



Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, and the Sample Location Figure, SDG FA42951

*Naval Air Station Cecil Field
Jacksonville, Florida*

July 2019

N60200_009855
CECIL_FIELD_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE FA42951 NAS CECIL FIELD FL
04/11/2017
ACCUTEST LABORATORIES

Approved for public release: distribution unlimited.

Technical Report for

Resolution Consultants

NAS Cecil Field PFAS; Jacksonville, FL

0888817799

SGS Accutest Job Number: FA42951

Sampling Date: 04/11/17

Report to:

Resolution Consultants
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Memphis, TN 38134
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ATTN: Kara Wimble

Total number of pages in report: **176**



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.



Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(L-A-B L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AK, AR, GA, IA, KY, MA, NV, OK, OR, UT, WA

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Test results relate only to samples analyzed.

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Sample Summary

Resolution Consultants

Job No: FA42951

NAS Cecil Field PFAS; Jacksonville, FL
Project No: 0888817799

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA42951-1	04/11/17	10:48 RB	04/12/17	DW	Drinking Water	FDOH-19-0417
FA42951-2	04/11/17	10:50 RB	04/12/17	DW	Drinking Water FB	FB-FDOH-19-0417

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Resolution Consultants

Job FA42951

Site: NAS Cecil Field PFAS; Jacksonville, FL

Report 4/27/2017 3:12:51

1 Sample and 1 Field Blank were collected on 04/11/2017 and were received at SGS Accutest Southeast (SASE) on 04/12/2017 properly preserved, at 3.6 Deg. C and intact. These Samples received an SASE job number of FA42951. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Extractables by GCMS By Method EPA 537

Matrix: DW

Batch ID: OP64782

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA42949-1MS, FA42949-1MSD were used as the QC samples indicated.

SGS Accutest (SASE) certifies that this report meets the project requirements for analytical data produced for the samples as received at SASE and as stated on the COC. SASE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SASE Quality Manual except as noted above. This report is to be used in its entirety. SASE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: April 27, 2017

Lovelie Metzgar, QA Officer (signature on file)

Summary of Hits

Job Number: FA42951
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/11/17



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

FA42951-1 FDOH-19-0417

No hits reported in this sample.

FA42951-2 FB-FDOH-19-0417

No hits reported in this sample.



Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

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Client Sample ID:	FDOH-19-0417	Date Sampled:	04/11/17
Lab Sample ID:	FA42951-1	Date Received:	04/12/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 537 EPA 537		
Project:	NAS Cecil Field PFAS; Jacksonville, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q808.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	-----	----	-------	---

PERFLUOROALKYLCARBOXYLIC ACIDS

335-67-1	Perfluorooctanoic acid	0.0032 U		0.0080	0.0032	0.0020	ug/l	
----------	------------------------	----------	--	--------	--------	--------	------	--

PERFLUOROALKYLSULFONATES

375-73-5	Perfluorobutanesulfonic acid	0.0060 U		0.0080	0.0060	0.0040	ug/l	
----------	------------------------------	----------	--	--------	--------	--------	------	--

1763-23-1	Perfluorooctanesulfonic acid	0.0032 U		0.0080	0.0032	0.0020	ug/l	
-----------	------------------------------	----------	--	--------	--------	--------	------	--

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
---------	----------------------	--------	--------	--------

	13C2-PFHxA	95%		70-130%
--	------------	-----	--	---------

	13C2-PFDA	113%		70-130%
--	-----------	------	--	---------

U = Not detected LOD = Limit of Detection

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID:	FB-FDOH-19-0417				
Lab Sample ID:	FA42951-2			Date Sampled:	04/11/17
Matrix:	DW - Drinking Water FB			Date Received:	04/12/17
Method:	EPA 537 EPA 537			Percent Solids:	n/a
Project:	NAS Cecil Field PFAS; Jacksonville, FL				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q809.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	-----	----	-------	---

PERFLUOROALKYLCARBOXYLIC ACIDS

335-67-1	Perfluorooctanoic acid	0.0031 U		0.0077	0.0031	0.0019	ug/l	
----------	------------------------	----------	--	--------	--------	--------	------	--

PERFLUOROALKYLSULFONATES

375-73-5	Perfluorobutanesulfonic acid	0.0058 U		0.0077	0.0058	0.0038	ug/l	
----------	------------------------------	----------	--	--------	--------	--------	------	--

1763-23-1	Perfluorooctanesulfonic acid	0.0031 U		0.0077	0.0031	0.0019	ug/l	
-----------	------------------------------	----------	--	--------	--------	--------	------	--

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
---------	----------------------	--------	--------	--------

	13C2-PFHxA	92%		70-130%
--	------------	-----	--	---------

	13C2-PFDA	111%		70-130%
--	-----------	------	--	---------

U = Not detected

LOD = Limit of Detection

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Misc. Forms

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Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

5.1

3.6

Rev 5/12

SGS ACCUTEST - ORLANDO SAMPLE RECEIPT CONFIRMATION

SGS ACCUTEST'S JOB NUMBER: FA42951 CLIENT: Resolution Cons. PROJECT: Former NAS
 DATE/TIME RECEIVED: 04/12/17 800 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER DELIVERY OTHER: _____
 AIRBILL NUMBERS: _____

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☐ TRIP BLANK PROVIDED
☒ TRIP BLANK NOT PROVIDED
☒ TRIP BLANK NOT ON COC
☐ TRIP BLANK INTACT
☐ TRIP BLANK NOT INTACT
☐ RECEIVED WATER TRIP BLANK
☐ RECEIVED SOIL TRIP BLANK

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 230315 pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS: _____

TECHNICIAN SIGNATURE/DATE [Signature] 04/12/17 REVIEWER SIGNATURE/DATE LC 04-12-17

NF 02/16

receipt confirmation 020116.xls

TEMPERATURE INFORMATION

- ☐ IR THERM ID 1 CORR. FACTOR +0.4
☐ OBSERVED TEMPS: 3.2
☐ CORRECTED TEMPS: 3.6 (USED FOR LIMS)

SAMPLE INFORMATION

- ☐ INCORRECT NUMBER OF CONTAINERS USED
☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
☐ INSUFFICIENT VOLUME FOR ANALYSIS
☐ DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
☐ ID'S ON COC DO NOT MATCH LABEL
☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
☐ UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
☐ 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
☐ BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
☐ % SOLIDS JAR NOT RECEIVED
☐ RESIDUAL CHLORINE PRESENT LOT# _____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

FA42951: Chain of Custody

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QC Evaluation: DOD QSM5 Limits

Job Number: FA42951
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/11/17

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
--------------	------	---------	--------------------	-------------	-------	--------

No Exceptions found.

* Sample used for QC is not from job FA42951



GC/MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-MB	2Q801.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

The QC reported here applies to the following samples:

Method: EPA 537

FA42951-1, FA42951-2

CAS No.	Compound	Result	RL	MDL	Units	Q
335-67-1	Perfluorooctanoic acid	ND	0.0077	0.0019	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0077	0.0038	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0077	0.0019	ug/l	

CAS No.	Surrogate Recoveries	Limits
	13C2-PFHxA	105% 70-130%
	13C2-PFDA	114% 70-130%

6.1.1

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Blank Spike Summary

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-BS	2Q800.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

The QC reported here applies to the following samples: Method: EPA 537

FA42951-1, FA42951-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
335-67-1	Perfluorooctanoic acid	0.0769	0.0820	107	70-130
375-73-5	Perfluorobutanesulfonic acid	0.0769	0.0800	104	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.0769	0.0749	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
	13C2-PFHxA	107%	70-130%
	13C2-PFDA	111%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64782-MS	2Q803.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
OP64782-MSD	2Q804.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23
FA42949-1	2Q802.D	1	04/27/17	NAF	04/25/17	OP64782	S2Q23

The QC reported here applies to the following samples:

Method: EPA 537

FA42951-1, FA42951-2

CAS No.	Compound	FA42949-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
335-67-1	Perfluorooctanoic acid	0.0077 U	0.154	0.161	105	0.154	0.158	103	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.0077 U	0.154	0.156	101	0.154	0.150	97	4	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U	0.154	0.133	86	0.154	0.141	92	6	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	FA42949-1	Limits
	13C2-PFHxA	101%	108%	87%	70-130%
	13C2-PFDA	105%	114%	101%	70-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std: S2Q23-CC18	Injection Date: 04/27/17
Lab File ID: 2Q798.D	Injection Time: 09:06
Instrument ID: GCMS2Q	Method: EPA 537

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Initial Cal ^a	77062	4.23	159216	6.65	78218	6.64	57710	7.20	34998	7.47	94157	10.66
Check Std ^b	85348	4.32	201927	6.75	90447	6.74	66625	7.31	40257	7.47	113852	11.06
Upper Limit ^c	107887	5.32	222902	7.75	109505	7.74	80794	8.31	48997	8.47	131820	12.06
Lower Limit ^d	53943	3.32	111451	5.75	54753	5.74	40397	6.31	24499	6.47	65910	10.06

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP64782-BS	79263	4.29	191596	6.74	81784	6.73	61419	7.30	37375	7.47	104528	10.99
OP64782-MB	68988	4.27	158452	6.72	72868	6.71	53498	7.29	33256	7.47	92287	10.95
FA42949-1	63375	4.27	163412	6.72	73068	6.71	55353	7.29	31197	7.46	95689	10.94
OP64782-MS	69181	4.27	182145	6.71	78202	6.70	57302	7.28	33347	7.47	101490	10.96
OP64782-MSD	75019	4.26	184277	6.71	78835	6.70	58159	7.28	34342	7.46	100380	10.90
ZZZZZZ	30775 ^e	4.26	171997	6.71	56708	6.70	56778	7.28	30501	7.46	97045	10.89
ZZZZZZ	76157	4.25	184168	6.71	85825	6.69	60847	7.28	35889	7.46	106956	10.94
ZZZZZZ	68165	4.25	183746	6.70	82427	6.69	60745	7.26	35667	7.46	107638	10.93
FA42951-1	64786	4.25	177426	6.70	76146	6.69	58591	7.26	32227	7.46	99204	10.89
FA42951-2	57133	4.25	173835	6.70	74420	6.69	57645	7.26	34009	7.46	101002	10.91
S2Q23-ECC18	88498	4.25	208692	6.70	92398	6.69	67608	7.26	40389	7.46	120735	10.91

IS 1 = 13C3-PFPeA
IS 2 = 13C2-6:2FTS
IS 3 = 13C2-PFOA
IS 4 = 13C4-PFOS
IS 5 = d3-MeFOSAA
IS 6 = 13C2-PFDoDA

- (a) Initial Cal is: S2Q18-ICC18 2Q655.D 04/20/17 13:13. Area is AVERAGE of initial cal points.
(b) Check Std Limit = -50 to +50% of initial cal area.
(c) Upper Limit = +40% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -30% of initial standard area; Retention time -1 minutes of check standard.
(e) Response outside of control limits; ISTD does not reference any reported target analytes.

Semivolatile Surrogate Recovery Summary

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Method: EPA 537	Matrix: DW
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
FA42951-1	2Q808.D	95	113
FA42951-2	2Q809.D	92	111
OP64782-BS	2Q800.D	107	111
OP64782-MB	2Q801.D	105	114
OP64782-MS	2Q803.D	101	105
OP64782-MSD	2Q804.D	108	114

Surrogate Compounds	Recovery Limits
S1 = 13C2-PFHxA	70-130%
S2 = 13C2-PFDA	70-130%

6.5.1
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Initial Calibration Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q18-ICC18
Lab FileID: 2Q655.D

Initial Calibration ReSponse Factors - D:\MassHunter\Data\0420_LIST_S2Q18\S2Q18.batch.bin

Level ID : Calibration File

1 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
2 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q652.d
3 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q653.d
4 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q654.d
5 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7 : D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Compound	1	2	3	4	5	6	7	AvgRF	%RSD	r^2
1) 13C2-6:2FTS	-----ISTD-----									
8) 4:2FTS	0.5439	0.5459	0.5345	0.5374	0.4892	0.5027	0.5077	0.5230	4.338	0.9995
9) 6:2FTS	-----	1.1352	1.0675	1.0557	0.9739	0.9634	0.9636	1.0266	6.898	0.9993
10) 8:2FTS	1.6663	1.6728	1.6625	1.6921	1.5507	1.5905	1.6117	1.6352	3.163	0.9996
3) 13C2-PFDoDA	-----ISTD-----									
19) PFDoDA	0.9060	0.9297	0.9083	0.9190	0.8505	0.9094	0.9372	0.9086	3.099	0.9996
31) PFTeDA	0.4345	0.4371	0.4318	0.4343	0.3962	0.4245	0.4420	0.4286	3.559	0.9993
32) PFTrDA	0.7809	0.7694	0.7711	0.7818	0.7223	0.7750	0.8091	0.7728	3.354	0.9994
33) PFUnDA	0.9073	0.8879	0.8779	0.8873	0.8215	0.8600	0.8974	0.8770	3.268	0.9985
5) 13C2-PFOA	-----ISTD-----									
2) 13C2-PFDA	1.3869	1.4181	1.3535	1.3743	1.2810	1.3950	1.4227	1.3759	3.507	0.9984
4) 13C2-PFHxA	0.9750	1.0479	1.0267	1.0364	0.9711	1.0614	1.0680	1.0266	3.818	0.9987
16) PFBA	0.4748	0.5318	0.5137	0.5159	0.4818	0.5228	0.5359	0.5110	4.649	0.9984
18) PFDA	1.0186	1.0187	0.9665	0.9766	0.9006	0.9736	1.0136	0.9812	4.293	0.9978
21) PFHpA	1.6423	1.4730	1.4128	1.4109	1.3074	1.4206	1.4665	1.4476	7.013	0.9986
23) PFHxA	0.4742	0.5078	0.4891	0.4767	0.4527	0.4935	0.4989	0.4847	3.794	0.9996
25) PFNA	1.1263	0.9385	0.9201	0.8924	0.8036	0.8867	0.9120	0.9256	10.636	0.9977
27) PFOA	0.9605	0.8457	0.8362	0.8326	0.7694	0.8479	0.8388	0.8473	6.694	0.9985
6) 13C3-PFPeA	-----ISTD-----									
29) PFPeA	1.5154	1.5656	1.4956	1.5117	1.4189	1.5044	1.5422	1.5077	3.048	0.9989
30) PFPeS	0.1734	0.1915	0.1872	0.1883	0.1775	0.1881	0.1940	0.1857	4.029	0.9987
7) 13C4-PFOS	-----ISTD-----									
17) PFBS	0.7614	0.7709	0.7757	0.7798	0.7414	0.7884	0.8143	0.7760	2.917	0.9986
20) PFDS	0.5220	0.5547	0.5462	0.5487	0.5249	0.5573	0.5779	0.5474	3.528	0.9997
22) PFHpS	0.8012	0.8342	0.8168	0.8222	0.7913	0.8358	0.8645	0.8237	2.944	0.9986
24) PFHxS	0.8075	0.8214	0.8108	0.8095	0.7715	0.8190	0.8571	0.8138	3.098	0.9980
26) PFNS	0.4808	0.5040	0.5004	0.4985	0.4714	0.4980	0.5153	0.4955	2.973	0.9987
28) PFOS	1.1322	1.1479	1.1431	1.1299	1.0613	1.1354	1.1823	1.1331	3.205	0.9981
11) d3-MeFOSAA	-----ISTD-----									
12) d5-EtFOSAA	0.8411	0.6125	0.5388	0.5228	0.5075	0.5045	0.5765	0.5862	20.291	0.9954
13) EtFOSAA	-----	0.5259	0.4906	0.4539	0.4378	0.4479	0.5192	0.4792	7.939	0.9942
14) FOSA	1.0873	1.0855	1.1177	1.1044	1.0530	1.0209	1.1121	1.0830	3.218	0.9968
15) MeFOSAA	-----	0.6142	0.5865	0.6084	0.5819	0.5706	0.6565	0.6030	5.130	0.9942

*(value) - Average RF below (value)

Initial Calibration Verification

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q18-ICV18
Lab FileID: 2Q659.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0420_LIST_S2Q18\S2Q18.batch.bin

Level ID: Calibration File

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6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q659

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
=====	=====	=====	=====	=====
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	0.000	0.0	0.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	0.000	0.0	0.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	24.064	20.3	120.3
6:2FTS	20.000	22.507	12.5	112.5
8:2FTS	20.000	22.545	12.7	112.7
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	0.0	0.0
EtFOSAA	20.000	23.571	17.9	117.9
FOSA	20.000	21.566	7.8	107.8
MeFOSAA	20.000	24.228	21.1	121.1
PFBA	20.000	21.001	5.0	105.0
PFBS	20.000	20.876	4.4	104.4
PFDA	20.000	21.111	5.6	105.6
PFDoDA	20.000	22.315	11.6	111.6
PFDS	20.000	22.350	11.7	111.7
PFHpA	20.000	21.559	7.8	107.8
PFHpS	20.000	21.058	5.3	105.3
PFHxA	20.000	21.933	9.7	109.7
PFHxS	20.000	22.038	10.2	110.2
PFNA	20.000	21.312	6.6	106.6
PFNS	20.000	22.659	13.3	113.3
PFOA	20.000	21.282	6.4	106.4
PFOS	20.000	19.618	-1.9	98.1
PFPeA	20.000	21.052	5.3	105.3
PFPeS	20.000	22.045	10.2	110.2
PFTeDA	20.000	22.537	12.7	112.7
PFTrDA	20.000	22.394	12.0	112.0
PFUnDA	20.000	21.206	6.0	106.0

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-CC18
Lab FileID: 2Q798.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID: Calibration File

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6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q798

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.392	-3.0	97.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	17.997	-10.0	90.0
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.158	-4.2	95.8
6:2FTS	20.000	19.568	-2.2	97.8
8:2FTS	20.000	20.593	3.0	103.0
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.704	-6.5	93.5
EtFOSAA	20.000	18.340	-8.3	91.7
FOSA	20.000	16.603	-17.0	83.0
MeFOSAA	20.000	19.405	-3.0	97.0
PFBA	20.000	16.175	-19.1	80.9
PFBS	20.000	17.616	-11.9	88.1
PFDA	20.000	18.807	-6.0	94.0
PFDoDA	20.000	19.956	-0.2	99.8
PFDS	20.000	18.273	-8.6	91.4
PFHpA	20.000	18.583	-7.1	92.9
PFHpS	20.000	18.552	-7.2	92.8
PFHxA	20.000	18.867	-5.7	94.3
PFHxS	20.000	15.556	-22.2	77.8
PFNA	20.000	19.206	-4.0	96.0
PFNS	20.000	18.623	-6.9	93.1
PFOA	20.000	18.204	-9.0	91.0
PFOS	20.000	16.182	-19.1	80.9
PFPeA	20.000	18.677	-6.6	93.4
PFPeS	20.000	19.291	-3.5	96.5
PFTeDA	20.000	17.690	-11.6	88.4
PFTTrDA	20.000	19.172	-4.1	95.9
PFUnDA	20.000	18.955	-5.2	94.8

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-CC18
Lab FileID: 2Q799.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID: Calibration File

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5:D:\MassHunter\Data\0420_LIST_S2Q18\2Q655.d
6:D:\MassHunter\Data\0420_LIST_S2Q18\2Q656.d
7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q799

Type : QC

Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	2.000	2.104	5.2	105.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	2.000	1.953	-2.3	97.7
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	2.000	2.051	2.5	102.5
6:2FTS	2.000	2.710	# 35.5	135.5
8:2FTS	2.000	2.283	14.1	114.1
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	2.000	5.176	# 158.8	258.8
EtFOSAA	2.000	4.618	# 130.9	230.9
FOSA	2.000	1.734	-13.3	86.7
MeFOSAA	2.000	4.221	# 111.0	211.0
PFBA	2.000	1.596	-20.2	79.8
PFBS	2.000	1.565	-21.7	78.3
PFDA	2.000	2.109	5.5	105.5
PFDoDA	2.000	2.193	9.7	109.7
PFDS	2.000	2.007	0.4	100.4
PFHpA	2.000	2.109	5.5	105.5
PFHpS	2.000	1.945	-2.7	97.3
PFHxA	2.000	2.208	10.4	110.4
PFHxS	2.000	1.717	-14.2	85.8
PFNA	2.000	2.420	21.0	121.0
PFNS	2.000	2.039	2.0	102.0
PFOA	2.000	2.215	10.8	110.8
PFOS	2.000	1.521	-23.9	76.1
PFPeA	2.000	1.970	-1.5	98.5
PFPeS	2.000	2.422	21.1	121.1
PFTeDA	2.000	2.036	1.8	101.8
PFTTrDA	2.000	2.172	8.6	108.6
PFUnDA	2.000	2.069	3.4	103.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA42951
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q23-ECC18
Lab FileID: 2Q810.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0427_LIST_S2Q23\S2Q23.batch.bin

Level ID: Calibration File

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7:D:\MassHunter\Data\0420_LIST_S2Q18\2Q657.d

Data File: 2Q810

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	19.647	-1.8	98.2
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	18.147	-9.3	90.7
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	19.544	-2.3	97.7
6:2FTS	20.000	19.585	-2.1	97.9
8:2FTS	20.000	20.076	0.4	100.4
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.215	21.1	121.1
EtFOSAA	20.000	19.690	-1.5	98.5
FOSA	20.000	18.000	-10.0	90.0
MeFOSAA	20.000	20.252	1.3	101.3
PFBA	20.000	16.087	-19.6	80.4
PFBS	20.000	17.358	-13.2	86.8
PFDA	20.000	18.839	-5.8	94.2
PFDoDA	20.000	19.362	-3.2	96.8
PFDS	20.000	18.737	-6.3	93.7
PFHpA	20.000	18.949	-5.3	94.7
PFHpS	20.000	18.726	-6.4	93.6
PFHxA	20.000	19.171	-4.1	95.9
PFHxS	20.000	18.465	-7.7	92.3
PFNA	20.000	18.826	-5.9	94.1
PFNS	20.000	18.354	-8.2	91.8
PFOA	20.000	19.113	-4.4	95.6
PFOS	20.000	17.954	-10.2	89.8
PFPeA	20.000	18.325	-8.4	91.6
PFPeS	20.000	18.719	-6.4	93.6
PFTeDA	20.000	17.364	-13.2	86.8
PFTrDA	20.000	19.229	-3.9	96.1
PFUnDA	20.000	18.256	-8.7	91.3

CC Criteria: +/- 25%



GC/MS Semi-volatiles

Raw Data

7

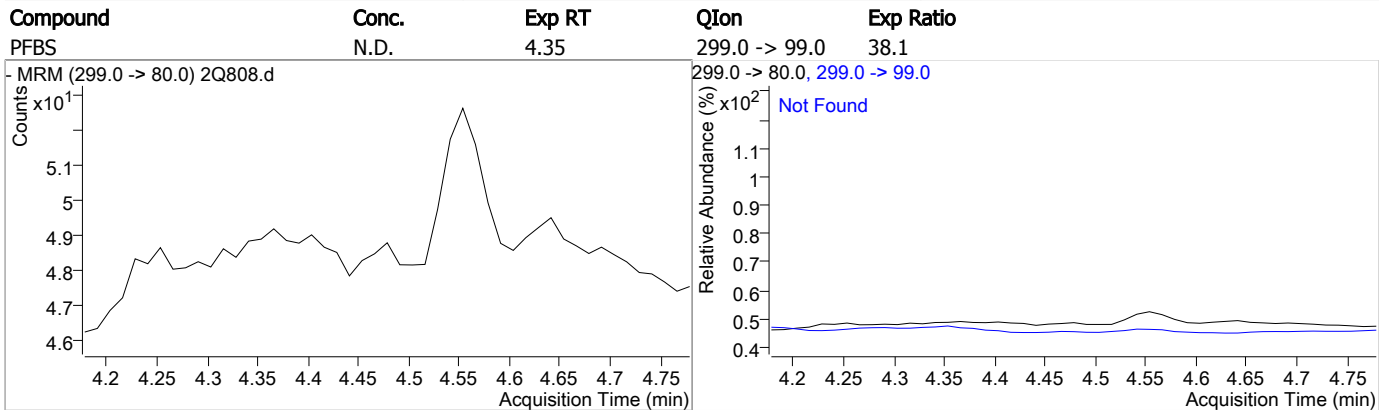
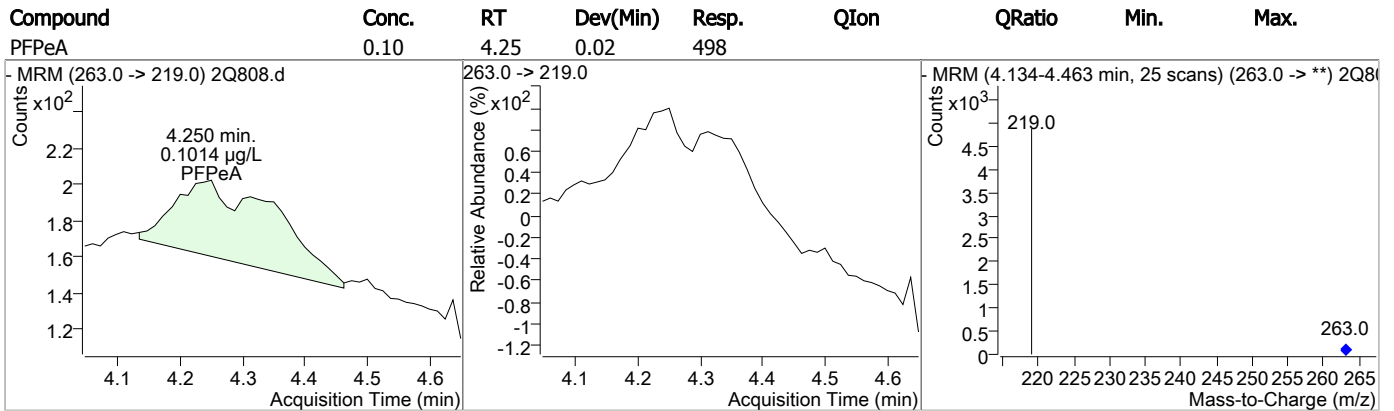
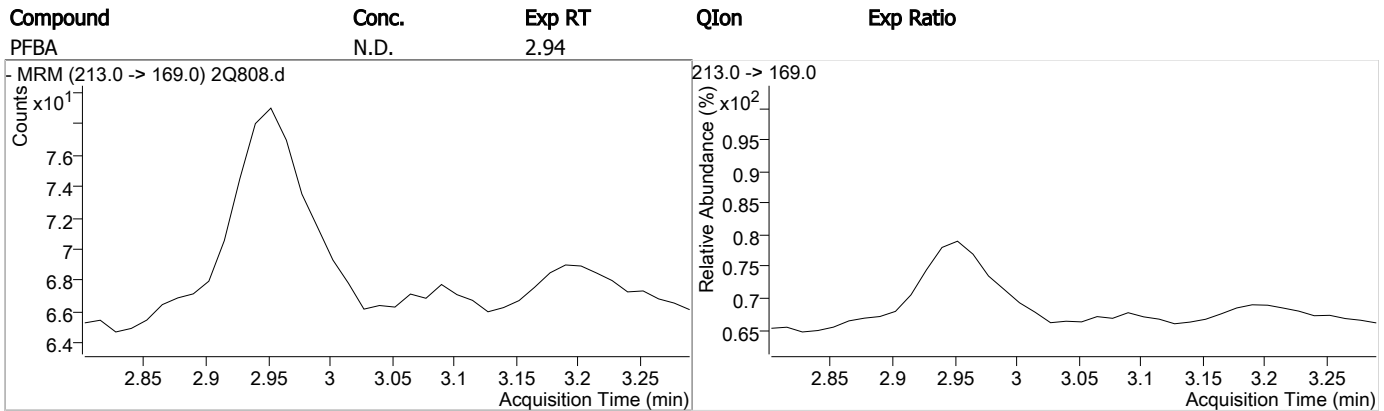
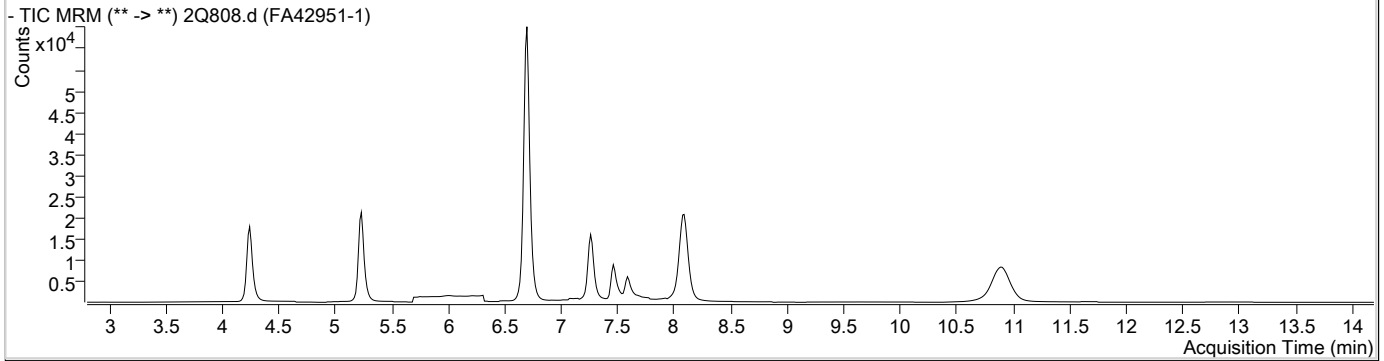
Perfluorinated Compounds by LC/MS/MS

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 Vial : Vial 21
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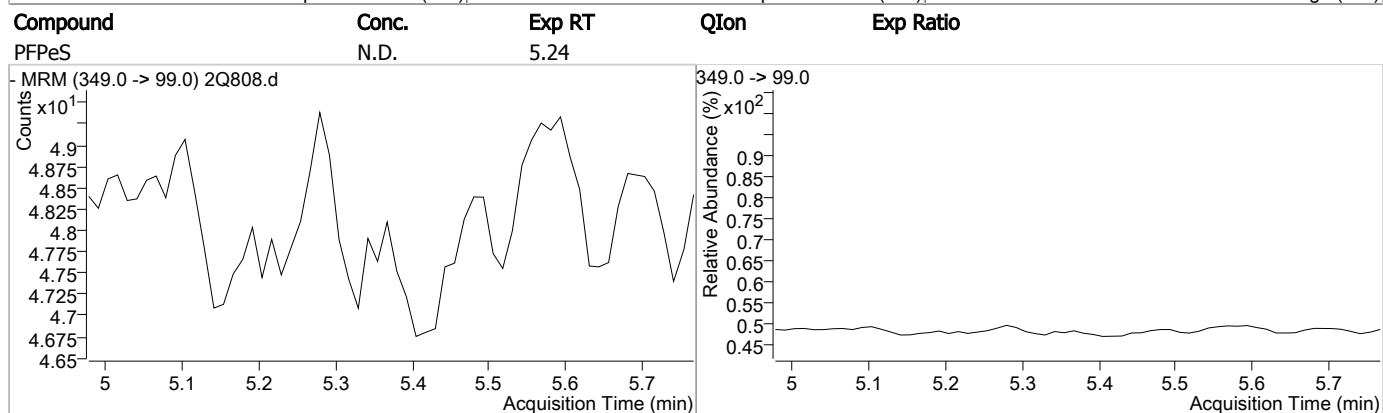
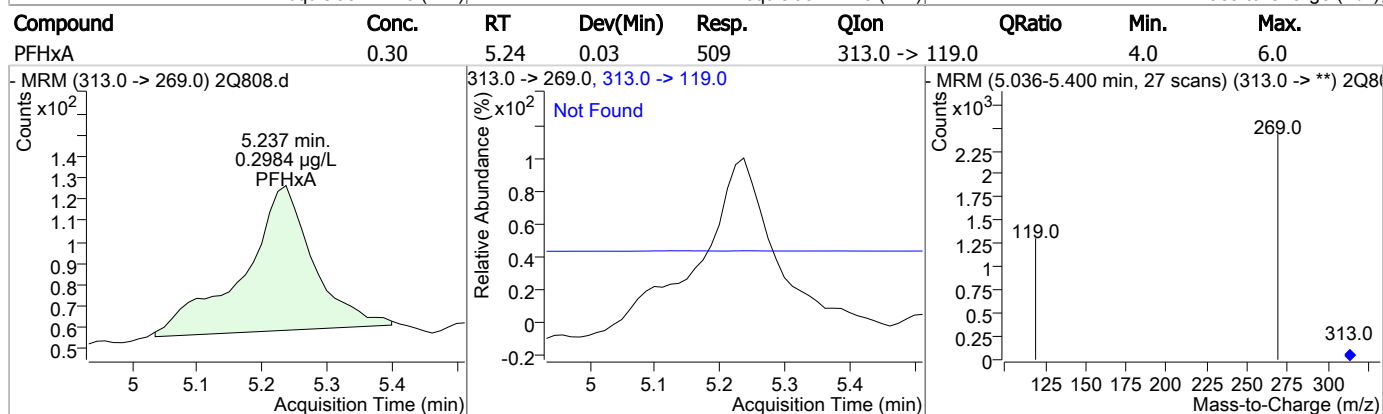
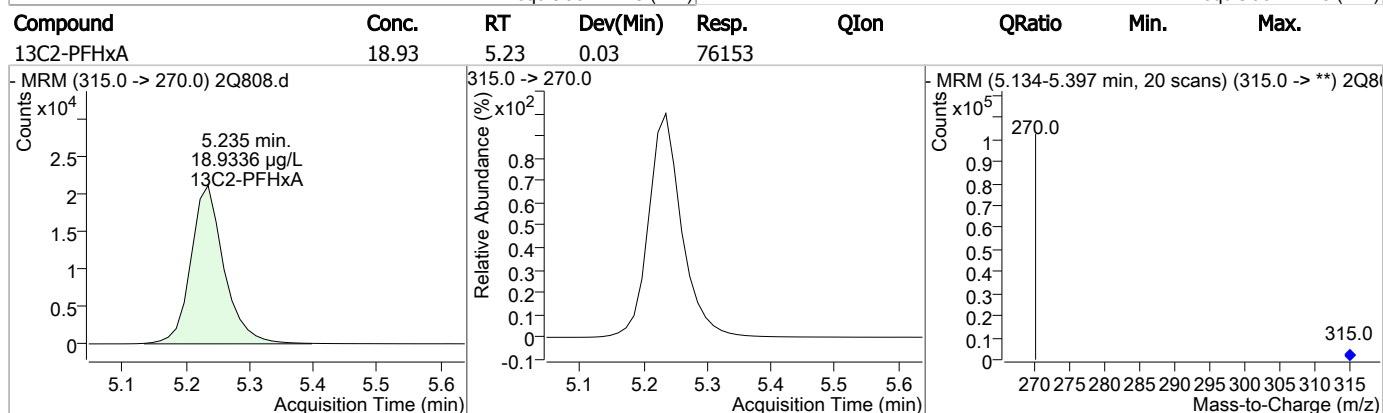
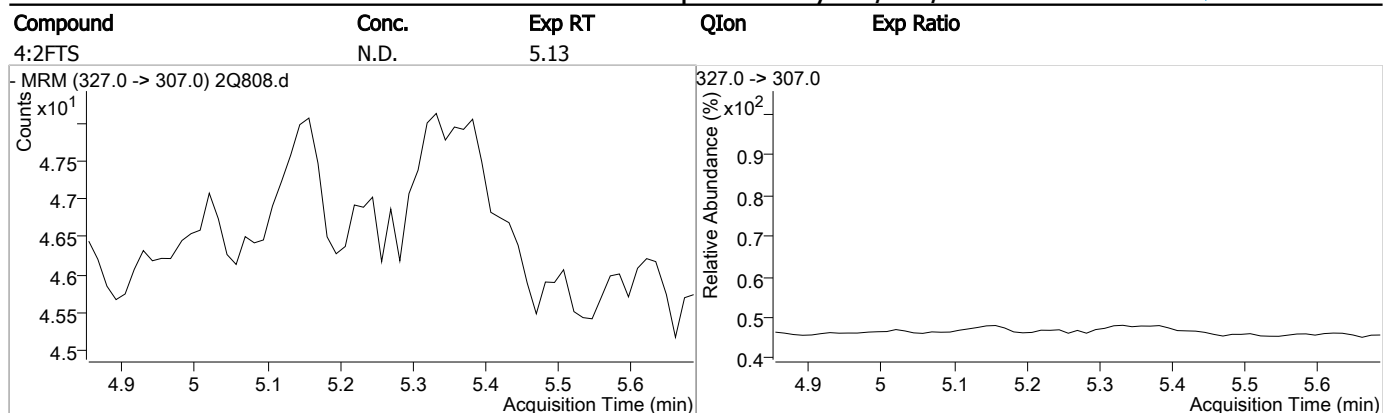
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.698	429.0 -> 409.0	177426	20.00 µg/L	0.050
13C2-PFDoDA	10.889	615.0 -> 570.0	99204	20.00 µg/L	0.225
13C2-PFOA	6.687	415.0 -> 370.0	76146	20.00 µg/L	0.050
13C3-PFPeA	4.247	266.0 -> 222.0	64786	20.00 µg/L	0.012
13C4-PFOS	7.264	503.0 -> 80.0	58591	20.00 µg/L	0.064
d3-MeFOSAA	7.462	573.0 -> 419.0	32227	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-PFDA	8.092	515.0 -> 470.0	120863	22.68 µg/L	0.123
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 113.4%	
13C2-PFHxA	5.235	315.0 -> 270.0	76153	18.93 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 94.7%	
d5-EtFOSAA	7.585	589.0 -> 419.0	19058	23.63 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 118.1%	
Target Compounds					
					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.699	427.0 -> 407.0	1840	0.21 µg/L	100
8:2FTS	8.252	527.0 -> 507.0	420	0.03 µg/L	100
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	8.108	513.0 -> 469.0	457	0.12 µg/L	100
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	6.011	363.0 -> 319.0	681	0.13 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.237	313.0 -> 269.0	509	0.30 µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	6.689	413.0 -> 369.0	434	0.14 µg/L	54
PFOS	7.265	499.0 -> 80.0	1284	0.38 µg/L	m 89
PFPeA	4.250	263.0 -> 219.0	498	0.10 µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	9.631	563.0 -> 519.0	362	0.08 µg/L	100

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

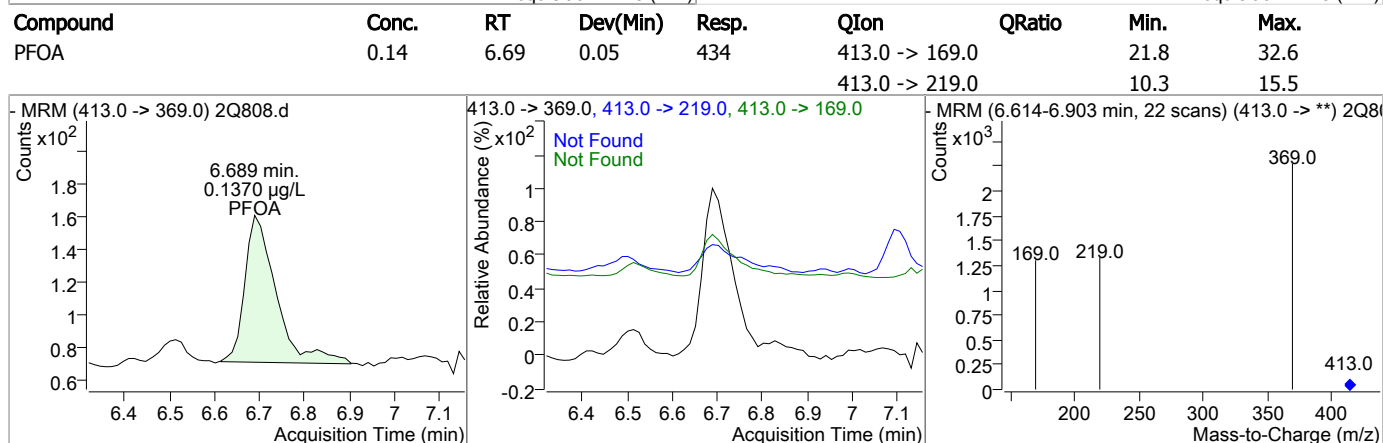
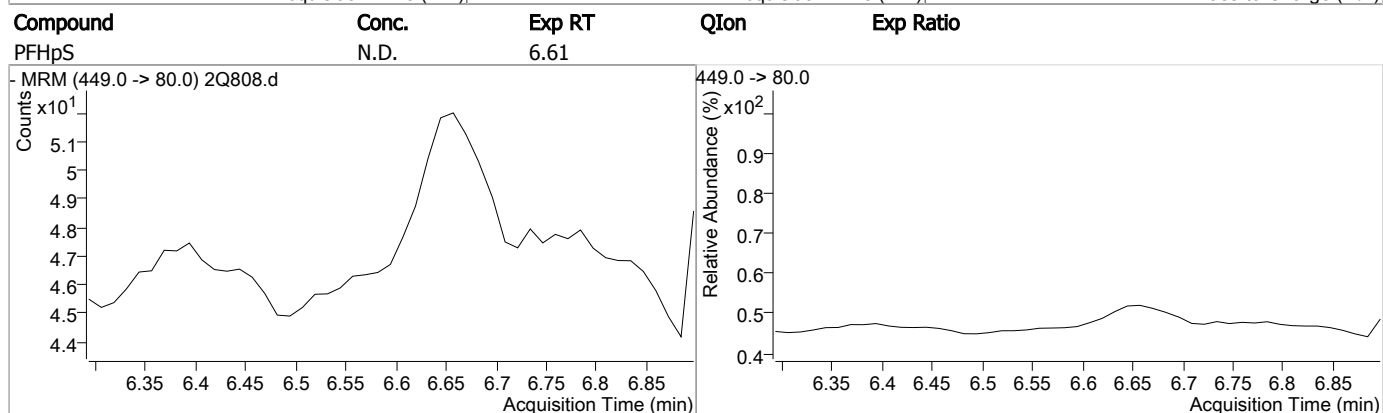
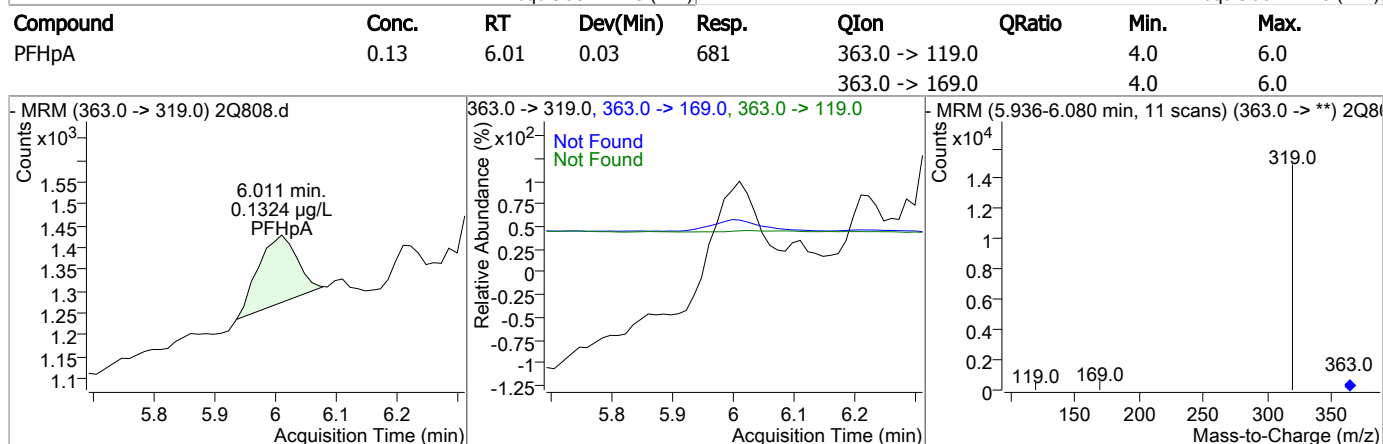
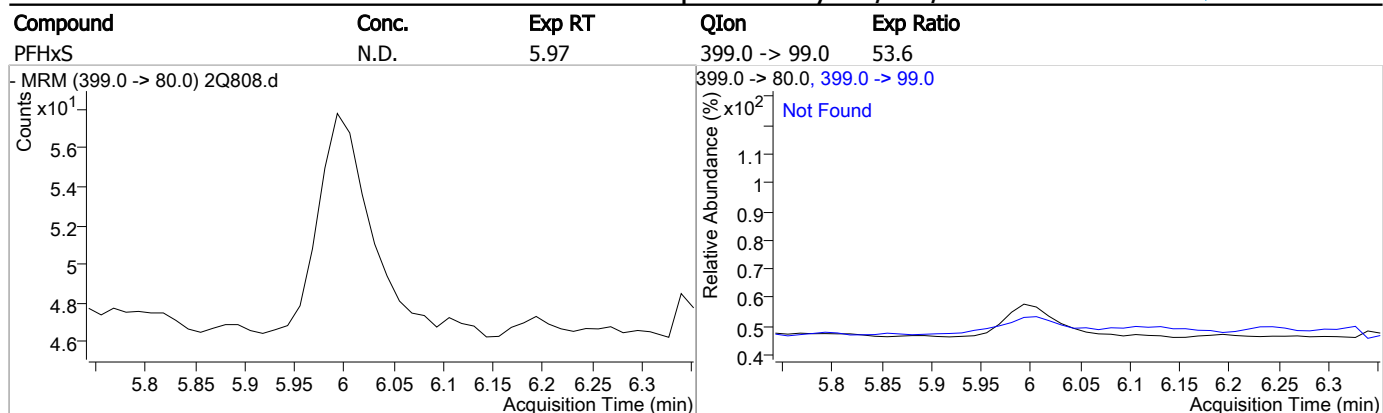
Perfluorinated Compounds by LC/MS/MS



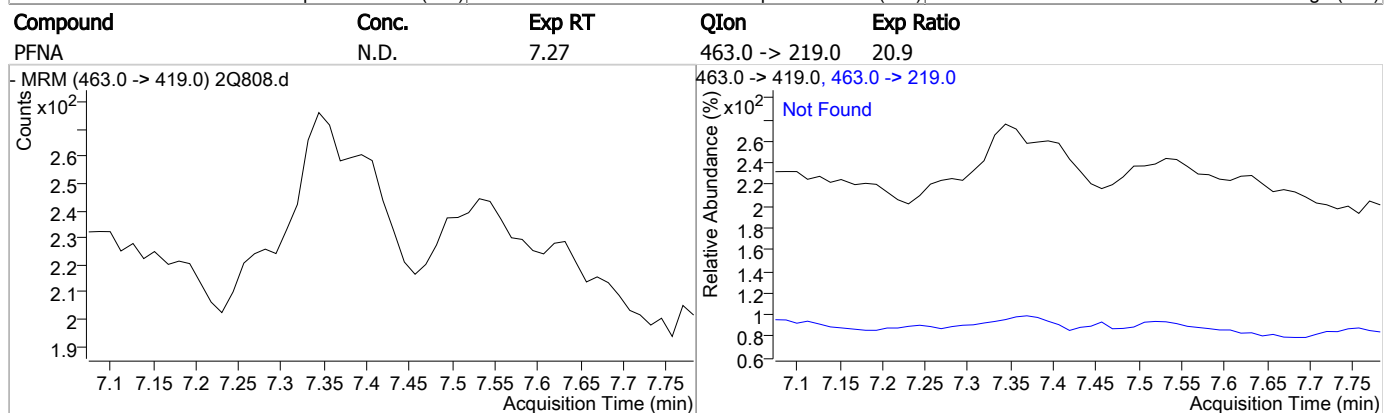
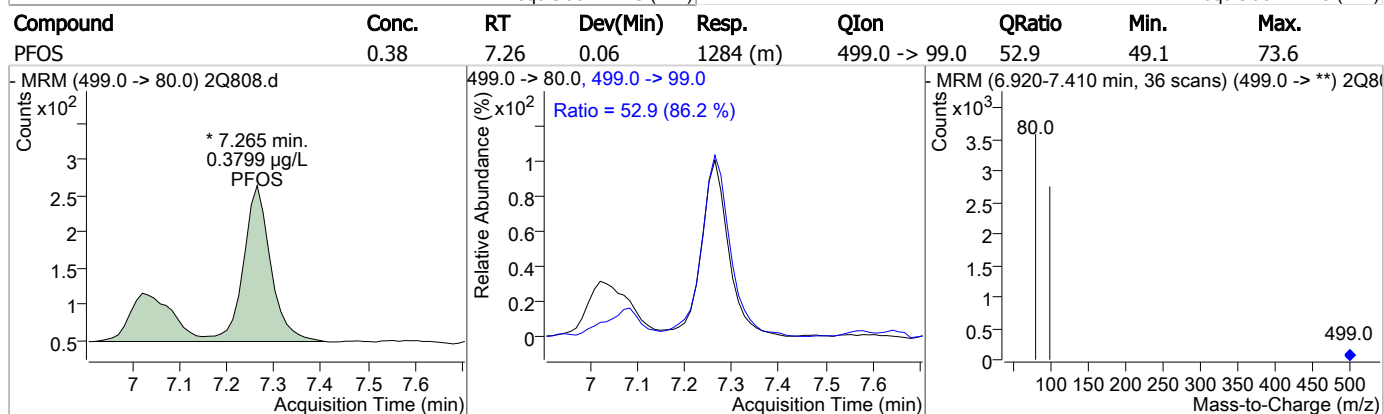
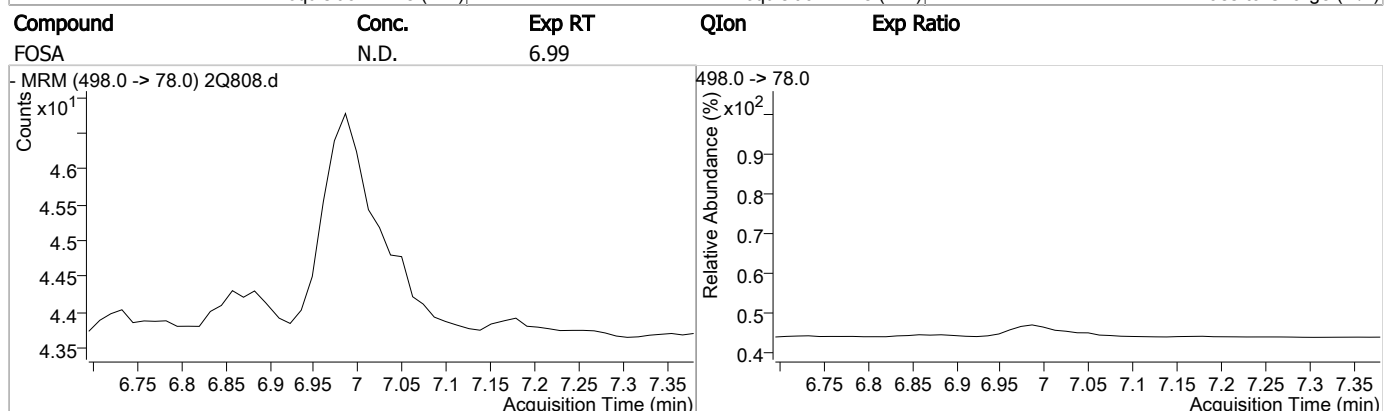
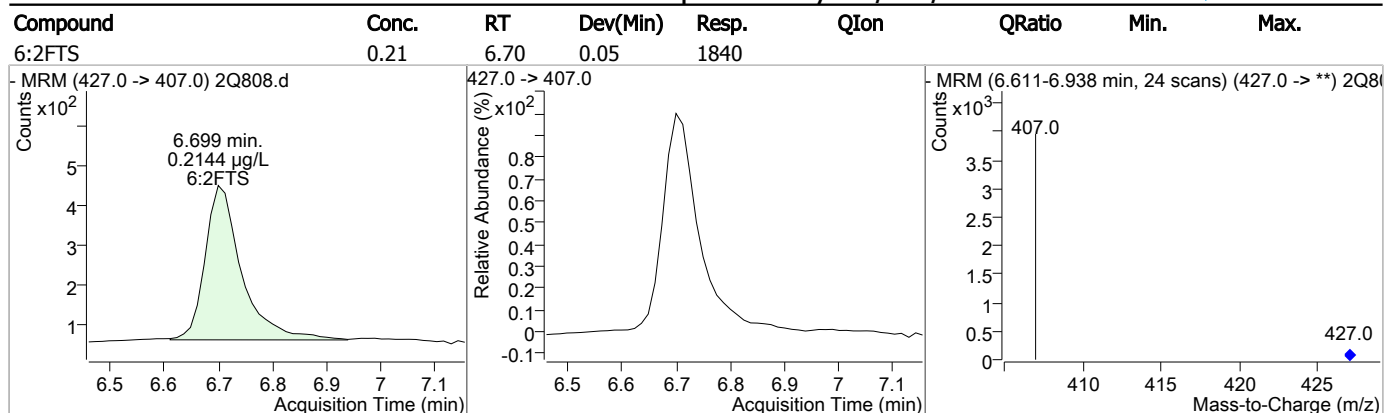
Perfluorinated Compounds by LC/MS/MS



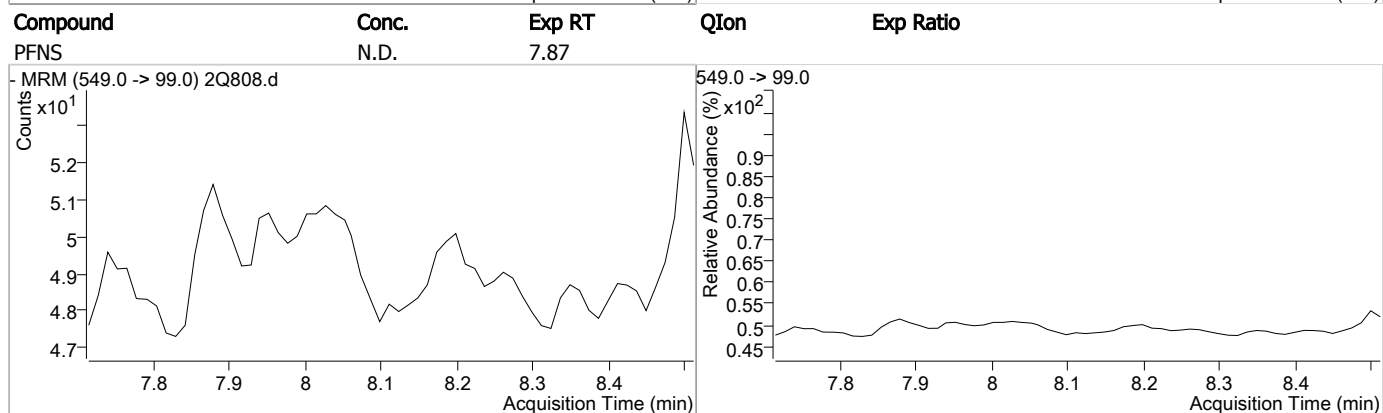
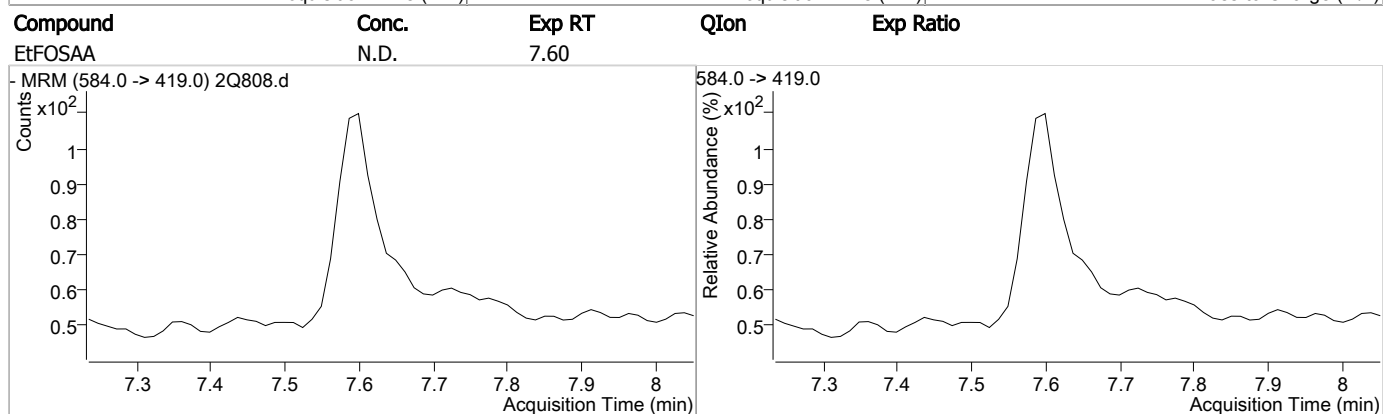
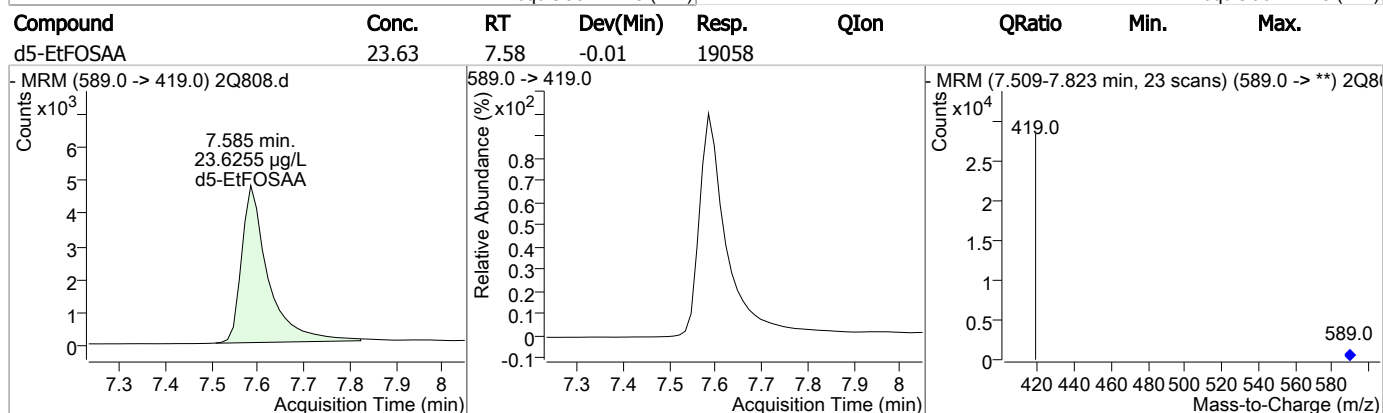
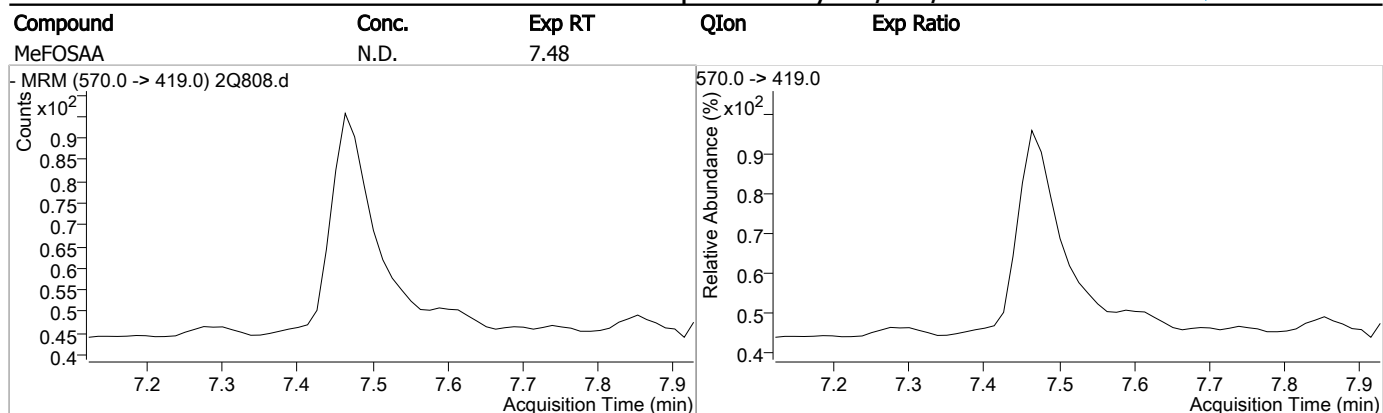
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

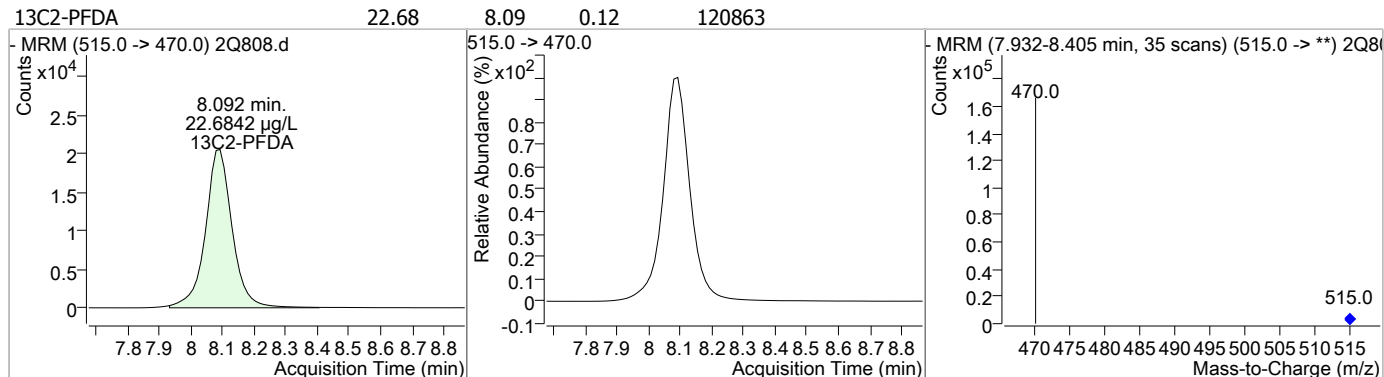


Perfluorinated Compounds by LC/MS/MS

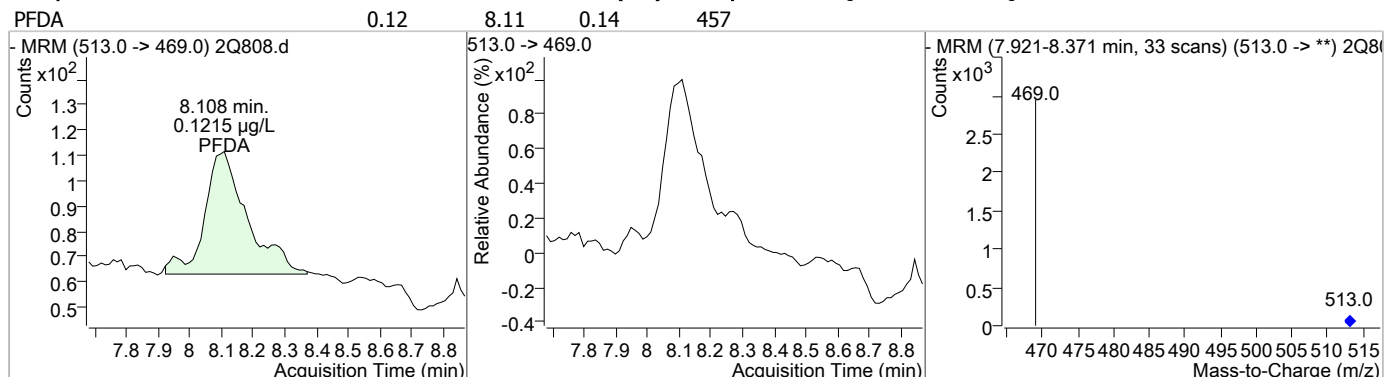


Perfluorinated Compounds by LC/MS/MS

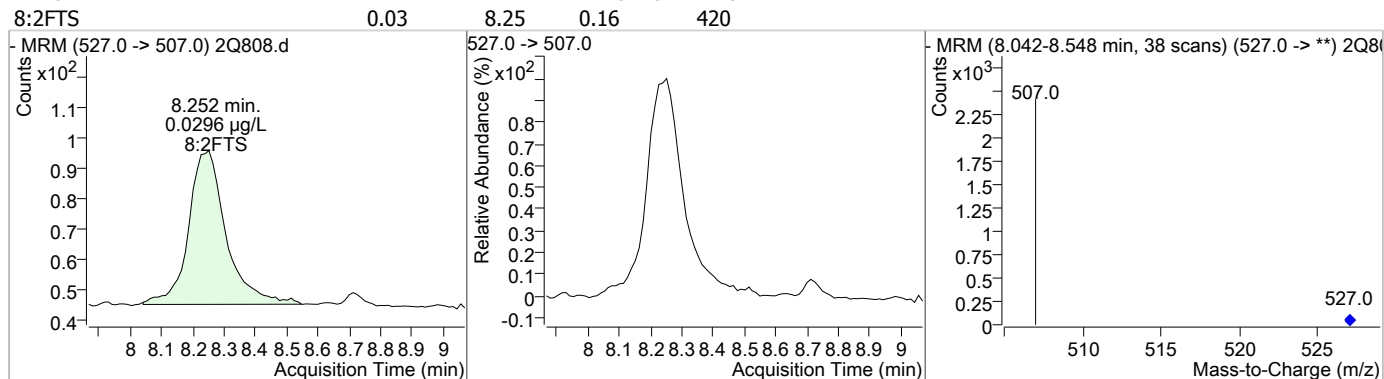
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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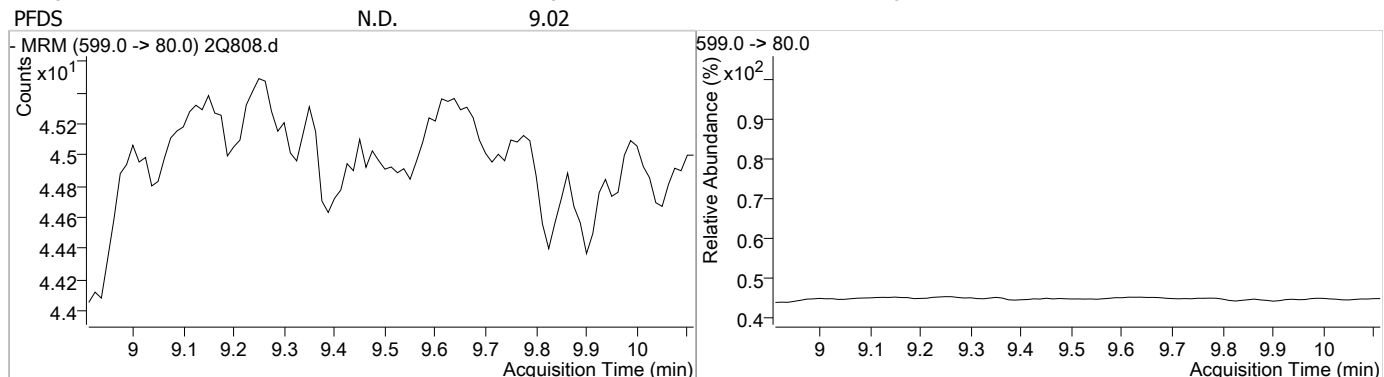
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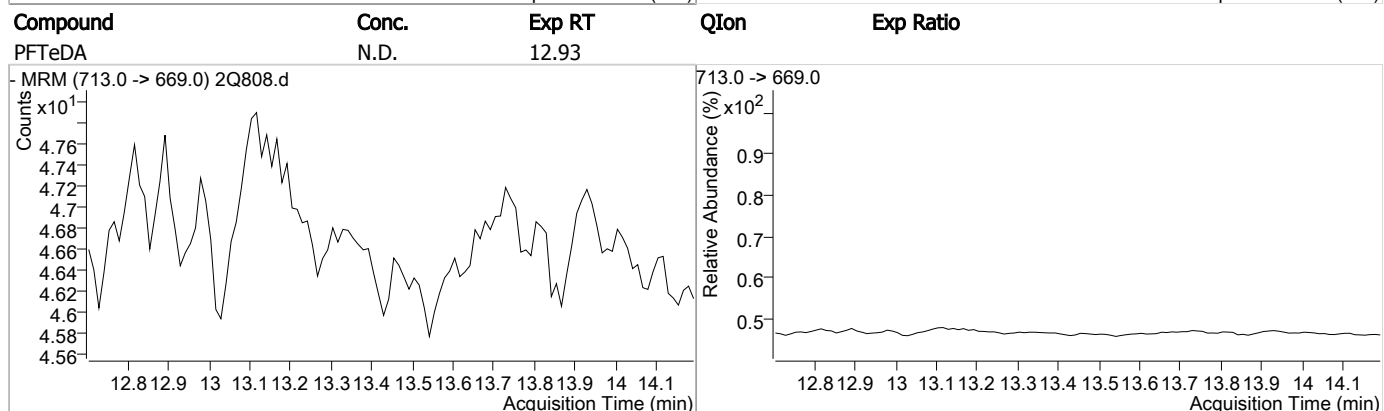
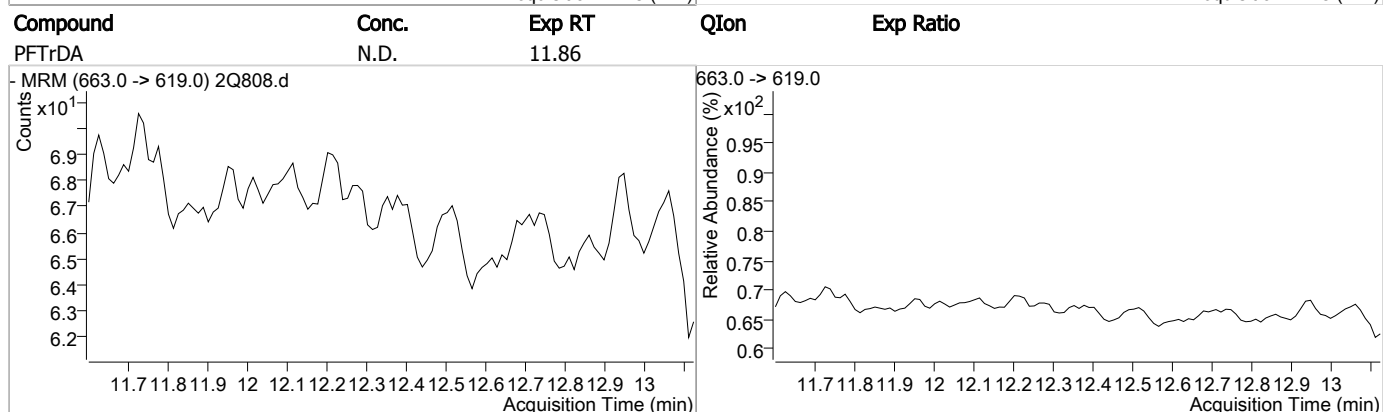
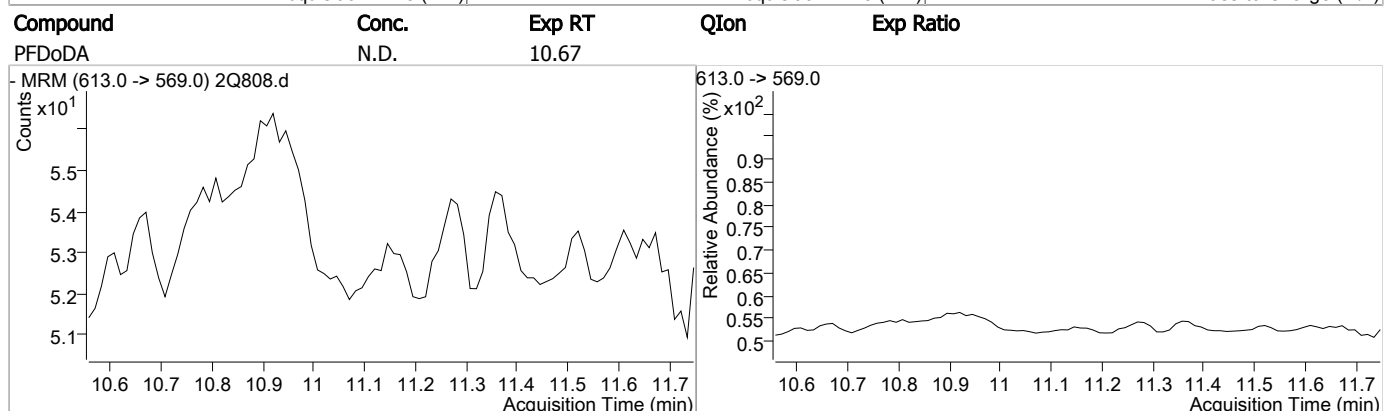
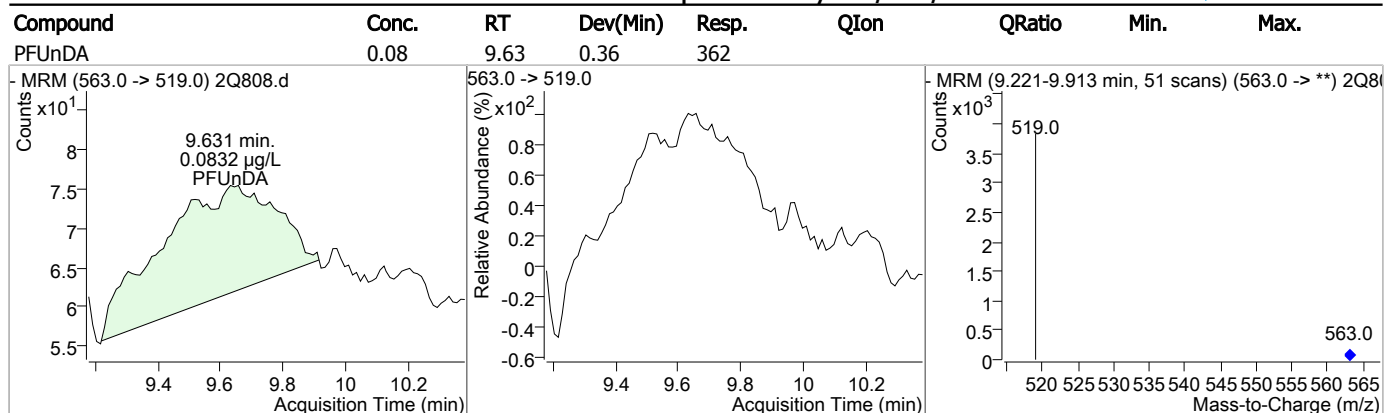
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
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Compound	Conc.	Exp RT	QIon	Exp Ratio
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Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: FA42951-1

Method: EPA 537

Lab FileID: 2Q808.D

Analyst approved: 04/27/17 14:43 Mike Eger

Injection Time: 04/27/17 12:48

Supervisor approved: 04/27/17 14:49 Mike Eger

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

7.1.1.1
7

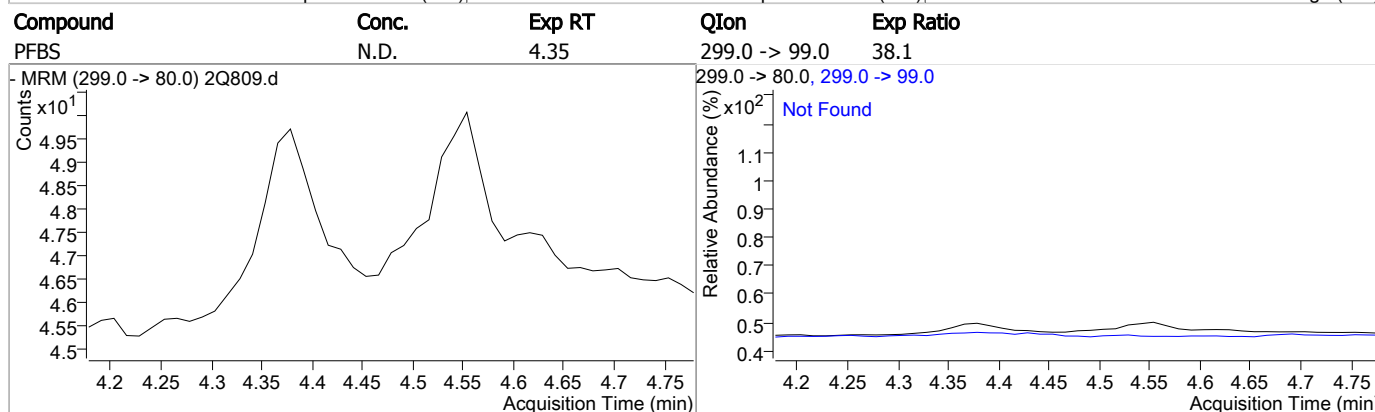
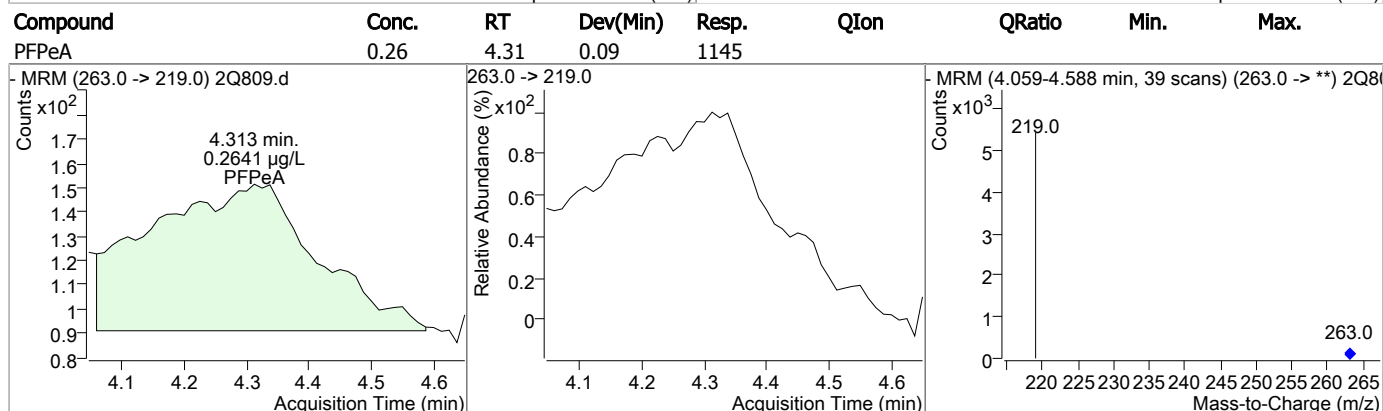
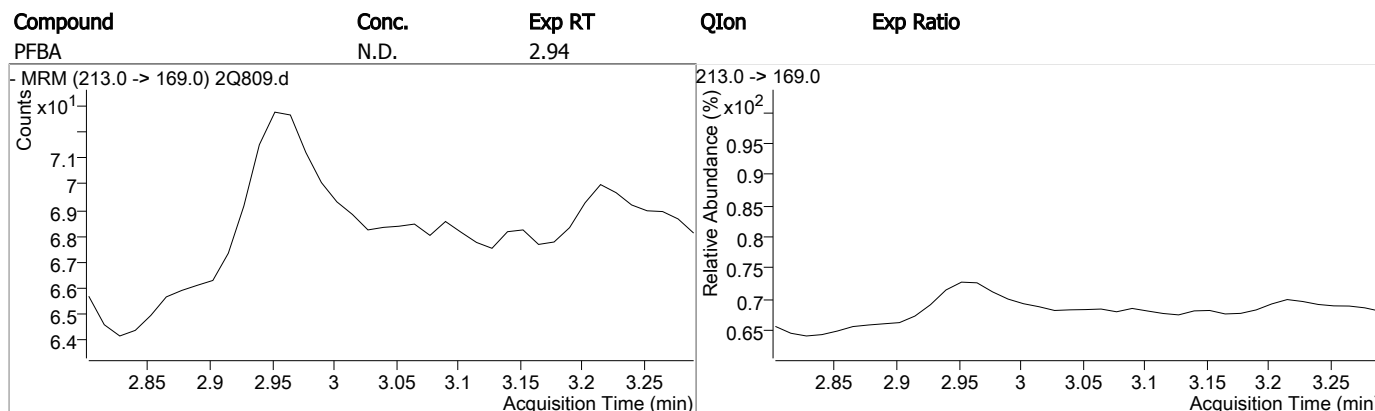
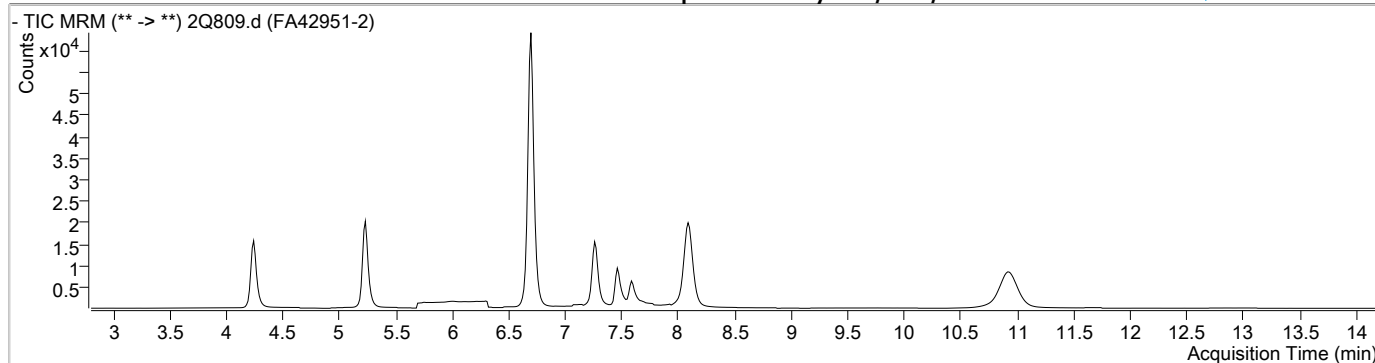
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q809.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 1:08:35 PM
 Sample Name : FA42951-2
 Vial : Vial 22
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

