q26050.d	P1-A2	cc367-1,0LL	1633full.m	QC	OP99308,S6Q367,500,,,5.0,1,water	Pass
126	6Q26051.d	P2-E8	FC9871-7	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓ + rr2x
127	6Q26052.d	P2-E9	FC9871-8	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	rr1x co
128	6Q26053.d	P2-F1	FC9871-9	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓
129	6Q26054.d	P2-F2	FC9871-10	1633full.m	Sample	OP99272,S6Q367,560,,,5.0,1,water	✓
130	6Q26055.d	P2-F3	FC9871-11	1633full.m	Sample	OP99272,S6Q367,565,,,5.0,1,water	✓
131	6Q26056.d	P2-F4	FC9871-12	1633full.m	Sample	OP99272,S6Q367,480,,,5.0,1,water	rr10x
132	6Q26057.d	P2-F5	FC9871-13	1633full.m	Sample	OP99272,S6Q367,485,,,5.0,1,water	rr1x co + rr2x
133	6Q26058.d	P2-F6	FC9871-14	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓ + rr5x
134	6Q26059.d	P2-F7	FC9871-15	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓ + rr5x
135	6Q26060.d	P1-A5	cc367-4	1633full.m	QC	OP99081,S6Q367,500,,,5.0,1,water	Pass
136	6Q26061.d	P1-A1	iccb	1633full.m	Sample	OP99081,S6Q367,500,,,5.0,1,water	ND
137	6Q26062.d	P2-F8	FC9871-16	1633full.m	Sample	OP99272,S6Q367,510,,,5.0,1,water	✓ + rr2x
138	6Q26063.d	P2-F9	FC9871-17	1633full.m	Sample	OP99272,S6Q367,500,,,5.0,1,water	✓
139	6Q26064.d	P3-A1	FC9871-18	1633full.m	Sample	OP99272,S6Q367,485,,,5.0,1,water	✓ + rr5x
140	6Q26065.d	P3-A2	FC9871-19	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓ + rr5x
141	6Q26066.d	P3-A3	FC9871-20	1633full.m	Sample	OP99272,S6Q367,585,,,5.0,1,water	✓
142	6Q26067.d	P1-A5	cc367-4	1633full.m	QC	OP99081,S6Q367,500,,,5.0,1,water	Pass
143	6Q26068.d	P1-A1	iccb	1633full.m	Sample	OP99081,S6Q367,500,,,5.0,1,water	ND
144	6Q26069.d	P3-A4	FC9804-9	1633full.m	Sample	OP99300,S6Q367,501,,,5.0,10,soil	✓
145	6Q26070.d	P3-A5	FC9804-10	1633full.m	Sample	OP99300,S6Q367,4,99,,,5.0,1,soil	✓
146	6Q26071.d	P3-A6	FC9804-10	1633full.m	Sample	OP99300,S6Q367,4,99,,,5.0,5,soil	✓
147	6Q26072.d	P3-A7	FC9742-9	1633full.m	Sample	OP99227,S6Q367,550,,,5.0,5,water	✓
148	6Q26073.d	P3-A8	FC9763-3	1633full.m	Sample	OP99203,S6Q367,115,,,5.0,1,water	✓
149	6Q26074.d	P3-A9	FC9776-4	1633full.m	Sample	OP99251,S6Q367,515,,,5.0,5,water	✓
150	6Q26075.d	P3-B1	FC9776-5	1633full.m	Sample	OP99251,S6Q367,515,,,5.0,5,water	✓
151	6Q26076.d	P3-B2	FC9776-9	1633full.m	Sample	OP99251,S6Q367,530,,,5.0,2,water	✓
152	6Q26077.d	P3-B3	FC9804-4	1633full.m	Sample	OP99300,S6Q367,5.02,,,5.0,10,soil	✓ + Redo at 1.0g
153	6Q26078.d	P3-B4	FC9804-5	1633full.m	Sample	OP99300,S6Q367,4,98,,,5.0,10,soil	✓ + Redo at 1.0g
154	6Q26079.d	P1-A5	cc367-4	1633full.m	QC	OP99081,S6Q367,500,,,5.0,1,water	Pass
155	6Q26080.d	P1-A1	iccb	1633full.m	Sample	OP99081,S6Q367,500,,,5.0,1,water	ND
156	6Q26081.d	P3-B5	FC9804-6	1633full.m	Sample	OP99300,S6Q367,5.00,,,5.0,10,soil	✓ + Redo at 1.0g
157	6Q26082.d	P3-B6	FC9804-8	1633full.m	Sample	OP99300,S6Q367,5.05,,,5.0,10,soil	✓ + Redo at 1.0g
158	6Q26083.d	P3-B7	FC9804-1	1633full.m	Sample	OP99300,S6Q367,4,98,,,5.0,10,soil	✓ + Redo at 1.0g
159	6Q26084.d	P3-B8	FC9804-2	1633full.m	Sample	OP99300,S6Q367,5.00,,,5.0,10,soil	✓ + Redo at 1.0g
160	6Q26085.d	P3-B9	FC9804-3	1633full.m	Sample	OP99300,S6Q367,5.00,,,5.0,10,soil	✓ + Redo at 1.0g
161	6Q26086.d	P3-C1	FC9804-7	1633full.m	Sample	OP99300,S6Q367,5.02,,,5.0,10,soil	✓ + Redo at 1.0g
162	6Q26087.d	P3-C2	FC9763-1	1633full.m	Sample	OP99203,S6Q367,120,,,5.0,10,water	✓
163	6Q26088.d	P3-C3	FC9763-2	1633full.m	Sample	OP99203,S6Q367,120,,,5.0,10,water	✓
164	6Q26089.d	P1-A5	Ecc367-4	1633full.m	QC	OP99081,S6Q367,500,,,5.0,1,water	Pass



