

The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC7490

Sampling Date: 07/03/23



Report to:

AECOM, Inc
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ATTN: Katie Abbott

Total number of pages in report: 738



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.

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: FC7490

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC7490-1	07/03/23	14:15	HN	07/05/23	AQ Ground Water	AF-RHMW225401-WGN01B-2307

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC7490

Site: N6274223F0104 RH Fire Suppression System

Report Date: 7/17/2023 4:50:34 PM

On 07/05/2023, 1 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 4.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC7490 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: OP97799

Sample(s) FC7583-3MS, FC7583-4DUP were used as the QC samples indicated.

RPD(s) for Duplicate for Perfluorodecanoic acid, Perfluorononanoic acid are outside control limits for sample OP97799-DUP. Probable cause is due to sample non-homogeneity.

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: FC7490
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/03/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC7490-1 AF-RHMW225401-WGN01B-2307

Perfluorohexanoic acid	0.91 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.68 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	0.97 J	3.8	0.96	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.58 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid	1.1 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	0.99 J	3.8	1.9	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	AF-RHMW225401-WGN01B-2307		
Lab Sample ID:	FC7490-1	Date Sampled:	07/03/23
Matrix:	AQ - Ground Water	Date Received:	07/05/23
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	6Q20923.D	1	07/13/23 18:06	MV	07/12/23 11:45	OP97799	S6Q310
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	0.91	3.8	1.9	0.48	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.68	3.8	1.9	0.48	ng/l	J
335-67-1	Perfluorooctanoic acid	0.97	3.8	0.96	0.48	ng/l	J
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	0.58	3.8	1.9	0.48	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.1	3.8	1.9	0.67	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	0.99	3.8	1.9	0.52	ng/l	J
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-RHMW225401-WGN01B-2307		
Lab Sample ID:	FC7490-1	Date Sampled:	07/03/23
Matrix:	AQ - Ground Water	Date Received:	07/05/23
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
---------	------------------------	--------	--------	--------

	13C4-PFBA	108%		20-150%
	13C5-PFPeA	113%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	113%		20-150%
	13C8-PFOA	119%		20-150%
	13C9-PFNA	110%		20-150%
	13C6-PFDA	128%		20-150%
	13C7-PFUnDA	126%		20-150%
	13C2-PFDoDA	106%		20-150%
	13C2-PFTeDA	100%		20-150%
	13C3-PFBS	122%		20-150%
	13C3-PFHxS	107%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2307	
Lab Sample ID:	FC7490-1	Date Sampled: 07/03/23
Matrix:	AQ - Ground Water	Date Received: 07/05/23
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	112%		20-150%
	13C8-FOSA	92%		20-150%
	d3-MeFOSA	81%		20-150%
	d5-EtFOSA	92%		20-150%
	d3-MeFOSAA	115%		20-150%
	d5-EtFOSAA	113%		20-150%
	d7-MeFOSE	81%		20-150%
	d9-EtFOSE	98%		20-150%
	13C2-4:2FTS	141%		20-180%
	13C2-6:2FTS	129%		20-180%
	13C2-8:2FTS	131%		20-180%
	13C3-HFPO-DA	107%		20-150%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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



SGS North America Inc - Orlando

FC7490

COC #: 2307AFSG07

Chain of Custody

SGS - ORLANDO JOB #

PAGE 1 OF 1

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

SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information		Project Information				Analytical Information										Matrix Codes	
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System														DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe	
Address: 1001 Bishop St. ste 1600		Street															
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii															
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512		Project # 60697810															
Sampler(s) Name(s) (Printed) Sampler 1: <u>E. Womak</u> Sampler 2: <u>H. M. Kikawa</u>		Client Purchase Order #				PFAS EPA Draft 1633										LAB USE ONLY	
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NDDE	HCl	NHCl	HNO3	H2SO4	NACH2ZAC	D WATER	MECH		
1	AF-RHMW225401-WGN01B-2307	7/13/2013	1415	HN	GW	3		X								X	
		7/13/2013 2 M 82				INITIAL ASSESSMENT											
						LABEL VERIFICATION										SP	
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks											
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW AIRWAY BILL UNITED: 016-96832924											
Rush T/A Data Available VIA Email or Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 J. Stone / AECOM	7/12/13 11:50	2 GABRIEL RIVERA / AECOM	3 GABRIEL RIVERA / AECOM	7/12/13 16:55	4 [Signature] / AECOM	5 [Signature] / AECOM	7/15/13 8:00	6 [Signature] / AECOM	7 [Signature] / AECOM	8 [Signature] / AECOM	9 [Signature] / AECOM	10 [Signature] / AECOM	11 [Signature] / AECOM	12 [Signature] / AECOM	13 [Signature] / AECOM	14 [Signature] / AECOM	15 [Signature] / AECOM

PFAS_COCS_ALL_07032023.xls Rev 031318

4.6 FR #1

FC7490: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC7490

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 7/5/2023 10:00:00 AM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-96332924

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.6);

Cooler Temps (Corrected) °C: Cooler 1: (4.4);

Cooler Information

Y or N

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

Trip Blank Information

Y or N N/A

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

Sample Information

Y or N N/A

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

Misc. Information

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

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 7/5/2023 10:00:00 AM

Reviewer: CD

Date: 7/9/2023

FC7490: Chain of Custody

Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FC7490
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/03/23

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 FC7490

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20892.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20892.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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	96% 20-150%
	13C4-PFHpA	98% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	97% 20-150%
	13C6-PFDA	92% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	104% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	104% 20-150%
	d5-EtFOSAA	105% 20-150%
	d7-MeFOSE	98% 20-150%
	d9-EtFOSE	104% 20-150%
	13C2-4:2FTS	112% 20-180%
	13C2-6:2FTS	105% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	93% 20-150%

Instrument Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20984.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20984.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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	102% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	92% 20-150%
	13C9-PFNA	99% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	90% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	112% 20-150%
	13C8-FOSA	112% 20-150%
	d3-MeFOSA	107% 20-150%
	d5-EtFOSA	116% 20-150%
	d3-MeFOSAA	115% 20-150%
	d5-EtFOSAA	113% 20-150%
	d7-MeFOSE	110% 20-150%
	d9-EtFOSE	124% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	120% 20-180%
	13C2-8:2FTS	129% 20-180%
	13C3-HFPO-DA	91% 20-150%

Continuing Calibration Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20918.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20918.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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	97% 20-150%
	13C4-PFHpA	95% 20-150%
	13C8-PFOA	96% 20-150%
	13C9-PFNA	110% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	96% 20-150%
	13C3-PFHxS	111% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	103% 20-150%
	d3-MeFOSA	96% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	99% 20-150%
	d9-EtFOSE	112% 20-150%
	13C2-4:2FTS	122% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	119% 20-180%
	13C3-HFPO-DA	92% 20-150%

Method Blank Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MB	6Q20912.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MB	6Q20912.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

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	115% 20-150%
	13C5-PFPeA	114% 20-150%
	13C5-PFHxA	118% 20-150%
	13C4-PFHpA	118% 20-150%
	13C8-PFOA	112% 20-150%
	13C9-PFNA	114% 20-150%
	13C6-PFDA	124% 20-150%
	13C7-PFUnDA	119% 20-150%
	13C2-PFDoDA	109% 20-150%
	13C2-PFTeDA	110% 20-150%
	13C3-PFBS	117% 20-150%
	13C3-PFHxS	114% 20-150%
	13C8-PFOS	123% 20-150%
	13C8-FOSA	78% 20-150%
	d3-MeFOSA	77% 20-150%
	d5-EtFOSA	83% 20-150%
	d3-MeFOSAA	128% 20-150%
	d5-EtFOSAA	120% 20-150%
	d7-MeFOSE	69% 20-150%
	d9-EtFOSE	90% 20-150%
	13C2-4:2FTS	132% 20-180%
	13C2-6:2FTS	129% 20-180%
	13C2-8:2FTS	136% 20-180%
	13C3-HFPO-DA	106% 20-150%

Continuing Calibration Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20906.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97799-BS, OP97799-LLBS, OP97799-MB, OP97799-MS

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

Continuing Calibration Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20906.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97799-BS, OP97799-LLBS, OP97799-MB, OP97799-MS

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

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	105% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	105% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	117% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	104% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	108% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	109% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	108% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	116% 20-150%
	13C2-4:2FTS	113% 20-180%
	13C2-6:2FTS	114% 20-180%
	13C2-8:2FTS	124% 20-180%
	13C3-HFPO-DA	100% 20-150%

Continuing Calibration Blank

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20978.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q310-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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20978.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q310-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	99% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	96% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	84% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	91% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	107% 20-150%
	13C8-PFOS	108% 20-150%
	13C8-FOSA	115% 20-150%
	d3-MeFOSA	103% 20-150%
	d5-EtFOSA	112% 20-150%
	d3-MeFOSAA	106% 20-150%
	d5-EtFOSAA	116% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	116% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	129% 20-180%
	13C3-HFPO-DA	95% 20-150%

Blank Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-LLBS	6Q20911.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0248	83	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0124	83	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0065	87	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0058	77	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0063	84	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0062	83	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0059	79	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0058	77	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0062	83	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0063	84	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0061	81	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0053	80	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0058	82	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0055	80	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0058	81	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0063	91	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0057	79	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0057	79	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0057	78	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0223	79	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0223	78	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0279	97	40-150
754-91-6	PFOSA	0.0075	0.0060	80	40-150
31506-32-8	MeFOSA	0.015	0.0130	87	40-150
4151-50-2	EtFOSA	0.015	0.0127	85	40-150
2355-31-9	MeFOSAA	0.0075	0.0063	84	40-150
2991-50-6	EtFOSAA	0.0075	0.0065	87	40-150
24448-09-7	MeFOSE	0.0375	0.0335	89	40-150
1691-99-2	EtFOSE	0.0375	0.0274	73	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0134	89	40-150
919005-14-4	ADONA	0.0142	0.0132	93	40-150
377-73-1	PFMPA	0.015	0.0128	85	40-150
863090-89-5	PFMBA	0.015	0.0128	85	40-150
151772-58-6	NFDHA	0.015	0.0129	86	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0126	90	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0120	85	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-LLBS	6Q20911.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0109	82	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0223	59	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.148	79	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.159	85	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	118%	20-150%
	13C5-PFPeA	117%	20-150%
	13C5-PFHxA	116%	20-150%
	13C4-PFHpA	122%	20-150%
	13C8-PFOA	116%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	129%	20-150%
	13C7-PFUnDA	127%	20-150%
	13C2-PFDoDA	116%	20-150%
	13C2-PFTeDA	113%	20-150%
	13C3-PFBS	123%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	127%	20-150%
	13C8-FOSA	93%	20-150%
	d3-MeFOSA	89%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	127%	20-150%
	d5-EtFOSAA	129%	20-150%
	d7-MeFOSE	79%	20-150%
	d9-EtFOSE	104%	20-150%
	13C2-4:2FTS	144%	20-180%
	13C2-6:2FTS	146%	20-180%
	13C2-8:2FTS	134%	20-180%
	13C3-HFPO-DA	106%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-BS	6Q20910.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0831	83	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0424	85	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0212	85	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0223	89	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0209	84	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0224	90	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0239	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0234	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0219	88	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0220	88	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0246	98	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0195	88	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0191	81	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0195	85	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0195	82	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0190	82	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0196	81	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0187	78	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0189	78	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0789	84	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0851	90	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0788	82	40-150
754-91-6	PFOSA	0.025	0.0202	81	40-150
31506-32-8	MeFOSA	0.05	0.0444	89	40-150
4151-50-2	EtFOSA	0.05	0.0414	83	40-150
2355-31-9	MeFOSAA	0.025	0.0207	83	40-150
2991-50-6	EtFOSAA	0.025	0.0227	91	40-150
24448-09-7	MeFOSE	0.125	0.107	86	40-150
1691-99-2	EtFOSE	0.125	0.0926	74	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0444	89	40-150
919005-14-4	ADONA	0.0473	0.0475	101	40-150
377-73-1	PFMPA	0.05	0.0432	86	40-150
863090-89-5	PFMBA	0.05	0.0436	87	40-150
151772-58-6	NFDHA	0.05	0.0421	84	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0424	91	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0433	92	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-BS	6Q20910.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0382	86	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0734	59	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.481	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.496	79	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	118%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	116%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	119%	20-150%
	13C3-PFHxS	126%	20-150%
	13C8-PFOS	122%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	73%	20-150%
	d5-EtFOSA	82%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	116%	20-150%
	d7-MeFOSE	66%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	138%	20-180%
	13C2-6:2FTS	137%	20-180%
	13C2-8:2FTS	144%	20-180%
	13C3-HFPO-DA	104%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MS	6Q20916.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-3	6Q20915.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	FC7583-3 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0943	0.0868	92	40-150
2706-90-3	Perfluoropentanoic acid	0.0029 J		0.0472	0.0460	91	40-150
307-24-4	Perfluorohexanoic acid	0.0014 J		0.0236	0.0218	86	40-150
375-85-9	Perfluoroheptanoic acid	0.0015 J		0.0236	0.0220	87	40-150
335-67-1	Perfluorooctanoic acid	0.0037 U		0.0236	0.0214	91	40-150
375-95-1	Perfluorononanoic acid	0.0037 U		0.0236	0.0241	102	40-150
335-76-2	Perfluorodecanoic acid	0.0037 U		0.0236	0.0205	87	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037 U		0.0236	0.0198	84	40-150
307-55-1	Perfluorododecanoic acid	0.0037 U		0.0236	0.0252	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037 U		0.0236	0.0231	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037 U		0.0236	0.0254	108	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037 U		0.0209	0.0190	91	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		0.0222	0.0193	87	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037 U		0.0216	0.0179	83	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U		0.0225	0.0216	96	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U		0.0219	0.0208	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037 U		0.0227	0.0189	83	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037 U		0.0228	0.0202	89	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		0.0229	0.0187	82	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0884	0.0856	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0047 J		0.0896	0.0870	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0906	0.0923	102	40-150
754-91-6	PFOSA	0.0037 U		0.0236	0.0222	94	40-150
31506-32-8	MeFOSA	0.0074 U		0.0472	0.0453	96	40-150
4151-50-2	EtFOSA	0.0074 U		0.0472	0.0437	93	40-150
2355-31-9	MeFOSAA	0.0046 U		0.0236	0.0231	98	40-150
2991-50-6	EtFOSAA	0.0046 U		0.0236	0.0212	90	40-150
24448-09-7	MeFOSE	0.037 U		0.118	0.109	92	40-150
1691-99-2	EtFOSE	0.037 U		0.118	0.106	90	40-150
13252-13-6	HFPO-DA (GenX)	0.0037 U		0.0472	0.0428	91	40-150
919005-14-4	ADONA	0.0074 U		0.0446	0.0487	109	40-150
377-73-1	PFMPA	0.0074 U		0.0472	0.0431	91	40-150
863090-89-5	PFMBA	0.0074 U		0.0472	0.0429	91	40-150
151772-58-6	NFDHA	0.0074 U		0.0472	0.0408	86	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U		0.0441	0.0420	95	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U		0.0446	0.0380	85	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MS	6Q20916.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-3	6Q20915.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	FC7583-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7PFEESA		0.0074 U	0.042	0.0364	87	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.118	0.0773	66	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.092 U	0.59	0.477	81	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.092 U	0.59	0.508	86	40-150

CAS No.	ID Standard Recoveries	MS	FC7583-3	Limits
	13C4-PFBA	96%	101%	20-150%
	13C5-PFPeA	108%	107%	20-150%
	13C5-PFHxA	113%	109%	20-150%
	13C4-PFHpA	122%	110%	20-150%
	13C8-PFOA	113%	110%	20-150%
	13C9-PFNA	96%	108%	20-150%
	13C6-PFDA	110%	123%	20-150%
	13C7-PFUnDA	111%	106%	20-150%
	13C2-PFDoDA	87%	93%	20-150%
	13C2-PFTeDA	81%	84%	20-150%
	13C3-PFBS	108%	108%	20-150%
	13C3-PFHxS	114%	115%	20-150%
	13C8-PFOS	100%	111%	20-150%
	13C8-FOSA	73%	93%	20-150%
	d3-MeFOSA	74%	85%	20-150%
	d5-EtFOSA	84%	88%	20-150%
	d3-MeFOSAA	101%	113%	20-150%
	d5-EtFOSAA	106%	110%	20-150%
	d7-MeFOSE	72%	85%	20-150%
	d9-EtFOSE	84%	97%	20-150%
	13C2-4:2FTS	106%	106%	20-180%
	13C2-6:2FTS	115%	122%	20-180%
	13C2-8:2FTS	111%	127%	20-180%
	13C3-HFPO-DA	100%	96%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-DUP	6Q20919.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-4	6Q20920.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	FC7583-4 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	0.00065 J		200*	30
335-76-2	Perfluorodecanoic acid	0.0035 U	0.00093 J		200*	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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-DUP	6Q20919.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-4	6Q20920.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7490-1

CAS No.	Compound	FC7583-4 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7PFEESA		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	FC7583-4	Limits
	13C4-PFBA	112%	105%	20-150%
	13C5-PFPeA	116%	103%	20-150%
	13C5-PFHxA	115%	106%	20-150%
	13C4-PFHpA	123%	108%	20-150%
	13C8-PFOA	117%	111%	20-150%
	13C9-PFNA	108%	106%	20-150%
	13C6-PFDA	121%	97%	20-150%
	13C7-PFUnDA	118%	98%	20-150%
	13C2-PFDoDA	100%	82%	20-150%
	13C2-PFTeDA	104%	77%	20-150%
	13C3-PFBS	124%	113%	20-150%
	13C3-PFHxS	125%	115%	20-150%
	13C8-PFOS	119%	111%	20-150%
	13C8-FOSA	98%	89%	20-150%
	d3-MeFOSA	91%	82%	20-150%
	d5-EtFOSA	97%	90%	20-150%
	d3-MeFOSAA	96%	104%	20-150%
	d5-EtFOSAA	119%	111%	20-150%
	d7-MeFOSE	80%	79%	20-150%
	d9-EtFOSE	101%	95%	20-150%
	13C2-4:2FTS	142%	135%	20-180%
	13C2-6:2FTS	140%	129%	20-180%
	13C2-8:2FTS	137%	128%	20-180%
	13C3-HFPO-DA	102%	91%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q310-CC307	Injection Date:	07/13/23
Lab File ID:	6Q20905.D	Injection Time:	13:54
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	94149	3.03	78985	5.69	126367	7.26	66288	7.81	44457	8.30
Check Std ^c	94888	3.01	80773	5.69	127258	7.26	71108	7.81	43779	8.30
Upper Limit ^d	188298	3.41	157970	6.09	252734	7.66	132576	8.21	88914	8.70
Lower Limit ^e	37660	2.61	31594	5.29	50547	6.86	26515	7.41	17783	7.90

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
S6Q310-ICCB	76999	3.03	58923	5.69	102037	7.26	54306	7.81	34774	8.30	1
ZZZZZZ	74342	3.03	60670	5.69	98922	7.26	51402	7.81	32426	8.30	2
ZZZZZZ	80265	3.03	65230	5.69	102490	7.26	54785	7.81	34405	8.30	5
ZZZZZZ	76955	3.03	62275	5.69	96735	7.26	53725	7.81	34780	8.31	5
OP97799-BS	69976	3.04	57343	5.69	94618	7.26	49793	7.81	32330	8.30	1
OP97799-LLBS	72385	3.04	58747	5.69	98665	7.26	54402	7.81	30924	8.31	1
OP97799-MB	74381	3.03	60178	5.69	103668	7.26	50813	7.81	31042	8.31	1
ZZZZZZ	50843	3.03	55977	5.68	103402	7.26	52558	7.81	34301	8.31	1
ZZZZZZ	52959	3.03	60000	5.68	105158	7.26	57124	7.81	38488	8.31	1
FC7583-3	66384	3.03	59118	5.69	95897	7.26	51757	7.81	30539	8.31	1
OP97799-MS	65686	3.03	55157	5.69	89411	7.26	49559	7.81	30367	8.30	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: S6Q307-ICC307 6Q20667.D 07/10/23 19:47. 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: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q310-CC307	Injection Date:	07/13/23
Lab File ID:	6Q20905.D	Injection Time:	13:54
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	13051	7.39	22799	8.48
Check Std ^c	13517	7.39	23650	8.48
Upper Limit ^d	26102	7.79	45598	8.88
Lower Limit ^e	5220	6.99	9120	8.08

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q310-ICCB	10302	7.39	17401	8.48	1
ZZZZZZ	9308	7.39	17056	8.48	2
ZZZZZZ	11395	7.39	18805	8.48	5
ZZZZZZ	10895	7.39	19415	8.48	5
OP97799-BS	8795	7.39	16079	8.48	1
OP97799-LLBS	9456	7.39	15555	8.48	1
OP97799-MB	9881	7.39	16026	8.48	1
ZZZZZZ	8478	7.39	16395	8.48	1
ZZZZZZ	9683	7.39	17239	8.48	1
FC7583-3	9224	7.39	16147	8.48	1
OP97799-MS	9284	7.39	16021	8.48	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q307-ICC307 6Q20667.D 07/10/23 19:47. 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.

Injection Standard Area Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q310-CC307	Injection Date:	07/13/23
Lab File ID:	6Q20917.D	Injection Time:	16:42
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal ^b	94149	3.03	78985	5.69	126367	7.26	66288	7.81	44457	8.30
Check Std ^c	95602	3.01	80567	5.69	127634	7.26	66865	7.81	45222	8.30
Upper Limit ^d	188298	3.41	157970	6.09	252734	7.66	132576	8.21	88914	8.70
Lower Limit ^e	37660	2.61	31594	5.29	50547	6.86	26515	7.41	17783	7.90

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
S6Q310-ICCB	77302	3.04	61879	5.69	99902	7.26	50198	7.81	34736	8.31	1
S6Q310-ICCB	77302	3.04	61879	5.69	99902	7.26	50198	7.81	34736	8.31	1
OP97799-DUP	70644	3.03	57672	5.69	96159	7.26	51605	7.81	30263	8.31	1
FC7583-4	72079	3.04	60926	5.69	95343	7.26	51103	7.81	35703	8.30	1
ZZZZZZ	68492	3.04	56359	5.69	92840	7.26	46936	7.81	29905	8.30	1
ZZZZZZ	69420	3.04	57355	5.69	97125	7.28	49564	7.81	29482	8.31	1
FC7490-1	69490	3.04	55579	5.69	89575	7.26	48241	7.81	29496	8.31	1
OP97753-BS	76944	3.03	62123	5.69	102247	7.28	53962	7.81	33727	8.31	1
OP97753-LLBS	72407	3.03	61145	5.69	91784	7.26	49887	7.81	32751	8.30	1
OP97753-MB	71815	3.03	60138	5.69	100508	7.26	49810	7.81	33293	8.31	1
ZZZZZZ	71324	3.03	54933	5.69	89318	7.28	48743	7.81	31827	8.30	1
ZZZZZZ	74273	3.03	55757	5.69	87291	7.26	48152	7.81	32070	8.30	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: S6Q307-ICC307 6Q20667.D 07/10/23 19:47. 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.

Injection Standard Area Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Check Std:	S6Q310-CC307	Injection Date:	07/13/23
Lab File ID:	6Q20917.D	Injection Time:	16:42
Instrument ID:	GCMS6Q	Method:	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal ^b	13051	7.39	22799	8.48
Check Std ^c	13153	7.39	22761	8.48
Upper Limit ^d	26102	7.79	45598	8.88
Lower Limit ^e	5220	6.99	9120	8.08

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF ^a
S6Q310-ICCB	10197	7.39	17605	8.48	1
S6Q310-ICCB	10197	7.39	17605	8.48	1
OP97799-DUP	9011	7.39	15932	8.48	1
FC7583-4	9253	7.39	17103	8.48	1
ZZZZZZ	9521	7.39	14820	8.48	1
ZZZZZZ	9639	7.40	14816	8.48	1
FC7490-1	9050	7.39	16043	8.48	1
OP97753-BS	10693	7.40	17318	8.48	1
OP97753-LLBS	9913	7.39	15857	8.48	1
OP97753-MB	9526	7.39	18125	8.48	1
ZZZZZZ	8126	7.39	16053	8.48	1
ZZZZZZ	7993	7.39	16519	8.48	1

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

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q307-ICC307 6Q20667.D 07/10/23 19:47. 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.

6.5.2
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TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q307-RT	Injection Date:	07/10/23
Lab File ID:	6Q20661.D	Injection Time:	18:23
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.478	--	--
TDCA	6.963	1.515	1.000
TCDCA	6.801	1.677	1.000
TUDCA	5.961	2.517	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
S6Q307-IC307	6Q20663.D	07/10/23	18:51	00:28	Mass Calibration Verification
S6Q307-IC307	6Q20664.D	07/10/23	19:05	00:42	Initial cal 1
S6Q307-IC307	6Q20665.D	07/10/23	19:19	00:56	Initial cal 2
S6Q307-IC307	6Q20666.D	07/10/23	19:33	01:10	Initial cal 3
S6Q307-ICC307	6Q20667.D	07/10/23	19:47	01:24	Initial cal 4
S6Q307-IC307	6Q20668.D	07/10/23	20:01	01:38	Initial cal 5
S6Q307-IC307	6Q20669.D	07/10/23	20:15	01:52	Initial cal 6
S6Q307-IC307	6Q20670.D	07/10/23	20:29	02:06	Initial cal 7
S6Q307-IC307	6Q20671.D	07/10/23	20:43	02:20	Initial cal 8
S6Q307-IBLK	6Q20672.D	07/10/23	20:57	02:34	Instrument Blank
S6Q307-IBLK	6Q20672.D	07/10/23	20:57	02:34	Instrument Blank
S6Q307-ICV307	6Q20673.D	07/10/23	21:11	02:48	Initial cal verification 4
S6Q307-ICV307	6Q20674.D	07/10/23	21:25	03:02	Initial cal verification 20
S6Q307-CC307	6Q20675.D	07/10/23	21:39	03:16	Continuing cal 4
S6Q307-CC307	6Q20676.D	07/10/23	21:53	03:30	Continuing cal 1.0LL
OP97713-BS	6Q20677.D	07/10/23	22:07	03:44	Blank Spike
OP97713-LLBS	6Q20678.D	07/10/23	22:21	03:58	Blank Spike
OP97713-MB	6Q20679.D	07/10/23	22:35	04:12	Method Blank
ZZZZZZ	6Q20680.D	07/10/23	22:49	04:26	(unrelated sample)
ZZZZZZ	6Q20682.D	07/10/23	23:17	04:54	(unrelated sample)
ZZZZZZ	6Q20683.D	07/10/23	23:31	05:08	(unrelated sample)
ZZZZZZ	6Q20684.D	07/10/23	23:45	05:22	(unrelated sample)
ZZZZZZ	6Q20685.D	07/10/23	23:59	05:36	(unrelated sample)
S6Q307-CC307	6Q20686.D	07/11/23	00:13	05:50	Continuing cal 4
S6Q307-ICCB	6Q20687.D	07/11/23	00:27	06:04	Continuing Calibration Blank
FC6994-5	6Q20688.D	07/11/23	00:41	06:18	(used for QC only; not part of job FC7490)
OP97713-MS	6Q20689.D	07/11/23	00:55	06:32	Matrix Spike
FC6994-6	6Q20690.D	07/11/23	01:09	06:46	(used for QC only; not part of job FC7490)
OP97713-DUP	6Q20691.D	07/11/23	01:23	07:00	Duplicate
ZZZZZZ	6Q20692.D	07/11/23	01:37	07:14	(unrelated sample)
ZZZZZZ	6Q20693.D	07/11/23	01:51	07:28	(unrelated sample)
ZZZZZZ	6Q20694.D	07/11/23	02:05	07:42	(unrelated sample)
ZZZZZZ	6Q20695.D	07/11/23	02:19	07:56	(unrelated sample)
ZZZZZZ	6Q20696.D	07/11/23	02:33	08:10	(unrelated sample)

TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q307-RT	Injection Date:	07/10/23
Lab File ID:	6Q20661.D	Injection Time:	18:23
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S6Q307-CC307	6Q20697.D	07/11/23	02:47	08:24	Continuing cal 4
S6Q307-ICCB	6Q20698.D	07/11/23	03:01	08:38	Continuing Calibration Blank
S6Q307-ICCB	6Q20698.D	07/11/23	03:01	08:38	Continuing Calibration Blank
ZZZZZZ	6Q20699.D	07/11/23	03:15	08:52	(unrelated sample)
ZZZZZZ	6Q20700.D	07/11/23	03:29	09:06	(unrelated sample)
OP97610-BS	6Q20701.D	07/11/23	03:43	09:20	Blank Spike
OP97610-LLBS	6Q20702.D	07/11/23	03:57	09:34	Blank Spike
OP97610-MB	6Q20703.D	07/11/23	04:10	09:47	Method Blank
ZZZZZZ	6Q20704.D	07/11/23	04:24	10:01	(unrelated sample)
ZZZZZZ	6Q20706.D	07/11/23	04:52	10:29	(unrelated sample)
ZZZZZZ	6Q20707.D	07/11/23	05:06	10:43	(unrelated sample)
ZZZZZZ	6Q20708.D	07/11/23	05:20	10:57	(unrelated sample)
S6Q307-CC307	6Q20709.D	07/11/23	05:34	11:11	Continuing cal 4
S6Q307-ICCB	6Q20710.D	07/11/23	05:48	11:25	Continuing Calibration Blank
S6Q307-ICCB	6Q20710.D	07/11/23	05:48	11:25	Continuing Calibration Blank
FC6954-1	6Q20711.D	07/11/23	06:02	11:39	(used for QC only; not part of job FC7490)
OP97610-MS	6Q20712.D	07/11/23	06:16	11:53	Matrix Spike
OP97610-MSD	6Q20713.D	07/11/23	06:30	12:07	Matrix Spike Duplicate
ZZZZZZ	6Q20714.D	07/11/23	06:44	12:21	(unrelated sample)
ZZZZZZ	6Q20715.D	07/11/23	06:58	12:35	(unrelated sample)
ZZZZZZ	6Q20716.D	07/11/23	07:12	12:49	(unrelated sample)
ZZZZZZ	6Q20717.D	07/11/23	07:26	13:03	(unrelated sample)
ZZZZZZ	6Q20718.D	07/11/23	07:40	13:17	(unrelated sample)
ZZZZZZ	6Q20719.D	07/11/23	07:54	13:31	(unrelated sample)
ZZZZZZ	6Q20720.D	07/11/23	08:08	13:45	(unrelated sample)
S6Q307-CC307	6Q20721.D	07/11/23	08:22	13:59	Continuing cal 4
S6Q307-ICCB	6Q20722.D	07/11/23	08:36	14:13	Continuing Calibration Blank
S6Q307-ICCB	6Q20722.D	07/11/23	08:36	14:13	Continuing Calibration Blank
ZZZZZZ	6Q20723.D	07/11/23	08:50	14:27	(unrelated sample)
ZZZZZZ	6Q20724.D	07/11/23	09:04	14:41	(unrelated sample)
ZZZZZZ	6Q20725.D	07/11/23	09:18	14:55	(unrelated sample)
ZZZZZZ	6Q20726.D	07/11/23	09:32	15:09	(unrelated sample)
ZZZZZZ	6Q20727.D	07/11/23	09:46	15:23	(unrelated sample)
ZZZZZZ	6Q20728.D	07/11/23	10:00	15:37	(unrelated sample)
S6Q307-ECC307	6Q20729.D	07/11/23	10:14	15:51	Ending cal 4
S6Q307-ICCB	6Q20730.D	07/11/23	10:28	16:05	Continuing Calibration Blank
S6Q307-ICCB	6Q20730.D	07/11/23	10:28	16:05	Continuing Calibration Blank

6.6.1
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TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q310-RT	Injection Date:	07/13/23
Lab File ID:	6Q20889.D	Injection Time:	10:11
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.478	--	--
TDCA	6.951	1.527	1.000
TCDCA	6.801	1.677	1.000
TUDCA	5.961	2.517	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
S6Q310-IBLK	6Q20892.D	07/13/23	10:53	00:42	Instrument Blank
S6Q310-IBLK	6Q20892.D	07/13/23	10:53	00:42	Instrument Blank
S6Q310-CC307	6Q20893.D	07/13/23	11:07	00:56	Continuing cal 4
S6Q310-CC307	6Q20894.D	07/13/23	11:21	01:10	Continuing cal 1.0LL
OP97773-BS	6Q20895.D	07/13/23	11:34	01:23	Blank Spike
OP97773-LLBS	6Q20896.D	07/13/23	11:48	01:37	Blank Spike
OP97773-MB	6Q20897.D	07/13/23	12:02	01:51	Method Blank
ZZZZZZ	6Q20898.D	07/13/23	12:16	02:05	(unrelated sample)
FC7015-1	6Q20899.D	07/13/23	12:30	02:19	(used for QC only; not part of job FC7490)
OP97773-MS	6Q20900.D	07/13/23	12:44	02:33	Matrix Spike
FC7015-2	6Q20901.D	07/13/23	12:58	02:47	(used for QC only; not part of job FC7490)
OP97773-DUP	6Q20902.D	07/13/23	13:12	03:01	Duplicate
ZZZZZZ	6Q20903.D	07/13/23	13:26	03:15	(unrelated sample)
ZZZZZZ	6Q20904.D	07/13/23	13:40	03:29	(unrelated sample)
S6Q310-CC307	6Q20905.D	07/13/23	13:54	03:43	Continuing cal 4
S6Q310-ICCB	6Q20906.D	07/13/23	14:08	03:57	Continuing Calibration Blank
ZZZZZZ	6Q20907.D	07/13/23	14:22	04:11	(unrelated sample)
ZZZZZZ	6Q20908.D	07/13/23	14:36	04:25	(unrelated sample)
ZZZZZZ	6Q20909.D	07/13/23	14:50	04:39	(unrelated sample)
OP97799-BS	6Q20910.D	07/13/23	15:04	04:53	Blank Spike
OP97799-LLBS	6Q20911.D	07/13/23	15:18	05:07	Blank Spike
OP97799-MB	6Q20912.D	07/13/23	15:32	05:21	Method Blank
ZZZZZZ	6Q20913.D	07/13/23	15:46	05:35	(unrelated sample)
ZZZZZZ	6Q20914.D	07/13/23	16:00	05:49	(unrelated sample)
FC7583-3	6Q20915.D	07/13/23	16:14	06:03	(used for QC only; not part of job FC7490)
OP97799-MS	6Q20916.D	07/13/23	16:28	06:17	Matrix Spike
S6Q310-CC307	6Q20917.D	07/13/23	16:42	06:31	Continuing cal 4
S6Q310-ICCB	6Q20918.D	07/13/23	16:56	06:45	Continuing Calibration Blank
S6Q310-ICCB	6Q20918.D	07/13/23	16:56	06:45	Continuing Calibration Blank
OP97799-DUP	6Q20919.D	07/13/23	17:10	06:59	Duplicate
FC7583-4	6Q20920.D	07/13/23	17:24	07:13	(used for QC only; not part of job FC7490)
ZZZZZZ	6Q20921.D	07/13/23	17:38	07:27	(unrelated sample)
ZZZZZZ	6Q20922.D	07/13/23	17:52	07:41	(unrelated sample)
FC7490-1	6Q20923.D	07/13/23	18:06	07:55	AF-RHMW225401-WGN01B-2307

TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q310-RT	Injection Date:	07/13/23
Lab File ID:	6Q20889.D	Injection Time:	10:11
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP97753-BS	6Q20924.D	07/13/23	18:20	08:09	Blank Spike
OP97753-LLBS	6Q20925.D	07/13/23	18:34	08:23	Blank Spike
OP97753-MB	6Q20926.D	07/13/23	18:48	08:37	Method Blank
ZZZZZZ	6Q20927.D	07/13/23	19:02	08:51	(unrelated sample)
ZZZZZZ	6Q20928.D	07/13/23	19:16	09:05	(unrelated sample)
S6Q310-CC307	6Q20929.D	07/13/23	19:30	09:19	Continuing cal 4
S6Q310-ICCB	6Q20930.D	07/13/23	19:44	09:33	Continuing Calibration Blank
S6Q310-ICCB	6Q20930.D	07/13/23	19:44	09:33	Continuing Calibration Blank
FC7109-7	6Q20931.D	07/13/23	19:58	09:47	(used for QC only; not part of job FC7490)
ZZZZZZ	6Q20934.D	07/13/23	20:40	10:29	(unrelated sample)
ZZZZZZ	6Q20935.D	07/13/23	20:54	10:43	(unrelated sample)
ZZZZZZ	6Q20937.D	07/13/23	21:22	11:11	(unrelated sample)
ZZZZZZ	6Q20938.D	07/13/23	21:36	11:25	(unrelated sample)
ZZZZZZ	6Q20940.D	07/13/23	22:04	11:53	(unrelated sample)
S6Q310-CC307	6Q20941.D	07/13/23	22:18	12:07	Continuing cal 4
S6Q310-ICCB	6Q20942.D	07/13/23	22:32	12:21	Continuing Calibration Blank
S6Q310-ICCB	6Q20942.D	07/13/23	22:32	12:21	Continuing Calibration Blank
ZZZZZZ	6Q20943.D	07/13/23	22:46	12:35	(unrelated sample)
ZZZZZZ	6Q20944.D	07/13/23	23:00	12:49	(unrelated sample)
ZZZZZZ	6Q20946.D	07/13/23	23:28	13:17	(unrelated sample)
ZZZZZZ	6Q20947.D	07/13/23	23:42	13:31	(unrelated sample)
ZZZZZZ	6Q20949.D	07/14/23	00:10	13:59	(unrelated sample)
ZZZZZZ	6Q20951.D	07/14/23	00:38	14:27	(unrelated sample)
ZZZZZZ	6Q20952.D	07/14/23	00:51	14:40	(unrelated sample)
S6Q310-CC307	6Q20953.D	07/14/23	01:05	14:54	Continuing cal 4
S6Q310-ICCB	6Q20954.D	07/14/23	01:19	15:08	Continuing Calibration Blank
S6Q310-ICCB	6Q20954.D	07/14/23	01:19	15:08	Continuing Calibration Blank
OP97800-BS	6Q20955.D	07/14/23	01:33	15:22	Blank Spike
OP97800-LLBS	6Q20956.D	07/14/23	01:47	15:36	Blank Spike
OP97800-MB	6Q20957.D	07/14/23	02:01	15:50	Method Blank
ZZZZZZ	6Q20958.D	07/14/23	02:15	16:04	(unrelated sample)
ZZZZZZ	6Q20959.D	07/14/23	02:29	16:18	(unrelated sample)
FC7060-41	6Q20960.D	07/14/23	02:43	16:32	(used for QC only; not part of job FC7490)
OP97800-MS	6Q20961.D	07/14/23	02:57	16:46	Matrix Spike
FC7060-42	6Q20962.D	07/14/23	03:11	17:00	(used for QC only; not part of job FC7490)
OP97800-DUP	6Q20963.D	07/14/23	03:25	17:14	Duplicate
ZZZZZZ	6Q20964.D	07/14/23	03:39	17:28	(unrelated sample)
S6Q310-CC307	6Q20965.D	07/14/23	03:53	17:42	Continuing cal 4
S6Q310-ICCB	6Q20966.D	07/14/23	04:07	17:56	Continuing Calibration Blank
ZZZZZZ	6Q20967.D	07/14/23	04:21	18:10	(unrelated sample)
ZZZZZZ	6Q20968.D	07/14/23	04:35	18:24	(unrelated sample)
ZZZZZZ	6Q20969.D	07/14/23	04:49	18:38	(unrelated sample)
ZZZZZZ	6Q20970.D	07/14/23	05:03	18:52	(unrelated sample)
ZZZZZZ	6Q20971.D	07/14/23	05:17	19:06	(unrelated sample)

TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q310-RT	Injection Date:	07/13/23
Lab File ID:	6Q20889.D	Injection Time:	10:11
Instrument ID:	GCMS6Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	6Q20972.D	07/14/23	05:31	19:20	(unrelated sample)
ZZZZZZ	6Q20973.D	07/14/23	05:45	19:34	(unrelated sample)
ZZZZZZ	6Q20974.D	07/14/23	05:59	19:48	(unrelated sample)
ZZZZZZ	6Q20975.D	07/14/23	06:13	20:02	(unrelated sample)
ZZZZZZ	6Q20976.D	07/14/23	06:27	20:16	(unrelated sample)
S6Q310-CC307	6Q20977.D	07/14/23	06:41	20:30	Continuing cal 4
S6Q310-ICCB	6Q20978.D	07/14/23	06:55	20:44	Continuing Calibration Blank
S6Q310-ICCB	6Q20978.D	07/14/23	06:55	20:44	Continuing Calibration Blank
ZZZZZZ	6Q20979.D	07/14/23	07:09	20:58	(unrelated sample)
ZZZZZZ	6Q20980.D	07/14/23	07:23	21:12	(unrelated sample)

6.6.2
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TDCA Retention Time Check

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample:	S6Q310-RT	Injection Date:	07/14/23
Lab File ID:	6Q20981.D	Injection Time:	07:37
Instrument ID:	GCMS6Q		

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.478	--	--
TDCA	6.951	1.527	1.000
TCDCA	6.789	1.689	1.000
TUDCA	5.961	2.517	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
S6Q310-IBLK	6Q20984.D	07/14/23	08:19	00:42	Instrument Blank
S6Q310-IBLK	6Q20984.D	07/14/23	08:19	00:42	Instrument Blank
S6Q310-CC307	6Q20985.D	07/14/23	08:33	00:56	Continuing cal 4
S6Q310-CC307	6Q20986.D	07/14/23	08:47	01:10	Continuing cal 1.0LL
OP97757-BS	6Q20987.D	07/14/23	09:01	01:24	Blank Spike
OP97757-LLBS	6Q20988.D	07/14/23	09:15	01:38	Blank Spike
OP97757-MB	6Q20989.D	07/14/23	09:29	01:52	Method Blank
ZZZZZZ	6Q20990.D	07/14/23	09:43	02:06	(unrelated sample)
ZZZZZZ	6Q20991.D	07/14/23	09:57	02:20	(unrelated sample)
ZZZZZZ	6Q20992.D	07/14/23	10:11	02:34	(unrelated sample)
JD67312-7B	6Q20993.D	07/14/23	10:25	02:48	(used for QC only; not part of job FC7490)
OP97757-MS	6Q20994.D	07/14/23	10:39	03:02	Matrix Spike
OP97757-MSD	6Q20995.D	07/14/23	10:53	03:16	Matrix Spike Duplicate
ZZZZZZ	6Q20996.D	07/14/23	11:07	03:30	(unrelated sample)
S6Q310-ECC307	6Q20997.D	07/14/23	11:21	03:44	Ending cal 4
S6Q310-ICCB	6Q20998.D	07/14/23	11:35	03:58	Continuing Calibration Blank

Ion Ratio Summary

Job Number: FC7490
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q310	Method: EPA DRAFT 1633
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Lab Sample ID	Lab File ID	Ion Ratios					
		PFHxA	PFHpA	PFOA	PFBS	PFHxS	PFOS
S6Q307-ICC307	6Q20667.D	4.9	16	16.8	41.1	49.2	59.4
FC7490-1	6Q20923.D	4.6	16.2	15.3	44.5	48.9	52.5

6.7.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC7490
 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
FC7490-1	6Q20923.D	108	113	113	113	119	110	128	126
OP97799-BS	6Q20910.D	118	115	116	115	110	109	105	114
OP97799-DUP	6Q20919.D	112	116	115	123	117	108	121	118
OP97799-LLBS	6Q20911.D	118	117	116	122	116	108	129	127
OP97799-MB	6Q20912.D	115	114	118	118	112	114	124	119
OP97799-MS	6Q20916.D	96	108	113	122	113	96	110	111
S6Q310-IBLK	6Q20892.D	99	101	96	98	97	97	92	108
S6Q310-IBLK	6Q20984.D	99	102	98	106	92	99	102	100
S6Q310-ICCB	6Q20918.D	99	100	97	95	96	110	97	108
S6Q310-ICCB	6Q20906.D	100	105	103	105	105	102	106	117
S6Q310-ICCB	6Q20978.D	99	99	102	96	105	84	97	106

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: FC7490
 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
FC7490-1	6Q20923.D	106	100	122	107	112	92	81	92
OP97799-BS	6Q20910.D	102	97	119	126	122	80	73	82
OP97799-DUP	6Q20919.D	100	104	124	125	119	98	91	97
OP97799-LLBS	6Q20911.D	116	113	123	122	127	93	89	98
OP97799-MB	6Q20912.D	109	110	117	114	123	78	77	83
OP97799-MS	6Q20916.D	87	81	108	114	100	73	74	84
S6Q310-IBLK	6Q20892.D	93	99	99	104	104	104	93	99
S6Q310-IBLK	6Q20984.D	90	100	100	104	112	112	107	116
S6Q310-ICCB	6Q20918.D	93	99	96	111	96	103	96	99
S6Q310-ICCB	6Q20906.D	98	104	103	99	97	108	94	109
S6Q310-ICCB	6Q20978.D	91	97	101	107	108	115	103	112

Isotope Dilution Standards

Recovery Limits

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

6.8.1

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Isotope Dilution Standard Recovery Summary

Job Number: FC7490
 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
FC7490-1	6Q20923.D	115	113	81	98	141	129	131	107
OP97799-BS	6Q20910.D	115	116	66	85	138	137	144	104
OP97799-DUP	6Q20919.D	96	119	80	101	142	140	137	102
OP97799-LLBS	6Q20911.D	127	129	79	104	144	146	134	106
OP97799-MB	6Q20912.D	128	120	69	90	132	129	136	106
OP97799-MS	6Q20916.D	101	106	72	84	106	115	111	100
S6Q310-IBLK	6Q20892.D	104	105	98	104	112	105	114	93
S6Q310-IBLK	6Q20984.D	115	113	110	124	121	120	129	91
S6Q310-ICCB	6Q20918.D	107	111	99	112	122	119	119	92
S6Q310-ICCB	6Q20906.D	103	108	100	116	113	114	124	100
S6Q310-ICCB	6Q20978.D	106	116	103	116	121	119	129	95

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

6.8.1
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Initial Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICC307
 Lab FileID: 6Q20667.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods	Level Name	Level Last Update Time	Acq. Date-Time	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
Method File	1633_071023_S6Q307.quantmethod.xml	1	7/11/2023 10:17:34 AM	7/10/2023 7:05:30 PM											
Batch Name	D:\MassHunter\Data\071023_1633_S6Q307\QuantResults\6q307.batch.bin	2	7/11/2023 10:17:34 AM	7/10/2023 7:19:28 PM											
Last Calib Update	7/11/2023 10:17:34 AM	3	7/11/2023 10:17:34 AM	7/10/2023 7:33:28 PM											
		4	7/11/2023 10:17:34 AM	7/10/2023 7:47:30 PM											
		5	7/11/2023 10:17:34 AM	7/10/2023 8:01:28 PM											
		6	7/11/2023 10:17:34 AM	7/10/2023 8:15:27 PM											
		7	7/11/2023 10:17:34 AM	7/10/2023 8:29:27 PM											
		8	7/11/2023 10:17:34 AM	7/10/2023 8:43:26 PM											
Compound															
I M4-PFBA															
T PFBA															
T 3:3FTCA															
I M5-PFPeA															
T PFMPA															
T PFPeA															
T PFMBA															
I M5-PFHxA															
T NFDHA															
T PFHxA															
T PFEEA															
T 5:3FTCA															
T 7:3FTCA															
I M4-PFHpA															
T PFHpA															
I M8-PFOA															
T PFOA															
I M9-PFNA															
T PFNA															
I M6-PFDA															
T PFDA															
I M7-PFUndA															
T PFUndA															
I M2-PFDODA															

Generated at 10:18 AM on 7/11/2023

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Initial Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICC307
 Lab FileID: 6Q20667.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.9035	0.9761	0.9546	0.9583	0.9502	1.0352	1.0602	0.9852	0.9779	5.089
T PFTfDA	Avg RF	0.8415	0.8681	0.9401	0.9446	0.9246	1.0014	1.0506	0.9629	0.9417	7.139
I M2-PFTeDA	Avg RF	1.2909	1.3893	1.3949	1.2648	1.4842	1.5097	1.6439	1.4444	1.4278	8.566
I M8-FOSA	Avg RF	0.7985	0.9646	1.0621	0.9170	1.0091	1.0653	0.9778	1.0429	0.9797	9.127
I M3-PFBS	Avg RF	0.8874	0.9180	1.0503	0.9124	0.9850	1.0832	1.0793	1.0382	0.9942	7.994
I M3-PFHxS	Avg RF	1.1538	1.3810	1.3176	1.1925	1.3608	1.3529	1.3645	1.2784	1.3002	6.561
T PFHxS	Avg RF	1.3525	1.3105	1.3159	1.2622	1.3106	1.3575	1.4074	1.3203	1.3296	3.228
I M8-PFOS	Avg RF	1.3223	1.4646	1.2855	1.3538	1.5865	1.5858	1.5739	1.3546	1.4409	8.845
T PFHpS	Avg RF	1.2094	1.3869	1.1770	1.2310	1.4602	1.4366	1.5023	1.4625	1.3582	9.646
T PFNS	Avg RF	1.1345	1.1860	1.0994	1.2047	1.3151	1.4501	1.2814	1.3426	1.2517	9.355
T PFDS	Avg RF	0.6370	0.7114	0.6895	0.6954	0.7811	0.8775	0.7686	0.7992	0.7450	10.230
T PFDoDS	Avg RF	0.2910	0.3311	0.2977	0.3278	0.3700	0.3872	0.3607	0.3567	0.3403	10.093
I M2-4:2FTS	Avg RF	7.9501	9.2993	8.8205	8.2068	9.2024	9.6060	9.9825	9.7020	9.0962	7.933
T 4:2FTS	Avg RF	5.4076	6.1018	6.4836	5.5946	5.8210	6.0561	6.0517	5.4649	5.8727	6.286
I M2-6:2FTS	Avg RF	3.5980	3.1522	3.5473	3.1288	3.2390	3.0563	3.3414	2.7316	3.1993	7.736
T 6:2FTS	Avg RF	0.9633	1.0146	1.2087	0.9576	1.1262	1.1395	1.2107	1.1623	1.0979	9.517
I M3-MeFOSAA	Avg RF	0.8186	1.0250	1.1278	1.0157	1.0424	1.0851	1.0196	1.0606	1.0243	8.921
T HFPO-DA	Avg RF	14.16	16.05	18.34	16.24	16.83	17.39	17.22	16.36	16.57	7.400
T ADONA	Avg RF	6.1797	7.0265	8.5923	7.3582	8.5443	8.2280	7.3345	7.4186	7.5852	10.891
T 9Cl-PF3ONS	Avg RF	4.1968	4.4671	4.8318	4.5123	4.7954	5.0048	4.7840	4.8597	4.6815	5.662
T 11Cl-PF3OUds	Avg RF	0.8289	0.7330	0.7346	0.7389	0.8038	0.8534	0.7693	0.8332	0.7869	6.239
I M5-EFOSAA	Avg RF	0.9606	0.9342	1.0756	0.9260	1.0274	1.1250	1.1248	1.2007	1.0468	9.675
I M7-MeFOSE	Avg RF	1.0210	1.2352	1.1344	1.0619	1.2679	1.3625	1.3780	1.5925	1.2567	14.971
T MeFOSE	Avg RF	1.0210	1.2352	1.1344	1.0619	1.2679	1.3625	1.3780	1.5925	1.2567	14.971

Initial Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICC307
 Lab FileID: 6Q20667.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EFOSA	Avg RF	0.9706	1.1777	1.2058	1.1325	1.2297	1.2953	1.3326	1.3294	1.2092	9.950
T EFOSA						ISTD					
I M3-MeFOSA	Avg RF	1.0571	1.0458	1.0916	0.9309	1.0807	1.2345	1.0828	1.0298	1.0691	7.866
T MeFOSA						ISTD					
I 13C4-PFOS						ISTD					
S d3-MeFOSAA	Avg RF	0.8153	0.7941	0.7036	0.8484	0.7422	0.7907	0.8018	0.7125	0.7761	6.608
S 13C8-PFOS	Avg RF	0.7563	0.7124	0.7572	0.6916	0.6614	0.6852	0.7300	0.6817	0.7095	5.026
S d5-EFOSAA	Avg RF	0.6398	0.6127	0.5842	0.6169	0.5975	0.6204	0.6486	0.6129	0.6166	3.372
S 13C8-FOSA	Avg RF	1.8086	1.8217	1.6074	1.7546	1.7414	1.7207	1.8504	1.6730	1.7472	4.630
S d7-MeFOSE	Avg RF	0.6083	0.6862	0.5546	0.6392	0.6653	0.6712	0.6992	0.6062	0.6413	7.609
S d3-MeFOSE	Avg RF	0.8108	0.8270	0.7488	0.8365	0.7919	0.7595	0.8648	0.8306	0.8087	4.906
S d9-EFOSE	Avg RF	0.8241	0.8146	0.7566	0.7246	0.7395	0.7271	0.7599	0.6287	0.7469	8.116
S d5-EFOSA	Avg RF	0.9620	0.8507	0.7669	0.8202	0.8255	0.7917	0.8523	0.7706	0.8300	7.543
I 13C3-PFBA						ISTD					
S 13C4-PFBA	Avg RF	1.1881	1.2003	1.1780	1.1858	1.1962	1.1858	1.1764	1.1681	1.1848	0.891
I 18O2-PFHxS						ISTD					
S 13C2-4:2FTS	Avg RF	0.1244	0.1183	0.1256	0.1241	0.1169	0.1038	0.0946	0.0887	0.1120	12.885
S 13C3-PBFS	Avg RF	2.0359	2.2225	2.1865	2.1479	2.1295	2.0665	2.0335	2.1105	2.1166	3.254
S 13C2-6:2FTS	Avg RF	1.1770	0.1722	0.1722	0.1782	0.1638	0.1634	0.1464	0.1523	0.1664	7.291
S 13C3-PFHxS	Avg RF	1.3067	1.2366	1.3654	1.3668	1.2947	1.3369	1.3163	1.4364	1.3325	4.451
S 13C2-8:2FTS	Avg RF	0.1621	0.1685	0.1645	0.1694	0.1645	0.1600	0.1450	0.1511	0.1606	5.296
I 13C4-PFOA						ISTD					
S 13C8-PFOA	Avg RF	0.9322	0.9261	0.9519	1.0186	0.8920	0.9651	0.9917	0.9401	0.9522	4.162
I 13C2-PFDA						ISTD					
S 13C6-PFDA	Avg RF	0.6950	0.6938	0.7305	0.6515	0.7258	0.6817	0.7628	0.6707	0.7015	5.148
S 13C7-PFUDA	Avg RF	0.9002	0.9263	0.9499	0.8505	0.9646	0.8618	0.9871	0.7744	0.9018	7.796
S 13C2-PFDODA	Avg RF	0.8453	0.9714	0.9559	0.8553	1.0088	0.8948	0.9612	0.9101	0.9254	6.299
S 13C2-PFTeDA	Avg RF	0.4574	0.5078	0.4728	0.4759	0.5107	0.4609	0.4747	0.4739	0.4793	4.113
I 13C5-PFNA						ISTD					
S 13C9-PFNA	Avg RF	0.9550	0.8784	0.8261	0.7497	0.8744	0.8955	0.7689	0.8128	0.8451	8.112
I 13C2-PFHxA						ISTD					
S 13C5-PPeA	Avg RF	0.4821	0.4852	0.4625	0.4925	0.4498	0.4486	0.4593	0.4480	0.4660	3.871
S 13C5-PFHxA	Avg RF	1.0264	1.0345	1.0043	1.0750	0.9658	0.9923	1.0577	0.9943	1.0188	3.577
S 13C3-HPOD-A	Avg RF	0.1745	0.1645	0.1466	0.1536	0.1467	0.1603	0.1616	0.1618	0.1587	5.922
S 13C4-PFHpA	Avg RF	1.0565	0.9463	0.9551	1.0177	0.9436	0.9187	0.9868	0.9970	0.9777	4.640

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

Initial Calibration Verification

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICV307
 Lab FileID: 6Q20673.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071023_1633_S6Q307\s6q307.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20673
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.633	12.7	112.7
13C2-6:2FTS	5.000	5.373	7.5	107.5
13C2-8:2FTS	5.000	5.266	5.3	105.3
13C2-PFDoDA	1.250	1.283	2.6	102.6
13C2-PFTeDA	1.250	1.165	-6.8	93.2
13C3-PFBS	2.500	2.696	7.8	107.8
13C3-PFHxS	2.500	2.616	4.6	104.6
13C4-PFBA	10.000	10.085	0.8	100.8
13C4-PFHpA	2.500	2.429	-2.8	97.2
13C5-PFHxA	2.500	2.547	1.9	101.9
13C5-PFPeA	5.000	5.134	2.7	102.7
13C6-PFDA	1.250	1.165	-6.8	93.2
13C7-PFUnDA	1.250	1.293	3.4	103.4
13C8-FOSA	2.500	2.546	1.8	101.8
13C8-PFOA	2.500	2.194	-12.3	87.7
13C8-PFOS	2.500	2.673	6.9	106.9
13C9-PFNA	1.250	1.272	1.8	101.8
4:2FTS	9.375	9.691	3.4	103.4
6:2FTS	9.500	10.137	6.7	106.7
8:2FTS	9.600	10.349	7.8	107.8
d3-MeFOSAA	5.000	5.118	2.4	102.4
EtFOSAA	2.500	2.474	-1.0	99.0
FOSA	2.500	2.487	-0.5	99.5
MeFOSAA	2.500	2.382	-4.7	95.3
PFBA	10.000	10.148	1.5	101.5
PFBS	2.218	2.112	-4.8	95.2
PFDA	2.500	2.895	15.8	115.8
PFDoDA	2.500	2.567	2.7	102.7
PFDS	2.413	2.386	-1.1	98.9
PFHpA	2.500	2.726	9.0	109.0
PFHpS	2.383	2.335	-2.0	98.0
PFHxA	2.500	2.593	3.7	103.7
PFHxS	2.285	2.314	1.3	101.3
PFNA	2.500	2.494	-0.2	99.8
PFNS	2.405	2.475	2.9	102.9
PFOA	2.500	2.576	3.0	103.0
PFOS	2.320	2.189	-5.6	94.4

Initial Calibration Verification

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICV307
 Lab FileID: 6Q20673.D

PFPeA	5.000	5.192	3.8	103.8
PFPeS	2.353	2.397	1.9	101.9
PFTeDA	2.500	2.692	7.7	107.7
PFTTrDA	2.500	2.478	-0.9	99.1
PFUnDA	2.500	2.579	3.1	103.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.933	4.4	104.4
13C3-HFPO-DA	10.000	9.839	-1.6	98.4
9C1-PF3ONS	4.675	5.234	12.0	112.0
ADONA	4.725	5.030	6.4	106.4
HFPO-DA	5.000	5.505	10.1	110.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	12.066	-3.3	96.7
5:3FTCA	62.400	62.559	0.3	100.3
7:3FTCA	62.400	67.782	8.6	108.6
d3-MeFOSA	2.500	2.567	2.7	102.7
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	5.204	4.1	104.1
EtFOSE	12.500	12.030	-3.8	96.2
MeFOSA	5.000	5.041	0.8	100.8
MeFOSE	12.500	12.390	-0.9	99.1
PFDoDS	2.425	2.476	2.1	102.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.185	3.7	103.7
d7-MeFOSE	25.000	25.913	3.7	103.7
d9-EtFOSE	25.000	26.590	6.4	106.4
d5-EtFOSA	2.500	2.537	1.5	101.5
NFDHA	5.000	5.050	1.0	101.0
PFMBA	5.000	5.150	3.0	103.0
PFMPA	5.000	5.096	1.9	101.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.682	5.2	105.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICV307
 Lab FileID: 6Q20674.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071023_1633_S6Q307\s6q307.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20674
 Type : QC
 Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.328	6.6	106.6
13C2-6:2FTS	5.000	5.239	4.8	104.8
13C2-8:2FTS	5.000	5.493	9.9	109.9
13C2-PFDoDA	1.250	1.382	10.6	110.6
13C2-PFTeDA	1.250	1.238	-1.0	99.0
13C3-PFBS	2.500	2.511	0.4	100.4
13C3-PFHxS	2.500	2.661	6.5	106.5
13C4-PFBA	10.000	9.970	-0.3	99.7
13C4-PFHpA	2.500	2.571	2.8	102.8
13C5-PFHxA	2.500	2.500	0.0	100.0
13C5-PFPeA	5.000	5.216	4.3	104.3
13C6-PFDA	1.250	1.327	6.2	106.2
13C7-PFUnDA	1.250	1.386	10.9	110.9
13C8-FOSA	2.500	2.490	-0.4	99.6
13C8-PFOA	2.500	2.456	-1.7	98.3
13C8-PFOS	2.500	2.396	-4.2	95.8
13C9-PFNA	1.250	1.274	1.9	101.9
4:2FTS	20.000	21.081	5.4	105.4
6:2FTS	20.000	20.865	4.3	104.3
8:2FTS	20.000	20.934	4.7	104.7
d3-MeFOSAA	5.000	4.834	-3.3	96.7
EtFOSAA	20.000	19.104	-4.5	95.5
FOSA	20.000	20.517	2.6	102.6
MeFOSAA	20.000	20.922	4.6	104.6
PFBA	20.000	20.237	1.2	101.2
PFBS	20.000	21.096	5.5	105.5
PFDA	20.000	19.985	-0.1	99.9
PFDoDA	20.000	19.033	-4.8	95.2
PFDS	20.000	21.090	5.5	105.5
PFHpA	20.000	20.168	0.8	100.8
PFHpS	20.000	20.759	3.8	103.8
PFHxA	20.000	21.189	5.9	105.9
PFHxS	20.000	19.298	-3.5	96.5
PFNA	20.000	23.082	15.4	115.4
PFNS	20.000	20.899	4.5	104.5
PFOA	20.000	20.739	3.7	103.7
PFOS	20.000	18.942	-5.3	94.7

Initial Calibration Verification

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q307-ICV307
 Lab FileID: 6Q20674.D

PFPeA	20.000	21.131	5.7	105.7
PFPeS	20.000	19.999	0.0	100.0
PFTeDA	20.000	21.763	8.8	108.8
PFTrDA	20.000	17.341	-13.3	86.7
PFUnDA	20.000	19.987	-0.1	99.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	21.031	5.2	105.2
13C3-HFPO-DA	10.000	9.839	-1.6	98.4
9C1-PF3ONS	20.000	22.547	12.7	112.7
ADONA	20.000	19.638	-1.8	98.2
HFPO-DA	20.000	21.408	7.0	107.0
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	19.362	-3.2	96.8
5:3FTCA	20.000	21.552	7.8	107.8
7:3FTCA	20.000	21.658	8.3	108.3
d3-MeFOSA	2.500	2.377	-4.9	95.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	20.548	2.7	102.7
EtFOSE	100.000	110.904	10.9	110.9
MeFOSA	20.000	18.696	-6.5	93.5
MeFOSE	100.000	118.869	18.9	118.9
PFDoDS	20.000	20.773	3.9	103.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.921	-1.6	98.4
d7-MeFOSE	25.000	22.857	-8.6	91.4
d9-EtFOSE	25.000	24.283	-2.9	97.1
d5-EtFOSA	2.500	2.393	-4.3	95.7
NFDHA	20.000	20.820	4.1	104.1
PFMBA	20.000	20.762	3.8	103.8
PFMPA	20.000	20.370	1.9	101.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.798	-11.0	89.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20894.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071023_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20894
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.231	4.6	104.6
13C2-6:2FTS	5.000	5.830	16.6	116.6
13C2-8:2FTS	5.000	5.358	7.2	107.2
13C2-PFDoDA	1.250	1.142	-8.6	91.4
13C2-PFTeDA	1.250	1.293	3.5	103.5
13C3-PFBS	2.500	2.441	-2.3	97.7
13C3-PFHxS	2.500	2.406	-3.8	96.2
13C4-PFBA	10.000	10.012	0.1	100.1
13C4-PFHpA	2.500	2.420	-3.2	96.8
13C5-PFHxA	2.500	2.491	-0.4	99.6
13C5-PFPeA	5.000	4.736	-5.3	94.7
13C6-PFDA	1.250	1.232	-1.4	98.6
13C7-PFUnDA	1.250	1.251	0.0	100.0
13C8-FOSA	2.500	2.917	16.7	116.7
13C8-PFOA	2.500	2.590	3.6	103.6
13C8-PFOS	2.500	2.594	3.8	103.8
13C9-PFNA	1.250	1.215	-2.8	97.2
4:2FTS	0.750	0.780	4.0	104.0
6:2FTS	0.760	0.711	-6.4	93.6
8:2FTS	0.768	0.816	6.2	106.2
d3-MeFOSAA	5.000	5.823	16.5	116.5
EtFOSAA	0.200	0.190	-5.2	94.8
FOSA	0.200	0.167	-16.7	83.3
MeFOSAA	0.200	0.178	-10.9	89.1
PFBA	0.800	0.717	-10.4	89.6
PFBS	0.177	0.171	-3.6	96.4
PFDA	0.200	0.190	-5.2	94.8
PFDoDA	0.200	0.216	8.0	108.0
PFDS	0.193	0.191	-1.1	98.9
PFHpA	0.200	0.188	-6.1	93.9
PFHpS	0.191	0.181	-5.3	94.7
PFHxA	0.200	0.173	-13.4	86.6
PFHxS	0.183	0.179	-2.0	98.0
PFNA	0.200	0.184	-8.1	91.9
PFNS	0.192	0.196	2.3	102.3
PFOA	0.200	0.171	-14.6	85.4
PFOS	0.186	0.208	12.0	112.0

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20894.D

PFPeA	0.400	0.375	-6.3	93.7
PFPeS	0.188	0.178	-5.1	94.9
PFTeDA	0.200	0.189	-5.3	94.7
PFTrDA	0.200	0.200	-0.1	99.9
PFUnDA	0.200	0.172	-13.8	86.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	0.378	0.366	-3.1	96.9
13C3-HFPO-DA	10.000	8.469	-15.3	84.7
9C1-PF3ONS	0.374	0.334	-10.7	89.3
ADONA	0.378	0.362	-4.3	95.7
HFPO-DA	0.400	0.403	0.6	100.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.947	-5.2	94.8
5:3FTCA	4.992	4.296	-13.9	86.1
7:3FTCA	4.992	4.745	-4.9	95.1
d3-MeFOSA	2.500	2.780	11.2	111.2
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.366	-8.4	91.6
EtFOSE	1.000	0.792	-20.8	79.2
MeFOSA	0.400	0.346	-13.5	86.5
MeFOSE	1.000	0.792	-20.8	79.2
PFDoDS	0.194	0.192	-0.8	99.2
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.932	18.6	118.6
d7-MeFOSE	25.000	28.172	12.7	112.7
d9-EtFOSE	25.000	30.874	23.5	123.5
d5-EtFOSA	2.500	2.807	12.3	112.3
NFDHA	0.400	0.355	-11.3	88.7
PFMBA	0.400	0.380	-4.9	95.1
PFMPA	0.400	0.375	-6.3	93.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.315	-11.4	88.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20905.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20905
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.039	0.8	100.8
13C2-6:2FTS	5.000	5.255	5.1	105.1
13C2-8:2FTS	5.000	5.523	10.5	110.5
13C2-PFDoDA	1.250	1.368	9.5	109.5
13C2-PFTeDA	1.250	1.369	9.6	109.6
13C3-PFBS	2.500	2.374	-5.0	95.0
13C3-PFHxS	2.500	2.411	-3.6	96.4
13C4-PFBA	10.000	9.988	-0.1	99.9
13C4-PFHpA	2.500	2.406	-3.7	96.3
13C5-PFHxA	2.500	2.356	-5.8	94.2
13C5-PFPeA	5.000	4.882	-2.4	97.6
13C6-PFDA	1.250	1.288	3.0	103.0
13C7-PFUnDA	1.250	1.319	5.5	105.5
13C8-FOSA	2.500	2.591	3.6	103.6
13C8-PFOA	2.500	2.635	5.4	105.4
13C8-PFOS	2.500	2.323	-7.1	92.9
13C9-PFNA	1.250	1.144	-8.5	91.5
4:2FTS	9.375	9.321	-0.6	99.4
6:2FTS	9.500	8.902	-6.3	93.7
8:2FTS	9.600	8.775	-8.6	91.4
d3-MeFOSAA	5.000	4.875	-2.5	97.5
EtFOSAA	2.500	2.285	-8.6	91.4
FOSA	2.500	2.187	-12.5	87.5
MeFOSAA	2.500	2.208	-11.7	88.3
PFBA	10.000	9.296	-7.0	93.0
PFBS	2.218	2.056	-7.3	92.7
PFDA	2.500	2.281	-8.7	91.3
PFDoDA	2.500	2.152	-13.9	86.1
PFDS	2.413	2.383	-1.2	98.8
PFHpA	2.500	2.363	-5.5	94.5
PFHpS	2.383	2.358	-1.1	98.9
PFHxA	2.500	2.229	-10.8	89.2
PFHxS	2.285	2.179	-4.6	95.4
PFNA	2.500	2.358	-5.7	94.3
PFNS	2.405	2.297	-4.5	95.5
PFOA	2.500	2.139	-14.5	85.5
PFOS	2.320	2.108	-9.1	90.9

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20905.D

PFPeA	5.000	4.662	-6.8	93.2
PFPeS	2.353	2.110	-10.3	89.7
PFTeDA	2.500	2.360	-5.6	94.4
PFTTrDA	2.500	2.258	-9.7	90.3
PFUnDA	2.500	2.163	-13.5	86.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.270	-9.6	90.4
13C3-HFPO-DA	10.000	9.170	-8.3	91.7
9C1-PF3ONS	4.675	4.310	-7.8	92.2
ADONA	4.725	4.438	-6.1	93.9
HFPO-DA	5.000	4.514	-9.7	90.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.482	-8.0	92.0
5:3FTCA	62.400	60.500	-3.0	97.0
7:3FTCA	62.400	64.394	3.2	103.2
d3-MeFOSA	2.500	2.297	-8.1	91.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.643	-7.1	92.9
EtFOSE	12.500	11.188	-10.5	89.5
MeFOSA	5.000	4.708	-5.8	94.2
MeFOSE	12.500	11.734	-6.1	93.9
PFDoDS	2.425	2.427	0.1	100.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.082	1.6	101.6
d7-MeFOSE	25.000	25.313	1.3	101.3
d9-EtFOSE	25.000	26.391	5.6	105.6
d5-EtFOSA	2.500	2.349	-6.0	94.0
NFDHA	5.000	4.549	-9.0	91.0
PFMBA	5.000	4.676	-6.5	93.5
PFMPA	5.000	4.623	-7.5	92.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.036	-9.3	90.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20917.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20917
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.501	10.0	110.0
13C2-6:2FTS	5.000	5.490	9.8	109.8
13C2-8:2FTS	5.000	5.635	12.7	112.7
13C2-PFDoDA	1.250	1.220	-2.4	97.6
13C2-PFTeDA	1.250	1.323	5.8	105.8
13C3-PFBS	2.500	2.471	-1.2	98.8
13C3-PFHxS	2.500	2.485	-0.6	99.4
13C4-PFBA	10.000	9.971	-0.3	99.7
13C4-PFHpA	2.500	2.424	-3.0	97.0
13C5-PFHxA	2.500	2.414	-3.4	96.6
13C5-PFPeA	5.000	4.903	-1.9	98.1
13C6-PFDA	1.250	1.179	-5.7	94.3
13C7-PFUnDA	1.250	1.239	-0.9	99.1
13C8-FOSA	2.500	2.724	8.9	108.9
13C8-PFOA	2.500	2.428	-2.9	97.1
13C8-PFOS	2.500	2.397	-4.1	95.9
13C9-PFNA	1.250	1.280	2.4	102.4
4:2FTS	9.375	9.319	-0.6	99.4
6:2FTS	9.500	8.959	-5.7	94.3
8:2FTS	9.600	9.618	0.2	100.2
d3-MeFOSAA	5.000	4.608	-7.8	92.2
EtFOSAA	2.500	2.286	-8.6	91.4
FOSA	2.500	2.168	-13.3	86.7
MeFOSAA	2.500	2.556	2.2	102.2
PFBA	10.000	9.250	-7.5	92.5
PFBS	2.218	2.144	-3.3	96.7
PFDA	2.500	2.397	-4.1	95.9
PFDoDA	2.500	2.472	-1.1	98.9
PFDS	2.413	2.271	-5.9	94.1
PFHpA	2.500	2.504	0.2	100.2
PFHpS	2.383	2.226	-6.6	93.4
PFHxA	2.500	2.417	-3.3	96.7
PFHxS	2.285	2.221	-2.8	97.2
PFNA	2.500	2.511	0.5	100.5
PFNS	2.405	2.275	-5.4	94.6
PFOA	2.500	2.359	-5.7	94.3
PFOS	2.320	2.264	-2.4	97.6

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20917.D

PFPeA	5.000	4.579	-8.4	91.6
PFPeS	2.353	2.091	-11.2	88.8
PFTeDA	2.500	2.278	-8.9	91.1
PFTTrDA	2.500	2.322	-7.1	92.9
PFUnDA	2.500	2.428	-2.9	97.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.563	-3.4	96.6
13C3-HFPO-DA	10.000	9.096	-9.0	91.0
9C1-PF3ONS	4.675	4.343	-7.1	92.9
ADONA	4.725	4.821	2.0	102.0
HFPO-DA	5.000	4.530	-9.4	90.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.494	-7.9	92.1
5:3FTCA	62.400	56.273	-9.8	90.2
7:3FTCA	62.400	62.755	0.6	100.6
d3-MeFOSA	2.500	2.352	-5.9	94.1
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.457	-10.9	89.1
EtFOSE	12.500	10.762	-13.9	86.1
MeFOSA	5.000	4.672	-6.6	93.4
MeFOSE	12.500	10.803	-13.6	86.4
PFDoDS	2.425	2.433	0.3	100.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.153	3.1	103.1
d7-MeFOSE	25.000	25.180	0.7	100.7
d9-EtFOSE	25.000	25.992	4.0	104.0
d5-EtFOSA	2.500	2.594	3.8	103.8
NFDHA	5.000	4.628	-7.4	92.6
PFMBA	5.000	4.630	-7.4	92.6
PFMPA	5.000	4.651	-7.0	93.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.034	-9.4	90.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20929.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20929
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.243	24.9	124.9
13C2-6:2FTS	5.000	6.026	20.5	120.5
13C2-8:2FTS	5.000	6.093	21.9	121.9
13C2-PFDoDA	1.250	1.385	10.8	110.8
13C2-PFTeDA	1.250	1.404	12.4	112.4
13C3-PFBS	2.500	2.598	3.9	103.9
13C3-PFHxS	2.500	2.593	3.7	103.7
13C4-PFBA	10.000	10.048	0.5	100.5
13C4-PFHpA	2.500	2.652	6.1	106.1
13C5-PFHxA	2.500	2.661	6.4	106.4
13C5-PFPeA	5.000	5.482	9.6	109.6
13C6-PFDA	1.250	1.196	-4.3	95.7
13C7-PFUnDA	1.250	1.379	10.3	110.3
13C8-FOSA	2.500	2.929	17.1	117.1
13C8-PFOA	2.500	2.278	-8.9	91.1
13C8-PFOS	2.500	2.867	14.7	114.7
13C9-PFNA	1.250	1.196	-4.3	95.7
4:2FTS	9.375	7.962	-15.1	84.9
6:2FTS	9.500	8.034	-15.4	84.6
8:2FTS	9.600	9.211	-4.1	95.9
d3-MeFOSAA	5.000	5.336	6.7	106.7
EtFOSAA	2.500	2.208	-11.7	88.3
FOSA	2.500	2.243	-10.3	89.7
MeFOSAA	2.500	2.330	-6.8	93.2
PFBA	10.000	9.194	-8.1	91.9
PFBS	2.218	2.033	-8.3	91.7
PFDA	2.500	2.721	8.8	108.8
PFDoDA	2.500	2.187	-12.5	87.5
PFDS	2.413	2.083	-13.7	86.3
PFHpA	2.500	2.314	-7.5	92.5
PFHpS	2.383	2.094	-12.1	87.9
PFHxA	2.500	2.569	2.7	102.7
PFHxS	2.285	2.110	-7.6	92.4
PFNA	2.500	2.402	-3.9	96.1
PFNS	2.405	2.063	-14.2	85.8
PFOA	2.500	2.306	-7.8	92.2
PFOS	2.320	1.933	-16.7	83.3

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20929.D

PFPeA	5.000	4.579	-8.4	91.6
PFPeS	2.353	2.093	-11.1	88.9
PFTeDA	2.500	2.532	1.3	101.3
PFTTrDA	2.500	2.111	-15.6	84.4
PFUnDA	2.500	2.110	-15.6	84.4
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	4.493	-4.9	95.1
13C3-HFPO-DA	10.000	10.494	4.9	104.9
9C1-PF3ONS	4.675	4.078	-12.8	87.2
ADONA	4.725	4.438	-6.1	93.9
HFPO-DA	5.000	4.579	-8.4	91.6
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.364	-8.9	91.1
5:3FTCA	62.400	59.044	-5.4	94.6
7:3FTCA	62.400	61.544	-1.4	98.6
d3-MeFOSA	2.500	2.509	0.4	100.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.539	-9.2	90.8
EtFOSE	12.500	10.527	-15.8	84.2
MeFOSA	5.000	4.833	-3.3	96.7
MeFOSE	12.500	11.759	-5.9	94.1
PFDoDS	2.425	2.035	-16.1	83.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.665	13.3	113.3
d7-MeFOSE	25.000	26.892	7.6	107.6
d9-EtFOSE	25.000	28.582	14.3	114.3
d5-EtFOSA	2.500	2.604	4.2	104.2
NFDHA	5.000	4.646	-7.1	92.9
PFMBA	5.000	4.667	-6.7	93.3
PFMPA	5.000	4.598	-8.0	92.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.284	-3.7	96.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20977.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20977
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.673	13.5	113.5
13C2-6:2FTS	5.000	5.436	8.7	108.7
13C2-8:2FTS	5.000	6.154	23.1	123.1
13C2-PFDoDA	1.250	1.368	9.4	109.4
13C2-PFTeDA	1.250	1.464	17.1	117.1
13C3-PFBS	2.500	2.502	0.1	100.1
13C3-PFHxS	2.500	2.489	-0.4	99.6
13C4-PFBA	10.000	10.025	0.2	100.2
13C4-PFHpA	2.500	2.673	6.9	106.9
13C5-PFHxA	2.500	2.442	-2.3	97.7
13C5-PFPeA	5.000	5.130	2.6	102.6
13C6-PFDA	1.250	1.464	17.1	117.1
13C7-PFUnDA	1.250	1.407	12.5	112.5
13C8-FOSA	2.500	2.687	7.5	107.5
13C8-PFOA	2.500	2.353	-5.9	94.1
13C8-PFOS	2.500	2.546	1.8	101.8
13C9-PFNA	1.250	1.274	1.9	101.9
4:2FTS	9.375	8.903	-5.0	95.0
6:2FTS	9.500	9.497	0.0	100.0
8:2FTS	9.600	8.834	-8.0	92.0
d3-MeFOSAA	5.000	5.363	7.3	107.3
EtFOSAA	2.500	2.294	-8.3	91.7
FOSA	2.500	2.223	-11.1	88.9
MeFOSAA	2.500	2.147	-14.1	85.9
PFBA	10.000	9.175	-8.3	91.7
PFBS	2.218	2.095	-5.5	94.5
PFDA	2.500	2.248	-10.1	89.9
PFDoDA	2.500	2.344	-6.2	93.8
PFDS	2.413	2.267	-6.0	94.0
PFHpA	2.500	2.178	-12.9	87.1
PFHpS	2.383	2.221	-6.8	93.2
PFHxA	2.500	2.399	-4.0	96.0
PFHxS	2.285	2.082	-8.9	91.1
PFNA	2.500	2.303	-7.9	92.1
PFNS	2.405	2.267	-5.8	94.2
PFOA	2.500	2.471	-1.2	98.8
PFOS	2.320	2.110	-9.0	91.0

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20977.D

PFPeA	5.000	4.577	-8.5	91.5
PFPeS	2.353	2.147	-8.7	91.3
PFTeDA	2.500	2.241	-10.3	89.7
PFTTrDA	2.500	2.490	-0.4	99.6
PFUnDA	2.500	2.236	-10.6	89.4
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	4.648	-1.6	98.4
13C3-HFPO-DA	10.000	9.774	-2.3	97.7
9C1-PF3ONS	4.675	4.423	-5.4	94.6
ADONA	4.725	4.355	-7.8	92.2
HFPO-DA	5.000	4.354	-12.9	87.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.222	-10.1	89.9
5:3FTCA	62.400	63.219	1.3	101.3
7:3FTCA	62.400	62.430	0.0	100.0
d3-MeFOSA	2.500	2.514	0.6	100.6
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.334	-13.3	86.7
EtFOSE	12.500	10.368	-17.1	82.9
MeFOSA	5.000	4.564	-8.7	91.3
MeFOSE	12.500	11.310	-9.5	90.5
PFDoDS	2.425	2.240	-7.6	92.4
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.673	13.5	113.5
d7-MeFOSE	25.000	25.544	2.2	102.2
d9-EtFOSE	25.000	27.195	8.8	108.8
d5-EtFOSA	2.500	2.654	6.2	106.2
NFDHA	5.000	4.779	-4.4	95.6
PFMBA	5.000	4.560	-8.8	91.2
PFMPA	5.000	4.584	-8.3	91.7
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.215	-5.3	94.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20985.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20985
 Type : QC
 Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.710	14.2	114.2
13C2-6:2FTS	5.000	5.870	17.4	117.4
13C2-8:2FTS	5.000	5.324	6.5	106.5
13C2-PFDoDA	1.250	1.360	8.8	108.8
13C2-PFTeDA	1.250	1.312	5.0	105.0
13C3-PFBS	2.500	2.421	-3.1	96.9
13C3-PFHxS	2.500	2.613	4.5	104.5
13C4-PFBA	10.000	10.000	0.0	100.0
13C4-PFHpA	2.500	2.484	-0.6	99.4
13C5-PFHxA	2.500	2.458	-1.7	98.3
13C5-PFPeA	5.000	4.921	-1.6	98.4
13C6-PFDA	1.250	1.288	3.1	103.1
13C7-PFUnDA	1.250	1.335	6.8	106.8
13C8-FOSA	2.500	2.575	3.0	103.0
13C8-PFOA	2.500	2.628	5.1	105.1
13C8-PFOS	2.500	2.509	0.4	100.4
13C9-PFNA	1.250	1.194	-4.5	95.5
4:2FTS	9.375	8.299	-11.5	88.5
6:2FTS	9.500	9.169	-3.5	96.5
8:2FTS	9.600	9.905	3.2	103.2
d3-MeFOSAA	5.000	5.395	7.9	107.9
EtFOSAA	2.500	2.286	-8.6	91.4
FOSA	2.500	2.273	-9.1	90.9
MeFOSAA	2.500	2.308	-7.7	92.3
PFBA	10.000	9.243	-7.6	92.4
PFBS	2.218	2.036	-8.2	91.8
PFDA	2.500	2.331	-6.8	93.2
PFDoDA	2.500	2.302	-7.9	92.1
PFDS	2.413	2.325	-3.6	96.4
PFHpA	2.500	2.354	-5.9	94.1
PFHpS	2.383	2.067	-13.2	86.8
PFHxA	2.500	2.383	-4.7	95.3
PFHxS	2.285	2.092	-8.4	91.6
PFNA	2.500	2.279	-8.8	91.2
PFNS	2.405	2.110	-12.3	87.7
PFOA	2.500	2.307	-7.7	92.3
PFOS	2.320	2.161	-6.9	93.1

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20985.D

PFPeA	5.000	4.696	-6.1	93.9
PFPeS	2.353	2.087	-11.3	88.7
PFTeDA	2.500	2.494	-0.3	99.7
PFTTrDA	2.500	2.408	-3.7	96.3
PFUnDA	2.500	2.488	-0.5	99.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	4.725	4.361	-7.7	92.3
13C3-HFPO-DA	10.000	9.386	-6.1	93.9
9C1-PF3ONS	4.675	4.538	-2.9	97.1
ADONA	4.725	4.329	-8.4	91.6
HFPO-DA	5.000	4.625	-7.5	92.5
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.232	-10.0	90.0
5:3FTCA	62.400	56.582	-9.3	90.7
7:3FTCA	62.400	61.128	-2.0	98.0
d3-MeFOSA	2.500	2.422	-3.1	96.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.540	-9.2	90.8
EtFOSE	12.500	10.607	-15.1	84.9
MeFOSA	5.000	4.458	-10.8	89.2
MeFOSE	12.500	11.771	-5.8	94.2
PFDoDS	2.425	2.195	-9.5	90.5
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.235	4.7	104.7
d7-MeFOSE	25.000	23.958	-4.2	95.8
d9-EtFOSE	25.000	25.448	1.8	101.8
d5-EtFOSA	2.500	2.380	-4.8	95.2
NFDHA	5.000	4.528	-9.4	90.6
PFMBA	5.000	4.690	-6.2	93.8
PFMPA	5.000	4.650	-7.0	93.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	4.450	4.027	-9.5	90.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20986.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071323_1633_S6Q310\S6Q310.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071023_1633_S6Q307\6Q20664.d
 2:D:\MassHunter\Data\071023_1633_S6Q307\6Q20665.d
 3:D:\MassHunter\Data\071023_1633_S6Q307\6Q20666.d
 4:D:\MassHunter\Data\071023_1633_S6Q307\6Q20667.d
 5:D:\MassHunter\Data\071023_1633_S6Q307\6Q20668.d
 6:D:\MassHunter\Data\071023_1633_S6Q307\6Q20669.d
 7:D:\MassHunter\Data\071023_1633_S6Q307\6Q20670.d
 8:D:\MassHunter\Data\071023_1633_S6Q307\6Q20671.d

Data File: 6Q20986
 Type : QC
 Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	6.031	20.6	120.6
13C2-6:2FTS	5.000	5.816	16.3	116.3
13C2-8:2FTS	5.000	6.842	# 36.8	136.8
13C2-PFDoDA	1.250	1.171	-6.3	93.7
13C2-PFTeDA	1.250	1.281	2.5	102.5
13C3-PFBS	2.500	2.647	5.9	105.9
13C3-PFHxS	2.500	2.534	1.4	101.4
13C4-PFBA	10.000	9.978	-0.2	99.8
13C4-PFHpA	2.500	2.545	1.8	101.8
13C5-PFHxA	2.500	2.486	-0.6	99.4
13C5-PFPeA	5.000	5.006	0.1	100.1
13C6-PFDA	1.250	1.342	7.4	107.4
13C7-PFUnDA	1.250	1.343	7.5	107.5
13C8-FOSA	2.500	2.731	9.2	109.2
13C8-PFOA	2.500	2.269	-9.3	90.7
13C8-PFOS	2.500	2.344	-6.2	93.8
13C9-PFNA	1.250	1.238	-1.0	99.0
4:2FTS	0.750	0.637	-15.1	84.9
6:2FTS	0.760	0.745	-1.9	98.1
8:2FTS	0.768	0.638	-17.0	83.0
d3-MeFOSAA	5.000	4.594	-8.1	91.9
EtFOSAA	0.200	0.185	-7.4	92.6
FOSA	0.200	0.166	-17.0	83.0
MeFOSAA	0.200	0.210	5.2	105.2
PFBA	0.800	0.707	-11.6	88.4
PFBS	0.177	0.157	-11.6	88.4
PFDA	0.200	0.186	-7.1	92.9
PFDoDA	0.200	0.221	10.5	110.5
PFDS	0.193	0.185	-4.1	95.9
PFHpA	0.200	0.188	-6.0	94.0
PFHpS	0.191	0.175	-8.2	91.8
PFHxA	0.200	0.189	-5.5	94.5
PFHxS	0.183	0.184	0.5	100.5
PFNA	0.200	0.188	-5.8	94.2
PFNS	0.192	0.177	-7.7	92.3
PFOA	0.200	0.186	-6.8	93.2
PFOS	0.186	0.194	4.3	104.3

Continuing Calibration Summary

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q310-CC307
 Lab FileID: 6Q20986.D

PFPeA	0.400	0.365	-8.7	91.3
PFPeS	0.188	0.162	-14.0	86.0
PFTeDA	0.200	0.225	12.3	112.3
PFTTrDA	0.200	0.194	-3.1	96.9
PFUnDA	0.200	0.183	-8.6	91.4
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	0.378	0.386	2.2	102.2
13C3-HFPO-DA	10.000	9.090	-9.1	90.9
9C1-PF3ONS	0.374	0.334	-10.7	89.3
ADONA	0.378	0.361	-4.5	95.5
HFPO-DA	0.400	0.388	-2.9	97.1
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.863	-13.6	86.4
5:3FTCA	4.992	4.754	-4.8	95.2
7:3FTCA	4.992	4.776	-4.3	95.7
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	0.378	-5.6	94.4
EtFOSE	1.000	0.781	-21.9	78.1
MeFOSA	0.400	0.367	-8.2	91.8
MeFOSE	1.000	0.820	-18.0	82.0
PFDODS	0.194	0.170	-12.3	87.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.646	12.9	112.9
d7-MeFOSE	25.000	24.126	-3.5	96.5
d9-EtFOSE	25.000	27.446	9.8	109.8
d5-EtFOSA	2.500	2.435	-2.6	97.4
NFDHA	0.400	0.366	-8.5	91.5
PFMBA	0.400	0.369	-7.8	92.2
PFMPA	0.400	0.367	-8.4	91.6
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEEESA	0.356	0.325	-8.8	91.2

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q307	Method: EPA DRAFT 1633	Instrument ID: GCMS6Q		
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q307-RT	6Q20661.D	07/10/23 18:23	n/a	Retention Time Marker
S6Q307-RT	6Q20662.D	07/10/23 18:37	n/a	Retention Time Marker
S6Q307-IC307	6Q20663.D	07/10/23 18:51	n/a	Mass Calibration Verification
S6Q307-IC307	6Q20664.D	07/10/23 19:05	n/a	Initial cal 1
S6Q307-IC307	6Q20665.D	07/10/23 19:19	n/a	Initial cal 2
S6Q307-IC307	6Q20666.D	07/10/23 19:33	n/a	Initial cal 3
S6Q307-ICC307	6Q20667.D	07/10/23 19:47	n/a	Initial cal 4
S6Q307-IC307	6Q20668.D	07/10/23 20:01	n/a	Initial cal 5
S6Q307-IC307	6Q20669.D	07/10/23 20:15	n/a	Initial cal 6
S6Q307-IC307	6Q20670.D	07/10/23 20:29	n/a	Initial cal 7
S6Q307-IC307	6Q20671.D	07/10/23 20:43	n/a	Initial cal 8
S6Q307-IBLK	6Q20672.D	07/10/23 20:57	n/a	Instrument Blank
S6Q307-IBLK	6Q20672.D	07/10/23 20:57	n/a	Instrument Blank
S6Q307-ICV307	6Q20673.D	07/10/23 21:11	n/a	Initial cal verification 4
S6Q307-ICV307	6Q20674.D	07/10/23 21:25	n/a	Initial cal verification 20
S6Q307-CC307	6Q20675.D	07/10/23 21:39	n/a	Continuing cal 4
S6Q307-CC307	6Q20676.D	07/10/23 21:53	n/a	Continuing cal 1.0LL
OP97713-BS	6Q20677.D	07/10/23 22:07	OP97713	Blank Spike
OP97713-LLBS	6Q20678.D	07/10/23 22:21	OP97713	Blank Spike
OP97713-MB	6Q20679.D	07/10/23 22:35	OP97713	Method Blank
ZZZZZZ	6Q20680.D	07/10/23 22:49	OP97713	(unrelated sample)
ZZZZZZ	6Q20682.D	07/10/23 23:17	OP97713	(unrelated sample)
ZZZZZZ	6Q20683.D	07/10/23 23:31	OP97713	(unrelated sample)
ZZZZZZ	6Q20684.D	07/10/23 23:45	OP97713	(unrelated sample)
ZZZZZZ	6Q20685.D	07/10/23 23:59	OP97713	(unrelated sample)
S6Q307-CC307	6Q20686.D	07/11/23 00:13	n/a	Continuing cal 4
S6Q307-ICCB	6Q20687.D	07/11/23 00:27	n/a	Continuing Calibration Blank
FC6994-5	6Q20688.D	07/11/23 00:41	OP97713	(used for QC only; not part of job FC7490)
OP97713-MS	6Q20689.D	07/11/23 00:55	OP97713	Matrix Spike
FC6994-6	6Q20690.D	07/11/23 01:09	OP97713	(used for QC only; not part of job FC7490)
OP97713-DUP	6Q20691.D	07/11/23 01:23	OP97713	Duplicate
ZZZZZZ	6Q20692.D	07/11/23 01:37	OP97713	(unrelated sample)
ZZZZZZ	6Q20693.D	07/11/23 01:51	OP97713	(unrelated sample)
ZZZZZZ	6Q20694.D	07/11/23 02:05	OP97563	(unrelated sample)
ZZZZZZ	6Q20695.D	07/11/23 02:19	OP97563	(unrelated sample)
ZZZZZZ	6Q20696.D	07/11/23 02:33	OP97563	(unrelated sample)
S6Q307-CC307	6Q20697.D	07/11/23 02:47	n/a	Continuing cal 4
S6Q307-ICCB	6Q20698.D	07/11/23 03:01	n/a	Continuing Calibration Blank
S6Q307-ICCB	6Q20698.D	07/11/23 03:01	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20699.D	07/11/23 03:15	OP97563	(unrelated sample)
ZZZZZZ	6Q20700.D	07/11/23 03:29	OP97563	(unrelated sample)
OP97610-BS	6Q20701.D	07/11/23 03:43	OP97610	Blank Spike
OP97610-LLBS	6Q20702.D	07/11/23 03:57	OP97610	Blank Spike
OP97610-MB	6Q20703.D	07/11/23 04:10	OP97610	Method Blank
ZZZZZZ	6Q20704.D	07/11/23 04:24	OP97610	(unrelated sample)
ZZZZZZ	6Q20706.D	07/11/23 04:52	OP97610	(unrelated sample)

Run Sequence Report

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q307	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	6Q20707.D	07/11/23 05:06	OP97610	(unrelated sample)
ZZZZZZ	6Q20708.D	07/11/23 05:20	OP97610	(unrelated sample)
S6Q307-CC307	6Q20709.D	07/11/23 05:34	n/a	Continuing cal 4
S6Q307-ICCB	6Q20710.D	07/11/23 05:48	n/a	Continuing Calibration Blank
S6Q307-ICCB	6Q20710.D	07/11/23 05:48	n/a	Continuing Calibration Blank
FC6954-1	6Q20711.D	07/11/23 06:02	OP97610	(used for QC only; not part of job FC7490)
OP97610-MS	6Q20712.D	07/11/23 06:16	OP97610	Matrix Spike
OP97610-MSD	6Q20713.D	07/11/23 06:30	OP97610	Matrix Spike Duplicate
ZZZZZZ	6Q20714.D	07/11/23 06:44	OP97610	(unrelated sample)
ZZZZZZ	6Q20715.D	07/11/23 06:58	OP97610	(unrelated sample)
ZZZZZZ	6Q20716.D	07/11/23 07:12	OP97610	(unrelated sample)
ZZZZZZ	6Q20717.D	07/11/23 07:26	OP97610	(unrelated sample)
ZZZZZZ	6Q20718.D	07/11/23 07:40	OP97610	(unrelated sample)
ZZZZZZ	6Q20719.D	07/11/23 07:54	OP97610	(unrelated sample)
ZZZZZZ	6Q20720.D	07/11/23 08:08	OP97610	(unrelated sample)
S6Q307-CC307	6Q20721.D	07/11/23 08:22	n/a	Continuing cal 4
S6Q307-ICCB	6Q20722.D	07/11/23 08:36	n/a	Continuing Calibration Blank
S6Q307-ICCB	6Q20722.D	07/11/23 08:36	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20723.D	07/11/23 08:50	OP97610	(unrelated sample)
ZZZZZZ	6Q20724.D	07/11/23 09:04	OP97610	(unrelated sample)
ZZZZZZ	6Q20725.D	07/11/23 09:18	OP97661	(unrelated sample)
ZZZZZZ	6Q20726.D	07/11/23 09:32	OP97661	(unrelated sample)
ZZZZZZ	6Q20727.D	07/11/23 09:46	OP97661	(unrelated sample)
ZZZZZZ	6Q20728.D	07/11/23 10:00	OP97661	(unrelated sample)
S6Q307-ECC307	6Q20729.D	07/11/23 10:14	n/a	Ending cal 4
S6Q307-ICCB	6Q20730.D	07/11/23 10:28	n/a	Continuing Calibration Blank
S6Q307-ICCB	6Q20730.D	07/11/23 10:28	n/a	Continuing Calibration Blank

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Run Sequence Report

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q310	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
S6Q310-RT	6Q20889.D	07/13/23 10:11	n/a	Retention Time Marker
S6Q310-RT	6Q20890.D	07/13/23 10:25	n/a	Retention Time Marker
S6Q310-IBLK	6Q20892.D	07/13/23 10:53	n/a	Instrument Blank
S6Q310-IBLK	6Q20892.D	07/13/23 10:53	n/a	Instrument Blank
S6Q310-CC307	6Q20893.D	07/13/23 11:07	n/a	Continuing cal 4
S6Q310-CC307	6Q20894.D	07/13/23 11:21	n/a	Continuing cal 1.0LL
OP97773-BS	6Q20895.D	07/13/23 11:34	OP97773	Blank Spike
OP97773-LLBS	6Q20896.D	07/13/23 11:48	OP97773	Blank Spike
OP97773-MB	6Q20897.D	07/13/23 12:02	OP97773	Method Blank
ZZZZZZ	6Q20898.D	07/13/23 12:16	OP97773	(unrelated sample)
FC7015-1	6Q20899.D	07/13/23 12:30	OP97773	(used for QC only; not part of job FC7490)
OP97773-MS	6Q20900.D	07/13/23 12:44	OP97773	Matrix Spike
FC7015-2	6Q20901.D	07/13/23 12:58	OP97773	(used for QC only; not part of job FC7490)
OP97773-DUP	6Q20902.D	07/13/23 13:12	OP97773	Duplicate
ZZZZZZ	6Q20903.D	07/13/23 13:26	OP97773	(unrelated sample)
ZZZZZZ	6Q20904.D	07/13/23 13:40	OP97773	(unrelated sample)
S6Q310-CC307	6Q20905.D	07/13/23 13:54	n/a	Continuing cal 4
S6Q310-ICCB	6Q20906.D	07/13/23 14:08	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20907.D	07/13/23 14:22	OP97749	(unrelated sample)
ZZZZZZ	6Q20908.D	07/13/23 14:36	OP97749	(unrelated sample)
ZZZZZZ	6Q20909.D	07/13/23 14:50	OP97749	(unrelated sample)
OP97799-BS	6Q20910.D	07/13/23 15:04	OP97799	Blank Spike
OP97799-LLBS	6Q20911.D	07/13/23 15:18	OP97799	Blank Spike
OP97799-MB	6Q20912.D	07/13/23 15:32	OP97799	Method Blank
ZZZZZZ	6Q20913.D	07/13/23 15:46	OP97799	(unrelated sample)
ZZZZZZ	6Q20914.D	07/13/23 16:00	OP97799	(unrelated sample)
FC7583-3	6Q20915.D	07/13/23 16:14	OP97799	(used for QC only; not part of job FC7490)
OP97799-MS	6Q20916.D	07/13/23 16:28	OP97799	Matrix Spike
S6Q310-CC307	6Q20917.D	07/13/23 16:42	n/a	Continuing cal 4
S6Q310-ICCB	6Q20918.D	07/13/23 16:56	n/a	Continuing Calibration Blank
S6Q310-ICCB	6Q20918.D	07/13/23 16:56	n/a	Continuing Calibration Blank
OP97799-DUP	6Q20919.D	07/13/23 17:10	OP97799	Duplicate
FC7583-4	6Q20920.D	07/13/23 17:24	OP97799	(used for QC only; not part of job FC7490)
ZZZZZZ	6Q20921.D	07/13/23 17:38	OP97799	(unrelated sample)
ZZZZZZ	6Q20922.D	07/13/23 17:52	OP97799	(unrelated sample)
FC7490-1	6Q20923.D	07/13/23 18:06	OP97799	AF-RHMW225401-WGN01B-2307
OP97753-BS	6Q20924.D	07/13/23 18:20	OP97753	Blank Spike
OP97753-LLBS	6Q20925.D	07/13/23 18:34	OP97753	Blank Spike
OP97753-MB	6Q20926.D	07/13/23 18:48	OP97753	Method Blank
ZZZZZZ	6Q20927.D	07/13/23 19:02	OP97753	(unrelated sample)
ZZZZZZ	6Q20928.D	07/13/23 19:16	OP97753	(unrelated sample)
S6Q310-CC307	6Q20929.D	07/13/23 19:30	n/a	Continuing cal 4
S6Q310-ICCB	6Q20930.D	07/13/23 19:44	n/a	Continuing Calibration Blank
S6Q310-ICCB	6Q20930.D	07/13/23 19:44	n/a	Continuing Calibration Blank
FC7109-7	6Q20931.D	07/13/23 19:58	OP97753	(used for QC only; not part of job FC7490)
ZZZZZZ	6Q20934.D	07/13/23 20:40	OP97753	(unrelated sample)

Run Sequence Report

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q310	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	6Q20935.D	07/13/23 20:54	OP97753	(unrelated sample)
ZZZZZZ	6Q20937.D	07/13/23 21:22	OP97753	(unrelated sample)
ZZZZZZ	6Q20938.D	07/13/23 21:36	OP97753	(unrelated sample)
ZZZZZZ	6Q20940.D	07/13/23 22:04	OP97753	(unrelated sample)
S6Q310-CC307	6Q20941.D	07/13/23 22:18	n/a	Continuing cal 4
S6Q310-ICCB	6Q20942.D	07/13/23 22:32	n/a	Continuing Calibration Blank
S6Q310-ICCB	6Q20942.D	07/13/23 22:32	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20943.D	07/13/23 22:46	OP97753	(unrelated sample)
ZZZZZZ	6Q20944.D	07/13/23 23:00	OP97753	(unrelated sample)
ZZZZZZ	6Q20946.D	07/13/23 23:28	OP97753	(unrelated sample)
ZZZZZZ	6Q20947.D	07/13/23 23:42	OP97753	(unrelated sample)
ZZZZZZ	6Q20949.D	07/14/23 00:10	OP97753	(unrelated sample)
ZZZZZZ	6Q20951.D	07/14/23 00:38	OP97753	(unrelated sample)
ZZZZZZ	6Q20952.D	07/14/23 00:51	OP97749	(unrelated sample)
S6Q310-CC307	6Q20953.D	07/14/23 01:05	n/a	Continuing cal 4
S6Q310-ICCB	6Q20954.D	07/14/23 01:19	n/a	Continuing Calibration Blank
S6Q310-ICCB	6Q20954.D	07/14/23 01:19	n/a	Continuing Calibration Blank
OP97800-BS	6Q20955.D	07/14/23 01:33	OP97800	Blank Spike
OP97800-LLBS	6Q20956.D	07/14/23 01:47	OP97800	Blank Spike
OP97800-MB	6Q20957.D	07/14/23 02:01	OP97800	Method Blank
ZZZZZZ	6Q20958.D	07/14/23 02:15	OP97800	(unrelated sample)
ZZZZZZ	6Q20959.D	07/14/23 02:29	OP97800	(unrelated sample)
FC7060-41	6Q20960.D	07/14/23 02:43	OP97800	(used for QC only; not part of job FC7490)
OP97800-MS	6Q20961.D	07/14/23 02:57	OP97800	Matrix Spike
FC7060-42	6Q20962.D	07/14/23 03:11	OP97800	(used for QC only; not part of job FC7490)
OP97800-DUP	6Q20963.D	07/14/23 03:25	OP97800	Duplicate
ZZZZZZ	6Q20964.D	07/14/23 03:39	OP97800	(unrelated sample)
S6Q310-CC307	6Q20965.D	07/14/23 03:53	n/a	Continuing cal 4
S6Q310-ICCB	6Q20966.D	07/14/23 04:07	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20967.D	07/14/23 04:21	OP97800	(unrelated sample)
ZZZZZZ	6Q20968.D	07/14/23 04:35	OP97800	(unrelated sample)
ZZZZZZ	6Q20969.D	07/14/23 04:49	OP97800	(unrelated sample)
ZZZZZZ	6Q20970.D	07/14/23 05:03	OP97800	(unrelated sample)
ZZZZZZ	6Q20971.D	07/14/23 05:17	OP97800	(unrelated sample)
ZZZZZZ	6Q20972.D	07/14/23 05:31	OP97800	(unrelated sample)
ZZZZZZ	6Q20973.D	07/14/23 05:45	OP97800	(unrelated sample)
ZZZZZZ	6Q20974.D	07/14/23 05:59	OP97800	(unrelated sample)
ZZZZZZ	6Q20975.D	07/14/23 06:13	OP97800	(unrelated sample)
ZZZZZZ	6Q20976.D	07/14/23 06:27	OP97800	(unrelated sample)
S6Q310-CC307	6Q20977.D	07/14/23 06:41	n/a	Continuing cal 4
S6Q310-ICCB	6Q20978.D	07/14/23 06:55	n/a	Continuing Calibration Blank
S6Q310-ICCB	6Q20978.D	07/14/23 06:55	n/a	Continuing Calibration Blank
ZZZZZZ	6Q20979.D	07/14/23 07:09	OP97610	(unrelated sample)
ZZZZZZ	6Q20980.D	07/14/23 07:23	OP97610	(unrelated sample)
S6Q310-RT	6Q20981.D	07/14/23 07:37	n/a	Retention Time Marker
S6Q310-RT	6Q20982.D	07/14/23 07:51	n/a	Retention Time Marker

Run Sequence Report

Job Number: FC7490
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q310	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
S6Q310-IBLK	6Q20984.D	07/14/23 08:19	n/a	Instrument Blank
S6Q310-IBLK	6Q20984.D	07/14/23 08:19	n/a	Instrument Blank
S6Q310-CC307	6Q20985.D	07/14/23 08:33	n/a	Continuing cal 4
S6Q310-CC307	6Q20986.D	07/14/23 08:47	n/a	Continuing cal 1.0LL
OP97757-BS	6Q20987.D	07/14/23 09:01	OP97757	Blank Spike
OP97757-LLBS	6Q20988.D	07/14/23 09:15	OP97757	Blank Spike
OP97757-MB	6Q20989.D	07/14/23 09:29	OP97757	Method Blank
ZZZZZZ	6Q20990.D	07/14/23 09:43	OP97757	(unrelated sample)
ZZZZZZ	6Q20991.D	07/14/23 09:57	OP97757	(unrelated sample)
ZZZZZZ	6Q20992.D	07/14/23 10:11	OP97757	(unrelated sample)
JD67312-7B	6Q20993.D	07/14/23 10:25	OP97757	(used for QC only; not part of job FC7490)
OP97757-MS	6Q20994.D	07/14/23 10:39	OP97757	Matrix Spike
OP97757-MSD	6Q20995.D	07/14/23 10:53	OP97757	Matrix Spike Duplicate
ZZZZZZ	6Q20996.D	07/14/23 11:07	OP97757	(unrelated sample)
S6Q310-ECC307	6Q20997.D	07/14/23 11:21	n/a	Ending cal 4
S6Q310-ICCB	6Q20998.D	07/14/23 11:35	n/a	Continuing Calibration Blank

6.10.2

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MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20923.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 6:06:27 PM
 Sample Name : FC7490-1
 Vial : P5-B6
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,520,,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	178173	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	58376	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	64077	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	61523	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	101180	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	44694	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	26529	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	33563	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	28817	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	14160	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	25917	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	23380	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	12955	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12740	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2866	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3886	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3809	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	28622	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	37818	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	22343	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	83030	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	116963	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	12220	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	10474	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16043	2.50 µg/L	0.000
13C3-PFBA	3.039	216.0 -> 172.0	69490	5.00 µg/L	0.012
18O2-PFHxS	7.391	403.0 -> 83.9	9050	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	89575	2.50 µg/L	0.000
13C2-PFDA	8.313	515.1 -> 470.1	29496	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	48241	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	55579	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2866	7.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 141.3%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3886	6.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.0%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3809	6.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 131.0%		
13C2-PFDoDA	9.211	615.1 -> 570.0	28817	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-PFTeDA	9.925	715.2 -> 670.0	14160	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 100.2%		
13C3-PFBS	5.635	302.1 -> 79.9	23380	3.05 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 122.1%		
13C3-PFHxS	7.392	402.1 -> 79.9	12955	2.69 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 = 107.4%		
13C4-PFBA	3.035	216.8 -> 171.9	178173	10.82 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 108.2%		
13C4-PFHpA	6.633	367.1 -> 322.0	61523	2.83 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C5-PFHxA	5.692	318.0 -> 273.0	64077	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C5-PFPeA	4.472	268.3 -> 223.0	58376	5.63 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C6-PFDA	8.313	519.1 -> 474.1	26529	1.60 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 128.2%		
13C7-PFUnDA	8.780	570.0 -> 525.1	33563	1.58 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 126.2%		
13C8-FOSA	9.674	506.1 -> 77.8	25917	2.21 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 92.5%		
13C8-PFOA	7.264	421.1 -> 376.0	101180	2.97 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 118.6%		
13C8-PFOS	8.476	507.1 -> 79.9	12740	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 111.9%		
13C9-PFNA	7.807	472.1 -> 427.0	44694	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.6%		
d3-MeFOSAA	8.346	573.2 -> 419.0	28622	5.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.9%		
13C3-HFPO-DA	6.070	286.9 -> 168.9	37818	10.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
d3-MeFOSA	10.763	515.0 -> 219.0	10474	2.02 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 80.7%		
d5-EtFOSAA	8.554	589.2 -> 419.0	22343	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.9%		
d7-MeFOSE	10.672	623.2 -> 58.9	83030	20.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 80.7%		
d9-EtFOSE	10.918	639.2 -> 58.9	116963	24.40 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%		Recovery = 97.6%		
d5-EtFOSA	10.983	531.1 -> 219.0	12220	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 91.8%		

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	5.648	298.7 -> 79.9	563	0.06 µg/L	95
		298.7 -> 98.8	250		
PFDA	-	512.9 -> 469.0	-	N.D.	
		512.9 -> 219.0			
PFDODA	9.174	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0	0		
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8				
		363.1 -> 319.0	2101	0.07	µg/L	99
PFHpS	-	363.1 -> 169.0	341			
		449.0 -> 79.9	-	N.D.		
PFHxA	5.694	449.0 -> 98.9				
		313.0 -> 269.0	2235	0.10	µg/L	99
PFHxS	7.393	313.0 -> 118.9	103			
		398.7 -> 79.9	808	0.12	µg/L	m
PFNA	8.293	398.7 -> 98.9	395			
		463.0 -> 419.0	0		µg/L	m
PFNS	-	463.0 -> 219.0	0			
		548.8 -> 79.9	-	N.D.		
PFOA	7.265	548.8 -> 98.9				
		413.0 -> 369.0	4834	0.10	µg/L	m
PFOS	8.478	413.0 -> 169.0	739			
		498.9 -> 79.9	714	0.10	µg/L	m
PFPeA	-	498.9 -> 98.8	375			
		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				
PFMBA	-					
PFMPA	-					
PFEESA	-					

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

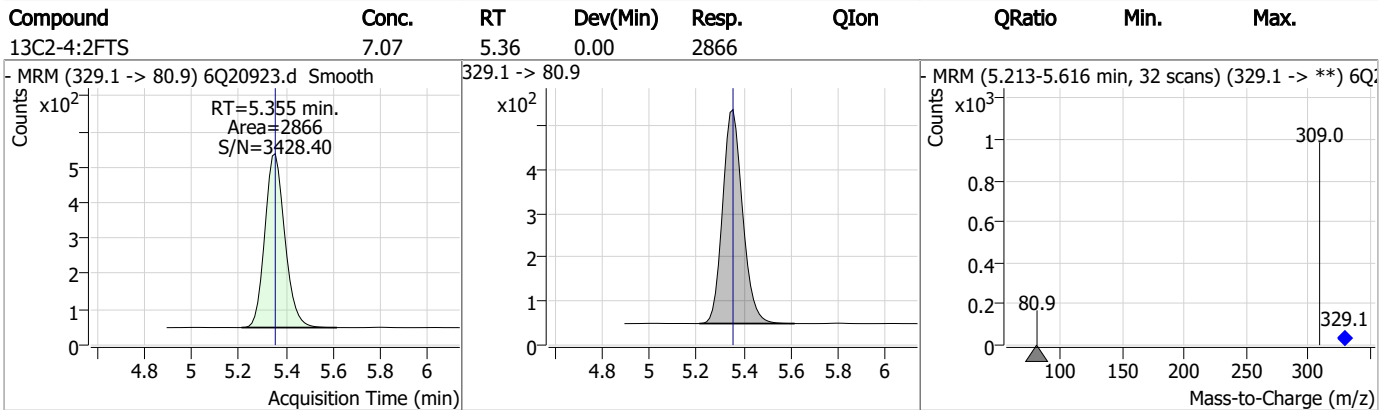
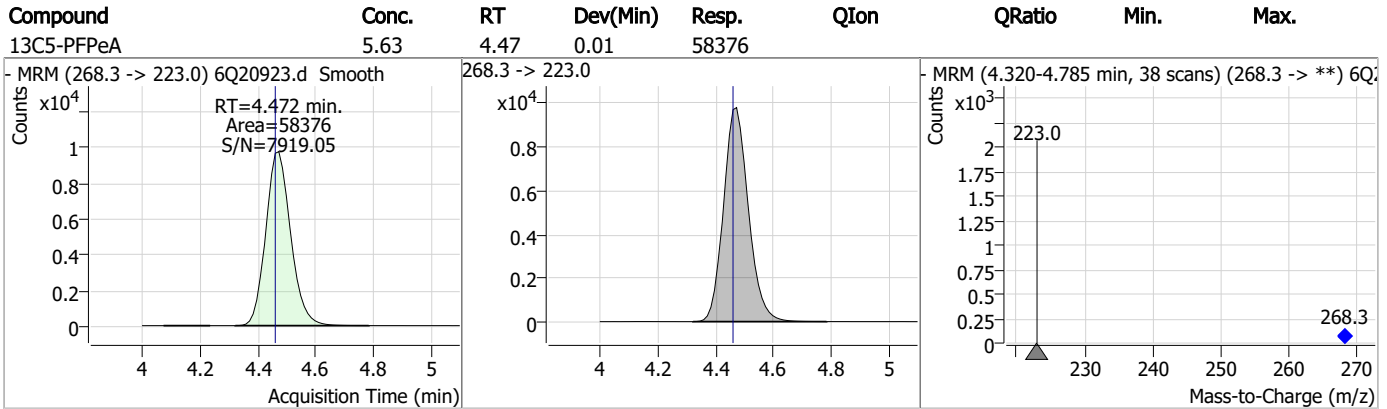
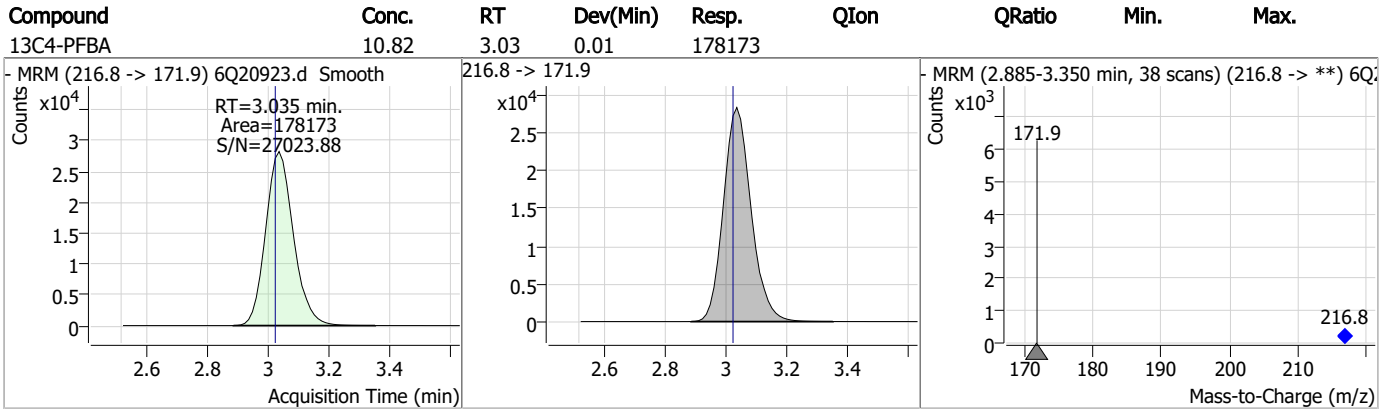
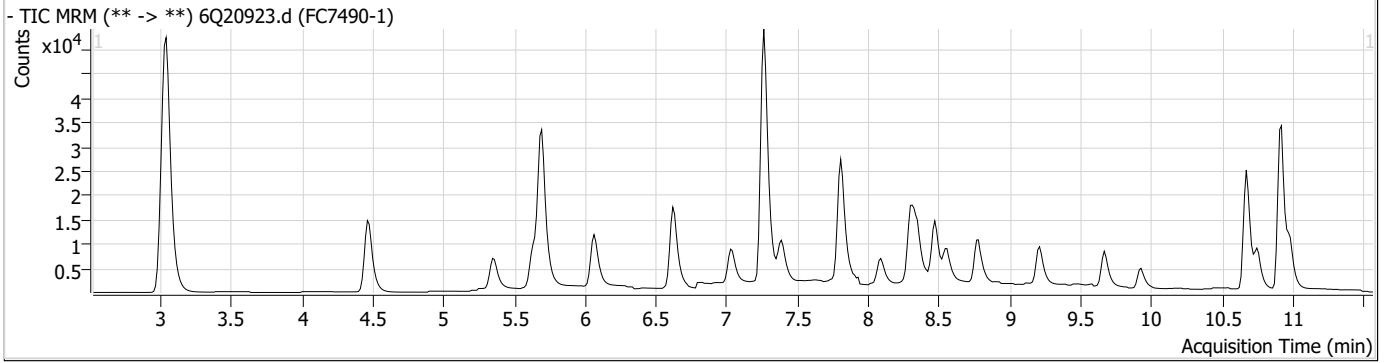
Perfluorinated Compounds by LC/MS/MS

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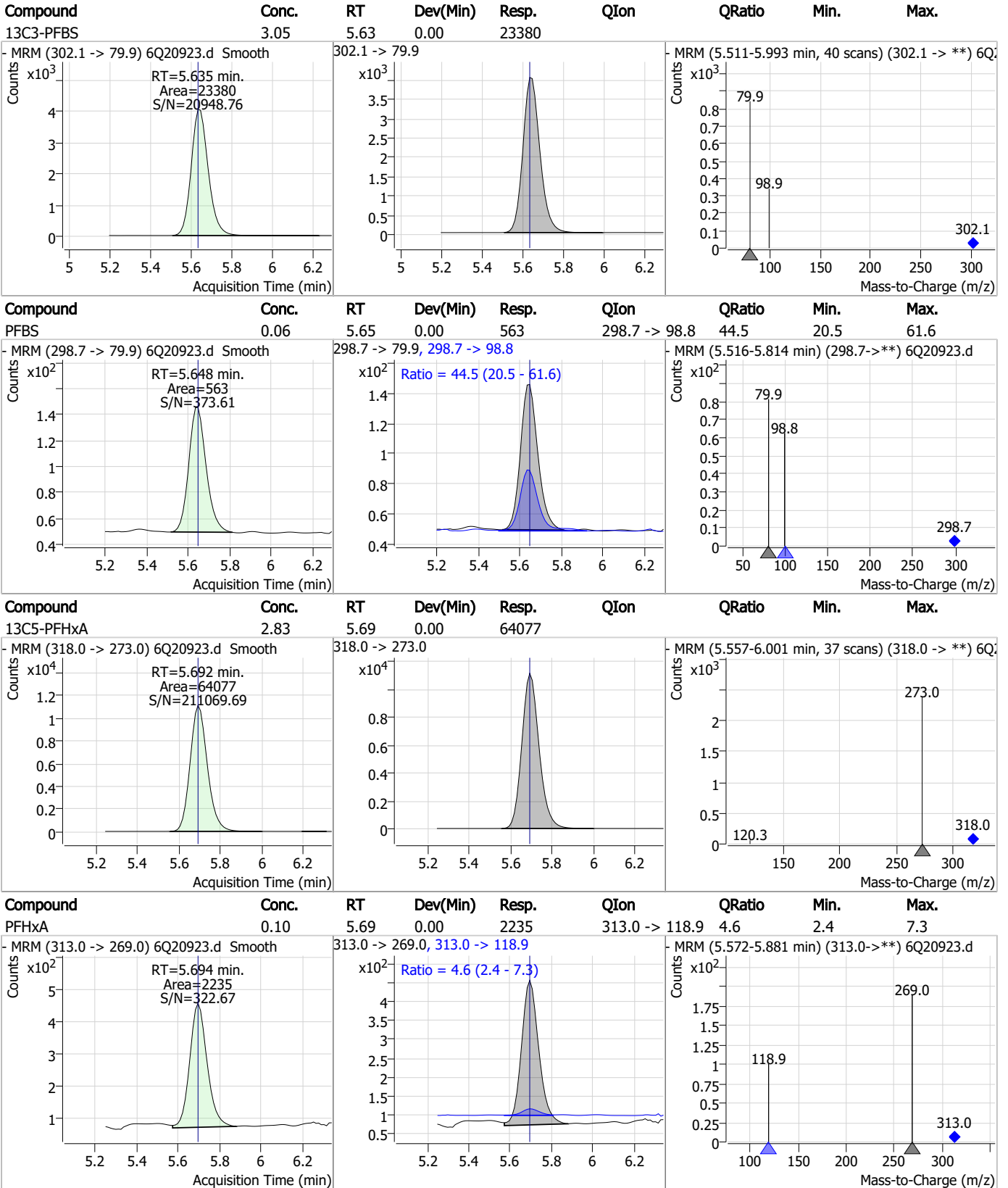
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Perfluorinated Compounds by LC/MS/MS



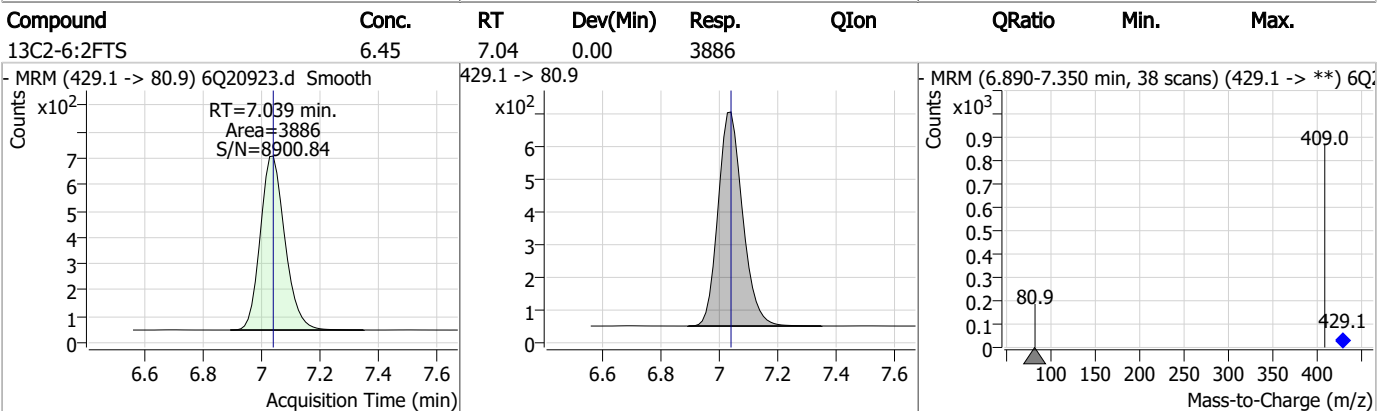
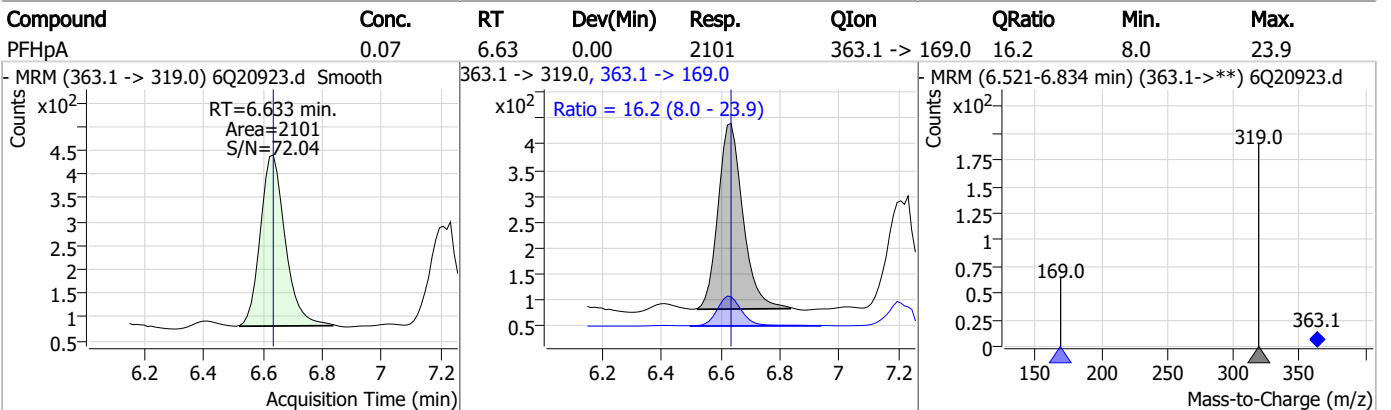
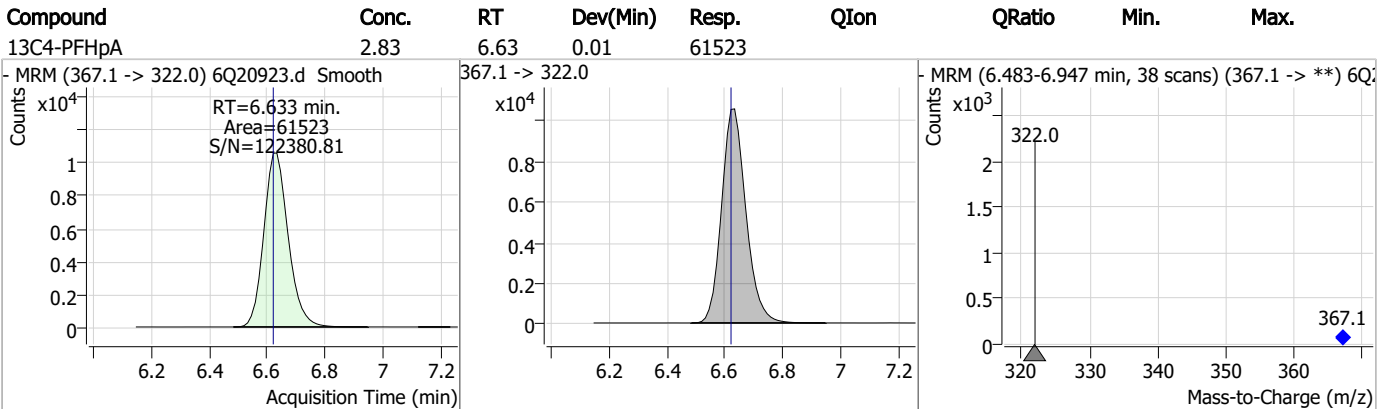
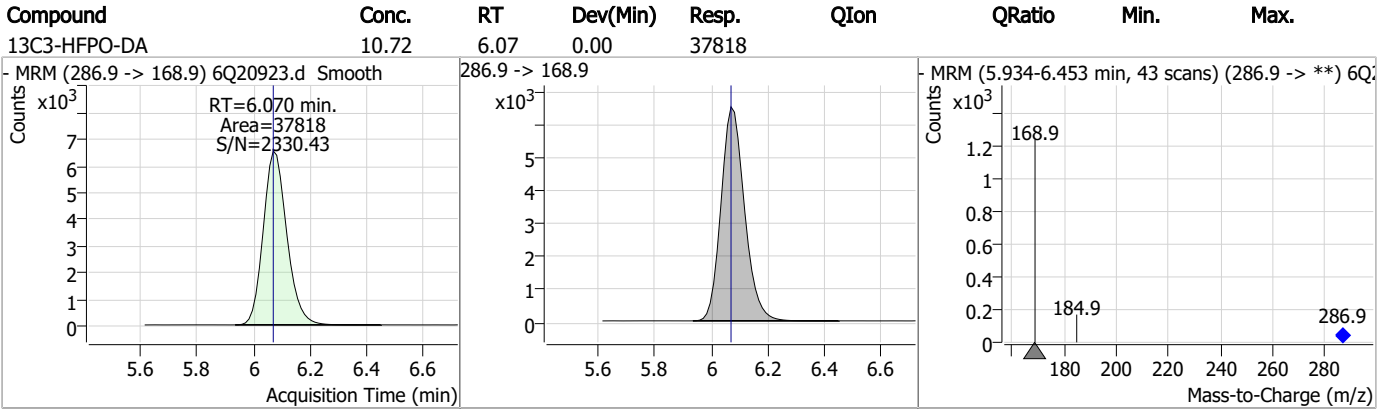
Perfluorinated Compounds by LC/MS/MS



7.1.1
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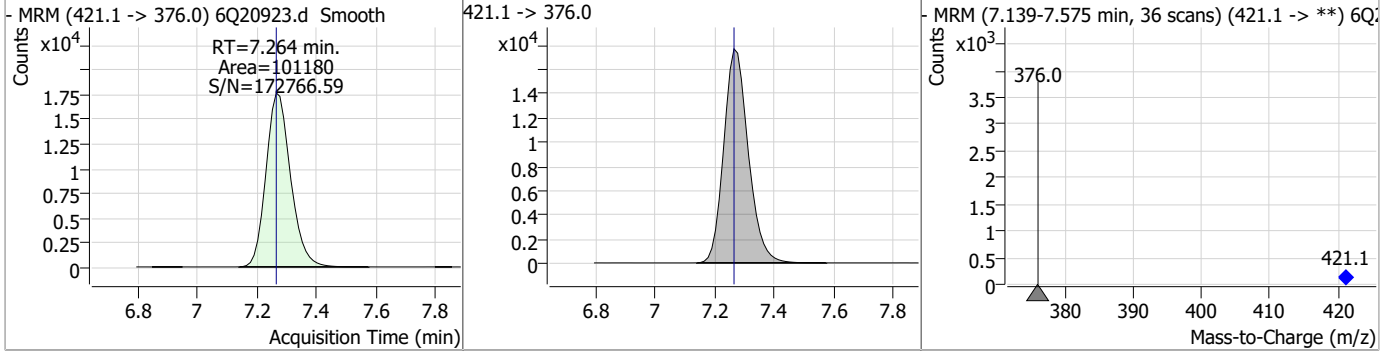


Perfluorinated Compounds by LC/MS/MS

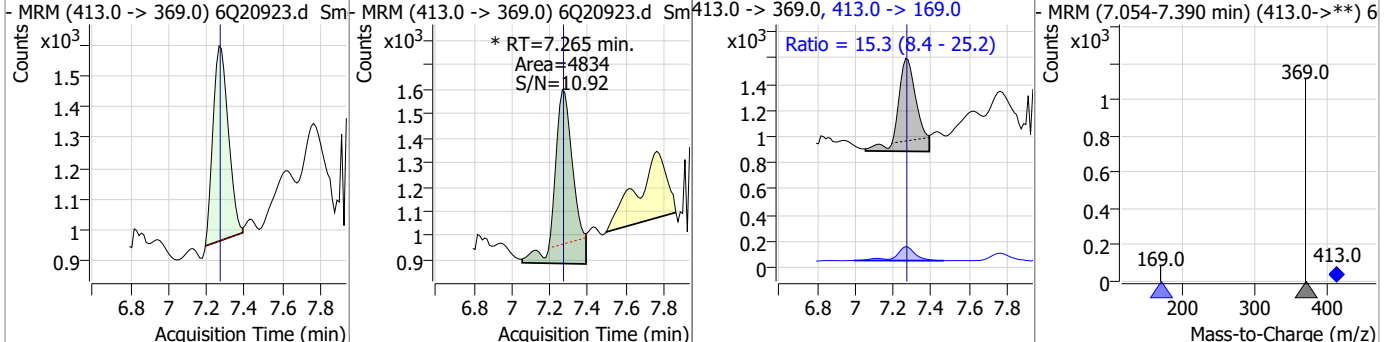


Perfluorinated Compounds by LC/MS/MS

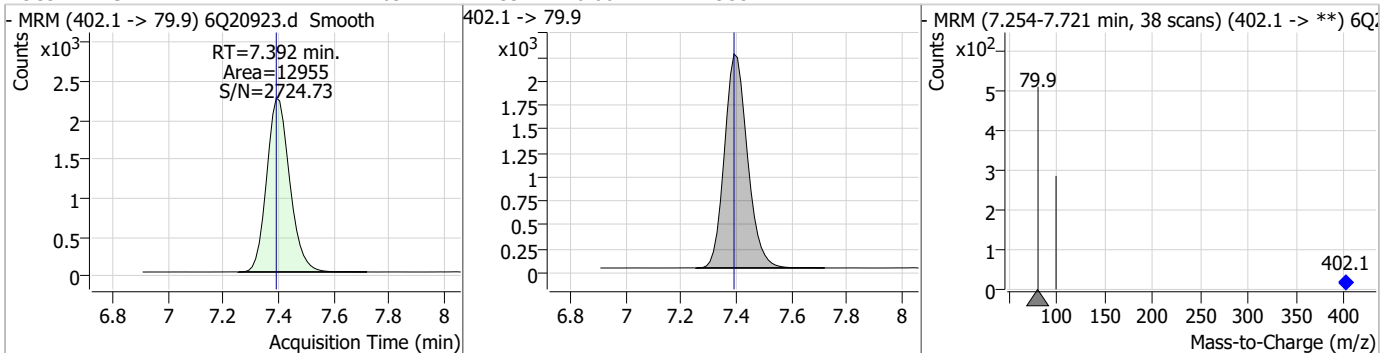
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.97	7.26	0.00	101180				



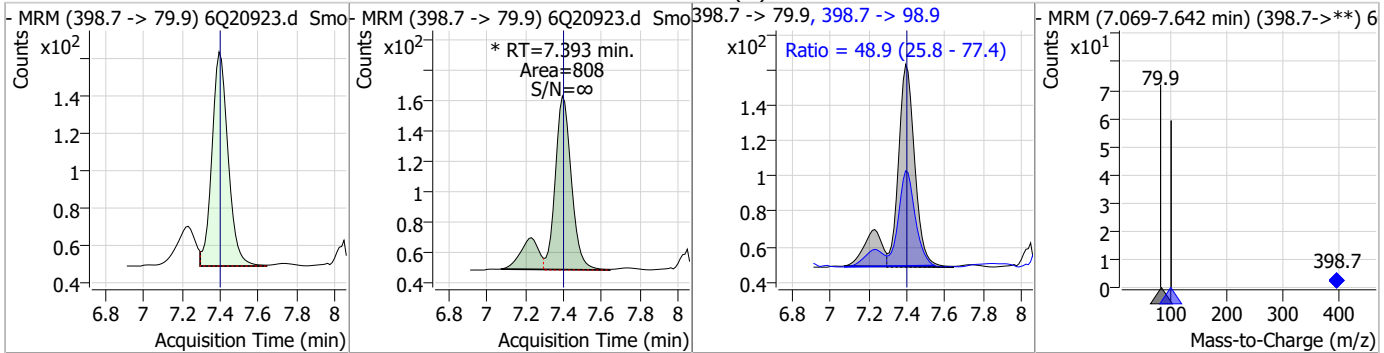
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.10	7.27	0.00	4834 (m)	413.0 -> 169.0	15.3	8.4	25.2



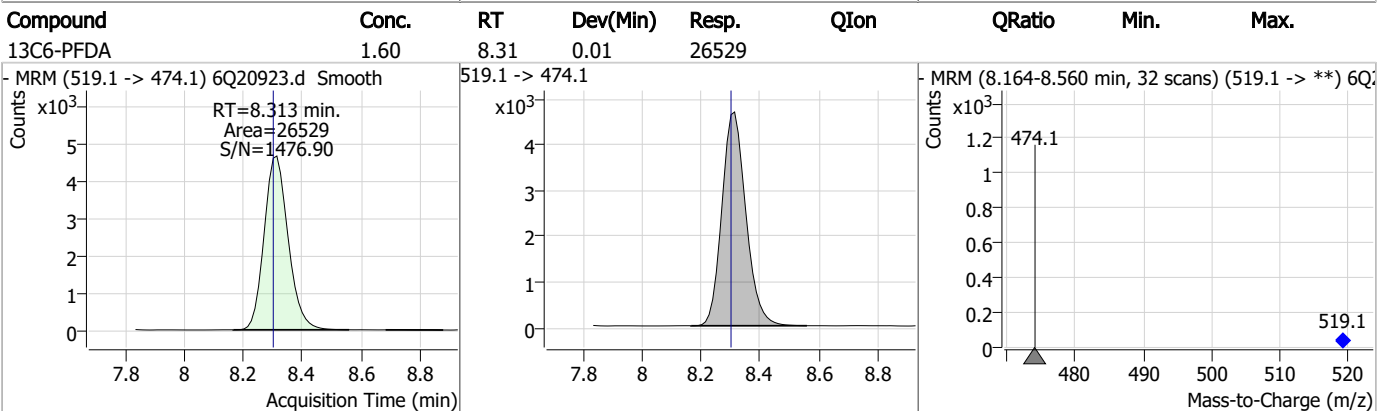
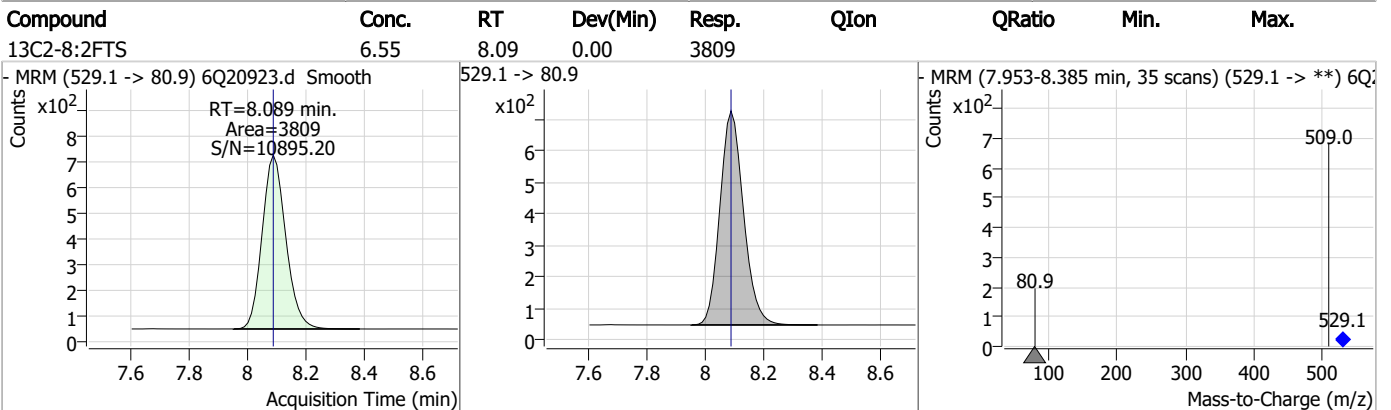
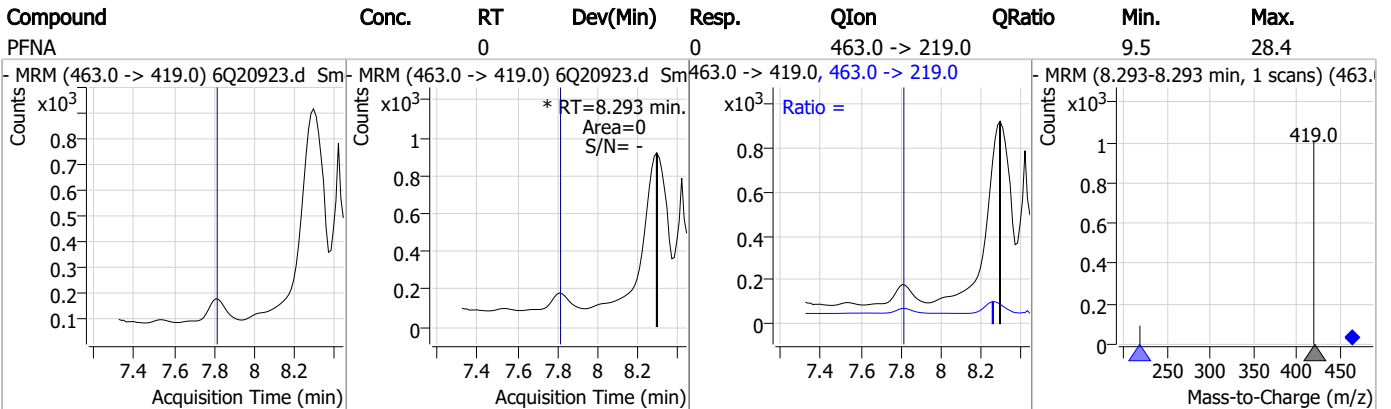
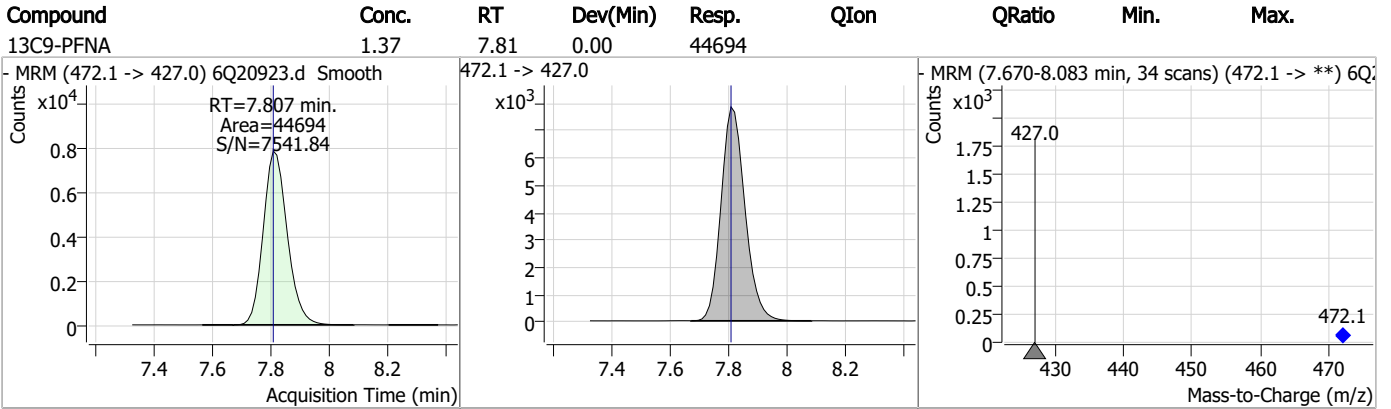
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.69	7.39	0.00	12955				



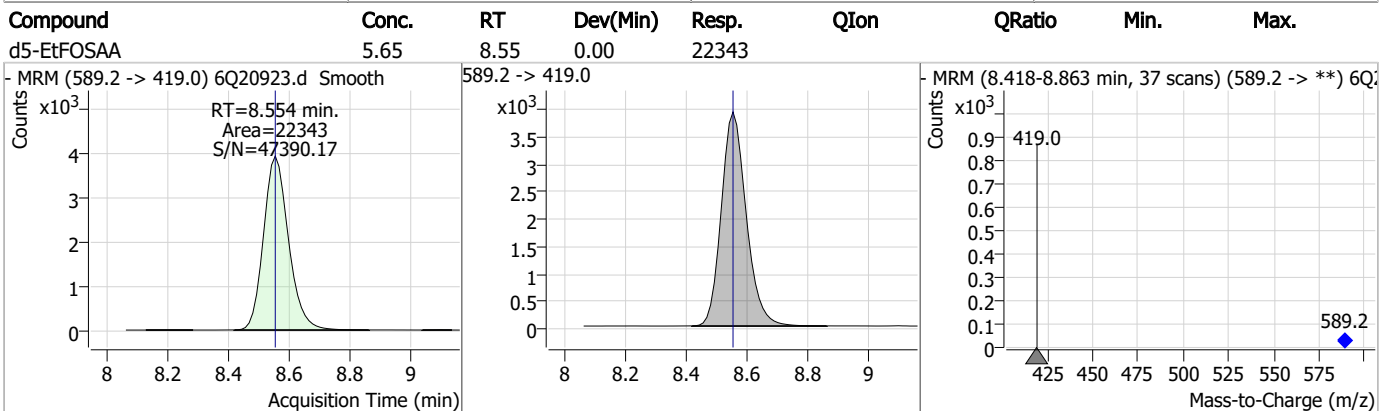
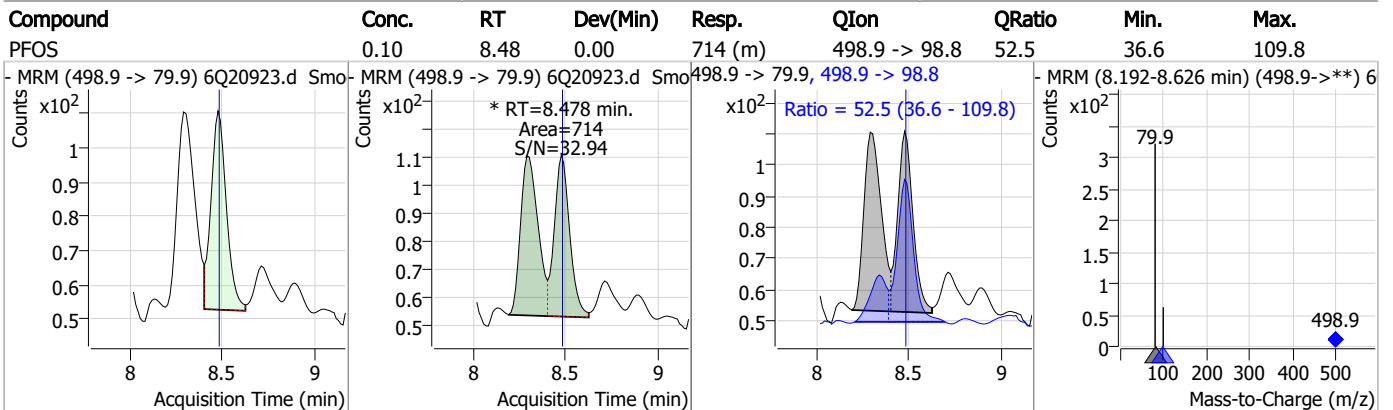
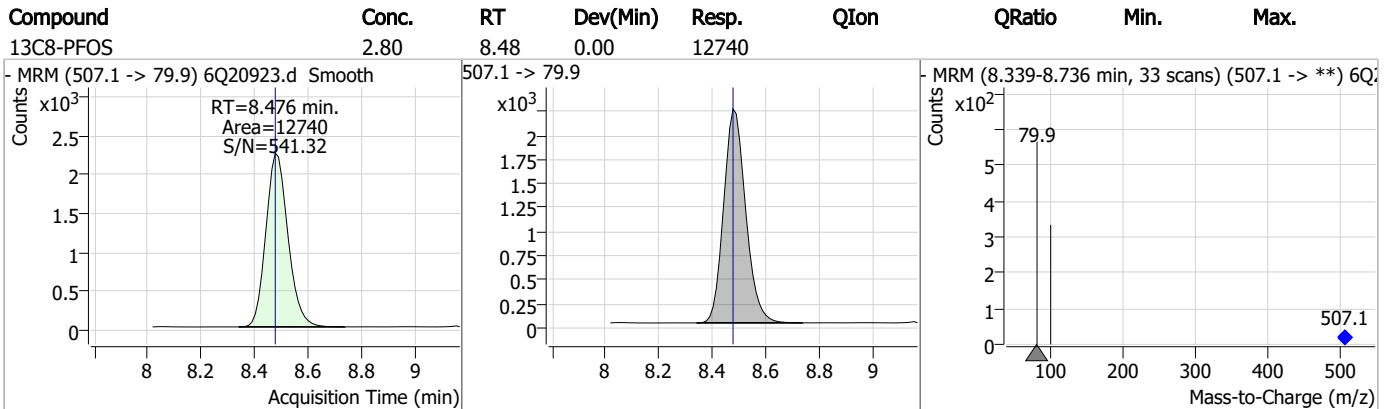
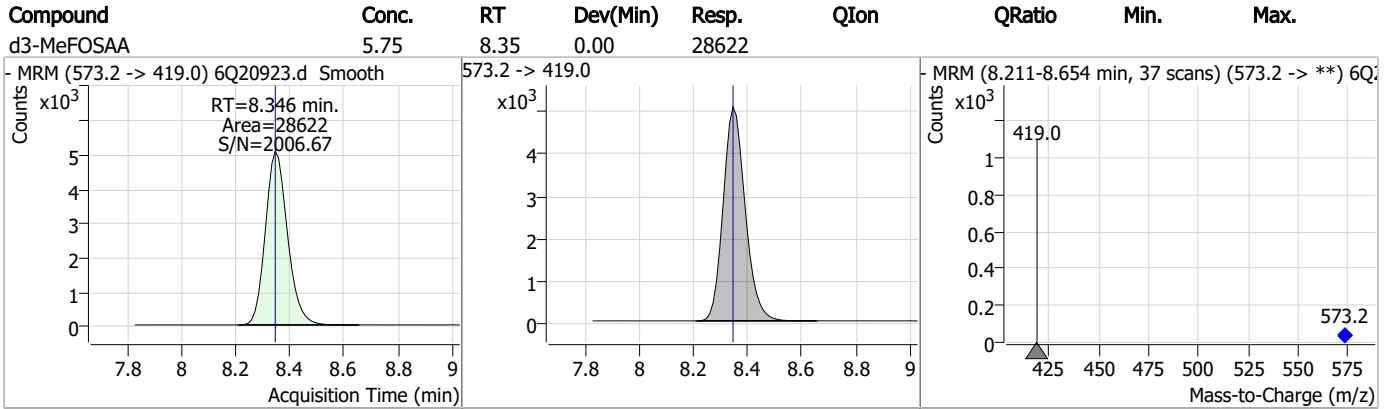
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.12	7.39	0.00	808 (m)	398.7 -> 98.9	48.9	25.8	77.4



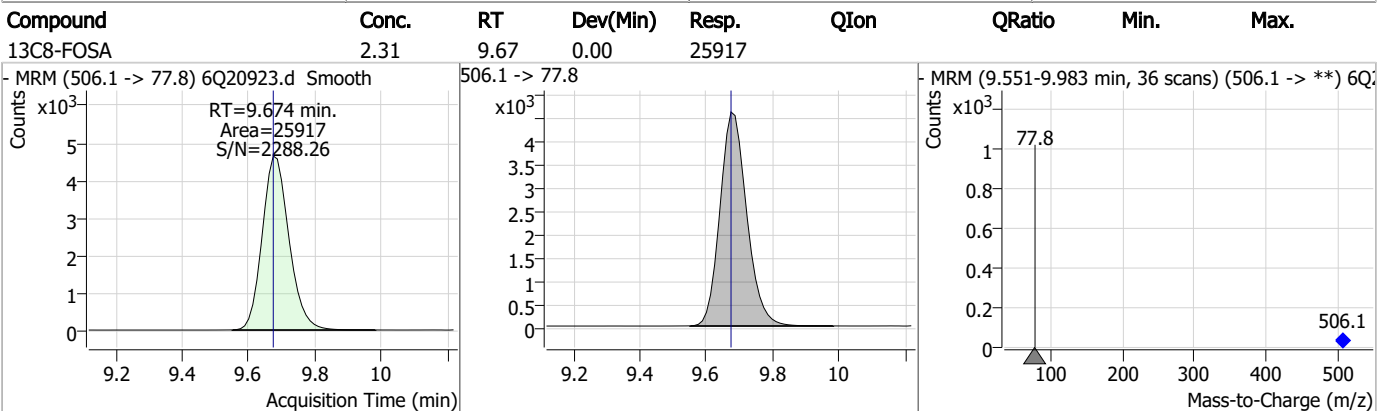
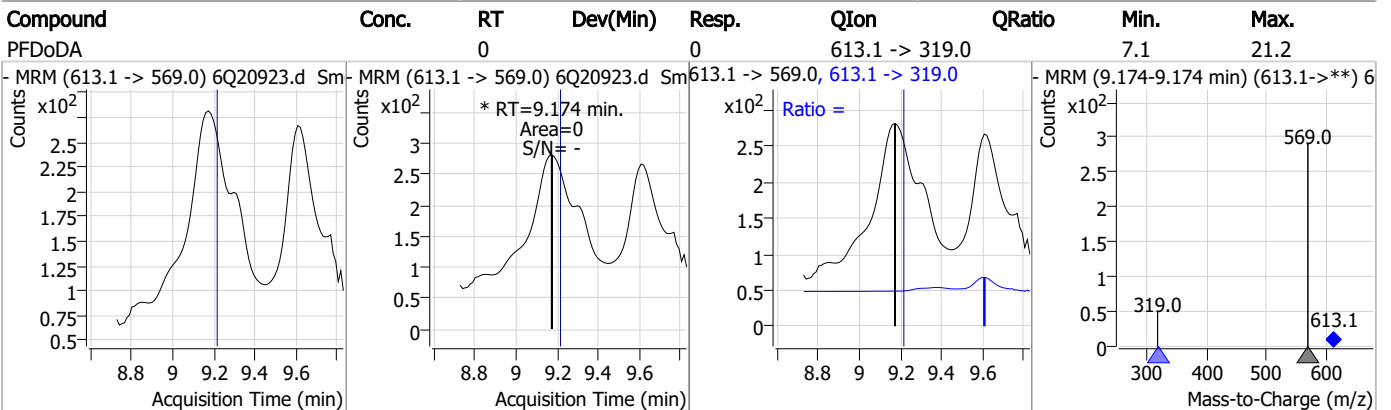
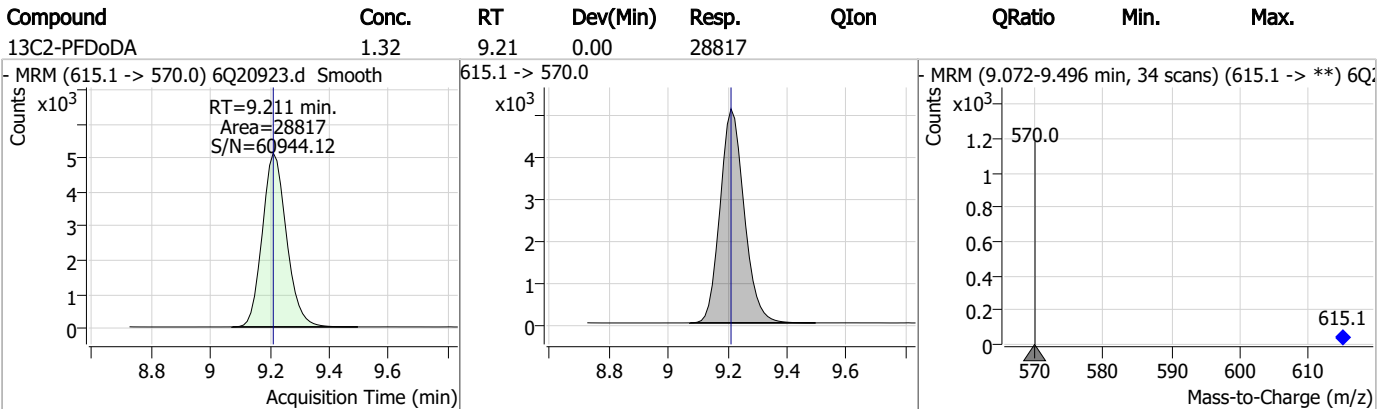
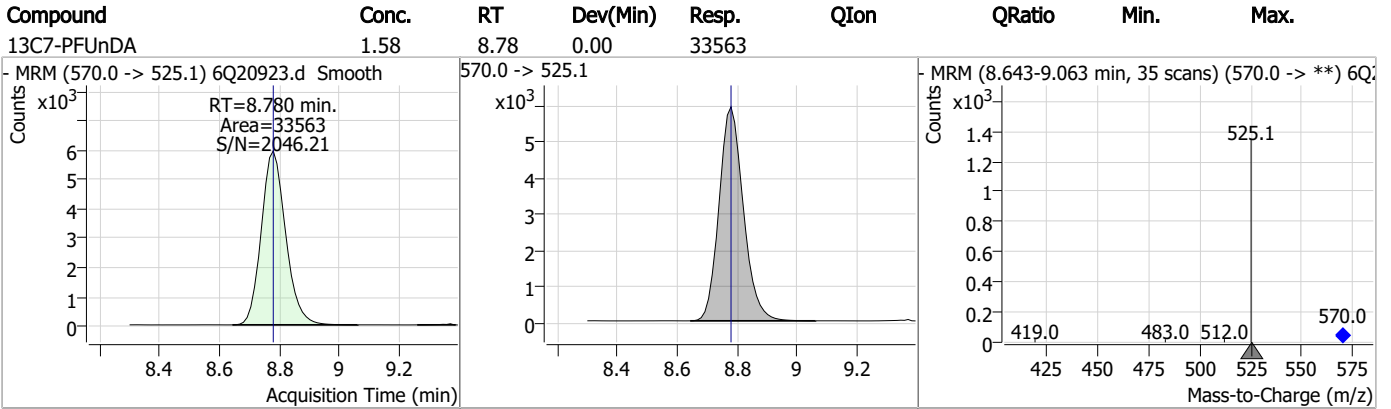
Perfluorinated Compounds by LC/MS/MS



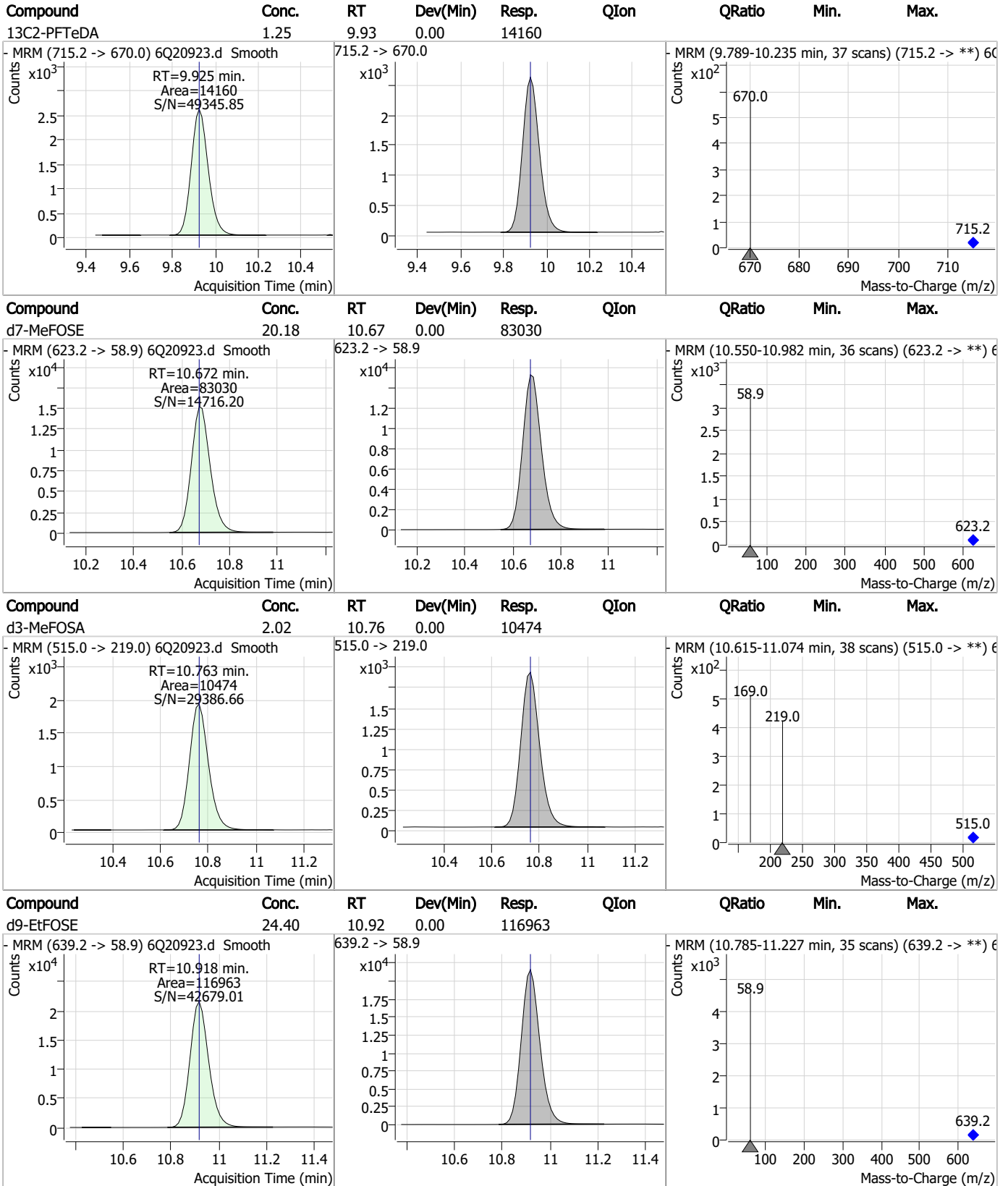
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

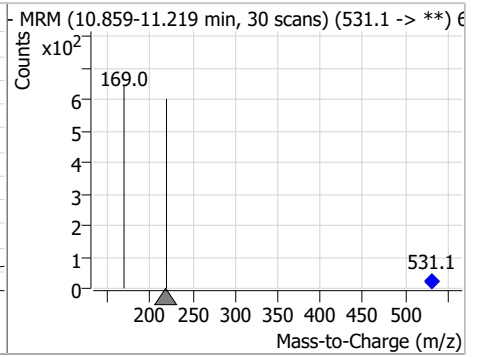
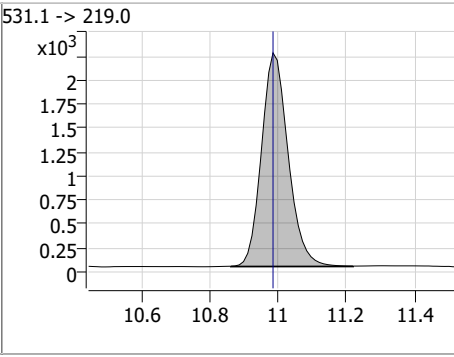
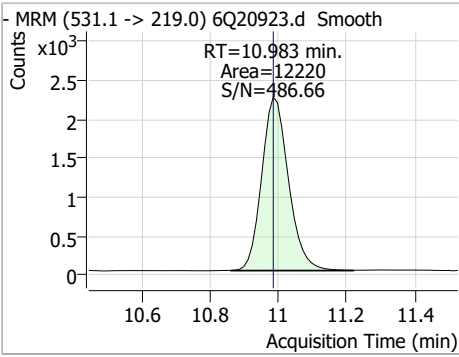


Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	10.98	0.00	12220				



7.1.1
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Manual Integration Approval Summary

Sample Number: FC7490-1 Method: EPA DRAFT 1633
Lab FileID: 6Q20923.D Analyst approved: 07/16/23 12:12 Martha Valls
Injection Time: 07/13/23 18:06 Supervisor approved: 07/17/23 11:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.26	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak

7.1.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20912.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 3:32:36 PM
 Sample Name : op97799-mb
 Vial : P5-A6
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	202446	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	63758	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	72207	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	69153	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	110833	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	48920	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	27033	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	33236	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	31316	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16366	1.25 µg/L	0.000
M8-FOSA	9.687	506.1 -> 77.8	21901	2.50 µg/L	0.012
M3-PFBS	5.647	302.1 -> 79.9	24396	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	14953	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	14000	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2932	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4227	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4317	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	31725	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	40358	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	23812	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	70724	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	107846	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	11009	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	10039	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16026	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	74381	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	9881	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	103668	2.50 µg/L	0.000
13C2-PFDA	8.313	515.1 -> 470.1	31042	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	50813	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	60178	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2932	6.62 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 132.4%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4227	6.43 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4317	6.80 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.0%		
13C2-PFDoDA	9.211	615.1 -> 570.0	31316	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16366	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C3-PFBS	5.647	302.1 -> 79.9	24396	2.92 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 116.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	14953	2.84 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 = 113.6%	
13C4-PFBA	3.035	216.8 -> 171.9	202446	11.49 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C4-PFHpA	6.633	367.1 -> 322.0	69153	2.94 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.5%	
13C5-PFHxA	5.692	318.0 -> 273.0	72207	2.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C5-PFPeA	4.472	268.3 -> 223.0	63758	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C6-PFDA	8.313	519.1 -> 474.1	27033	1.55 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 124.1%	
13C7-PFUnDA	8.780	570.0 -> 525.1	33236	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.7%	
13C8-FOSA	9.687	506.1 -> 77.8	21901	1.96 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.2%	
13C8-PFOA	7.264	421.1 -> 376.0	110833	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.3%	
13C8-PFOS	8.476	507.1 -> 79.9	14000	3.08 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.1%	
13C9-PFNA	7.807	472.1 -> 427.0	48920	1.42 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.9%	
d3-MeFOSAA	8.346	573.2 -> 419.0	31725	6.38 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 127.5%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	40358	10.56 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d3-MeFOSA	10.763	515.0 -> 219.0	10039	1.94 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.5%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23812	6.02 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 120.5%	
d7-MeFOSE	10.672	623.2 -> 58.9	70724	17.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.8%	
d9-EtFOSE	10.918	639.2 -> 58.9	107846	22.53 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
d5-EtFOSA	10.983	531.1 -> 219.0	11009	2.07 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.8%	

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.	



7.2.1
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.738	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.1
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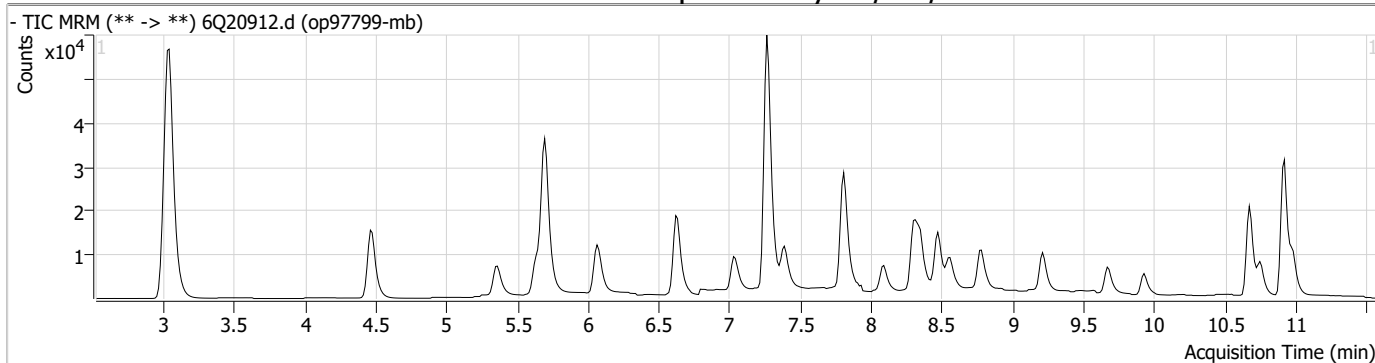
Perfluorinated Compounds by LC/MS/MS

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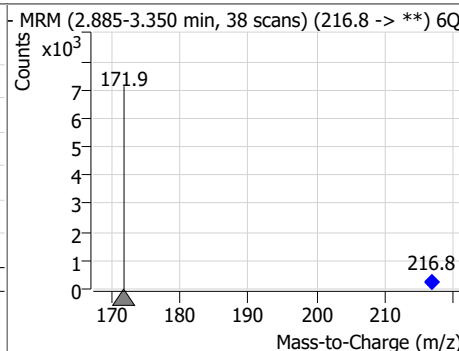
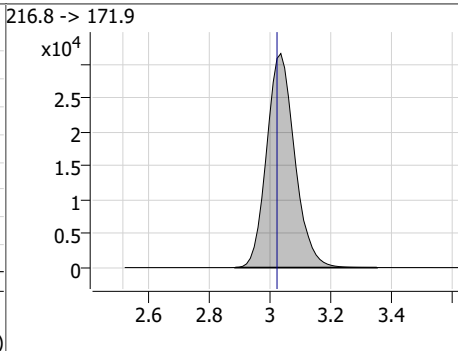
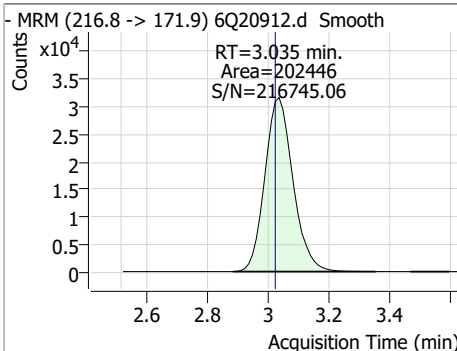
7.2.1

7

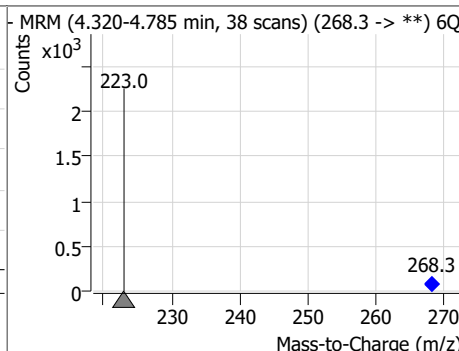
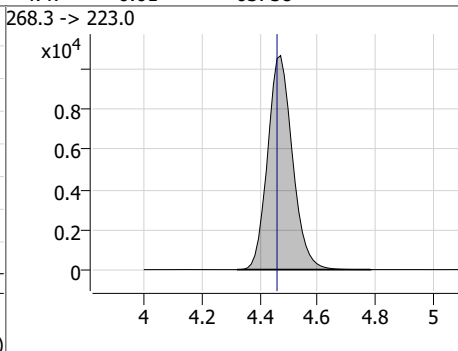
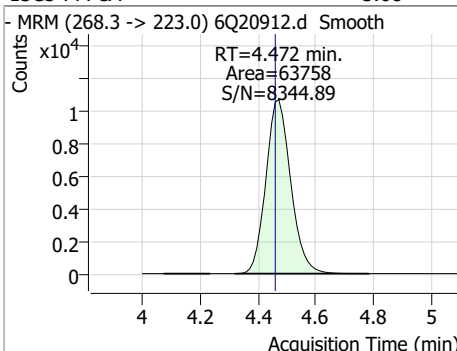
Perfluorinated Compounds by LC/MS/MS



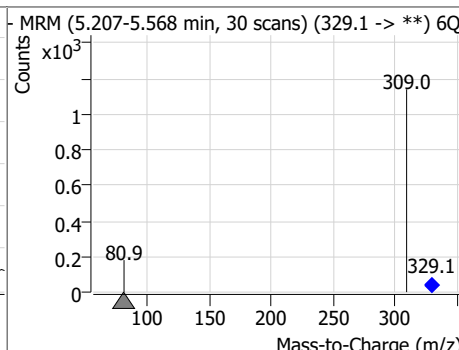
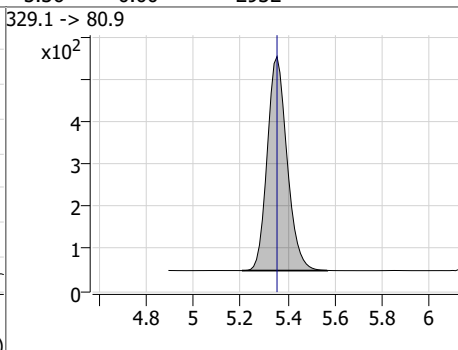
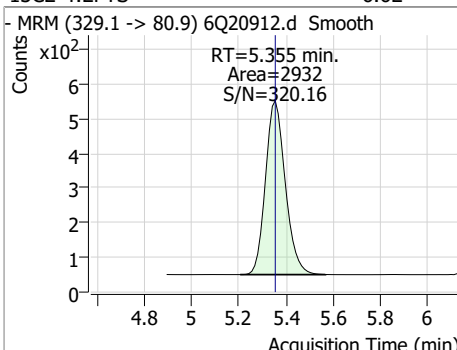
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.49	3.03	0.01	202446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.68	4.47	0.01	63758				

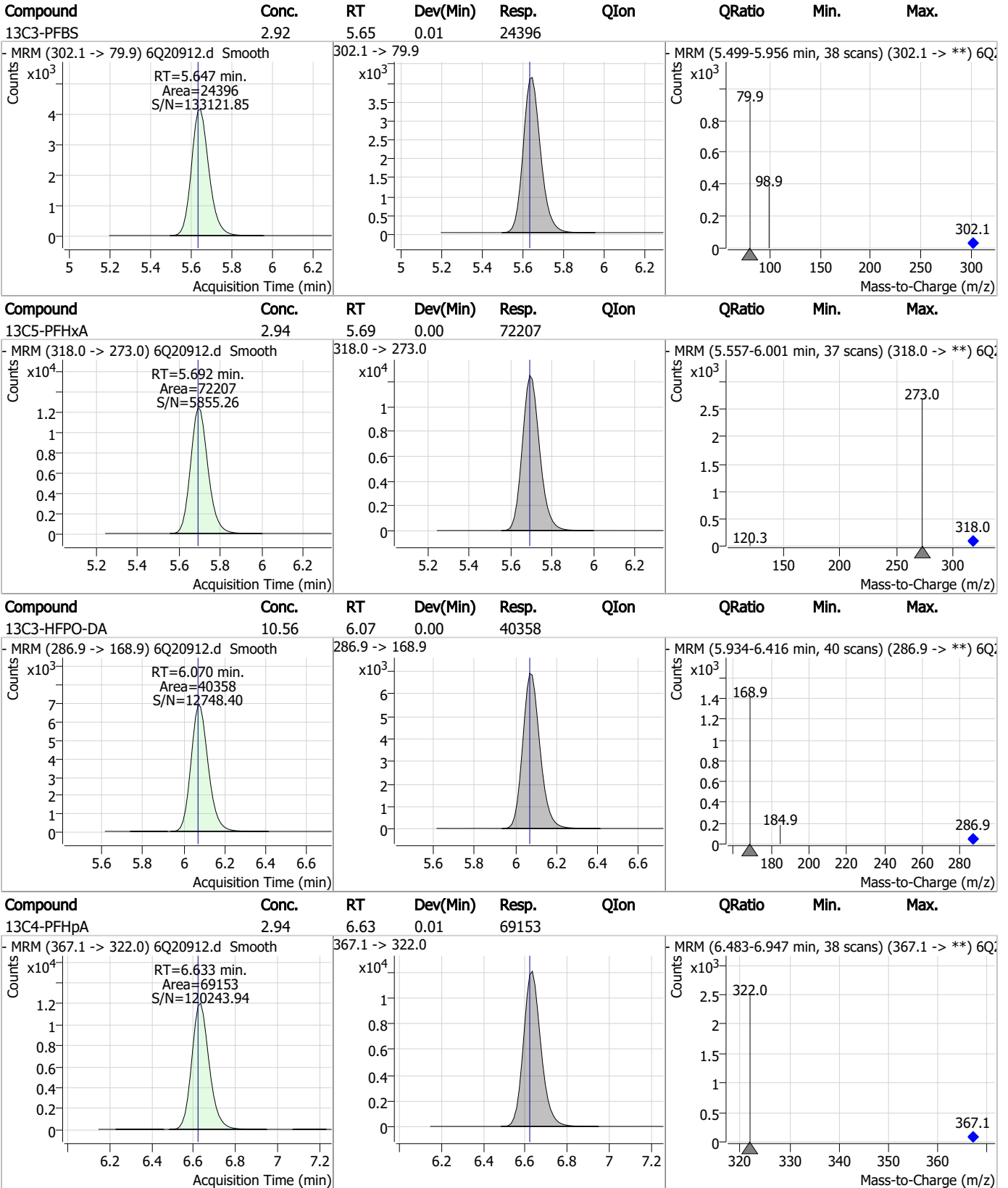


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.62	5.36	0.00	2932				



7.2.1
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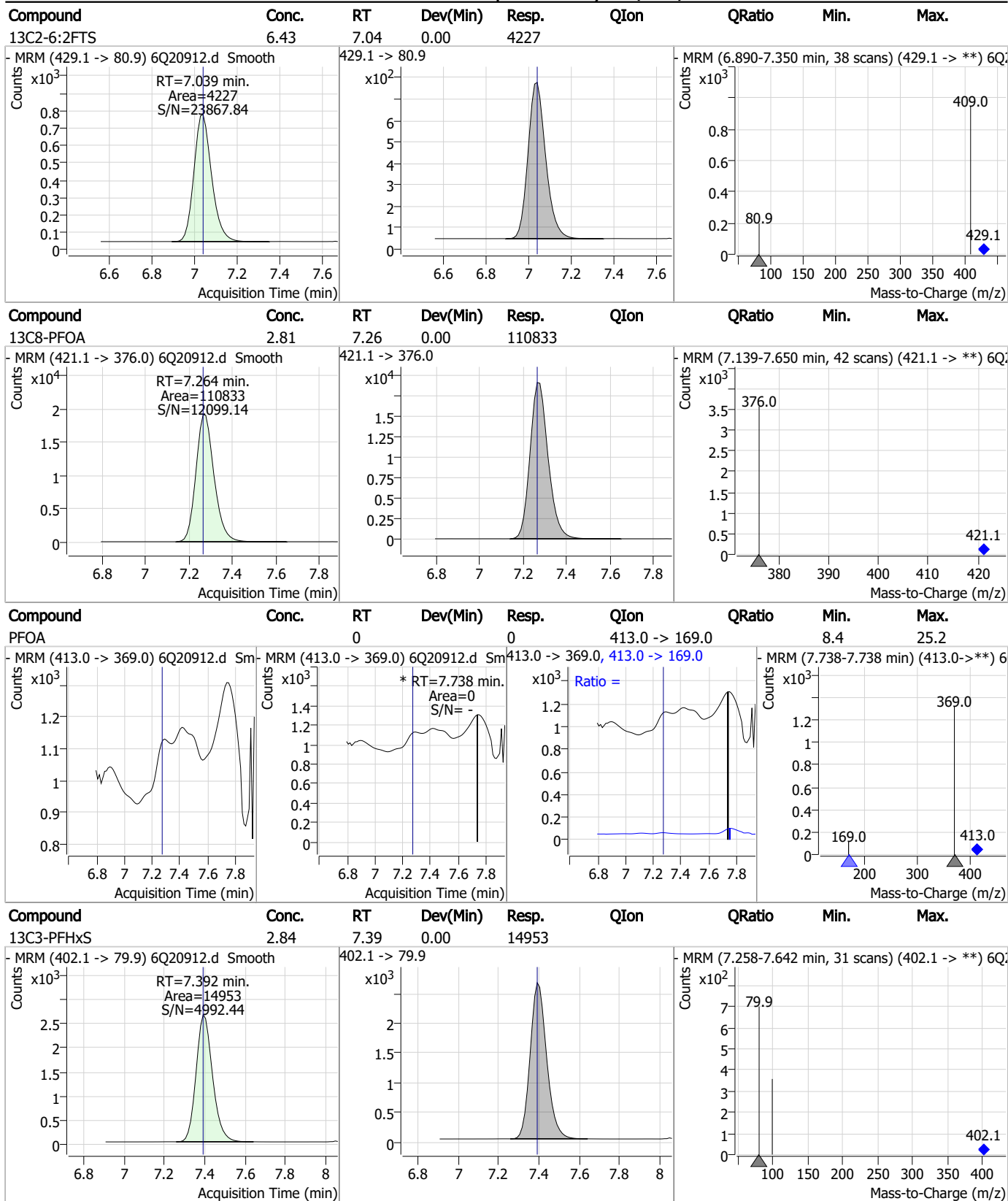
Perfluorinated Compounds by LC/MS/MS



7.2.1

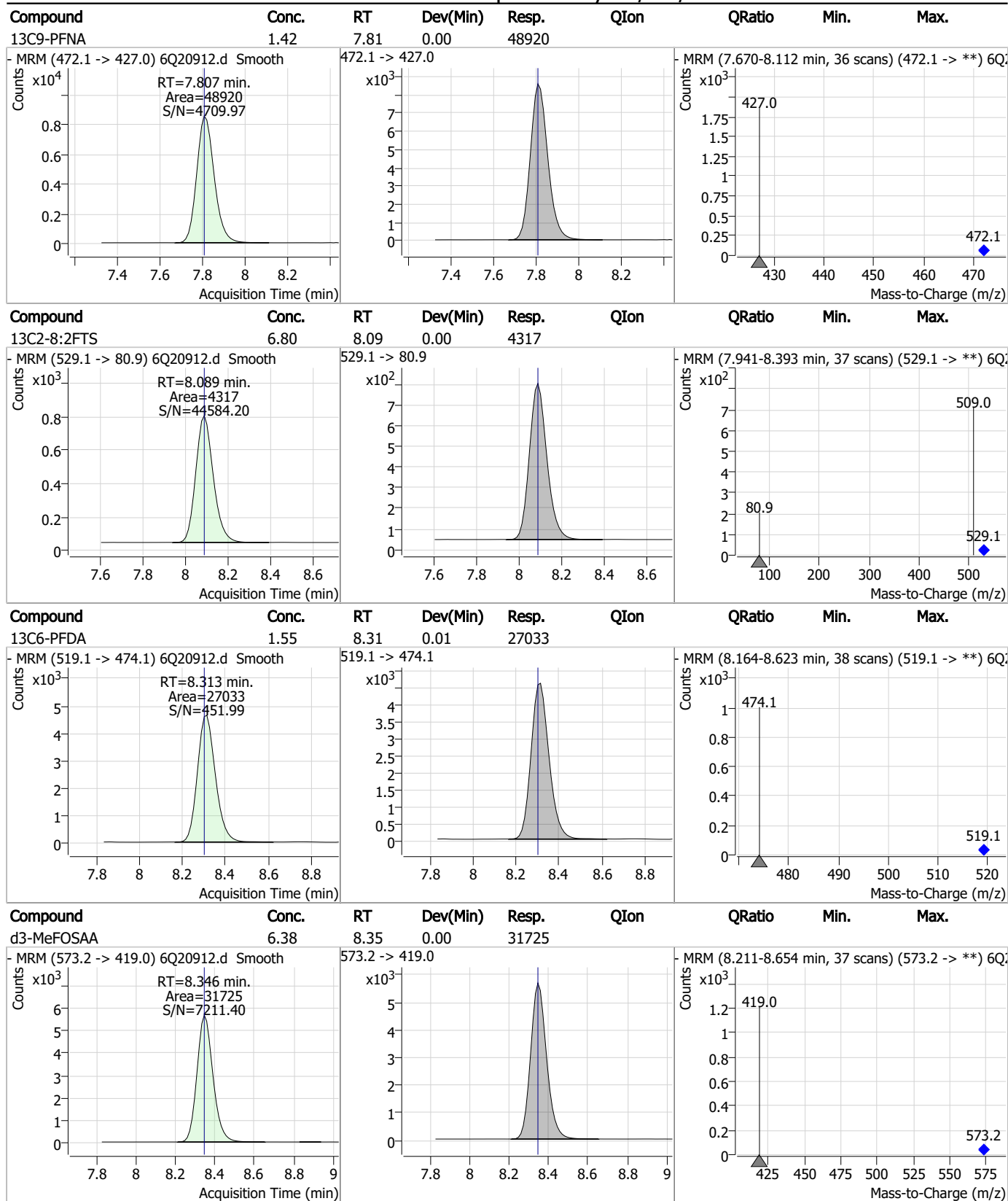
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Perfluorinated Compounds by LC/MS/MS



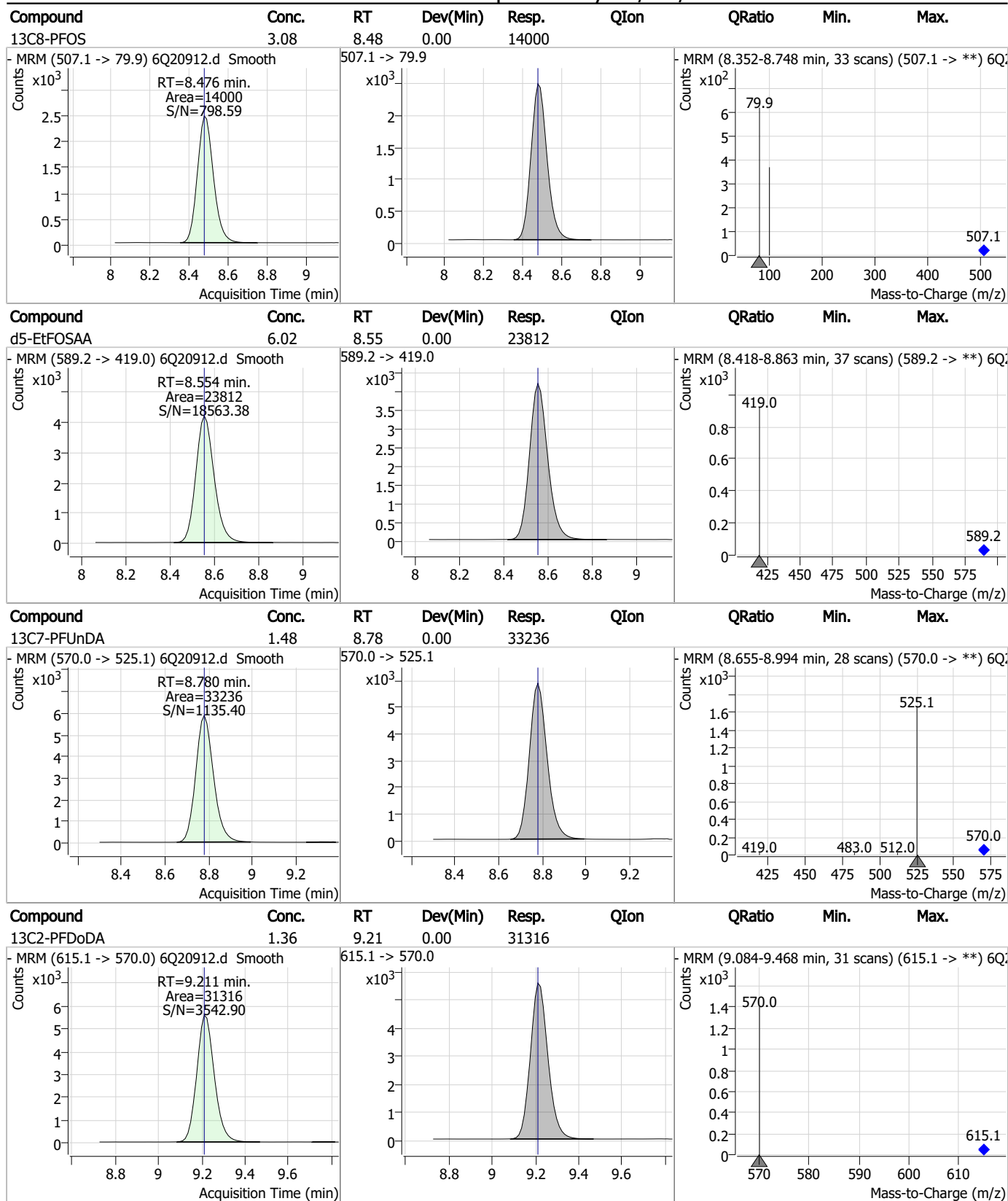
7.2.1
7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7

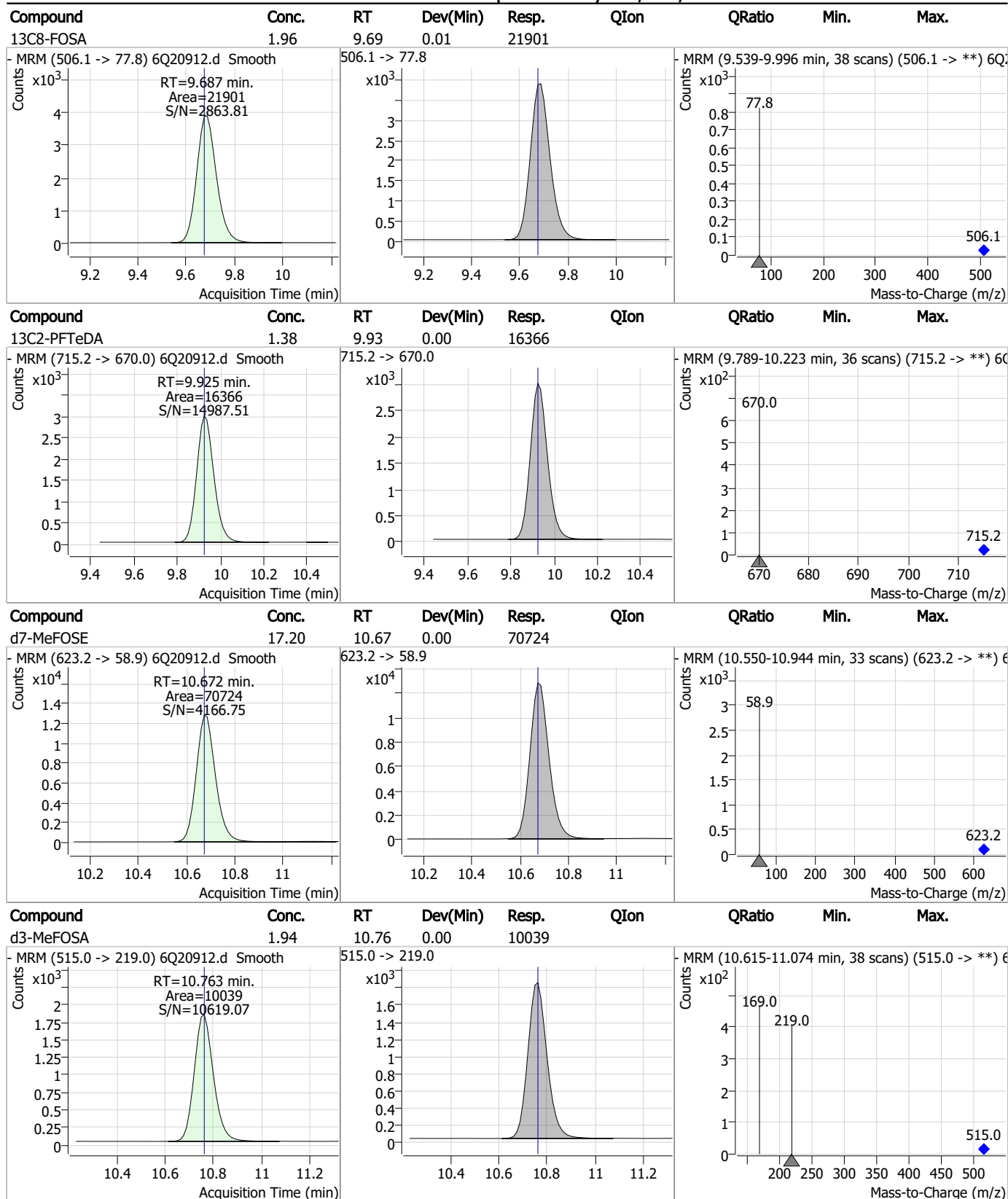
Perfluorinated Compounds by LC/MS/MS



7.2.1

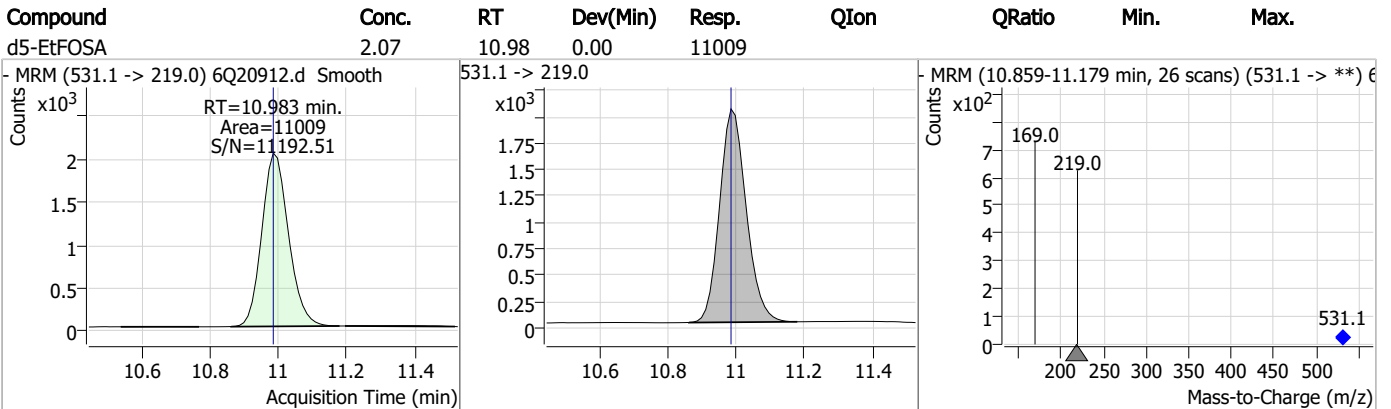
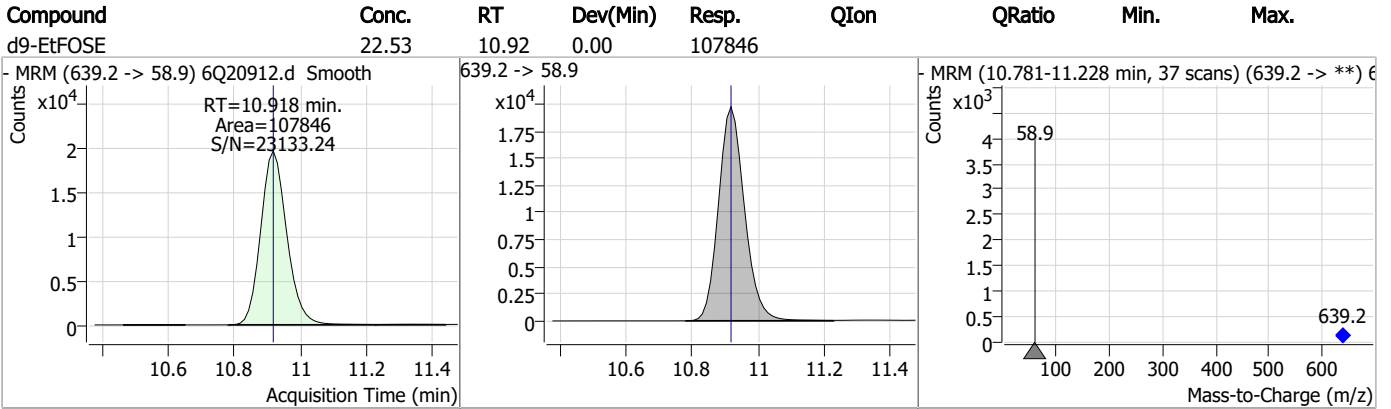
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Perfluorinated Compounds by LC/MS/MS



7.2.1
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Perfluorinated Compounds by LC/MS/MS



7.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20892.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 10:53:03 AM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	182542	10.00 µg/L	0.012
M5-PFPeA	4.459	268.3 -> 223.0	58954	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	61081	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	59563	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	98140	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	45258	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	21967	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	32934	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	29163	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16156	1.25 µg/L	0.000
M8-FOSA	9.687	506.1 -> 77.8	32903	2.50 µg/L	0.012
M3-PFBS	5.635	302.1 -> 79.9	22050	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14498	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	13327	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2625	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	3660	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	3847	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	29172	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	36753	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	23477	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	113882	25.00 µg/L	0.012
M9-EtFOSE	10.918	639.2 -> 58.9	140995	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14797	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13526	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	18075	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	77783	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	10474	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	105921	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	33939	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	55423	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	62342	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2625	5.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.8%		
13C2-6:2FTS	7.026	429.1 -> 80.9	3660	5.25 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3847	5.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.3%		
13C2-PFDoDA	9.211	615.1 -> 570.0	29163	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.9%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16156	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFBS	5.635	302.1 -> 79.9	22050	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.5%		
13C3-PFHxS	7.392	402.1 -> 79.9	14498	2.60 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 = 103.9%	
13C4-PFBA	3.035	216.8 -> 171.9	182542	9.90 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	6.621	367.1 -> 322.0	59563	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C5-PFHxA	5.692	318.0 -> 273.0	61081	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	58954	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C6-PFDA	8.301	519.1 -> 474.1	21967	1.15 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C7-PFUnDA	8.780	570.0 -> 525.1	32934	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C8-FOSA	9.687	506.1 -> 77.8	32903	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-PFOA	7.264	421.1 -> 376.0	98140	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.476	507.1 -> 79.9	13327	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C9-PFNA	7.807	472.1 -> 427.0	45258	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%	
d3-MeFOSAA	8.346	573.2 -> 419.0	29172	5.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	36753	9.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	13526	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23477	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
d7-MeFOSE	10.685	623.2 -> 58.9	113882	24.56 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d9-EtFOSE	10.918	639.2 -> 58.9	140995	26.11 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d5-EtFOSA	10.983	531.1 -> 219.0	14797	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	

7.22
7

Target Compounds

QValue

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



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	7.762	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

7.2.2
7

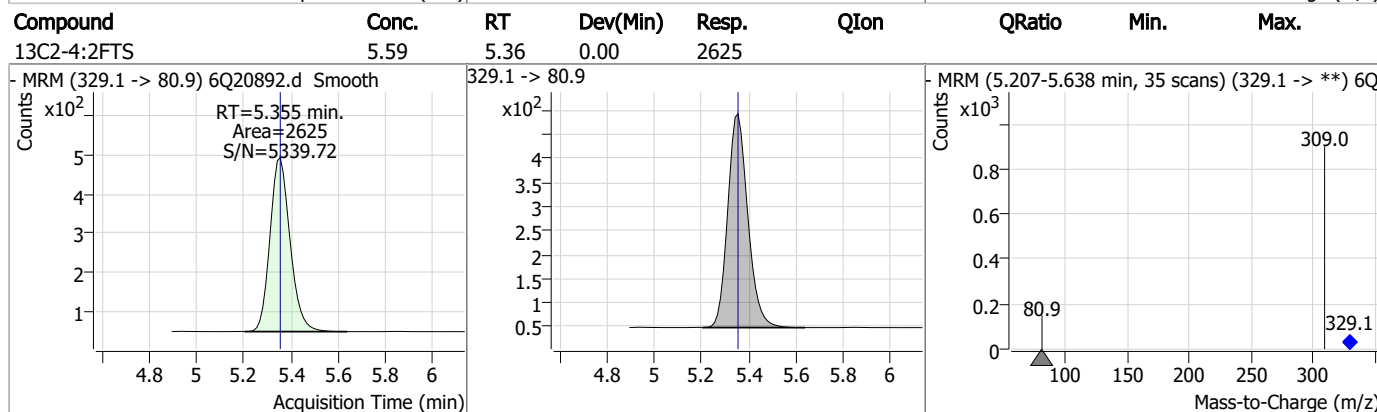
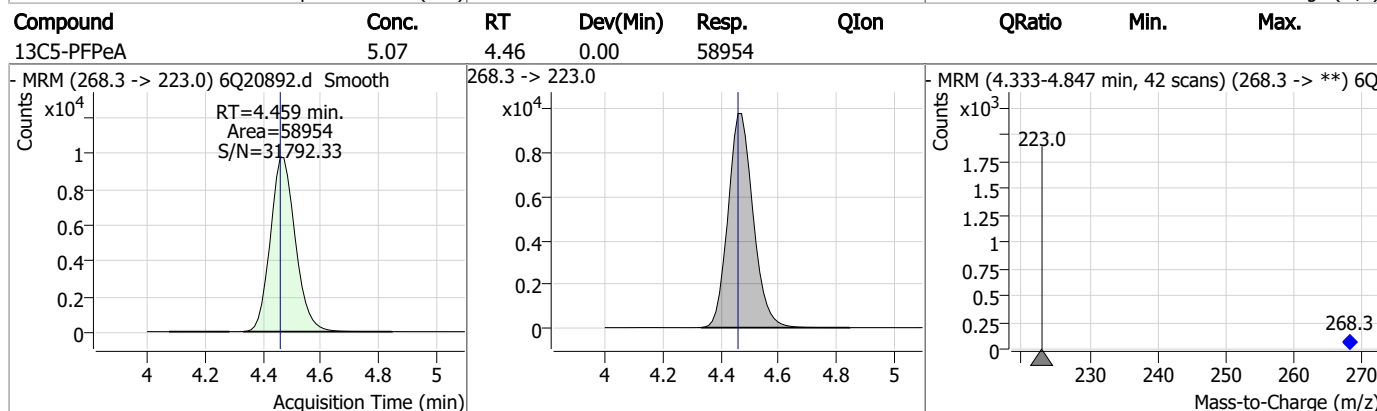
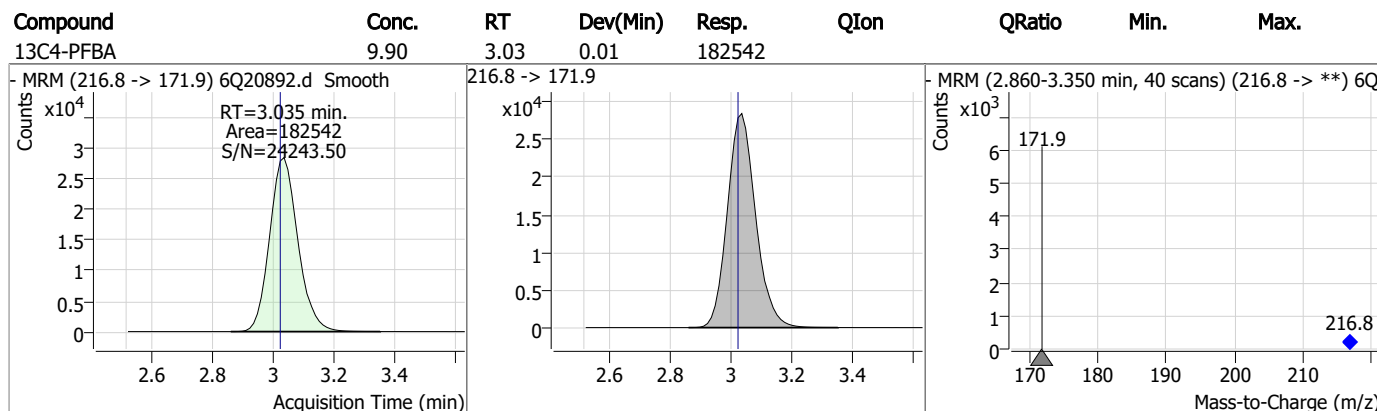
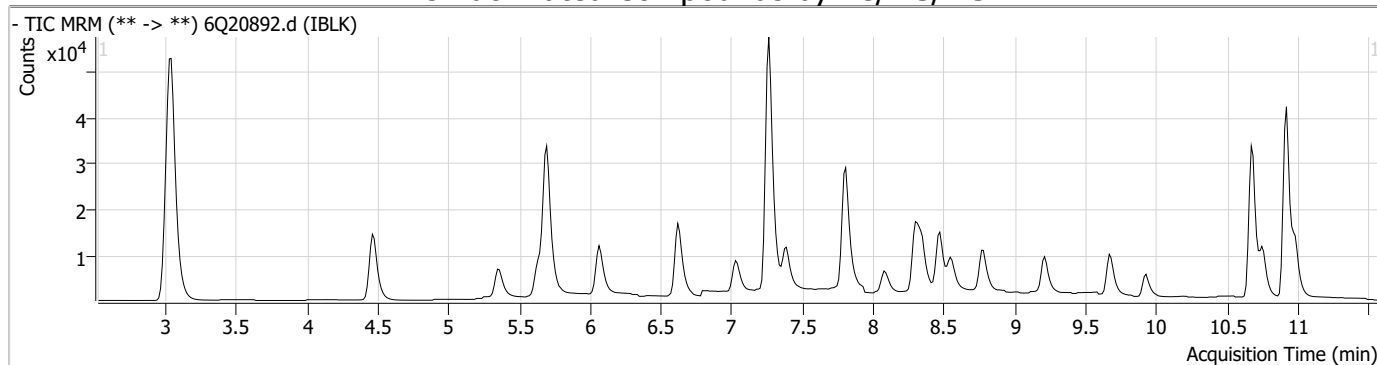
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



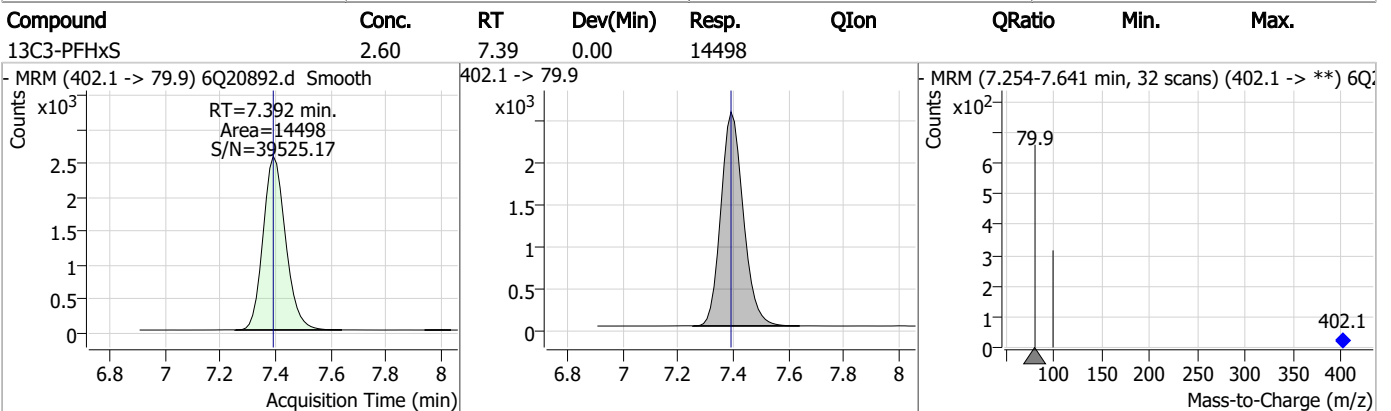
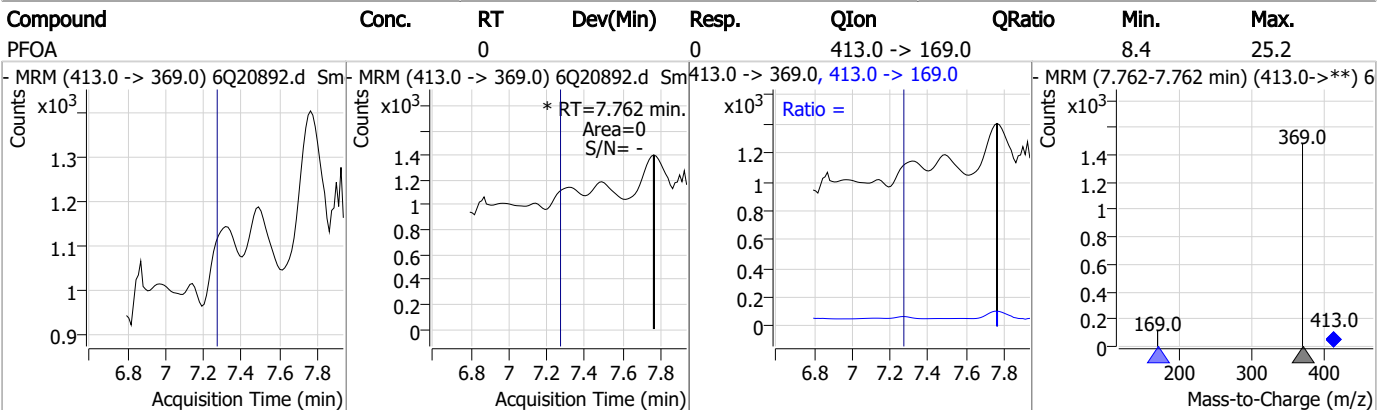
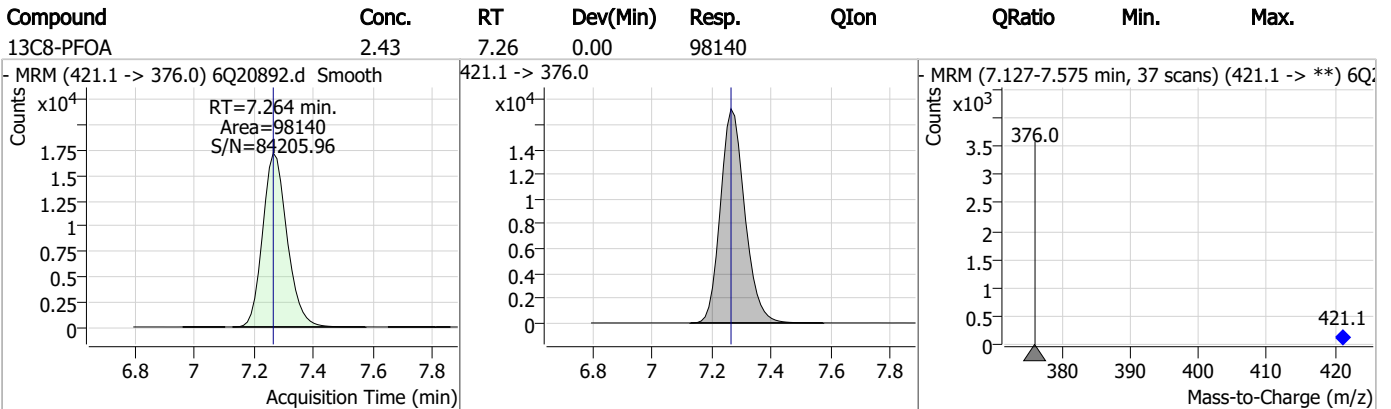
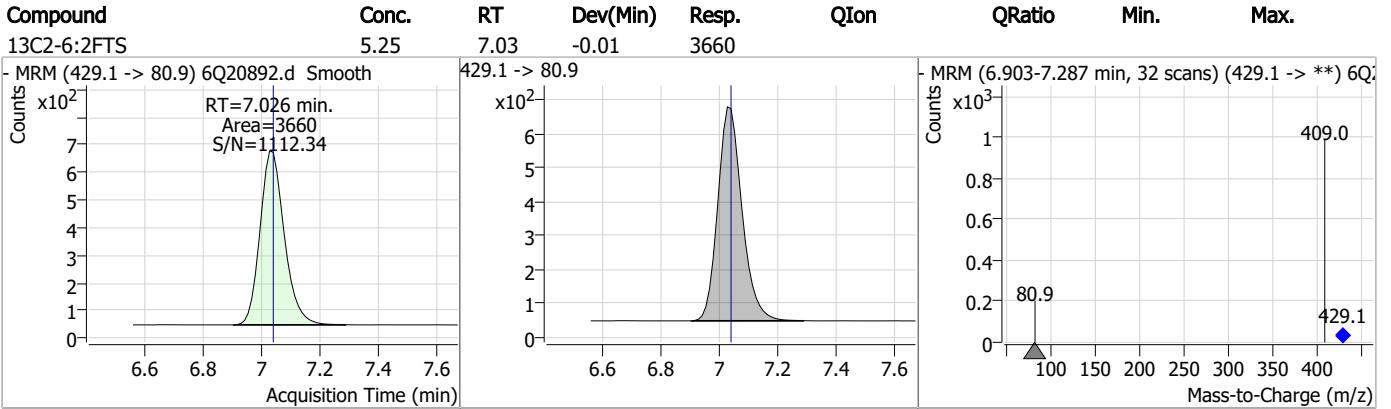
7.2.2
7

Perfluorinated Compounds by LC/MS/MS

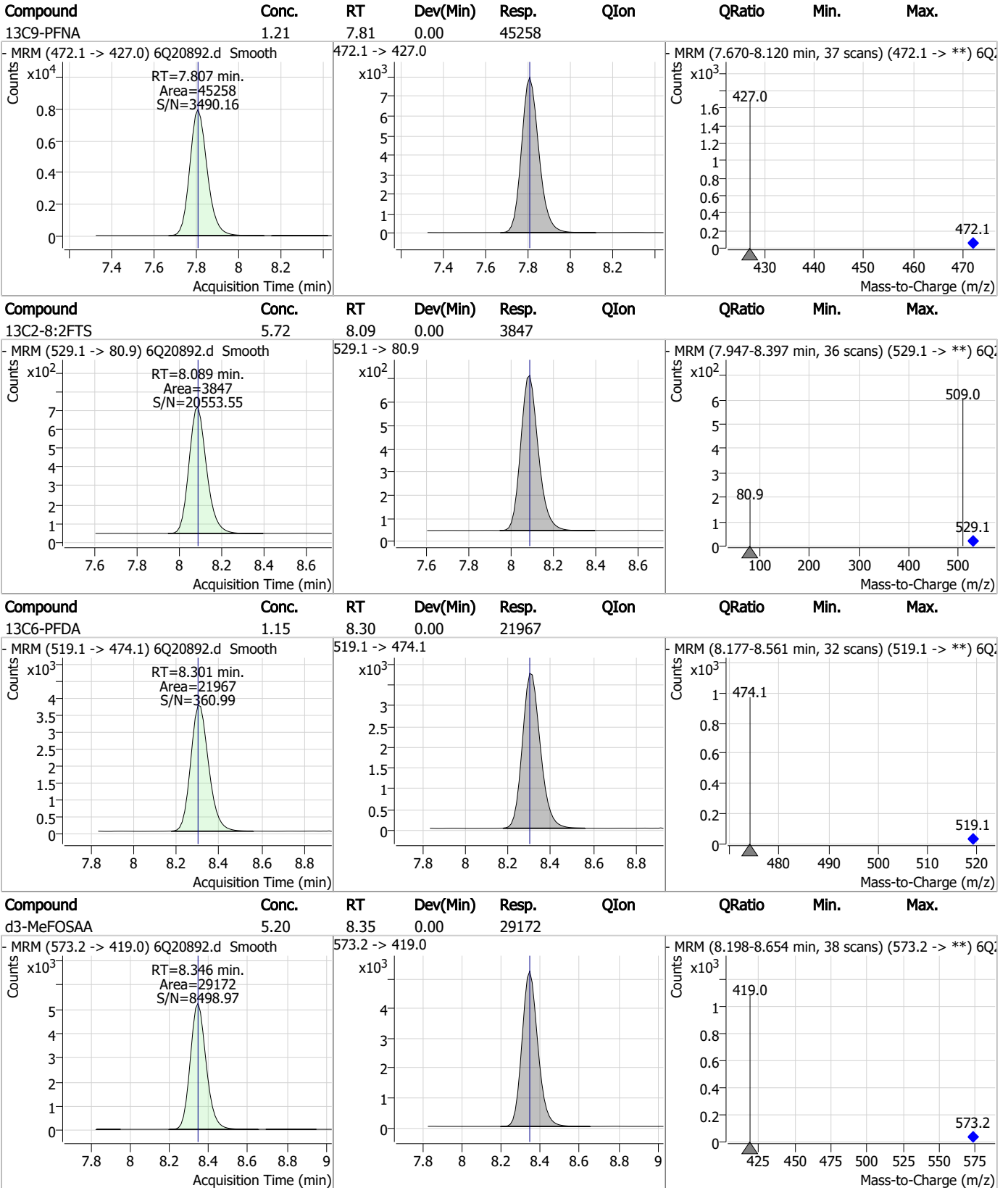
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.63	0.00	22050				
13C5-PFHxA	2.40	5.69	0.00	61081				
13C3-HFPO-DA	9.29	6.07	0.00	36753				
13C4-PFHpA	2.44	6.62	0.00	59563				

7.2.2
7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

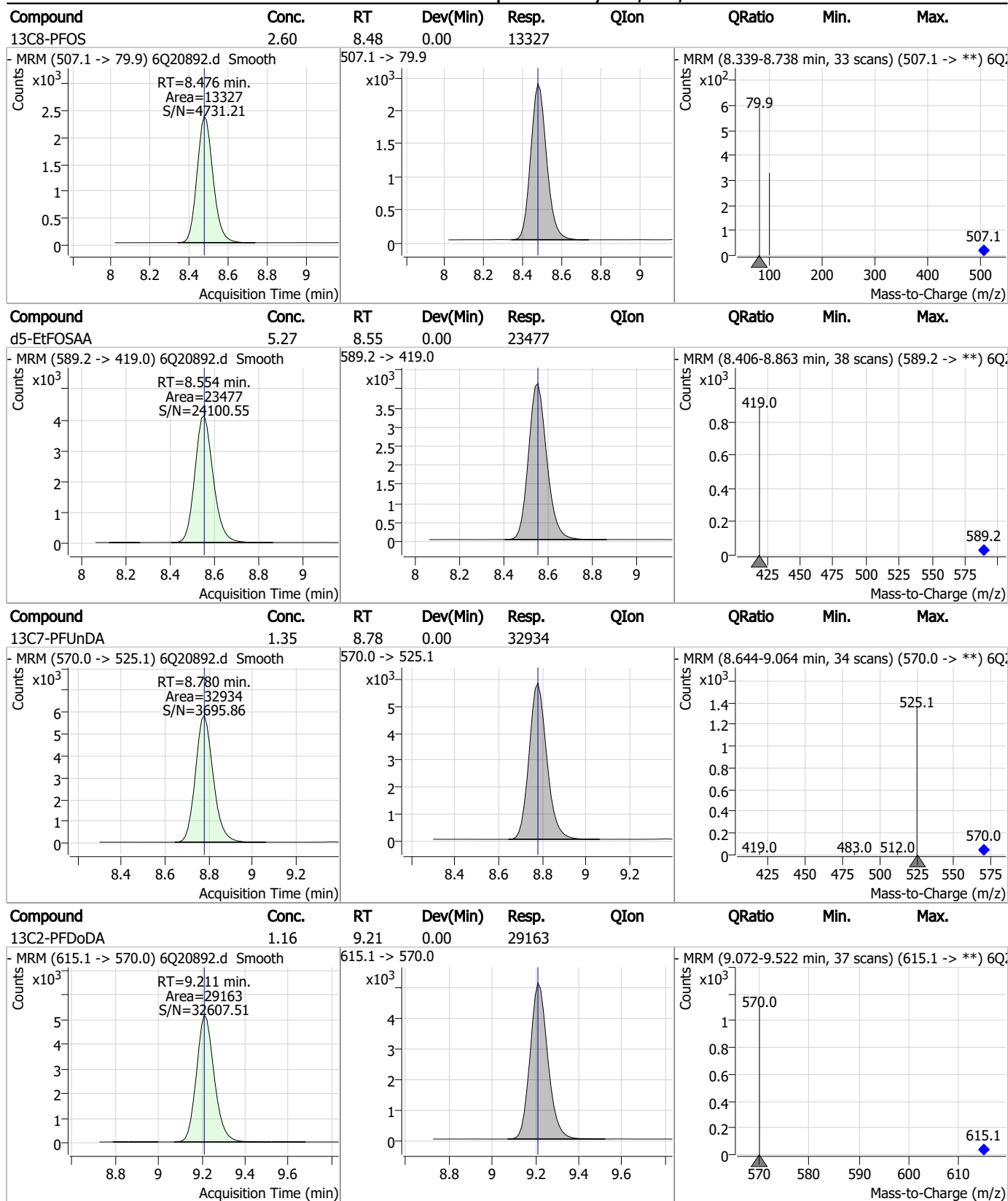


7.2.2

7

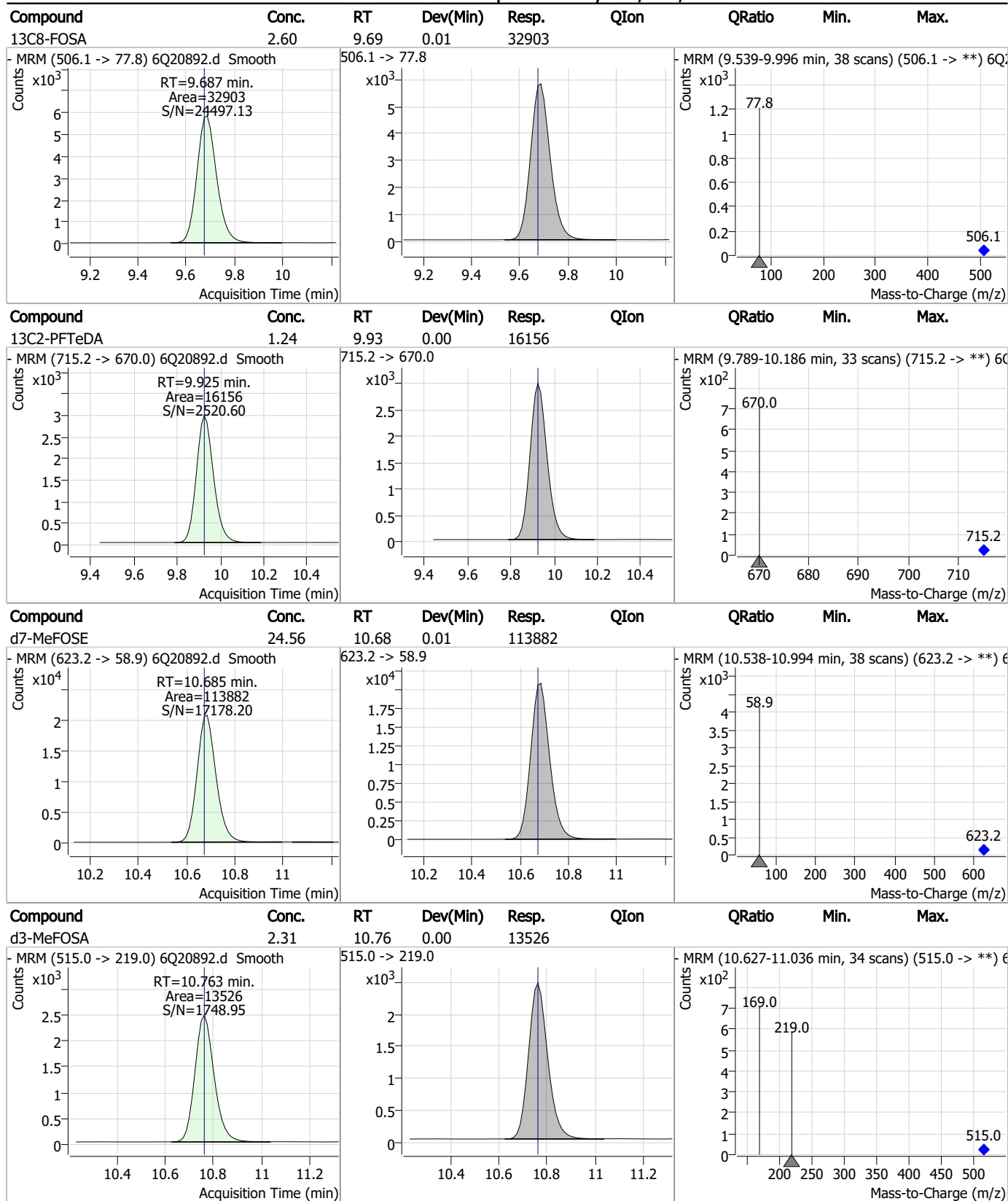


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

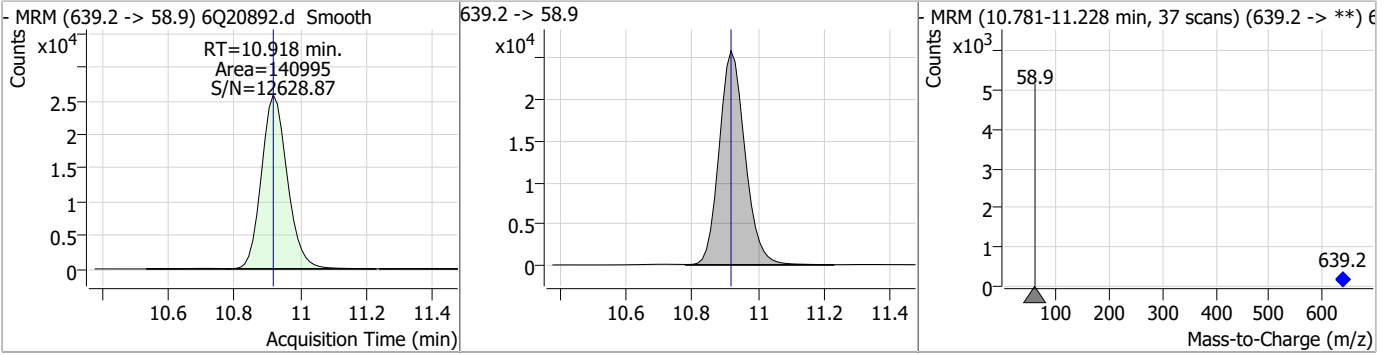


7.2.2
7

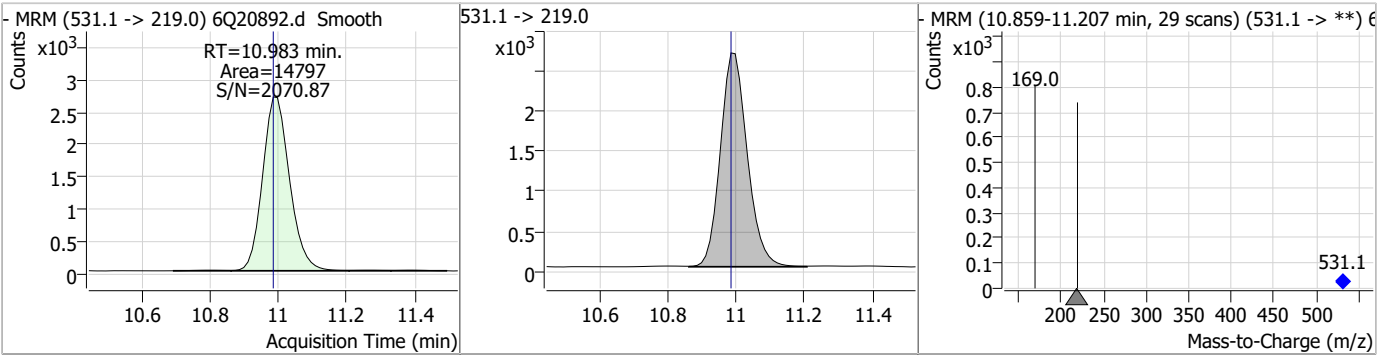


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.11	10.92	0.00	140995				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOFA	2.47	10.98	0.00	14797				



7.2.2

7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20918.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 4:56:34 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	182217	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	57600	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	61005	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	57650	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	91494	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	46620	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	23594	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	33973	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	30008	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16546	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	31675	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	20651	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	15018	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12013	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2785	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4031	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	3882	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	29251	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	36171	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	24143	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	111582	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	147116	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14483	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13710	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	17605	2.50 µg/L	0.000
13C3-PFBA	3.039	216.0 -> 172.0	77302	5.00 µg/L	0.012
18O2-PFHxS	7.391	403.0 -> 83.9	10197	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	99902	2.50 µg/L	0.000
13C2-PFDA	8.313	515.1 -> 470.1	34736	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	50198	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	61879	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2785	6.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.9%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4031	5.94 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.8%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3882	5.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 118.5%		
13C2-PFDoDA	9.211	615.1 -> 570.0	30008	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.4%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16546	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.4%		
13C3-PFBS	5.647	302.1 -> 79.9	20651	2.39 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	15018	2.76 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 = 110.5%	
13C4-PFBA	3.035	216.8 -> 171.9	182217	9.95 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.633	367.1 -> 322.0	57650	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C5-PFHxA	5.692	318.0 -> 273.0	61005	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFPeA	4.472	268.3 -> 223.0	57600	4.99 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	8.301	519.1 -> 474.1	23594	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C7-PFUnDA	8.780	570.0 -> 525.1	33973	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C8-FOSA	9.674	506.1 -> 77.8	31675	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-PFOA	7.264	421.1 -> 376.0	91494	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOS	8.476	507.1 -> 79.9	12013	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C9-PFNA	7.807	472.1 -> 427.0	46620	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.9%	
d3-MeFOSAA	8.346	573.2 -> 419.0	29251	5.35 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	36171	9.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.1%	
d3-MeFOSA	10.763	515.0 -> 219.0	13710	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
d5-EtFOSAA	8.554	589.2 -> 419.0	24143	5.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
d7-MeFOSE	10.672	623.2 -> 58.9	111582	24.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
d9-EtFOSE	10.918	639.2 -> 58.9	147116	27.97 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 111.9%	
d5-EtFOSA	10.983	531.1 -> 219.0	14483	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.1%	

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

7.2.3
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	8.256	398.7 -> 98.9	0	µg/L	m	1
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	0	N.D.		
		548.8 -> 79.9				
PFOA	7.750	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	0	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.2.3
7

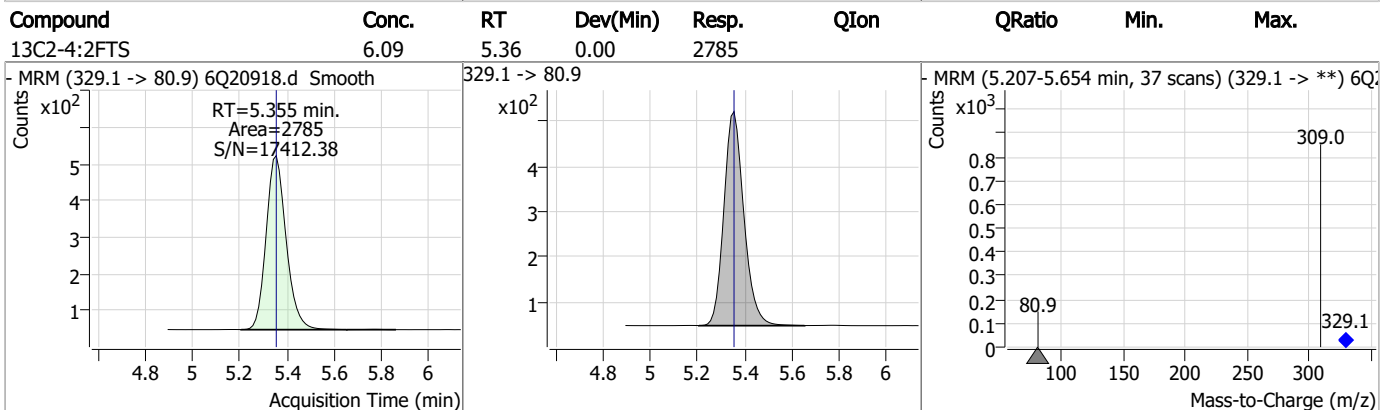
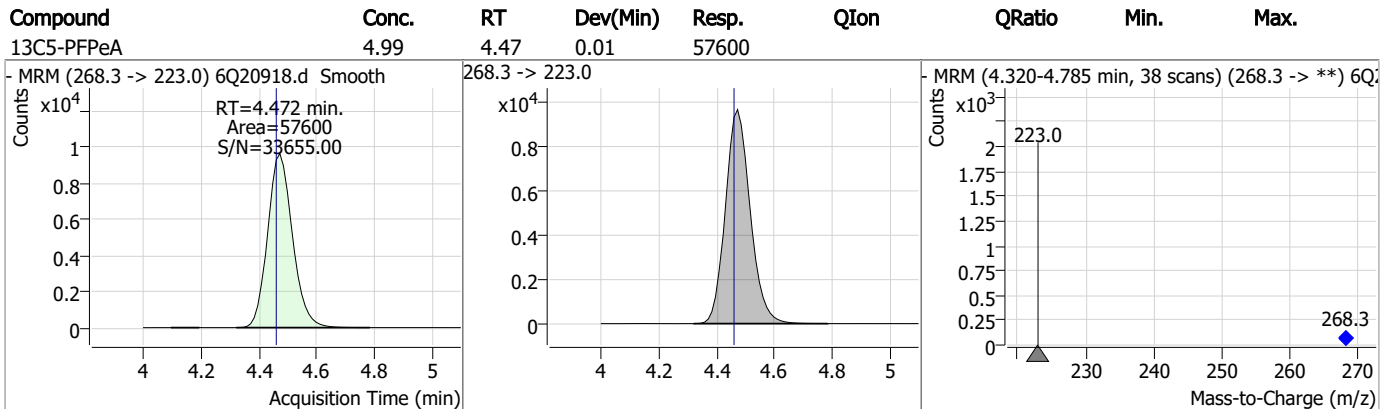
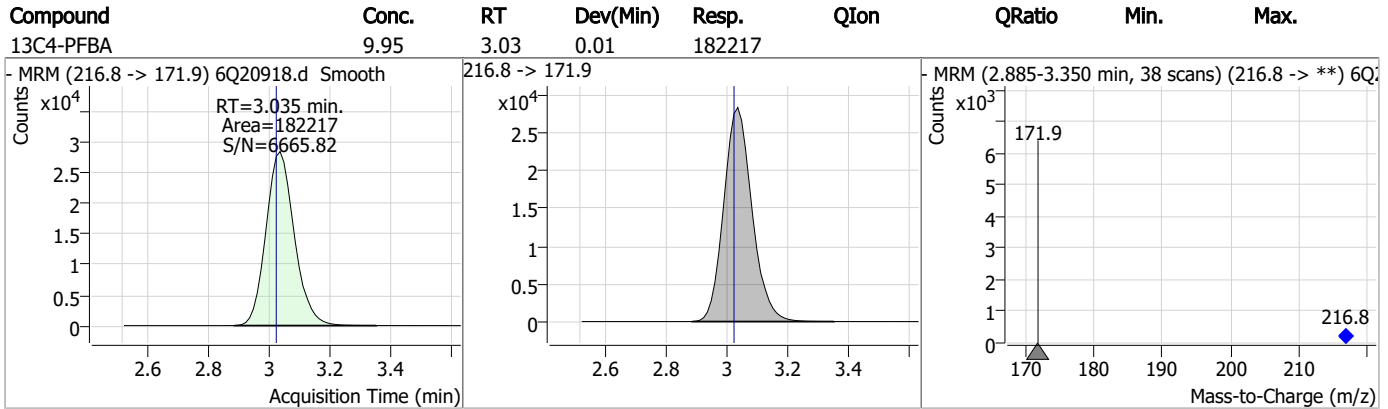
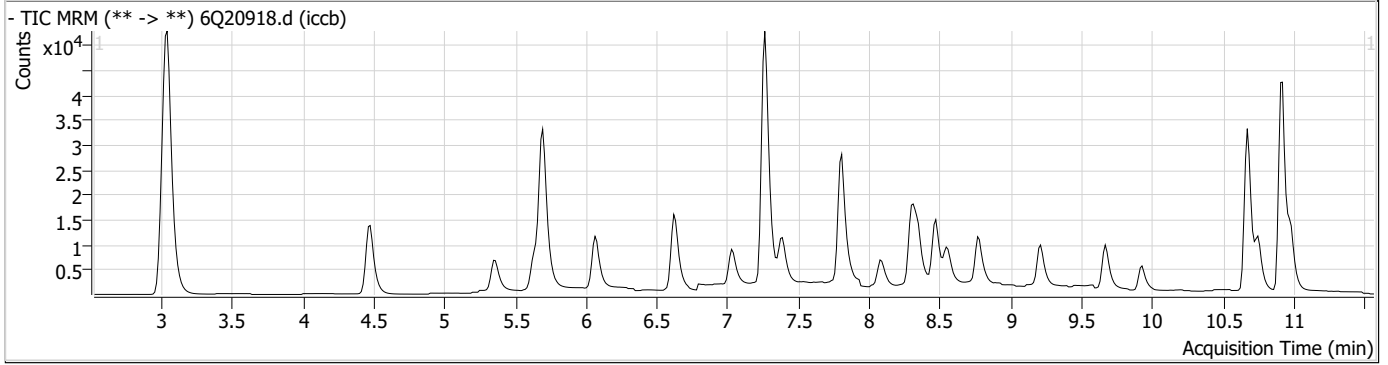
Perfluorinated Compounds by LC/MS/MS

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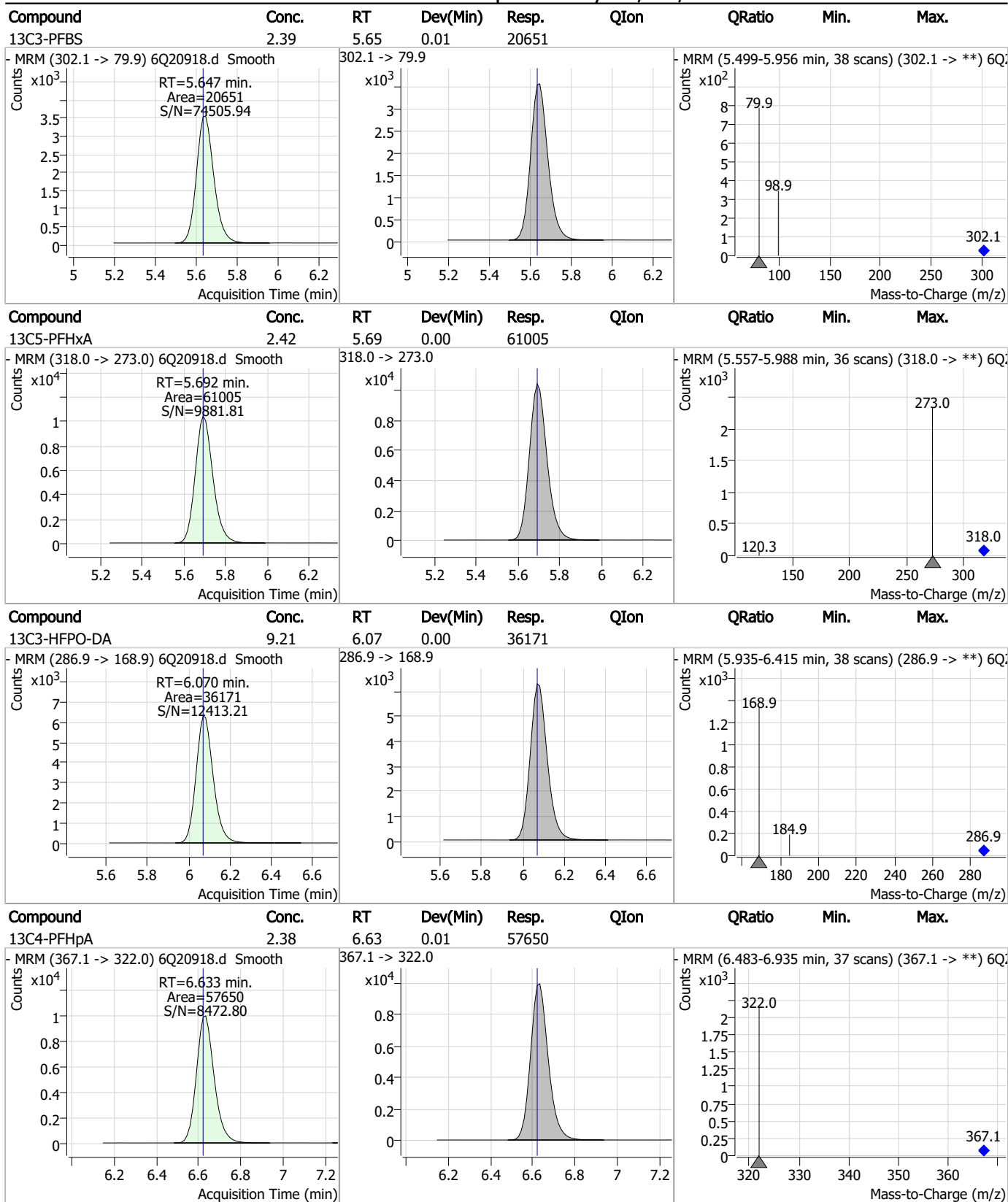
7.2.3

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Perfluorinated Compounds by LC/MS/MS

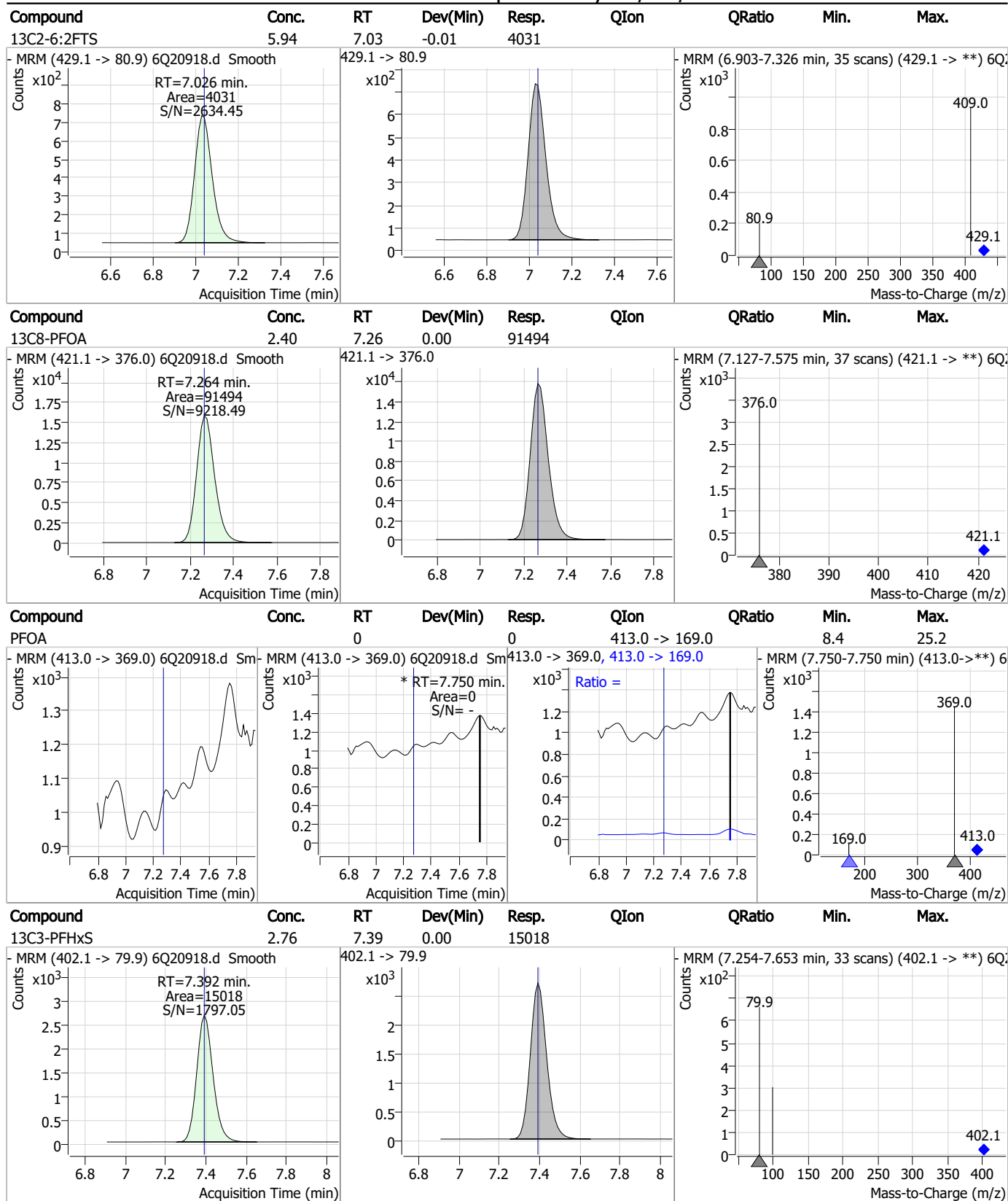


Perfluorinated Compounds by LC/MS/MS



7.2.3
7

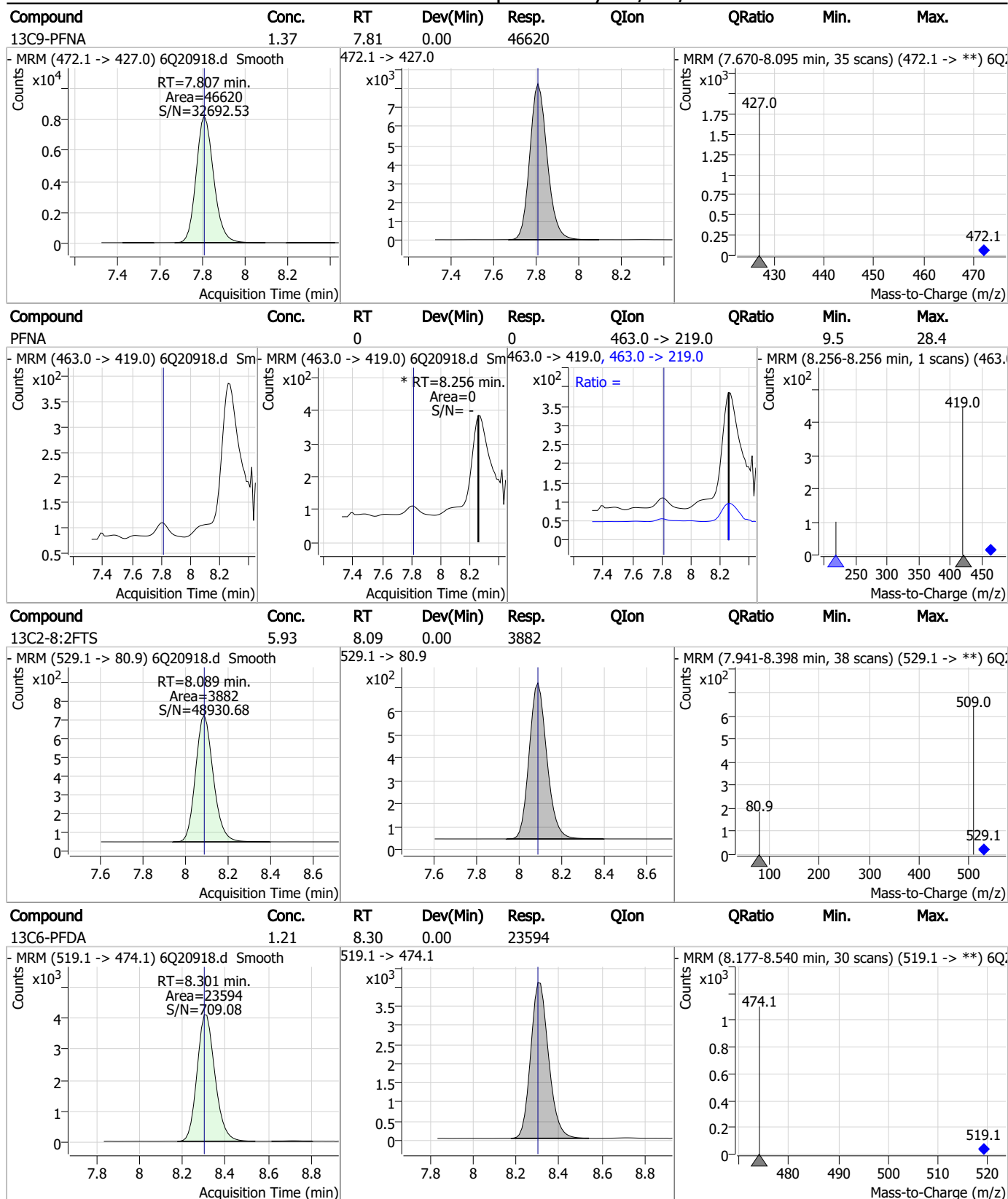
Perfluorinated Compounds by LC/MS/MS



7.2.3
7

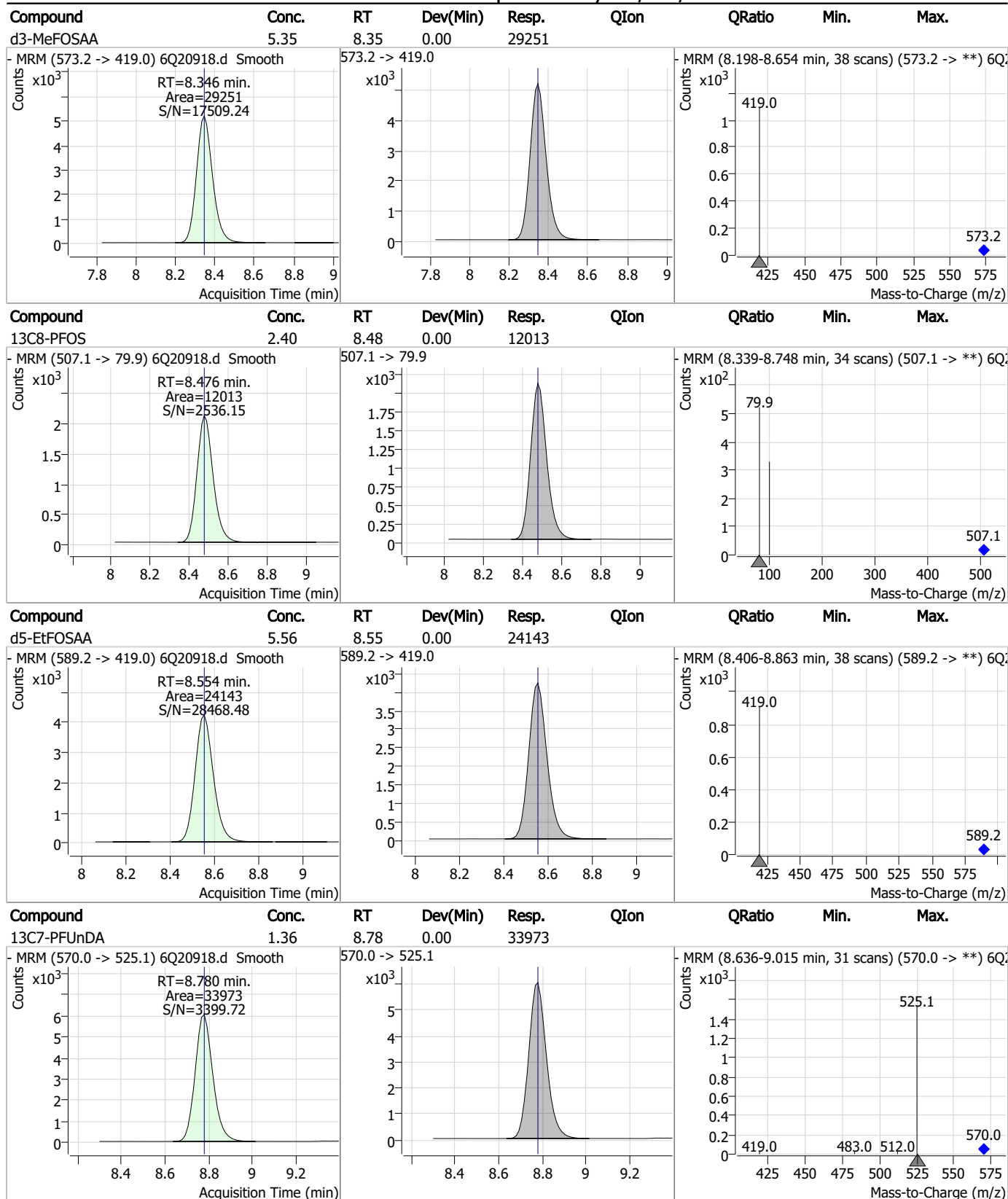


Perfluorinated Compounds by LC/MS/MS



7.2.3
7

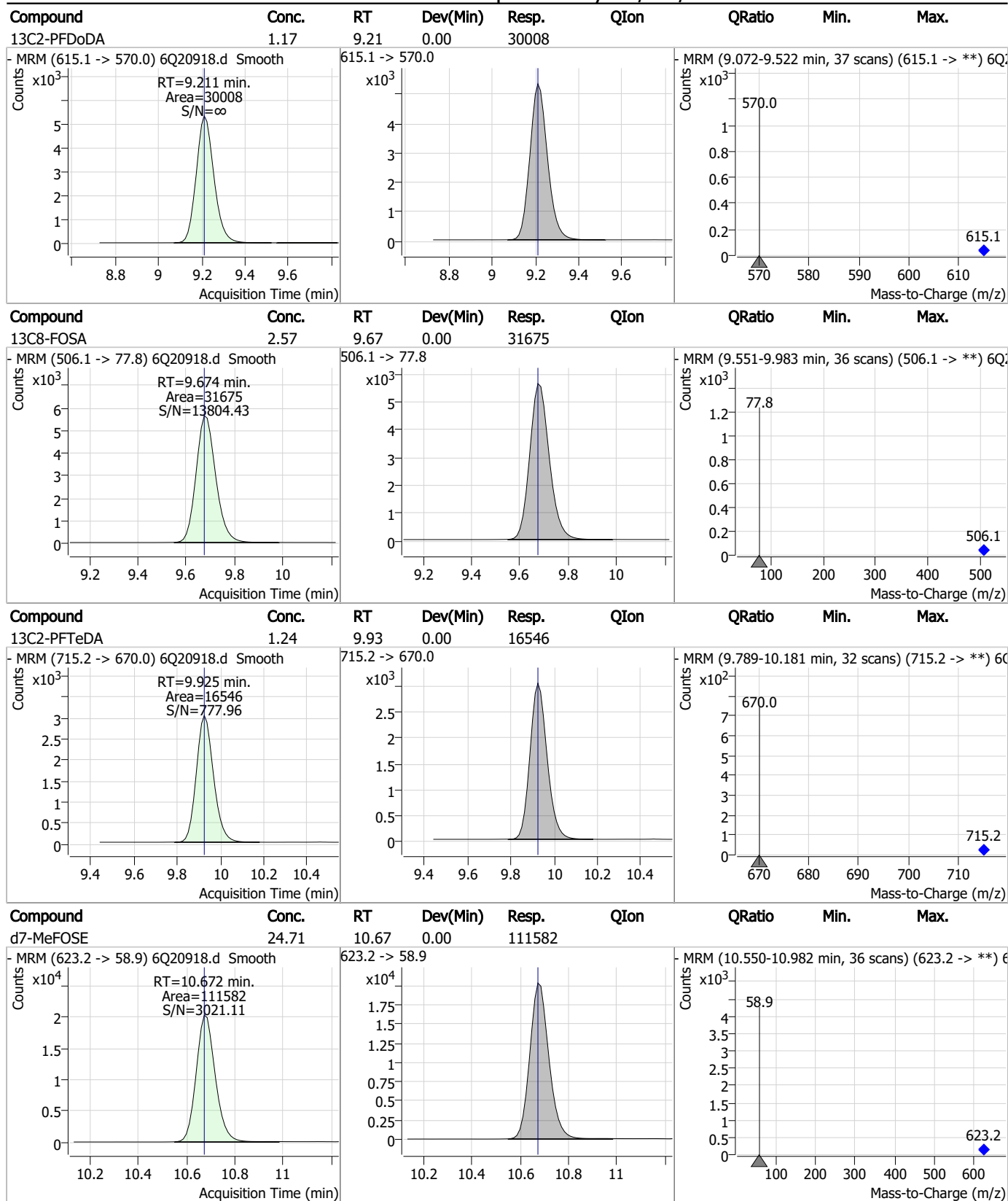
Perfluorinated Compounds by LC/MS/MS



7.2.3
7



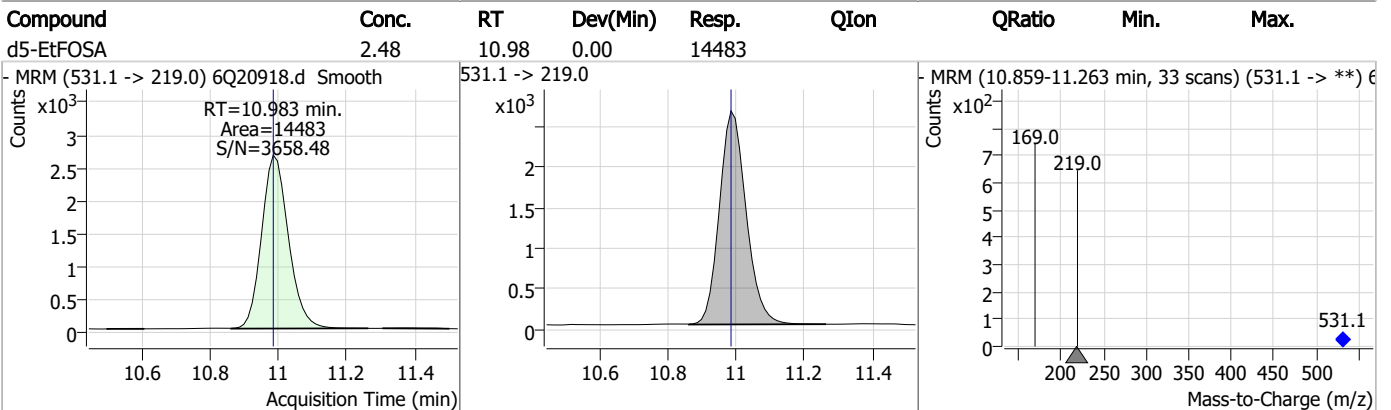
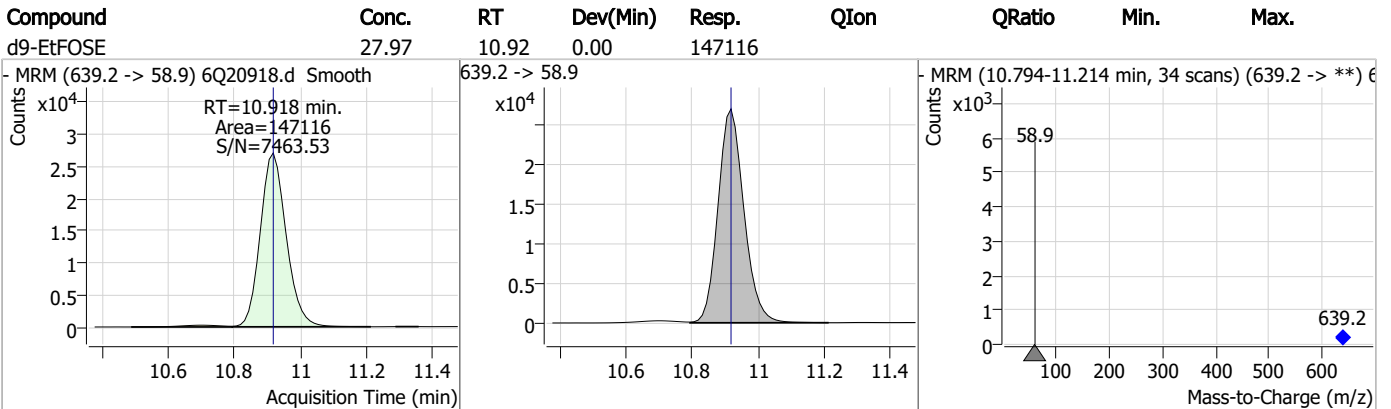
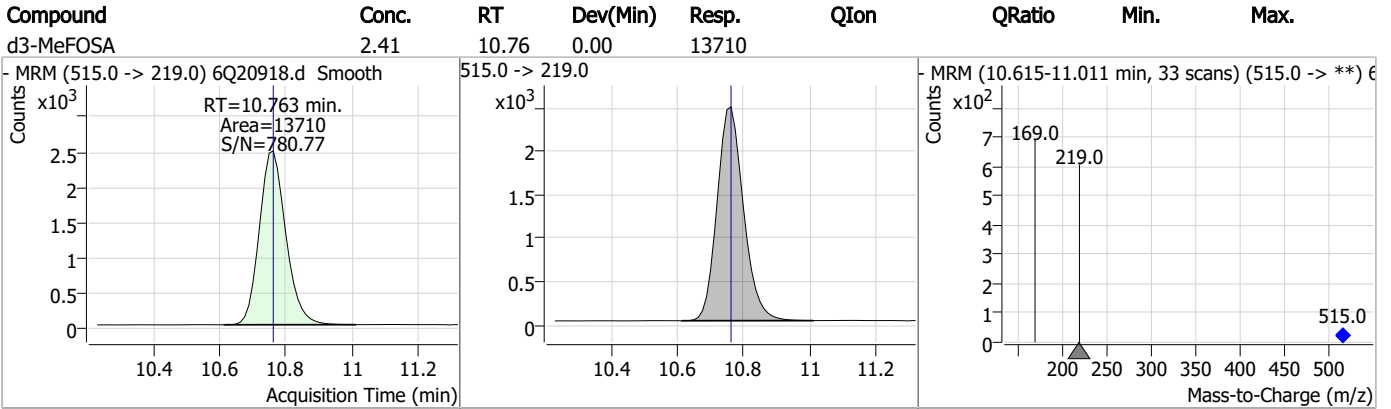
Perfluorinated Compounds by LC/MS/MS



7.2.3

7

Perfluorinated Compounds by LC/MS/MS



7.2.3

7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20984.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 8:19:19 AM
 Sample Name : IBLK
 Vial : P1-A1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	180327	10.00 µg/L	0.012
M5-PFPeA	4.459	268.3 -> 223.0	57429	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	60633	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	62652	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	95996	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	43714	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	25044	1.25 µg/L	0.000
M7-PFUnDA	8.768	570.0 -> 525.1	31521	1.25 µg/L	-0.012
M2-PFDoDA	9.211	615.1 -> 570.0	29144	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16758	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	31474	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	21797	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14232	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12846	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2791	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4110	5.00 µg/L	-0.012
M2-8:2FTS	8.077	529.1 -> 80.9	4274	5.00 µg/L	-0.012
M3-MeFOSAA	8.346	573.2 -> 419.0	28771	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	34947	10.00 µg/L	0.000
M5-EtFOSAA	8.541	589.2 -> 419.0	22370	5.00 µg/L	-0.012
M7-MeFOSE	10.672	623.2 -> 58.9	114073	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	149317	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15526	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13944	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16116	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	76730	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	10317	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	109159	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	34987	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	52465	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	60593	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2791	6.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.7%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4110	5.98 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.7%		
13C2-8:2FTS	8.077	529.1 -> 80.9	4274	6.45 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 128.9%		
13C2-PFDoDA	9.211	615.1 -> 570.0	29144	1.13 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.0%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16758	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.9%		
13C3-PFBS	5.635	302.1 -> 79.9	21797	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C3-PFHxS	7.392	402.1 -> 79.9	14232	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 = 103.5%	
13C4-PFBA	3.035	216.8 -> 171.9	180327	9.92 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.621	367.1 -> 322.0	62652	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C5-PFHxA	5.692	318.0 -> 273.0	60633	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	57429	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.301	519.1 -> 474.1	25044	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C7-PFUnDA	8.768	570.0 -> 525.1	31521	1.25 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C8-FOSA	9.674	506.1 -> 77.8	31474	2.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.8%	
13C8-PFOA	7.264	421.1 -> 376.0	95996	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C8-PFOS	8.476	507.1 -> 79.9	12846	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.4%	
13C9-PFNA	7.807	472.1 -> 427.0	43714	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
d3-MeFOSAA	8.346	573.2 -> 419.0	28771	5.75 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.0%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	34947	9.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	13944	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
d5-EtFOSAA	8.541	589.2 -> 419.0	22370	5.63 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.5%	
d7-MeFOSE	10.672	623.2 -> 58.9	114073	27.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
d9-EtFOSE	10.918	639.2 -> 58.9	149317	31.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 124.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	15526	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.1%	

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.747	512.9 -> 469.0	0	µg/L m	1
		512.9 -> 219.0	0		
PFDODA	-	613.1 -> 569.0	-	N.D.	
		613.1 -> 319.0			
PFDS	-	599.0 -> 79.9	-	N.D.	



7.2.4
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	-	599.0 -> 98.8	-	N.D.		
		363.1 -> 319.0				
PFHpS	-	363.1 -> 169.0	-	N.D.		
		449.0 -> 79.9				
PFHxA	-	449.0 -> 98.9	-	N.D.		
		313.0 -> 269.0				
PFHxS	-	313.0 -> 118.9	-	N.D.		
		398.7 -> 79.9				
PFNA	-	398.7 -> 98.9	-	N.D.		
		463.0 -> 419.0				
PFNS	-	463.0 -> 219.0	-	N.D.		
		548.8 -> 79.9				
PFOA	7.464	548.8 -> 98.9	0	µg/L	m	1
		413.0 -> 369.0				
PFOS	-	413.0 -> 169.0	-	N.D.		
		498.9 -> 79.9				
PFPeA	-	498.9 -> 98.8	-	N.D.		
		263.0 -> 219.0				
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
		511.9 -> 219.0				
MeFOSA	-	511.9 -> 169.0	-	N.D.		
		616.1 -> 58.9				
MeFOSE	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
PFDoDS	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
NFDHA	-	279.0 -> 85.1	-	N.D.		
		229.0 -> 84.9				
PFMBA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

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

7.24
7

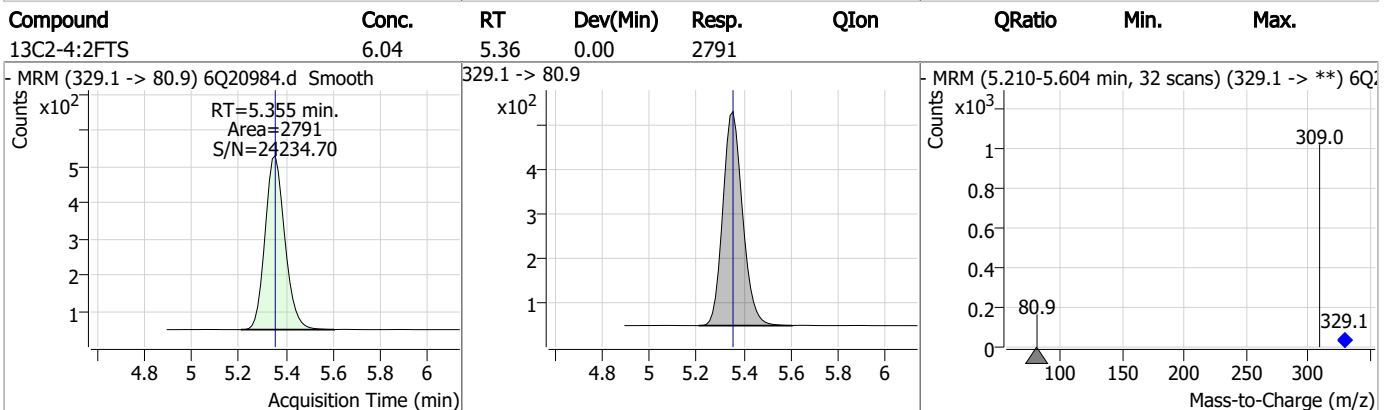
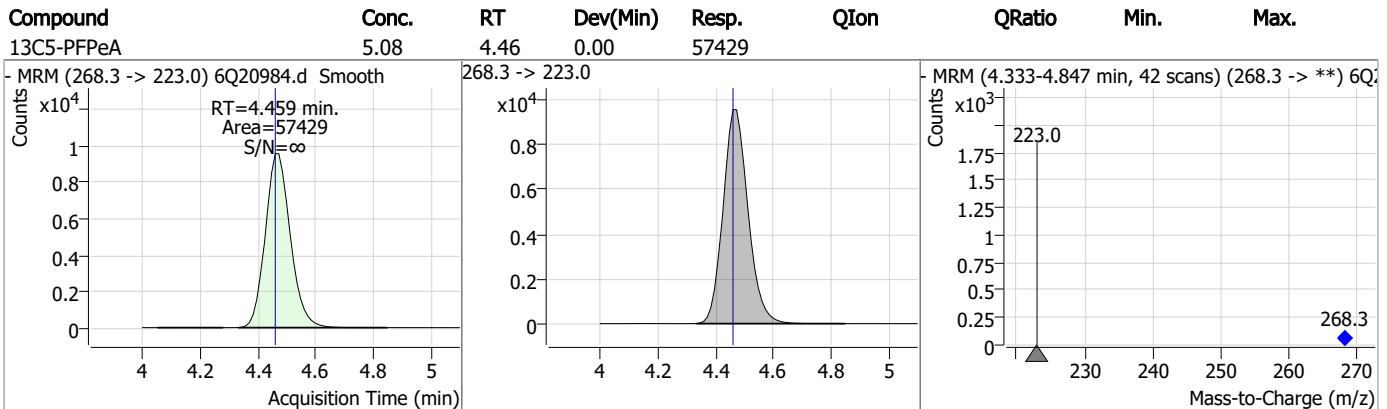
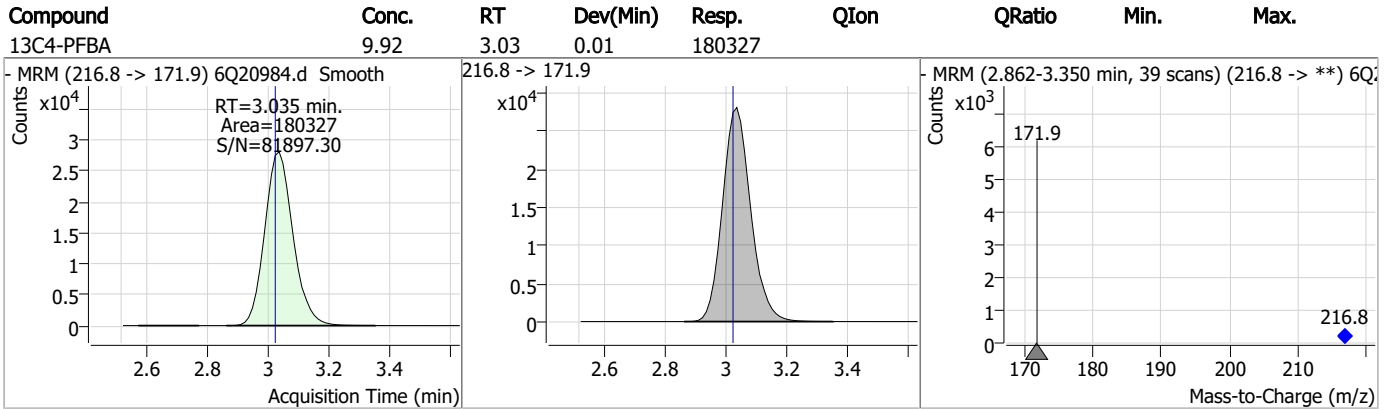
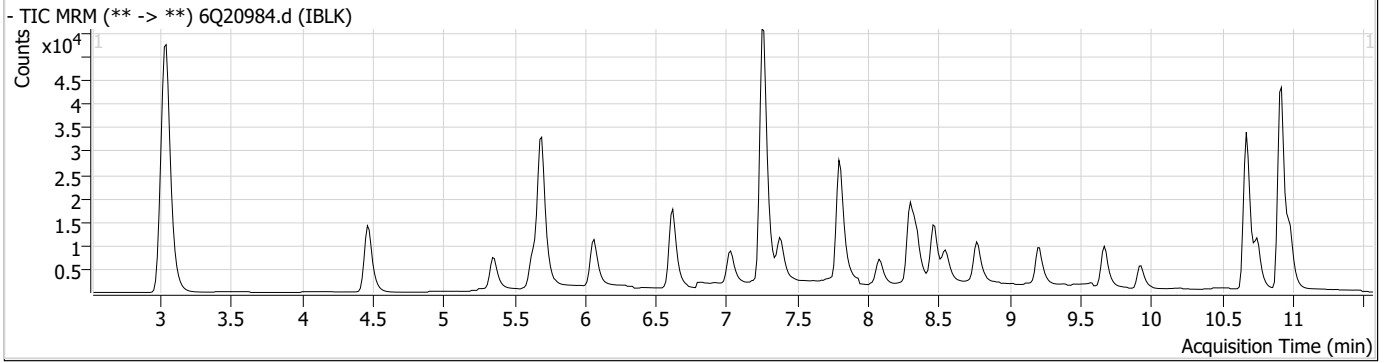
Perfluorinated Compounds by LC/MS/MS

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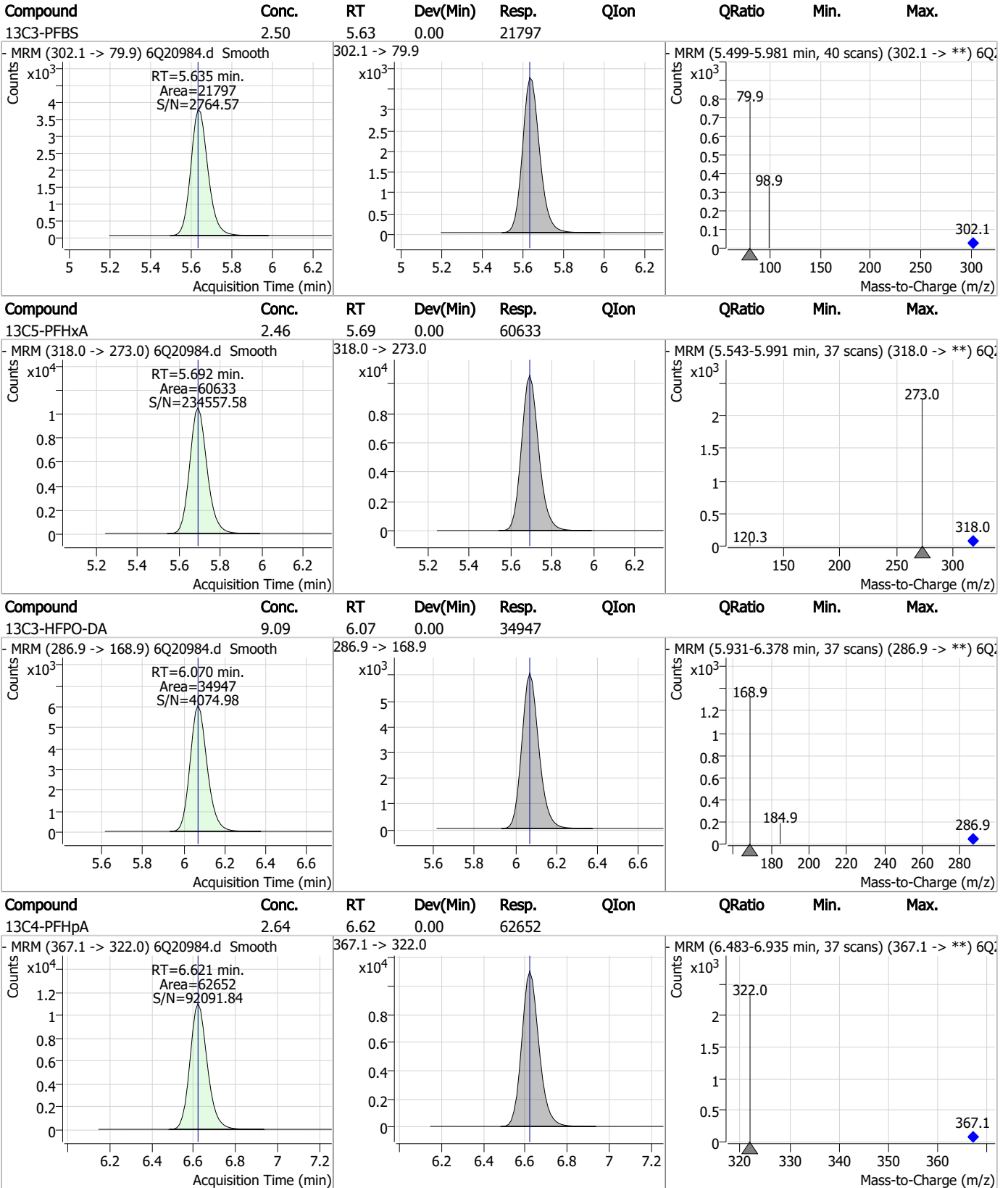
7.2.4

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Perfluorinated Compounds by LC/MS/MS



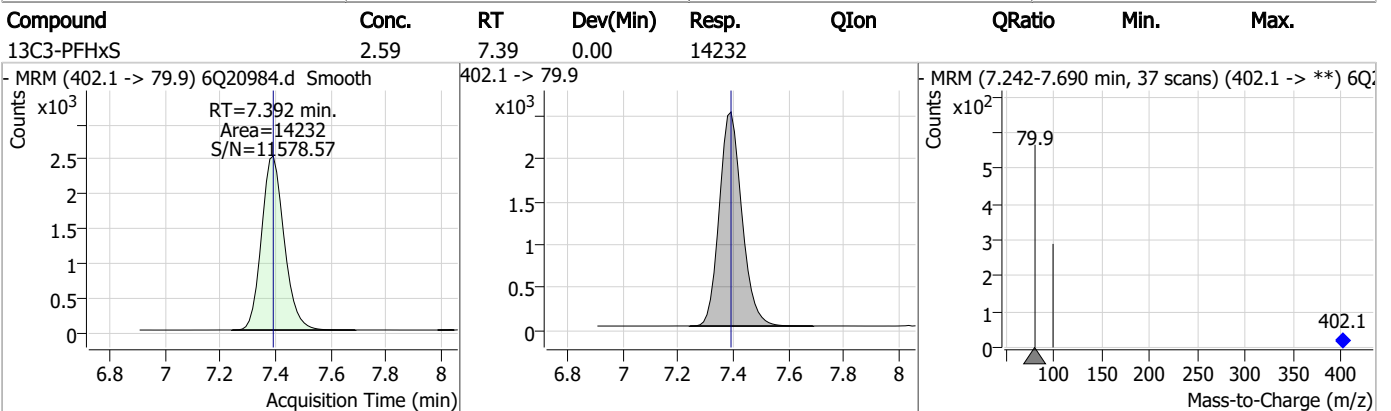
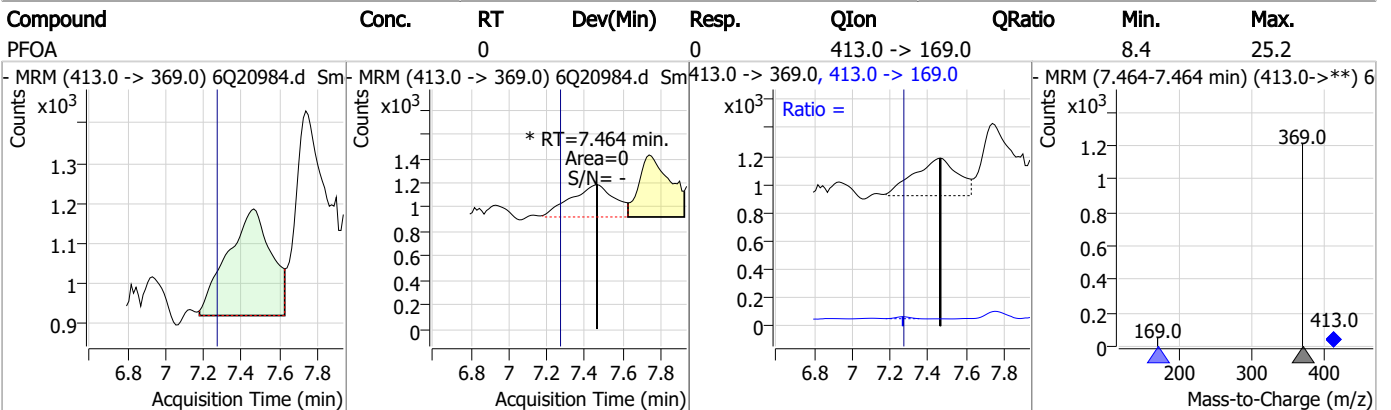
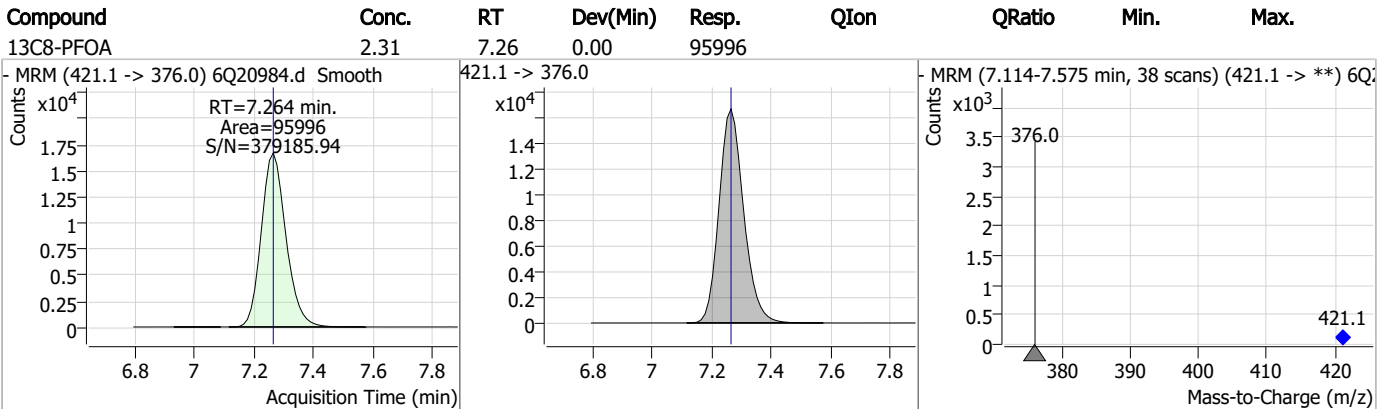
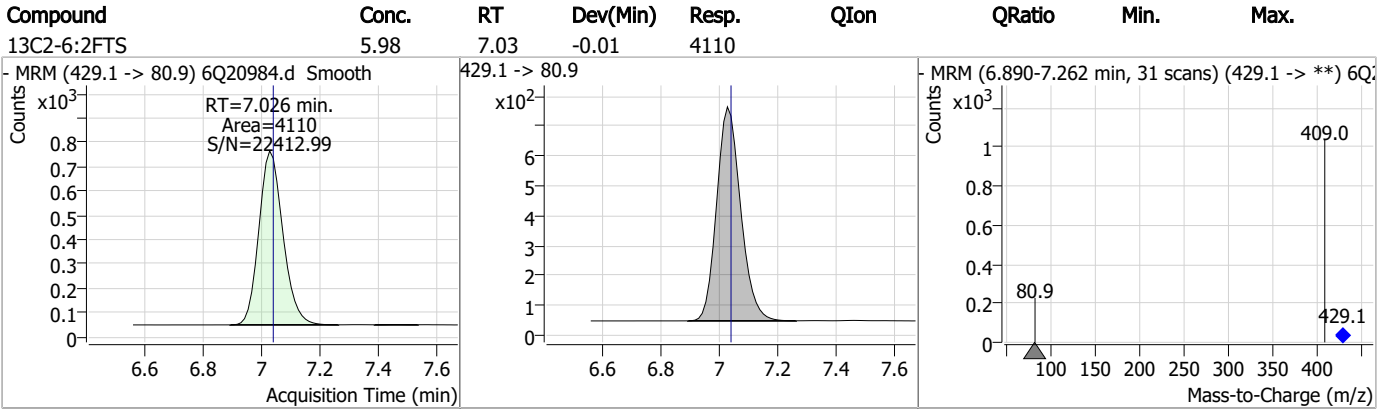
Perfluorinated Compounds by LC/MS/MS



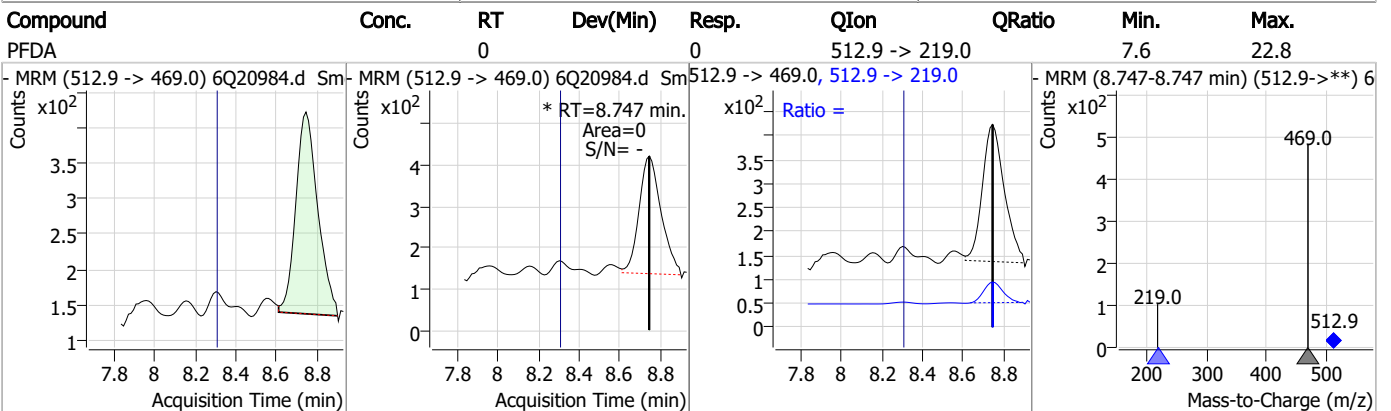
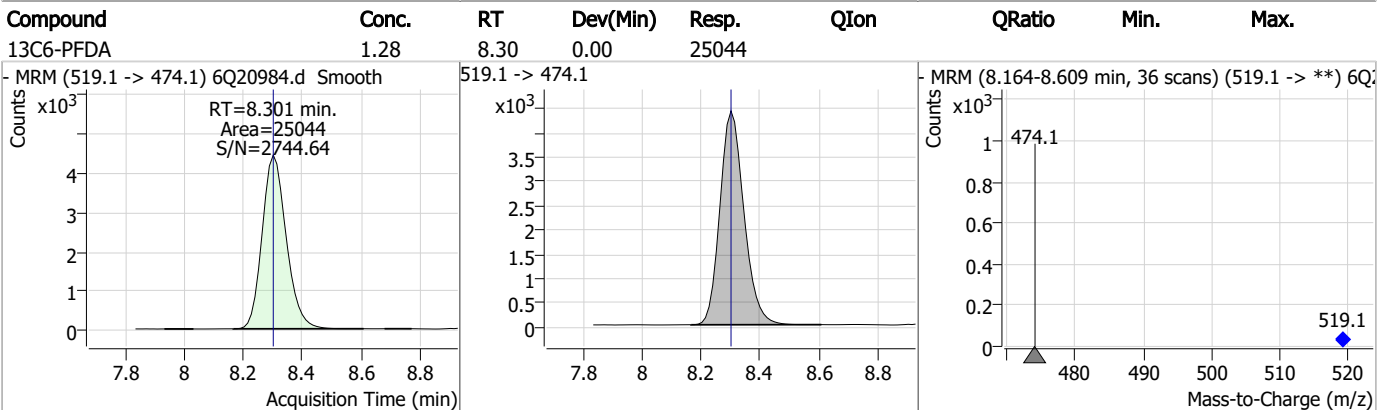
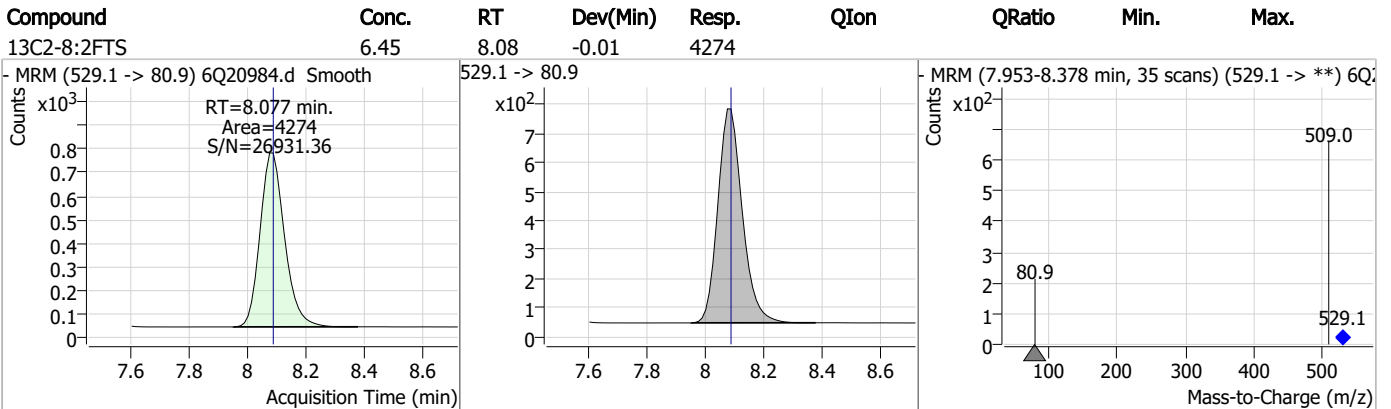
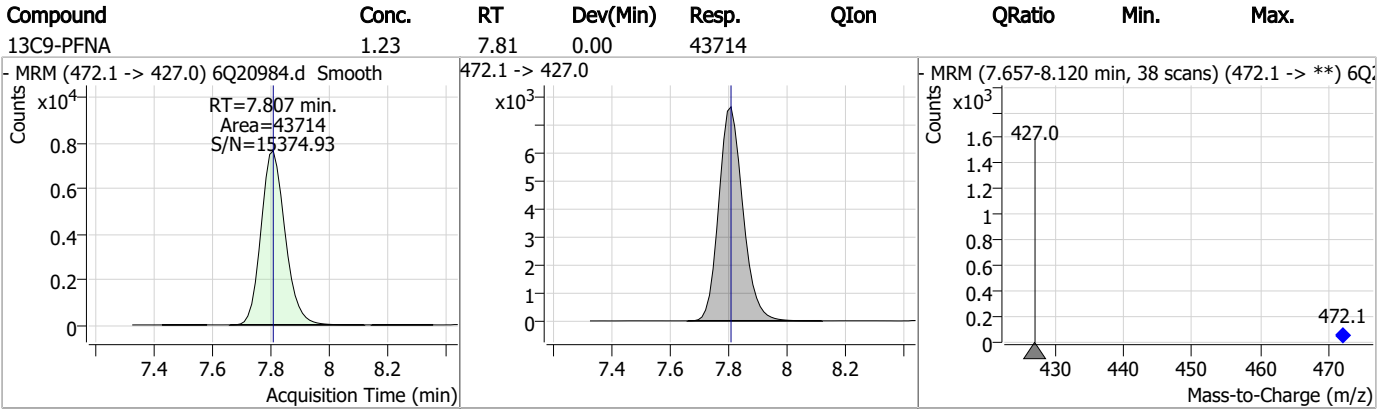
7.2.4

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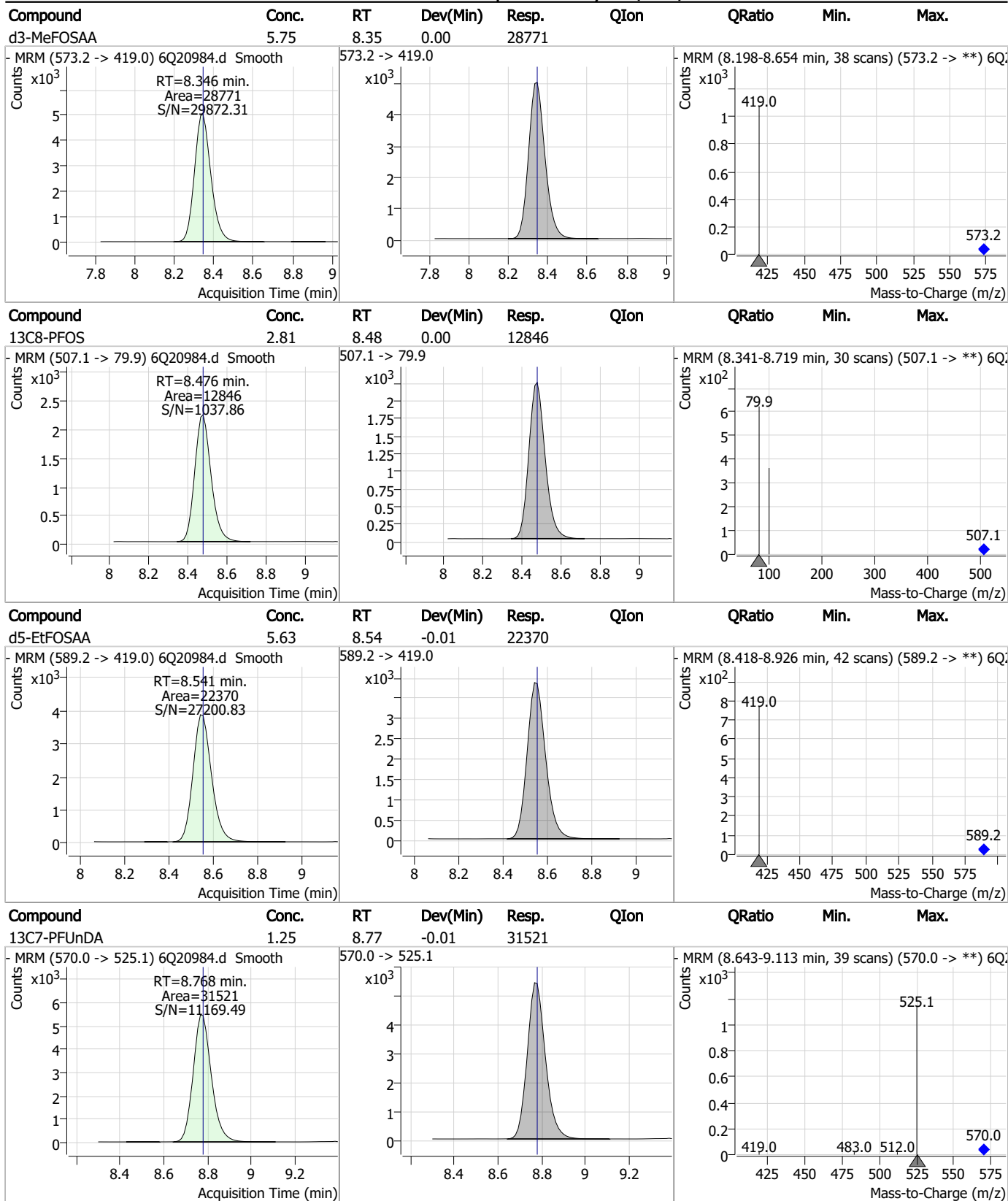
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



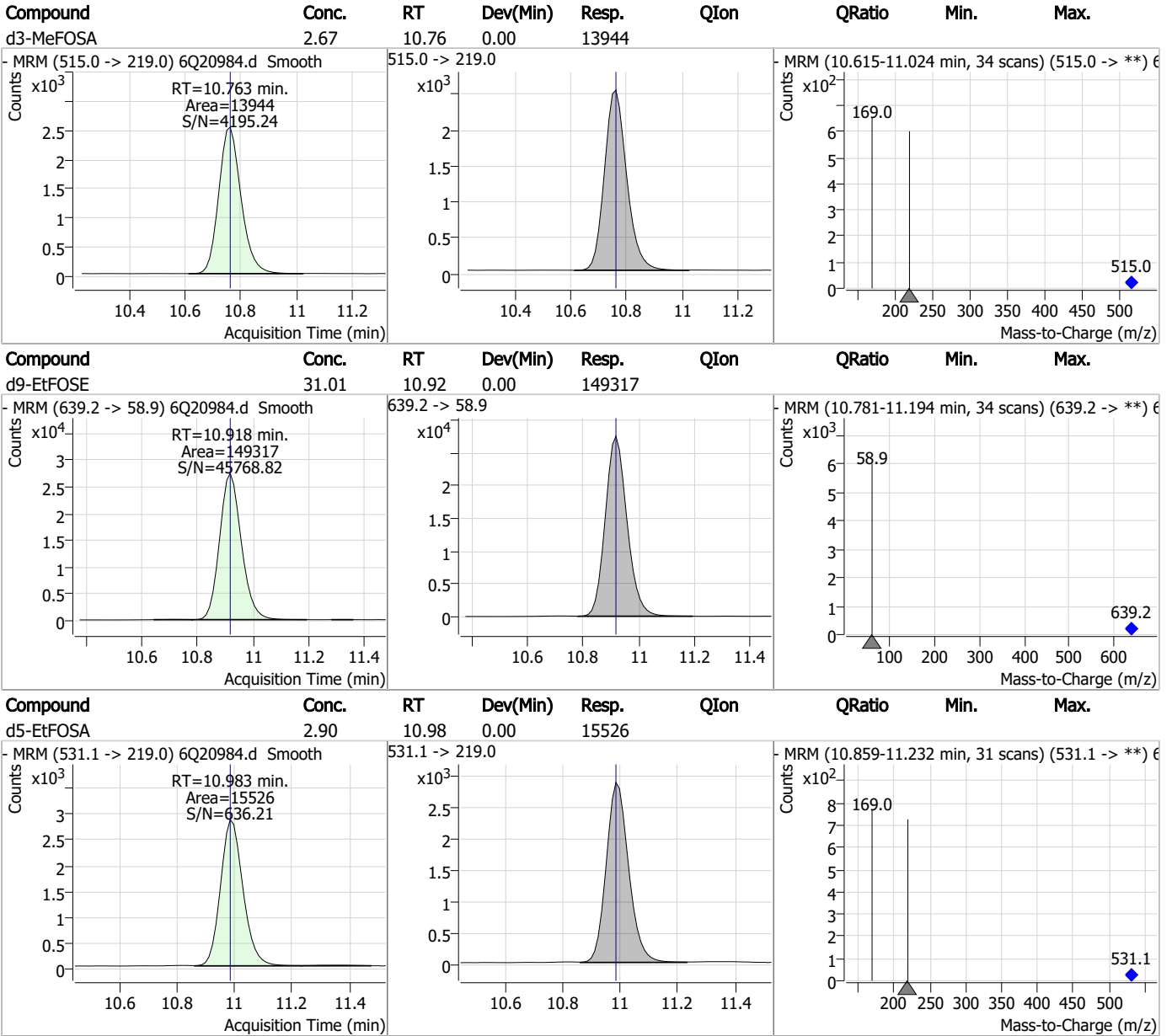
7.2.4
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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.13	9.21	0.00	29144				
13C8-FOSA	2.79	9.67	0.00	31474				
13C2-PFTeDA	1.25	9.93	0.00	16758				
d7-MeFOSE	27.59	10.67	0.00	114073				

7.2.4
7

Perfluorinated Compounds by LC/MS/MS



7.2.4

7



Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20906.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 2:08:42 PM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	182247	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	57434	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	61646	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	60470	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	102091	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	46677	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	25924	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	36577	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	31561	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	17339	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	32821	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	22493	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	13539	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	11935	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2614	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3915	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4107	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	27842	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	37356	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	23250	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	111659	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	150722	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15761	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13271	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	17401	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	76999	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	10302	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	102037	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	34774	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	54306	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	58923	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2614	5.66 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.2%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3915	5.71 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.2%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4107	6.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.1%		
13C2-PFDoDA	9.211	615.1 -> 570.0	31561	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.1%		
13C2-PFTeDA	9.925	715.2 -> 670.0	17339	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.0%		
13C3-PFBS	5.647	302.1 -> 79.9	22493	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.2%		
13C3-PFHxS	7.392	402.1 -> 79.9	13539	2.47 µg/L	0.000

7.2.5
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFBA	3.035	216.8 -> 171.9	182247	9.99 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.633	367.1 -> 322.0	60470	2.62 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C5-PFHxA	5.692	318.0 -> 273.0	61646	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C5-PFPeA	4.472	268.3 -> 223.0	57434	5.23 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C6-PFDA	8.301	519.1 -> 474.1	25924	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C7-PFUnDA	8.780	570.0 -> 525.1	36577	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.6%	
13C8-FOSA	9.674	506.1 -> 77.8	32821	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C8-PFOA	7.264	421.1 -> 376.0	102091	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-PFOS	8.476	507.1 -> 79.9	11935	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C9-PFNA	7.807	472.1 -> 427.0	46677	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSAA	8.346	573.2 -> 419.0	27842	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	37356	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	13271	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23250	5.42 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
d7-MeFOSE	10.672	623.2 -> 58.9	111659	25.02 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d9-EtFOSE	10.918	639.2 -> 58.9	150722	28.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 116.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	15761	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.1%	

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.	

7.25
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	7.762	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

7.2.5
7

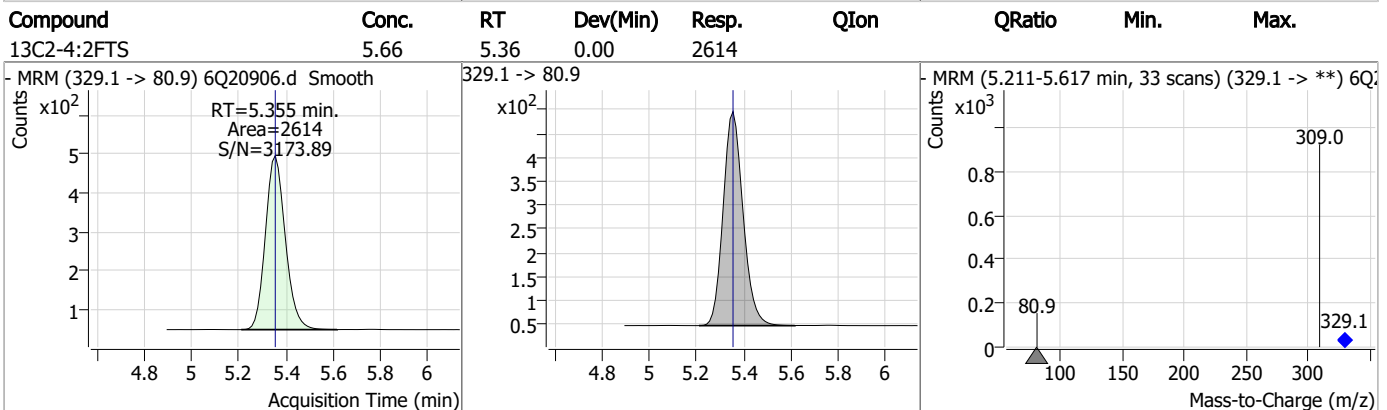
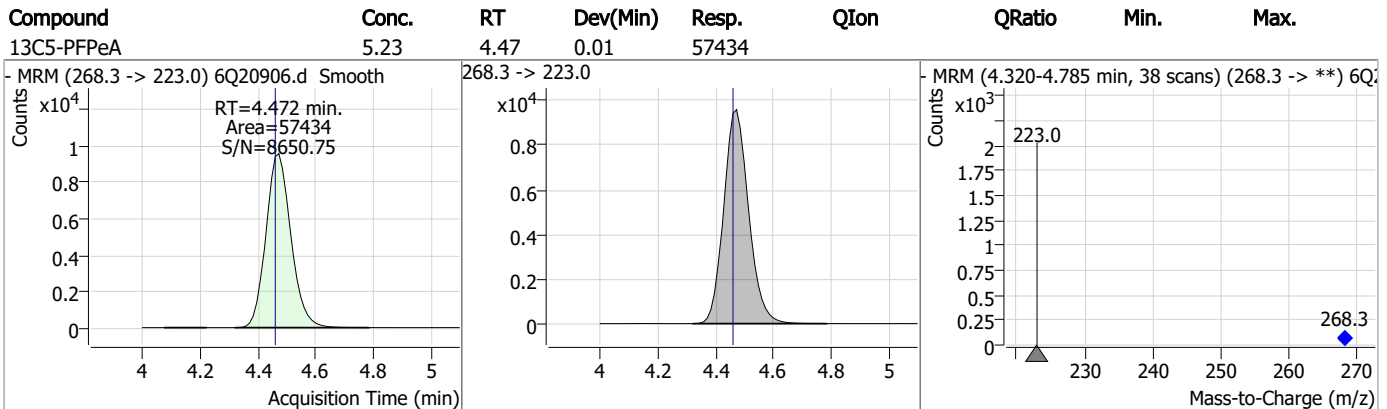
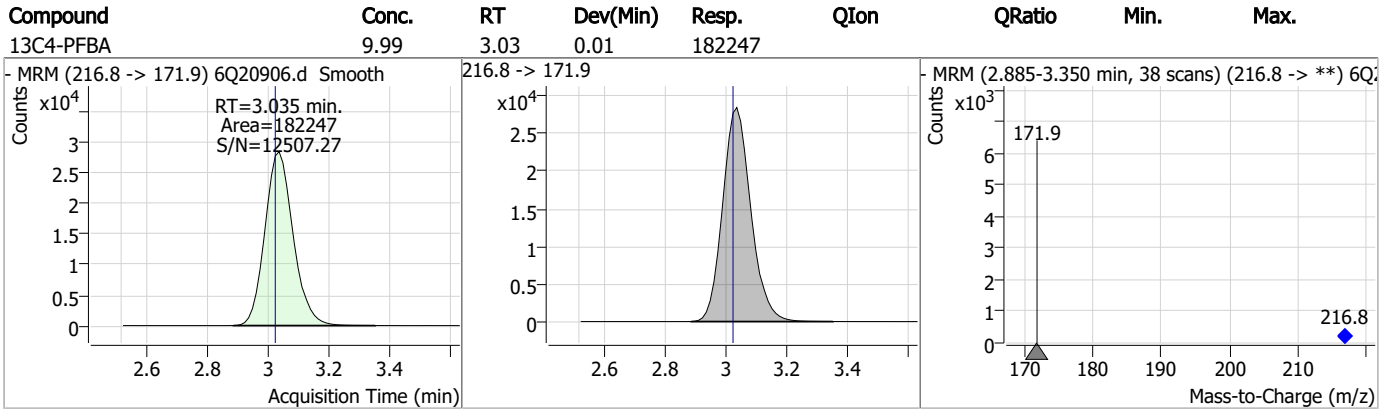
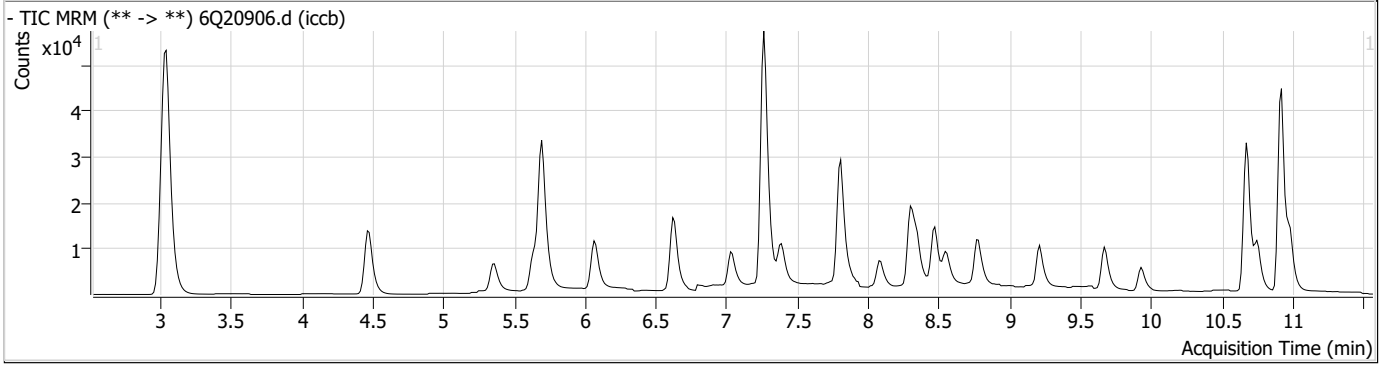
Perfluorinated Compounds by LC/MS/MS

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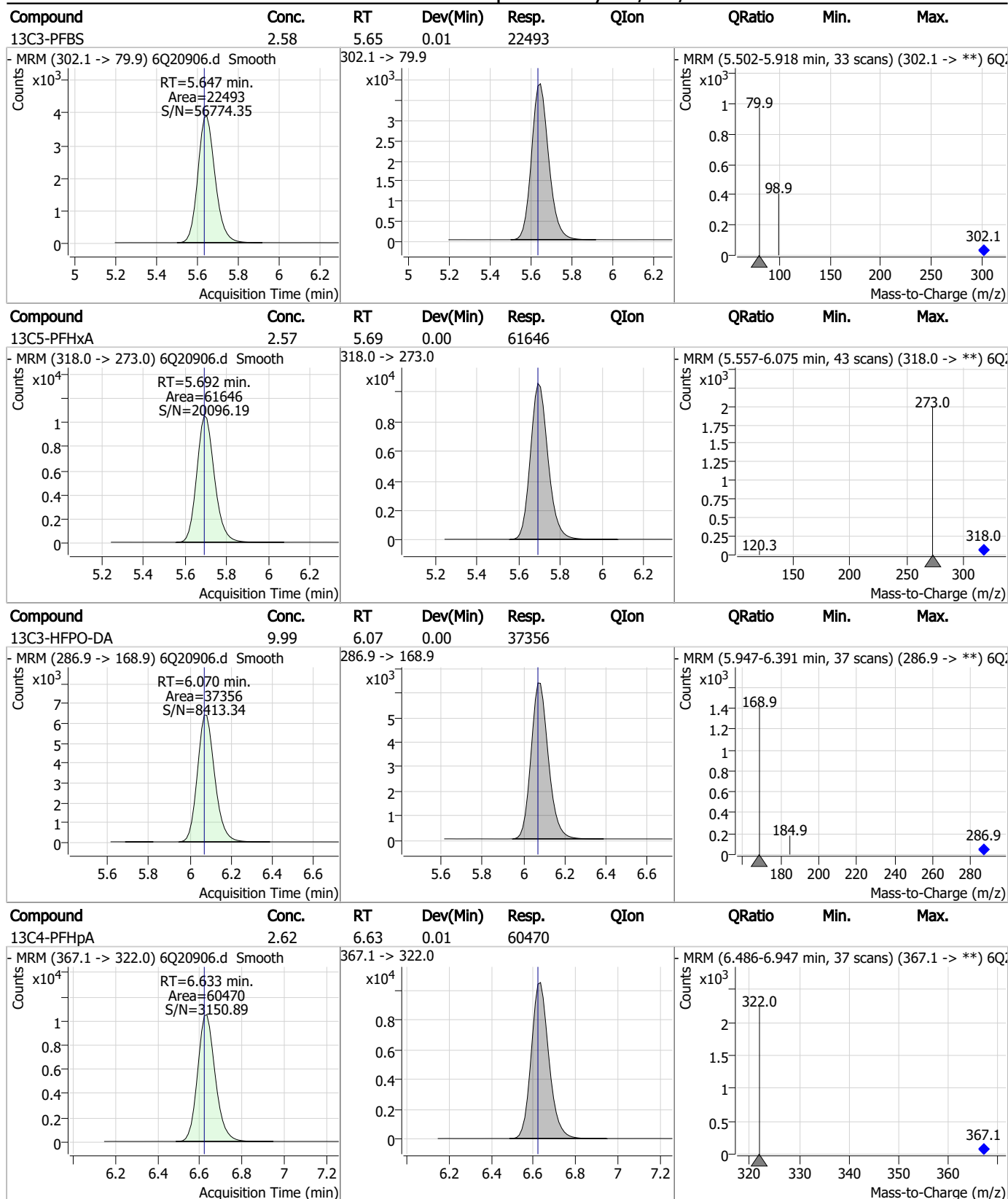
7.2.5

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Perfluorinated Compounds by LC/MS/MS

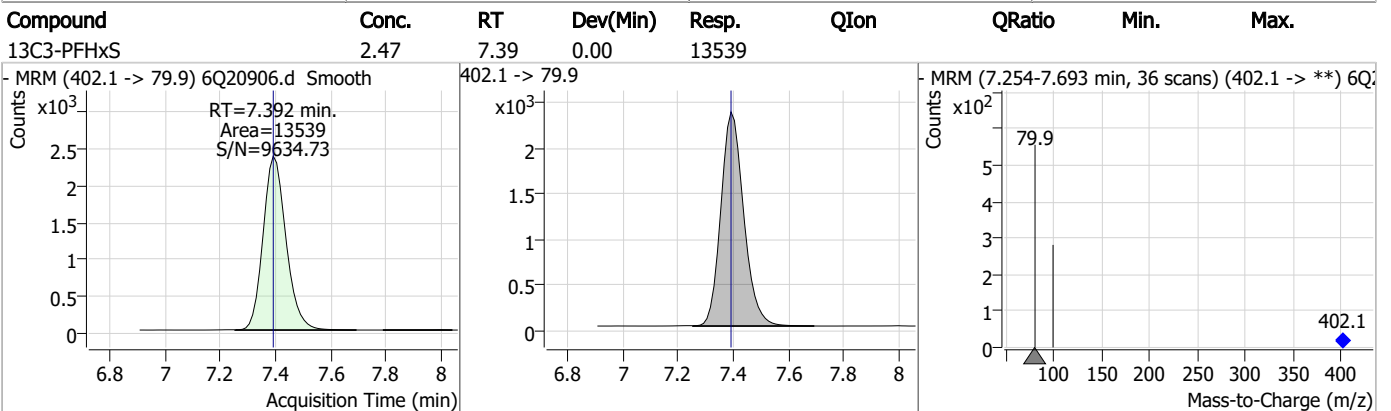
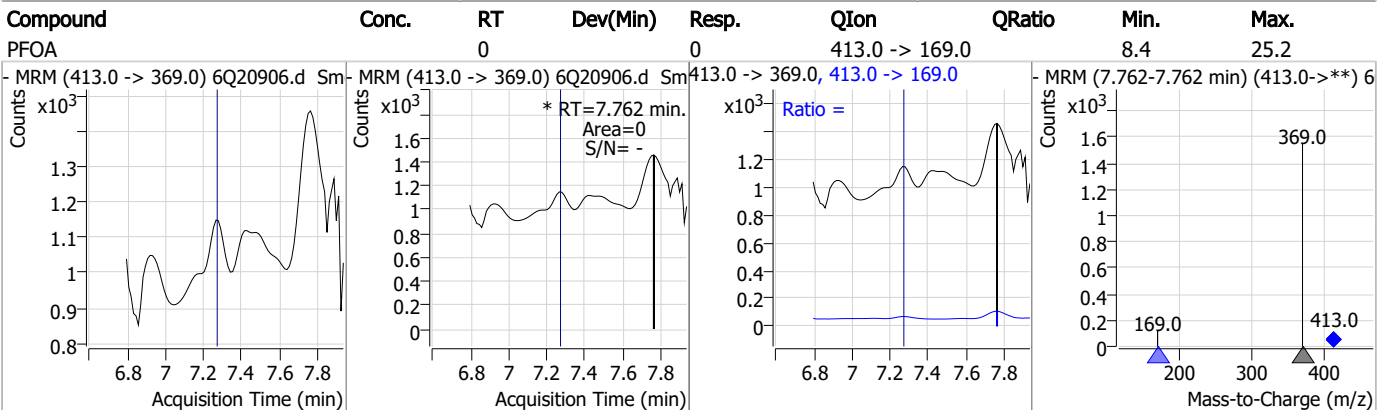
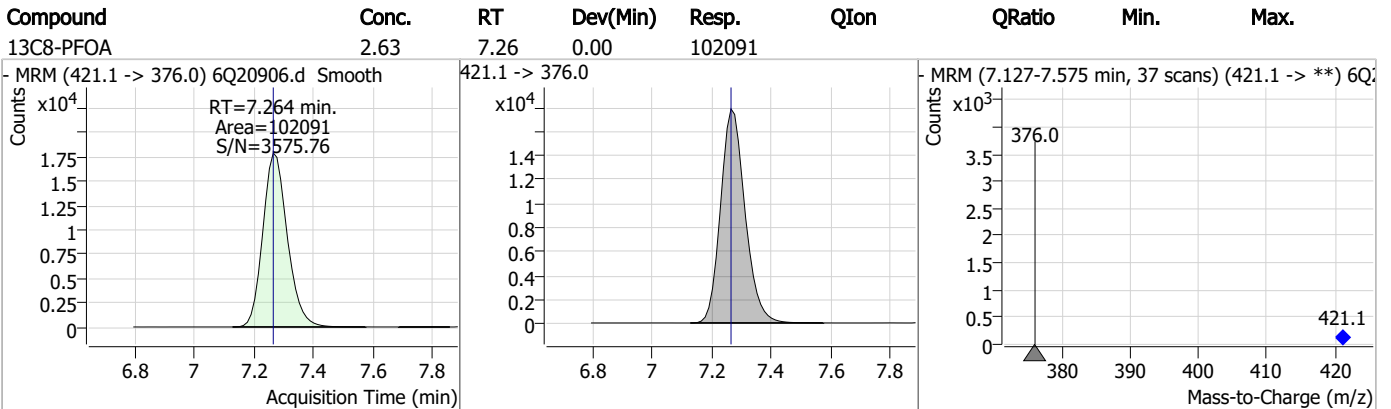
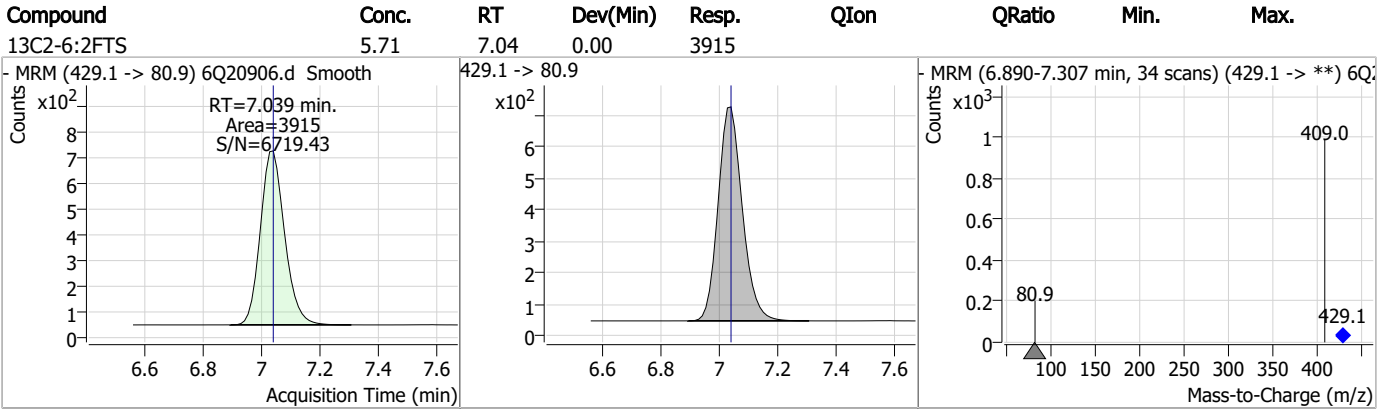


Perfluorinated Compounds by LC/MS/MS

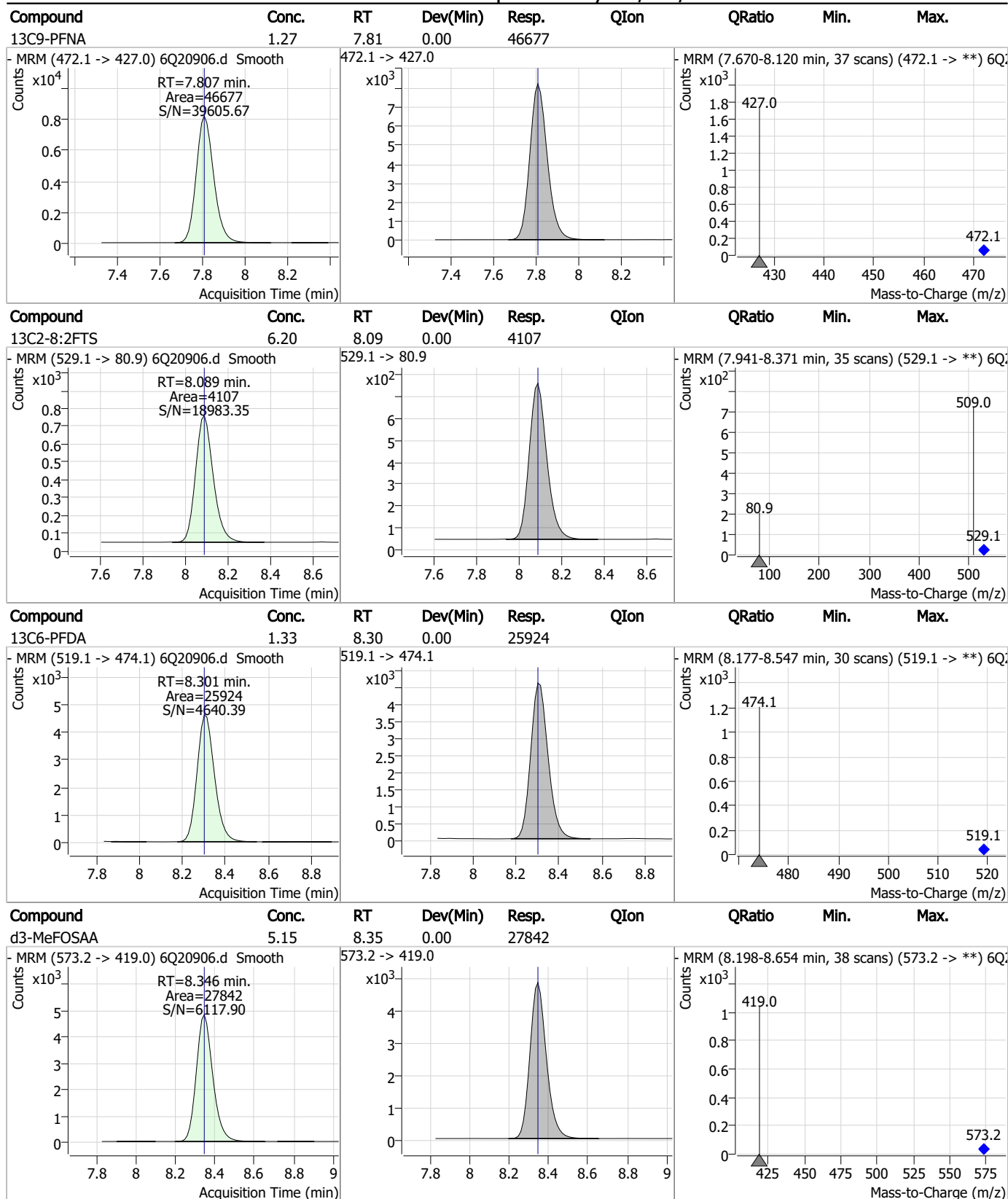


7.2.5
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Perfluorinated Compounds by LC/MS/MS

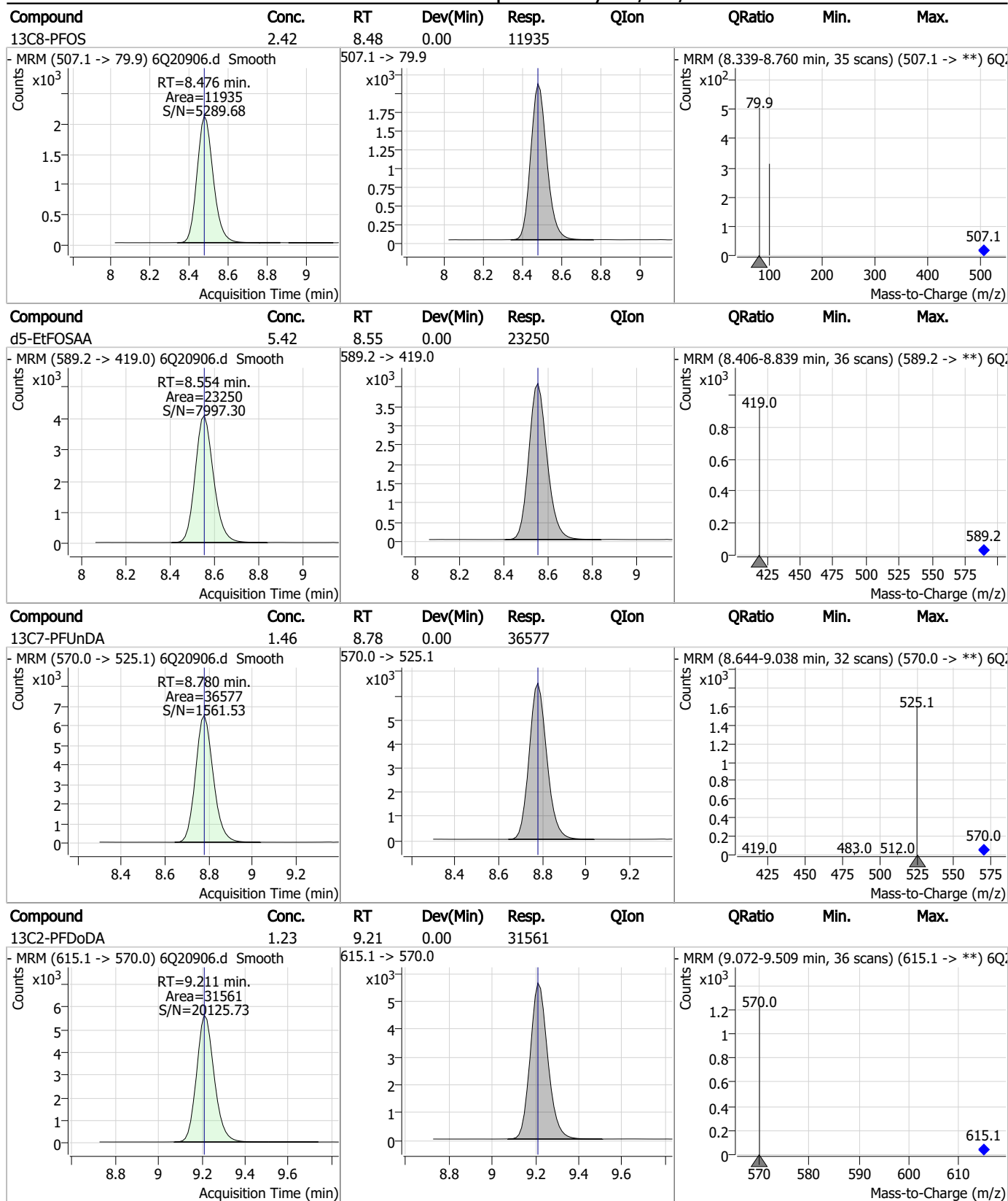


Perfluorinated Compounds by LC/MS/MS



7.2.5
7

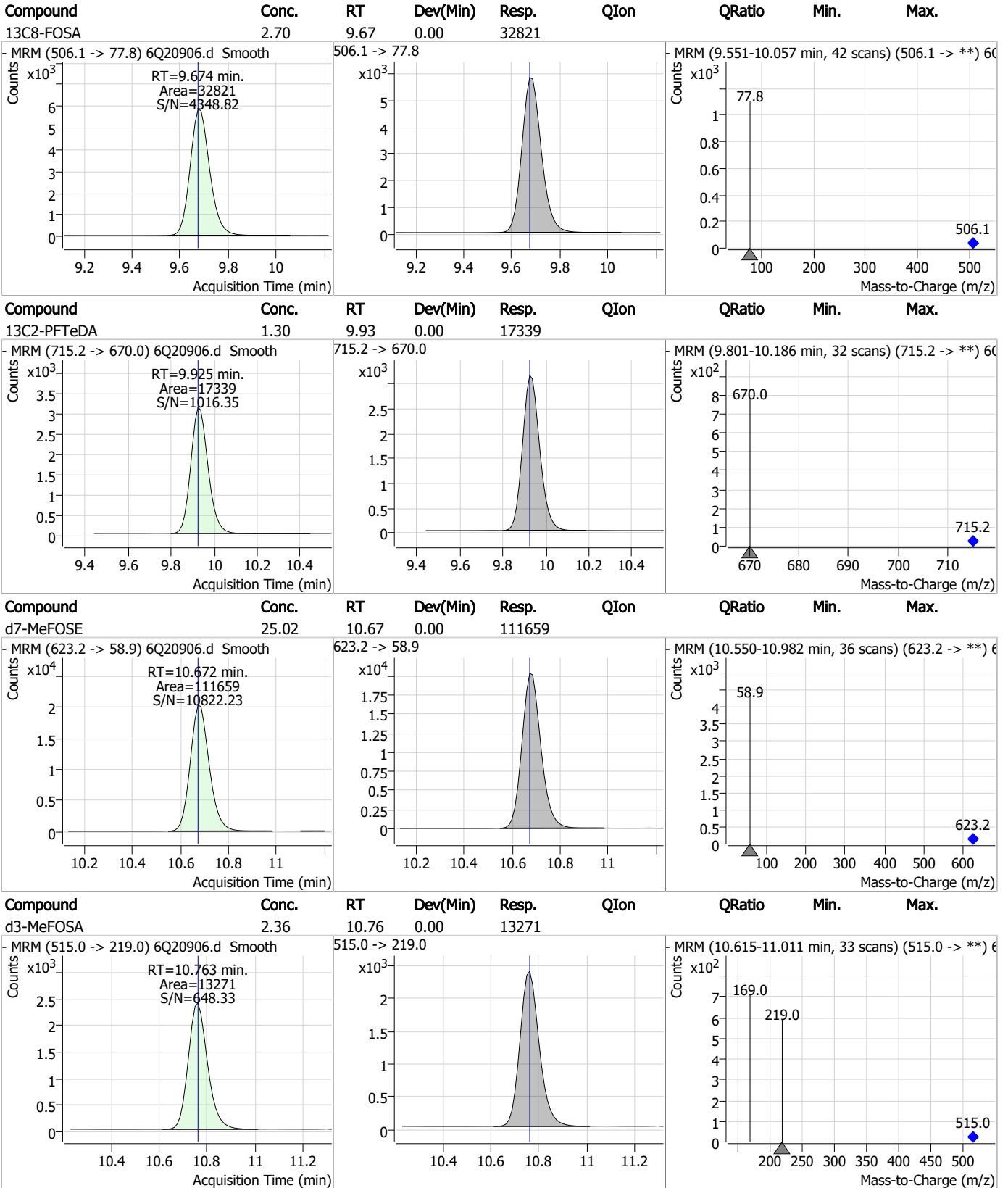
Perfluorinated Compounds by LC/MS/MS



7.2.5

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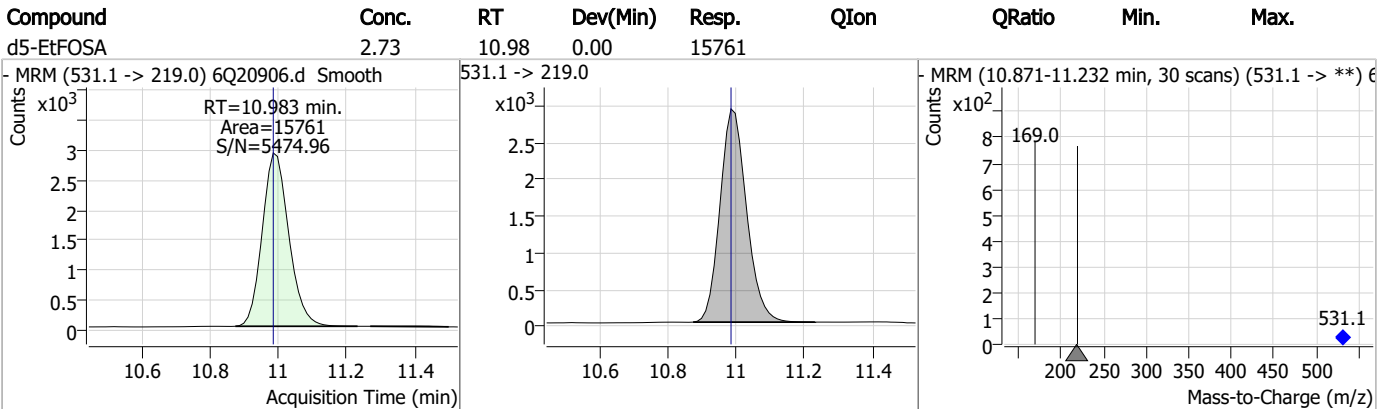
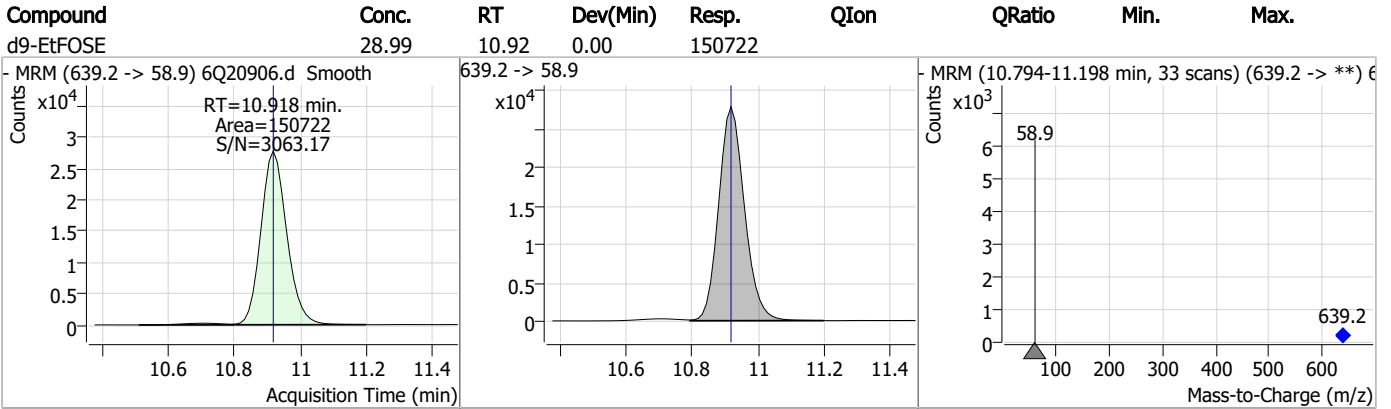
Perfluorinated Compounds by LC/MS/MS



7.2.5

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Perfluorinated Compounds by LC/MS/MS



7.2.5

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Perfluorinated Compounds by LC/MS/MS

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 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 6:55:29 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	182827	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	58147	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	65396	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	59401	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	100992	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	39696	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	24680	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	34653	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	30508	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16799	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	33645	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	20881	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	13901	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12774	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2638	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3868	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4060	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	27375	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	37957	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	23942	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	110038	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	144368	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15488	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	13913	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16688	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	77801	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	9771	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	100811	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	36279	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	55773	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	63068	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2638	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.5%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3868	5.95 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 119.0%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4060	6.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 129.3%		
13C2-PFDoDA	9.211	615.1 -> 570.0	30508	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 90.9%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16799	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.647	302.1 -> 79.9	20881	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C3-PFHxS	7.392	402.1 -> 79.9	13901	2.67 µg/L	0.000

7.2.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C4-PFBA	3.035	216.8 -> 171.9	182827	9.92 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.633	367.1 -> 322.0	59401	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C5-PFHxA	5.692	318.0 -> 273.0	65396	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFPeA	4.472	268.3 -> 223.0	58147	4.95 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C6-PFDA	8.313	519.1 -> 474.1	24680	1.21 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C7-PFUnDA	8.780	570.0 -> 525.1	34653	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-FOSA	9.674	506.1 -> 77.8	33645	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.4%	
13C8-PFOA	7.264	421.1 -> 376.0	100992	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-PFOS	8.476	507.1 -> 79.9	12774	2.70 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C9-PFNA	7.807	472.1 -> 427.0	39696	1.05 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 84.2%	
d3-MeFOSAA	8.346	573.2 -> 419.0	27375	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	37957	9.48 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	13913	2.58 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.1%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23942	5.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.3%	
d7-MeFOSE	10.672	623.2 -> 58.9	110038	25.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
d9-EtFOSE	10.918	639.2 -> 58.9	144368	28.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 115.8%	
d5-EtFOSA	10.983	531.1 -> 219.0	15488	2.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.8%	

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	9.610	613.1 -> 569.0	0	µg/L m	1
		613.1 -> 319.0	0		
PFDS	-	599.0 -> 79.9	-	N.D.	

