



Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, and the Sample Location Figure, SDG FA42998

*Naval Air Station Cecil Field
Jacksonville, Florida*

July 2019

N60200_009856
CECIL_FIELD_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE FA42998 NAS CECIL FIELD FL
04/12/2017
ACCUTEST LABORATORIES

Approved for public release: distribution unlimited.

Technical Report for

Resolution Consultants

NAS Cecil Field PFAS; Jacksonville, FL

0888817799

SGS Accutest Job Number: FA42998

Sampling Date: 04/12/17

Report to:

Resolution Consultants
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Memphis, TN 38134
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ATTN: Kara Wimble

Total number of pages in report: **179**



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: FA42998

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

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
FA42998-1	04/12/17	13:46	RB	04/13/17	DW	Drinking Water	PW-101-0417
FA42998-2	04/12/17	13:48	RB	04/13/17	DW	Drinking Water FB	FB-PW-101-0417

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Resolution Consultants

Job No: FA42998

Site: NAS Cecil Field PFAS; Jacksonville, FL

Report Date: 5/1/2017 1:48:24 PM

1 Sample(s) and 1 Field Blank(s) were collected on 04/12/2017 and were received at SGS Accutest Southeast (SASE) on 04/13/2017 properly preserved, at 3.8 Deg. C and intact. These Samples received an SASE job number of FA42998. 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: OP64797

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) FA43000-1MS, FA43000-1MSD 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:

Kim Benham, Client Services (signature on file)

Date May 1, 2017

Monday, May 01, 2017

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Summary of Hits

Job Number: FA42998
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/12/17



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

FA42998-1 PW-101-0417

No hits reported in this sample.

FA42998-2 FB-PW-101-0417

Perfluorooctanesulfonic acid	0.00269 J	0.0077	0.0031	ug/l	EPA 537
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Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

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Client Sample ID:	PW-101-0417	Date Sampled:	04/12/17
Lab Sample ID:	FA42998-1	Date Received:	04/13/17
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	2Q869.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25
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 97% 70-130%

13C2-PFDA 84% 70-130%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 141) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

SGS Accutest

Report of Analysis

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Client Sample ID:	FB-PW-101-0417				
Lab Sample ID:	FA42998-2			Date Sampled:	04/12/17
Matrix:	DW - Drinking Water FB			Date Received:	04/13/17
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	2Q870.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25
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 0.00269 0.0077 0.0031 0.0019 ug/l J

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

13C2-PFHxA 84% 70-130%
13C2-PFDA 87% 70-130%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 141) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

[illegible]

5.1

SGS ACCUTEST - ORLANDO SAMPLE RECEIPT CONFIRMATION

SGS ACCUTEST'S JOB NUMBER: FA42998 CLIENT: Resolutions Cons. PROJECT: Former NAS
 DATE/TIME RECEIVED: 04/13/17 800 {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: _____

TEMPERATURE INFORMATION

- ☐ IR THERM ID 1 CORR. FACTOR 10.4
☐ OBSERVED TEMPS: 3.4
☐ CORRECTED TEMPS: 3.8 (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}

TECHNICIAN SIGNATURE/DATE [Signature] 04/13/17 REVIEWER SIGNATURE/DATE [Signature] 4-13-17

NF 02/16

receipt confirmation 020116.xls

FA42998: Chain of Custody

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QC Evaluation: DOD QSM5 Limits

Job Number: FA42998
Account: Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL
Collected: 04/12/17

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

No Exceptions found.

* Sample used for QC is not from job FA42998



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

Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64797-MB	2Q862.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25

The QC reported here applies to the following samples: Method: EPA 537
FA42998-1, FA42998-2

CAS No.	Compound	Result	RL	MDL	Units	Q
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	

CAS No.	Surrogate Recoveries	Limits
	13C2-PFHxA	110% 70-130%
	13C2-PFDA	111% 70-130%

Blank Spike Summary

Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64797-BS	2Q861.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25

The QC reported here applies to the following samples: Method: EPA 537
FA42998-1, FA42998-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
335-67-1	Perfluorooctanoic acid	0.08	0.0825	103	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0777	97	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0714	89	70-130

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: FA42998

Account: RESCTNM Resolution Consultants

Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64797-MS	2Q864.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25
OP64797-MSD	2Q865.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25
FA43000-1	2Q863.D	1	04/28/17	NAF	04/26/17	OP64797	S2Q25

The QC reported here applies to the following samples:

Method: EPA 537

FA42998-1, FA42998-2

CAS No.	Compound	FA43000-1 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	0.08	0.0738	92	0.08	0.0781	98	6	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.0077 U	0.08	0.0835	104	0.08	0.0863	108	3	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U	0.08	0.0753	94	0.08	0.0753	94	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	FA43000-1	Limits
	13C2-PFHxA	88%	94%	93%	70-130%
	13C2-PFDA	78%	77%	88%	70-130%

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

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Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std: S2Q25-CC18	Injection Date: 04/28/17
Lab File ID: 2Q859.D	Injection Time: 14:24
Instrument ID: GCMS2Q	Method: EPA 537

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	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	56182	4.21	133118	6.67	59092	6.66	43394	7.24	26014	7.45	71752	10.88
Upper Limit ^c	115593	5.21	238824	7.67	117327	7.66	86565	8.24	52497	8.45	141236	11.88
Lower Limit ^d	38531	3.21	79608	5.67	39109	5.66	28855	6.24	17499	6.45	47079	9.88

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP64797-BS	66489	4.21	154462	6.67	68979	6.66	49451	7.24	28788	7.45	80861	10.83
OP64797-MB	61226	4.21	135973	6.67	63693	6.66	45946	7.24	26985	7.45	73370	10.83
FA43000-1	55422	4.21	125242	6.67	57719	6.65	42645	7.24	25302	7.45	70538	10.86
OP64797-MS	64857	4.21	158079	6.67	69338	6.65	50027	7.24	29456	7.45	83608	10.85
OP64797-MSD	64909	4.21	160522	6.67	66713	6.66	51441	7.24	31241	7.45	69896	10.83
ZZZZZZ	63480	4.20	130316	6.66	65180	6.65	48642	7.22	28975	7.44	70108	10.85

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 = +50% of initial standard area; Retention time +1 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Semivolatile Internal Standard Area Summary

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Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Check Std: S2Q25-CC18	Injection Date: 04/28/17
Lab File ID: 2Q867.D	Injection Time: 17:16
Instrument ID: GCMS2Q	Method: EPA 537

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	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	55655	4.20	121980	6.66	57261	6.65	42716	7.22	25853	7.44	61580	10.80
Upper Limit ^c	107887	5.20	222902	7.66	109505	7.65	80794	8.22	48997	8.44	131820	11.80
Lower Limit ^d	53943	3.20	111451	5.66	54753	5.65	40397	6.22	24499	6.44	65910	9.80

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
FA42998-1	59121	4.21	128745	6.67	62781	6.66	48213	7.24	28382	7.45	72203	10.81
FA42998-2	56835	4.21	118200	6.67	58905	6.66	45298	7.24	25829	7.45	65328 ^e	10.83
ZZZZZZ	53248 ^e	4.21	111734	6.67	55100	6.66	43184	7.24	24810	7.45	61221 ^e	10.81
ZZZZZZ	58579	4.21	121575	6.67	60125	6.66	46495	7.24	27260	7.45	66751	10.88
ZZZZZZ	58176	4.21	120834	6.67	59832	6.66	46938	7.24	27572	7.45	65288 ^e	10.83
OP64815-BS	66659	4.21	148305	6.67	70236	6.66	54182	7.24	30623	7.45	77438	10.83
OP64815-MB	70091	4.22	147295	6.67	74209	6.66	57119	7.24	32372	7.45	80649	10.84
ZZZZZZ	78997	4.22	167284	6.68	83589	6.67	65493	7.25	35627	7.46	91031	10.84

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: FA42998
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
FA42998-1	2Q869.D	97	84
FA42998-2	2Q870.D	84	87
OP64797-BS	2Q861.D	105	105
OP64797-MB	2Q862.D	110	111
OP64797-MS	2Q864.D	88	78
OP64797-MSD	2Q865.D	94	77

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

Initial Calibration Summary

Page 1 of 1

Job Number: FA42998
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: FA42998
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

1:D:\MassHunter\Data\0420_LIST_S2Q18\2Q651.d
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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

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: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q25-CC18
Lab FileID: 2Q859.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0428_LIST_S2Q25\2SQ25.batch.bin

Level ID: Calibration File

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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

Data File: 2Q859

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	21.113	5.6	105.6
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.479	2.4	102.4
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	22.222	11.1	111.1
6:2FTS	20.000	22.168	10.8	110.8
8:2FTS	20.000	22.804	14.0	114.0
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.476	17.4	117.4
EtFOSAA	20.000	20.972	4.9	104.9
FOSA	20.000	20.330	1.6	101.6
MeFOSAA	20.000	22.222	11.1	111.1
PFBA	20.000	18.217	-8.9	91.1
PFBS	20.000	19.673	-1.6	98.4
PFDA	20.000	20.445	2.2	102.2
PFDoDA	20.000	22.041	10.2	110.2
PFDS	20.000	22.105	10.5	110.5
PFHpA	20.000	20.534	2.7	102.7
PFHpS	20.000	21.435	7.2	107.2
PFHxA	20.000	21.609	8.0	108.0
PFHxS	20.000	20.628	3.1	103.1
PFNA	20.000	20.442	2.2	102.2
PFNS	20.000	21.229	6.1	106.1
PFOA	20.000	21.510	7.6	107.6
PFOS	20.000	20.330	1.7	101.7
PFPeA	20.000	20.570	2.9	102.9
PFPeS	20.000	21.345	6.7	106.7
PFTeDA	20.000	19.520	-2.4	97.6
PFTrDA	20.000	21.587	7.9	107.9
PFUnDA	20.000	20.475	2.4	102.4

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q25-CC18
Lab FileID: 2Q867.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0428_LIST_S2Q25\2SQ25.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: 2Q867

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.593	3.0	103.0
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.247	1.2	101.2
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	20.932	4.7	104.7
6:2FTS	20.000	22.104	10.5	110.5
8:2FTS	20.000	23.524	17.6	117.6
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.375	21.9	121.9
EtFOSAA	20.000	21.545	7.7	107.7
FOSA	20.000	21.428	7.1	107.1
MeFOSAA	20.000	21.912	9.6	109.6
PFBA	20.000	18.160	-9.2	90.8
PFBS	20.000	19.746	-1.3	98.7
PFDA	20.000	20.189	0.9	100.9
PFDoDA	20.000	21.876	9.4	109.4
PFDS	20.000	21.732	8.7	108.7
PFHpA	20.000	21.191	6.0	106.0
PFHpS	20.000	21.404	7.0	107.0
PFHxA	20.000	21.537	7.7	107.7
PFHxS	20.000	22.261	11.3	111.3
PFNA	20.000	20.800	4.0	104.0
PFNS	20.000	21.385	6.9	106.9
PFOA	20.000	21.108	5.5	105.5
PFOS	20.000	20.477	2.4	102.4
PFPeA	20.000	20.149	0.7	100.7
PFPeS	20.000	20.727	3.6	103.6
PFTeDA	20.000	19.408	-3.0	97.0
PFTrDA	20.000	22.228	11.1	111.1
PFUnDA	20.000	19.652	-1.7	98.3

CC Criteria: +/- 25%

Continuing Calibration Summary

Page 1 of 1

Job Number: FA42998
Account: RESCTNM Resolution Consultants
Project: NAS Cecil Field PFAS; Jacksonville, FL

Sample: S2Q25-CC18
Lab FileID: 2Q877.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\0428_LIST_S2Q25\2SQ25.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: 2Q877

Type : QC

Level : 5

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
=====	=====	=====	=====	=====
13C2-6:2FTS	---	--ISTD--		
13C2-PFDA	20.000	20.774	3.9	103.9
13C2-PFDoDA	---	--ISTD--		
13C2-PFHxA	20.000	20.027	0.1	100.1
13C2-PFOA	---	--ISTD--		
13C3-PFPeA	---	--ISTD--		
13C4-PFOS	---	--ISTD--		
4:2FTS	20.000	20.863	4.3	104.3
6:2FTS	20.000	22.141	10.7	110.7
8:2FTS	20.000	24.062	20.3	120.3
d3-MeFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	25.056	# 25.3	125.3
EtFOSAA	20.000	20.715	3.6	103.6
FOSA	20.000	21.262	6.3	106.3
MeFOSAA	20.000	21.093	5.5	105.5
PFBA	20.000	18.332	-8.3	91.7
PFBS	20.000	19.560	-2.2	97.8
PFDA	20.000	19.841	-0.8	99.2
PFDoDA	20.000	22.035	10.2	110.2
PFDS	20.000	21.535	7.7	107.7
PFHpA	20.000	21.310	6.5	106.5
PFHpS	20.000	21.353	6.8	106.8
PFHxA	20.000	21.079	5.4	105.4
PFHxS	20.000	20.374	1.9	101.9
PFNA	20.000	19.904	-0.5	99.5
PFNS	20.000	21.038	5.2	105.2
PFOA	20.000	20.762	3.8	103.8
PFOS	20.000	20.785	3.9	103.9
PFPeA	20.000	20.664	3.3	103.3
PFPeS	20.000	21.777	8.9	108.9
PFTeDA	20.000	19.848	-0.8	99.2
PFTrDA	20.000	21.728	8.6	108.6
PFUnDA	20.000	19.014	-4.9	95.1

CC Criteria: +/- 25%



GC/MS Semi-volatiles

Raw Data

7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q869.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 5:53:22 PM
 Sample Name : FA42998-1
 Vial : Vial 13
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.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	6.671	429.0 -> 409.0	128745	20.00 µg/L	0.000
13C2-PFDoDA	10.814	615.0 -> 570.0	72203	20.00 µg/L	0.025
13C2-PFOA	6.662	415.0 -> 370.0	62781	20.00 µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	59121	20.00 µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	48213	20.00 µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	28382	20.00 µg/L	0.000

System Monitoring Compounds

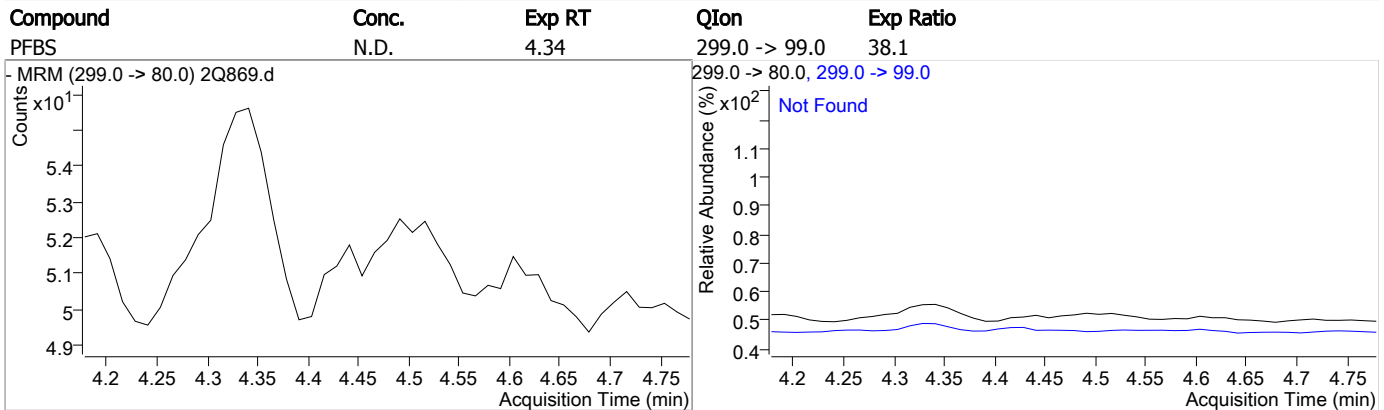
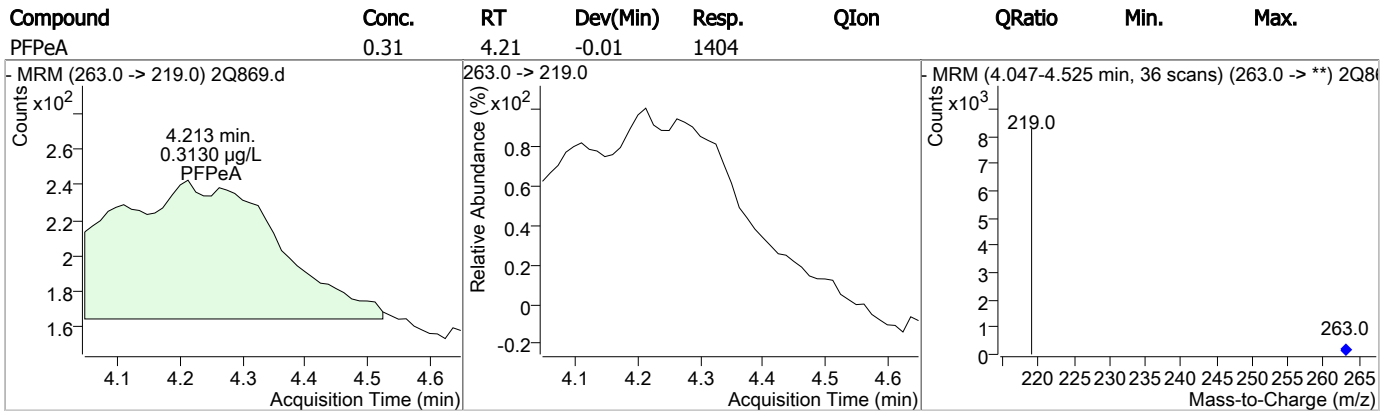
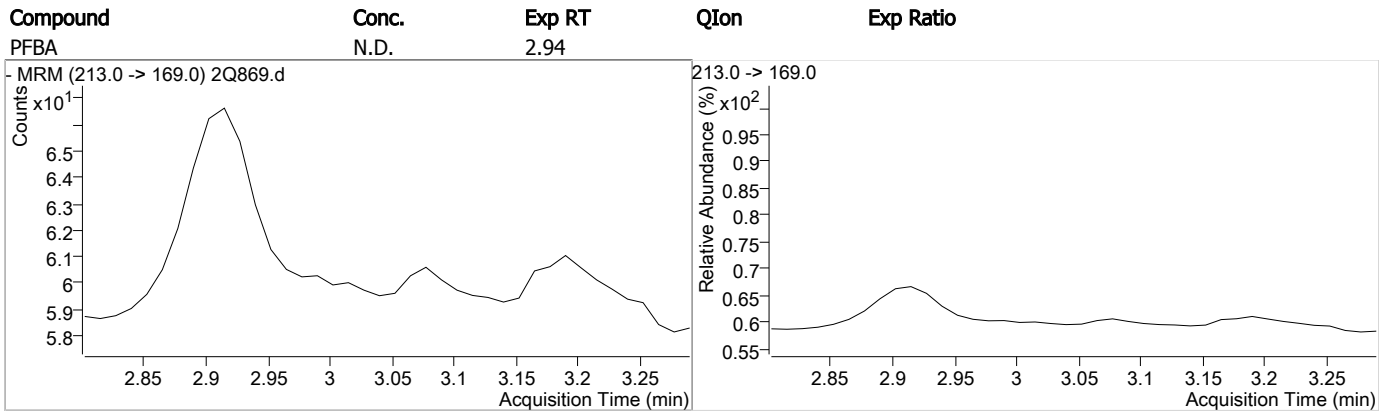
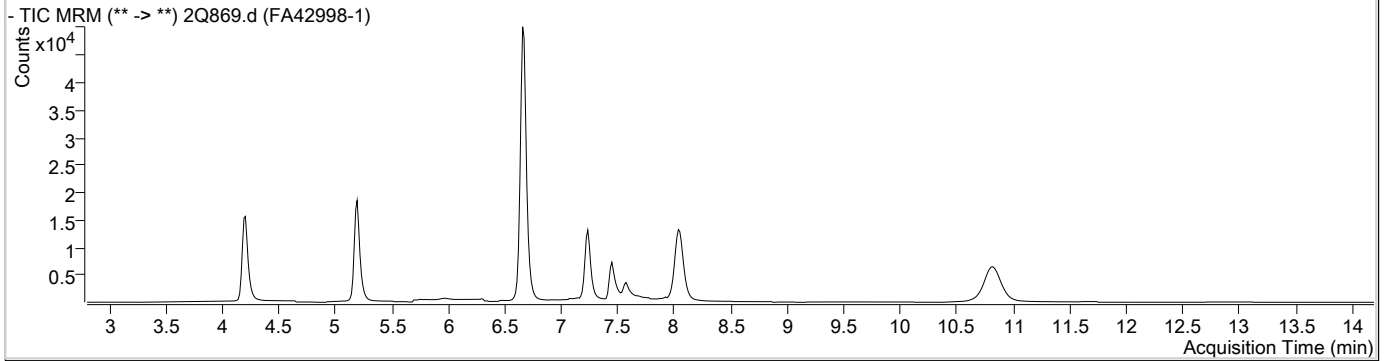
13C2-PFDA	8.044	515.0 -> 470.0	73400	16.71 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 83.5%		
13C2-PFHxA	5.197	315.0 -> 270.0	64470	19.44 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 97.2%		
d5-EtFOSAA	7.572	589.0 -> 419.0	10298	15.08 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 75.4%		