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

165	6Q26090.d	P1-A1	iccb	1633full.m	Sample	CP99081,S6Q367,500,,,5.0,1,water	ND
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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 2192A-E	1033 Cal. Std. (SPIKE)	LCMS 2191	PFAC Bx-15 Bx-16	Sgs Labs	N/A	12/28/23	2ppm 5ppm	250uL	4 mL	125 312.5ppb	1033 1034 (2x108800)	9/29/23 10/16/23	12/28/23 10/16/23	MW
		11940	PFAC	Wellington	4-19-28	9/24/23	1-4 ppm	250uL		125 250ppb				
		11908	MXH			9/24/23								
		11947B 11943A 11947A	PFAC MXF		3-24-26	9/15/24 9/24/24	2ppm	250uL		125ppb				
		11948A 11948B	PFAC MXG		12-1-27	9/15/24 9/24/24	2ppm	250uL		125ppb				
		11971 11992 12016A	PFAC MXJ		3-28-28	9/15/24 9/24/24	4-20 ppm	312 uL		312 1100ppb				
LCMS 2193	FOSE Std	11409	N-ET-FOSE	Wellington Labs	05/13/27	09/25/24	50ppm	200 uL	2.0 mL	5ppb	95% MeOH 5% H ₂ O	09/25/23	03/25/24	JR
		11410	N-Me-FOSE		05/13/27	09/25/24								
LCMS 2194	Full List 40 Spike (cal std)	11904/ 12006	PFAC- DOP (25.00mg)	Absolute	03/13/28	09/11/24	1.0 ppm	400 uL	4.0 mL	100ppb	95% MeOH 5% H ₂ O	09/19/23	10/16/23	JR
		LCMS 2179	40 List Add-on#1	Sgs Std	-	10/18/23								
		LCMS 2156	40 List Add-on#2		-	02/07/24								
		LCMS 2193	FOSE Std.		-	03/25/24	5.0 ppm			500ppb				