7.2.6
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	7.762	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

7.2.6
7

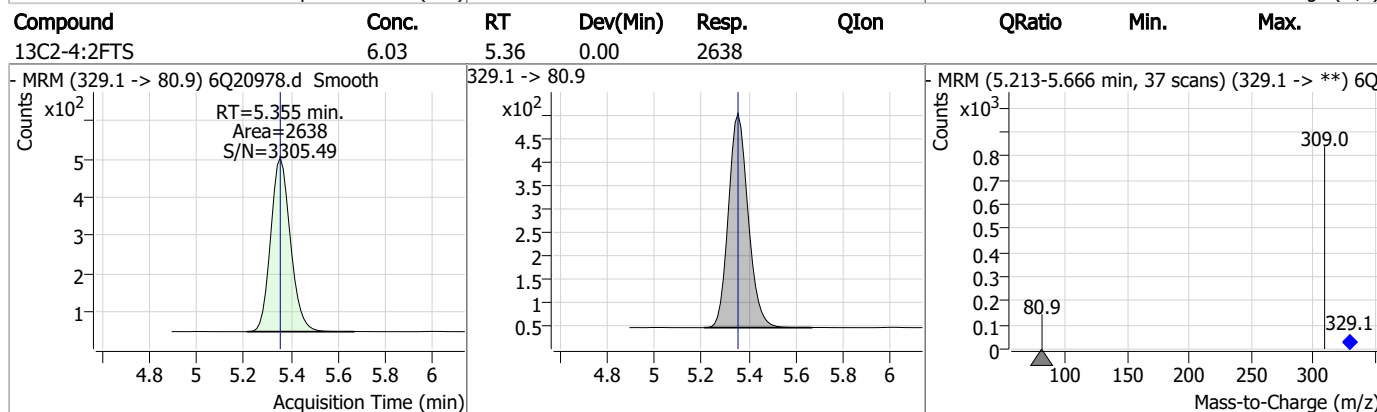
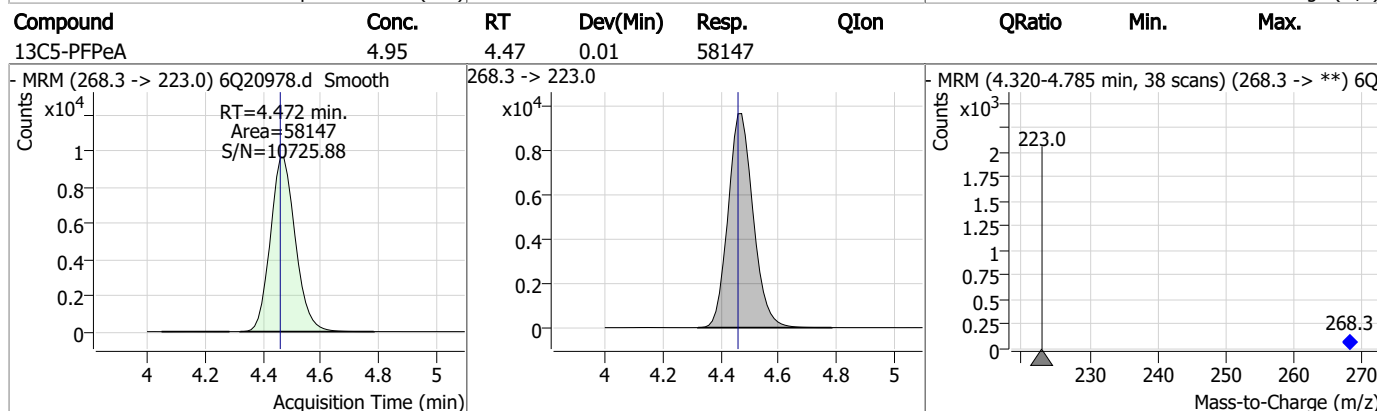
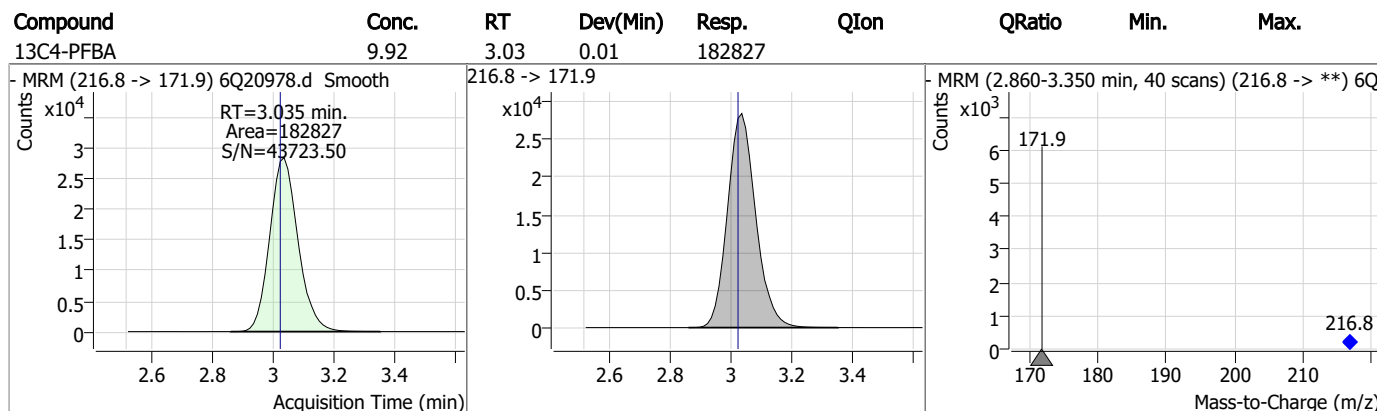
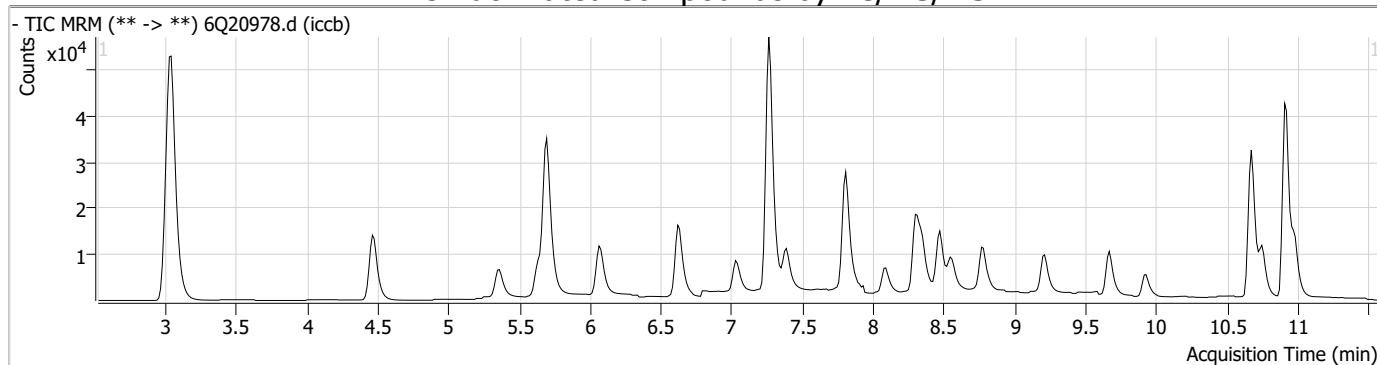
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS



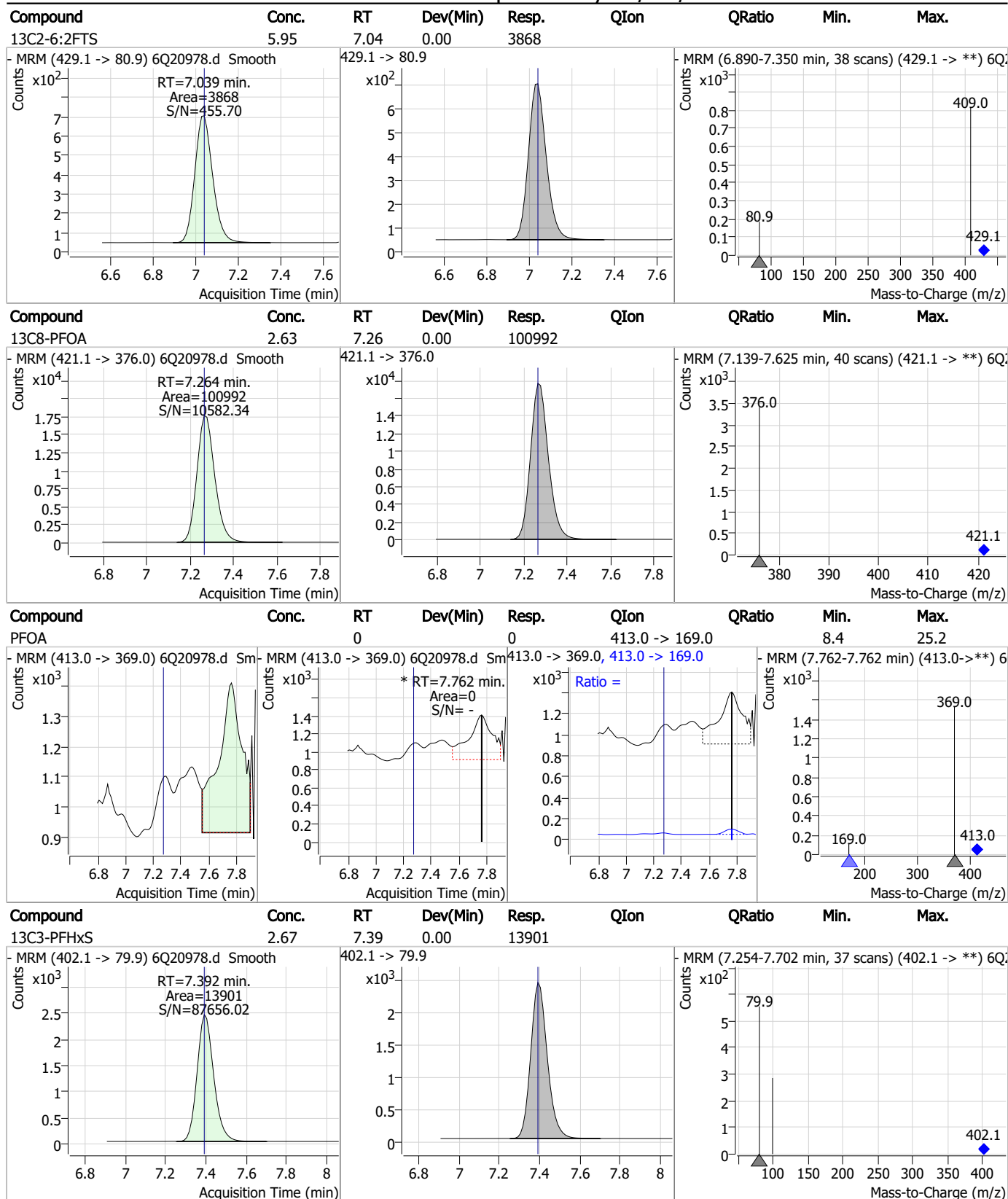
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.52	5.65	0.01	20881				
13C5-PFHxA	2.54	5.69	0.00	65396				
13C3-HFPO-DA	9.48	6.08	0.01	37957				
13C4-PFHpA	2.41	6.63	0.01	59401				

7.2.6

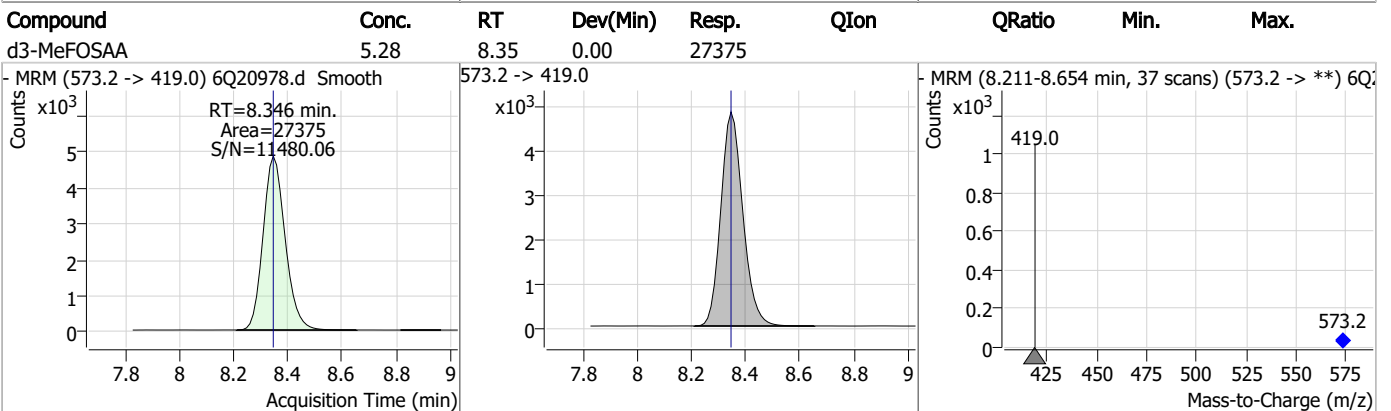
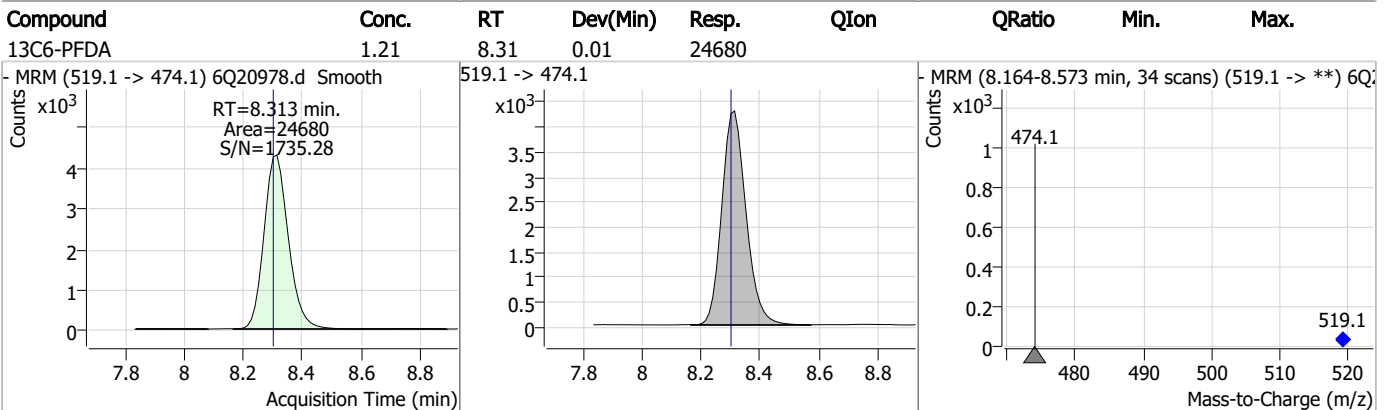
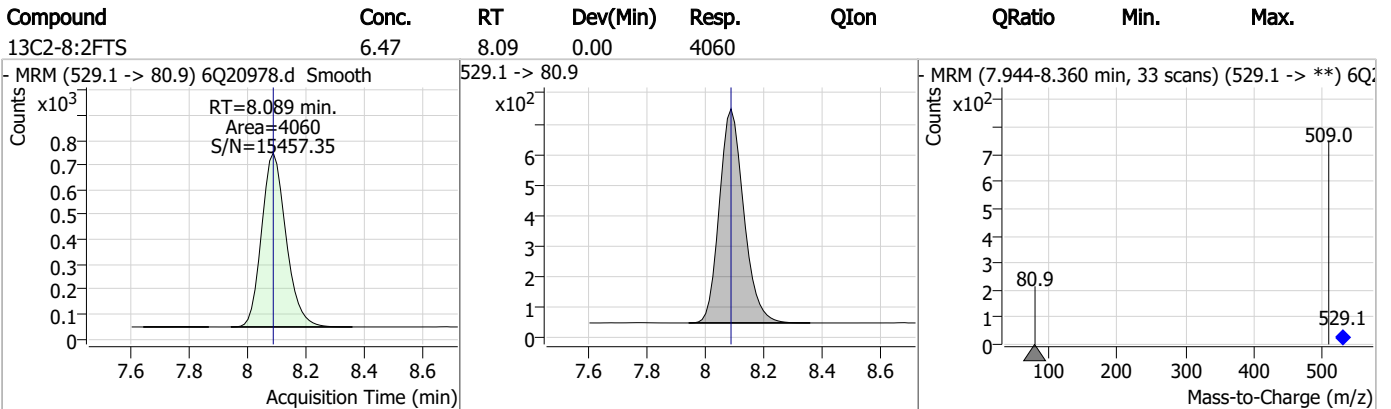
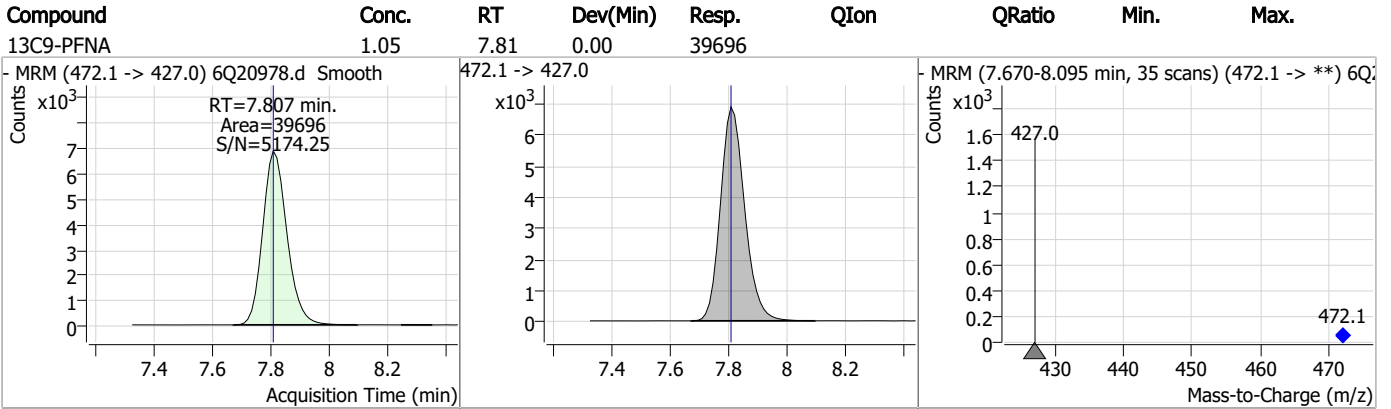
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Perfluorinated Compounds by LC/MS/MS

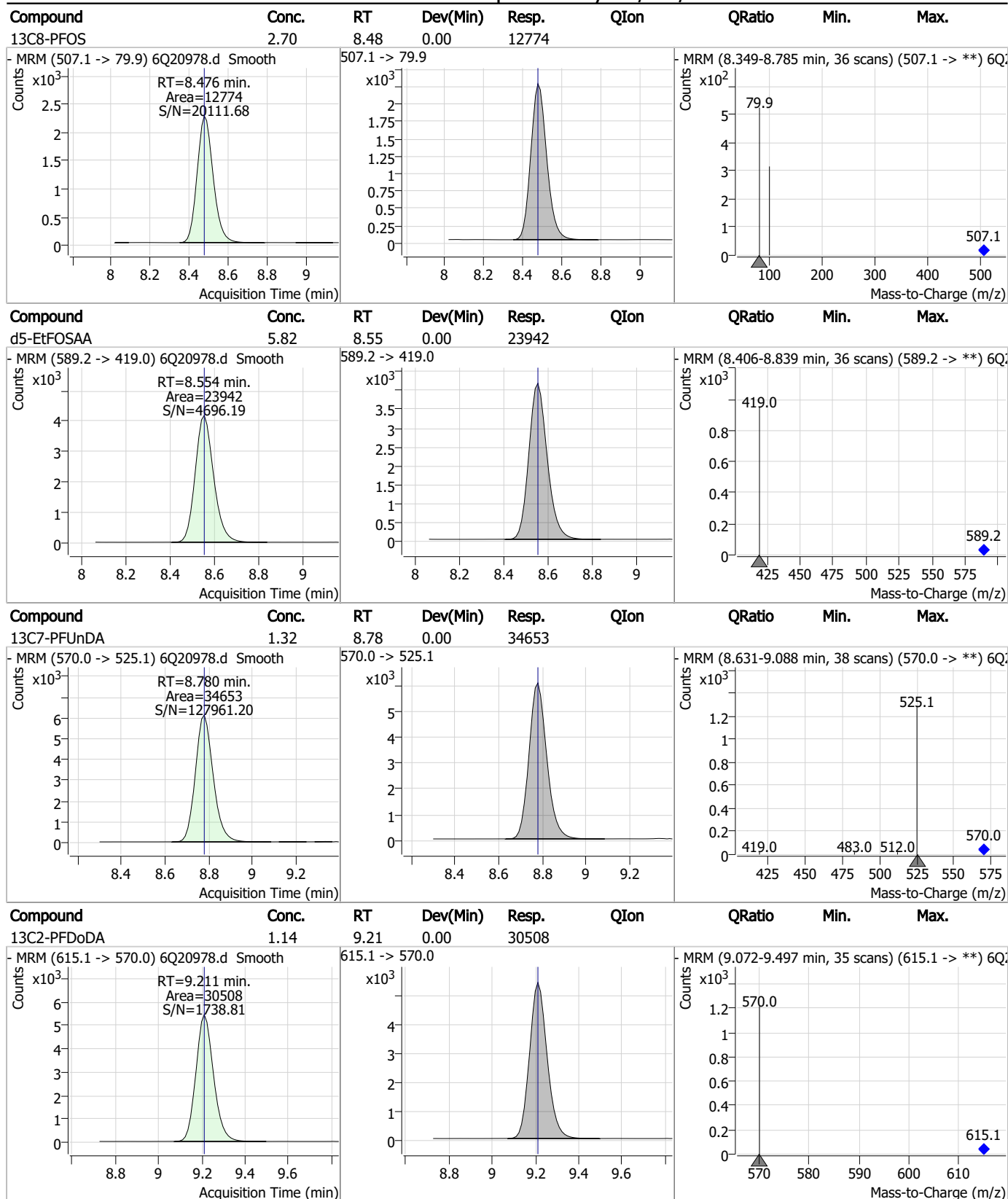


7.2.6
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Perfluorinated Compounds by LC/MS/MS



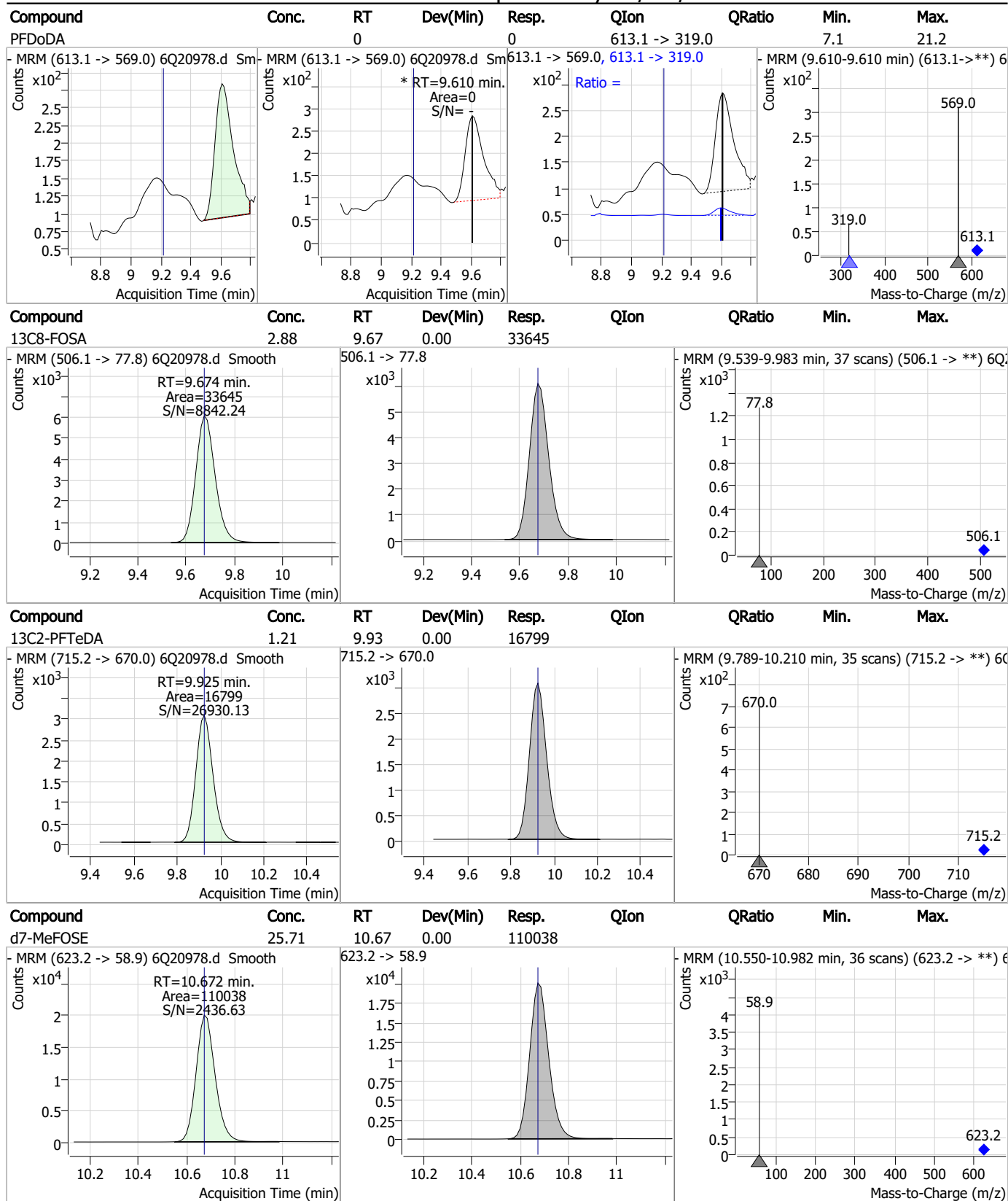
Perfluorinated Compounds by LC/MS/MS



7.2.6

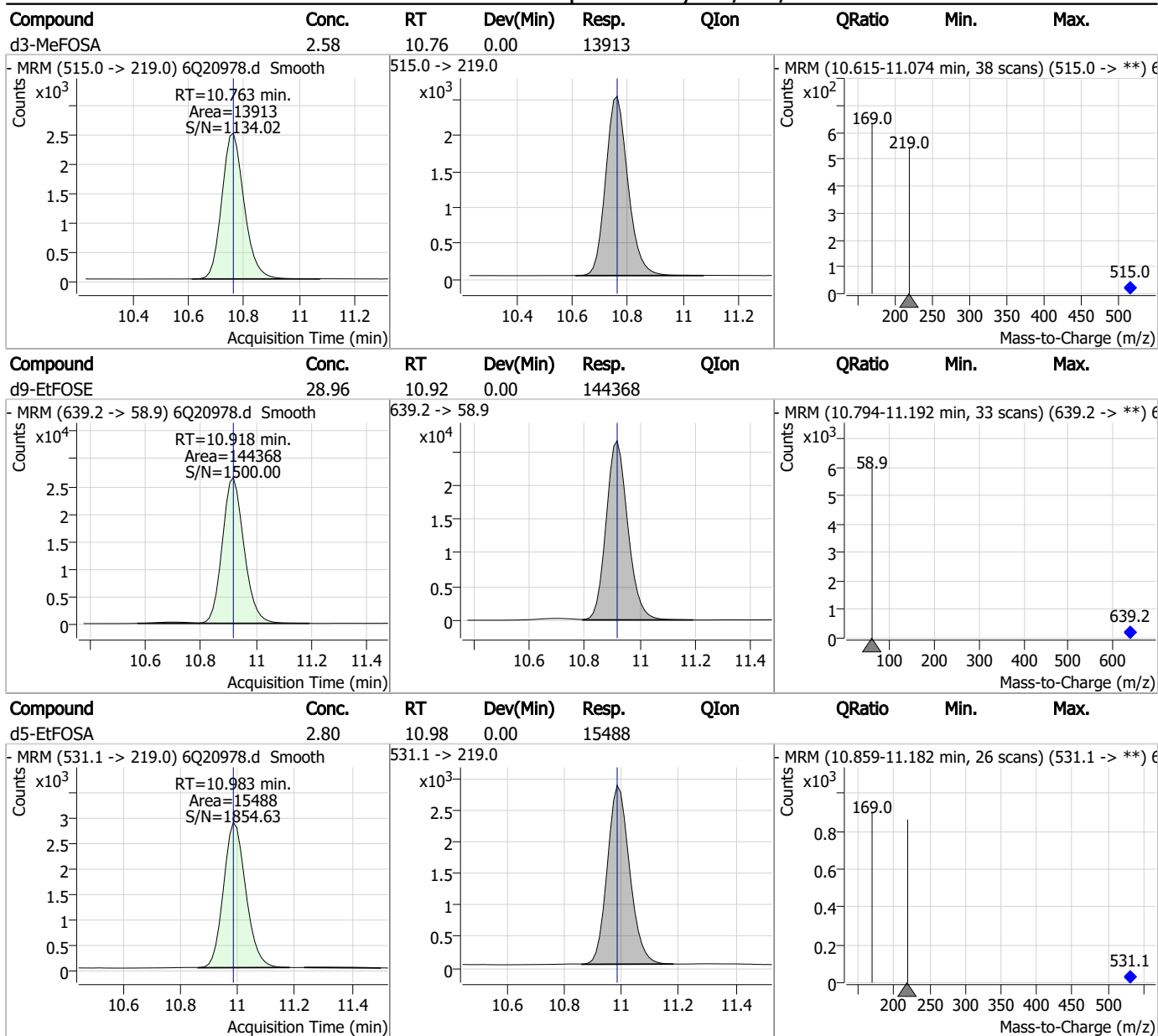
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Perfluorinated Compounds by LC/MS/MS



7.2.6
7

Perfluorinated Compounds by LC/MS/MS



7.2.6
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20910.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 3:04:39 PM
 Sample Name : op97799-bs
 Vial : P5-A4
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	195396	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	61295	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	68055	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	64556	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	99493	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	45911	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	23902	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	33337	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	30451	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	15015	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	22521	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	22238	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14811	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	13882	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2716	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4011	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4071	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	28749	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	37722	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	22938	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	67545	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	102308	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	10916	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	9428	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16079	2.50 µg/L	0.000
13C3-PFBA	3.039	216.0 -> 172.0	69976	5.00 µg/L	0.012
18O2-PFHxS	7.391	403.0 -> 83.9	8795	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	94618	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	32330	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	49793	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	57343	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2716	6.89 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.8%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4011	6.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.0%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4071	7.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 144.1%		
13C2-PFDoDA	9.211	615.1 -> 570.0	30451	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 101.8%		
13C2-PFTeDA	9.925	715.2 -> 670.0	15015	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFBS	5.635	302.1 -> 79.9	22238	2.99 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 119.5%		
13C3-PFHxS	7.392	402.1 -> 79.9	14811	3.16 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 = 126.4%	
13C4-PFBA	3.035	216.8 -> 171.9	195396	11.78 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C4-PFHpA	6.621	367.1 -> 322.0	64556	2.88 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.1%	
13C5-PFHxA	5.692	318.0 -> 273.0	68055	2.91 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.5%	
13C5-PFPeA	4.472	268.3 -> 223.0	61295	5.73 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C6-PFDA	8.301	519.1 -> 474.1	23902	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C7-PFUnDA	8.780	570.0 -> 525.1	33337	1.43 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 114.3%	
13C8-FOSA	9.674	506.1 -> 77.8	22521	2.00 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.2%	
13C8-PFOA	7.264	421.1 -> 376.0	99493	2.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.4%	
13C8-PFOS	8.476	507.1 -> 79.9	13882	3.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.7%	
13C9-PFNA	7.807	472.1 -> 427.0	45911	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.1%	
d3-MeFOSAA	8.346	573.2 -> 419.0	28749	5.76 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	37722	10.36 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSA	10.763	515.0 -> 219.0	9428	1.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 72.5%	
d5-EtFOSAA	8.554	589.2 -> 419.0	22938	5.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	67545	16.38 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 65.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	102308	21.30 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 85.2%	
d5-EtFOSA	10.983	531.1 -> 219.0	10916	2.04 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.8%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	38959	7.89 µg/L	98
		327.1 -> 80.9	14365		
6:2FTS	7.039	427.1 -> 407.0	40106	8.51 µg/L	98
		427.1 -> 80.9	12416		
8:2FTS	8.090	527.1 -> 507.0	20529	7.88 µg/L	86
		527.1 -> 80.8	8470		
EtFOSAA	8.555	584.2 -> 419.1	8183	2.27 µg/L	m 99
		584.2 -> 526.0	4031		
FOSA	9.677	498.1 -> 77.9	17811	2.02 µg/L	98
		498.1 -> 478.0	523		
MeFOSAA	8.347	570.1 -> 419.0	13074	2.07 µg/L	m 95
		570.1 -> 483.0	2518		
PFBA	3.031	212.8 -> 168.9	62611	8.31 µg/L	100
PFBS	5.648	298.7 -> 79.9	17236	1.95 µg/L	95
		298.7 -> 98.8	6583		
PFDA	8.301	512.9 -> 469.0	79732	2.39 µg/L	99
		512.9 -> 219.0	11738		
PFDODA	9.211	613.1 -> 569.0	52098	2.19 µg/L	100
		613.1 -> 319.0	7379		
PFDS	9.374	599.0 -> 79.9	7724	1.87 µg/L	97

7.3.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3843			
PFHpA	6.633	363.1 -> 319.0	69355	2.23	µg/L	97
		363.1 -> 169.0	11886			
PFHpS	7.960	449.0 -> 79.9	15593	1.95	µg/L	98
		449.0 -> 98.9	8040			
PFHxA	5.694	313.0 -> 269.0	52893	2.12	µg/L	99
		313.0 -> 118.9	2747			
PFHxS	7.393	398.7 -> 79.9	15369	1.95	µg/L	m 93
		398.7 -> 98.9	7153			
PFNA	7.808	463.0 -> 419.0	81905	2.24	µg/L	99
		463.0 -> 219.0	15271			
PFNS	8.955	548.8 -> 79.9	13590	1.96	µg/L	97
		548.8 -> 98.9	7215			
PFOA	7.265	413.0 -> 369.0	98726	2.09	µg/L	96
		413.0 -> 169.0	18340			
PFOS	8.478	498.9 -> 79.9	14357	1.90	µg/L	m 72
		498.9 -> 98.8	7135			
PFPeA	4.474	263.0 -> 219.0	69322	4.24	µg/L	100
PFPeS	6.697	349.1 -> 79.9	14718	1.91	µg/L	98
		349.1 -> 98.9	6977			
PFTeDA	9.926	713.1 -> 669.0	42116	2.46	µg/L	98
		713.1 -> 168.9	3631			
PFTrDA	9.595	663.0 -> 619.0	50549	2.20	µg/L	99
		663.0 -> 168.9	5595			
PFUnDA	8.780	563.1 -> 519.0	57564	2.34	µg/L	98
		563.1 -> 269.1	8362			
11CI-PF3OUdS	9.646	630.9 -> 450.9	76454	4.33	µg/L	98
		632.9 -> 452.9	24433			
9CI-PF3ONS	8.819	530.8 -> 351.0	121204	4.24	µg/L	94
		532.8 -> 353.0	39021			
ADONA	6.870	376.9 -> 250.9	297121	4.75	µg/L	98
		376.9 -> 84.8	70193			
HFPO-DA	6.071	284.9 -> 168.9	17163	4.44	µg/L	97
		284.9 -> 184.9	2016			
3:3FTCA	3.921	241.0 -> 177.0	8965	7.34	µg/L	99
		241.0 -> 117.0	1174			
5:3FTCA	6.322	341.0 -> 237.1	250682	48.10	µg/L	99
		341.0 -> 217.0	178174			
7:3FTCA	7.711	441.0 -> 316.9	181193	49.62	µg/L	91
		441.0 -> 336.9	395835			
EtFOSA	10.985	526.0 -> 219.0	21846	4.14	µg/L	98
		526.0 -> 169.0	29367			
EtFOSE	10.931	630.0 -> 58.9	47629	9.26	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	17901	4.44	µg/L	m 89
		511.9 -> 169.0	24594			
MeFOSE	10.697	616.1 -> 58.9	30218	10.68	µg/L	100
PFDoDS	10.053	699.1 -> 79.9	3563	1.89	µg/L	92
		699.1 -> 98.8	2132			
NFDHA	5.576	295.0 -> 201.0	12818	4.21	µg/L	100
		295.0 -> 84.9	3429			
PFMBA	4.900	279.0 -> 85.1	46726	4.36	µg/L	100
PFMPA	3.601	229.0 -> 84.9	38991	4.32	µg/L	100
PFEESA	6.188	314.8 -> 134.9	133612	3.82	µg/L	99
		314.8 -> 82.9	3893			

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

7.3.1
7

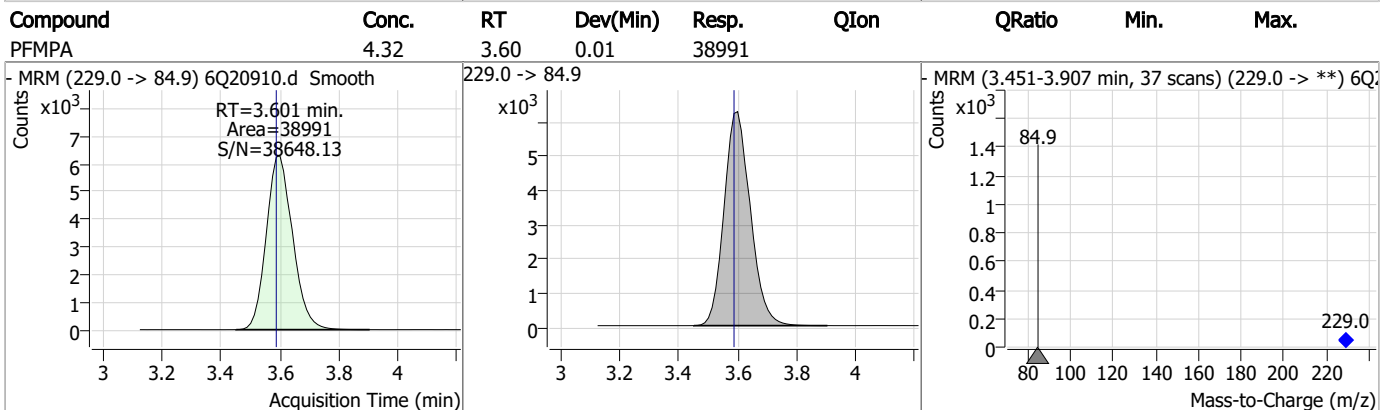
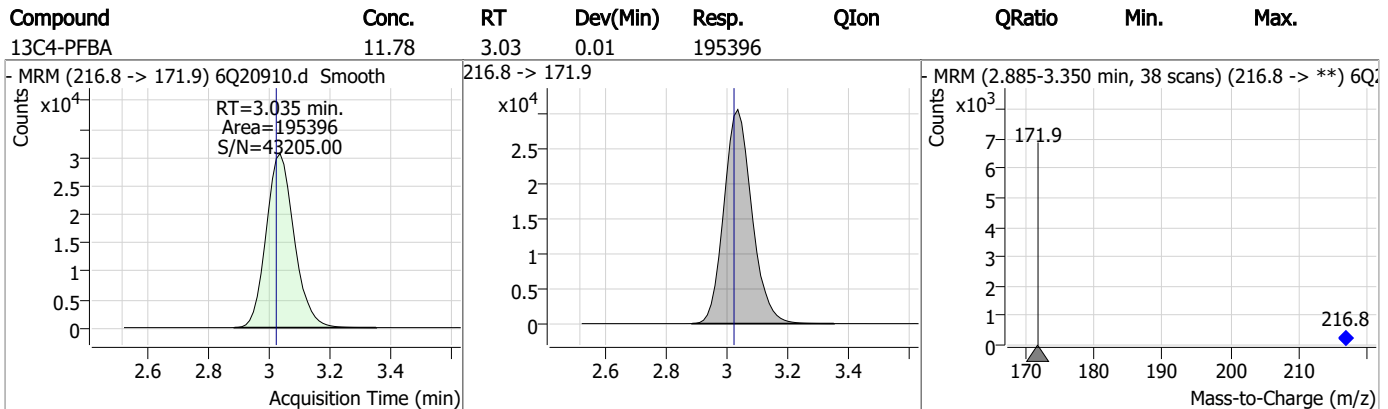
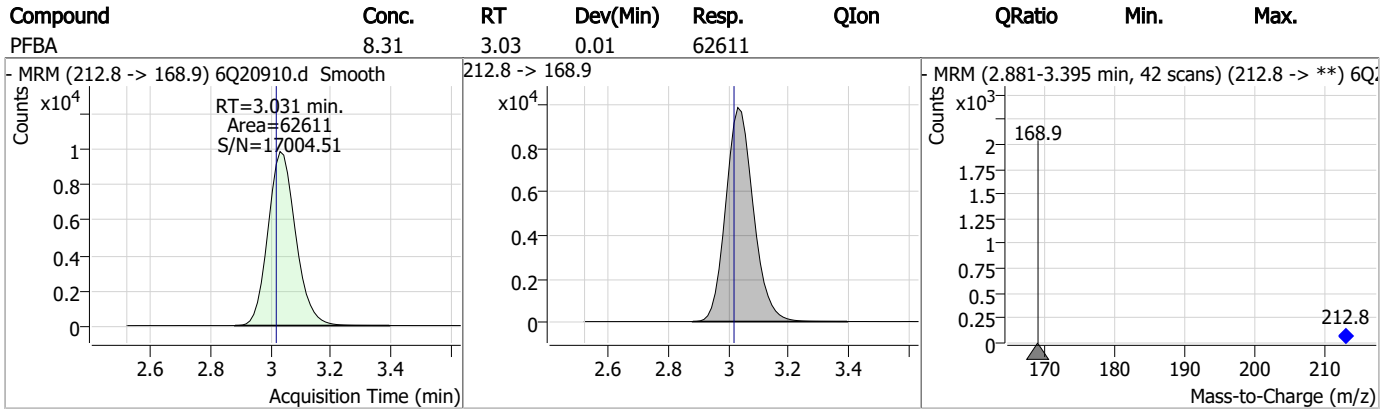
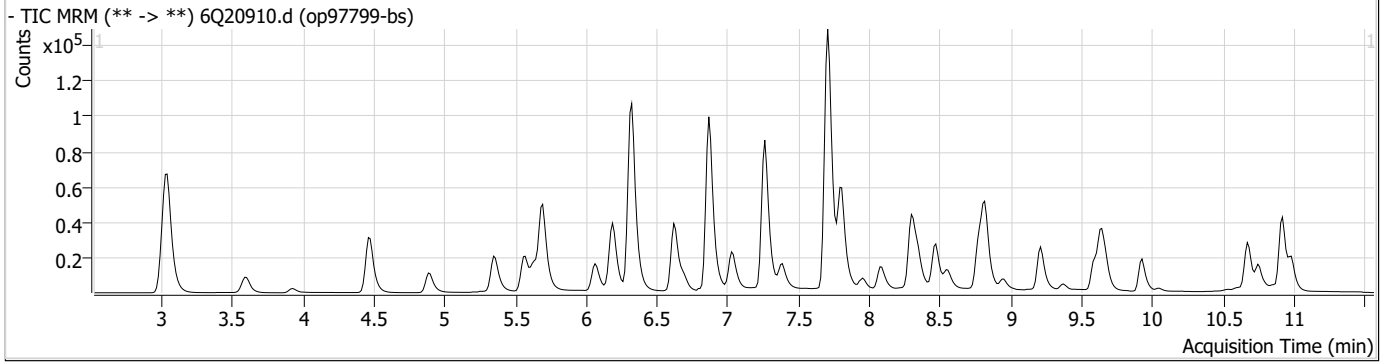
Perfluorinated Compounds by LC/MS/MS

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

7

Perfluorinated Compounds by LC/MS/MS

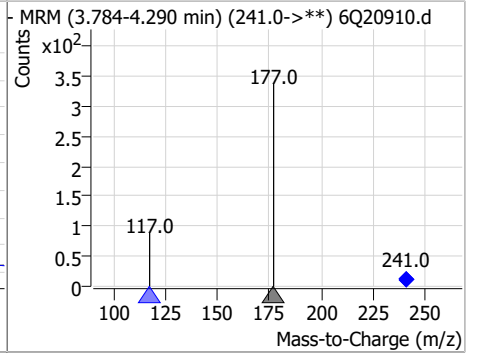
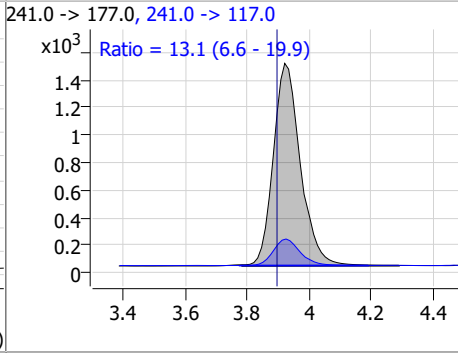
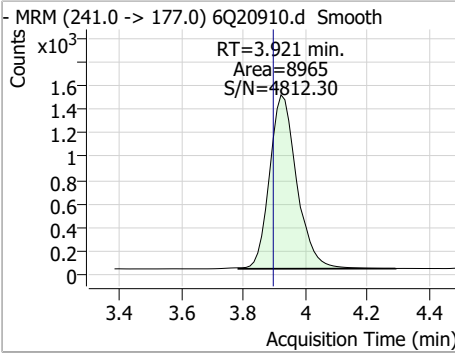


7.3.1

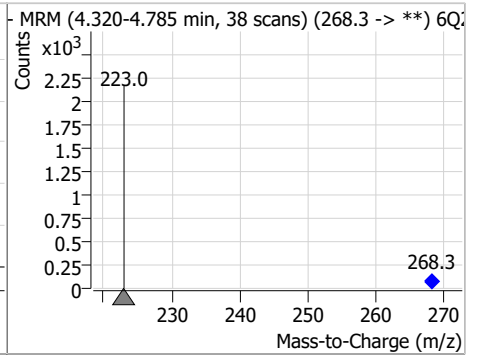
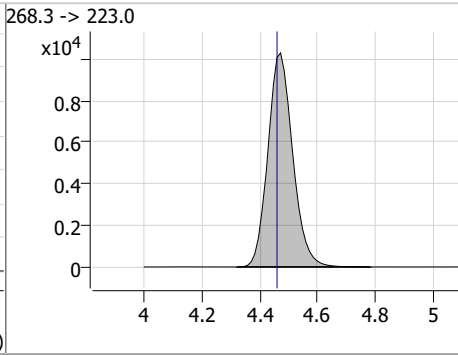
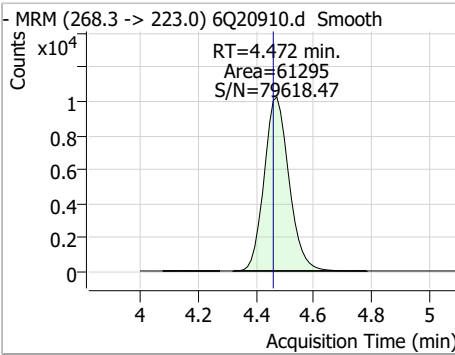
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Perfluorinated Compounds by LC/MS/MS

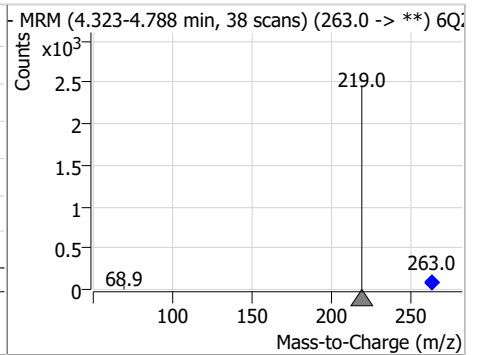
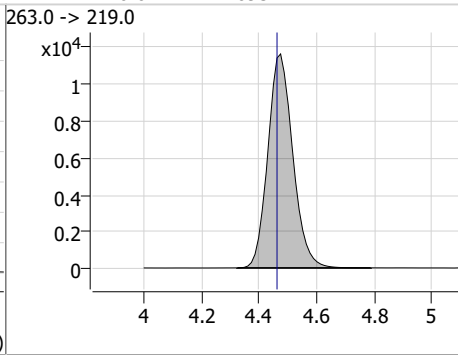
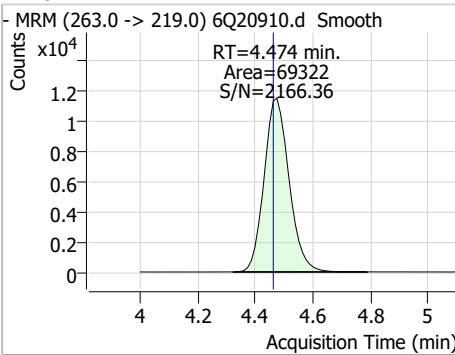
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	7.34	3.92	0.02	8965	241.0 -> 117.0	13.1	6.6	19.9



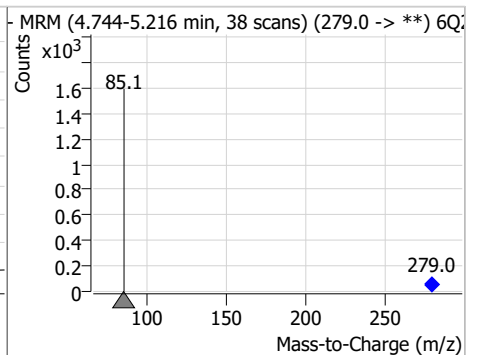
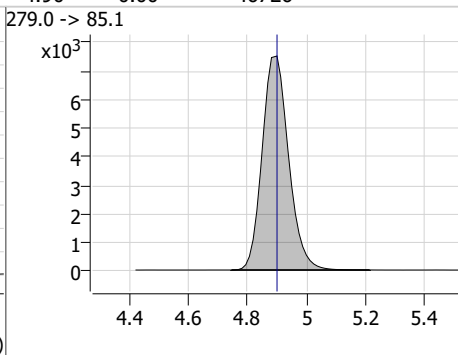
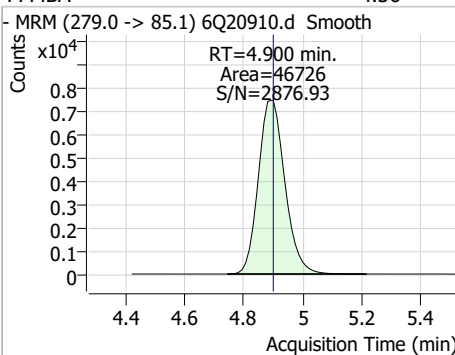
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.73	4.47	0.01	61295				



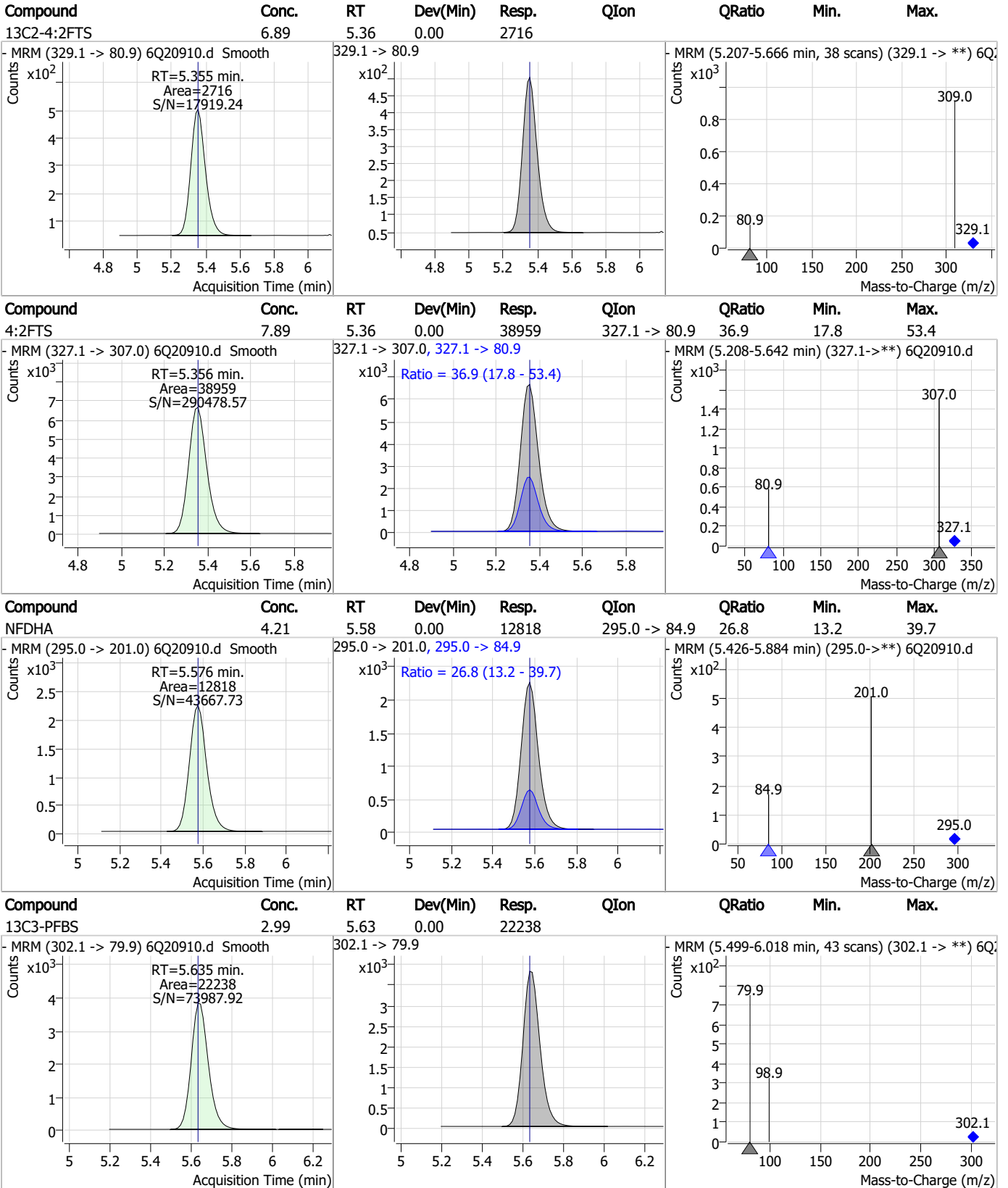
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.24	4.47	0.01	69322				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.36	4.90	0.00	46726				



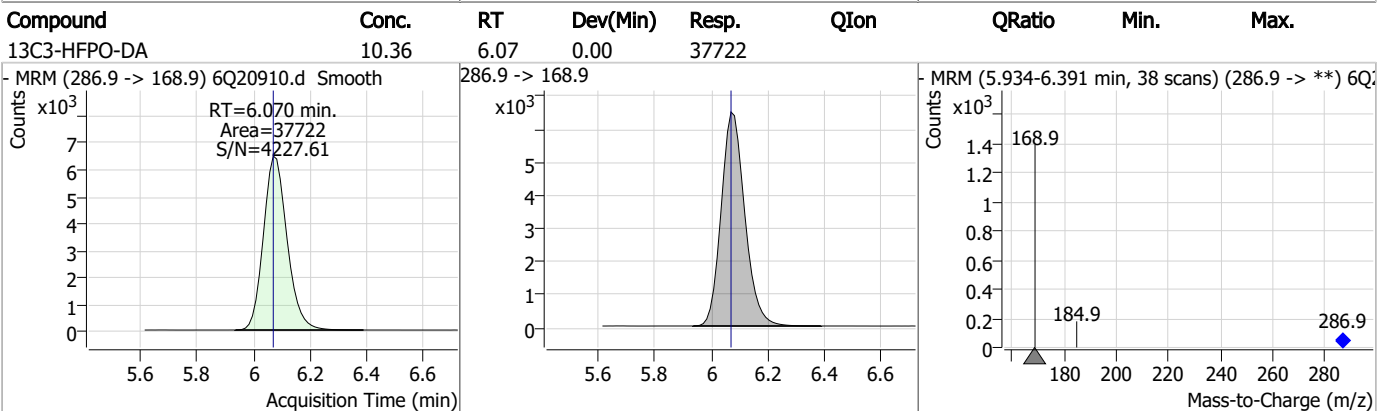
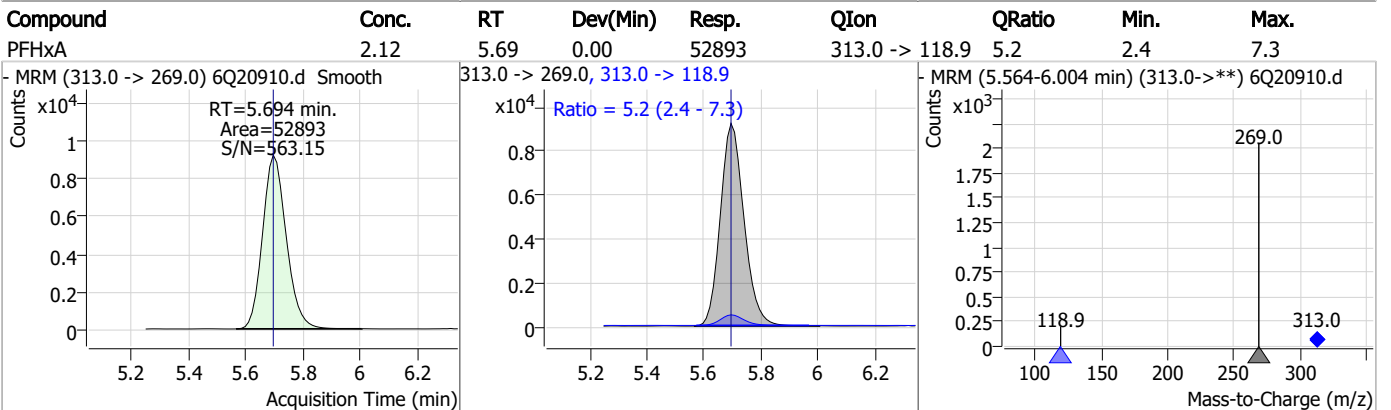
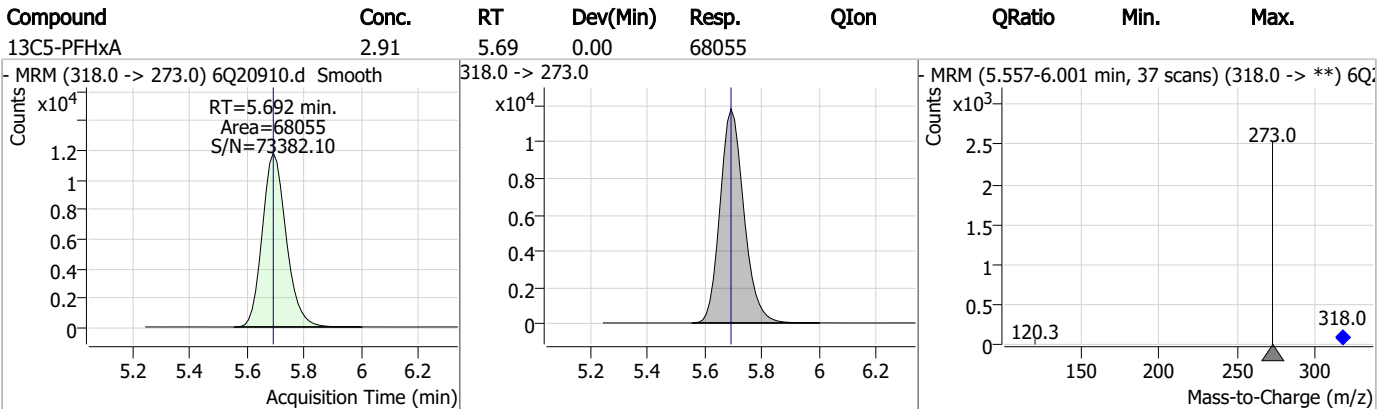
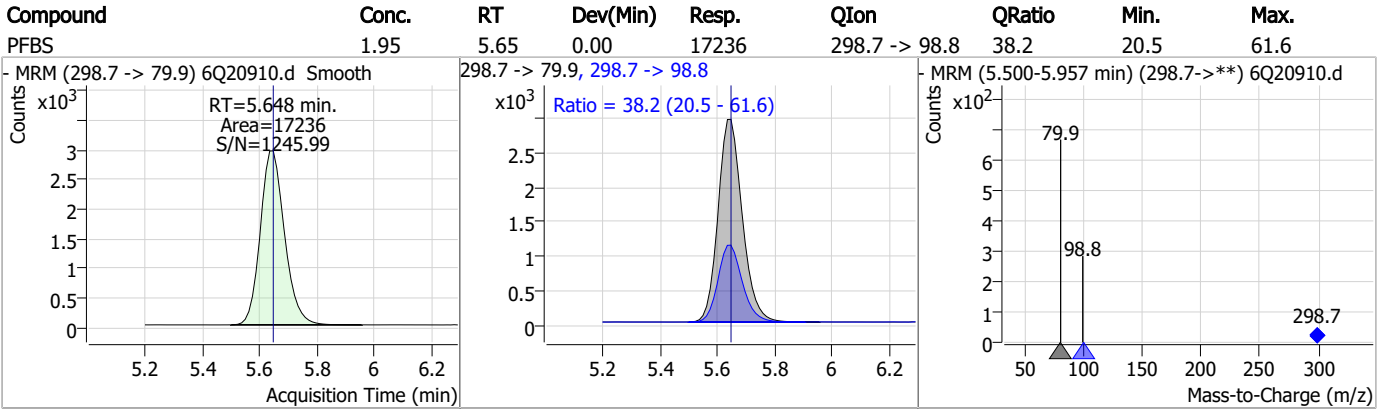
Perfluorinated Compounds by LC/MS/MS



7.3.1

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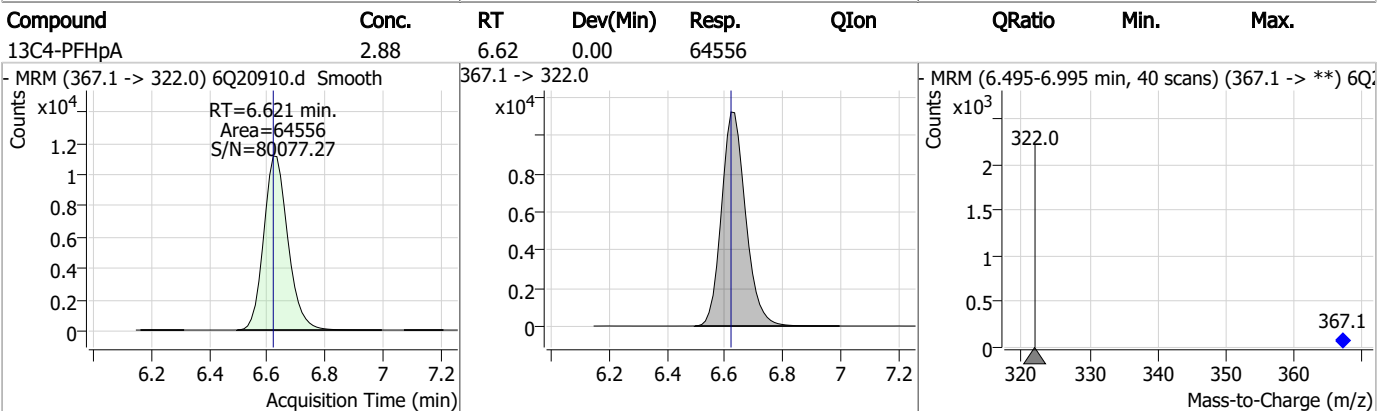
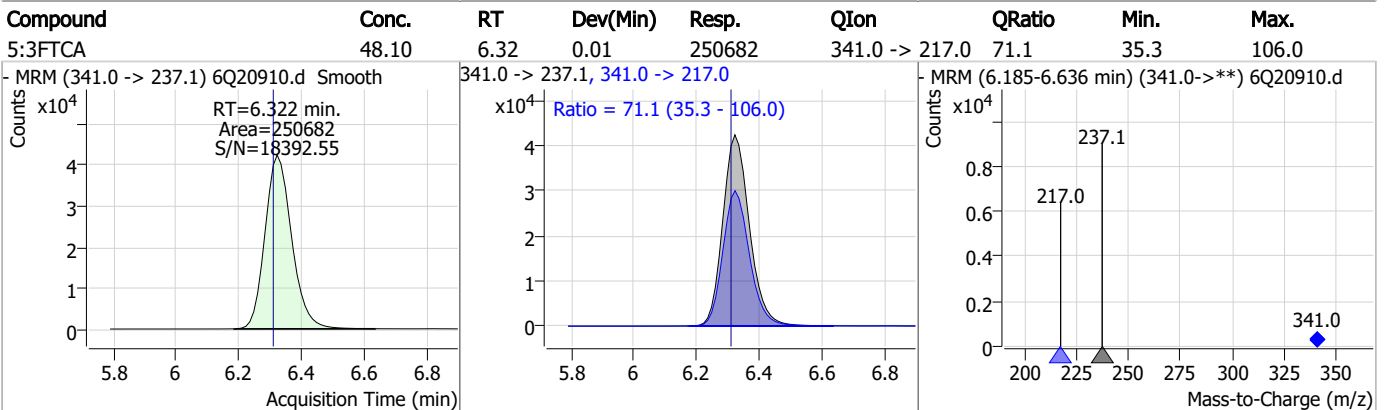
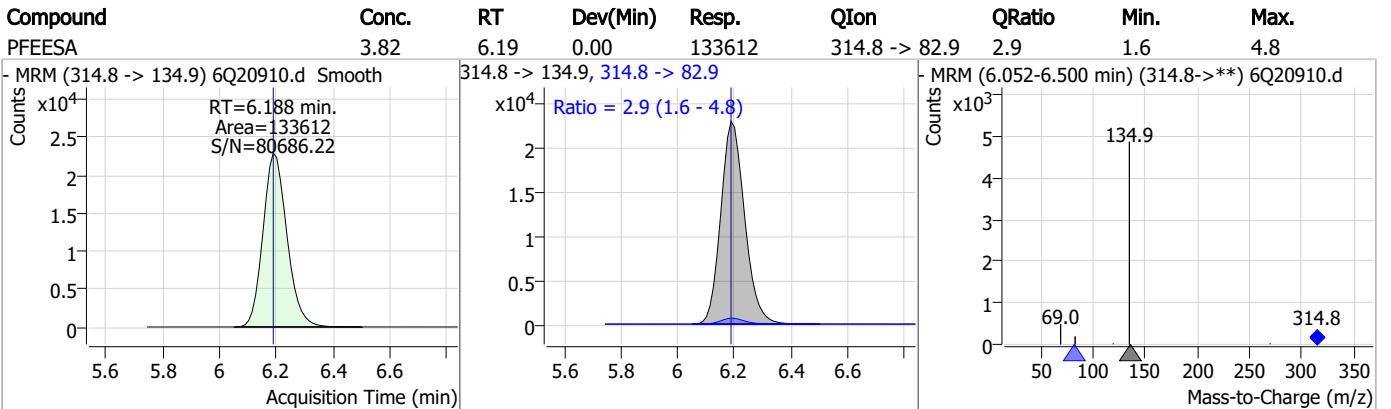
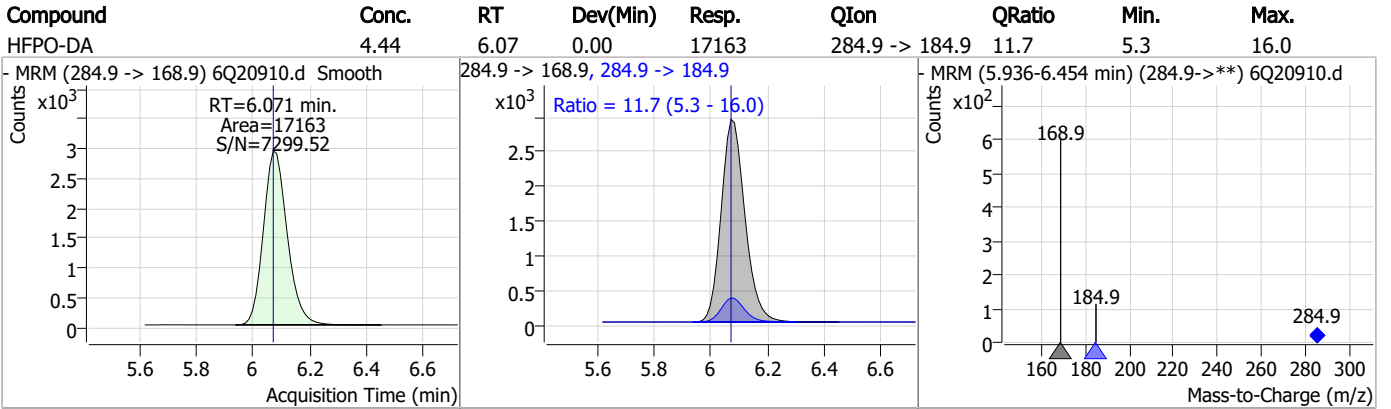
Perfluorinated Compounds by LC/MS/MS



7.3.1

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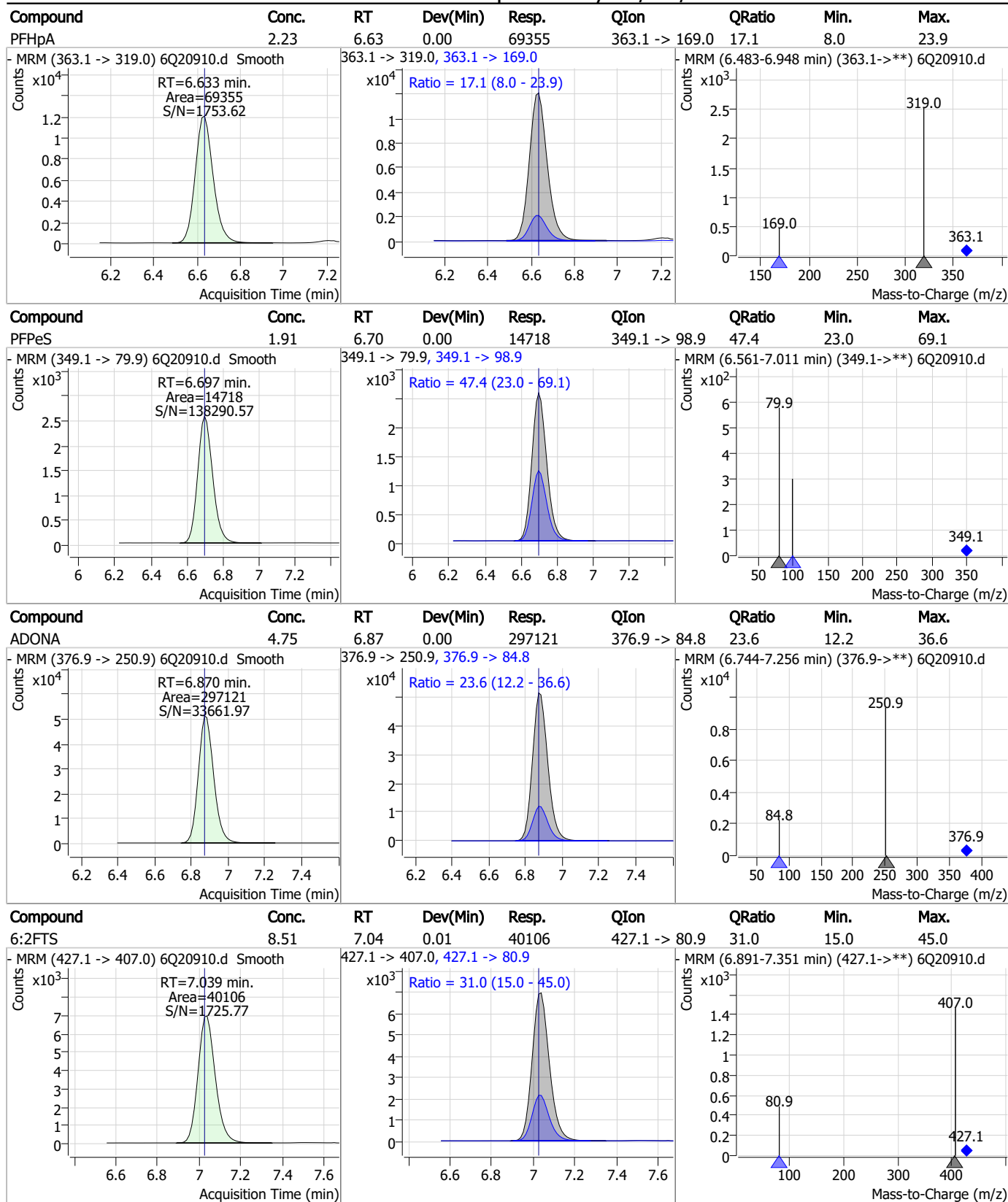
Perfluorinated Compounds by LC/MS/MS



7.3.1

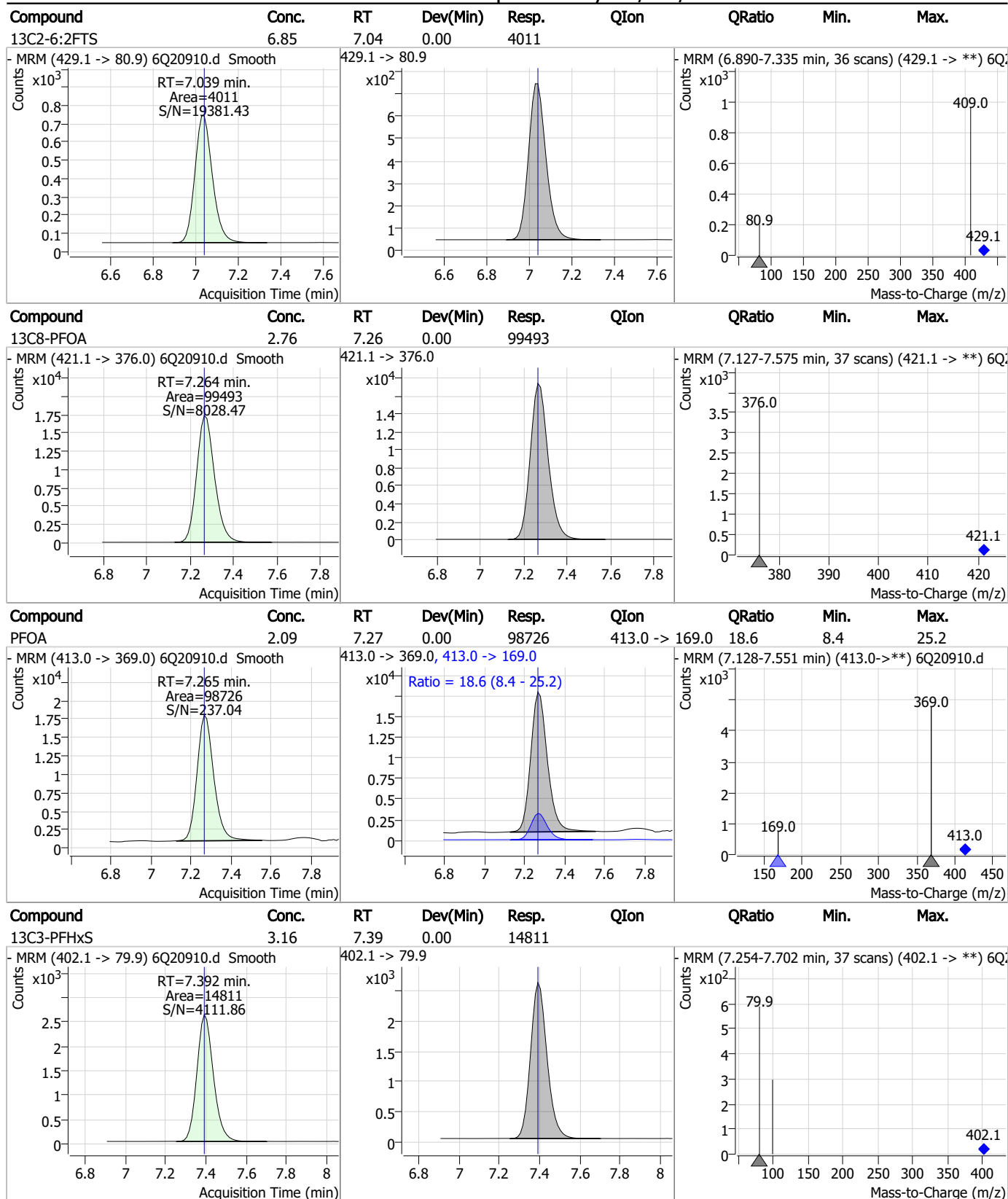
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Perfluorinated Compounds by LC/MS/MS



7.3.1
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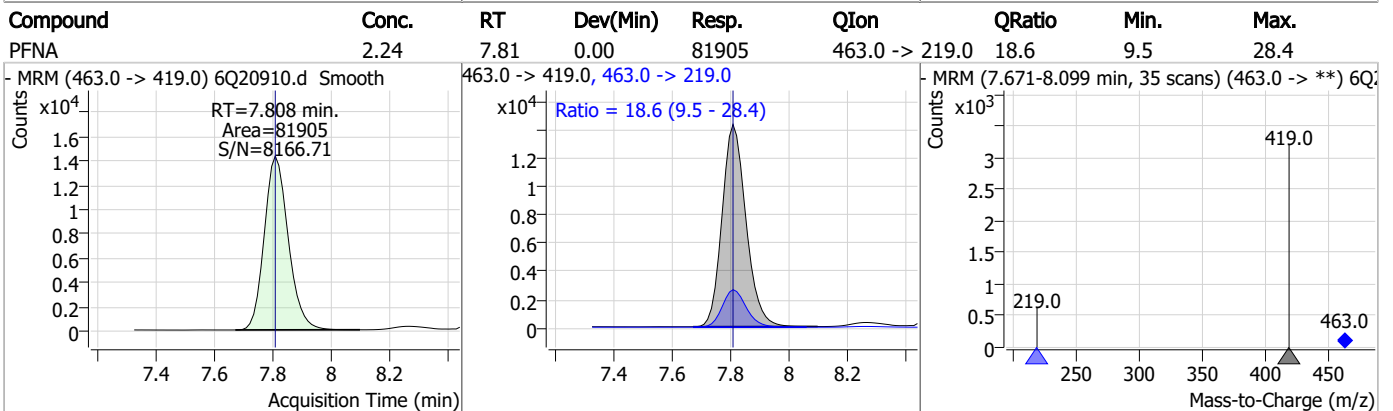
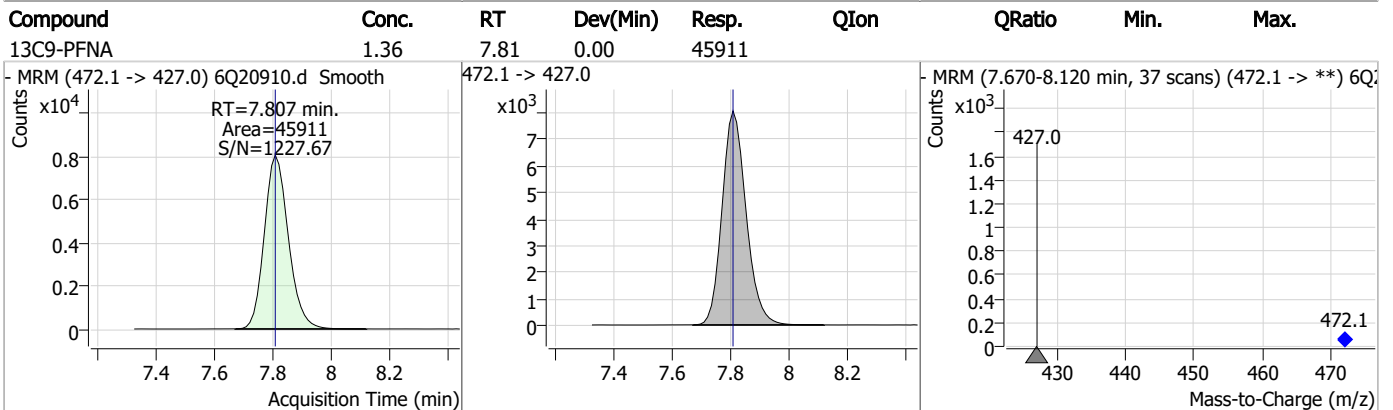
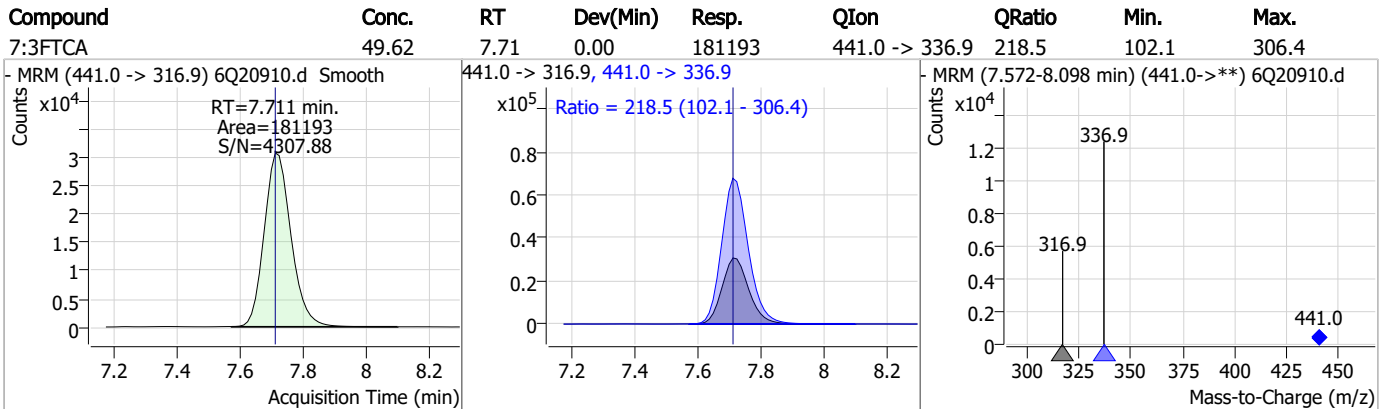
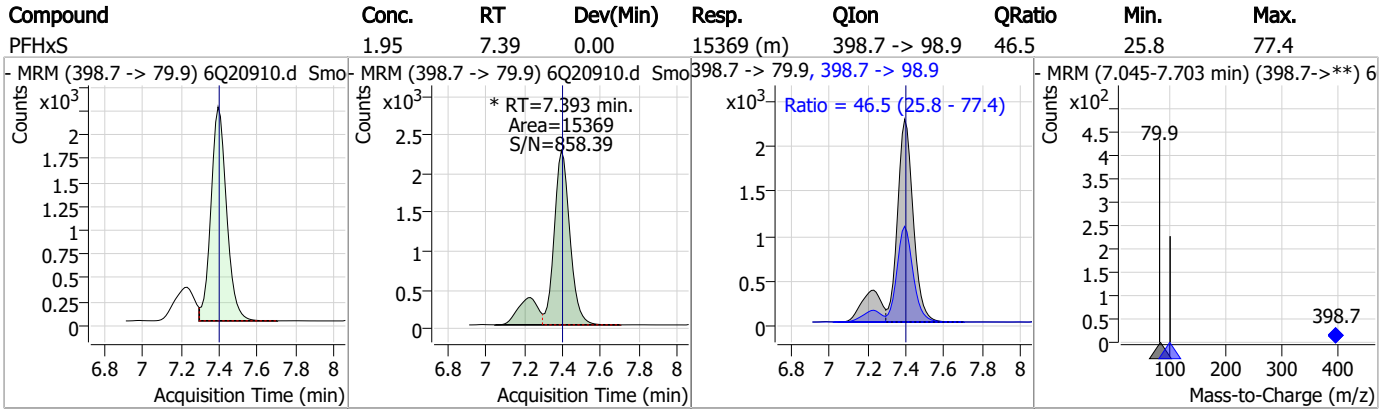
Perfluorinated Compounds by LC/MS/MS



7.3.1
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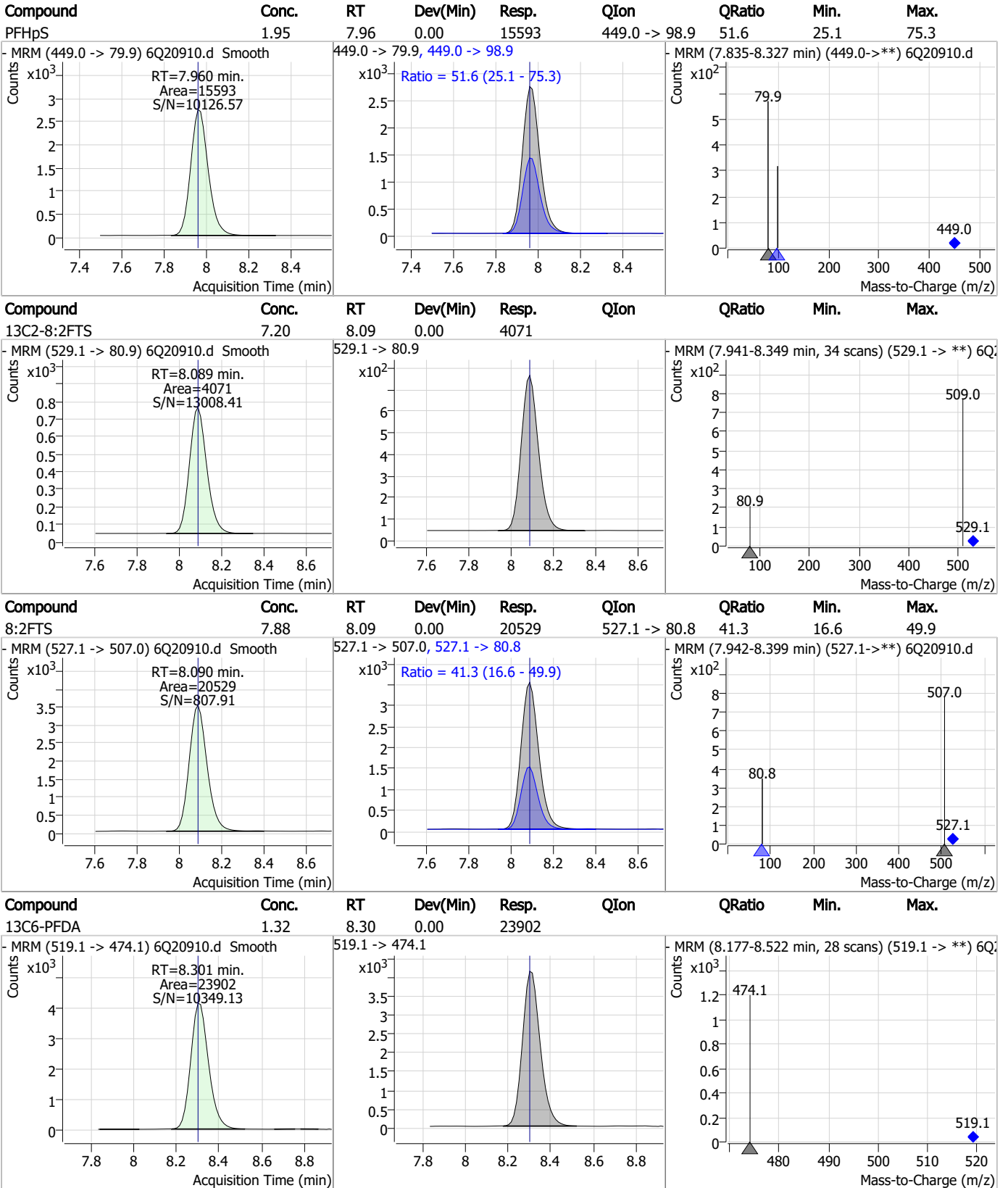
Perfluorinated Compounds by LC/MS/MS



7.3.1

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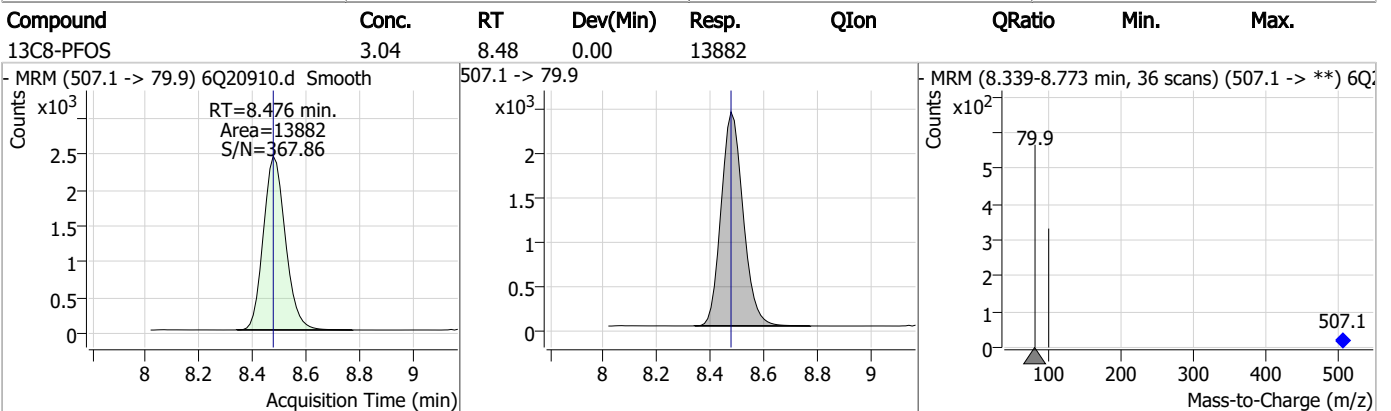
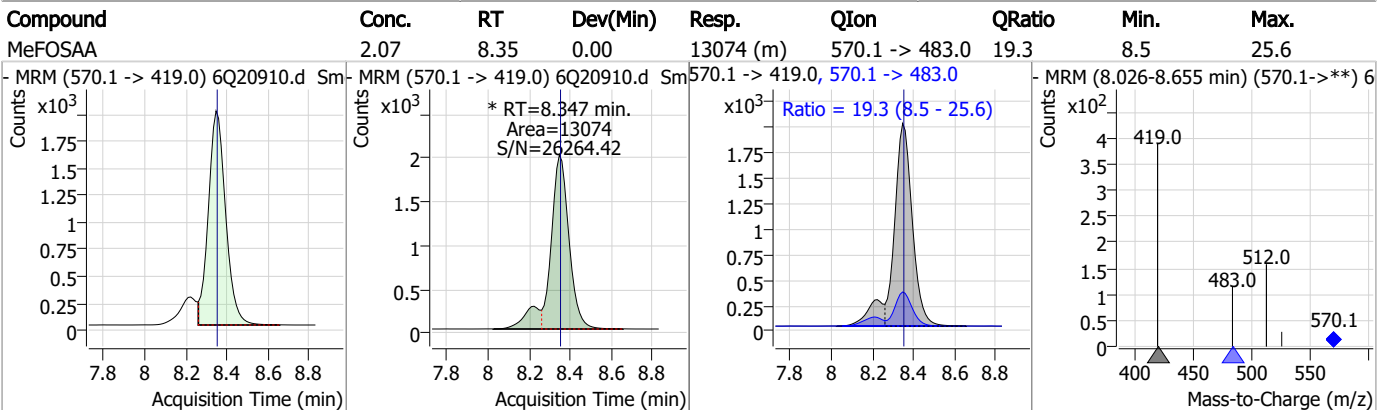
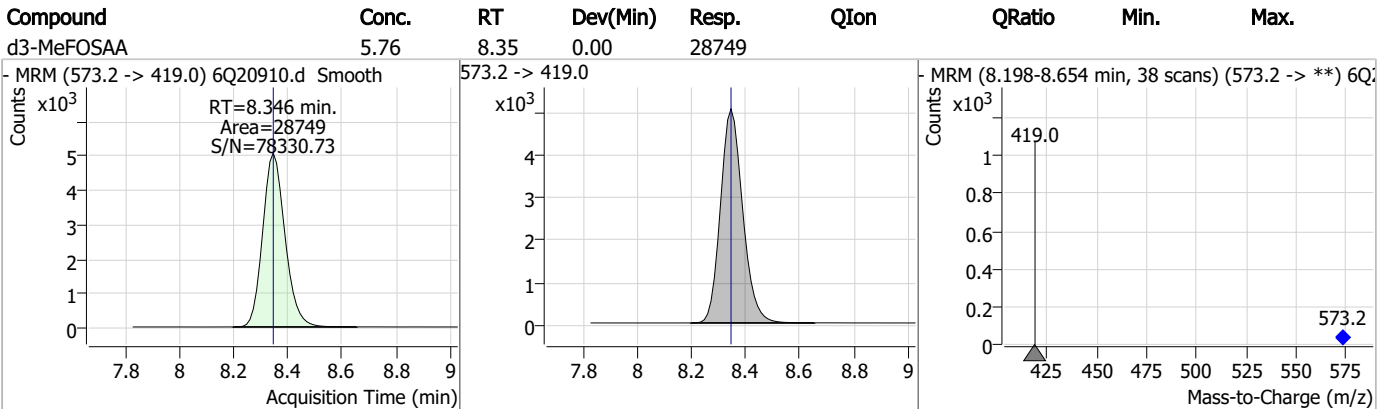
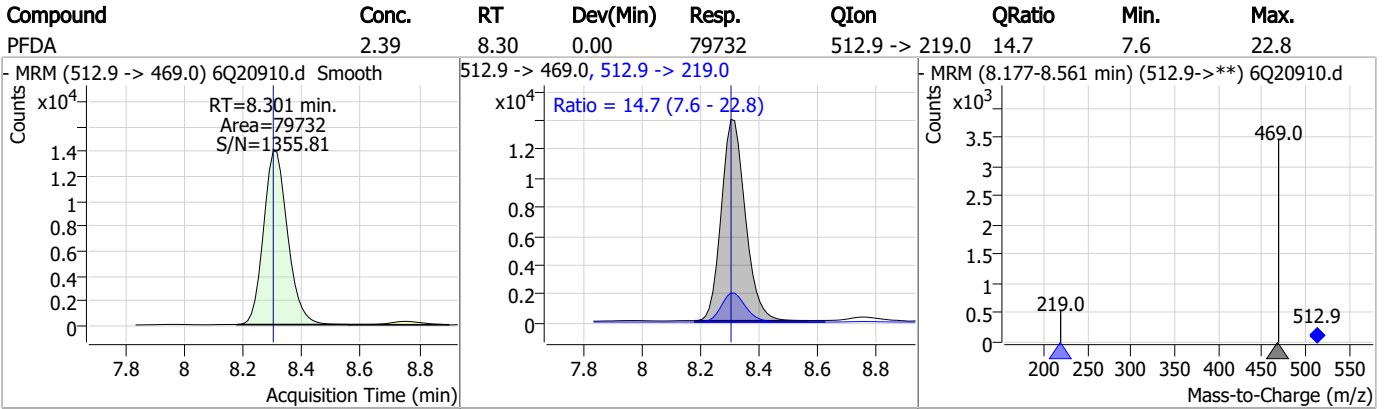
Perfluorinated Compounds by LC/MS/MS



7.3.1

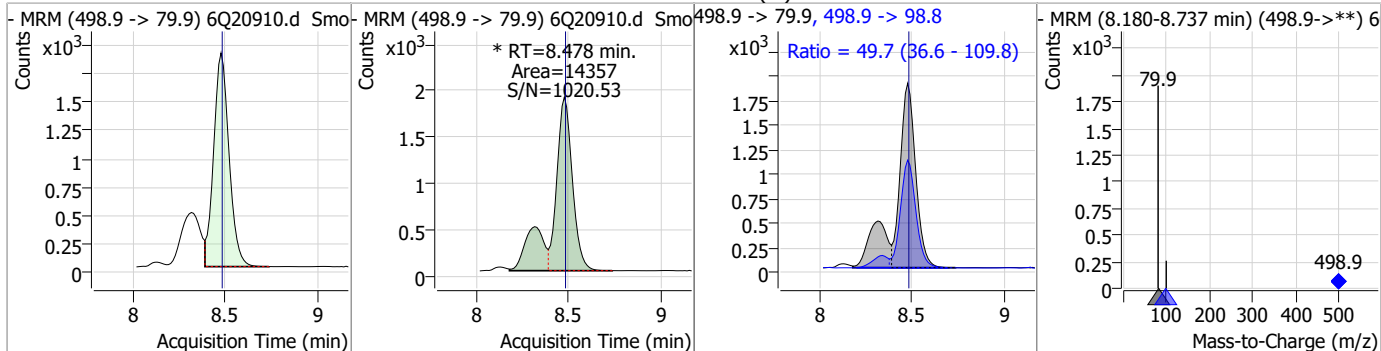
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Perfluorinated Compounds by LC/MS/MS

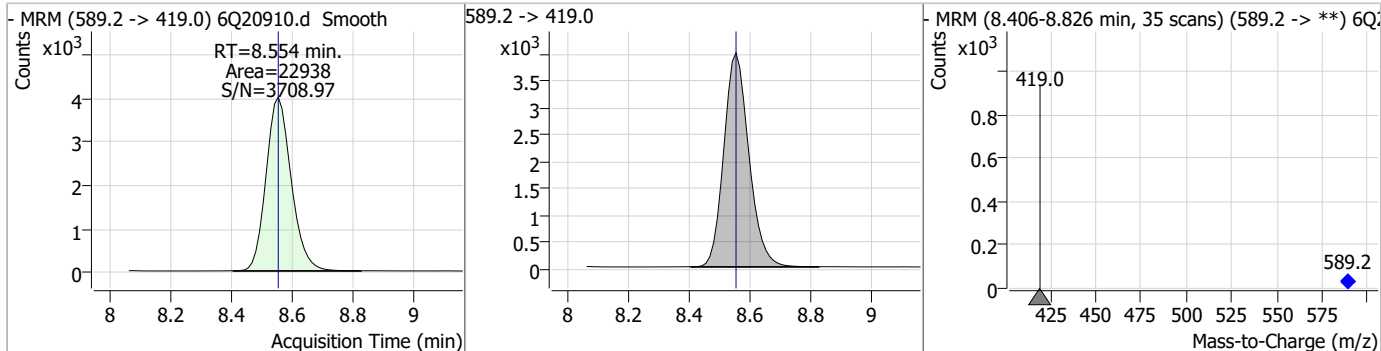


Perfluorinated Compounds by LC/MS/MS

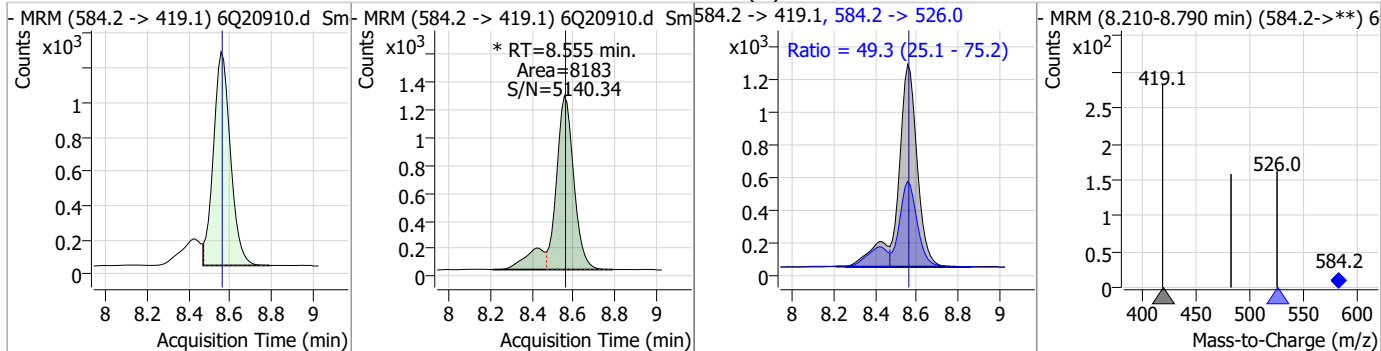
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.90	8.48	0.00	14357 (m)	498.9 -> 98.8	49.7	36.6	109.8



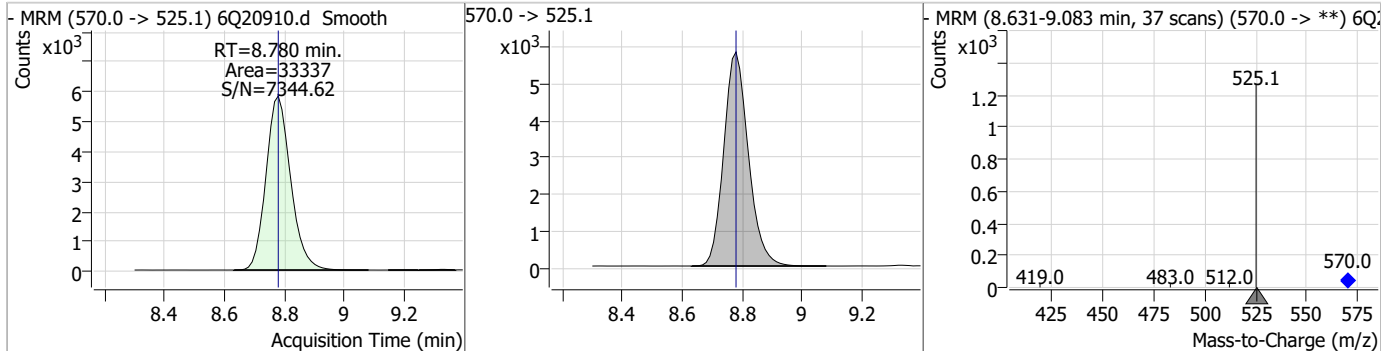
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.78	8.55	0.00	22938	589.2 -> 419.0	49.3	25.1	75.2



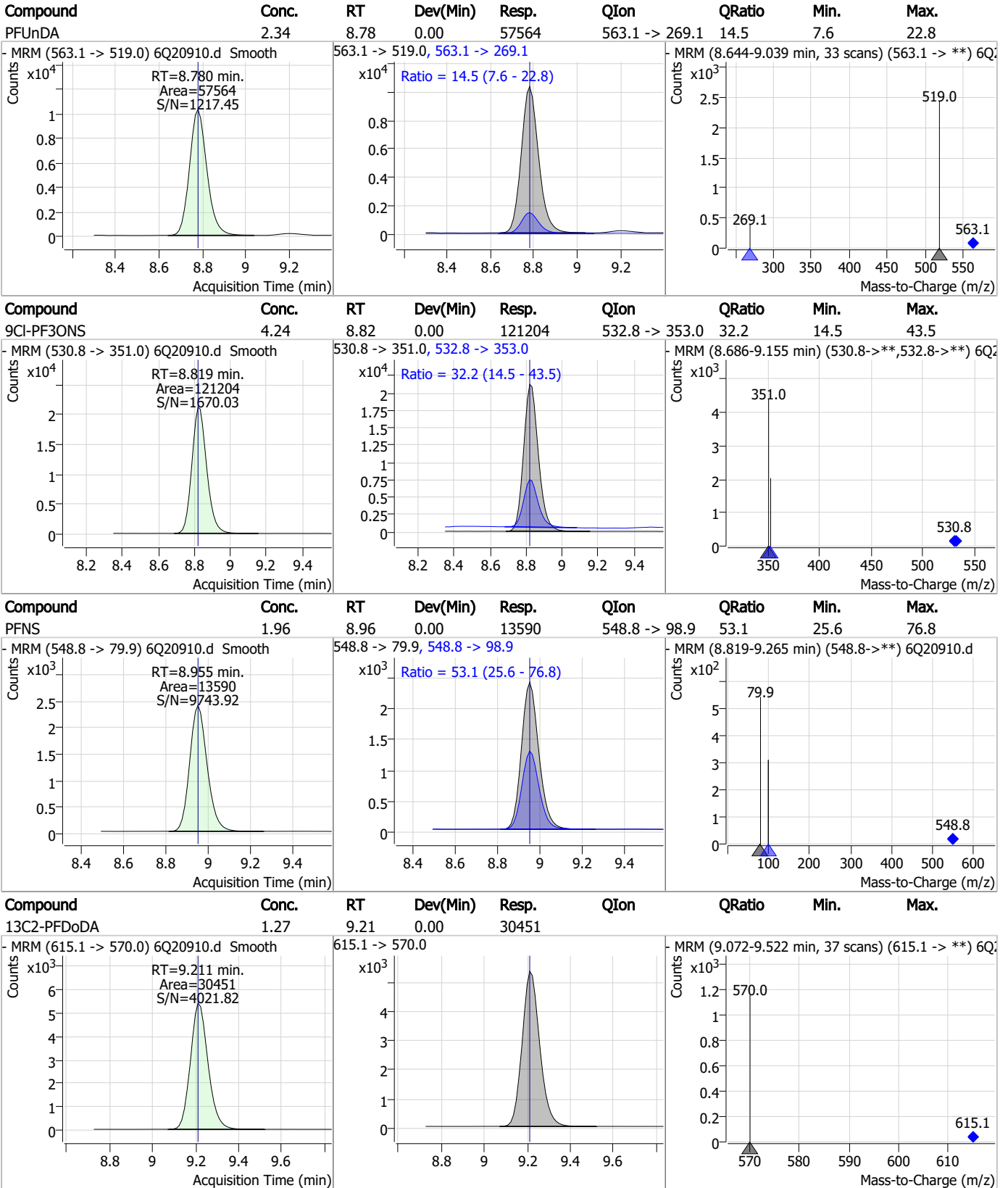
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.27	8.55	0.00	8183 (m)	584.2 -> 526.0	49.3	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.43	8.78	0.00	33337	570.0 -> 525.1	49.3	25.1	75.2



Perfluorinated Compounds by LC/MS/MS

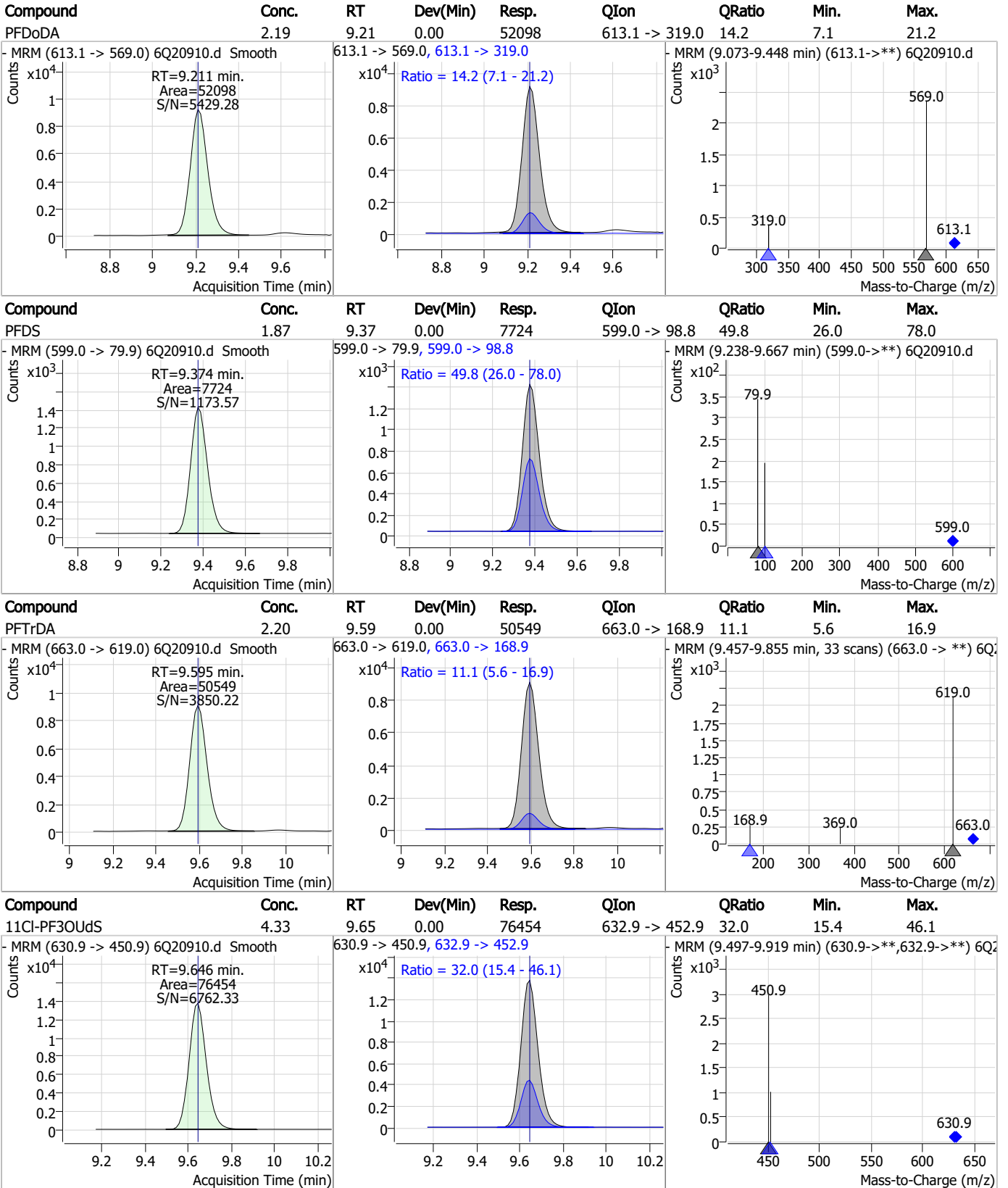


7.3.1

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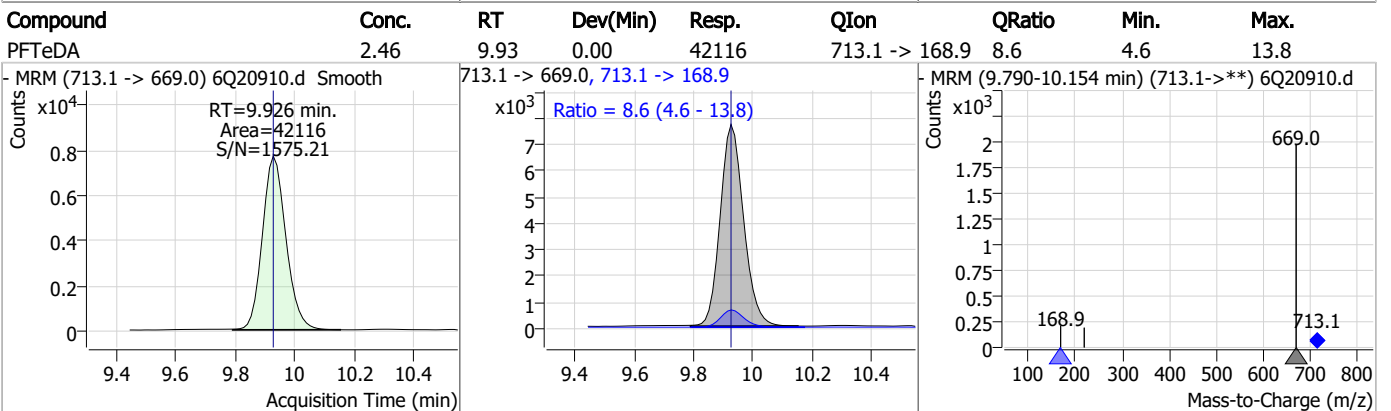
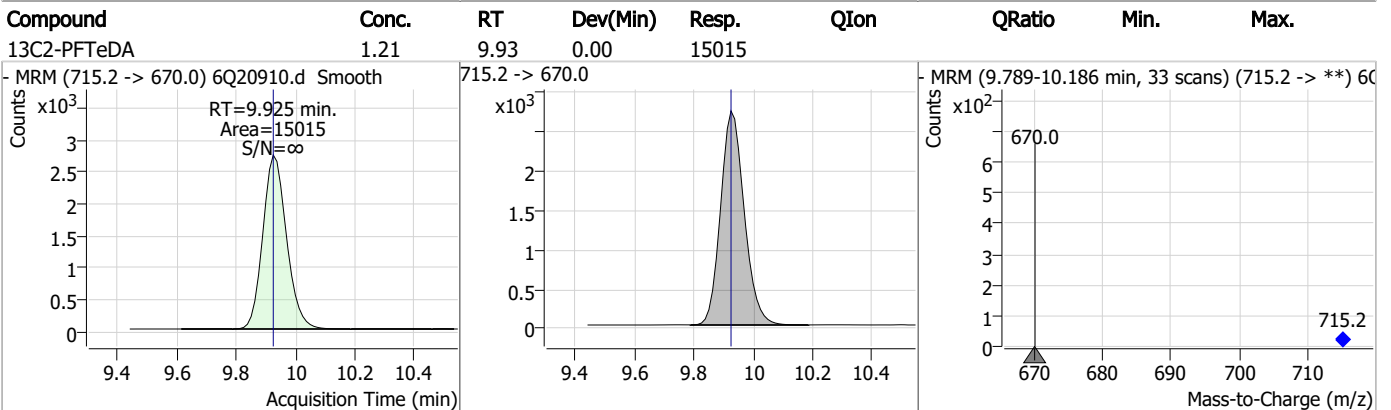
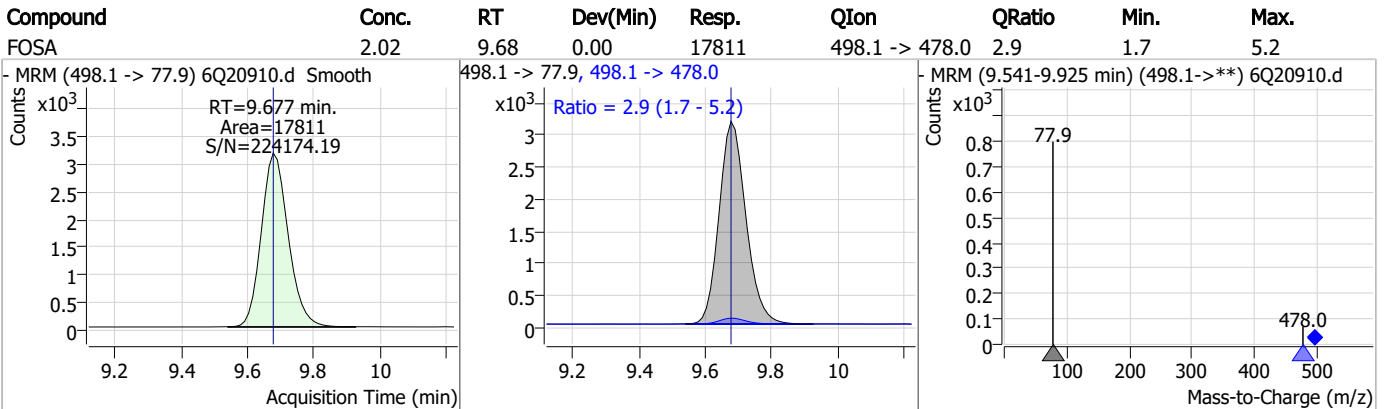
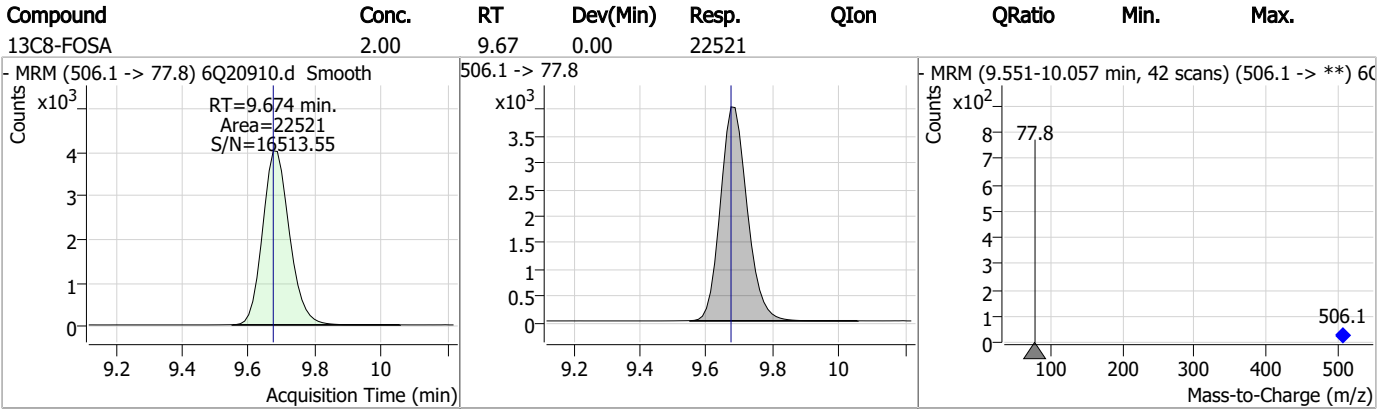
Perfluorinated Compounds by LC/MS/MS



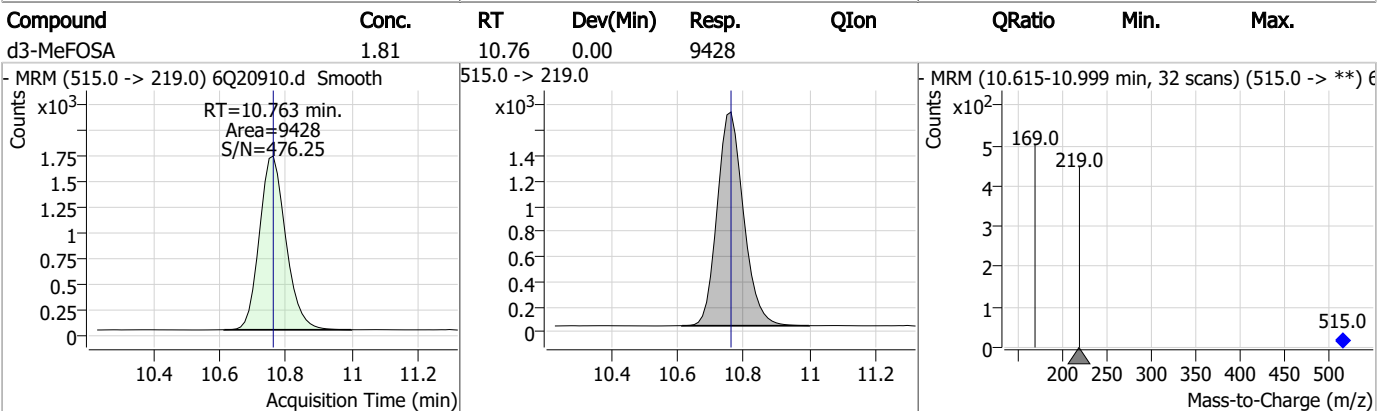
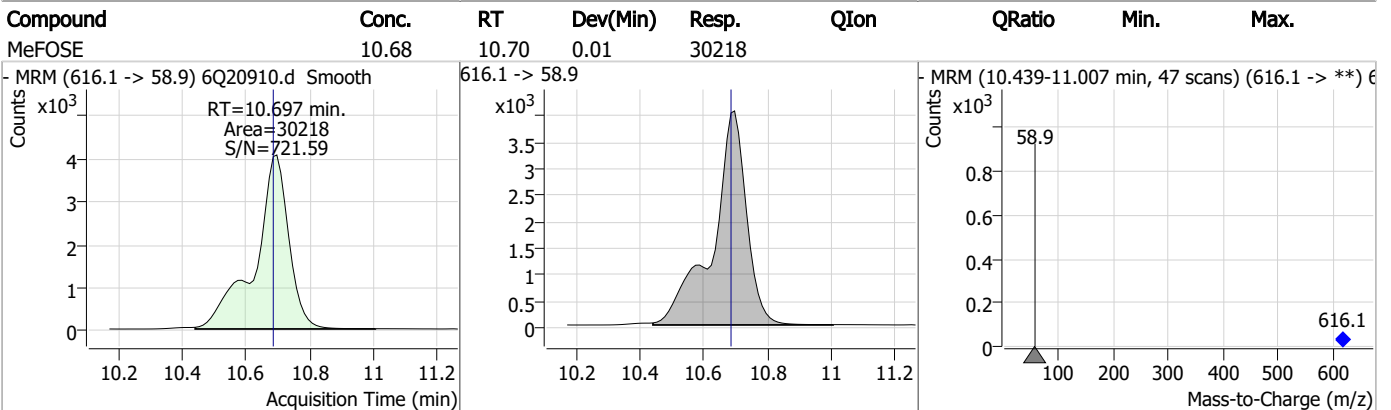
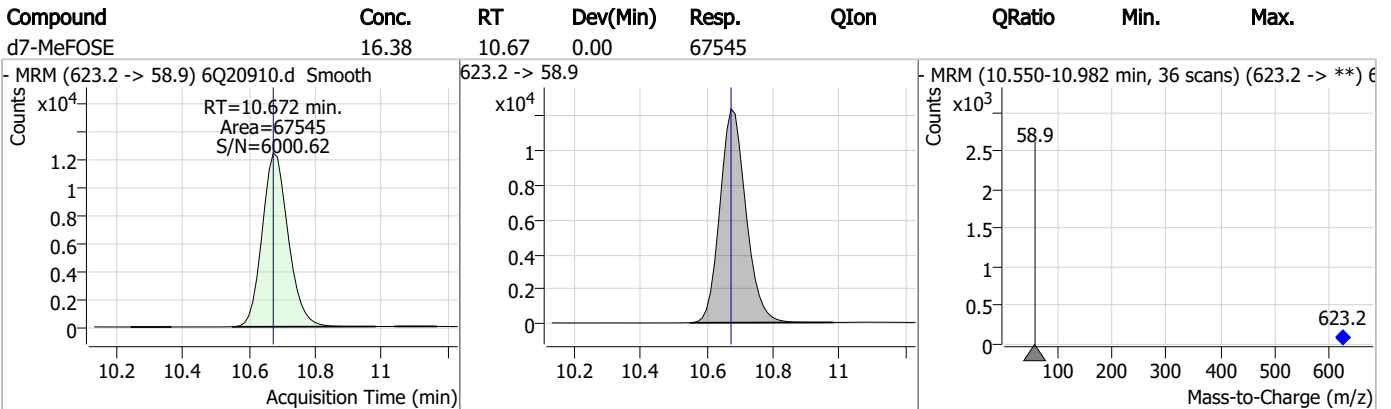
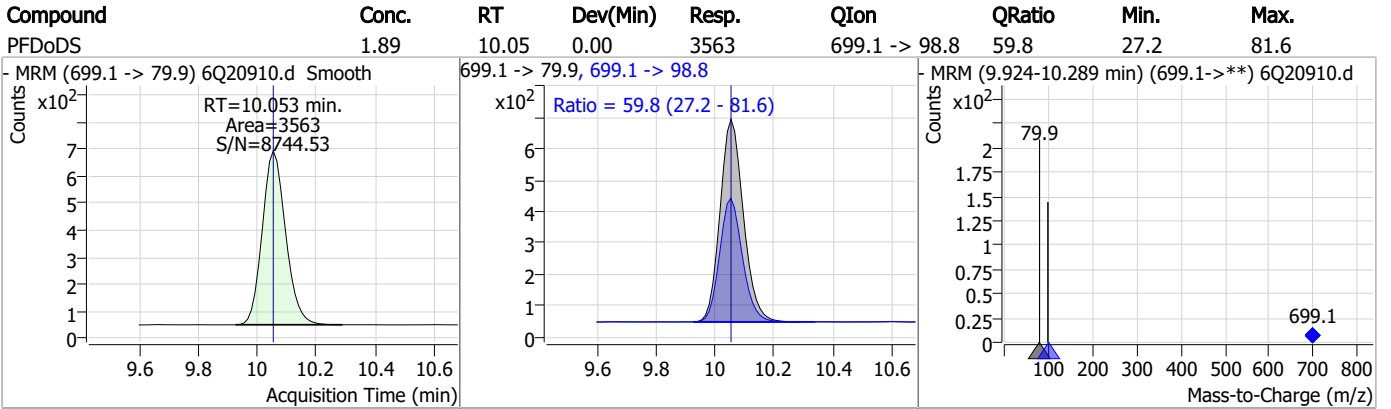
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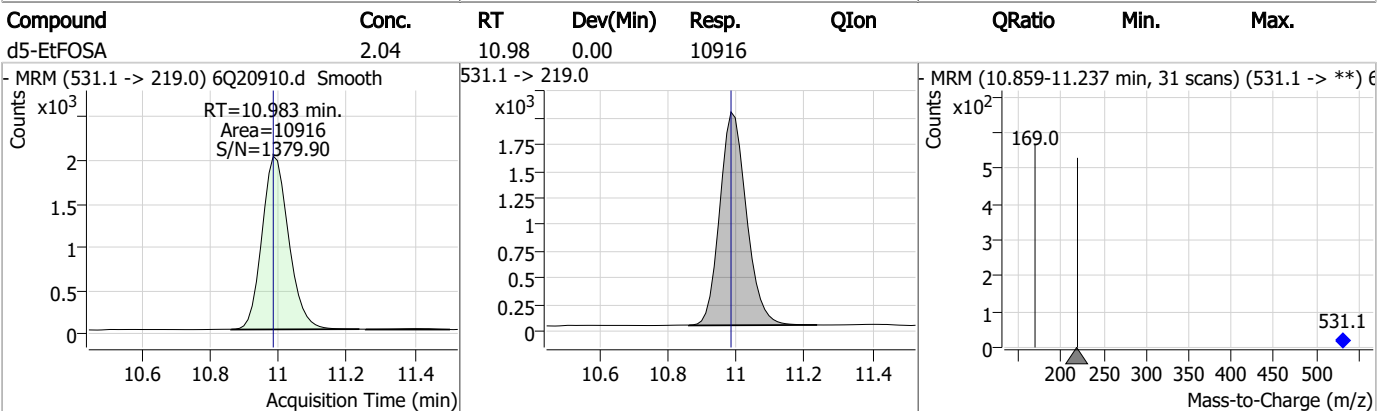
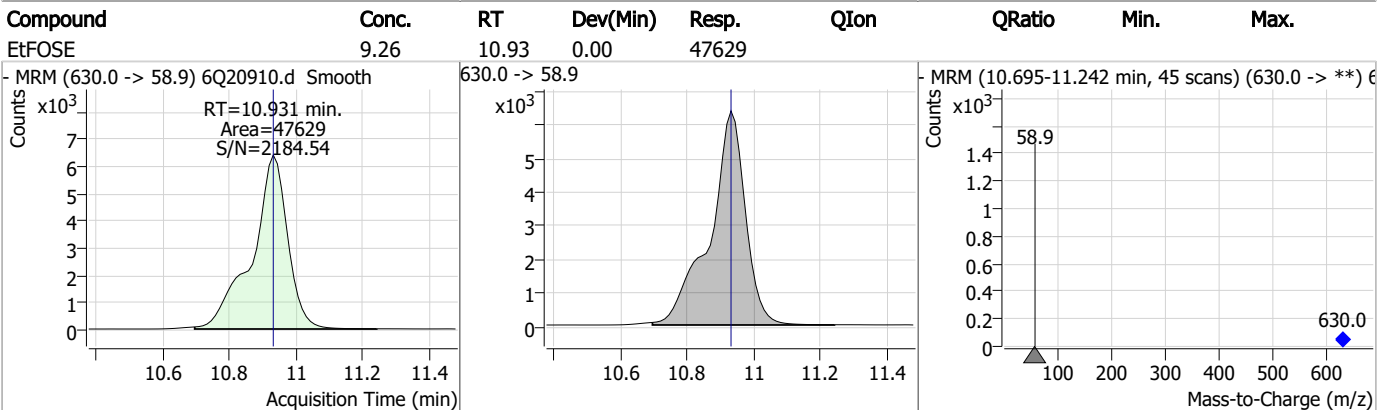
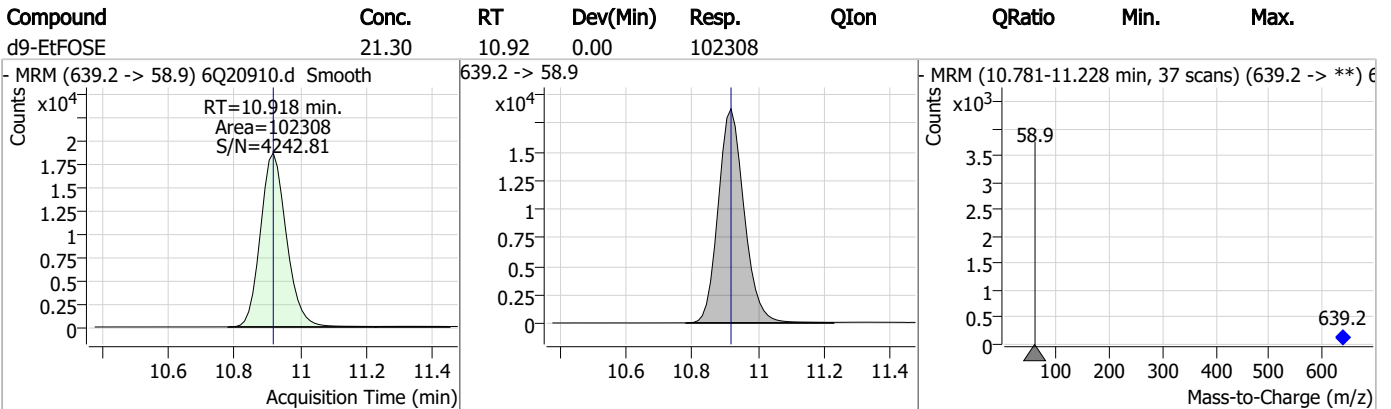
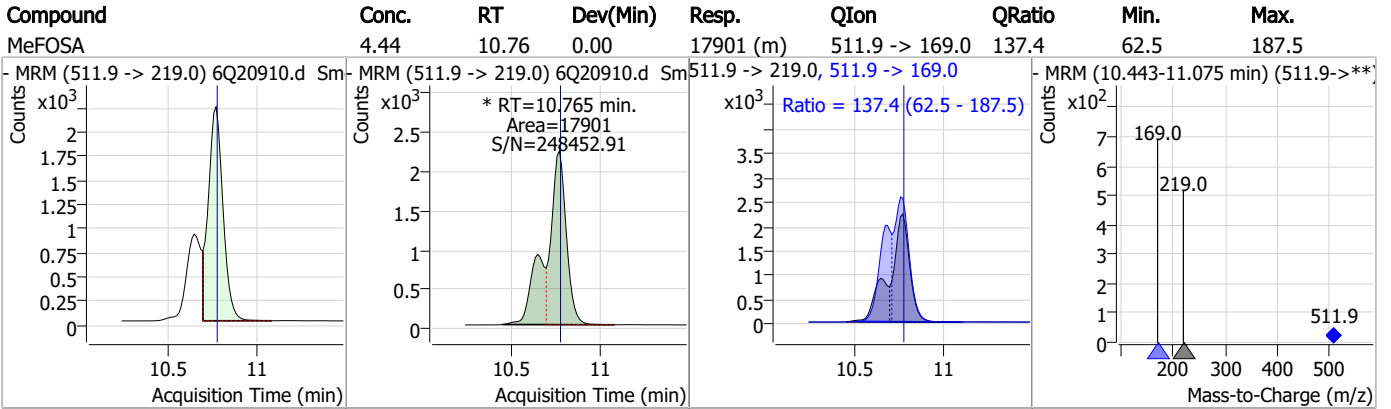
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



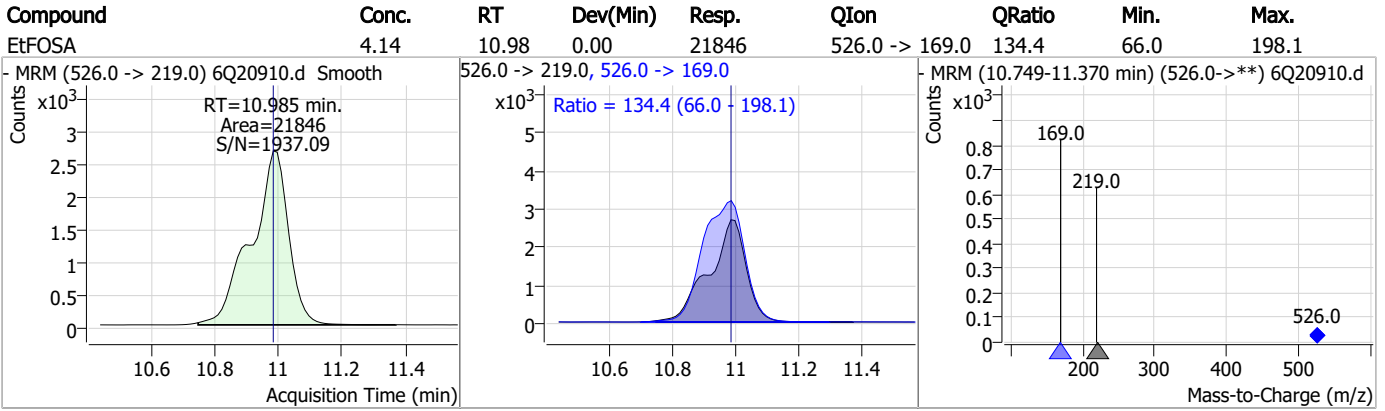
Perfluorinated Compounds by LC/MS/MS



7.3.1

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Perfluorinated Compounds by LC/MS/MS



7.3.1

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Manual Integration Approval Summary

Sample Number: OP97799-BS Method: EPA DRAFT 1633
Lab FileID: 6Q20910.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 15:04 Supervisor approved: 07/17/23 11:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.3.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20911.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 3:18:38 PM
 Sample Name : op97799-llbs:3
 Vial : P5-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	203088	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	64155	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	69544	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	70271	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	108561	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	49673	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	27949	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	35406	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	33224	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	16741	1.25 µg/L	0.000
M8-FOSA	9.687	506.1 -> 77.8	25154	2.50 µg/L	0.012
M3-PFBS	5.647	302.1 -> 79.9	24566	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	15420	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	14016	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3052	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4580	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4071	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	30774	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	39347	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	24761	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	78388	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	120427	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	12633	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	11247	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	15555	2.50 µg/L	0.000
13C3-PFBA	3.039	216.0 -> 172.0	72385	5.00 µg/L	0.012
18O2-PFHxS	7.391	403.0 -> 83.9	9456	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	98665	2.50 µg/L	0.000
13C2-PFDA	8.313	515.1 -> 470.1	30924	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	54402	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	58747	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3052	7.20 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 144.1%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4580	7.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 145.6%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4071	6.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 134.0%		
13C2-PFDoDA	9.211	615.1 -> 570.0	33224	1.45 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 116.1%		
13C2-PFTeDA	9.925	715.2 -> 670.0	16741	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 113.0%		
13C3-PFBS	5.647	302.1 -> 79.9	24566	3.07 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 122.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	15420	3.06 µg/L	0.000

7.32
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.4%	
13C4-PFBA	3.035	216.8 -> 171.9	203088	11.84 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.4%	
13C4-PFHpA	6.633	367.1 -> 322.0	70271	3.06 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 122.3%	
13C5-PFHxA	5.692	318.0 -> 273.0	69544	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.2%	
13C5-PFPeA	4.472	268.3 -> 223.0	64155	5.86 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C6-PFDA	8.313	519.1 -> 474.1	27949	1.61 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 128.8%	
13C7-PFUnDA	8.780	570.0 -> 525.1	35406	1.59 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 127.0%	
13C8-FOSA	9.687	506.1 -> 77.8	25154	2.31 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C8-PFOA	7.264	421.1 -> 376.0	108561	2.89 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.6%	
13C8-PFOS	8.476	507.1 -> 79.9	14016	3.18 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 127.0%	
13C9-PFNA	7.807	472.1 -> 427.0	49673	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.0%	
d3-MeFOSAA	8.346	573.2 -> 419.0	30774	6.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 127.5%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	39347	10.55 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
d3-MeFOSA	10.763	515.0 -> 219.0	11247	2.24 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.4%	
d5-EtFOSAA	8.554	589.2 -> 419.0	24761	6.45 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 129.1%	
d7-MeFOSE	10.672	623.2 -> 58.9	78388	19.65 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 78.6%	
d9-EtFOSE	10.918	639.2 -> 58.9	120427	25.91 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d5-EtFOSA	10.983	531.1 -> 219.0	12633	2.45 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	12363	2.23 µg/L	96
		327.1 -> 80.9	4714		
6:2FTS	7.039	427.1 -> 407.0	11974	2.23 µg/L	92
		427.1 -> 80.9	4129		
8:2FTS	8.090	527.1 -> 507.0	7274	2.79 µg/L	99
		527.1 -> 80.8	2472		
EtFOSAA	8.555	584.2 -> 419.1	2515	0.65 µg/L	m 89
		584.2 -> 526.0	1072		
FOSA	9.677	498.1 -> 77.9	5890	0.60 µg/L	99
		498.1 -> 478.0	187		
MeFOSAA	8.347	570.1 -> 419.0	4276	0.63 µg/L	m 96
		570.1 -> 483.0	805		
PFBA	3.031	212.8 -> 168.9	19408	2.48 µg/L	100
PFBS	5.648	298.7 -> 79.9	5130	0.53 µg/L	99
		298.7 -> 98.8	2068		
PFDA	8.314	512.9 -> 469.0	22987	0.59 µg/L	96
		512.9 -> 219.0	3845		
PFDODA	9.211	613.1 -> 569.0	16083	0.62 µg/L	99
		613.1 -> 319.0	2213		
PFDS	9.374	599.0 -> 79.9	2376	0.57 µg/L	98

7.3.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	1202			
PFHpA	6.633	363.1 -> 319.0	19742	0.58	µg/L	94
		363.1 -> 169.0	3677			
PFHpS	7.972	449.0 -> 79.9	4691	0.58	µg/L	95
		449.0 -> 98.9	2509			
PFHxA	5.694	313.0 -> 269.0	16694	0.65	µg/L	98
		313.0 -> 118.9	916			
PFHxS	7.393	398.7 -> 79.9	4522	0.55	µg/L	m 94
		398.7 -> 98.9	2508			
PFNA	7.808	463.0 -> 419.0	24534	0.62	µg/L	98
		463.0 -> 219.0	4882			
PFNS	8.955	548.8 -> 79.9	3987	0.57	µg/L	93
		548.8 -> 98.9	2249			
PFOA	7.265	413.0 -> 369.0	32684	0.63	µg/L	99
		413.0 -> 169.0	5659			
PFOS	8.478	498.9 -> 79.9	4802	0.63	µg/L	m 71
		498.9 -> 98.8	2351			
PFPeA	4.474	263.0 -> 219.0	21287	1.24	µg/L	100
PFPeS	6.697	349.1 -> 79.9	4631	0.58	µg/L	99
		349.1 -> 98.9	2156			
PFTeDA	9.926	713.1 -> 669.0	11680	0.61	µg/L	99
		713.1 -> 168.9	1051			
PFTrDA	9.595	663.0 -> 619.0	15788	0.63	µg/L	98
		663.0 -> 168.9	1684			
PFUnDA	8.780	563.1 -> 519.0	15036	0.58	µg/L	95
		563.1 -> 269.1	2582			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	22155	1.20	µg/L	98
		632.9 -> 452.9	6620			
9Cl-PF3ONS	8.819	530.8 -> 351.0	37572	1.26	µg/L	90
		532.8 -> 353.0	12913			
ADONA	6.870	376.9 -> 250.9	86130	1.32	µg/L	98
		376.9 -> 84.8	21793			
HFPO-DA	6.071	284.9 -> 168.9	5419	1.34	µg/L	99
		284.9 -> 184.9	596			
3:3FTCA	3.921	241.0 -> 177.0	2835	2.23	µg/L	99
		241.0 -> 117.0	364			
5:3FTCA	6.322	341.0 -> 237.1	79066	14.84	µg/L	100
		341.0 -> 217.0	55515			
7:3FTCA	7.711	441.0 -> 316.9	59370	15.91	µg/L	98
		441.0 -> 336.9	122702			
EtFOSA	10.985	526.0 -> 219.0	7729	1.26	µg/L	99
		526.0 -> 169.0	10271			
EtFOSE	10.931	630.0 -> 58.9	16562	2.74	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	6266	1.30	µg/L	m 92
		511.9 -> 169.0	8401			
MeFOSE	10.697	616.1 -> 58.9	10992	3.35	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	1094	0.57	µg/L	96
		699.1 -> 98.8	628			
NFDHA	5.576	295.0 -> 201.0	4004	1.29	µg/L	95
		295.0 -> 84.9	951			
PFMBA	4.900	279.0 -> 85.1	14382	1.28	µg/L	100
PFMPA	3.601	229.0 -> 84.9	12143	1.28	µg/L	100
PFEESA	6.188	314.8 -> 134.9	39053	1.09	µg/L	100
		314.8 -> 82.9	1271			

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

7.3.2
7

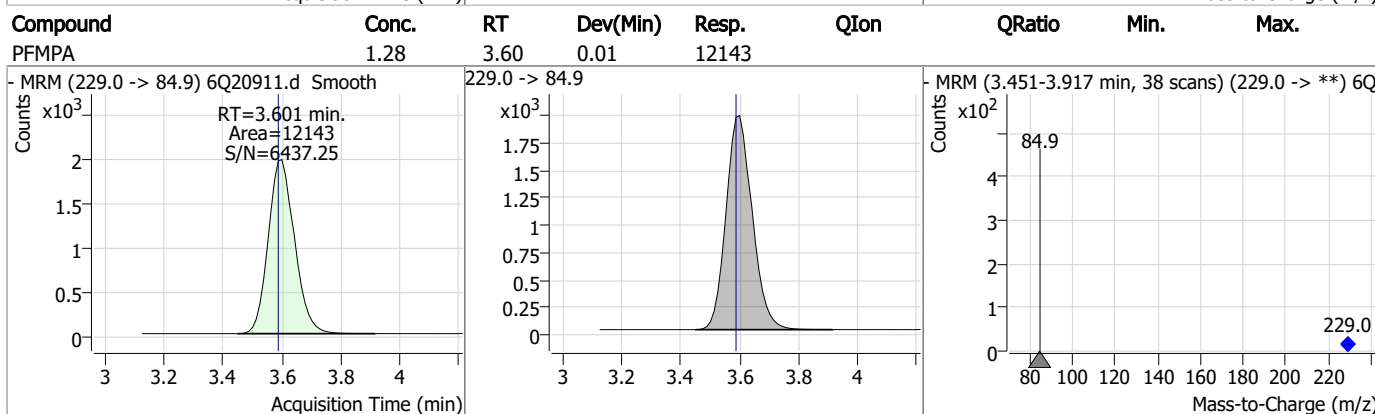
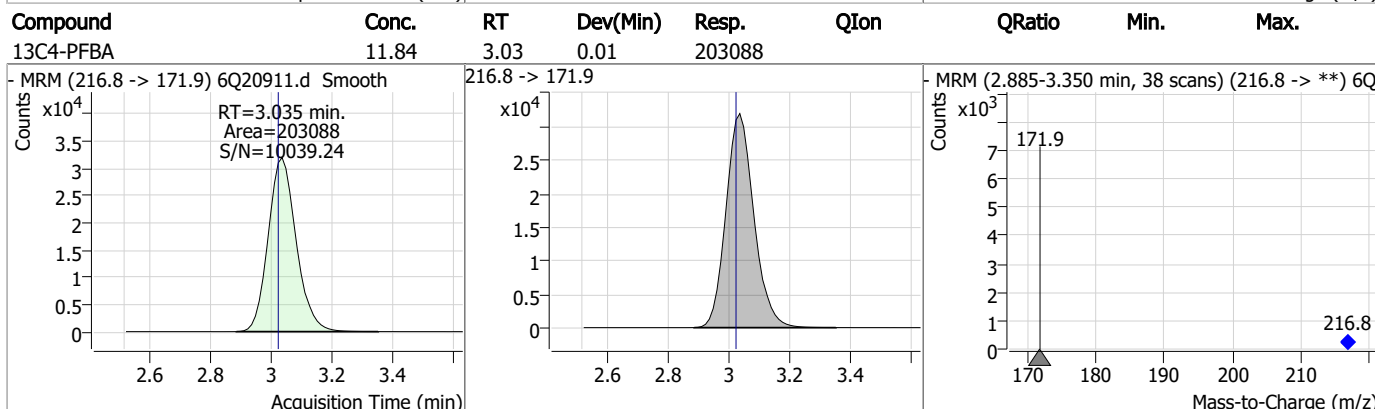
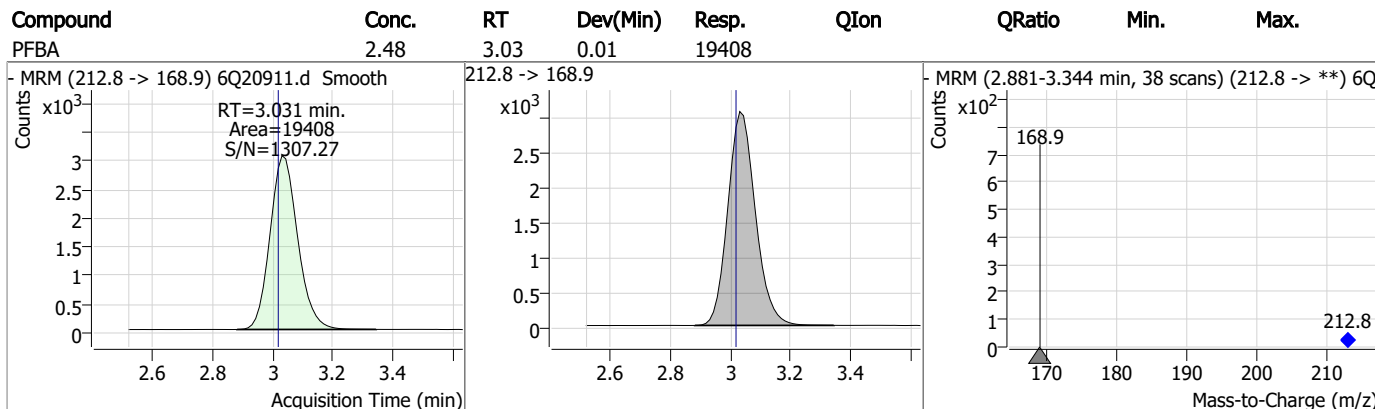
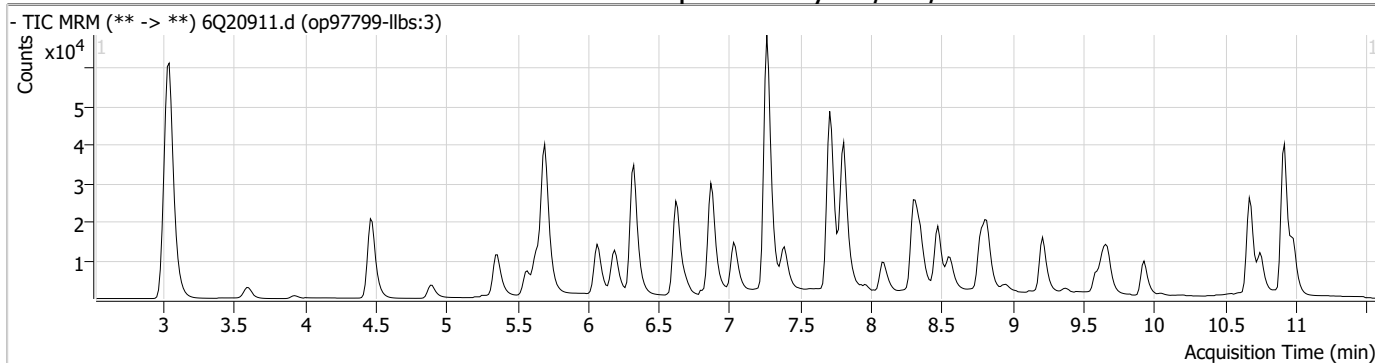
Perfluorinated Compounds by LC/MS/MS

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

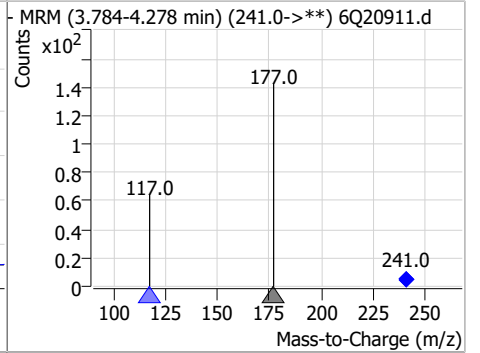
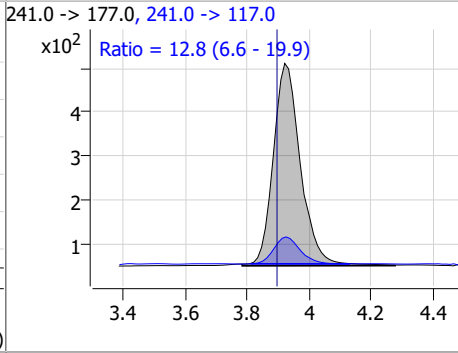
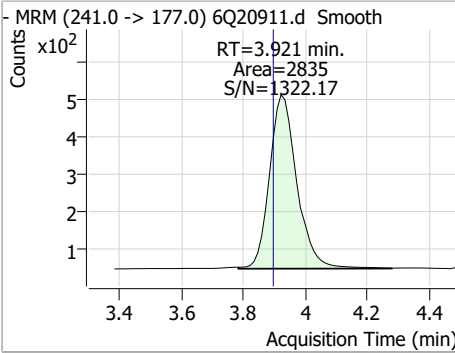
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Perfluorinated Compounds by LC/MS/MS

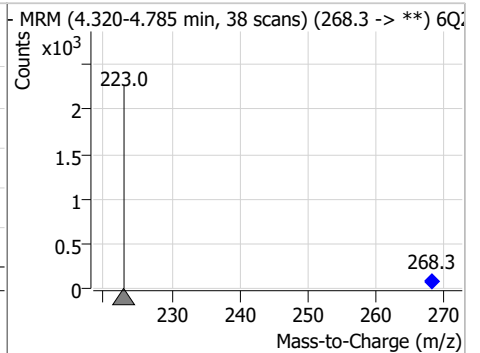
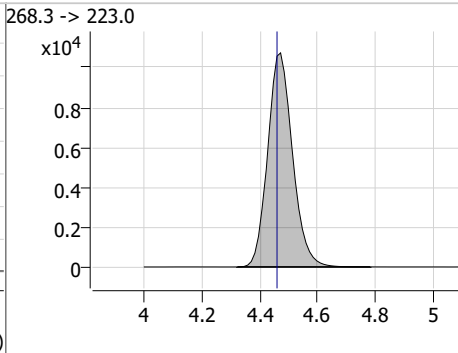
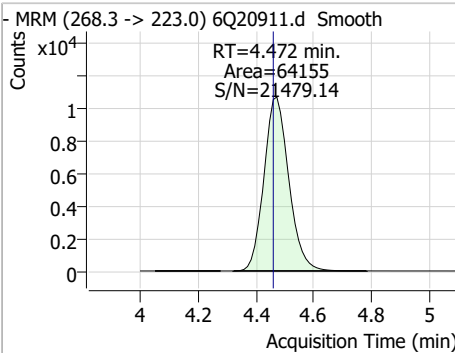


Perfluorinated Compounds by LC/MS/MS

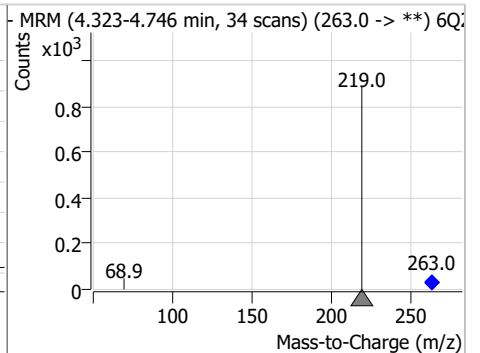
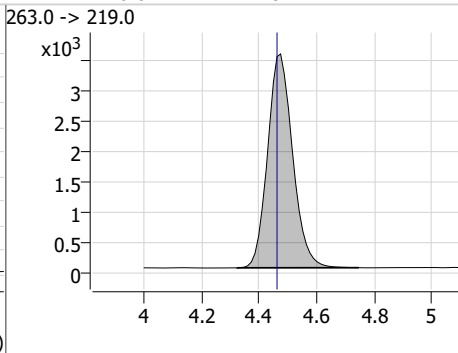
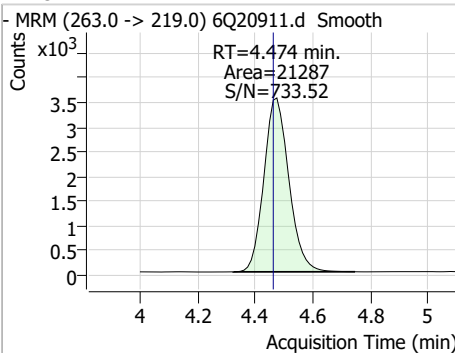
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	2.23	3.92	0.02	2835	241.0 -> 117.0	12.8	6.6	19.9



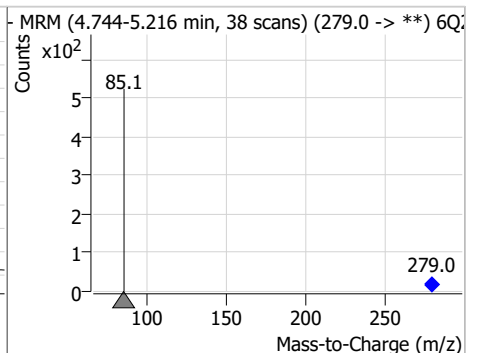
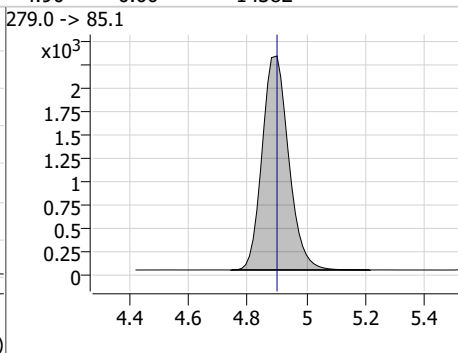
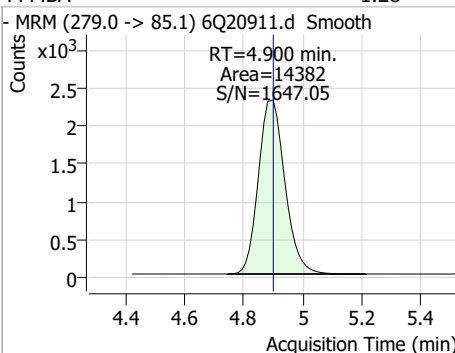
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.86	4.47	0.01	64155				



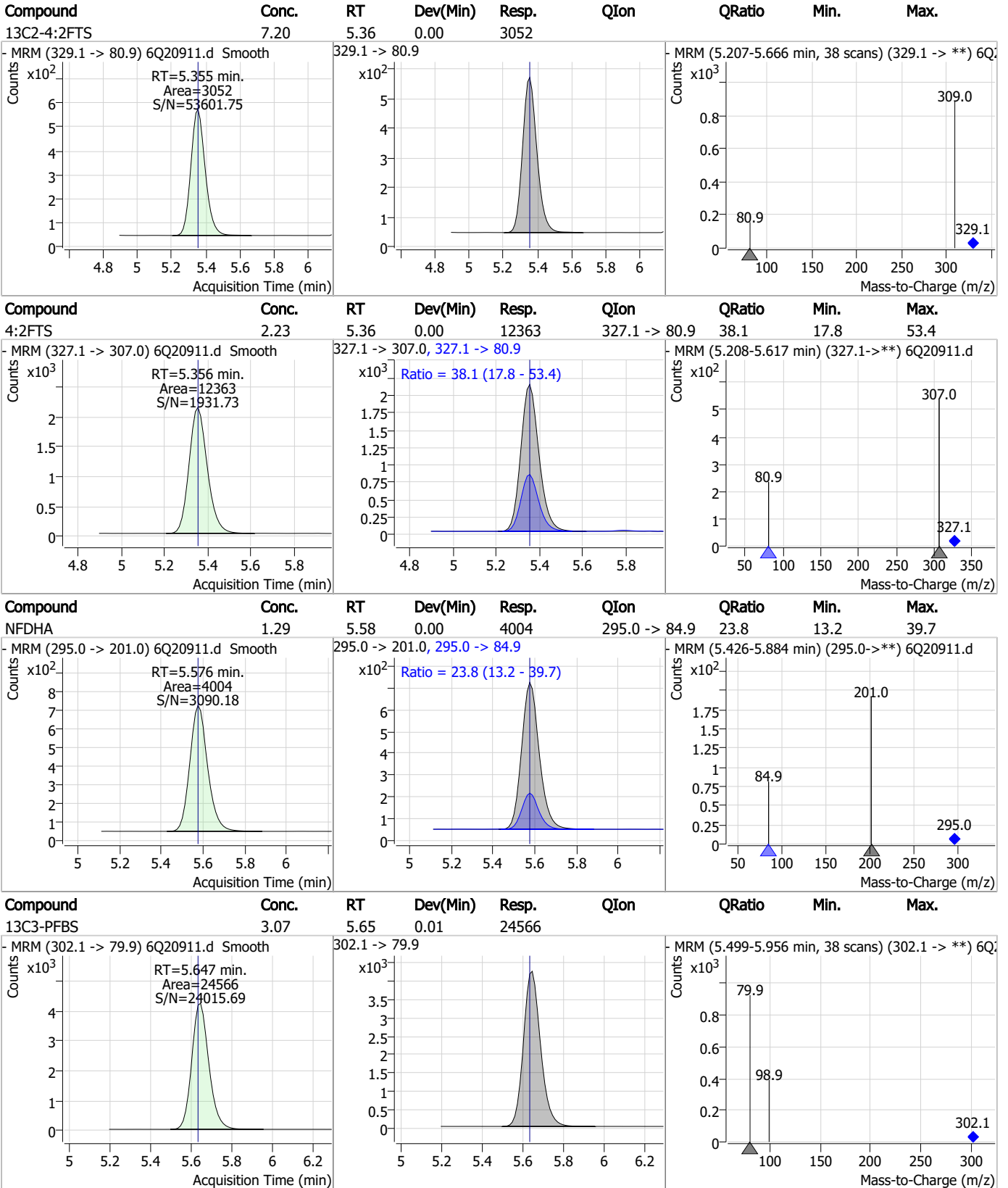
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.24	4.47	0.01	21287				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.28	4.90	0.00	14382				



Perfluorinated Compounds by LC/MS/MS

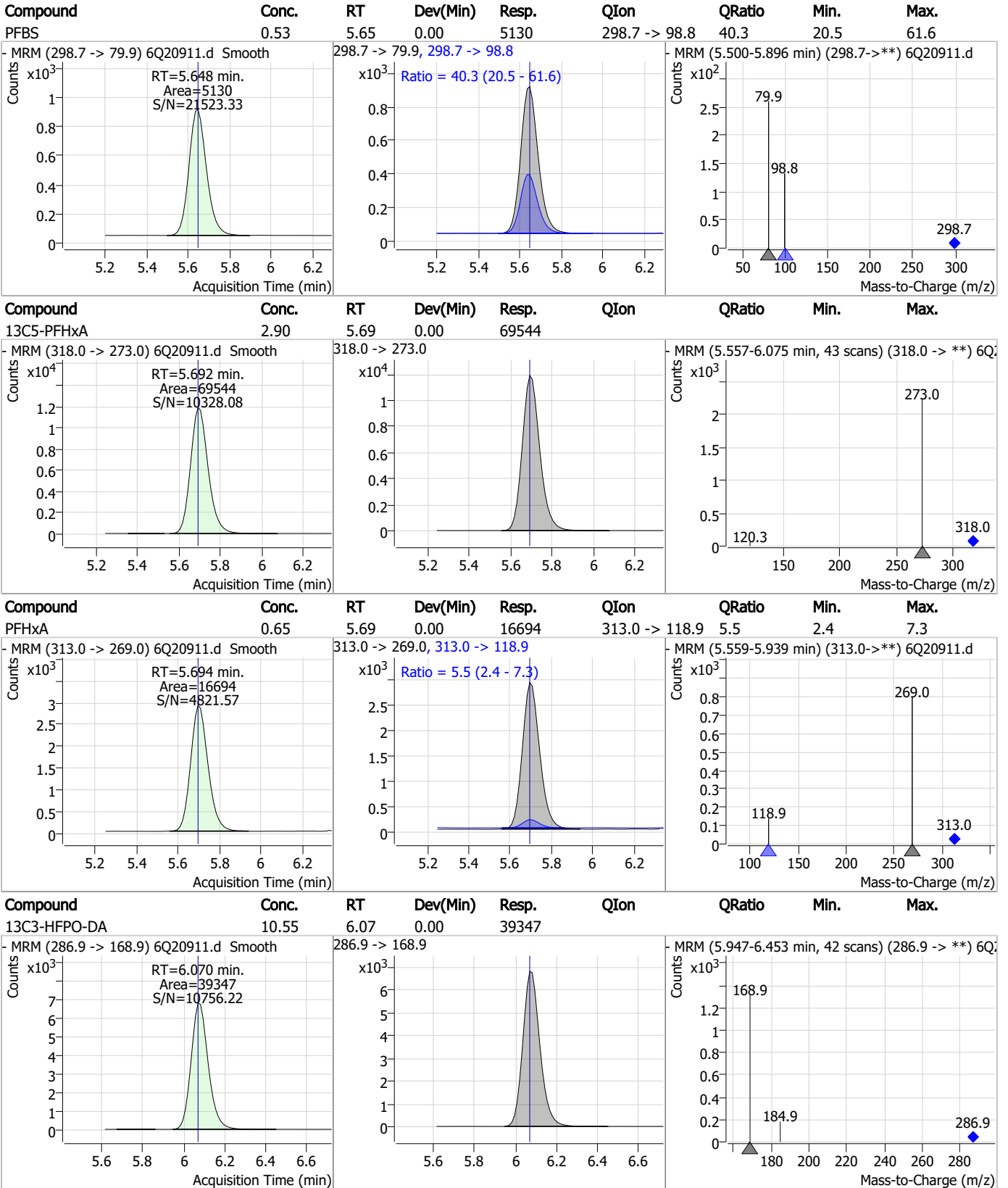


7.3.2

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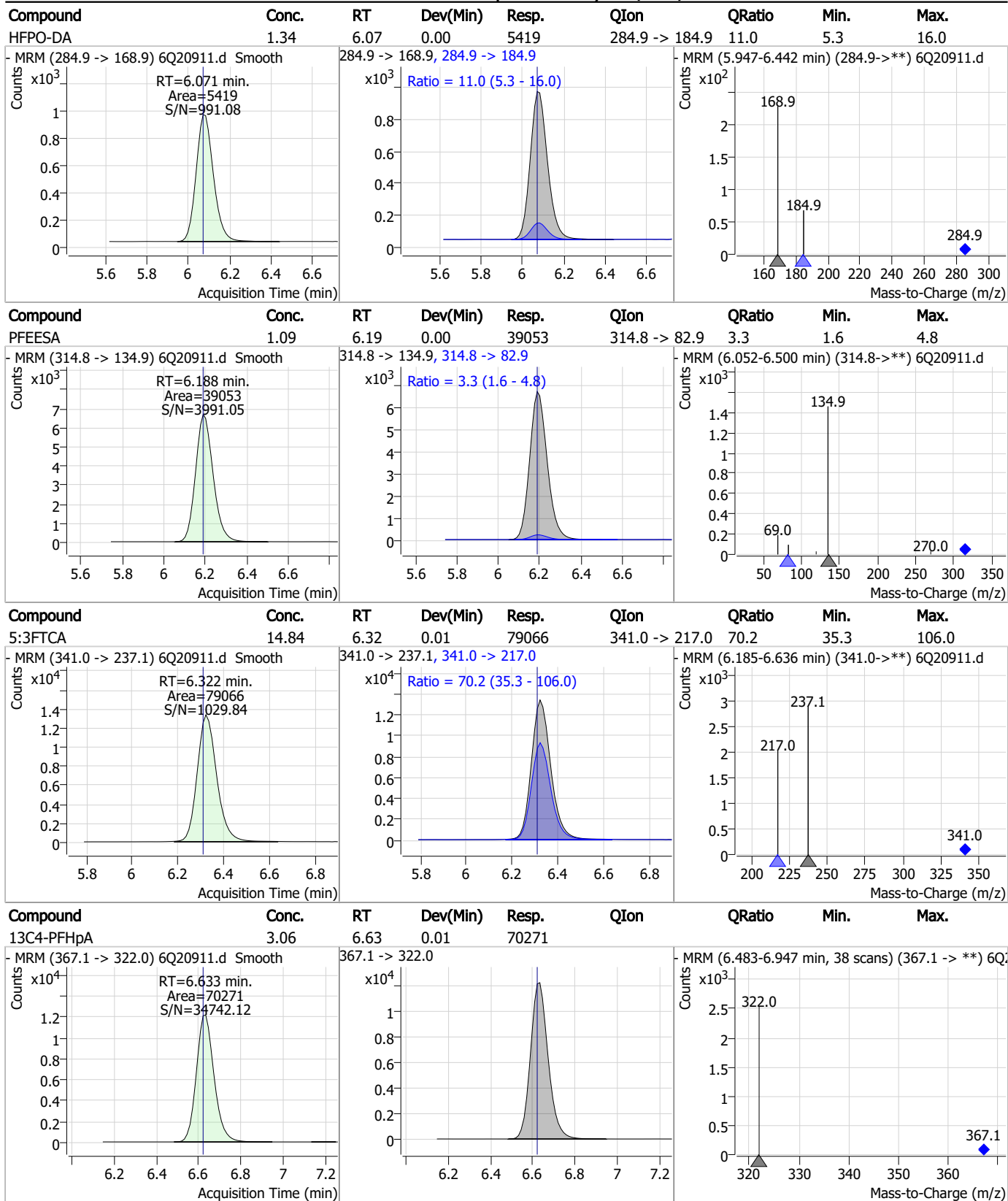
Perfluorinated Compounds by LC/MS/MS



7.3.2
7



Perfluorinated Compounds by LC/MS/MS

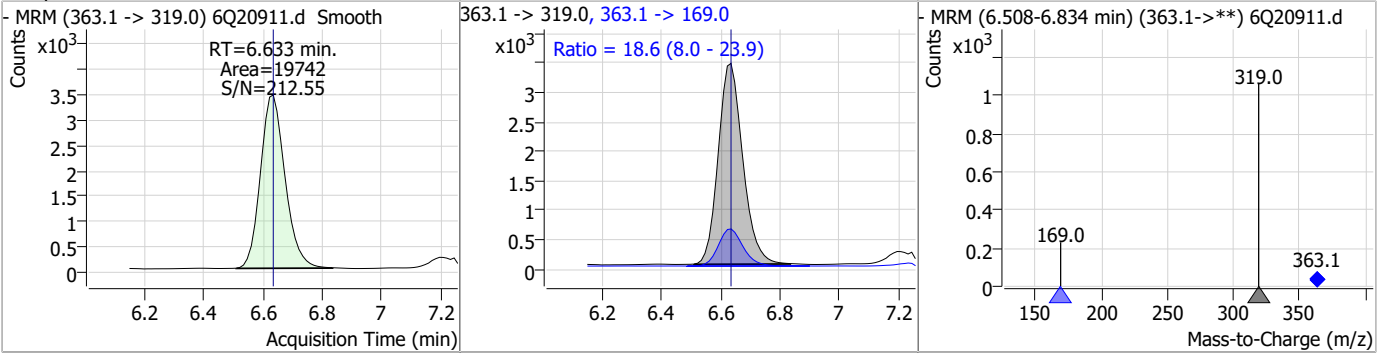


7.3.2
7

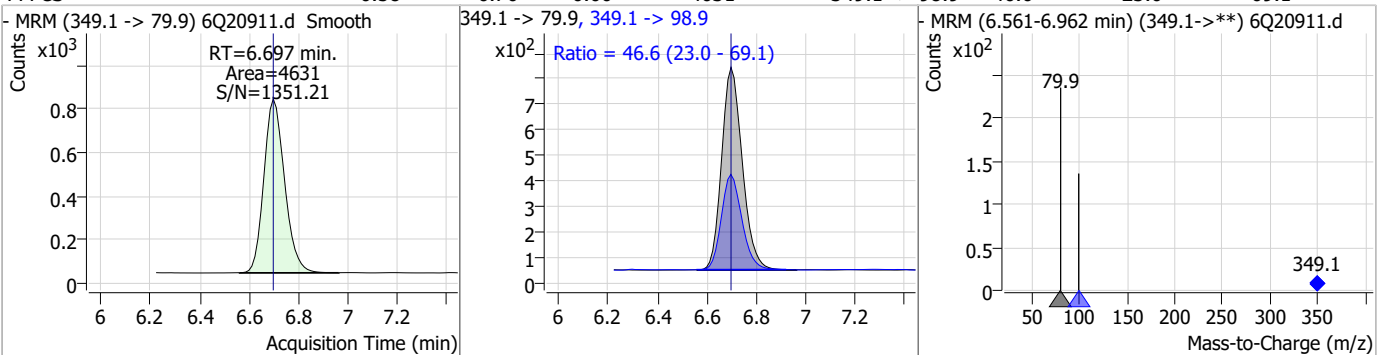


Perfluorinated Compounds by LC/MS/MS

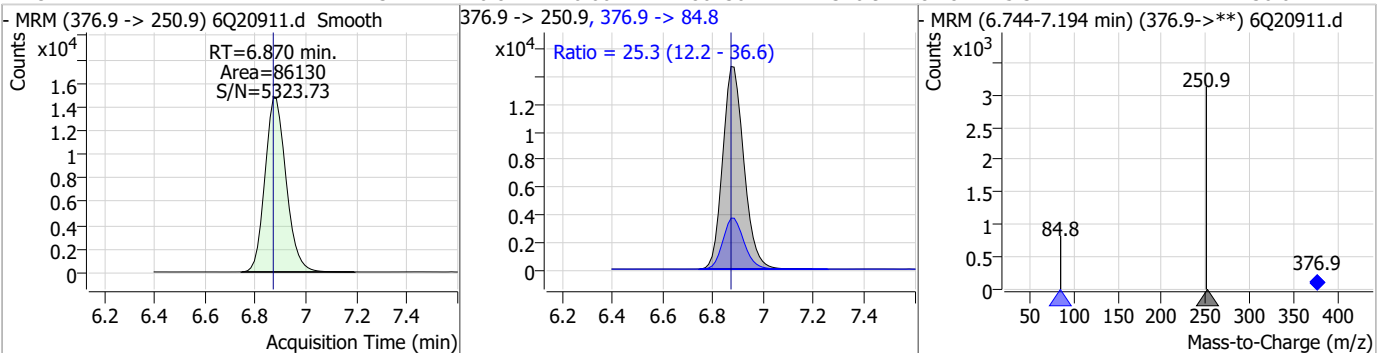
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.58	6.63	0.00	19742	363.1 -> 169.0	18.6	8.0	23.9



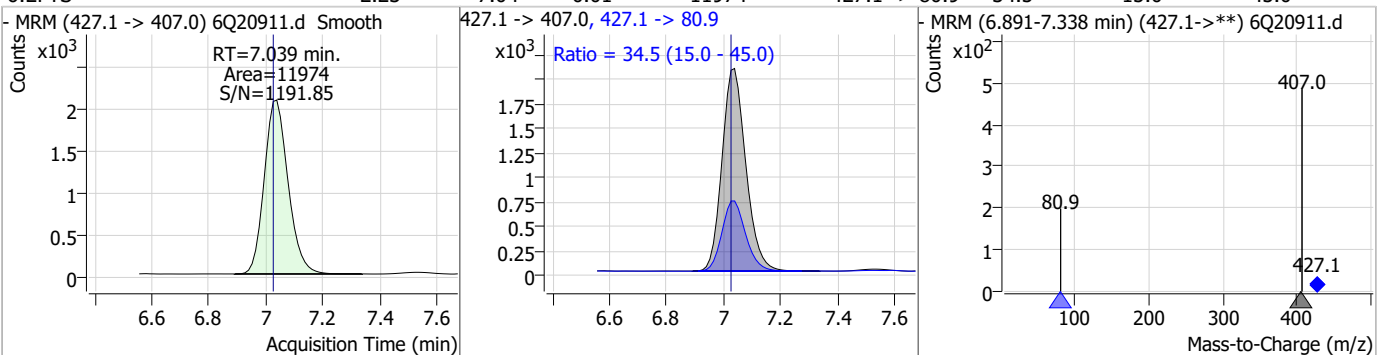
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.58	6.70	0.00	4631	349.1 -> 98.9	46.6	23.0	69.1



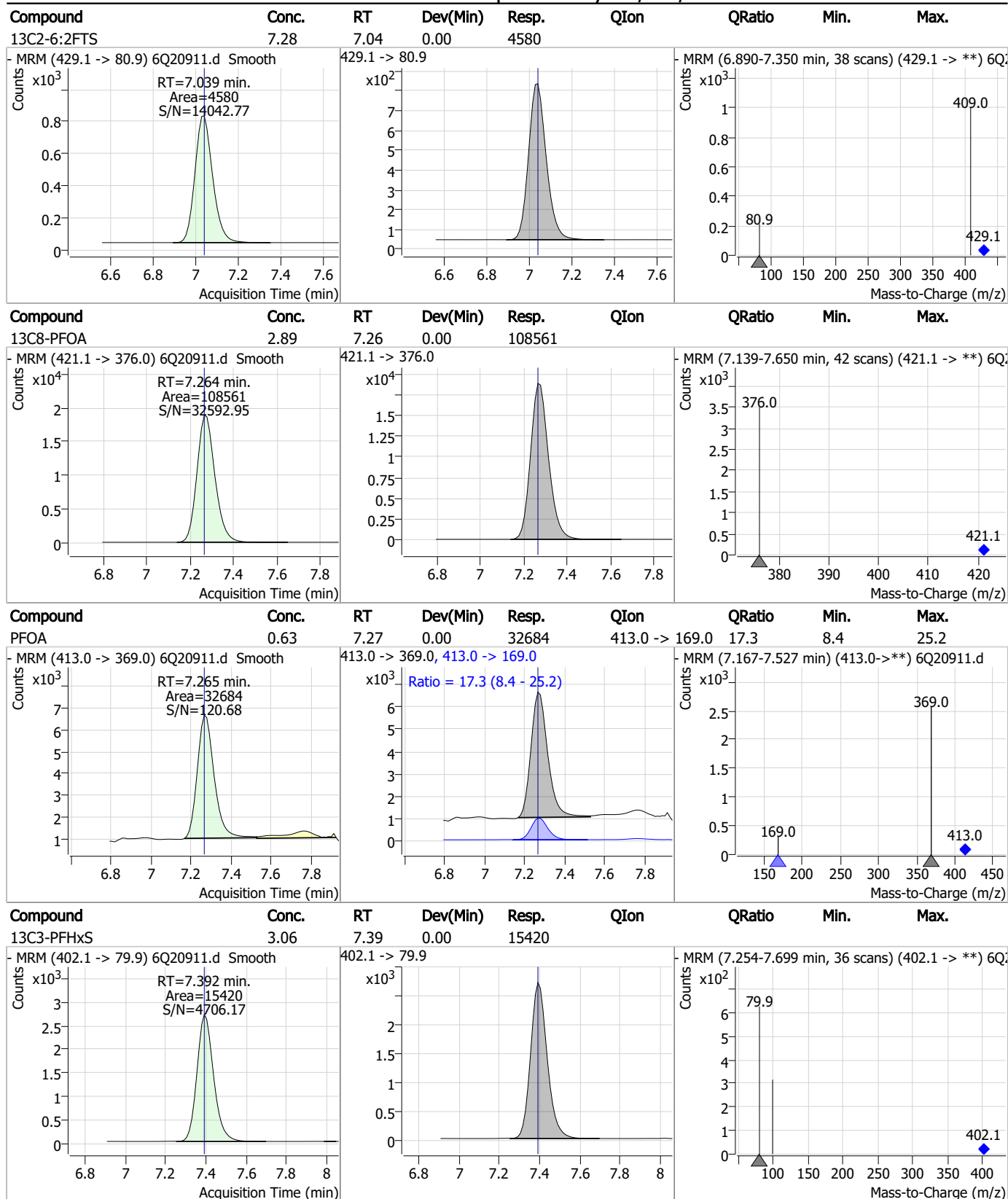
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.32	6.87	0.00	86130	376.9 -> 84.8	25.3	12.2	36.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.23	7.04	0.01	11974	427.1 -> 80.9	34.5	15.0	45.0

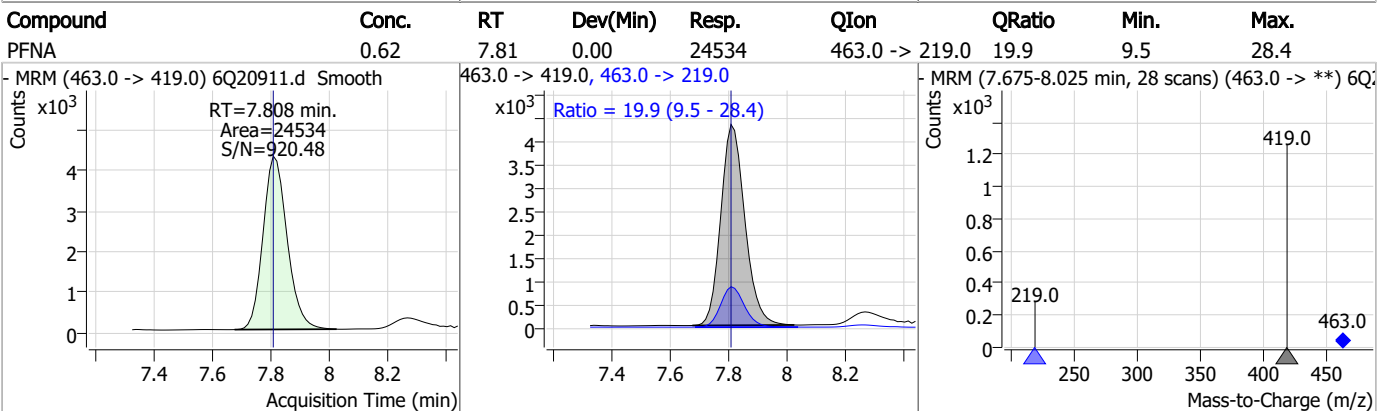
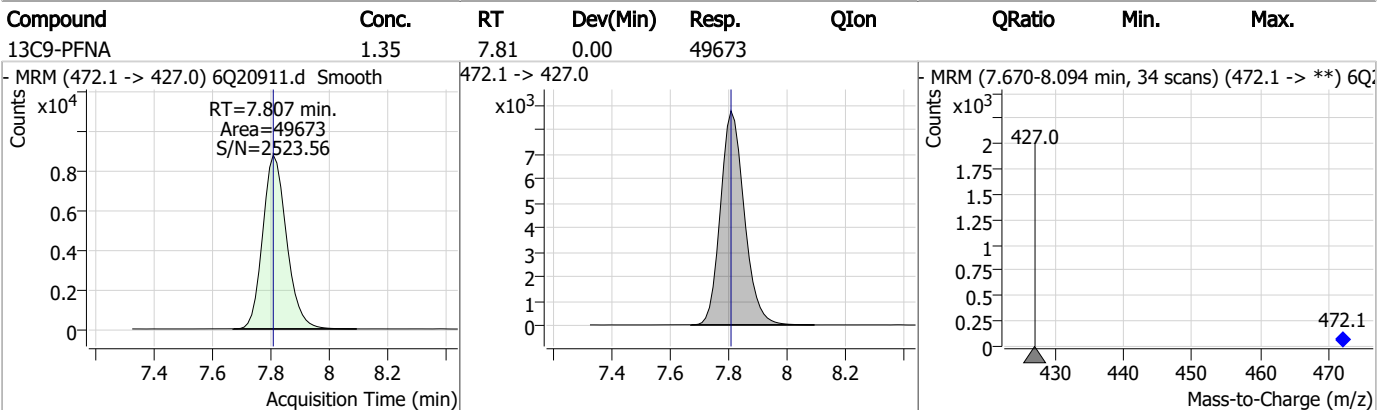
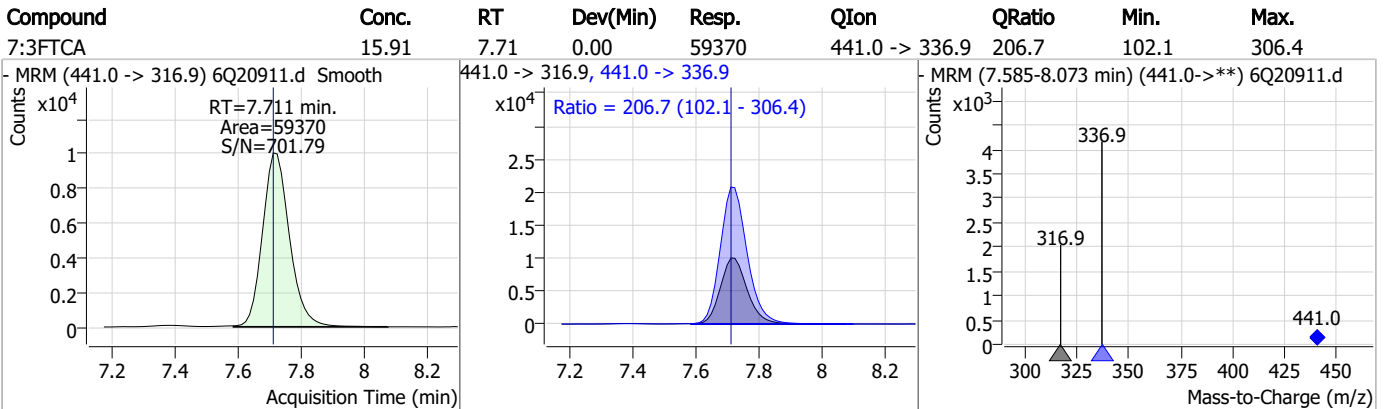
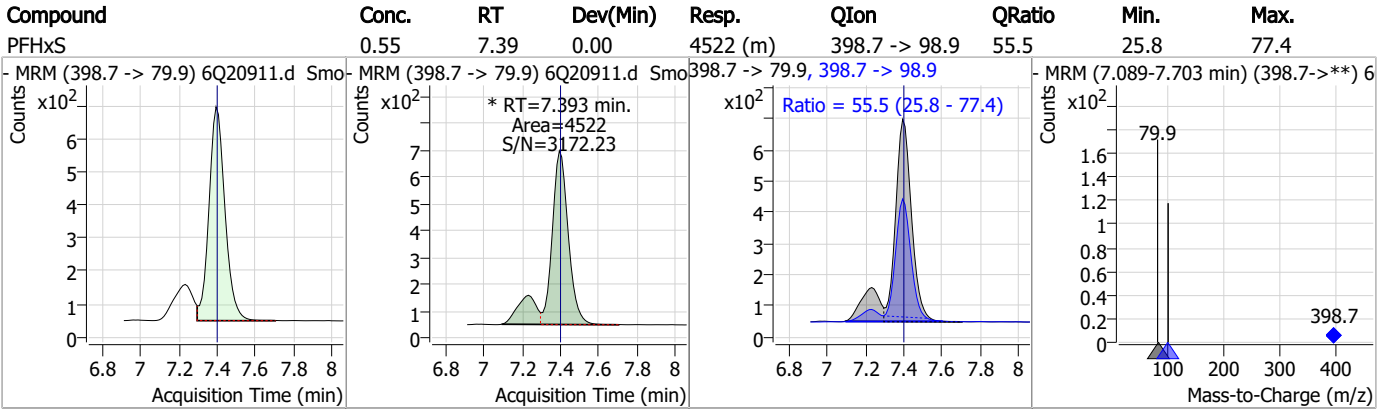


Perfluorinated Compounds by LC/MS/MS



7.3.2
7

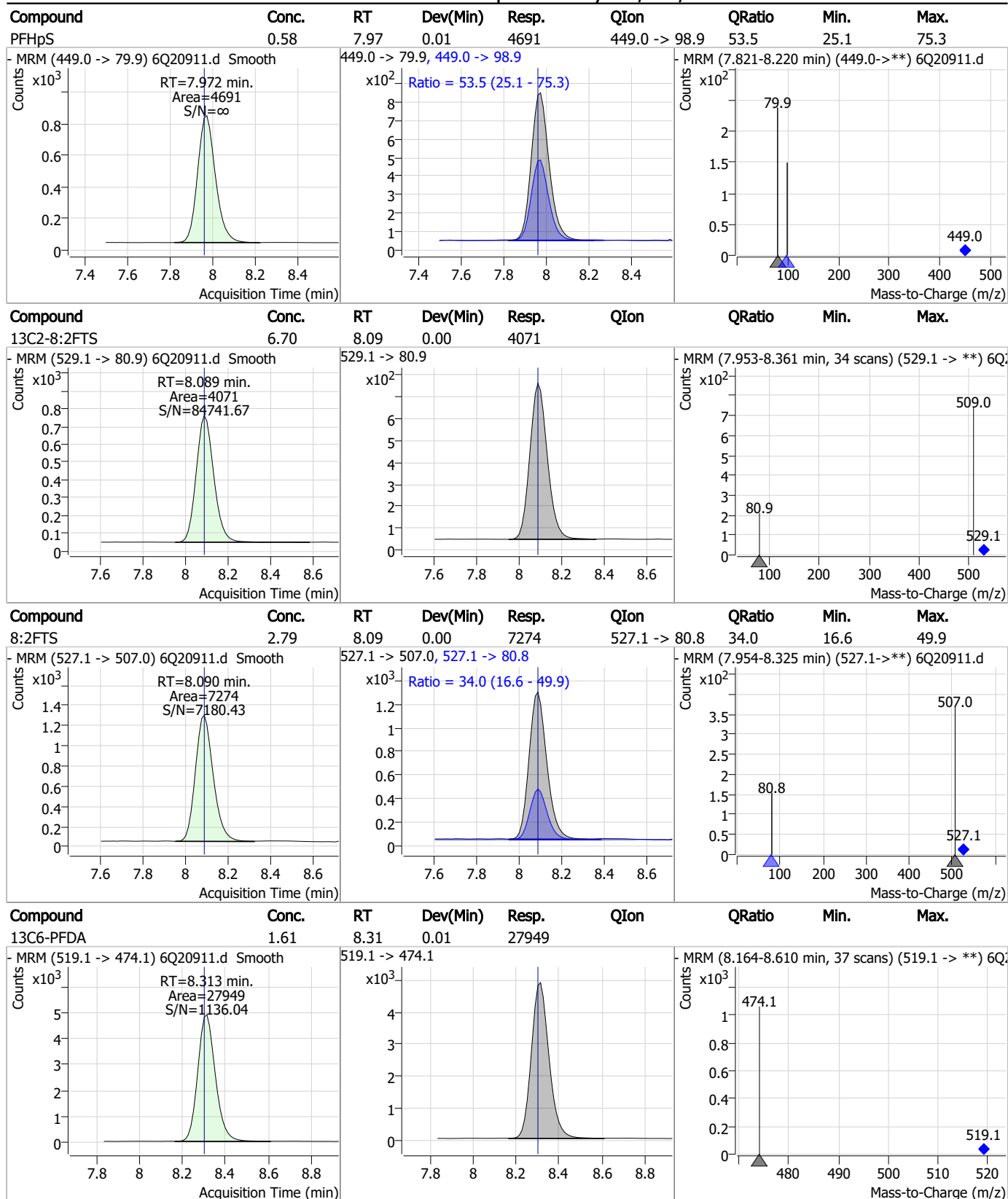
Perfluorinated Compounds by LC/MS/MS



7.3.2

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Perfluorinated Compounds by LC/MS/MS

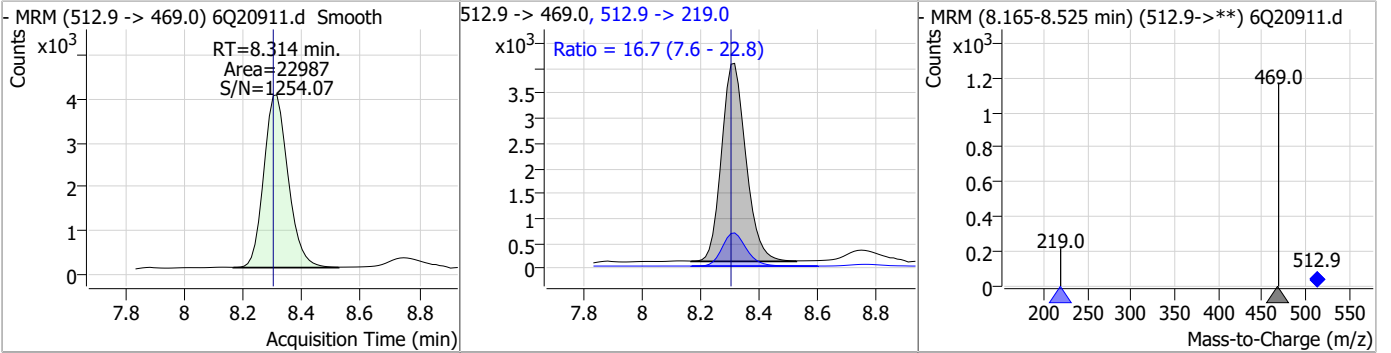


7.3.2
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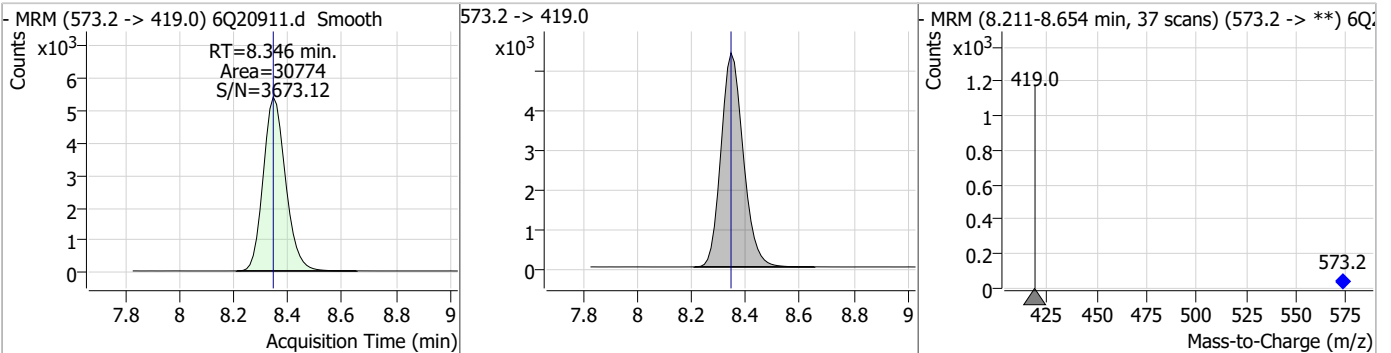


Perfluorinated Compounds by LC/MS/MS

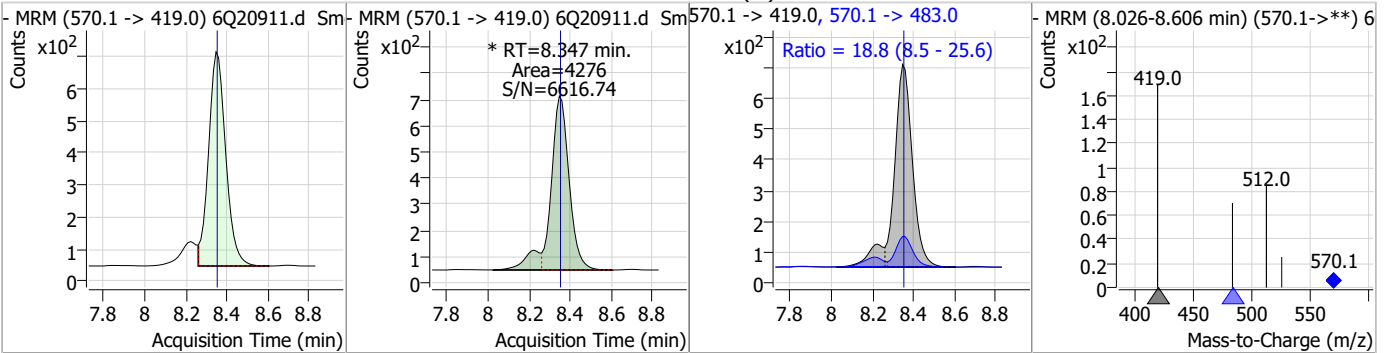
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.59	8.31	0.01	22987	512.9 -> 219.0	16.7	7.6	22.8



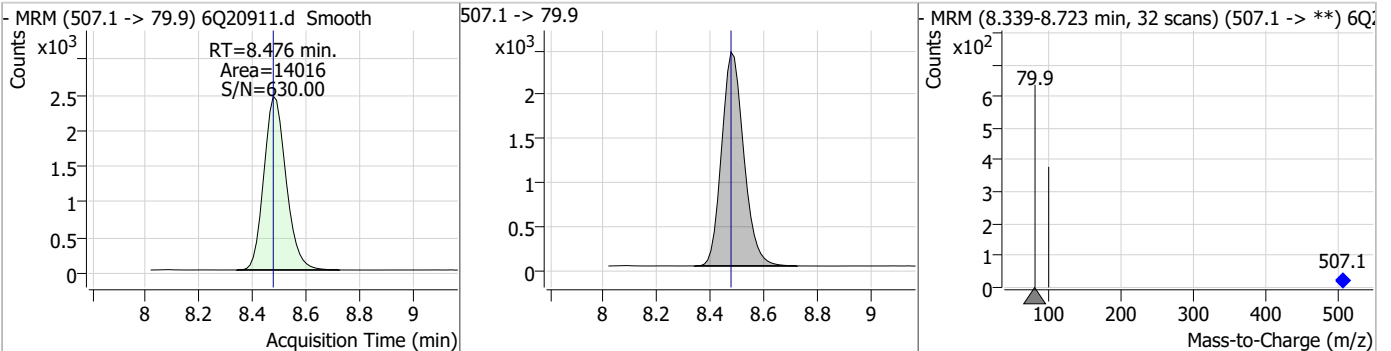
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.37	8.35	0.00	30774				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.63	8.35	0.00	4276 (m)	570.1 -> 483.0	18.8	8.5	25.6

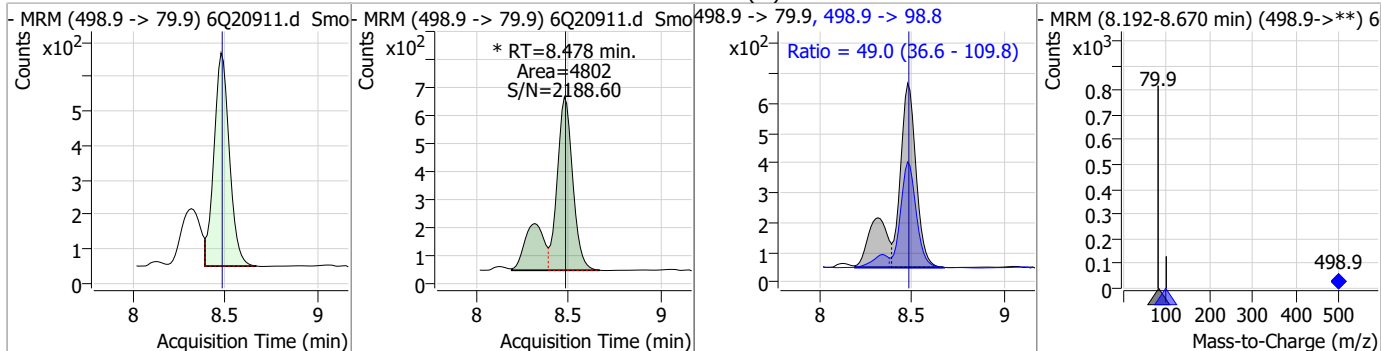


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.18	8.48	0.00	14016				

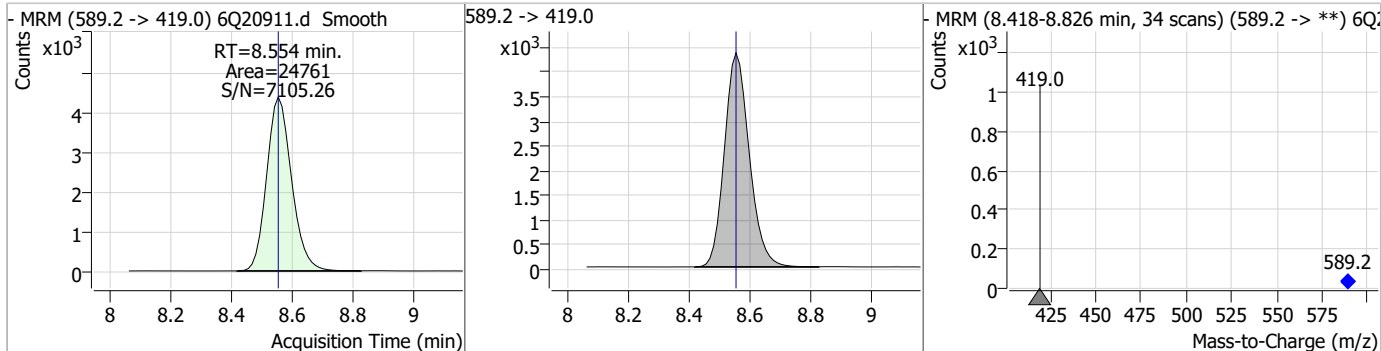


Perfluorinated Compounds by LC/MS/MS

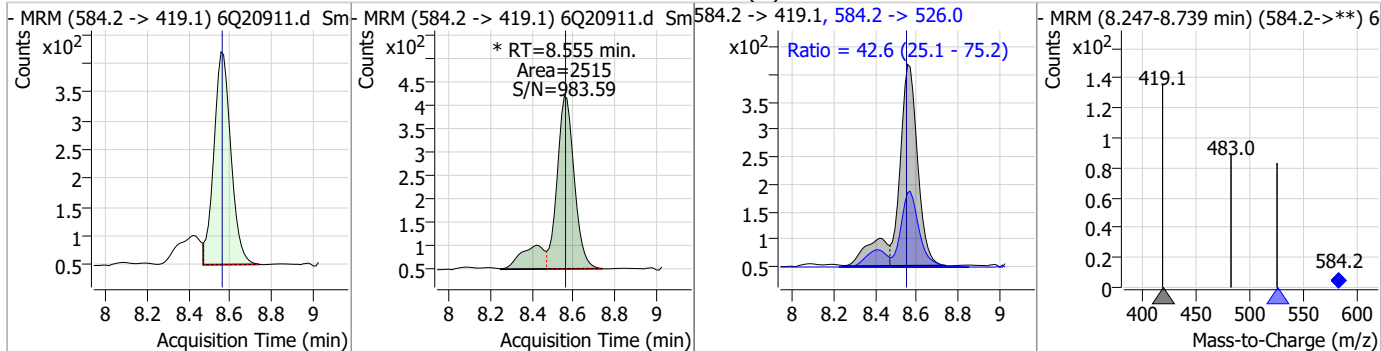
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.63	8.48	0.00	4802 (m)	498.9 -> 98.8	49.0	36.6	109.8



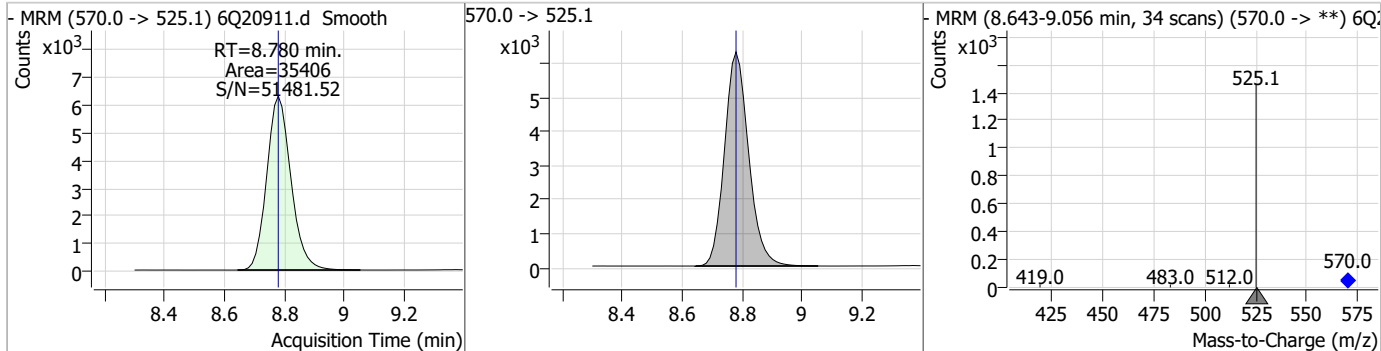
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.45	8.55	0.00	24761				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.65	8.55	0.00	2515 (m)	584.2 -> 526.0	42.6	25.1	75.2



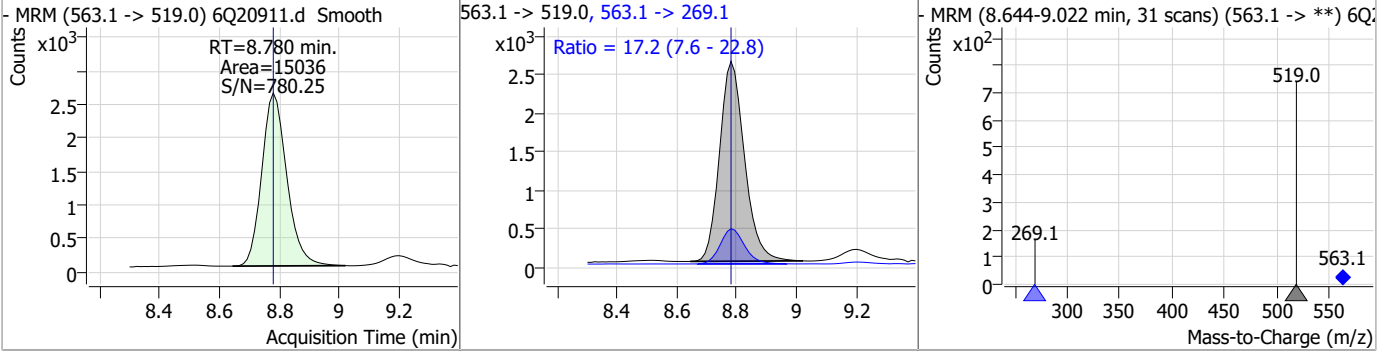
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.59	8.78	0.00	35406				



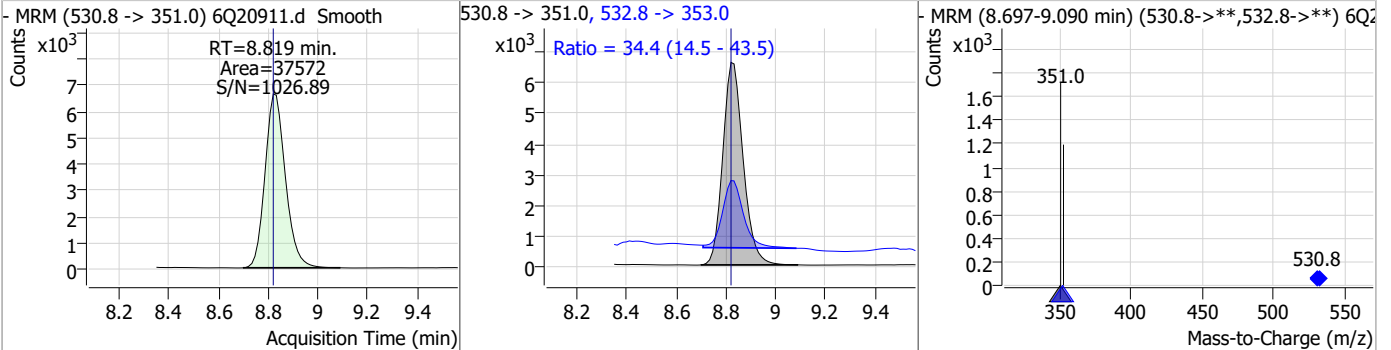
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

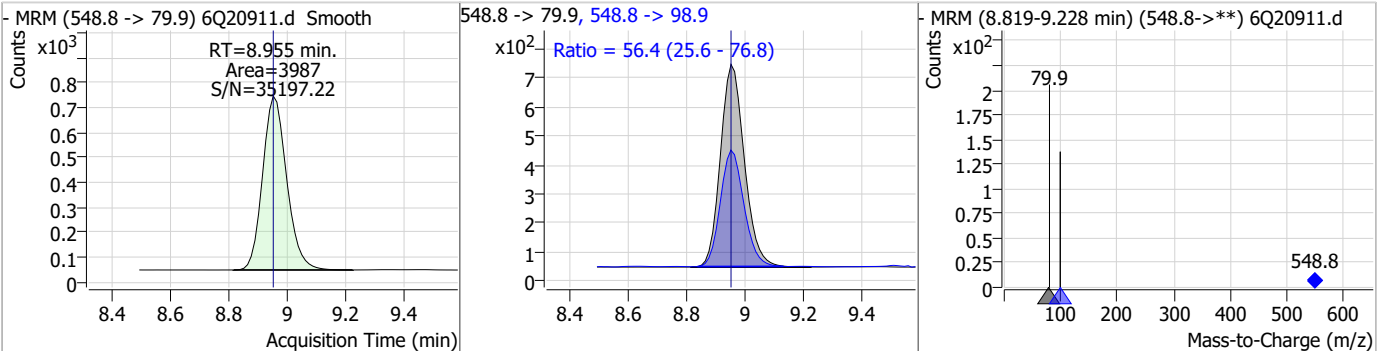
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.58	8.78	0.00	15036	563.1 -> 269.1	17.2	7.6	22.8



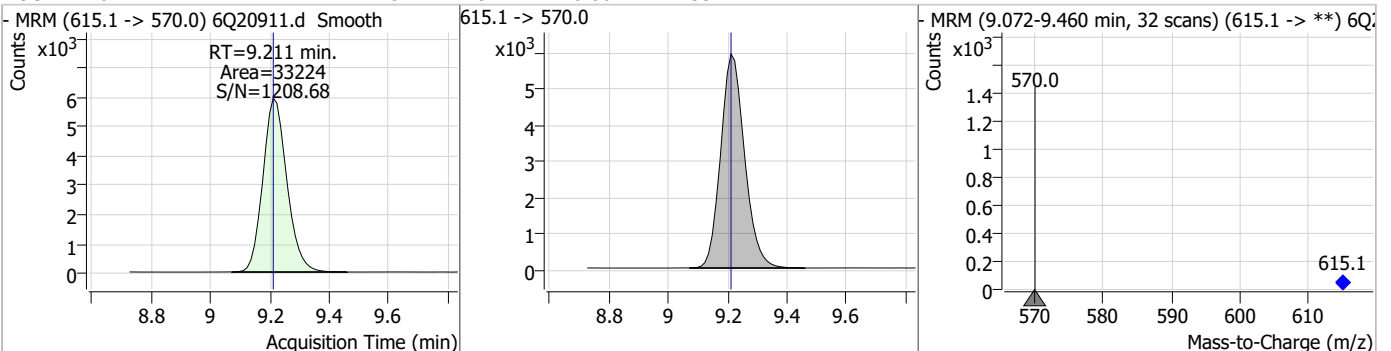
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9CI-PF3ONS	1.26	8.82	0.00	37572	532.8 -> 353.0	34.4	14.5	43.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.57	8.96	0.00	3987	548.8 -> 98.9	56.4	25.6	76.8

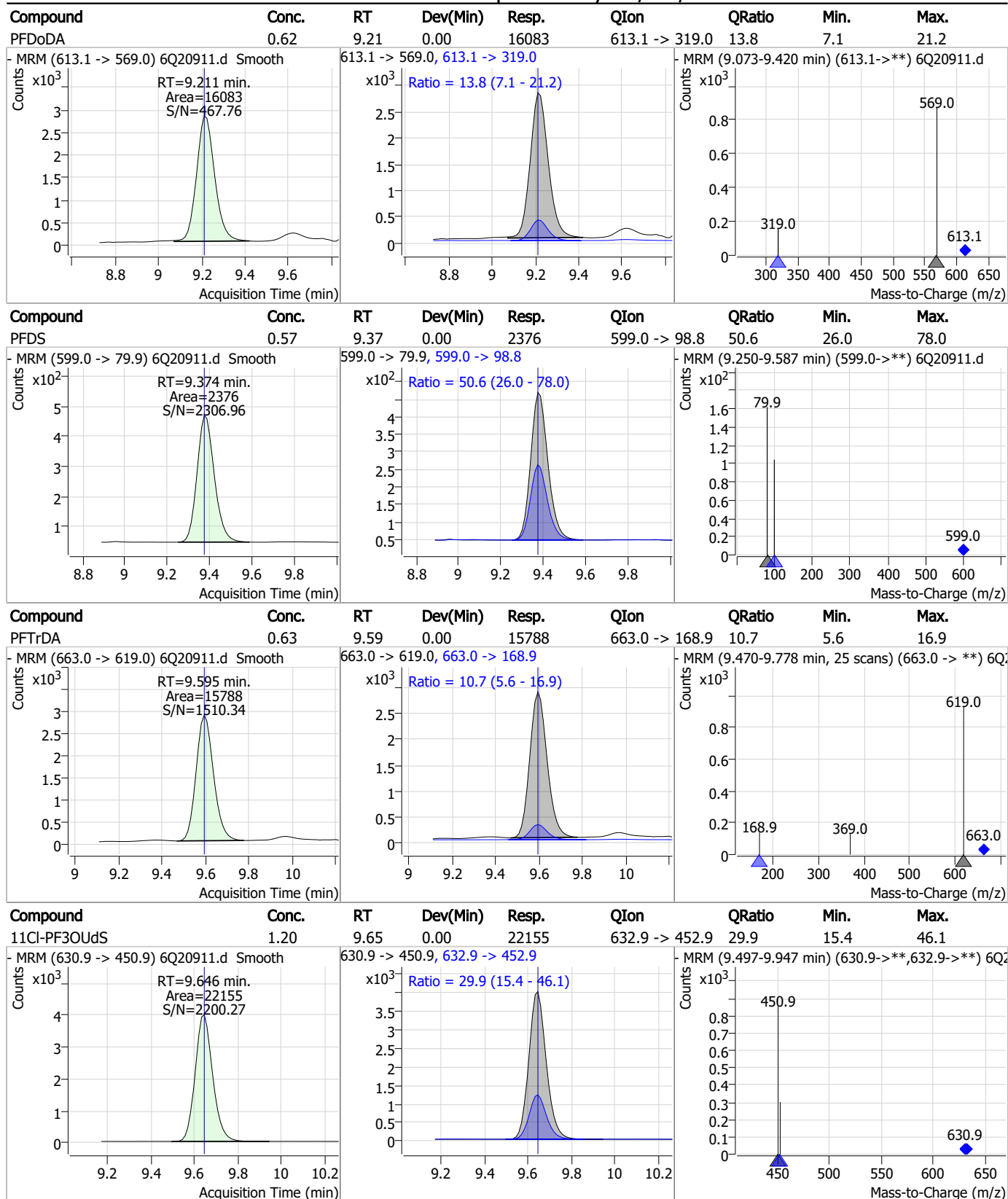


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.45	9.21	0.00	33224	615.1 -> 570.0	-	-	-



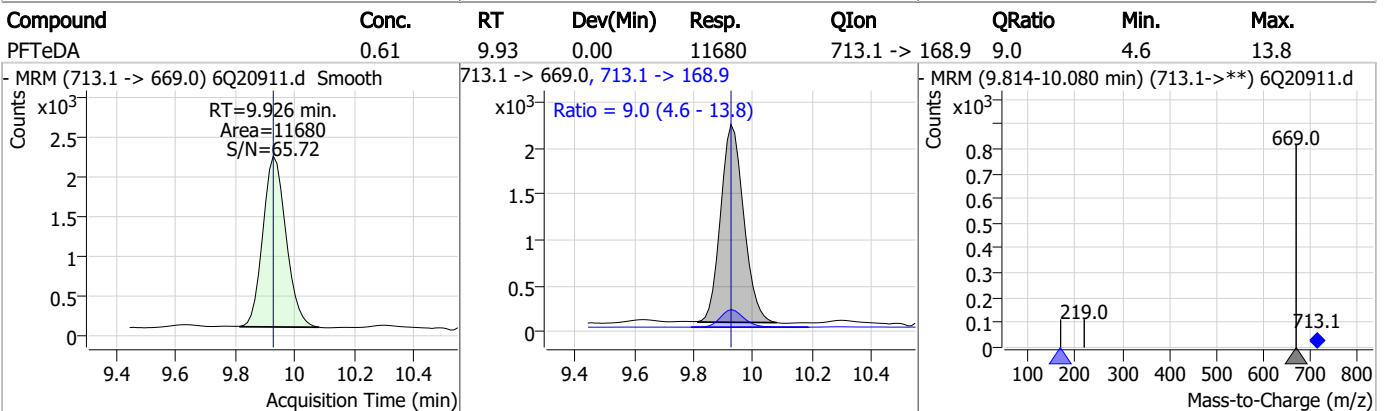
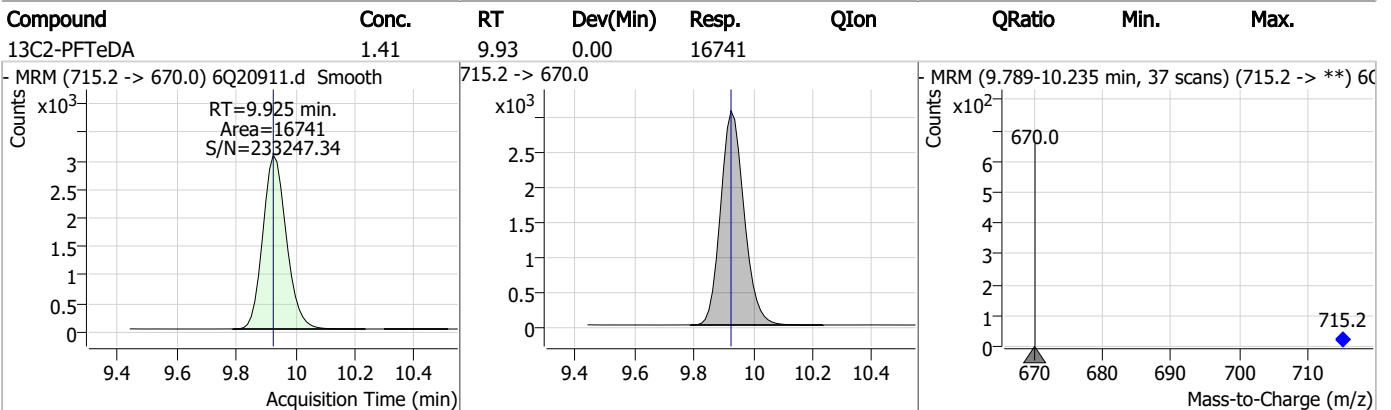
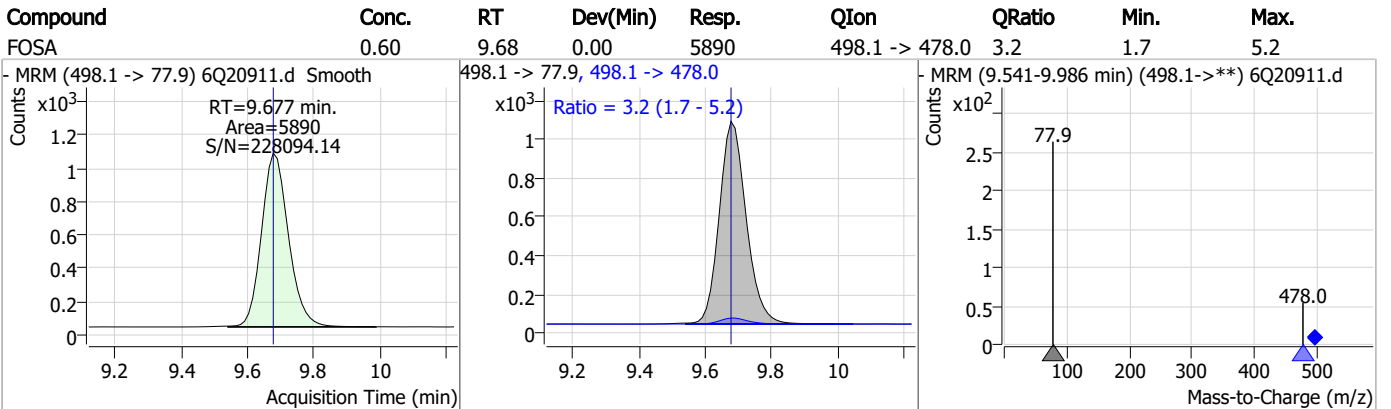
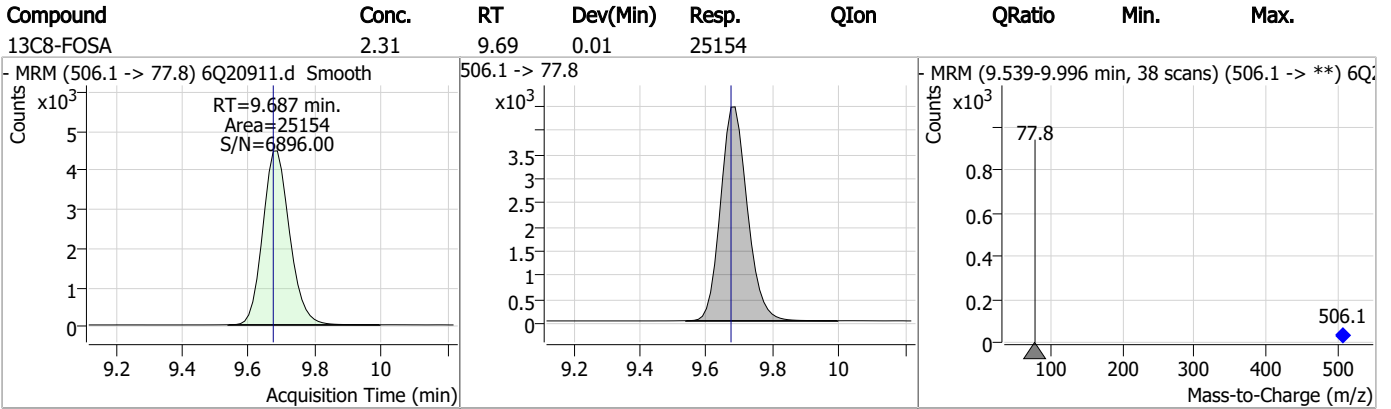
7.3.2
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Perfluorinated Compounds by LC/MS/MS



7.3.2
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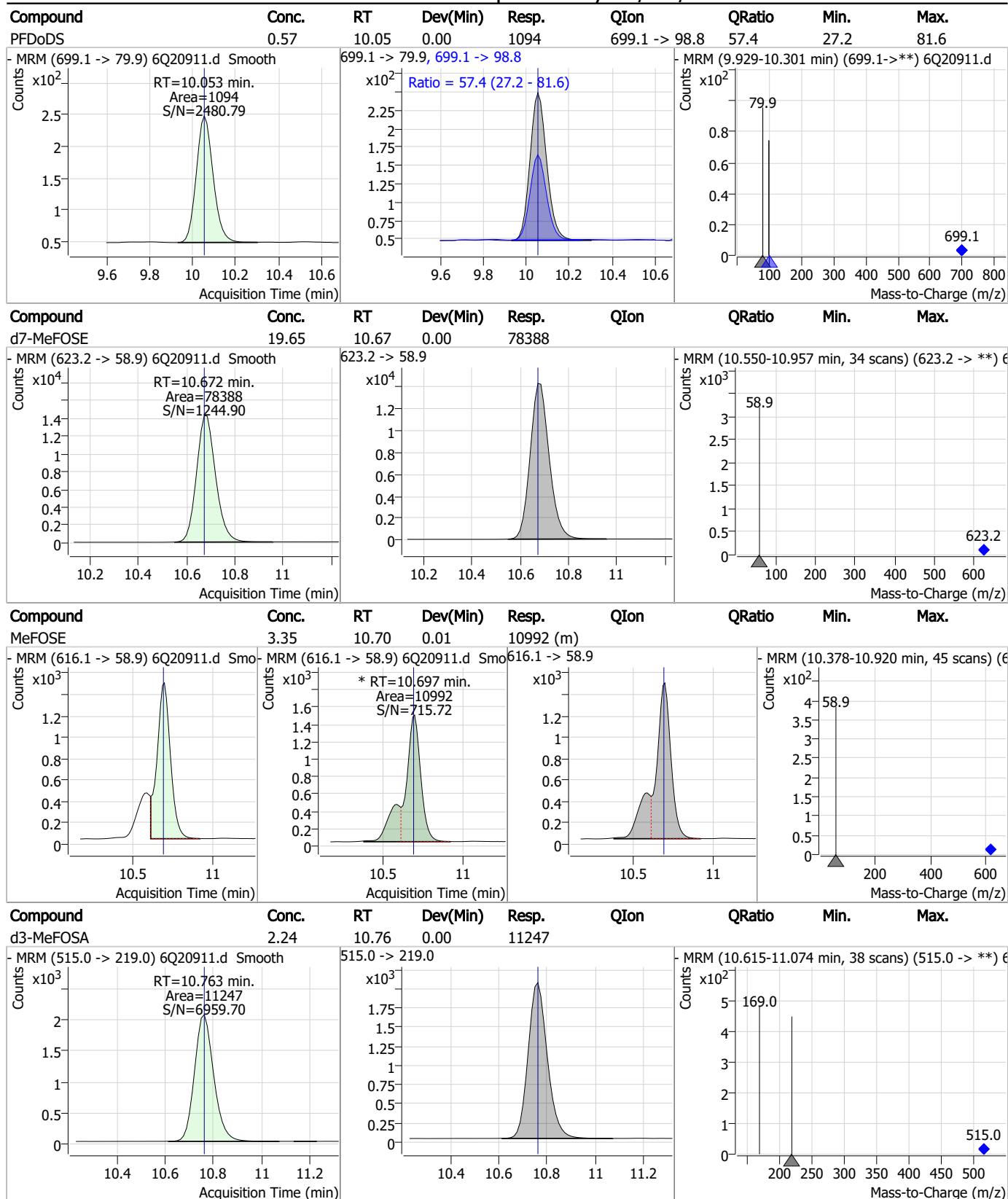
Perfluorinated Compounds by LC/MS/MS



7.3.2

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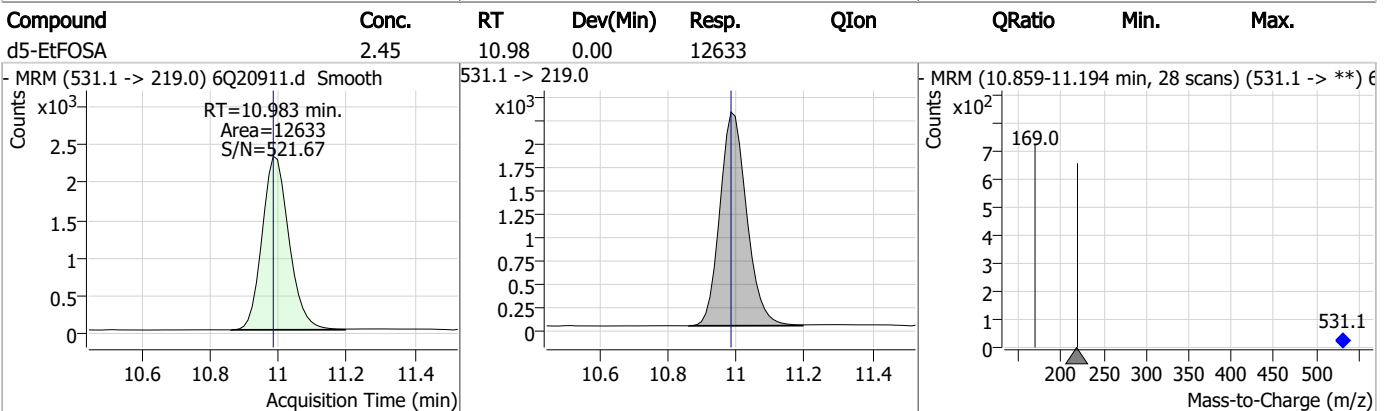
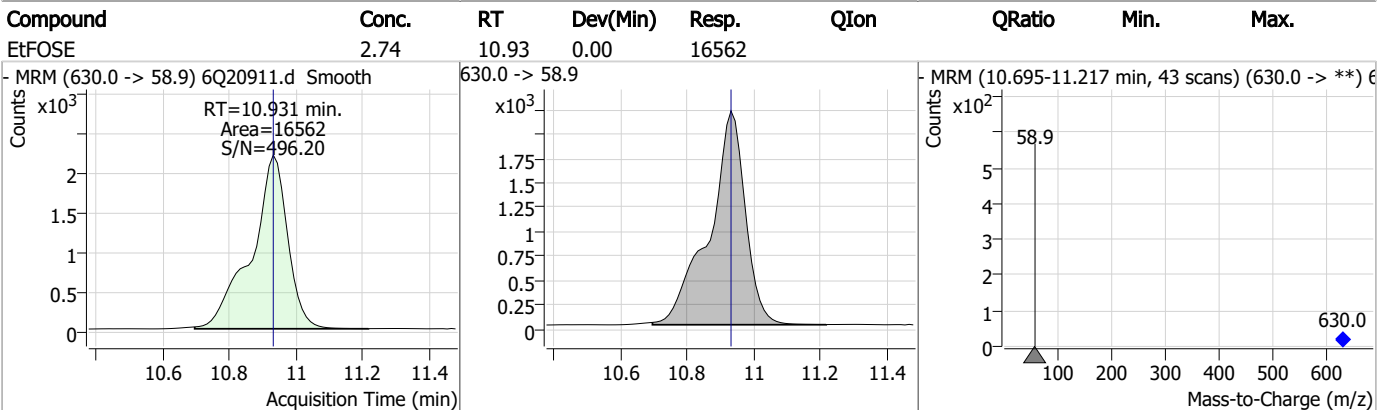
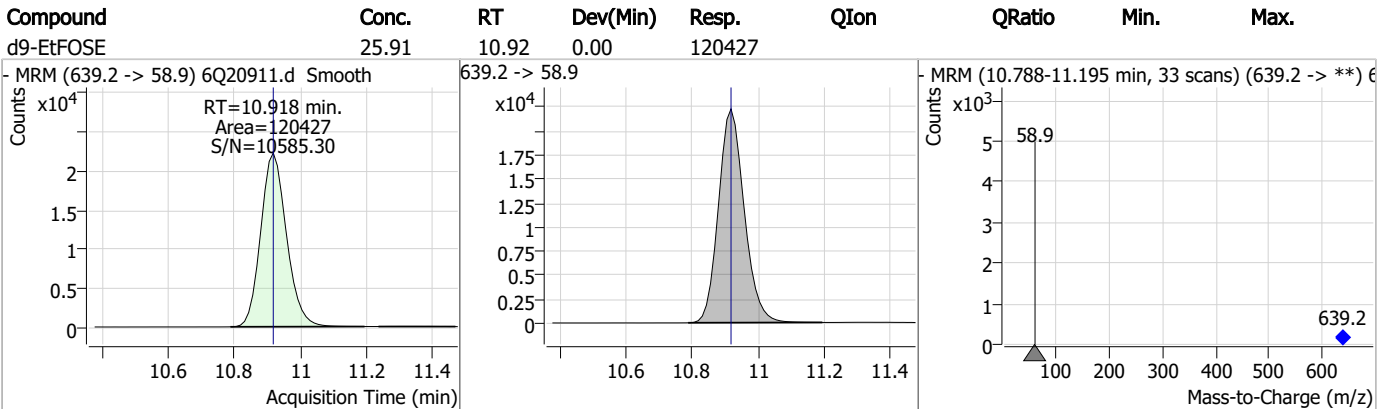
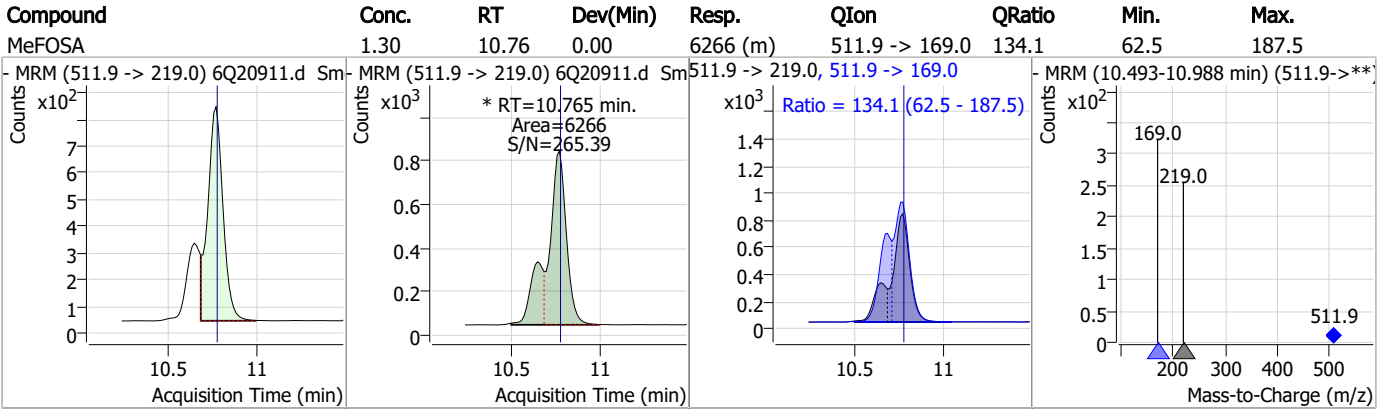
Perfluorinated Compounds by LC/MS/MS



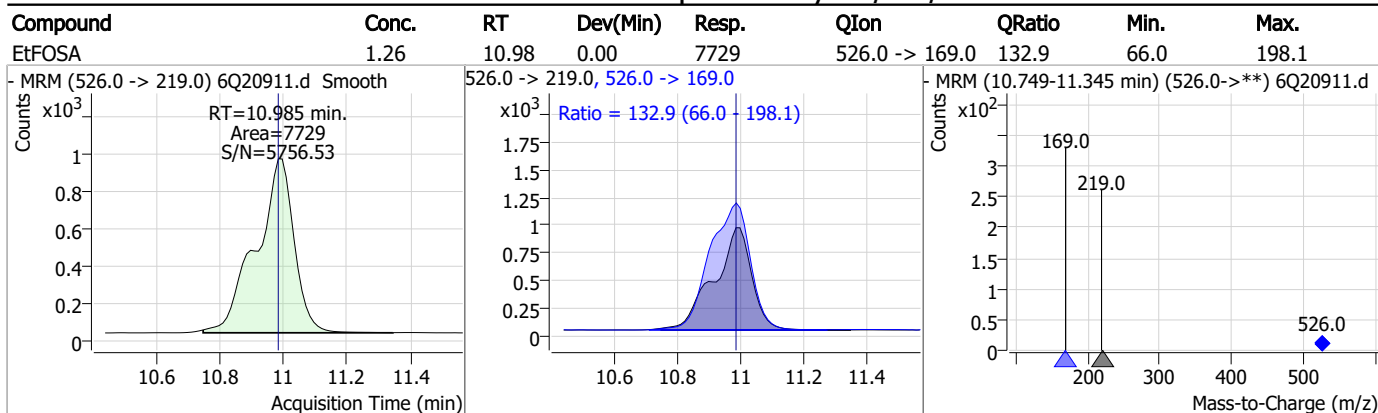
7.3.2
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Manual Integration Approval Summary

Sample Number: OP97799-LLBS Method: EPA DRAFT 1633
Lab FileID: 6Q20911.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 15:18 Supervisor approved: 07/17/23 11:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.3.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20916.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 4:28:33 PM
 Sample Name : op97799-ms
 Vial : P5-B1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	148912	10.00 µg/L	0.012
M5-PFPeA	4.459	268.3 -> 223.0	55583	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	63344	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	65567	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	96194	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	40251	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	23389	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	30388	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	24357	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	11807	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	20444	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	21156	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14068	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	11324	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2205	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3565	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3325	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	24992	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	34891	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	20948	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	73910	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	100143	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	11147	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	9638	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16021	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	65686	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	9284	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	89411	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	30367	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	49559	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	55157	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2205	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.0%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3565	5.77 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 115.4%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3325	5.57 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.5%		
13C2-PFDoDA	9.211	615.1 -> 570.0	24357	1.08 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 86.7%		
13C2-PFTeDA	9.925	715.2 -> 670.0	11807	1.01 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 81.1%		
13C3-PFBS	5.635	302.1 -> 79.9	21156	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	14068	2.84 µg/L	0.000

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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	3.035	216.8 -> 171.9	148912	9.57 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFHpA	6.633	367.1 -> 322.0	65567	3.04 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 121.6%	
13C5-PFHxA	5.692	318.0 -> 273.0	63344	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C5-PFPeA	4.459	268.3 -> 223.0	55583	5.41 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C6-PFDA	8.301	519.1 -> 474.1	23389	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C7-PFUnDA	8.780	570.0 -> 525.1	30388	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C8-FOSA	9.674	506.1 -> 77.8	20444	1.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.0%	
13C8-PFOA	7.264	421.1 -> 376.0	96194	2.82 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C8-PFOS	8.476	507.1 -> 79.9	11324	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C9-PFNA	7.807	472.1 -> 427.0	40251	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.1%	
d3-MeFOSAA	8.346	573.2 -> 419.0	24992	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	34891	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	9638	1.86 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.4%	
d5-EtFOSAA	8.554	589.2 -> 419.0	20948	5.30 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d7-MeFOSE	10.672	623.2 -> 58.9	73910	17.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 71.9%	
d9-EtFOSE	10.918	639.2 -> 58.9	100143	20.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 83.7%	
d5-EtFOSA	10.983	531.1 -> 219.0	11147	2.10 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 83.8%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	36412	9.08 µg/L	99
		327.1 -> 80.9	12849		
6:2FTS	7.039	427.1 -> 407.0	38615	9.22 µg/L	97
		427.1 -> 80.9	12182		
8:2FTS	8.090	527.1 -> 507.0	20825	9.79 µg/L	90
		527.1 -> 80.8	8064		
EtFOSAA	8.555	584.2 -> 419.1	7416	2.25 µg/L	m 99
		584.2 -> 526.0	3657		
FOSA	9.677	498.1 -> 77.9	18848	2.35 µg/L	98
		498.1 -> 478.0	538		
MeFOSAA	8.347	570.1 -> 419.0	13438	2.45 µg/L	m 99
		570.1 -> 483.0	2338		
PFBA	3.031	212.8 -> 168.9	52788	9.20 µg/L	100
PFBS	5.636	298.7 -> 79.9	16903	2.01 µg/L	100
		298.7 -> 98.8	6997		
PFDA	8.301	512.9 -> 469.0	70654	2.17 µg/L	97
		512.9 -> 219.0	11757		
PFDODA	9.211	613.1 -> 569.0	50893	2.67 µg/L	97
		613.1 -> 319.0	6635		
PFDS	9.374	599.0 -> 79.9	7239	2.15 µg/L	97

7.4.1
7



Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3627			
PFHpA	6.633	363.1 -> 319.0	73826	2.33	µg/L	98
		363.1 -> 169.0	11159			
PFHpS	7.960	449.0 -> 79.9	14917	2.29	µg/L	99
		449.0 -> 98.9	7564			
PFHxA	5.694	313.0 -> 269.0	53730	2.31	µg/L	99
		313.0 -> 118.9	2827			
PFHxS	7.393	398.7 -> 79.9	14213	1.90	µg/L	m 100
		398.7 -> 98.9	7373			
PFNA	7.808	463.0 -> 419.0	81696	2.55	µg/L	100
		463.0 -> 219.0	15404			
PFNS	8.955	548.8 -> 79.9	11379	2.01	µg/L	94
		548.8 -> 98.9	6320			
PFOA	7.265	413.0 -> 369.0	103577	2.27	µg/L	100
		413.0 -> 169.0	17403			
PFOS	8.478	498.9 -> 79.9	13559	2.20	µg/L	m 75
		498.9 -> 98.8	7125			
PFPeA	4.461	263.0 -> 219.0	72305	4.88	µg/L	100
PFPeS	6.697	349.1 -> 79.9	14943	2.04	µg/L	99
		349.1 -> 98.9	7002			
PFTeDA	9.926	713.1 -> 669.0	36312	2.69	µg/L	97
		713.1 -> 168.9	2904			
PFTrDA	9.595	663.0 -> 619.0	45021	2.45	µg/L	100
		663.0 -> 168.9	5160			
PFUnDA	8.780	563.1 -> 519.0	47045	2.10	µg/L	98
		563.1 -> 269.1	7641			
11CI-PF3OUdS	9.646	630.9 -> 450.9	65877	4.03	µg/L	96
		632.9 -> 452.9	21609			
9CI-PF3ONS	8.819	530.8 -> 351.0	117923	4.46	µg/L	96
		532.8 -> 353.0	36425			
ADONA	6.870	376.9 -> 250.9	298687	5.17	µg/L	97
		376.9 -> 84.8	68334			
HFPO-DA	6.071	284.9 -> 168.9	16223	4.54	µg/L	97
		284.9 -> 184.9	1934			
3:3FTCA	3.921	241.0 -> 177.0	7631	8.20	µg/L	100
		241.0 -> 117.0	1014			
5:3FTCA	6.322	341.0 -> 237.1	245136	50.53	µg/L	98
		341.0 -> 217.0	177770			
7:3FTCA	7.711	441.0 -> 316.9	183092	53.87	µg/L	87
		441.0 -> 336.9	411500			
EtFOSA	10.985	526.0 -> 219.0	24963	4.63	µg/L	97
		526.0 -> 169.0	32172			
EtFOSE	10.931	630.0 -> 58.9	56725	11.27	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	19787	4.80	µg/L	m 79
		511.9 -> 169.0	29387			
MeFOSE	10.697	616.1 -> 58.9	35685	11.53	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	3054	1.98	µg/L	97
		699.1 -> 98.8	1728			
NFDHA	5.576	295.0 -> 201.0	12259	4.33	µg/L	98
		295.0 -> 84.9	3350			
PFMBA	4.882	279.0 -> 85.1	44207	4.54	µg/L	100
PFMPA	3.588	229.0 -> 84.9	37431	4.57	µg/L	100
PFEESA	6.188	314.8 -> 134.9	125408	3.86	µg/L	99
		314.8 -> 82.9	4259			

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

7.4.1
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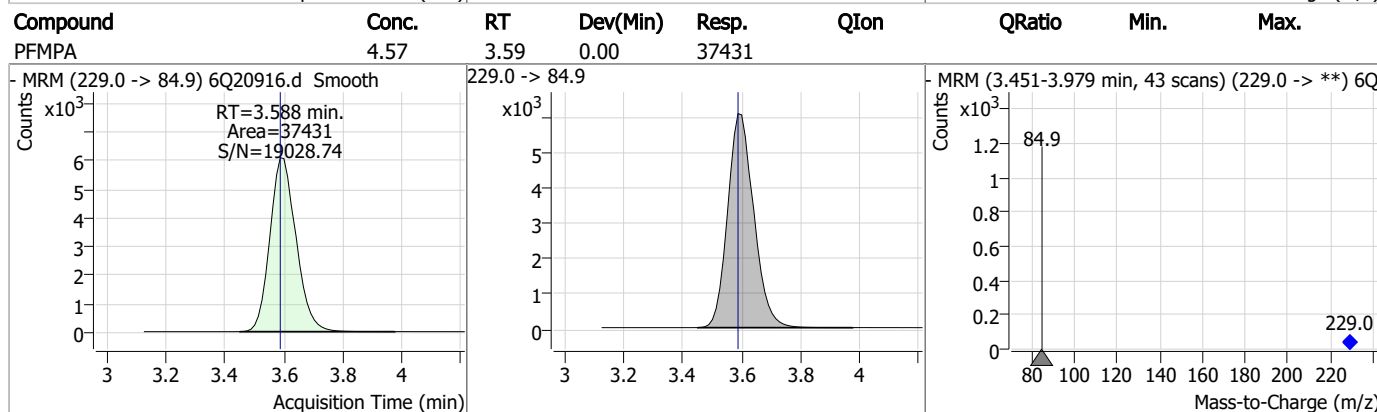
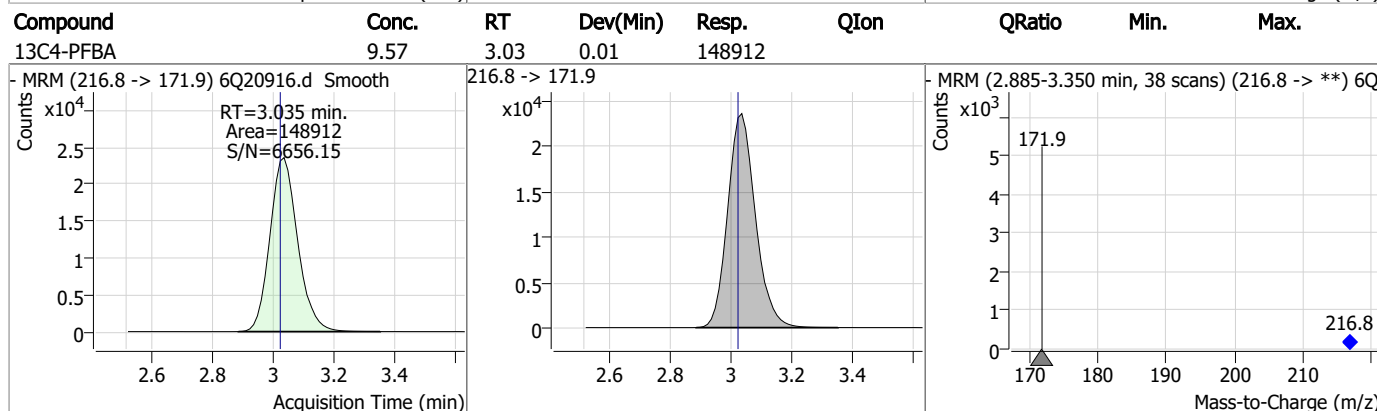
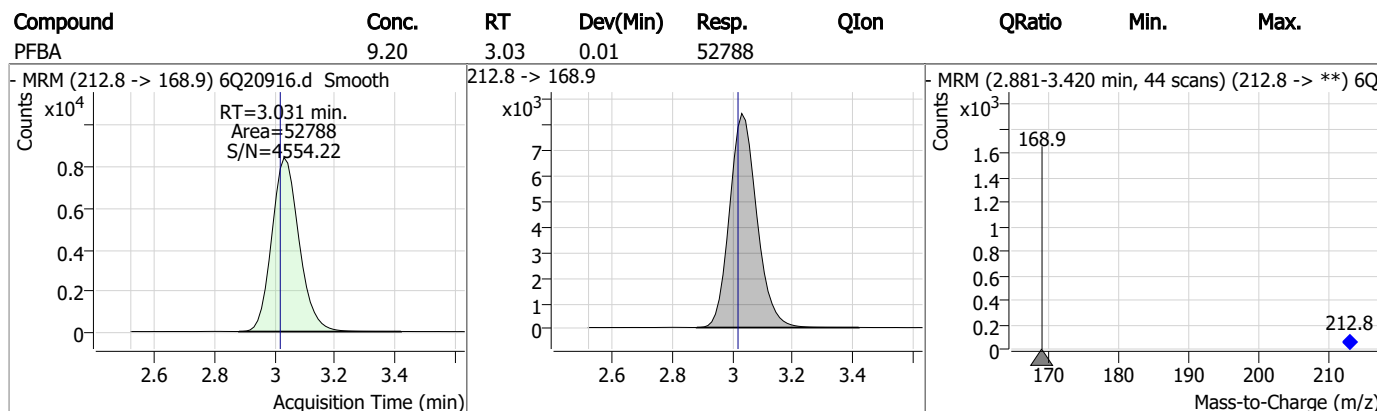
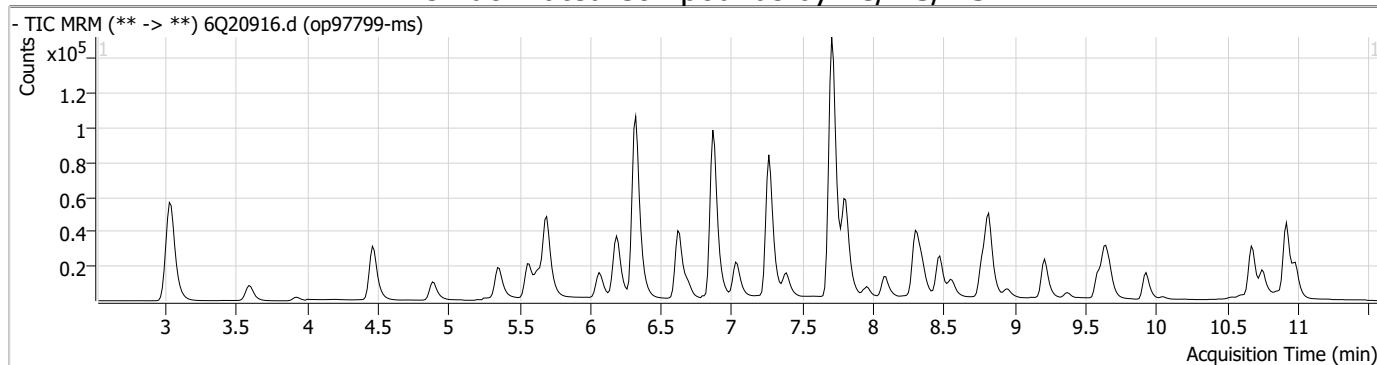
Perfluorinated Compounds by LC/MS/MS

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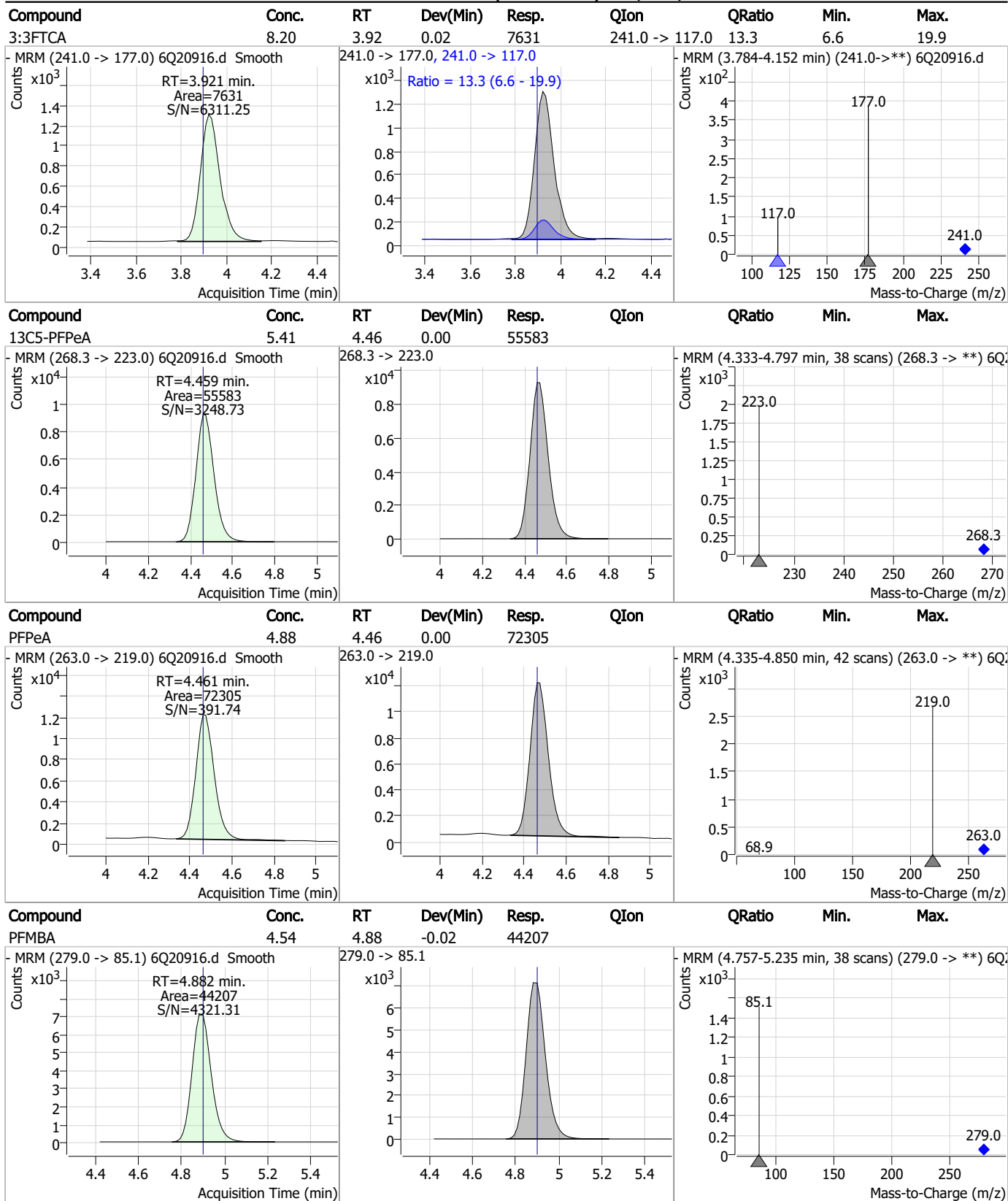
7.4.1

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Perfluorinated Compounds by LC/MS/MS

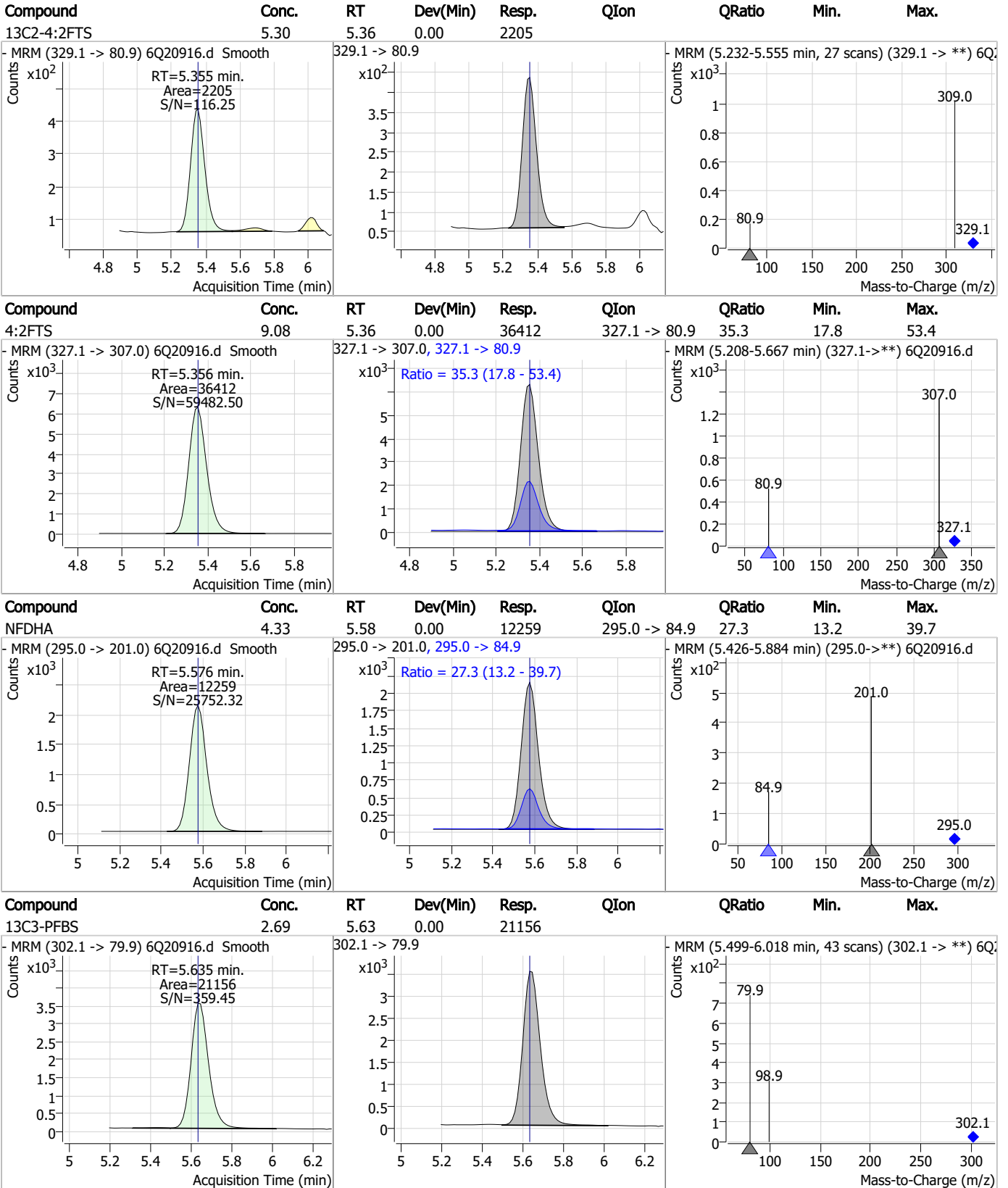


Perfluorinated Compounds by LC/MS/MS



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

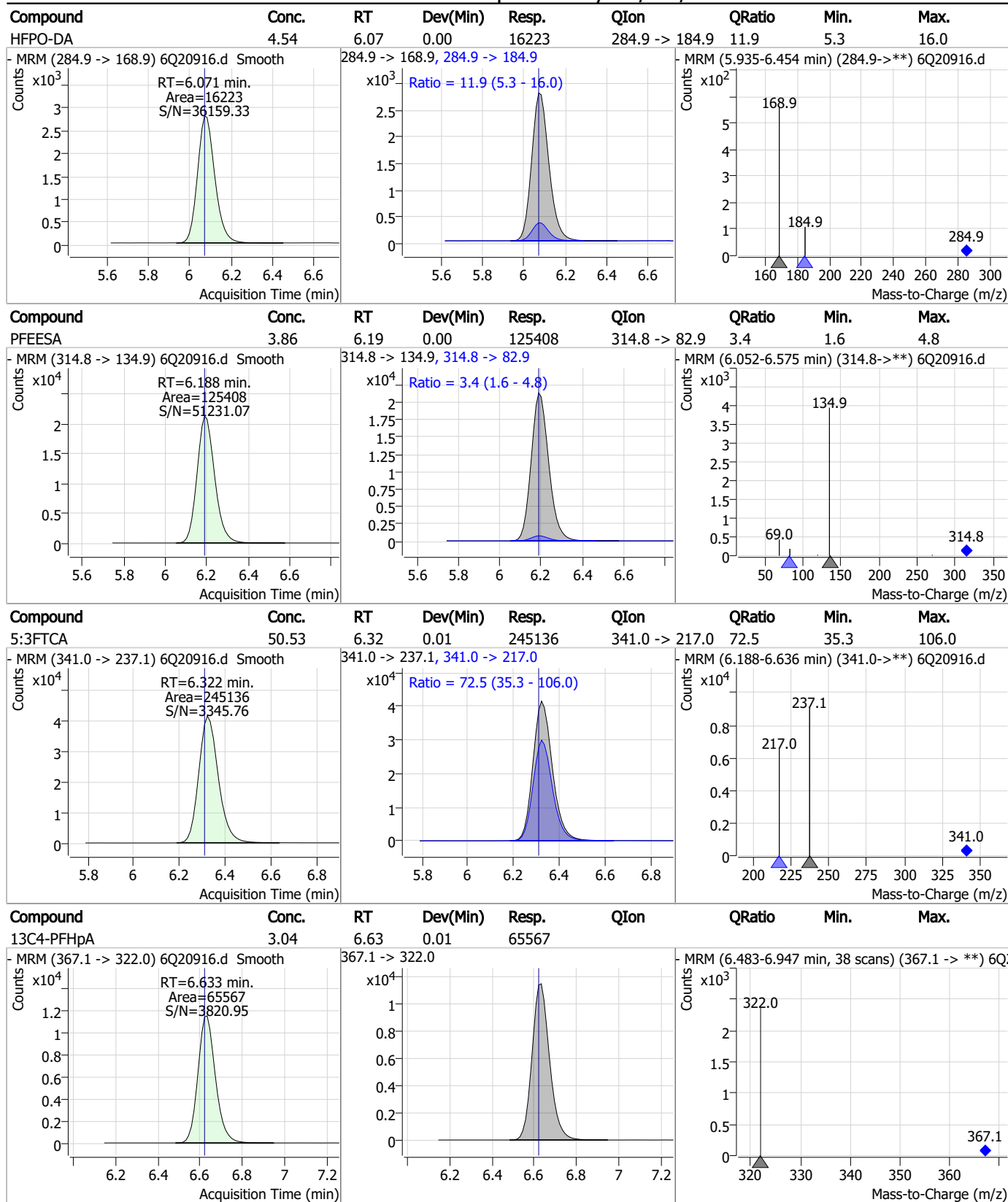
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	5.64	-0.01	16903	298.7 -> 98.8	41.4	20.5	61.6
13C5-PFHxA	2.82	5.69	0.00	63344	318.0 -> 273.0	5.3	2.4	7.3
PFHxA	2.31	5.69	0.00	53730	313.0 -> 118.9	5.3	2.4	7.3
13C3-HFPO-DA	9.97	6.07	0.00	34891	286.9 -> 168.9	5.3	2.4	7.3

7.4.1

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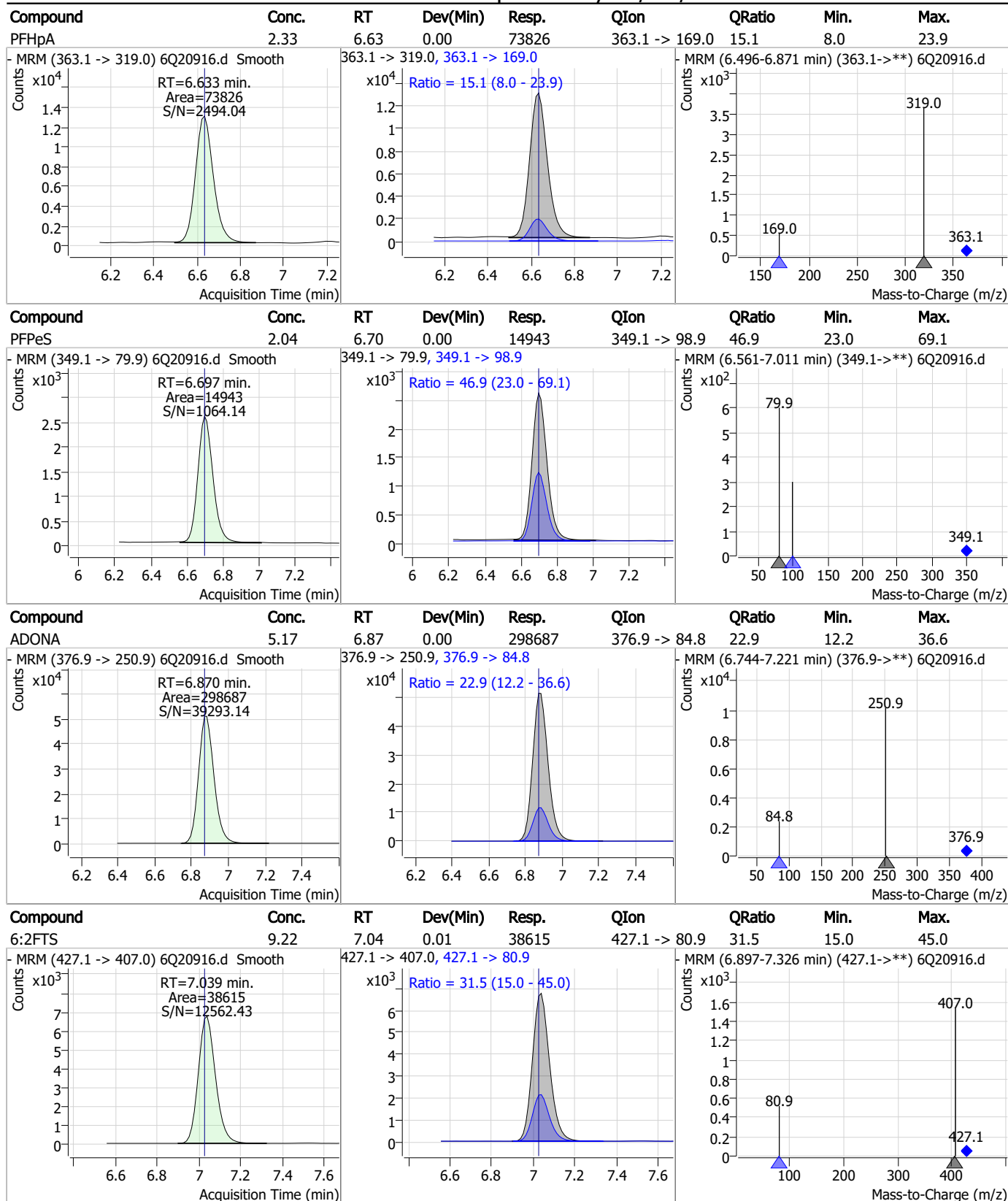
Perfluorinated Compounds by LC/MS/MS



7.4.1
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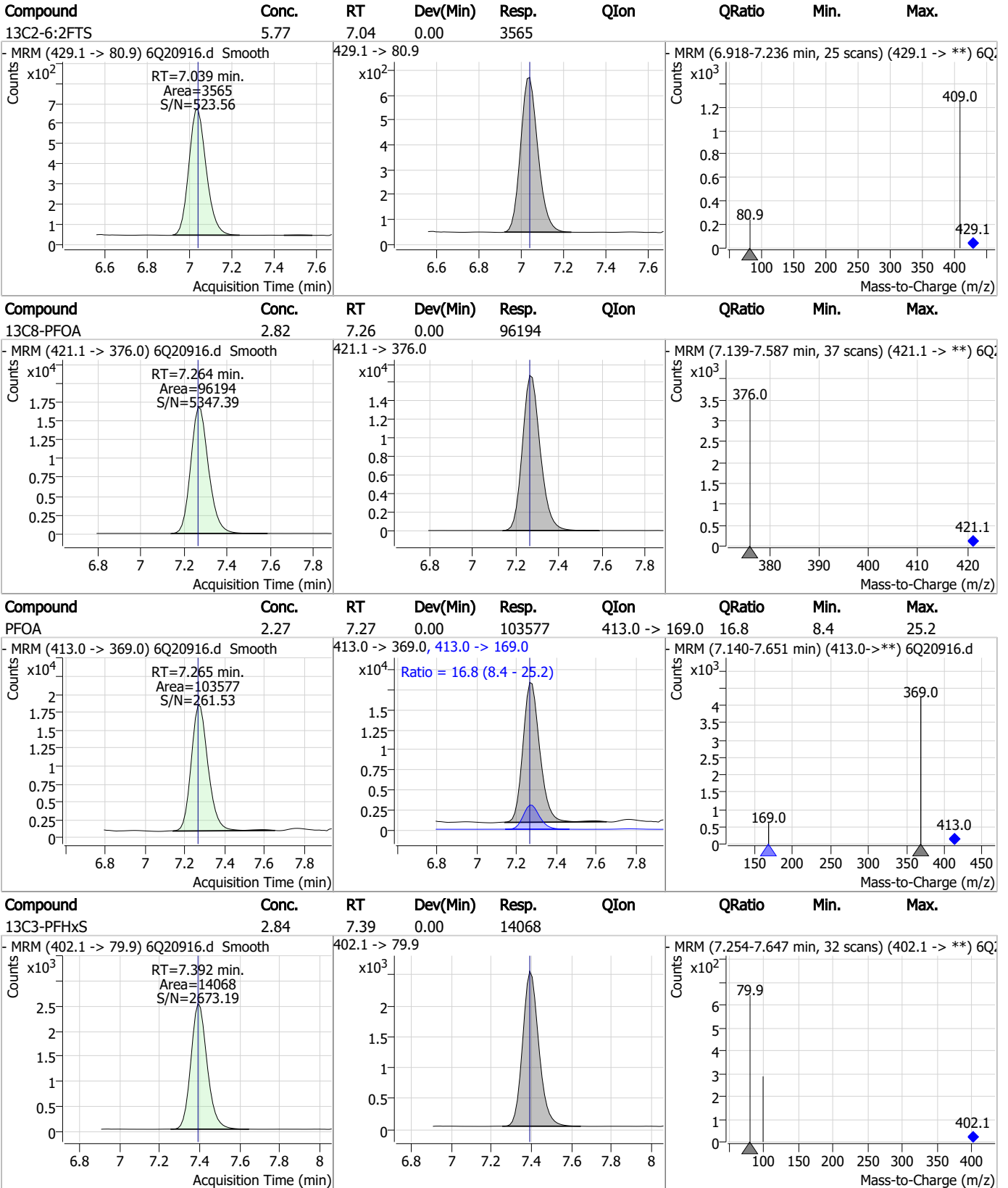


Perfluorinated Compounds by LC/MS/MS



7.4.1
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Perfluorinated Compounds by LC/MS/MS

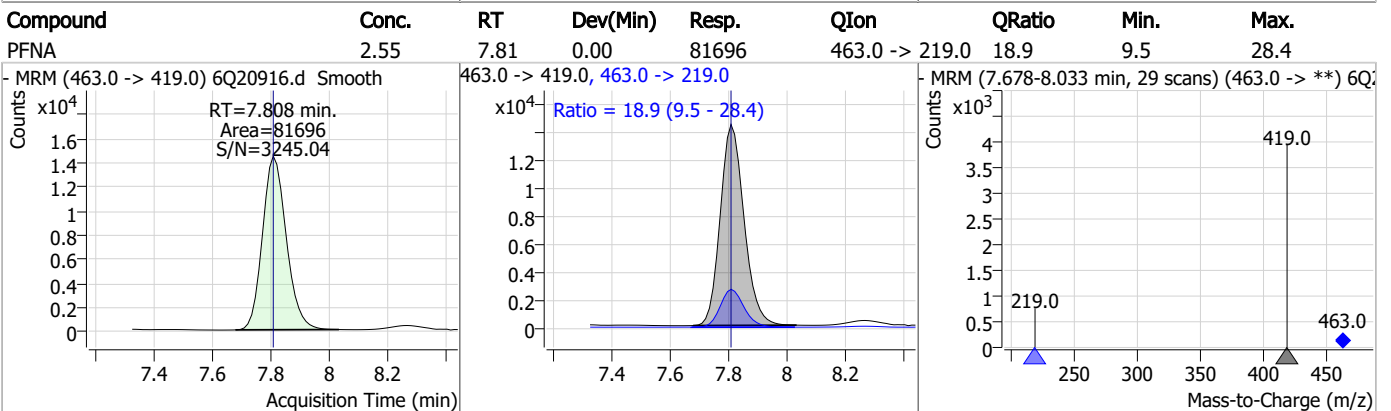
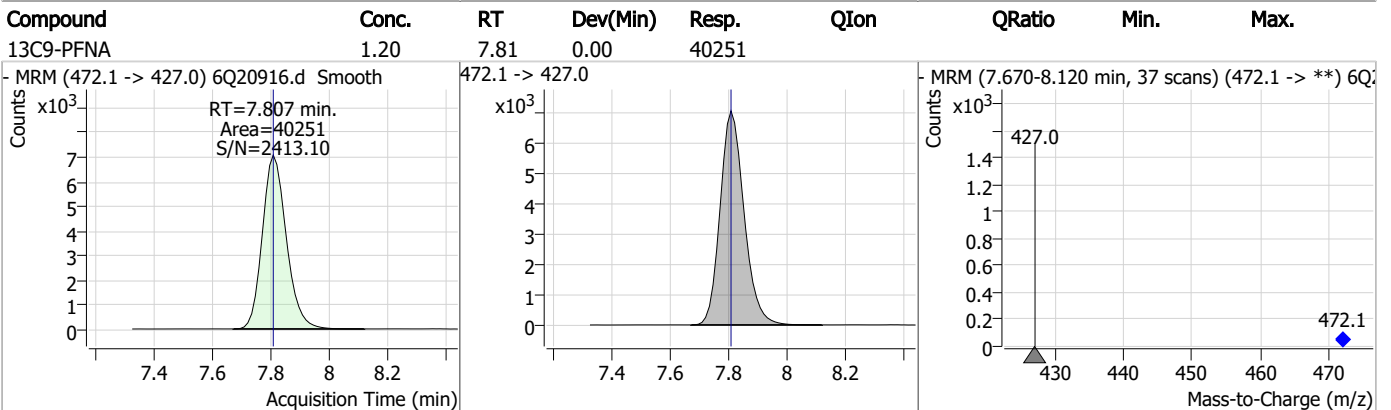
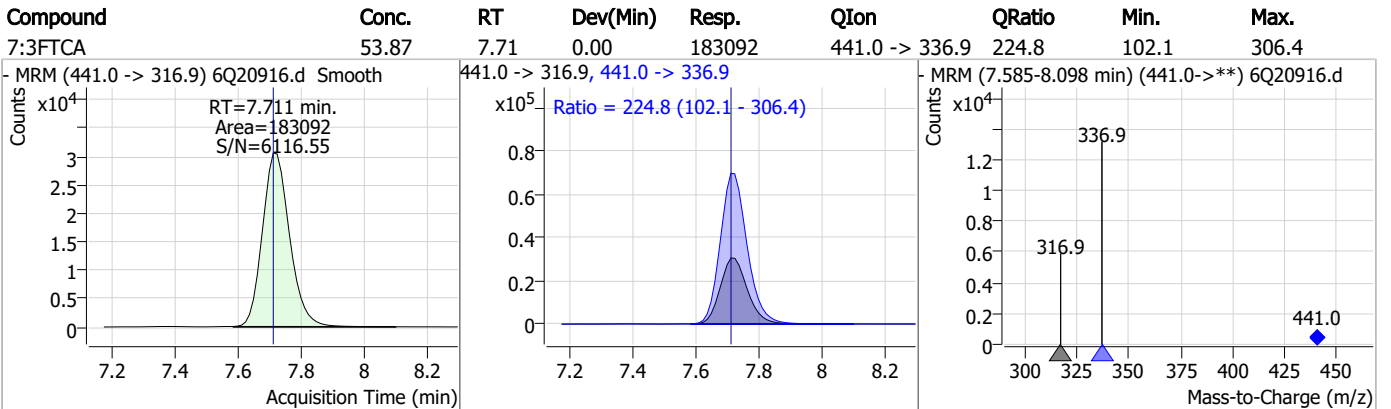
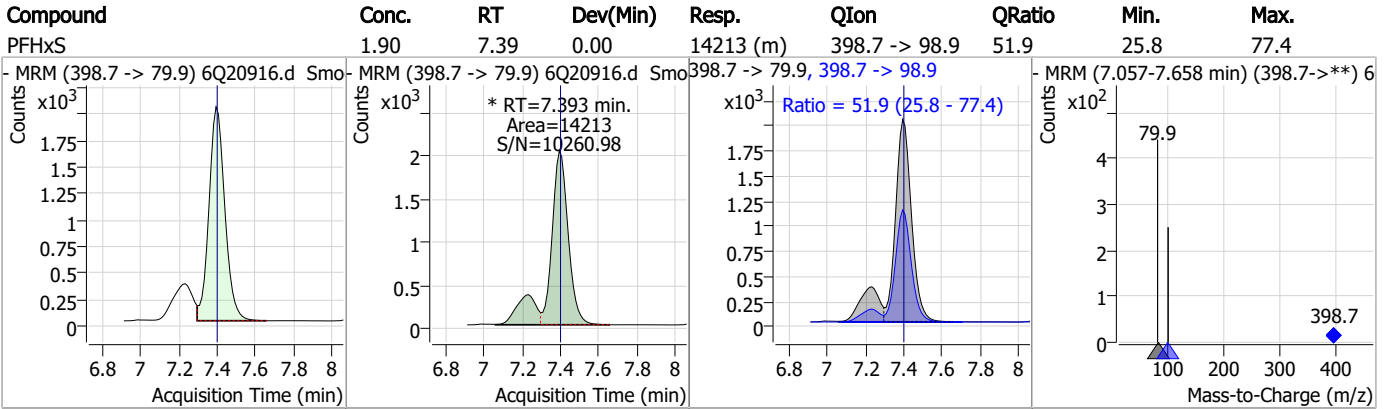


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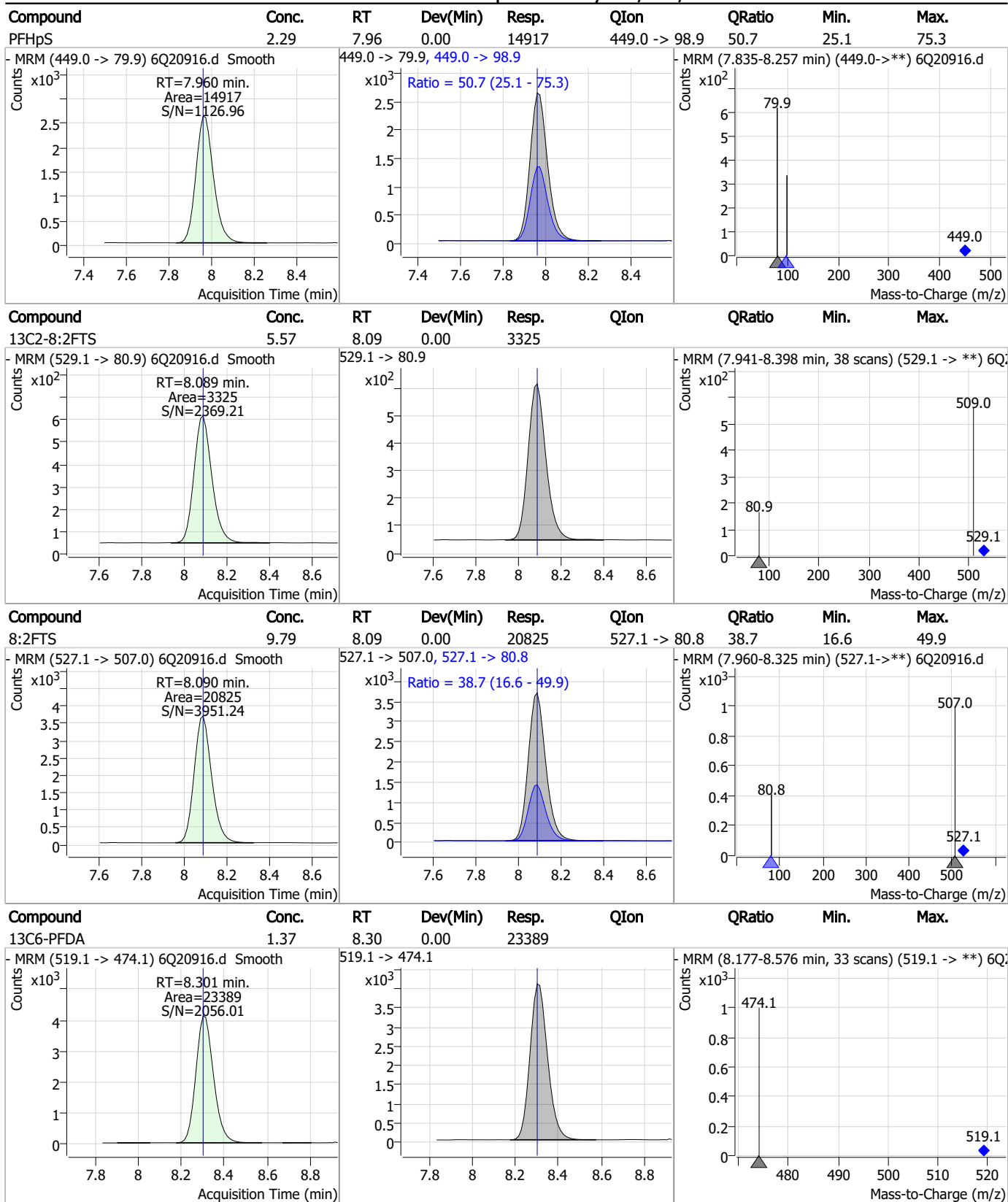
Perfluorinated Compounds by LC/MS/MS



7.4.1

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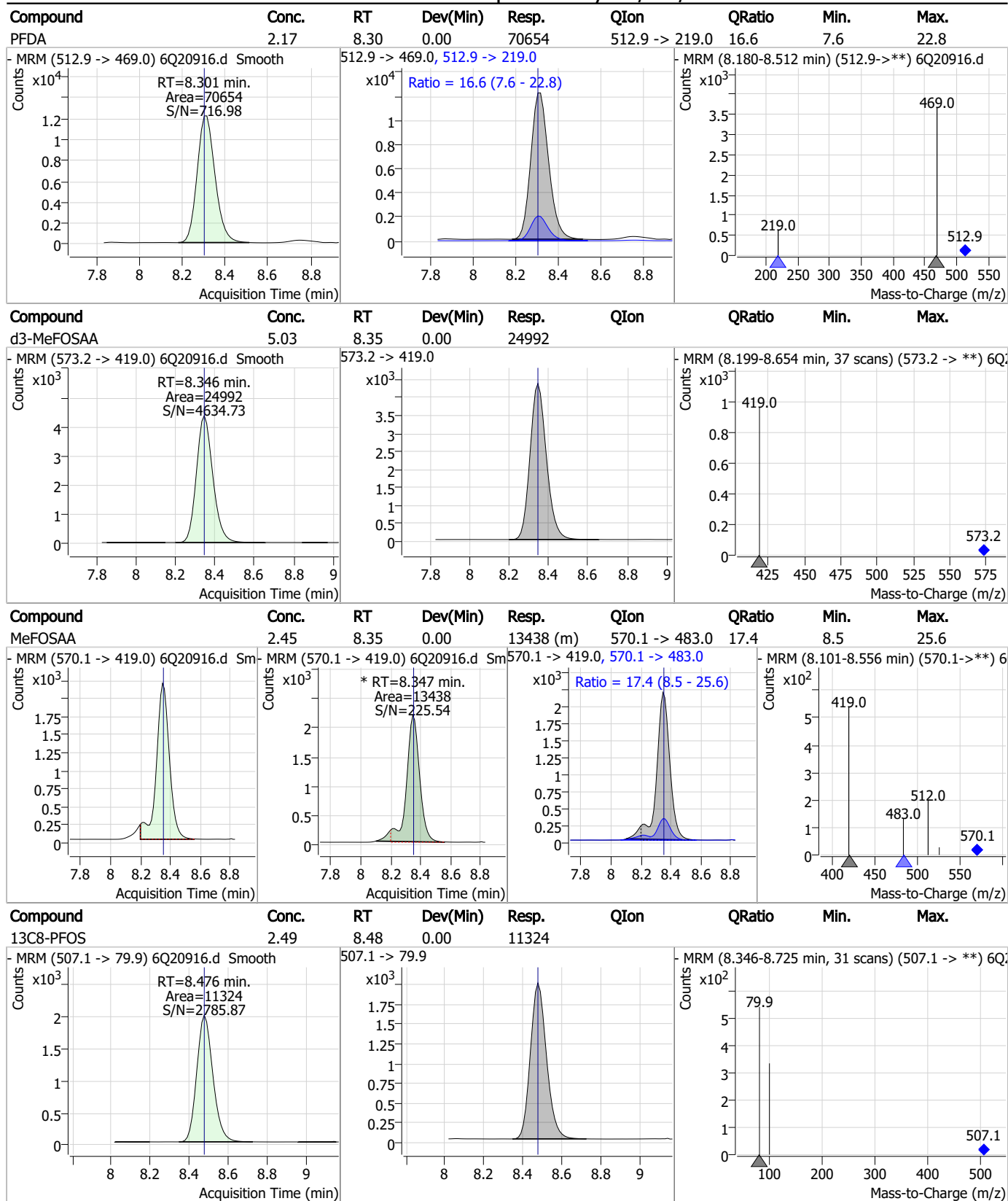
Perfluorinated Compounds by LC/MS/MS



7.4.1
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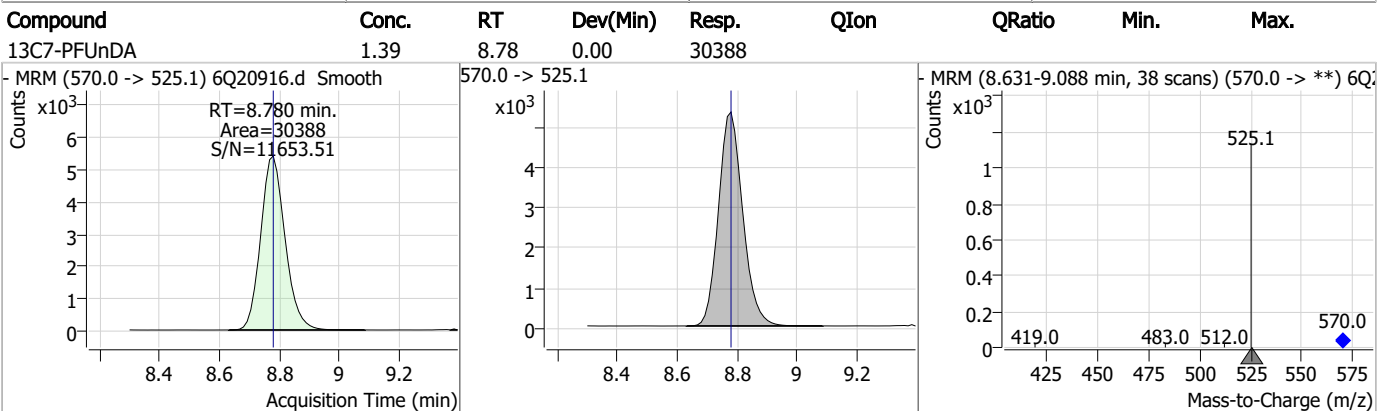
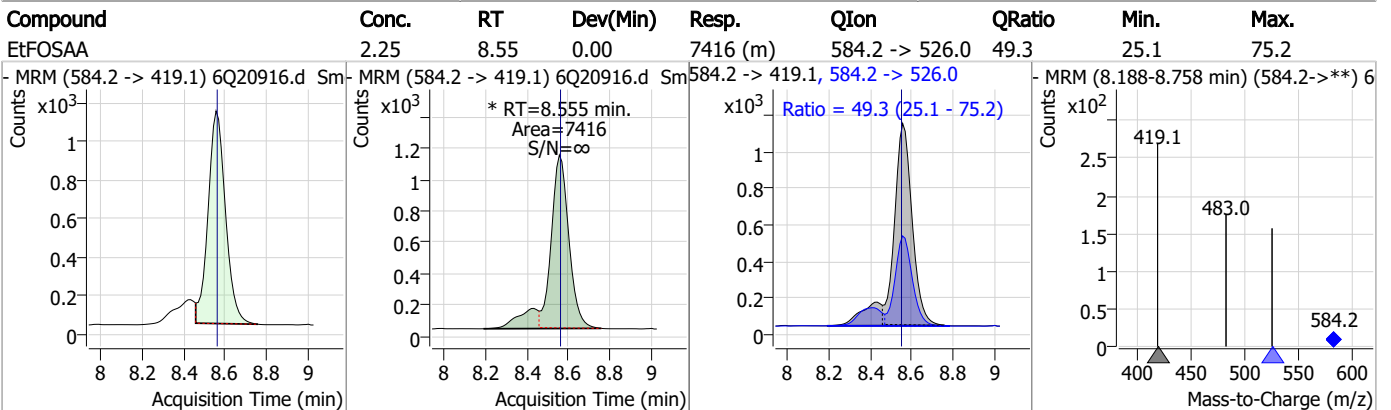
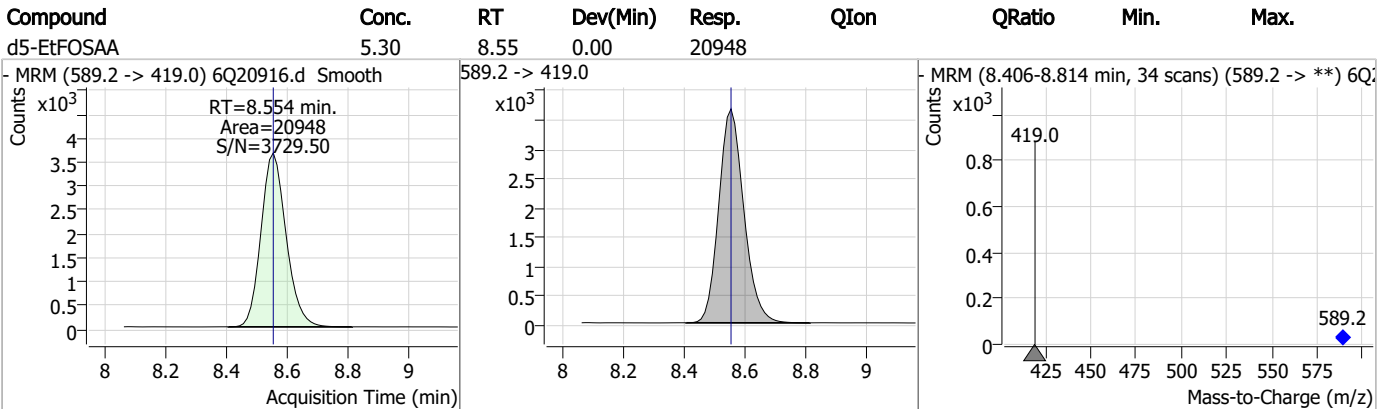
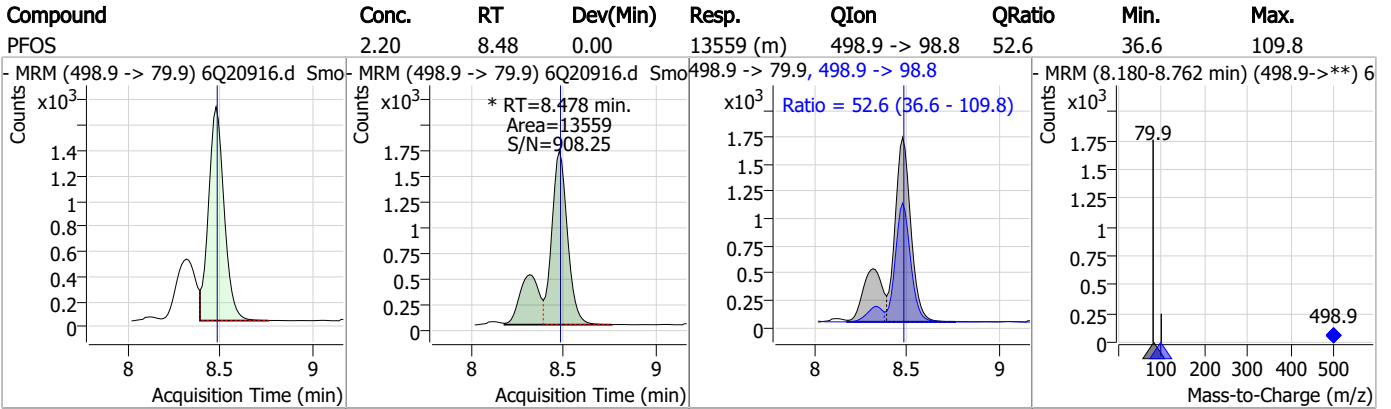
Perfluorinated Compounds by LC/MS/MS



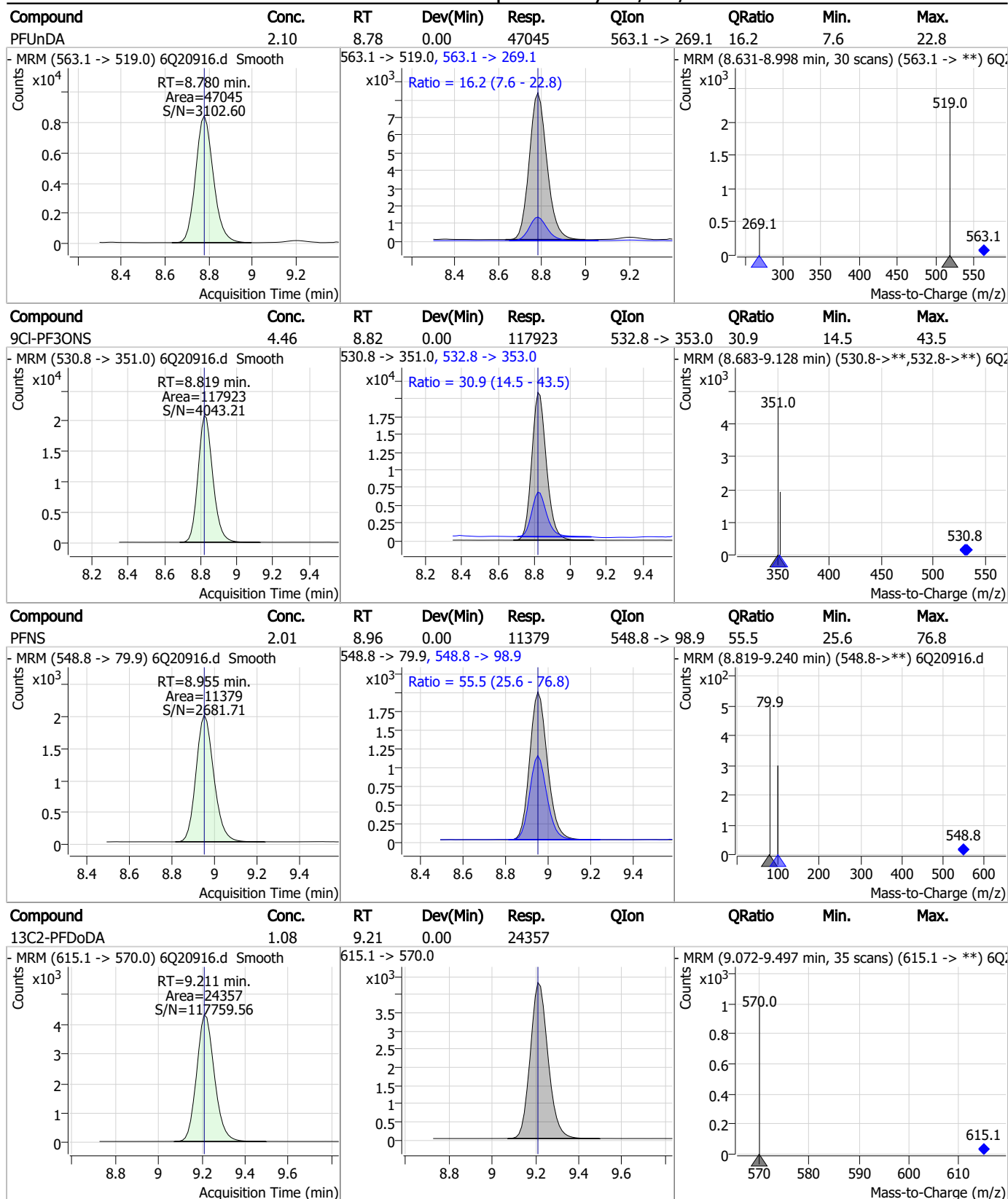
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Perfluorinated Compounds by LC/MS/MS

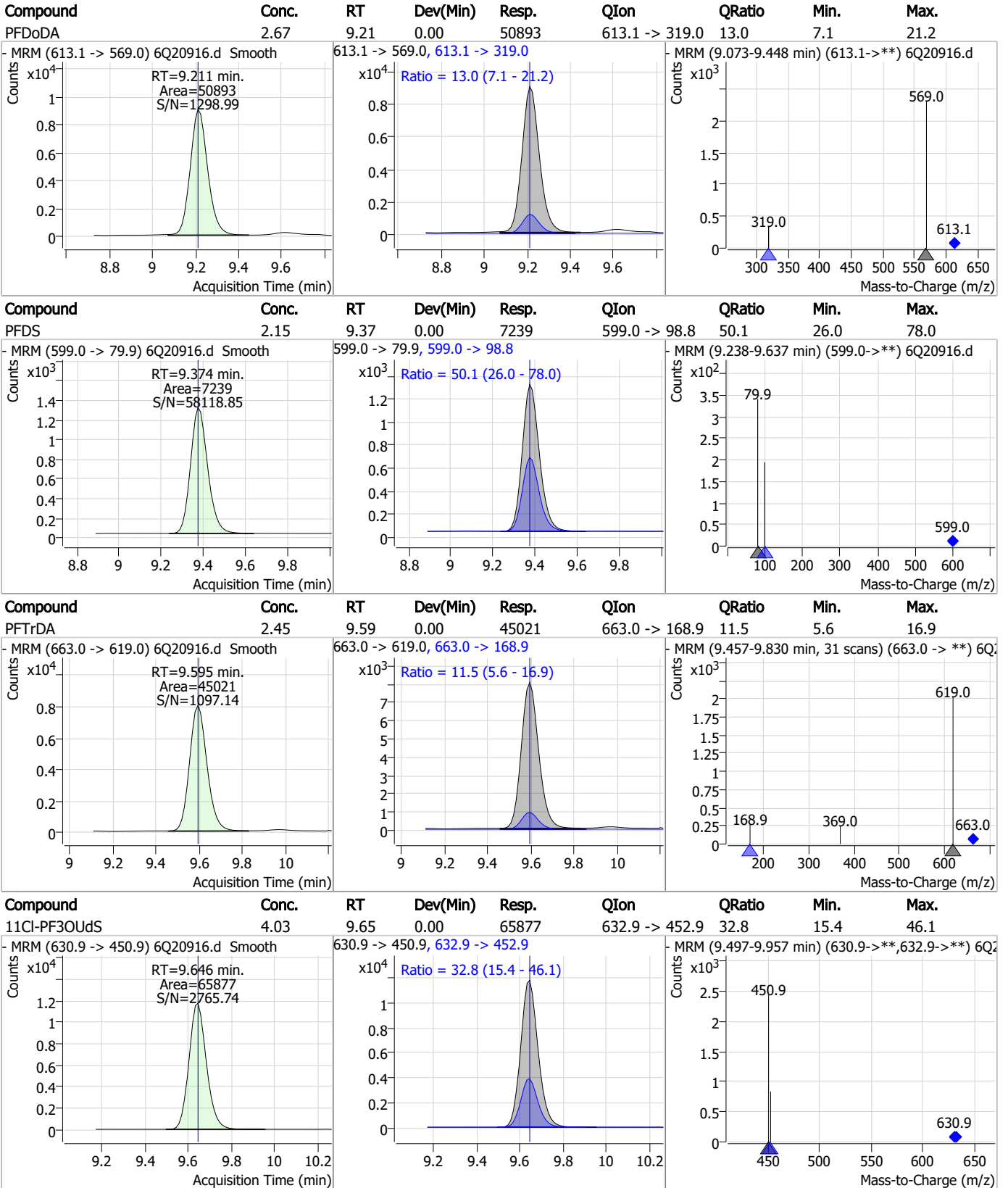


Perfluorinated Compounds by LC/MS/MS



7.4.1
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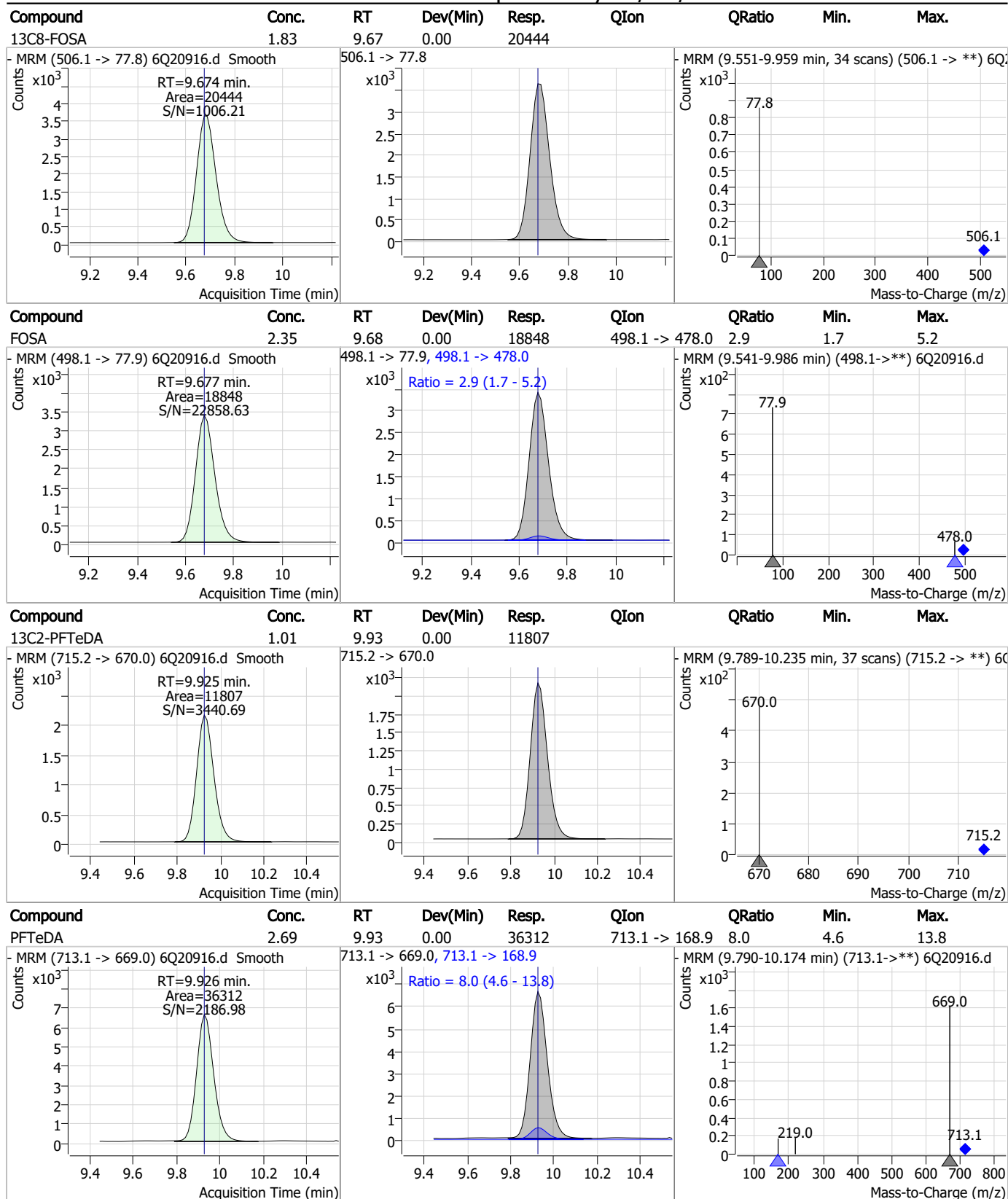
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

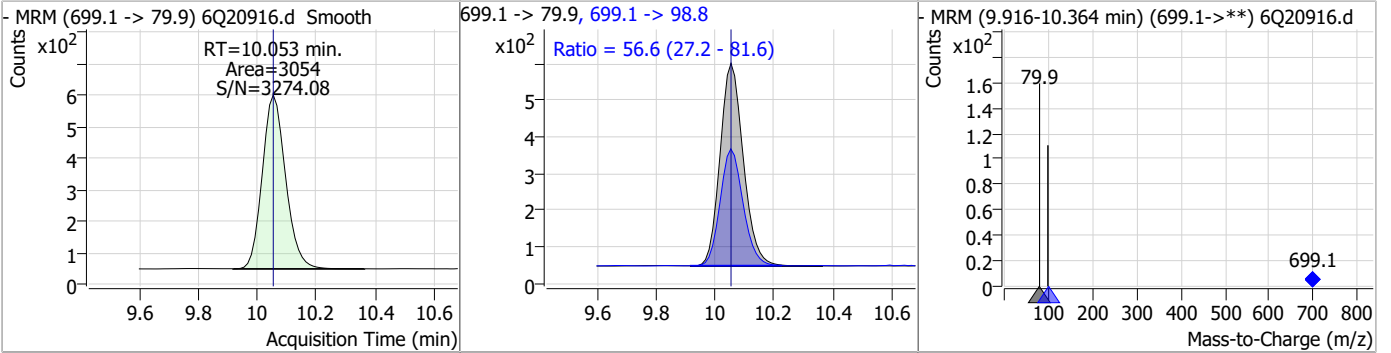


7.4.1
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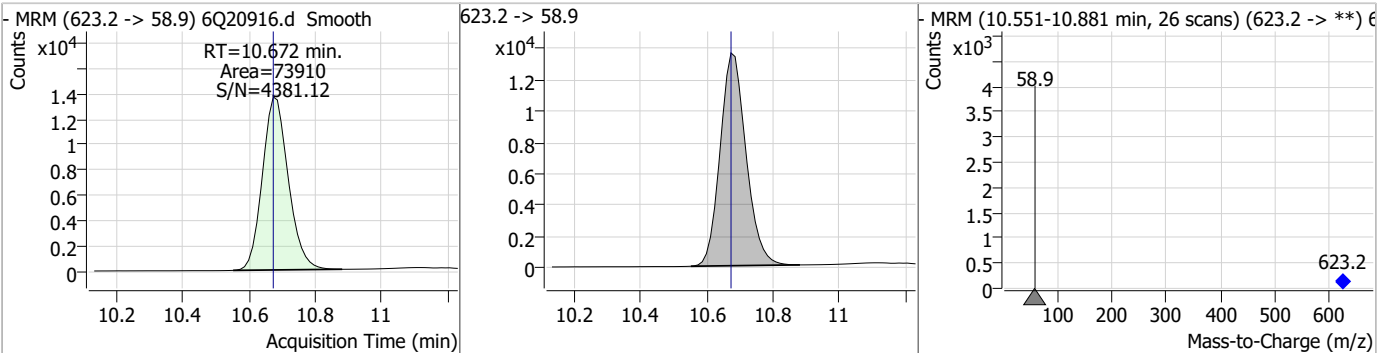


Perfluorinated Compounds by LC/MS/MS

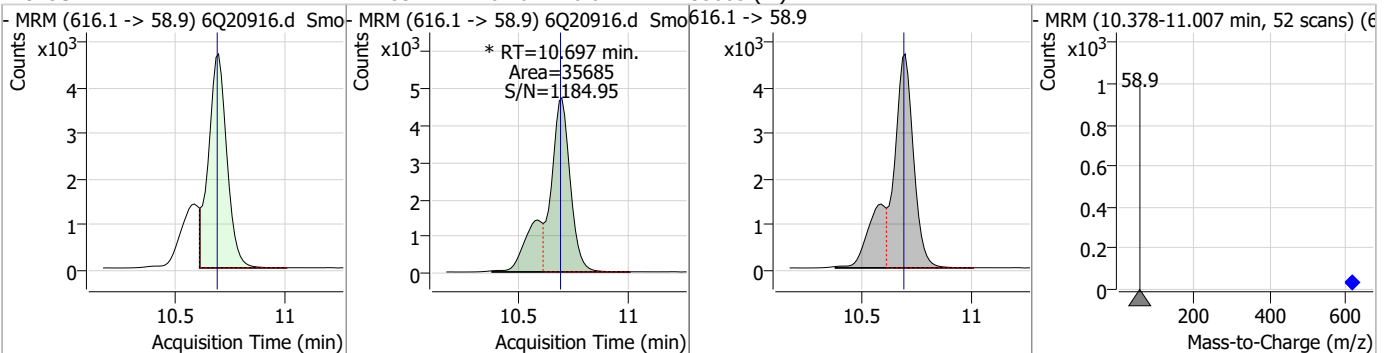
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	1.98	10.05	0.00	3054	699.1 -> 98.8	56.6	27.2	81.6



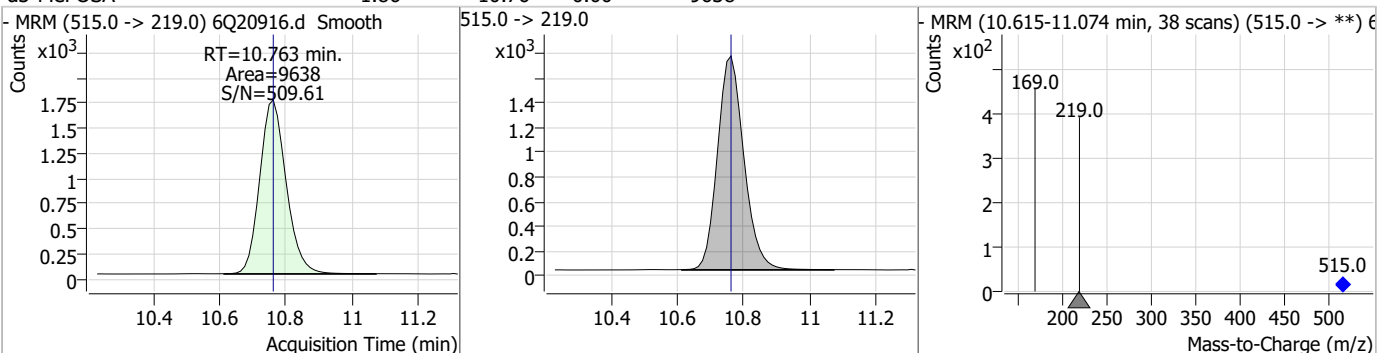
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	17.99	10.67	0.00	73910				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.53	10.70	0.01	35685 (m)				

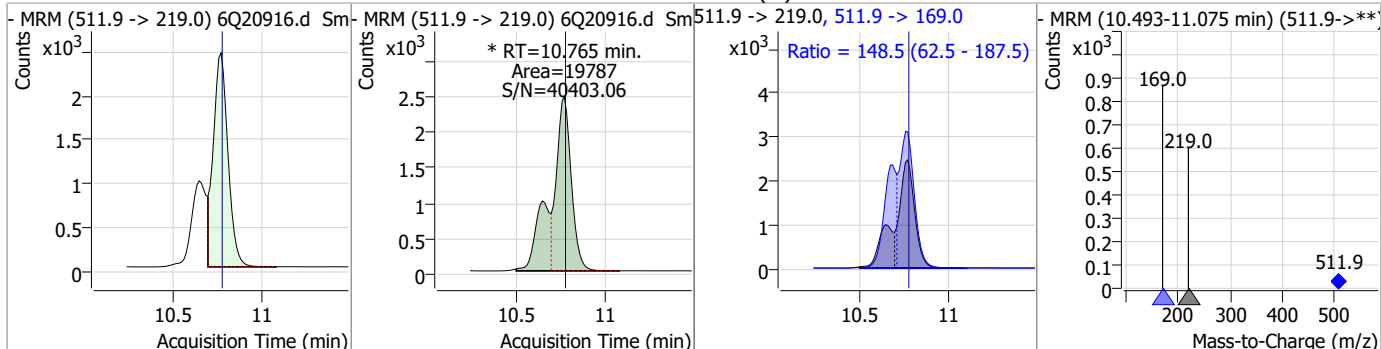


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.86	10.76	0.00	9638				

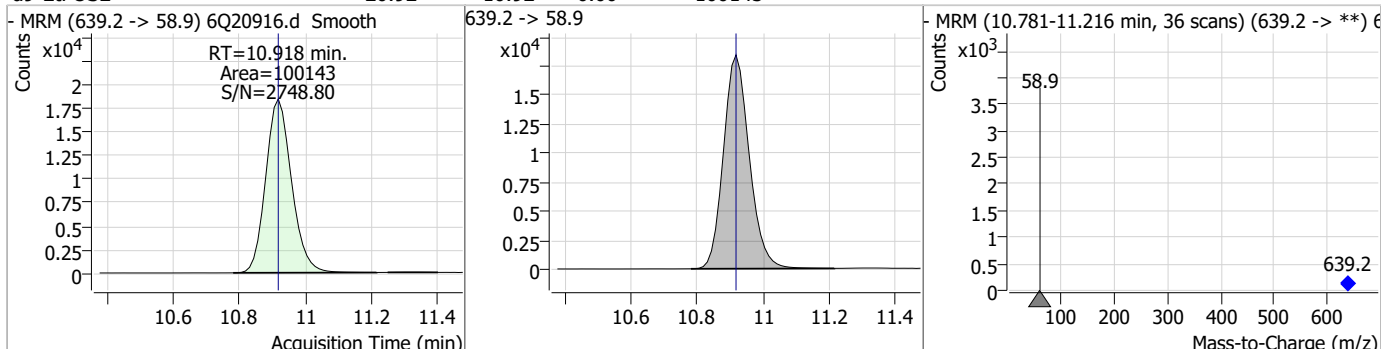


Perfluorinated Compounds by LC/MS/MS

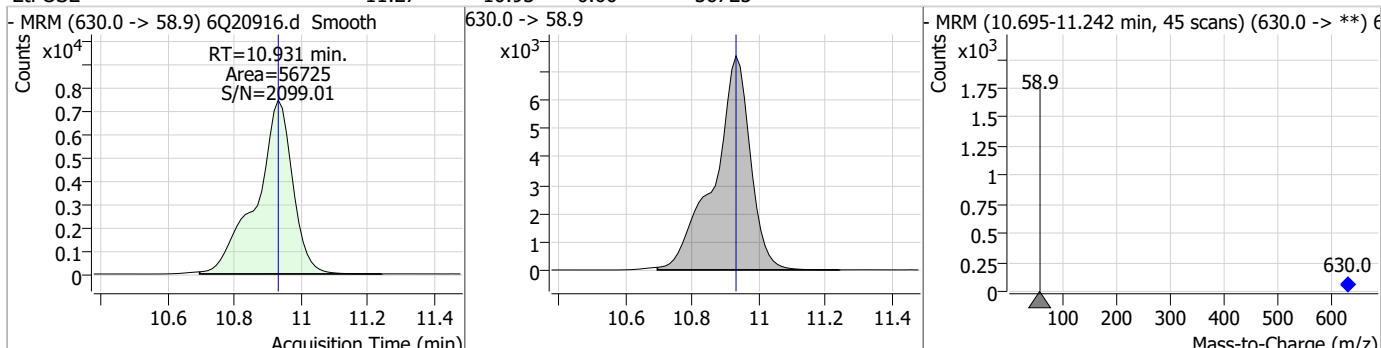
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.80	10.76	0.00	19787 (m)	511.9 -> 219.0	148.5	62.5	187.5