Target Compounds

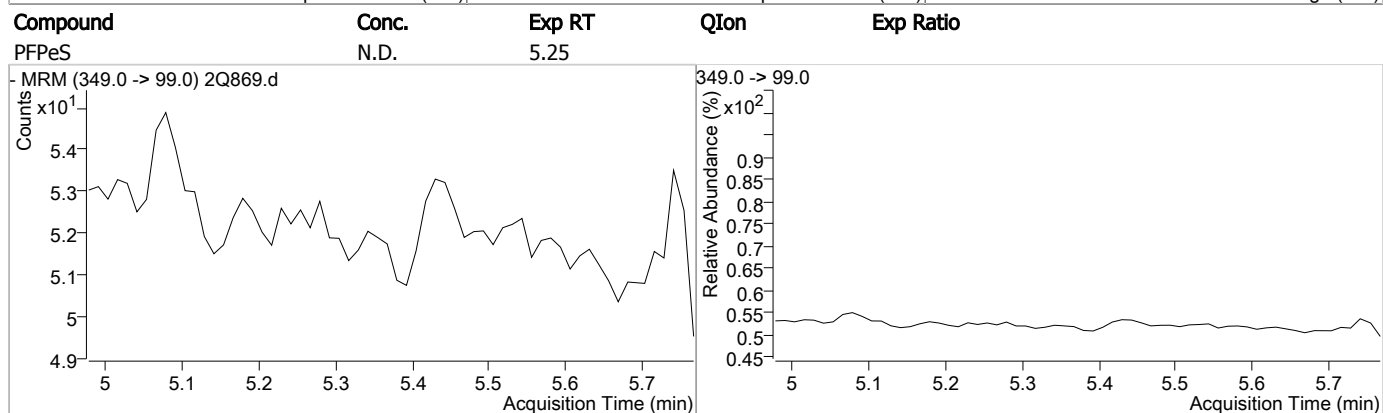
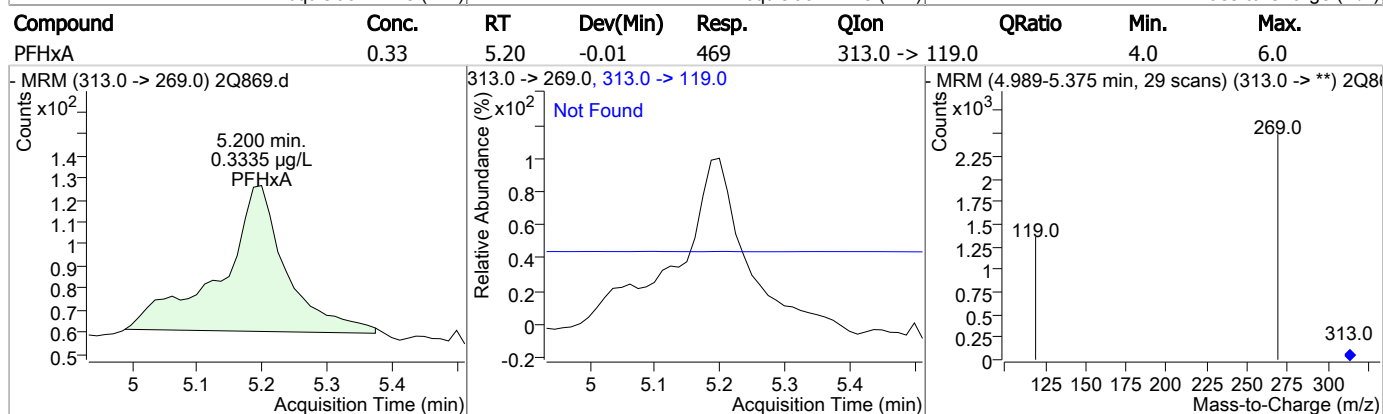
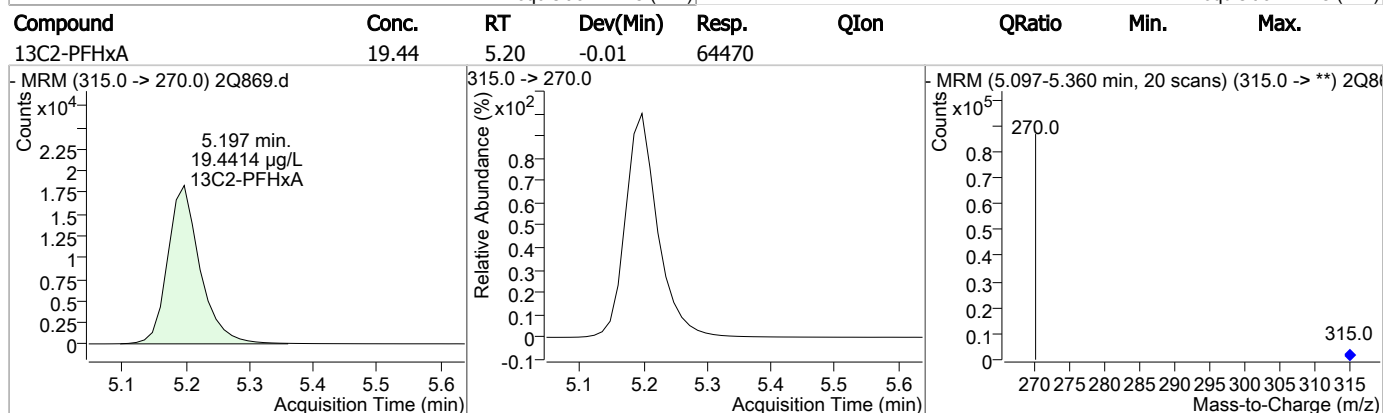
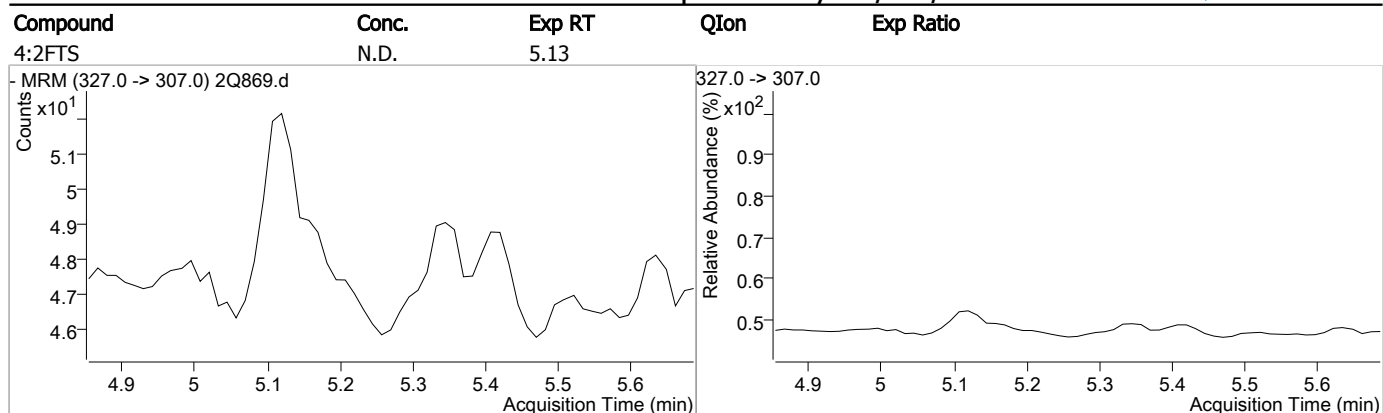
					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.673	427.0 -> 407.0	996	0.16 µg/L	100
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	7.573	584.0 -> 419.0	785	1.28 µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.451	570.0 -> 419.0	695	0.96 µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	8.070	513.0 -> 469.0	421	0.14 µg/L	100
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	5.973	363.0 -> 319.0	937	0.22 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.200	313.0 -> 269.0	469	0.33 µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	7.319	463.0 -> 419.0	373	0.13 µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	6.664	413.0 -> 369.0	510	0.20 µg/L	54
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	4.213	263.0 -> 219.0	1404	0.31 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

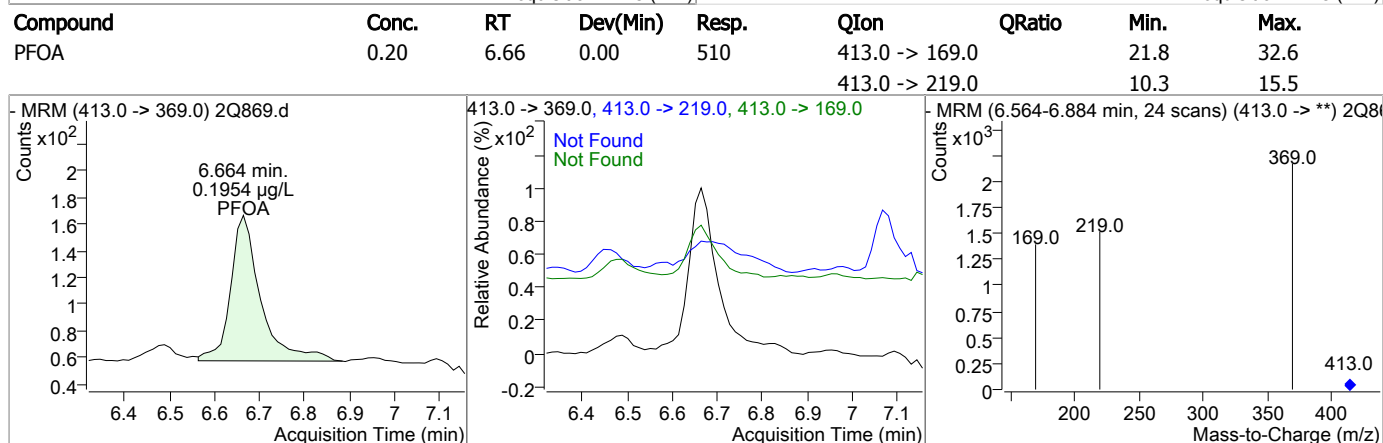
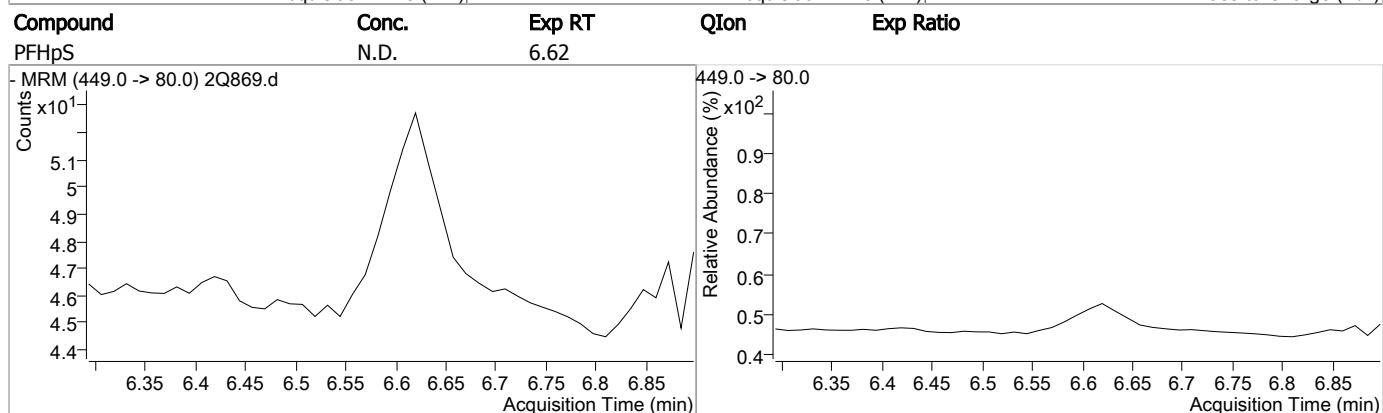
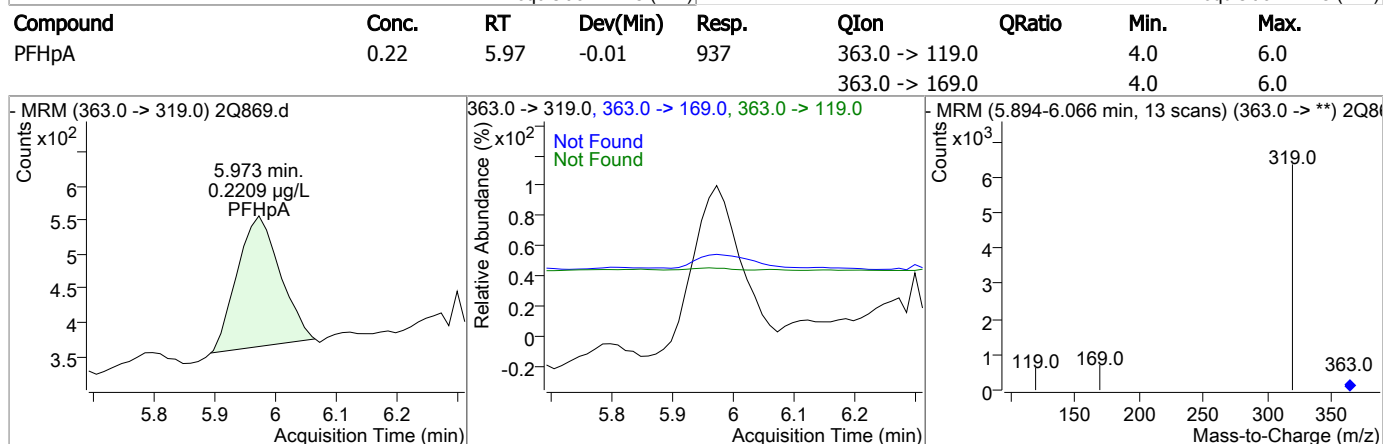
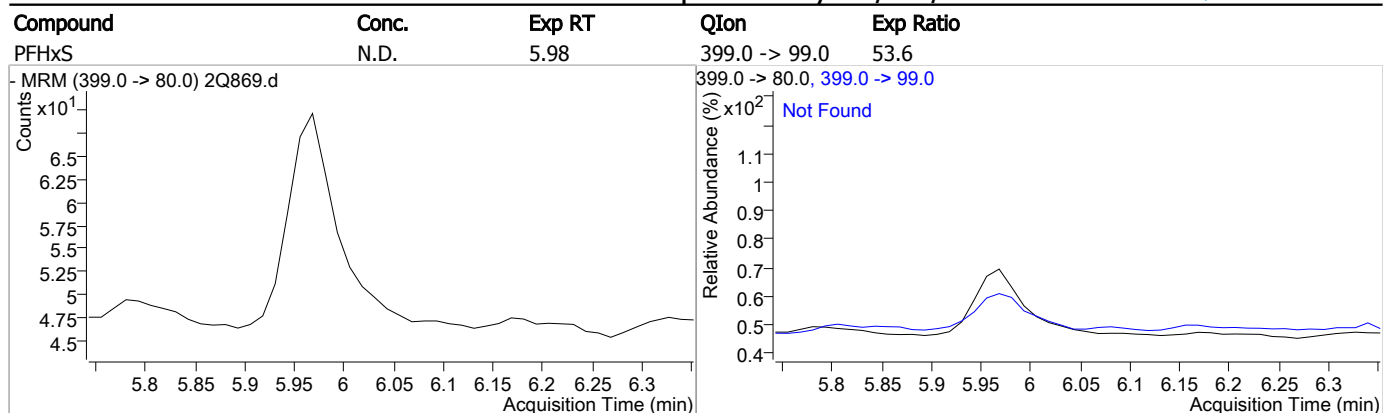
Perfluorinated Compounds by LC/MS/MS



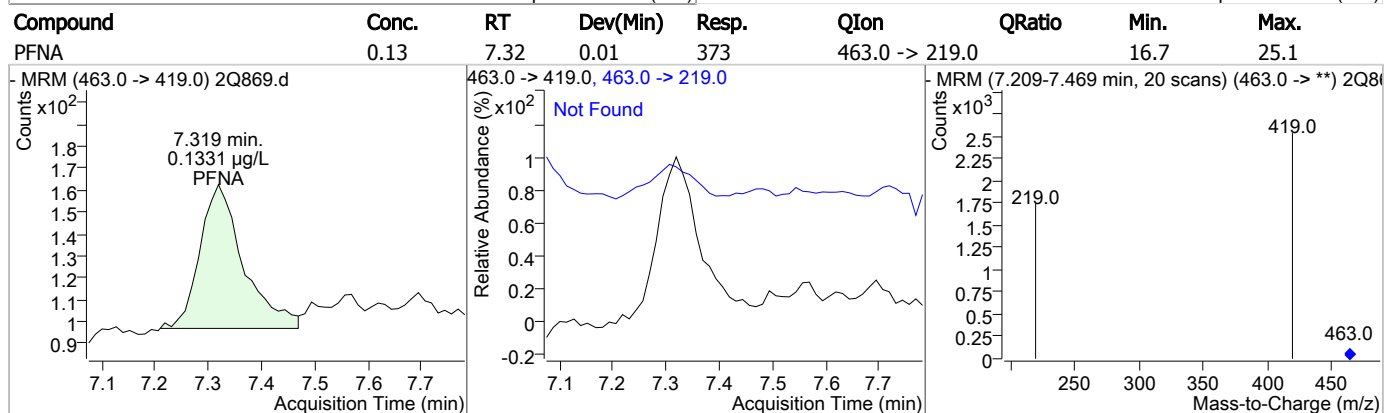
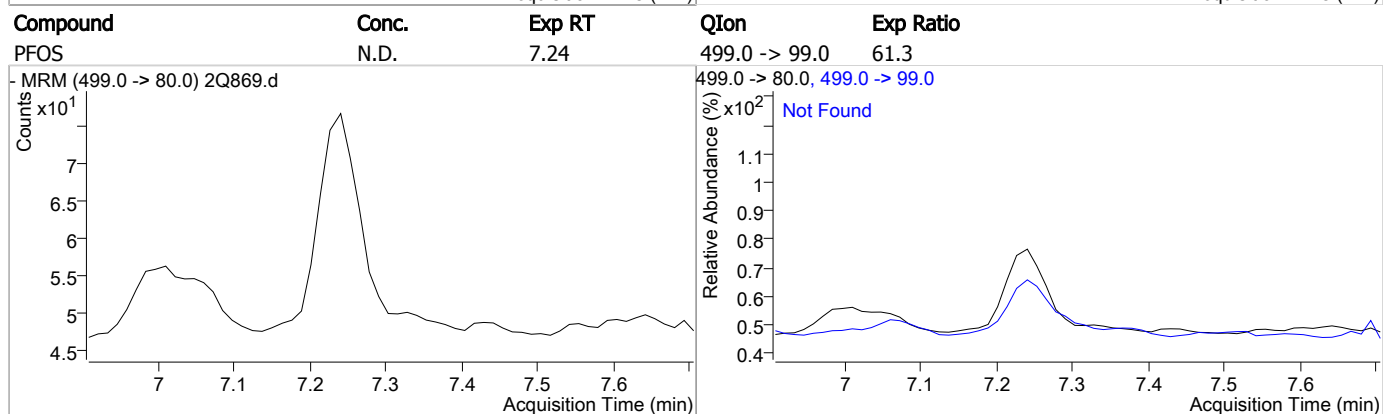
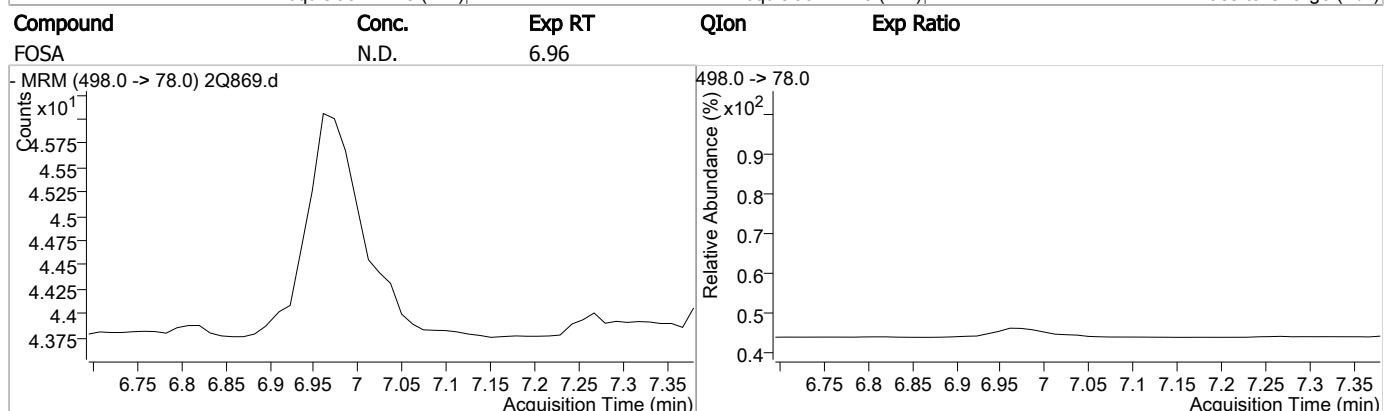
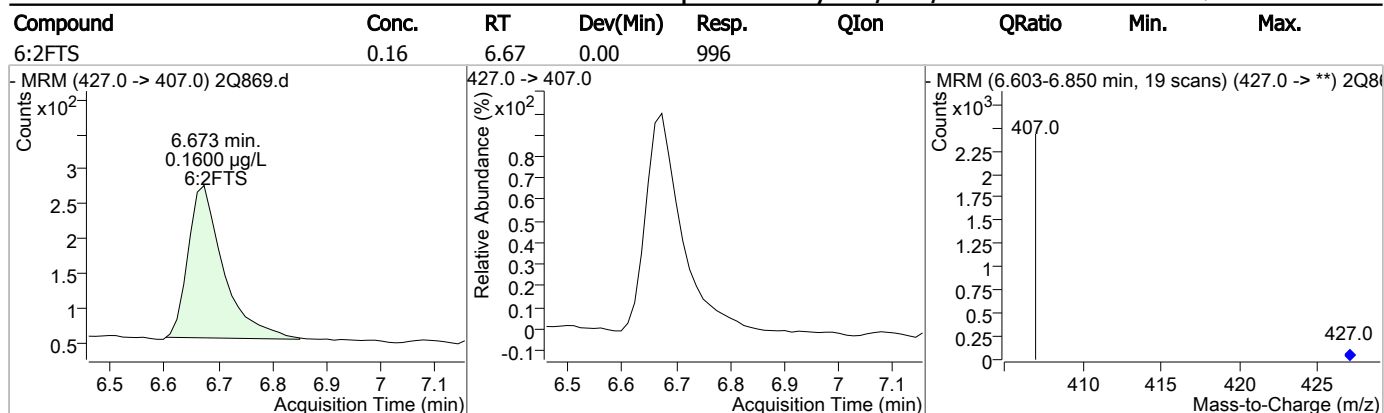
Perfluorinated Compounds by LC/MS/MS