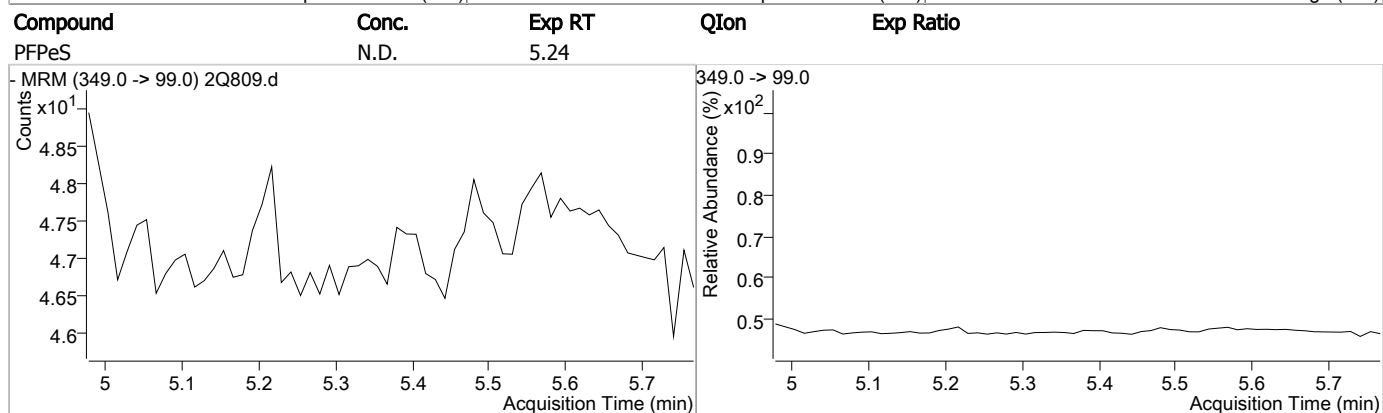
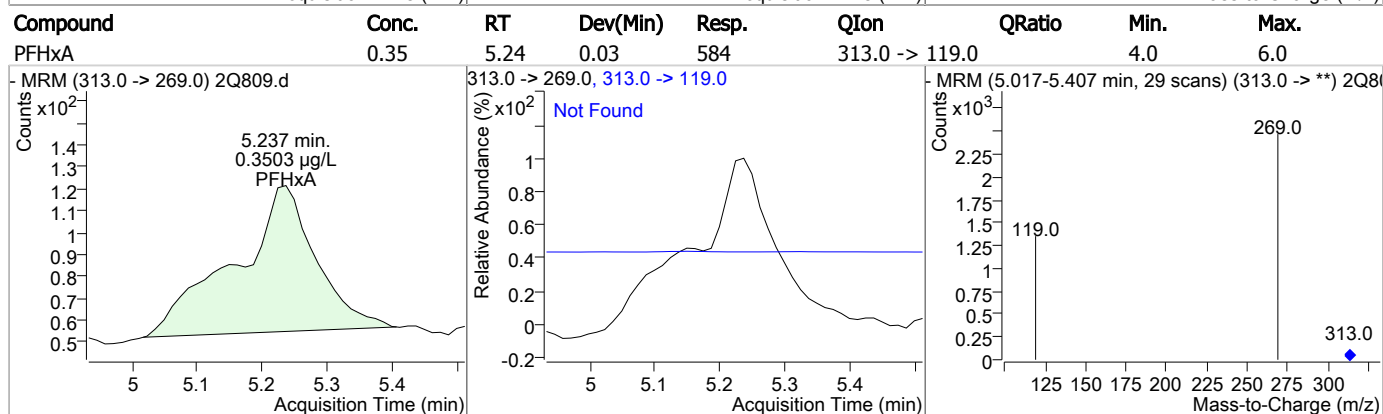
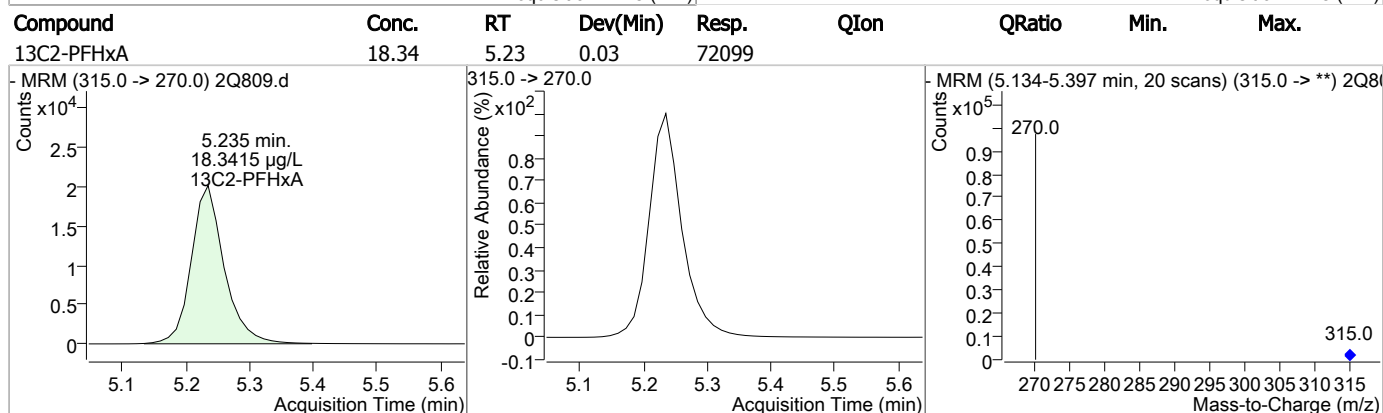
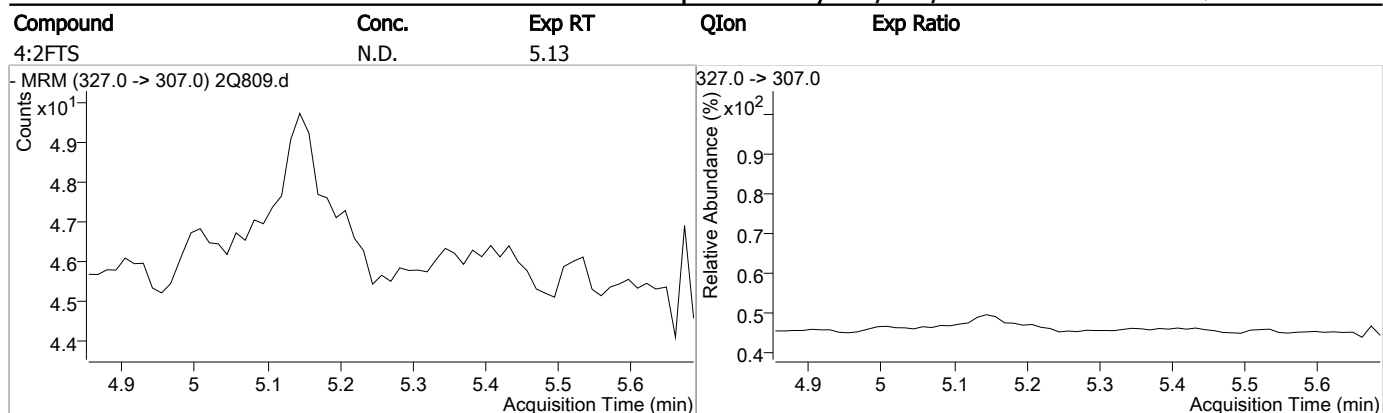
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.698	429.0 -> 409.0	173835	20.00 µg/L	0.050
13C2-PFDoDA	10.914	615.0 -> 570.0	101002	20.00 µg/L	0.250
13C2-PFOA	6.687	415.0 -> 370.0	74420	20.00 µg/L	0.050
13C3-PFPeA	4.247	266.0 -> 222.0	57133	20.00 µg/L	0.012
13C4-PFOS	7.264	503.0 -> 80.0	57645	20.00 µg/L	0.064
d3-MeFOSAA	7.462	573.0 -> 419.0	34009	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-PFDA	8.092	515.0 -> 470.0	115505	22.18 µg/L	0.123
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 110.9%	
13C2-PFHxA	5.235	315.0 -> 270.0	72099	18.34 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 91.7%	
d5-EtFOSAA	7.585	589.0 -> 419.0	20580	24.12 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 120.6%	
Target Compounds					
					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.699	427.0 -> 407.0	1927	0.23 µg/L	100
8:2FTS	8.252	527.0 -> 507.0	390	0.03 µg/L	100
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	8.108	513.0 -> 469.0	368	0.10 µg/L	100
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	6.011	363.0 -> 319.0	713	0.14 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.237	313.0 -> 269.0	584	0.35 µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	7.356	463.0 -> 419.0	365	0.11 µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	6.702	413.0 -> 369.0	430	0.14 µg/L	54
PFOS	7.265	499.0 -> 80.0	350	0.11 µg/L	77
PFPeA	4.313	263.0 -> 219.0	1145	0.26 µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	

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

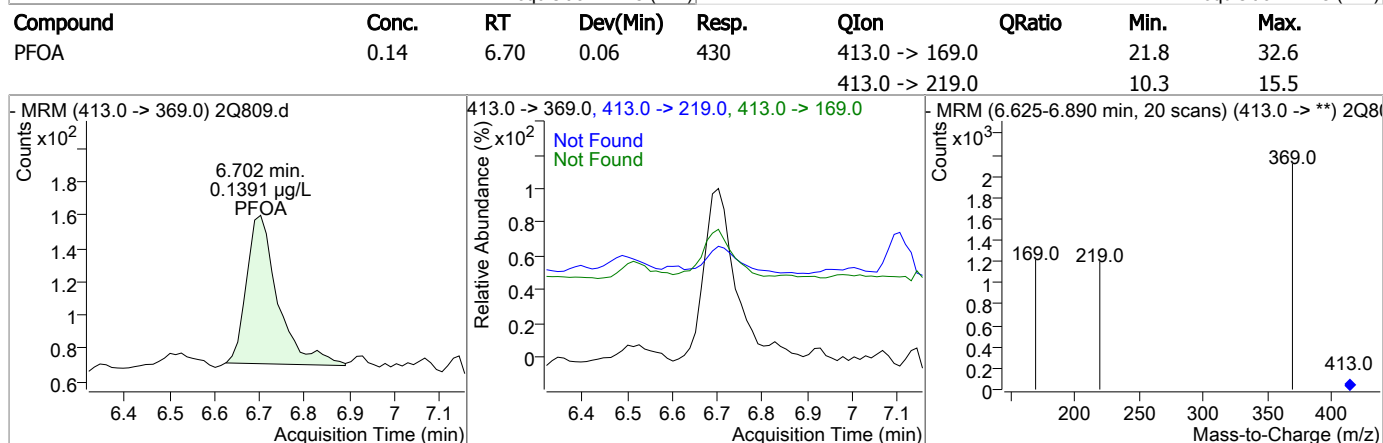
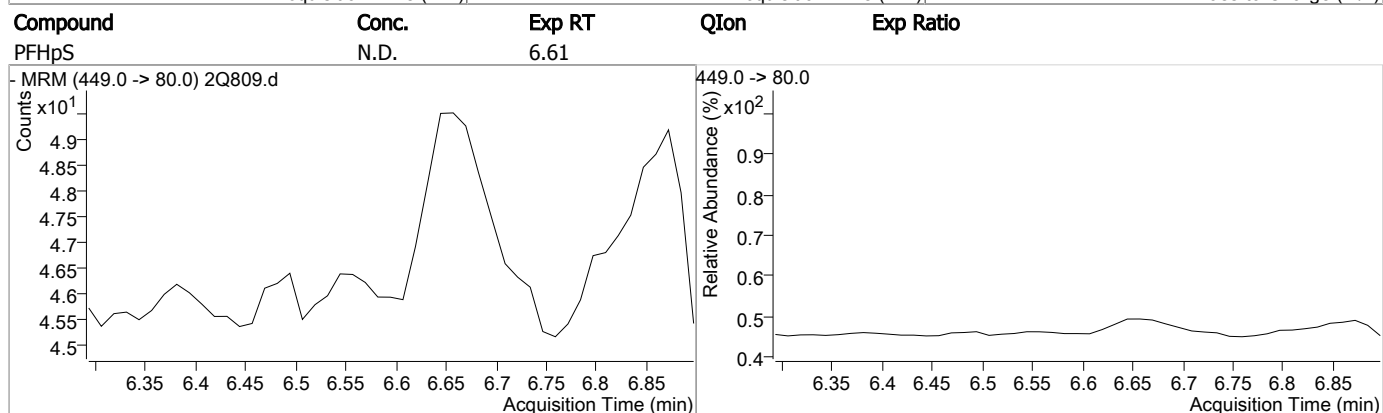
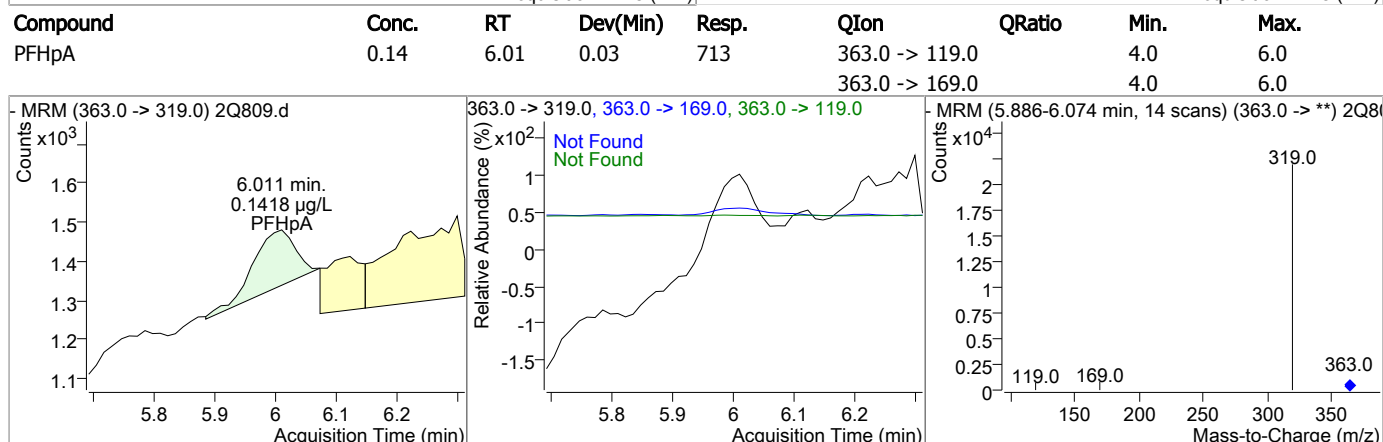
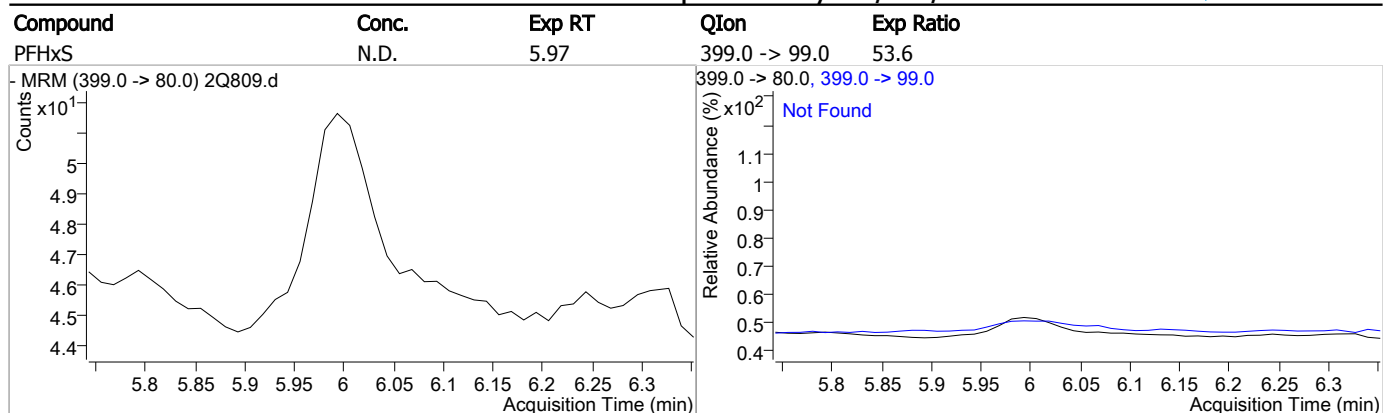
Perfluorinated Compounds by LC/MS/MS



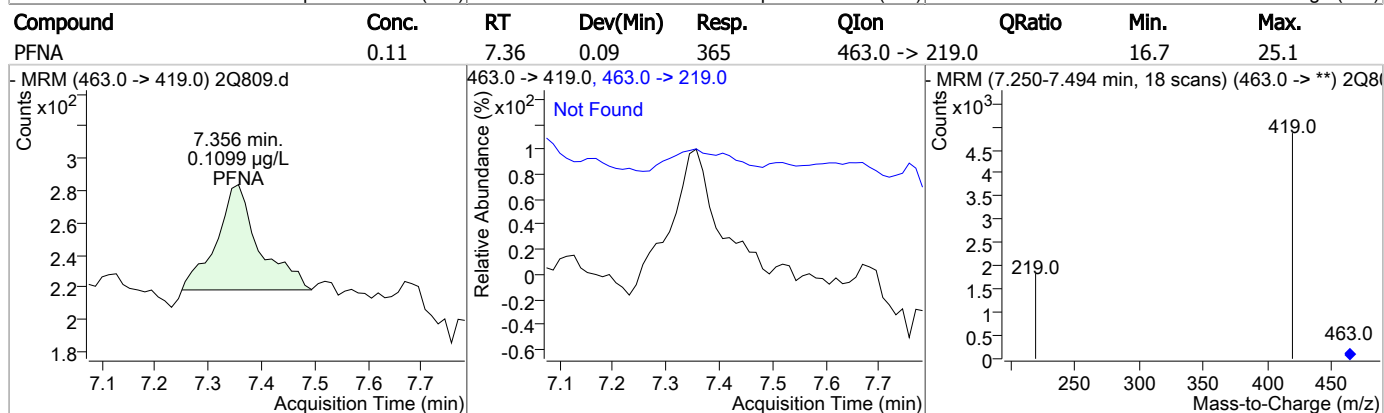
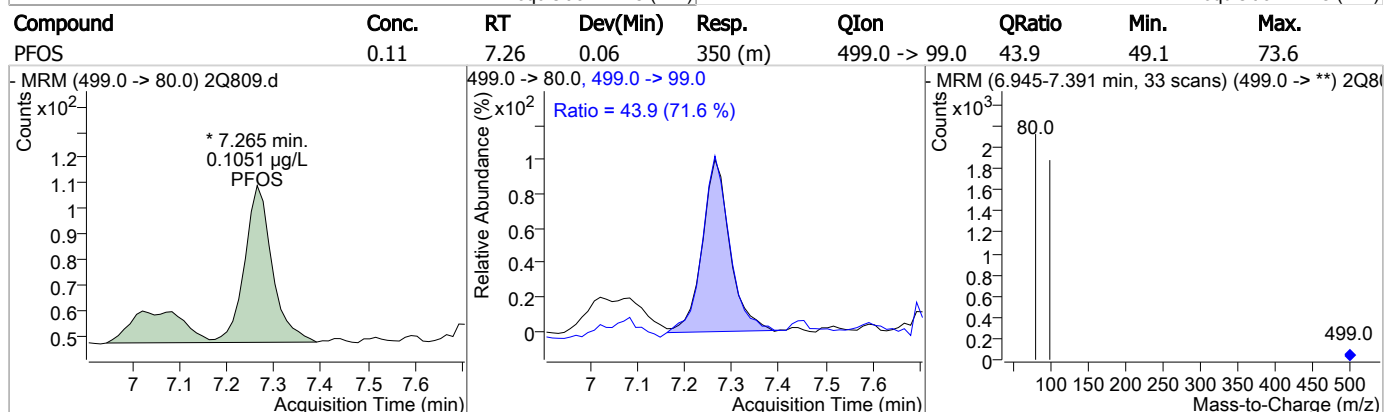
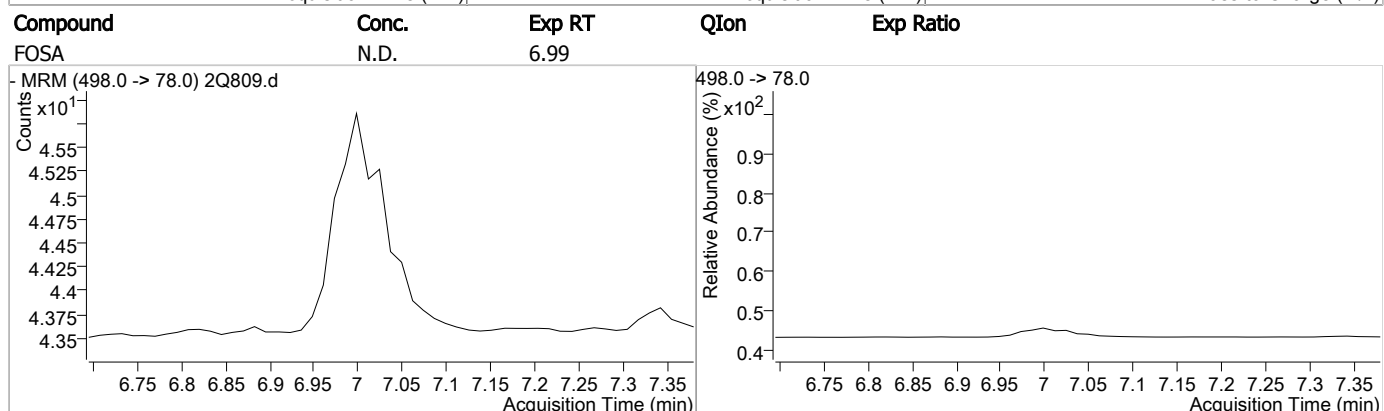
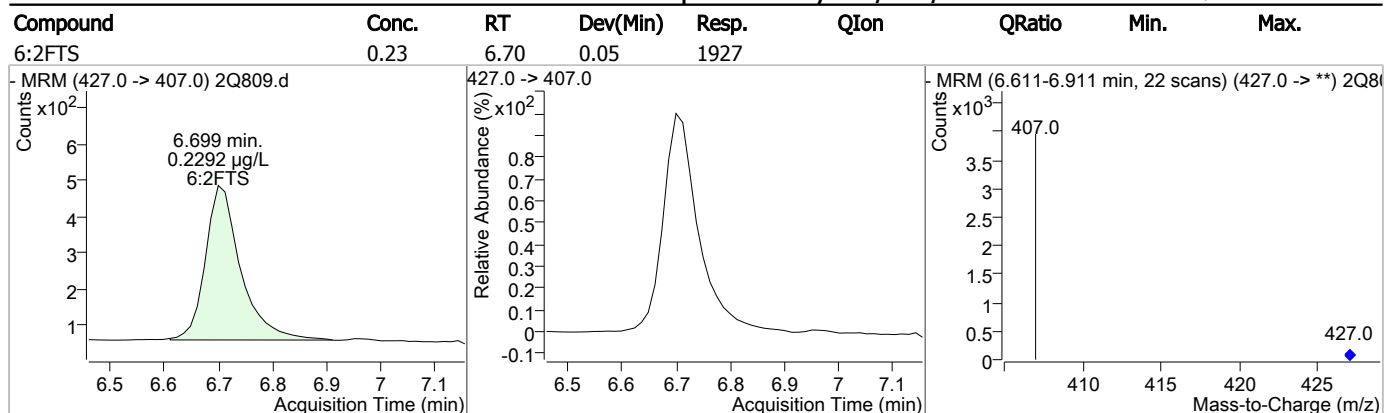
Perfluorinated Compounds by LC/MS/MS



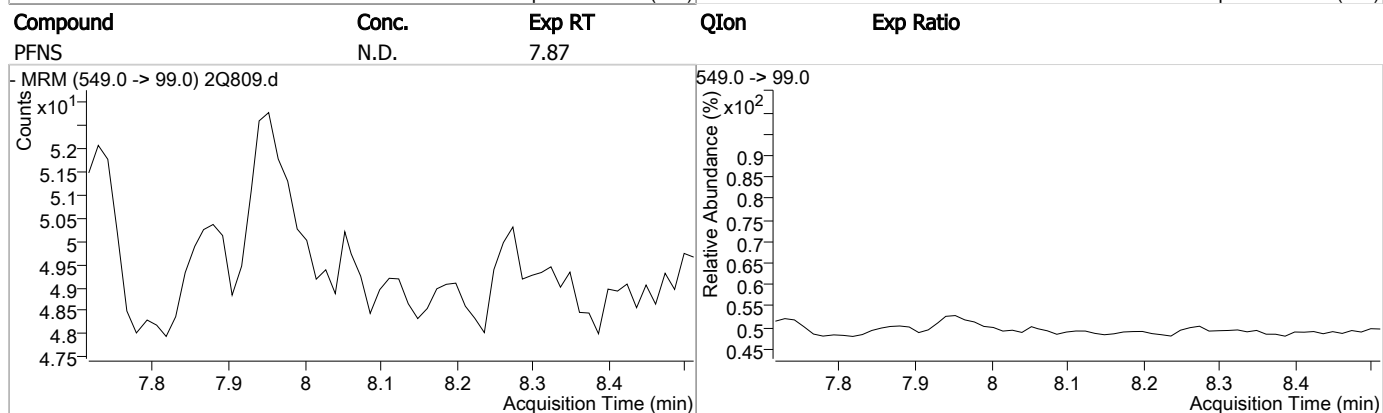
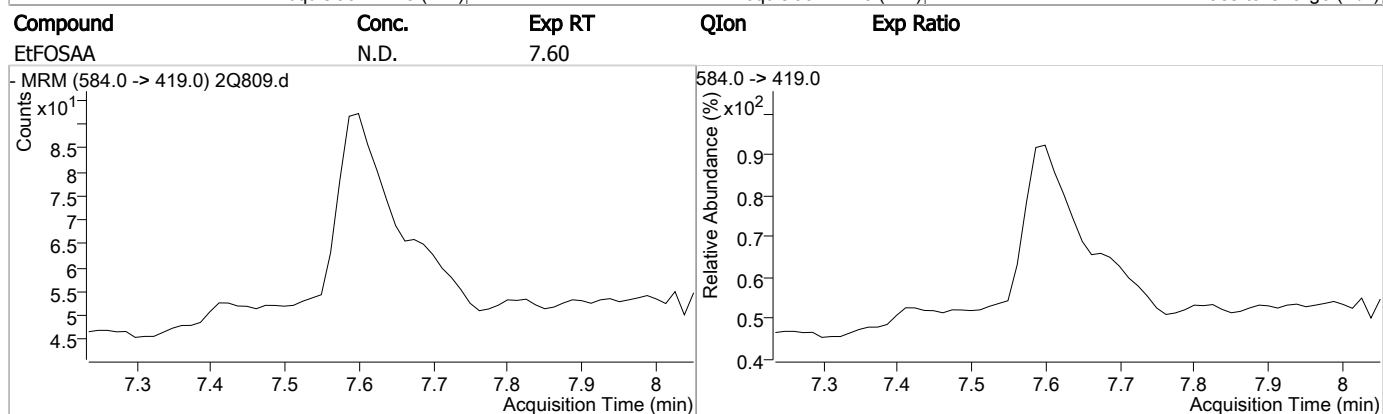
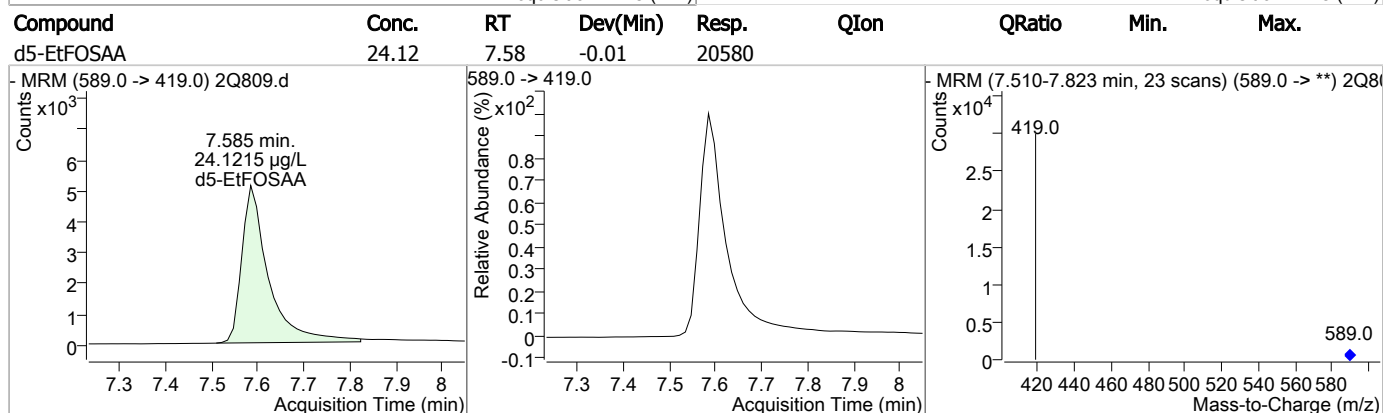
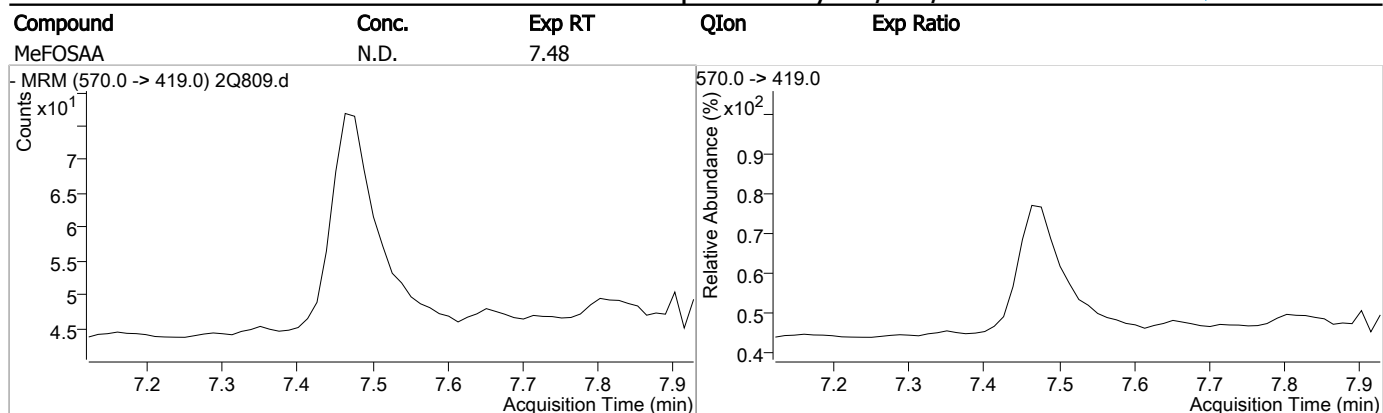
Perfluorinated Compounds by LC/MS/MS



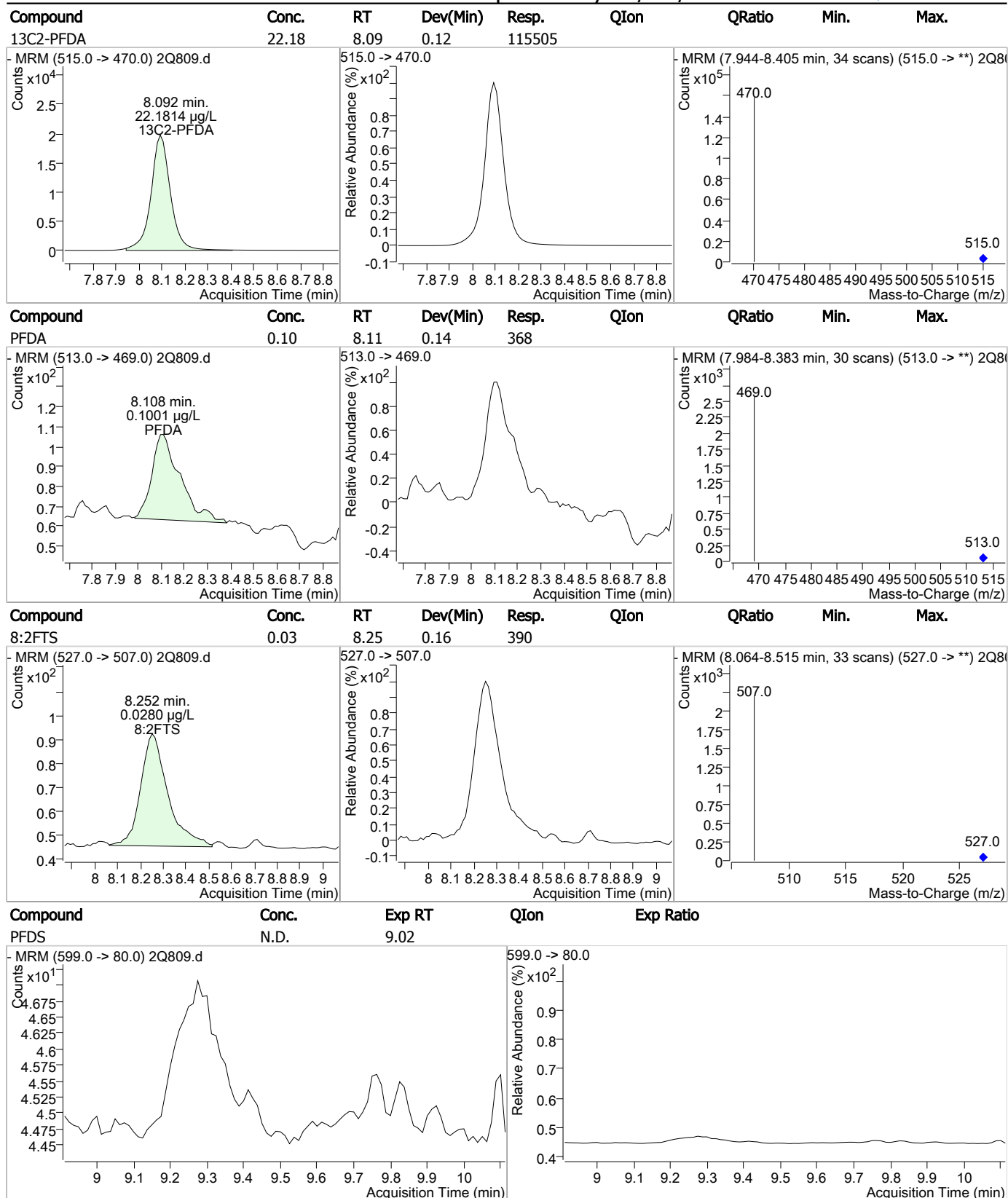
Perfluorinated Compounds by LC/MS/MS



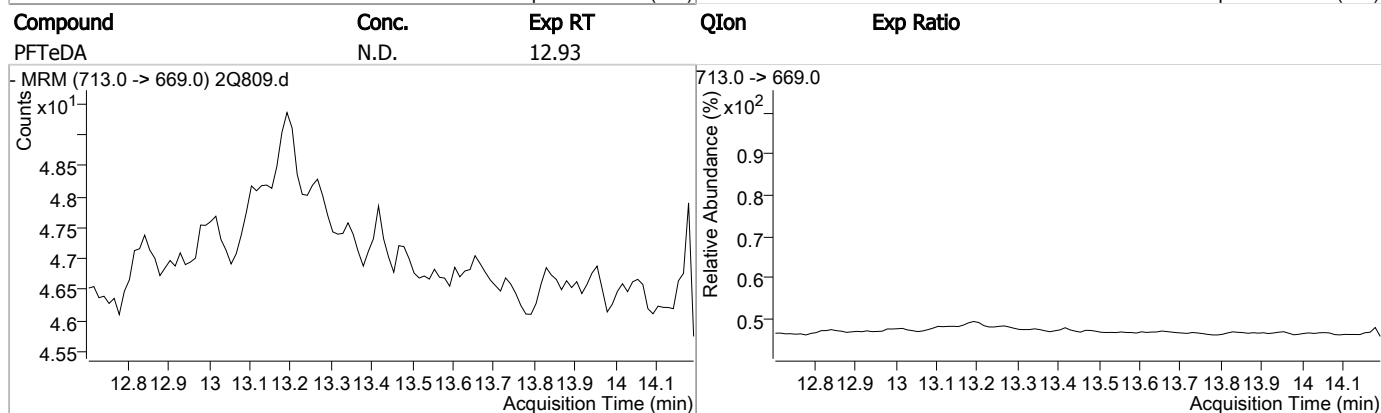
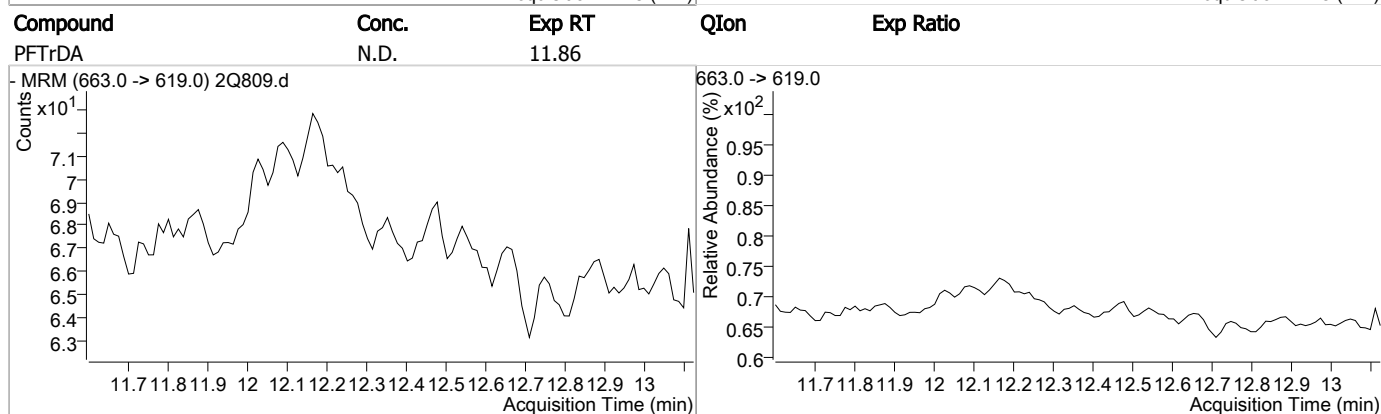
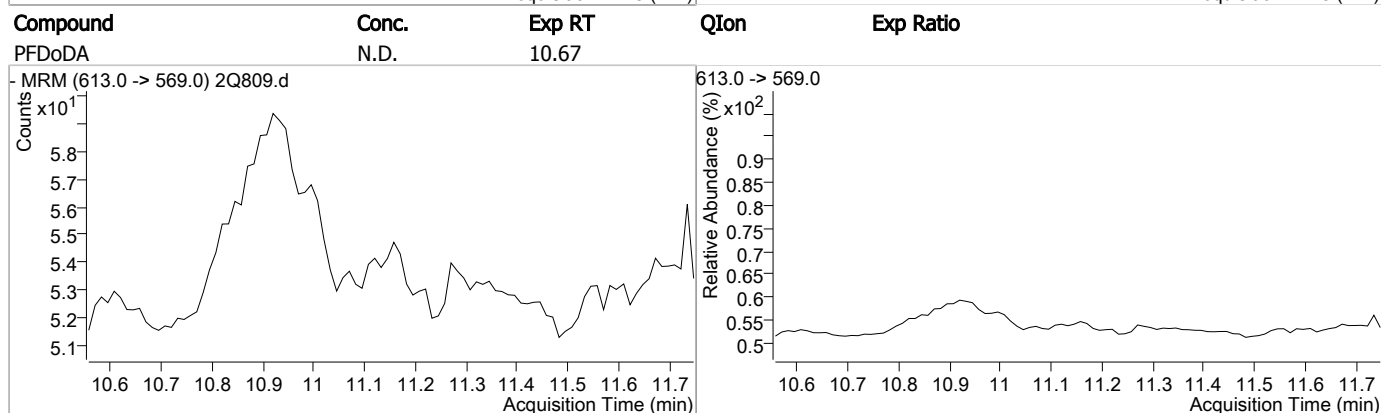
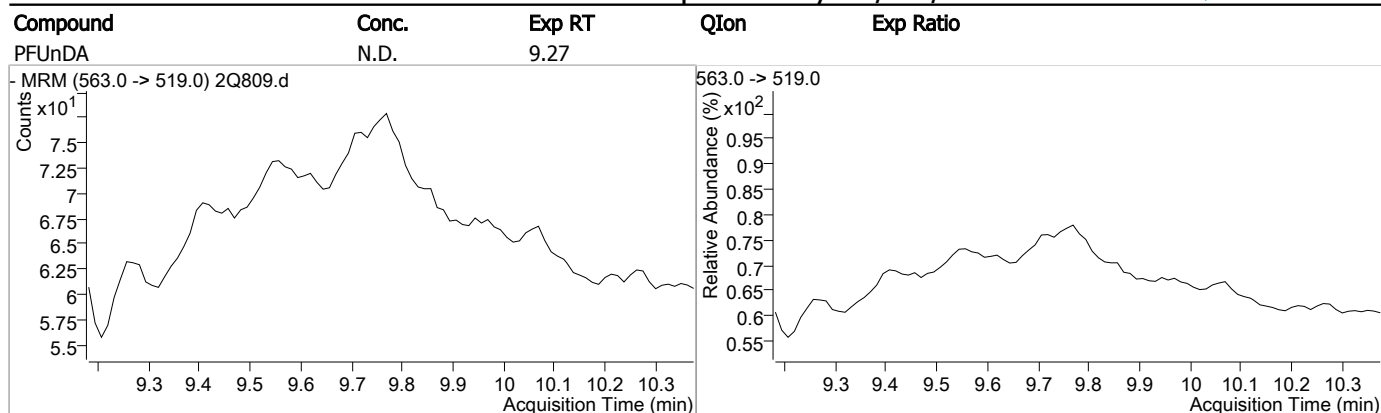
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: FA42951-2

Method: EPA 537

Lab FileID: 2Q809.D

Analyst approved: 04/27/17 14:43 Mike Eger

Injection Time: 04/27/17 13:08

Supervisor approved: 04/27/17 14:49 Mike Eger

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

7.1.2.1
7

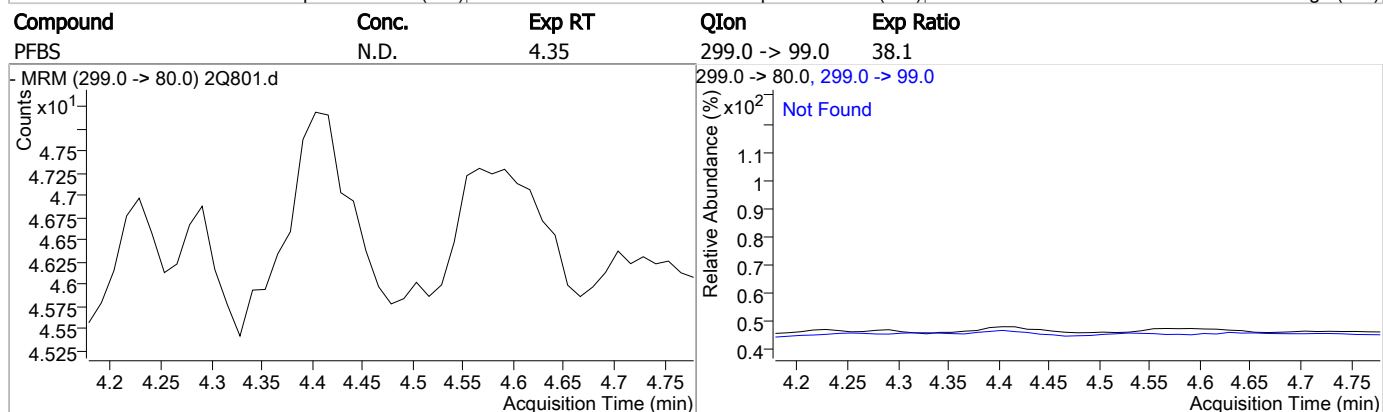
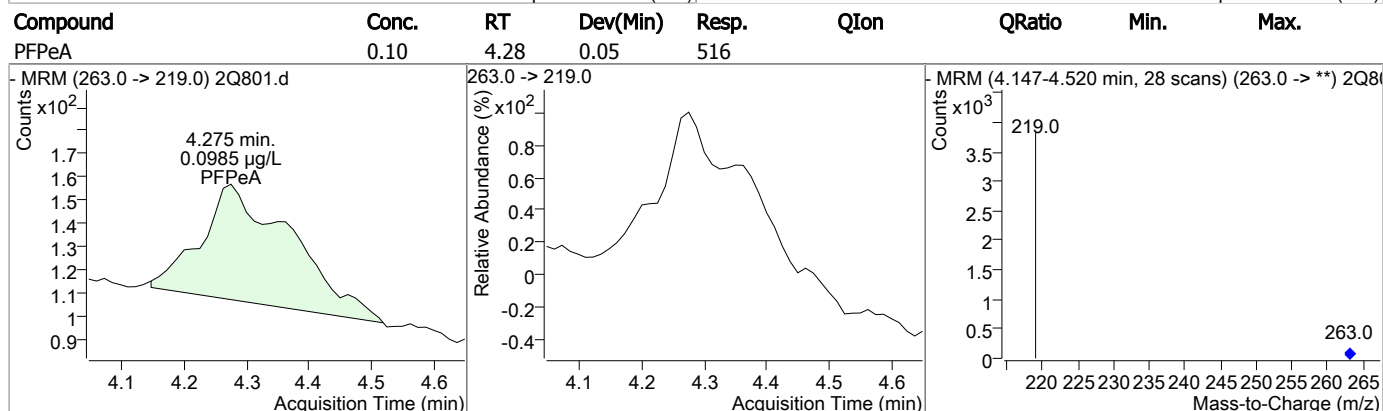
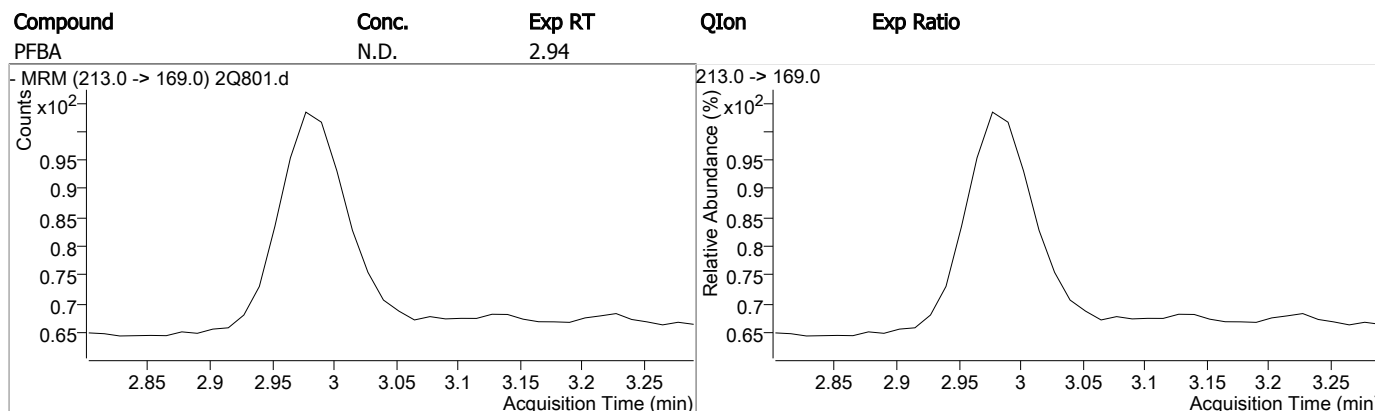
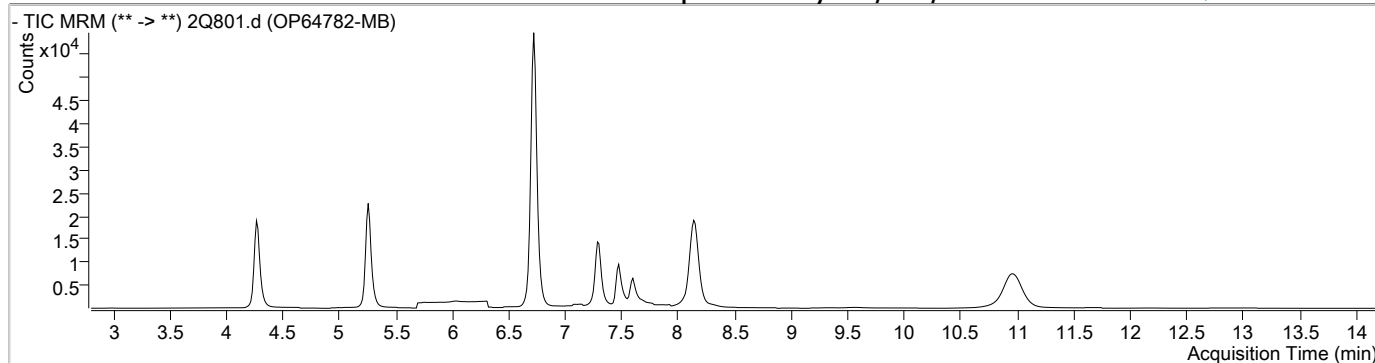
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q801.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 10:30:34 AM
 Sample Name : OP64782-MB
 Vial : Vial 14
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/27/2017 2:25:49 PM

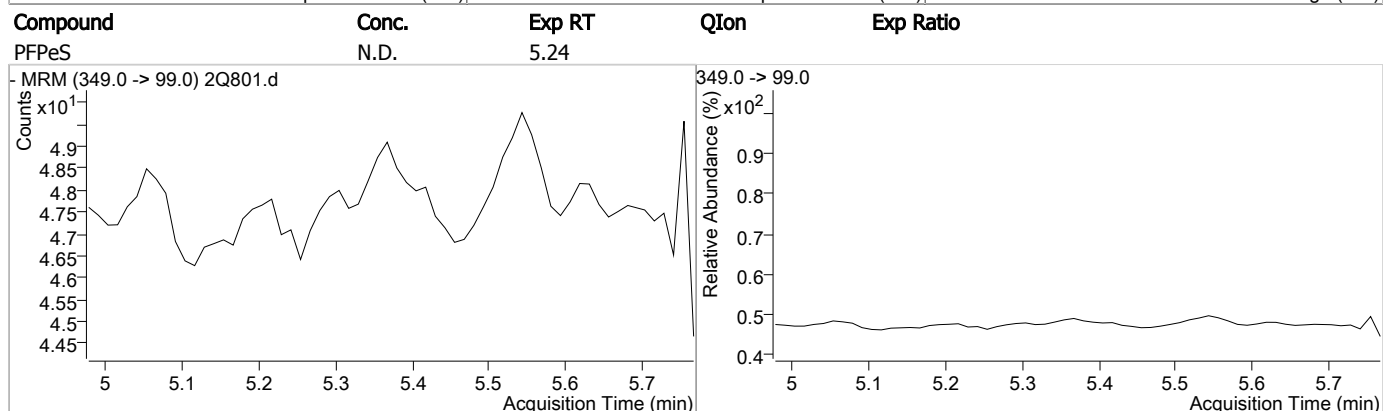
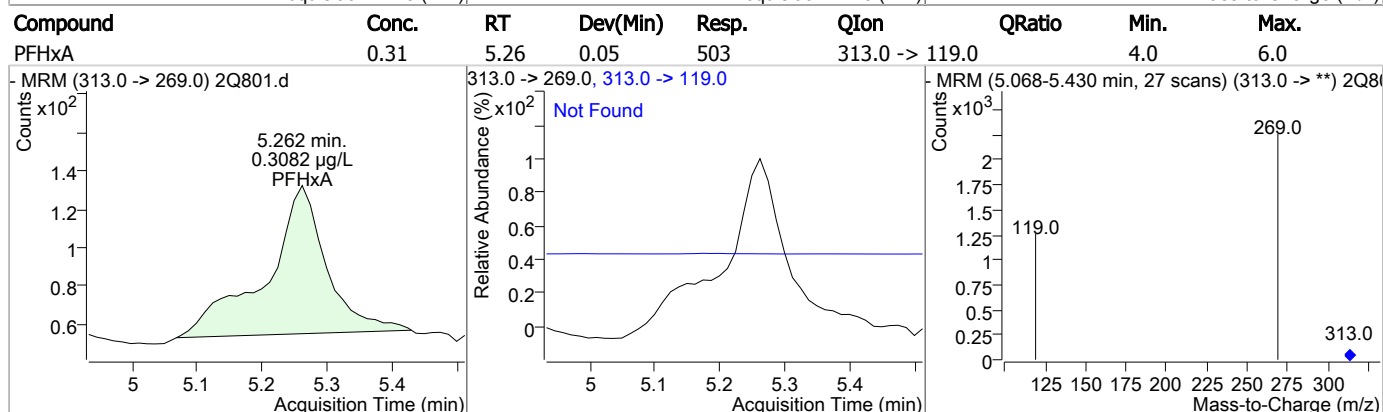
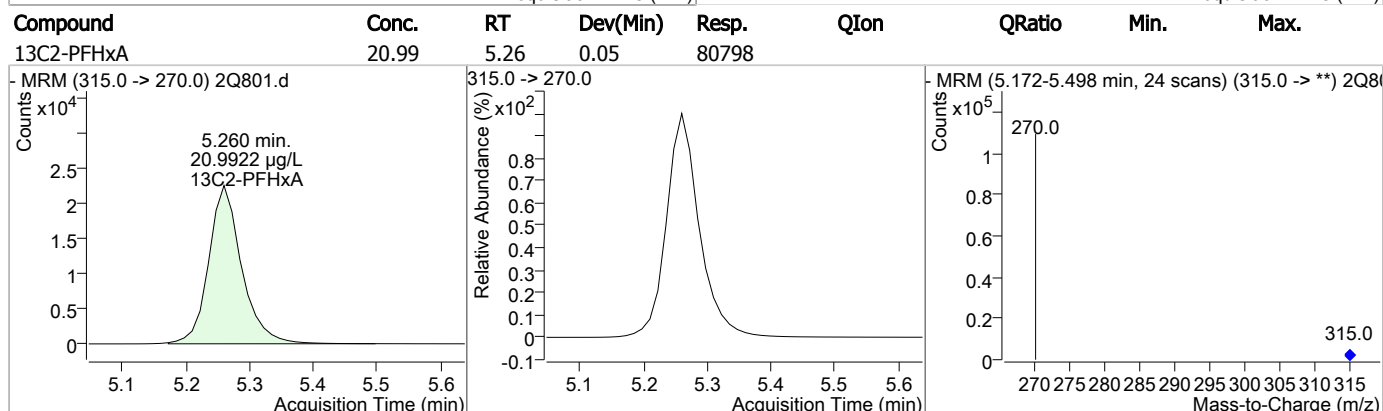
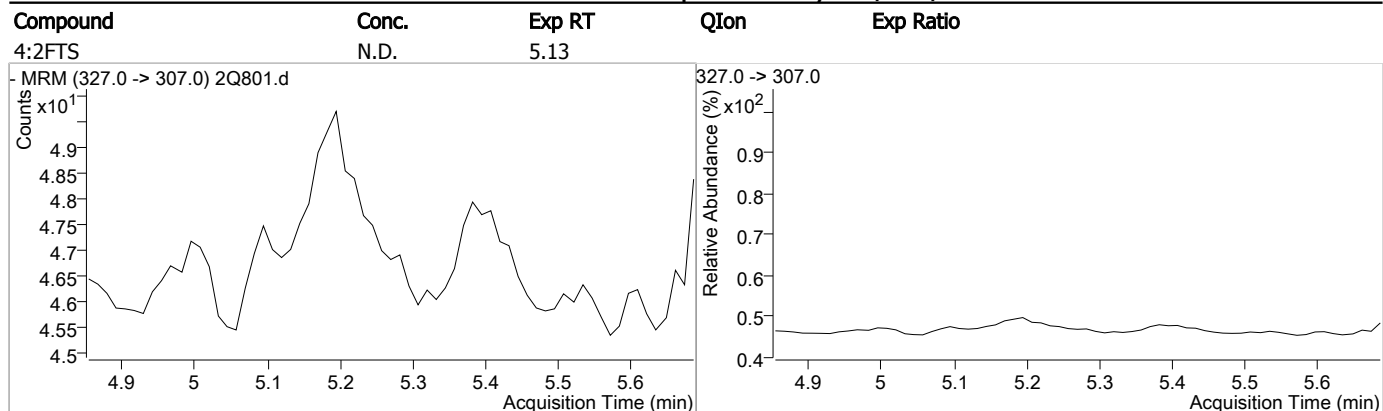
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.723	429.0 -> 409.0	158452	20.00 µg/L	0.075
13C2-PFDoDA	10.951	615.0 -> 570.0	92287	20.00 µg/L	0.288
13C2-PFOA	6.713	415.0 -> 370.0	72868	20.00 µg/L	0.076
13C3-PFPeA	4.272	266.0 -> 222.0	68988	20.00 µg/L	0.037
13C4-PFOS	7.289	503.0 -> 80.0	53498	20.00 µg/L	0.090
d3-MeFOSAA	7.475	573.0 -> 419.0	33256	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	8.142	515.0 -> 470.0	115863	22.72 µg/L	0.173
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 113.6%		
13C2-PFHxA	5.260	315.0 -> 270.0	80798	20.99 µg/L	0.050
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 105.0%		
d5-EtFOSAA	7.597	589.0 -> 419.0	18110	21.93 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 109.6%		
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.724	427.0 -> 407.0	3073	0.40 µg/L	100
8:2FTS	8.302	527.0 -> 507.0	2525	0.20 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	2947	4.06 µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.476	570.0 -> 419.0	2844	3.31 µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	8.145	513.0 -> 469.0	1084	0.30 µg/L	100
PFDoDA	10.945	613.0 -> 569.0	1222	0.32 µg/L	100
PFDS	9.325	599.0 -> 80.0	506	0.37 µg/L	100
PFHpA	6.036	363.0 -> 319.0	873	0.18 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.262	313.0 -> 269.0	503	0.31 µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	7.369	463.0 -> 419.0	744	0.23 µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	6.728	413.0 -> 369.0	419	0.14 µg/L	54
PFOS	7.290	499.0 -> 80.0	908	0.29 µg/L	97
PFPeA	4.275	263.0 -> 219.0	516	0.10 µg/L	100
PFPeS	-	349.0 -> 99.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTTrDA	12.140	663.0 -> 619.0	556	0.17 µg/L	100
PFUnDA	9.569	563.0 -> 519.0	1568	0.39 µg/L	100

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

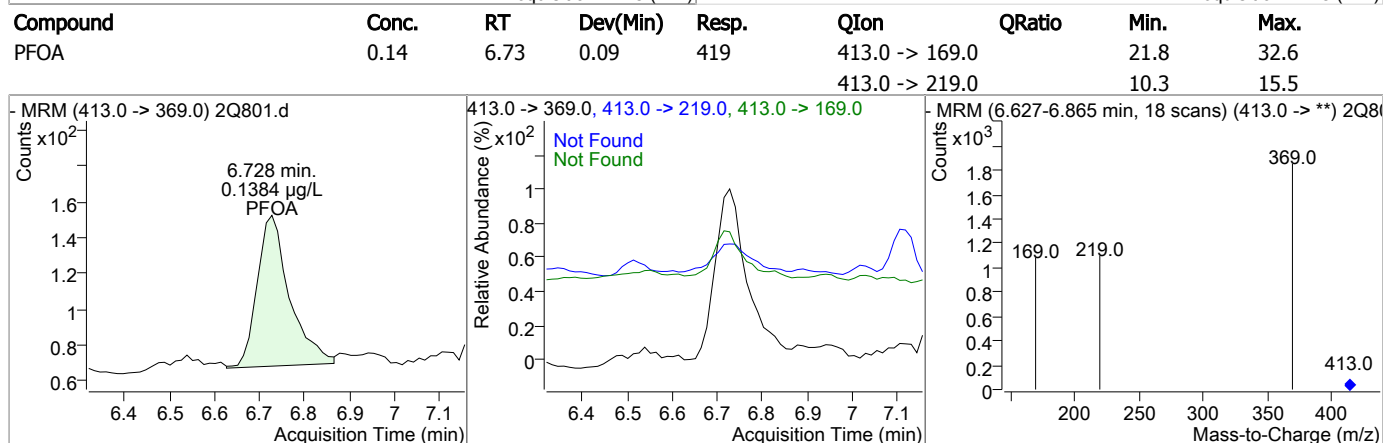
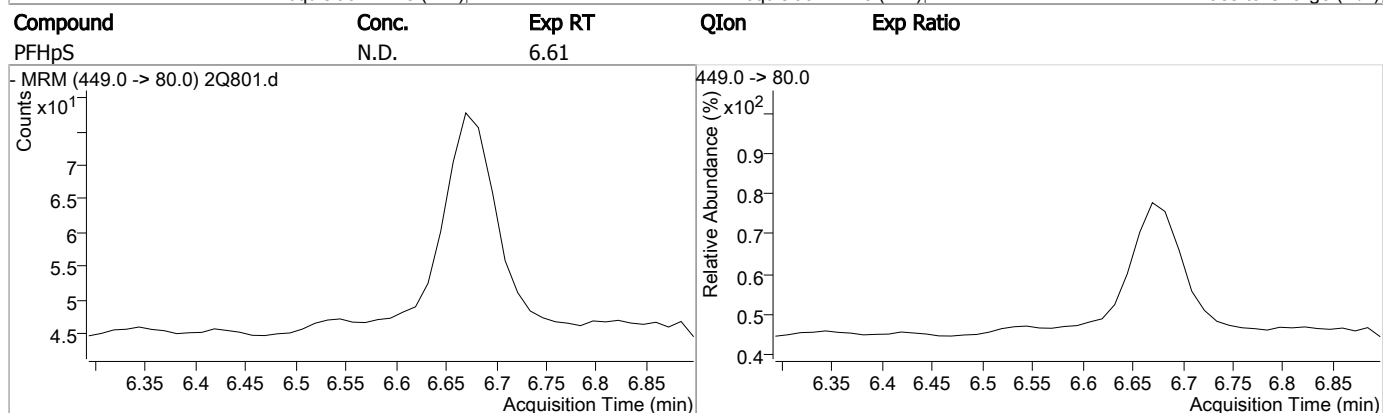
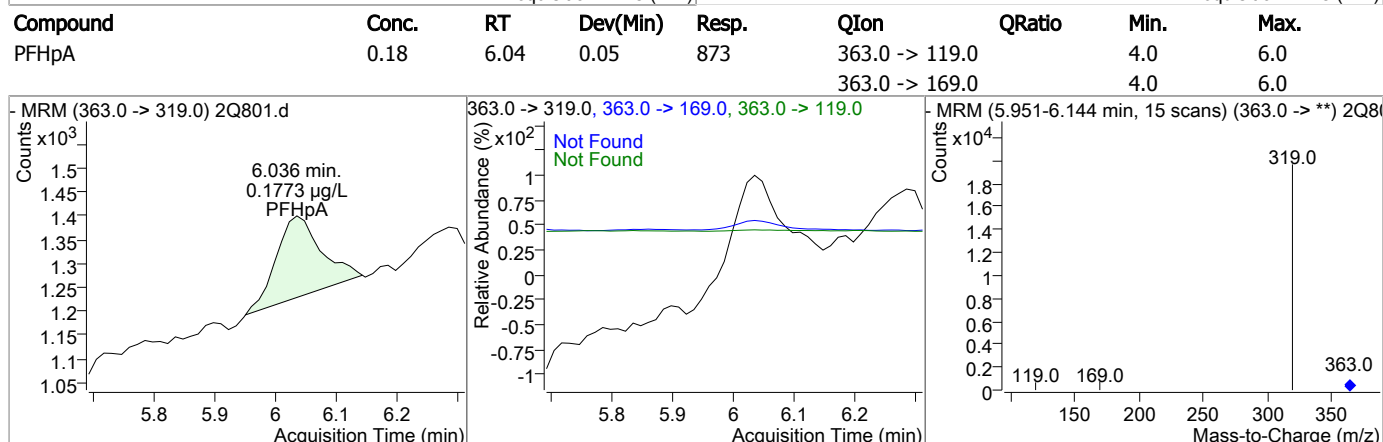
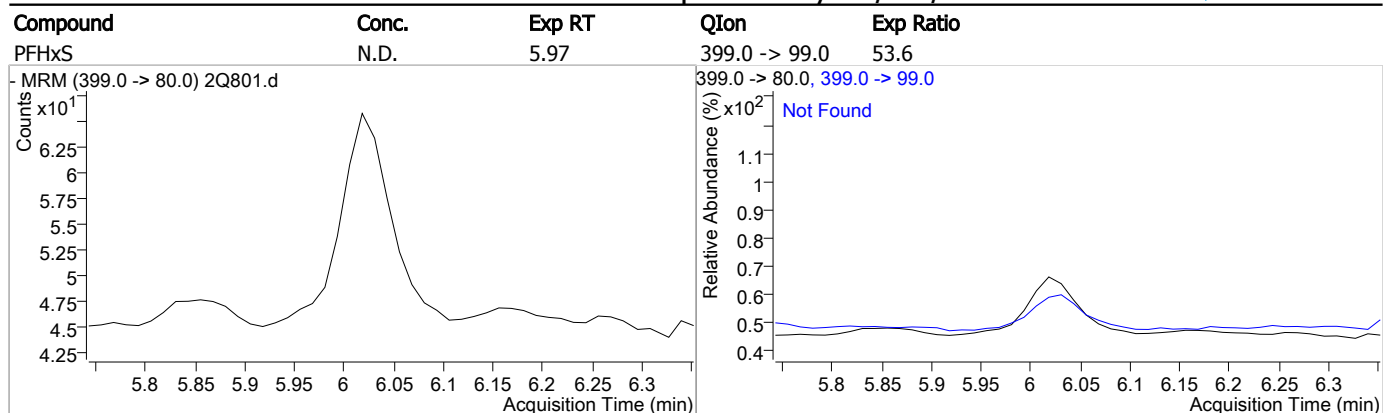
Perfluorinated Compounds by LC/MS/MS



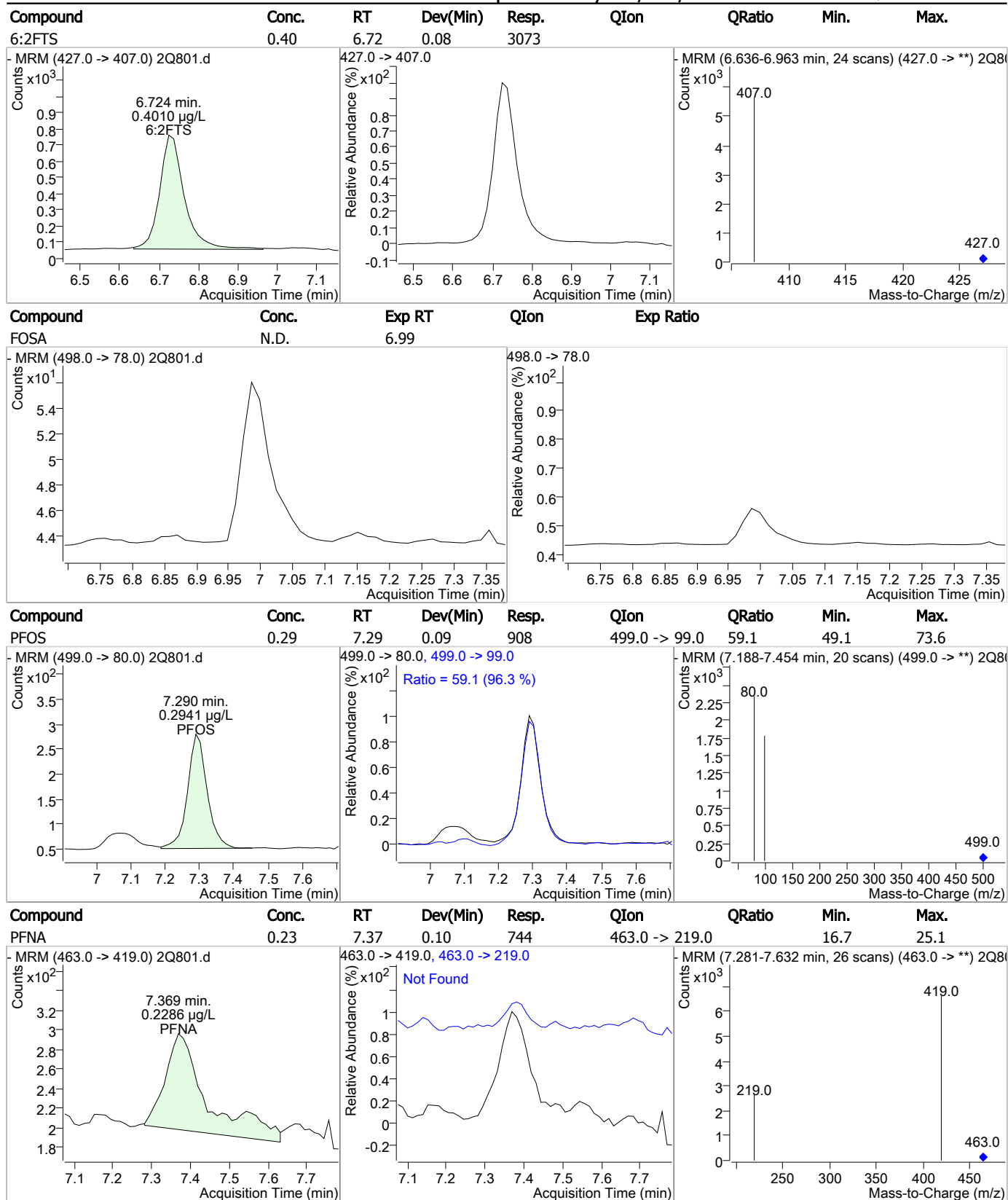
Perfluorinated Compounds by LC/MS/MS



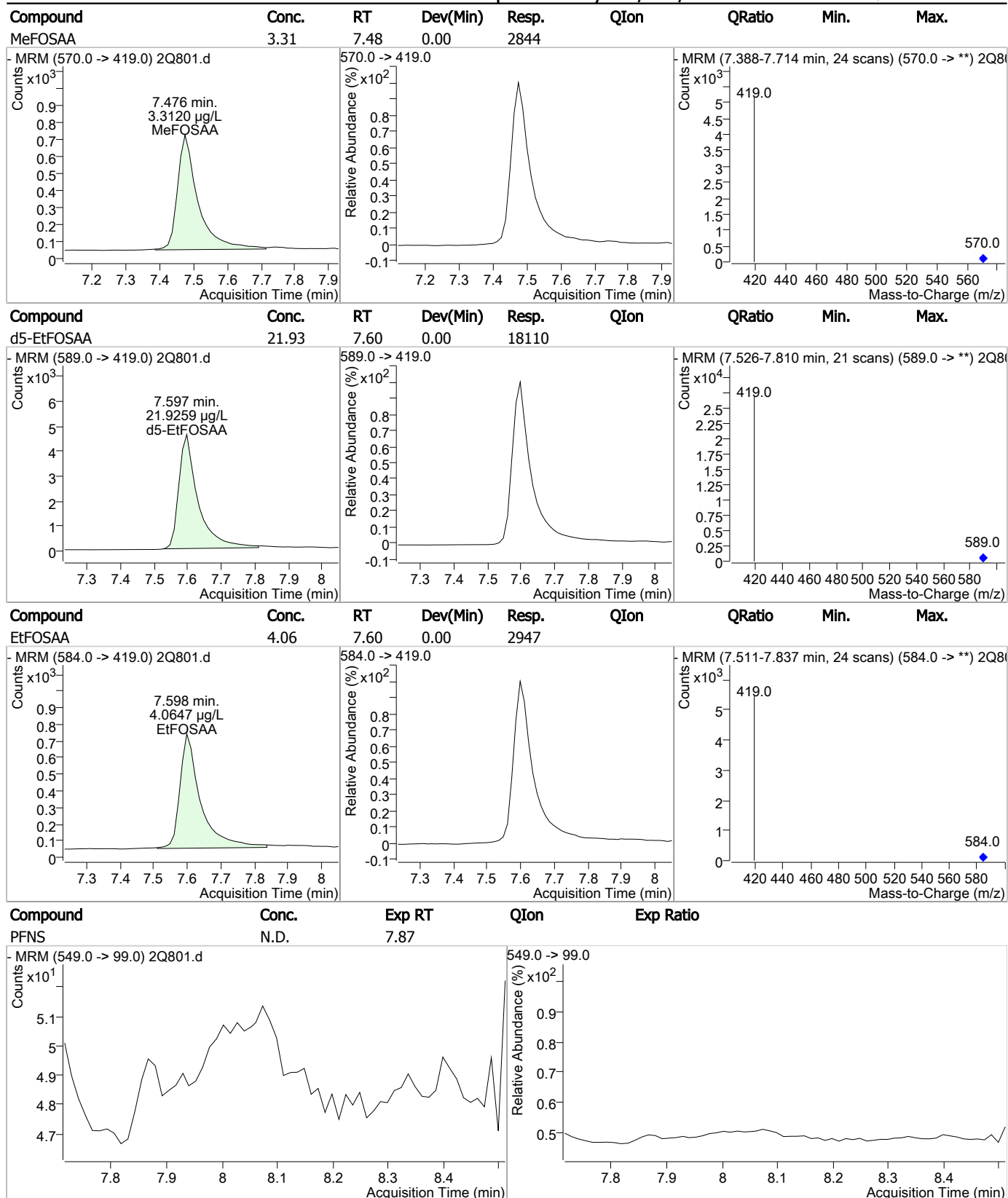
Perfluorinated Compounds by LC/MS/MS



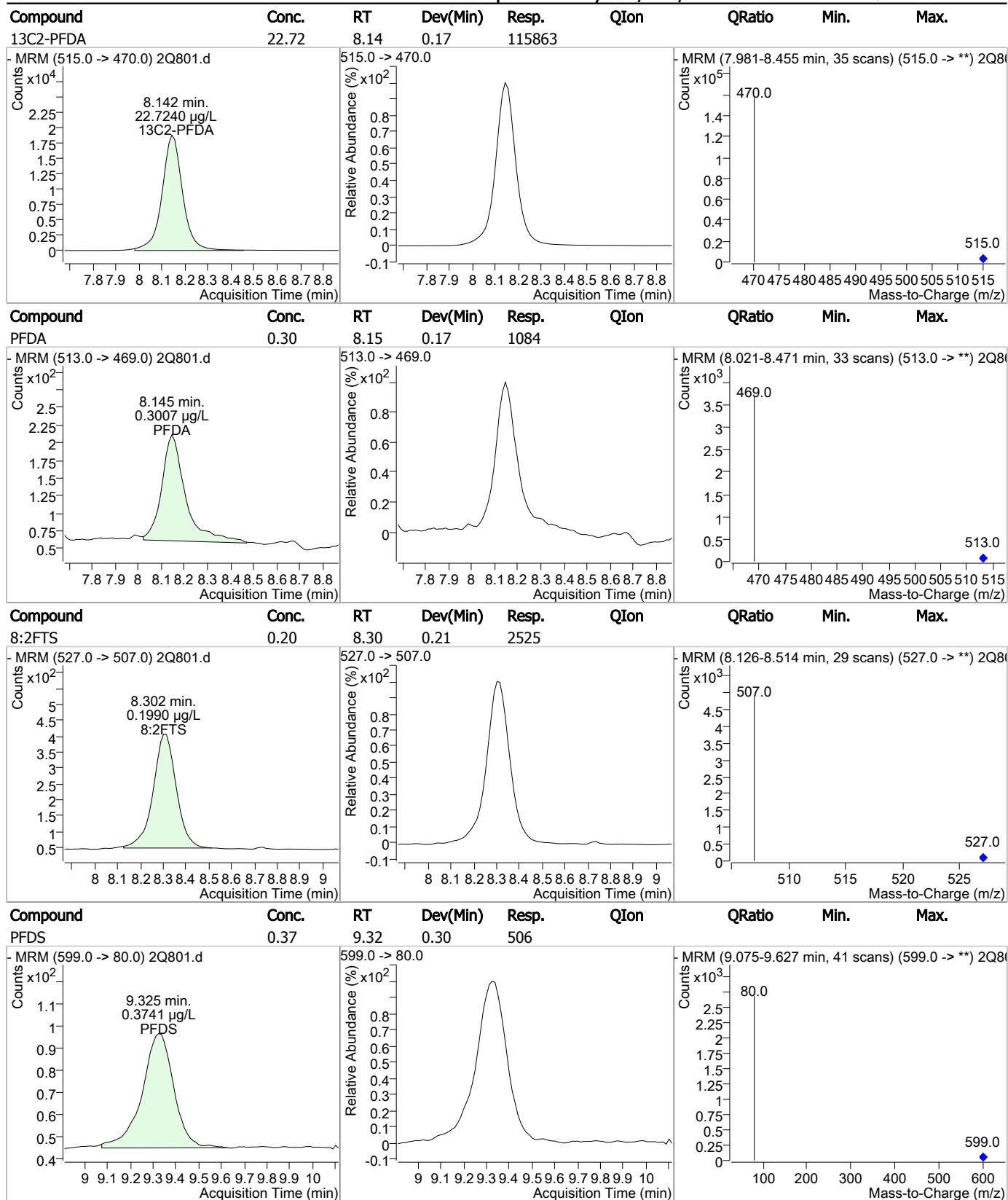
Perfluorinated Compounds by LC/MS/MS



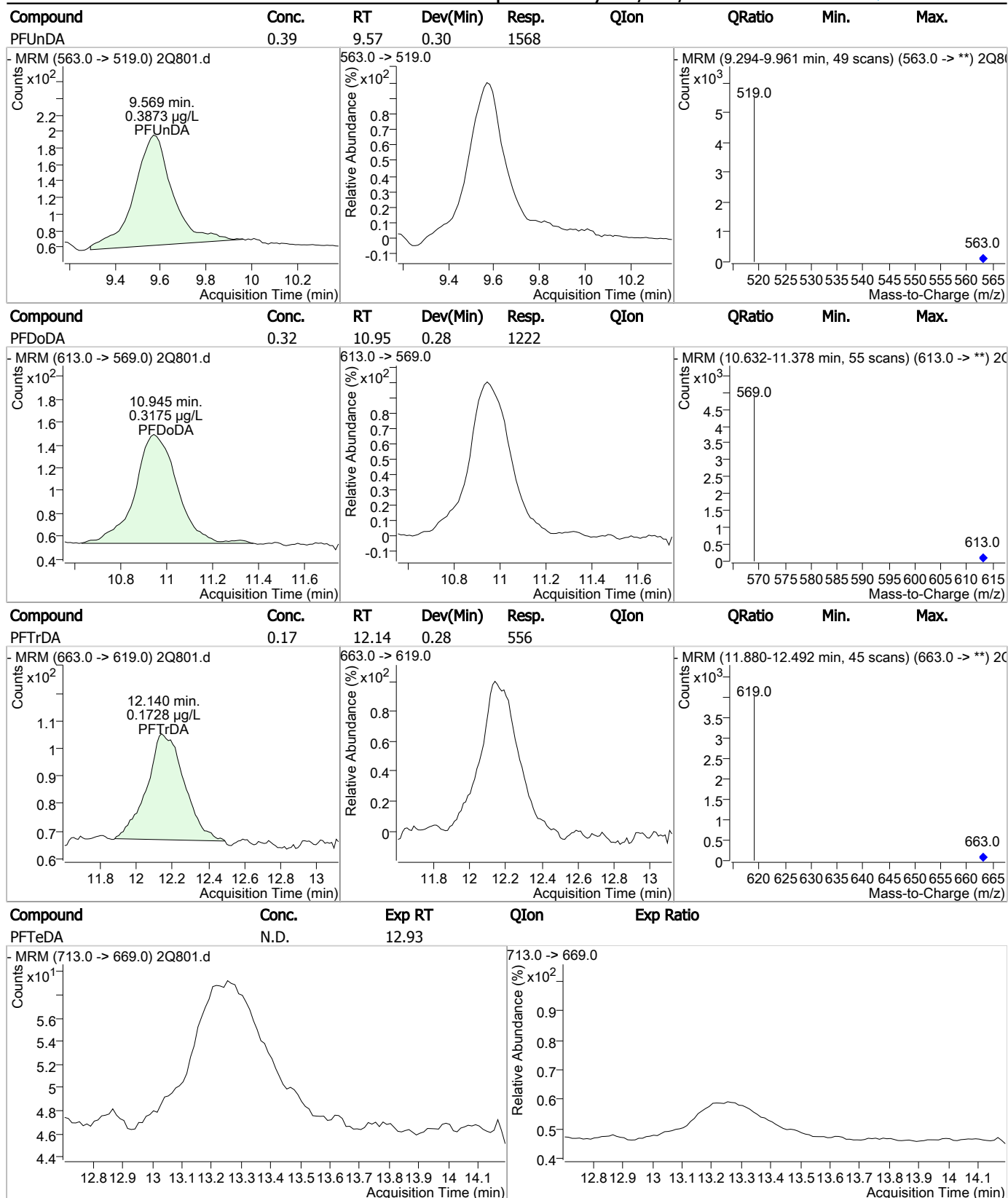
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q800.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 10:10:49 AM
 Sample Name : OP64782-BS
 Vial : Vial 13
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/27/2017 2:25:49 PM

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.735	429.0 -> 409.0	191596	20.00 µg/L	0.088
13C2-PFDoDA	10.989	615.0 -> 570.0	104528	20.00 µg/L	0.325
13C2-PFOA	6.726	415.0 -> 370.0	81784	20.00 µg/L	0.089
13C3-PFPeA	4.285	266.0 -> 222.0	79263	20.00 µg/L	0.050
13C4-PFOS	7.301	503.0 -> 80.0	61419	20.00 µg/L	0.102
d3-MeFOSAA	7.475	573.0 -> 419.0	37375	20.00 µg/L	0.000

System Monitoring Compounds

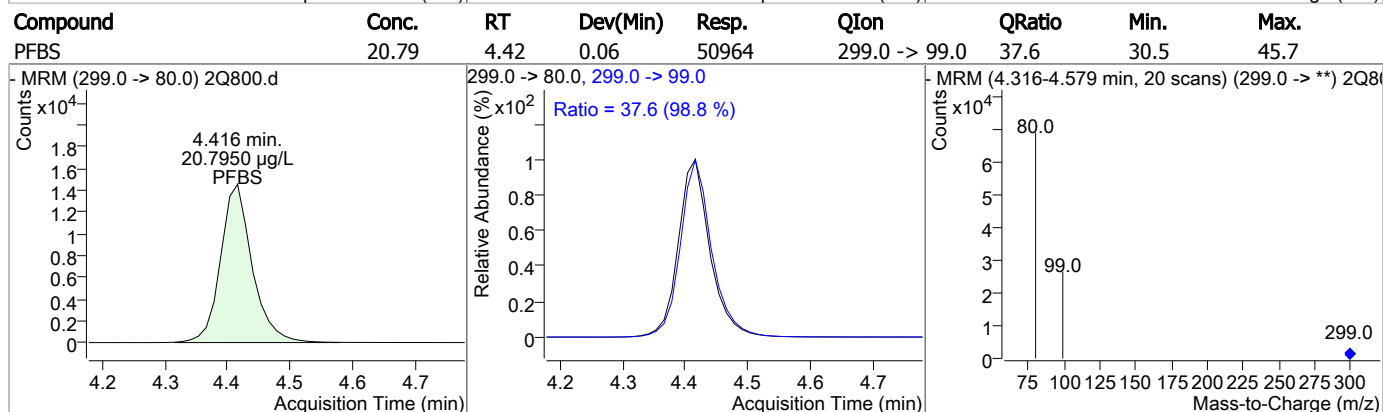
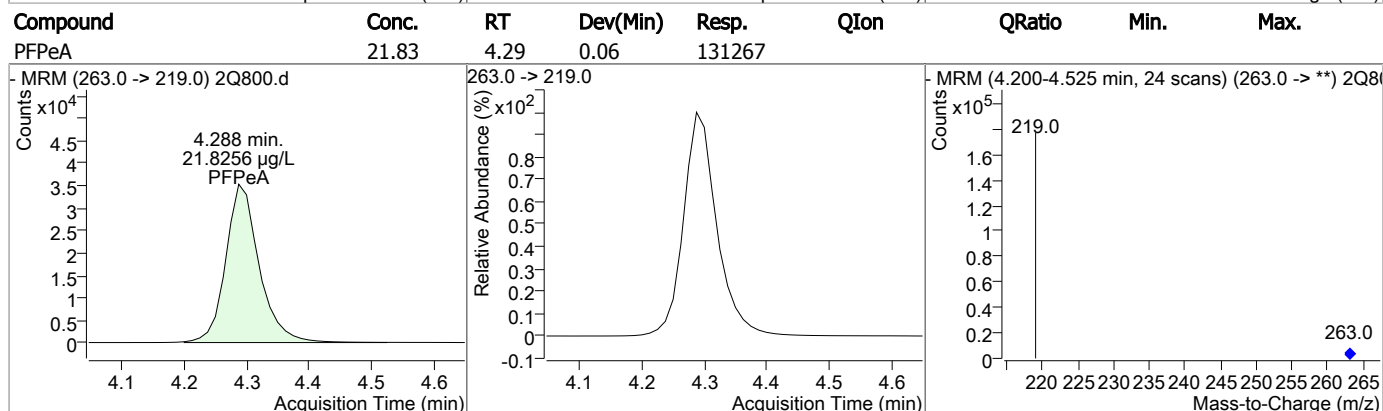
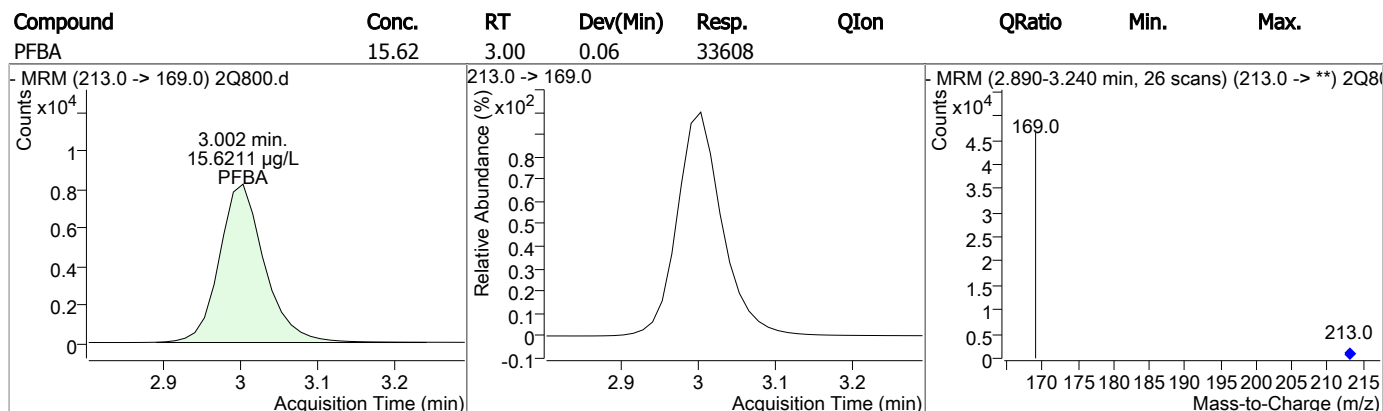
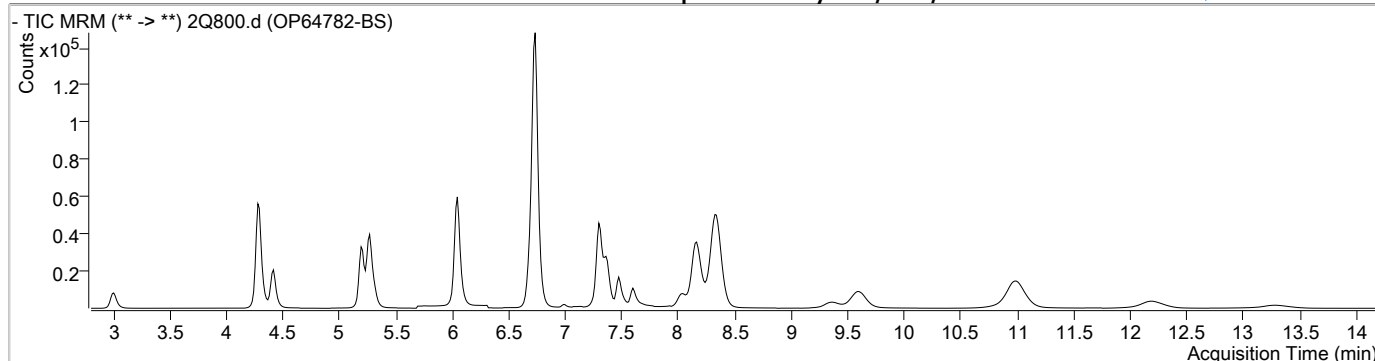
13C2-PFDA	8.167	515.0 -> 470.0	127142	22.22 µg/L	0.198
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 111.1%		
13C2-PFHxA	5.272	315.0 -> 270.0	92038	21.31 µg/L	0.063
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 106.5%		
d5-EtFOSAA	7.597	589.0 -> 419.0	19151	20.74 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.7%		