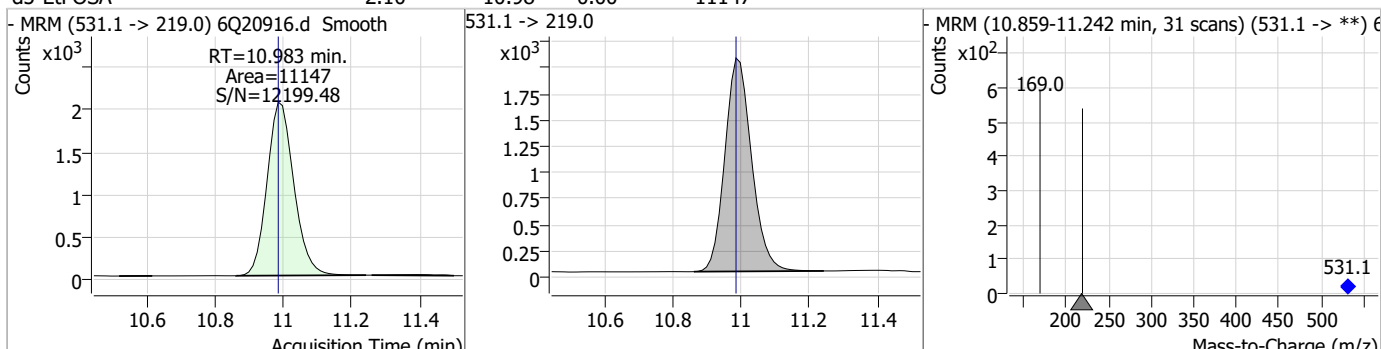
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.92	10.92	0.00	100143				



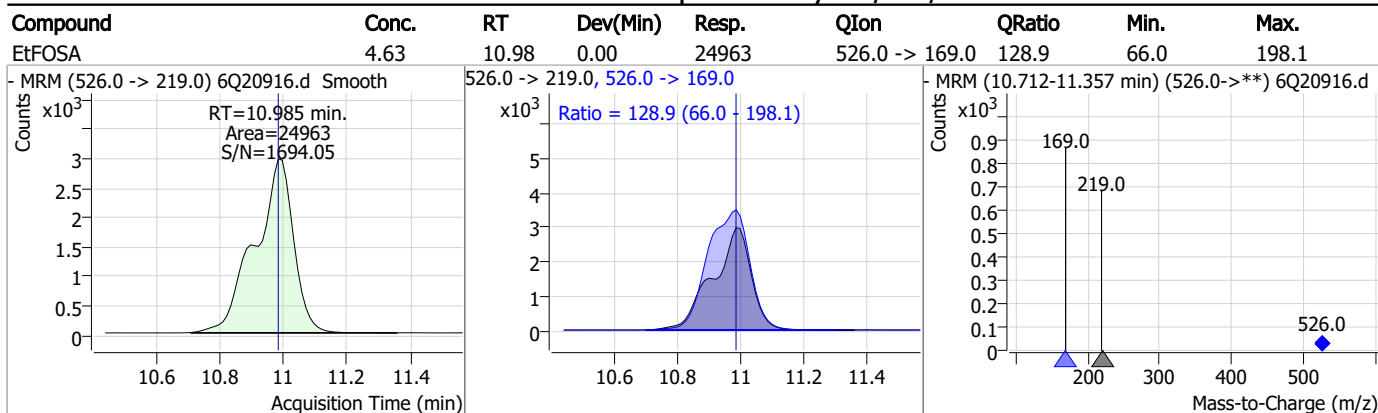
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.27	10.93	0.00	56725				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.10	10.98	0.00	11147				



Perfluorinated Compounds by LC/MS/MS



7.4.1

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Manual Integration Approval Summary

Sample Number: OP97799-MS Method: EPA DRAFT 1633
Lab FileID: 6Q20916.D Analyst approved: 07/16/23 12:12 Martha Valls
Injection Time: 07/13/23 16:28 Supervisor approved: 07/17/23 11:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Baseline ripple
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Missed peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.4.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20919.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 5:10:32 PM
 Sample Name : op97799-dup
 Vial : P5-B2
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97799,S6Q310,574,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	188099	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	62515	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	67359	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	69420	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	107040	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	47293	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	25646	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	32209	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	27945	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	15050	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	27205	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	23672	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	15002	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	13493	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2877	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4191	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3979	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	23849	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	37274	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	23435	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	81775	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	120358	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	12784	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	11769	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	15932	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	70644	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	9011	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	96159	2.50 µg/L	0.000
13C2-PFDA	8.313	515.1 -> 470.1	30263	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	51605	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	57672	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2877	7.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 142.5%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4191	6.99 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 139.8%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3979	6.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 137.4%		
13C2-PFDoDA	9.211	615.1 -> 570.0	27945	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.8%		
13C2-PFTeDA	9.925	715.2 -> 670.0	15050	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.8%		
13C3-PFBS	5.635	302.1 -> 79.9	23672	3.10 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 124.1%		
13C3-PFHxS	7.392	402.1 -> 79.9	15002	3.12 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 = 124.9%	
13C4-PFBA	3.035	216.8 -> 171.9	188099	11.24 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.4%	
13C4-PFHpA	6.633	367.1 -> 322.0	69420	3.08 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 123.1%	
13C5-PFHxA	5.692	318.0 -> 273.0	67359	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.6%	
13C5-PFPeA	4.472	268.3 -> 223.0	62515	5.82 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.3%	
13C6-PFDA	8.313	519.1 -> 474.1	25646	1.51 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 120.8%	
13C7-PFUnDA	8.780	570.0 -> 525.1	32209	1.48 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 118.0%	
13C8-FOSA	9.674	506.1 -> 77.8	27205	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C8-PFOA	7.264	421.1 -> 376.0	107040	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.9%	
13C8-PFOS	8.476	507.1 -> 79.9	13493	2.98 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 119.4%	
13C9-PFNA	7.807	472.1 -> 427.0	47293	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.4%	
d3-MeFOSAA	8.346	573.2 -> 419.0	23849	4.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	37274	10.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	11769	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.3%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23435	5.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.3%	
d7-MeFOSE	10.672	623.2 -> 58.9	81775	20.01 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 80.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	120358	25.29 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d5-EtFOSA	10.983	531.1 -> 219.0	12784	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%	

7.5.1
7

Target Compounds	RT	Transition	Response	Conc. Units	QValue
4:2FTS	-	327.1 -> 307.0	-	N.D.	
		327.1 -> 80.9			
6:2FTS	-	427.1 -> 407.0	-	N.D.	
		427.1 -> 80.9			
8:2FTS	-	527.1 -> 507.0	-	N.D.	
		527.1 -> 80.8			
EtFOSAA	-	584.2 -> 419.1	-	N.D.	
		584.2 -> 526.0			
FOSA	-	498.1 -> 77.9	-	N.D.	
		498.1 -> 478.0			
MeFOSAA	-	570.1 -> 419.0	-	N.D.	
		570.1 -> 483.0			
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9	-	N.D.	
		298.7 -> 98.8			
PFDA	8.314	512.9 -> 469.0	3804	0.11 µg/L	93
		512.9 -> 219.0	690		
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)
		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	7.808	463.0 -> 419.0	2807	0.07 µg/L	95
		463.0 -> 219.0	595		
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

7.5.1
7

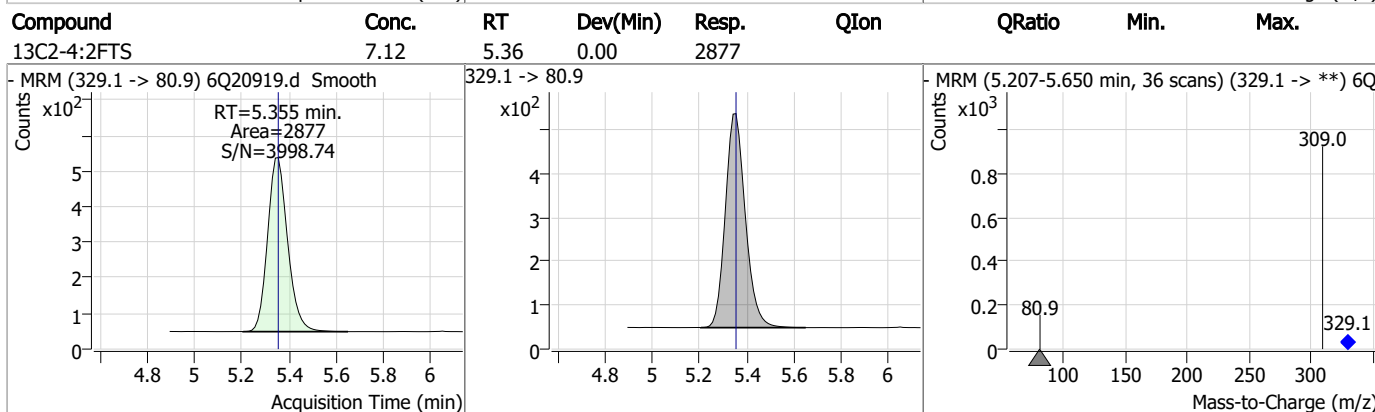
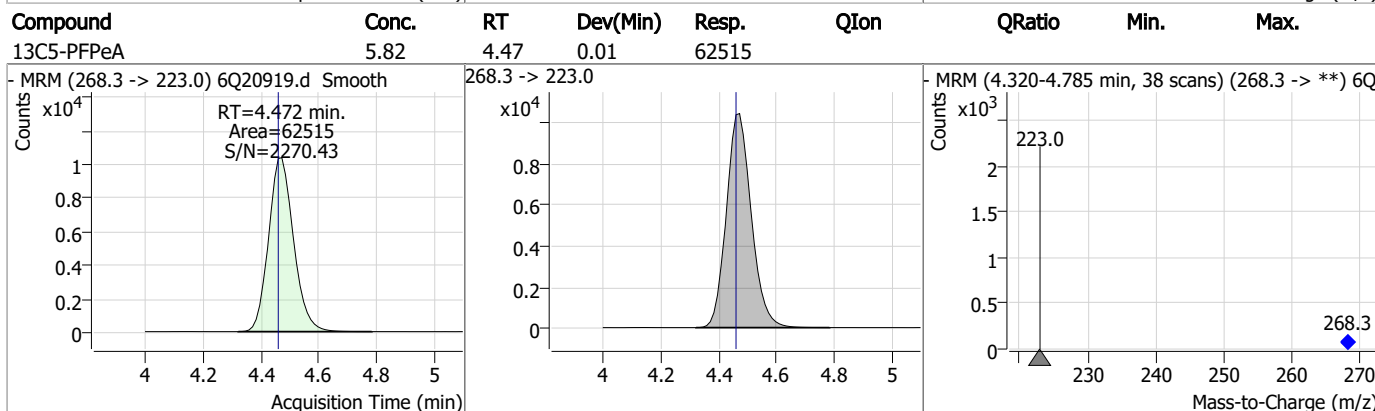
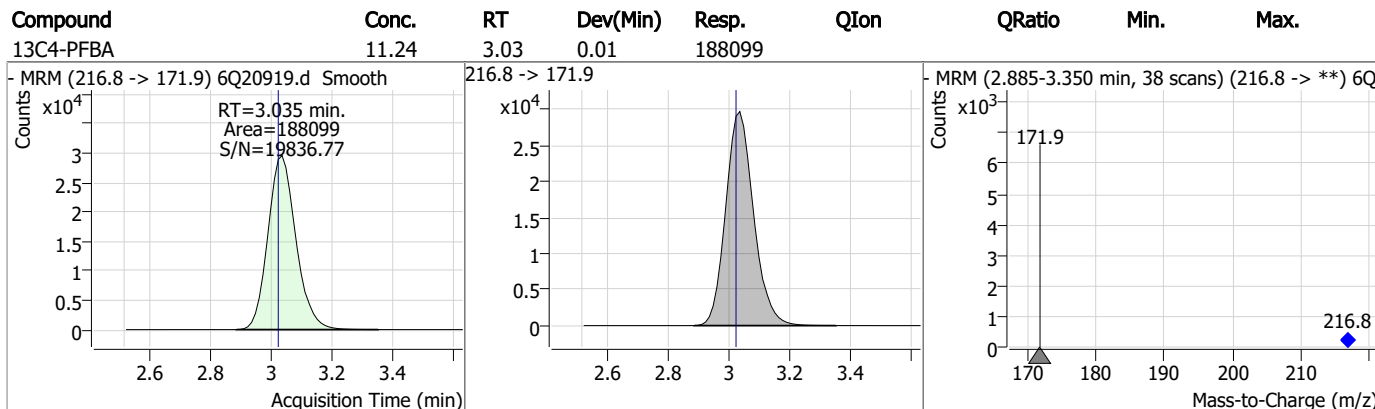
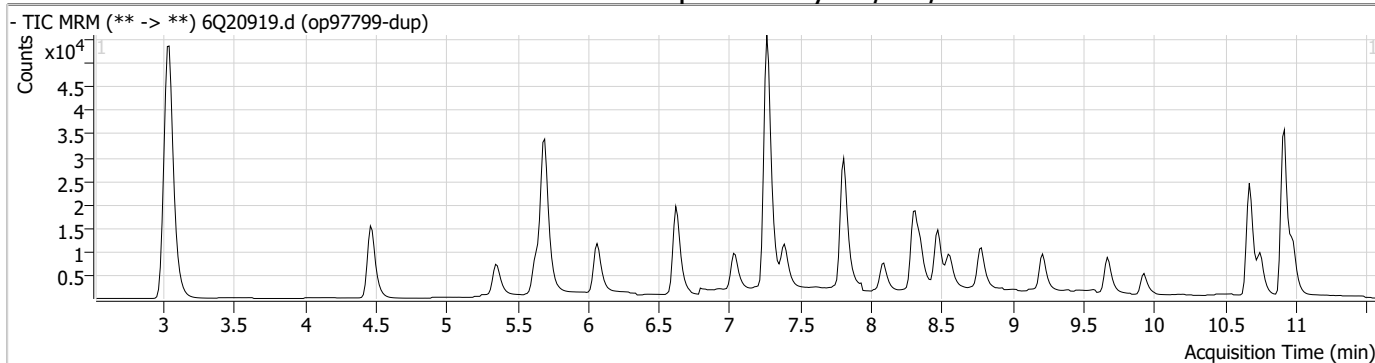
Perfluorinated Compounds by LC/MS/MS

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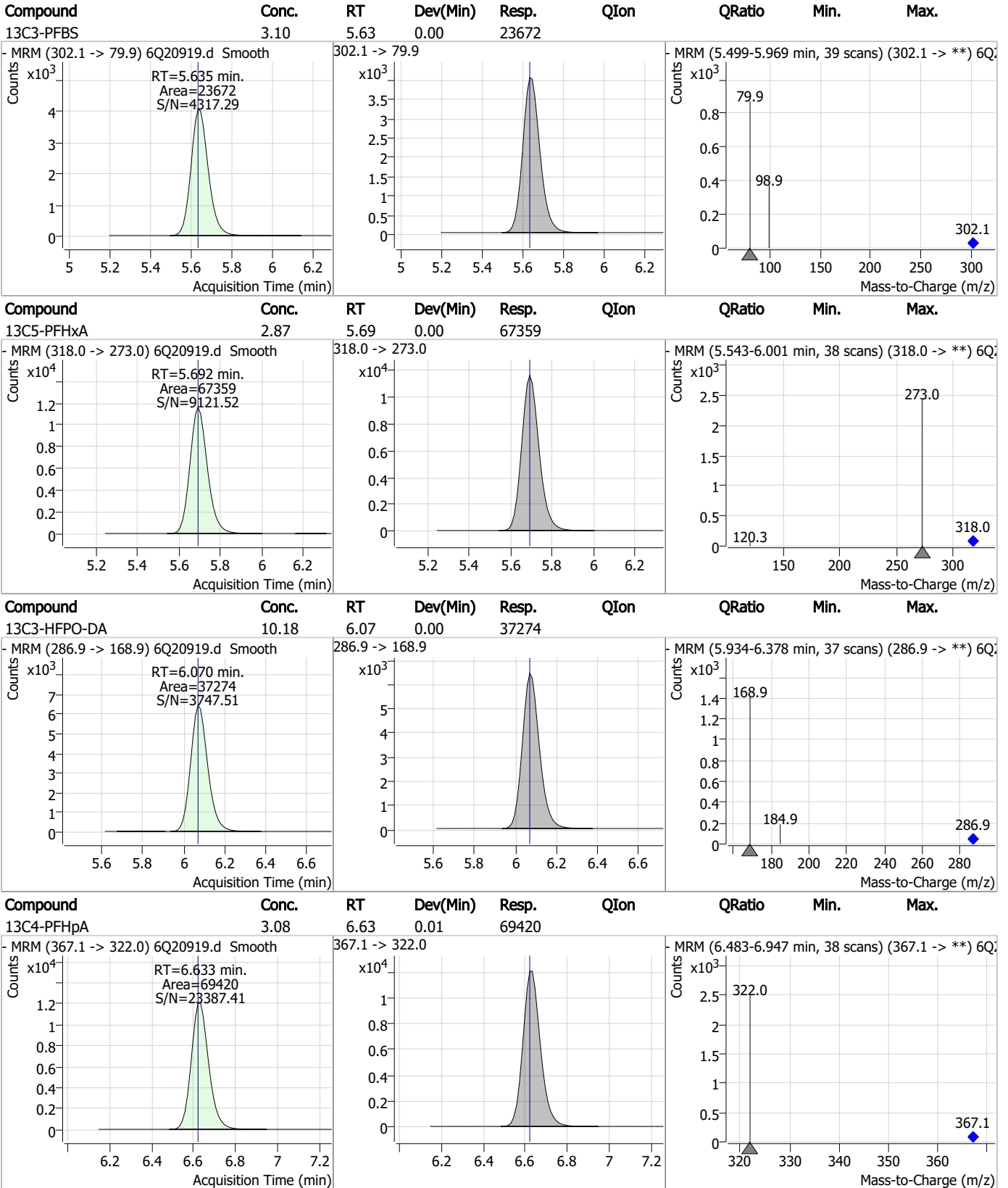
7.5.1

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

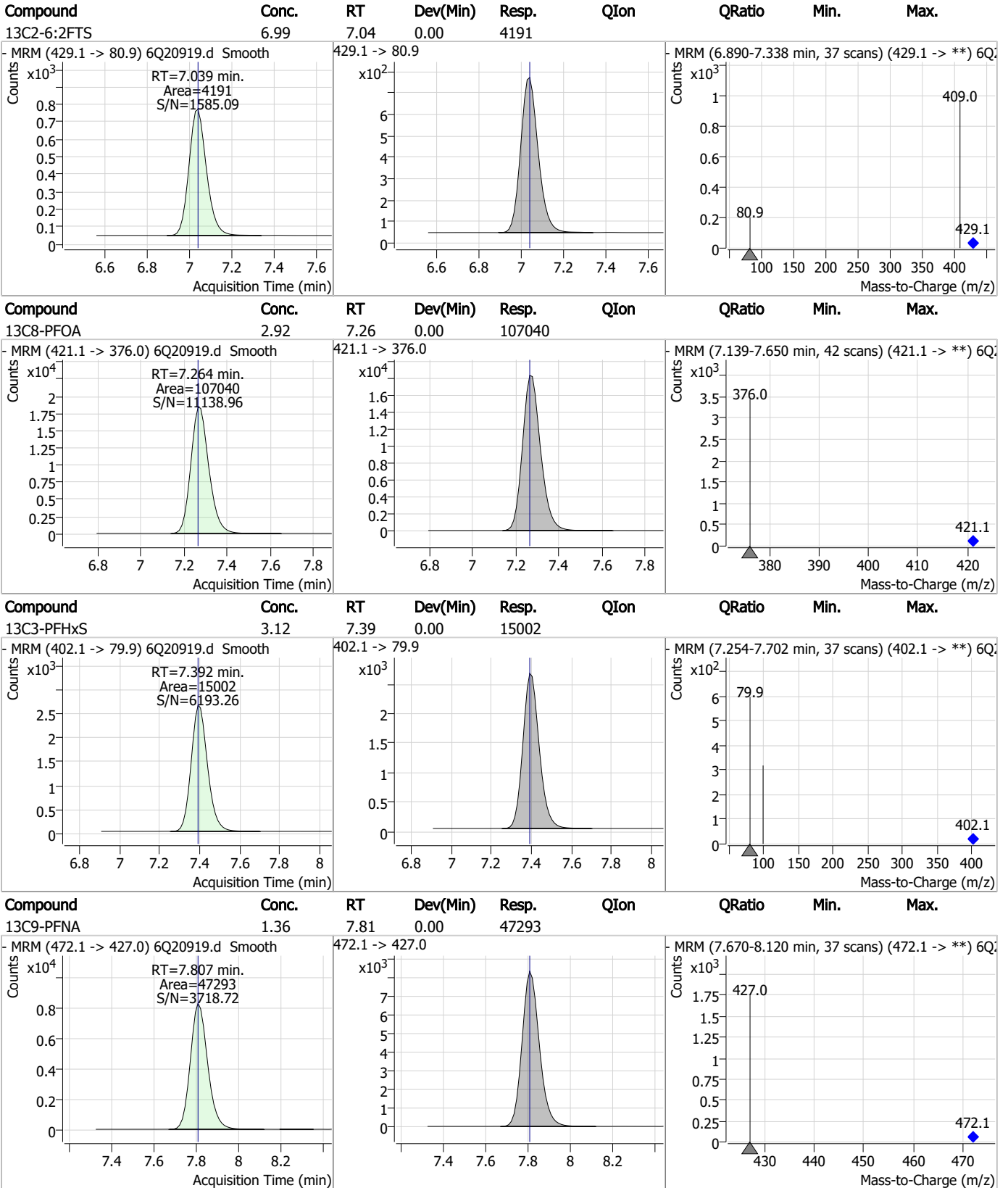


7.5.1

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Perfluorinated Compounds by LC/MS/MS

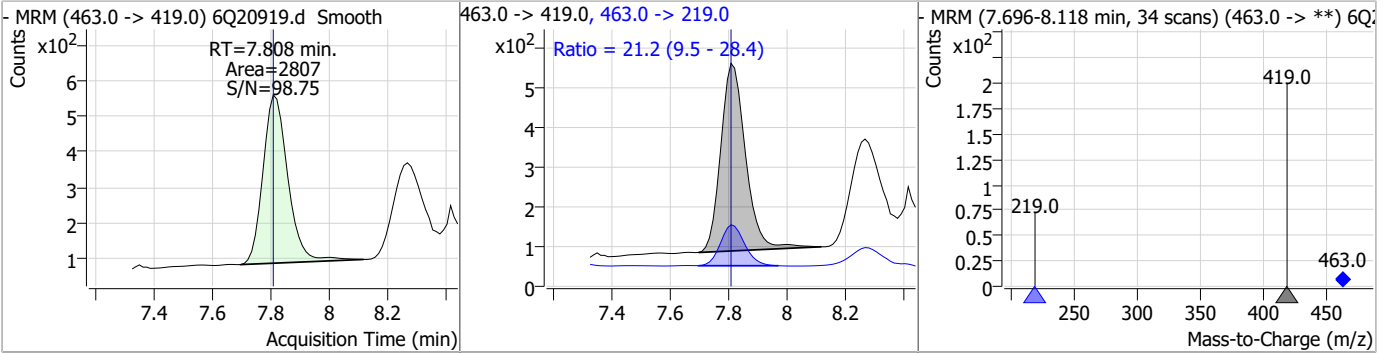


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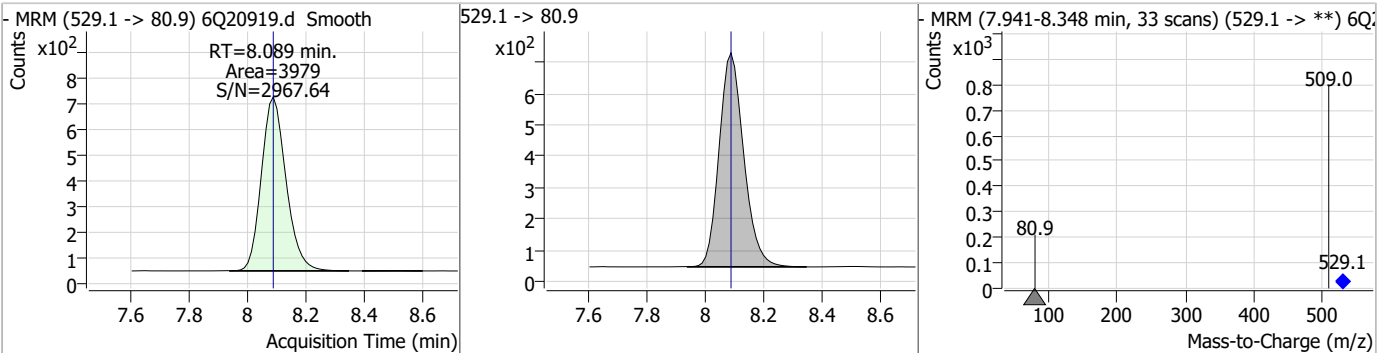
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Perfluorinated Compounds by LC/MS/MS

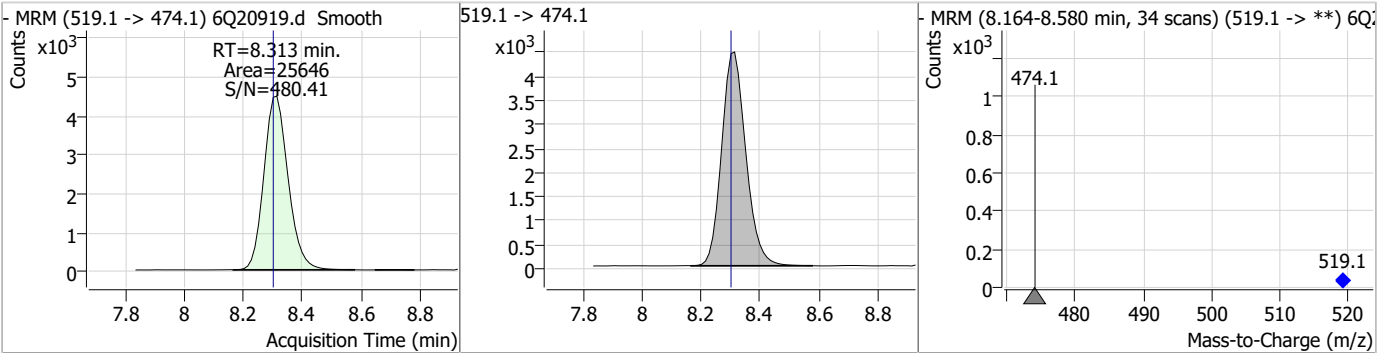
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.07	7.81	0.00	2807	463.0 -> 219.0	21.2	9.5	28.4



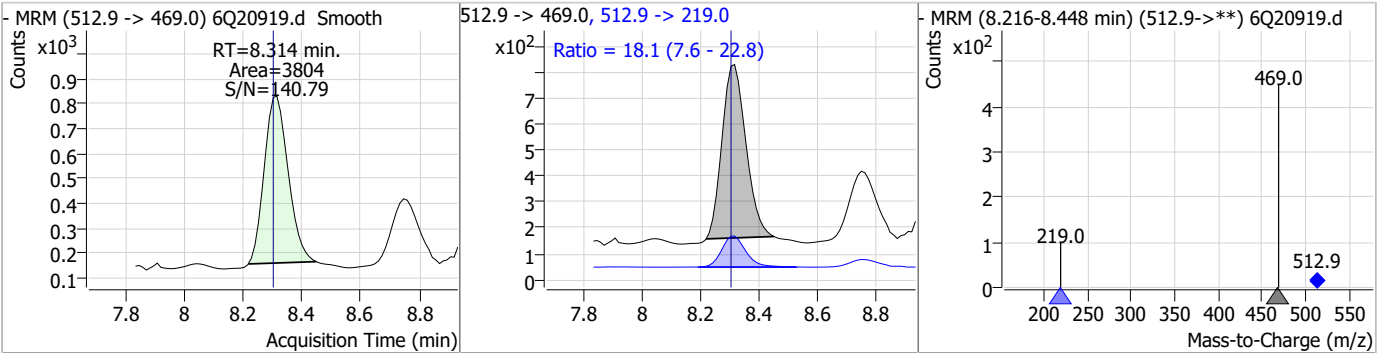
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.87	8.09	0.00	3979				



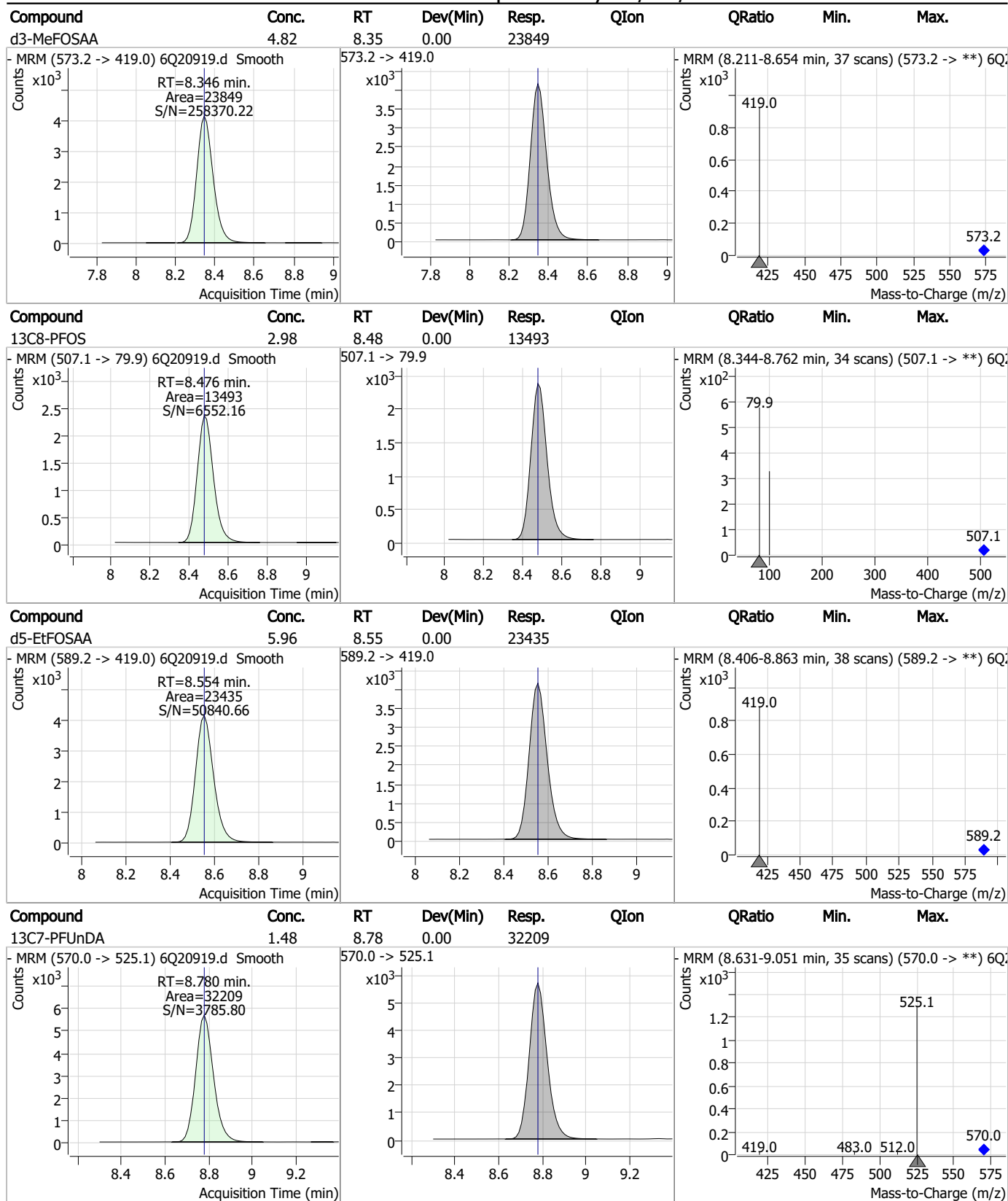
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.51	8.31	0.01	25646				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.11	8.31	0.01	3804	512.9 -> 219.0	18.1	7.6	22.8

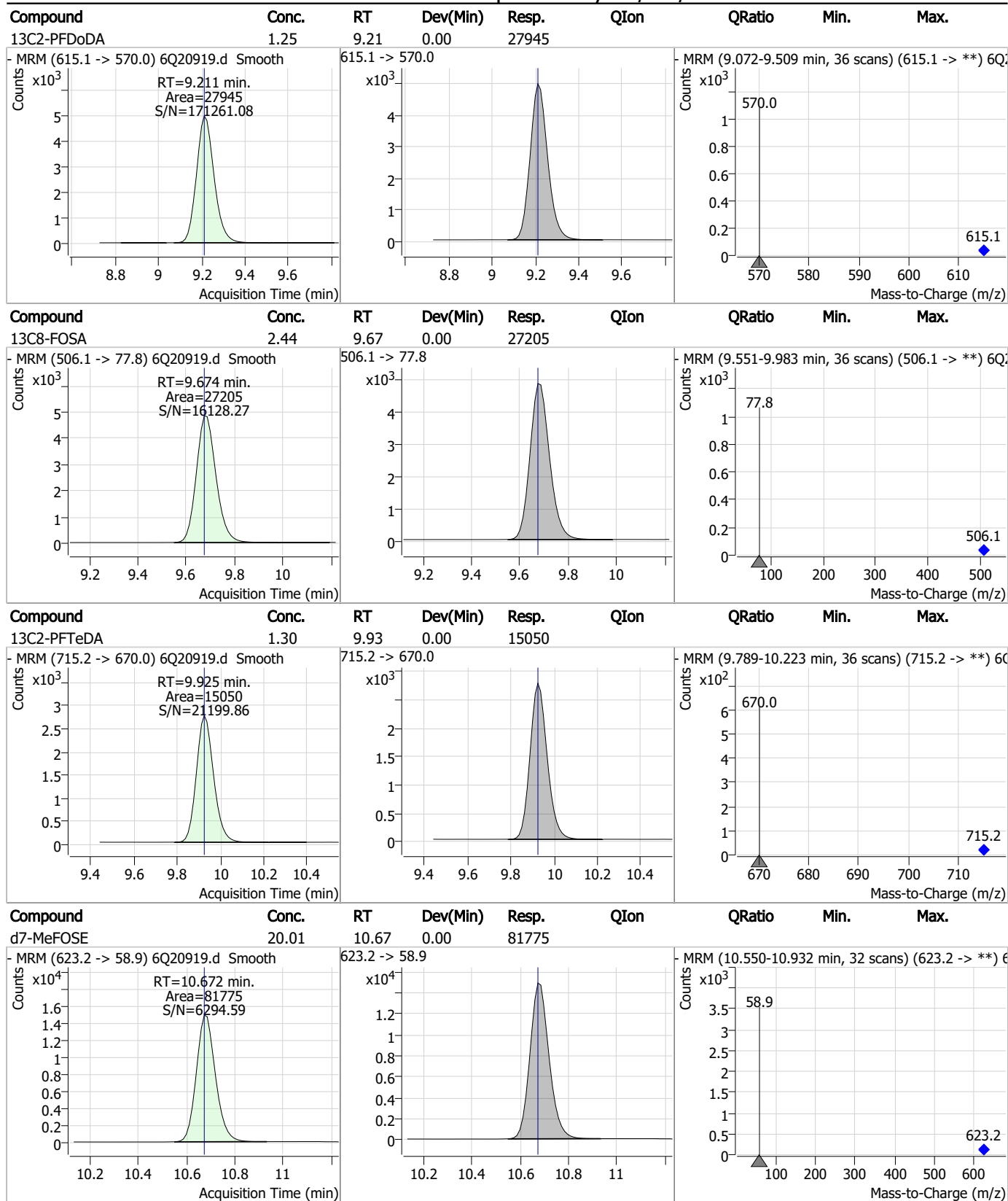


Perfluorinated Compounds by LC/MS/MS



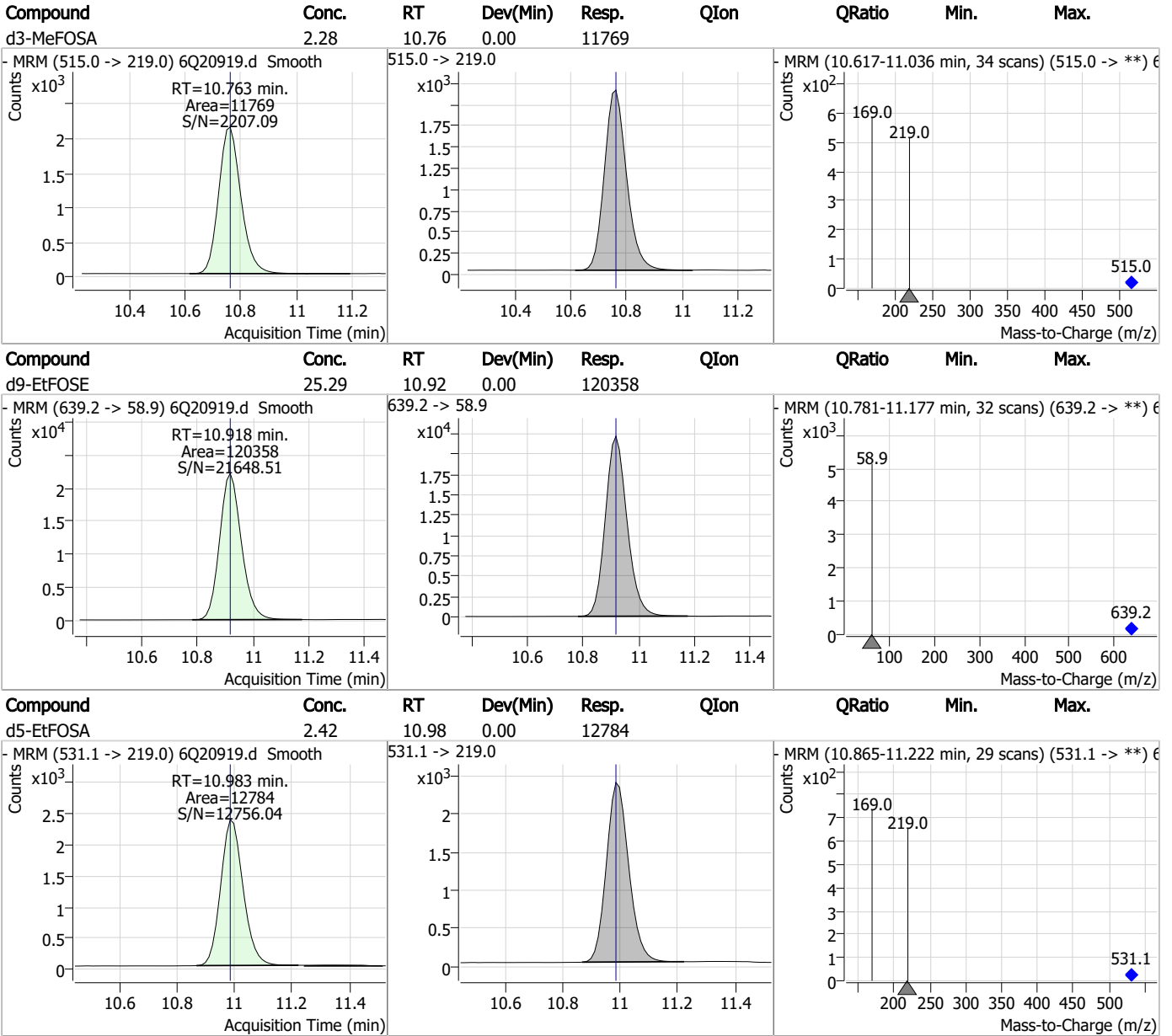
7.5.1
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Perfluorinated Compounds by LC/MS/MS



7.5.1
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Perfluorinated Compounds by LC/MS/MS



7.5.1

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Perfluorinated Compounds by LC/MS/MS

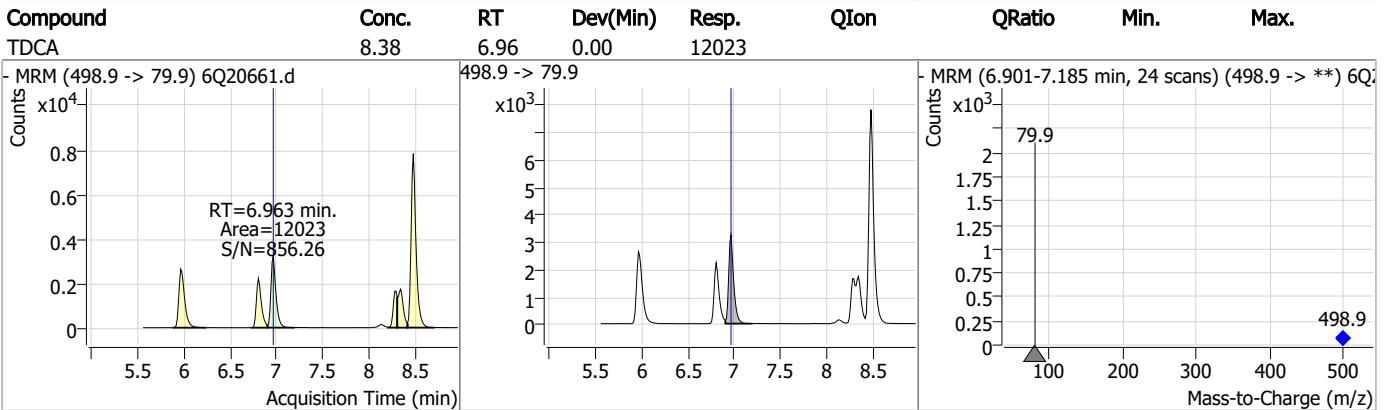
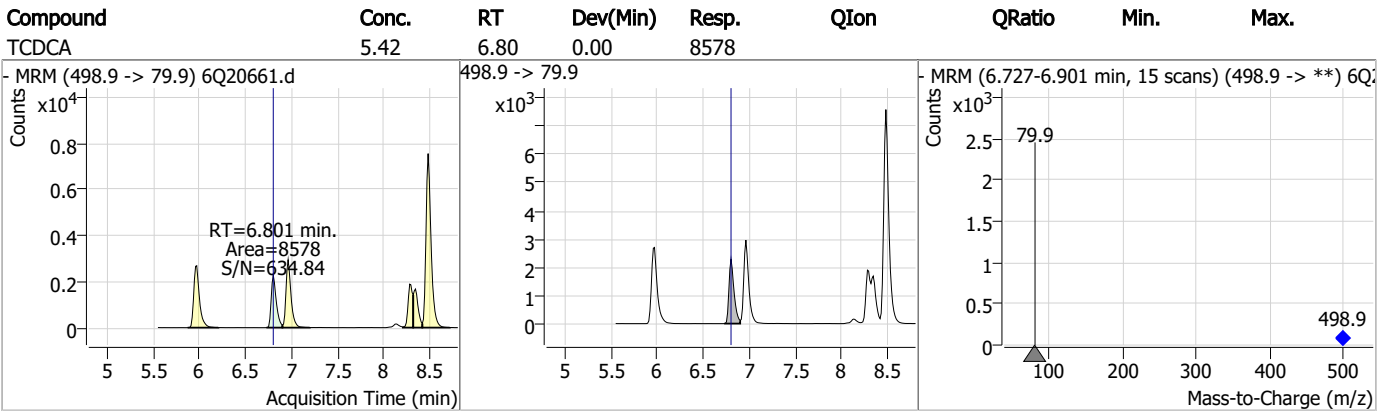
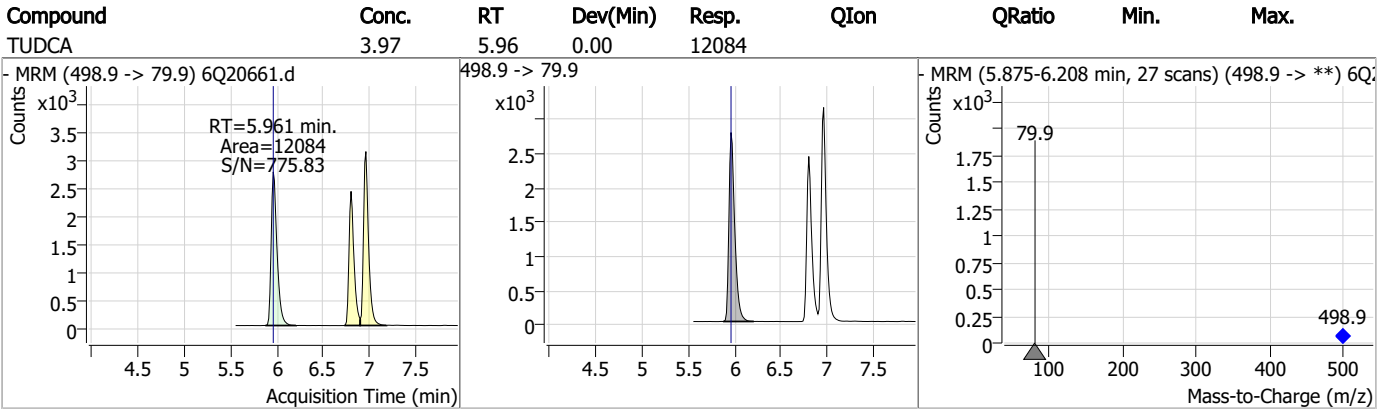
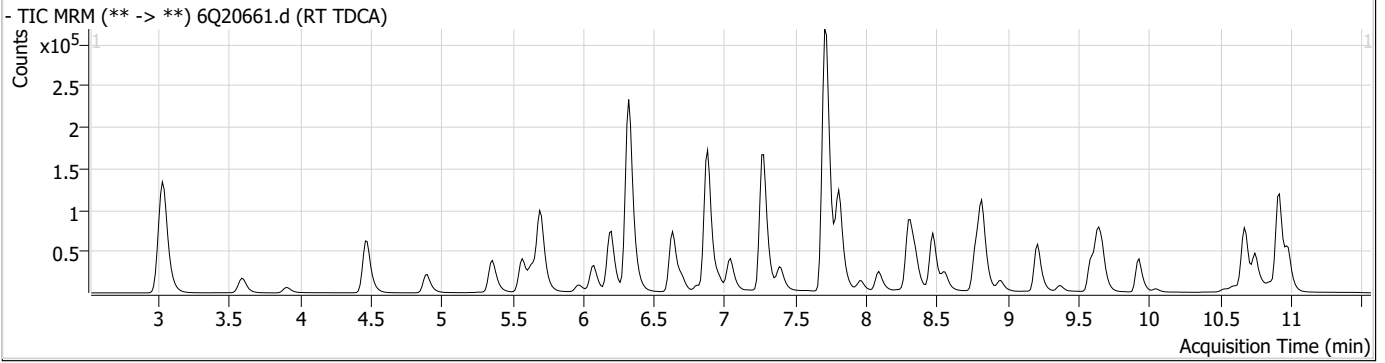
Data File : 6Q20661.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 6:23:35 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q307 TDCA.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.476	507.1 -> 79.9	34327	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	48559	2.50 µg/L	0.000
System Monitoring Compounds					
13C8-PFOS	8.476	507.1 -> 79.9	34327	1.79 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 71.7%		
Target Compounds					
PFOS	8.478	498.9 -> 79.9 498.9 -> 98.8	38796 19473	3.31 µg/L m	86
TCDCa	6.801	498.9 -> 79.9	8578	5.42 ng/ml	100
TDCA	6.963	498.9 -> 79.9	12023	8.38 ng/ml	100
TUDCA	5.961	498.9 -> 79.9	12084	3.97 ng/ml	100

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

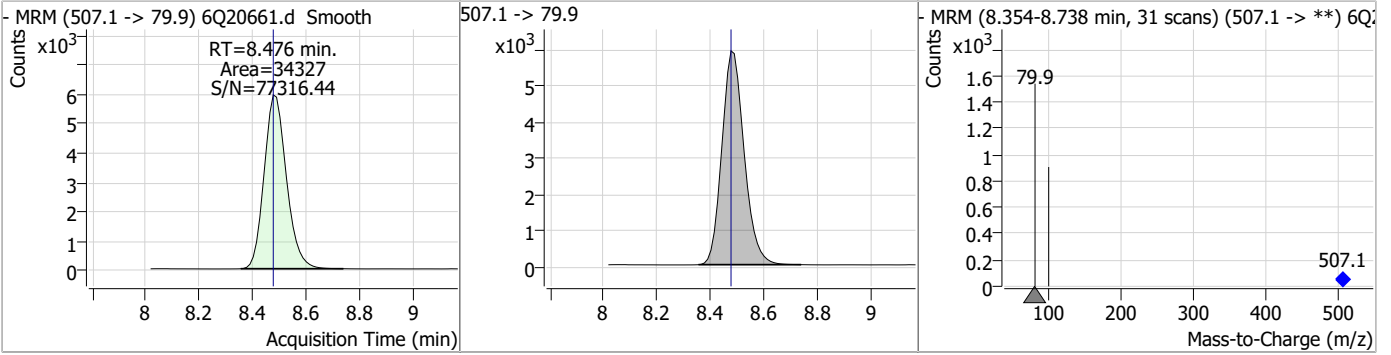
7.6.1
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Perfluorinated Compounds by LC/MS/MS

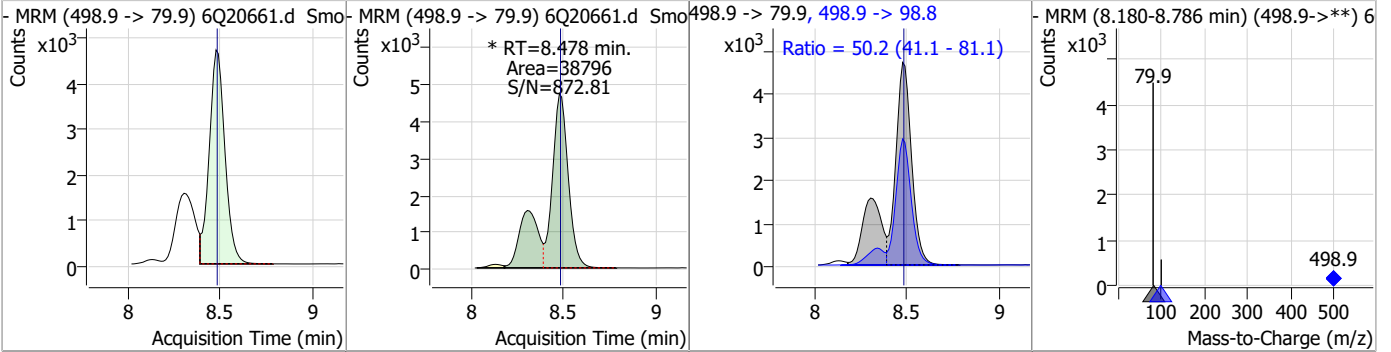


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.79	8.48	0.00	34327				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.31	8.48	0.00	38796 (m)	498.9 -> 98.8	50.2	41.1	81.1



7.6.1

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Manual Integration Approval Summary

Sample Number: S6Q307-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20661.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 18:23 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak

7.6.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20662.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 6:37:33 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	199066	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	66715	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	72595	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	68970	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	102023	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	48307	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	28194	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	37119	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	38753	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	18564	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	36998	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	23673	2.50 µg/L	0.012
M3-PFHxS	7.404	402.1 -> 79.9	16454	2.50 µg/L	0.012
M8-PFOS	8.476	507.1 -> 79.9	15075	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2609	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3708	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3453	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	28258	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	44629	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	23879	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	116864	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	149913	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	16668	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17081	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	19948	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	84389	5.00 µg/L	-0.012
18O2-PFHxS	7.403	403.0 -> 83.9	12330	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	110051	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	40097	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	57992	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	71110	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2609	4.72 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.4%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3708	4.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.4%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3453	4.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 87.2%		
13C2-PFDoDA	9.211	615.1 -> 570.0	38753	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.4%		
13C2-PFTeDA	9.925	715.2 -> 670.0	18564	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.6%		
13C3-PFBS	5.647	302.1 -> 79.9	23673	2.27 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 90.7%		
13C3-PFHxS	7.404	402.1 -> 79.9	16454	2.50 µg/L	0.012

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 = 100.1%	
13C4-PFBA	3.022	216.8 -> 171.9	199066	9.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFHpA	6.633	367.1 -> 322.0	68970	2.48 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C5-PFHxA	5.692	318.0 -> 273.0	72595	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	66715	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C6-PFDA	8.313	519.1 -> 474.1	28194	1.25 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	37119	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C8-FOSA	9.674	506.1 -> 77.8	36998	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C8-PFOA	7.276	421.1 -> 376.0	102023	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.476	507.1 -> 79.9	15075	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C9-PFNA	7.807	472.1 -> 427.0	48307	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
d3-MeFOSAA	8.346	573.2 -> 419.0	28258	4.56 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	44629	9.89 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	17081	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
d5-EtFOSAA	8.554	589.2 -> 419.0	23879	4.85 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d7-MeFOSE	10.672	623.2 -> 58.9	116864	22.84 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
d9-EtFOSE	10.918	639.2 -> 58.9	149913	25.15 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d5-EtFOSA	10.983	531.1 -> 219.0	16668	2.52 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	240991	50.78 µg/L	99
		327.1 -> 80.9	84912		
6:2FTS	7.039	427.1 -> 407.0	234617	53.87 µg/L	99
		427.1 -> 80.9	71623		
8:2FTS	8.090	527.1 -> 507.0	121464	54.98 µg/L	87
		527.1 -> 80.8	49383		
EtFOSAA	8.555	584.2 -> 419.1	54271	14.44 µg/L	m 97
		584.2 -> 526.0	28533		
FOSA	9.677	498.1 -> 77.9	456017	31.45 µg/L	m 99
		498.1 -> 478.0	14368		
MeFOSAA	8.347	570.1 -> 419.0	101547	16.37 µg/L	m 97
		570.1 -> 483.0	18603		
PFBA	3.018	212.8 -> 168.9	437119	56.98 µg/L	100
PFBS	5.648	298.7 -> 79.9	124516	13.23 µg/L	98
		298.7 -> 98.8	49893		
PFDA	8.314	512.9 -> 469.0	532384	13.56 µg/L	96
		512.9 -> 219.0	89503		
PFDoDA	9.211	613.1 -> 569.0	403226	13.30 µg/L	96
		613.1 -> 319.0	63658		
PFDS	9.374	599.0 -> 79.9	57539	12.81 µg/L	98

7.6.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8	30885	14.43	µg/L	99
		363.1 -> 319.0	480405			
PFHpS	7.972	363.1 -> 169.0	77888	12.21	µg/L	97
		449.0 -> 79.9	106074			
PFHxA	5.694	449.0 -> 98.9	50909	13.64	µg/L	99
		313.0 -> 269.0	363187			
PFHxS	7.405	313.0 -> 118.9	18562	12.13	µg/L	m
		398.7 -> 79.9	106153			
PFNA	7.670	398.7 -> 98.9	52664	29.19	µg/L	m
		463.0 -> 419.0	1120870			
PFNS	8.955	463.0 -> 219.0	239423	12.68	µg/L	95
		548.8 -> 79.9	95732			
PFOA	7.278	548.8 -> 98.9	52661	30.32	µg/L	m
		413.0 -> 369.0	1467034			
PFOS	8.478	413.0 -> 169.0	264794	12.52	µg/L	m
		498.9 -> 79.9	102554			
PFPeA	4.461	498.9 -> 98.8	51328	27.33	µg/L	100
		263.0 -> 219.0	486012			
PFPeS	6.709	349.1 -> 79.9	104405	12.20	µg/L	97
		349.1 -> 98.9	50245			
PFTeDA	9.926	713.1 -> 669.0	303230	14.30	µg/L	100
		713.1 -> 168.9	27462			
PFTrDA	9.595	663.0 -> 619.0	410157	14.05	µg/L	97
		663.0 -> 168.9	41004			
PFUnDA	8.780	563.1 -> 519.0	373391	13.66	µg/L	95
		563.1 -> 269.1	63774			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	569887	27.28	µg/L	98
		632.9 -> 452.9	167722			
9Cl-PF3ONS	8.832	530.8 -> 351.0	841069	24.85	µg/L	92
		532.8 -> 353.0	281401			
ADONA	6.883	376.9 -> 250.9	1983252	26.81	µg/L	99
		376.9 -> 84.8	477180			
HFPO-DA	6.083	284.9 -> 168.9	128668	28.15	µg/L	99
		284.9 -> 184.9	13472			
3:3FTCA	3.896	241.0 -> 177.0	85633	68.82	µg/L	100
		241.0 -> 117.0	11346			
5:3FTCA	6.322	341.0 -> 237.1	1844379	331.73	µg/L	98
		341.0 -> 217.0	1325080			
7:3FTCA	7.711	441.0 -> 316.9	1303432	334.65	µg/L	81
		441.0 -> 336.9	3044801			
EtFOSA	10.985	526.0 -> 219.0	386818	47.98	µg/L	m
		526.0 -> 169.0	498822			
EtFOSE	10.931	630.0 -> 58.9	642949	85.32	µg/L	100
		511.9 -> 219.0	307025			
MeFOSA	10.765	511.9 -> 169.0	447678	42.03	µg/L	m
		616.1 -> 58.9	482292			
MeFOSE	10.685	699.1 -> 79.9	27377	98.56	µg/L	m
		699.1 -> 98.8	15725			
PFDoDS	10.053	295.0 -> 201.0	91888	13.34	µg/L	96
		295.0 -> 84.9	22165			
NFDHA	5.576	279.0 -> 85.1	320028	28.29	µg/L	95
		229.0 -> 84.9	268779			
PFMBA	4.882	314.8 -> 134.9	920916	27.41	µg/L	100
		314.8 -> 82.9	28912			
PFMPA	3.588			27.33	µg/L	100
PFEESA	6.188			24.71	µg/L	100

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

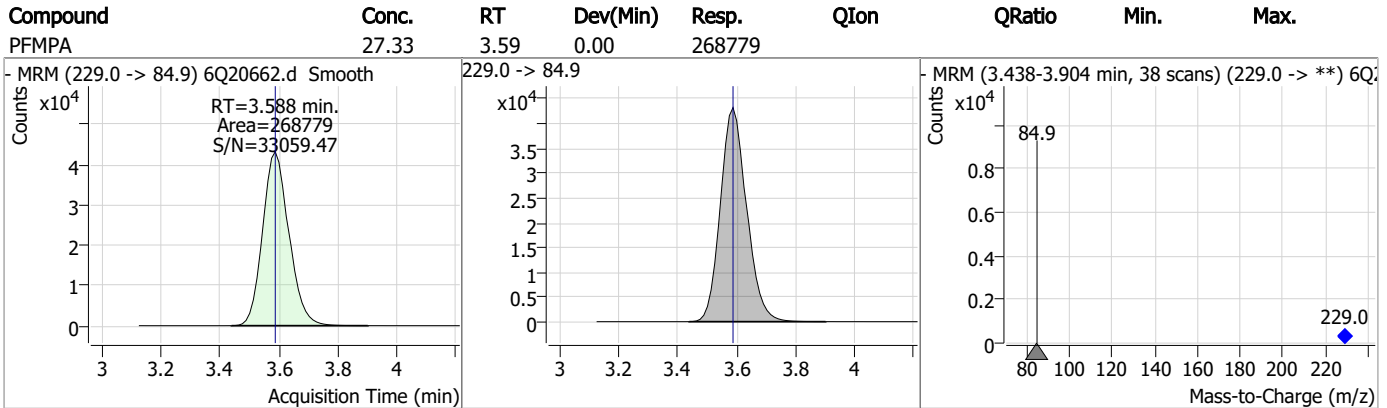
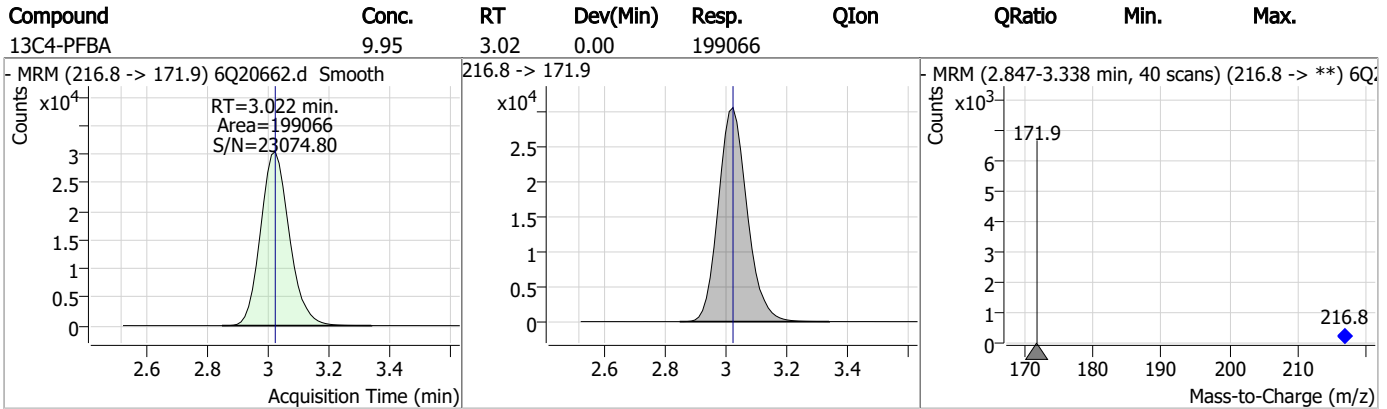
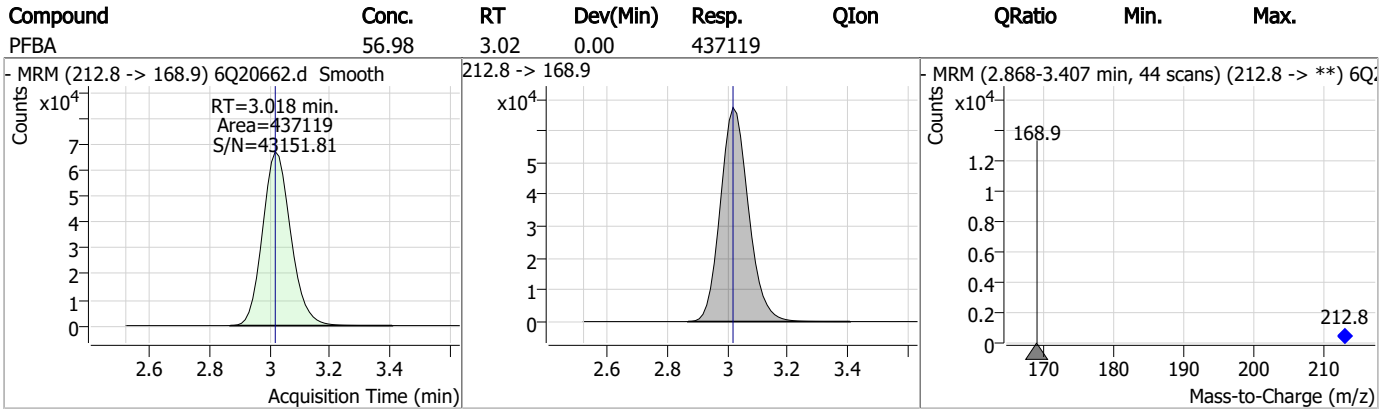
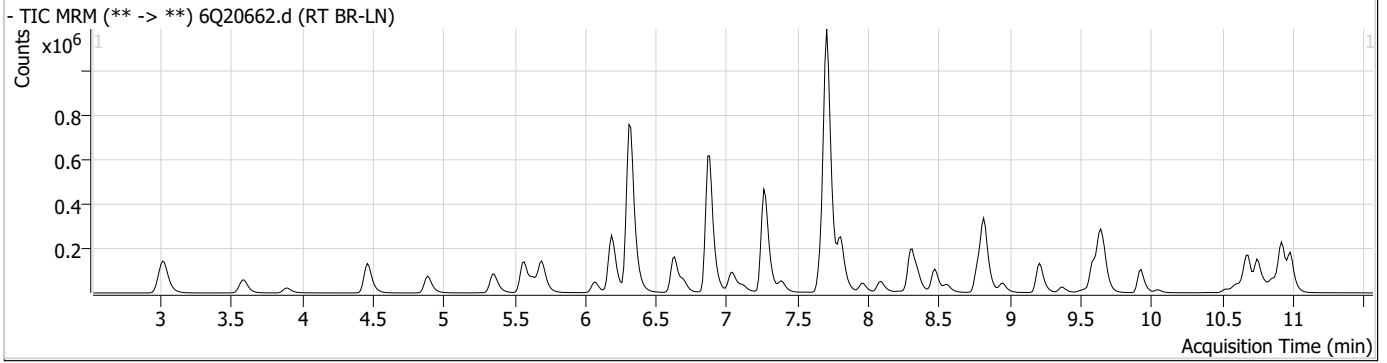
Perfluorinated Compounds by LC/MS/MS

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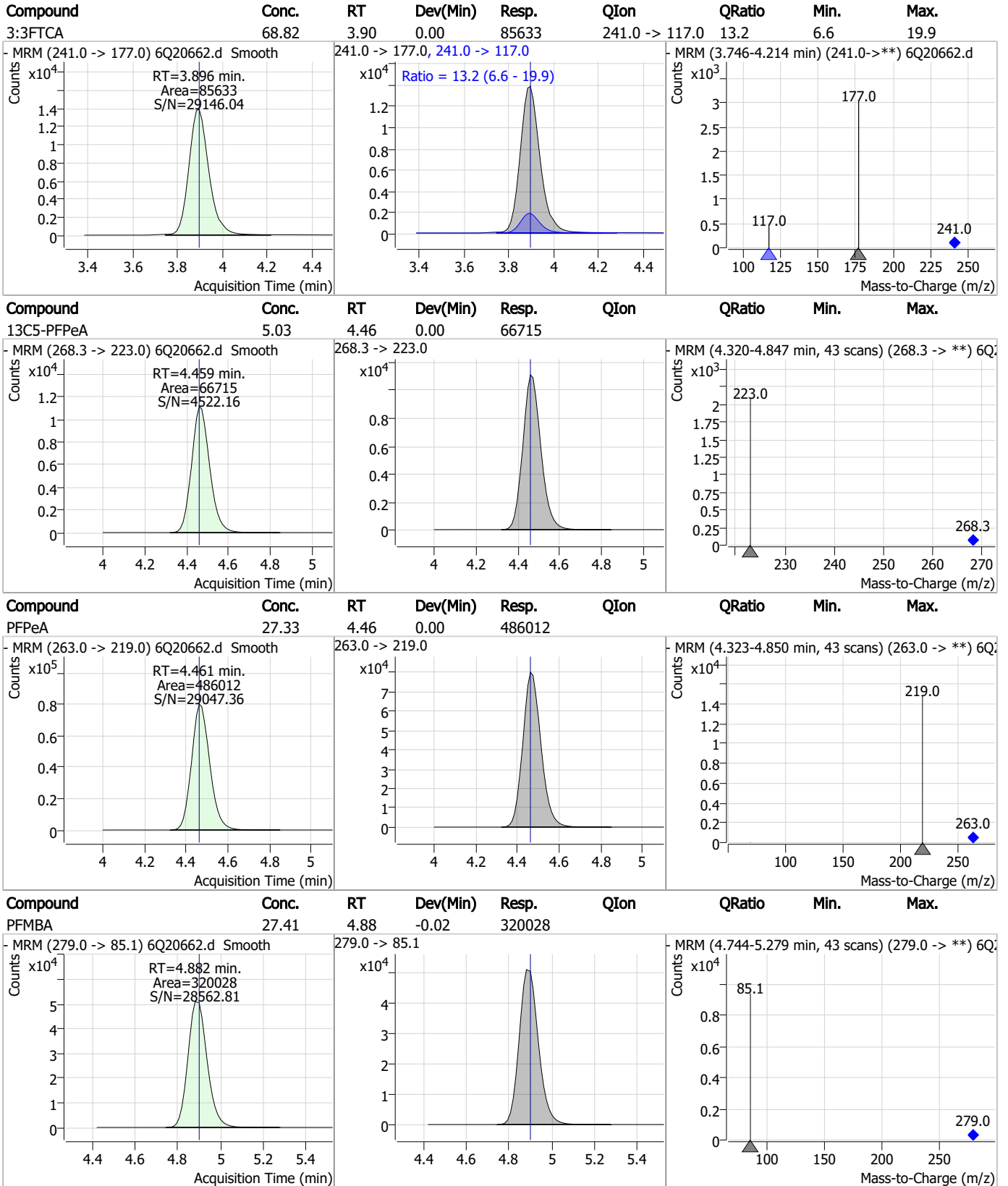
7.6.2

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Perfluorinated Compounds by LC/MS/MS



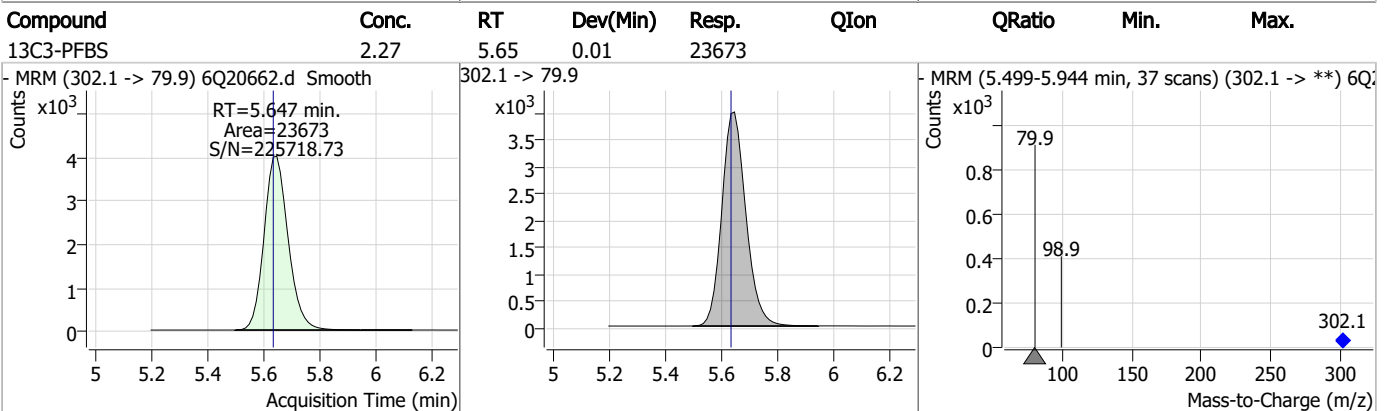
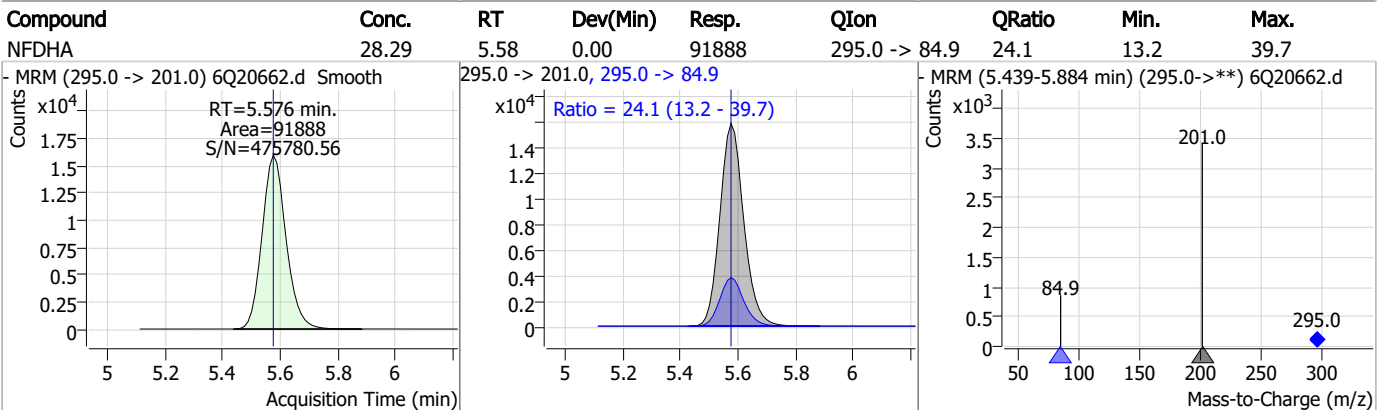
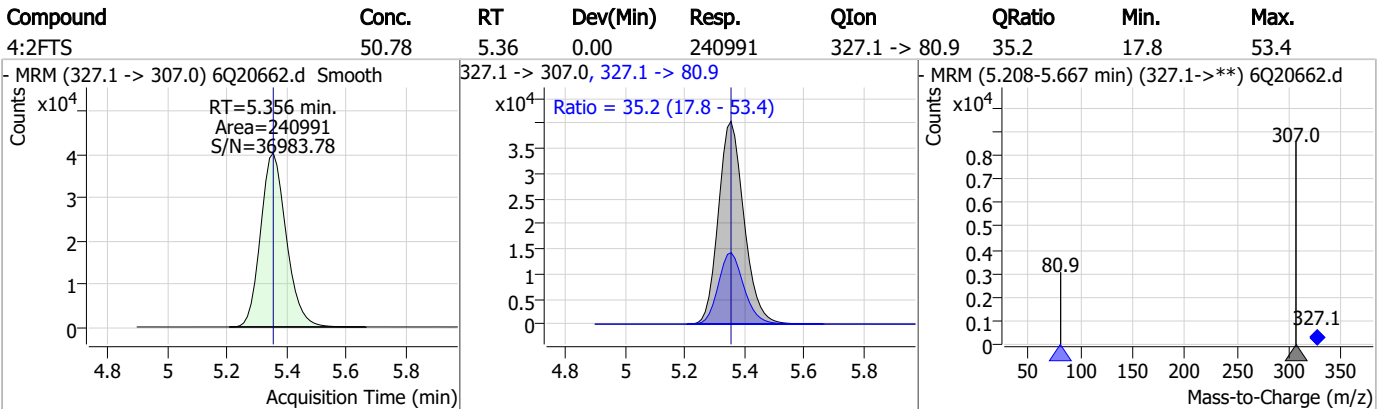
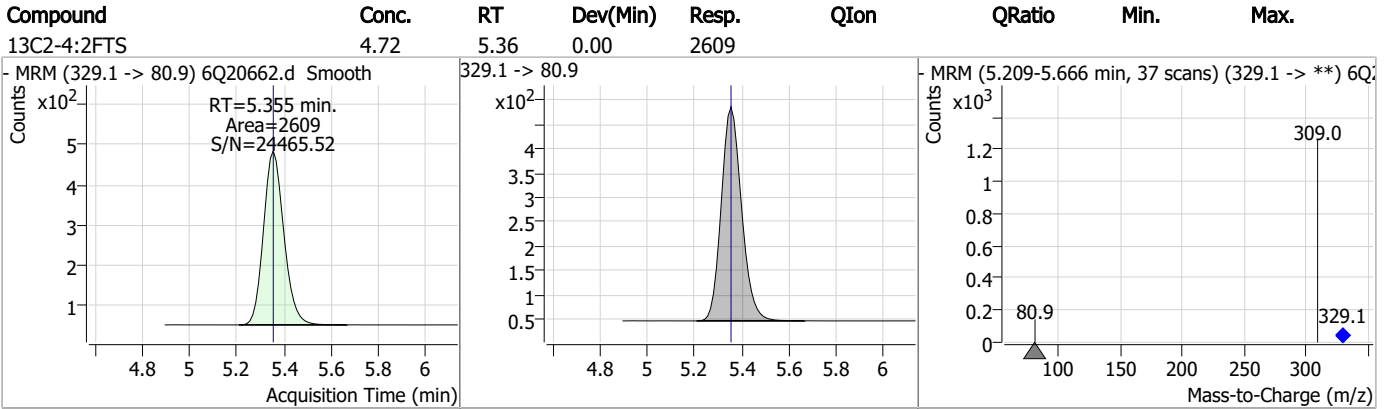
Perfluorinated Compounds by LC/MS/MS



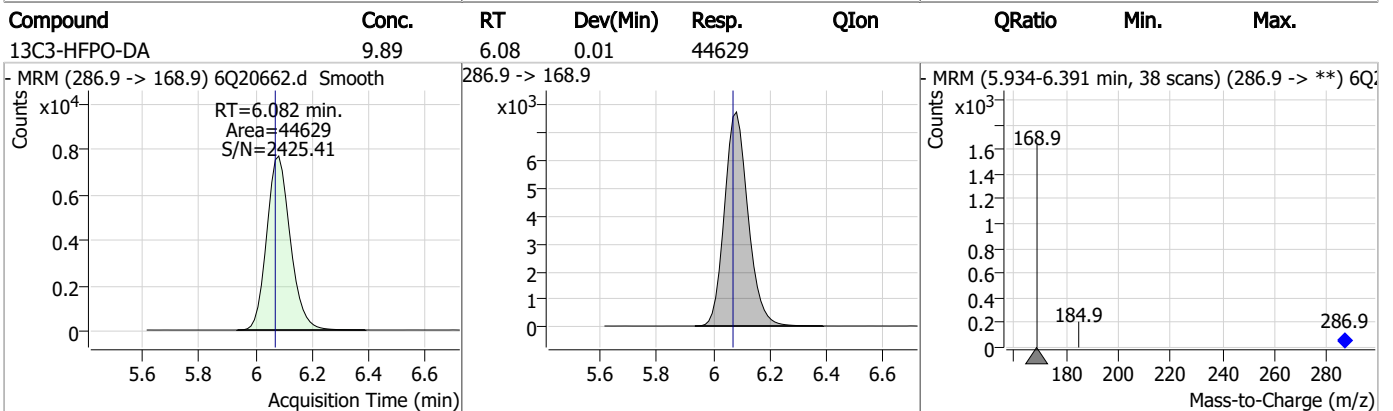
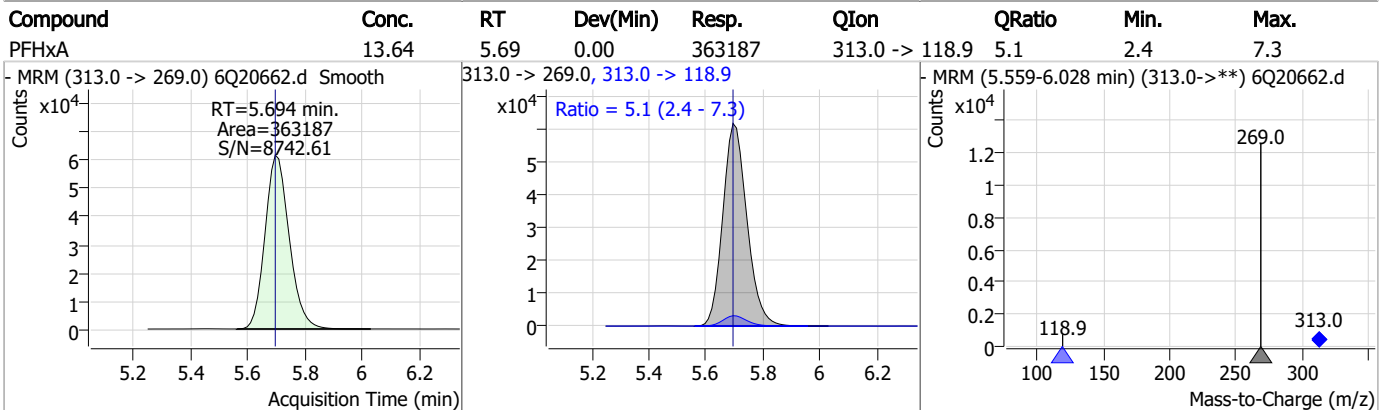
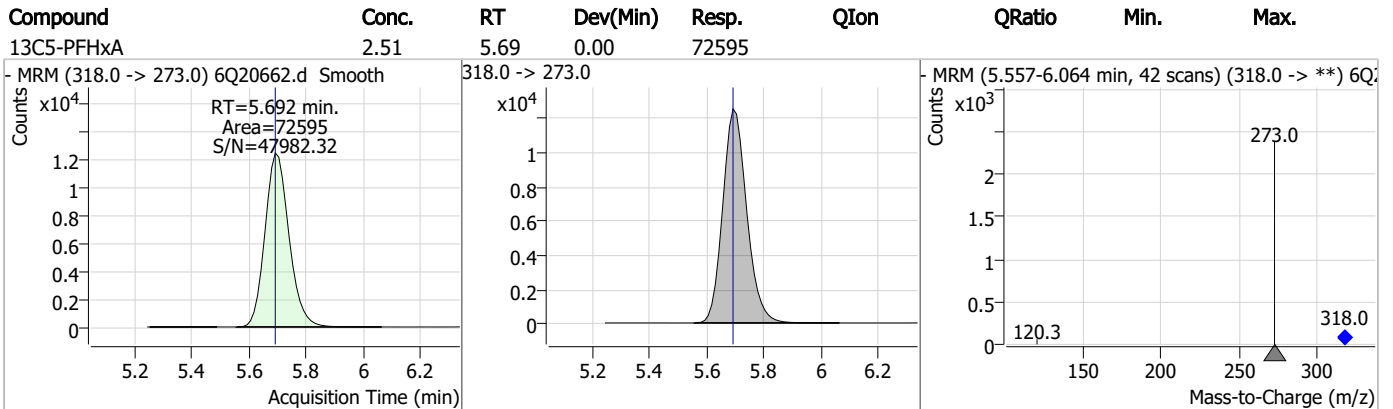
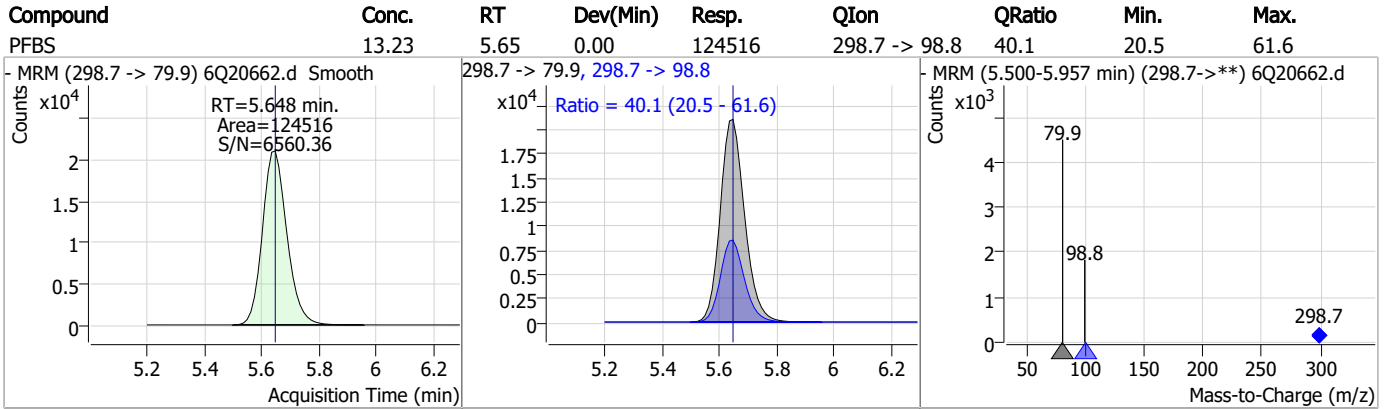
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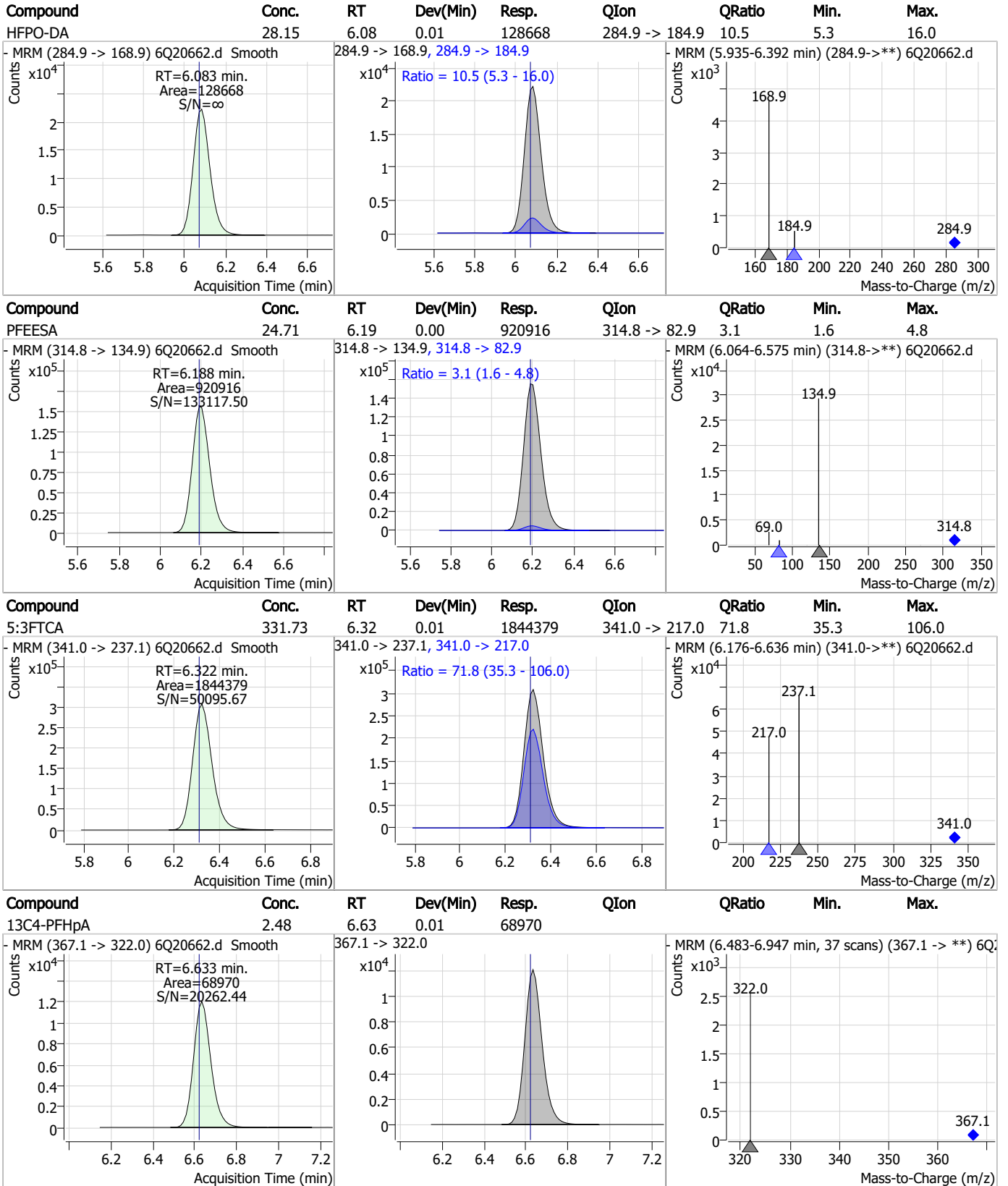
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



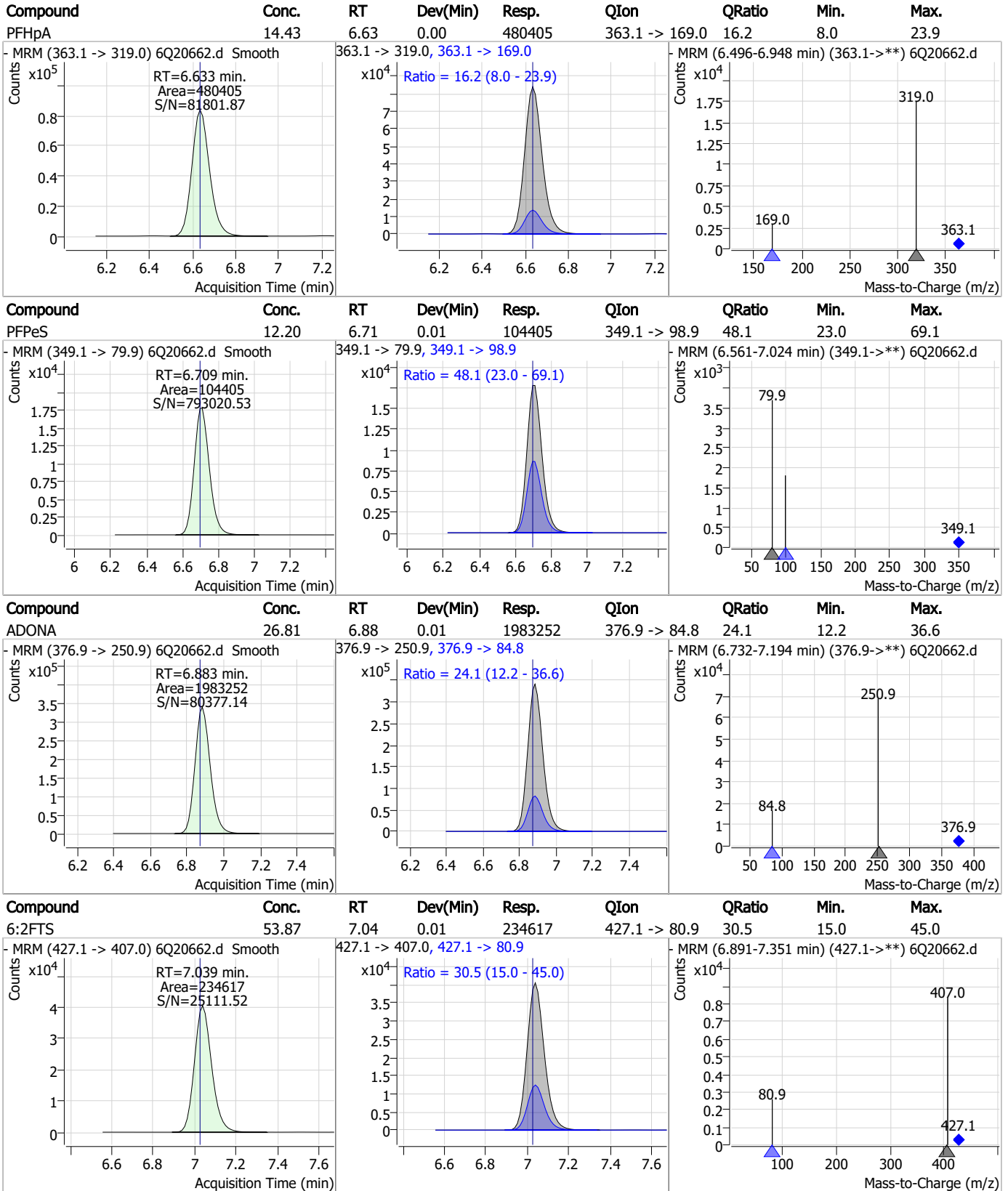
Perfluorinated Compounds by LC/MS/MS



7.6.2

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Perfluorinated Compounds by LC/MS/MS

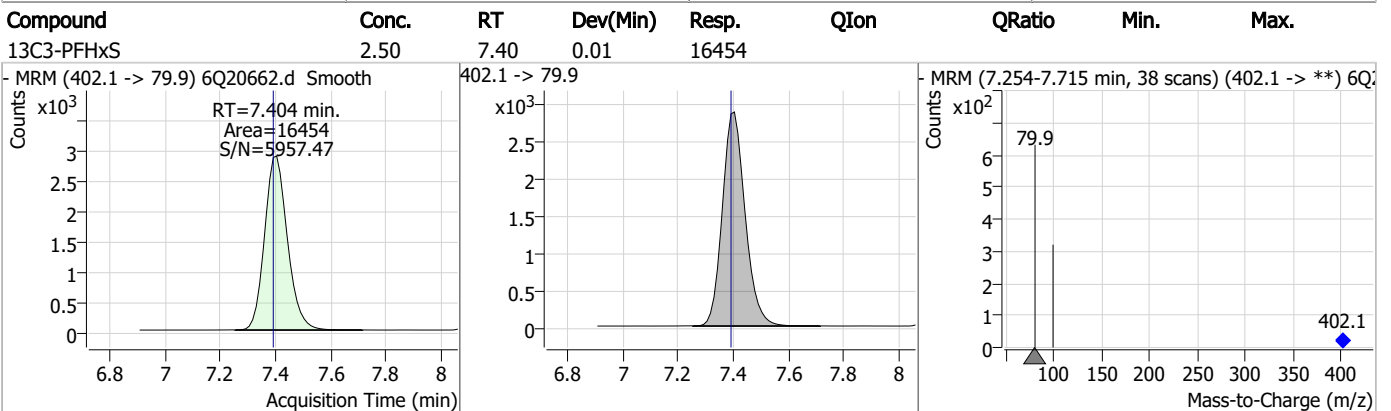
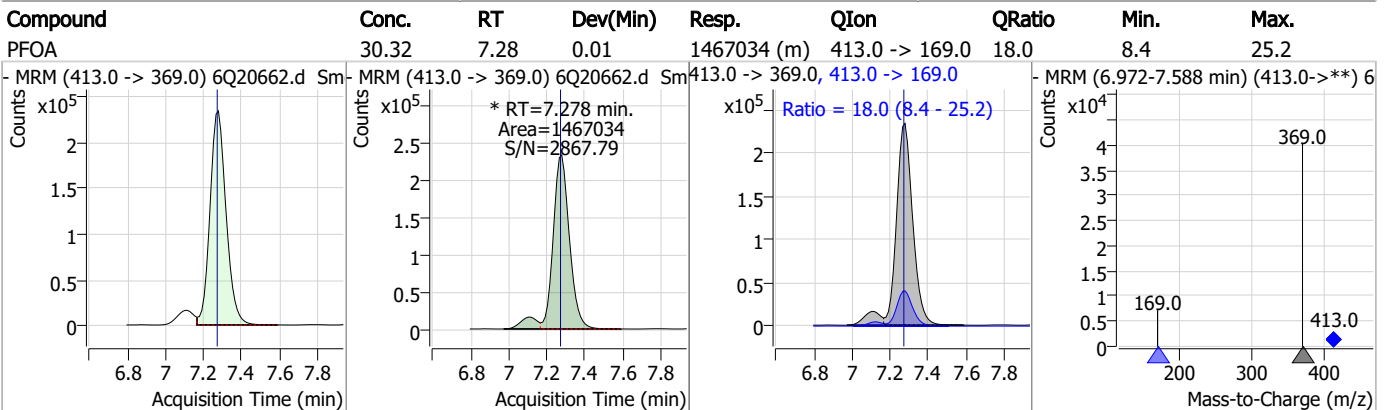
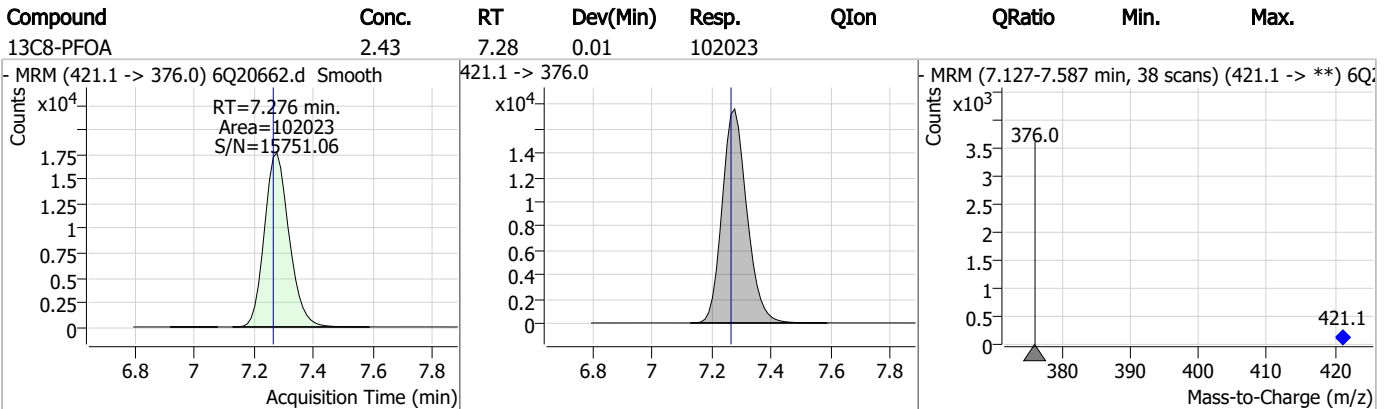
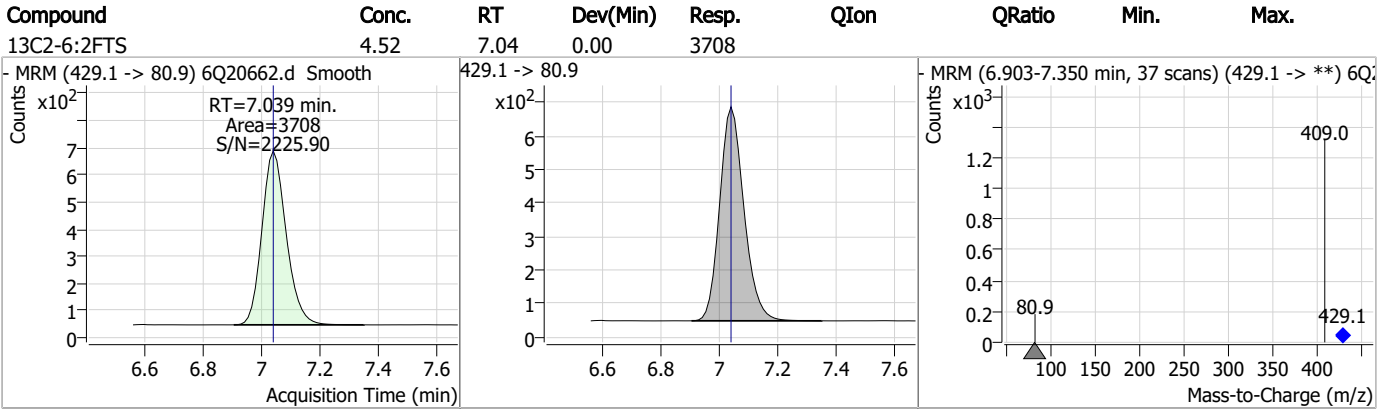


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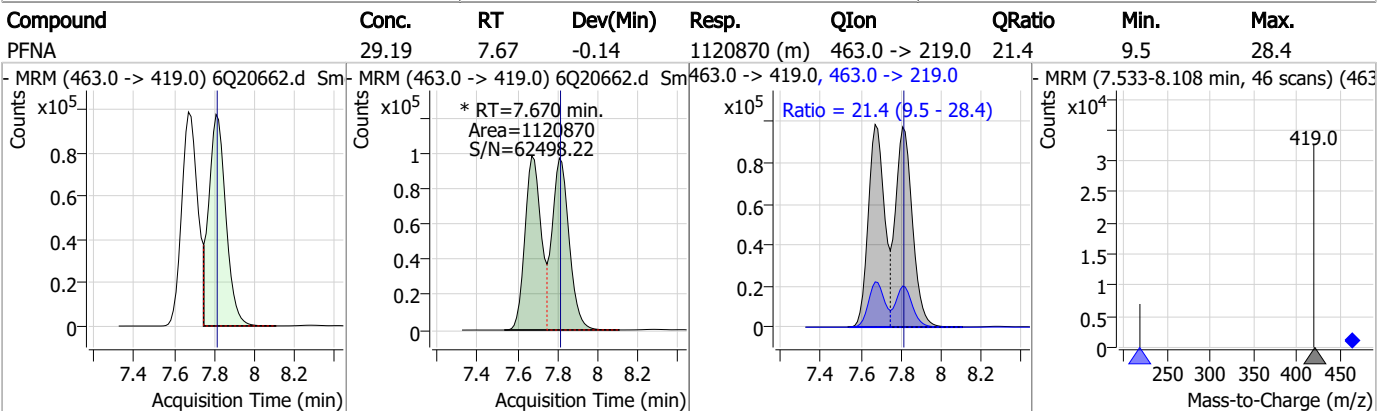
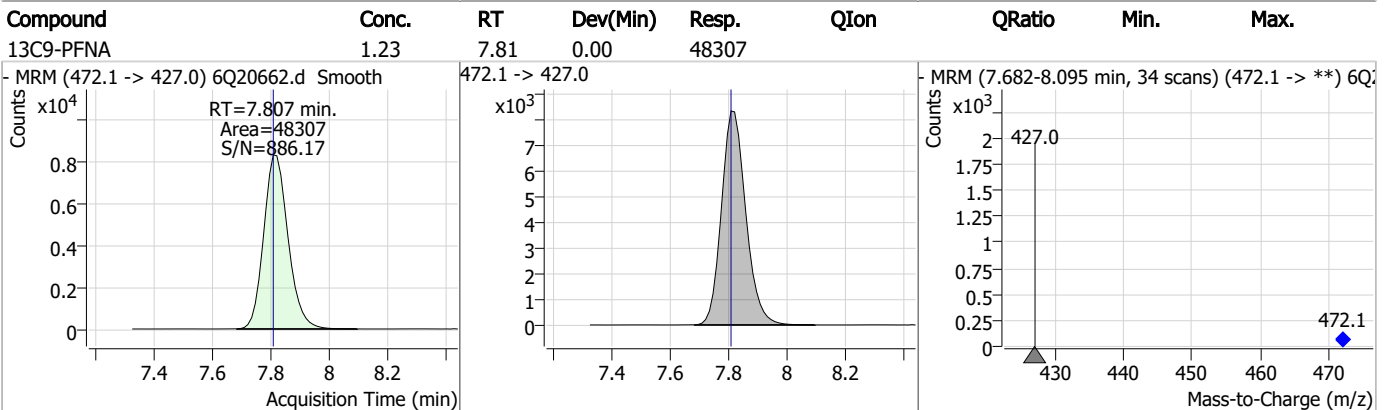
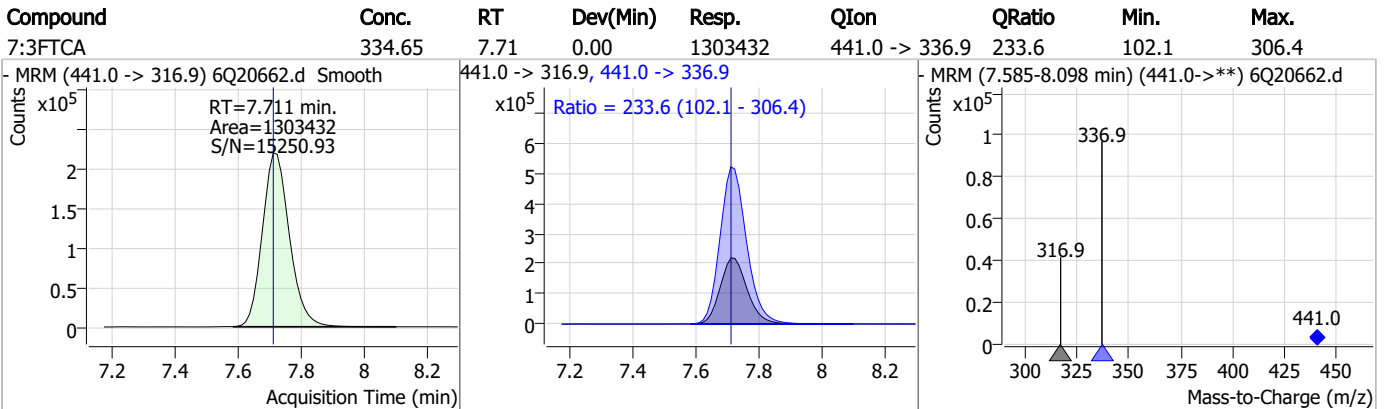
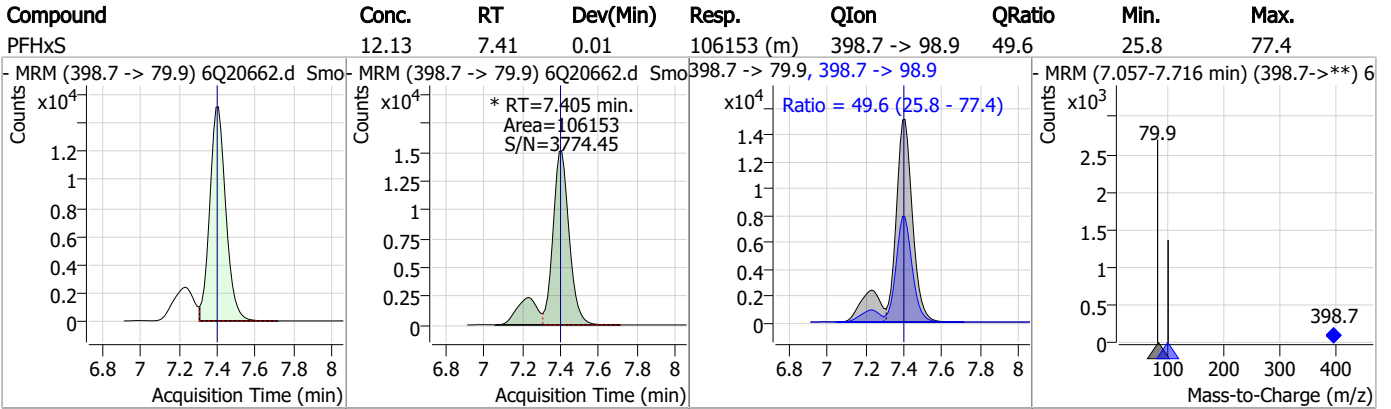


Perfluorinated Compounds by LC/MS/MS



7.6.2
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Perfluorinated Compounds by LC/MS/MS



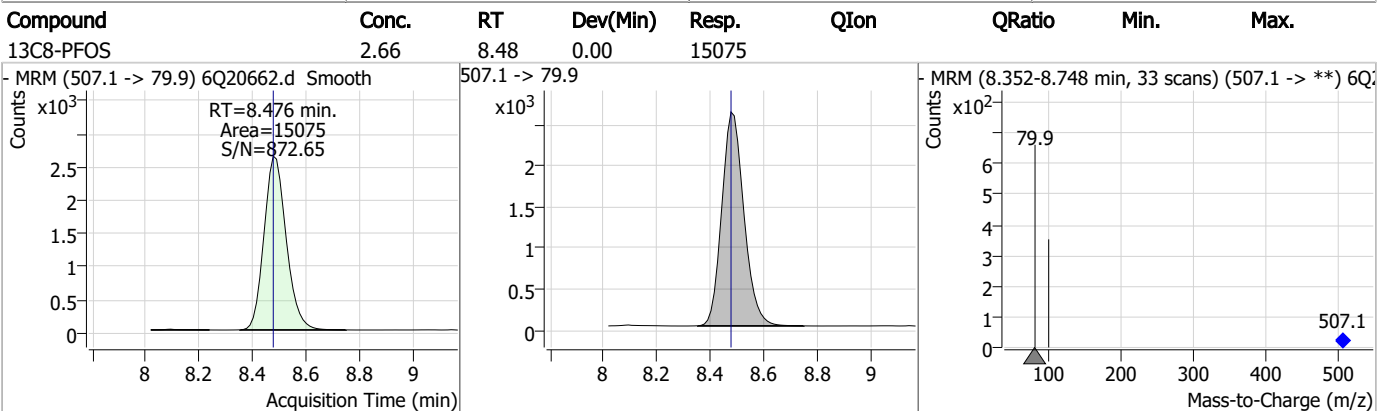
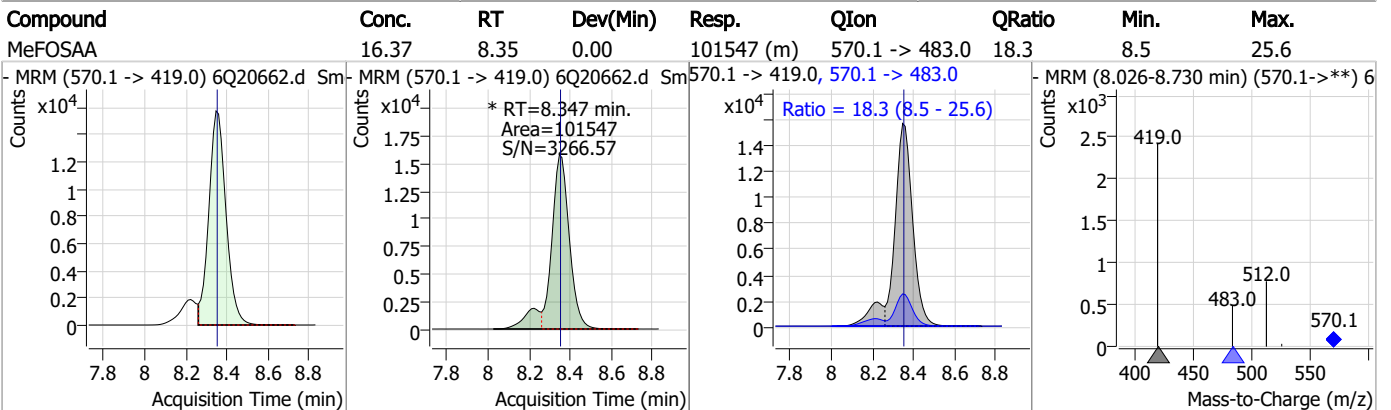
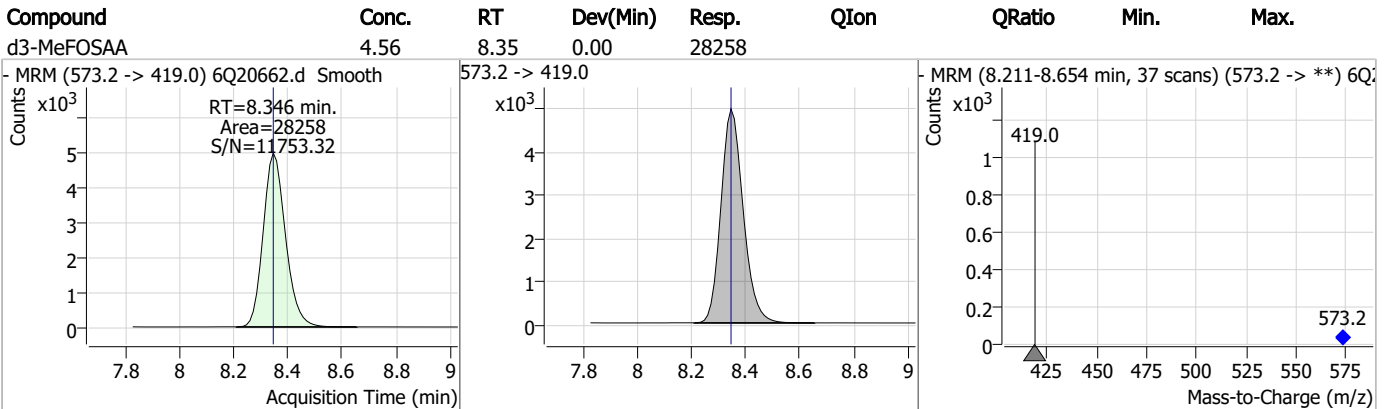
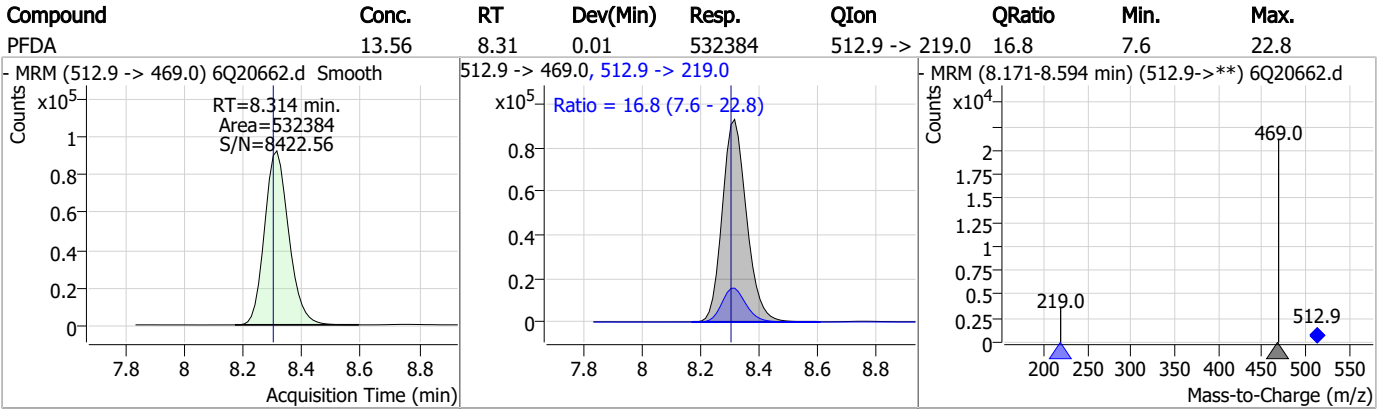
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.21	7.97	0.01	106074	449.0 -> 98.9	48.0	25.1	75.3
13C2-8:2FTS	4.36	8.09	0.00	3453	529.1 -> 80.9			
8:2FTS	54.98	8.09	0.00	121464	527.1 -> 80.8	40.7	16.6	49.9
13C6-PFDA	1.25	8.31	0.01	28194	519.1 -> 474.1			

7.6.2

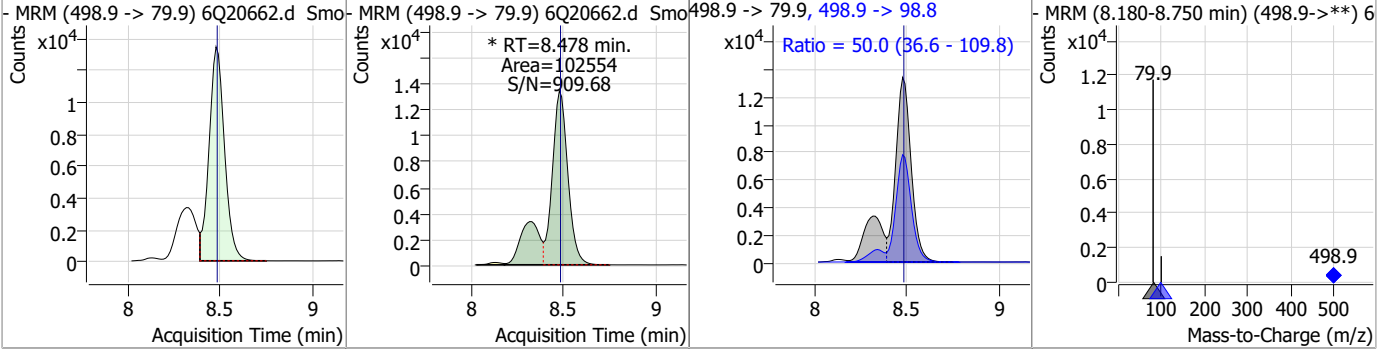
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Perfluorinated Compounds by LC/MS/MS

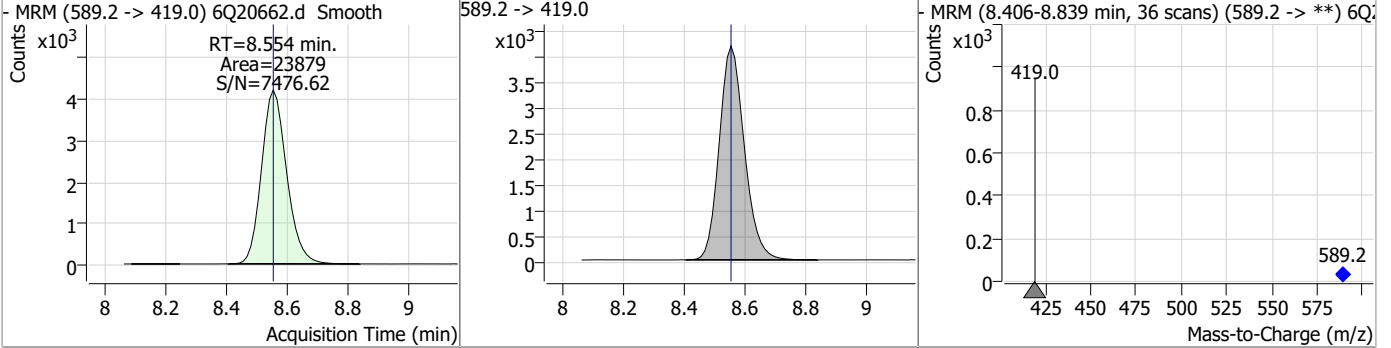


Perfluorinated Compounds by LC/MS/MS

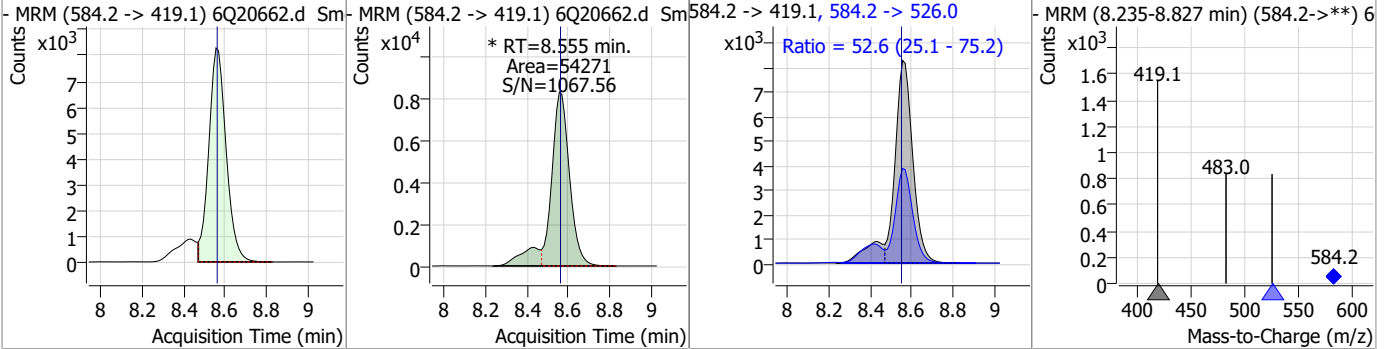
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.52	8.48	0.00	102554 (m)	498.9 -> 98.8	50.0	36.6	109.8



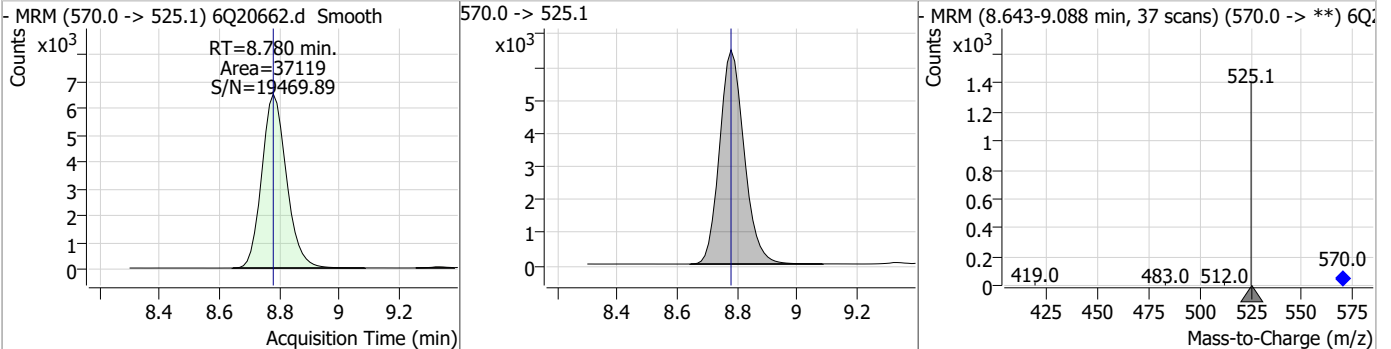
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.85	8.55	0.00	23879	589.2 -> 419.0	52.6	25.1	75.2



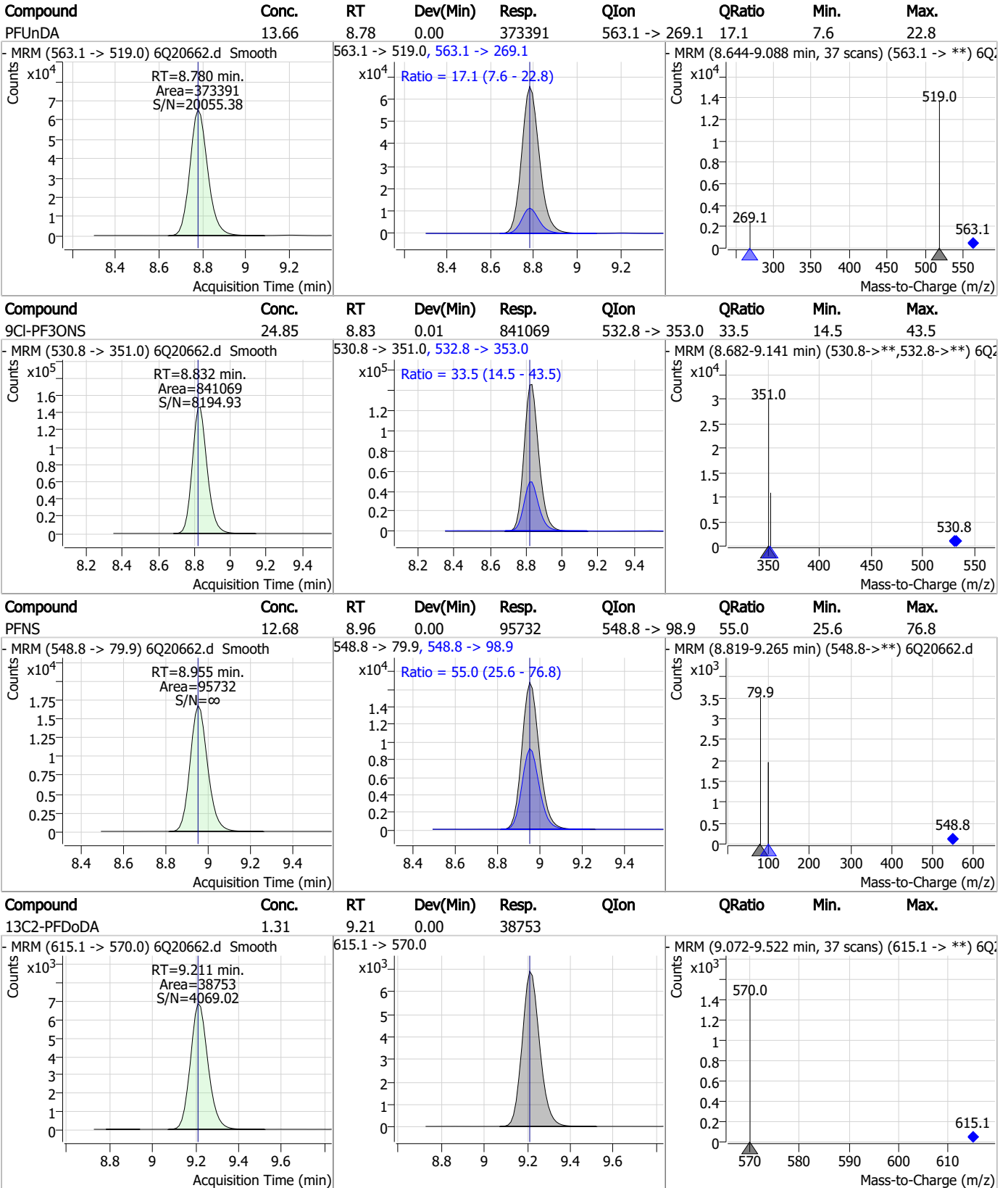
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.44	8.55	0.00	54271 (m)	584.2 -> 526.0	52.6	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.78	0.00	37119	570.0 -> 525.1	52.6	25.1	75.2



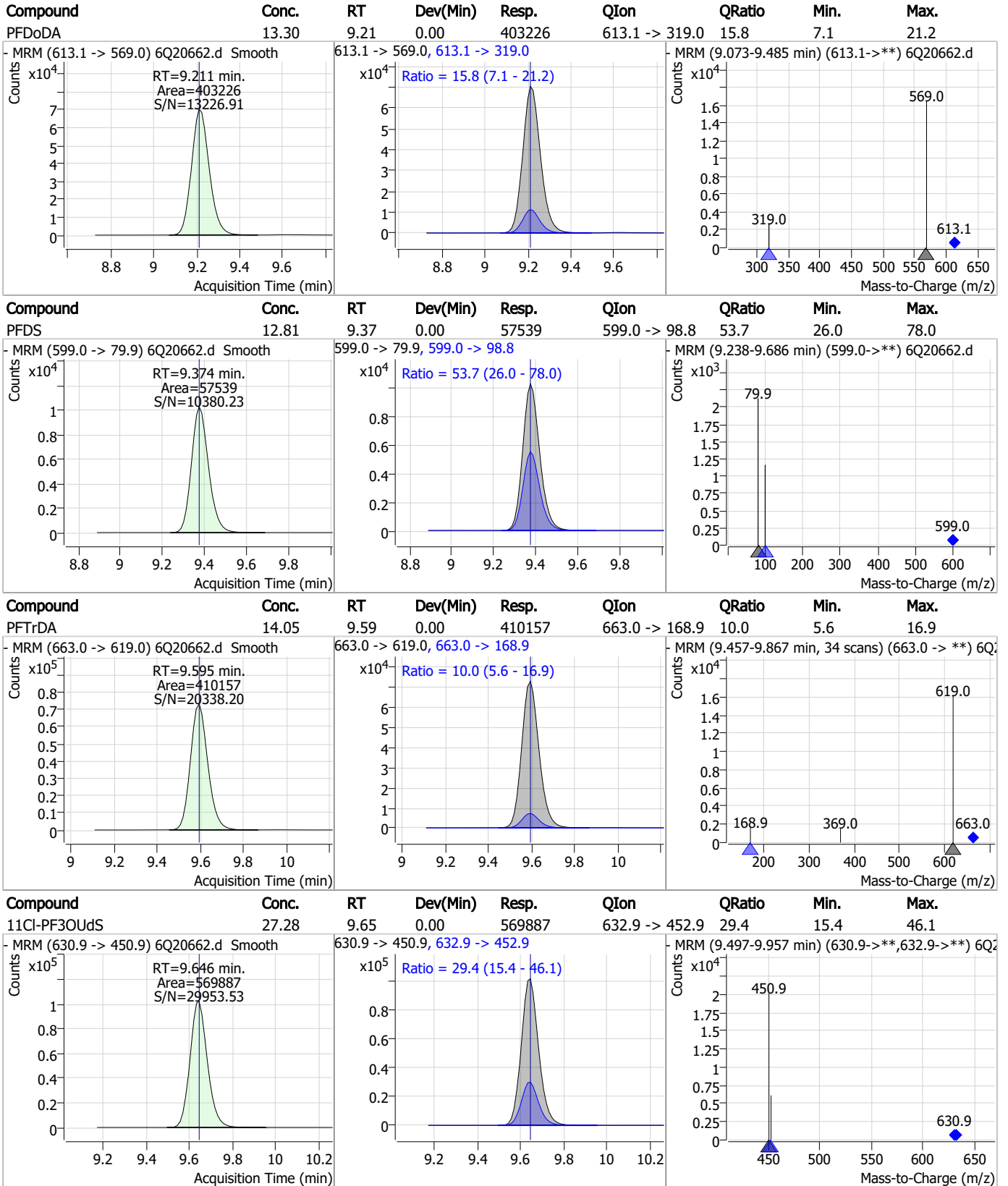
Perfluorinated Compounds by LC/MS/MS



7.6.2

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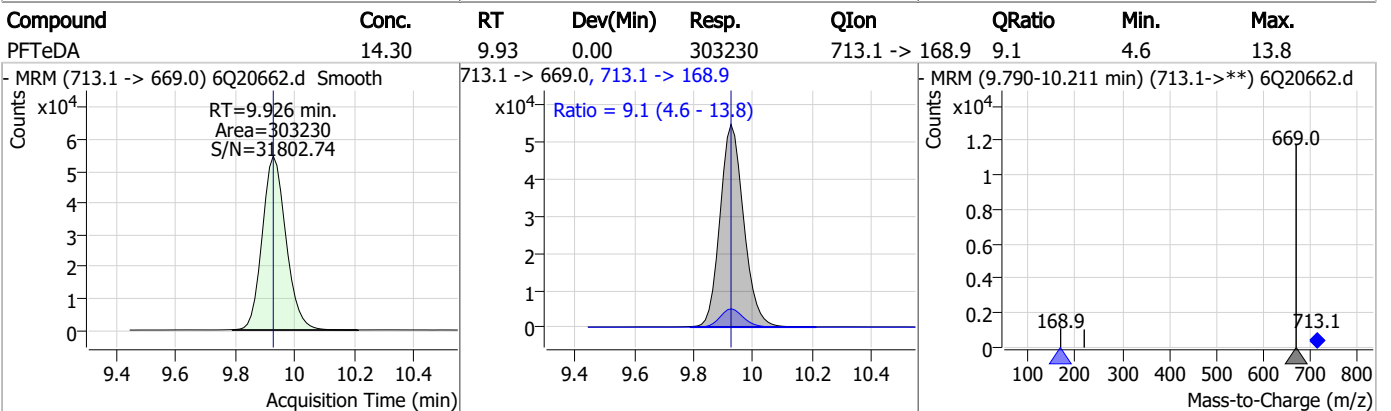
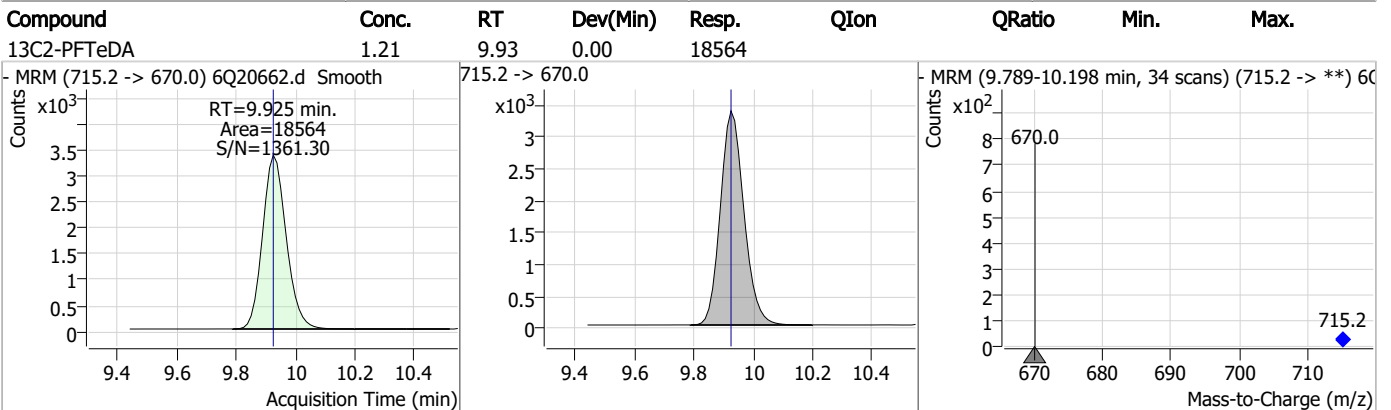
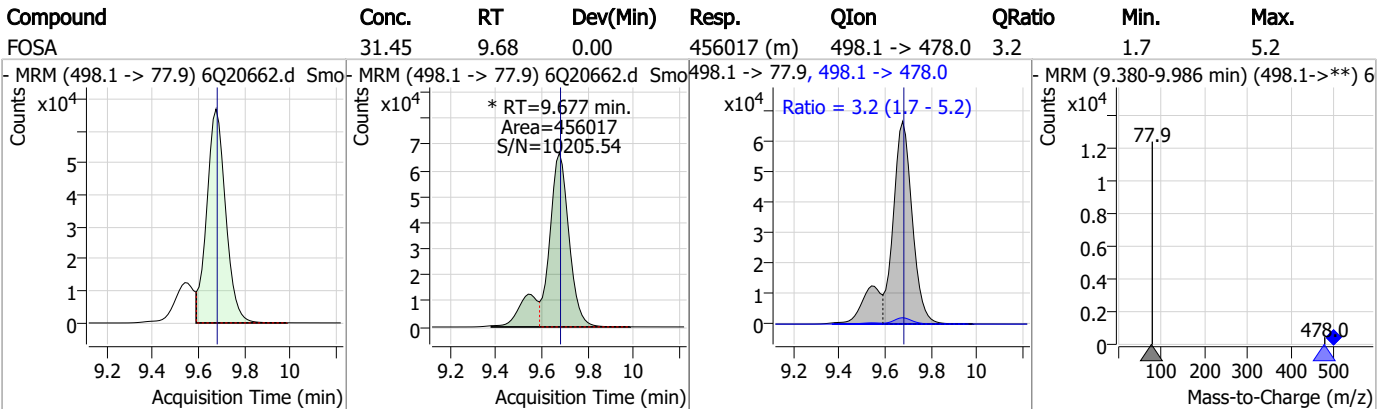
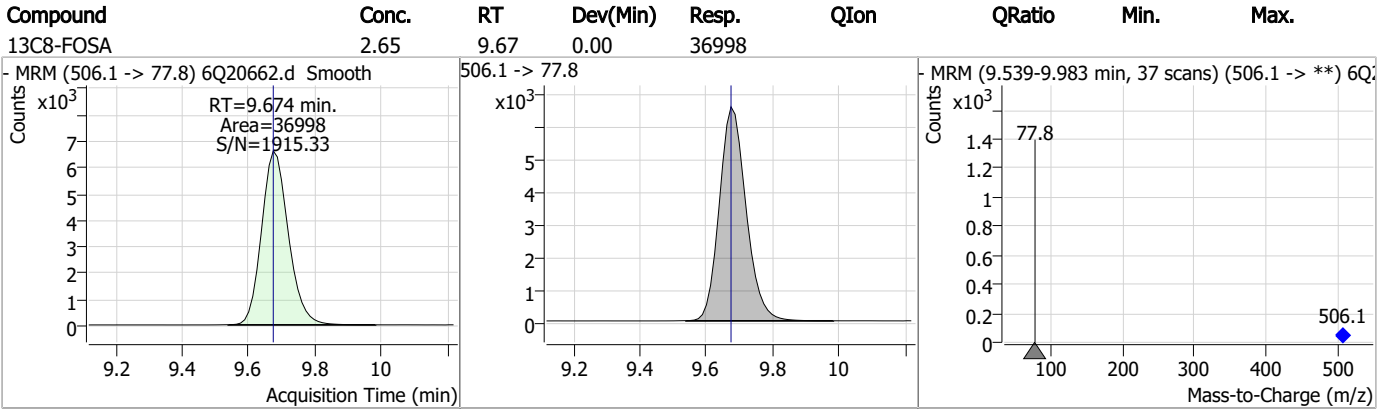
Perfluorinated Compounds by LC/MS/MS



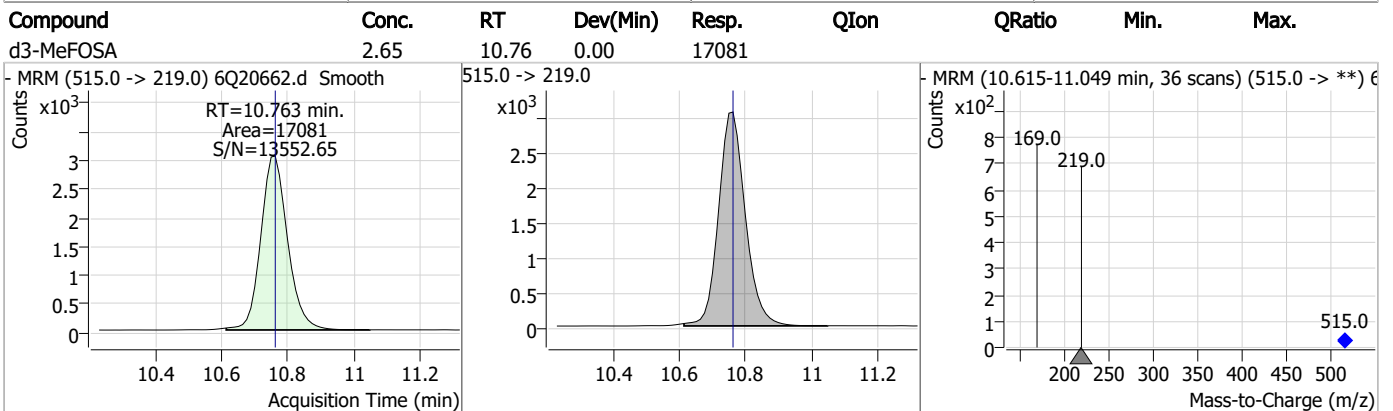
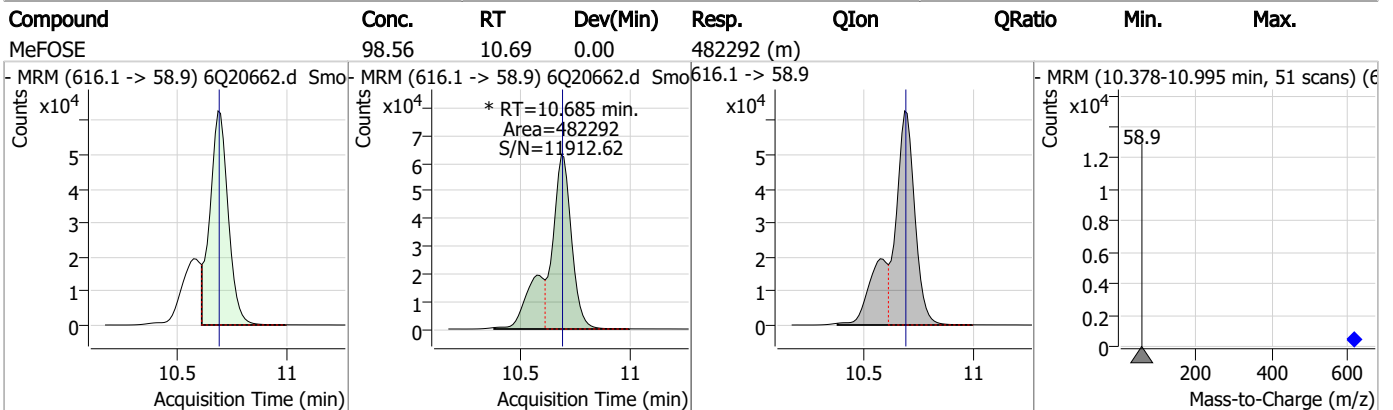
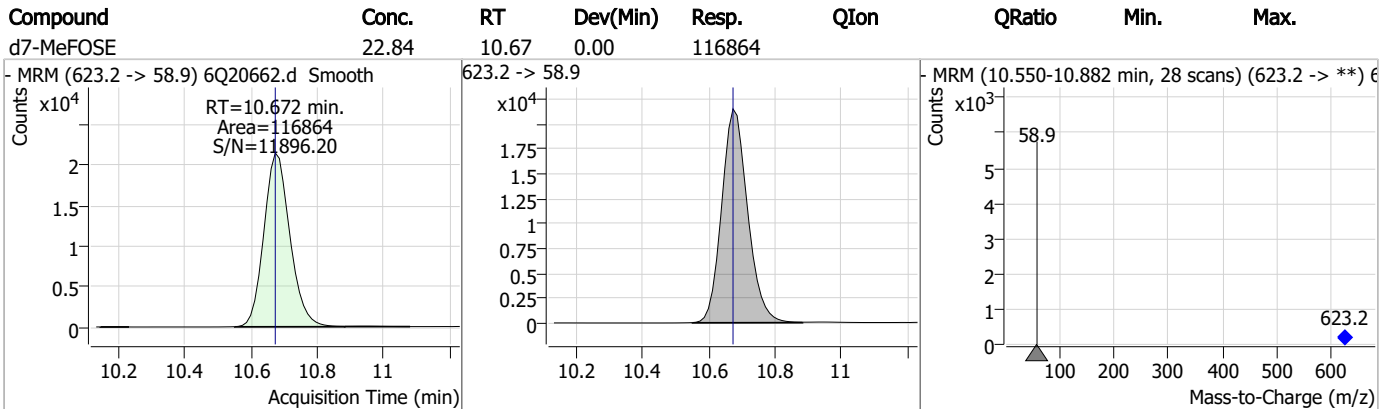
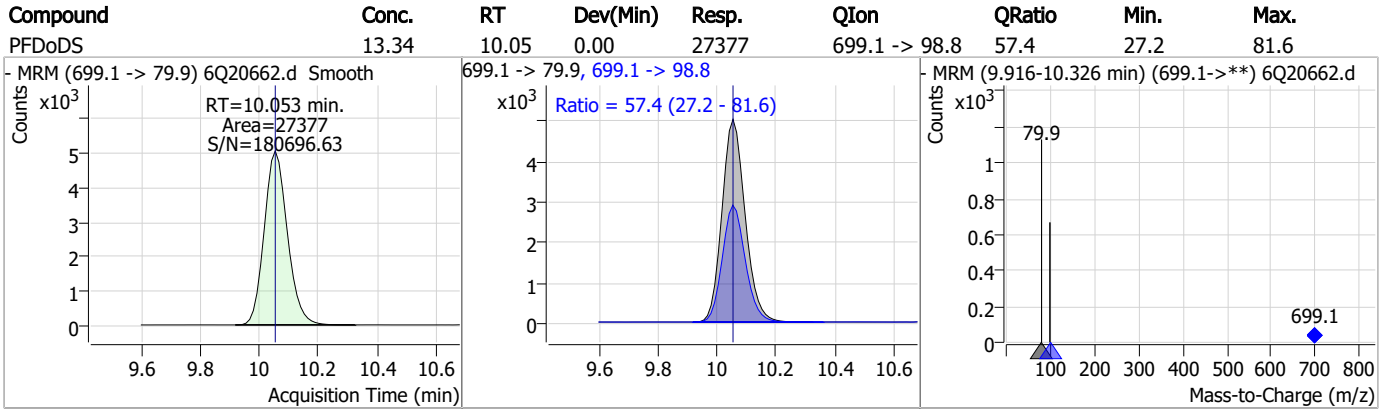
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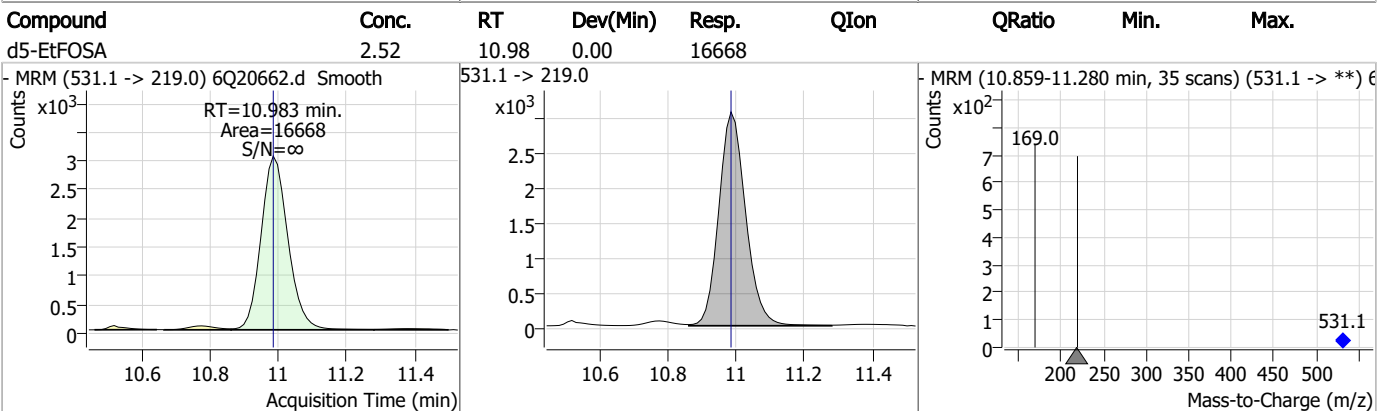
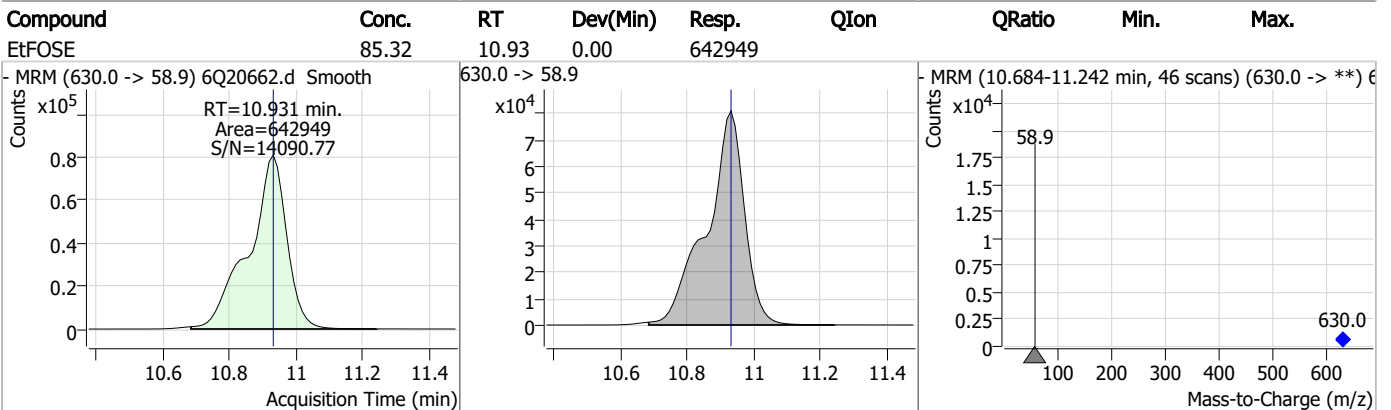
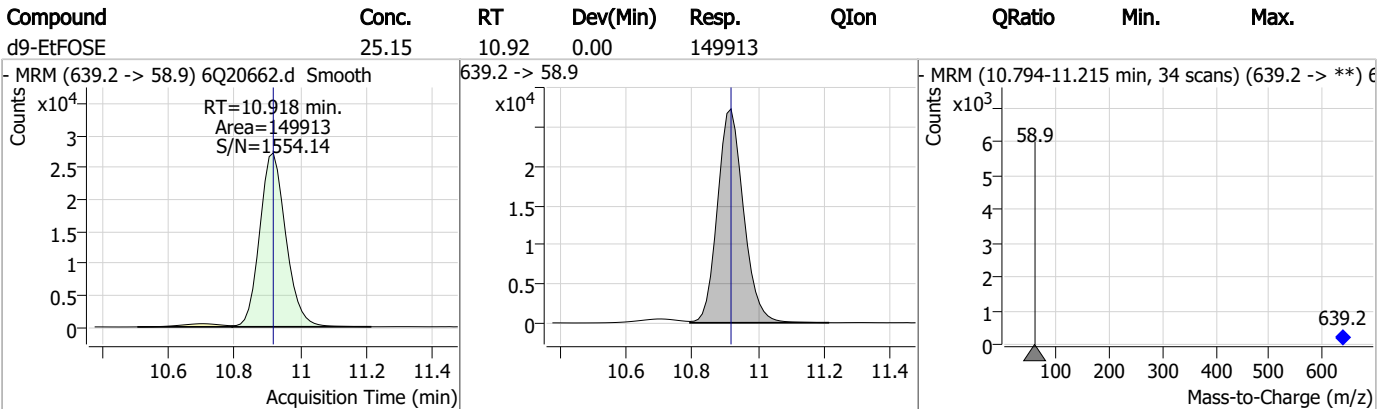
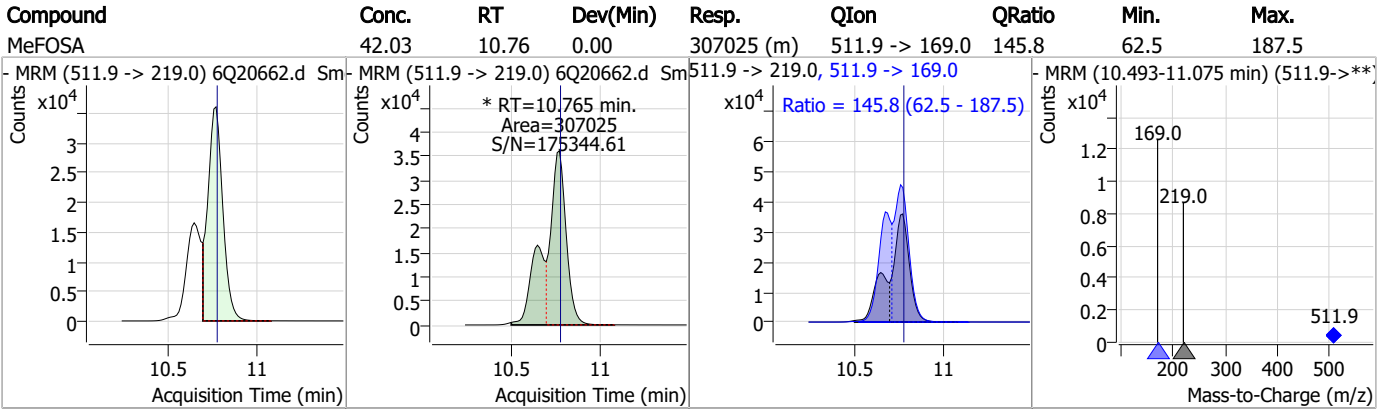
Perfluorinated Compounds by LC/MS/MS



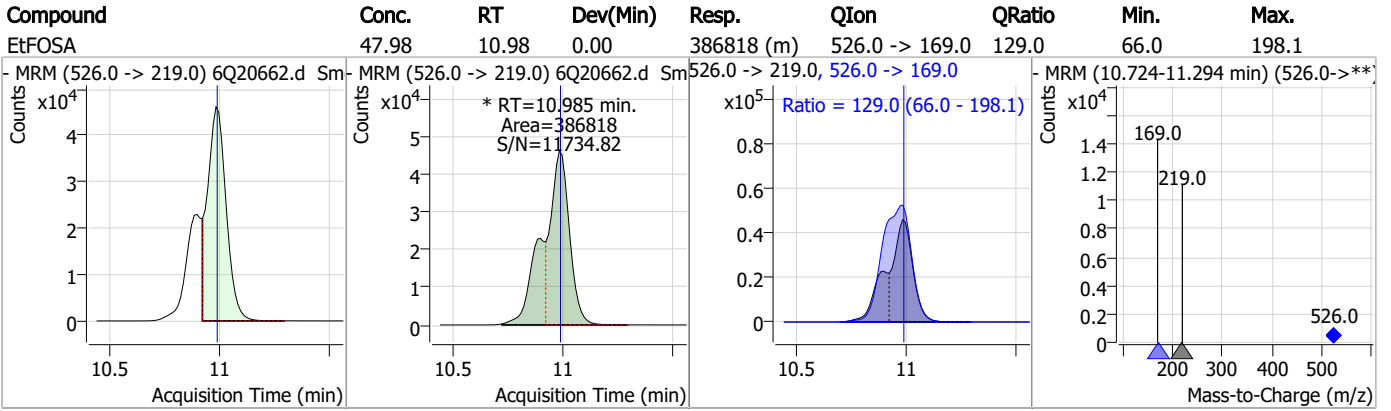
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q307-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20662.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 18:37 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.28	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.41	Split peak
Perfluorononanoic acid	375-95-1		7.67	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
PFOSA	754-91-6		9.68	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.6.2.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20889.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 10:11:06 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q310 TDCA.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

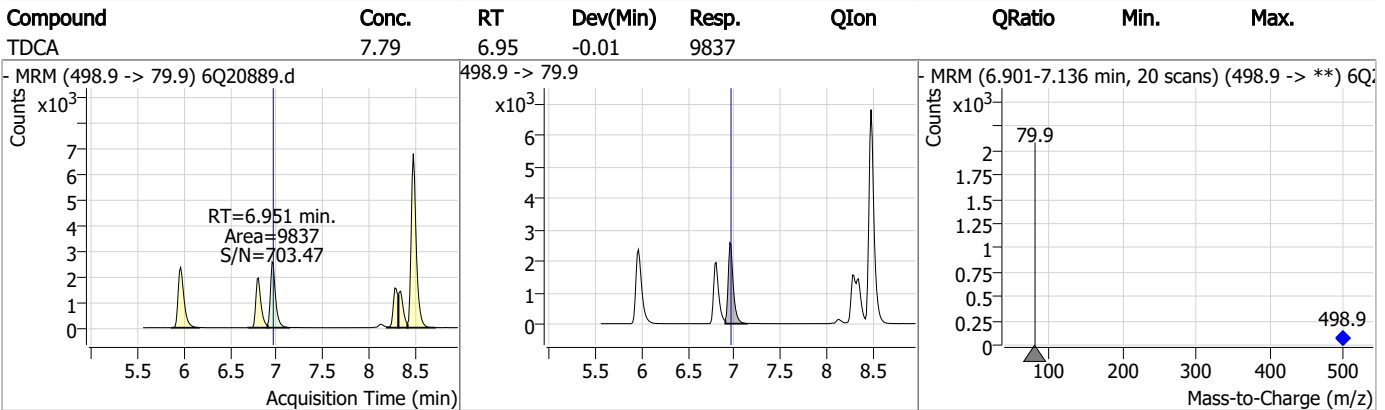
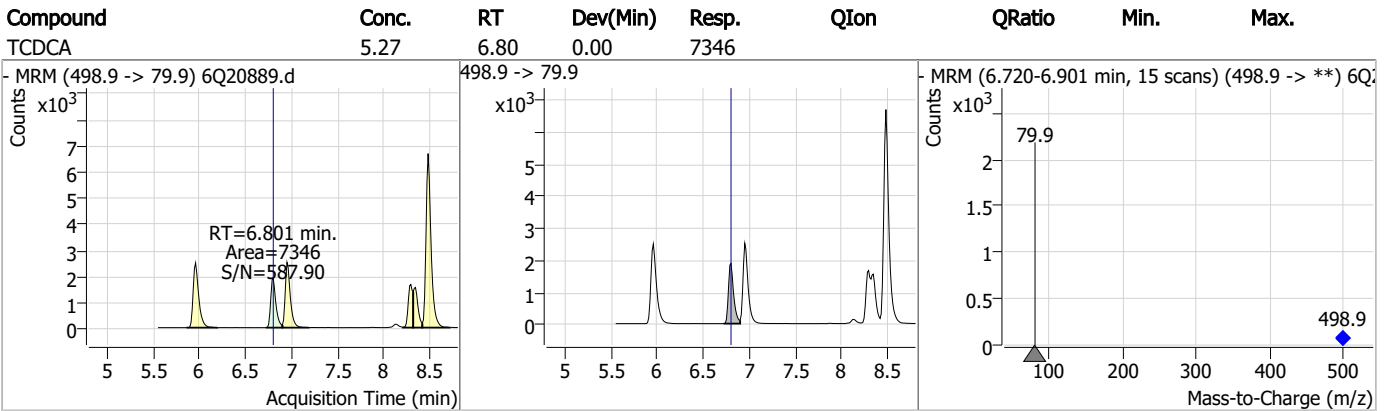
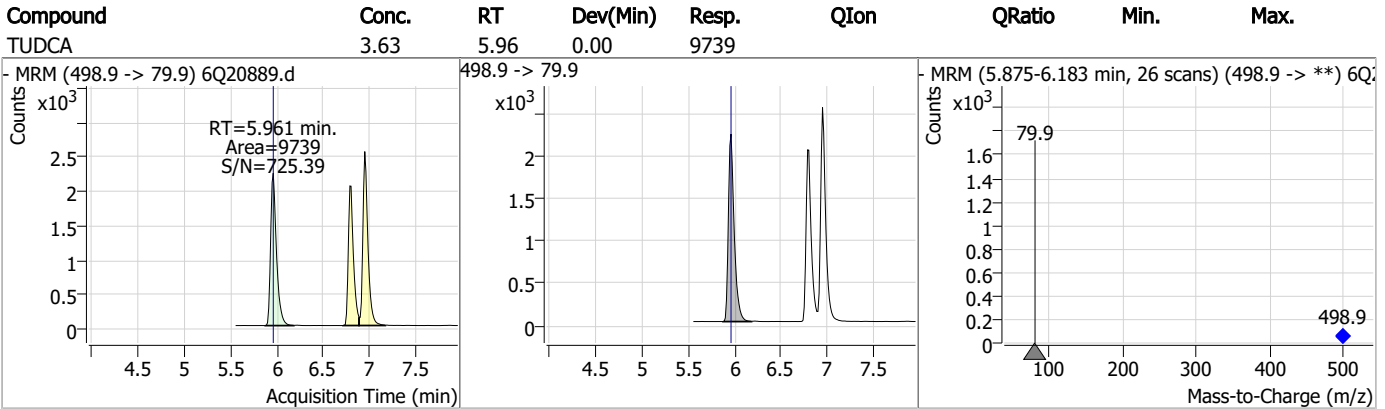
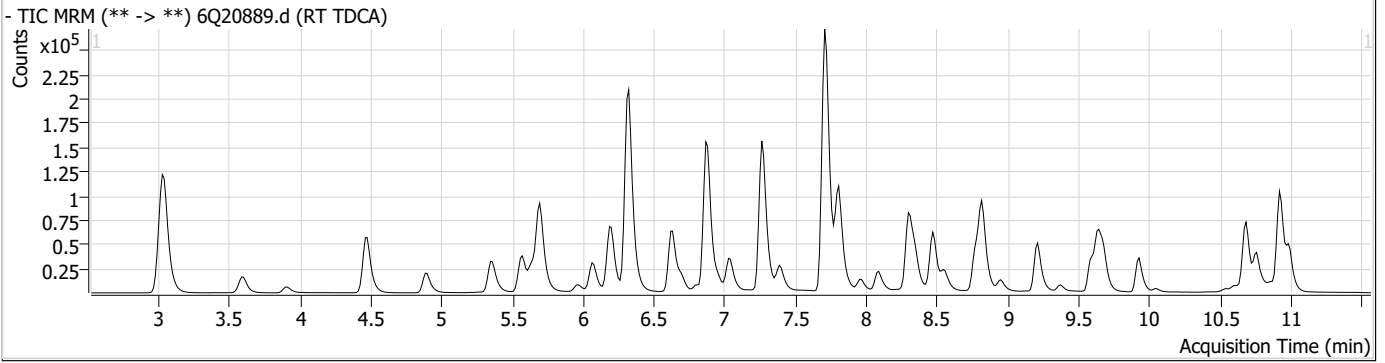
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.476	507.1 -> 79.9	30223	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	43603	2.50 µg/L	0.000
System Monitoring Compounds					
13C8-PFOS	8.476	507.1 -> 79.9	30223	1.76 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 70.3%		
Target Compounds					
PFOS	8.478	498.9 -> 79.9	35583	3.45 µg/L m	85
		498.9 -> 98.8	17565		
TCDCa	6.801	498.9 -> 79.9	7346	5.27 ng/ml	100
TDCA	6.951	498.9 -> 79.9	9837	7.79 ng/ml	100
TUDCA	5.961	498.9 -> 79.9	9739	3.63 ng/ml	100

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

7.6.3

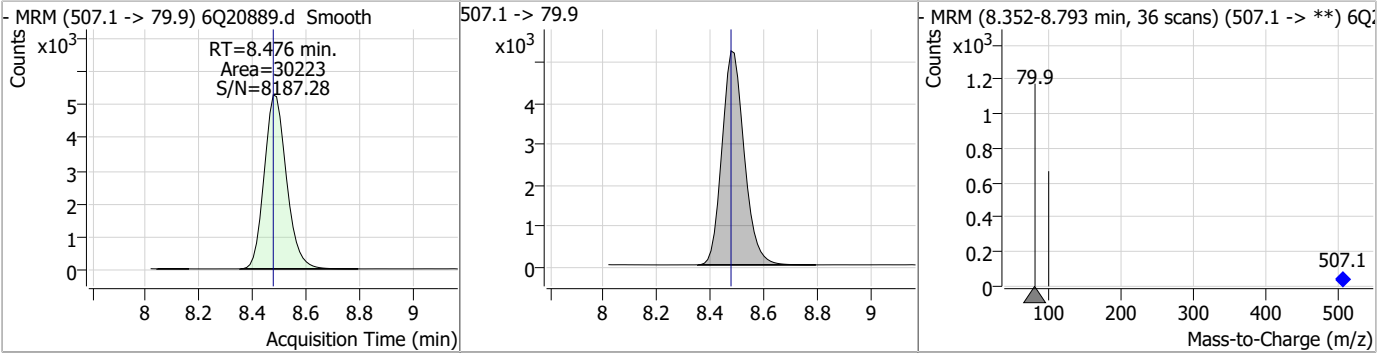
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Perfluorinated Compounds by LC/MS/MS

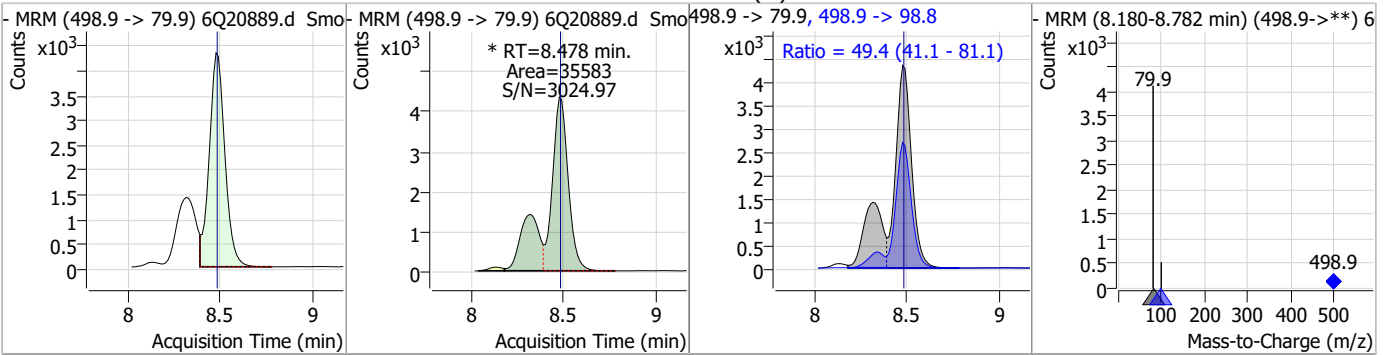


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.76	8.48	0.00	30223				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.45	8.48	0.00	35583 (m)	498.9 -> 98.8	49.4	41.1	81.1



7.6.3

7

Manual Integration Approval Summary

Sample Number: S6Q310-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20889.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 10:11 Supervisor approved: 07/17/23 11:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak

7.6.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20890.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 10:25:05 AM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	183682	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	60196	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	63752	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	60348	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	94801	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	47352	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	24408	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	32730	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	34249	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	18215	1.25 µg/L	0.000
M8-FOSA	9.687	506.1 -> 77.8	33841	2.50 µg/L	0.012
M3-PFBS	5.635	302.1 -> 79.9	22355	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14211	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	13658	2.50 µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	2224	5.00 µg/L	-0.012
M2-6:2FTS	7.026	429.1 -> 80.9	3388	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	3465	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	25933	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	41177	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	21635	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	111138	25.00 µg/L	0.012
M9-EtFOSE	10.918	639.2 -> 58.9	134410	25.00 µg/L	0.000
M5-EtFOSA	10.996	531.1 -> 219.0	15596	2.50 µg/L	0.012
M3-MeFOSA	10.763	515.0 -> 219.0	14958	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	17016	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	76910	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	10677	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	102264	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	34042	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	51992	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	63708	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.343	329.1 -> 80.9	2224	4.65 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.0%		
13C2-6:2FTS	7.026	429.1 -> 80.9	3388	4.77 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3465	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.0%		
13C2-PFDoDA	9.211	615.1 -> 570.0	34249	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-PFTeDA	9.925	715.2 -> 670.0	18215	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 111.6%		
13C3-PFBS	5.635	302.1 -> 79.9	22355	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFHxS	7.392	402.1 -> 79.9	14211	2.50 µg/L	0.000

7.6.4
7

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	3.022	216.8 -> 171.9	183682	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.621	367.1 -> 322.0	60348	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.692	318.0 -> 273.0	63752	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	60196	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	8.301	519.1 -> 474.1	24408	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	32730	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C8-FOSA	9.687	506.1 -> 77.8	33841	2.85 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C8-PFOA	7.264	421.1 -> 376.0	94801	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C8-PFOS	8.476	507.1 -> 79.9	13658	2.83 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C9-PFNA	7.807	472.1 -> 427.0	47352	1.35 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.8%	
d3-MeFOSAA	8.346	573.2 -> 419.0	25933	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	41177	10.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	14958	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
d5-EtFOSAA	8.554	589.2 -> 419.0	21635	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d7-MeFOSE	10.685	623.2 -> 58.9	111138	25.46 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d9-EtFOSE	10.918	639.2 -> 58.9	134410	26.44 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
d5-EtFOSA	10.996	531.1 -> 219.0	15596	2.76 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.4%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	212664	52.56 µg/L	100
		327.1 -> 80.9	75428		
6:2FTS	7.027	427.1 -> 407.0	219714	55.21 µg/L	97
		427.1 -> 80.9	62046		
8:2FTS	8.090	527.1 -> 507.0	115765	52.21 µg/L	95
		527.1 -> 80.8	42040		
EtFOSAA	8.555	584.2 -> 419.1	49547	14.55 µg/L	m 99
		584.2 -> 526.0	25050		
FOSA	9.677	498.1 -> 77.9	439790	33.16 µg/L	m 98
		498.1 -> 478.0	13124		
MeFOSAA	8.347	570.1 -> 419.0	89072	15.64 µg/L	m 94
		570.1 -> 483.0	17687		
PFBA	3.018	212.8 -> 168.9	391883	55.36 µg/L	100
PFBS	5.636	298.7 -> 79.9	109308	12.30 µg/L	97
		298.7 -> 98.8	42538		
PFDA	8.301	512.9 -> 469.0	473539	13.93 µg/L	99
		512.9 -> 219.0	73022		
PFDoDA	9.211	613.1 -> 569.0	385370	14.38 µg/L	98
		613.1 -> 319.0	57530		
PFDS	9.374	599.0 -> 79.9	56152	13.80 µg/L	92

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.621	599.0 -> 98.8	26062	14.83	µg/L	97
		363.1 -> 319.0	432129			
PFHpS	7.960	363.1 -> 169.0	74754	12.80	µg/L	100
		449.0 -> 79.9	100733			
PFHxA	5.694	449.0 -> 98.9	50494	14.22	µg/L	100
		313.0 -> 269.0	332432			
PFHxS	7.393	313.0 -> 118.9	16797	13.08	µg/L	94
		398.7 -> 79.9	98892			
PFNA	7.808	398.7 -> 98.9	46930	26.07	µg/L	92
		463.0 -> 419.0	981388			
PFNS	8.955	463.0 -> 219.0	219239	12.37	µg/L	91
		548.8 -> 79.9	84595			
PFOA	7.265	548.8 -> 98.9	48345	28.64	µg/L	96
		413.0 -> 369.0	1287753			
PFOS	8.478	413.0 -> 169.0	238260	12.30	µg/L	76
		498.9 -> 79.9	91274			
PFPeA	4.461	498.9 -> 98.8	48672	27.57	µg/L	100
		263.0 -> 219.0	442391			
PFPeS	6.697	349.1 -> 79.9	95482	12.92	µg/L	97
		349.1 -> 98.9	45617			
PFTeDA	9.926	713.1 -> 669.0	281947	13.55	µg/L	99
		713.1 -> 168.9	24968			
PFTrDA	9.595	663.0 -> 619.0	355624	13.78	µg/L	100
		663.0 -> 168.9	40727			
PFUnDA	8.780	563.1 -> 519.0	349865	14.51	µg/L	100
		563.1 -> 269.1	52657			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	475953	24.69	µg/L	97
		632.9 -> 452.9	154918			
9Cl-PF3ONS	8.819	530.8 -> 351.0	789585	25.28	µg/L	94
		532.8 -> 353.0	252936			
ADONA	6.870	376.9 -> 250.9	1683100	24.66	µg/L	96
		376.9 -> 84.8	448188			
HFPO-DA	6.071	284.9 -> 168.9	113120	26.82	µg/L	98
		284.9 -> 184.9	12761			
3:3FTCA	3.883	241.0 -> 177.0	80108	69.77	µg/L	99
		241.0 -> 117.0	10298			
5:3FTCA	6.310	341.0 -> 237.1	1629491	333.73	µg/L	92
		341.0 -> 217.0	1258914			
7:3FTCA	7.711	441.0 -> 316.9	1125880	329.16	µg/L	83
		441.0 -> 336.9	2584426			
EtFOSA	10.997	526.0 -> 219.0	344542	45.67	µg/L	98
		526.0 -> 169.0	462368			
EtFOSE	10.931	630.0 -> 58.9	624578	92.44	µg/L	100
		511.9 -> 219.0	299639			
MeFOSA	10.765	511.9 -> 169.0	409100	46.84	µg/L	90
		616.1 -> 58.9	451700			
MeFOSE	10.697	699.1 -> 79.9	24426	97.07	µg/L	100
		699.1 -> 98.8	13974			
PFDoDS	10.053	295.0 -> 201.0	81291	13.14	µg/L	96
		295.0 -> 84.9	21073			
NFDHA	5.564	279.0 -> 85.1	296224	28.50	µg/L	99
		229.0 -> 84.9	250934			
PFMBA	4.882	314.8 -> 134.9	812726	28.12	µg/L	100
		314.8 -> 82.9	27612			
PFMPA	3.588			28.28	µg/L	100
PFEESA	6.188			24.84	µg/L	99

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

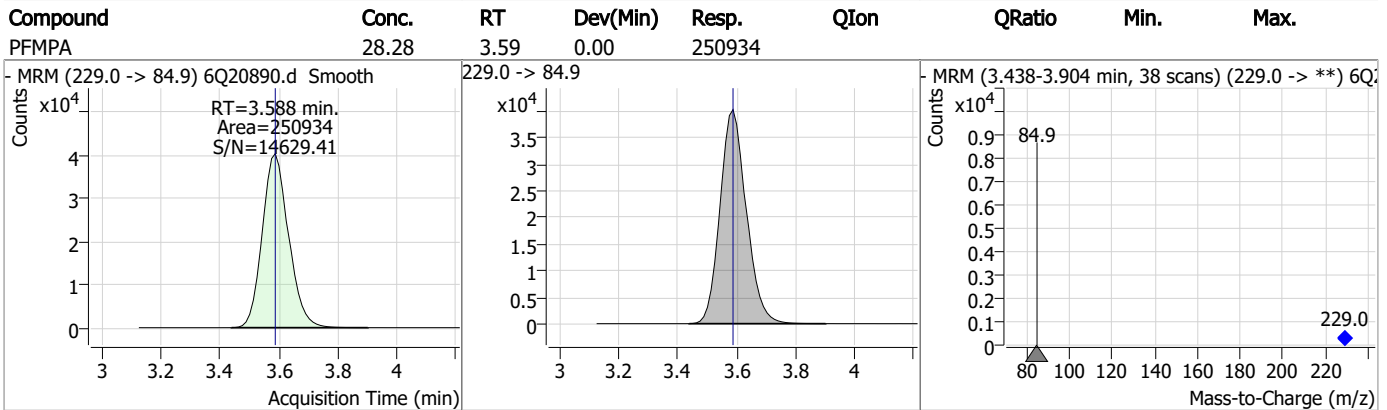
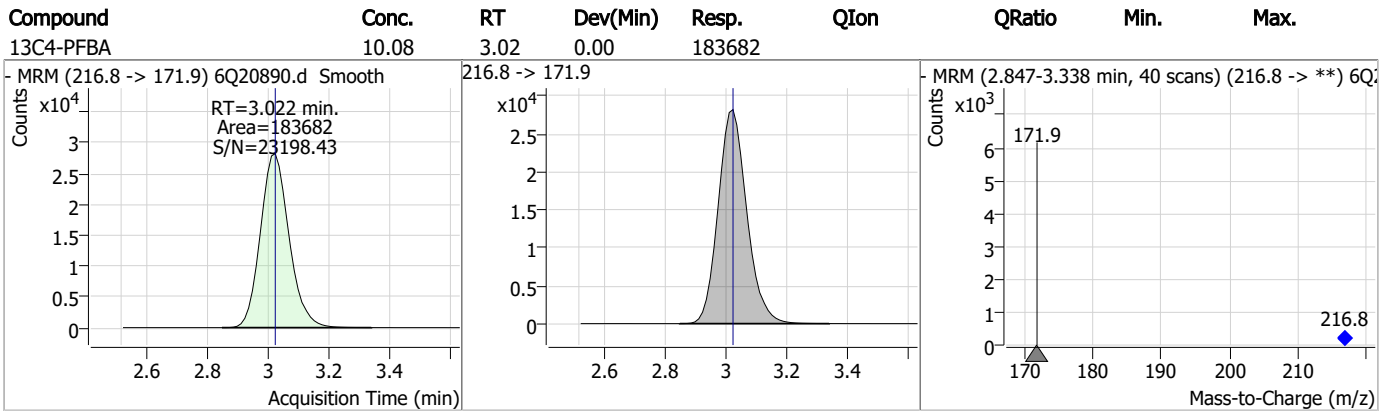
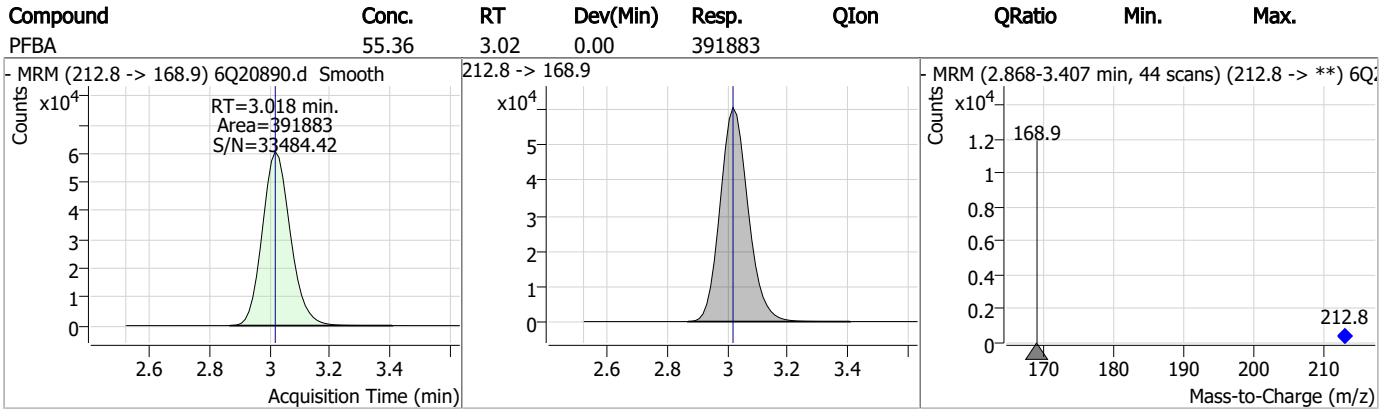
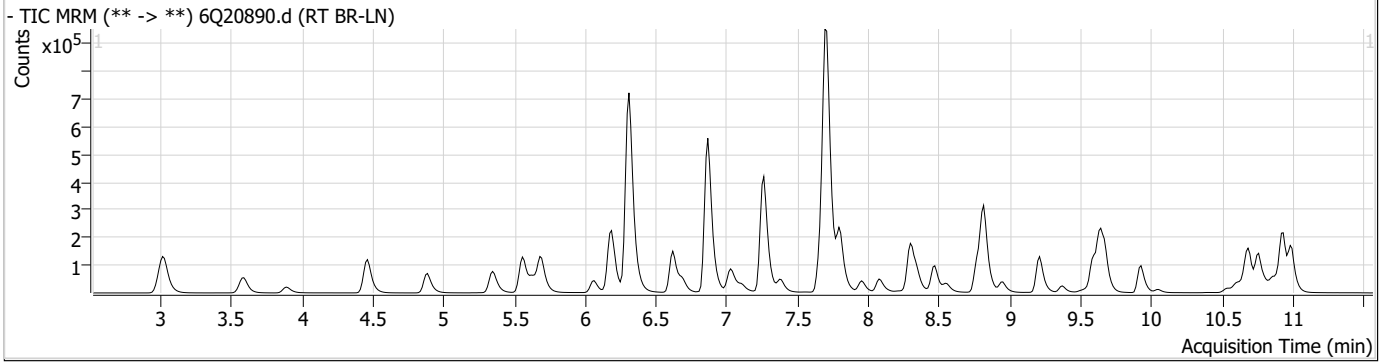
Perfluorinated Compounds by LC/MS/MS

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

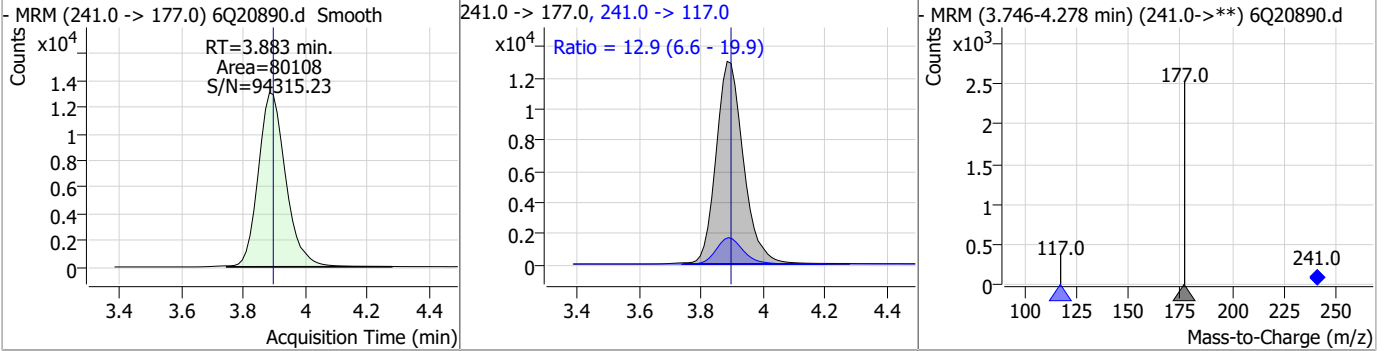
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Perfluorinated Compounds by LC/MS/MS

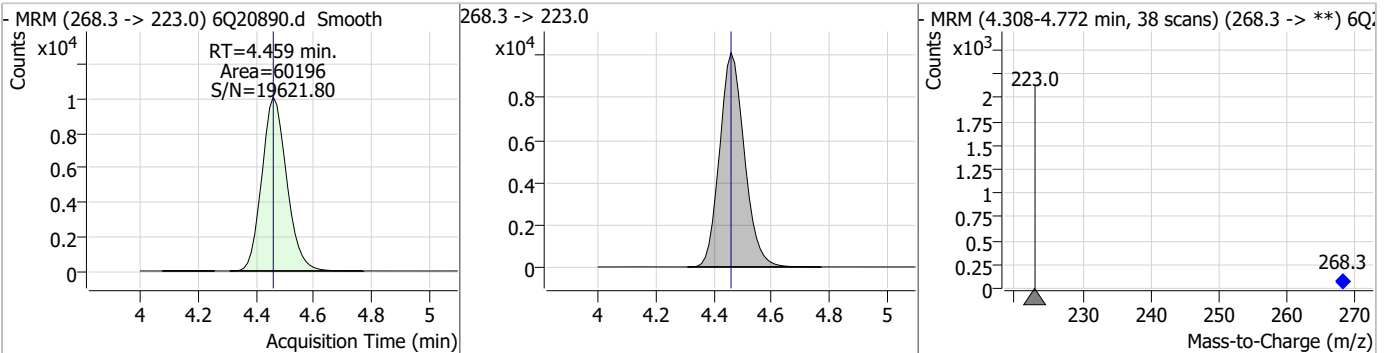


Perfluorinated Compounds by LC/MS/MS

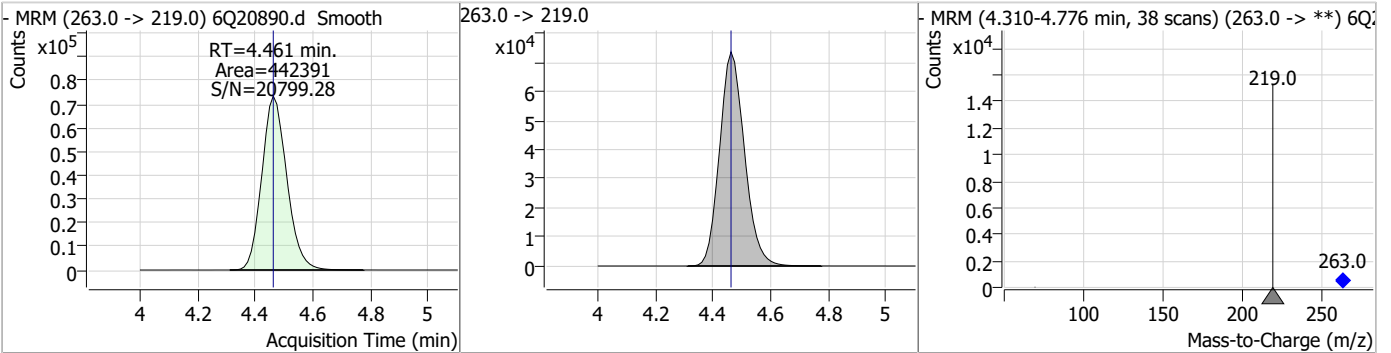
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	69.77	3.88	-0.01	80108	241.0 -> 117.0	12.9	6.6	19.9



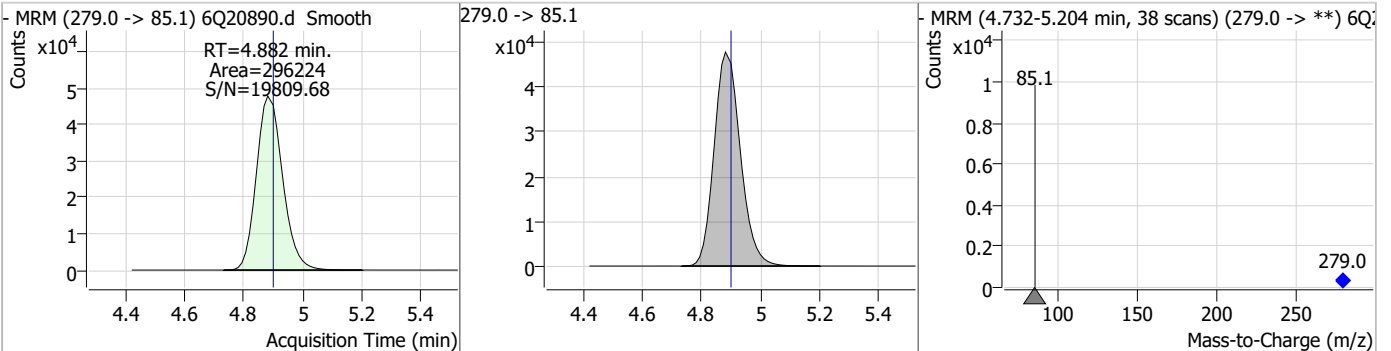
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.07	4.46	0.00	60196				



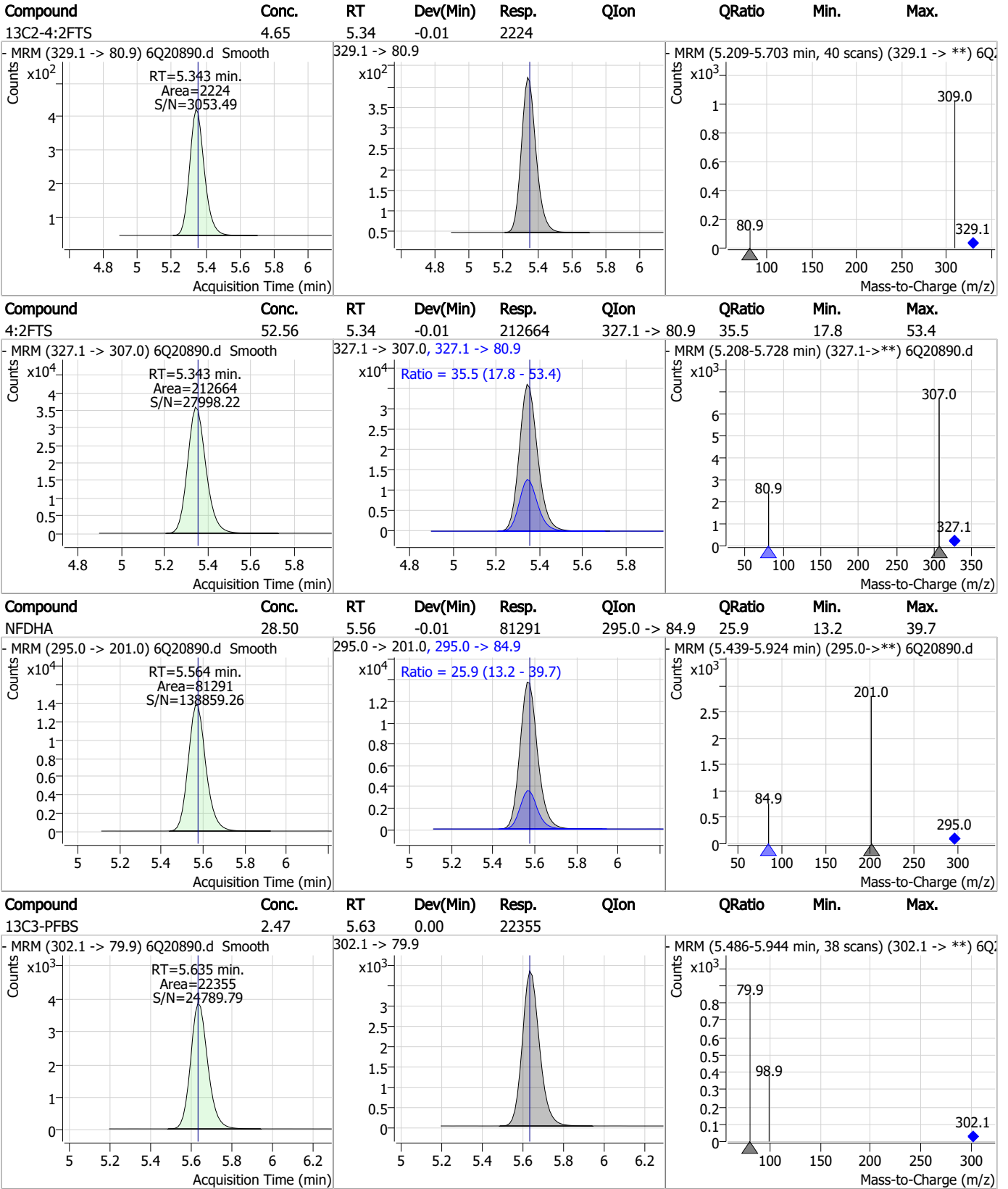
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	27.57	4.46	0.00	442391				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	28.12	4.88	-0.02	296224				



Perfluorinated Compounds by LC/MS/MS



7.6.4

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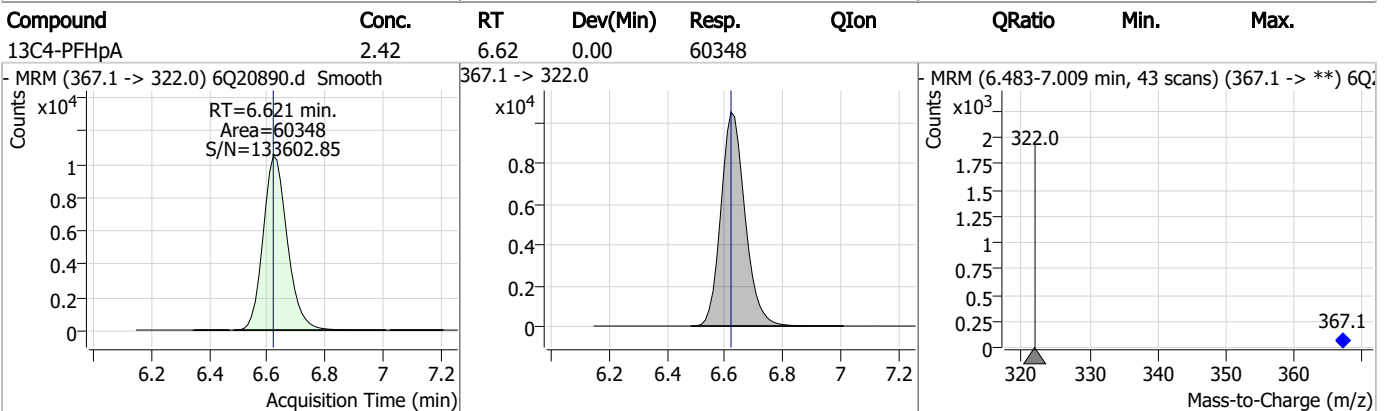
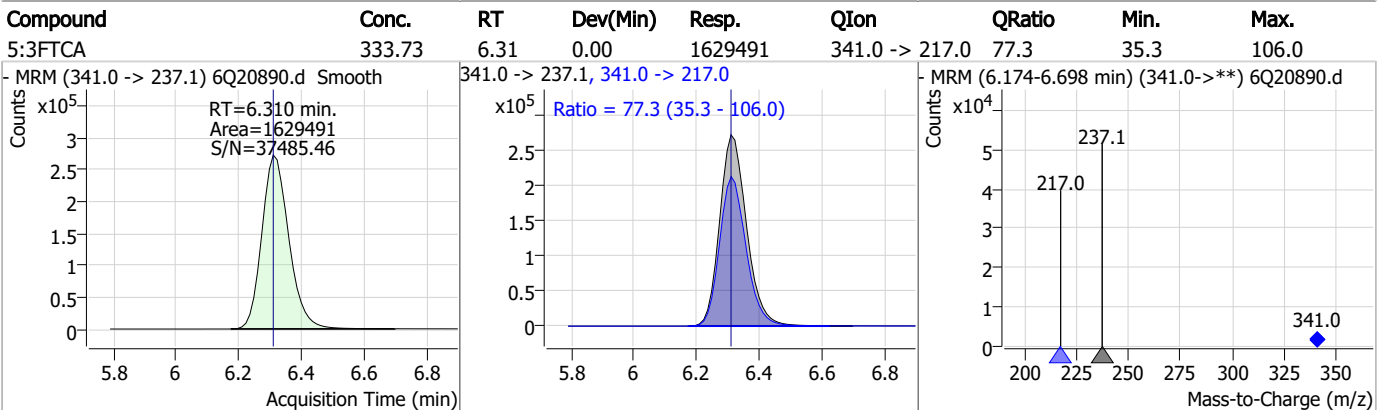
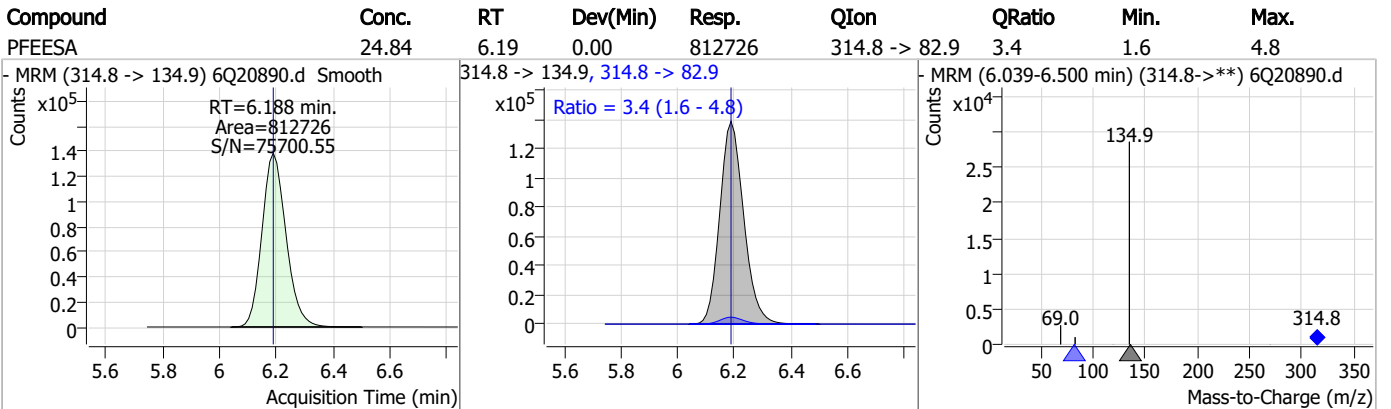
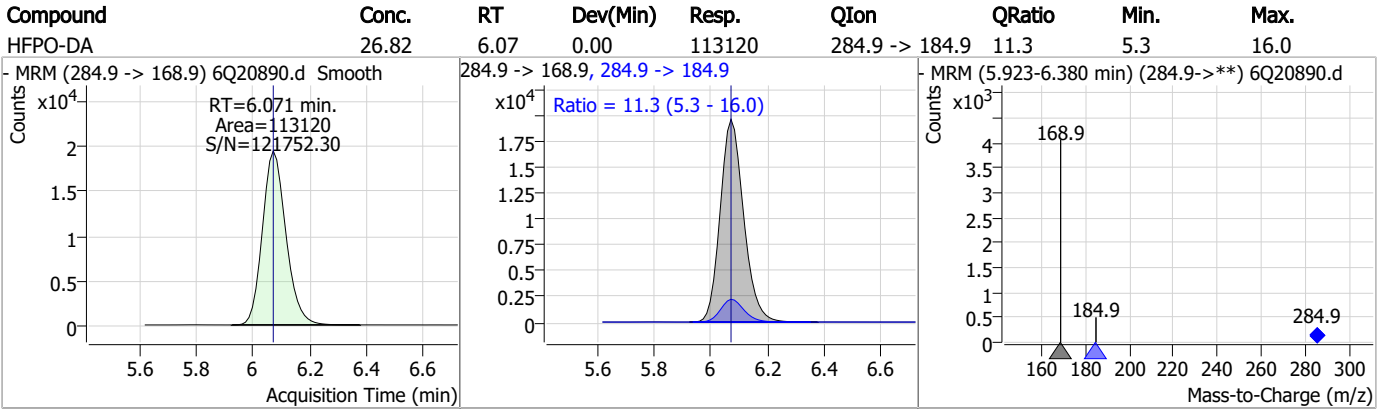
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	12.30	5.64	-0.01	109308	298.7 -> 98.8	38.9	20.5	61.6
13C5-PFHxA	2.46	5.69	0.00	63752				
PFHxA	14.22	5.69	0.00	332432	313.0 -> 118.9	5.1	2.4	7.3
13C3-HFPO-DA	10.18	6.07	0.00	41177				

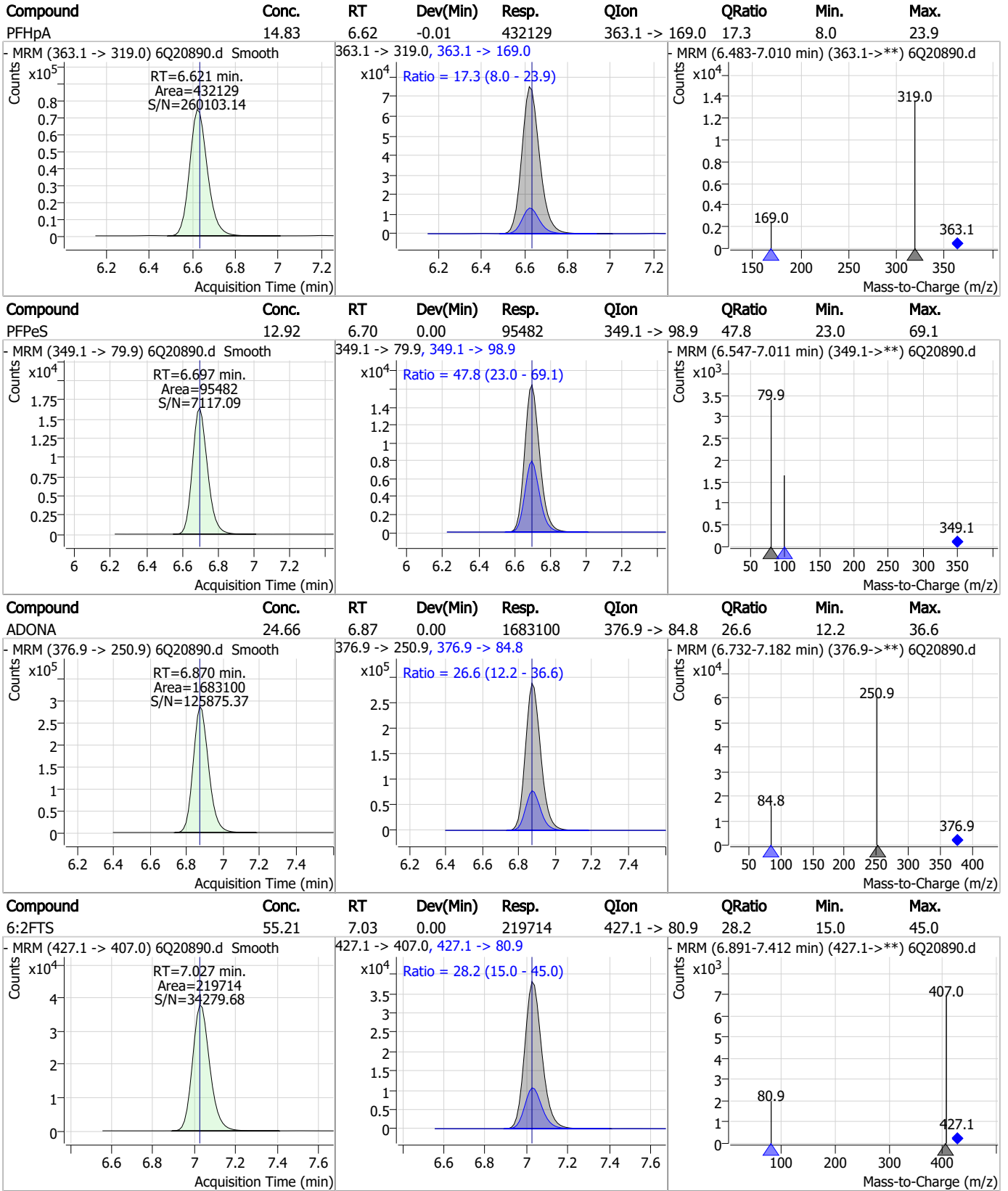
7.6.4

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

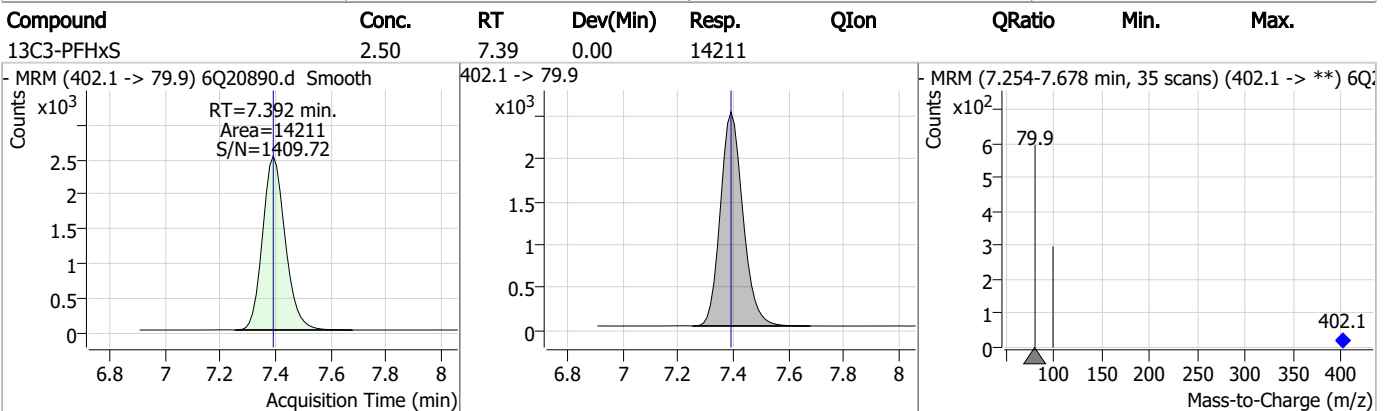
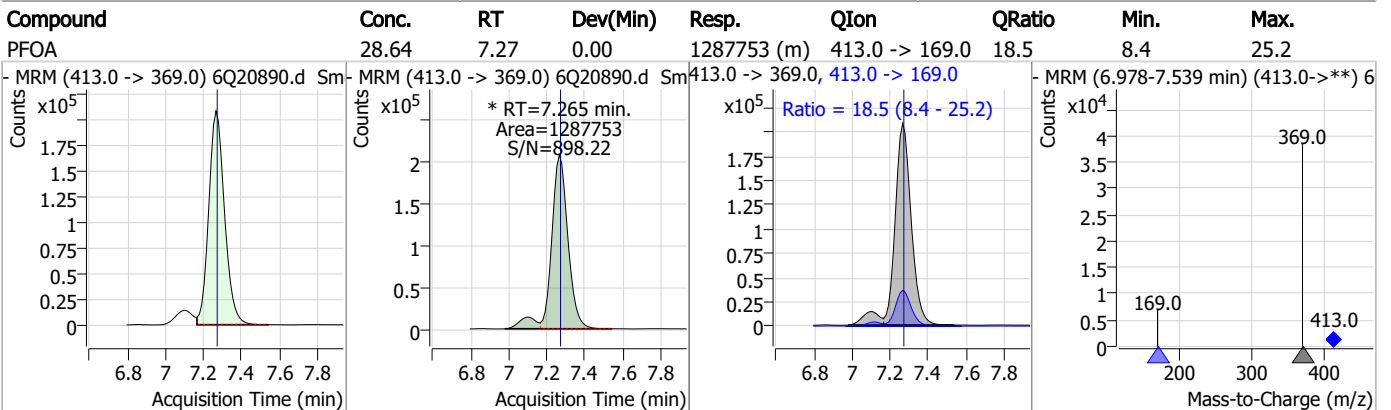
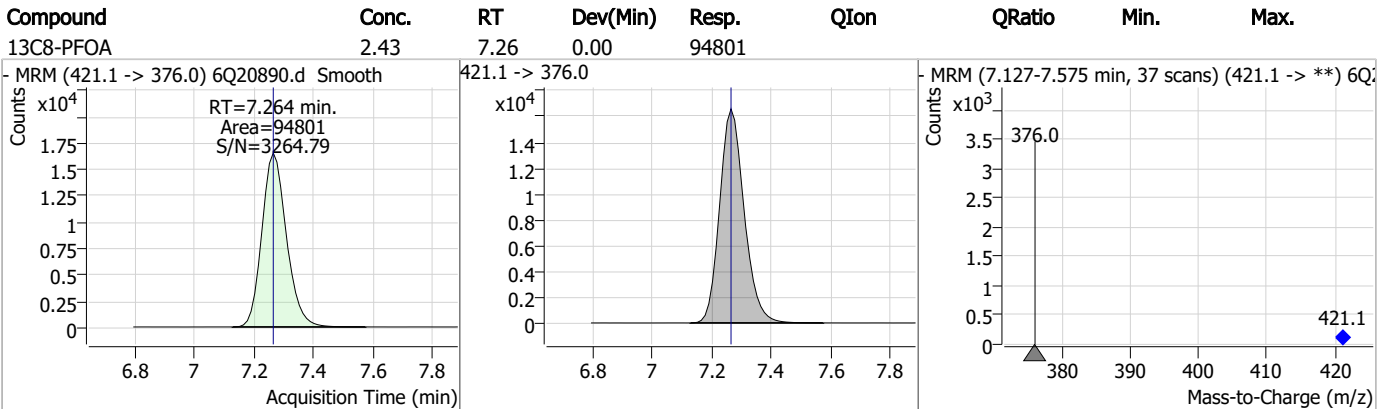
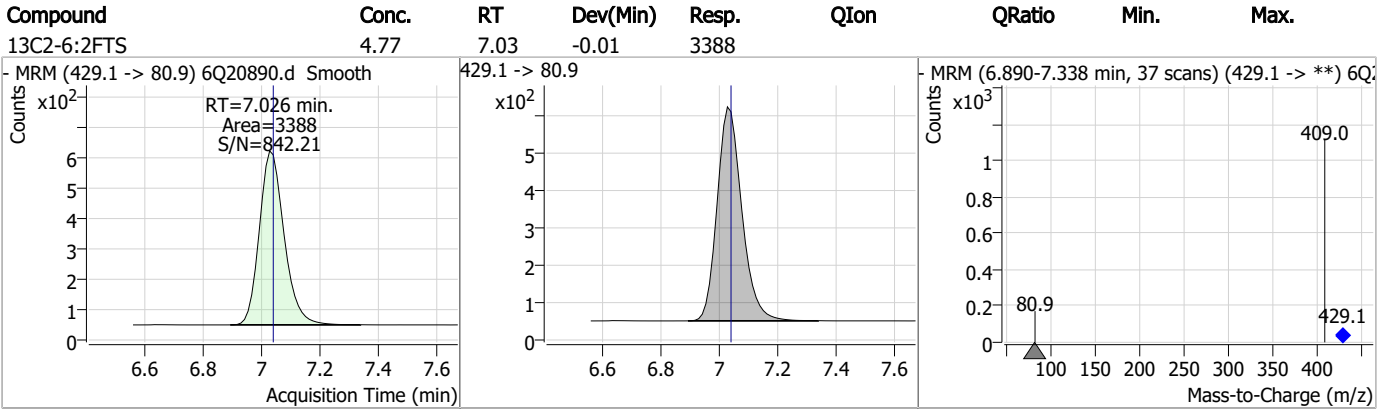


7.6.4

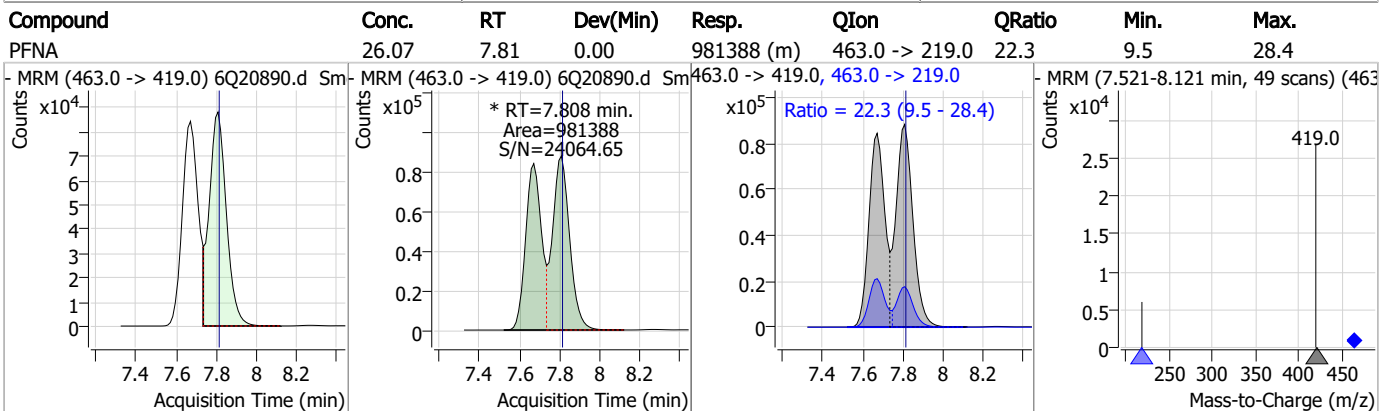
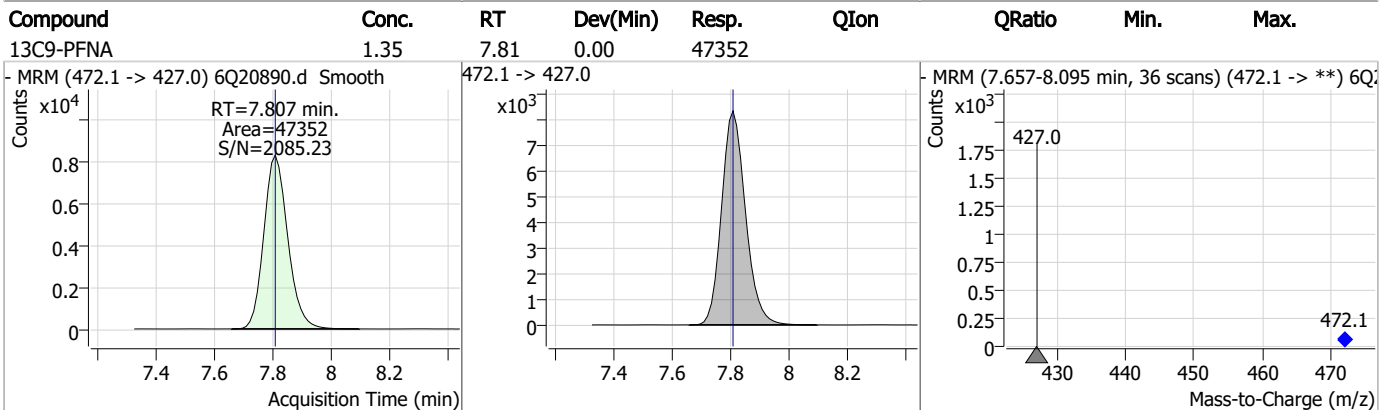
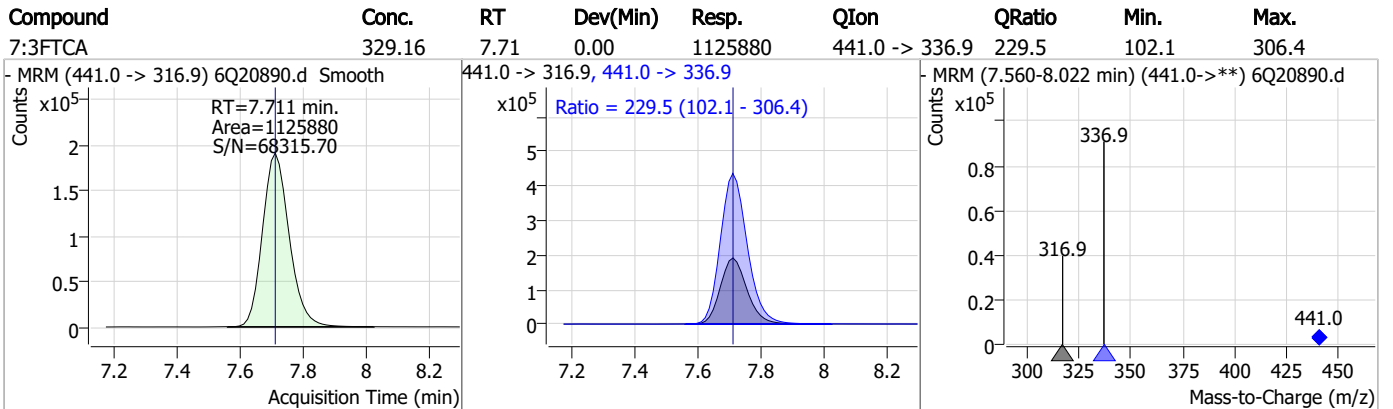
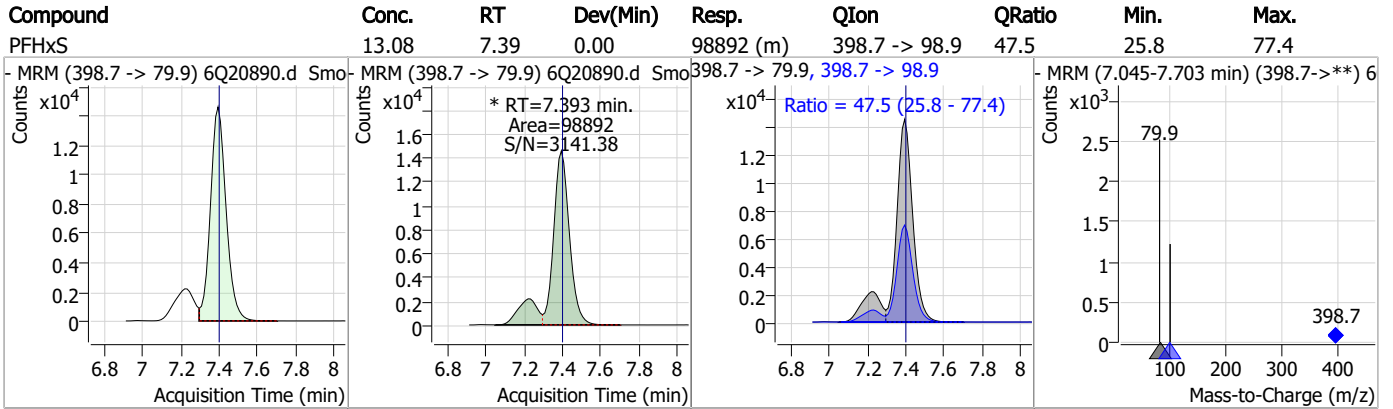
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



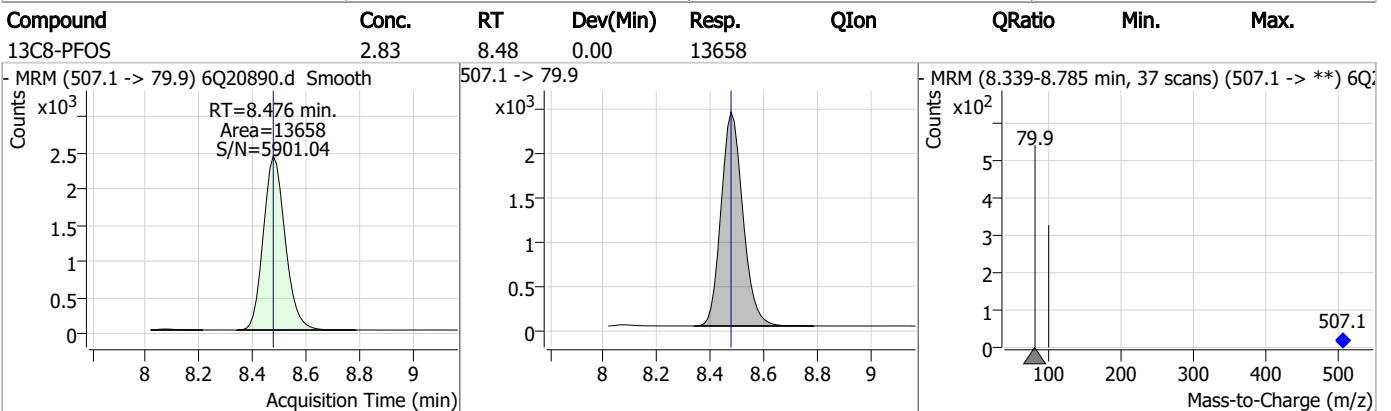
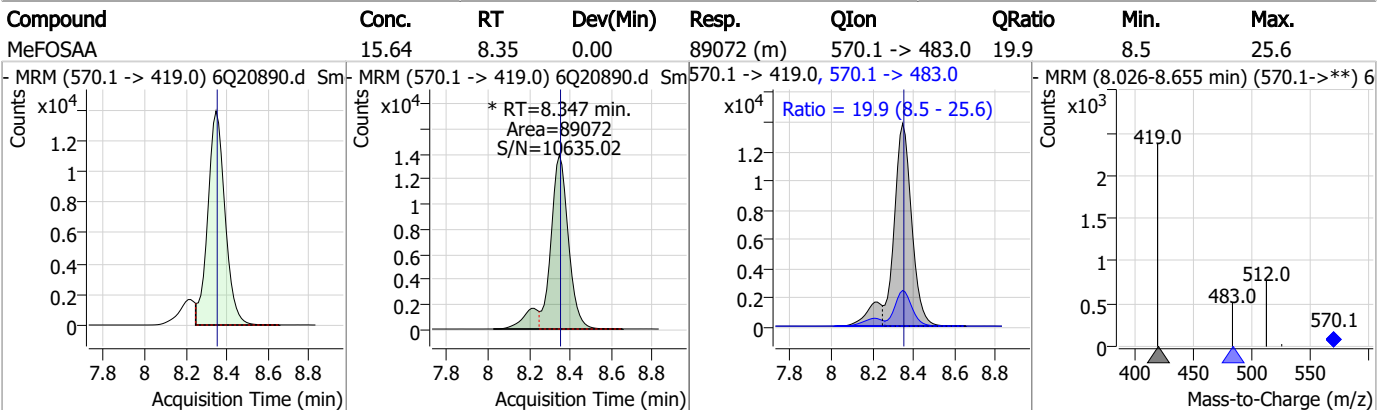
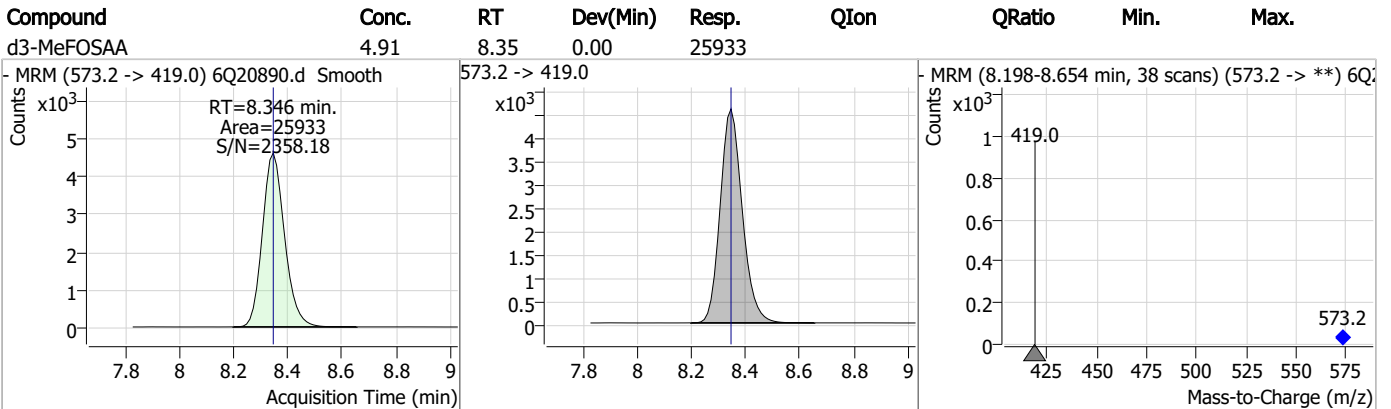
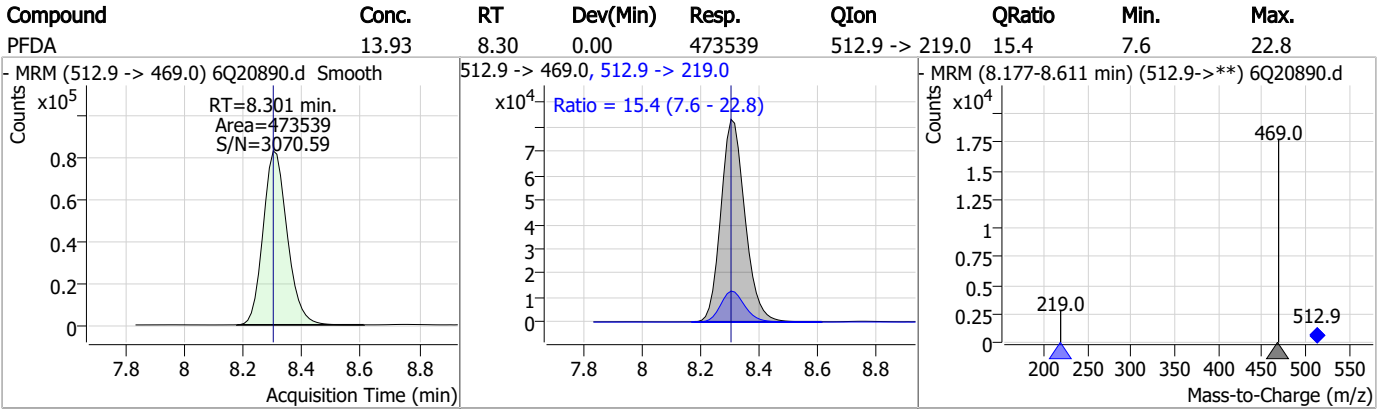
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.80	7.96	0.00	100733	449.0 -> 98.9	50.1	25.1	75.3
13C2-8:2FTS	5.05	8.09	0.00	3465				
8:2FTS	52.21	8.09	0.00	115765	527.1 -> 80.8	36.3	16.6	49.9
13C6-PFDA	1.28	8.30	0.00	24408				

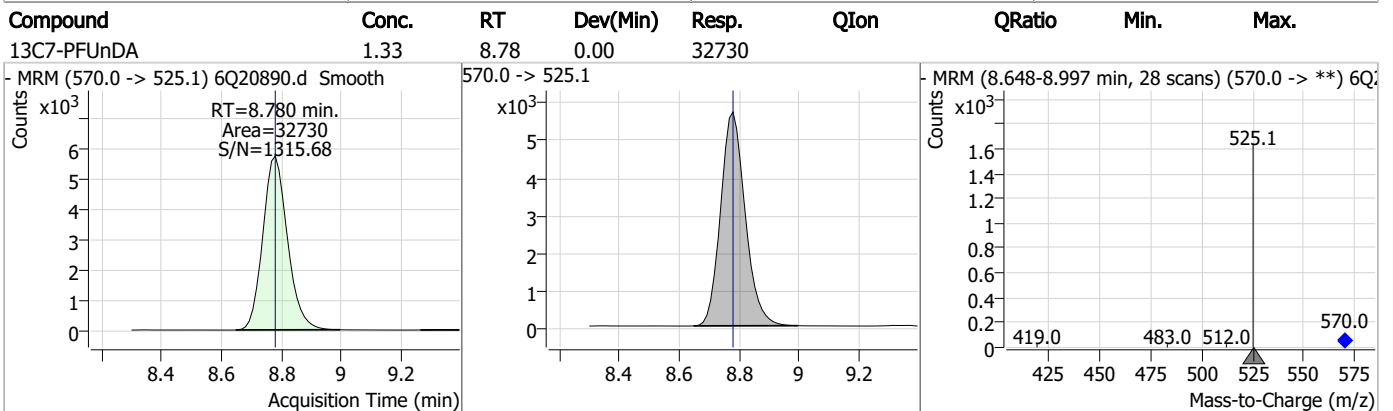
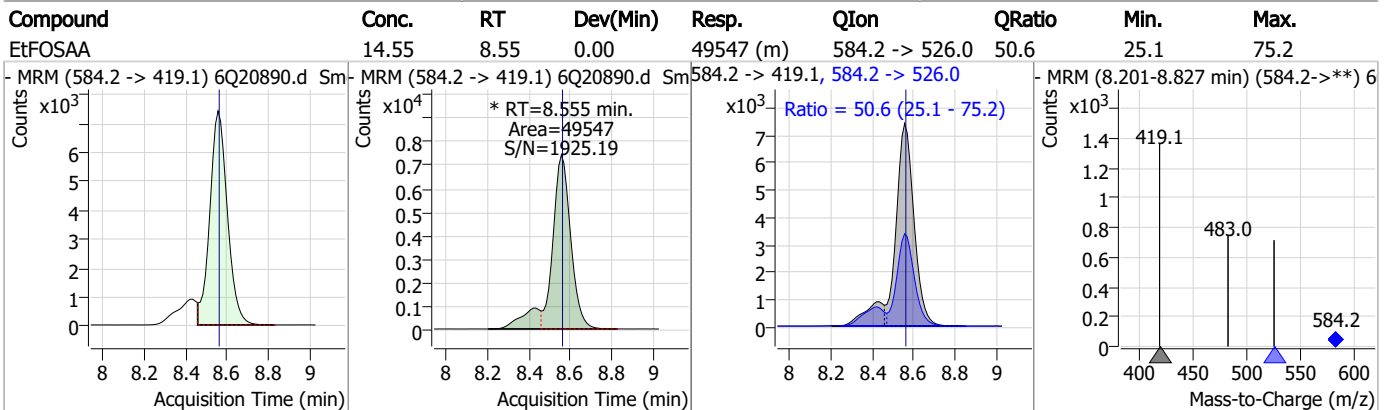
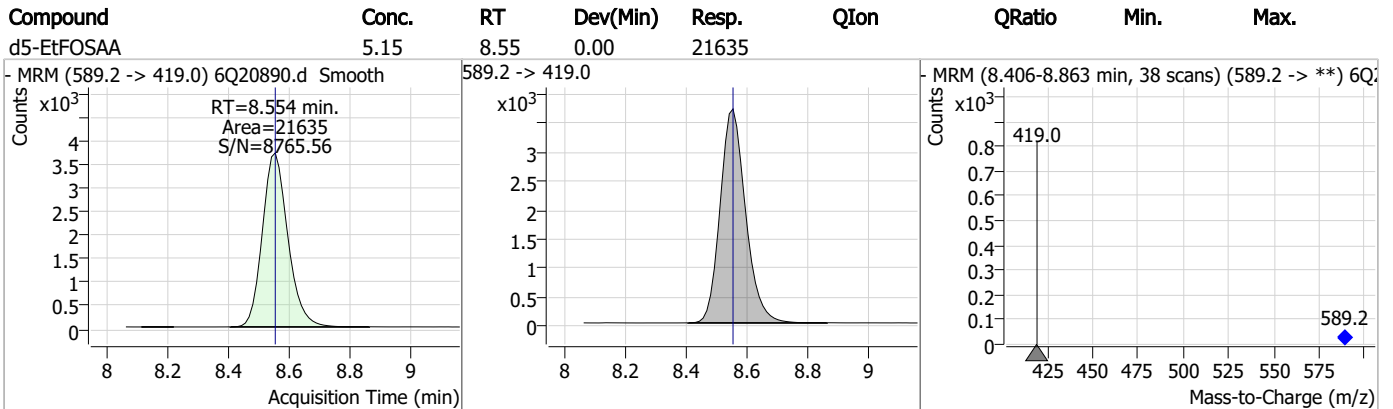
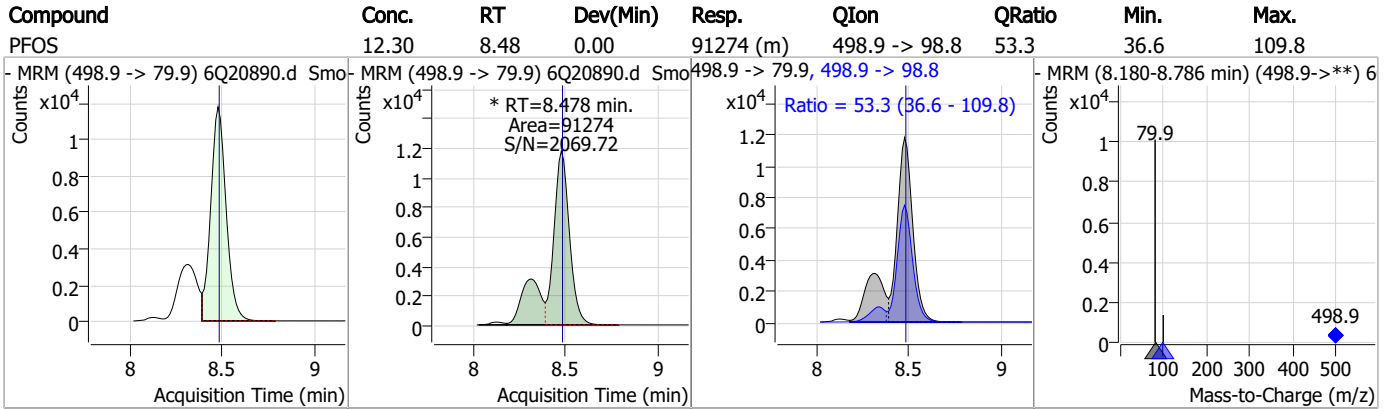
7.6.4

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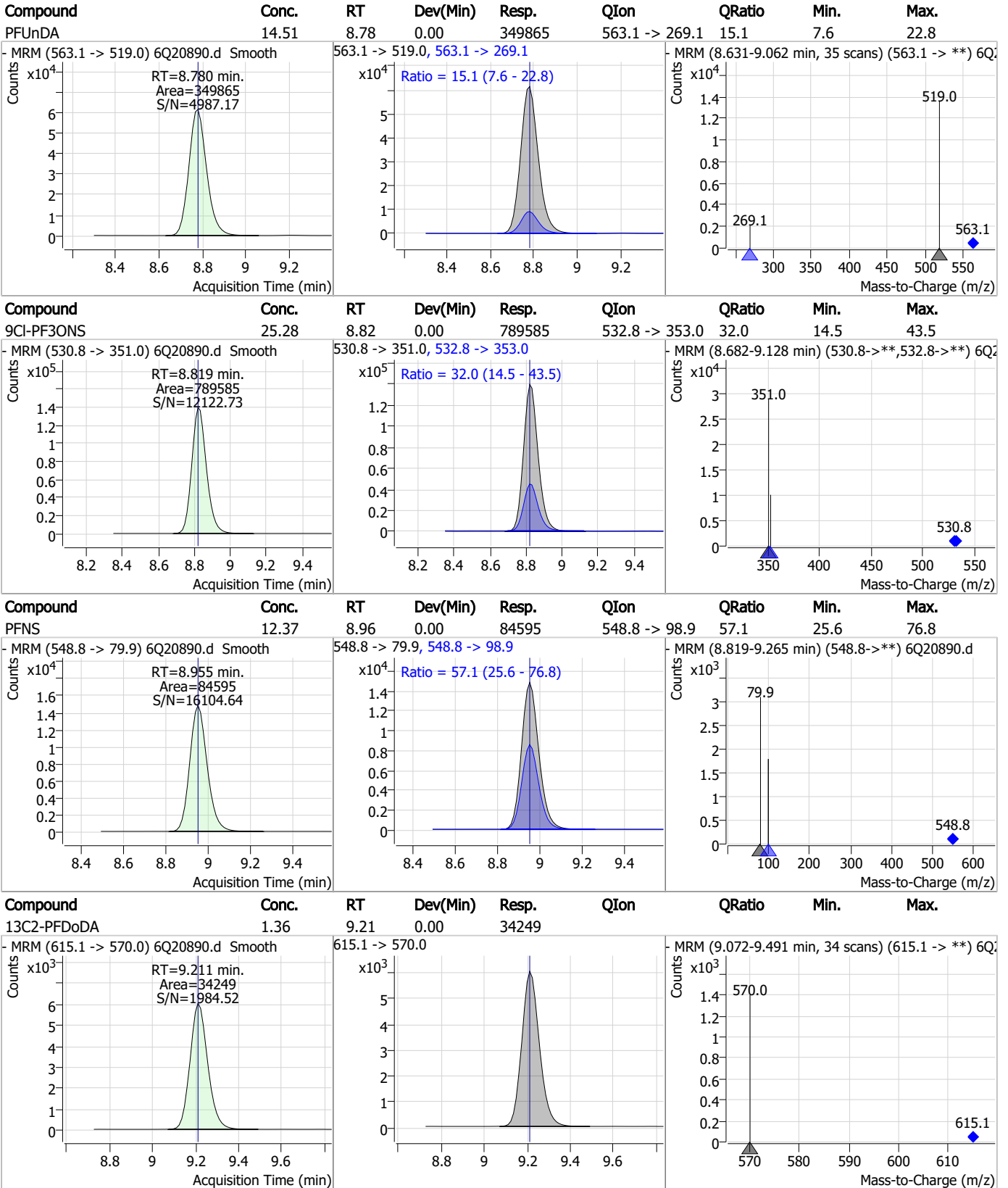
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

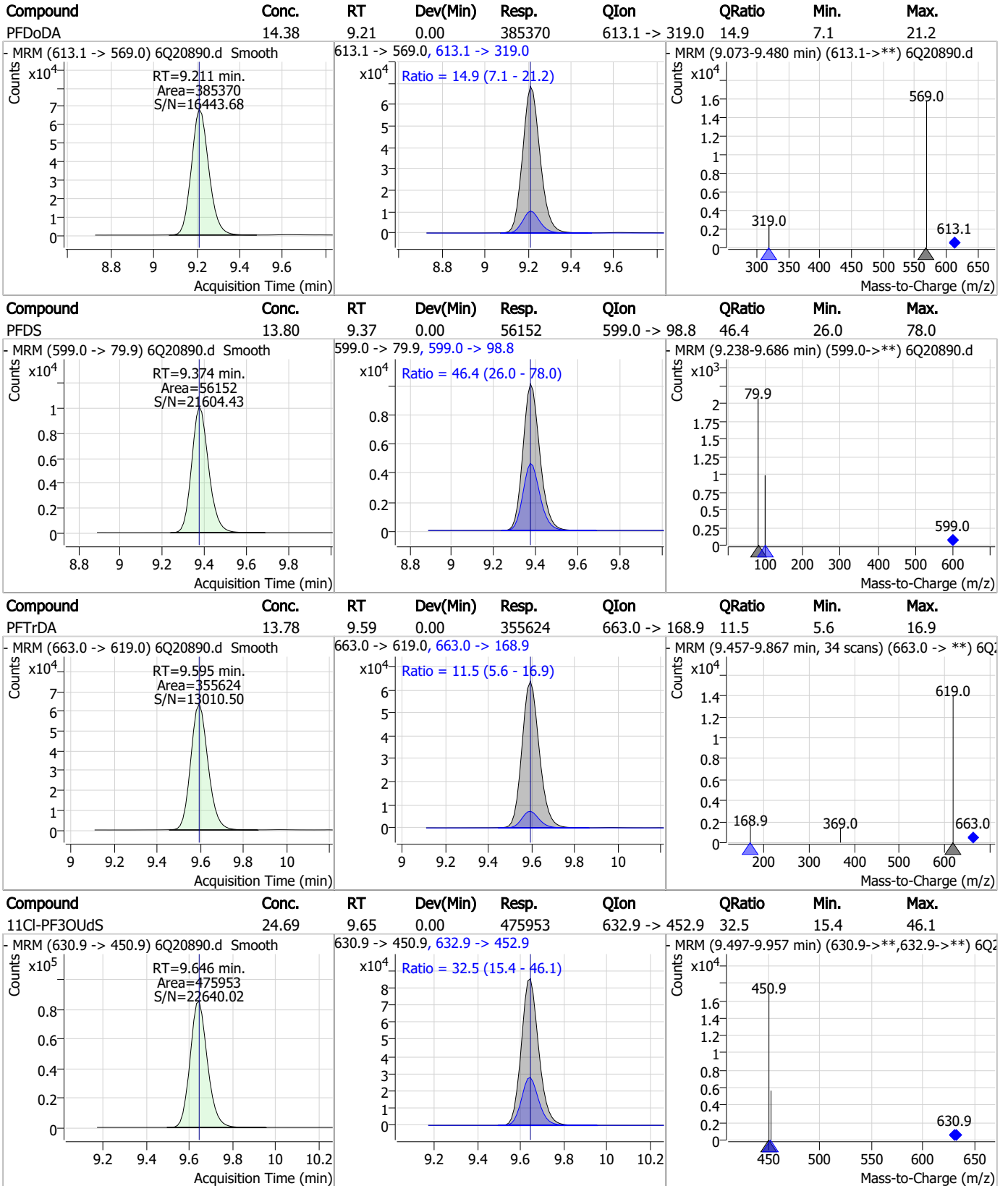


7.6.4

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Perfluorinated Compounds by LC/MS/MS

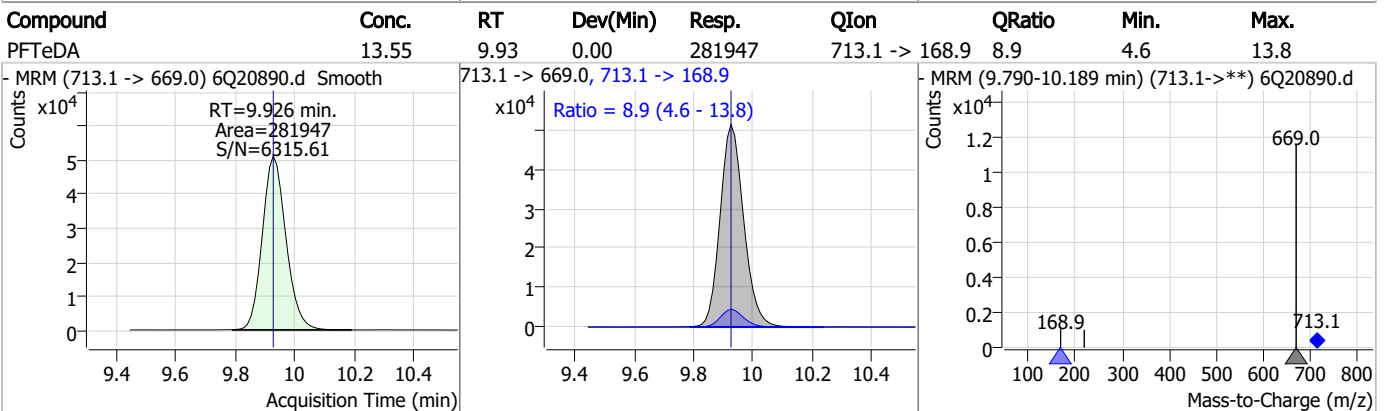
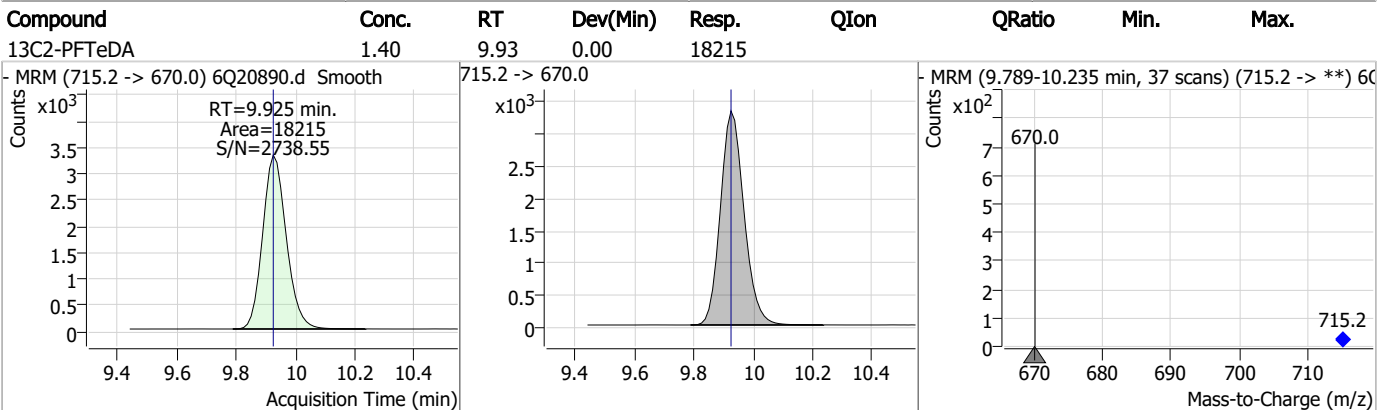
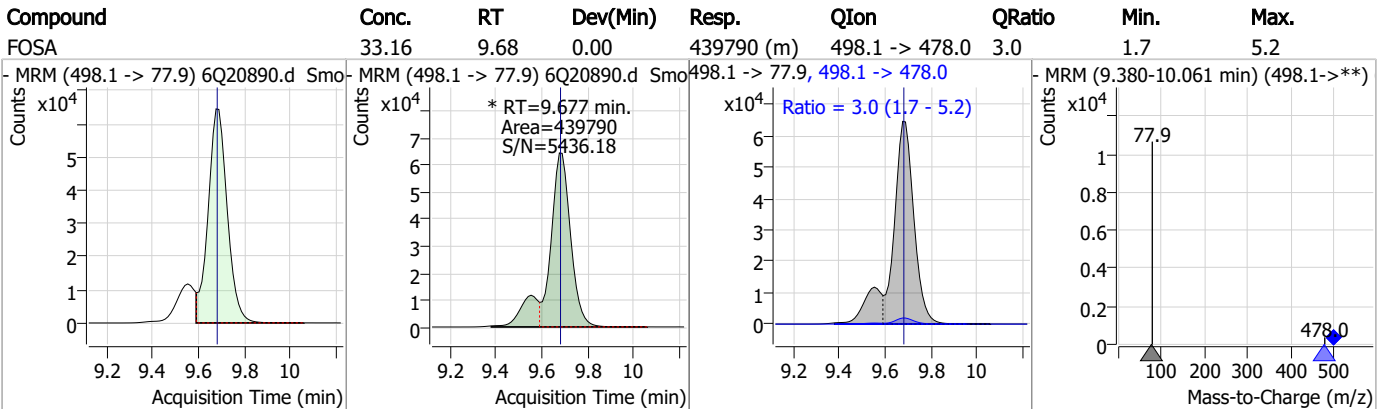
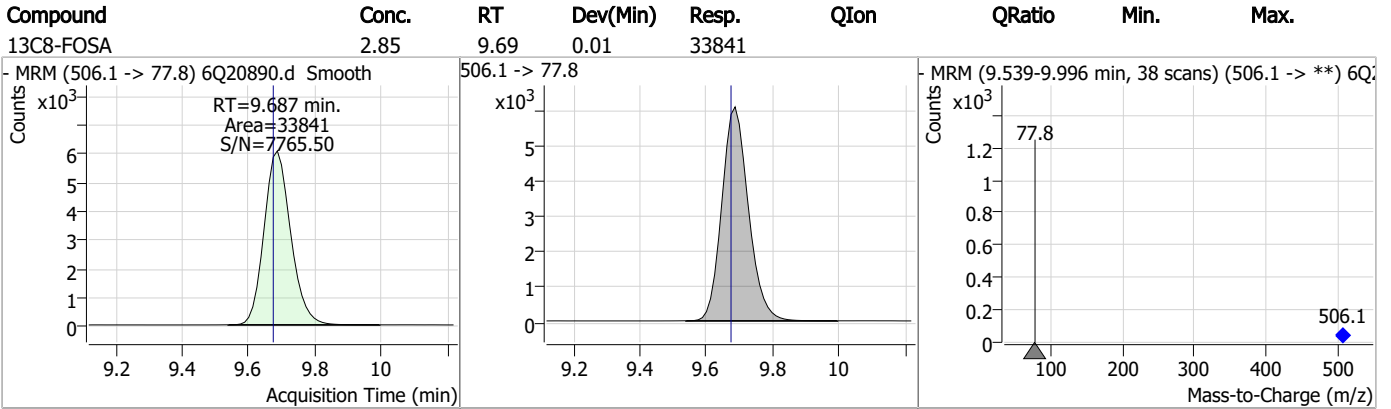


7.6.4

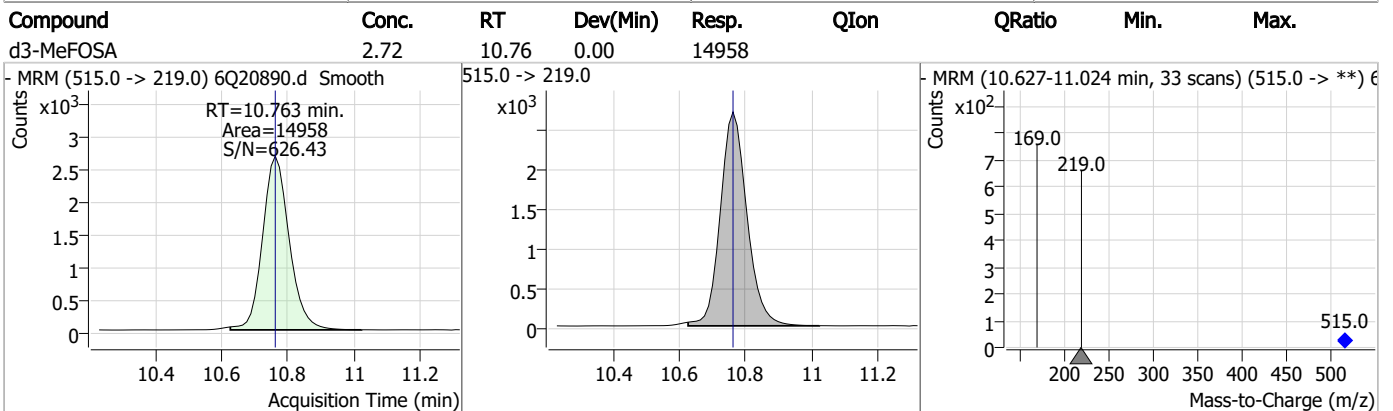
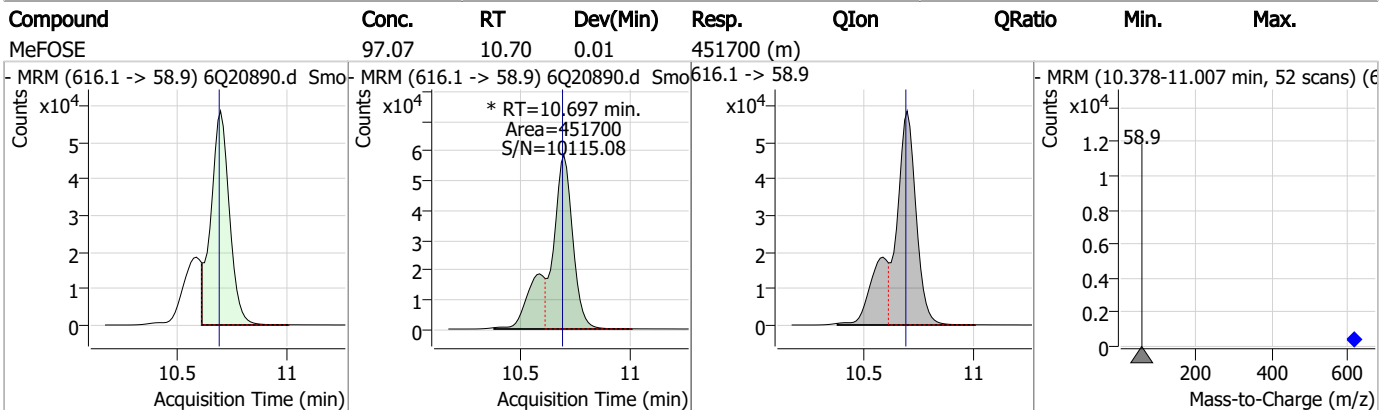
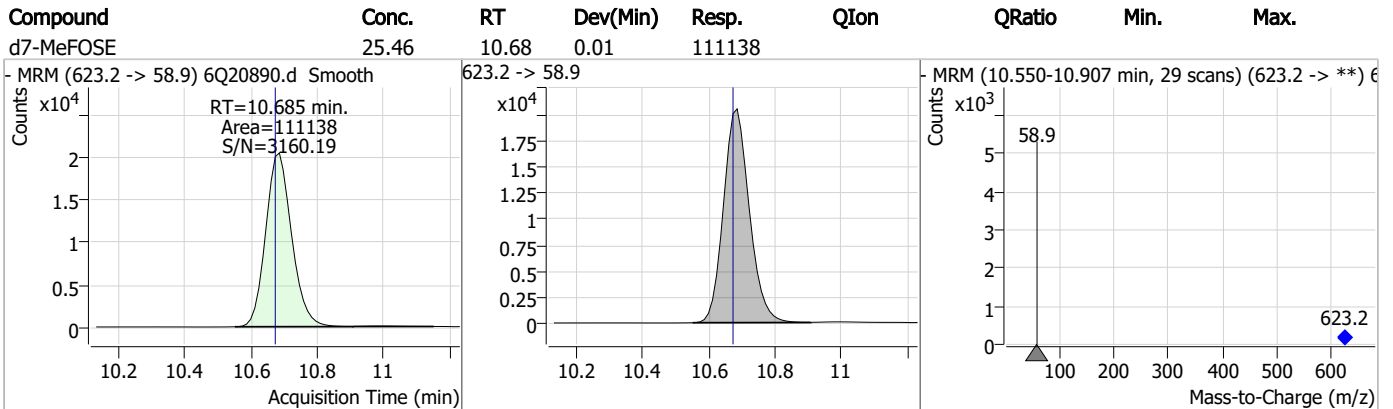
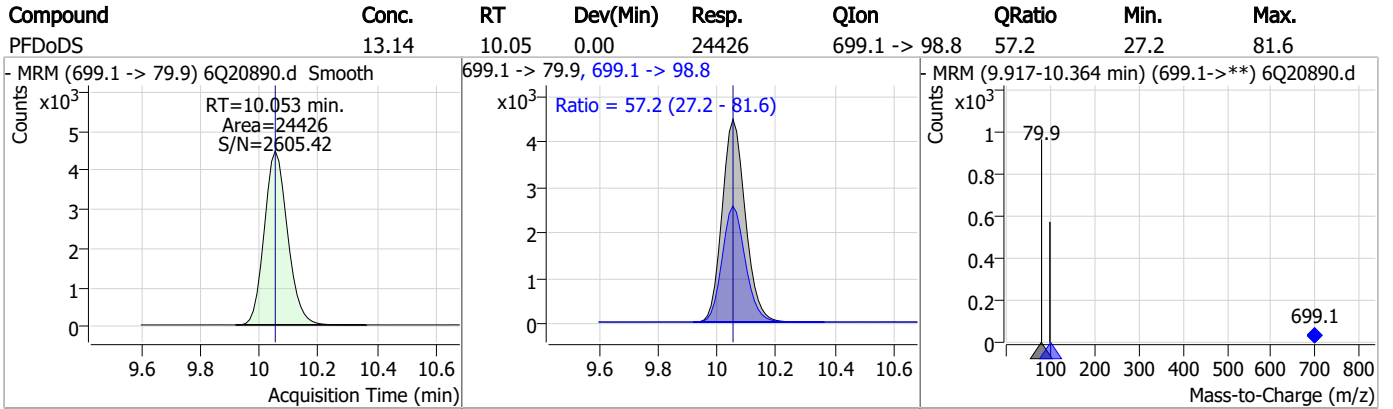
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Perfluorinated Compounds by LC/MS/MS

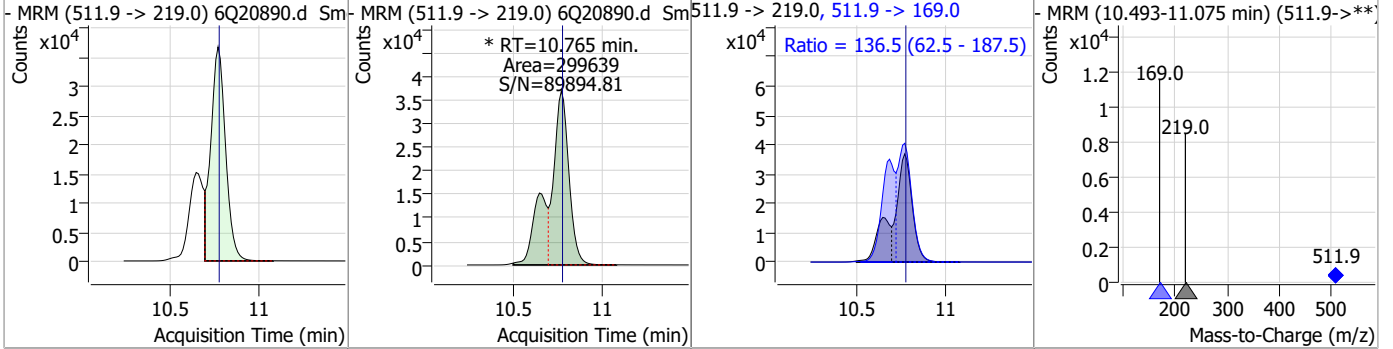


Perfluorinated Compounds by LC/MS/MS

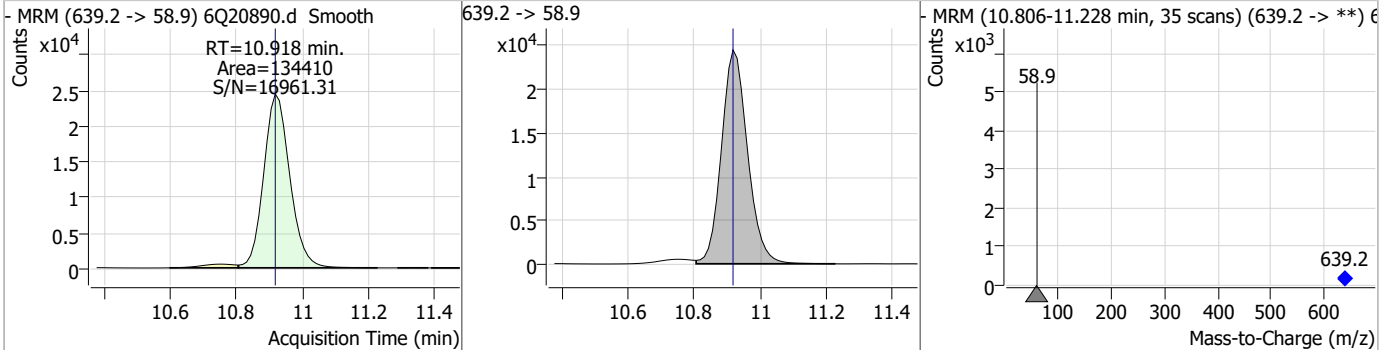


Perfluorinated Compounds by LC/MS/MS

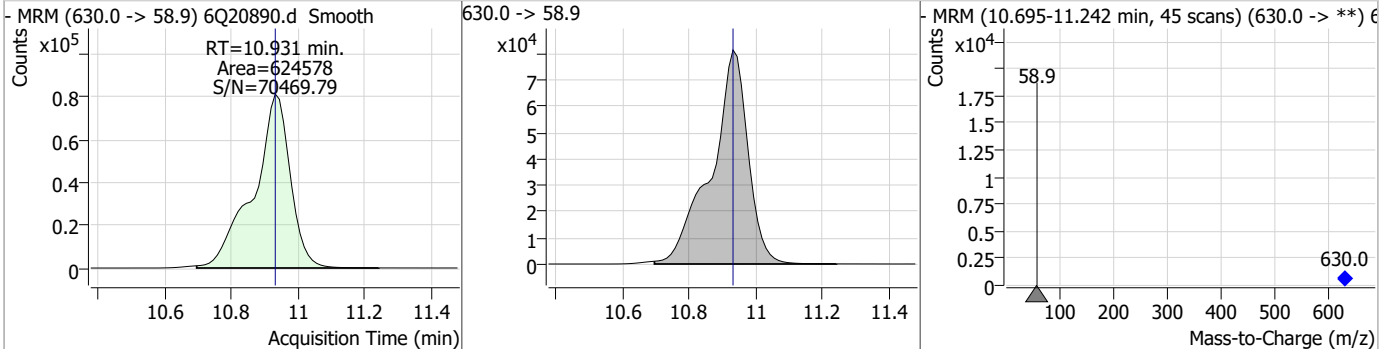
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSEA	46.84	10.76	0.00	299639 (m)	511.9 -> 169.0	136.5	62.5	187.5



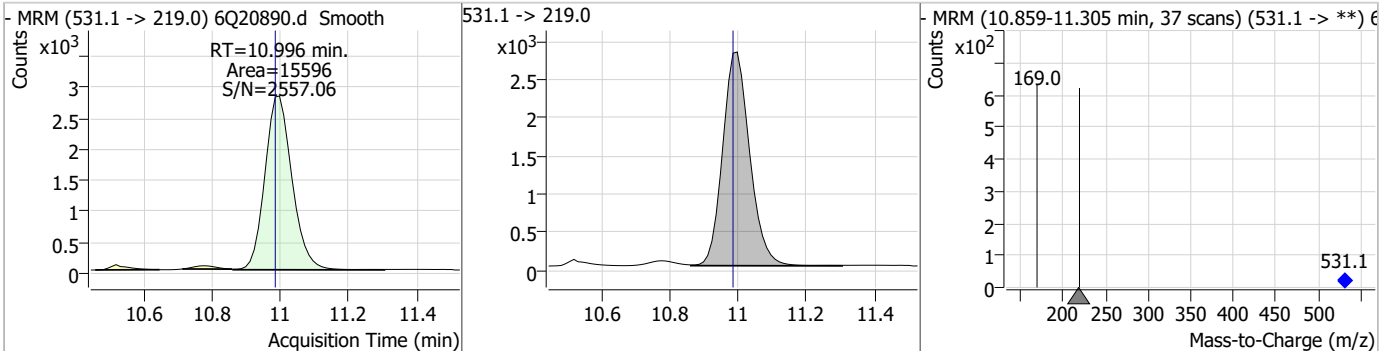
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.44	10.92	0.00	134410				



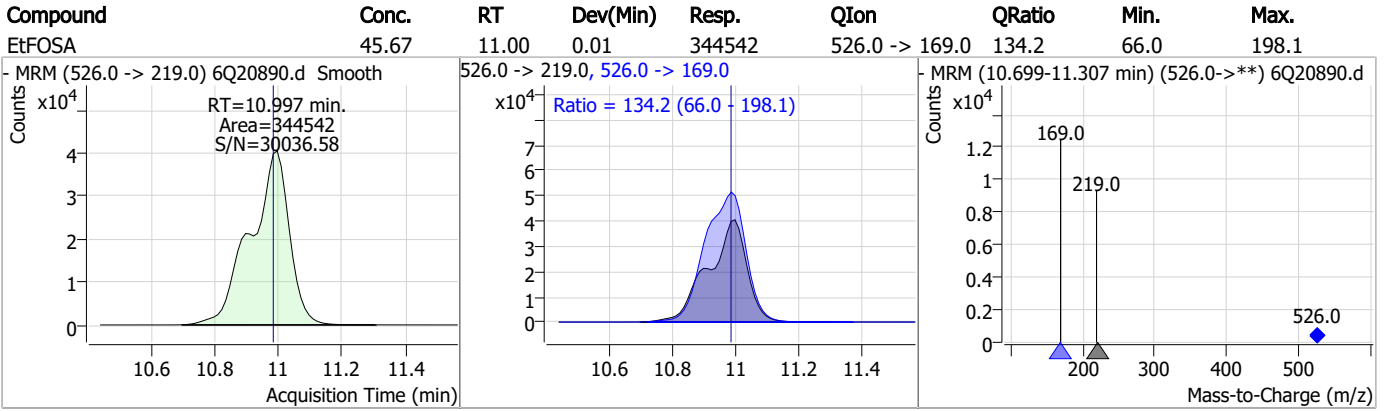
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	92.44	10.93	0.00	624578				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSEA	2.76	11.00	0.01	15596				



Perfluorinated Compounds by LC/MS/MS



7.6.4

7

Manual Integration Approval Summary

Sample Number: S6Q310-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20890.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 10:25 Supervisor approved: 07/17/23 11:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.26	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
Perfluorononanoic acid	375-95-1		7.81	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
PFOSA	754-91-6		9.68	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.6.4.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 07/17/23 11:26

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20981.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 7:37:23 AM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : S6Q310 TDCA.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M8-PFOS	8.476	507.1 -> 79.9	33025	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	46480	2.50 µg/L	0.000
System Monitoring Compounds					
13C8-PFOS	8.476	507.1 -> 79.9	33025	1.80 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 72.1%		
Target Compounds					
PFOS	8.478	498.9 -> 79.9	33710	2.99 µg/L m	93
		498.9 -> 98.8	18793		
TCDCa	6.789	498.9 -> 79.9	7691	5.05 ng/ml	100
TDCA	6.951	498.9 -> 79.9	10459	7.58 ng/ml	100
TUDCA	5.961	498.9 -> 79.9	10902	3.72 ng/ml	100

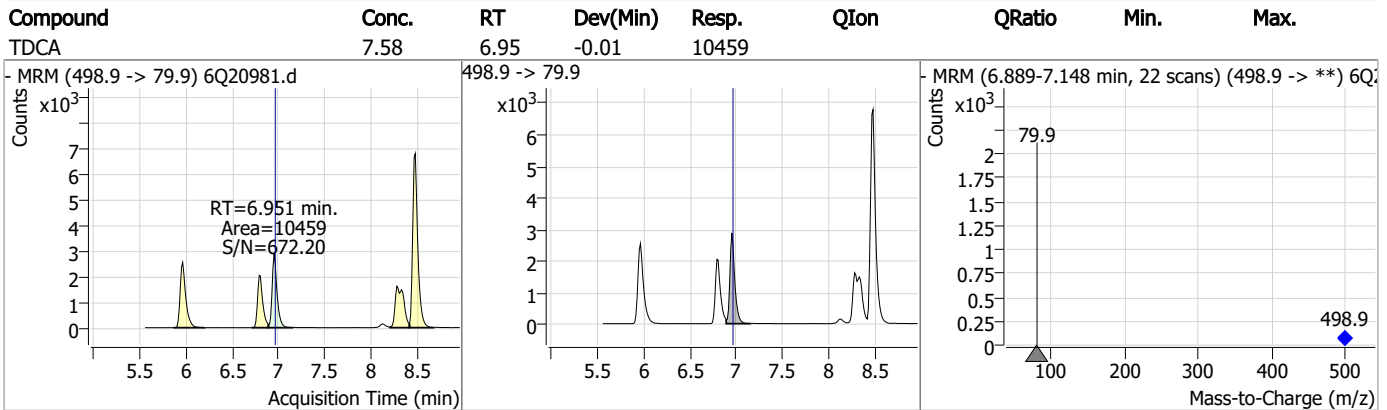
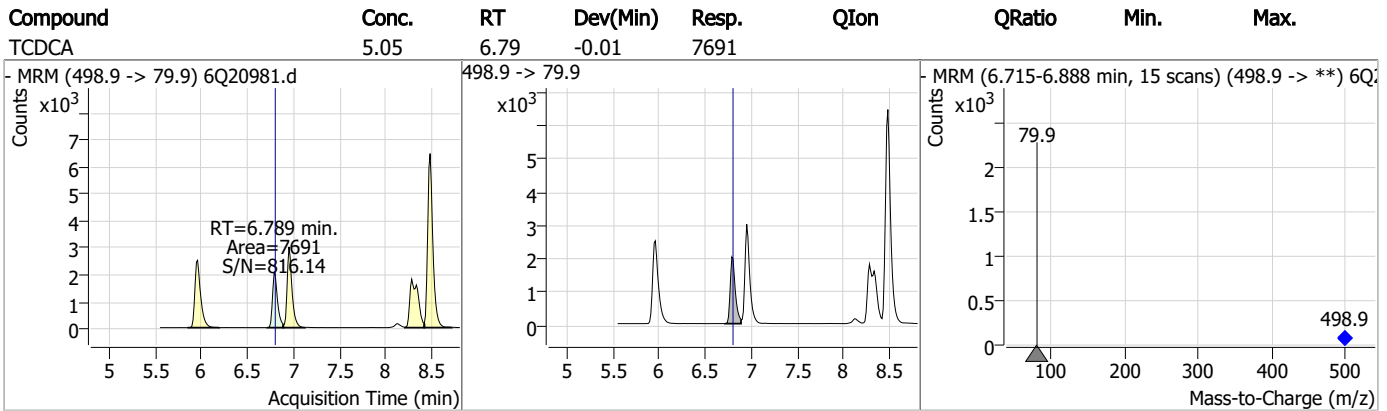
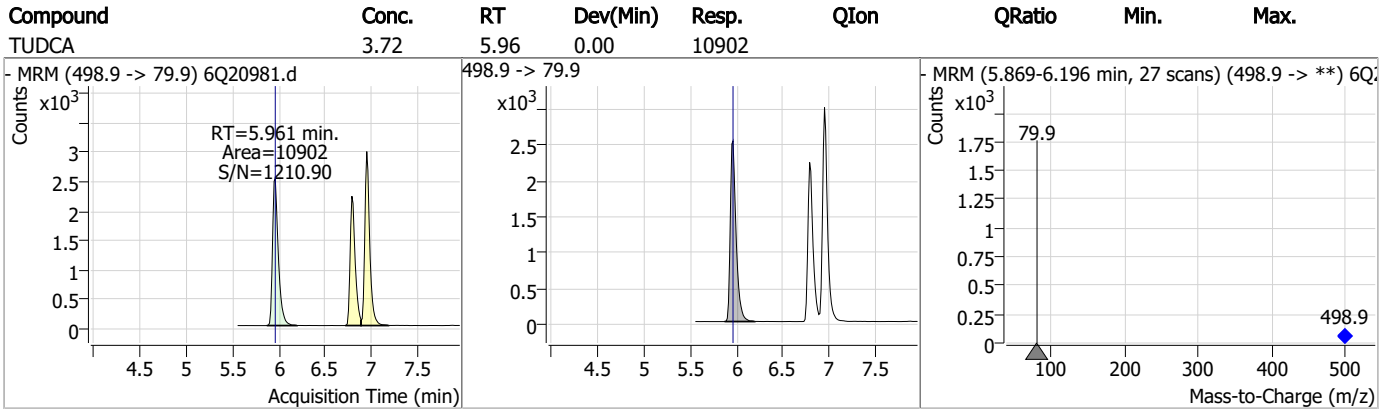
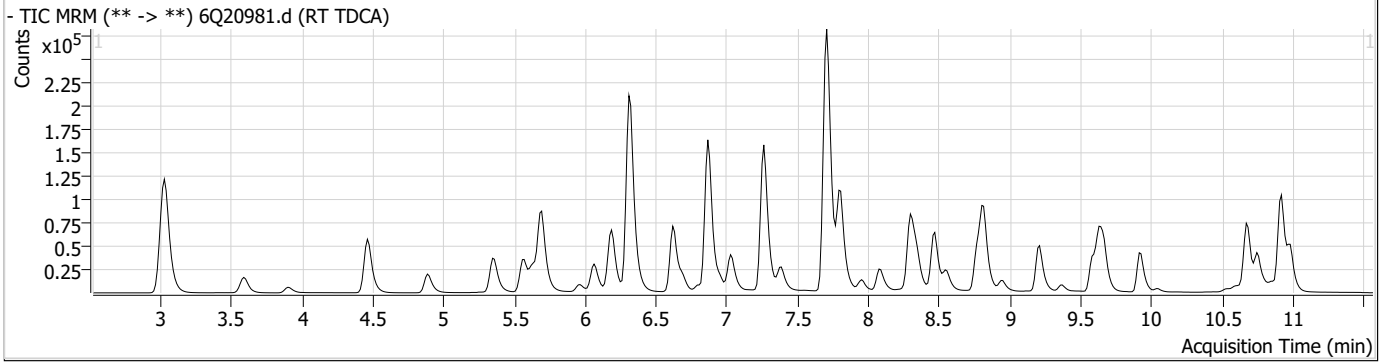
= Qualifier out of range, m = manually integrated, + = Area summed

7.6.5

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Perfluorinated Compounds by LC/MS/MS

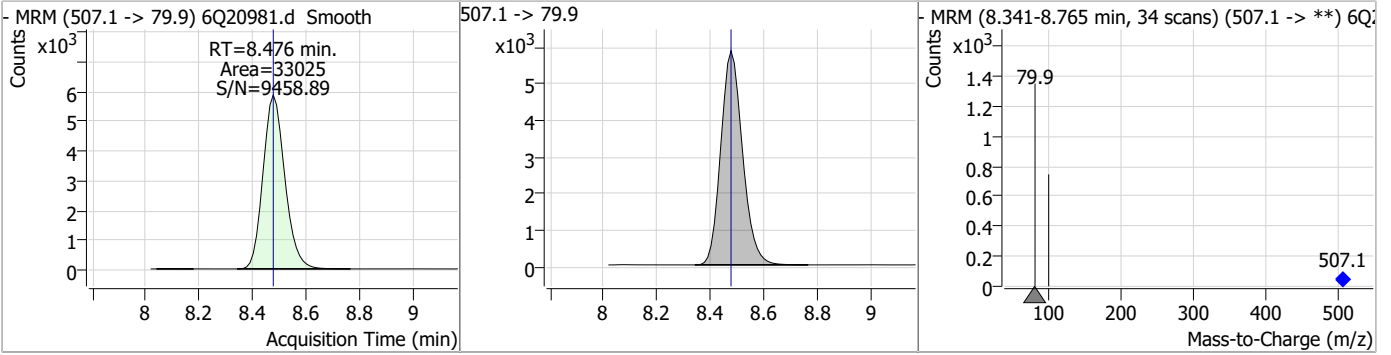


7.6.5

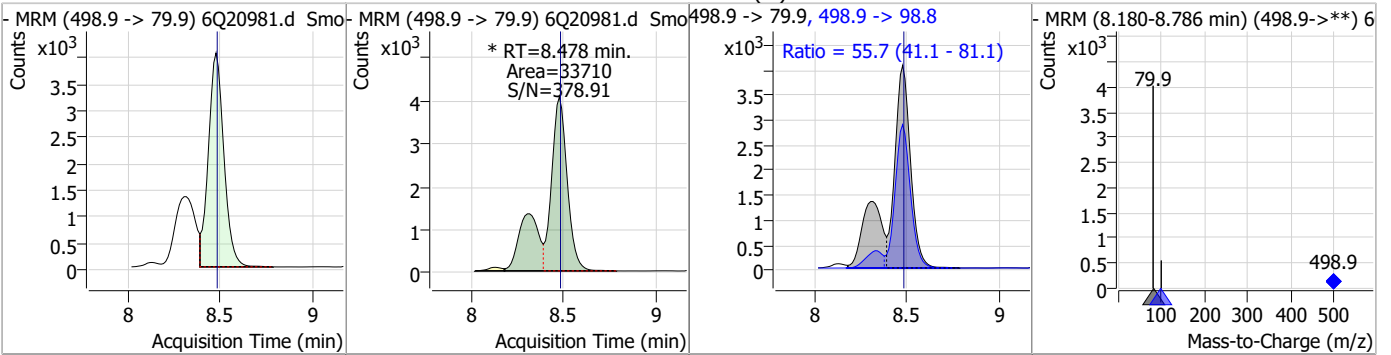
7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.80	8.48	0.00	33025				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.99	8.48	0.00	33710 (m)	498.9 -> 98.8	55.7	41.1	81.1



7.6.5

7



Manual Integration Approval Summary

Sample Number: S6Q310-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20981.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/14/23 07:37 Supervisor approved: 07/17/23 11:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak

7.6.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20982.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 7:51:22 AM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	180253	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	60143	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	63525	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	62286	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	94421	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	44379	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	25619	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	34927	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	32740	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	18382	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	36565	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	22696	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14047	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	13669	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2501	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3434	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3726	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	28545	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	39280	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	25706	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	104311	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	133894	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	14990	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	14389	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	18880	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	76932	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	11013	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	106170	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	36818	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	53891	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	67388	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2501	5.07 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 101.3%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3434	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3726	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-PFDoDA	9.211	615.1 -> 570.0	32740	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C2-PFTeDA	9.925	715.2 -> 670.0	18382	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 104.2%		
13C3-PFBS	5.635	302.1 -> 79.9	22696	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.4%		
13C3-PFHxS	7.392	402.1 -> 79.9	14047	2.39 µg/L	0.000

7.6.6
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFBA	3.022	216.8 -> 171.9	180253	9.89 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFHpA	6.621	367.1 -> 322.0	62286	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.5%	
13C5-PFHxA	5.692	318.0 -> 273.0	63525	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
13C5-PFPeA	4.459	268.3 -> 223.0	60143	4.79 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C6-PFDA	8.301	519.1 -> 474.1	25619	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	34927	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-FOSA	9.674	506.1 -> 77.8	36565	2.77 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.8%	
13C8-PFOA	7.264	421.1 -> 376.0	94421	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C8-PFOS	8.476	507.1 -> 79.9	13669	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C9-PFNA	7.807	472.1 -> 427.0	44379	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSAA	8.346	573.2 -> 419.0	28545	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	39280	9.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	14389	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
d5-EtFOSAA	8.554	589.2 -> 419.0	25706	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	104311	21.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
d9-EtFOSE	10.918	639.2 -> 58.9	133894	23.74 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	14990	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	231009	50.78 µg/L	99
		327.1 -> 80.9	80614		
6:2FTS	7.039	427.1 -> 407.0	224956	55.77 µg/L	99
		427.1 -> 80.9	69028		
8:2FTS	8.090	527.1 -> 507.0	120976	50.74 µg/L	88
		527.1 -> 80.8	48227		
EtFOSAA	8.555	584.2 -> 419.1	53825	13.31 µg/L	m 97
		584.2 -> 526.0	27974		
FOSA	9.677	498.1 -> 77.9	354571	24.75 µg/L	99
		498.1 -> 478.0	11590		
MeFOSAA	8.347	570.1 -> 419.0	90288	14.41 µg/L	m 96
		570.1 -> 483.0	17178		
PFBA	3.018	212.8 -> 168.9	391687	56.39 µg/L	100
PFBS	5.636	298.7 -> 79.9	109977	12.18 µg/L	96
		298.7 -> 98.8	42462		
PFDA	8.301	512.9 -> 469.0	527367	14.78 µg/L	100
		512.9 -> 219.0	80394		
PFDoDA	9.211	613.1 -> 569.0	393234	15.35 µg/L	98
		613.1 -> 319.0	58420		
PFDS	9.374	599.0 -> 79.9	54801	13.45 µg/L	99

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	28299			
PFHpA	6.633	363.1 -> 319.0	440189	14.64	µg/L	99
		363.1 -> 169.0	72081			
PFHpS	7.972	449.0 -> 79.9	104054	13.21	µg/L	100
		449.0 -> 98.9	51894			
PFHxA	5.694	313.0 -> 269.0	331902	14.25	µg/L	99
		313.0 -> 118.9	17192			
PFHxS	7.393	398.7 -> 79.9	94451	12.64	µg/L	m 98
		398.7 -> 98.9	50257			
PFNA	7.808	463.0 -> 419.0	1074046	30.44	µg/L	m 97
		463.0 -> 219.0	216472			
PFNS	8.955	548.8 -> 79.9	85199	12.45	µg/L	90
		548.8 -> 98.9	49447			
PFOA	7.265	413.0 -> 369.0	1308737	29.22	µg/L	m 97
		413.0 -> 169.0	239313			
PFOS	8.478	498.9 -> 79.9	93816	12.63	µg/L	m 73
		498.9 -> 98.8	47125			
PFPeA	4.461	263.0 -> 219.0	437743	27.31	µg/L	100
PFPeS	6.697	349.1 -> 79.9	99065	13.56	µg/L	97
		349.1 -> 98.9	43717			
PFTeDA	9.926	713.1 -> 669.0	309701	14.75	µg/L	99
		713.1 -> 168.9	29314			
PFTrDA	9.595	663.0 -> 619.0	370891	15.04	µg/L	100
		663.0 -> 168.9	41733			
PFUnDA	8.780	563.1 -> 519.0	334476	13.00	µg/L	98
		563.1 -> 269.1	53318			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	488711	26.58	µg/L	95
		632.9 -> 452.9	162638			
9Cl-PF3ONS	8.819	530.8 -> 351.0	815194	27.36	µg/L	98
		532.8 -> 353.0	227919			
ADONA	6.883	376.9 -> 250.9	1746515	26.83	µg/L	99
		376.9 -> 84.8	417691			
HFPO-DA	6.071	284.9 -> 168.9	107559	26.73	µg/L	99
		284.9 -> 184.9	11821			
3:3FTCA	3.883	241.0 -> 177.0	79208	70.30	µg/L	99
		241.0 -> 117.0	10337			
5:3FTCA	6.310	341.0 -> 237.1	1728246	355.22	µg/L	99
		341.0 -> 217.0	1206706			
7:3FTCA	7.711	441.0 -> 316.9	1241032	364.12	µg/L	87
		441.0 -> 336.9	2787981			
EtFOSA	10.985	526.0 -> 219.0	331961	45.78	µg/L	96
		526.0 -> 169.0	455578			
EtFOSE	10.931	630.0 -> 58.9	645629	95.93	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	304594	49.50	µg/L	m 89
		511.9 -> 169.0	418769			
MeFOSE	10.697	616.1 -> 58.9	445270	101.95	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	26003	13.98	µg/L	99
		699.1 -> 98.8	13973			
NFDHA	5.576	295.0 -> 201.0	80306	28.25	µg/L	97
		295.0 -> 84.9	19949			
PFMBA	4.882	279.0 -> 85.1	292022	27.74	µg/L	100
PFMPA	3.588	229.0 -> 84.9	249191	28.11	µg/L	100
PFEESA	6.188	314.8 -> 134.9	815820	25.02	µg/L	100
		314.8 -> 82.9	25304			

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

7.6.6
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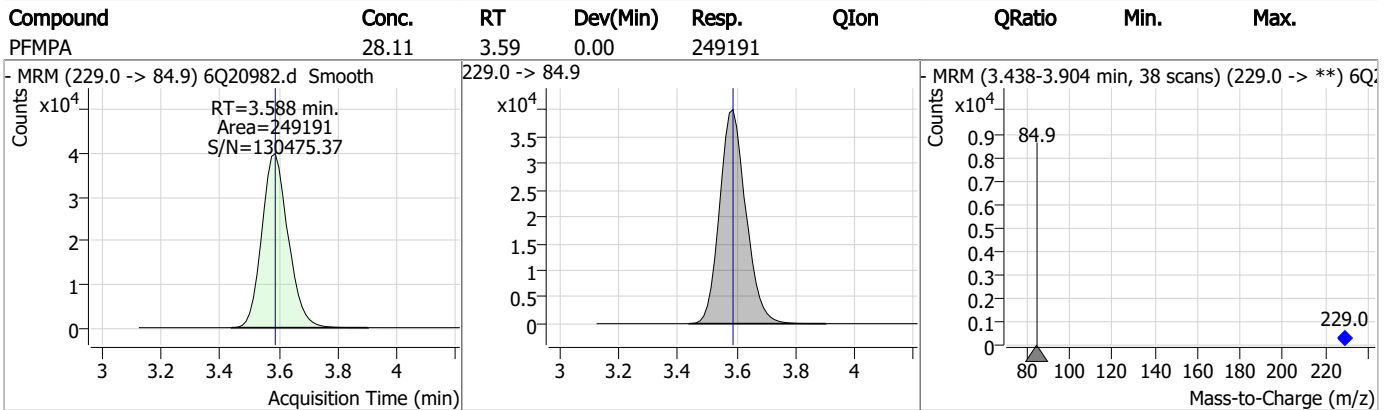
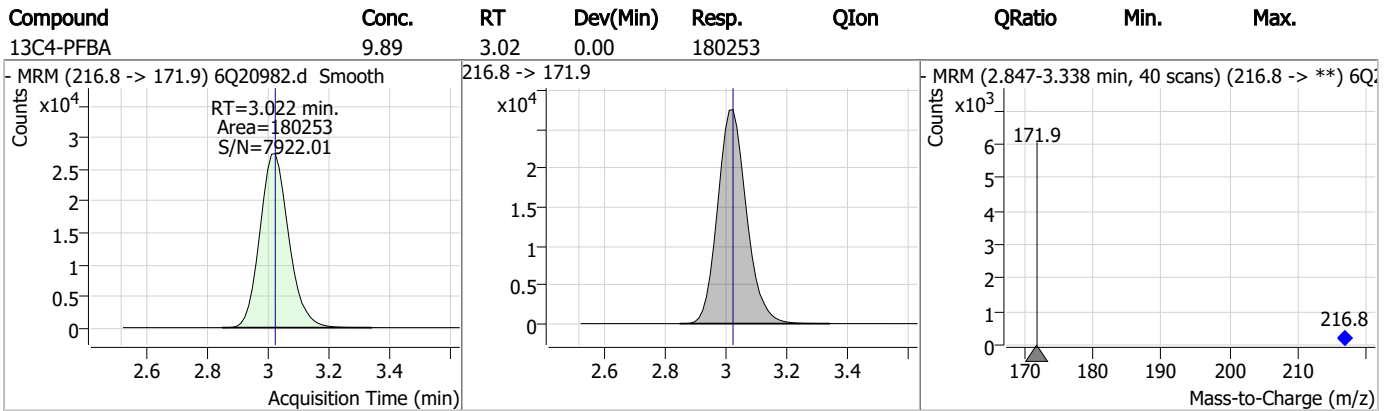
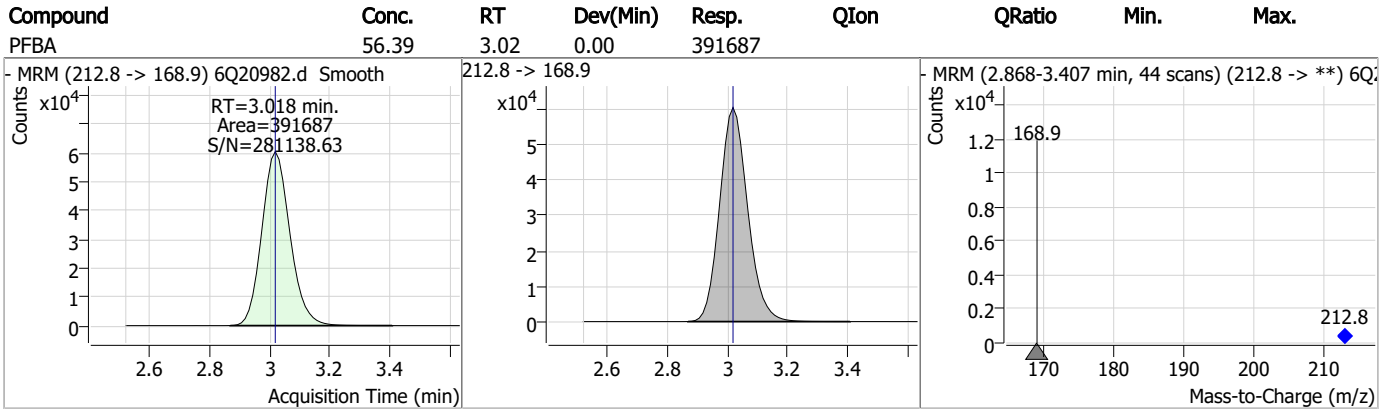
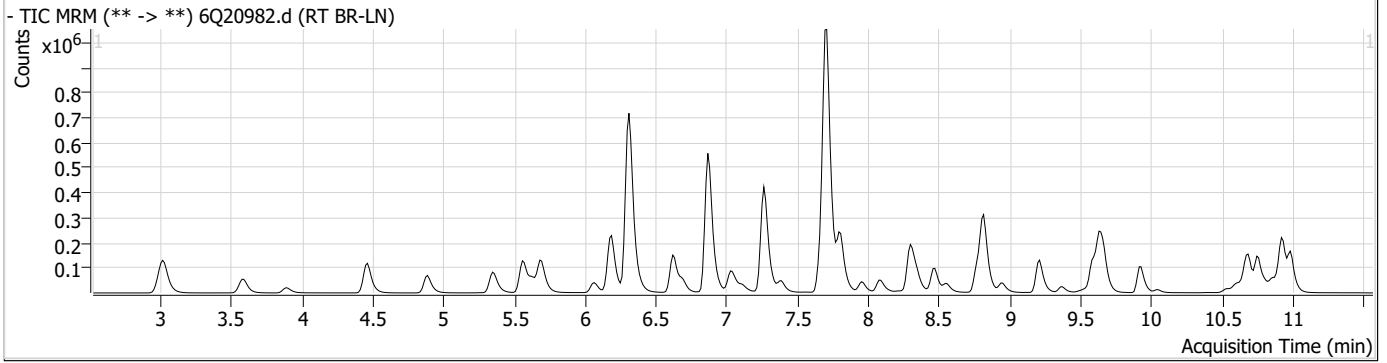
Perfluorinated Compounds by LC/MS/MS

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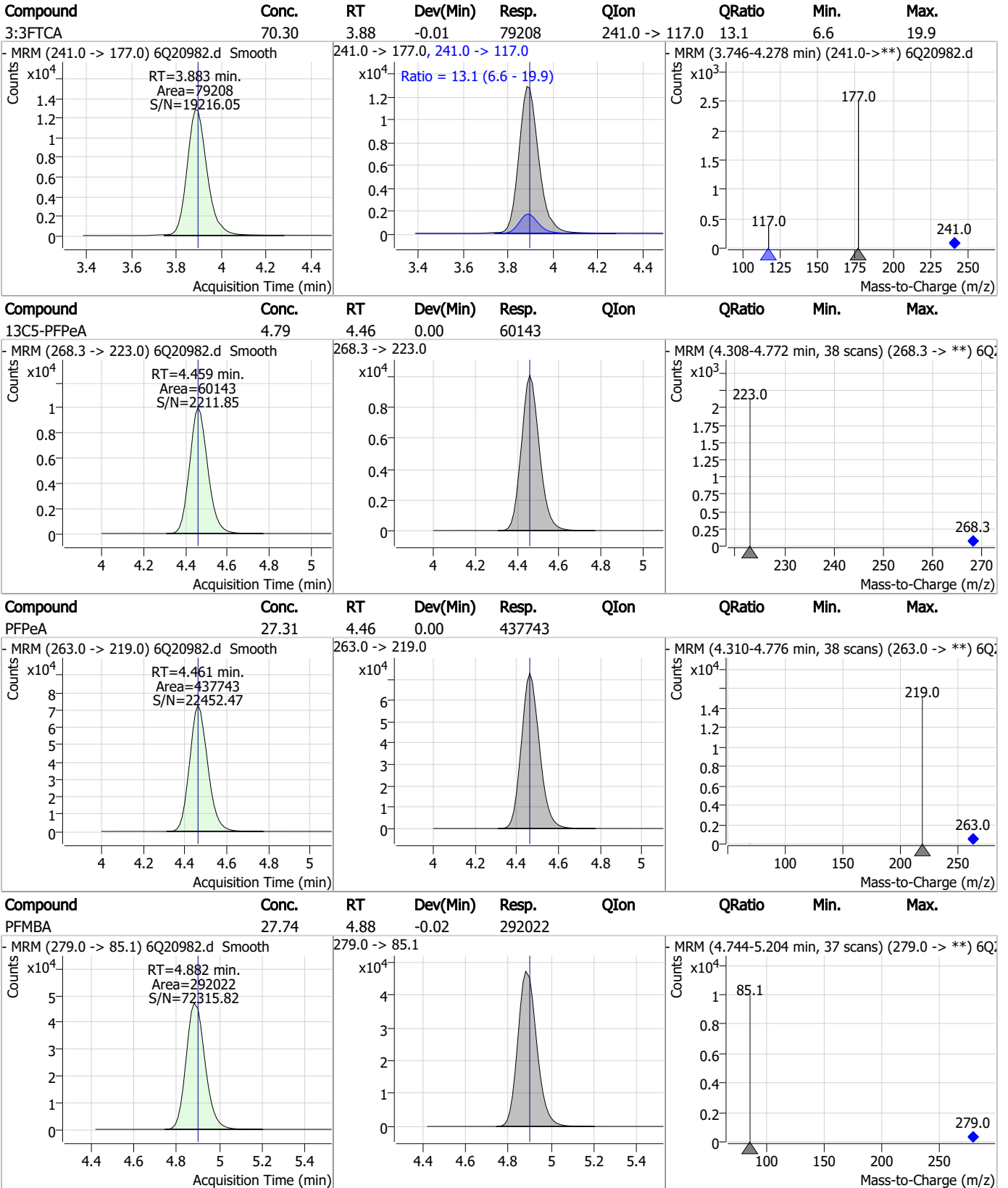
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Perfluorinated Compounds by LC/MS/MS



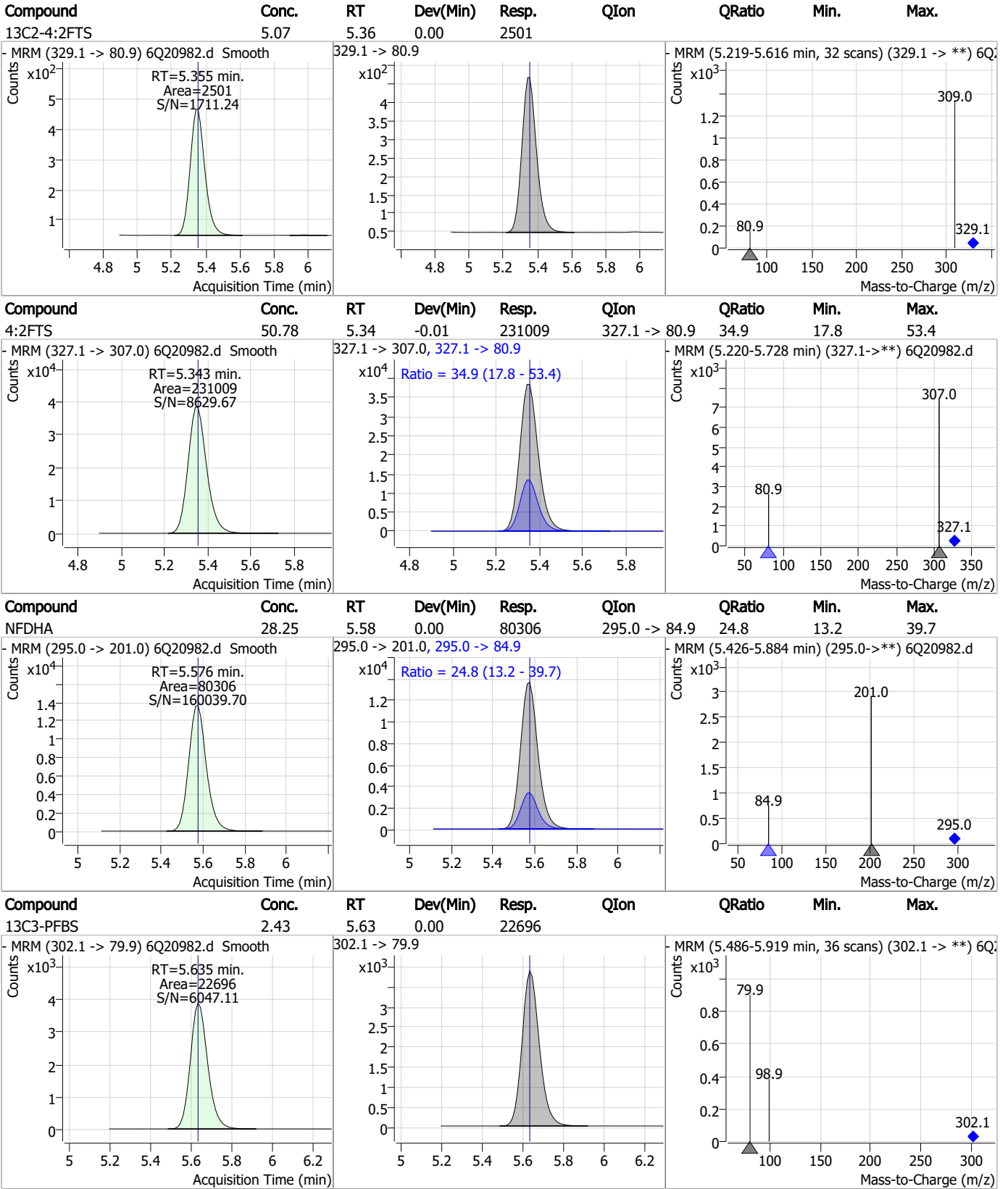
Perfluorinated Compounds by LC/MS/MS



7.6.6

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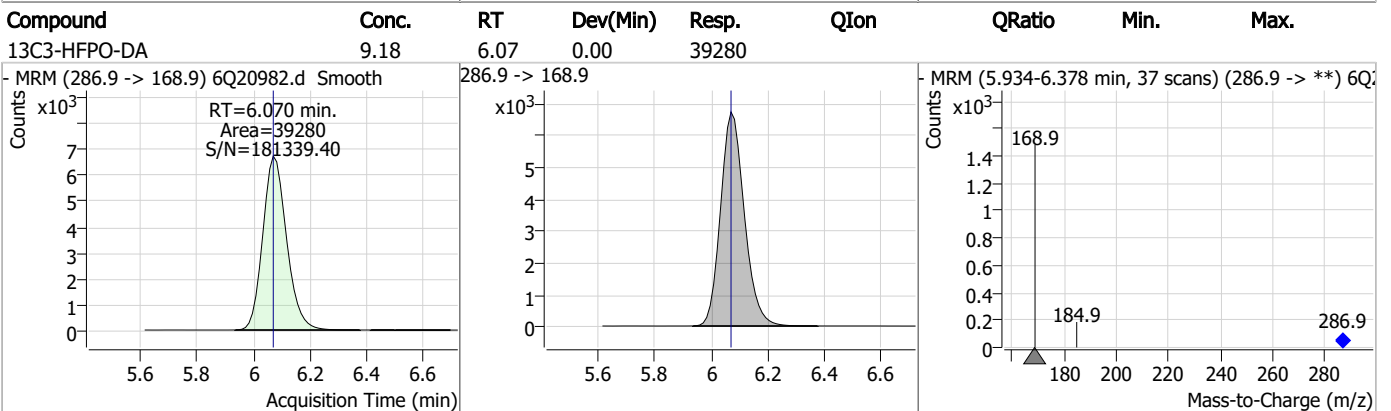
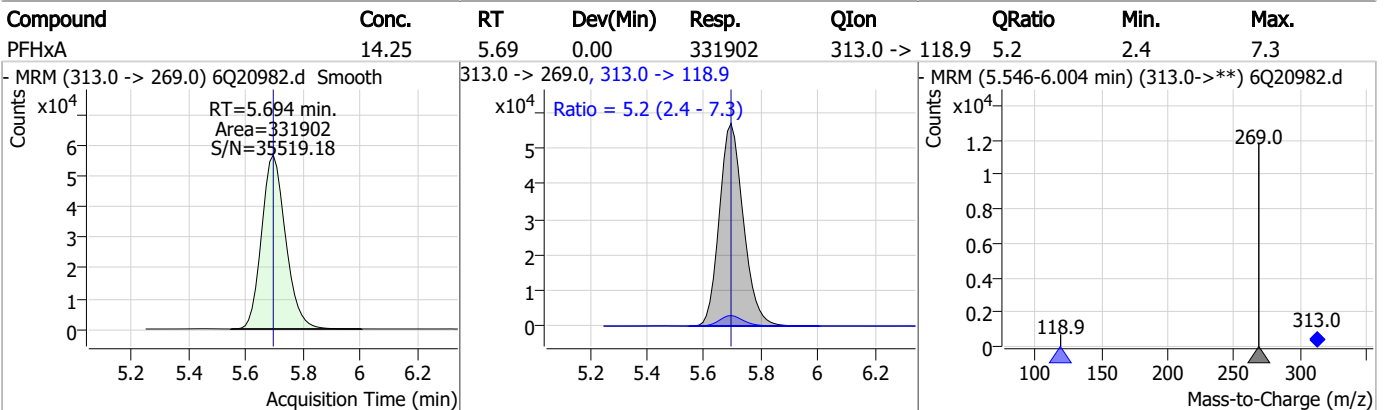
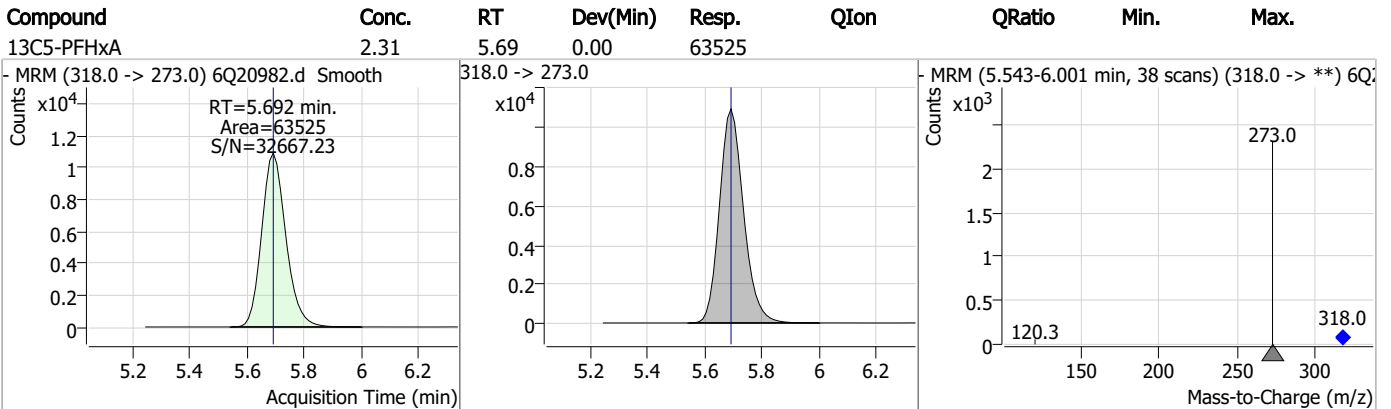
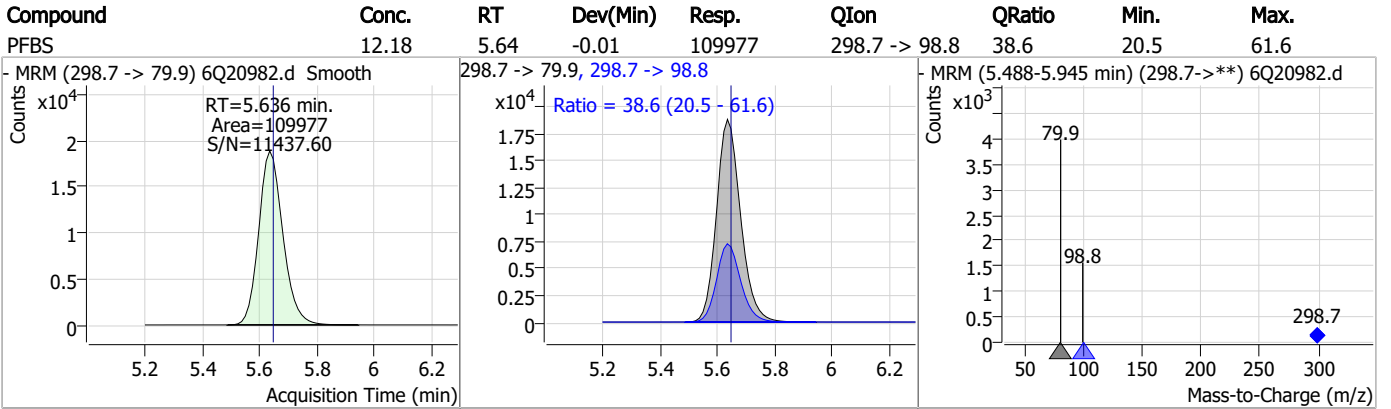
Perfluorinated Compounds by LC/MS/MS



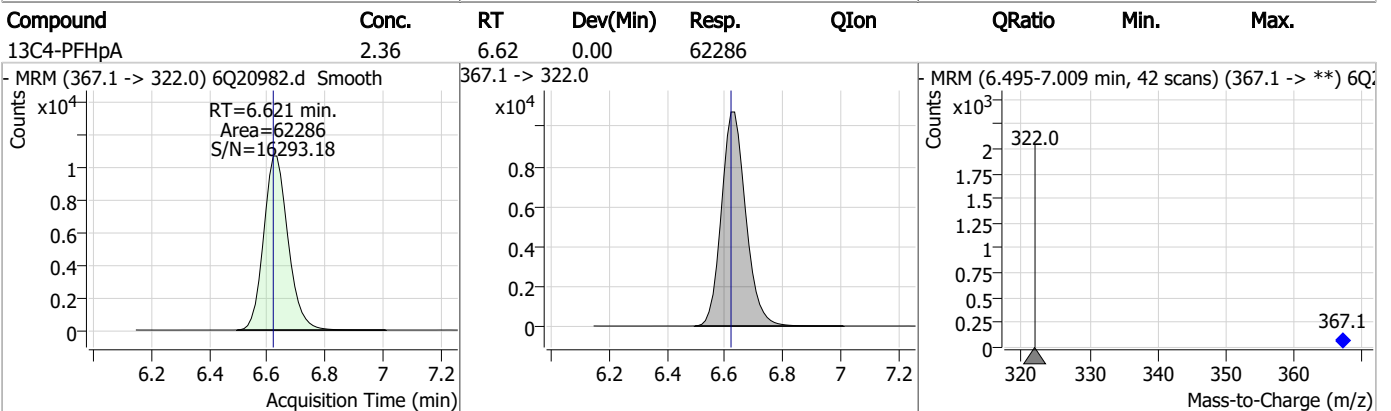
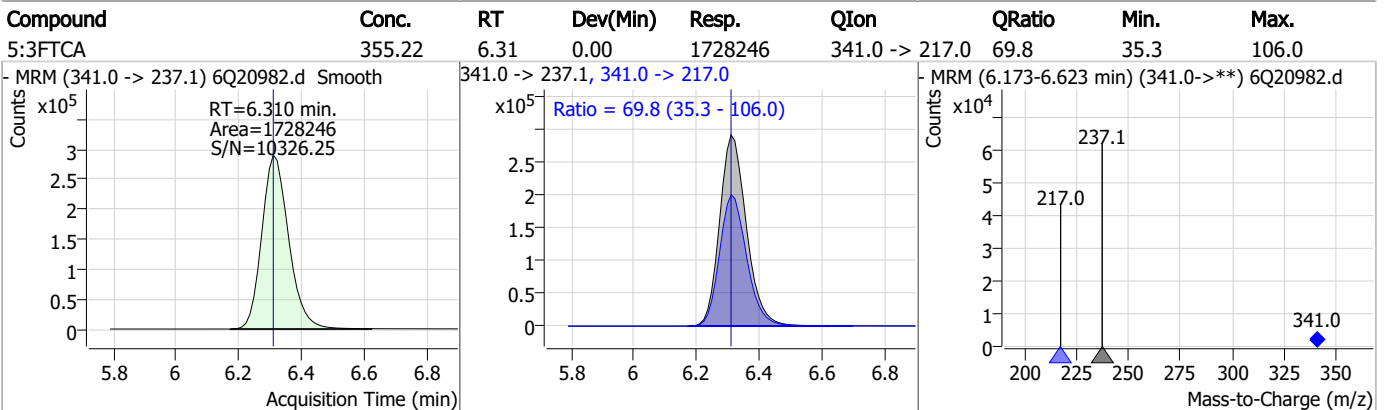
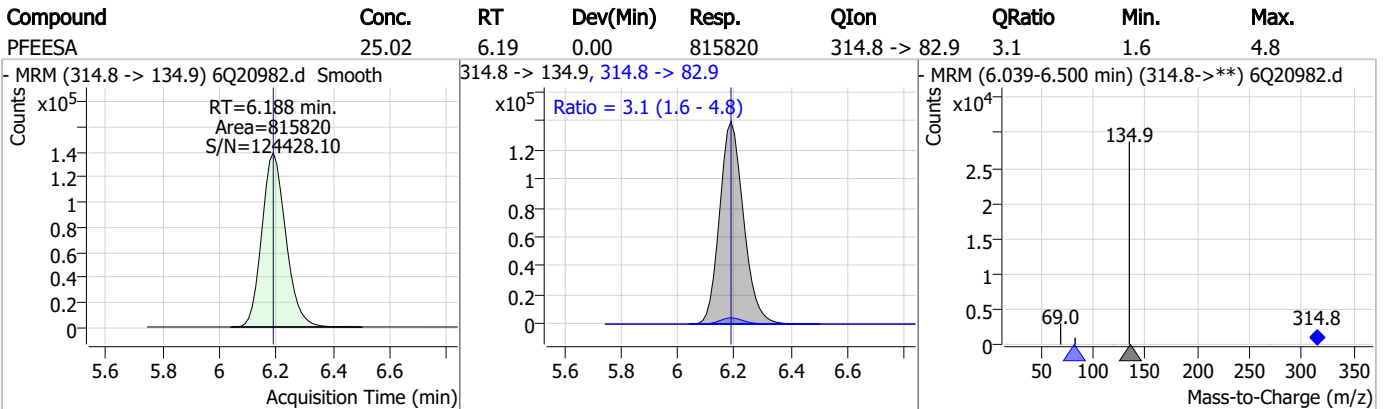
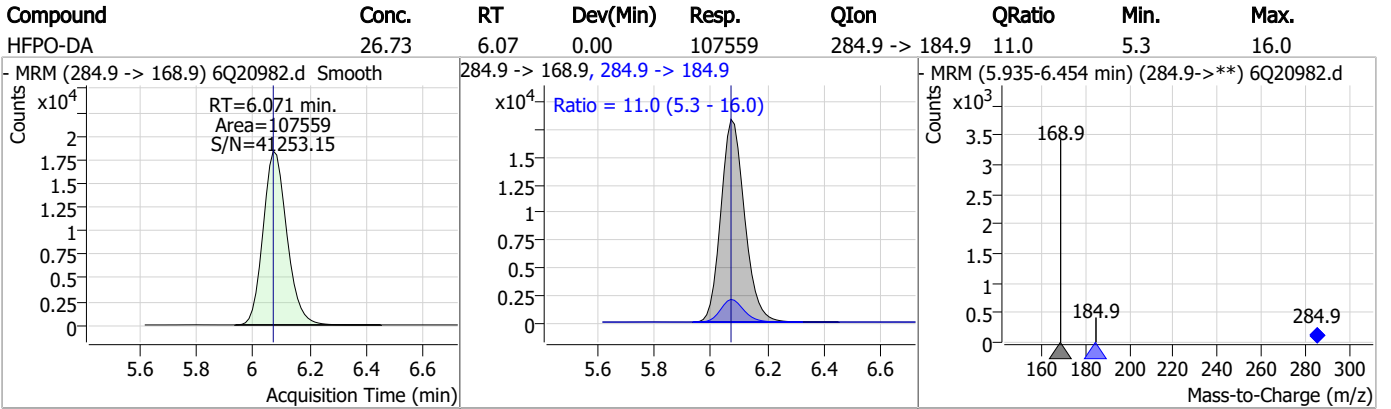
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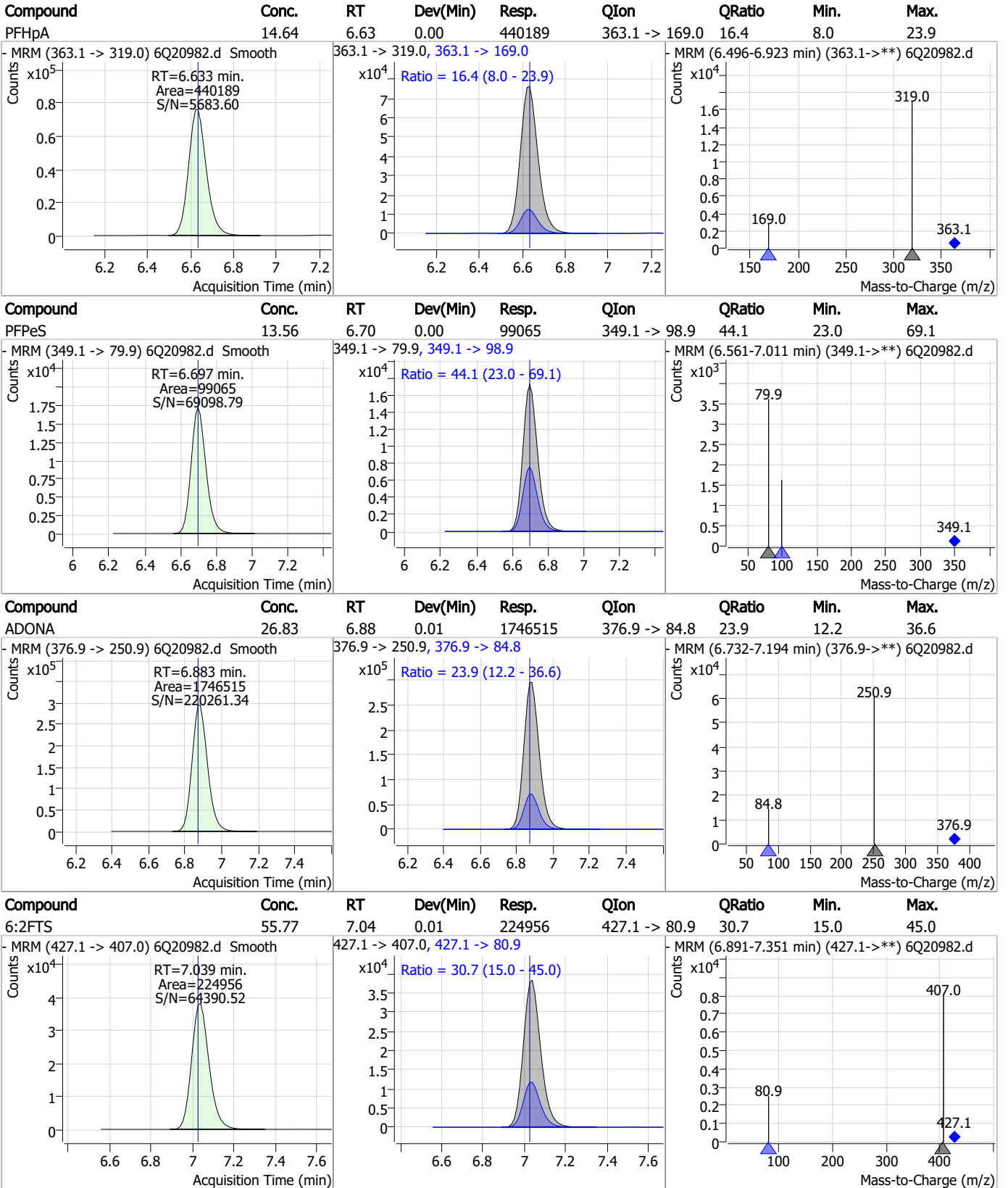
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



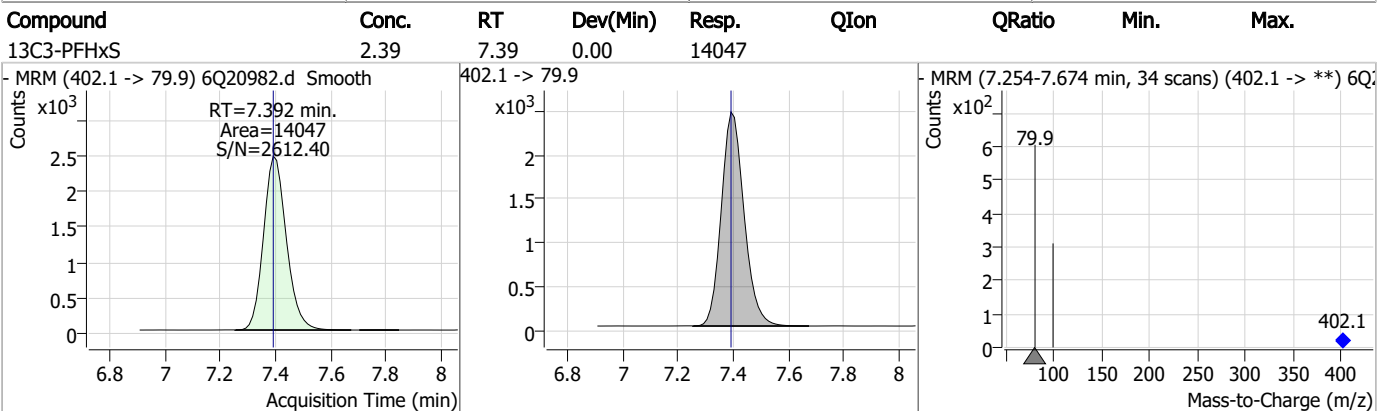
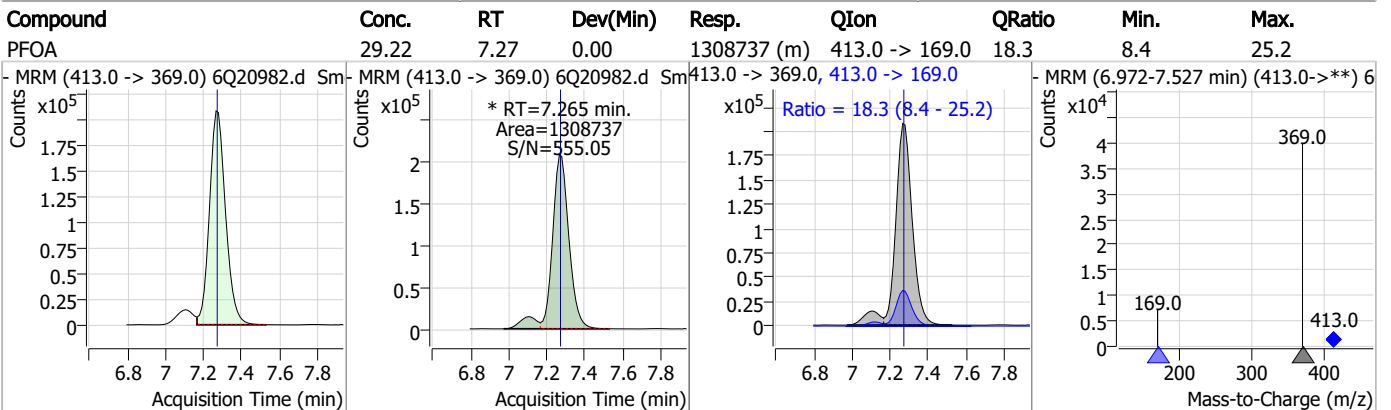
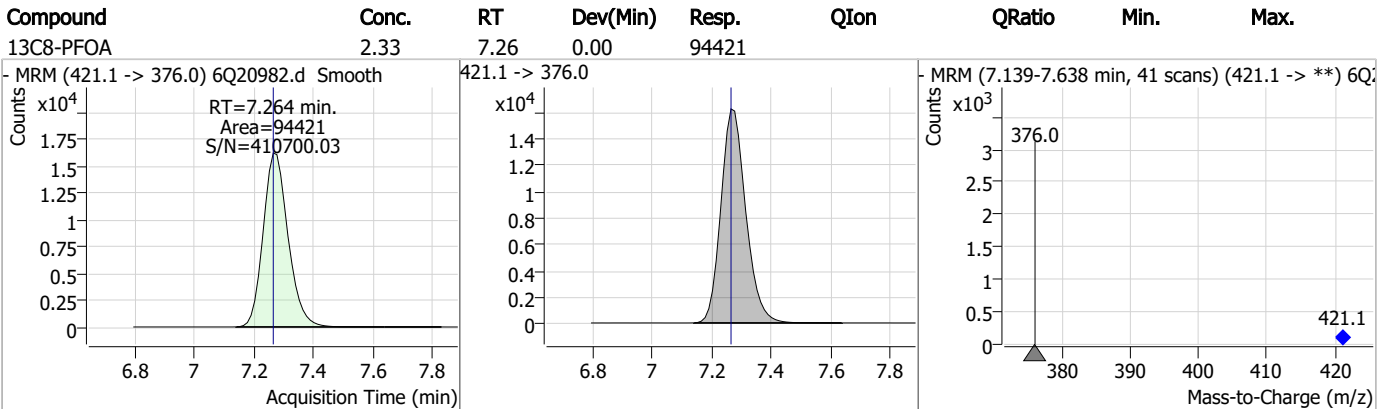
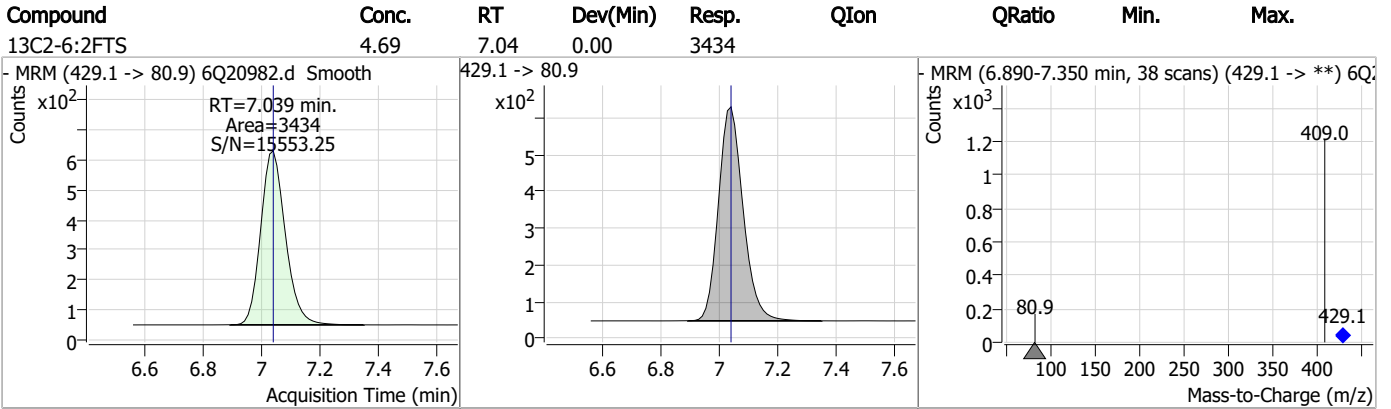
Perfluorinated Compounds by LC/MS/MS