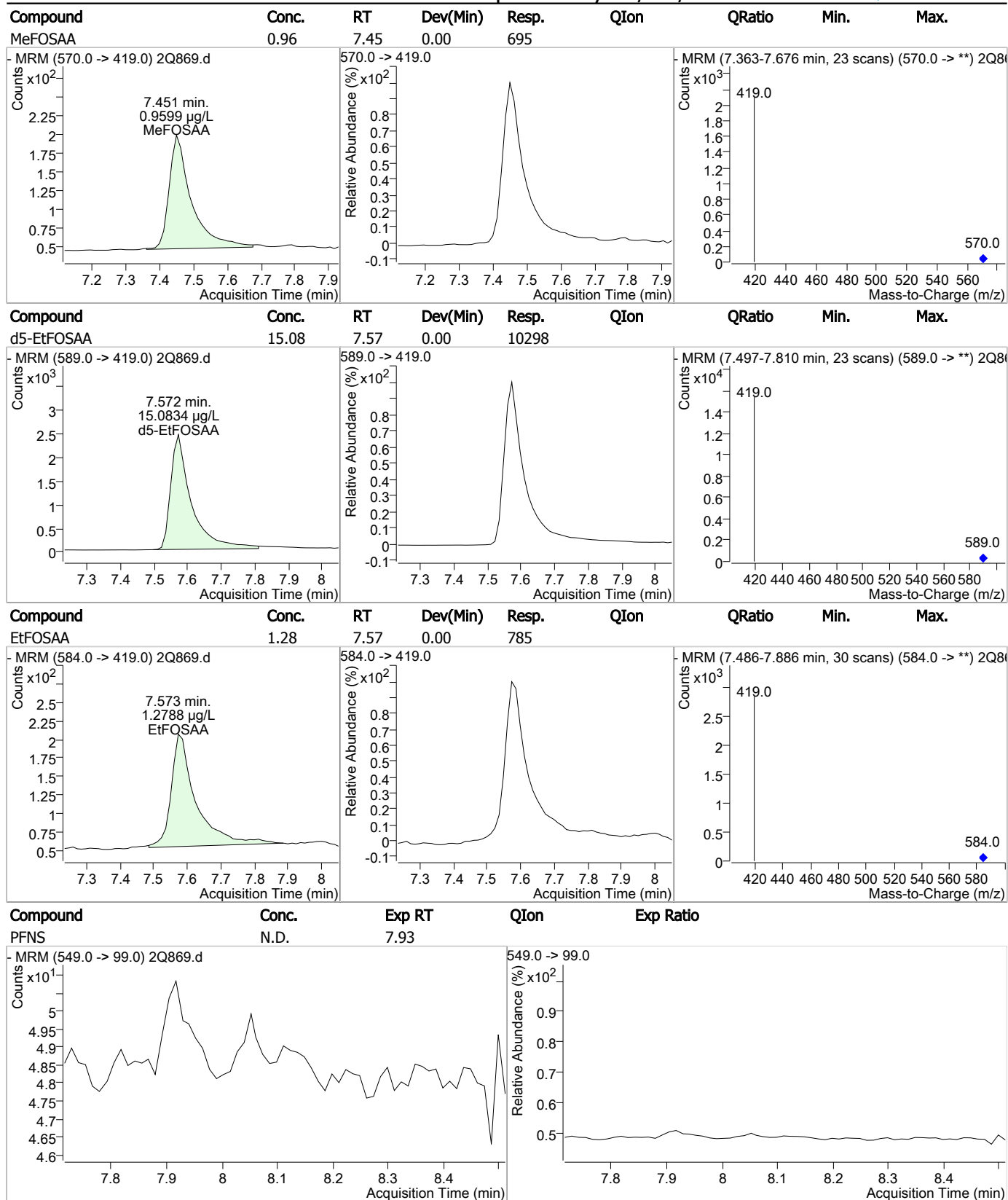
Perfluorinated Compounds by LC/MS/MS



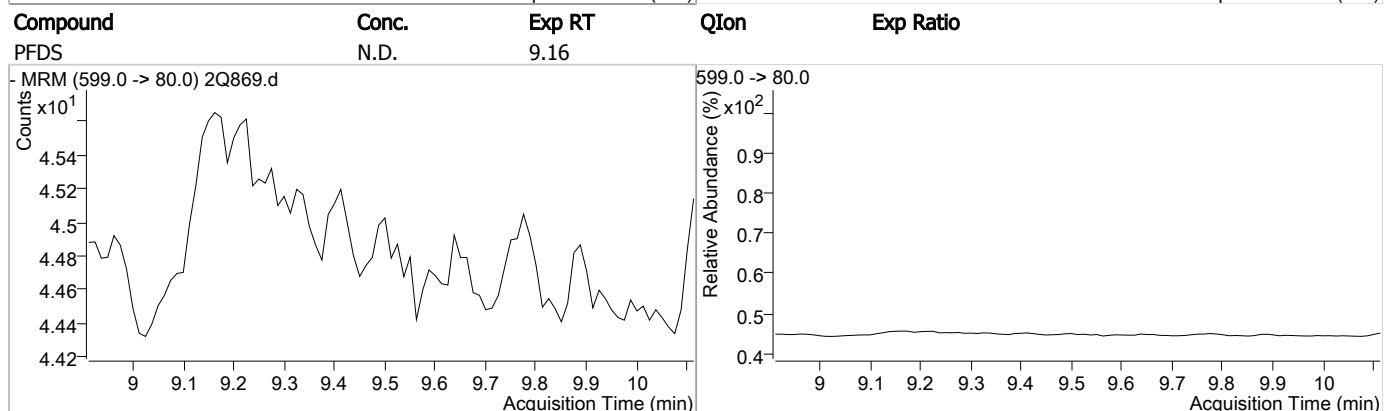
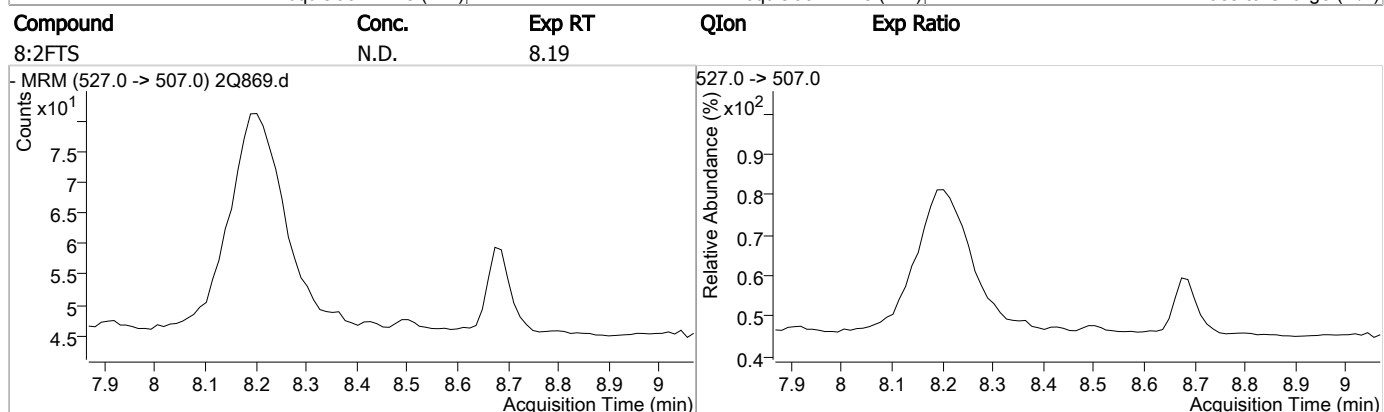
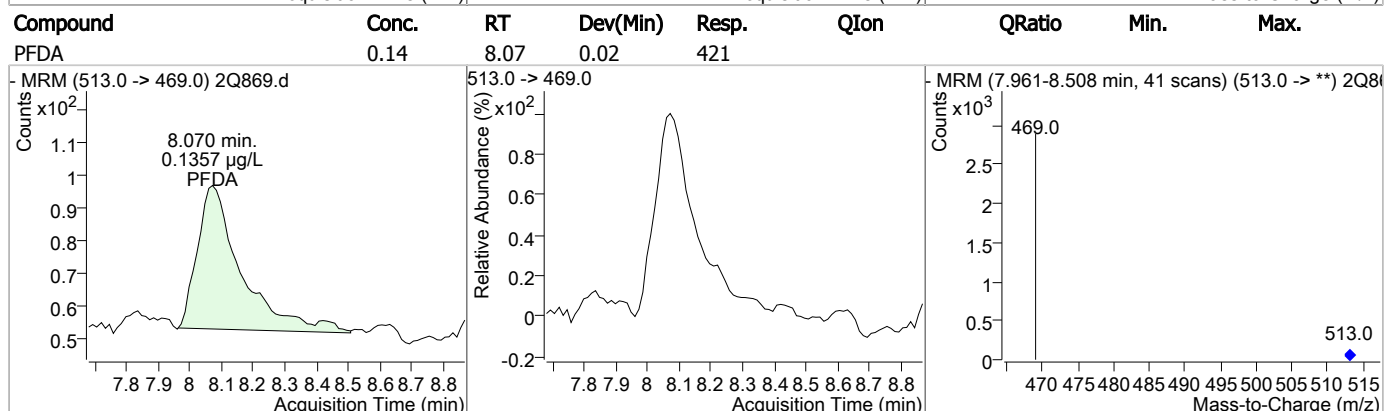
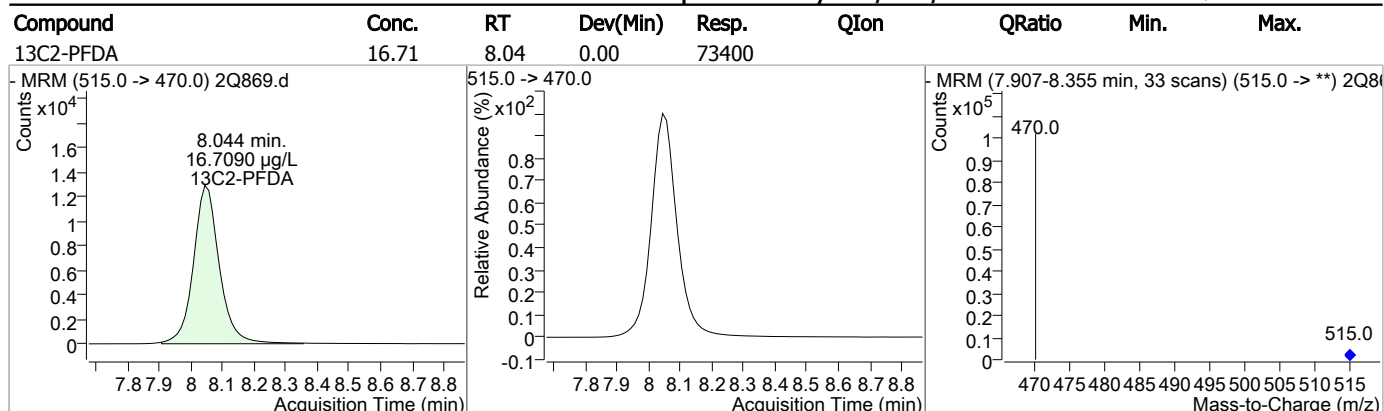
Perfluorinated Compounds by LC/MS/MS



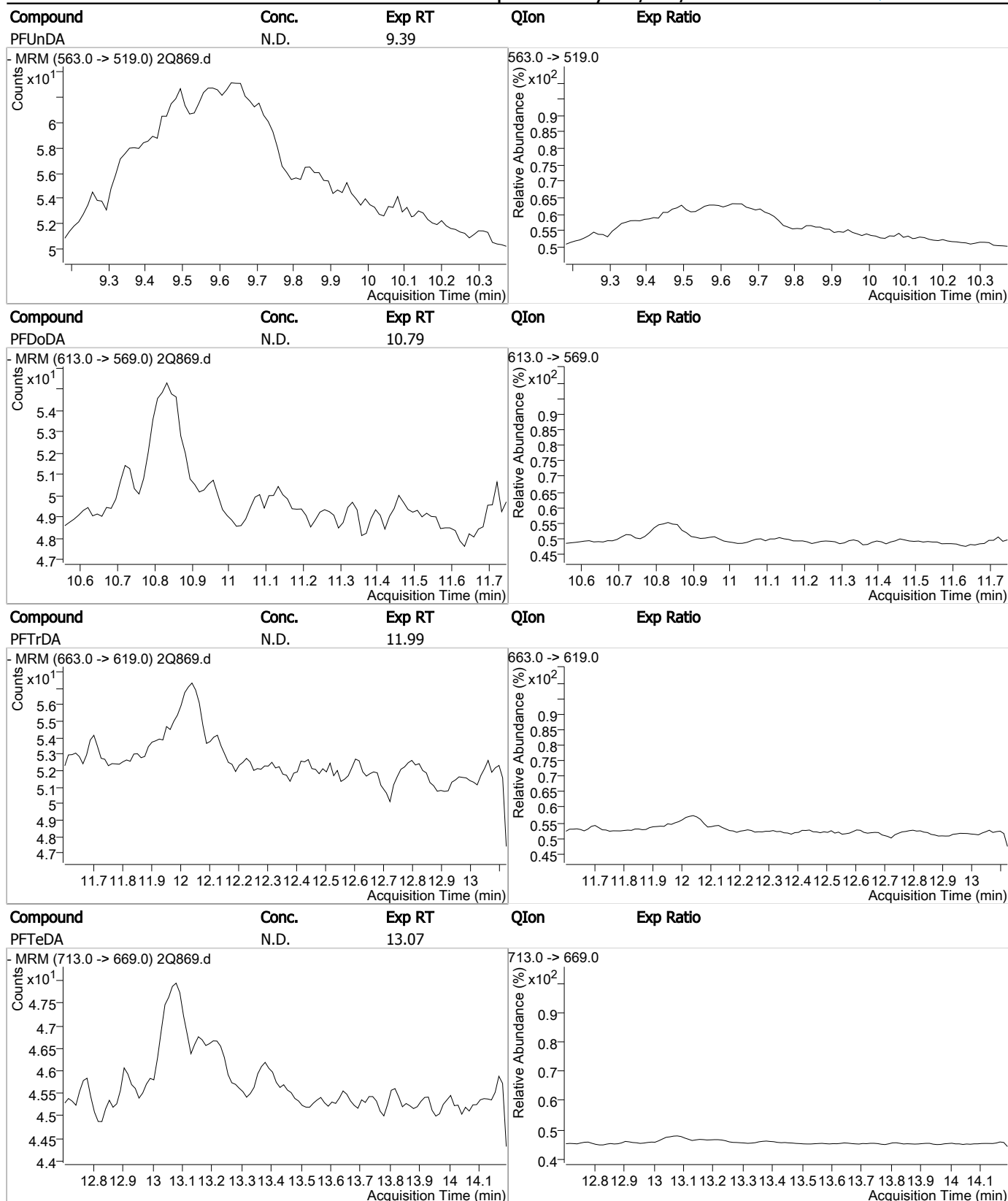
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.1.1
7

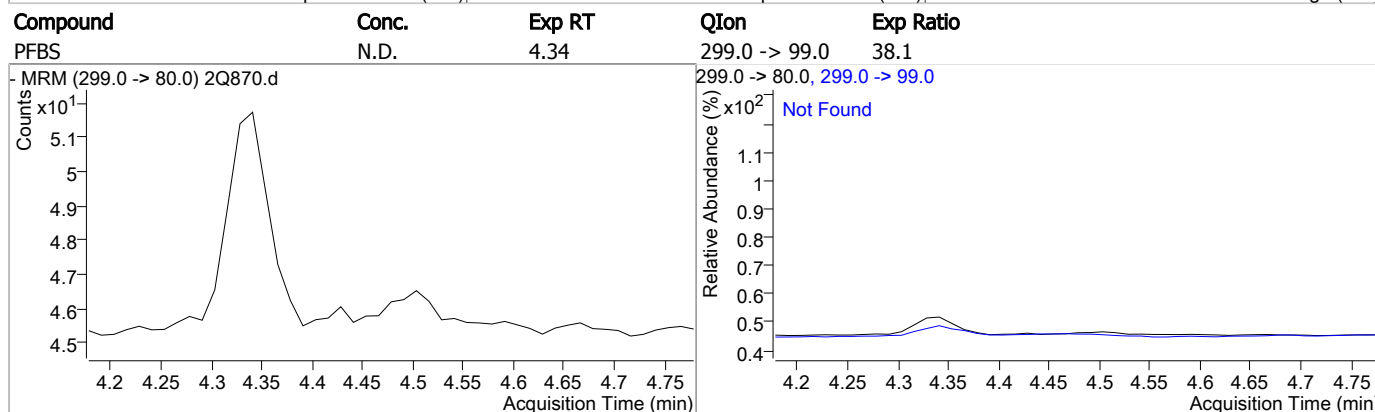
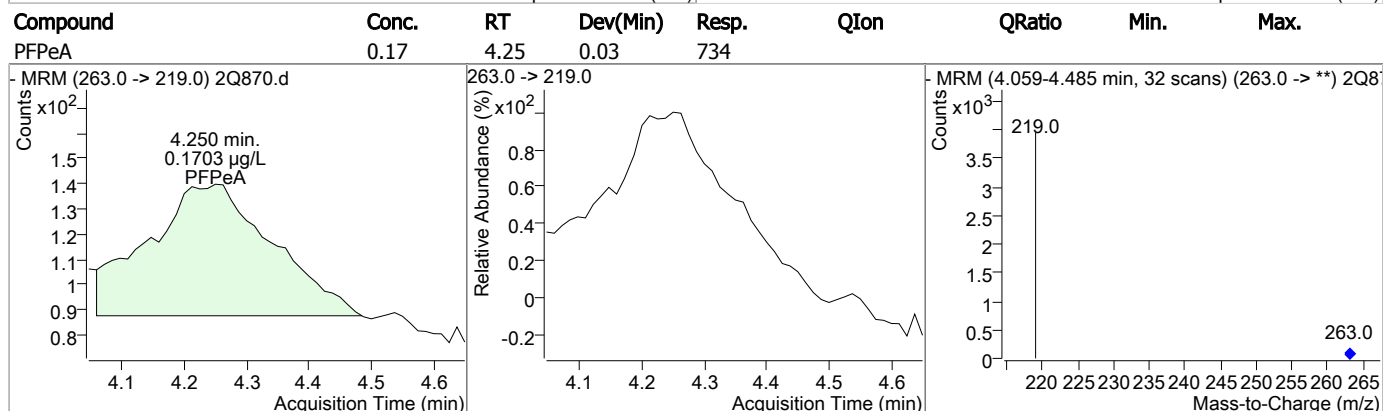
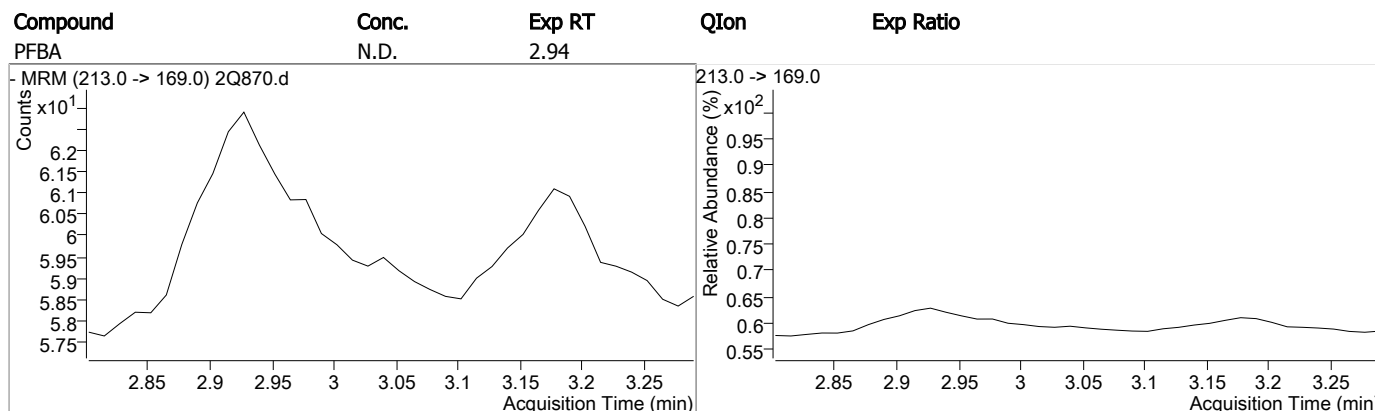
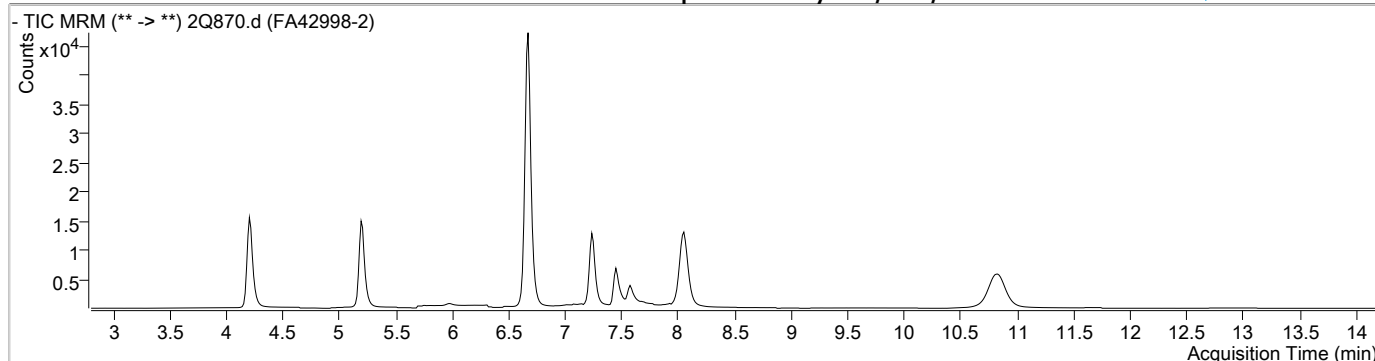
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q870.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 6:13:07 PM
 Sample Name : FA42998-2
 Vial : Vial 14
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