* 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 2180	List 40 Spike (Cal Std)	11940	PFA-POP (25 Comp)	Absolute	03/13/28	08/29/24	1.0 ppm	400 uL	4.0 mL	100 ppb	95% MeOH 5% H2O	09/09/23	07/19/23	JR
		68MS 2179	40 list Add-on #1	-	-	10/18/23								
		LCMS 2156	40 list Add-on #2	-	-	02/07/24								
		LCMS 2176	PGE Std	-	-	09/19/23	5.0 ppm							
LCMS 2181	537.1 DW Spike	11811	MCHPPO DA	Wellington Labs	04/03/26	09/16/24	50 ppm	200 uL	5 mL	2.0 ppm	91% MeOH 4% H2O	09/16/23	03/16/24	NG
		11337	05-ET-N R55AA		05/11/27	09/16/24		200 uL						NG
		99926	MPFDA		09/05/24	03/16/24		100 uL		1.0 ppm				NG
		99938	MPFAA		10/11/24	03/16/24		100 uL						NG
LCMS 2182	537.1 DW Spike	11940	PFA-DND (25 Comp)	Absolute	03/13/28	08/29/24	1.0 ppm	1 mL	5 mL	200 ppb	91% MeOH 4% H2O	09/16/23	03/16/24	NG
LCMS 2183	537.1 DW Std.	11940	PFA-DND (25 Comp)	Absolute	03/13/28	08/29/24	1.0 ppm	400 uL	4 mL	100 ppb	91% MeOH 4% H2O	09/16/23	09/16/24	NG
		LCMS 2181	DW Spike	-	-	03/16/24	10/20 ppm	400 uL		100/200 ppb				NG
LCMS 2184	PFC Spike	11940/11964	PFA-POP (25 Comp)	Absolute	03/13/28	08/29/24	1.0 ppm	2 mL	5 mL	400 ppb	95% MeOH 5% H2O	09/11/23	03/11/24	JR
		11432	N-Me-EFA	Wellington Labs	02/28/27	03/13/24	50 ppm	40 uL						
		11793	FBKA-1		02/01/28	08/08/24								
		11792	FHKA-1		12/01/27	08/08/24								
		11332	PFECHS		03/29/27	04/18/24								

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

ORL D OAC 0017 6 03 ECDM form old man for file 030810



Organic Standards Preparation Log

SGS - Orlando 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 2175 A-F	Br-LW EtMe	SGS LABS	NA	12/28/23	2ppm	250uL	4mL	125 312.5ppb	1433 MIX (2000uL)	9/5/23	12/18/23	MJ
	PFAC MXH	Wellington	4/19/28	8/20/24	1-4 ppm			62.5 125 250ppb				
	PFAC MXF		3/24/26	8/31/24	2ppm			125ppb				
	PFAC MXG		12/1/27	8/31/24	2ppm			125ppb				
	PFAC MXJ		5/28/28	9/5/24	4-20 ppm	312uL		312 1100ppb				
LCMS 2176	N-Et-FOSE Std	Wellington Labs	5/13/27	9/19/23	50ppm	100 200uL	1.0 2.0mL	5 ppm	95% MeOH 5% H2O	9/05/23	9/19/23	JR
	N-Me-FOSE											
LCMS 2177	PFA-DND (28comp) ID Std	Absolute	3/13/28	8/29/24	1.0 ppm	400 mL	4.0 mL	100 ppb	95% MeOH 5% H2O	9/05/23	03/05/24	JR
	N-Me-OSA-M	Wellington Labs	02/28/27	3/13/24	50 ppm	8 mL						
	FBSA-1		02/01/28	8/08/24								
	FHSA-1		12/01/27	8/08/24								
	PFECHS		3/28/27	4/18/24								
LCMS 2178 A-J	MPAC-2MES PFC ID SURF (10)	Wellington Labs	9/08/28	8/10/24	1.0 ppm	1.2 mL	~2.5 mL	0.5 ppm	75% MeOH 5% H2O	8/04/23	03/06/24	JR
	H3HFO-DA		4/03/26	9/06/24	50 ppm	24 mL						
	d-N-Me POSA-M		11/1/27	8/12/24								