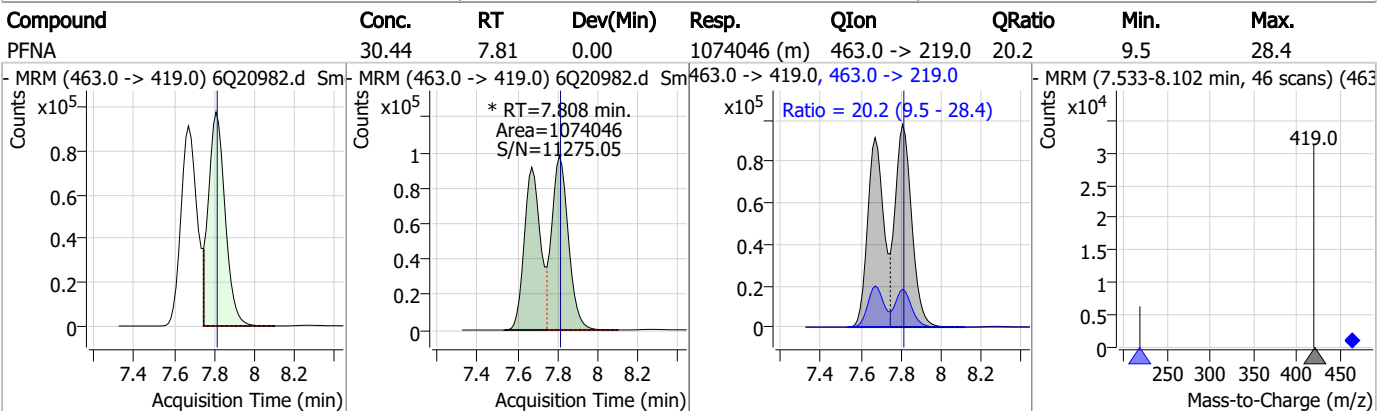
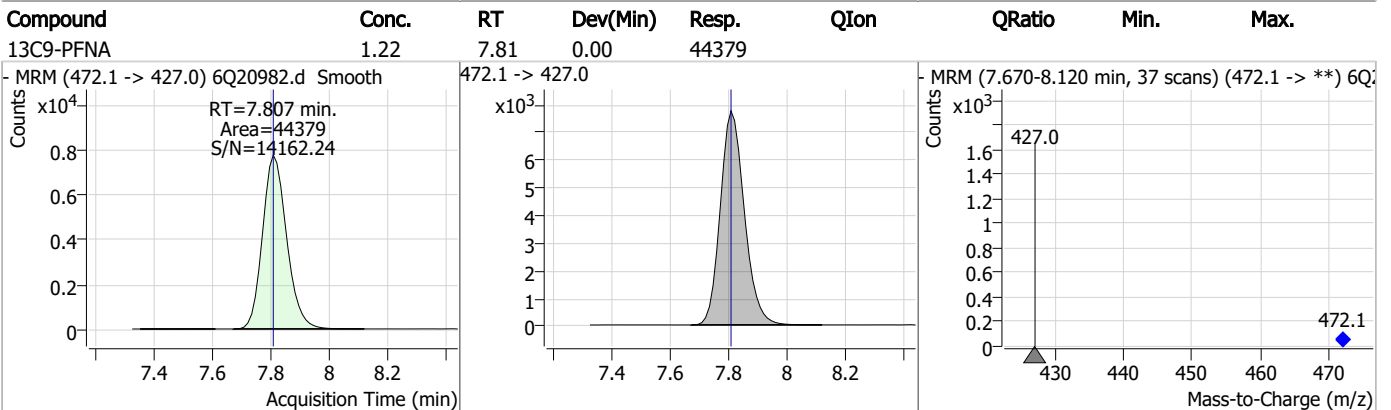
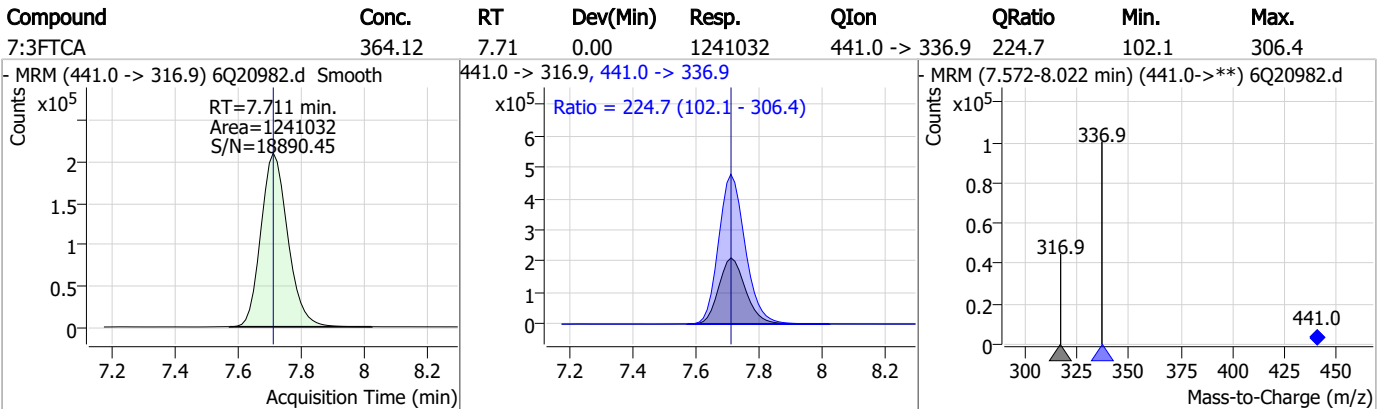
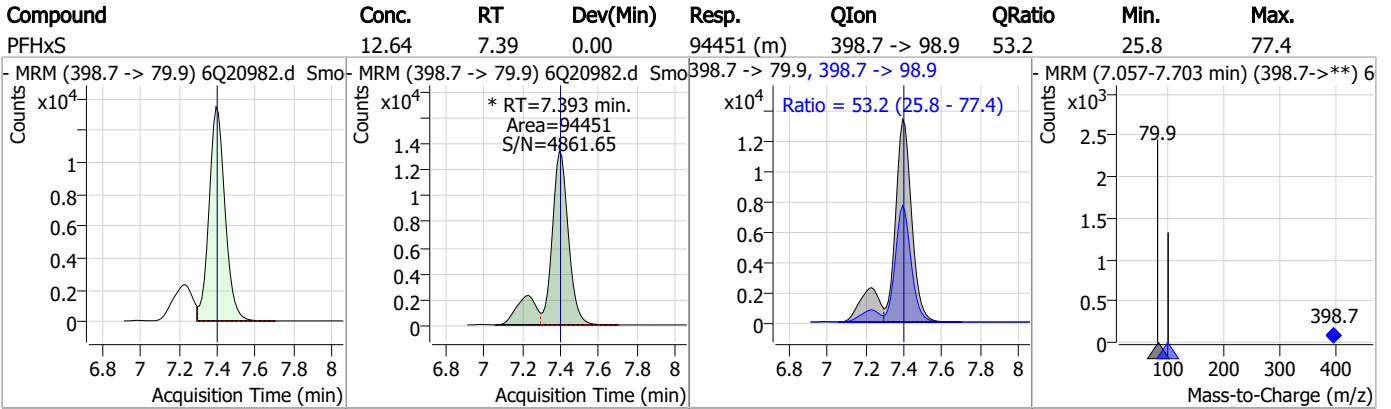
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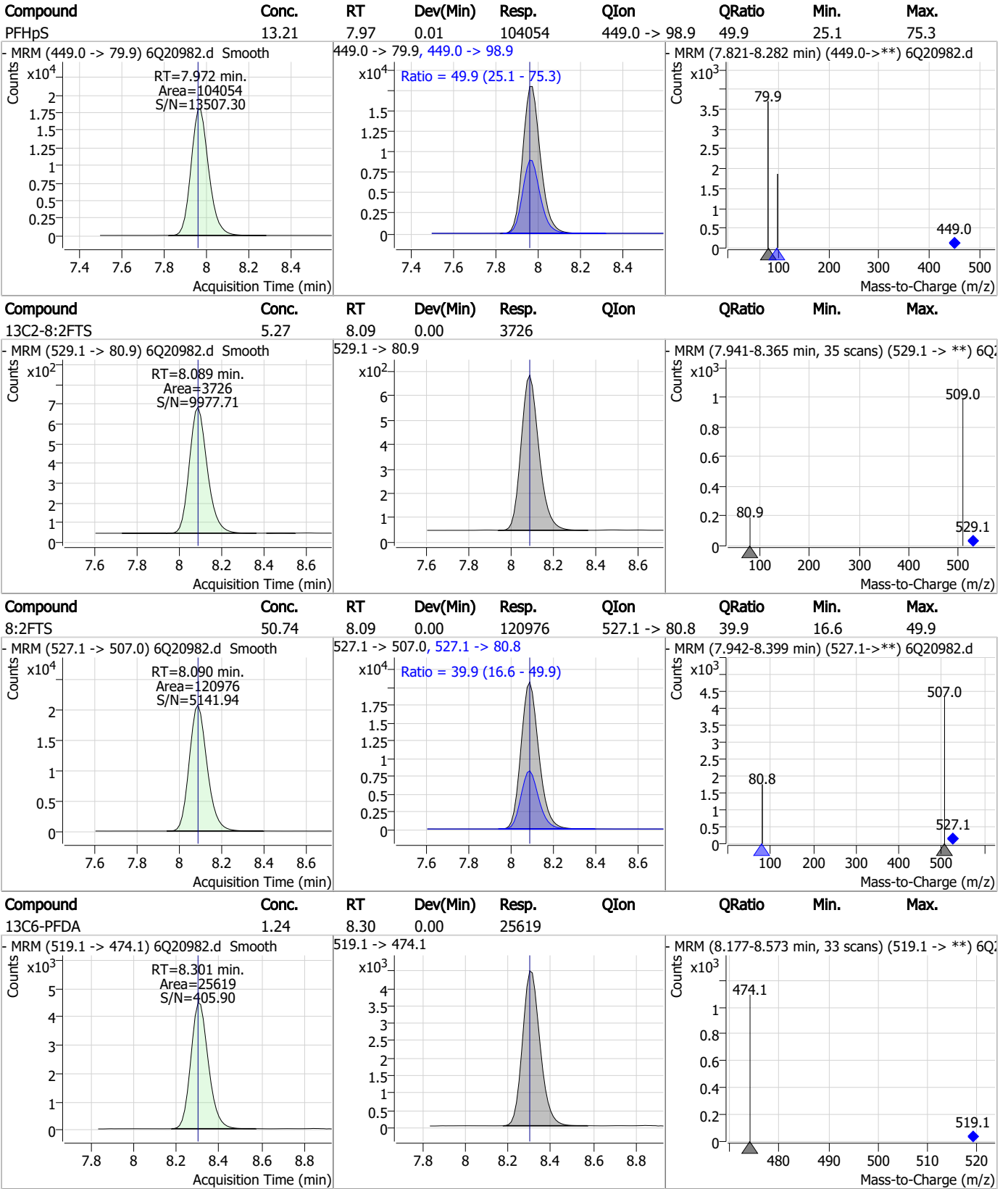
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



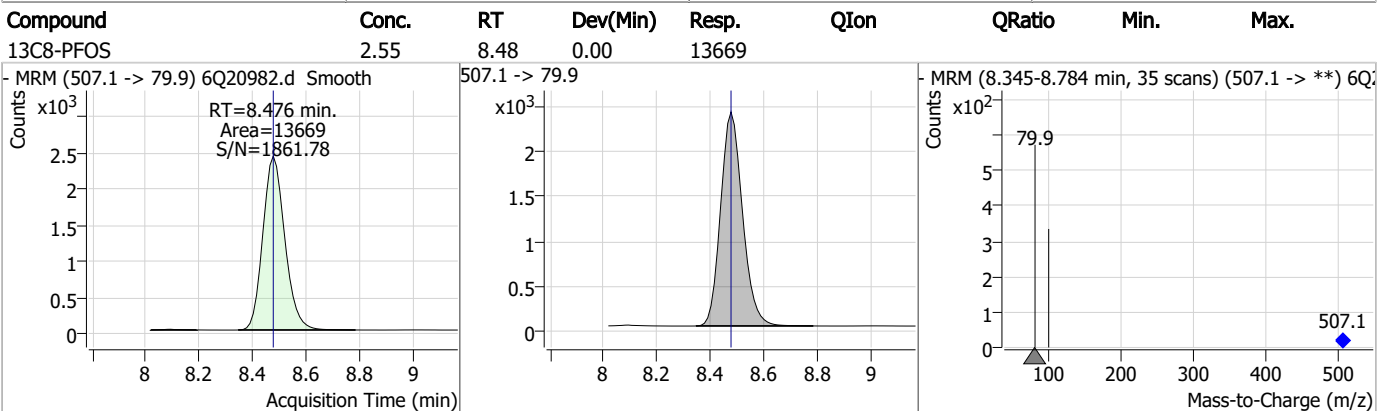
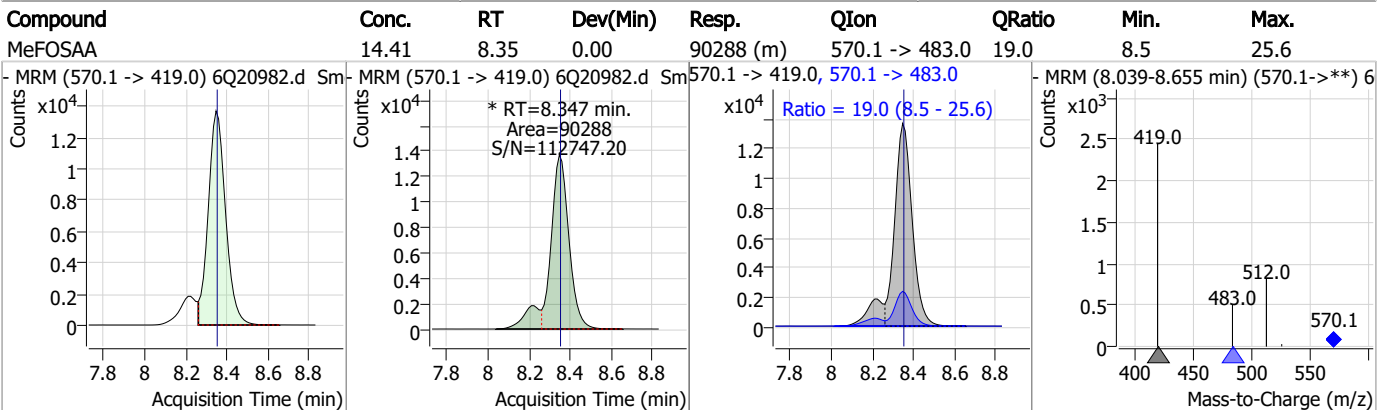
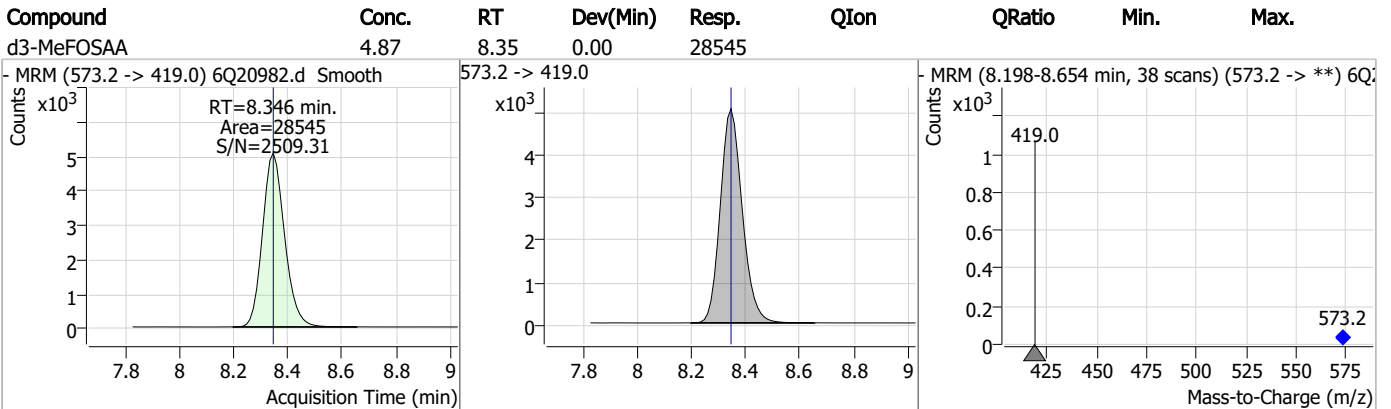
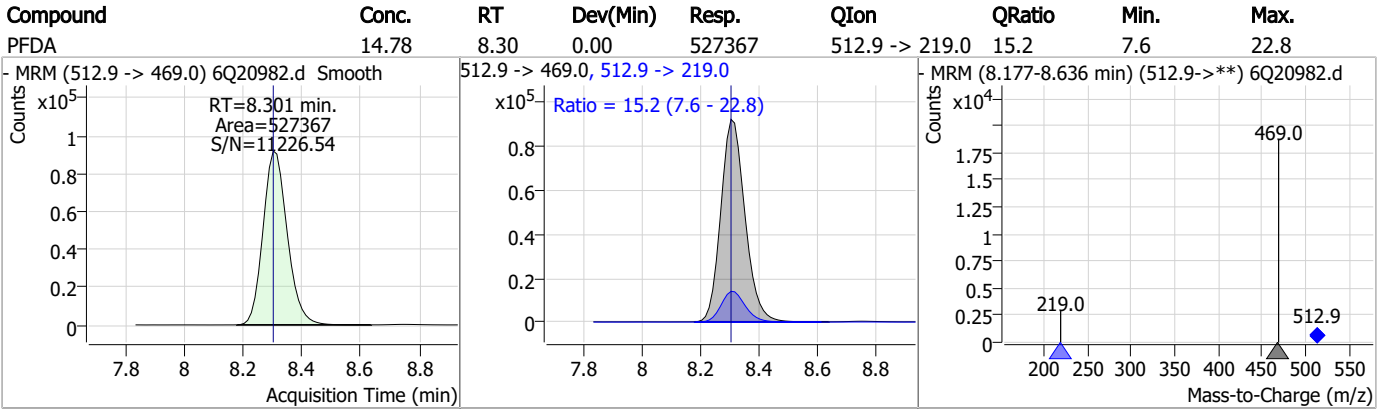
Perfluorinated Compounds by LC/MS/MS



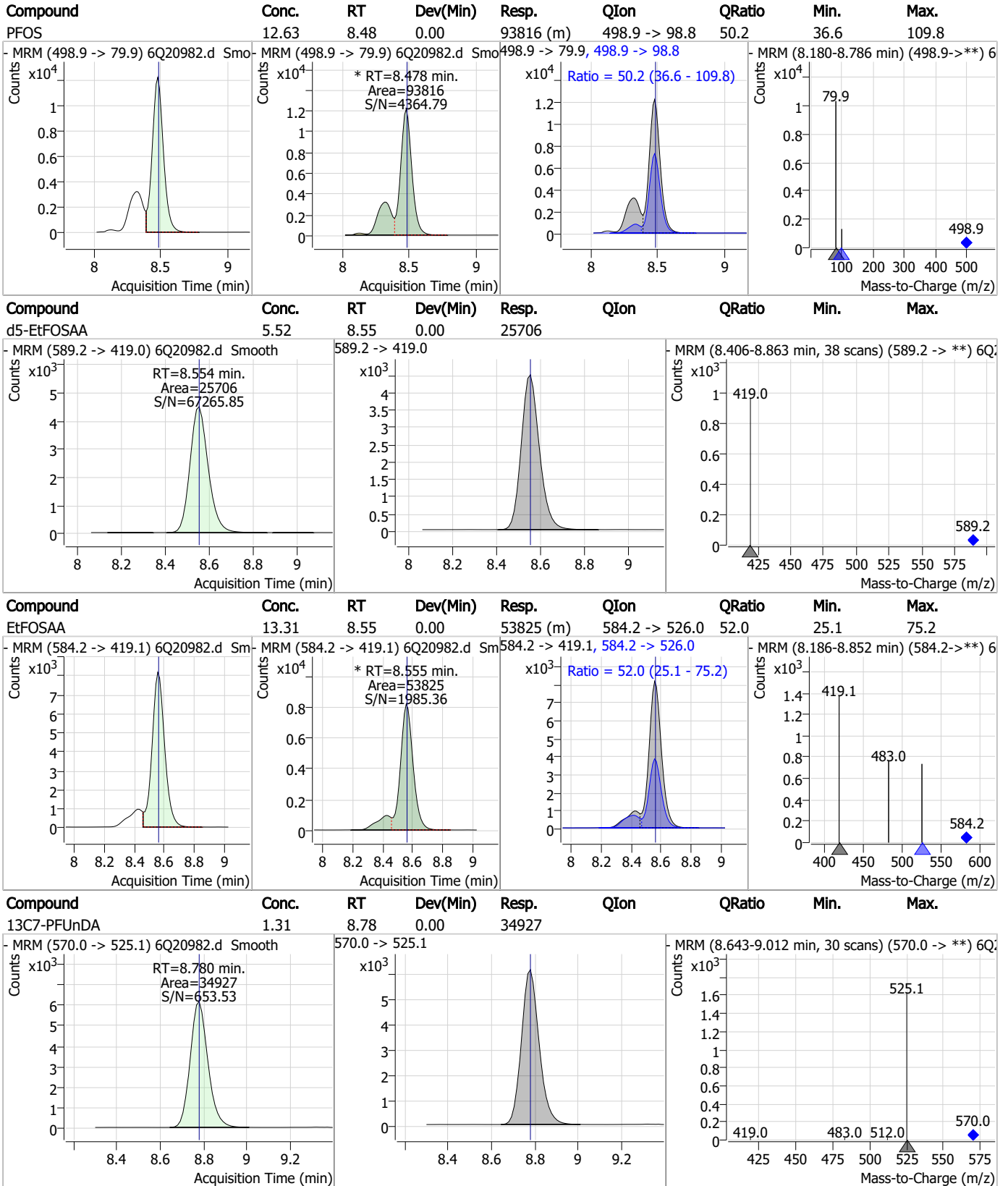
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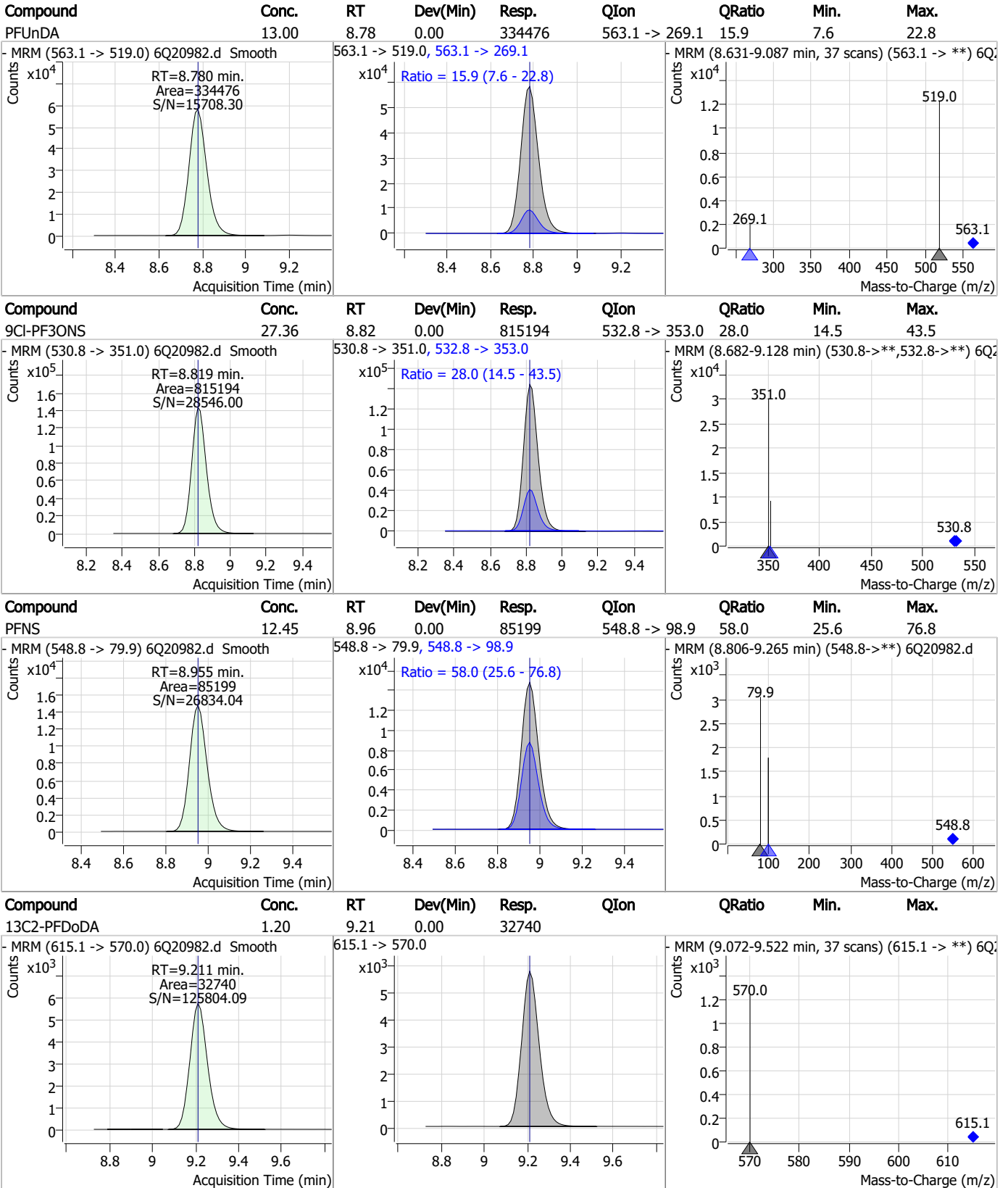
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



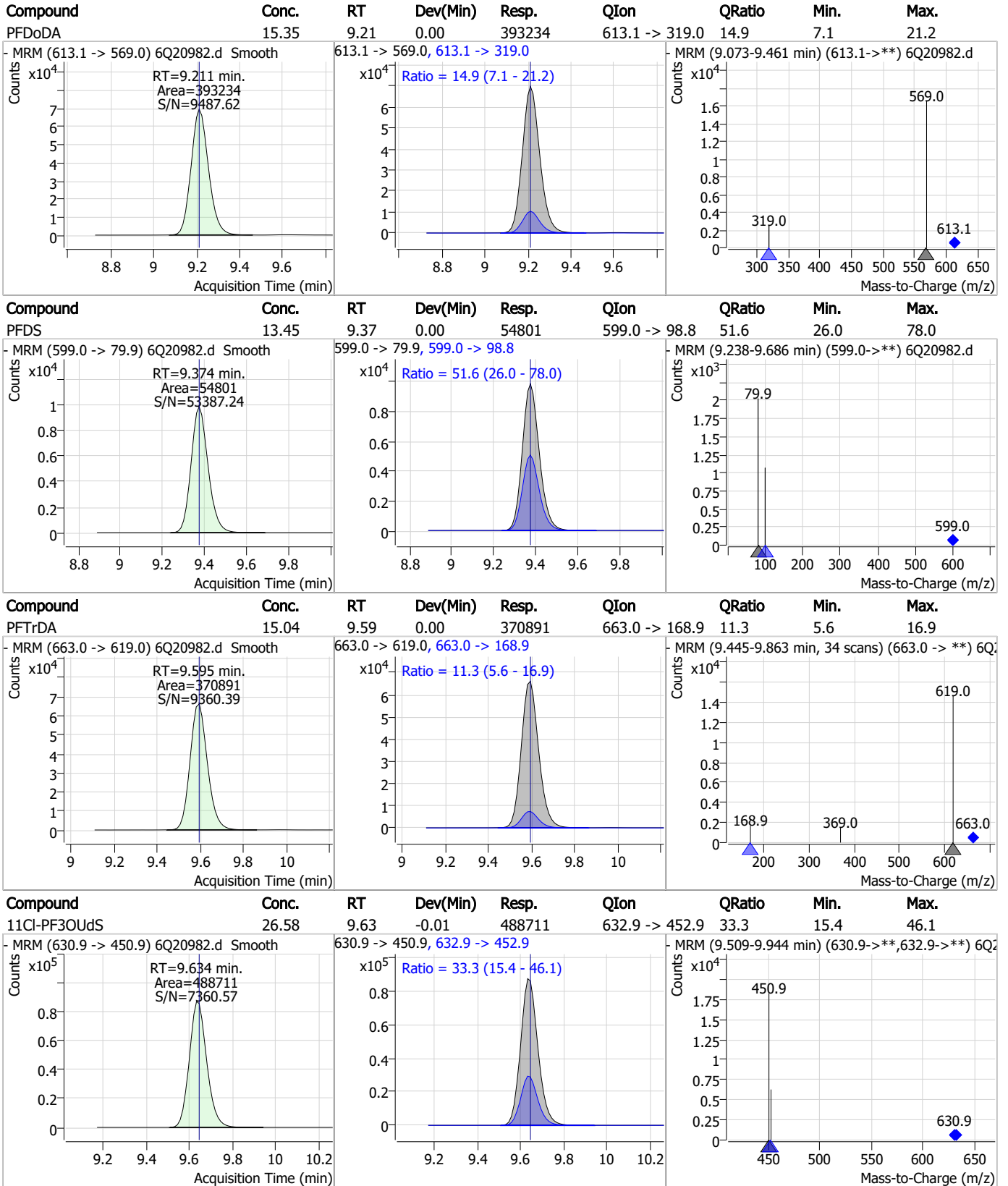
Perfluorinated Compounds by LC/MS/MS



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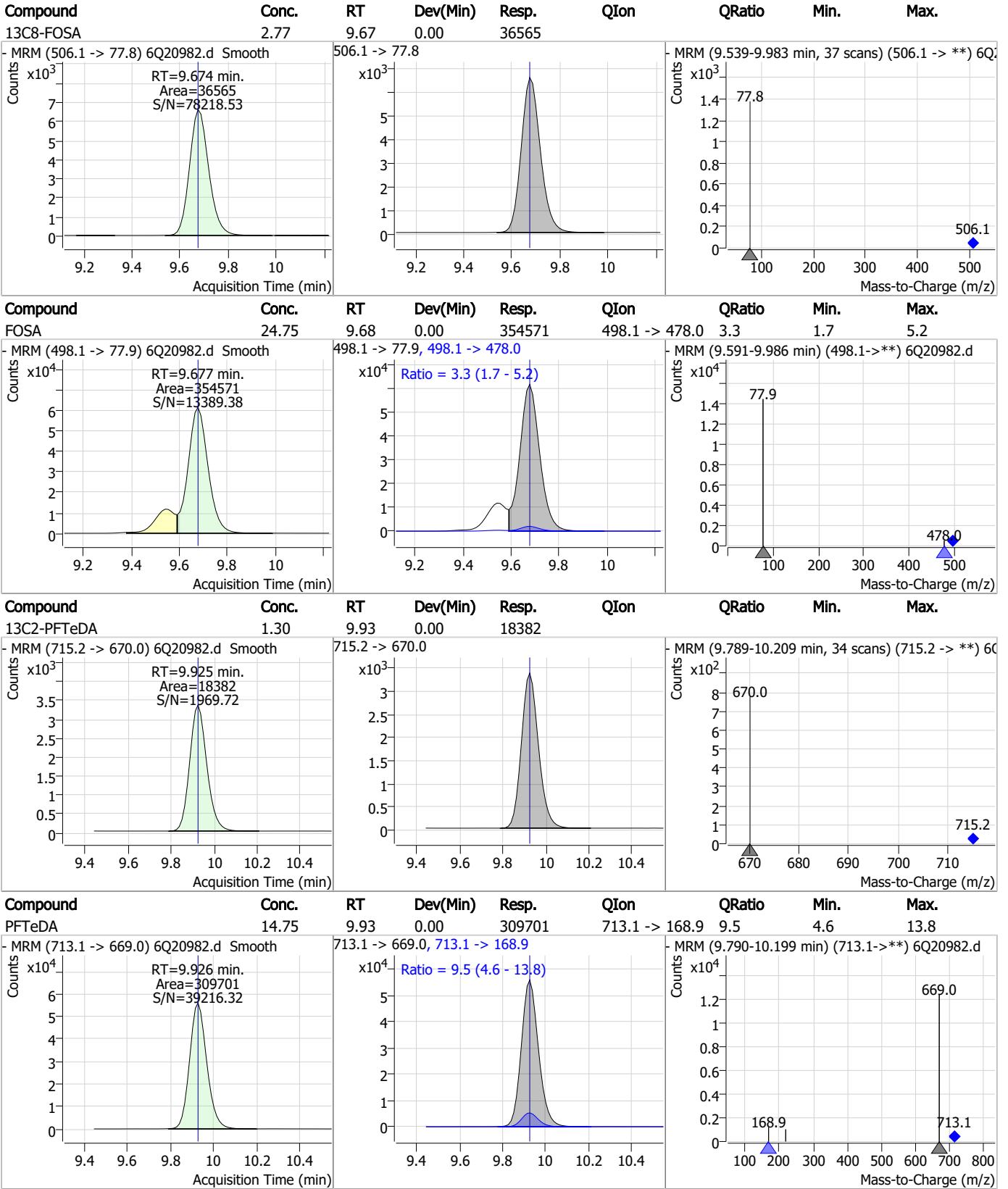
Perfluorinated Compounds by LC/MS/MS



7.6.6

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Perfluorinated Compounds by LC/MS/MS

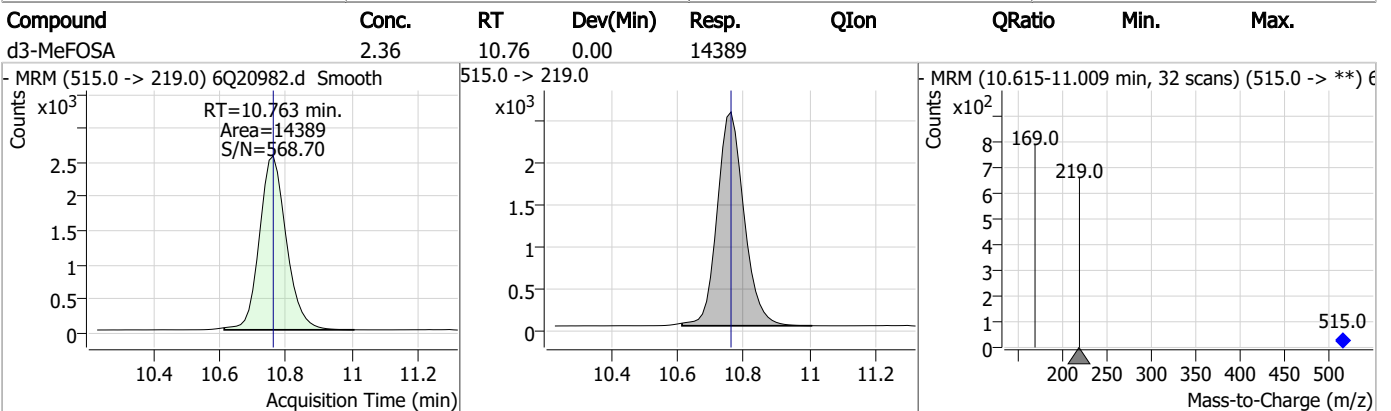
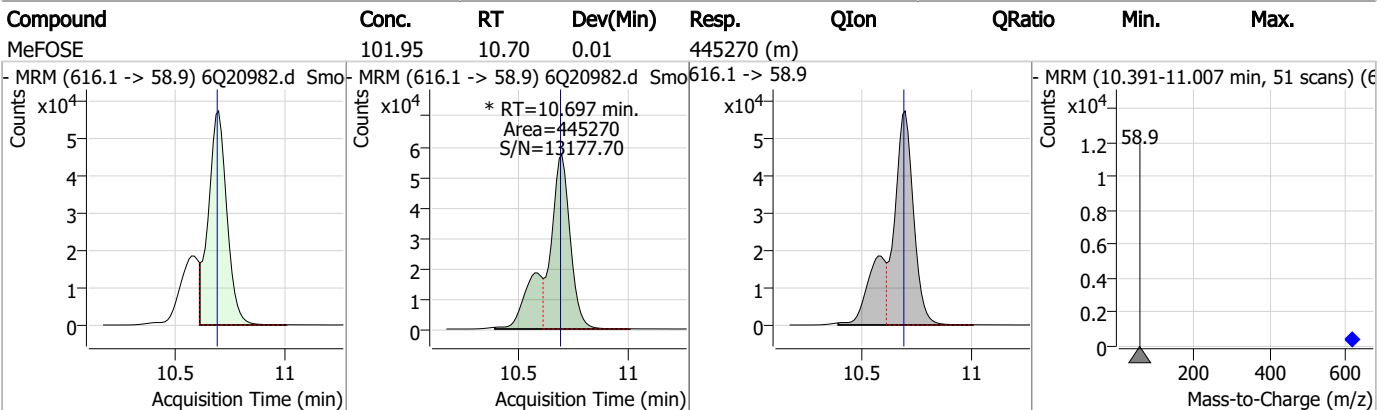
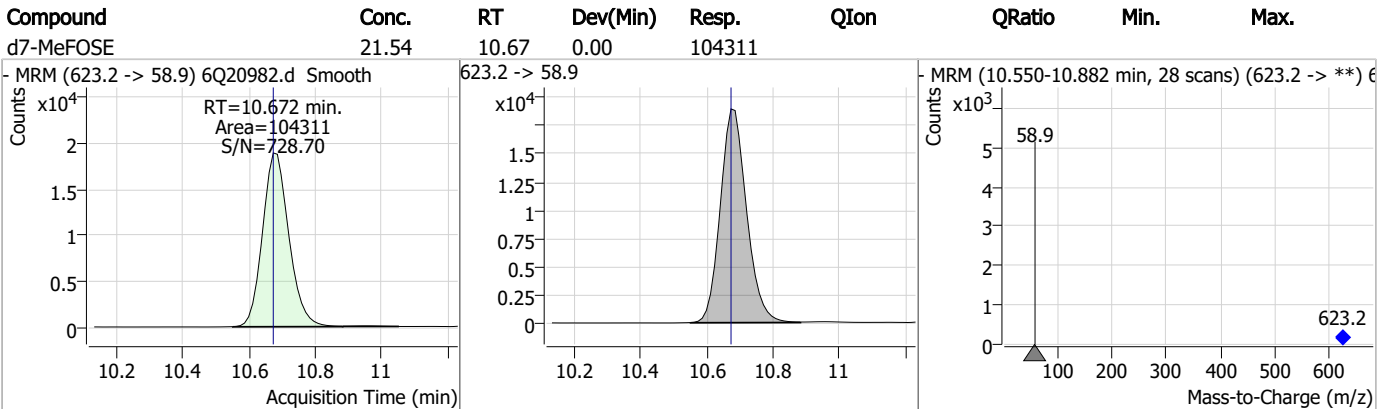
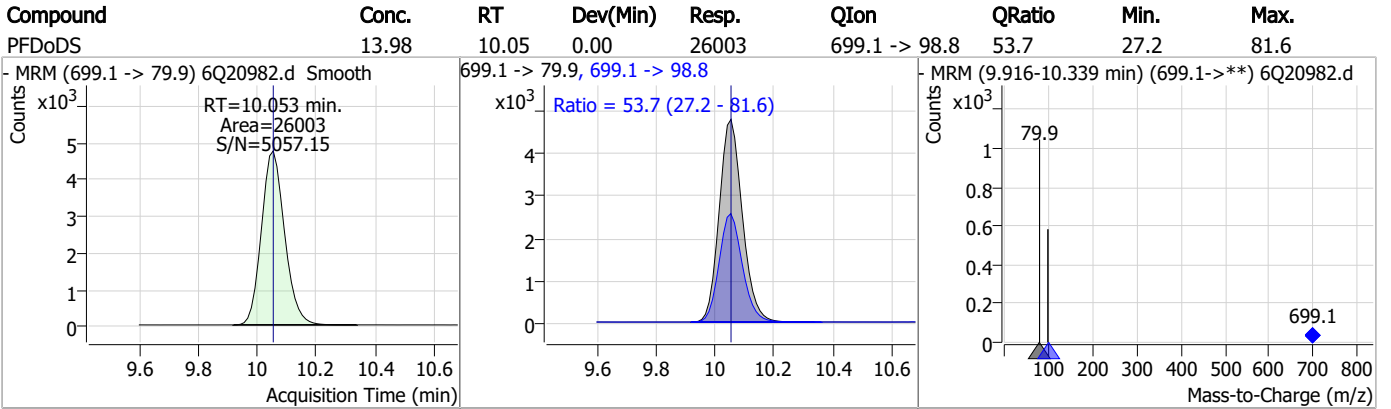


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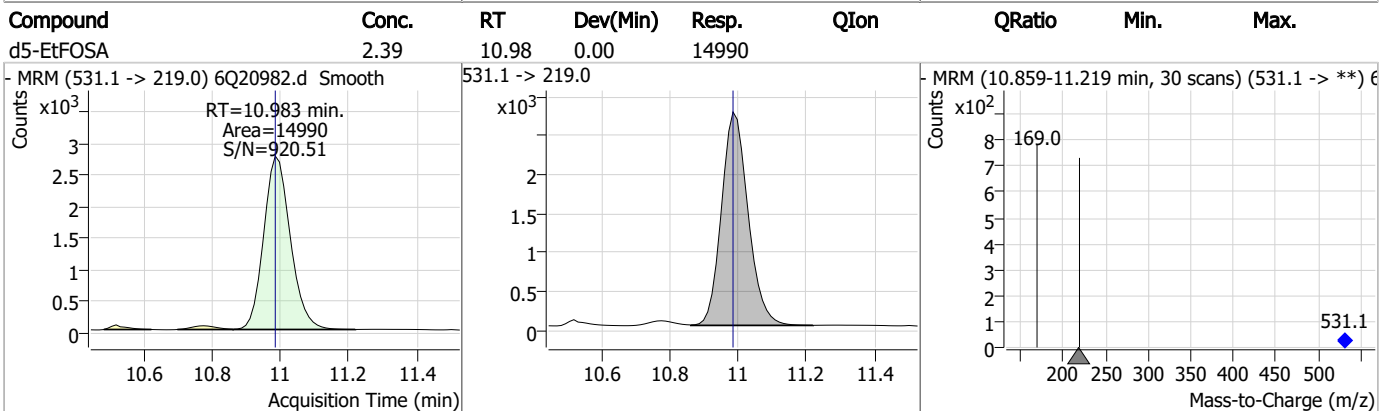
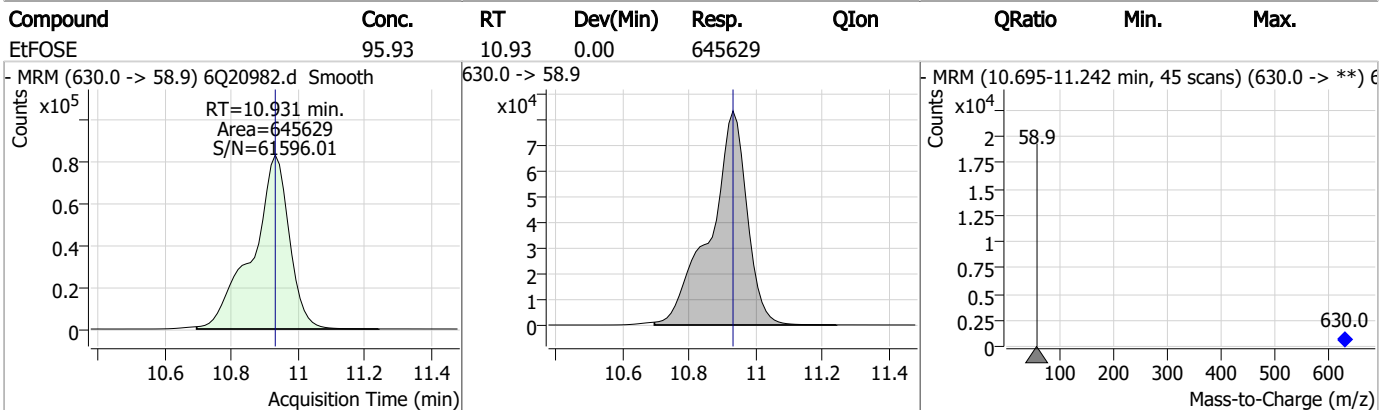
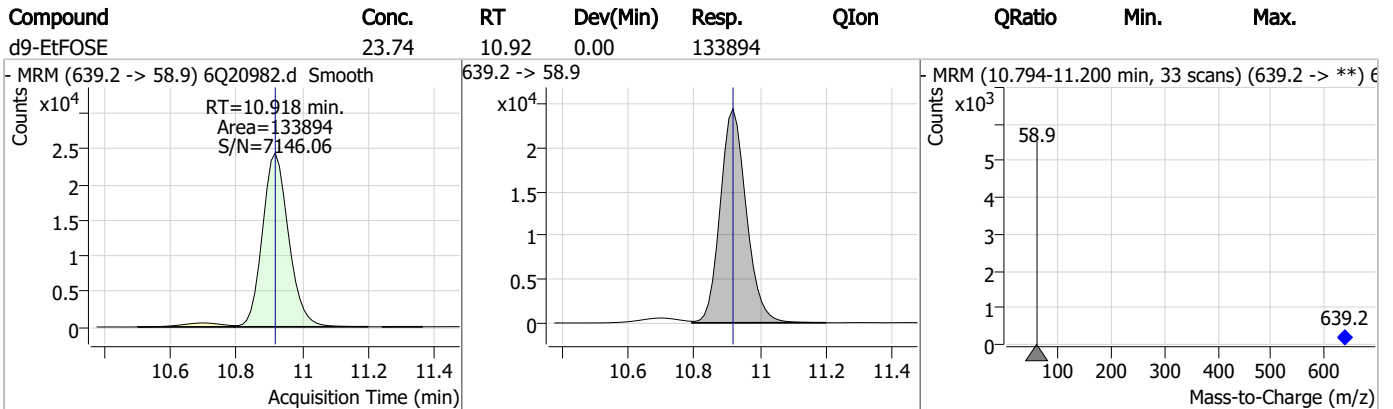
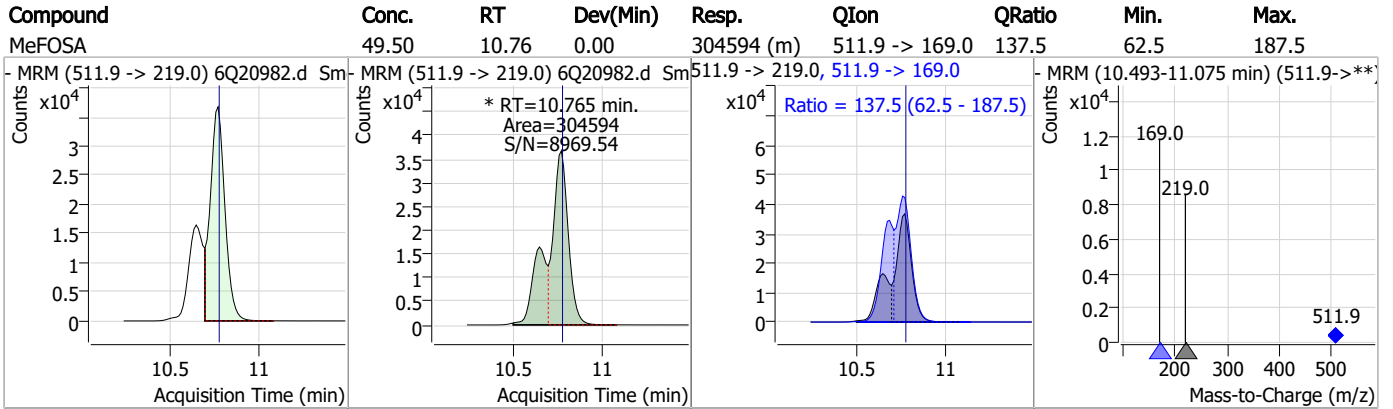
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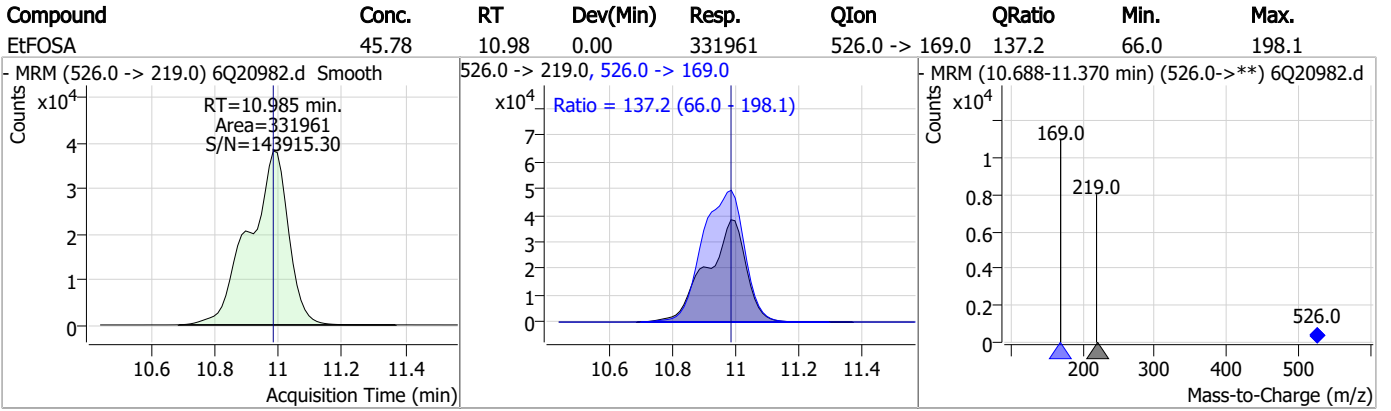
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.6

7

Manual Integration Approval Summary

Sample Number: S6Q310-RT Method: EPA DRAFT 1633
Lab FileID: 6Q20982.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/14/23 07:51 Supervisor approved: 07/17/23 11:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.26	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
Perfluorononanoic acid	375-95-1		7.81	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.6.6.1
7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 03 July 2023 10:23:55
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.tune.xml
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.82E+0 [R] (Torr); 2.89E-5 [H] (Torr)

Source Parameters

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

7.7.1

7

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	112.92	-0.07	Pass	0.70	0.66	-0.04	Pass	260642
302.00	301.98	-0.02	Pass	0.70	0.67	-0.03	Pass	848693
601.98	601.88	-0.10	Pass	0.70	0.60	-0.10	Pass	1876826
1033.99	1033.87	-0.12	Pass	0.70	0.61	-0.09	Pass	752181
1633.95	1633.73	-0.22	Adjust	0.70	0.70	0.00	Pass	460026
2233.91	2233.50	-0.41	Adjust	0.70	0.65	-0.05	Pass	153754

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	0.70	0.68	-0.02	Pass	106900
112.99	112.96	-0.03	Pass	0.70	0.75	0.05	Pass	557453
302.00	301.95	-0.05	Pass	0.70	0.78	0.08	Pass	1019875
601.98	601.92	-0.06	Pass	0.70	0.68	-0.02	Pass	1475971
1033.99	1033.85	-0.14	Pass	0.70	0.72	0.02	Pass	526337
1633.95	1633.75	-0.20	Pass	0.70	0.74	0.04	Pass	412238
2233.91	2233.64	-0.27	Pass	0.70	0.69	-0.01	Pass	115075

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.87	-0.12	Pass	1.20	1.08	-0.12	Pass	376489
302.00	301.92	-0.08	Pass	1.20	1.27	0.07	Pass	1305311
601.98	601.93	-0.05	Pass	1.20	1.43	0.23	Pass	2757483
1033.99	1033.80	-0.19	Pass	1.20	1.48	0.28	Pass	1501867
1633.95	1633.67	-0.28	Pass	1.20	1.33	0.13	Pass	961459
2233.91	2233.56	-0.35	Pass	1.20	1.34	0.14	Pass	324847

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.00	0.00	Pass	1.20	1.08	-0.12	Pass	124687
112.99	112.95	-0.04	Pass	1.20	1.11	-0.09	Pass	725313
302.00	301.93	-0.07	Pass	1.20	1.19	-0.01	Pass	1410410
601.98	601.85	-0.13	Pass	1.20	1.24	0.04	Pass	2657702
1033.99	1033.81	-0.18	Pass	1.20	1.39	0.19	Pass	945406
1633.95	1633.68	-0.27	Pass	1.20	1.40	0.20	Pass	941147
2233.91	2233.58	-0.33	Pass	1.20	1.20	0.00	Pass	261840

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	2.28	-0.22	Pass	495002
302.00	301.77	-0.23	Pass	2.50	2.42	-0.08	Pass	1773579
601.98	601.80	-0.18	Pass	2.50	2.54	0.04	Pass	3976631
1033.99	1033.74	-0.25	Pass	2.50	2.40	-0.10	Pass	2367400
1633.95	1633.60	-0.35	Pass	2.50	2.31	-0.19	Pass	1967985
2233.91	2233.47	-0.44	Pass	2.50	2.16	-0.34	Pass	886232

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.94	-0.06	Pass	2.50	2.54	0.04	Pass	147450
112.99	112.93	-0.06	Pass	2.50	2.60	0.10	Pass	873703
302.00	301.91	-0.09	Pass	2.50	2.53	0.03	Pass	2194280
601.98	601.94	-0.04	Pass	2.50	2.39	-0.11	Pass	3713645
1033.99	1033.93	-0.06	Pass	2.50	2.51	0.01	Pass	2242197
1633.95	1633.60	-0.35	Pass	2.50	2.47	-0.03	Pass	1848531
2233.91	2233.71	-0.20	Pass	2.50	2.06	-0.44	Pass	712239

7.7.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20664.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 7:05:30 PM
 Sample Name : ic307-1
 Vial : P1-A2
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	217027	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	68042	5.00 µg/L	0.012
M5-PFHxA	5.705	318.0 -> 273.0	72426	2.50 µg/L	0.012
M4-PFHpA	6.633	367.1 -> 322.0	74550	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	111433	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	54756	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	28925	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	37466	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	35181	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	19036	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	36190	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	24911	2.50 µg/L	0.012
M3-PFHxS	7.404	402.1 -> 79.9	15989	2.50 µg/L	0.012
M8-PFOS	8.476	507.1 -> 79.9	15134	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3043	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4353	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3968	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	32629	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	49256	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	25606	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	121718	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	164913	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	19249	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	16224	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	20010	2.50 µg/L	0.000
13C3-PFBA	3.039	216.0 -> 172.0	91332	5.00 µg/L	0.012
18O2-PFHxS	7.403	403.0 -> 83.9	12236	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	119539	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	41620	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	57335	1.25 µg/L	0.000
13C2-PFHxA	5.706	315.1 -> 270.0	70562	2.50 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3043	5.55 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 111.0%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4353	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.9%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3968	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.9%		
13C2-PFDoDA	9.211	615.1 -> 570.0	35181	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.3%		
13C2-PFTeDA	9.925	715.2 -> 670.0	19036	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 95.4%		
13C3-PFBS	5.647	302.1 -> 79.9	24911	2.40 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFHxS	7.404	402.1 -> 79.9	15989	2.45 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C4-PFBA	3.035	216.8 -> 171.9	217027	10.03 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.633	367.1 -> 322.0	74550	2.70 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C5-PFHxA	5.705	318.0 -> 273.0	72426	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFPeA	4.472	268.3 -> 223.0	68042	5.17 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	8.313	519.1 -> 474.1	28925	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C7-PFUnDA	8.780	570.0 -> 525.1	37466	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-FOSA	9.674	506.1 -> 77.8	36190	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C8-PFOA	7.276	421.1 -> 376.0	111433	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOS	8.476	507.1 -> 79.9	15134	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C9-PFNA	7.807	472.1 -> 427.0	54756	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 113.0%	
d3-MeFOSAA	8.346	573.2 -> 419.0	32629	5.25 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	49256	11.00 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	16224	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
d5-EtFOSAA	8.554	589.2 -> 419.0	25606	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
d7-MeFOSE	10.672	623.2 -> 58.9	121718	23.71 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%	
d9-EtFOSE	10.918	639.2 -> 58.9	164913	27.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
d5-EtFOSA	10.983	531.1 -> 219.0	19249	2.90 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.9%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	3629	0.66 µg/L	100
		327.1 -> 80.9	1297		
6:2FTS	7.039	427.1 -> 407.0	3578	0.70 µg/L	94
		427.1 -> 80.9	1191		
8:2FTS	8.090	527.1 -> 507.0	2071	0.82 µg/L	97
		527.1 -> 80.8	721		
EtFOSAA	8.555	584.2 -> 419.1	849	0.21 µg/L	m 89
		584.2 -> 526.0	363		
FOSA	9.677	498.1 -> 77.9	2312	0.16 µg/L	99
		498.1 -> 478.0	89		
MeFOSAA	8.347	570.1 -> 419.0	1257	0.18 µg/L	m 87
		570.1 -> 483.0	287		
PFBA	3.031	212.8 -> 168.9	5973	0.71 µg/L	100
PFBS	5.648	298.7 -> 79.9	1565	0.16 µg/L	97
		298.7 -> 98.8	668		
PFDA	8.314	512.9 -> 469.0	7098	0.18 µg/L	99
		512.9 -> 219.0	1110		
PFDODA	9.211	613.1 -> 569.0	5086	0.18 µg/L	100
		613.1 -> 319.0	724		
PFDS	9.374	599.0 -> 79.9	744	0.17 µg/L	97

7.7.2
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	403			
PFHpA	6.633	363.1 -> 319.0	6437	0.18	µg/L	97
		363.1 -> 169.0	959			
PFHpS	7.972	449.0 -> 79.9	1529	0.18	µg/L	90
		449.0 -> 98.9	661			
PFHxA	5.707	313.0 -> 269.0	4757	0.18	µg/L	98
		313.0 -> 118.9	261			
PFHxS	7.405	398.7 -> 79.9	1583	0.19	µg/L	m 97
		398.7 -> 98.9	785			
PFNA	7.808	463.0 -> 419.0	7298	0.17	µg/L	98
		463.0 -> 219.0	1443			
PFNS	8.955	548.8 -> 79.9	1319	0.17	µg/L	99
		548.8 -> 98.9	684			
PFOA	7.278	413.0 -> 369.0	9529	0.18	µg/L	99
		413.0 -> 169.0	1623			
PFOS	8.478	498.9 -> 79.9	1362	0.17	µg/L	m 74
		498.9 -> 98.8	703			
PFPeA	4.474	263.0 -> 219.0	6682	0.37	µg/L	100
PFPeS	6.709	349.1 -> 79.9	1387	0.17	µg/L	93
		349.1 -> 98.9	701			
PFTeDA	9.926	713.1 -> 669.0	3932	0.18	µg/L	97
		713.1 -> 168.9	411			
PFTrDA	9.595	663.0 -> 619.0	4737	0.18	µg/L	97
		663.0 -> 168.9	589			
PFUnDA	8.780	563.1 -> 519.0	5330	0.19	µg/L	96
		563.1 -> 269.1	890			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	7814	0.34	µg/L	96
		632.9 -> 452.9	2220			
9Cl-PF3ONS	8.832	530.8 -> 351.0	11384	0.30	µg/L	87
		532.8 -> 353.0	2520			
ADONA	6.883	376.9 -> 250.9	26362	0.32	µg/L	99
		376.9 -> 84.8	6272			
HFPO-DA	6.083	284.9 -> 168.9	1613	0.32	µg/L	96
		284.9 -> 184.9	200			
3:3FTCA	3.933	241.0 -> 177.0	1250	0.92	µg/L	98
		241.0 -> 117.0	157			
5:3FTCA	6.335	341.0 -> 237.1	25860	4.66	µg/L	93
		341.0 -> 217.0	19741			
7:3FTCA	7.723	441.0 -> 316.9	18290	4.71	µg/L	91
		441.0 -> 336.9	39770			
EtFOSA	10.985	526.0 -> 219.0	2989	0.32	µg/L	91
		526.0 -> 169.0	4259			
EtFOSE	10.931	630.0 -> 58.9	6735	0.81	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	2744	0.40	µg/L	m 92
		511.9 -> 169.0	3668			
MeFOSE	10.685	616.1 -> 58.9	4677	0.92	µg/L	100
PFDoDS	10.053	699.1 -> 79.9	342	0.17	µg/L	86
		699.1 -> 98.8	220			
NFDHA	5.588	295.0 -> 201.0	1190	0.37	µg/L	98
		295.0 -> 84.9	325			
PFMBA	4.900	279.0 -> 85.1	4497	0.38	µg/L	100
PFMPA	3.601	229.0 -> 84.9	3663	0.37	µg/L	100
PFEESA	6.200	314.8 -> 134.9	12792	0.34	µg/L	99
		314.8 -> 82.9	375			

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

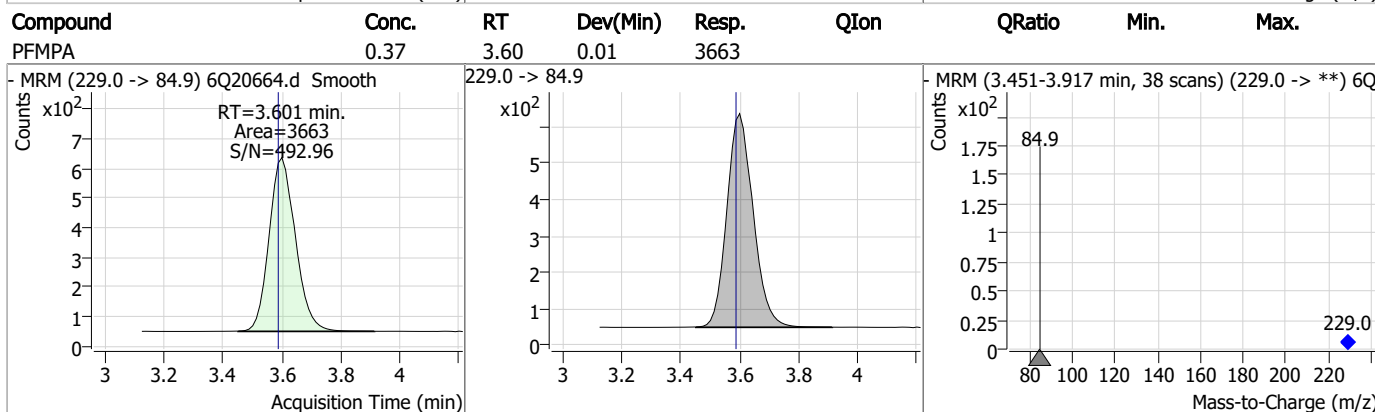
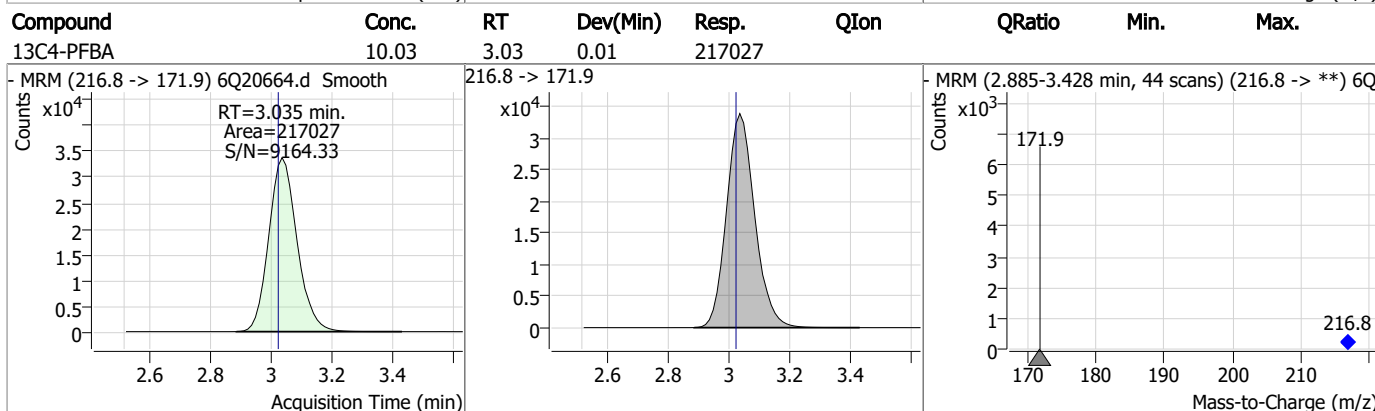
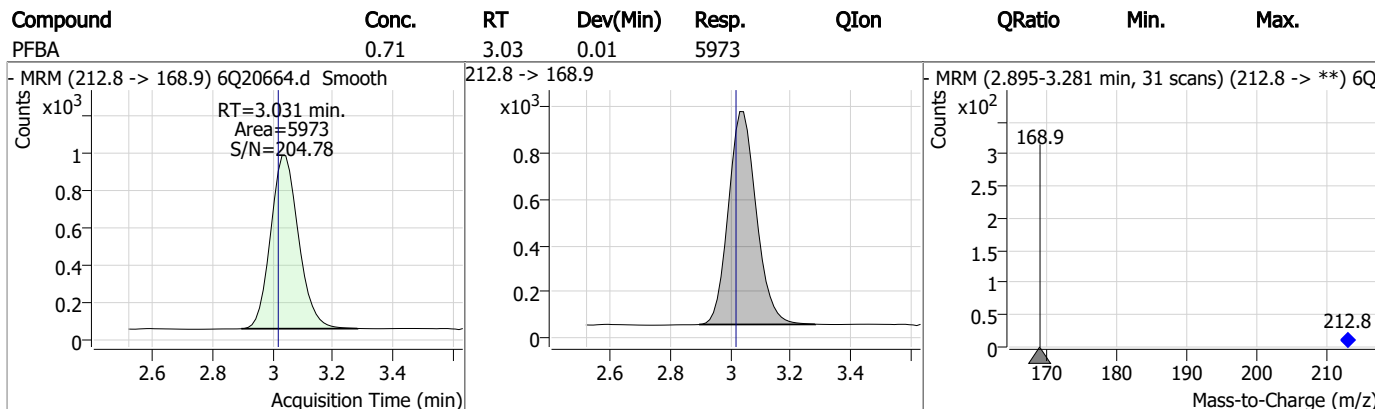
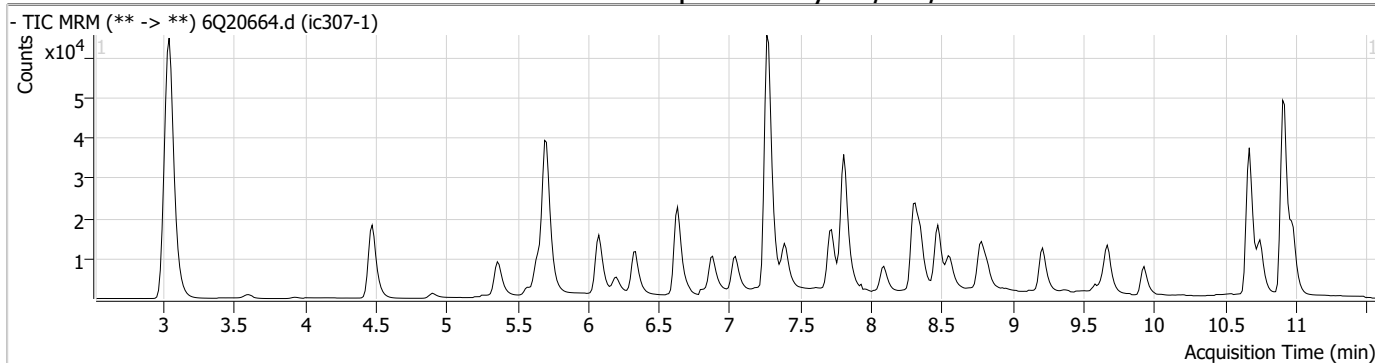
Perfluorinated Compounds by LC/MS/MS

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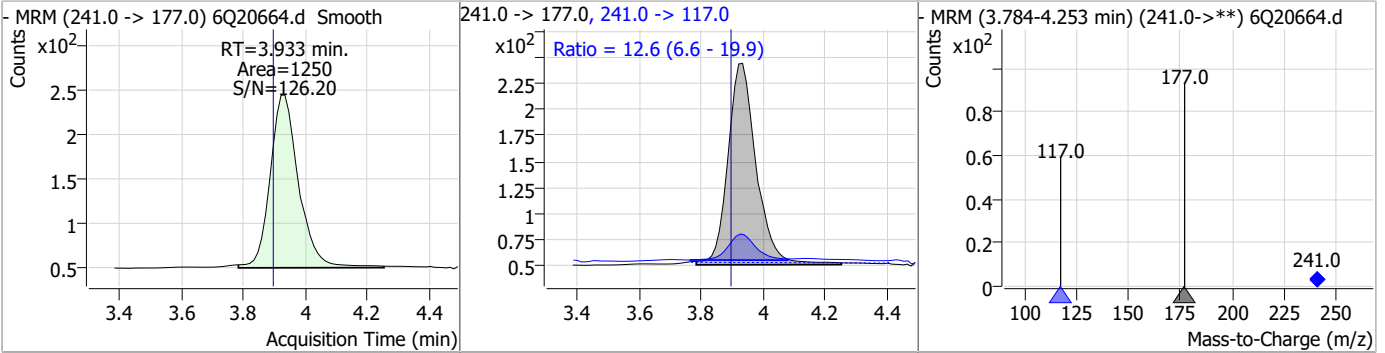


Perfluorinated Compounds by LC/MS/MS

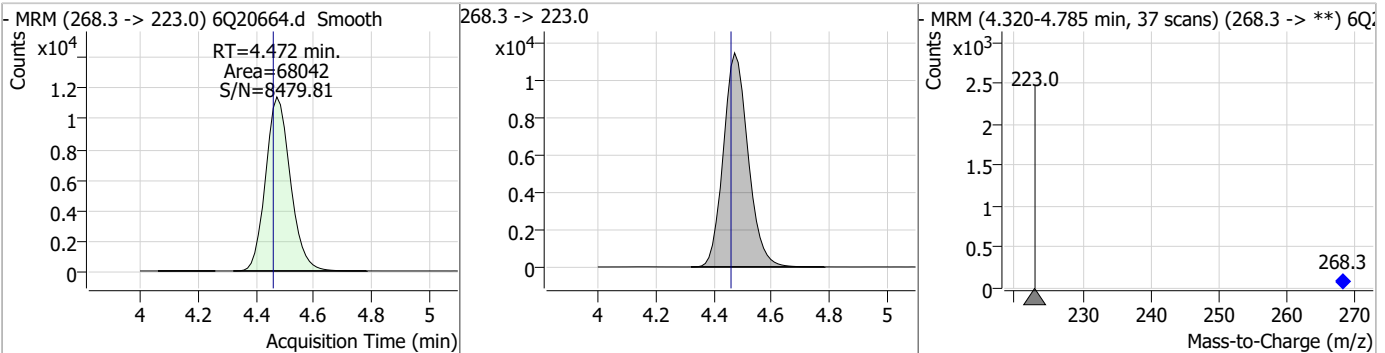


Perfluorinated Compounds by LC/MS/MS

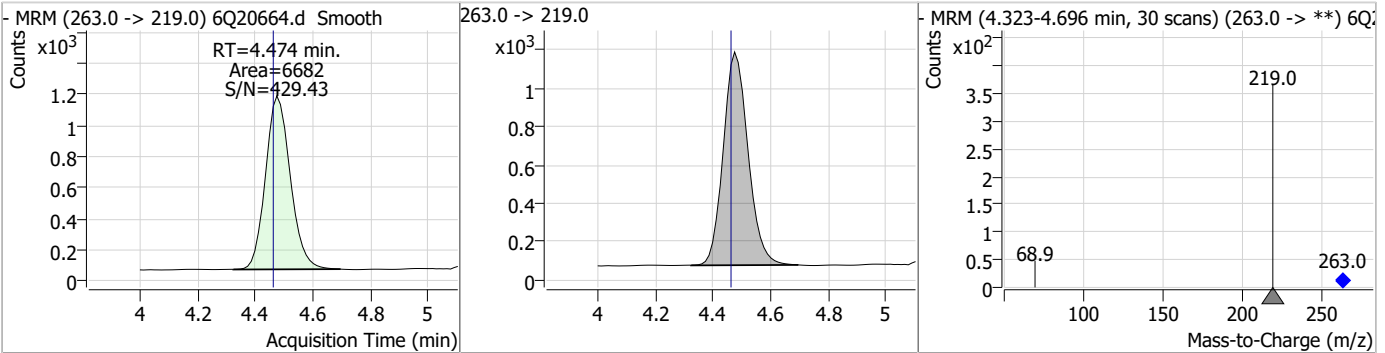
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.92	3.93	0.04	1250	241.0 -> 117.0	12.6	6.6	19.9



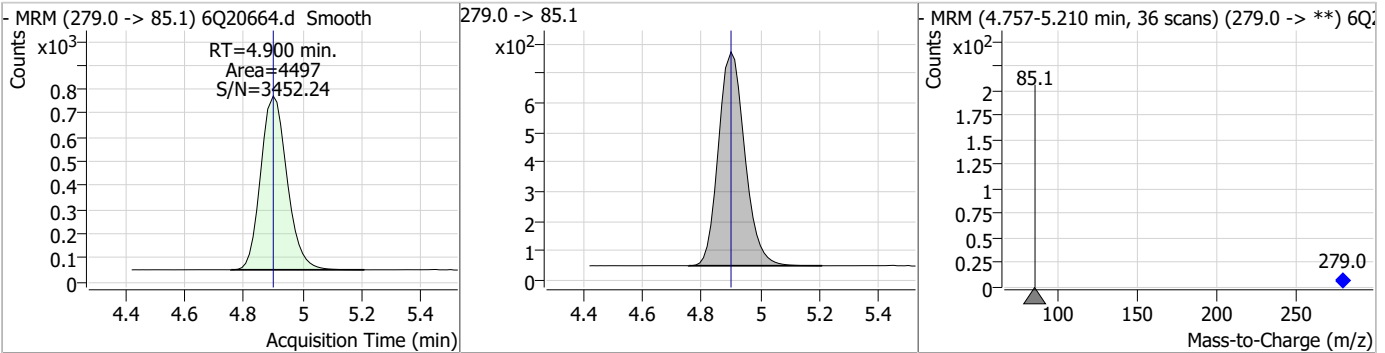
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.17	4.47	0.01	68042				



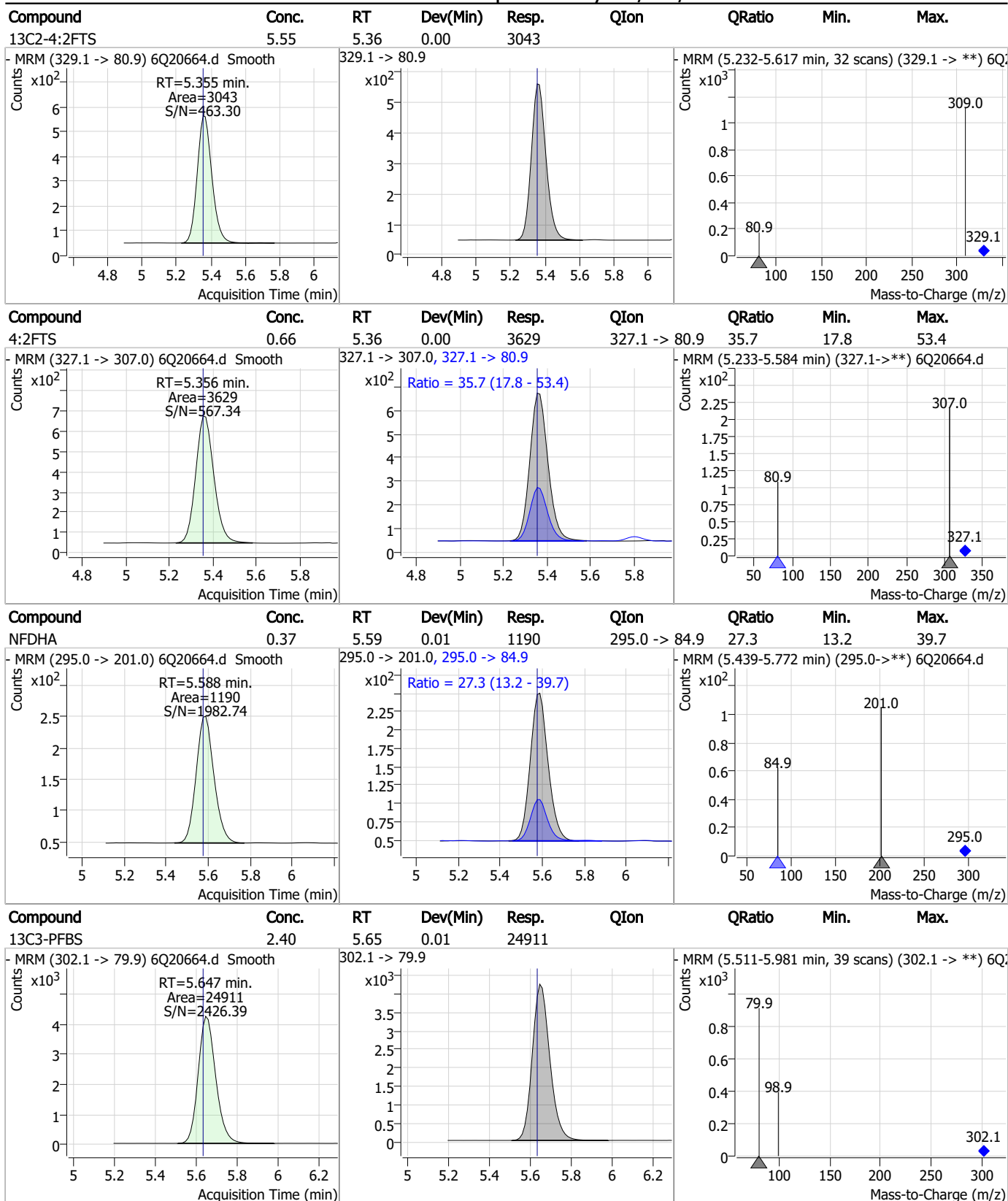
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.37	4.47	0.01	6682				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.38	4.90	0.00	4497				



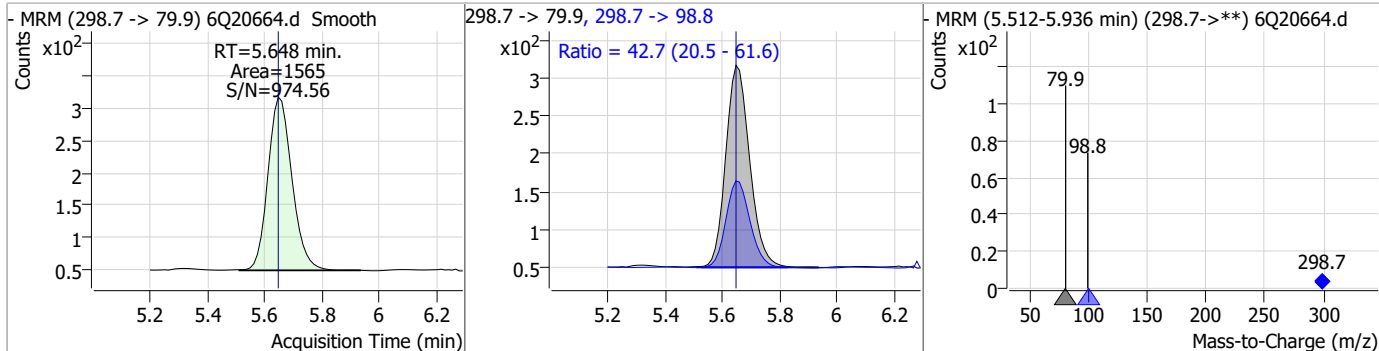
Perfluorinated Compounds by LC/MS/MS



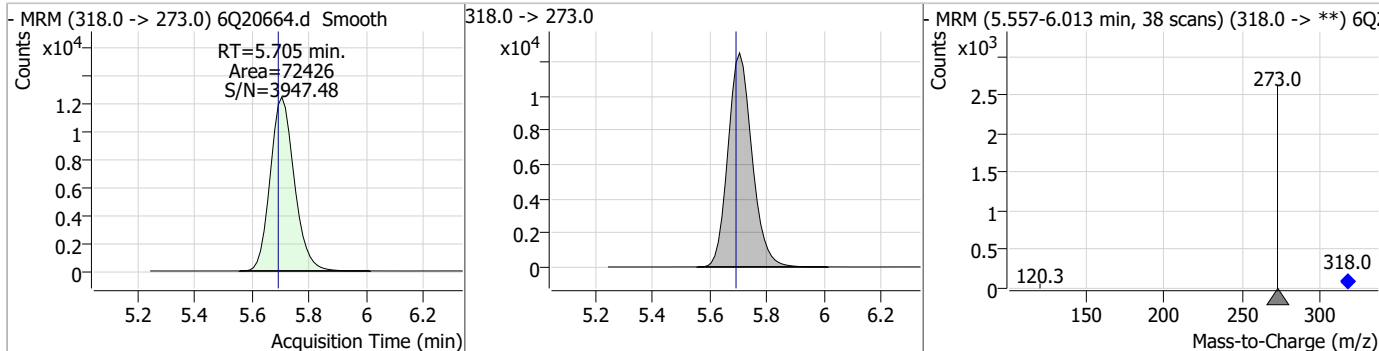
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Perfluorinated Compounds by LC/MS/MS

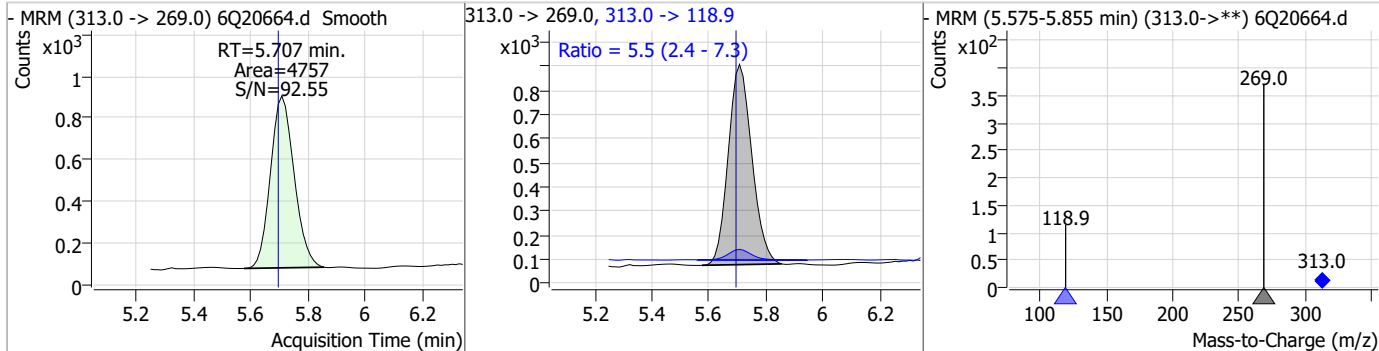
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.16	5.65	0.00	1565	298.7 -> 98.8	42.7	20.5	61.6



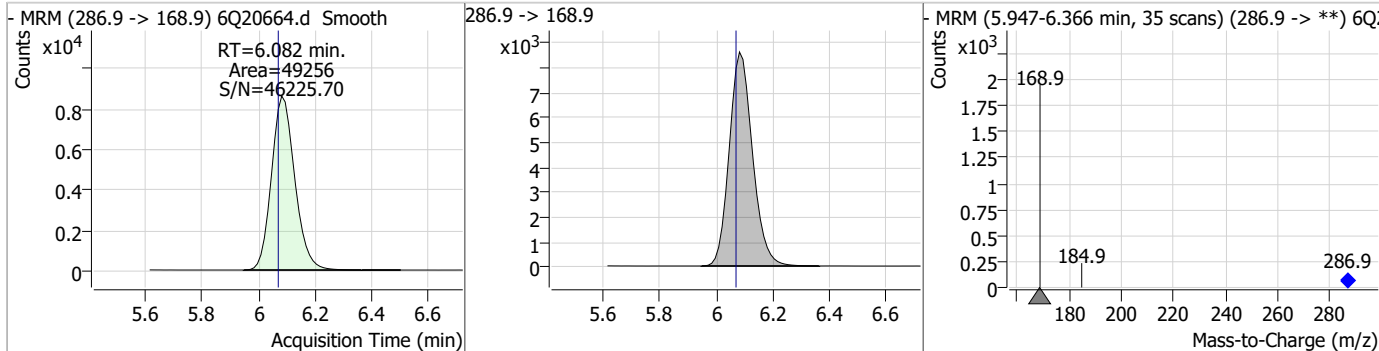
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.70	0.01	72426				



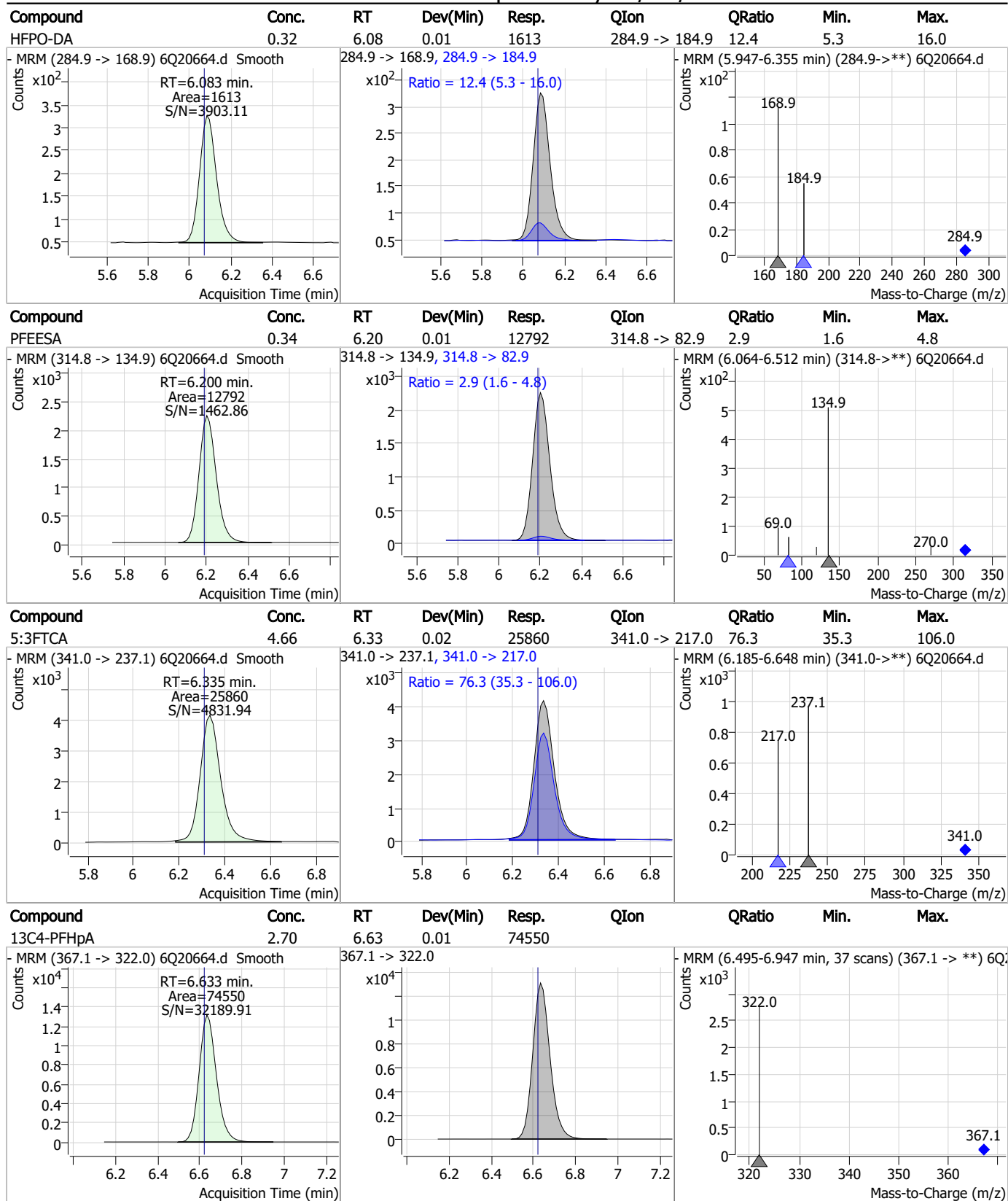
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.18	5.71	0.01	4757	313.0 -> 118.9	5.5	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.00	6.08	0.01	49256				



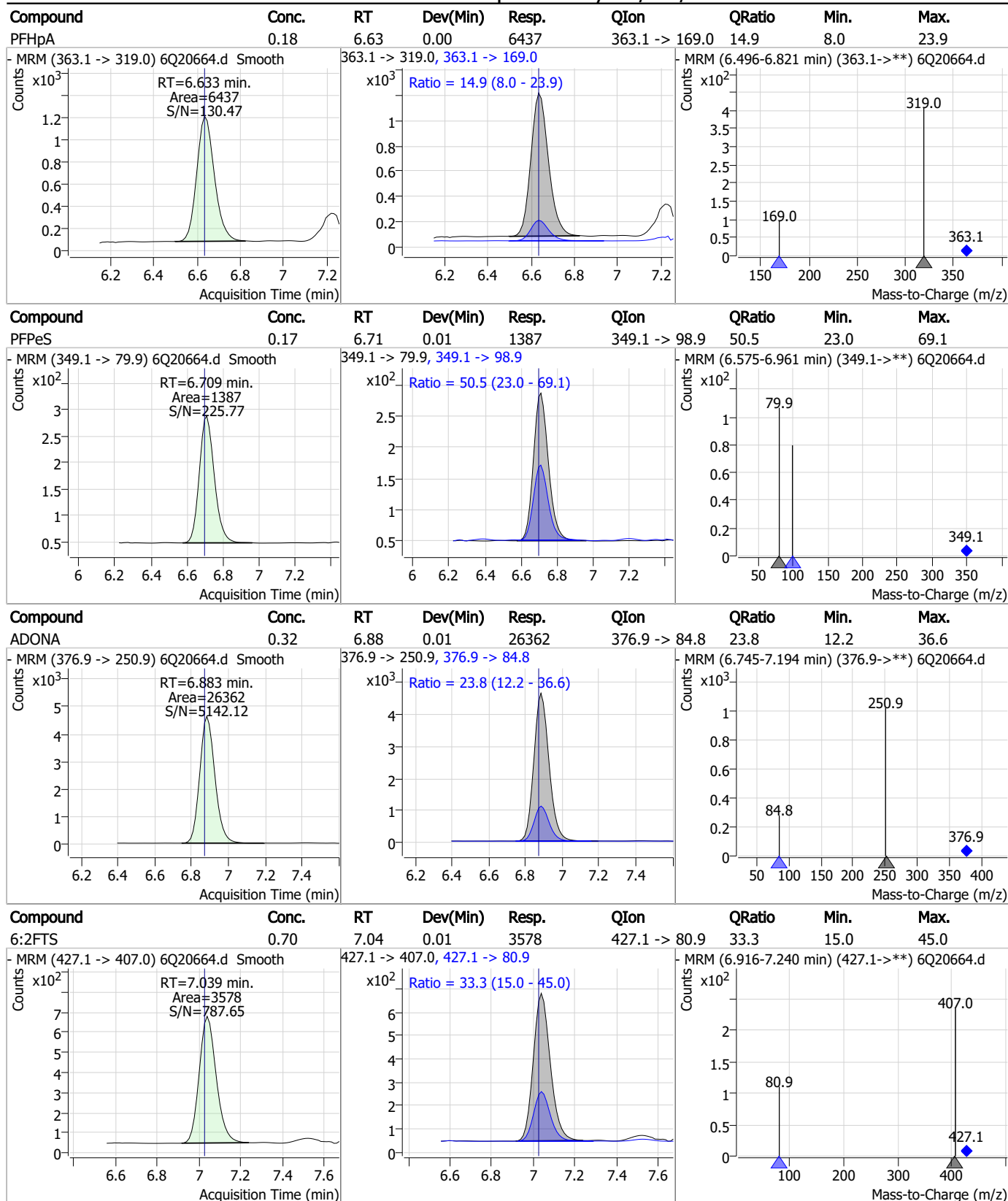
Perfluorinated Compounds by LC/MS/MS



7.7.2
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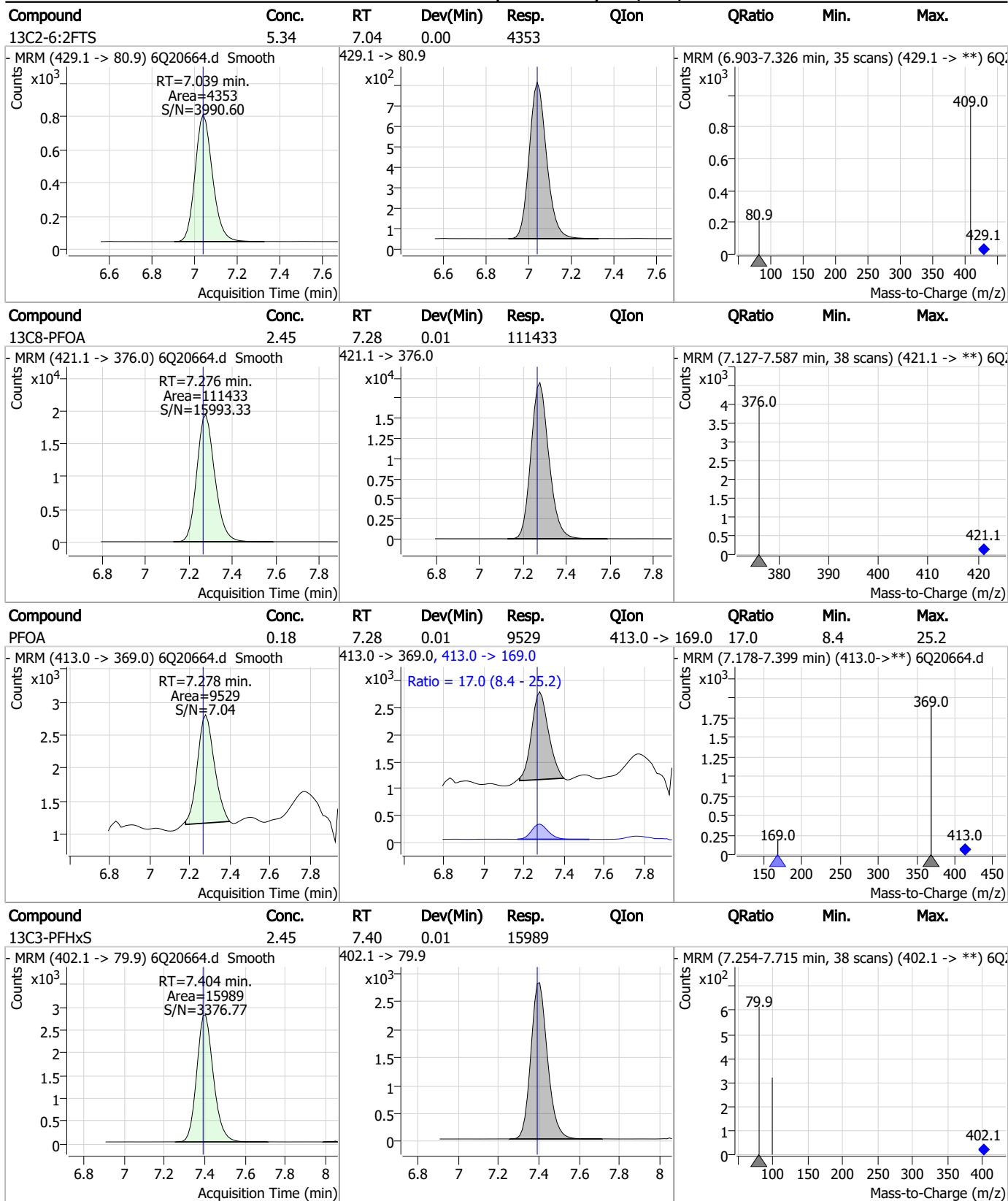


Perfluorinated Compounds by LC/MS/MS



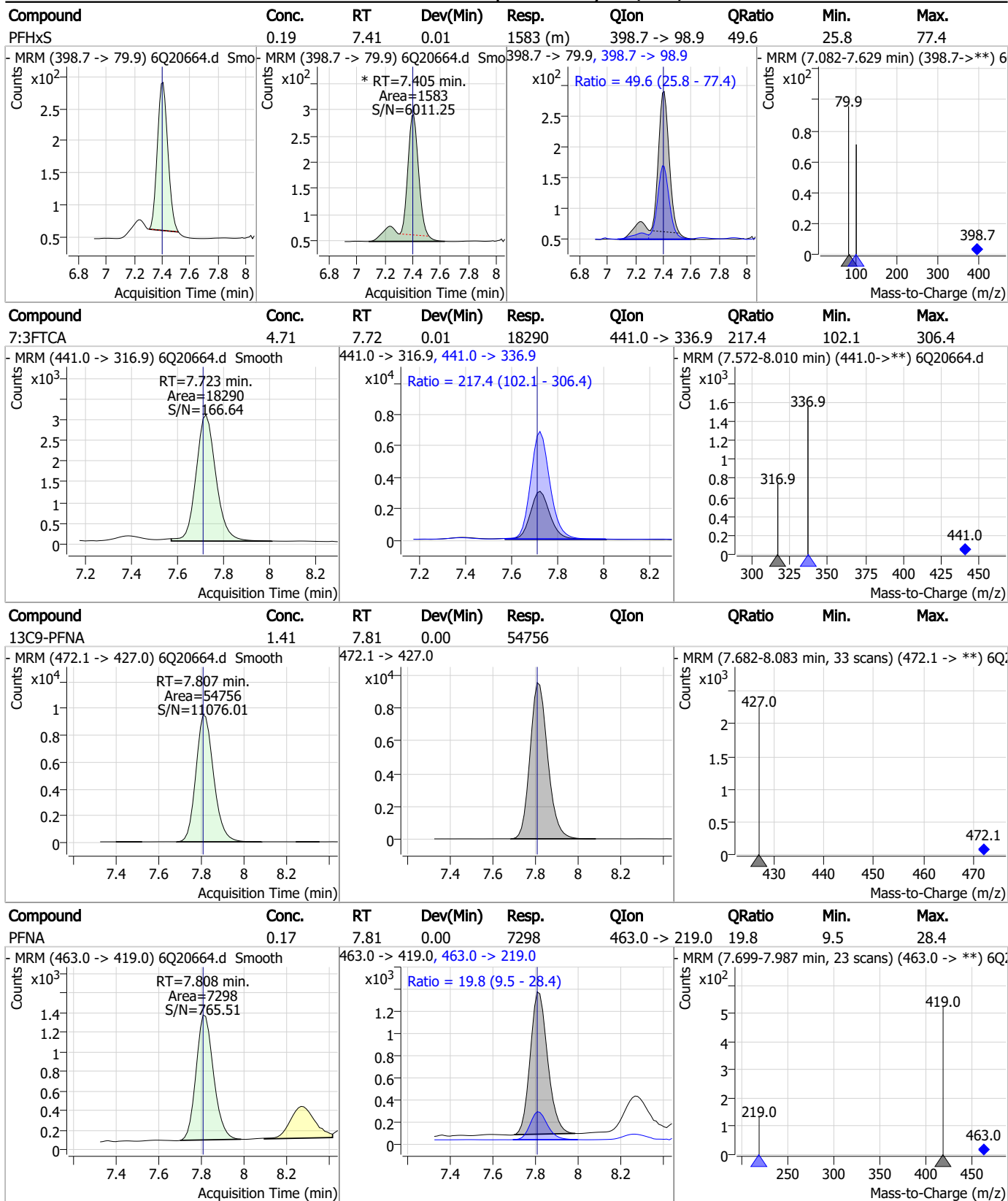
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Perfluorinated Compounds by LC/MS/MS



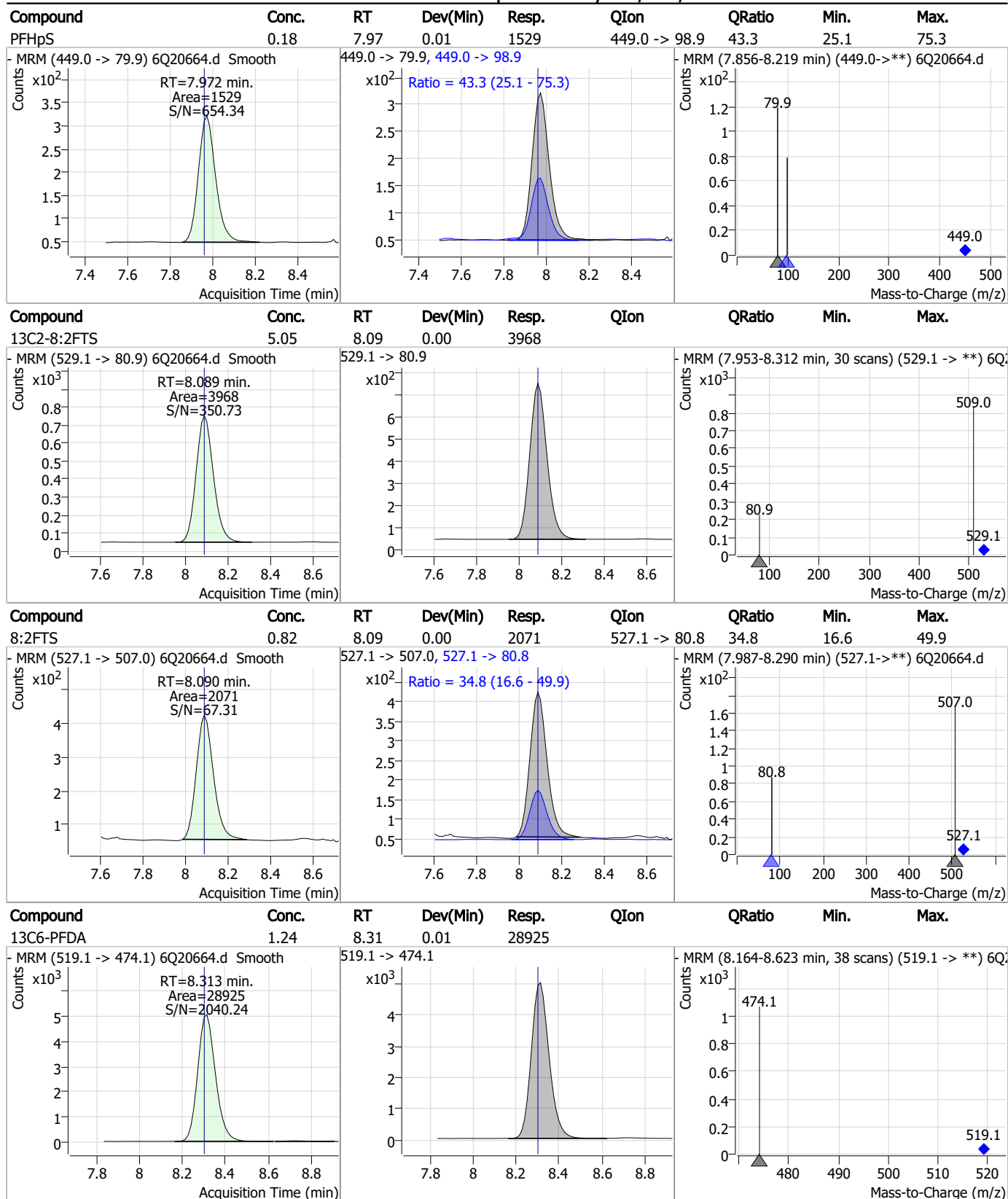
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Perfluorinated Compounds by LC/MS/MS



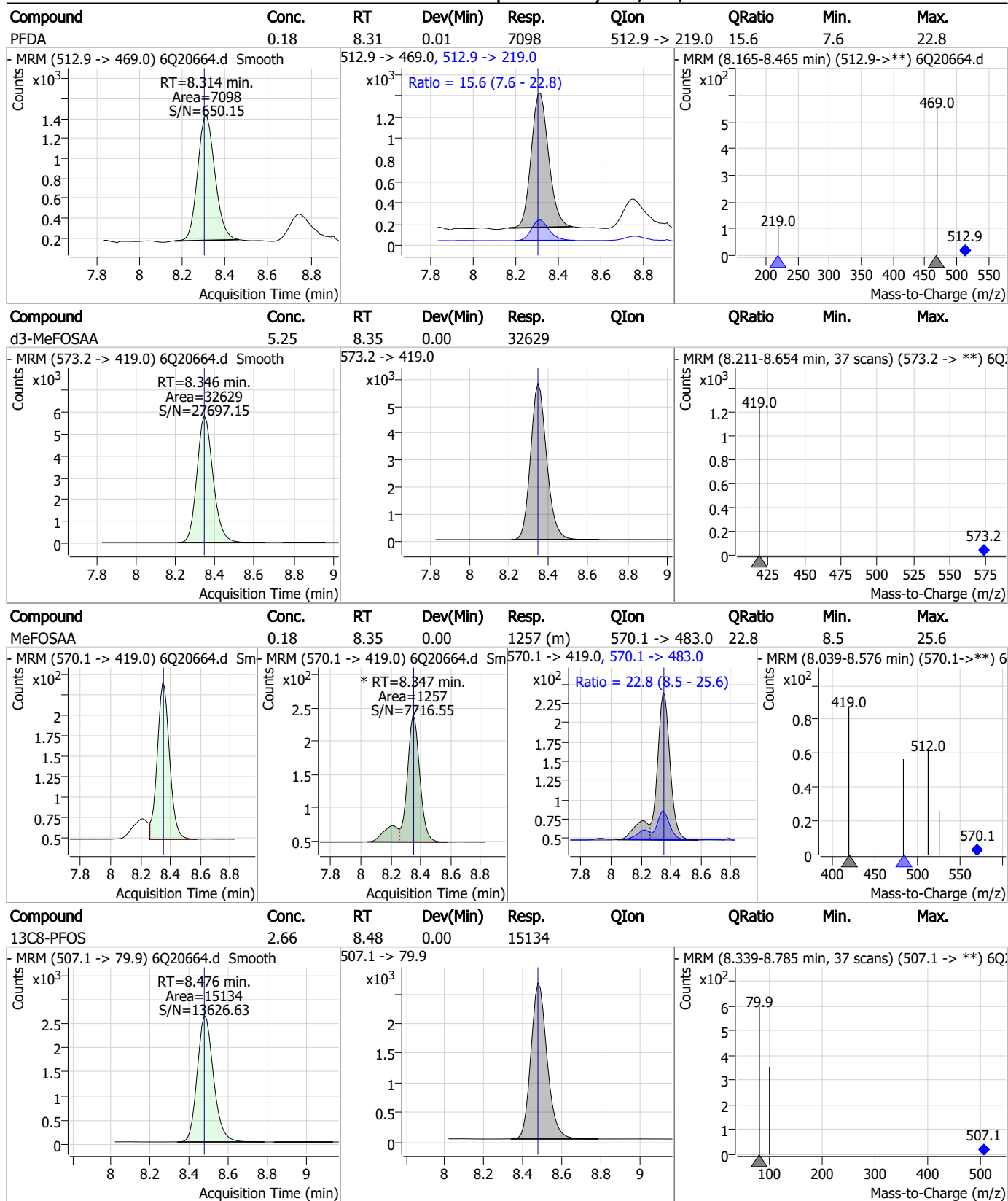
7.7.2
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Perfluorinated Compounds by LC/MS/MS



7.7.2
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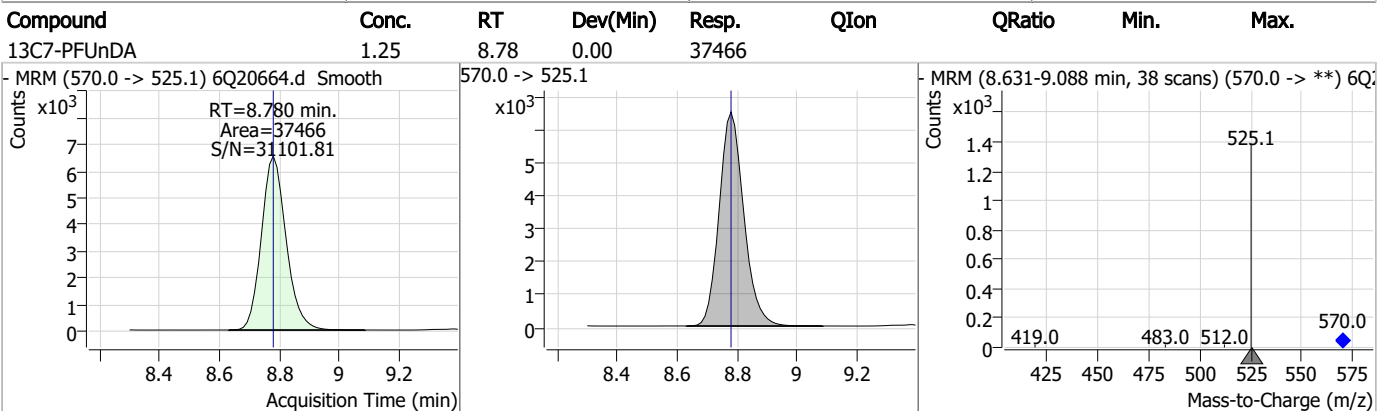
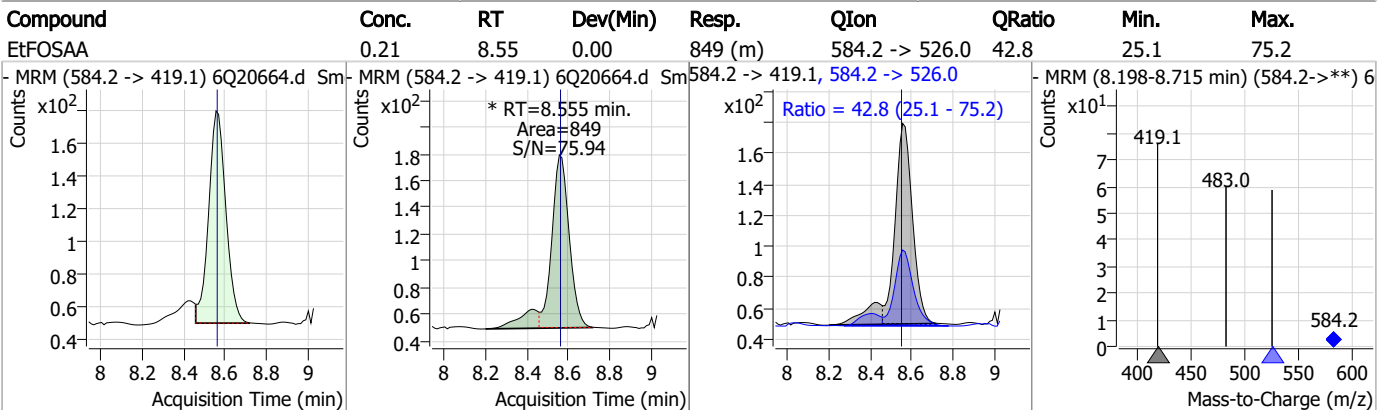
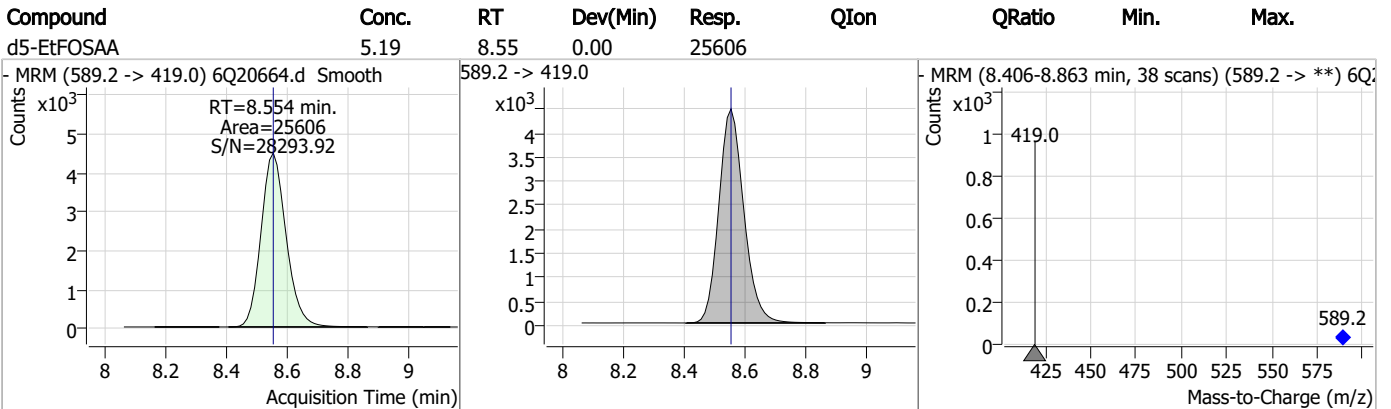
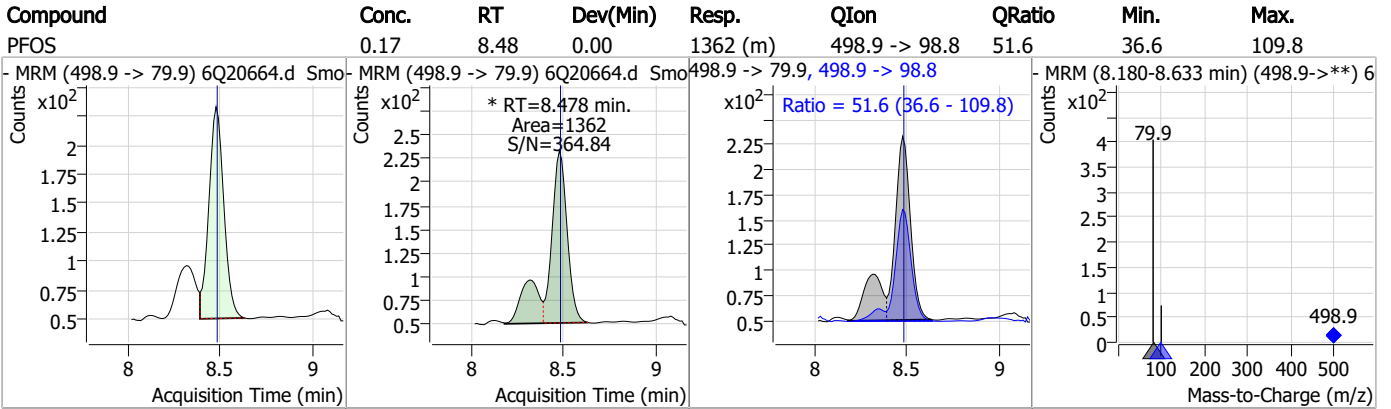
Perfluorinated Compounds by LC/MS/MS



7.7.2

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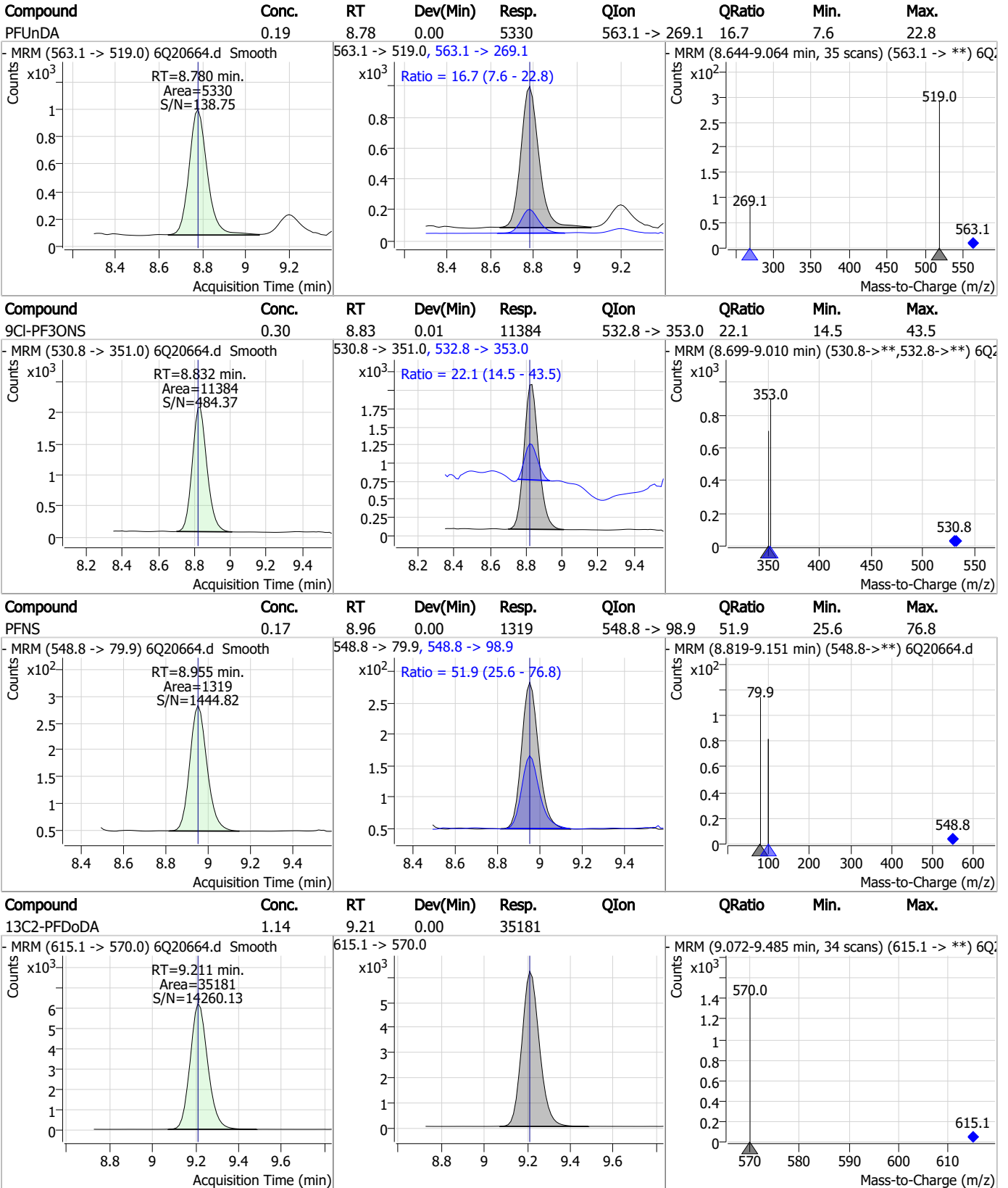
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

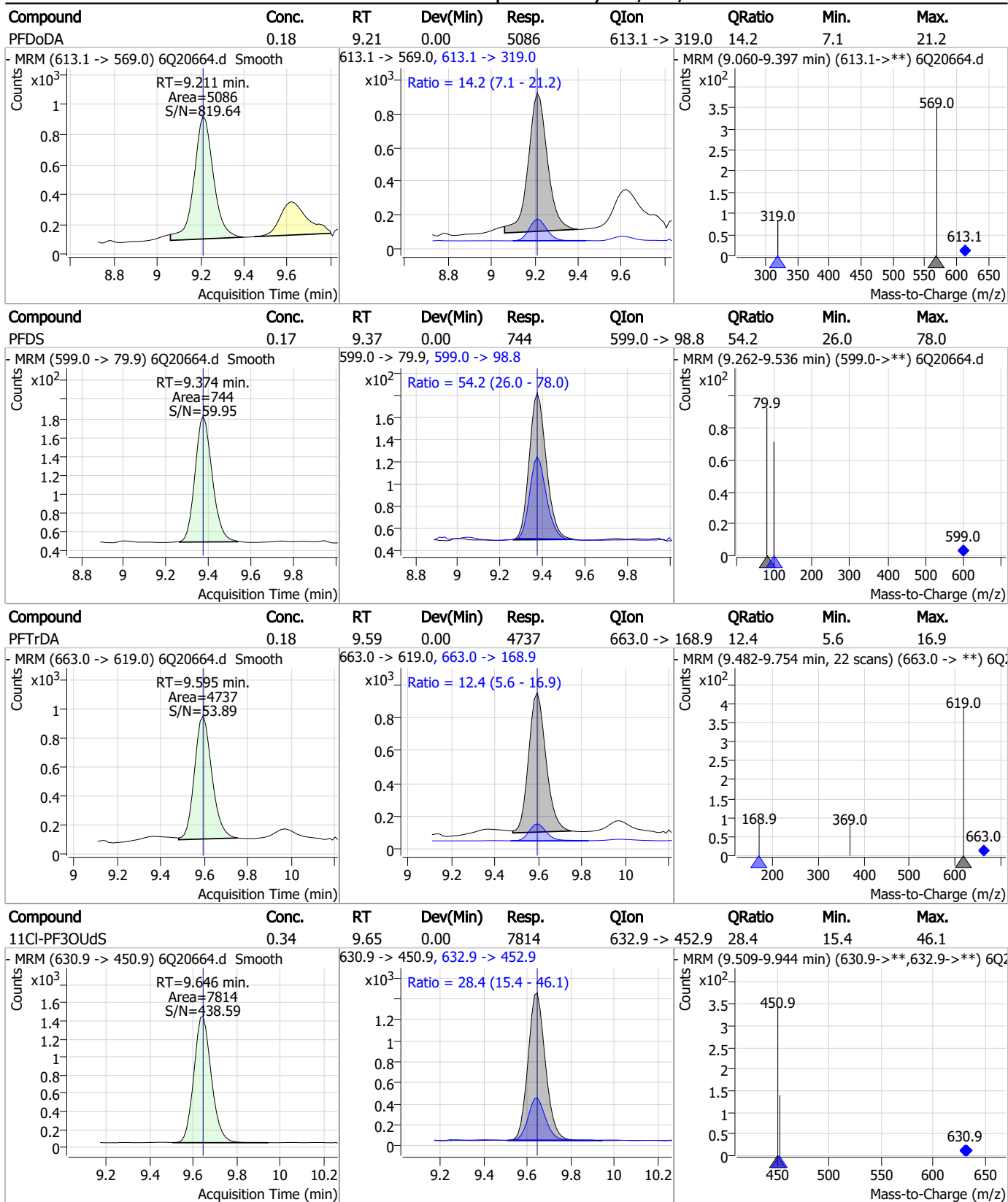


7.7.2

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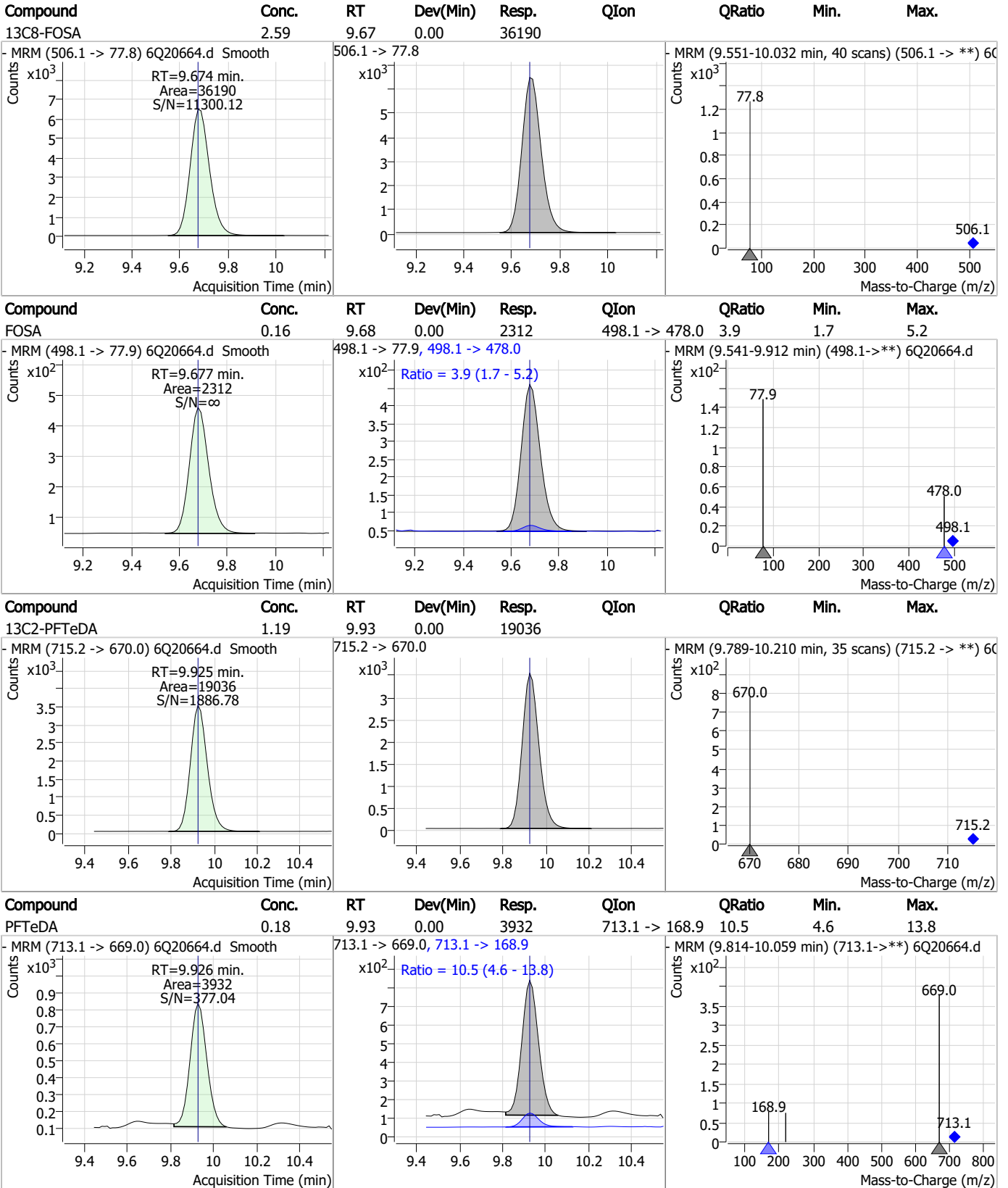
Perfluorinated Compounds by LC/MS/MS



7.7.2
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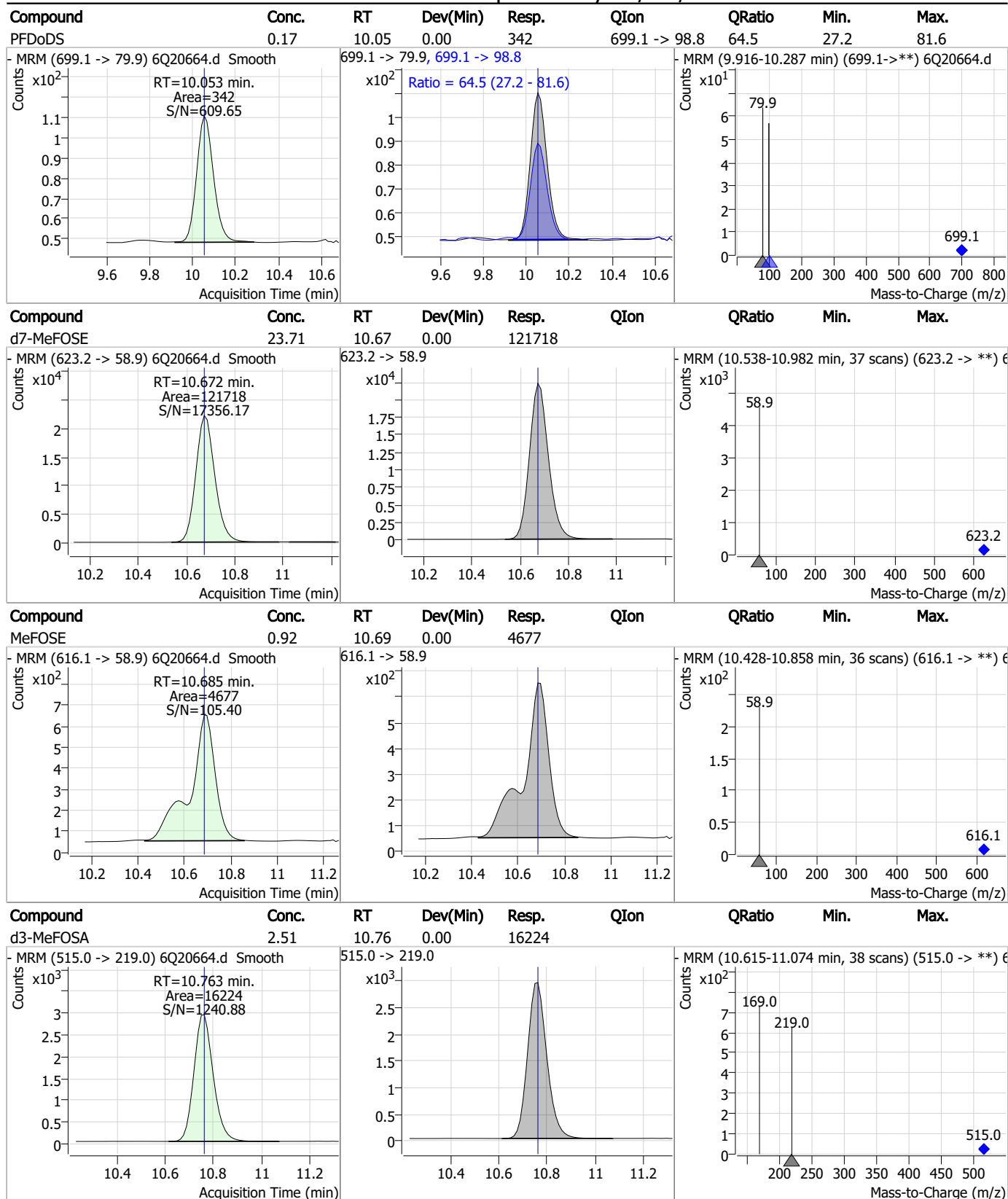
Perfluorinated Compounds by LC/MS/MS



7.7.2

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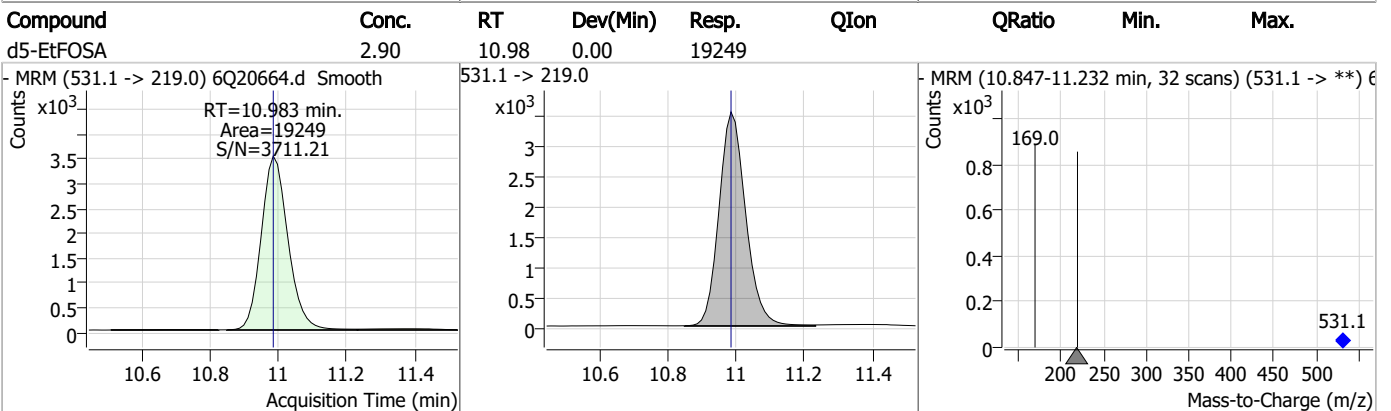
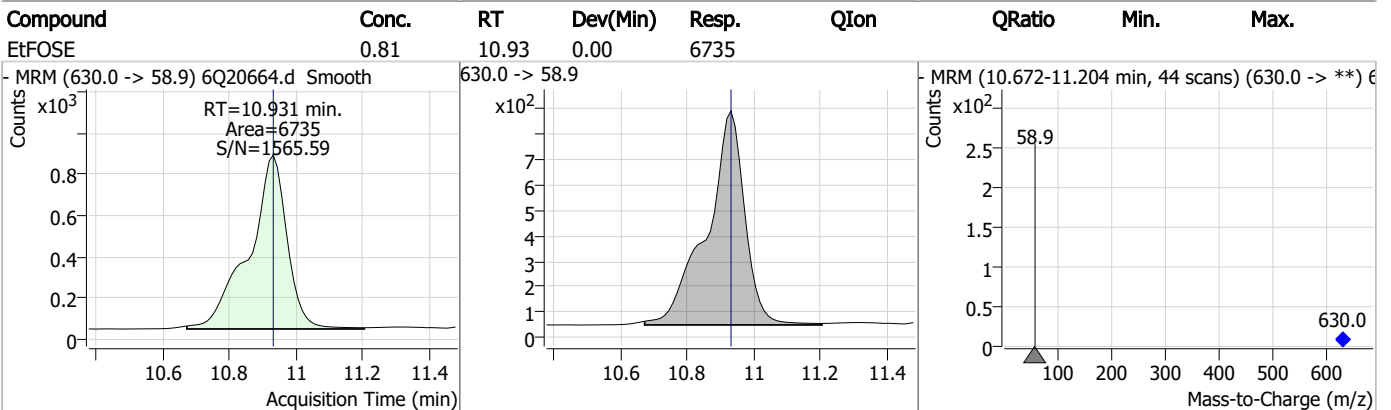
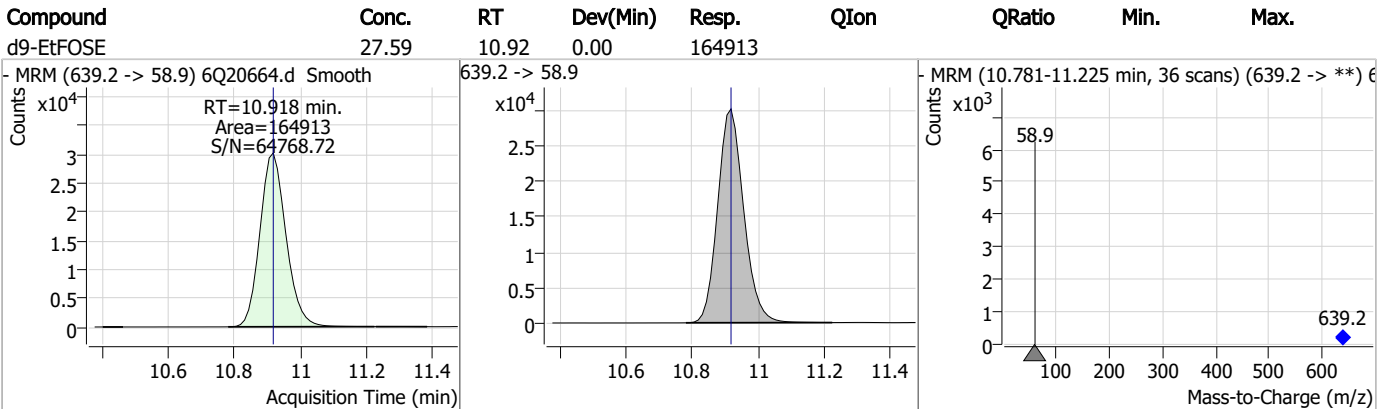
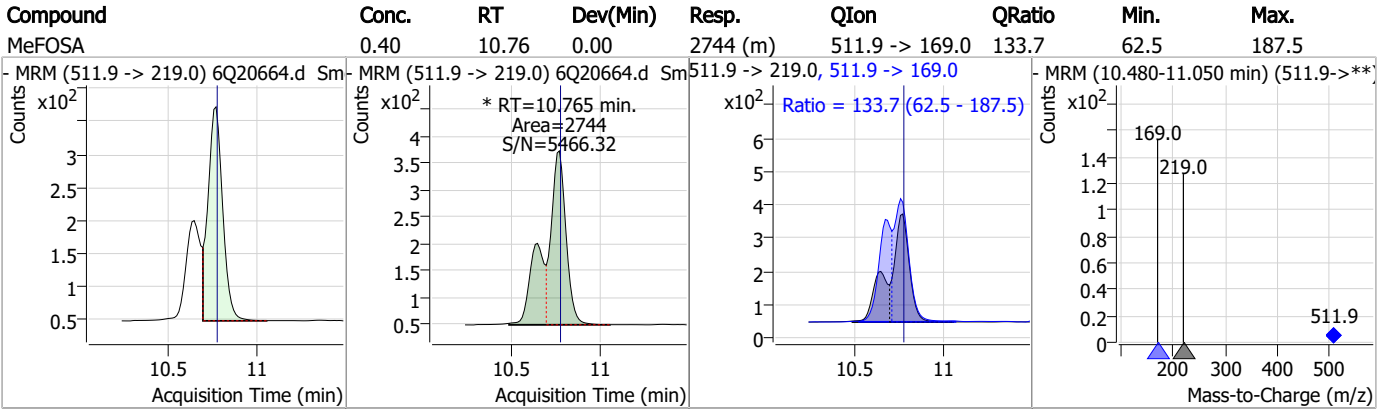
Perfluorinated Compounds by LC/MS/MS



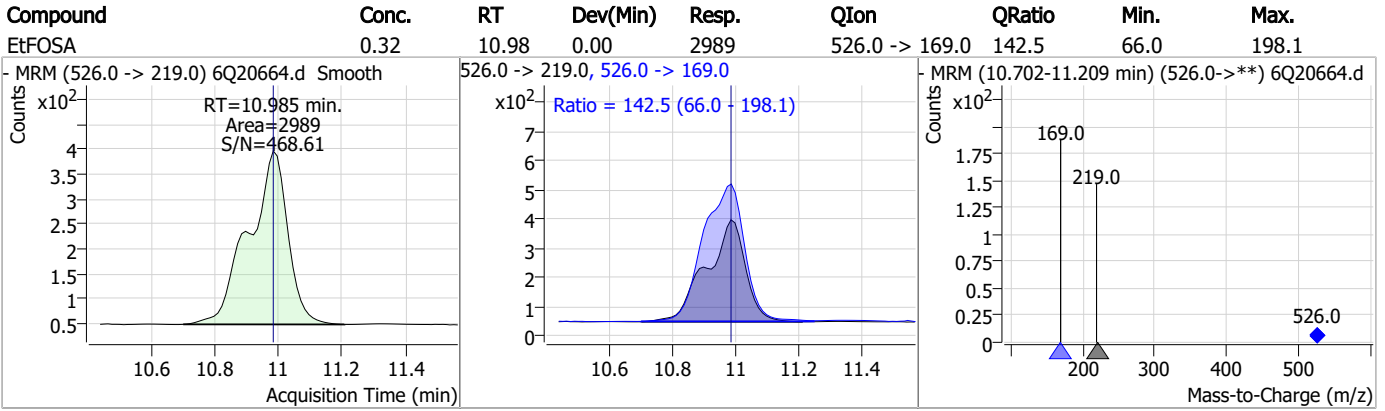
7.7.2
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.7.2

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Manual Integration Approval Summary

Sample Number: S6Q307-IC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20664.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 19:05 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.41	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.7.2.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20665.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 7:19:28 PM
 Sample Name : ic307-2
 Vial : P1-A3
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	229031	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	73669	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	78541	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	71847	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	117669	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	55800	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	29167	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	38939	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	40836	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	21345	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	40260	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	28976	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	16123	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	15745	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3085	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4615	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4393	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	35098	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	49941	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	27079	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	151650	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	180024	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	18800	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	18276	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	22100	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	95404	5.00 µg/L	-0.012
18O2-PFHxS	7.403	403.0 -> 83.9	13038	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	127052	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	42037	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	63521	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	75921	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3085	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.6%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4615	5.32 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.4%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4393	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.9%		
13C2-PFDoDA	9.211	615.1 -> 570.0	40836	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C2-PFTeDA	9.925	715.2 -> 670.0	21345	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C3-PFBS	5.647	302.1 -> 79.9	28976	2.63 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C3-PFHxS	7.392	402.1 -> 79.9	16123	2.32 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 = 92.8%	
13C4-PFBA	3.022	216.8 -> 171.9	229031	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFHpA	6.633	367.1 -> 322.0	71847	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.692	318.0 -> 273.0	78541	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.459	268.3 -> 223.0	73669	5.21 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C6-PFDA	8.313	519.1 -> 474.1	29167	1.24 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C7-PFUnDA	8.780	570.0 -> 525.1	38939	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-FOSA	9.674	506.1 -> 77.8	40260	2.61 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C8-PFOA	7.276	421.1 -> 376.0	117669	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C8-PFOS	8.476	507.1 -> 79.9	15745	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.807	472.1 -> 427.0	55800	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSAA	8.346	573.2 -> 419.0	35098	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	49941	10.36 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
d3-MeFOSA	10.763	515.0 -> 219.0	18276	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
d5-EtFOSAA	8.554	589.2 -> 419.0	27079	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	151650	26.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	180024	27.27 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d5-EtFOSA	10.983	531.1 -> 219.0	18800	2.56 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0 327.1 -> 80.9	8607 3184	1.53 µg/L	98
6:2FTS	7.039	427.1 -> 407.0 427.1 -> 80.9	8560 2363	1.58 µg/L	96
8:2FTS	8.090	527.1 -> 507.0 527.1 -> 80.8	4253 1726	1.51 µg/L	87
EtFOSAA	8.555	584.2 -> 419.1 584.2 -> 526.0	1588 923	0.37 µg/L	m 88
FOSA	9.677	498.1 -> 77.9 498.1 -> 478.0	6214 233	0.39 µg/L	99
MeFOSAA	8.347	570.1 -> 419.0 570.1 -> 483.0	2849 647	0.37 µg/L	m 87
PFBA	3.018	212.8 -> 168.9	13301	1.51 µg/L	100
PFBS	5.648	298.7 -> 79.9 298.7 -> 98.8	3777 1469	0.33 µg/L	96
PFDA	8.314	512.9 -> 469.0 512.9 -> 219.0	16715 2348	0.41 µg/L	97
PFDODA	9.211	613.1 -> 569.0 613.1 -> 319.0	12756 1938	0.40 µg/L	97
PFDS	9.374	599.0 -> 79.9	1729	0.37 µg/L	100

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	898			
PFHpA	6.633	363.1 -> 319.0	14667	0.42	µg/L	99
		363.1 -> 169.0	2393			
PFHpS	7.972	449.0 -> 79.9	3514	0.39	µg/L	99
		449.0 -> 98.9	1728			
PFHxA	5.694	313.0 -> 269.0	11508	0.40	µg/L	98
		313.0 -> 118.9	649			
PFHxS	7.393	398.7 -> 79.9	3093	0.36	µg/L	m 99
		398.7 -> 98.9	1624			
PFNA	7.808	463.0 -> 419.0	16986	0.38	µg/L	99
		463.0 -> 219.0	3165			
PFNS	8.955	548.8 -> 79.9	2876	0.36	µg/L	100
		548.8 -> 98.9	1464			
PFOA	7.278	413.0 -> 369.0	20908	0.37	µg/L	95
		413.0 -> 169.0	3984			
PFOS	8.478	498.9 -> 79.9	3241	0.38	µg/L	m 74
		498.9 -> 98.8	1677			
PFPeA	4.461	263.0 -> 219.0	15623	0.80	µg/L	100
PFPeS	6.697	349.1 -> 79.9	3349	0.40	µg/L	100
		349.1 -> 98.9	1546			
PFTeDA	9.926	713.1 -> 669.0	9490	0.39	µg/L	99
		713.1 -> 168.9	844			
PFTrDA	9.595	663.0 -> 619.0	11344	0.37	µg/L	98
		663.0 -> 168.9	1378			
PFUnDA	8.780	563.1 -> 519.0	11294	0.39	µg/L	93
		563.1 -> 269.1	2037			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	16865	0.72	µg/L	96
		632.9 -> 452.9	4802			
9Cl-PF3ONS	8.819	530.8 -> 351.0	26248	0.69	µg/L	87
		532.8 -> 353.0	9484			
ADONA	6.883	376.9 -> 250.9	60584	0.73	µg/L	100
		376.9 -> 84.8	14697			
HFPO-DA	6.083	284.9 -> 168.9	4095	0.80	µg/L	98
		284.9 -> 184.9	410			
3:3FTCA	3.883	241.0 -> 177.0	2578	1.80	µg/L	100
		241.0 -> 117.0	340			
5:3FTCA	6.322	341.0 -> 237.1	58010	9.64	µg/L	94
		341.0 -> 217.0	43953			
7:3FTCA	7.711	441.0 -> 316.9	43886	10.41	µg/L	99
		441.0 -> 336.9	88954			
EtFOSA	10.985	526.0 -> 219.0	7085	0.78	µg/L	m 95
		526.0 -> 169.0	8944			
EtFOSE	10.931	630.0 -> 58.9	17789	1.97	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	6116	0.78	µg/L	m 88
		511.9 -> 169.0	8474			
MeFOSE	10.685	616.1 -> 58.9	11333	1.78	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	809	0.38	µg/L	97
		699.1 -> 98.8	460			
NFDHA	5.576	295.0 -> 201.0	2670	0.76	µg/L	100
		295.0 -> 84.9	711			
PFMBA	4.900	279.0 -> 85.1	9710	0.75	µg/L	100
PFMPA	3.588	229.0 -> 84.9	8333	0.77	µg/L	100
PFEESA	6.188	314.8 -> 134.9	27617	0.69	µg/L	100
		314.8 -> 82.9	845			

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

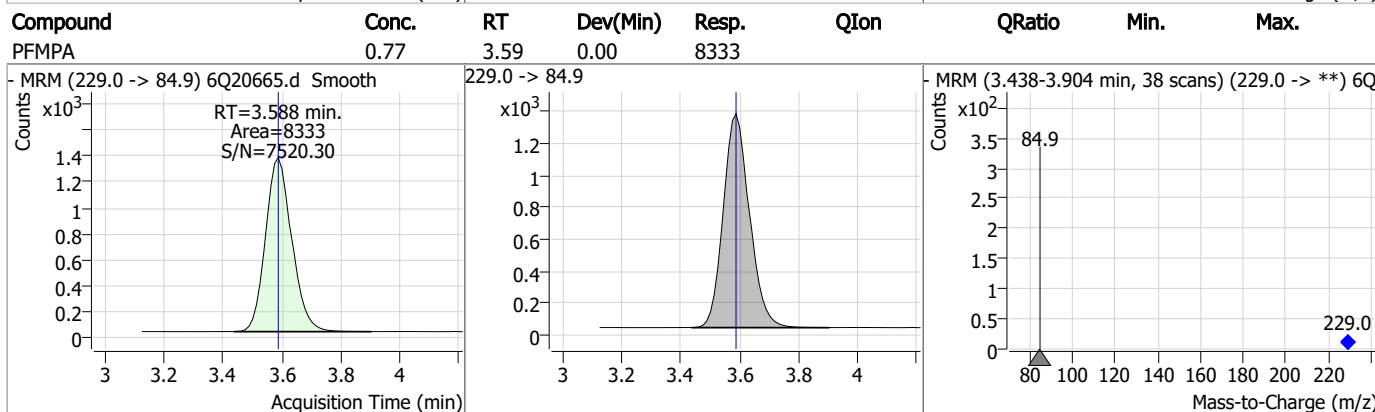
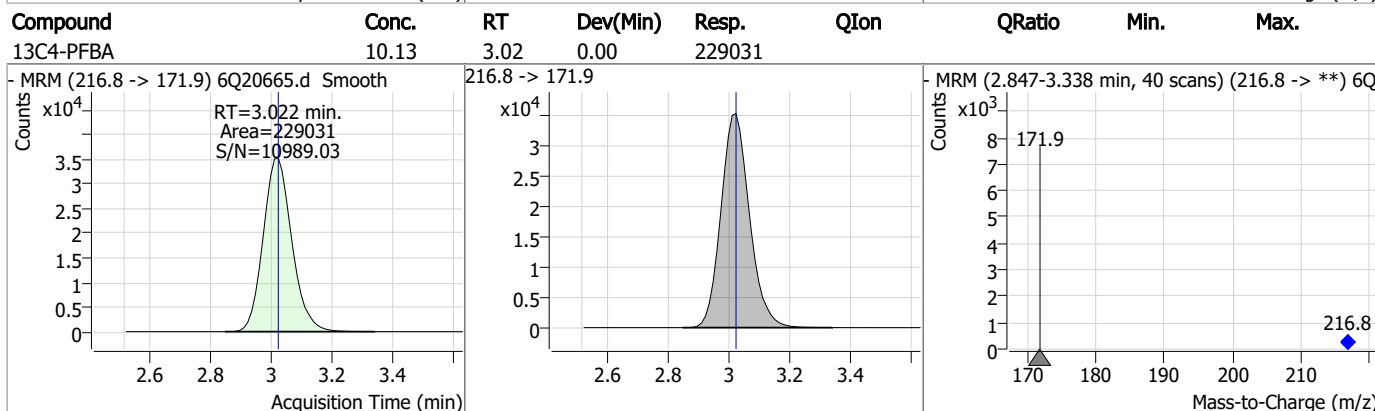
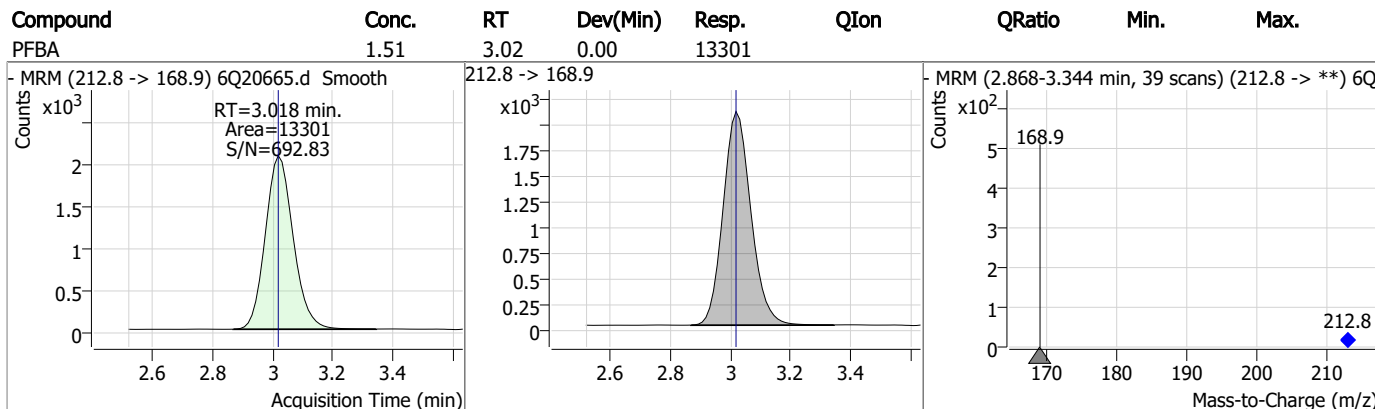
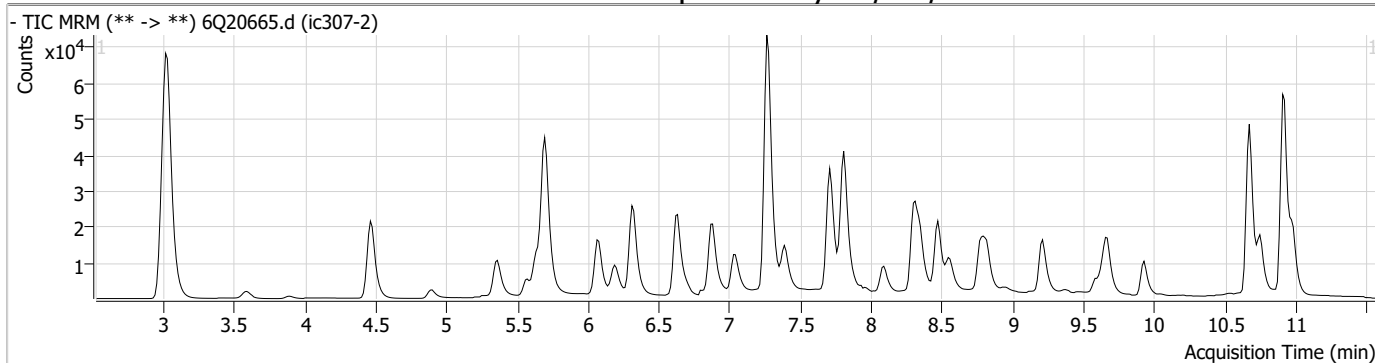
Perfluorinated Compounds by LC/MS/MS

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

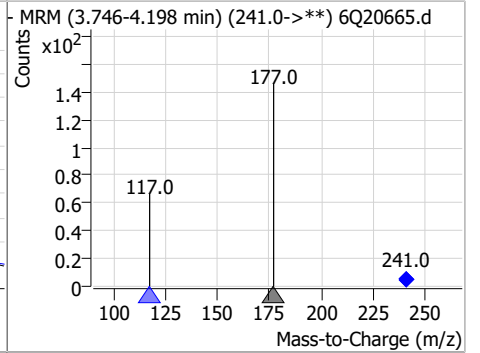
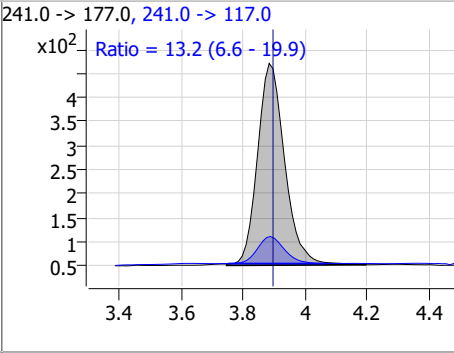
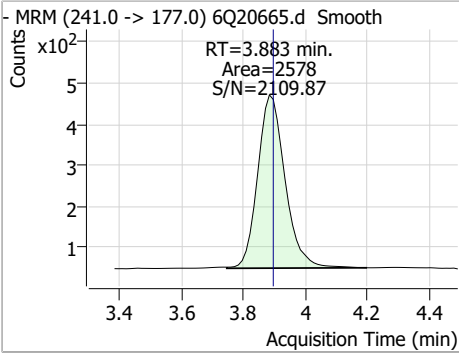
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Perfluorinated Compounds by LC/MS/MS

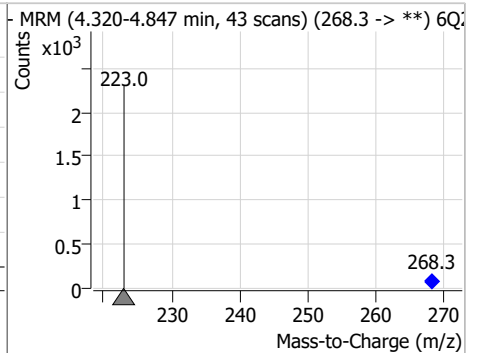
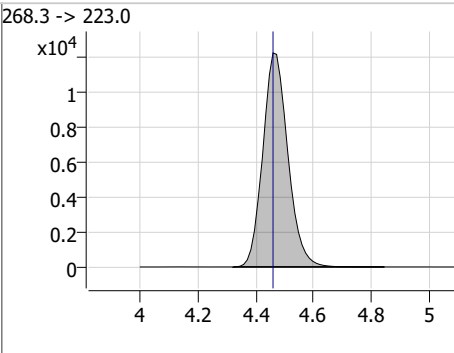
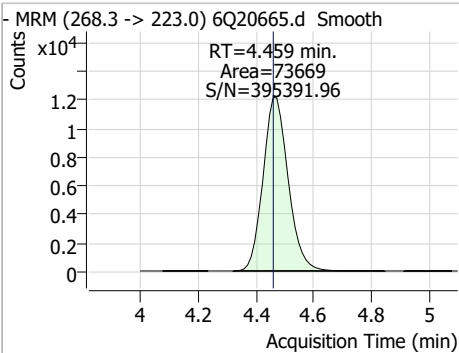


Perfluorinated Compounds by LC/MS/MS

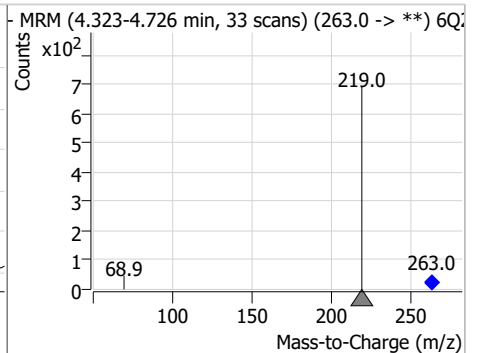
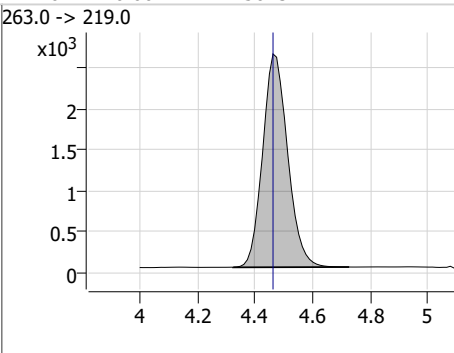
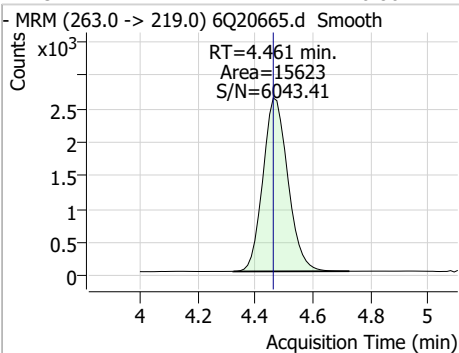
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.80	3.88	-0.01	2578	241.0 -> 117.0	13.2	6.6	19.9



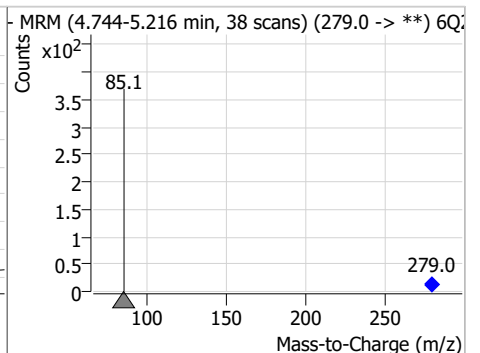
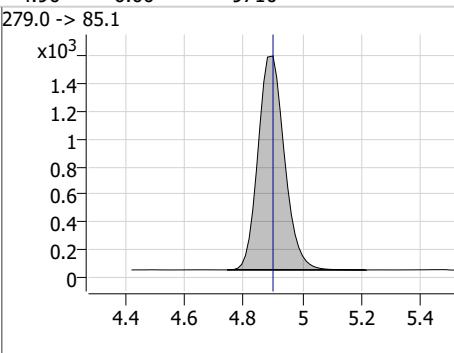
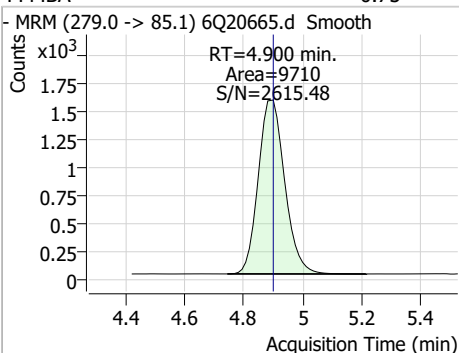
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.21	4.46	0.00	73669				



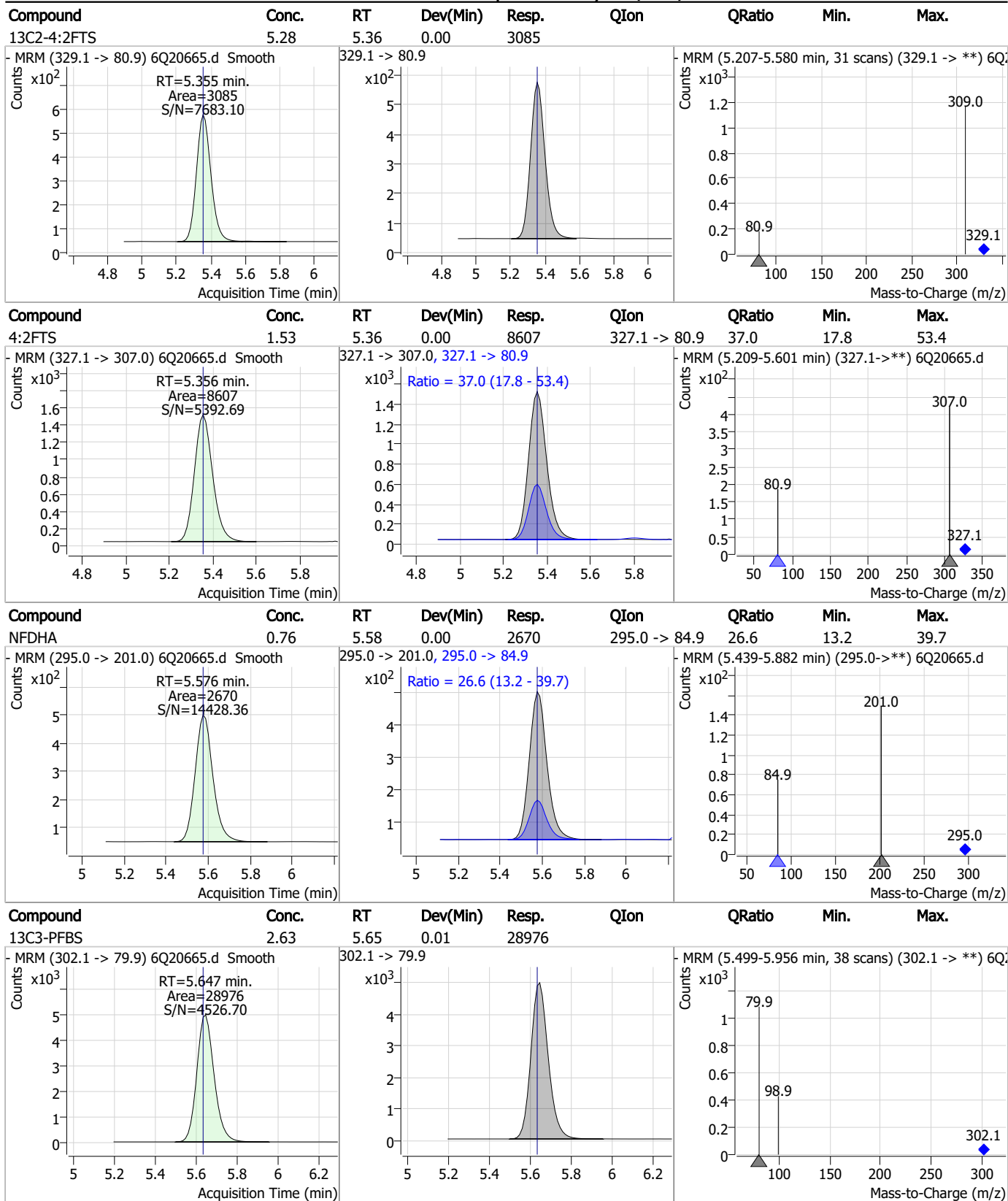
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.80	4.46	0.00	15623				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.75	4.90	0.00	9710				

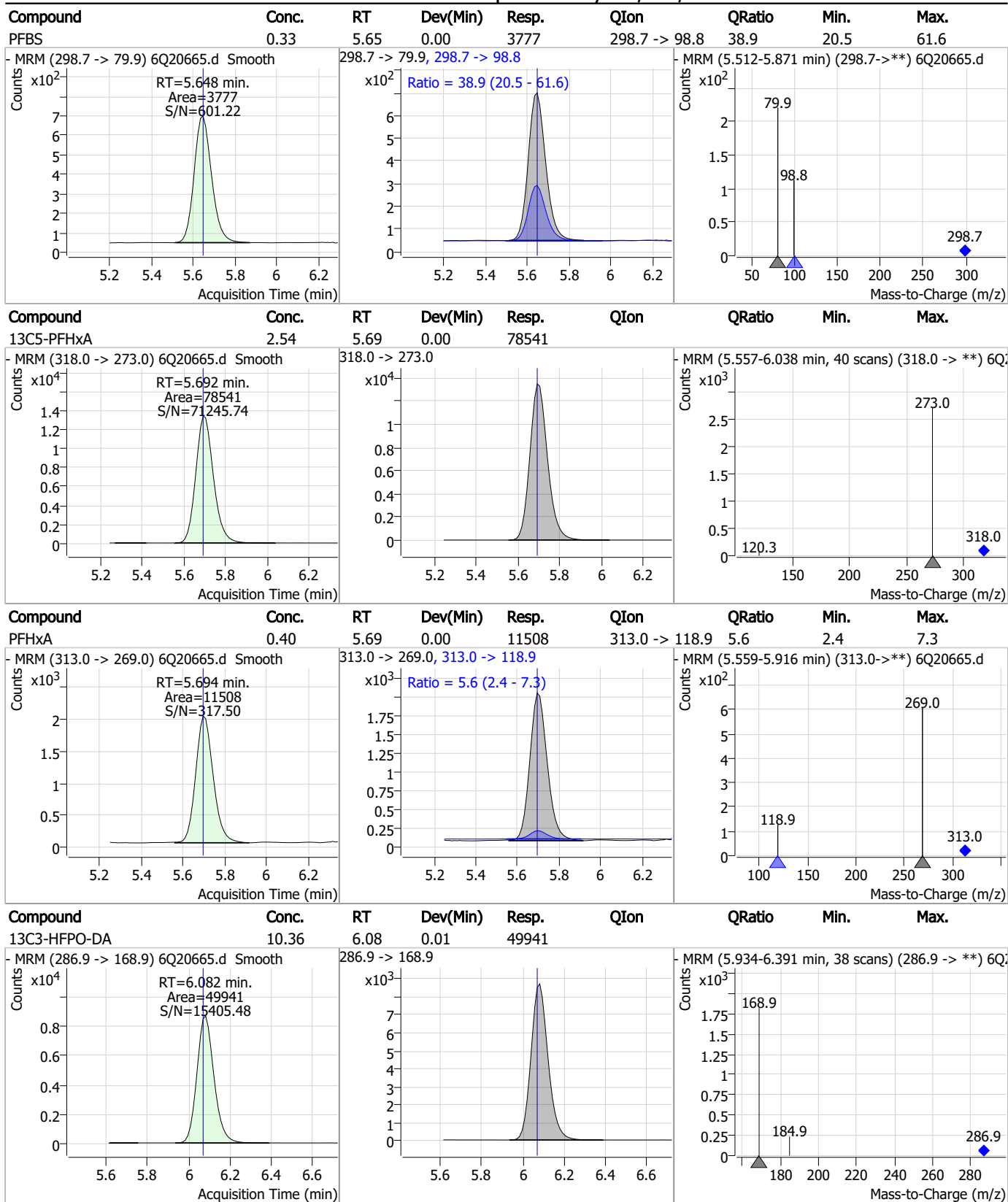


Perfluorinated Compounds by LC/MS/MS



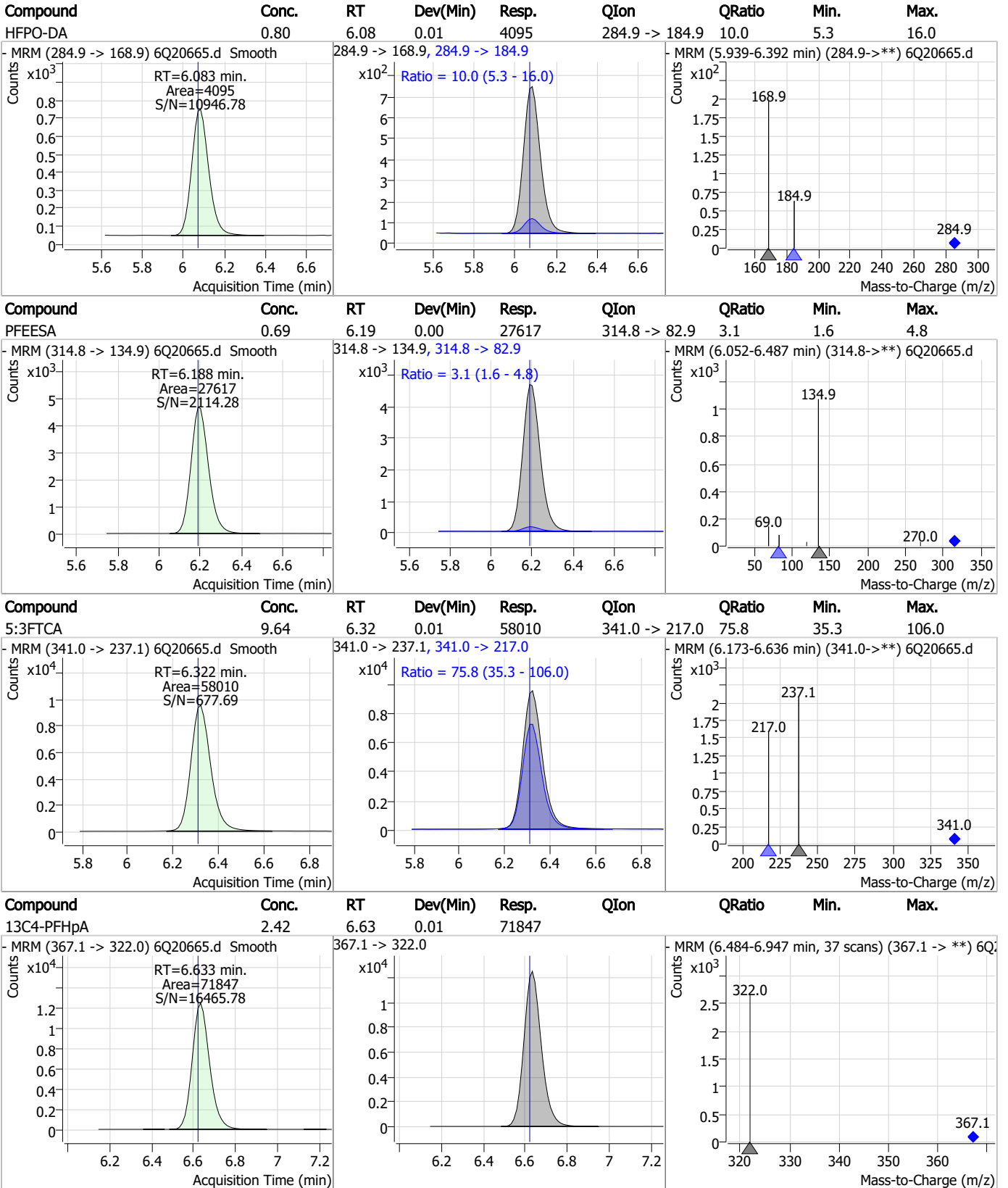
7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS

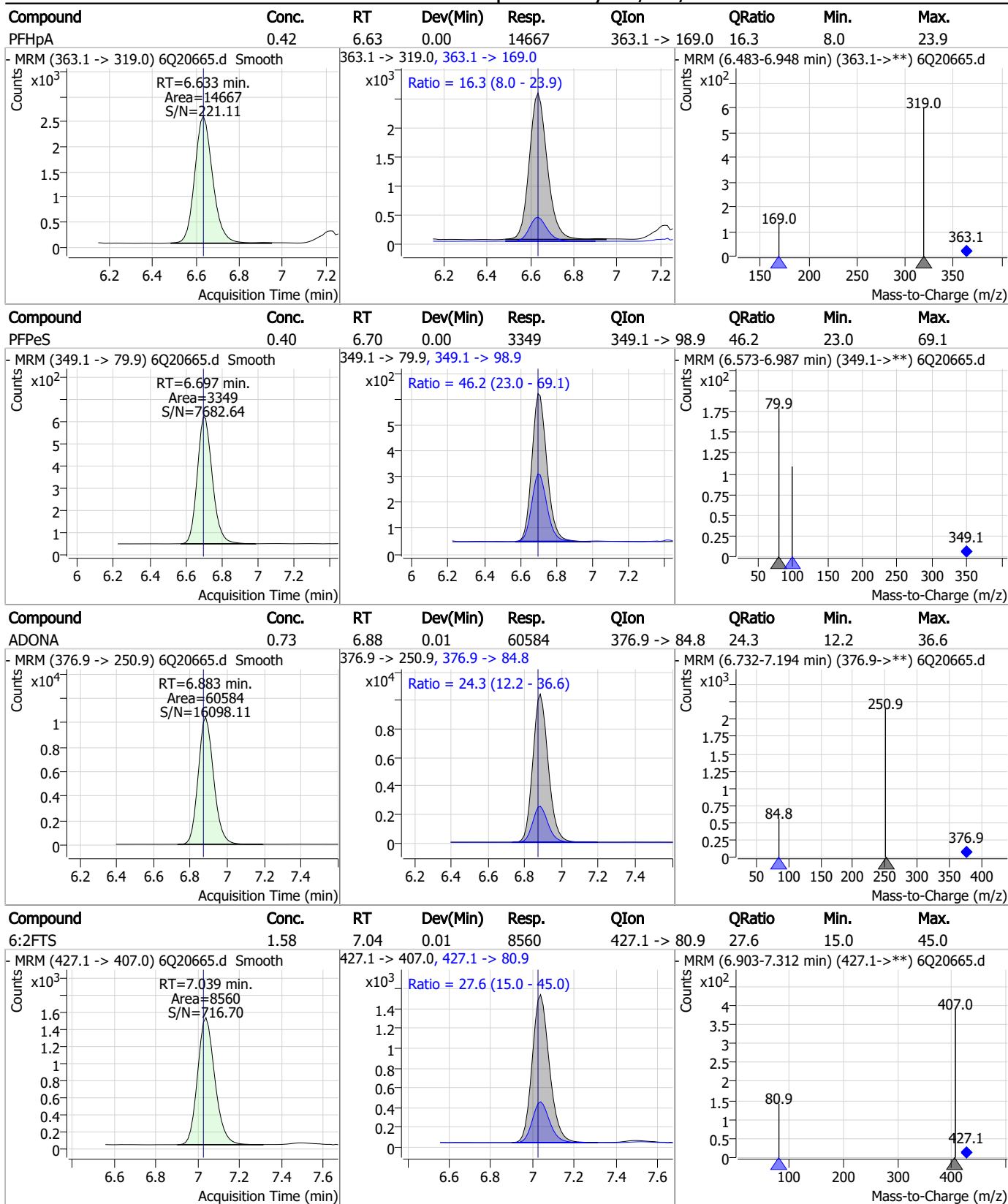


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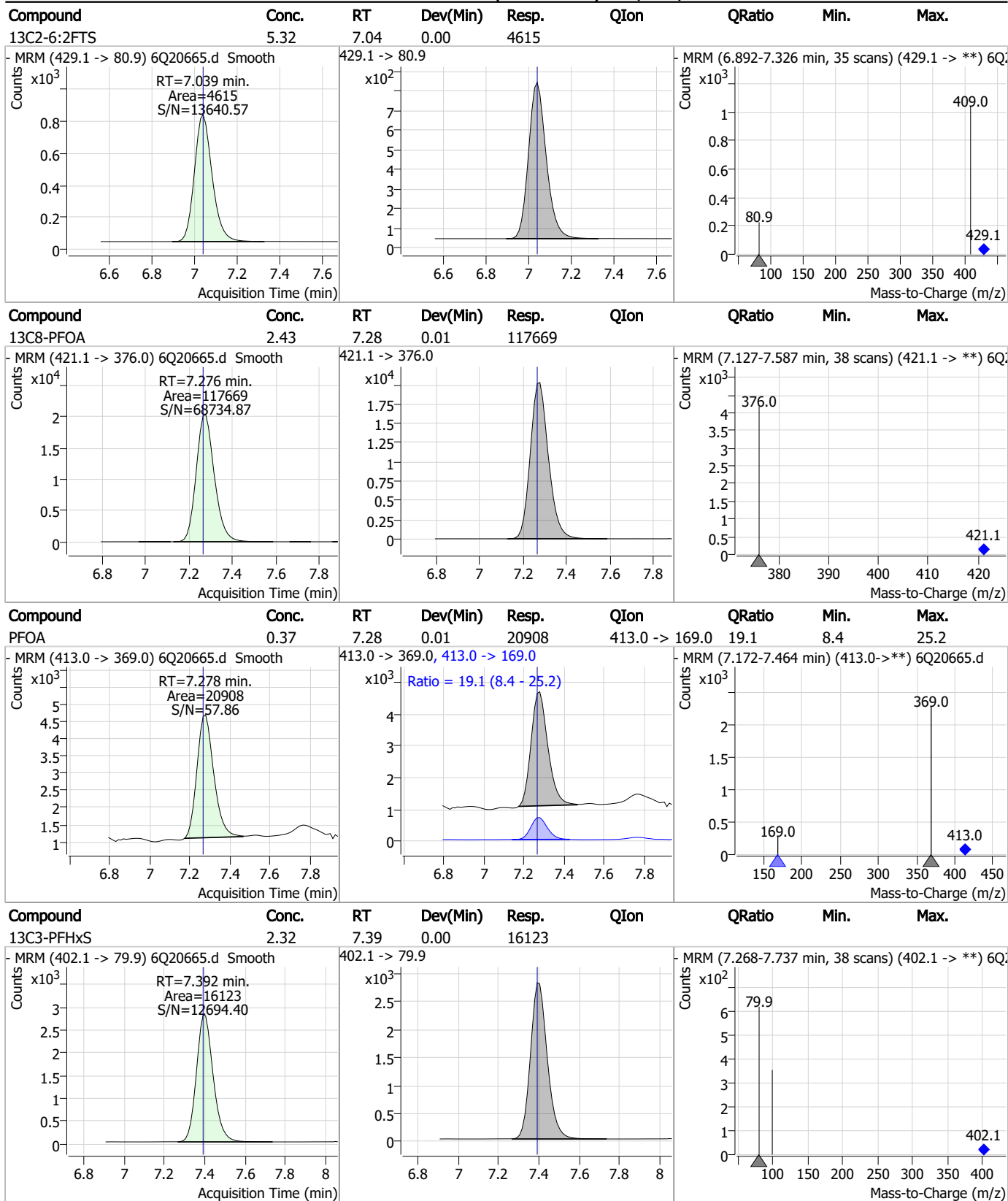
Perfluorinated Compounds by LC/MS/MS



7.7.3

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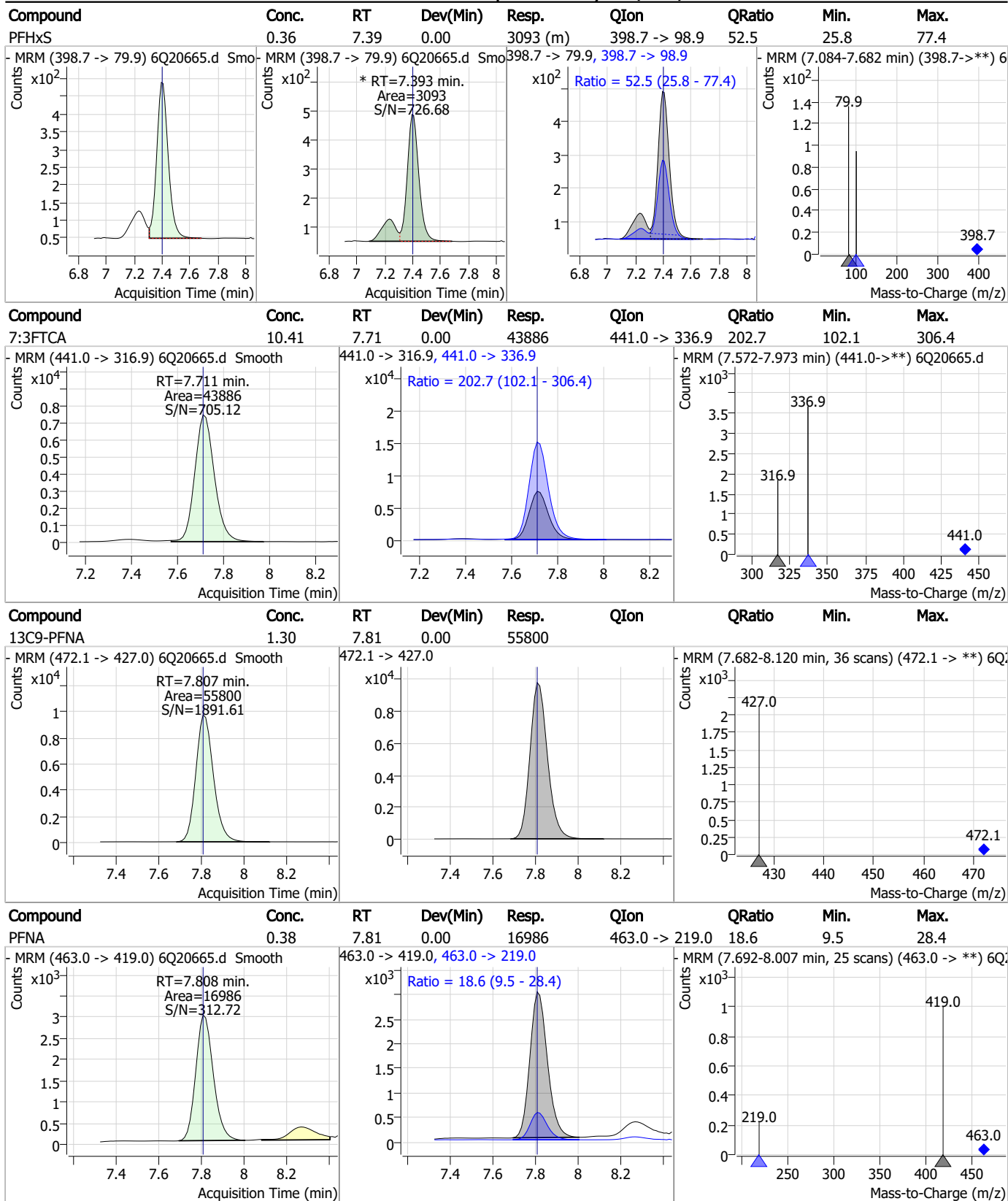
Perfluorinated Compounds by LC/MS/MS



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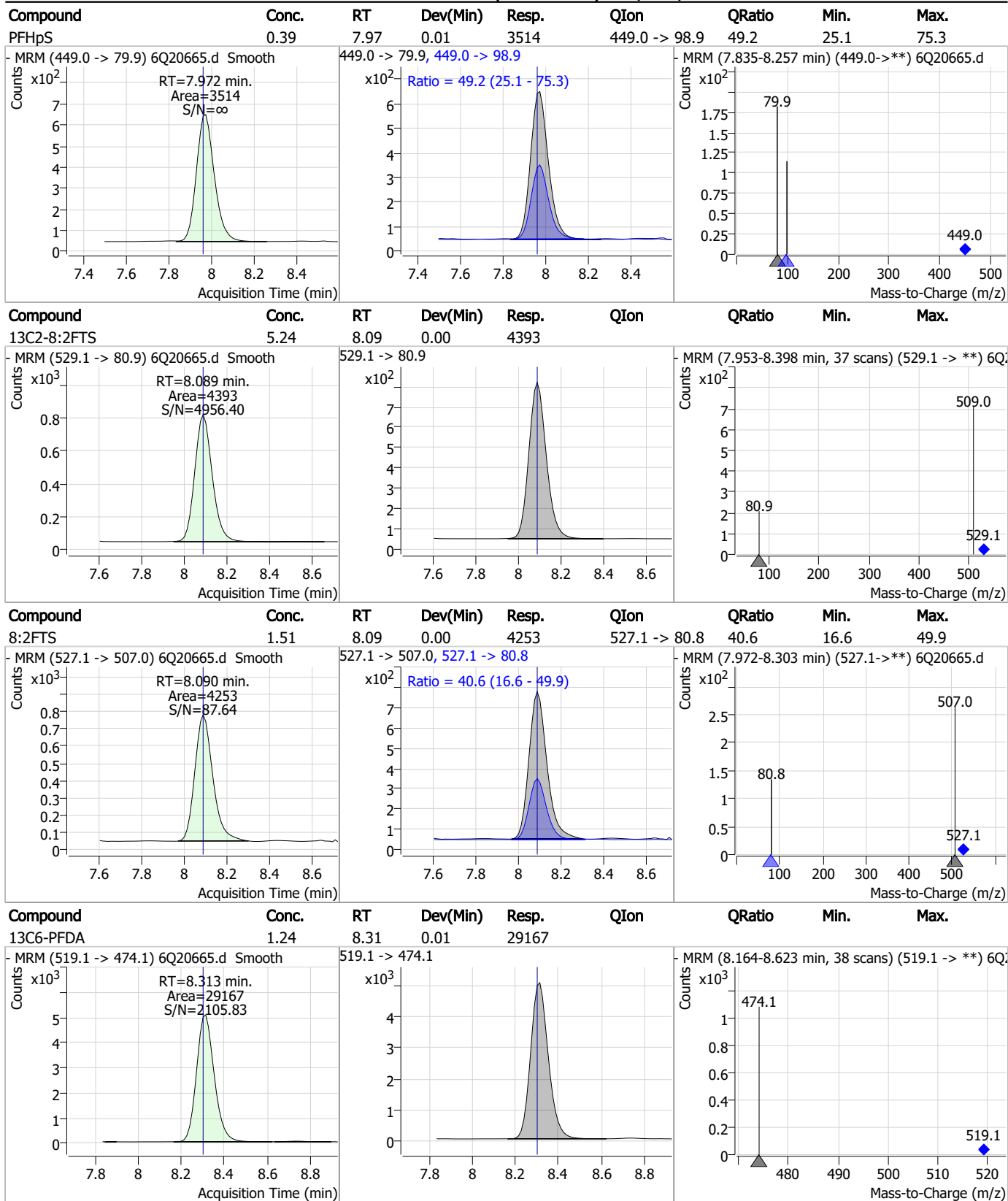


Perfluorinated Compounds by LC/MS/MS



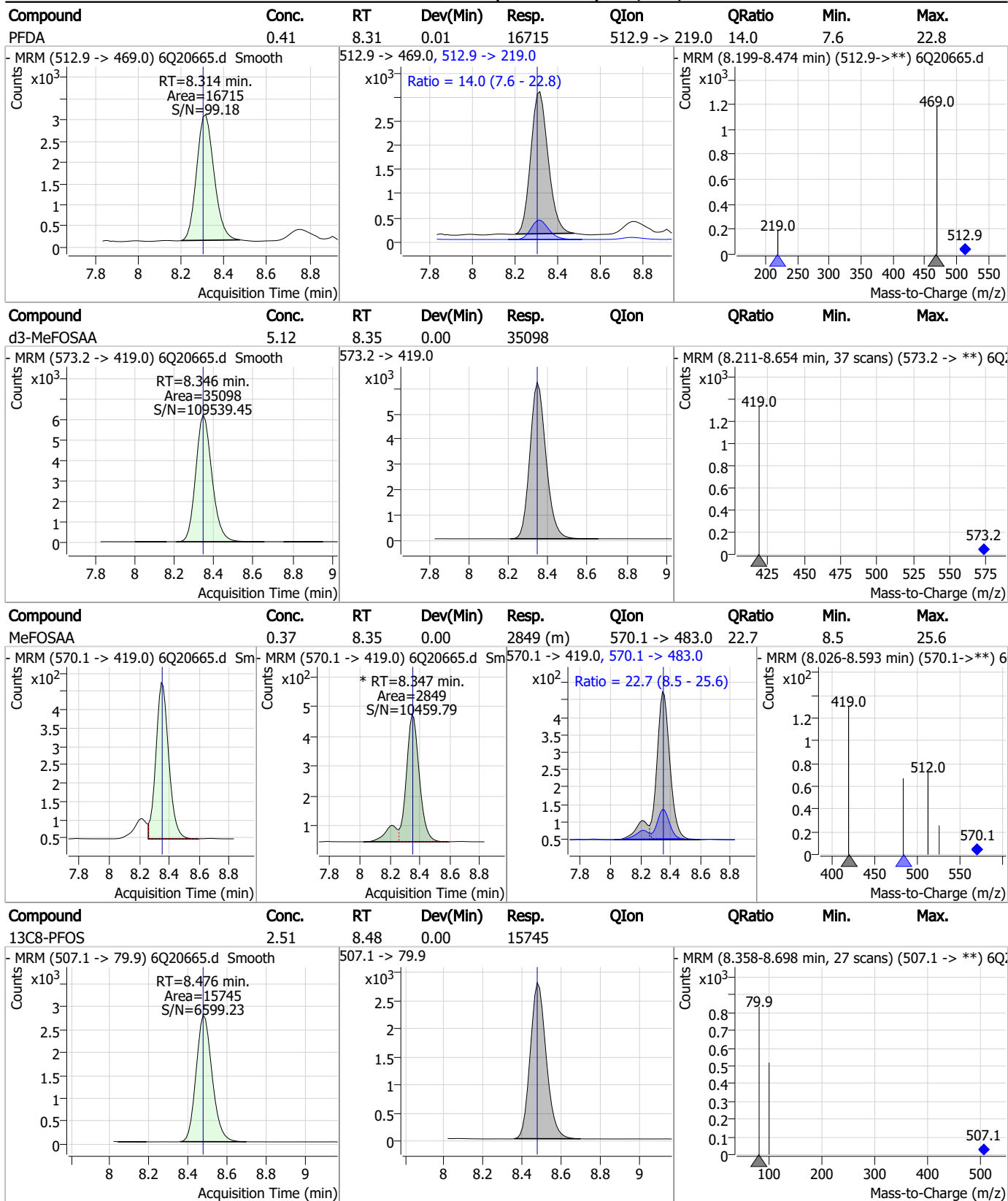
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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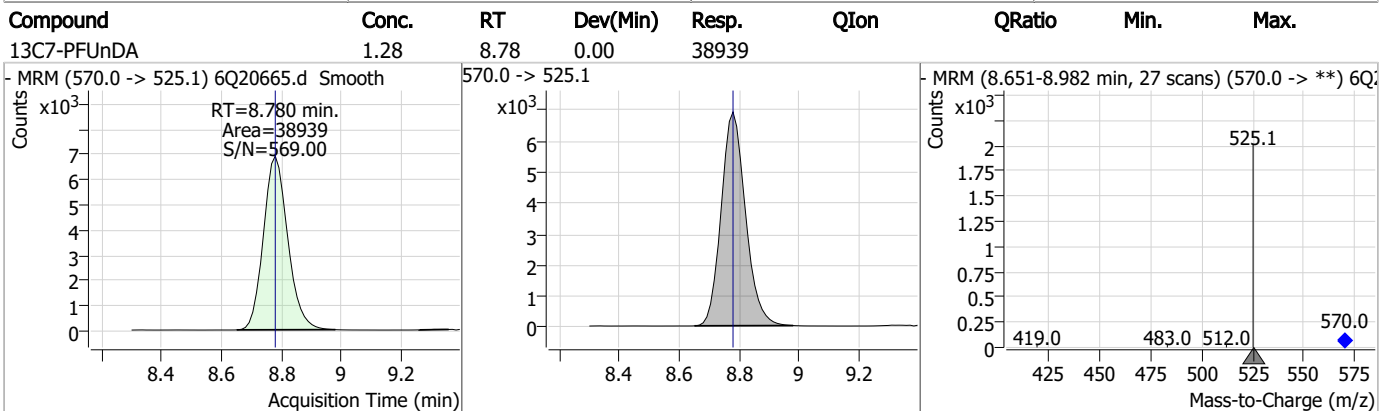
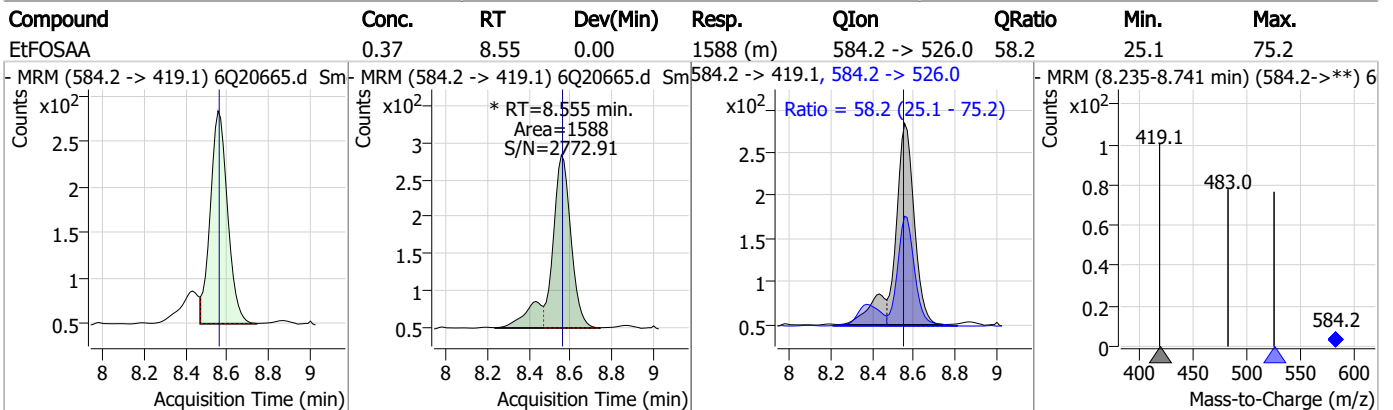
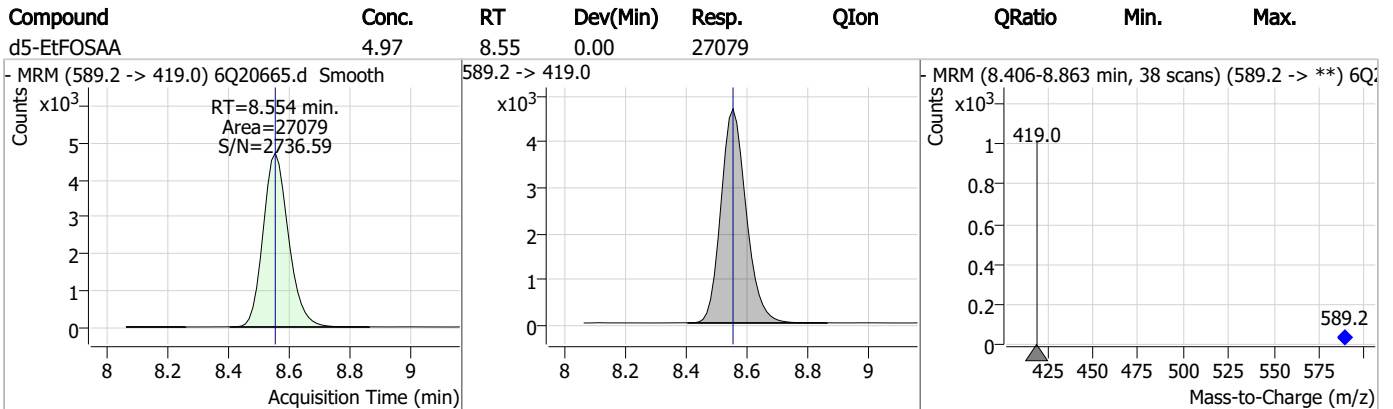
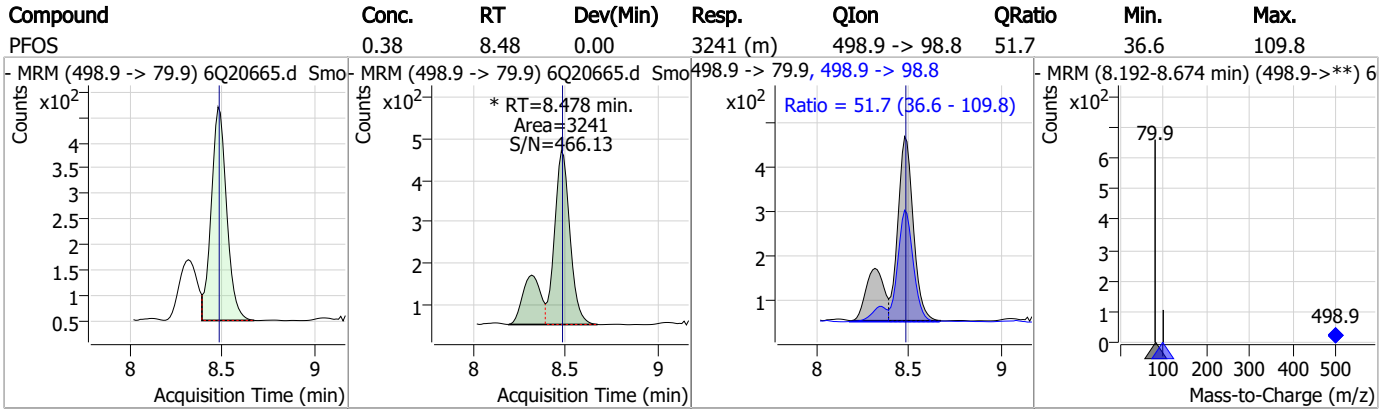
Perfluorinated Compounds by LC/MS/MS



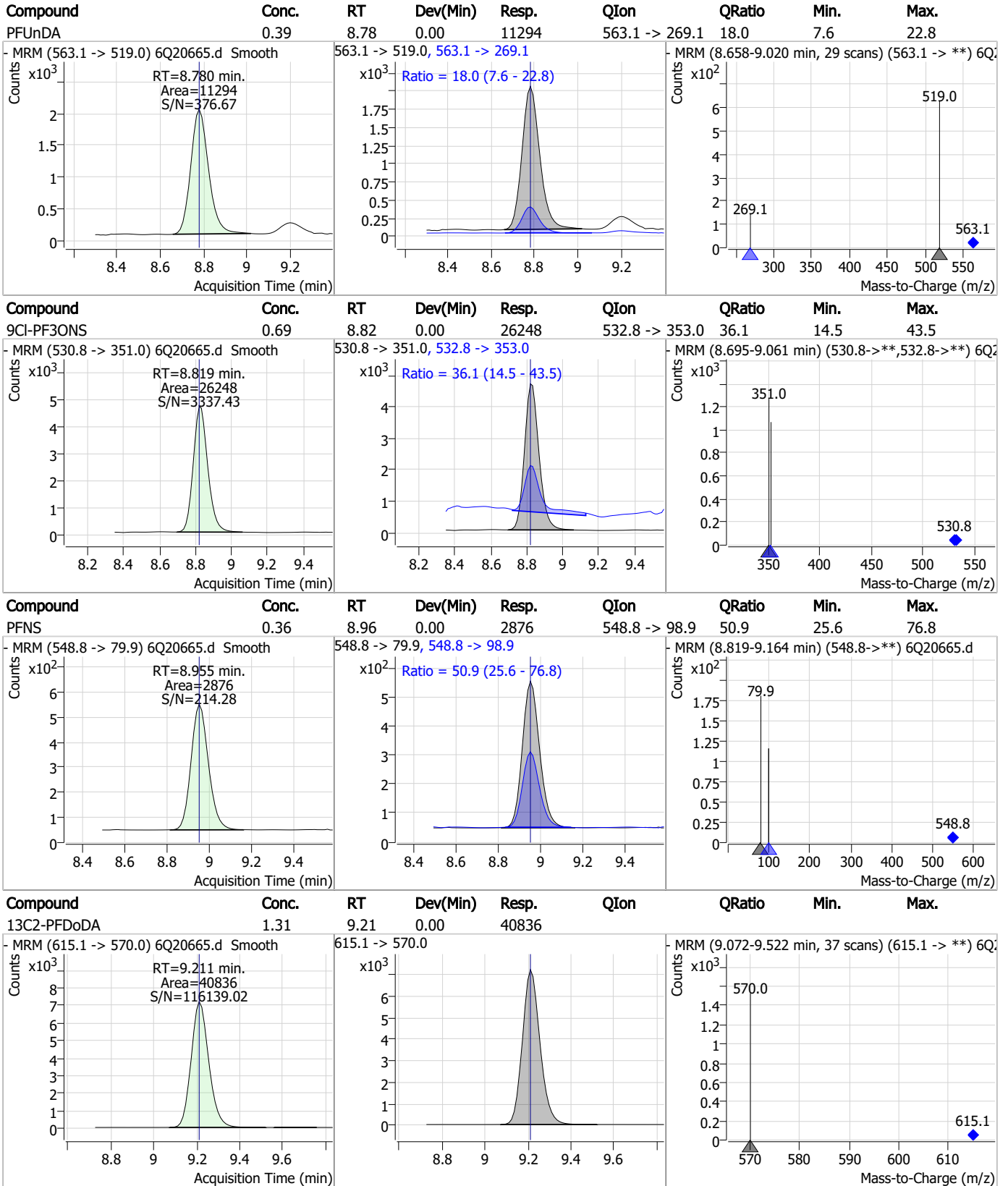
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Perfluorinated Compounds by LC/MS/MS



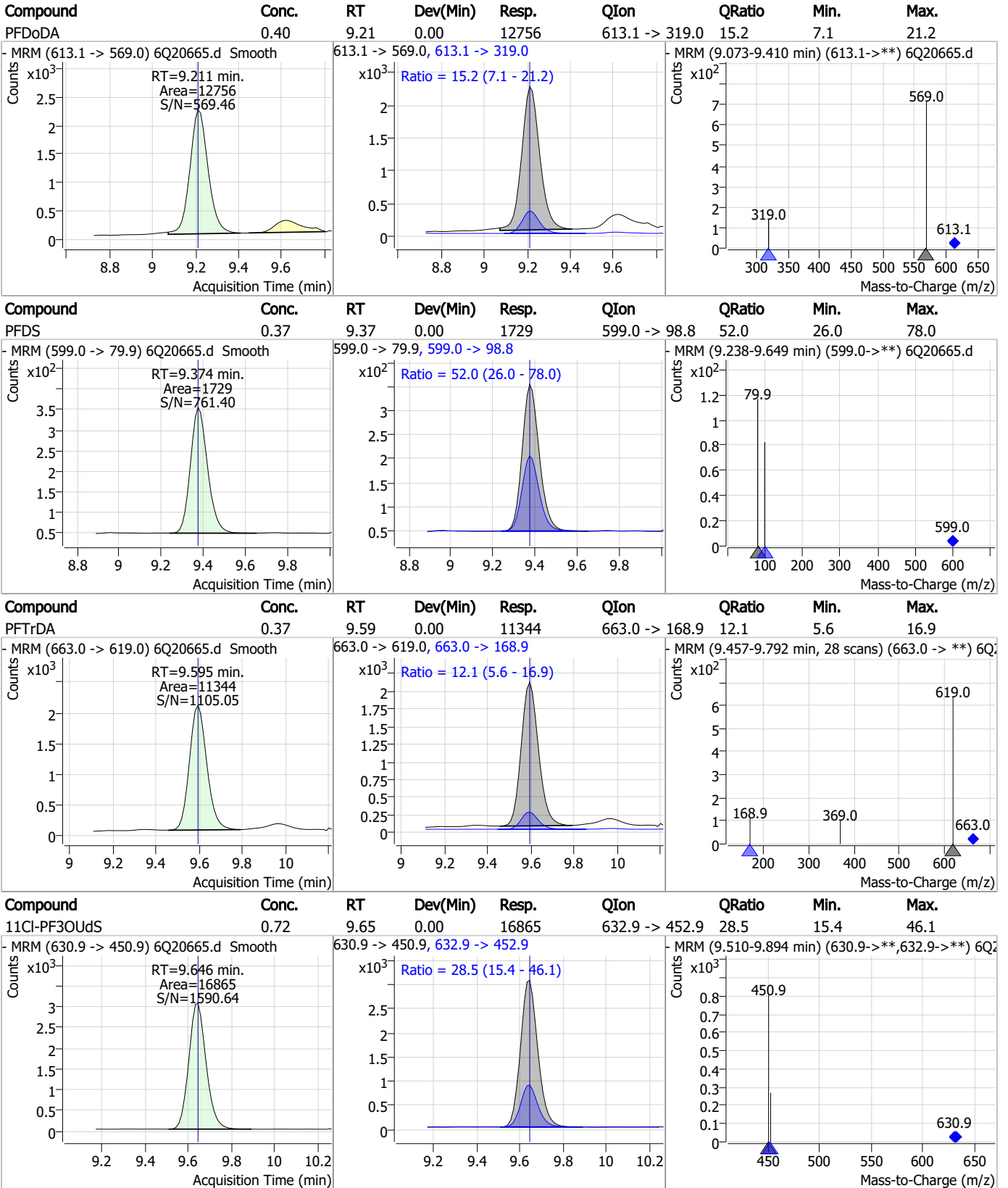
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

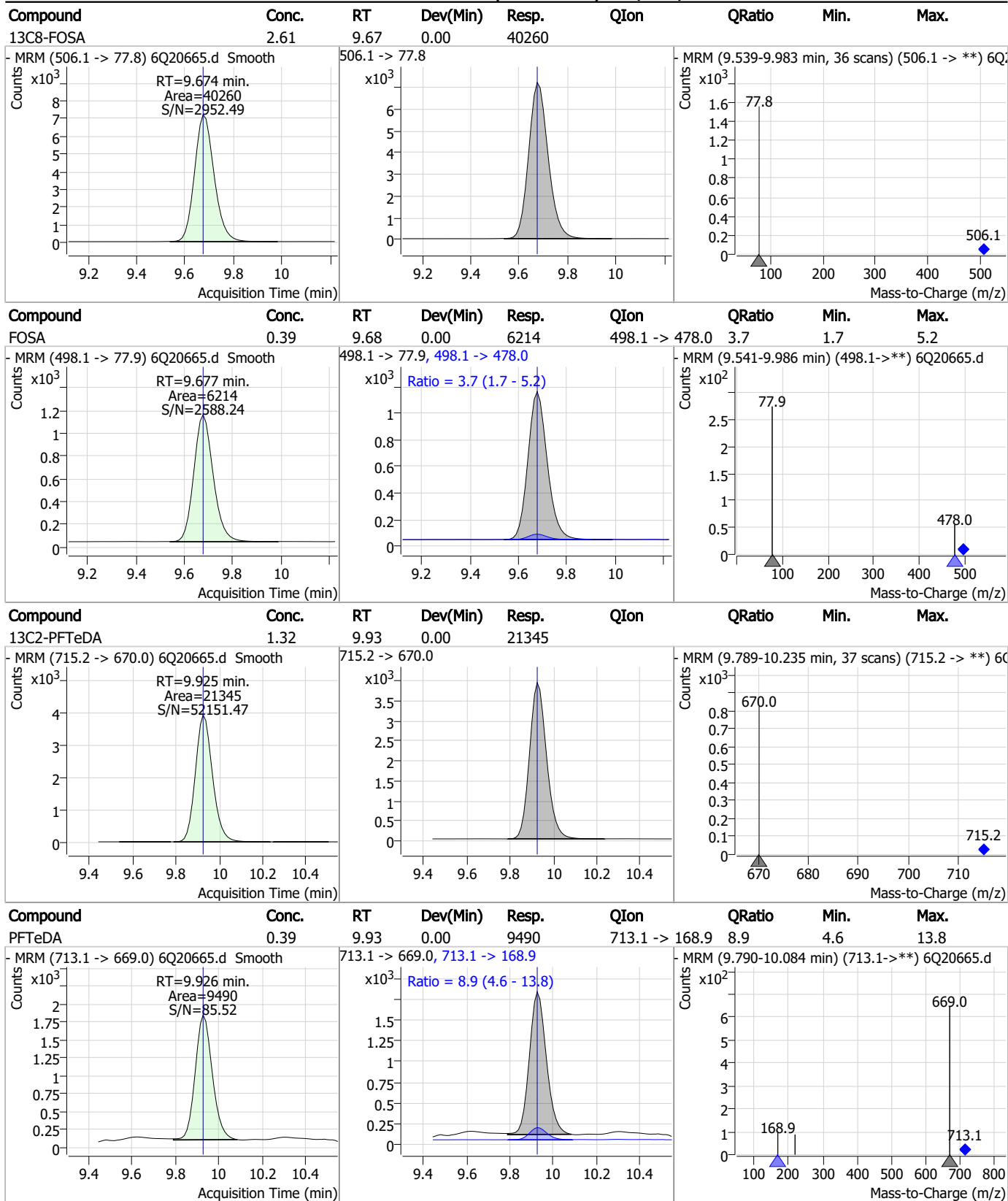


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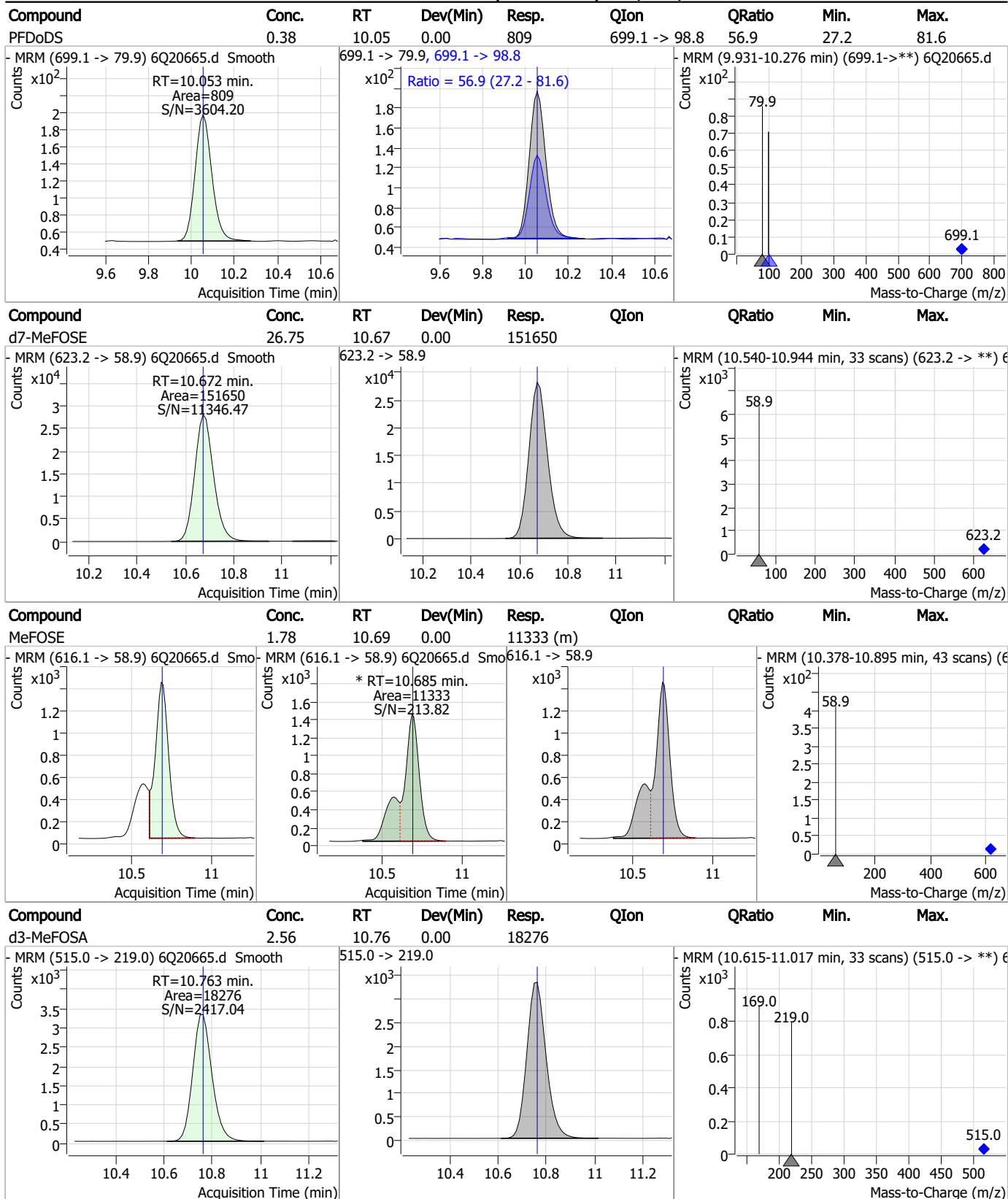


Perfluorinated Compounds by LC/MS/MS



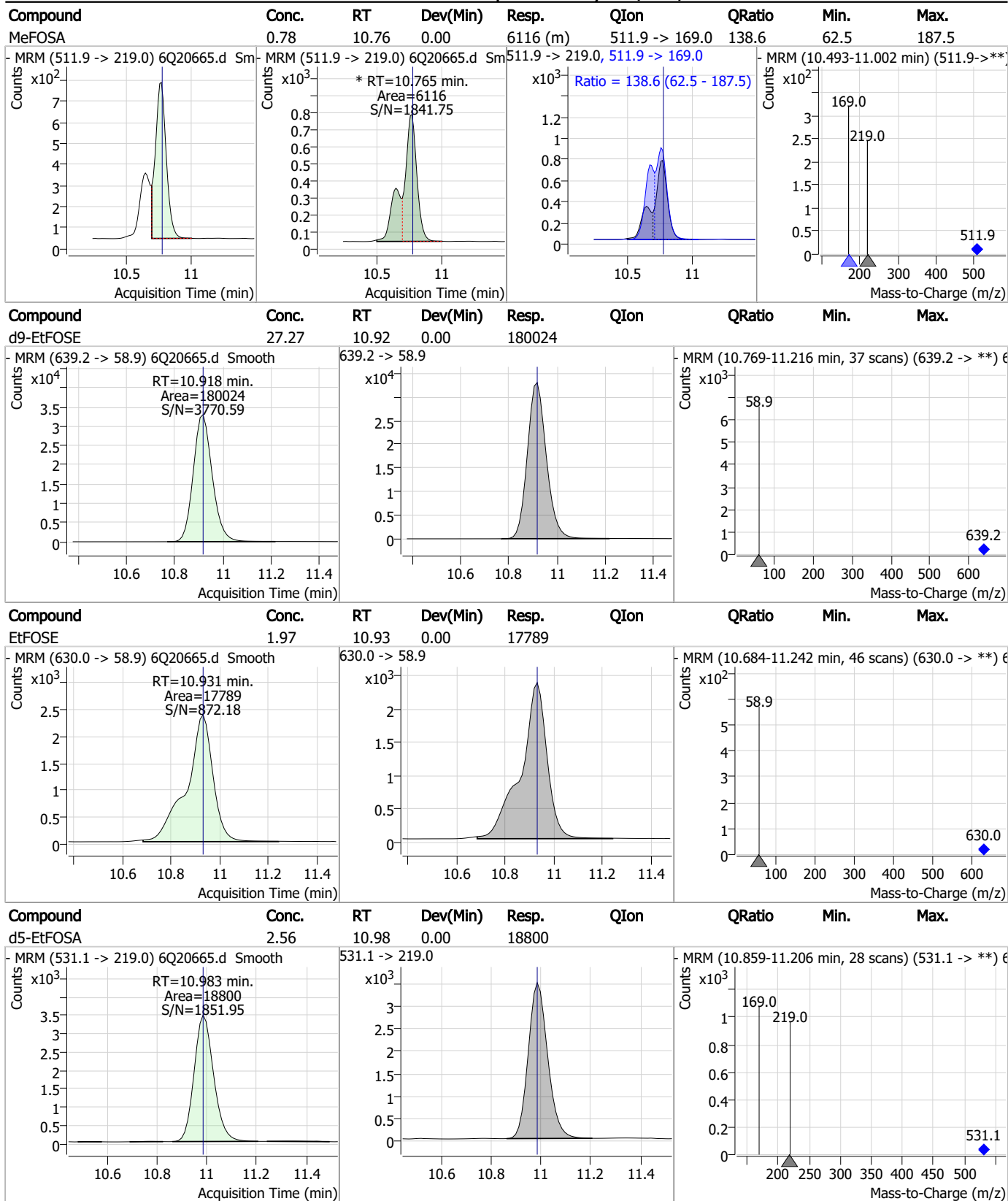
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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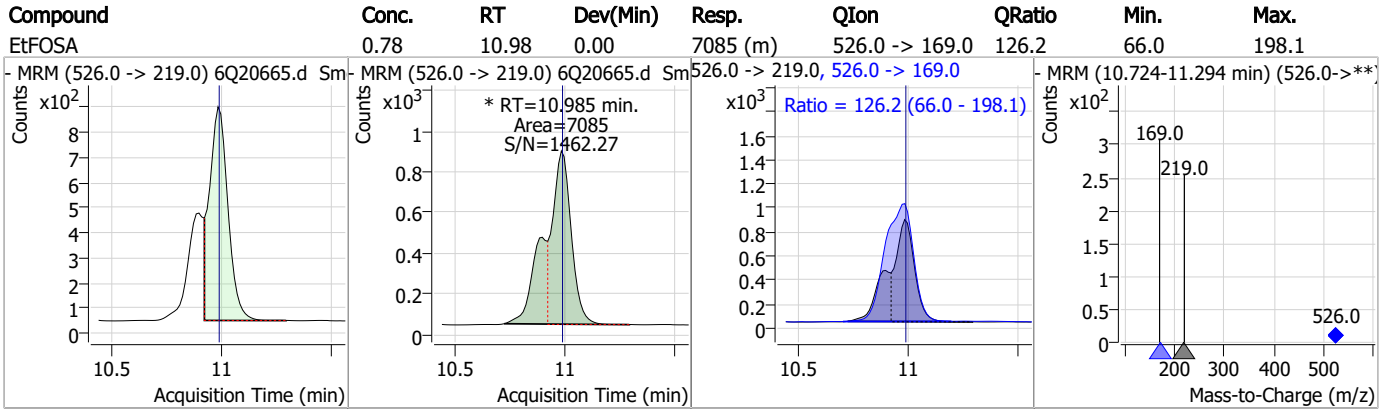
Perfluorinated Compounds by LC/MS/MS



7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3

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Manual Integration Approval Summary

Sample Number: S6Q307-IC307
Lab FileID: 6Q20665.D
Injection Time: 07/10/23 19:19

Method: EPA DRAFT 1633
Analyst approved: 07/11/23 12:14 Martha Valls
Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.7.3.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20666.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 7:33:28 PM
 Sample Name : ic307-3
 Vial : P1-A4
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	305887	10.00 µg/L	0.000
M5-PFPeA	4.472	268.3 -> 223.0	99028	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	107521	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	102254	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	157208	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	73019	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	44443	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	57793	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	58157	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	28767	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	51854	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	37524	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	23432	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	24427	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	4309	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	5909	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	5645	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	45397	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	62798	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	37689	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	178917	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	244077	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	24739	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	24157	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	32259	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	129834	5.00 µg/L	0.000
18O2-PFHxS	7.403	403.0 -> 83.9	17162	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	165146	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	60842	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	88386	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	107061	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	4309	5.60 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.1%		
13C2-6:2FTS	7.039	429.1 -> 80.9	5909	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	5645	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-PFDoDA	9.211	615.1 -> 570.0	58157	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C2-PFTeDA	9.925	715.2 -> 670.0	28767	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.7%		
13C3-PFBS	5.647	302.1 -> 79.9	37524	2.58 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.3%		
13C3-PFHxS	7.392	402.1 -> 79.9	23432	2.56 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 = 102.5%	
13C4-PFBA	3.022	216.8 -> 171.9	305887	9.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	6.633	367.1 -> 322.0	102254	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C5-PFHxA	5.692	318.0 -> 273.0	107521	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C5-PFPeA	4.472	268.3 -> 223.0	99028	4.96 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.313	519.1 -> 474.1	44443	1.30 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C7-PFUnDA	8.780	570.0 -> 525.1	57793	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C8-FOSA	9.674	506.1 -> 77.8	51854	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C8-PFOA	7.276	421.1 -> 376.0	157208	2.50 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.476	507.1 -> 79.9	24427	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C9-PFNA	7.807	472.1 -> 427.0	73019	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%	
d3-MeFOSAA	8.346	573.2 -> 419.0	45397	4.53 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	62798	9.24 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
d3-MeFOSA	10.763	515.0 -> 219.0	24157	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
d5-EtFOSAA	8.554	589.2 -> 419.0	37689	4.74 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	178917	21.62 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 86.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	244077	25.33 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSA	10.983	531.1 -> 219.0	24739	2.31 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.4%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	35639	4.55 µg/L	96
		327.1 -> 80.9	13625		
6:2FTS	7.039	427.1 -> 407.0	36397	5.24 µg/L	98
		427.1 -> 80.9	11393		
8:2FTS	8.090	527.1 -> 507.0	19223	5.32 µg/L	92
		527.1 -> 80.8	7257		
EtFOSAA	8.555	584.2 -> 419.1	6922	1.17 µg/L	m 91
		584.2 -> 526.0	3901		
FOSA	9.677	498.1 -> 77.9	27537	1.36 µg/L	99
		498.1 -> 478.0	899		
MeFOSAA	8.347	570.1 -> 419.0	13718	1.38 µg/L	m 95
		570.1 -> 483.0	2623		
PFBA	3.031	212.8 -> 168.9	59189	5.02 µg/L	100
PFBS	5.648	298.7 -> 79.9	17484	1.17 µg/L	95
		298.7 -> 98.8	6674		
PFDA	8.314	512.9 -> 469.0	70818	1.14 µg/L	98
		512.9 -> 219.0	11296		
PFDODA	9.211	613.1 -> 569.0	55518	1.22 µg/L	99
		613.1 -> 319.0	8097		
PFDS	9.374	599.0 -> 79.9	8125	1.12 µg/L	96

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	3984			
PFHpA	6.633	363.1 -> 319.0	63231	1.28	µg/L	100
		363.1 -> 169.0	10043			
PFHpS	7.972	449.0 -> 79.9	14959	1.06	µg/L	100
		449.0 -> 98.9	7473			
PFHxA	5.694	313.0 -> 269.0	48797	1.24	µg/L	99
		313.0 -> 118.9	2613			
PFHxS	7.393	398.7 -> 79.9	14097	1.13	µg/L	m 98
		398.7 -> 98.9	7036			
PFNA	7.808	463.0 -> 419.0	74230	1.28	µg/L	99
		463.0 -> 219.0	14225			
PFNS	8.955	548.8 -> 79.9	12922	1.06	µg/L	93
		548.8 -> 98.9	7248			
PFOA	7.278	413.0 -> 369.0	102823	1.38	µg/L	97
		413.0 -> 169.0	16048			
PFOS	8.478	498.9 -> 79.9	13340	1.01	µg/L	m 73
		498.9 -> 98.8	6779			
PFPeA	4.474	263.0 -> 219.0	67744	2.57	µg/L	100
PFPeS	6.697	349.1 -> 79.9	14523	1.19	µg/L	95
		349.1 -> 98.9	6217			
PFTeDA	9.926	713.1 -> 669.0	40127	1.22	µg/L	98
		713.1 -> 168.9	3447			
PFTrDA	9.595	663.0 -> 619.0	54674	1.25	µg/L	98
		663.0 -> 168.9	5787			
PFUnDA	8.780	563.1 -> 519.0	51406	1.21	µg/L	95
		563.1 -> 269.1	8942			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	71685	2.44	µg/L	98
		632.9 -> 452.9	22785			
9Cl-PF3ONS	8.832	530.8 -> 351.0	126127	2.65	µg/L	100
		532.8 -> 353.0	36505			
ADONA	6.883	376.9 -> 250.9	272043	2.61	µg/L	100
		376.9 -> 84.8	66951			
HFPO-DA	6.083	284.9 -> 168.9	17706	2.75	µg/L	98
		284.9 -> 184.9	1769			
3:3FTCA	3.896	241.0 -> 177.0	11609	6.07	µg/L	99
		241.0 -> 117.0	1585			
5:3FTCA	6.322	341.0 -> 237.1	259992	31.57	µg/L	97
		341.0 -> 217.0	189125			
7:3FTCA	7.711	441.0 -> 316.9	182589	31.65	µg/L	89
		441.0 -> 336.9	404392			
EtFOSA	10.985	526.0 -> 219.0	29830	2.49	µg/L	93
		526.0 -> 169.0	41794			
EtFOSE	10.931	630.0 -> 58.9	69218	5.64	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	26368	2.55	µg/L	m 83
		511.9 -> 169.0	38205			
MeFOSE	10.685	616.1 -> 58.9	48111	6.42	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	3528	1.06	µg/L	95
		699.1 -> 98.8	2051			
NFDHA	5.576	295.0 -> 201.0	12425	2.58	µg/L	96
		295.0 -> 84.9	3016			
PFMBA	4.900	279.0 -> 85.1	44439	2.56	µg/L	100
PFMPA	3.588	229.0 -> 84.9	36797	2.52	µg/L	100
PFEESA	6.188	314.8 -> 134.9	128677	2.33	µg/L	99
		314.8 -> 82.9	3792			

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

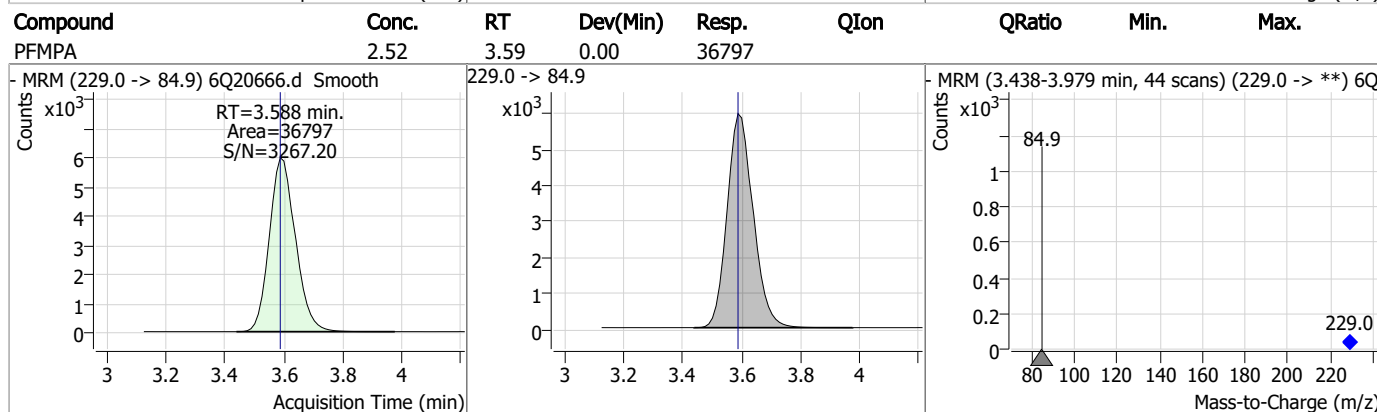
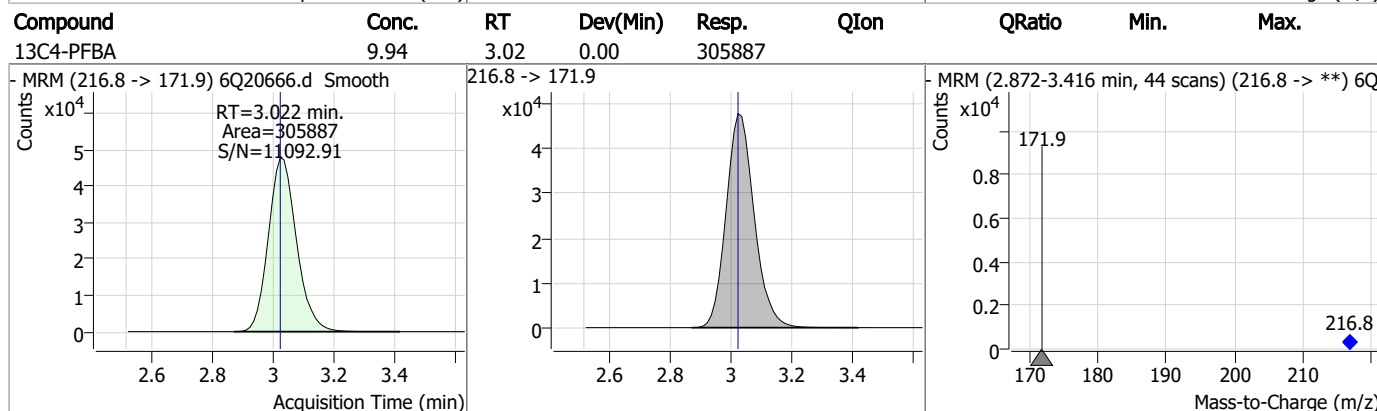
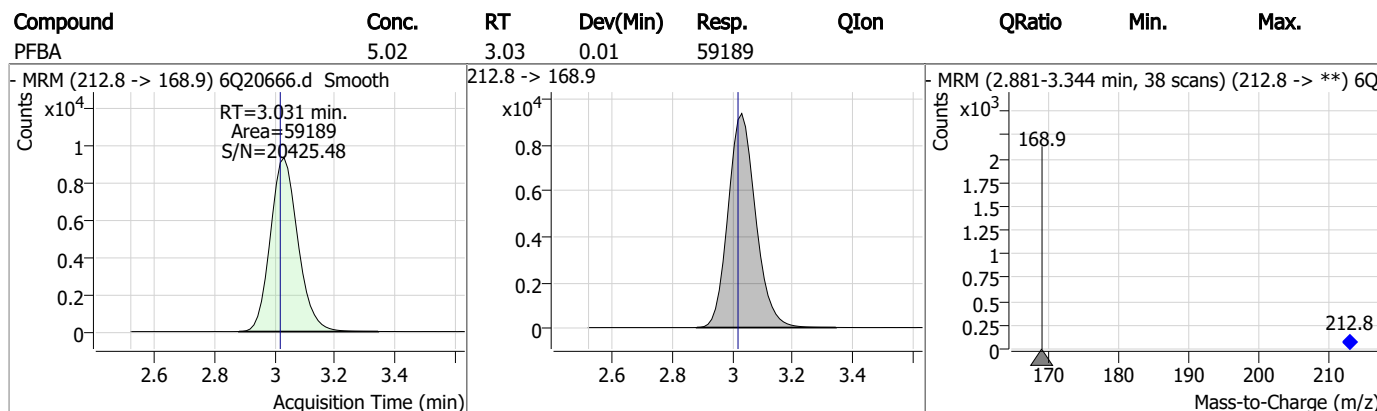
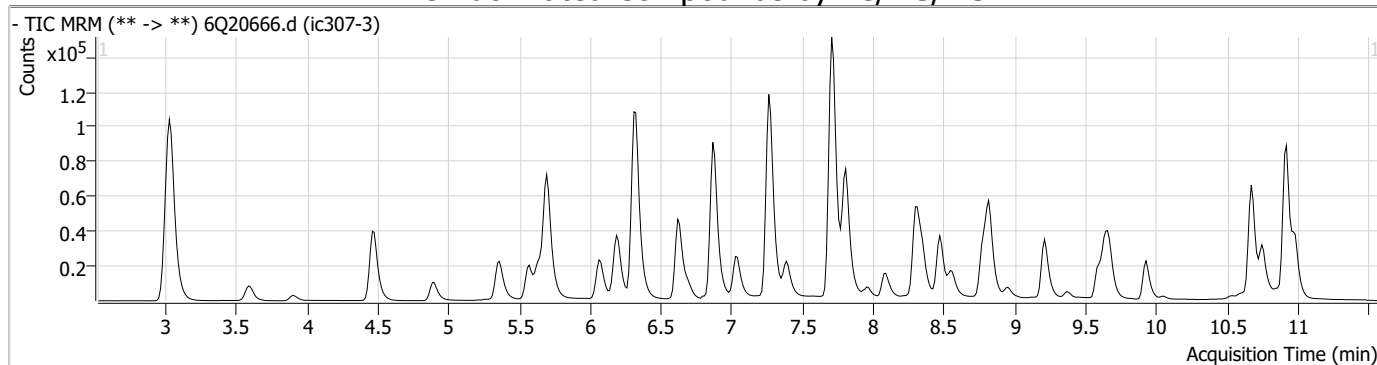
Perfluorinated Compounds by LC/MS/MS

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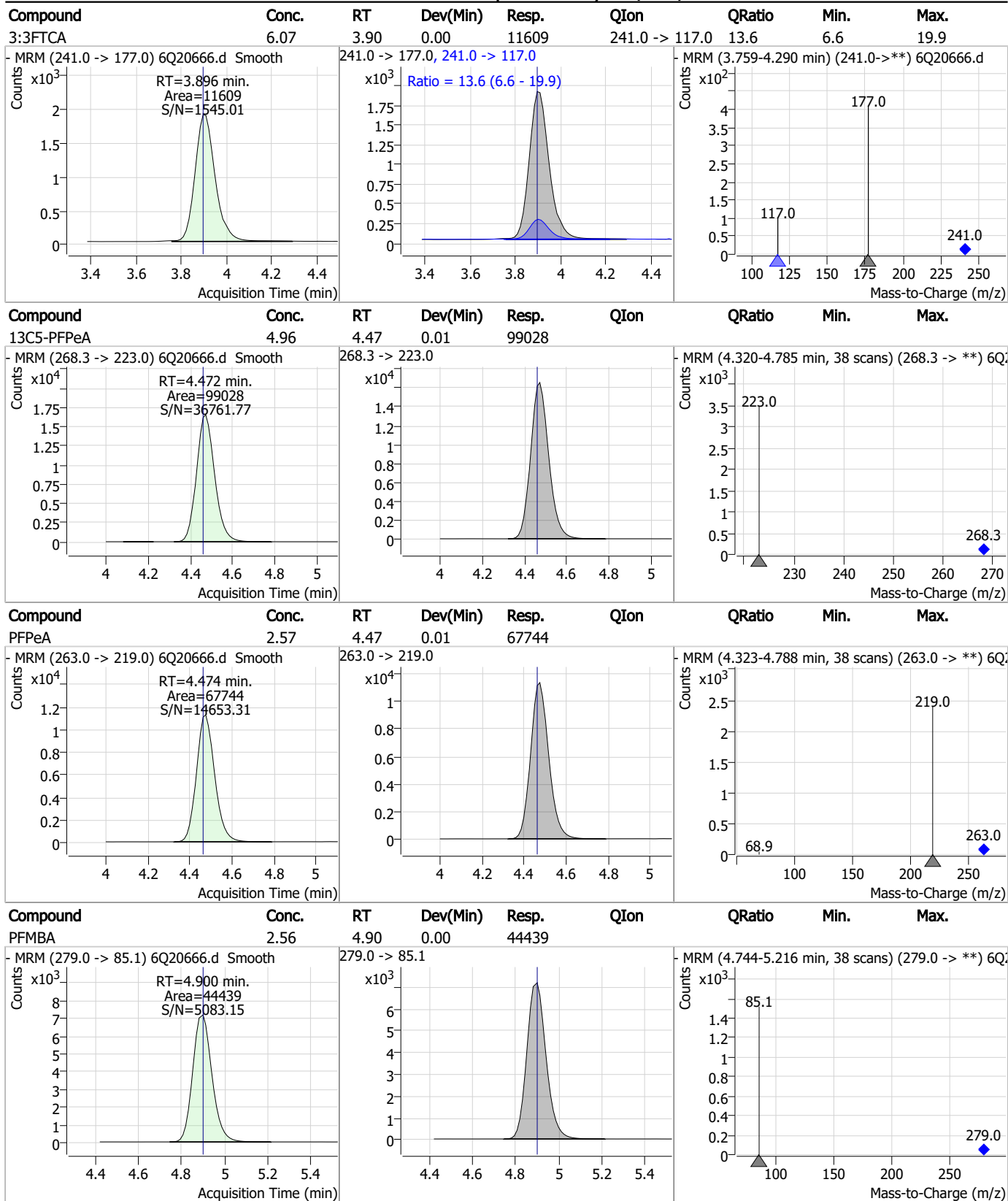
7.7.4

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Perfluorinated Compounds by LC/MS/MS

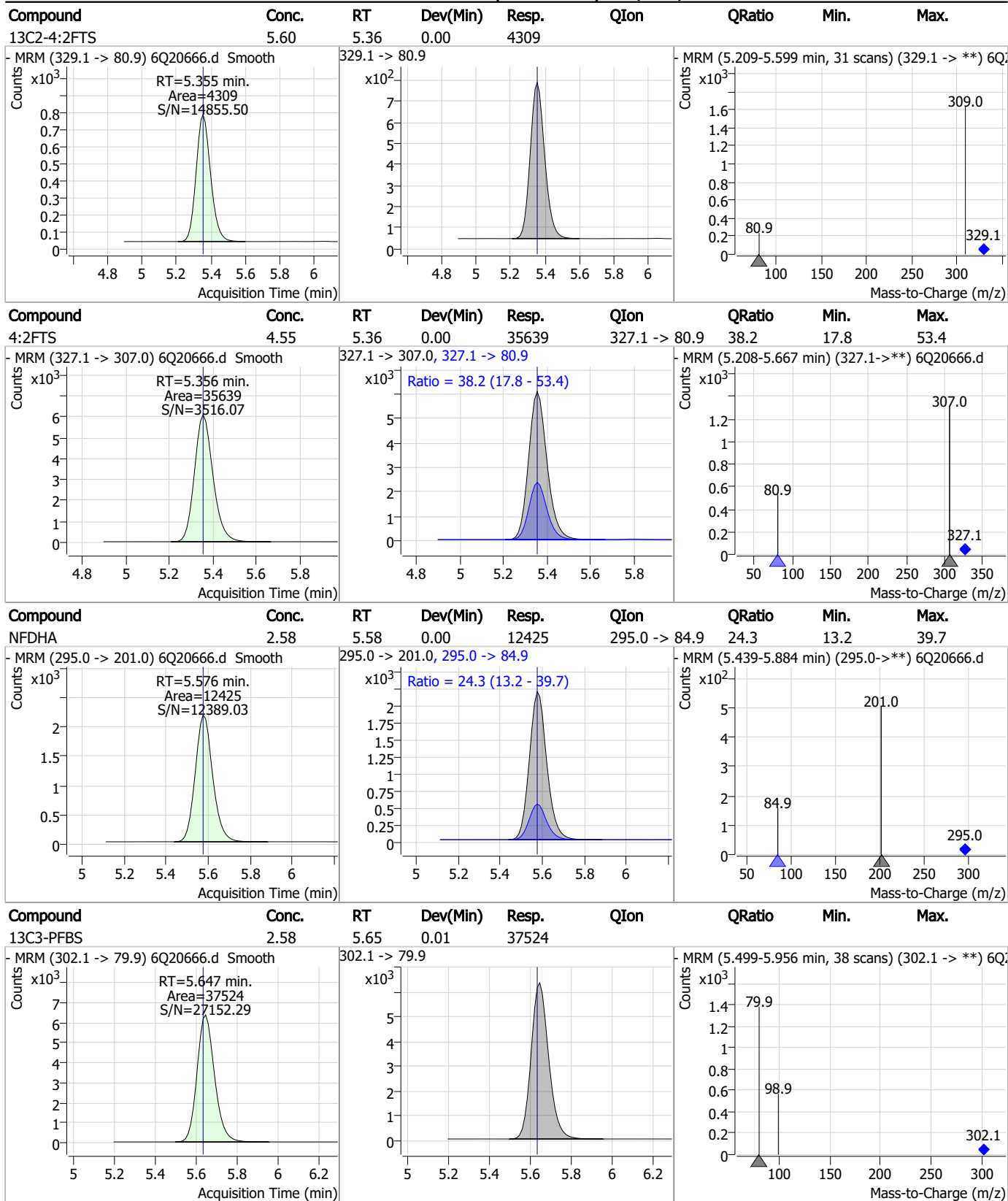


Perfluorinated Compounds by LC/MS/MS



7.7.4
7

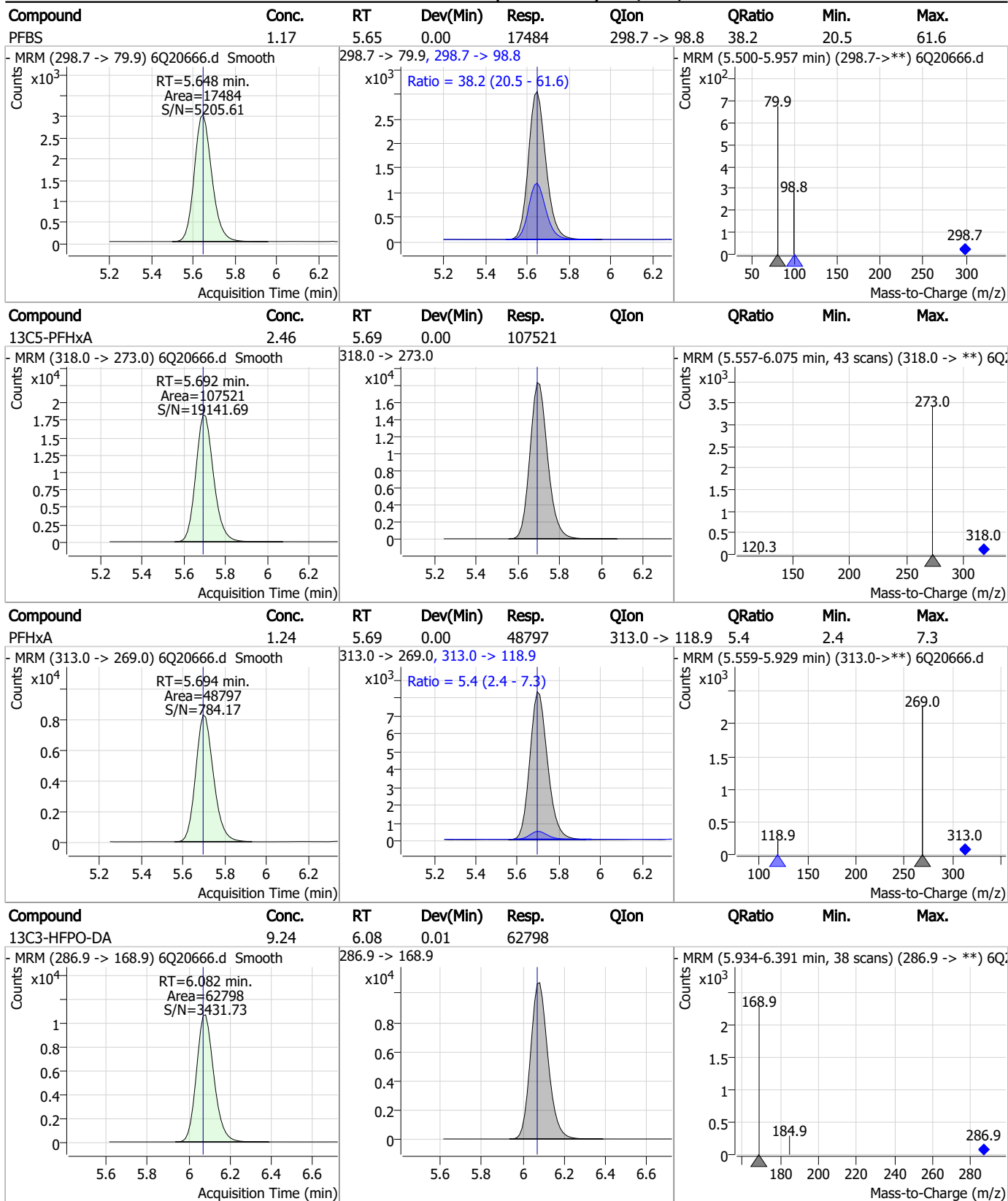
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

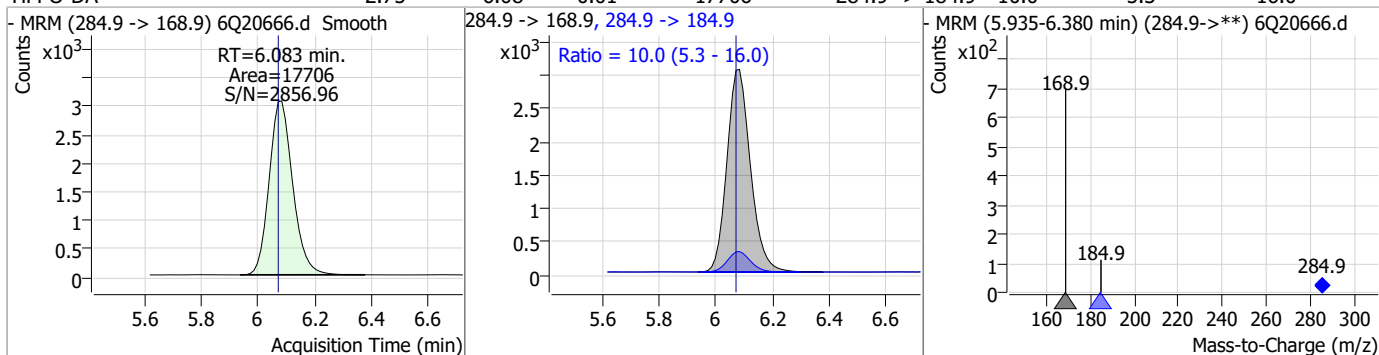
Perfluorinated Compounds by LC/MS/MS



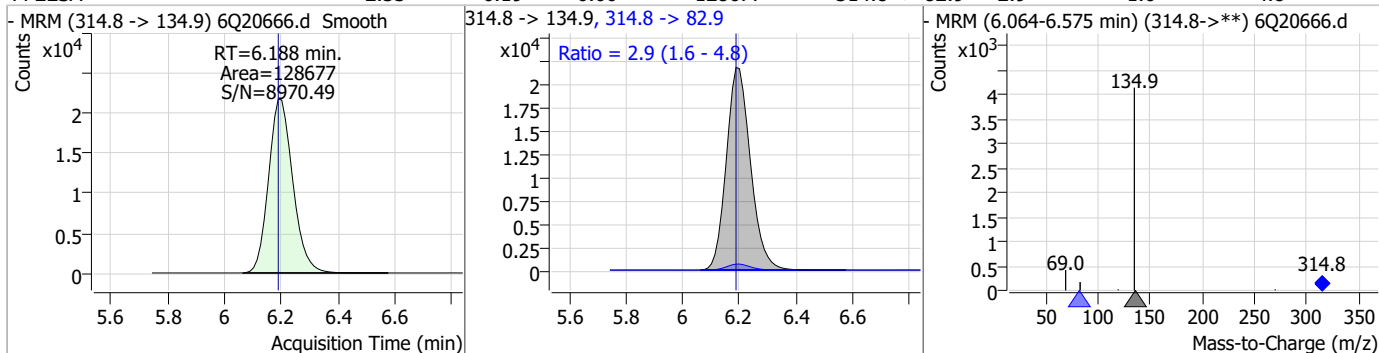
7.7.4
7

Perfluorinated Compounds by LC/MS/MS

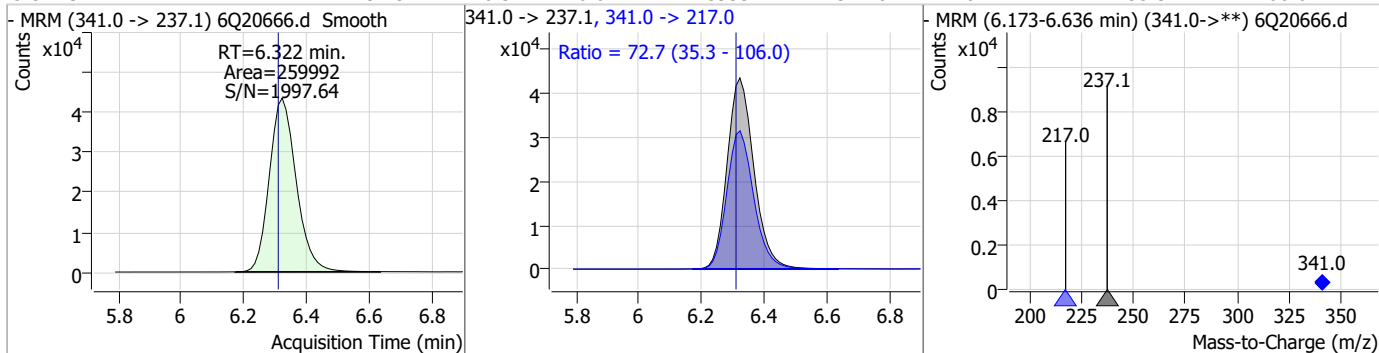
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.75	6.08	0.01	17706	284.9 -> 184.9	10.0	5.3	16.0



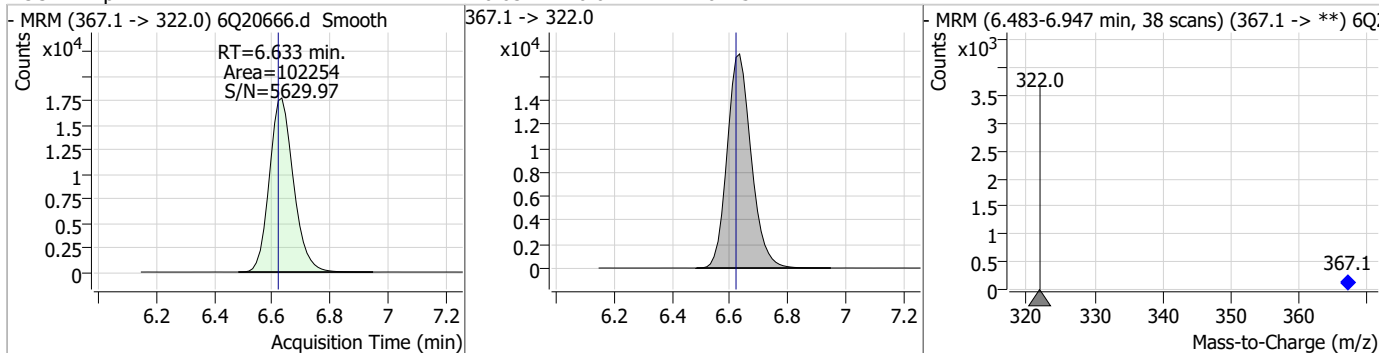
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.33	6.19	0.00	128677	314.8 -> 82.9	2.9	1.6	4.8



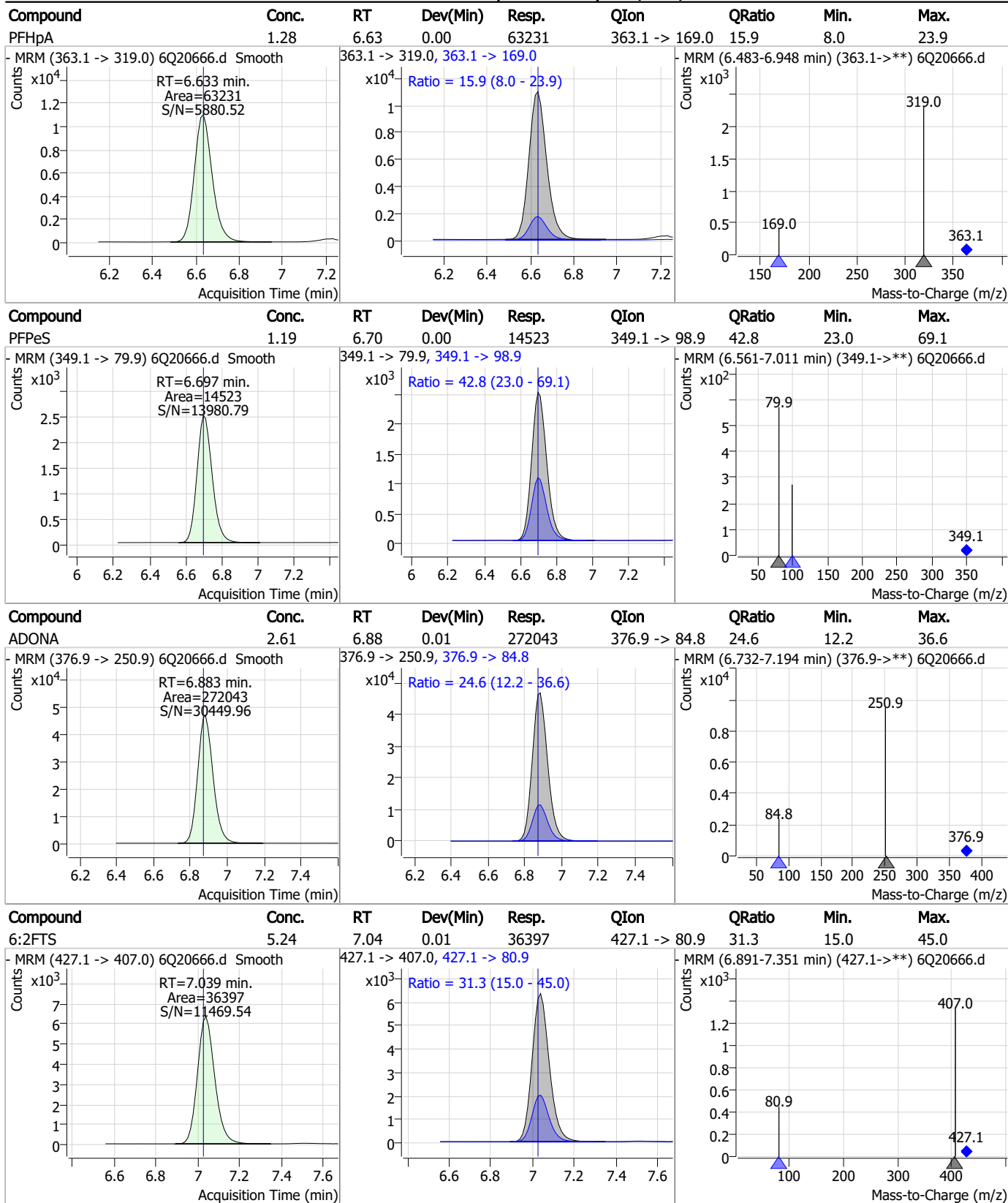
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	31.57	6.32	0.01	259992	341.0 -> 217.0	72.7	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.44	6.63	0.01	102254	367.1 -> 322.0			



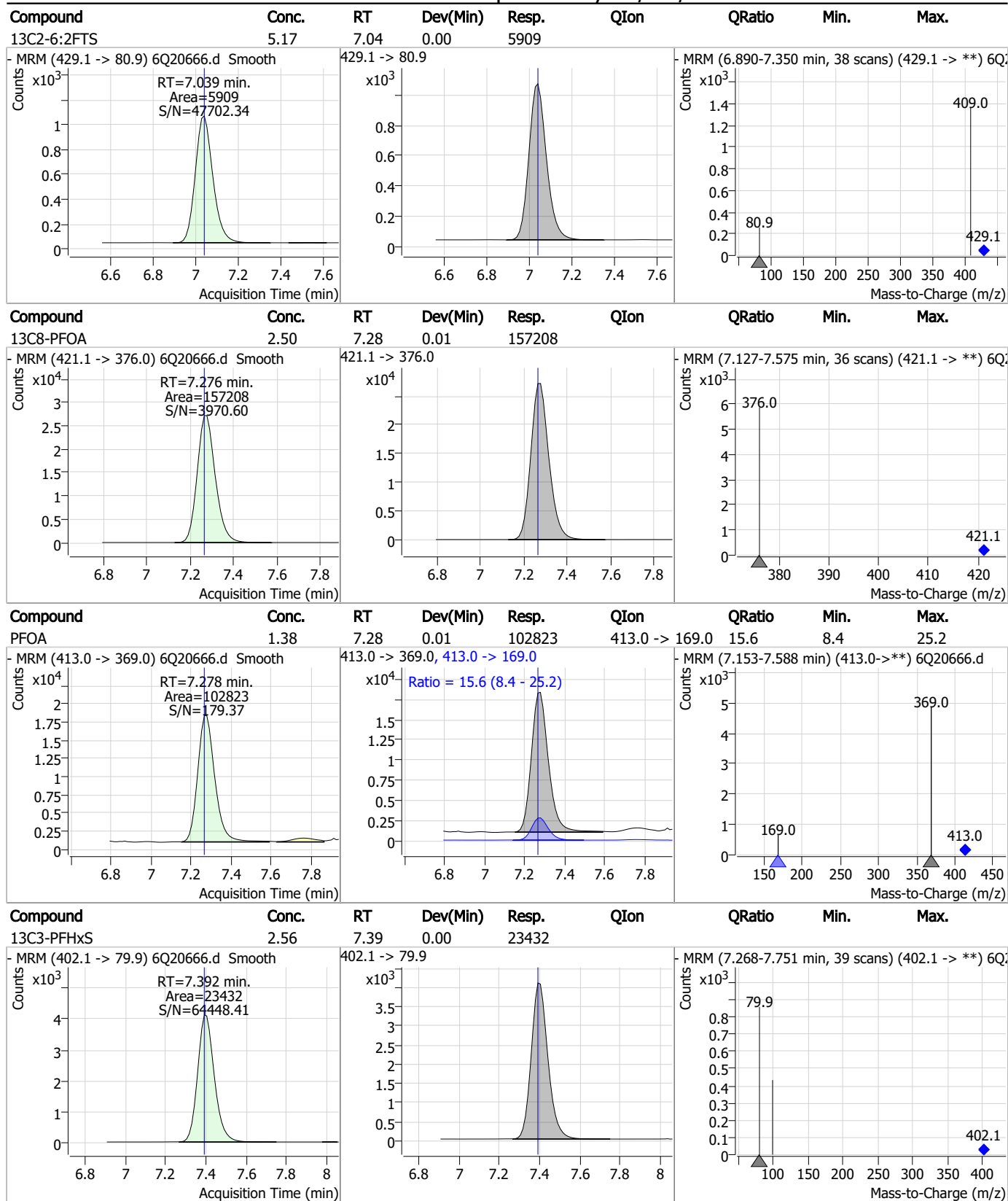
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

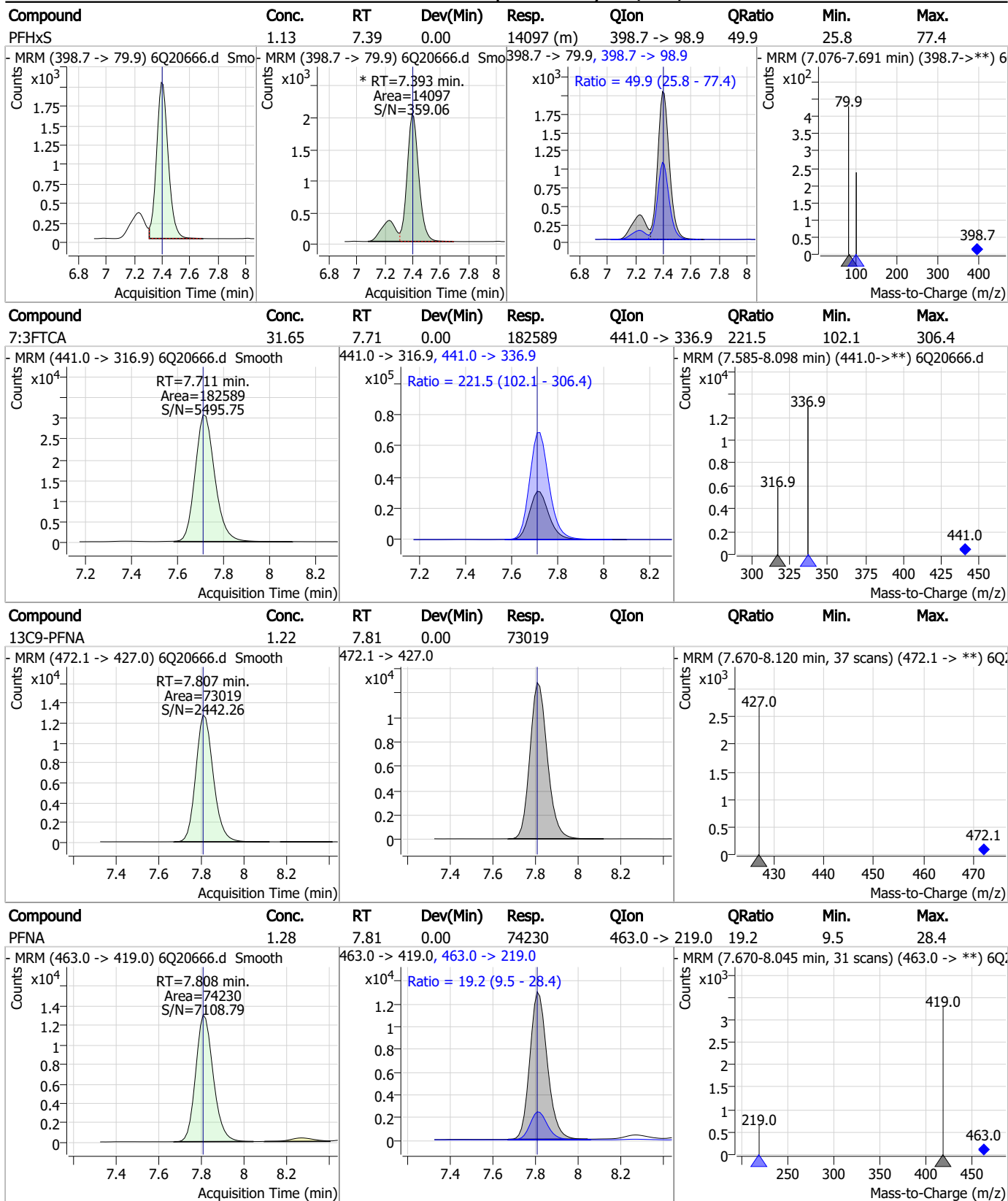
Perfluorinated Compounds by LC/MS/MS



7.7.4
7

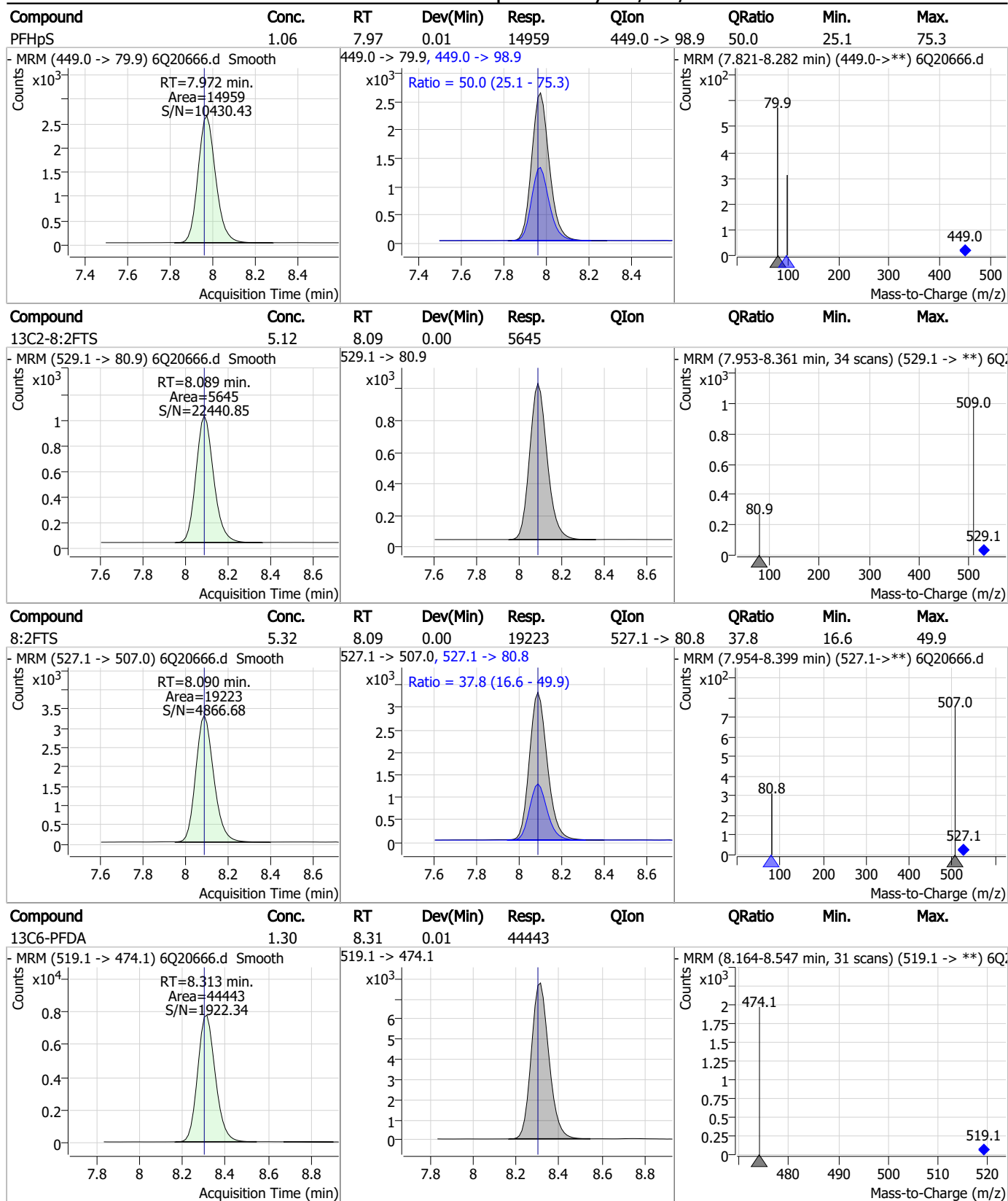


Perfluorinated Compounds by LC/MS/MS



7.7.4
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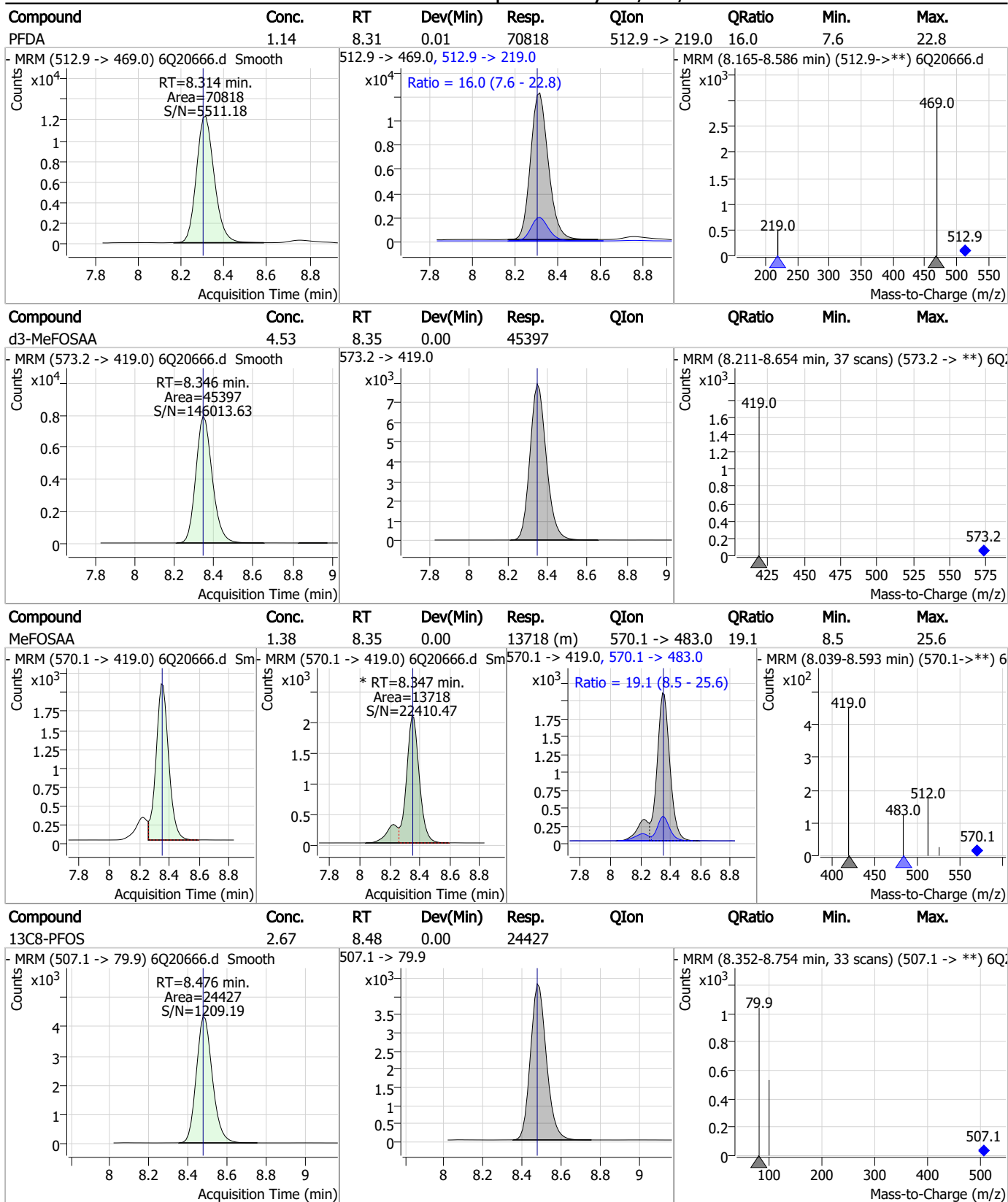
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Perfluorinated Compounds by LC/MS/MS

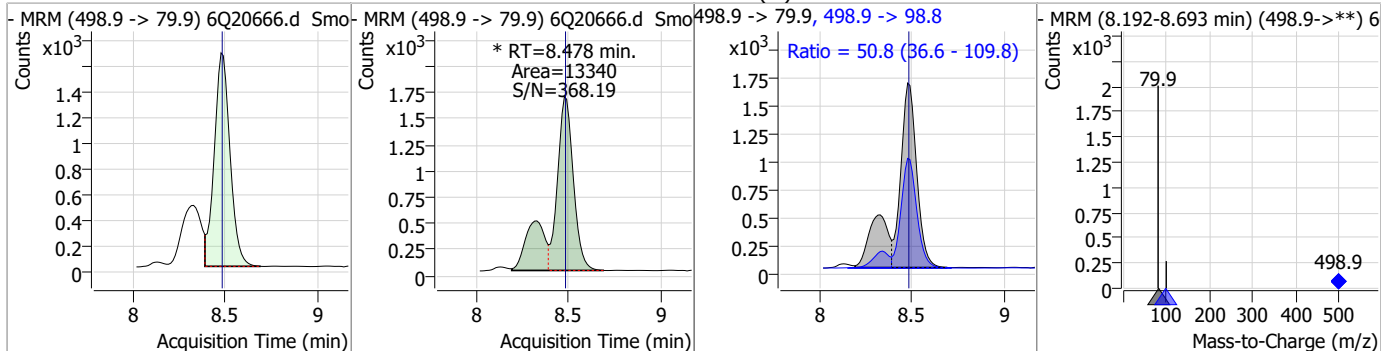


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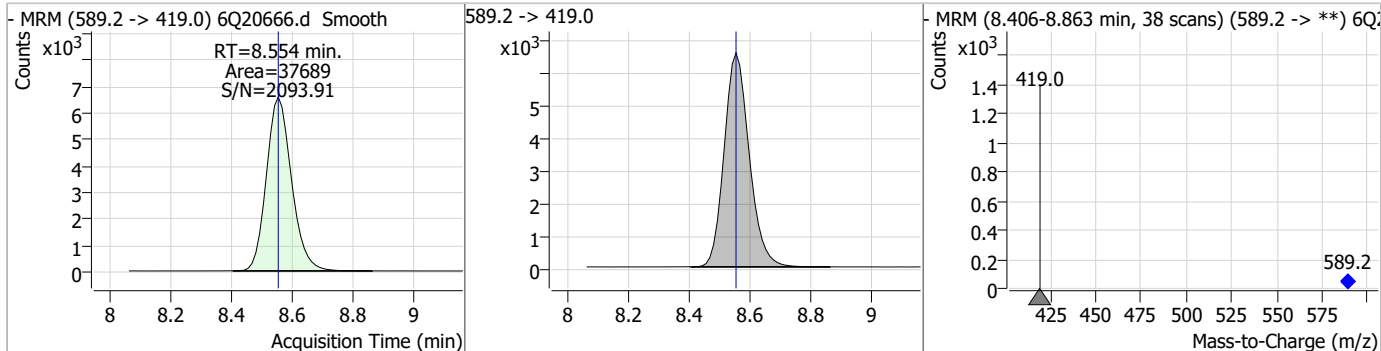
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Perfluorinated Compounds by LC/MS/MS

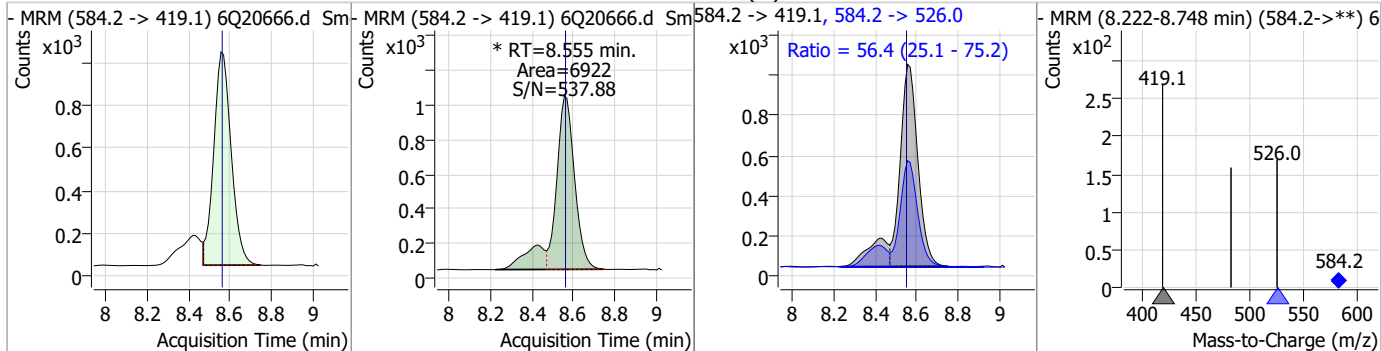
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.01	8.48	0.00	13340 (m)	498.9 -> 98.8	50.8	36.6	109.8



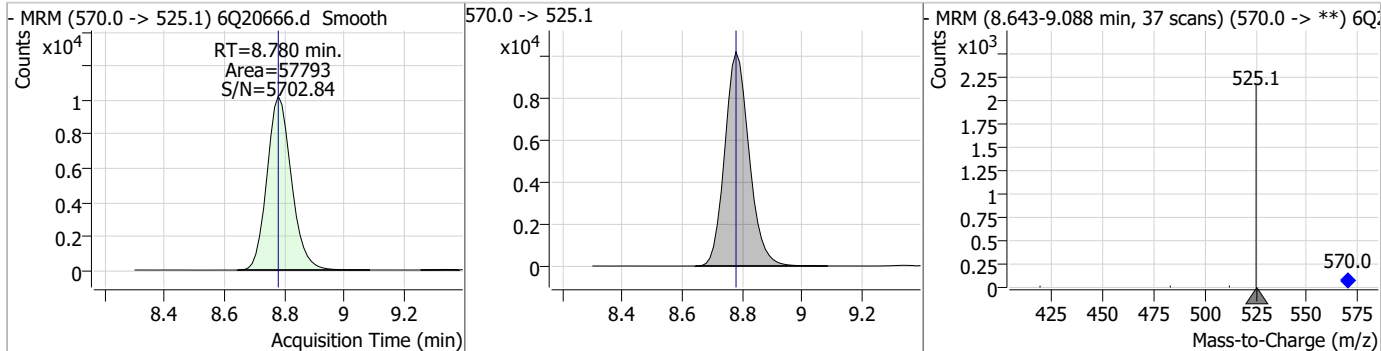
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.74	8.55	0.00	37689				



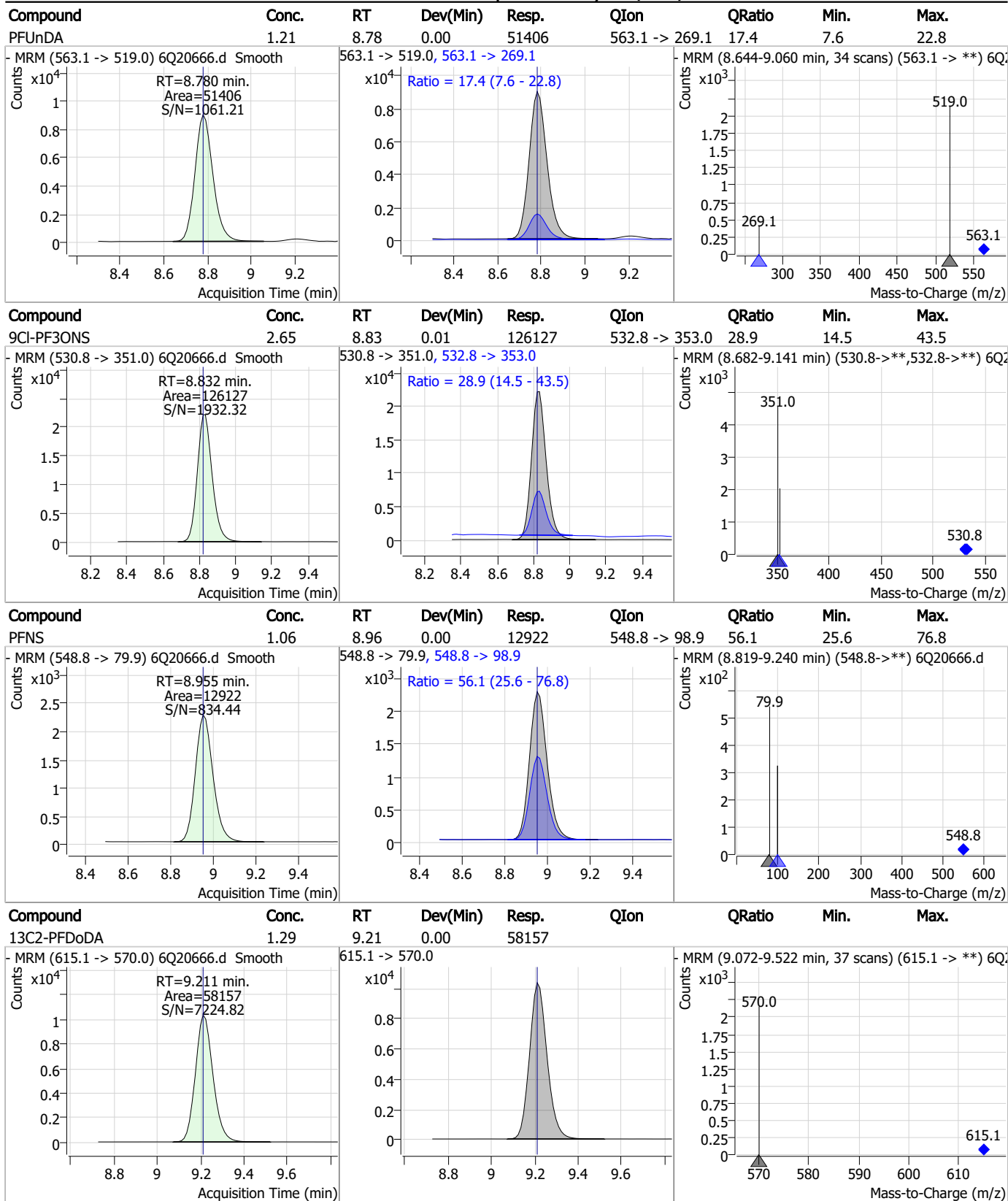
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.17	8.55	0.00	6922 (m)	584.2 -> 526.0	56.4	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.78	0.00	57793				

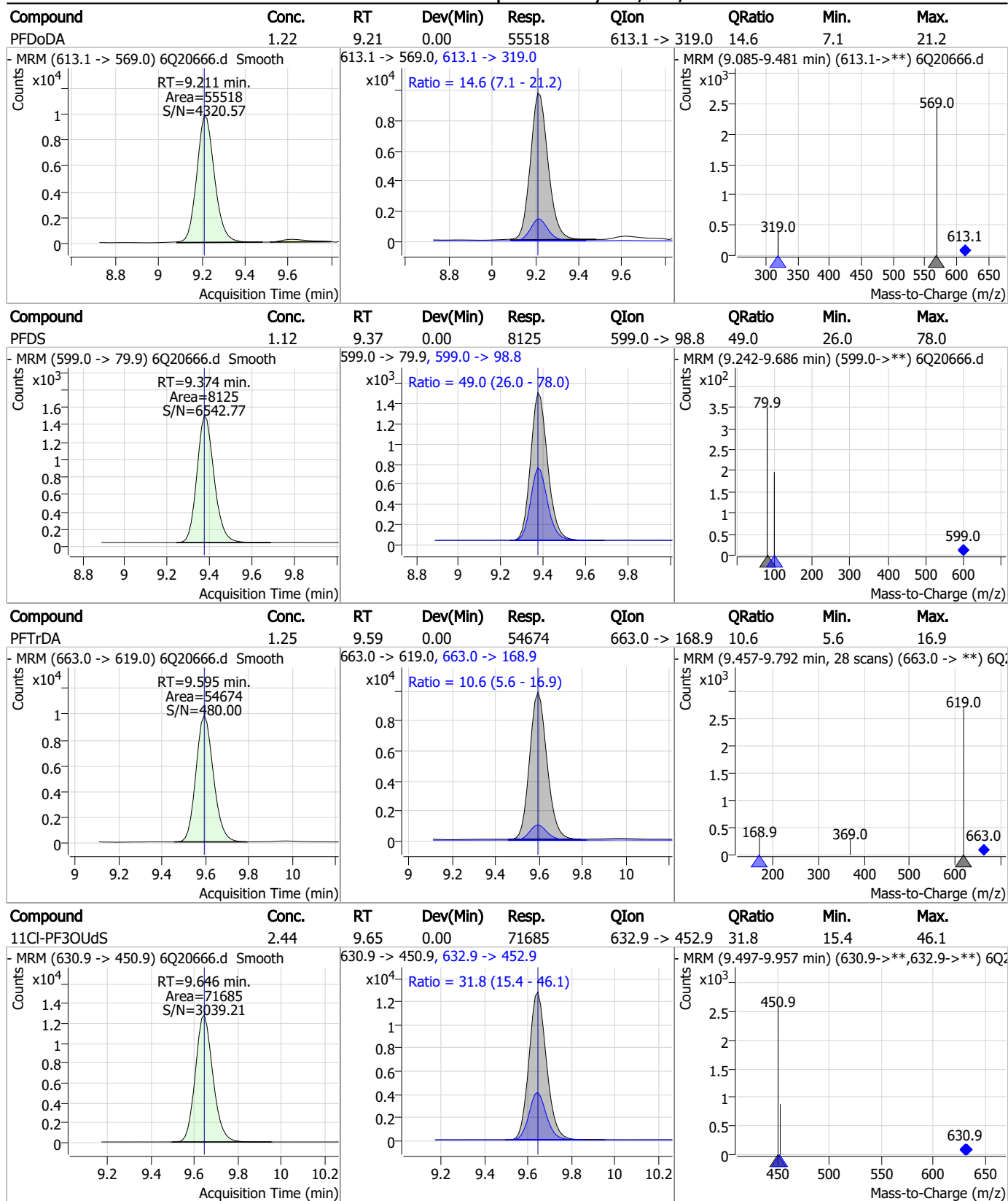


Perfluorinated Compounds by LC/MS/MS



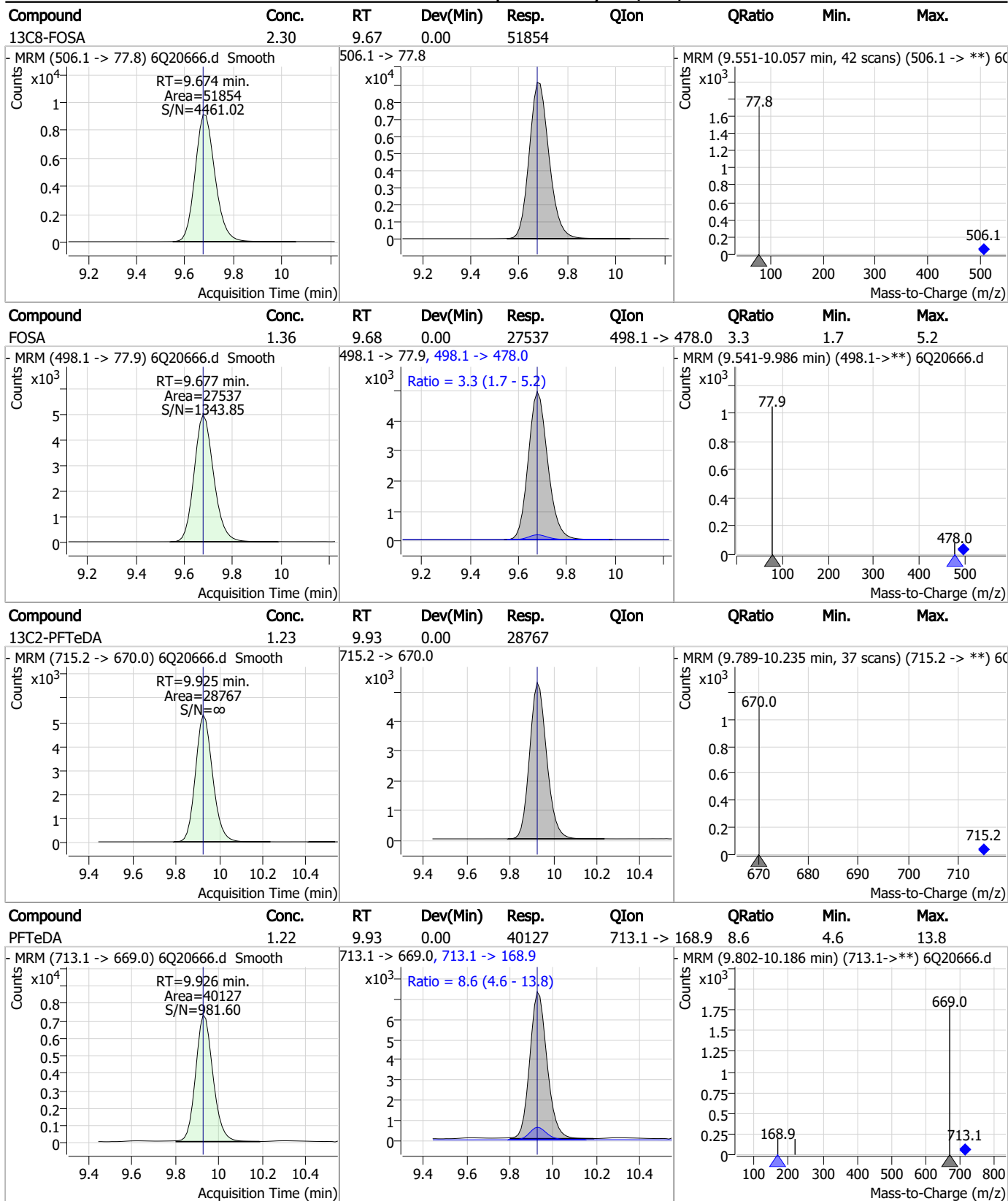
7.7.4
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Perfluorinated Compounds by LC/MS/MS



7.7.4
7

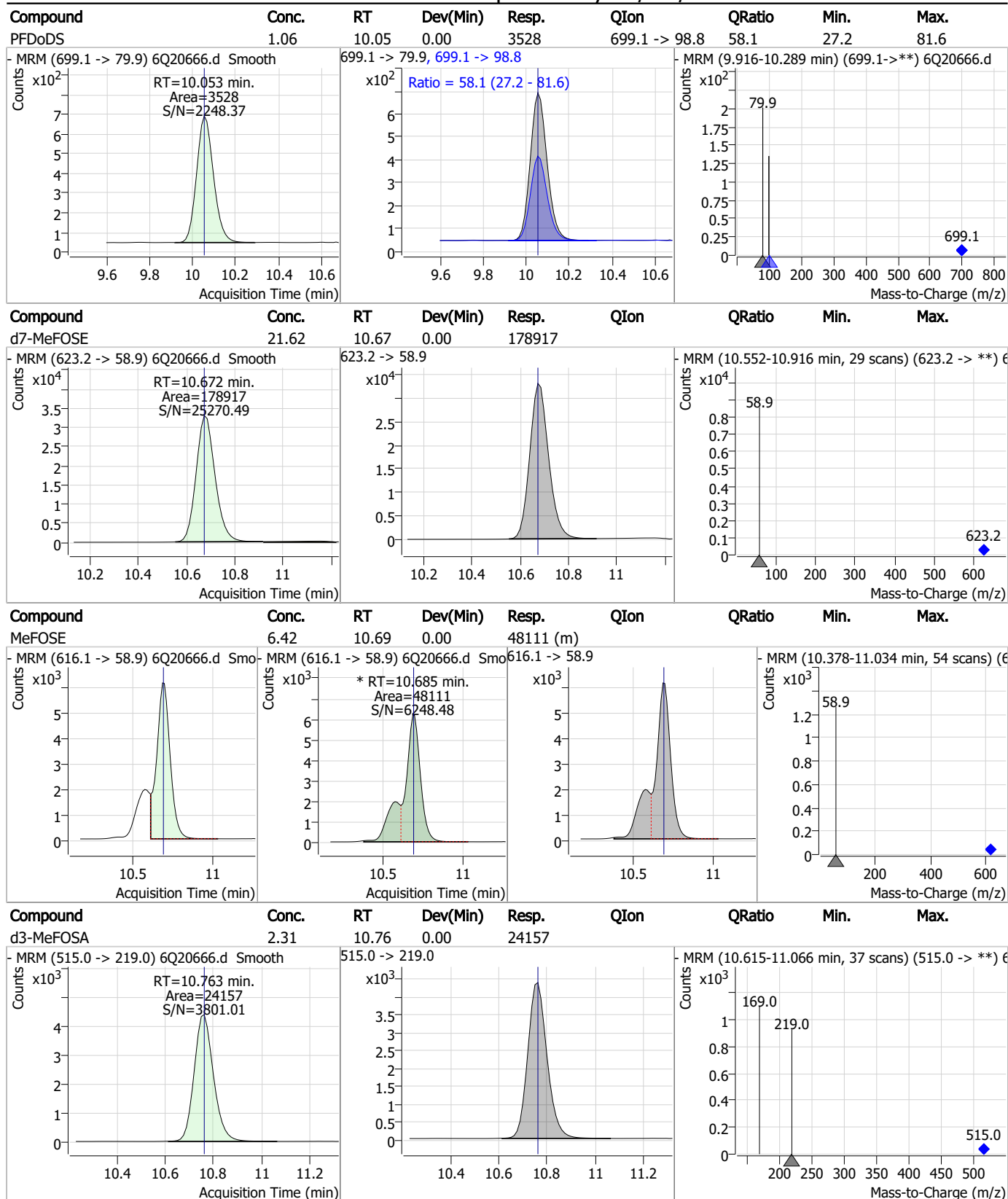
Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Perfluorinated Compounds by LC/MS/MS

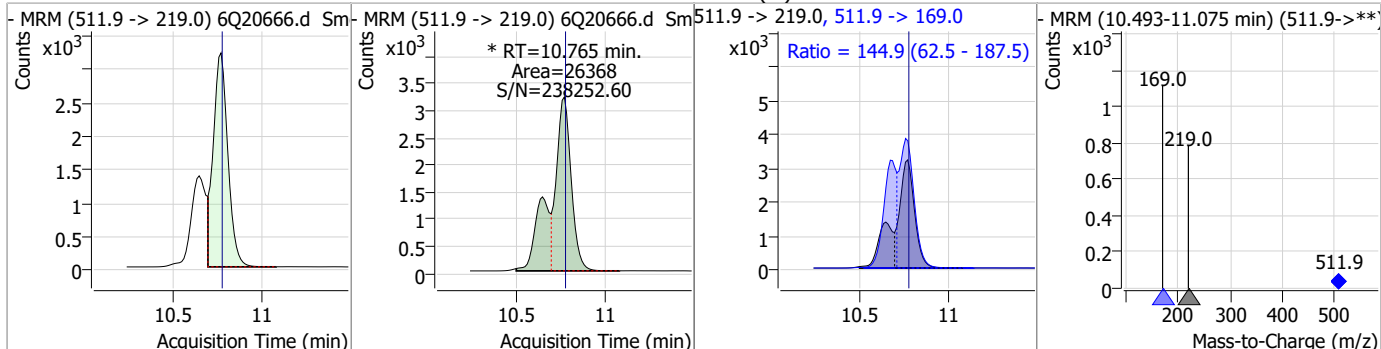


7.7.4

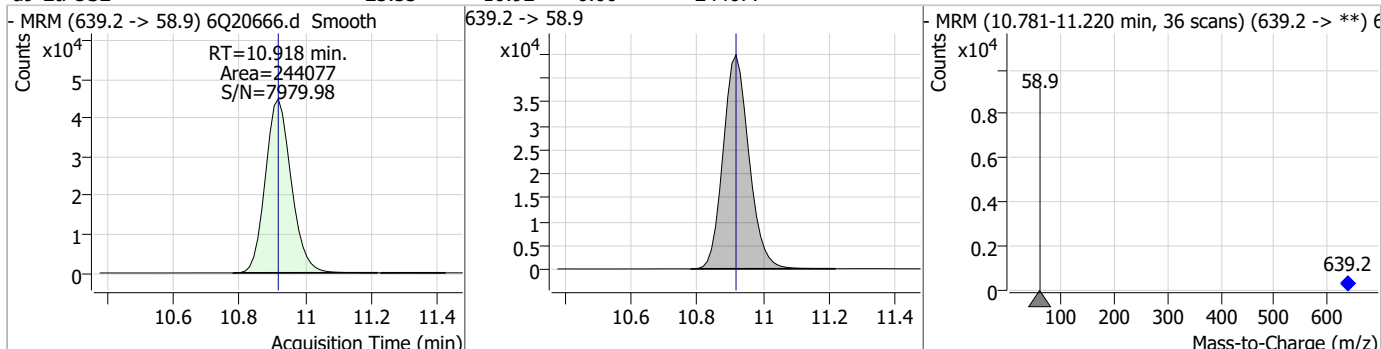
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Perfluorinated Compounds by LC/MS/MS

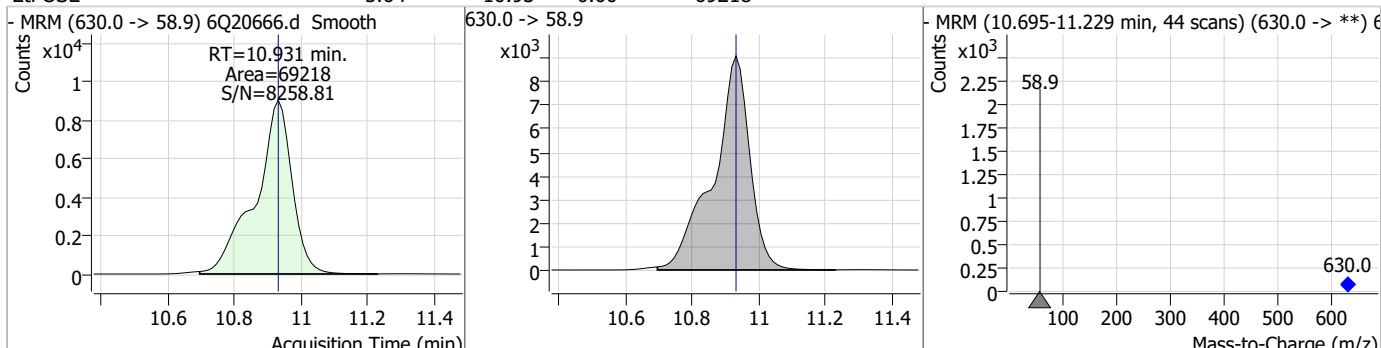
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.55	10.76	0.00	26368 (m)	511.9 -> 169.0	144.9	62.5	187.5



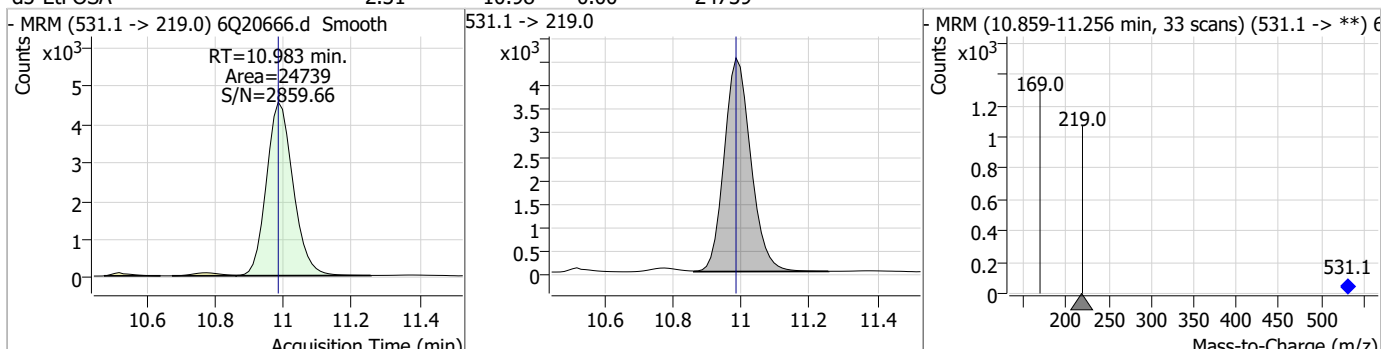
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.33	10.92	0.00	244077				



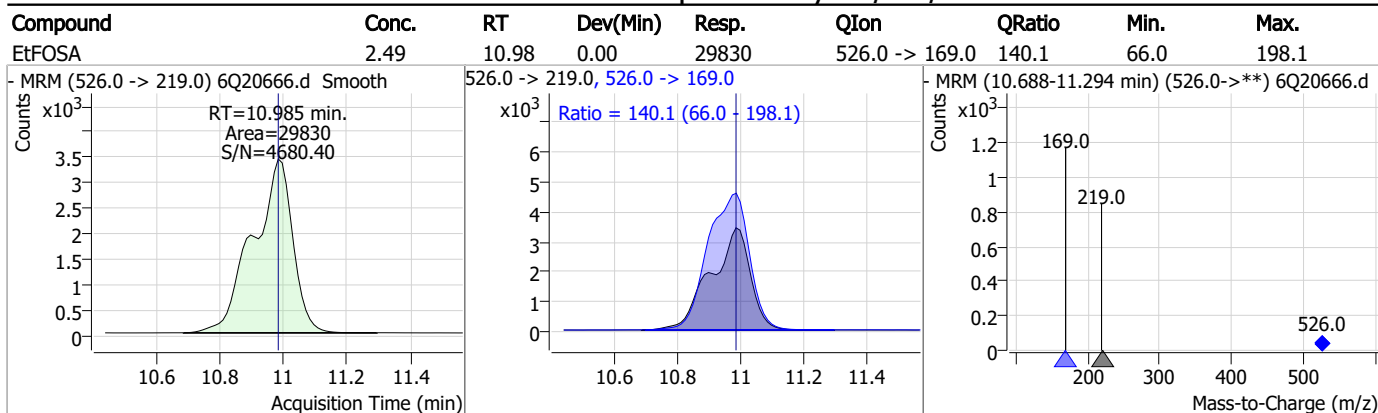
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	5.64	10.93	0.00	69218				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.31	10.98	0.00	24739				



Perfluorinated Compounds by LC/MS/MS



7.7.4

7

Manual Integration Approval Summary

Sample Number: S6Q307-IC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20666.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 19:33 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.7.4.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20667.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 7:47:30 PM
 Sample Name : icc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	238505	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	79332	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	86577	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	81967	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	133124	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	55705	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	31513	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	41138	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	41374	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	23021	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	41362	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	29038	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	18477	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	16302	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3356	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4819	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4580	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	40000	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	49471	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	29084	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	150674	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	170803	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	19333	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	19718	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	23573	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	100564	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	13519	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	130687	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	48371	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	74300	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	80538	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3356	5.54 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4819	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.1%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4580	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.5%		
13C2-PFDoDA	9.211	615.1 -> 570.0	41374	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 92.4%		
13C2-PFTeDA	9.925	715.2 -> 670.0	23021	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.3%		
13C3-PFBS	5.635	302.1 -> 79.9	29038	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 101.5%		
13C3-PFHxS	7.392	402.1 -> 79.9	18477	2.56 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 = 102.6%	
13C4-PFBA	3.022	216.8 -> 171.9	238505	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.621	367.1 -> 322.0	81967	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C5-PFHxA	5.692	318.0 -> 273.0	86577	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C5-PFPeA	4.459	268.3 -> 223.0	79332	5.28 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C6-PFDA	8.301	519.1 -> 474.1	31513	1.16 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C7-PFUnDA	8.780	570.0 -> 525.1	41138	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C8-FOSA	9.674	506.1 -> 77.8	41362	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C8-PFOA	7.264	421.1 -> 376.0	133124	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C8-PFOS	8.476	507.1 -> 79.9	16302	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C9-PFNA	7.807	472.1 -> 427.0	55705	1.11 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.7%	
d3-MeFOSAA	8.346	573.2 -> 419.0	40000	5.47 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	49471	9.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	19718	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%	
d5-EtFOSAA	8.554	589.2 -> 419.0	29084	5.00 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
d7-MeFOSE	10.672	623.2 -> 58.9	150674	24.92 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	170803	24.25 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	19333	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	51644	8.46 µg/L	100
		327.1 -> 80.9	18388		
6:2FTS	7.027	427.1 -> 407.0	51223	9.05 µg/L	100
		427.1 -> 80.9	15372		
8:2FTS	8.090	527.1 -> 507.0	27514	9.39 µg/L	100
		527.1 -> 80.8	9158		
EtFOSAA	8.555	584.2 -> 419.1	10744	2.35 µg/L	m 94
		584.2 -> 526.0	5823		
FOSA	9.677	498.1 -> 77.9	37928	2.34 µg/L	100
		498.1 -> 478.0	1319		
MeFOSAA	8.347	570.1 -> 419.0	19153	2.18 µg/L	m 94
		570.1 -> 483.0	3801		
PFBA	3.018	212.8 -> 168.9	84276	9.17 µg/L	100
PFBS	5.648	298.7 -> 79.9	23506	2.04 µg/L	100
		298.7 -> 98.8	9649		
PFDA	8.301	512.9 -> 469.0	103108	2.35 µg/L	100
		512.9 -> 219.0	15671		
PFDODA	9.211	613.1 -> 569.0	79298	2.45 µg/L	100
		613.1 -> 319.0	11198		
PFDS	9.374	599.0 -> 79.9	10943	2.25 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8	5688	2.25	µg/L	100
		363.1 -> 319.0	89104			
PFHpS	7.960	363.1 -> 169.0	14224	2.24	µg/L	100
		449.0 -> 79.9	21037			
PFHxA	5.694	449.0 -> 98.9	10556	2.40	µg/L	100
		313.0 -> 269.0	76196			
PFHxS	7.393	313.0 -> 118.9	3714	2.17	µg/L	m
		398.7 -> 79.9	21317			
PFNA	7.808	398.7 -> 98.9	10496	2.50	µg/L	100
		463.0 -> 419.0	110547			
PFNS	8.955	463.0 -> 219.0	20948	2.31	µg/L	100
		548.8 -> 79.9	18892			
PFOA	7.265	548.8 -> 98.9	9679	2.26	µg/L	100
		413.0 -> 369.0	142516			
PFOS	8.478	413.0 -> 169.0	23911	2.10	µg/L	m
		498.9 -> 79.9	18622			
PFPeA	4.461	498.9 -> 98.8	11071	4.49	µg/L	100
		263.0 -> 219.0	94857			
PFPeS	6.697	349.1 -> 79.9	20738	2.16	µg/L	100
		349.1 -> 98.9	9559			
PFTeDA	9.926	713.1 -> 669.0	58235	2.21	µg/L	100
		713.1 -> 168.9	5355			
PFTrDA	9.595	663.0 -> 619.0	78160	2.51	µg/L	100
		663.0 -> 168.9	8805			
PFUnDA	8.780	563.1 -> 519.0	74565	2.46	µg/L	100
		563.1 -> 269.1	11323			
11CI-PF3OUdS	9.646	630.9 -> 450.9	105476	4.55	µg/L	100
		632.9 -> 452.9	32435			
9CI-PF3ONS	8.819	530.8 -> 351.0	170179	4.54	µg/L	100
		532.8 -> 353.0	49370			
ADONA	6.870	376.9 -> 250.9	379568	4.63	µg/L	100
		376.9 -> 84.8	92719			
HFPO-DA	6.071	284.9 -> 168.9	25123	4.96	µg/L	100
		284.9 -> 184.9	2682			
3:3FTCA	3.896	241.0 -> 177.0	16456	11.04	µg/L	100
		241.0 -> 117.0	2187			
5:3FTCA	6.310	341.0 -> 237.1	376748	56.82	µg/L	100
		341.0 -> 217.0	266152			
7:3FTCA	7.711	441.0 -> 316.9	268536	57.81	µg/L	100
		441.0 -> 336.9	548462			
EtFOSA	10.985	526.0 -> 219.0	43790	4.68	µg/L	100
		526.0 -> 169.0	57832			
EtFOSE	10.931	630.0 -> 58.9	90692	10.56	µg/L	100
		511.9 -> 219.0	36709			
MeFOSA	10.765	511.9 -> 169.0	52806	4.35	µg/L	m
		616.1 -> 58.9	69762			
MeFOSE	10.685	699.1 -> 79.9	5184	11.06	µg/L	m
		699.1 -> 98.8	2819			
PFDoDS	10.053	295.0 -> 201.0	17402	4.49	µg/L	100
		295.0 -> 84.9	4608			
NFDHA	5.576	279.0 -> 85.1	62795	4.52	µg/L	100
		229.0 -> 84.9	53228			
PFMBA	3.588	314.8 -> 134.9	174798	4.55	µg/L	100
		314.8 -> 82.9	5599			
PFEESA	6.188			3.93	µg/L	100

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

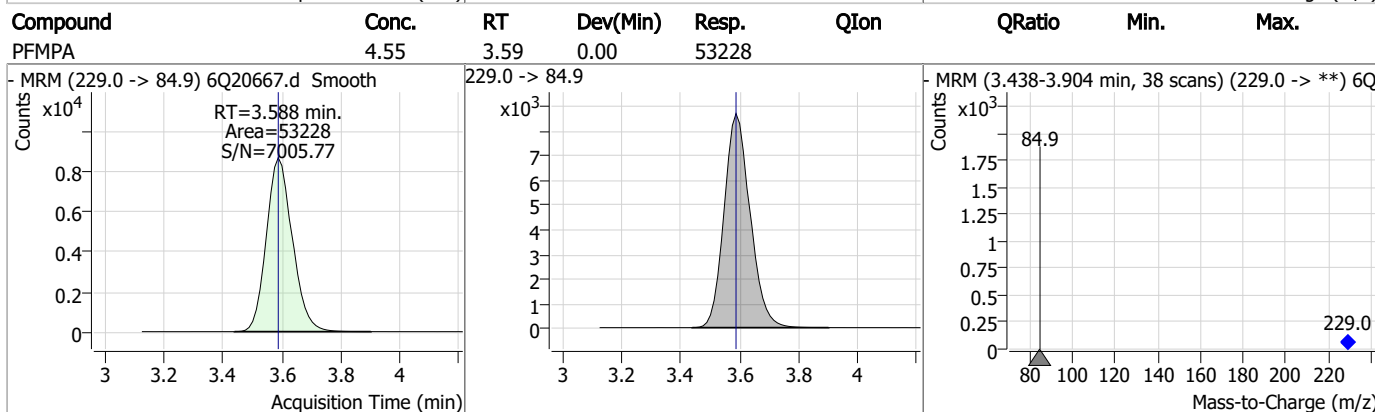
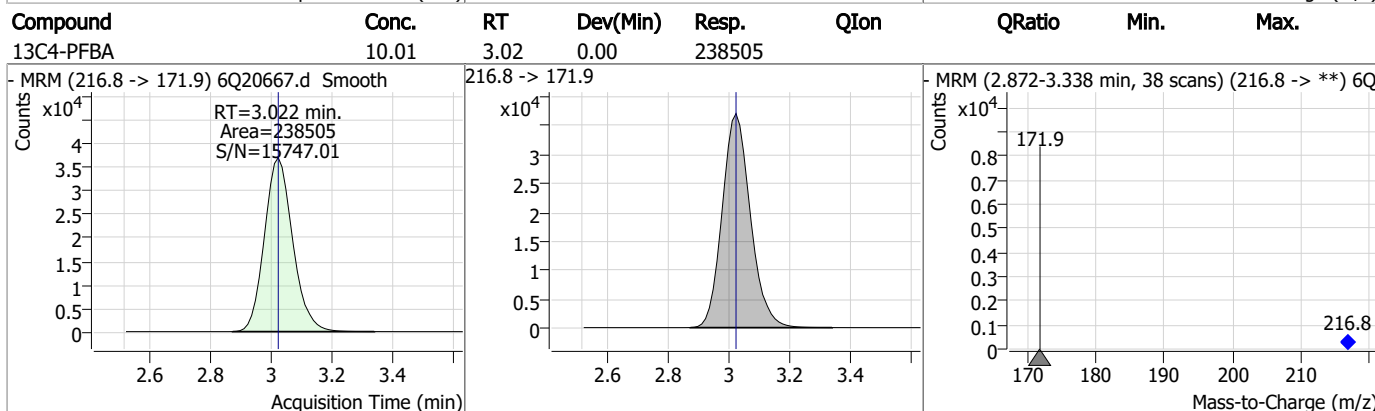
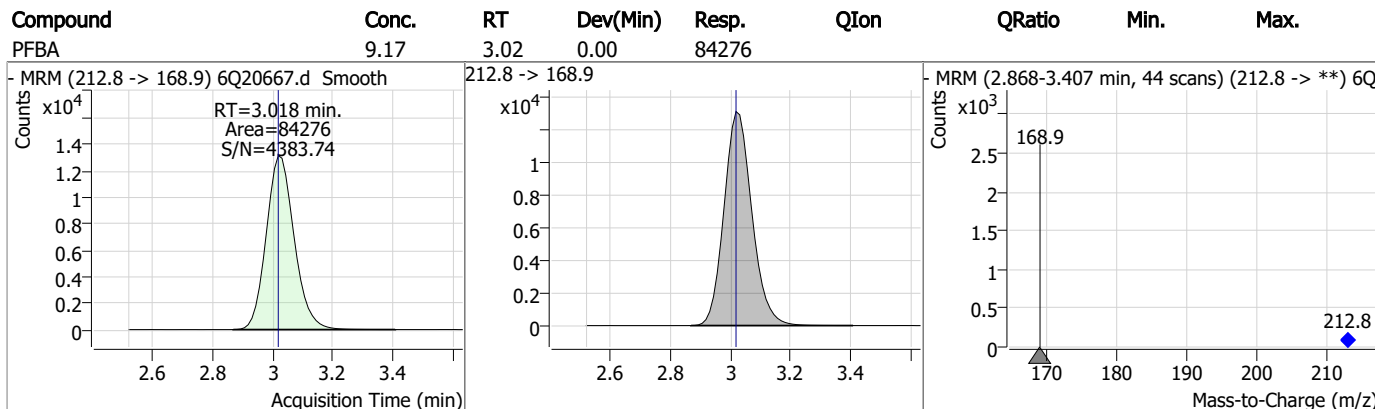
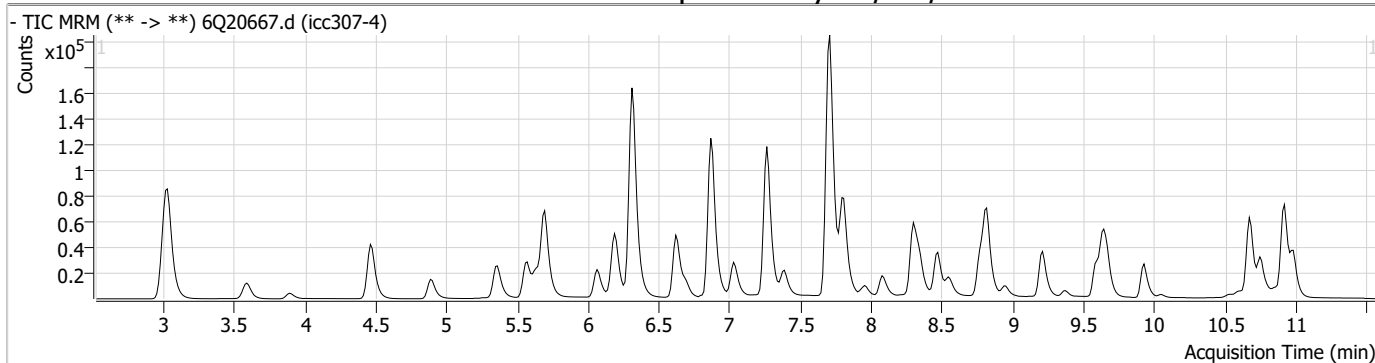
Perfluorinated Compounds by LC/MS/MS

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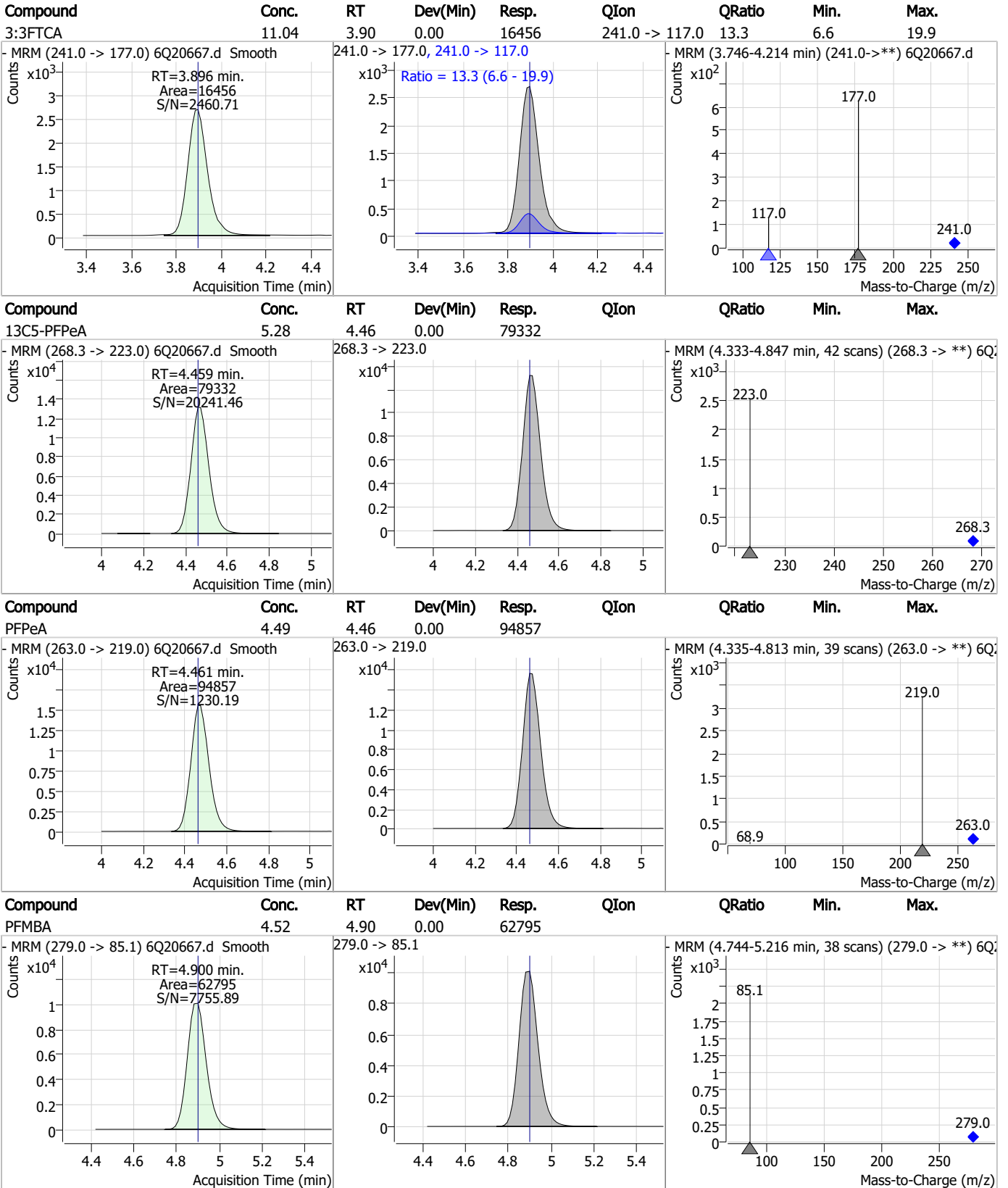
7.7.5
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Perfluorinated Compounds by LC/MS/MS



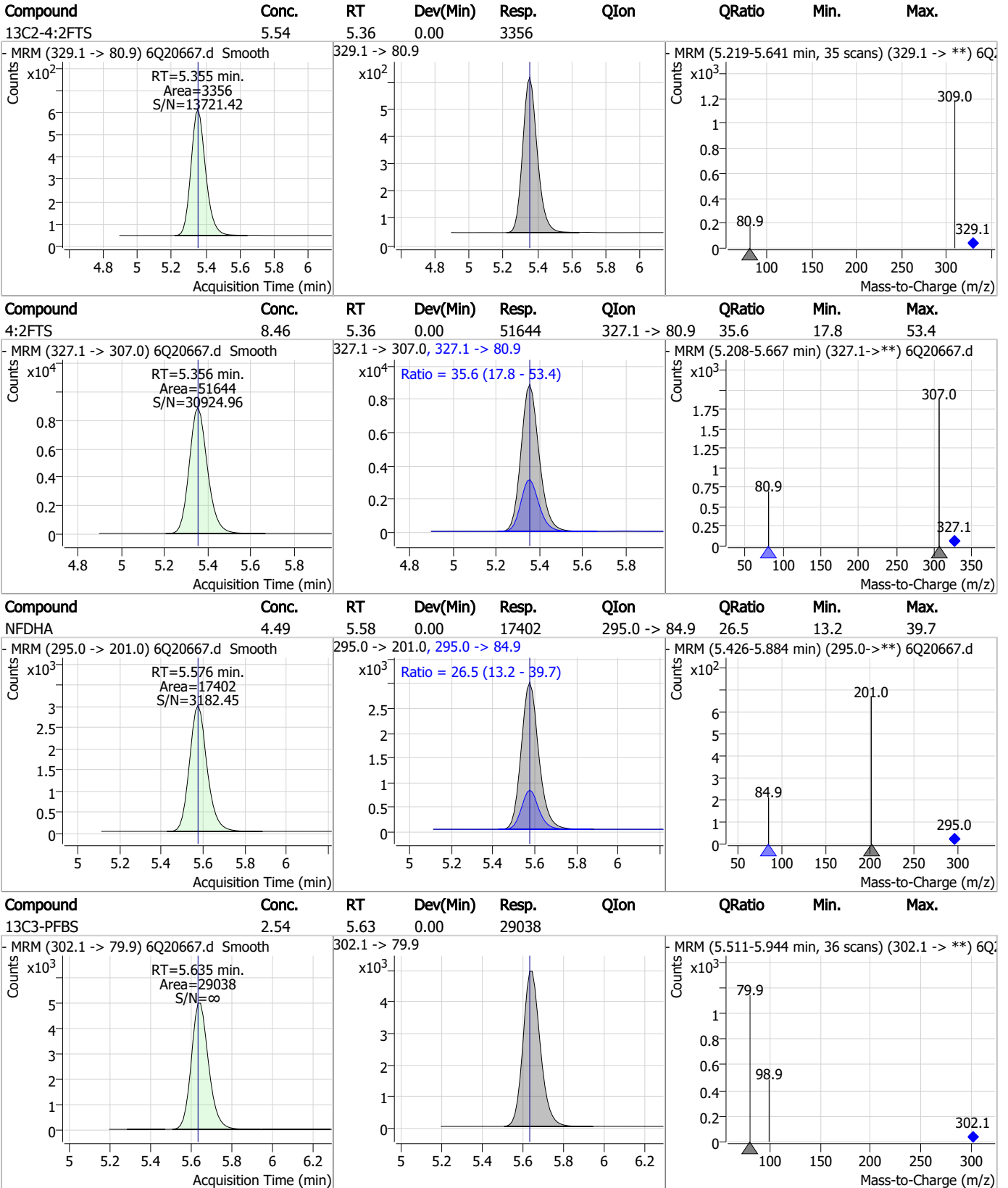
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.5

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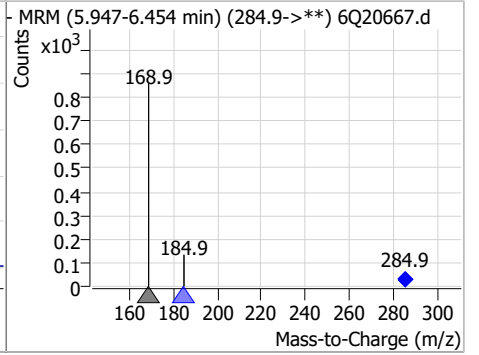
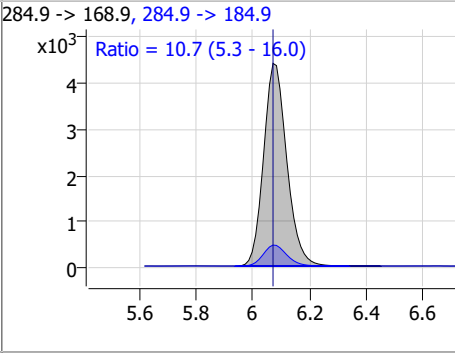
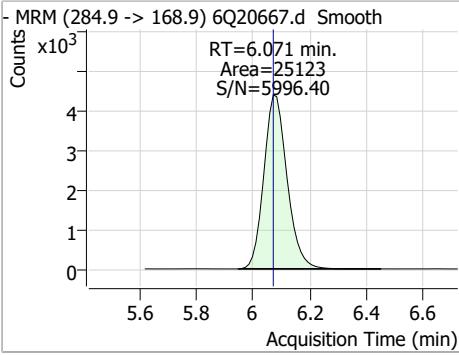
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.04	5.65	0.00	23506	298.7 -> 98.8	41.1	20.5	61.6
13C5-PFHxA	2.64	5.69	0.00	86577				
PFHxA	2.40	5.69	0.00	76196	313.0 -> 118.9	4.9	2.4	7.3
13C3-HFPO-DA	9.68	6.07	0.00	49471				

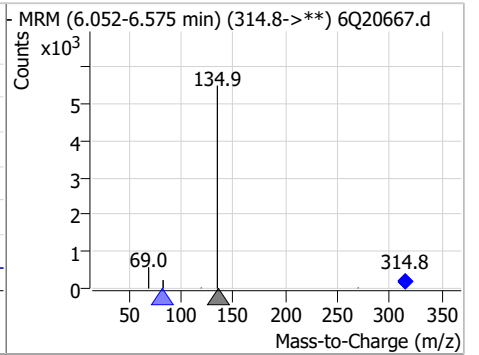
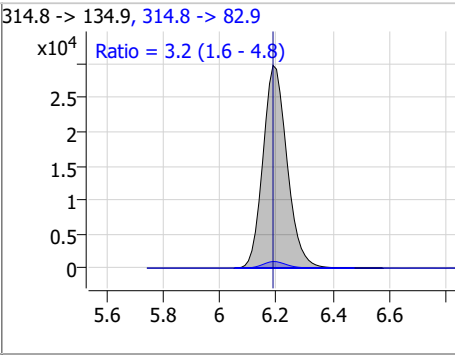
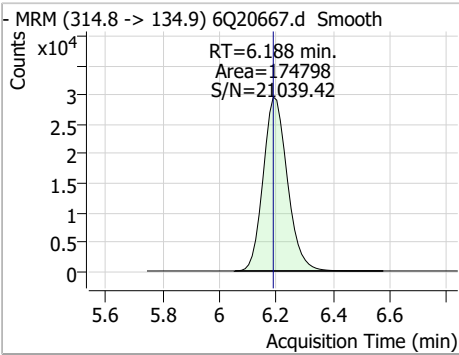
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Perfluorinated Compounds by LC/MS/MS

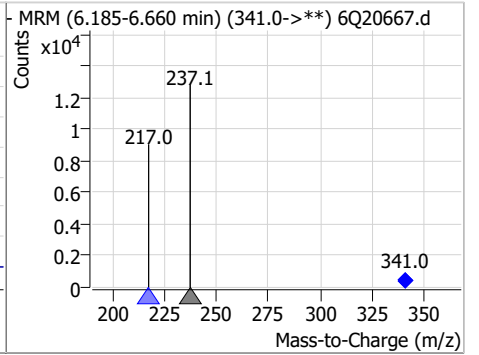
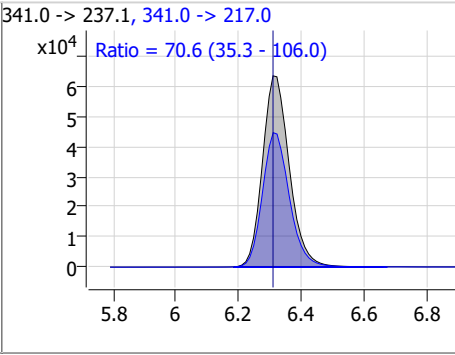
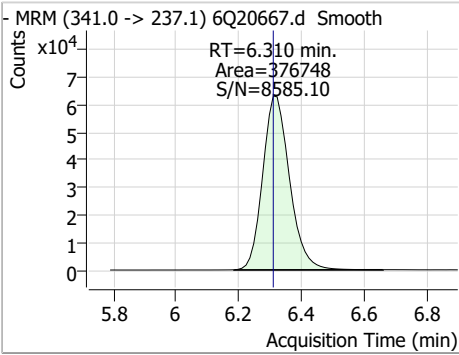
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.96	6.07	0.00	25123	284.9 -> 184.9	10.7	5.3	16.0



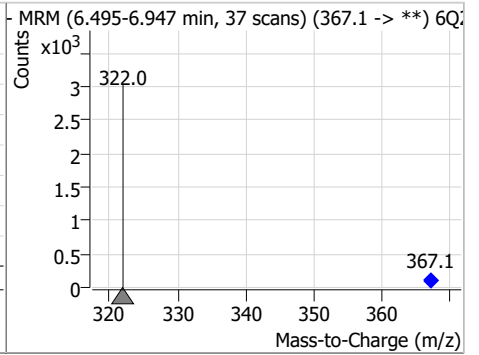
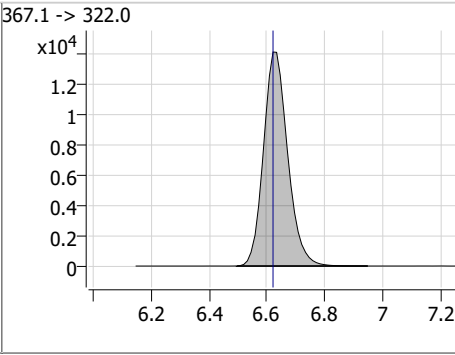
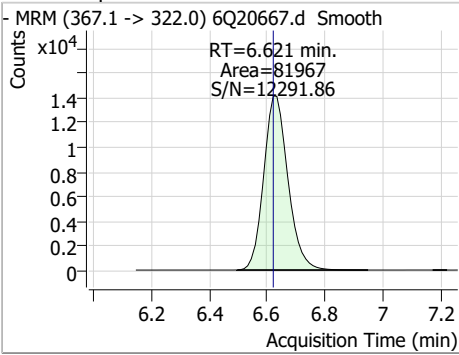
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	3.93	6.19	0.00	174798	314.8 -> 82.9	3.2	1.6	4.8