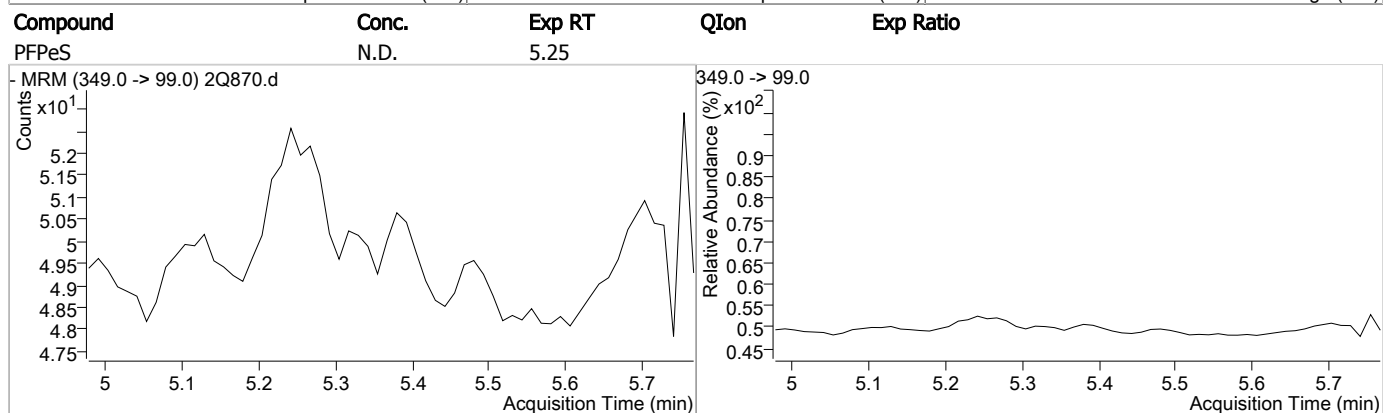
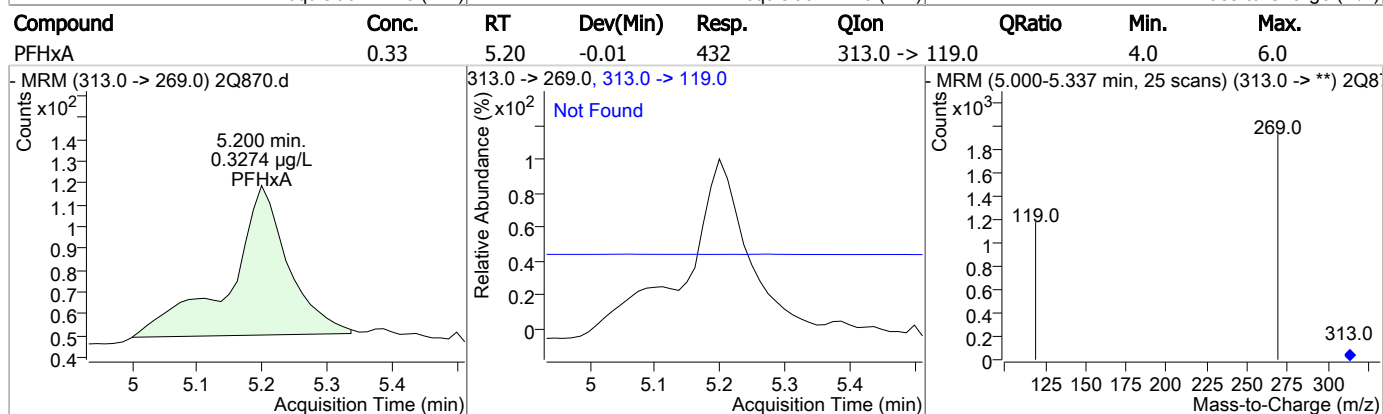
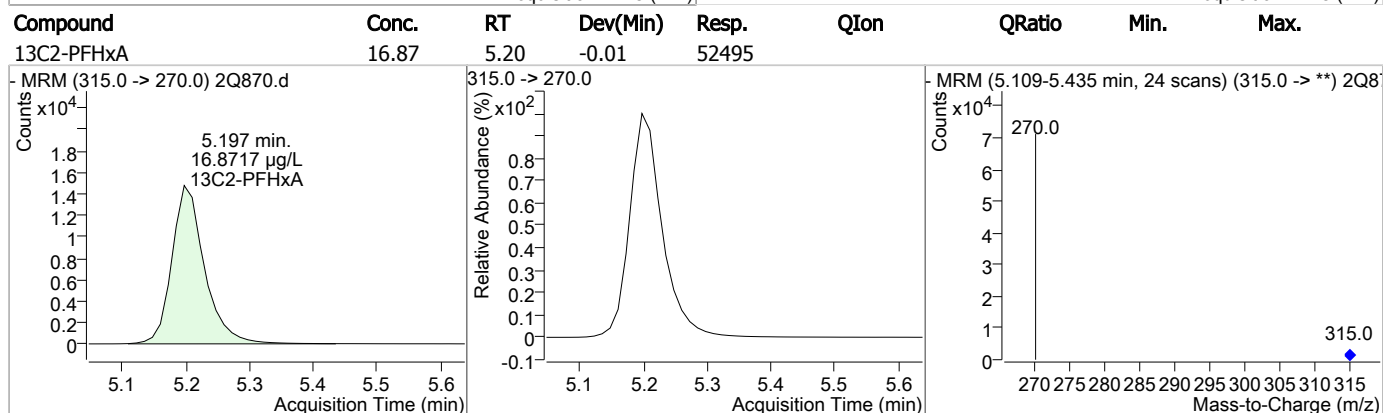
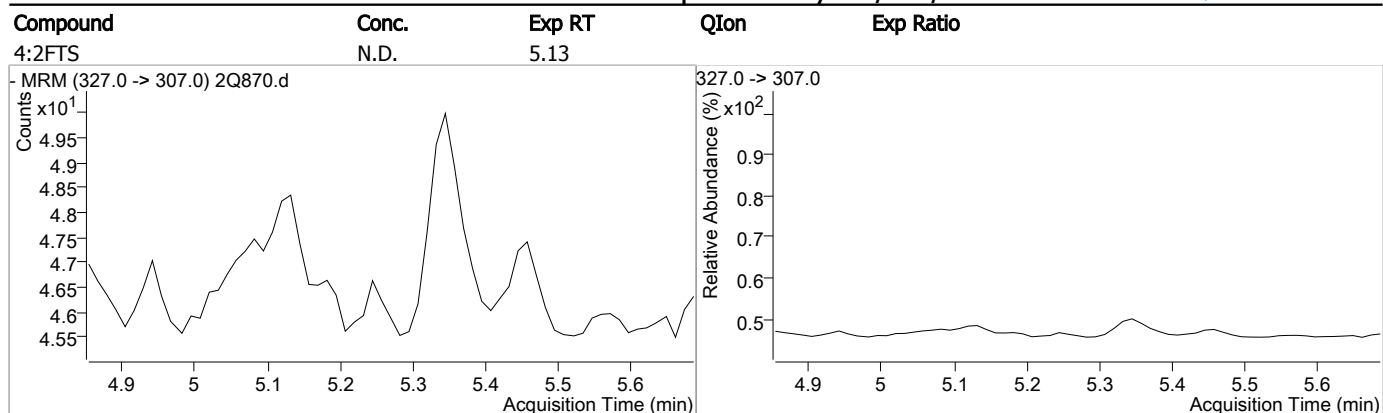
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.671	429.0 -> 409.0	118200	20.00	µg/L	0.000
13C2-PFDoDA	10.826	615.0 -> 570.0	65328	20.00	µg/L	0.038
13C2-PFOA	6.662	415.0 -> 370.0	58905	20.00	µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	56835	20.00	µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	45298	20.00	µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	25829	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.057	515.0 -> 470.0	71783	17.42	µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 87.1%			
13C2-PFHxA	5.197	315.0 -> 270.0	52495	16.87	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 84.4%			
d5-EtFOSAA	7.572	589.0 -> 419.0	12160	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.0%			
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.673	427.0 -> 407.0	3422	0.60	µg/L	100
8:2FTS	8.202	527.0 -> 507.0	429	0.05	µg/L	100
EtFOSAA	7.573	584.0 -> 419.0	457	0.82	µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.451	570.0 -> 419.0	388	0.59	µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	5.986	363.0 -> 319.0	782	0.20	µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.200	313.0 -> 269.0	432	0.33	µg/L	85
PFHxS	5.968	399.0 -> 80.0	355	0.19	µg/L	25
PFNA	7.331	463.0 -> 419.0	449	0.17	µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.		
PFOA	6.664	413.0 -> 369.0	437	0.18	µg/L	54
PFOS	7.240	499.0 -> 80.0	1831	0.70	µg/L	77
PFPeA	4.250	263.0 -> 219.0	734	0.17	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

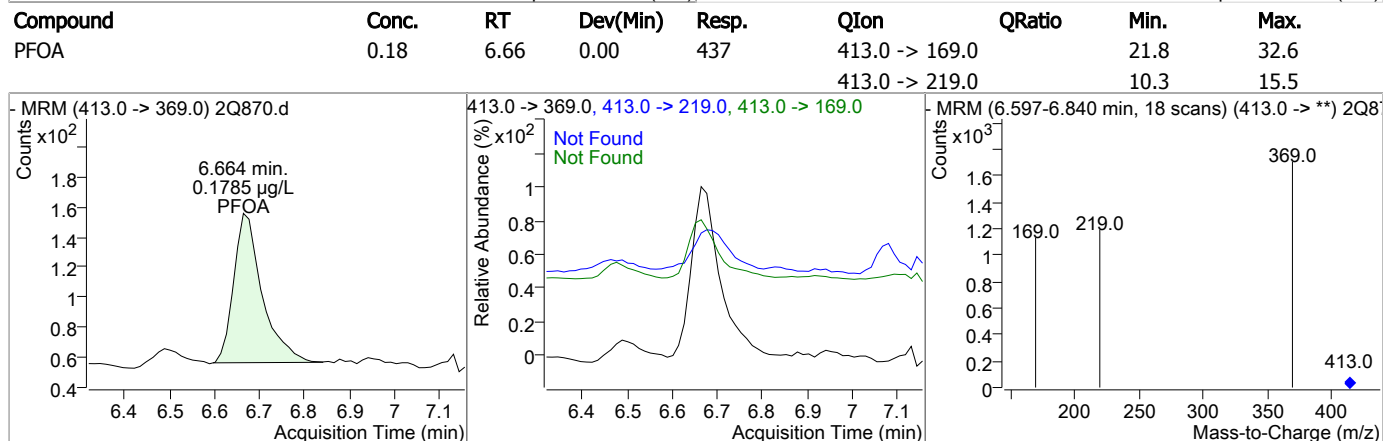
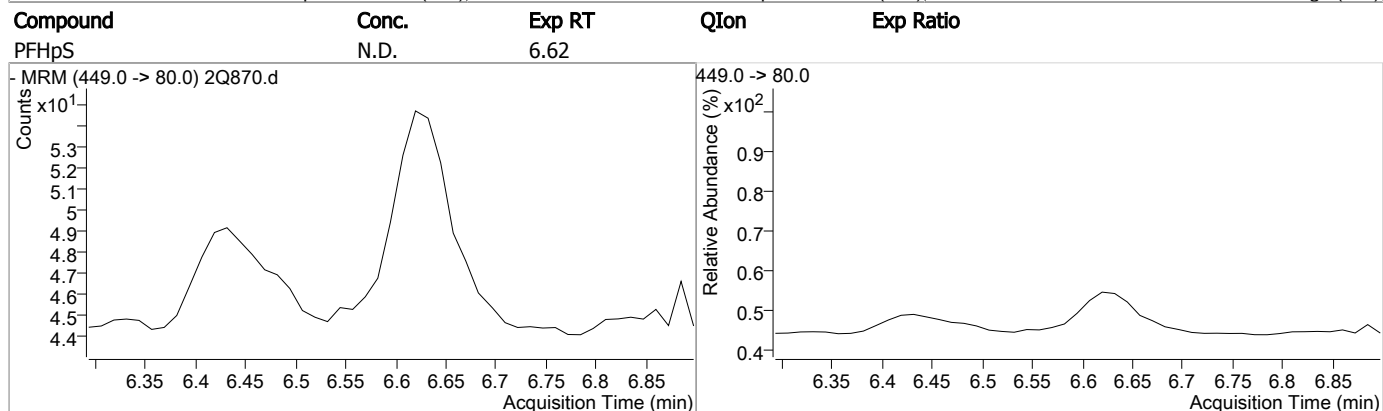
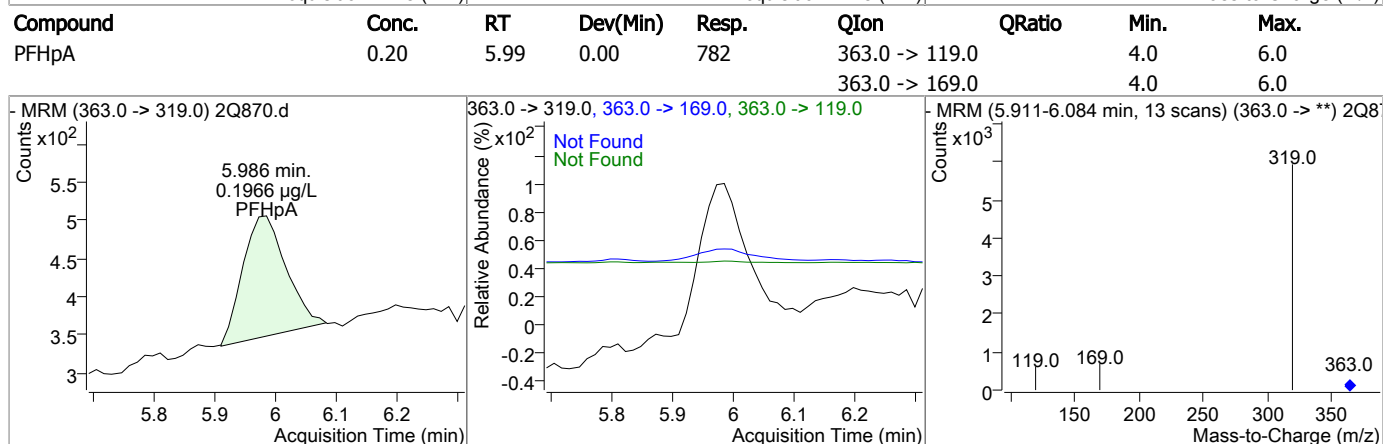
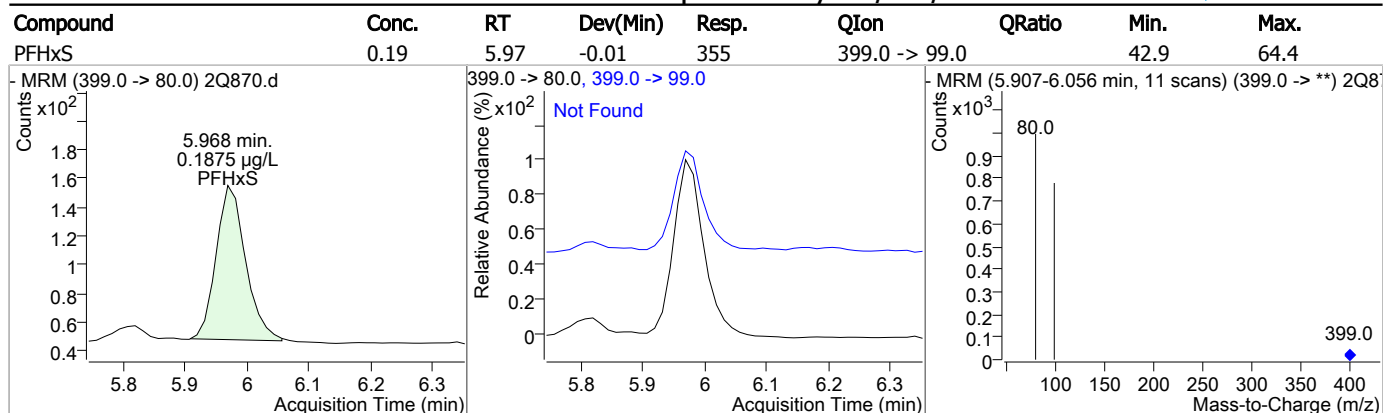
Perfluorinated Compounds by LC/MS/MS