Target Compounds

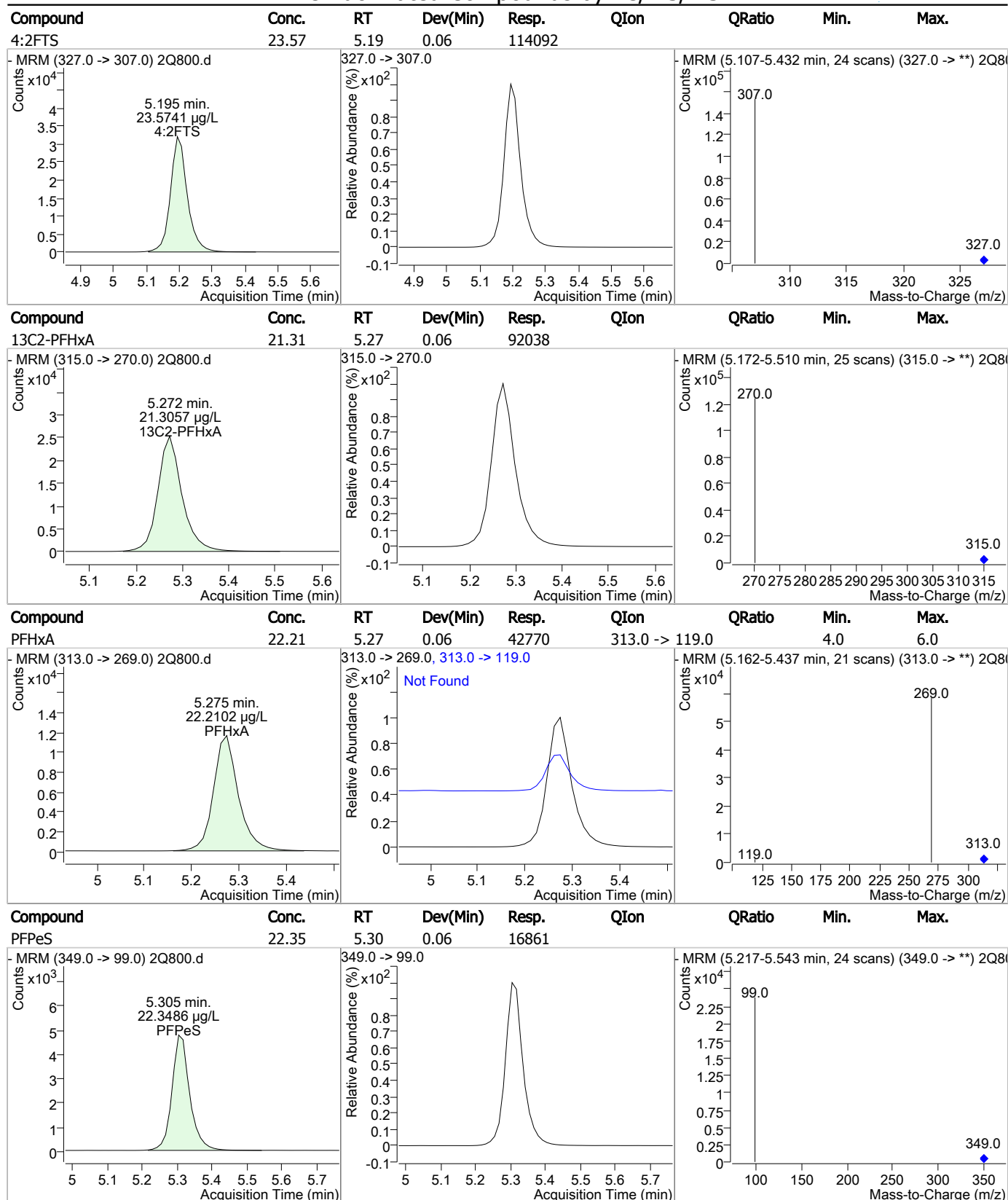
					QValue
4:2FTS	5.195	327.0 -> 307.0	114092	23.57 µg/L	100
6:2FTS	6.737	427.0 -> 407.0	209059	22.57 µg/L	100
8:2FTS	8.327	527.0 -> 507.0	361702	23.58 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	17464	20.44 µg/L	100
FOSA	6.986	498.0 -> 78.0	4593	2.29 µg/L	100
MeFOSAA	7.476	570.0 -> 419.0	23213	21.99 µg/L	100
PFBA	3.002	213.0 -> 169.0	33608	15.62 µg/L	100
PFBS	4.416	299.0 -> 80.0	50964	20.79 µg/L	99
PFDA	8.158	513.0 -> 469.0	87635	21.67 µg/L	100
PFDoDA	10.983	613.0 -> 569.0	79225	17.45 µg/L	100
PFDS	9.350	599.0 -> 80.0	28119	17.29 µg/L	100
PFHpA	6.048	363.0 -> 319.0	126475	22.18 µg/L	# 93
PFHpS	6.682	449.0 -> 80.0	53207	20.45 µg/L	100
PFHxA	5.275	313.0 -> 269.0	42770	22.21 µg/L	85
PFHxS	6.031	399.0 -> 80.0	58259	22.71 µg/L	93
PFNA	7.369	463.0 -> 419.0	80444	22.02 µg/L	98
PFNS	8.027	549.0 -> 99.0	31631	20.39 µg/L	100
PFOA	6.728	413.0 -> 369.0	72507	21.33 µg/L	97
PFOS	7.303	499.0 -> 80.0	69032	19.48 µg/L	97
PFPeA	4.288	263.0 -> 219.0	131267	21.83 µg/L	100
PFPeS	5.305	349.0 -> 99.0	16861	22.35 µg/L	100
PFTeDA	13.278	713.0 -> 669.0	29167	13.91 µg/L	100
PFTTrDA	12.190	663.0 -> 619.0	58288	15.28 µg/L	100
PFUnDA	9.594	563.0 -> 519.0	94121	20.52 µg/L	100

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

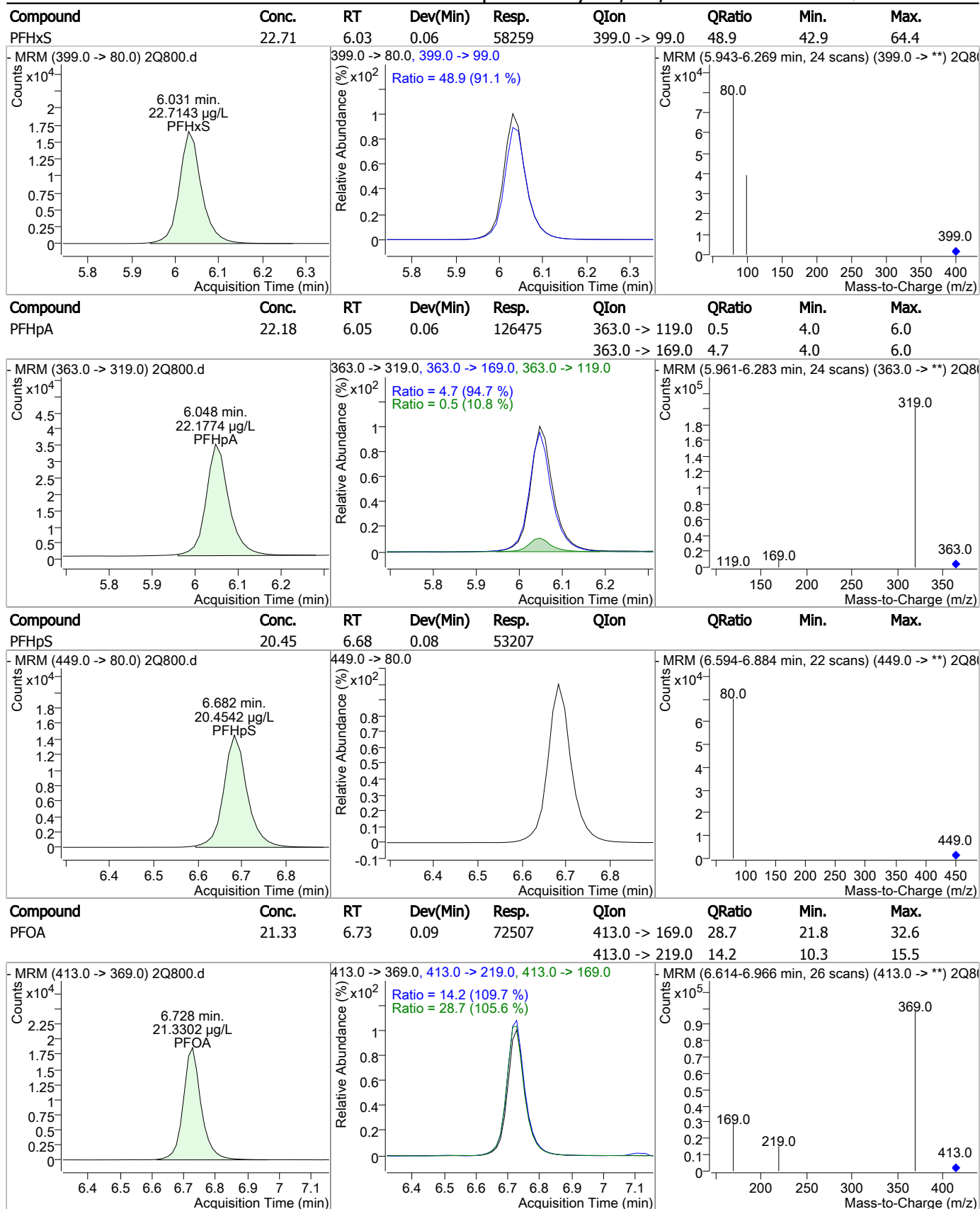
Perfluorinated Compounds by LC/MS/MS



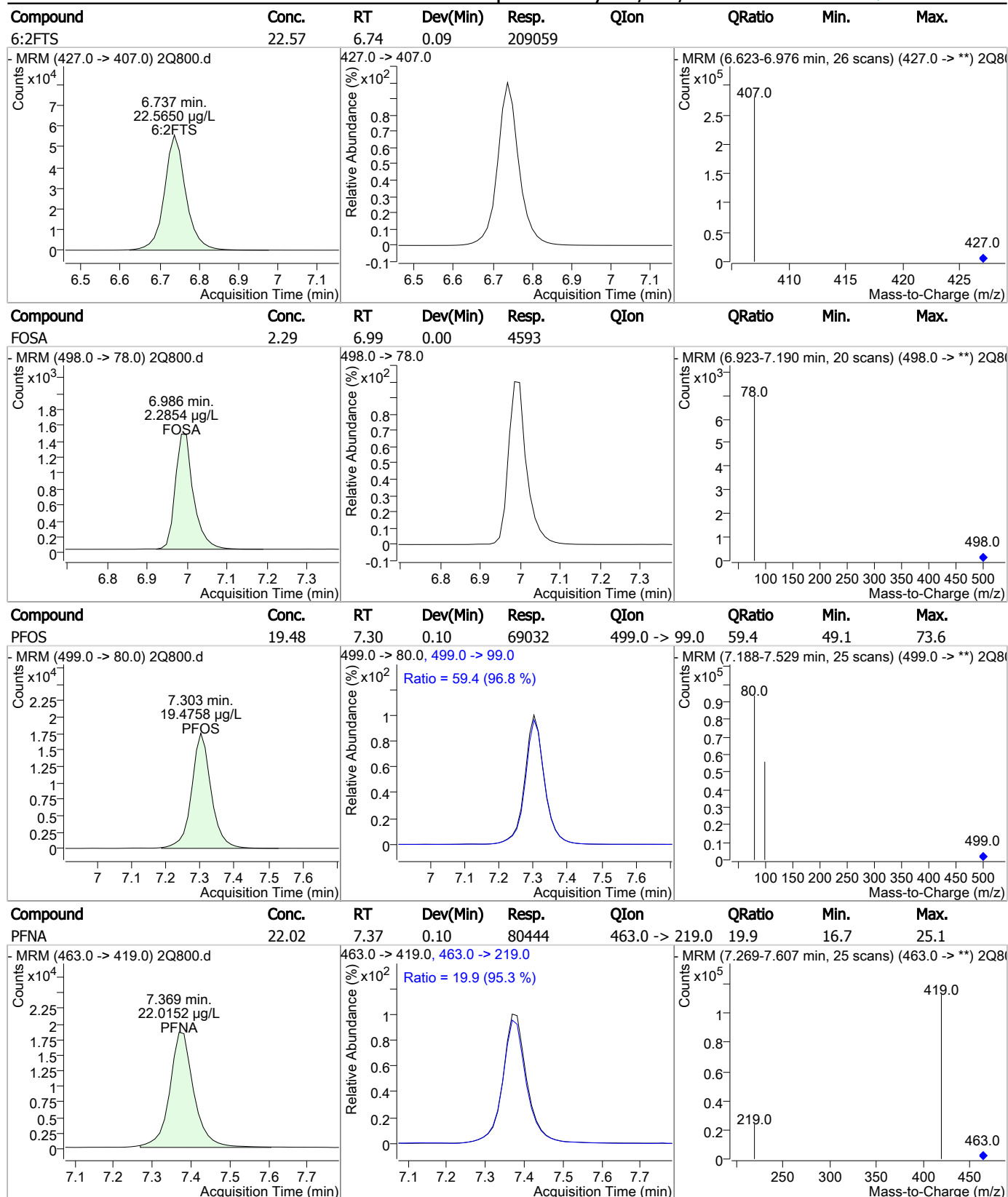
Perfluorinated Compounds by LC/MS/MS



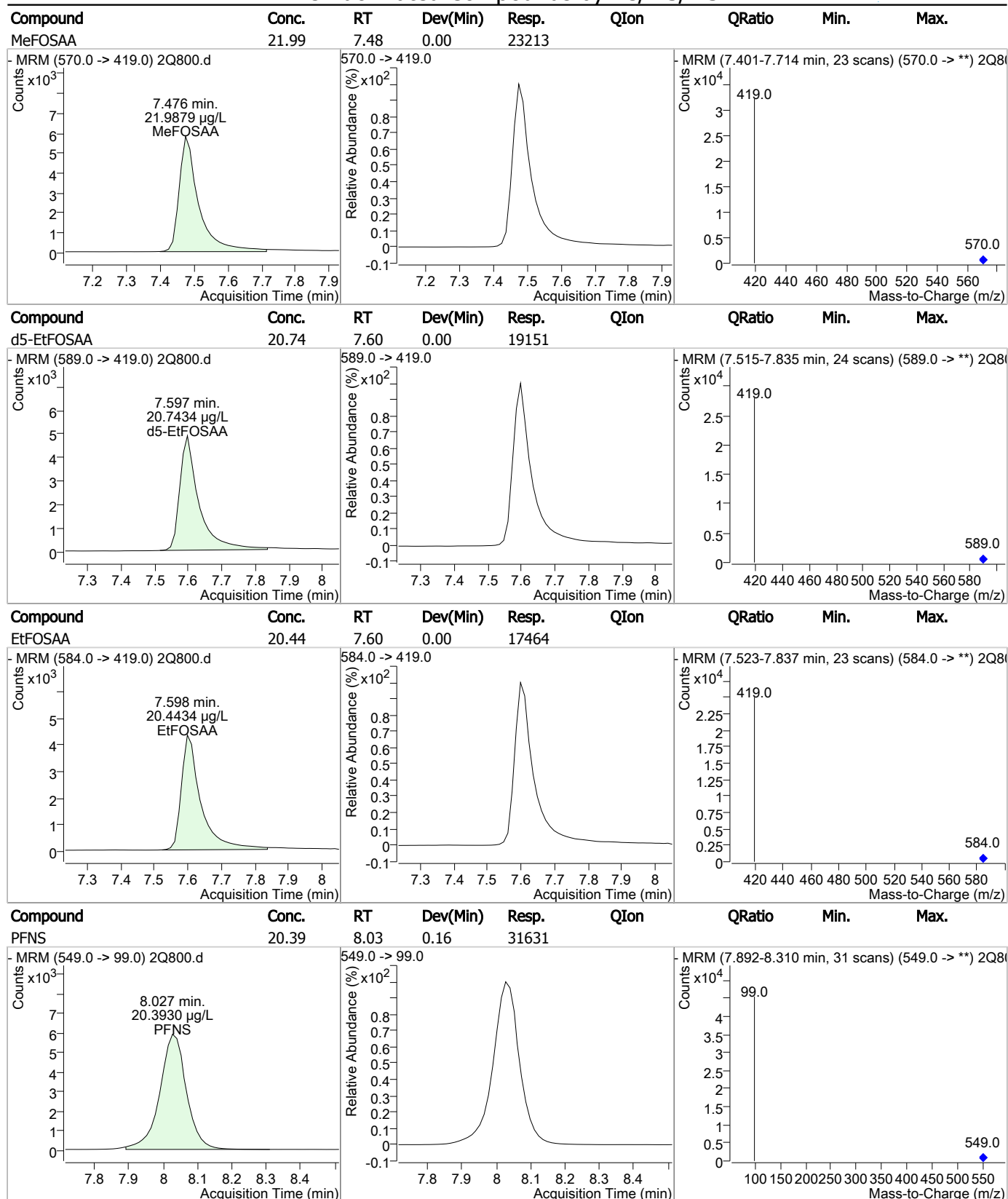
Perfluorinated Compounds by LC/MS/MS



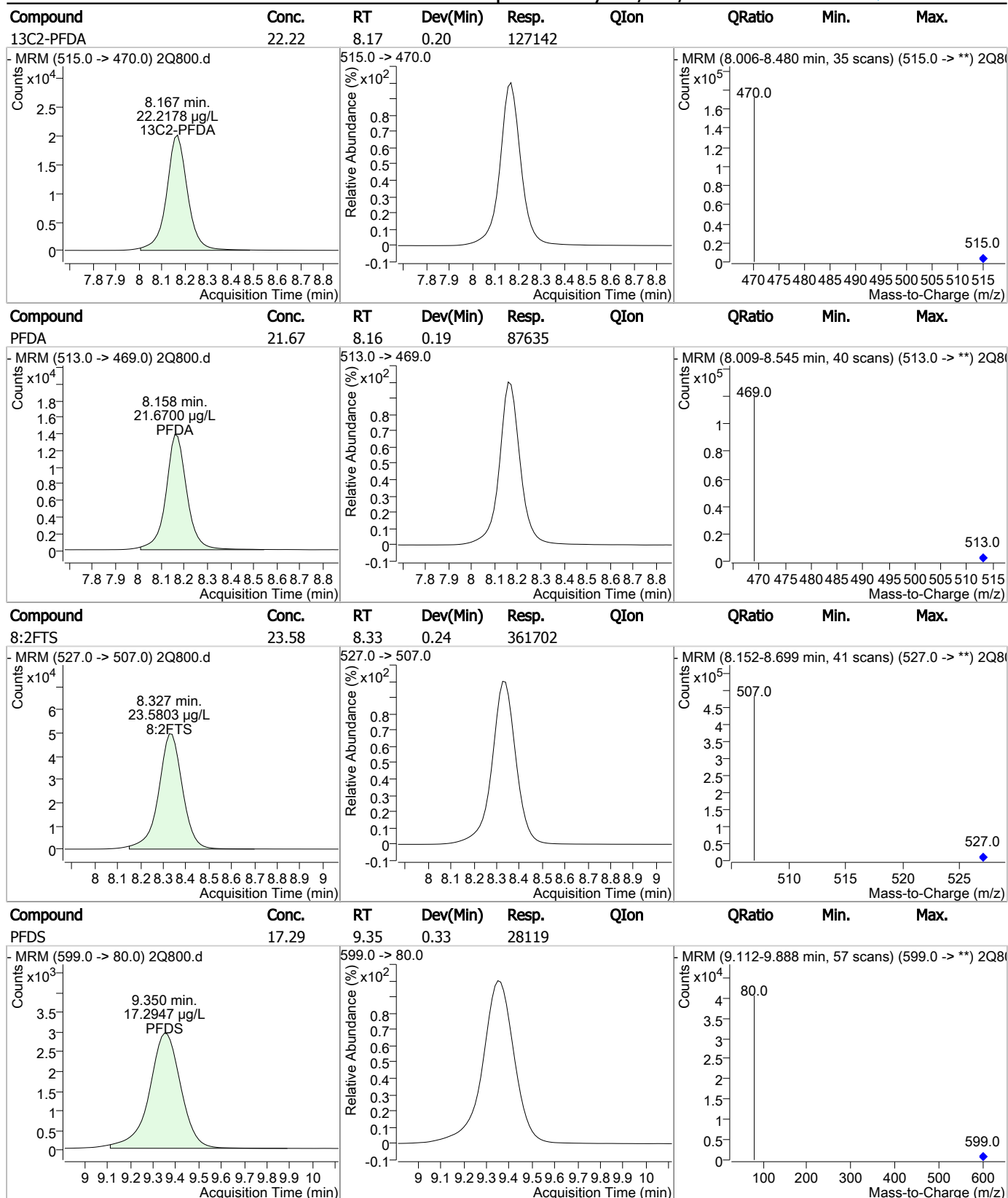
Perfluorinated Compounds by LC/MS/MS



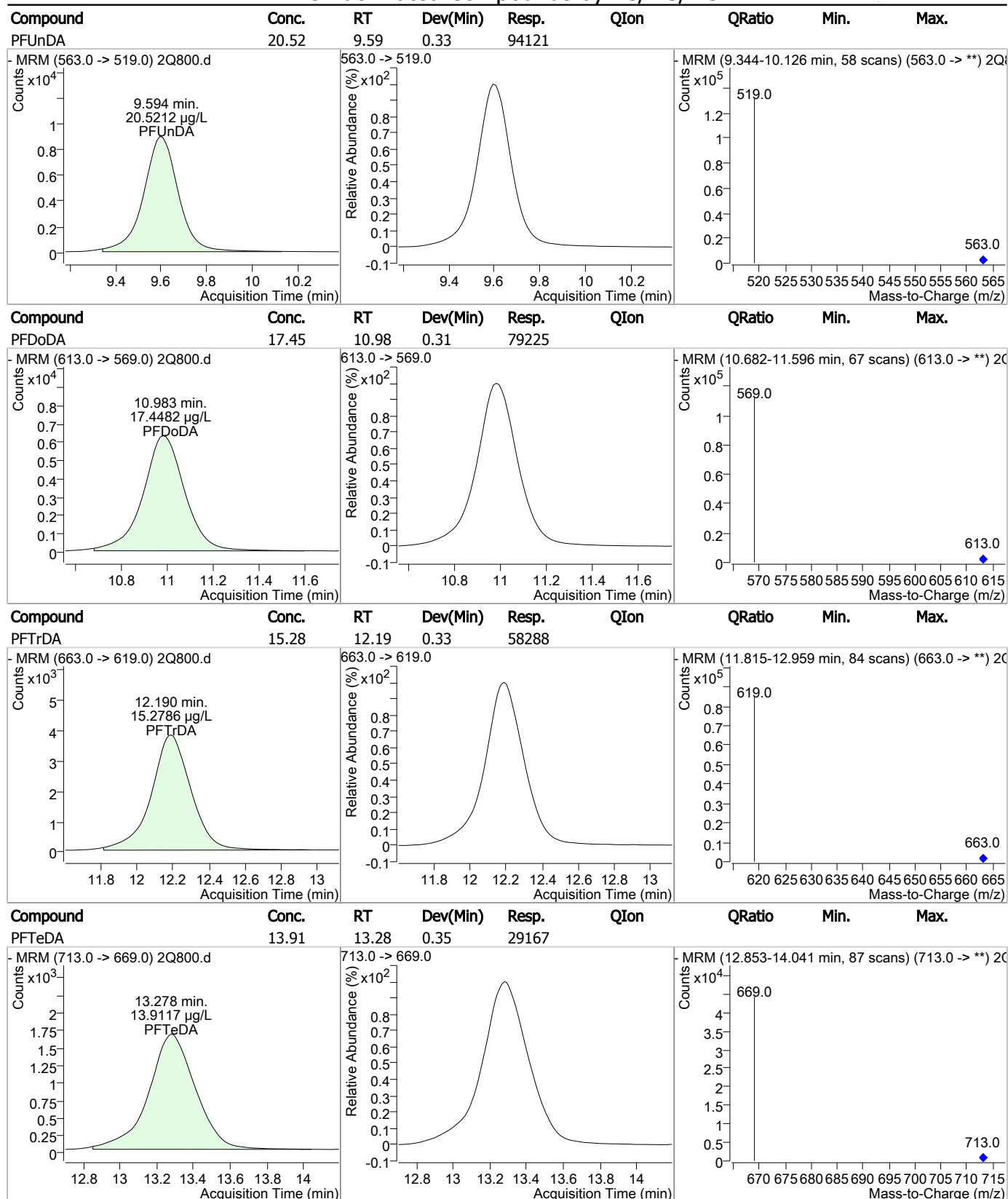
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q803.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 11:10:06 AM
 Sample Name : OP64782-MS
 Vial : Vial 16
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/27/2017 2:25:49 PM

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.710	429.0 -> 409.0	182145	20.00 µg/L	0.063
13C2-PFDoDA	10.964	615.0 -> 570.0	101490	20.00 µg/L	0.300
13C2-PFOA	6.701	415.0 -> 370.0	78202	20.00 µg/L	0.064
13C3-PFPeA	4.272	266.0 -> 222.0	69181	20.00 µg/L	0.037
13C4-PFOS	7.276	503.0 -> 80.0	57302	20.00 µg/L	0.077
d3-MeFOSAA	7.475	573.0 -> 419.0	33347	20.00 µg/L	0.000

System Monitoring Compounds

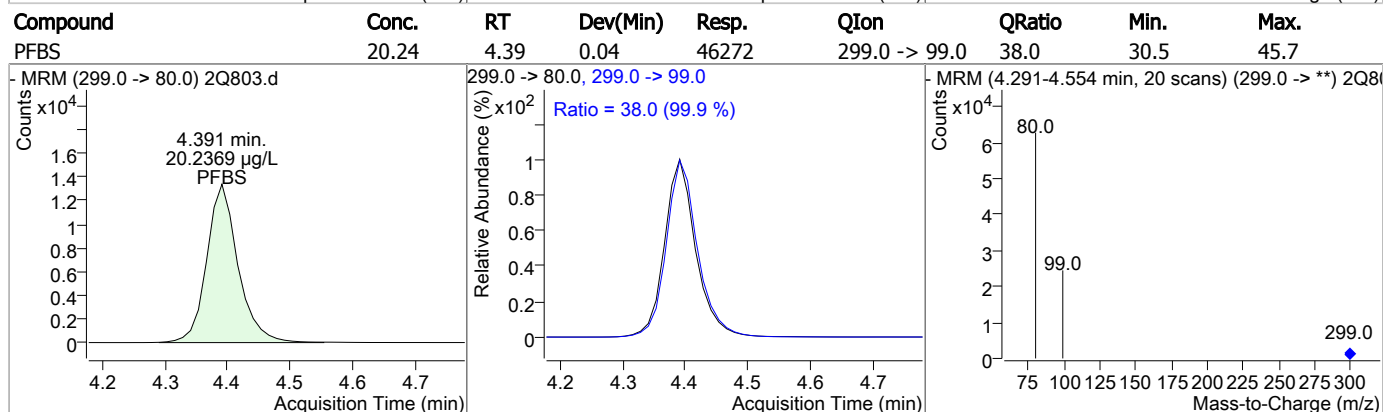
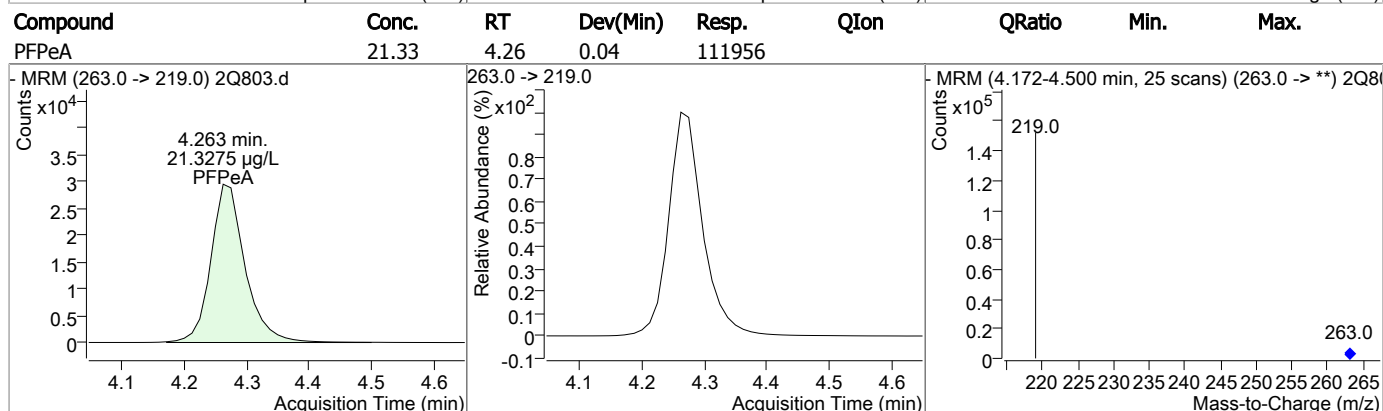
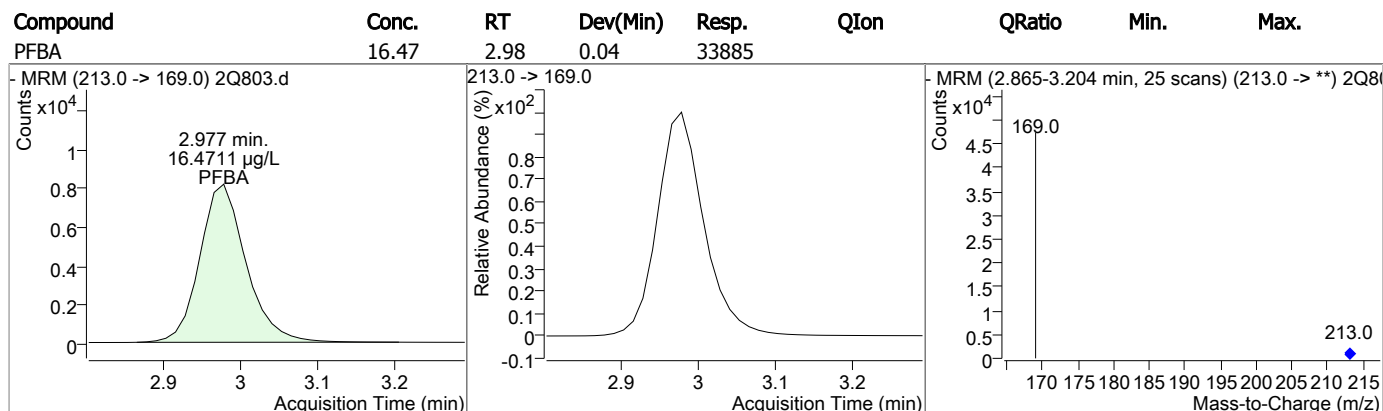
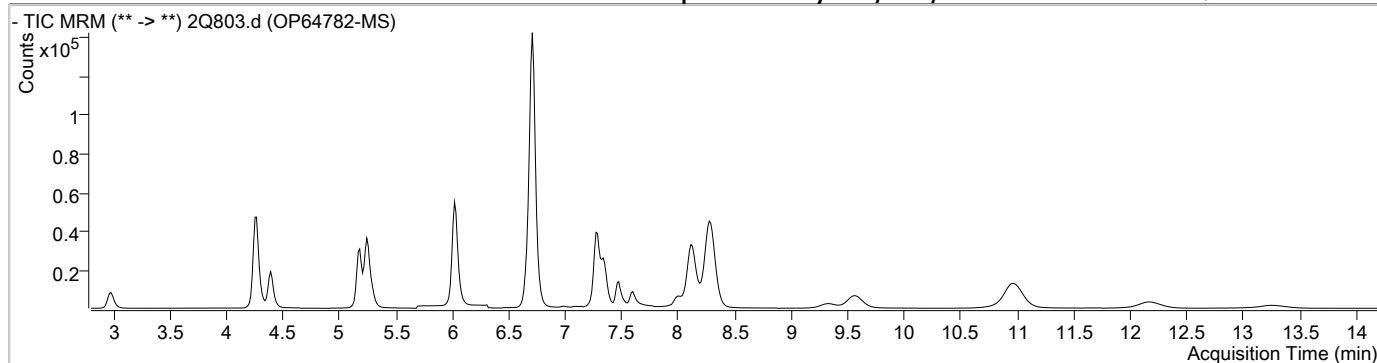
13C2-PFDA	8.117	515.0 -> 470.0	114436	20.91 µg/L	0.148
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 104.6%		
13C2-PFHxA	5.247	315.0 -> 270.0	83836	20.30 µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 101.5%		
d5-EtFOSAA	7.597	589.0 -> 419.0	17104	20.76 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.8%		

Target Compounds

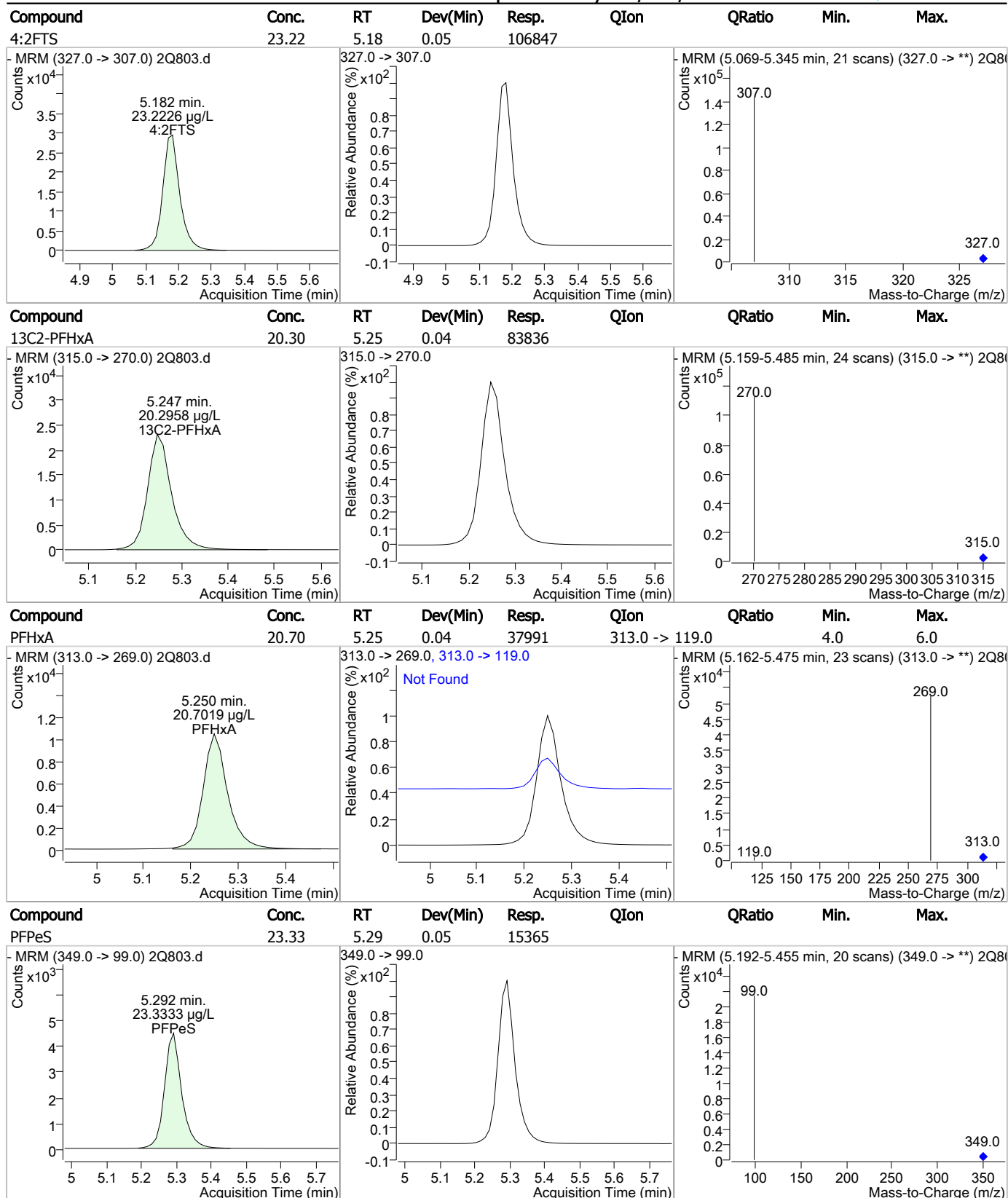
					QValue
4:2FTS	5.182	327.0 -> 307.0	106847	23.22 µg/L	100
6:2FTS	6.712	427.0 -> 407.0	198177	22.50 µg/L	100
8:2FTS	8.277	527.0 -> 507.0	308962	21.19 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	12481	16.56 µg/L	100
FOSA	6.986	498.0 -> 78.0	1671	0.93 µg/L	100
MeFOSAA	7.476	570.0 -> 419.0	18251	19.59 µg/L	100
PFBA	2.977	213.0 -> 169.0	33885	16.47 µg/L	100
PFBS	4.391	299.0 -> 80.0	46272	20.24 µg/L	100
PFDA	8.120	513.0 -> 469.0	75431	19.51 µg/L	100
PFDoDA	10.958	613.0 -> 569.0	61266	14.01 µg/L	100
PFDS	9.325	599.0 -> 80.0	21115	14.04 µg/L	100
PFHpA	6.036	363.0 -> 319.0	113837	20.91 µg/L	# 93
PFHpS	6.657	449.0 -> 80.0	49712	20.48 µg/L	100
PFHxA	5.250	313.0 -> 269.0	37991	20.70 µg/L	85
PFHxS	6.018	399.0 -> 80.0	53421	22.32 µg/L	93
PFNA	7.344	463.0 -> 419.0	74513	21.33 µg/L	97
PFNS	7.990	549.0 -> 99.0	23092	15.96 µg/L	100
PFOA	6.702	413.0 -> 369.0	67987	20.92 µg/L	98
PFOS	7.278	499.0 -> 80.0	57291	17.32 µg/L	97
PFPeA	4.263	263.0 -> 219.0	111956	21.33 µg/L	100
PFPeS	5.292	349.0 -> 99.0	15365	23.33 µg/L	100
PFTeDA	13.253	713.0 -> 669.0	26985	13.28 µg/L	100
PFTTrDA	12.165	663.0 -> 619.0	49863	13.53 µg/L	100
PFUnDA	9.569	563.0 -> 519.0	68861	15.46 µg/L	100

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

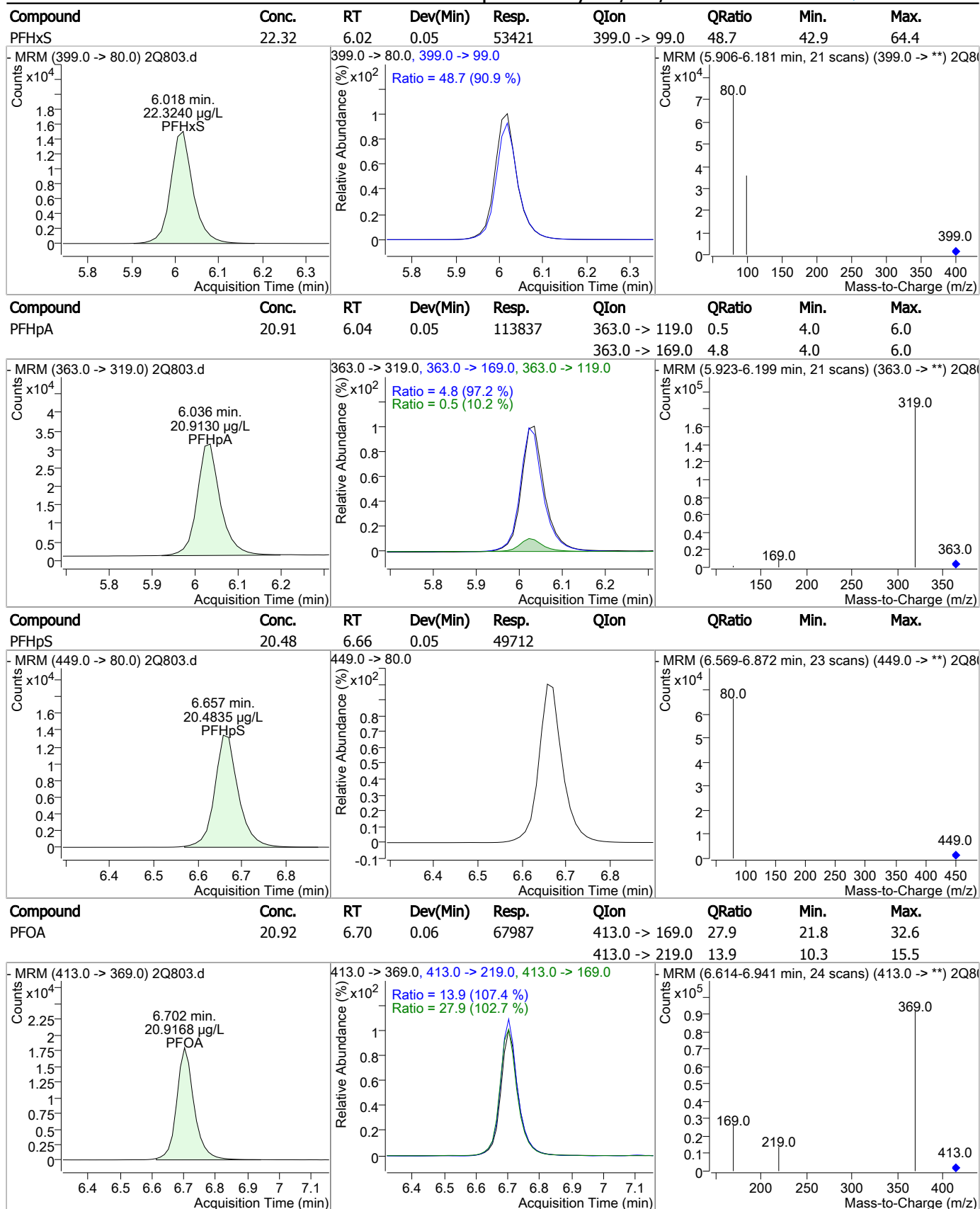
Perfluorinated Compounds by LC/MS/MS



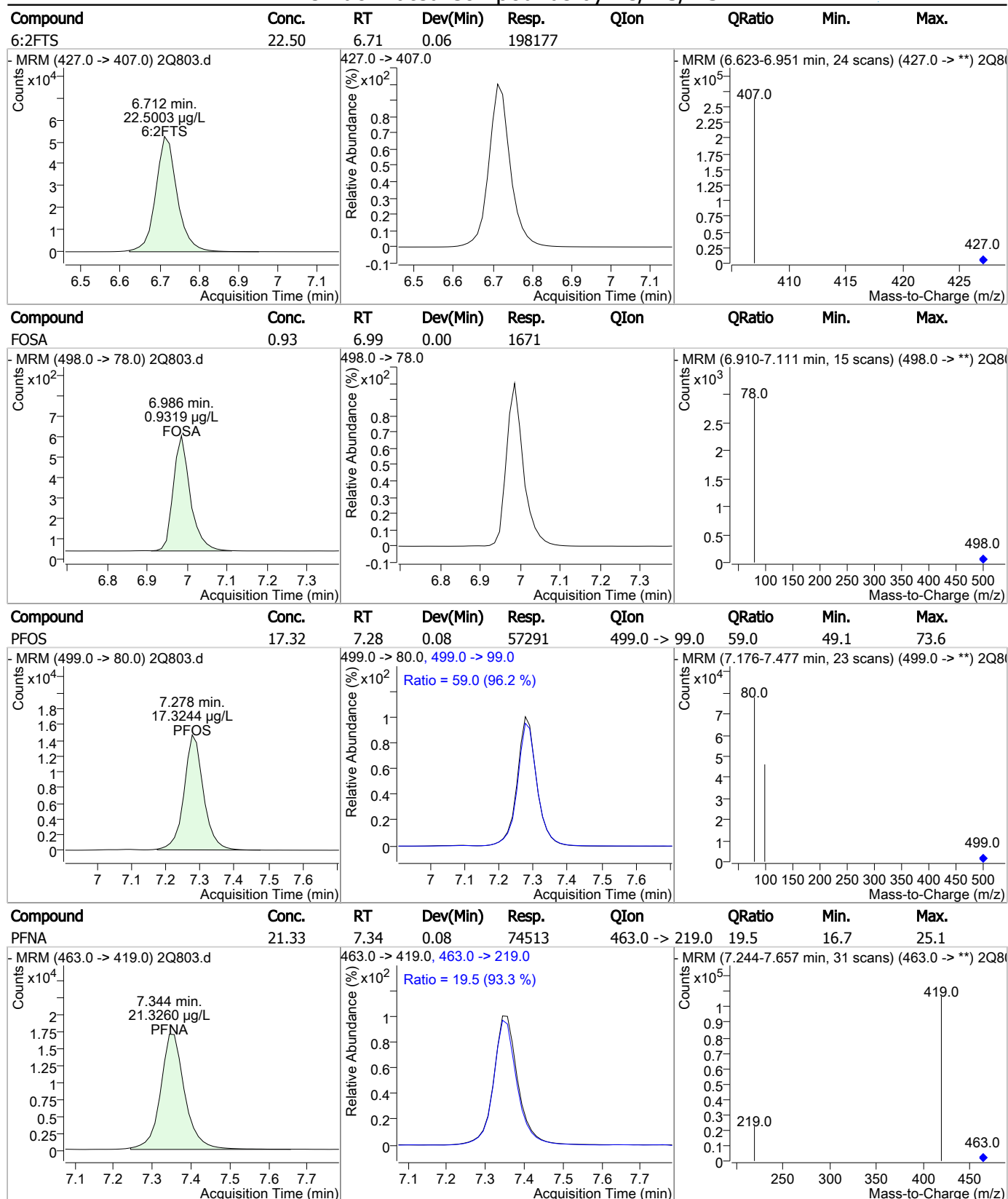
Perfluorinated Compounds by LC/MS/MS



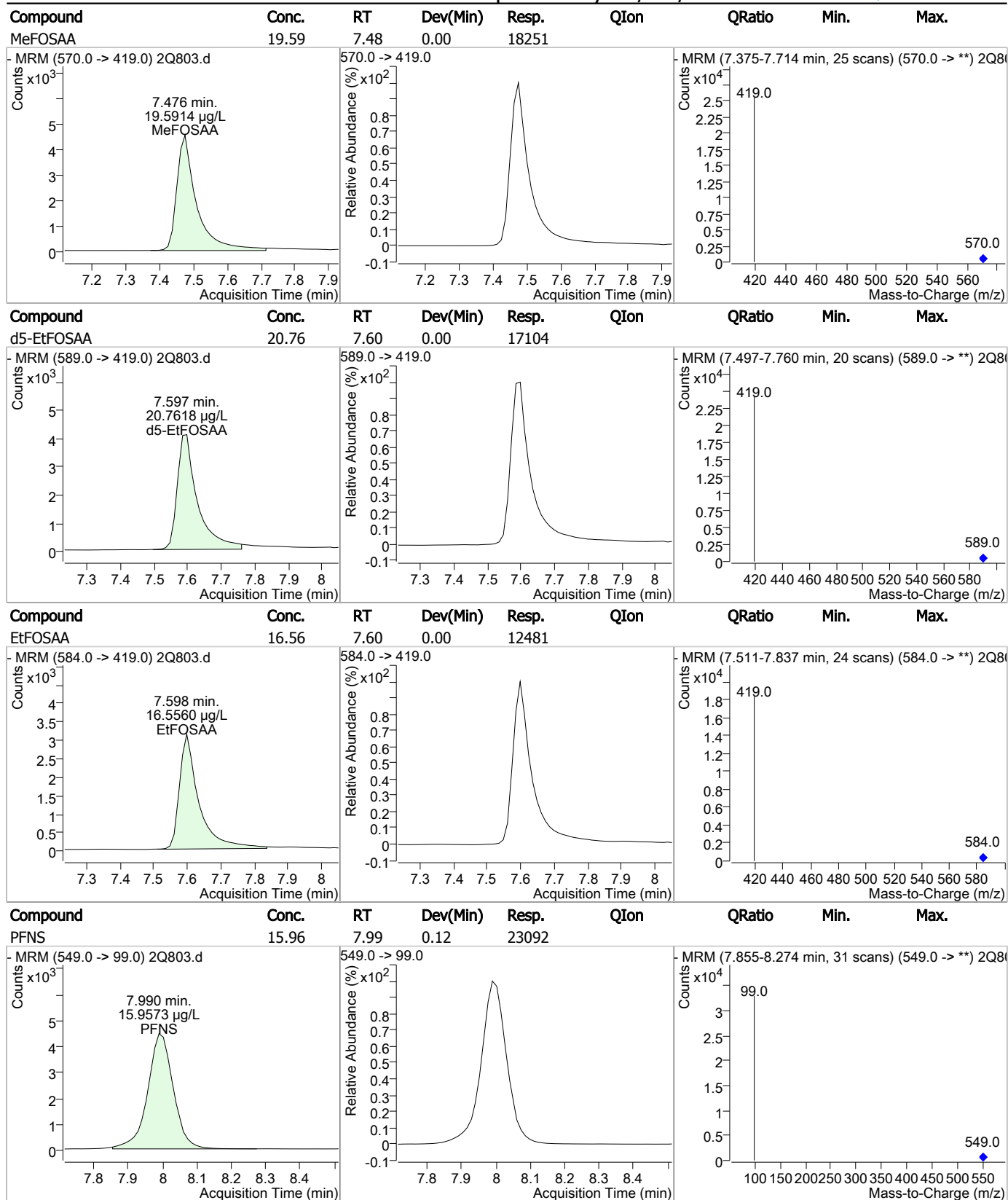
Perfluorinated Compounds by LC/MS/MS



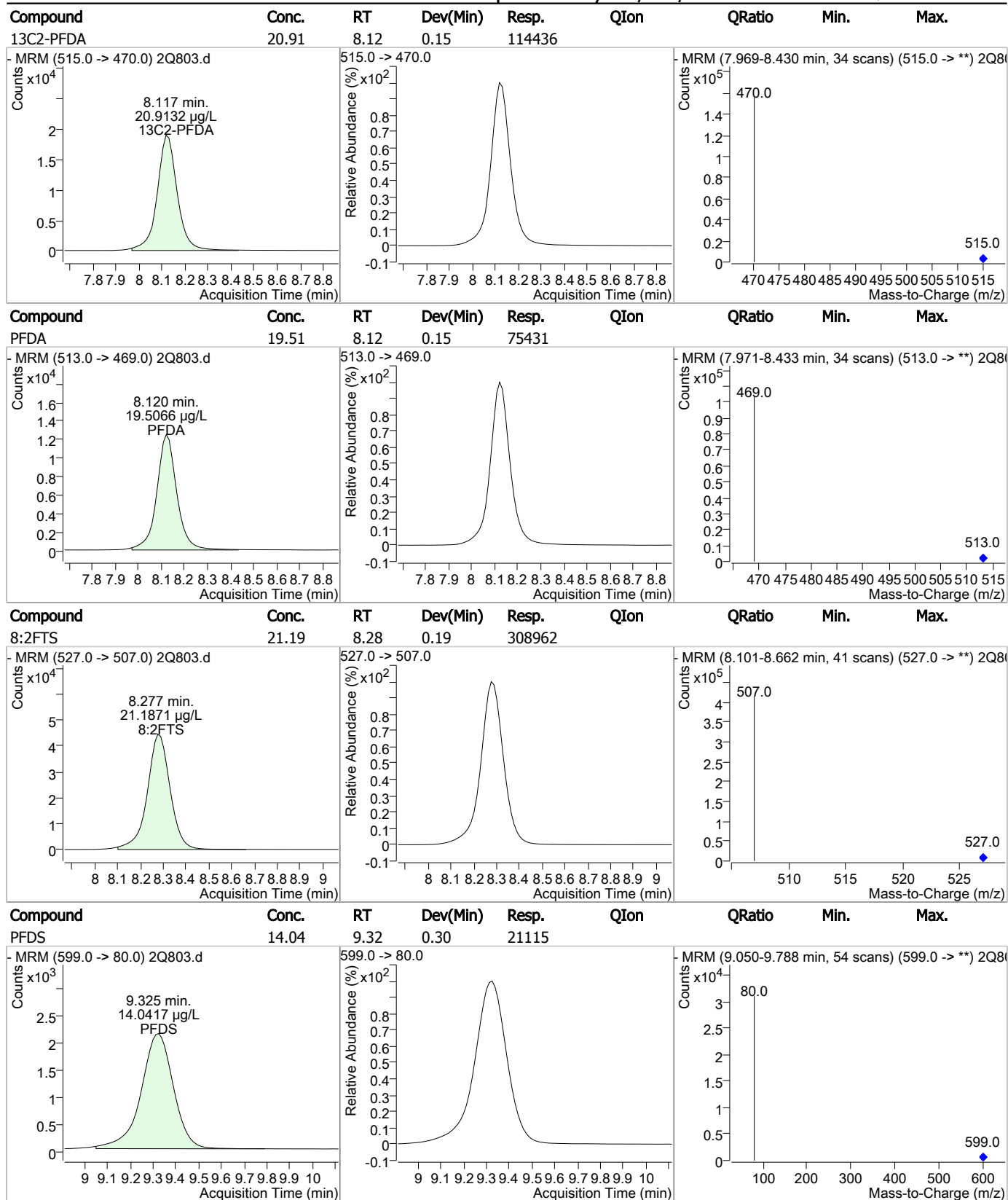
Perfluorinated Compounds by LC/MS/MS



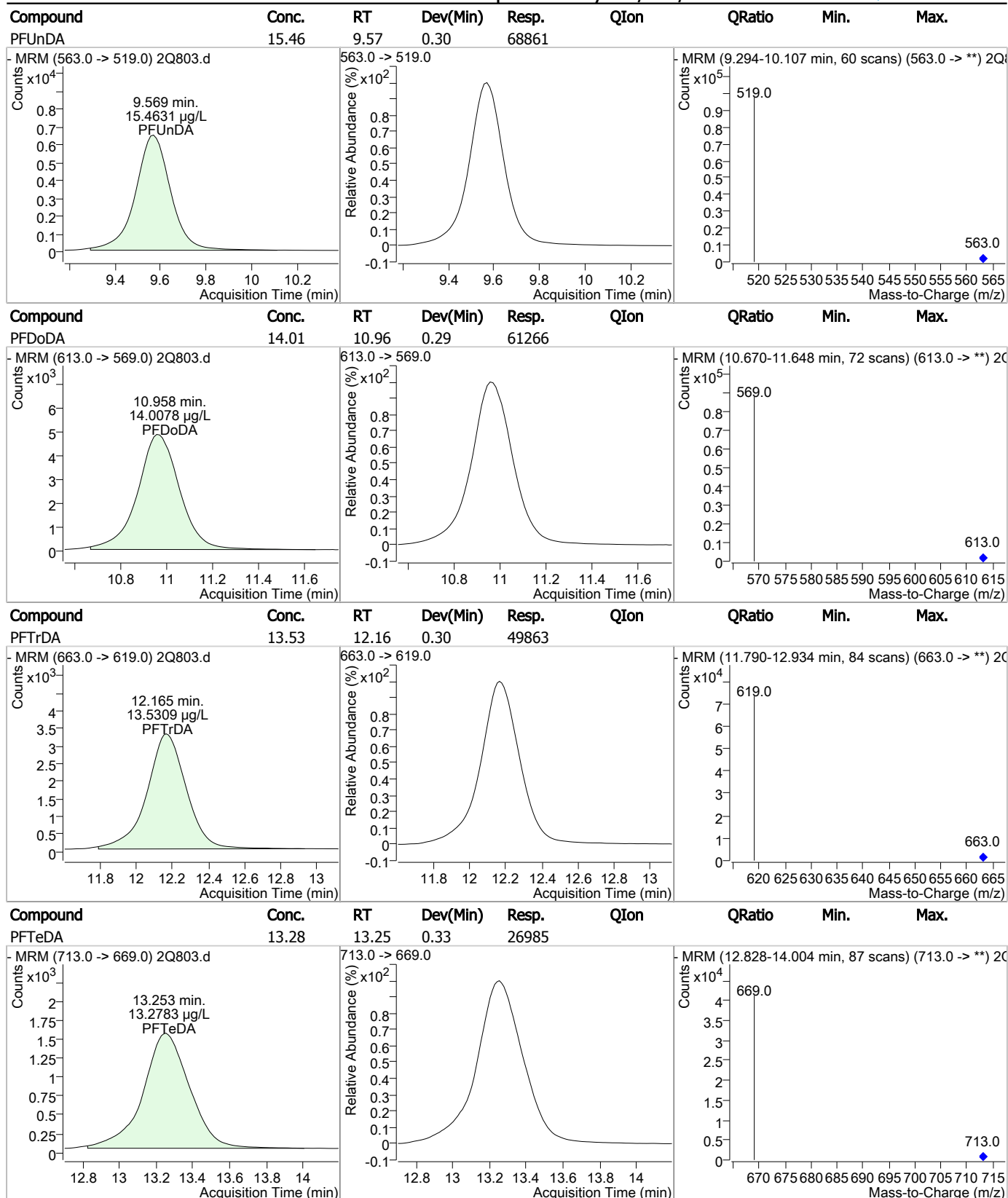
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q804.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 11:29:53 AM
 Sample Name : OP64782-MSD
 Vial : Vial 17
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/27/2017 2:25:49 PM

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.710	429.0 -> 409.0	184277	20.00 µg/L	0.063
13C2-PFDoDA	10.901	615.0 -> 570.0	100380	20.00 µg/L	0.238
13C2-PFOA	6.701	415.0 -> 370.0	78835	20.00 µg/L	0.064
13C3-PFPeA	4.259	266.0 -> 222.0	75019	20.00 µg/L	0.025
13C4-PFOS	7.276	503.0 -> 80.0	58159	20.00 µg/L	0.077
d3-MeFOSAA	7.462	573.0 -> 419.0	34342	20.00 µg/L	-0.012

System Monitoring Compounds

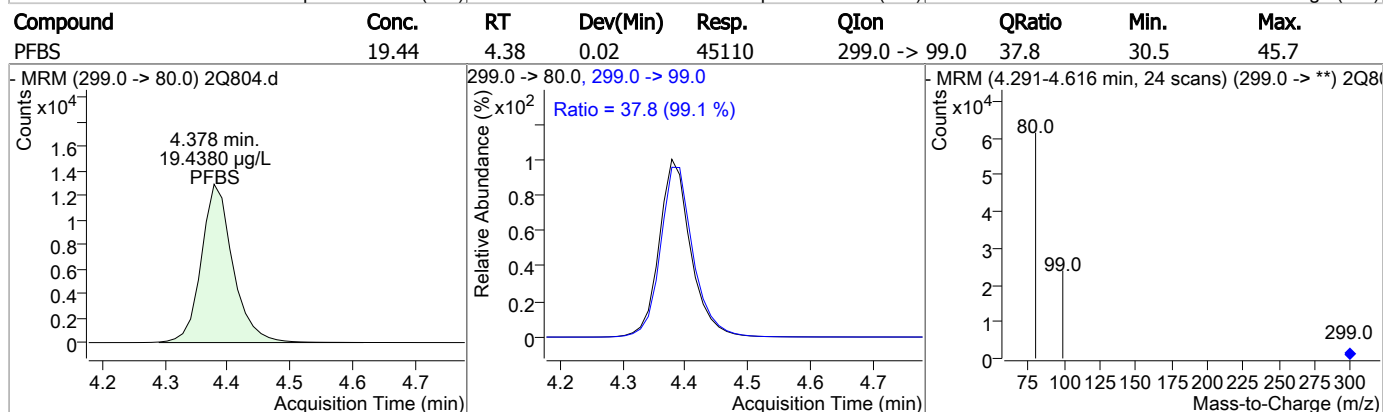
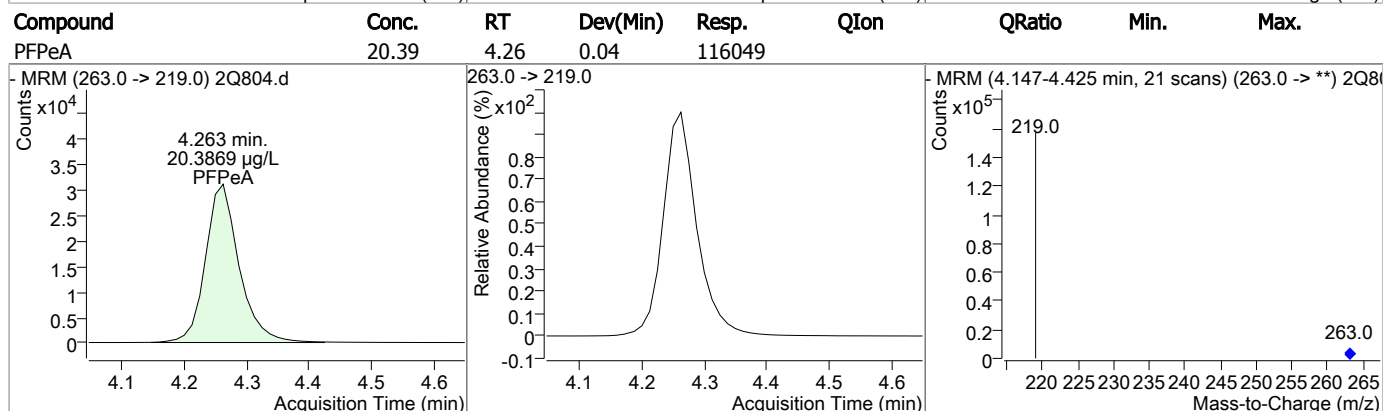
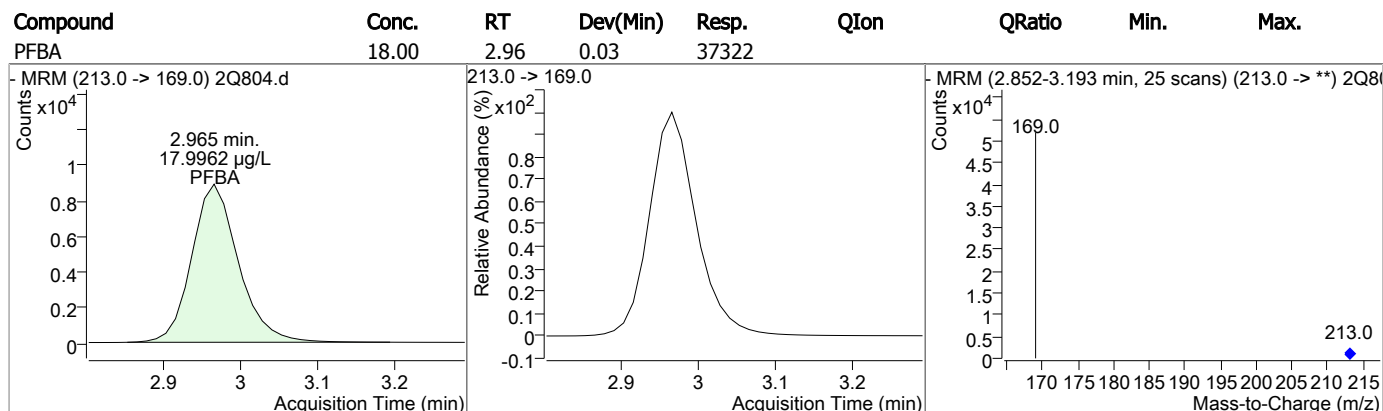
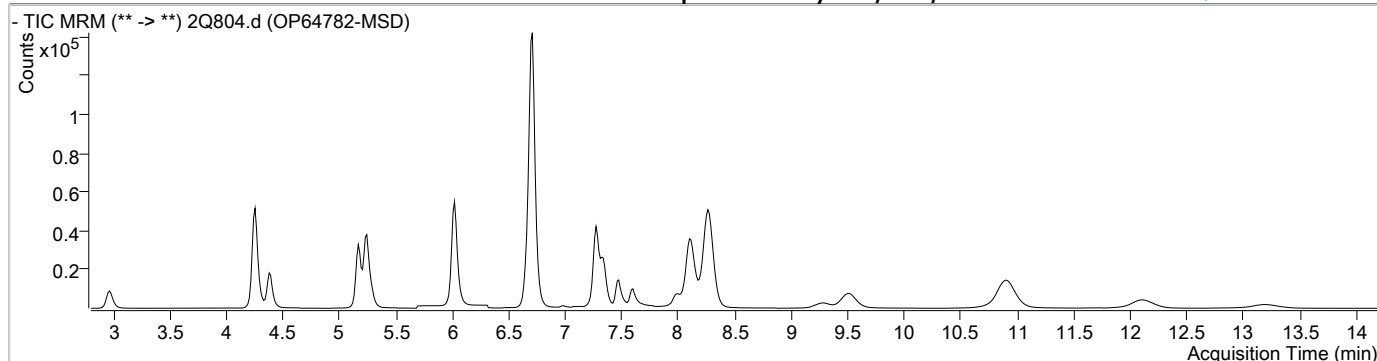
13C2-PFDA	8.105	515.0 -> 470.0	125769	22.80 µg/L	0.135
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 114.0%		
13C2-PFHxA	5.247	315.0 -> 270.0	90255	21.67 µg/L	0.038
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 108.4%		
d5-EtFOSAA	7.585	589.0 -> 419.0	19754	23.04 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 115.2%		

Target Compounds

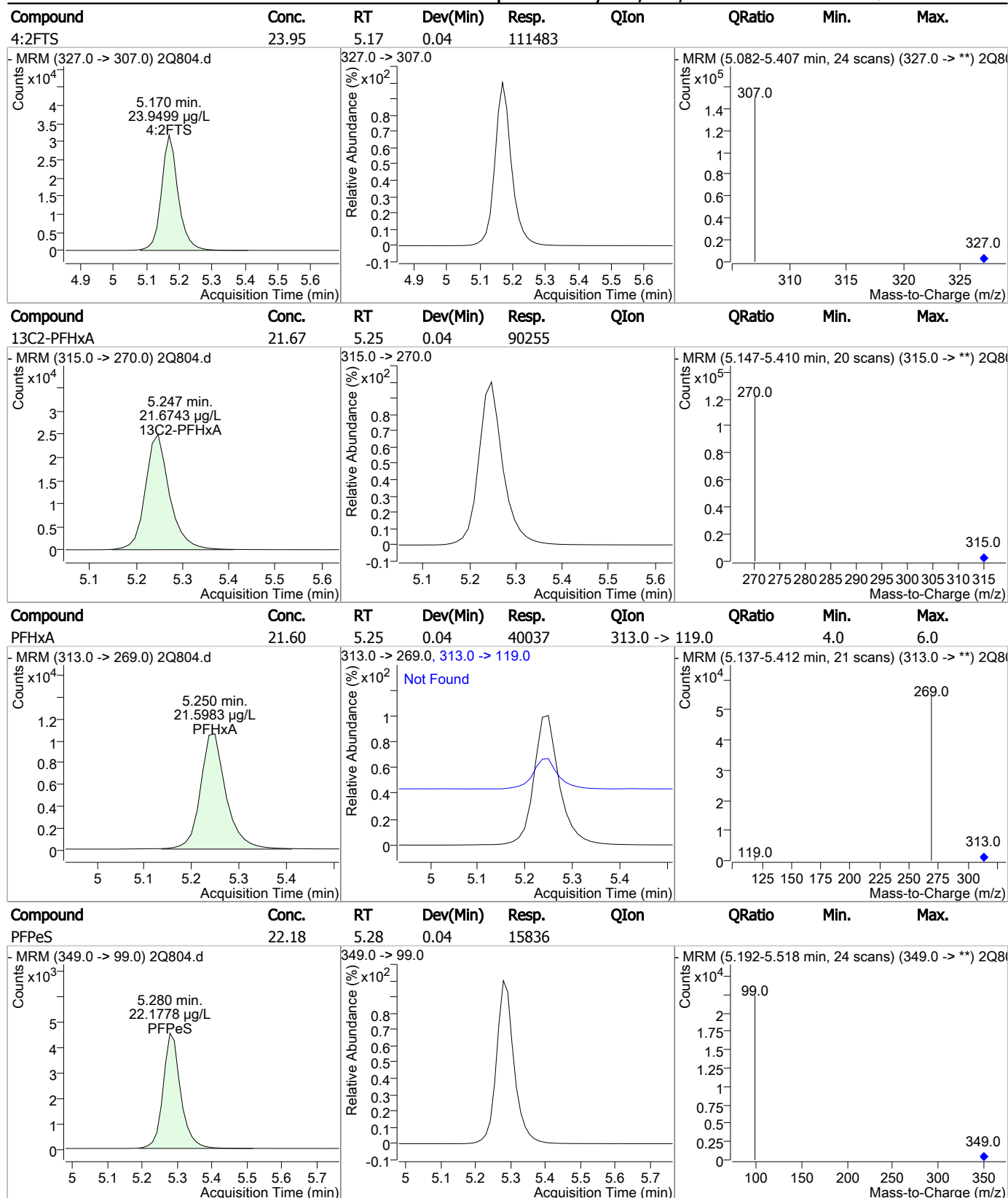
					QValue
4:2FTS	5.170	327.0 -> 307.0	111483	23.95 µg/L	100
6:2FTS	6.712	427.0 -> 407.0	200304	22.48 µg/L	100
8:2FTS	8.264	527.0 -> 507.0	334629	22.68 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	16037	20.43 µg/L	100
FOSA	6.986	498.0 -> 78.0	2519	1.36 µg/L	100
MeFOSAA	7.476	570.0 -> 419.0	21939	22.56 µg/L	100
PFBA	2.965	213.0 -> 169.0	37322	18.00 µg/L	100
PFBS	4.378	299.0 -> 80.0	45110	19.44 µg/L	99
PFDA	8.108	513.0 -> 469.0	79012	20.27 µg/L	100
PFDoDA	10.895	613.0 -> 569.0	72213	16.59 µg/L	100
PFDS	9.275	599.0 -> 80.0	23556	15.38 µg/L	100
PFHpA	6.023	363.0 -> 319.0	115237	21.00 µg/L	# 93
PFHpS	6.657	449.0 -> 80.0	52488	21.31 µg/L	100
PFHxA	5.250	313.0 -> 269.0	40037	21.60 µg/L	85
PFHxS	6.006	399.0 -> 80.0	52120	21.46 µg/L	93
PFNA	7.344	463.0 -> 419.0	74085	21.03 µg/L	98
PFNS	7.990	549.0 -> 99.0	27681	18.85 µg/L	100
PFOA	6.703	413.0 -> 369.0	67435	20.58 µg/L	97
PFOS	7.278	499.0 -> 80.0	61342	18.28 µg/L	96
PFPeA	4.263	263.0 -> 219.0	116049	20.39 µg/L	100
PFPeS	5.280	349.0 -> 99.0	15836	22.18 µg/L	100
PFTeDA	13.191	713.0 -> 669.0	32769	16.18 µg/L	100
PFTTrDA	12.102	663.0 -> 619.0	63782	17.31 µg/L	100
PFUnDA	9.519	563.0 -> 519.0	76890	17.46 µg/L	100