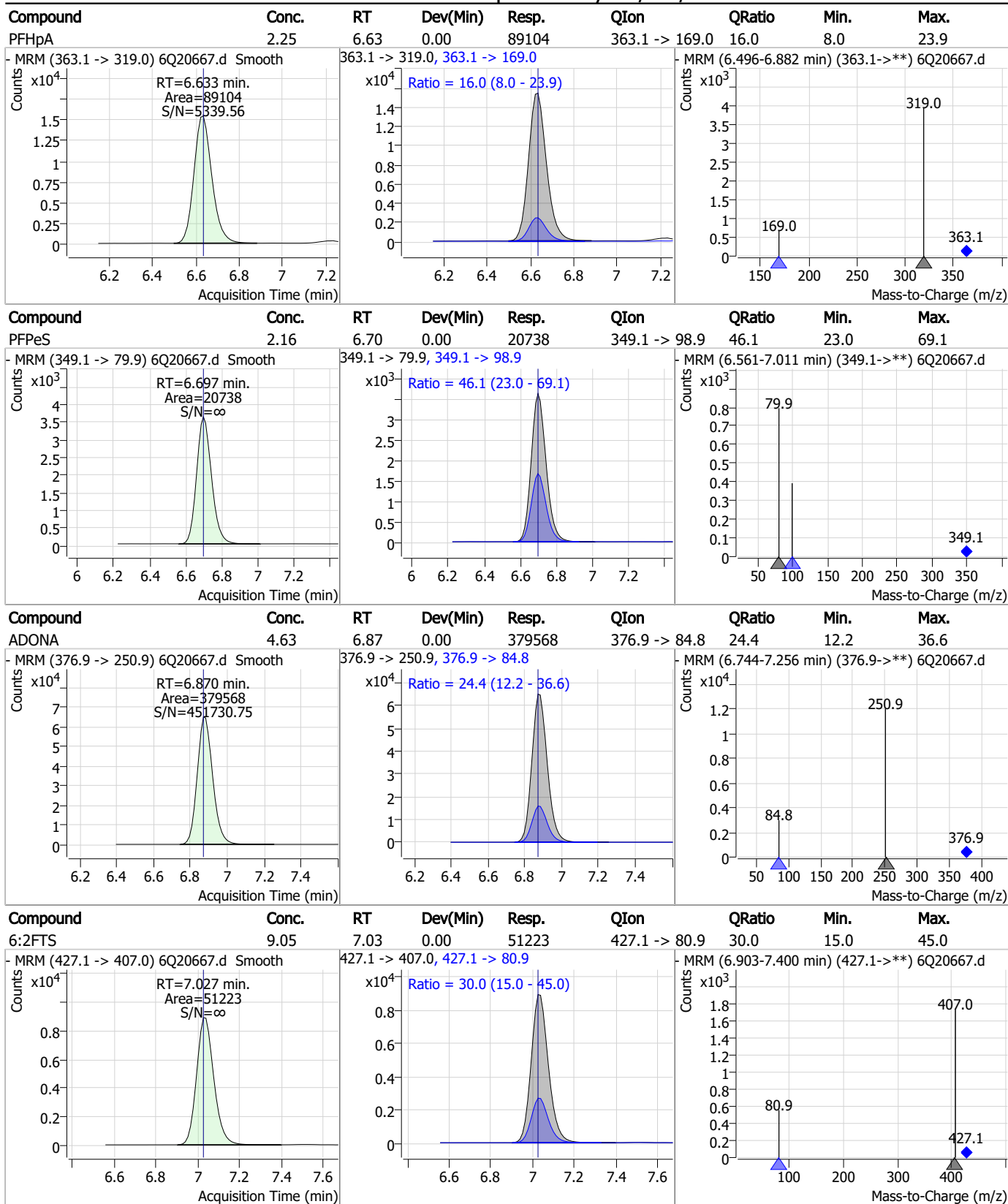
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.82	6.31	0.00	376748	341.0 -> 217.0	70.6	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.60	6.62	0.00	81967	367.1 -> 322.0			

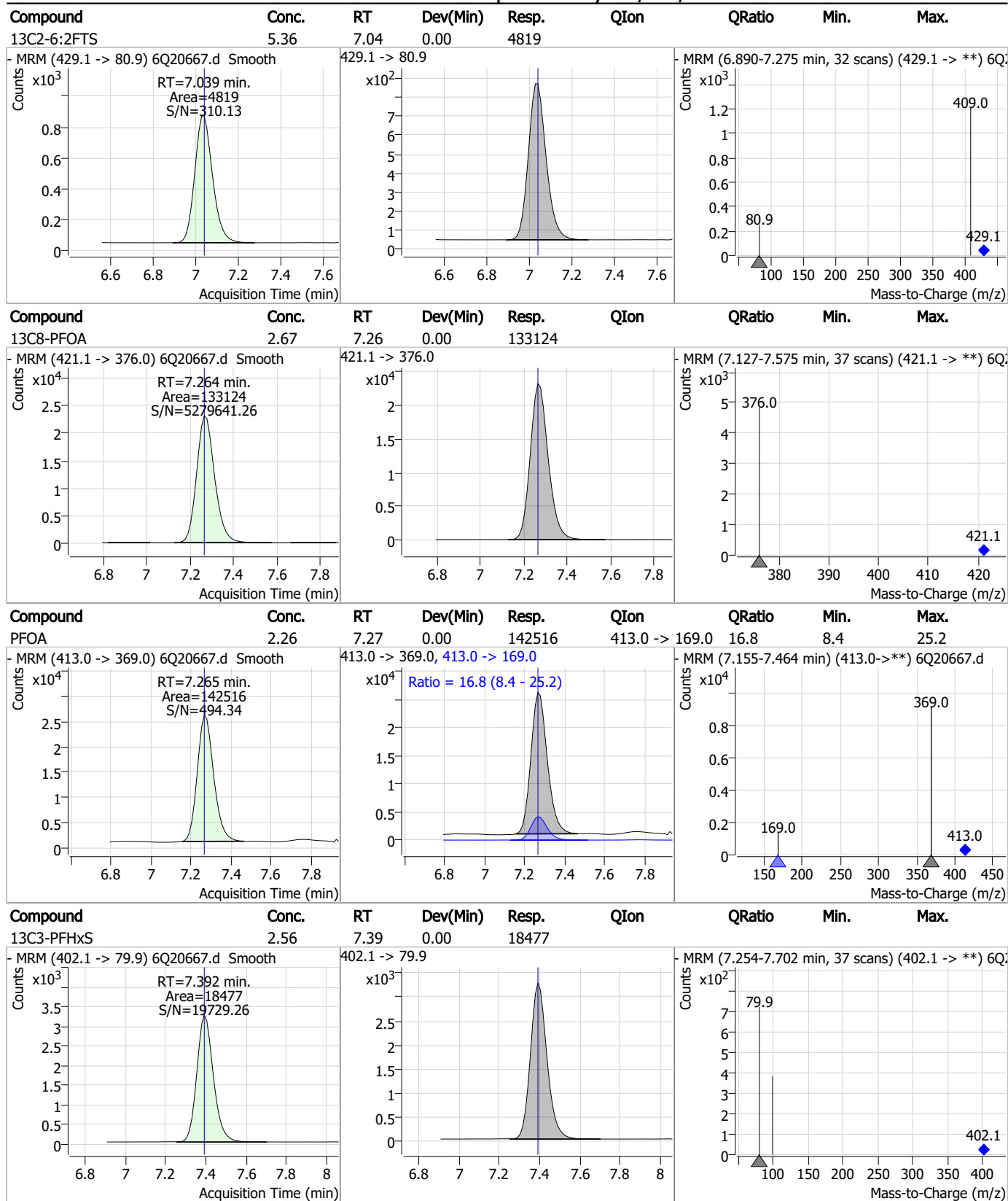


Perfluorinated Compounds by LC/MS/MS



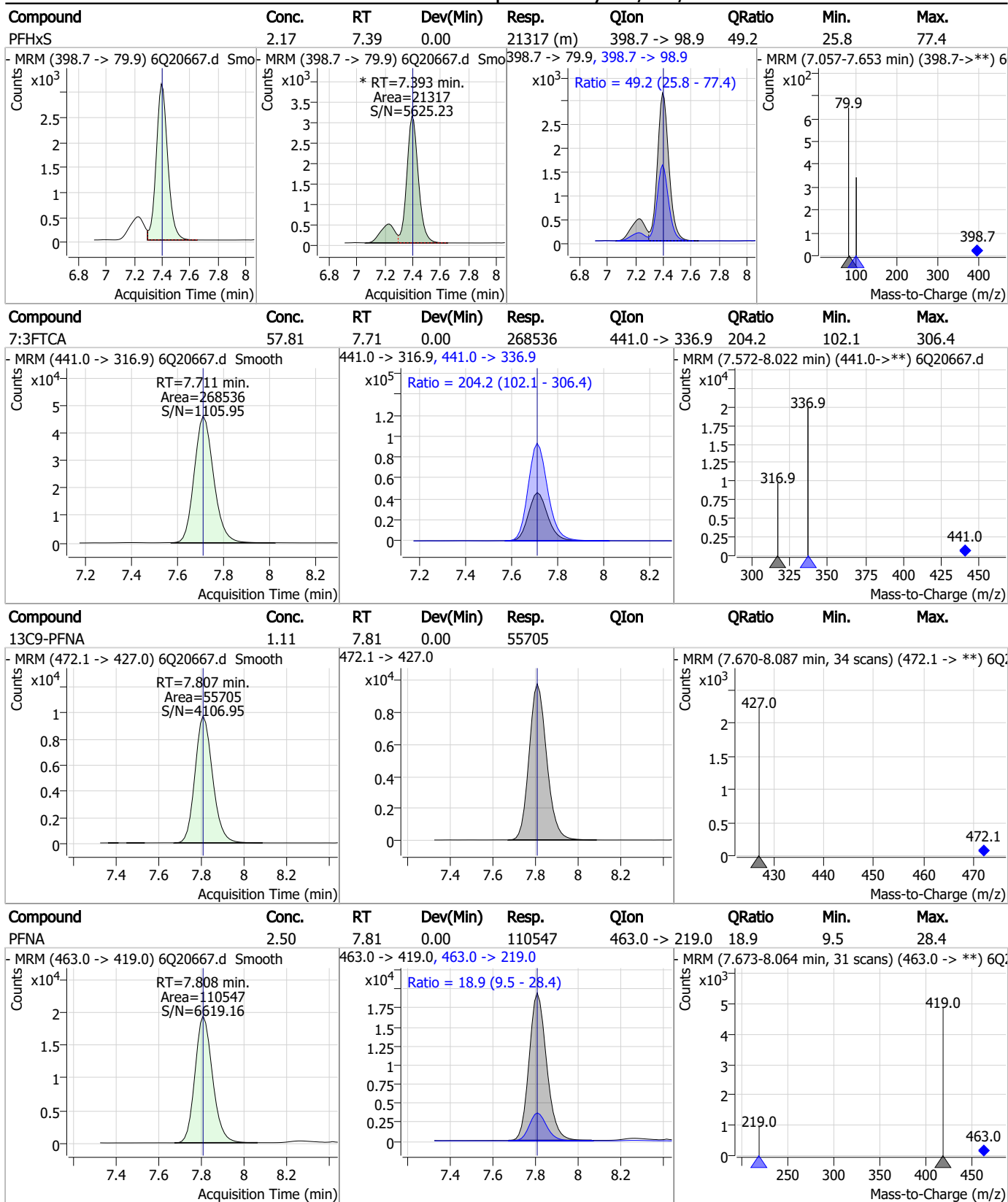
7.7.5
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Perfluorinated Compounds by LC/MS/MS



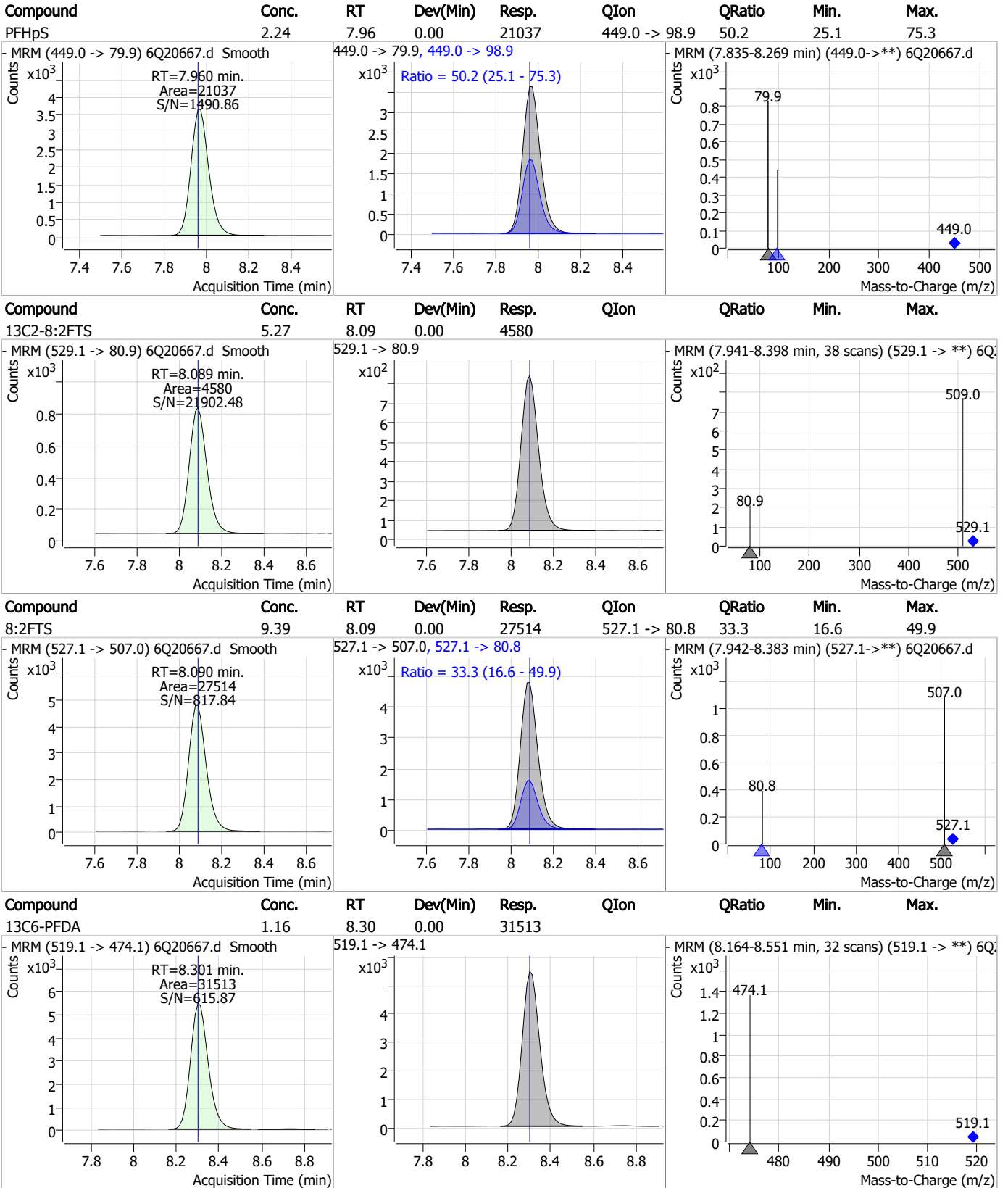
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
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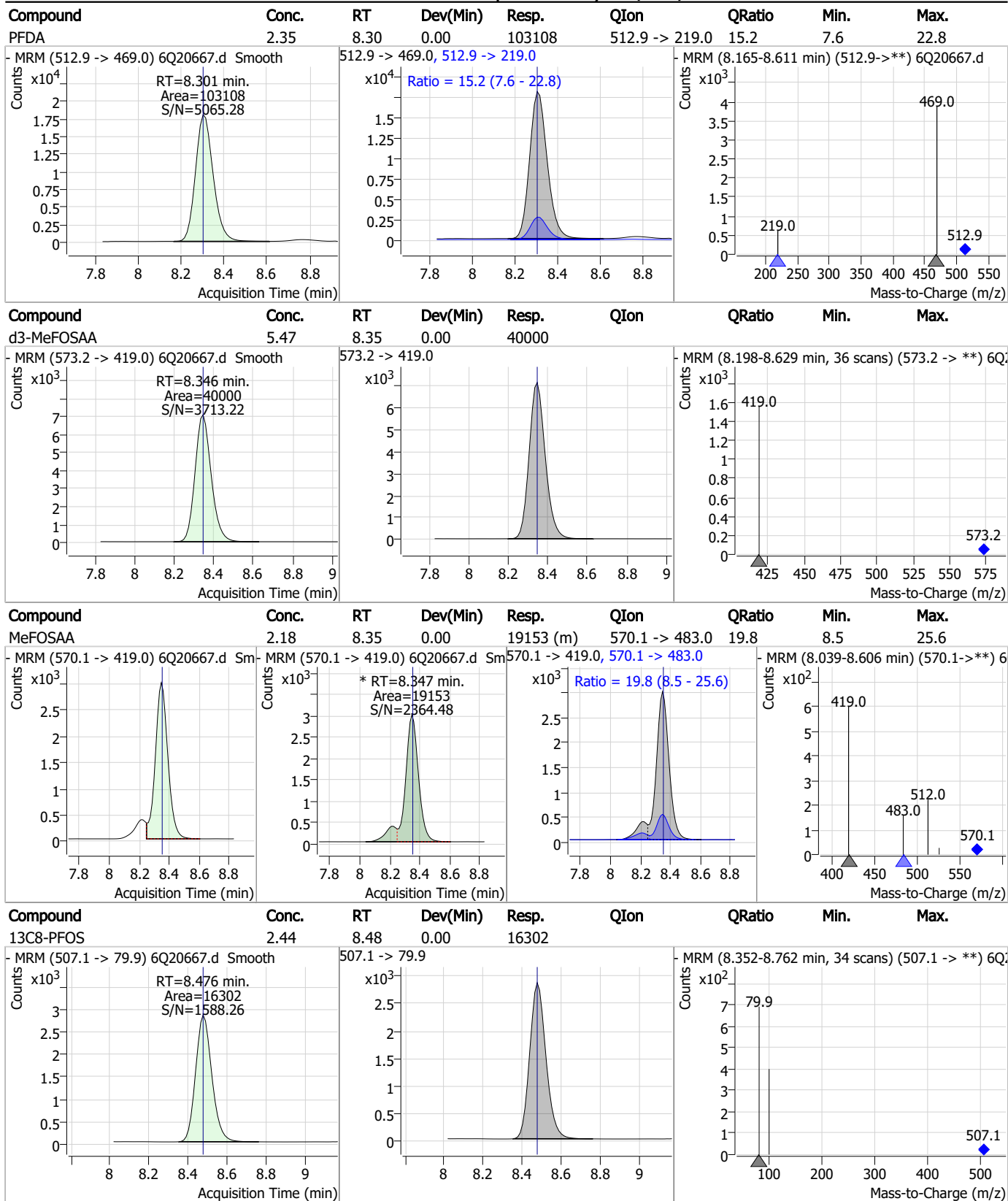
Perfluorinated Compounds by LC/MS/MS



7.7.5

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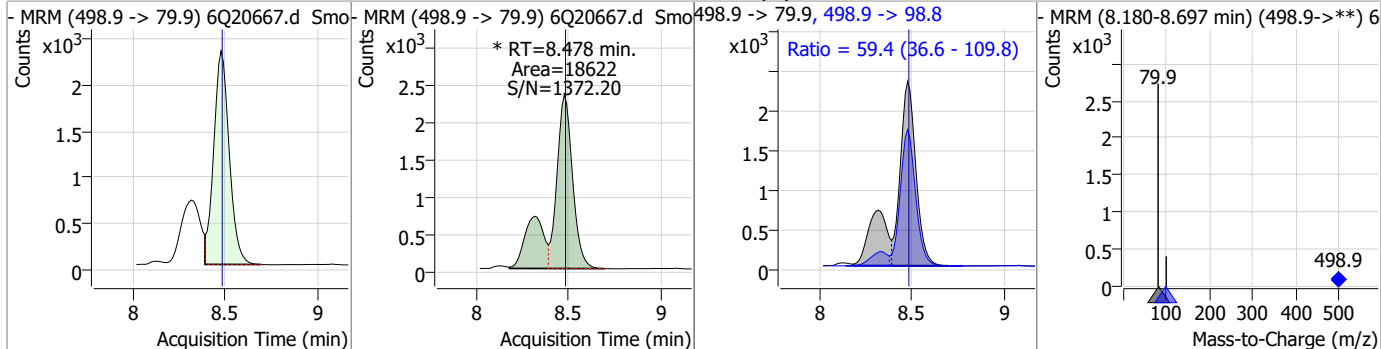
Perfluorinated Compounds by LC/MS/MS



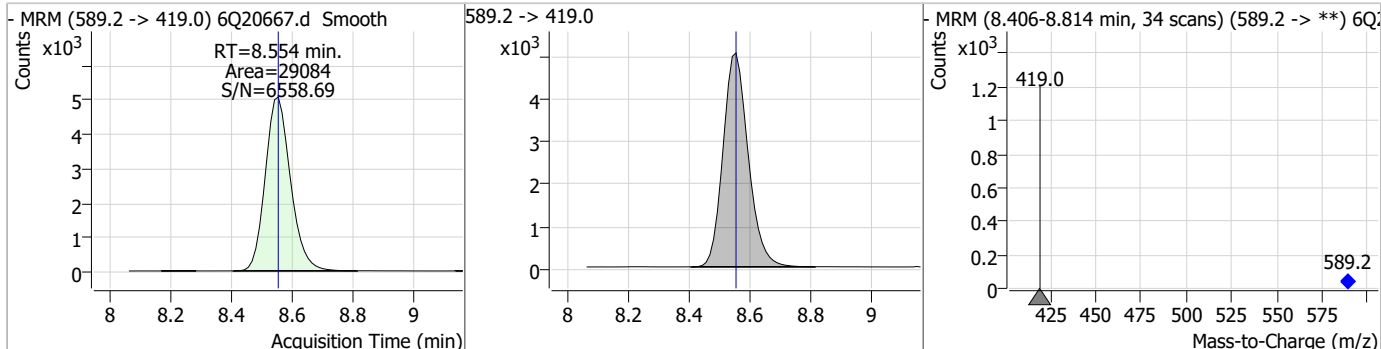
7.7.5
7

Perfluorinated Compounds by LC/MS/MS

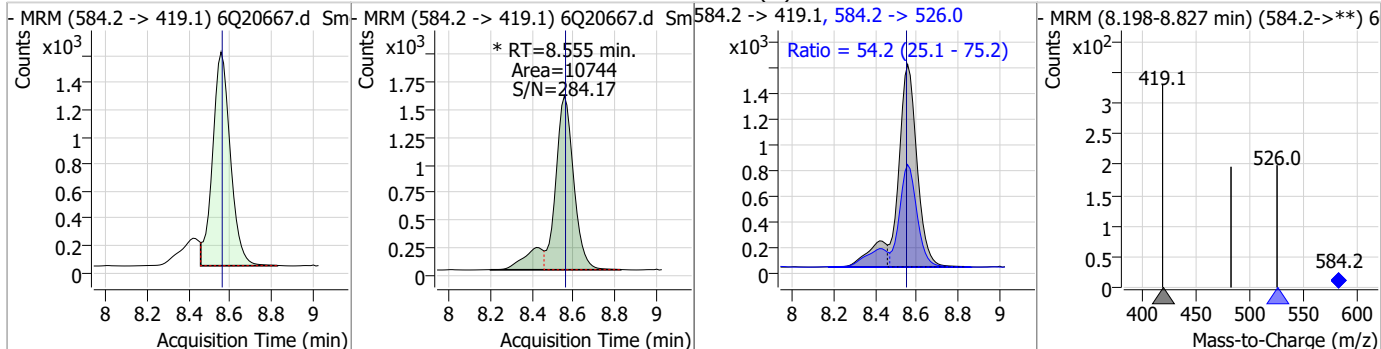
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.10	8.48	0.00	18622 (m)	498.9 -> 98.8	59.4	36.6	109.8



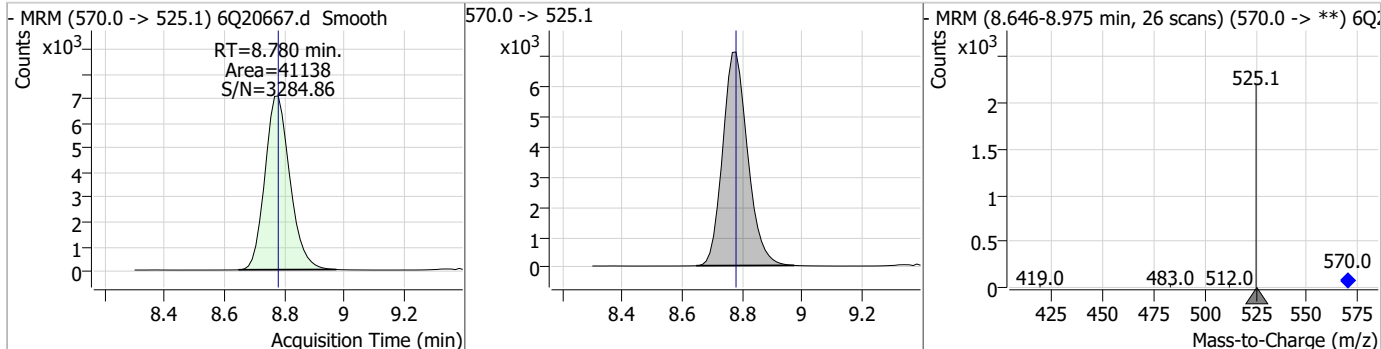
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.00	8.55	0.00	29084				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.35	8.55	0.00	10744 (m)	584.2 -> 526.0	54.2	25.1	75.2

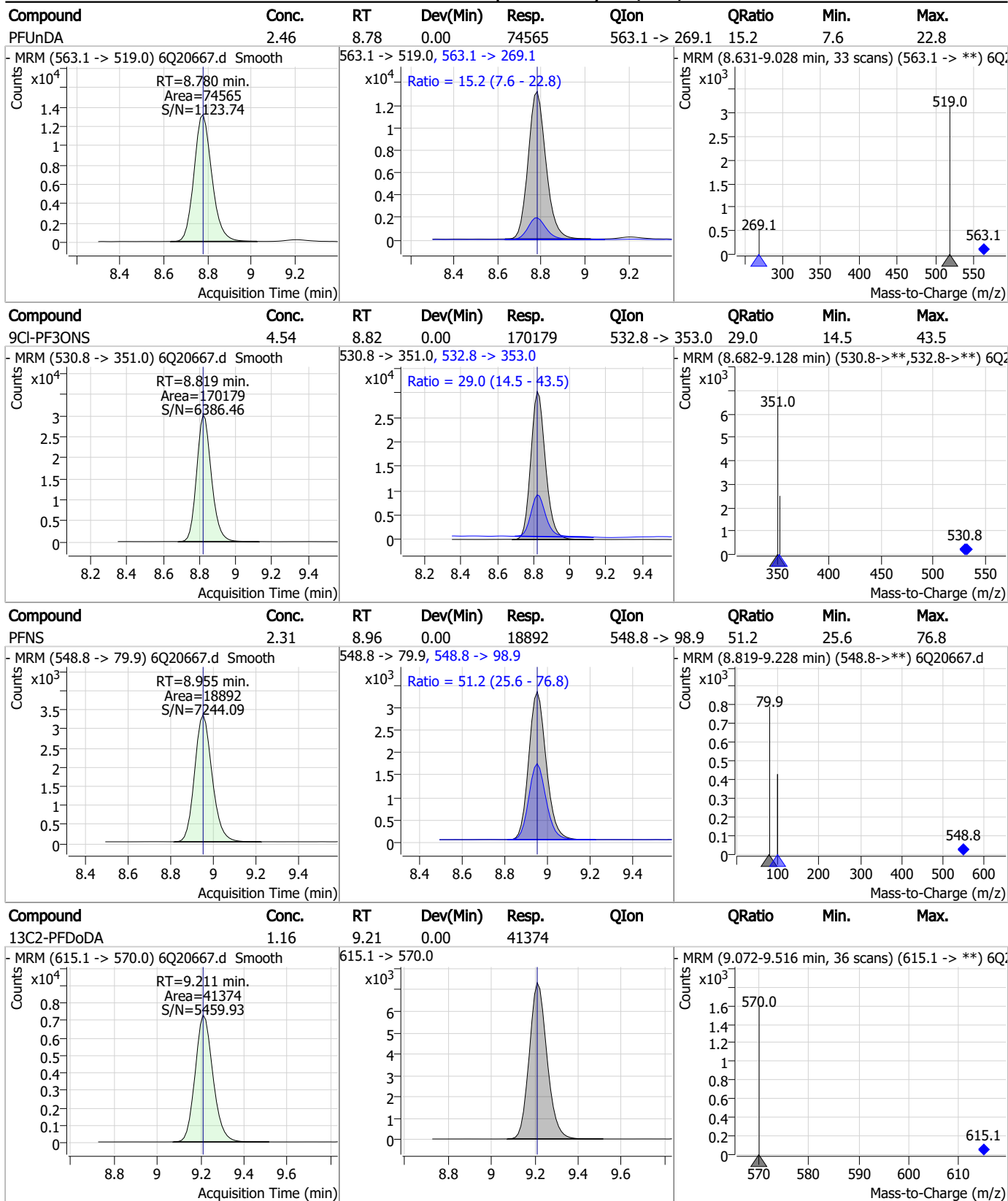


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.18	8.78	0.00	41138				



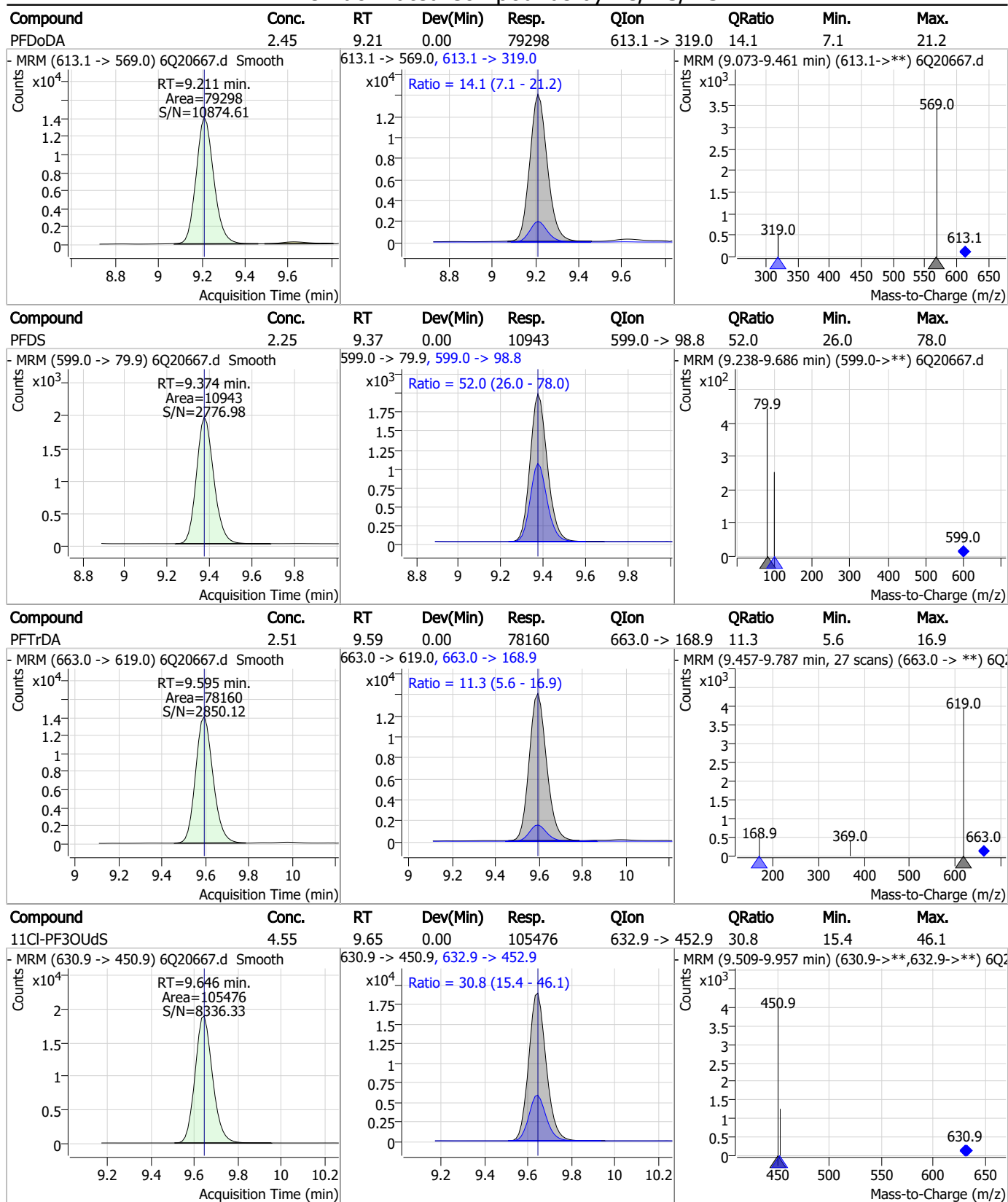
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



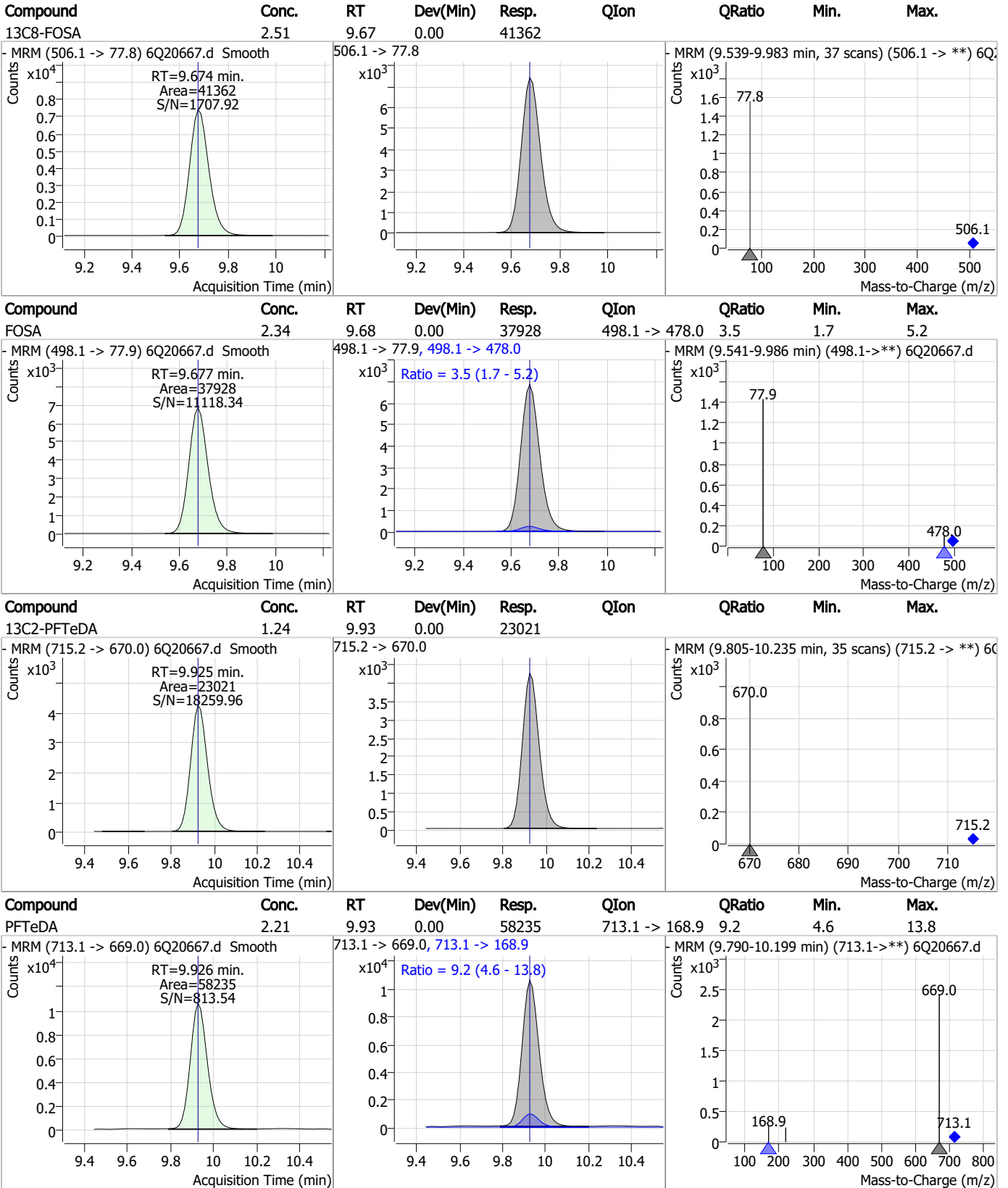
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Perfluorinated Compounds by LC/MS/MS

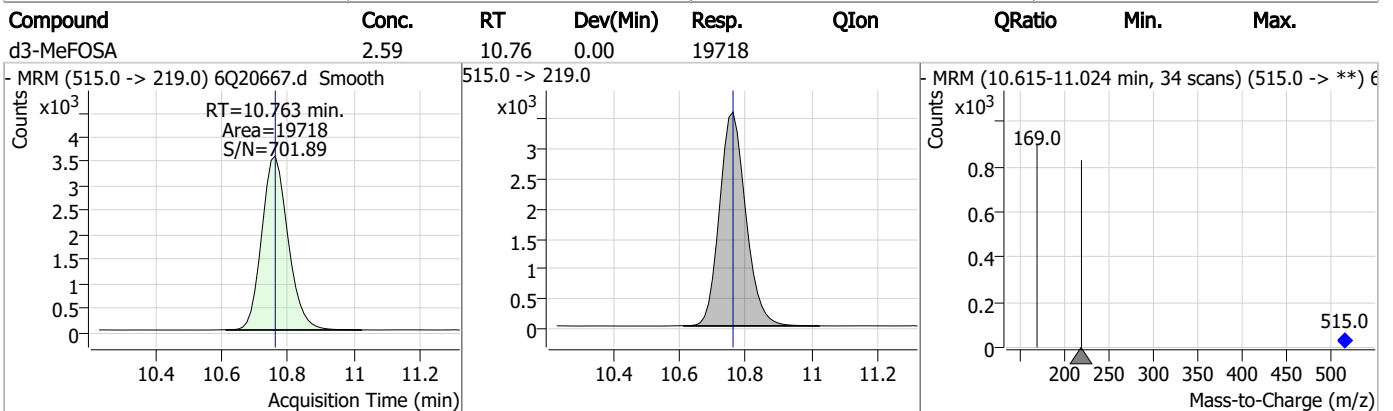
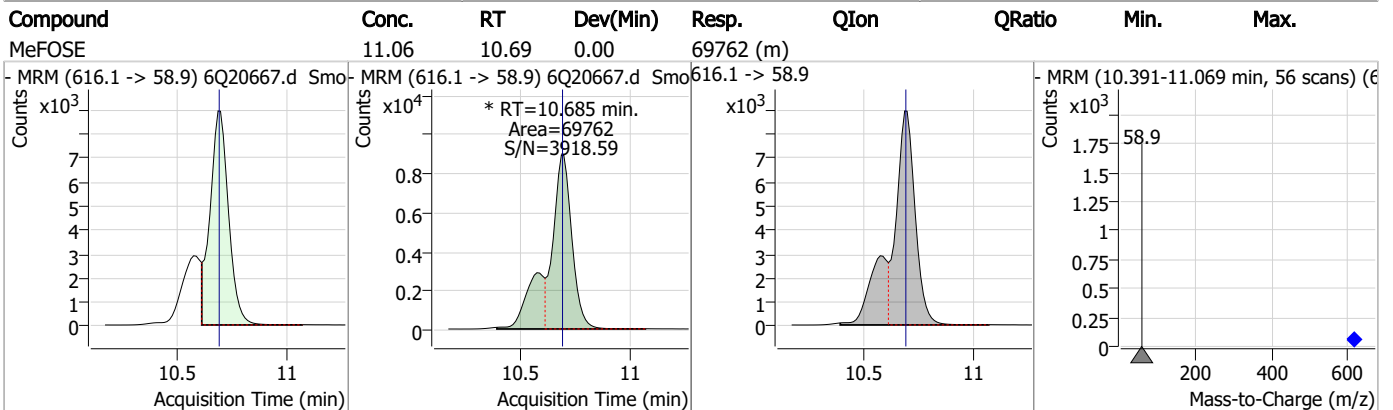
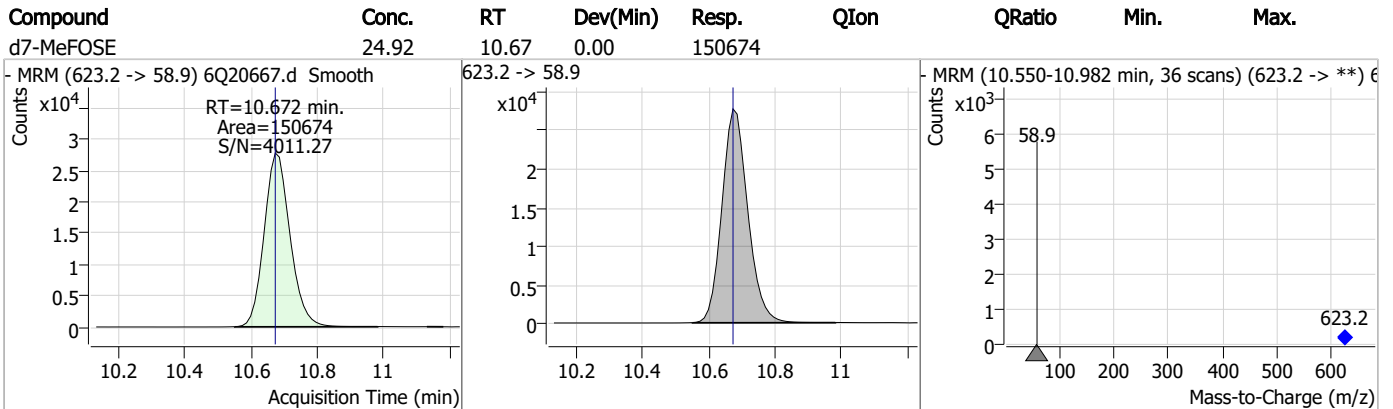
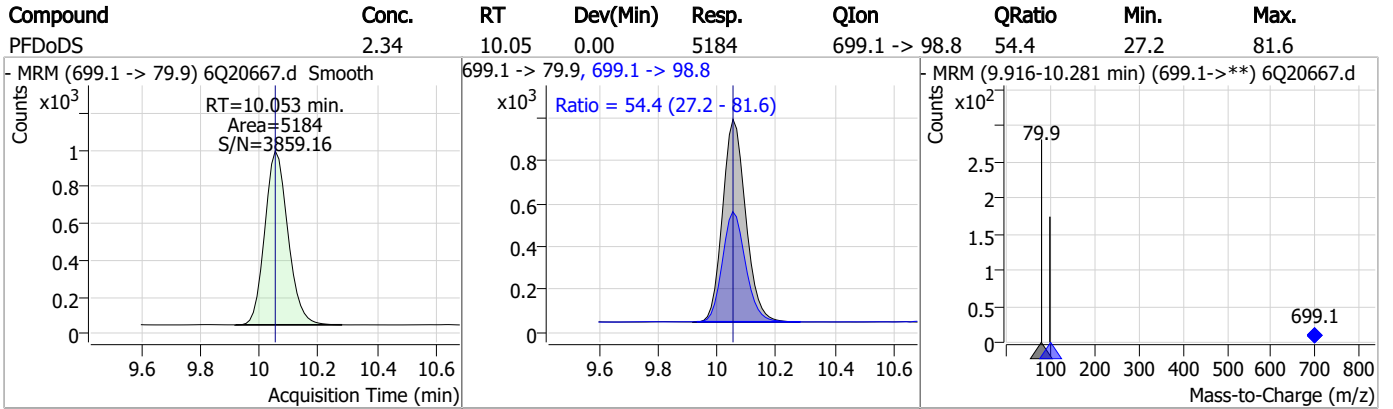


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

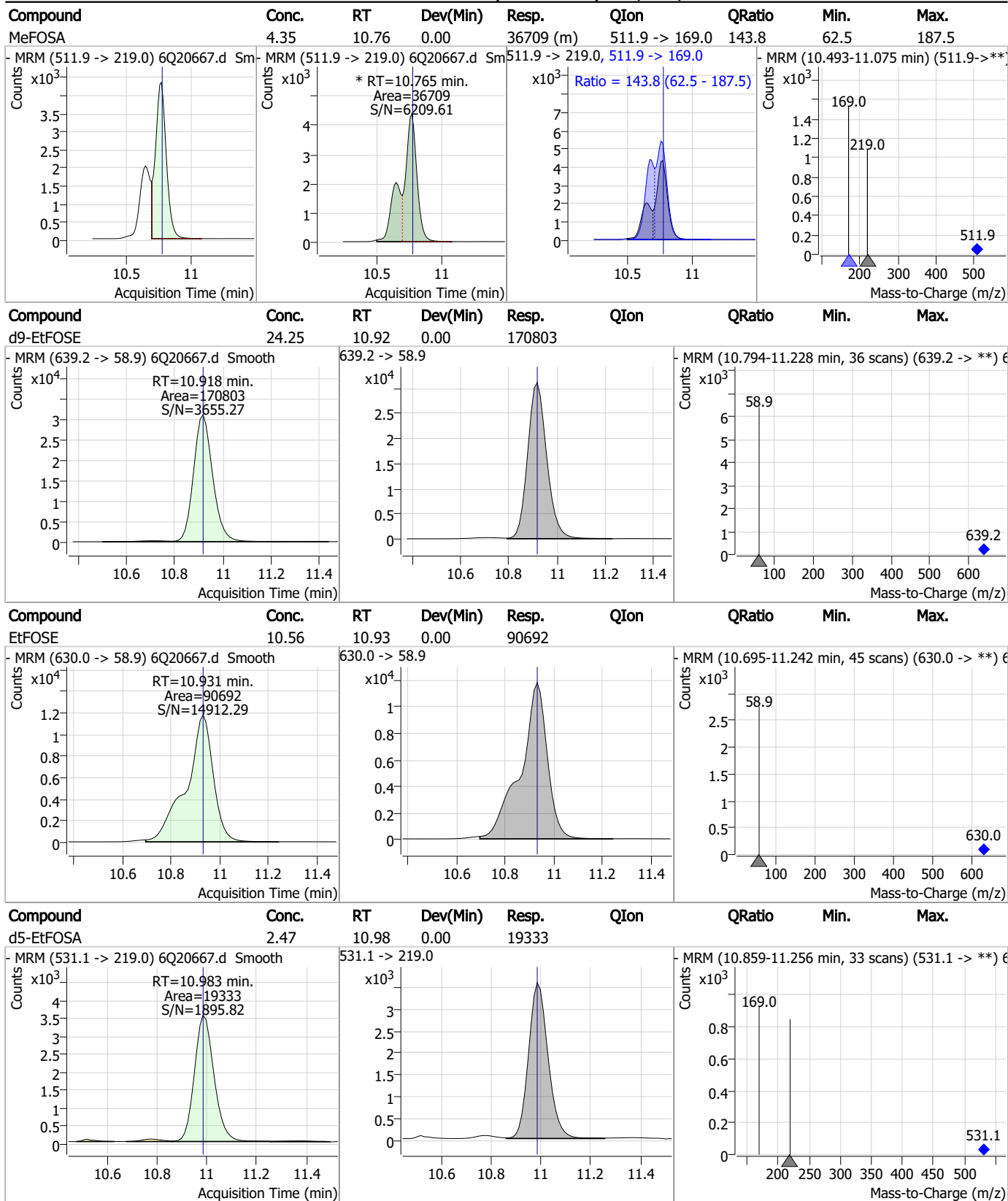


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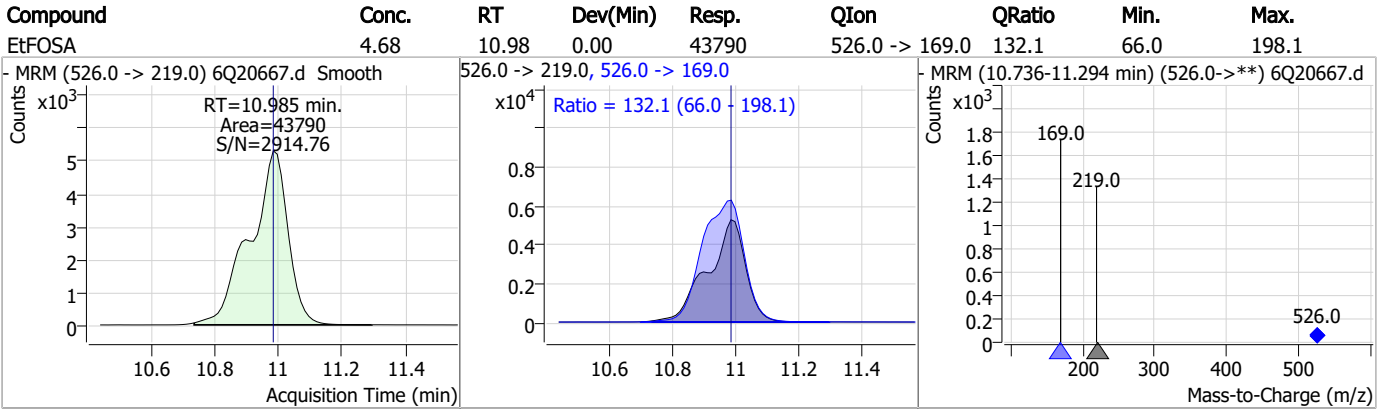


Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Manual Integration Approval Summary

Sample Number: S6Q307-ICC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20667.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 19:47 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.7.5.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20668.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 8:01:28 PM
 Sample Name : ic307-5
 Vial : P1-A6
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	223668	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	72947	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	78317	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	76520	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	112705	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	58065	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	29535	1.25 µg/L	0.000
M7-PFUnDA	8.768	570.0 -> 525.1	39254	1.25 µg/L	-0.012
M2-PFDoDA	9.211	615.1 -> 570.0	41051	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	20783	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	39345	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	27639	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	16805	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	14943	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3034	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4253	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4271	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	33538	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	47597	10.00 µg/L	0.012
M5-EtFOSAA	8.541	589.2 -> 419.0	27000	5.00 µg/L	-0.012
M7-MeFOSE	10.672	623.2 -> 58.9	150307	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	167076	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	18652	2.50 µg/L	0.000
M3-MeFOSA	10.751	515.0 -> 219.0	17893	2.50 µg/L	-0.012
13C4-PFOS	8.477	502.8 -> 79.9	22594	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	93493	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	12979	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	126356	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	40693	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	66405	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	81092	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3034	5.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.3%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4253	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4271	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 102.4%		
13C2-PFDoDA	9.211	615.1 -> 570.0	41051	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.0%		
13C2-PFTeDA	9.925	715.2 -> 670.0	20783	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C3-PFBS	5.647	302.1 -> 79.9	27639	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.6%		
13C3-PFHxS	7.392	402.1 -> 79.9	16805	2.43 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C4-PFBA	3.022	216.8 -> 171.9	223668	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA	6.633	367.1 -> 322.0	76520	2.41 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFHxA	5.692	318.0 -> 273.0	78317	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C5-PFPeA	4.459	268.3 -> 223.0	72947	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C6-PFDA	8.301	519.1 -> 474.1	29535	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C7-PFUnDA	8.768	570.0 -> 525.1	39254	1.34 µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C8-FOSA	9.674	506.1 -> 77.8	39345	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C8-PFOA	7.264	421.1 -> 376.0	112705	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.7%	
13C8-PFOS	8.476	507.1 -> 79.9	14943	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C9-PFNA	7.807	472.1 -> 427.0	58065	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.5%	
d3-MeFOSAA	8.346	573.2 -> 419.0	33538	4.78 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	47597	9.25 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.5%	
d3-MeFOSA	10.751	515.0 -> 219.0	17893	2.45 µg/L	-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
d5-EtFOSAA	8.541	589.2 -> 419.0	27000	4.84 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
d7-MeFOSE	10.672	623.2 -> 58.9	150307	25.93 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	167076	24.75 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	18652	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	104685	18.97 µg/L	98
		327.1 -> 80.9	36160		
6:2FTS	7.039	427.1 -> 407.0	94081	18.83 µg/L	95
		427.1 -> 80.9	30846		
8:2FTS	8.090	527.1 -> 507.0	53126	19.44 µg/L	100
		527.1 -> 80.8	17763		
EtFOSAA	8.555	584.2 -> 419.1	21702	5.11 µg/L	m 99
		584.2 -> 526.0	10776		
FOSA	9.677	498.1 -> 77.9	79404	5.15 µg/L	99
		498.1 -> 478.0	2530		
MeFOSAA	8.347	570.1 -> 419.0	37769	5.13 µg/L	m 97
		570.1 -> 483.0	6903		
PFBA	3.018	212.8 -> 168.9	174694	20.27 µg/L	100
PFBS	5.648	298.7 -> 79.9	48298	4.39 µg/L	99
		298.7 -> 98.8	19486		
PFDA	8.301	512.9 -> 469.0	215284	5.23 µg/L	100
		512.9 -> 219.0	33087		
PFDoDA	9.211	613.1 -> 569.0	156021	4.86 µg/L	95
		613.1 -> 319.0	24934		
PFDS	9.374	599.0 -> 79.9	22526	5.06 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	11714			
PFHpA	6.633	363.1 -> 319.0	180374	4.88	µg/L	97
		363.1 -> 169.0	30779			
PFHpS	7.960	449.0 -> 79.9	45185	5.25	µg/L	100
		449.0 -> 98.9	22755			
PFHxA	5.694	313.0 -> 269.0	150234	5.23	µg/L	100
		313.0 -> 118.9	7403			
PFHxS	7.393	398.7 -> 79.9	40261	4.50	µg/L	m 99
		398.7 -> 98.9	20623			
PFNA	7.808	463.0 -> 419.0	217637	4.71	µg/L	98
		463.0 -> 219.0	43539			
PFNS	8.955	548.8 -> 79.9	37810	5.05	µg/L	99
		548.8 -> 98.9	19557			
PFOA	7.265	413.0 -> 369.0	276365	5.17	µg/L	98
		413.0 -> 169.0	49017			
PFOS	8.478	498.9 -> 79.9	40497	4.99	µg/L	m 69
		498.9 -> 98.8	19185			
PFPeA	4.461	263.0 -> 219.0	197798	10.17	µg/L	100
PFPeS	6.697	349.1 -> 79.9	43037	4.92	µg/L	98
		349.1 -> 98.9	20347			
PFTeDA	9.926	713.1 -> 669.0	123386	5.20	µg/L	97
		713.1 -> 168.9	9816			
PFTrDA	9.595	663.0 -> 619.0	151815	4.91	µg/L	99
		663.0 -> 168.9	16813			
PFUnDA	8.780	563.1 -> 519.0	146840	5.08	µg/L	96
		563.1 -> 269.1	24921			
11CI-PF3OUdS	9.634	630.9 -> 450.9	215694	9.68	µg/L	98
		632.9 -> 452.9	68596			
9CI-PF3ONS	8.819	530.8 -> 351.0	380247	10.53	µg/L	99
		532.8 -> 353.0	109084			
ADONA	6.883	376.9 -> 250.9	756927	9.60	µg/L	98
		376.9 -> 84.8	193271			
HFPO-DA	6.083	284.9 -> 168.9	49614	10.18	µg/L	98
		284.9 -> 184.9	5656			
3:3FTCA	3.883	241.0 -> 177.0	33388	23.88	µg/L	99
		241.0 -> 117.0	4319			
5:3FTCA	6.322	341.0 -> 237.1	774147	129.07	µg/L	99
		341.0 -> 217.0	539744			
7:3FTCA	7.711	441.0 -> 316.9	544986	129.70	µg/L	97
		441.0 -> 336.9	1138663			
EtFOSA	10.985	526.0 -> 219.0	91748	10.17	µg/L	m 97
		526.0 -> 169.0	118093			
EtFOSE	10.931	630.0 -> 58.9	211832	25.22	µg/L	100
MeFOSA	10.752	511.9 -> 219.0	77347	10.11	µg/L	m 84
		511.9 -> 169.0	110773			
MeFOSE	10.685	616.1 -> 58.9	154428	24.54	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	10726	5.27	µg/L	97
		699.1 -> 98.8	6088			
NFDHA	5.576	295.0 -> 201.0	37981	10.84	µg/L	96
		295.0 -> 84.9	9341			
PFMBA	4.900	279.0 -> 85.1	128330	10.05	µg/L	100
PFMPA	3.588	229.0 -> 84.9	107505	10.00	µg/L	100
PFEESA	6.188	314.8 -> 134.9	370995	9.23	µg/L	99
		314.8 -> 82.9	11206			

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

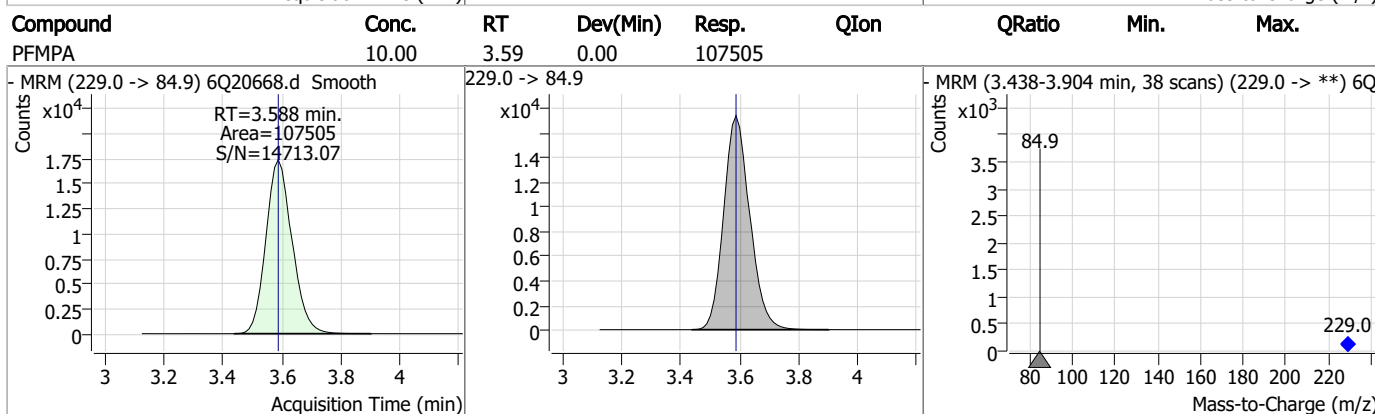
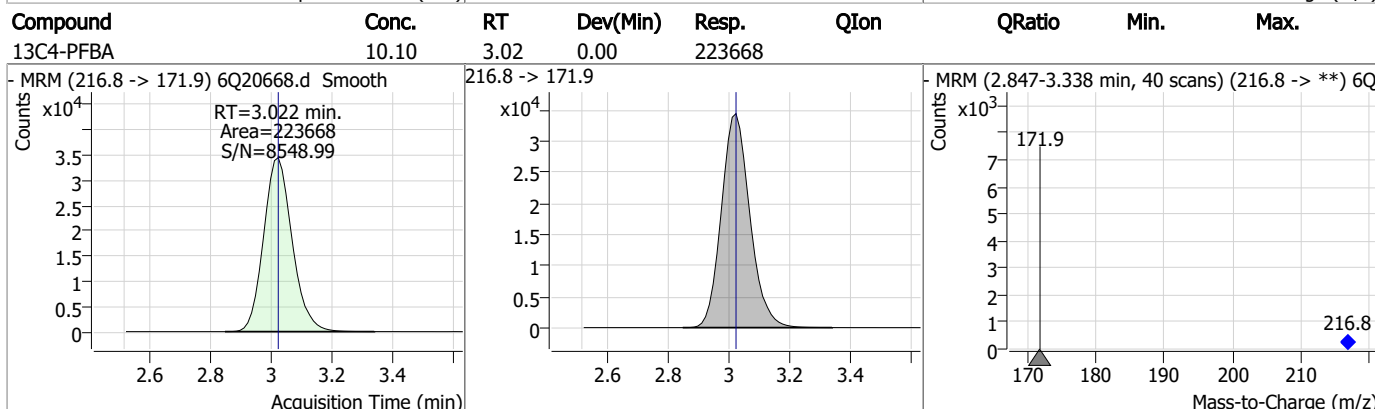
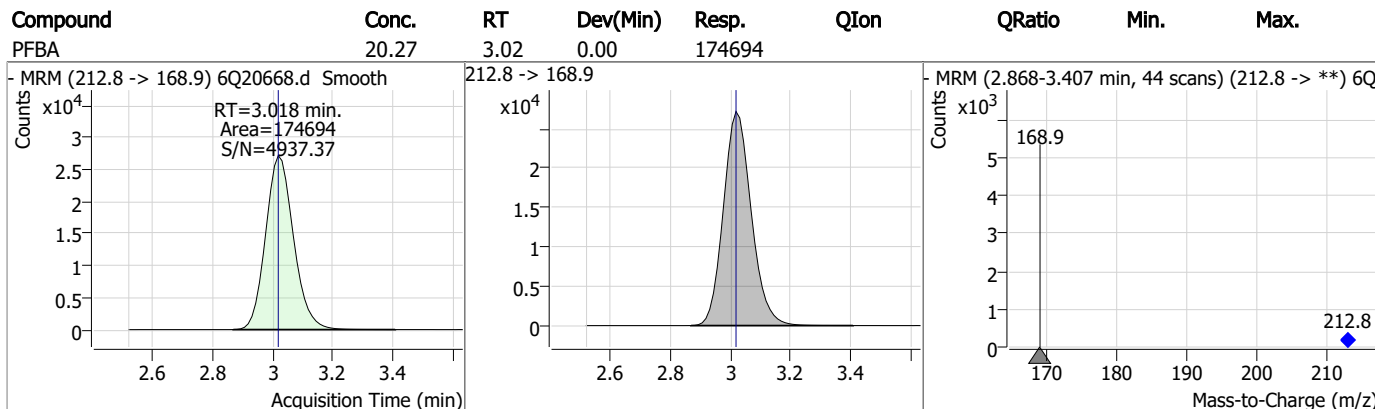
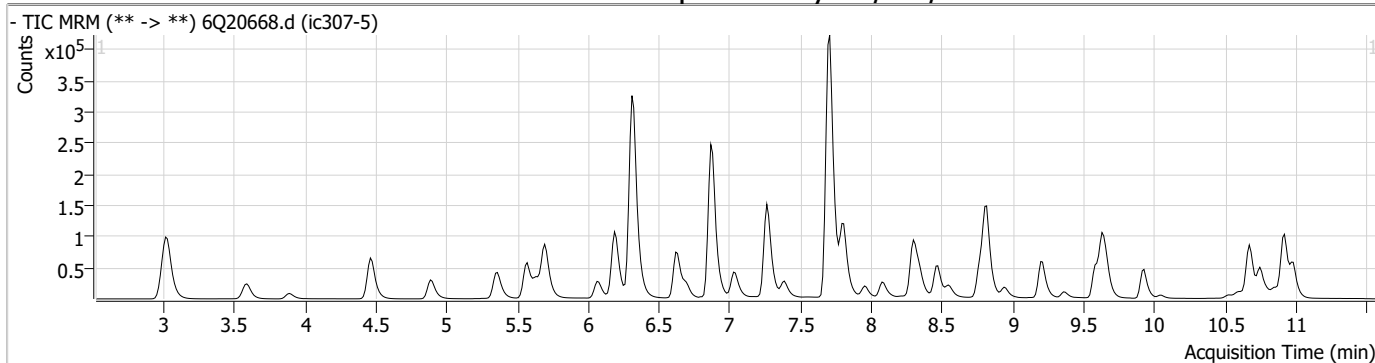
Perfluorinated Compounds by LC/MS/MS

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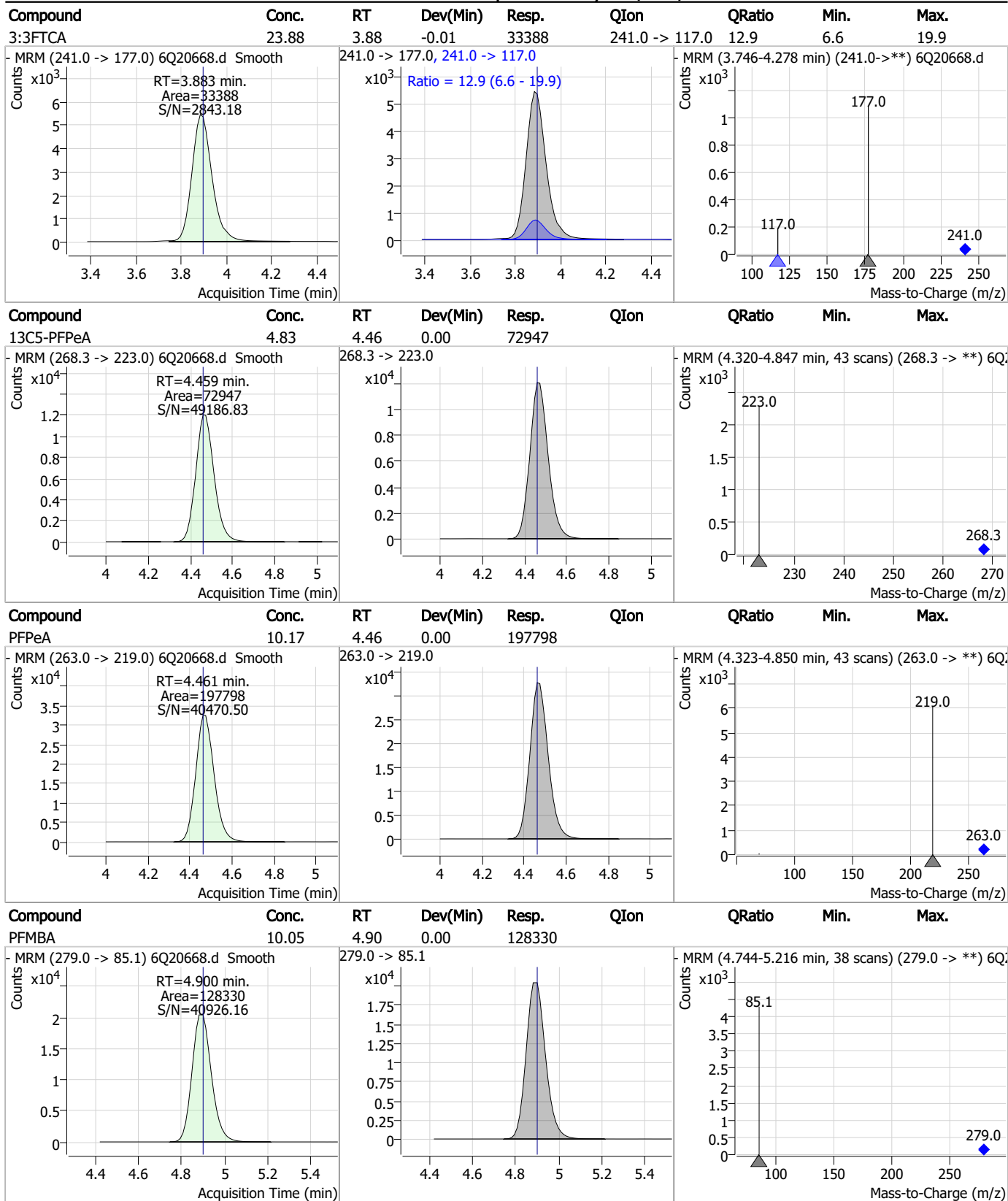
7.7.6

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Perfluorinated Compounds by LC/MS/MS

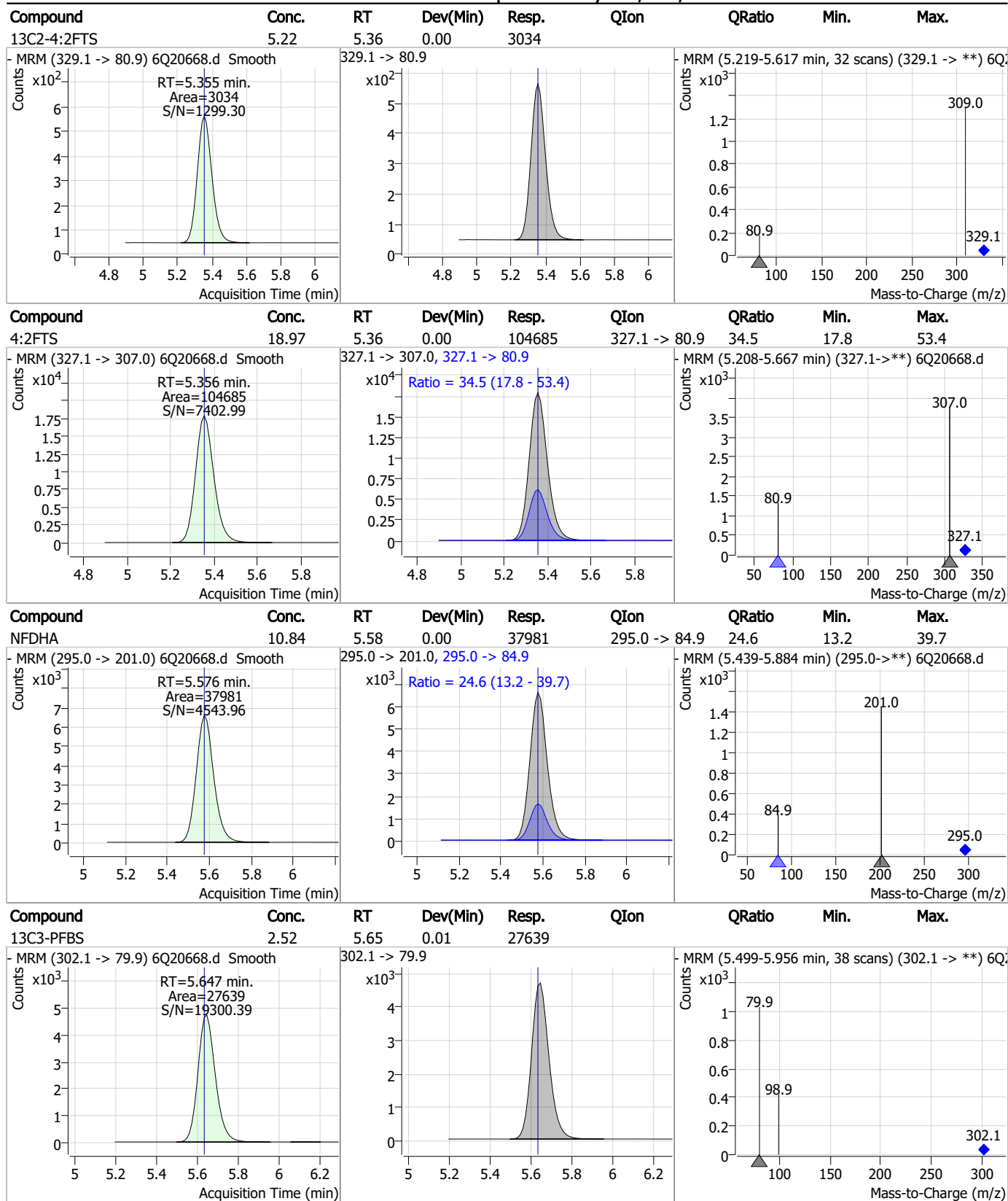


Perfluorinated Compounds by LC/MS/MS



7.7.6
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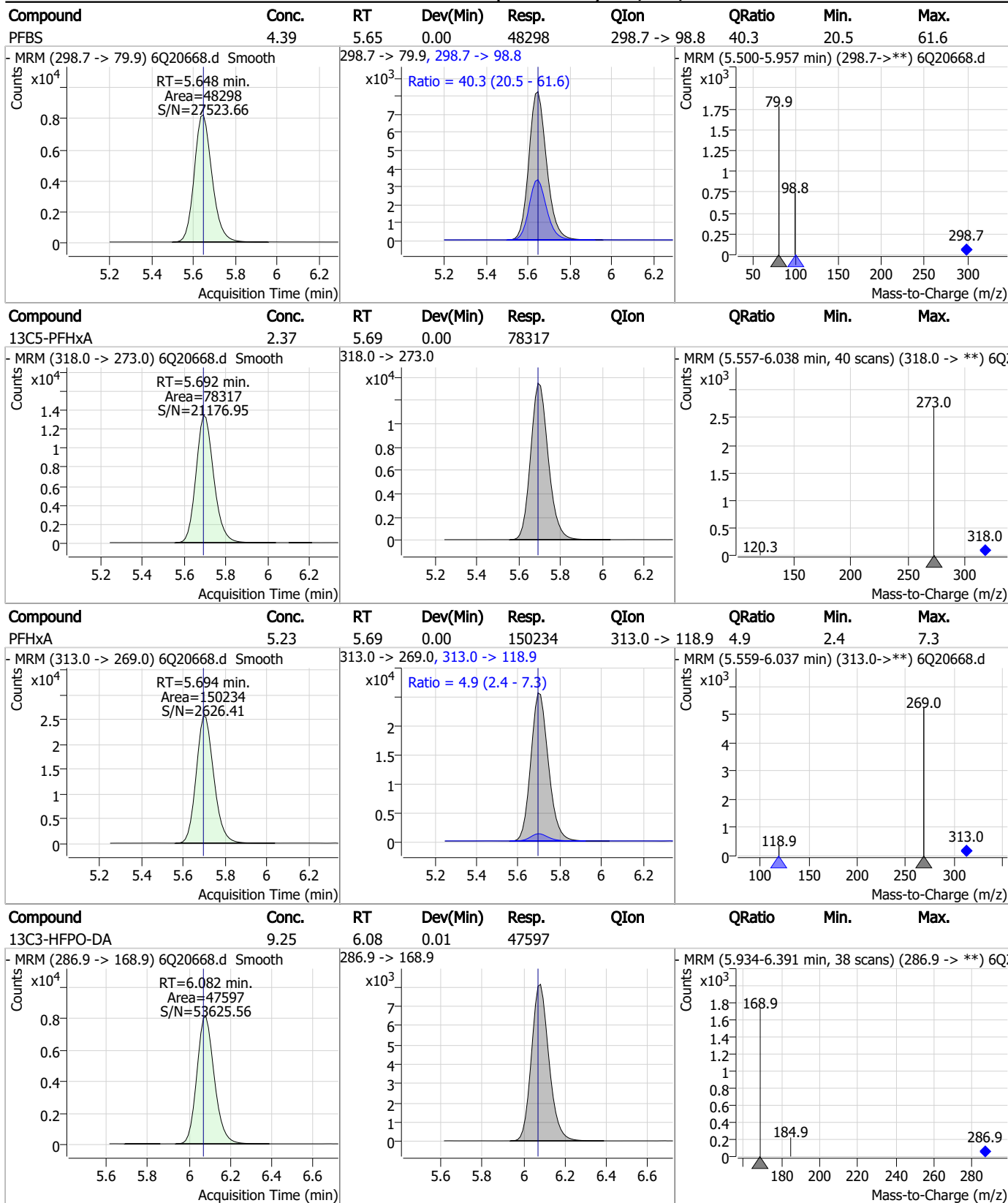
Perfluorinated Compounds by LC/MS/MS



7.7.6
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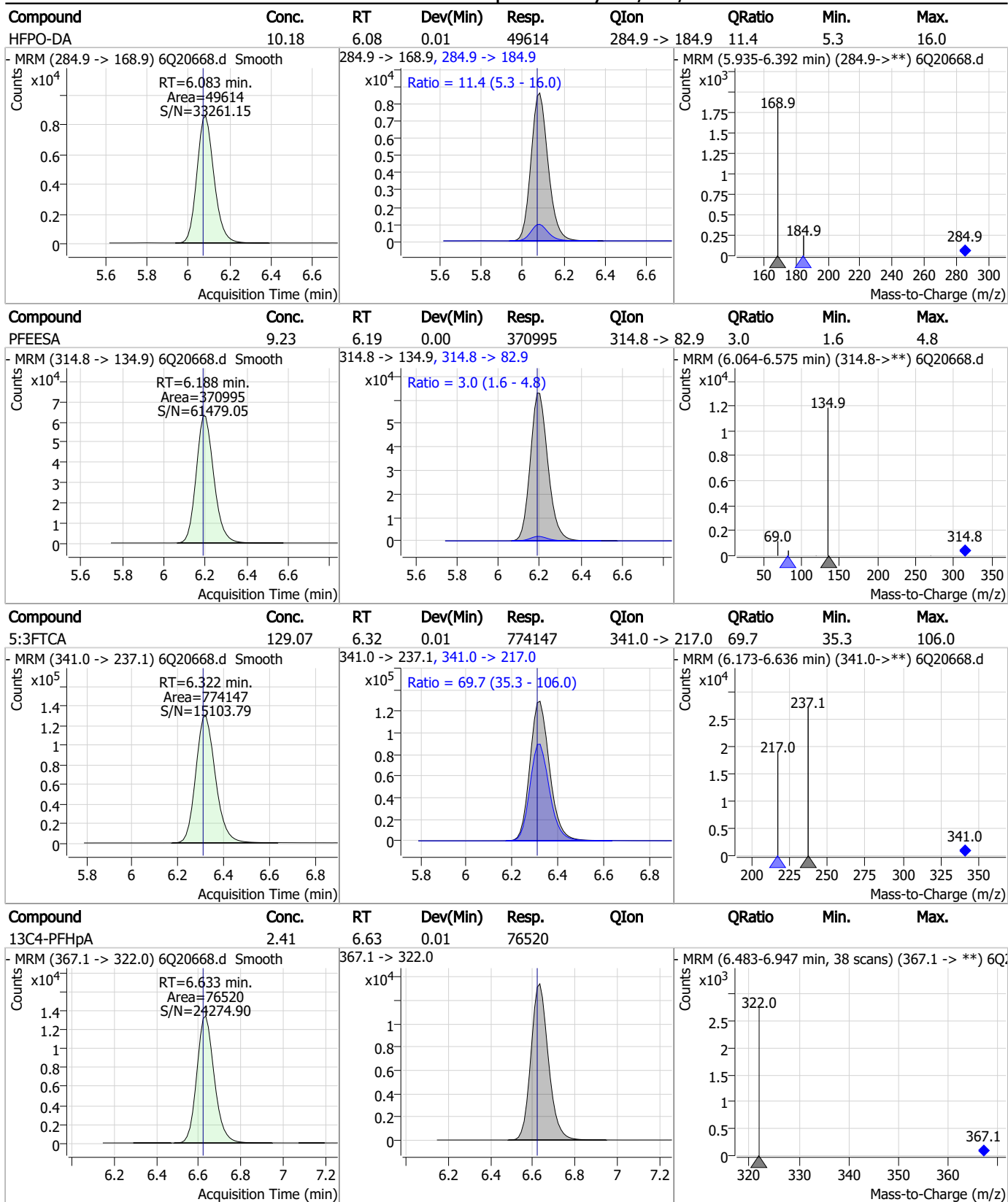


Perfluorinated Compounds by LC/MS/MS



7.7.6
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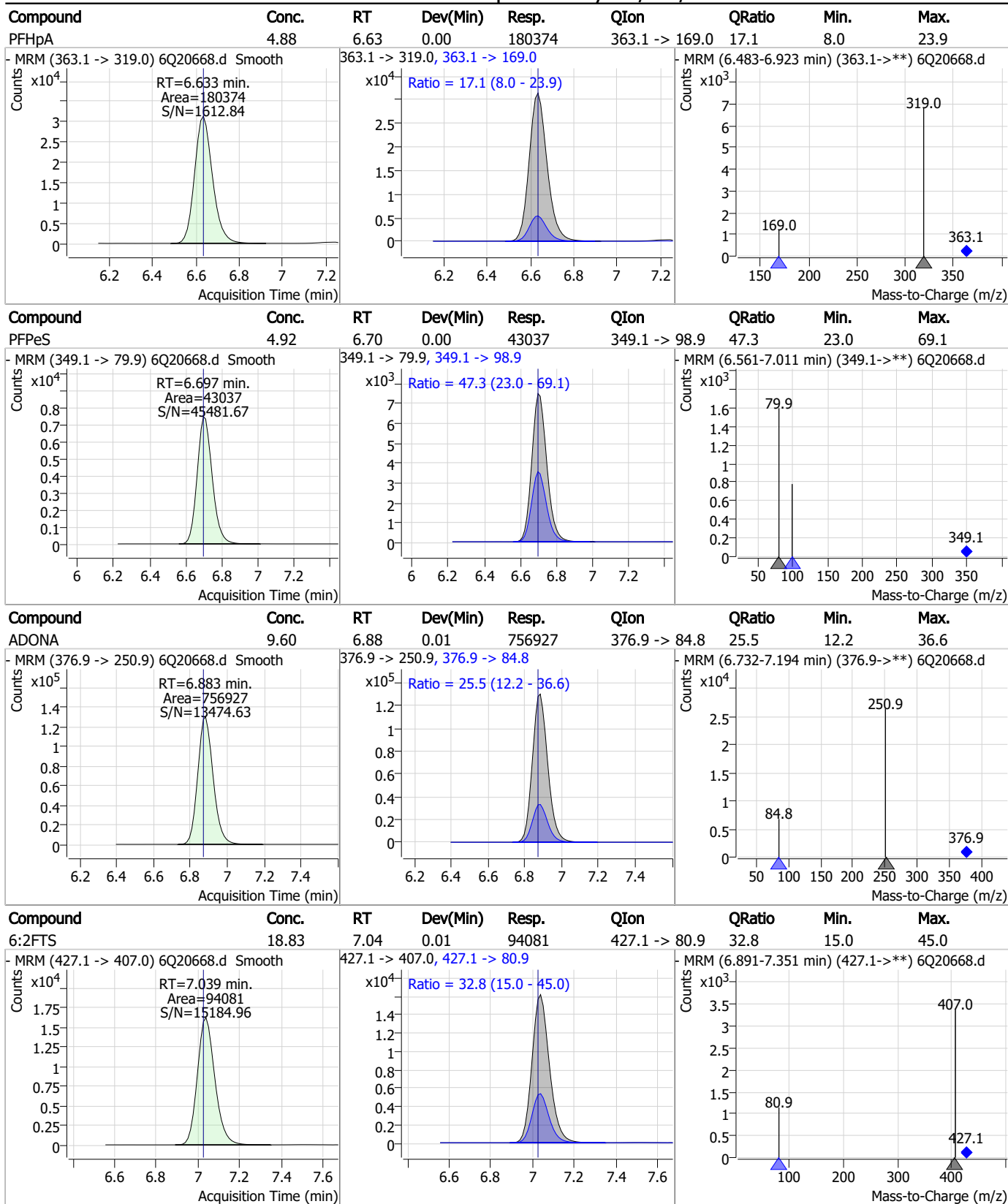
Perfluorinated Compounds by LC/MS/MS



7.7.6

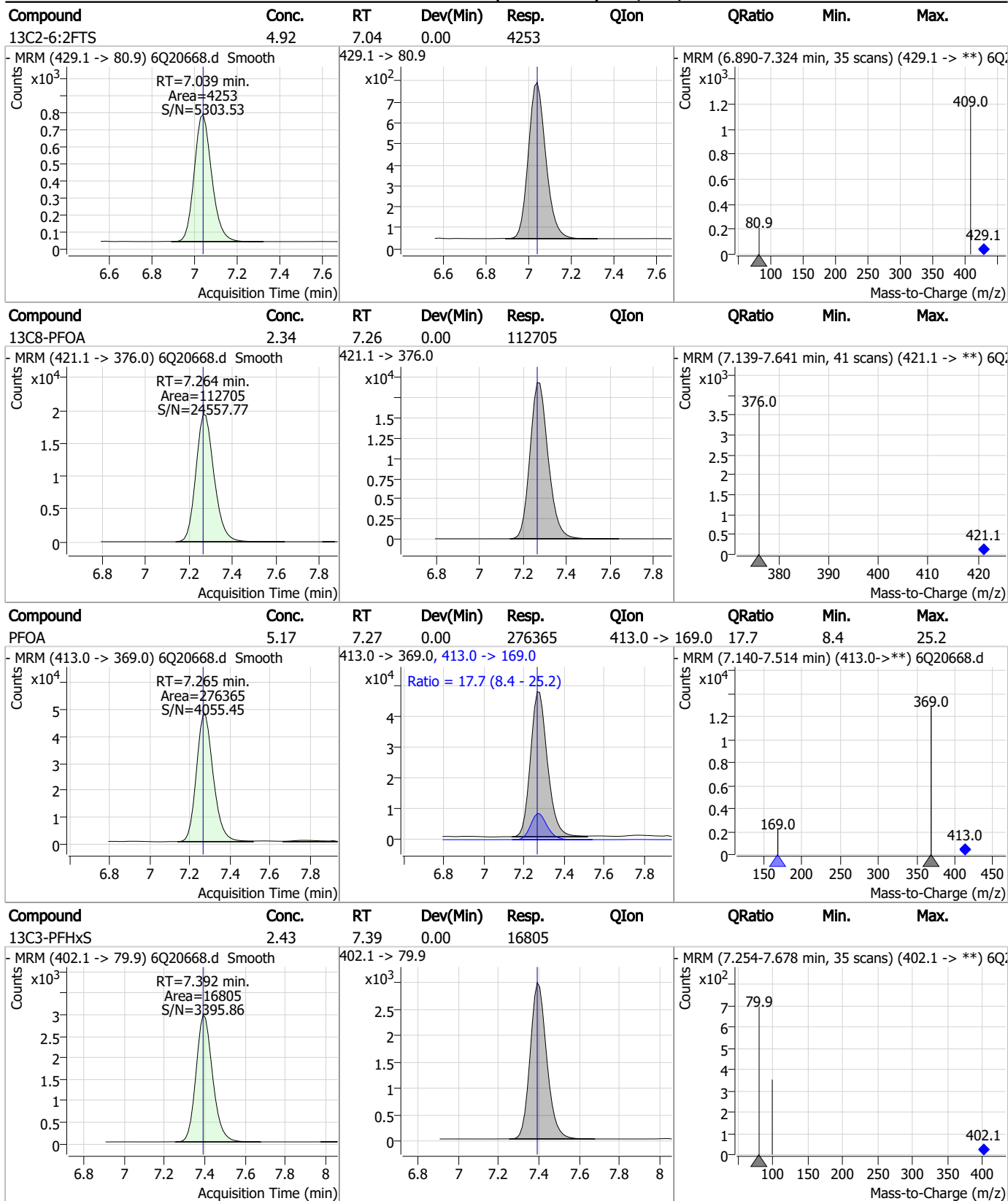
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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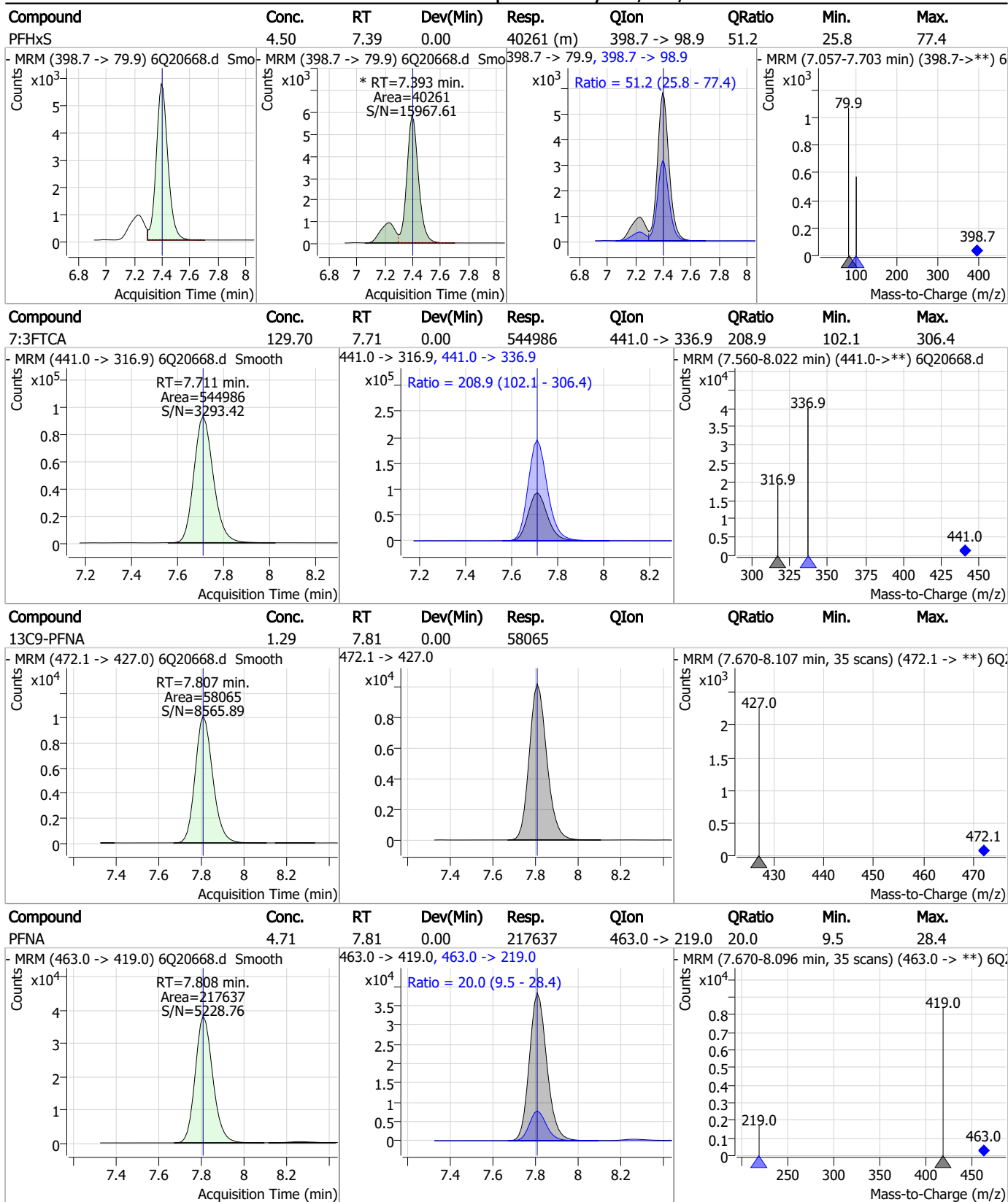
Perfluorinated Compounds by LC/MS/MS



7.7.6
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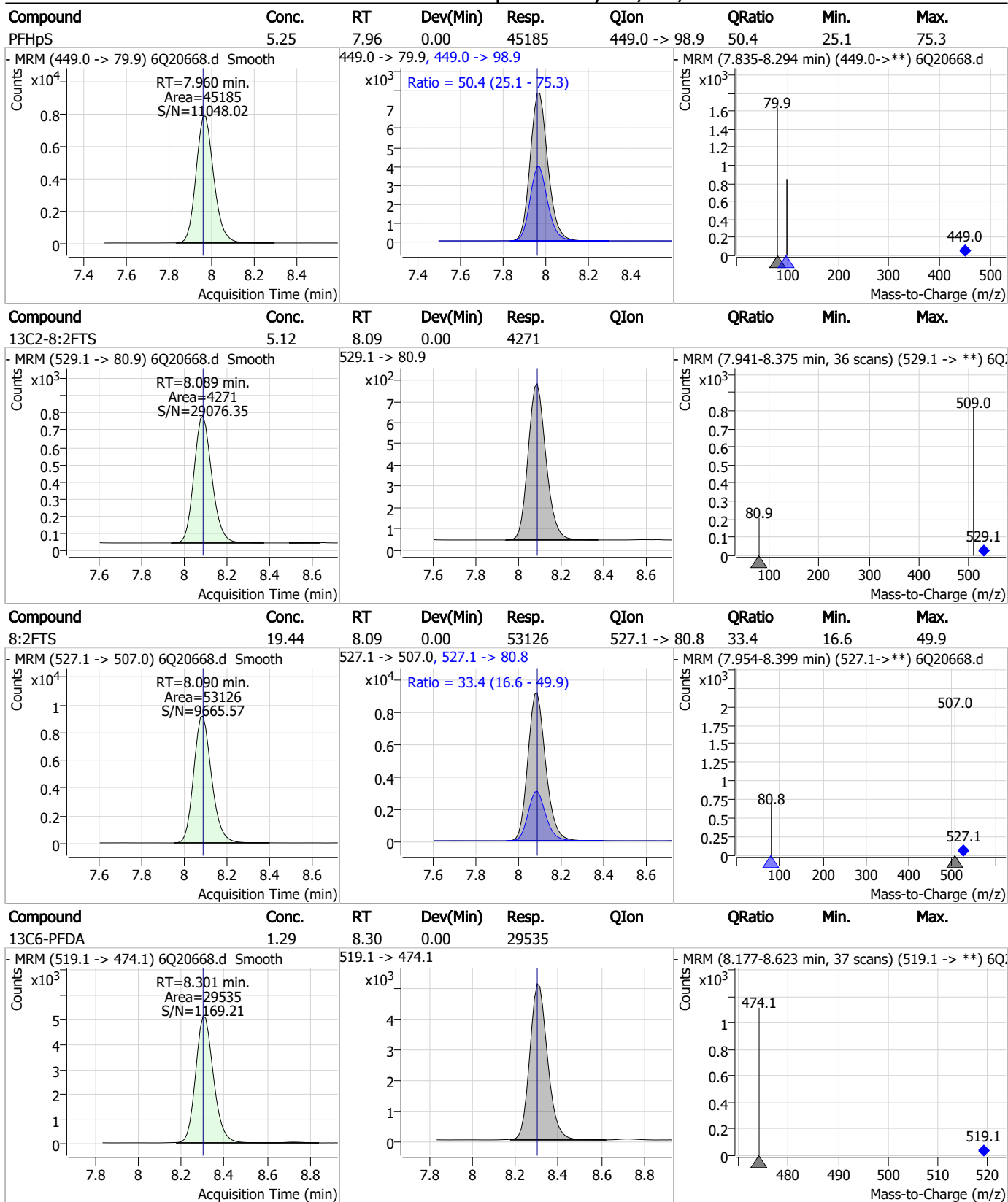


Perfluorinated Compounds by LC/MS/MS



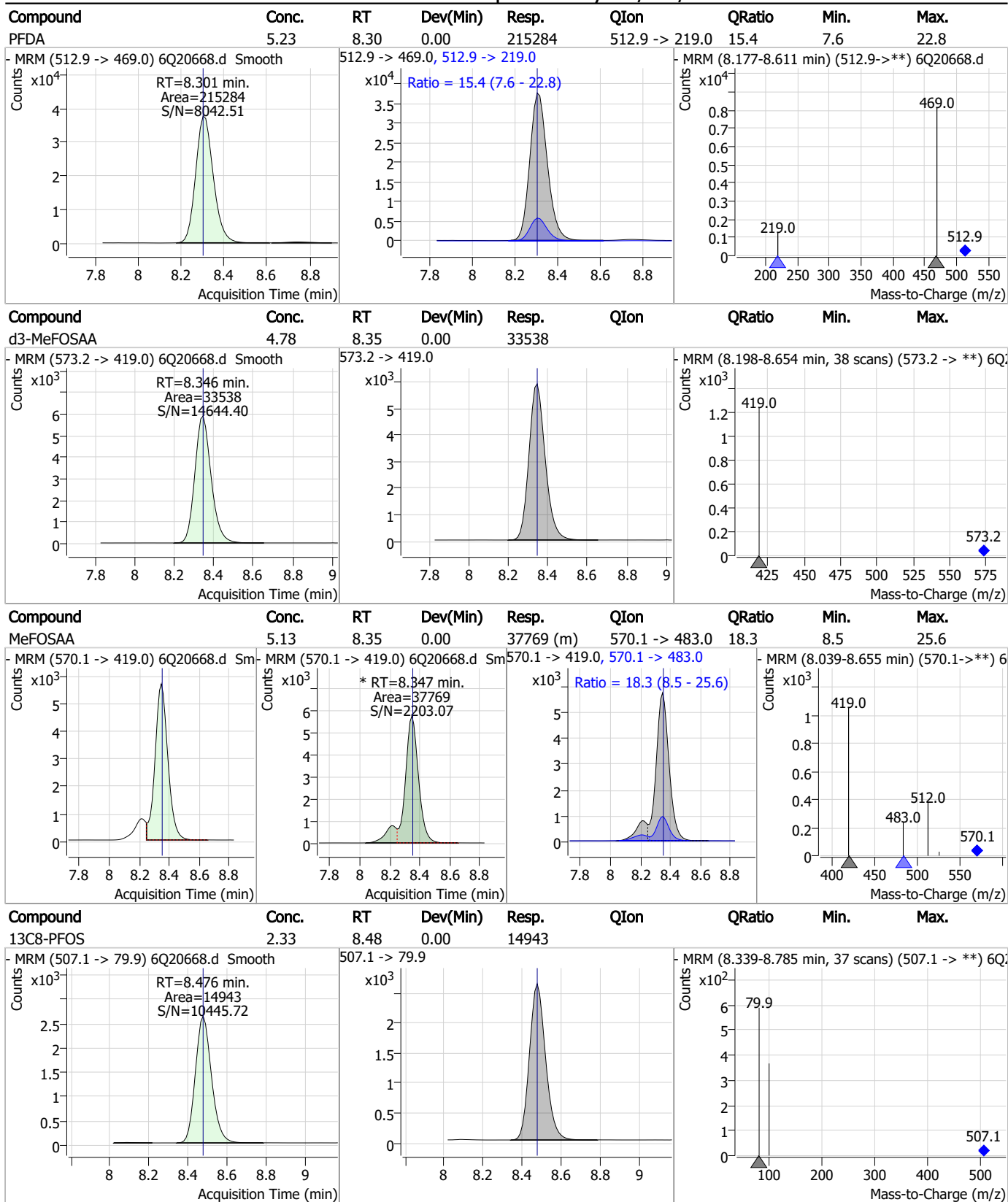
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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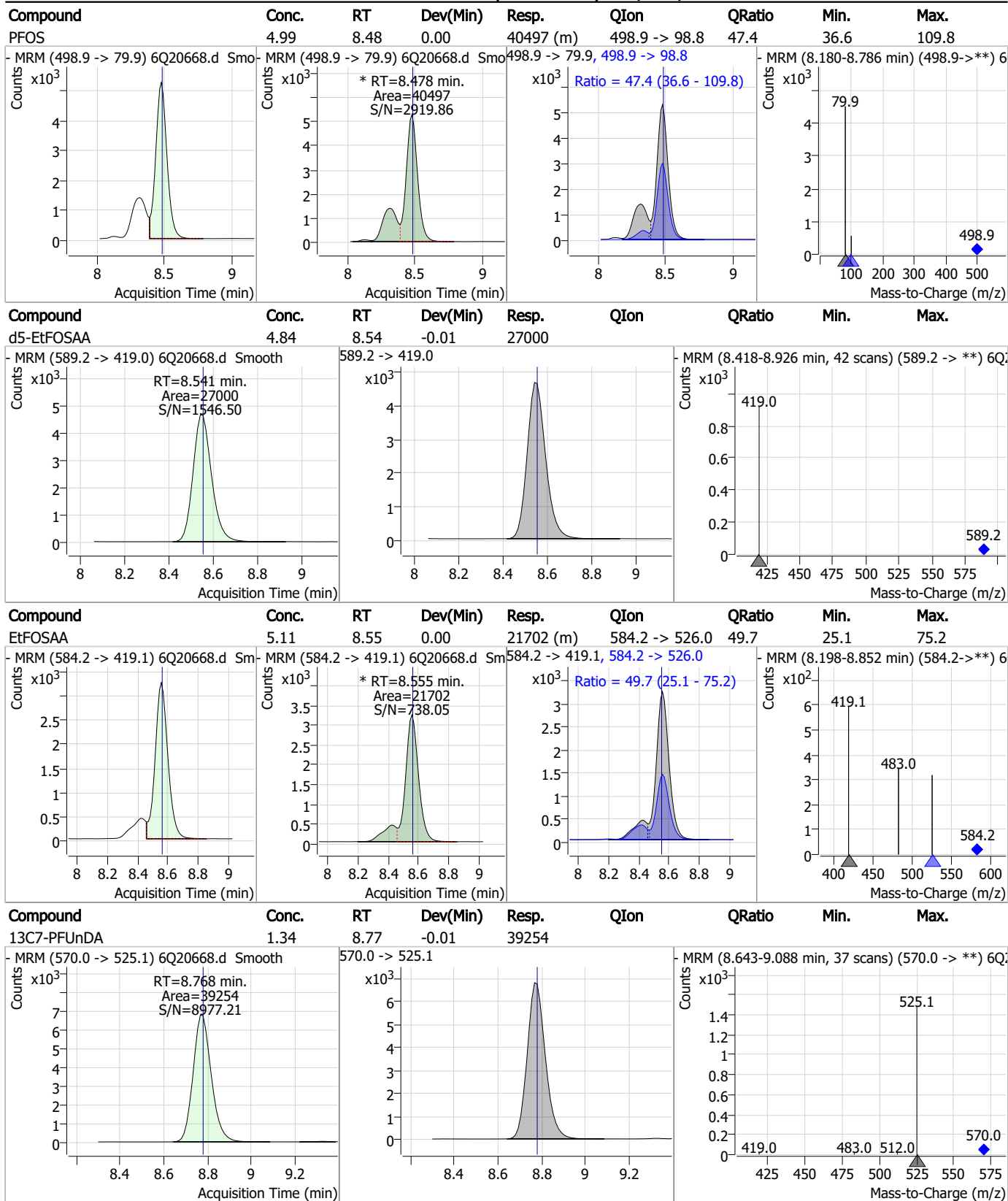
Perfluorinated Compounds by LC/MS/MS



7.7.6
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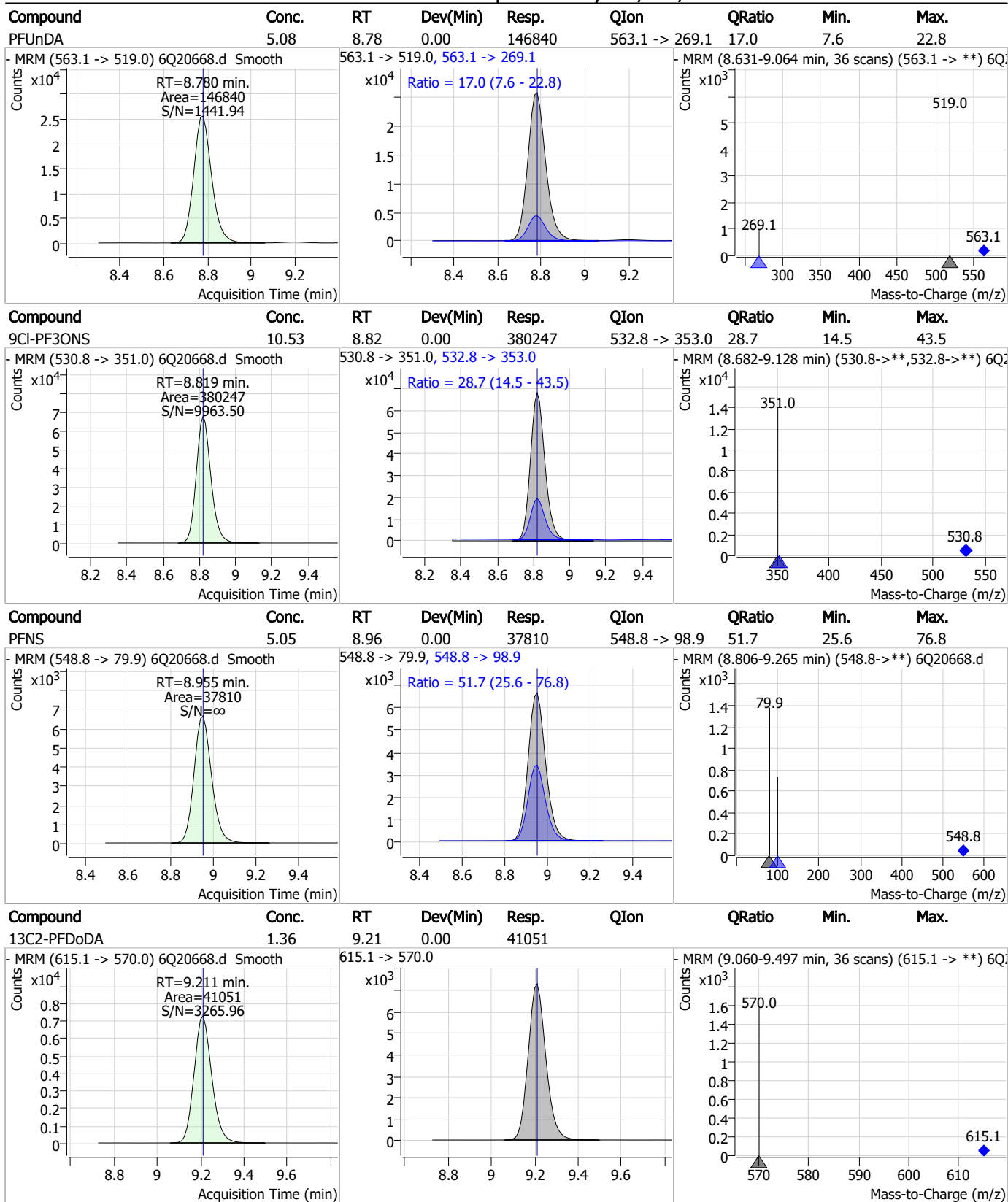


Perfluorinated Compounds by LC/MS/MS



7.7.6
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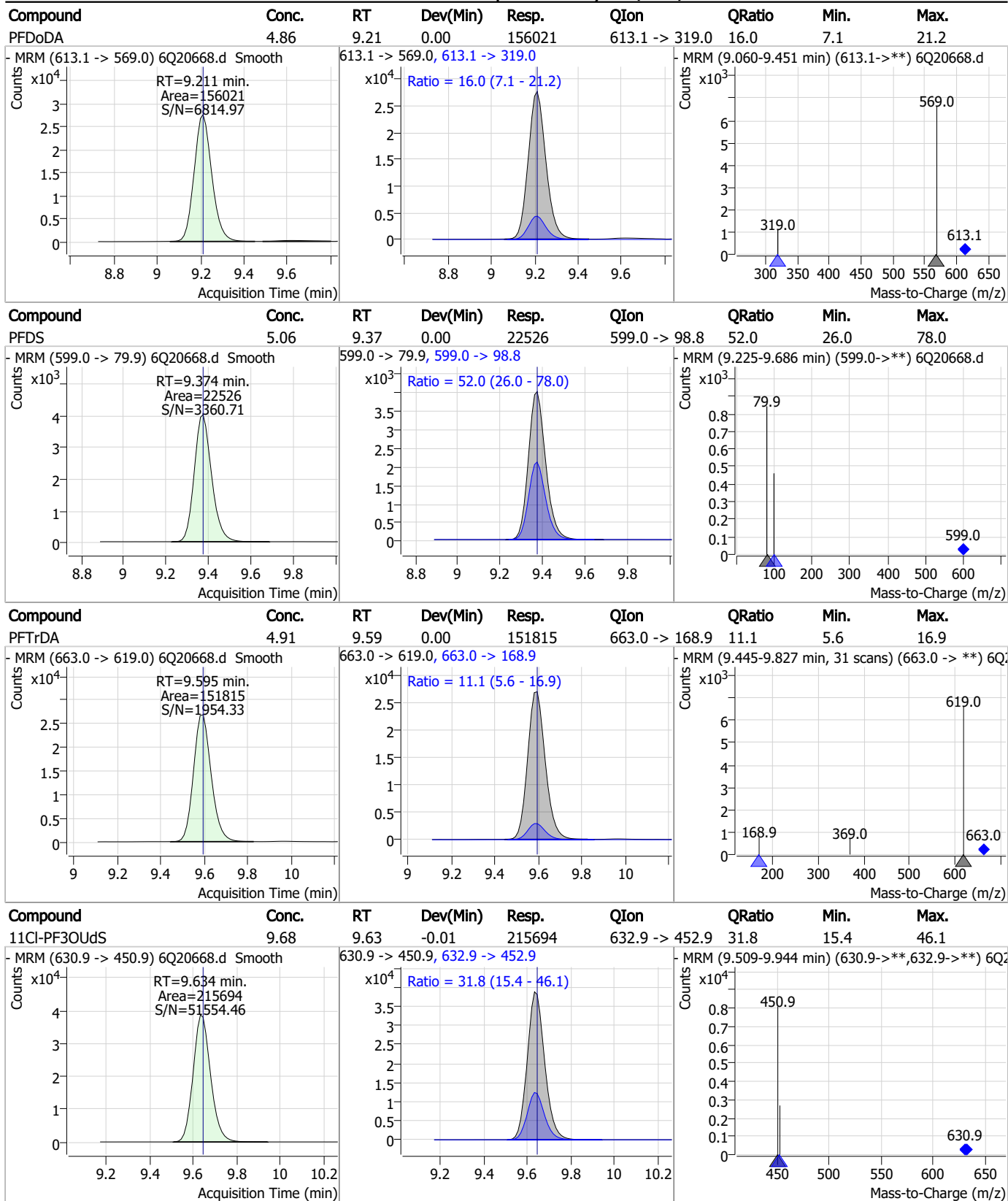
Perfluorinated Compounds by LC/MS/MS



7.7.6

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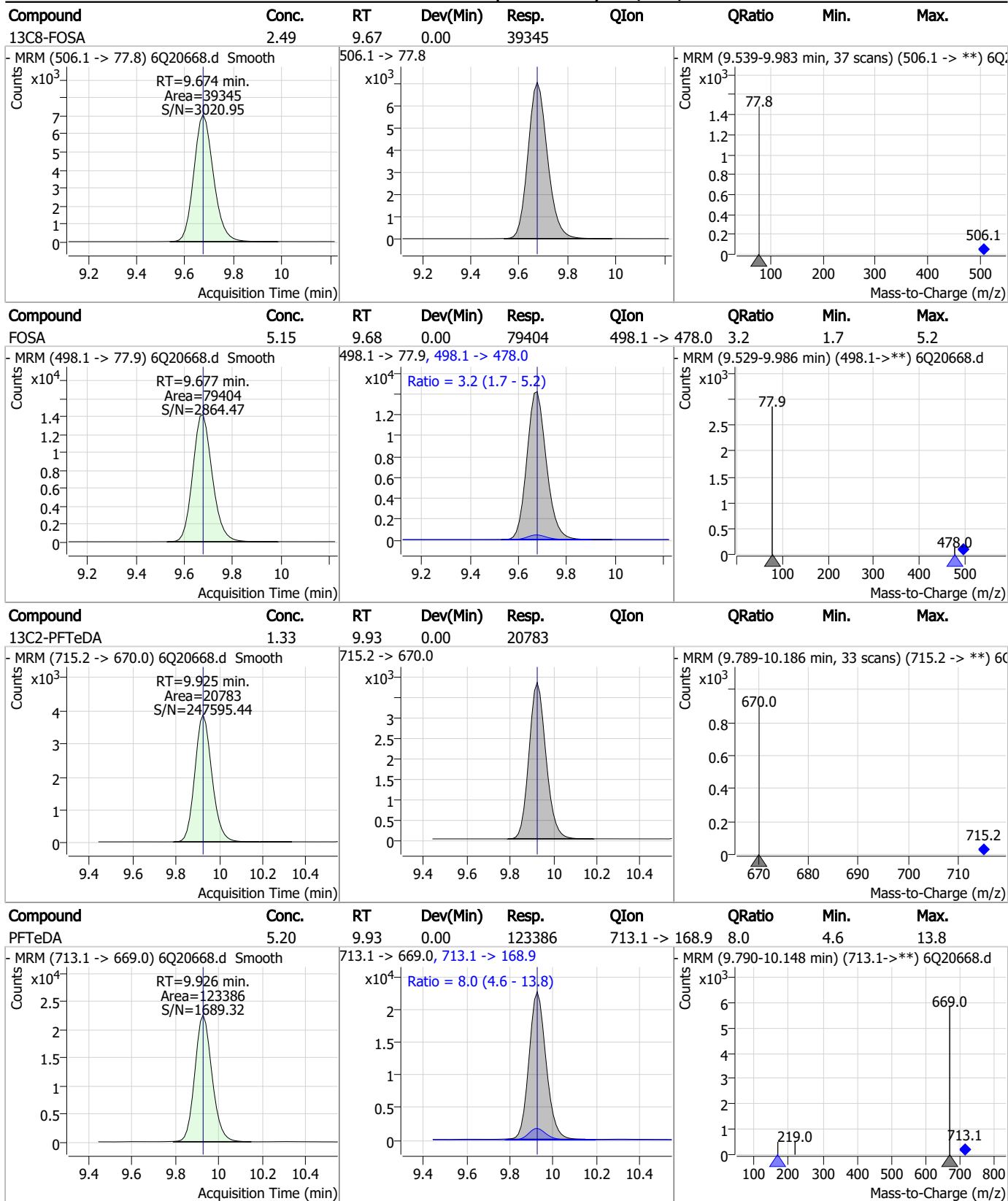
Perfluorinated Compounds by LC/MS/MS



7.7.6
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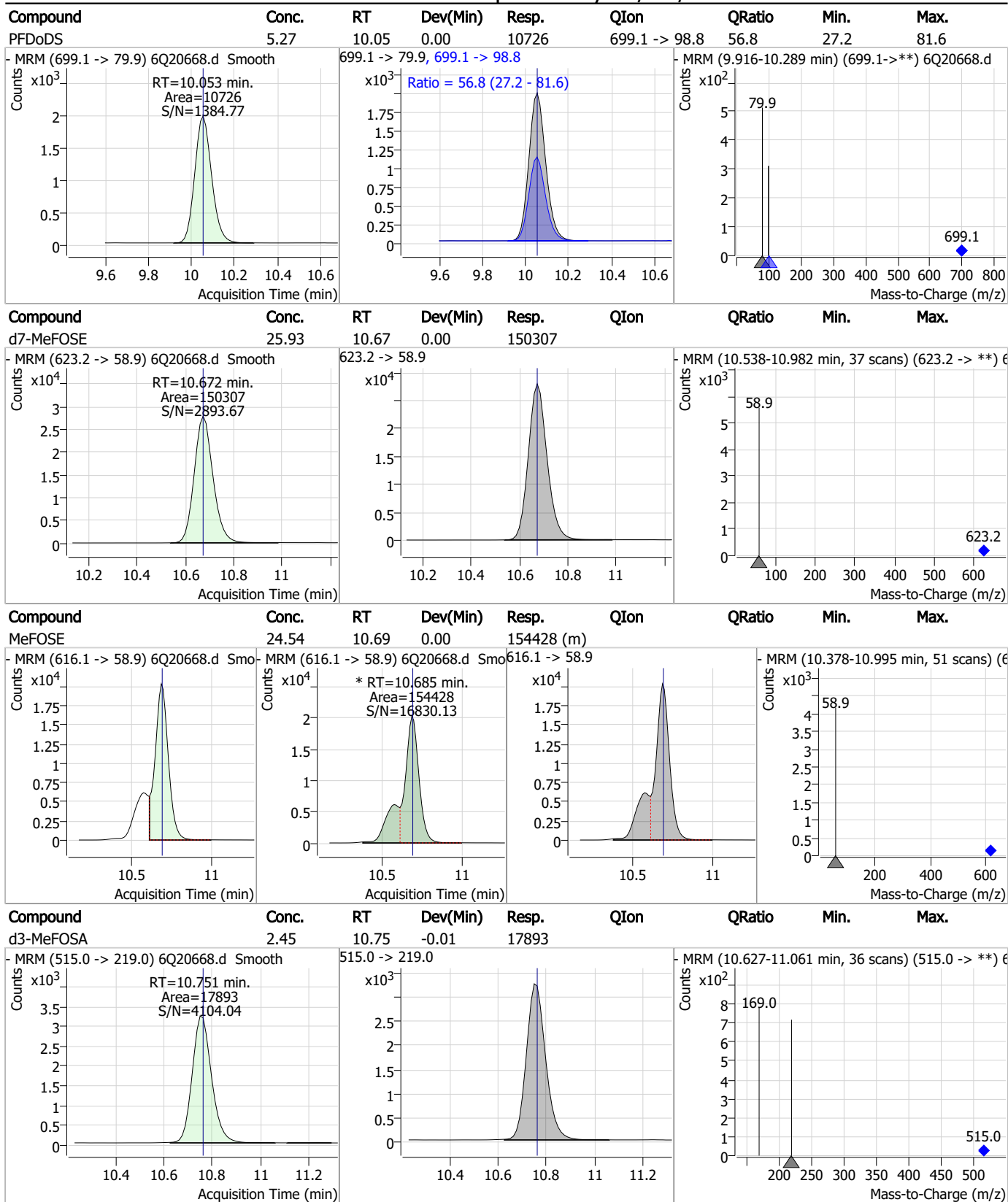


Perfluorinated Compounds by LC/MS/MS



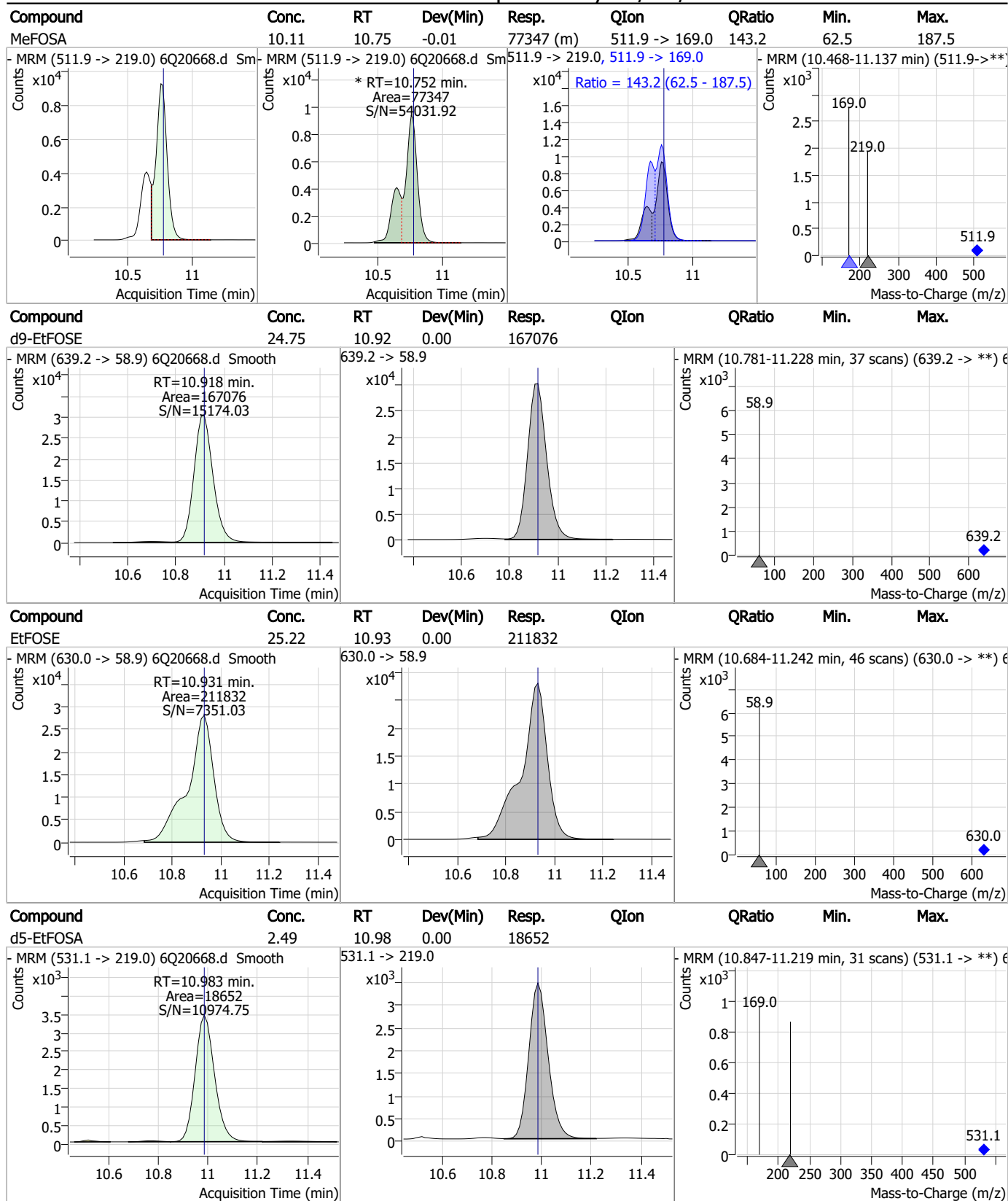
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

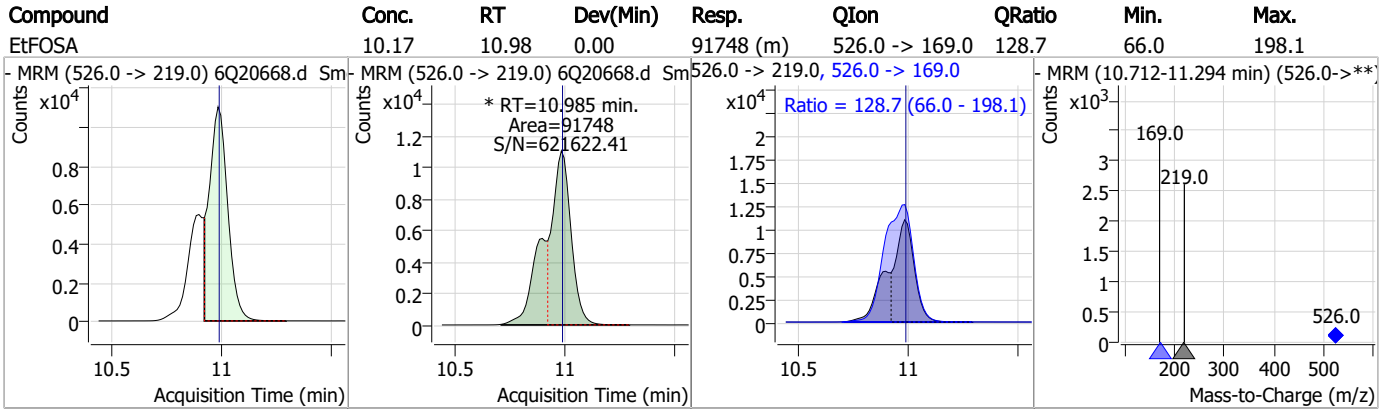
Perfluorinated Compounds by LC/MS/MS



7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6

7

Manual Integration Approval Summary

Sample Number: S6Q307-IC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20668.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 20:01 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.75	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.7.6.1
7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 07/11/23 14:22

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20669.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 8:15:27 PM
 Sample Name : ic307-6
 Vial : P1-A7
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	215177	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	71050	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	78582	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	72751	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	118172	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	55475	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	30815	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	38957	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	40449	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	20834	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	37853	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	26211	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	16957	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	15073	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2633	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4144	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4060	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	34788	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	50792	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	27297	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	147652	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	159950	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	17416	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	16708	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	21999	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	90732	5.00 µg/L	-0.012
18O2-PFHxS	7.403	403.0 -> 83.9	12684	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	122452	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	45204	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	61949	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	79191	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2633	4.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 92.6%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4144	4.91 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 98.2%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4060	4.98 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 99.6%		
13C2-PFDoDA	9.211	615.1 -> 570.0	40449	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.7%		
13C2-PFTeDA	9.925	715.2 -> 670.0	20834	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 96.2%		
13C3-PFBS	5.635	302.1 -> 79.9	26211	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C3-PFHxS	7.392	402.1 -> 79.9	16957	2.51 µg/L	0.000

7.7.7
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFBA	3.022	216.8 -> 171.9	215177	10.01 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.633	367.1 -> 322.0	72751	2.35 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C5-PFHxA	5.692	318.0 -> 273.0	78582	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C5-PFPeA	4.459	268.3 -> 223.0	71050	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C6-PFDA	8.301	519.1 -> 474.1	30815	1.21 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	38957	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C8-FOSA	9.674	506.1 -> 77.8	37853	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C8-PFOA	7.264	421.1 -> 376.0	118172	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-PFOS	8.476	507.1 -> 79.9	15073	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C9-PFNA	7.807	472.1 -> 427.0	55475	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSAA	8.346	573.2 -> 419.0	34788	5.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	50792	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	16708	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.9%	
d5-EtFOSAA	8.554	589.2 -> 419.0	27297	5.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d7-MeFOSE	10.672	623.2 -> 58.9	147652	26.17 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	159950	24.34 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSA	10.983	531.1 -> 219.0	17416	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.4%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	237077	49.50 µg/L	99
		327.1 -> 80.9	85837		
6:2FTS	7.039	427.1 -> 407.0	238434	48.98 µg/L	97
		427.1 -> 80.9	75825		
8:2FTS	8.090	527.1 -> 507.0	119122	45.85 µg/L	90
		527.1 -> 80.8	46335		
EtFOSAA	8.555	584.2 -> 419.1	58235	13.56 µg/L	m 99
		584.2 -> 526.0	28979		
FOSA	9.677	498.1 -> 77.9	201628	13.59 µg/L	99
		498.1 -> 478.0	6309		
MeFOSAA	8.347	570.1 -> 419.0	99105	12.97 µg/L	m 96
		570.1 -> 483.0	18622		
PFBA	3.018	212.8 -> 168.9	445289	53.70 µg/L	100
PFBS	5.636	298.7 -> 79.9	125917	12.08 µg/L	99
		298.7 -> 98.8	51104		
PFDA	8.301	512.9 -> 469.0	572264	13.33 µg/L	99
		512.9 -> 219.0	85481		
PFDoDA	9.211	613.1 -> 569.0	418716	13.23 µg/L	100
		613.1 -> 319.0	59491		
PFDS	9.374	599.0 -> 79.9	63820	14.21 µg/L	90

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	28869			
PFHpA	6.633	363.1 -> 319.0	464576	13.23	µg/L	96
		363.1 -> 169.0	81908			
PFHpS	7.972	449.0 -> 79.9	113901	13.11	µg/L	96
		449.0 -> 98.9	54237			
PFHxA	5.694	313.0 -> 269.0	369551	12.82	µg/L	99
		313.0 -> 118.9	19226			
PFHxS	7.393	398.7 -> 79.9	105196	11.66	µg/L	m 97
		398.7 -> 98.9	56301			
PFNA	7.808	463.0 -> 419.0	562762	12.76	µg/L	98
		463.0 -> 219.0	111038			
PFNS	8.955	548.8 -> 79.9	105134	13.93	µg/L	94
		548.8 -> 98.9	49200			
PFOA	7.278	413.0 -> 369.0	753466	13.44	µg/L	98
		413.0 -> 169.0	120986			
PFOS	8.478	498.9 -> 79.9	100476	12.27	µg/L	m 74
		498.9 -> 98.8	51180			
PFPeA	4.461	263.0 -> 219.0	496861	26.24	µg/L	100
PFPeS	6.697	349.1 -> 79.9	107942	12.24	µg/L	99
		349.1 -> 98.9	50772			
PFTeDA	9.926	713.1 -> 669.0	314528	13.22	µg/L	98
		713.1 -> 168.9	27167			
PFTrDA	9.595	663.0 -> 619.0	405060	13.29	µg/L	99
		663.0 -> 168.9	44619			
PFUnDA	8.780	563.1 -> 519.0	365184	12.73	µg/L	94
		563.1 -> 269.1	64016			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	600560	25.26	µg/L	94
		632.9 -> 452.9	164547			
9Cl-PF3ONS	8.819	530.8 -> 351.0	976883	25.36	µg/L	96
		532.8 -> 353.0	260273			
ADONA	6.883	376.9 -> 250.9	2087139	24.79	µg/L	97
		376.9 -> 84.8	477582			
HFPO-DA	6.071	284.9 -> 168.9	137784	26.48	µg/L	98
		284.9 -> 184.9	13624			
3:3FTCA	3.883	241.0 -> 177.0	86531	64.33	µg/L	99
		241.0 -> 117.0	11324			
5:3FTCA	6.310	341.0 -> 237.1	1980932	329.15	µg/L	99
		341.0 -> 217.0	1388875			
7:3FTCA	7.711	441.0 -> 316.9	1387081	328.99	µg/L	98
		441.0 -> 336.9	2793939			
EtFOSA	10.985	526.0 -> 219.0	225599	26.78	µg/L	m 93
		526.0 -> 169.0	316695			
EtFOSE	10.931	630.0 -> 58.9	544845	67.76	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	206250	28.87	µg/L	m 91
		511.9 -> 169.0	278666			
MeFOSE	10.685	616.1 -> 58.9	415259	67.17	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	28304	13.80	µg/L	100
		699.1 -> 98.8	15387			
NFDHA	5.576	295.0 -> 201.0	95417	27.14	µg/L	96
		295.0 -> 84.9	23186			
PFMBA	4.882	279.0 -> 85.1	329251	26.48	µg/L	100
PFMPA	3.588	229.0 -> 84.9	280546	26.79	µg/L	100
PFEESA	6.188	314.8 -> 134.9	907110	22.49	µg/L	100
		314.8 -> 82.9	28010			

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

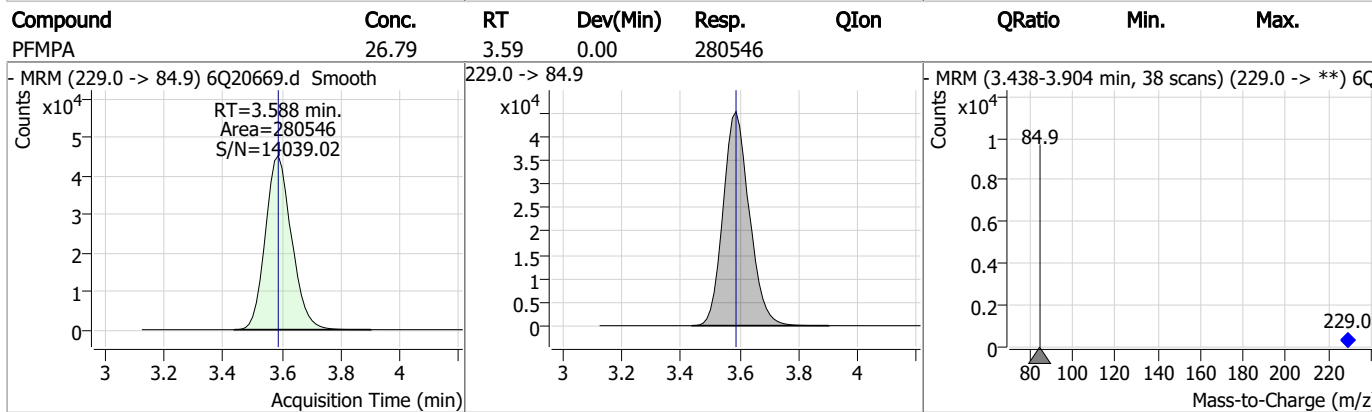
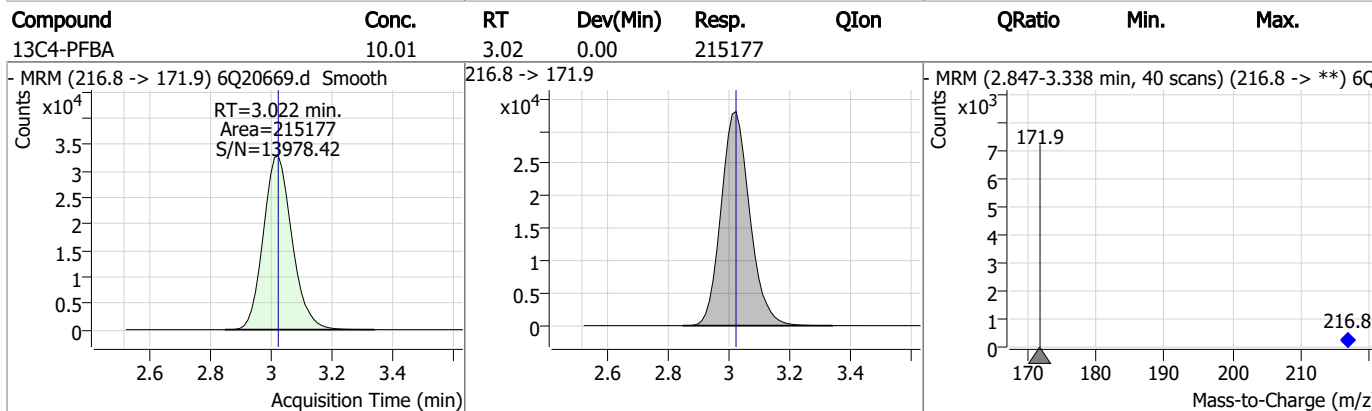
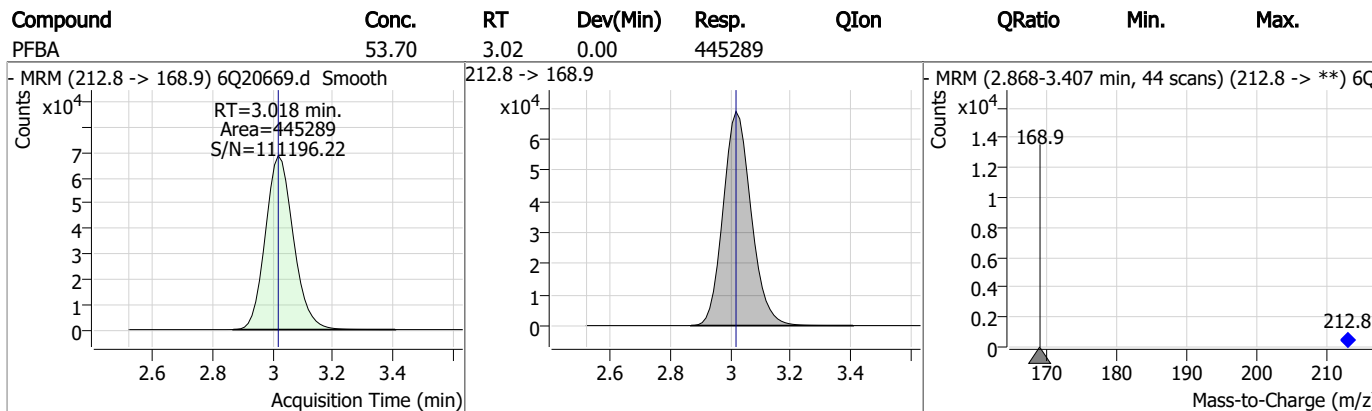
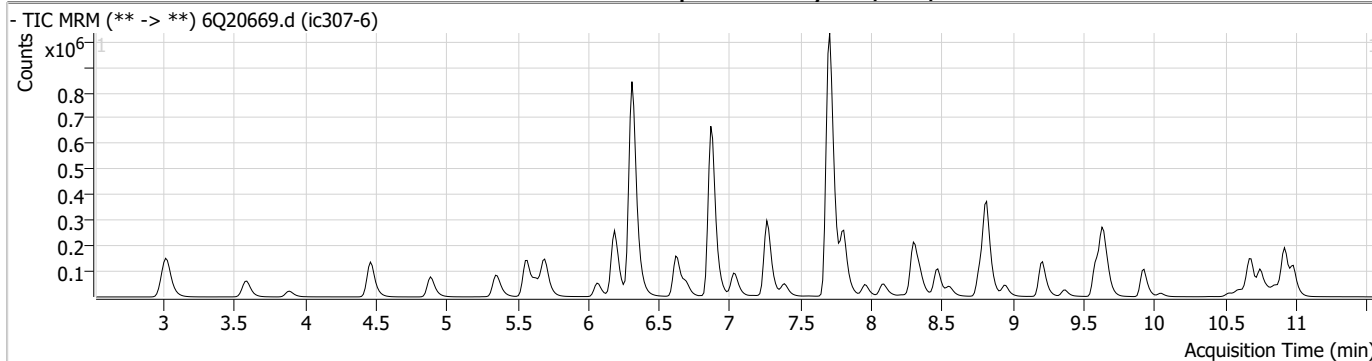
Perfluorinated Compounds by LC/MS/MS

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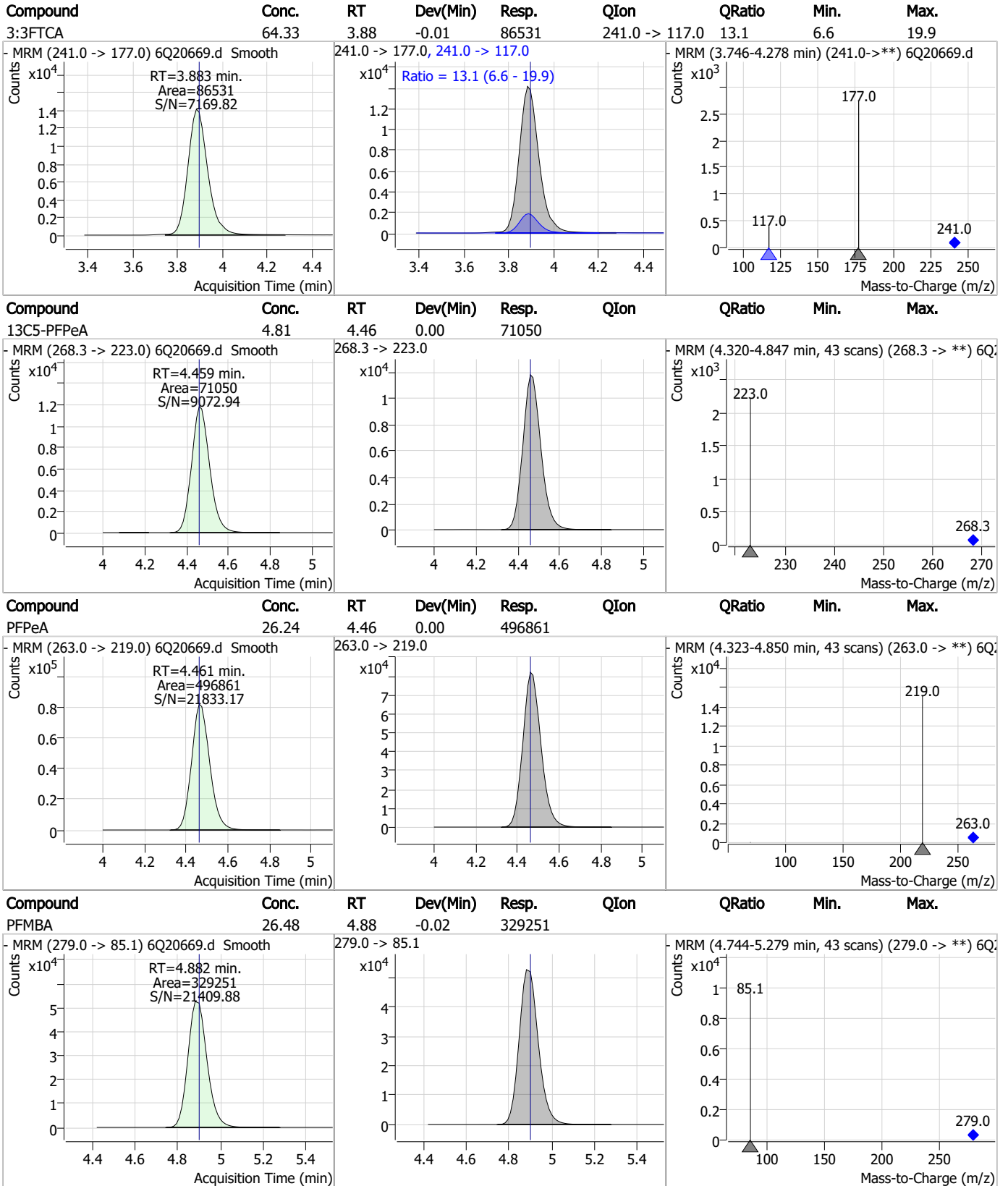
7.7.7

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

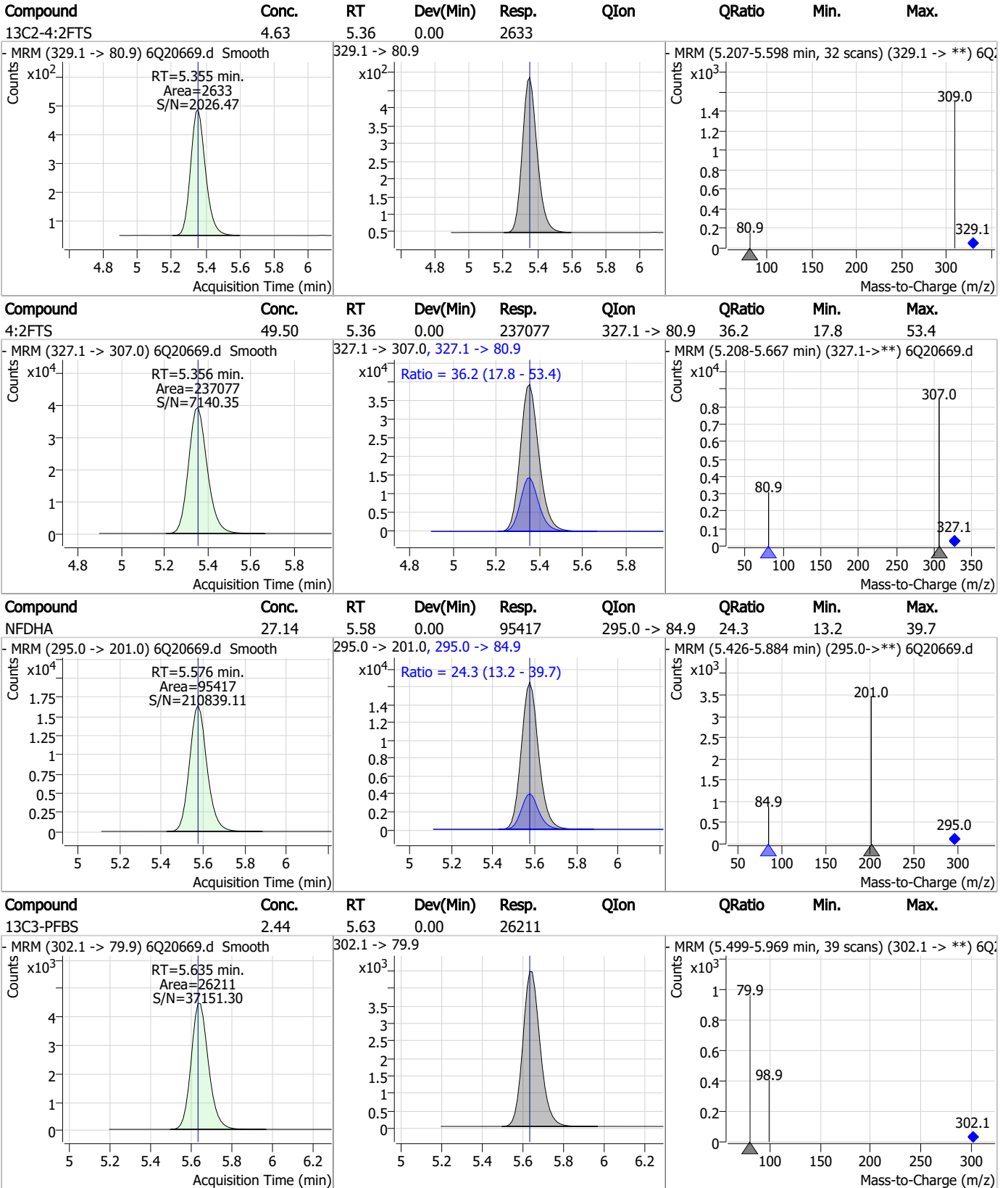


7.7.7

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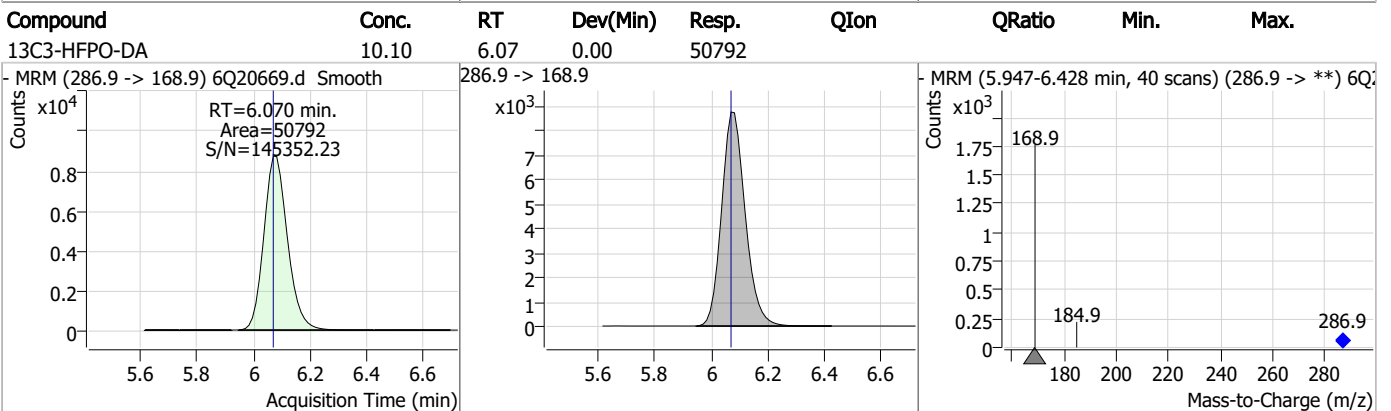
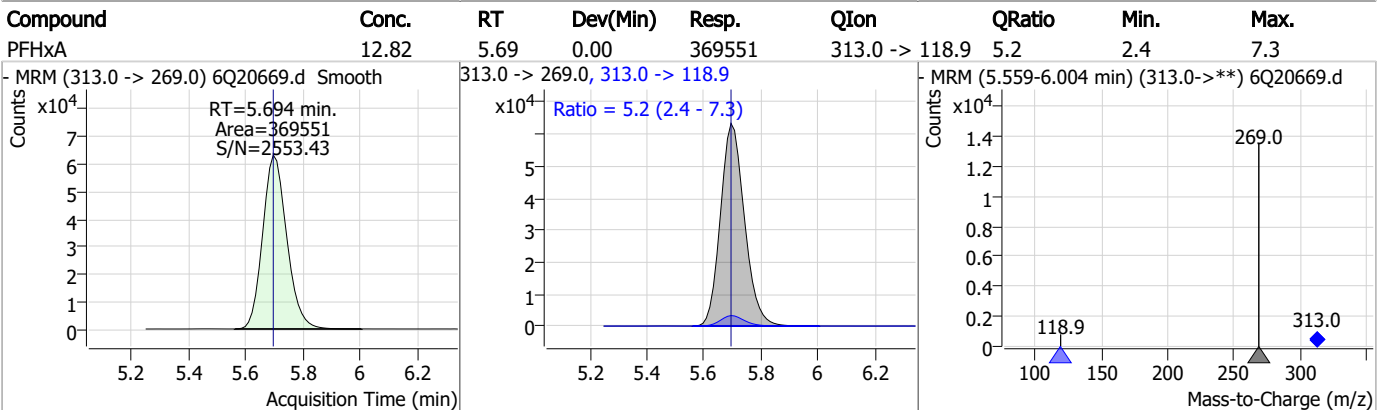
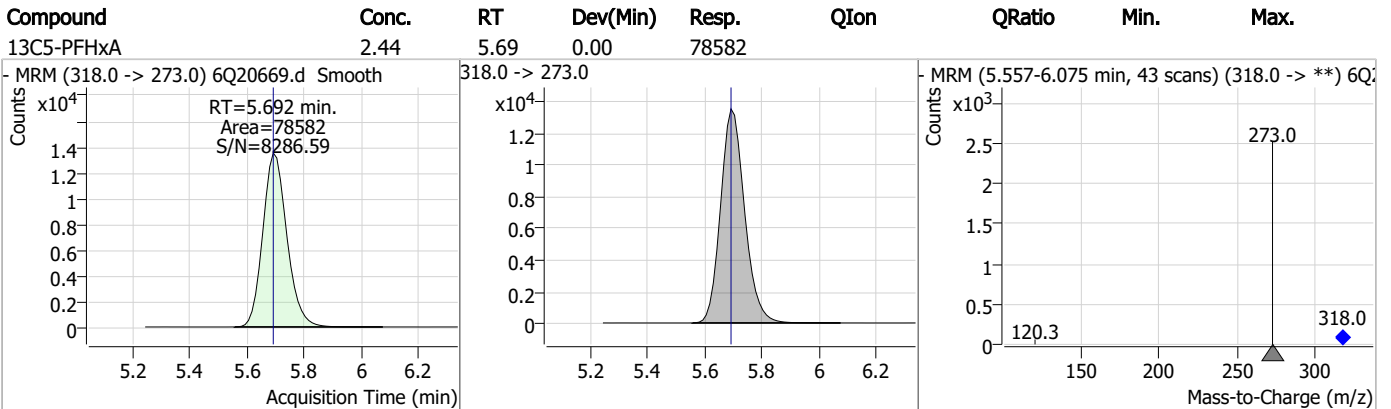
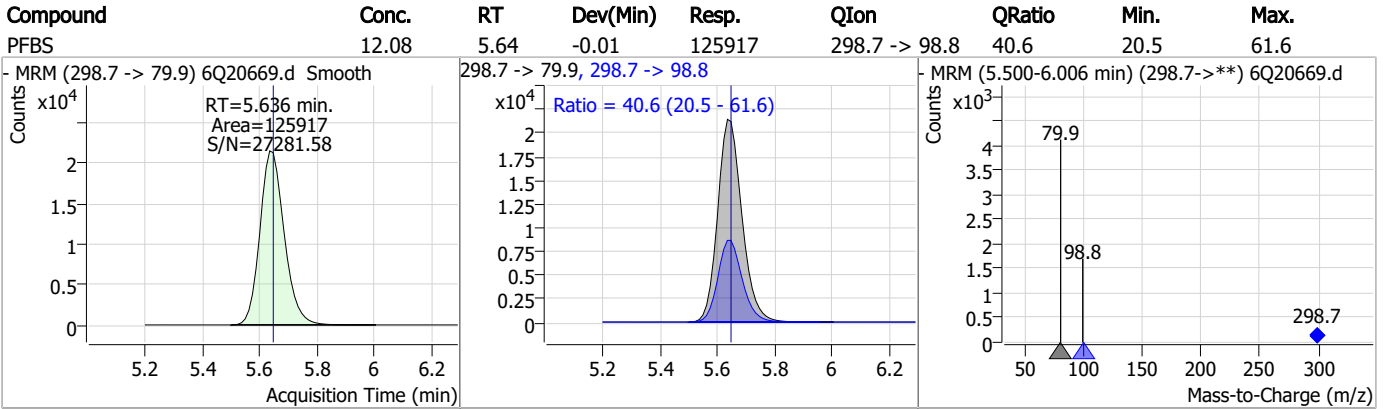


Perfluorinated Compounds by LC/MS/MS

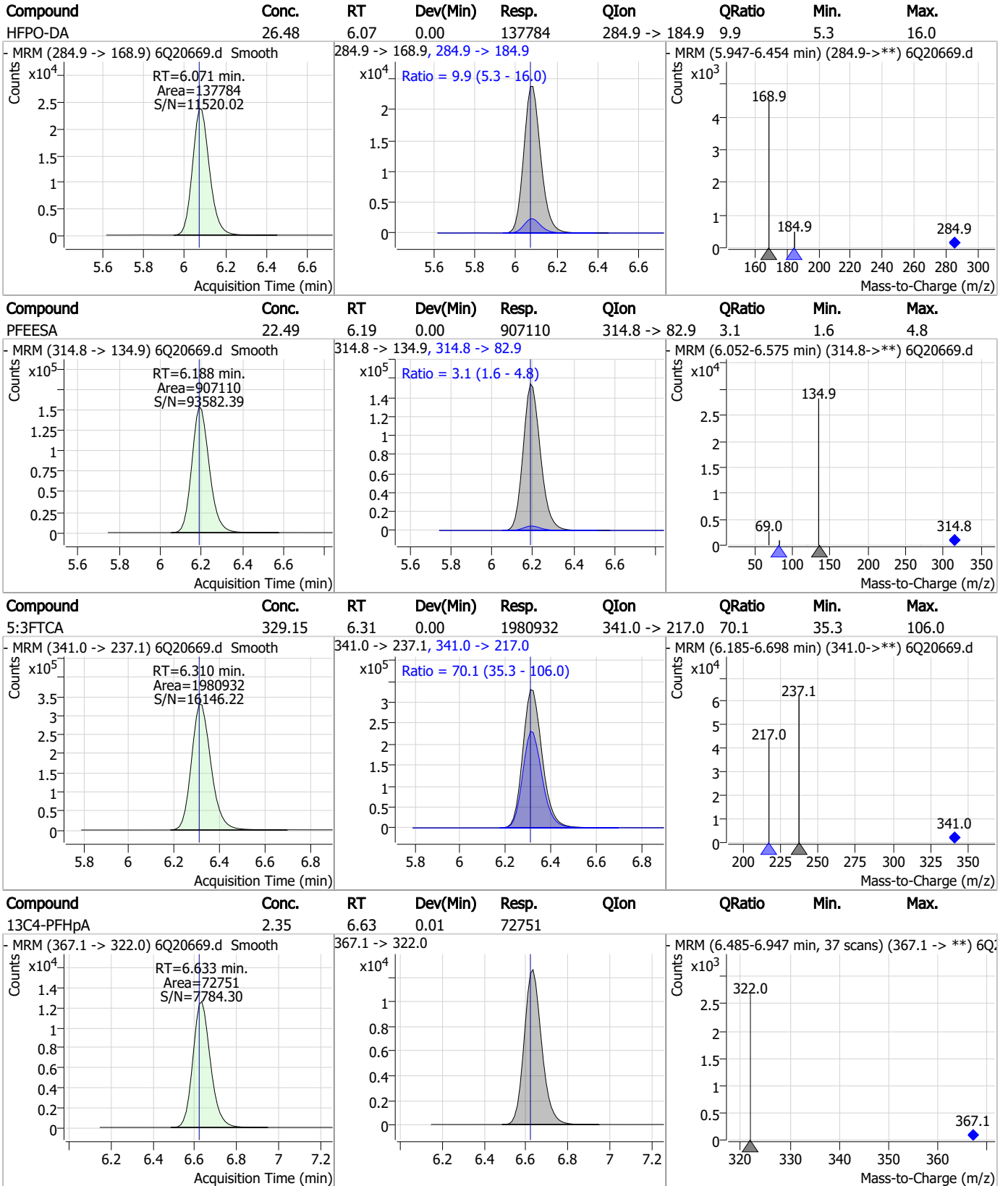


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Perfluorinated Compounds by LC/MS/MS



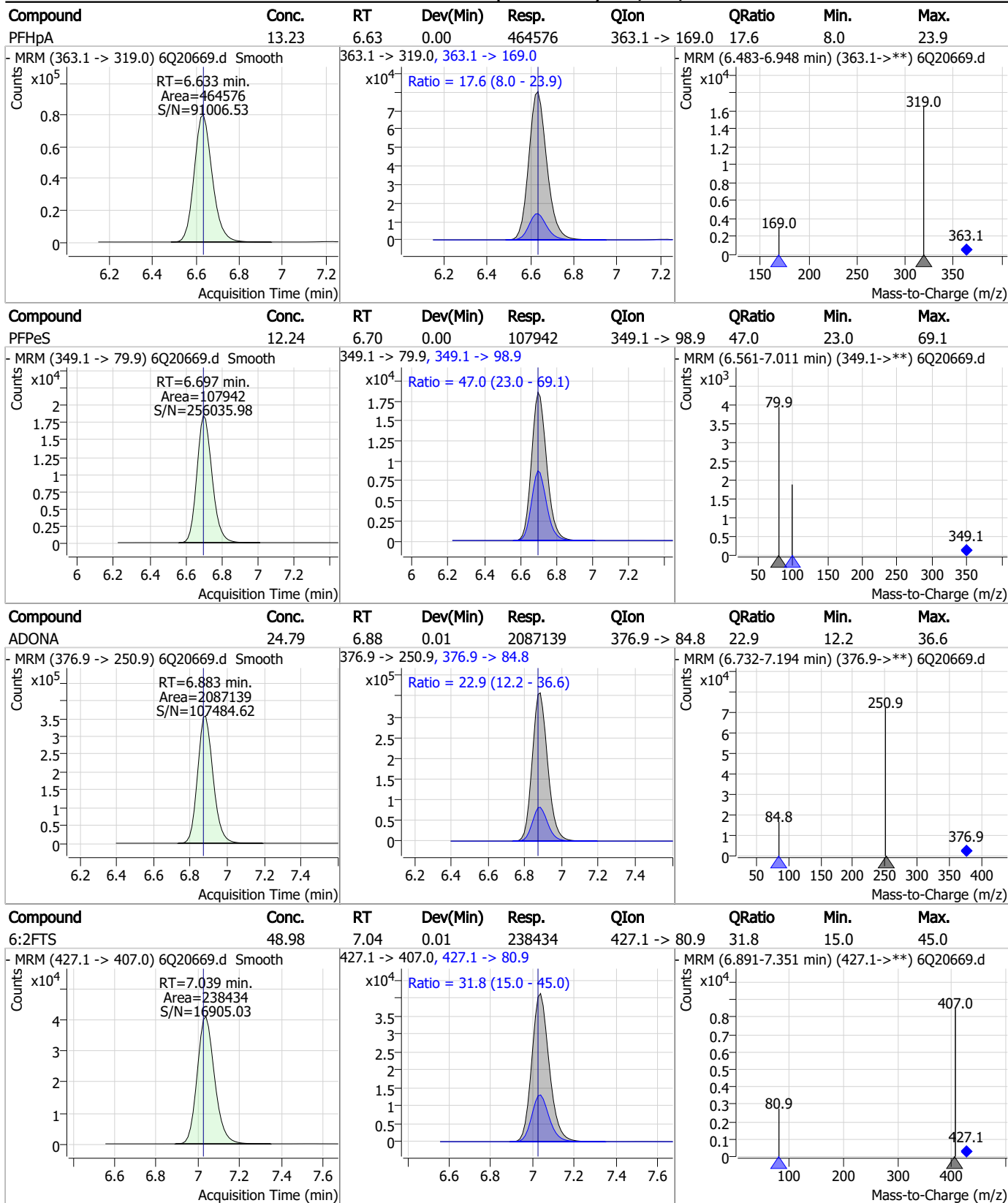
Perfluorinated Compounds by LC/MS/MS



7.7.7

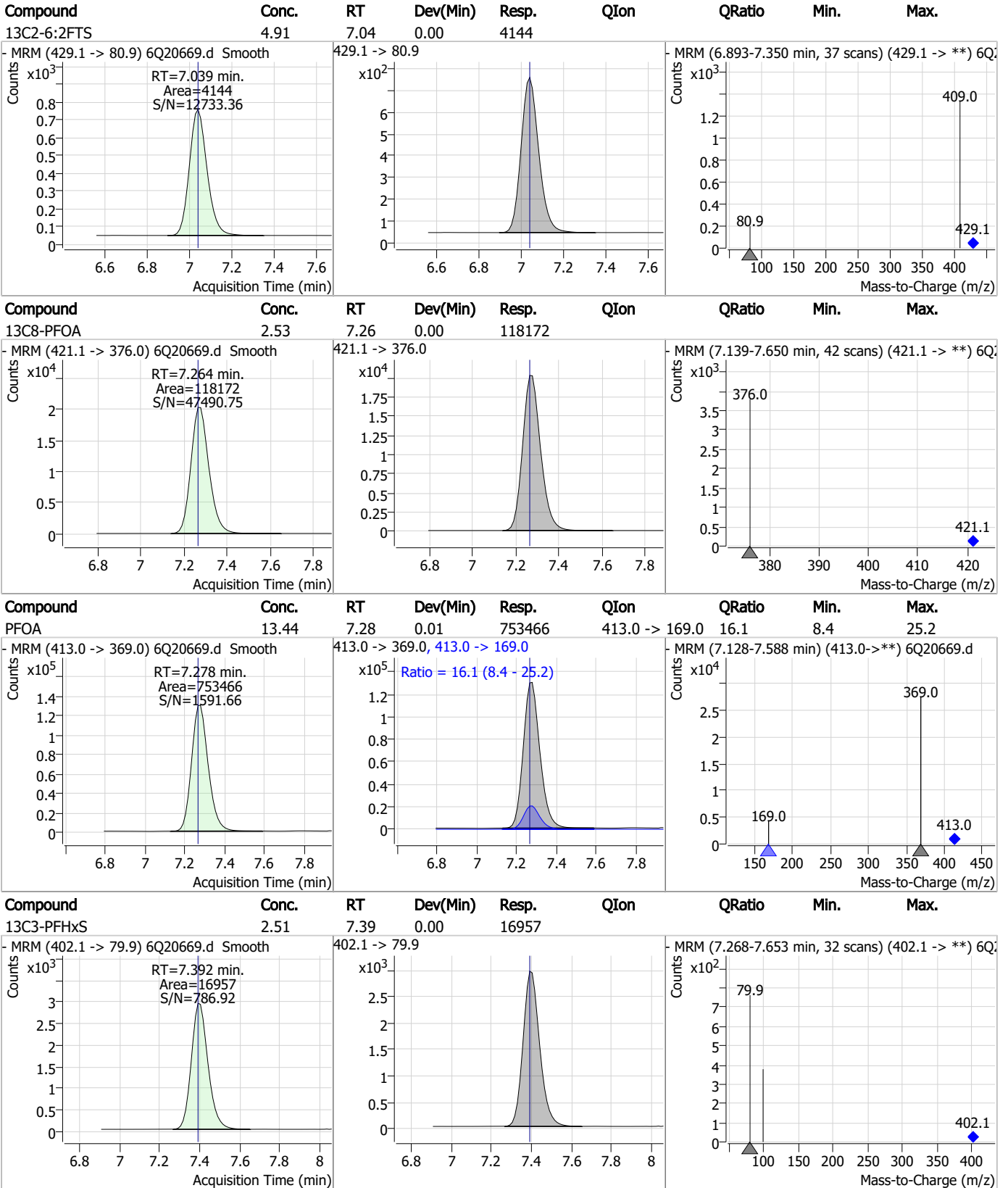
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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Perfluorinated Compounds by LC/MS/MS

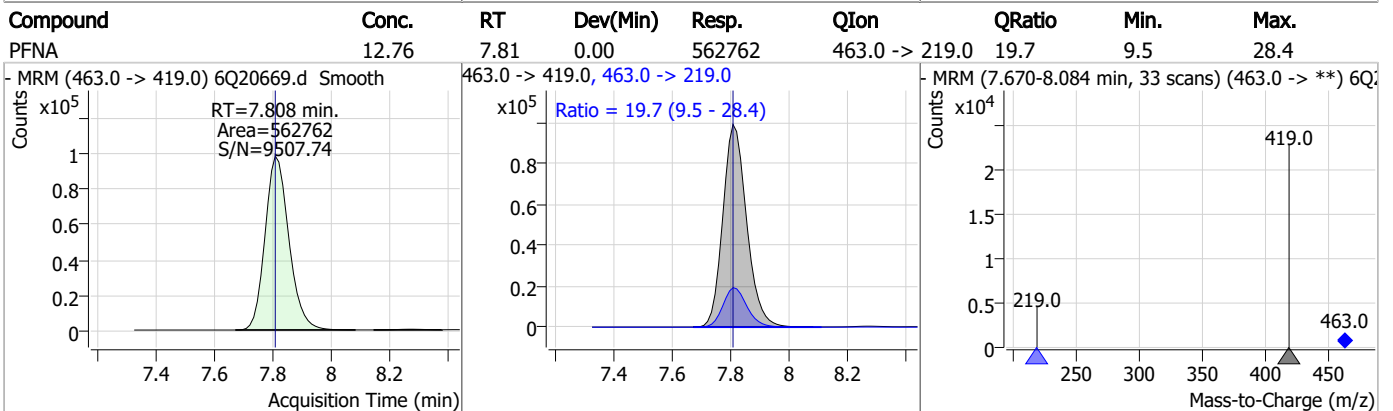
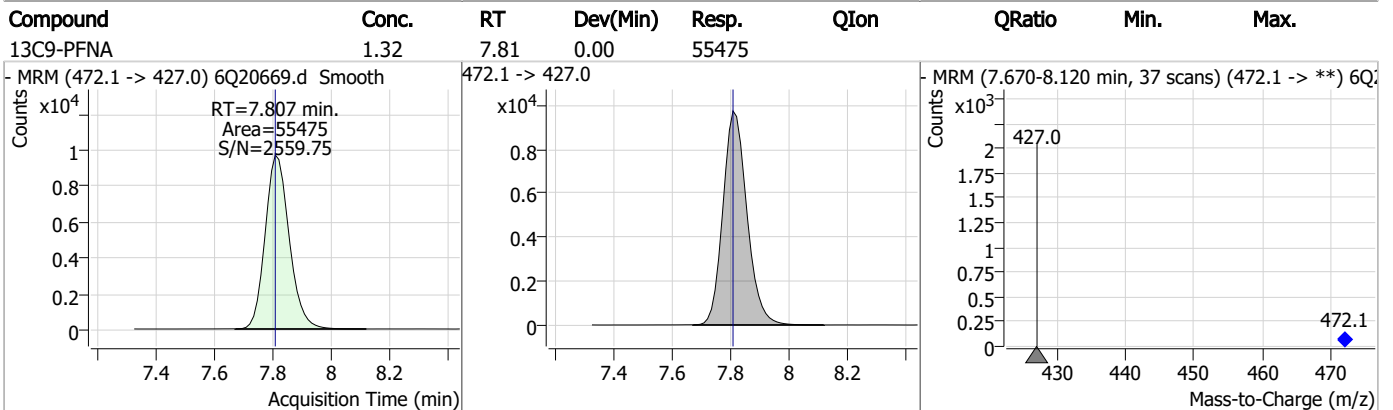
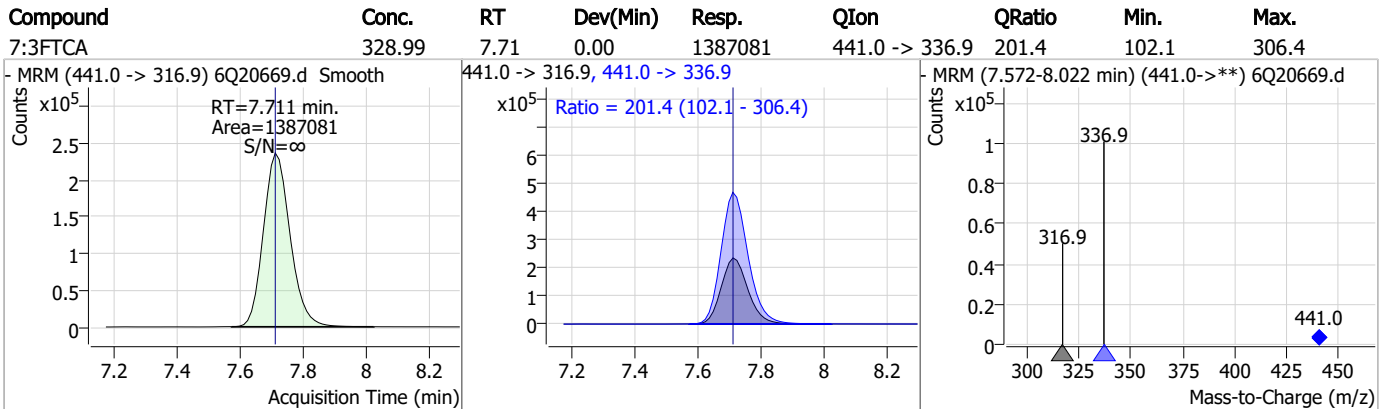
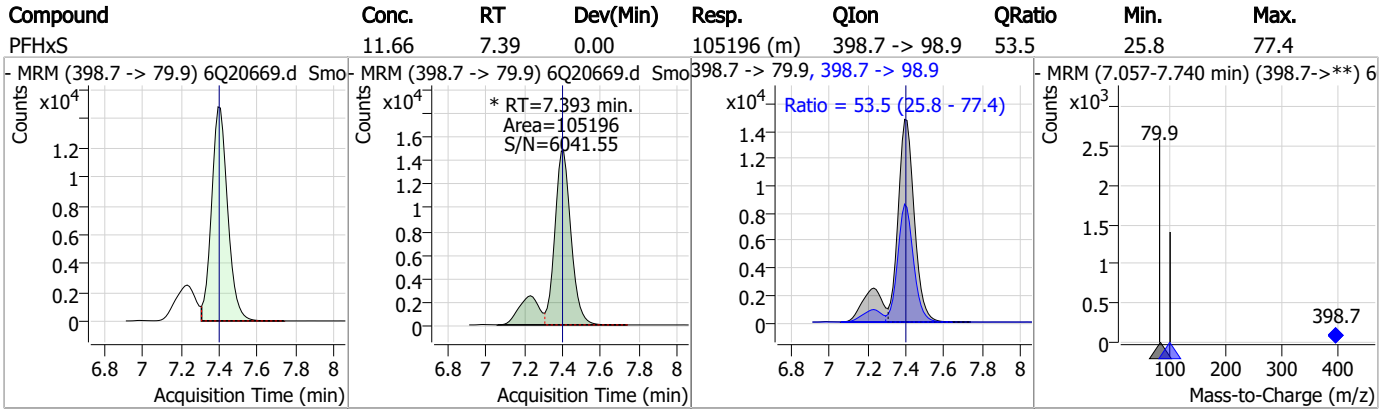


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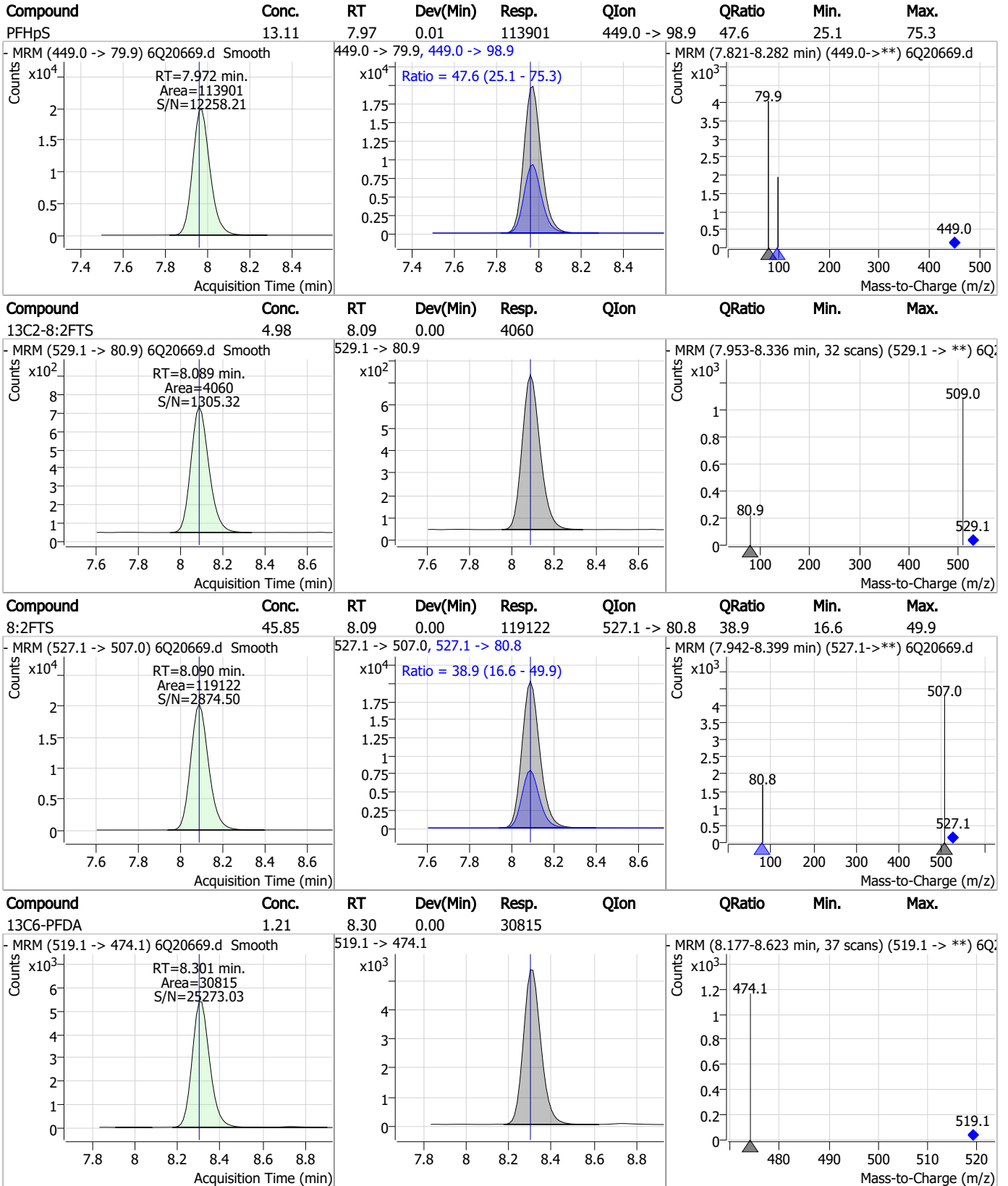
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Perfluorinated Compounds by LC/MS/MS



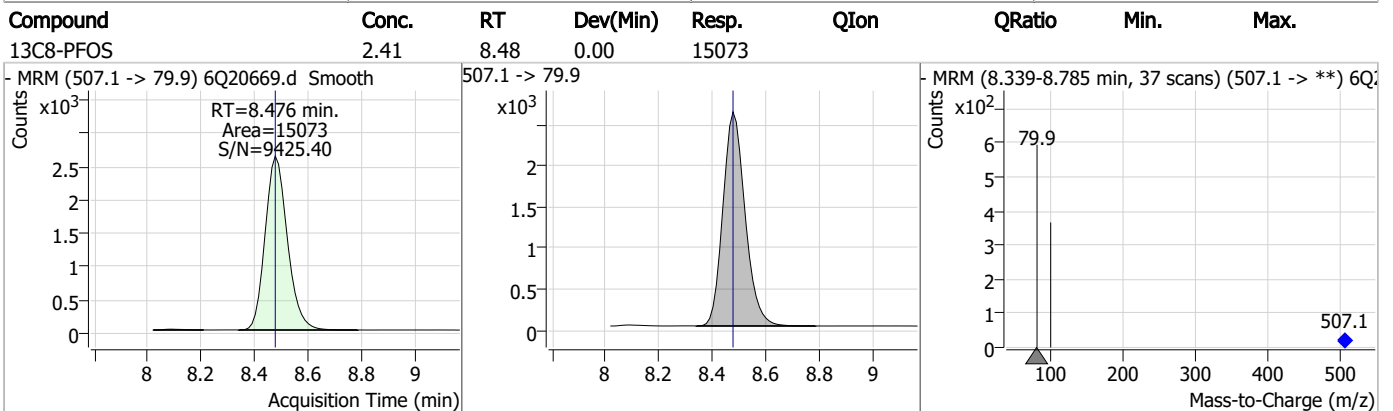
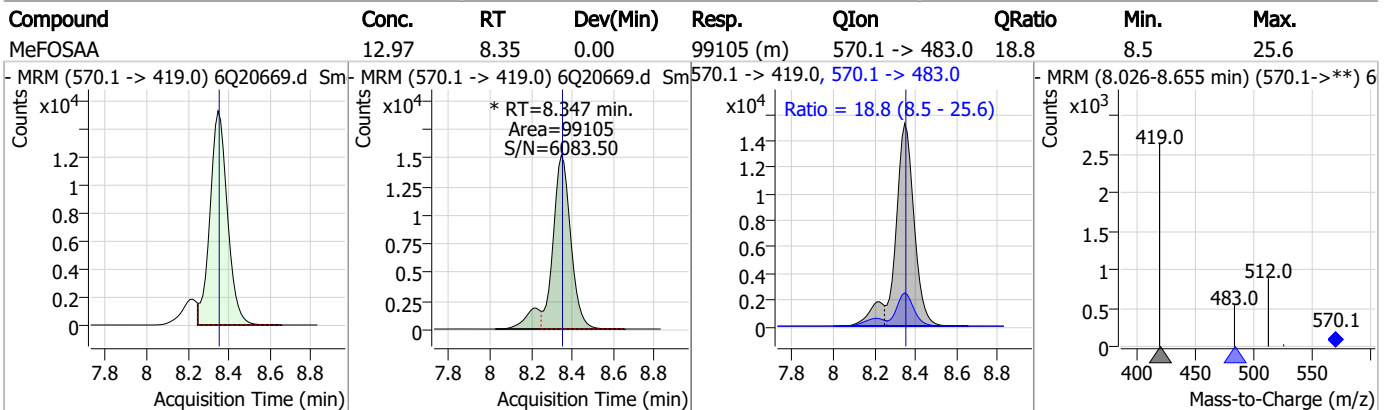
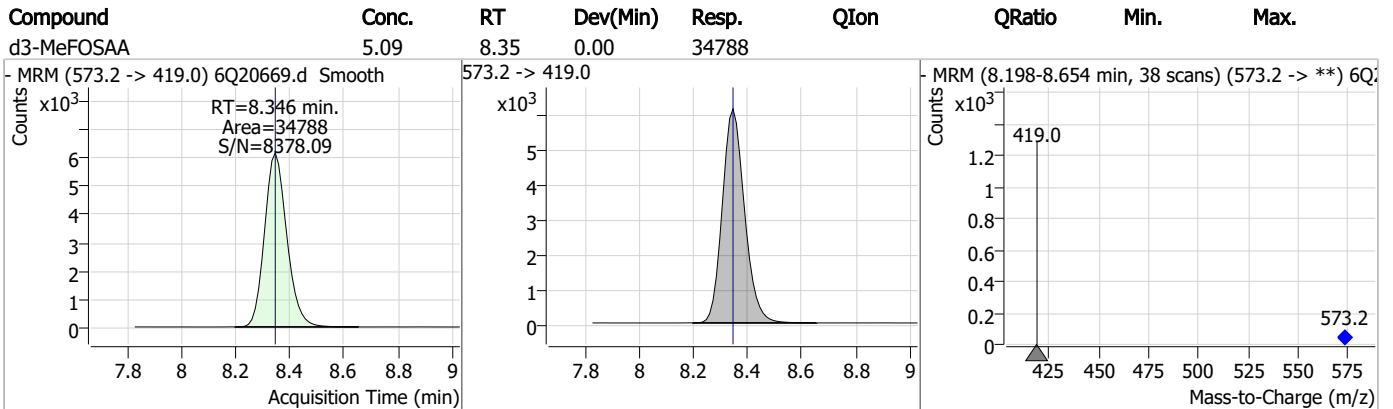
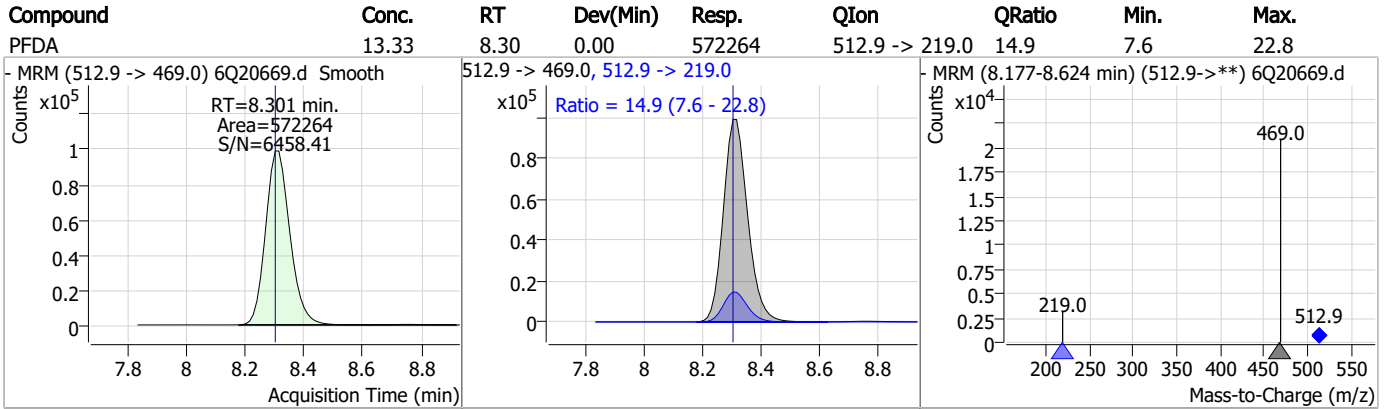
Perfluorinated Compounds by LC/MS/MS



7.7.7

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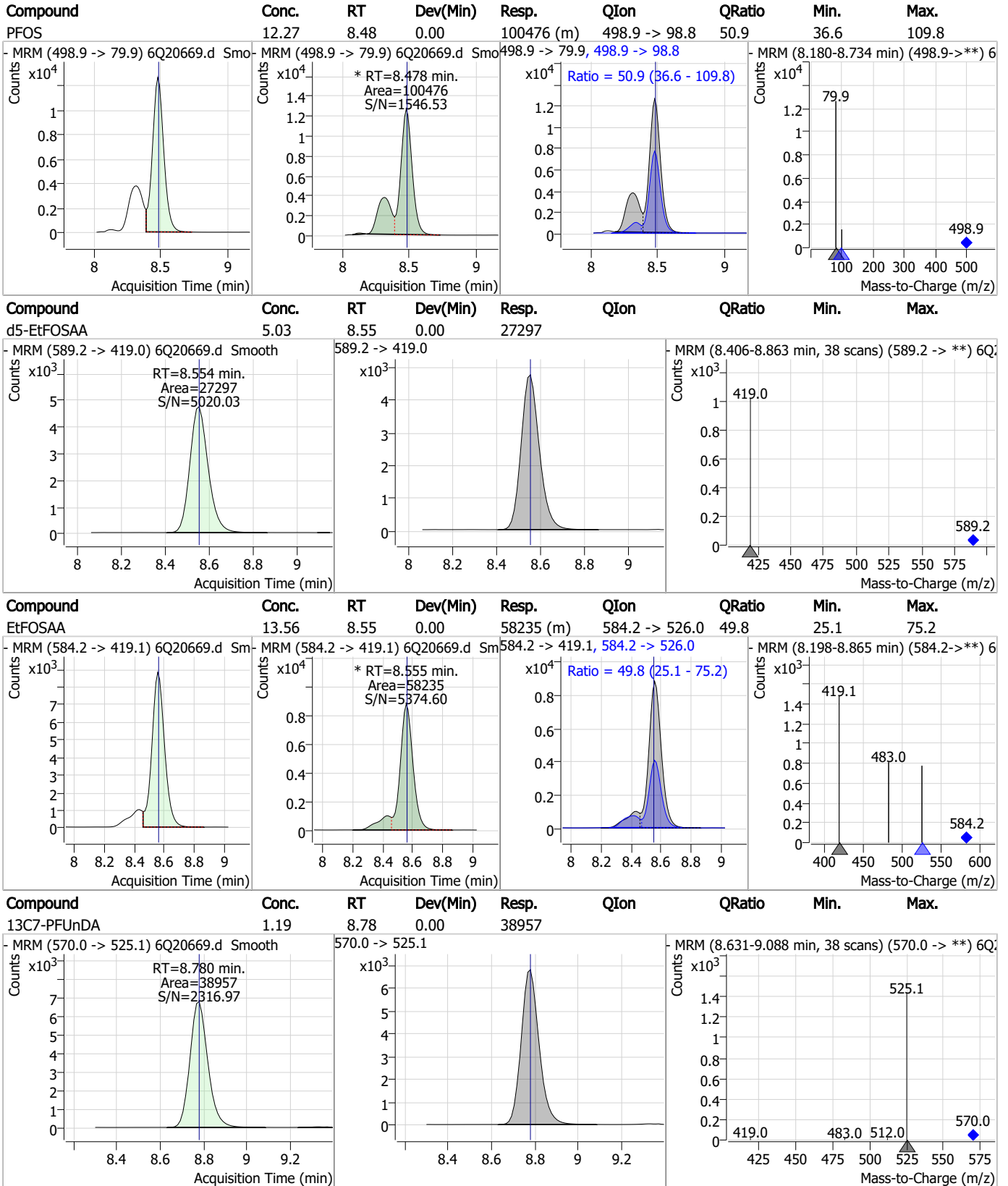
Perfluorinated Compounds by LC/MS/MS



7.7.7

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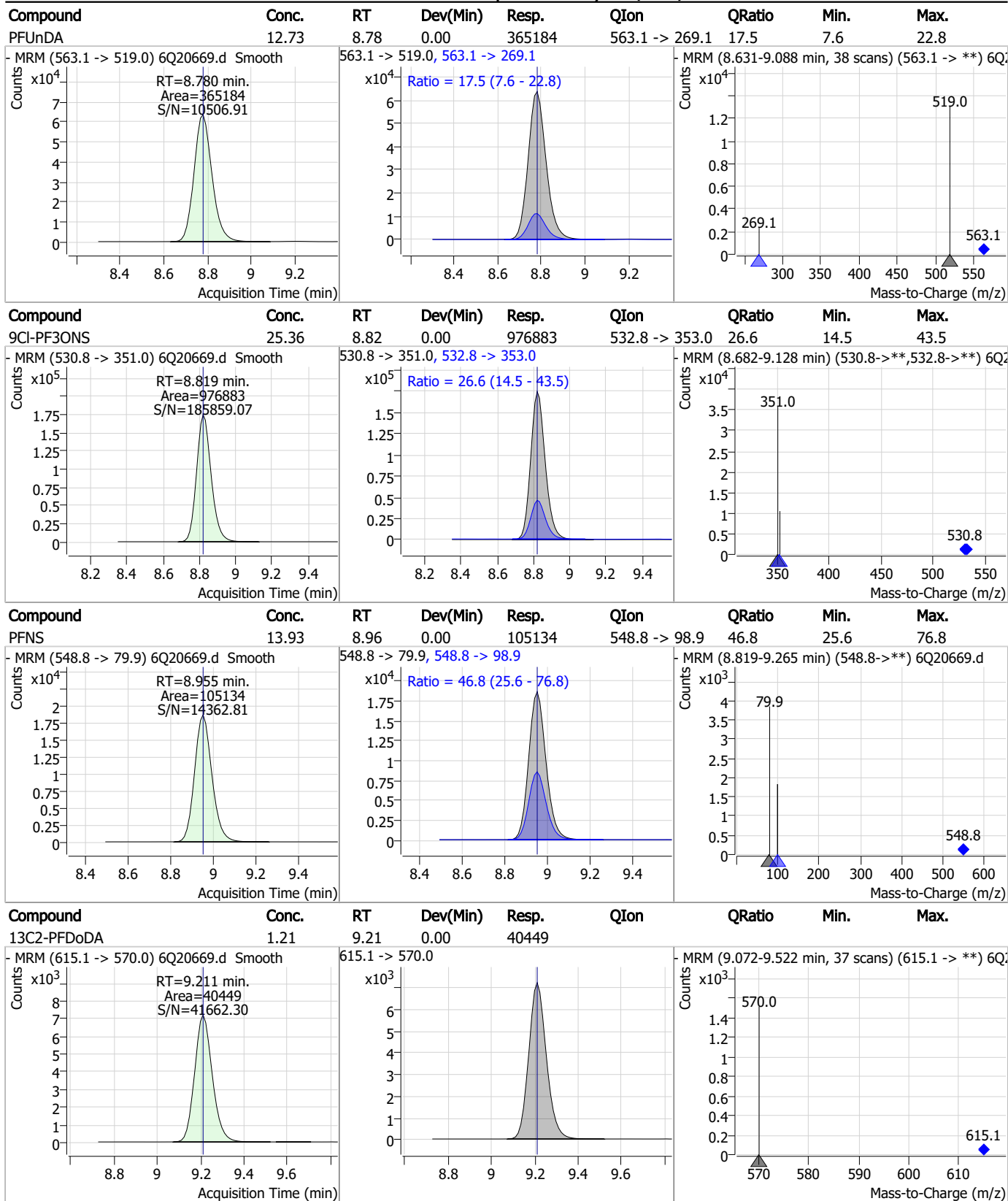
Perfluorinated Compounds by LC/MS/MS



7.7.7

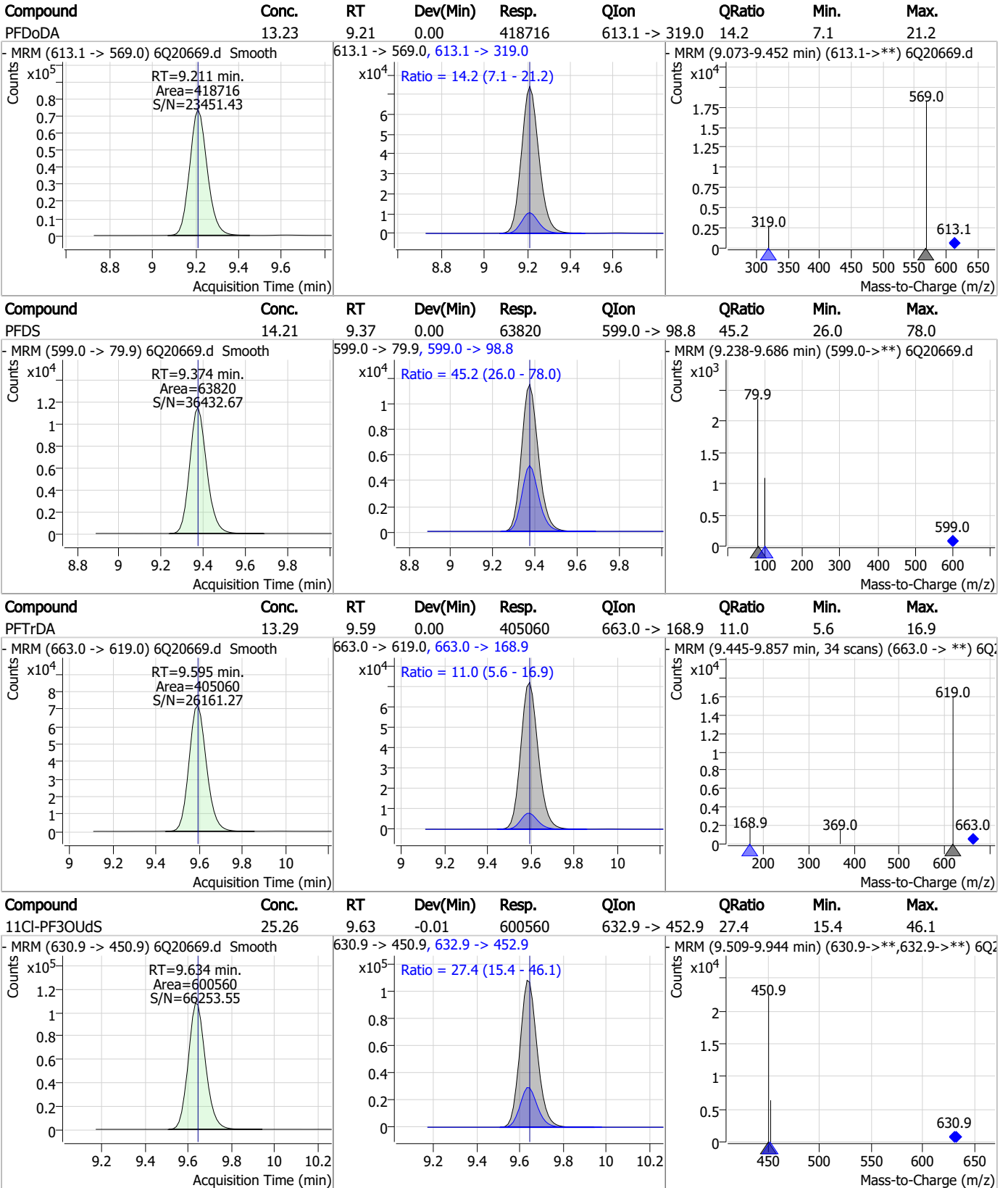
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Perfluorinated Compounds by LC/MS/MS



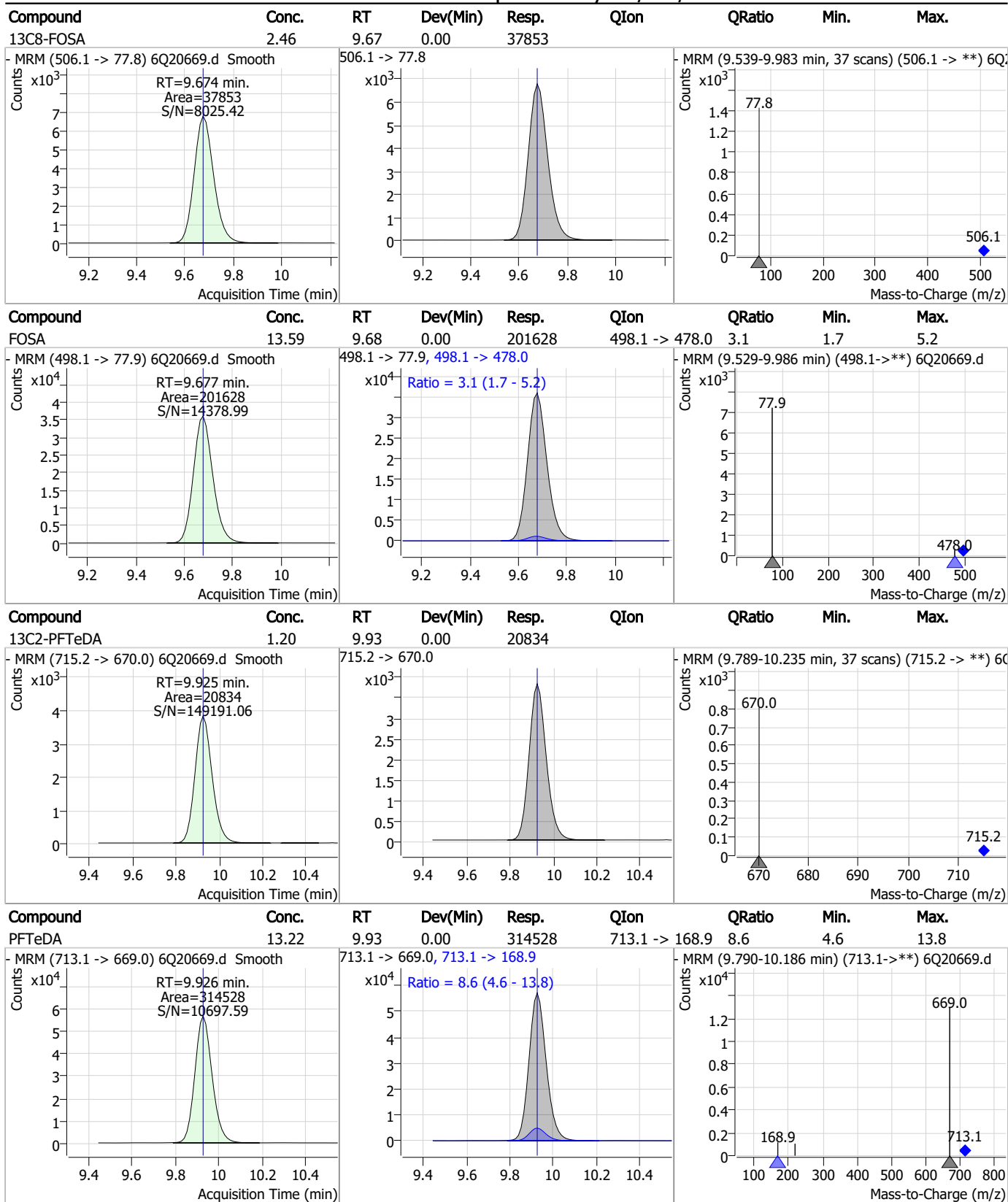
7.7.7
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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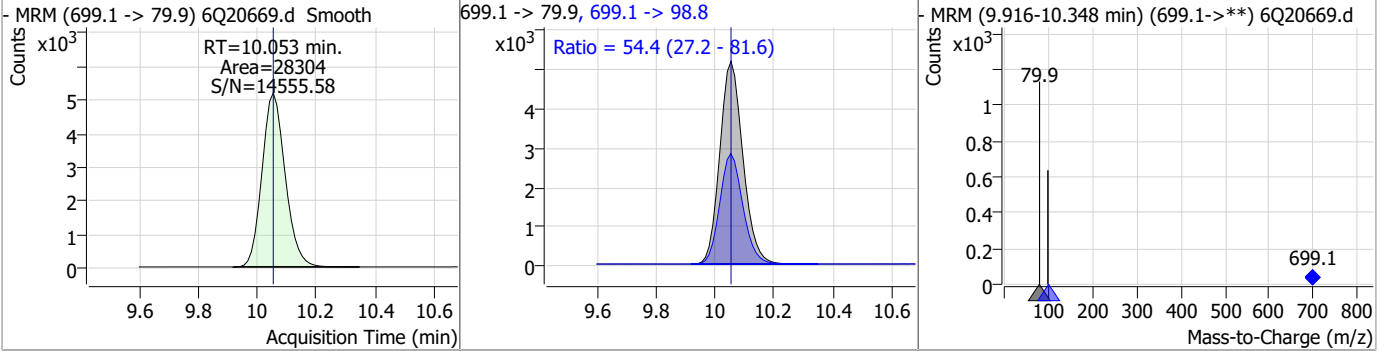
Perfluorinated Compounds by LC/MS/MS



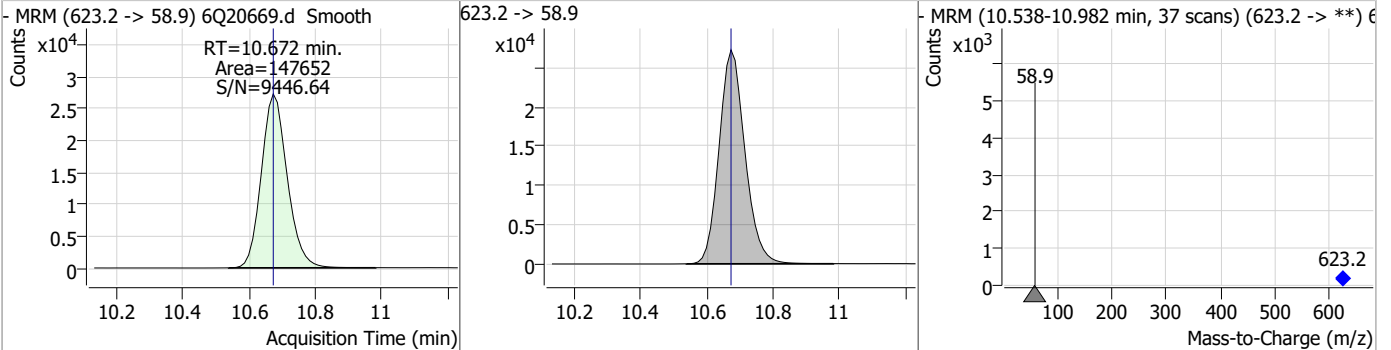
7.7.7

Perfluorinated Compounds by LC/MS/MS

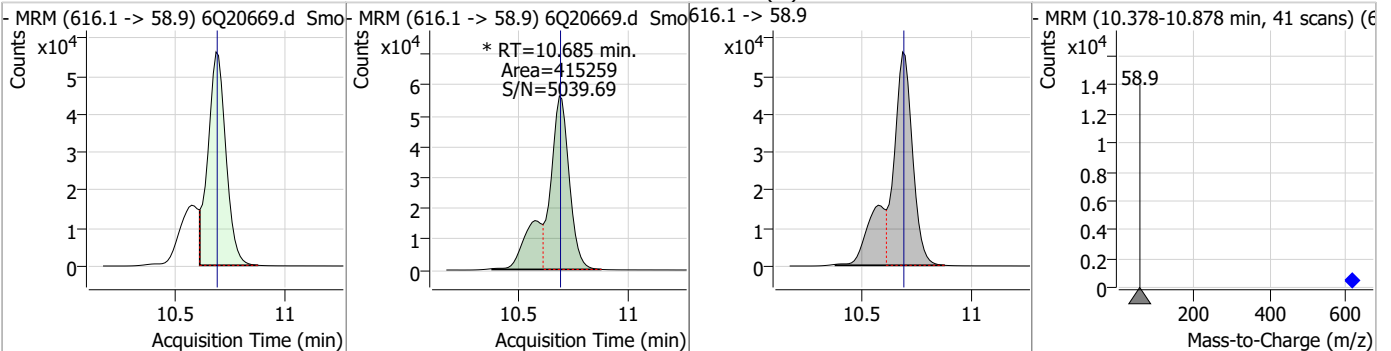
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	13.80	10.05	0.00	28304	699.1 -> 98.8	54.4	27.2	81.6



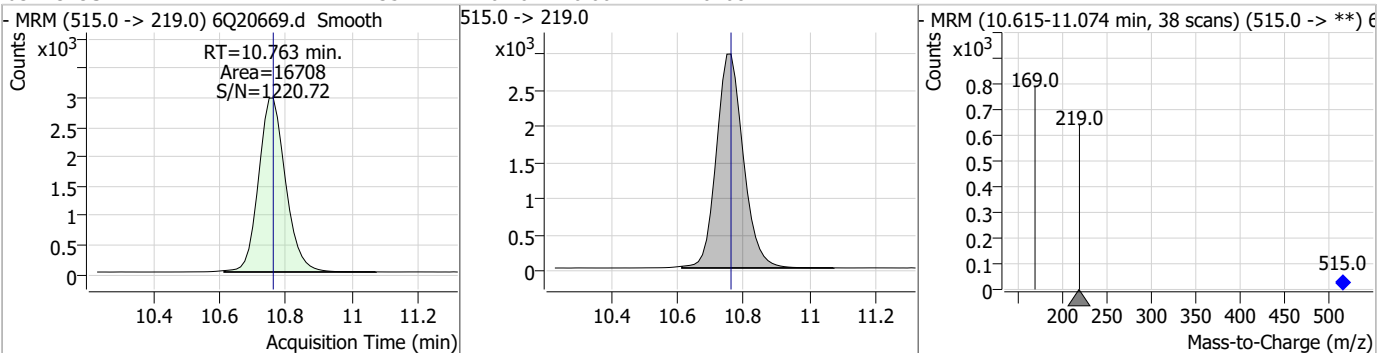
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.17	10.67	0.00	147652				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	67.17	10.69	0.00	415259 (m)				

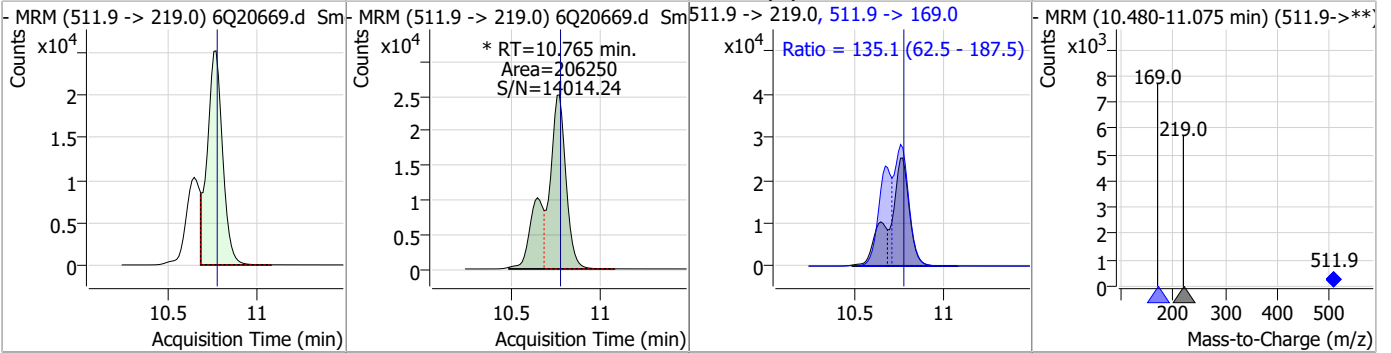


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.35	10.76	0.00	16708				

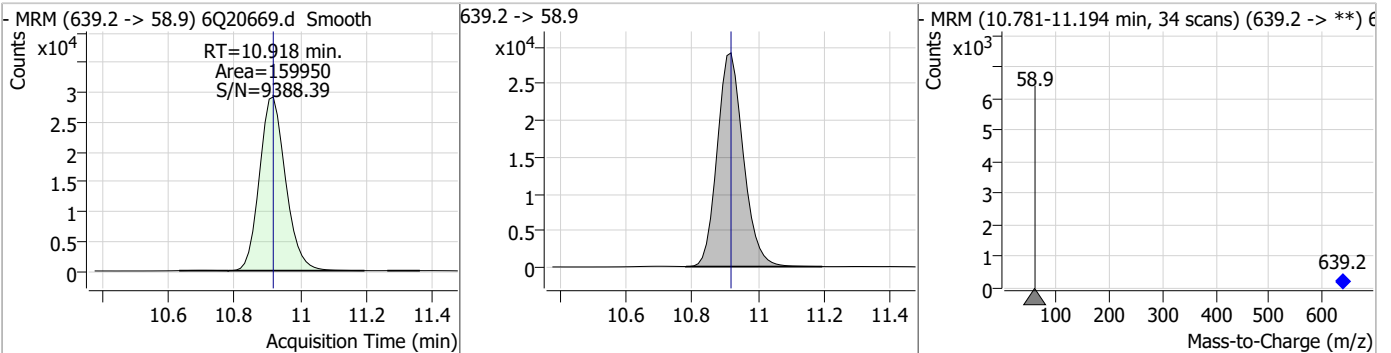


Perfluorinated Compounds by LC/MS/MS

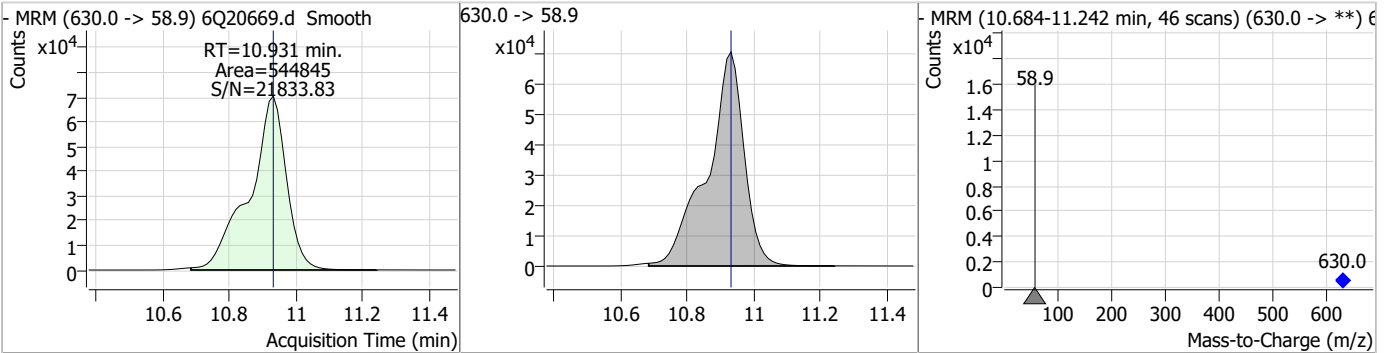
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	28.87	10.76	0.00	206250 (m)	511.9 -> 169.0	135.1	62.5	187.5



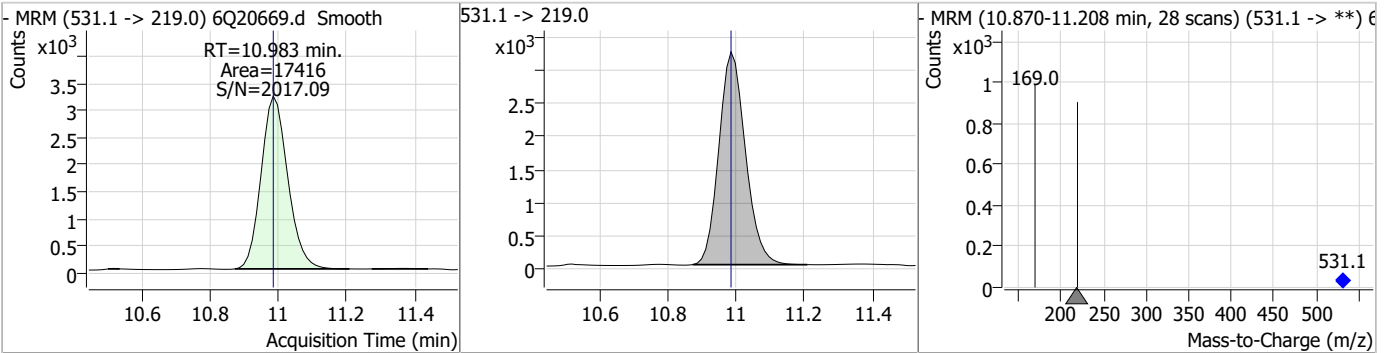
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.34	10.92	0.00	159950				



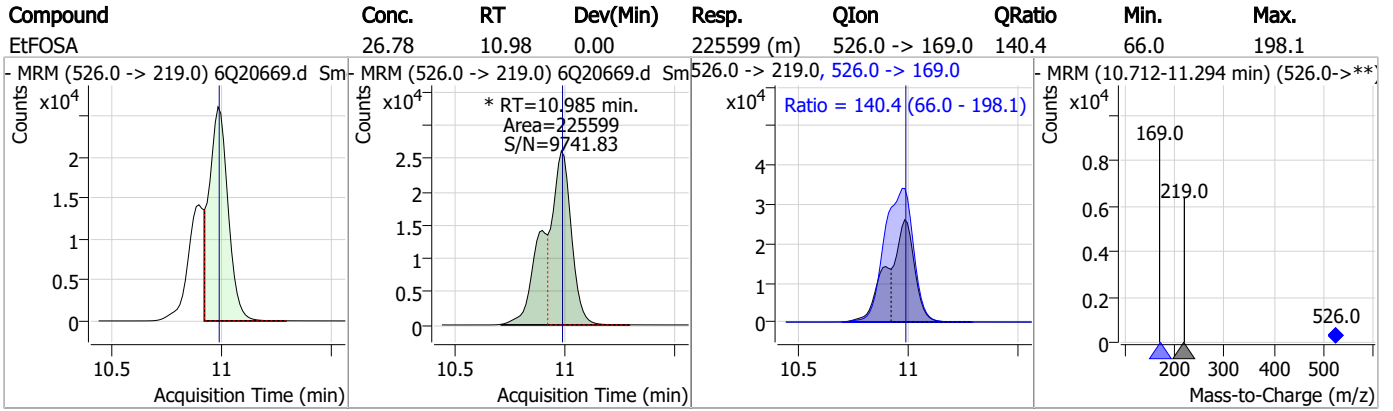
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	67.76	10.93	0.00	544845				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	10.98	0.00	17416				



Perfluorinated Compounds by LC/MS/MS



7.7.7
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Manual Integration Approval Summary

Sample Number: S6Q307-IC307
Lab FileID: 6Q20669.D
Injection Time: 07/10/23 20:15

Method: EPA DRAFT 1633
Analyst approved: 07/11/23 12:14 Martha Valls
Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.7.7.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 07/11/23 14:22

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20670.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 8:29:27 PM
 Sample Name : ic307-7
 Vial : P1-A8
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	187669	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	63561	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	73190	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	68280	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	106870	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	45728	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	27888	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	36088	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	35142	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	17356	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	35674	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	23870	2.50 µg/L	0.000
M3-PFHxS	7.404	402.1 -> 79.9	15451	2.50 µg/L	0.012
M8-PFOS	8.476	507.1 -> 79.9	14074	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2221	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3438	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3404	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	30917	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	44720	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	25010	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	134793	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	146498	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	16433	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	16672	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	19279	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	79764	5.00 µg/L	-0.012
18O2-PFHxS	7.403	403.0 -> 83.9	11738	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	107767	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	36561	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	59471	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	69195	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2221	4.22 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 84.4%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3438	4.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 88.0%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3404	4.51 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 90.3%		
13C2-PFDoDA	9.211	615.1 -> 570.0	35142	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C2-PFTeDA	9.925	715.2 -> 670.0	17356	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFBS	5.635	302.1 -> 79.9	23870	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.1%		
13C3-PFHxS	7.404	402.1 -> 79.9	15451	2.47 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C4-PFBA	3.022	216.8 -> 171.9	187669	9.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C4-PFHpA	6.633	367.1 -> 322.0	68280	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFHxA	5.692	318.0 -> 273.0	73190	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFPeA	4.459	268.3 -> 223.0	63561	4.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C6-PFDA	8.313	519.1 -> 474.1	27888	1.36 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C7-PFUnDA	8.780	570.0 -> 525.1	36088	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C8-FOSA	9.674	506.1 -> 77.8	35674	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C8-PFOA	7.276	421.1 -> 376.0	106870	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C8-PFOS	8.476	507.1 -> 79.9	14074	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C9-PFNA	7.807	472.1 -> 427.0	45728	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.0%	
d3-MeFOSAA	8.346	573.2 -> 419.0	30917	5.17 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	44720	10.18 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSA	10.763	515.0 -> 219.0	16672	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
d5-EtFOSAA	8.554	589.2 -> 419.0	25010	5.26 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
d7-MeFOSE	10.672	623.2 -> 58.9	134793	27.26 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
d9-EtFOSE	10.918	639.2 -> 58.9	146498	25.43 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d5-EtFOSA	10.983	531.1 -> 219.0	16433	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	415698	102.88 µg/L	98
		327.1 -> 80.9	142462		
6:2FTS	7.039	427.1 -> 407.0	395263	97.90 µg/L	95
		427.1 -> 80.9	130121		
8:2FTS	8.090	527.1 -> 507.0	218365	100.26 µg/L	99
		527.1 -> 80.8	73507		
EtFOSAA	8.555	584.2 -> 419.1	96202	24.44 µg/L	m 87
		584.2 -> 526.0	56947		
FOSA	9.677	498.1 -> 77.9	348825	24.95 µg/L	100
		498.1 -> 478.0	12020		
MeFOSAA	8.347	570.1 -> 419.0	187164	27.57 µg/L	m 97
		570.1 -> 483.0	34266		
PFBA	3.018	212.8 -> 168.9	794101	109.80 µg/L	100
PFBS	5.636	298.7 -> 79.9	228512	24.07 µg/L	97
		298.7 -> 98.8	89727		
PFDA	8.314	512.9 -> 469.0	1014180	26.11 µg/L	100
		512.9 -> 219.0	155880		
PFDoDA	9.211	613.1 -> 569.0	745183	27.10 µg/L	99
		613.1 -> 319.0	106963		
PFDS	9.374	599.0 -> 79.9	104385	24.89 µg/L	100

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	54203			
PFHpA	6.633	363.1 -> 319.0	860892	26.12	µg/L	98
		363.1 -> 169.0	143814			
PFHpS	7.972	449.0 -> 79.9	211095	26.02	µg/L	98
		449.0 -> 98.9	108270			
PFHxA	5.694	313.0 -> 269.0	672503	25.06	µg/L	99
		313.0 -> 118.9	35169			
PFHxS	7.393	398.7 -> 79.9	198749	24.19	µg/L	m 98
		398.7 -> 98.9	99259			
PFNA	7.808	463.0 -> 419.0	1018249	28.01	µg/L	98
		463.0 -> 219.0	200954			
PFNS	8.955	548.8 -> 79.9	173485	24.62	µg/L	91
		548.8 -> 98.9	100098			
PFOA	7.278	413.0 -> 369.0	1245062	24.56	µg/L	95
		413.0 -> 169.0	235231			
PFOS	8.478	498.9 -> 79.9	196203	25.66	µg/L	m 72
		498.9 -> 98.8	97640			
PFPeA	4.461	263.0 -> 219.0	906437	53.50	µg/L	100
PFPeS	6.697	349.1 -> 79.9	198391	24.69	µg/L	96
		349.1 -> 98.9	97094			
PFTeDA	9.926	713.1 -> 669.0	570619	28.78	µg/L	97
		713.1 -> 168.9	46940			
PFTrDA	9.595	663.0 -> 619.0	738420	27.89	µg/L	97
		663.0 -> 168.9	74502			
PFUnDA	8.780	563.1 -> 519.0	636178	23.93	µg/L	92
		563.1 -> 269.1	118536			
11CI-PF3OUdS	9.634	630.9 -> 450.9	1010873	48.28	µg/L	99
		632.9 -> 452.9	304506			
9CI-PF3ONS	8.819	530.8 -> 351.0	1533411	45.20	µg/L	91
		532.8 -> 353.0	519873			
ADONA	6.883	376.9 -> 250.9	3638651	49.09	µg/L	98
		376.9 -> 84.8	852708			
HFPO-DA	6.071	284.9 -> 168.9	227984	49.77	µg/L	98
		284.9 -> 184.9	26290			
3:3FTCA	3.883	241.0 -> 177.0	160844	137.11	µg/L	100
		241.0 -> 117.0	21209			
5:3FTCA	6.310	341.0 -> 237.1	3626717	646.99	µg/L	94
		341.0 -> 217.0	2368089			
7:3FTCA	7.711	441.0 -> 316.9	2360763	601.18	µg/L	71
		441.0 -> 336.9	5855706			
EtFOSA	10.985	526.0 -> 219.0	437958	55.10	µg/L	m 99
		526.0 -> 169.0	574702			
EtFOSE	10.931	630.0 -> 58.9	1009351	137.07	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	361038	50.64	µg/L	m 83
		511.9 -> 169.0	520408			
MeFOSE	10.685	616.1 -> 58.9	758083	134.32	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	49246	25.71	µg/L	95
		699.1 -> 98.8	28676			
NFDHA	5.576	295.0 -> 201.0	170241	51.99	µg/L	96
		295.0 -> 84.9	41748			
PFMBA	4.882	279.0 -> 85.1	600646	53.99	µg/L	100
PFMPA	3.588	229.0 -> 84.9	514082	54.88	µg/L	100
PFEESA	6.188	314.8 -> 134.9	1783388	47.47	µg/L	99
		314.8 -> 82.9	53063			

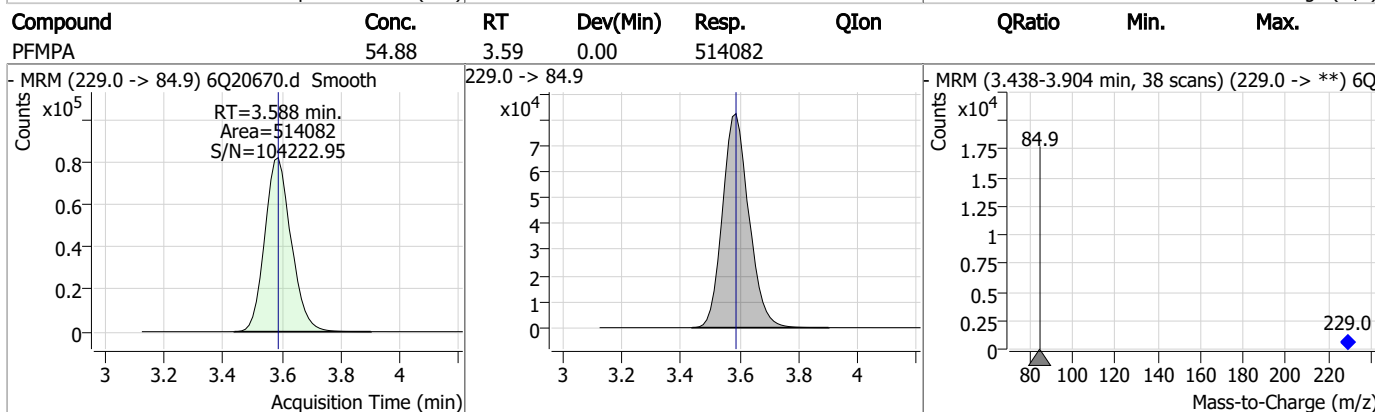
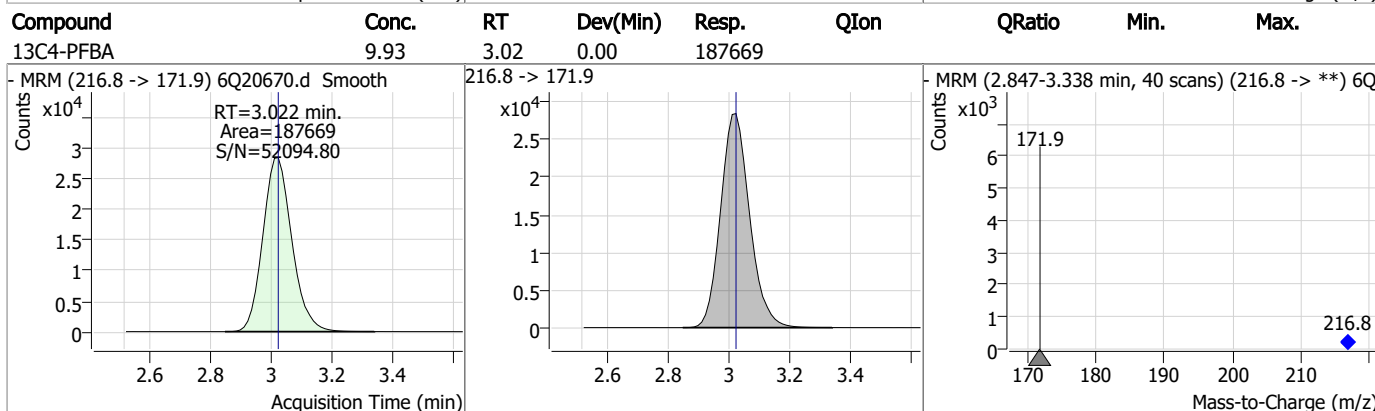
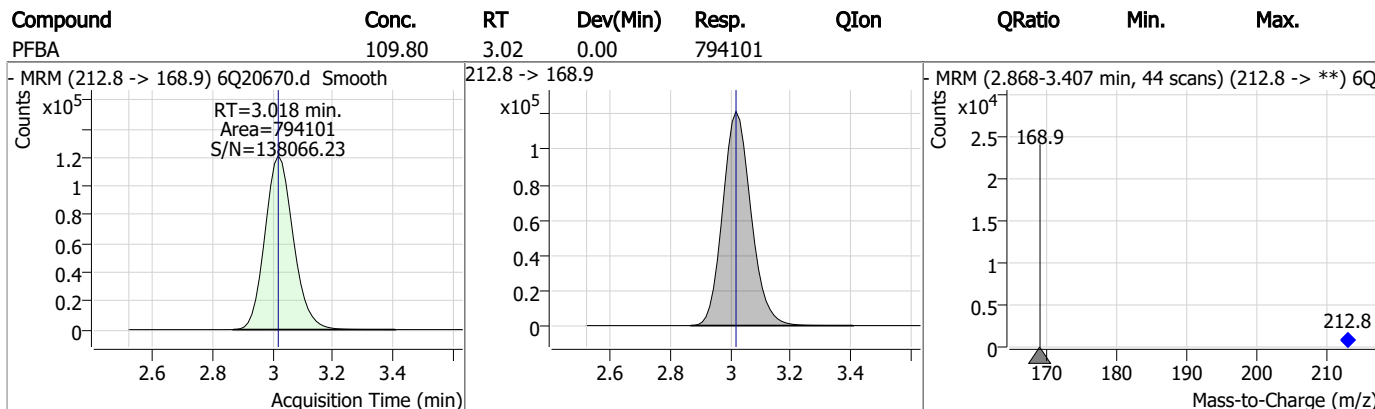
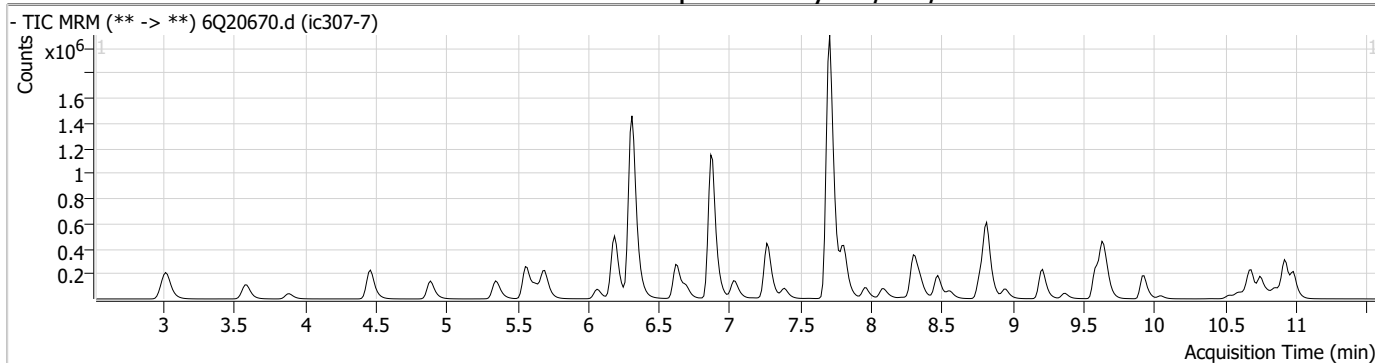
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

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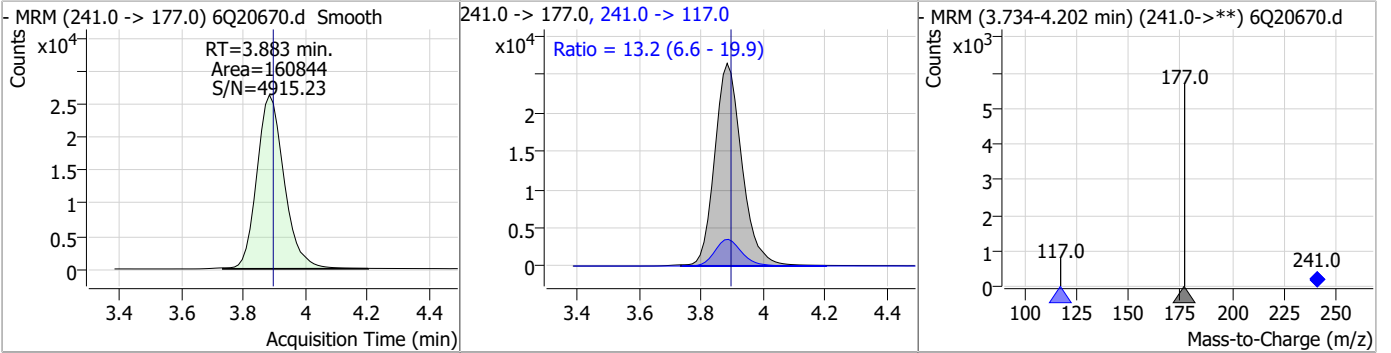
7.7.8
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Perfluorinated Compounds by LC/MS/MS

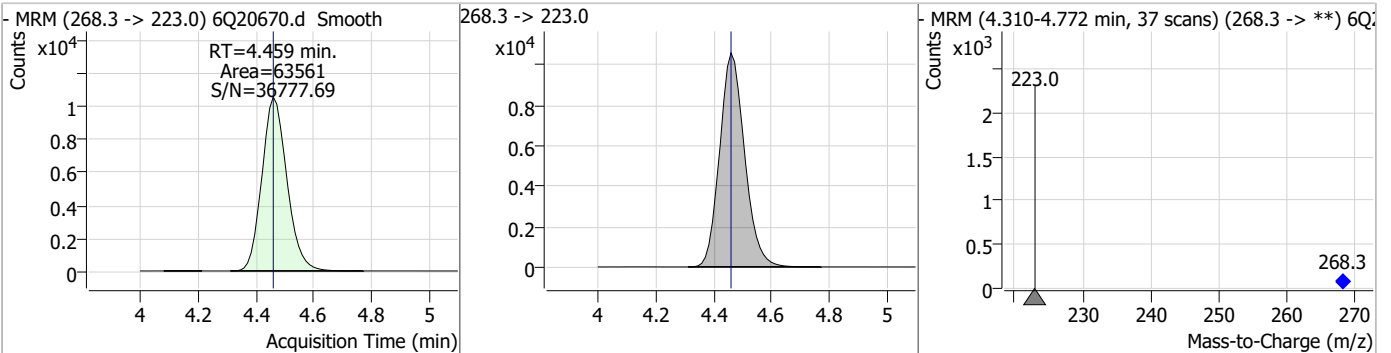


Perfluorinated Compounds by LC/MS/MS

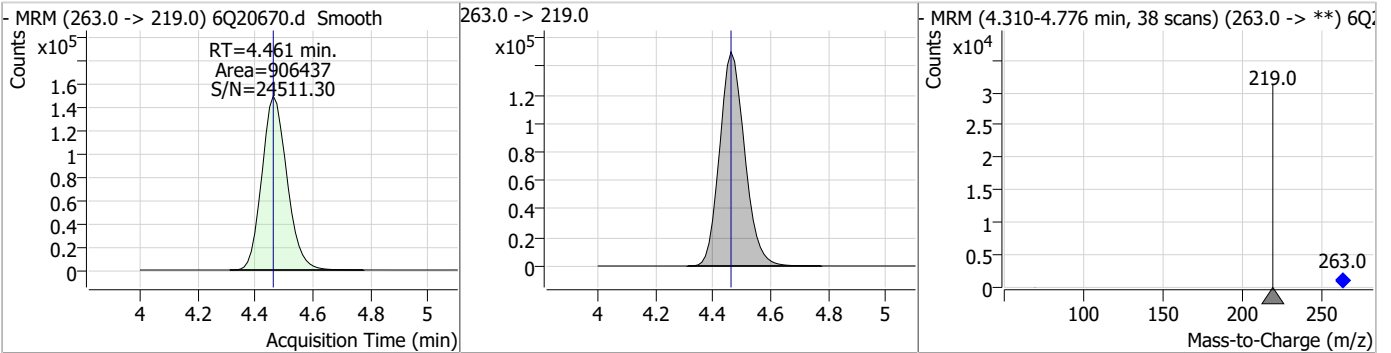
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	137.11	3.88	-0.01	160844	241.0 -> 117.0	13.2	6.6	19.9



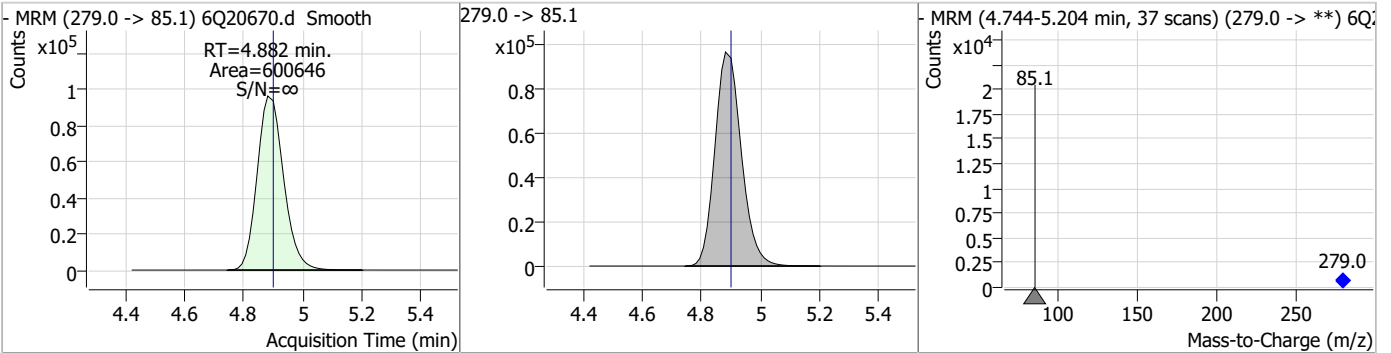
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.93	4.46	0.00	63561				



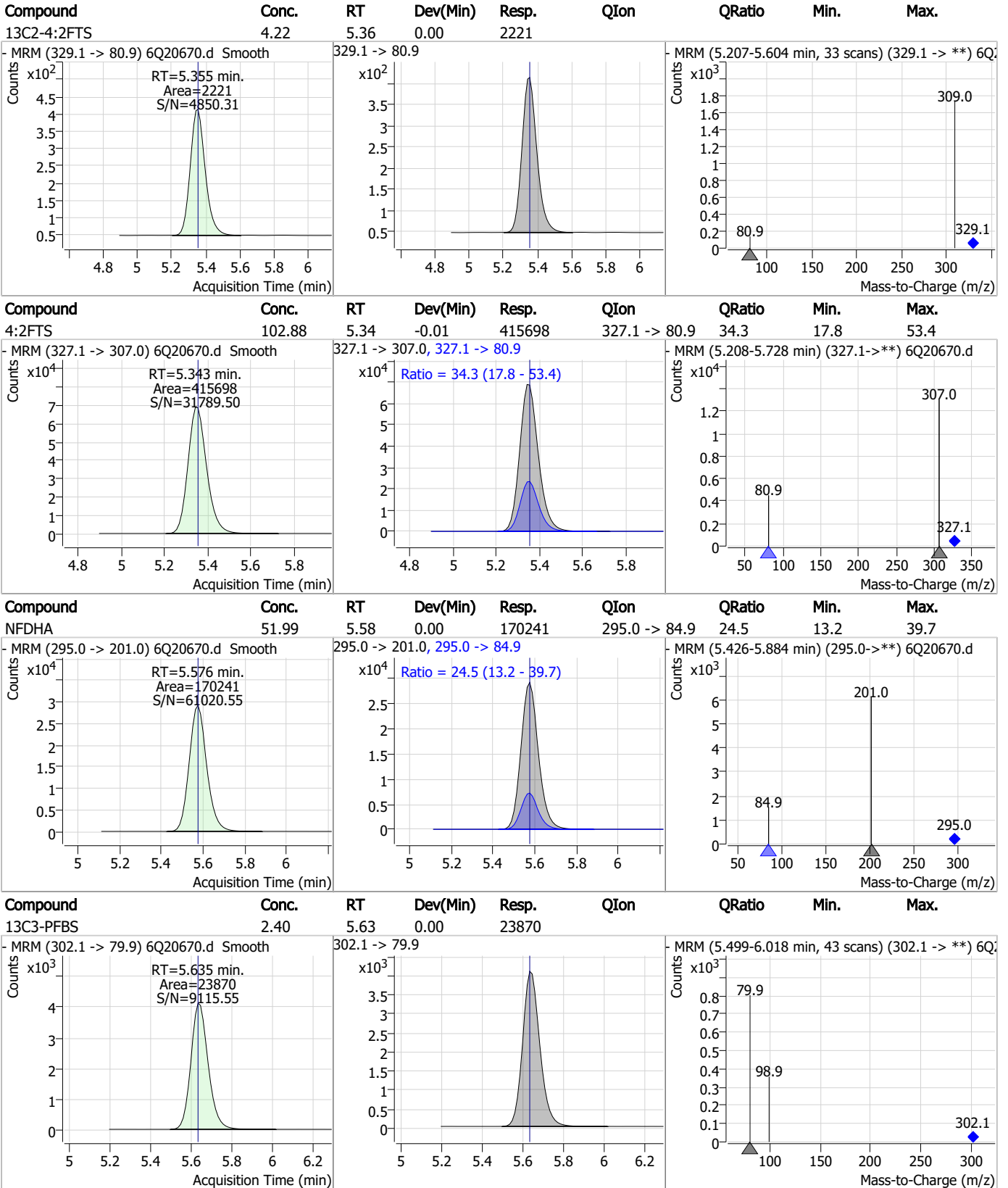
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	53.50	4.46	0.00	906437				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	53.99	4.88	-0.02	600646				



Perfluorinated Compounds by LC/MS/MS



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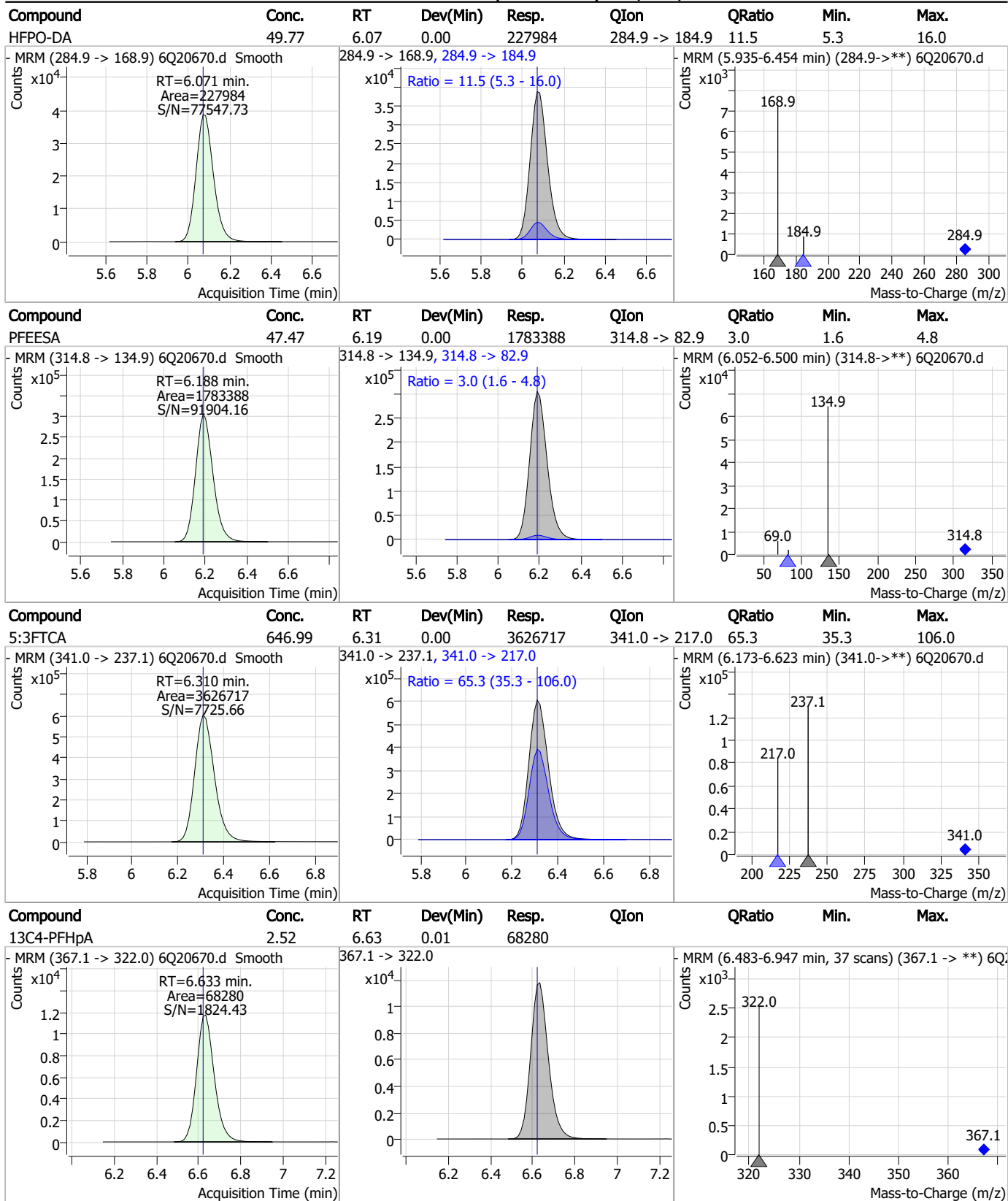
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	24.07	5.64	-0.01	228512	298.7 -> 98.8	39.3	20.5	61.6
13C5-PFHxA	2.60	5.69	0.00	73190				
PFHxA	25.06	5.69	0.00	672503	313.0 -> 118.9	5.2	2.4	7.3
13C3-HFPO-DA	10.18	6.07	0.00	44720				

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Perfluorinated Compounds by LC/MS/MS

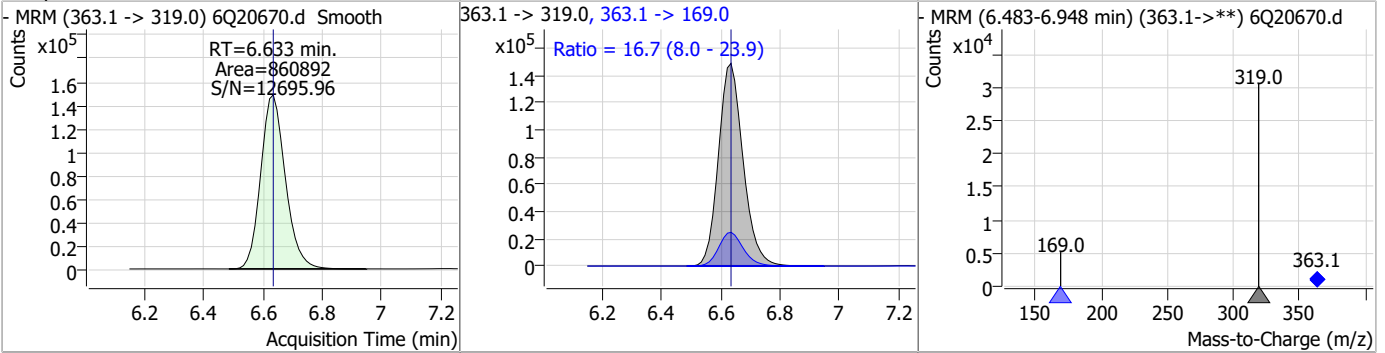


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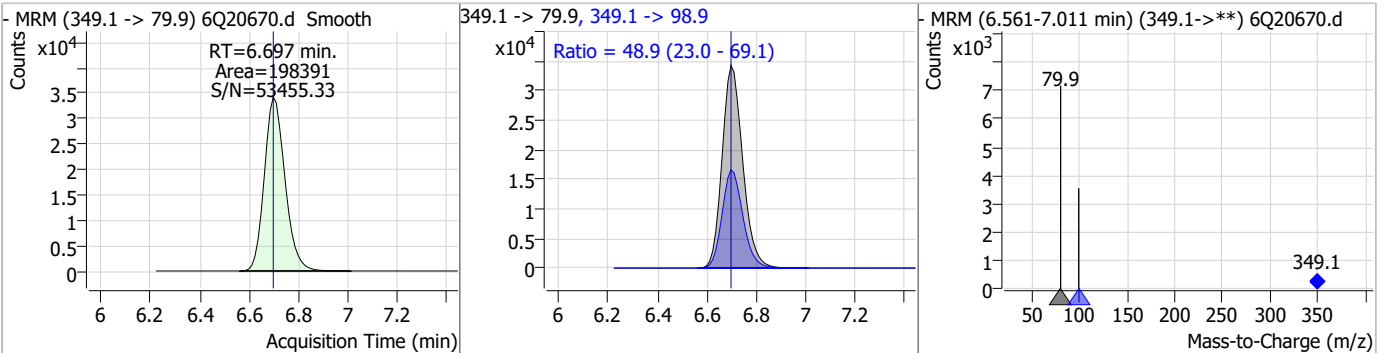


Perfluorinated Compounds by LC/MS/MS

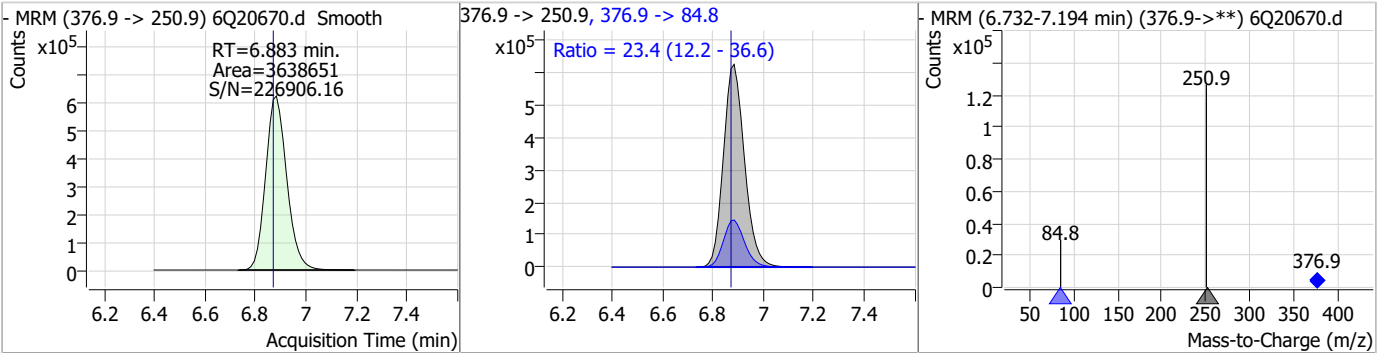
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	26.12	6.63	0.00	860892	363.1 -> 169.0	16.7	8.0	23.9



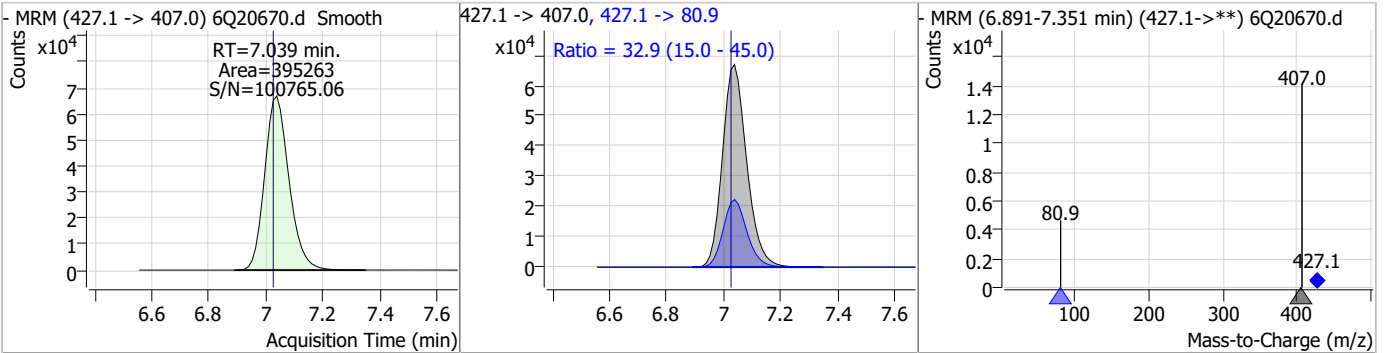
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	24.69	6.70	0.00	198391	349.1 -> 98.9	48.9	23.0	69.1



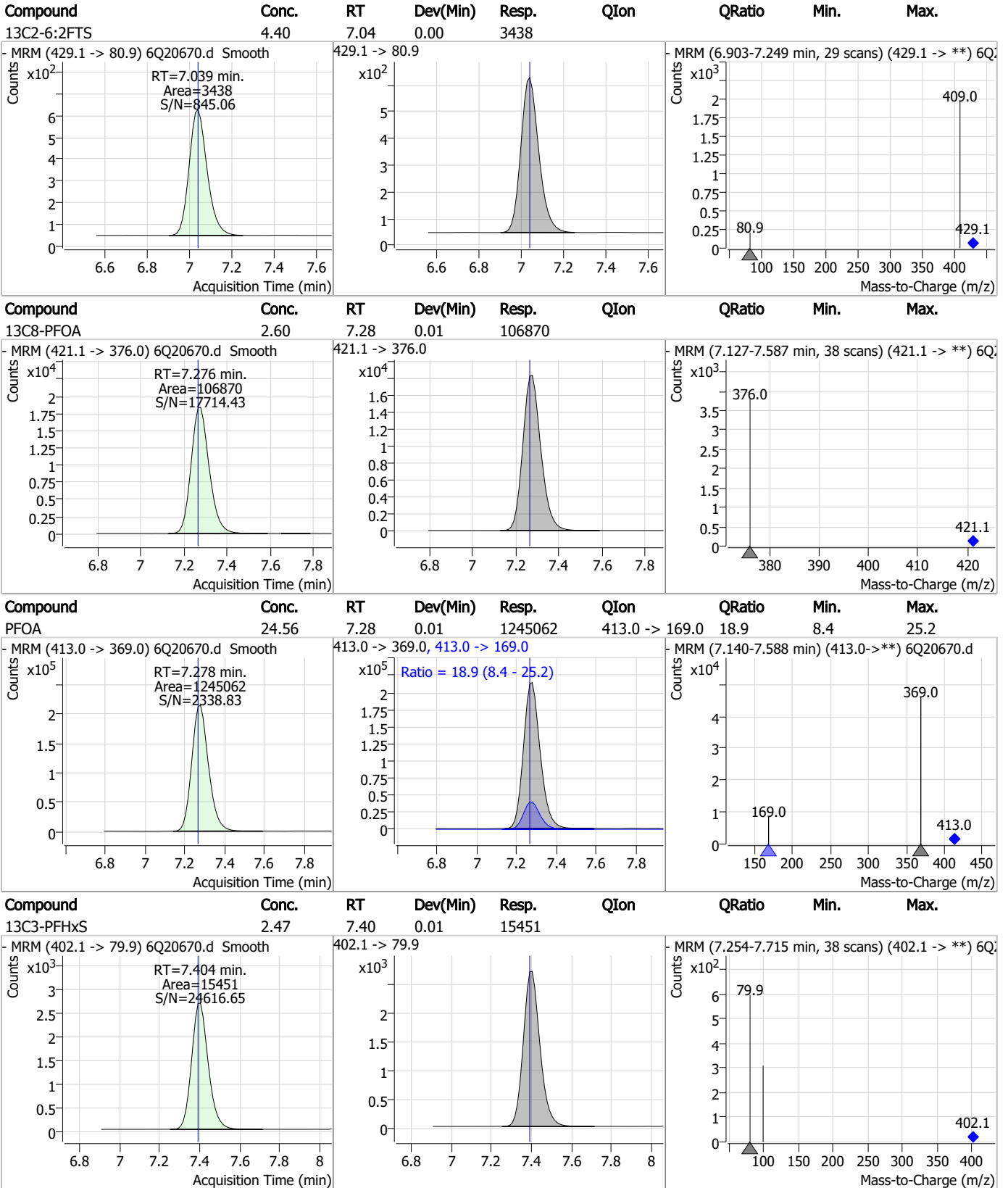
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.09	6.88	0.01	3638651	376.9 -> 84.8	23.4	12.2	36.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	97.90	7.04	0.01	395263	427.1 -> 80.9	32.9	15.0	45.0



Perfluorinated Compounds by LC/MS/MS

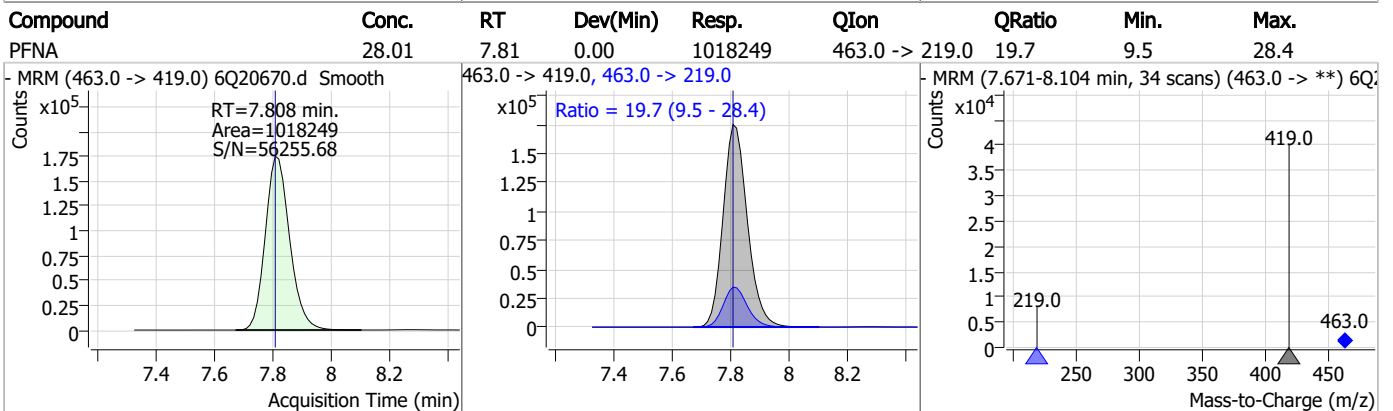
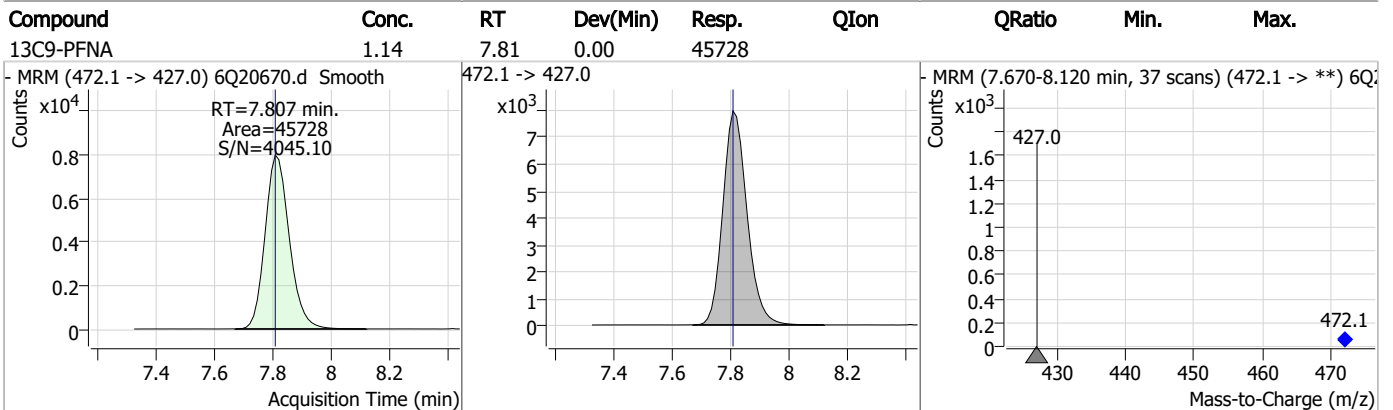
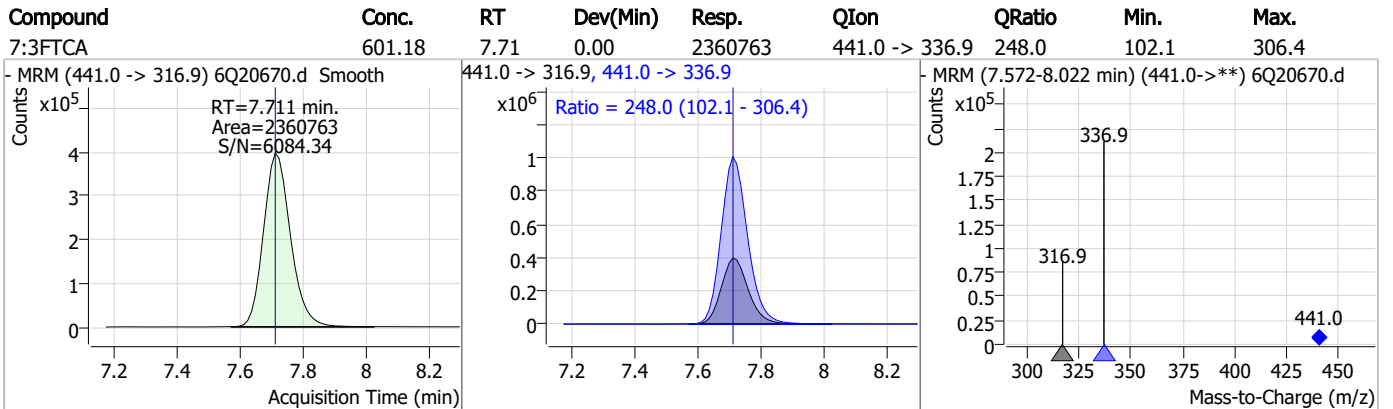
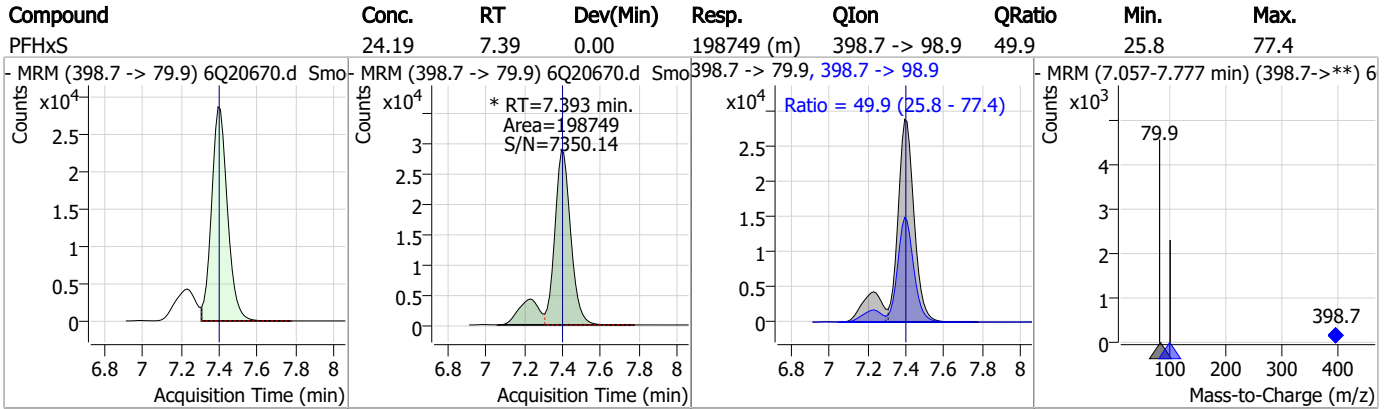


7.7.8

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Perfluorinated Compounds by LC/MS/MS



7.7.8

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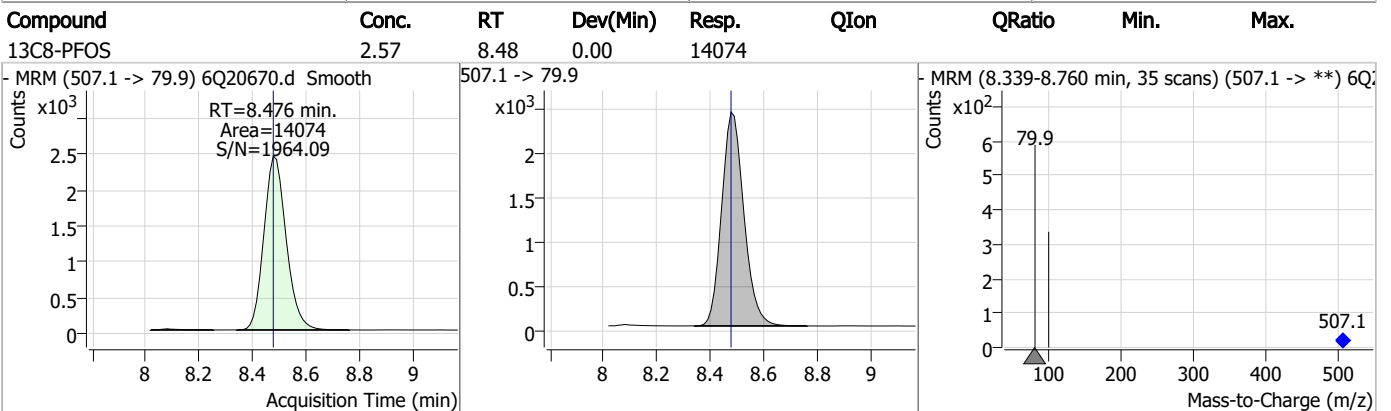
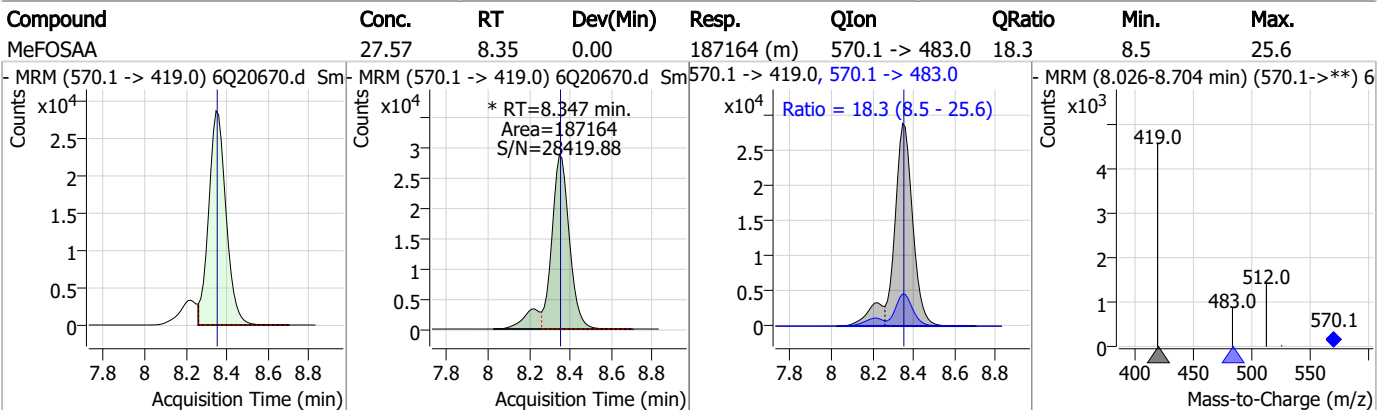
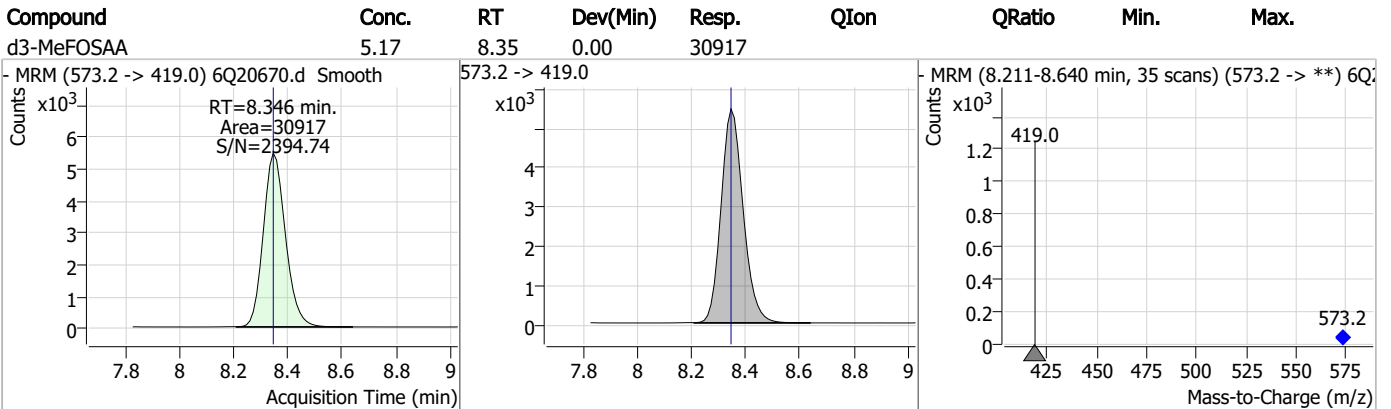
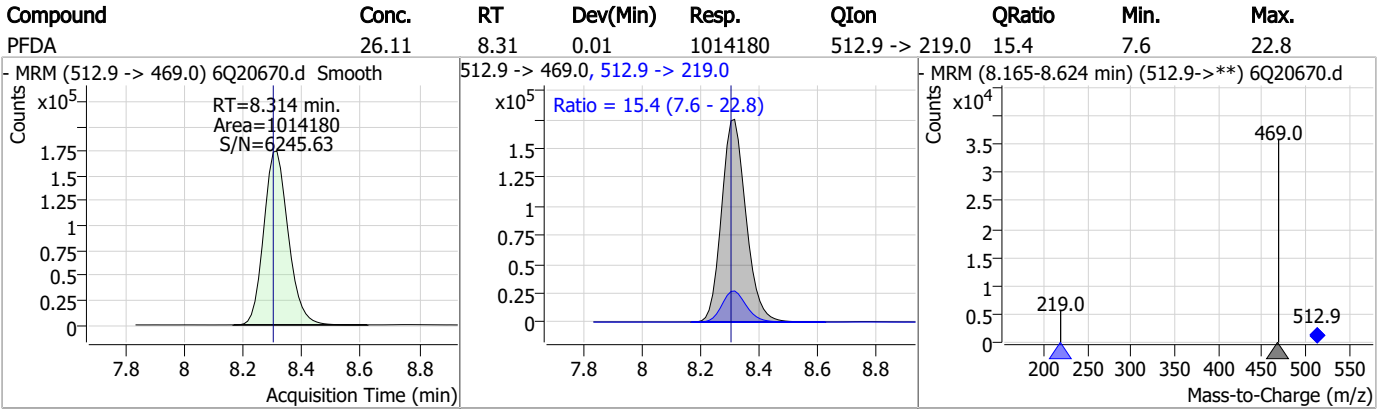
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	26.02	7.97	0.01	211095	449.0 -> 98.9	51.3	25.1	75.3
13C2-8:2FTS	4.51	8.09	0.00	3404				
8:2FTS	100.26	8.09	0.00	218365	527.1 -> 80.8	33.7	16.6	49.9
13C6-PFDA	1.36	8.31	0.01	27888				

7.7.8

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Perfluorinated Compounds by LC/MS/MS

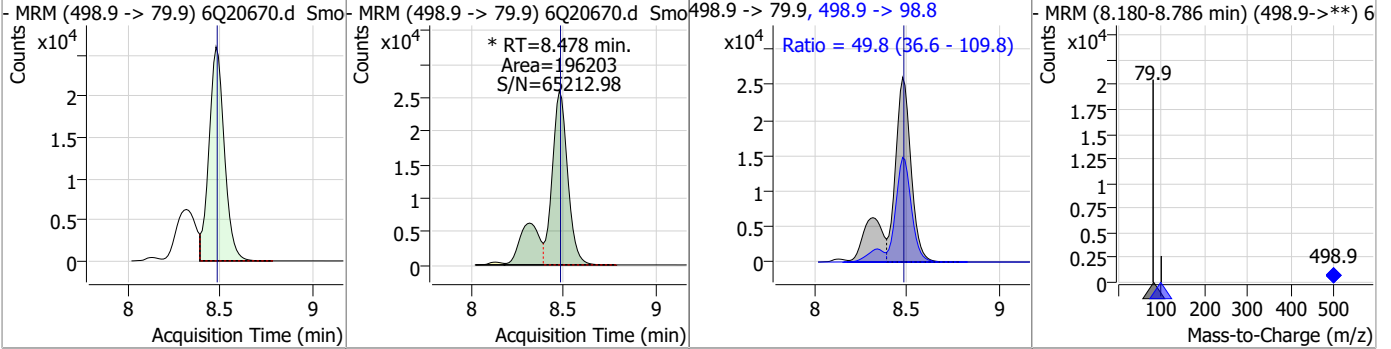


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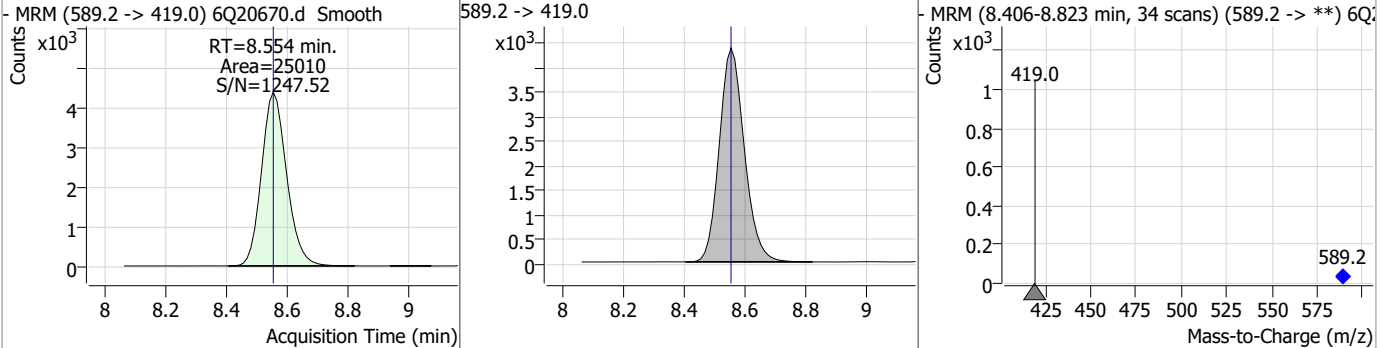
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Perfluorinated Compounds by LC/MS/MS

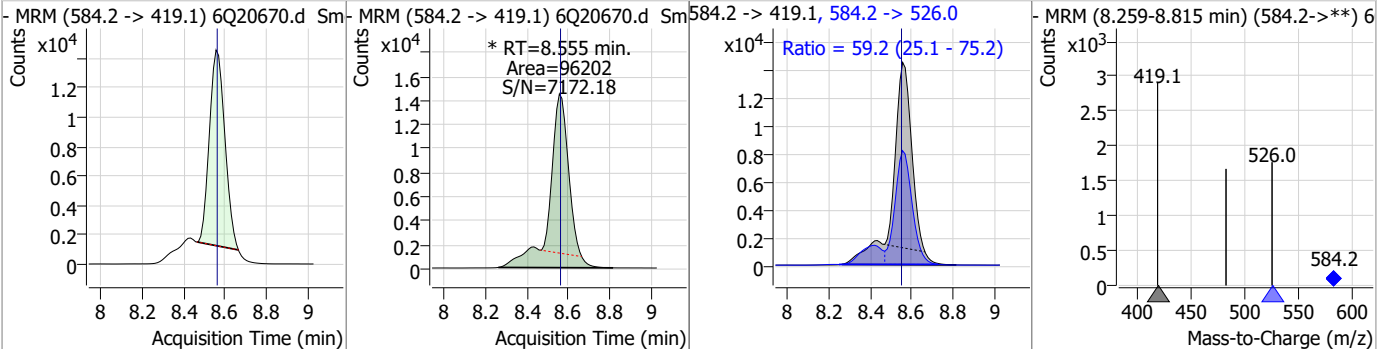
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	25.66	8.48	0.00	196203 (m)	498.9 -> 98.8	49.8	36.6	109.8



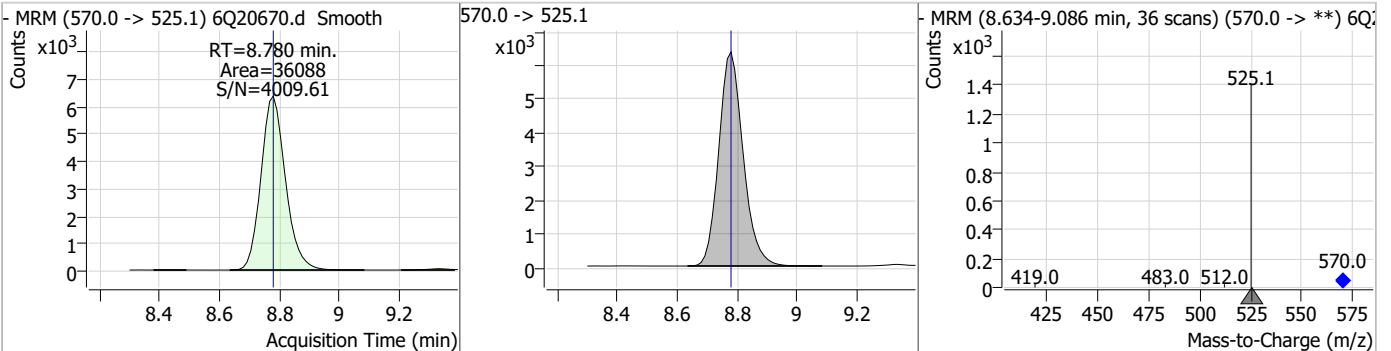
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.26	8.55	0.00	25010				



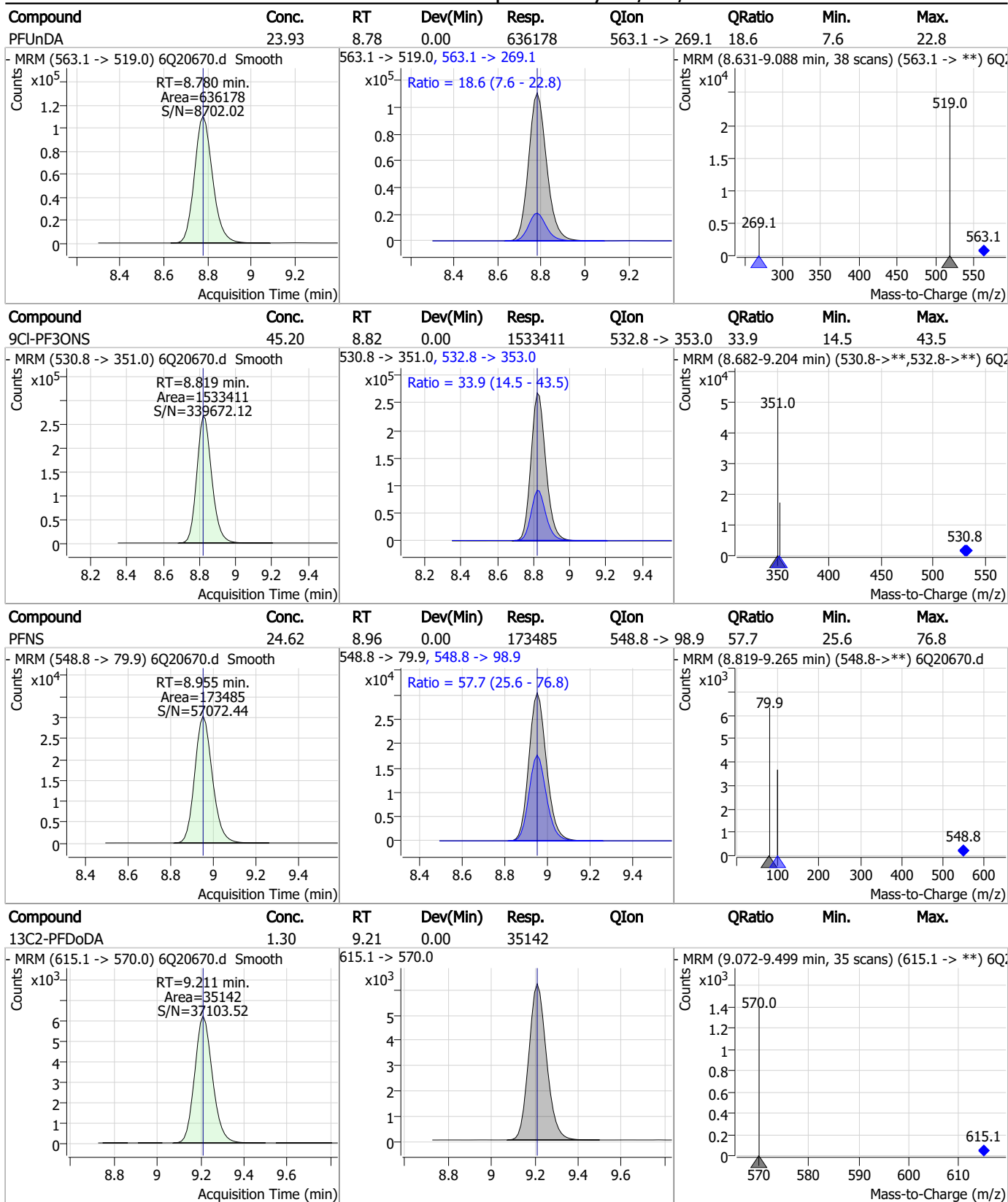
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	24.44	8.55	0.00	96202 (m)	584.2 -> 526.0	59.2	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	8.78	0.00	36088				

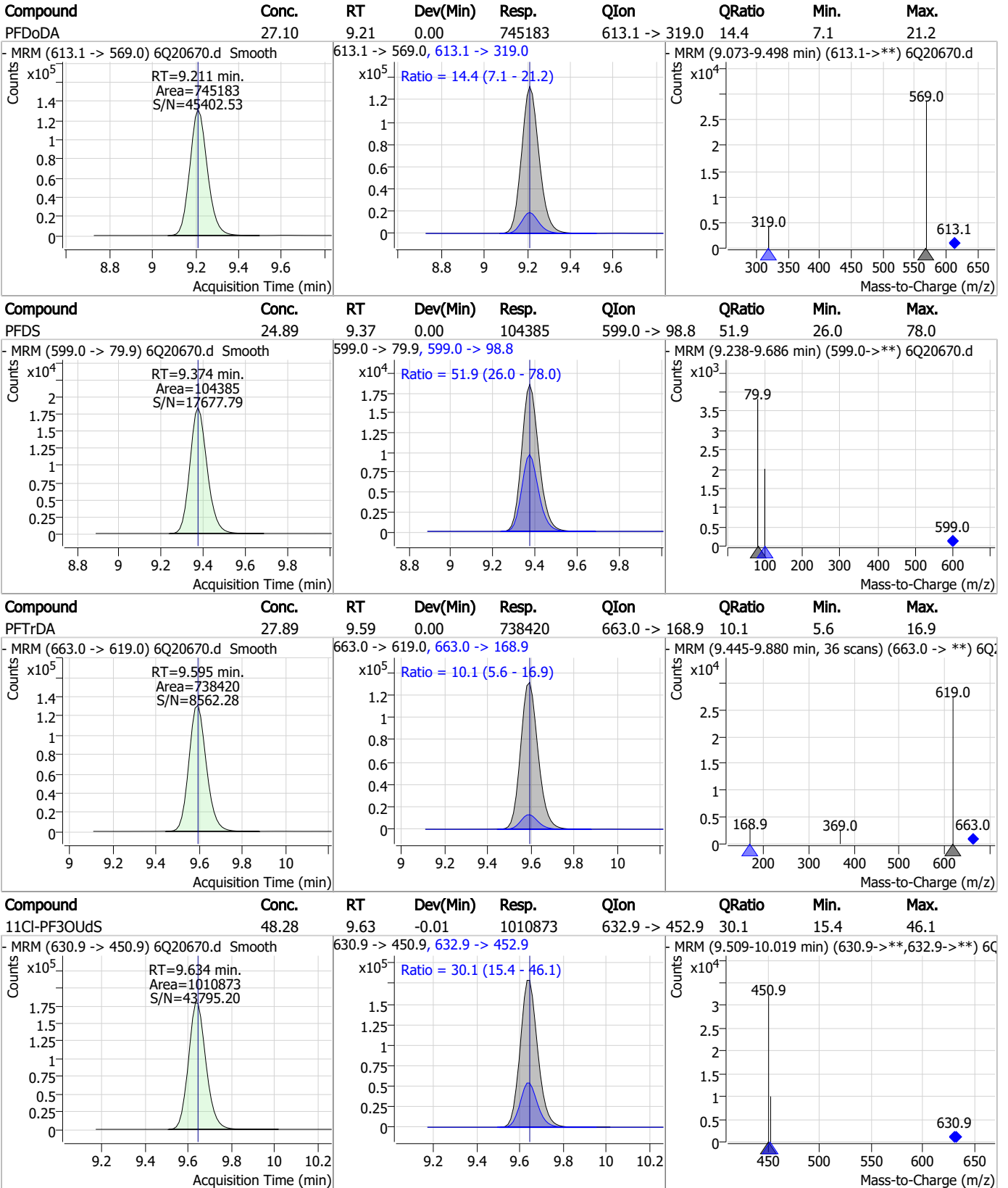


Perfluorinated Compounds by LC/MS/MS



7.7.8
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Perfluorinated Compounds by LC/MS/MS

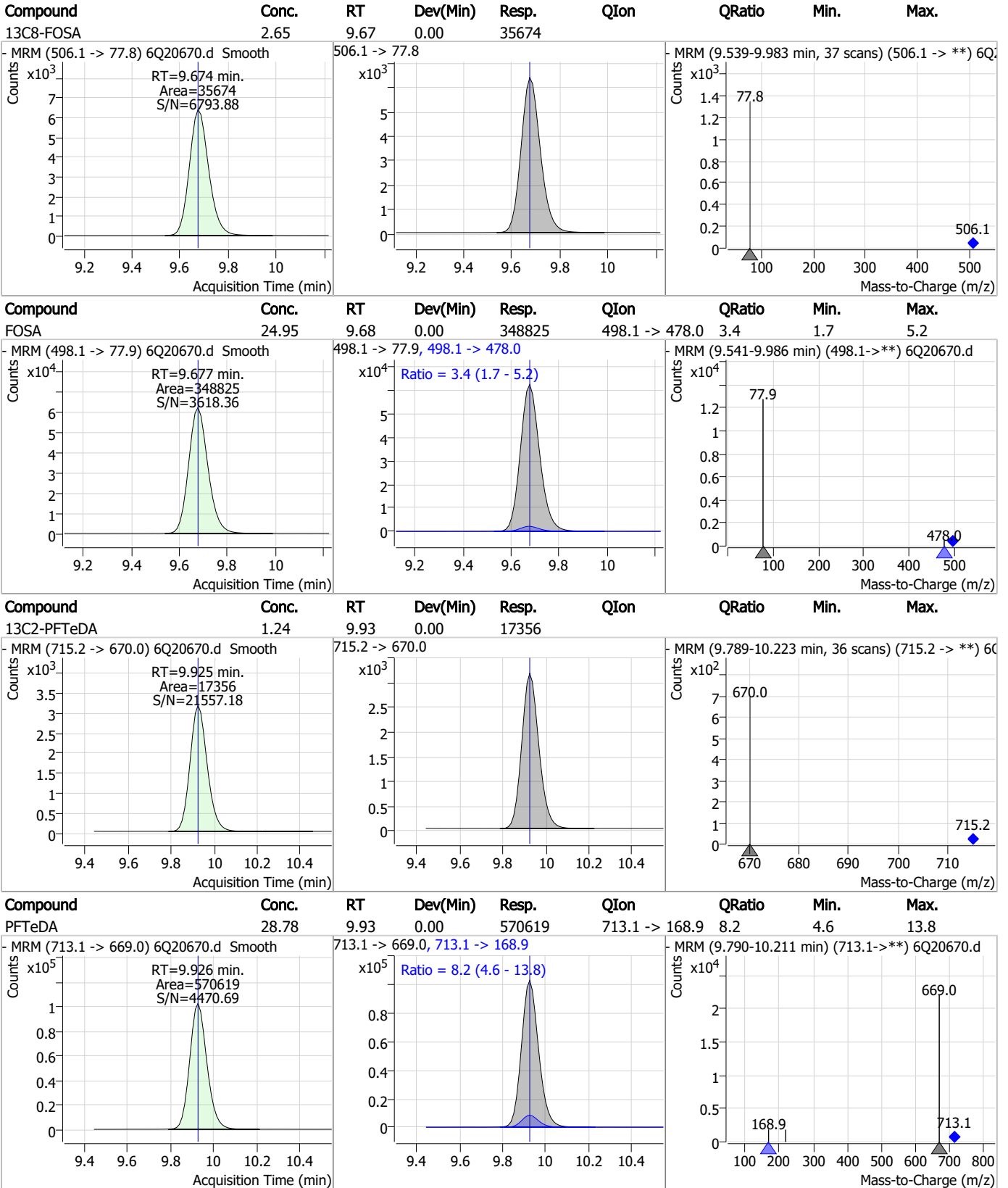


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Perfluorinated Compounds by LC/MS/MS

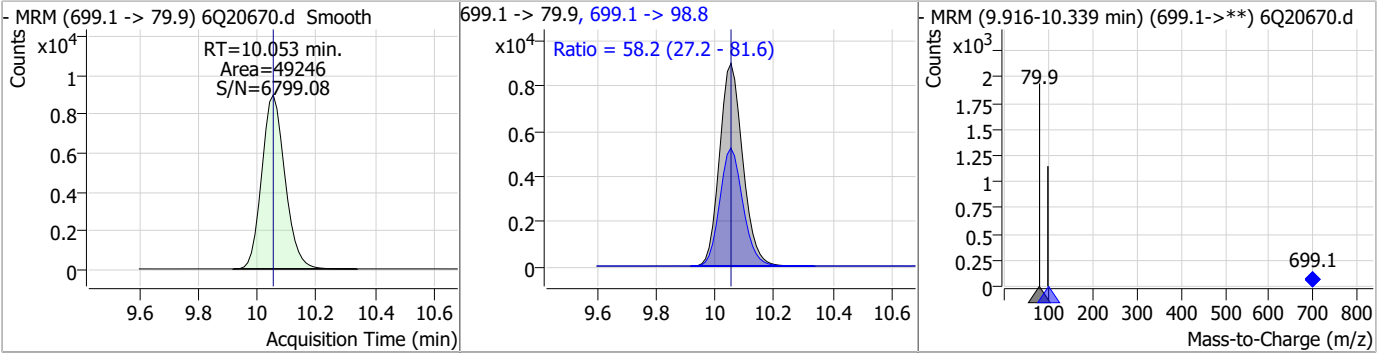


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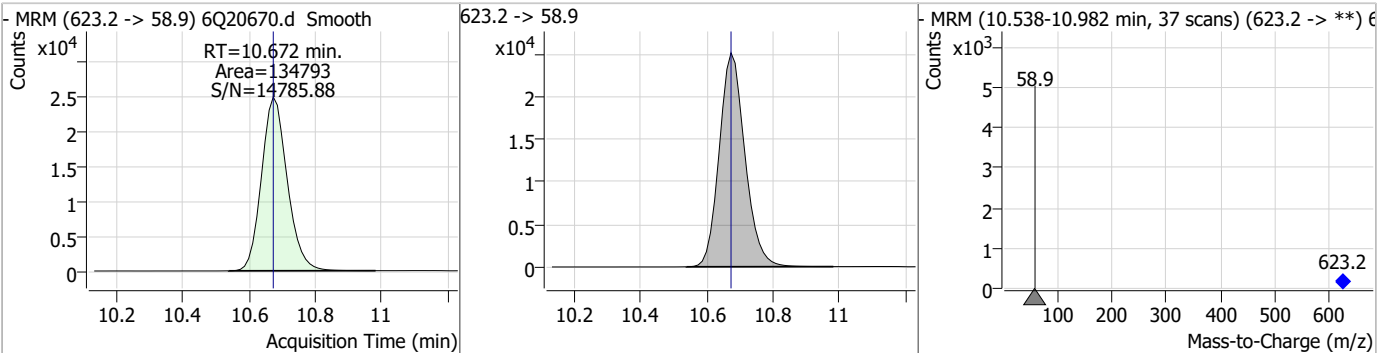
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Perfluorinated Compounds by LC/MS/MS

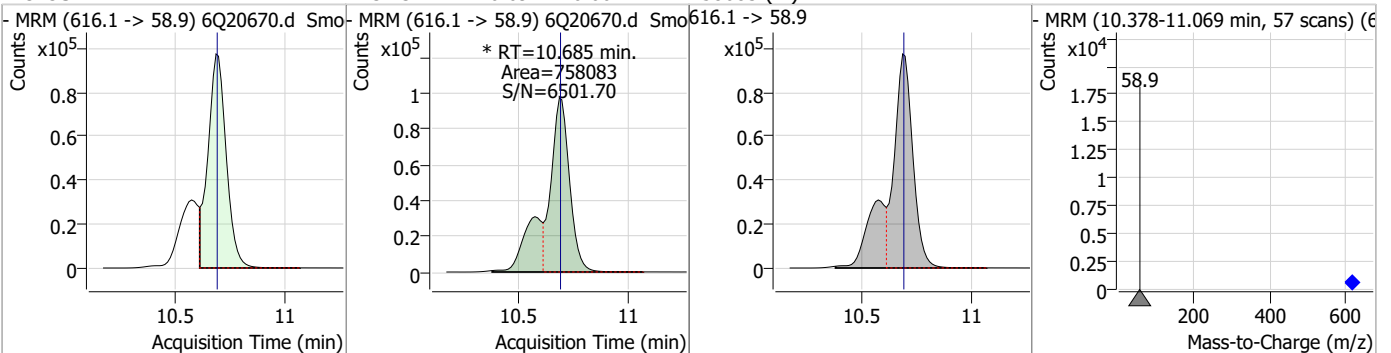
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	25.71	10.05	0.00	49246	699.1 -> 98.8	58.2	27.2	81.6



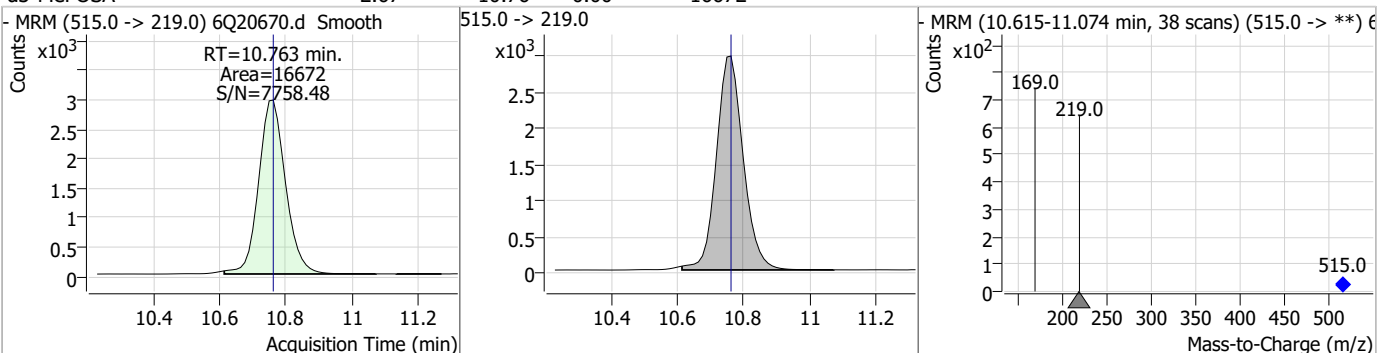
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.26	10.67	0.00	134793				



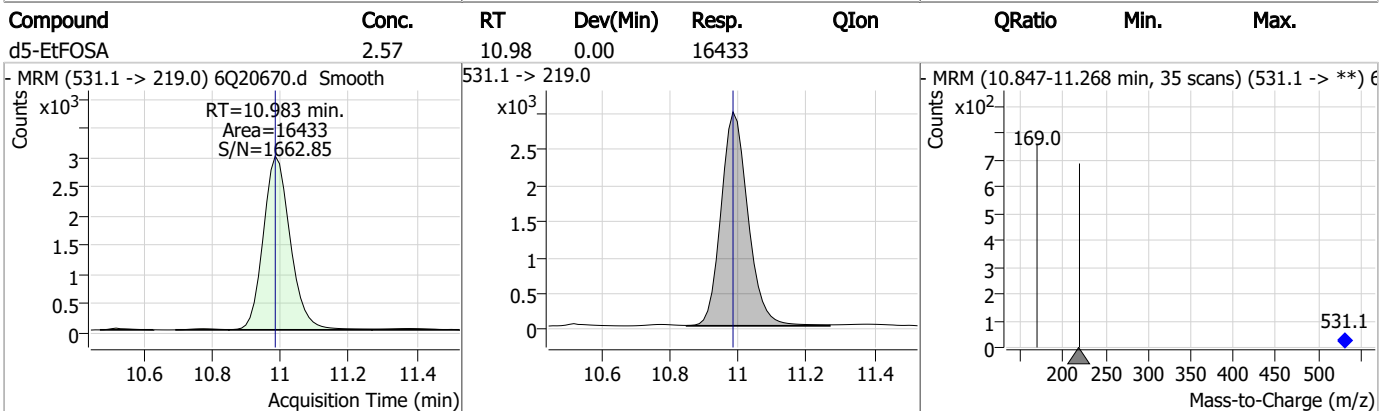
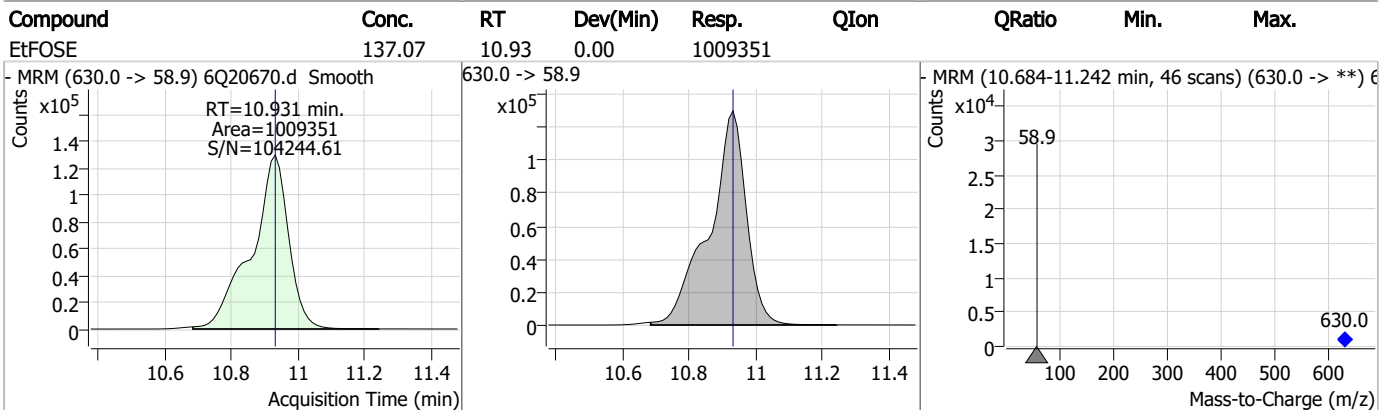
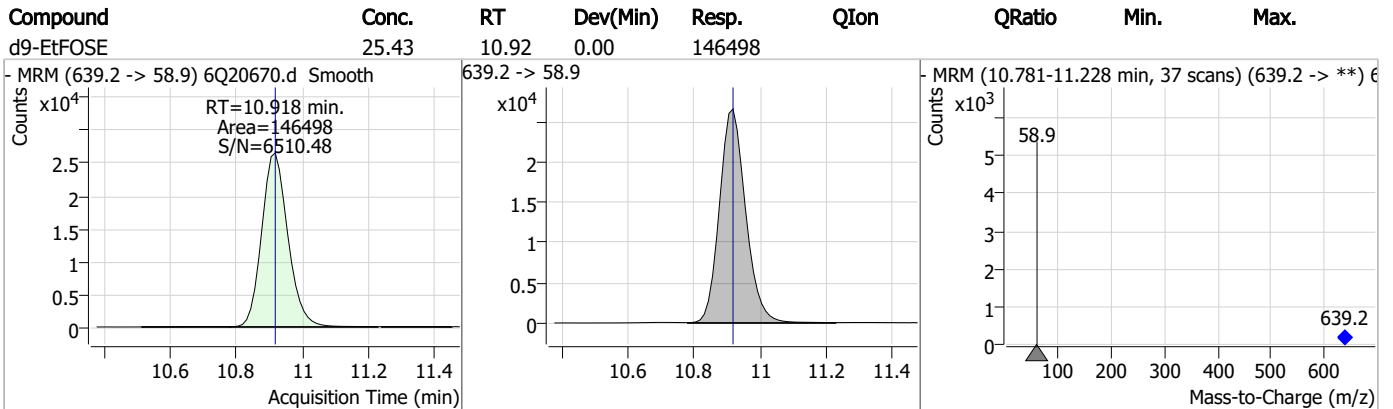
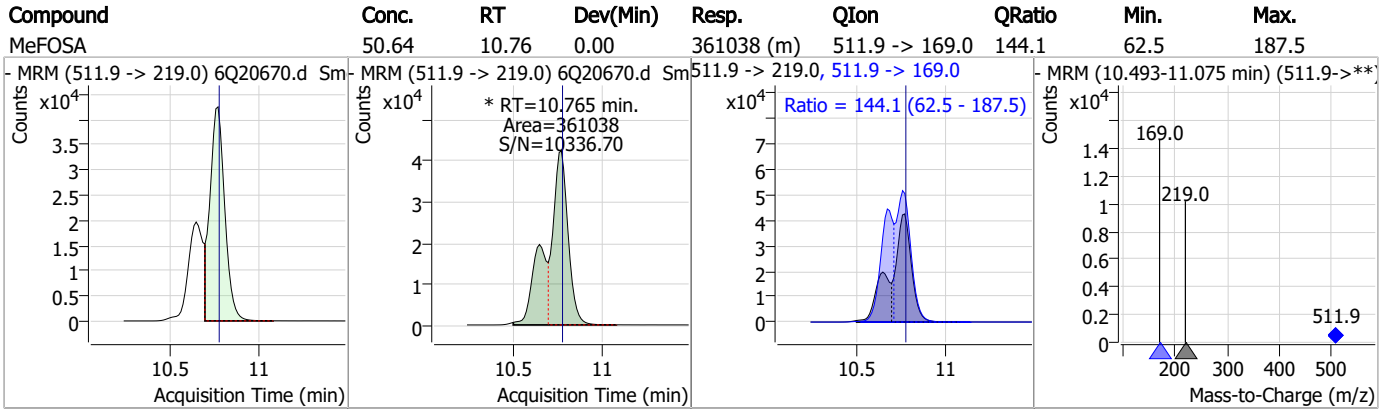
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	134.32	10.69	0.00	758083 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.67	10.76	0.00	16672				



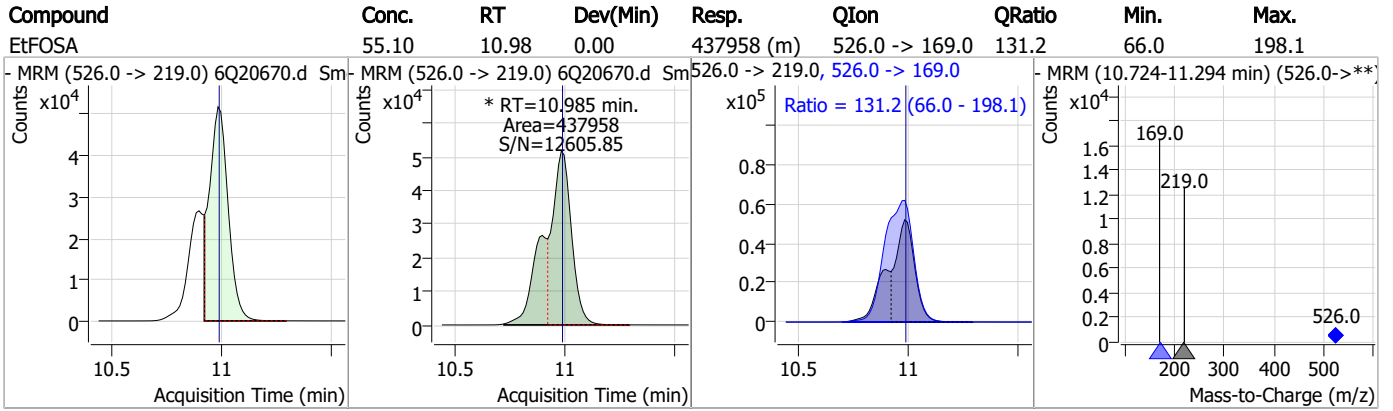
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q307-IC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20670.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 20:29 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20671.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 8:43:26 PM
 Sample Name : ic307-8
 Vial : P1-A9
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	168360	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	61219	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	67935	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	68114	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	105232	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	47903	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	27052	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	31232	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	36704	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	19115	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	34425	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	23329	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	15878	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	14027	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	1962	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	3367	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	3340	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	29324	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	44204	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	25223	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	124748	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	129376	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15857	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17092	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	20577	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	72067	5.00 µg/L	0.000
18O2-PFHxS	7.403	403.0 -> 83.9	11054	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	111936	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	40331	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	58937	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	68321	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	1962	3.96 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 79.2%		
13C2-6:2FTS	7.039	429.1 -> 80.9	3367	4.58 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 91.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3340	4.70 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 94.1%		
13C2-PFDoDA	9.211	615.1 -> 570.0	36704	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.3%		
13C2-PFTeDA	9.925	715.2 -> 670.0	19115	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 98.9%		
13C3-PFBS	5.635	302.1 -> 79.9	23329	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 99.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	15878	2.70 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 = 107.8%	
13C4-PFBA	3.022	216.8 -> 171.9	168360	9.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C4-PFHpA	6.633	367.1 -> 322.0	68114	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	5.692	318.0 -> 273.0	67935	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C5-PFPeA	4.459	268.3 -> 223.0	61219	4.81 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C6-PFDA	8.301	519.1 -> 474.1	27052	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C7-PFUnDA	8.780	570.0 -> 525.1	31232	1.07 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 85.9%	
13C8-FOSA	9.674	506.1 -> 77.8	34425	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C8-PFOA	7.276	421.1 -> 376.0	105232	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C8-PFOS	8.476	507.1 -> 79.9	14027	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.1%	
13C9-PFNA	7.807	472.1 -> 427.0	47903	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%	
d3-MeFOSAA	8.346	573.2 -> 419.0	29324	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	44204	10.19 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	17092	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
d5-EtFOSAA	8.554	589.2 -> 419.0	25223	4.97 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	124748	23.63 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	129376	21.04 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 84.2%	
d5-EtFOSA	10.983	531.1 -> 219.0	15857	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	892085	249.98 µg/L	97
		327.1 -> 80.9	301004		
6:2FTS	7.039	427.1 -> 407.0	874010	221.01 µg/L	100
		427.1 -> 80.9	260381		
8:2FTS	8.090	527.1 -> 507.0	437933	204.91 µg/L	92
		527.1 -> 80.8	166252		
EtFOSAA	8.555	584.2 -> 419.1	262713	66.18 µg/L	m 95
		584.2 -> 526.0	140625		
FOSA	9.677	498.1 -> 77.9	897593	66.54 µg/L	99
		498.1 -> 478.0	27008		
MeFOSAA	8.347	570.1 -> 419.0	426051	66.17 µg/L	m 95
		570.1 -> 483.0	81202		
PFBA	3.018	212.8 -> 168.9	1717819	264.76 µg/L	100
PFBS	5.648	298.7 -> 79.9	537113	57.89 µg/L	98
		298.7 -> 98.8	214165		
PFDA	8.301	512.9 -> 469.0	2539824	67.40 µg/L	96
		512.9 -> 219.0	346012		
PFDoDA	9.211	613.1 -> 569.0	1808047	62.97 µg/L	97
		613.1 -> 319.0	276250		
PFDS	9.374	599.0 -> 79.9	270438	64.70 µg/L	92

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8	125911	65.21	µg/L	98
		363.1 -> 319.0	2144226			
PFHpS	7.972	363.1 -> 169.0	325997	56.00	µg/L	91
		449.0 -> 79.9	452678			
PFHxA	5.694	449.0 -> 98.9	254256	67.58	µg/L	99
		313.0 -> 269.0	1683523			
PFHxS	7.393	313.0 -> 118.9	85443	56.73	µg/L	97
		398.7 -> 79.9	479040			
PFNA	7.808	398.7 -> 98.9	237816	68.69	µg/L	98
		463.0 -> 419.0	2615948			
PFNS	8.955	463.0 -> 219.0	473795	64.49	µg/L	97
		548.8 -> 79.9	452934			
PFOA	7.278	548.8 -> 98.9	222816	66.52	µg/L	99
		413.0 -> 369.0	3320517			
PFOS	8.478	413.0 -> 169.0	537245	62.45	µg/L	69
		498.9 -> 79.9	475934			
PFPeA	4.461	498.9 -> 98.8	225291	127.98	µg/L	100
		263.0 -> 219.0	2088230			
PFPeS	6.697	349.1 -> 79.9	477541	57.83	µg/L	99
		349.1 -> 98.9	222895			
PFTeDA	9.926	713.1 -> 669.0	1380446	63.23	µg/L	99
		713.1 -> 168.9	119813			
PFTrDA	9.595	663.0 -> 619.0	1767031	63.90	µg/L	98
		663.0 -> 168.9	182843			
PFUnDA	8.780	563.1 -> 519.0	1594414	69.30	µg/L	94
		563.1 -> 269.1	282310			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	2537519	122.62	µg/L	97
		632.9 -> 452.9	745377			
9Cl-PF3ONS	8.819	530.8 -> 351.0	3832683	114.31	µg/L	90
		532.8 -> 353.0	1310820			
ADONA	6.883	376.9 -> 250.9	8543779	116.62	µg/L	97
		376.9 -> 84.8	1968661			
HFPO-DA	6.083	284.9 -> 168.9	586049	129.43	µg/L	100
		284.9 -> 184.9	63538			
3:3FTCA	3.896	241.0 -> 177.0	404342	384.22	µg/L	100
		241.0 -> 117.0	53030			
5:3FTCA	6.310	341.0 -> 237.1	8485600	1630.92	µg/L	95
		341.0 -> 217.0	5644808			
7:3FTCA	7.711	441.0 -> 316.9	5738638	1574.43	µg/L	88
		441.0 -> 336.9	12735712			
EtFOSA	10.985	526.0 -> 219.0	1053992	137.42	µg/L	100
		526.0 -> 169.0	1392308			
EtFOSE	10.931	630.0 -> 58.9	2575456	396.02	µg/L	100
		511.9 -> 219.0	880063			
MeFOSA	10.765	511.9 -> 169.0	1274119	120.40	µg/L	83
		616.1 -> 58.9	1872376			
MeFOSE	10.685	699.1 -> 79.9	121325	358.46	µg/L	100
		699.1 -> 98.8	67468			
PFDoDS	10.053	295.0 -> 201.0	376858	63.55	µg/L	98
		295.0 -> 84.9	98702			
NFDHA	5.576	279.0 -> 85.1	1393445	123.98	µg/L	99
		229.0 -> 84.9	1172496			
PFMBA	4.882	314.8 -> 134.9	3977955	130.05	µg/L	100
		314.8 -> 82.9	132678			
PFMPA	3.588			129.95	µg/L	100
PFEESA	6.188			114.07	µg/L	100

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

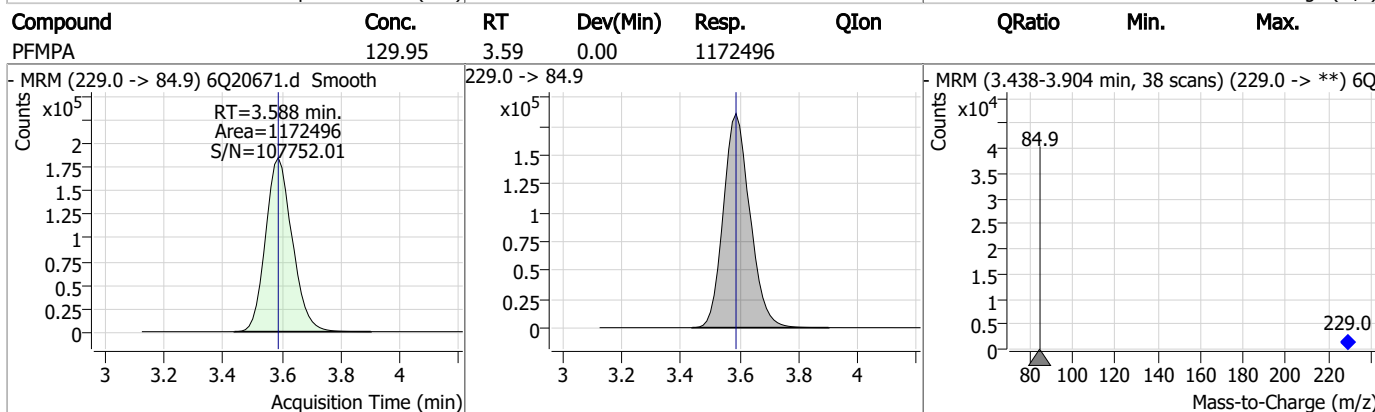
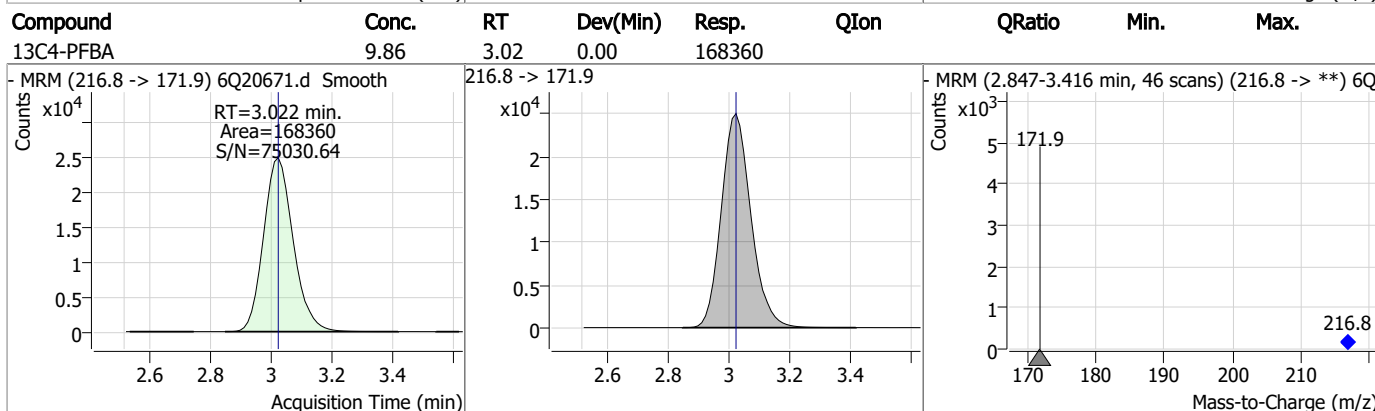
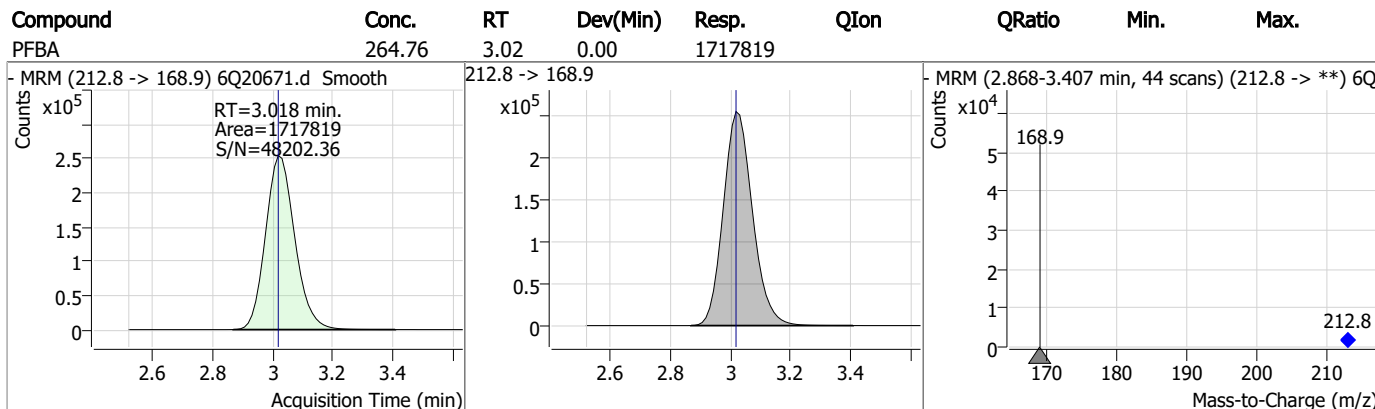
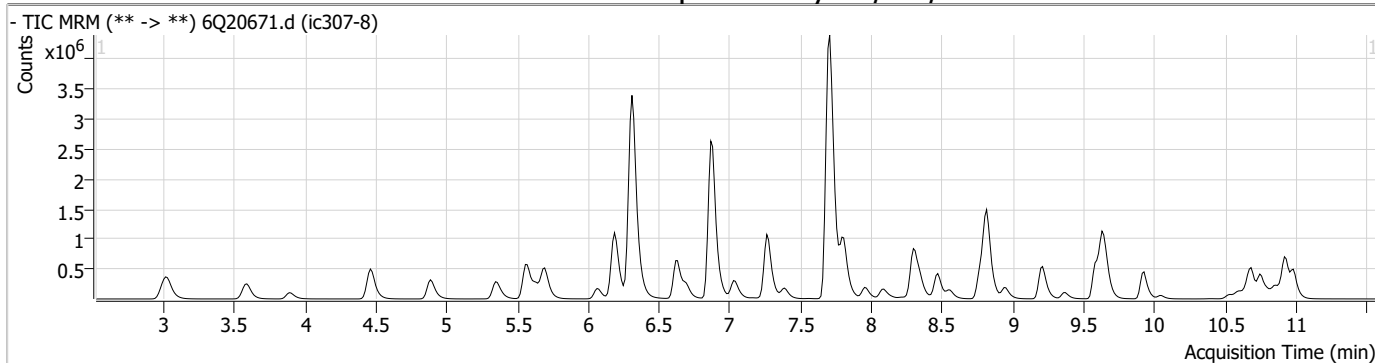
Perfluorinated Compounds by LC/MS/MS

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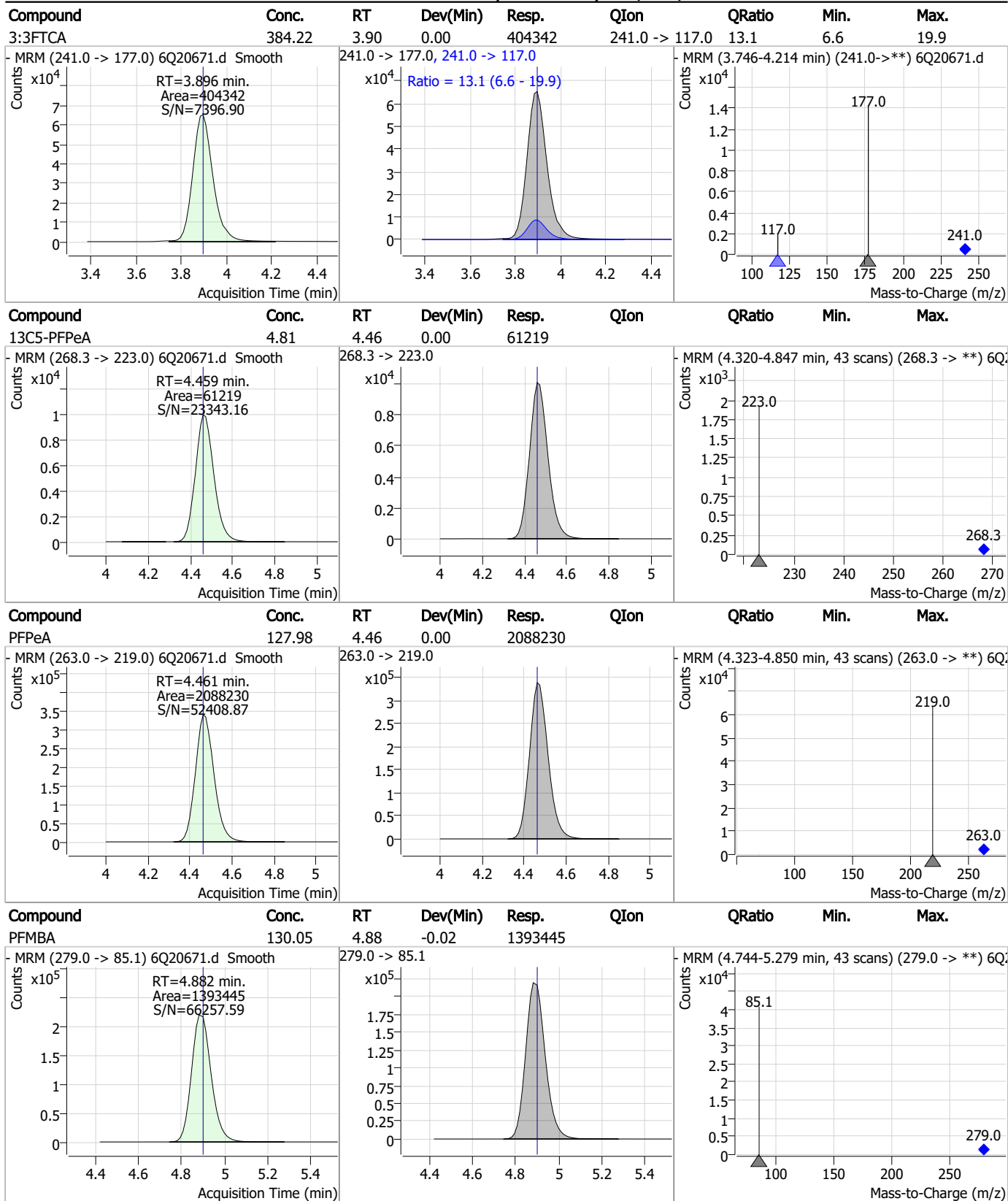
7.7.9

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Perfluorinated Compounds by LC/MS/MS

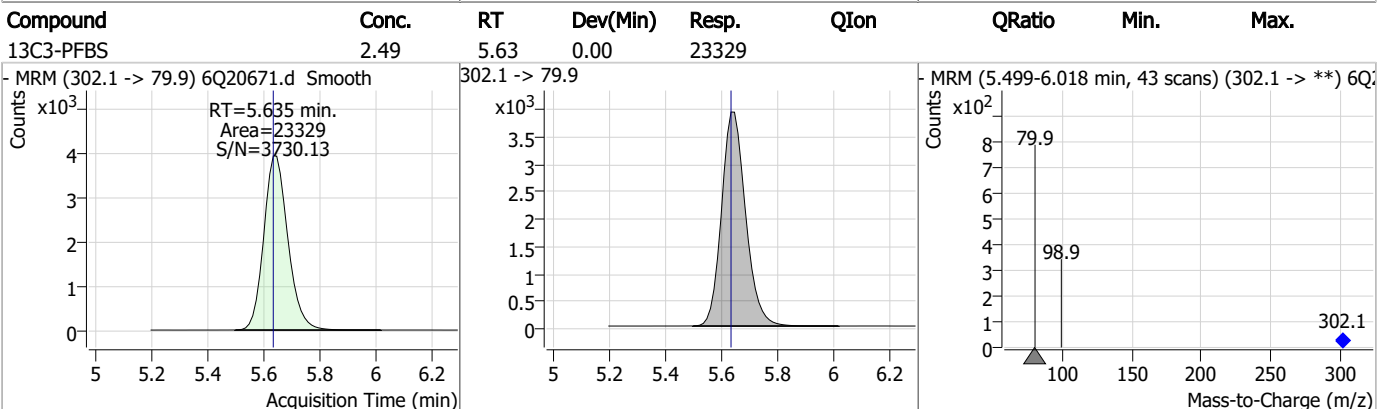
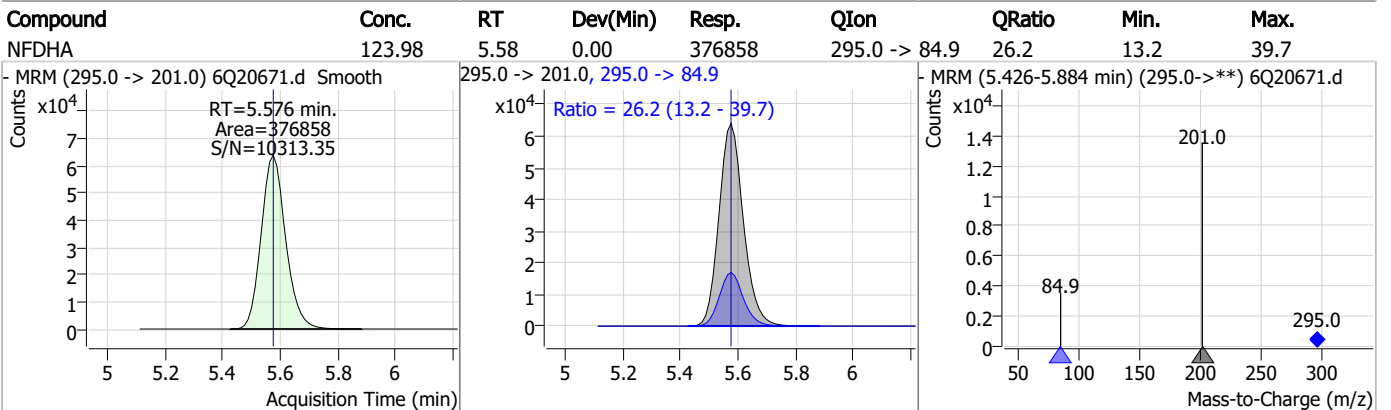
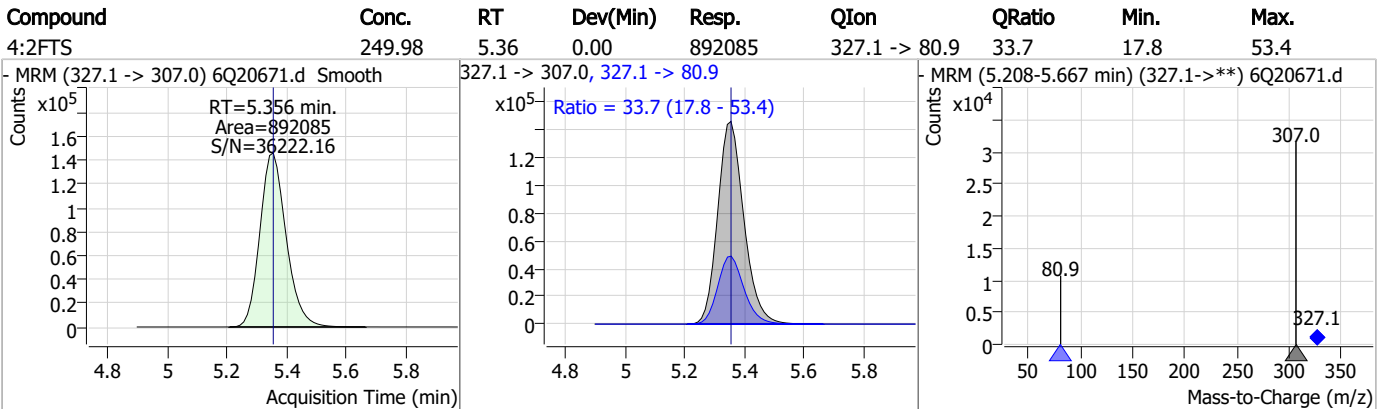
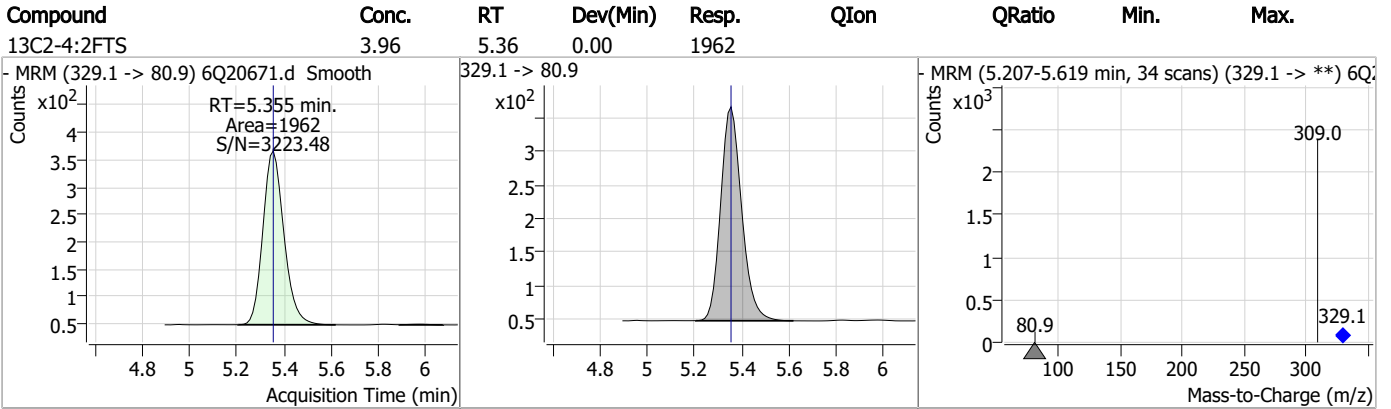