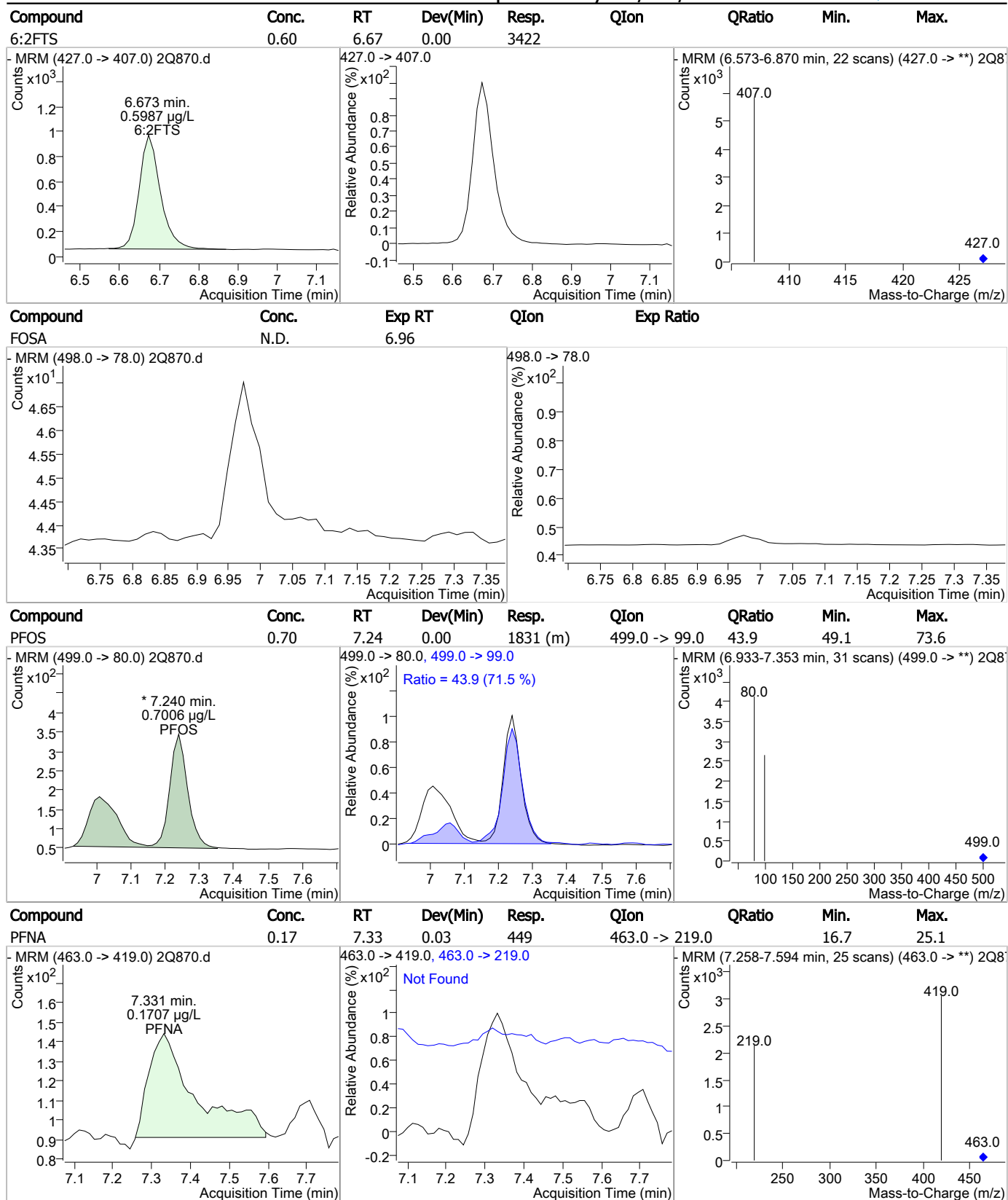
Perfluorinated Compounds by LC/MS/MS



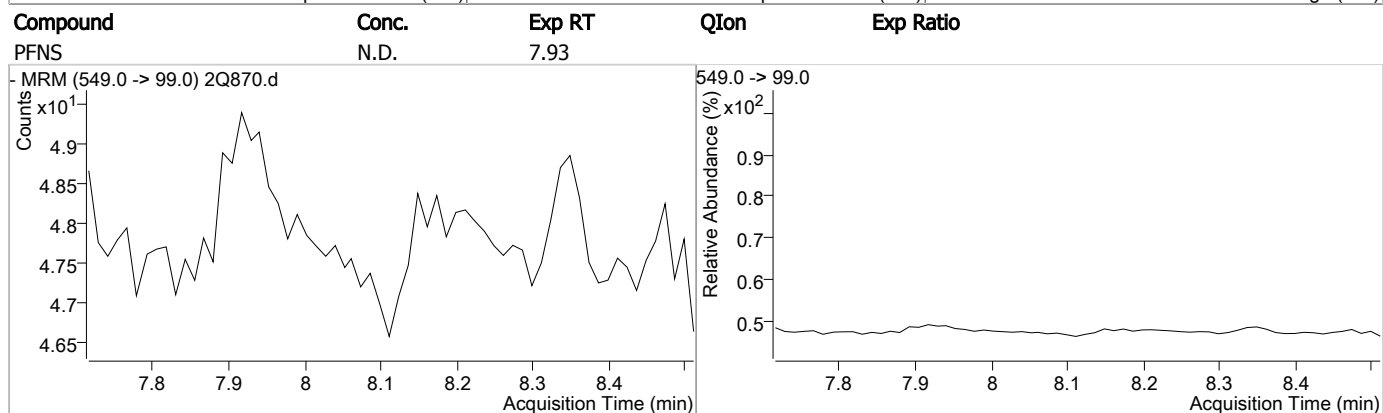
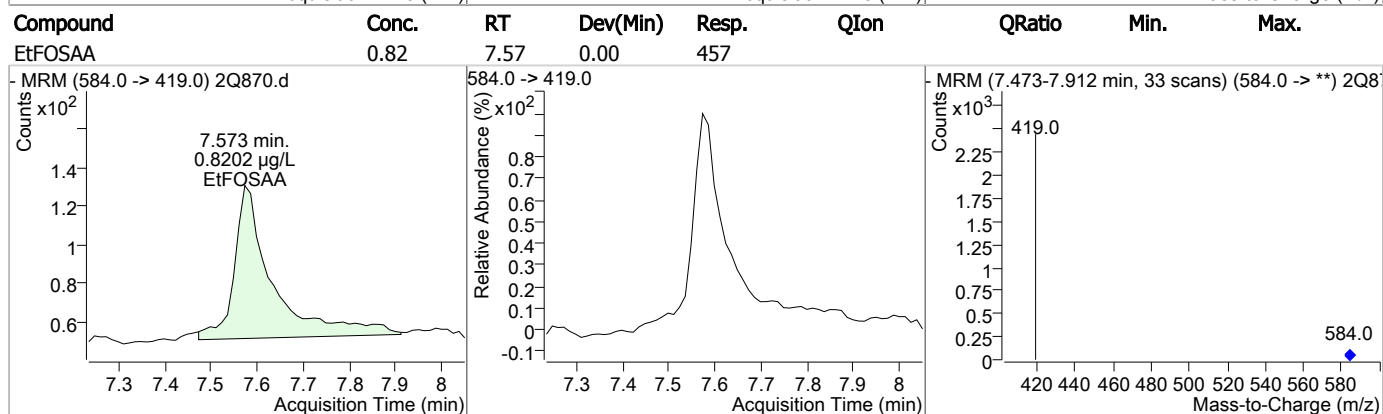
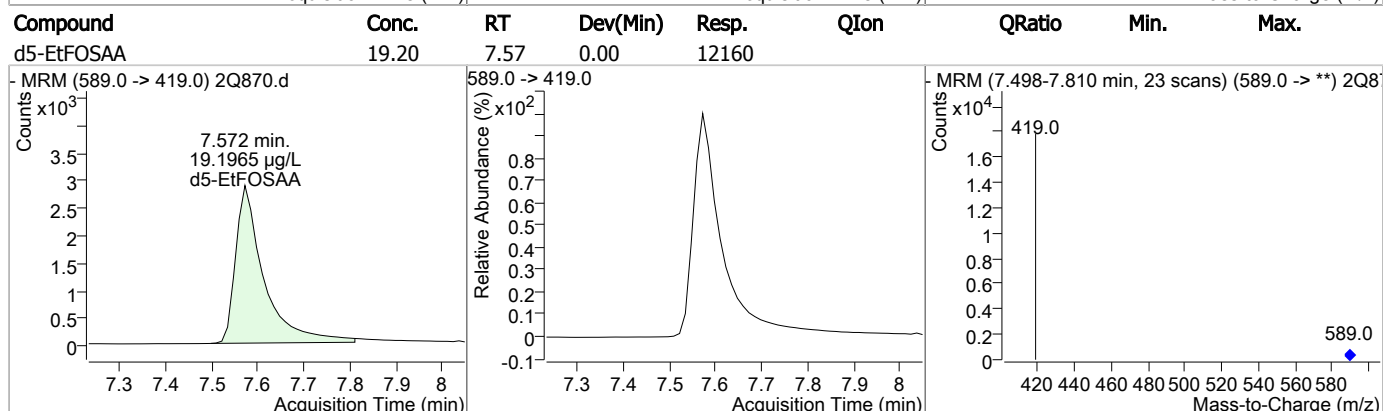
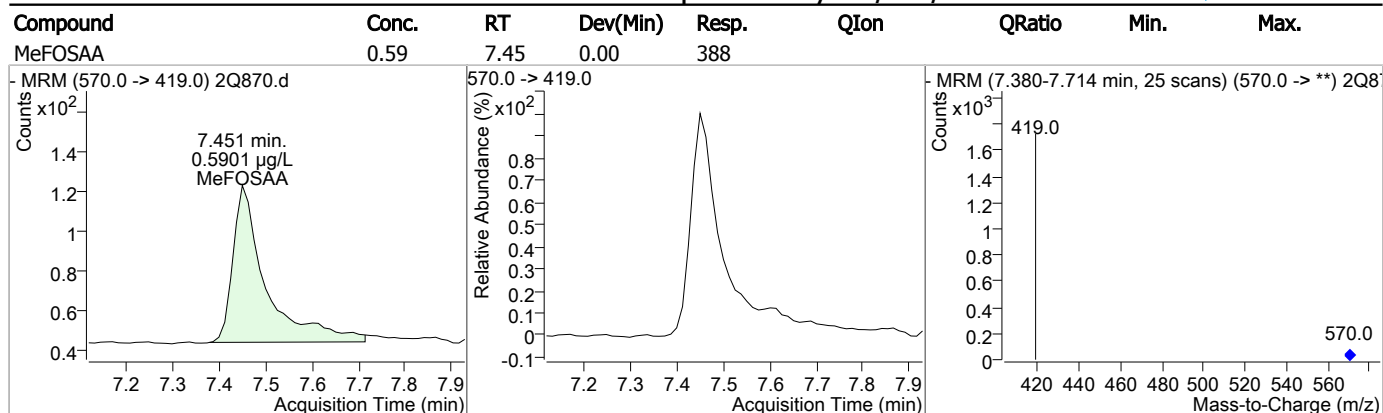
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

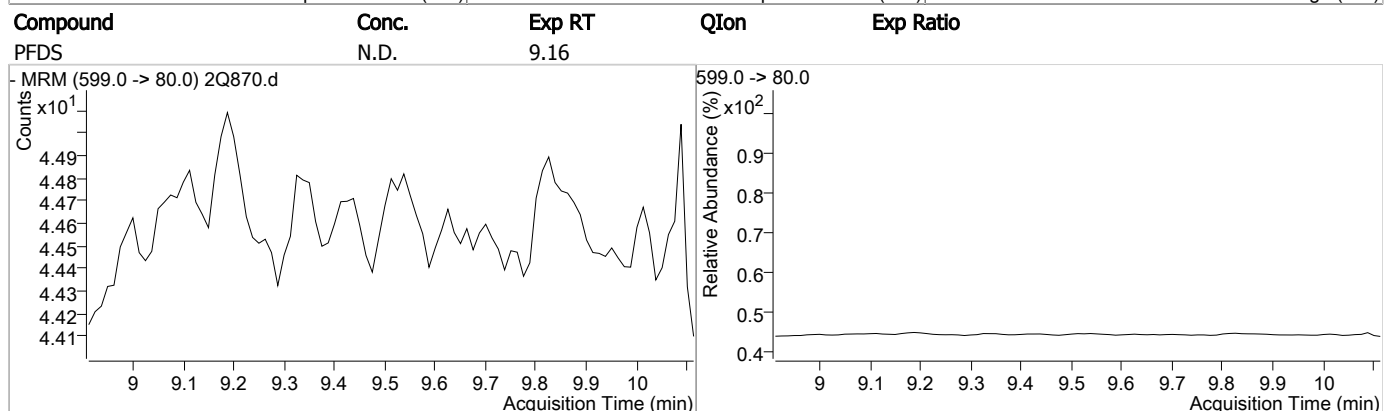
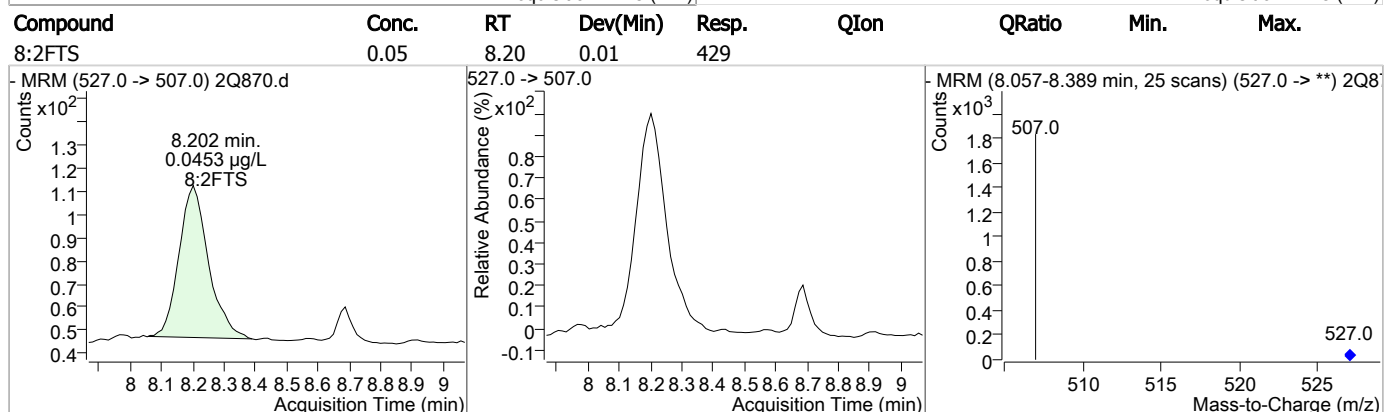
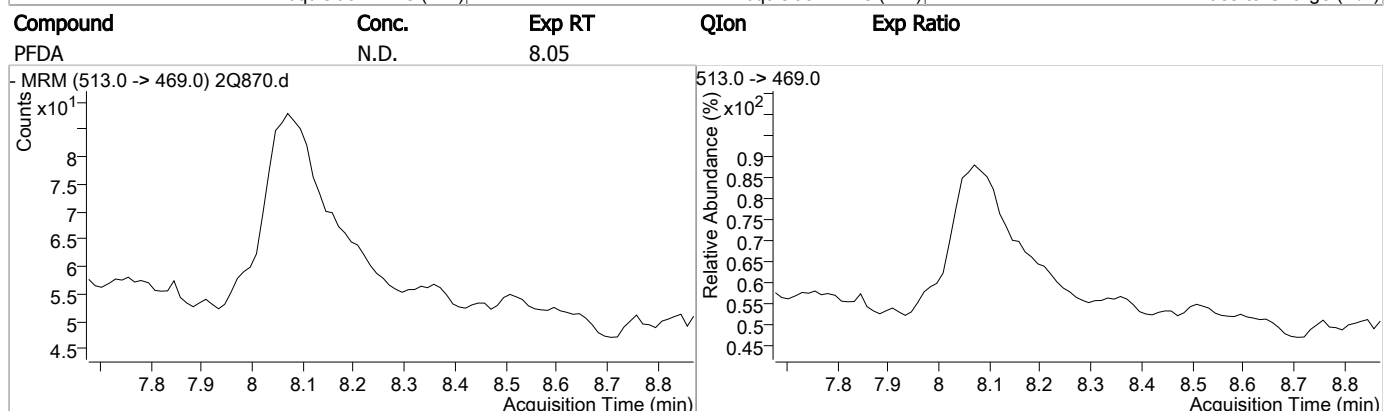
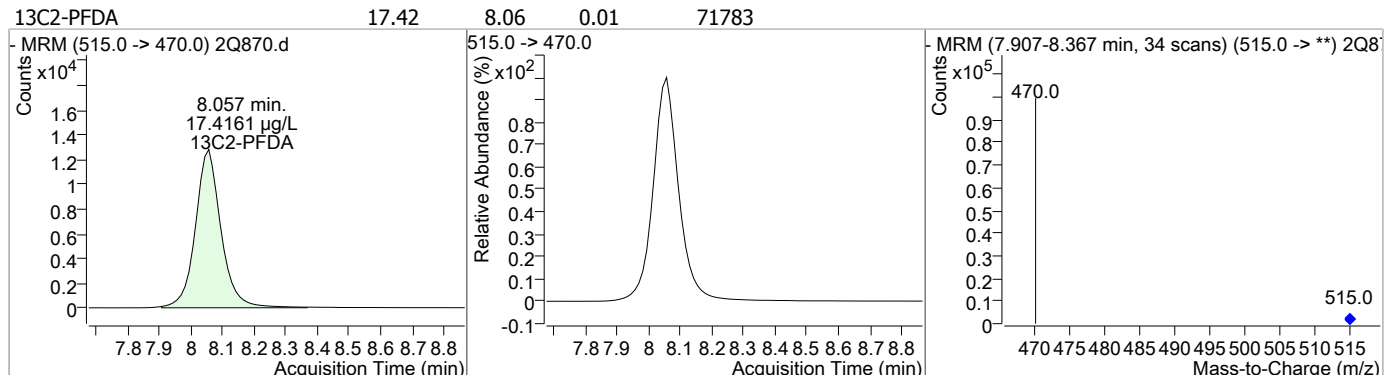


Perfluorinated Compounds by LC/MS/MS

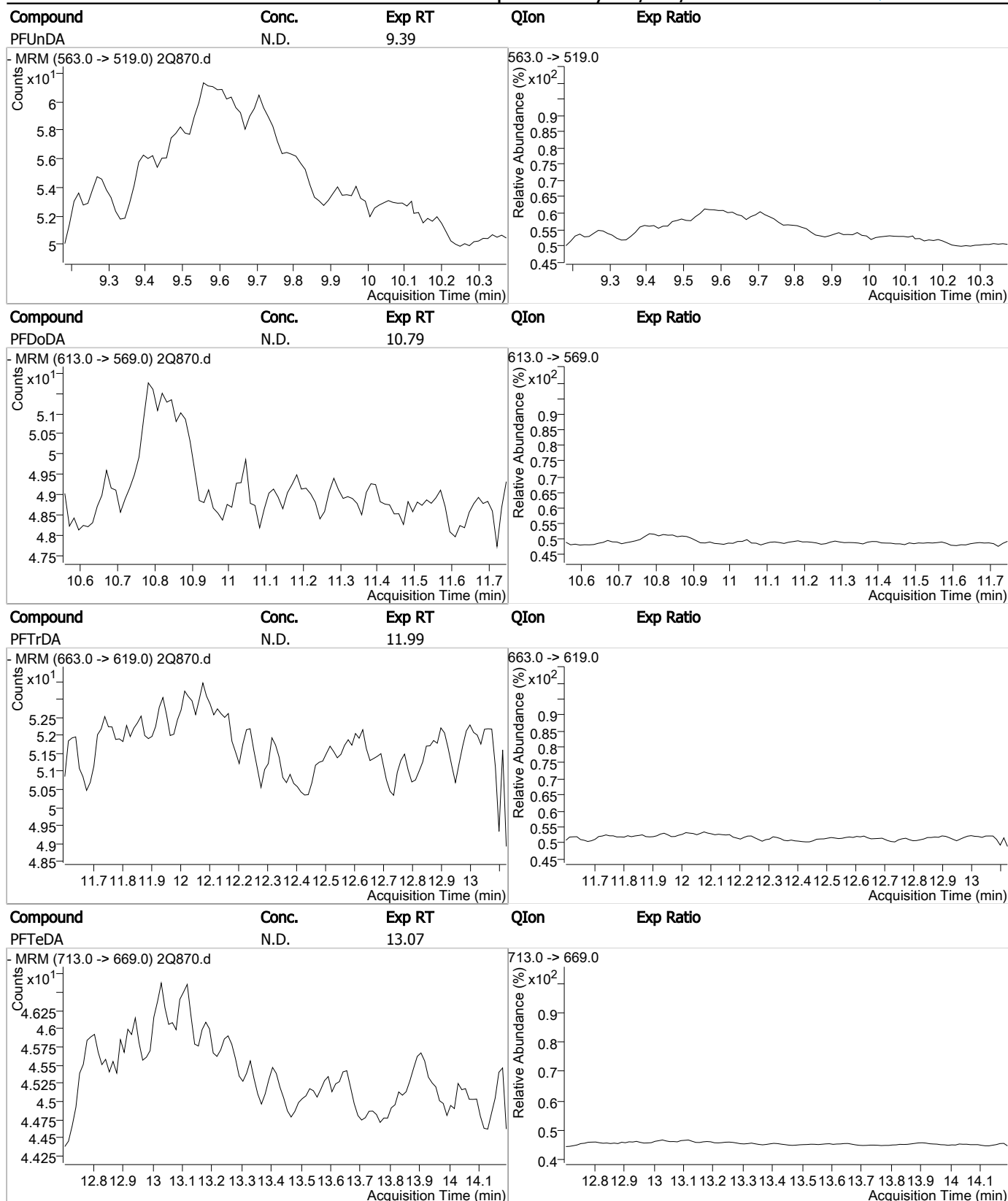


Perfluorinated Compounds by LC/MS/MS

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



Manual Integration Approval Summary

Sample Number: FA42998-2

Method: EPA 537

Lab FileID: 2Q870.D

Analyst approved: 05/01/17 10:02 Nancy Saunders

Injection Time: 04/28/17 18:13

Supervisor approved: 05/01/17 12:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		7.24	Split peak