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

Ended 09/06/23

10762 A-B



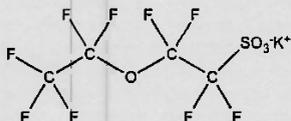
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *rec'd
8/20/21
WPH* **LOT NUMBER:** PFEESA0520

COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₉SO₄K **MOLECULAR WEIGHT:** 354.19

CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol

44.6 ± 2.2 µg/ml (PFEESA acid)

44.5 ± 2.2 µg/ml (PFEESA anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 05/13/2020

EXPIRY DATE: (mm/dd/yyyy) 05/13/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

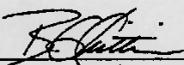
Figure 1: LC/MS Data (TIC and Mass Spectrum)

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/29/2020
(mm/dd/yyyy)
 B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:27, Issued 2004-11-10
 Revision#:7, Revised 2020-01-09

7.9.1

7

10765 A-13



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPH
8/20/21

LOT NUMBER:

36OPFHpA0320

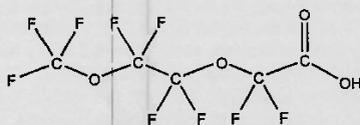
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

LOT NUMBER:

NEtFOSA0821M

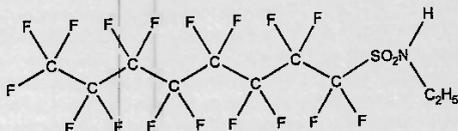
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

4151-50-2



MOLECULAR FORMULA:

C₁₀H₉F₁₇NO₂S

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

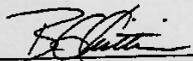
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


 B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

7.9.1
7



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CERTIFICATE OF ANALYSIS DOCUMENTATION

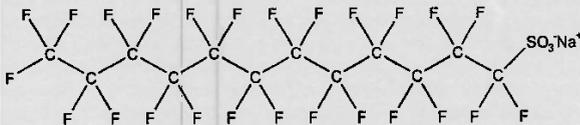
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol

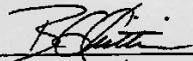
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

PFODA

10847 NS 01/18/23

LOT NUMBER:

PFODA0821

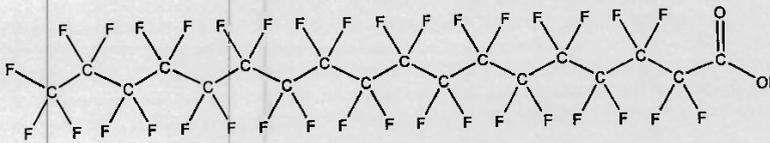
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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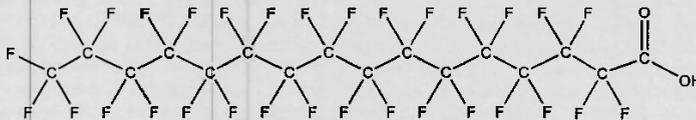
CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 * NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 05/07/2021

EXPIRY DATE: (mm/dd/yyyy) 05/07/2026

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

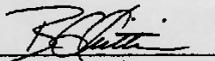
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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

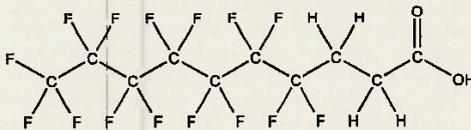
COMPOUND:

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

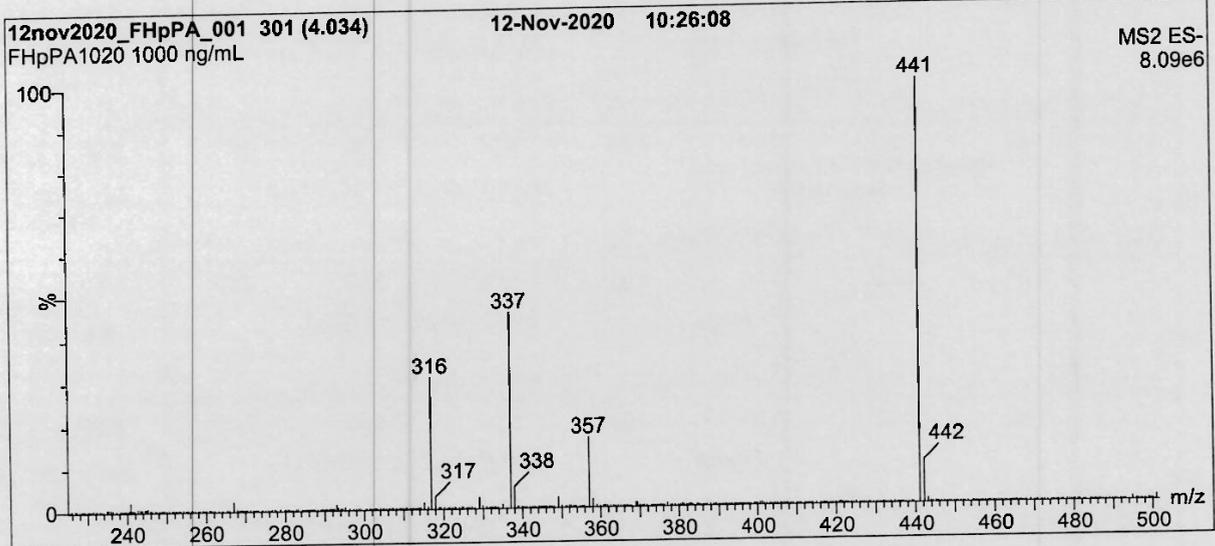
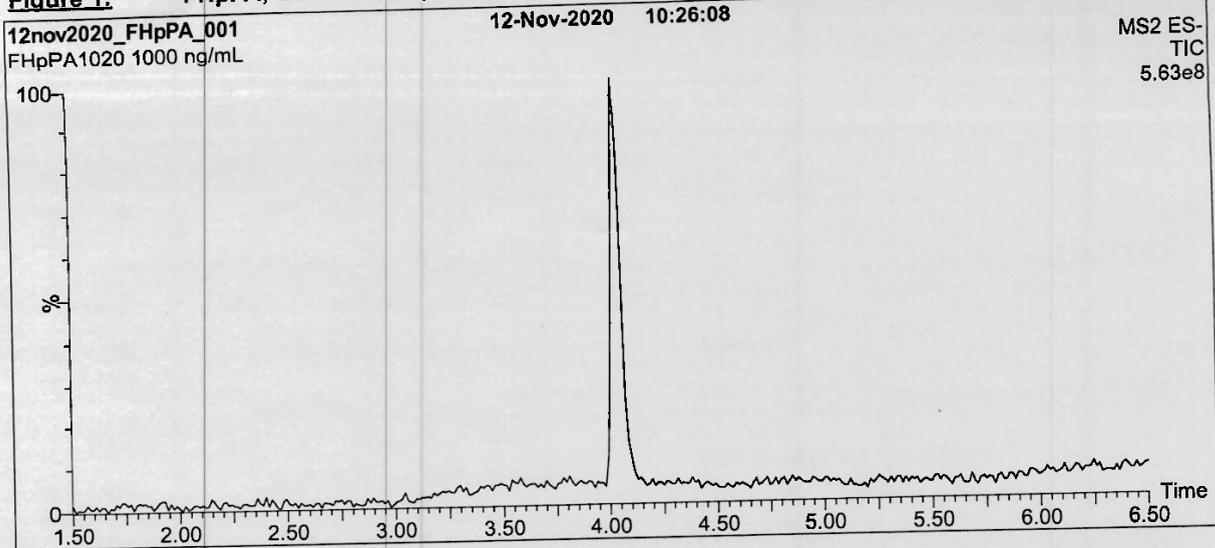
Date: 11/27/2020