Perfluorinated Compounds by LC/MS/MS

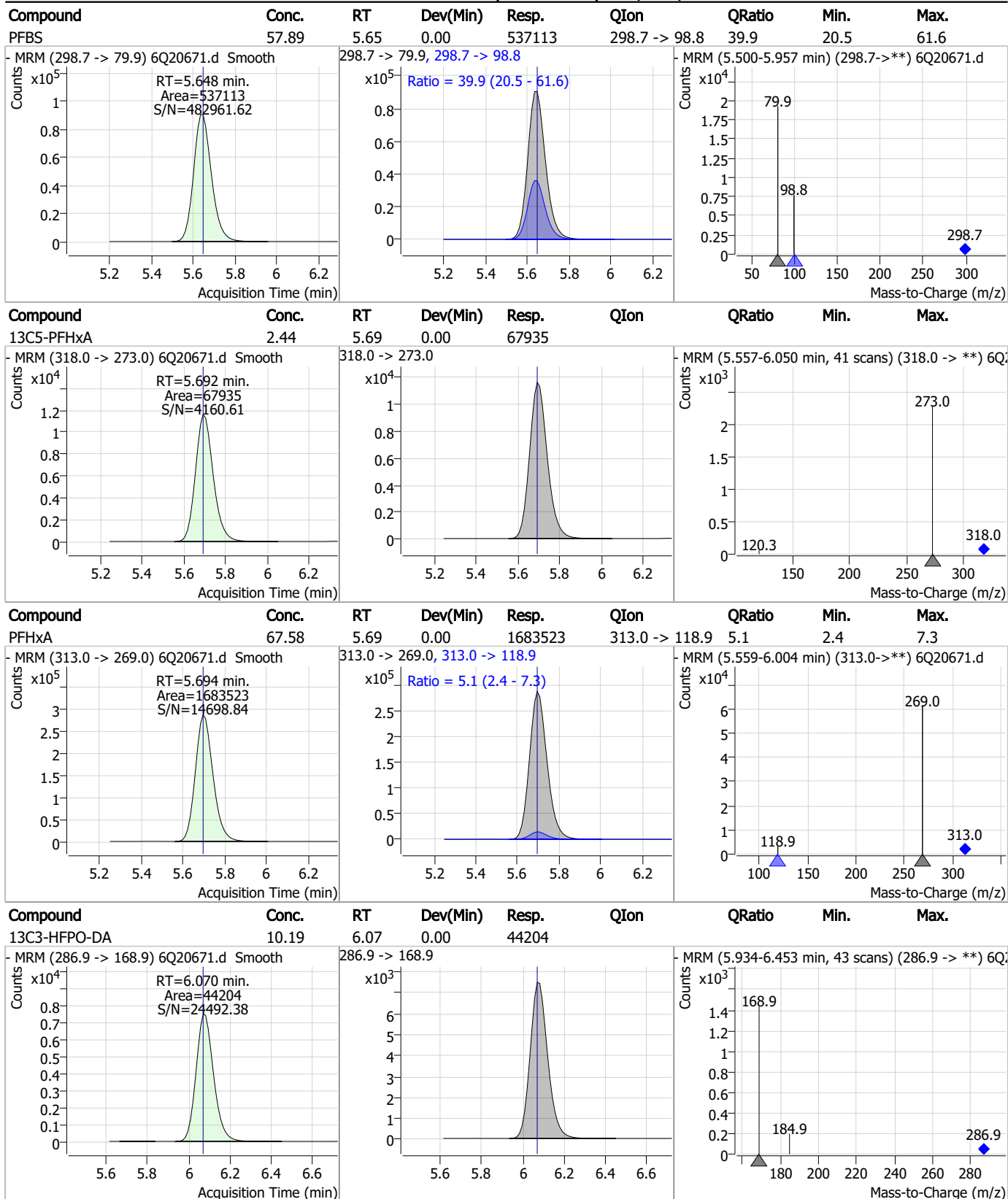


7.7.9
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

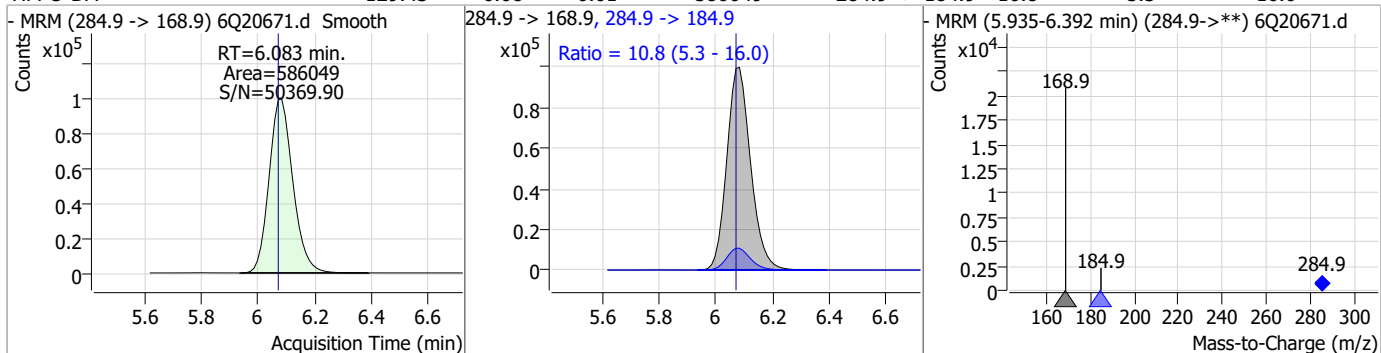


7.7.9
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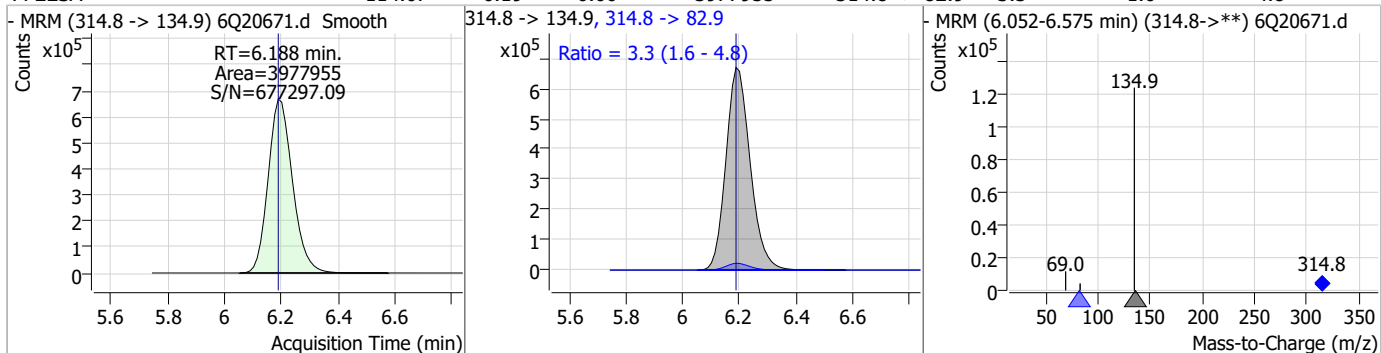


Perfluorinated Compounds by LC/MS/MS

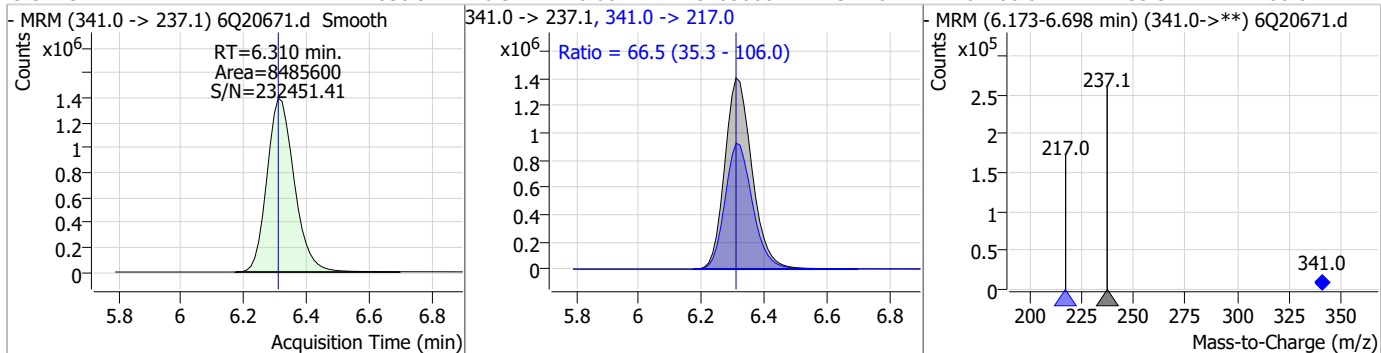
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	129.43	6.08	0.01	586049	284.9 -> 184.9	10.8	5.3	16.0



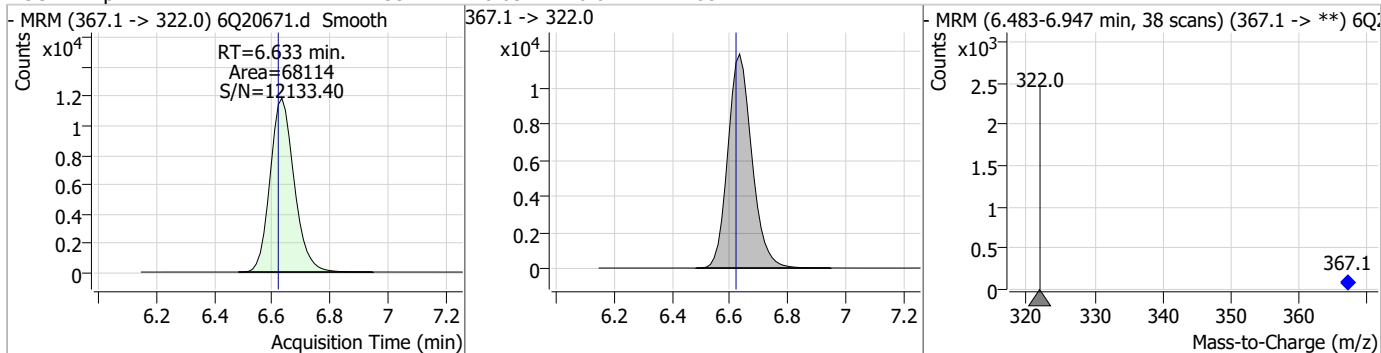
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	114.07	6.19	0.00	3977955	314.8 -> 82.9	3.3	1.6	4.8



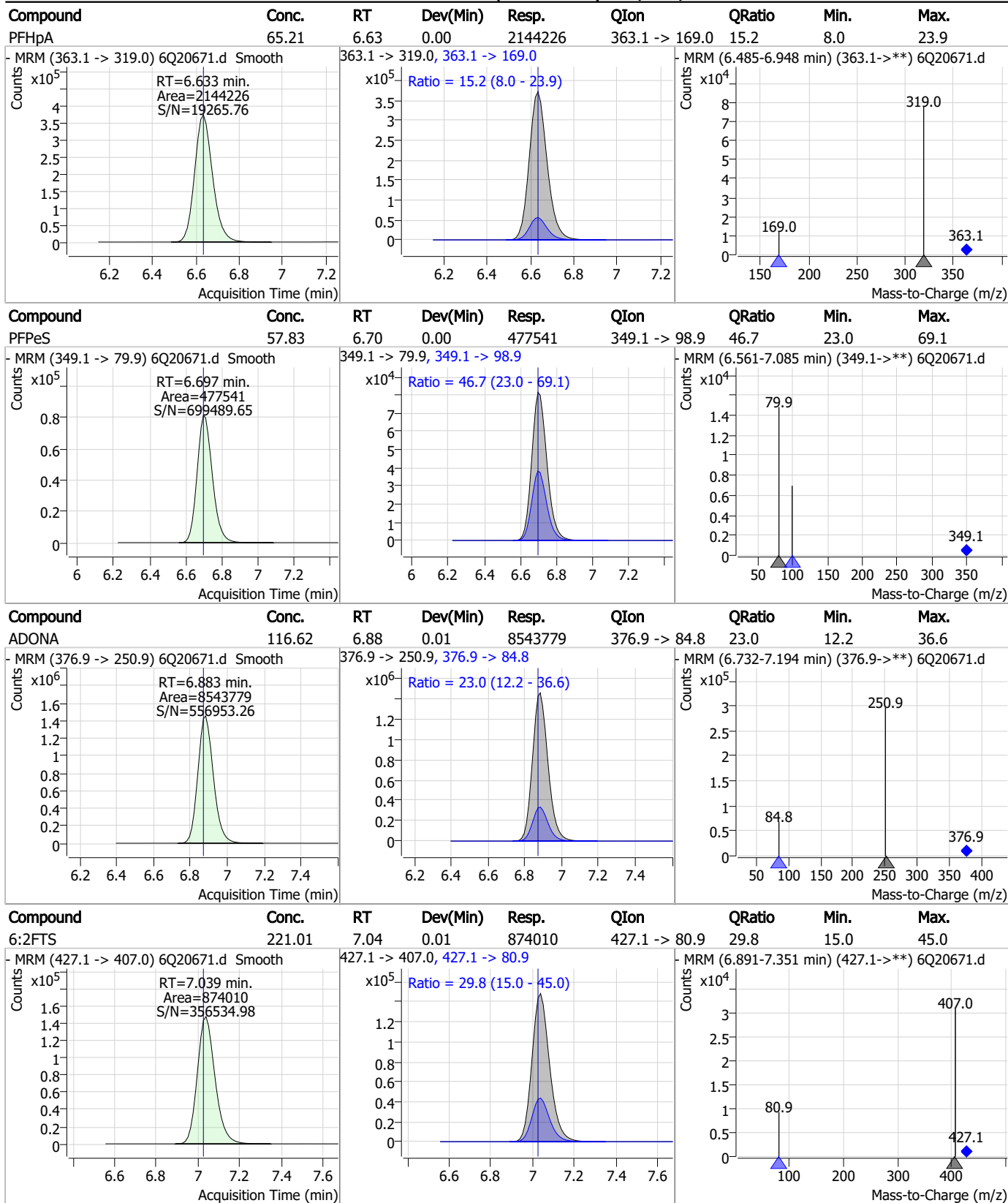
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1630.92	6.31	0.00	8485600	341.0 -> 217.0	66.5	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.63	0.01	68114	367.1 -> 322.0			



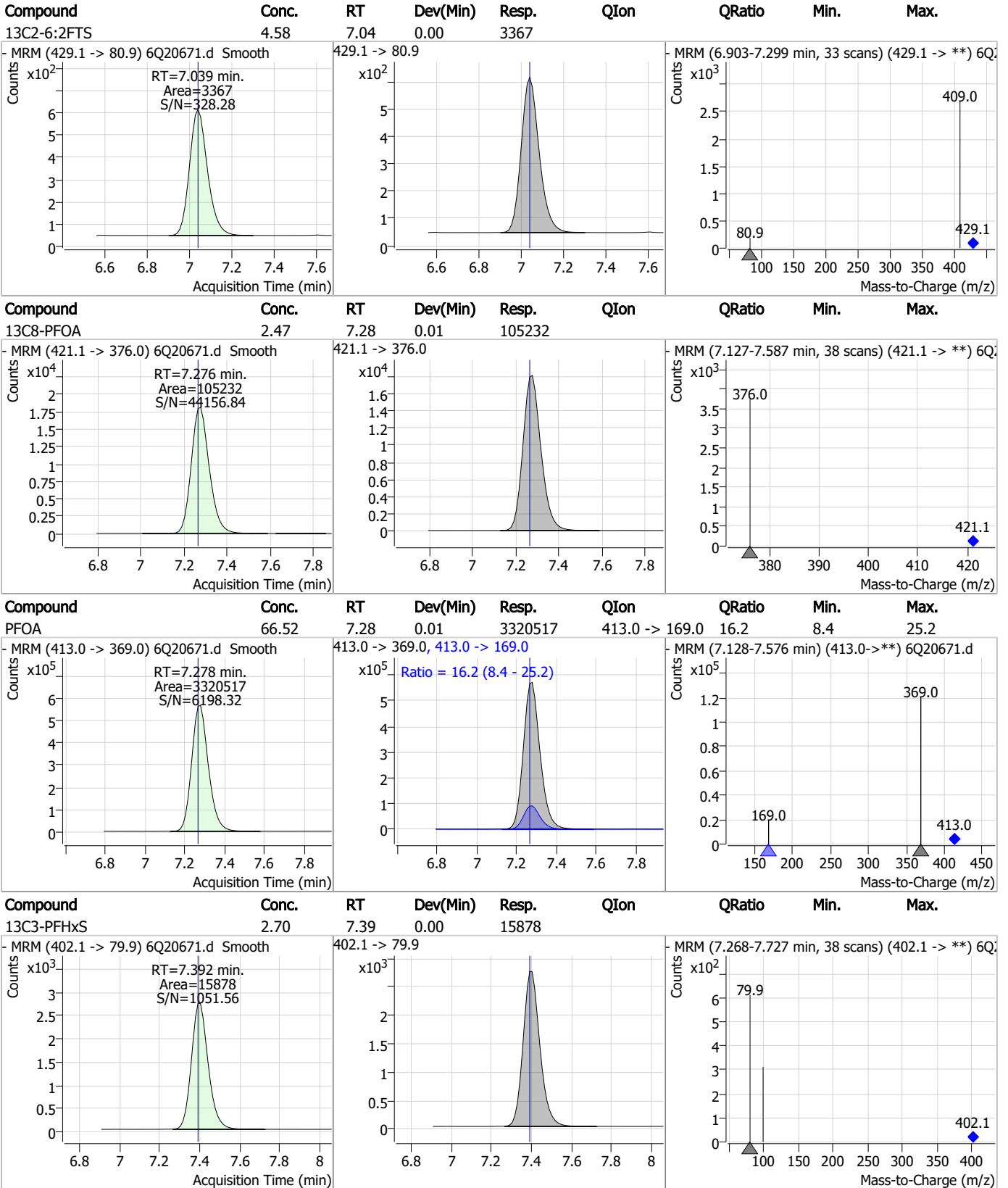
Perfluorinated Compounds by LC/MS/MS



7.7.9
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Perfluorinated Compounds by LC/MS/MS

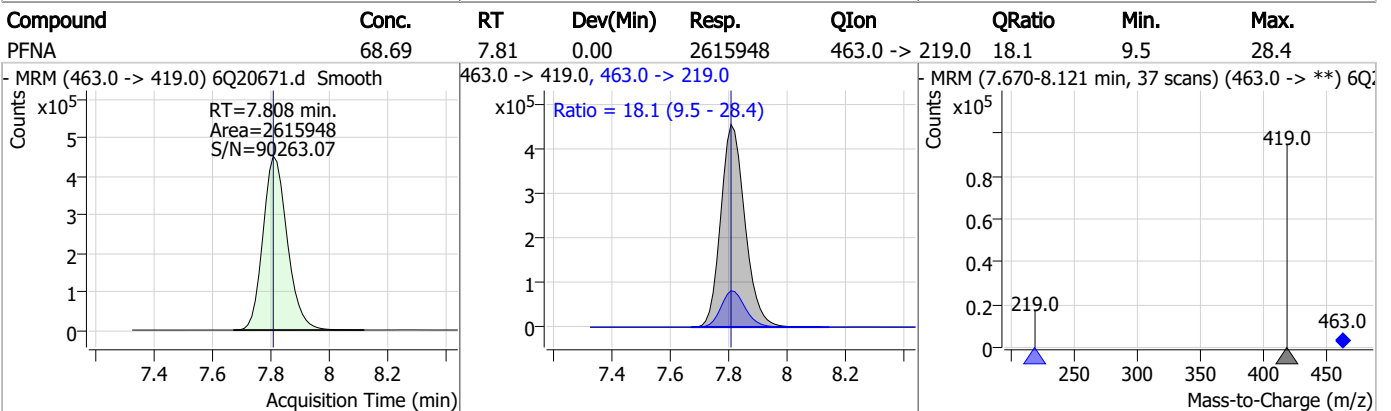
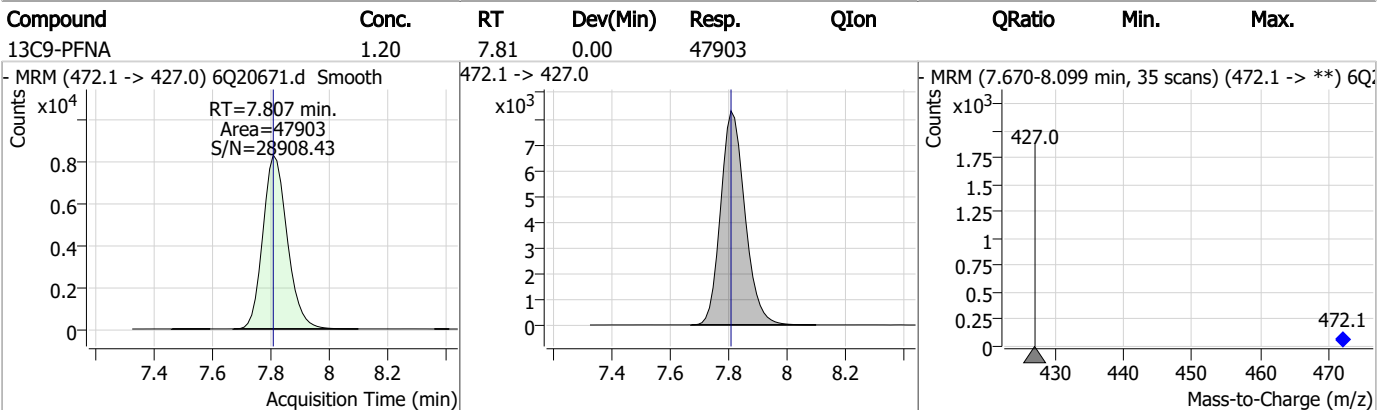
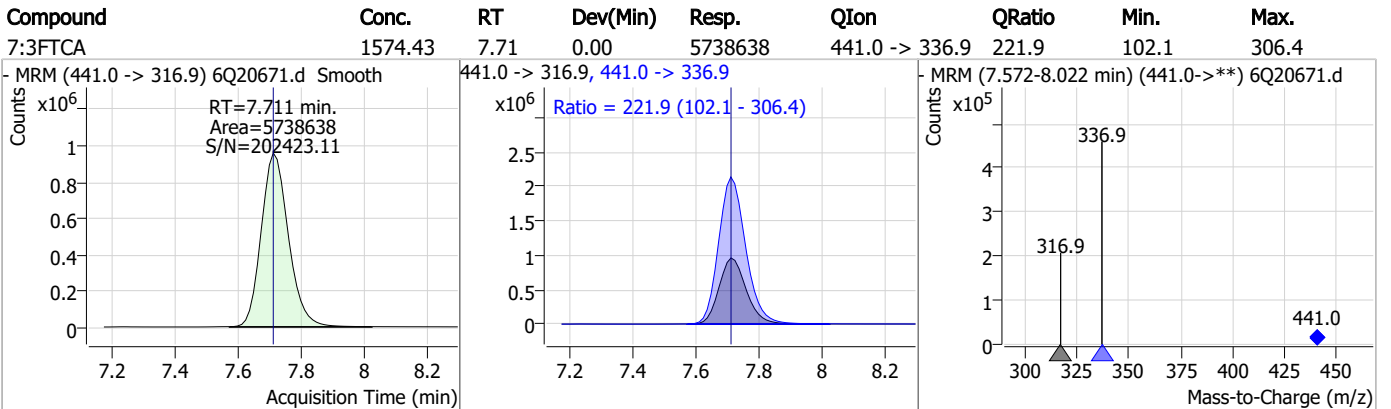
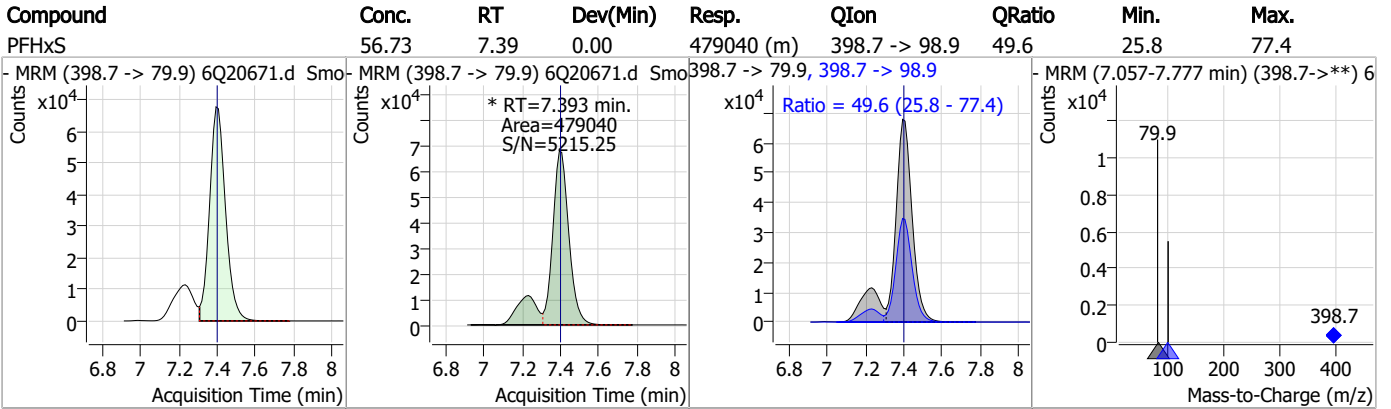


7.7.9

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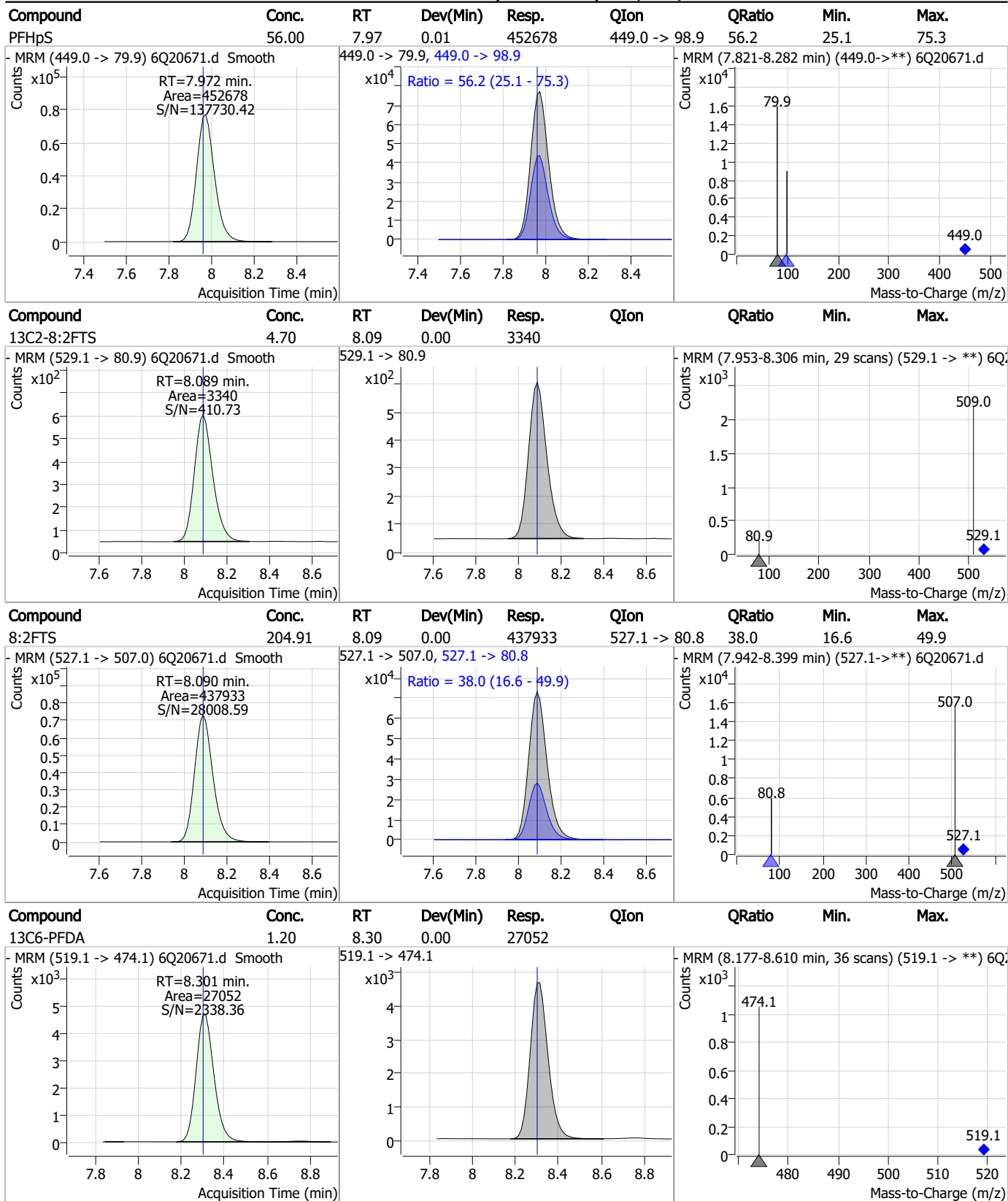
Perfluorinated Compounds by LC/MS/MS



7.7.9

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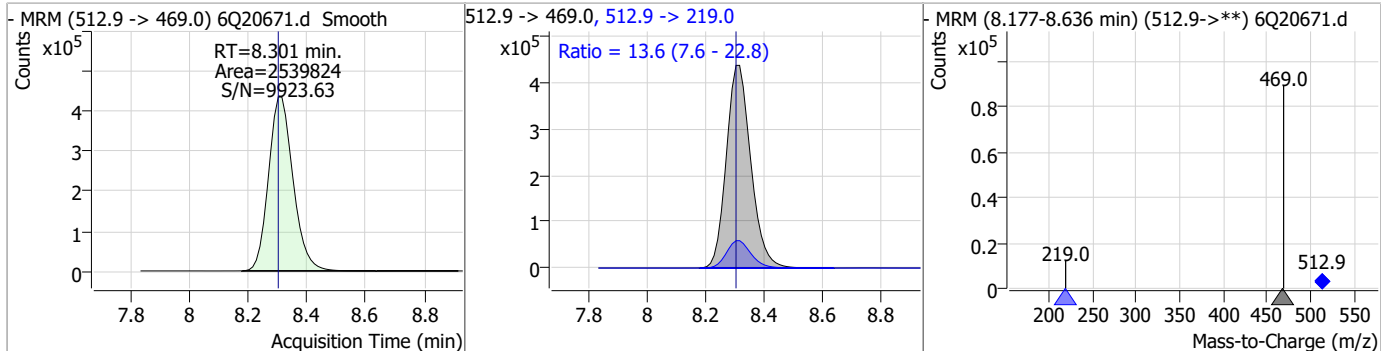
Perfluorinated Compounds by LC/MS/MS



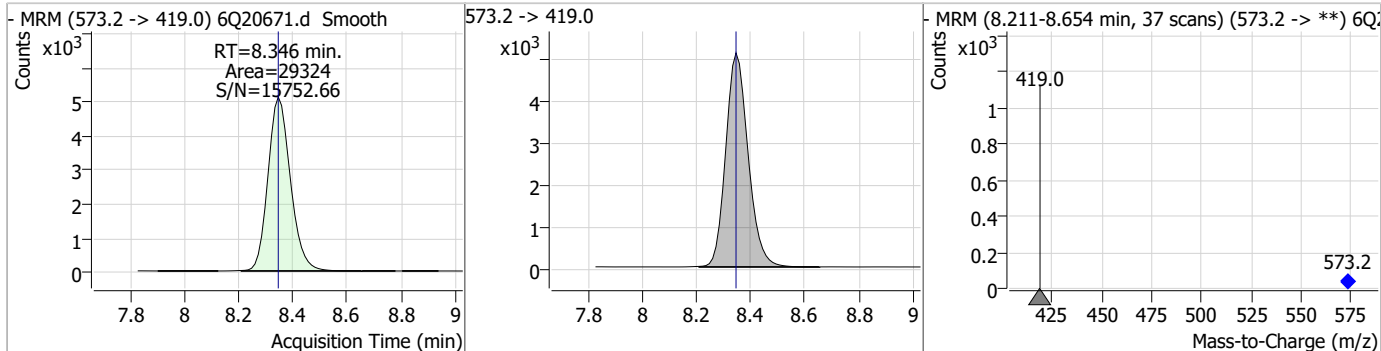
7.7.9
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Perfluorinated Compounds by LC/MS/MS

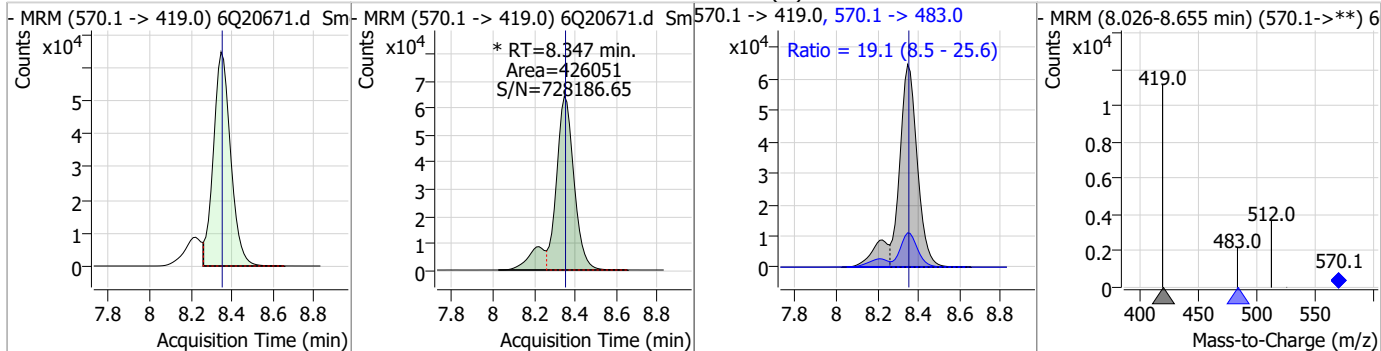
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	67.40	8.30	0.00	2539824	512.9 -> 219.0	13.6	7.6	22.8



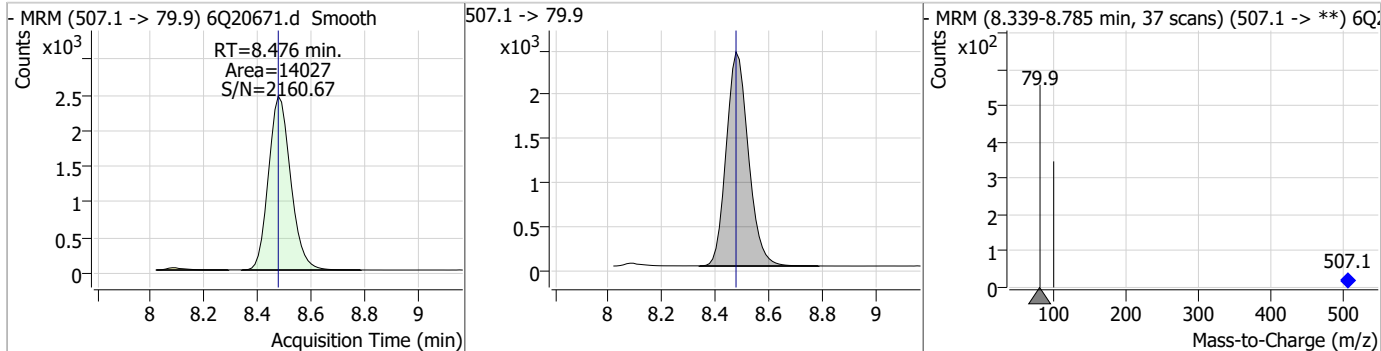
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.59	8.35	0.00	29324				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	66.17	8.35	0.00	426051 (m)	570.1 -> 483.0	19.1	8.5	25.6



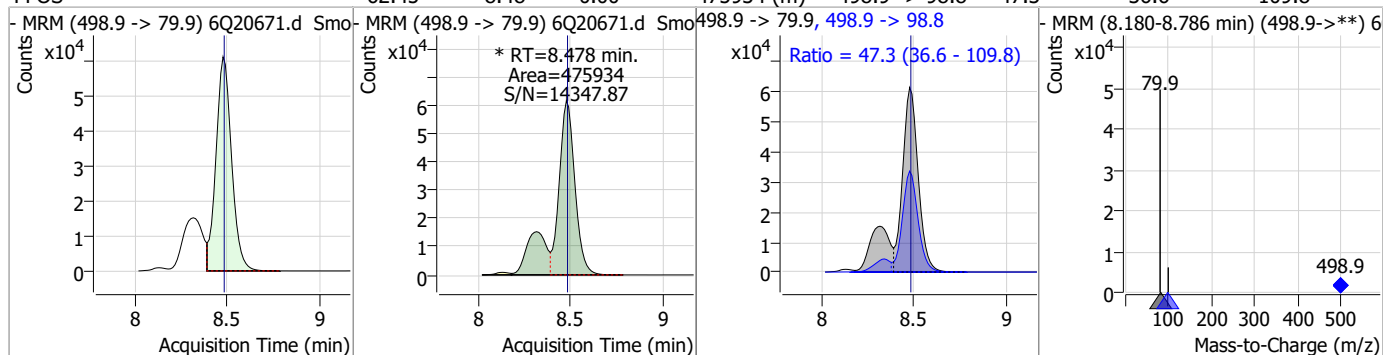
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.40	8.48	0.00	14027				



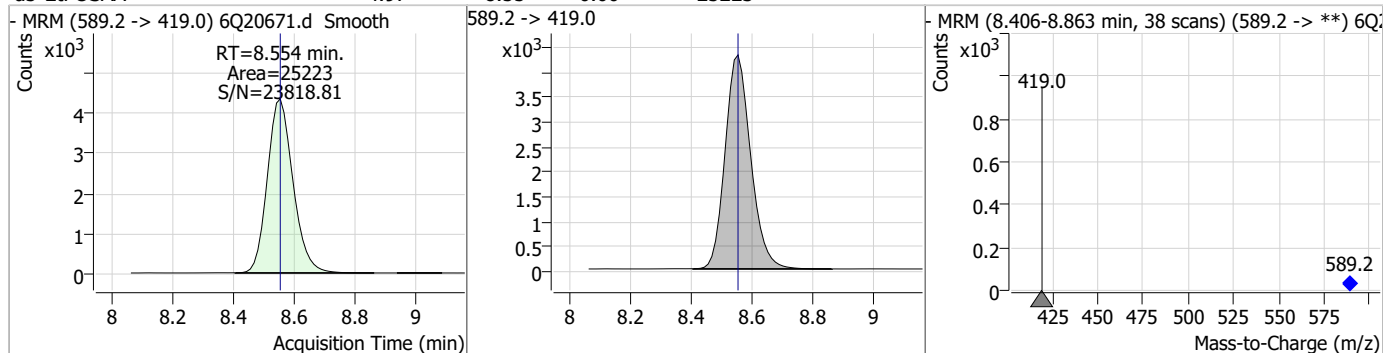
7.7.9
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Perfluorinated Compounds by LC/MS/MS

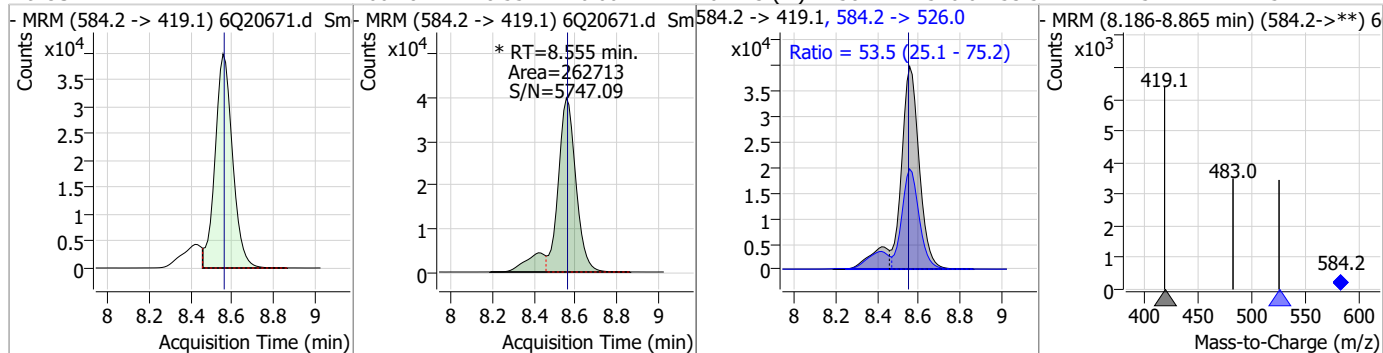
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	62.45	8.48	0.00	475934 (m)	498.9 -> 98.8	47.3	36.6	109.8



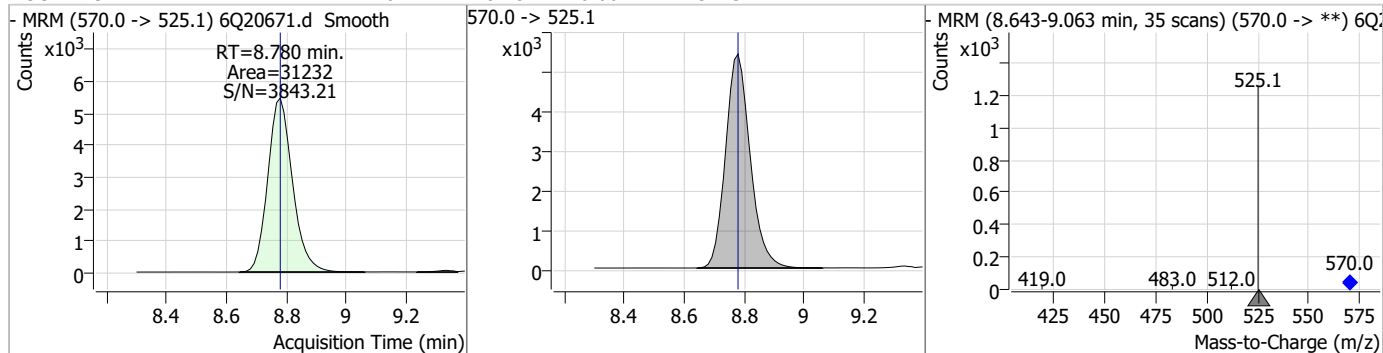
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.97	8.55	0.00	25223				



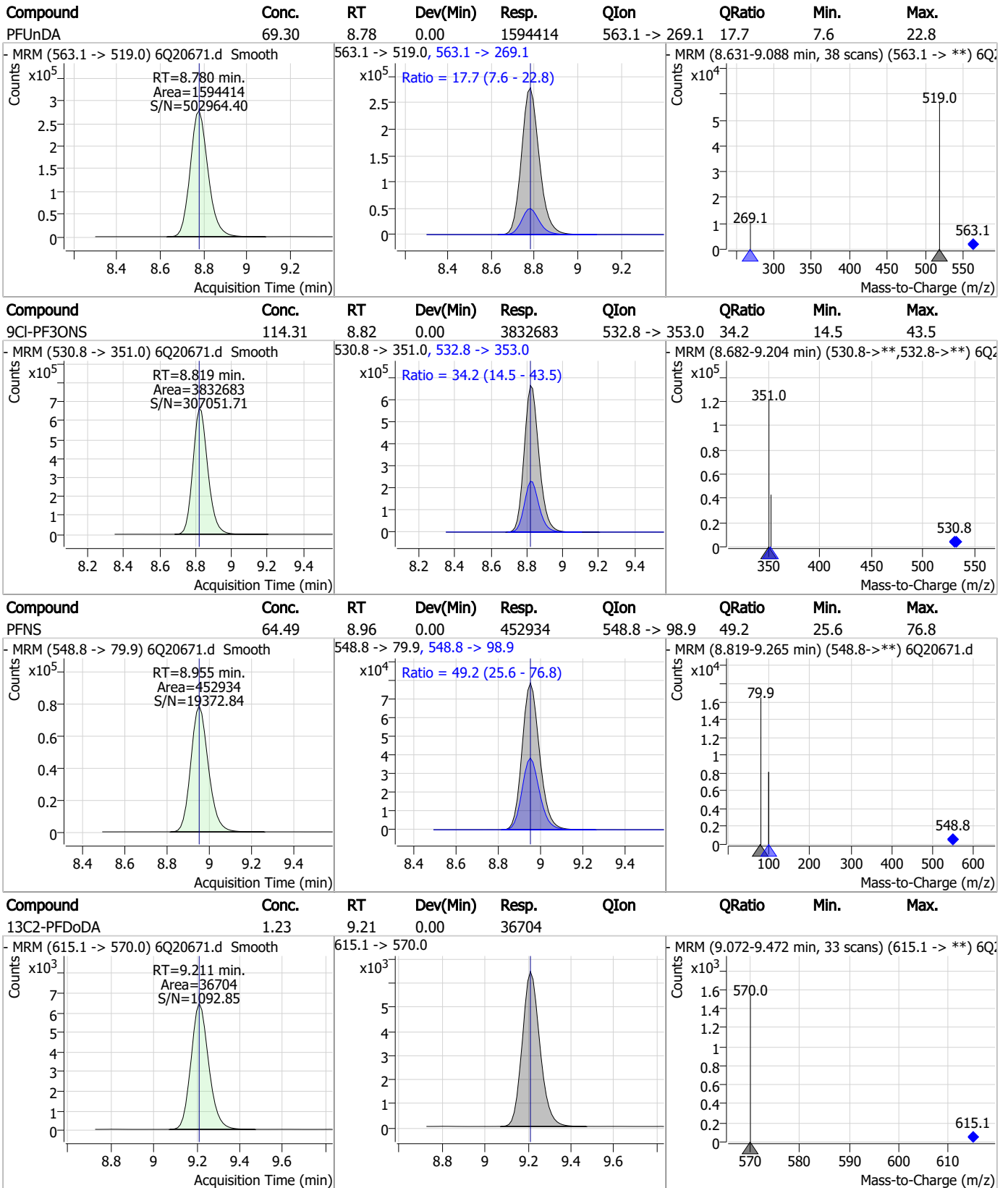
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	66.18	8.55	0.00	262713 (m)	584.2 -> 526.0	53.5	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.07	8.78	0.00	31232				



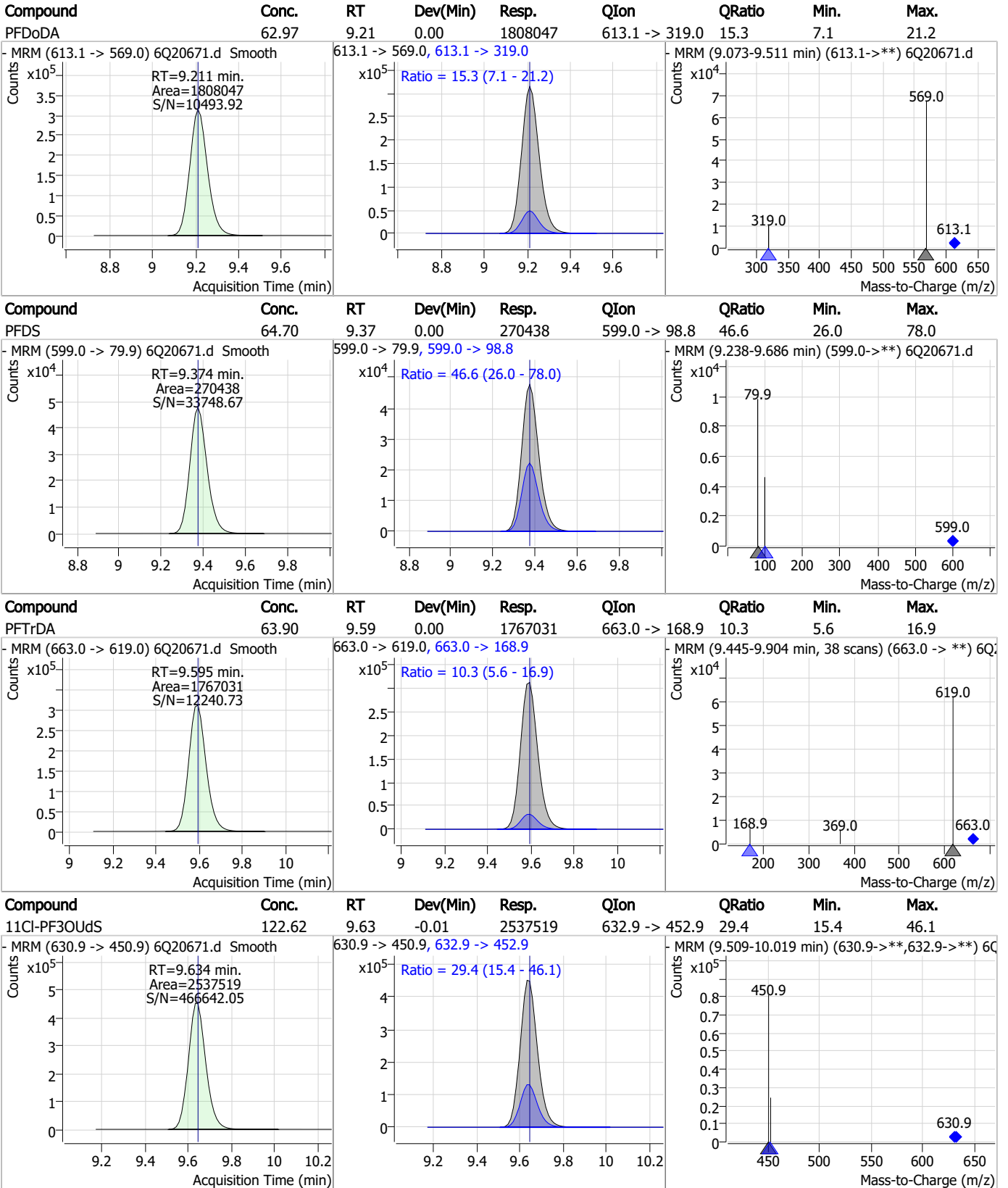
Perfluorinated Compounds by LC/MS/MS



7.7.9

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Perfluorinated Compounds by LC/MS/MS

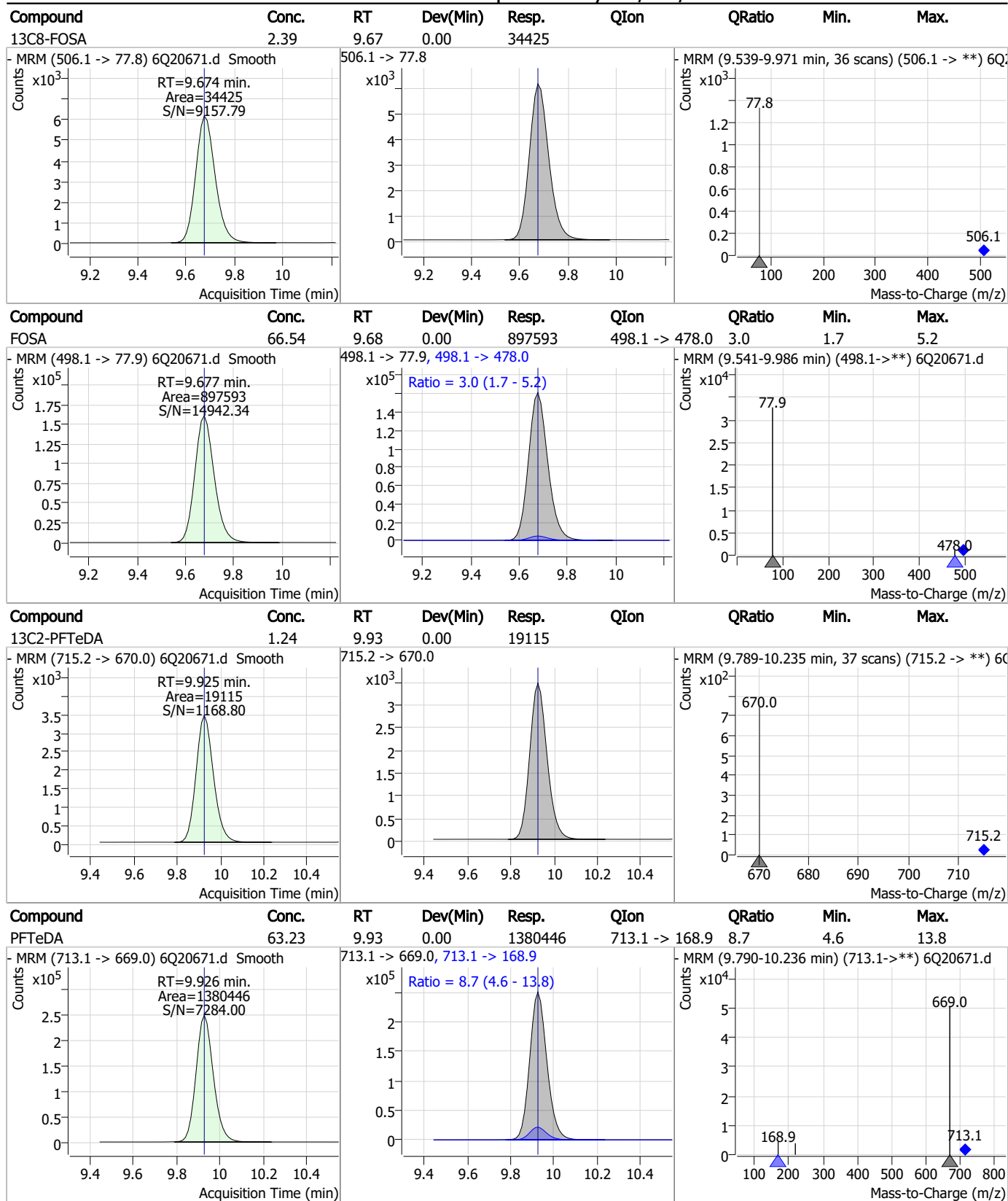


7.7.9

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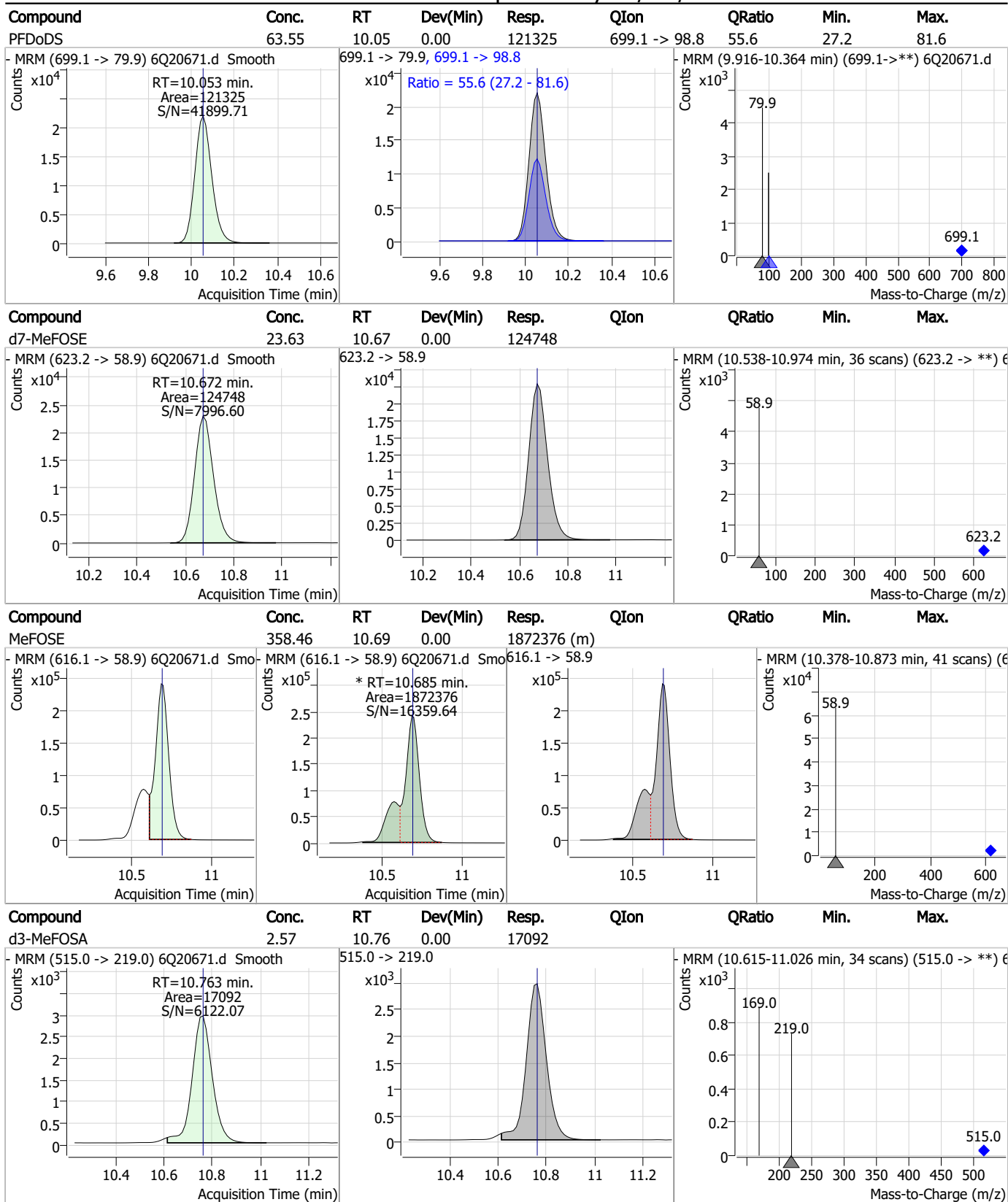
Perfluorinated Compounds by LC/MS/MS



7.7.9
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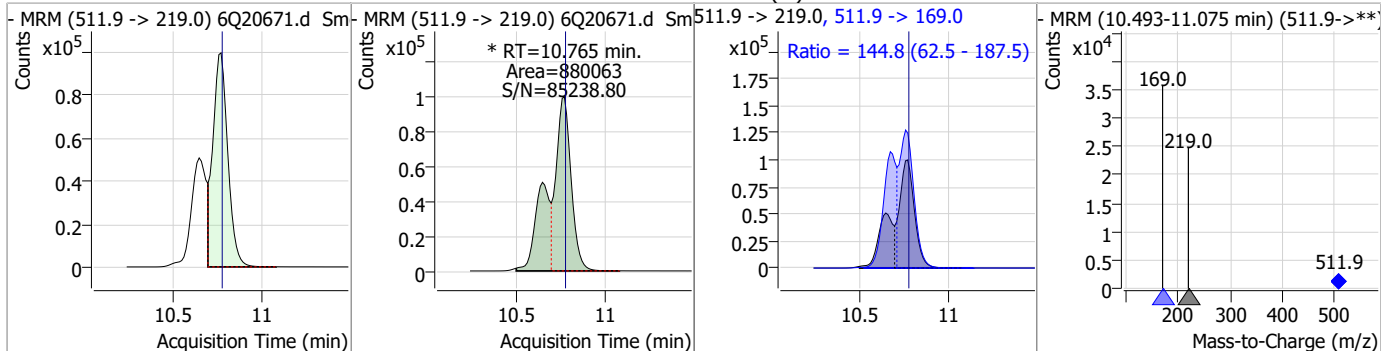
Perfluorinated Compounds by LC/MS/MS



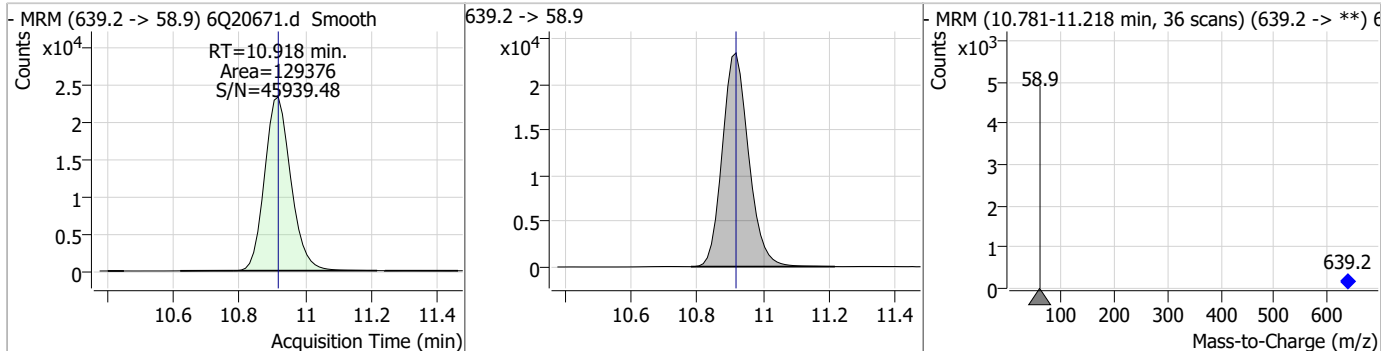
7.7.9
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Perfluorinated Compounds by LC/MS/MS

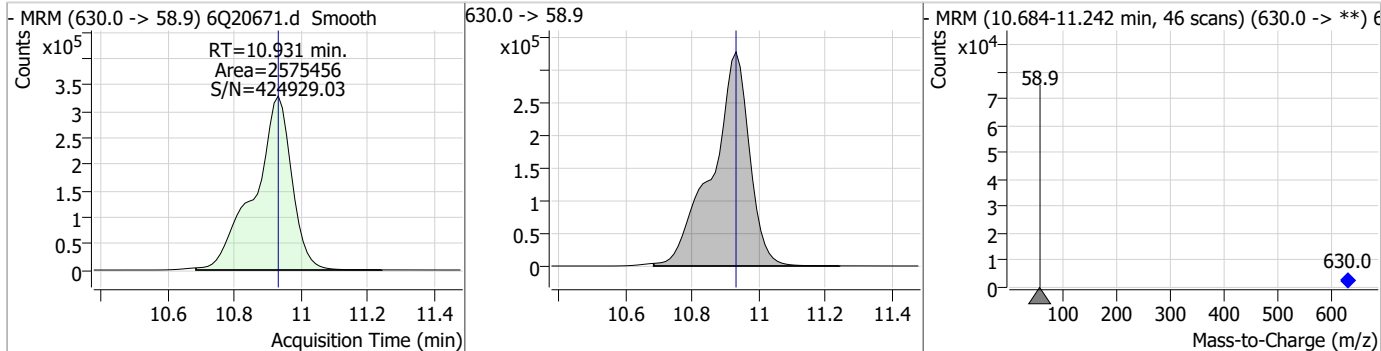
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	120.40	10.76	0.00	880063 (m)	511.9 -> 169.0	144.8	62.5	187.5



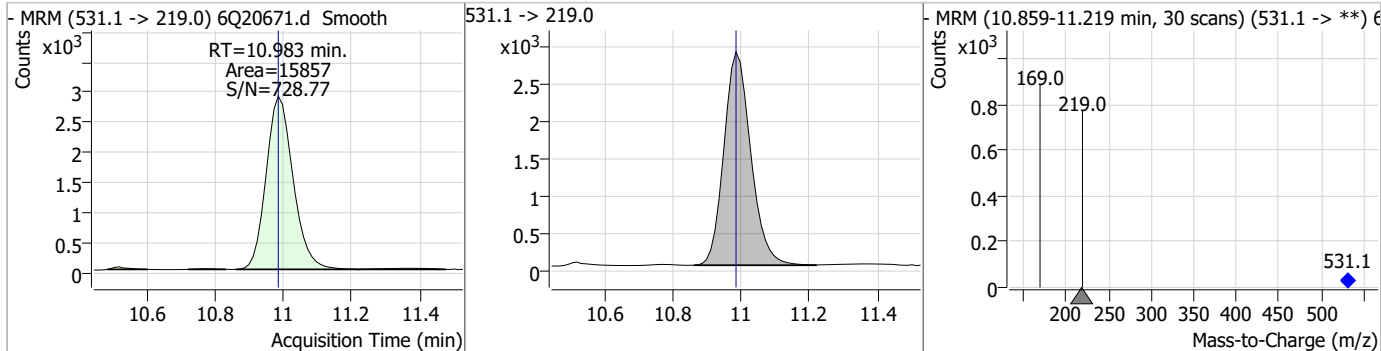
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	21.04	10.92	0.00	129376				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	396.02	10.93	0.00	2575456				

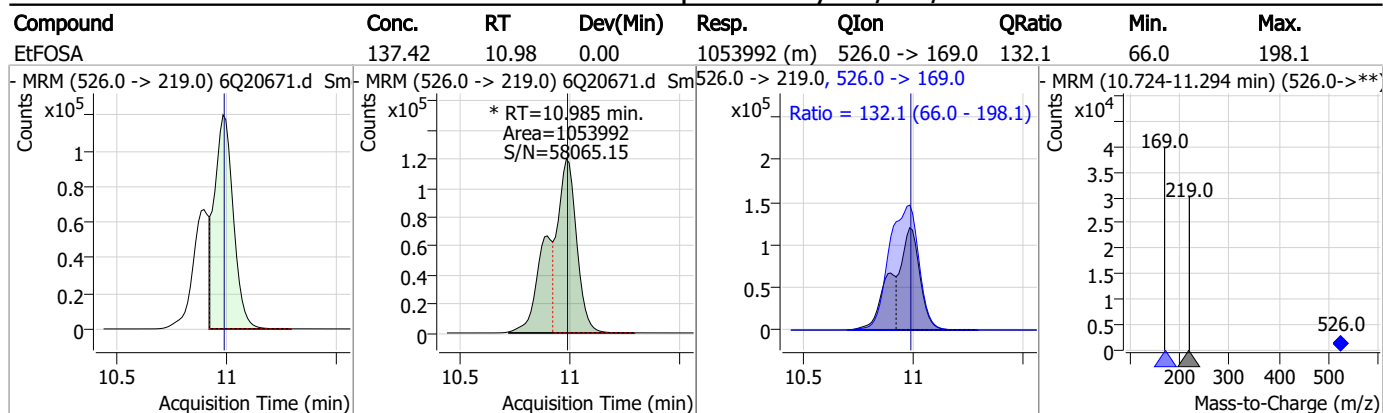


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	10.98	0.00	15857				



7.7.9
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Perfluorinated Compounds by LC/MS/MS



7.7.9

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Manual Integration Approval Summary

Sample Number: S6Q307-IC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20671.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 20:43 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.7.9.1
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20673.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 9:11:26 PM
 Sample Name : icv307-4
 Vial : P1-B1
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	218390	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	70314	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	76254	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	69797	2.50 µg/L	0.012
M8-PFOA	7.276	421.1 -> 376.0	107526	2.50 µg/L	0.012
M9-PFNA	7.807	472.1 -> 427.0	53888	1.25 µg/L	0.000
M6-PFDA	8.313	519.1 -> 474.1	27408	1.25 µg/L	0.012
M7-PFUnDA	8.780	570.0 -> 525.1	39119	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	39826	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	18736	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	36584	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	27189	2.50 µg/L	0.012
M3-PFHxS	7.404	402.1 -> 79.9	16612	2.50 µg/L	0.012
M8-PFOS	8.476	507.1 -> 79.9	15592	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3007	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4260	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4031	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	32665	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	45892	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	26292	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	136650	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	163312	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	17313	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17068	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	20558	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	91387	5.00 µg/L	-0.012
18O2-PFHxS	7.403	403.0 -> 83.9	11913	2.50 µg/L	0.012
13C4-PFOA	7.277	417.1 -> 372.0	128701	2.50 µg/L	0.012
13C2-PFDA	8.313	515.1 -> 470.1	41934	1.25 µg/L	0.012
13C5-PFNA	7.807	468.0 -> 423.0	62657	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	73475	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3007	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4260	5.37 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4031	5.27 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.3%		
13C2-PFDoDA	9.211	615.1 -> 570.0	39826	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.6%		
13C2-PFTeDA	9.925	715.2 -> 670.0	18736	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.2%		
13C3-PFBS	5.647	302.1 -> 79.9	27189	2.70 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 107.8%		
13C3-PFHxS	7.404	402.1 -> 79.9	16612	2.62 µg/L	0.012

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C4-PFBA	3.022	216.8 -> 171.9	218390	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	6.633	367.1 -> 322.0	69797	2.43 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C5-PFHxA	5.692	318.0 -> 273.0	76254	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFPeA	4.459	268.3 -> 223.0	70314	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C6-PFDA	8.313	519.1 -> 474.1	27408	1.16 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	39119	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C8-FOSA	9.674	506.1 -> 77.8	36584	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C8-PFOA	7.276	421.1 -> 376.0	107526	2.19 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.7%	
13C8-PFOS	8.476	507.1 -> 79.9	15592	2.67 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C9-PFNA	7.807	472.1 -> 427.0	53888	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSAA	8.346	573.2 -> 419.0	32665	5.12 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	45892	9.84 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d3-MeFOSA	10.763	515.0 -> 219.0	17068	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.7%	
d5-EtFOSAA	8.554	589.2 -> 419.0	26292	5.19 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	136650	25.91 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	163312	26.59 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
d5-EtFOSA	10.983	531.1 -> 219.0	17313	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.5%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	53021	9.69 µg/L	98
		327.1 -> 80.9	18172		
6:2FTS	7.039	427.1 -> 407.0	50725	10.14 µg/L	99
		427.1 -> 80.9	15439		
8:2FTS	8.090	527.1 -> 507.0	26691	10.35 µg/L	92
		527.1 -> 80.8	10035		
EtFOSAA	8.555	584.2 -> 419.1	10238	2.47 µg/L	m 100
		584.2 -> 526.0	5112		
FOSA	9.677	498.1 -> 77.9	35654	2.49 µg/L	100
		498.1 -> 478.0	1265		
MeFOSAA	8.347	570.1 -> 419.0	17084	2.38 µg/L	m 91
		570.1 -> 483.0	3553		
PFBA	3.018	212.8 -> 168.9	85409	10.15 µg/L	100
PFBS	5.648	298.7 -> 79.9	22834	2.11 µg/L	99
		298.7 -> 98.8	9574		
PFDA	8.314	512.9 -> 469.0	110534	2.90 µg/L	98
		512.9 -> 219.0	16077		
PFDODA	9.211	613.1 -> 569.0	79972	2.57 µg/L	99
		613.1 -> 319.0	11659		
PFDS	9.374	599.0 -> 79.9	11087	2.39 µg/L	100

7.7.10
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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	5800			
PFHpA	6.633	363.1 -> 319.0	91848	2.73	µg/L	99
		363.1 -> 169.0	15267			
PFHpS	7.972	449.0 -> 79.9	20980	2.33	µg/L	93
		449.0 -> 98.9	11556			
PFHxA	5.694	313.0 -> 269.0	72507	2.59	µg/L	99
		313.0 -> 118.9	3895			
PFHxS	7.405	398.7 -> 79.9	20440	2.31	µg/L	m 96
		398.7 -> 98.9	9988			
PFNA	7.808	463.0 -> 419.0	106855	2.49	µg/L	98
		463.0 -> 219.0	20954			
PFNS	8.955	548.8 -> 79.9	19318	2.47	µg/L	99
		548.8 -> 98.9	9738			
PFOA	7.278	413.0 -> 369.0	131366	2.58	µg/L	97
		413.0 -> 169.0	23818			
PFOS	8.478	498.9 -> 79.9	18544	2.19	µg/L	m 75
		498.9 -> 98.8	9707			
PFPeA	4.461	263.0 -> 219.0	97305	5.19	µg/L	100
PFPeS	6.697	349.1 -> 79.9	20706	2.40	µg/L	97
		349.1 -> 98.9	10001			
PFTeDA	9.926	713.1 -> 669.0	57610	2.69	µg/L	98
		713.1 -> 168.9	4841			
PFTrDA	9.595	663.0 -> 619.0	74354	2.48	µg/L	100
		663.0 -> 168.9	8471			
PFUnDA	8.780	563.1 -> 519.0	74304	2.58	µg/L	97
		563.1 -> 269.1	12218			
11CI-PF3OUdS	9.646	630.9 -> 450.9	105974	4.93	µg/L	98
		632.9 -> 452.9	31306			
9CI-PF3ONS	8.819	530.8 -> 351.0	182203	5.23	µg/L	99
		532.8 -> 353.0	52242			
ADONA	6.883	376.9 -> 250.9	382535	5.03	µg/L	100
		376.9 -> 84.8	92475			
HFPO-DA	6.083	284.9 -> 168.9	25880	5.51	µg/L	99
		284.9 -> 184.9	2645			
3:3FTCA	3.883	241.0 -> 177.0	16471	12.07	µg/L	100
		241.0 -> 117.0	2175			
5:3FTCA	6.322	341.0 -> 237.1	365351	62.56	µg/L	95
		341.0 -> 217.0	272280			
7:3FTCA	7.711	441.0 -> 316.9	277313	67.78	µg/L	96
		441.0 -> 336.9	549336			
EtFOSA	10.985	526.0 -> 219.0	43580	5.20	µg/L	98
		526.0 -> 169.0	58361			
EtFOSE	10.931	630.0 -> 58.9	98756	12.03	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	36798	5.04	µg/L	m 80
		511.9 -> 169.0	54412			
MeFOSE	10.685	616.1 -> 58.9	70894	12.39	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	5253	2.48	µg/L	96
		699.1 -> 98.8	2994			
NFDHA	5.576	295.0 -> 201.0	17229	5.05	µg/L	99
		295.0 -> 84.9	4612			
PFMBA	4.882	279.0 -> 85.1	63373	5.15	µg/L	100
PFMPA	3.588	229.0 -> 84.9	52808	5.10	µg/L	100
PFEESA	6.188	314.8 -> 134.9	183259	4.68	µg/L	99
		314.8 -> 82.9	5471			

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

7.7.10
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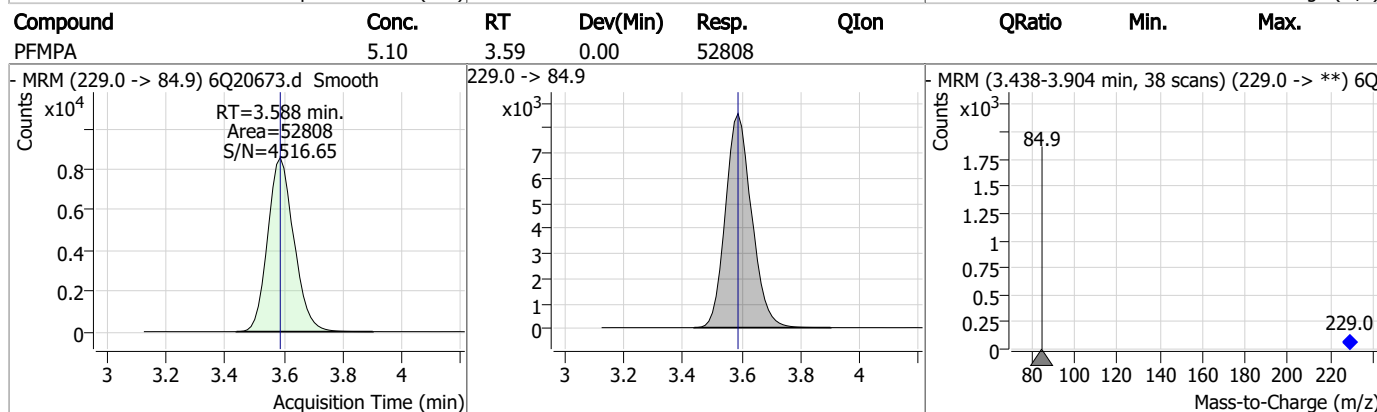
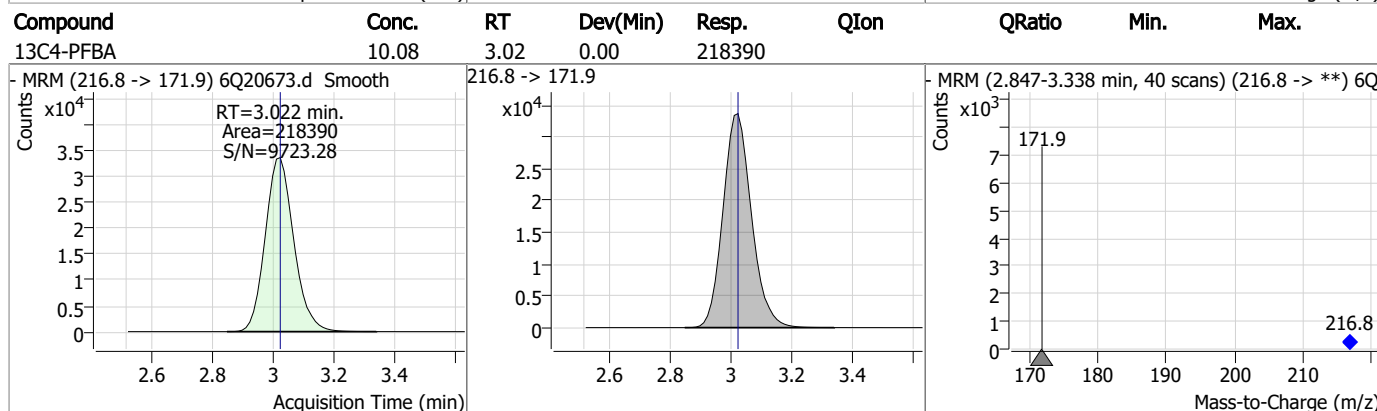
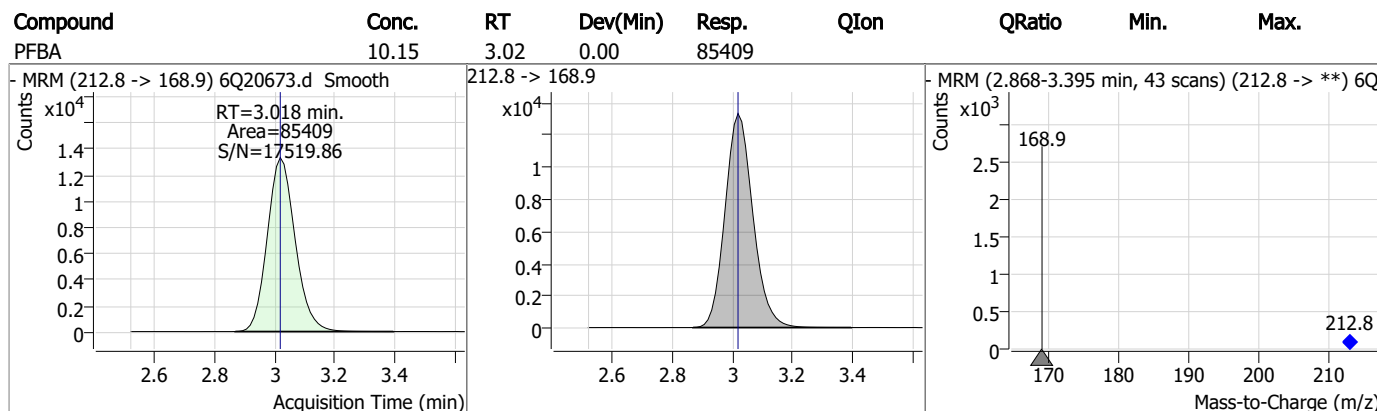
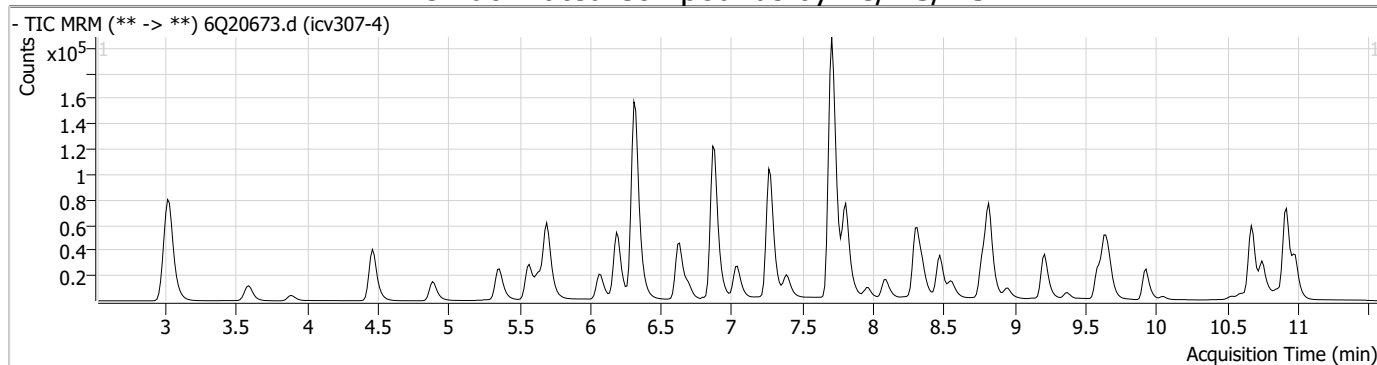
Perfluorinated Compounds by LC/MS/MS

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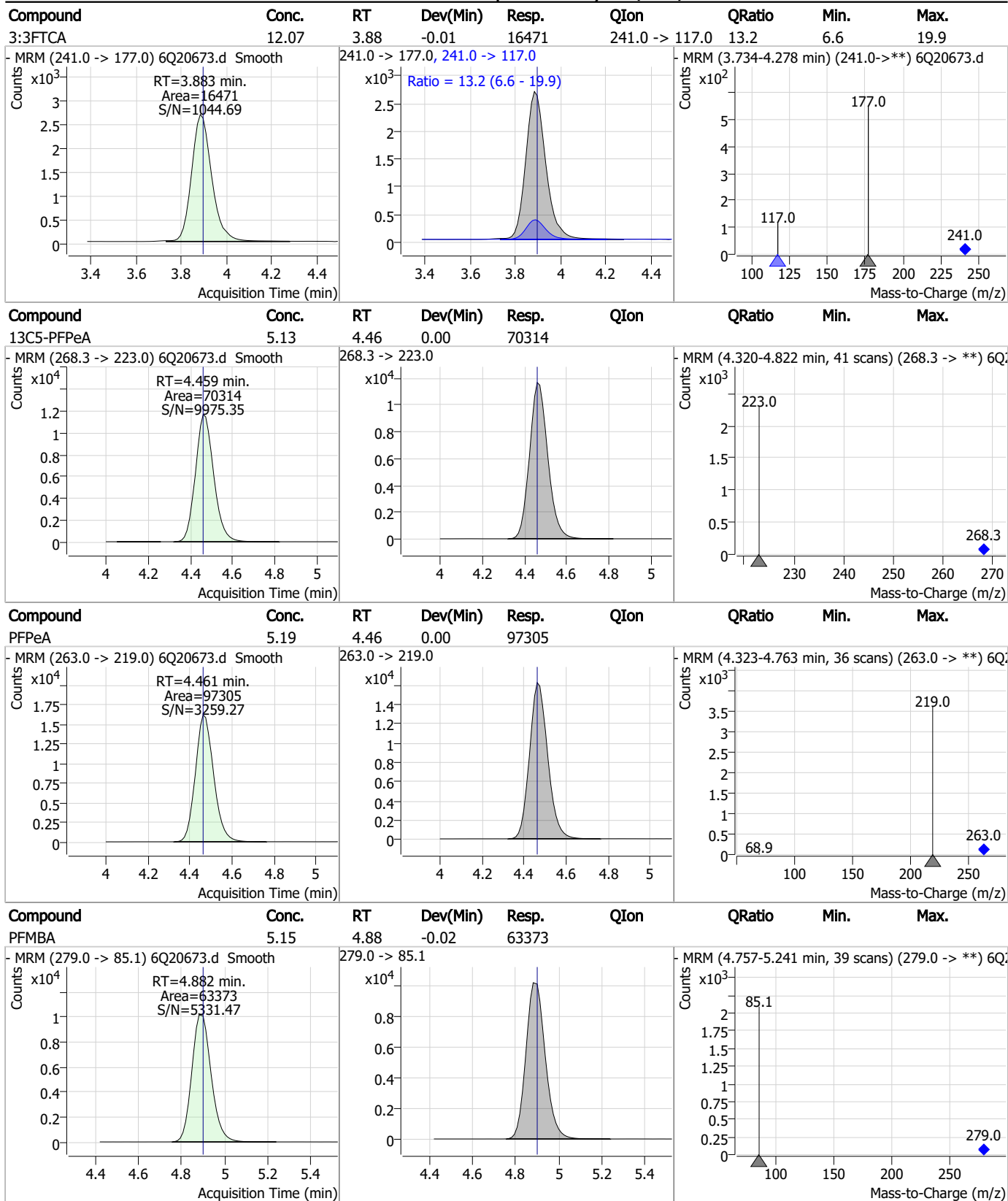
7.7.10

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Perfluorinated Compounds by LC/MS/MS



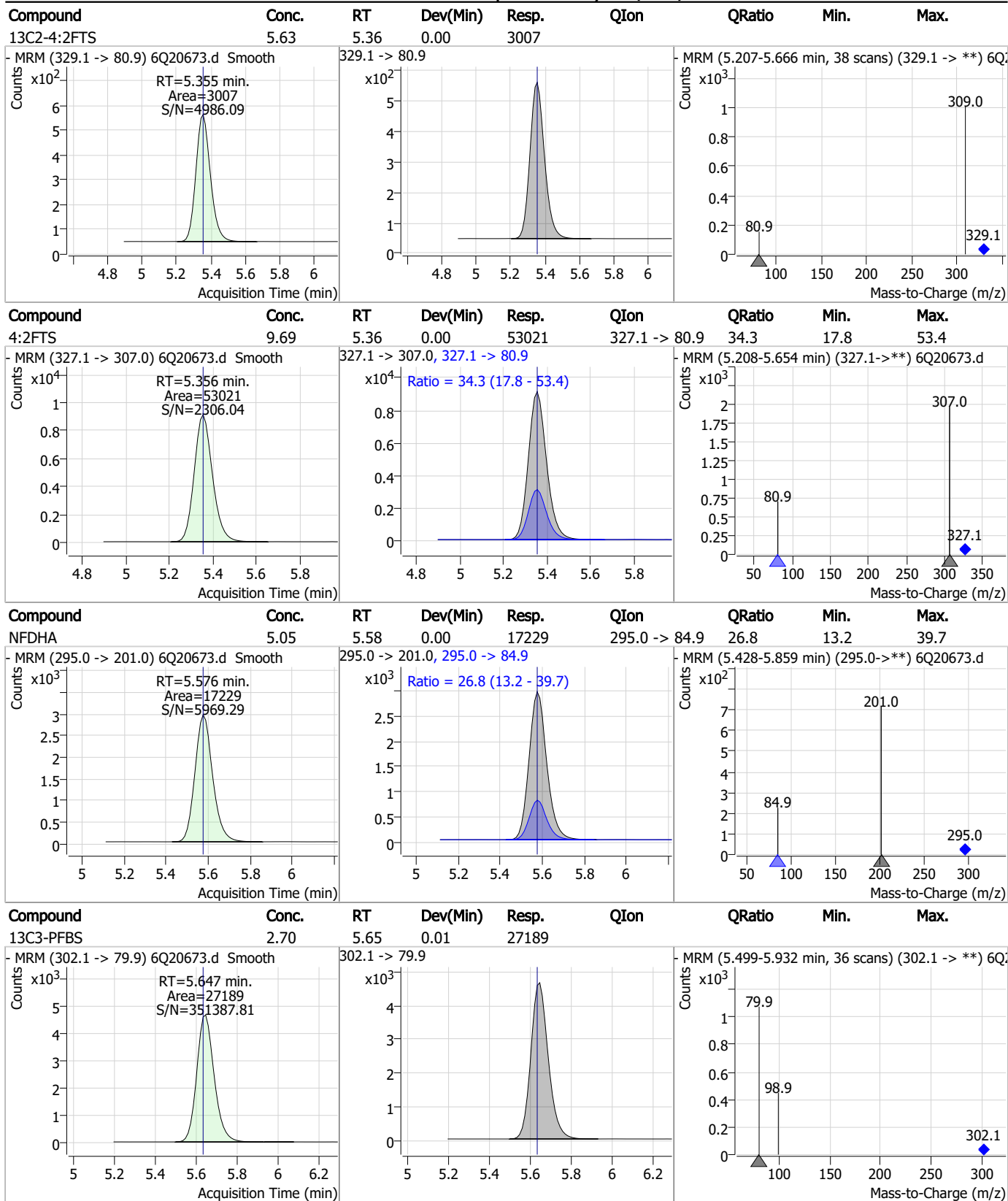
Perfluorinated Compounds by LC/MS/MS



7.7.10

7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

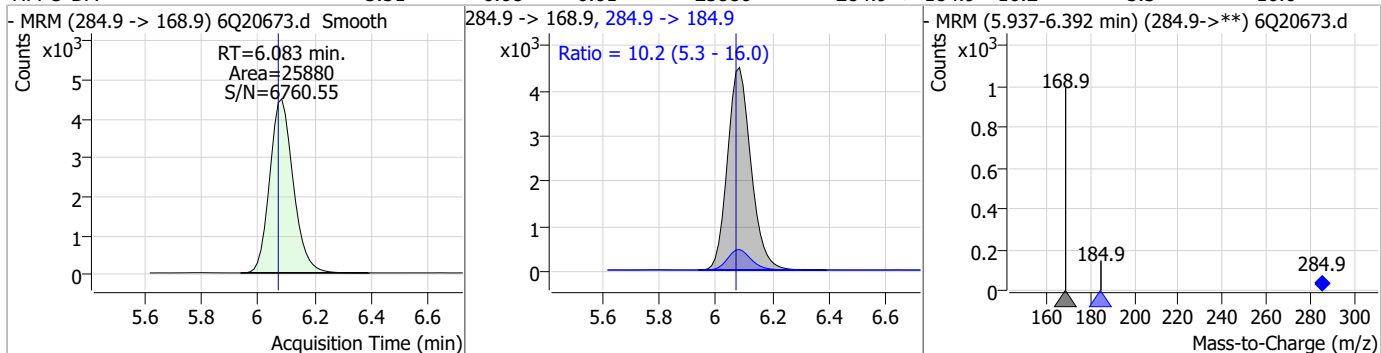
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.11	5.65	0.00	22834	298.7 -> 98.8	41.9	20.5	61.6
13C5-PFHxA	2.55	5.69	0.00	76254				
PFHxA	2.59	5.69	0.00	72507	313.0 -> 118.9	5.4	2.4	7.3
13C3-HFPO-DA	9.84	6.08	0.01	45892				

7.7.10 7

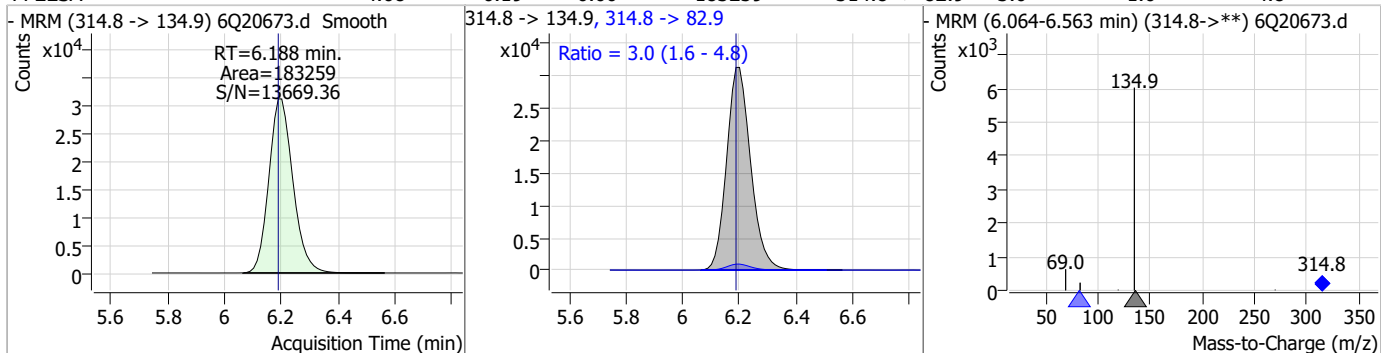


Perfluorinated Compounds by LC/MS/MS

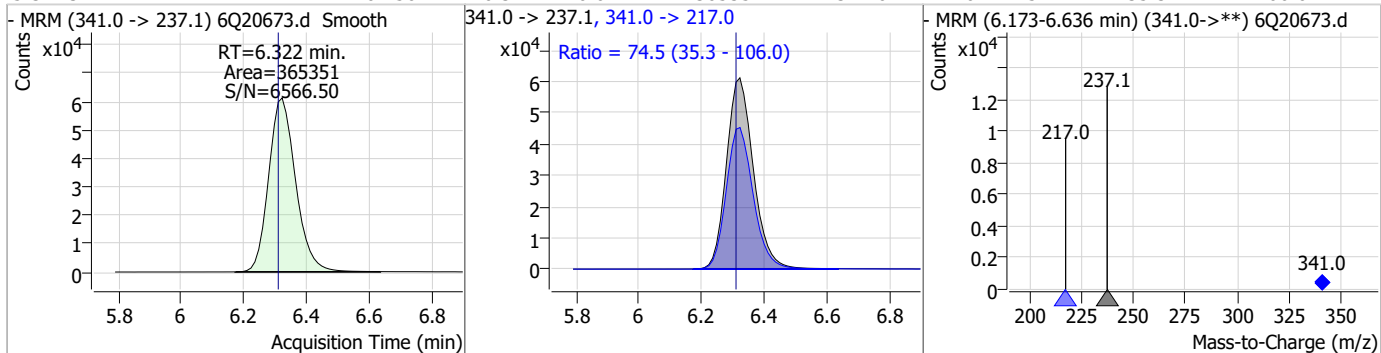
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.51	6.08	0.01	25880	284.9 -> 184.9	10.2	5.3	16.0



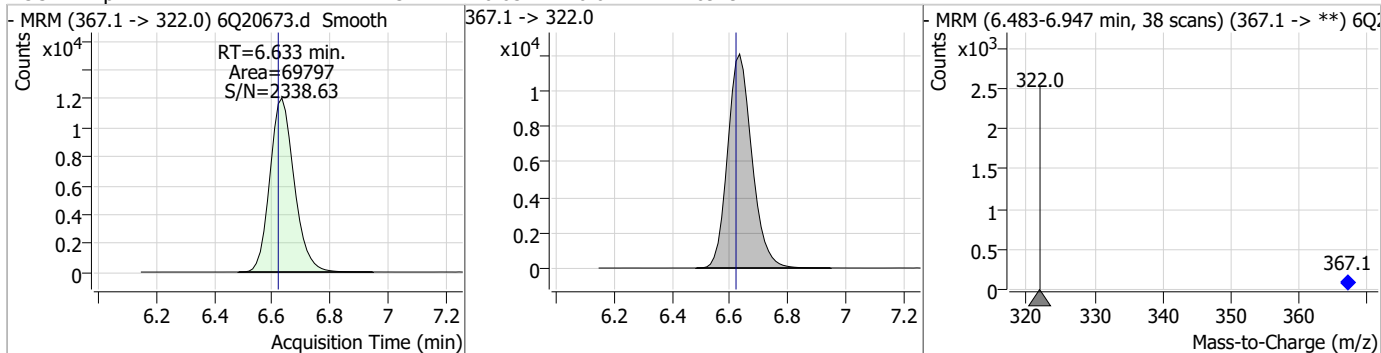
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.68	6.19	0.00	183259	314.8 -> 82.9	3.0	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	62.56	6.32	0.01	365351	341.0 -> 217.0	74.5	35.3	106.0

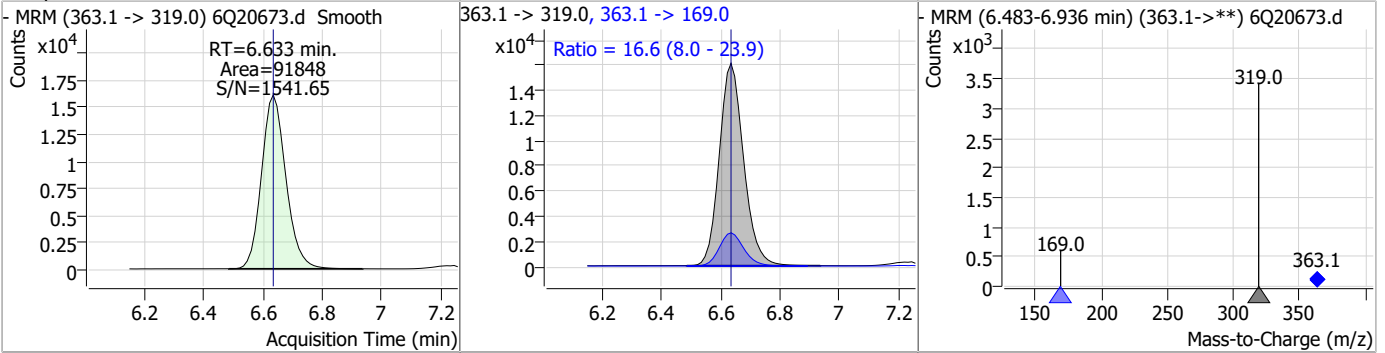


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.43	6.63	0.01	69797	367.1 -> 322.0			

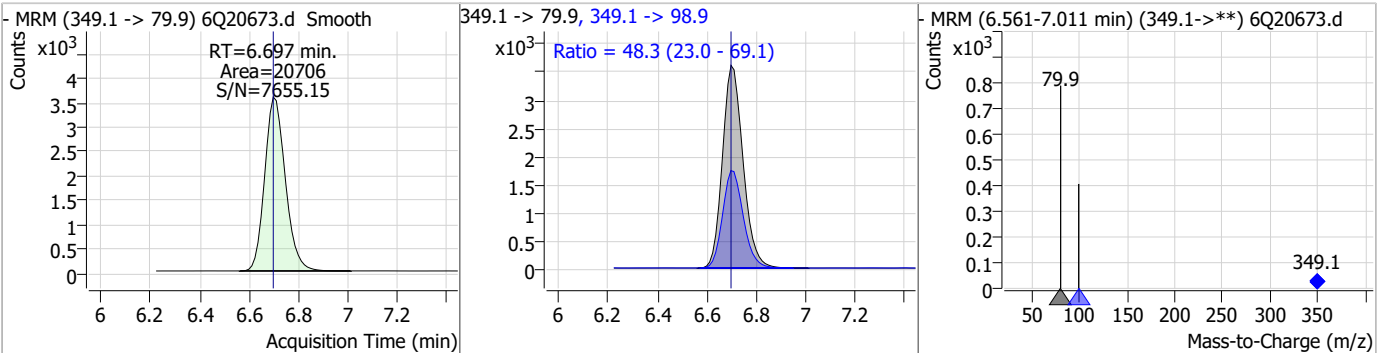


Perfluorinated Compounds by LC/MS/MS

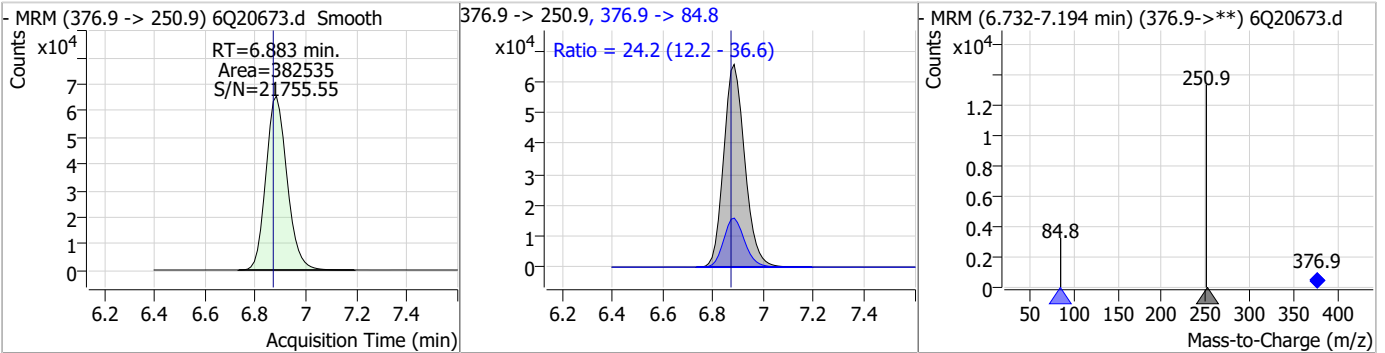
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.73	6.63	0.00	91848	363.1 -> 169.0	16.6	8.0	23.9



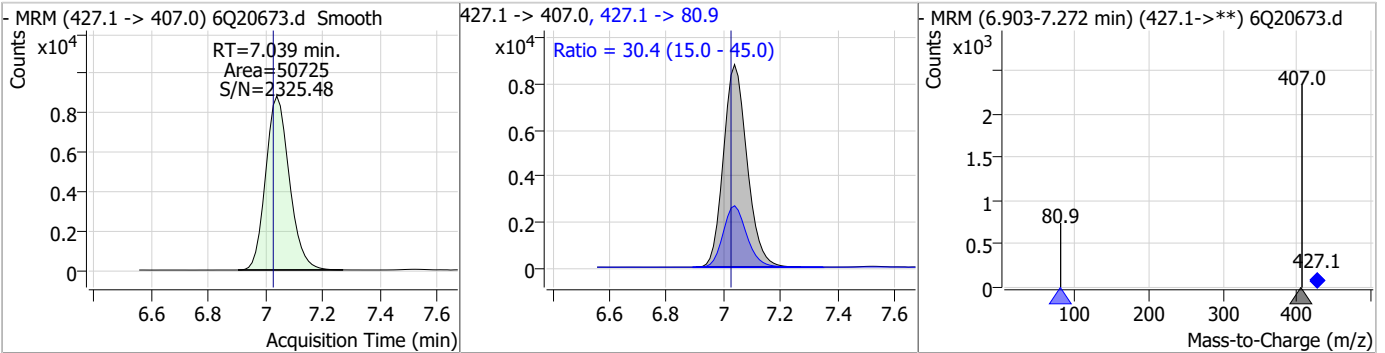
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.40	6.70	0.00	20706	349.1 -> 98.9	48.3	23.0	69.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.03	6.88	0.01	382535	376.9 -> 84.8	24.2	12.2	36.6

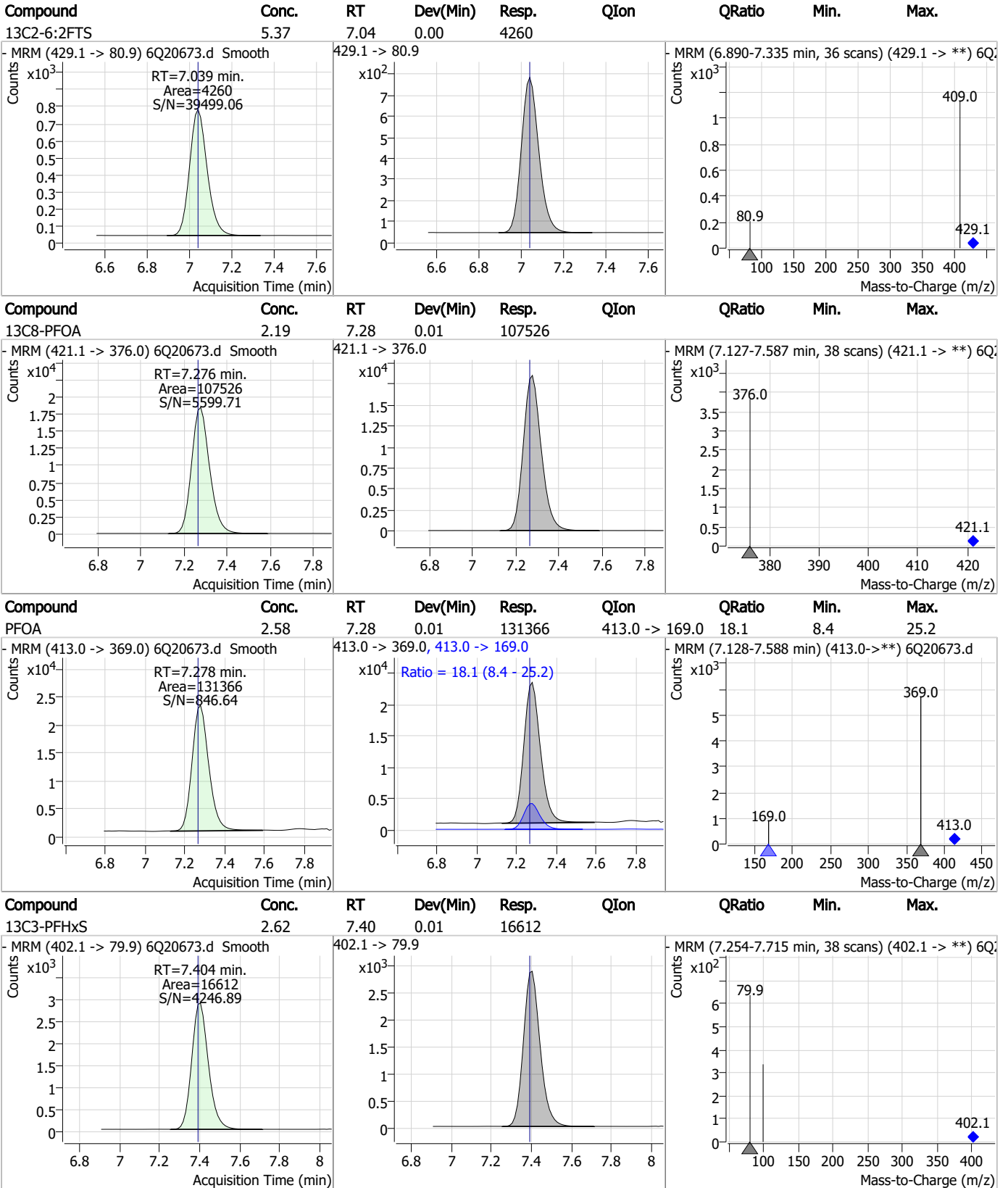


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.14	7.04	0.01	50725	427.1 -> 80.9	30.4	15.0	45.0



7.7.10
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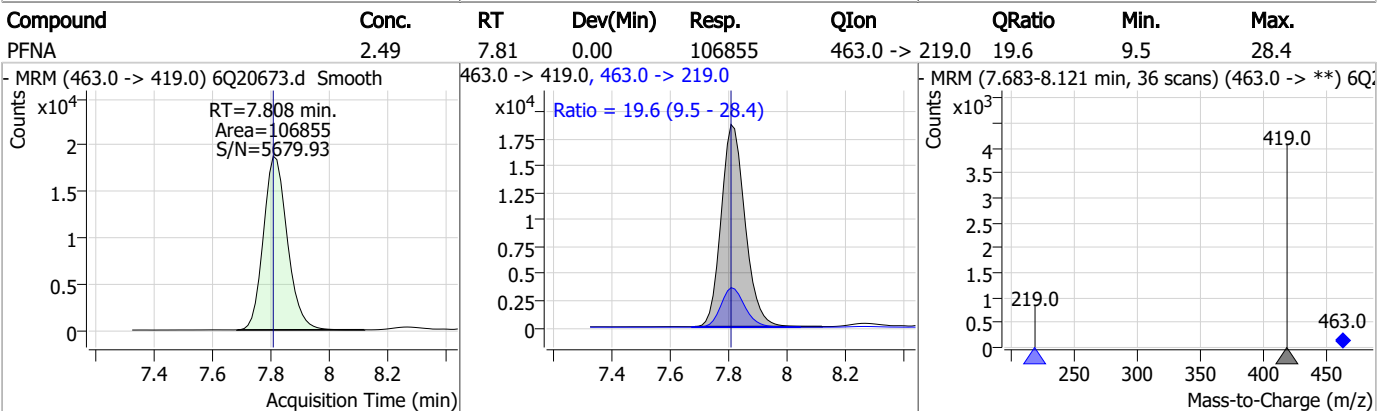
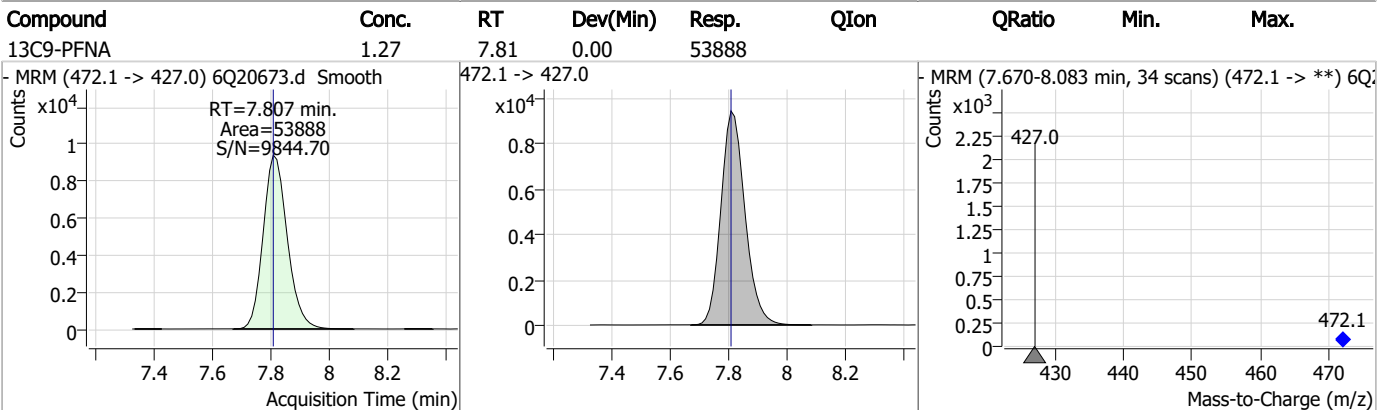
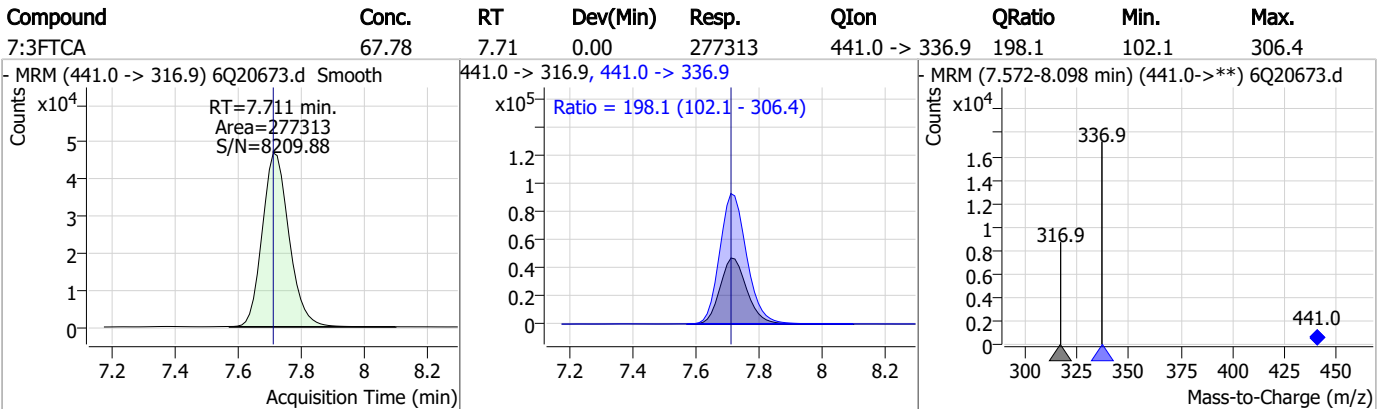
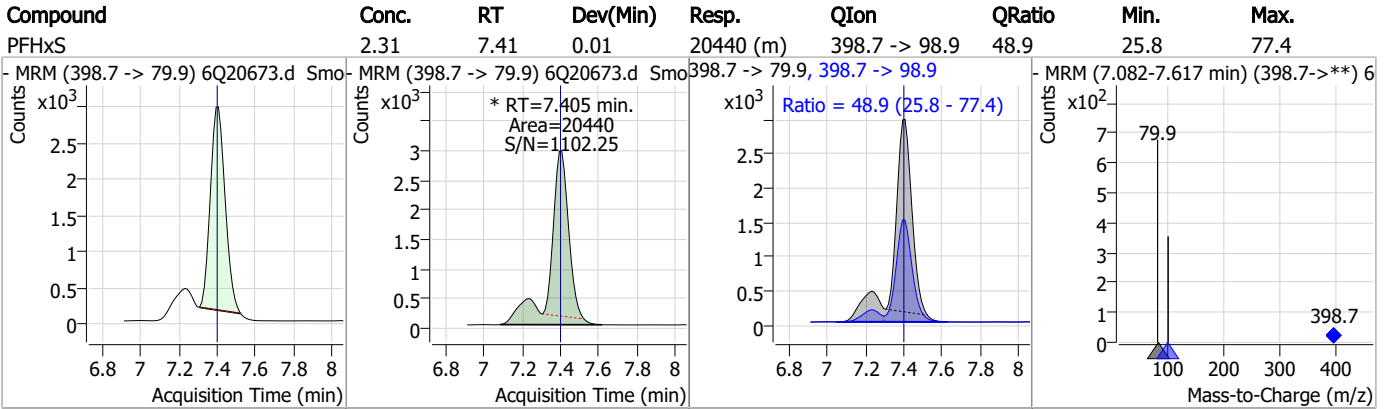
Perfluorinated Compounds by LC/MS/MS



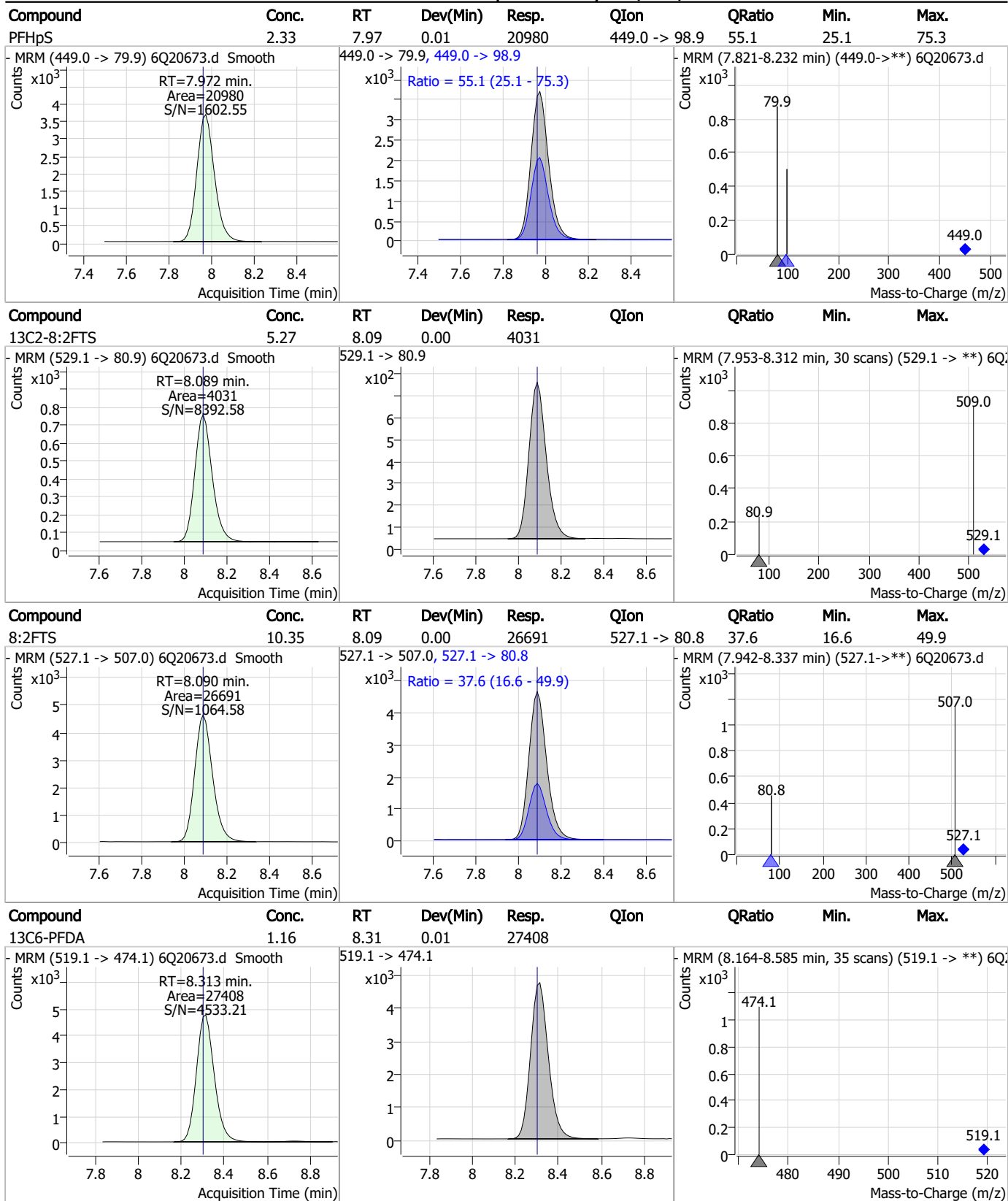
7.7.10 7



Perfluorinated Compounds by LC/MS/MS

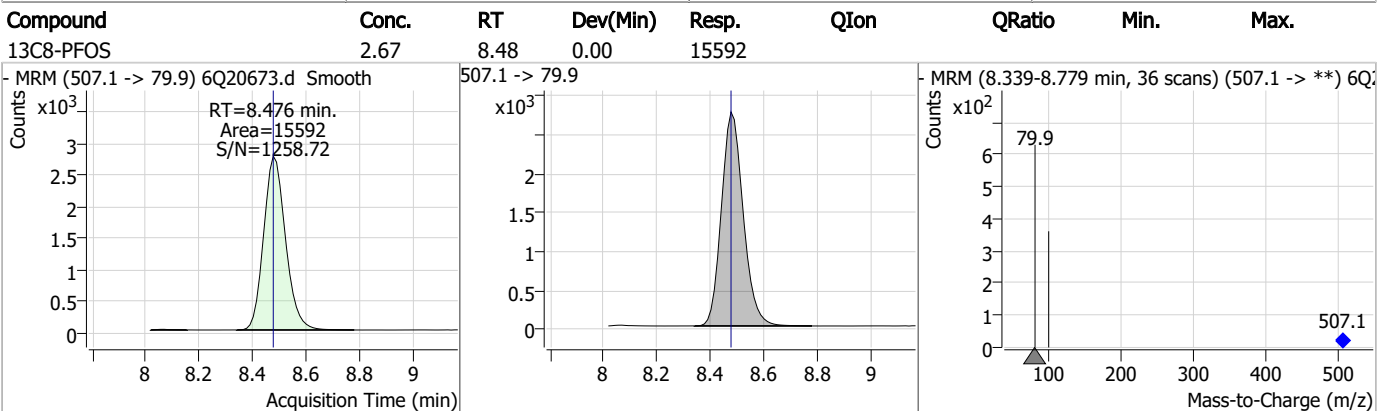
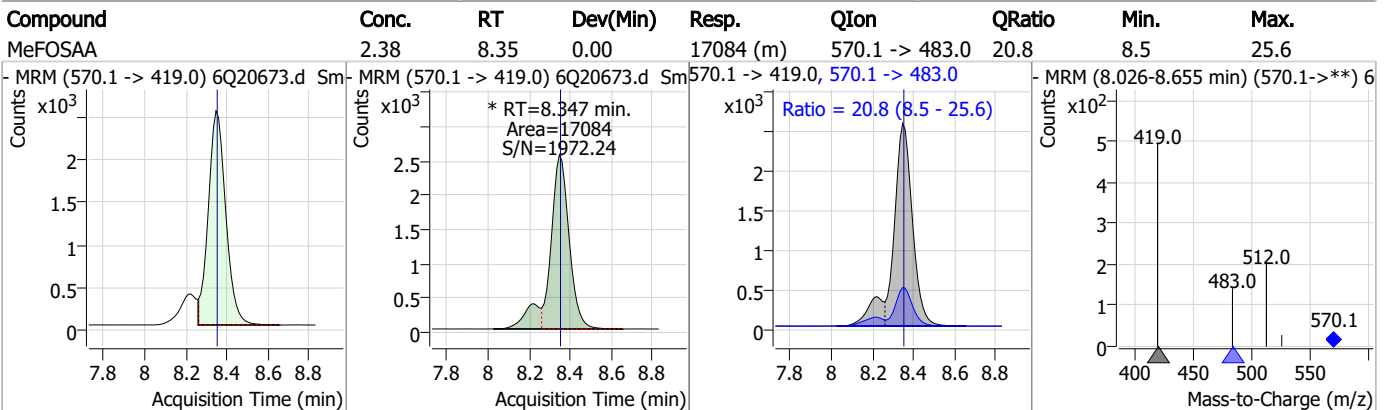
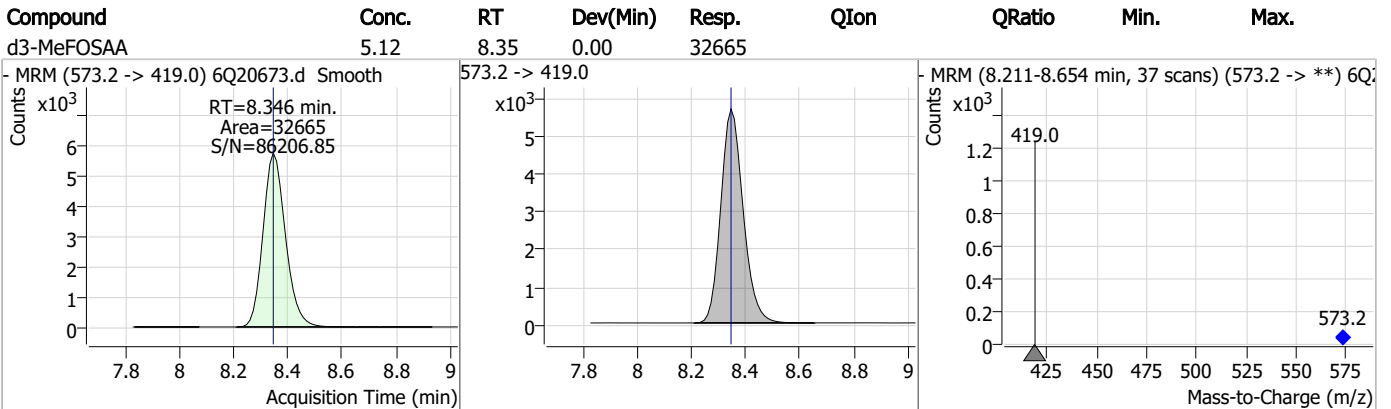
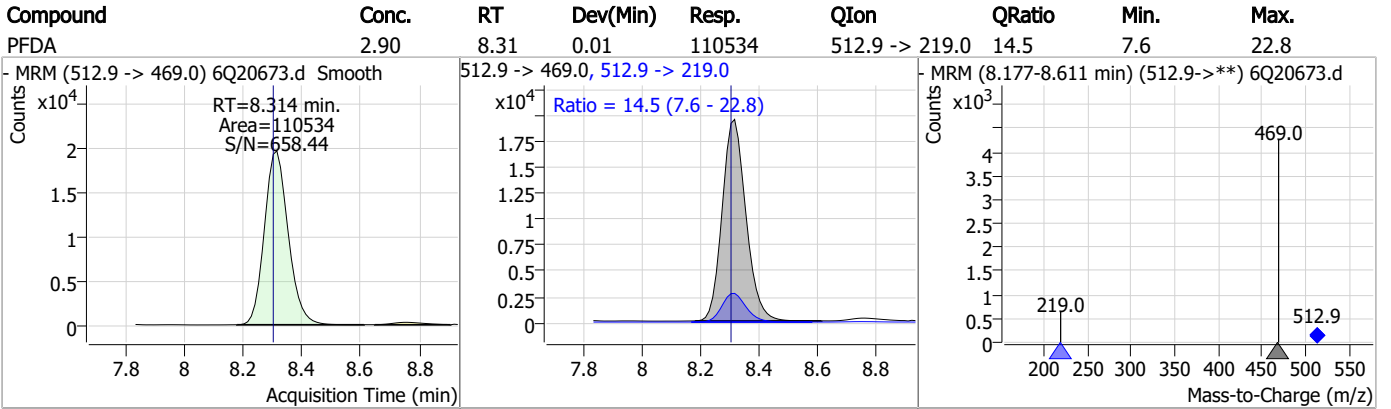


Perfluorinated Compounds by LC/MS/MS



7.7.10
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Perfluorinated Compounds by LC/MS/MS

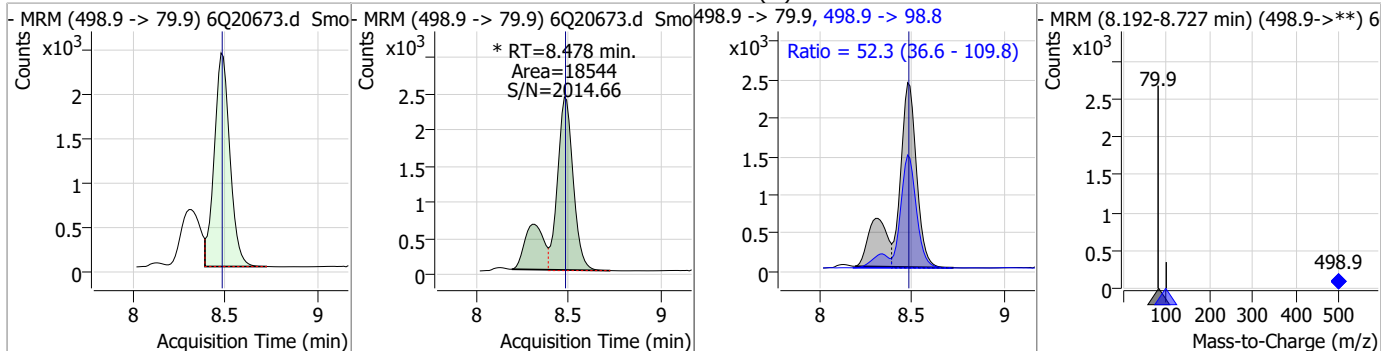


7.7.10 7

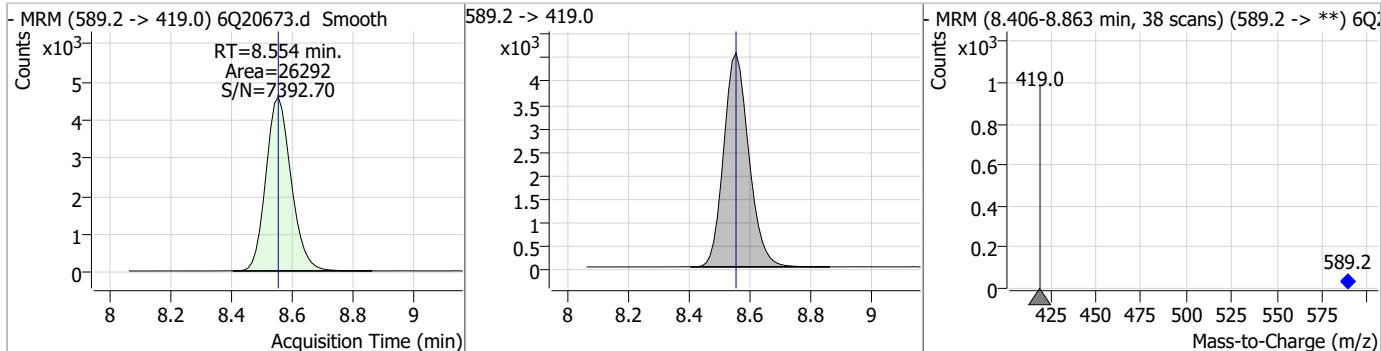


Perfluorinated Compounds by LC/MS/MS

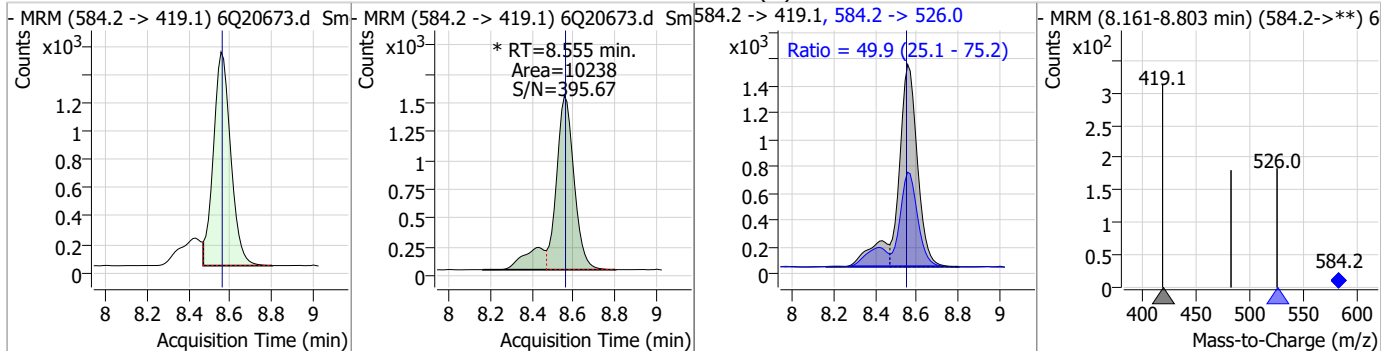
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.19	8.48	0.00	18544 (m)	498.9 -> 98.8	52.3	36.6	109.8



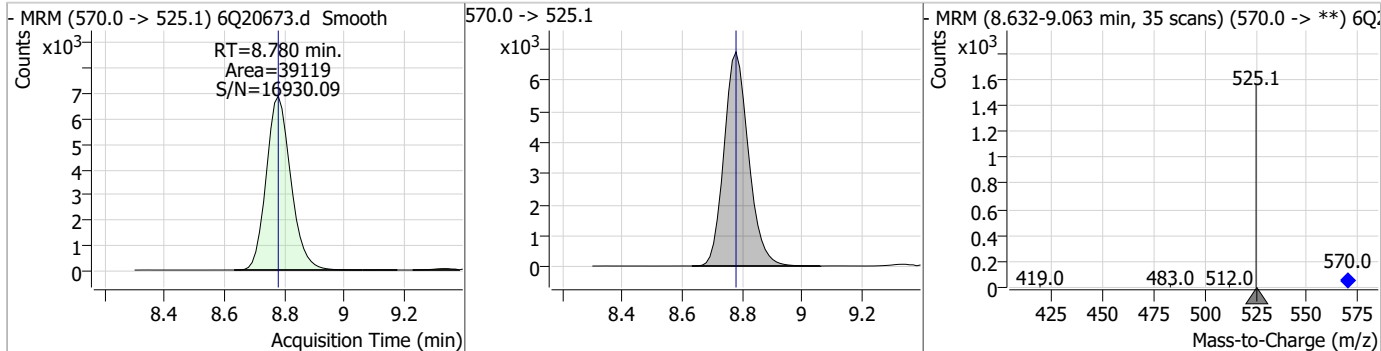
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.19	8.55	0.00	26292				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.47	8.55	0.00	10238 (m)	584.2 -> 526.0	49.9	25.1	75.2

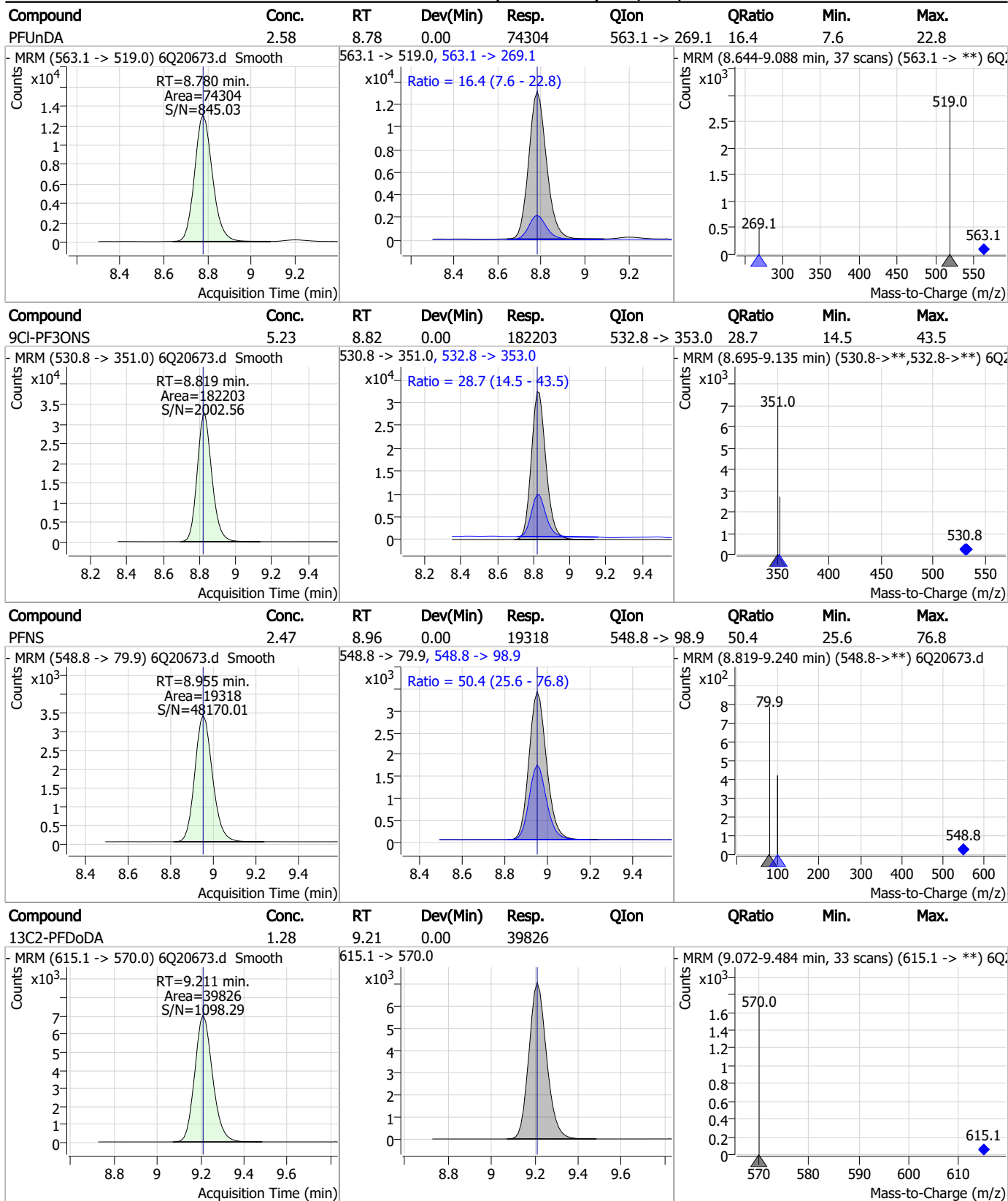


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.78	0.00	39119				



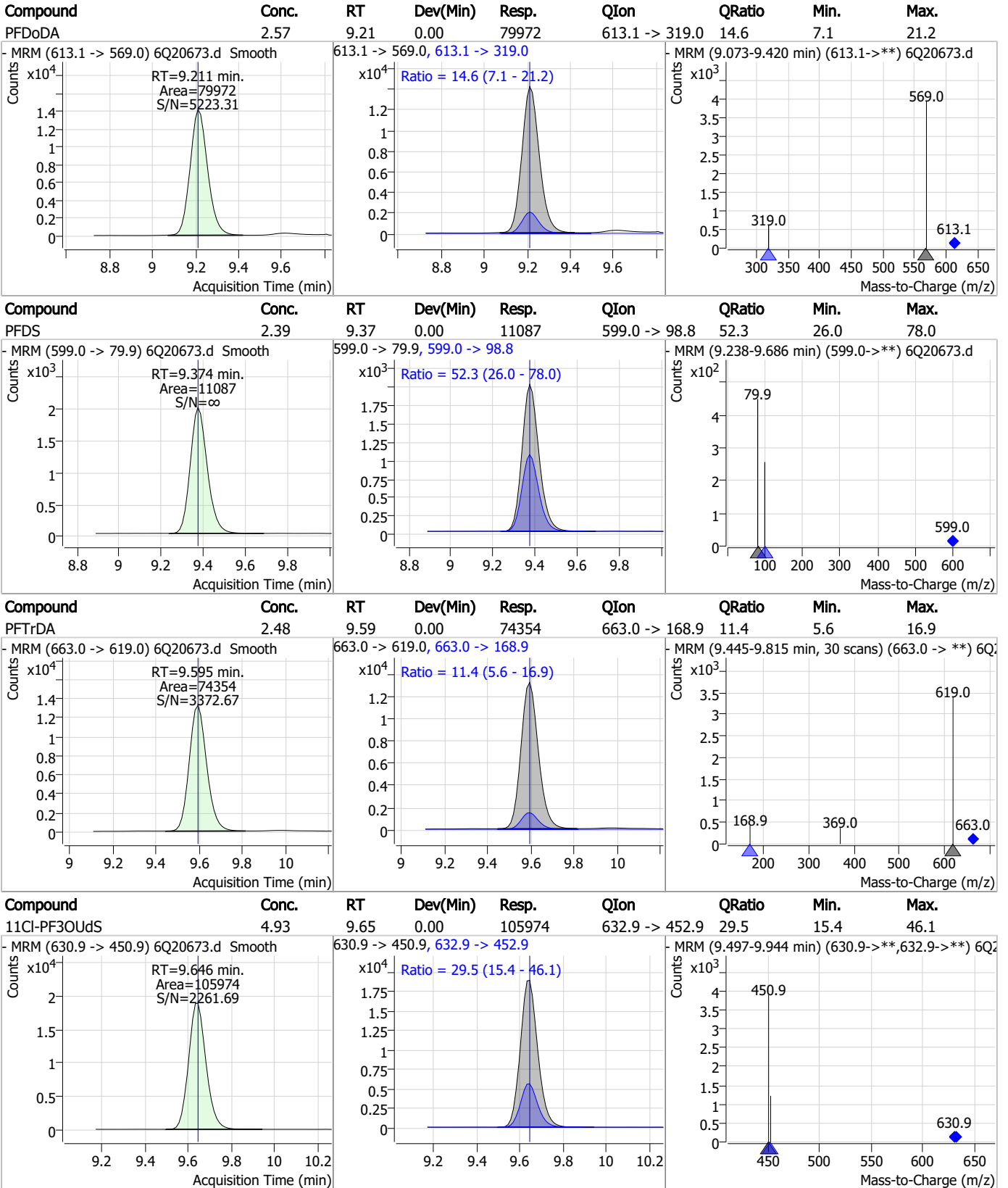
7.7.10
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Perfluorinated Compounds by LC/MS/MS



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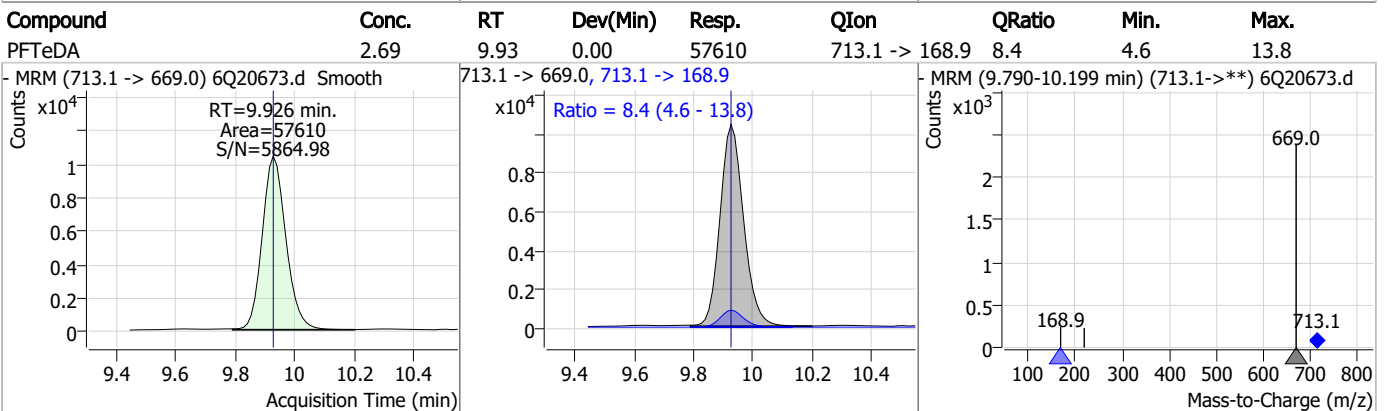
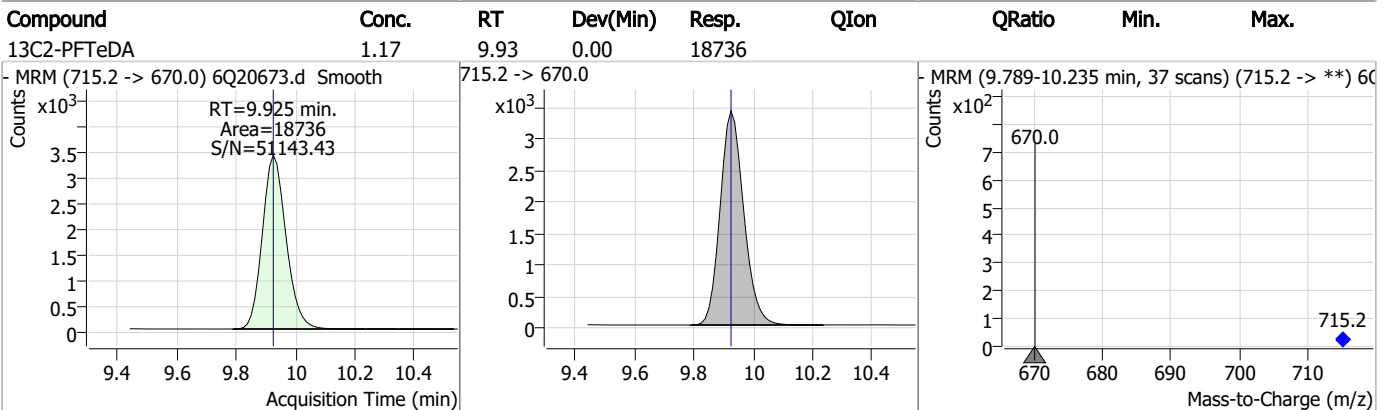
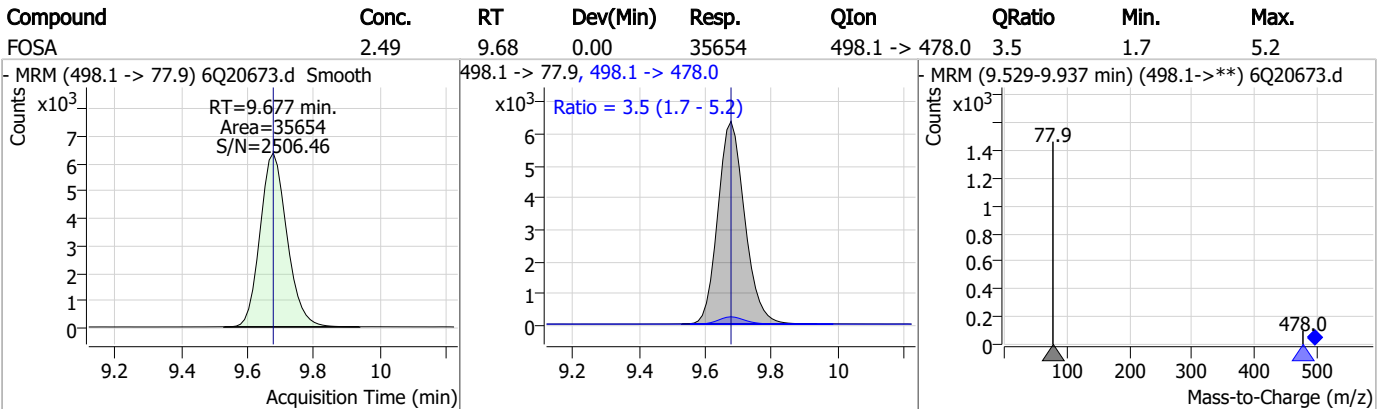
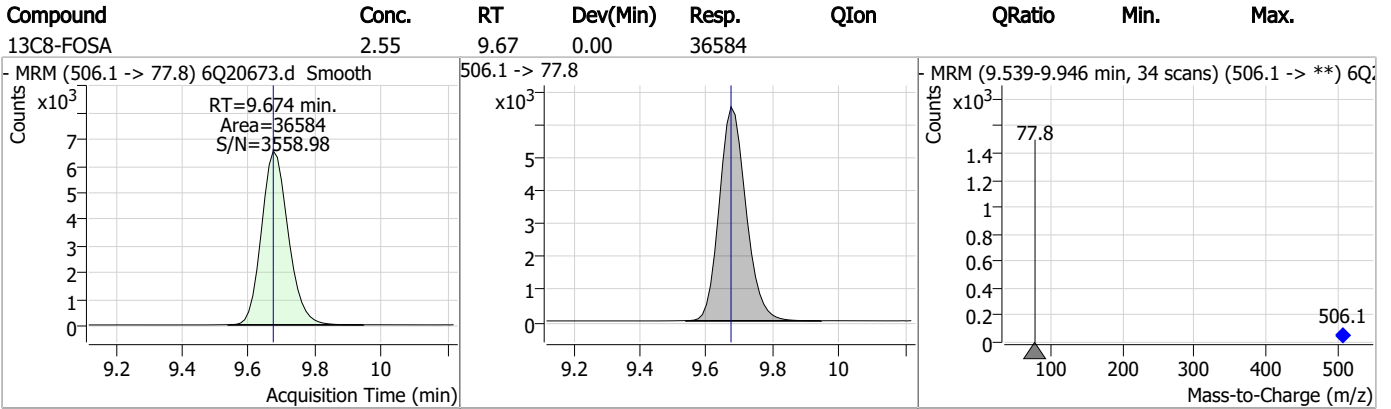
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



Perfluorinated Compounds by LC/MS/MS

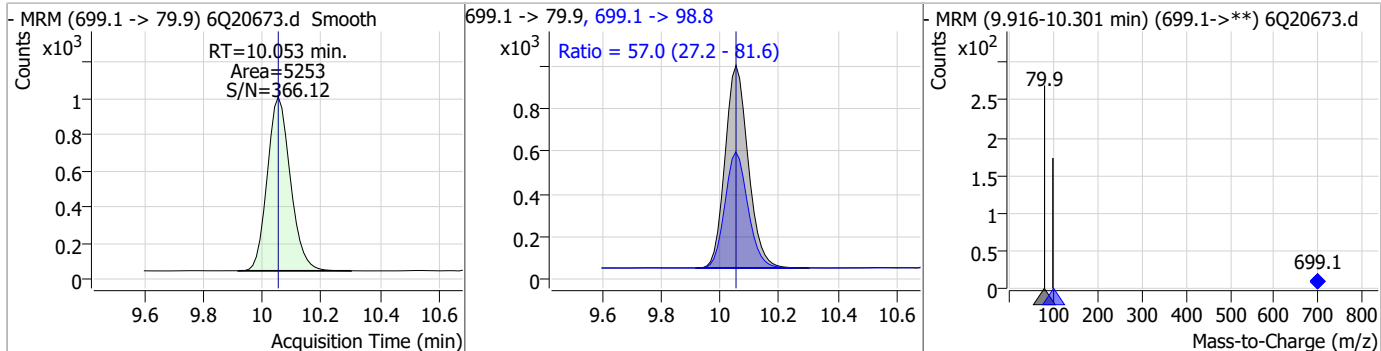


7.7.10 7

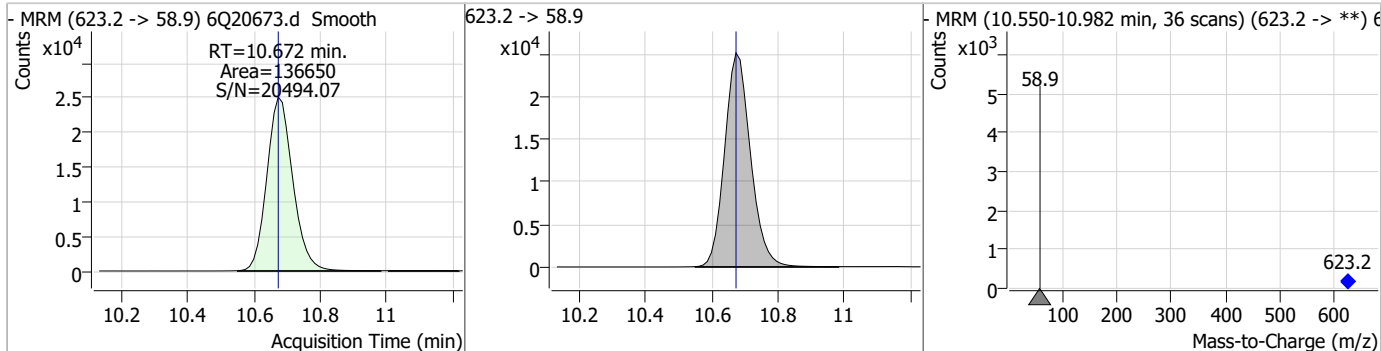


Perfluorinated Compounds by LC/MS/MS

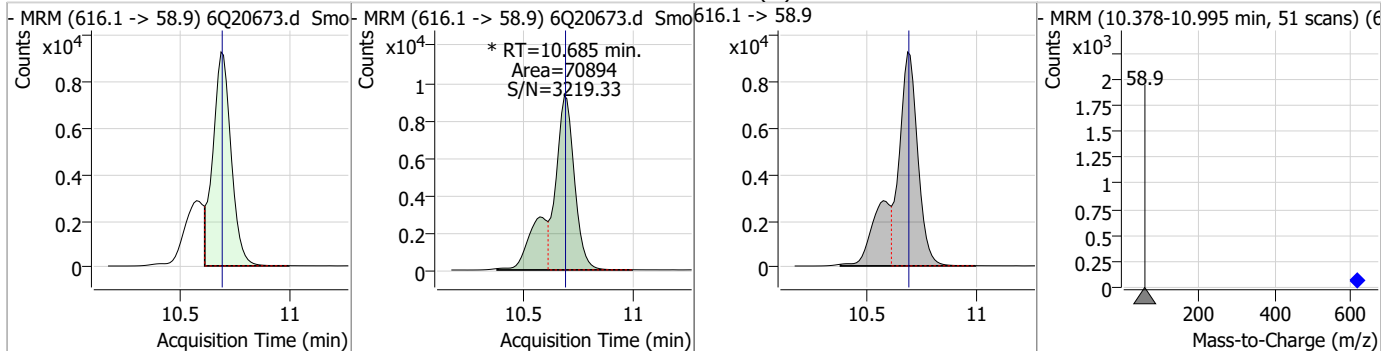
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.48	10.05	0.00	5253	699.1 -> 98.8	57.0	27.2	81.6



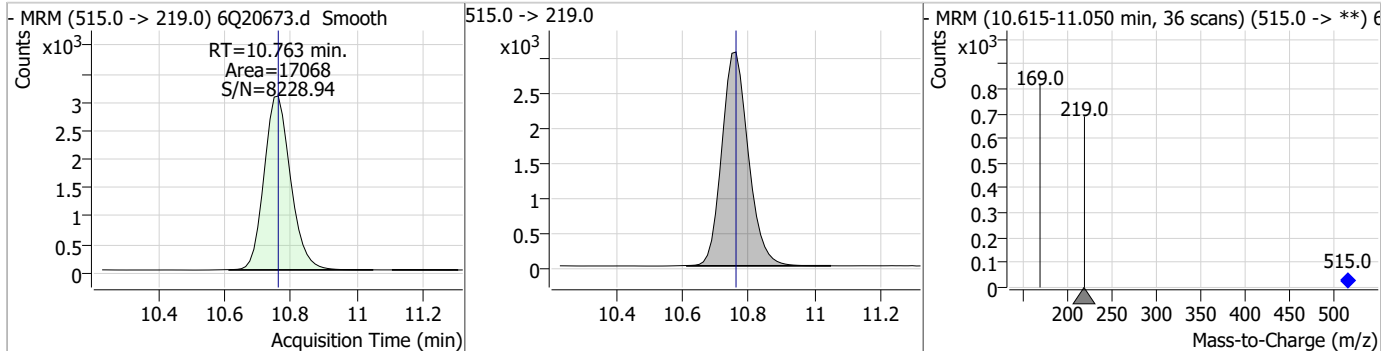
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.91	10.67	0.00	136650				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	12.39	10.69	0.00	70894 (m)				

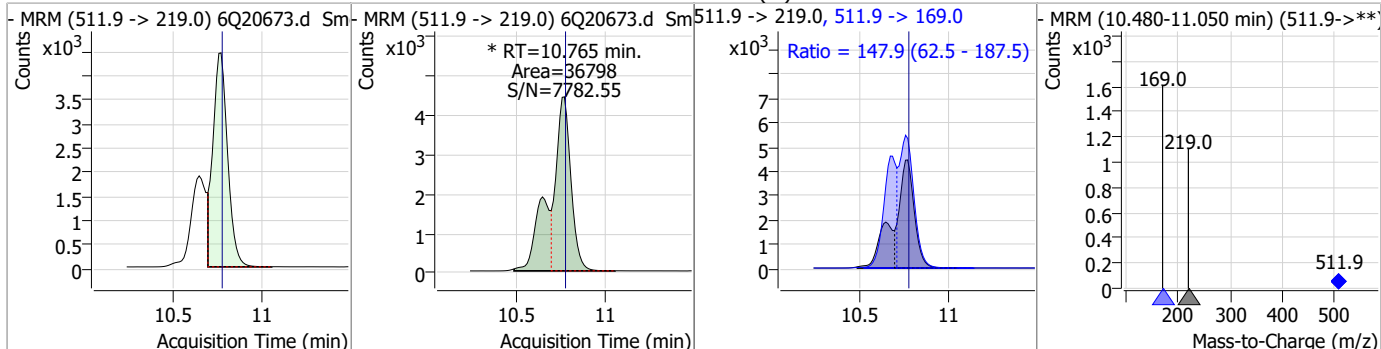


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.57	10.76	0.00	17068				

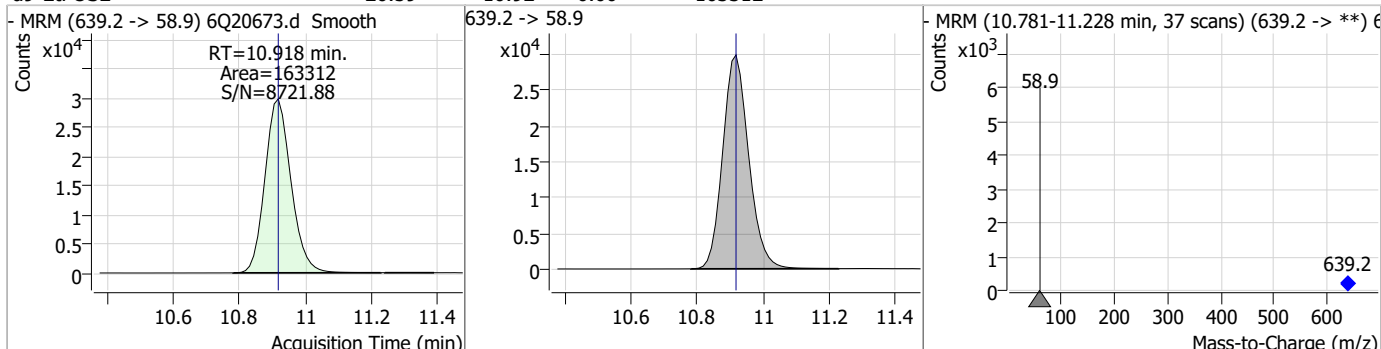


Perfluorinated Compounds by LC/MS/MS

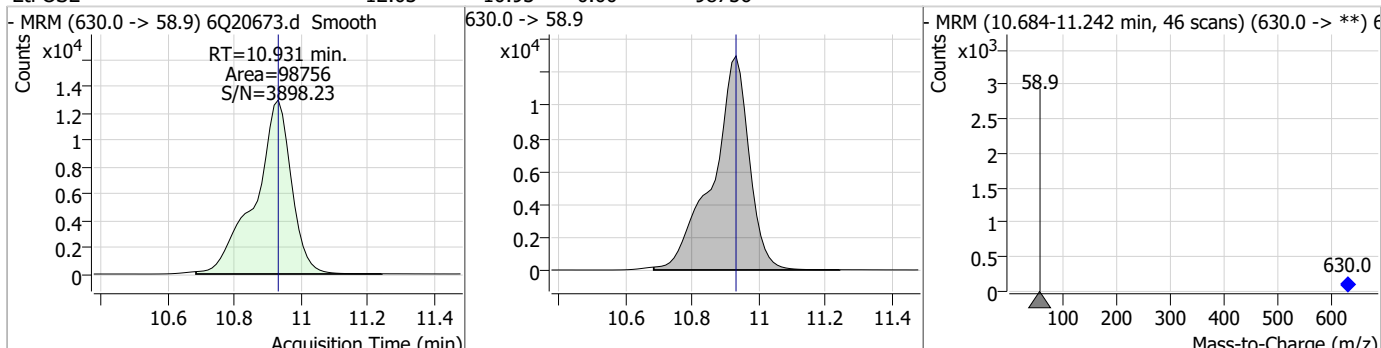
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.04	10.76	0.00	36798 (m)	511.9 -> 169.0	147.9	62.5	187.5



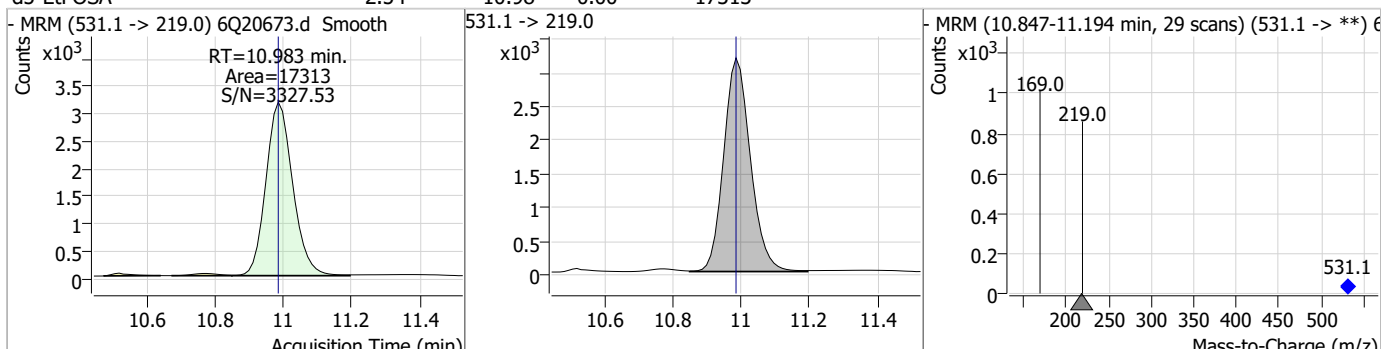
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.59	10.92	0.00	163312				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	12.03	10.93	0.00	98756				

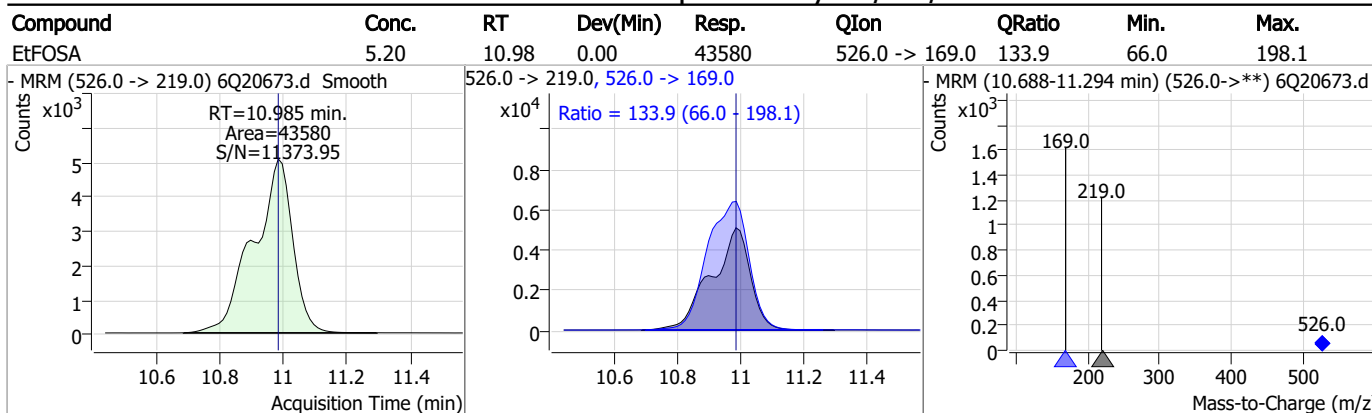


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.54	10.98	0.00	17313				



7.7.10
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Perfluorinated Compounds by LC/MS/MS



7.7.10
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Manual Integration Approval Summary

Sample Number: S6Q307-ICV307 Method: EPA DRAFT 1633
Lab FileID: 6Q20673.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 21:11 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.41	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.7.10.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20674.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/10/2023 9:25:26 PM
 Sample Name : icv307-20
 Vial : P1-B2
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : s6q307.batch.bin
 Sample Information : OP97325,S6Q307,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	270977	10.00 µg/L	0.000
M5-PFPeA	4.472	268.3 -> 223.0	86795	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	90952	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	89759	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	135207	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	63863	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	36470	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	48961	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	50092	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	23237	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	46429	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	31995	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	21349	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	18139	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3594	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	5248	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	5313	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	40038	5.00 µg/L	0.000
M3-HFPO-DA	6.082	286.9 -> 168.9	55757	10.00 µg/L	0.012
M5-EtFOSAA	8.554	589.2 -> 419.0	32387	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	156427	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	193556	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	21196	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	20516	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	26681	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	114693	5.00 µg/L	0.000
18O2-PFHxS	7.403	403.0 -> 83.9	15051	2.50 µg/L	0.012
13C4-PFOA	7.264	417.1 -> 372.0	144520	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	48957	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	74132	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	89277	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3594	5.33 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.6%		
13C2-6:2FTS	7.039	429.1 -> 80.9	5248	5.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.8%		
13C2-8:2FTS	8.089	529.1 -> 80.9	5313	5.49 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.9%		
13C2-PFDoDA	9.211	615.1 -> 570.0	50092	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.6%		
13C2-PFTeDA	9.925	715.2 -> 670.0	23237	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 99.0%		
13C3-PFBS	5.647	302.1 -> 79.9	31995	2.51 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.4%		
13C3-PFHxS	7.392	402.1 -> 79.9	21349	2.66 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C4-PFBA	3.022	216.8 -> 171.9	270977	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.633	367.1 -> 322.0	89759	2.57 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFHxA	5.692	318.0 -> 273.0	90952	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFPeA	4.472	268.3 -> 223.0	86795	5.22 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C6-PFDA	8.301	519.1 -> 474.1	36470	1.33 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C7-PFUnDA	8.780	570.0 -> 525.1	48961	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C8-FOSA	9.674	506.1 -> 77.8	46429	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C8-PFOA	7.264	421.1 -> 376.0	135207	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C8-PFOS	8.476	507.1 -> 79.9	18139	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C9-PFNA	7.807	472.1 -> 427.0	63863	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSAA	8.346	573.2 -> 419.0	40038	4.83 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-HFPO-DA	6.082	286.9 -> 168.9	55757	9.84 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d3-MeFOSA	10.763	515.0 -> 219.0	20516	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSAA	8.554	589.2 -> 419.0	32387	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
d7-MeFOSE	10.672	623.2 -> 58.9	156427	22.86 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
d9-EtFOSE	10.918	639.2 -> 58.9	193556	24.28 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
d5-EtFOSA	10.983	531.1 -> 219.0	21196	2.39 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	137837	21.08 µg/L	100
		327.1 -> 80.9	49135		
6:2FTS	7.039	427.1 -> 407.0	128624	20.87 µg/L	99
		427.1 -> 80.9	39009		
8:2FTS	8.090	527.1 -> 507.0	71161	20.93 µg/L	93
		527.1 -> 80.8	26562		
EtFOSAA	8.555	584.2 -> 419.1	97370	19.10 µg/L	m 88
		584.2 -> 526.0	57065		
FOSA	9.677	498.1 -> 77.9	373278	20.52 µg/L	99
		498.1 -> 478.0	11374		
MeFOSAA	8.347	570.1 -> 419.0	183931	20.92 µg/L	m 96
		570.1 -> 483.0	34853		
PFBA	3.031	212.8 -> 168.9	211335	20.24 µg/L	100
PFBS	5.648	298.7 -> 79.9	268428	21.10 µg/L	99
		298.7 -> 98.8	111442		
PFDA	8.301	512.9 -> 469.0	1015255	19.98 µg/L	98
		512.9 -> 219.0	164852		
PFDoDA	9.211	613.1 -> 569.0	745865	19.03 µg/L	99
		613.1 -> 319.0	108936		
PFDS	9.374	599.0 -> 79.9	113998	21.09 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	57658			
PFHpA	6.633	363.1 -> 319.0	873879	20.17	µg/L	98
		363.1 -> 169.0	146367			
PFHpS	7.972	449.0 -> 79.9	217023	20.76	µg/L	97
		449.0 -> 98.9	112729			
PFHxA	5.694	313.0 -> 269.0	706726	21.19	µg/L	99
		313.0 -> 118.9	36494			
PFHxS	7.393	398.7 -> 79.9	219115	19.30	µg/L	m 99
		398.7 -> 98.9	112038			
PFNA	7.808	463.0 -> 419.0	1171910	23.08	µg/L	96
		463.0 -> 219.0	201017			
PFNS	8.955	548.8 -> 79.9	189807	20.90	µg/L	99
		548.8 -> 98.9	95849			
PFOA	7.265	413.0 -> 369.0	1330023	20.74	µg/L	99
		413.0 -> 169.0	219319			
PFOS	8.478	498.9 -> 79.9	186672	18.94	µg/L	m 77
		498.9 -> 98.8	100141			
PFPeA	4.474	263.0 -> 219.0	488860	21.13	µg/L	100
PFPeS	6.697	349.1 -> 79.9	222052	20.00	µg/L	100
		349.1 -> 98.9	101676			
PFTeDA	9.926	713.1 -> 669.0	577627	21.76	µg/L	99
		713.1 -> 168.9	51327			
PFTrDA	9.595	663.0 -> 619.0	654394	17.34	µg/L	98
		663.0 -> 168.9	69474			
PFUnDA	8.780	563.1 -> 519.0	720866	19.99	µg/L	99
		563.1 -> 269.1	112076			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	548959	21.03	µg/L	95
		632.9 -> 452.9	153573			
9Cl-PF3ONS	8.819	530.8 -> 351.0	953589	22.55	µg/L	99
		532.8 -> 353.0	279448			
ADONA	6.883	376.9 -> 250.9	1814689	19.64	µg/L	99
		376.9 -> 84.8	434812			
HFPO-DA	6.083	284.9 -> 168.9	122270	21.41	µg/L	99
		284.9 -> 184.9	13698			
3:3FTCA	3.908	241.0 -> 177.0	32796	19.36	µg/L	99
		241.0 -> 117.0	4215			
5:3FTCA	6.322	341.0 -> 237.1	150129	21.55	µg/L	99
		341.0 -> 217.0	107187			
7:3FTCA	7.723	441.0 -> 316.9	105688	21.66	µg/L	89
		441.0 -> 336.9	233085			
EtFOSA	10.997	526.0 -> 219.0	210667	20.55	µg/L	80
		526.0 -> 169.0	228030			
EtFOSE	10.931	630.0 -> 58.9	1079034	110.90	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	164039	18.70	µg/L	98
		511.9 -> 169.0	201017			
MeFOSE	10.697	616.1 -> 58.9	778572	118.87	µg/L	100
PFDoDS	10.053	699.1 -> 79.9	51285	20.77	µg/L	99
		699.1 -> 98.8	28345			
NFDHA	5.576	295.0 -> 201.0	84727	20.82	µg/L	100
		295.0 -> 84.9	22537			
PFMBA	4.900	279.0 -> 85.1	315393	20.76	µg/L	100
PFMPA	3.588	229.0 -> 84.9	260582	20.37	µg/L	100
PFEESA	6.188	314.8 -> 134.9	830931	17.80	µg/L	100
		314.8 -> 82.9	26794			

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

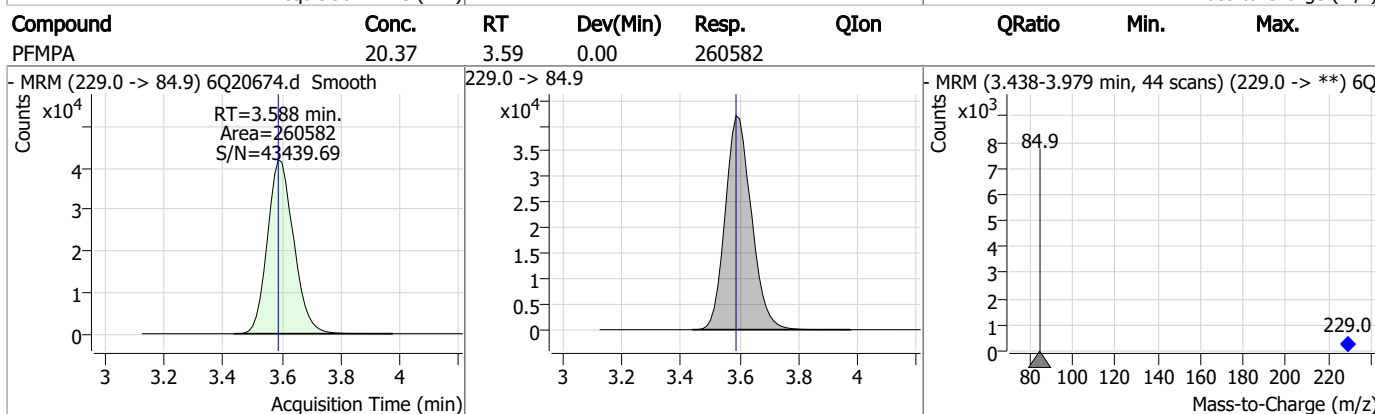
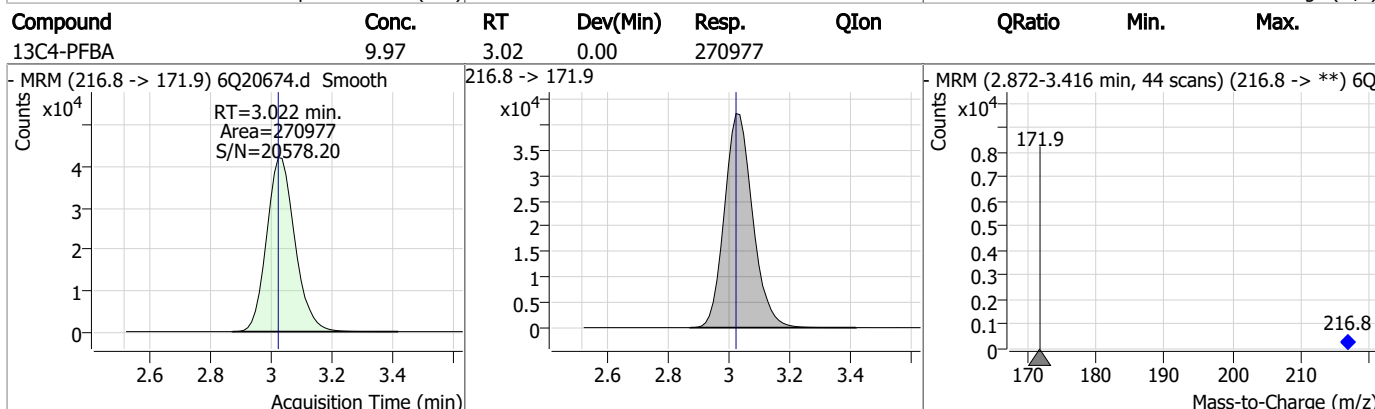
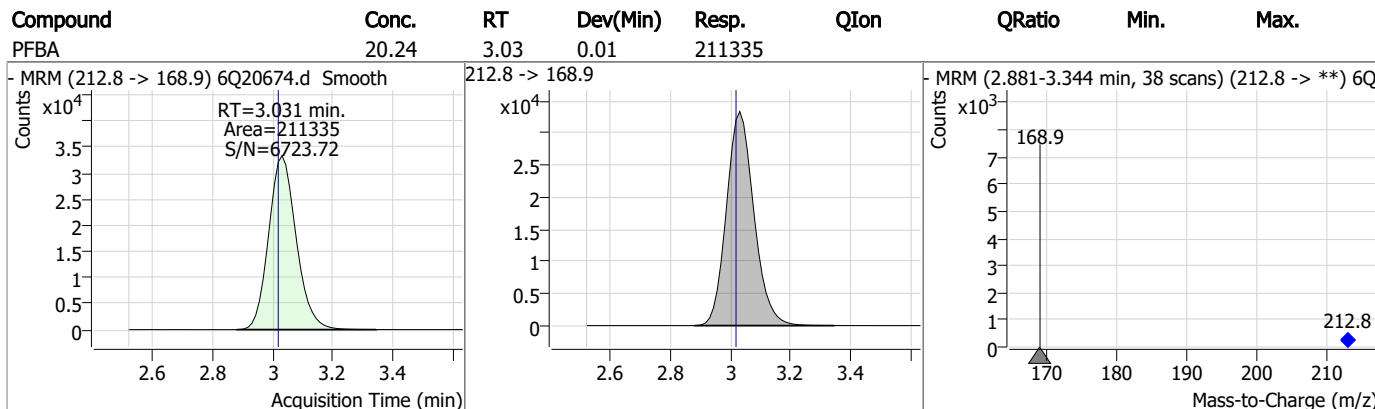
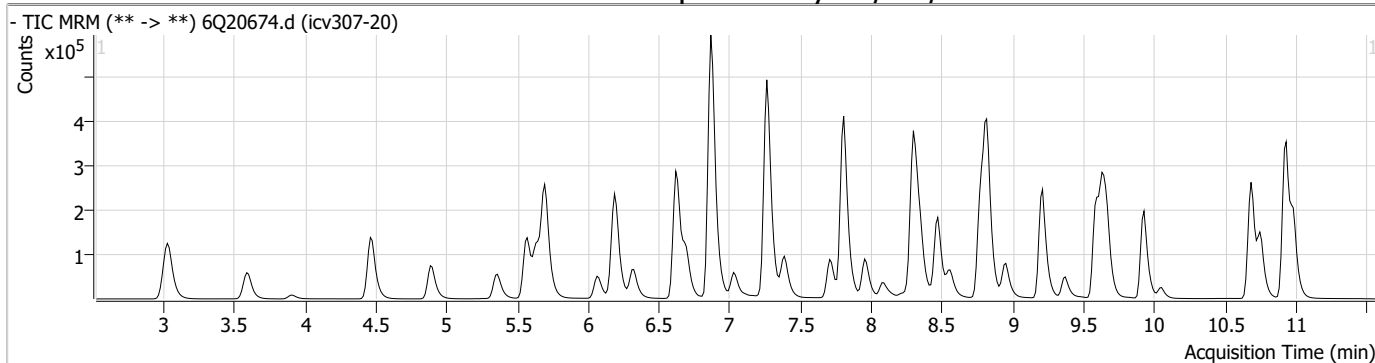
Perfluorinated Compounds by LC/MS/MS

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



Perfluorinated Compounds by LC/MS/MS

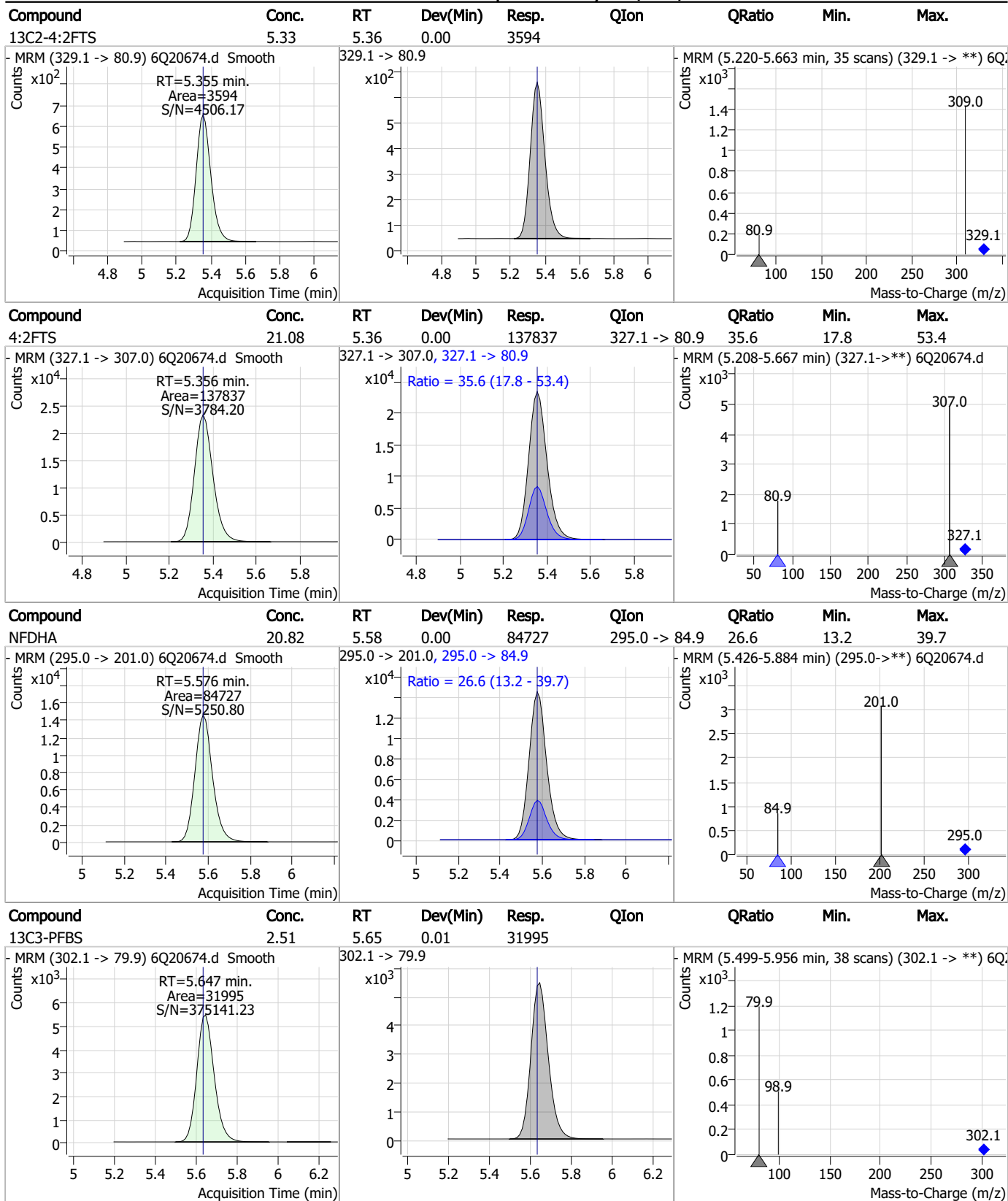
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	19.36	3.91	0.01	32796	241.0 -> 117.0	12.9	6.6	19.9
13C5-PFPeA	5.22	4.47	0.01	86795	241.0 -> 117.0	12.9	6.6	19.9
PFPeA	21.13	4.47	0.01	488860	263.0 -> 219.0	12.9	6.6	19.9
PFMBA	20.76	4.90	0.00	315393	263.0 -> 219.0	12.9	6.6	19.9

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Perfluorinated Compounds by LC/MS/MS



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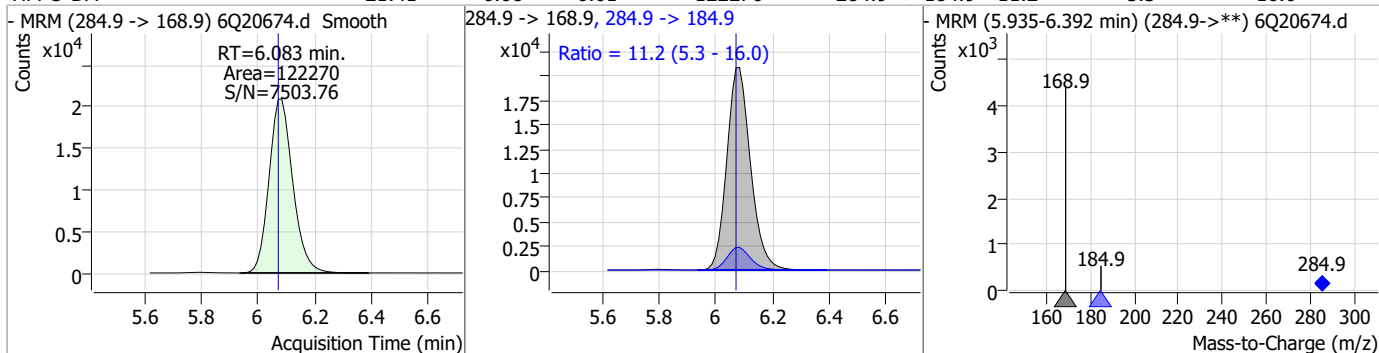
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.10	5.65	0.00	268428	298.7 -> 98.8	41.5	20.5	61.6
13C5-PFHxA	2.50	5.69	0.00	90952				
PFHxA	21.19	5.69	0.00	706726	313.0 -> 118.9	5.2	2.4	7.3
13C3-HFPO-DA	9.84	6.08	0.01	55757				

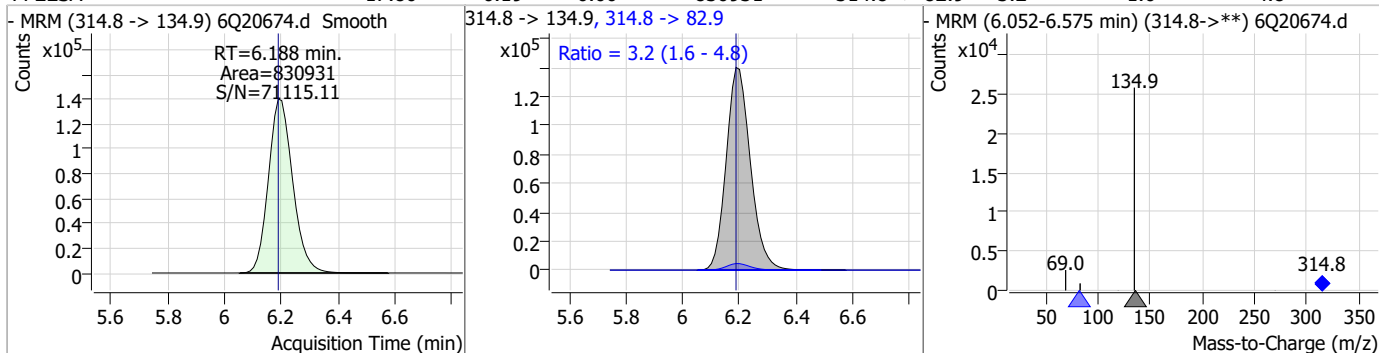
7.7.11
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Perfluorinated Compounds by LC/MS/MS

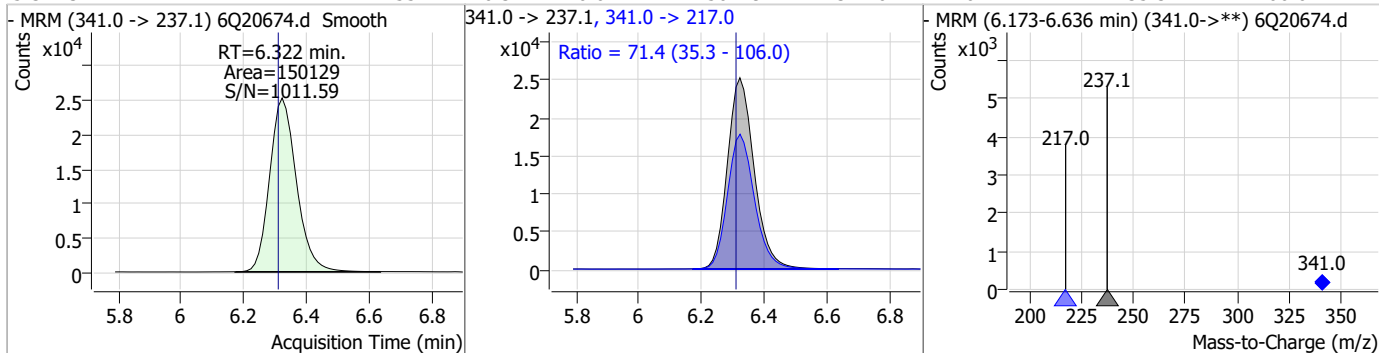
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.41	6.08	0.01	122270	284.9 -> 184.9	11.2	5.3	16.0



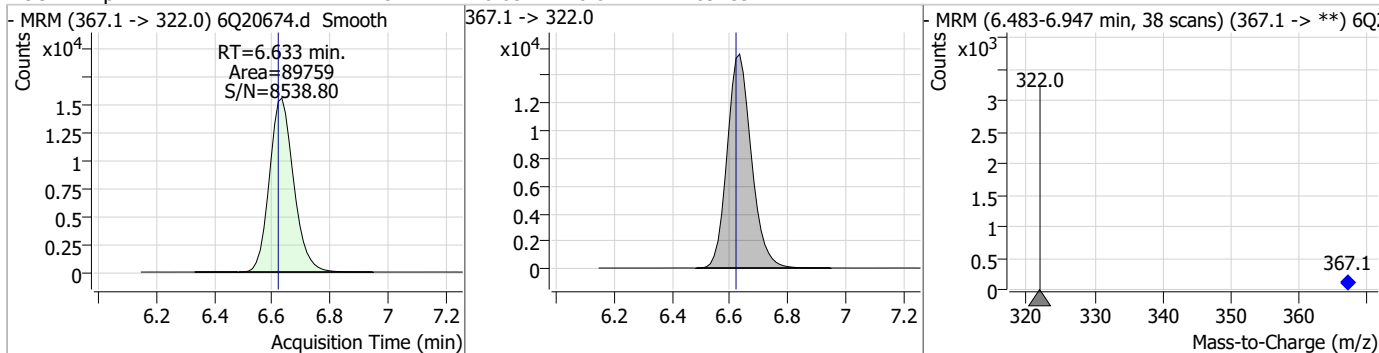
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	17.80	6.19	0.00	830931	314.8 -> 82.9	3.2	1.6	4.8



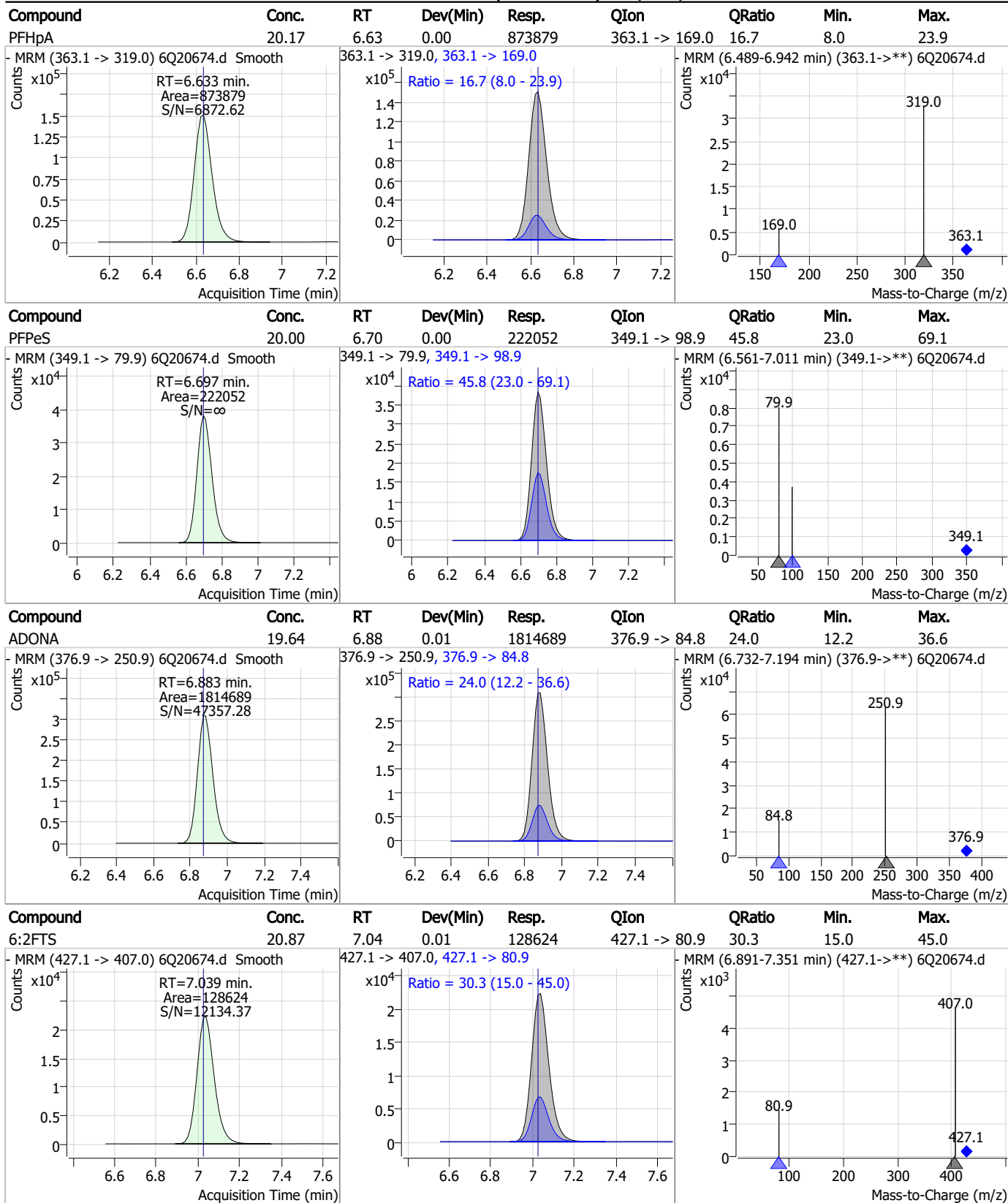
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	21.55	6.32	0.01	150129	341.0 -> 217.0	71.4	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.57	6.63	0.01	89759	367.1 -> 322.0			



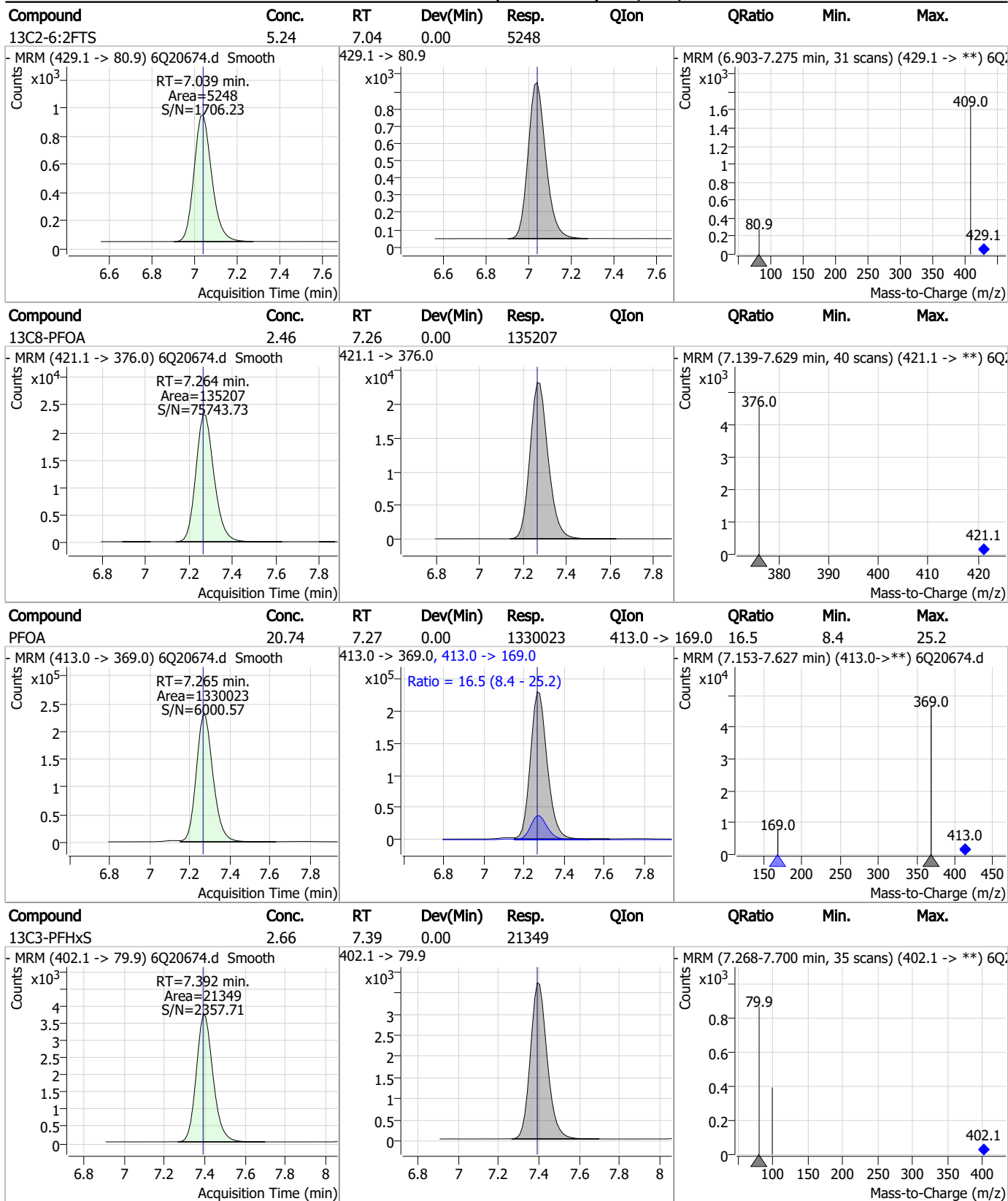
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

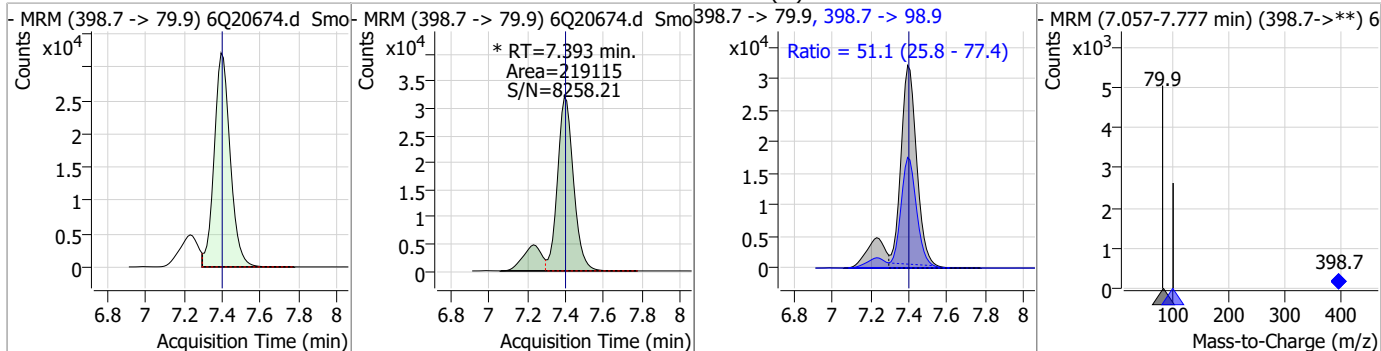


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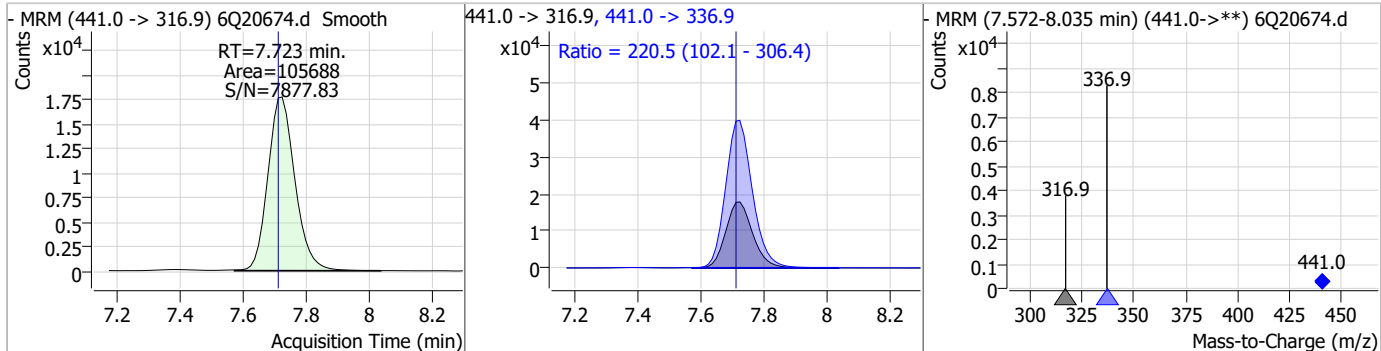


Perfluorinated Compounds by LC/MS/MS

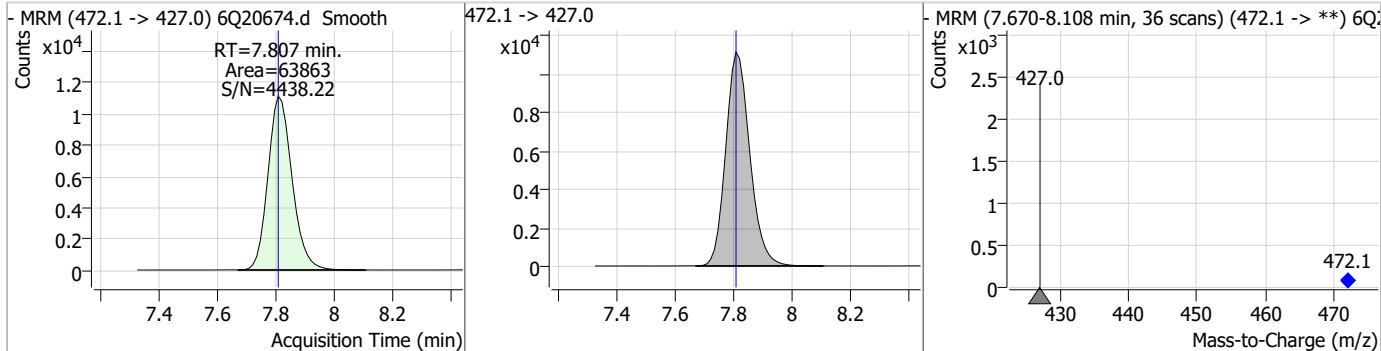
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.30	7.39	0.00	219115 (m)	398.7 -> 98.9	51.1	25.8	77.4



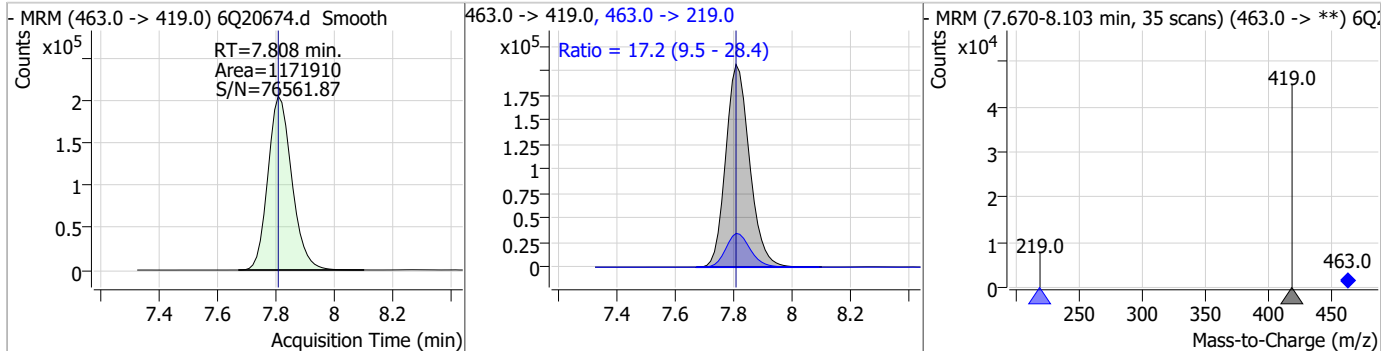
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	21.66	7.72	0.01	105688	441.0 -> 336.9	220.5	102.1	306.4



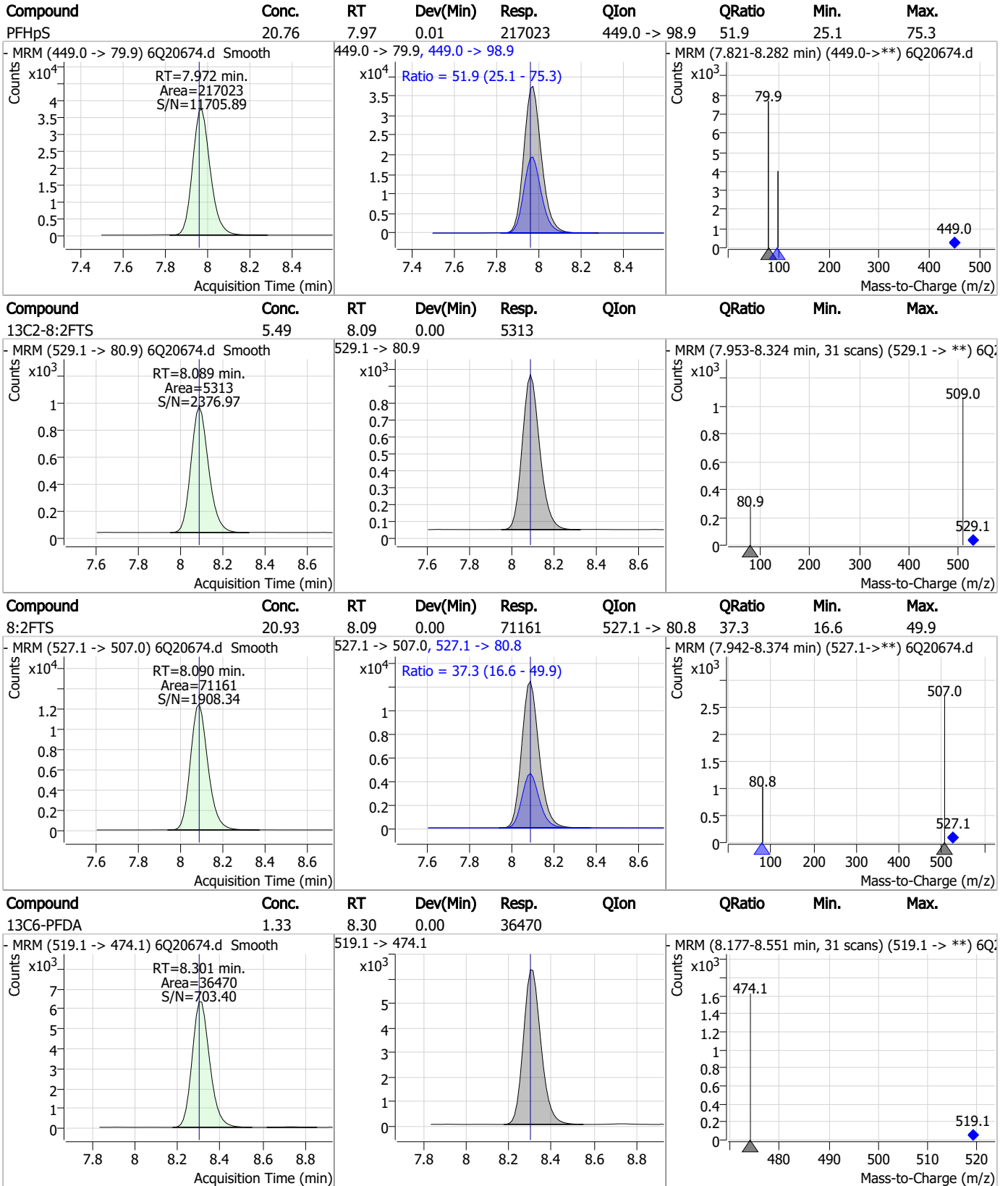
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.81	0.00	63863	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	23.08	7.81	0.00	1171910	463.0 -> 219.0	17.2	9.5	28.4



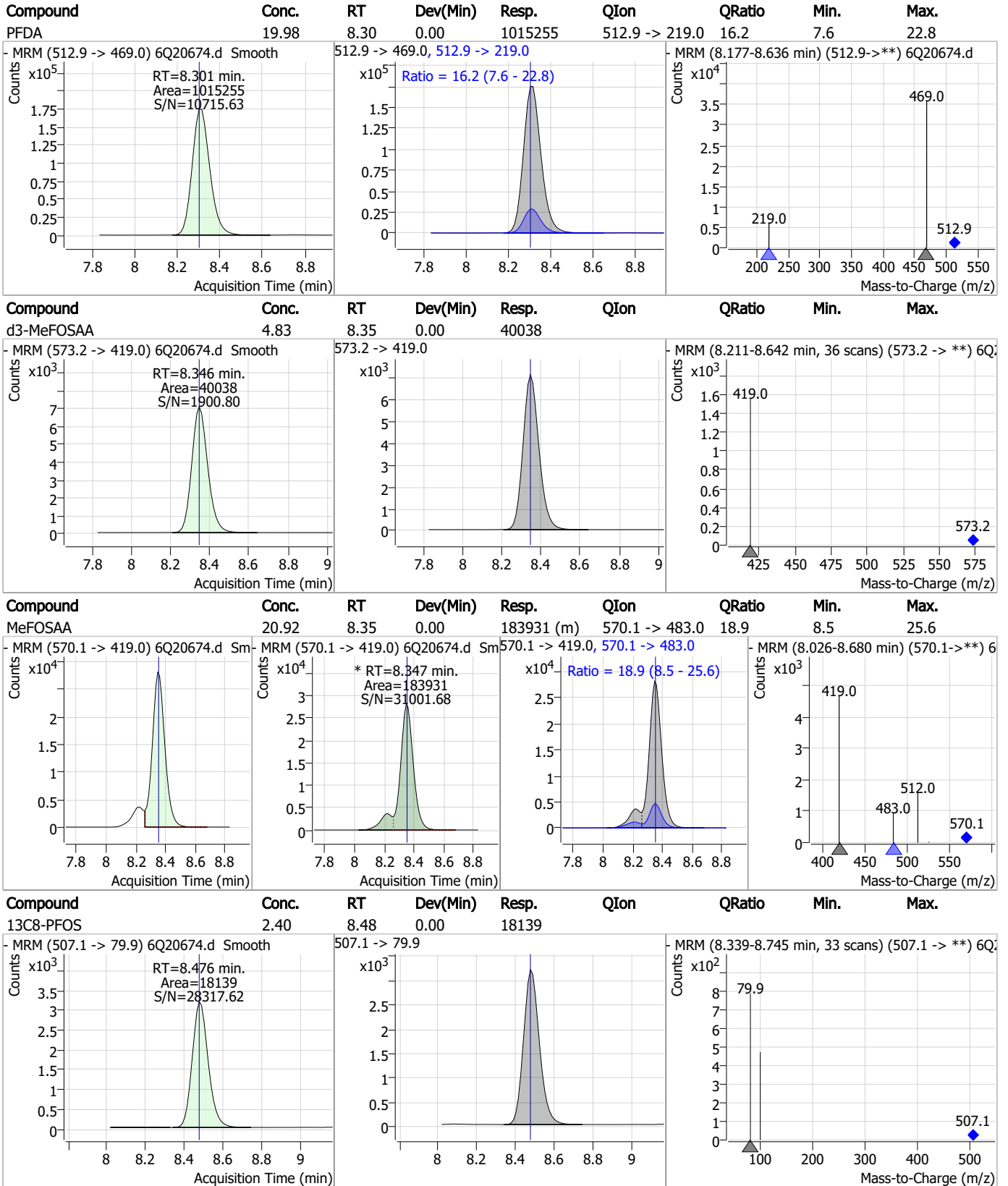
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

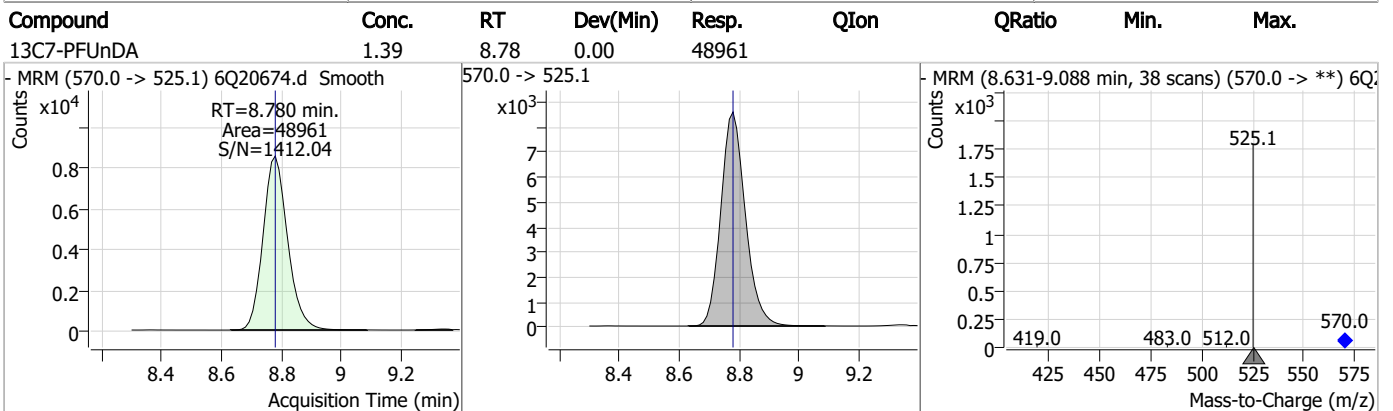
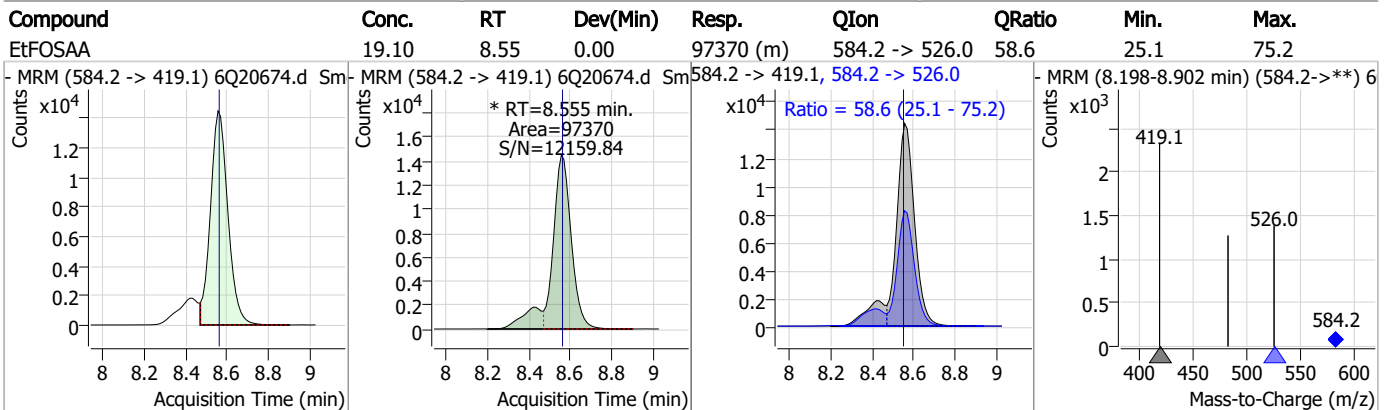
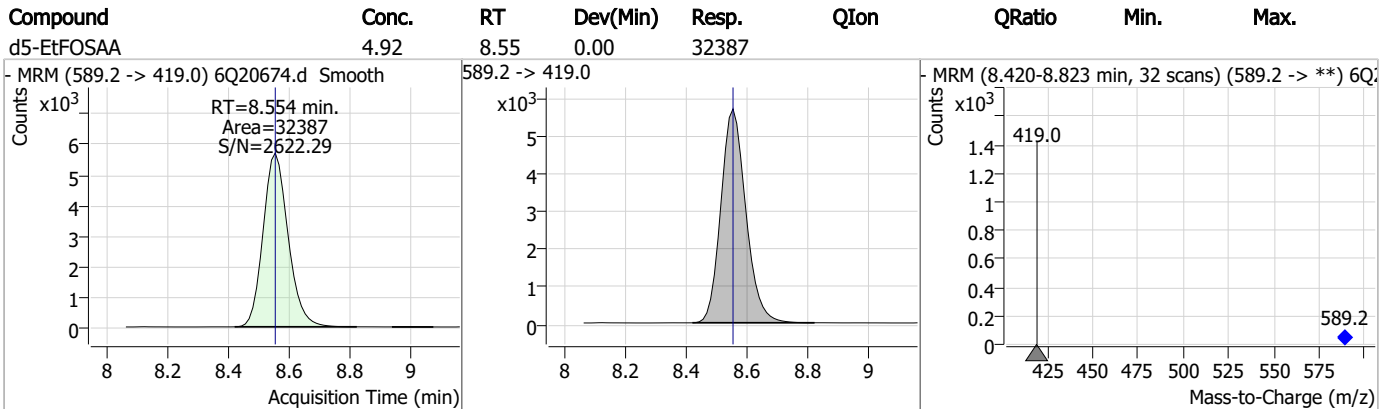
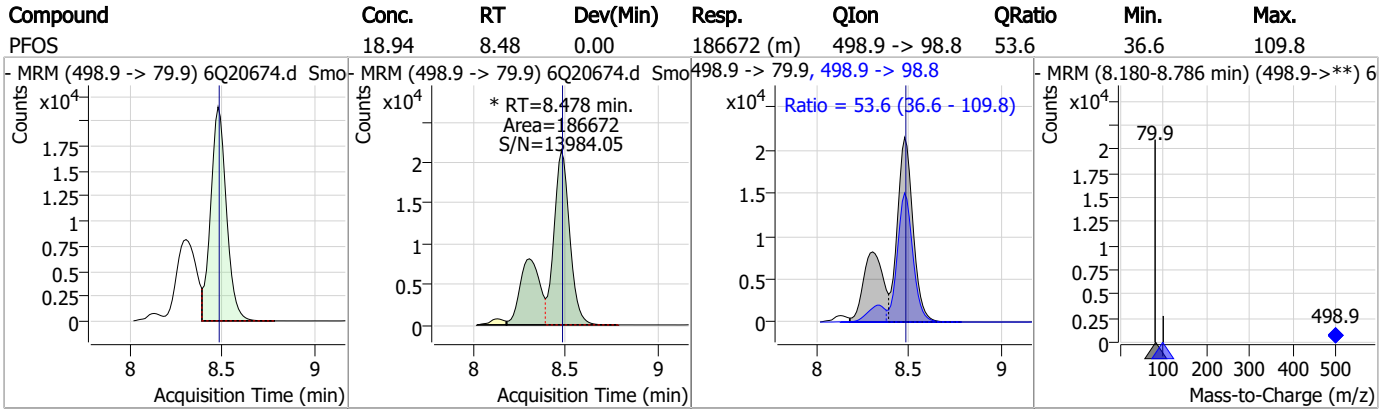


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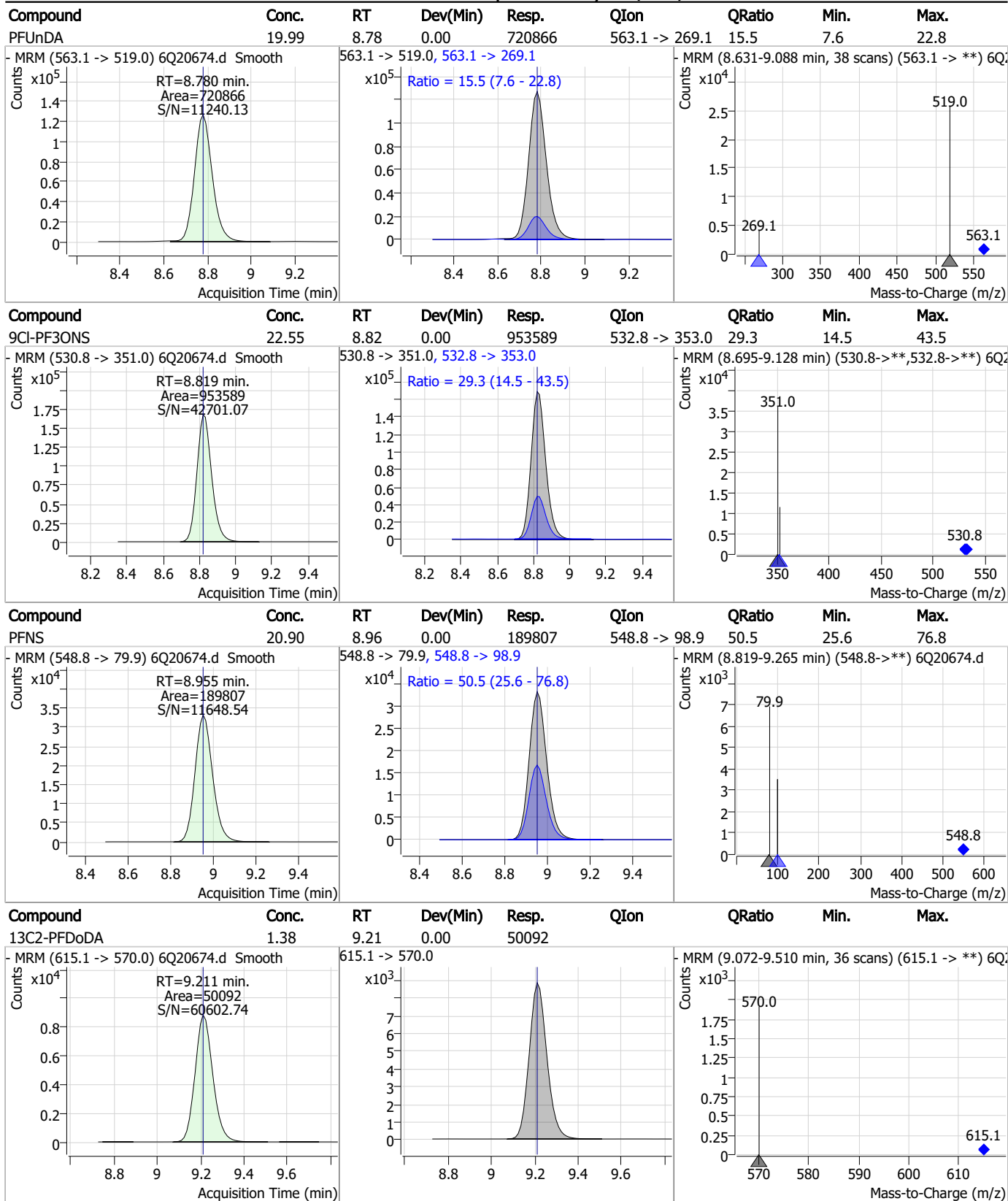
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Perfluorinated Compounds by LC/MS/MS

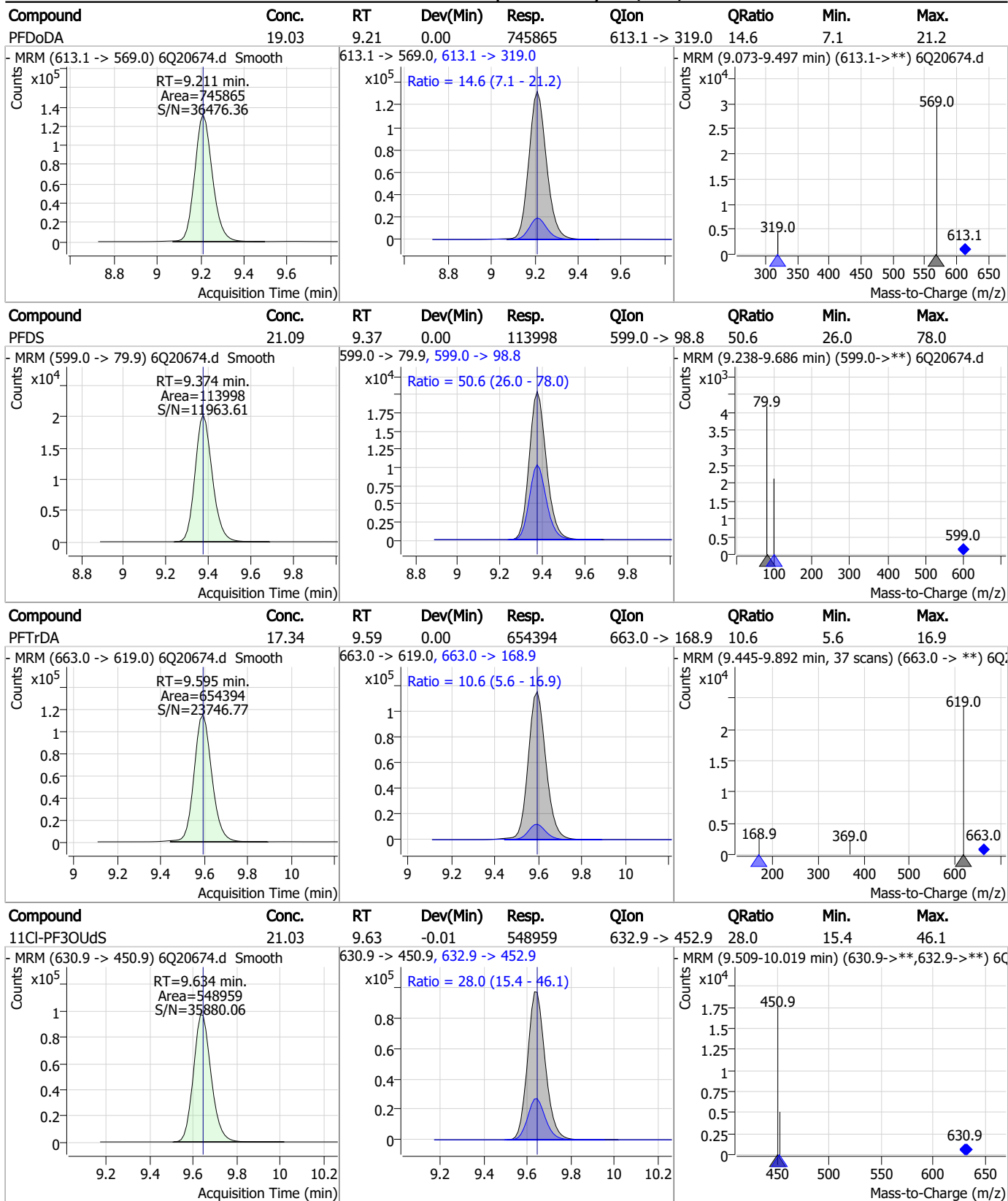


Perfluorinated Compounds by LC/MS/MS



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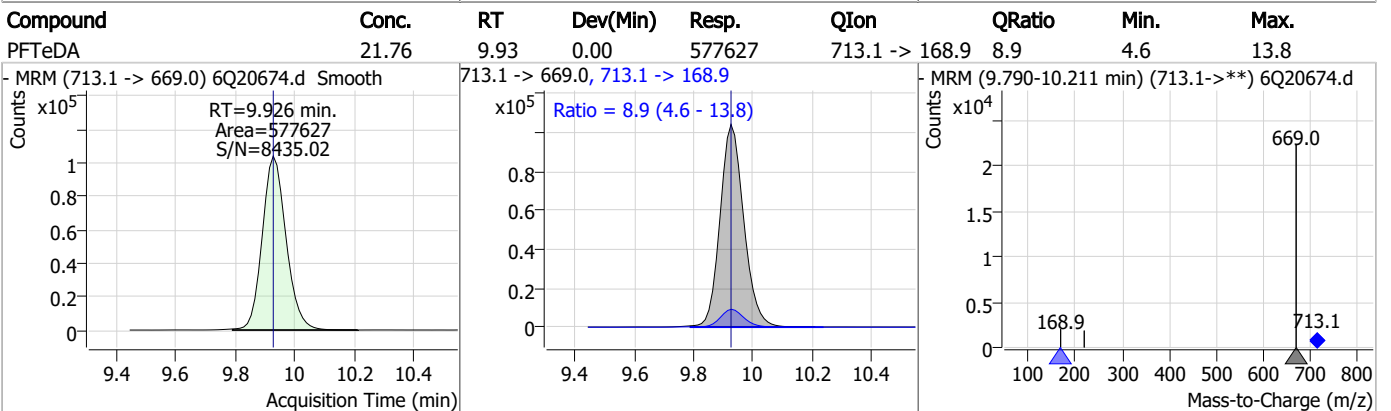
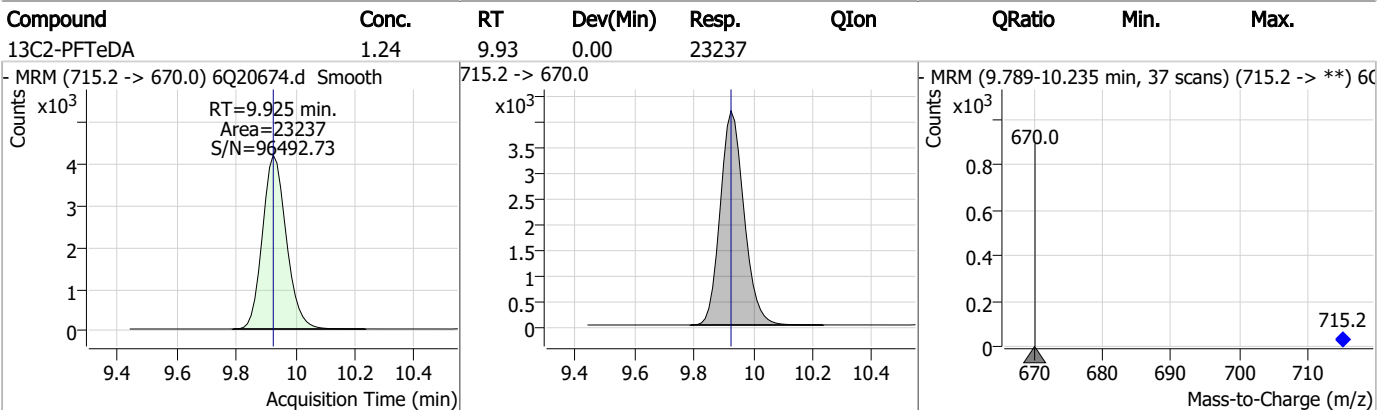
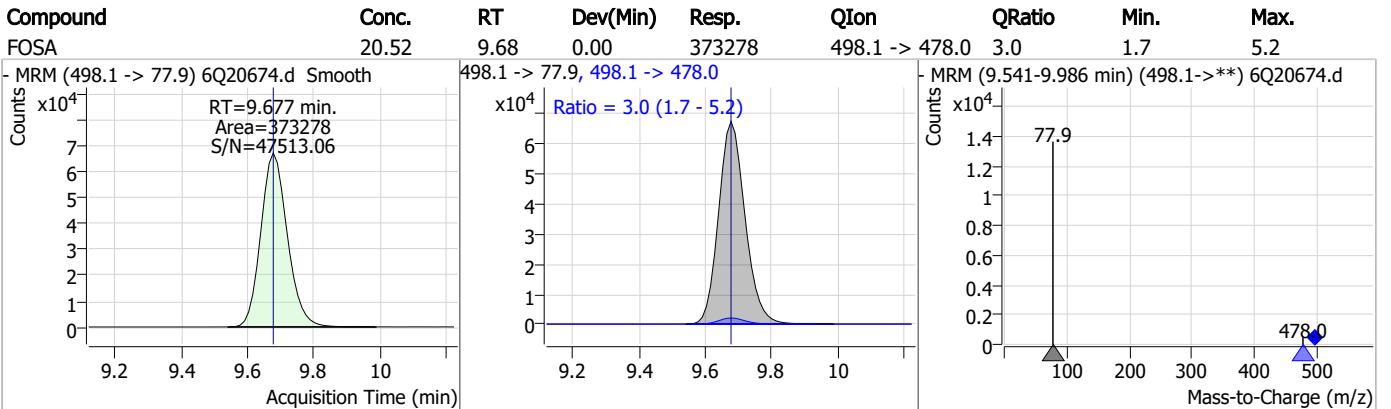
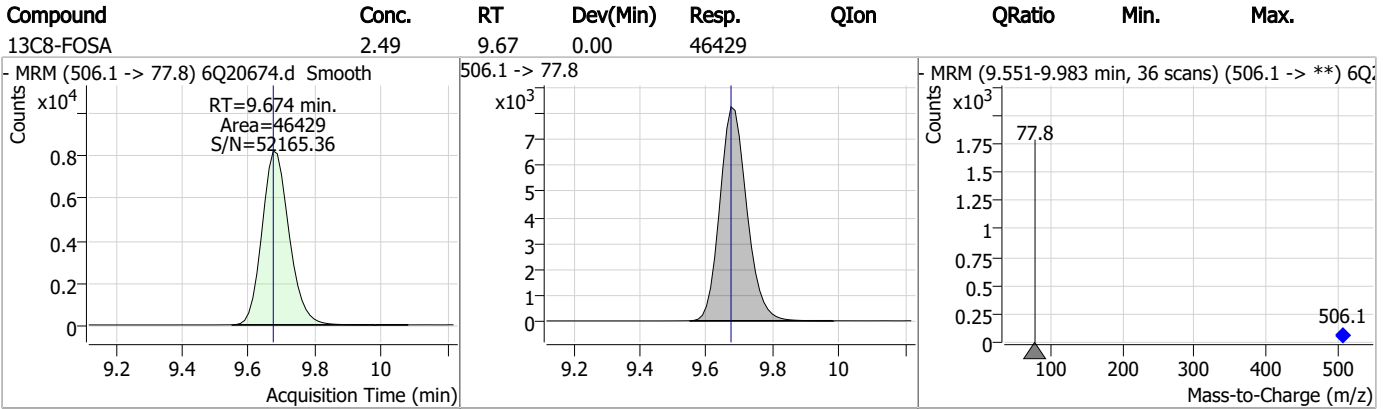
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

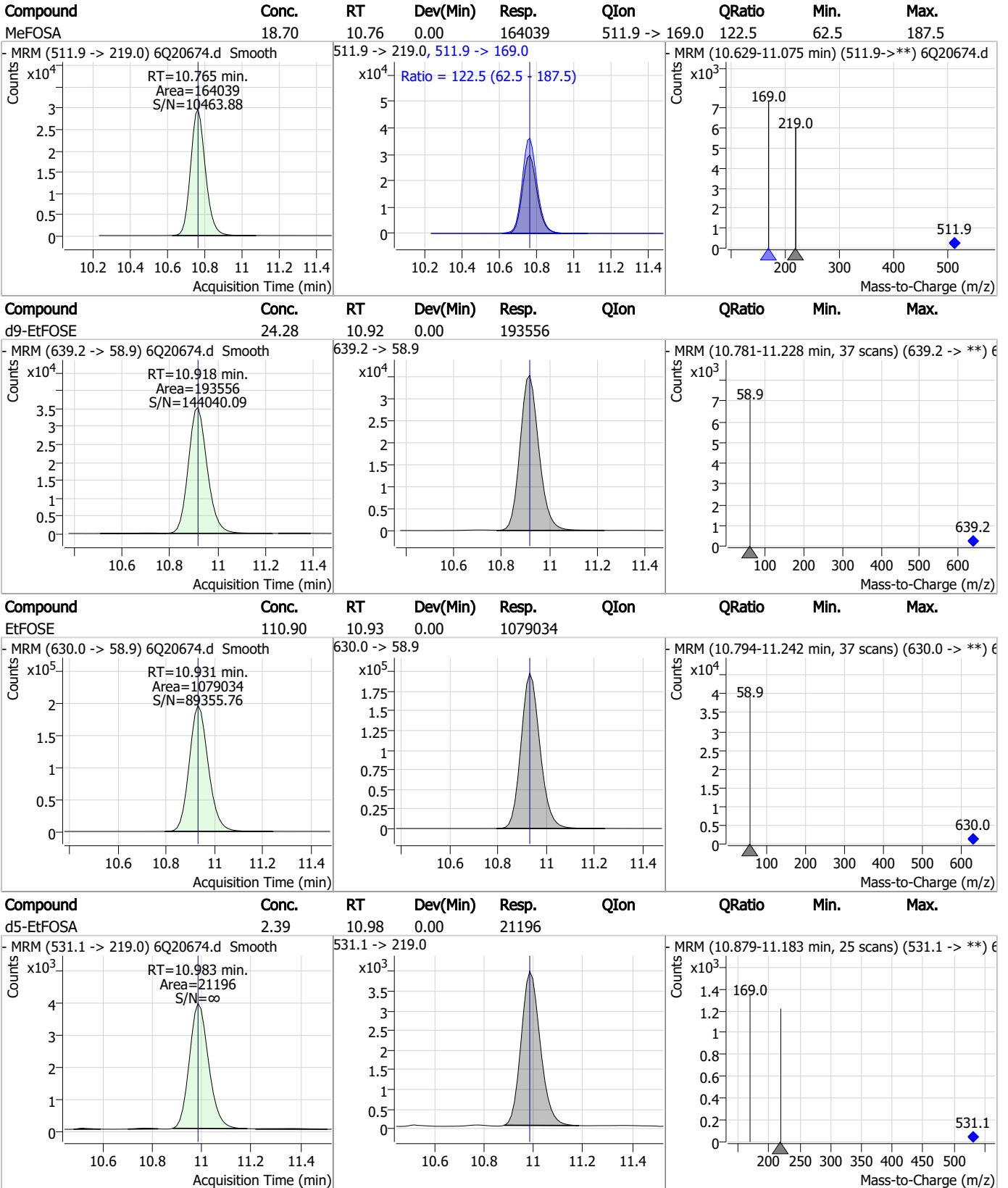
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	20.77	10.05	0.00	51285	699.1 -> 98.8	55.3	27.2	81.6
d7-MeFOSE	22.86	10.67	0.00	156427				
MeFOSE	118.87	10.70	0.01	778572				
d3-MeFOSA	2.38	10.76	0.00	20516				

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Perfluorinated Compounds by LC/MS/MS

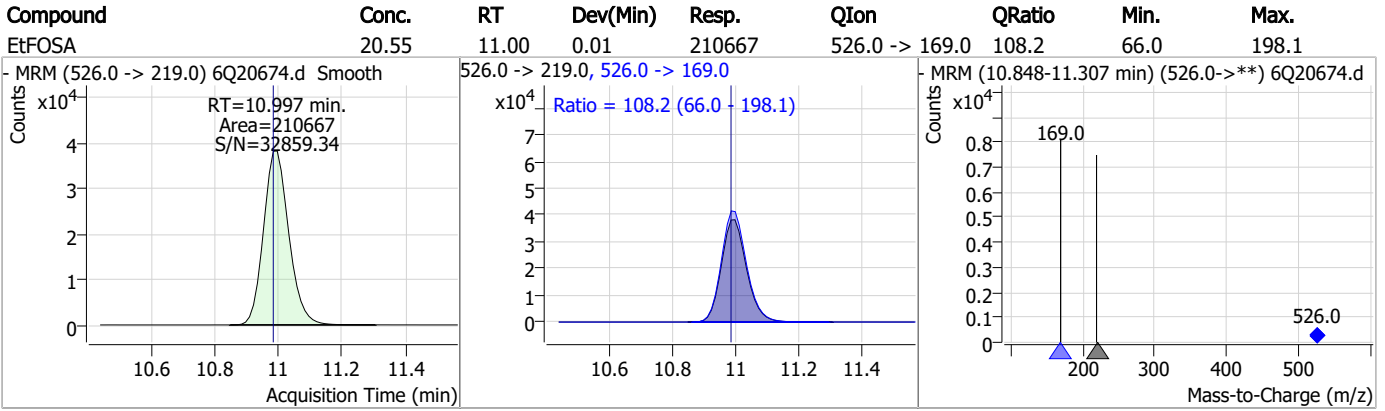


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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q307-ICV307 Method: EPA DRAFT 1633
Lab FileID: 6Q20674.D Analyst approved: 07/11/23 12:14 Martha Valls
Injection Time: 07/10/23 21:25 Supervisor approved: 07/11/23 14:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20894.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 11:21:00 AM
 Sample Name : cc307-1.0LL
 Vial : P1-A2
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	190094	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	59400	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	68306	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	63680	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	102164	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	45446	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	25273	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	32981	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	30900	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	18128	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	34447	2.50 µg/L	0.000
M3-PFBS	5.647	302.1 -> 79.9	22144	2.50 µg/L	0.012
M3-PFHxS	7.392	402.1 -> 79.9	13737	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12440	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2512	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4157	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	3688	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	30542	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	36173	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	24721	5.00 µg/L	0.000
M7-MeFOSE	10.685	623.2 -> 58.9	122097	25.00 µg/L	0.012
M9-EtFOSE	10.918	639.2 -> 58.9	155851	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15743	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	15193	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	16896	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	80124	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	10713	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	103560	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	36553	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	55308	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	67285	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2512	5.23 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 104.6%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4157	5.83 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.6%		
13C2-8:2FTS	8.089	529.1 -> 80.9	3688	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 107.2%		
13C2-PFDoDA	9.211	615.1 -> 570.0	30900	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 91.4%		
13C2-PFTeDA	9.925	715.2 -> 670.0	18128	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 103.5%		
13C3-PFBS	5.647	302.1 -> 79.9	22144	2.44 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 97.7%		
13C3-PFHxS	7.392	402.1 -> 79.9	13737	2.41 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C4-PFBA	3.035	216.8 -> 171.9	190094	10.01 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.621	367.1 -> 322.0	63680	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C5-PFHxA	5.692	318.0 -> 273.0	68306	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	4.472	268.3 -> 223.0	59400	4.74 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C6-PFDA	8.301	519.1 -> 474.1	25273	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C7-PFUnDA	8.780	570.0 -> 525.1	32981	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-FOSA	9.674	506.1 -> 77.8	34447	2.92 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C8-PFOA	7.264	421.1 -> 376.0	102164	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-PFOS	8.476	507.1 -> 79.9	12440	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C9-PFNA	7.807	472.1 -> 427.0	45446	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%	
d3-MeFOSAA	8.346	573.2 -> 419.0	30542	5.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 116.5%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	36173	8.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	15193	2.78 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.2%	
d5-EtFOSAA	8.554	589.2 -> 419.0	24721	5.93 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 118.6%	
d7-MeFOSE	10.685	623.2 -> 58.9	122097	28.17 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	155851	30.87 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 123.5%	
d5-EtFOSA	10.983	531.1 -> 219.0	15743	2.81 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.3%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0 327.1 -> 80.9	3563 1202	0.78 µg/L	97
6:2FTS	7.027	427.1 -> 407.0 427.1 -> 80.9	3472 1098	0.71 µg/L	97
8:2FTS	8.090	527.1 -> 507.0 527.1 -> 80.8	1926 629	0.82 µg/L	99
EtFOSAA	8.555	584.2 -> 419.1 584.2 -> 526.0	737 304	0.19 µg/L	87
FOSA	9.677	498.1 -> 77.9 498.1 -> 478.0	2250 80	0.17 µg/L	100
MeFOSAA	8.347	570.1 -> 419.0 570.1 -> 483.0	1195 235	0.18 µg/L	m 94
PFBA	3.031	212.8 -> 168.9	5250	0.72 µg/L	100
PFBS	5.636	298.7 -> 79.9 298.7 -> 98.8	1502 560	0.17 µg/L	94
PFDA	8.301	512.9 -> 469.0 512.9 -> 219.0	6674 1062	0.19 µg/L	98
PFDODA	9.211	613.1 -> 569.0 613.1 -> 319.0	5223 650	0.22 µg/L	96
PFDS	9.374	599.0 -> 79.9	708	0.19 µg/L	93

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.621	599.0 -> 98.8	331	0.19	µg/L	100
		363.1 -> 319.0	5776			
PFHpS	7.960	363.1 -> 169.0	921	0.18	µg/L	97
		449.0 -> 79.9	1297			
PFHxA	5.694	449.0 -> 98.9	675	0.17	µg/L	96
		313.0 -> 269.0	4338			
PFHxS	7.393	313.0 -> 118.9	266	0.18	µg/L	m
		398.7 -> 79.9	1310			
PFNA	7.808	398.7 -> 98.9	752	0.18	µg/L	94
		463.0 -> 419.0	6640			
PFNS	8.955	463.0 -> 219.0	1430	0.20	µg/L	87
		548.8 -> 79.9	1223			
PFOA	7.265	548.8 -> 98.9	735	0.17	µg/L	94
		413.0 -> 369.0	8277			
PFOS	8.478	413.0 -> 169.0	1591	0.21	µg/L	m
		498.9 -> 79.9	1408			
PFPeA	4.474	498.9 -> 98.8	693	0.37	µg/L	100
		263.0 -> 219.0	5931			
PFPeS	6.697	349.1 -> 79.9	1274	0.18	µg/L	93
		349.1 -> 98.9	645			
PFTeDA	9.926	713.1 -> 669.0	3920	0.19	µg/L	96
		713.1 -> 168.9	425			
PFTrDA	9.595	663.0 -> 619.0	4653	0.20	µg/L	98
		663.0 -> 168.9	553			
PFUnDA	8.780	563.1 -> 519.0	4188	0.17	µg/L	94
		563.1 -> 269.1	749			
11Cl-PF3OUdS	9.646	630.9 -> 450.9	6206	0.37	µg/L	96
		632.9 -> 452.9	1761			
9Cl-PF3ONS	8.819	530.8 -> 351.0	9161	0.33	µg/L	93
		532.8 -> 353.0	2989			
ADONA	6.870	376.9 -> 250.9	21686	0.36	µg/L	94
		376.9 -> 84.8	5929			
HFPO-DA	6.071	284.9 -> 168.9	1492	0.40	µg/L	99
		284.9 -> 184.9	165			
3:3FTCA	3.921	241.0 -> 177.0	1125	0.95	µg/L	95
		241.0 -> 117.0	128			
5:3FTCA	6.322	341.0 -> 237.1	22473	4.30	µg/L	94
		341.0 -> 217.0	17053			
7:3FTCA	7.711	441.0 -> 316.9	17389	4.74	µg/L	94
		441.0 -> 336.9	37025			
EtFOSA	10.997	526.0 -> 219.0	2789	0.37	µg/L	99
		526.0 -> 169.0	3665			
EtFOSE	10.931	630.0 -> 58.9	6201	0.79	µg/L	100
		511.9 -> 219.0	2249			
MeFOSA	10.765	511.9 -> 169.0	3400	0.35	µg/L	m
		616.1 -> 58.9	4047			
MeFOSE	10.697	699.1 -> 79.9	326	0.79	µg/L	m
		699.1 -> 98.8	190			
PFDoDS	10.053	295.0 -> 201.0	1085	0.19	µg/L	95
		295.0 -> 84.9	304			
NFDHA	5.576	279.0 -> 85.1	3954	0.38	µg/L	100
		229.0 -> 84.9	3281			
PFMBA	4.900	314.8 -> 134.9	11060	0.37	µg/L	100
		314.8 -> 82.9	373			
PFMPA	3.588			0.32	µg/L	99
PFEESA	6.188					

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

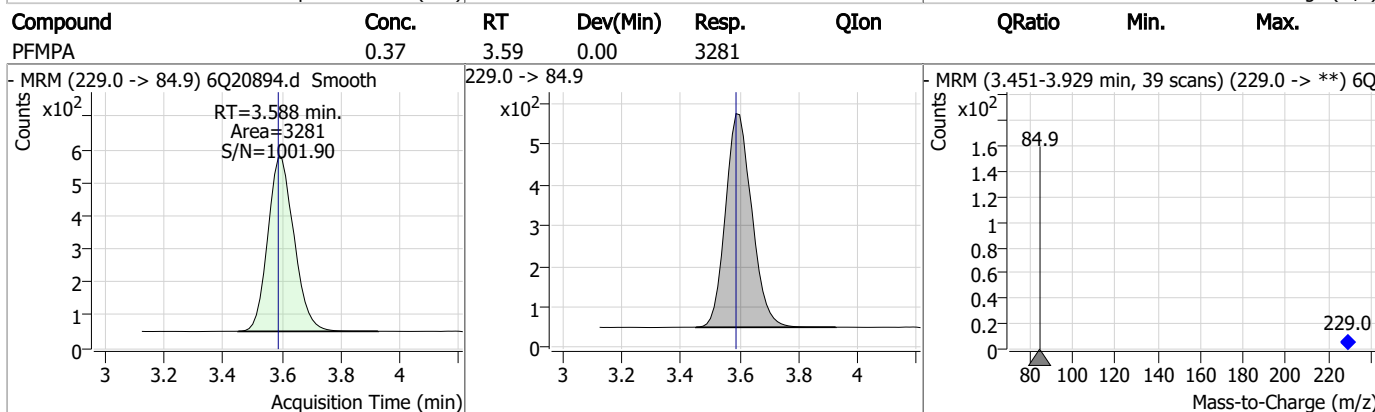
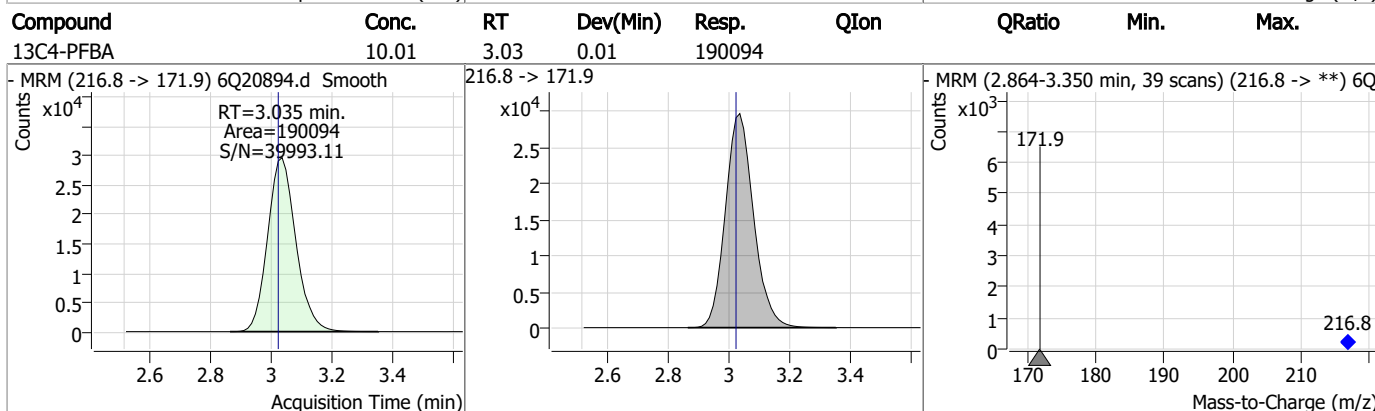
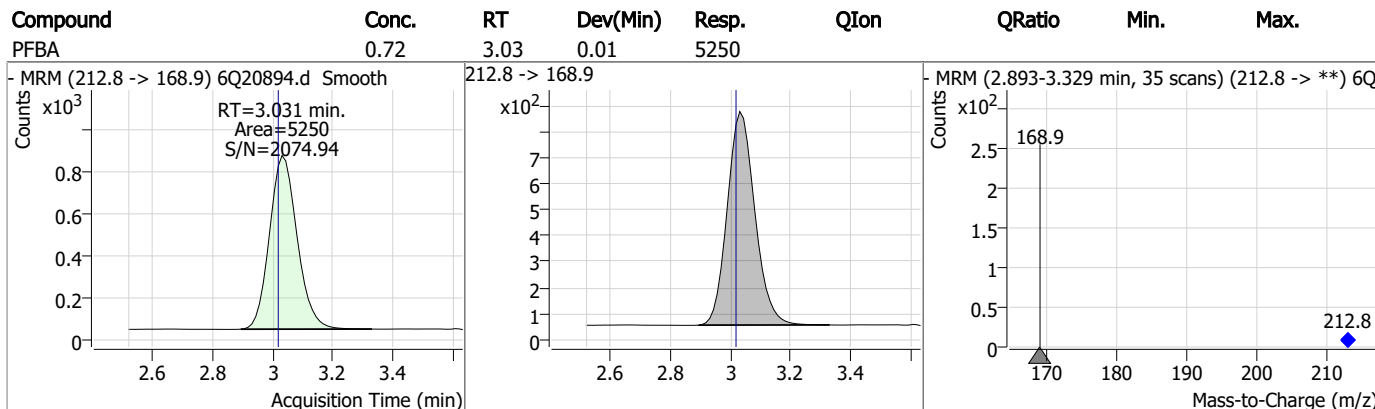
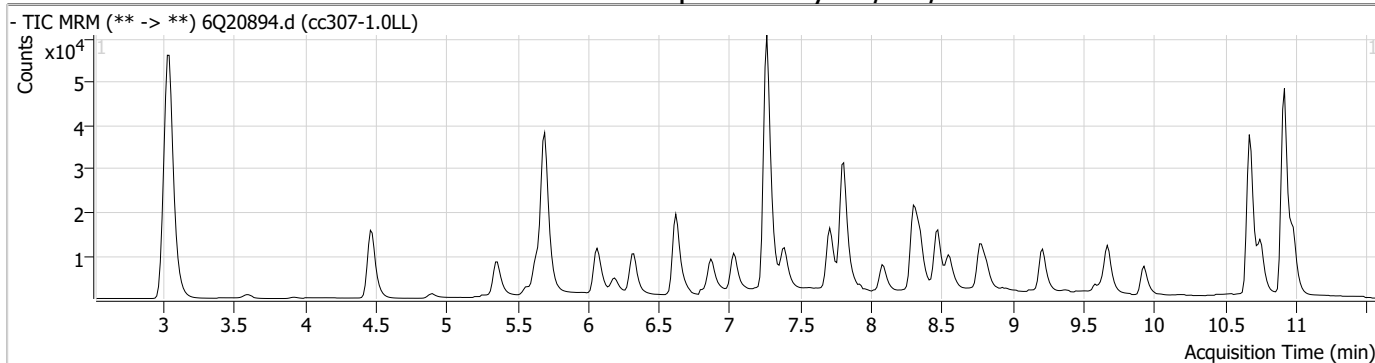
Perfluorinated Compounds by LC/MS/MS

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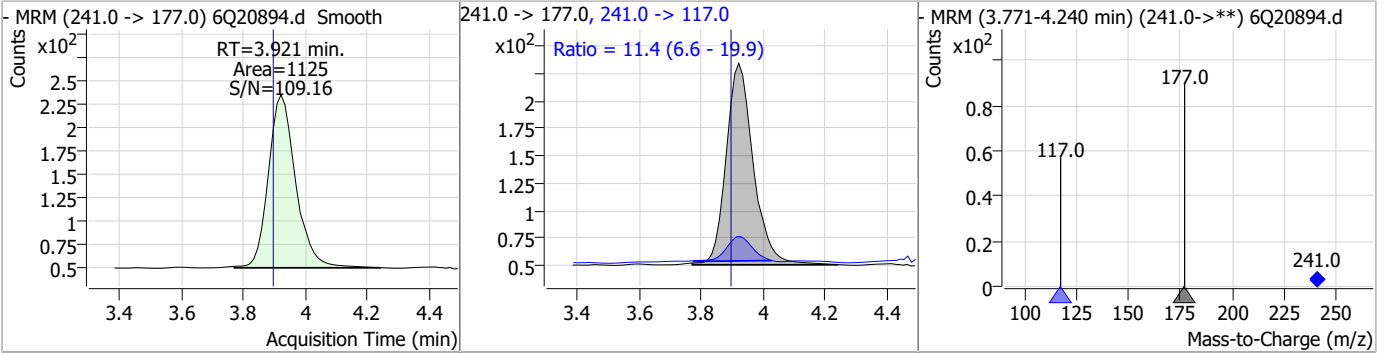
Perfluorinated Compounds by LC/MS/MS



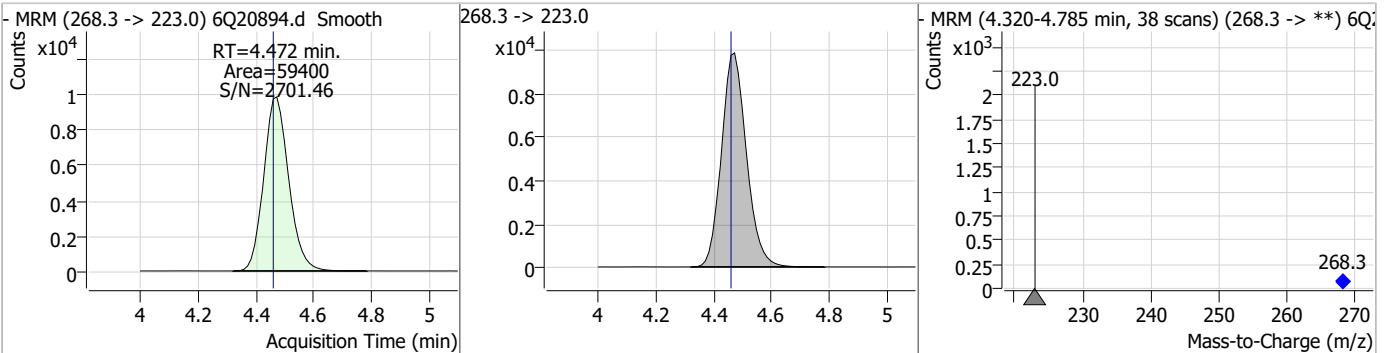
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Perfluorinated Compounds by LC/MS/MS

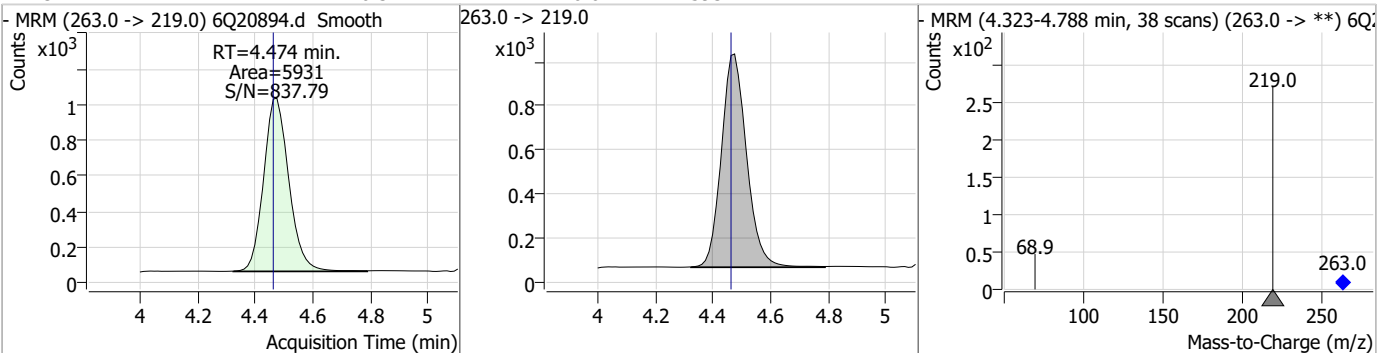
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.95	3.92	0.02	1125	241.0 -> 117.0	11.4	6.6	19.9



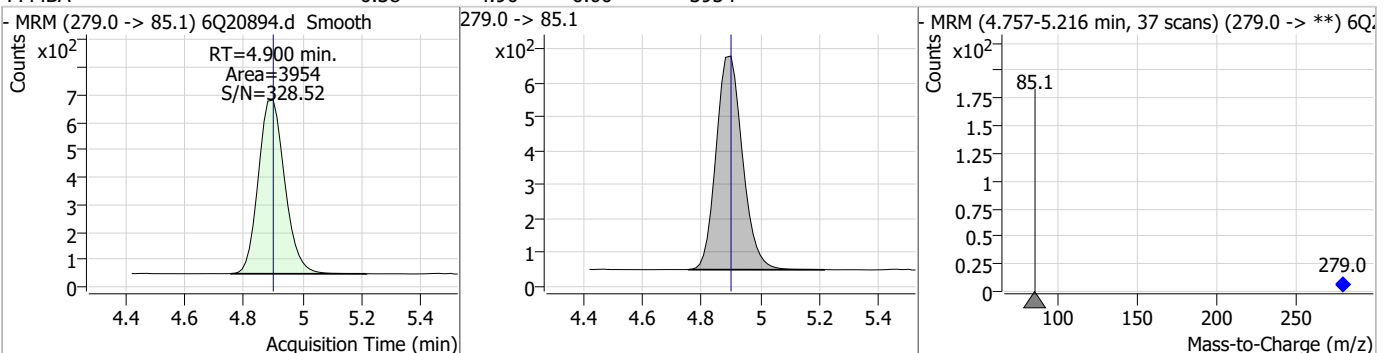
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.74	4.47	0.01	59400				



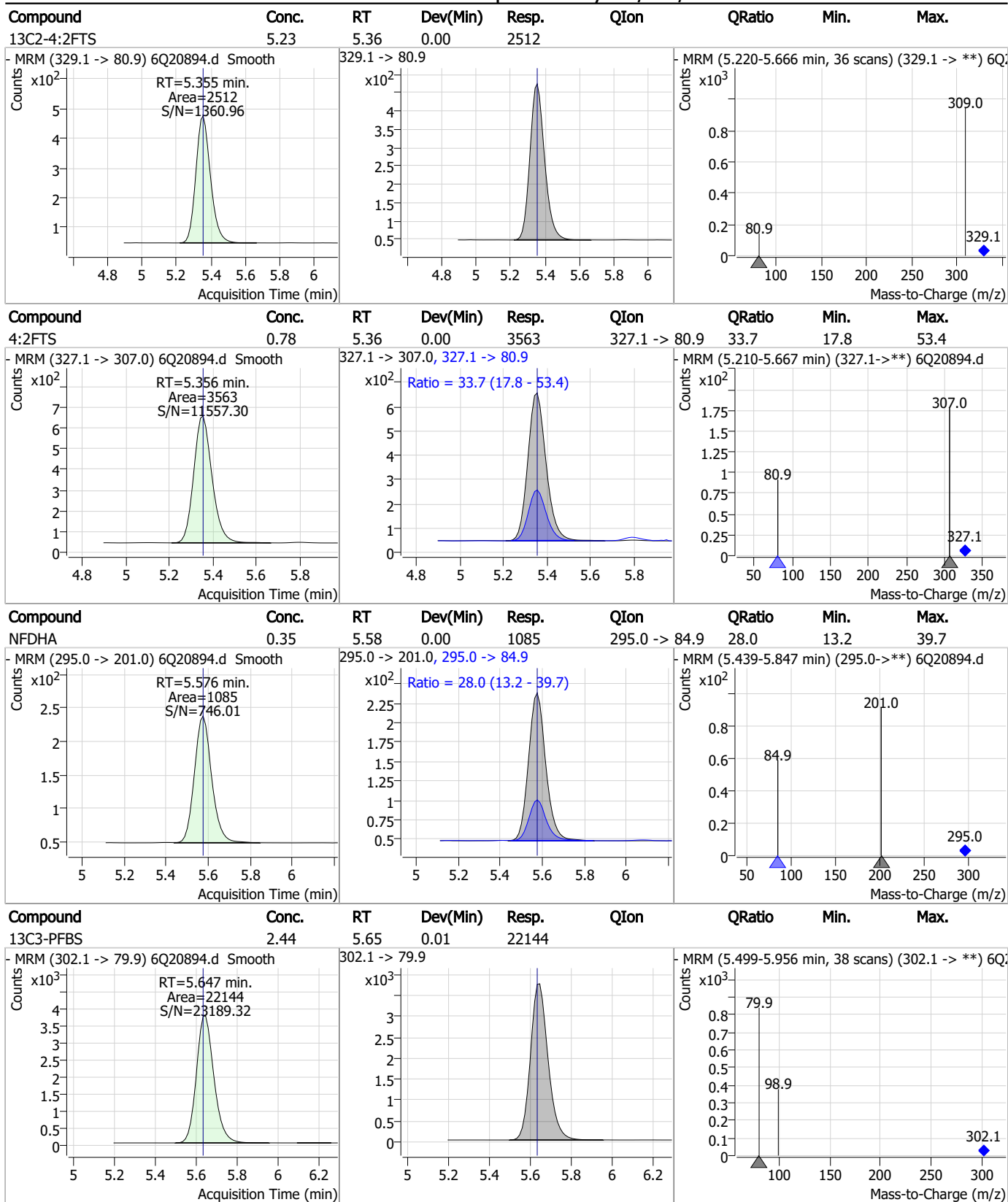
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.37	4.47	0.01	5931				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.38	4.90	0.00	3954				



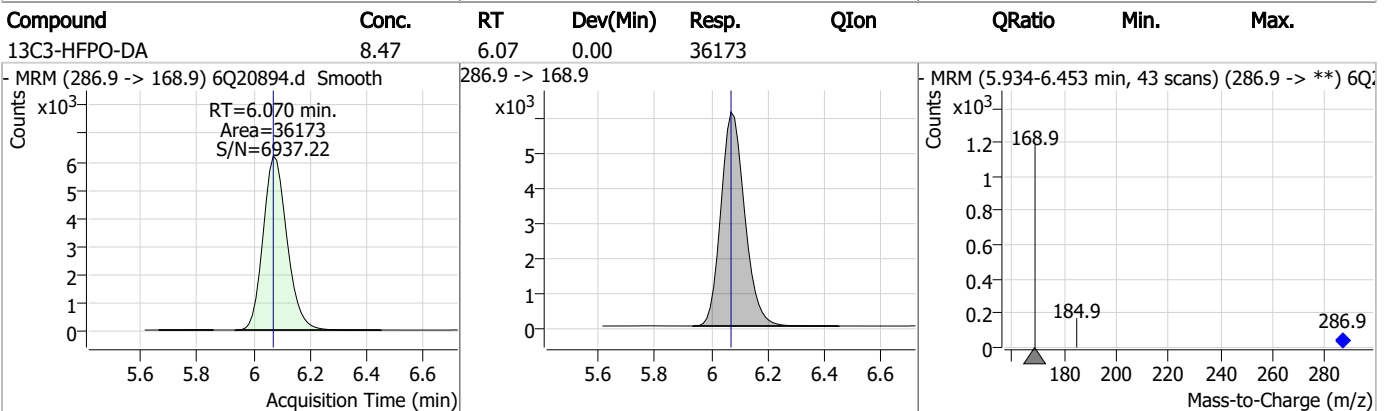
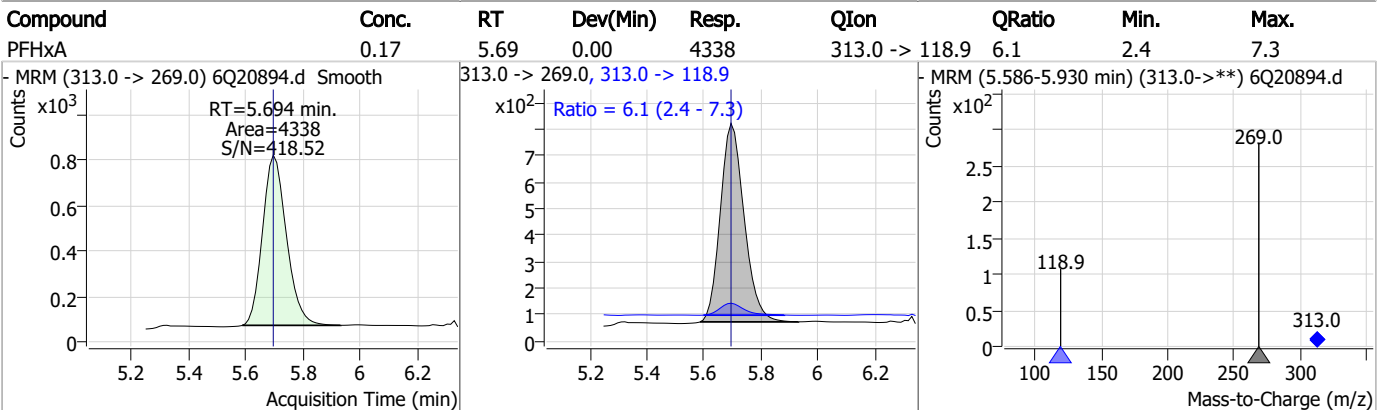
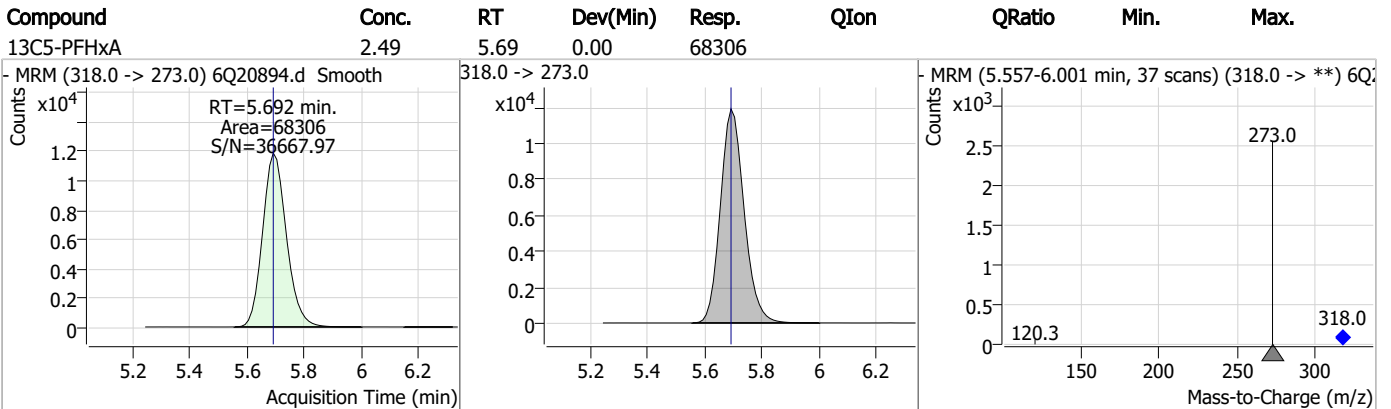
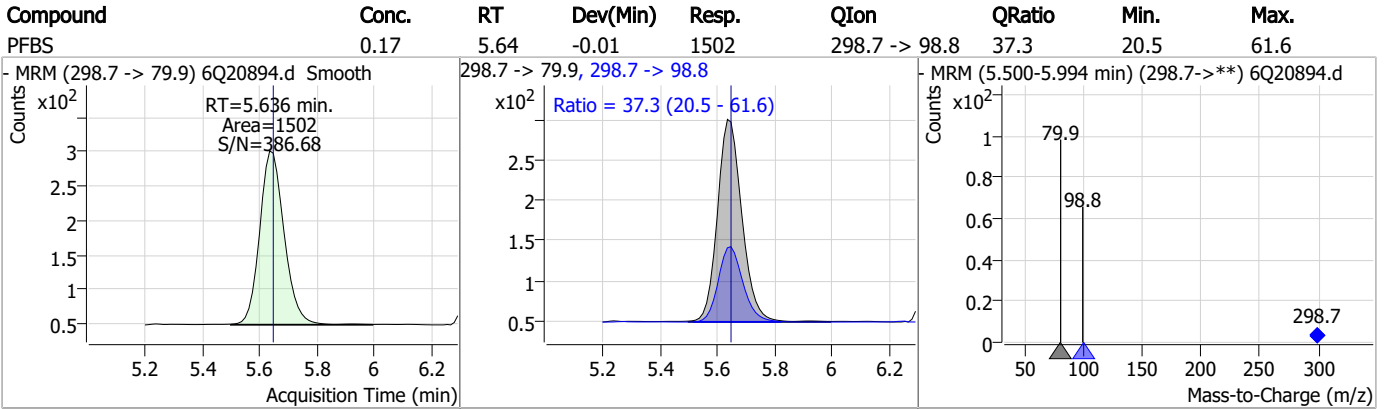
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

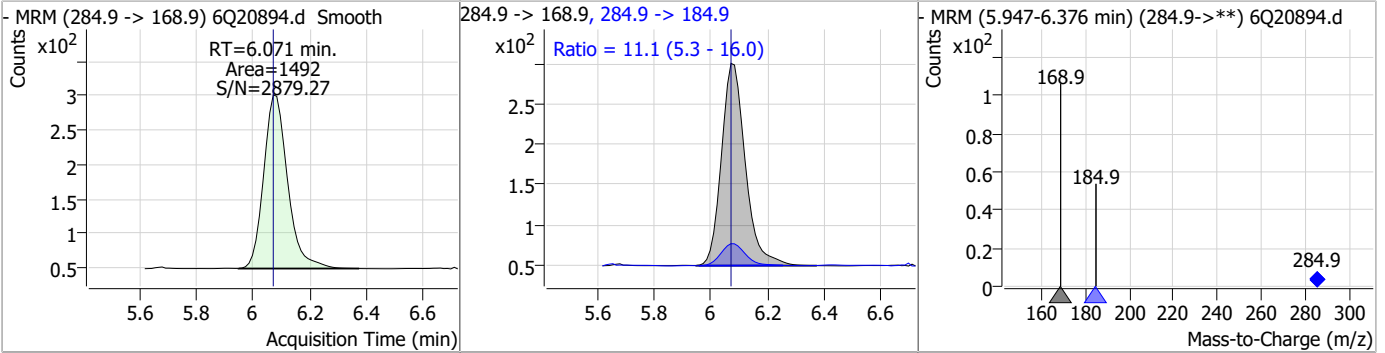


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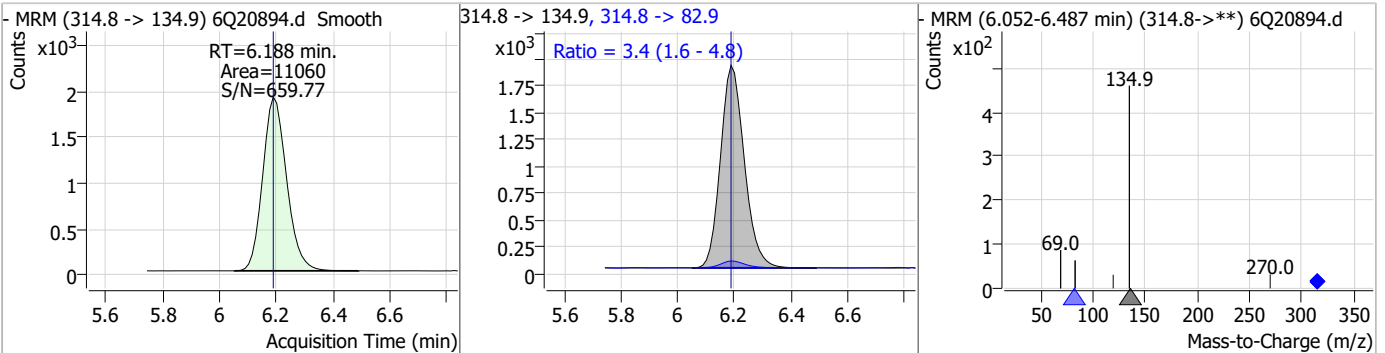


Perfluorinated Compounds by LC/MS/MS

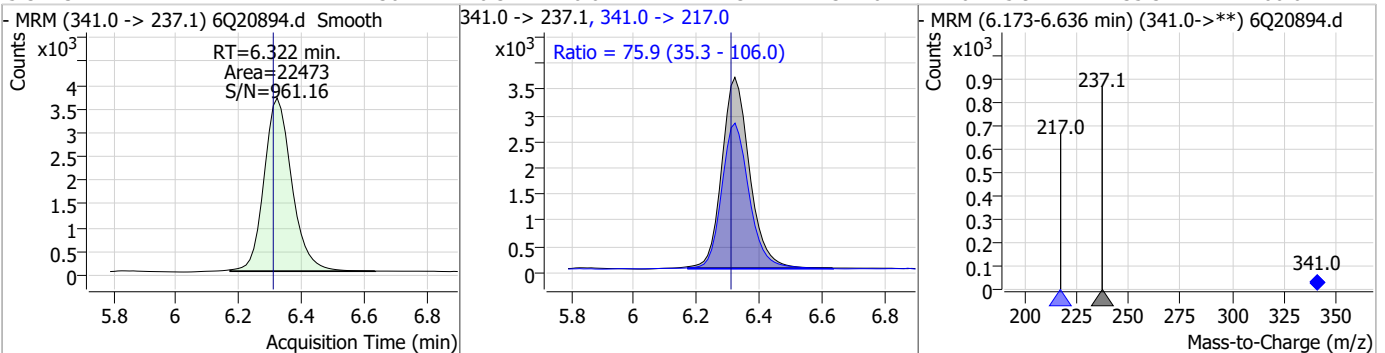
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.40	6.07	0.00	1492	284.9 -> 184.9	11.1	5.3	16.0



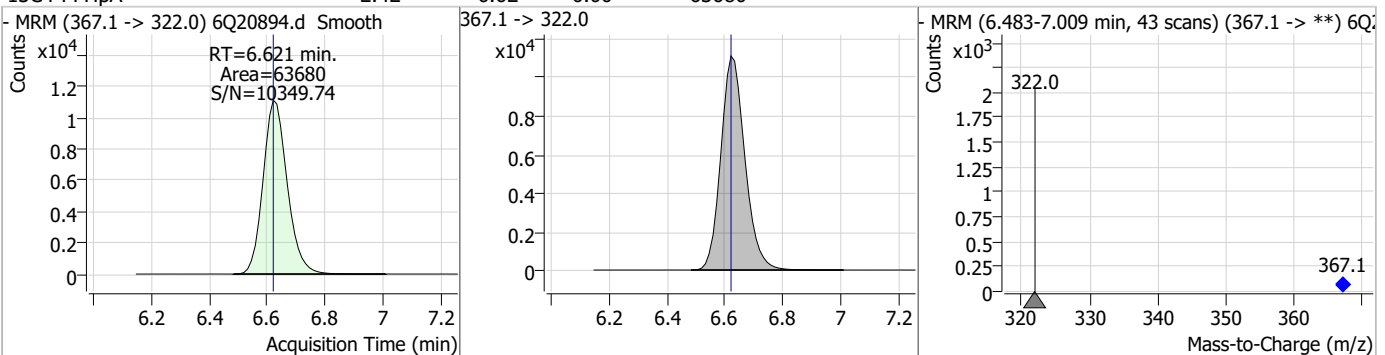
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.32	6.19	0.00	11060	314.8 -> 82.9	3.4	1.6	4.8



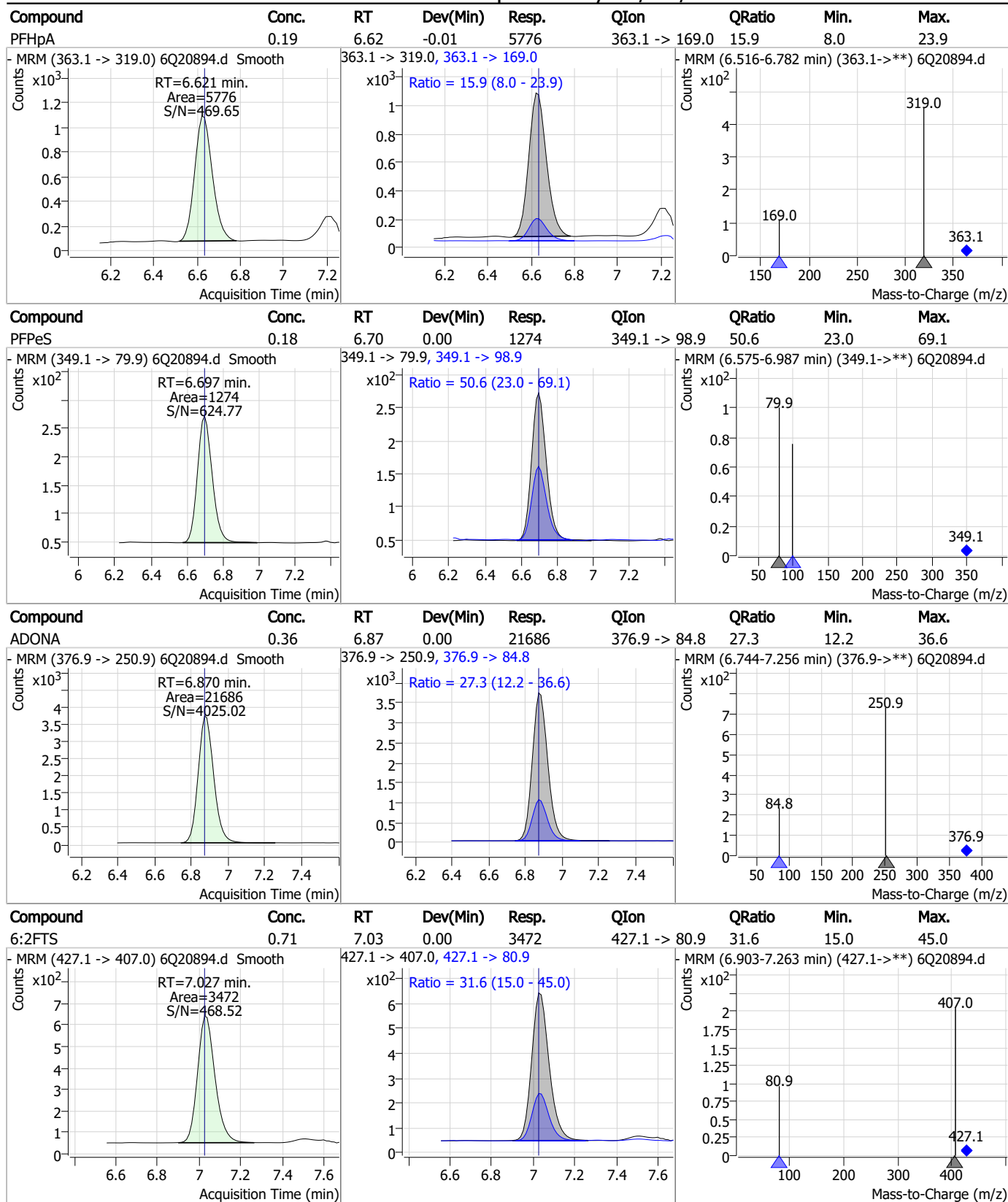
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.30	6.32	0.01	22473	341.0 -> 217.0	75.9	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.62	0.00	63680	367.1 -> 322.0	-	-	-



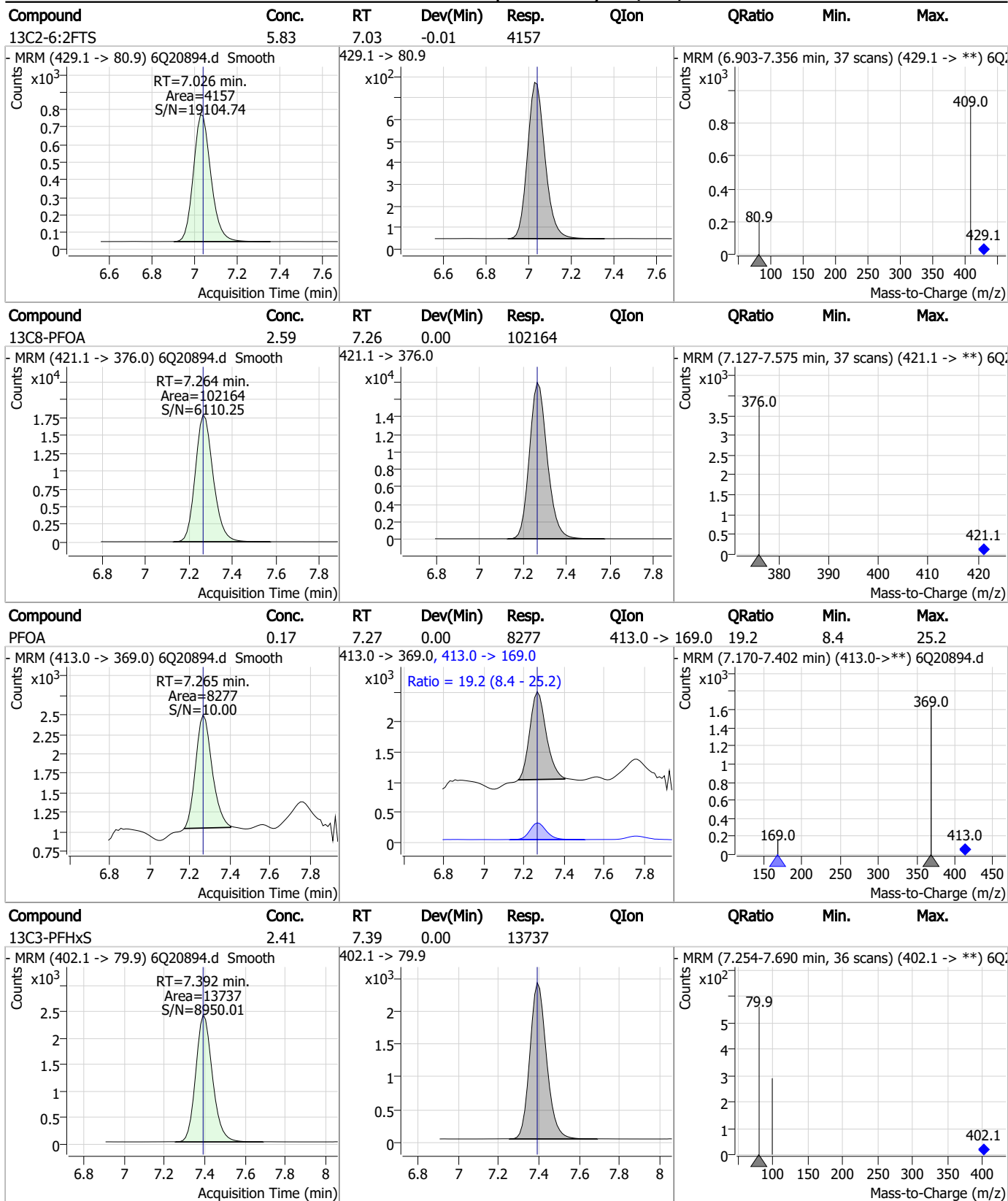
Perfluorinated Compounds by LC/MS/MS



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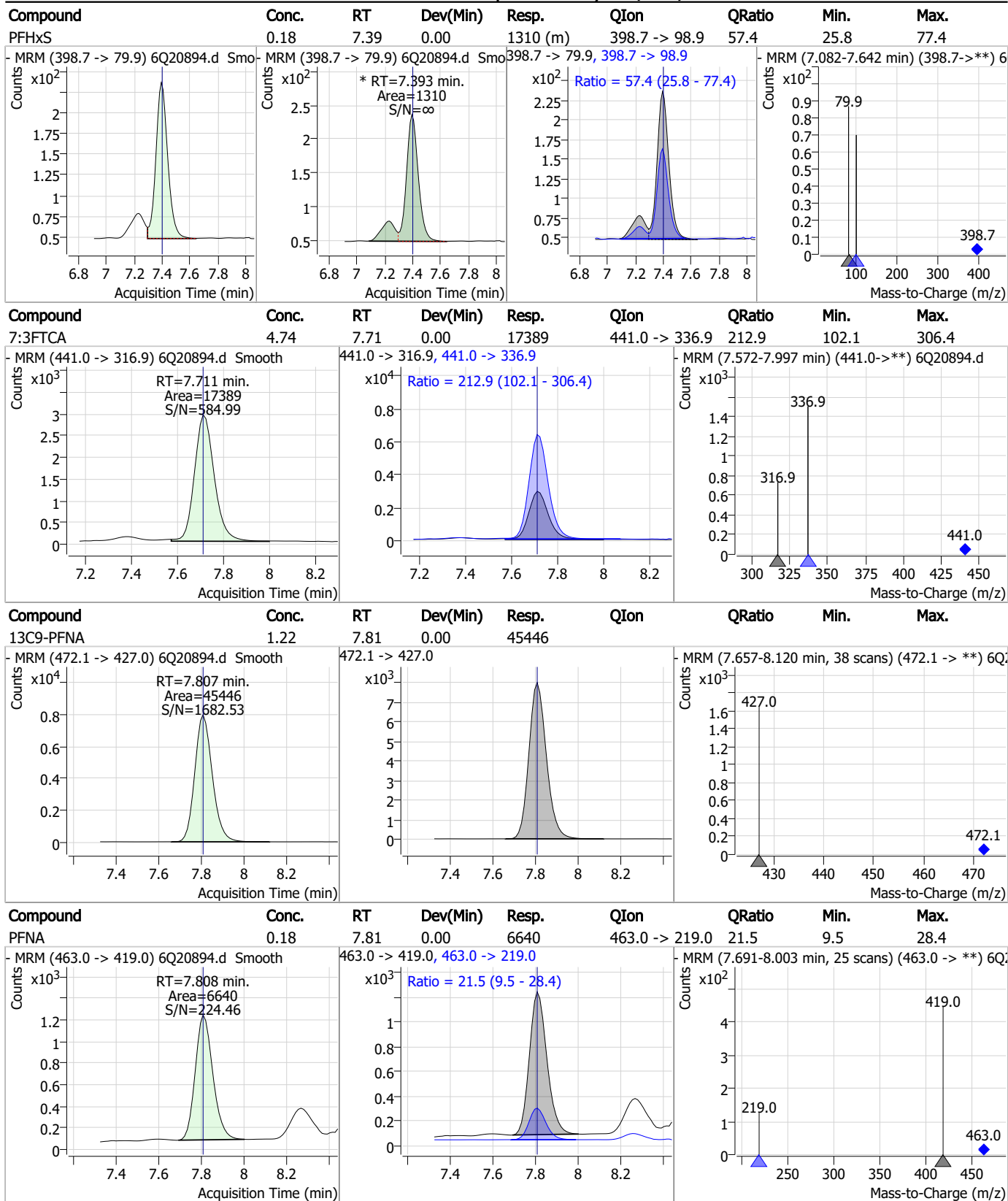


Perfluorinated Compounds by LC/MS/MS



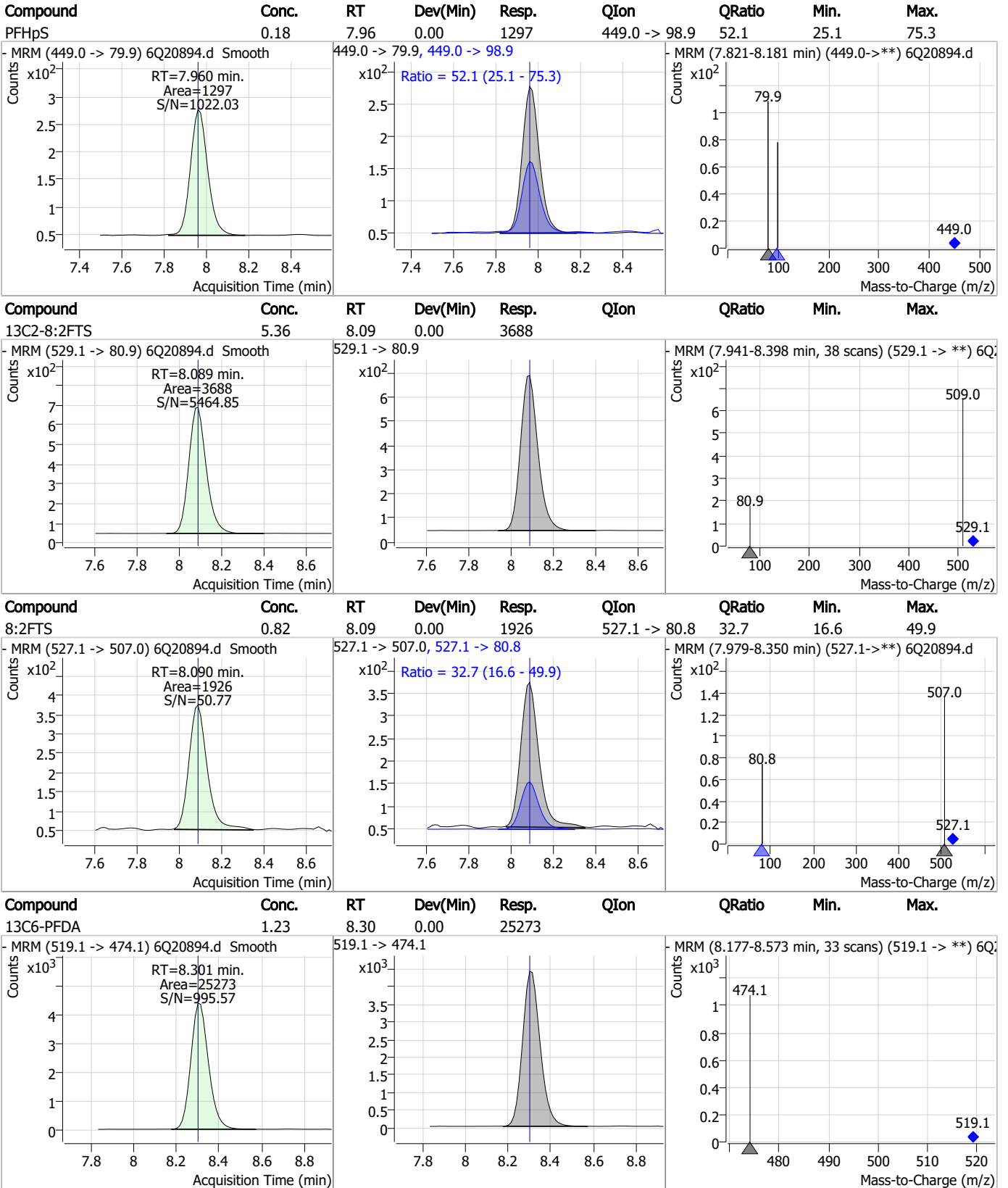
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Perfluorinated Compounds by LC/MS/MS



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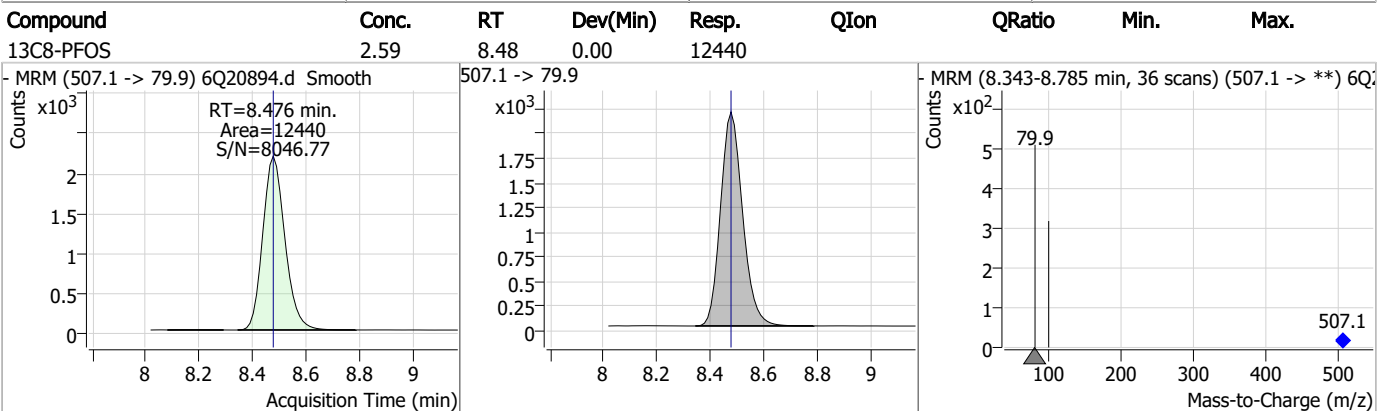
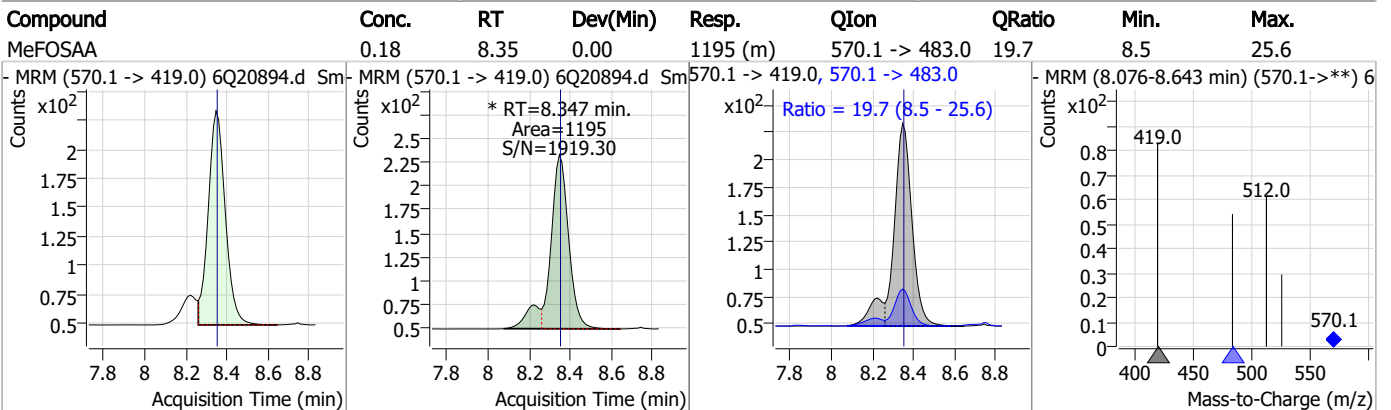
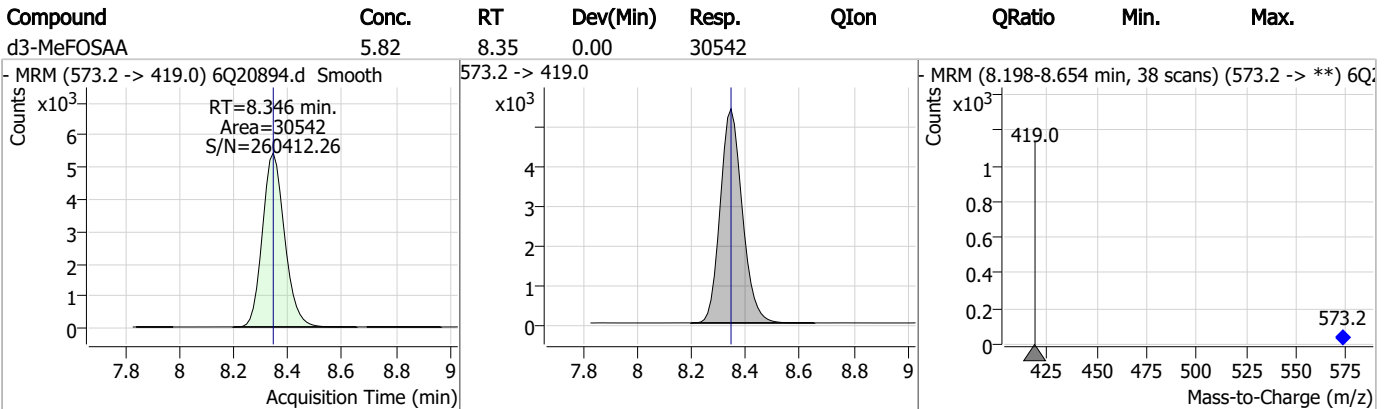
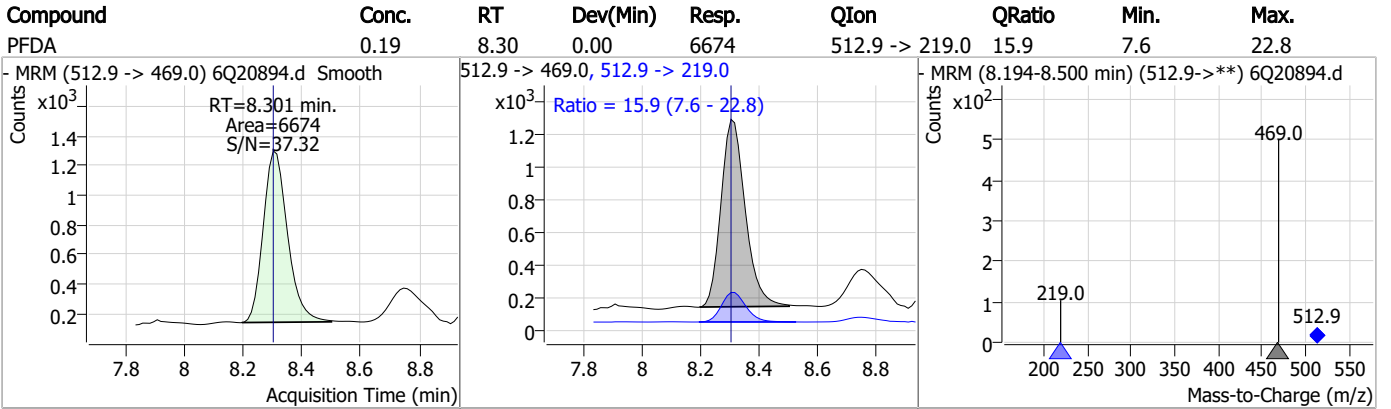
Perfluorinated Compounds by LC/MS/MS



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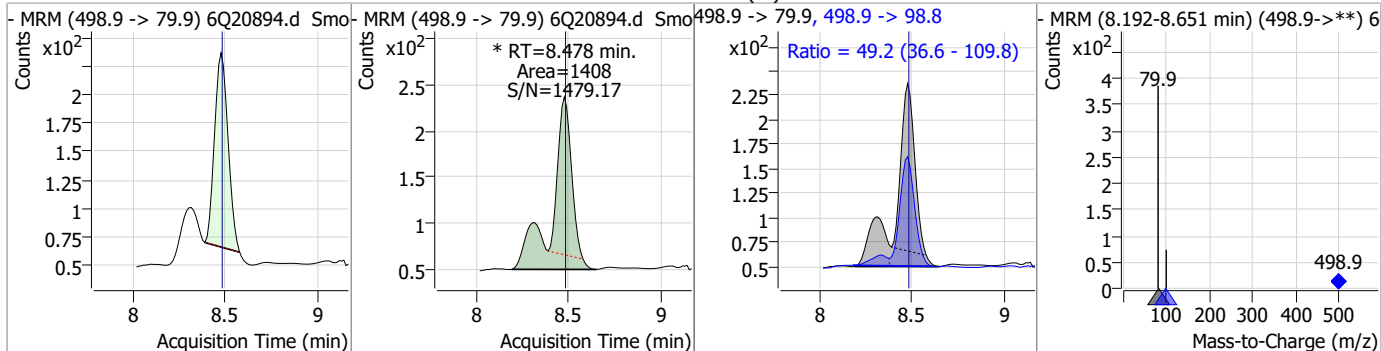


Perfluorinated Compounds by LC/MS/MS

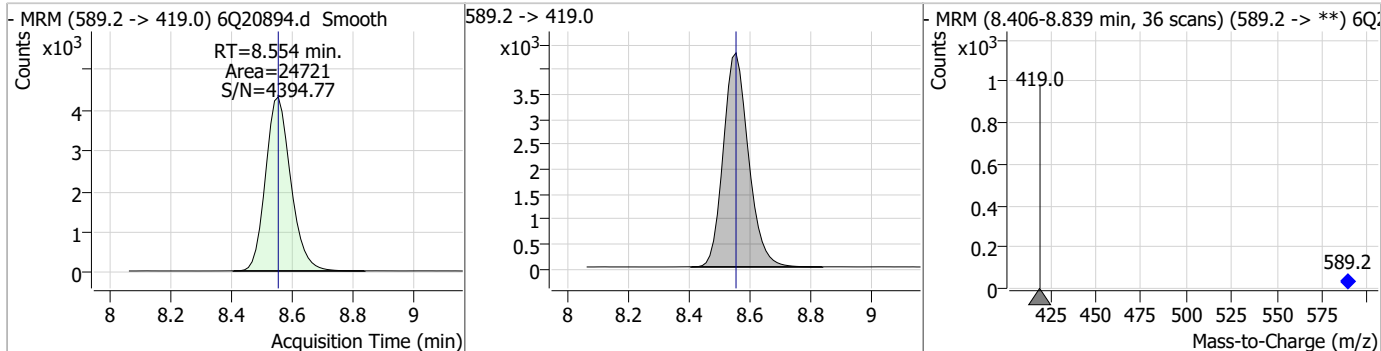


Perfluorinated Compounds by LC/MS/MS

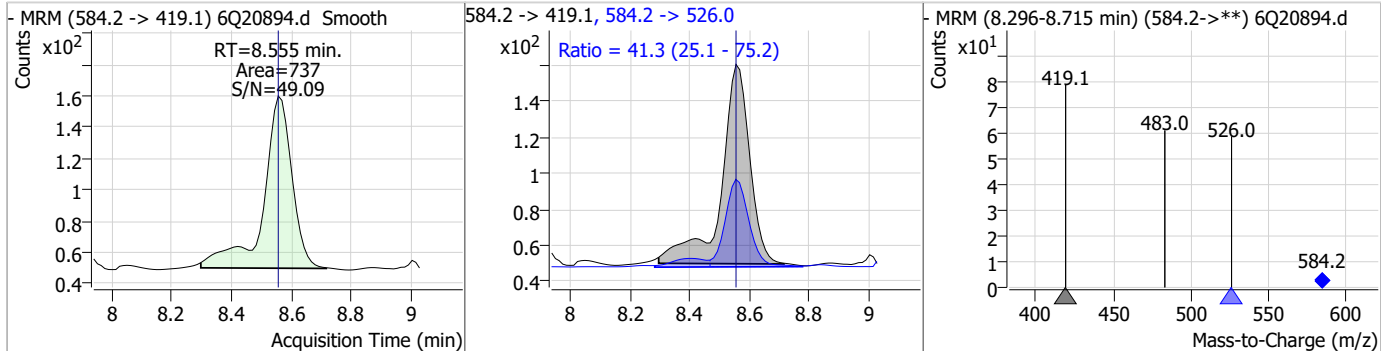
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.21	8.48	0.00	1408 (m)	498.9 -> 98.8	49.2	36.6	109.8



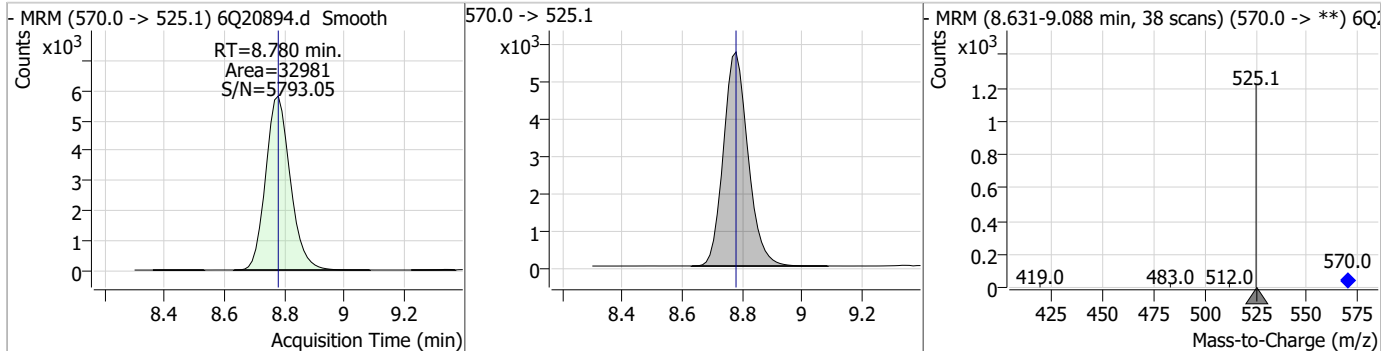
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.93	8.55	0.00	24721				



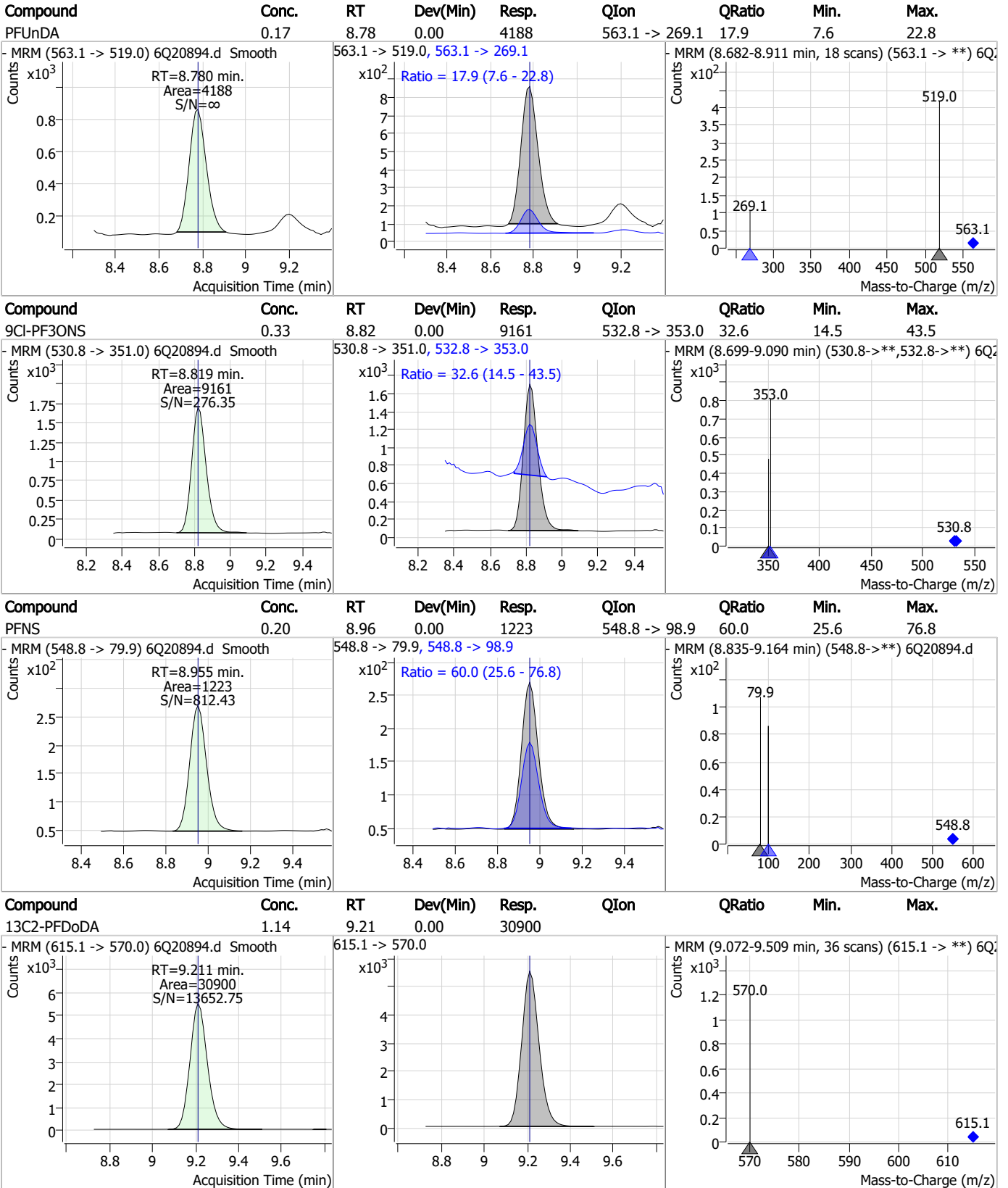
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.19	8.55	0.00	737	584.2 -> 526.0	41.3	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.78	0.00	32981				



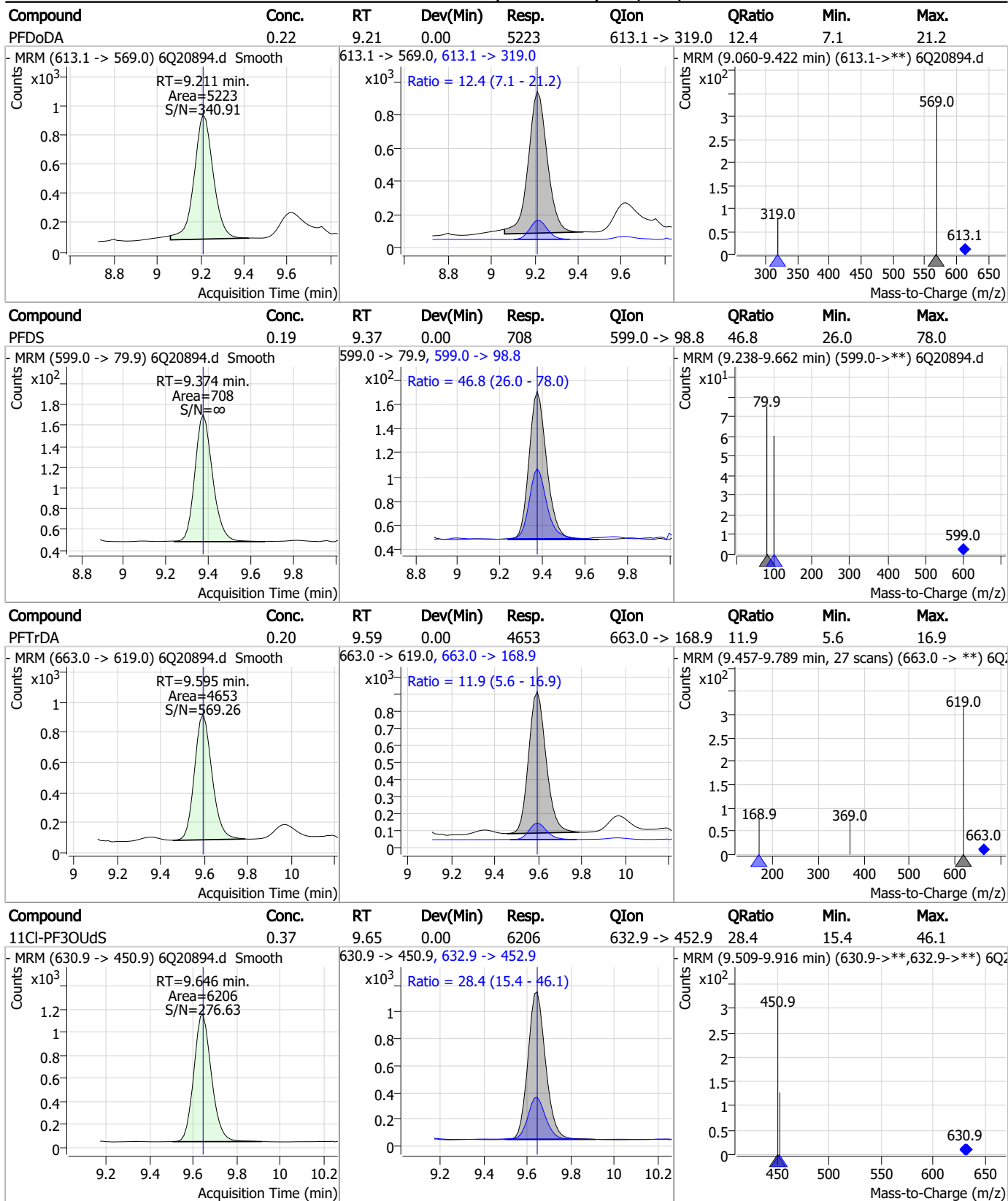
Perfluorinated Compounds by LC/MS/MS



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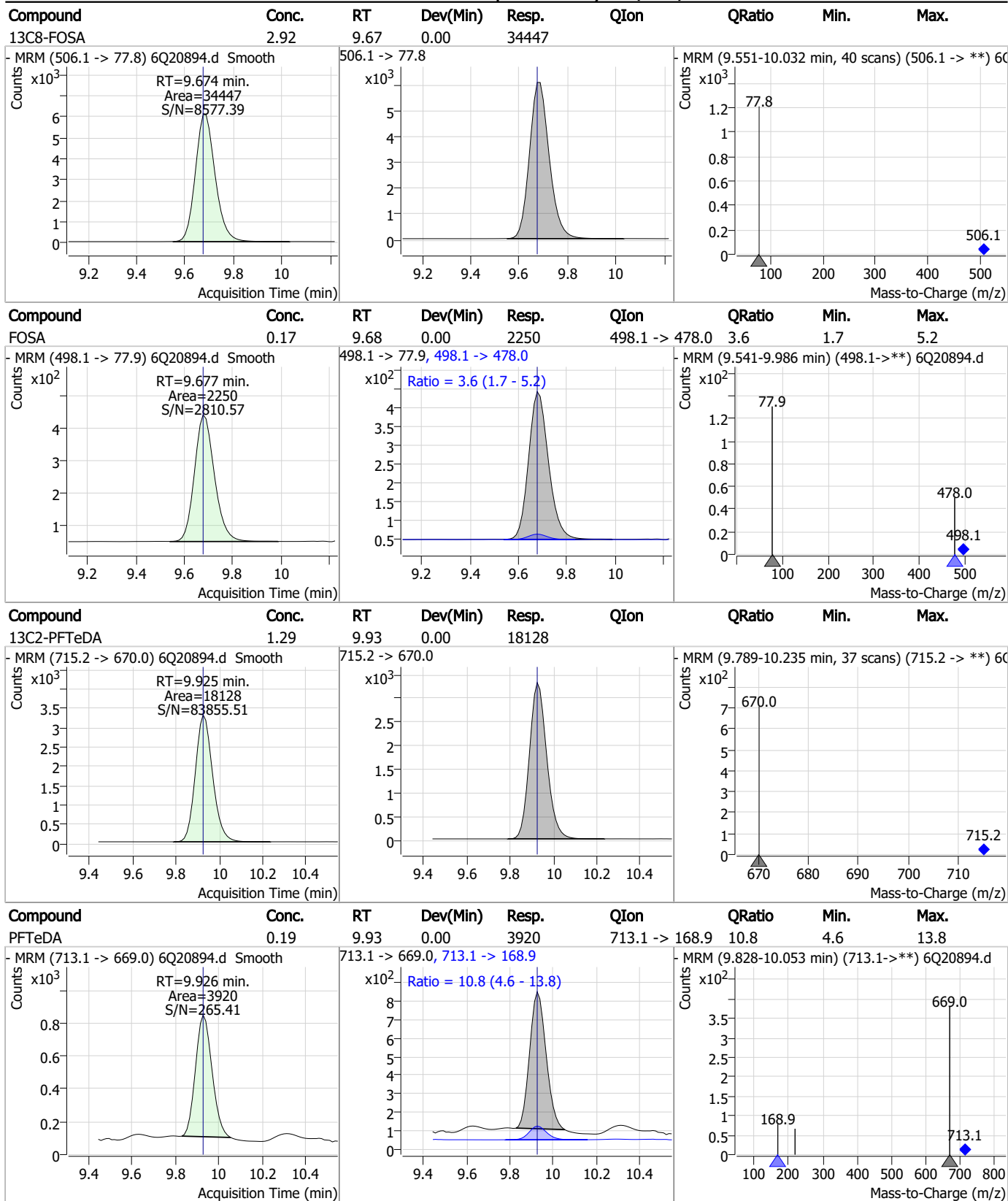
Perfluorinated Compounds by LC/MS/MS



7.7.12

7

Perfluorinated Compounds by LC/MS/MS

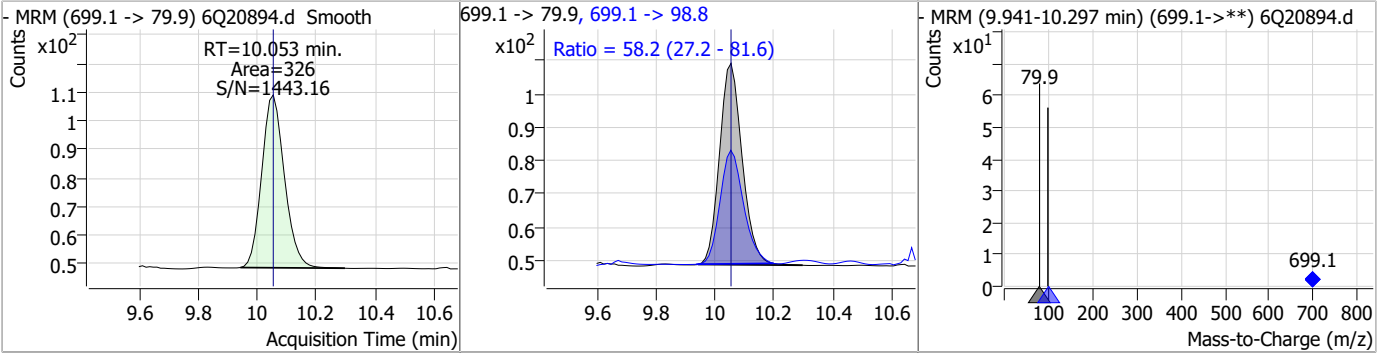


7.7.12

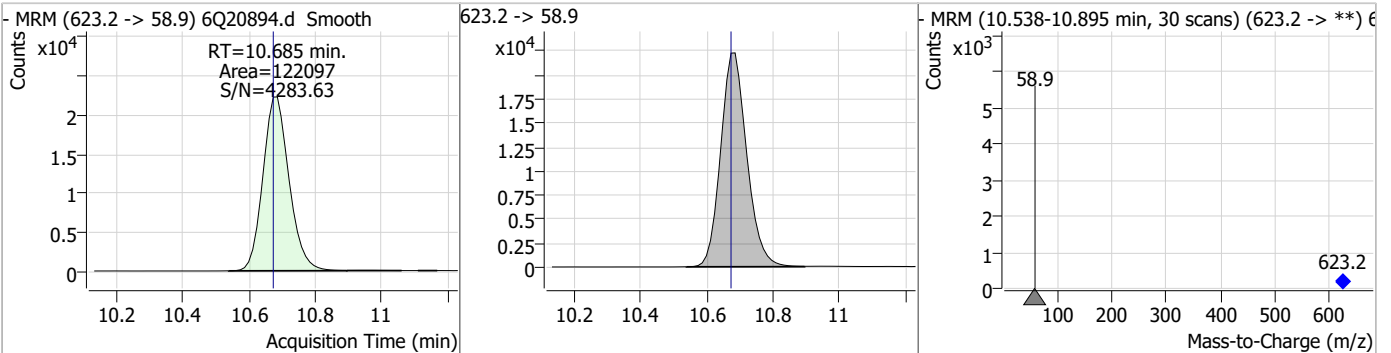


Perfluorinated Compounds by LC/MS/MS

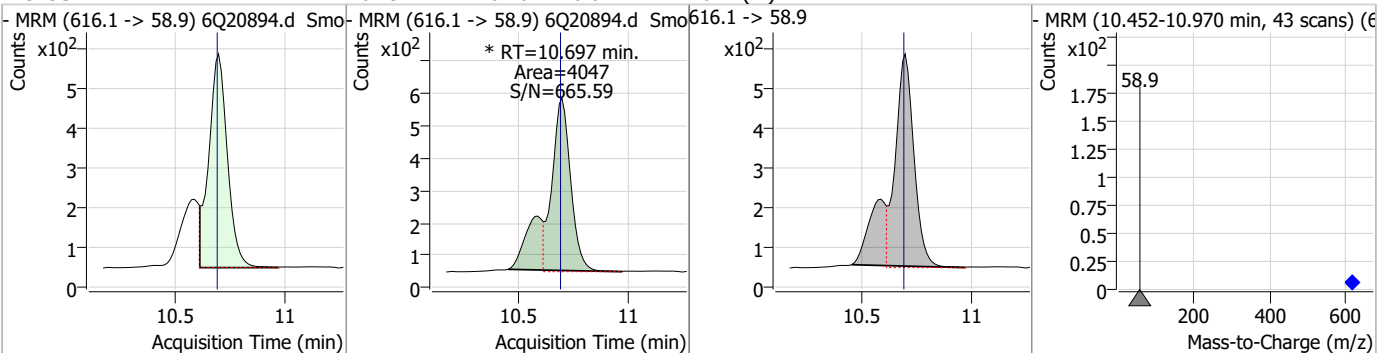
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFD _o DS	0.19	10.05	0.00	326	699.1 -> 98.8	58.2	27.2	81.6



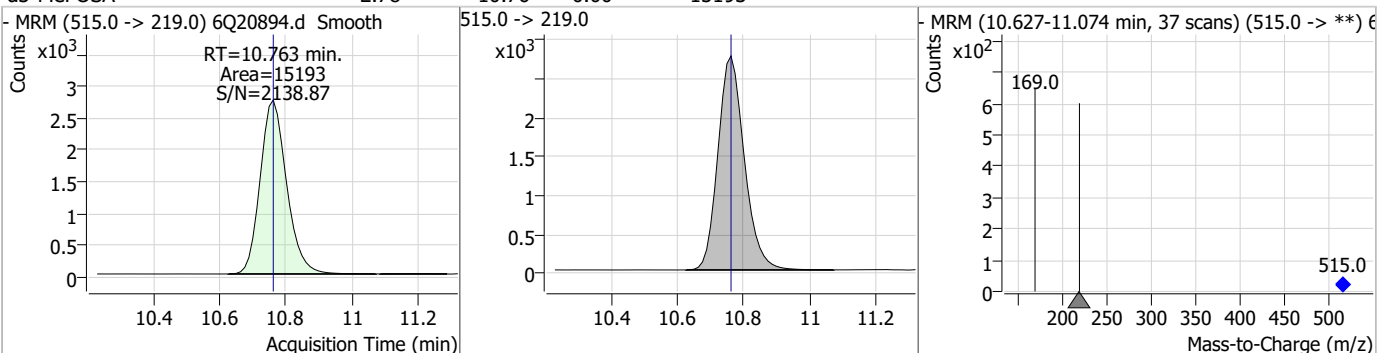
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	28.17	10.68	0.01	122097				