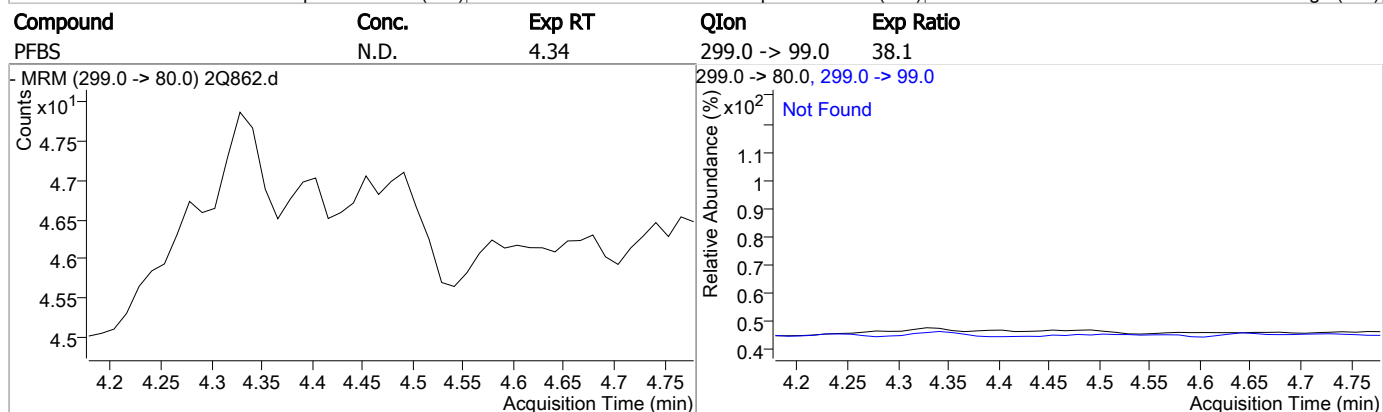
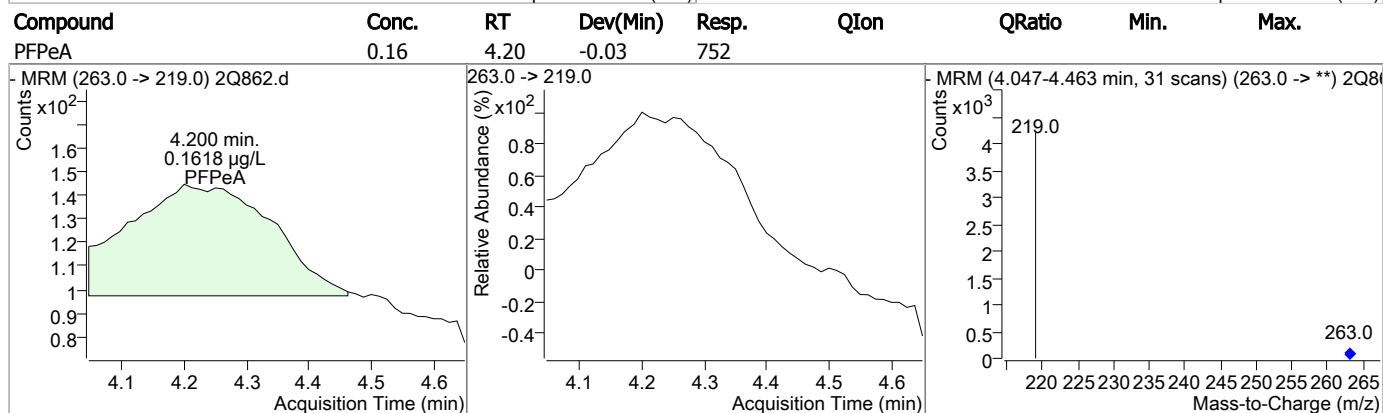
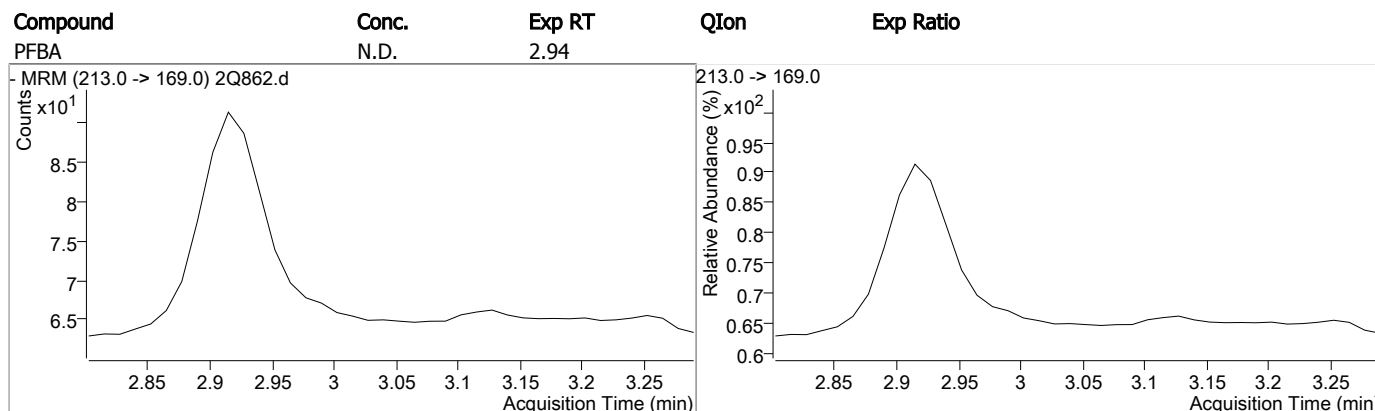
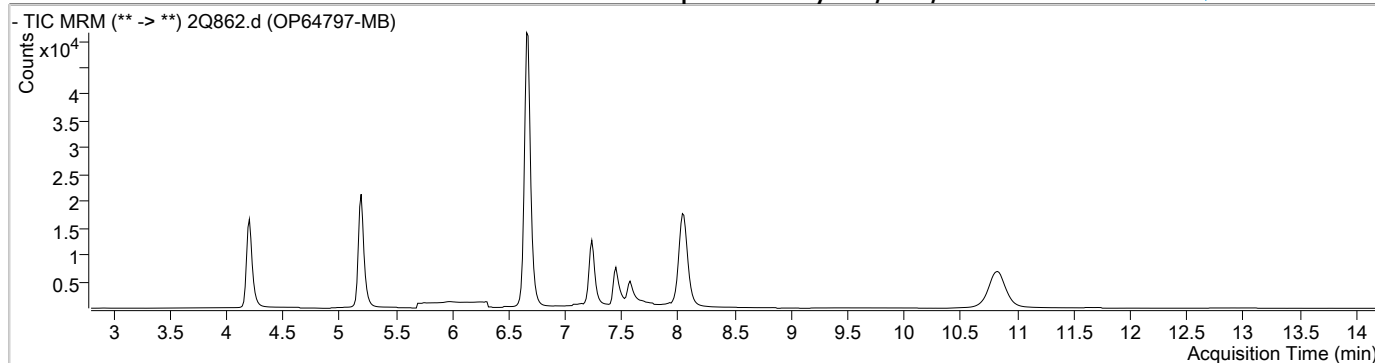
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q862.d
Operator : NANCYF
Acq. Method : dMRM_PFOA_PFOS_LIST.m
Acq. Date-Time : 4/28/2017 3:23:29 PM
Sample Name : OP64797-MB
Vial : Vial 8
DA Method File : PFCLISTDW_0420_S2Q18.m
Batch Name : 2SQ25.batch.bin
Last Calib Update : 4/21/2017 7:57:04 AM

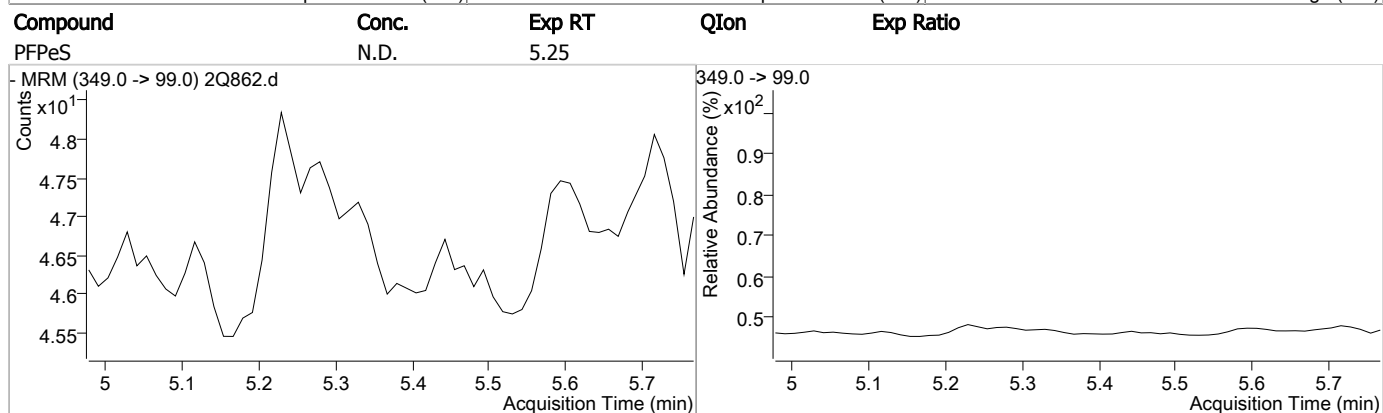
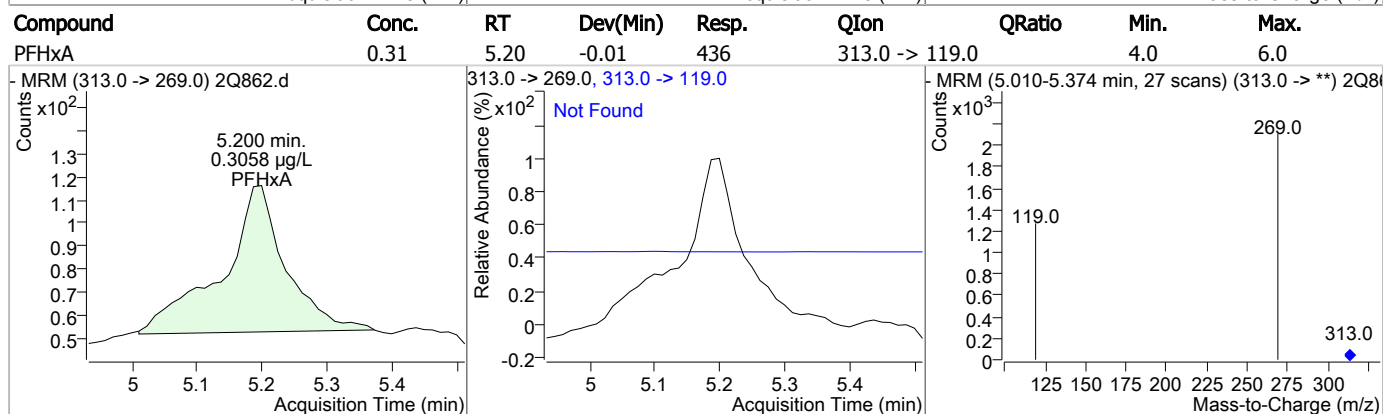
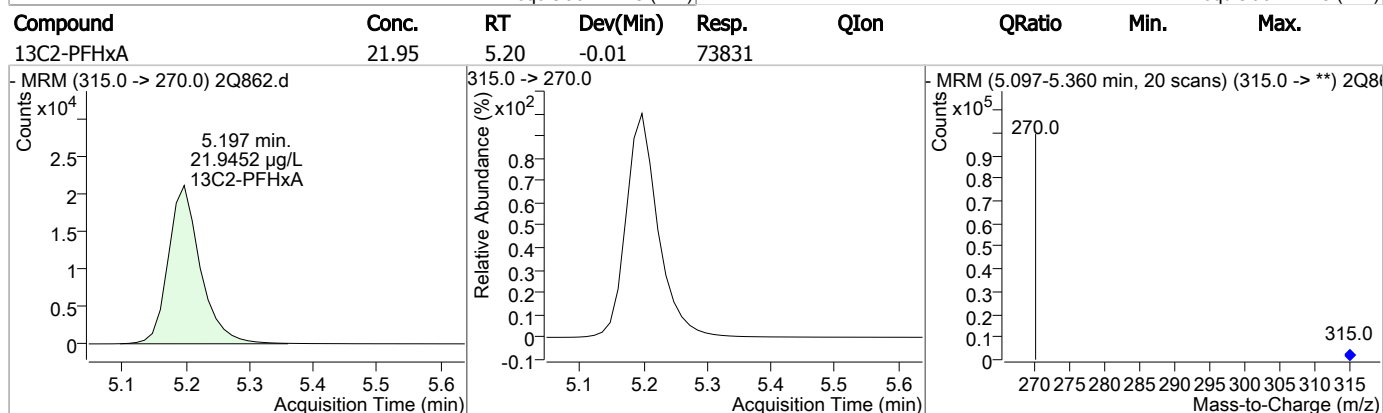
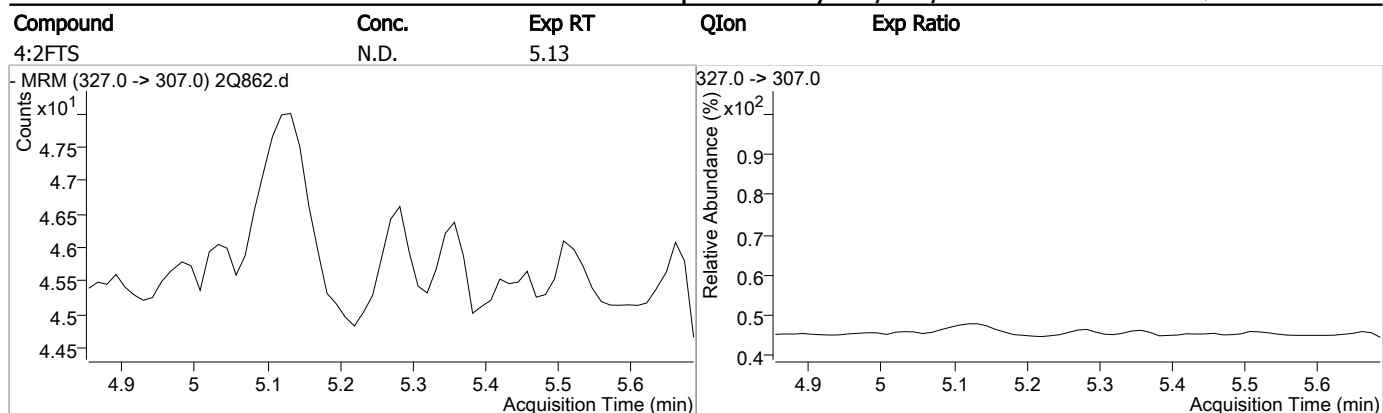
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.671	429.0 -> 409.0	135973	20.00 µg/L	0.000
13C2-PFDoDA	10.826	615.0 -> 570.0	73370	20.00 µg/L	0.038
13C2-PFOA	6.662	415.0 -> 370.0	63693	20.00 µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	61226	20.00 µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	45946	20.00 µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	26985	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	8.044	515.0 -> 470.0	98745	22.16 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 110.8%		
13C2-PFHxA	5.197	315.0 -> 270.0	73831	21.95 µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 109.7%		
d5-EtFOSAA	7.572	589.0 -> 419.0	15335	22.79 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 113.9%		
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	6.673	427.0 -> 407.0	1257	0.19 µg/L	100
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	7.573	584.0 -> 419.0	2203	3.75 µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.451	570.0 -> 419.0	2047	2.94 µg/L	100
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	8.059	513.0 -> 469.0	544	0.17 µg/L	100
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	5.986	363.0 -> 319.0	754	0.18 µg/L	85
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	5.200	313.0 -> 269.0	436	0.31 µg/L	85
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	7.319	463.0 -> 419.0	407	0.14 µg/L	55
PFNS	-	549.0 -> 99.0	-	N.D.	
PFOA	6.664	413.0 -> 369.0	435	0.16 µg/L	54
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	4.200	263.0 -> 219.0	752	0.16 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

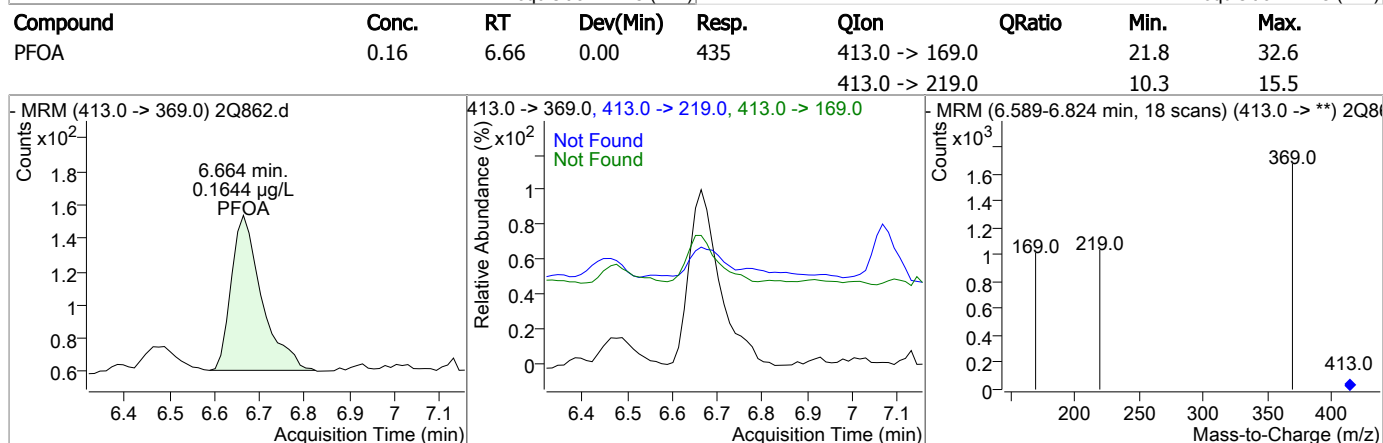
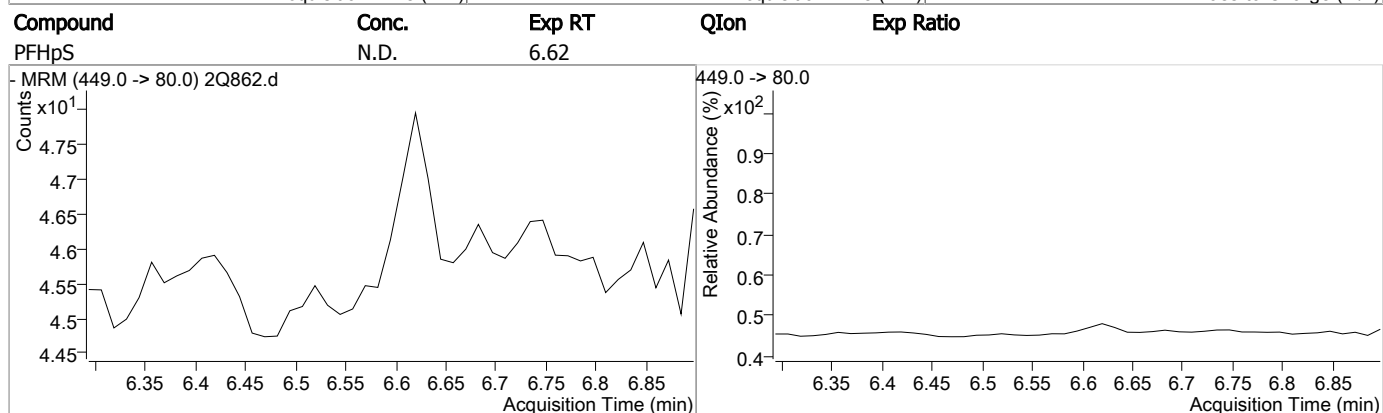
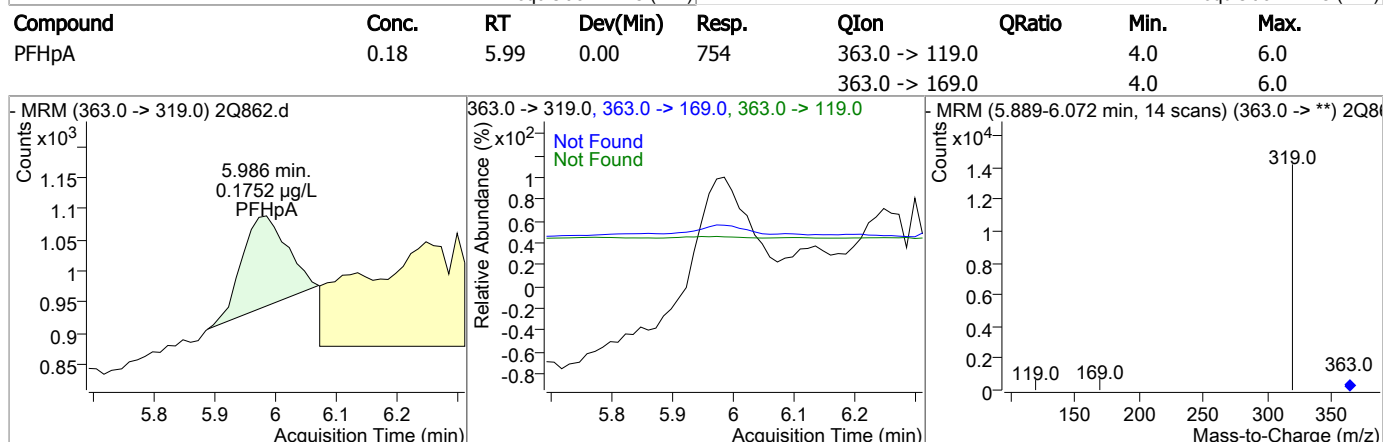
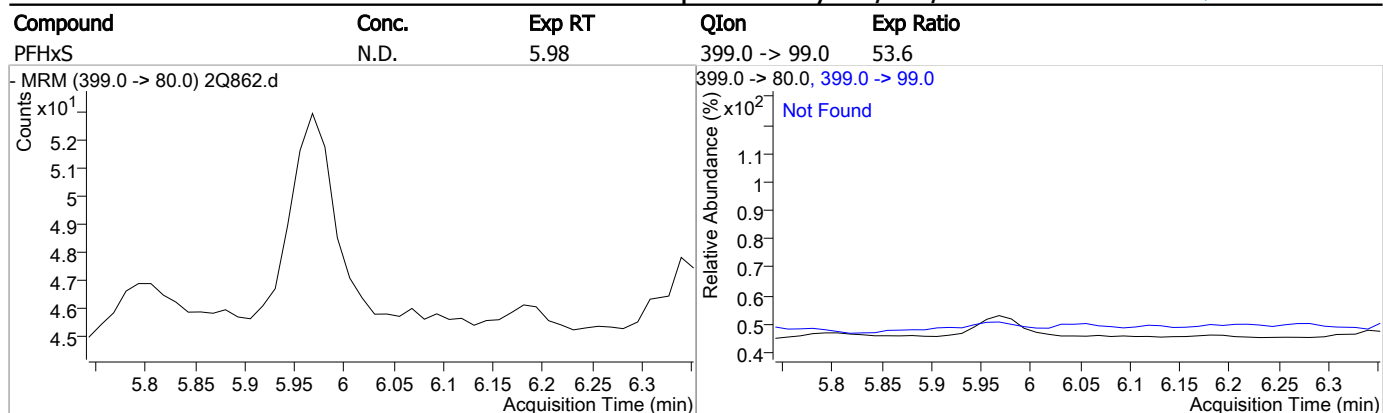
Perfluorinated Compounds by LC/MS/MS