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

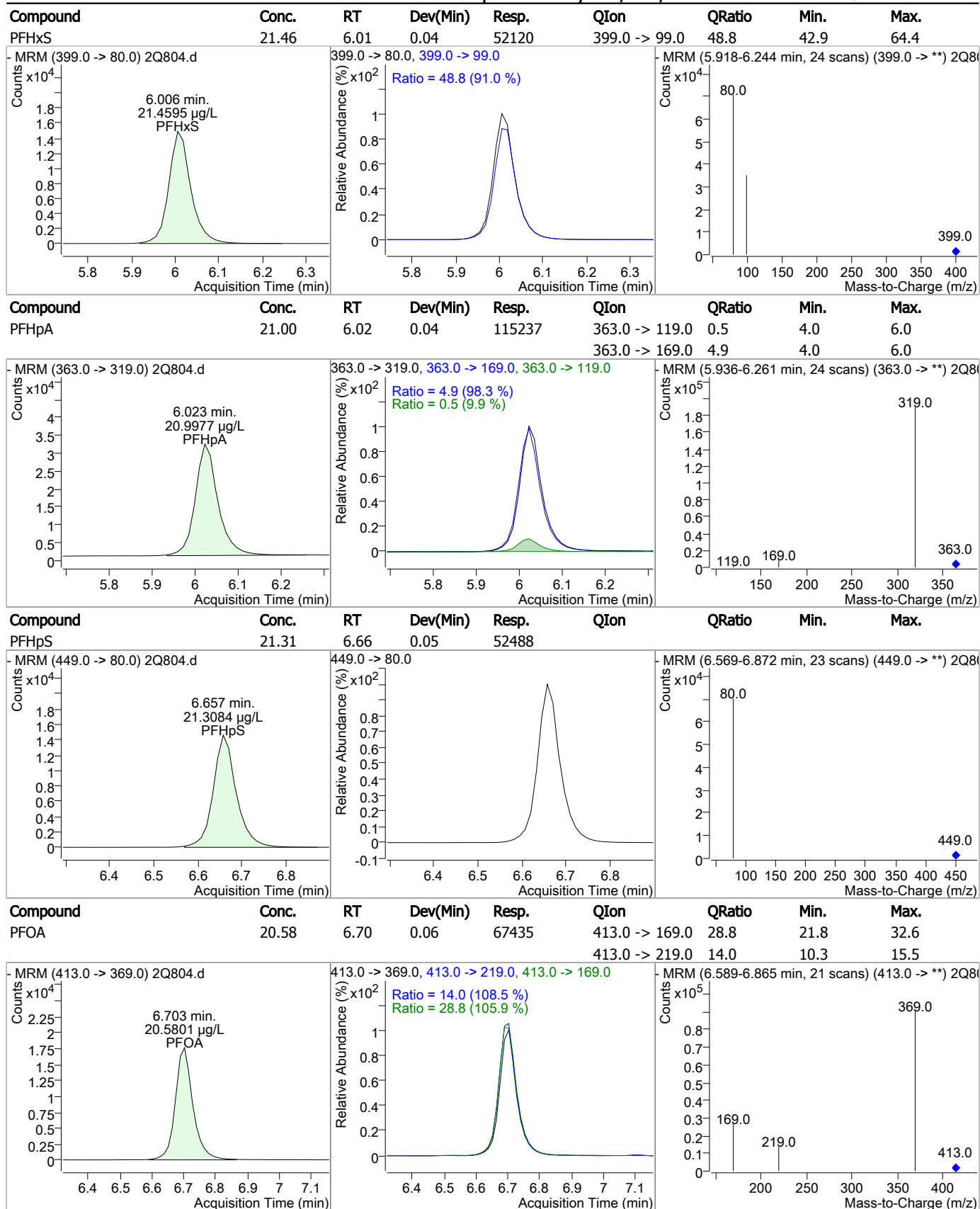
Perfluorinated Compounds by LC/MS/MS



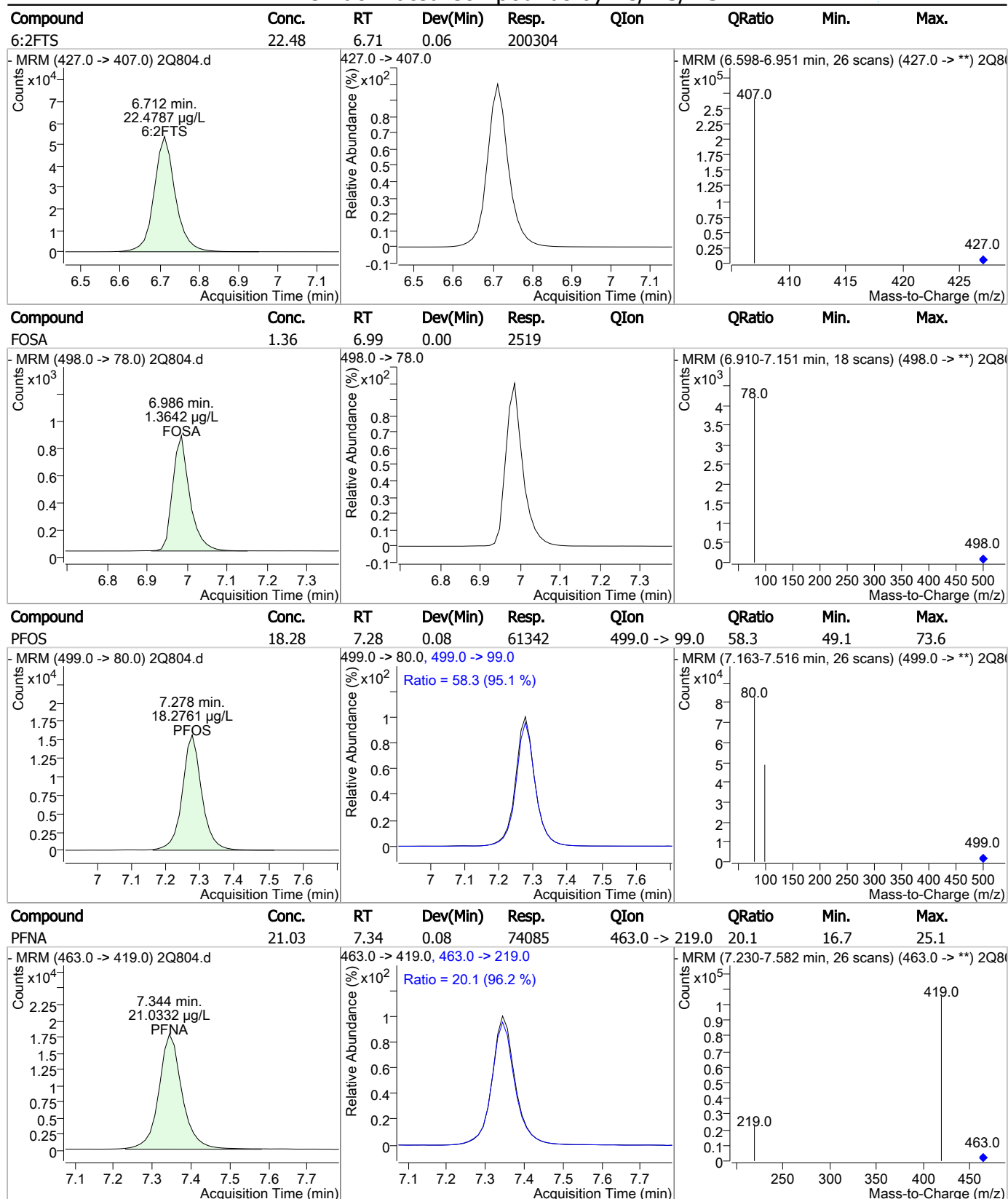
Perfluorinated Compounds by LC/MS/MS



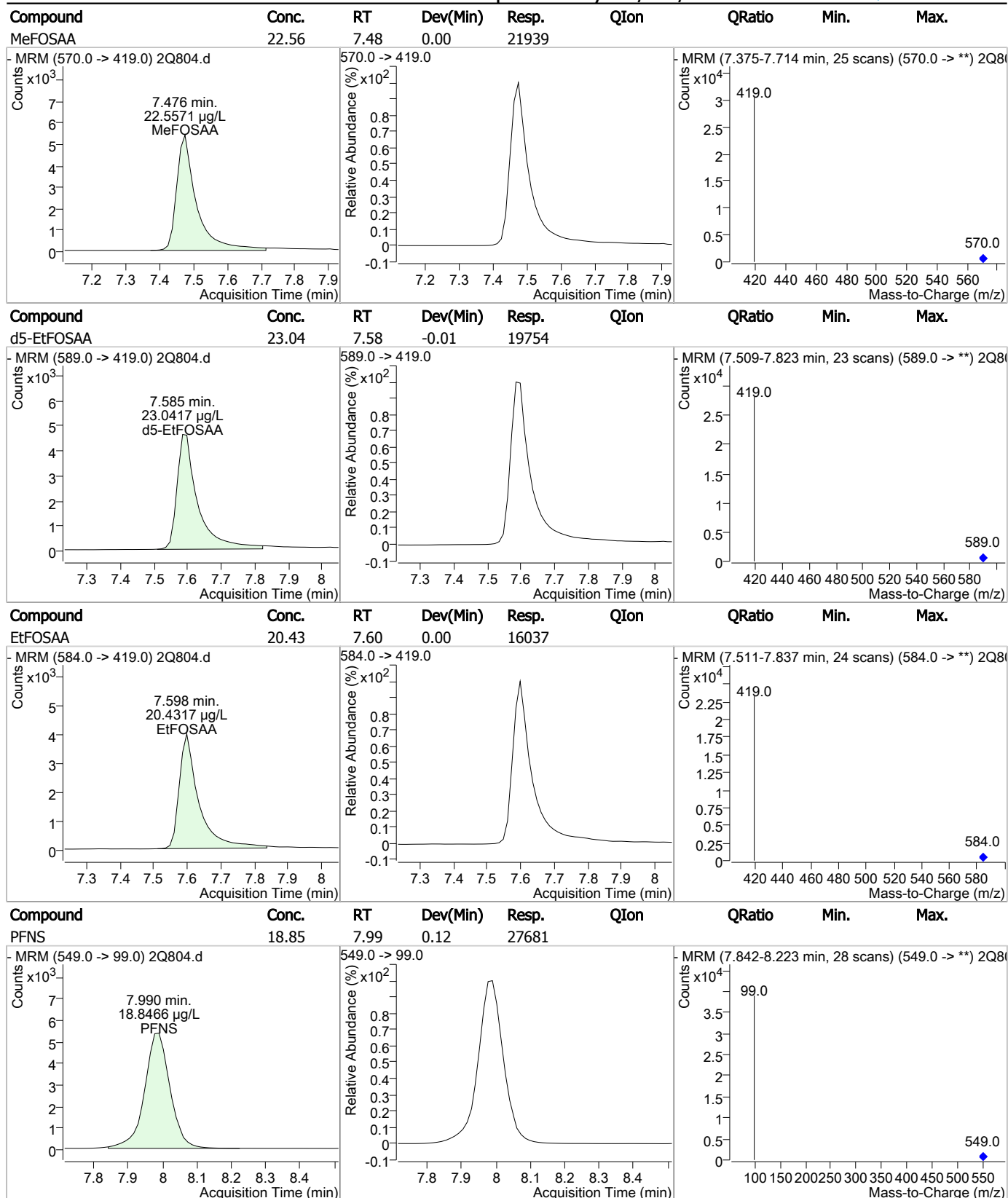
Perfluorinated Compounds by LC/MS/MS



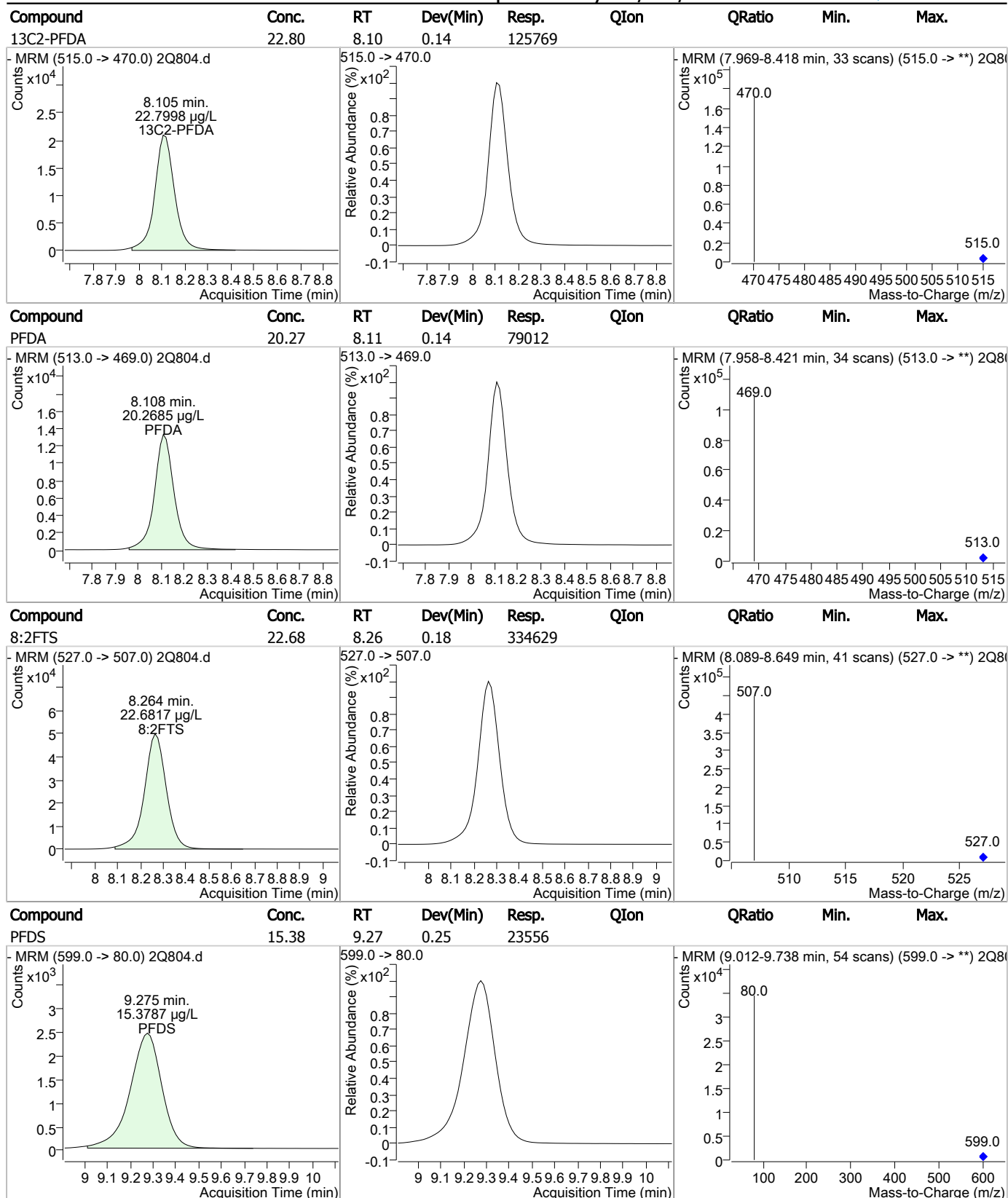
Perfluorinated Compounds by LC/MS/MS



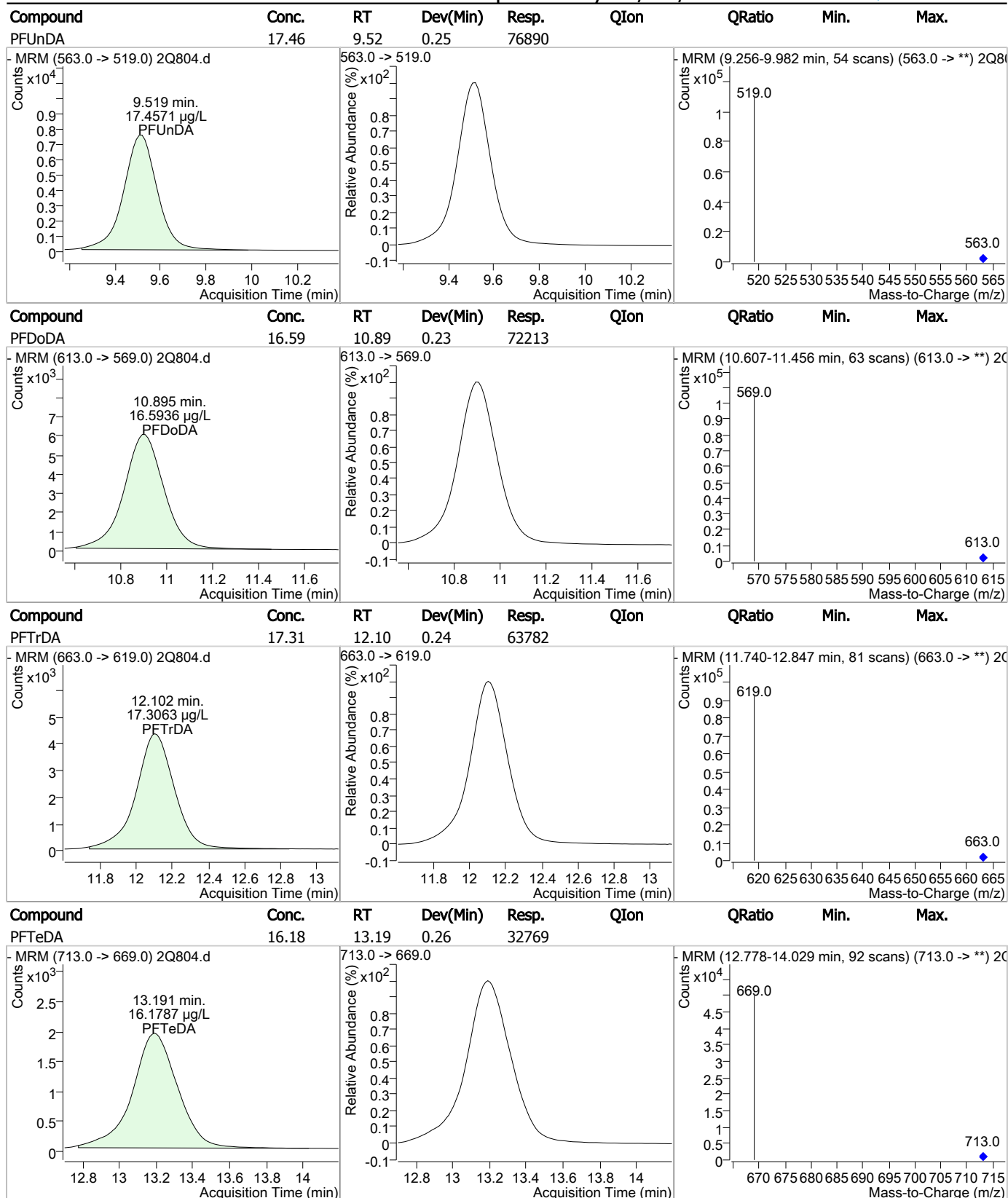
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Mike Eger
04/21/17 11:22

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q651.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 11:54:23 AM
 Sample Name : IC18-1
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	146593	20.00 µg/L	0.013
13C2-PFDoDA	10.714	615.0 -> 570.0	95399	20.00 µg/L	0.050
13C2-PFOA	6.651	415.0 -> 370.0	81433	20.00 µg/L	0.013
13C3-PFPeA	4.247	266.0 -> 222.0	77778	20.00 µg/L	0.013
13C4-PFOS	7.214	503.0 -> 80.0	57060	20.00 µg/L	0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34386	20.00 µg/L	0.000

System Monitoring Compounds

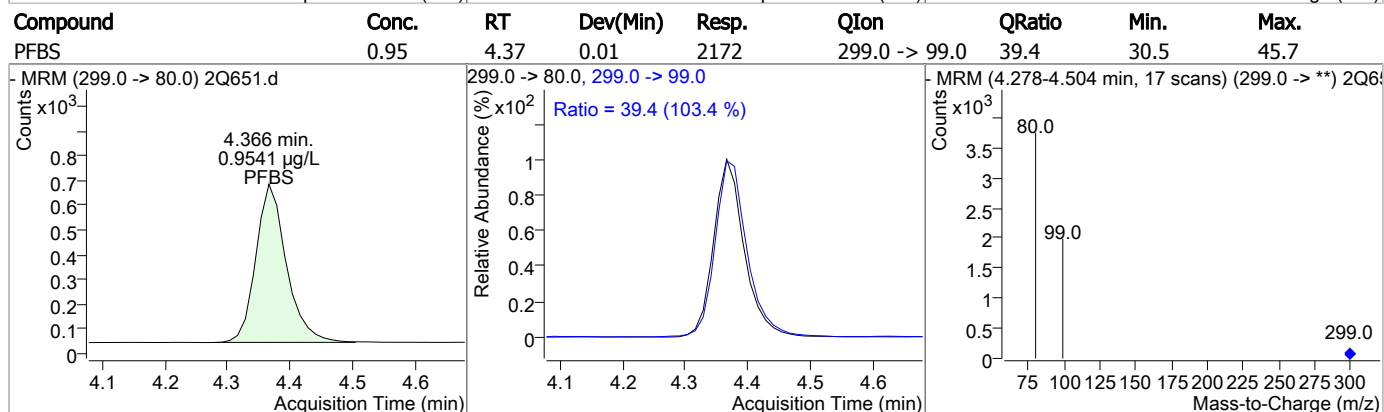
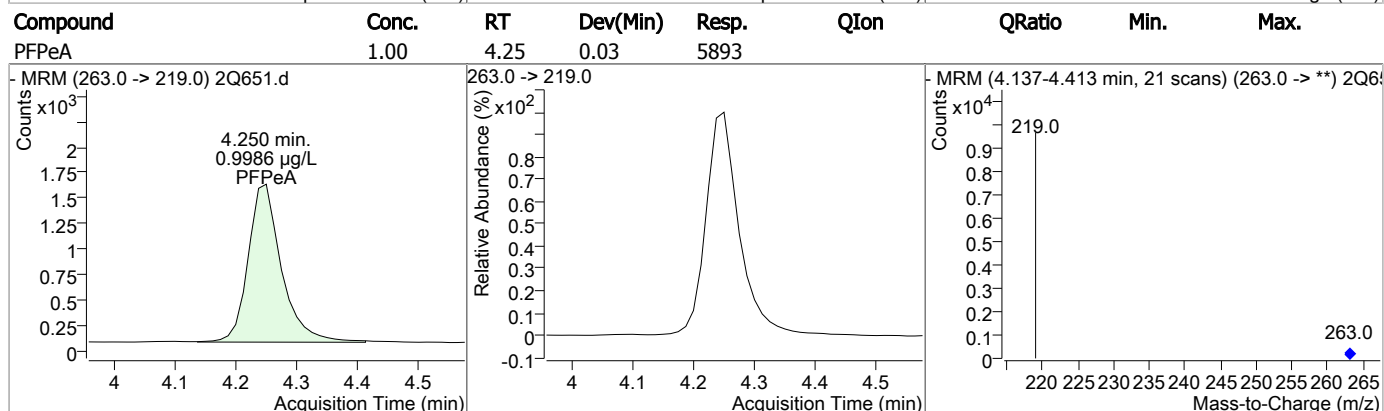
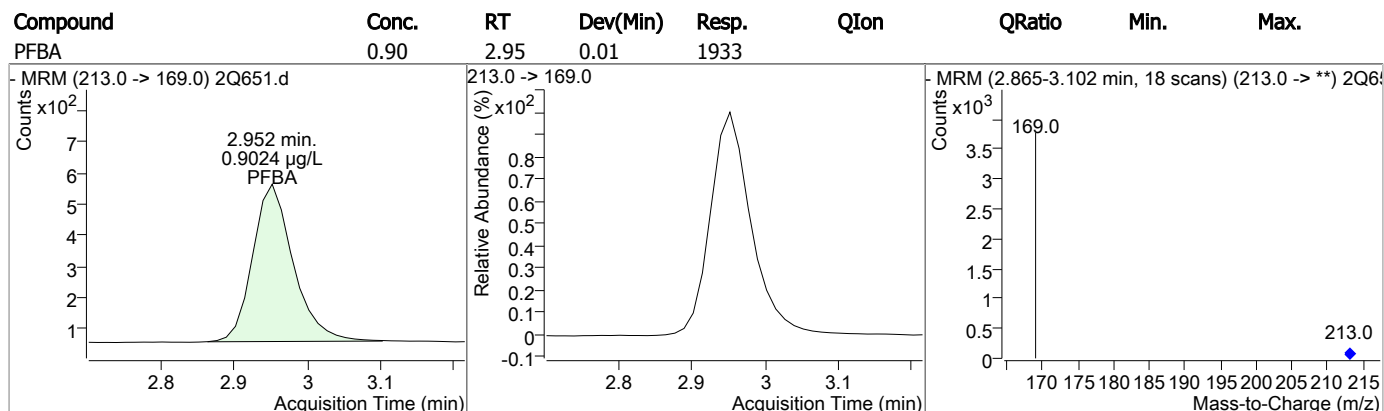
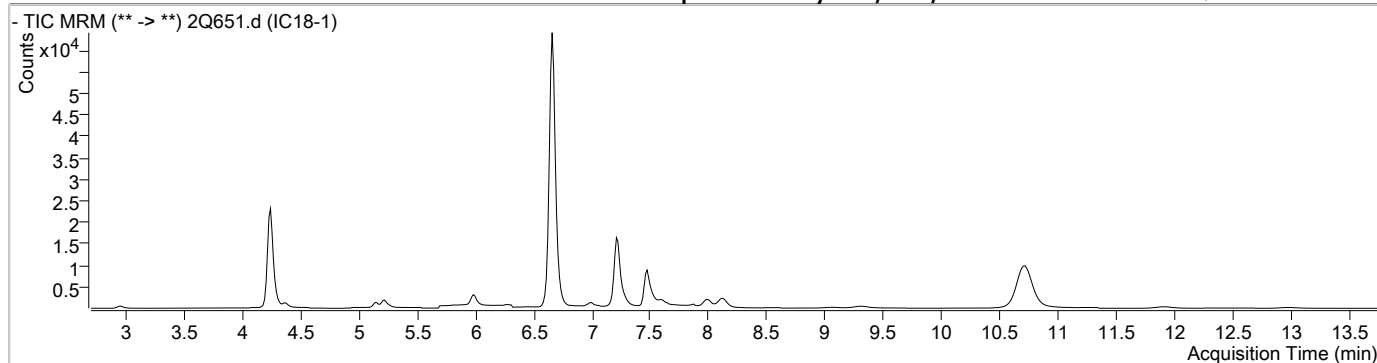
13C2-PFDA	7.994	515.0 -> 470.0	5647	0.99 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 5.0%		
13C2-PFHxA	5.222	315.0 -> 270.0	3970	0.92 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 4.6%		
d5-EtFOSAA	7.597	589.0 -> 419.0	1446	1.87 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 9.3%		

Target Compounds

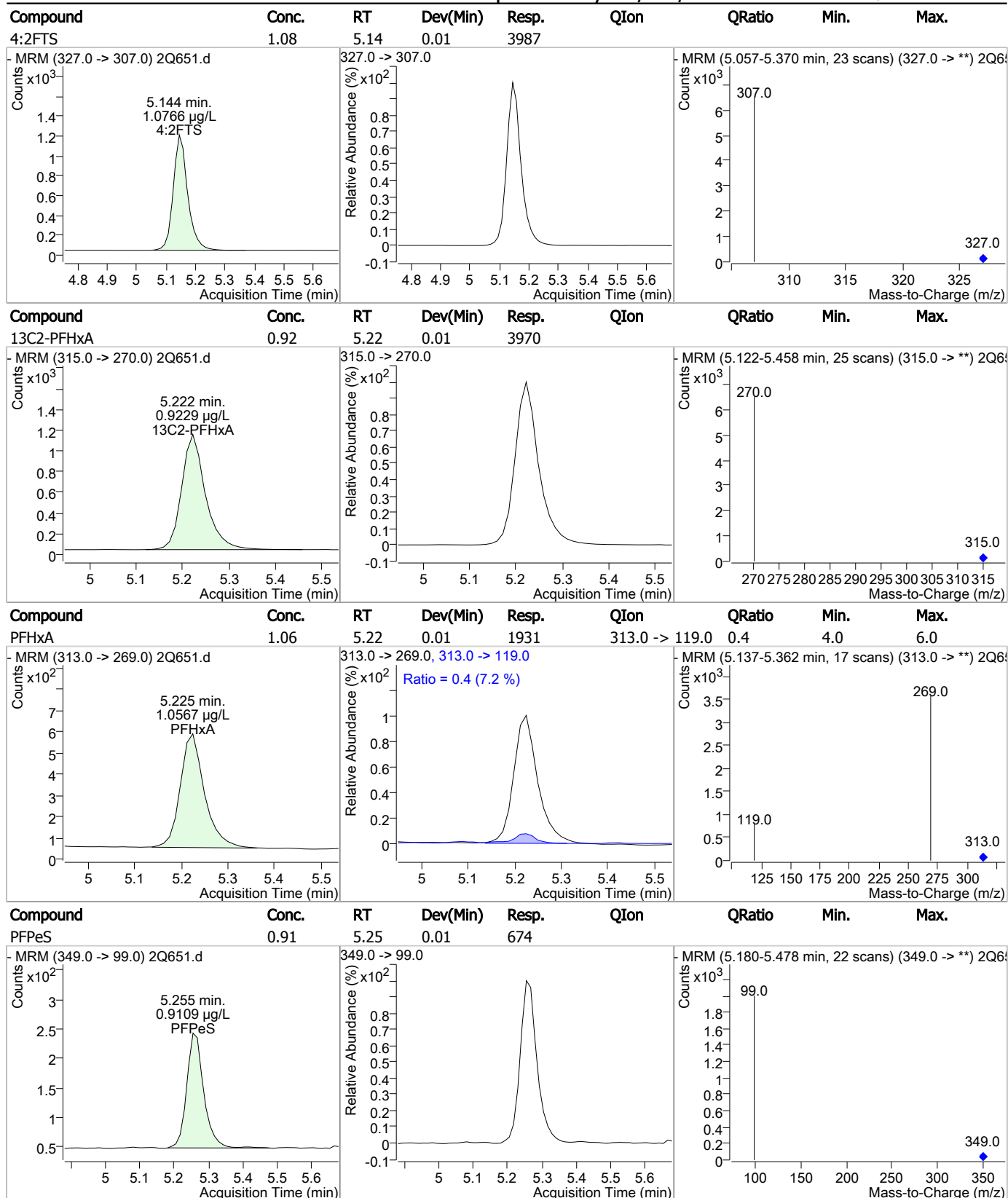
					QValue
4:2FTS	5.144	327.0 -> 307.0	3987	1.08 µg/L	100
6:2FTS	6.662	427.0 -> 407.0	10182	1.44 µg/L	100
8:2FTS	8.114	527.0 -> 507.0	12214	1.04 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	1377	1.85 µg/L	100
FOSA	6.986	498.0 -> 78.0	1869	1.01 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	1515	1.72 µg/L	100
PFBA	2.952	213.0 -> 169.0	1933	0.90 µg/L	100
PFBS	4.366	299.0 -> 80.0	2172	0.95 µg/L	98
PFDA	7.996	513.0 -> 469.0	4148	1.03 µg/L	100
PFDoDA	10.707	613.0 -> 569.0	4321	1.08 µg/L	100
PFDS	9.062	599.0 -> 80.0	1489	1.03 µg/L	100
PFHpA	5.986	363.0 -> 319.0	6687	1.21 µg/L	#m 93
PFHpS	6.620	449.0 -> 80.0	2286	0.95 µg/L	100
PFHxA	5.225	313.0 -> 269.0	1931	1.06 µg/L	# 86
PFHxS	5.981	399.0 -> 80.0	2304	0.97 µg/L	m 92
PFNA	7.281	463.0 -> 419.0	4586	1.26 µg/L	97
PFNS	7.879	549.0 -> 99.0	1372	0.95 µg/L	100
PFOA	6.652	413.0 -> 369.0	3911	1.16 µg/L	# 96
PFOS	7.215	499.0 -> 80.0	3230	0.98 µg/L	m 86
PFPeA	4.250	263.0 -> 219.0	5893	1.00 µg/L	100
PFPeS	5.255	349.0 -> 99.0	674	0.91 µg/L	100
PFTeDA	12.978	713.0 -> 669.0	2073	1.12 µg/L	100
PFTTrDA	11.915	663.0 -> 619.0	3725	1.12 µg/L	100
PFUnDA	9.306	563.0 -> 519.0	4328	1.03 µg/L	100

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

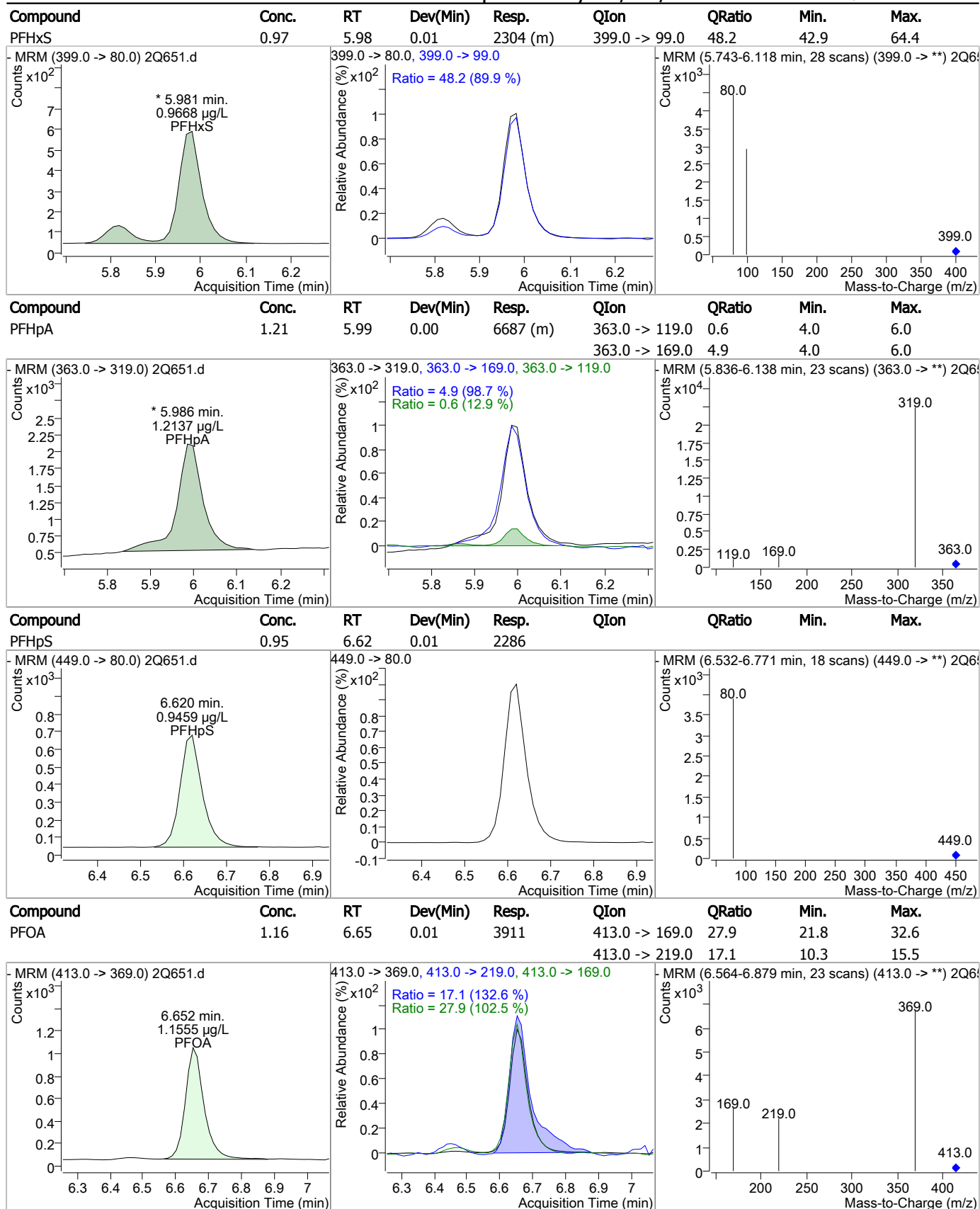
Perfluorinated Compounds by LC/MS/MS



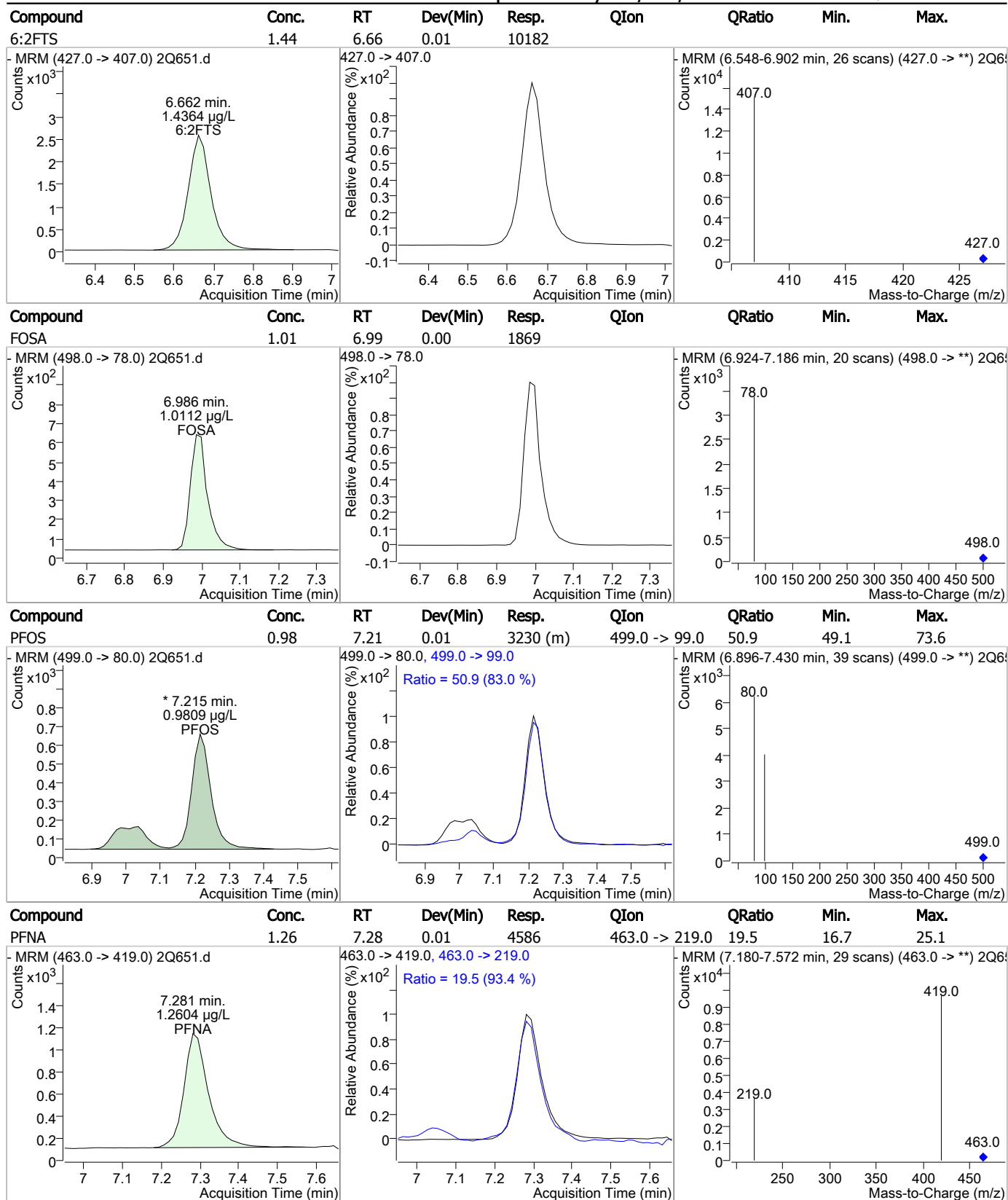
Perfluorinated Compounds by LC/MS/MS



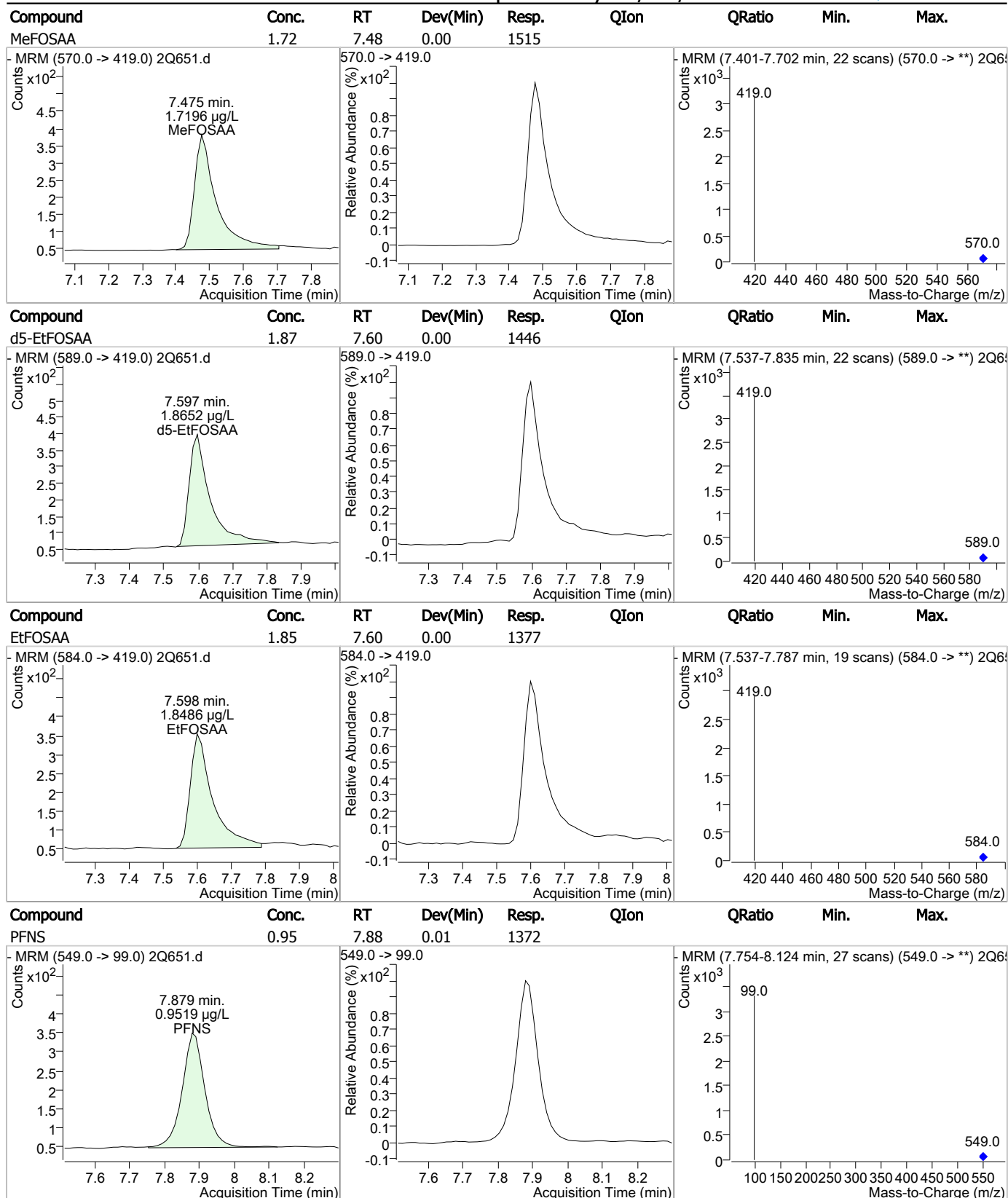
Perfluorinated Compounds by LC/MS/MS



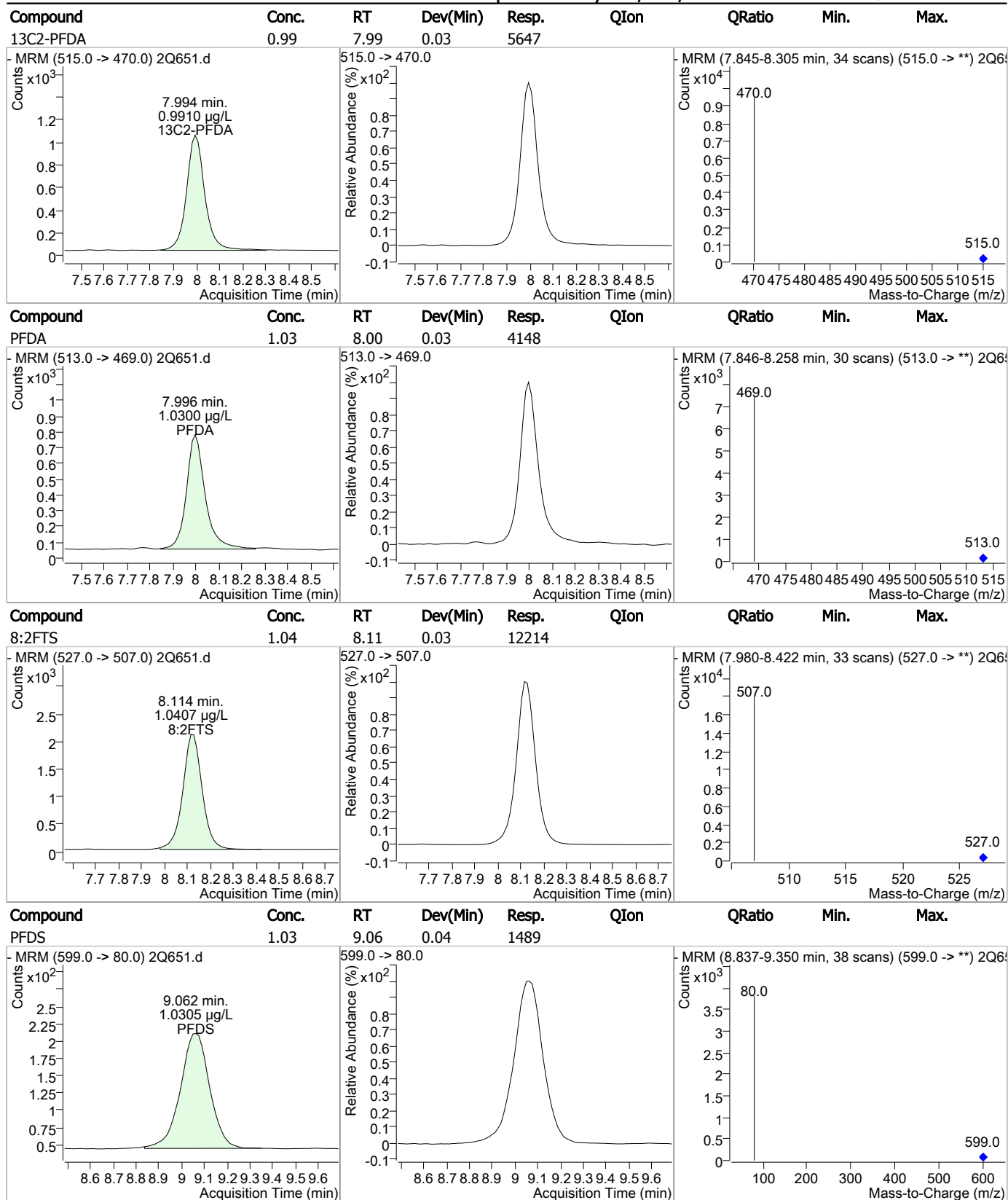
Perfluorinated Compounds by LC/MS/MS



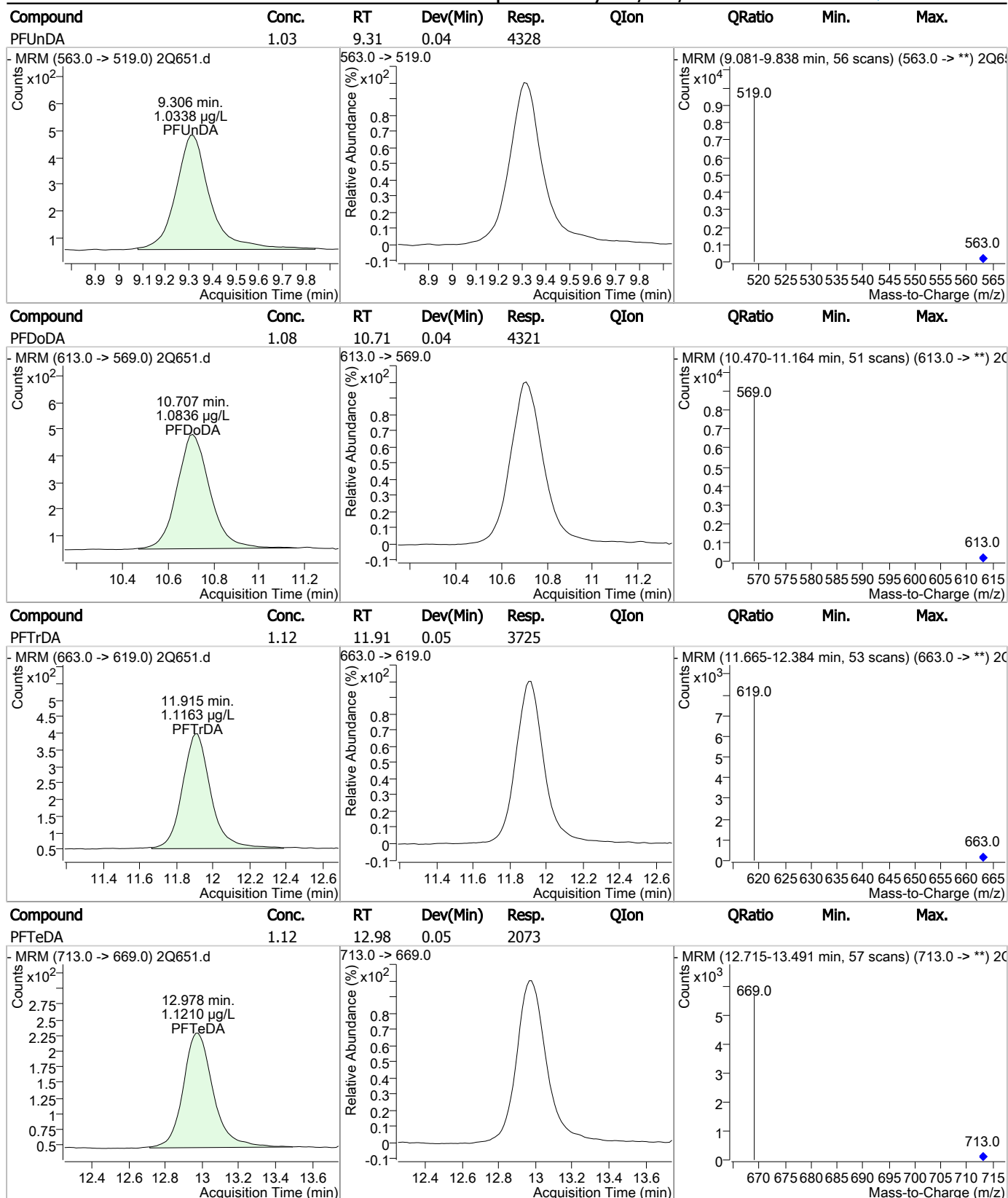
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q651.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 11:54

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.98	Split peak
Perfluoroheptanoic acid	375-85-9		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

7.5.1.1
7

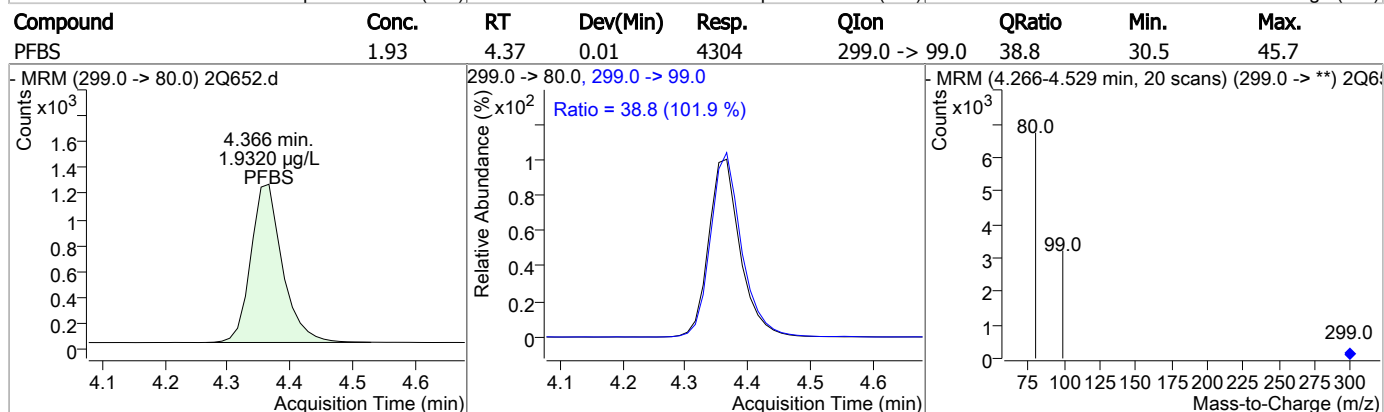
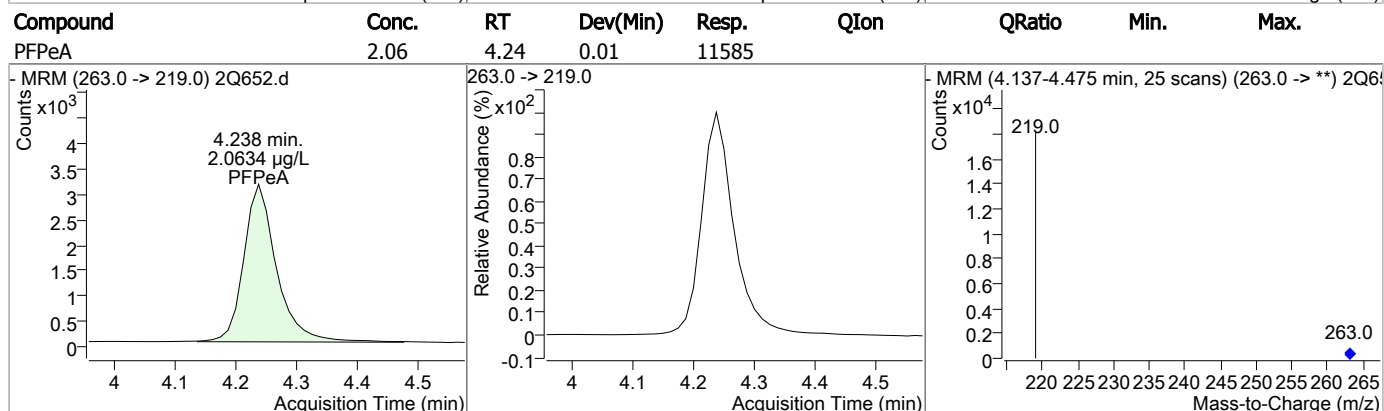
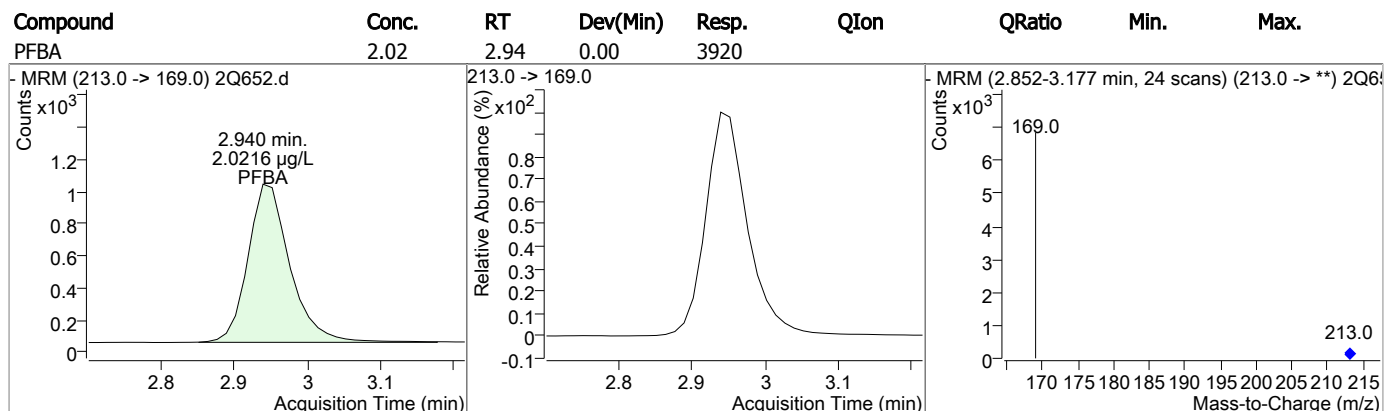
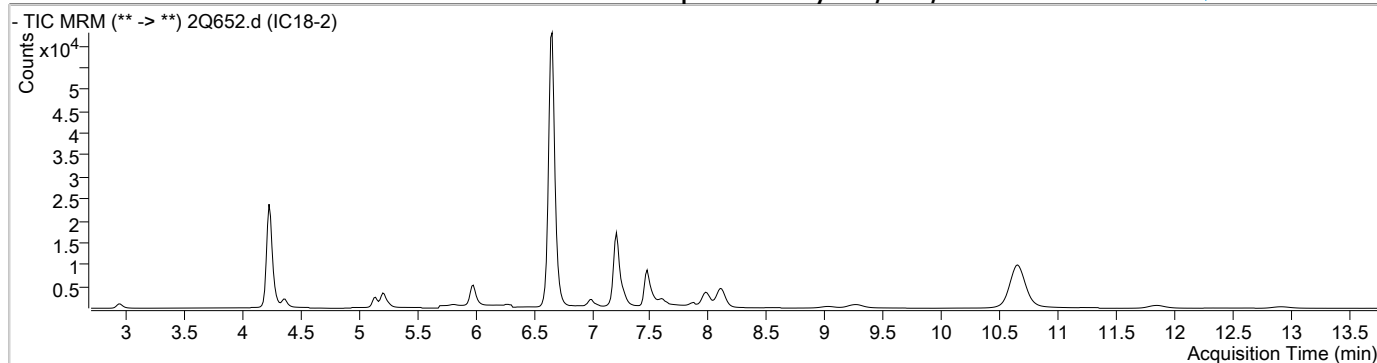
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q652.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 12:14:08 PM
 Sample Name : IC18-2
 Vial : Vial 3
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

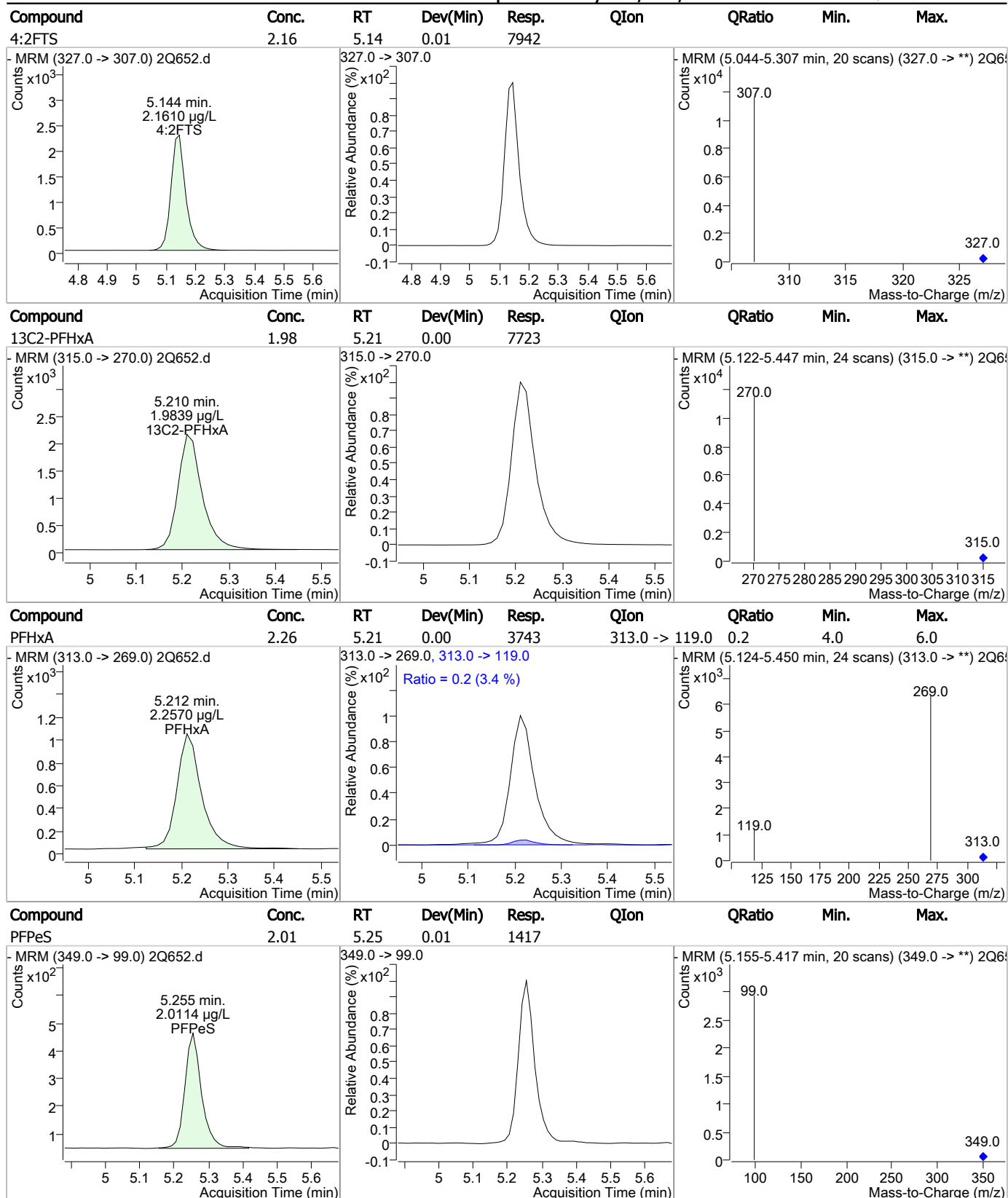
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	145491	20.00 µg/L	0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	90132	20.00 µg/L	-0.013
13C2-PFOA	6.651	415.0 -> 370.0	73705	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	73997	20.00 µg/L	0.000
13C4-PFOS	7.214	503.0 -> 80.0	55828	20.00 µg/L	0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34397	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.982	515.0 -> 470.0	10452	2.03 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 10.1%	
13C2-PFHxA	5.210	315.0 -> 270.0	7723	1.98 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 9.9%	
d5-EtFOSAA	7.597	589.0 -> 419.0	2107	2.71 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 13.5%	
Target Compounds					
					QValue
4:2FTS	5.144	327.0 -> 307.0	7942	2.16 µg/L	100
6:2FTS	6.662	427.0 -> 407.0	16517	2.35 µg/L	100
8:2FTS	8.102	527.0 -> 507.0	24338	2.09 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	1809	2.42 µg/L	100
FOSA	6.999	498.0 -> 78.0	3734	2.02 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	2113	2.39 µg/L	100
PFBA	2.940	213.0 -> 169.0	3920	2.02 µg/L	100
PFBS	4.366	299.0 -> 80.0	4304	1.93 µg/L	99
PFDA	7.984	513.0 -> 469.0	7508	2.06 µg/L	100
PFDoDA	10.645	613.0 -> 569.0	8380	2.22 µg/L	100
PFDS	9.025	599.0 -> 80.0	3097	2.18 µg/L	100
PFHpA	5.986	363.0 -> 319.0	10857	2.17 µg/L	# 93
PFHpS	6.607	449.0 -> 80.0	4657	1.97 µg/L	100
PFHxA	5.212	313.0 -> 269.0	3743	2.26 µg/L	# 85
PFHxS	5.968	399.0 -> 80.0	4586	1.97 µg/L	m 94
PFNA	7.281	463.0 -> 419.0	6918	2.10 µg/L	98
PFNS	7.879	549.0 -> 99.0	2814	2.00 µg/L	100
PFOA	6.652	413.0 -> 369.0	6233	2.03 µg/L	96
PFOS	7.215	499.0 -> 80.0	6408	1.99 µg/L	#m 82
PFPeA	4.238	263.0 -> 219.0	11585	2.06 µg/L	100
PFPeS	5.255	349.0 -> 99.0	1417	2.01 µg/L	100
PFTeDA	12.903	713.0 -> 669.0	3940	2.25 µg/L	100
PFTTrDA	11.840	663.0 -> 619.0	6935	2.19 µg/L	100
PFUnDA	9.269	563.0 -> 519.0	8003	2.02 µg/L	100

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

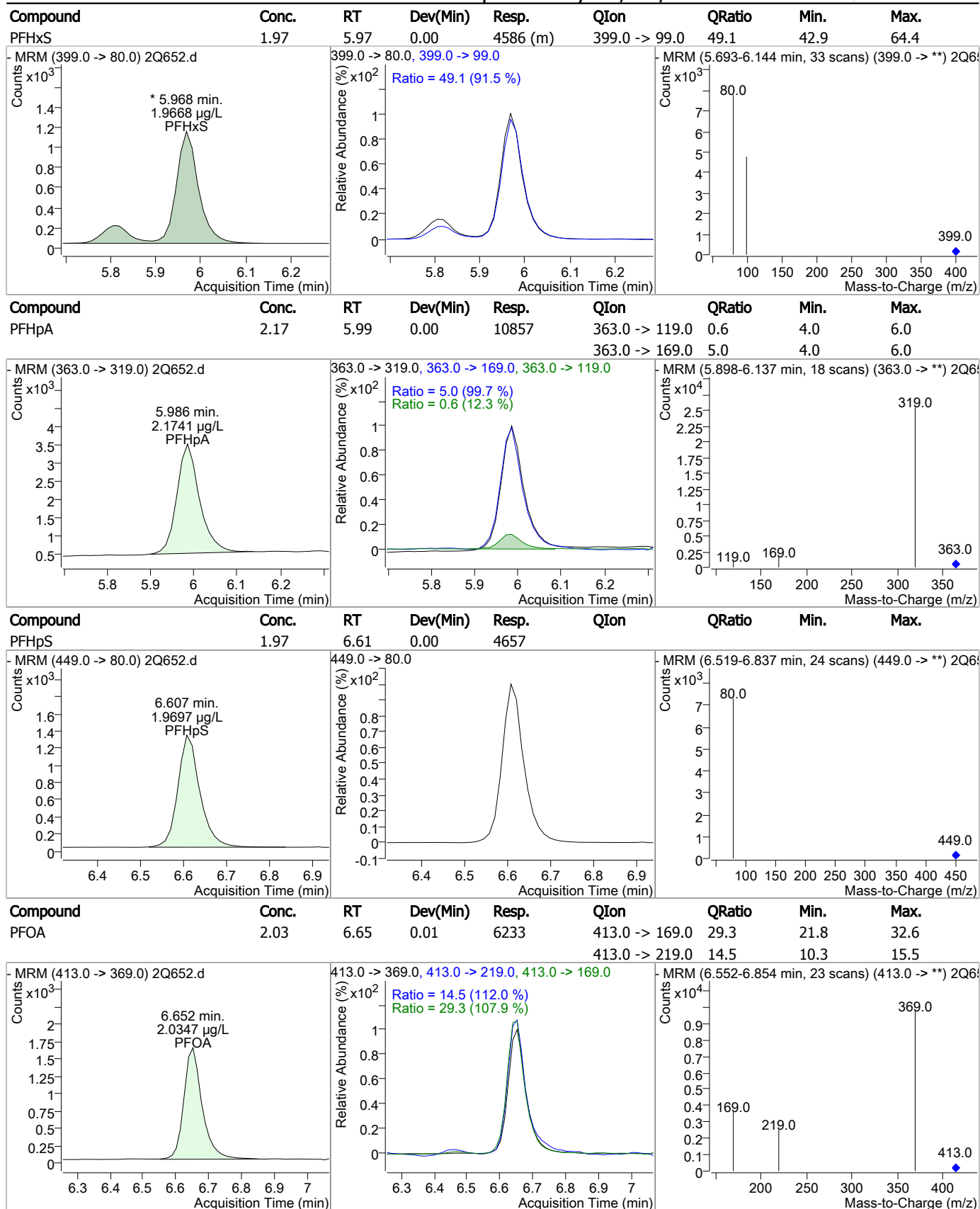
Perfluorinated Compounds by LC/MS/MS



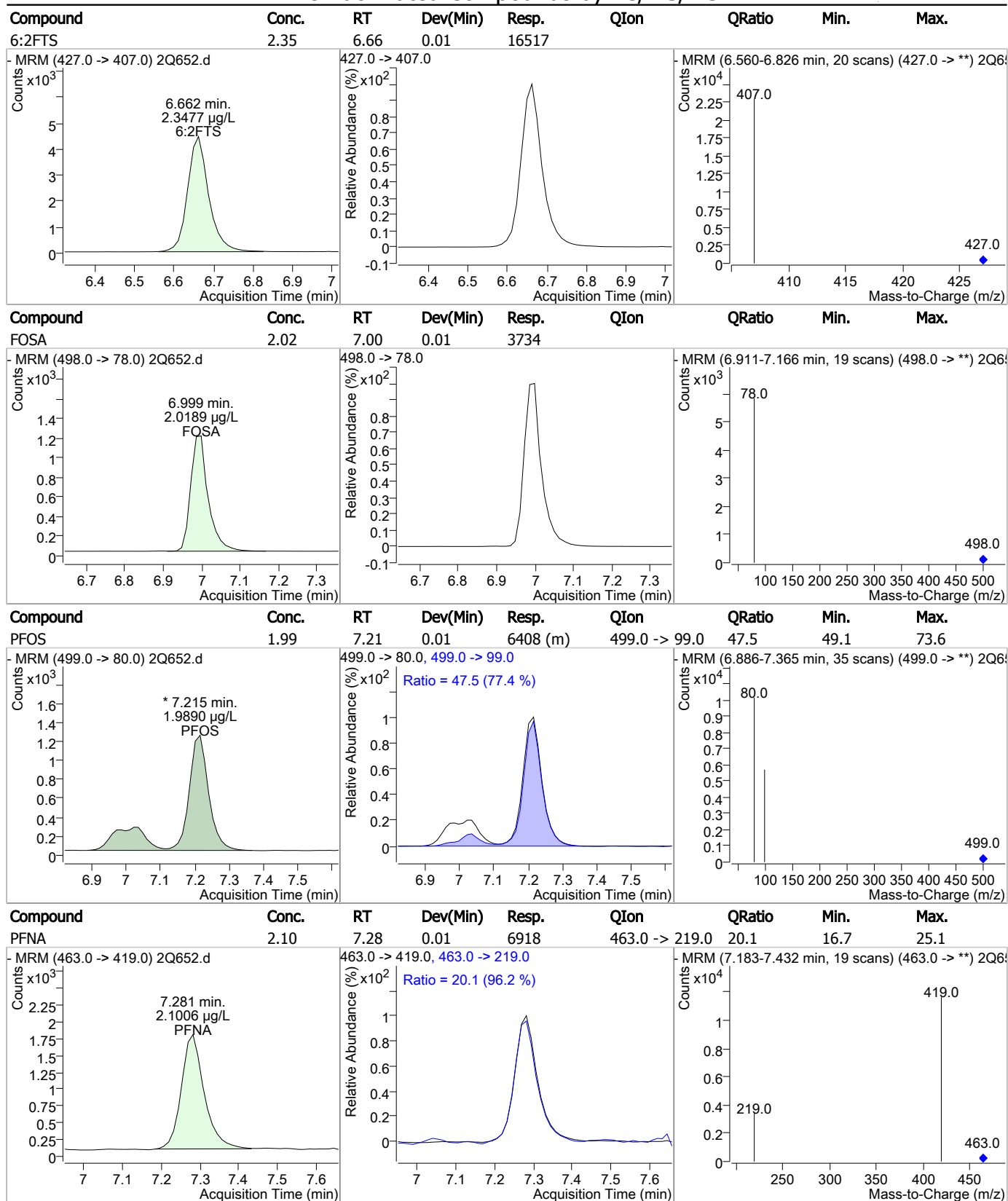
Perfluorinated Compounds by LC/MS/MS



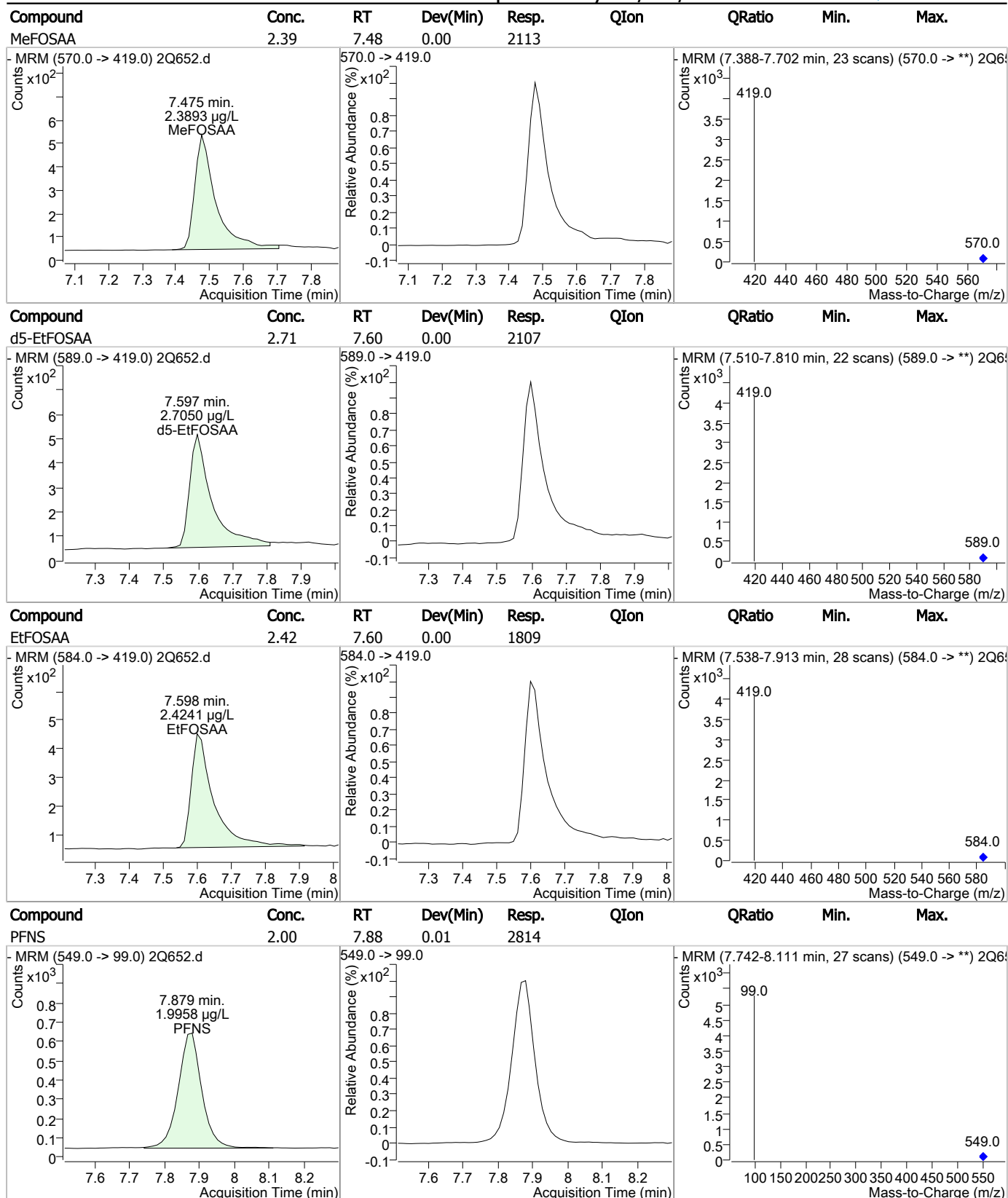
Perfluorinated Compounds by LC/MS/MS



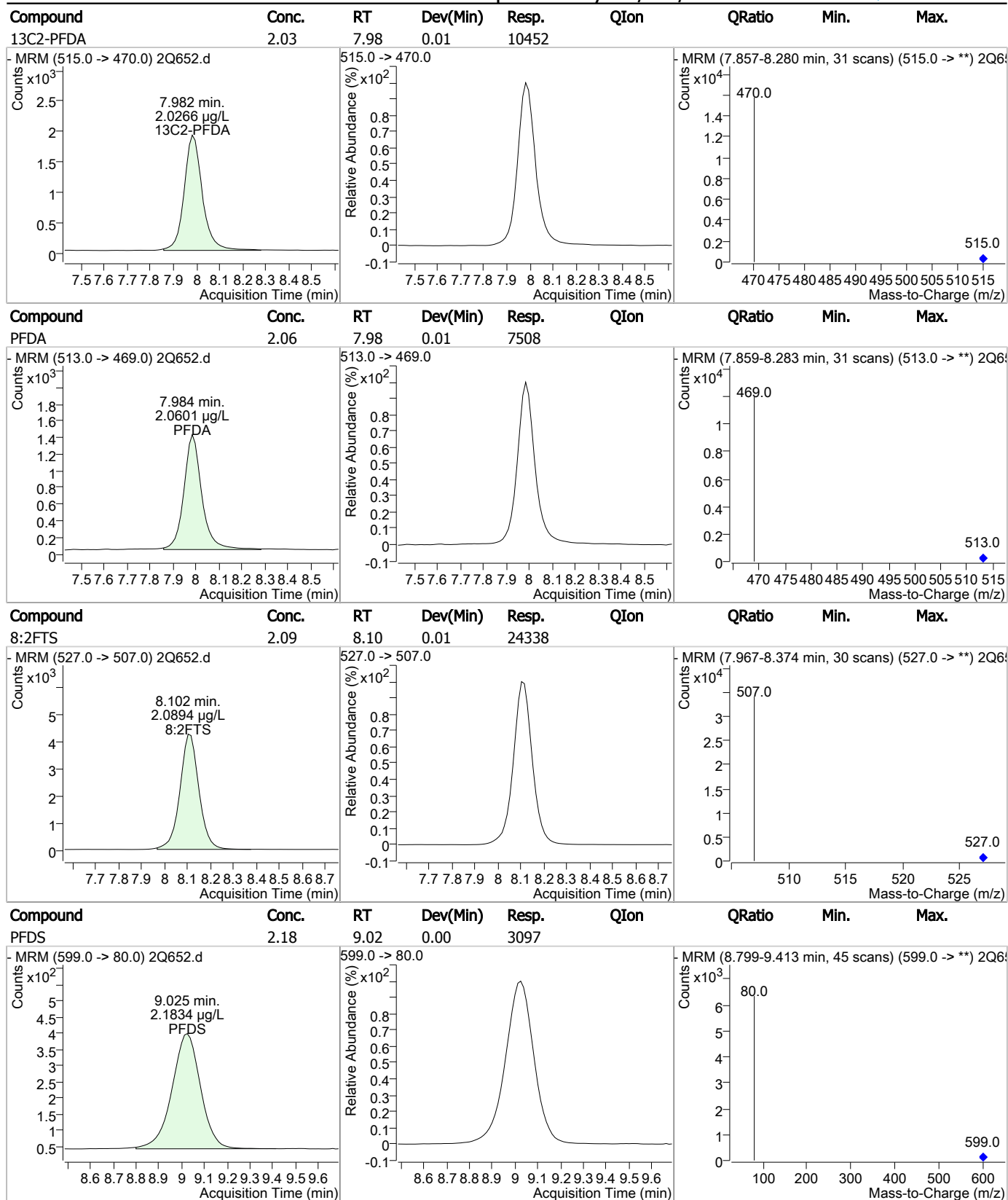
Perfluorinated Compounds by LC/MS/MS



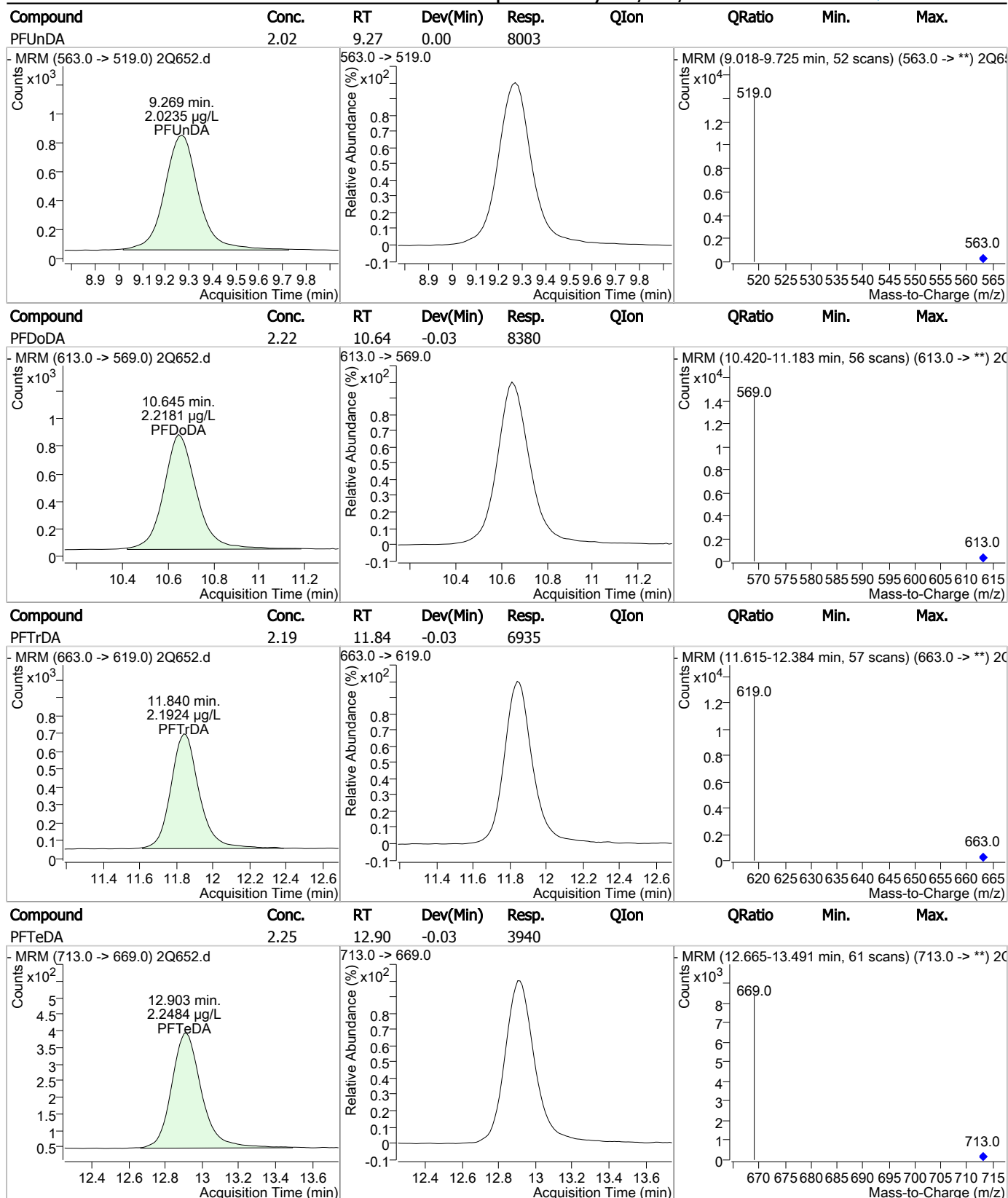
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q652.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 12:14

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

7.5.2.1
7

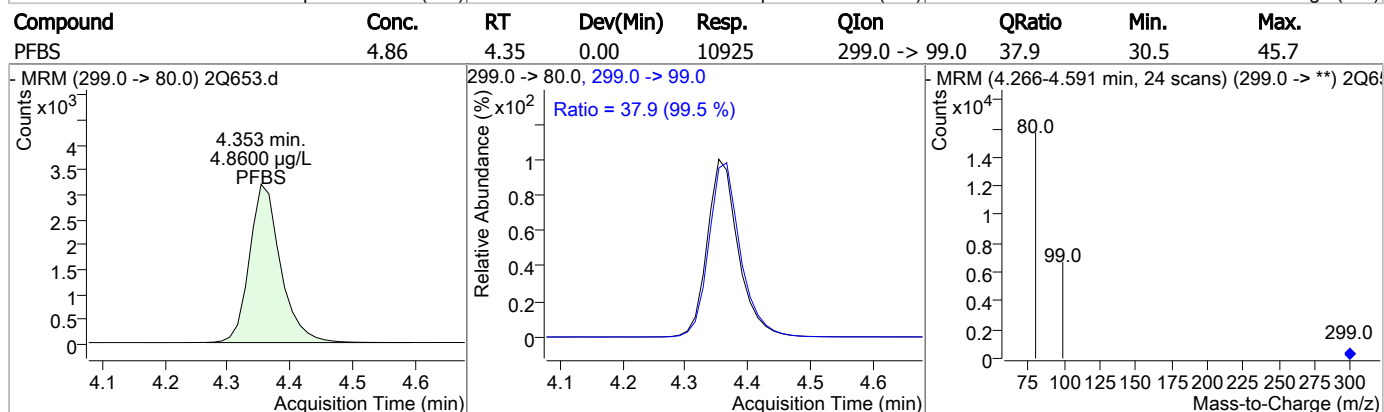
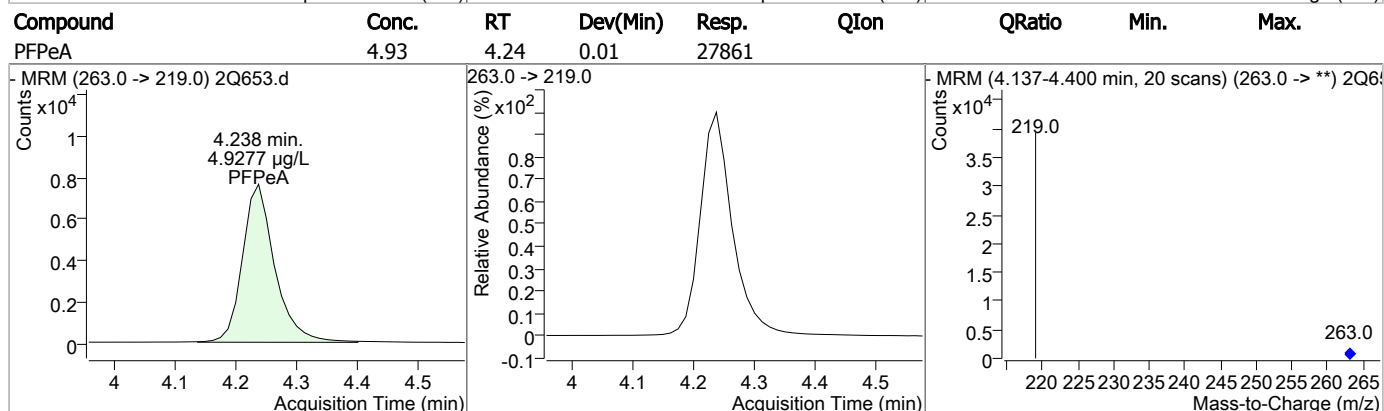
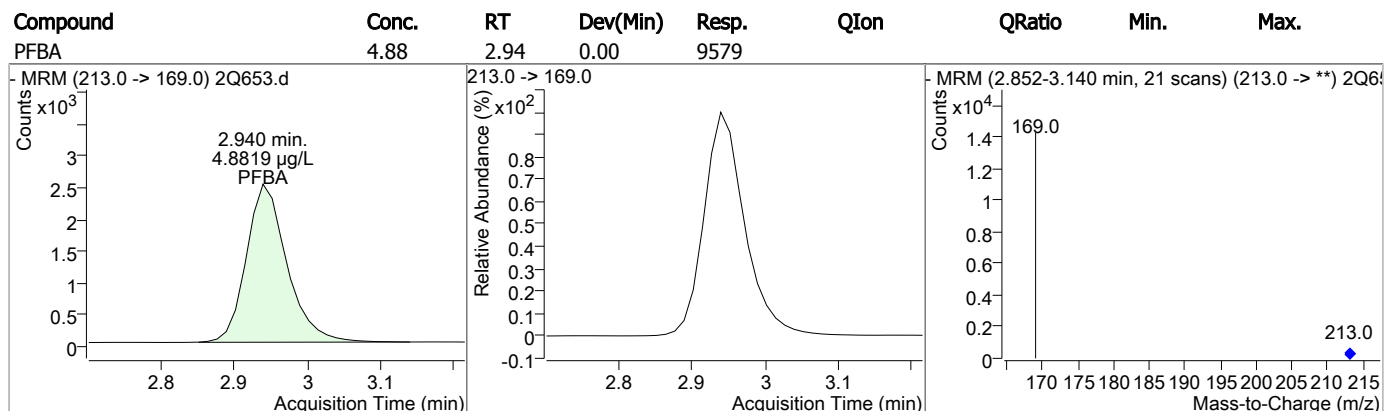
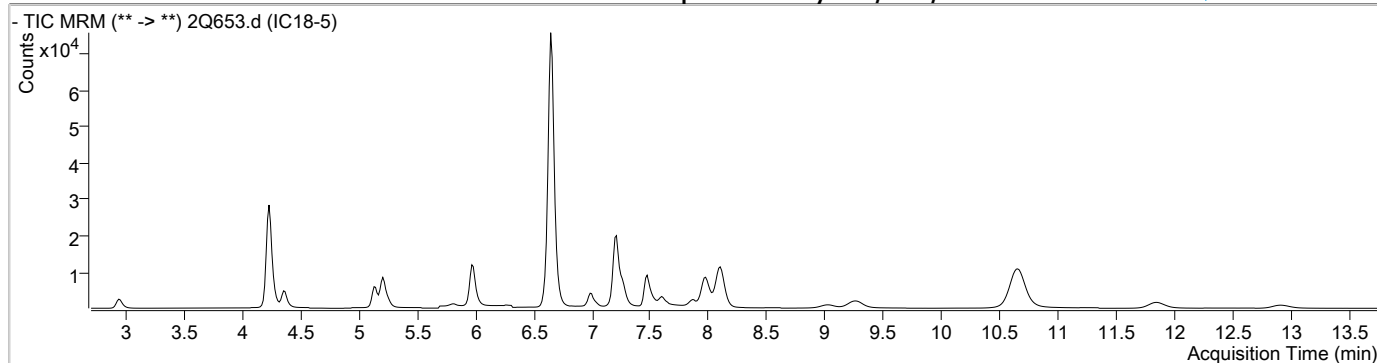
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q653.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 12:33:51 PM
 Sample Name : IC18-5
 Vial : Vial 4
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