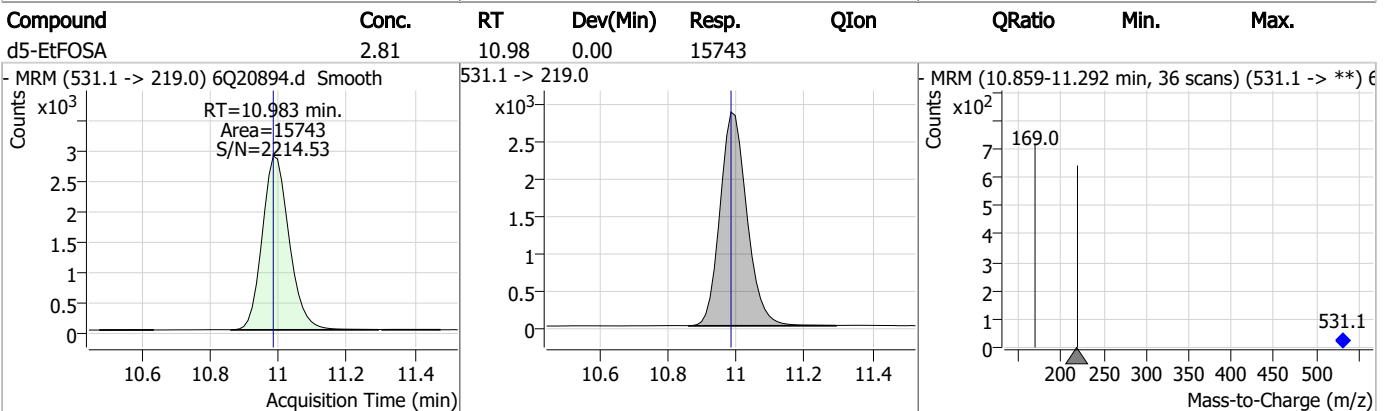
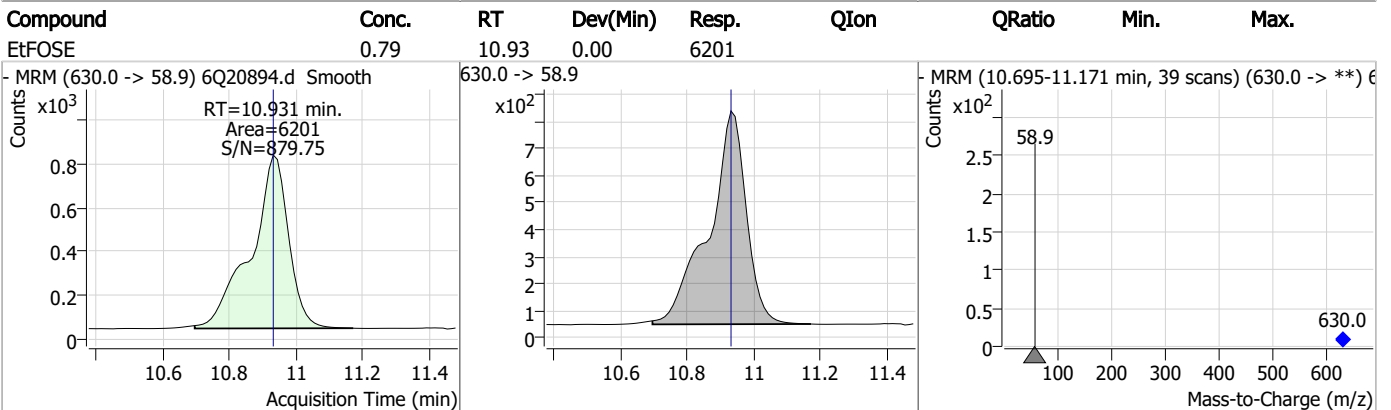
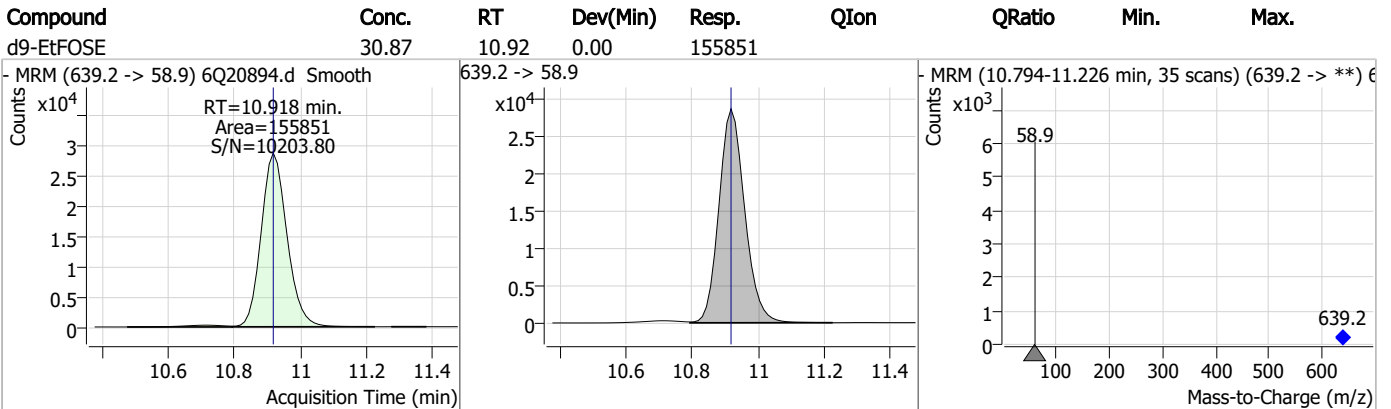
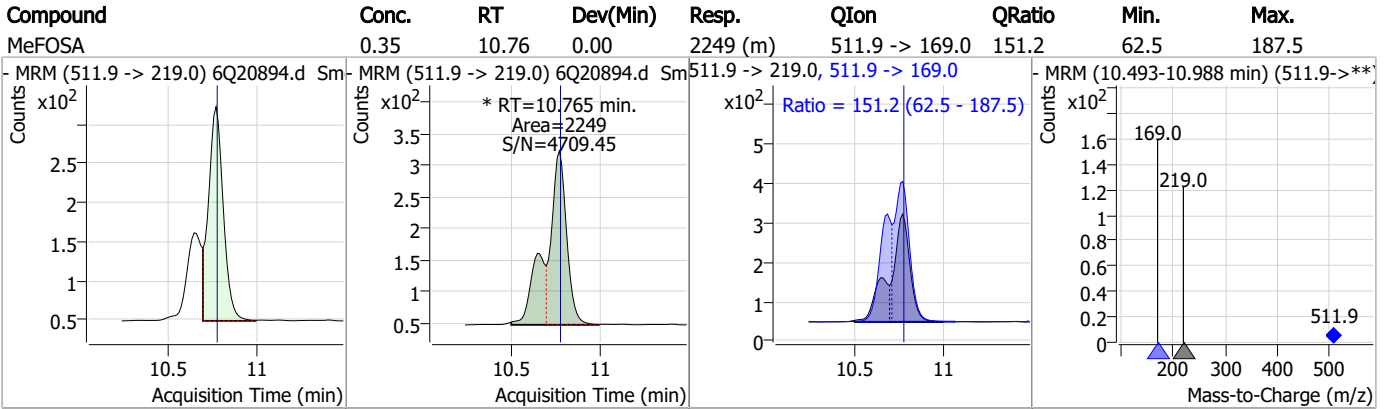
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.79	10.70	0.01	4047 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.78	10.76	0.00	15193				



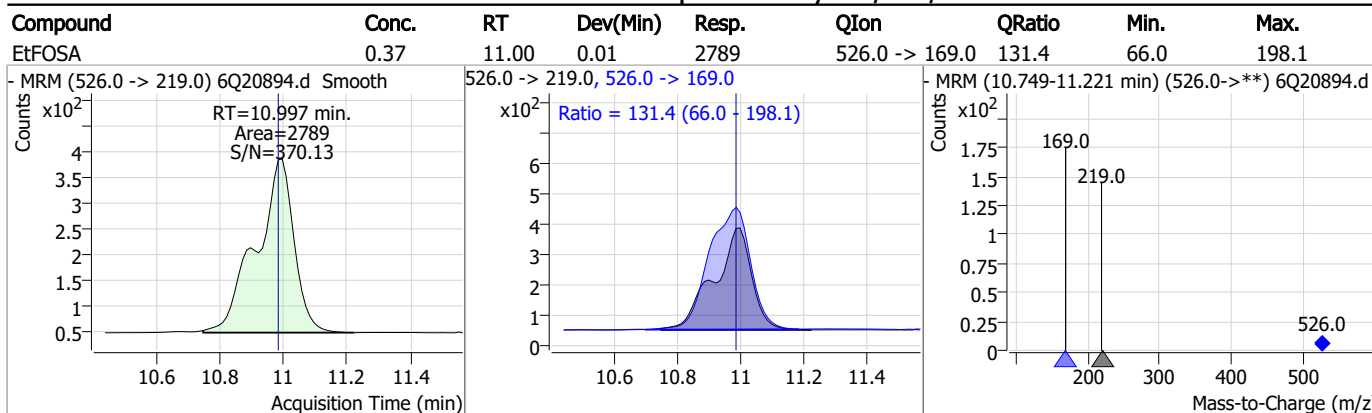
Perfluorinated Compounds by LC/MS/MS



7.7.12



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20894.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 11:21 Supervisor approved: 07/17/23 11:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

7.7.12.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20905.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 1:54:43 PM
 Sample Name : cc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	224579	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	73506	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	77535	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	76016	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	127722	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	54976	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	31636	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	41672	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	44351	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	22987	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	42819	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	27173	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	17372	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	15590	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3052	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4728	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	4797	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	35788	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	47020	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	29645	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	153557	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	186468	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	18445	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17577	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	23650	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	94888	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	13517	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	127258	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	43779	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	71108	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	80773	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3052	5.04 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 100.8%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4728	5.26 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 105.1%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4797	5.52 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.5%		
13C2-PFDoDA	9.211	615.1 -> 570.0	44351	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.5%		
13C2-PFTeDA	9.925	715.2 -> 670.0	22987	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.6%		
13C3-PFBS	5.635	302.1 -> 79.9	27173	2.37 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 95.0%		
13C3-PFHxS	7.392	402.1 -> 79.9	17372	2.41 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C4-PFBA	3.022	216.8 -> 171.9	224579	9.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFHpA	6.621	367.1 -> 322.0	76016	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C5-PFHxA	5.692	318.0 -> 273.0	77535	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C5-PFPeA	4.459	268.3 -> 223.0	73506	4.88 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C6-PFDA	8.301	519.1 -> 474.1	31636	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C7-PFUnDA	8.780	570.0 -> 525.1	41672	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C8-FOSA	9.674	506.1 -> 77.8	42819	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C8-PFOA	7.264	421.1 -> 376.0	127722	2.64 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-PFOS	8.476	507.1 -> 79.9	15590	2.32 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C9-PFNA	7.807	472.1 -> 427.0	54976	1.14 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.5%	
d3-MeFOSAA	8.346	573.2 -> 419.0	35788	4.87 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	47020	9.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	17577	2.30 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.9%	
d5-EtFOSAA	8.554	589.2 -> 419.0	29645	5.08 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d7-MeFOSE	10.672	623.2 -> 58.9	153557	25.31 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d9-EtFOSE	10.918	639.2 -> 58.9	186468	26.39 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
d5-EtFOSA	10.983	531.1 -> 219.0	18445	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	51756	9.32 µg/L	99
		327.1 -> 80.9	18249		
6:2FTS	7.027	427.1 -> 407.0	49435	8.90 µg/L	97
		427.1 -> 80.9	15679		
8:2FTS	8.090	527.1 -> 507.0	26933	8.77 µg/L	91
		527.1 -> 80.8	10337		
EtFOSAA	8.555	584.2 -> 419.1	10661	2.29 µg/L	m 96
		584.2 -> 526.0	5089		
FOSA	9.677	498.1 -> 77.9	36698	2.19 µg/L	99
		498.1 -> 478.0	1198		
MeFOSAA	8.347	570.1 -> 419.0	17351	2.21 µg/L	m 92
		570.1 -> 483.0	3552		
PFBA	3.018	212.8 -> 168.9	80455	9.30 µg/L	100
PFBS	5.636	298.7 -> 79.9	22220	2.06 µg/L	94
		298.7 -> 98.8	8259		
PFDA	8.301	512.9 -> 469.0	100536	2.28 µg/L	99
		512.9 -> 219.0	14755		
PFDODA	9.211	613.1 -> 569.0	74662	2.15 µg/L	97
		613.1 -> 319.0	11496		
PFDS	9.374	599.0 -> 79.9	11073	2.38 µg/L	97

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.621	599.0 -> 98.8	5515	2.36	µg/L	100
		363.1 -> 319.0	86731			
PFHpS	7.960	363.1 -> 169.0	13878	2.36	µg/L	97
		449.0 -> 79.9	21186			
PFHxA	5.694	449.0 -> 98.9	10214	2.23	µg/L	99
		313.0 -> 269.0	63379			
PFHxS	7.393	313.0 -> 118.9	3358	2.18	µg/L	m
		398.7 -> 79.9	20135			
PFNA	7.808	398.7 -> 98.9	9818	2.36	µg/L	99
		463.0 -> 419.0	103048			
PFNS	8.955	463.0 -> 219.0	19743	2.30	µg/L	94
		548.8 -> 79.9	17934			
PFOA	7.265	548.8 -> 98.9	9965	2.14	µg/L	98
		413.0 -> 369.0	129556			
PFOS	8.478	413.0 -> 169.0	22757	2.11	µg/L	m
		498.9 -> 79.9	17854			
PFPeA	4.461	498.9 -> 98.8	10306	4.66	µg/L	100
		263.0 -> 219.0	91341			
PFPeS	6.697	349.1 -> 79.9	19060	2.11	µg/L	93
		349.1 -> 98.9	9678			
PFTeDA	9.926	713.1 -> 669.0	61966	2.36	µg/L	99
		713.1 -> 168.9	5466			
PFTrDA	9.595	663.0 -> 619.0	75460	2.26	µg/L	98
		663.0 -> 168.9	7909			
PFUnDA	8.780	563.1 -> 519.0	66410	2.16	µg/L	97
		563.1 -> 269.1	10917			
11CI-PF3OUdS	9.646	630.9 -> 450.9	93987	4.27	µg/L	96
		632.9 -> 452.9	30919			
9CI-PF3ONS	8.819	530.8 -> 351.0	153735	4.31	µg/L	99
		532.8 -> 353.0	45659			
ADONA	6.870	376.9 -> 250.9	345859	4.44	µg/L	95
		376.9 -> 84.8	92854			
HFPO-DA	6.071	284.9 -> 168.9	21742	4.51	µg/L	97
		284.9 -> 184.9	2603			
3:3FTCA	3.883	241.0 -> 177.0	16118	11.48	µg/L	100
		241.0 -> 117.0	2114			
5:3FTCA	6.310	341.0 -> 237.1	359260	60.50	µg/L	94
		341.0 -> 217.0	271657			
7:3FTCA	7.711	441.0 -> 316.9	267877	64.39	µg/L	98
		441.0 -> 336.9	554061			
EtFOSA	10.985	526.0 -> 219.0	41426	4.64	µg/L	100
		526.0 -> 169.0	54722			
EtFOSE	10.931	630.0 -> 58.9	104871	11.19	µg/L	100
		511.9 -> 219.0	35387			
MeFOSA	10.765	511.9 -> 169.0	51497	4.71	µg/L	m
		616.1 -> 58.9	75448			
MeFOSE	10.697	699.1 -> 79.9	5149	11.73	µg/L	m
		699.1 -> 98.8	2879			
PFDoDS	10.053	295.0 -> 201.0	15779	2.43	µg/L	98
		295.0 -> 84.9	4185			
NFDHA	5.576	279.0 -> 85.1	60154	4.55	µg/L	100
		229.0 -> 84.9	50086			
PFMBA	4.882	314.8 -> 134.9	160643	4.62	µg/L	100
		314.8 -> 82.9	5309			
PFMPA	3.588			4.04	µg/L	100
PFEESA	6.188					

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

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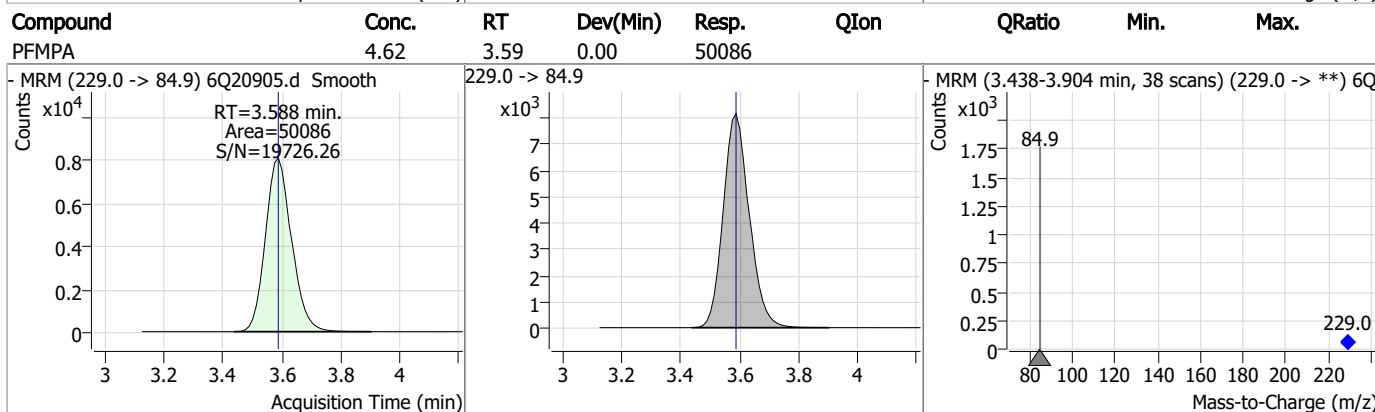
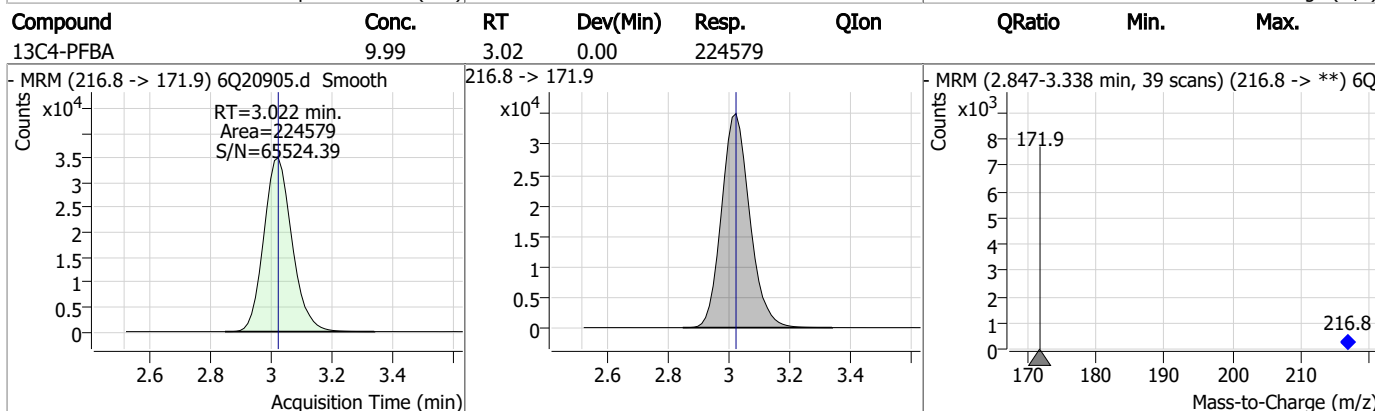
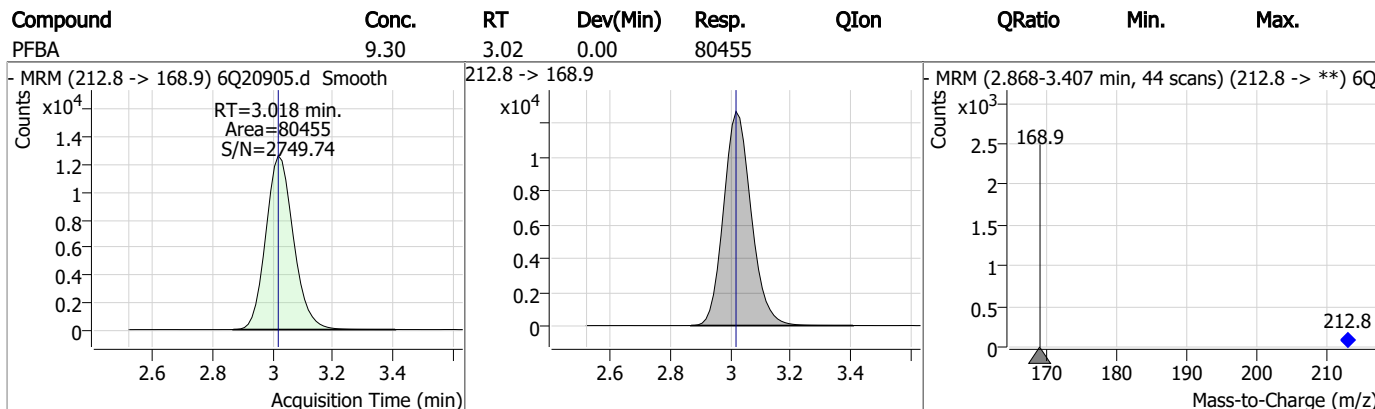
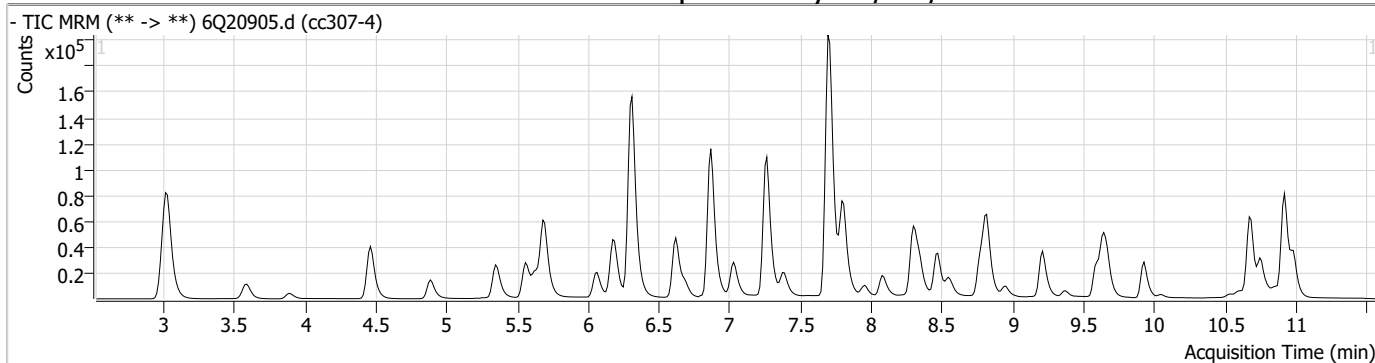
Perfluorinated Compounds by LC/MS/MS

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

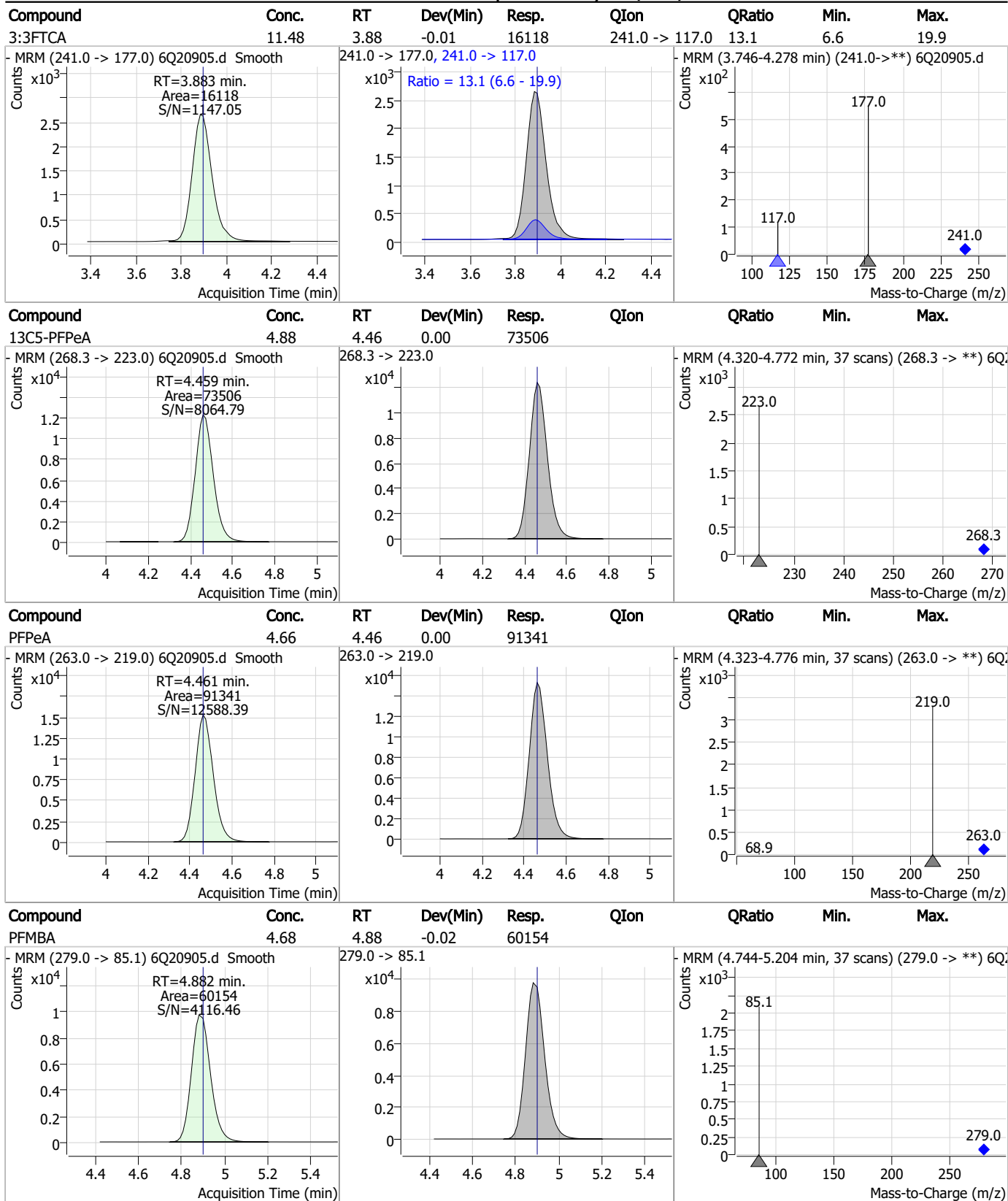
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Perfluorinated Compounds by LC/MS/MS



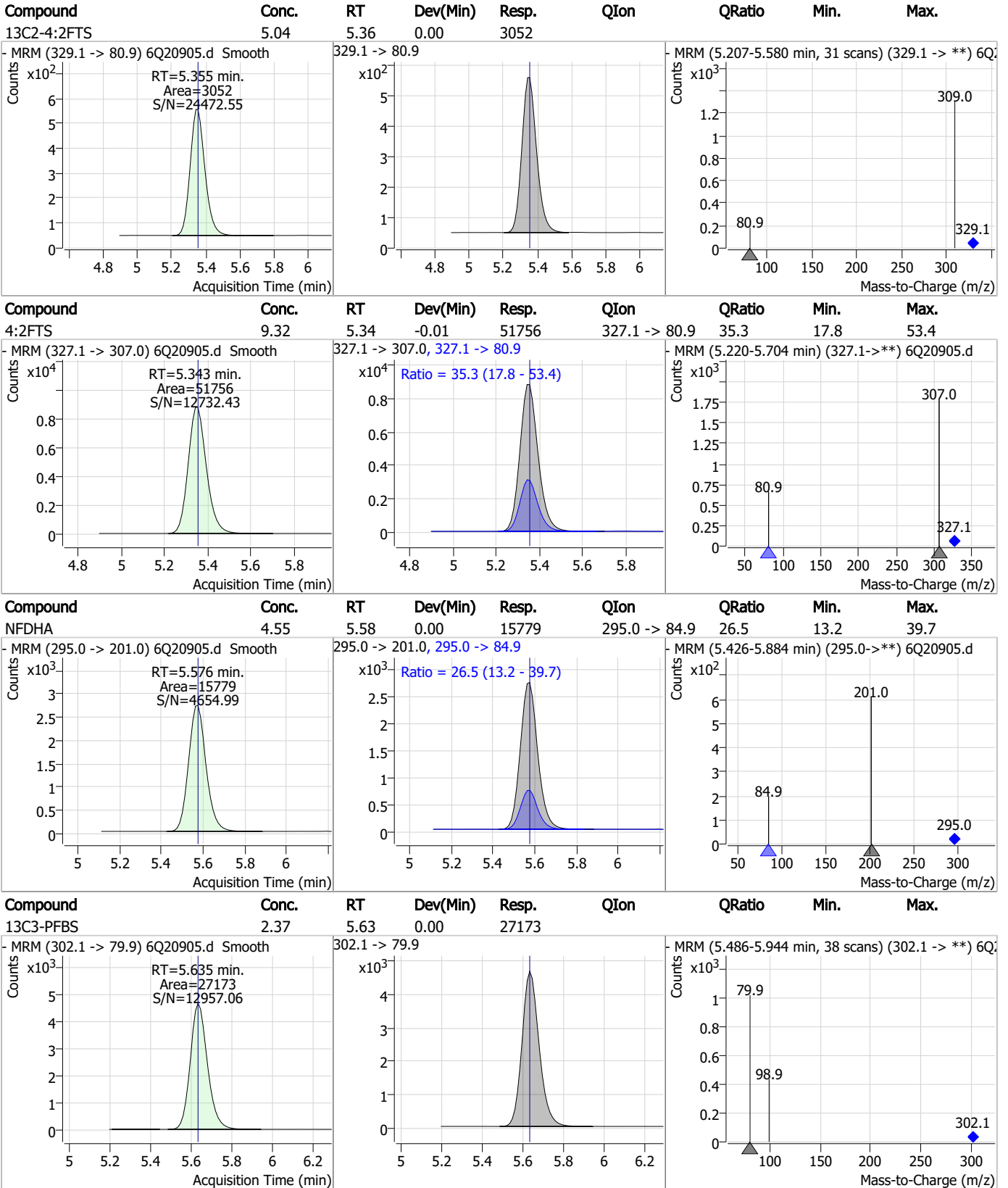
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Perfluorinated Compounds by LC/MS/MS



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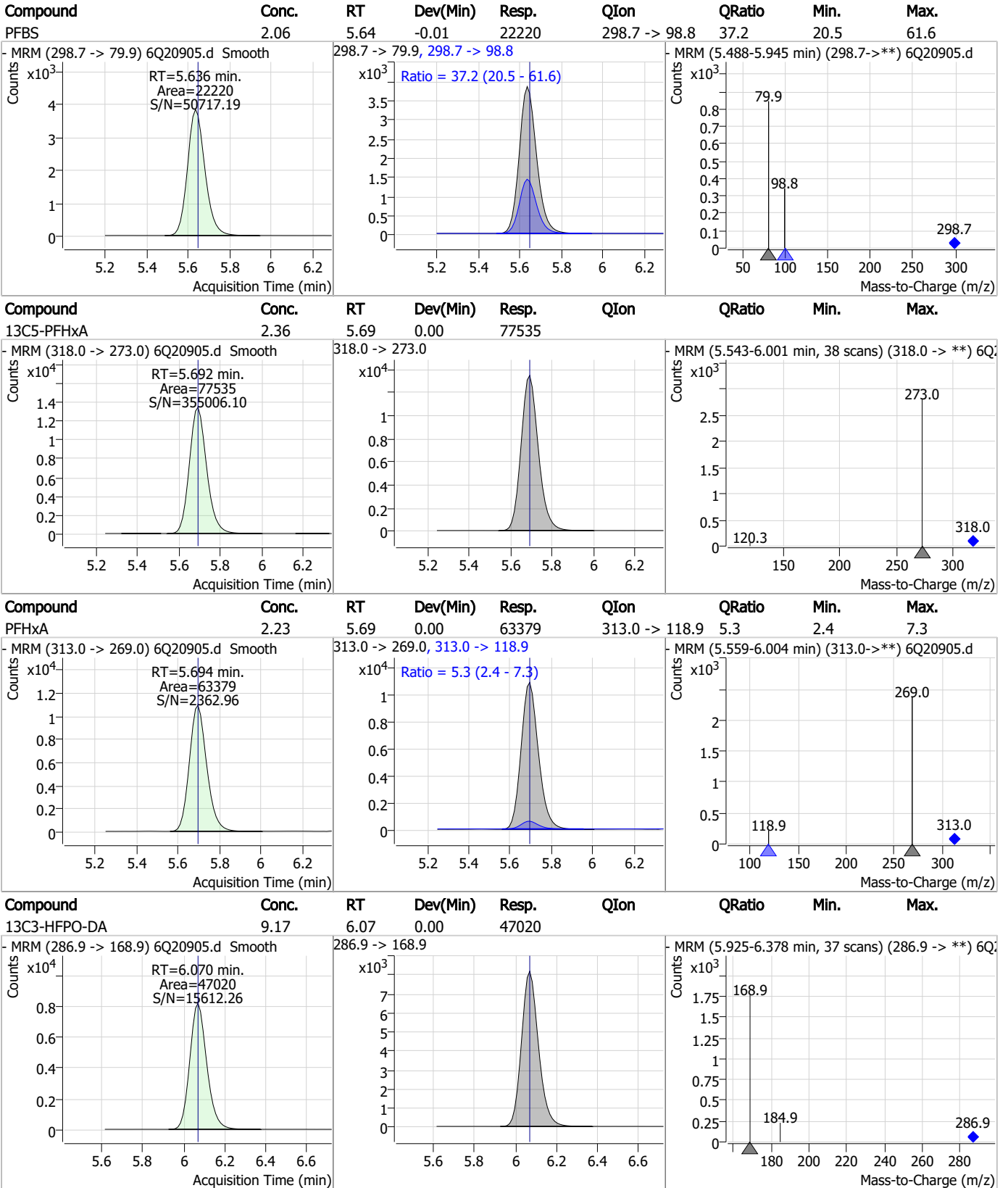
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

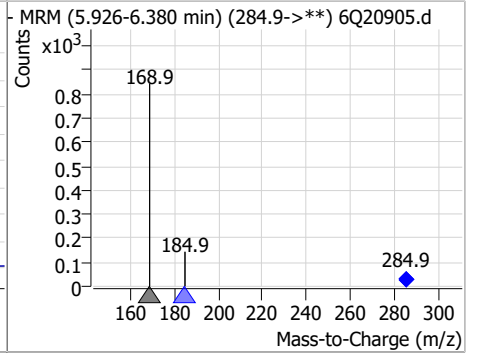
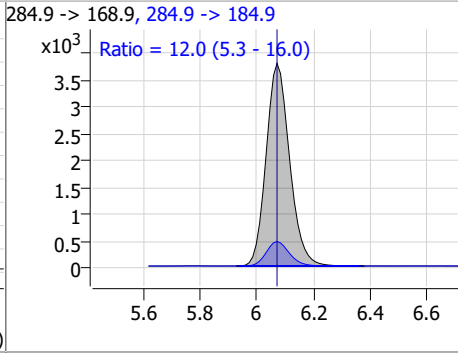
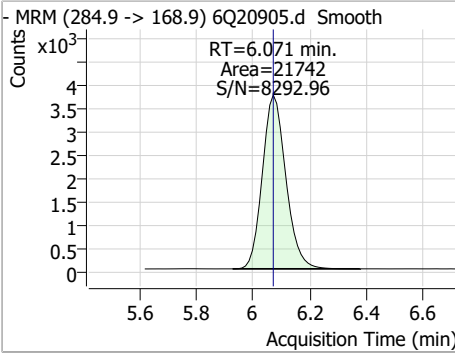


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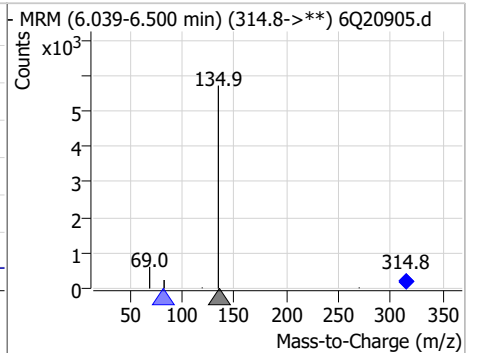
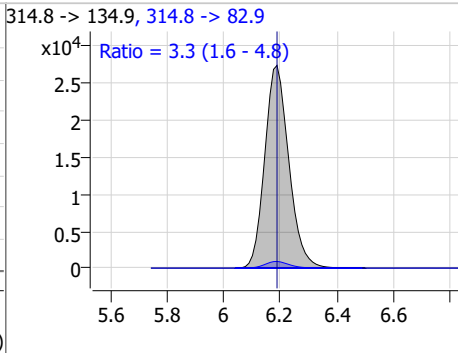
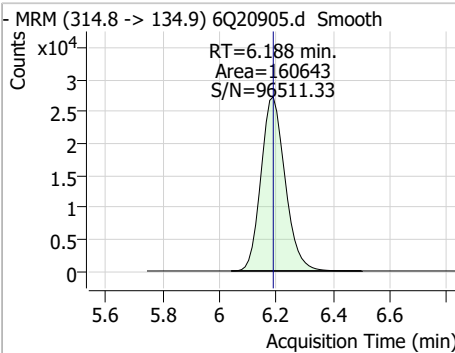


Perfluorinated Compounds by LC/MS/MS

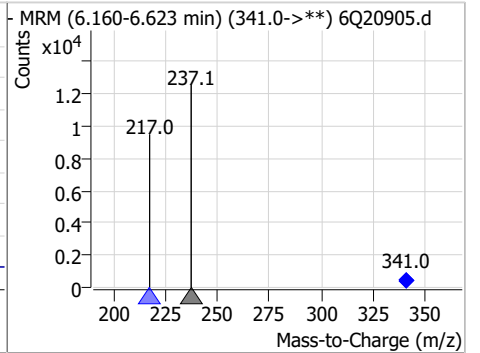
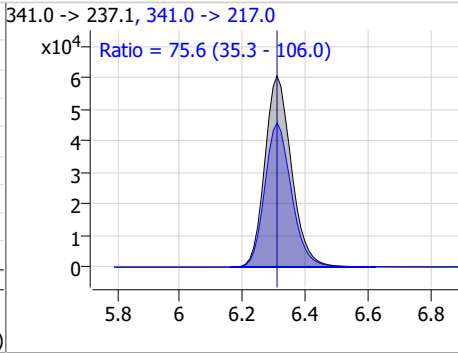
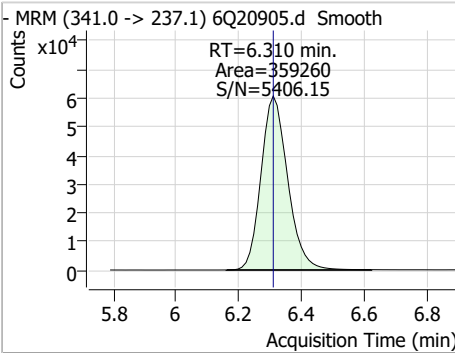
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.51	6.07	0.00	21742	284.9 -> 184.9	12.0	5.3	16.0



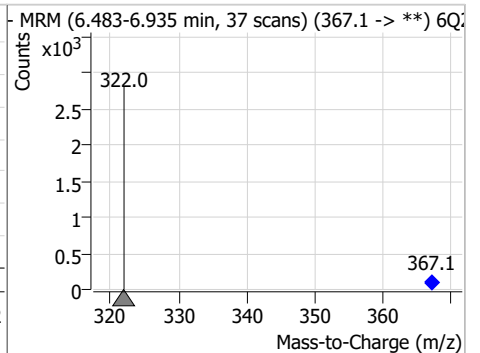
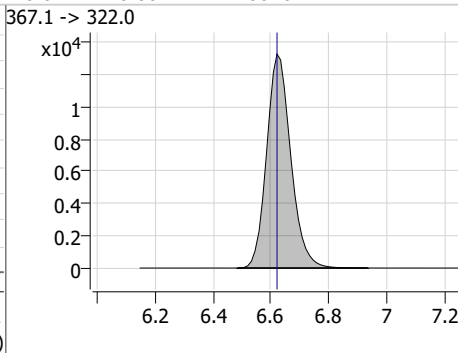
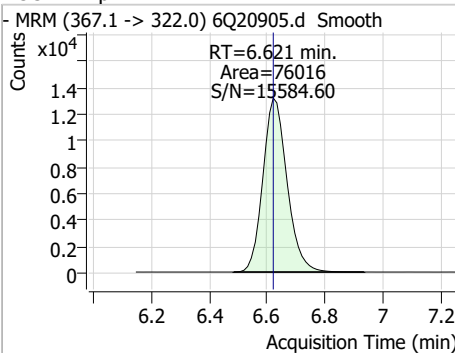
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.04	6.19	0.00	160643	314.8 -> 82.9	3.3	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	60.50	6.31	0.00	359260	341.0 -> 217.0	75.6	35.3	106.0

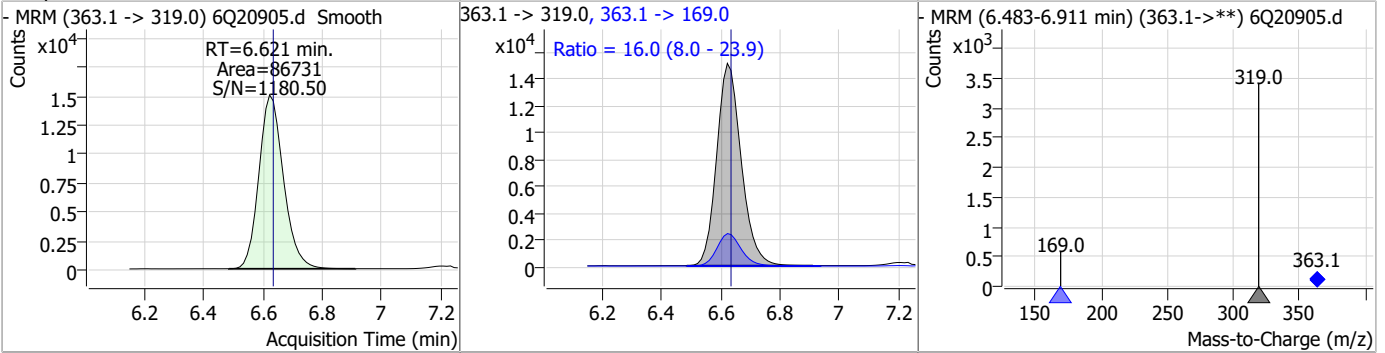


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.41	6.62	0.00	76016	367.1 -> 322.0			

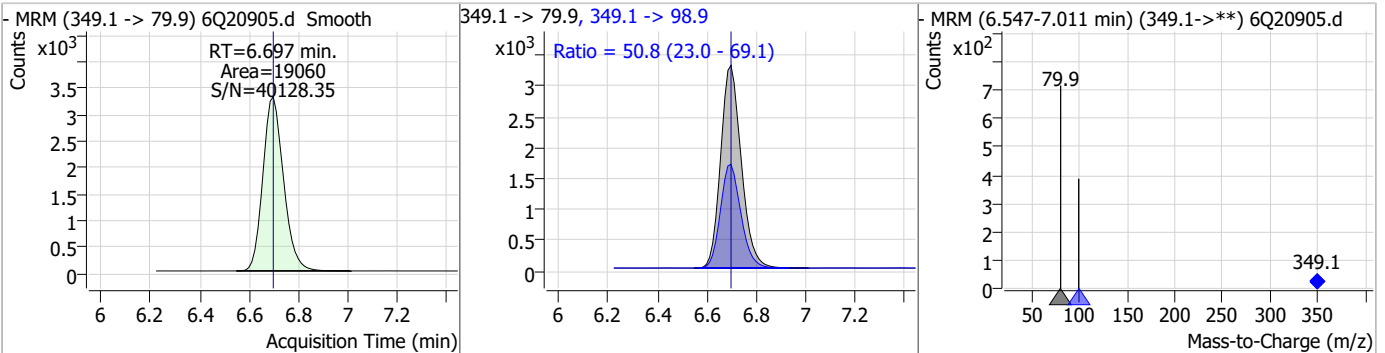


Perfluorinated Compounds by LC/MS/MS

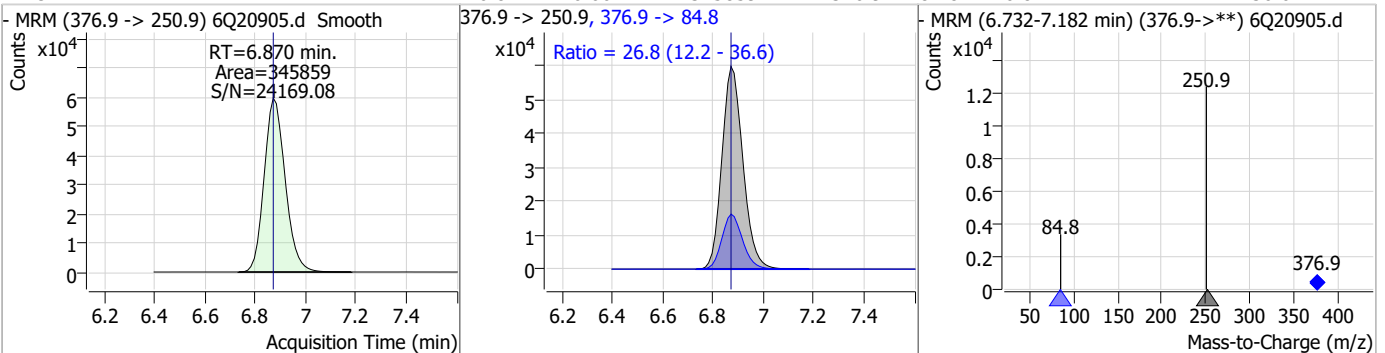
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.36	6.62	-0.01	86731	363.1 -> 169.0	16.0	8.0	23.9



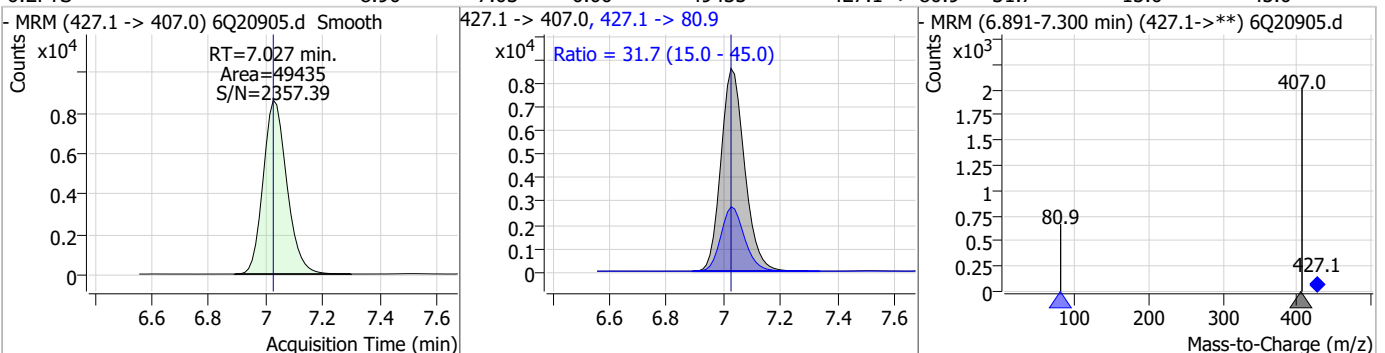
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.11	6.70	0.00	19060	349.1 -> 98.9	50.8	23.0	69.1



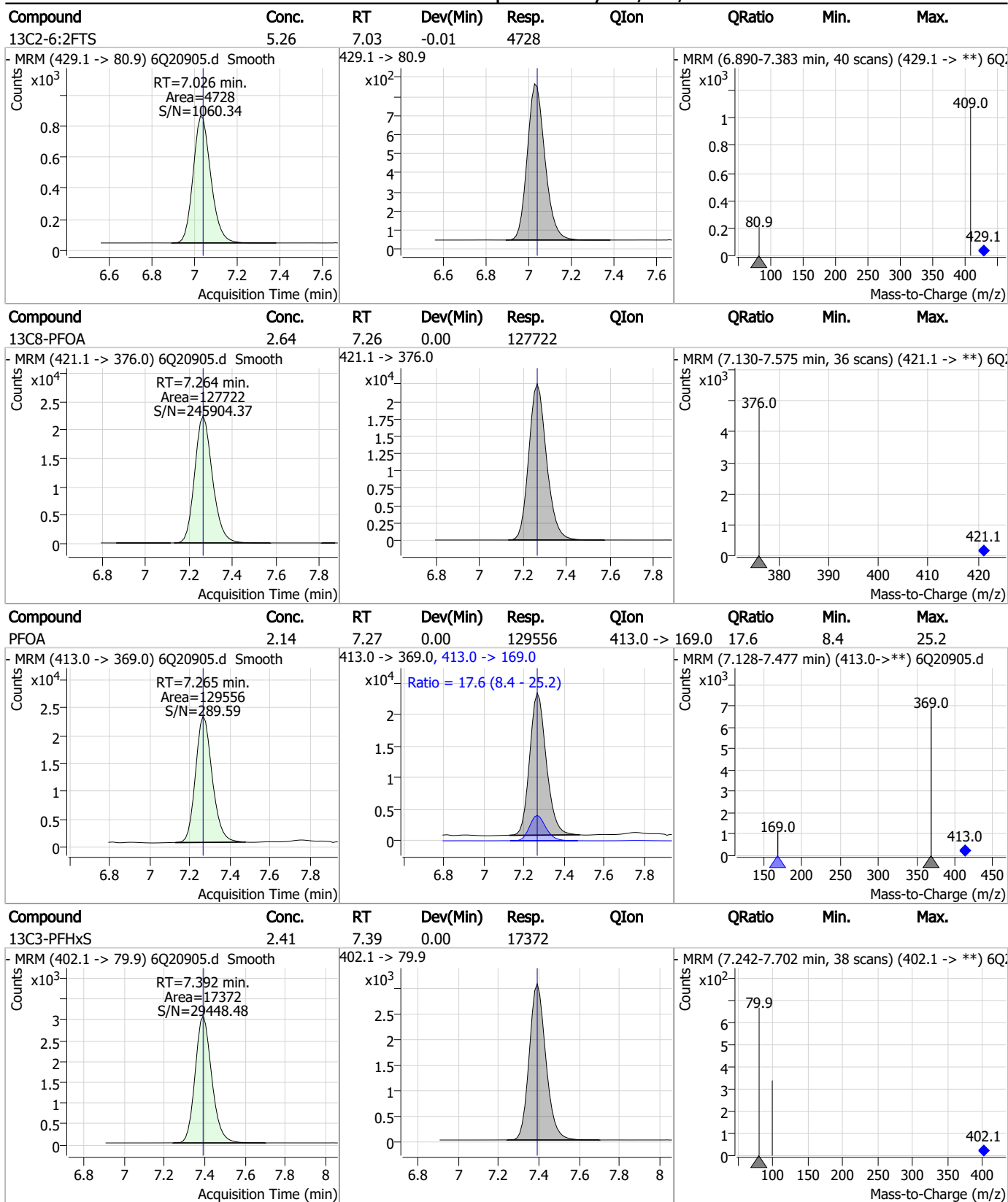
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.44	6.87	0.00	345859	376.9 -> 84.8	26.8	12.2	36.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2F7S	8.90	7.03	0.00	49435	427.1 -> 80.9	31.7	15.0	45.0



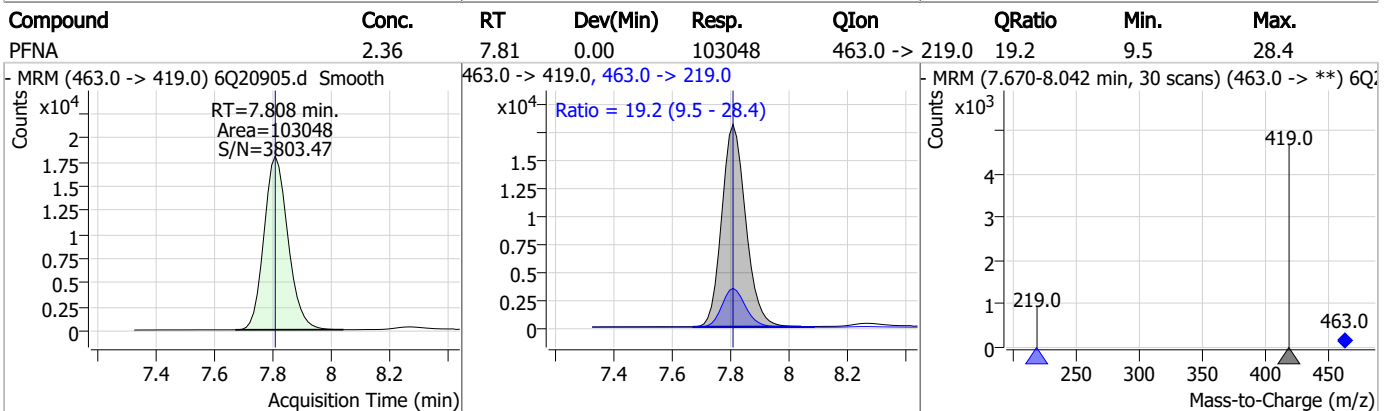
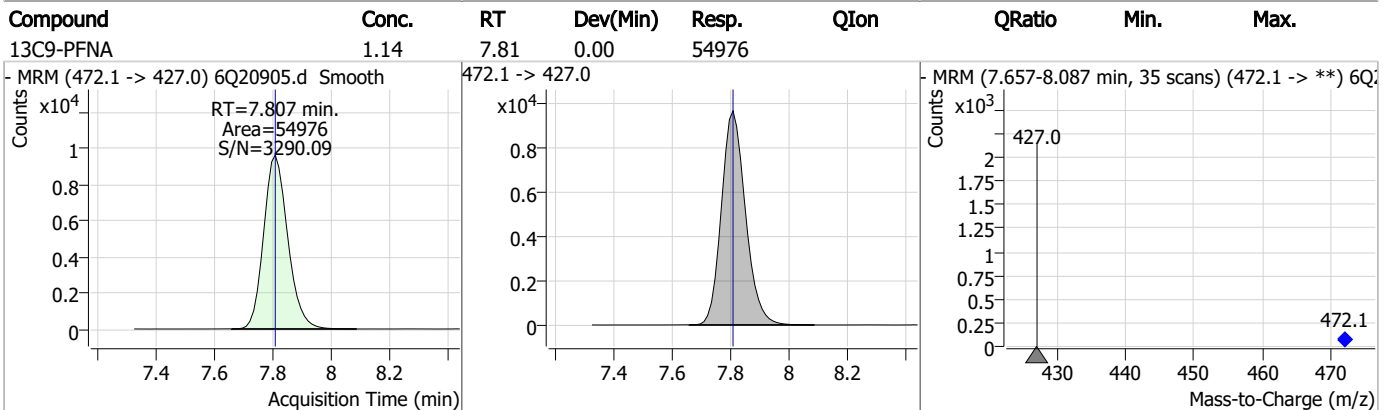
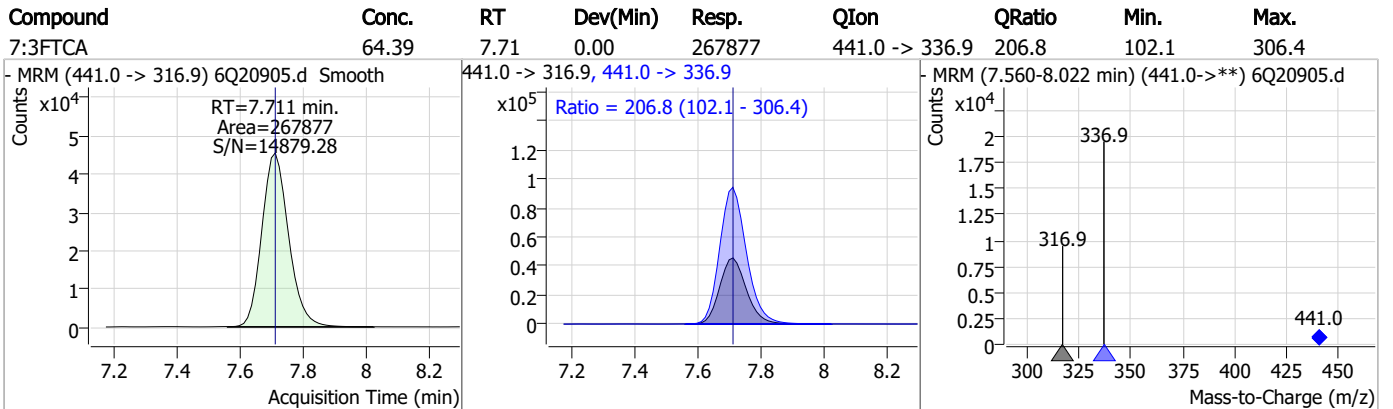
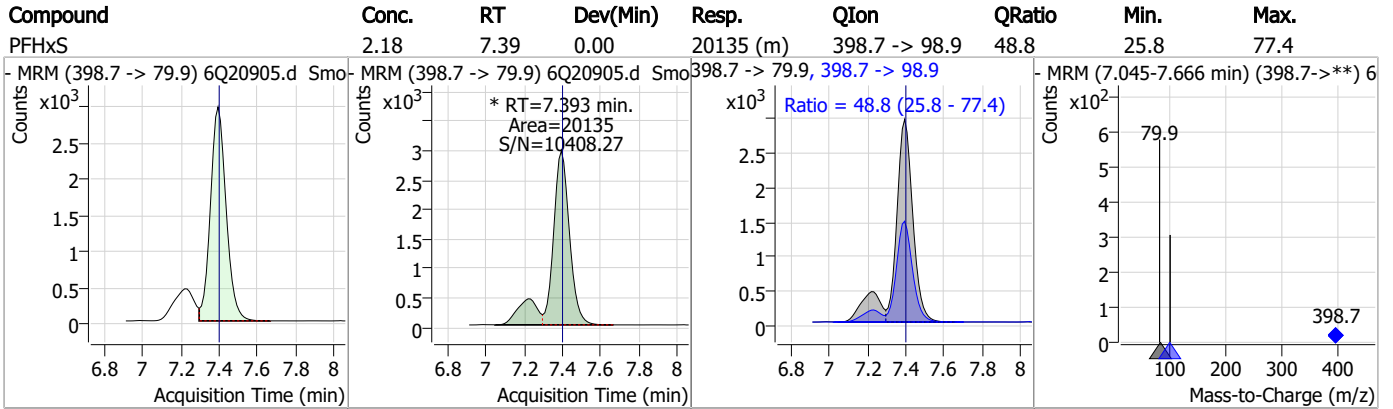
Perfluorinated Compounds by LC/MS/MS



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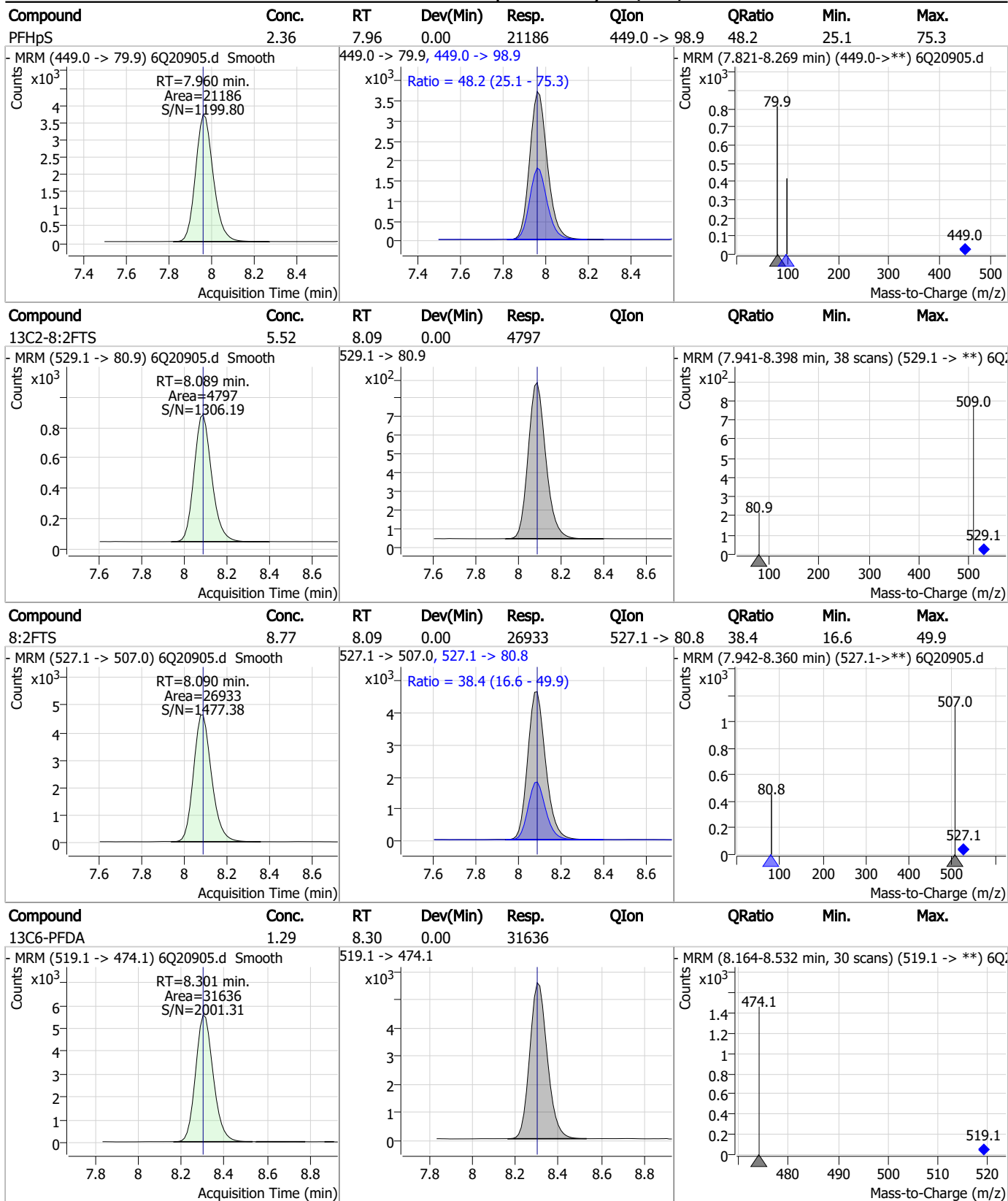
Perfluorinated Compounds by LC/MS/MS



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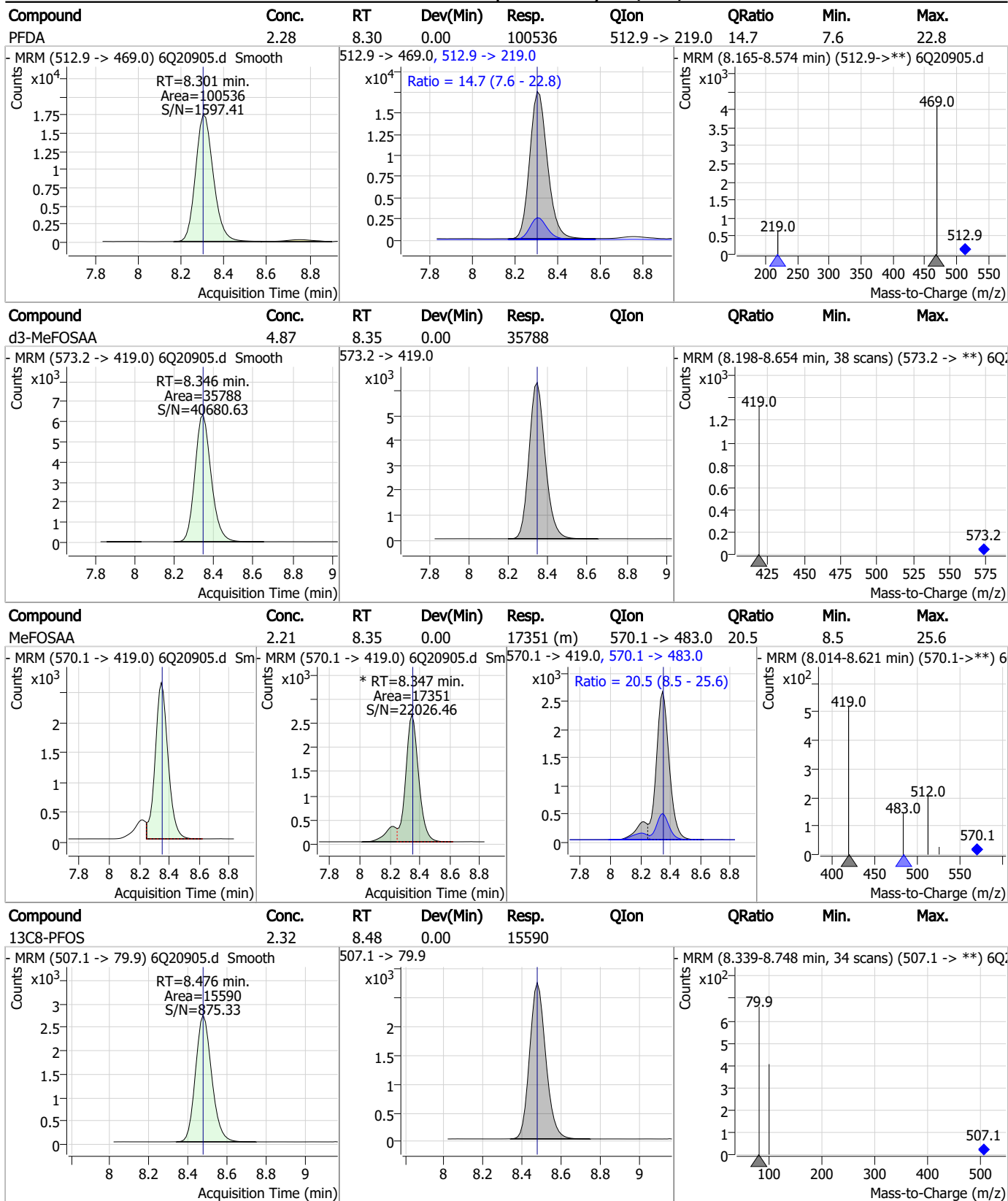


Perfluorinated Compounds by LC/MS/MS



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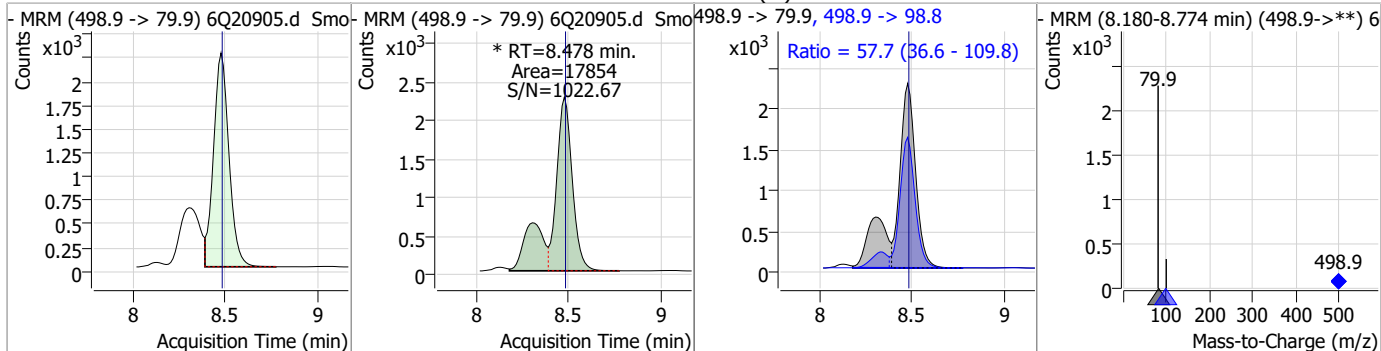
Perfluorinated Compounds by LC/MS/MS



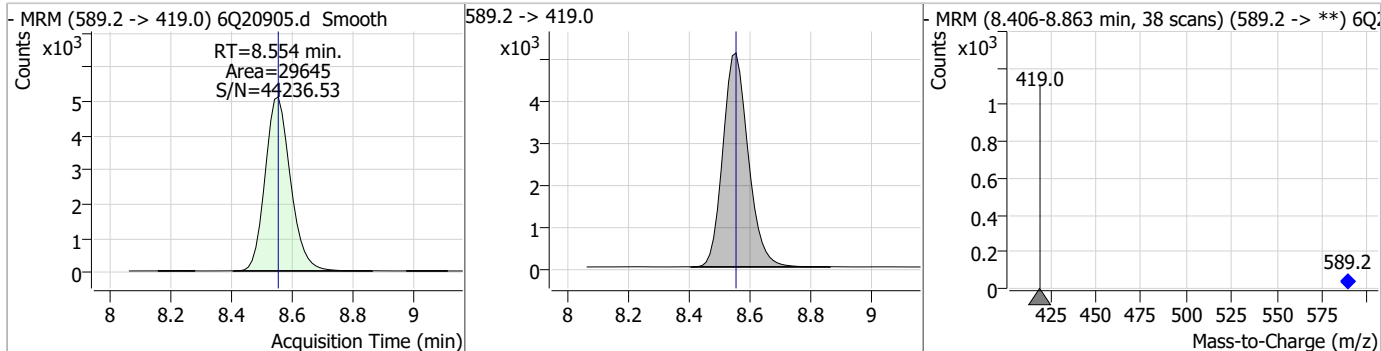
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Perfluorinated Compounds by LC/MS/MS

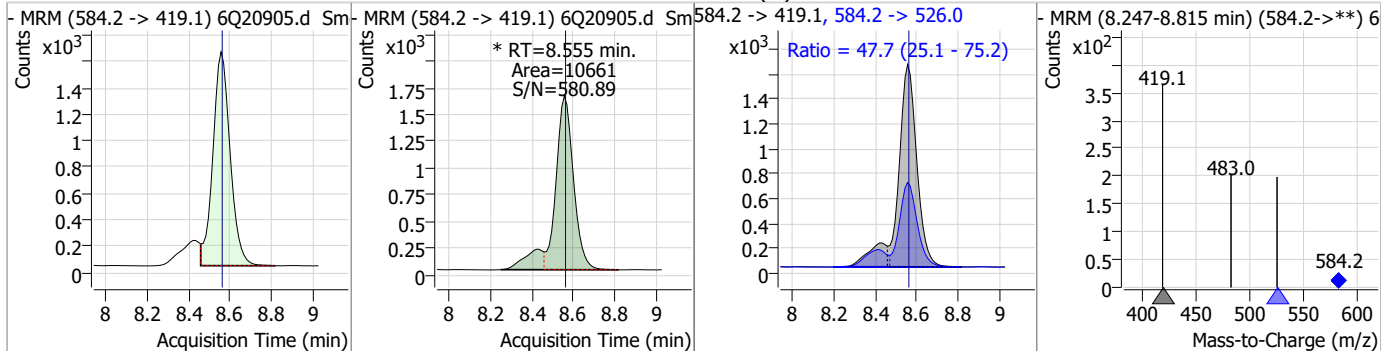
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.11	8.48	0.00	17854 (m)	498.9 -> 98.8	57.7	36.6	109.8



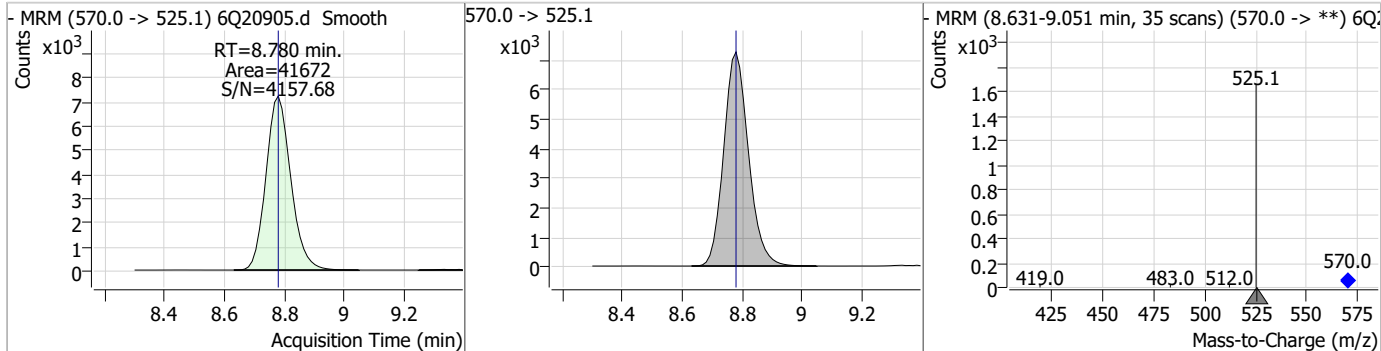
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.08	8.55	0.00	29645				



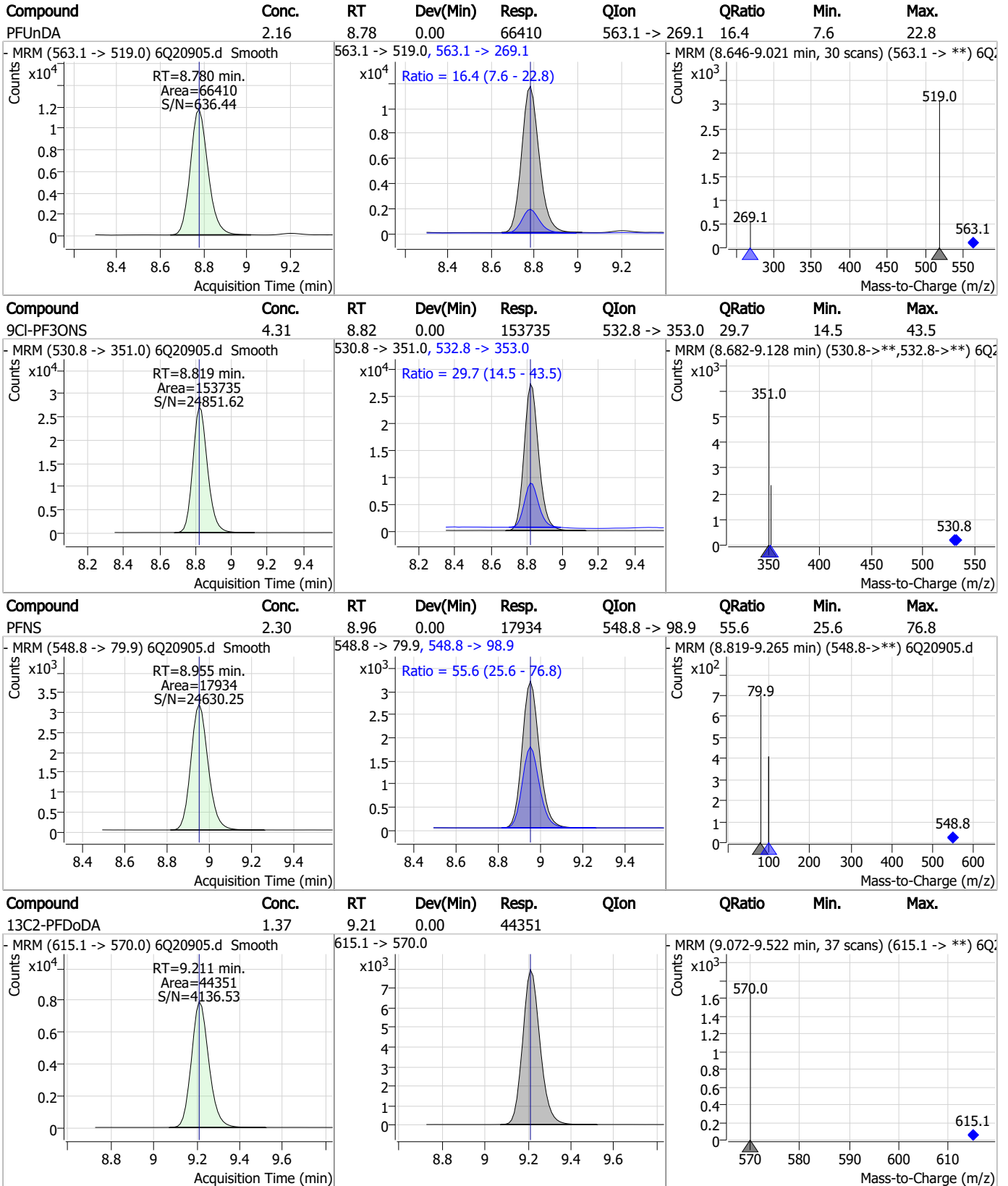
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.29	8.55	0.00	10661 (m)	584.2 -> 526.0	47.7	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.78	0.00	41672				



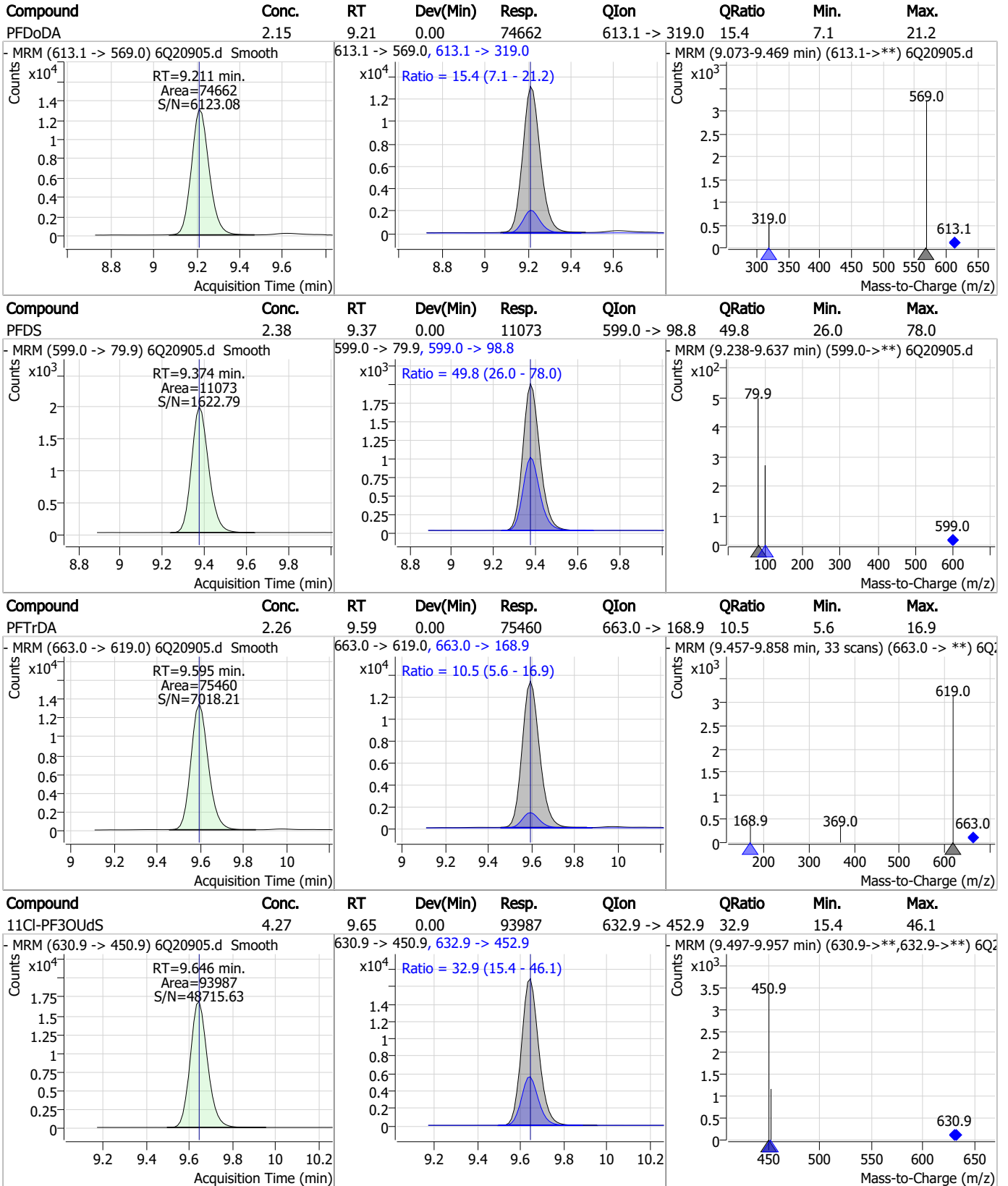
Perfluorinated Compounds by LC/MS/MS



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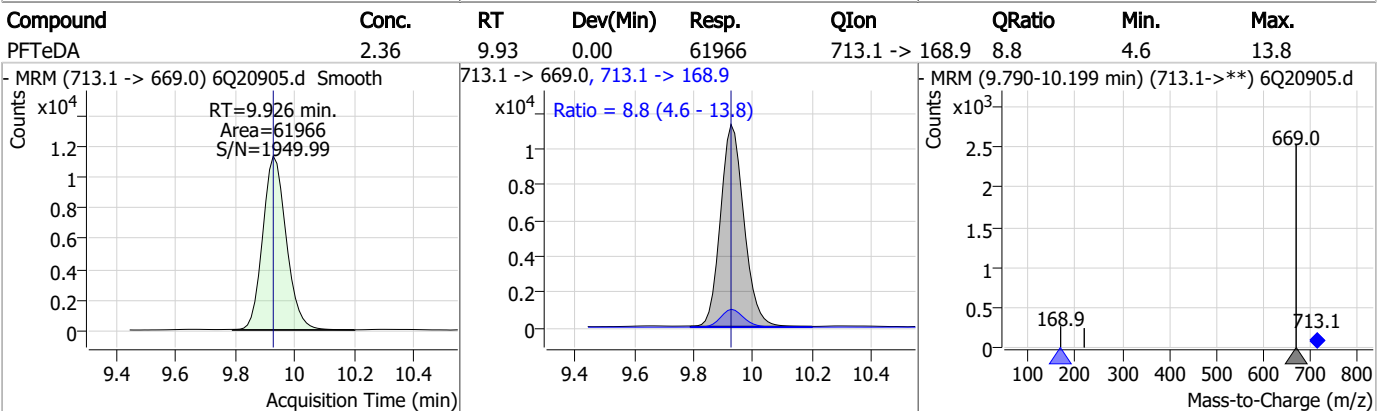
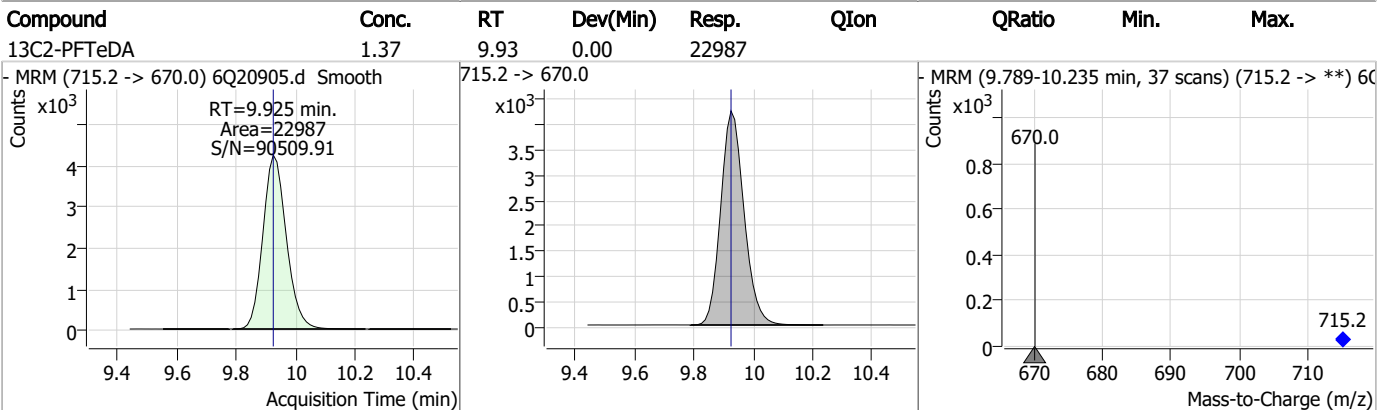
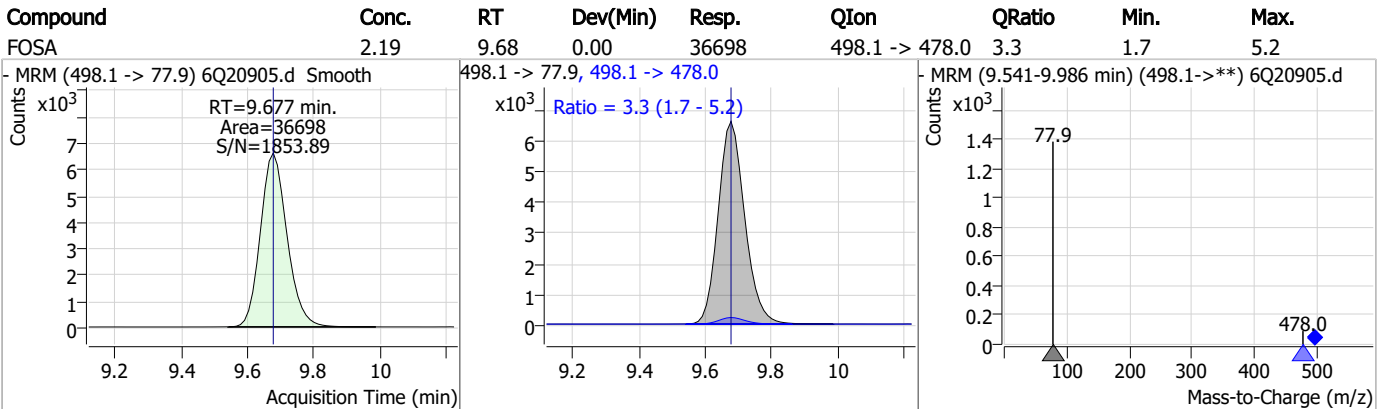
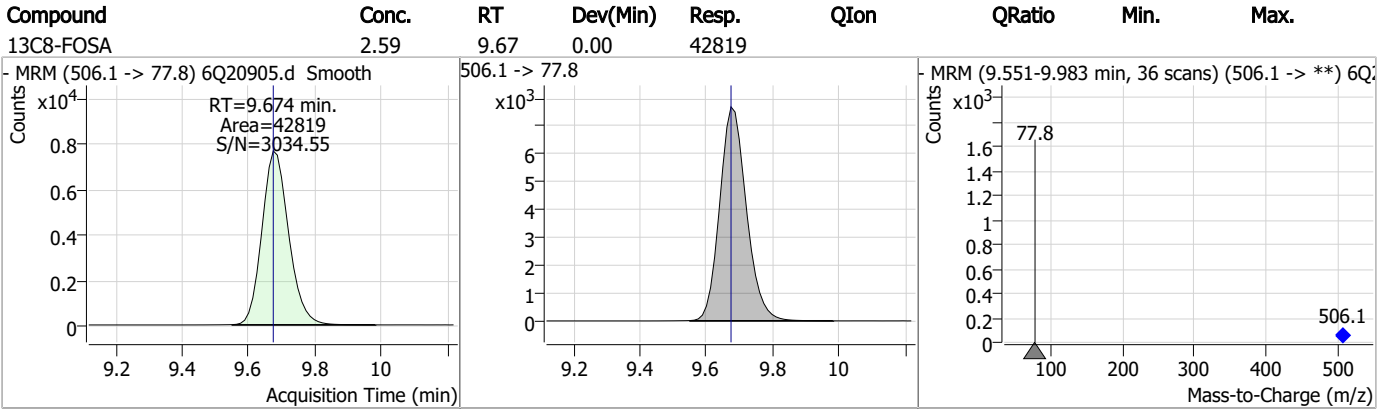
Perfluorinated Compounds by LC/MS/MS



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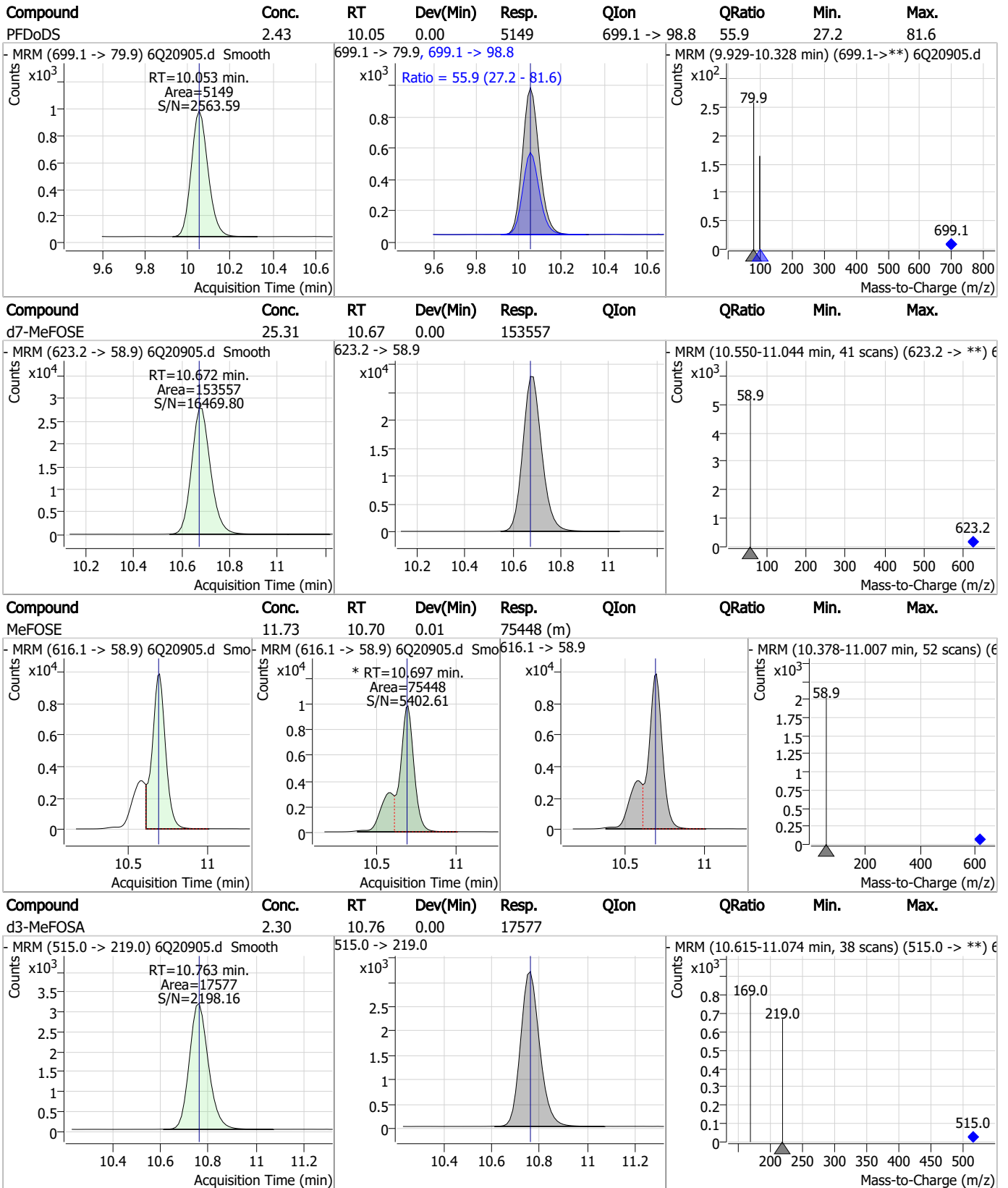


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

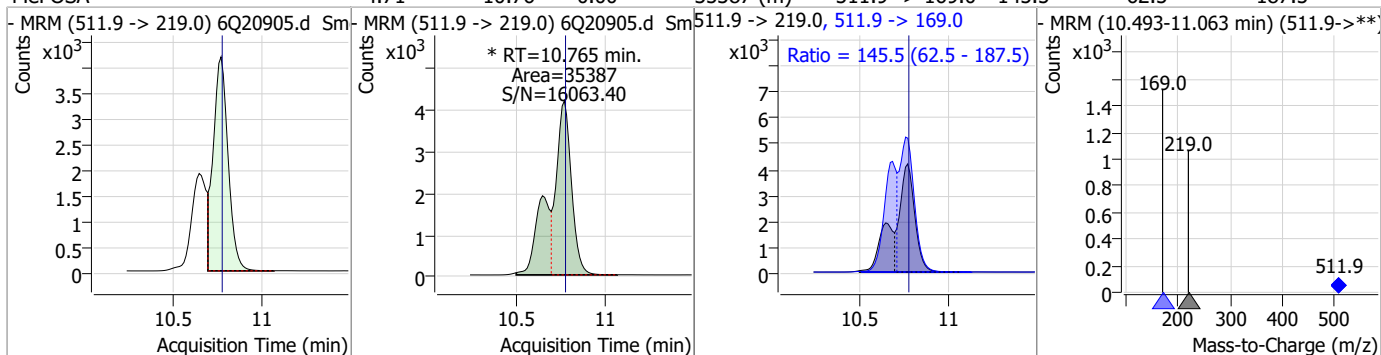


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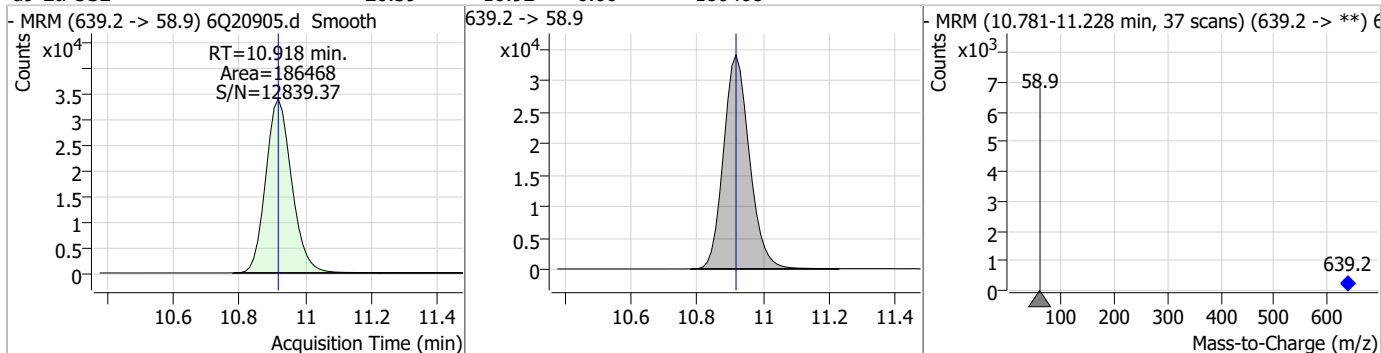


Perfluorinated Compounds by LC/MS/MS

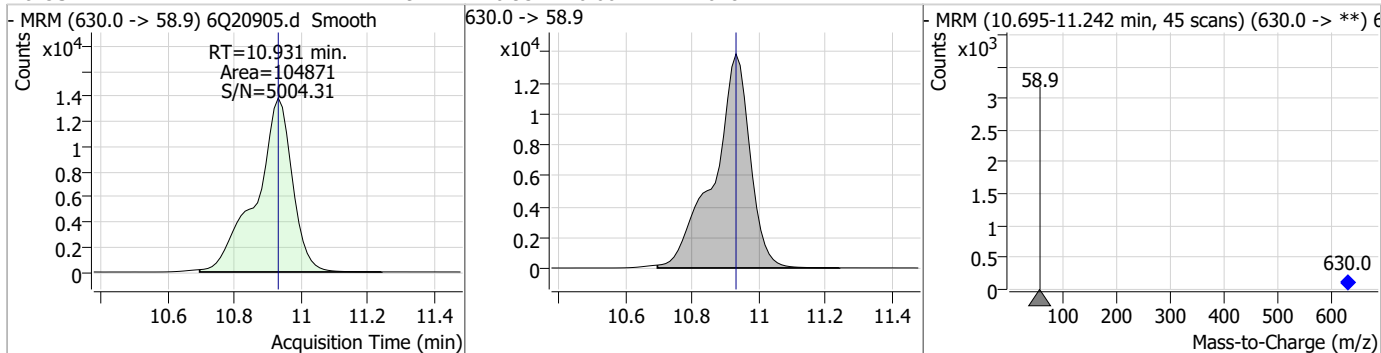
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.71	10.76	0.00	35387 (m)	511.9 -> 169.0	145.5	62.5	187.5



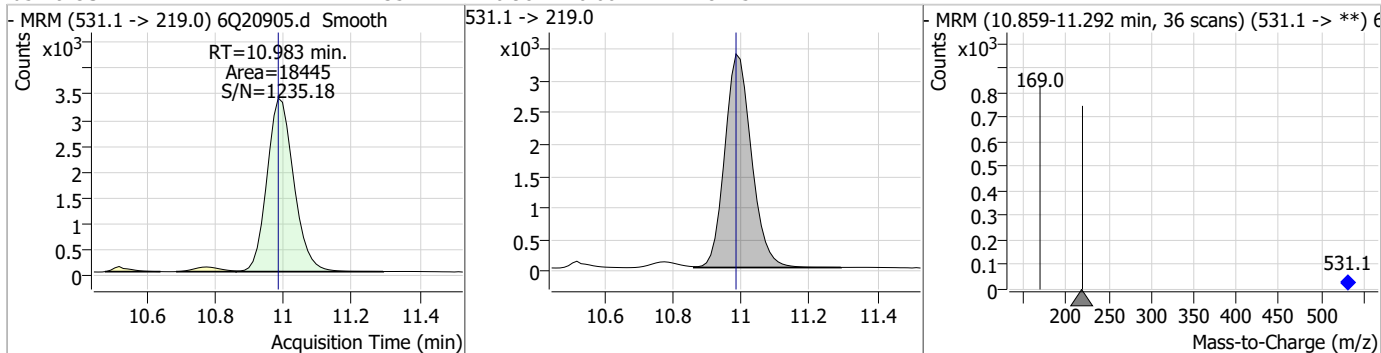
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.39	10.92	0.00	186468				



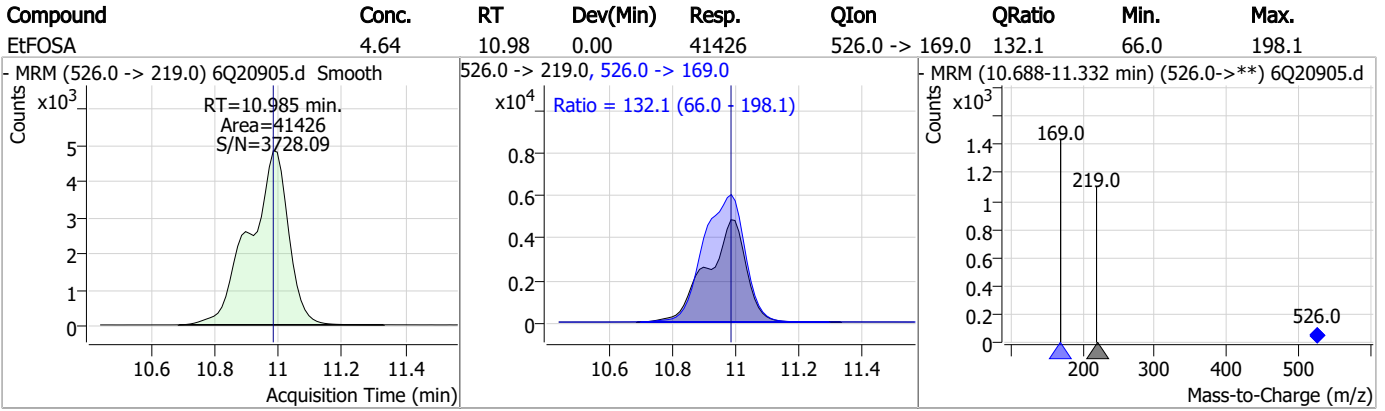
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.19	10.93	0.00	104871				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.35	10.98	0.00	18445				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307
Lab FileID: 6Q20905.D
Injection Time: 07/13/23 13:54

Method: EPA DRAFT 1633
Analyst approved: 07/16/23 11:49 Martha Valls
Supervisor approved: 07/17/23 11:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20917.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 4:42:34 PM
 Sample Name : cc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	225888	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	73637	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	79269	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	76387	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	118031	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	57885	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	29914	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	40425	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	40830	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	22932	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	43324	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	27511	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	17423	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	15485	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3243	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4807	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	4762	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	32560	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	46518	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	28928	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	147010	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	176742	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	19602	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17319	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	22761	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	95602	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	13153	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	127634	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	45222	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	66865	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	80567	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3243	5.50 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 110.0%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4807	5.49 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 109.8%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4762	5.63 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 112.7%		
13C2-PFDoDA	9.211	615.1 -> 570.0	40830	1.22 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 97.6%		
13C2-PFTeDA	9.925	715.2 -> 670.0	22932	1.32 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.8%		
13C3-PFBS	5.635	302.1 -> 79.9	27511	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 98.8%		
13C3-PFHxS	7.392	402.1 -> 79.9	17423	2.49 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 = 99.4%	
13C4-PFBA	3.022	216.8 -> 171.9	225888	9.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFHpA	6.621	367.1 -> 322.0	76387	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C5-PFHxA	5.692	318.0 -> 273.0	79269	2.41 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFPeA	4.459	268.3 -> 223.0	73637	4.90 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C6-PFDA	8.301	519.1 -> 474.1	29914	1.18 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C7-PFUnDA	8.780	570.0 -> 525.1	40425	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C8-FOSA	9.674	506.1 -> 77.8	43324	2.72 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C8-PFOA	7.264	421.1 -> 376.0	118031	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C8-PFOS	8.476	507.1 -> 79.9	15485	2.40 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C9-PFNA	7.807	472.1 -> 427.0	57885	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSAA	8.346	573.2 -> 419.0	32560	4.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	46518	9.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
d3-MeFOSA	10.763	515.0 -> 219.0	17319	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
d5-EtFOSAA	8.554	589.2 -> 419.0	28928	5.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d7-MeFOSE	10.672	623.2 -> 58.9	147010	25.18 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
d9-EtFOSE	10.918	639.2 -> 58.9	176742	25.99 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
d5-EtFOSA	10.983	531.1 -> 219.0	19602	2.59 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	54977	9.32 µg/L	94
		327.1 -> 80.9	17728		
6:2FTS	7.027	427.1 -> 407.0	50580	8.96 µg/L	94
		427.1 -> 80.9	16774		
8:2FTS	8.077	527.1 -> 507.0	29307	9.62 µg/L	98
		527.1 -> 80.8	10127		
EtFOSAA	8.555	584.2 -> 419.1	10408	2.29 µg/L	m 97
		584.2 -> 526.0	5456		
FOSA	9.677	498.1 -> 77.9	36809	2.17 µg/L	99
		498.1 -> 478.0	1225		
MeFOSAA	8.347	570.1 -> 419.0	18275	2.56 µg/L	m 95
		570.1 -> 483.0	3491		
PFBA	3.018	212.8 -> 168.9	80525	9.25 µg/L	100
PFBS	5.636	298.7 -> 79.9	23460	2.14 µg/L	95
		298.7 -> 98.8	8940		
PFDA	8.301	512.9 -> 469.0	99894	2.40 µg/L	95
		512.9 -> 219.0	17390		
PFDoDA	9.211	613.1 -> 569.0	78978	2.47 µg/L	100
		613.1 -> 319.0	11256		
PFDS	9.374	599.0 -> 79.9	10479	2.27 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	5723			
PFHpA	6.621	363.1 -> 319.0	92341	2.50	µg/L	100
		363.1 -> 169.0	14766			
PFHpS	7.960	449.0 -> 79.9	19863	2.23	µg/L	97
		449.0 -> 98.9	10367			
PFHxA	5.694	313.0 -> 269.0	70255	2.42	µg/L	99
		313.0 -> 118.9	3583			
PFHxS	7.393	398.7 -> 79.9	20579	2.22	µg/L	m 93
		398.7 -> 98.9	9664			
PFNA	7.808	463.0 -> 419.0	115569	2.51	µg/L	98
		463.0 -> 219.0	20883			
PFNS	8.955	548.8 -> 79.9	17638	2.27	µg/L	92
		548.8 -> 98.9	9988			
PFOA	7.265	413.0 -> 369.0	132043	2.36	µg/L	98
		413.0 -> 169.0	23176			
PFOS	8.478	498.9 -> 79.9	19049	2.26	µg/L	m 73
		498.9 -> 98.8	9650			
PFPeA	4.461	263.0 -> 219.0	89867	4.58	µg/L	100
PFPeS	6.697	349.1 -> 79.9	18943	2.09	µg/L	99
		349.1 -> 98.9	8806			
PFTeDA	9.926	713.1 -> 669.0	59661	2.28	µg/L	98
		713.1 -> 168.9	4999			
PFTrDA	9.595	663.0 -> 619.0	71420	2.32	µg/L	99
		663.0 -> 168.9	8225			
PFUnDA	8.780	563.1 -> 519.0	72307	2.43	µg/L	97
		563.1 -> 269.1	11755			
11CI-PF3OUdS	9.634	630.9 -> 450.9	99361	4.56	µg/L	99
		632.9 -> 452.9	31416			
9CI-PF3ONS	8.819	530.8 -> 351.0	153228	4.34	µg/L	89
		532.8 -> 353.0	53743			
ADONA	6.870	376.9 -> 250.9	371671	4.82	µg/L	97
		376.9 -> 84.8	85904			
HFPO-DA	6.071	284.9 -> 168.9	21588	4.53	µg/L	100
		284.9 -> 184.9	2298			
3:3FTCA	3.896	241.0 -> 177.0	16229	11.49	µg/L	99
		241.0 -> 117.0	2120			
5:3FTCA	6.310	341.0 -> 237.1	341634	56.27	µg/L	88
		341.0 -> 217.0	273727			
7:3FTCA	7.711	441.0 -> 316.9	266897	62.75	µg/L	86
		441.0 -> 336.9	600393			
EtFOSA	10.985	526.0 -> 219.0	42257	4.46	µg/L	96
		526.0 -> 169.0	53756			
EtFOSE	10.931	630.0 -> 58.9	95615	10.76	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	34601	4.67	µg/L	m 72
		511.9 -> 169.0	54266			
MeFOSE	10.685	616.1 -> 58.9	66498	10.80	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	5127	2.43	µg/L	98
		699.1 -> 98.8	2874			
NFDHA	5.576	295.0 -> 201.0	16413	4.63	µg/L	98
		295.0 -> 84.9	4211			
PFMBA	4.882	279.0 -> 85.1	59669	4.63	µg/L	100
PFMPA	3.588	229.0 -> 84.9	50474	4.65	µg/L	100
PFEESA	6.188	314.8 -> 134.9	164130	4.03	µg/L	100
		314.8 -> 82.9	5204			

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

7.7.14
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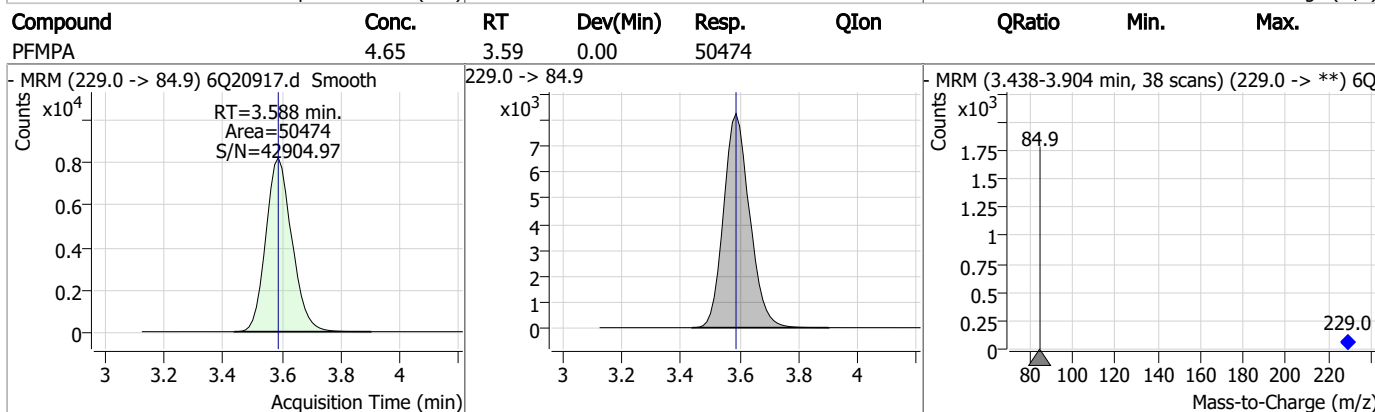
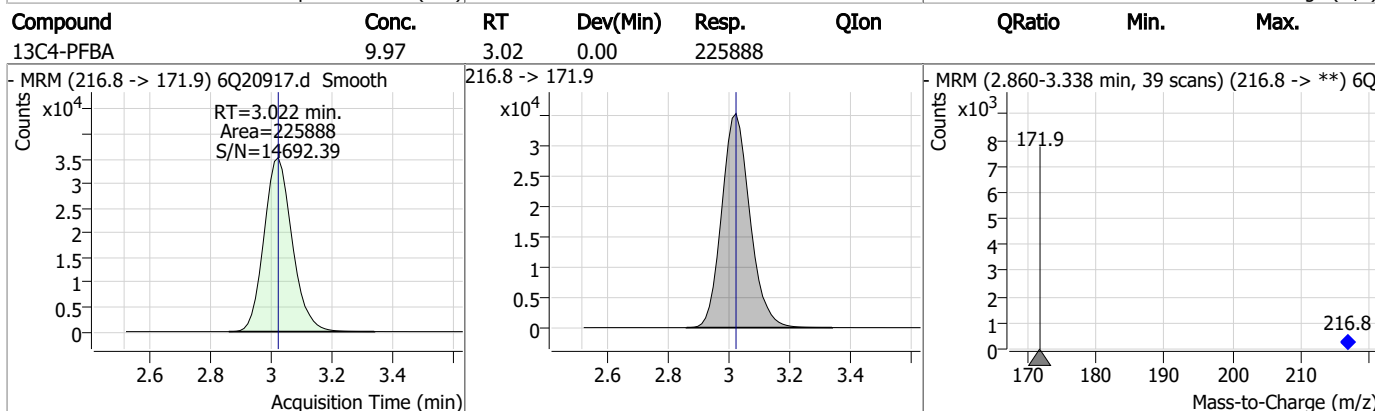
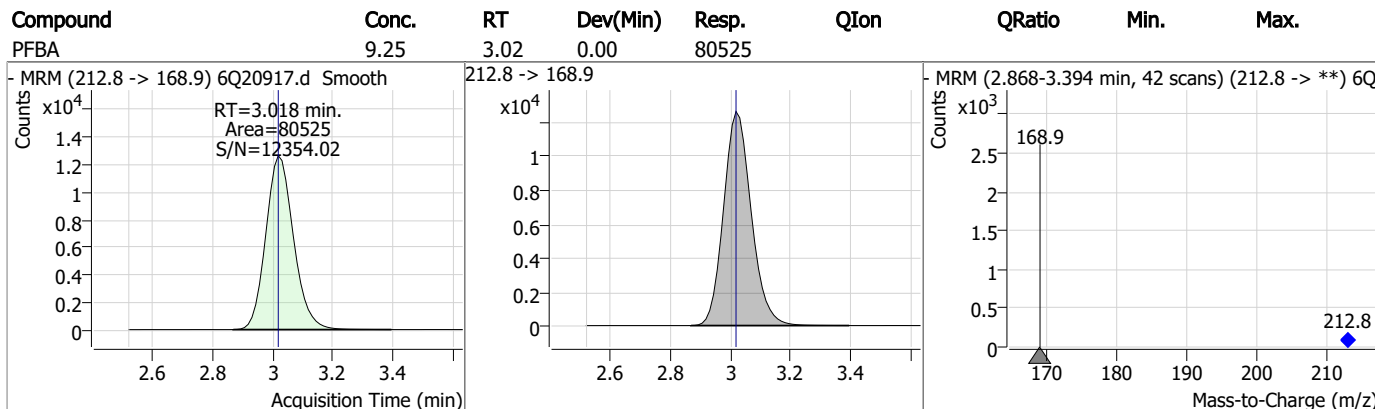
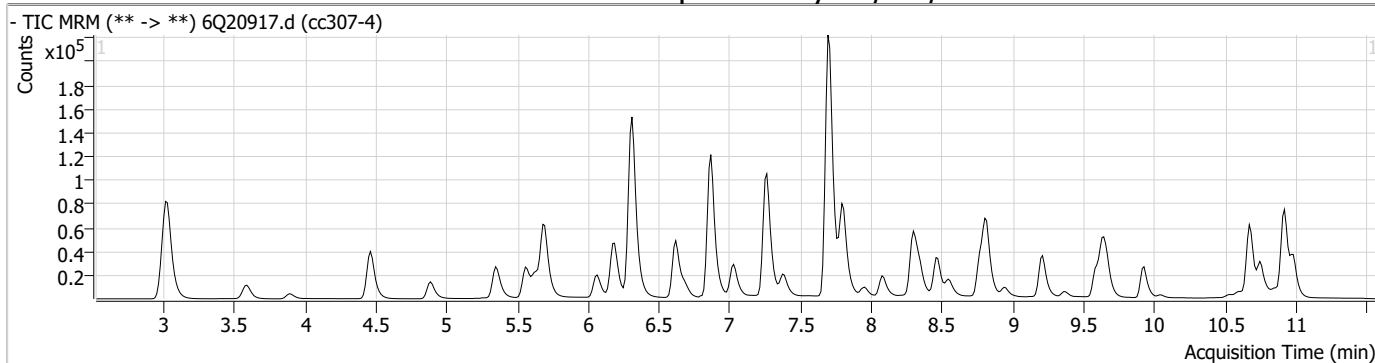
Perfluorinated Compounds by LC/MS/MS

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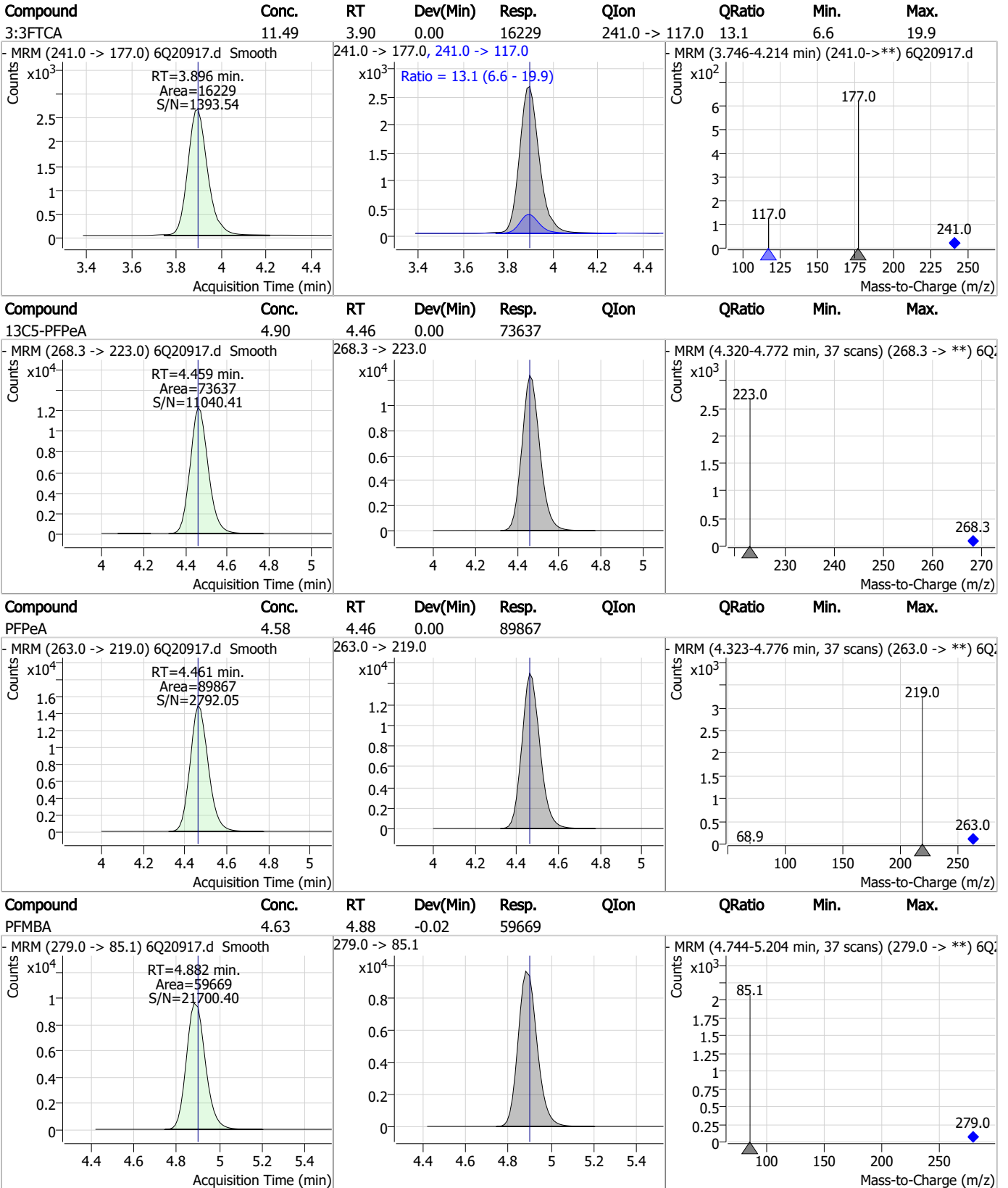
7.7.14

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Perfluorinated Compounds by LC/MS/MS



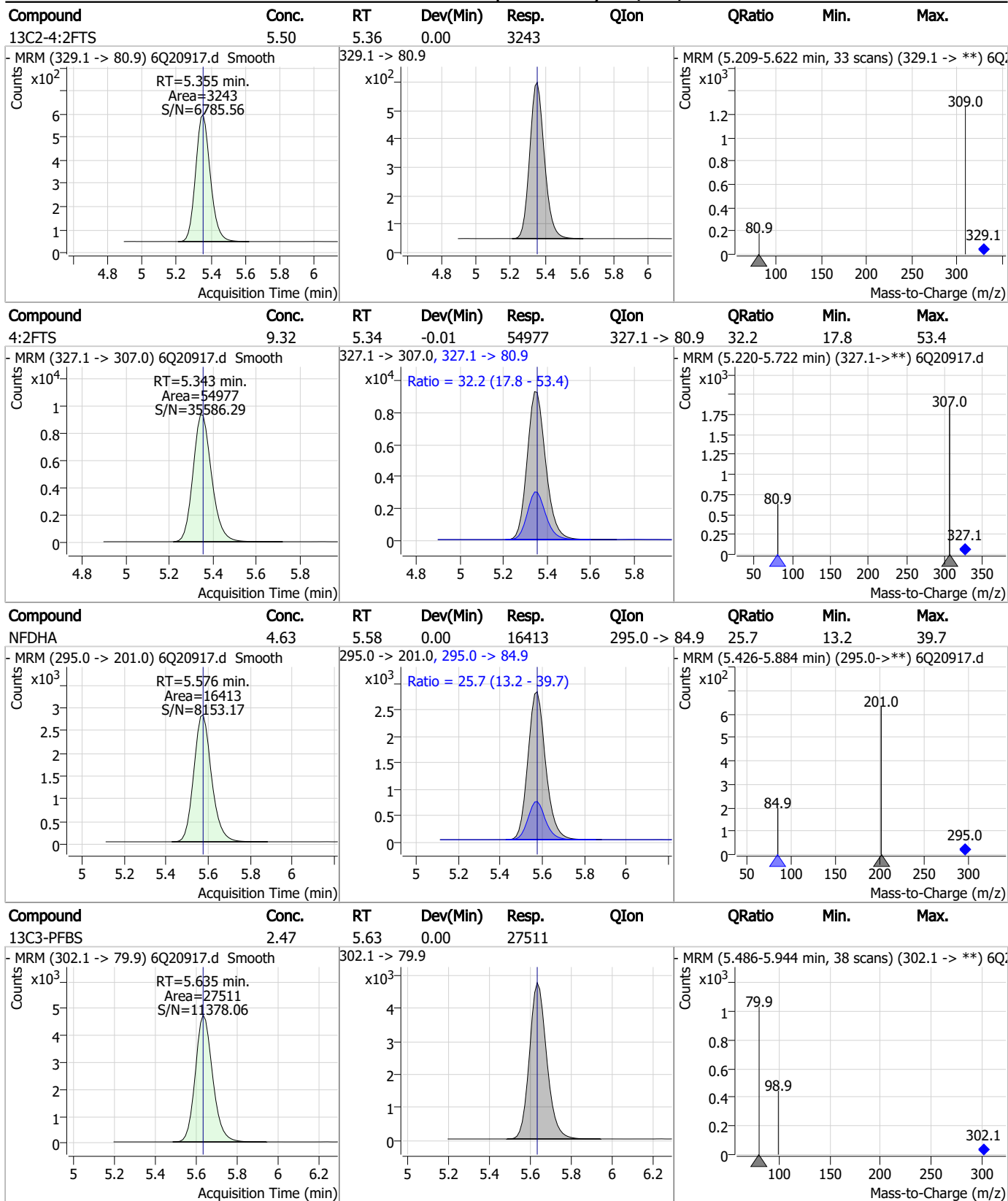
Perfluorinated Compounds by LC/MS/MS



7.7.14

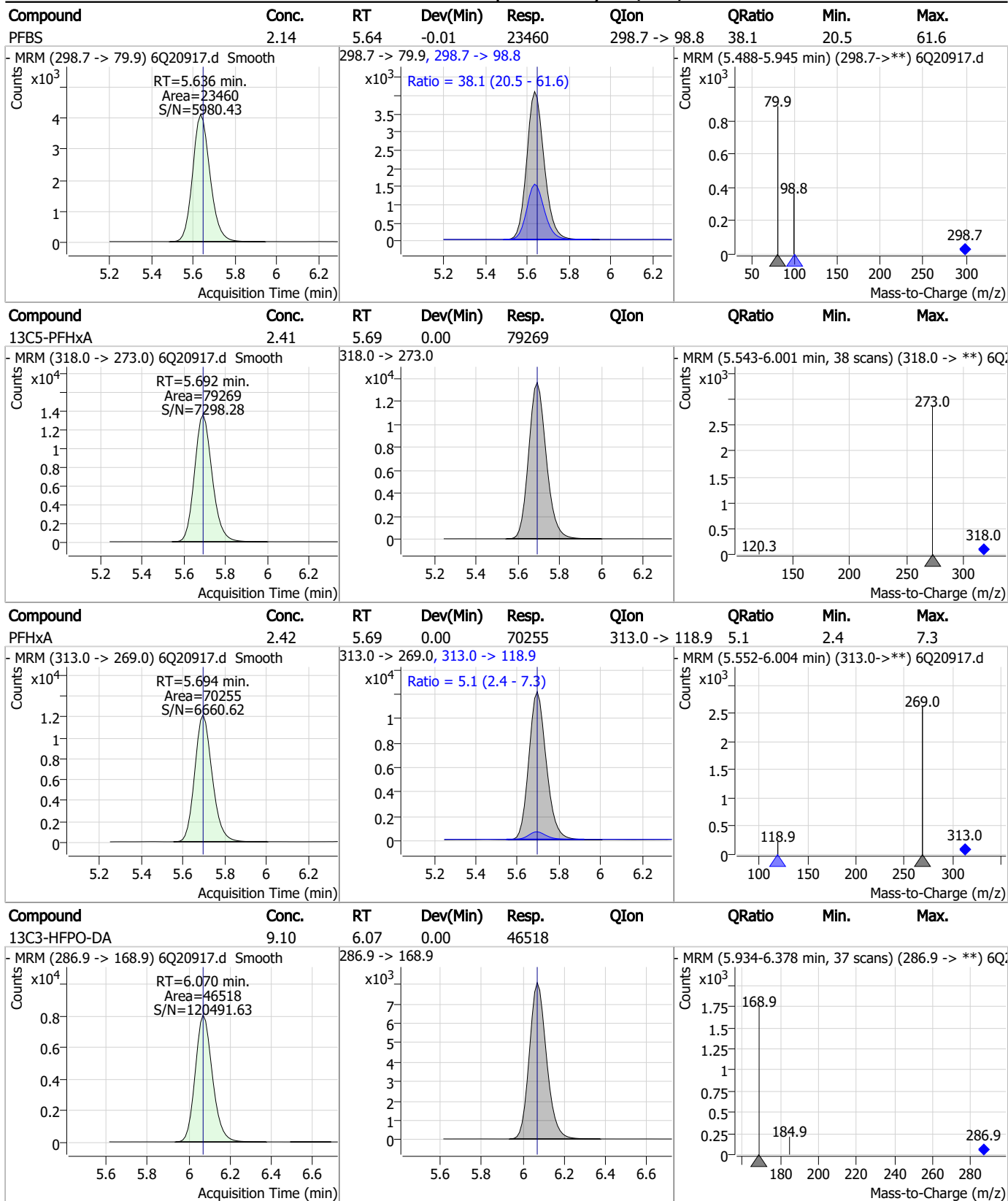
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Perfluorinated Compounds by LC/MS/MS



7.7.14
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Perfluorinated Compounds by LC/MS/MS

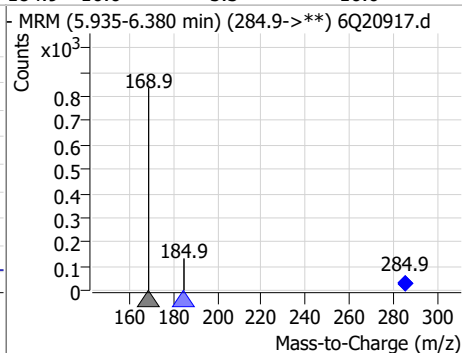
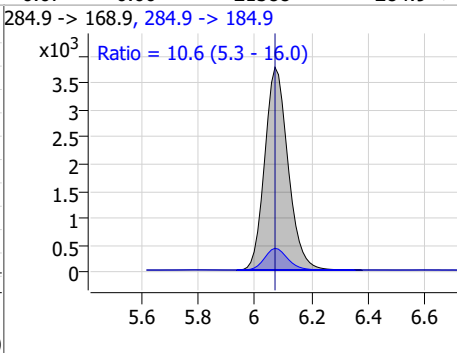
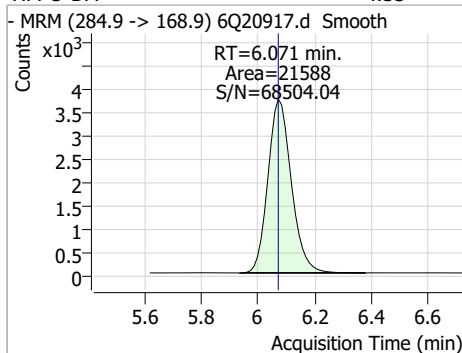


7.7.14
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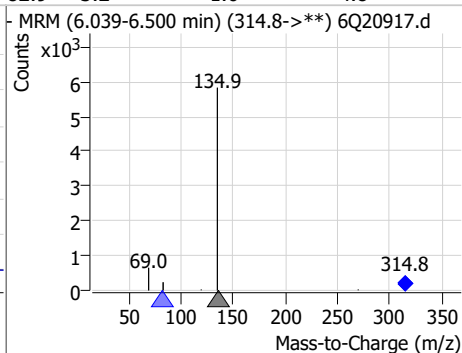
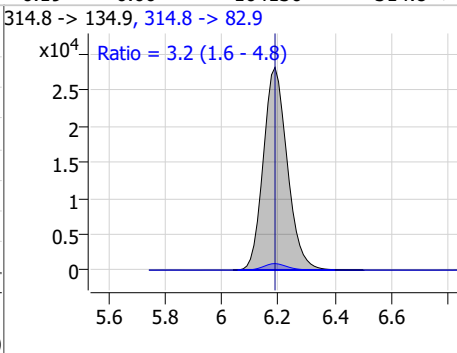
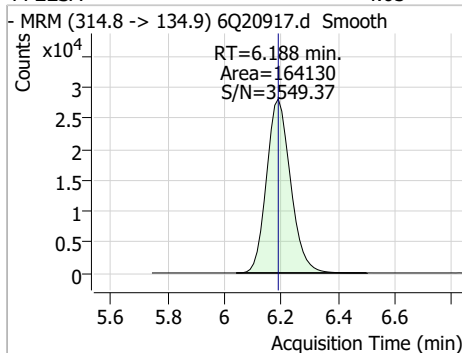


Perfluorinated Compounds by LC/MS/MS

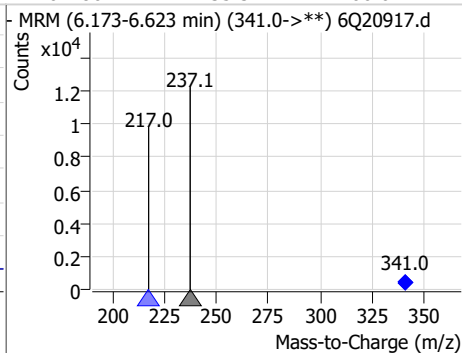
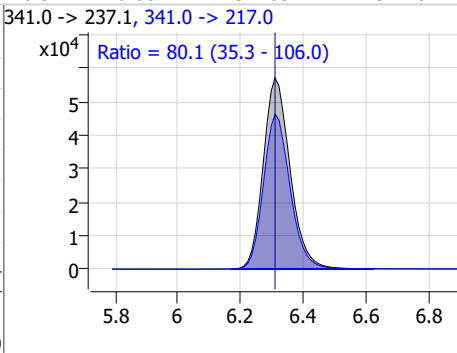
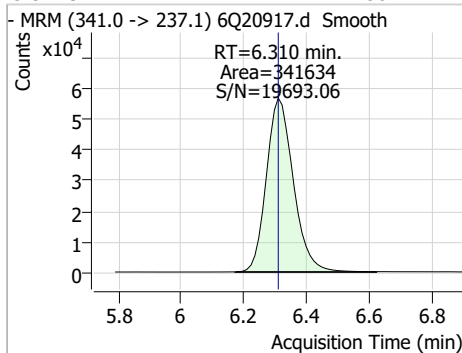
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.53	6.07	0.00	21588	284.9 -> 184.9	10.6	5.3	16.0



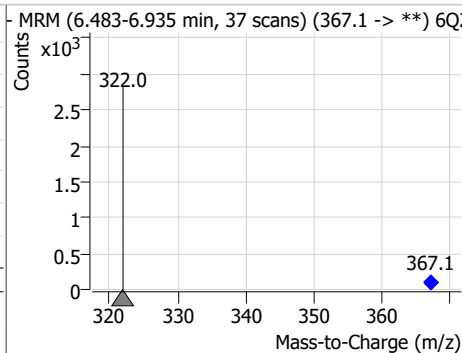
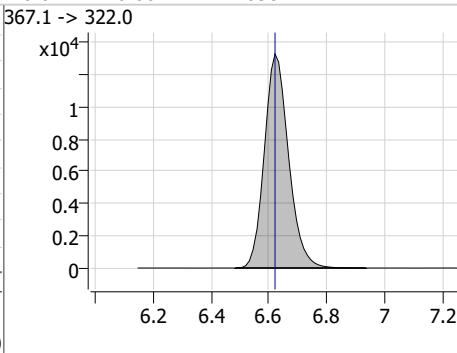
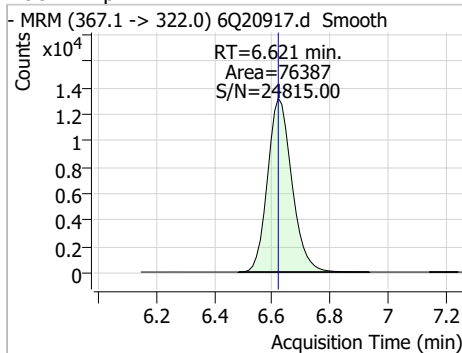
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.03	6.19	0.00	164130	314.8 -> 82.9	3.2	1.6	4.8



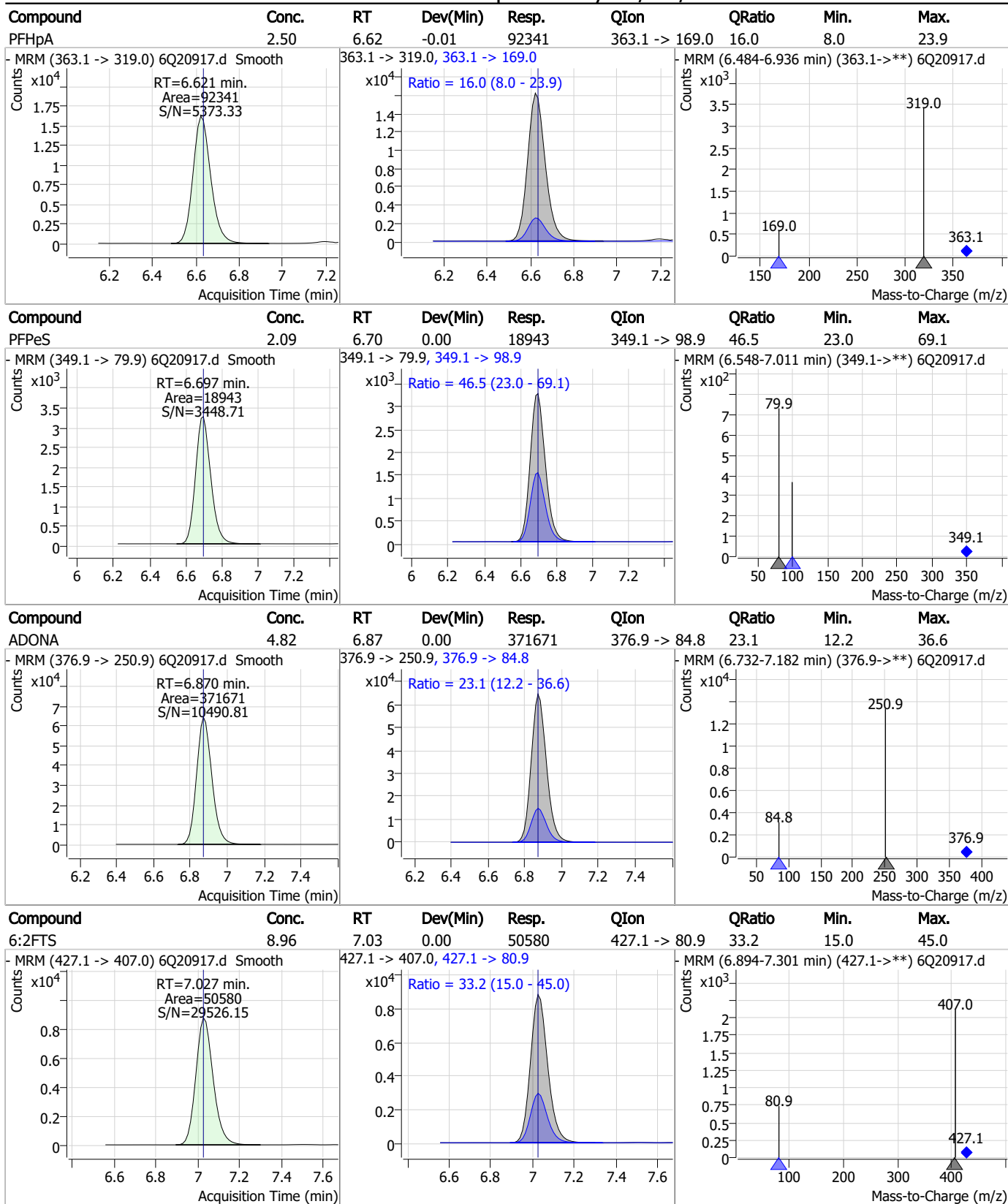
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.27	6.31	0.00	341634	341.0 -> 217.0	80.1	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.62	0.00	76387	367.1 -> 322.0			

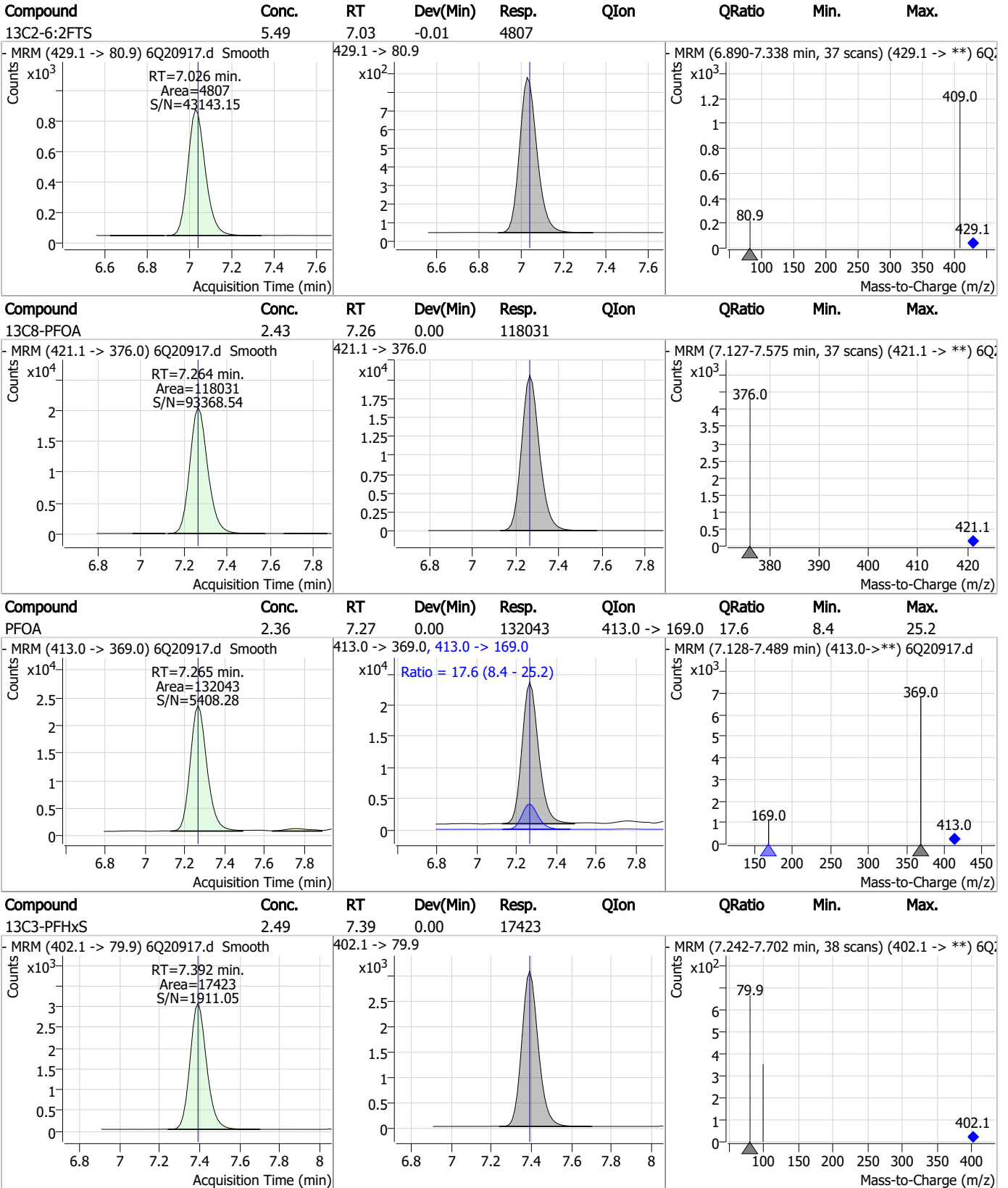


Perfluorinated Compounds by LC/MS/MS



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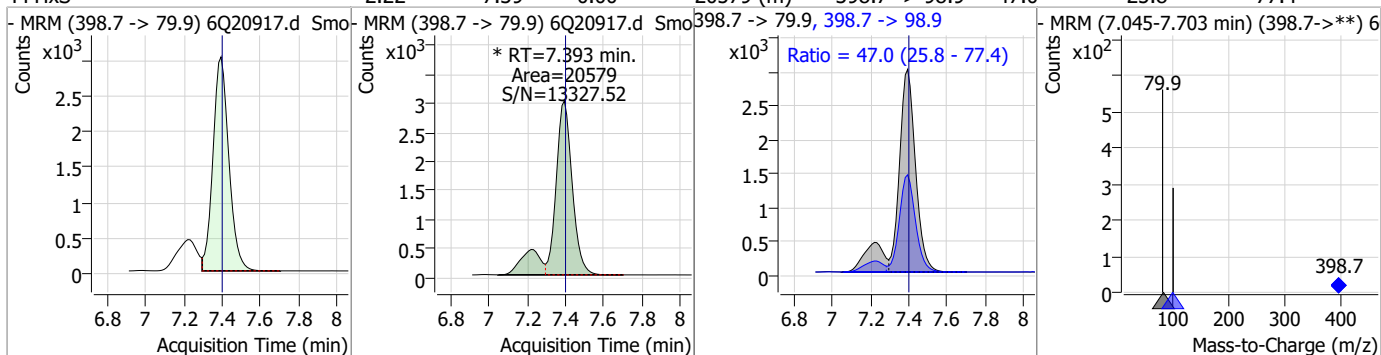
Perfluorinated Compounds by LC/MS/MS



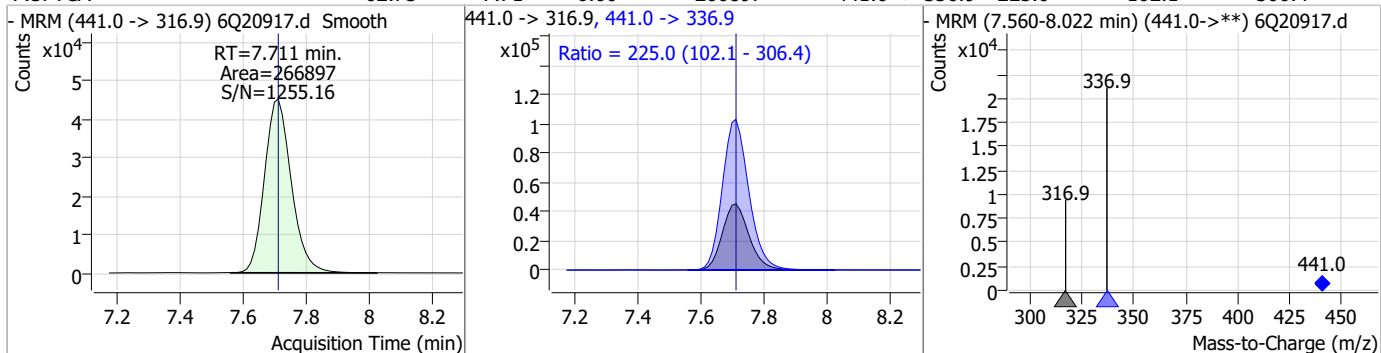
7.7.14
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Perfluorinated Compounds by LC/MS/MS

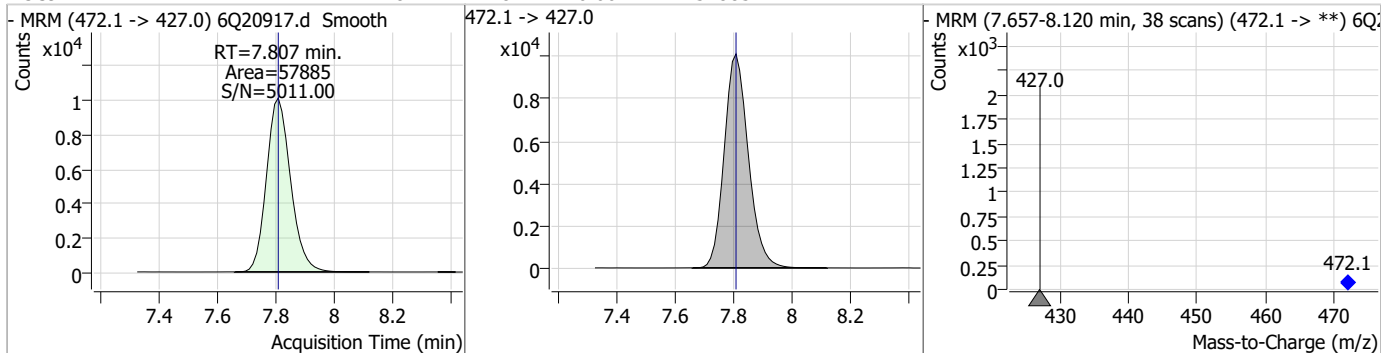
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.22	7.39	0.00	20579 (m)	398.7 -> 98.9	47.0	25.8	77.4



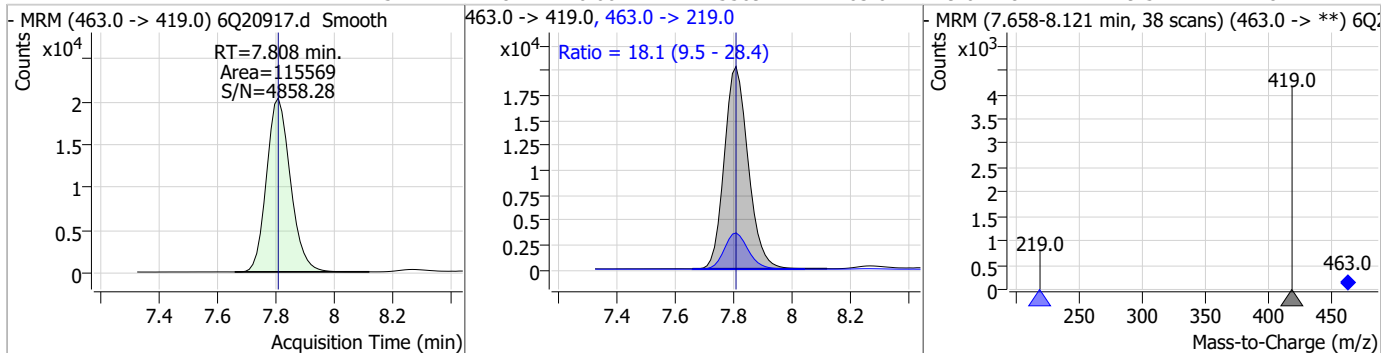
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	62.75	7.71	0.00	266897	441.0 -> 336.9	225.0	102.1	306.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.81	0.00	57885	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.51	7.81	0.00	115569	463.0 -> 219.0	18.1	9.5	28.4



Perfluorinated Compounds by LC/MS/MS

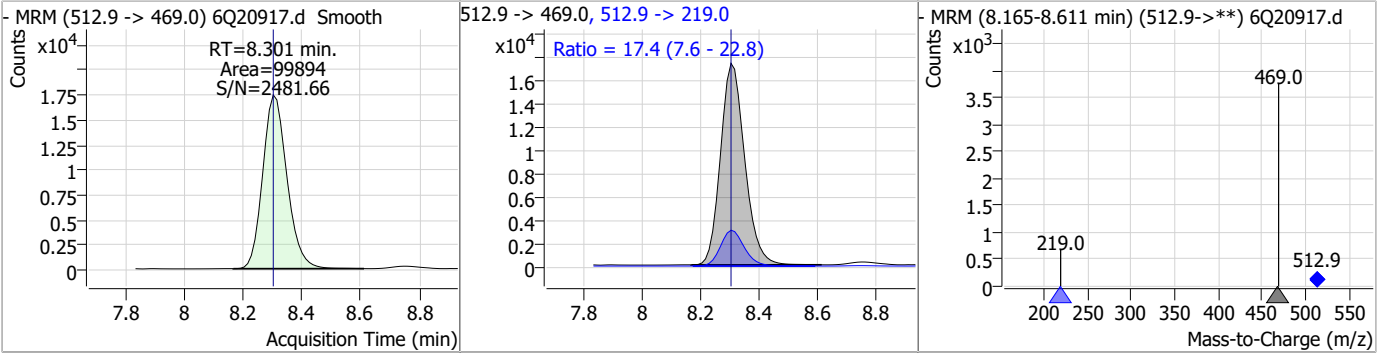
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.23	7.96	0.00	19863	449.0 -> 98.9	52.2	25.1	75.3
13C2-8:2FTS	5.63	8.09	0.00	4762	529.1 -> 80.9			
8:2FTS	9.62	8.08	-0.01	29307	527.1 -> 80.8	34.6	16.6	49.9
13C6-PFDA	1.18	8.30	0.00	29914	519.1 -> 474.1			

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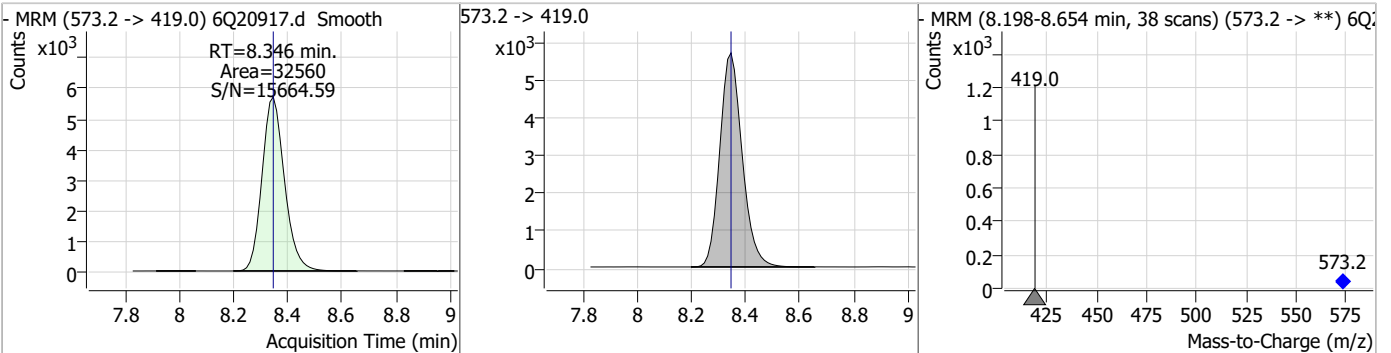


Perfluorinated Compounds by LC/MS/MS

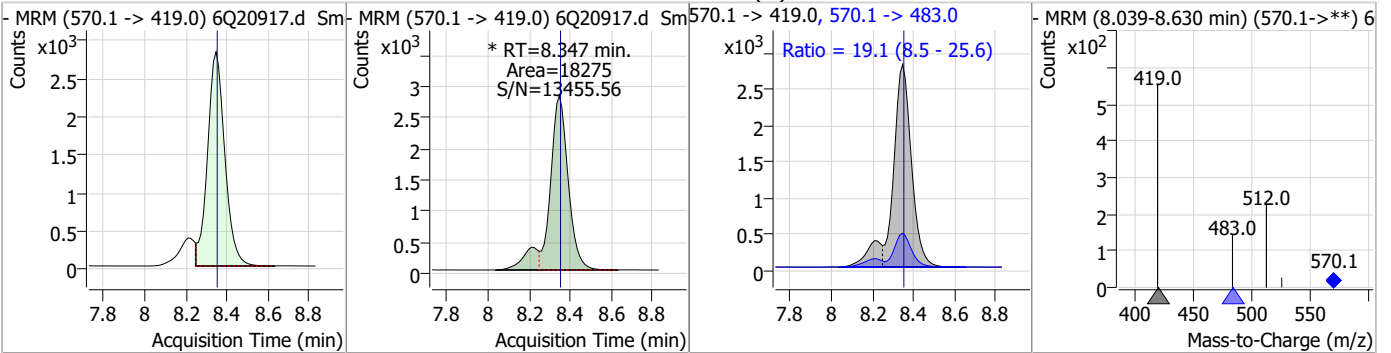
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.40	8.30	0.00	99894	512.9 -> 219.0	17.4	7.6	22.8



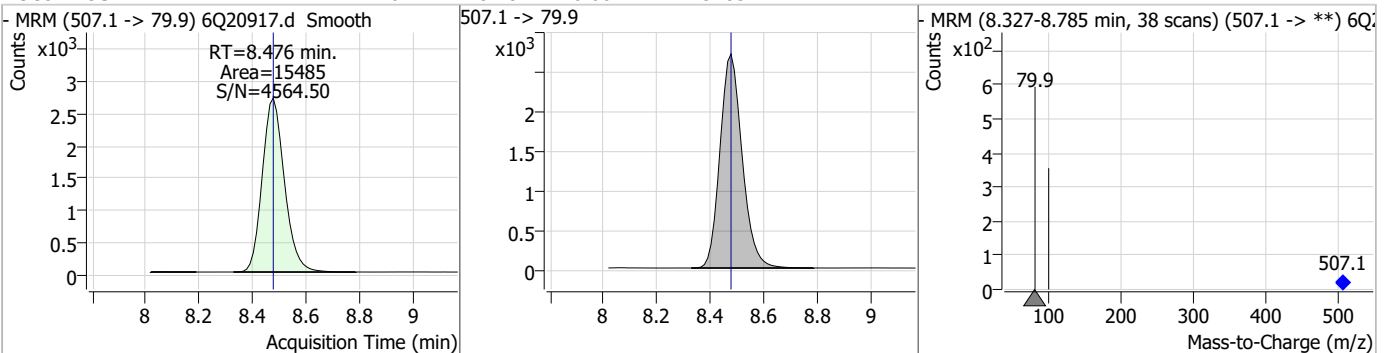
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.61	8.35	0.00	32560				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.56	8.35	0.00	18275 (m)	570.1 -> 483.0	19.1	8.5	25.6

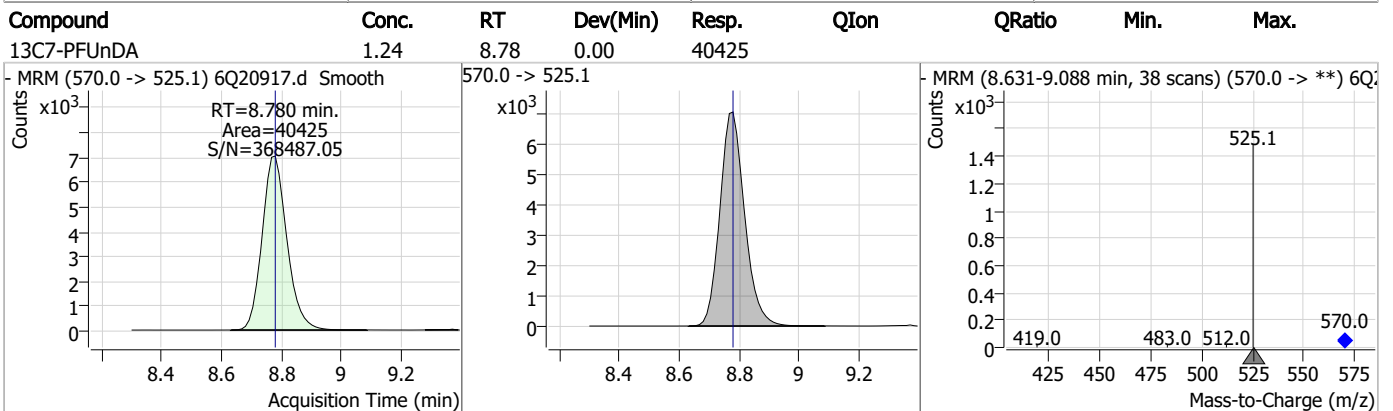
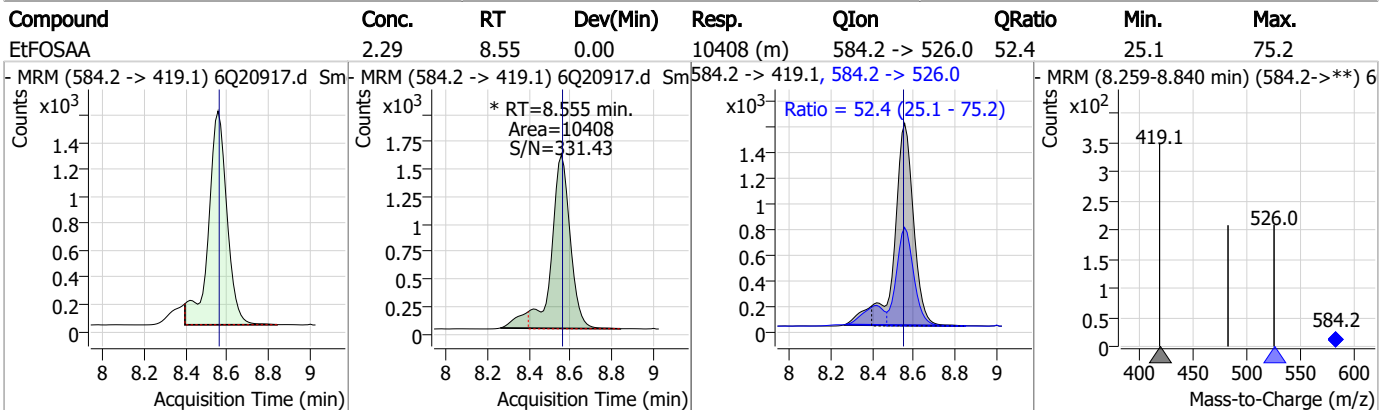
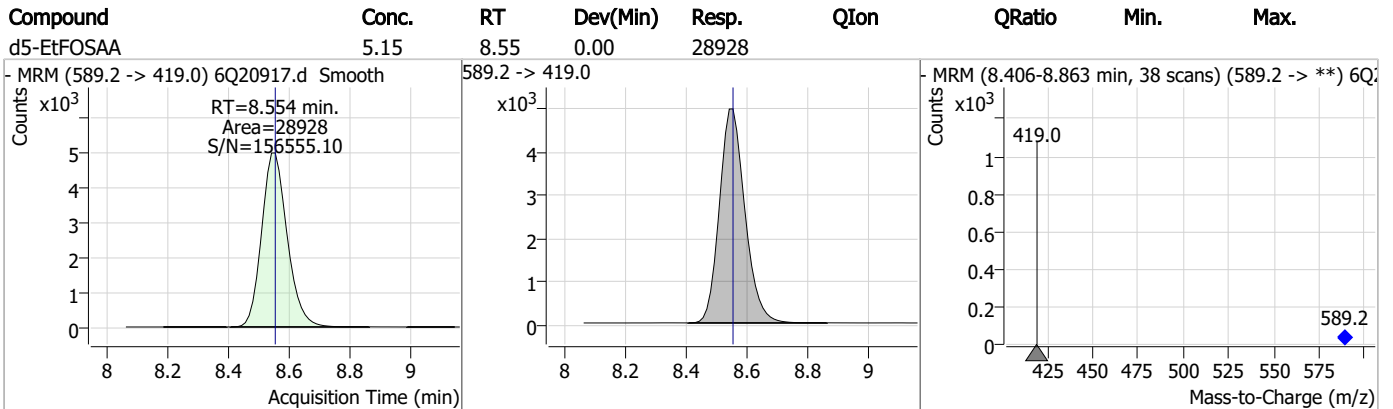
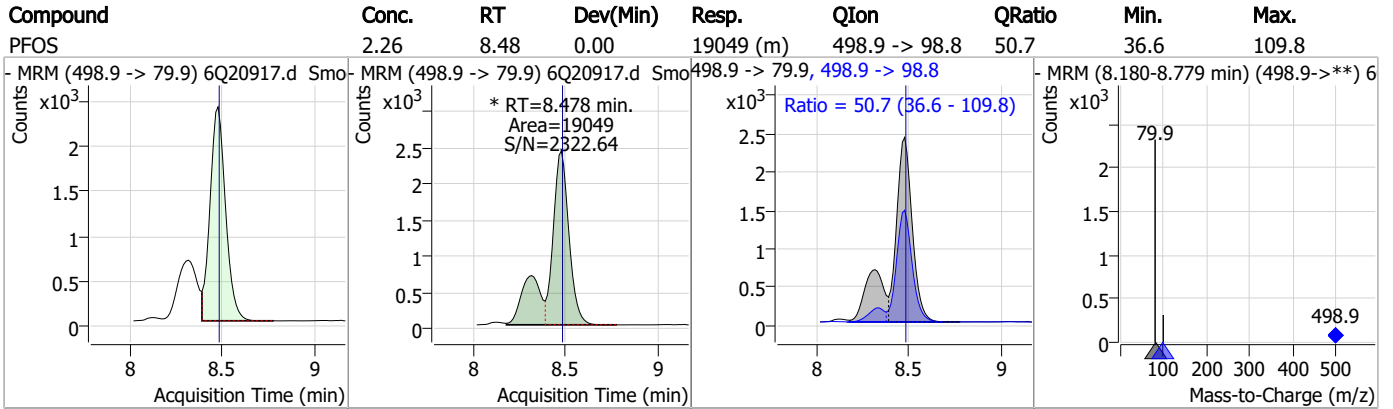


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.40	8.48	0.00	15485				

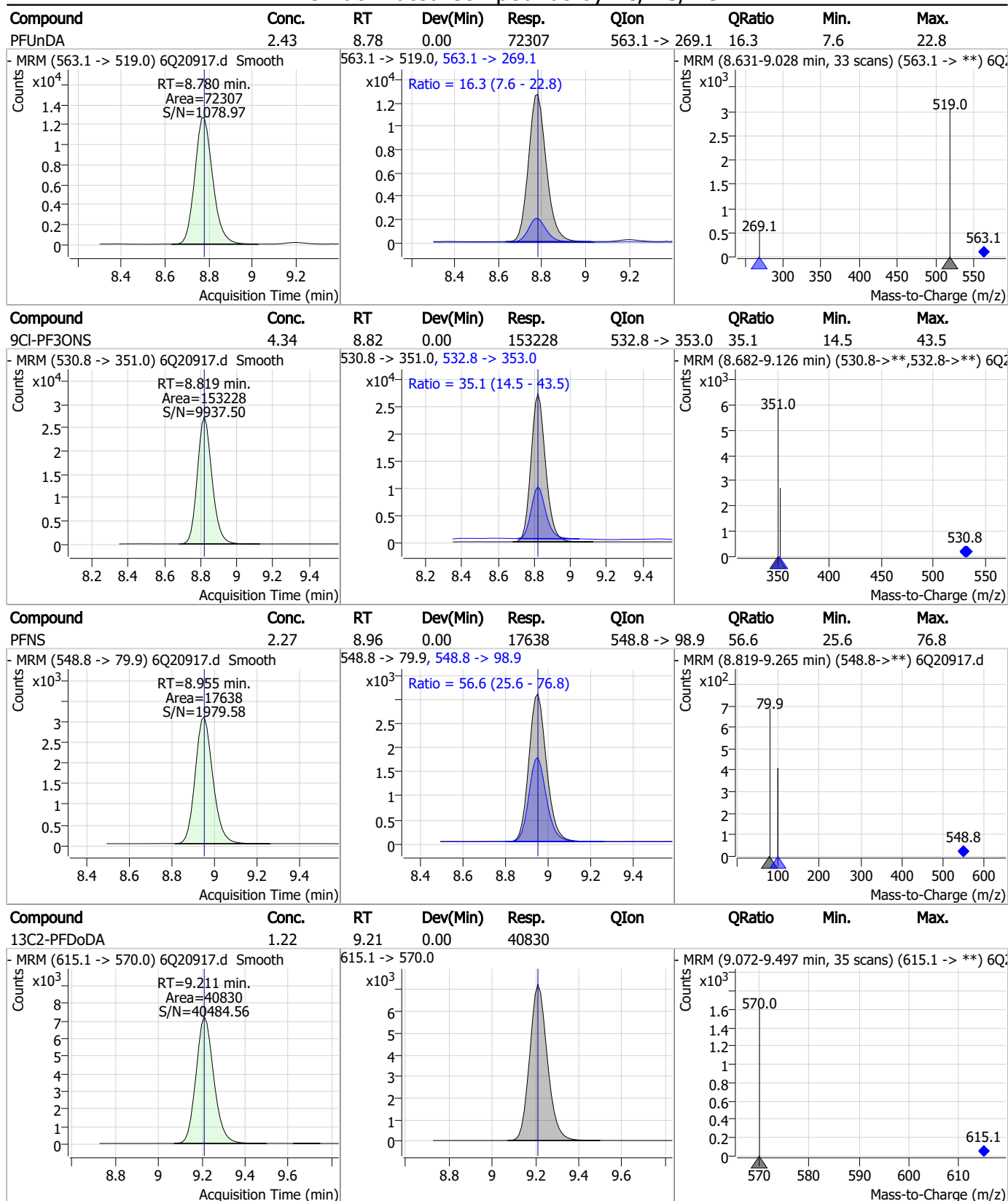


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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

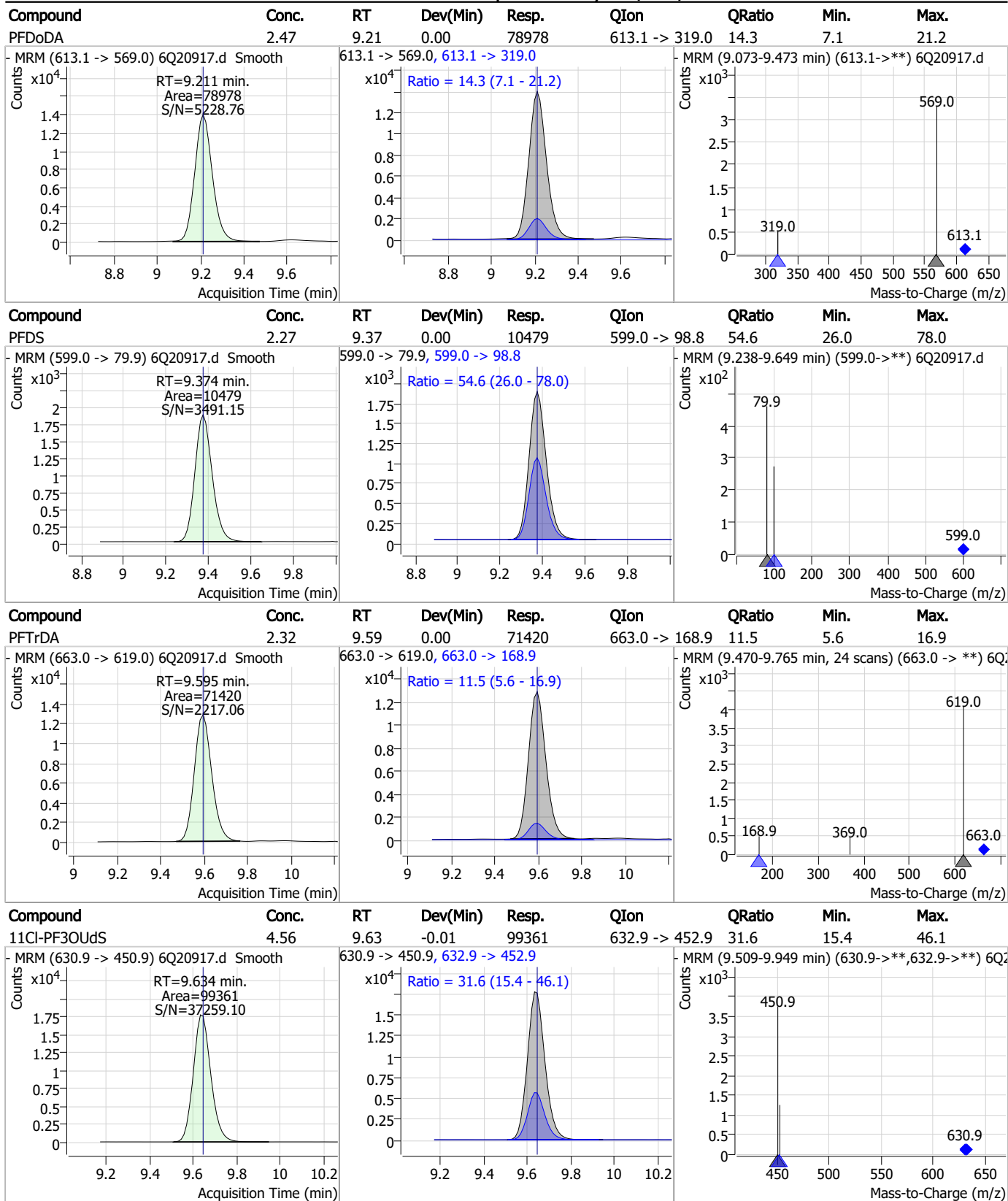


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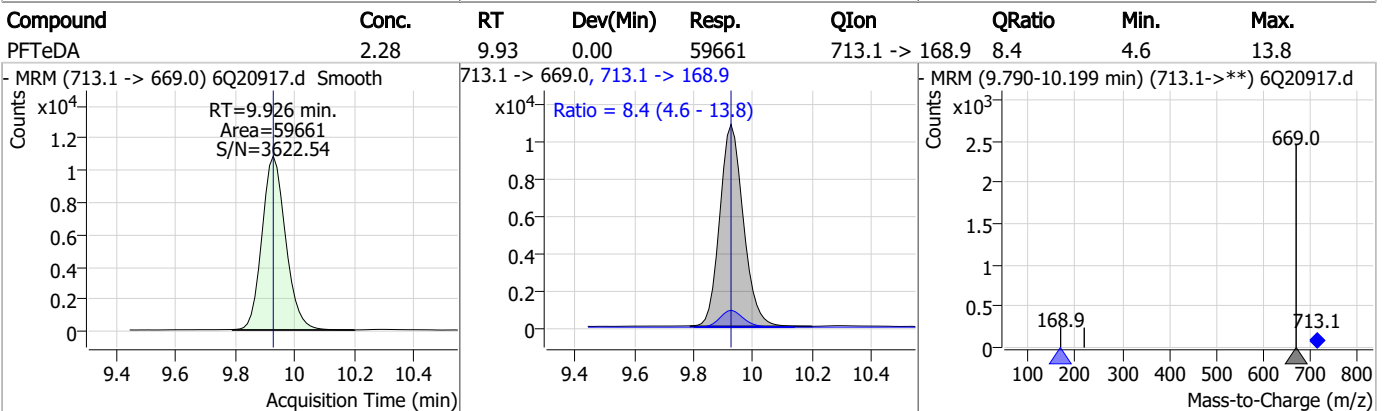
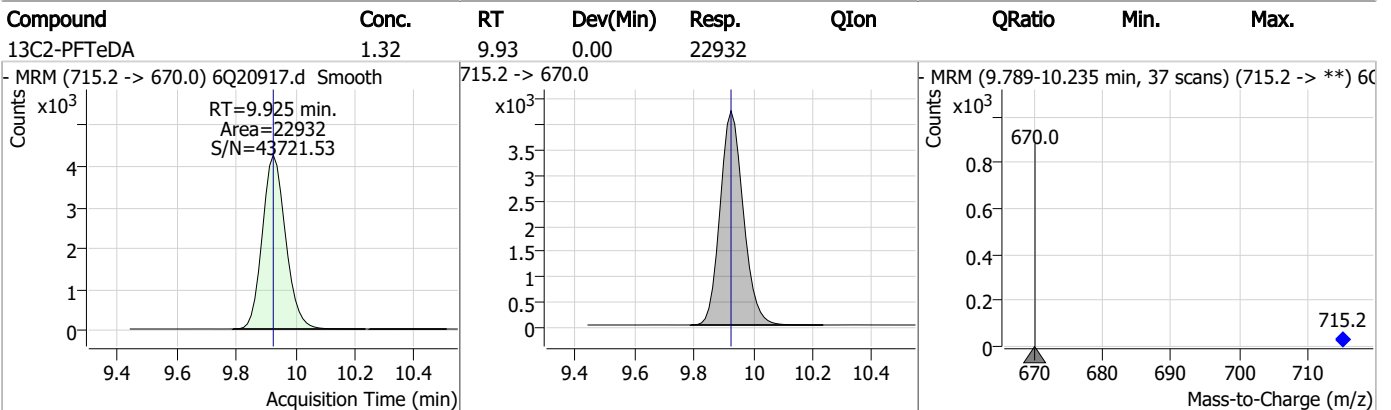
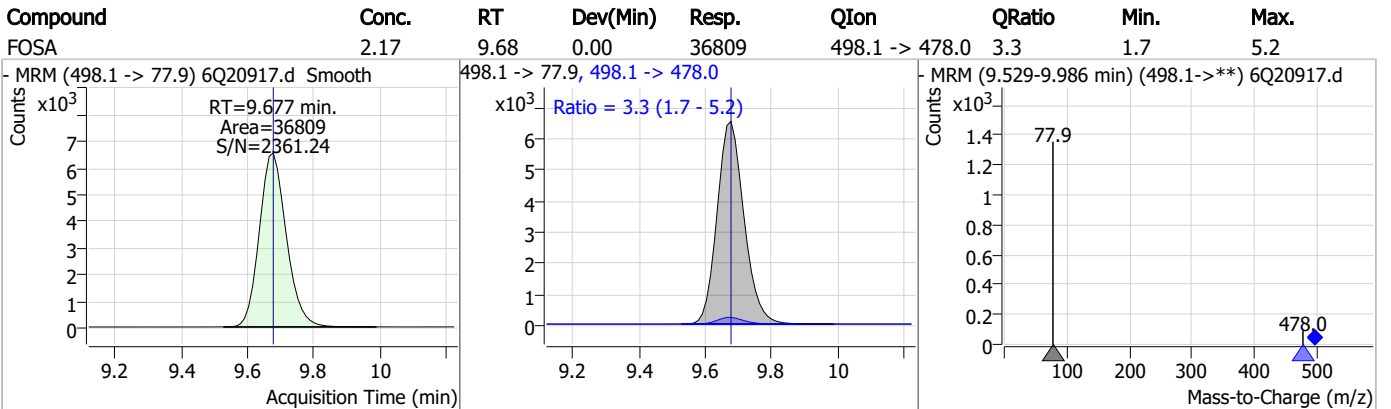
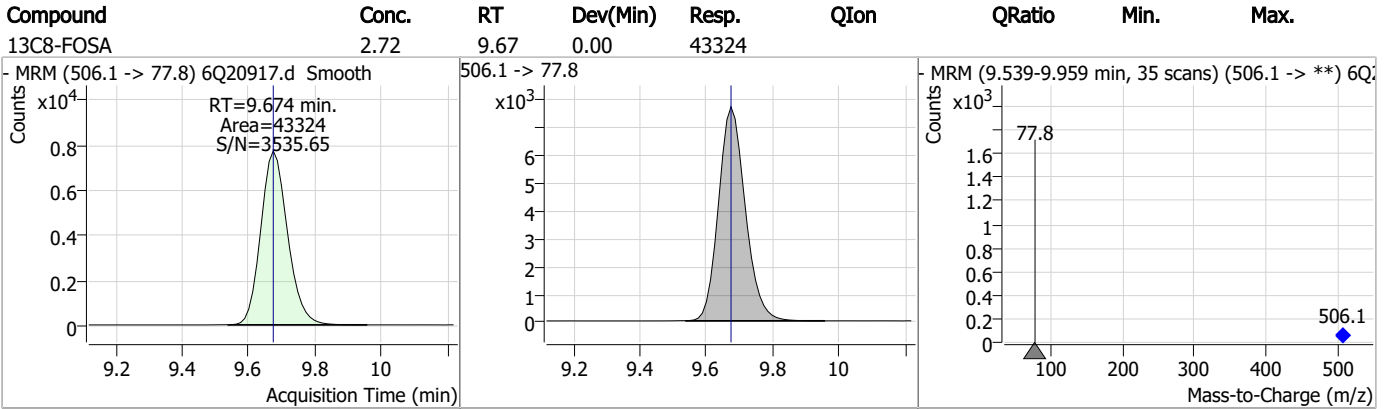


Perfluorinated Compounds by LC/MS/MS



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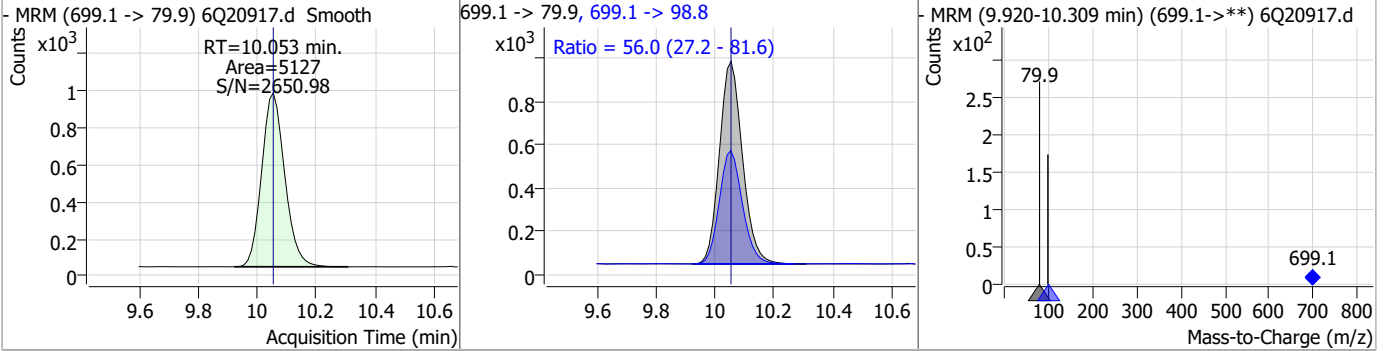
Perfluorinated Compounds by LC/MS/MS



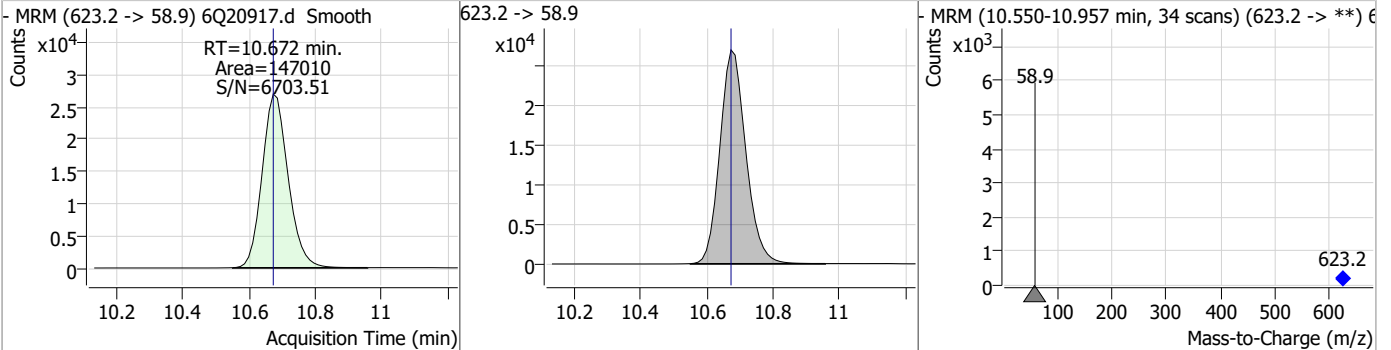
7.7.14
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Perfluorinated Compounds by LC/MS/MS

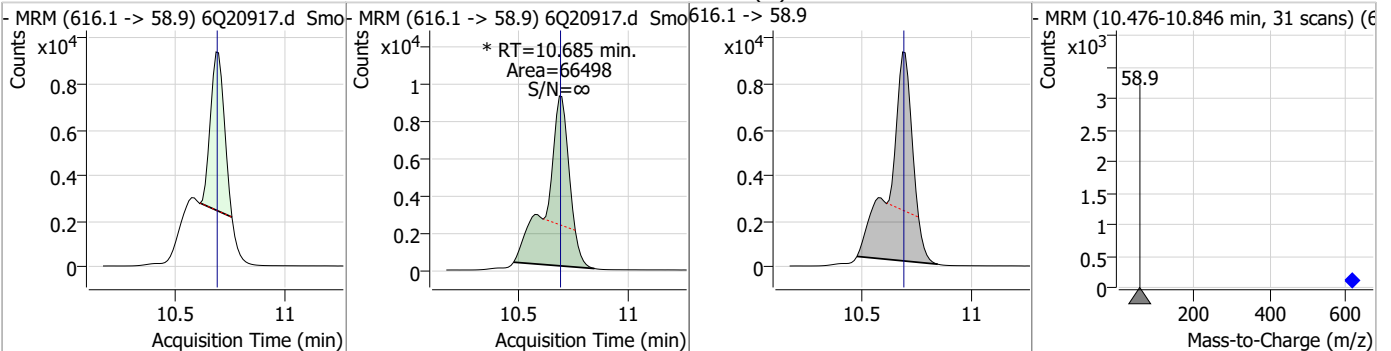
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.43	10.05	0.00	5127	699.1 -> 98.8	56.0	27.2	81.6



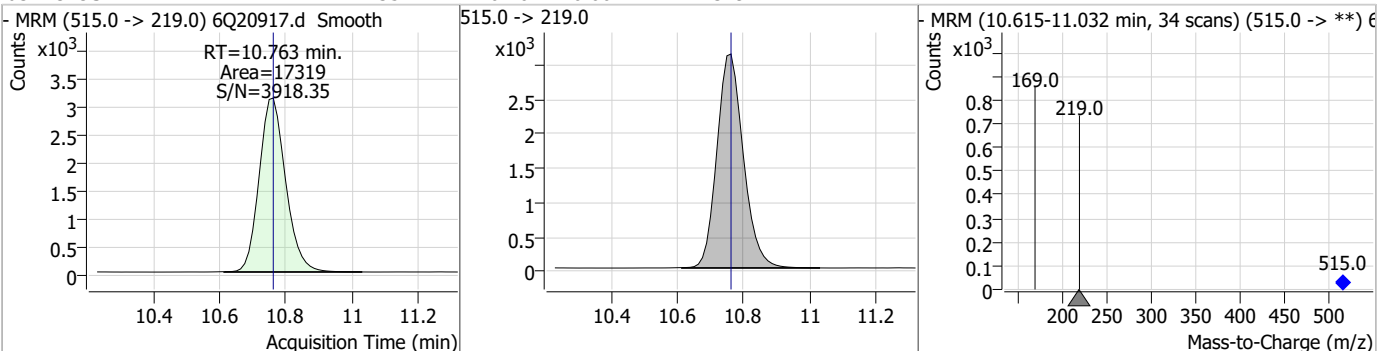
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.18	10.67	0.00	147010				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	10.80	10.69	0.00	66498 (m)				

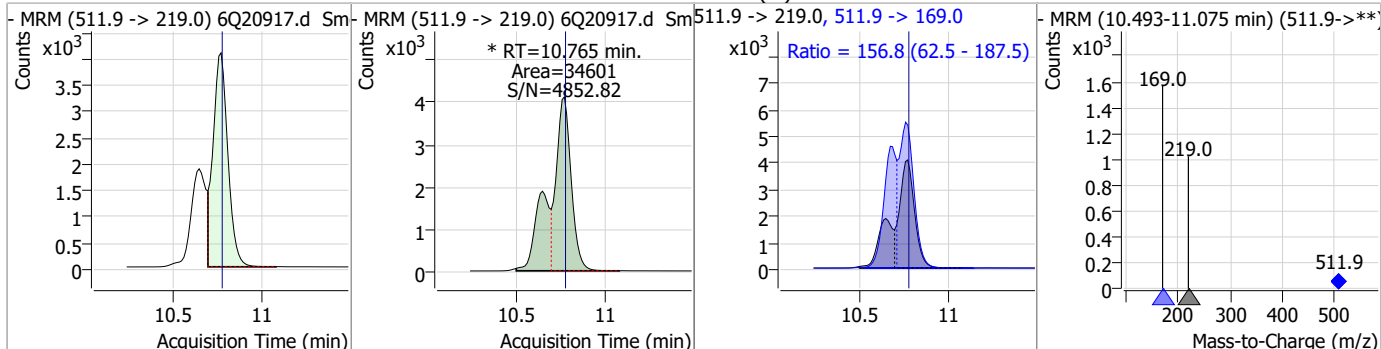


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.35	10.76	0.00	17319				

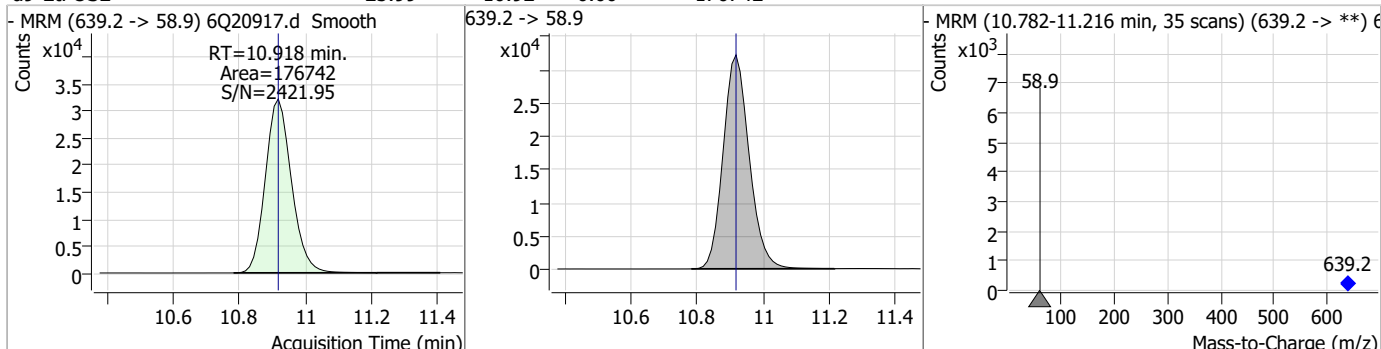


Perfluorinated Compounds by LC/MS/MS

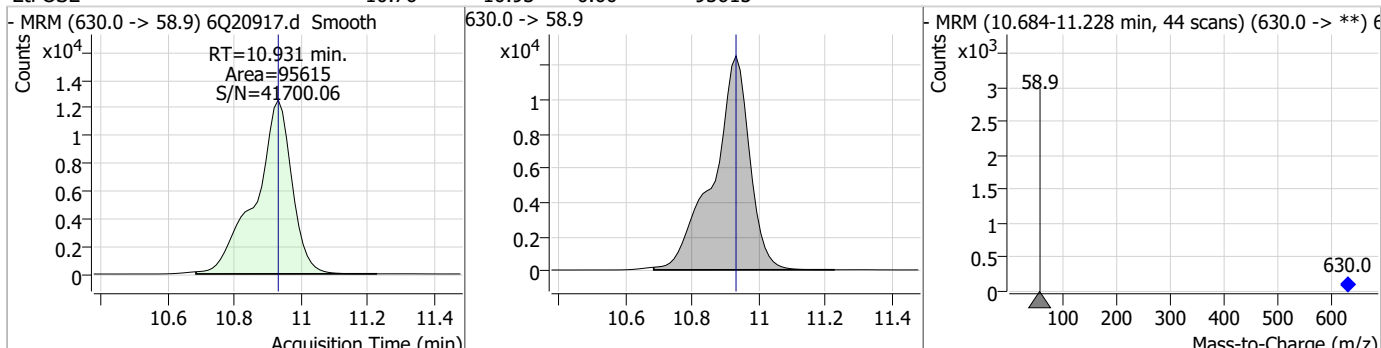
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.67	10.76	0.00	34601 (m)	511.9 -> 169.0	156.8	62.5	187.5



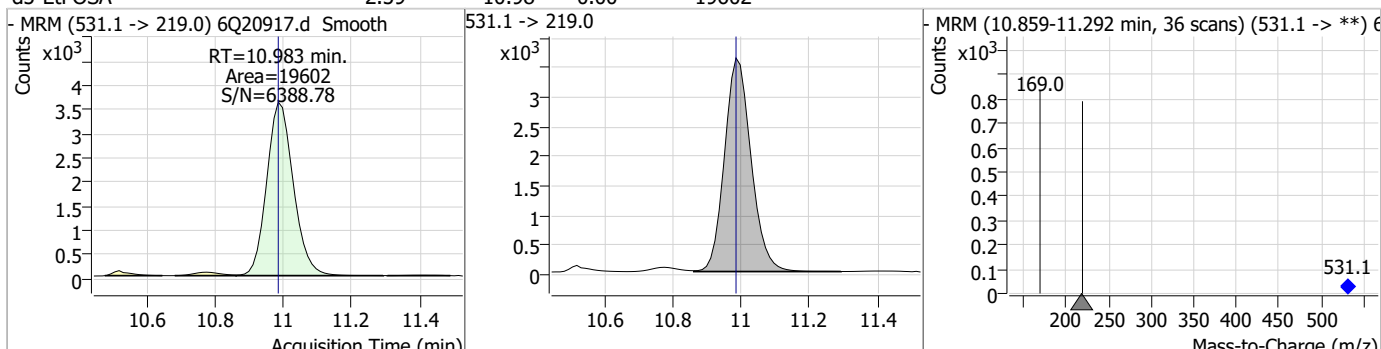
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.99	10.92	0.00	176742				



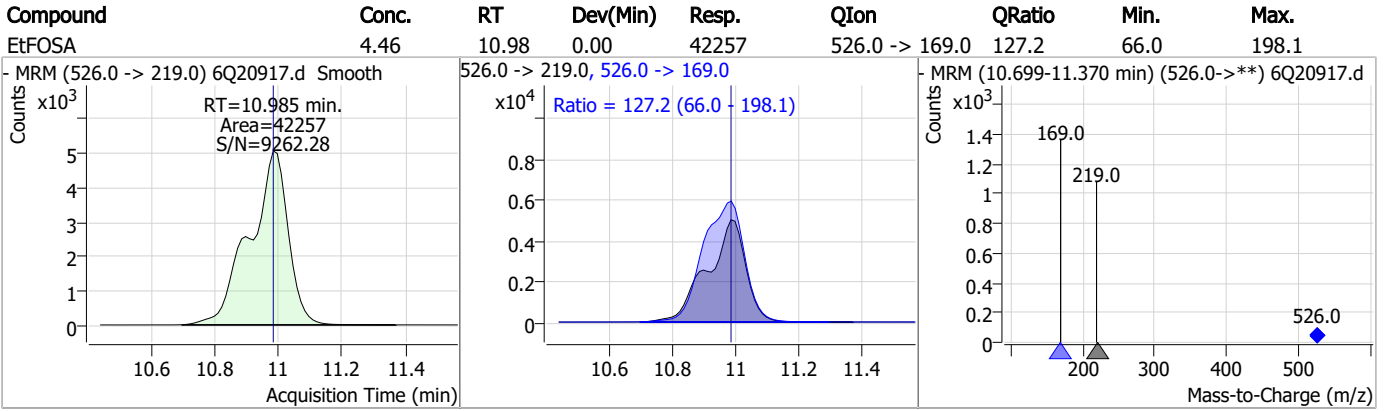
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	10.76	10.93	0.00	95615				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.59	10.98	0.00	19602				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20917.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 16:42 Supervisor approved: 07/17/23 11:22 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20929.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/13/2023 7:30:23 PM
 Sample Name : cc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	229229	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	74851	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	79434	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	75971	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	119320	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	55302	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	29155	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	43204	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	44547	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	23389	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	43961	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	28145	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	17678	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	17476	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3579	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	5131	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	5009	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	35576	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	48795	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	30013	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	148162	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	183411	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	18569	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	17433	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	21479	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	96273	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	12794	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	137515	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	43433	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	68378	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	73247	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	3579	6.24 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 124.9%		
13C2-6:2FTS	7.039	429.1 -> 80.9	5131	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.5%		
13C2-8:2FTS	8.089	529.1 -> 80.9	5009	6.09 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 121.9%		
13C2-PFDoDA	9.211	615.1 -> 570.0	44547	1.39 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 110.8%		
13C2-PFTeDA	9.925	715.2 -> 670.0	23389	1.40 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 112.4%		
13C3-PFBS	5.635	302.1 -> 79.9	28145	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 103.9%		
13C3-PFHxS	7.392	402.1 -> 79.9	17678	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	3.022	216.8 -> 171.9	229229	10.05 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C4-PFHpA	6.621	367.1 -> 322.0	75971	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFHxA	5.692	318.0 -> 273.0	79434	2.66 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C5-PFPeA	4.459	268.3 -> 223.0	74851	5.48 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C6-PFDA	8.301	519.1 -> 474.1	29155	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C7-PFUnDA	8.780	570.0 -> 525.1	43204	1.38 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C8-FOSA	9.674	506.1 -> 77.8	43961	2.93 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C8-PFOA	7.264	421.1 -> 376.0	119320	2.28 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.1%	
13C8-PFOS	8.476	507.1 -> 79.9	17476	2.87 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C9-PFNA	7.807	472.1 -> 427.0	55302	1.20 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.7%	
d3-MeFOSAA	8.346	573.2 -> 419.0	35576	5.34 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	48795	10.49 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	17433	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
d5-EtFOSAA	8.554	589.2 -> 419.0	30013	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.3%	
d7-MeFOSE	10.672	623.2 -> 58.9	148162	26.89 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
d9-EtFOSE	10.918	639.2 -> 58.9	183411	28.58 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 114.3%	
d5-EtFOSA	10.983	531.1 -> 219.0	18569	2.60 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	51846	7.96 µg/L	99
		327.1 -> 80.9	18296		
6:2FTS	7.027	427.1 -> 407.0	48416	8.03 µg/L	95
		427.1 -> 80.9	15907		
8:2FTS	8.090	527.1 -> 507.0	29523	9.21 µg/L	100
		527.1 -> 80.8	9905		
EtFOSAA	8.555	584.2 -> 419.1	10430	2.21 µg/L	m 96
		584.2 -> 526.0	5516		
FOSA	9.677	498.1 -> 77.9	38636	2.24 µg/L	99
		498.1 -> 478.0	1210		
MeFOSAA	8.347	570.1 -> 419.0	18197	2.33 µg/L	m 92
		570.1 -> 483.0	3711		
PFBA	3.018	212.8 -> 168.9	81217	9.19 µg/L	100
PFBS	5.636	298.7 -> 79.9	22756	2.03 µg/L	95
		298.7 -> 98.8	8662		
PFDA	8.301	512.9 -> 469.0	110491	2.72 µg/L	97
		512.9 -> 219.0	15633		
PFDODA	9.211	613.1 -> 569.0	76215	2.19 µg/L	99
		613.1 -> 319.0	11120		
PFDS	9.374	599.0 -> 79.9	10847	2.08 µg/L	96

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8	5354	2.31	µg/L	96
		363.1 -> 319.0	84847			
PFHpS	7.960	363.1 -> 169.0	14857	2.09	µg/L	95
		449.0 -> 79.9	21092			
PFHxA	5.694	449.0 -> 98.9	11375	2.57	µg/L	99
		313.0 -> 269.0	74826			
PFHxS	7.393	313.0 -> 118.9	3511	2.11	µg/L	m
		398.7 -> 79.9	19841			
PFNA	7.808	398.7 -> 98.9	9919	2.40	µg/L	100
		463.0 -> 419.0	105592			
PFNS	8.955	463.0 -> 219.0	19857	2.06	µg/L	100
		548.8 -> 79.9	18052			
PFOA	7.265	548.8 -> 98.9	9228	2.31	µg/L	99
		413.0 -> 369.0	130512			
PFOS	8.478	413.0 -> 169.0	22599	1.93	µg/L	m
		498.9 -> 79.9	18355			
PFPeA	4.461	498.9 -> 98.8	10013	4.58	µg/L	100
		263.0 -> 219.0	91354			
PFPeS	6.697	349.1 -> 79.9	19240	2.09	µg/L	94
		349.1 -> 98.9	9631			
PFTeDA	9.926	713.1 -> 669.0	67629	2.53	µg/L	97
		713.1 -> 168.9	5477			
PFTrDA	9.595	663.0 -> 619.0	70844	2.11	µg/L	99
		663.0 -> 168.9	8167			
PFUnDA	8.780	563.1 -> 519.0	67162	2.11	µg/L	98
		563.1 -> 269.1	10837			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	102631	4.49	µg/L	100
		632.9 -> 452.9	31693			
9Cl-PF3ONS	8.819	530.8 -> 351.0	150953	4.08	µg/L	90
		532.8 -> 353.0	52203			
ADONA	6.870	376.9 -> 250.9	358879	4.44	µg/L	98
		376.9 -> 84.8	91331			
HFPO-DA	6.071	284.9 -> 168.9	22887	4.58	µg/L	100
		284.9 -> 184.9	2428			
3:3FTCA	3.883	241.0 -> 177.0	16284	11.36	µg/L	99
		241.0 -> 117.0	2078			
5:3FTCA	6.310	341.0 -> 237.1	359207	59.04	µg/L	92
		341.0 -> 217.0	276806			
7:3FTCA	7.711	441.0 -> 316.9	262293	61.54	µg/L	88
		441.0 -> 336.9	585115			
EtFOSA	10.985	526.0 -> 219.0	40767	4.54	µg/L	m
		526.0 -> 169.0	56917			
EtFOSE	10.931	630.0 -> 58.9	97056	10.53	µg/L	100
		511.9 -> 219.0	36034			
MeFOSA	10.765	511.9 -> 169.0	51024	4.83	µg/L	m
		616.1 -> 58.9	72952			
MeFOSE	10.697	699.1 -> 79.9	4840	11.76	µg/L	m
		699.1 -> 98.8	2995			
PFDoDS	10.053	295.0 -> 201.0	16513	2.03	µg/L	90
		295.0 -> 84.9	4175			
NFDHA	5.576	279.0 -> 85.1	61140	4.67	µg/L	100
		229.0 -> 84.9	50724			
PFMBA	4.882	314.8 -> 134.9	174661	4.60	µg/L	100
		314.8 -> 82.9	5354			
PFMPA	3.588			4.28	µg/L	100
PFEESA	6.188					

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



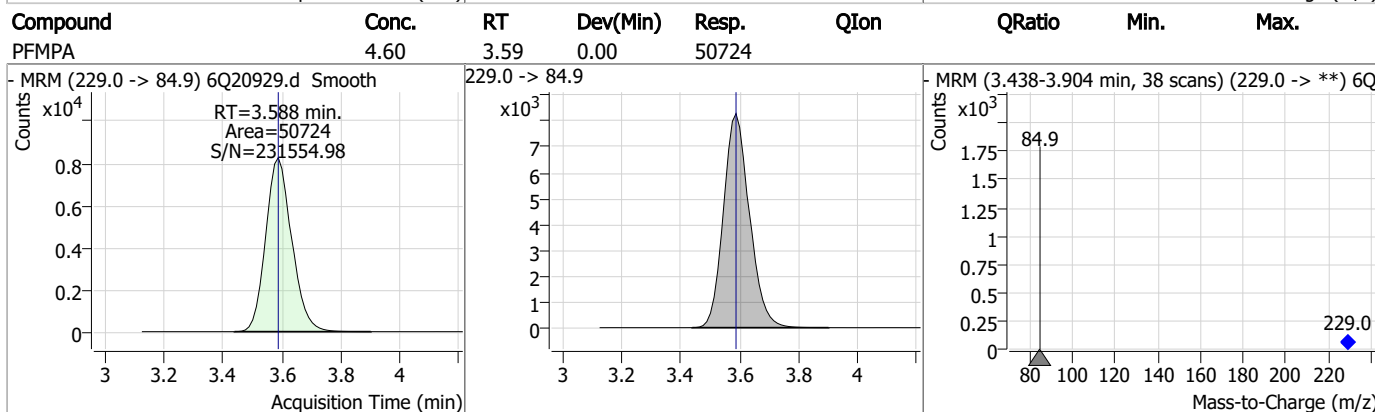
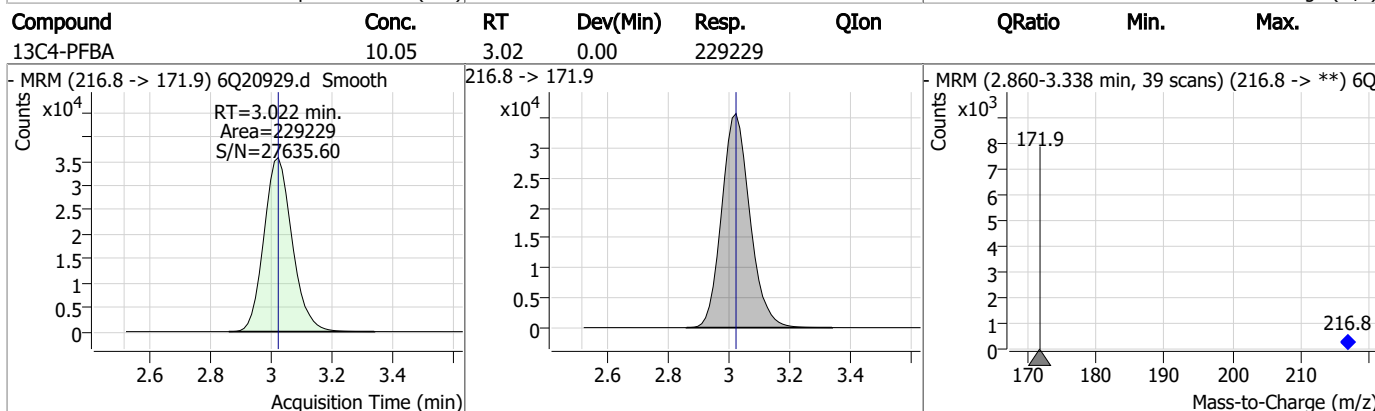
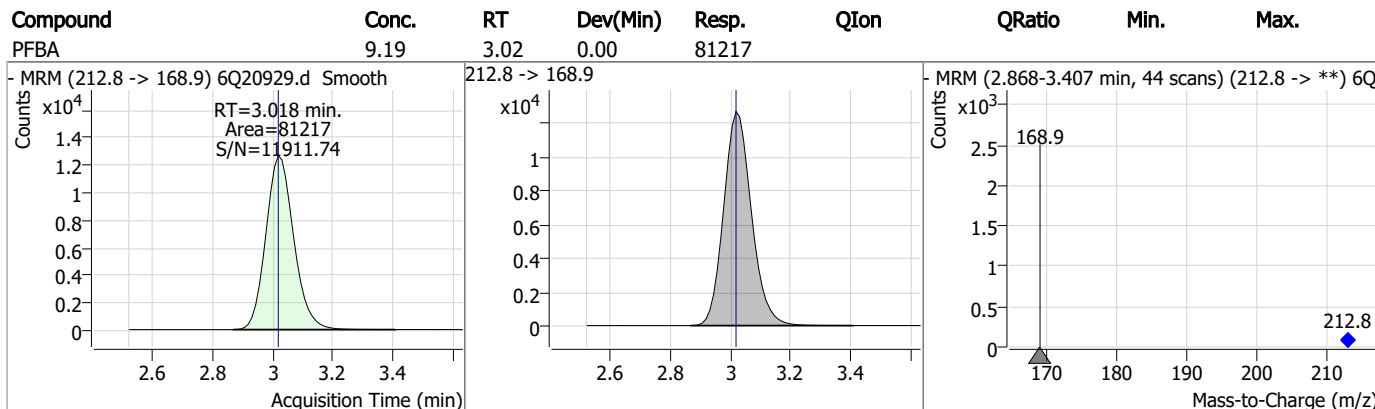
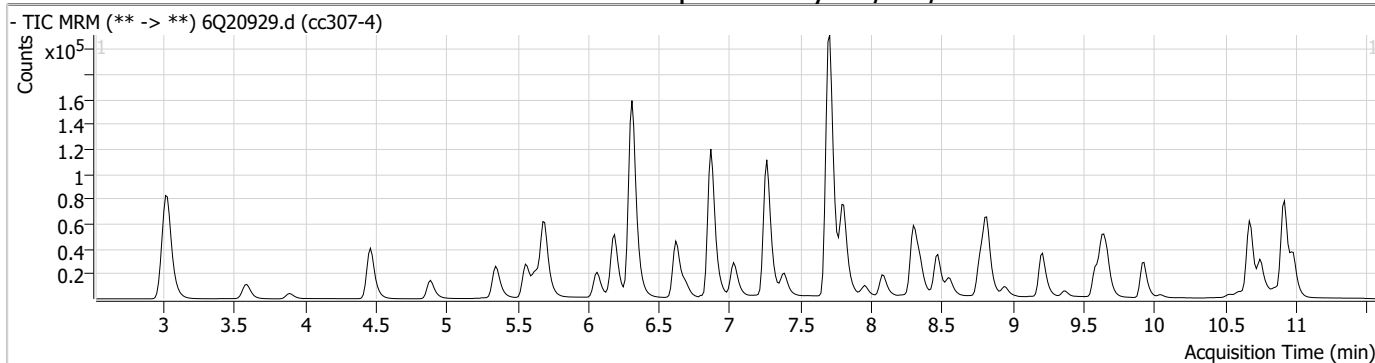
Perfluorinated Compounds by LC/MS/MS

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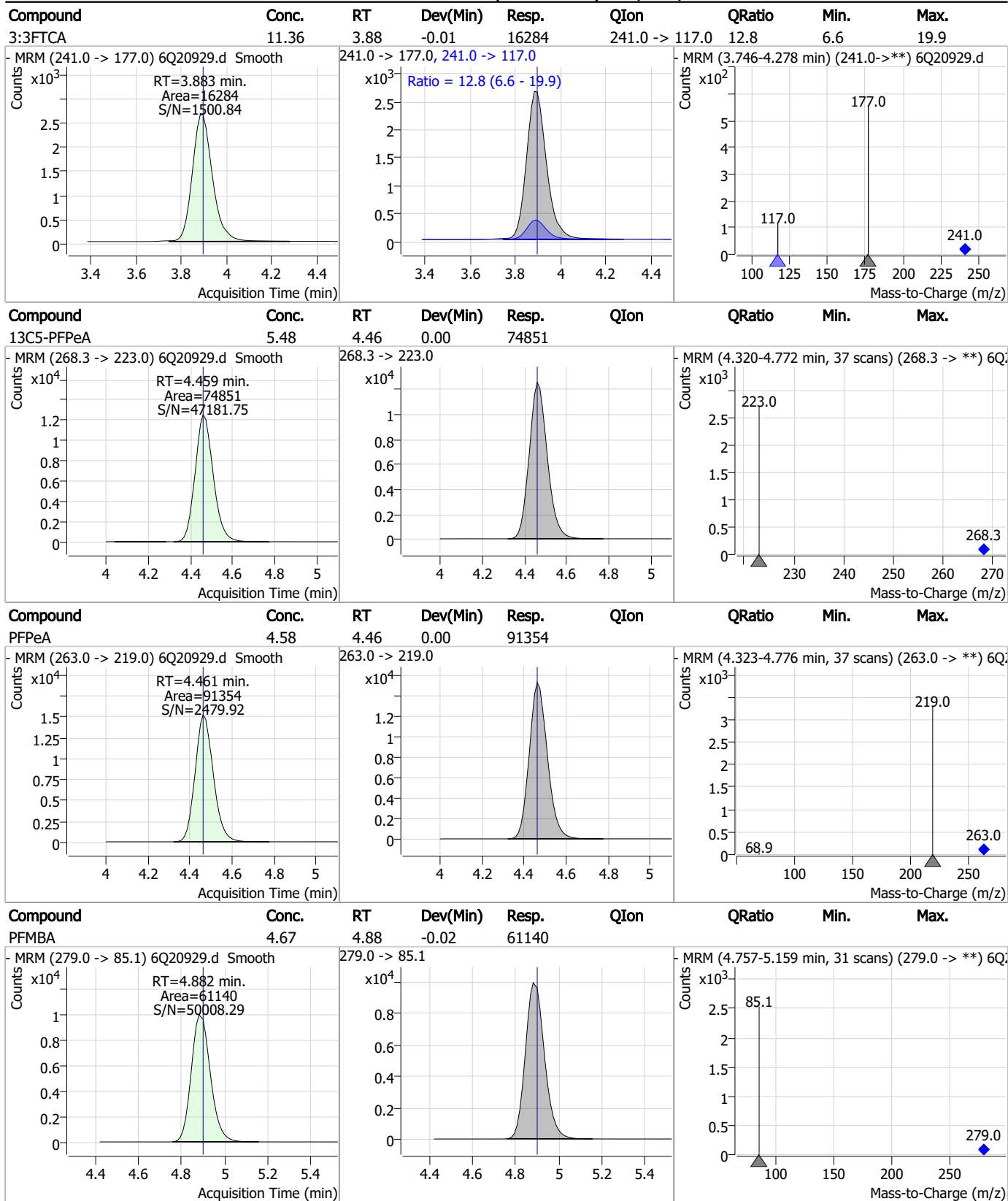
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Perfluorinated Compounds by LC/MS/MS



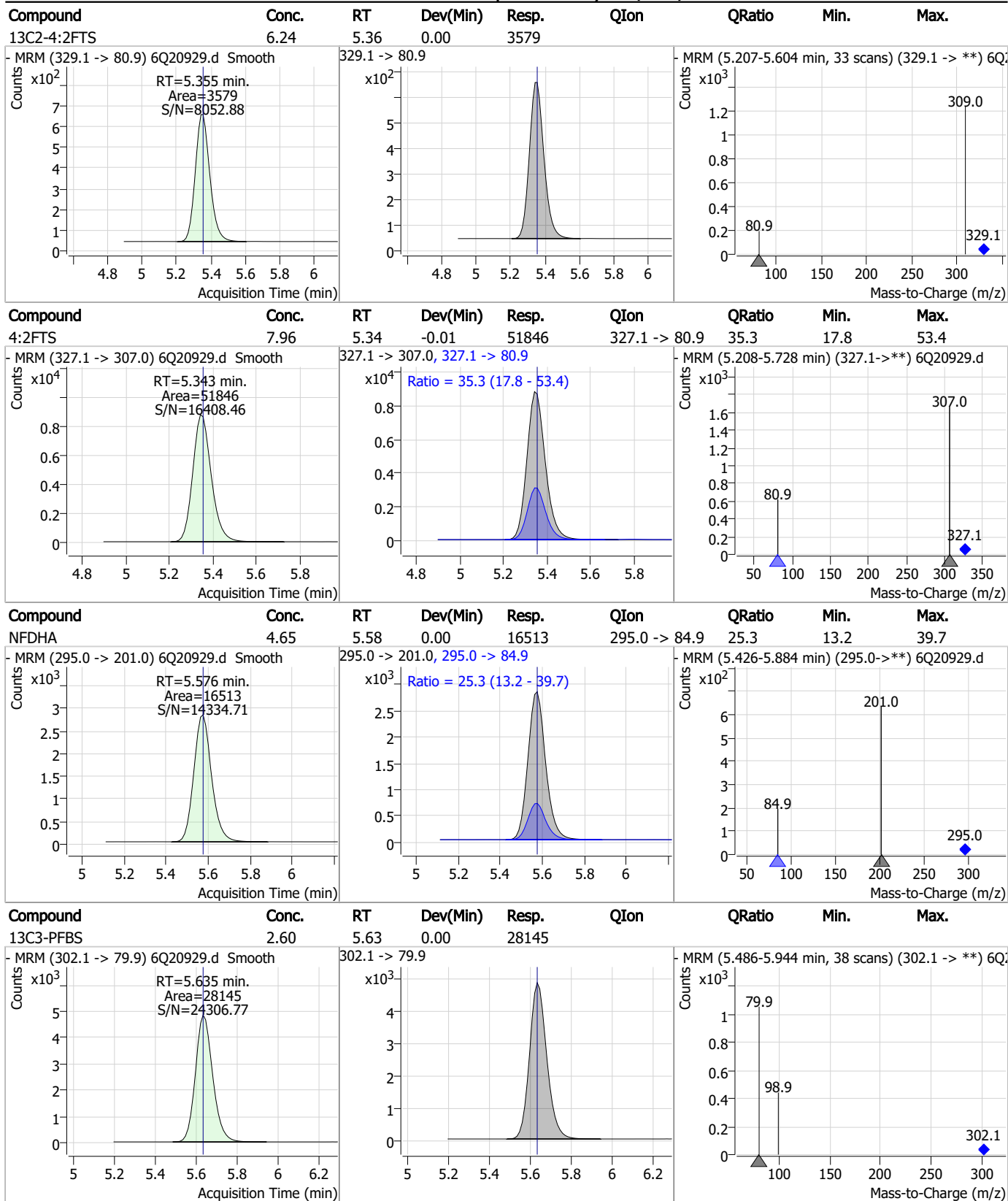
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Perfluorinated Compounds by LC/MS/MS



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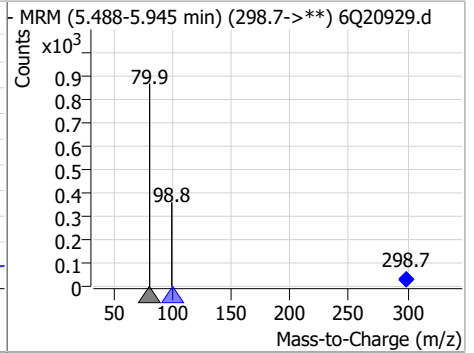
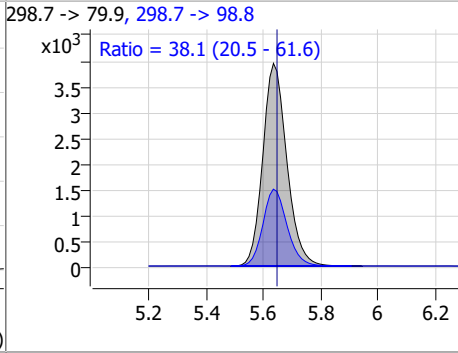
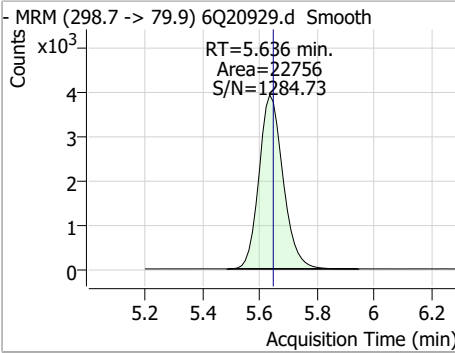
Perfluorinated Compounds by LC/MS/MS



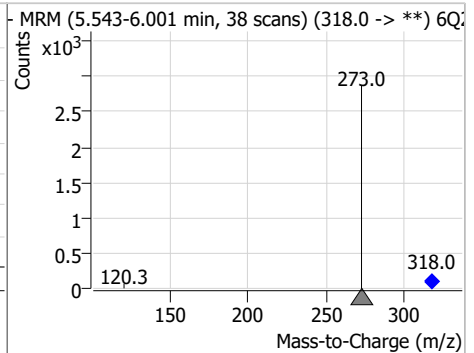
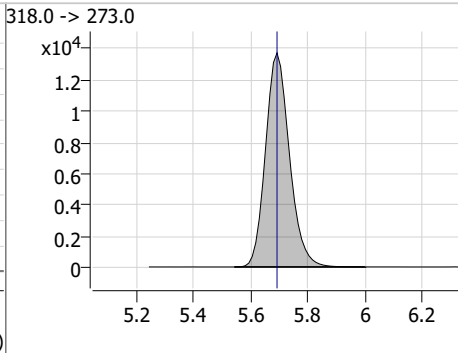
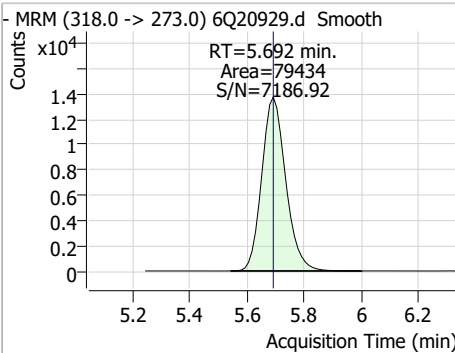
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Perfluorinated Compounds by LC/MS/MS

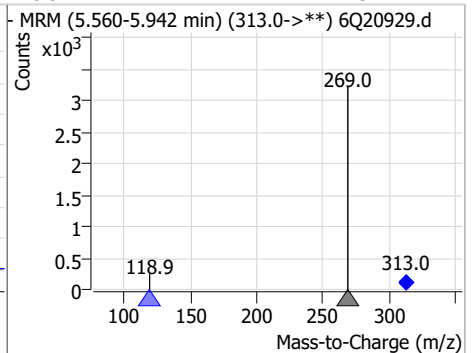
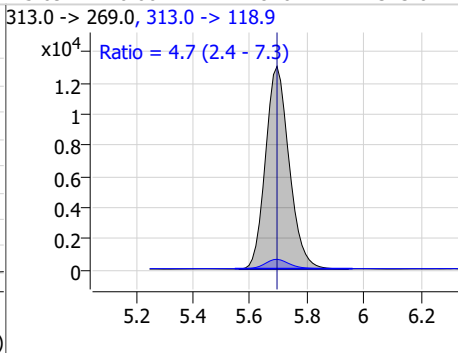
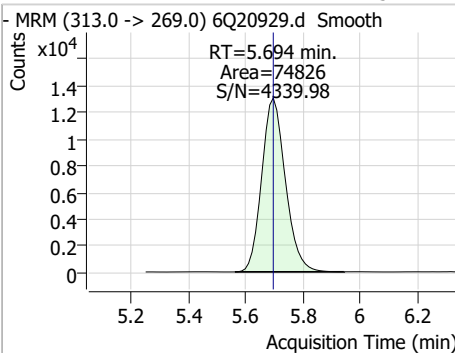
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.03	5.64	-0.01	22756	298.7 -> 98.8	38.1	20.5	61.6



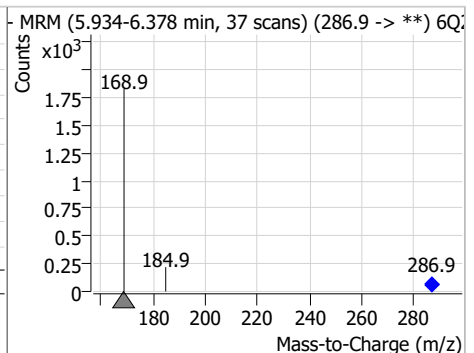
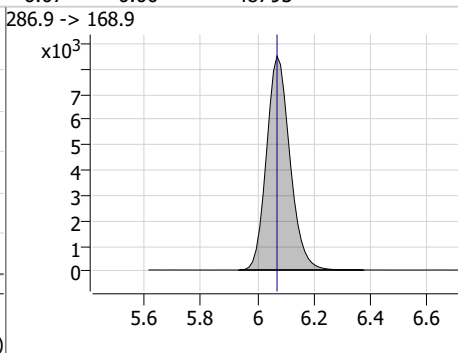
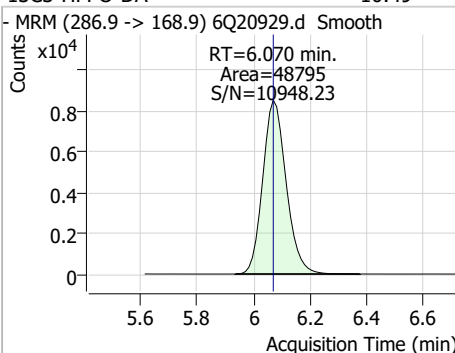
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.66	5.69	0.00	79434				



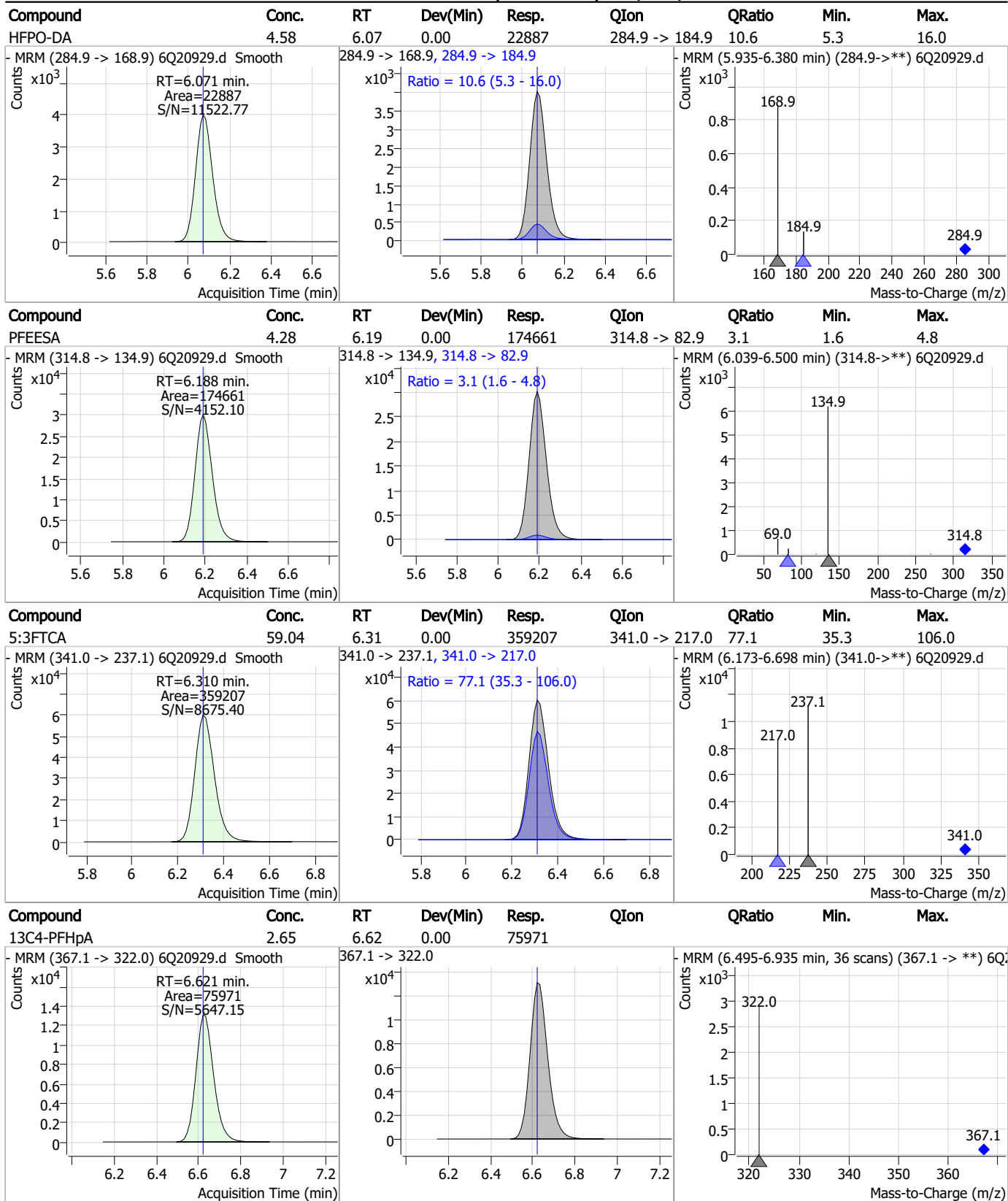
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.57	5.69	0.00	74826	313.0 -> 118.9	4.7	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.49	6.07	0.00	48795				

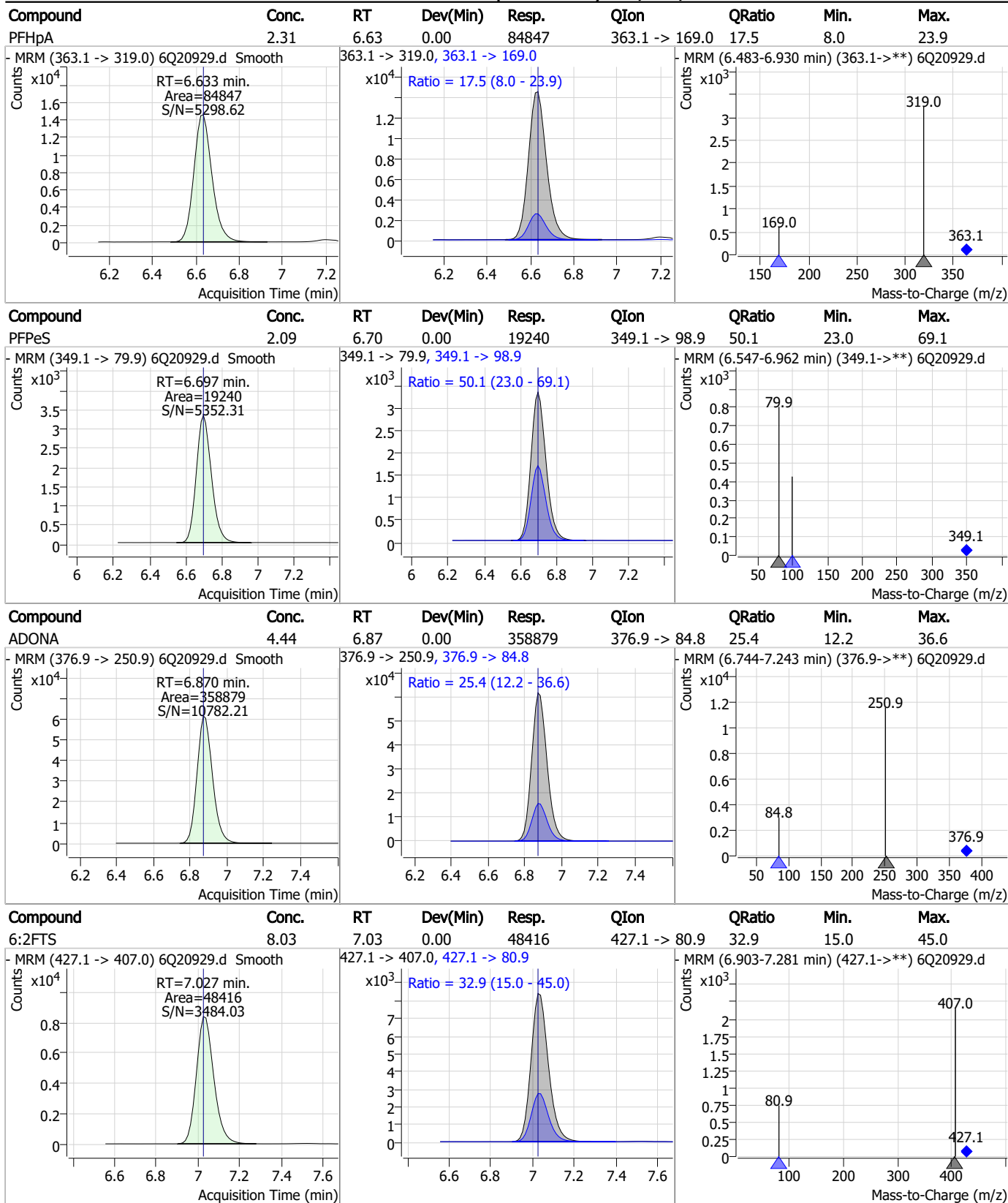


Perfluorinated Compounds by LC/MS/MS



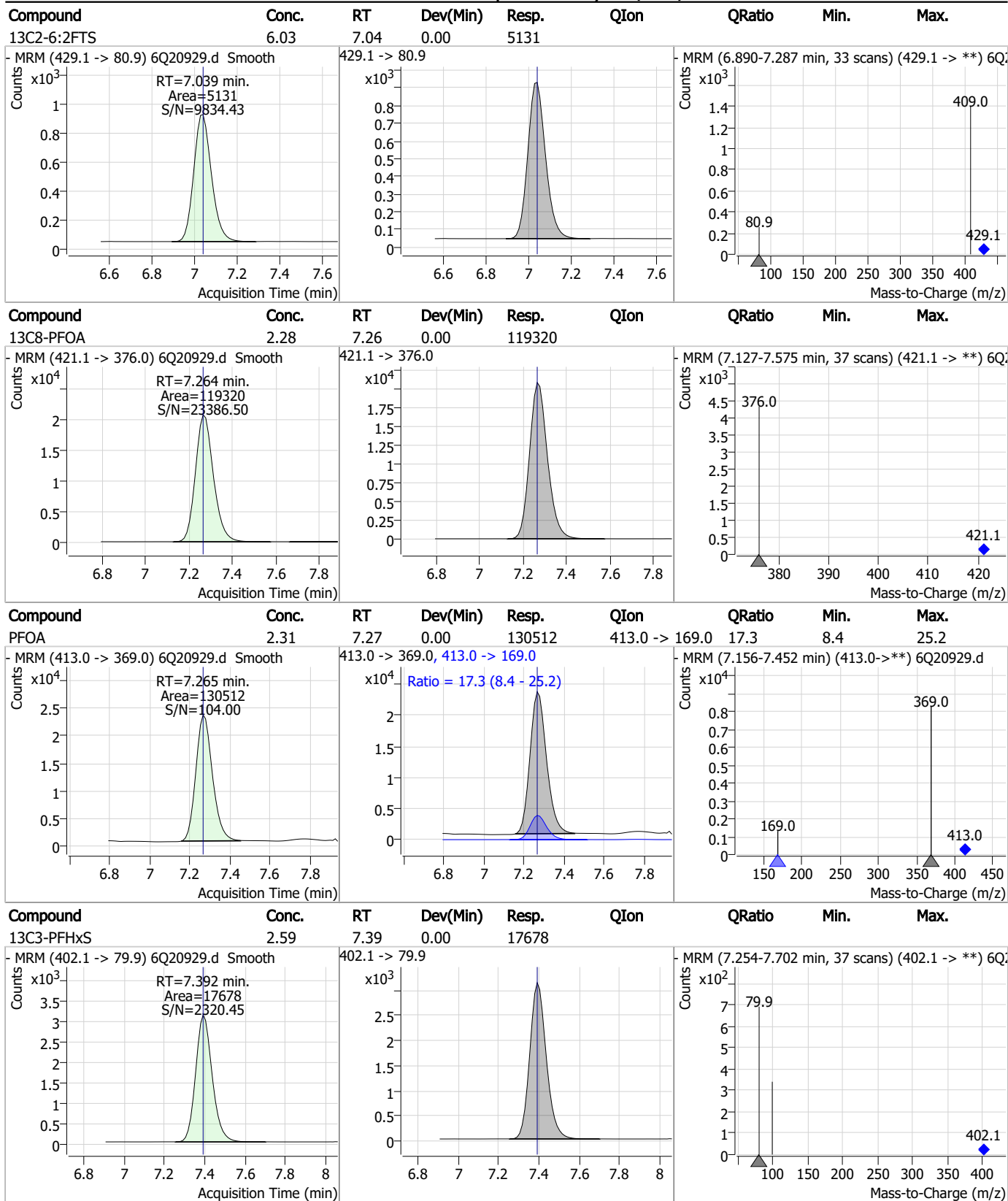
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Perfluorinated Compounds by LC/MS/MS



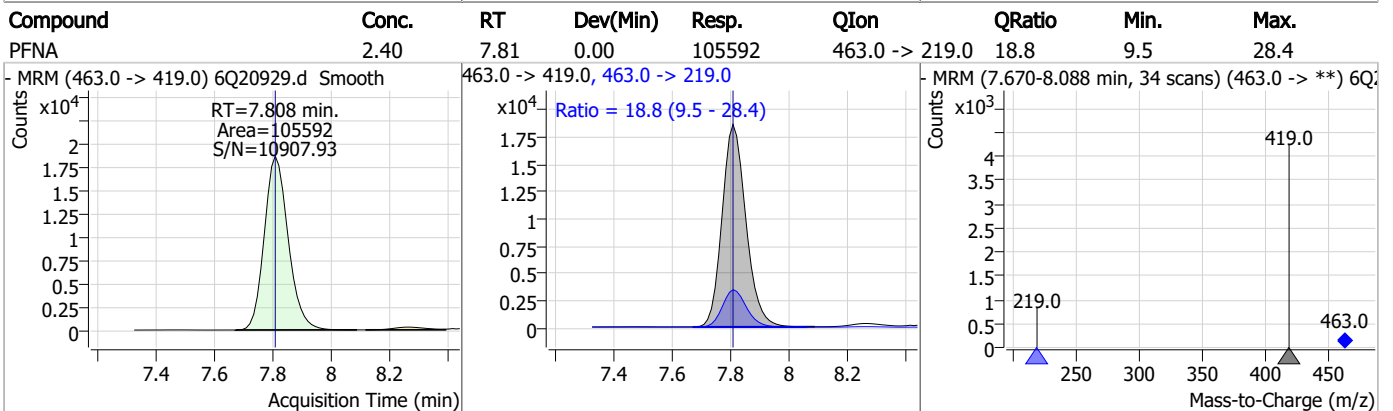
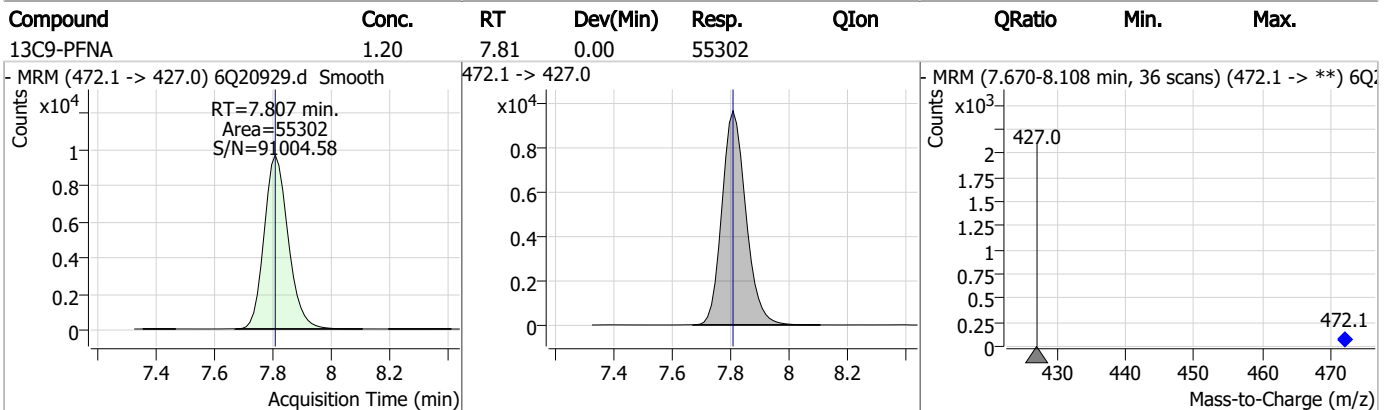
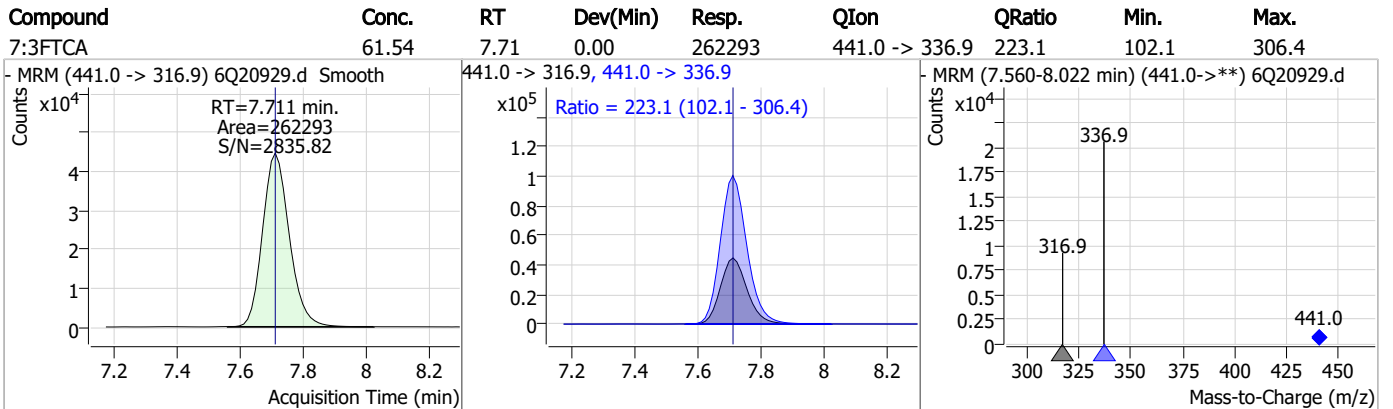
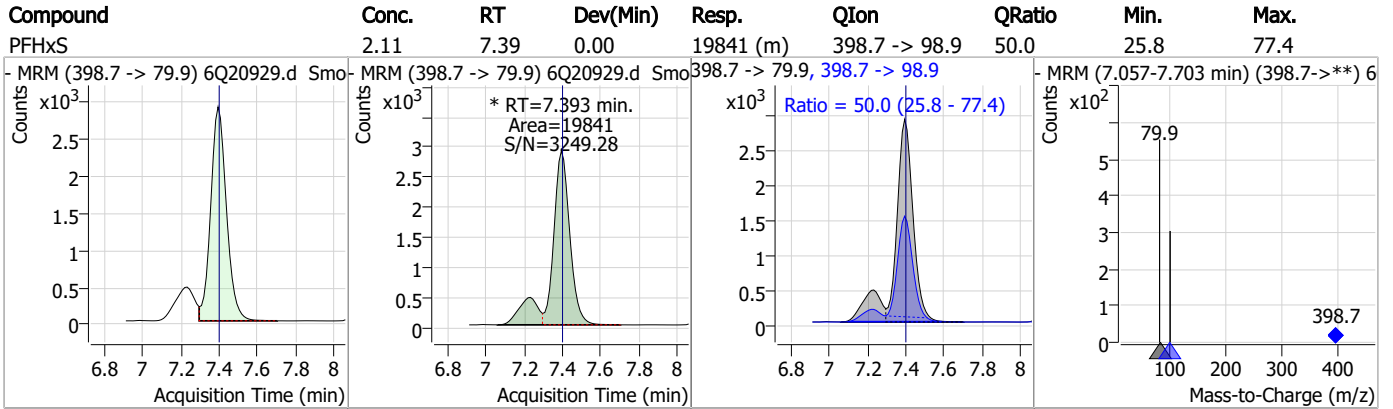
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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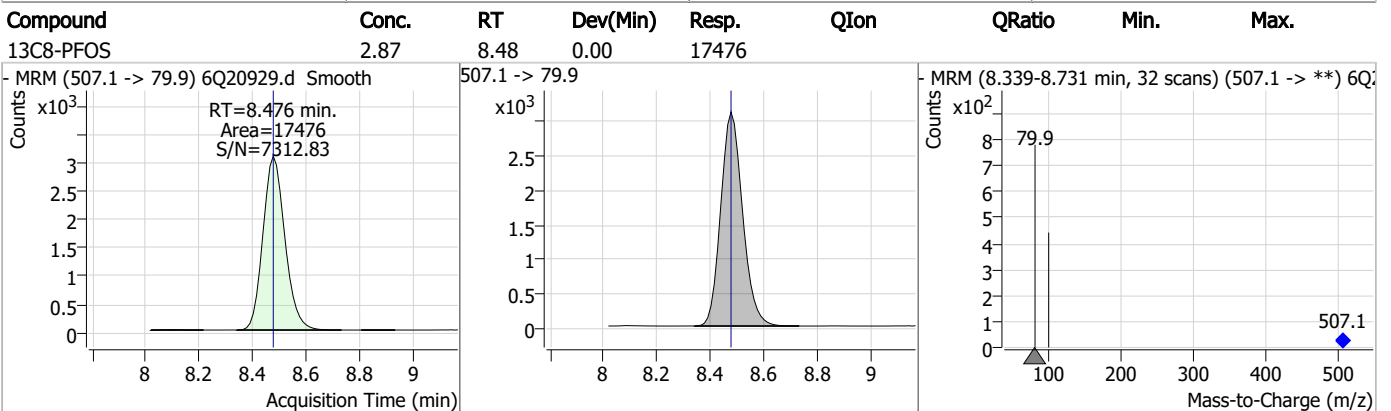
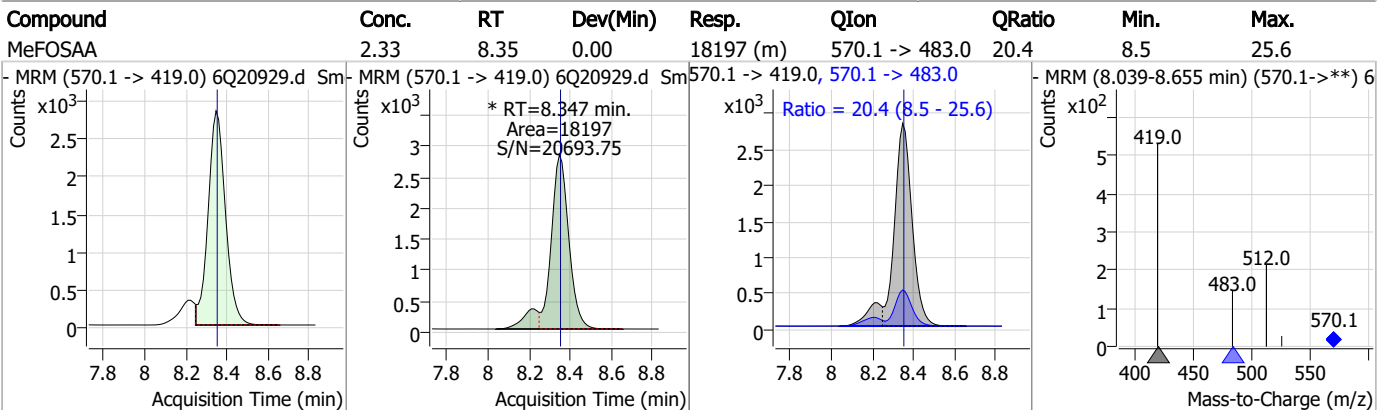
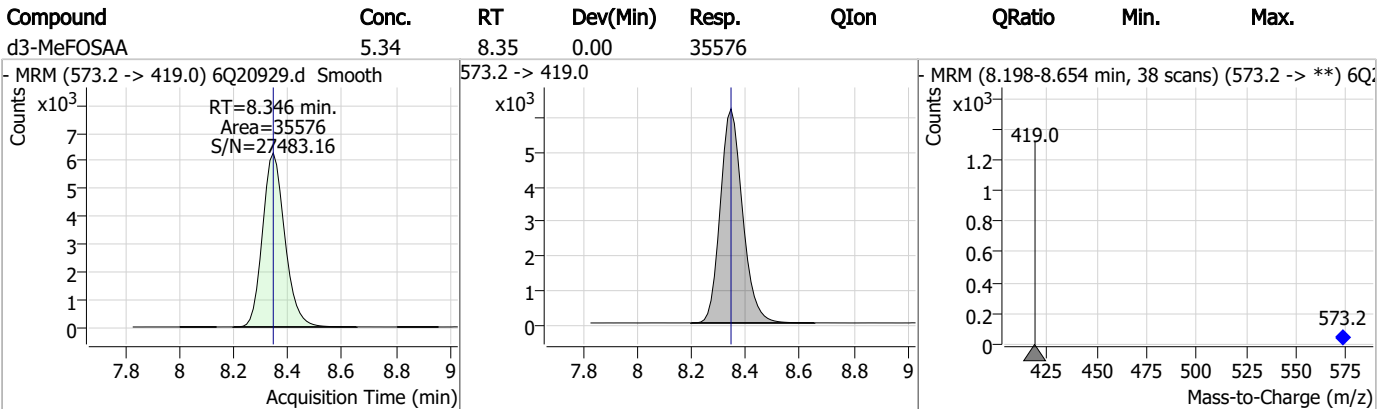
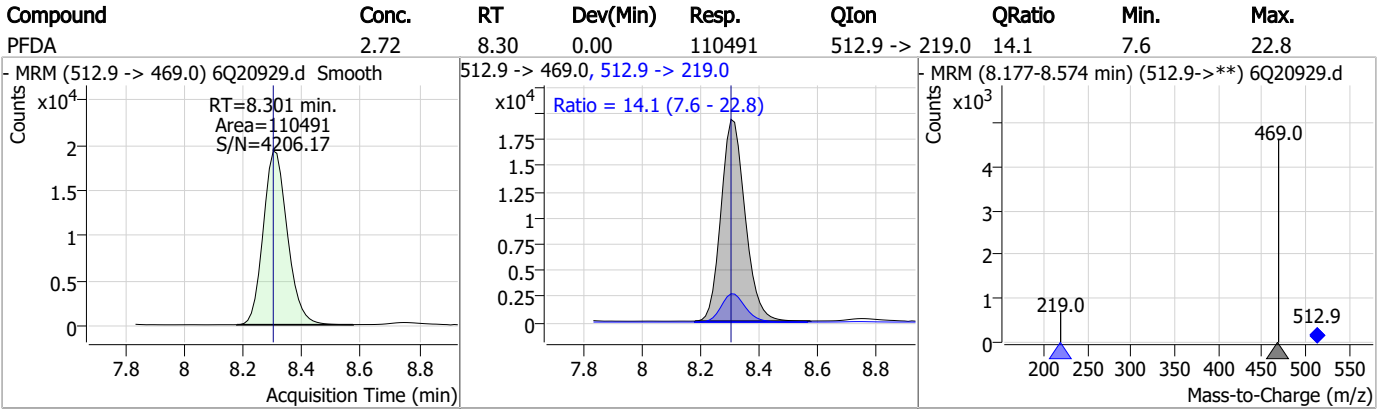
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.09	7.96	0.00	21092	449.0 -> 98.9	53.9	25.1	75.3
13C2-8:2FTS	6.09	8.09	0.00	5009	529.1 -> 80.9	33.5	16.6	49.9
8:2FTS	9.21	8.09	0.00	29523	527.1 -> 80.8	33.5	16.6	49.9
13C6-PFDA	1.20	8.30	0.00	29155	519.1 -> 474.1	33.5	16.6	49.9

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Perfluorinated Compounds by LC/MS/MS



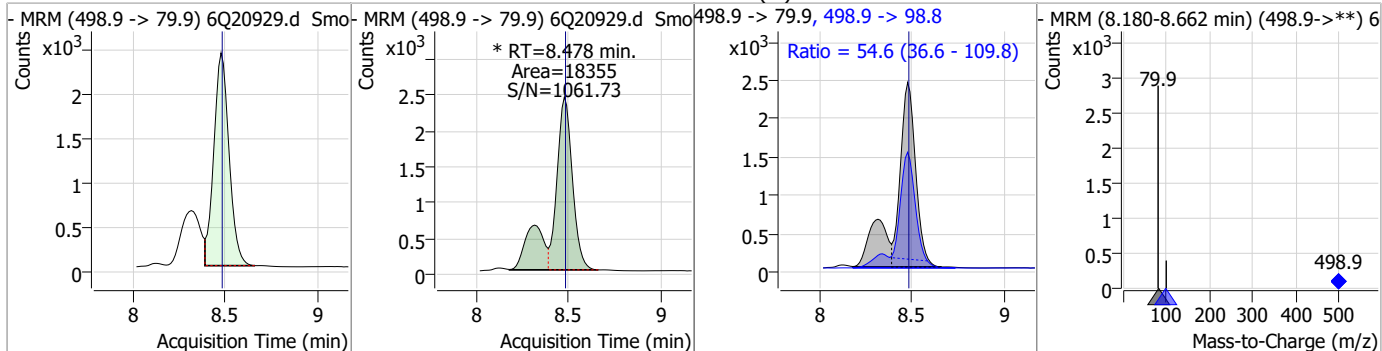
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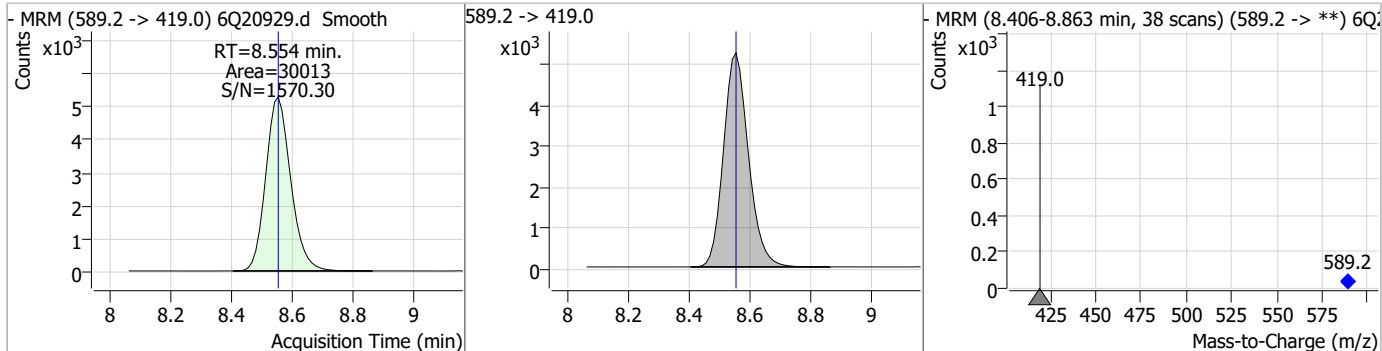


Perfluorinated Compounds by LC/MS/MS

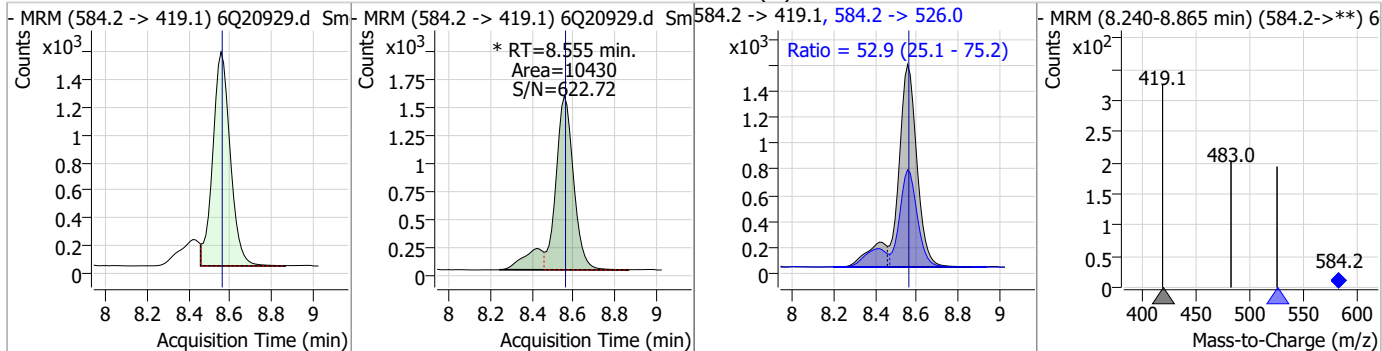
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.93	8.48	0.00	18355 (m)	498.9 -> 98.8	54.6	36.6	109.8



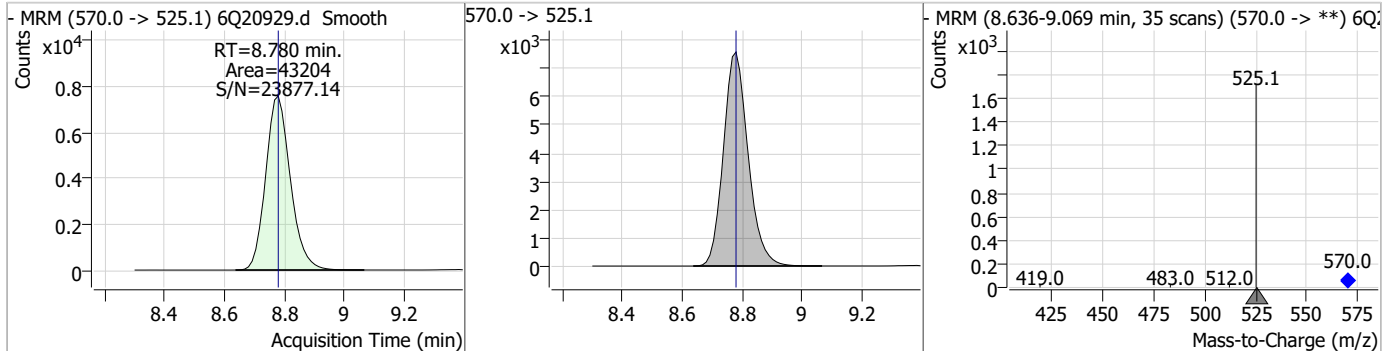
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.67	8.55	0.00	30013				



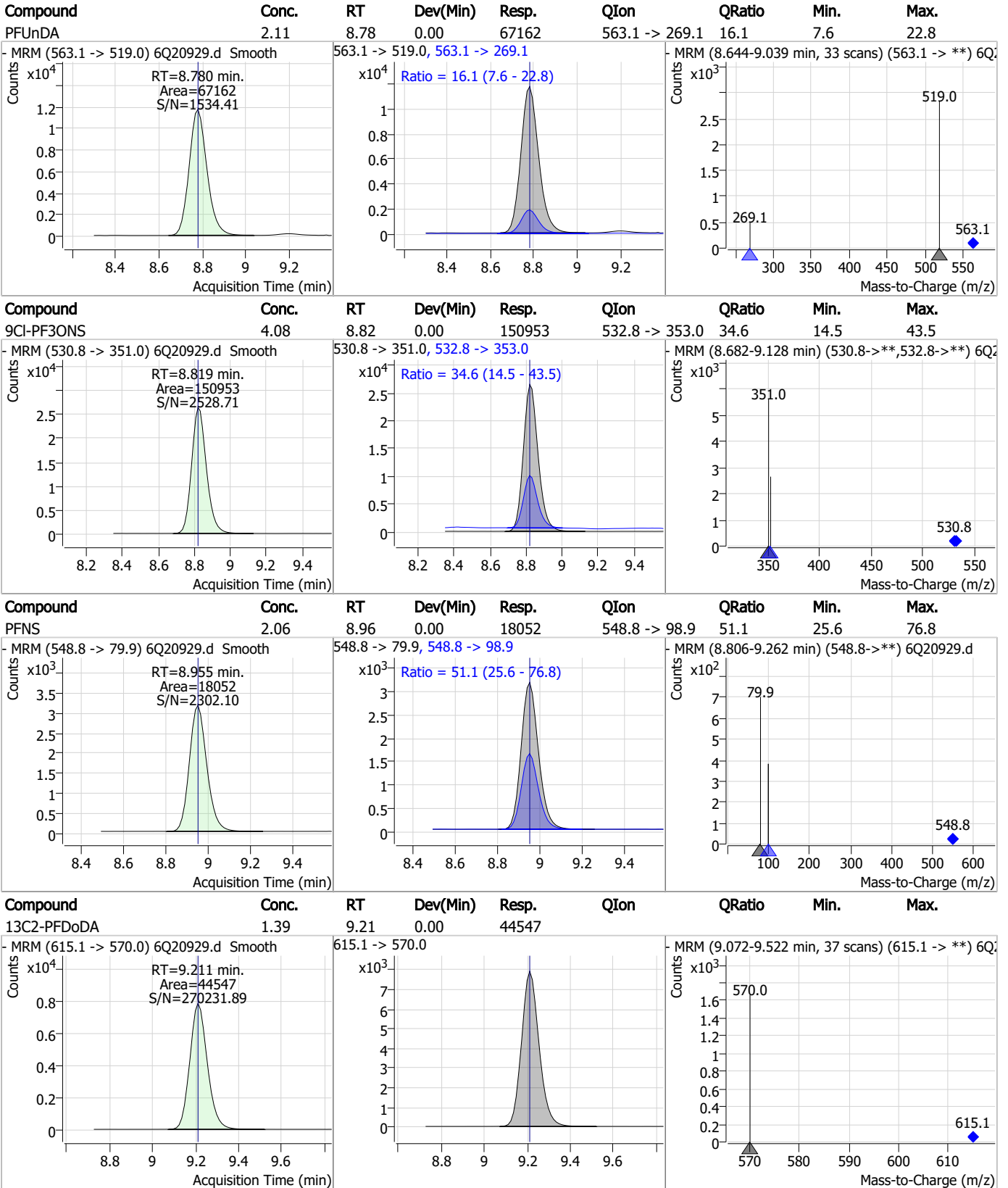
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.21	8.55	0.00	10430 (m)	584.2 -> 526.0	52.9	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.38	8.78	0.00	43204				



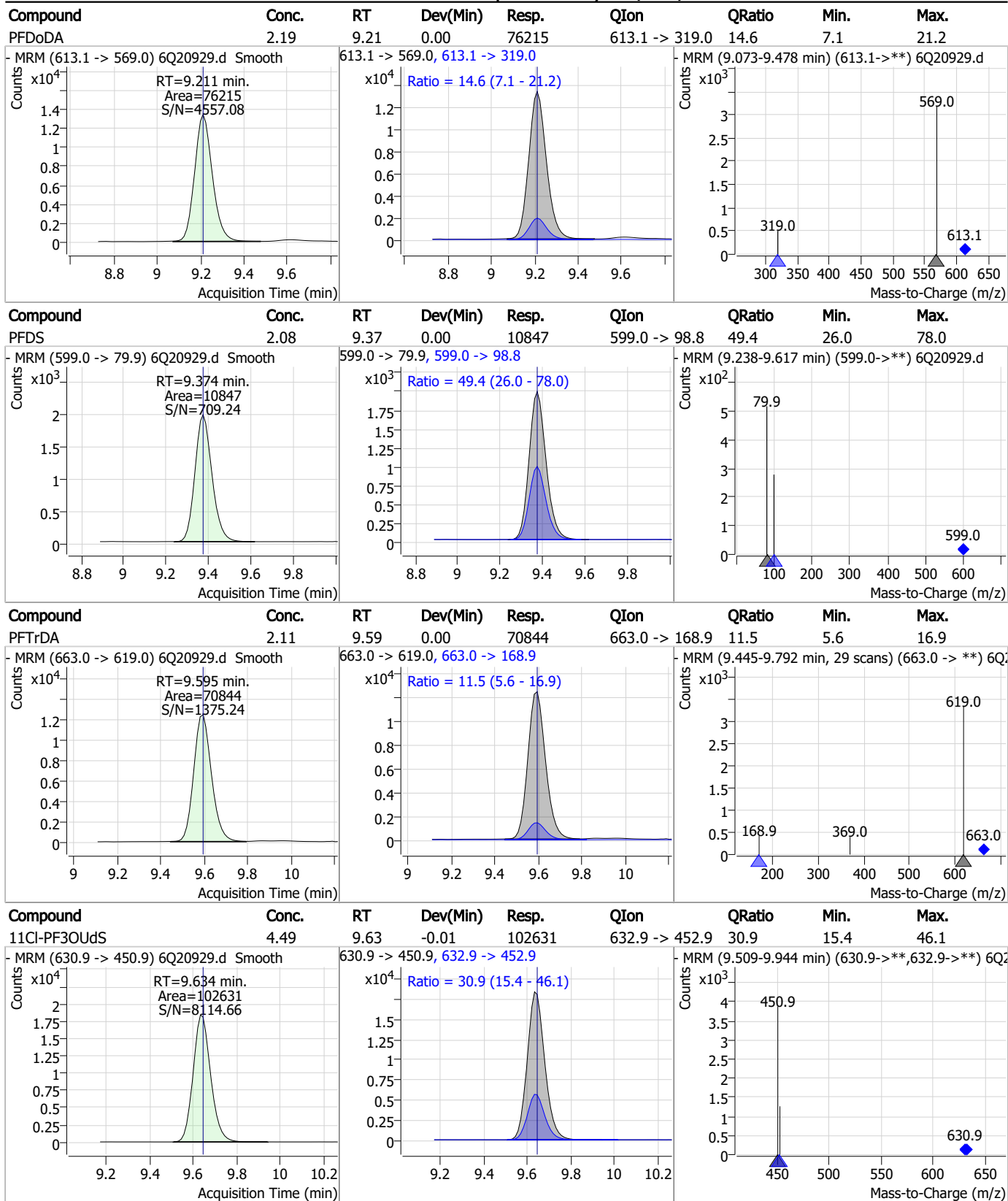
Perfluorinated Compounds by LC/MS/MS



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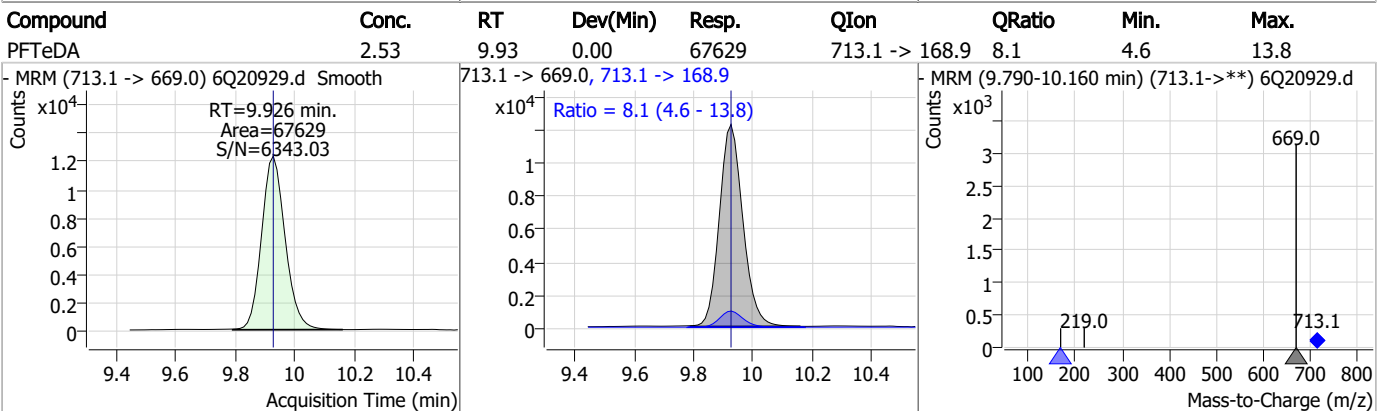
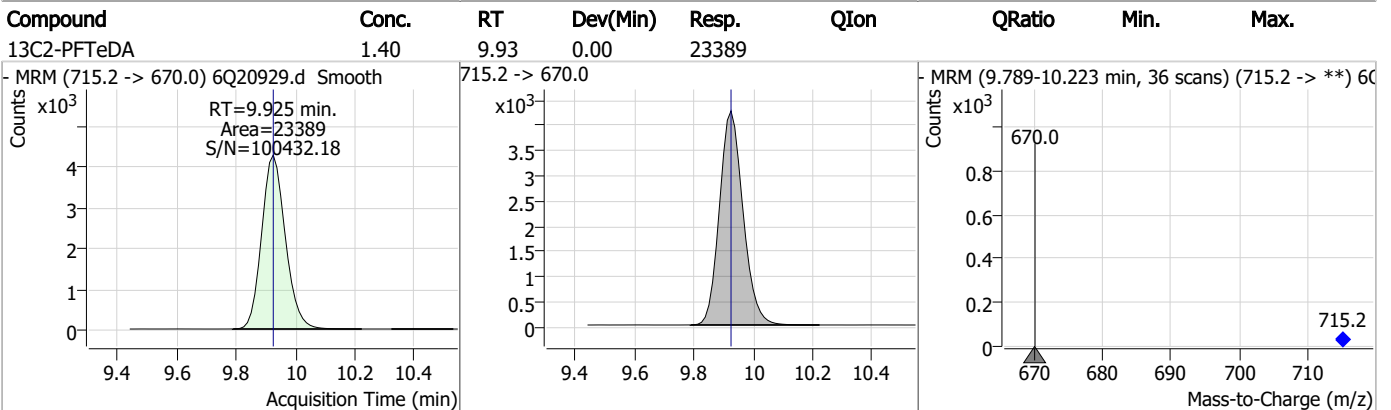
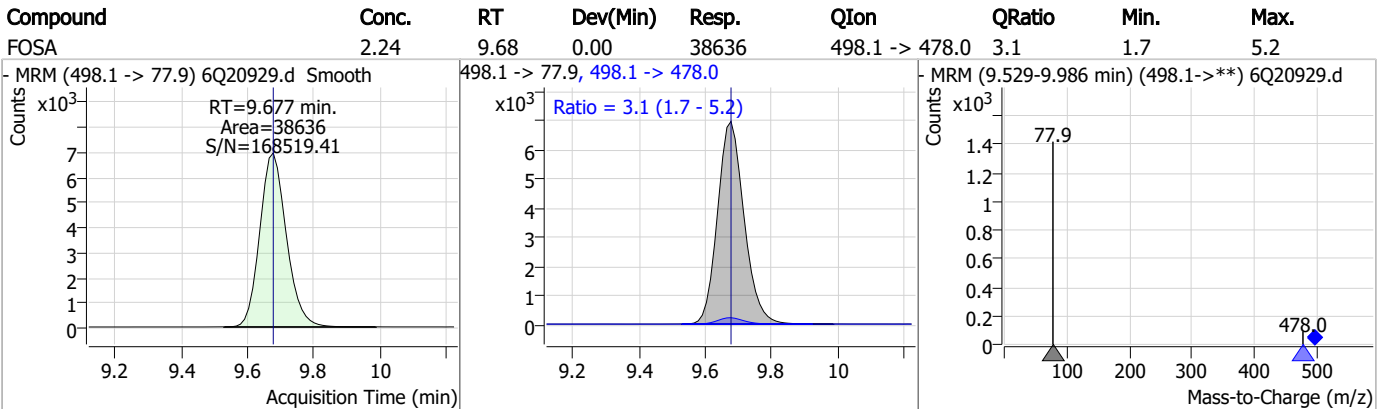
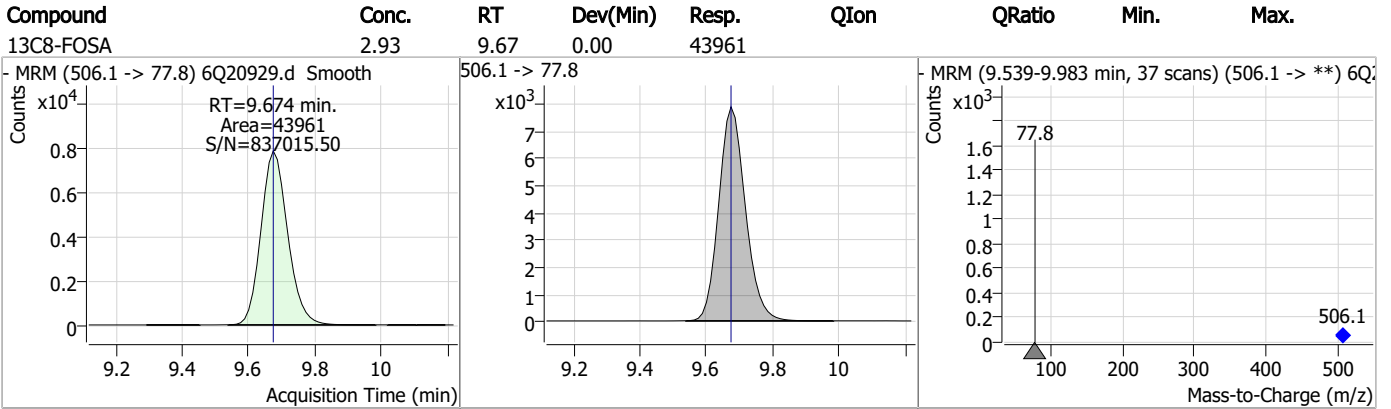
Perfluorinated Compounds by LC/MS/MS



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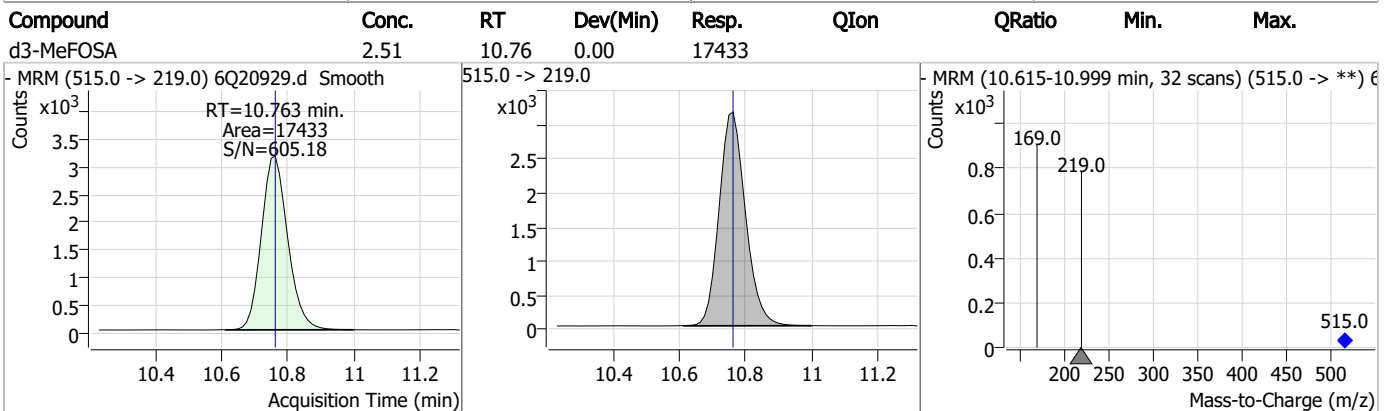
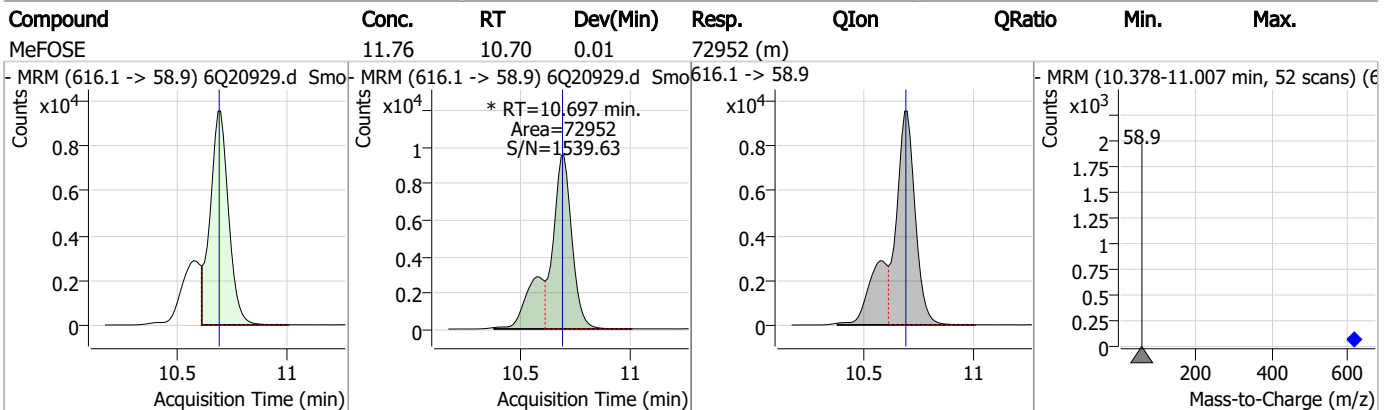
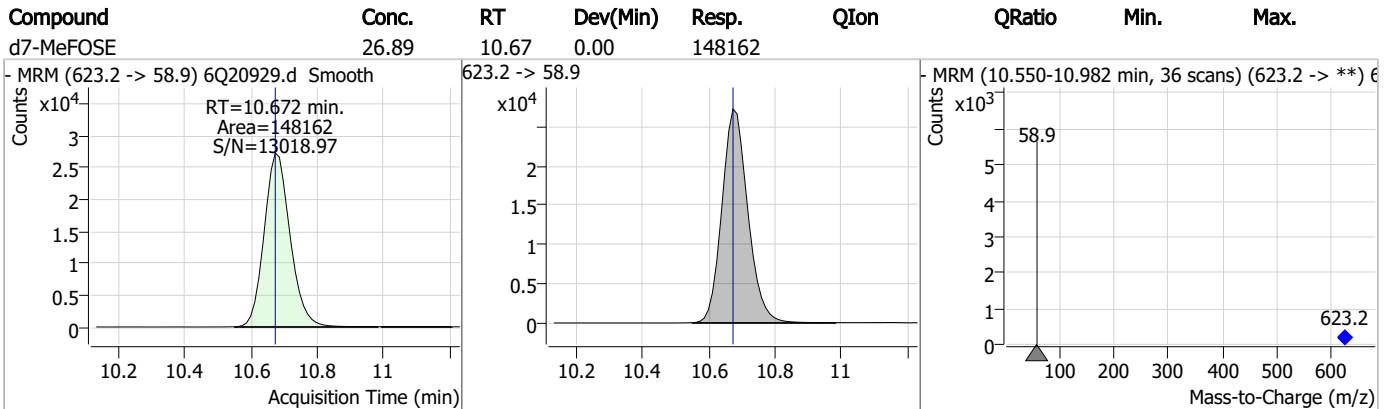
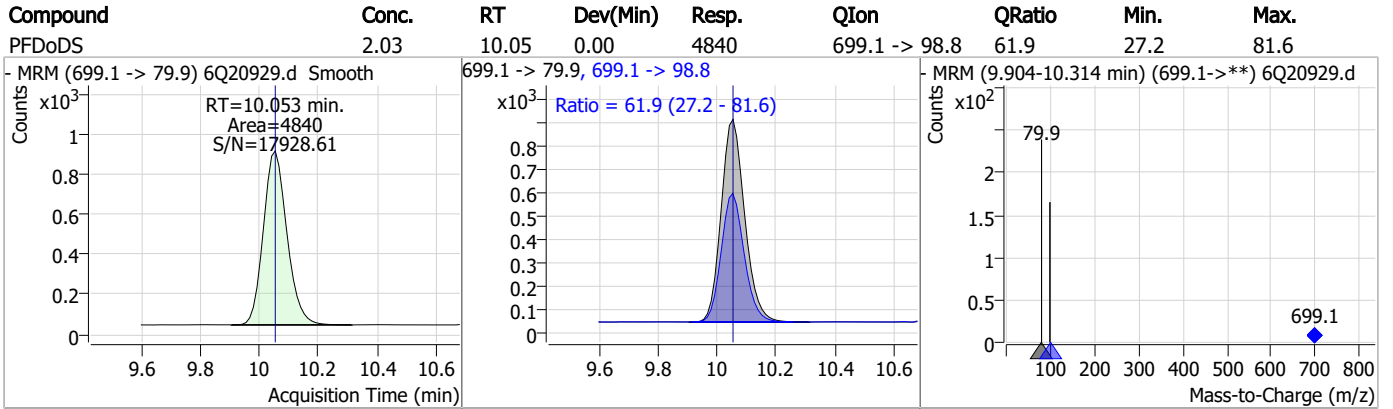
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Perfluorinated Compounds by LC/MS/MS



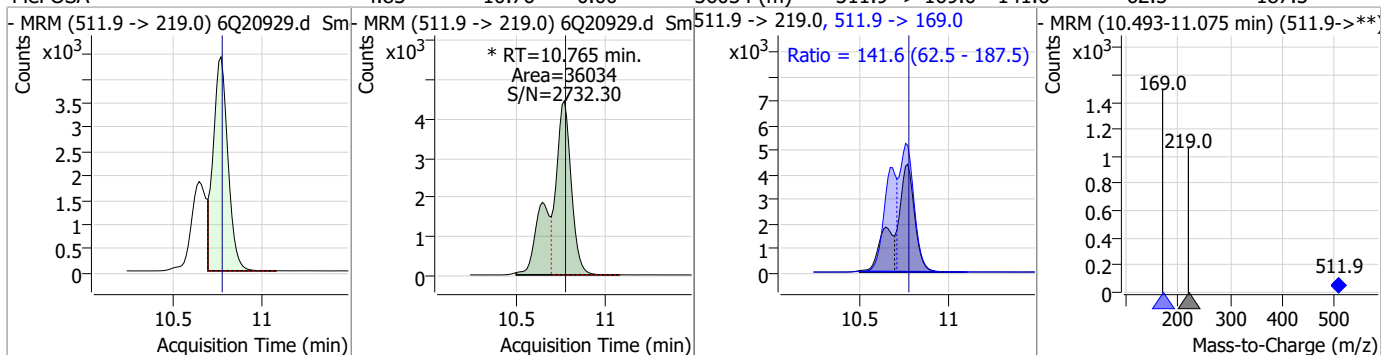
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Perfluorinated Compounds by LC/MS/MS

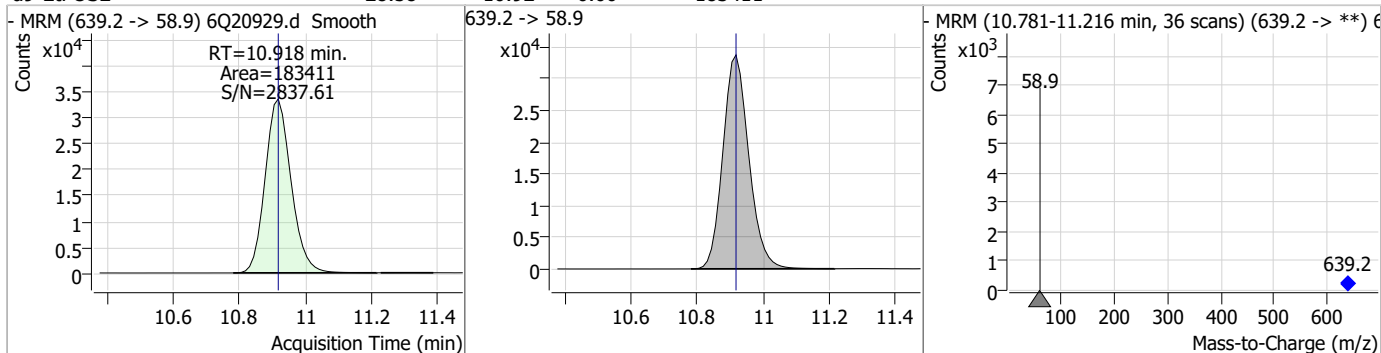


Perfluorinated Compounds by LC/MS/MS

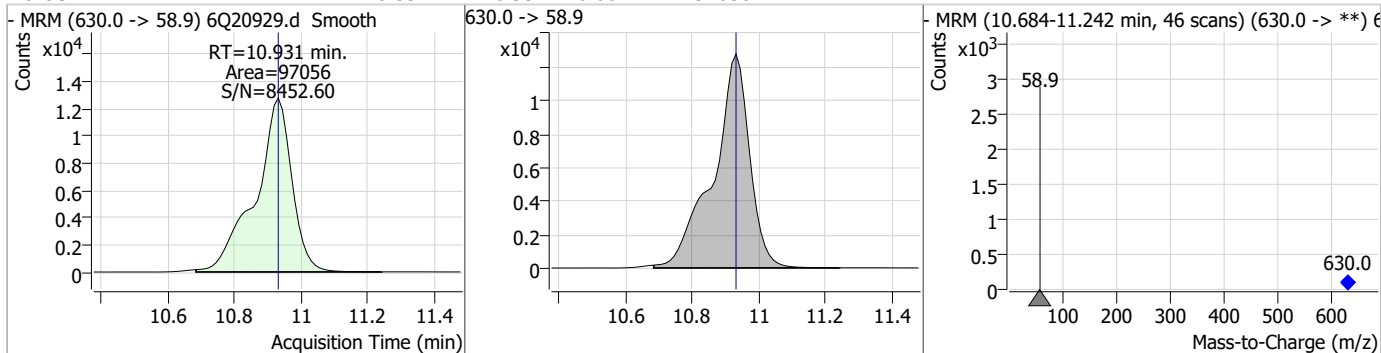
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.83	10.76	0.00	36034 (m)	511.9 -> 169.0	141.6	62.5	187.5



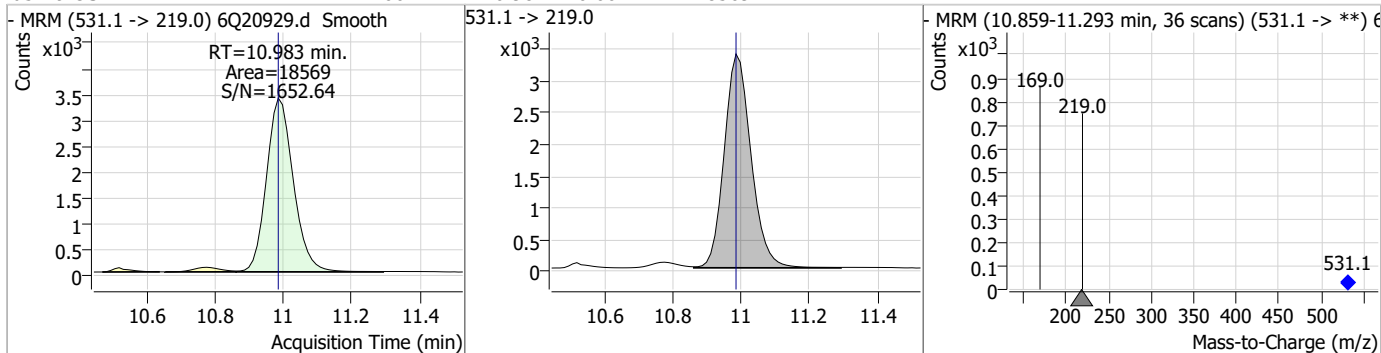
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	28.58	10.92	0.00	183411				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	10.53	10.93	0.00	97056				

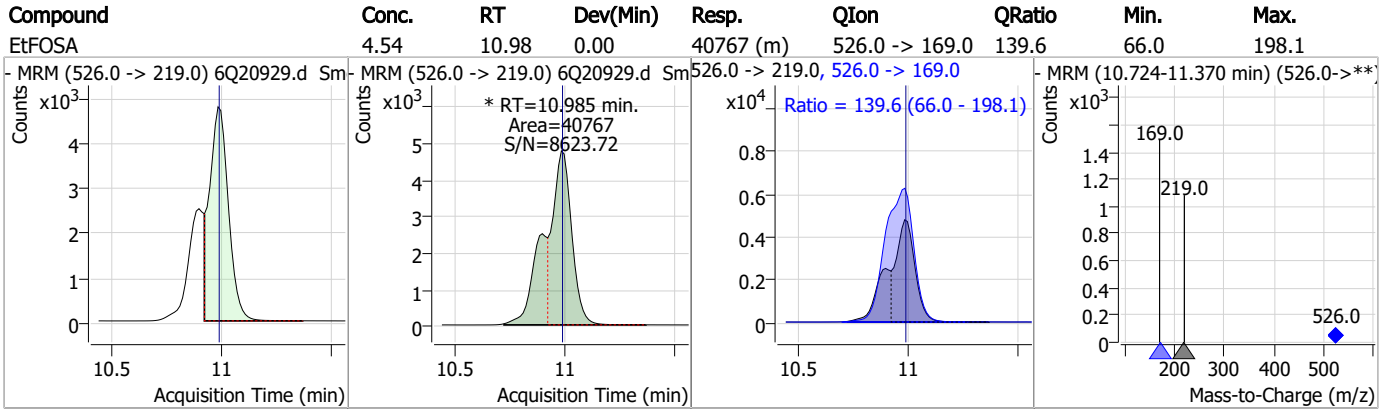


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.60	10.98	0.00	18569				



7.7.15
7

Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Manual Integration Approval Summary

Sample Number: S6Q310-CC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20929.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/13/23 19:30 Supervisor approved: 07/17/23 11:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

7.7.15.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20977.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 6:41:31 AM
 Sample Name : cc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	231109	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	75474	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	78546	2.50 µg/L	0.000
M4-PFHpA	6.633	367.1 -> 322.0	82505	2.50 µg/L	0.012
M8-PFOA	7.264	421.1 -> 376.0	122628	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	58800	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	33919	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	41897	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	41798	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	23166	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	43147	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	28153	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	17633	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	16601	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	3379	5.00 µg/L	0.000
M2-6:2FTS	7.026	429.1 -> 80.9	4809	5.00 µg/L	-0.012
M2-8:2FTS	8.089	529.1 -> 80.9	5255	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	38248	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	48975	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	32149	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	150537	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	186663	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	20242	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	18687	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	22975	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	97287	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	13290	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	136816	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	41282	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	68280	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	78934	2.50 µg/L	0.000

System Monitoring Compounds

13C2-4:2FTS	5.355	329.1 -> 80.9	3379	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 113.5%		
13C2-6:2FTS	7.026	429.1 -> 80.9	4809	5.44 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 108.7%		
13C2-8:2FTS	8.089	529.1 -> 80.9	5255	6.15 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 123.1%		
13C2-PFDoDA	9.211	615.1 -> 570.0	41798	1.37 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 109.4%		
13C2-PFTeDA	9.925	715.2 -> 670.0	23166	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 117.1%		
13C3-PFBS	5.635	302.1 -> 79.9	28153	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 100.1%		
13C3-PFHxS	7.392	402.1 -> 79.9	17633	2.49 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 = 99.6%	
13C4-PFBA	3.022	216.8 -> 171.9	231109	10.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFHpA	6.633	367.1 -> 322.0	82505	2.67 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C5-PFHxA	5.692	318.0 -> 273.0	78546	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C5-PFPeA	4.459	268.3 -> 223.0	75474	5.13 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C6-PFDA	8.301	519.1 -> 474.1	33919	1.46 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C7-PFUnDA	8.780	570.0 -> 525.1	41897	1.41 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.5%	
13C8-FOSA	9.674	506.1 -> 77.8	43147	2.69 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-PFOA	7.264	421.1 -> 376.0	122628	2.35 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C8-PFOS	8.476	507.1 -> 79.9	16601	2.55 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C9-PFNA	7.807	472.1 -> 427.0	58800	1.27 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%	
d3-MeFOSAA	8.346	573.2 -> 419.0	38248	5.36 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	48975	9.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d3-MeFOSA	10.763	515.0 -> 219.0	18687	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%	
d5-EtFOSAA	8.554	589.2 -> 419.0	32149	5.67 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.5%	
d7-MeFOSE	10.672	623.2 -> 58.9	150537	25.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
d9-EtFOSE	10.918	639.2 -> 58.9	186663	27.20 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.8%	
d5-EtFOSA	10.983	531.1 -> 219.0	20242	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.2%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	54732	8.90 µg/L	98
		327.1 -> 80.9	18874		
6:2FTS	7.027	427.1 -> 407.0	53638	9.50 µg/L	99
		427.1 -> 80.9	16317		
8:2FTS	8.090	527.1 -> 507.0	29705	8.83 µg/L	93
		527.1 -> 80.8	11018		
EtFOSAA	8.555	584.2 -> 419.1	11605	2.29 µg/L	m 96
		584.2 -> 526.0	5540		
FOSA	9.677	498.1 -> 77.9	37590	2.22 µg/L	99
		498.1 -> 478.0	1435		
MeFOSAA	8.347	570.1 -> 419.0	18032	2.15 µg/L	m 95
		570.1 -> 483.0	3465		
PFBA	3.018	212.8 -> 168.9	81715	9.17 µg/L	100
PFBS	5.636	298.7 -> 79.9	23460	2.10 µg/L	93
		298.7 -> 98.8	8551		
PFDA	8.301	512.9 -> 469.0	106191	2.25 µg/L	99
		512.9 -> 219.0	15798		
PFDODA	9.211	613.1 -> 569.0	76657	2.34 µg/L	97
		613.1 -> 319.0	11733		
PFDS	9.374	599.0 -> 79.9	11215	2.27 µg/L	94

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
PFHpA	6.633	599.0 -> 98.8	5348	2.18	µg/L	99
		363.1 -> 319.0	86763			
PFHpS	7.960	363.1 -> 169.0	14147	2.22	µg/L	95
		449.0 -> 79.9	21251			
PFHxA	5.694	449.0 -> 98.9	9945	2.40	µg/L	100
		313.0 -> 269.0	69095			
PFHxS	7.393	313.0 -> 118.9	3394	2.08	µg/L	96
		398.7 -> 79.9	19527			
PFNA	7.808	398.7 -> 98.9	9568	2.30	µg/L	100
		463.0 -> 419.0	107652			
PFNS	8.955	463.0 -> 219.0	20358	2.27	µg/L	98
		548.8 -> 79.9	18840			
PFOA	7.265	548.8 -> 98.9	9953	2.47	µg/L	99
		413.0 -> 369.0	143740			
PFOS	8.478	413.0 -> 169.0	23571	2.11	µg/L	79
		498.9 -> 79.9	19032			
PFPeA	4.461	498.9 -> 98.8	10541	4.58	µg/L	100
		263.0 -> 219.0	92073			
PFPeS	6.697	349.1 -> 79.9	19691	2.15	µg/L	95
		349.1 -> 98.9	9721			
PFTeDA	9.926	713.1 -> 669.0	59310	2.24	µg/L	100
		713.1 -> 168.9	5406			
PFTrDA	9.595	663.0 -> 619.0	78408	2.49	µg/L	98
		663.0 -> 168.9	8403			
PFUnDA	8.780	563.1 -> 519.0	69007	2.24	µg/L	94
		563.1 -> 269.1	12077			
11CI-PF3OUdS	9.634	630.9 -> 450.9	106556	4.65	µg/L	100
		632.9 -> 452.9	32769			
9CI-PF3ONS	8.819	530.8 -> 351.0	164310	4.42	µg/L	96
		532.8 -> 353.0	50727			
ADONA	6.870	376.9 -> 250.9	353513	4.36	µg/L	97
		376.9 -> 84.8	90901			
HFPO-DA	6.071	284.9 -> 168.9	21843	4.35	µg/L	99
		284.9 -> 184.9	2450			
3:3FTCA	3.896	241.0 -> 177.0	16211	11.22	µg/L	99
		241.0 -> 117.0	2097			
5:3FTCA	6.310	341.0 -> 237.1	380301	63.22	µg/L	99
		341.0 -> 217.0	263997			
7:3FTCA	7.711	441.0 -> 316.9	263095	62.43	µg/L	92
		441.0 -> 336.9	567964			
EtFOSA	10.985	526.0 -> 219.0	42432	4.33	µg/L	100
		526.0 -> 169.0	56200			
EtFOSE	10.931	630.0 -> 58.9	97279	10.37	µg/L	100
		511.9 -> 219.0	36477			
MeFOSA	10.765	511.9 -> 169.0	50165	4.56	µg/L	89
		616.1 -> 58.9	71291			
MeFOSE	10.685	699.1 -> 79.9	5062	11.31	µg/L	100
		699.1 -> 98.8	2979			
PFDoDS	10.053	295.0 -> 201.0	16796	2.24	µg/L	94
		295.0 -> 84.9	4217			
NFDHA	5.576	279.0 -> 85.1	60239	4.78	µg/L	97
		229.0 -> 84.9	50997			
PFMBA	4.882	314.8 -> 134.9	169950	4.56	µg/L	100
		314.8 -> 82.9	5232			
PFMPA	3.588			4.58	µg/L	100
PFEESA	6.188			4.22	µg/L	100

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



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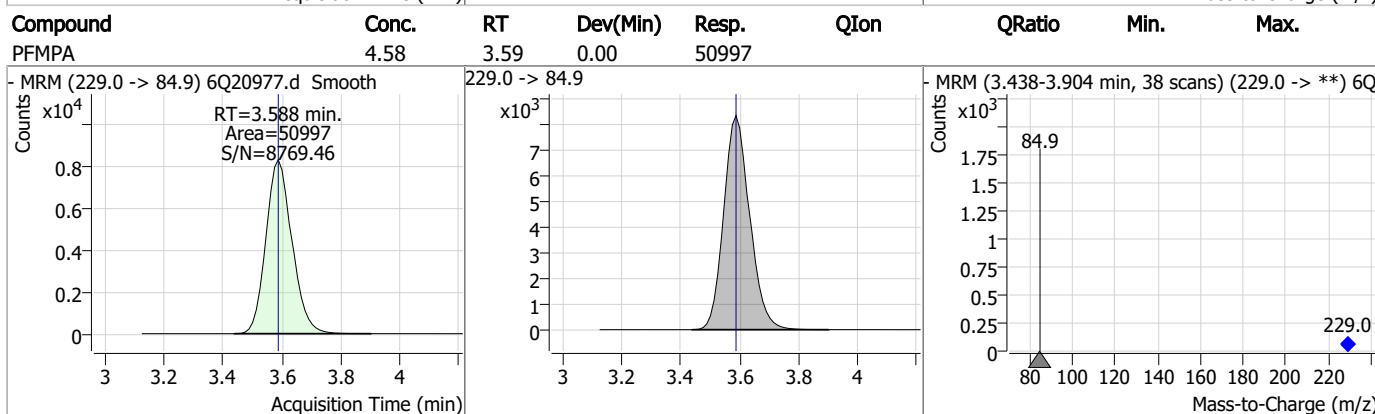
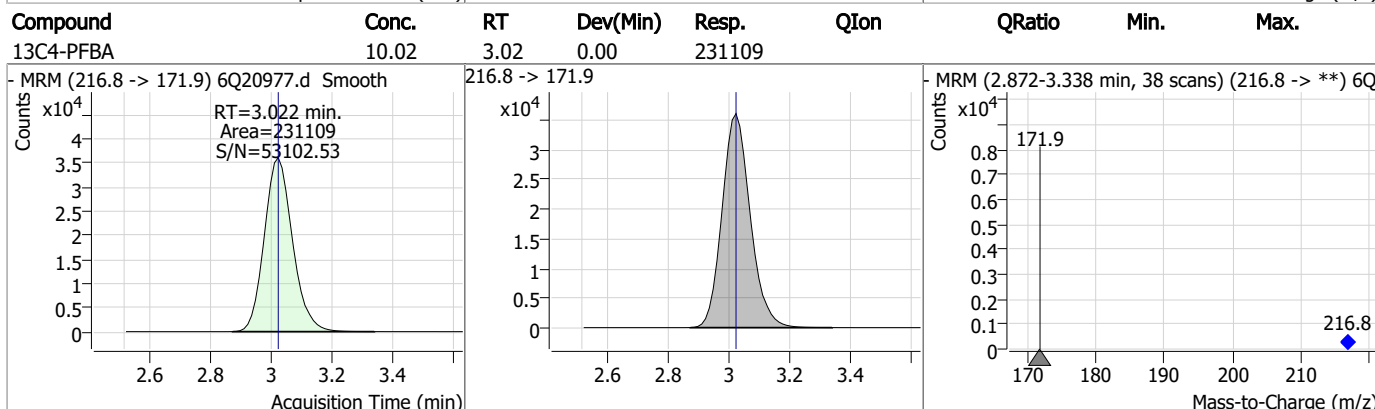
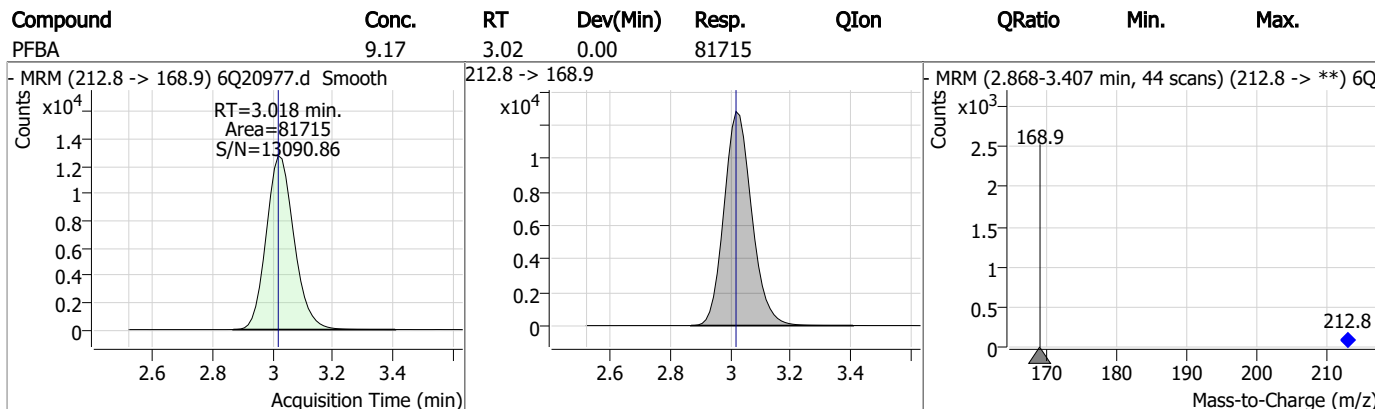
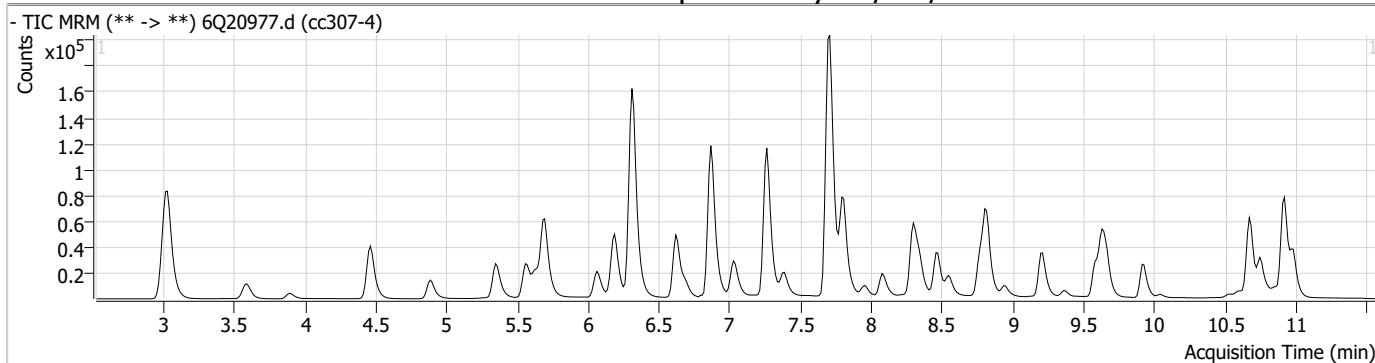
Perfluorinated Compounds by LC/MS/MS

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

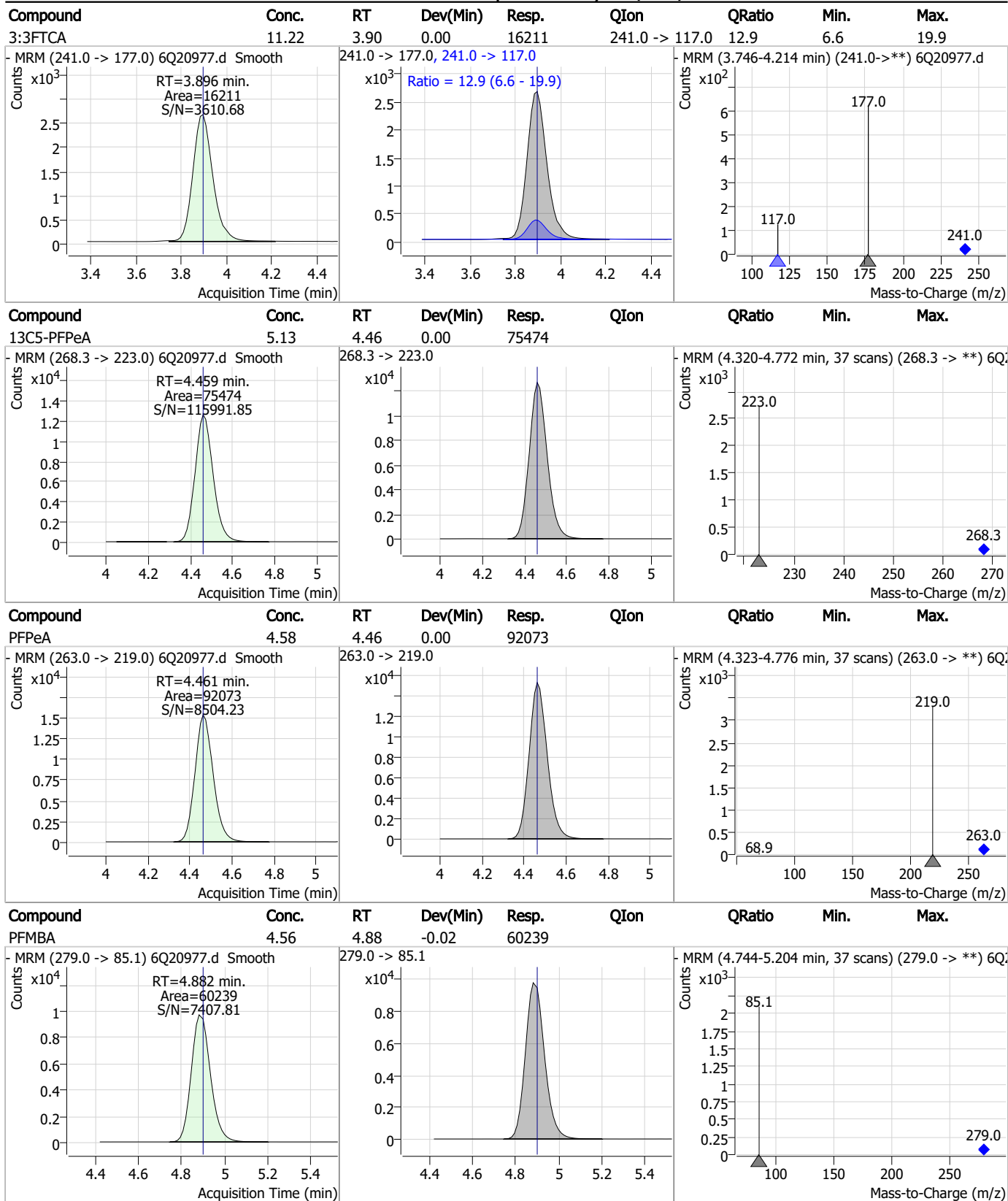
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Perfluorinated Compounds by LC/MS/MS



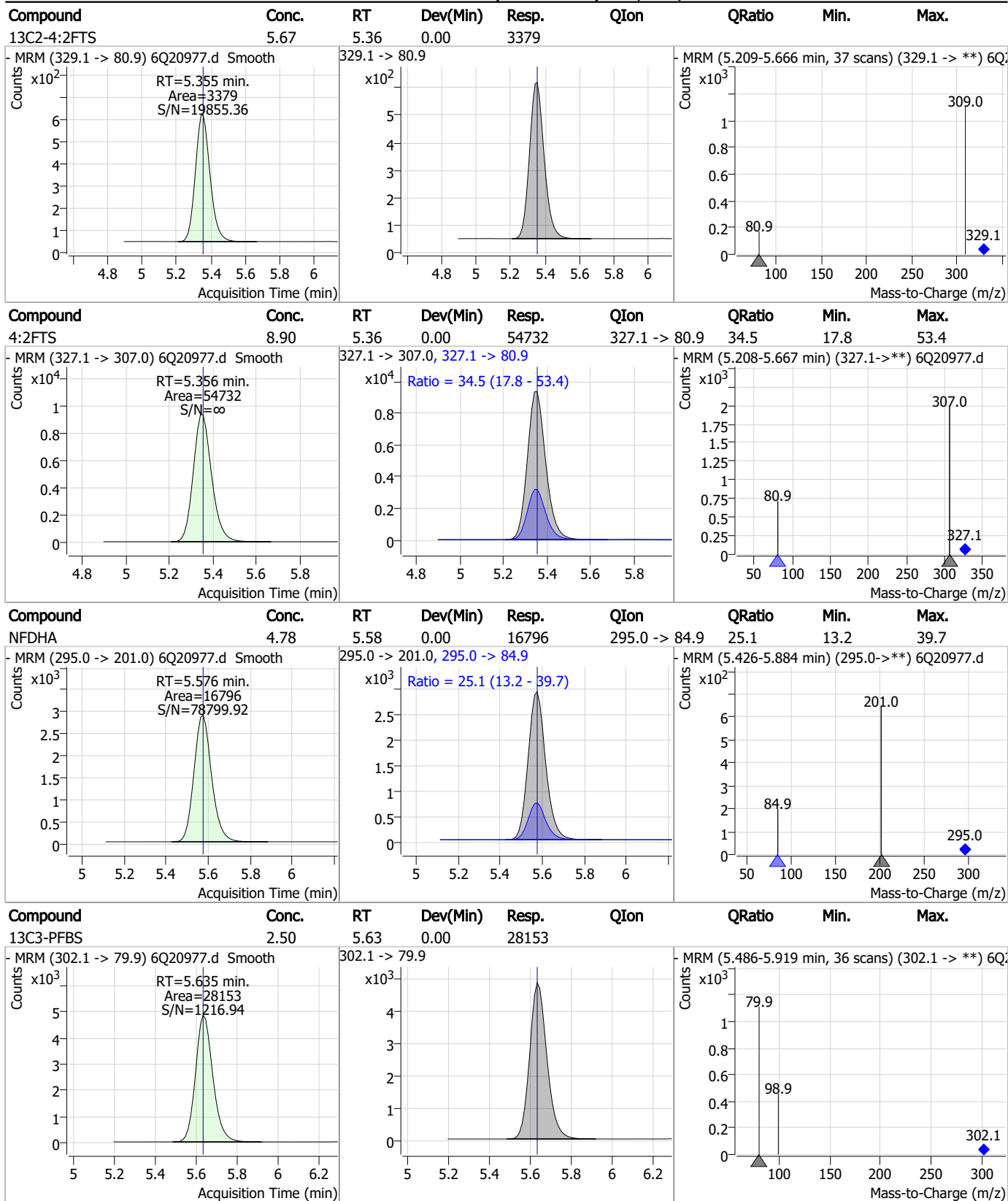
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Perfluorinated Compounds by LC/MS/MS



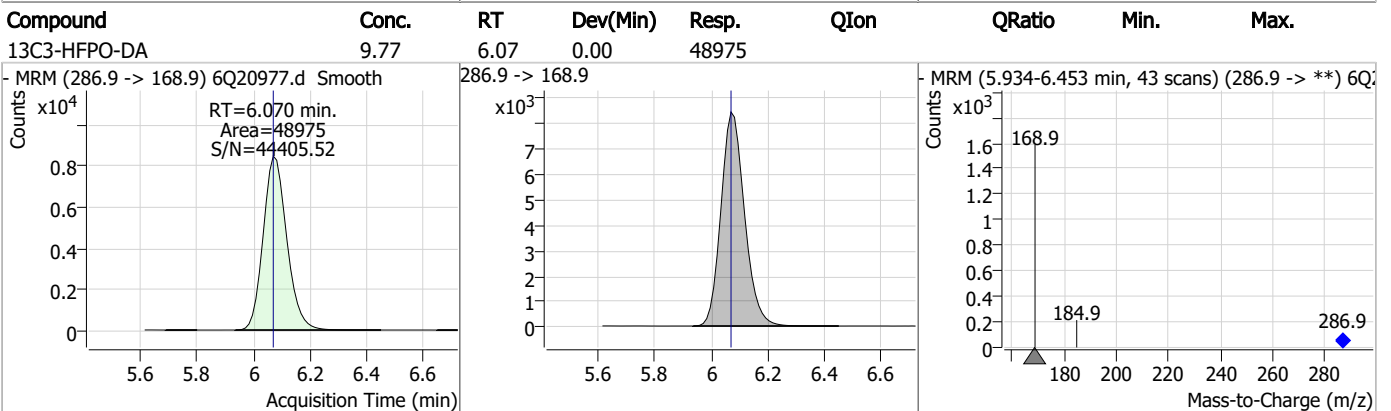
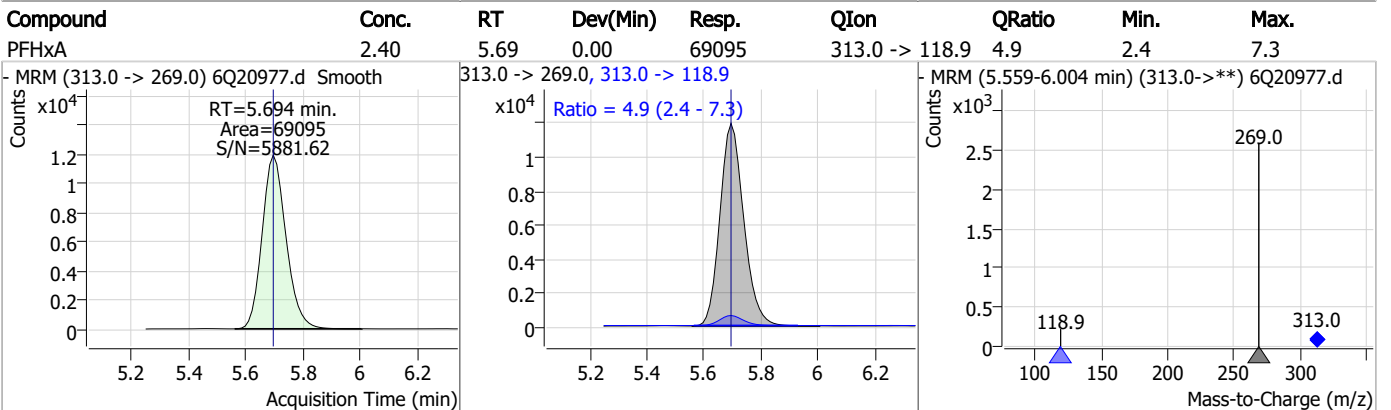
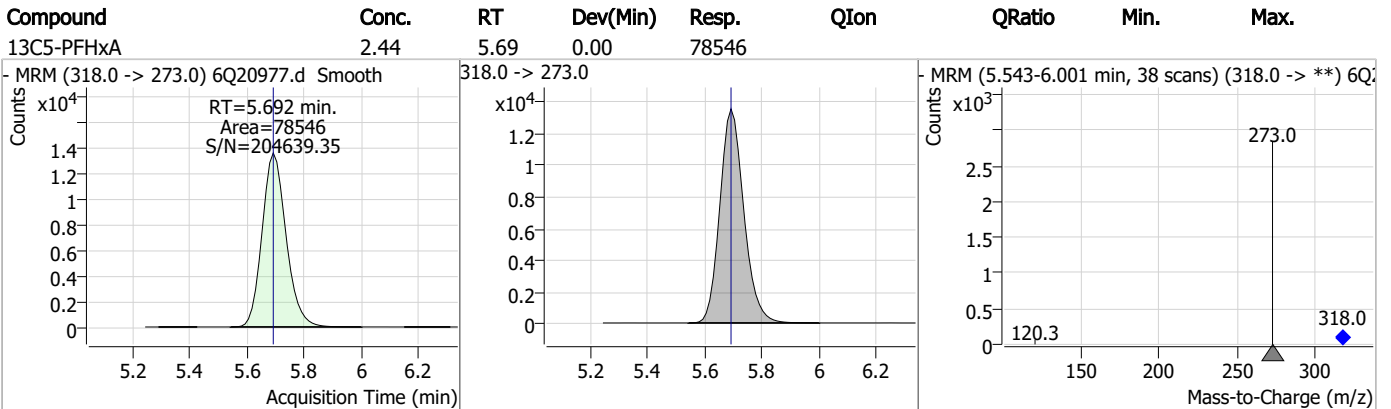
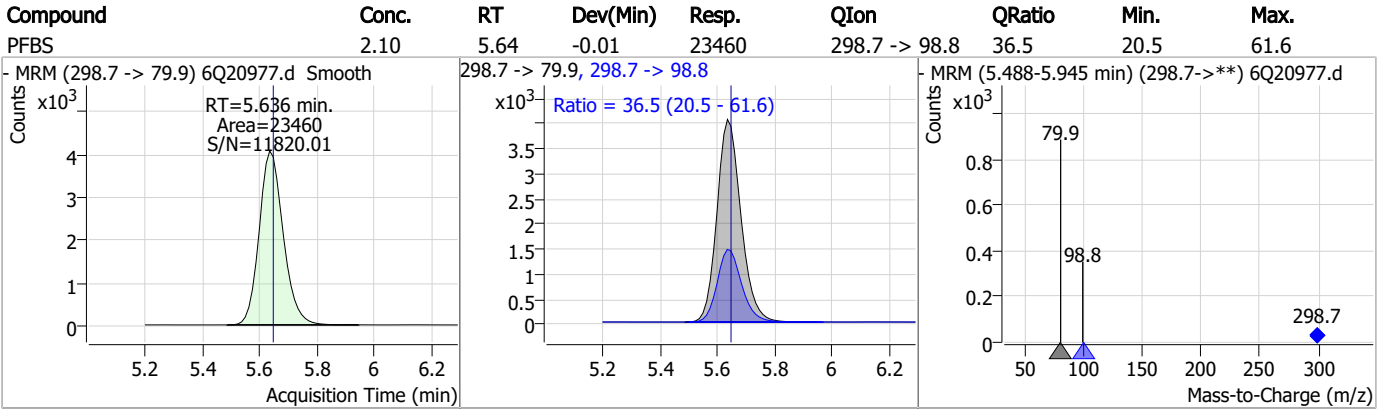
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Perfluorinated Compounds by LC/MS/MS



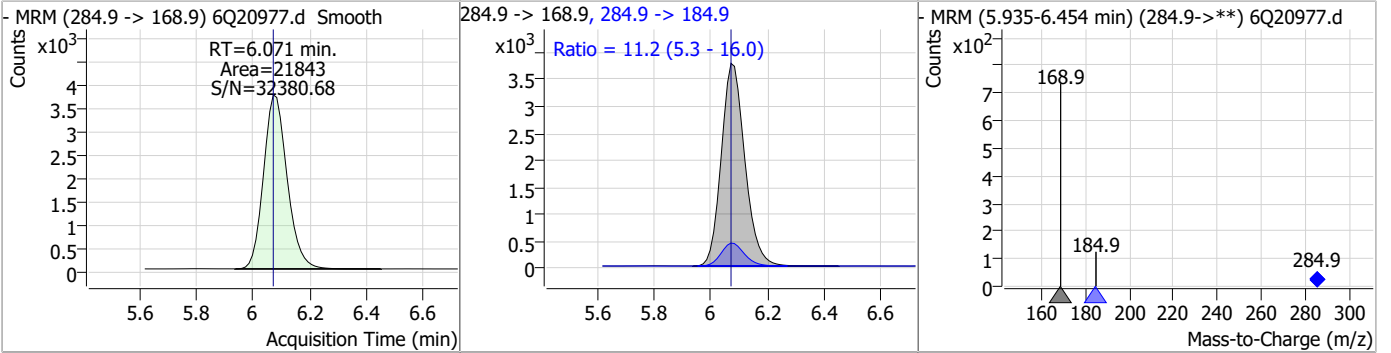
7.7.16
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Perfluorinated Compounds by LC/MS/MS

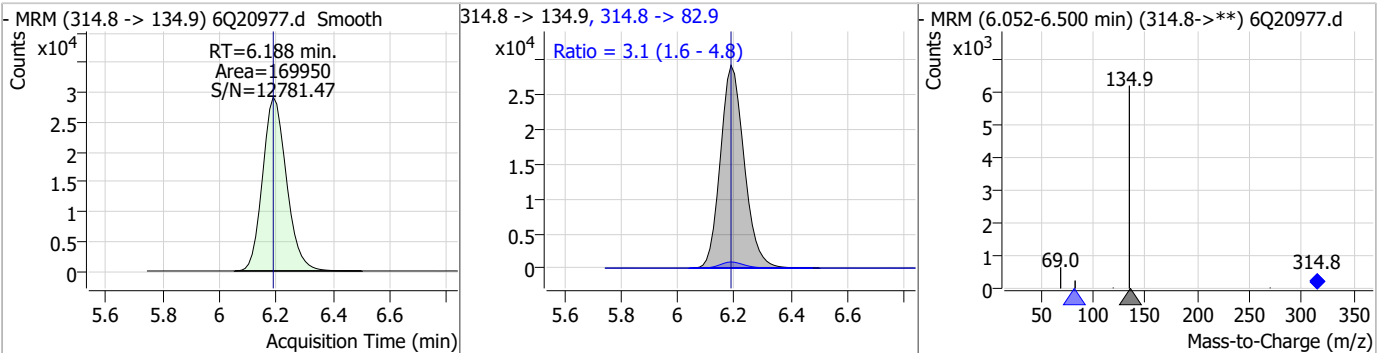


Perfluorinated Compounds by LC/MS/MS

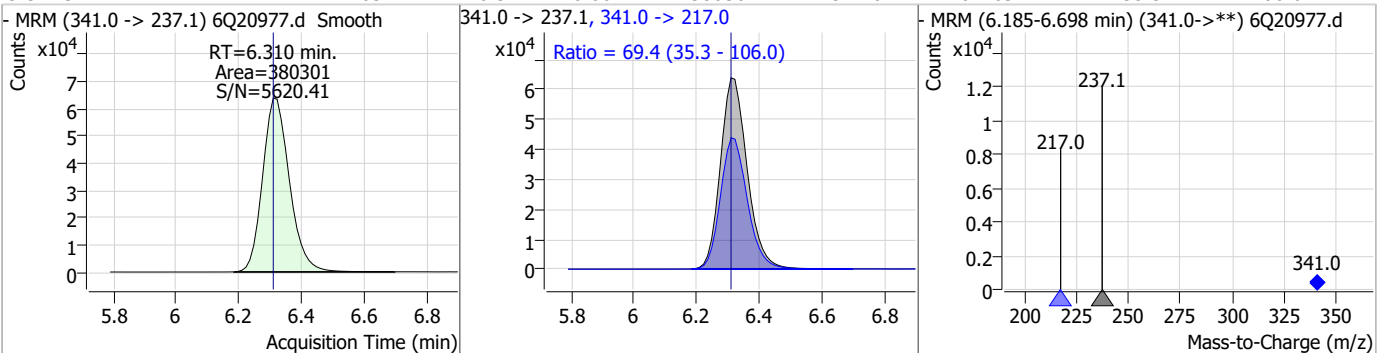
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.35	6.07	0.00	21843	284.9 -> 184.9	11.2	5.3	16.0



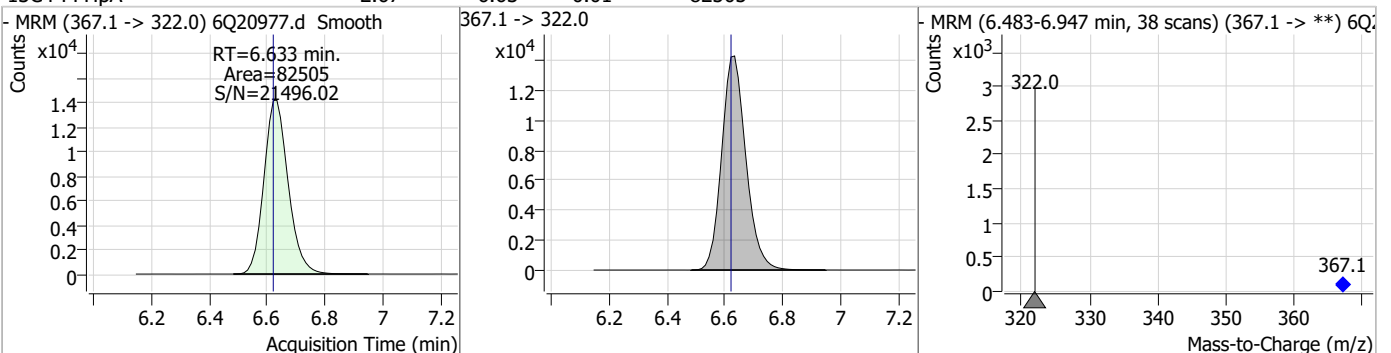
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.22	6.19	0.00	169950	314.8 -> 82.9	3.1	1.6	4.8



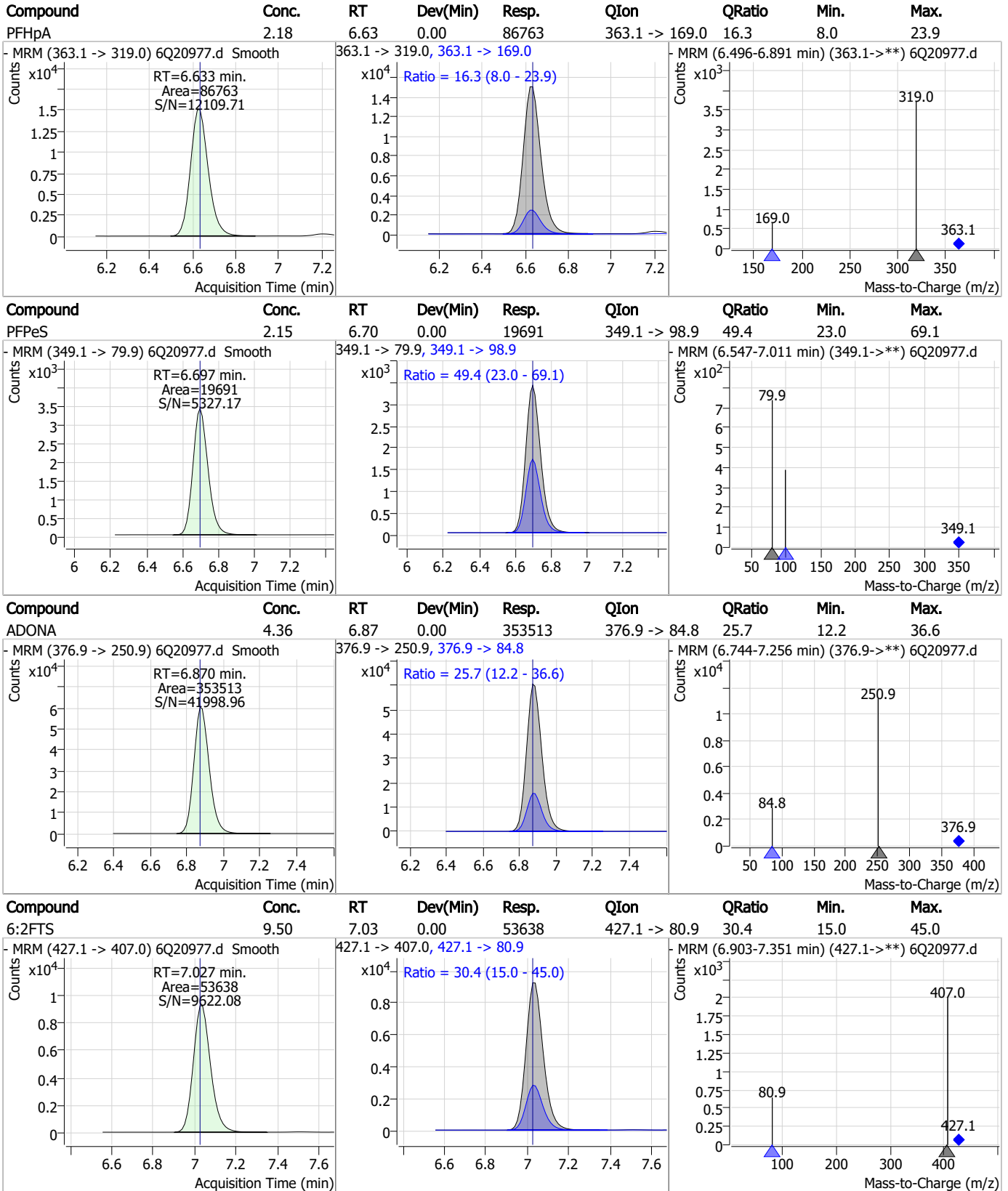
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.22	6.31	0.00	380301	341.0 -> 217.0	69.4	35.3	106.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpa	2.67	6.63	0.01	82505	367.1 -> 322.0			