(mm/dd/yyyy)

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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

LOT NUMBER:

FPrPA0122

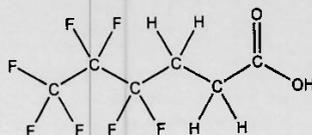
COMPOUND:

3-Perfluoropropyl propanoic acid

STRUCTURE:

CAS #:

356-02-5



MOLECULAR FORMULA:

C₆H₃F₇O₂

MOLECULAR WEIGHT:

242.09

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

02/03/2022

EXPIRY DATE: (mm/dd/yyyy)

02/03/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

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Certified By:

B.G. Chittim, General Manager

Date: 02/04/2022
(mm/dd/yyyy)

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11140



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PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

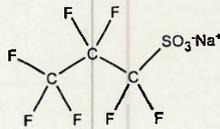
COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₃F₇SO₃Na

MOLECULAR WEIGHT:

272.07

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

46.0 ± 2.3 µg/mL (PFPrS acid)

45.8 ± 2.3 µg/mL (PFPrS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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11338



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

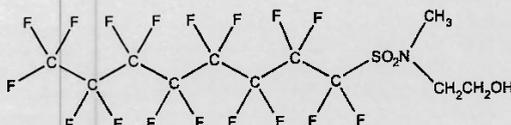
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:**C₁₁H₈F₁₇NO₃S**MOLECULAR WEIGHT:**

557.22

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By:

B.G. Chittim, General Manager
Date: 06/14/2022
(mm/dd/yyyy)

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11497



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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NMeFOSA
<u>LOT NUMBER:</u>	brNMeFOSA0822
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/18/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/23/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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Revision#:9, Revised 2020-12-23

brNMeFOSA0822 (1 of 6)
rev1

7.9.1
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11498



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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (SIR)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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brNEtFOSA0922 (1 of 6)
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11514 rec'd 11/14/22

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-1

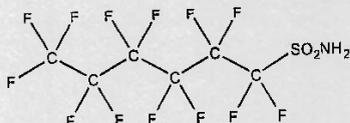
LOT NUMBER: FHxSA1221I

COMPOUND:

Perfluoro-1-hexanesulfonamide

CAS #: 41997-13-1

STRUCTURE:



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

MOLECULAR WEIGHT: 399.13

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 01/10/2022
(mm/dd/yyyy)

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FHxSA1221I (1 of 4)

11649 Rec. 02/13/23

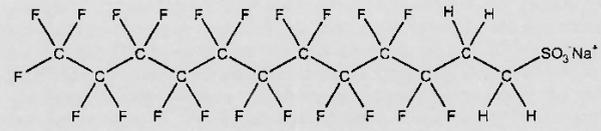


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PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS1122
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

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) 12/01/2022
EXPIRY DATE: (mm/dd/yyyy) 12/01/2027
RECOMMENDED STORAGE: Refrigerate ampoule

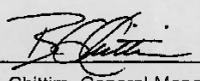
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:  **Date:** 12/09/2022
B.G. Chittim, General Manager (mm/dd/yyyy)

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

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rev0

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11794
rec'd: 05/15/23



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PRODUCT CODE:

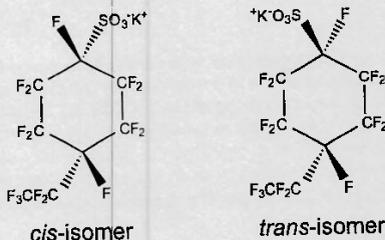
PFECHS

LOT NUMBER: PFECHS0223

COMPOUND:

Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



CAS #: 335-24-0

MOLECULAR FORMULA:

C₉F₁₅SO₃K

MOLECULAR WEIGHT: 500.22

CONCENTRATION:

50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)

SOLVENT(S): Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/14/2023

EXPIRY DATE: (mm/dd/yyyy)

03/14/2028

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*, by ¹⁹F NMR).