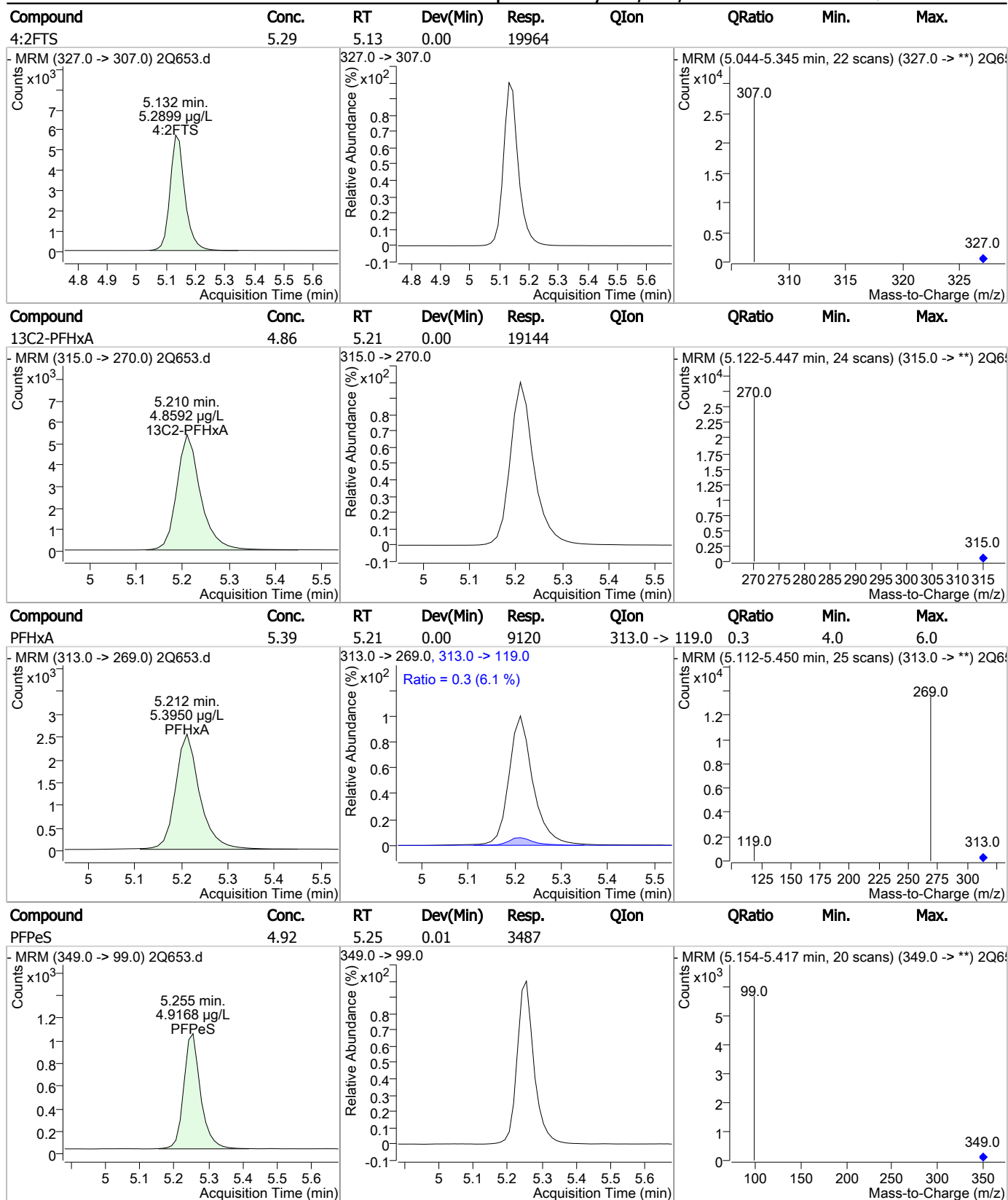
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	149408	20.00 µg/L	0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	89183	20.00 µg/L	-0.013
13C2-PFOA	6.651	415.0 -> 370.0	74588	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74514	20.00 µg/L	0.000
13C4-PFOS	7.214	503.0 -> 80.0	56334	20.00 µg/L	0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	32584	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.982	515.0 -> 470.0	25239	4.84 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 24.2%	
13C2-PFHxA	5.210	315.0 -> 270.0	19144	4.86 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 24.3%	
d5-EtFOSAA	7.597	589.0 -> 419.0	4389	5.86 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 29.3%	
Target Compounds					
					QValue
4:2FTS	5.132	327.0 -> 307.0	19964	5.29 µg/L	100
6:2FTS	6.649	427.0 -> 407.0	39875	5.52 µg/L	100
8:2FTS	8.102	527.0 -> 507.0	62098	5.19 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	3997	5.60 µg/L	100
FOSA	6.986	498.0 -> 78.0	9105	5.20 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	4778	5.61 µg/L	100
PFBA	2.940	213.0 -> 169.0	9579	4.88 µg/L	100
PFBS	4.353	299.0 -> 80.0	10925	4.86 µg/L	100
PFDA	7.971	513.0 -> 469.0	18022	4.89 µg/L	100
PFDoDA	10.645	613.0 -> 569.0	20252	5.38 µg/L	100
PFDS	9.025	599.0 -> 80.0	7692	5.33 µg/L	100
PFHpA	5.986	363.0 -> 319.0	26345	5.19 µg/L	# 93
PFHpS	6.607	449.0 -> 80.0	11503	4.82 µg/L	100
PFHxA	5.212	313.0 -> 269.0	9120	5.39 µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	11419	4.85 µg/L	m 93
PFNA	7.269	463.0 -> 419.0	17156	5.15 µg/L	97
PFNS	7.867	549.0 -> 99.0	7047	4.95 µg/L	100
PFOA	6.652	413.0 -> 369.0	15593	5.03 µg/L	99
PFOS	7.201	499.0 -> 80.0	16099	4.95 µg/L	m 85
PFPeA	4.238	263.0 -> 219.0	27861	4.93 µg/L	100
PFPeS	5.255	349.0 -> 99.0	3487	4.92 µg/L	100
PFTeDA	12.903	713.0 -> 669.0	9627	5.50 µg/L	100
PFTTrDA	11.840	663.0 -> 619.0	17193	5.44 µg/L	100
PFUnDA	9.269	563.0 -> 519.0	19572	5.00 µg/L	100

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

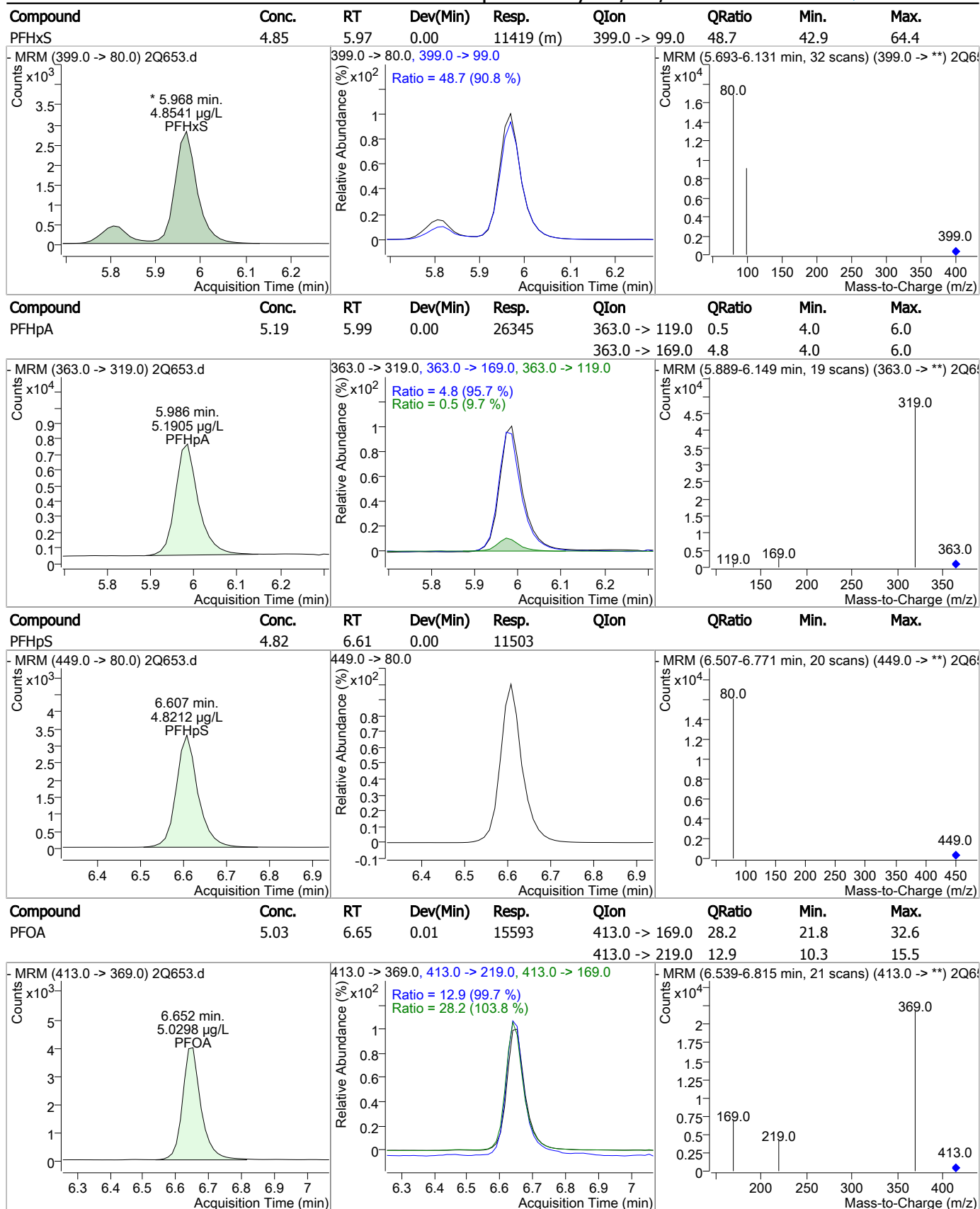
Perfluorinated Compounds by LC/MS/MS



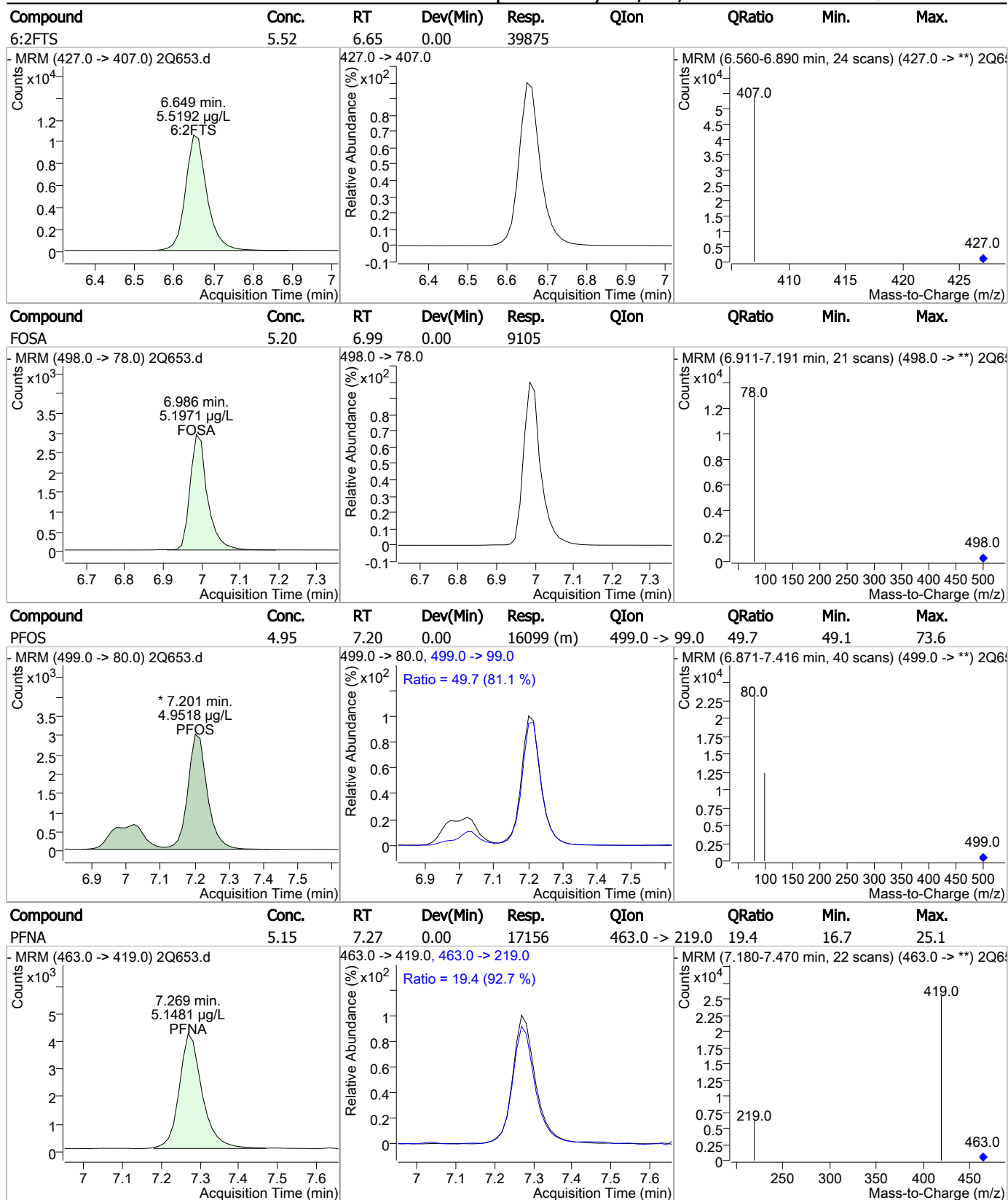
Perfluorinated Compounds by LC/MS/MS



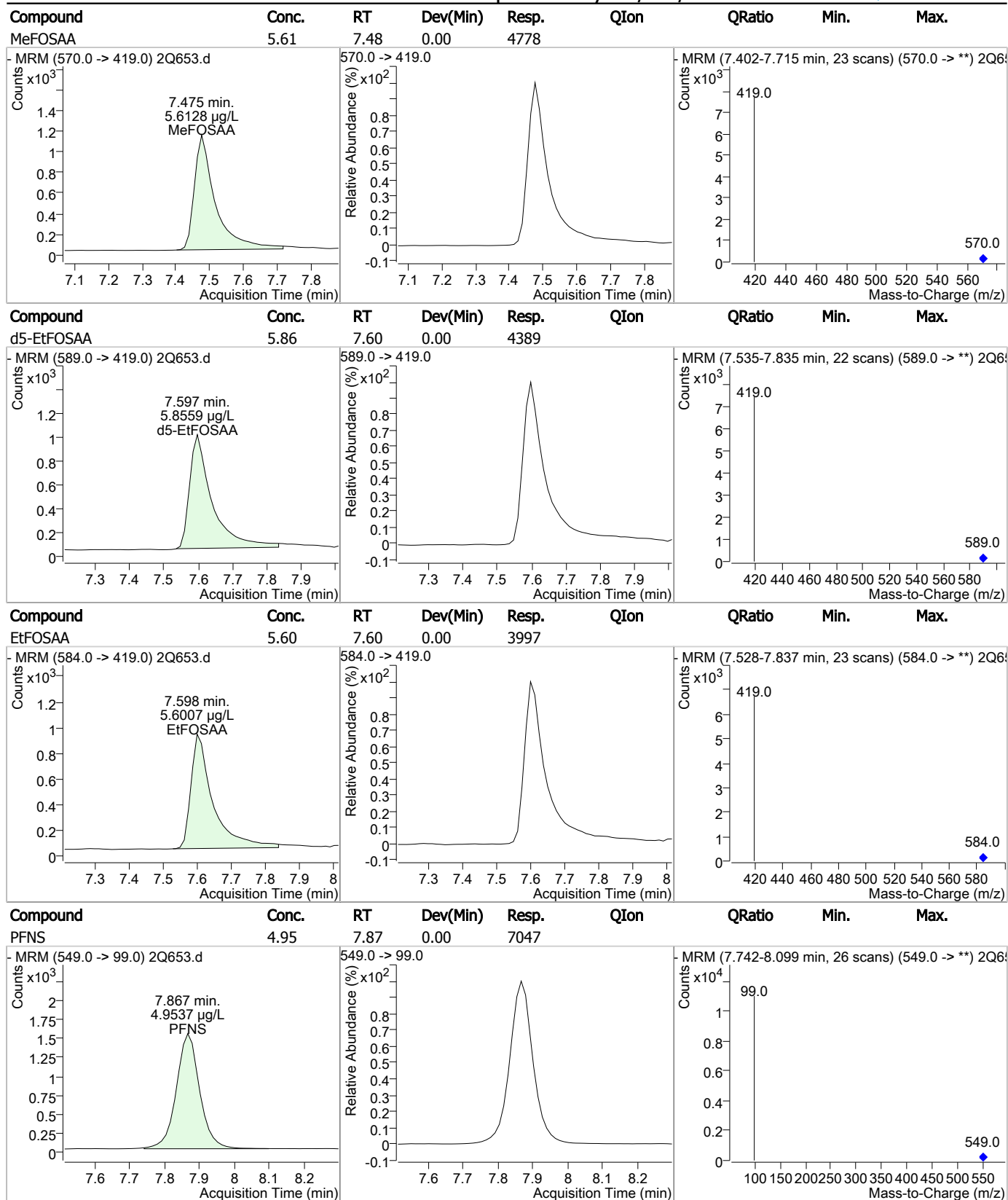
Perfluorinated Compounds by LC/MS/MS



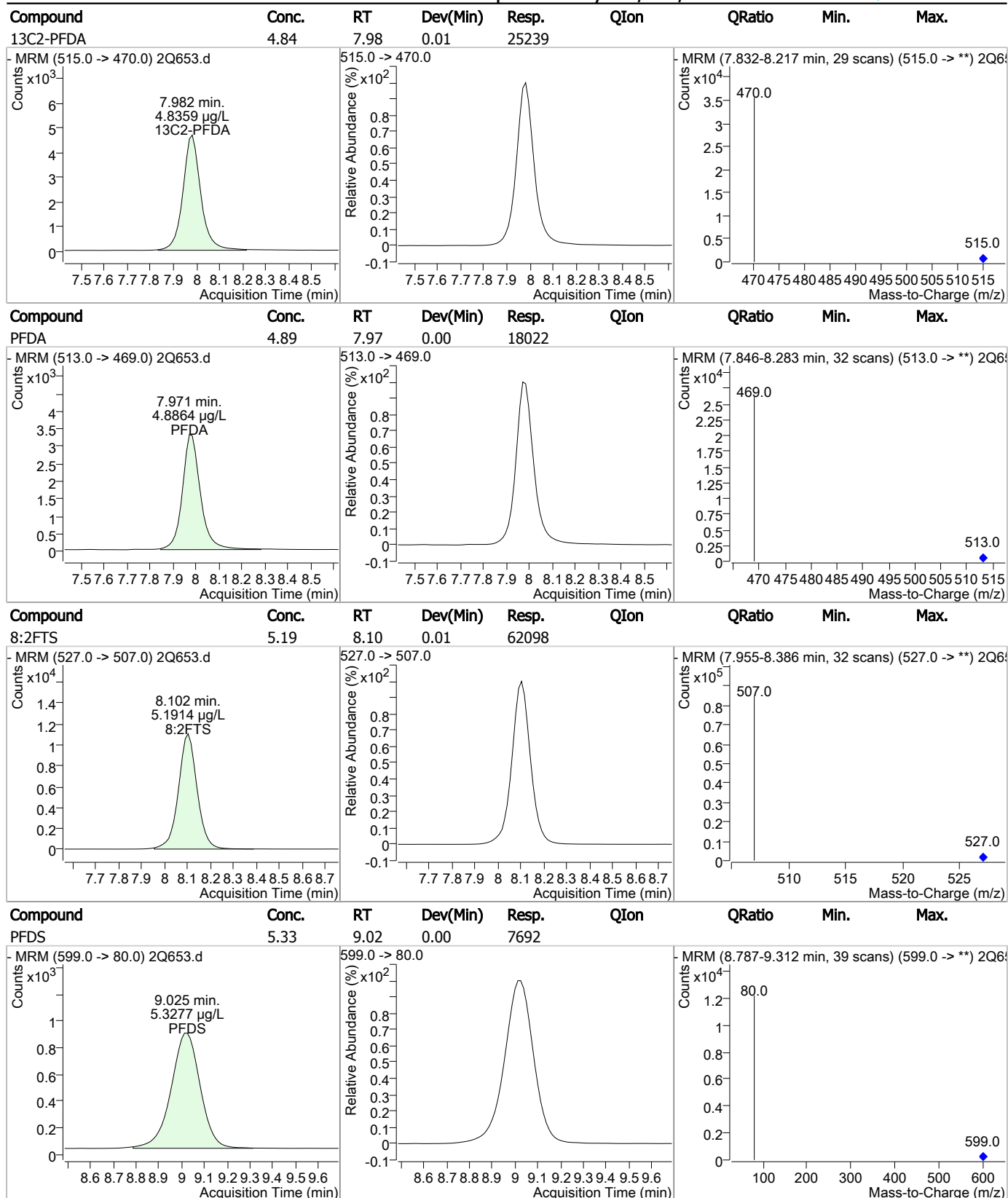
Perfluorinated Compounds by LC/MS/MS



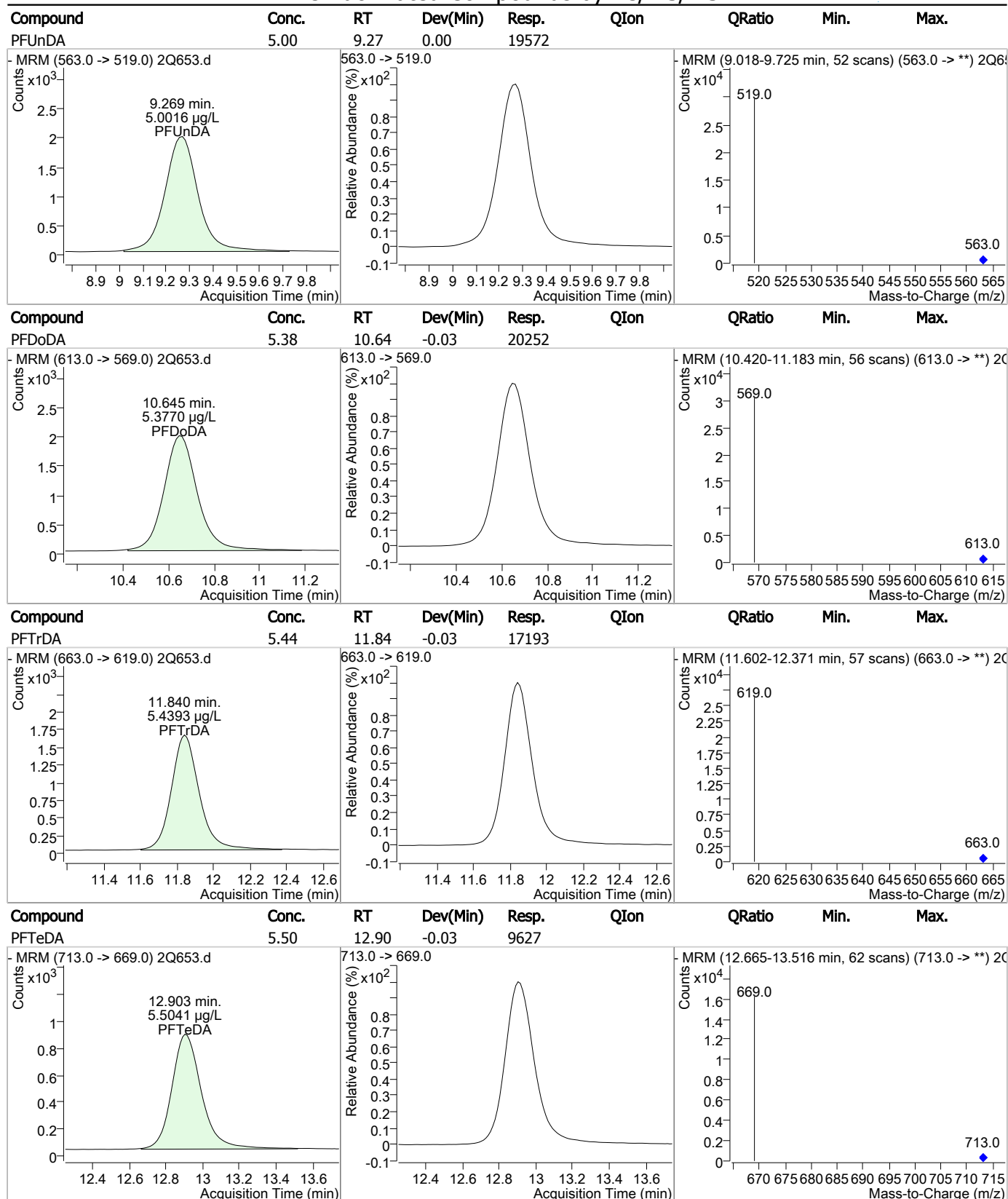
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q653.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 12:33

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

7.5.3.1
7

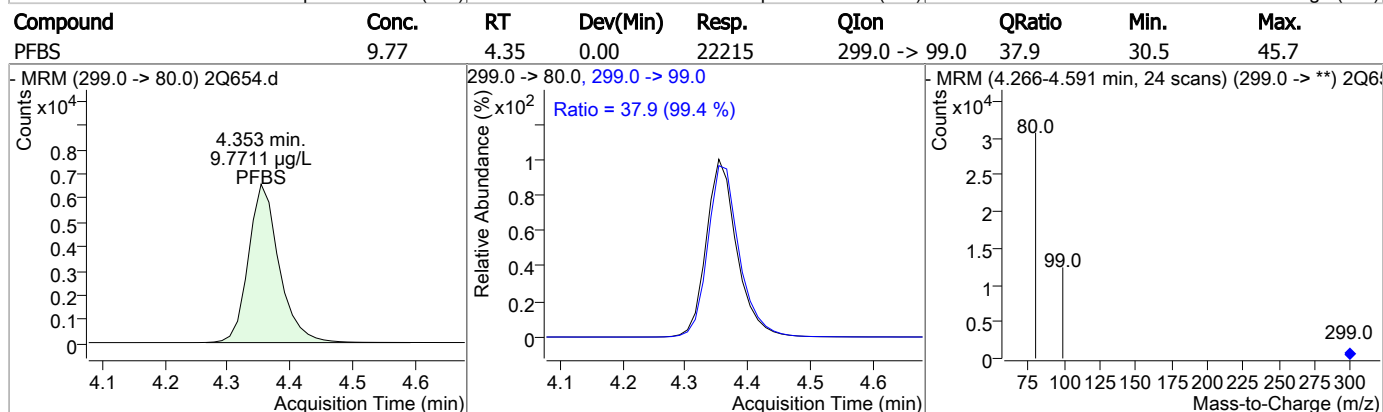
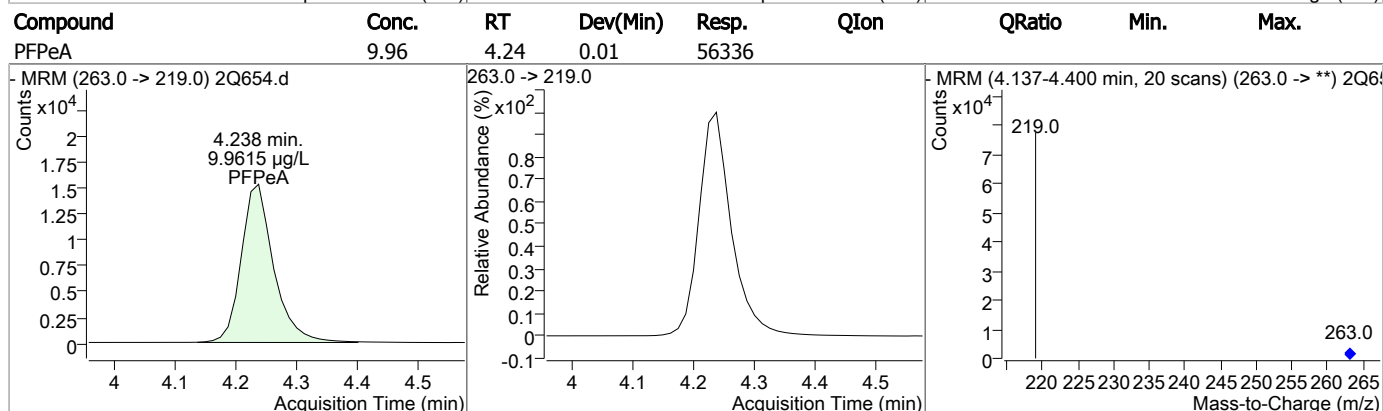
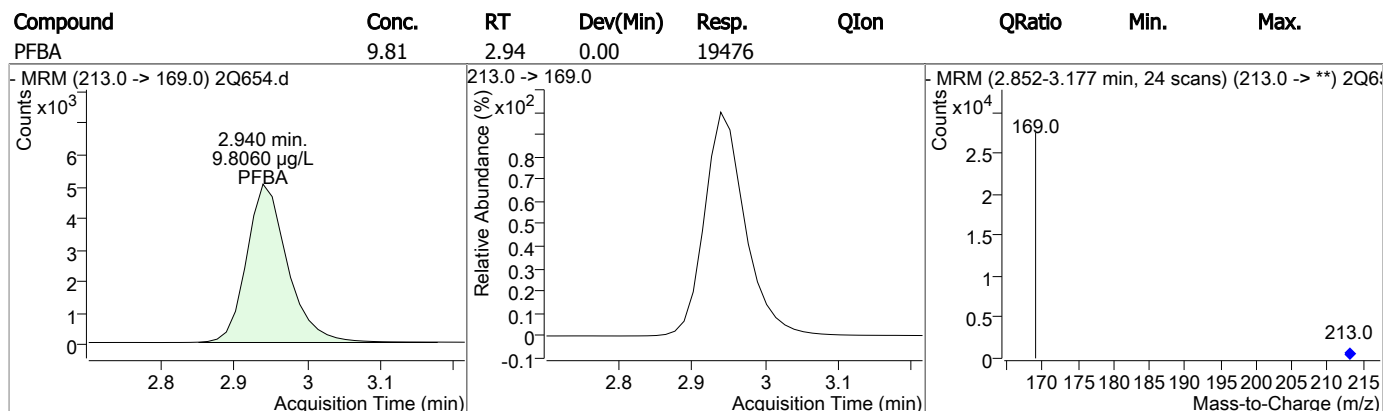
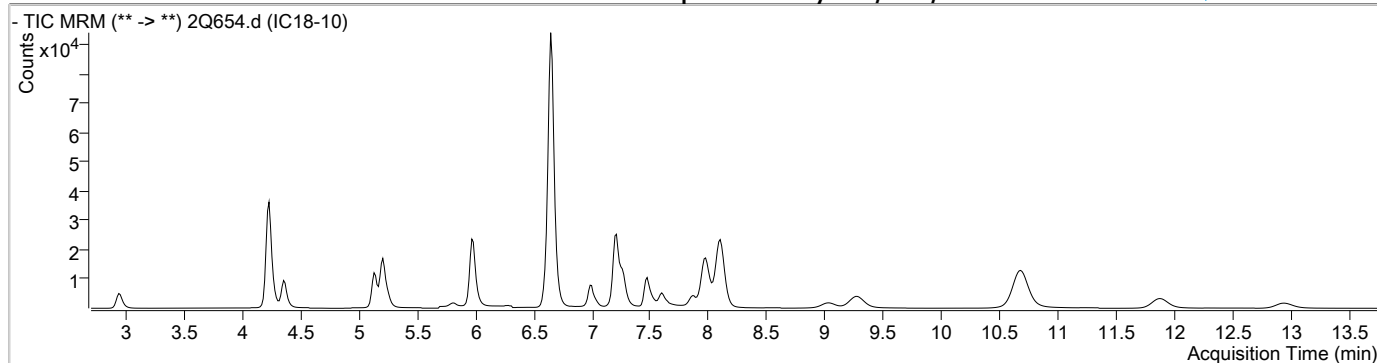
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q654.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 12:53:35 PM
 Sample Name : IC18-10
 Vial : Vial 5
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

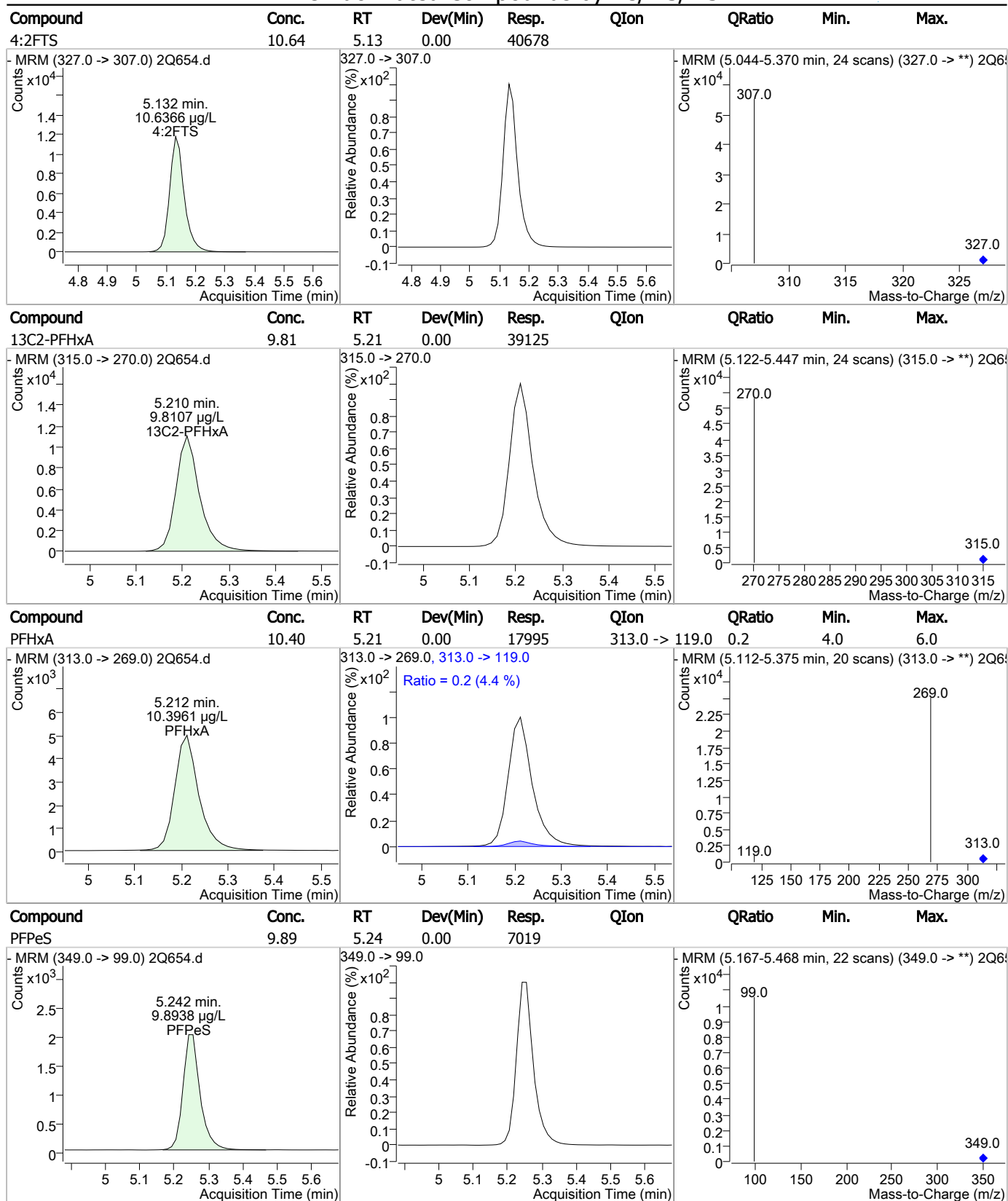
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	151398	20.00 µg/L	0.013
13C2-PFDoDA	10.676	615.0 -> 570.0	90119	20.00 µg/L	0.013
13C2-PFOA	6.651	415.0 -> 370.0	75500	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74532	20.00 µg/L	0.000
13C4-PFOS	7.214	503.0 -> 80.0	56977	20.00 µg/L	0.014
d3-MeFOSAA	7.474	573.0 -> 419.0	34214	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.982	515.0 -> 470.0	51879	9.82 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.1%	
13C2-PFHxA	5.210	315.0 -> 270.0	39125	9.81 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 49.1%	
d5-EtFOSAA	7.597	589.0 -> 419.0	8943	11.08 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 55.4%	
Target Compounds					
					QValue
4:2FTS	5.132	327.0 -> 307.0	40678	10.64 µg/L	100
6:2FTS	6.649	427.0 -> 407.0	79916	10.92 µg/L	100
8:2FTS	8.102	527.0 -> 507.0	128092	10.57 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	7765	10.22 µg/L	100
FOSA	6.986	498.0 -> 78.0	18892	10.27 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	10408	11.32 µg/L	100
PFBA	2.940	213.0 -> 169.0	19476	9.81 µg/L	100
PFBS	4.353	299.0 -> 80.0	22215	9.77 µg/L	100
PFDA	7.971	513.0 -> 469.0	36869	9.88 µg/L	100
PFDoDA	10.670	613.0 -> 569.0	41408	10.74 µg/L	100
PFDS	9.025	599.0 -> 80.0	15632	10.55 µg/L	100
PFHpA	5.986	363.0 -> 319.0	53261	10.29 µg/L	# 93
PFHpS	6.607	449.0 -> 80.0	23423	9.71 µg/L	100
PFHxA	5.212	313.0 -> 269.0	17995	10.40 µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	23060	9.69 µg/L	m 94
PFNA	7.269	463.0 -> 419.0	33687	9.99 µg/L	98
PFNS	7.867	549.0 -> 99.0	14200	9.87 µg/L	100
PFOA	6.639	413.0 -> 369.0	31431	10.02 µg/L	99
PFOS	7.201	499.0 -> 80.0	32188	9.79 µg/L	m 85
PFPeA	4.238	263.0 -> 219.0	56336	9.96 µg/L	100
PFPeS	5.242	349.0 -> 99.0	7019	9.89 µg/L	100
PFTeDA	12.928	713.0 -> 669.0	19571	10.91 µg/L	100
PFTTrDA	11.865	663.0 -> 619.0	35228	10.85 µg/L	100
PFUnDA	9.269	563.0 -> 519.0	39980	10.11 µg/L	100

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

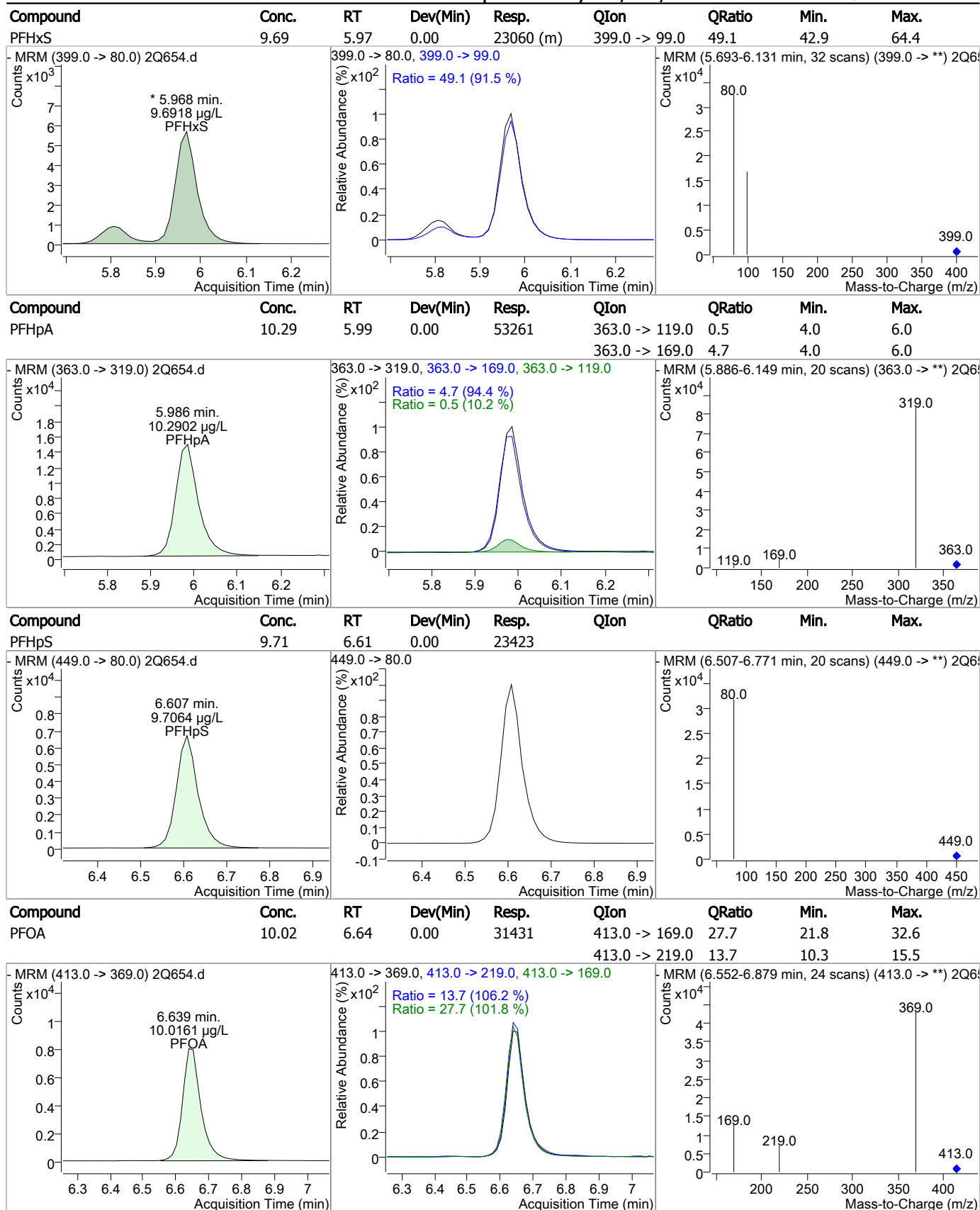
Perfluorinated Compounds by LC/MS/MS



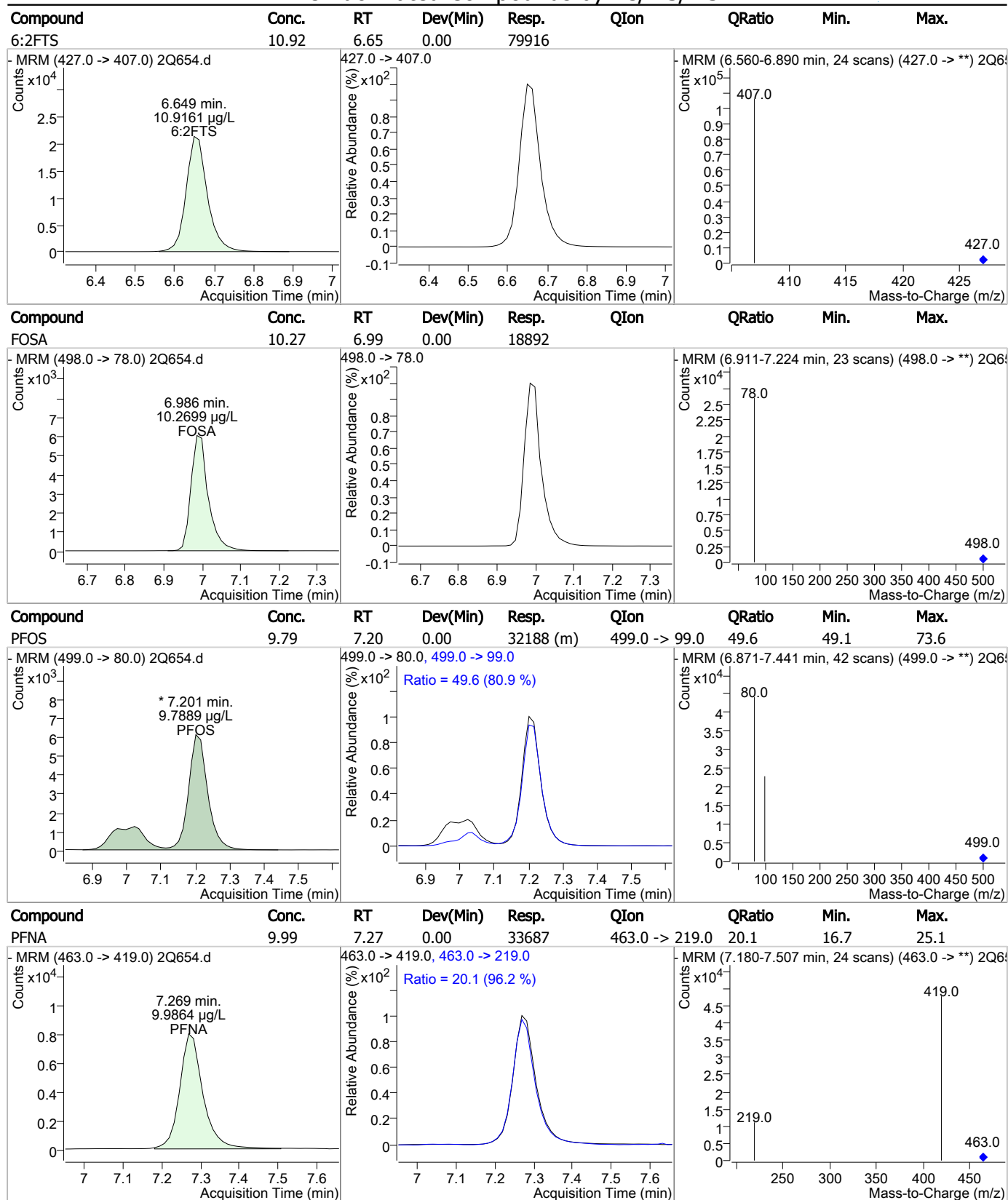
Perfluorinated Compounds by LC/MS/MS



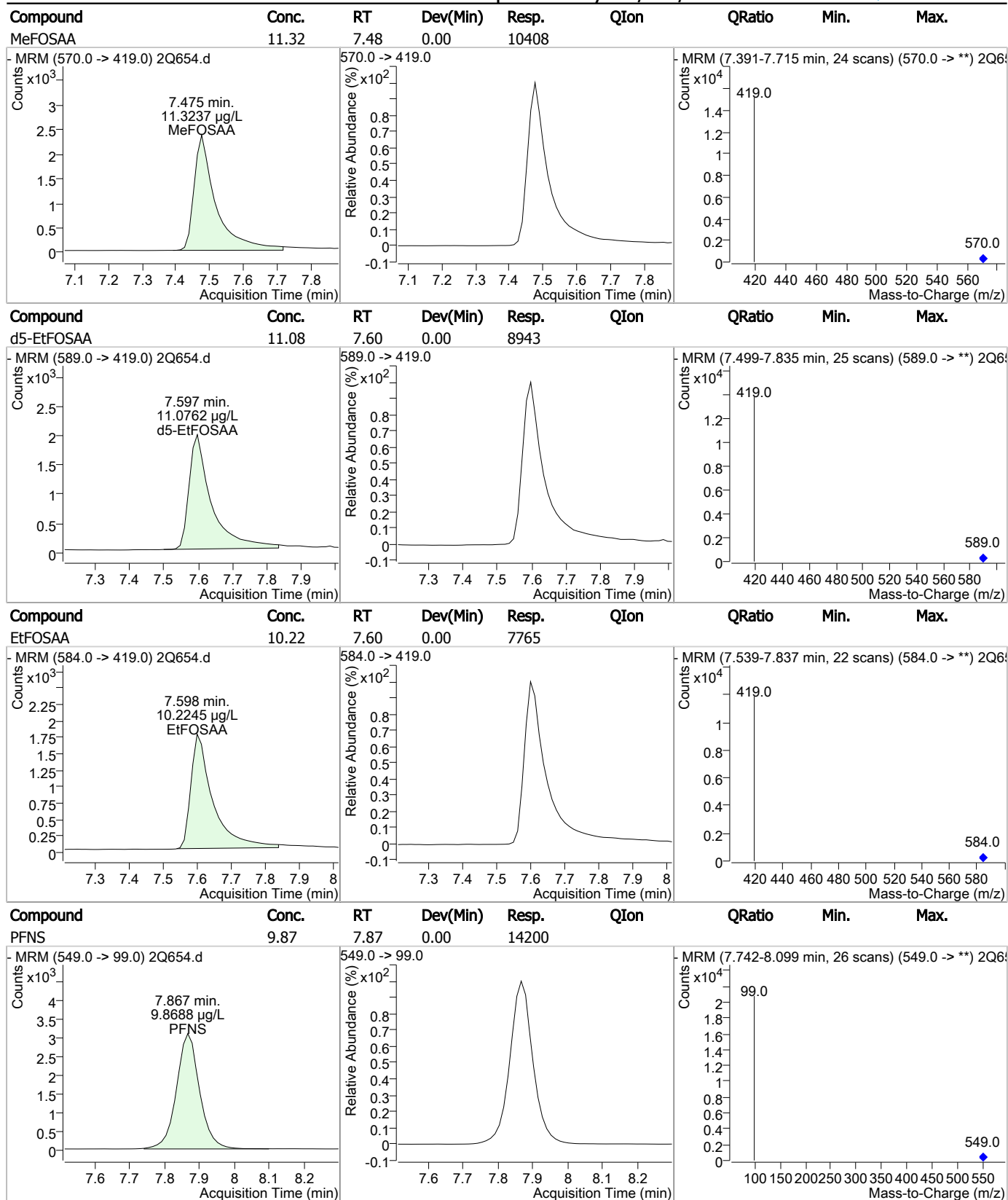
Perfluorinated Compounds by LC/MS/MS



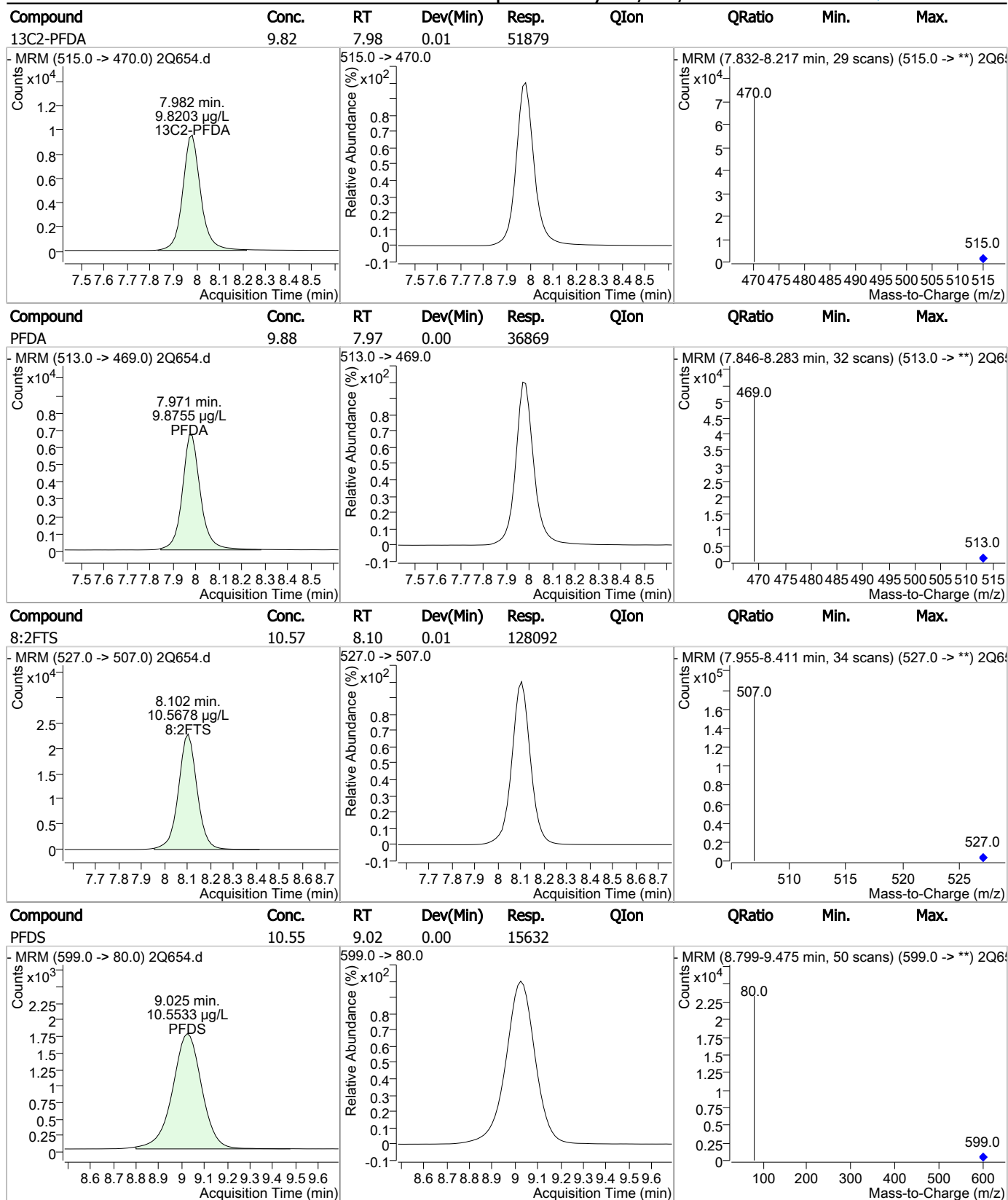
Perfluorinated Compounds by LC/MS/MS



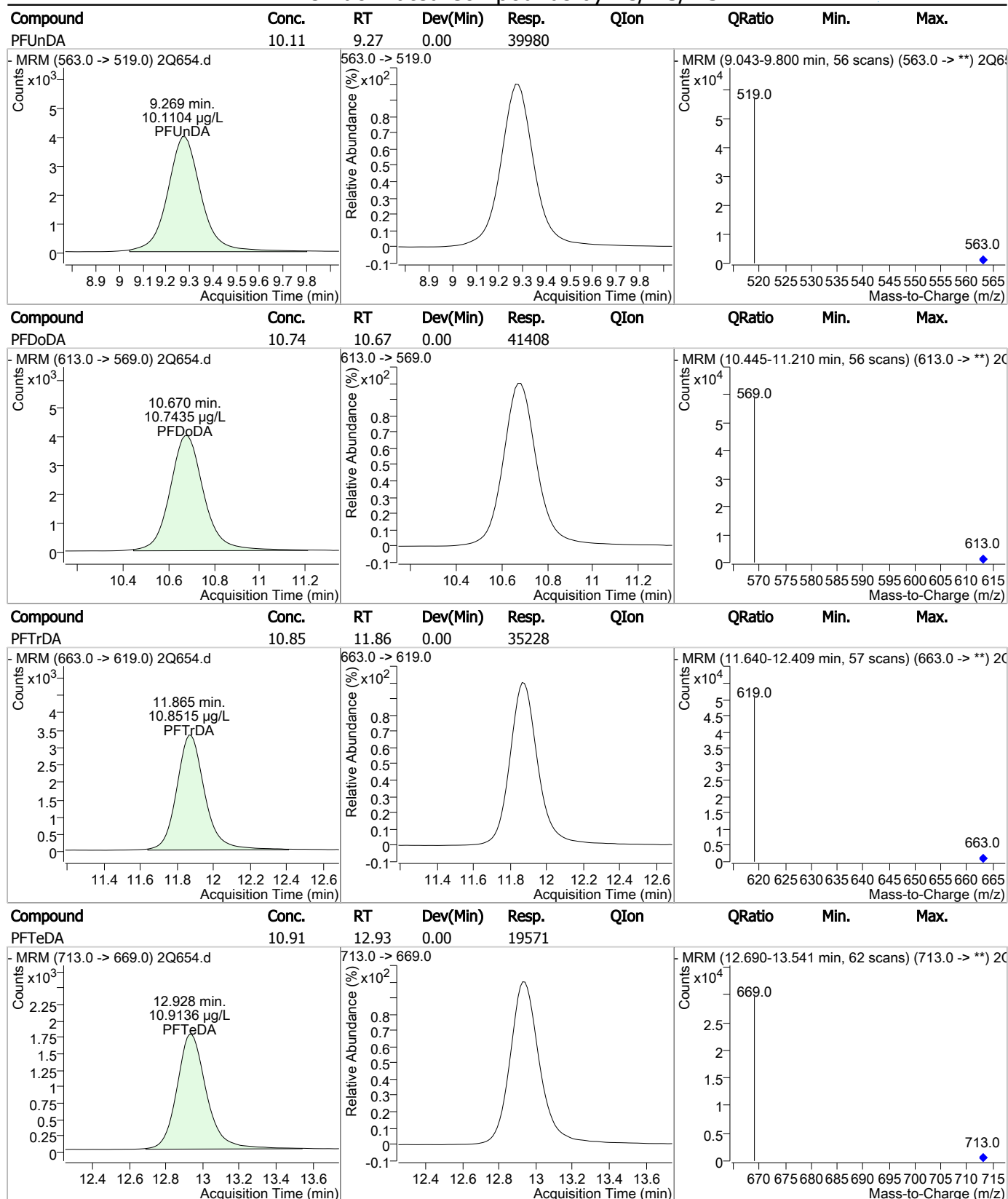
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q654.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 12:53

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

7.5.4.1
7

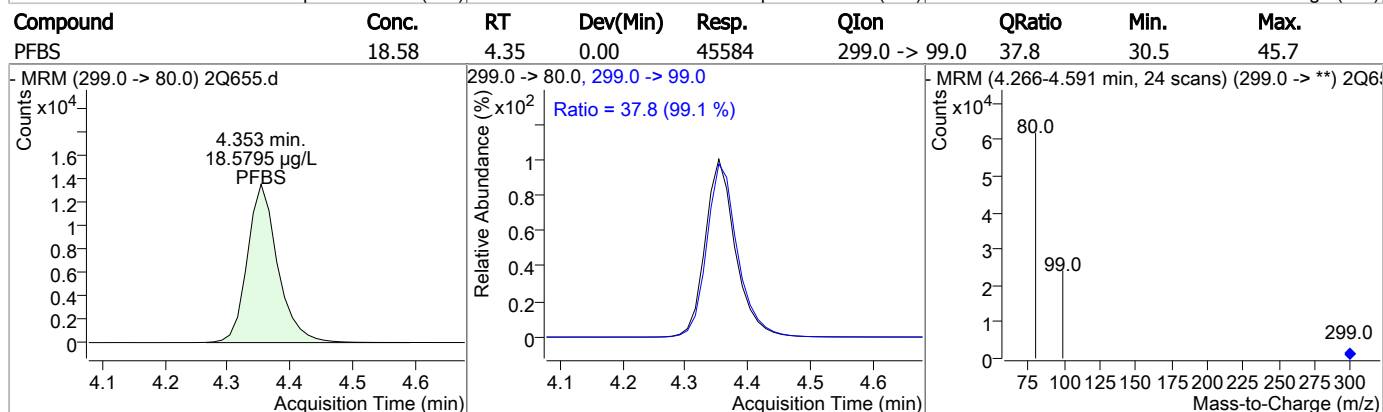
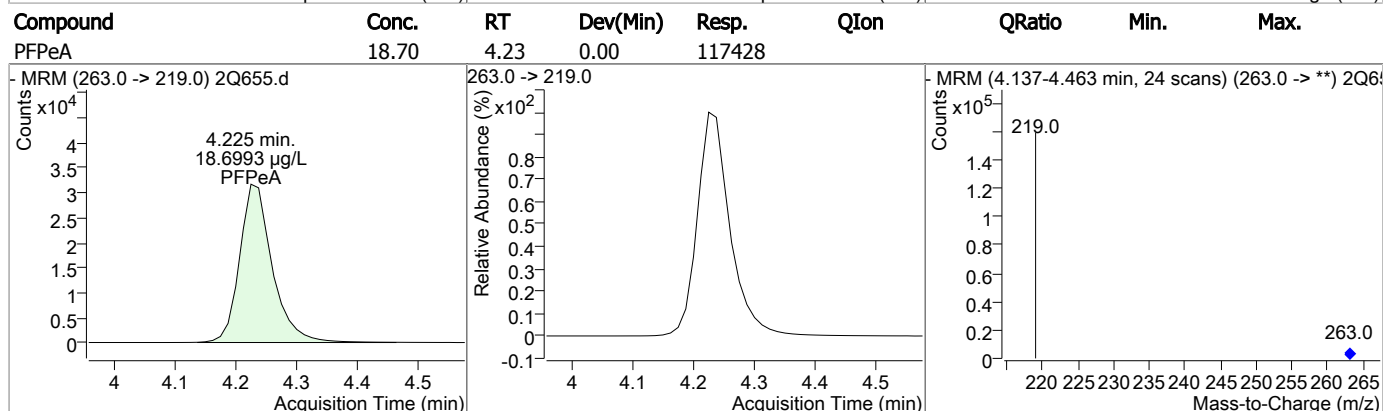
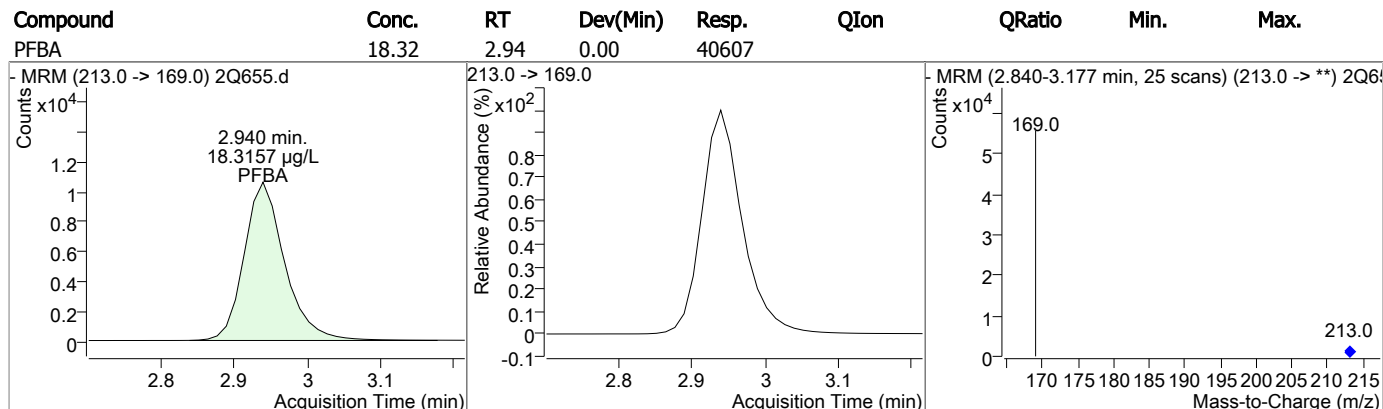
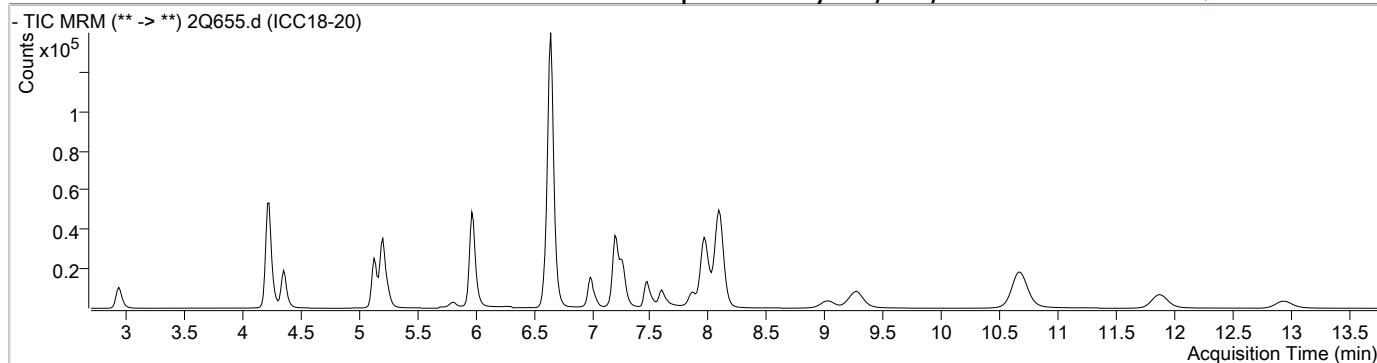
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q655.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 1:13:18 PM
 Sample Name : ICC18-20
 Vial : Vial 6
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

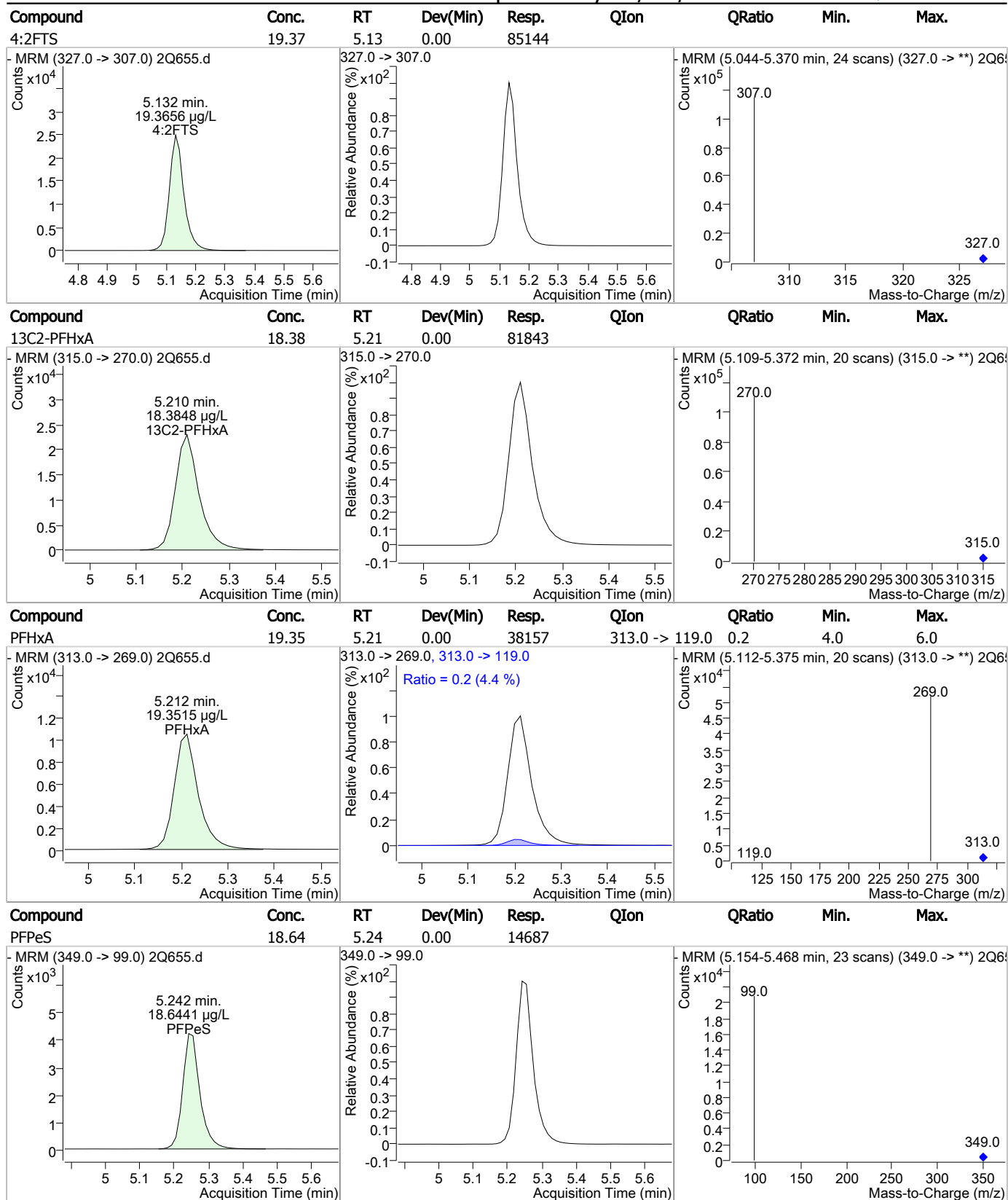
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.648	429.0 -> 409.0	174056	20.00 µg/L	0.000
13C2-PFDoDA	10.664	615.0 -> 570.0	101125	20.00 µg/L	0.000
13C2-PFOA	6.637	415.0 -> 370.0	84279	20.00 µg/L	0.000
13C3-PFPeA	4.234	266.0 -> 222.0	82762	20.00 µg/L	0.000
13C4-PFOS	7.199	503.0 -> 80.0	61486	20.00 µg/L	0.000
d3-MeFOSAA	7.474	573.0 -> 419.0	36374	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	7.969	515.0 -> 470.0	107957	18.31 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 91.5%		
13C2-PFHxA	5.210	315.0 -> 270.0	81843	18.38 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 91.9%		
d5-EtFOSAA	7.597	589.0 -> 419.0	18459	20.56 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 102.8%		
Target Compounds					QValue
4:2FTS	5.132	327.0 -> 307.0	85144	19.37 µg/L	100
6:2FTS	6.649	427.0 -> 407.0	169510	20.14 µg/L	100
8:2FTS	8.089	527.0 -> 507.0	269915	19.37 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	15926	19.22 µg/L	100
FOSA	6.986	498.0 -> 78.0	38302	19.58 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	21165	20.72 µg/L	100
PFBA	2.940	213.0 -> 169.0	40607	18.32 µg/L	100
PFBS	4.353	299.0 -> 80.0	45584	18.58 µg/L	99
PFDA	7.971	513.0 -> 469.0	75901	18.21 µg/L	100
PFDoDA	10.670	613.0 -> 569.0	86004	19.49 µg/L	100
PFDS	9.025	599.0 -> 80.0	32276	19.70 µg/L	100
PFHpA	5.986	363.0 -> 319.0	110187	18.84 µg/L	# 93
PFHpS	6.607	449.0 -> 80.0	48655	18.68 µg/L	100
PFHxA	5.212	313.0 -> 269.0	38157	19.35 µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	47438	18.47 µg/L	m 95
PFNA	7.269	463.0 -> 419.0	67724	17.99 µg/L	98
PFNS	7.867	549.0 -> 99.0	28984	18.67 µg/L	100
PFOA	6.639	413.0 -> 369.0	64840	18.51 µg/L	98
PFOS	7.201	499.0 -> 80.0	65253	18.39 µg/L	m 86
PFPeA	4.225	263.0 -> 219.0	117428	18.70 µg/L	100
PFPeS	5.242	349.0 -> 99.0	14687	18.64 µg/L	100
PFTeDA	12.928	713.0 -> 669.0	40066	19.47 µg/L	100
PFTTrDA	11.865	663.0 -> 619.0	73047	19.55 µg/L	100
PFUnDA	9.269	563.0 -> 519.0	83071	18.72 µg/L	100

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

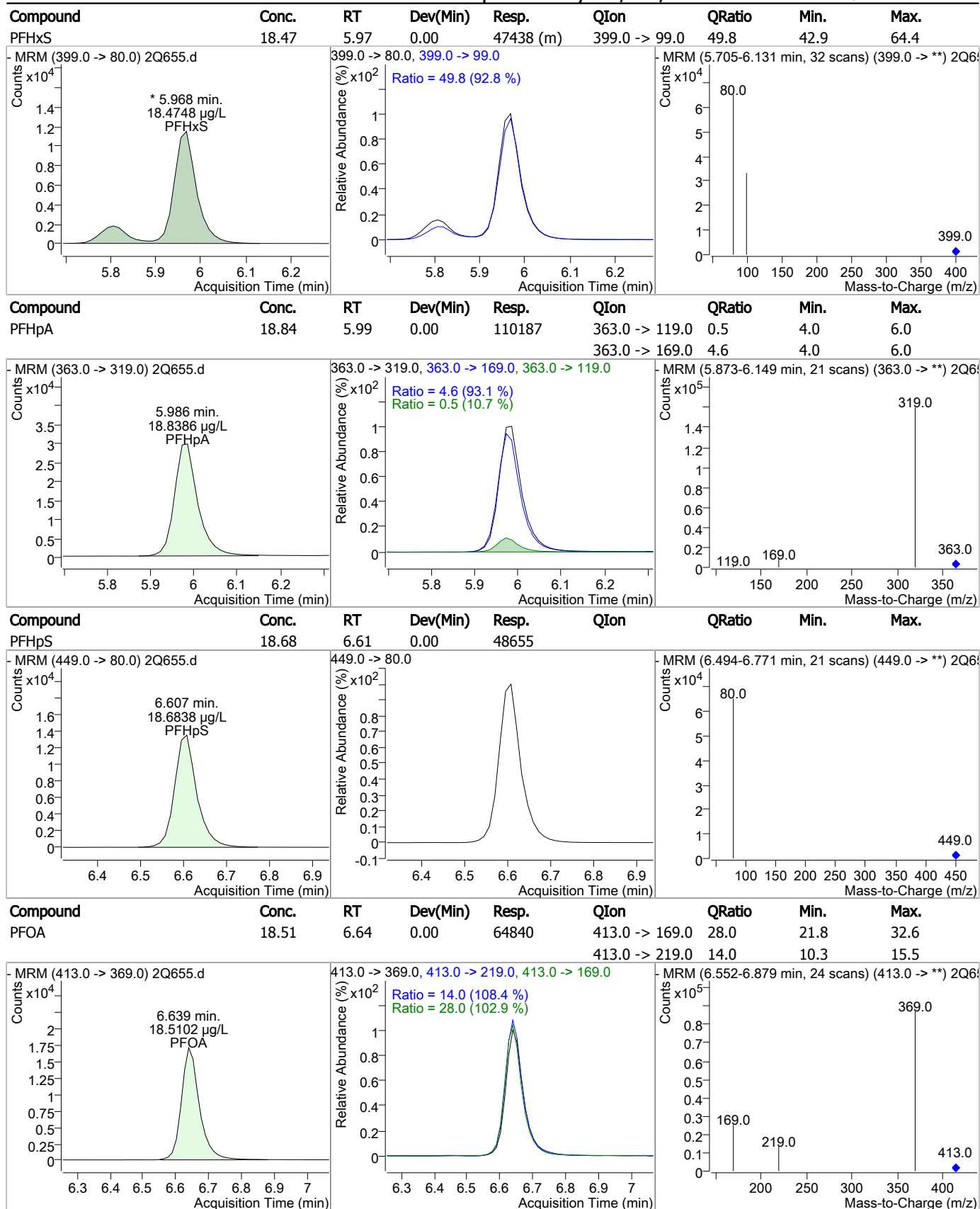
Perfluorinated Compounds by LC/MS/MS



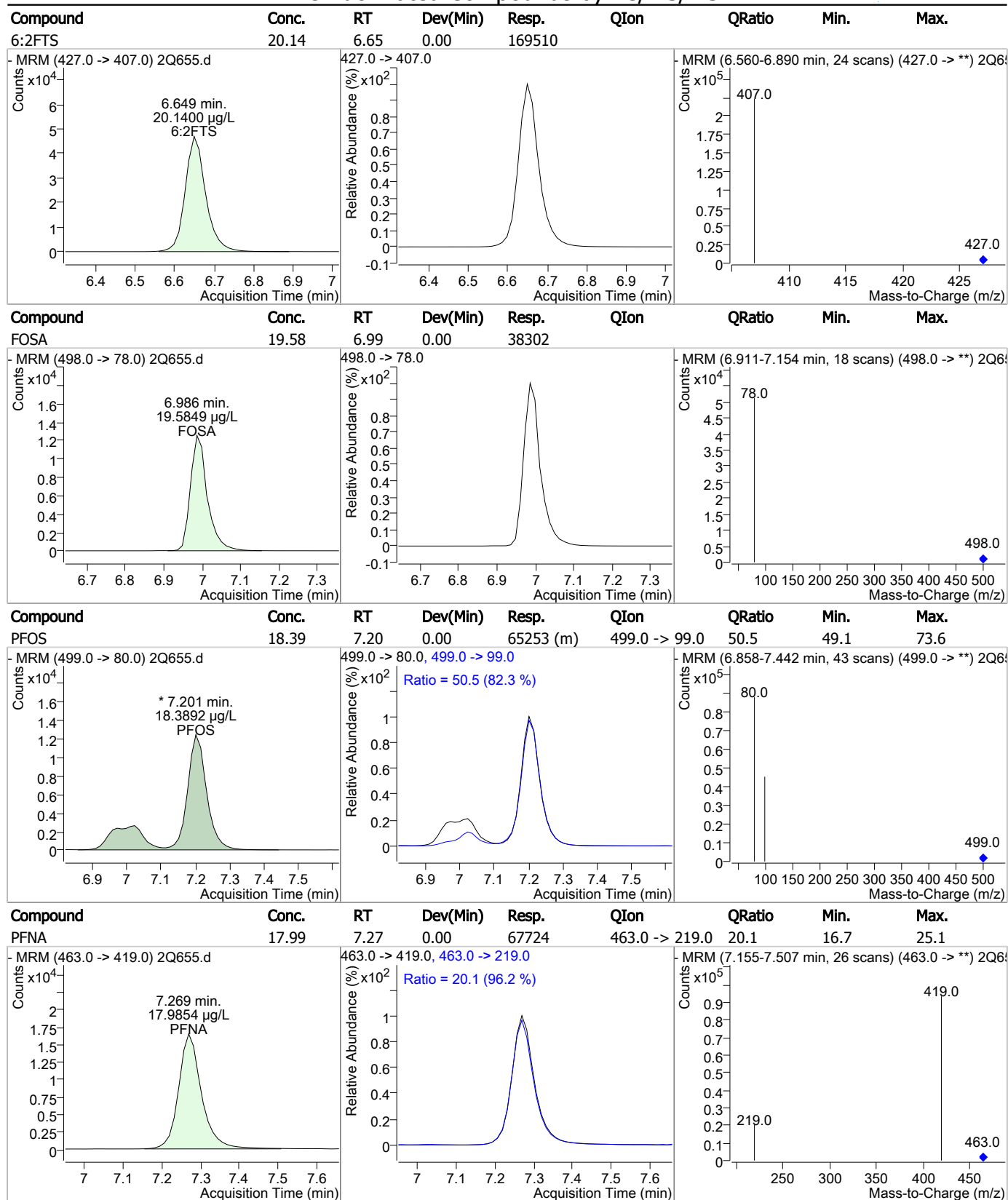
Perfluorinated Compounds by LC/MS/MS



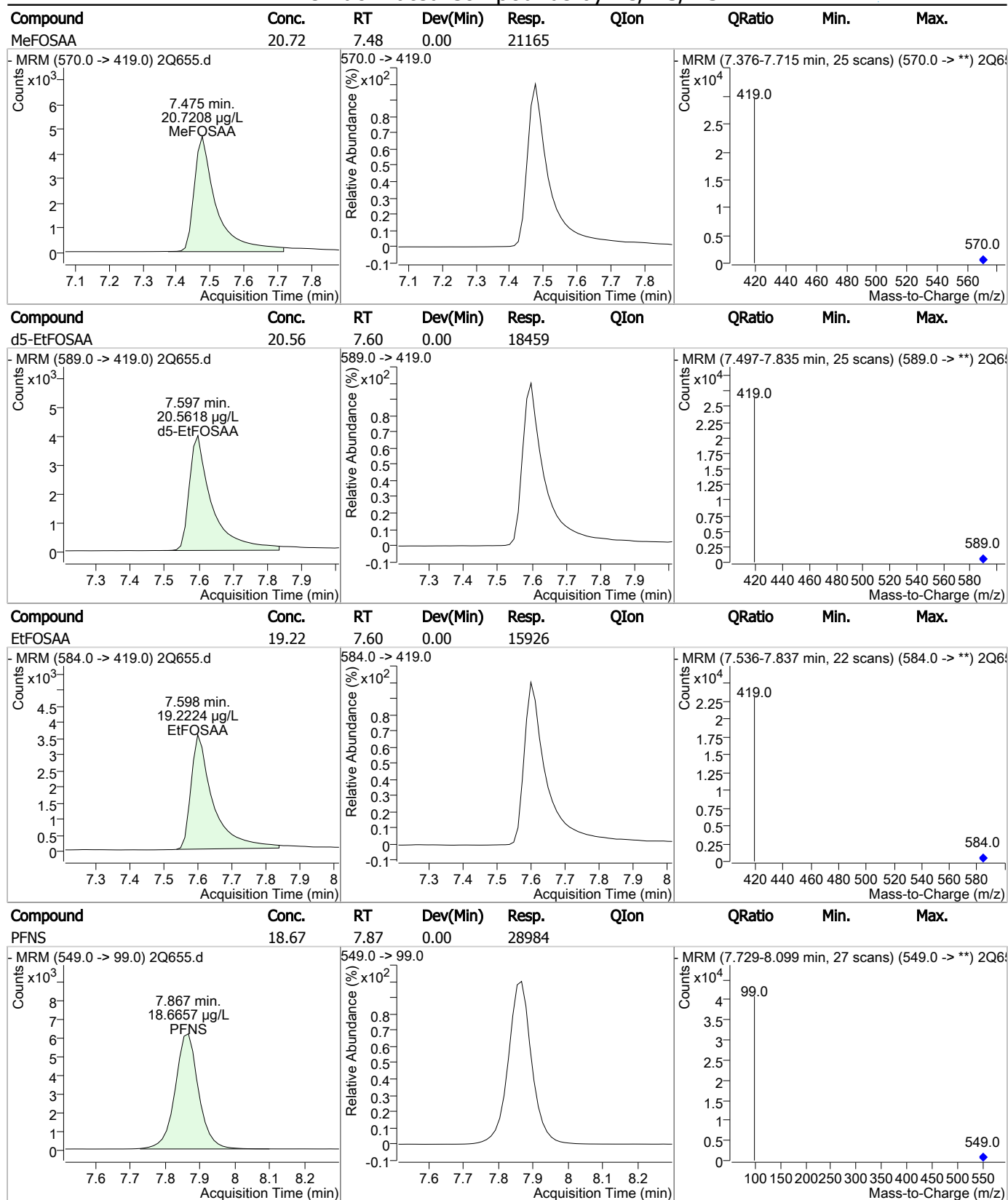
Perfluorinated Compounds by LC/MS/MS



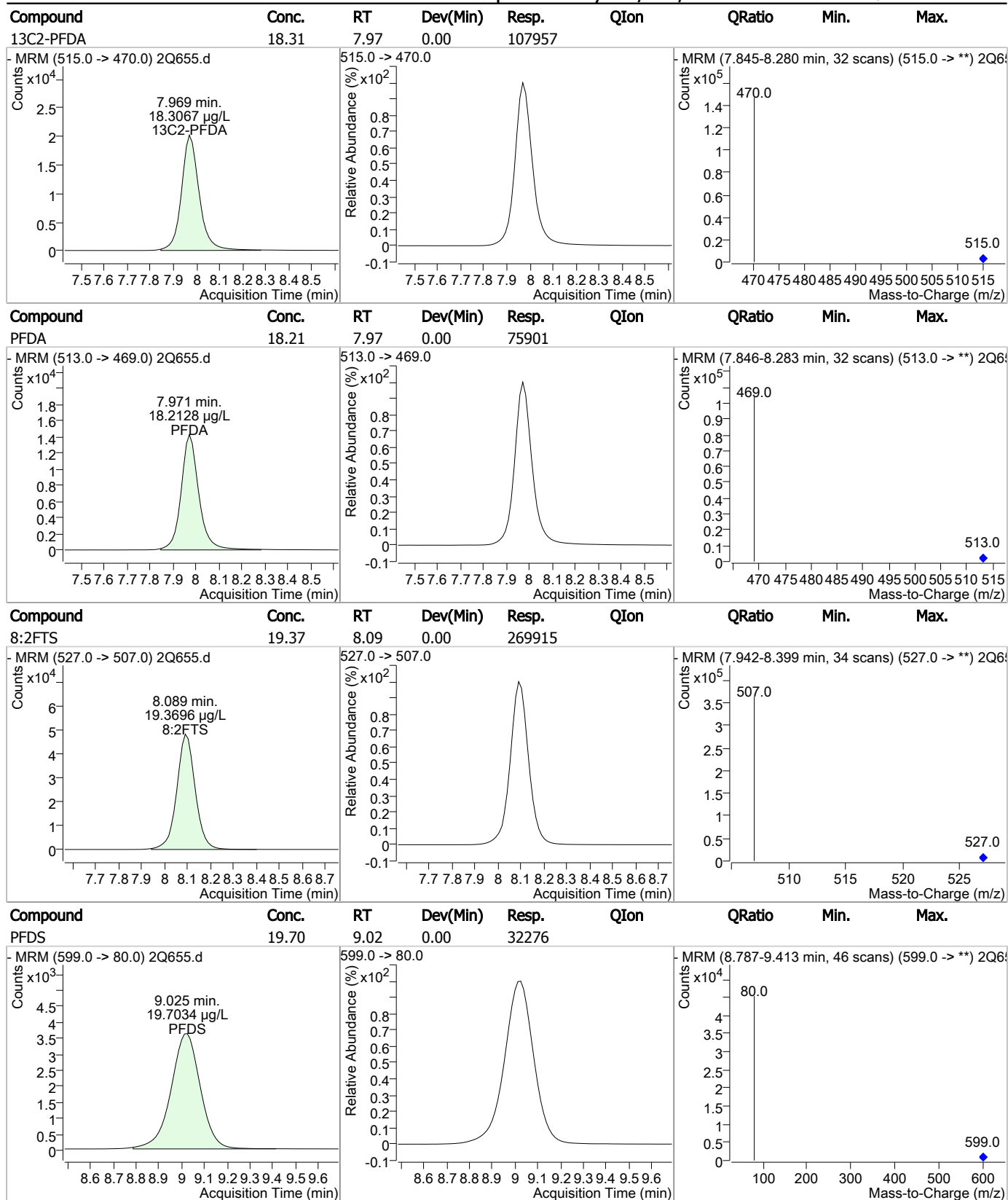
Perfluorinated Compounds by LC/MS/MS



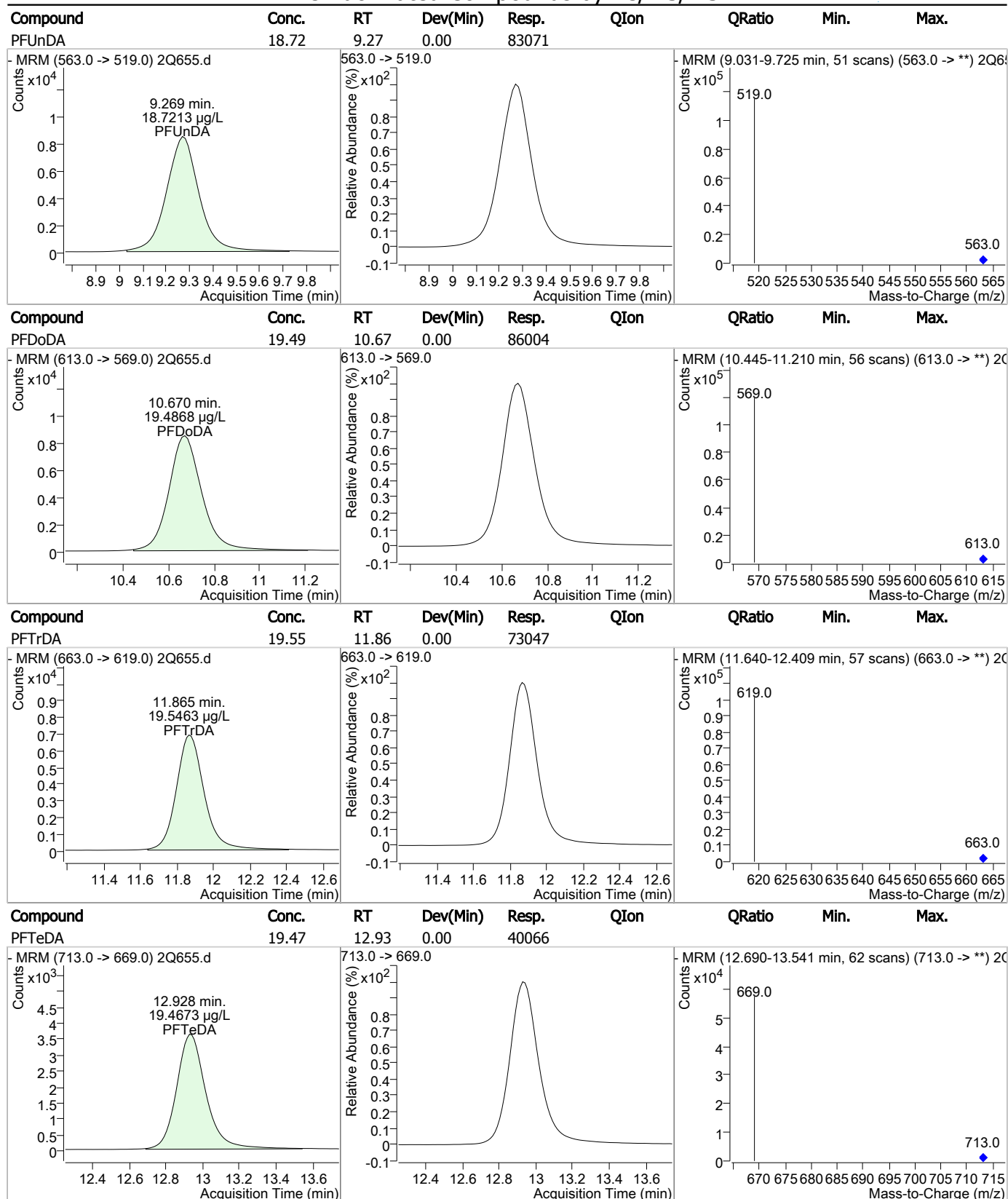
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-ICC18