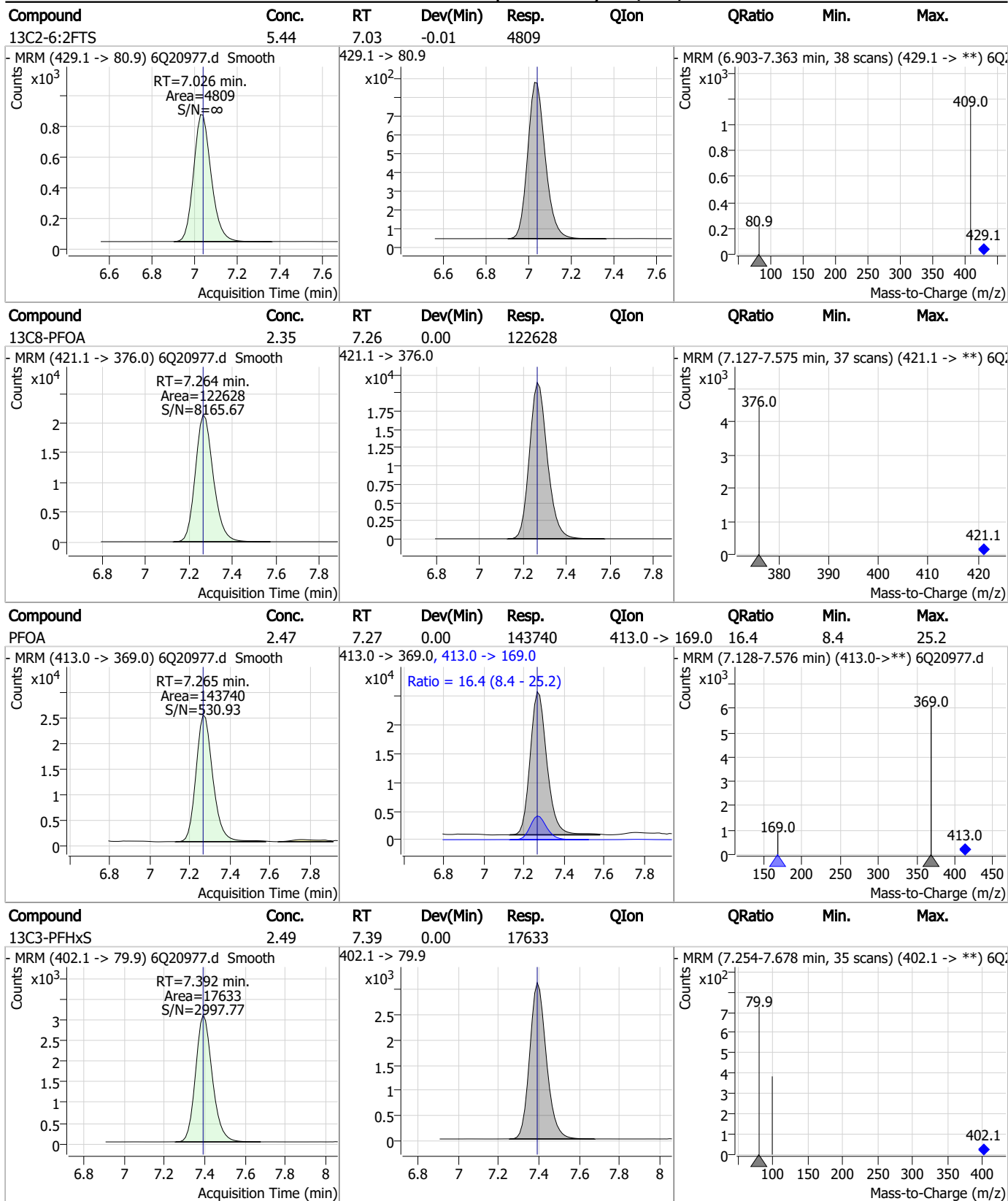


Perfluorinated Compounds by LC/MS/MS



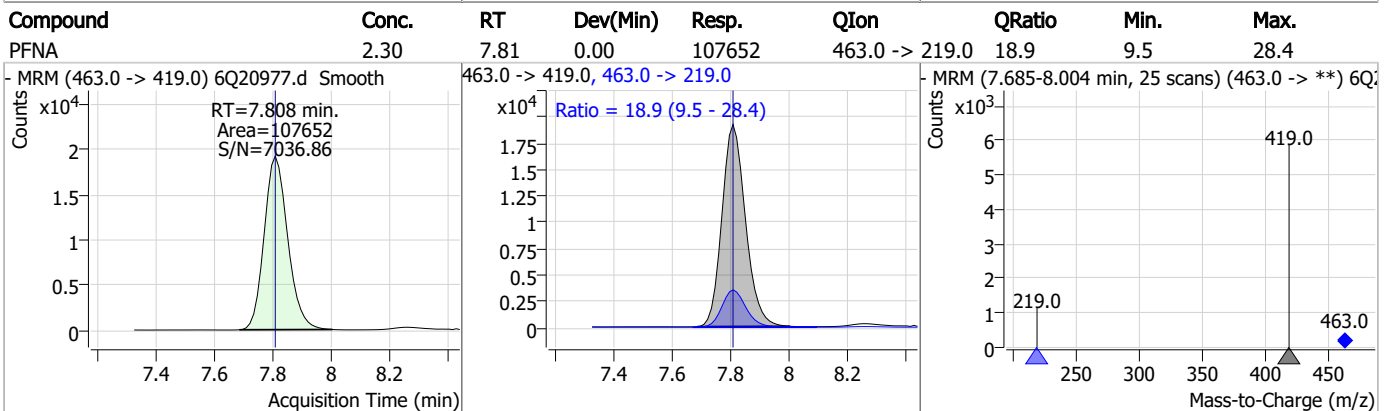
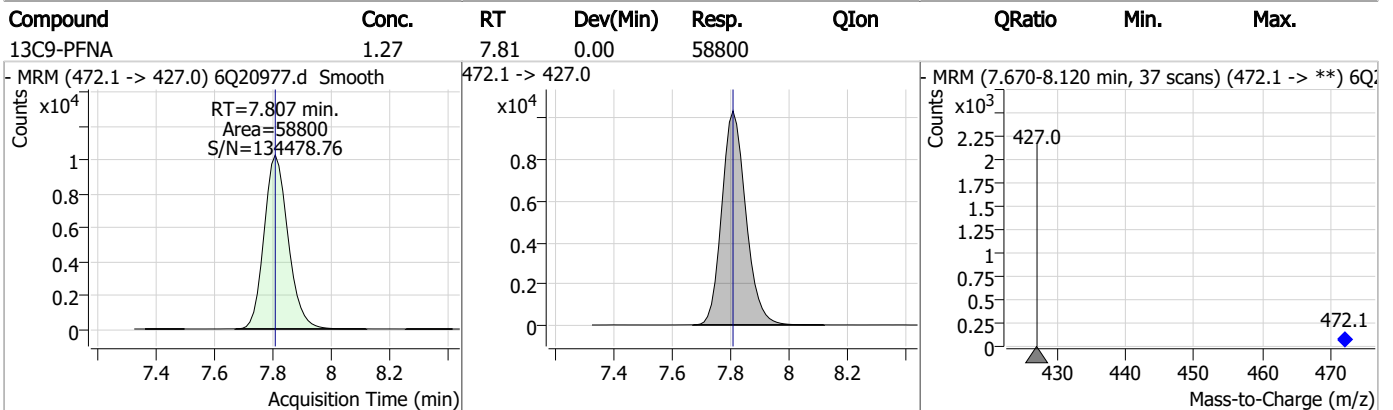
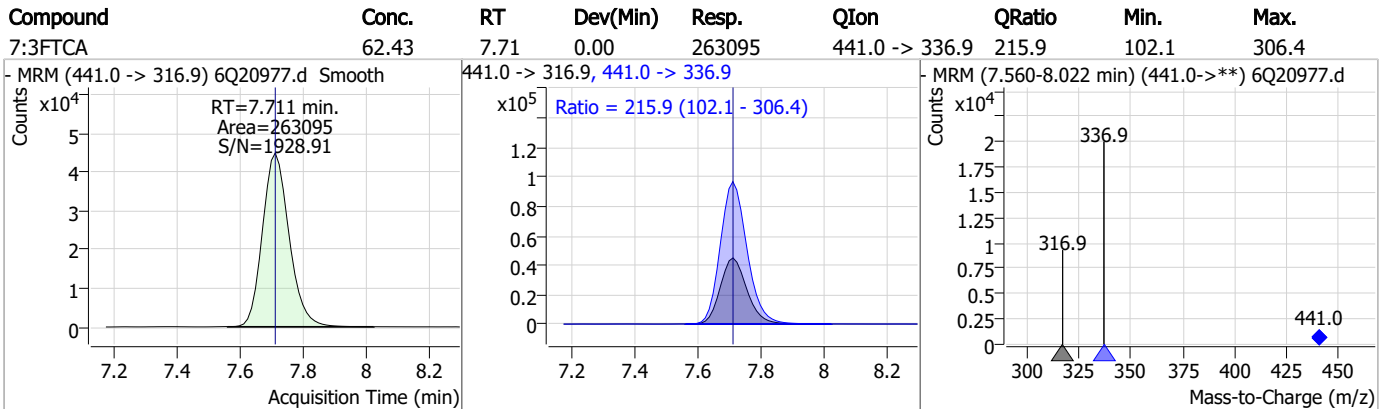
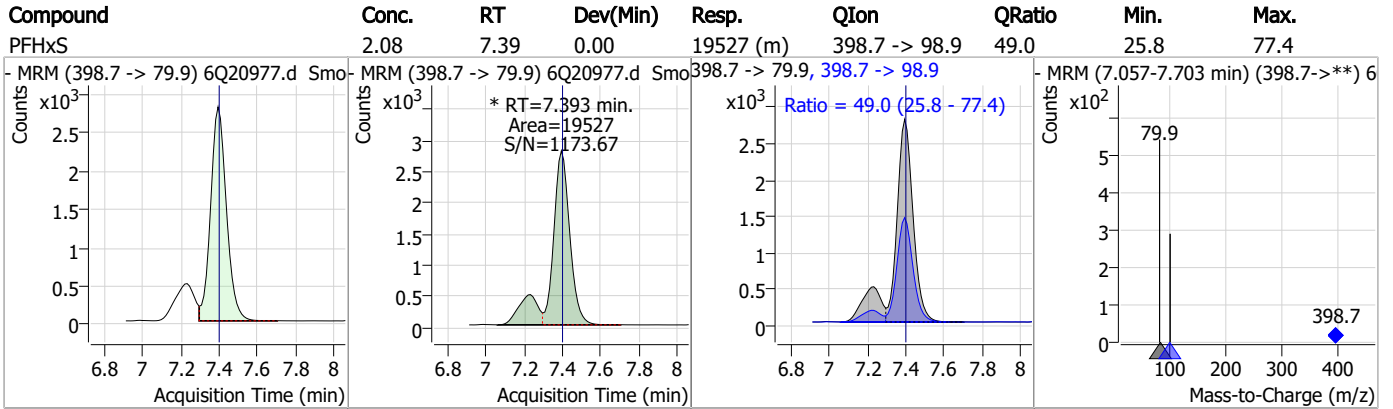
7.7.16
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Perfluorinated Compounds by LC/MS/MS



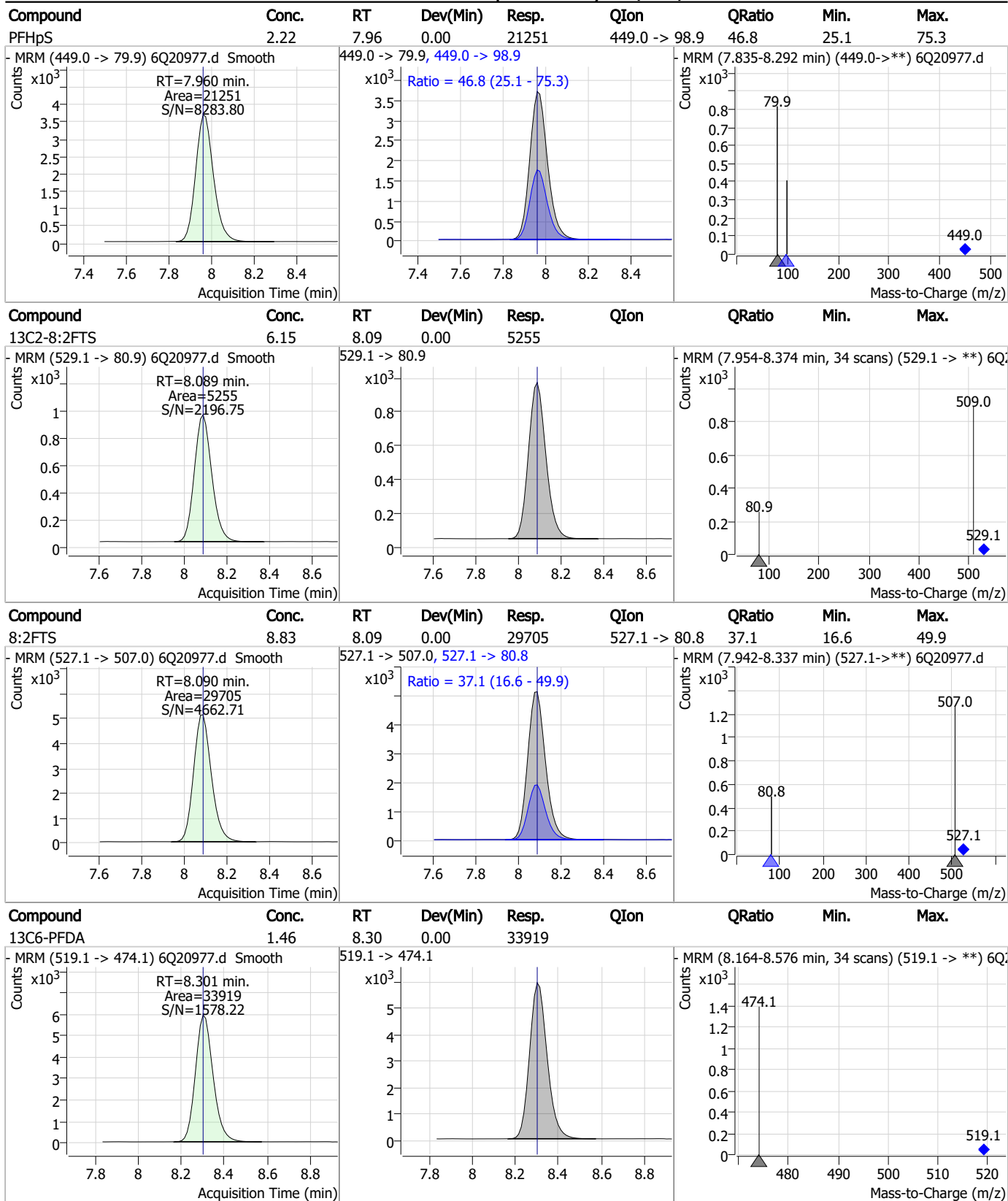
7.7.16
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Perfluorinated Compounds by LC/MS/MS



7.7.16
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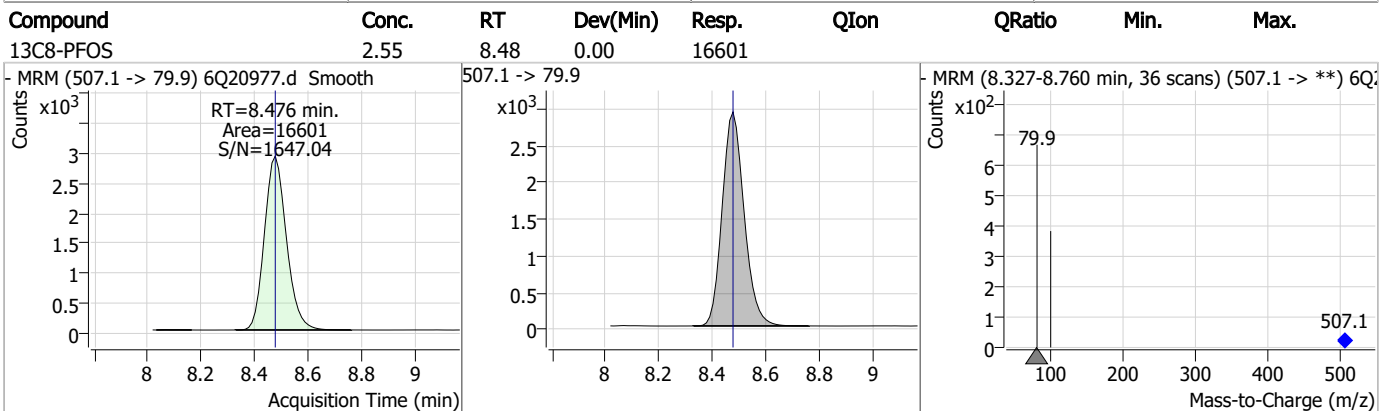
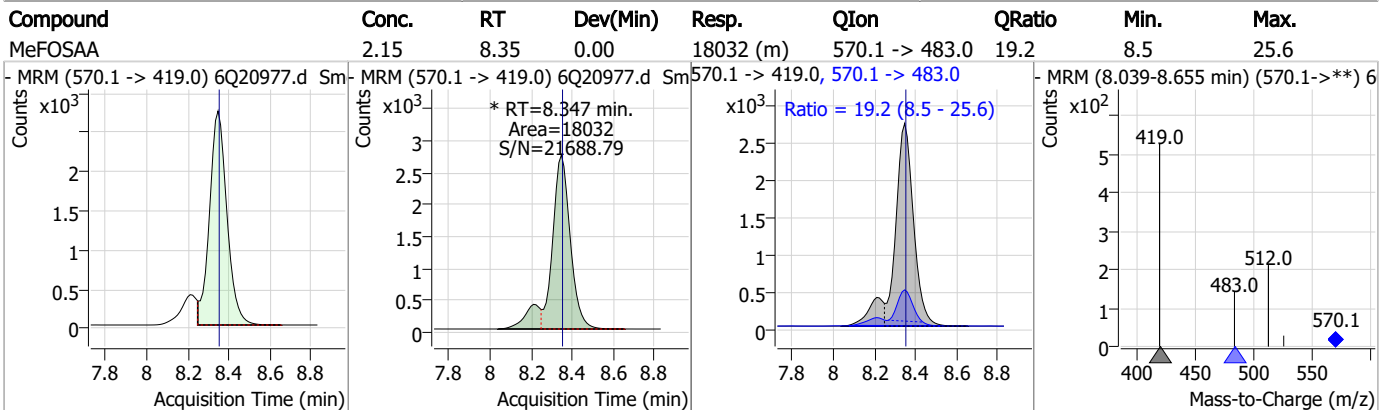
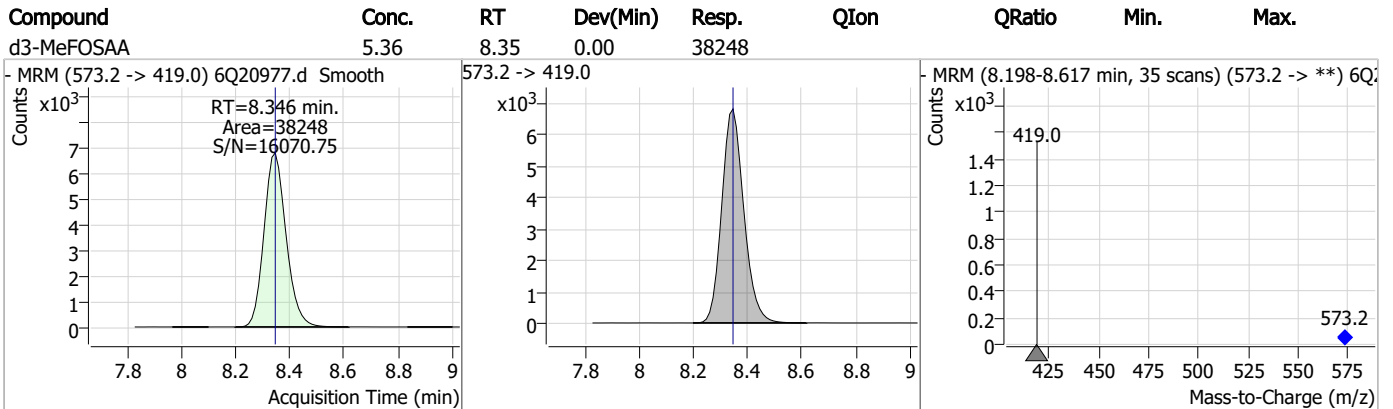
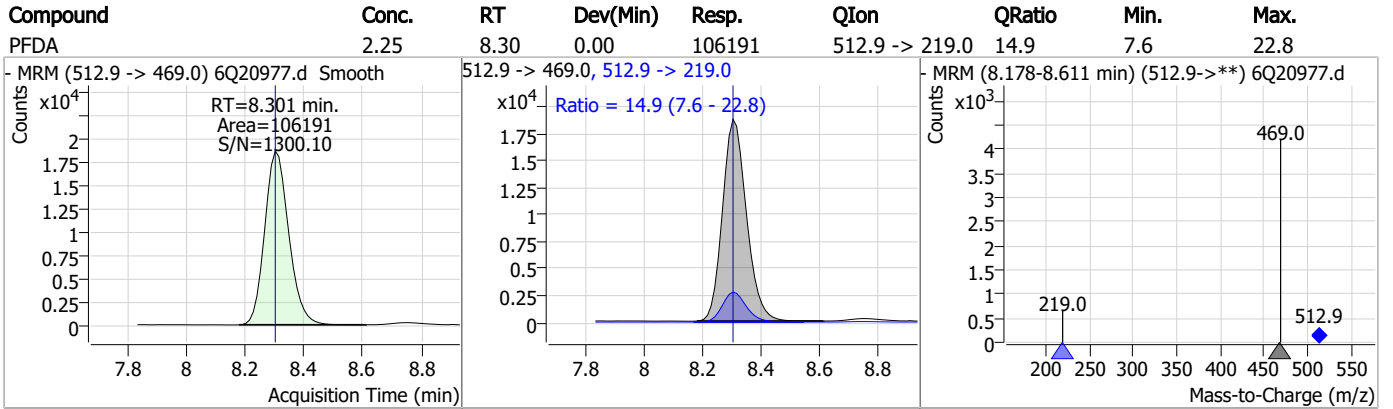
Perfluorinated Compounds by LC/MS/MS



7.7.16
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Perfluorinated Compounds by LC/MS/MS

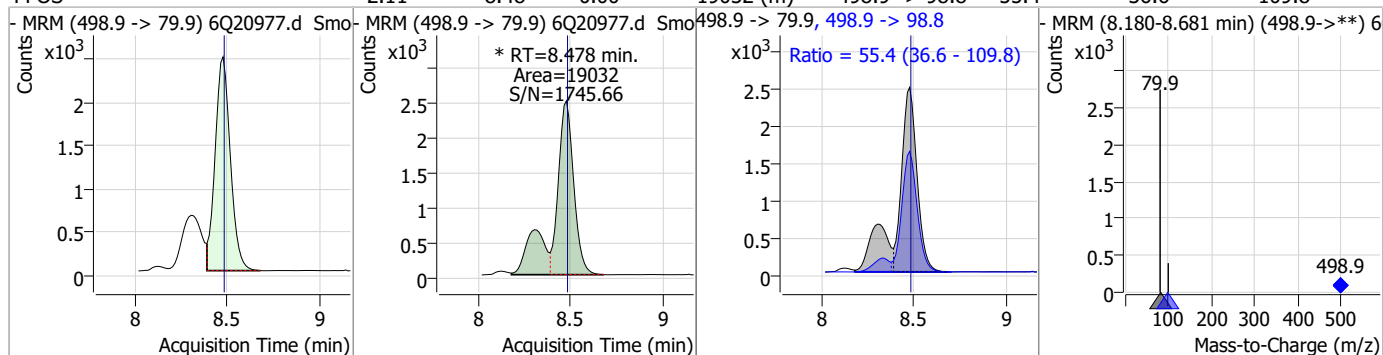


7.7.16
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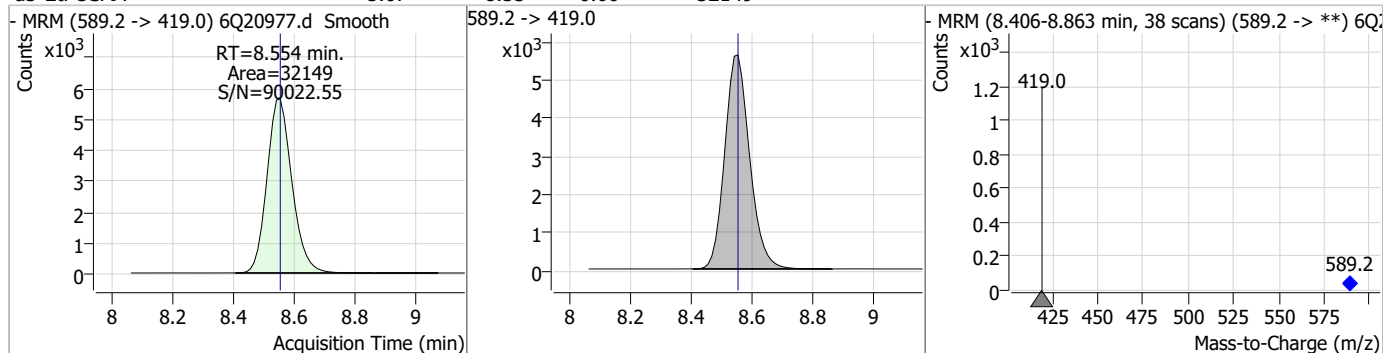


Perfluorinated Compounds by LC/MS/MS

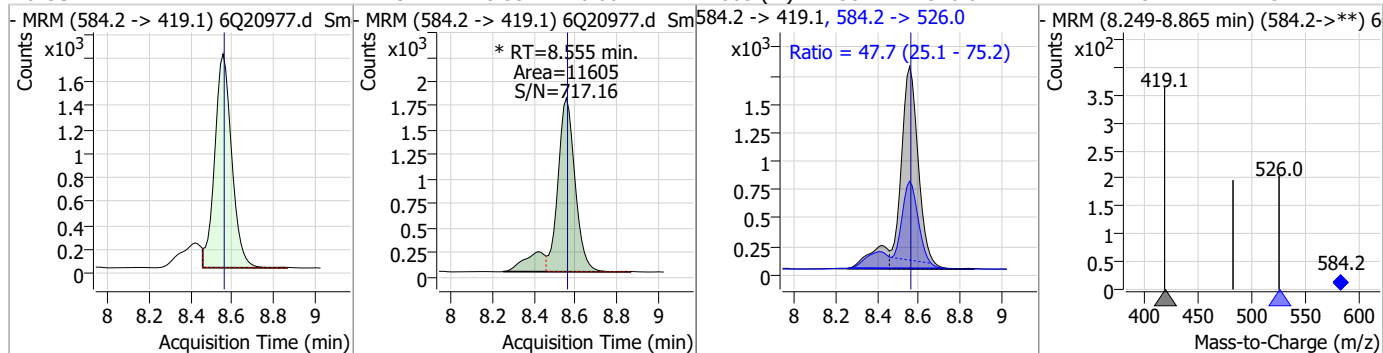
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.11	8.48	0.00	19032 (m)	498.9 -> 98.8	55.4	36.6	109.8



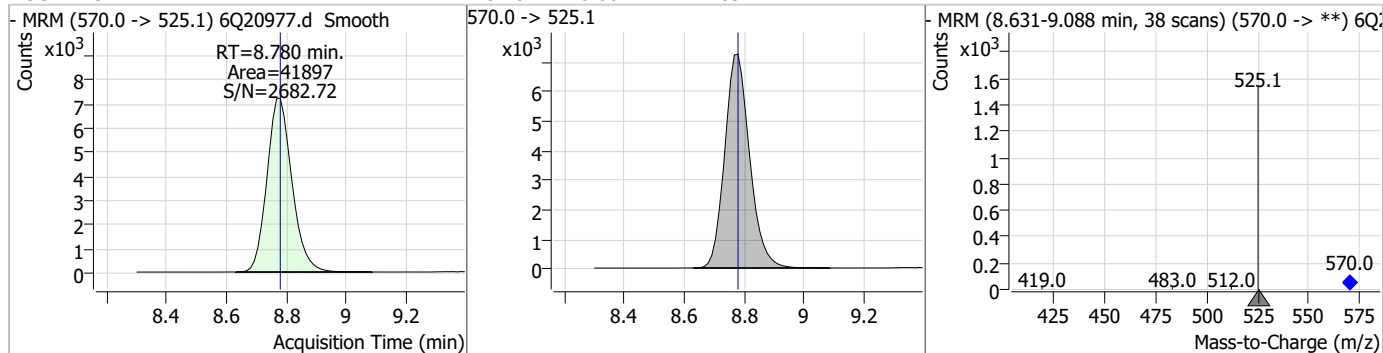
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.67	8.55	0.00	32149				



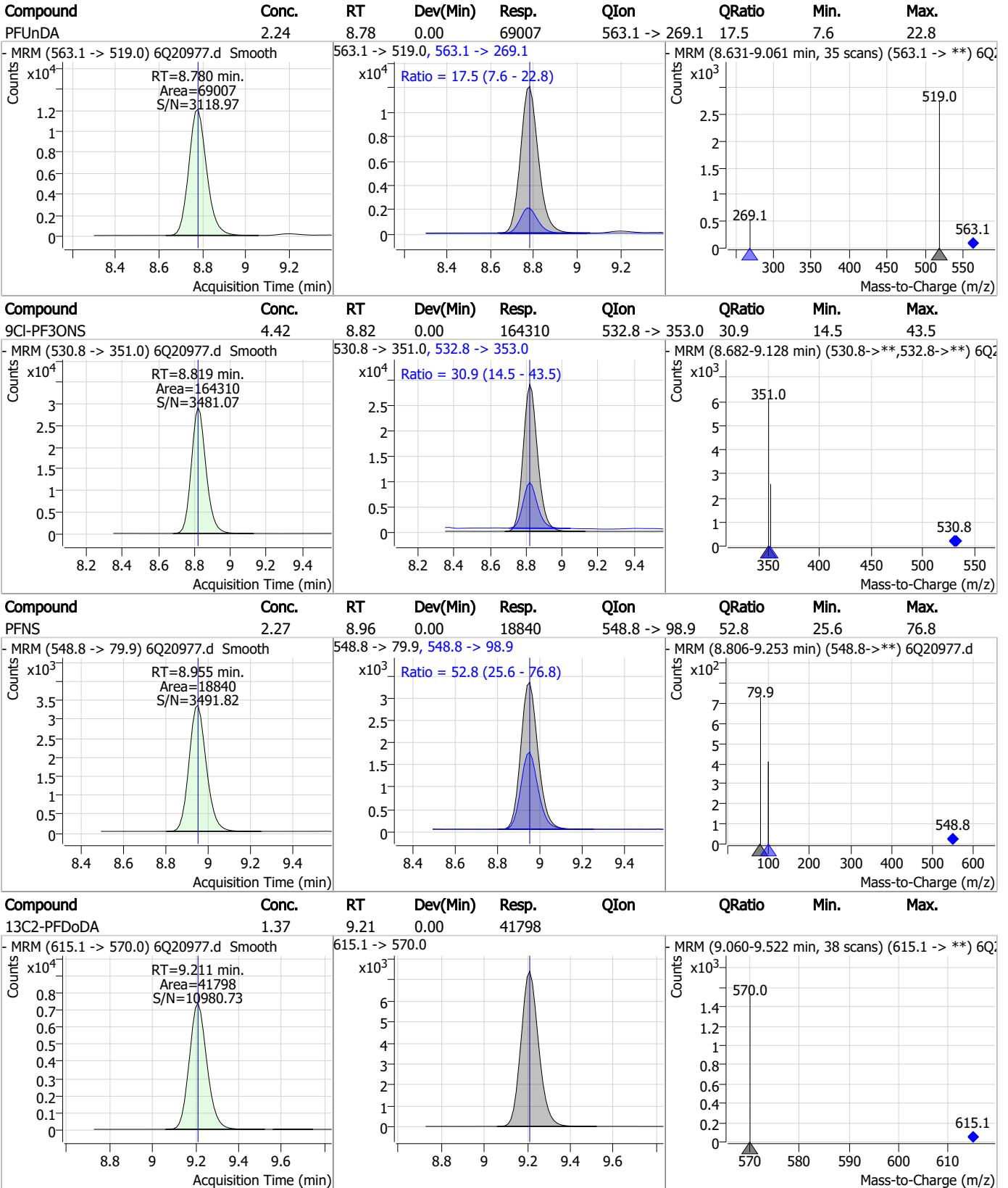
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.29	8.55	0.00	11605 (m)	584.2 -> 526.0	47.7	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.41	8.78	0.00	41897				

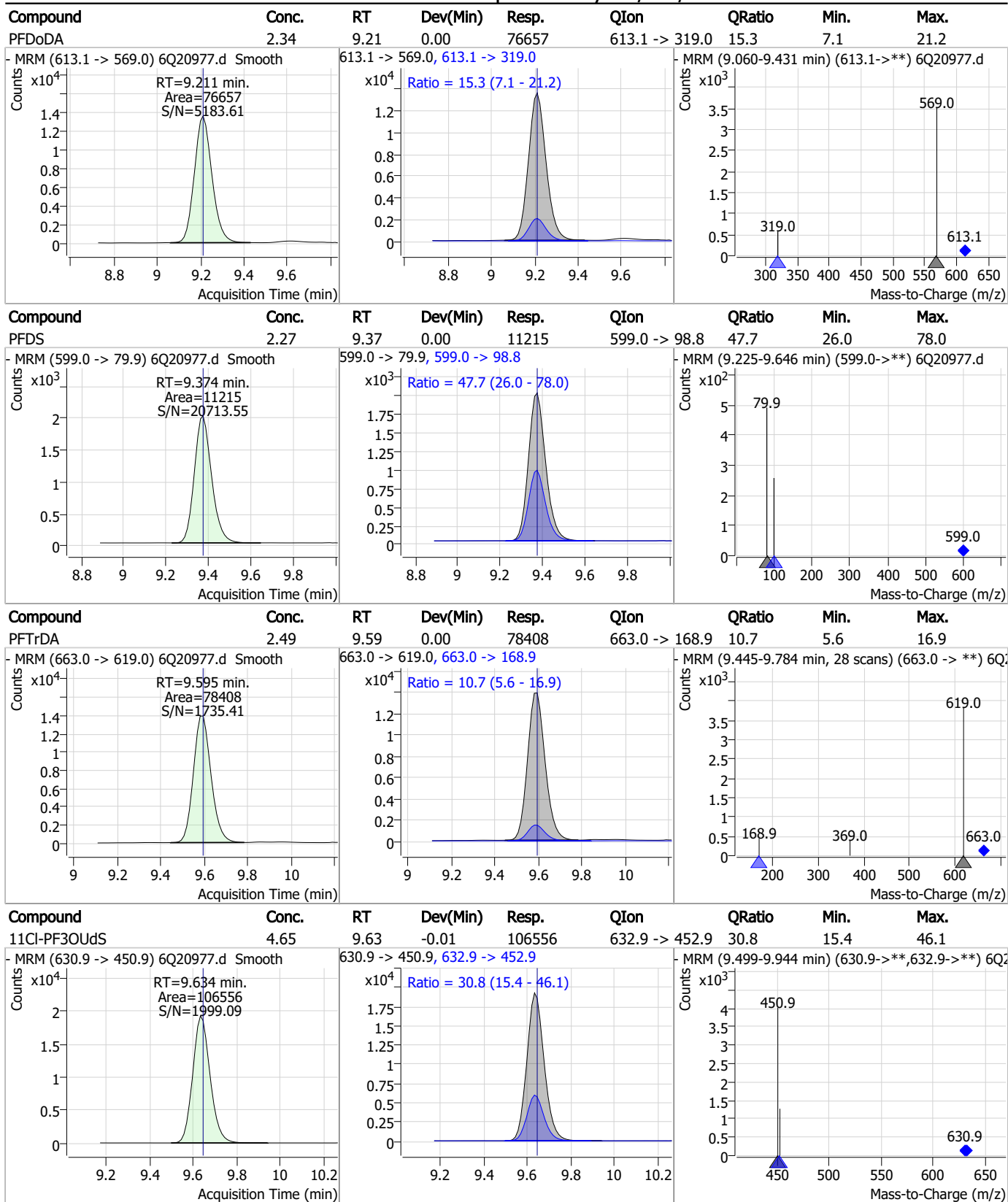


Perfluorinated Compounds by LC/MS/MS



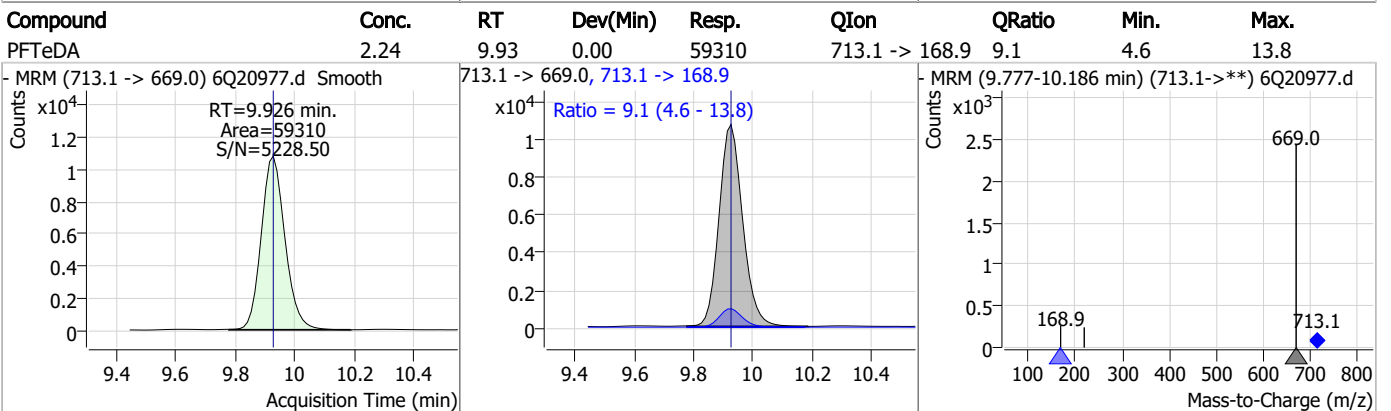
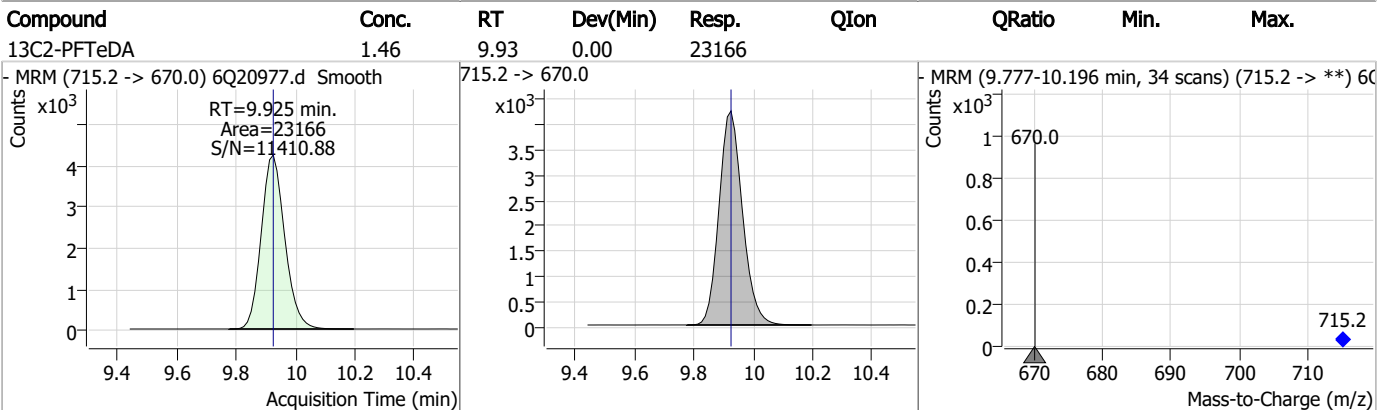
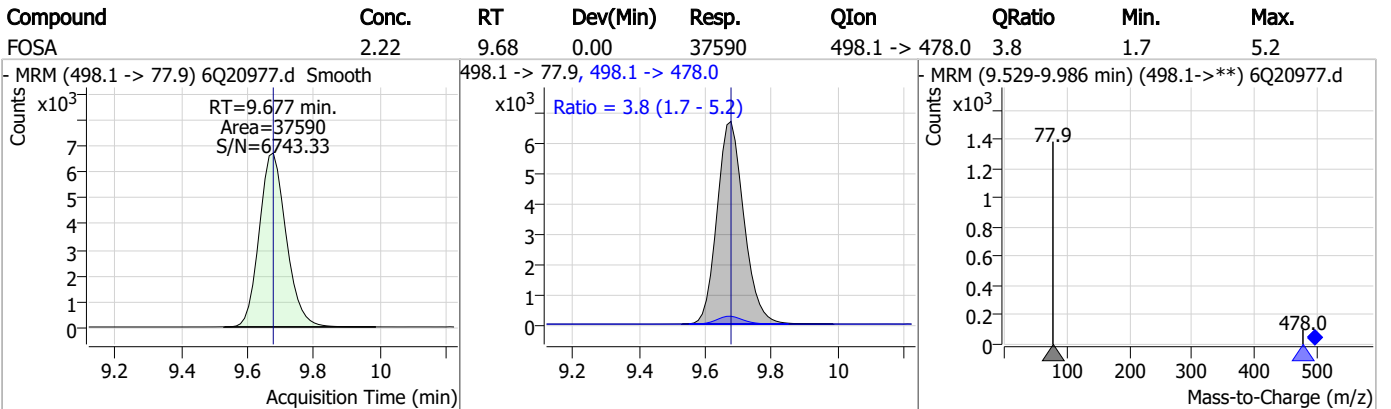
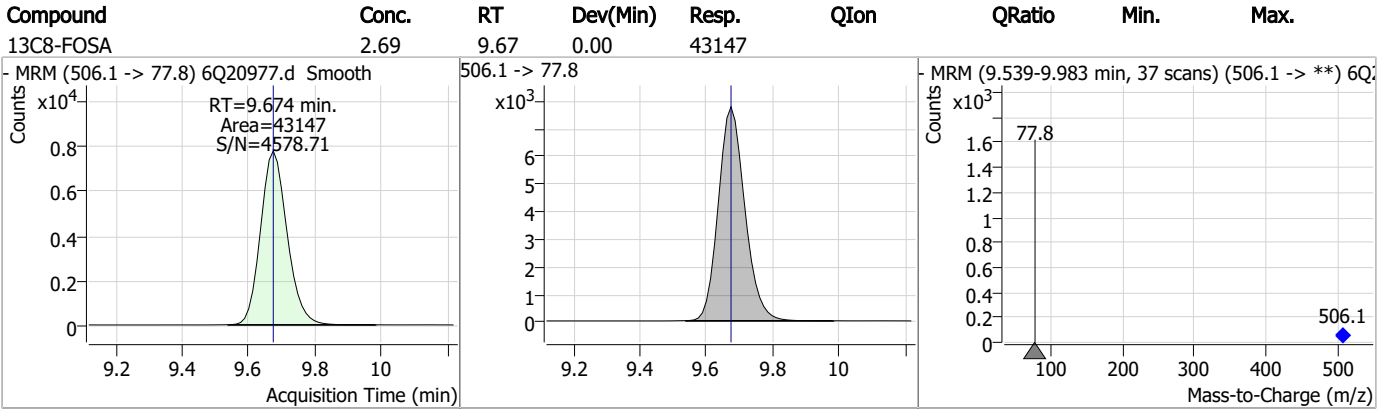
7.7.16 7

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

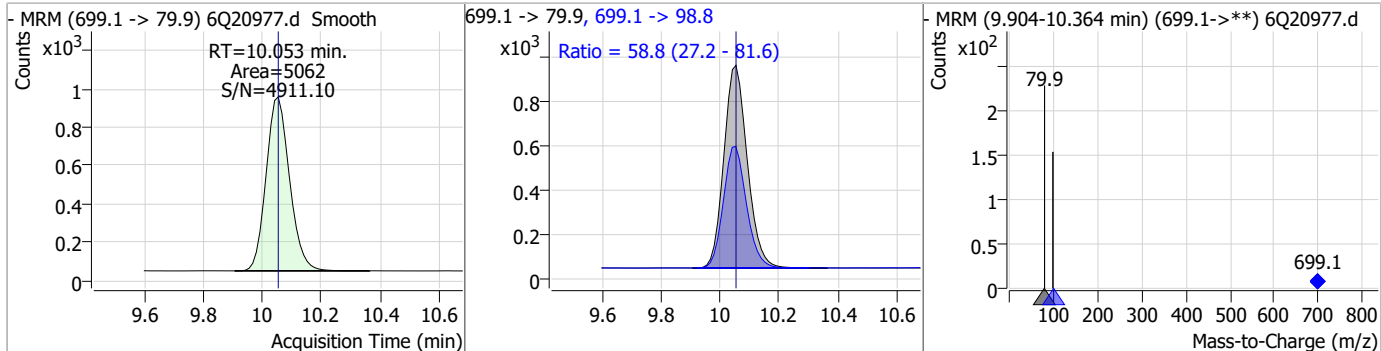


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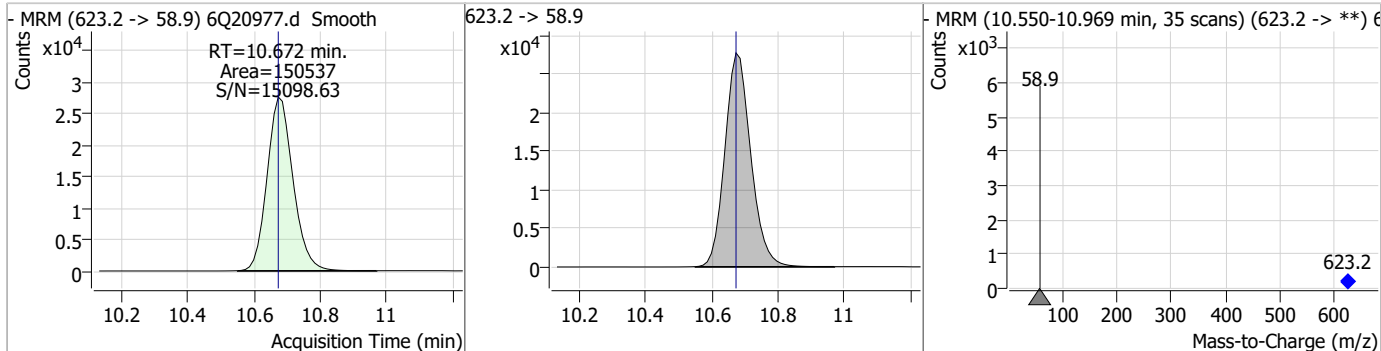


Perfluorinated Compounds by LC/MS/MS

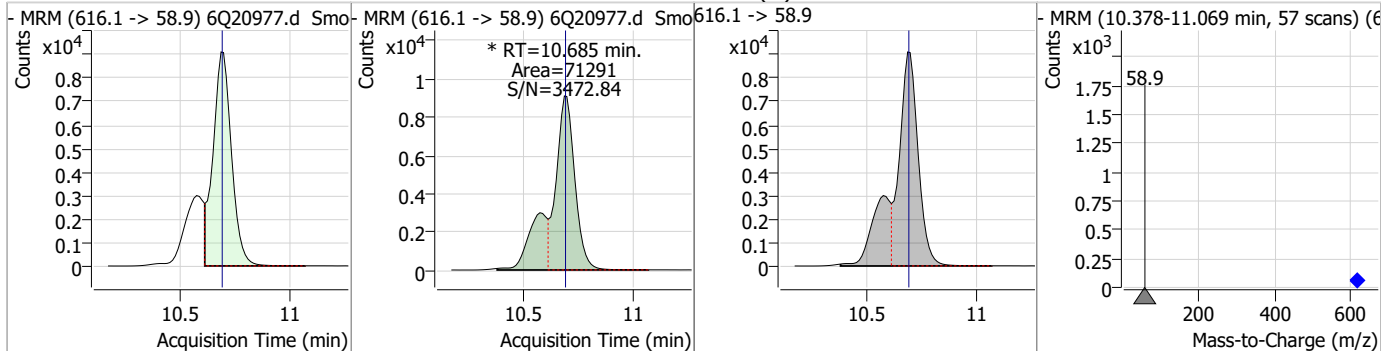
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.24	10.05	0.00	5062	699.1 -> 98.8	58.8	27.2	81.6



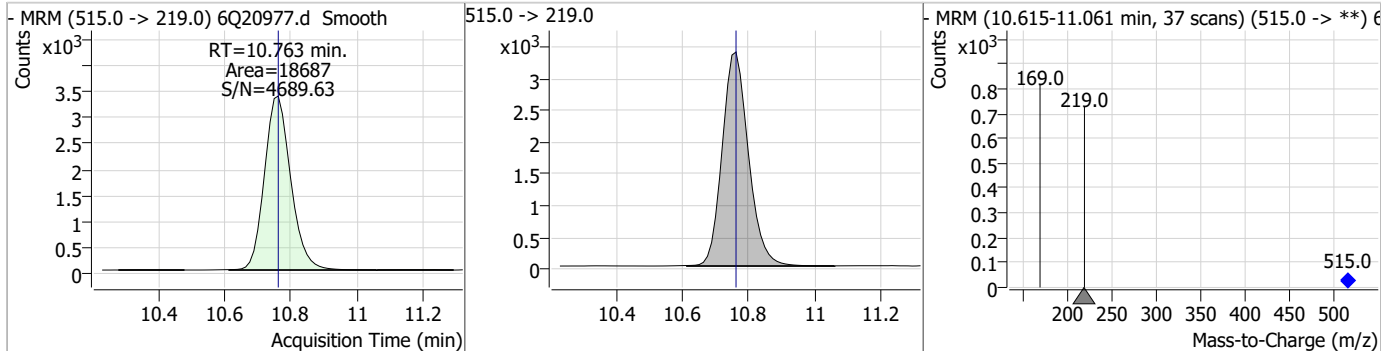
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.54	10.67	0.00	150537				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.31	10.69	0.00	71291 (m)				



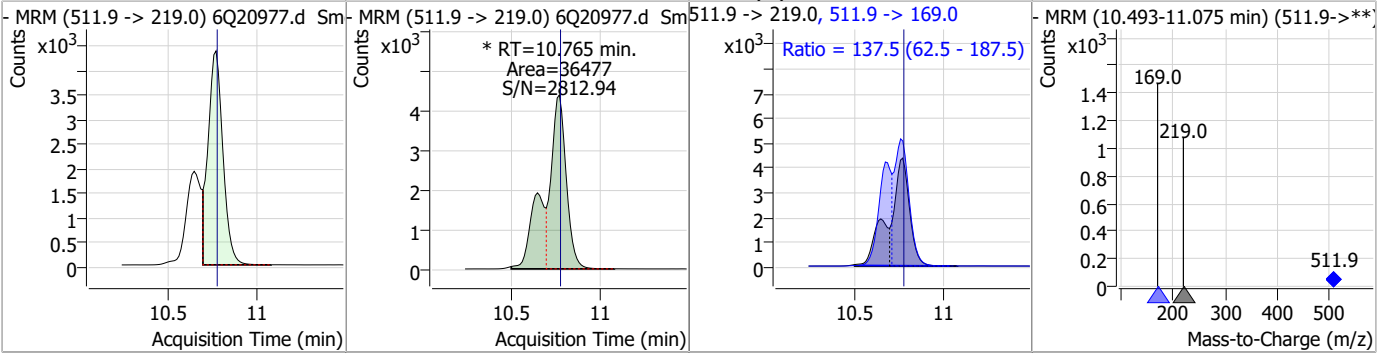
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.51	10.76	0.00	18687				



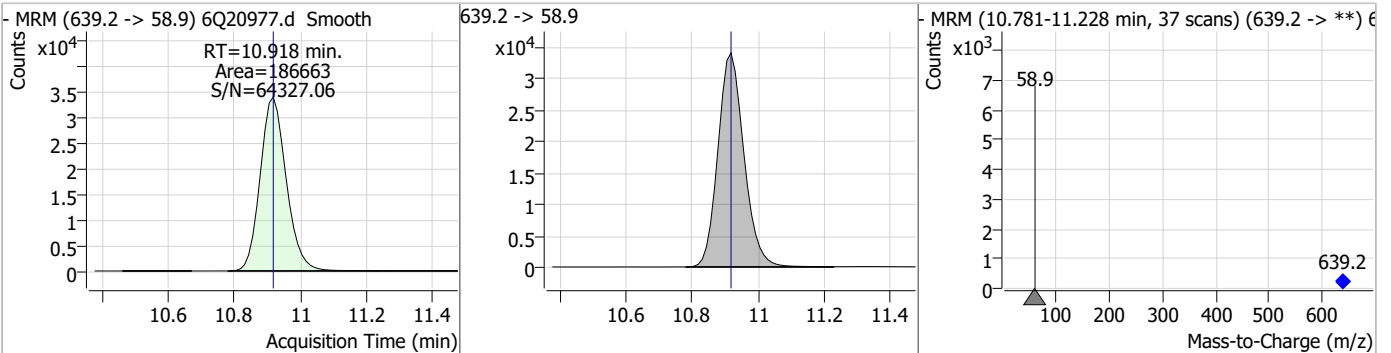
7.7.16
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Perfluorinated Compounds by LC/MS/MS

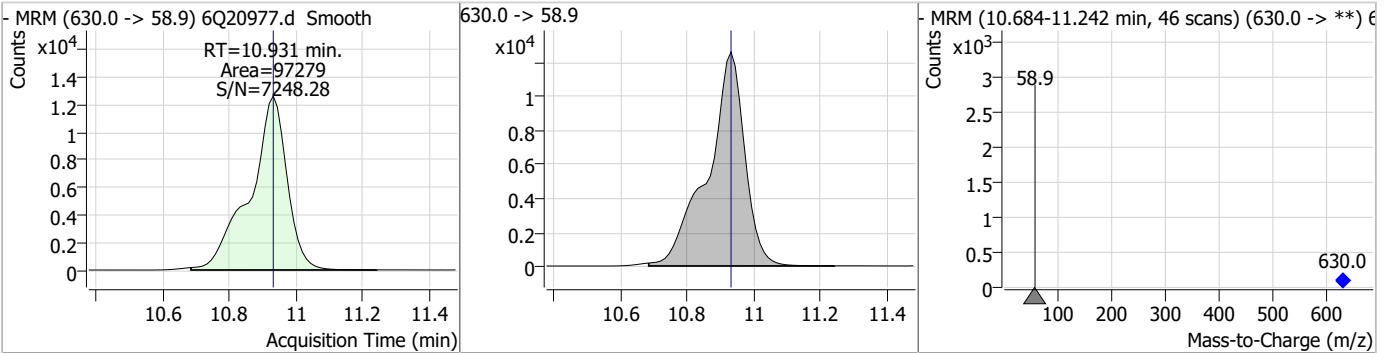
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.56	10.76	0.00	36477 (m)	511.9 -> 169.0	137.5	62.5	187.5



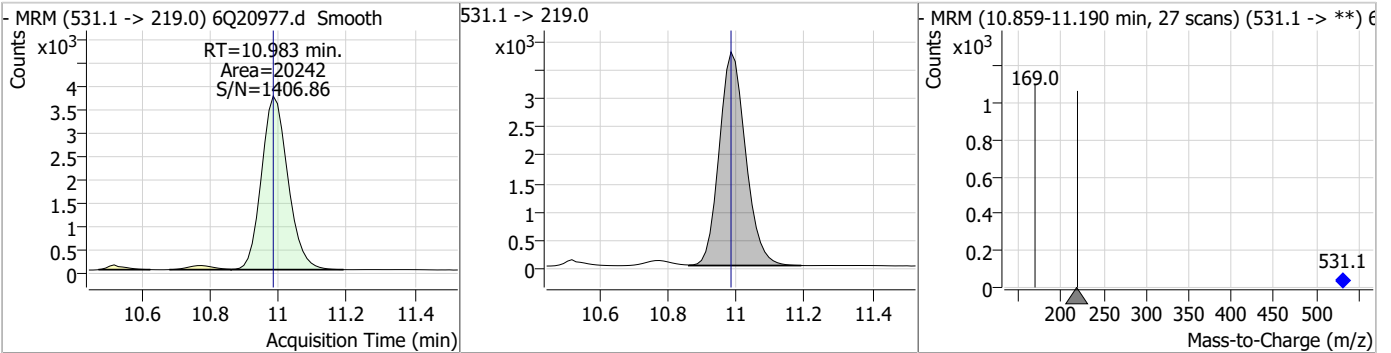
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.20	10.92	0.00	186663				



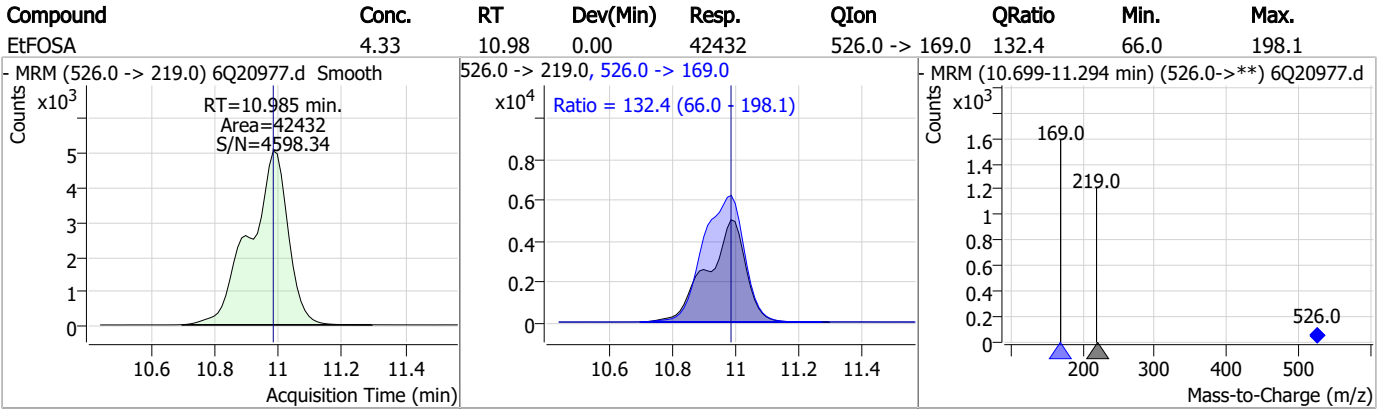
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	10.37	10.93	0.00	97279				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.65	10.98	0.00	20242				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307
Lab FileID: 6Q20977.D
Injection Time: 07/14/23 06:41

Method: EPA DRAFT 1633
Analyst approved: 07/16/23 11:49 Martha Valls
Supervisor approved: 07/17/23 11:27 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.69	Split peak
MeFOSA	31506-32-8		10.77	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20985.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 8:33:17 AM
 Sample Name : cc307-4
 Vial : P1-A5
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.022	216.8 -> 171.9	229405	10.00 µg/L	0.000
M5-PFPeA	4.459	268.3 -> 223.0	74226	5.00 µg/L	0.000
M5-PFHxA	5.692	318.0 -> 273.0	81058	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	78624	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	126980	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	58697	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	31182	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	41549	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	43414	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	21701	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	43067	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	27390	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	18606	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	17045	2.50 µg/L	0.000
M2-4:2FTS	5.343	329.1 -> 80.9	3419	5.00 µg/L	-0.012
M2-6:2FTS	7.026	429.1 -> 80.9	5220	5.00 µg/L	-0.012
M2-8:2FTS	8.077	529.1 -> 80.9	4570	5.00 µg/L	-0.012
M3-MeFOSAA	8.346	573.2 -> 419.0	40090	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	48214	10.00 µg/L	0.000
M5-EtFOSAA	8.541	589.2 -> 419.0	30903	5.00 µg/L	-0.012
M7-MeFOSE	10.672	623.2 -> 58.9	147091	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	181974	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	18915	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	18753	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	23935	2.50 µg/L	0.000
13C3-PFBA	3.014	216.0 -> 172.0	96808	5.00 µg/L	-0.012
18O2-PFHxS	7.391	403.0 -> 83.9	13360	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	126862	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	43125	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	72716	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	80922	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.343	329.1 -> 80.9	3419	5.71 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 114.2%		
13C2-6:2FTS	7.026	429.1 -> 80.9	5220	5.87 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 117.4%		
13C2-8:2FTS	8.077	529.1 -> 80.9	4570	5.32 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 106.5%		
13C2-PFDoDA	9.211	615.1 -> 570.0	43414	1.36 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 108.8%		
13C2-PFTeDA	9.925	715.2 -> 670.0	21701	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 105.0%		
13C3-PFBS	5.635	302.1 -> 79.9	27390	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 96.9%		
13C3-PFHxS	7.392	402.1 -> 79.9	18606	2.61 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C4-PFBA	3.022	216.8 -> 171.9	229405	10.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.621	367.1 -> 322.0	78624	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.692	318.0 -> 273.0	81058	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	4.459	268.3 -> 223.0	74226	4.92 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C6-PFDA	8.301	519.1 -> 474.1	31182	1.29 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C7-PFUnDA	8.780	570.0 -> 525.1	41549	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C8-FOSA	9.674	506.1 -> 77.8	43067	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C8-PFOA	7.264	421.1 -> 376.0	126980	2.63 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C8-PFOS	8.476	507.1 -> 79.9	17045	2.51 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	7.807	472.1 -> 427.0	58697	1.19 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.5%	
d3-MeFOSAA	8.346	573.2 -> 419.0	40090	5.40 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	48214	9.39 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	18753	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSAA	8.541	589.2 -> 419.0	30903	5.23 µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
d7-MeFOSE	10.672	623.2 -> 58.9	147091	23.96 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
d9-EtFOSE	10.918	639.2 -> 58.9	181974	25.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d5-EtFOSA	10.983	531.1 -> 219.0	18915	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	
Target Compounds					QValue
4:2FTS	5.343	327.1 -> 307.0	51614	8.30 µg/L	98
		327.1 -> 80.9	18844		
6:2FTS	7.027	427.1 -> 407.0	56211	9.17 µg/L	100
		427.1 -> 80.9	16734		
8:2FTS	8.077	527.1 -> 507.0	28968	9.91 µg/L	91
		527.1 -> 80.8	11084		
EtFOSAA	8.555	584.2 -> 419.1	11116	2.29 µg/L	m 98
		584.2 -> 526.0	5708		
FOSA	9.677	498.1 -> 77.9	38368	2.27 µg/L	99
		498.1 -> 478.0	1184		
MeFOSAA	8.347	570.1 -> 419.0	20315	2.31 µg/L	m 98
		570.1 -> 483.0	3612		
PFBA	3.018	212.8 -> 168.9	81713	9.24 µg/L	100
PFBS	5.636	298.7 -> 79.9	22181	2.04 µg/L	99
		298.7 -> 98.8	8912		
PFDA	8.301	512.9 -> 469.0	101243	2.33 µg/L	100
		512.9 -> 219.0	15516		
PFDODA	9.211	613.1 -> 569.0	78191	2.30 µg/L	98
		613.1 -> 319.0	11583		
PFDS	9.374	599.0 -> 79.9	11809	2.32 µg/L	89

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	5254			
PFHpA	6.621	363.1 -> 319.0	89327	2.35	µg/L	99
		363.1 -> 169.0	14635			
PFHpS	7.960	449.0 -> 79.9	20309	2.07	µg/L	98
		449.0 -> 98.9	10529			
PFHxA	5.694	313.0 -> 269.0	70837	2.38	µg/L	100
		313.0 -> 118.9	3451			
PFHxS	7.393	398.7 -> 79.9	20701	2.09	µg/L	m 95
		398.7 -> 98.9	9885			
PFNA	7.808	463.0 -> 419.0	106342	2.28	µg/L	99
		463.0 -> 219.0	20435			
PFNS	8.955	548.8 -> 79.9	18005	2.11	µg/L	98
		548.8 -> 98.9	9472			
PFOA	7.265	413.0 -> 369.0	138979	2.31	µg/L	100
		413.0 -> 169.0	23233			
PFOS	8.478	498.9 -> 79.9	20012	2.16	µg/L	m 72
		498.9 -> 98.8	9860			
PFPeA	4.461	263.0 -> 219.0	92907	4.70	µg/L	100
PFPeS	6.697	349.1 -> 79.9	20194	2.09	µg/L	98
		349.1 -> 98.9	9562			
PFTeDA	9.926	713.1 -> 669.0	61813	2.49	µg/L	98
		713.1 -> 168.9	5310			
PFTrDA	9.595	663.0 -> 619.0	78766	2.41	µg/L	98
		663.0 -> 168.9	8383			
PFUnDA	8.780	563.1 -> 519.0	76141	2.49	µg/L	97
		563.1 -> 269.1	10684			
11CI-PF3OUdS	9.634	630.9 -> 450.9	98441	4.36	µg/L	98
		632.9 -> 452.9	31565			
9CI-PF3ONS	8.819	530.8 -> 351.0	165971	4.54	µg/L	96
		532.8 -> 353.0	44911			
ADONA	6.870	376.9 -> 250.9	345939	4.33	µg/L	98
		376.9 -> 84.8	87532			
HFPO-DA	6.071	284.9 -> 168.9	22842	4.63	µg/L	100
		284.9 -> 184.9	2443			
3:3FTCA	3.883	241.0 -> 177.0	16106	11.23	µg/L	99
		241.0 -> 117.0	2095			
5:3FTCA	6.310	341.0 -> 237.1	351264	56.58	µg/L	97
		341.0 -> 217.0	255441			
7:3FTCA	7.711	441.0 -> 316.9	265850	61.13	µg/L	93
		441.0 -> 336.9	572200			
EtFOSA	10.985	526.0 -> 219.0	41536	4.54	µg/L	99
		526.0 -> 169.0	55527			
EtFOSE	10.931	630.0 -> 58.9	97025	10.61	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	35750	4.46	µg/L	m 82
		511.9 -> 169.0	51881			
MeFOSE	10.697	616.1 -> 58.9	72500	11.77	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	5092	2.20	µg/L	96
		699.1 -> 98.8	2911			
NFDHA	5.576	295.0 -> 201.0	16423	4.53	µg/L	100
		295.0 -> 84.9	4329			
PFMBA	4.882	279.0 -> 85.1	60934	4.69	µg/L	100
PFMPA	3.588	229.0 -> 84.9	50867	4.65	µg/L	100
PFEESA	6.188	314.8 -> 134.9	167569	4.03	µg/L	100
		314.8 -> 82.9	5241			

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

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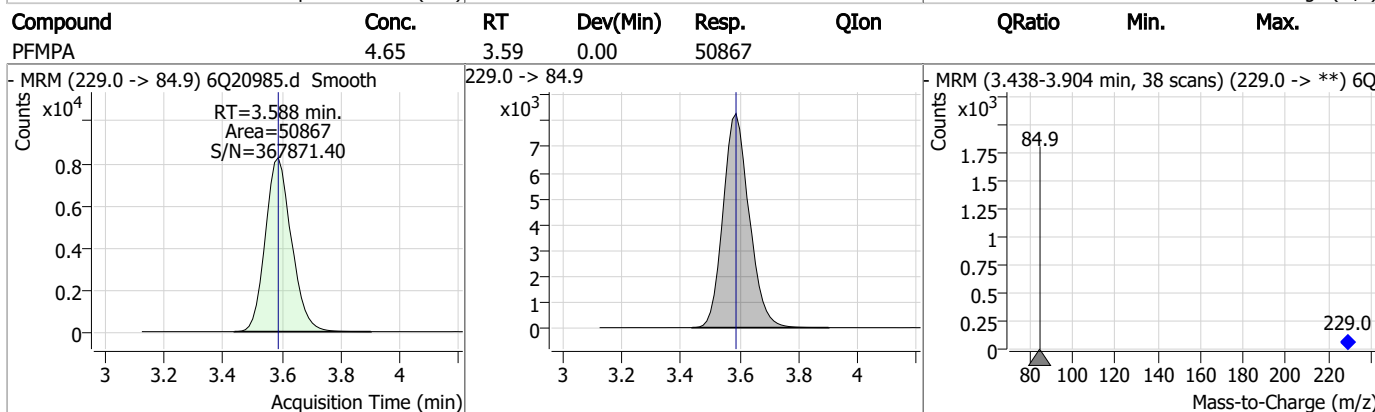
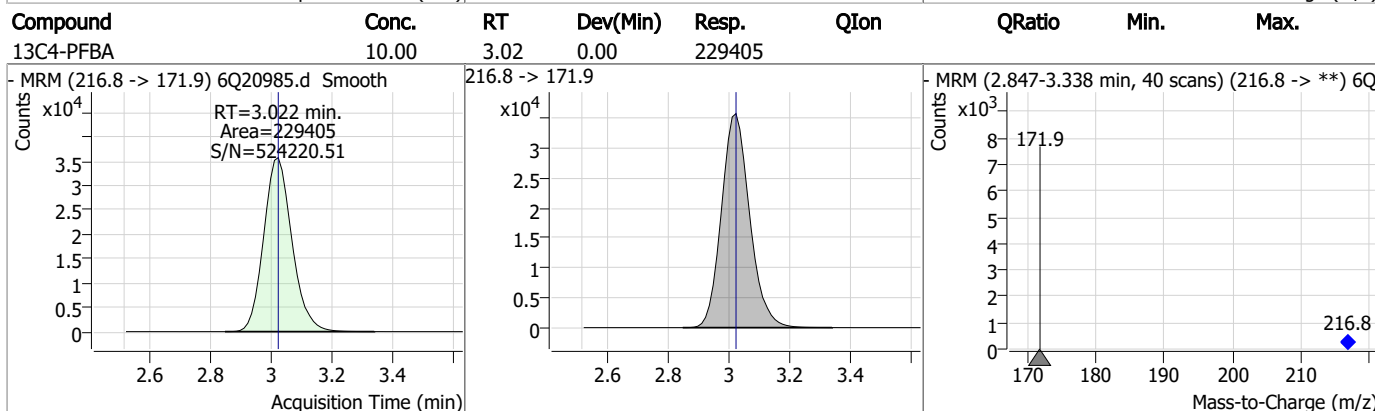
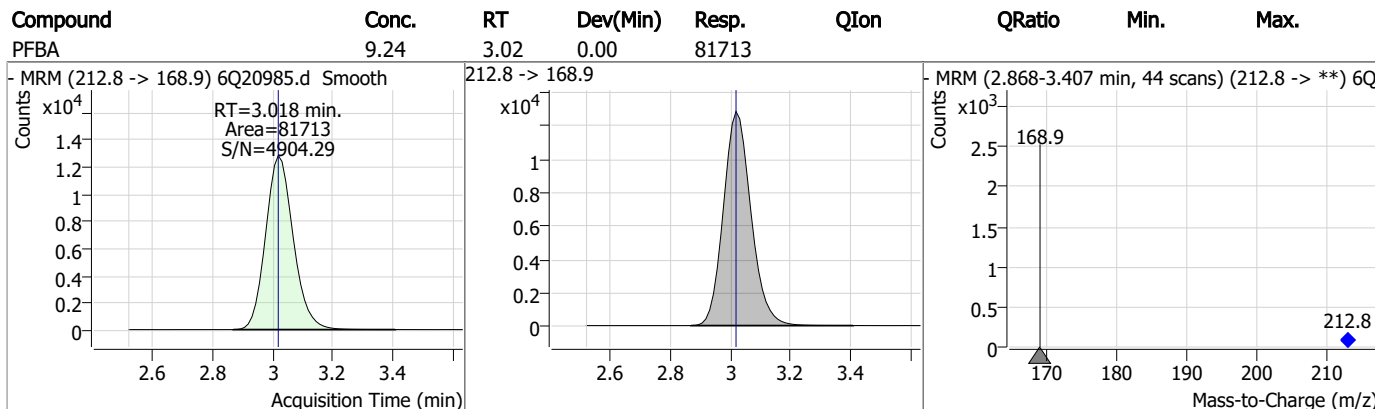
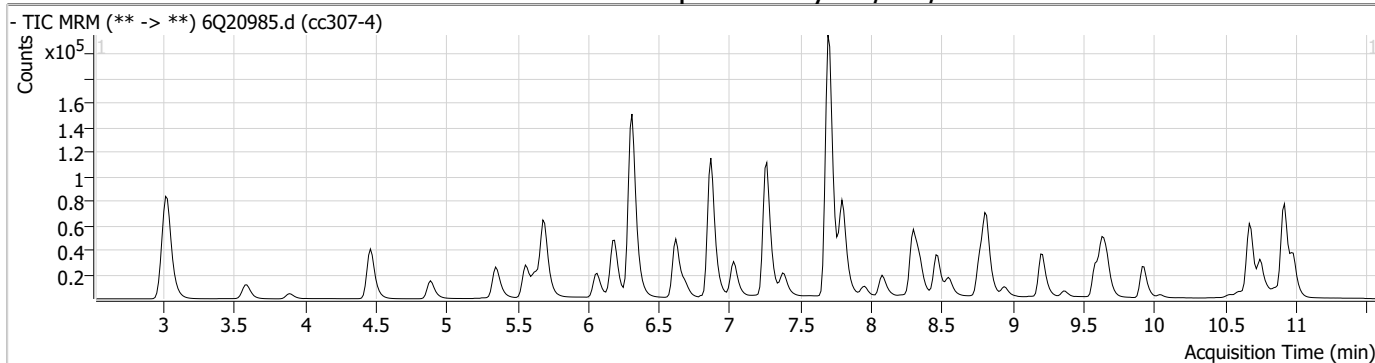
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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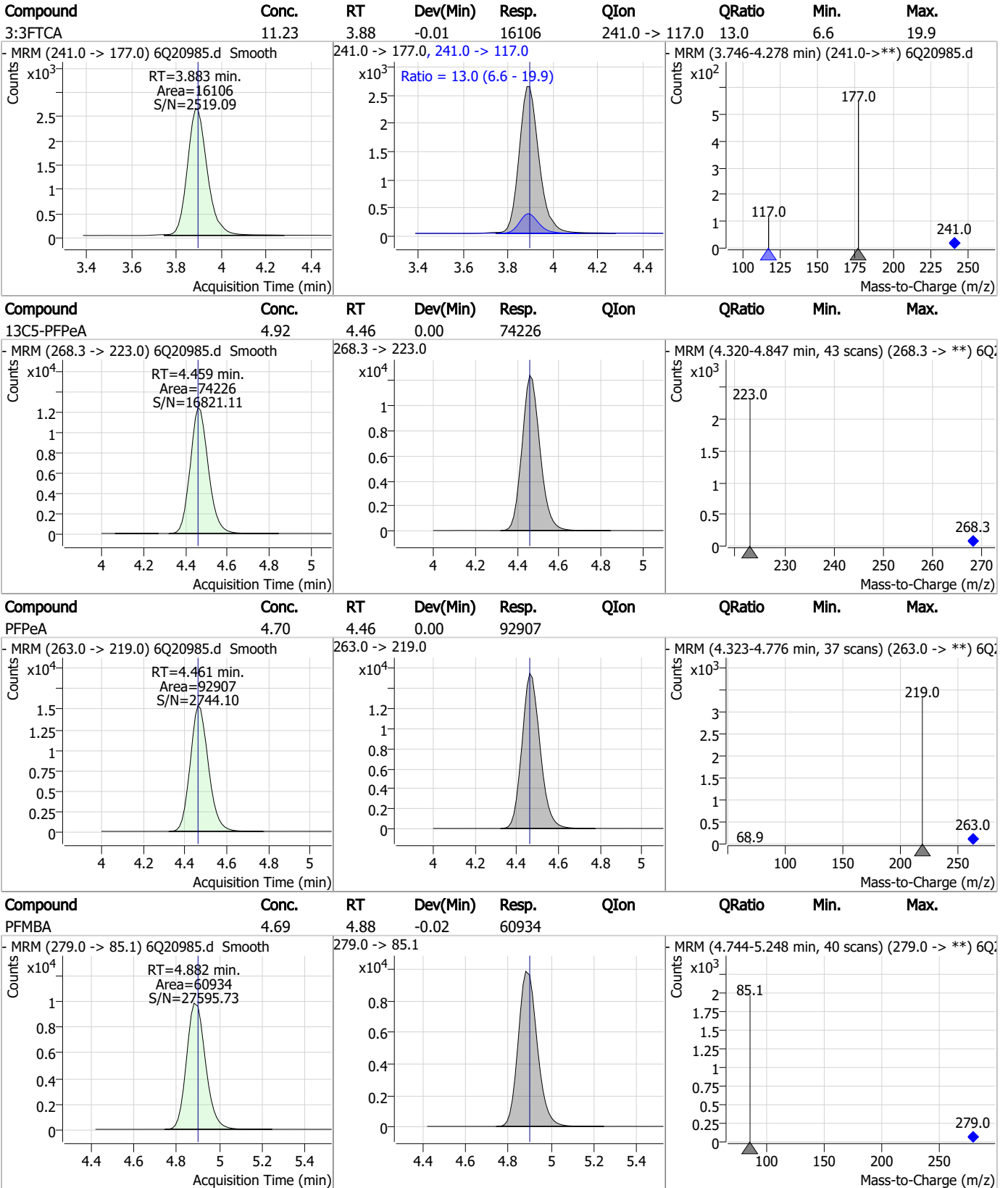


Perfluorinated Compounds by LC/MS/MS



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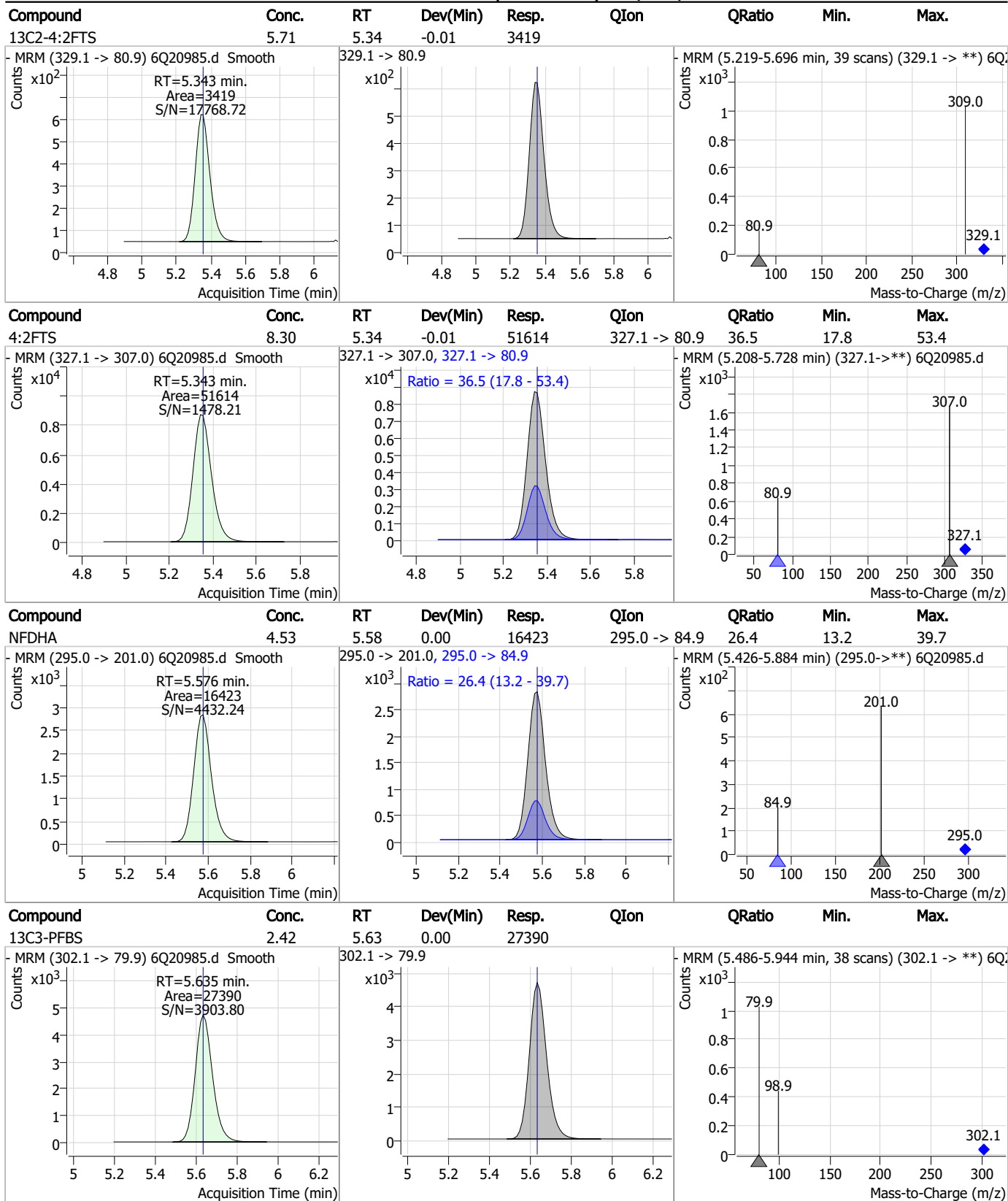
Perfluorinated Compounds by LC/MS/MS



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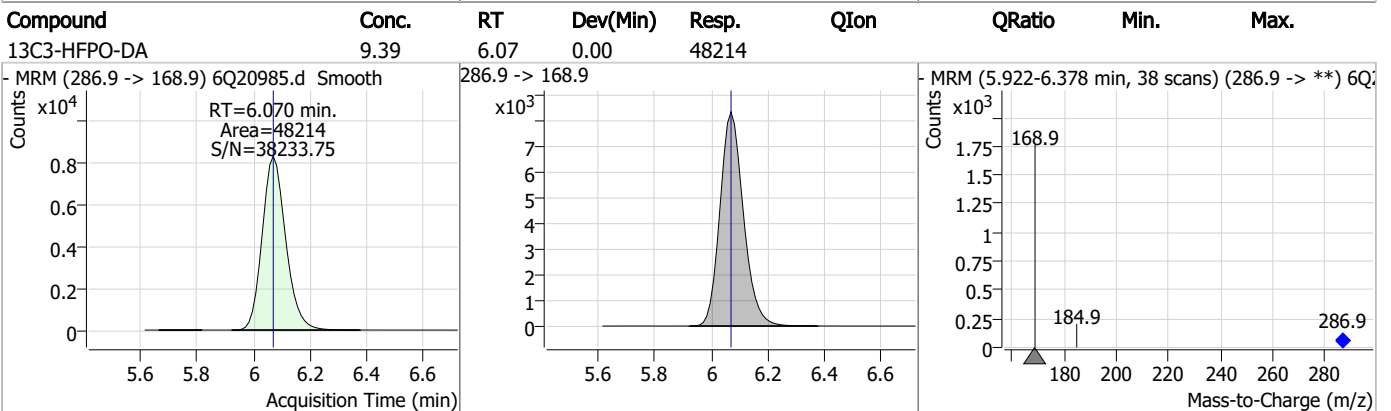
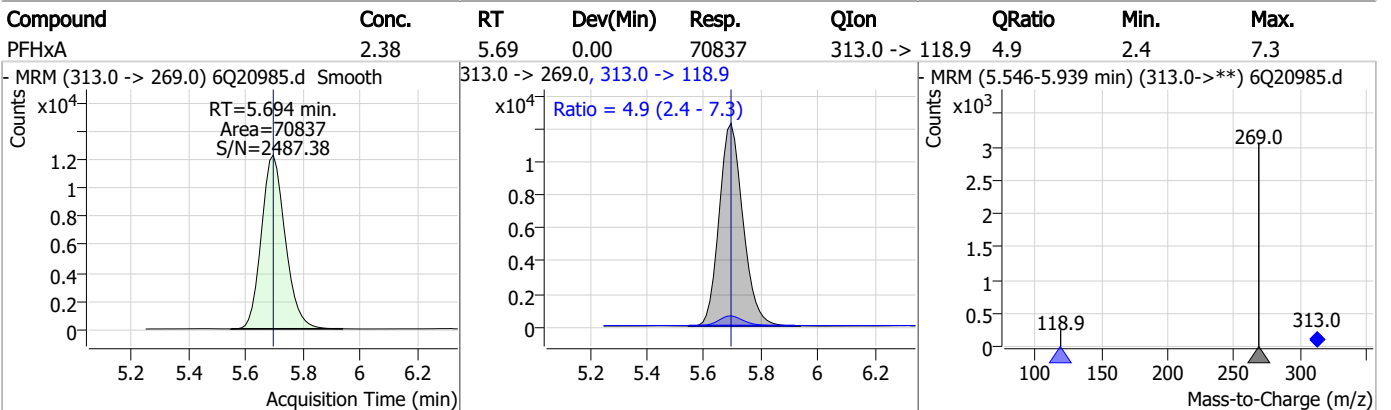
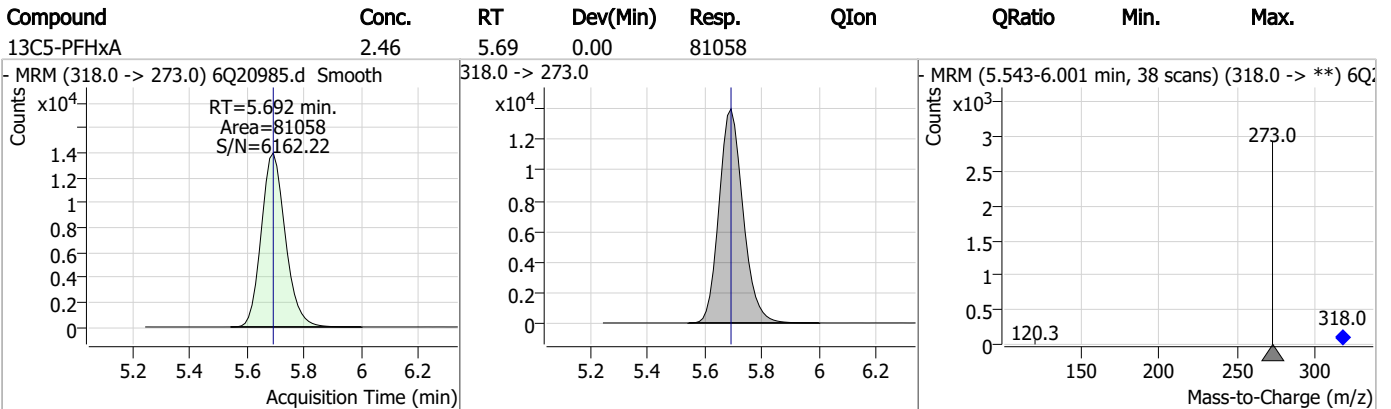
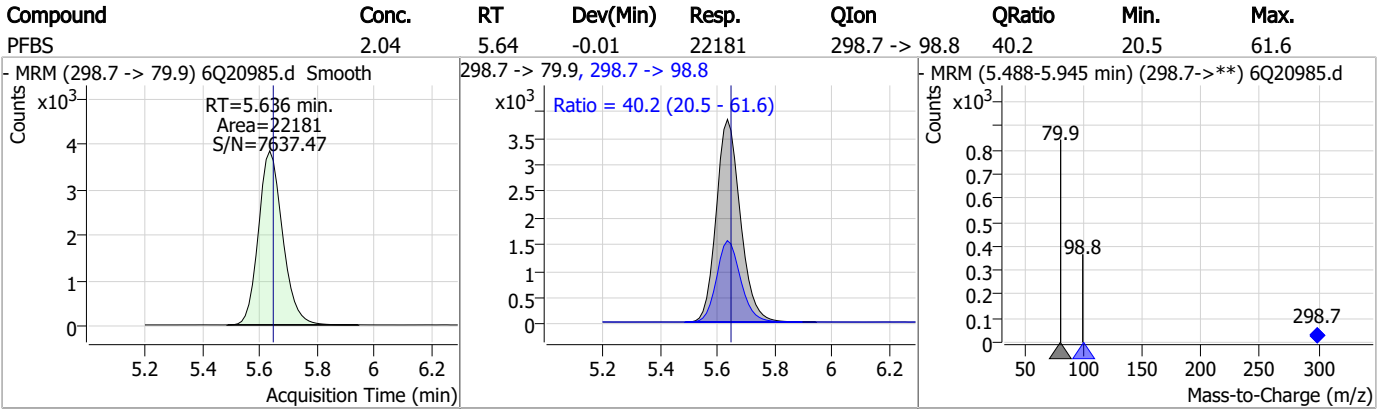
Perfluorinated Compounds by LC/MS/MS



7.7.17



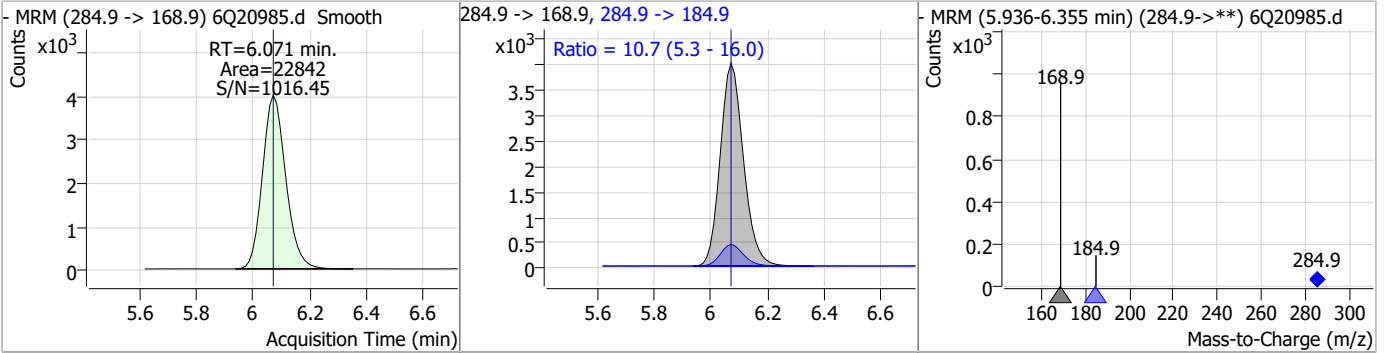
Perfluorinated Compounds by LC/MS/MS



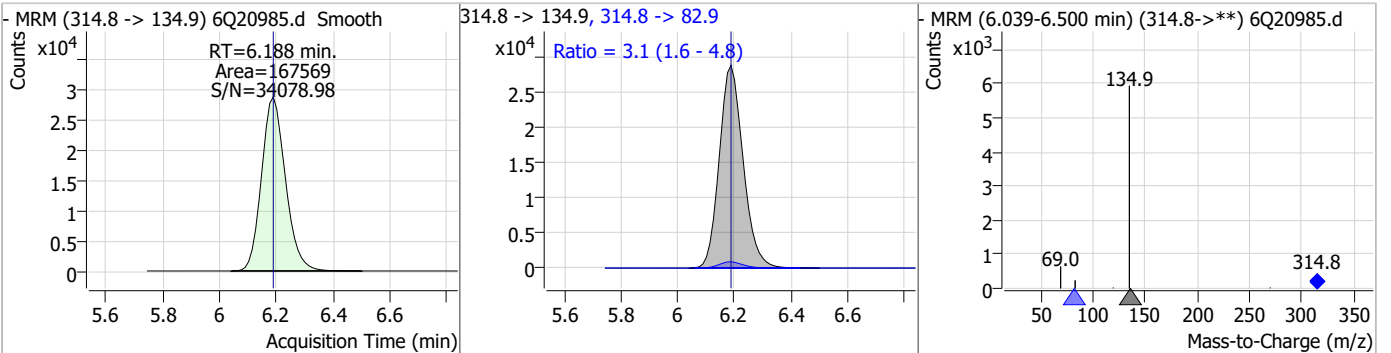
7.7.17

Perfluorinated Compounds by LC/MS/MS

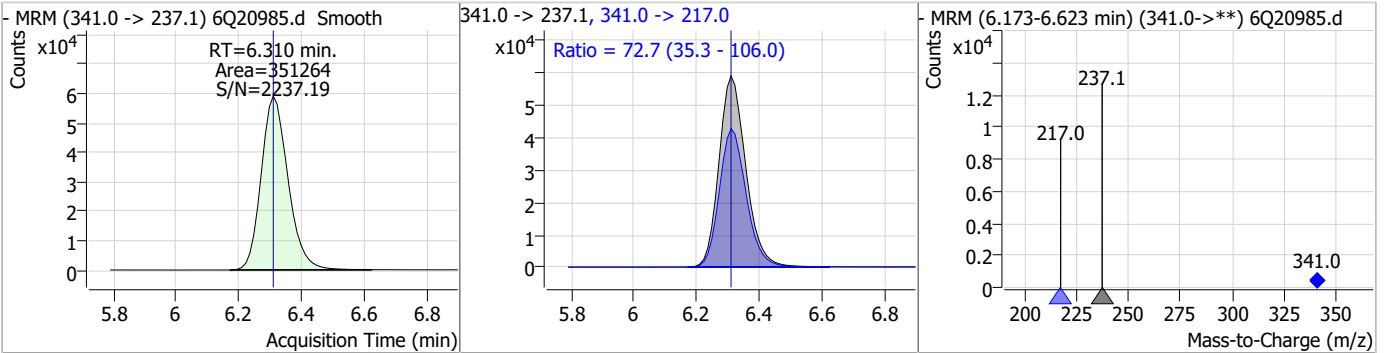
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.63	6.07	0.00	22842	284.9 -> 184.9	10.7	5.3	16.0



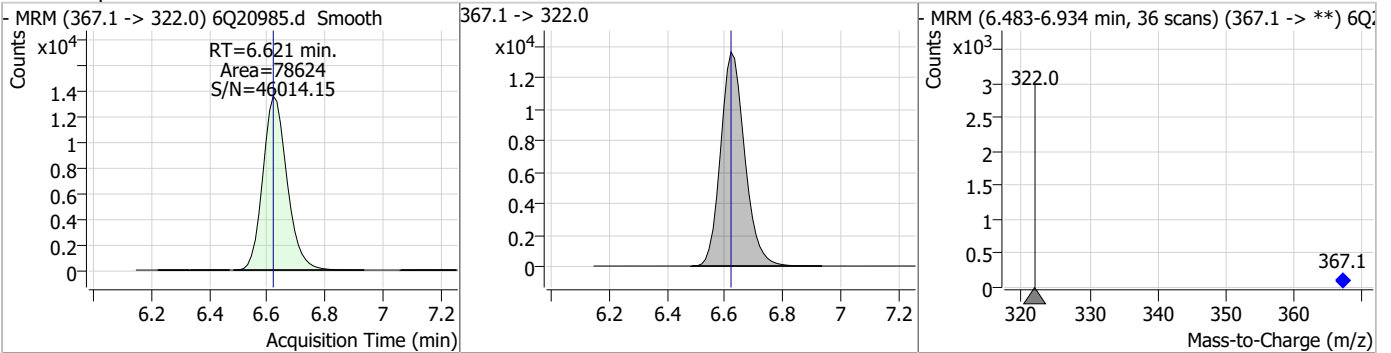
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.03	6.19	0.00	167569	314.8 -> 82.9	3.1	1.6	4.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	56.58	6.31	0.00	351264	341.0 -> 217.0	72.7	35.3	106.0

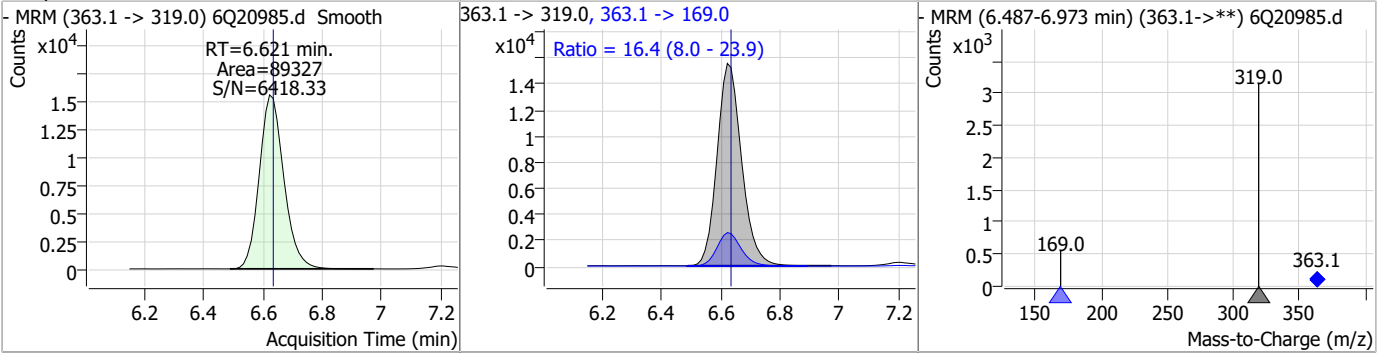


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.48	6.62	0.00	78624	367.1 -> 322.0	-	-	-

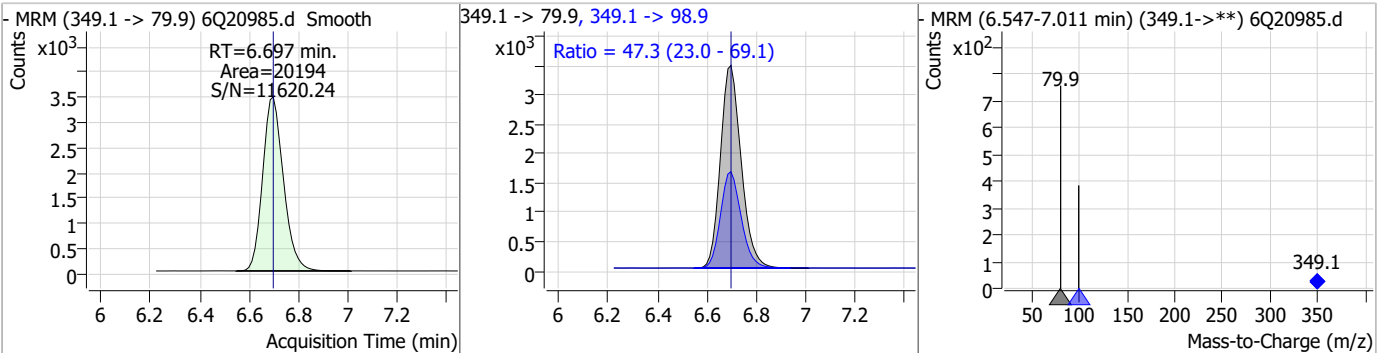


Perfluorinated Compounds by LC/MS/MS

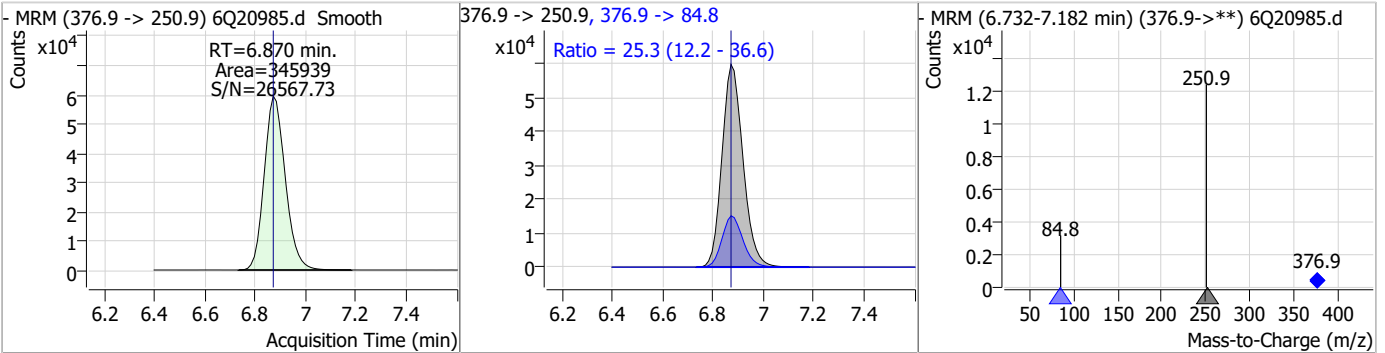
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.35	6.62	-0.01	89327	363.1 -> 169.0	16.4	8.0	23.9



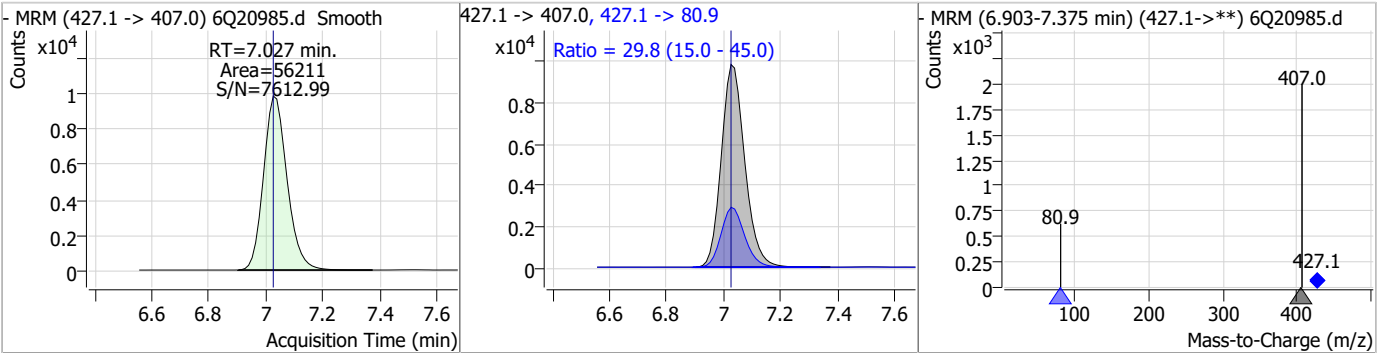
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.09	6.70	0.00	20194	349.1 -> 98.9	47.3	23.0	69.1



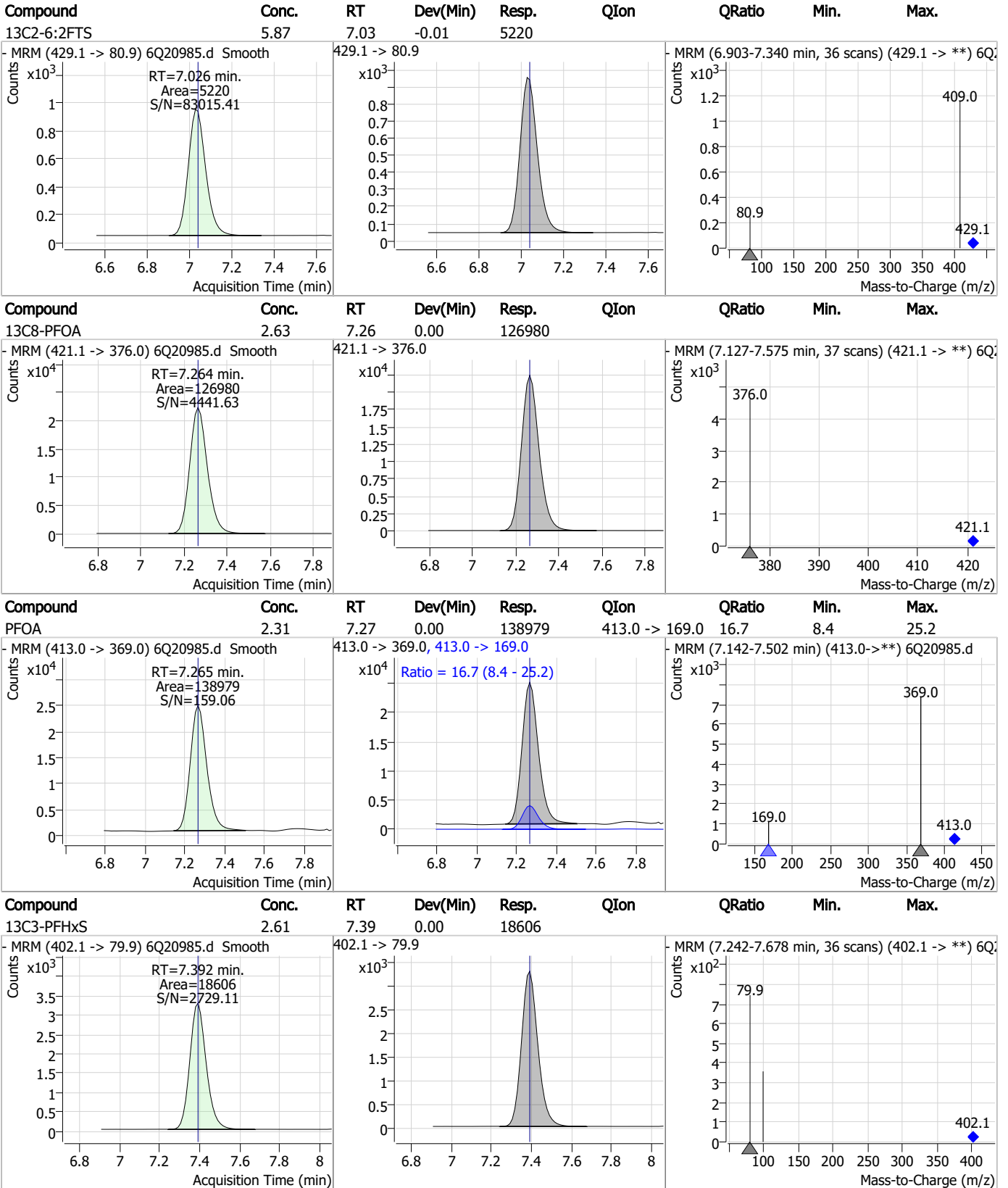
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.33	6.87	0.00	345939	376.9 -> 84.8	25.3	12.2	36.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.17	7.03	0.00	56211	427.1 -> 80.9	29.8	15.0	45.0



Perfluorinated Compounds by LC/MS/MS

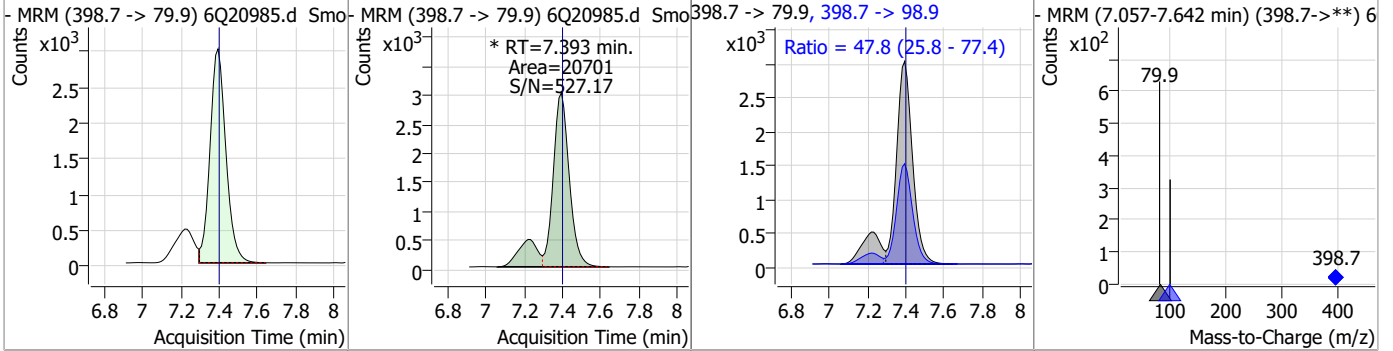


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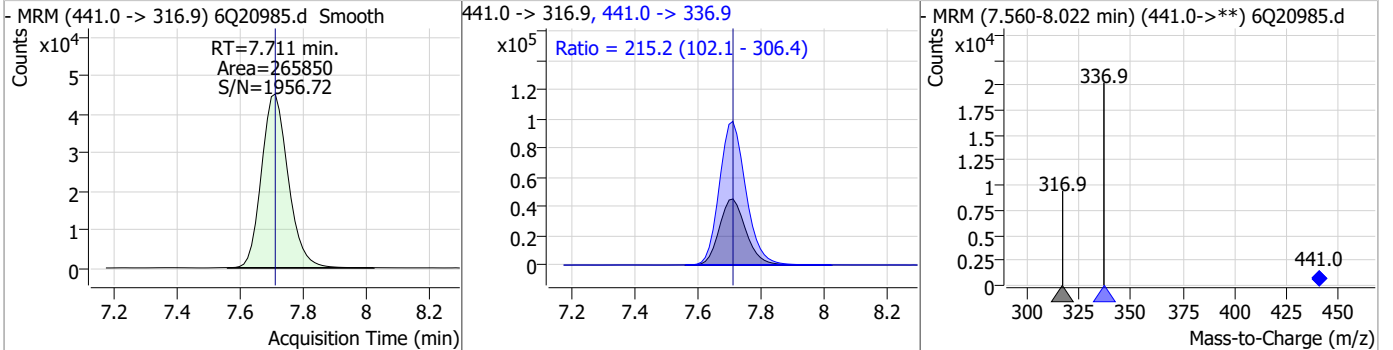


Perfluorinated Compounds by LC/MS/MS

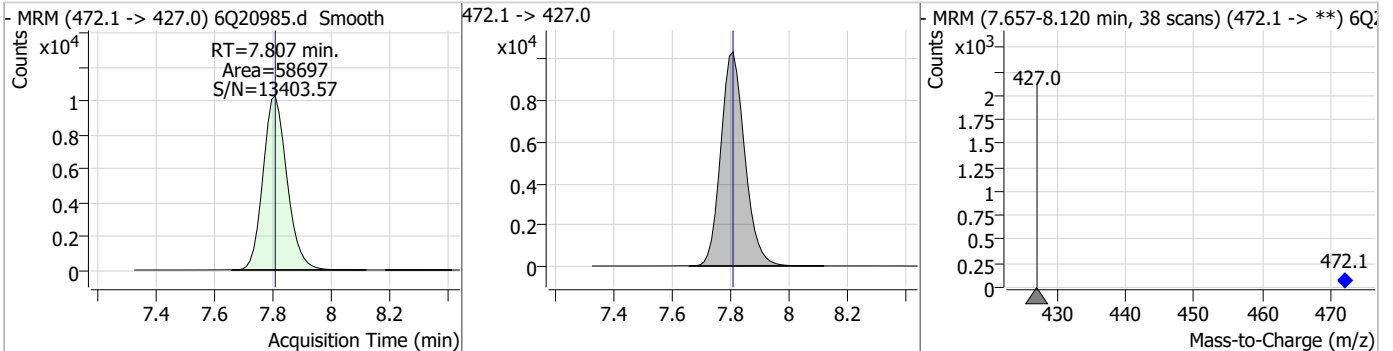
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.09	7.39	0.00	20701 (m)	398.7 -> 98.9	47.8	25.8	77.4



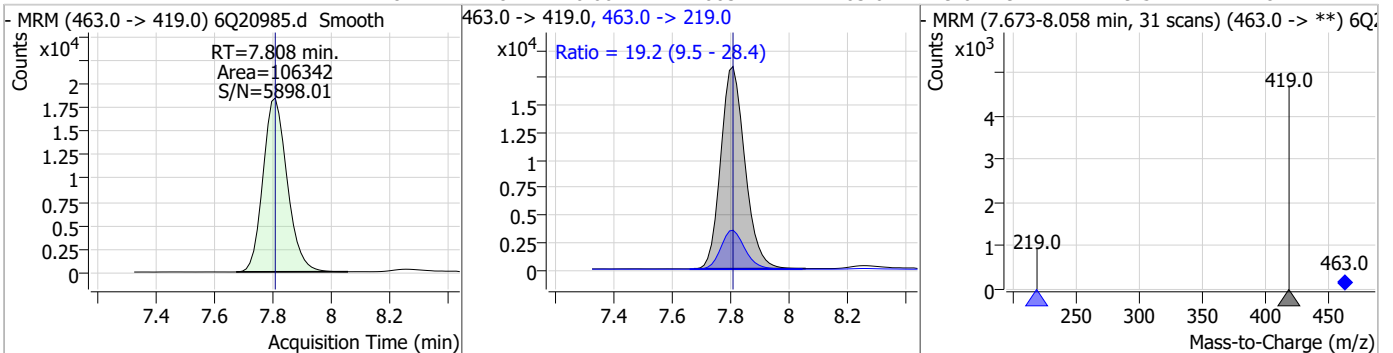
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.13	7.71	0.00	265850	441.0 -> 336.9	215.2	102.1	306.4



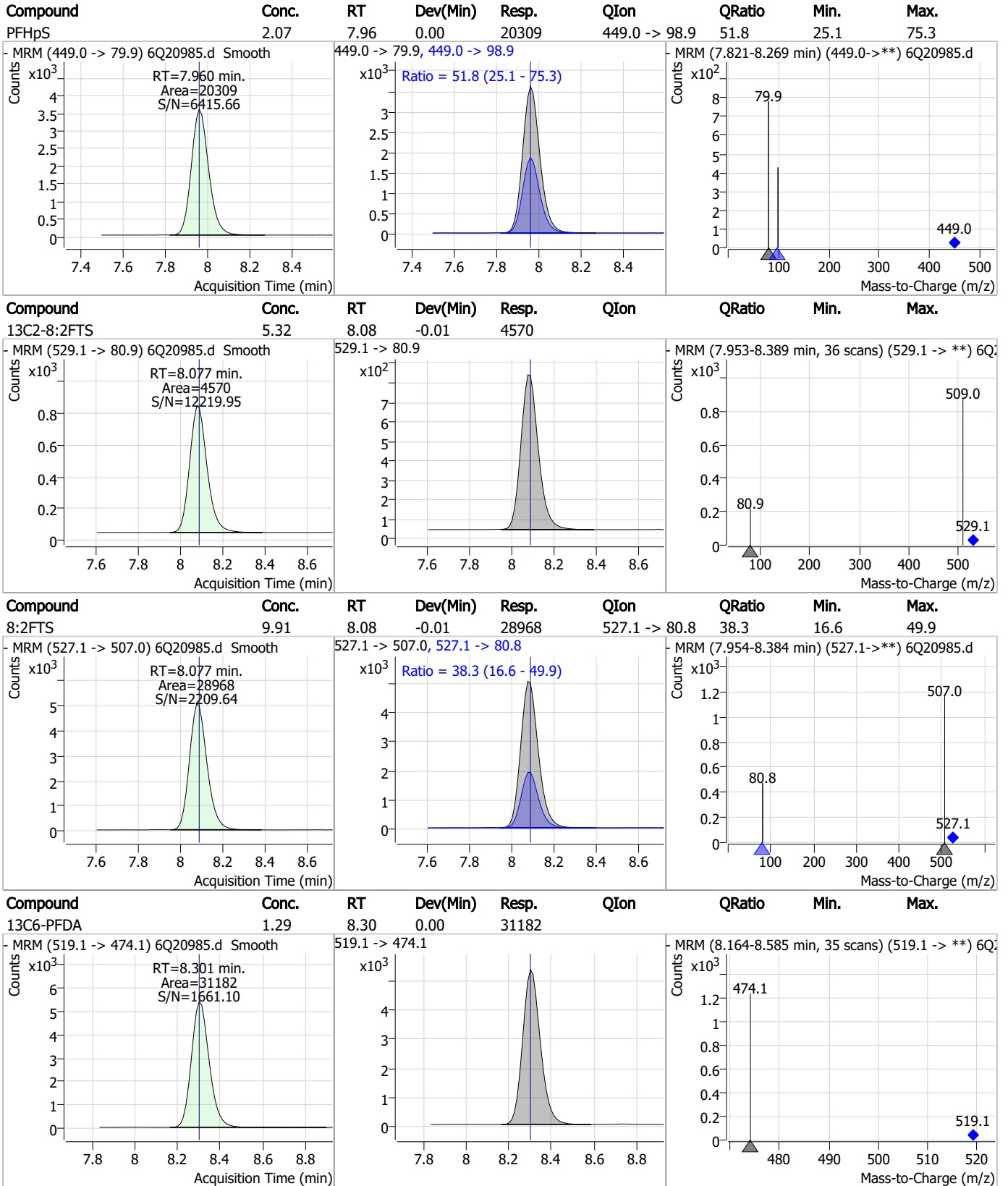
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.19	7.81	0.00	58697	472.1 -> 427.0			



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.28	7.81	0.00	106342	463.0 -> 219.0	19.2	9.5	28.4



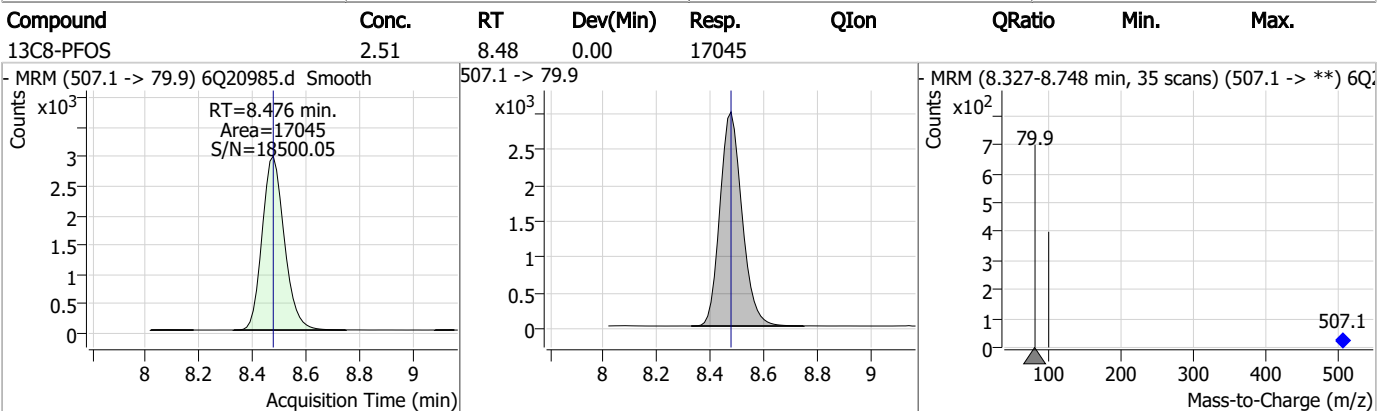
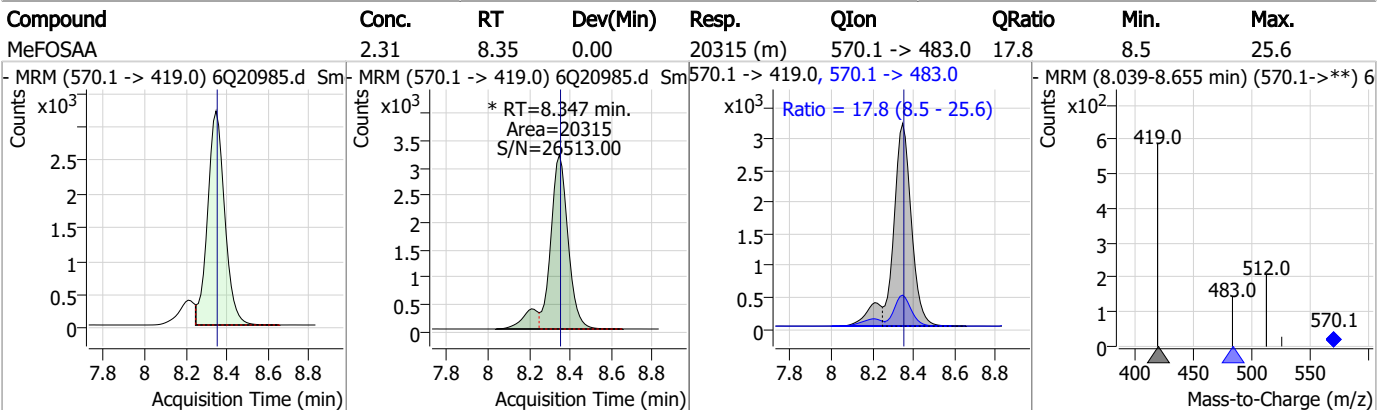
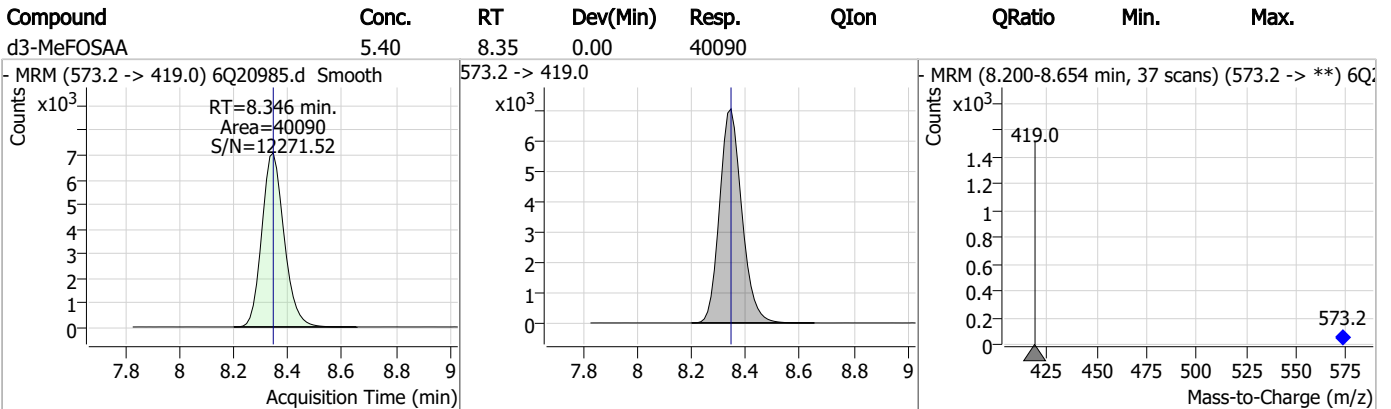
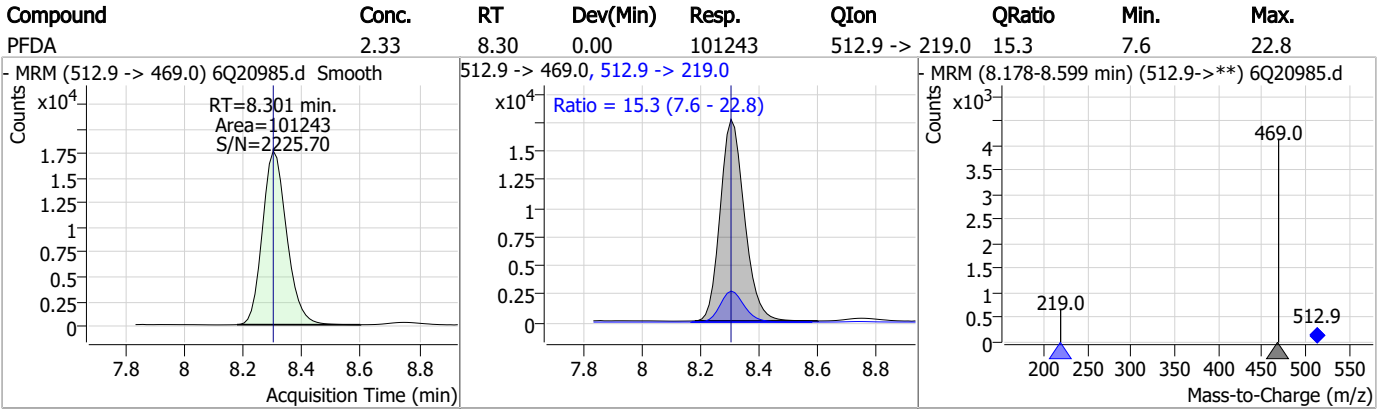
Perfluorinated Compounds by LC/MS/MS



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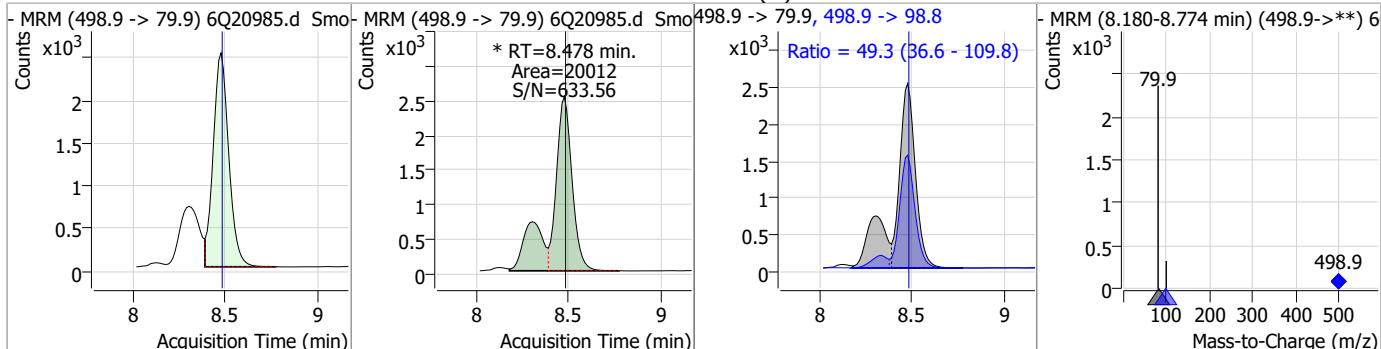


Perfluorinated Compounds by LC/MS/MS

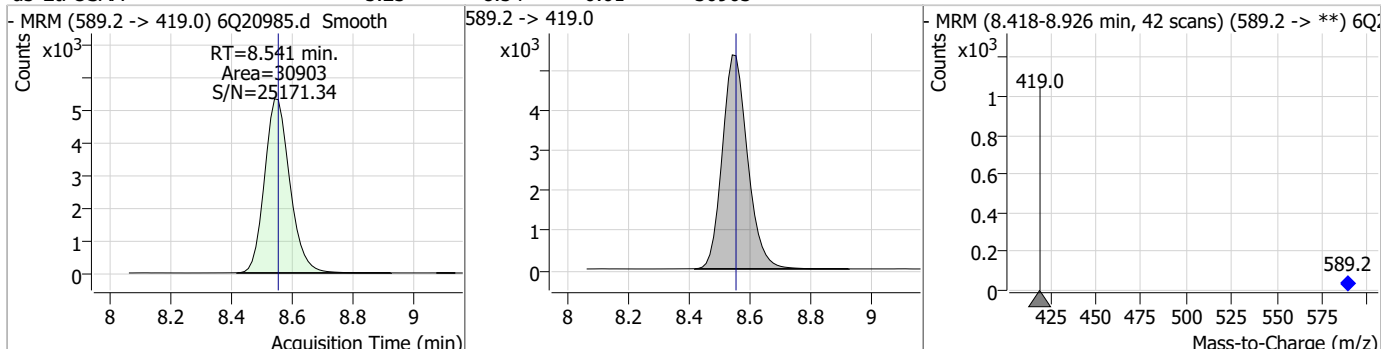


Perfluorinated Compounds by LC/MS/MS

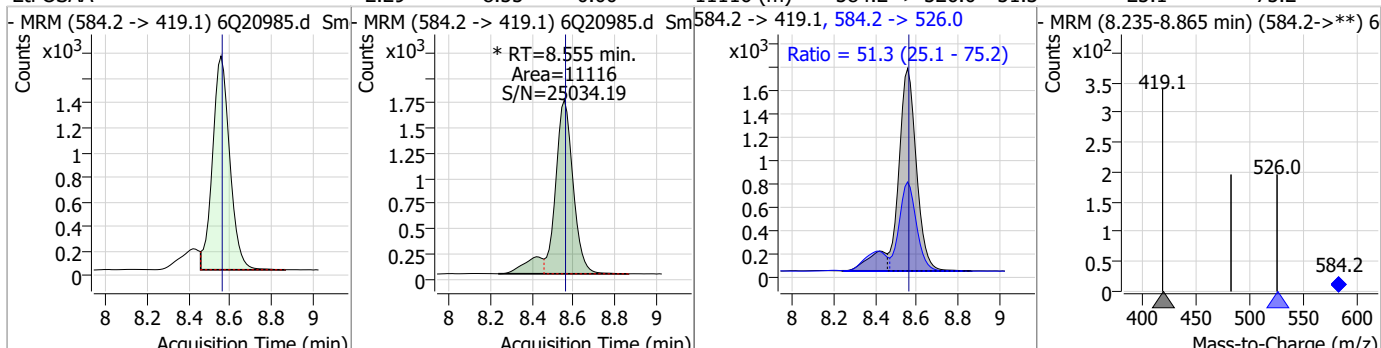
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.16	8.48	0.00	20012 (m)	498.9 -> 98.8	49.3	36.6	109.8



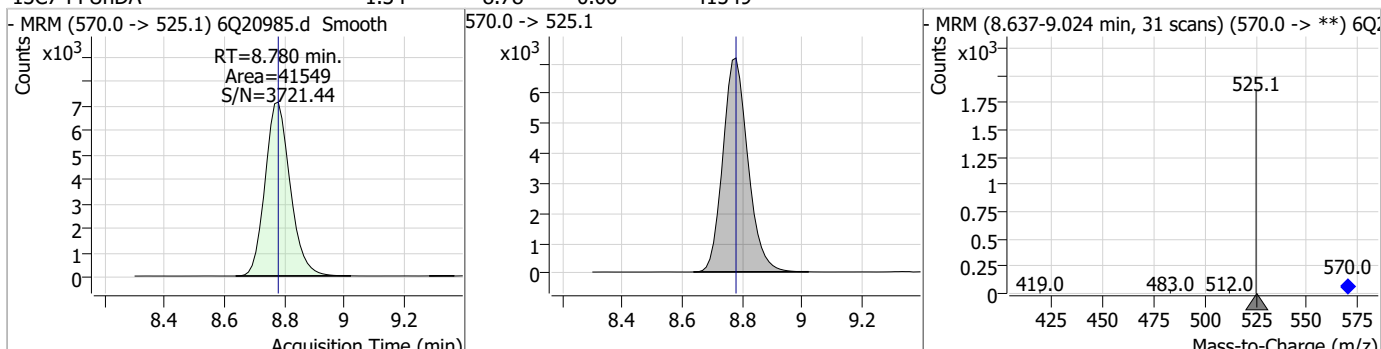
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.23	8.54	-0.01	30903				



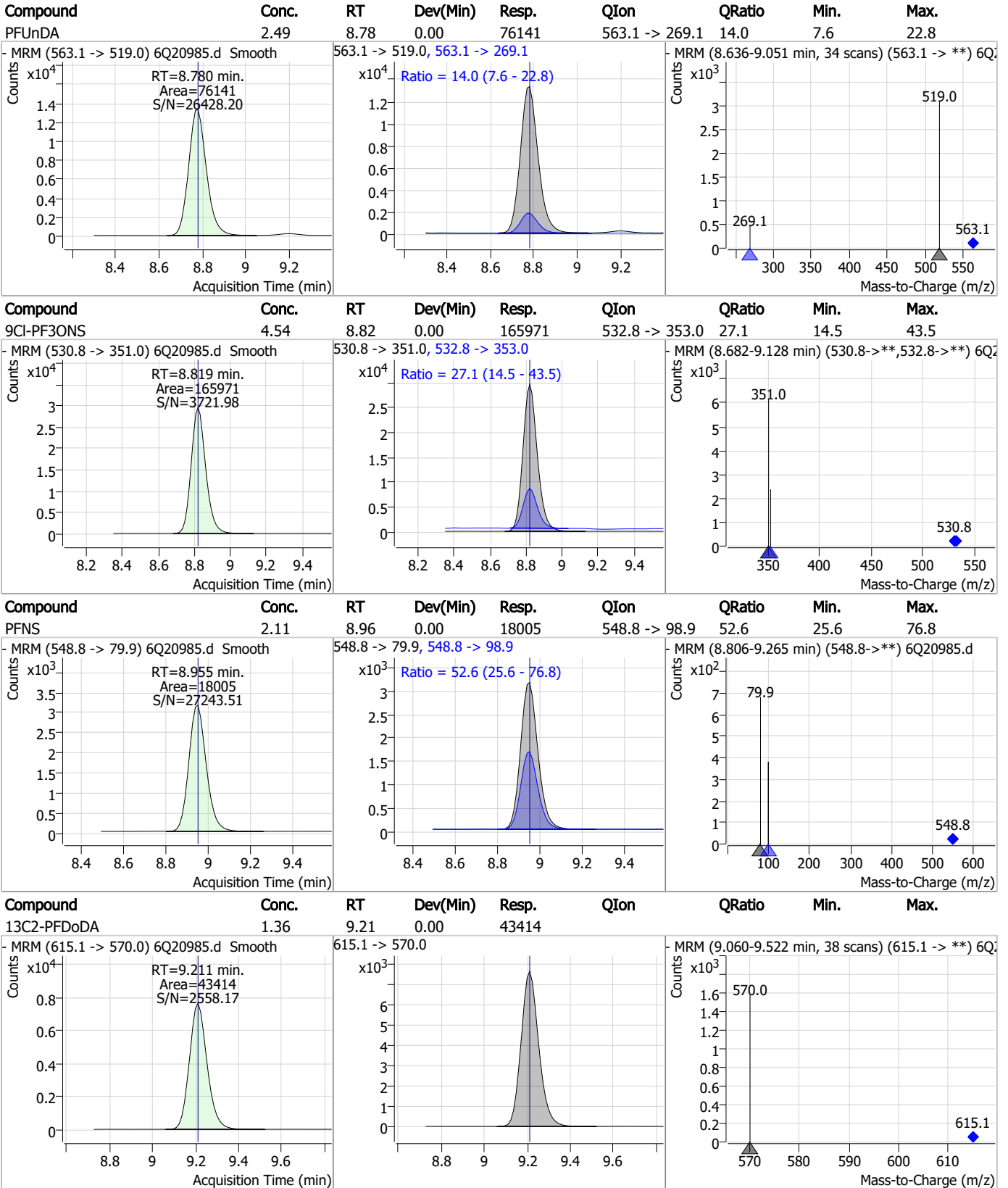
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.29	8.55	0.00	11116 (m)	584.2 -> 526.0	51.3	25.1	75.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.78	0.00	41549				



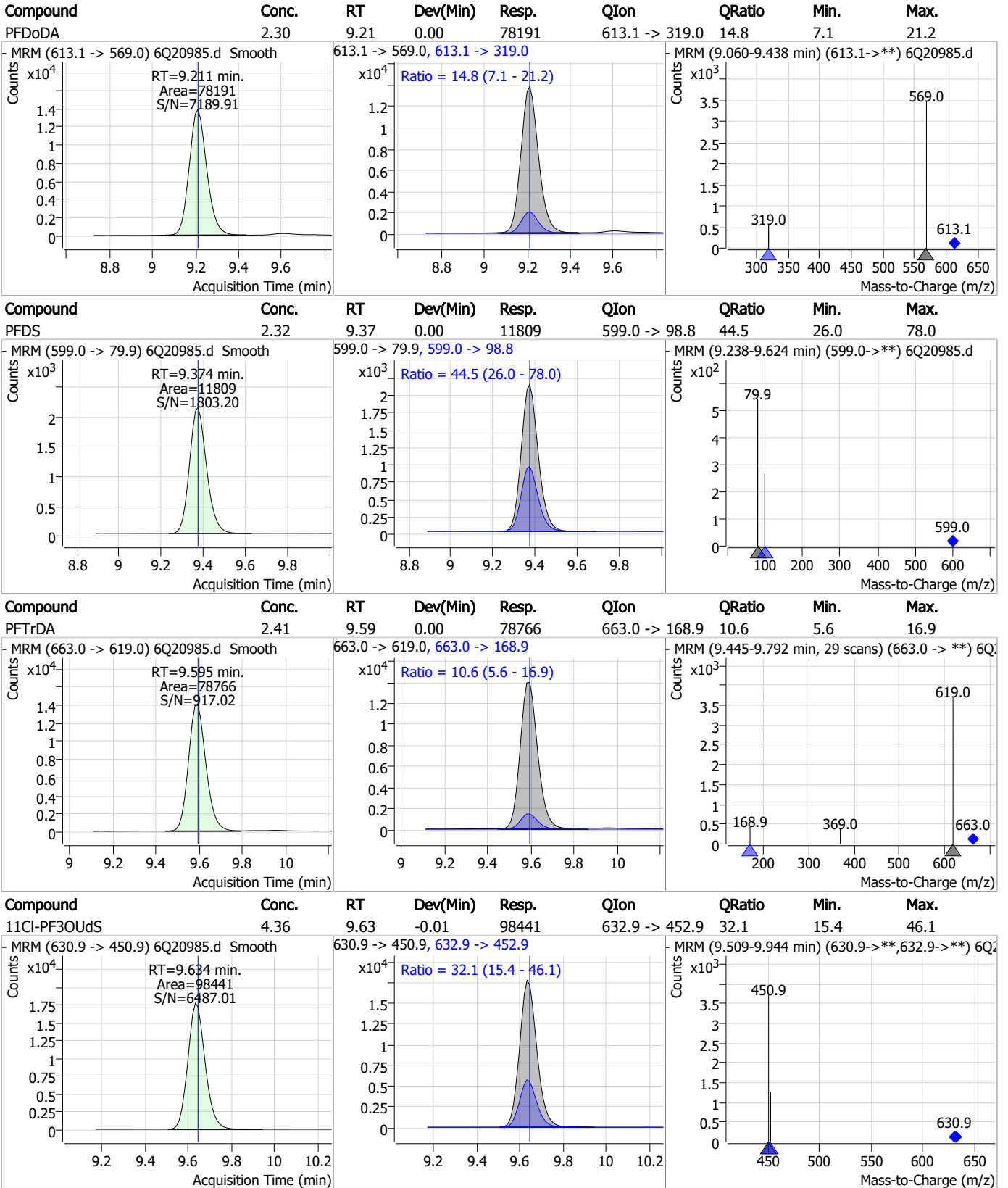
Perfluorinated Compounds by LC/MS/MS



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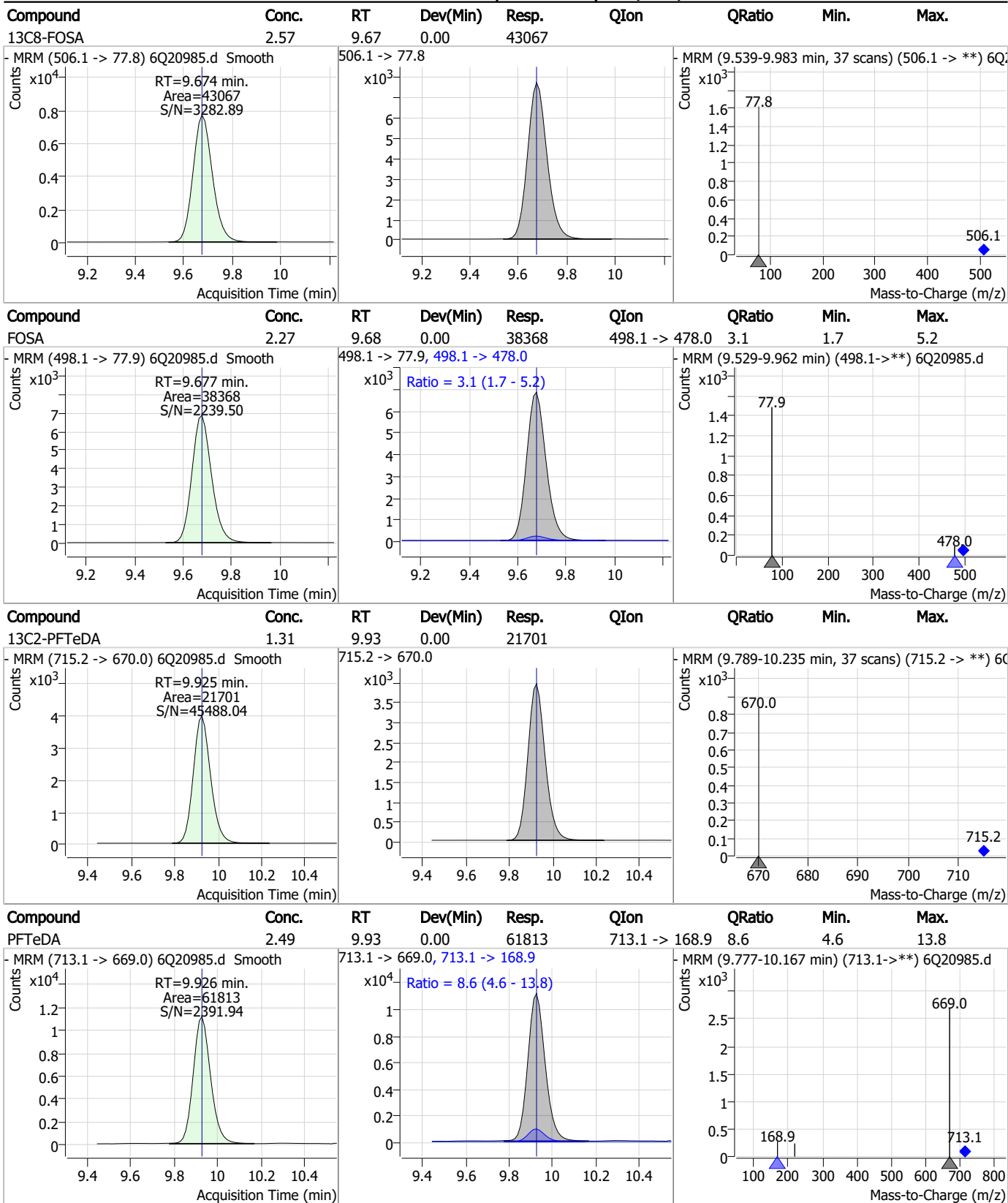
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

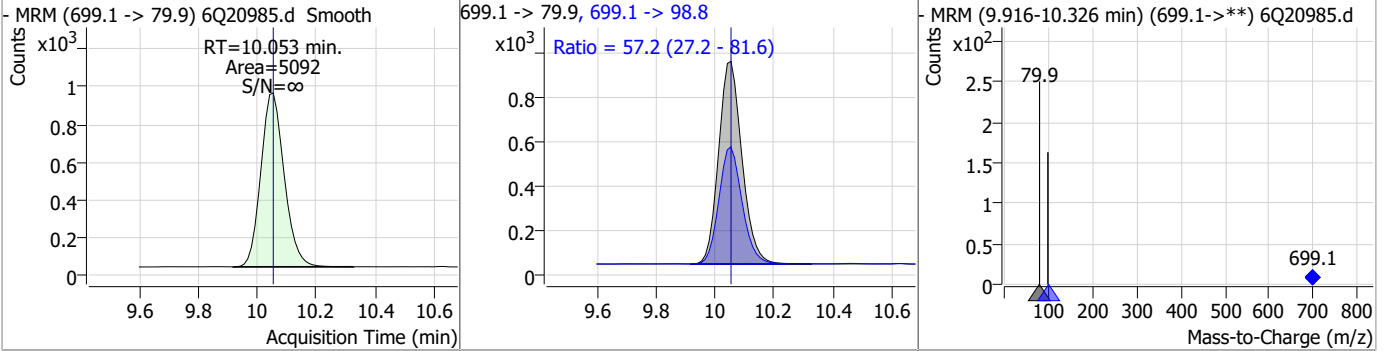


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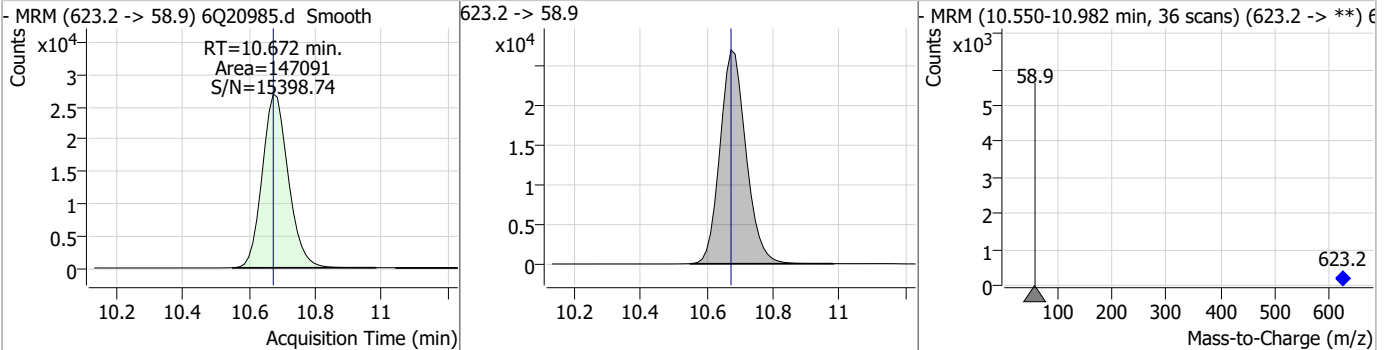


Perfluorinated Compounds by LC/MS/MS

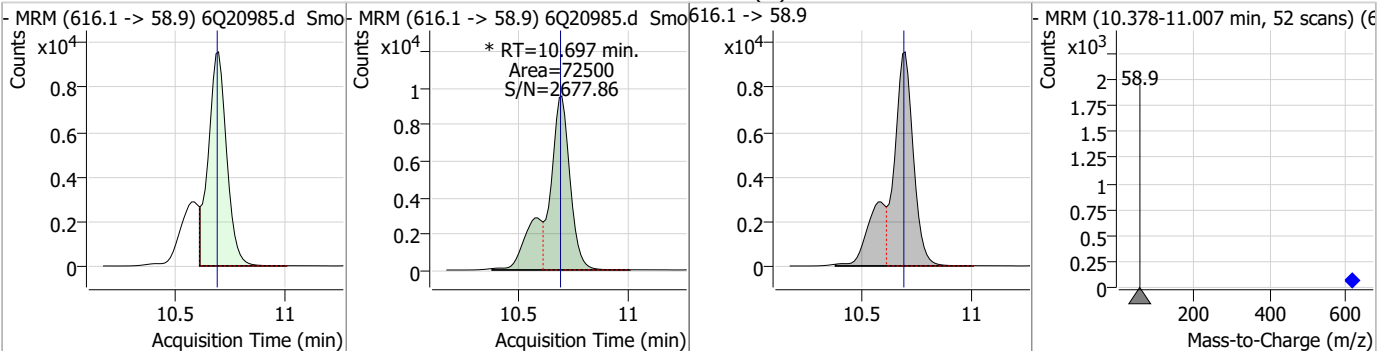
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	2.20	10.05	0.00	5092	699.1 -> 98.8	57.2	27.2	81.6



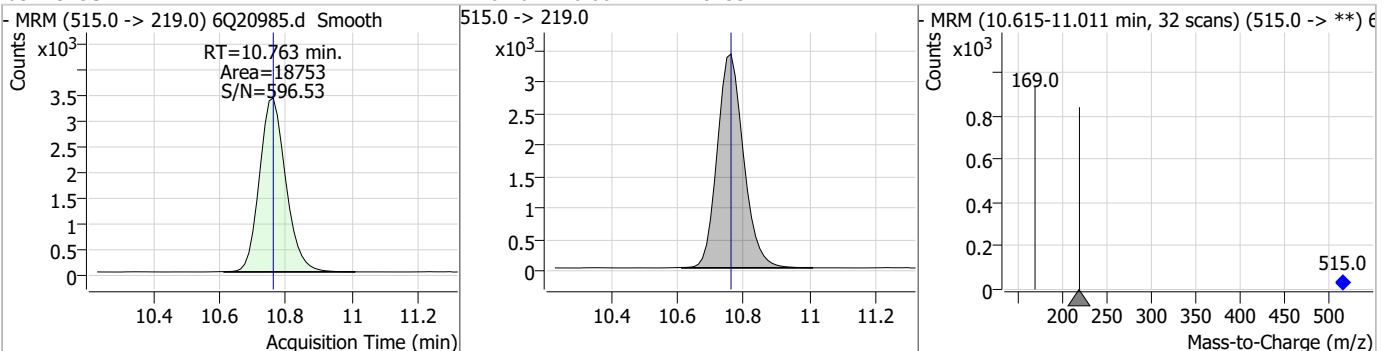
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.96	10.67	0.00	147091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.77	10.70	0.01	72500 (m)				

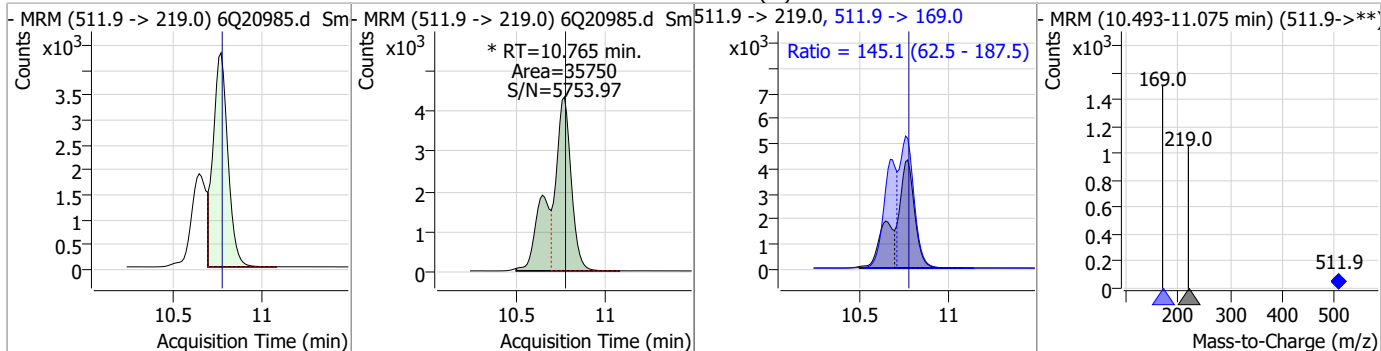


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	10.76	0.00	18753				

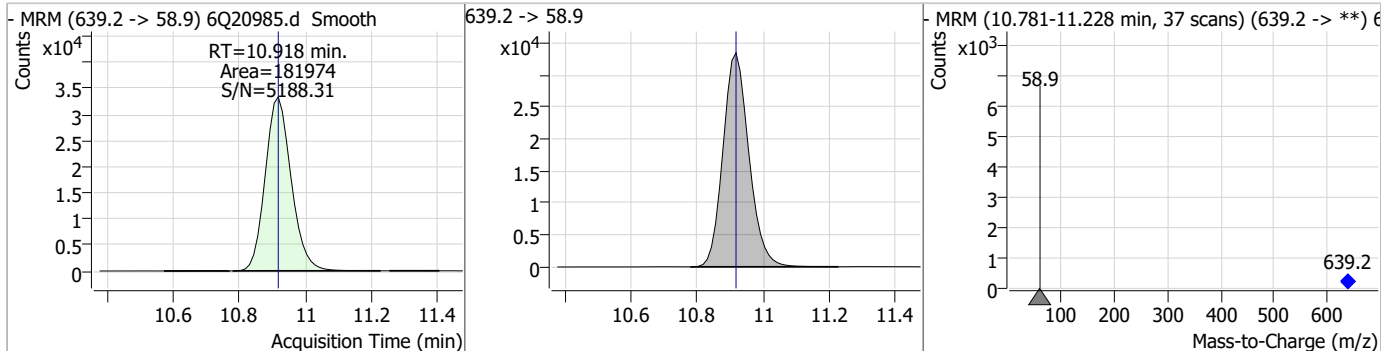


Perfluorinated Compounds by LC/MS/MS

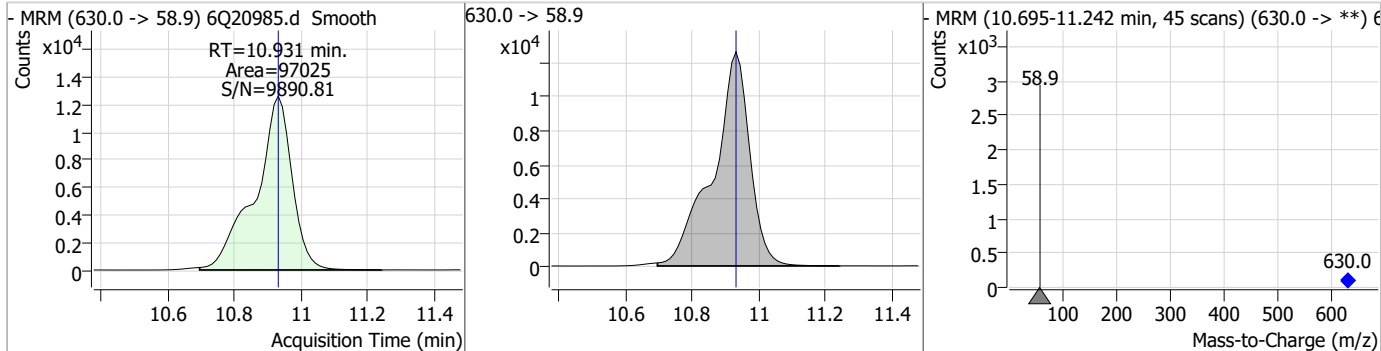
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.46	10.76	0.00	35750 (m)	511.9 -> 169.0	145.1	62.5	187.5



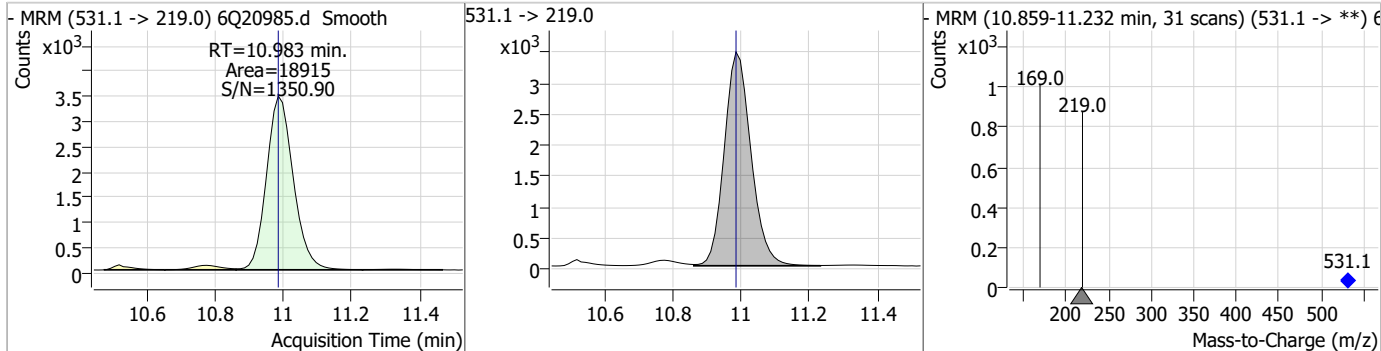
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.45	10.92	0.00	181974				



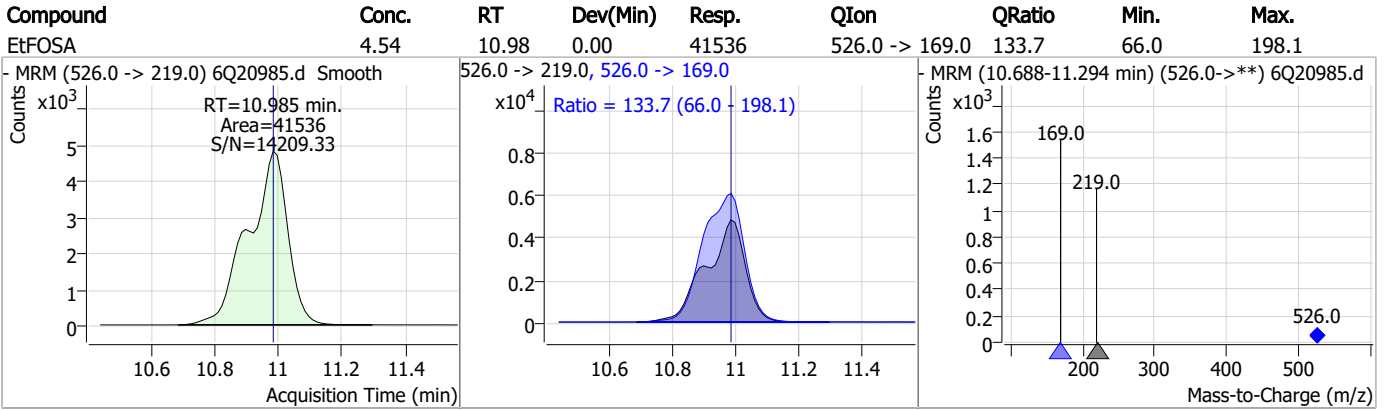
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	10.61	10.93	0.00	97025				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	10.98	0.00	18915				



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307 Method: EPA DRAFT 1633
Lab FileID: 6Q20985.D Analyst approved: 07/16/23 11:49 Martha Valls
Injection Time: 07/14/23 08:33 Supervisor approved: 07/17/23 11:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.55	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q20986.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 7/14/2023 8:47:17 AM
 Sample Name : cc307-1.0LL
 Vial : P1-A2
 DA Method File : 1633_071023_S6Q307.quantmethod.xml
 Batch Name : S6Q310.batch.bin
 Sample Information : OP97715,S6Q310,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	3.035	216.8 -> 171.9	190659	10.00 µg/L	0.012
M5-PFPeA	4.472	268.3 -> 223.0	59857	5.00 µg/L	0.012
M5-PFHxA	5.692	318.0 -> 273.0	64989	2.50 µg/L	0.000
M4-PFHpA	6.621	367.1 -> 322.0	63840	2.50 µg/L	0.000
M8-PFOA	7.264	421.1 -> 376.0	97436	2.50 µg/L	0.000
M9-PFNA	7.807	472.1 -> 427.0	47099	1.25 µg/L	0.000
M6-PFDA	8.301	519.1 -> 474.1	26200	1.25 µg/L	0.000
M7-PFUnDA	8.780	570.0 -> 525.1	33707	1.25 µg/L	0.000
M2-PFDoDA	9.211	615.1 -> 570.0	30149	1.25 µg/L	0.000
M2-PFTeDA	9.925	715.2 -> 670.0	17082	1.25 µg/L	0.000
M8-FOSA	9.674	506.1 -> 77.8	36472	2.50 µg/L	0.000
M3-PFBS	5.635	302.1 -> 79.9	23444	2.50 µg/L	0.000
M3-PFHxS	7.392	402.1 -> 79.9	14132	2.50 µg/L	0.000
M8-PFOS	8.476	507.1 -> 79.9	12712	2.50 µg/L	0.000
M2-4:2FTS	5.355	329.1 -> 80.9	2827	5.00 µg/L	0.000
M2-6:2FTS	7.039	429.1 -> 80.9	4050	5.00 µg/L	0.000
M2-8:2FTS	8.089	529.1 -> 80.9	4599	5.00 µg/L	0.000
M3-MeFOSAA	8.346	573.2 -> 419.0	27256	5.00 µg/L	0.000
M3-HFPO-DA	6.070	286.9 -> 168.9	37012	10.00 µg/L	0.000
M5-EtFOSAA	8.554	589.2 -> 419.0	26613	5.00 µg/L	0.000
M7-MeFOSE	10.672	623.2 -> 58.9	118264	25.00 µg/L	0.000
M9-EtFOSE	10.918	639.2 -> 58.9	156696	25.00 µg/L	0.000
M5-EtFOSA	10.983	531.1 -> 219.0	15451	2.50 µg/L	0.000
M3-MeFOSA	10.763	515.0 -> 219.0	14697	2.50 µg/L	0.000
13C4-PFOS	8.477	502.8 -> 79.9	19110	2.50 µg/L	0.000
13C3-PFBA	3.026	216.0 -> 172.0	80636	5.00 µg/L	0.000
18O2-PFHxS	7.391	403.0 -> 83.9	10462	2.50 µg/L	0.000
13C4-PFOA	7.264	417.1 -> 372.0	112764	2.50 µg/L	0.000
13C2-PFDA	8.301	515.1 -> 470.1	34781	1.25 µg/L	0.000
13C5-PFNA	7.807	468.0 -> 423.0	56293	1.25 µg/L	0.000
13C2-PFHxA	5.693	315.1 -> 270.0	64147	2.50 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.355	329.1 -> 80.9	2827	6.03 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 120.6%		
13C2-6:2FTS	7.039	429.1 -> 80.9	4050	5.82 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 116.3%		
13C2-8:2FTS	8.089	529.1 -> 80.9	4599	6.84 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%		Recovery = 136.8%		
13C2-PFDoDA	9.211	615.1 -> 570.0	30149	1.17 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 93.7%		
13C2-PFTeDA	9.925	715.2 -> 670.0	17082	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%		Recovery = 102.5%		
13C3-PFBS	5.635	302.1 -> 79.9	23444	2.65 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%		Recovery = 105.9%		
13C3-PFHxS	7.392	402.1 -> 79.9	14132	2.53 µg/L	0.000

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C4-PFBA	3.035	216.8 -> 171.9	190659	9.98 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFHpA	6.621	367.1 -> 322.0	63840	2.54 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFHxA	5.692	318.0 -> 273.0	64989	2.49 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFPeA	4.472	268.3 -> 223.0	59857	5.01 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C6-PFDA	8.301	519.1 -> 474.1	26200	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C7-PFUnDA	8.780	570.0 -> 525.1	33707	1.34 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C8-FOSA	9.674	506.1 -> 77.8	36472	2.73 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C8-PFOA	7.264	421.1 -> 376.0	97436	2.27 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C8-PFOS	8.476	507.1 -> 79.9	12712	2.34 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.8%	
13C9-PFNA	7.807	472.1 -> 427.0	47099	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
d3-MeFOSAA	8.346	573.2 -> 419.0	27256	4.59 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C3-HFPO-DA	6.070	286.9 -> 168.9	37012	9.09 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
d3-MeFOSA	10.763	515.0 -> 219.0	14697	2.38 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.1%	
d5-EtFOSAA	8.554	589.2 -> 419.0	26613	5.65 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.9%	
d7-MeFOSE	10.672	623.2 -> 58.9	118264	24.13 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
d9-EtFOSE	10.918	639.2 -> 58.9	156696	27.45 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
d5-EtFOSA	10.983	531.1 -> 219.0	15451	2.44 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.4%	
Target Compounds					QValue
4:2FTS	5.356	327.1 -> 307.0	3277	0.64 µg/L	94
		327.1 -> 80.9	1284		
6:2FTS	7.027	427.1 -> 407.0	3544	0.75 µg/L	95
		427.1 -> 80.9	1153		
8:2FTS	8.090	527.1 -> 507.0	1877	0.64 µg/L	98
		527.1 -> 80.8	643		
EtFOSAA	8.567	584.2 -> 419.1	776	0.19 µg/L	m 91
		584.2 -> 526.0	436		
FOSA	9.677	498.1 -> 77.9	2374	0.17 µg/L	99
		498.1 -> 478.0	90		
MeFOSAA	8.347	570.1 -> 419.0	1259	0.21 µg/L	m 97
		570.1 -> 483.0	229		
PFBA	3.031	212.8 -> 168.9	5195	0.71 µg/L	100
PFBS	5.636	298.7 -> 79.9	1460	0.16 µg/L	88
		298.7 -> 98.8	486		
PFDA	8.301	512.9 -> 469.0	6779	0.19 µg/L	98
		512.9 -> 219.0	967		
PFDODA	9.211	613.1 -> 569.0	5214	0.22 µg/L	98
		613.1 -> 319.0	767		
PFDS	9.374	599.0 -> 79.9	701	0.19 µg/L	98

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Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8	377			
PFHpA	6.621	363.1 -> 319.0	5793	0.19	µg/L	100
		363.1 -> 169.0	917			
PFHpS	7.960	449.0 -> 79.9	1284	0.18	µg/L	97
		449.0 -> 98.9	618			
PFHxA	5.694	313.0 -> 269.0	4505	0.19	µg/L	99
		313.0 -> 118.9	242			
PFHxS	7.393	398.7 -> 79.9	1382	0.18	µg/L	m 99
		398.7 -> 98.9	703			
PFNA	7.808	463.0 -> 419.0	7056	0.19	µg/L	99
		463.0 -> 219.0	1299			
PFNS	8.955	548.8 -> 79.9	1128	0.18	µg/L	81
		548.8 -> 98.9	729			
PFOA	7.265	413.0 -> 369.0	8616	0.19	µg/L	100
		413.0 -> 169.0	1438			
PFOS	8.478	498.9 -> 79.9	1340	0.19	µg/L	m 71
		498.9 -> 98.8	653			
PFPeA	4.474	263.0 -> 219.0	5829	0.37	µg/L	100
PFPeS	6.697	349.1 -> 79.9	1189	0.16	µg/L	93
		349.1 -> 98.9	606			
PFTeDA	9.926	713.1 -> 669.0	4382	0.22	µg/L	99
		713.1 -> 168.9	384			
PFTrDA	9.595	663.0 -> 619.0	4403	0.19	µg/L	98
		663.0 -> 168.9	470			
PFUnDA	8.780	563.1 -> 519.0	4541	0.18	µg/L	95
		563.1 -> 269.1	779			
11Cl-PF3OUdS	9.634	630.9 -> 450.9	6697	0.39	µg/L	97
		632.9 -> 452.9	1961			
9Cl-PF3ONS	8.819	530.8 -> 351.0	9381	0.33	µg/L	94
		532.8 -> 353.0	3045			
ADONA	6.870	376.9 -> 250.9	22143	0.36	µg/L	99
		376.9 -> 84.8	5522			
HFPO-DA	6.071	284.9 -> 168.9	1473	0.39	µg/L	96
		284.9 -> 184.9	179			
3:3FTCA	3.921	241.0 -> 177.0	1028	0.86	µg/L	94
		241.0 -> 117.0	160			
5:3FTCA	6.322	341.0 -> 237.1	23660	4.75	µg/L	97
		341.0 -> 217.0	17321			
7:3FTCA	7.711	441.0 -> 316.9	16652	4.78	µg/L	87
		441.0 -> 336.9	37428			
EtFOSA	10.985	526.0 -> 219.0	2821	0.38	µg/L	m 99
		526.0 -> 169.0	3702			
EtFOSE	10.931	630.0 -> 58.9	6154	0.78	µg/L	100
MeFOSA	10.765	511.9 -> 219.0	2308	0.37	µg/L	m 86
		511.9 -> 169.0	3253			
MeFOSE	10.697	616.1 -> 58.9	4062	0.82	µg/L	m 100
PFDoDS	10.053	699.1 -> 79.9	294	0.17	µg/L	84
		699.1 -> 98.8	194			
NFDHA	5.576	295.0 -> 201.0	1064	0.37	µg/L	93
		295.0 -> 84.9	243			
PFMBA	4.900	279.0 -> 85.1	3862	0.37	µg/L	100
PFMPA	3.588	229.0 -> 84.9	3234	0.37	µg/L	100
PFEESA	6.188	314.8 -> 134.9	10833	0.32	µg/L	100
		314.8 -> 82.9	340			

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



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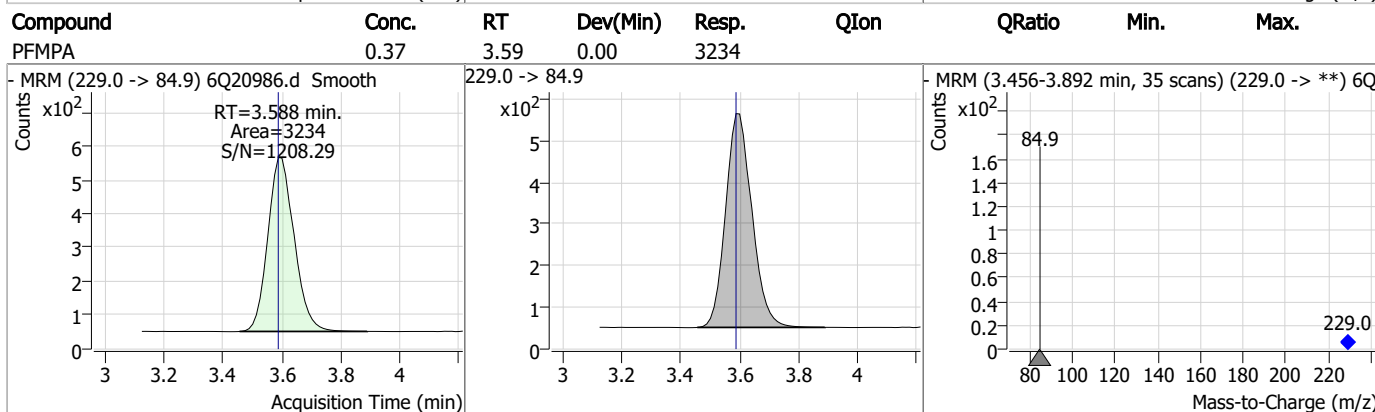
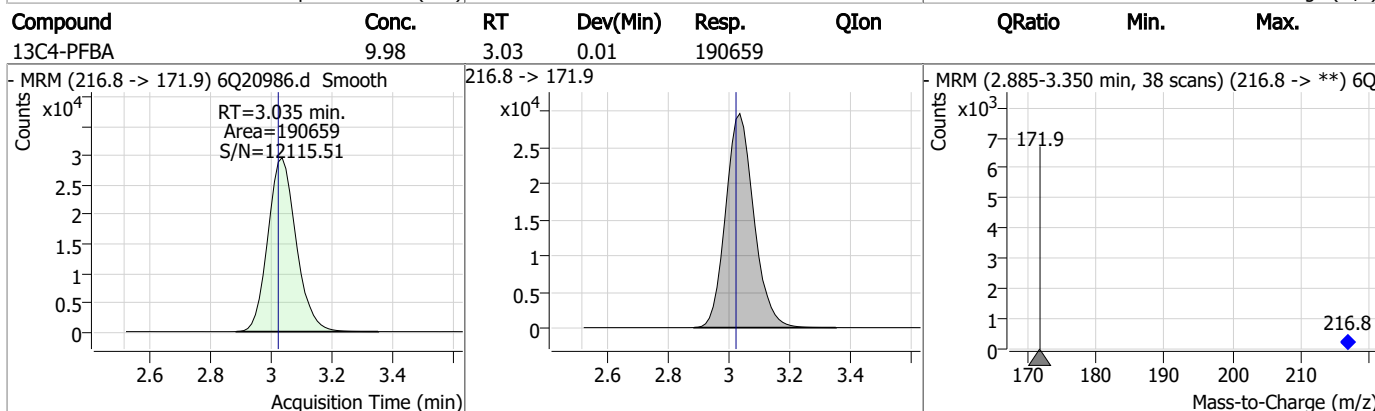
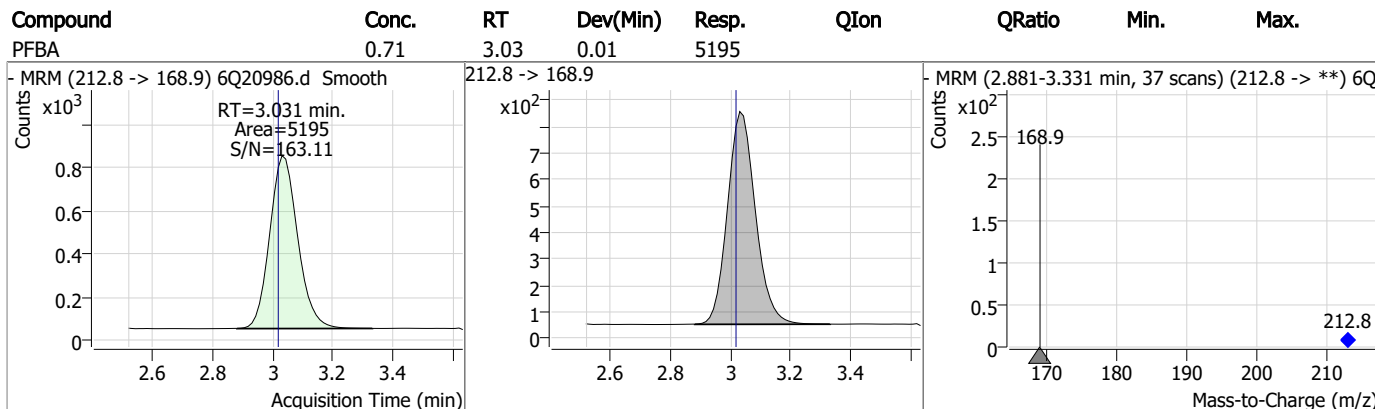
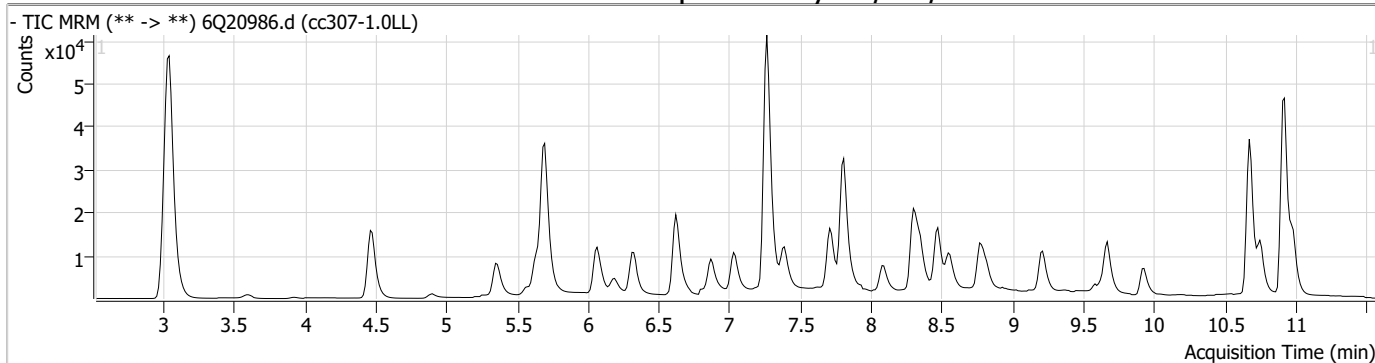
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
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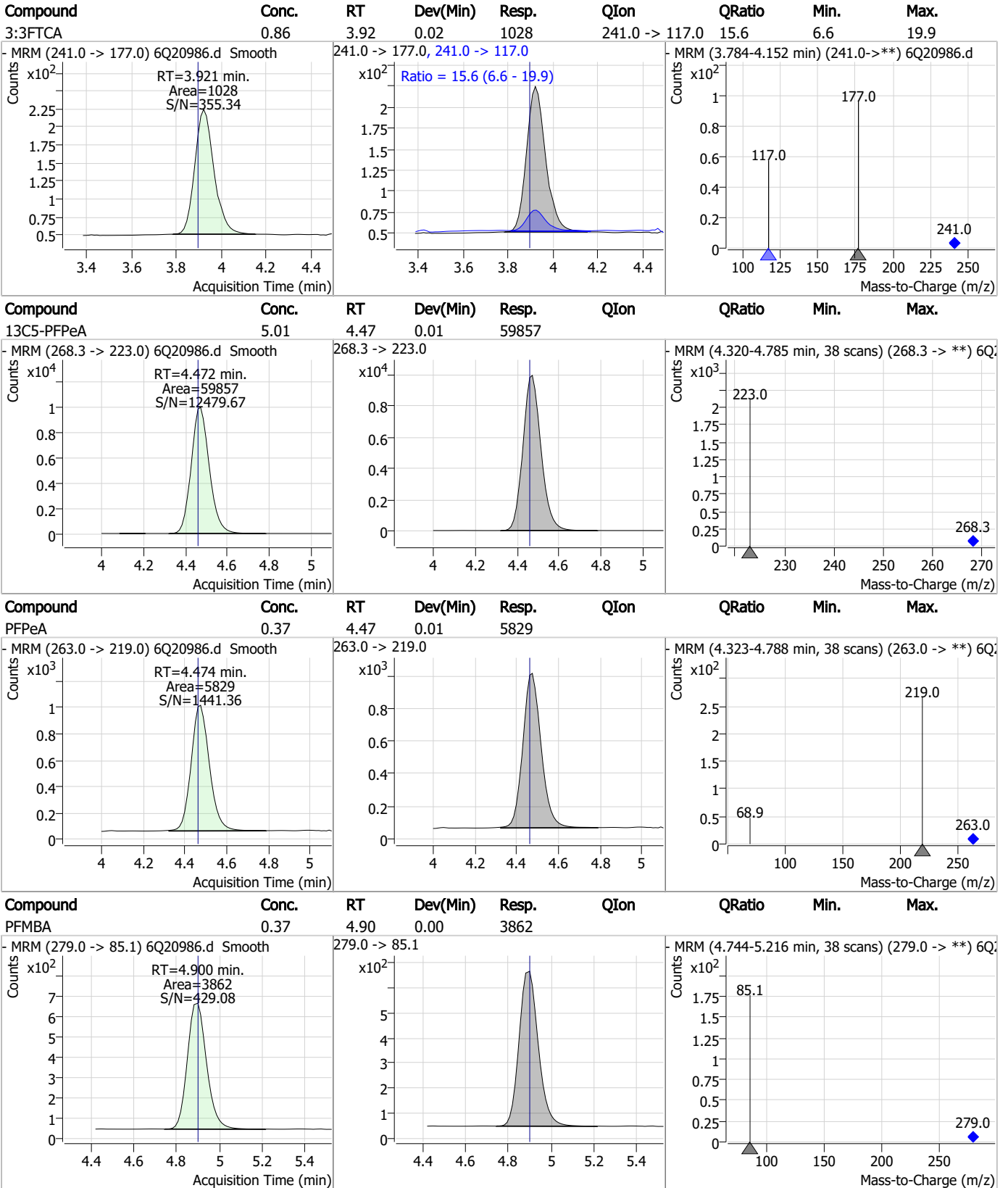
7.7.18

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Perfluorinated Compounds by LC/MS/MS



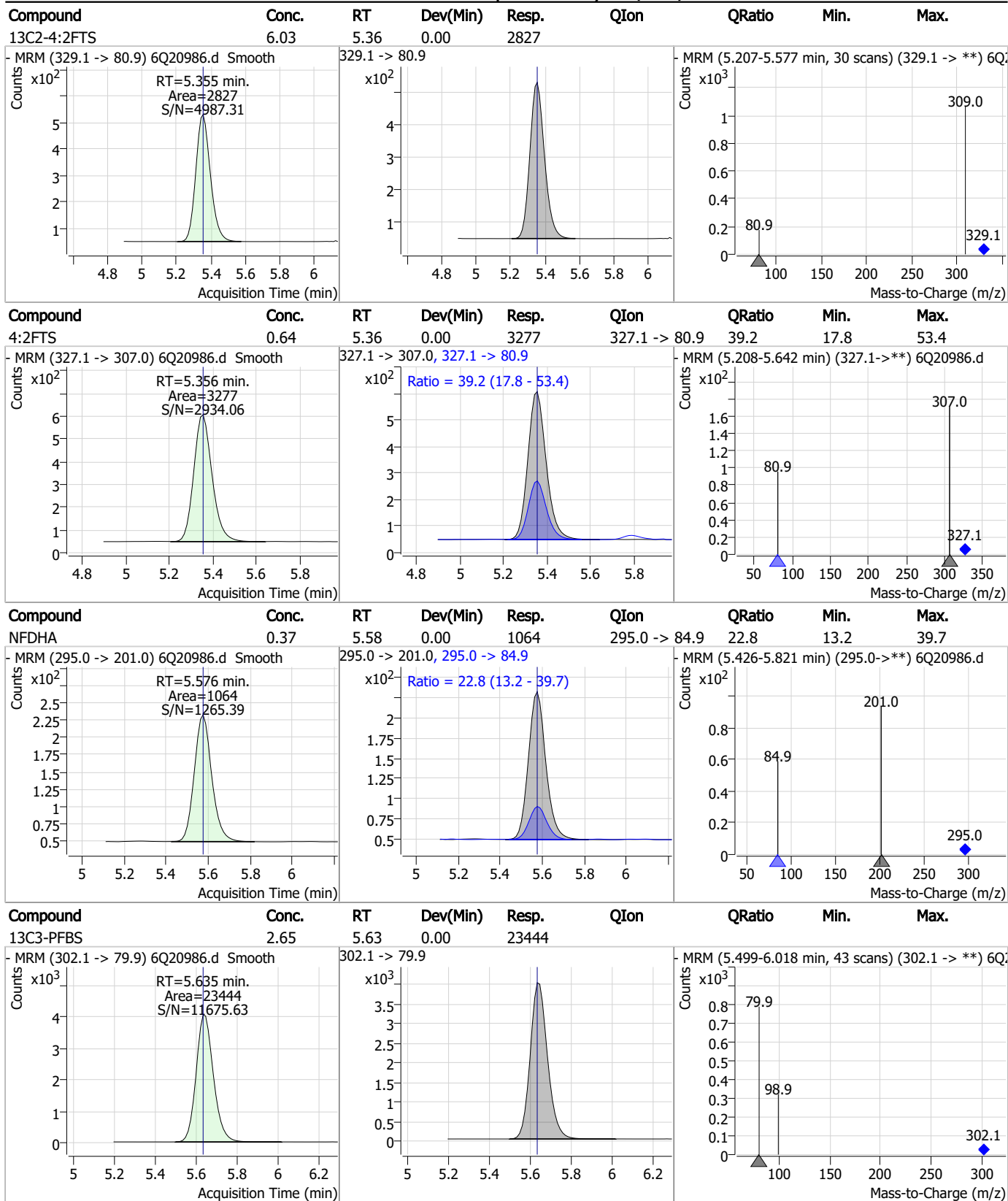
Perfluorinated Compounds by LC/MS/MS



7.7.18 7

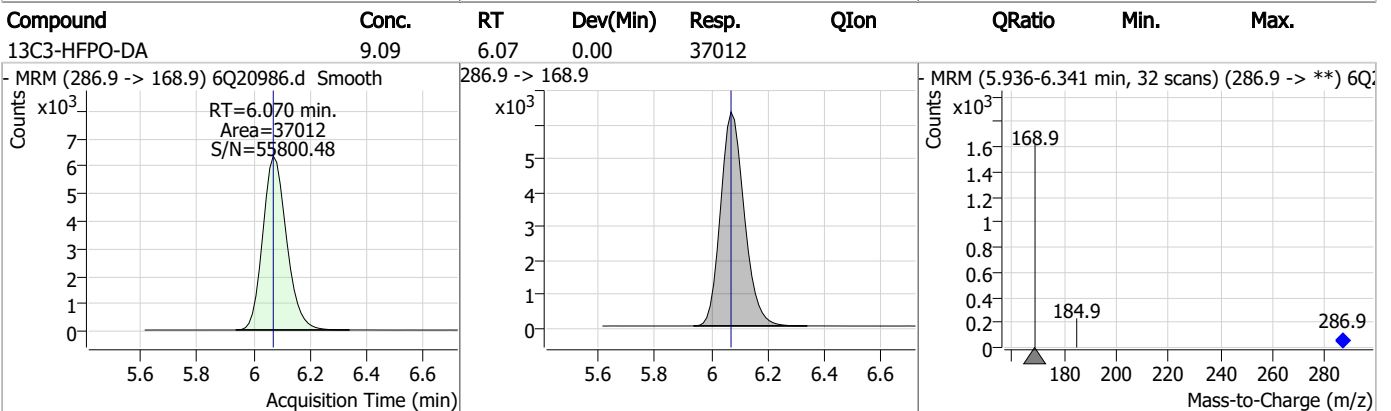
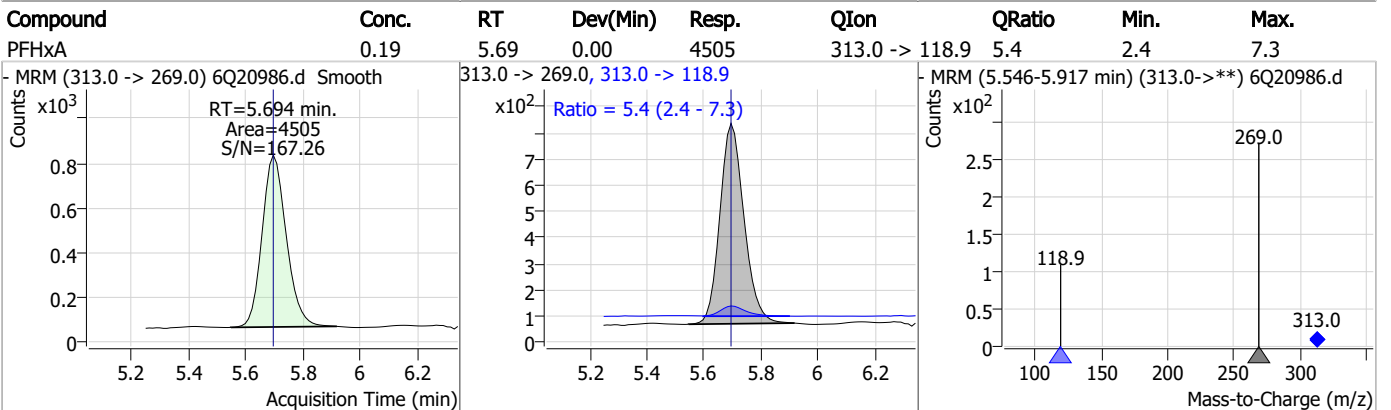
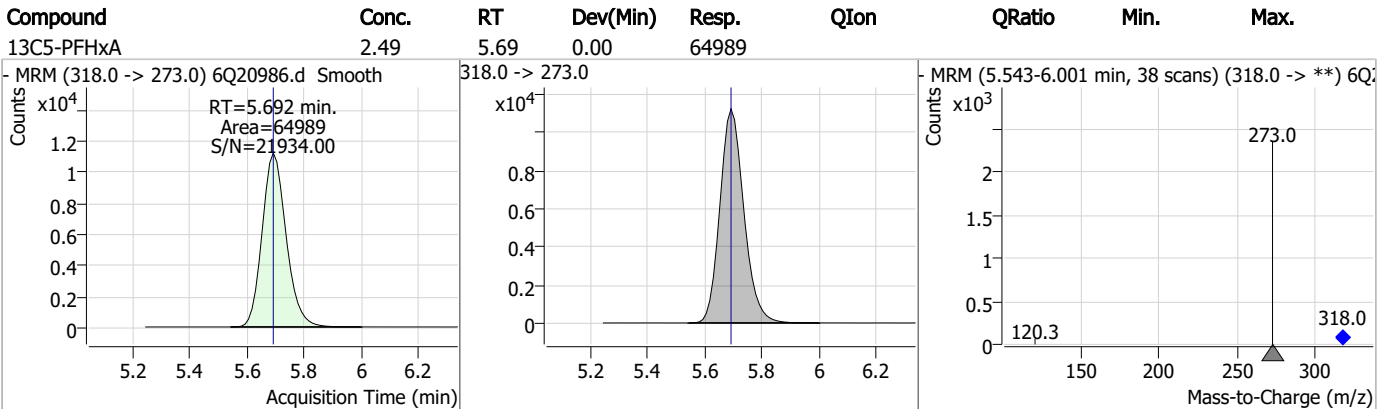
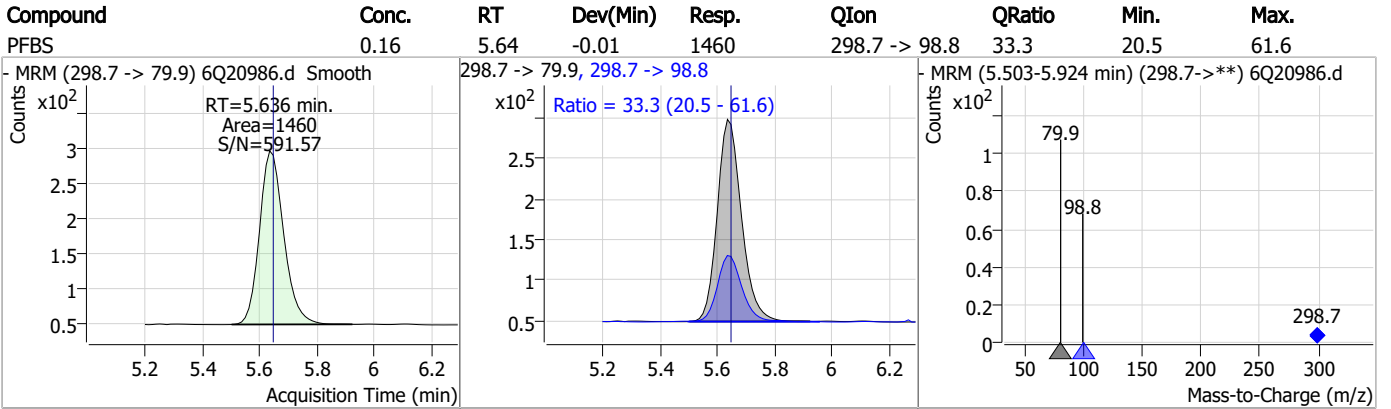


Perfluorinated Compounds by LC/MS/MS



7.7.18 7

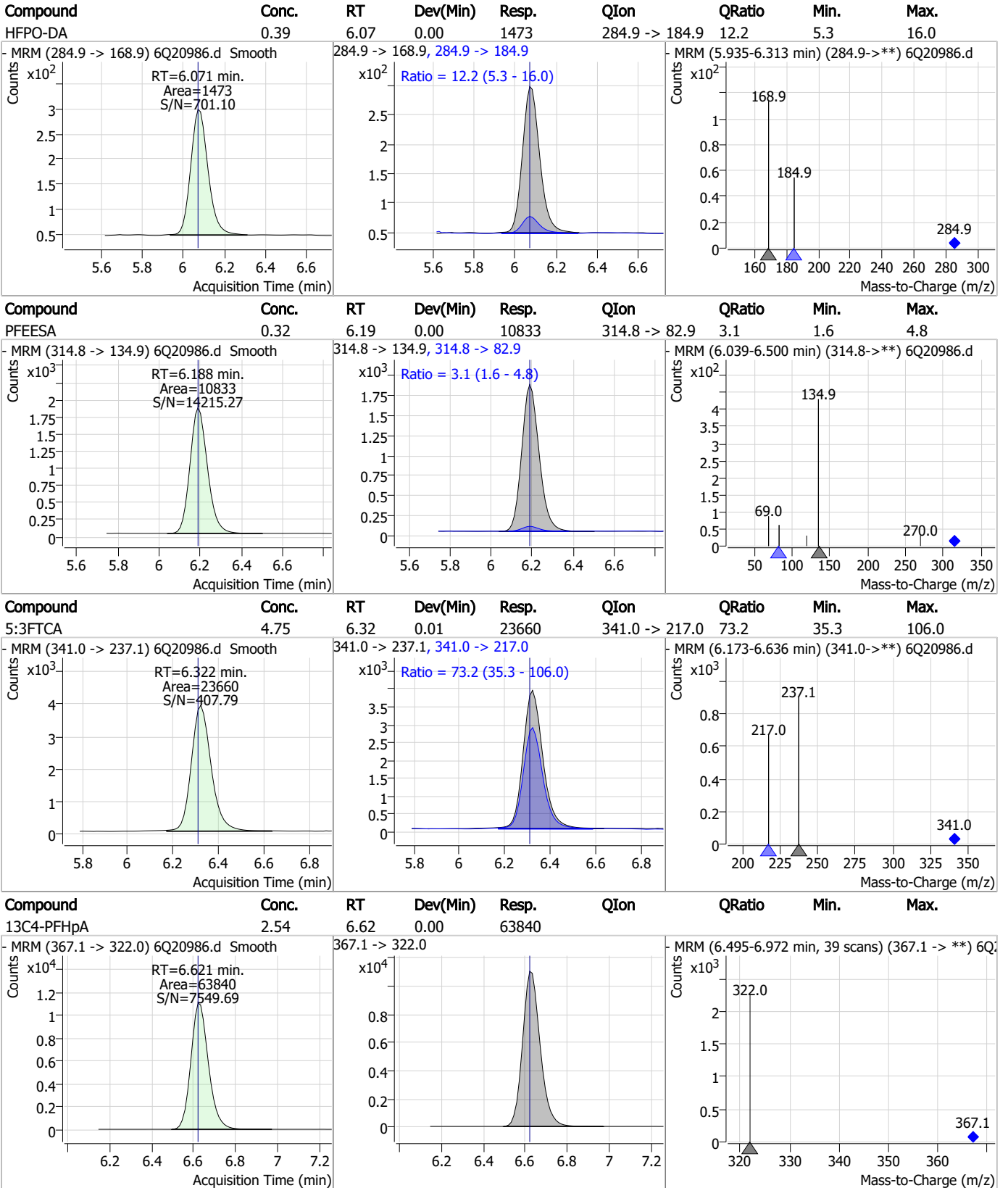
Perfluorinated Compounds by LC/MS/MS



7.7.18



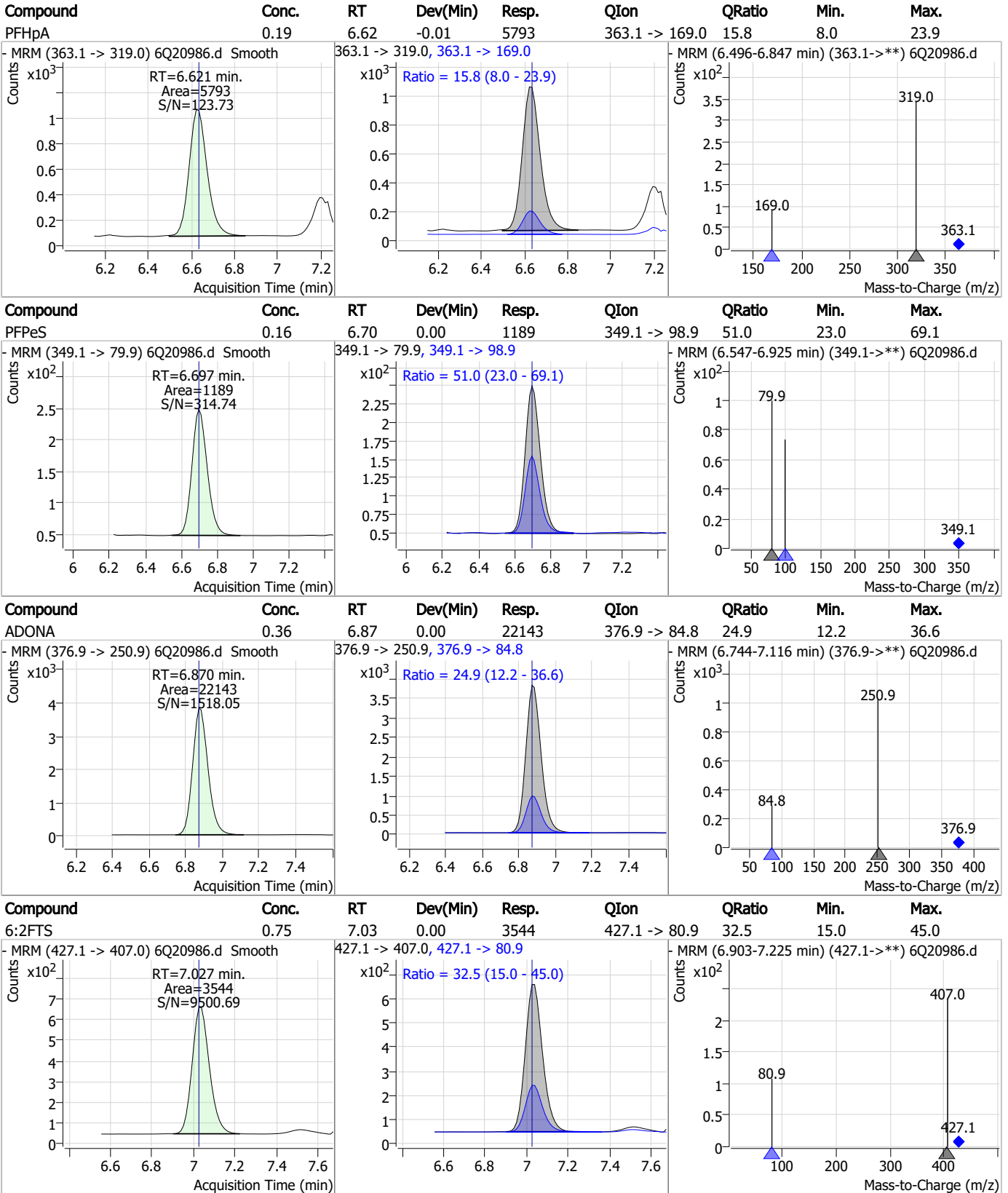
Perfluorinated Compounds by LC/MS/MS



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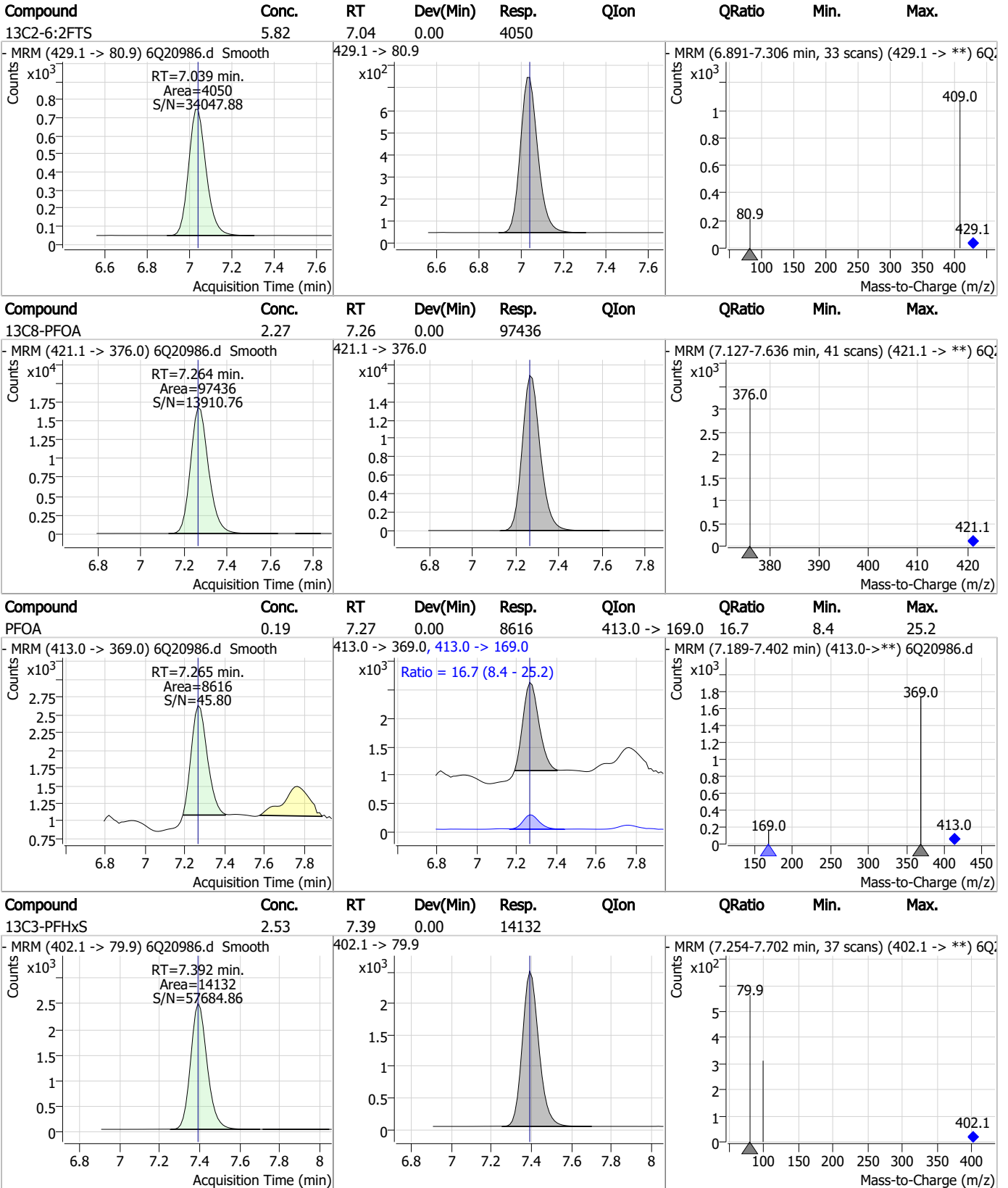
Perfluorinated Compounds by LC/MS/MS



7.7.18 7



Perfluorinated Compounds by LC/MS/MS

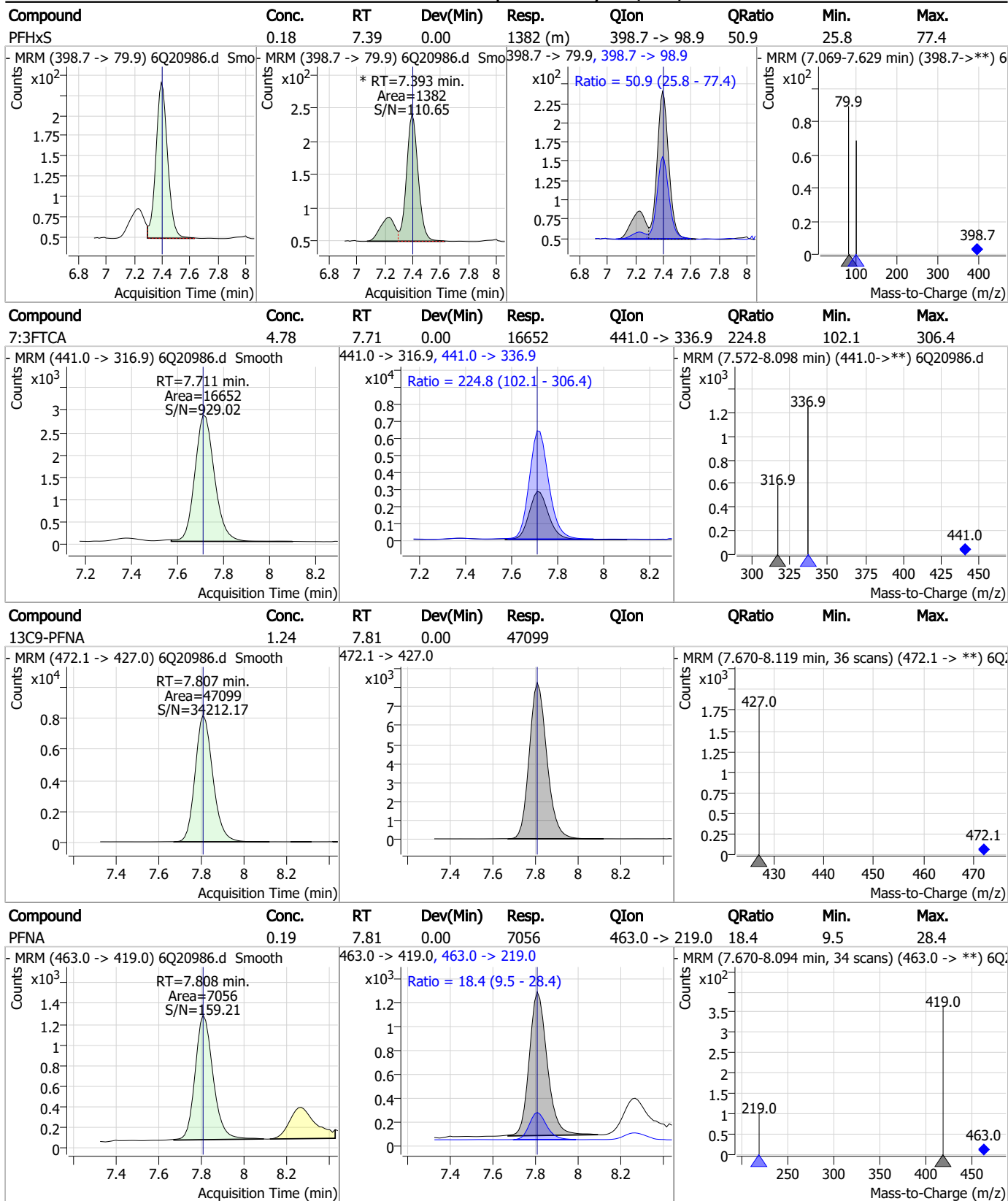


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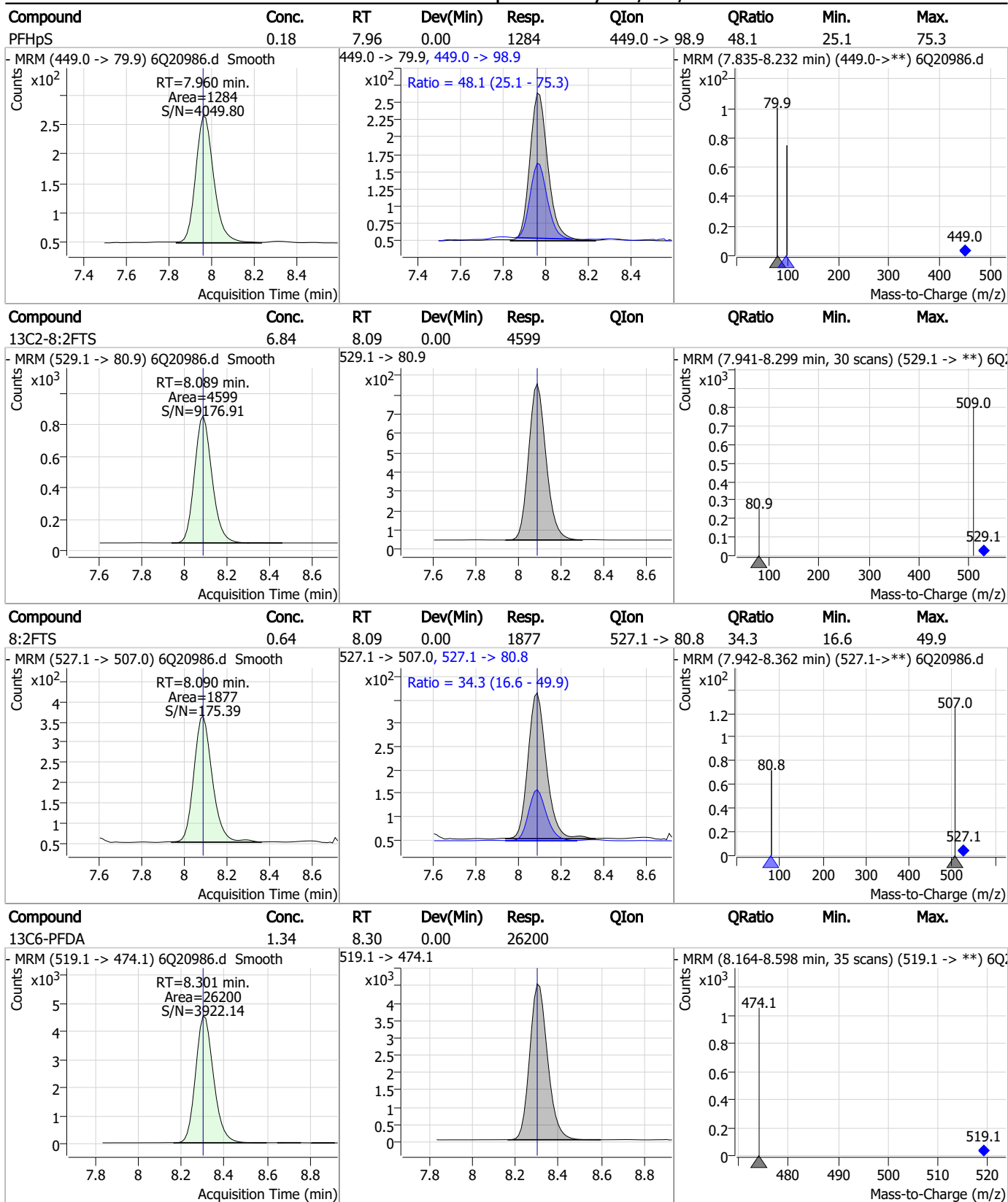


Perfluorinated Compounds by LC/MS/MS



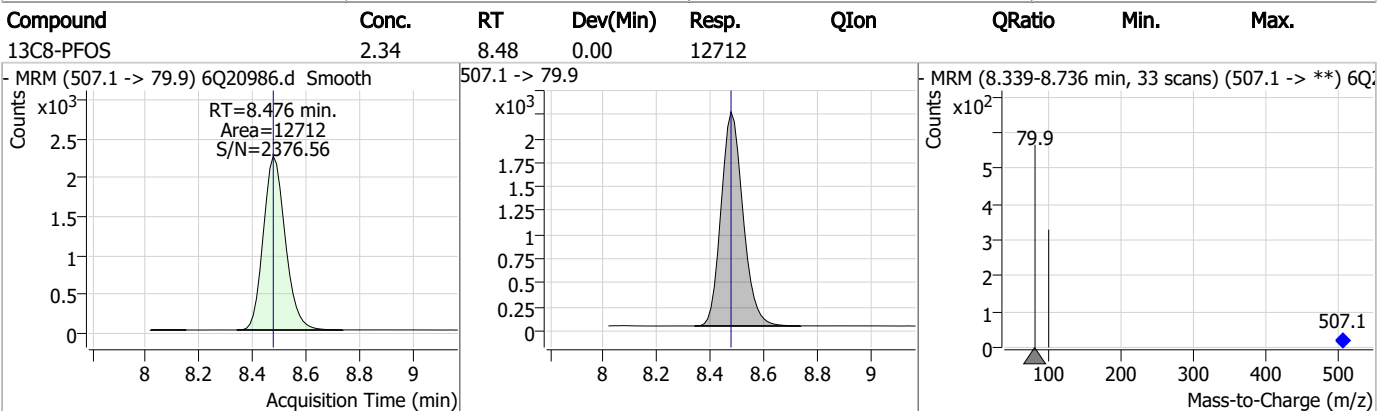
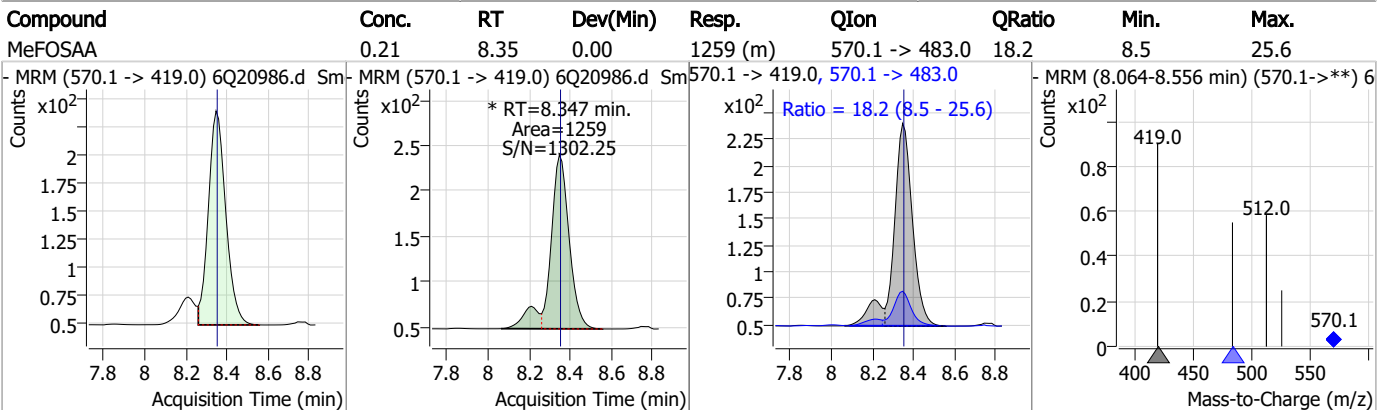
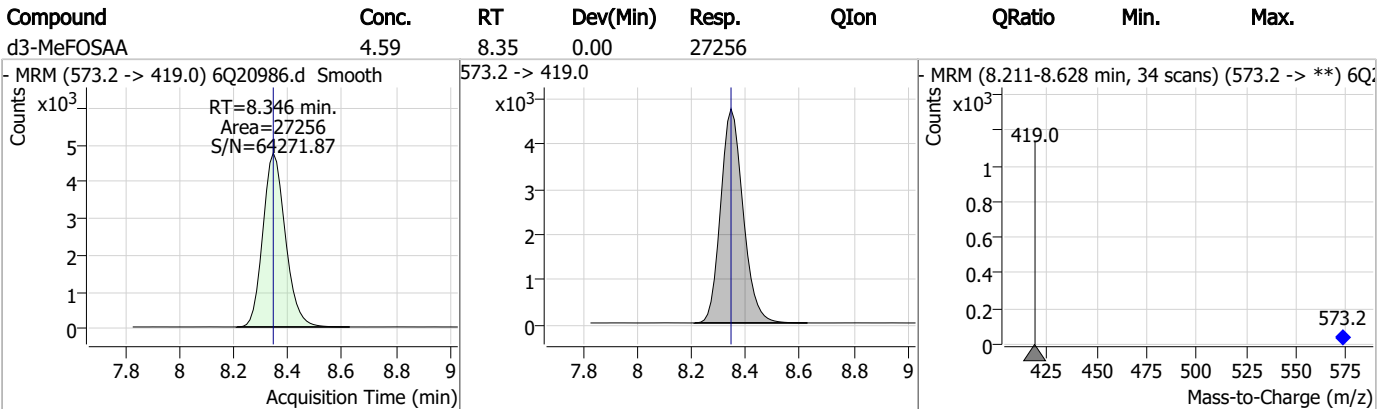
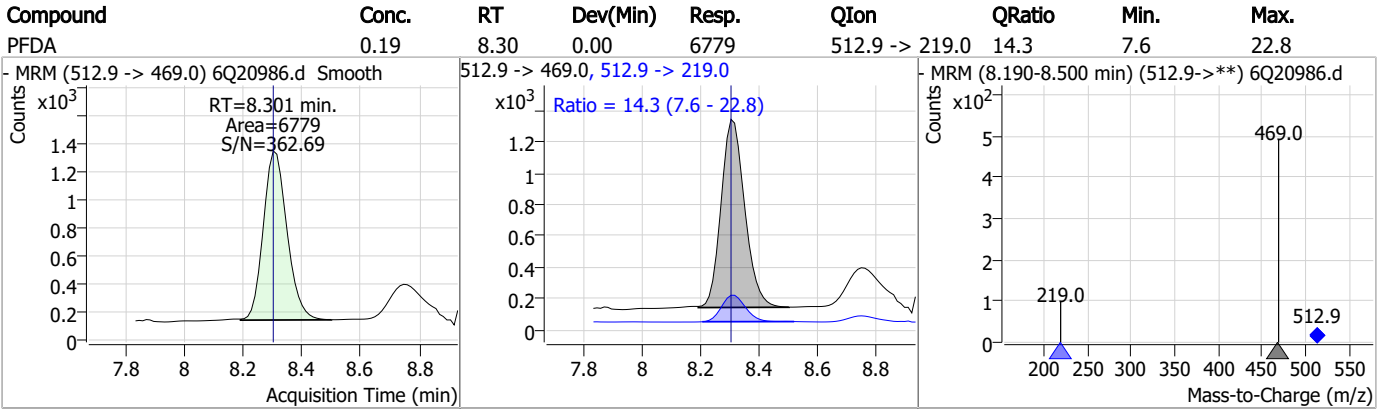
7.7.18 7

Perfluorinated Compounds by LC/MS/MS



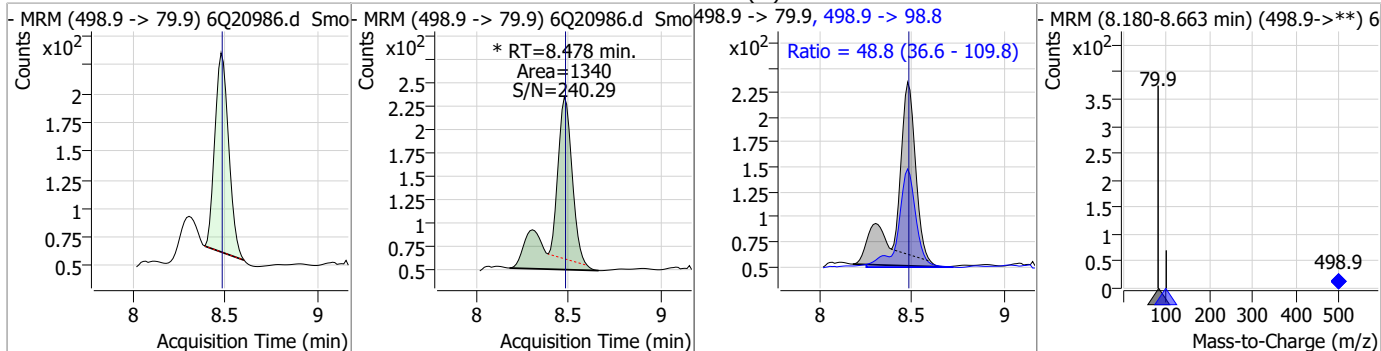
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Perfluorinated Compounds by LC/MS/MS

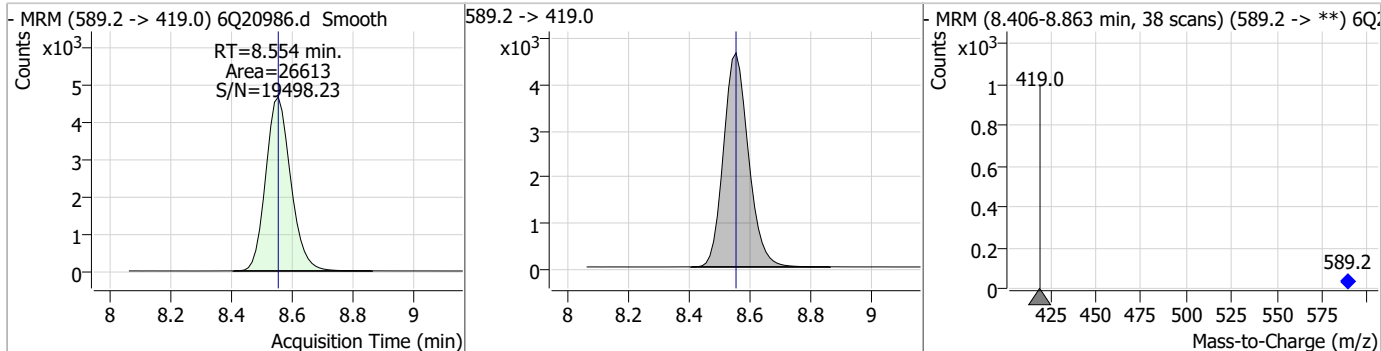


Perfluorinated Compounds by LC/MS/MS

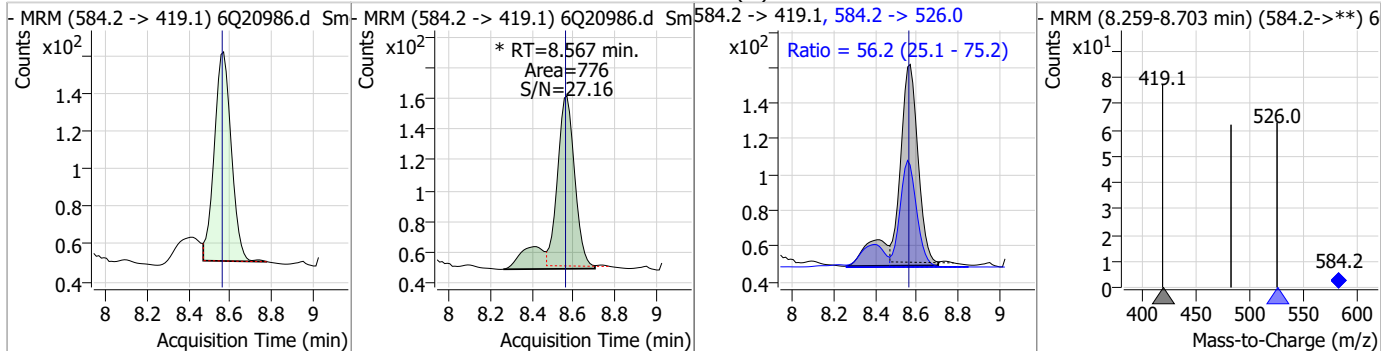
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.19	8.48	0.00	1340 (m)	498.9 -> 98.8	48.8	36.6	109.8



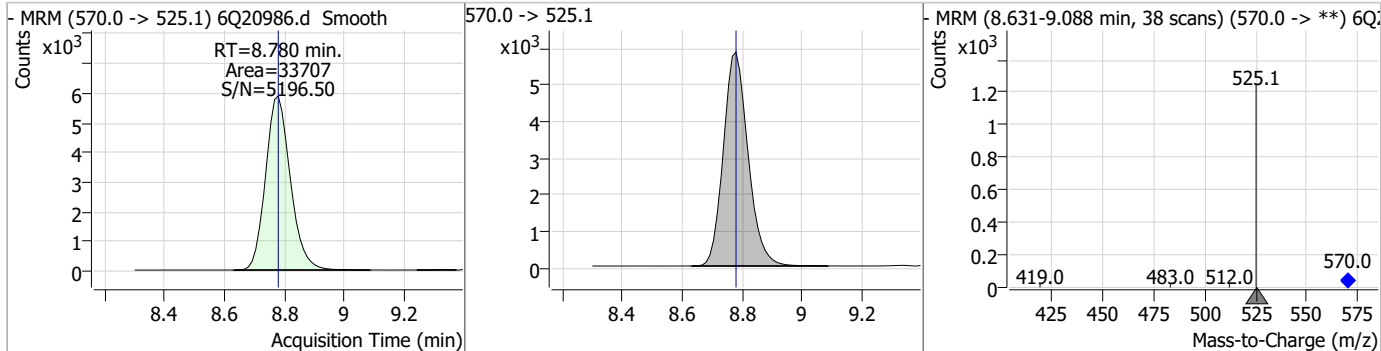
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.65	8.55	0.00	26613				



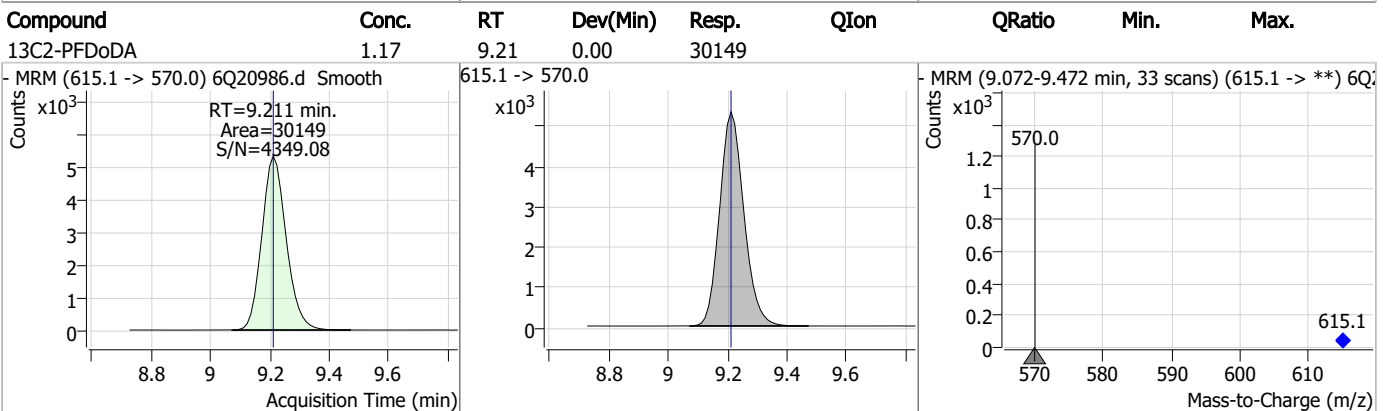
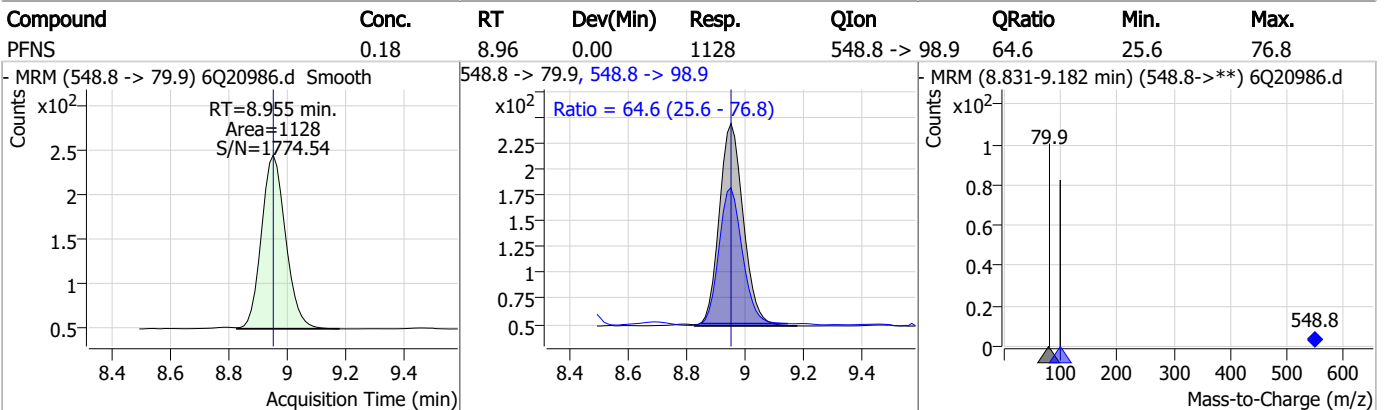
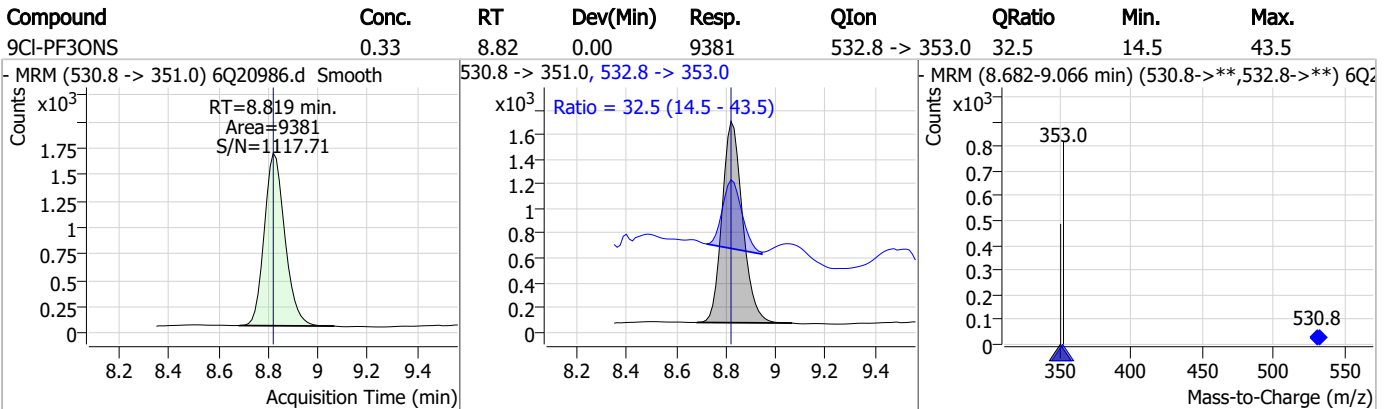
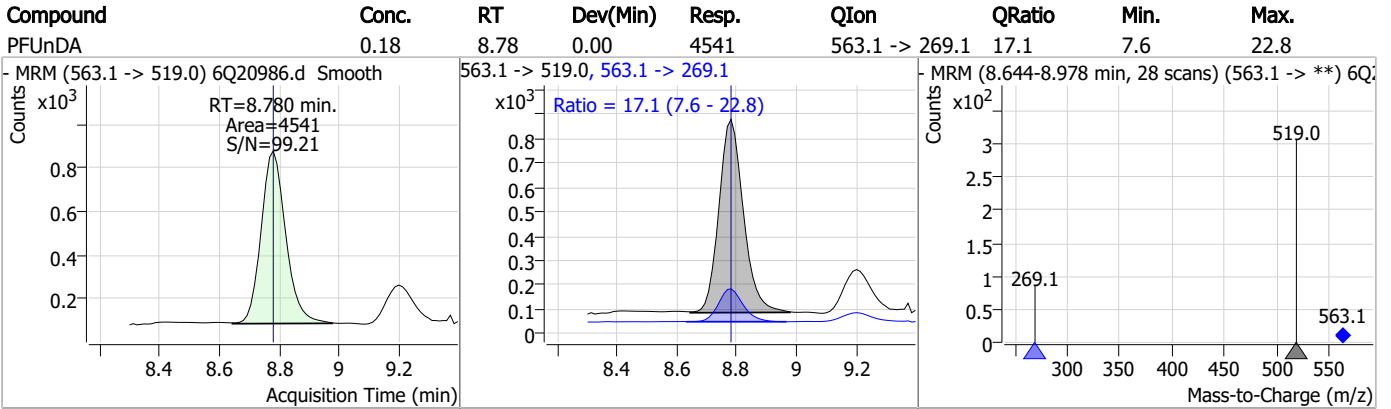
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.19	8.57	0.01	776 (m)	584.2 -> 526.0	56.2	25.1	75.2



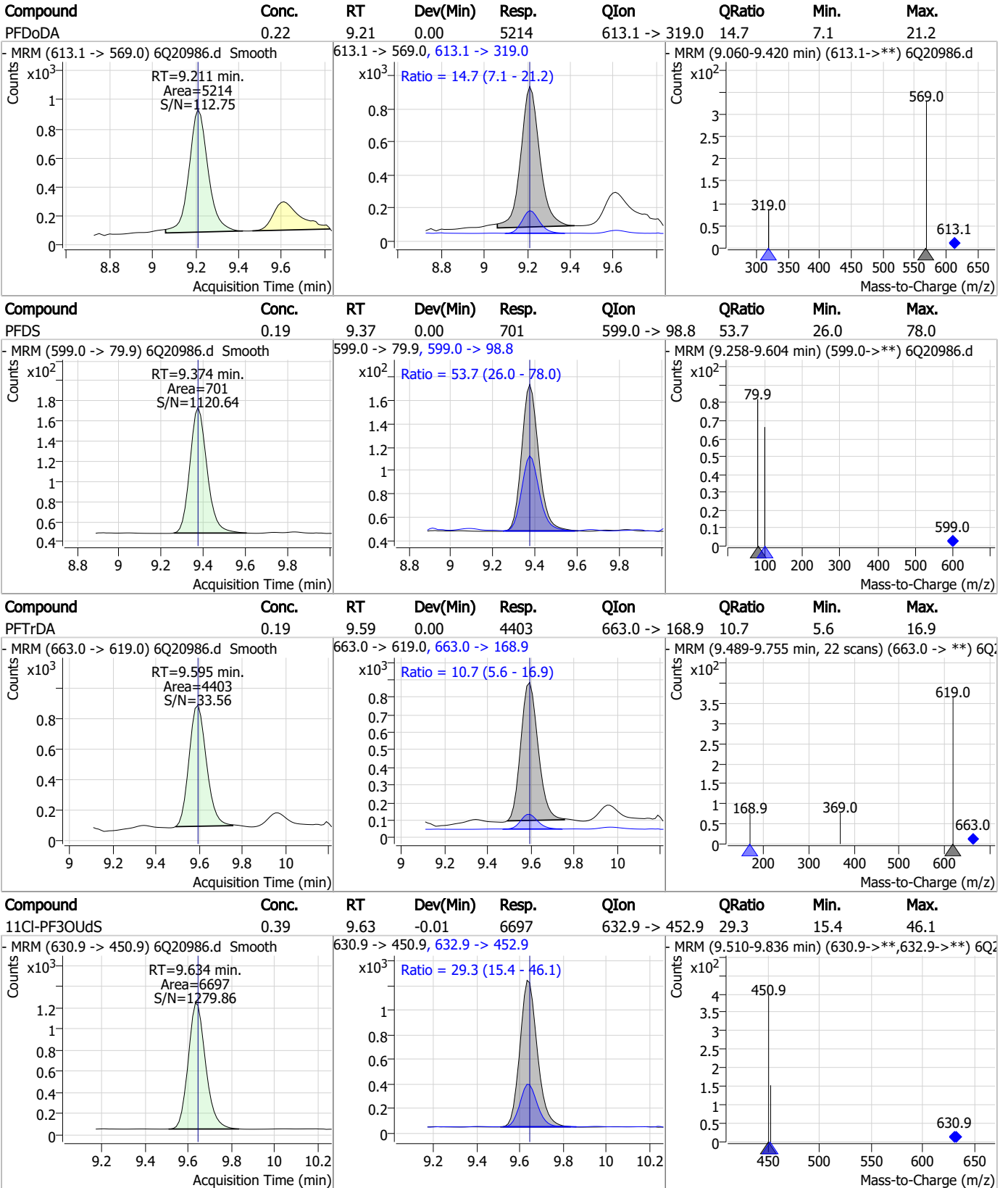
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.34	8.78	0.00	33707				



Perfluorinated Compounds by LC/MS/MS



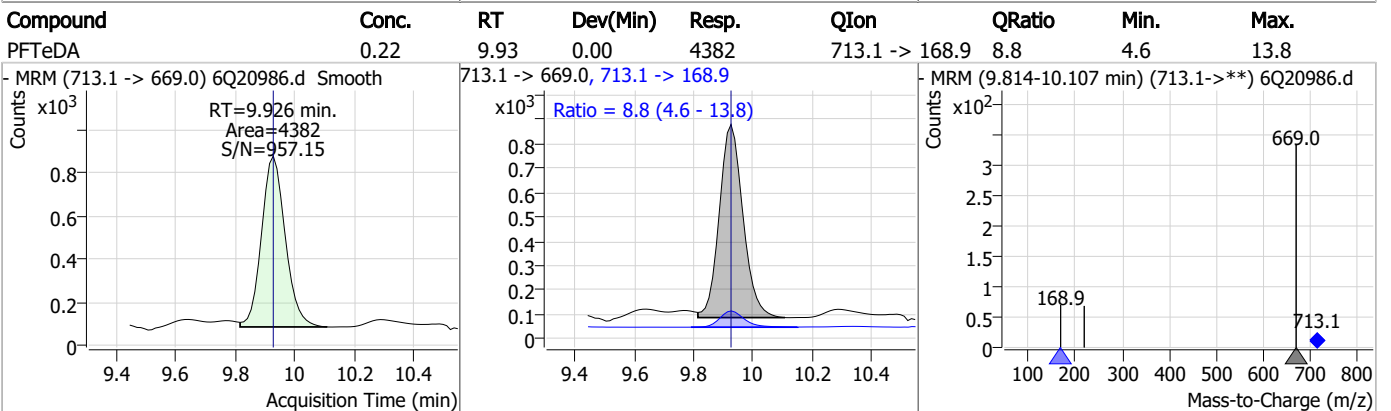
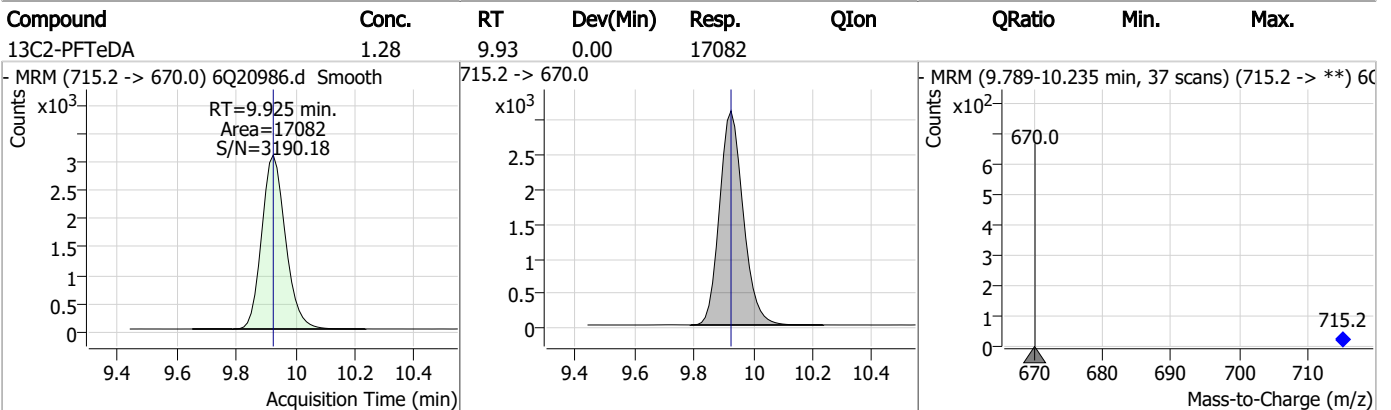
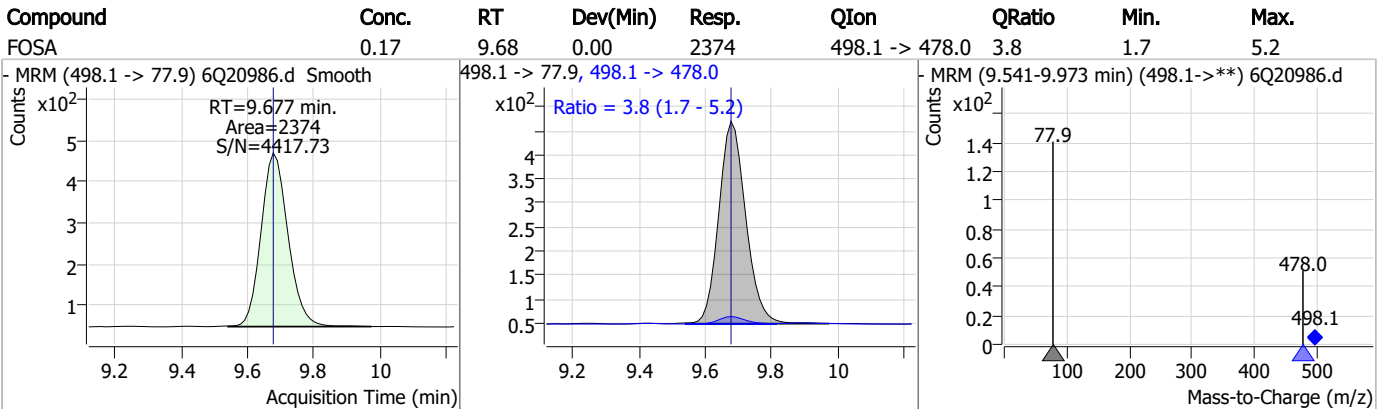
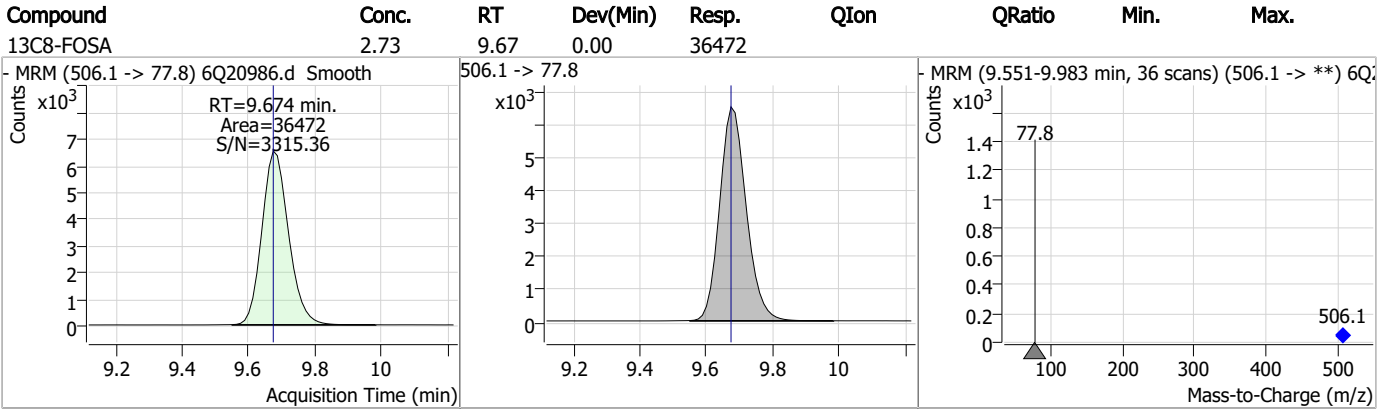
Perfluorinated Compounds by LC/MS/MS



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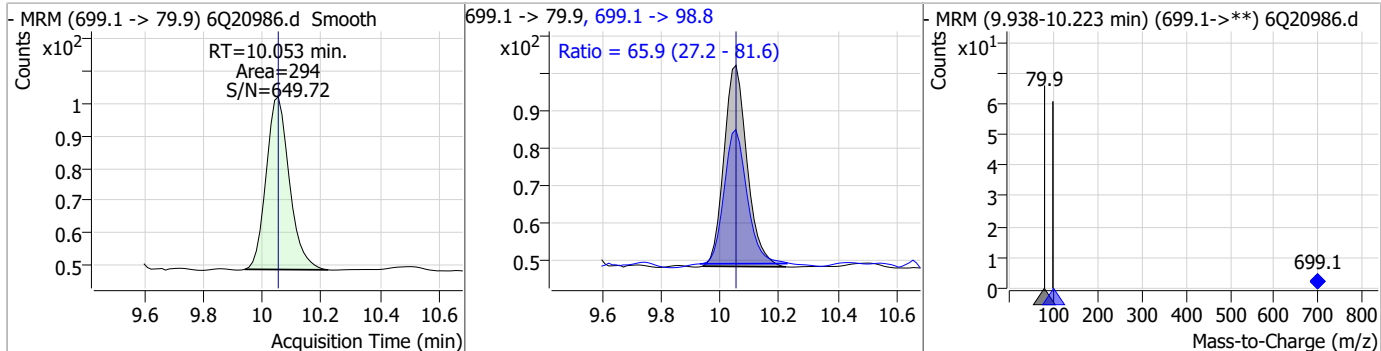


Perfluorinated Compounds by LC/MS/MS

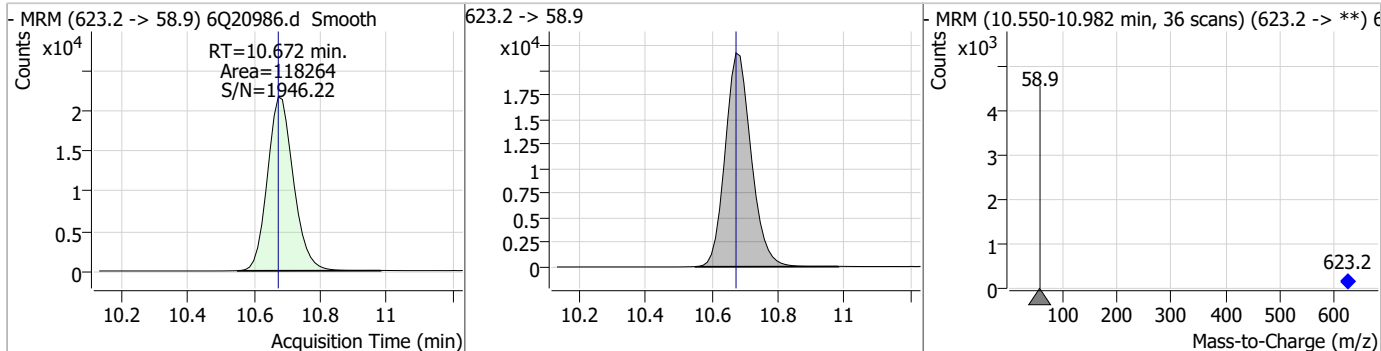


Perfluorinated Compounds by LC/MS/MS

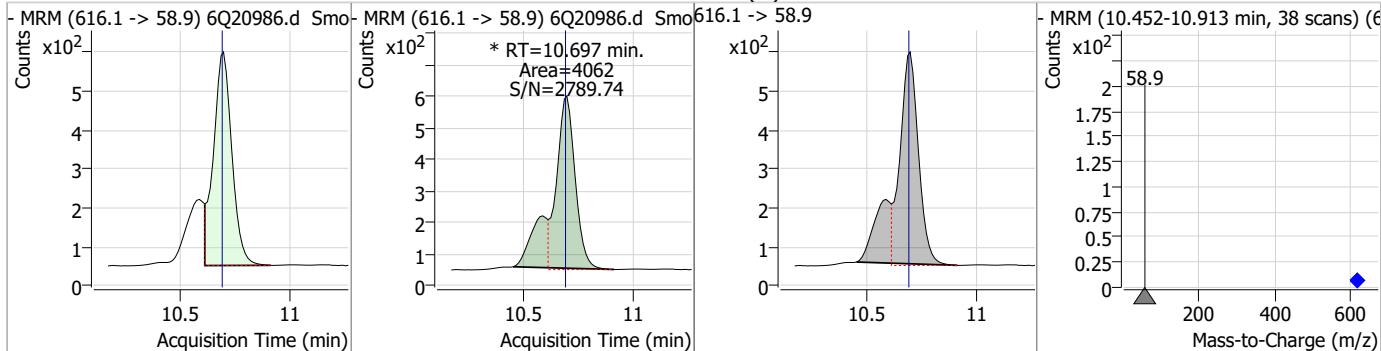
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoS	0.17	10.05	0.00	294	699.1 -> 98.8	65.9	27.2	81.6



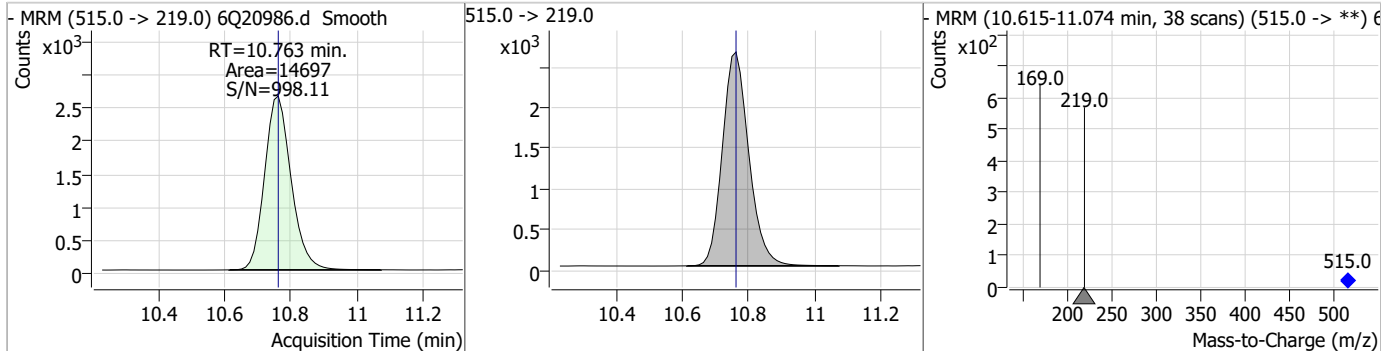
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.13	10.67	0.00	118264				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.82	10.70	0.01	4062 (m)				

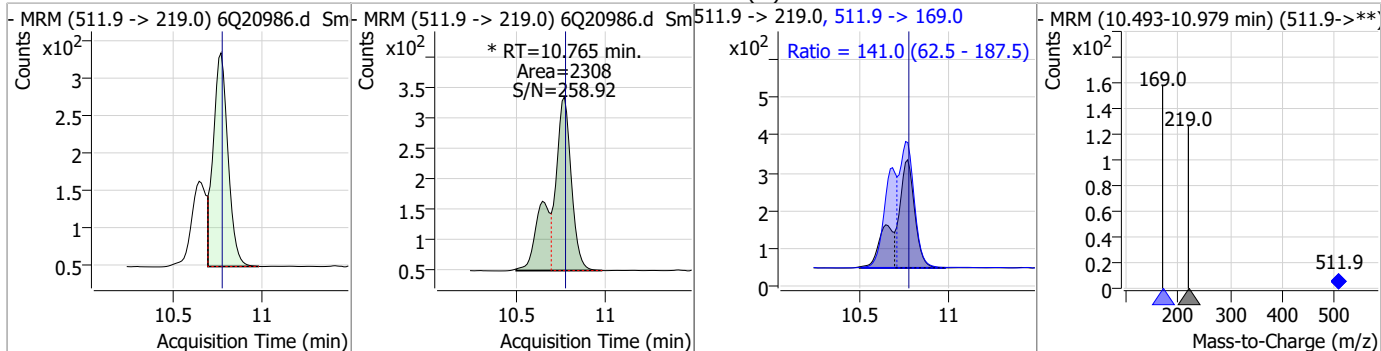


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.38	10.76	0.00	14697				

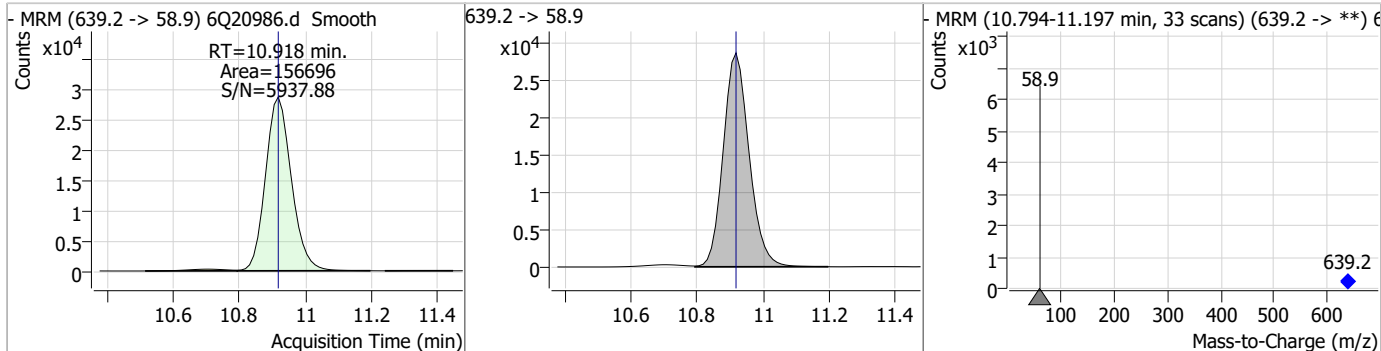


Perfluorinated Compounds by LC/MS/MS

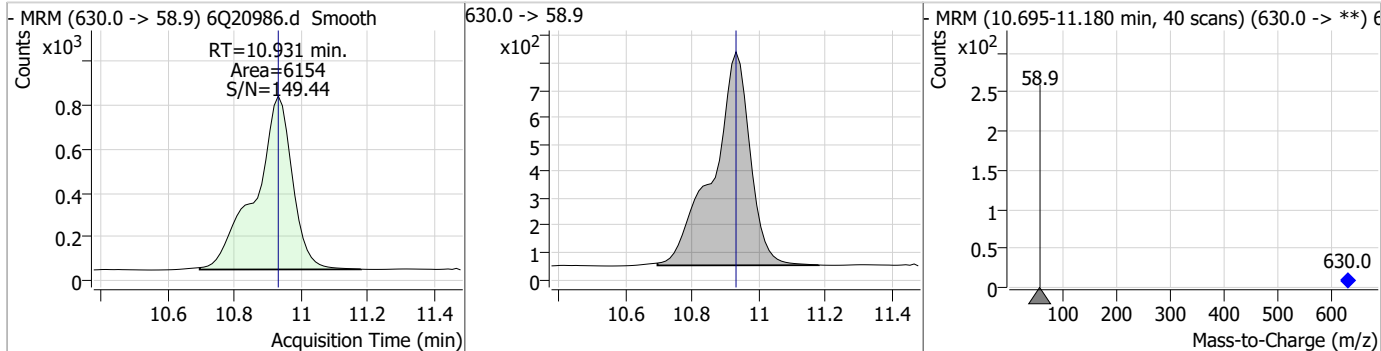
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.37	10.76	0.00	2308 (m)	511.9 -> 169.0	141.0	62.5	187.5



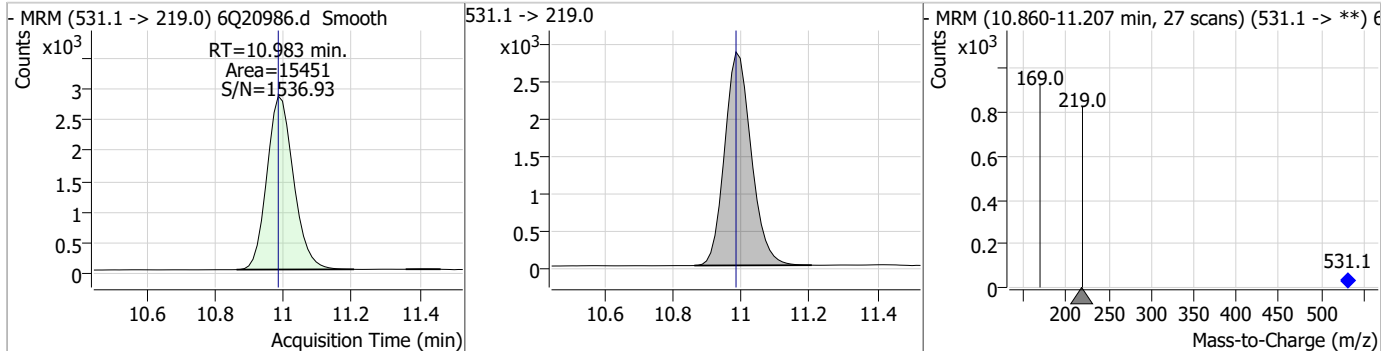
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	27.45	10.92	0.00	156696				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.78	10.93	0.00	6154				

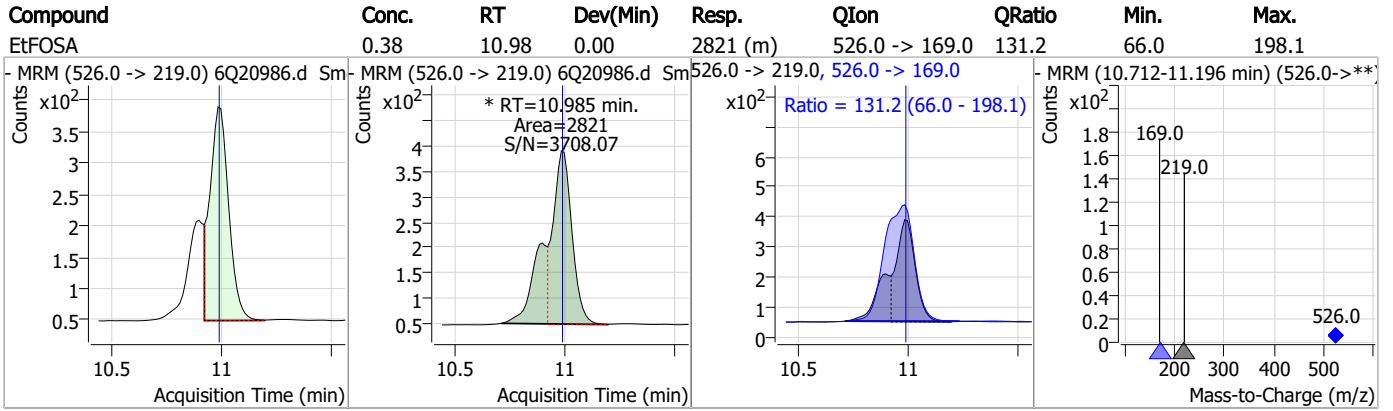


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.44	10.98	0.00	15451				



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q310-CC307
Lab FileID: 6Q20986.D
Injection Time: 07/14/23 08:47

Method: EPA DRAFT 1633
Analyst approved: 07/16/23 11:49 Martha Valls
Supervisor approved: 07/17/23 11:26 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.39	Split peak
MeFOSAA	2355-31-9		8.35	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.48	Split peak
EtFOSAA	2991-50-6		8.57	Split peak
MeFOSE	24448-09-7		10.70	Split peak
MeFOSA	31506-32-8		10.77	Split peak
EtFOSA	4151-50-2		10.98	Split peak

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SGS ORLANDO

DATE:	07/10/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_070623_S6Q304
CAL DATE:	07/06/23
ANALYST:	M. Valls
RUN BATCH:	S6Q307

ELUENT A LOT #:	ACN 220811
ELUENT B LOT #:	HPLC WATER LOT: 230470 W5% Methanol 224279 2ml AMAC: 11387
IC/CC STD LOT #:	LCMS 2124-D
ICV STD LOT #:	LCMS 2124D/2125B
ISTD/ID STD LOT #:	11851/11850

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q20640.d	P1-B9	CCB	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
2	6Q20641.d	P1-B9	CCB	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
3	6Q20642.d	P1-B9	CCB	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
4	6Q20643.d	P1-B3	RT TDCA	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
5	6Q20644.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
6	6Q20645.d	P1-A9	High Std	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
7	6Q20646.d	P1-A1	IBLK	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
8	6Q20647.d	P1-A5	cc304-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1.,water	surr low
9	6Q20648.d	P1-A2	cc304-1.0LL	1633full.m	QC	1.6/500	OP97325.S6Q307.500,,,5.0,1.,water	Pass
10	6Q20649.d	P2-A1	op97713-bs	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1.,water	ir due to failing ccv
11	6Q20650.d	P2-A2	op97713-llbs:2	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1.,water	↓
12	6Q20651.d	P2-A3	op97713-mb	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1.,water	↓
13	6Q20652.d	P2-A4	JD67319-1	1633full.m	Sample		OP97713.S6Q307.60,,,5.0,1.,water	↓
14	6Q20653.d	P2-A5	FC6959-1	1633full.m	Sample		OP97713.S6Q307.520,,,5.0,1.,water	↓
15	6Q20654.d	P2-A6	FC6994-1	1633full.m	Sample		OP97713.S6Q307.510,,,5.0,1.,water	↓
16	6Q20655.d	P2-A7	FC6994-2	1633full.m	Sample		OP97713.S6Q307.490,,,5.0,1.,water	↓
17	6Q20656.d	P2-A8	FC6994-3	1633full.m	Sample		OP97713.S6Q307.550,,,5.0,1.,water	↓
18	6Q20657.d	P2-A9	FC6994-4	1633full.m	Sample		OP97713.S6Q307.450,,,5.0,1.,water	↓
19	6Q20658.d	P1-A5	cc304-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1.,water	surr fail low
20	6Q20659.d	P1-B8	cc304-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1.,water	surr fail low, re-calibrate
21	6Q20660.d	P1-B9	CCB	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
22	6Q20661.d	P1-B3	RT TDCA	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
23	6Q20662.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
24	6Q20663.d	P1-A1	ic307-0	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
25	6Q20664.d	P1-A2	ic307-1	1633full.m	Cal	1.6/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
26	6Q20665.d	P1-A3	ic307-2	1633full.m	Cal	3.2/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
27	6Q20666.d	P1-A4	ic307-3	1633full.m	Cal	10/500	OP97325.S6Q307.500,,,5.0,1.,water	Level 3 1st resp concentrate
28	6Q20667.d	P1-A5	icc307-4	1633full.m	Cal	20/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
29	6Q20668.d	P1-A6	ic307-5	1633full.m	Cal	40/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
30	6Q20669.d	P1-A7	ic307-6	1633full.m	Cal	100/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
31	6Q20670.d	P1-A8	ic307-7	1633full.m	Cal	200/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
32	6Q20671.d	P1-A9	ic307-8	1633full.m	Cal	1x	OP97325.S6Q307.500,,,5.0,1.,water	✓
33	6Q20672.d	P1-A1	IBLK	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1.,water	✓
34	6Q20673.d	P1-B1	icv307-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1.,water	✓
35	6Q20674.d	P1-B2	icv307-20	1633full.m	QC	100/500	OP97325.S6Q307.500,,,5.0,1.,water	✓



LCMS6-6Q ANALYSIS LOG

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36	6Q20675.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1,water	✓
37	6Q20676.d	P1-A2	cc307-1.0LL	1633full.m	QC	1.6/500	OP97325.S6Q307.500,,,5.0,1,water	✓
38	6Q20677.d	P2-A1	op97713-bs	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1,water	✓
39	6Q20678.d	P2-A2	op97713-llbs:2	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1,water	✓
40	6Q20679.d	P2-A3	op97713-mb	1633full.m	Sample		OP97713.S6Q307.500,,,5.0,1,water	✓
41	6Q20680.d	P2-A4	JD67319-1	1633full.m	Sample		OP97713.S6Q307.60,,,5.0,1,water	cf
42	6Q20681.d	P2-A5	FC6959-1	1633full.m	Sample		OP97713.S6Q307.520,,,5.0,1,water	rr1x for co
43	6Q20682.d	P2-A6	FC6994-1	1633full.m	Sample		OP97713.S6Q307.510,,,5.0,1,water	✓
44	6Q20683.d	P2-A7	FC6994-2	1633full.m	Sample		OP97713.S6Q307.490,,,5.0,1,water	✓
45	6Q20684.d	P2-A8	FC6994-3	1633full.m	Sample		OP97713.S6Q307.550,,,5.0,1,water	✓
46	6Q20685.d	P2-A9	FC6994-4	1633full.m	Sample		OP97713.S6Q307.450,,,5.0,1,water	Redo, surr fail low
47	6Q20686.d	P1-B8	cc307-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1,water	✓
48	6Q20687.d	P1-A1	iccb	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1,water	✓
49	6Q20688.d	P2-B1	FC6994-5	1633full.m	Sample		OP97713.S6Q307.450,,,5.0,1,water	pfba confirm with ms
50	6Q20689.d	P2-B2	op97713-ms	1633full.m	Sample		OP97713.S6Q307.450,,,5.0,1,water	✓
51	6Q20690.d	P2-B3	FC6994-6	1633full.m	Sample		OP97713.S6Q307.450,,,5.0,1,water	✓
52	6Q20691.d	P2-B4	op97713-dup	1633full.m	Sample		OP97713.S6Q307.490,,,5.0,1,water	✓
53	6Q20692.d	P2-B5	FC6774-1	1633full.m	Sample		OP97713.S6Q307.485,,,5.0,1,water	✓
54	6Q20693.d	P2-B6	FC6774-2	1633full.m	Sample		OP97713.S6Q307.485,,,5.0,1,water	✓
55	6Q20694.d	P2-B7	FC6681-4	1633full.m	Sample	250/500	OP97563.S6Q307.530,,,5.0,2,water	✓
56	6Q20695.d	P2-B8	FC6681-11	1633full.m	Sample	250/500	OP97563.S6Q307.375,,,5.0,2,water	✓
57	6Q20696.d	P2-B9	FC6681-11	1633full.m	Sample	100/500	OP97563.S6Q307.375,,,5.0,5,water	✓
58	6Q20697.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1,water	✓
59	6Q20698.d	P1-A1	iccb	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1,water	✓
60	6Q20699.d	P2-C1	FC6681-13	1633full.m	Sample	250/500	OP97563.S6Q307.515,,,5.0,2,water	✓
61	6Q20700.d	P2-C2	FC6681-13	1633full.m	Sample	100/500	OP97563.S6Q307.515,,,5.0,5,water	✓
62	6Q20701.d	P2-C3	op97610-bs	1633full.m	Sample		OP97610.S6Q307.500,,,5.0,1,soil	✓
63	6Q20702.d	P2-C4	op97610-llbs:2	1633full.m	Sample		OP97610.S6Q307.500,,,5.0,1,soil	✓
64	6Q20703.d	P2-C5	op97610-mb	1633full.m	Sample		OP97610.S6Q307.500,,,5.0,1,soil	✓
65	6Q20704.d	P2-C6	FC6804-1	1633full.m	Sample		OP97610.S6Q307.503,,,5.0,1,soil	rf5x effsoa surr high
66	6Q20705.d	P2-C7	FC6804-2	1633full.m	Sample		OP97610.S6Q307.505,,,5.0,1,soil	rf5x effsoa surr high
67	6Q20706.d	P2-C8	FC6804-3	1633full.m	Sample		OP97610.S6Q307.505,,,5.0,1,soil	✓
68	6Q20707.d	P2-C9	FC6804-4	1633full.m	Sample		OP97610.S6Q307.499,,,5.0,1,soil	✓
69	6Q20708.d	P2-D1	FC6804-5	1633full.m	Sample		OP97610.S6Q307.504,,,5.0,1,soil	✓
70	6Q20709.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97325.S6Q307.500,,,5.0,1,water	✓
71	6Q20710.d	P1-A1	iccb	1633full.m	Sample		OP97325.S6Q307.500,,,5.0,1,water	✓
72	6Q20711.d	P2-D2	FC6954-1	1633full.m	Sample		OP97610.S6Q307.500,,,5.0,1,soil	✓
73	6Q20712.d	P2-D3	op97610-ms	1633full.m	Sample		OP97610.S6Q307.504,,,5.0,1,soil	✓
74	6Q20713.d	P2-D4	op97610-mnsd	1633full.m	Sample		OP97610.S6Q307.495,,,5.0,1,soil	✓
75	6Q20714.d	P2-D5	FC6954-2	1633full.m	Sample		OP97610.S6Q307.504,,,5.0,1,soil	✓
76	6Q20715.d	P2-D6	FC6954-3	1633full.m	Sample		OP97610.S6Q307.504,,,5.0,1,soil	✓
77	6Q20716.d	P2-D7	FC6954-4	1633full.m	Sample		OP97610.S6Q307.504,,,5.0,1,soil	✓
78	6Q20717.d	P2-D8	FC6954-5	1633full.m	Sample		OP97610.S6Q307.501,,,5.0,1,soil	✓



SGS ORLANDO LCMS6-6Q ANALYSIS LOG

79	6Q20718.d	P2-D9	FC6954-6	1633full.m	Sample	OP97610,S6Q307,4,97,,5.0,1,soil	✓
80	6Q20719.d	P2-E1	FC6954-7	1633full.m	Sample	OP97610,S6Q307,5.01,,5.0,1,soil	✓
81	6Q20720.d	P2-E2	FC6954-8	1633full.m	Sample	OP97610,S6Q307,5.01,,5.0,1,soil	✓
82	6Q20721.d	P1-A5	cc307-4	1633full.m	QC	20/500	✓
83	6Q20722.d	P1-A1	iccb	1633full.m	Sample	OP97325,S6Q307,500,,5.0,1,water	✓
84	6Q20723.d	P2-E3	FC6954-9	1633full.m	Sample	OP97610,S6Q307,5.00,,5.0,1,soil	✓
85	6Q20724.d	P2-E4	FC6954-10	1633full.m	Sample	OP97610,S6Q307,5.03,,5.0,1,soil	✓
86	6Q20725.d	P2-E5	FC6774-7	1633full.m	Sample	OP97661,S6Q307,495,,5.0,5,water	✓
87	6Q20726.d	P2-E6	FC6774-10	1633full.m	Sample	OP97661,S6Q307,450,,5.0,5,water	✓
88	6Q20727.d	P2-E7	FC6774-11	1633full.m	Sample	OP97661,S6Q307,475,,5.0,5,water	✓
89	6Q20728.d	P2-E8	FC7024-1	1633full.m	Sample	OP97661,S6Q307,485,,5.0,5,water	rr10x
90	6Q20729.d	P1-A5	ecc307-4	1633full.m	QC	20/500	✓
91	6Q20730.d	P1-A1	iccb	1633full.m	Sample	OP97325,S6Q307,500,,5.0,1,water	✓

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DATE:	07/13/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 uI
INSTRUMENT:	LCMS6-6Q

LCMS6-6Q ANALYSIS LOG

METHODS:	1633
PROC. METH:	1633_071023_S6Q307
CAL DATE:	07/10/23
ANALYST:	M. Valls
RUN BATCH:	S6Q310

ELUENT A LOT #:	ACN 220811
ELUENT B LOT #:	HPLC WATER LOT: 230470 W5% Methanol 224279 2mM AMAC: 11387
IC/CC STD LOT #:	LCMS 2124-D
ICV STD LOT #:	LCMS 2124D/2125B
ISTD/ID STD LOT #:	11851/11850

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q20887.d	P1-B9	CCB	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
2	6Q20888.d	P1-B9	CCB	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
3	6Q20889.d	P1-B3	RT TDCA	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
4	6Q20890.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
5	6Q20891.d	P1-A9	High Std	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
6	6Q20892.d	P1-A1	IBLK	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
7	6Q20893.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715.S6Q310.500,,,5.0,1,,water	✓
8	6Q20894.d	P1-A2	cc307-1.0LL	1633full.m	QC	1.6/500	OP97715.S6Q310.500,,,5.0,1,,water	✓
9	6Q20895.d	P4-C6	op97773-bs	1633full.m	Sample		OP97773.S6Q310.500,,,5.0,1,,water	✓
10	6Q20896.d	P4-C7	op97773-llbs:2	1633full.m	Sample		OP97773.S6Q310.500,,,5.0,1,,water	✓
11	6Q20897.d	P4-C8	op97773-mb	1633full.m	Sample		OP97773.S6Q310.500,,,5.0,1,,water	✓
12	6Q20898.d	P4-C9	FC6881-4	1633full.m	Sample		OP97773.S6Q310.466,,,5.0,1,,water	✓
13	6Q20899.d	P4-D1	FC7015-1	1633full.m	Sample		OP97773.S6Q310.480,,,5.0,1,,water	rf5x for 4,2,6:2 surr high
14	6Q20900.d	P4-D2	op97773-ms	1633full.m	Sample		OP97773.S6Q310.500,,,5.0,1,,water	✓
15	6Q20901.d	P4-D3	FC7015-2	1633full.m	Sample		OP97773.S6Q310.510,,,5.0,1,,water	✓
16	6Q20902.d	P4-D4	op97773-dup	1633full.m	Sample		OP97773.S6Q310.510,,,5.0,1,,water	✓
17	6Q20903.d	P4-D5	FC7015-3	1633full.m	Sample		OP97773.S6Q310.495,,,5.0,1,,water	✓
18	6Q20904.d	P4-D6	FC7015-4	1633full.m	Sample		OP97773.S6Q310.510,,,5.0,1,,water	✓
19	6Q20905.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715.S6Q310.500,,,5.0,1,,water	✓
20	6Q20906.d	P1-A1	iccb	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
21	6Q20907.d	P5-A1	FC6934-13	1633full.m	Sample	250/500	OP97749.S6Q310.528,,,5.0,2,,water	✓
22	6Q20908.d	P5-A2	FC6934-17	1633full.m	Sample	100/500	OP97749.S6Q310.520,,,5.0,5,,water	✓
23	6Q20909.d	P5-A3	FC6934-18	1633full.m	Sample	100/500	OP97749.S6Q310.512,,,5.0,5,,water	✓
24	6Q20910.d	P5-A4	op97799-bs	1633full.m	Sample		OP97799.S6Q310.500,,,5.0,1,,water	✓
25	6Q20911.d	P5-A5	op97799-llbs:3	1633full.m	Sample		OP97799.S6Q310.500,,,5.0,1,,water	✓
26	6Q20912.d	P5-A6	op97799-mb	1633full.m	Sample		OP97799.S6Q310.500,,,5.0,1,,water	✓
27	6Q20913.d	P5-A7	FC7583-1	1633full.m	Sample		OP97799.S6Q310.500,,,5.0,1,,water	✓
28	6Q20914.d	P5-A8	FC7583-2	1633full.m	Sample		OP97799.S6Q310.520,,,5.0,1,,water	HXA qual out
29	6Q20915.d	P5-A9	FC7583-3	1633full.m	Sample		OP97799.S6Q310.544,,,5.0,1,,water	✓
30	6Q20916.d	P5-B1	op97799-ms	1633full.m	Sample		OP97799.S6Q310.530,,,5.0,1,,water	✓
31	6Q20917.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715.S6Q310.500,,,5.0,1,,water	✓
32	6Q20918.d	P1-A1	iccb	1633full.m	Sample		OP97715.S6Q310.500,,,5.0,1,,water	✓
33	6Q20919.d	P5-B2	op97799-dup	1633full.m	Sample		OP97799.S6Q310.574,,,5.0,1,,water	✓
34	6Q20920.d	P5-B3	FC7583-4	1633full.m	Sample		OP97799.S6Q310.570,,,5.0,1,,water	✓
35	6Q20921.d	P5-B4	FC7583-5	1633full.m	Sample		OP97799.S6Q310.520,,,5.0,1,,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

36	6Q20922.d	P5-B5	FC7583-6	1633full.m	Sample	OP97799,S6Q310,570,,5.0,1,water	✓
37	6Q20923.d	P5-B6	FC7490-1	1633full.m	Sample	OP97799,S6Q310,520,,5.0,1,water	✓
38	6Q20924.d	P5-B7	op97753-bs	1633full.m	Sample	OP97753,S6Q310,500,,5.0,1,soil	✓
39	6Q20925.d	P5-B8	op97753-llbs:3	1633full.m	Sample	OP97753,S6Q310,500,,5.0,1,soil	✓
40	6Q20926.d	P5-B9	op97753-mb	1633full.m	Sample	OP97753,S6Q310,500,,5.0,1,soil	✓
41	6Q20927.d	P5-C1	FC7109-5	1633full.m	Sample	OP97753,S6Q310,4.97,,5.0,1,soil	HxS high, rr 5x
42	6Q20928.d	P5-C2	FC7109-6	1633full.m	Sample	OP97753,S6Q310,5.01,,5.0,1,soil	HxS, Pfoa high, rr 5x
43	6Q20929.d	P1-A5	cc307-4	1633full.m	QC	OP97715,S6Q310,500,,5.0,1,water	✓
44	6Q20930.d	P1-A1	iccb	1633full.m	Sample	OP97715,S6Q310,500,,5.0,1,water	✓
45	6Q20931.d	P5-C3	FC7109-7	1633full.m	Sample	OP97753,S6Q310,4.95,,5.0,1,soil	HxS high, rr 5x
46	6Q20932.d	P5-C4	op97753-ms	1633full.m	Sample	OP97753,S6Q310,4.95,,5.0,1,soil	rr5x
47	6Q20933.d	P5-C5	op97753-msd	1633full.m	Sample	OP97753,S6Q310,4.97,,5.0,1,soil	rr5x
48	6Q20934.d	P5-C6	FC7109-8	1633full.m	Sample	OP97753,S6Q310,5.02,,5.0,1,soil	HxS high, rr 2x
49	6Q20935.d	P5-C7	FC7109-9	1633full.m	Sample	OP97753,S6Q310,5.02,,5.0,1,soil	HxS, Pfos high, rr 5x
50	6Q20936.d	P5-C8	FC7109-10	1633full.m	Sample	OP97753,S6Q310,5.03,,5.0,1,soil	rr1x co
51	6Q20937.d	P5-C9	FC7109-11	1633full.m	Sample	OP97753,S6Q310,5.01,,5.0,1,soil	✓
52	6Q20938.d	P5-D1	FC7109-12	1633full.m	Sample	OP97753,S6Q310,4.97,,5.0,1,soil	rr10x E
53	6Q20939.d	P5-D2	FC7109-13	1633full.m	Sample	OP97753,S6Q310,5.01,,5.0,1,soil	rr1x co
54	6Q20940.d	P5-D3	FC7109-14	1633full.m	Sample	OP97753,S6Q310,5.04,,5.0,1,soil	rr10x Pfos + Redo low volume, IST fail
55	6Q20941.d	P1-A5	cc307-4	1633full.m	QC	OP97715,S6Q310,500,,5.0,1,water	✓
56	6Q20942.d	P1-A1	iccb	1633full.m	Sample	OP97715,S6Q310,500,,5.0,1,water	✓
57	6Q20943.d	P5-D4	FC7109-15	1633full.m	Sample	OP97753,S6Q310,5.02,,5.0,1,soil	rr10x E
58	6Q20944.d	P5-D5	FC7109-16	1633full.m	Sample	OP97753,S6Q310,4.96,,5.0,1,soil	rr10x + Redo low volume
59	6Q20945.d	P5-D6	FC7109-17	1633full.m	Sample	OP97753,S6Q310,4.96,,5.0,1,soil	rr1x co + 10x Pfos
60	6Q20946.d	P5-D7	FC7109-18	1633full.m	Sample	OP97753,S6Q310,4.97,,5.0,1,soil	rr10x E + Redo lower volume
61	6Q20947.d	P5-D8	FC7109-19	1633full.m	Sample	OP97753,S6Q310,5.03,,5.0,1,soil	rr10x E + Redo lower volume
62	6Q20948.d	P5-D9	FC7109-20	1633full.m	Sample	OP97753,S6Q310,5.05,,5.0,1,soil	rr1x co + 10x E
63	6Q20949.d	P5-E1	FC7109-21	1633full.m	Sample	OP97753,S6Q310,4.98,,5.0,1,soil	rr10x Pfos + Redo low volume, IST fail
64	6Q20950.d	P5-E2	FC7109-22	1633full.m	Sample	OP97753,S6Q310,5.05,,5.0,1,soil	rr1x co + 5x HxS
65	6Q20951.d	P5-E3	FC7109-23	1633full.m	Sample	OP97753,S6Q310,5.01,,5.0,1,soil	rr1x co
66	6Q20952.d	P2-E9	FC6934-10	1633full.m	Sample	OP97749,S6Q310,528,,5.0,1,water	CF
67	6Q20953.d	P1-A5	cc307-4	1633full.m	QC	OP97715,S6Q310,500,,5.0,1,water	✓
68	6Q20954.d	P1-A1	iccb	1633full.m	Sample	OP97715,S6Q310,500,,5.0,1,water	✓
69	6Q20955.d	P5-E4	op97800-bs	1633full.m	Sample	OP97800,S6Q310,500,,5.0,1,water	✓
70	6Q20956.d	P5-E5	op97800-llbs:3	1633full.m	Sample	OP97800,S6Q310,500,,5.0,1,water	✓
71	6Q20957.d	P5-E6	op97800-mb	1633full.m	Sample	OP97800,S6Q310,500,,5.0,1,water	✓
72	6Q20958.d	P5-E7	FC7060-39	1633full.m	Sample	OP97800,S6Q310,480,,5.0,1,water	✓
73	6Q20959.d	P5-E8	FC7060-40	1633full.m	Sample	OP97800,S6Q310,445,,5.0,1,water	rr2x HxA
74	6Q20960.d	P5-E9	FC7060-41	1633full.m	Sample	OP97800,S6Q310,520,,5.0,1,water	✓
75	6Q20961.d	P5-F1	op97800-ms	1633full.m	Sample	OP97800,S6Q310,510,,5.0,1,water	✓
76	6Q20962.d	P5-F2	FC7060-42	1633full.m	Sample	OP97800,S6Q310,500,,5.0,1,water	✓
77	6Q20963.d	P5-F3	op97800-dup	1633full.m	Sample	OP97800,S6Q310,480,,5.0,1,water	✓
78	6Q20964.d	P5-F4	FC7063-1	1633full.m	Sample	OP97800,S6Q310,64,,5.0,1,water	✓

LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

79	6Q20965.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715,S6Q310,500,,,5.0,1,water	✓
80	6Q20966.d	P1-A1	iccb	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
81	6Q20967.d	P5-F5	FC7063-2	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
82	6Q20968.d	P5-F6	FC7063-3	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
83	6Q20969.d	P5-F7	FC7063-4	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
84	6Q20970.d	P5-F8	FC7063-5	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
85	6Q20971.d	P5-F9	FC7063-6	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
86	6Q20972.d	P2-F5	FC7063-7	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
87	6Q20973.d	P2-F6	FC7063-8	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
88	6Q20974.d	P2-F7	FC7063-9	1633full.m	Sample		OP97800,S6Q310,64,,,5.0,1,water	✓
89	6Q20975.d	P2-F8	FC7063-10	1633full.m	Sample		OP97800,S6Q310,280,,,5.0,1,water	✓
90	6Q20976.d	P2-F9	FC7063-11	1633full.m	Sample		OP97800,S6Q310,270,,,5.0,1,water	✓
91	6Q20977.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715,S6Q310,500,,,5.0,1,water	✓
92	6Q20978.d	P1-A1	iccb	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
93	6Q20979.d	P1-F1	FC6804-2	1633full.m	Sample		OP97610,S6Q310,5.00,,,5.0,1,SOIL	✓
94	6Q20980.d	P1-F2	FC6804-2	1633full.m	Sample	100/500	OP97610,S6Q310,5.00,,,5.0,5,SOIL	✓
95	6Q20981.d	P1-B3	RT TDCA	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
96	6Q20982.d	P1-B4	RT BR-LN	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
97	6Q20983.d	P1-A9	High Std	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
98	6Q20984.d	P1-A1	IBLK	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
99	6Q20985.d	P1-A5	cc307-4	1633full.m	QC	20/500	OP97715,S6Q310,500,,,5.0,1,water	✓
100	6Q20986.d	P1-A2	cc307-1,0LL	1633full.m	QC	1.6/500	OP97715,S6Q310,500,,,5.0,1,water	✓
101	6Q20987.d	P6-A1	op97757-bs	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	✓
102	6Q20988.d	P6-A2	op97757-llbs:2	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	✓
103	6Q20989.d	P6-A3	op97757-mb	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	✓
104	6Q20990.d	P6-A4	JD67312-1B	1633full.m	Sample		OP97757,S6Q310,5.01,,,5.0,1,soil	✓
105	6Q20991.d	P6-A5	JD67312-3B	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	✓
106	6Q20992.d	P6-A6	JD67312-5B	1633full.m	Sample		OP97757,S6Q310,4.99,,,5.0,1,soil	✓
107	6Q20993.d	P6-A7	JD67312-7B	1633full.m	Sample		OP97757,S6Q310,5.01,,,5.0,1,soil	✓
108	6Q20994.d	P6-A8	op97757-ms	1633full.m	Sample		OP97757,S6Q310,4.99,,,5.0,1,soil	✓
109	6Q20995.d	P6-A9	op97757-msd	1633full.m	Sample		OP97757,S6Q310,5.01,,,5.0,1,soil	✓
110	6Q20996.d	P6-B1	JD67312-9B	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	✓
111	6Q20997.d	P1-A5	ecc307-4	1633full.m	QC	20/500	OP97715,S6Q310,500,,,5.0,1,water	✓
112	6Q20998.d	P1-A1	iccb	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	✓
113	6Q20999.d	P6-B2	JD67312-11B	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	rr1 x due to no after ccv
114	6Q21000.d	P6-B3	JD67312-13B	1633full.m	Sample		OP97757,S6Q310,5.01,,,5.0,1,soil	↓
115	6Q21001.d	P6-B4	JD67312-15B	1633full.m	Sample		OP97757,S6Q310,5.02,,,5.0,1,soil	↓
116	6Q21002.d	P6-B5	JD67312-17B	1633full.m	Sample		OP97757,S6Q310,5.00,,,5.0,1,soil	↓
117	6Q21003.d	P1-A5	ecc307-4	1633full.m	QC	20/500	OP97715,S6Q310,500,,,5.0,1,water	Low volume in vial.
118	6Q21004.d	P1-A1	iccb	1633full.m	Sample		OP97715,S6Q310,500,,,5.0,1,water	not use

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2122A-E	1633 opike Cal Std.	11771 11799A	PFAC MXF	wellington	4/19/28	4-27-24 5-15-24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 mix	5/15/23	10/28/23	MJ
		LCMS 2097A	Br-LN Et+Me	sgs labo	n/a	10/28/23	2 ppm 5 ppm	250uL		125 312.5 ppb	2088ml			
		11772 11801A	PFAC MXF	wellington	3/24/26	4-27-24 5-15-24	2 ppm	250uL		125ppb				
		11774 11802A	PFAC MXG		12-01-27 12-01-27	4-27-24 5-15-24	2 ppm	250uL		125ppb				
		11738 11803A	PFAC MXJ		9/14/26 3-28-28	4-27-24 5-15-24	4-20 ppm	312uL	V	312/1160 ppb				
LCMS 2123A-B	PFC SPIKE	11750	PFAC MXH	Absolute Wellington Labs	03/19/28	05/16/24	1.0 ppm	2mL	5mL	95/1000 5/1.420	100ppb	05/16/23	11/02/23	NG
		11432	N-Me- FOSA-M	wellington Labs	02/18/27	03/19/24	50ppm	40uL						NG
		11513	FBSA-1		11/10/26	04/18/24								NG
		11514	FWSA-1		10/29/26	04/18/24								NG
		11332	PFECHS		03/18/27	04/18/24								NG
LCMS 2123-2124	1633 opike Cal std.	11799B	PFAC MXH	wellington	4/19/28	5/22/24 5/22/24	1-4 ppm	250uL	4mL	62.5 125 250ppb	1633 mix	5/22/23	10/28/23	NW
		LCMS 2097A 4801B	Br-LN Et+Me	sgs labo	n/a	10/28/23	2 ppm 5 ppm			125 312.5 ppb	(2088ml)			
		11801B	PFAC MXF	wellington	3/24/26	5/22/24	2 ppm			125ppb				
		11802B	PFAC MXG		12/1/27	5/22/24	2 ppm			125ppb				
		11803B	PFAC MXJ		3/28/28	5/22/24	4-20 ppm	312uL	V	312/1160 ppb				
						n/a	NW	continue next page 5/22/23						

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

Organic Standards Preparation Log

SGS - Orlando Sid. #	Name Description	Parent Sid. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2095A-J	(10PTO) PFC ID SURR	11669	PFAC-2YES	Wellington Labs	01/18/23	03/28/24	1.0ppm	2.4mL	~50mL	0.5ppm	NS/Meeth 51420	03/28/23	09/28/23	NS
↓	↓	11585	PFAC-DA	↓	11/08/23	01/26/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
↓	↓	11431	PFAC-d-N	↓	05/06/27	03/13/24	50ppm	48uL	↓	↓	↓	↓	↓	NS
LCMS 20940 A-B	1033 spike Cal std.	11672	PFAC-MxH	Wellington Labs	8/8/27	3/23/24	1-4 ppm	250uL	4mL	02.5 125 250ppb	1033 MIX	3/30/23	9/30/23	MU
↓	↓	11686	PFAC-MxI	↓	2/27/28	3/30/24	170 ppm	250uL	↓	02.5 625ppb	↓	↓	↓	↓
↓	↓	11674A	PFAC-MxF	↓	1/11/25	3/23/24	2ppm	500uL	↓	250ppb	↓	↓	↓	↓
↓	↓	11674B	PFAC-MxF	↓	12/11/27	3/30/24	2ppm	250uL	↓	125ppb	↓	↓	↓	↓
↓	↓	11600	PFAC-MxG	↓	9/14/26	3/23/24	4-20 ppm	312uL	↓	312/100 ppb	↓	↓	↓	↓
↓	↓	11675	PFAC-MxJ	↓	10/07/27	10/28/23	50ppm	200uL	5mL	2ppm	1033 MIX	4/6/23	10/28/23	MU
LCMS 2097A-B	BR-LN metel for 1633	11497	br-N metosa	Wellington Labs	08/23/27	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11498	br-N Etfose	↓	10/07/27	10/28/23	50ppm	200uL	↓	2ppm	↓	↓	↓	↓
↓	↓	11495	br-N metose	↓	10/07/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓	11494	br-N Etfose	↓	10/07/27	10/28/23	50ppm	500uL	↓	5ppm	↓	↓	↓	↓
↓	↓					4/6/27								

* tested & signed by SSA LST

* 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 2125A-B	FULL LIST 40 SPIKE (CALC)	11750	PFOA 28 Comp.	Alabate	3/13/28	5/10/24	1.0ppm	400ul	4.0mL	100ppb	951MEOH 581H2O (2,400ml)	5/22/23	8/23/23	MW
↓	↓	LCMS 2067	40 LIST Aged on #2	SGS old.	—	8/23/23	1.0ppm	400ul	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2117	40 LIST Aged on #2	↓	—	11/8/23	1.0ppm	400ul	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2101	F05E Std.	↓	—	7/19/23	5.0ppm	400ul	↓	500ppb	↓	↓	↓	↓
LCMS 2126A-J	PFC ID SURT (10 PPB)	11804	MPAC - 24ES	Wellington Labs	01/18/28	05/23/24	1.0ppm	1.2mL	~2.5mL	0.5ppm	951MEOH 571H2O	05/23/23	10/28/23	NG
↓	↓	11635A	M3HFO DA	↓	11/08/25	04/14/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
↓	↓	11431	D-N- MERSAM	↓	05/06/27	02/10/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
LCMS 2127A-E	1633-OPICE CAL STD.	11799B	PFAC MxH	Wellington	4/19/28	5/22/24	1-4 ppm	2.50ul	4mL	62.5 125 250ppb	1033 MIX (268ml)	5/24/23	10/28/23	MW
↓	↓	11807	MxH	↓	—	5/24/24	1-4 ppm	2.50ul	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2097A-B	BE IN ET-ME	SGS Labo	MA	10/28/23	2 ppm	↓	↓	↓	↓	↓	↓	↓
↓	↓	11801B	PFAC Mx F	Wellington	3/24/26	5/22/24	2 ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11802B	PFAC Mx G	↓	12/1/27	5/24/24	2 ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	11809	PFAC Mx G	↓	3/28/28	5/24/24	2 ppm	3/2ul	↓	312 160ppb	↓	↓	↓	↓
↓	↓	11803B	PFAC Mx J	↓	—	5/22/24	4-20 ppm	↓	↓	↓	↓	↓	↓	↓
↓	↓	11810	PFAC Mx J	↓	—	5/24/24	4-20 ppm	↓	↓	↓	↓	↓	↓	↓
LCMS 2128A-J	PFC ID SURT (10 PPB)	F-5 11819	MPAC - 24ES	Wellington Labs	01/18/28	06/10/24	1.0ppm	1.2mL	~2.5mL	0.5ppm	951MEOH 571H2O	06/10/23	10/28/23	NG
↓	↓	11635A	M3HFO DA	↓	11/08/25	04/14/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
↓	↓	11584	D-N- MERSAM	↓	11/11/27	06/10/24	50ppm	24ul	↓	↓	↓	↓	↓	NG
						NG 06/10/24								

* See on 10/27

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

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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 2067	40 List std. ADD-ON #1	10726A	10:2 FTS	Wellington	3/3/26	3/21/23	50 ppm	80 uL	4.0 mL	1 ppm	95% MeOH 5% H2O	2/8/23	3/21/23 8/23/23	MV
		10840	L- PFDOS		7/9/26	10/18/23							8/23/23	
		10829	N- MCFOSA		8/3/26	8/23/23								
		10837	N- EToFOSA		8/3/26	8/23/23								
		10842	PFHxDA		9/3/26	10/18/23								
		10841	PFOBA		5/7/26	10/18/23								
		11116B	3:3 FTCA PFR-PA		2/3/27	2/8/24								
		10685A	5:3 FTCA PFPePA		11/11/25	8/23/23								
		11116A	7:3 FTCA FHP-PA		11/12/25	2/8/24								
		11332	PFECHS		3/2/27	10/18/23								
		10762B	PFEESA		5/13/25	10/18/23								
		10763B	PFMBA		3/31/25	10/18/23								
		10764	PFMFA		3/31/25	2/8/24								
		10765B	PF406A		3/31/25	10/18/23								
			NFHDA		3/31/25	10/18/23								
			3:6-OPFPA											
					NS	02/10/23								

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

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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 2098A	1033 spike Cal std.	11672A	PFAC MxH	Wellington	8/8/24	3/23/24	1-4 ppm	2.50uL	4mL	6.25 250ppb	1033 mix	4/6/23	10/6/23	MU
		LCMS 2097	Br-in Et. Me	SGS	1/9	10/28/23	3ppm 5ppm	2.50uL		125ppb 312.5ppb				
		11674B	PFAC MxH	Wellington	11/25	3/30/24	2ppm	500uL		350ppb 125ppb				
		11675	PFAC MxG		12/1/24	3/30/24	2ppm	250uL		125ppb				
		11672B	PFAC MxJ		9/14/26	3/23/24	4-20 ppm	312uL		312/1000 ppb				
LCMS 2099	537.1 Duw std. (Interim)	11670	M3PF-PEA	Wellington Labs	07/06/25	04/06/24	50ppm	80uL	4mL	10ppm	96:1 MeOH 4:1 H2O	04/06/23	06/15/23	NG
		10436A	MAG-a FTS		11/05/25	04/06/24		80uL		10ppm				NG
		10528B	D3-N-MSFSA		10/22/25	05/15/23		160uL		20ppm				NG
		10498A	MPTOS		11/02/25	04/06/24		80uL		10ppm				NG
		11669	MARFA		12/01/26	03/20/24		80uL		10ppm				NG
LCMS 2100	Full List (40) List 40 spike (Std)	11626	PF0A DEP 28 Comp.	Absolute	11/9/27 4/23/24	4/11/24	1.0ppm	400uL	4.0mL	100ppb	75% MeOH 5% H2O (2.40031)	4/11/23	7/24/23	MU
		LCMS 2067	40 List ADP FN	SGS add.		8/23/23	1.0ppm	400uL						
		LCMS 2076	40 List ADP FN			5/12/23	1.0ppm	400uL						
		LCMS 2054	F05F Std.			7/24/23	5.0ppm	400uL		50ppb				
LCMS 2101	F05F std.	11336	N-et F05F	Wellington	5/13/27	9/19/23	50ppm	200uL	2.0mL	5ppm	95% MeOH 5% H2O	9/11/23	9/19/23	MU
		11338	N-me f05F		5/13/27	9/19/23	50ppm	200uL						

(1,000)

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

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

10685A



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FPePA

LOT NUMBER:

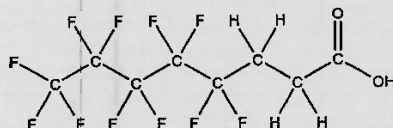
FPePA1120

COMPOUND:

3-Perfluoropentyl propanoic acid

STRUCTURE:**CAS #:**

914637-49-3

**MOLECULAR FORMULA:** $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:**

342.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/11/2020

EXPIRY DATE: (mm/dd/yyyy)

11/11/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

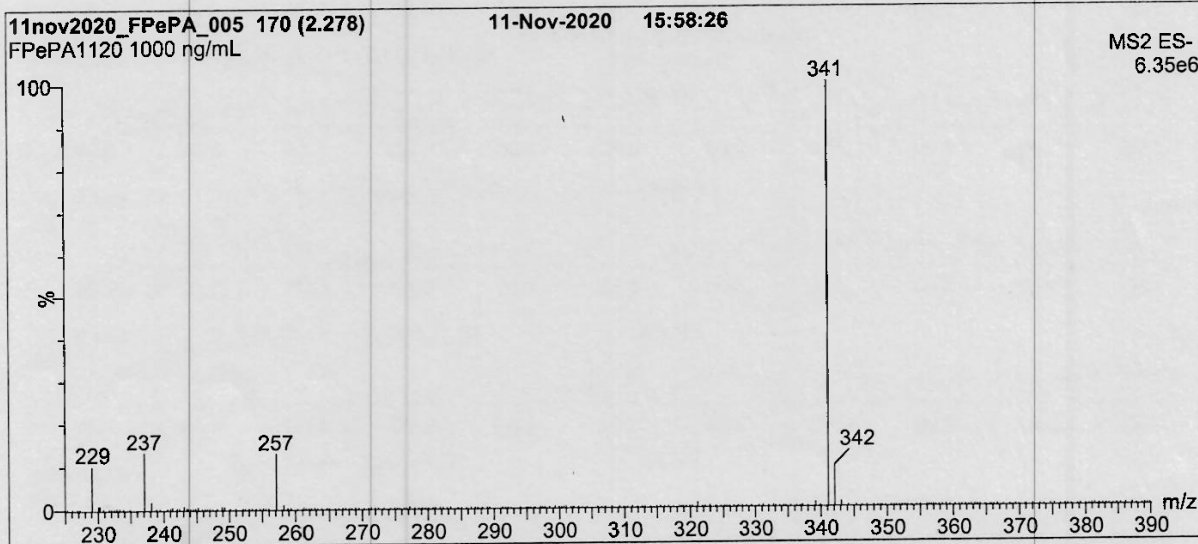
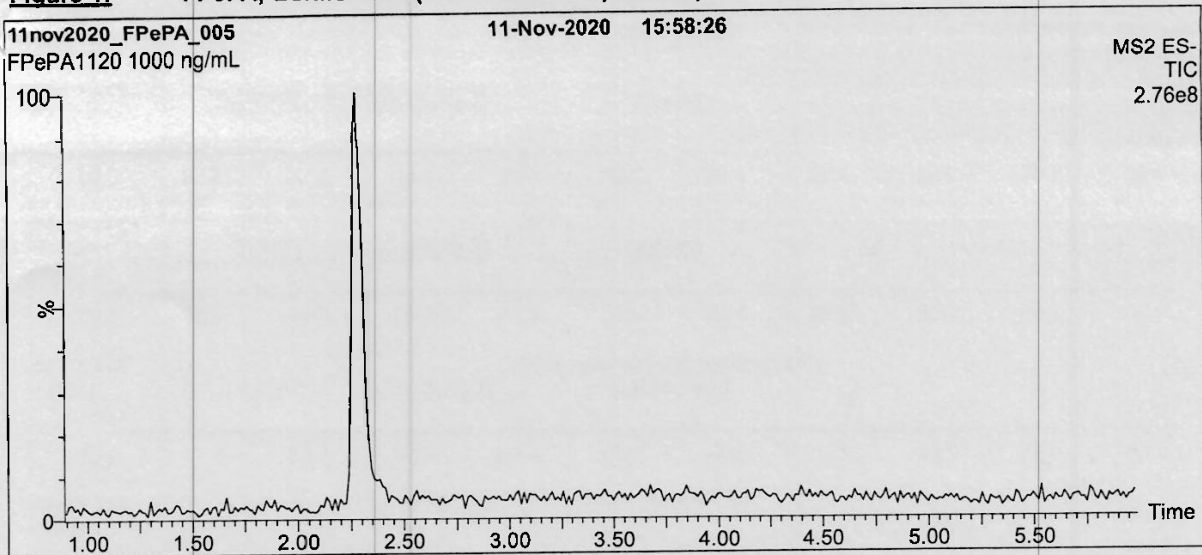
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager
Date: 11/27/2020
(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

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



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10726 A

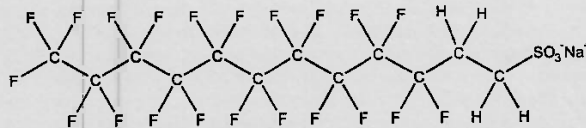


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221
COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/03/2021
EXPIRY DATE: (mm/dd/yyyy) 03/03/2026
RECOMMENDED STORAGE: Refrigerate ampoule

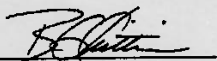
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:  **Date:** 03/05/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

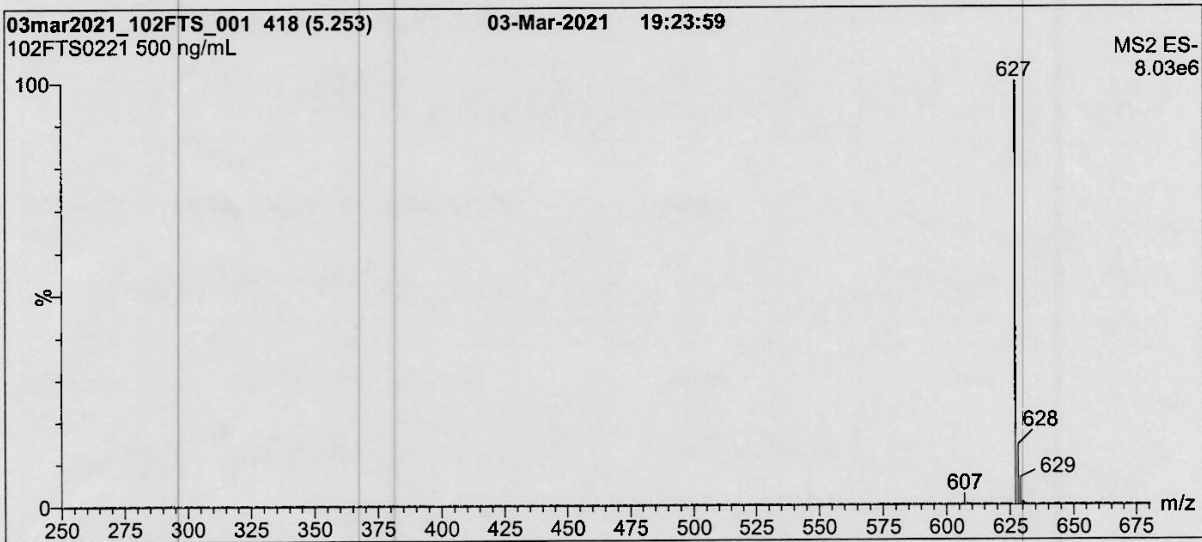
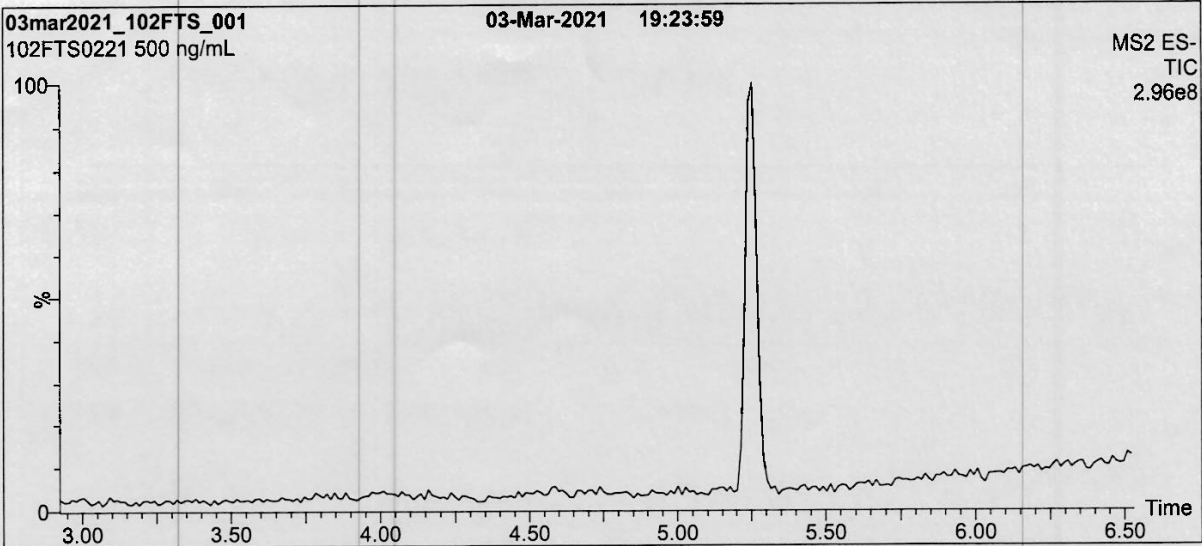
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Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

7.9.1

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Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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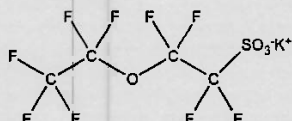


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFEESA *rec'd 8/20/21 WPH* **LOT NUMBER:** PFEESA0520
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

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



MOLECULAR FORMULA: C₄F₈SO₄K **MOLECULAR WEIGHT:** 354.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/13/2020
EXPIRY DATE: (mm/dd/yyyy) 05/13/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

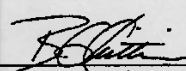
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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Revision#:7, Revised 2020-01-09

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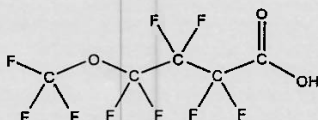
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *res'd with 8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

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

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

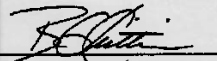
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

PF5OHxA0320 (1 of 4)
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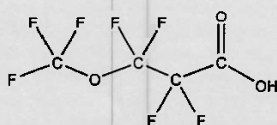
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF4OPeA *rec'd
WPH
8/20/21* **LOT NUMBER:** PF4OPeA0320

COMPOUND: Perfluoro-4-oxapentanoic acid

SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA)

STRUCTURE: **CAS #:** 377-73-1



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04

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

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

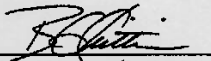
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 12/21/2020
(mm/dd/yyyy)

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10765 A-13



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
WPH
8/20/21

LOT NUMBER:

36OPFHpA0320

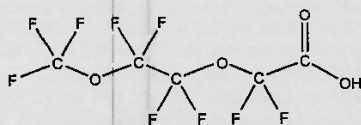
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₆H₂F₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

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

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10829



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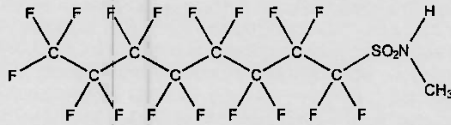
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



rec'd
WPA
10/5/21

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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Revision#:9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

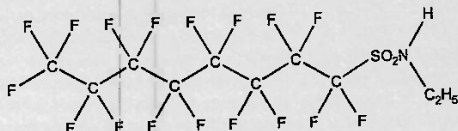
LOT NUMBER: NEtFOSA0821M

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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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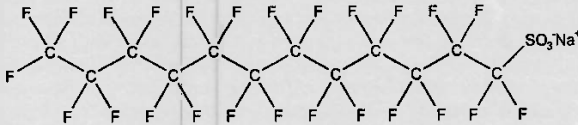
10840

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

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



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

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol


DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

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

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10847 NG 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

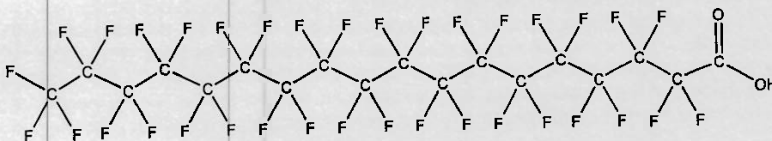
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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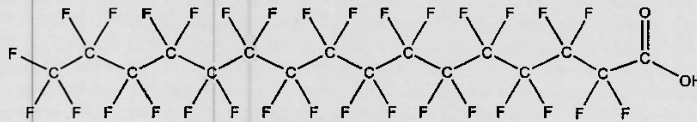
CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 * NG 01/18/23

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

COMPOUND: Perfluoro-n-hexadecanoic acid

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



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

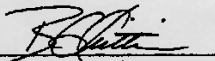
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

PFHxDA0421 (1 of 4)
 rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

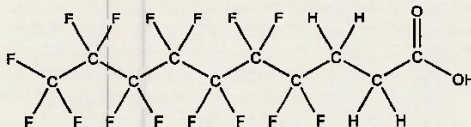
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020

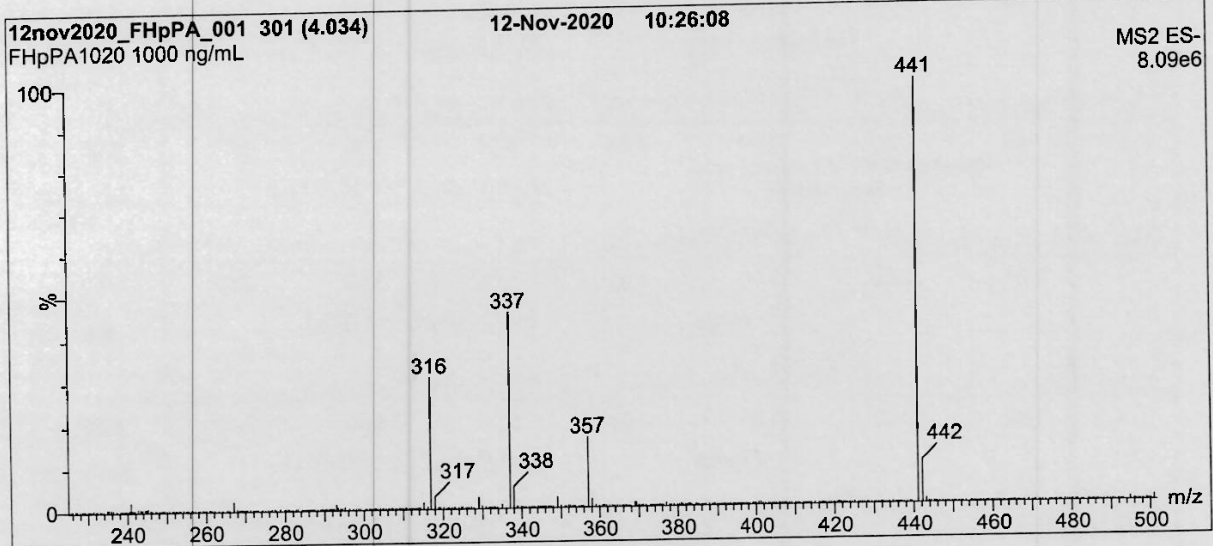
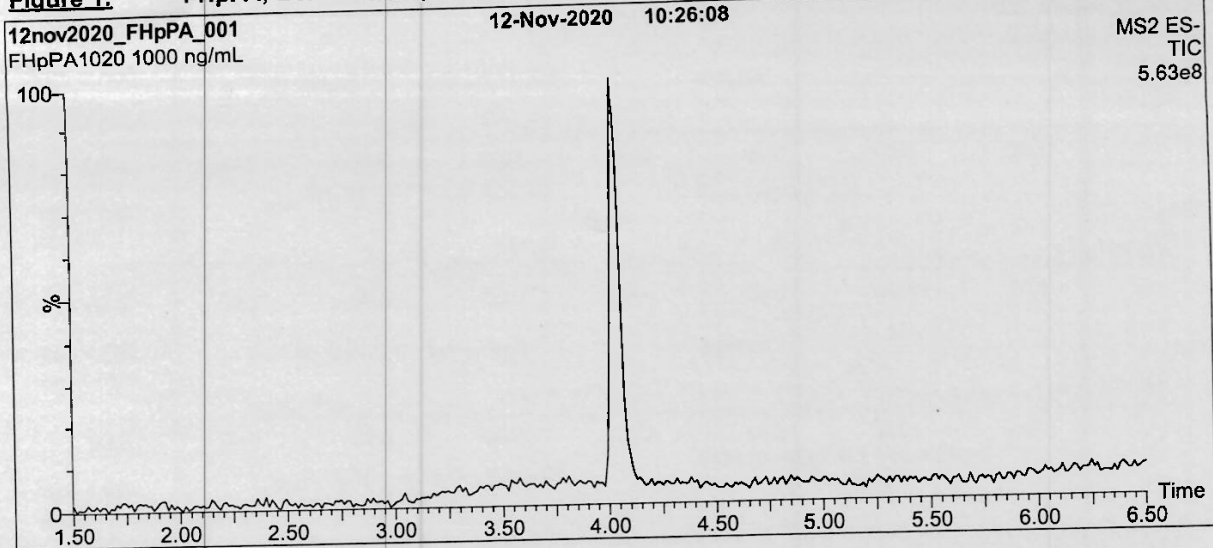
(mm/dd/yyyy)

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

FHpPA1020 (1 of 4)
rev0

7.9.1
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPrPA(3:3FTEA) 1116 B



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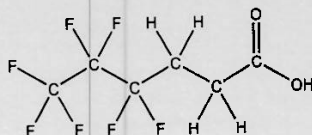
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

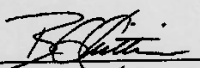
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

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

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

L-PFPrS

LOT NUMBER:

LPFPrS0721

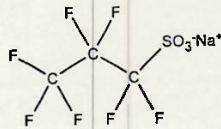
COMPOUND:

Sodium perfluoro-1-propanesulfonate

STRUCTURE:

CAS #:

Not available



MOLECULAR FORMULA:

C₃F₇SO₃Na

MOLECULAR WEIGHT:

272.07

CONCENTRATION:

50.0 ± 2.5 µg/mL (Na salt)

46.0 ± 2.3 µg/mL (PFPrS acid)

45.8 ± 2.3 µg/mL (PFPrS anion)

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

07/12/2021

EXPIRY DATE: (mm/dd/yyyy)

07/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 08/04/2021

(mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHxSA-I

LOT NUMBER:

FHxSA12211

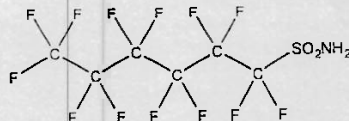
COMPOUND:

Perfluoro-1-hexanesulfonamide

STRUCTURE:

CAS #:

41997-13-1



MOLECULAR FORMULA:

C₆H₂F₁₃NO₂S

MOLECULAR WEIGHT:

399.13

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

12/29/2021

EXPIRY DATE: (mm/dd/yyyy)

12/29/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

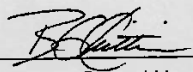
- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 01/10/2022

(mm/dd/yyyy)

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11250 Lx 7/11/22



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

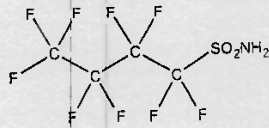
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₉NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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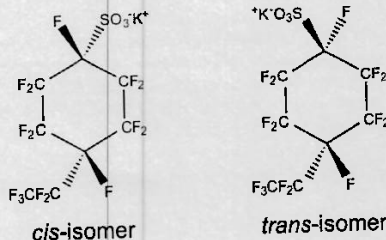
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

STRUCTURE:



CAS #: 335-24-0

MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
>98%

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

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Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

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11338



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

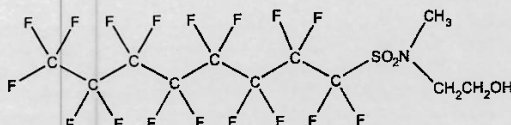
NMeFOSE0522M

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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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

<u>PRODUCT CODE:</u>	br-NMeFOSE
<u>LOT NUMBER:</u>	brNMeFOSE0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/02/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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

brNMeFOSE0922 (1 of 7)
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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSE

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

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

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

- Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS Data (SIR)
- Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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

brNEtFOSE1022 (1 of 7)
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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NMeFOSA

**N-Methylperfluorooctanesulfonamide
Isomeric Mix**

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

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

brNMeFOSA0822 (1 of 6)
rev1

11498



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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE:	br-NEtFOSA
LOT NUMBER:	brNEtFOSA0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/23/2022
LAST TESTED: (mm/dd/yyyy)	10/07/2022
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% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

brNEtFOSA0922 (1 of 6)
rev1

7.9.1

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Certified Reference Material CRM



11750
rec'd: 04/17/23

Part Number: 031323	Lot Number: 601538	Expiration Date: 1/1/2025	Recommended Storage: NIST Seal Bag
Material: 28 components	Method: Methanol (1 mL) KClH 2-Propanol	Lot #: 10722	Concentration: 2500 (2%)
Formulated By: Prashant Chauhan	Revised By: Prashant Chauhan	Date: 03/13/23	

Part Number	Lot	Division	Initial	Final	Expanded	SDS Information			
96542	110452	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A
96543	011723	0.02	2.00	0.017	50.3	1.01	0.02	2705-90-3	N/A
99199	071122	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A
99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A
99202	090522	0.02	2.00	0.017	50.2	1.00	0.02	355-87-1 (L)	per se 183mg/kg
99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-96-1	N/A
99195	110922	0.02	2.00	0.017	50.2	1.00	0.02	335-76-2	per se 57mg/kg
99205	071522	0.02	2.00	0.017	50.1	1.00	0.02	2059-94-8	N/A
99196	071522	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A
99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72639-84-8	N/A
99193	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A
3677	FOSA0321	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	N/A
4162	3MNEFOSA42	0.02	2.00	0.017	50.0	1.00	0.05	2955-31-9 (L)	N/A
4163	3MNEFOSA1121	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A
99194	060522	0.02	2.00	0.017	50.2	1.00	0.02	375-75-5	N/A
99544	091522	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A
99198	030923	0.02	2.00	0.017	50.0	1.00	0.02	355-46-4 (L)	N/A
3672	LPFH50822	0.02	2.10	0.017	47.8	1.00	0.05	375-95-8	N/A
99201	030923	0.02	2.10	0.017	47.9	1.00	0.02	1783-23-1 (L)	N/A
99197	030923	0.02	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A
3671	LPFN51122	0.02	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A
68271	060522	0.02	2.00	0.017	50.2	1.00	0.05	27124-72-4	N/A
3672	031023	0.02	2.10	0.017	47.9	1.01	0.05	7819-87-2	N/A
3682	8F150822	0.02	2.10	0.017	47.9	1.01	0.05	33109-34-4	N/A
99199	060522	0.02	2.10	0.017	50.1	1.00	0.02	9205-31-6	N/A
4166	11CF30M5022	0.02	2.12	0.017	47.1	1.00	0.05	783051-28-9	N/A
4165	8CF30M51022	0.02	2.14	0.017	46.8	1.00	0.05	79426-36-1	N/A
4164	8CF30M51022	0.02	2.14	0.017	46.8	1.00	0.05	79426-36-1	N/A
4163	8CF30M51022	0.02	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A

Part Number	Lot	Division	Initial	Final	Expanded	SDS Information			
96202	060622	0.02	2.00	0.004	48.6	0.89	0.010	335-87-1 (L)	N/A
96202	060622	0.02	2.00	0.004	0.6	0.01	0.001	335-87-1 (L)	N/A
99198	030923	0.02	2.00	0.017	44.0	0.88	0.02	355-46-4 (L)	N/A
99198	030923	0.02	2.00	0.017	6.0	0.12	0.0020	355-46-4 (L)	N/A
99201	030923	0.02	2.00	0.017	38.1	0.76	0.02	1783-23-1 (L)	N/A
99201	030923	0.02	2.00	0.017	7.5	0.15	0.005	1783-23-1 (L)	N/A
99201	030923	0.02	2.00	0.017	4.0	0.08	0.002	1783-23-1 (L)	N/A
99201	030923	0.02	2.00	0.017	0.5	0.010	0.0002	1783-23-1 (L)	N/A
4162	3MNEFOSA42	0.02	2.00	0.017	36.0	0.72	0.04	2955-31-9 (L)	N/A
4162	3MNEFOSA42	0.02	2.00	0.017	6.5	0.13	0.011	2955-31-9 (L)	N/A
4162	3MNEFOSA42	0.02	2.00	0.017	5.0	0.10	0.005	2955-31-9 (L)	N/A
4162	3MNEFOSA42	0.02	2.00	0.017	2.5	0.05	0.0009	2955-31-9 (L)	N/A
4165	3MNEFOSA1121	0.02	2.00	0.017	36.5	0.73	0.04	2991-50-6 (L)	N/A
4165	3MNEFOSA1121	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A
4165	3MNEFOSA1121	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	N/A
4165	3MNEFOSA1121	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A

A qualitative standard (Sect. 3.13) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This linear PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers. The linear PFOA standard must be used for quantitation (Sect. 12.2) and a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.

*The certified value is the concentration calculated from gravimetric and volumetric measurements under reference method.
 †Values in parentheses are not certified values but are included for information. Values in boldface are the highest values in NIST for which:
 • Standards are certified to 0.5% or better, unless otherwise noted.
 • All standards, after opening ampule, should be stored with cap tightly and under appropriate laboratory conditions.
 • All standards should be used within the time period indicated on the label.
 NIST Technical Note 1871, U.S. Government Printing Office, Washington, DC, (1994).

11799 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS Solution/Mixture

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

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

PFACMXH0423 (1 of 11)
rev1

7.9.1
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	PFDaA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		24
N-Methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-Ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.^c See Table D for percent composition of linear and branched PFHxSK isomers.^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 05/11/2023

(mm/dd/yyyy)

11801A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

PRODUCT CODE:

PFAC-MXF

LOT NUMBER:

PFACMXF0323

SOLVENT(S):

Methanol / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

03/23/2023

LAST TESTED: (mm/dd/yyyy)

03/24/2023

EXPIRY DATE: (mm/dd/yyyy)

03/24/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-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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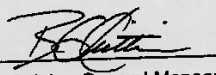
Form# 13, Issued 2004-11-10
Revision# 9, Revised 2020-12-23

PFACMXF0323 (1 of 5)
rev0

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

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

* Concentrations have been rounded to three significant figures.

Certified By:  Date: 03/29/2023
(mm/dd/yyyy)
 B.G. Chittim, General Manager

11802 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

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)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:

LOT NUMBER:

SOLVENT(S):

DATE PREPARED: (mm/dd/yyyy)

LAST TESTED: (mm/dd/yyyy)

EXPIRY DATE: (mm/dd/yyyy)

RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
Refrigerate ampoule

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

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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)

PFACMXJ0323 (3 of 5)
rev0

11850 A-J
rec'd: 06/01/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctane-sulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

MPFACHIFES1022 (1 of 7)
 rev0

7.9.1

7

Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₁₀)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₁₁)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₁₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₁₄)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

11851 A-J
REC'D: 06/01/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

**Mass-Labelled PFAS Injection
Standard Solution/Mixture**

PRODUCT CODE:	MPFAC-HIF-IS
LOT NUMBER:	MPFACHIFIS1122
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	11/28/2022
LAST TESTED: (mm/dd/yyyy)	11/29/2022
EXPIRY DATE: (mm/dd/yyyy)	11/29/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

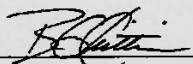
MPFACHIFIS1122 (1 of 5)
rev0

7.9.1
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Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid	MPFDA	250		7
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 12/05/2022
(mm/dd/yyyy)

SGS - ORLANDO

Date/Time: 07/12/23 11:45

Date/Time: 7/13/23 12:03

Batch# OP97799 Ext. By: GH

SPE LIQUID SAMPLE PREP REPORT

Method: EPA 1633 Draft (QSM) List 40

Balance ID: _____

Conc. By: _____ Viald By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 97799 MB	/	500	7	N/A	25		5	A4	
OP 97799 BS	/	500	7	N/A		200			
OP 97799 LLBS	/	500	7	N/A		60			
FC7583-1	2	520	7						
	2	550							
	2	544							
	2	570							
	2	520							
	2	570							
FC7490-1	2	520	7	N/A	25		5	A4	
GH 07/12/23									
OPFC7583-3MS	3	530	7	N/A	25	200	5	A4	
OP MSD									
OPFC7583-4DUP	3	574	7	N/A	25		5	A4	

Comments:

EIS (SURR) ID: 118062-5 Conc: 250-5000 ng/ml Exp. Date: 07/06/24 Inj. By: GH Ver. By: KG
 SPIKE 1 ID: LMS 2136D Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: KG
 SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11888A-C Conc: 250-1000 ng/ml Exp. Date: 7/11/24 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 # 230916 1% NH4OH MeOH PF483 SPE Lot # 6741433-02
 Water Lot# 0P97000 0.3M Formic Acid PF474 Syringe filter Lot # _____
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF482 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: Gabriel Fuentetaja
 Accepted By: MW

Date: 07/12/23
 Date: 7/13/23

7.10.1
7