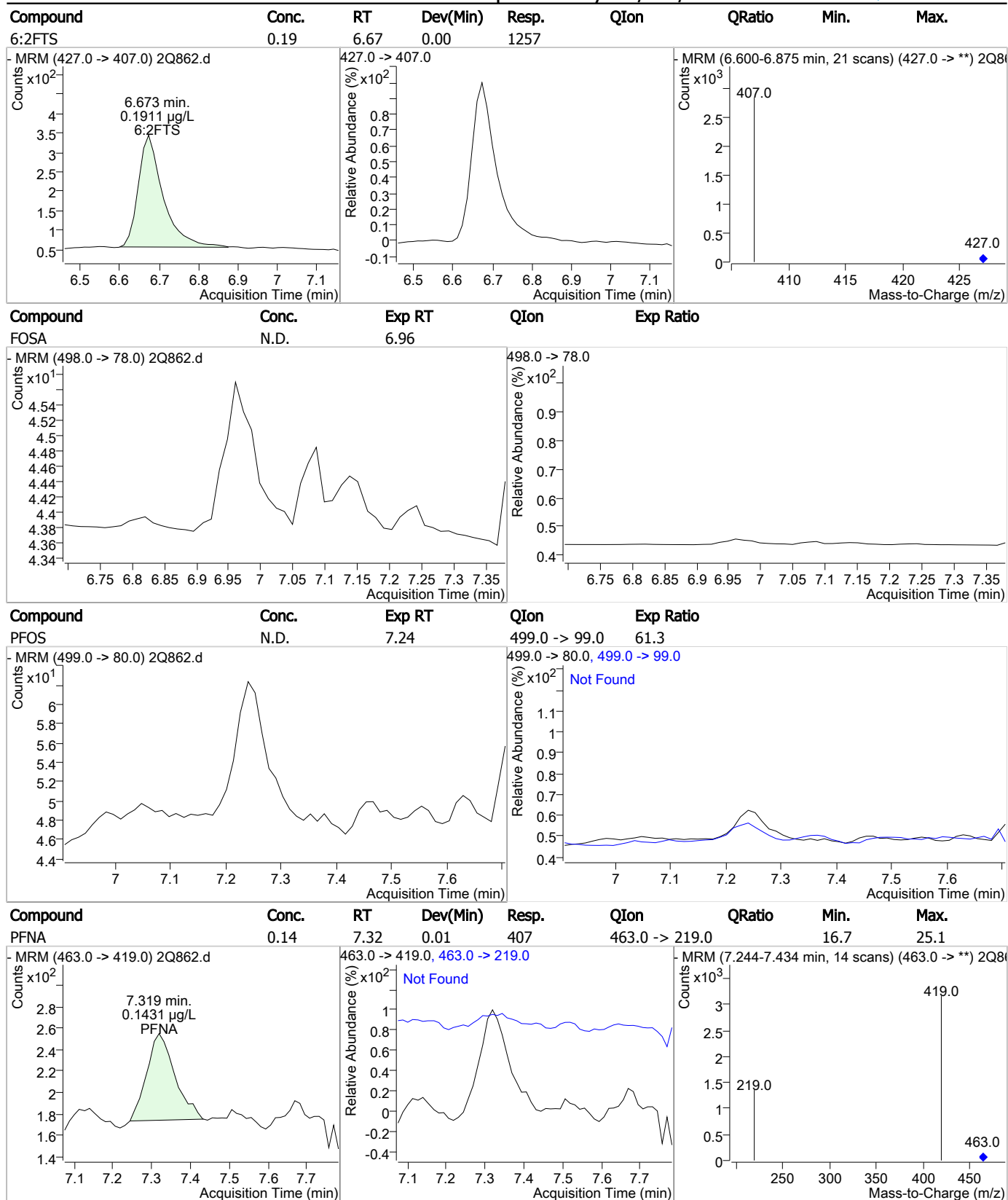
Perfluorinated Compounds by LC/MS/MS



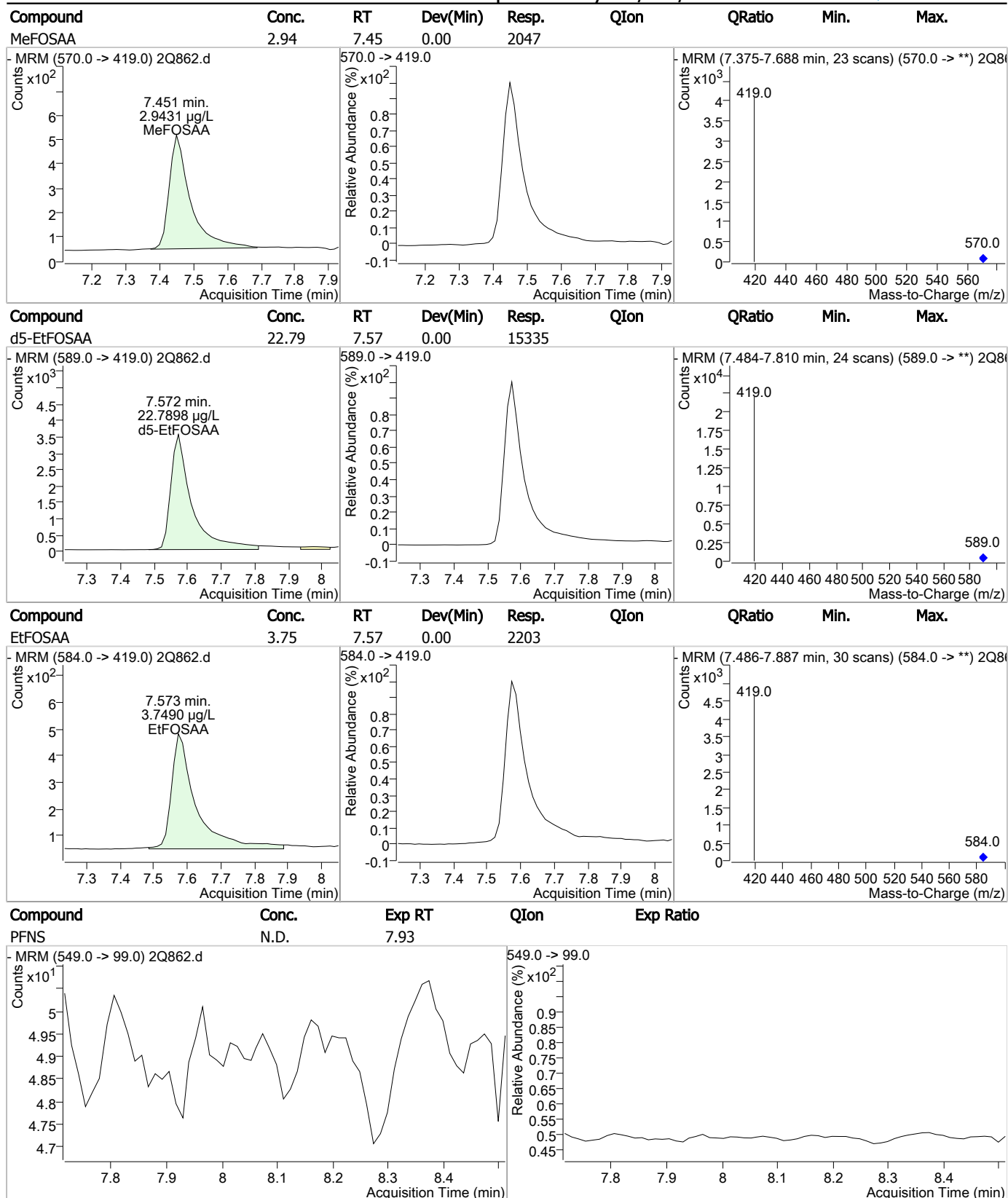
Perfluorinated Compounds by LC/MS/MS



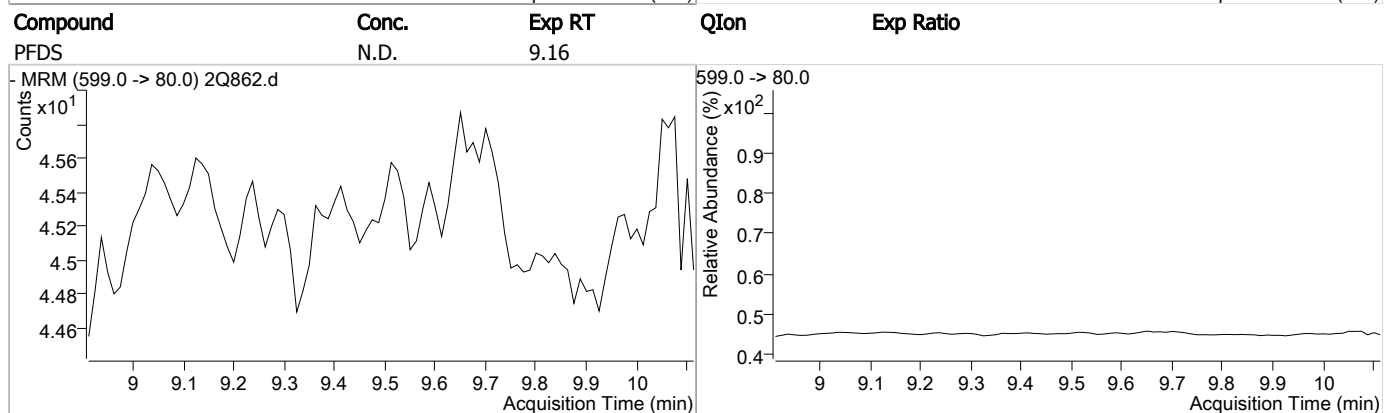
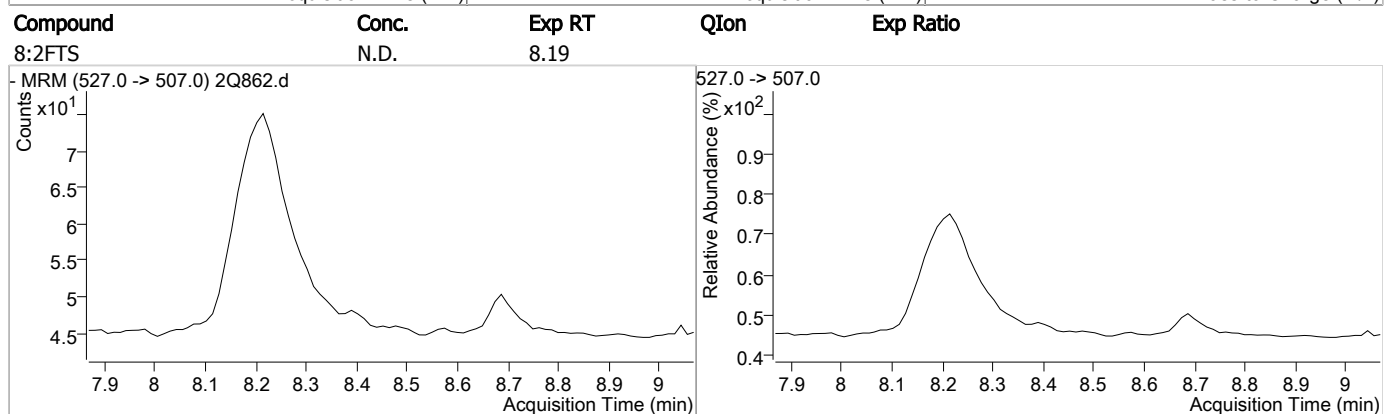
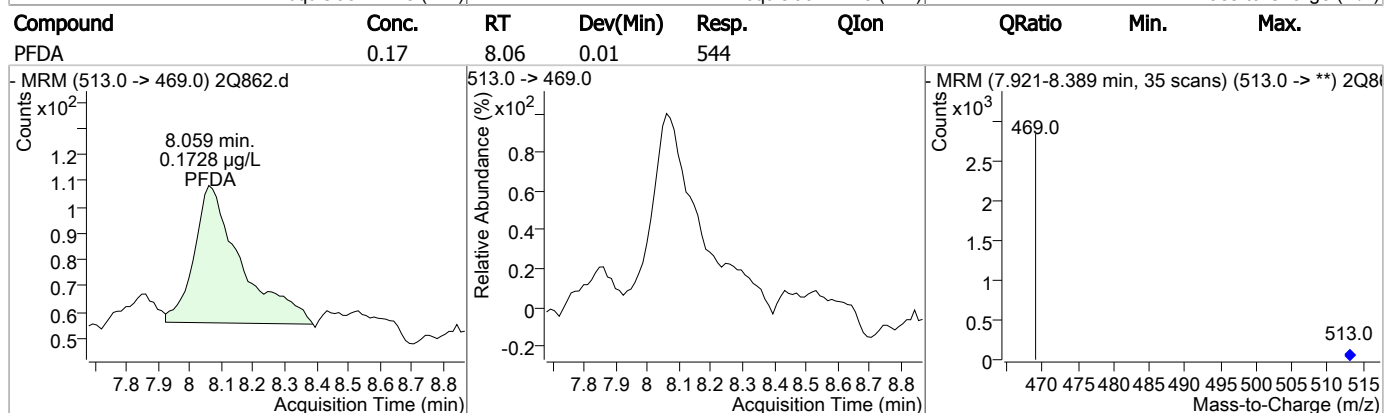
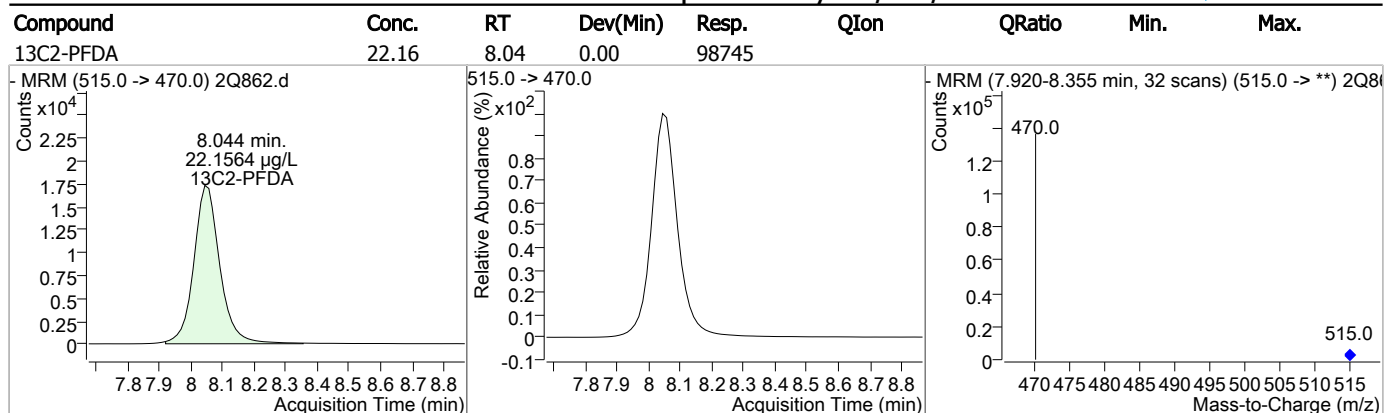
Perfluorinated Compounds by LC/MS/MS



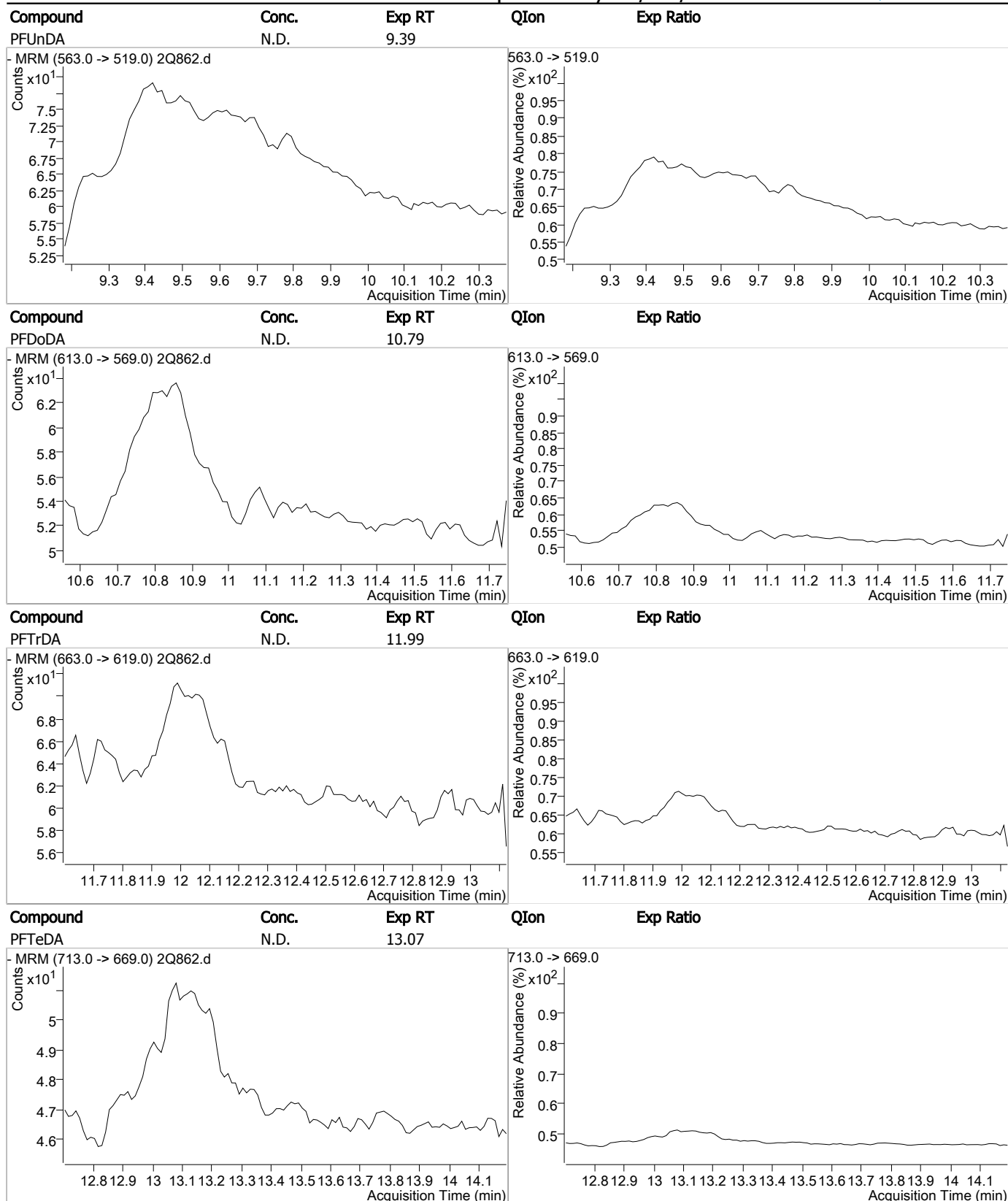
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q861.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 3:03:44 PM
 Sample Name : OP64797-BS
 Vial : Vial 7
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.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	6.671	429.0 -> 409.0	154462	20.00 µg/L	0.000
13C2-PFDoDA	10.826	615.0 -> 570.0	80861	20.00 µg/L	0.038
13C2-PFOA	6.662	415.0 -> 370.0	68979	20.00 µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	66489	20.00 µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	49451	20.00 µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	28788	20.00 µg/L	0.000