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Certified By:

B.G. Chittim, General Manager

Date: 03/16/2023
(mm/dd/yyyy)

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11795
rec'd 10/5/15/23



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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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Revision#: 9, Revised 2020-12-23

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11796
rec'd: 05/15/23



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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

PRODUCT CODE: br-NEtFOSE
LOT NUMBER: brNEtFOSE1022
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/12/2022
LAST TESTED: (mm/dd/yyyy) 09/12/2022 (HRGC/LRMS)
10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by 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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11946 A-B
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0423
SOLVENT(S): Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 04/06/2023
LAST TESTED: (mm/dd/yyyy) 04/19/2023
EXPIRY DATE: (mm/dd/yyyy) 04/19/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, 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. 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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7

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2FTS	4000	3840	16

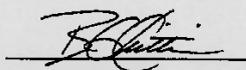
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11947A-B
rec'd: 08/09/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE: PFAC-MXF
LOT NUMBER: PFACMXF0323
SOLVENT(S): Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 03/23/2023
LAST TESTED: (mm/dd/yyyy) 03/24/2023
EXPIRY DATE: (mm/dd/yyyy) 03/24/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

PFACMXF0323 (1 of 5)
rev0

7.9.1
7

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroicosafuoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11948 A-B
rec'd: 08/09/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

PRODUCT CODE: PFAC-MXG
LOT NUMBER: PFACMXG1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/30/2022
LAST TESTED: (mm/dd/yyyy) 12/01/2022
EXPIRY DATE: (mm/dd/yyyy) 12/01/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

PFACMXG1122 (1 of 5)
rev0

7.9.1
7



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

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxahexanoic acid	3,6-OPFHxA	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)

11968
rec'd '08/22/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0423
SOLVENT(S): Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 04/06/2023
LAST TESTED: (mm/dd/yyyy) 04/19/2023
EXPIRY DATE: (mm/dd/yyyy) 04/19/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, 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. 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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PFACMXH0423 (1 of 11)
rev1

7.9.1
7

e A:

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

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		23
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11971
rec'd: 08/22/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE: PFAC-MXJ
LOT NUMBER: PFACMXJ0323
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 03/27/2023
LAST TESTED: (mm/dd/yyyy) 03/28/2023
EXPIRY DATE: (mm/dd/yyyy) 03/28/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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

PFACMXJ0323 (1 of 5)
rev0

7.9.1
7

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: 04/12/2023

(mm/dd/yyyy)

11992
rec'd 08/13/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE: PFAC-MXJ
LOT NUMBER: PFACMXJ0323
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 03/27/2023
LAST TESTED: (mm/dd/yyyy) 03/28/2023
EXPIRY DATE: (mm/dd/yyyy) 03/28/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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

Compound	Acronym	Concentration ($\mu\text{g}/\text{mL}$)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: 
B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

11994
rec'd: 08/13/22



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA (5:3)

LOT NUMBER:

FPePA0722

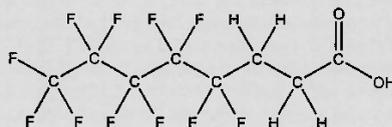
COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:

CAS #:

914637-49-3



MOLECULAR FORMULA:

$C_8H_5F_{11}O_2$

MOLECULAR WEIGHT:

342.11

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/02/2022

EXPIRY DATE: (mm/dd/yyyy)

08/02/2027

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by $^1\text{H NMR}$.