Method: EPA 537 MOD

Lab FileID: 2Q655.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 13:13

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

7.5.5.1
7

Manual Integrations
APPROVED
(compounds with "m" flag)

Mike Eger
04/21/17 11:22

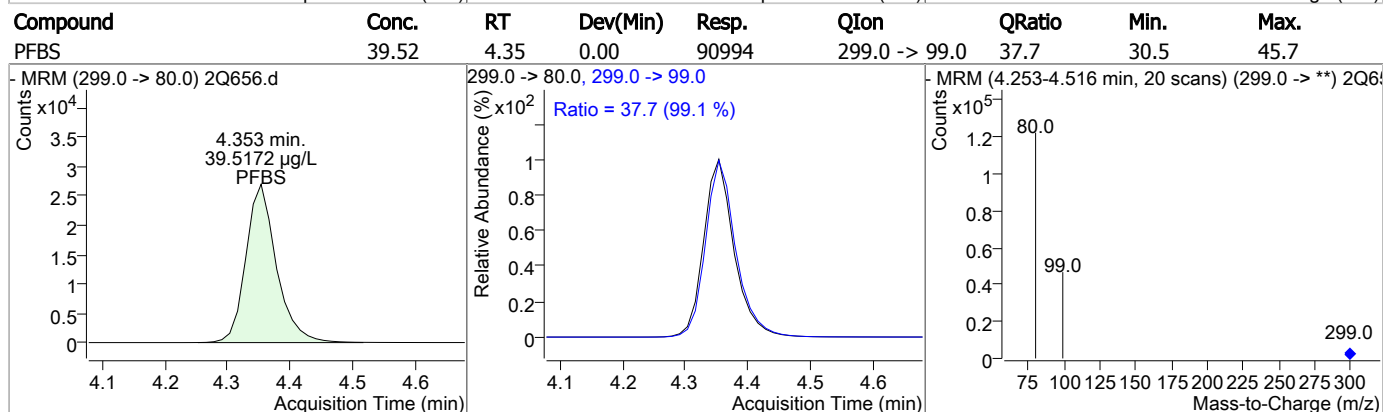
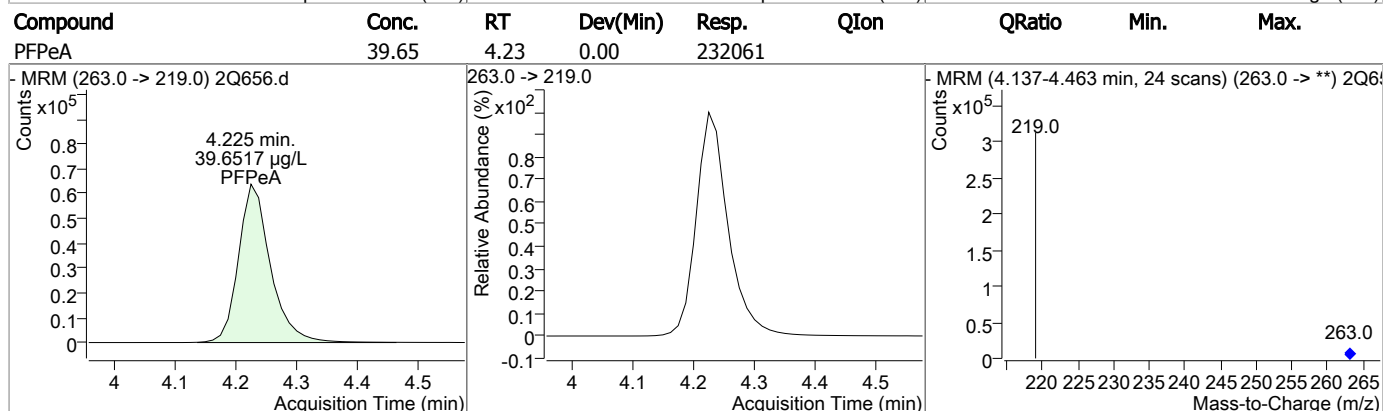
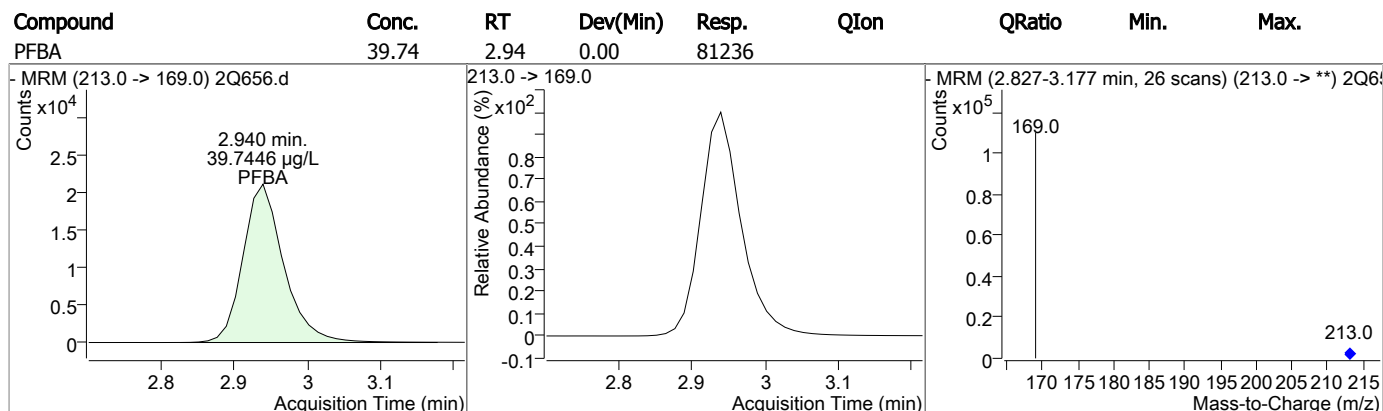
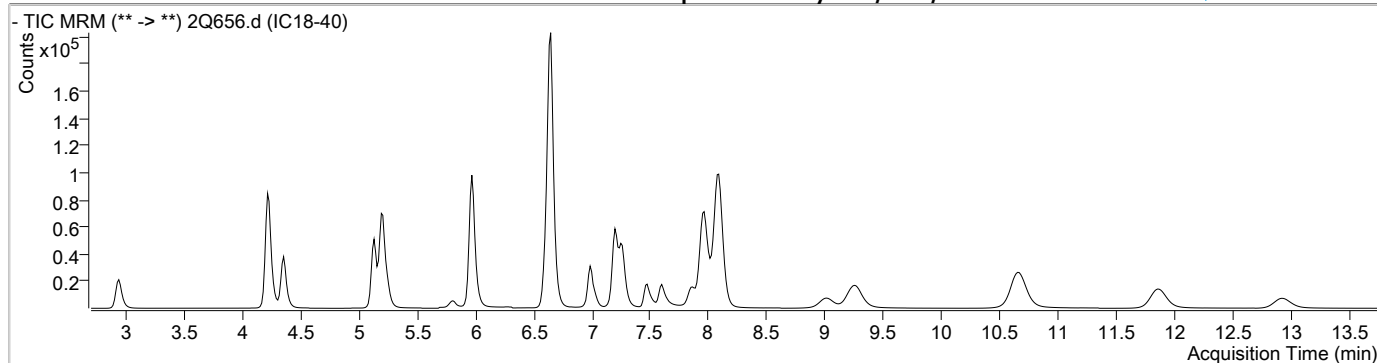
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q656.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/20/2017 1:33:02 PM
Sample Name : IC18-40
Vial : Vial 7
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : S2Q18.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

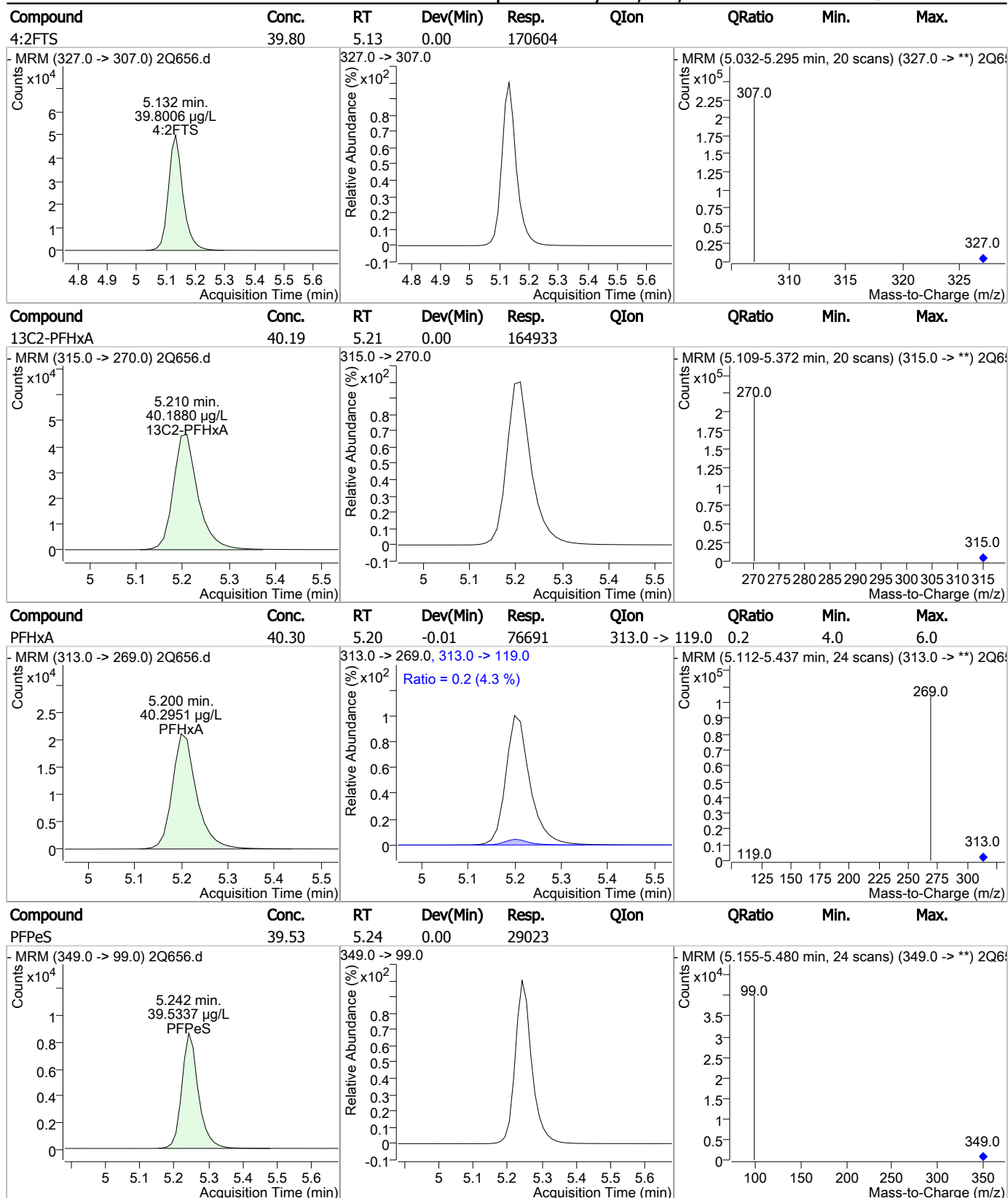
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.648	429.0 -> 409.0	169693	20.00	µg/L	0.000
13C2-PFDoDA	10.664	615.0 -> 570.0	95637	20.00	µg/L	0.000
13C2-PFOA	6.637	415.0 -> 370.0	77698	20.00	µg/L	0.000
13C3-PFPeA	4.222	266.0 -> 222.0	77130	20.00	µg/L	-0.013
13C4-PFOS	7.199	503.0 -> 80.0	57707	20.00	µg/L	0.000
d3-MeFOSAA	7.462	573.0 -> 419.0	37333	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-PFDA	7.969	515.0 -> 470.0	216770	39.87	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 199.4%			
13C2-PFHxA	5.210	315.0 -> 270.0	164933	40.19	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 200.9%			
d5-EtFOSAA	7.597	589.0 -> 419.0	37670	37.86	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 189.3%			
Target Compounds						QValue
4:2FTS	5.132	327.0 -> 307.0	170604	39.80	µg/L	100
6:2FTS	6.649	427.0 -> 407.0	326949	39.84	µg/L	100
8:2FTS	8.089	527.0 -> 507.0	539797	39.73	µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	33444	37.40	µg/L	100
FOSA	6.986	498.0 -> 78.0	76229	37.98	µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	42603	37.69	µg/L	100
PFBA	2.940	213.0 -> 169.0	81236	39.74	µg/L	100
PFBS	4.353	299.0 -> 80.0	90994	39.52	µg/L	99
PFDA	7.959	513.0 -> 469.0	151294	39.38	µg/L	100
PFDoDA	10.657	613.0 -> 569.0	173937	39.82	µg/L	100
PFDS	9.012	599.0 -> 80.0	64318	39.73	µg/L	100
PFHpA	5.973	363.0 -> 319.0	220762	39.75	µg/L	# 93
PFHpS	6.594	449.0 -> 80.0	96459	39.47	µg/L	100
PFHxA	5.200	313.0 -> 269.0	76691	40.30	µg/L	# 86
PFHxS	5.956	399.0 -> 80.0	94522	39.22	µg/L	m 94
PFNA	7.269	463.0 -> 419.0	137792	39.69	µg/L	98
PFNS	7.854	549.0 -> 99.0	57477	39.44	µg/L	100
PFOA	6.639	413.0 -> 369.0	131759	40.80	µg/L	98
PFOS	7.201	499.0 -> 80.0	131036	39.35	µg/L	m 85
PFPeA	4.225	263.0 -> 219.0	232061	39.65	µg/L	100
PFPeS	5.242	349.0 -> 99.0	29023	39.53	µg/L	100
PFTeDA	12.916	713.0 -> 669.0	81191	39.63	µg/L	100
PFTTrDA	11.852	663.0 -> 619.0	148239	39.63	µg/L	100
PFUnDA	9.256	563.0 -> 519.0	164495	39.20	µg/L	100

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

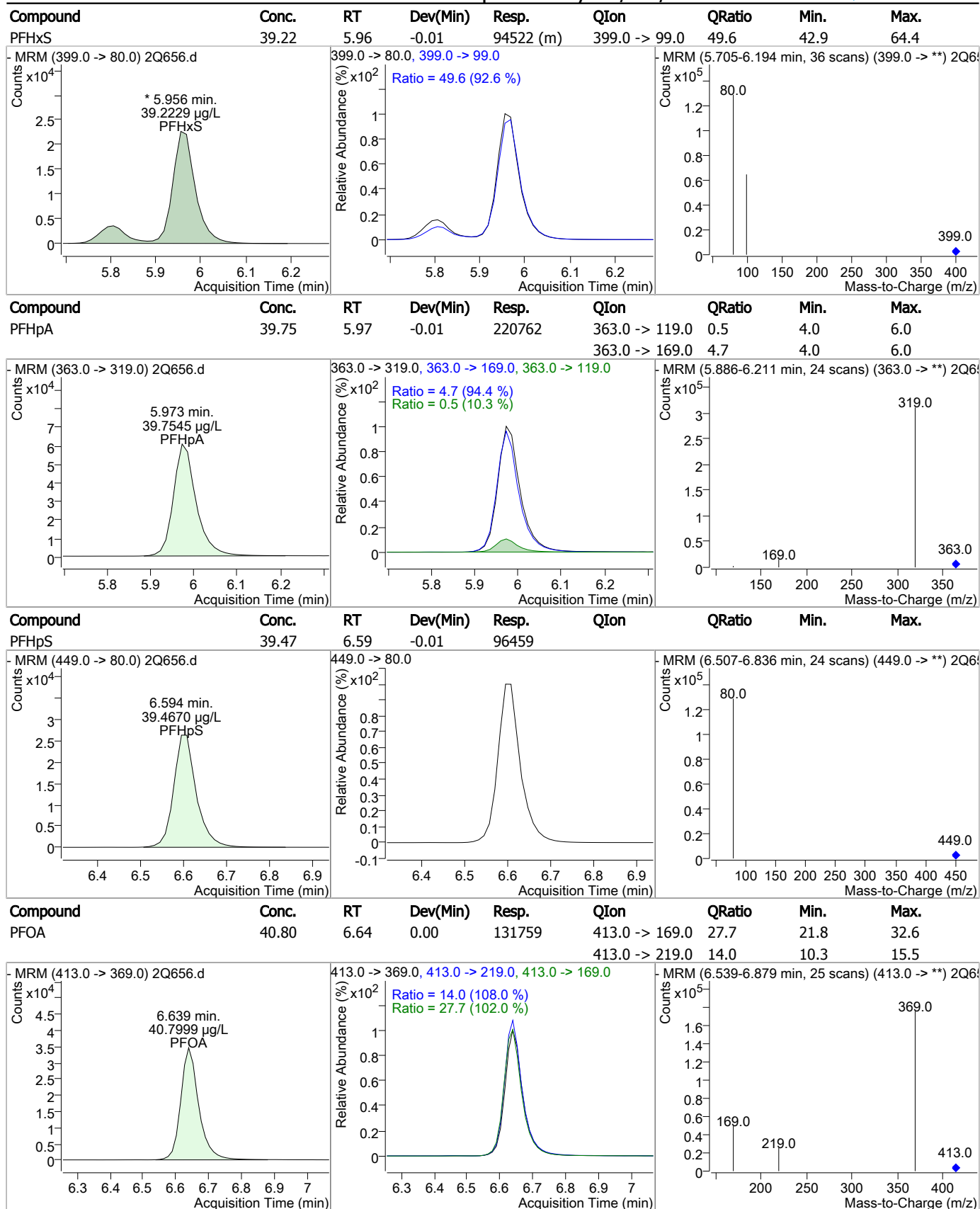
Perfluorinated Compounds by LC/MS/MS



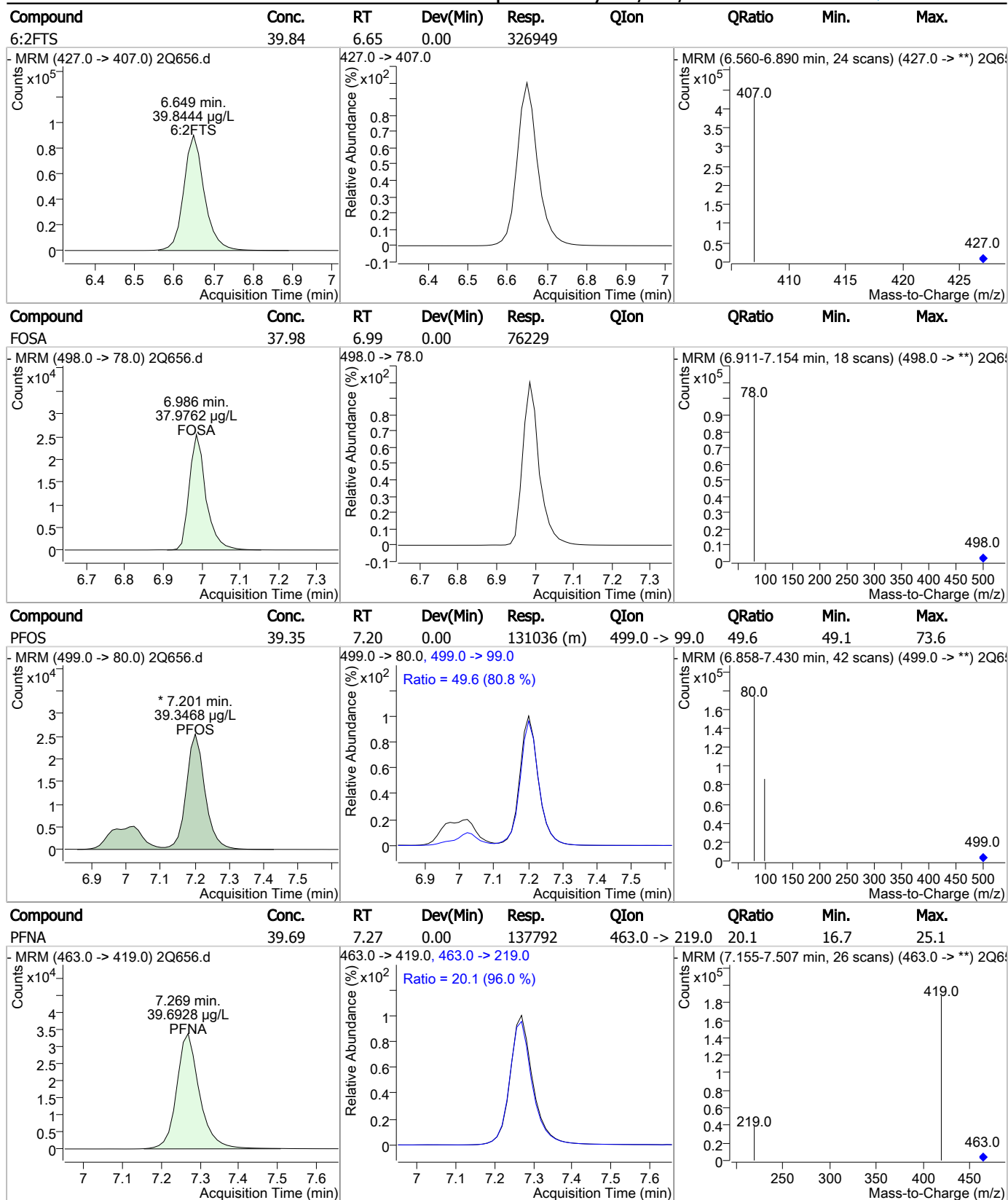
Perfluorinated Compounds by LC/MS/MS



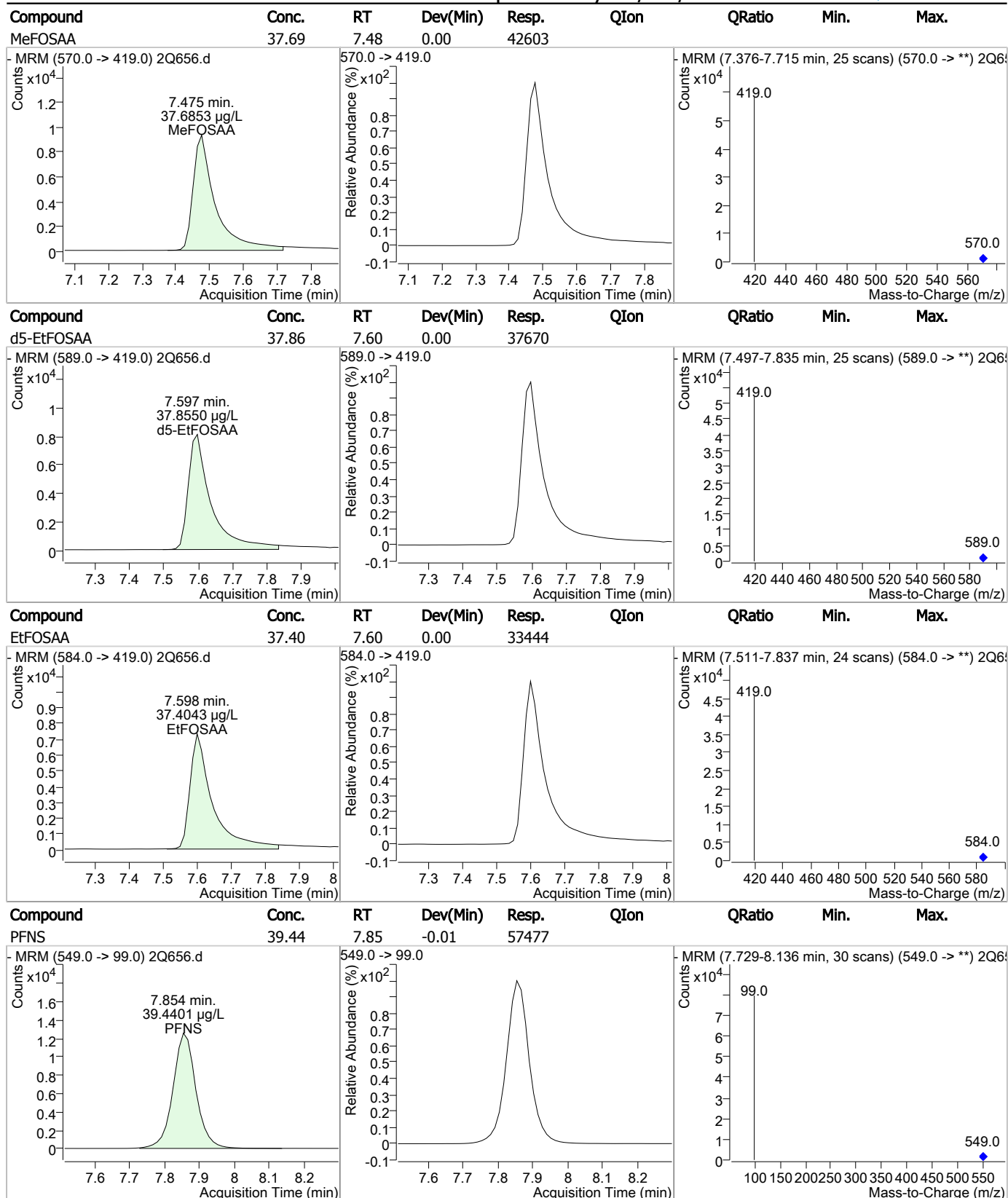
Perfluorinated Compounds by LC/MS/MS



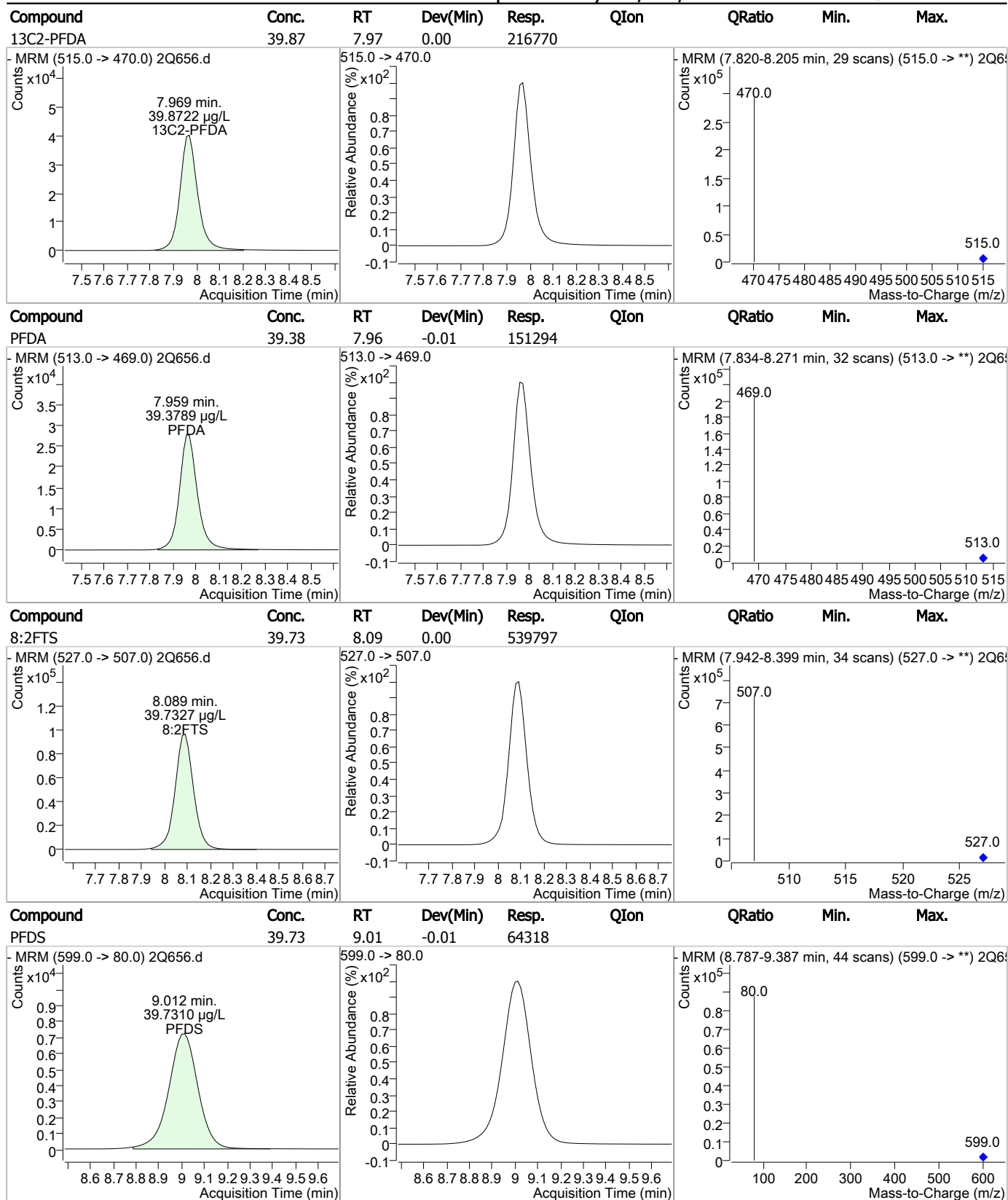
Perfluorinated Compounds by LC/MS/MS



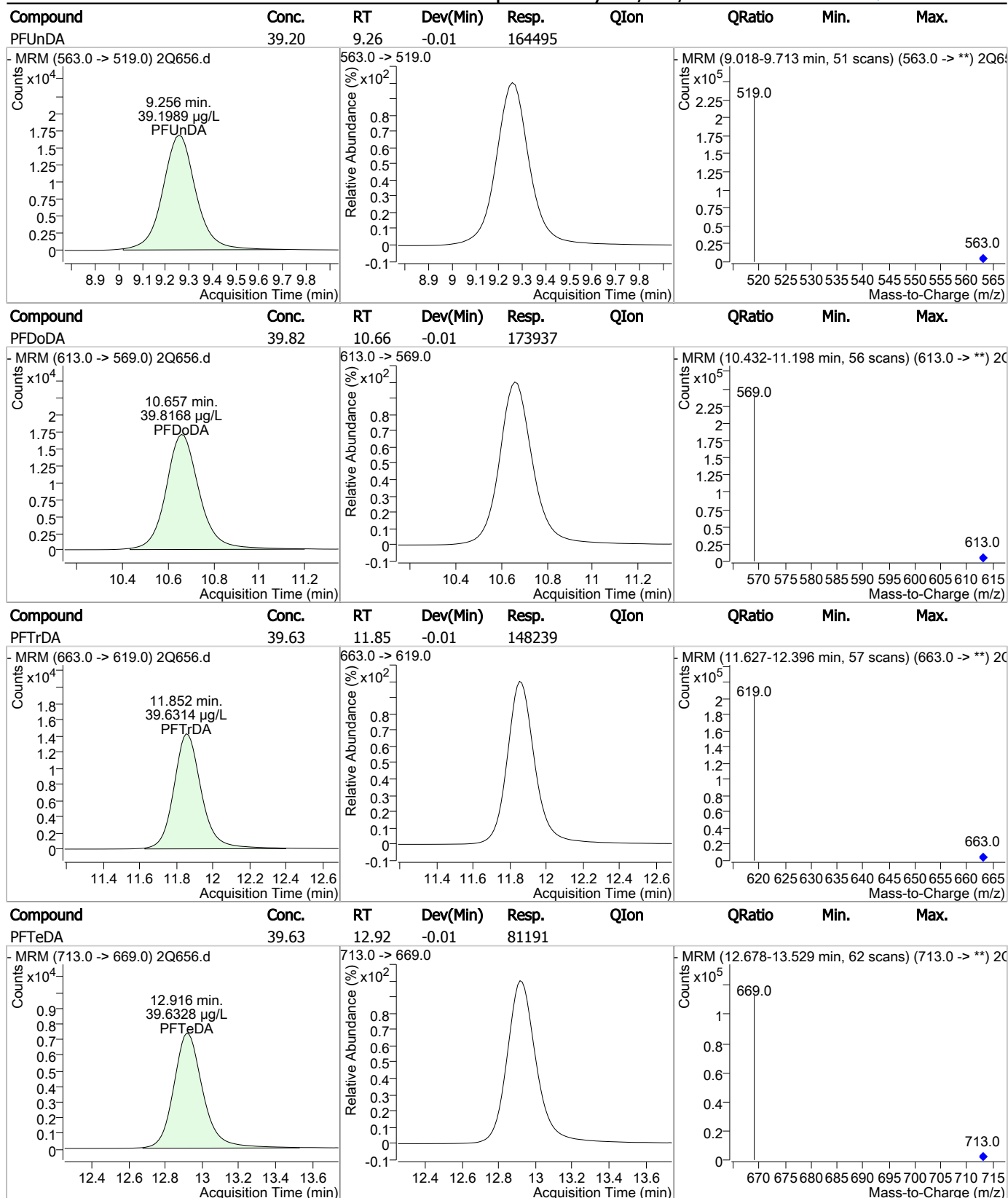
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q656.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 13:33

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

7.5.6.1
7

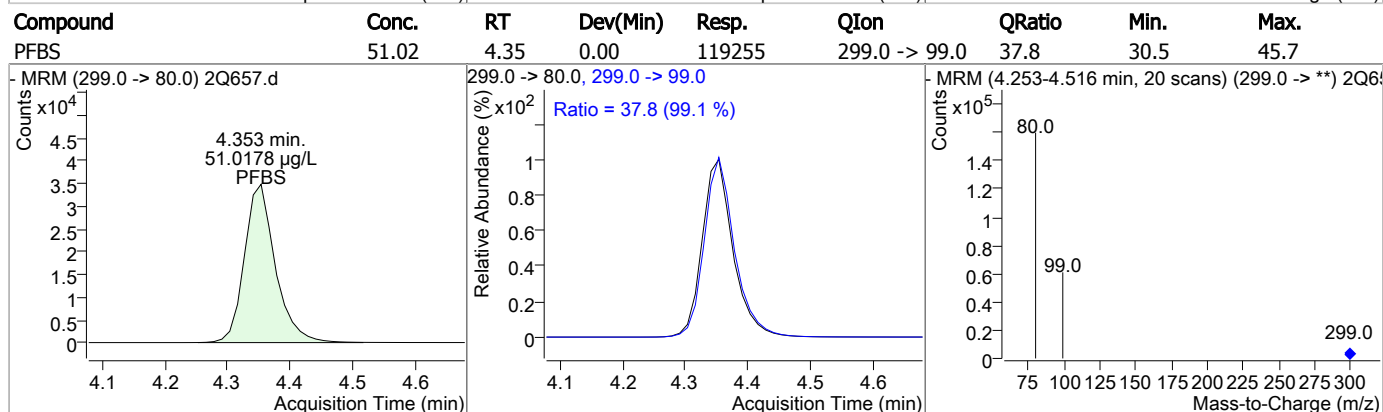
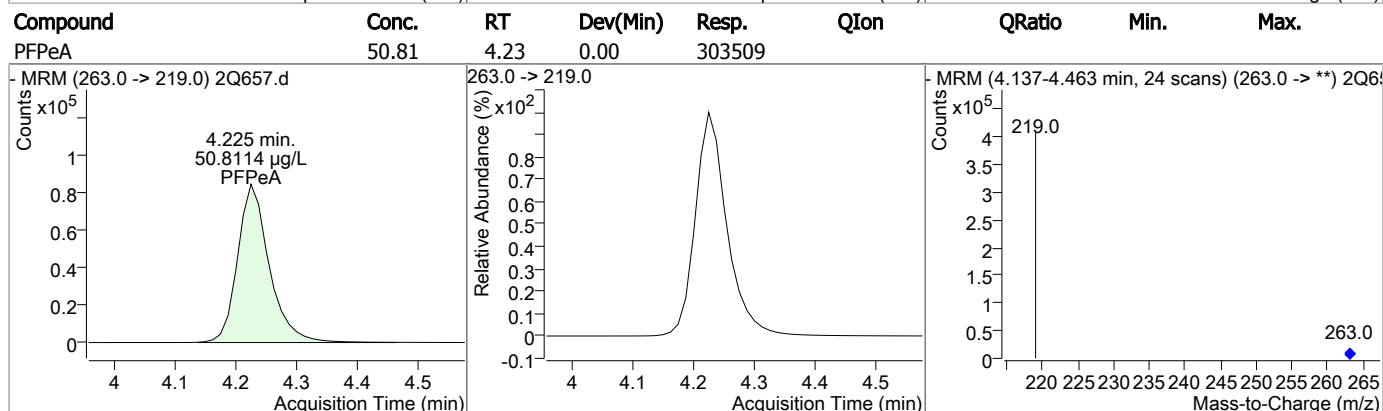
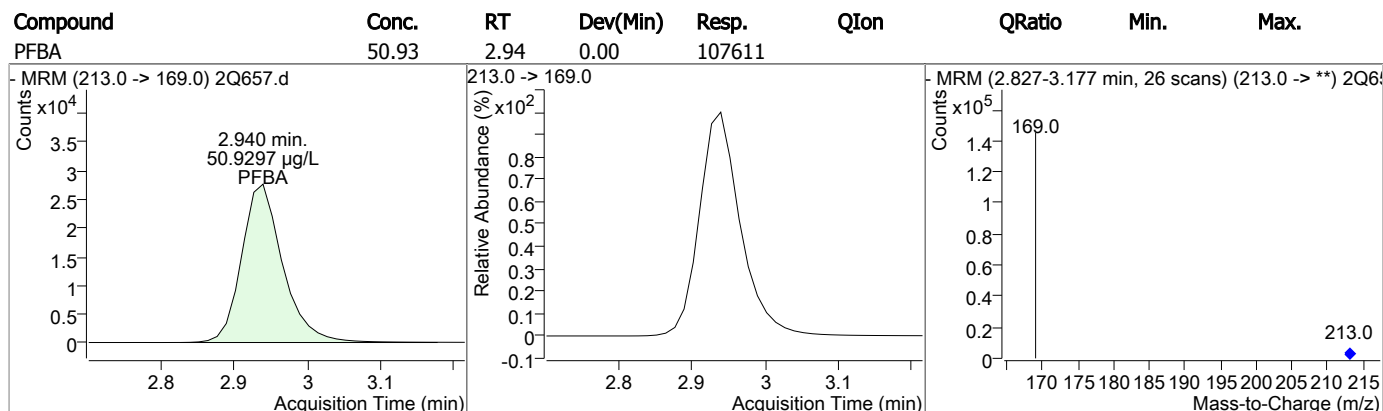
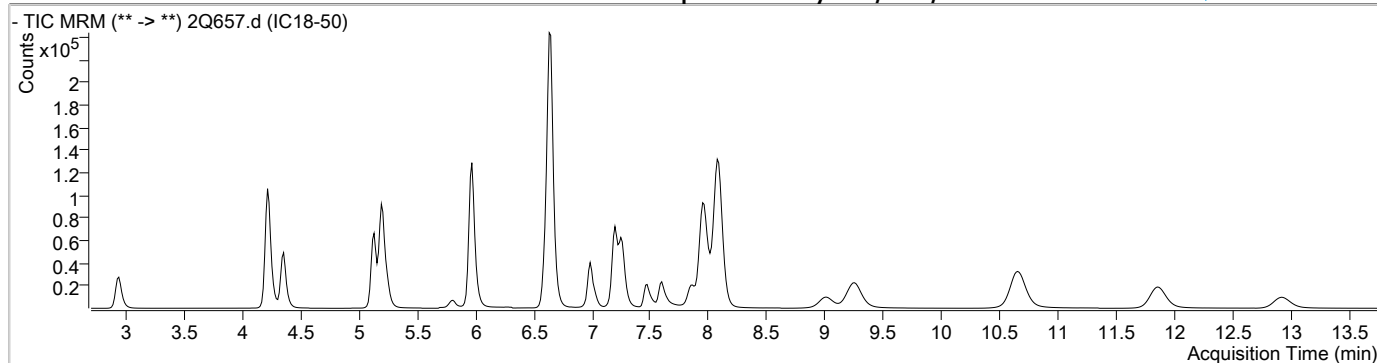
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q657.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 1:53:01 PM
 Sample Name : IC18-50
 Vial : Vial 8
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

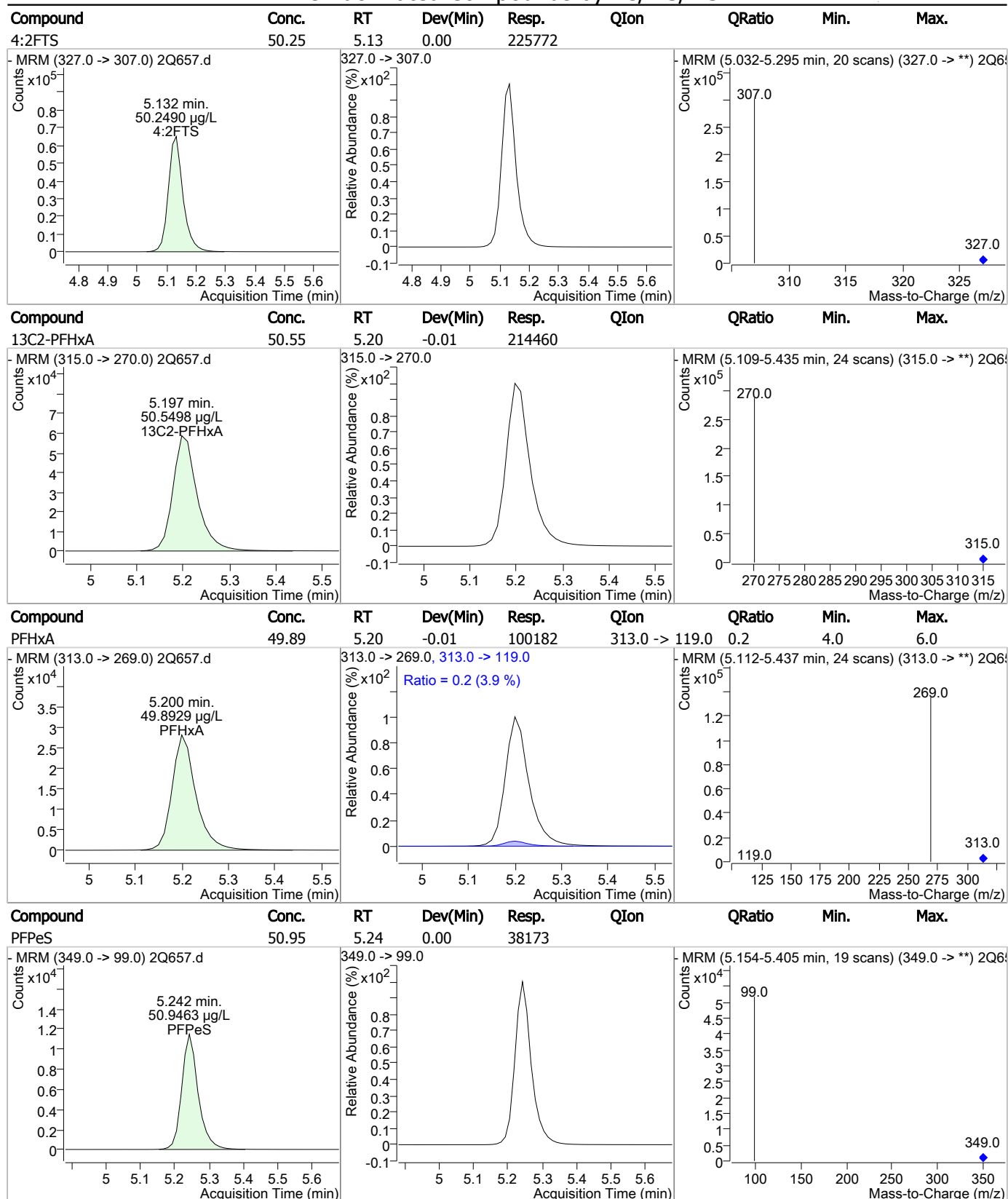
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.648	429.0 -> 409.0	177873	20.00 µg/L	0.000
13C2-PFDoDA	10.651	615.0 -> 570.0	97502	20.00 µg/L	-0.013
13C2-PFOA	6.637	415.0 -> 370.0	80320	20.00 µg/L	0.000
13C3-PFPeA	4.222	266.0 -> 222.0	78721	20.00 µg/L	-0.013
13C4-PFOS	7.199	503.0 -> 80.0	58581	20.00 µg/L	0.000
d3-MeFOSAA	7.462	573.0 -> 419.0	35696	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-PFDA	7.957	515.0 -> 470.0	285676	50.83 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 254.2%	
13C2-PFHxA	5.197	315.0 -> 270.0	214460	50.55 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 252.7%	
d5-EtFOSAA	7.597	589.0 -> 419.0	51446	51.16 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 255.8%	
Target Compounds					
					QValue
4:2FTS	5.132	327.0 -> 307.0	225772	50.25 µg/L	100
6:2FTS	6.649	427.0 -> 407.0	428504	49.82 µg/L	100
8:2FTS	8.077	527.0 -> 507.0	716709	50.33 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	46332	52.13 µg/L	100
FOSA	6.986	498.0 -> 78.0	99247	51.71 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	58587	51.23 µg/L	100
PFBA	2.940	213.0 -> 169.0	107611	50.93 µg/L	100
PFBS	4.353	299.0 -> 80.0	119255	51.02 µg/L	99
PFDA	7.959	513.0 -> 469.0	203528	51.25 µg/L	100
PFDoDA	10.657	613.0 -> 569.0	228436	50.16 µg/L	100
PFDS	9.000	599.0 -> 80.0	84636	50.18 µg/L	100
PFHpA	5.973	363.0 -> 319.0	294462	50.54 µg/L	# 93
PFHpS	6.594	449.0 -> 80.0	126613	51.03 µg/L	100
PFHxA	5.200	313.0 -> 269.0	100182	49.89 µg/L	# 86
PFHxS	5.956	399.0 -> 80.0	125523	51.31 µg/L	m 94
PFNA	7.269	463.0 -> 419.0	183128	51.03 µg/L	98
PFNS	7.854	549.0 -> 99.0	75469	51.01 µg/L	100
PFOA	6.639	413.0 -> 369.0	168435	50.45 µg/L	97
PFOS	7.201	499.0 -> 80.0	173143	51.21 µg/L	#m 84
PFPeA	4.225	263.0 -> 219.0	303509	50.81 µg/L	100
PFPeS	5.242	349.0 -> 99.0	38173	50.95 µg/L	100
PFTeDA	12.916	713.0 -> 669.0	107737	50.26 µg/L	100
PFTTrDA	11.852	663.0 -> 619.0	197227	50.26 µg/L	100
PFUnDA	9.256	563.0 -> 519.0	218740	51.13 µg/L	100

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

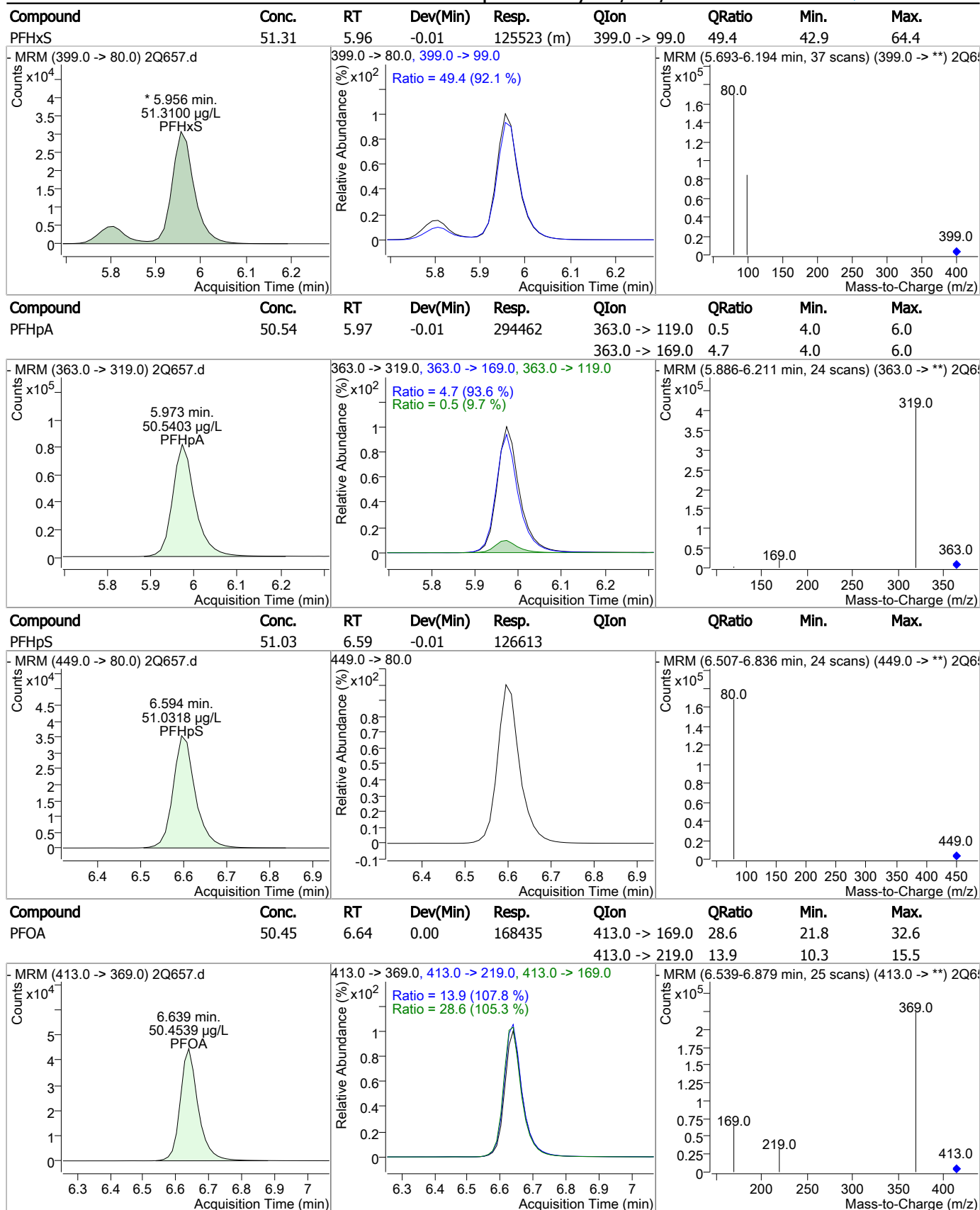
Perfluorinated Compounds by LC/MS/MS



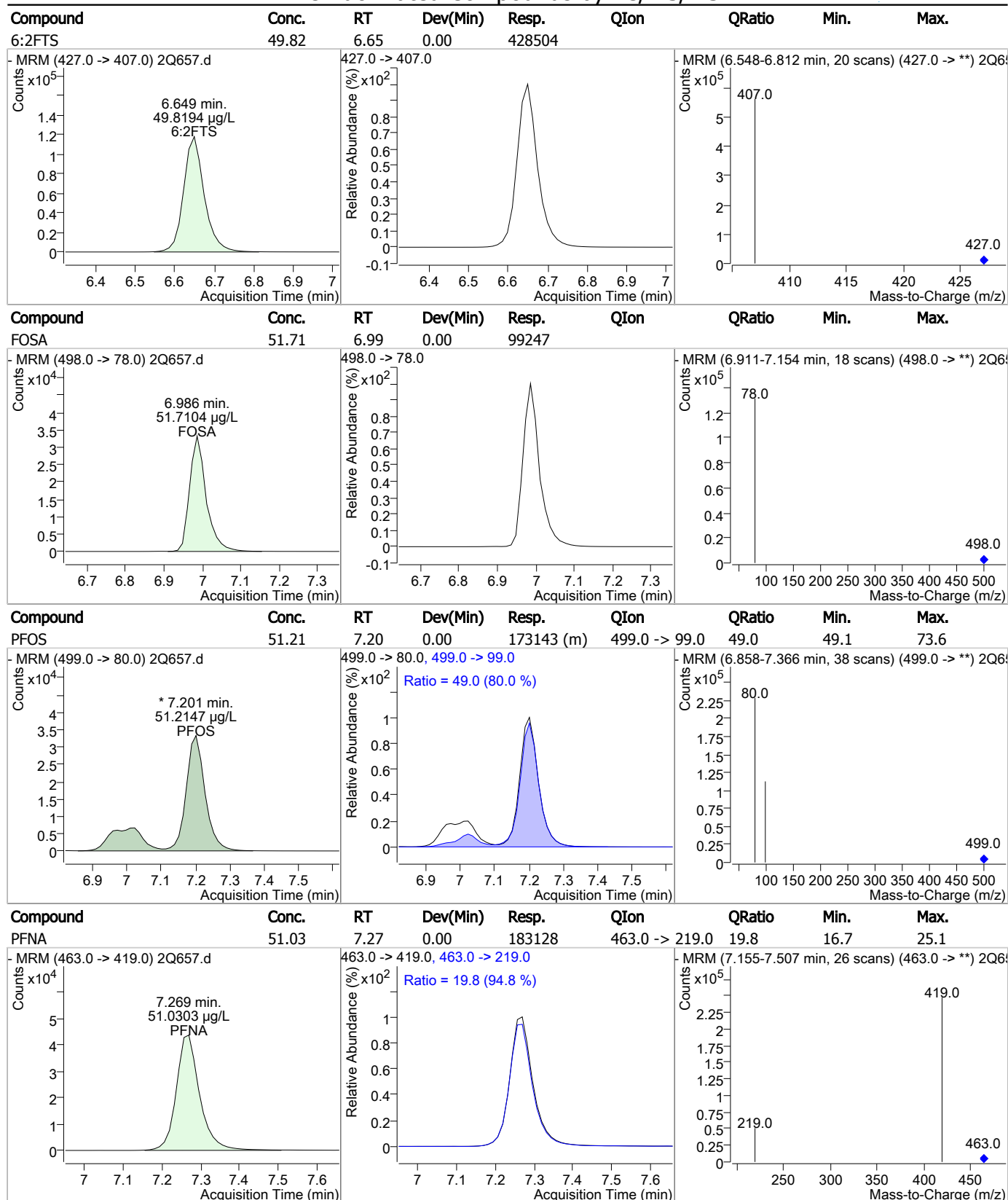
Perfluorinated Compounds by LC/MS/MS



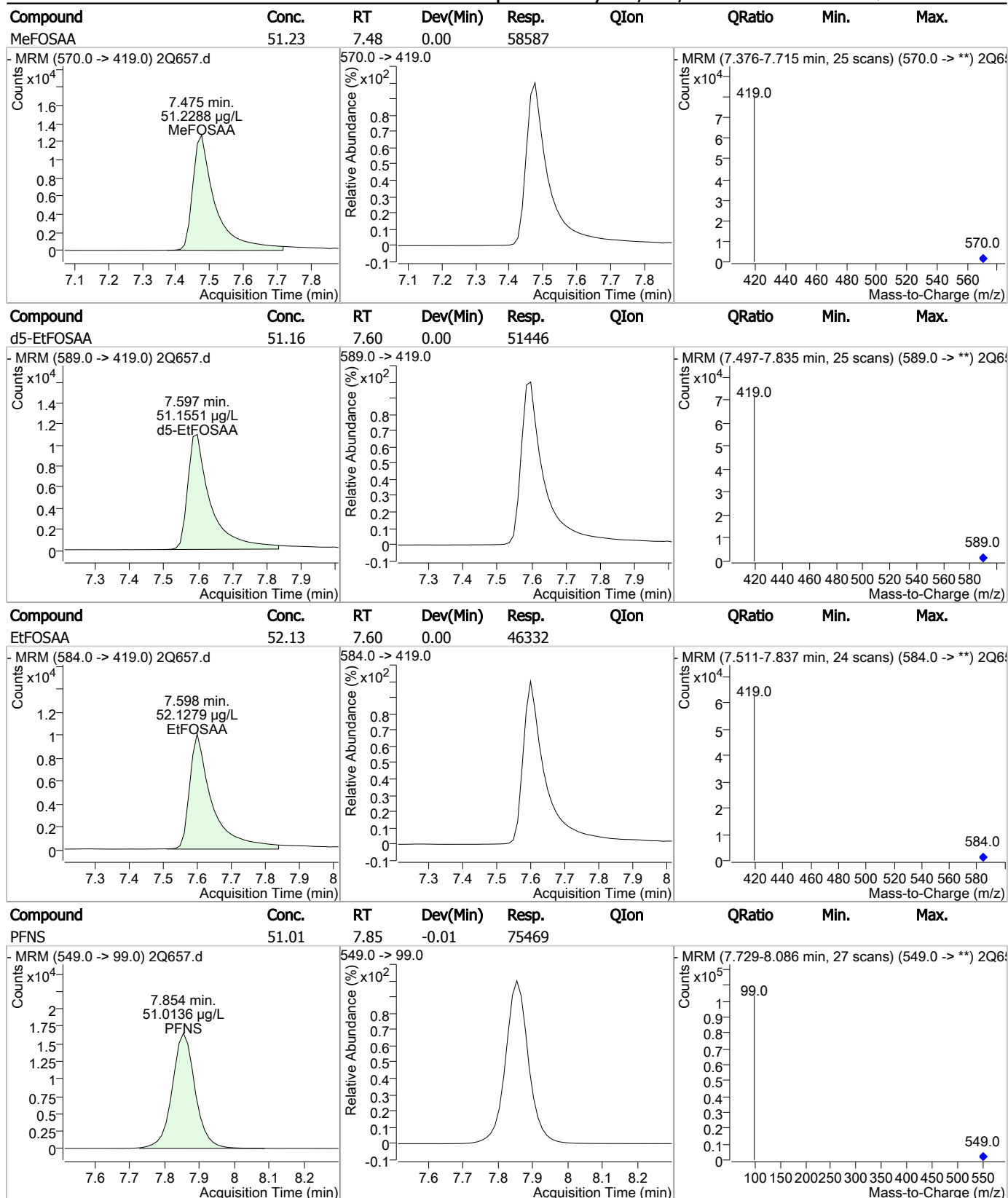
Perfluorinated Compounds by LC/MS/MS



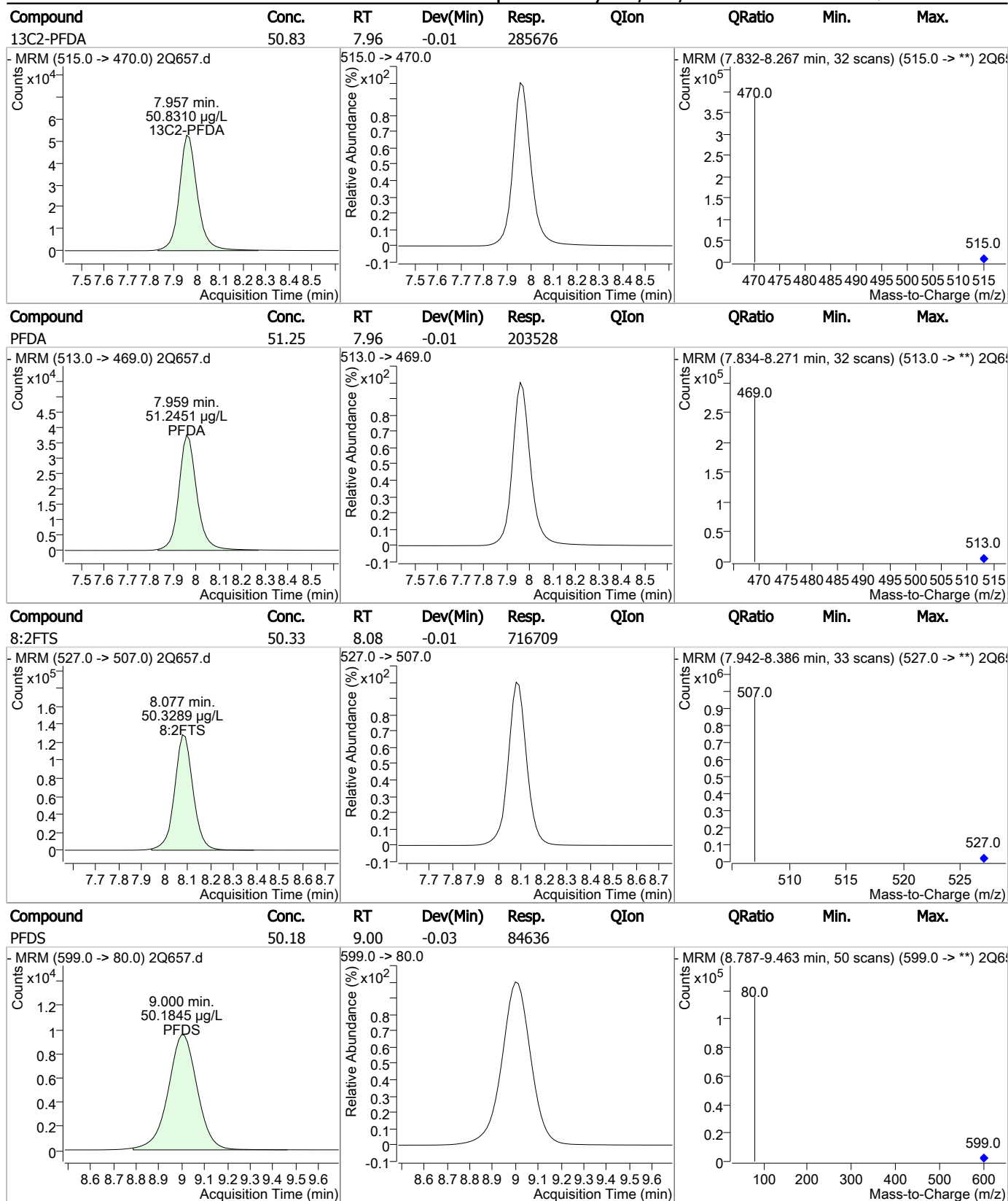
Perfluorinated Compounds by LC/MS/MS



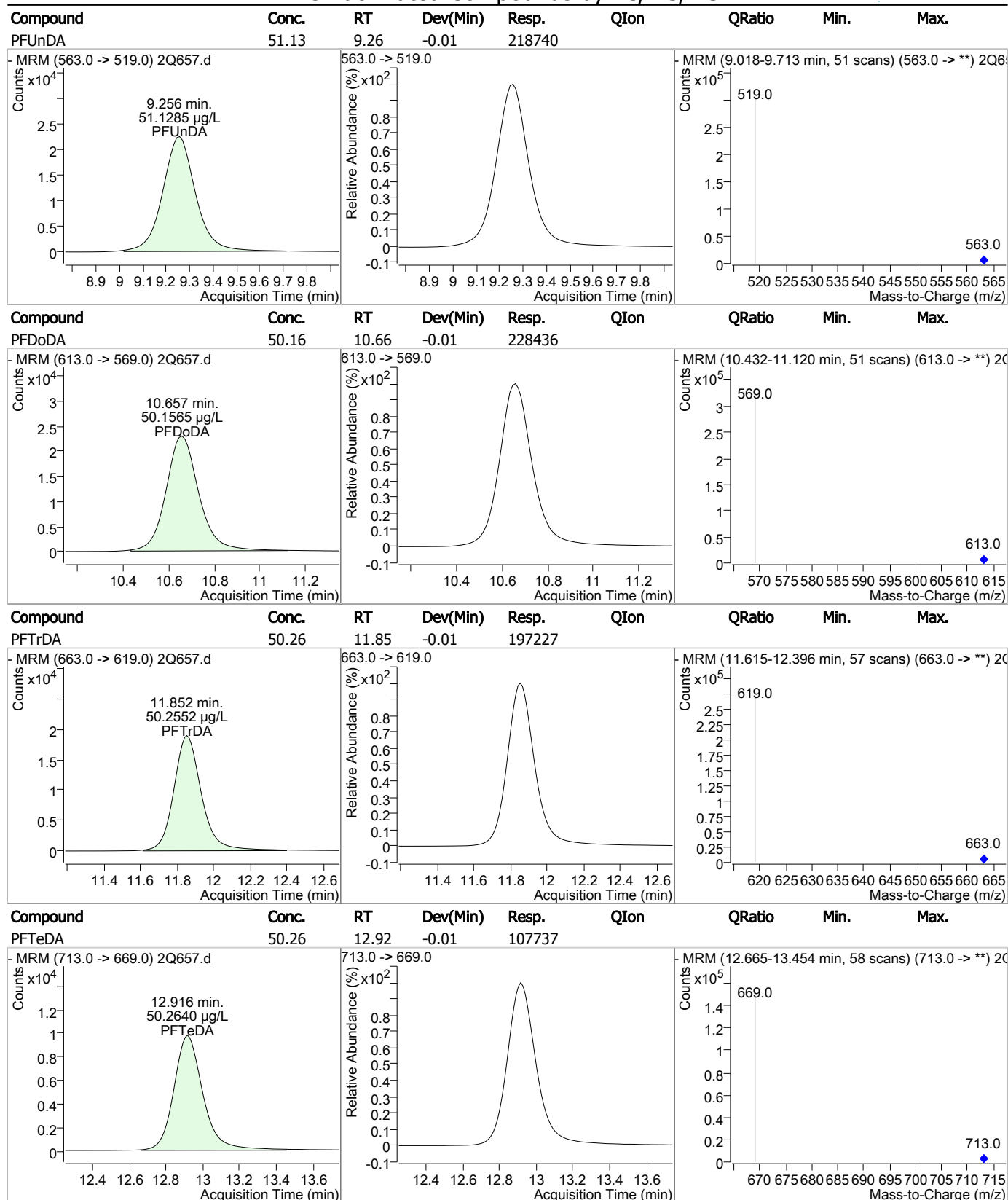
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q18-IC18

Method: EPA 537 MOD

Lab FileID: 2Q657.D

Analyst approved: 04/21/17 09:46 Nancy Saunders

Injection Time: 04/20/17 13:53

Supervisor approved: 04/21/17 11:22 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

7.5.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q659.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/20/2017 2:34:37 PM
 Sample Name : ICV18-20
 Vial : Vial 9
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q18.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.648	429.0 -> 409.0	158830	20.00 µg/L	0.000
13C2-PFDoDA	10.651	615.0 -> 570.0	91721	20.00 µg/L	-0.013
13C2-PFOA	6.637	415.0 -> 370.0	75324	20.00 µg/L	0.000
13C3-PFPeA	4.222	266.0 -> 222.0	74004	20.00 µg/L	-0.013
13C4-PFOS	7.199	503.0 -> 80.0	55296	20.00 µg/L	0.000
d3-MeFOSAA	7.474	573.0 -> 419.0	34720	20.00 µg/L	0.000

System Monitoring Compounds

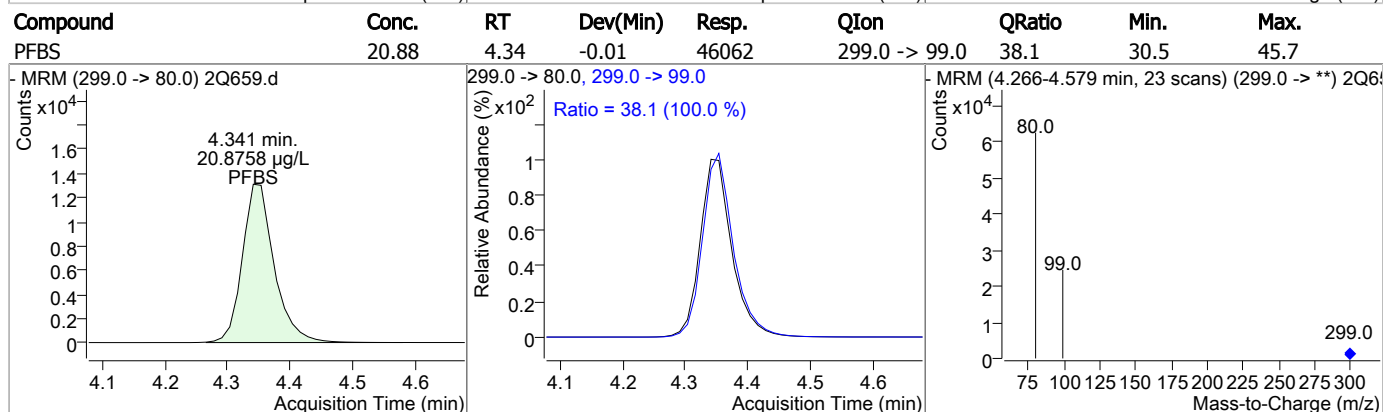
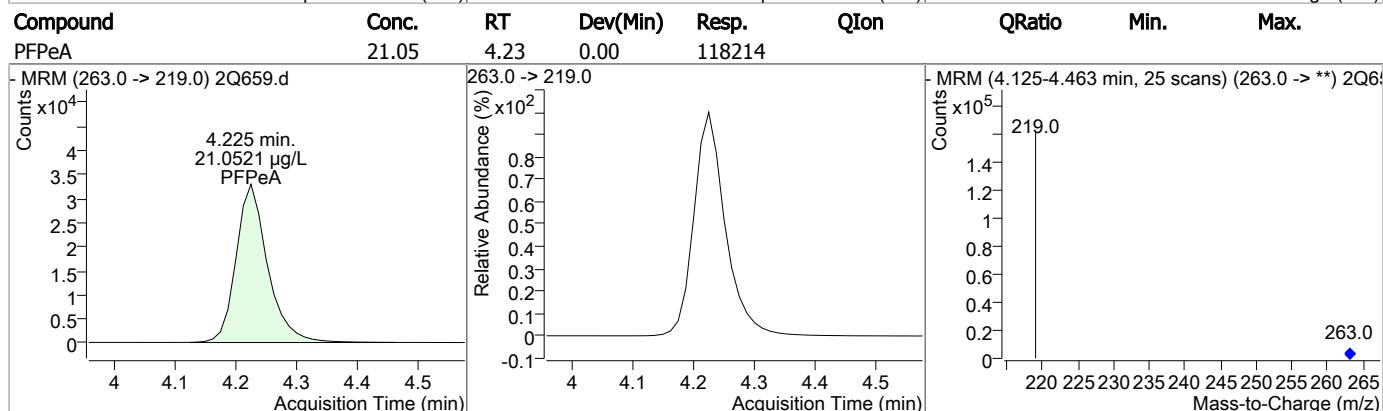
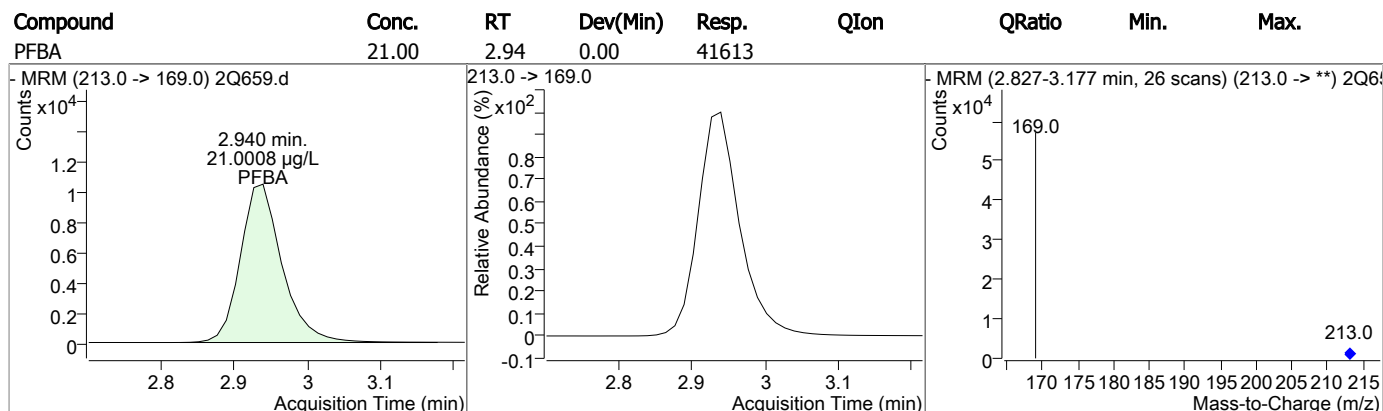
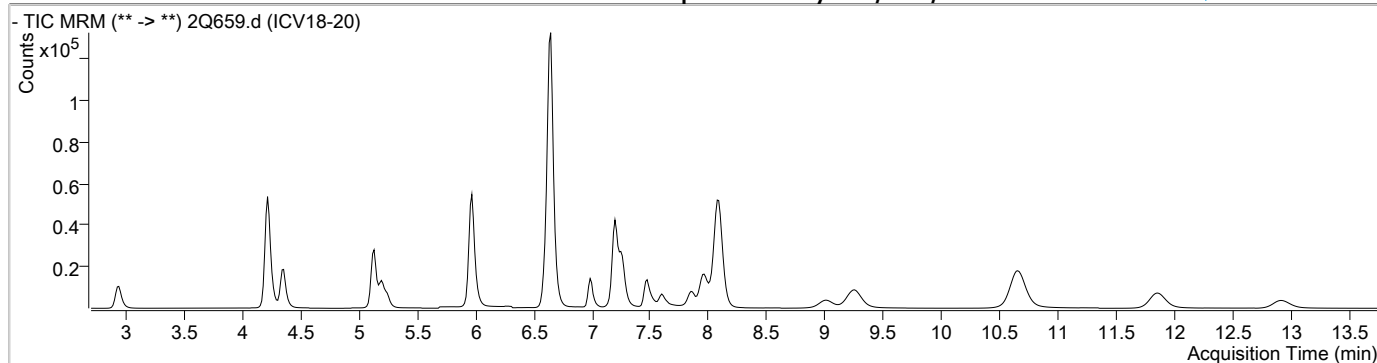
13C2-PFDA	7.969	515.0 -> 470.0	0	0.00 µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%			
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.		
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%			
d5-EtFOSAA	7.597	589.0 -> 419.0	0	0.00 µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%			

Target Compounds

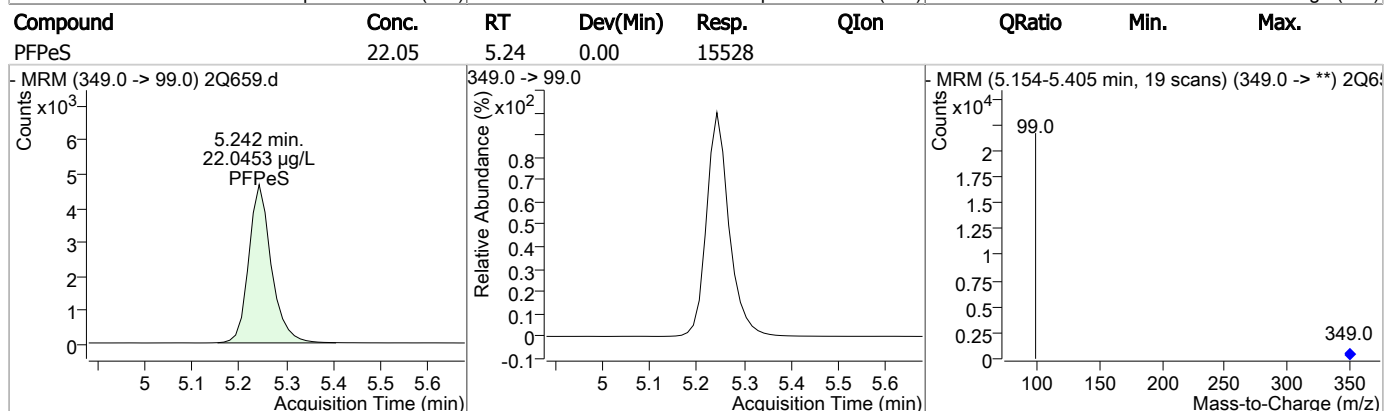
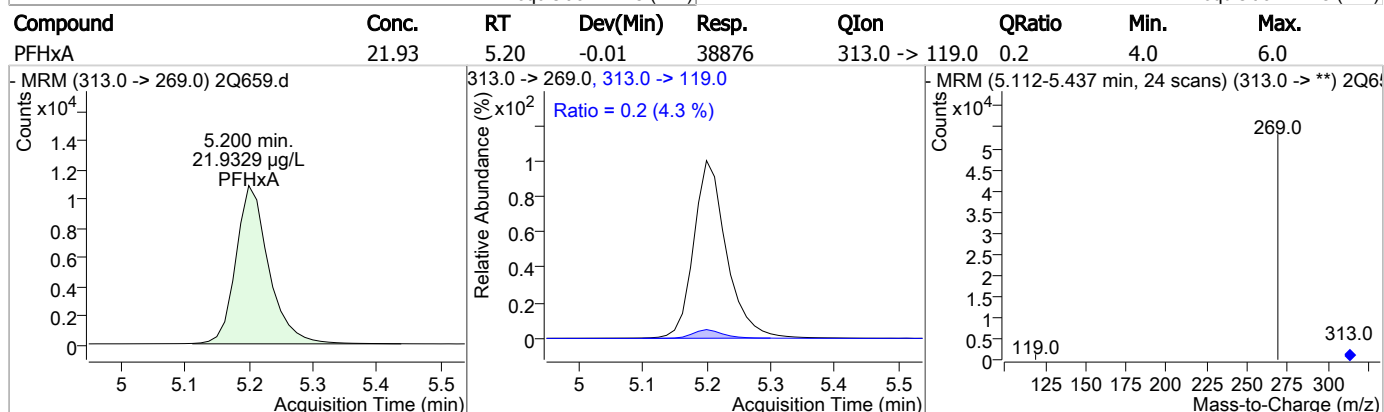
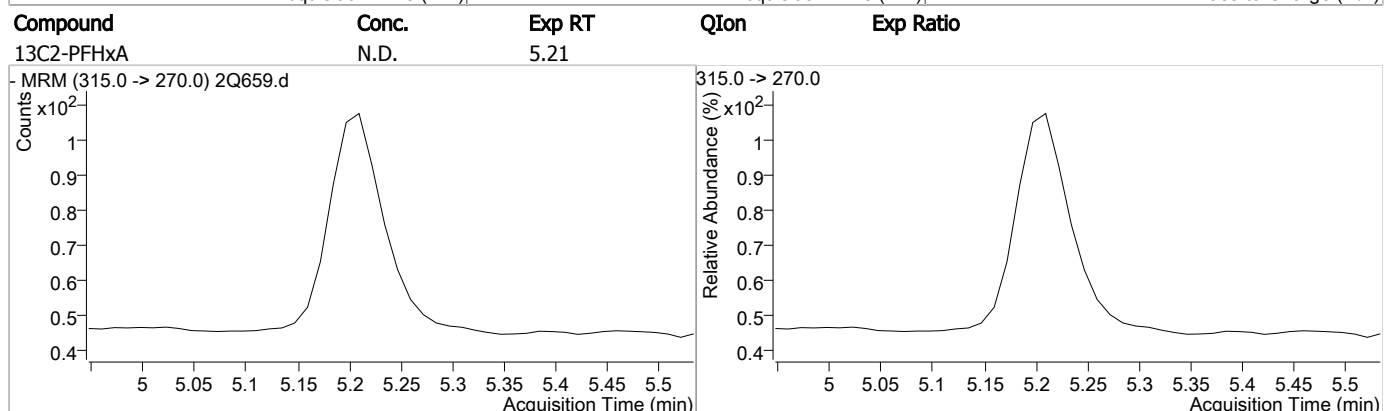
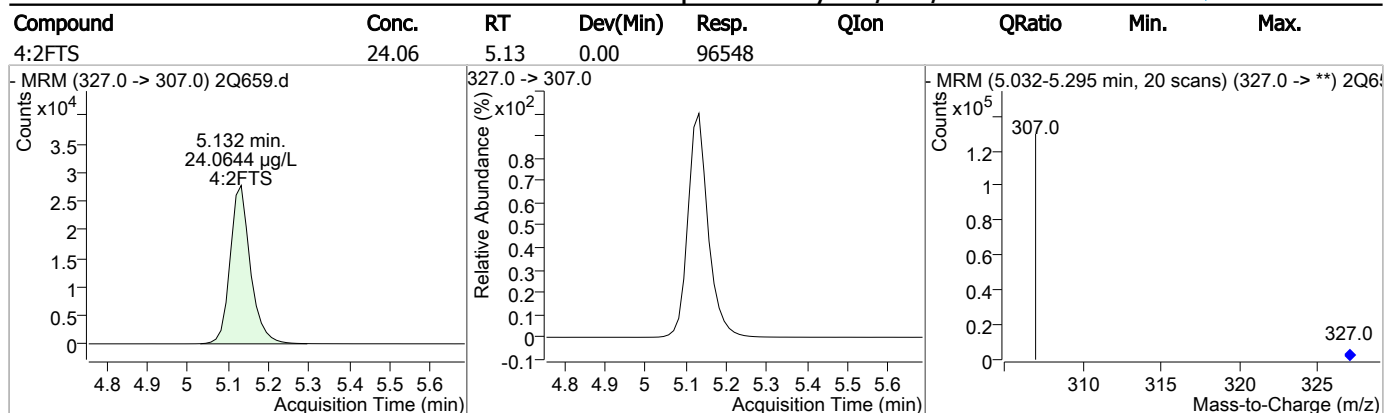
						QValue
4:2FTS	5.132	327.0 -> 307.0	96548	24.06 µg/L		100
6:2FTS	6.649	427.0 -> 407.0	172861	22.51 µg/L		100
8:2FTS	8.077	527.0 -> 507.0	286680	22.54 µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	18871	23.57 µg/L		100
FOSA	6.986	498.0 -> 78.0	40260	21.57 µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	24006	24.23 µg/L		100
PFBA	2.940	213.0 -> 169.0	41613	21.00 µg/L		100
PFBS	4.341	299.0 -> 80.0	46062	20.88 µg/L		100
PFDA	7.959	513.0 -> 469.0	78630	21.11 µg/L		100
PFDoDA	10.657	613.0 -> 569.0	89904	22.31 µg/L		100
PFDS	9.000	599.0 -> 80.0	33156	22.35 µg/L		100
PFHpA	5.973	363.0 -> 319.0	113139	21.56 µg/L	#	93
PFHpS	6.594	449.0 -> 80.0	49317	21.06 µg/L		100
PFHxA	5.200	313.0 -> 269.0	38876	21.93 µg/L	#	86
PFHxS	5.956	399.0 -> 80.0	50890	22.04 µg/L		94
PFNA	7.269	463.0 -> 419.0	71725	21.31 µg/L		97
PFNS	7.854	549.0 -> 99.0	31642	22.66 µg/L		100
PFOA	6.639	413.0 -> 369.0	66629	21.28 µg/L		99
PFOS	7.201	499.0 -> 80.0	62605	19.62 µg/L		96
PFPeA	4.225	263.0 -> 219.0	118214	21.05 µg/L		100
PFPeS	5.242	349.0 -> 99.0	15528	22.05 µg/L		100
PFTeDA	12.916	713.0 -> 669.0	42406	22.54 µg/L		100
PFTTrDA	11.852	663.0 -> 619.0	76534	22.39 µg/L		100
PFUnDA	9.256	563.0 -> 519.0	85345	21.21 µg/L		100