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Certified By:

B.G. Chittim, General Manager

Date: 08/10/2022

(mm/dd/yyyy)

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12016 A-B
rec'd: 09/11/23



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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

PFACMXJ0323 (1 of 5)
rev0

7.9.1
7

A:

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

Compound	Acronym	Concentration ($\mu\text{g/mL}$)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By:


B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

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

PFACMXJ0323 (3 of 5)
rev0

11988 A-5
rec'd: 08/13/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0623
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	06/19/2023
LAST TESTED: (mm/dd/yyyy)	06/20/2023
EXPIRY DATE: (mm/dd/yyyy)	06/20/2026
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 (¹³C₃-GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

MPFACHIFES0623 (1 of 7)
rev0

7.9.1
7

Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		24
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		16
N-Methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-Ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		23
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		17
2-(N-Methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-Ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 06/22/2023
(mm/dd/yyyy)

11987A-J
rec'd: 08/13/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection
Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS0723
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 07/05/2023
LAST TESTED: (mm/dd/yyyy) 07/05/2023
EXPIRY DATE: (mm/dd/yyyy) 07/05/2028
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 , C_6 , C_8 - C_{10}) and two mass-labelled (^{18}O and ^{13}C) perfluoroalkanesulfonates (C_6 and C_8). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of $\geq 99\%$ per ^{13}C or >94% per ^{18}O .

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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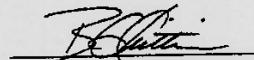
MPFACHIFIS0723 (1 of 5)
rev0

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: 
B.G. Chittim, General Manager

Date: 07/07/2023
(mm/dd/yyyy)

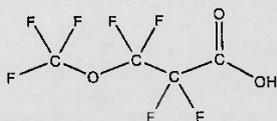
11648 Rec. 02/13/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0722
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1
STRUCTURE:



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/02/2022
EXPIRY DATE: (mm/dd/yyyy) 08/02/2027
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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/15/2022
(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

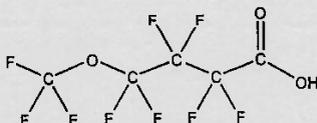
11465



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA **LOT NUMBER:** PF5OHxA0722
COMPOUND: Perfluoro-5-oxahexanoic acid
SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)
STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: $C_6H_2F_9O_3$ **MOLECULAR WEIGHT:** 280.05
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/02/2022
EXPIRY DATE: (mm/dd/yyyy) 08/02/2027
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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 08/26/2022
 (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

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 10/07/23 08:10
Started (mm/dd/yy 24:00)

Method: EPA 1633 Draft (QSM) List 40

Date/Time: 10/8/23 13:14
Finished (mm/dd/yy 24:00)

Balance ID: _____

Batch#: OP99404 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 99404 MB		500	6	N/A	25		5	E	
OP 99404 BS		500	6			200			
OP 99404 LLBS		500	6			60			
FC 10192-1	2	520	6						
	2	570	6						
	3	550	6	N/A	25		5	F	
GH 10/07/23									
OPFC10192-1 MS	3	520	6	N/A	25	200	5	E	
OP MSD									
OPFC10192-2 DUP	3	550	6	N/A	25		5	E	

Comments:

EIS (SURR) ID: 12002A-D Conc: 250-5000 ng/ml Exp. Date: 10/01/24 Inj. By: GH Ver. By: VH
 SPIKE.1 ID: LCMS 217D Conc: VARIED Exp. Date: 12/28/23 Inj. By: GH Ver. By: VH
 SPIKE.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 120114-J Conc: 250-1000 ng/ml Exp. Date: 10/1/24 Inj. By: MW Ver. By: NG

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 232037 1% NH4OH MeOH PF646 SPE Lot # 6752453-01
 Water Lot # OP98930 D1H20 0.3M Formic Acid PF624 Syringe filter Lot #
 Acetic Acid # 194003 3% NH4OH Sol _____ pH paper Lot# 205423
 0.1M Formic PF641 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: [Signature]
 Accepted By: [Signature]

Date: 10/07/23
 Date: 10/8/23

7.10.1
7