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

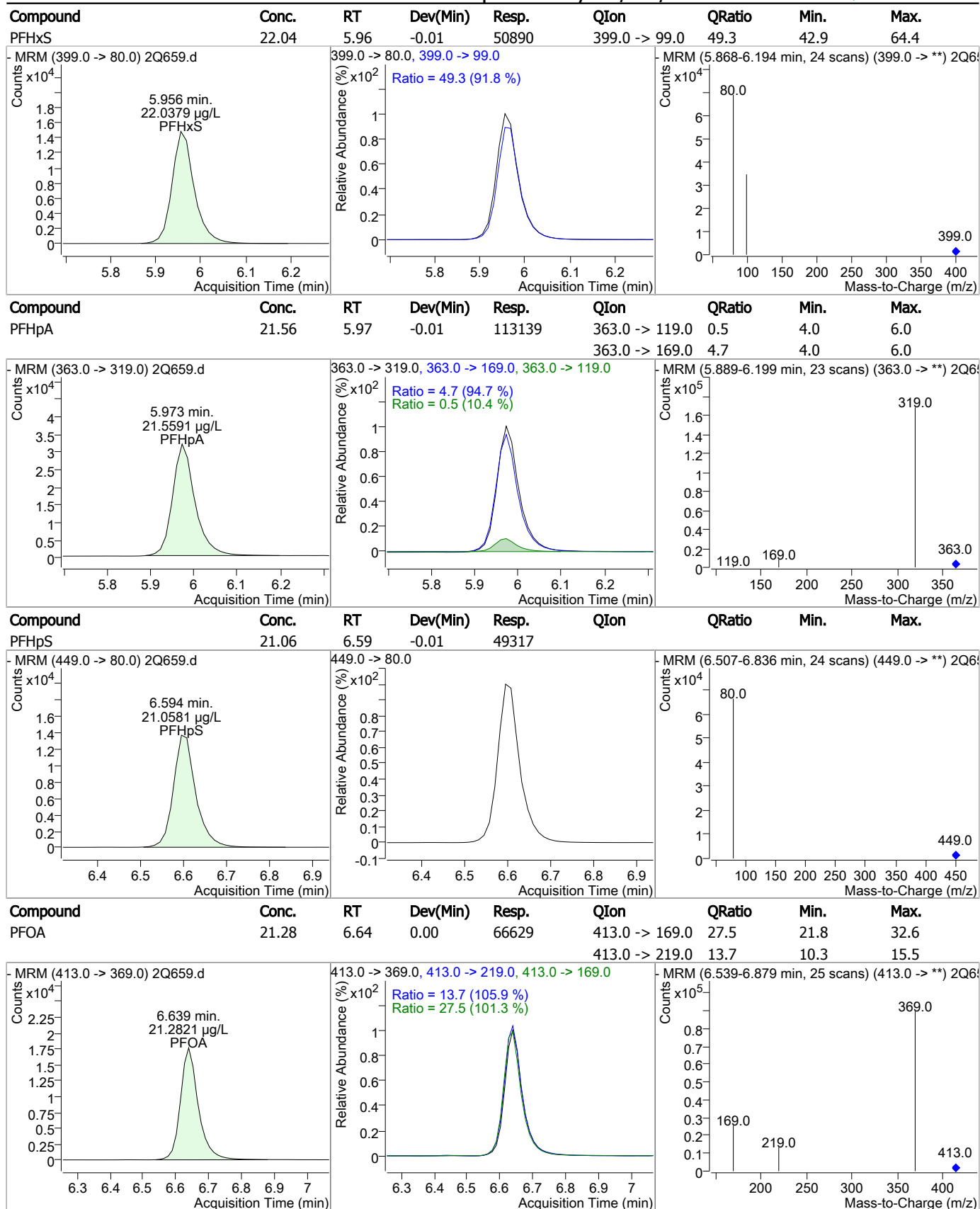
Perfluorinated Compounds by LC/MS/MS



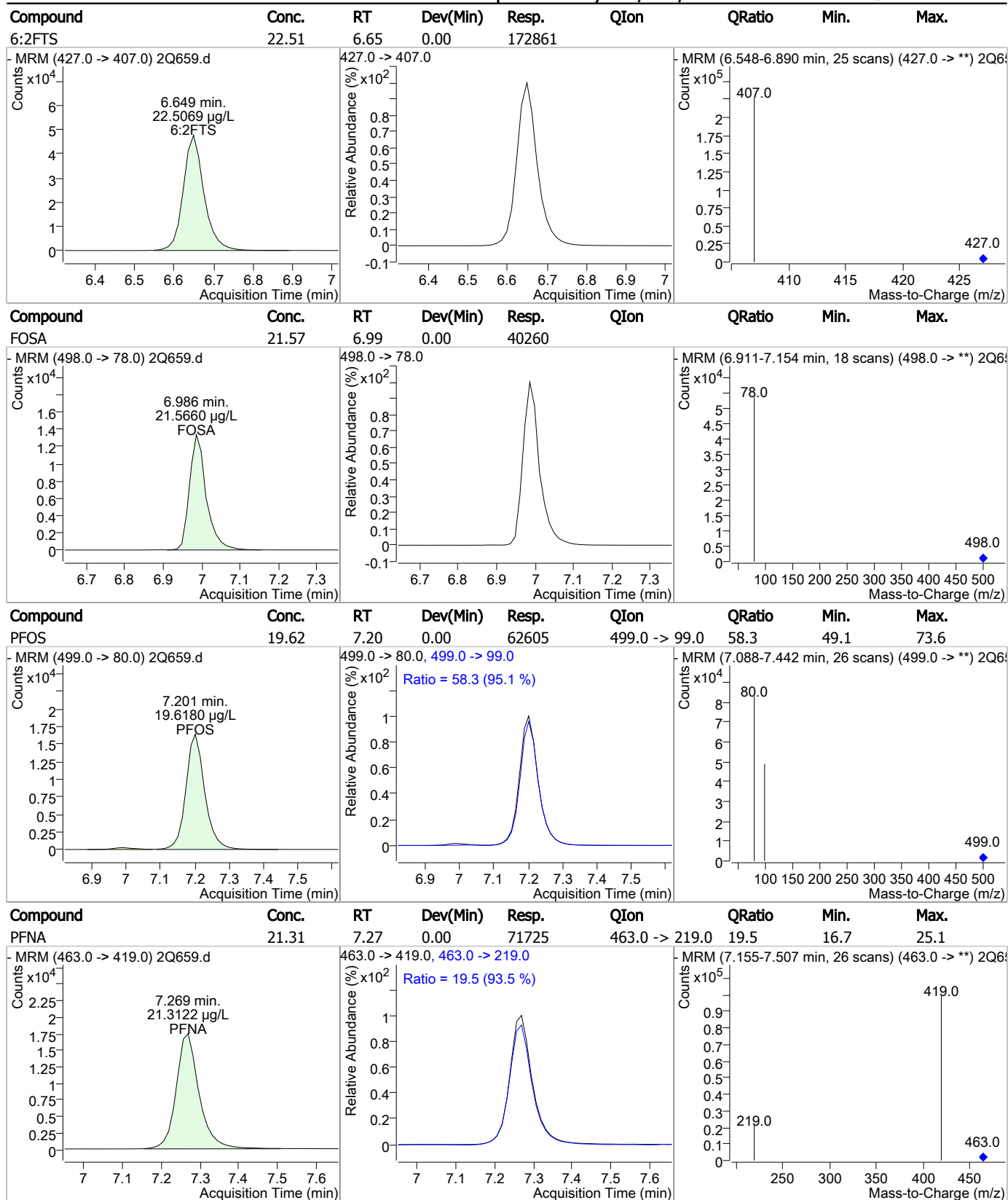
Perfluorinated Compounds by LC/MS/MS



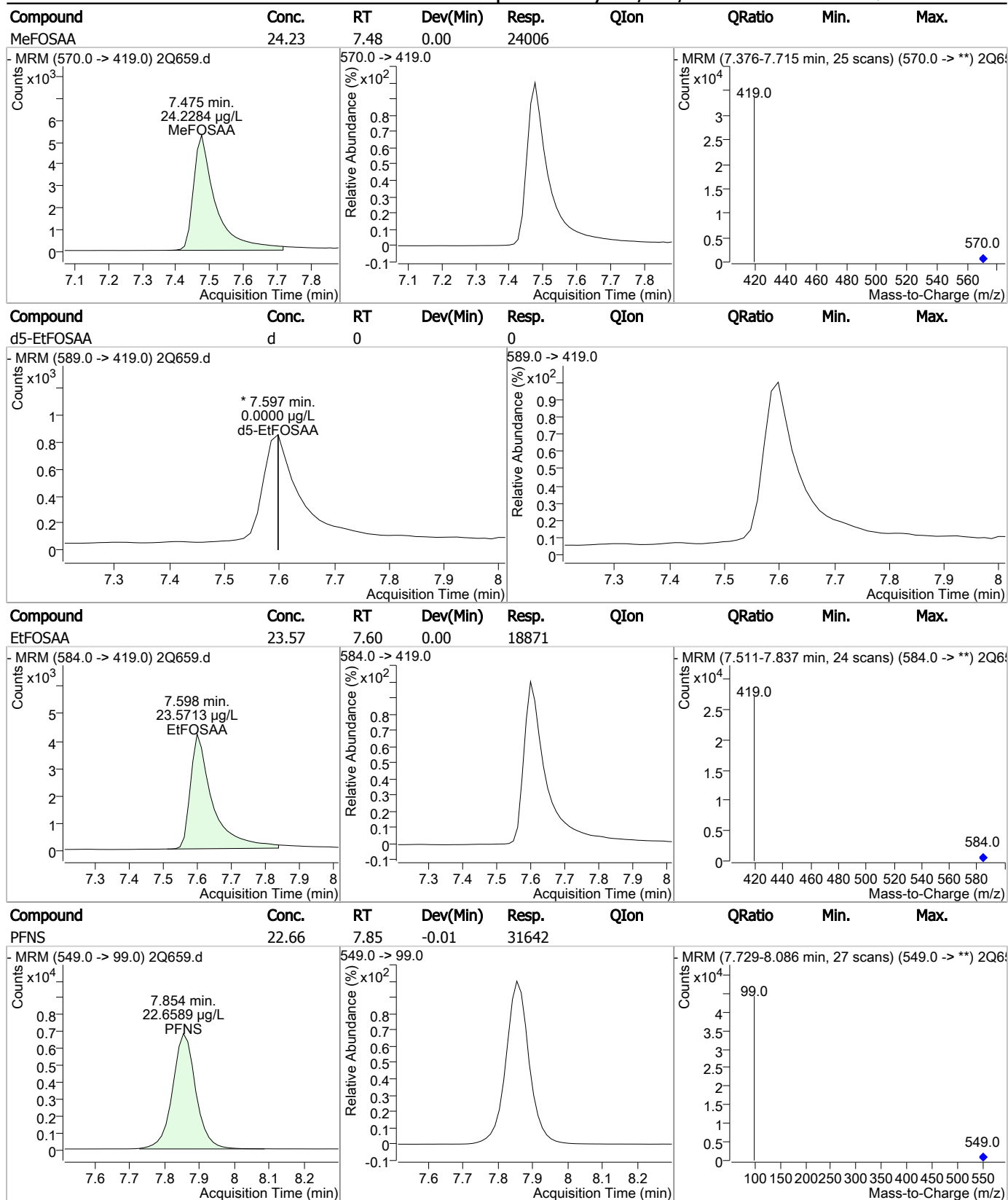
Perfluorinated Compounds by LC/MS/MS



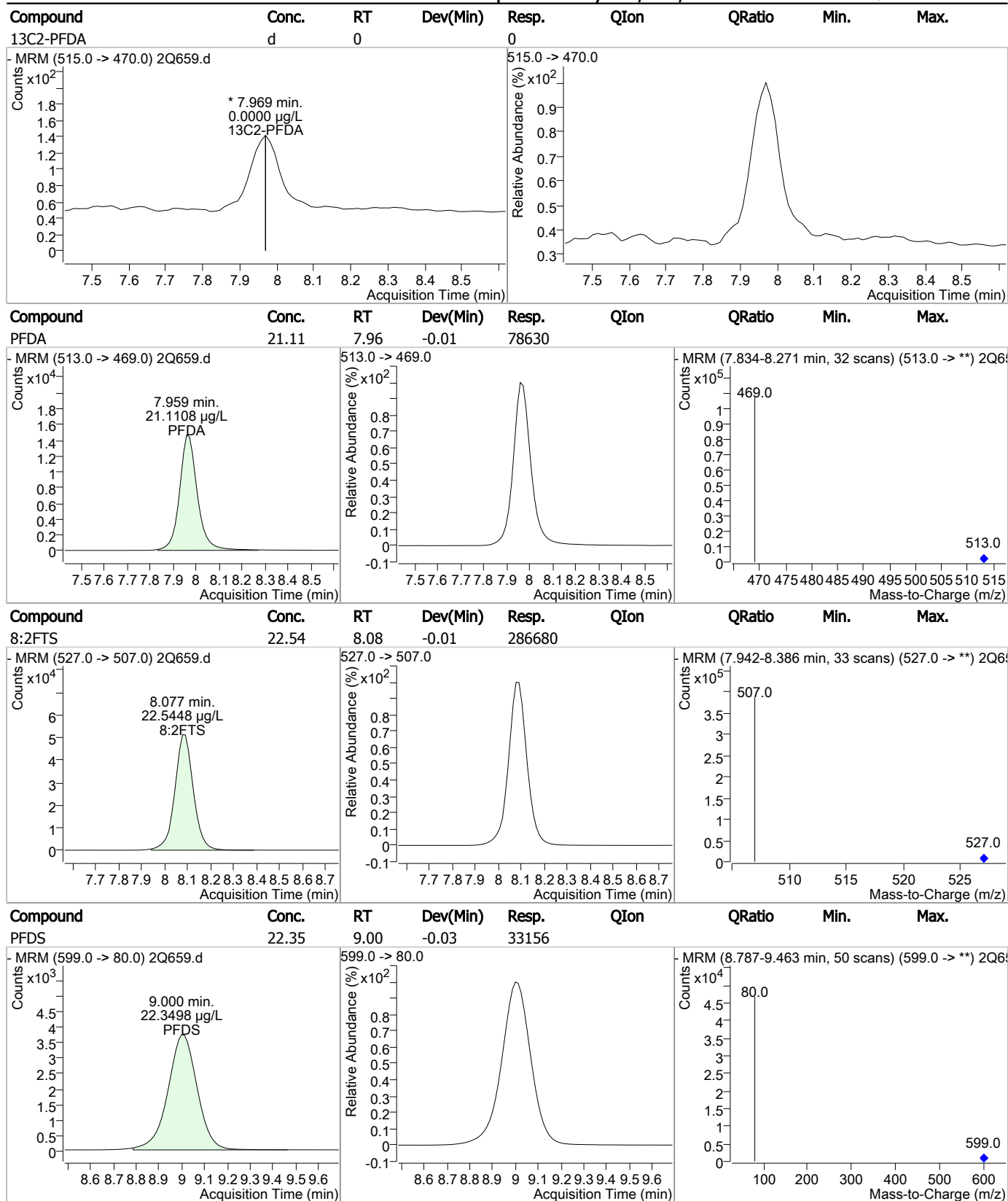
Perfluorinated Compounds by LC/MS/MS



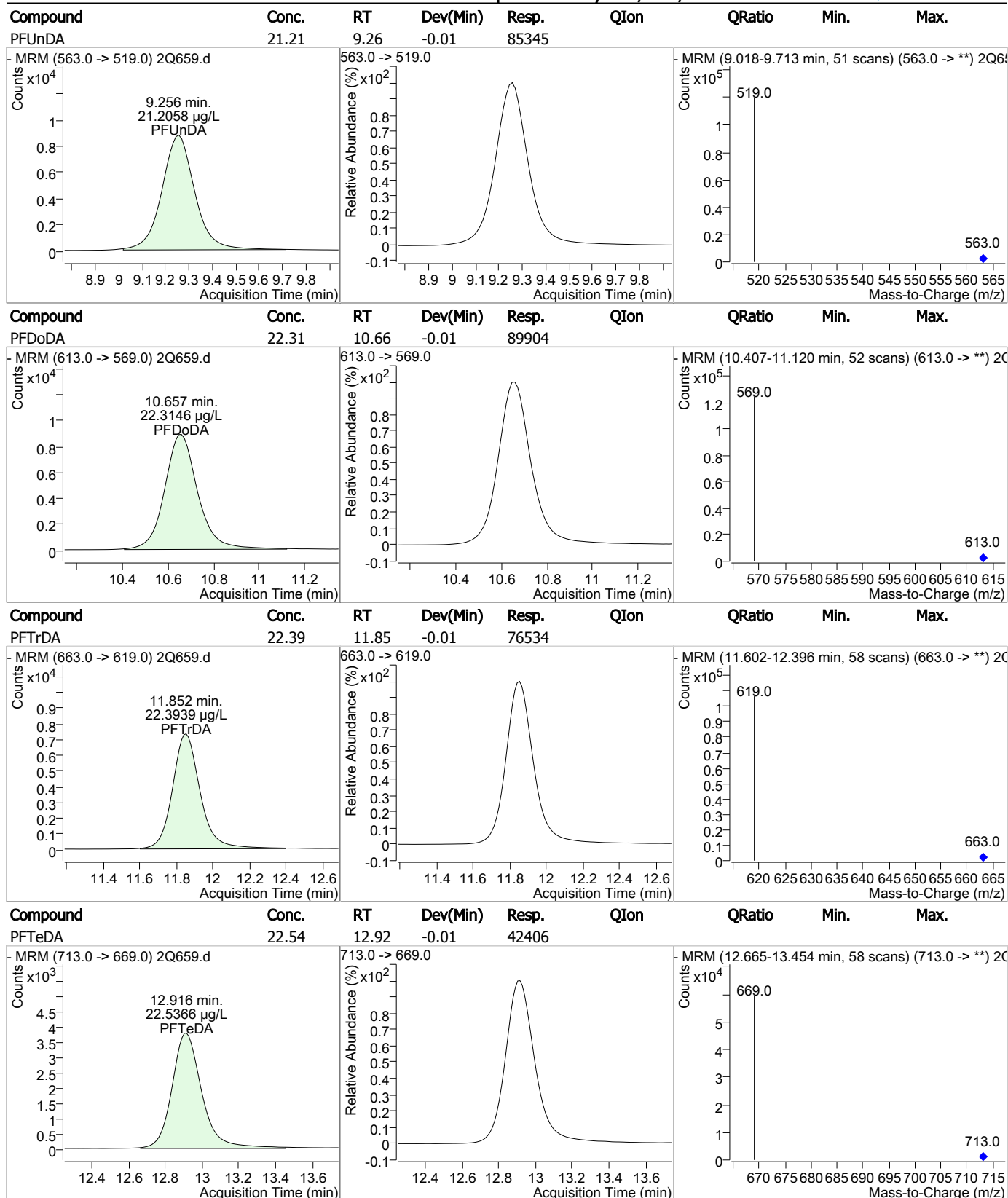
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



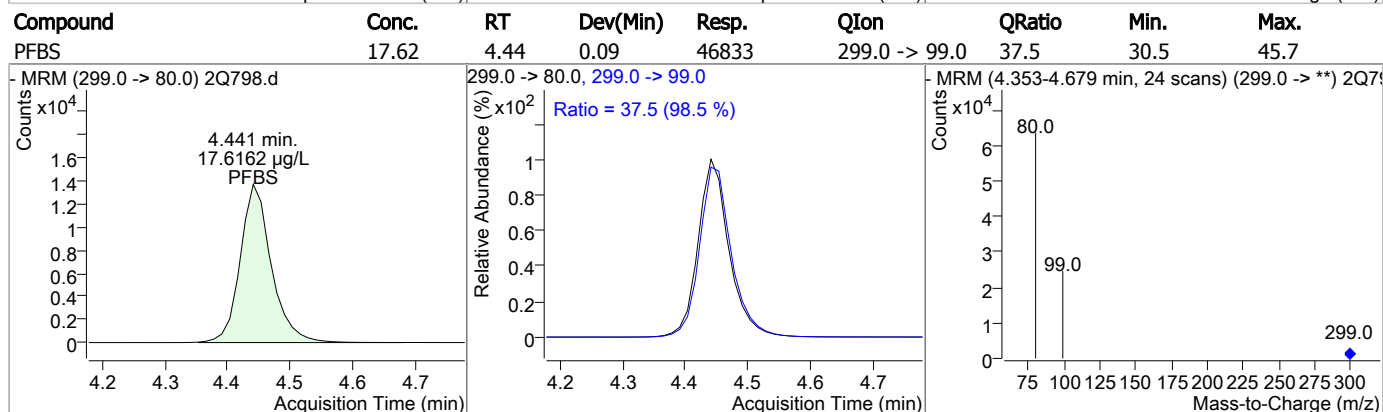
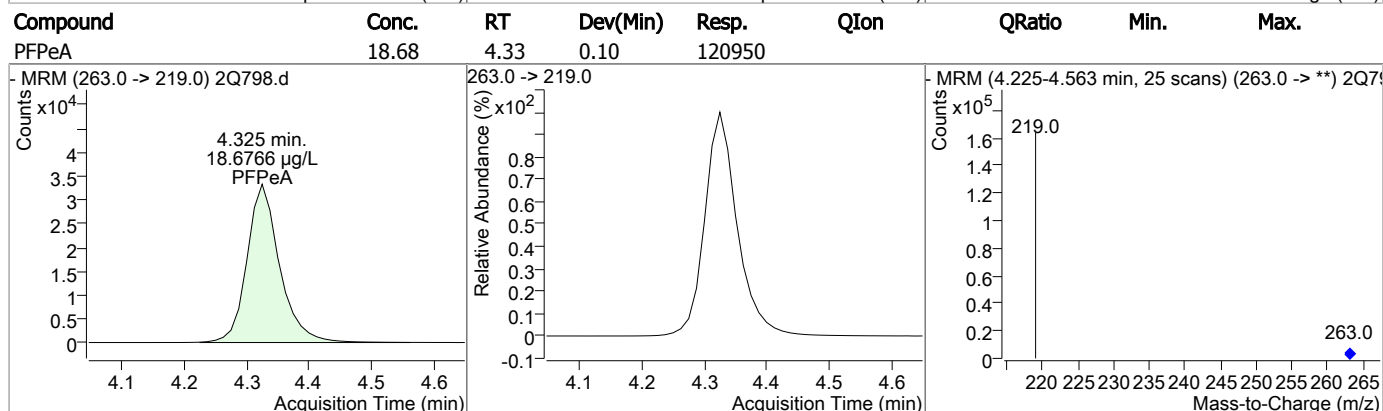
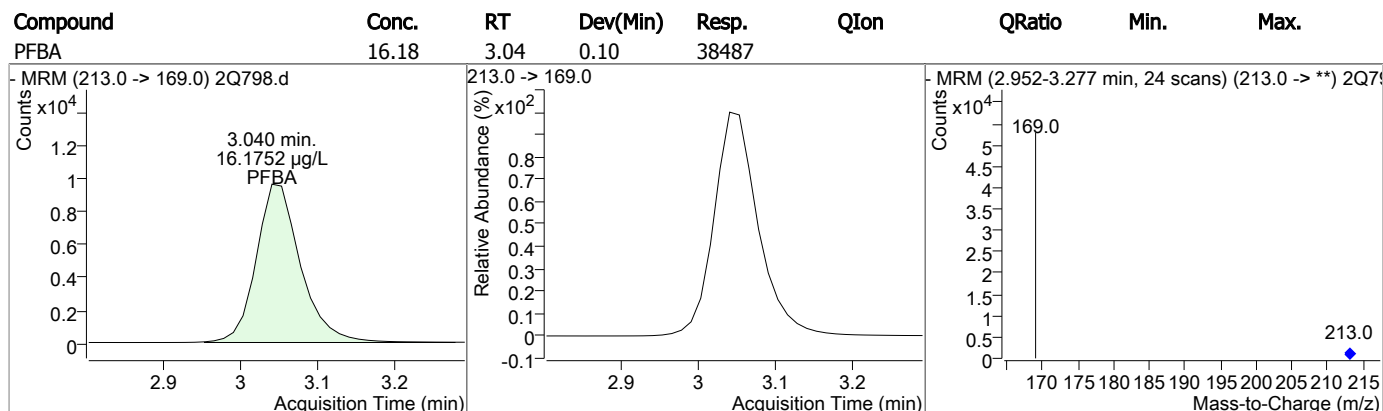
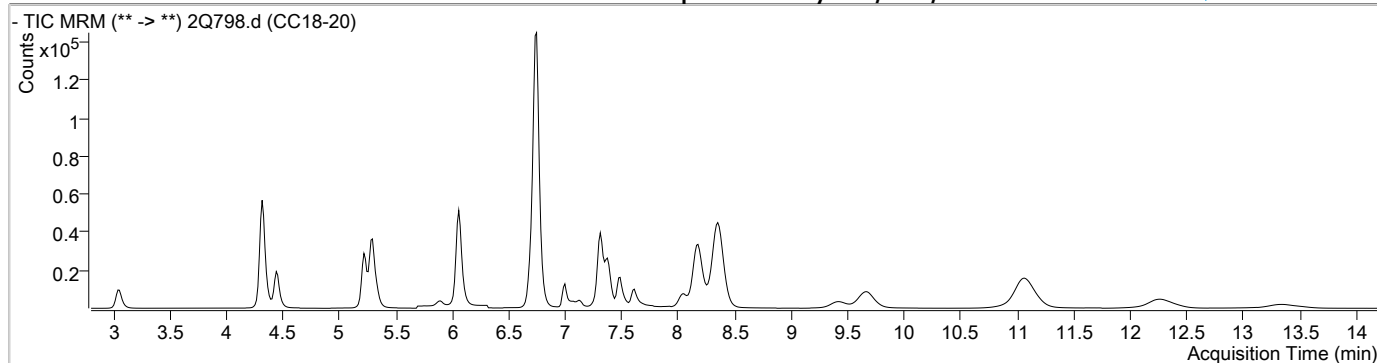
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q798.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 9:06:41 AM
 Sample Name : CC18-20
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

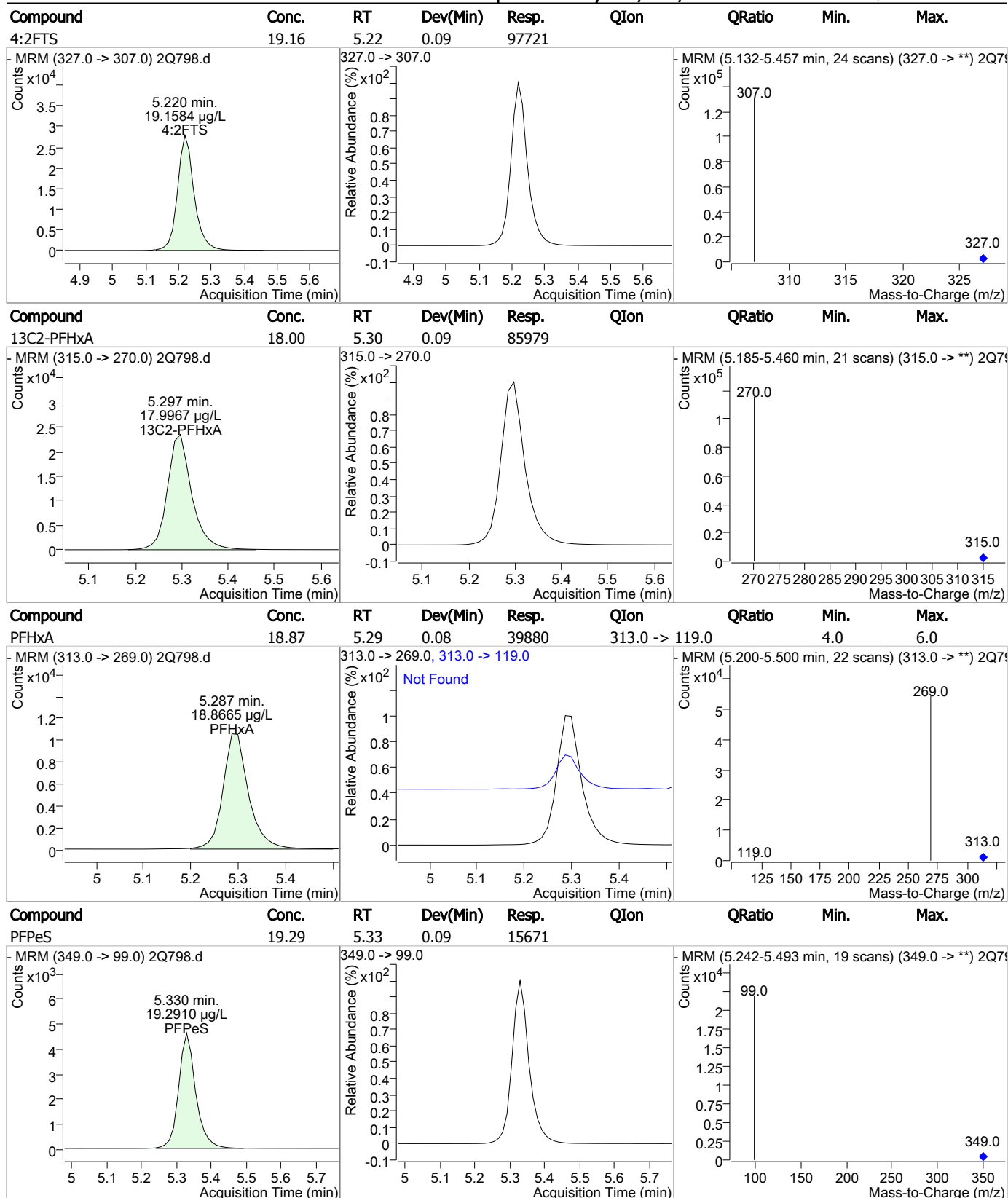
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.748	429.0 -> 409.0	201927	20.00	µg/L	0.100
13C2-PFDoDA	11.064	615.0 -> 570.0	113852	20.00	µg/L	0.400
13C2-PFOA	6.739	415.0 -> 370.0	90447	20.00	µg/L	0.101
13C3-PFPeA	4.322	266.0 -> 222.0	85348	20.00	µg/L	0.088
13C4-PFOS	7.314	503.0 -> 80.0	66625	20.00	µg/L	0.115
d3-MeFOSAA	7.475	573.0 -> 419.0	40257	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.180	515.0 -> 470.0	122726	19.39	µg/L	0.211
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.0%			
13C2-PFHxA	5.297	315.0 -> 270.0	85979	18.00	µg/L	0.088
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 90.0%			
d5-EtFOSAA	7.597	589.0 -> 419.0	18425	18.70	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 93.5%			
Target Compounds						QValue
4:2FTS	5.220	327.0 -> 307.0	97721	19.16	µg/L	100
6:2FTS	6.749	427.0 -> 407.0	191072	19.57	µg/L	100
8:2FTS	8.352	527.0 -> 507.0	332907	20.59	µg/L	100
EtFOSAA	7.611	584.0 -> 419.0	16776	18.34	µg/L	100
FOSA	6.998	498.0 -> 78.0	35938	16.60	µg/L	100
MeFOSAA	7.488	570.0 -> 419.0	21805	19.41	µg/L	100
PFBA	3.040	213.0 -> 169.0	38487	16.18	µg/L	100
PFBS	4.441	299.0 -> 80.0	46833	17.62	µg/L	99
PFDA	8.170	513.0 -> 469.0	84113	18.81	µg/L	100
PFDoDA	11.058	613.0 -> 569.0	99265	19.96	µg/L	100
PFDS	9.412	599.0 -> 80.0	32312	18.27	µg/L	100
PFHpA	6.061	363.0 -> 319.0	116603	18.58	µg/L	# 93
PFHpS	6.696	449.0 -> 80.0	52349	18.55	µg/L	100
PFHxA	5.287	313.0 -> 269.0	39880	18.87	µg/L	85
PFHxS	6.043	399.0 -> 80.0	43280	15.56	µg/L	97
PFNA	7.382	463.0 -> 419.0	77613	19.21	µg/L	96
PFNS	8.040	549.0 -> 99.0	31333	18.62	µg/L	100
PFOA	6.740	413.0 -> 369.0	68436	18.20	µg/L	97
PFOS	7.315	499.0 -> 80.0	62219	16.18	µg/L	m 84
PFPeA	4.325	263.0 -> 219.0	120950	18.68	µg/L	100
PFPeS	5.330	349.0 -> 99.0	15671	19.29	µg/L	100
PFTeDA	13.341	713.0 -> 669.0	40800	17.69	µg/L	100
PFTTrDA	12.265	663.0 -> 619.0	80579	19.17	µg/L	100
PFUnDA	9.669	563.0 -> 519.0	94694	18.96	µg/L	100

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

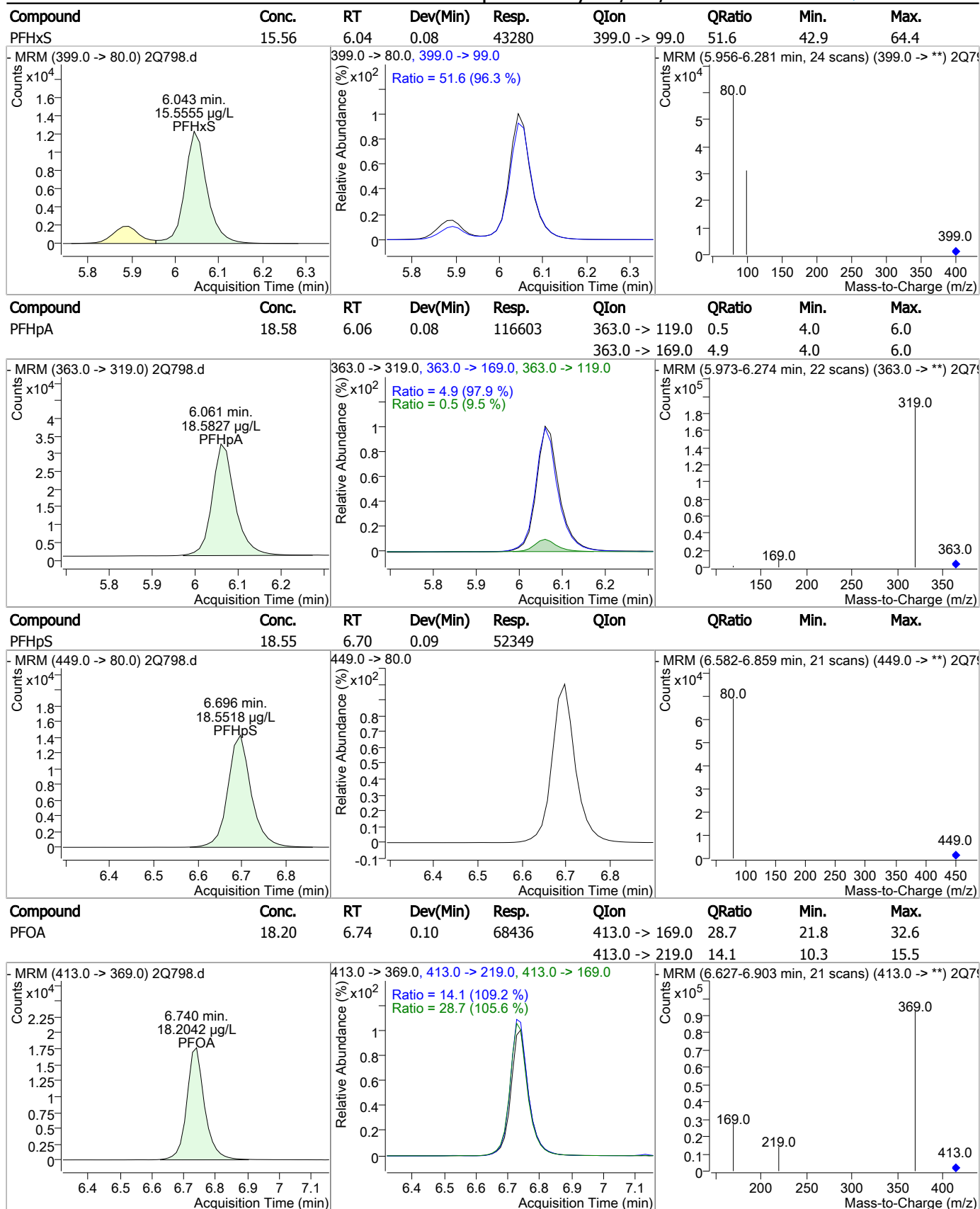
Perfluorinated Compounds by LC/MS/MS



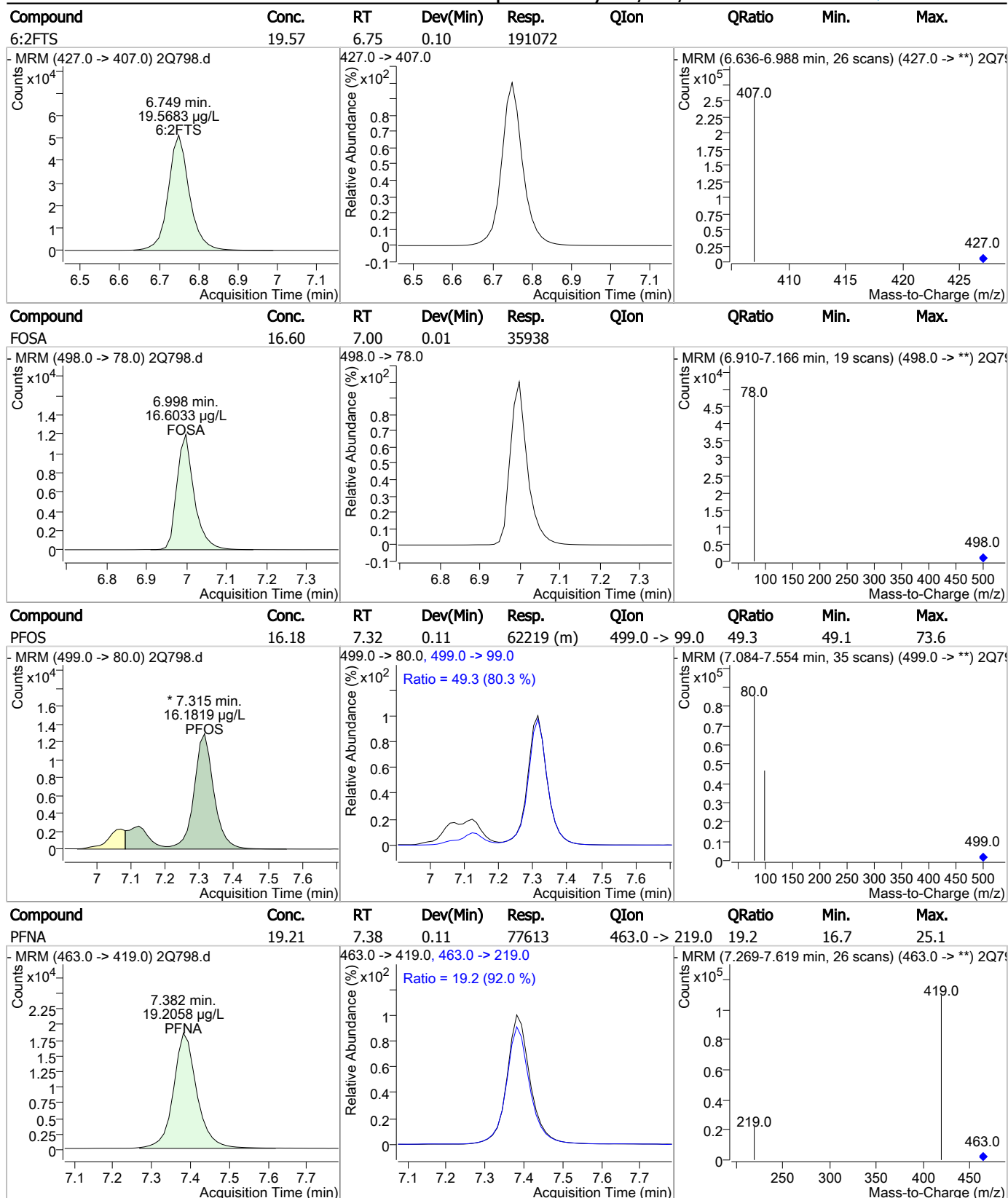
Perfluorinated Compounds by LC/MS/MS



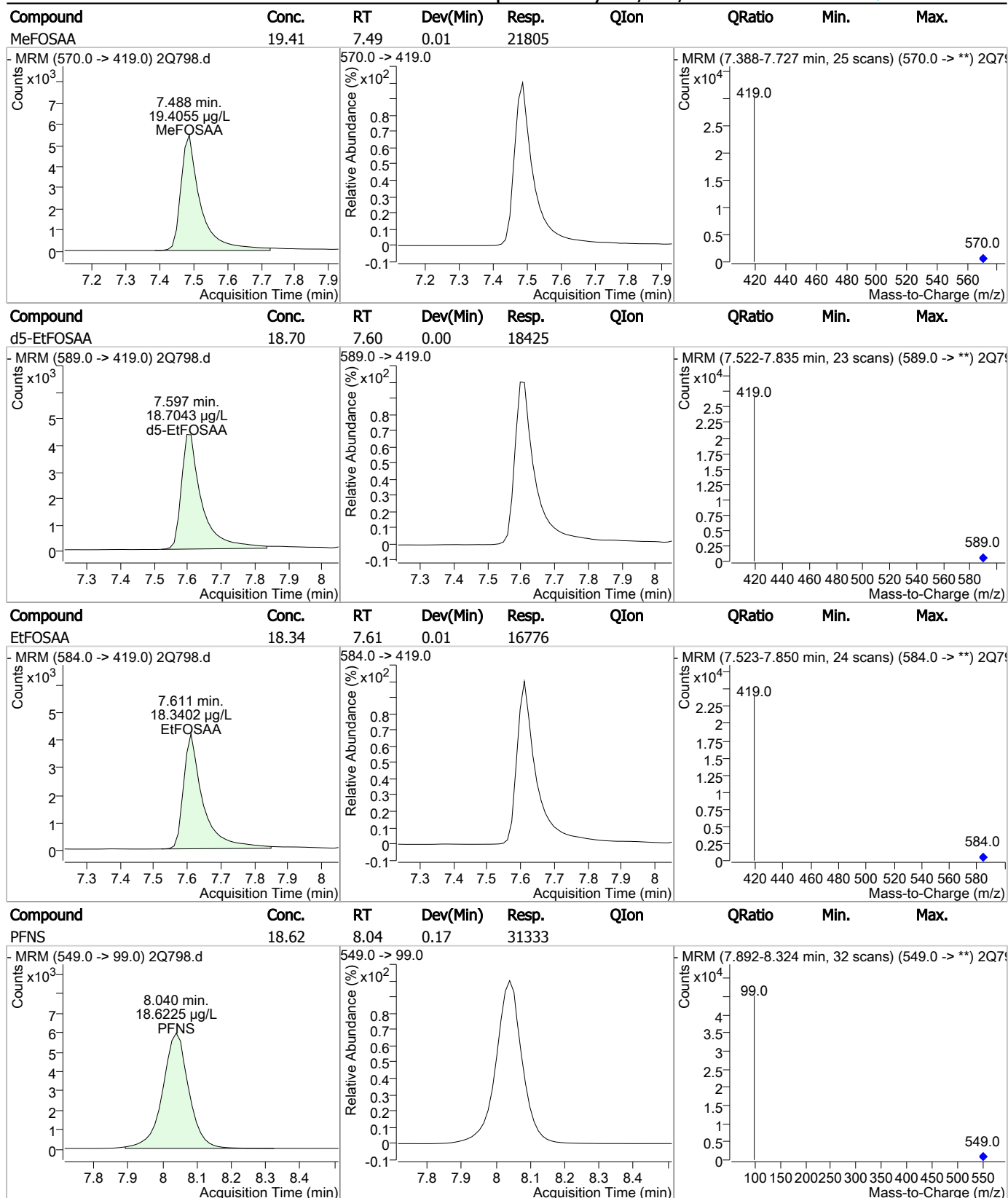
Perfluorinated Compounds by LC/MS/MS



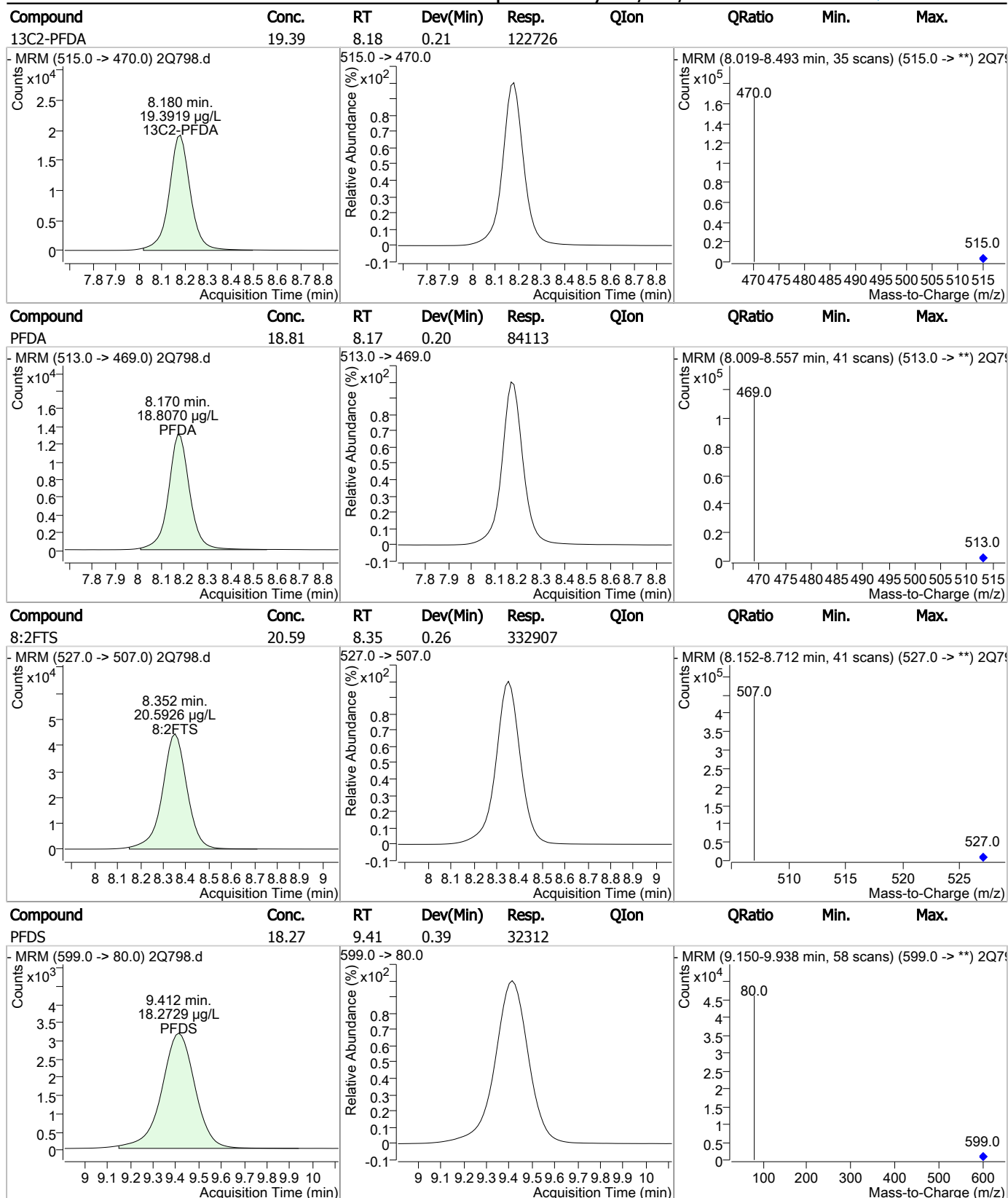
Perfluorinated Compounds by LC/MS/MS



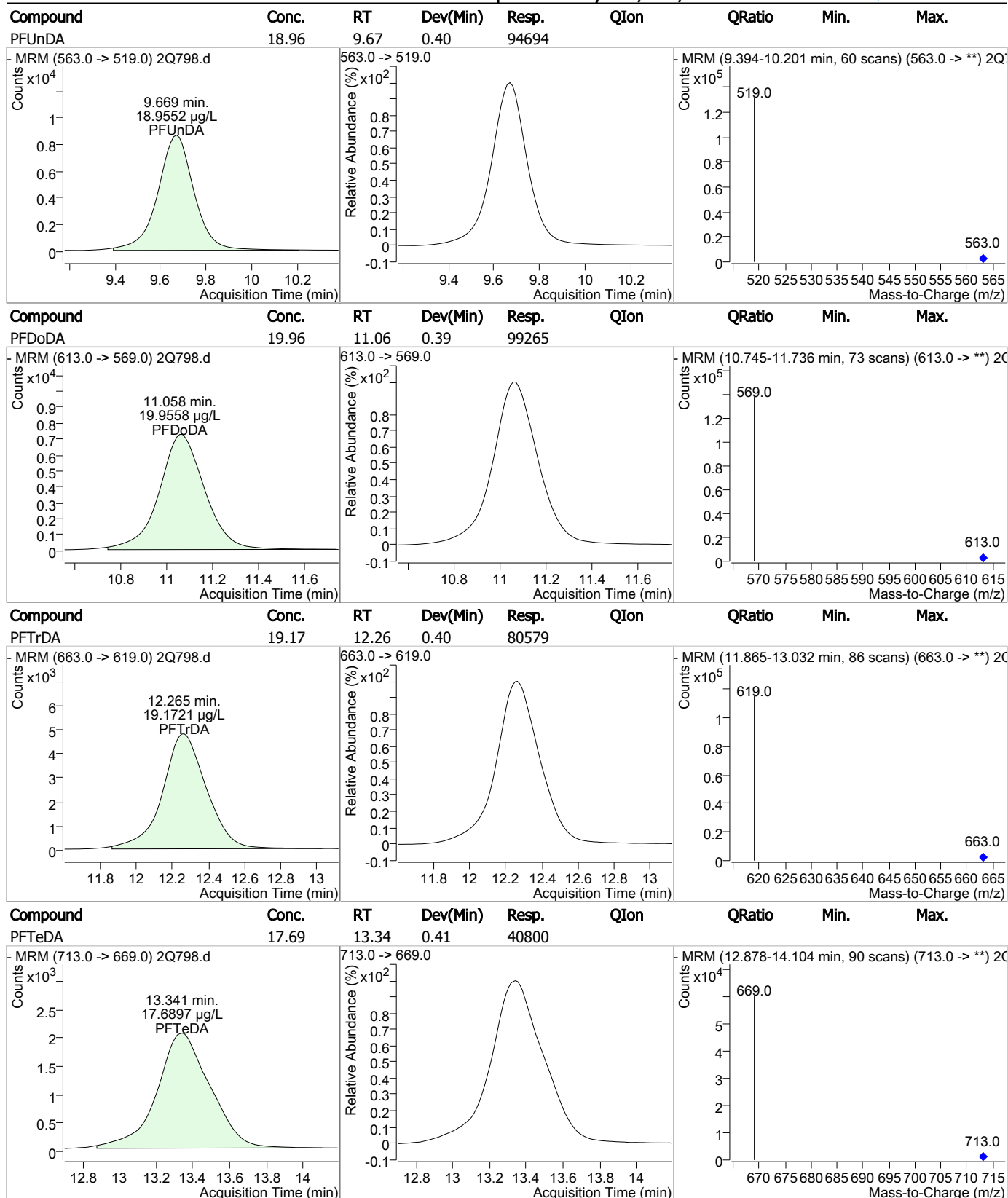
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q23-CC18

Method: EPA 537

Lab FileID: 2Q798.D

Analyst approved: 04/27/17 14:42 Mike Eger

Injection Time: 04/27/17 09:06

Supervisor approved: 04/27/17 14:49 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.32	Split peak

7.5.9.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q799.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 9:42:30 AM
 Sample Name : CC18-2
 Vial : Vial 4
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.748	429.0 -> 409.0	200415	20.00 µg/L	0.100
13C2-PFDoDA	11.026	615.0 -> 570.0	111498	20.00 µg/L	0.363
13C2-PFOA	6.739	415.0 -> 370.0	87133	20.00 µg/L	0.101
13C3-PFPeA	4.297	266.0 -> 222.0	73981	20.00 µg/L	0.063
13C4-PFOS	7.314	503.0 -> 80.0	67978	20.00 µg/L	0.115
d3-MeFOSAA	7.475	573.0 -> 419.0	41408	20.00 µg/L	0.000

System Monitoring Compounds

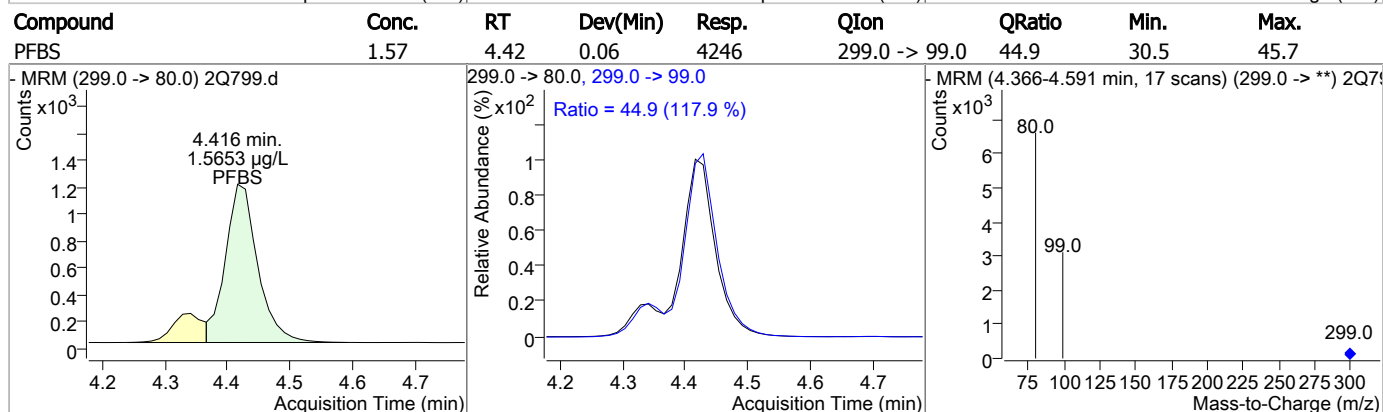
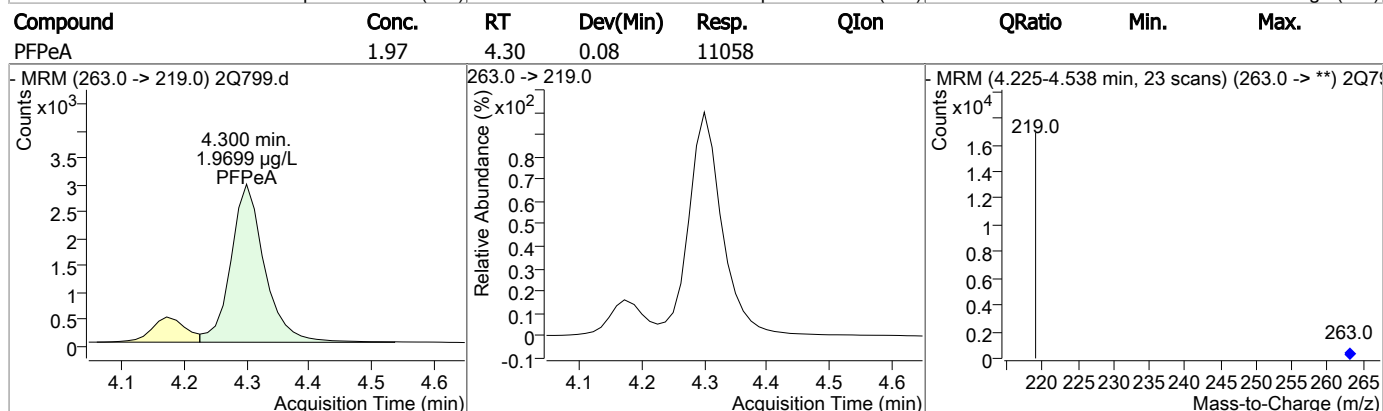
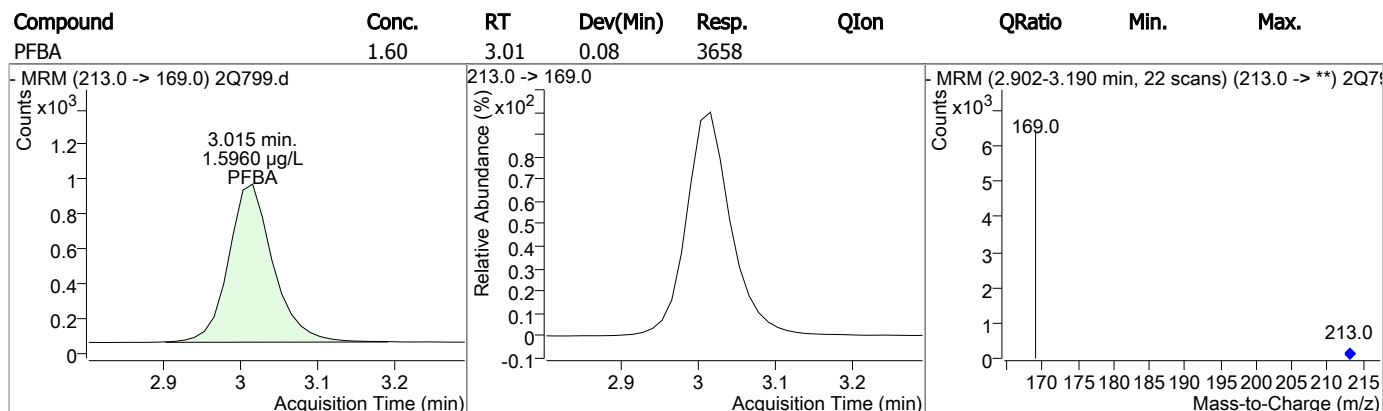
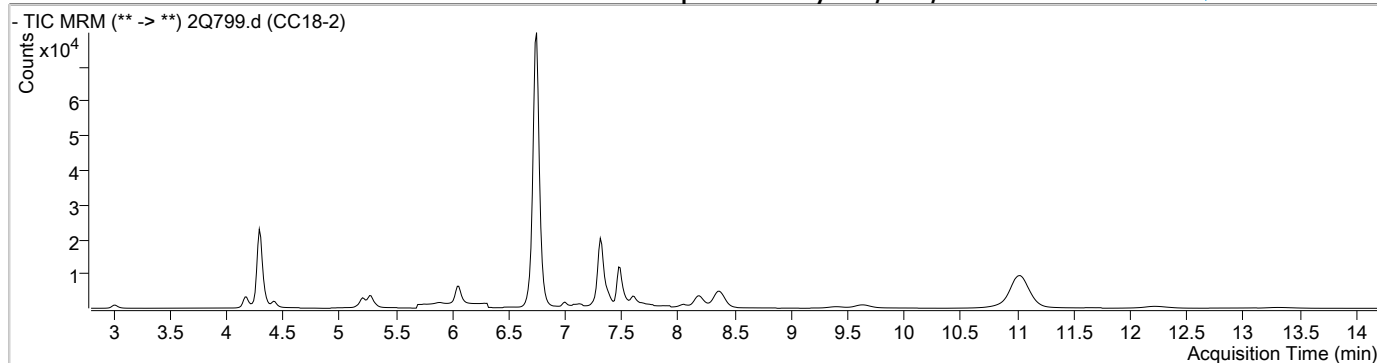
13C2-PFDA	8.180	515.0 -> 470.0	12828	2.10 µg/L	0.211
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 10.5%		
13C2-PFHxA	5.285	315.0 -> 270.0	8989	1.95 µg/L	0.075
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 9.8%		
d5-EtFOSAA	7.597	589.0 -> 419.0	4913	5.18 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 25.9%		

Target Compounds

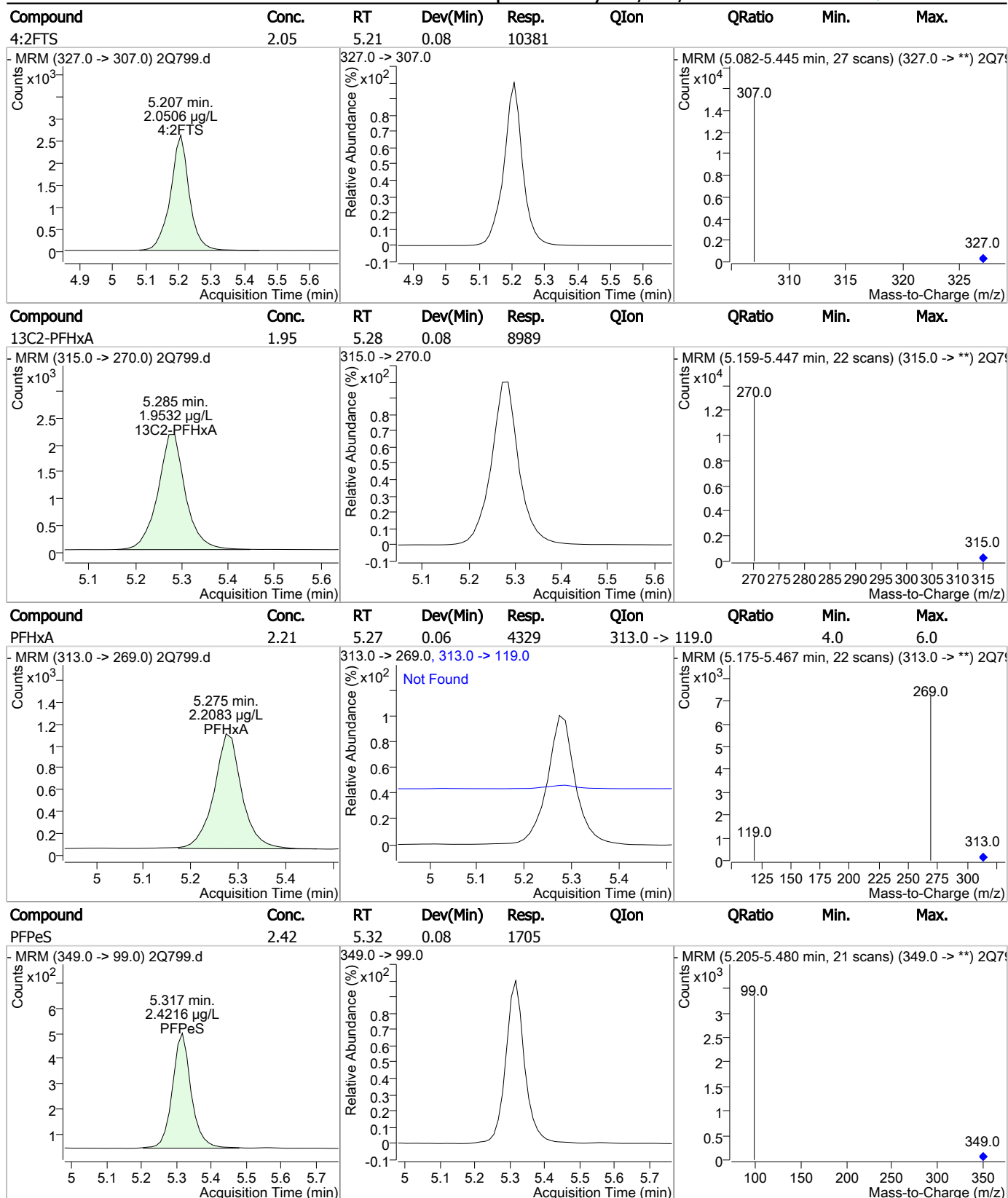
					QValue
4:2FTS	5.207	327.0 -> 307.0	10381	2.05 µg/L	100
6:2FTS	6.749	427.0 -> 407.0	26264	2.71 µg/L	100
8:2FTS	8.364	527.0 -> 507.0	36625	2.28 µg/L	100
EtFOSAA	7.611	584.0 -> 419.0	4176	4.62 µg/L	100
FOSA	6.998	498.0 -> 78.0	3860	1.73 µg/L	100
MeFOSAA	7.488	570.0 -> 419.0	4534	4.22 µg/L	100
PFBA	3.015	213.0 -> 169.0	3658	1.60 µg/L	100
PFBS	4.416	299.0 -> 80.0	4246	1.57 µg/L	89
PFDA	8.183	513.0 -> 469.0	9087	2.11 µg/L	100
PFDoDA	11.020	613.0 -> 569.0	10250	2.19 µg/L	100
PFDS	9.387	599.0 -> 80.0	3465	2.01 µg/L	100
PFHpA	6.061	363.0 -> 319.0	12451	2.11 µg/L	92
PFHpS	6.696	449.0 -> 80.0	5601	1.95 µg/L	100
PFHxA	5.275	313.0 -> 269.0	4329	2.21 µg/L	85
PFHxS	6.043	399.0 -> 80.0	4873	1.72 µg/L	98
PFNA	7.382	463.0 -> 419.0	9421	2.42 µg/L	98
PFNS	8.052	549.0 -> 99.0	3501	2.04 µg/L	100
PFOA	6.740	413.0 -> 369.0	8022	2.22 µg/L	97
PFOS	7.315	499.0 -> 80.0	5967	1.52 µg/L	100
PFPeA	4.300	263.0 -> 219.0	11058	1.97 µg/L	100
PFPeS	5.317	349.0 -> 99.0	1705	2.42 µg/L	100
PFTeDA	13.303	713.0 -> 669.0	4411	2.04 µg/L	100
PFTTrDA	12.215	663.0 -> 619.0	8500	2.17 µg/L	100
PFUnDA	9.644	563.0 -> 519.0	10122	2.07 µg/L	100

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

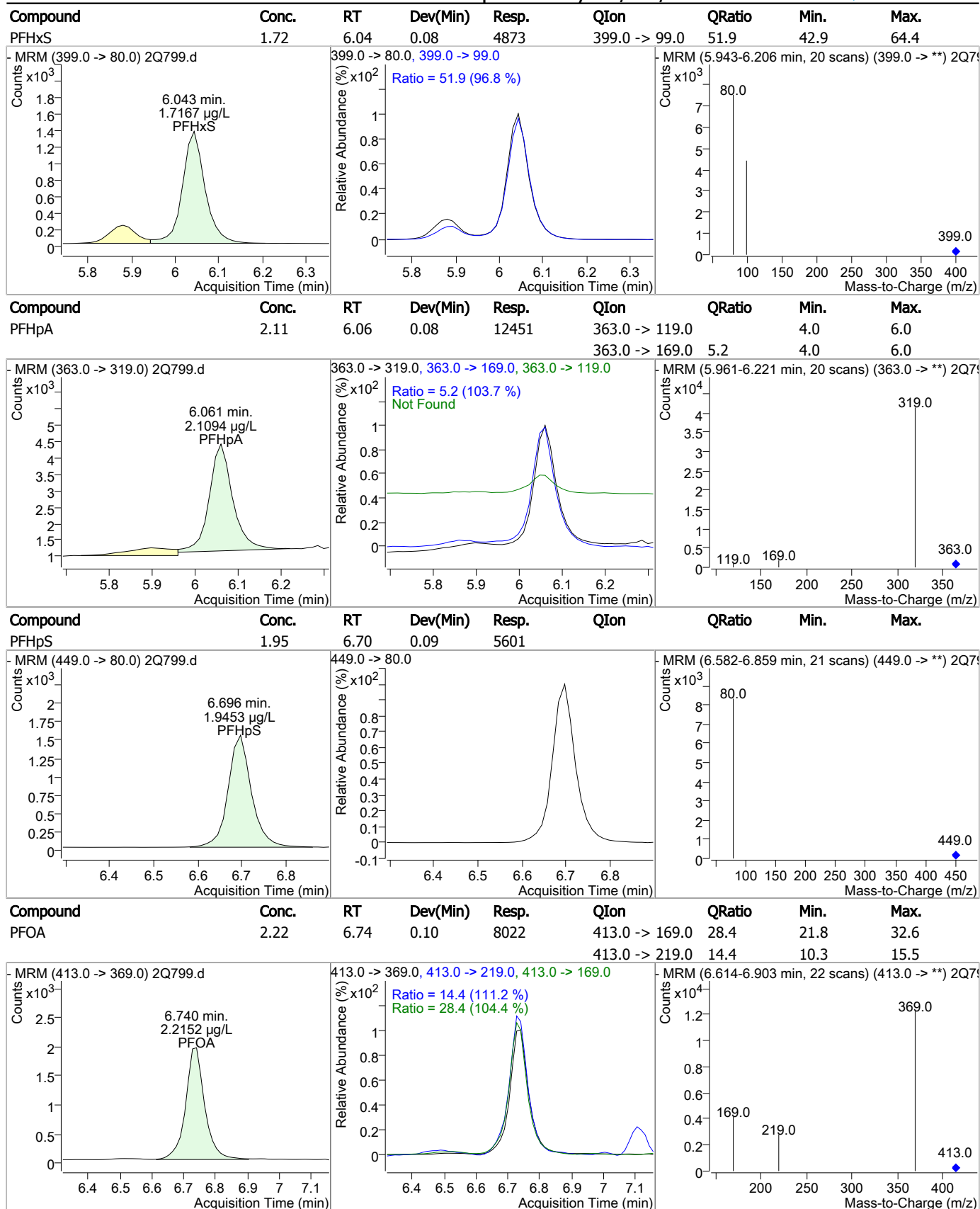
Perfluorinated Compounds by LC/MS/MS



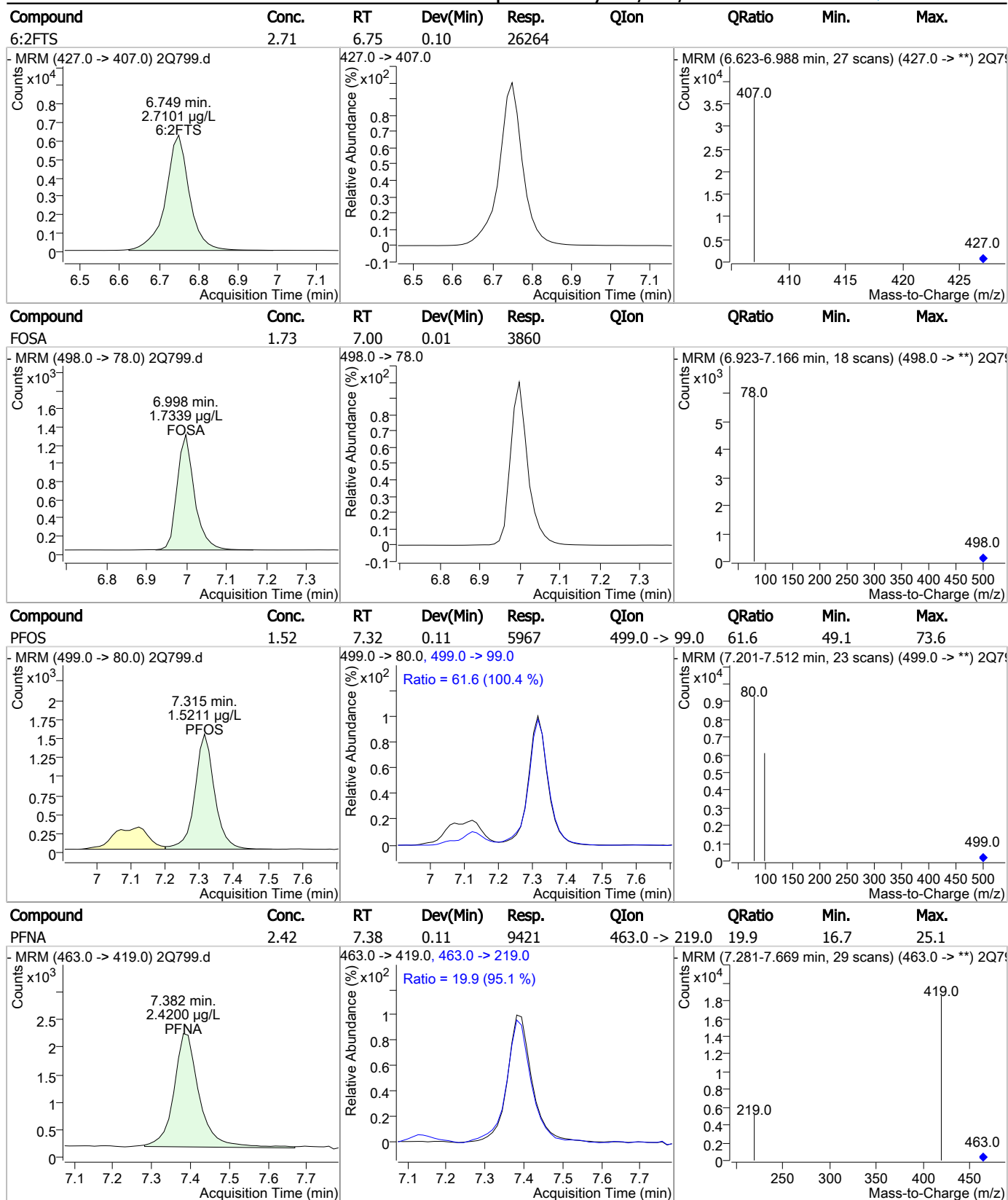
Perfluorinated Compounds by LC/MS/MS



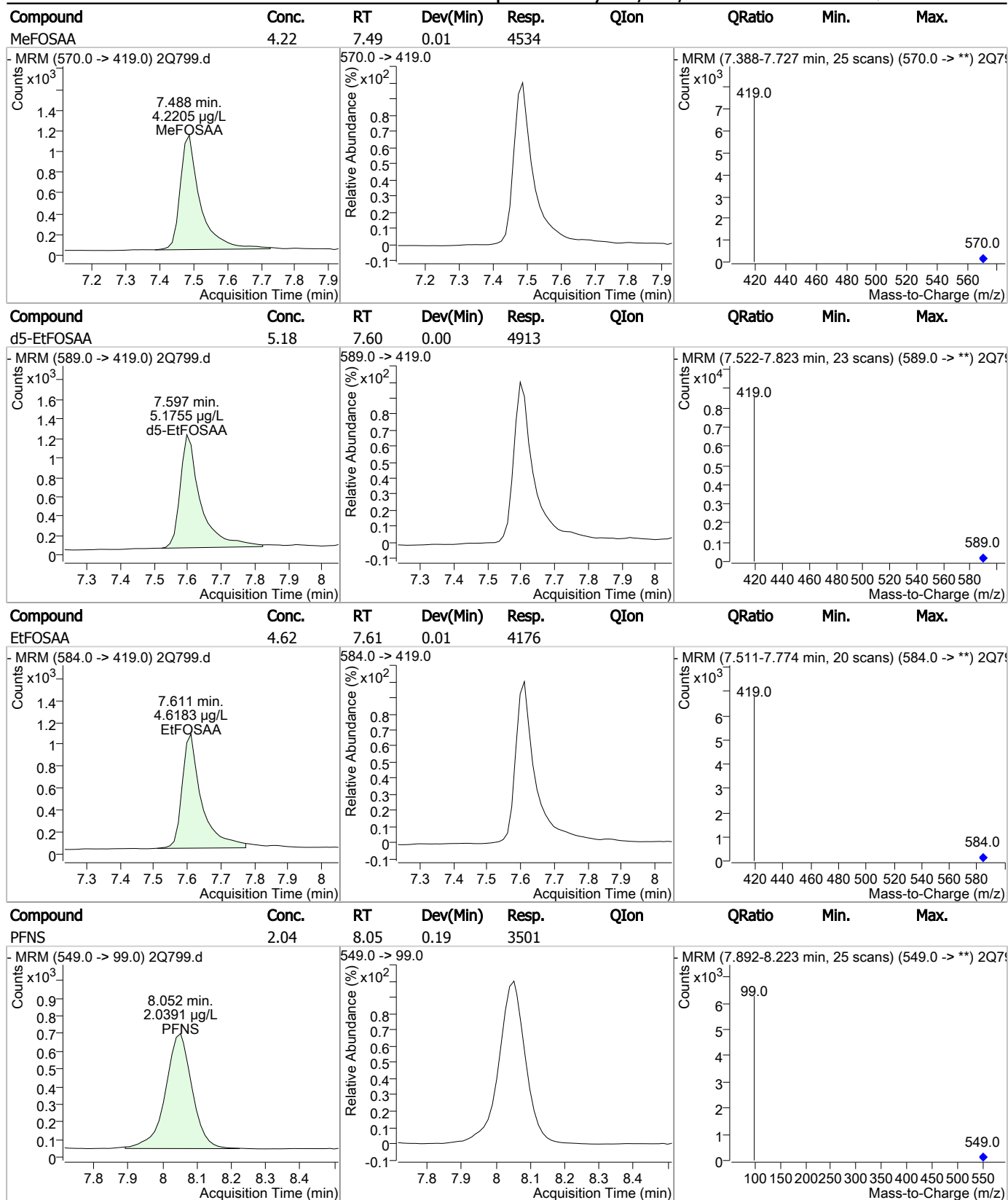
Perfluorinated Compounds by LC/MS/MS



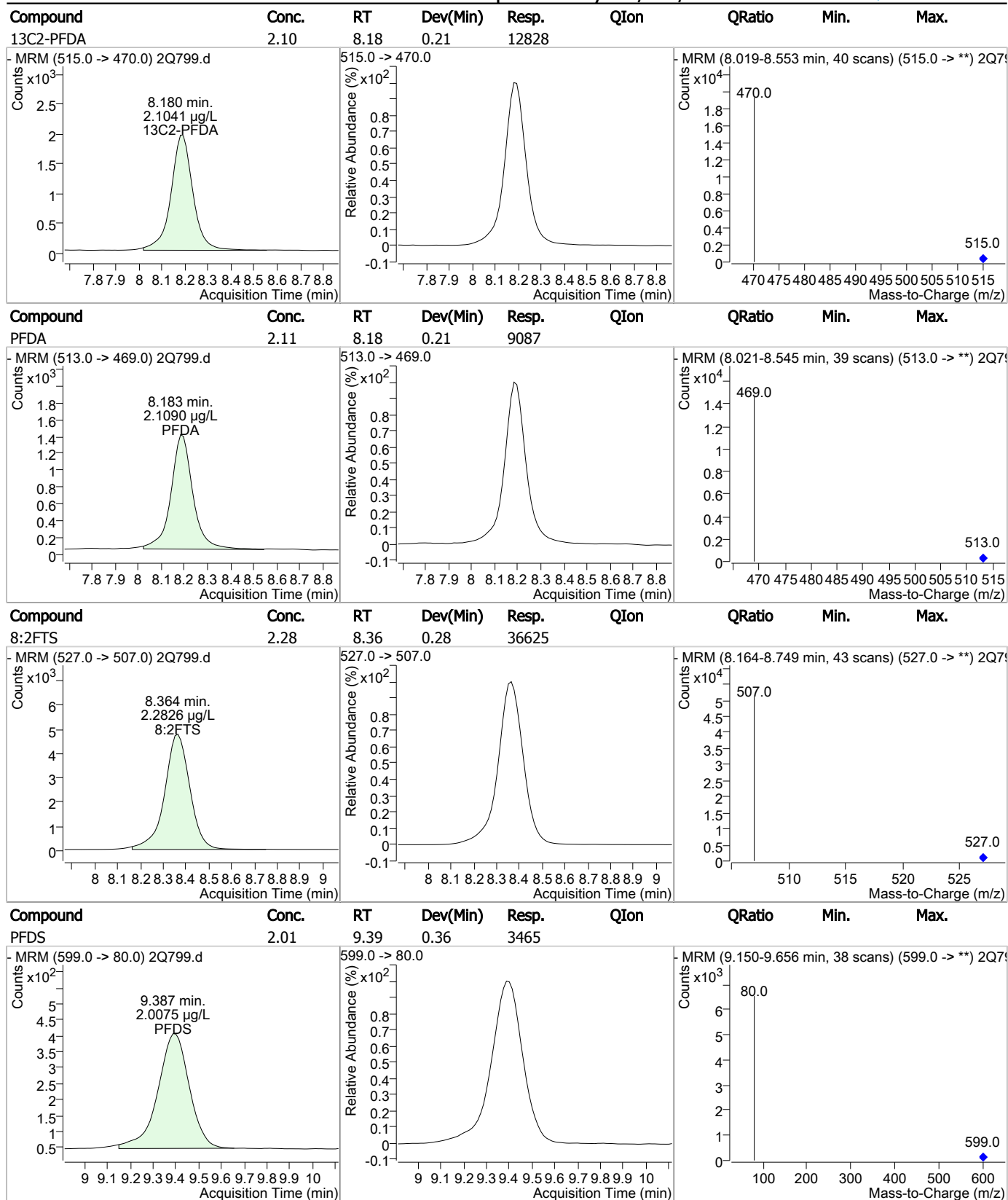
Perfluorinated Compounds by LC/MS/MS



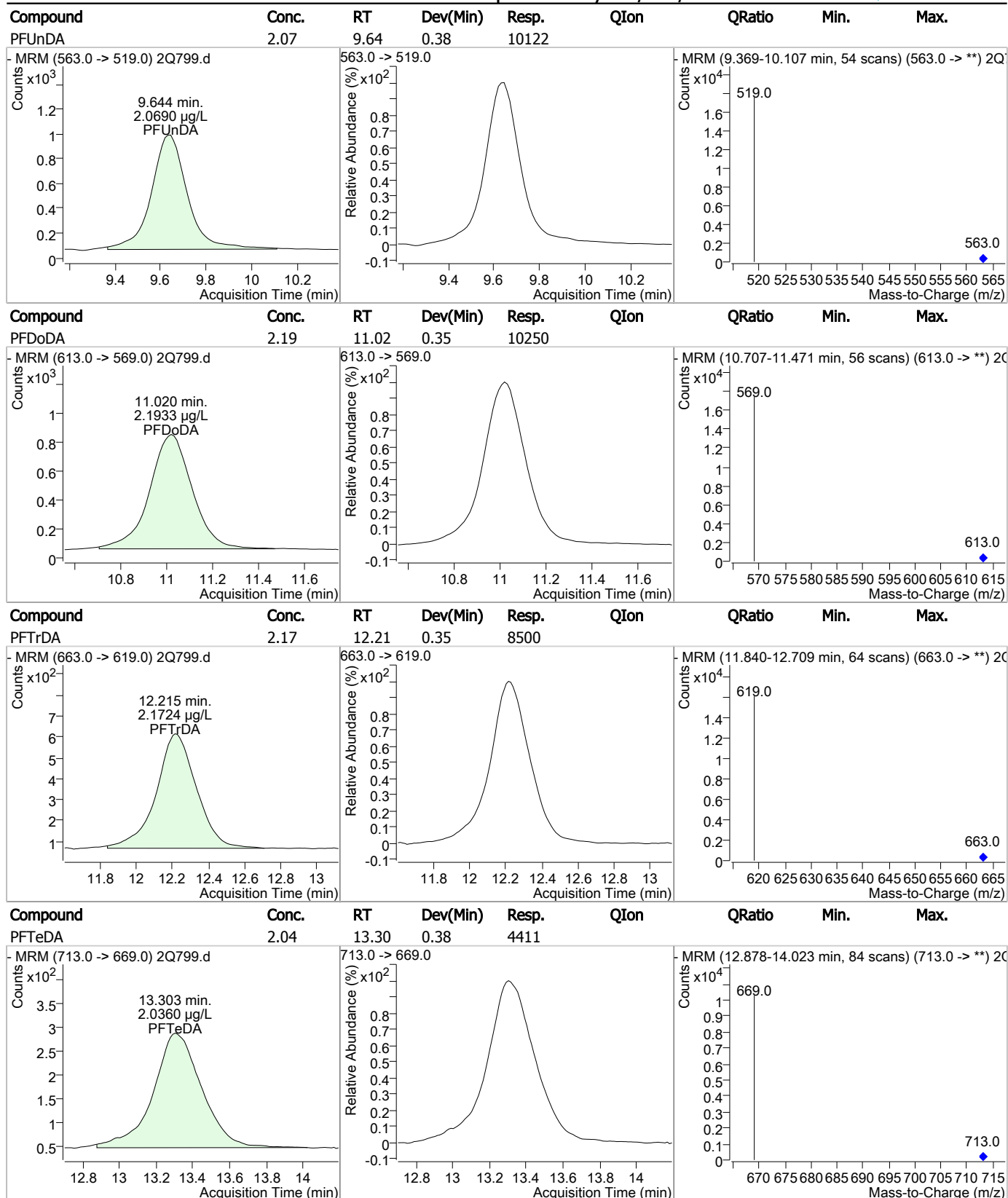
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q810.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/27/2017 1:28:19 PM
 Sample Name : ECC18-20
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : S2Q23.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.698	429.0 -> 409.0	208692	20.00 µg/L	0.050
13C2-PFDoDA	10.914	615.0 -> 570.0	120735	20.00 µg/L	0.250
13C2-PFOA	6.687	415.0 -> 370.0	92398	20.00 µg/L	0.050
13C3-PFPeA	4.247	266.0 -> 222.0	88498	20.00 µg/L	0.012
13C4-PFOS	7.264	503.0 -> 80.0	67608	20.00 µg/L	0.064
d3-MeFOSAA	7.462	573.0 -> 419.0	40389	20.00 µg/L	-0.012

System Monitoring Compounds

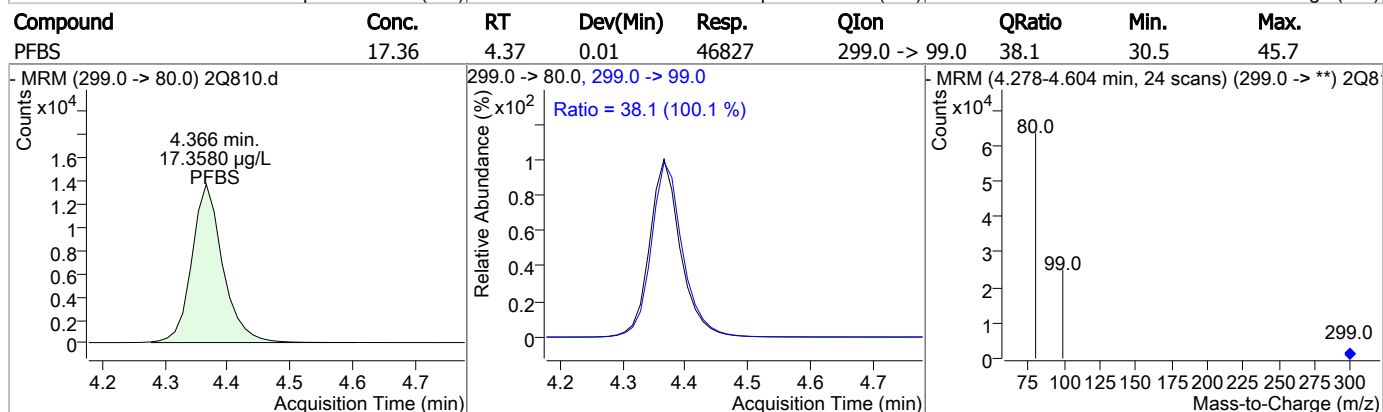
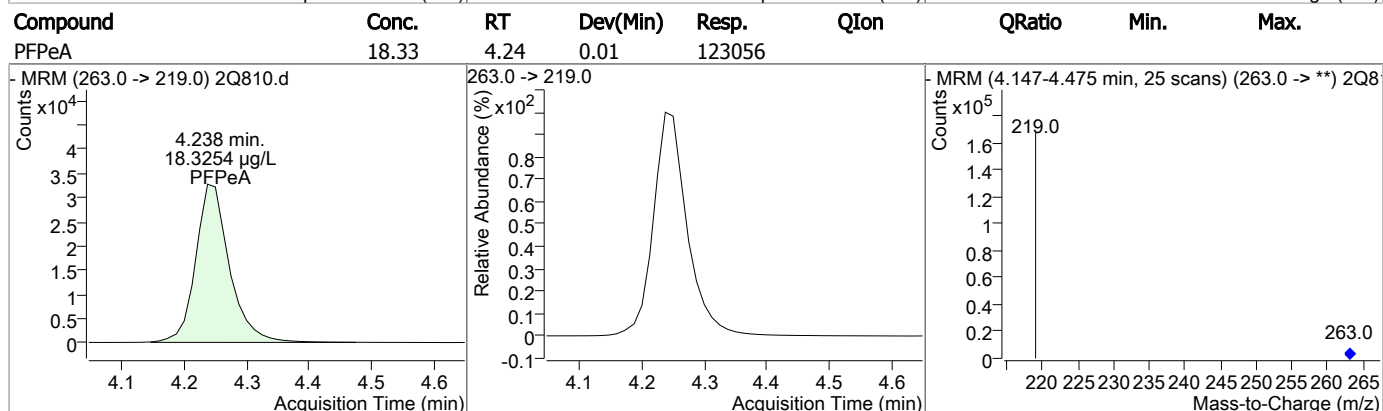
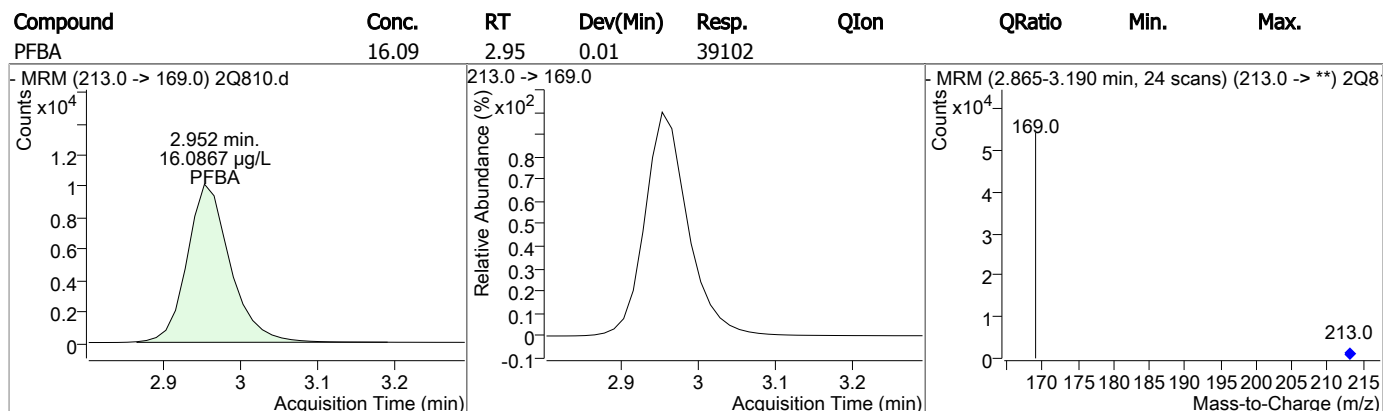
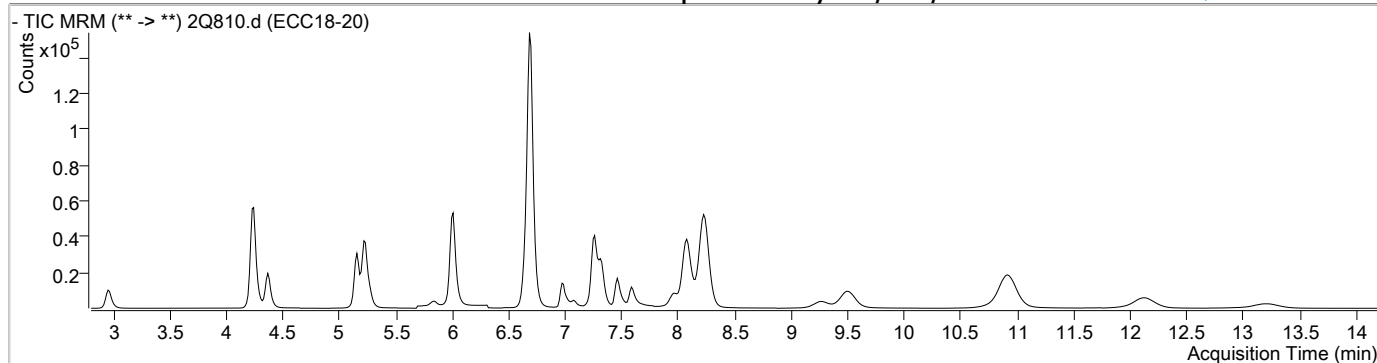
13C2-PFDA	8.080	515.0 -> 470.0	127024	19.65 µg/L	0.110
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 98.2%		
13C2-PFHxA	5.235	315.0 -> 270.0	88569	18.15 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 90.7%		
d5-EtFOSAA	7.585	589.0 -> 419.0	24546	24.21 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 121.1%		

Target Compounds

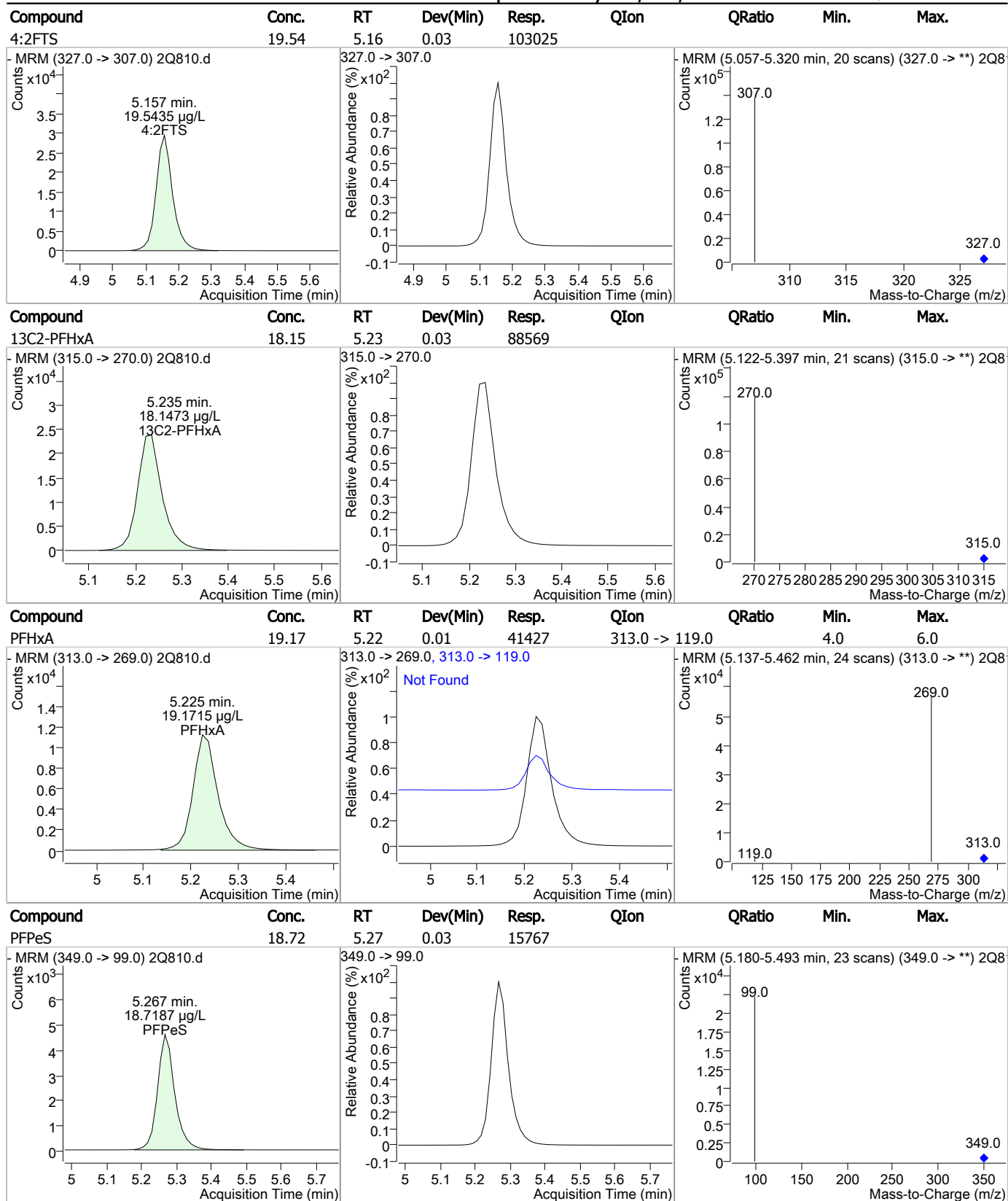
					QValue
4:2FTS	5.157	327.0 -> 307.0	103025	19.54 µg/L	100
6:2FTS	6.699	427.0 -> 407.0	197638	19.58 µg/L	100
8:2FTS	8.227	527.0 -> 507.0	335426	20.08 µg/L	100
EtFOSAA	7.586	584.0 -> 419.0	18139	19.69 µg/L	100
FOSA	6.973	498.0 -> 78.0	39088	18.00 µg/L	100
MeFOSAA	7.463	570.0 -> 419.0	22920	20.25 µg/L	100
PFBA	2.952	213.0 -> 169.0	39102	16.09 µg/L	100
PFBS	4.366	299.0 -> 80.0	46827	17.36 µg/L	100
PFDA	8.083	513.0 -> 469.0	86075	18.84 µg/L	100
PFDoDA	10.920	613.0 -> 569.0	101995	19.36 µg/L	100
PFDS	9.262	599.0 -> 80.0	33663	18.74 µg/L	100
PFHpA	6.011	363.0 -> 319.0	121527	18.95 µg/L	# 93
PFHpS	6.645	449.0 -> 80.0	53621	18.73 µg/L	100
PFHxA	5.225	313.0 -> 269.0	41427	19.17 µg/L	85
PFHxS	5.993	399.0 -> 80.0	52133	18.46 µg/L	m 93
PFNA	7.331	463.0 -> 419.0	77719	18.83 µg/L	98
PFNS	7.952	549.0 -> 99.0	31336	18.35 µg/L	100
PFOA	6.677	413.0 -> 369.0	73401	19.11 µg/L	99
PFOS	7.252	499.0 -> 80.0	70052	17.95 µg/L	m 87
PFPeA	4.238	263.0 -> 219.0	123056	18.33 µg/L	100
PFPeS	5.267	349.0 -> 99.0	15767	18.72 µg/L	100
PFTeDA	13.203	713.0 -> 669.0	42433	17.36 µg/L	100
PFTTrDA	12.127	663.0 -> 619.0	85717	19.23 µg/L	100
PFUnDA	9.506	563.0 -> 519.0	96717	18.26 µg/L	100

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

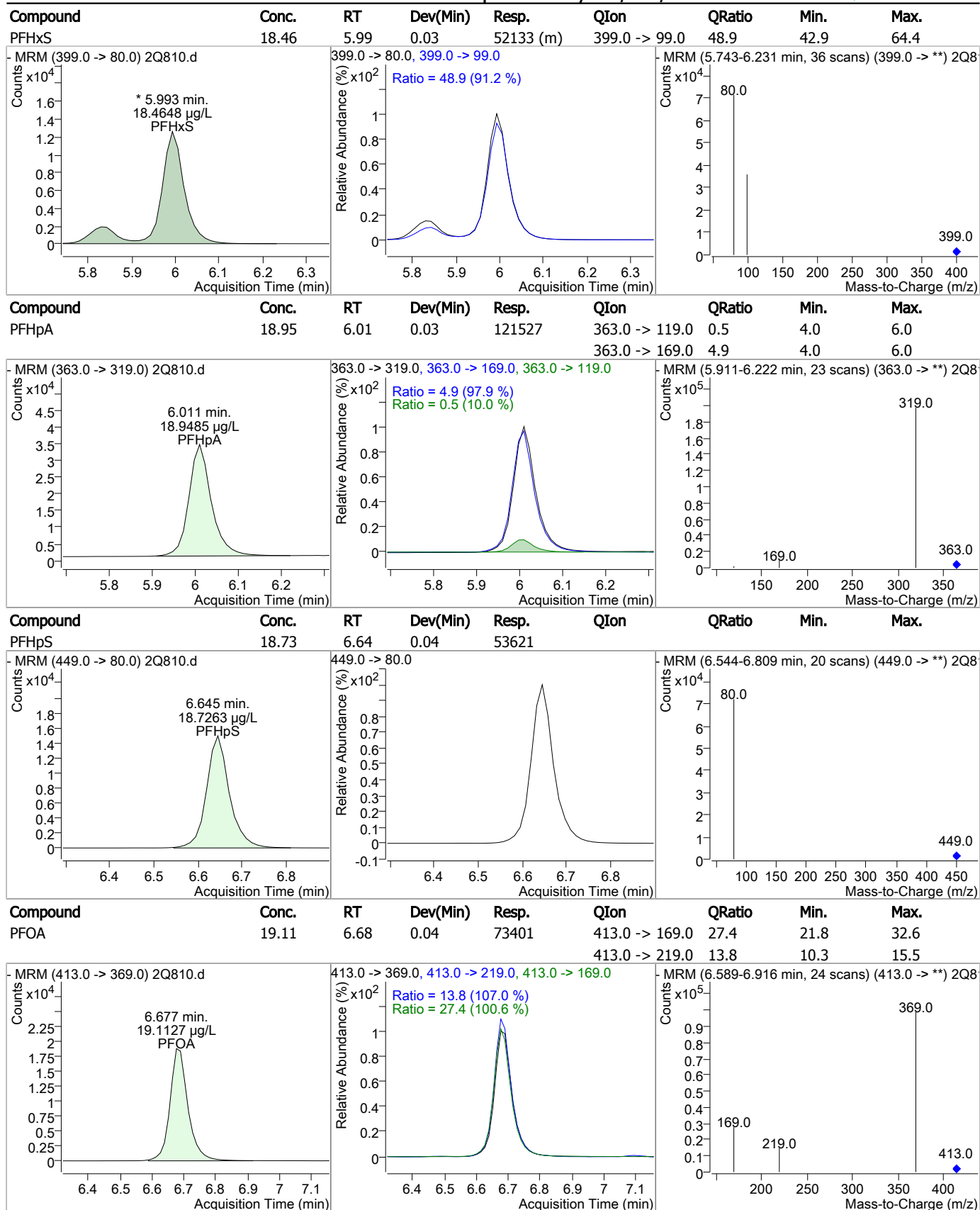
Perfluorinated Compounds by LC/MS/MS



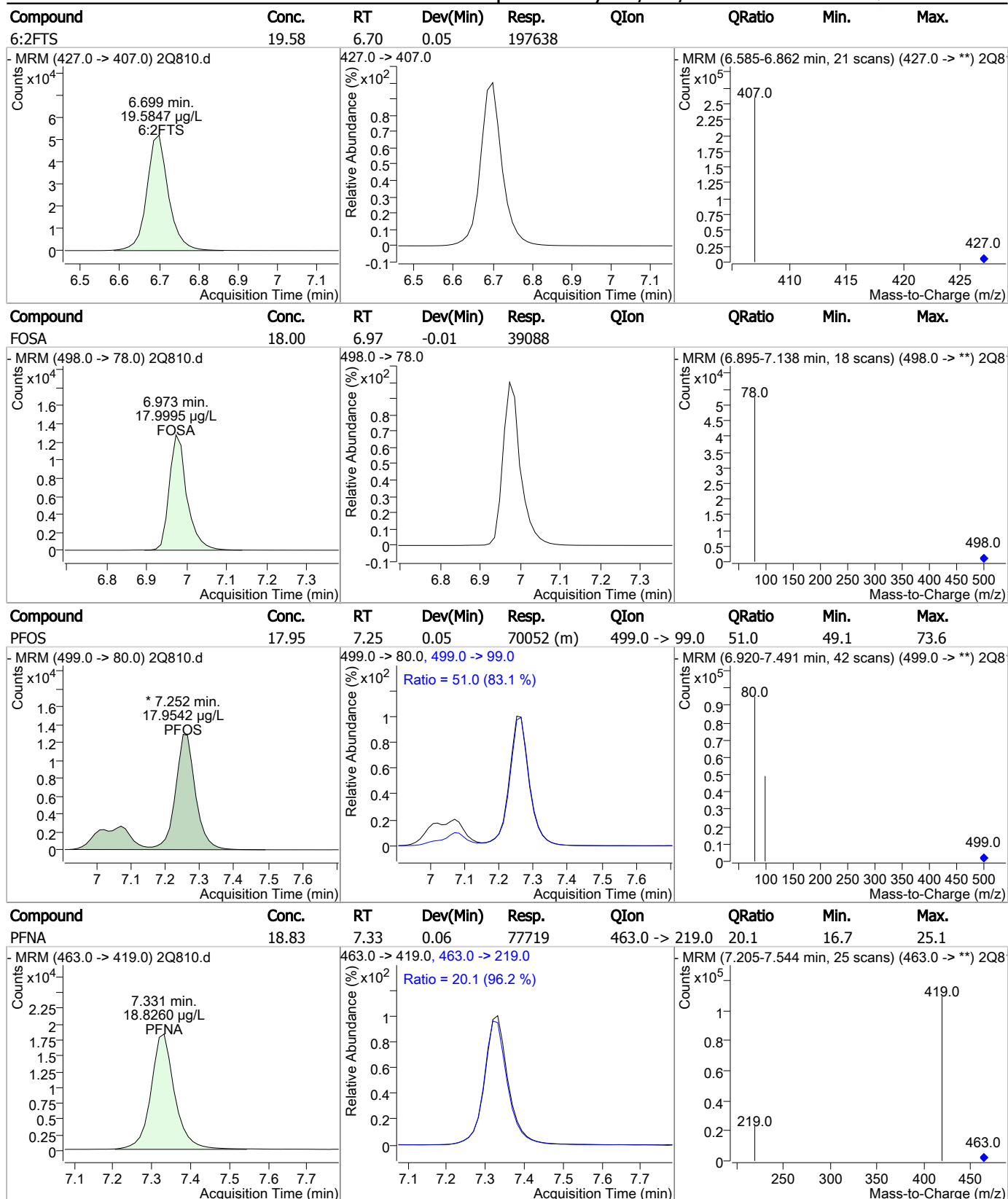
Perfluorinated Compounds by LC/MS/MS



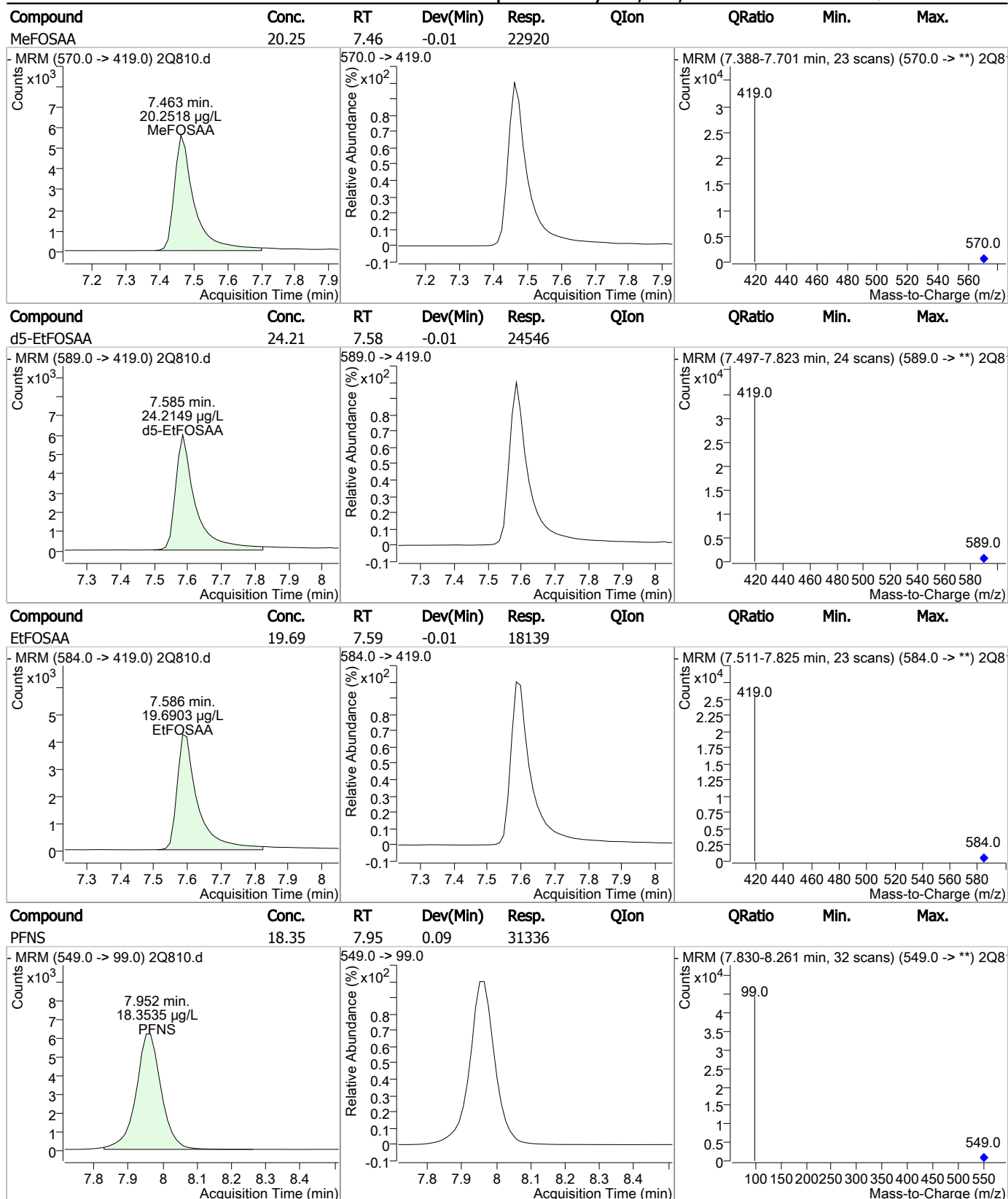
Perfluorinated Compounds by LC/MS/MS



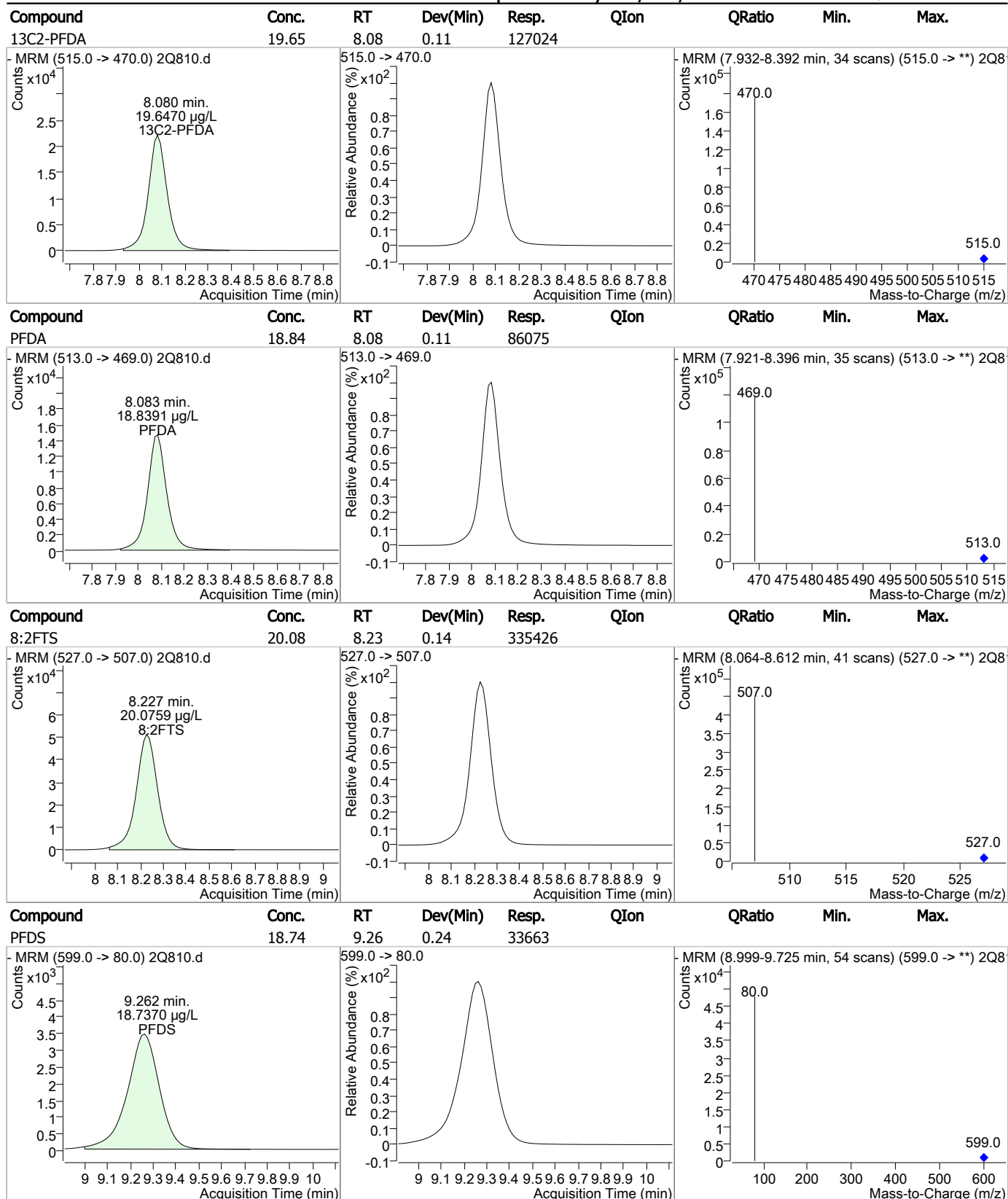
Perfluorinated Compounds by LC/MS/MS



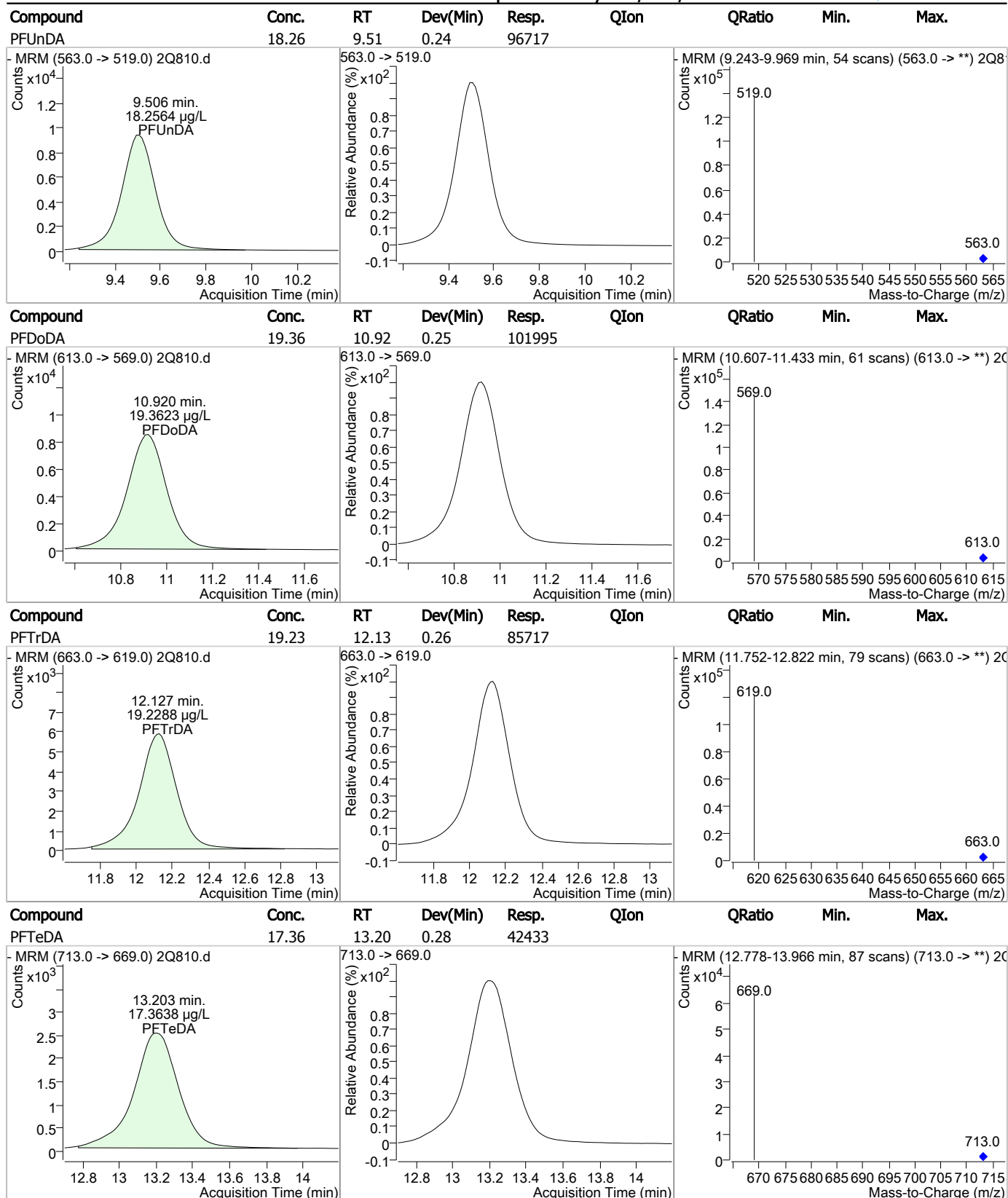
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q23-ECC18

Method: EPA 537

Lab FileID: 2Q810.D

Analyst approved: 04/27/17 14:42 Mike Eger

Injection Time: 04/27/17 13:28

Supervisor approved: 04/27/17 14:49 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.25	Split peak

7.5.11.1
7

SGS ACCUTEST-ORLANDO

DATE: 04-20-17
 COLUMN TYPE: Perchlorate
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 330

LCMS2-2Q ANALYSIS LOG

METHODS: 537 mod
 ACQ. METHOD: dMAM AREA PDS list
 PROC. METHOD: PFC list DW 04202018
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 18

ANALYST: Mgs
 ELUENT A LOT #: 167421
 ELUENT B LOT #: 166751
 WATER LOT #: 167421
 ISTD Lot #: 22836

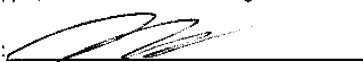
DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 644	1	CCB	PFC						✓
2Q 45	1	CCB							✓
2Q 46	1	CCB							✓
2Q 47	2	CC16-20		LC838	100/100				SS ↓ AmCura
2Q 48	1	CCB							✓
2Q 49	1	CCB							✓
2Q 50	2	FC18-1		LC838	5/100				X Fix AT RA
2Q 51	2	-1			↓		SD		✓
2Q 52	3	-2			100/100		SD		✓
2Q 53	4	-5			25/100		SD		✓
2Q 54	5	-10			70/100		SD		✓
2Q 55	6	FC18-20			100/100		SP		✓
2Q 56	7	FC18-40			200/100		SD		✓
2Q 57	8	-50			250/100		SP		✓
2Q 58	1	CCB							✓
2Q 59	9	FC18-20		LC817/614 84068	5/100 5/100				Pass
2Q 60	10	OP64645-BS		OP64645	1X				✓
2Q 61	11	FA42757-3			10X		SD		✓ Report E+, Re Form 1X
2Q 62	12	-25			10X		SD	±	✓ ↓
2Q 63	13	-4			1X		SD		✓

* < Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE: 04-20-17
 COLUMN TYPE: Poragov 16C18
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 320

LCMS2-2Q ANALYSIS LOG

METHODS: 537 M03
 ACQ. METHOD: JMEM PLOT ACQS LIST
 PROC. METHOD: PFLIST BW 3420 320.16
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 18

ANALYST: NAS
 ELUENT A LOT #: 167421 WATKINS
 ELUENT B LOT #: 166751
 WATER LOT #: 167421
 ISTD Lot #: LL836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 664	14	OP 64707-RS	PFL	OP64707	17				✓
2Q 65	15	-MB							✓ ME, ETAL
2Q 66	15	-MB							BAL
2Q 67	16	FA43168-1							BAL
2Q 68	17	-2					SP		✓
2Q 69	18	-3					SP		✓
2Q 70	19	-4					SP		✓
2Q 71	6	CC18-20		LL836	1001500		SP		PASS
2Q 72	1	CCB							✓
2Q 73	1	CCB							✓
2Q 74	20	FA42877-1		OP64707	17		SP		✓
2Q 75	24	-3					SP		✓ AA 10X, 100X
2Q 76	25	-4					SP		✓ AA 5X
2Q 77	26	-5					SP		✓ AA 5X
2Q 78	27	-6					SP		✓ AA 10X, 50X
2Q 79	28	-8					SP OP	I	✓ AA 20X
2Q 80	29	-9					SP		✓ AA 20X, 50X
2Q 81	21	-2					SP		✓ AA 5X
2Q 82	22	OP64707-M5					SP		
2Q 83	23	MSD					SP		↓

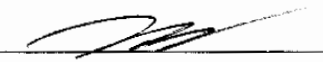
*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE: 04-20-17
 COLUMN TYPE: Porus 11 FC10
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 330

LCMS2-2Q ANALYSIS LOG

METHODS: 537 mod
 ACQ. METHOD: dmam PDA ACOS List
 PROC. METHOD: PFC Listow 0420 S2Q18
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 18

ANALYST: mas
 ELUENT A LOT #: 167421 w Acetic
 ELUENT B LOT #: 166751 L
 WATER LOT #: 167421
 ISTD Lot #: LC836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 684	6	CC18-20	PFC	LC836	100/TW		SP		Pass
2Q 85	1	CCB							✓
2Q 86	1	CCB							✓
2Q 87	30	FA 412677-1		0A64707	17		SP		✓ AA 20X
2Q 88	31	-16		+	+				Pass
2Q 89	6	ECC 18-20		LC836	100/TW		SP		Pass
2Q 90	1	CCB							✓
2Q									
2Q									
2Q									
2Q									
2Q									
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2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

*< Conductivity Limit For Perchlorate by SW846 6850
 Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

Analyst's Signature: 

SGS ACCUTEST-ORLANDO

DATE: 4/27/17
 COLUMN TYPE: Poroshell EC-18
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 321

LCMS2-2Q ANALYSIS LOG

METHODS: 537
 ACQ. METHOD: MRM-PPDA-PPDS-11ST
 PROC. METHOD: PPLIST DW 0420 S2Q18
 CALIB. DATE: 4/20/17
 RUN BATCH: S2Q 23

ANALYST: *[Signature]*
 ELUENT A LOT #: 167421 'Acetic Acid'
 ELUENT B LOT #: 166751
 WATER LOT #: 167421
 ISTD Lot #: LC 836

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 795	1	CCB	537						
2Q 796	1	CCB							
2Q 797	1	CCB							
2Q 798	2	CC18-20		LC838	100/500		SP		PASS
2Q 799	4	CC18-2		L	10/500		SP		PASS +/- 30%
2Q 800	13	OP64782-B5		64782	1				
2Q 01	14	L-MB							ND
2Q 02	15	FA42949-1							L
2Q 03	16	OP64782-M5					SP ~ 4/27/17		
2Q 04	17	L-MSD					SP L		
2Q 05	18	FA42949-2							BDC
2Q 06	19	FA42950-1							
2Q 07	20	2-2							
2Q 08	21	FA42951-1							
2Q 09	22	L-2							
2Q 10	2	ECC18-20		LC838	100/500		SP		PASS
2Q 11	1	CCB							
2Q									
2Q									
2Q									

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument Integration
 All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

LCMS2_2Q_log.xls ME rev. 06/16

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Analyst's Signature: *[Signature]*

SGS ACCUTEST - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/25/17 1300
Started (mm/dd/yy 24:00)Prep Method: 3535A or Method (circle)Date/Time: 04/25/17 1800
Finished (mm/dd/yy 24:00)Analytical Method: LC537 DWBatch#: OP64782 Ext. By: MB Conc. By: AA Viald By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Comments
OP64782 MB	X	260	6	N/A	20ul		1.25	
OP64782 BS	X	260				10+10ul		
FA42949-1	1	260						
-2	1	250						
FA42950-1	1	260						
-2	1	260						
FA42951-1	1	250						
-2	1	260						
MB 04/25/17								
FA42949-1 MS	2	130	6	N/A	20ul	10+10ul	1.25	
-1 MSD	2	130						
DUP								

Comments:

Surr.1 ID: LC834 Conc: 18ppm Exp. Date: 10/05/17 Inj. By: MB Ver. By: MB
 Surr.2 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By: —
 Spk.1 ID: LC839 Conc: 2ppm Exp. Date: 08/25/17 Inj. By: MB Ver. By: MB
 Spk.2 ID: B487A Conc: 2ppm Exp. Date: 04/19/18 Inj. By: MB Ver. By: MB

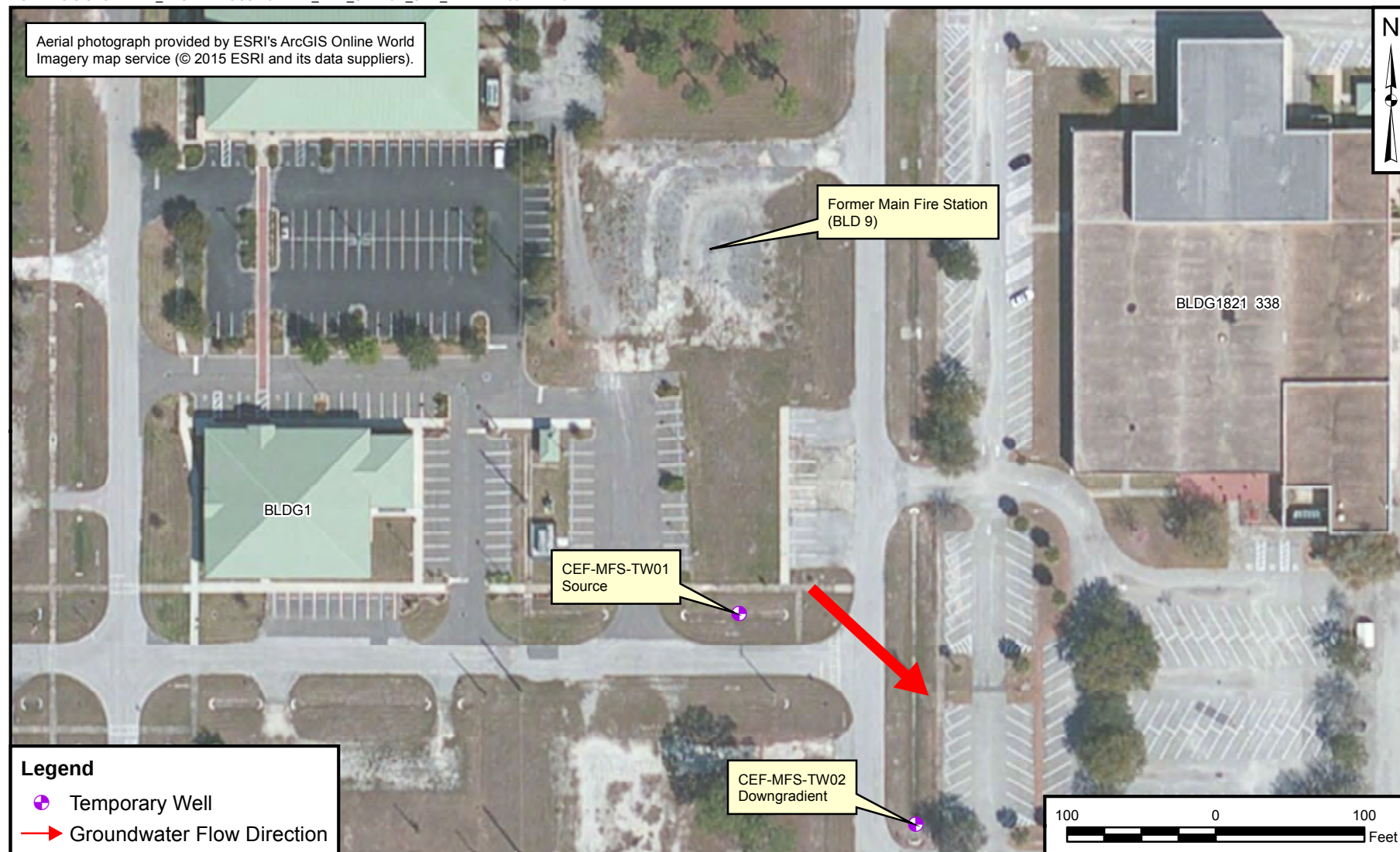
Initial Bath Temp (Therm ID): — Exchange Bath/N-Evap Temp (Therm ID): N-EVAP
 Observed Temp °C: — Corr. Temp °C: — Observed Temp °C: — Corr. Temp °C: —

Methanol Lot # 170294 SPE Lot # 5308-0072 pH Paper # 2300/6
 Acetonitrile Lot # — SPE Lot # — Reagent # —
 Water Lot # OP64208 Syringe Filter Lot # — Solvent # —

Relinquished By: Ahmad AliDate: 04/26/17Accepted By: —Date: 04/26/17

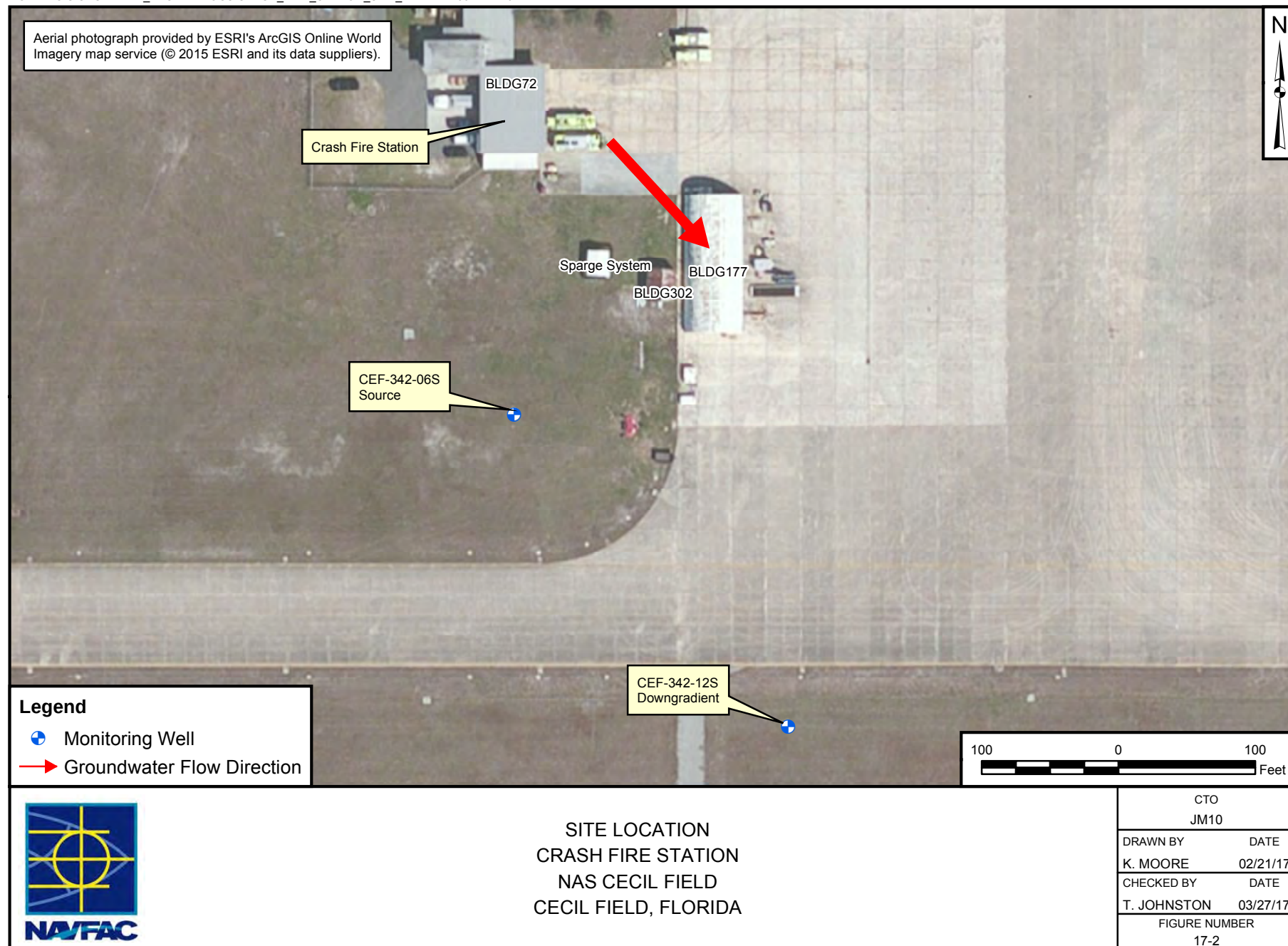
NF 02/16

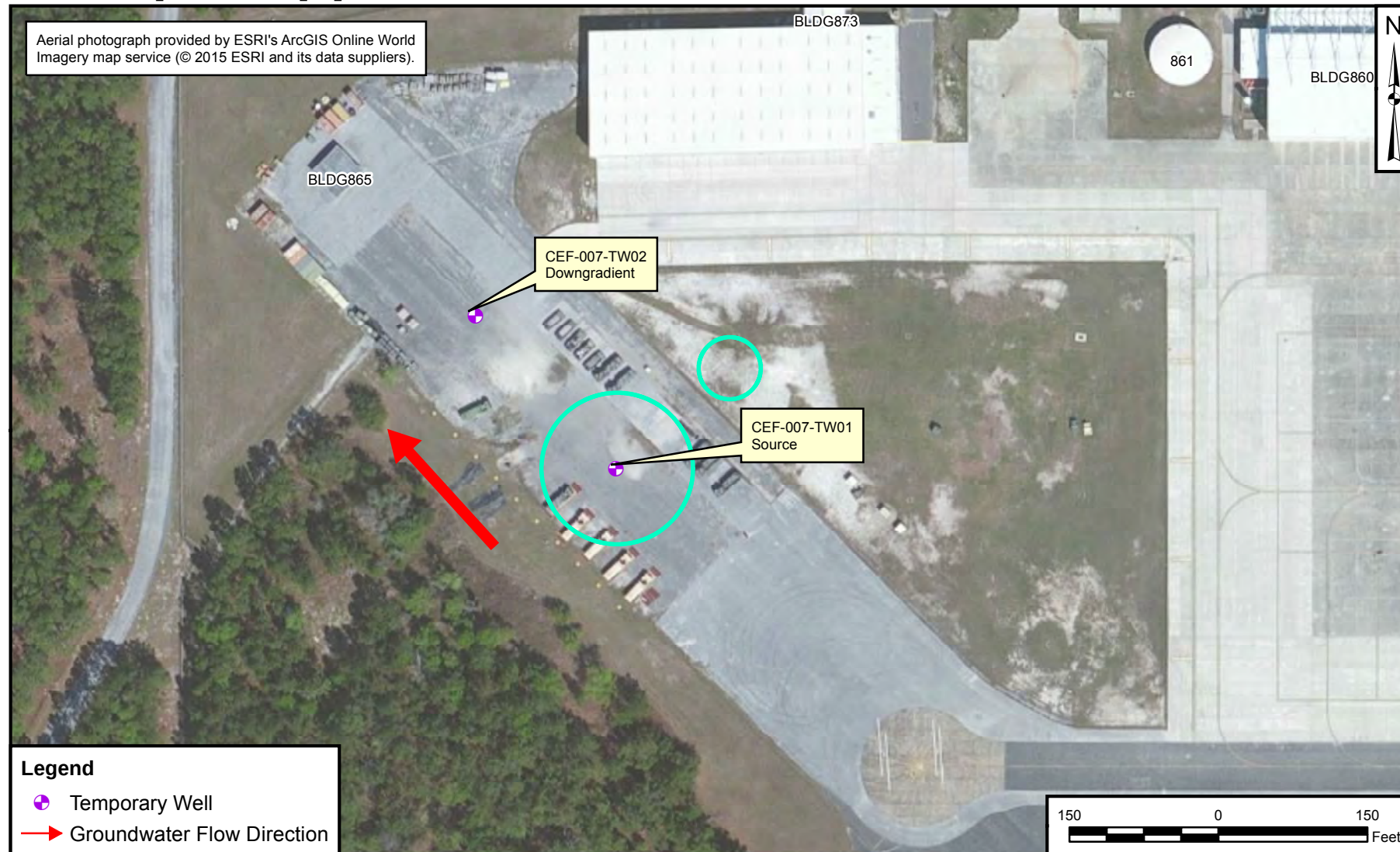
extwater_spe 020116.xls



SITE LOCATION
FORMER FIRE STATION
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-1	

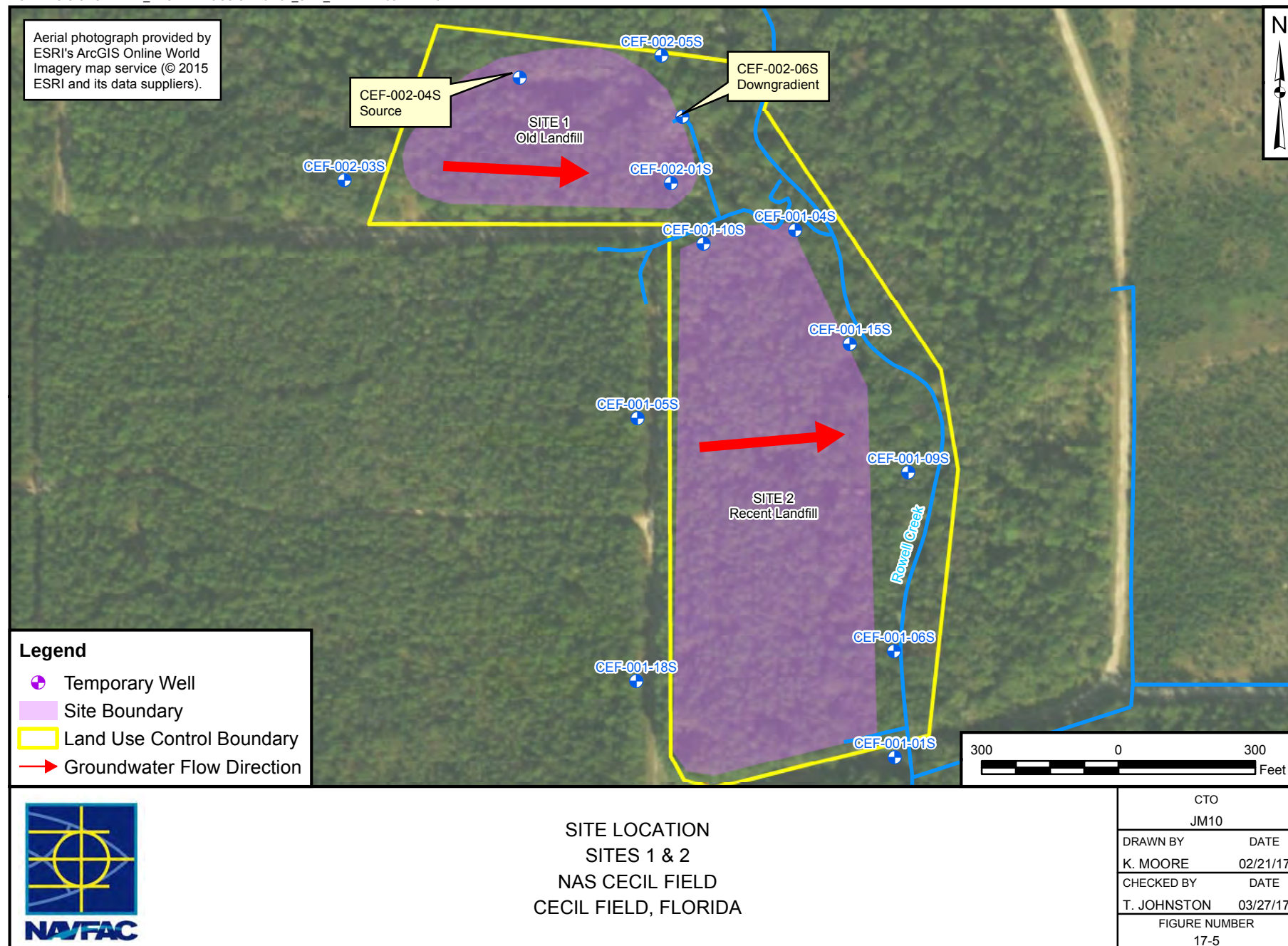


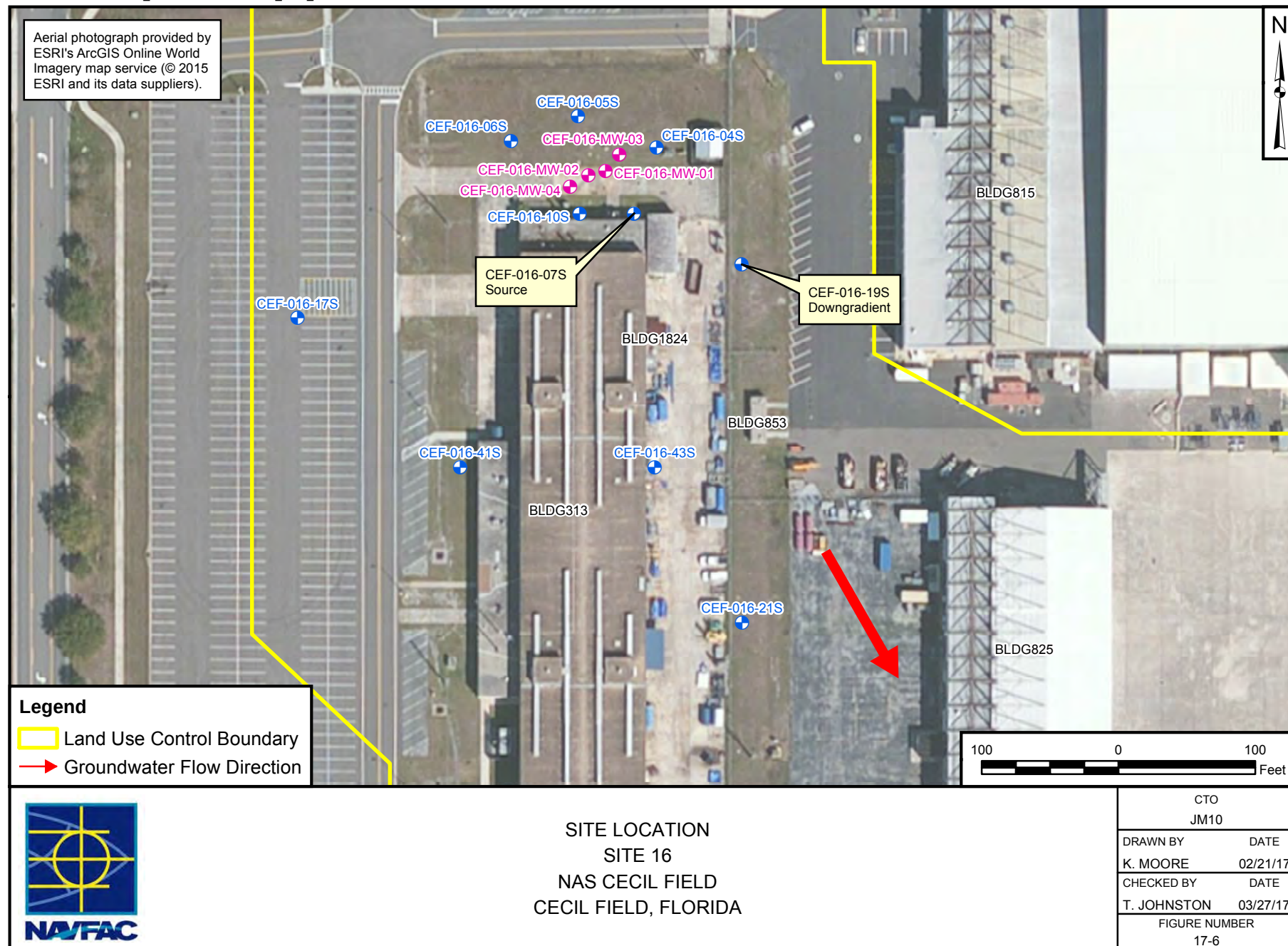


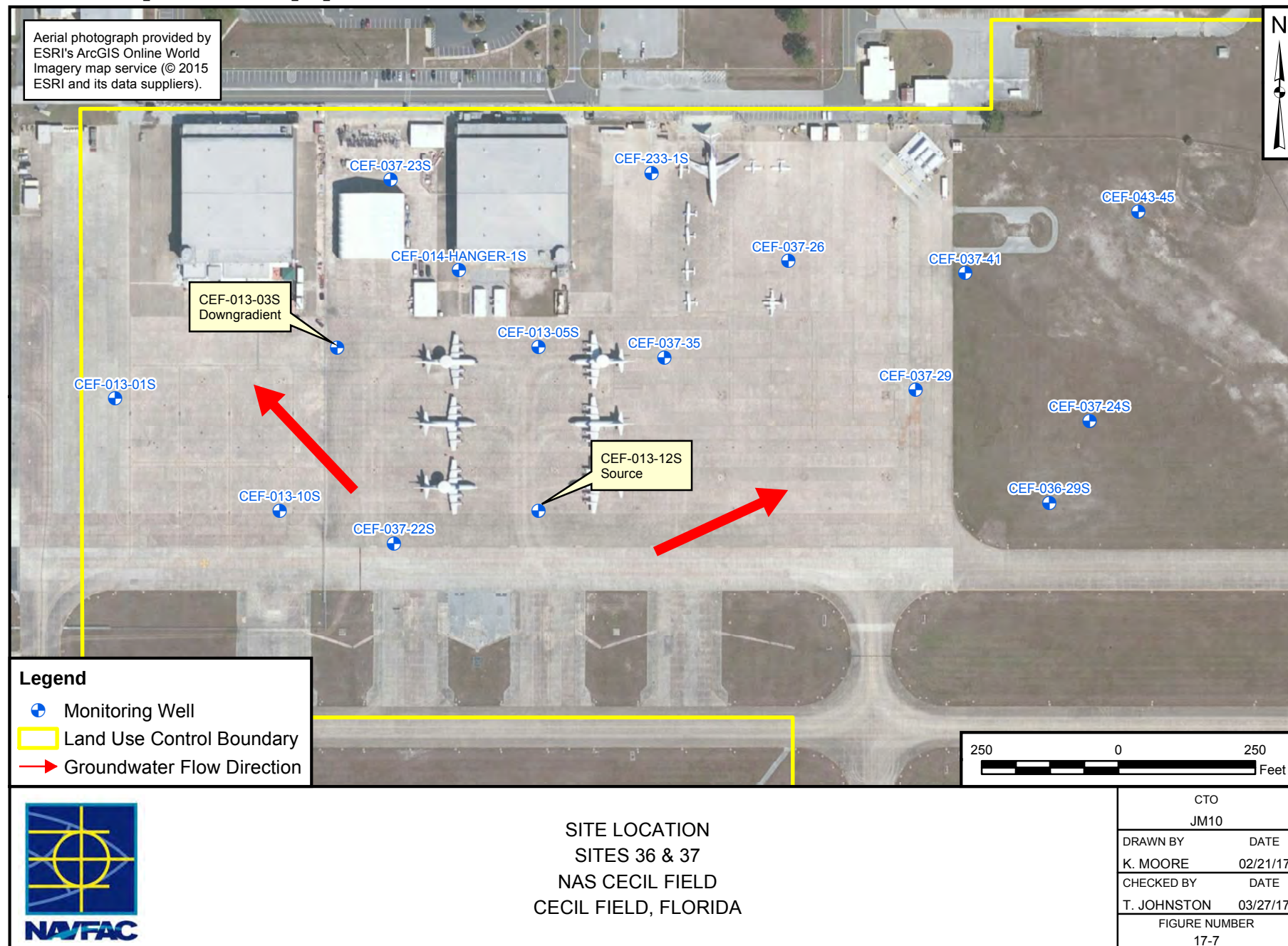
SITE LOCATION
SITE 7
NAS CECIL FIELD
CECIL FIELD, FLORIDA

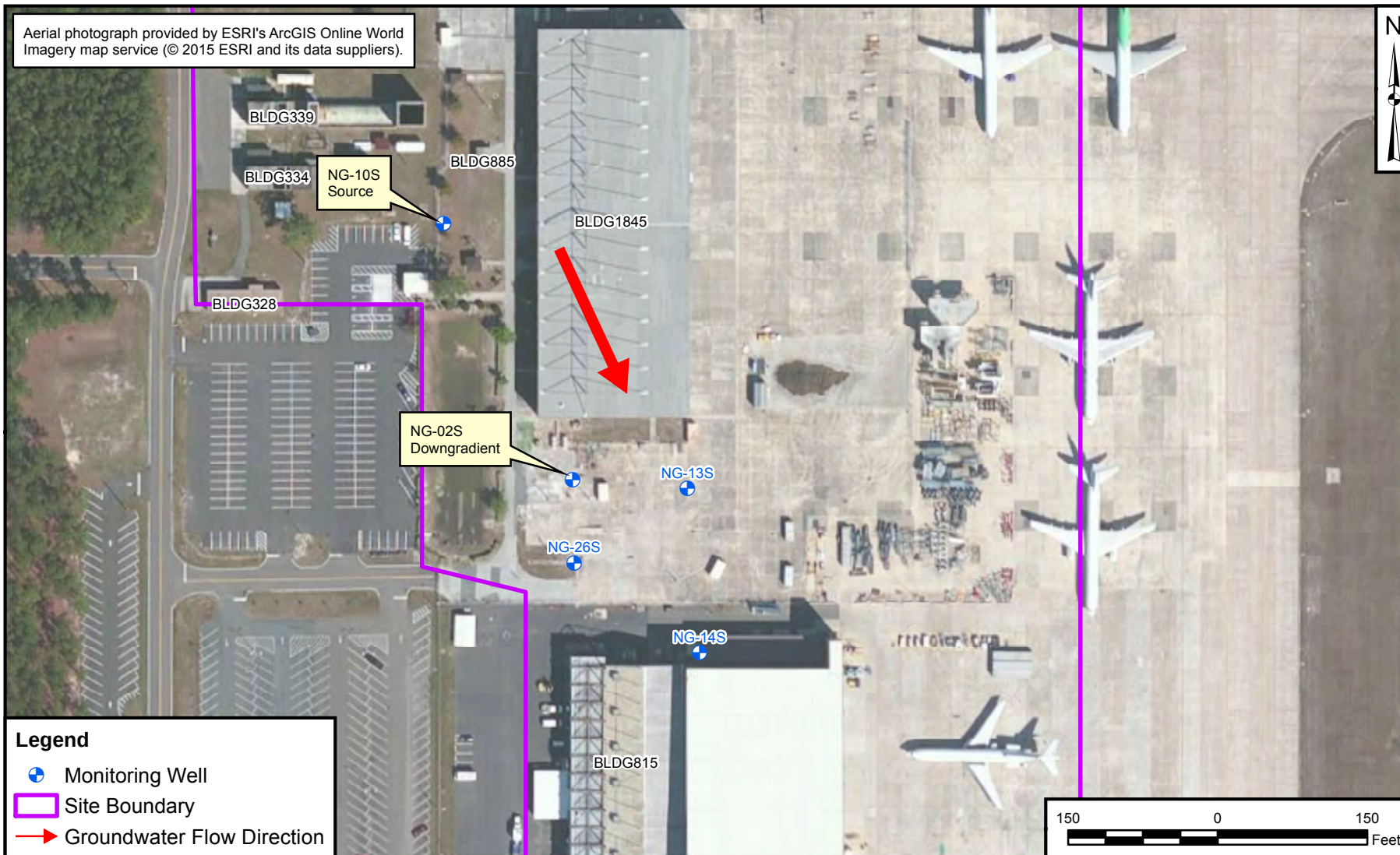
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-3	











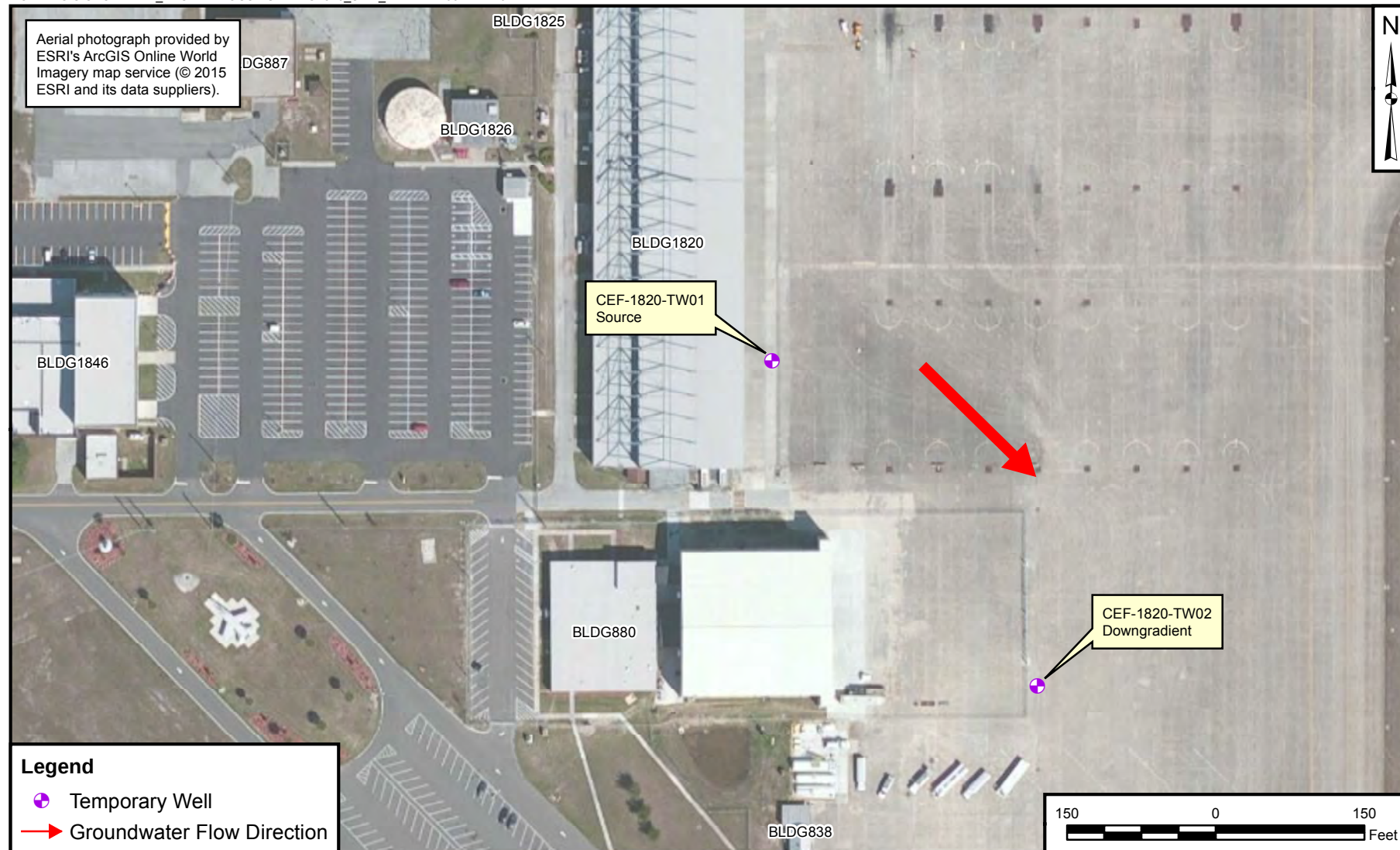
SITE LOCATION
SITE 59
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-8	



SITE LOCATION
BUILDING 860
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO	
JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER	
17-9	



SITE LOCATION
BUILDING 1820
NAS CECIL FIELD
CECIL FIELD, FLORIDA

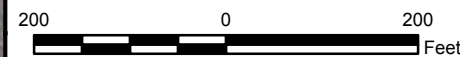
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DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-10	

Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2015 ESRI and its data suppliers).



Legend

- Land Use Control Boundary
- ➔ Groundwater Flow Direction



SITE LOCATION
NORTH FUEL FARM
NAS CECIL FIELD
CECIL FIELD, FLORIDA

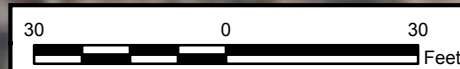
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DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-11	

Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2015 ESRI and its data suppliers).



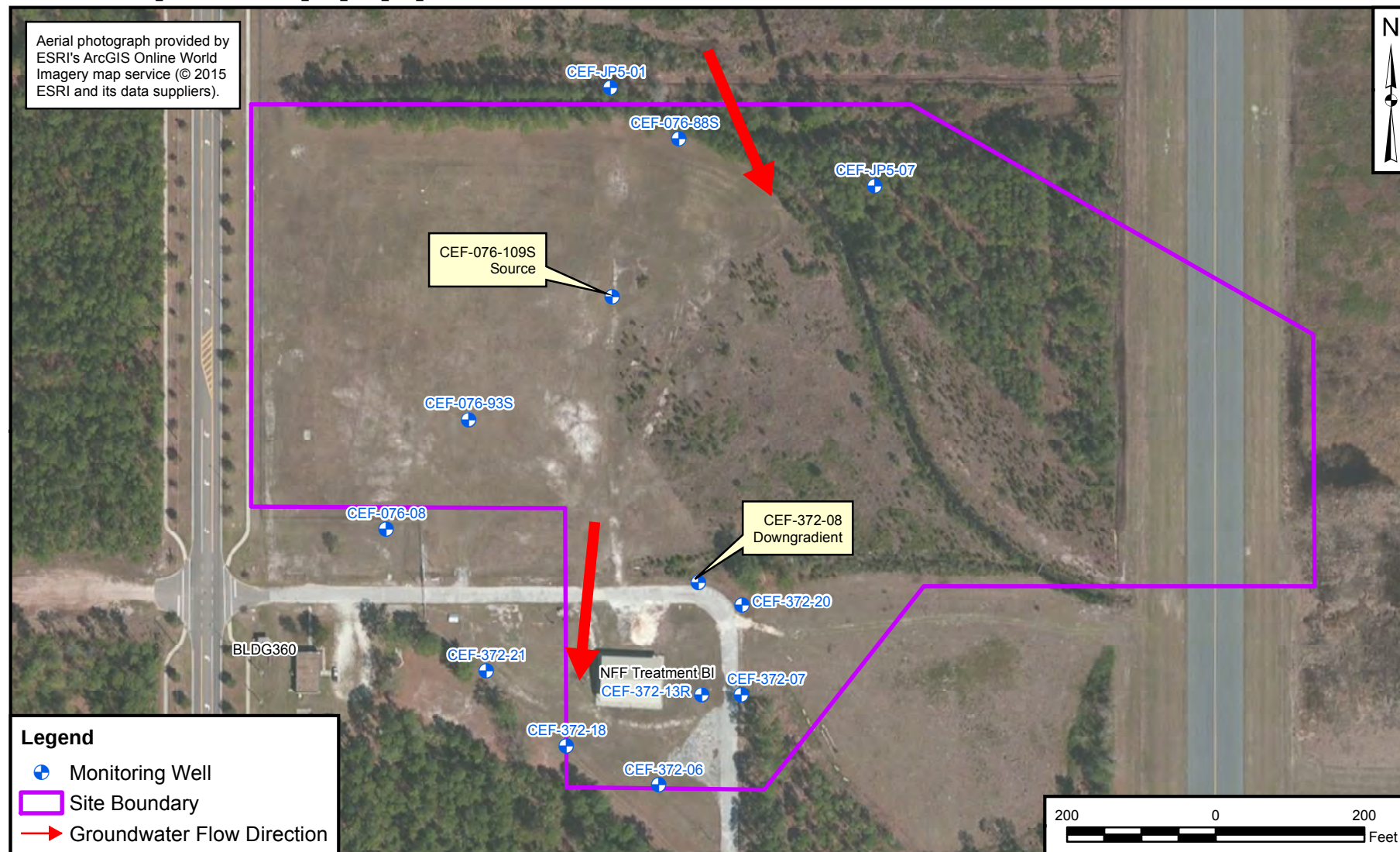
Legend

-  Monitoring Well
-  Groundwater Flow Direction



SITE LOCATION
OCALA CRASH SITE
NAS CECIL FIELD
CECIL FIELD, FLORIDA

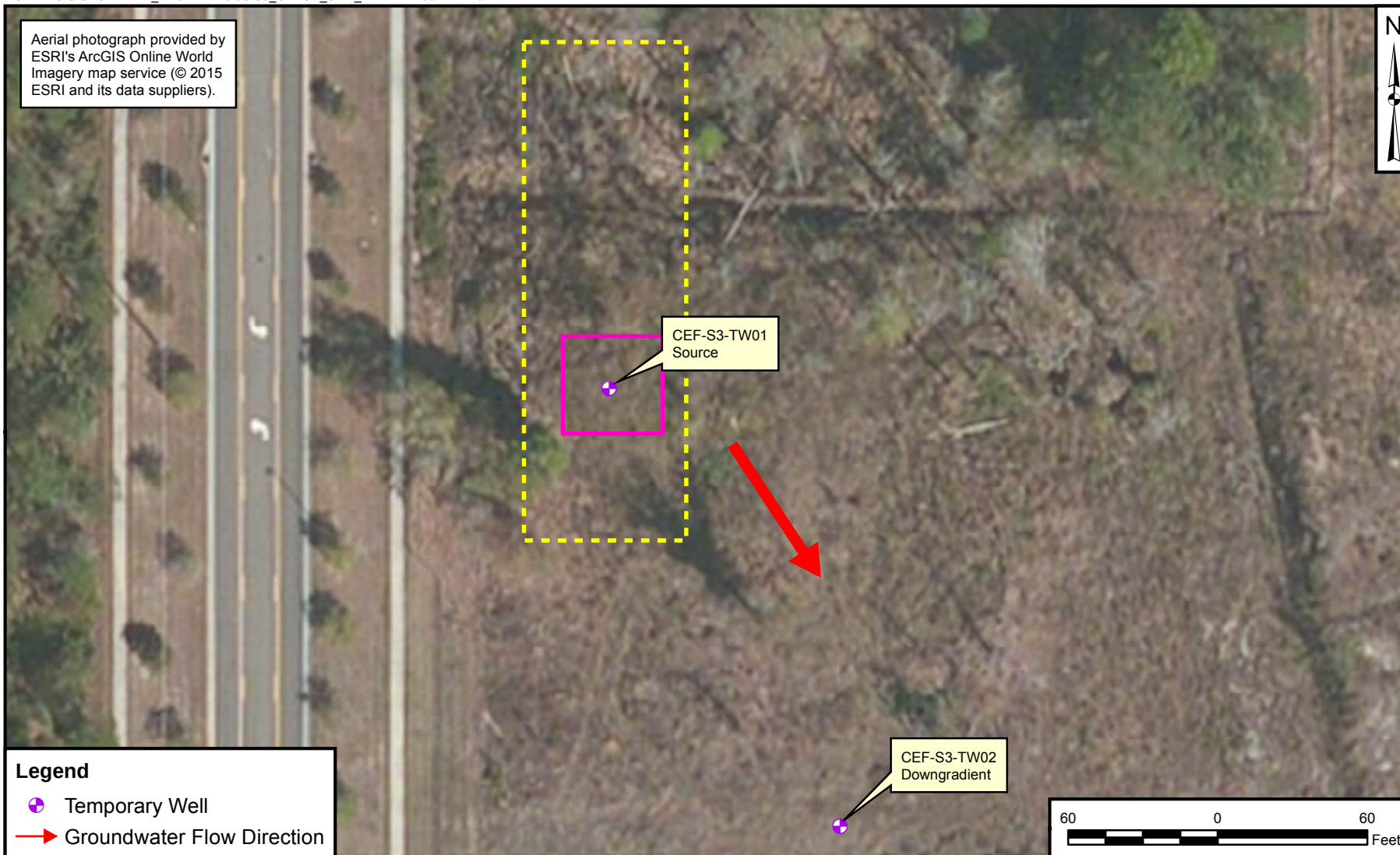
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-12	



SITE LOCATION
NORTH FUEL FARM
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-13	

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Imagery map service (© 2015
ESRI and its data suppliers).



Legend

- Temporary Well
- Groundwater Flow Direction



SITE LOCATION
S-3 CRASH SITE
NAS CECIL FIELD
CECIL FIELD, FLORIDA

CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-14	