System Monitoring Compounds

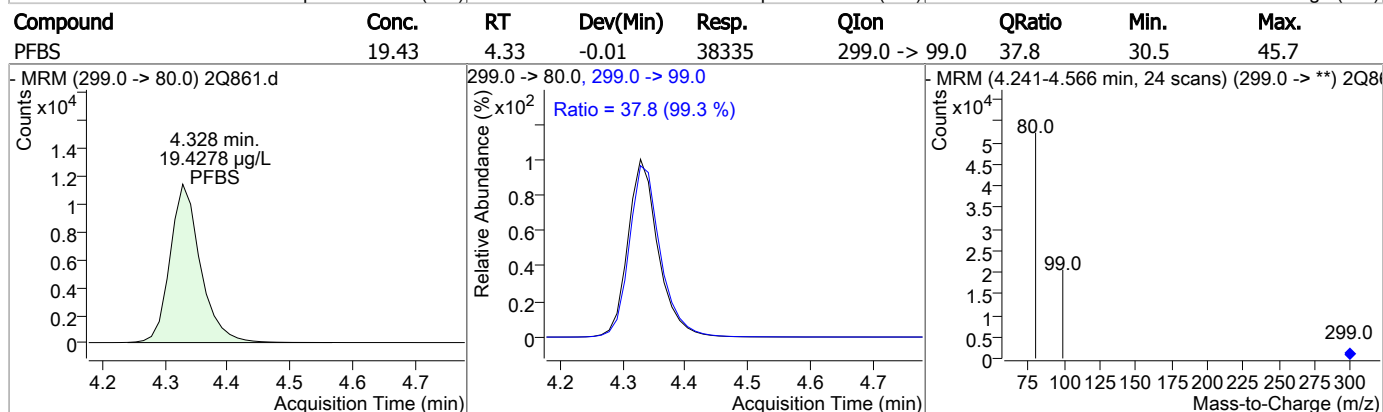
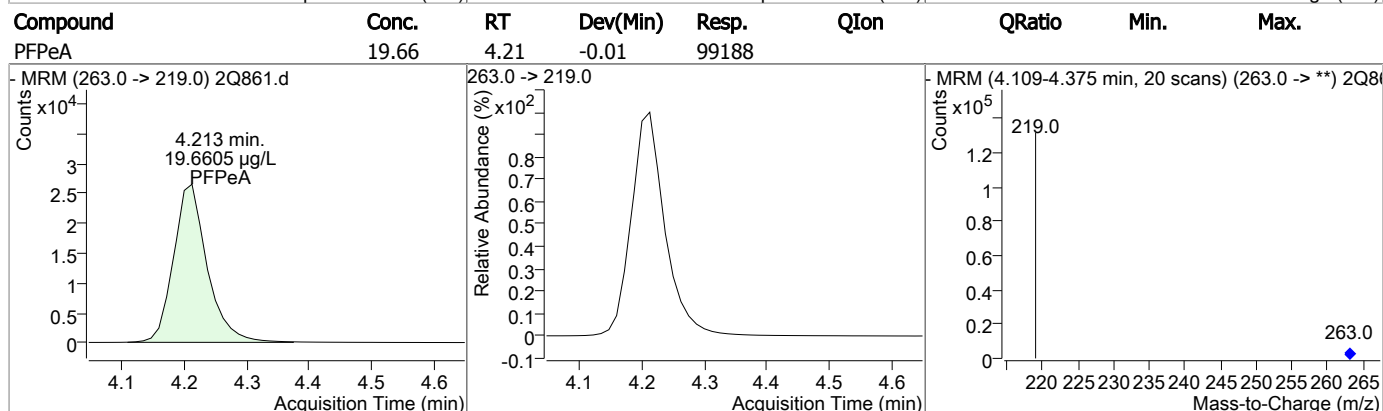
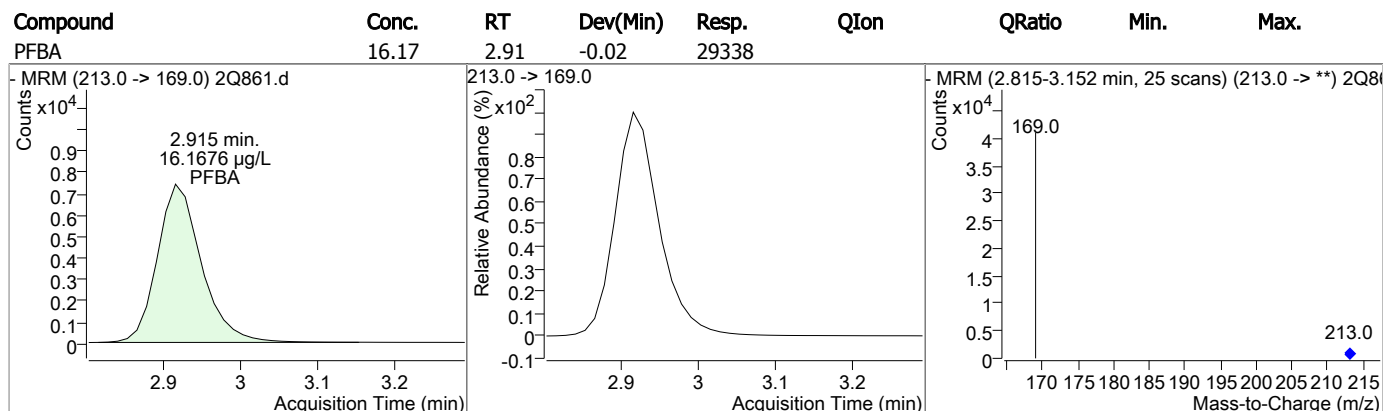
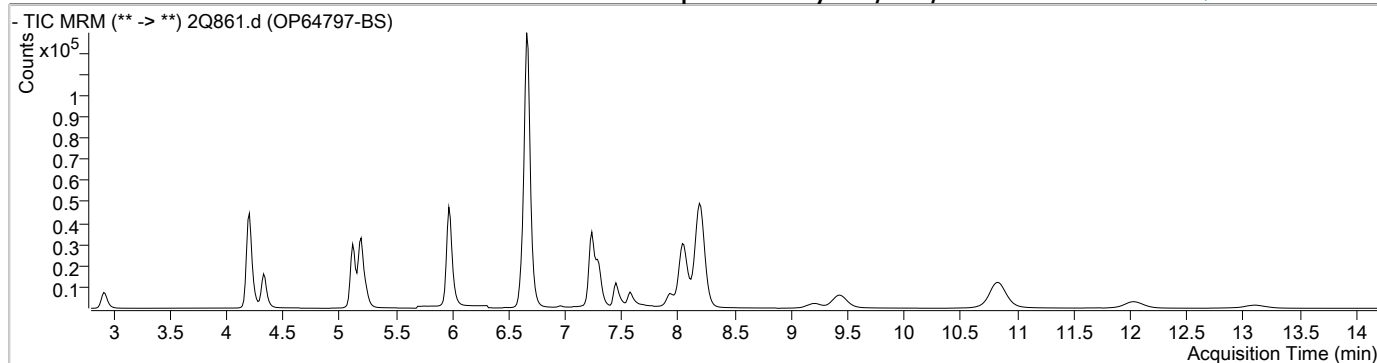
13C2-PFDA	8.044	515.0 -> 470.0	101598	21.05 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 105.2%		
13C2-PFHxA	5.197	315.0 -> 270.0	76400	20.97 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 104.8%		
d5-EtFOSAA	7.572	589.0 -> 419.0	13661	19.34 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 96.7%		

Target Compounds

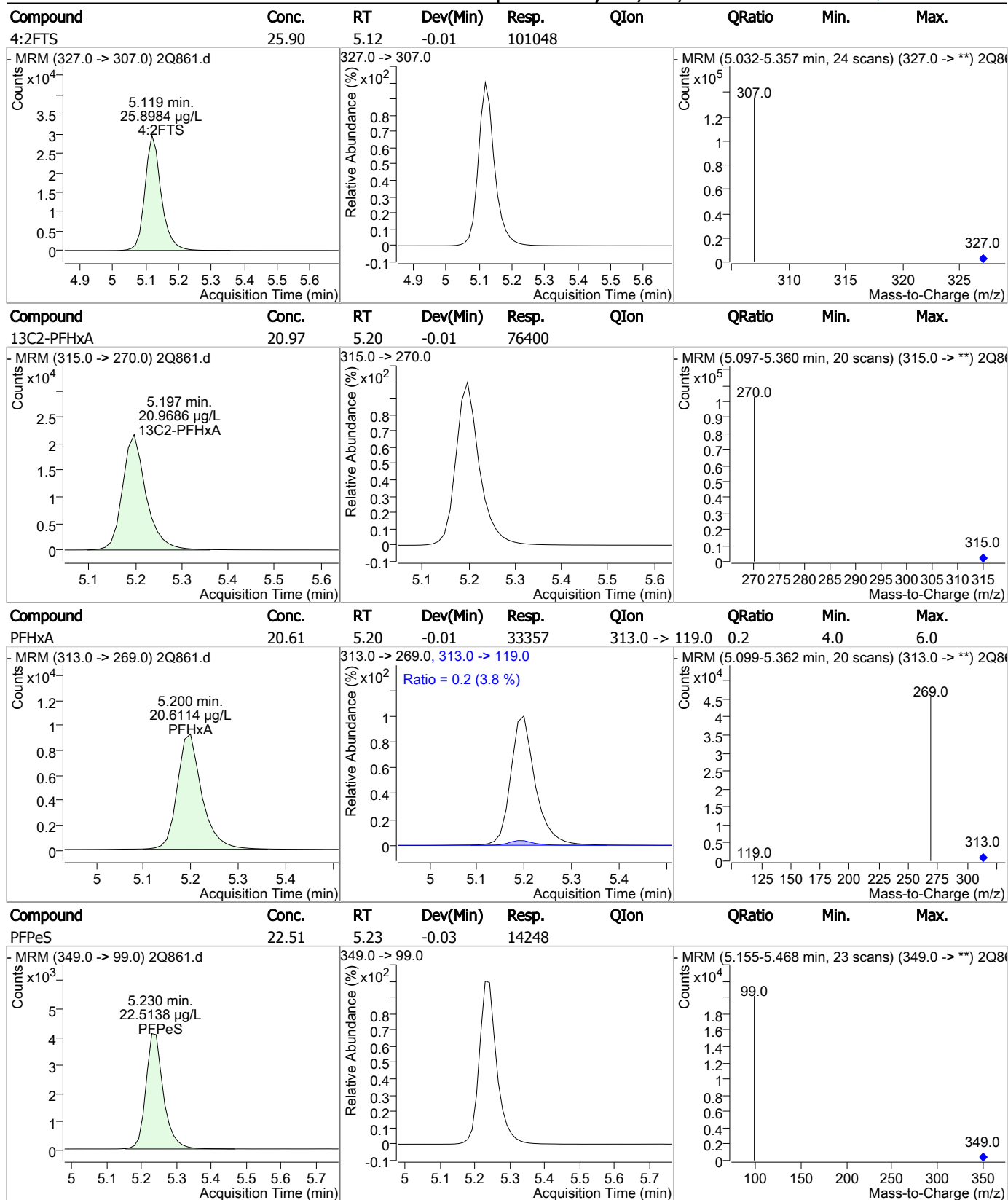
					QValue
4:2FTS	5.119	327.0 -> 307.0	101048	25.90 µg/L	100
6:2FTS	6.673	427.0 -> 407.0	180610	24.18 µg/L	100
8:2FTS	8.189	527.0 -> 507.0	301395	24.37 µg/L	100
EtFOSAA	7.573	584.0 -> 419.0	12396	18.92 µg/L	100
FOSA	6.961	498.0 -> 78.0	1873	1.21 µg/L	100
MeFOSAA	7.451	570.0 -> 419.0	17264	21.30 µg/L	100
PFBA	2.915	213.0 -> 169.0	29338	16.17 µg/L	100
PFBS	4.328	299.0 -> 80.0	38335	19.43 µg/L	100
PFDA	8.046	513.0 -> 469.0	64829	19.01 µg/L	100
PFDoDA	10.833	613.0 -> 569.0	51079	14.64 µg/L	100
PFDS	9.200	599.0 -> 80.0	19814	15.22 µg/L	100
PFHpA	5.973	363.0 -> 319.0	95267	19.87 µg/L	# 93
PFHpS	6.620	449.0 -> 80.0	47863	22.85 µg/L	100
PFHxA	5.200	313.0 -> 269.0	33357	20.61 µg/L	# 85
PFHxS	5.968	399.0 -> 80.0	44296	21.45 µg/L	93
PFNA	7.306	463.0 -> 419.0	60491	19.63 µg/L	99
PFNS	7.929	549.0 -> 99.0	26204	20.98 µg/L	100
PFOA	6.652	413.0 -> 369.0	59148	20.63 µg/L	99
PFOS	7.240	499.0 -> 80.0	50960	17.86 µg/L	97
PFPeA	4.213	263.0 -> 219.0	99188	19.66 µg/L	100
PFPeS	5.230	349.0 -> 99.0	14248	22.51 µg/L	100
PFTeDA	13.116	713.0 -> 669.0	19985	12.37 µg/L	100
PFTTrDA	12.027	663.0 -> 619.0	40233	13.70 µg/L	100
PFUnDA	9.431	563.0 -> 519.0	59865	16.87 µg/L	100

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

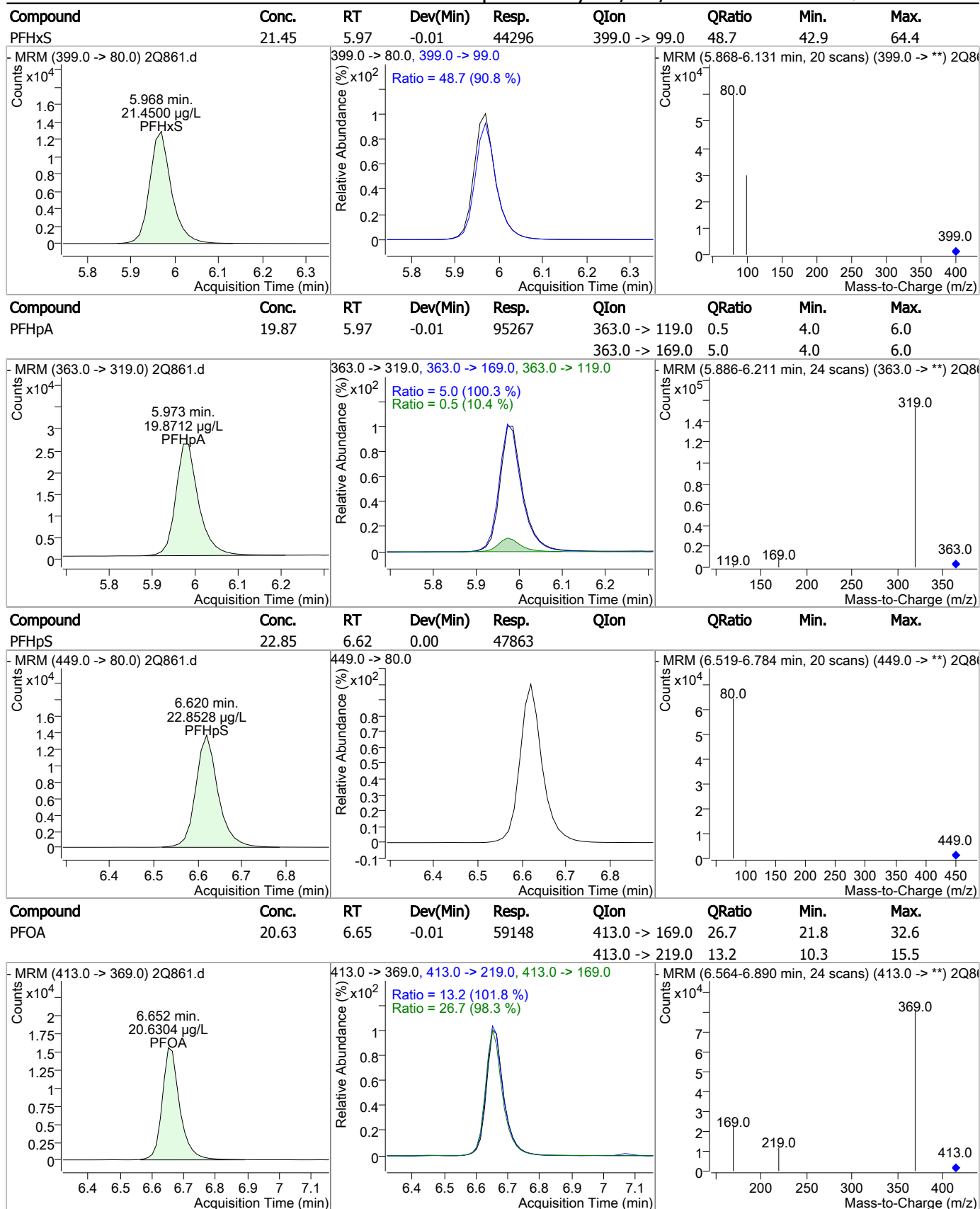
Perfluorinated Compounds by LC/MS/MS



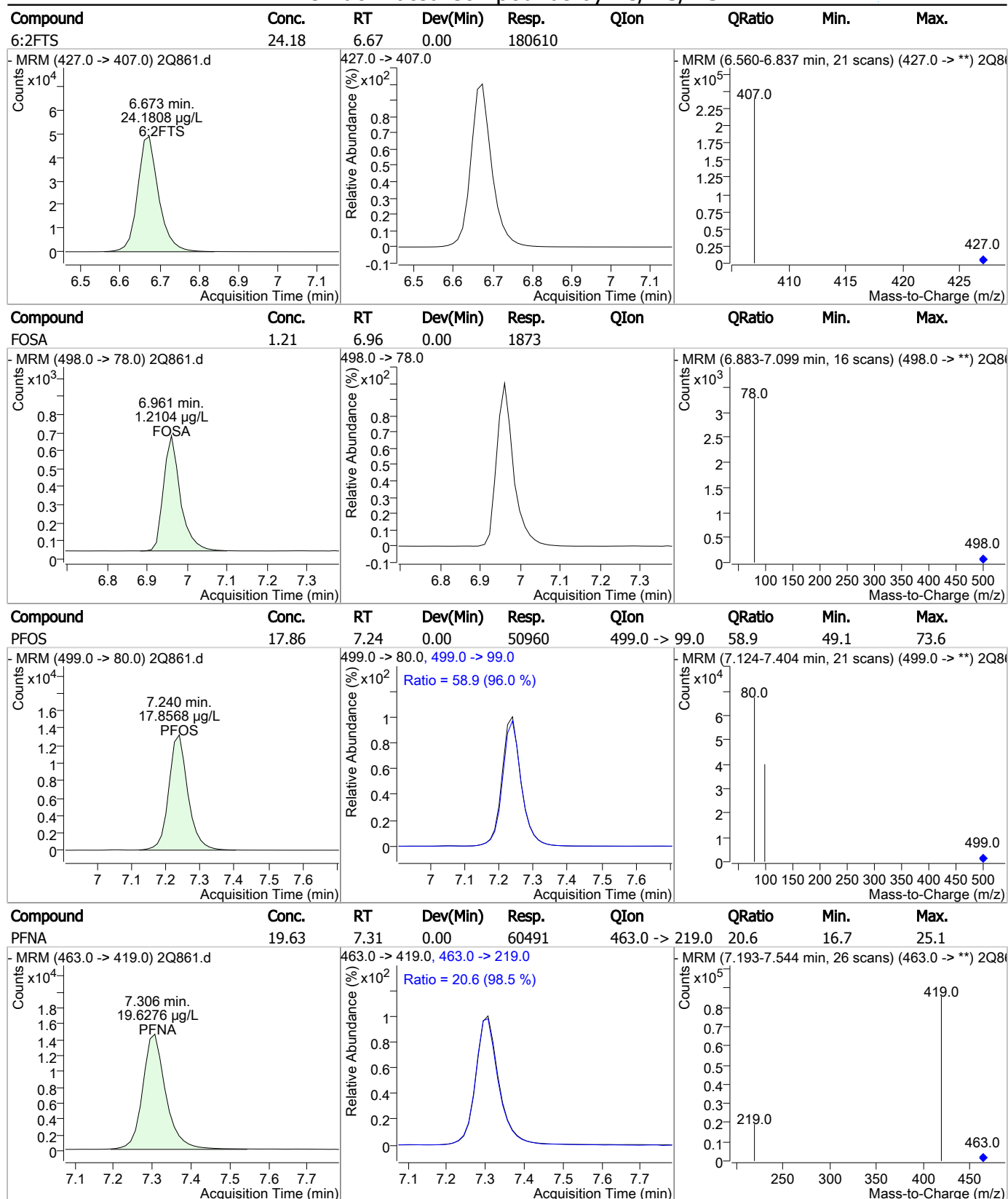
Perfluorinated Compounds by LC/MS/MS



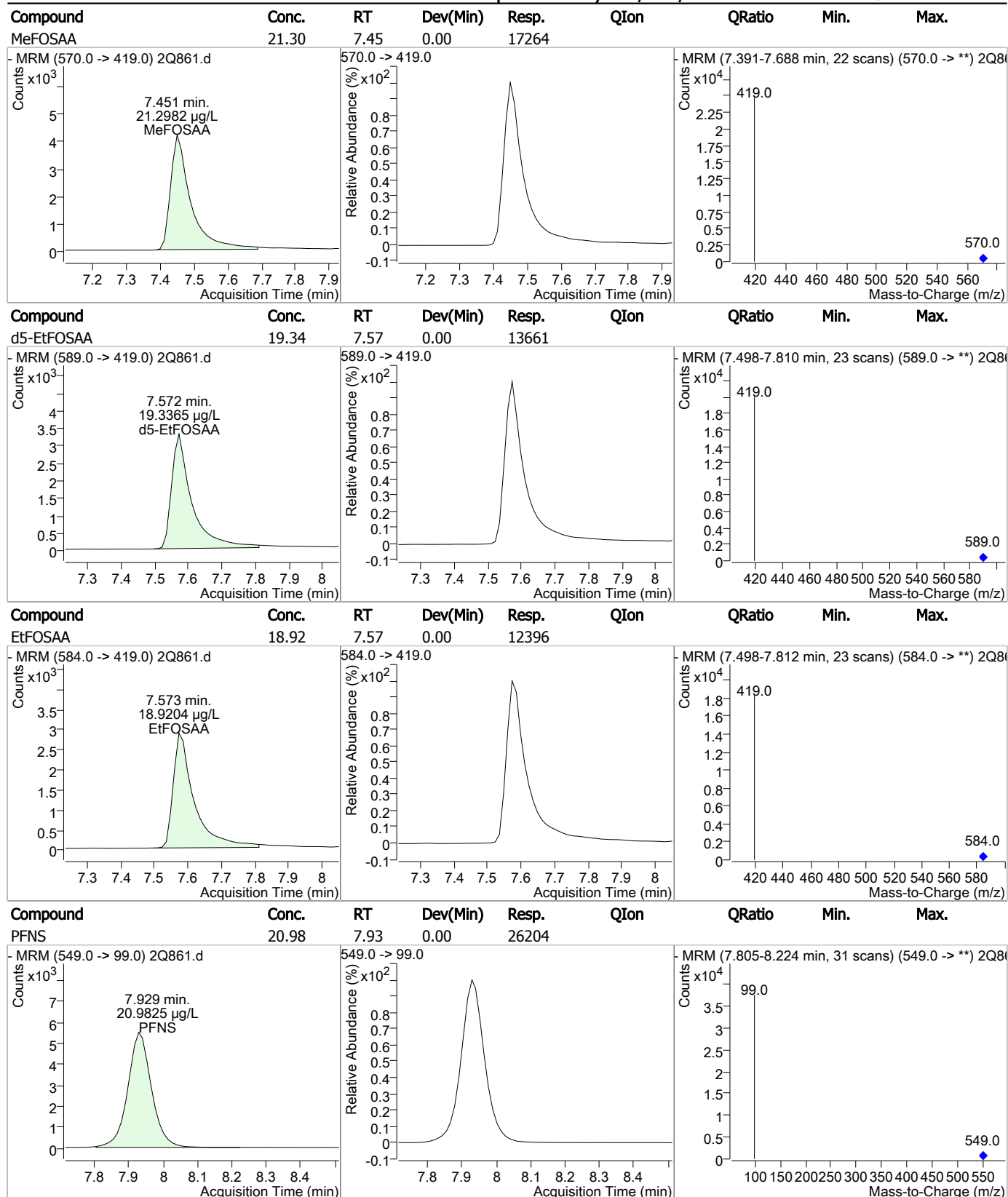
Perfluorinated Compounds by LC/MS/MS



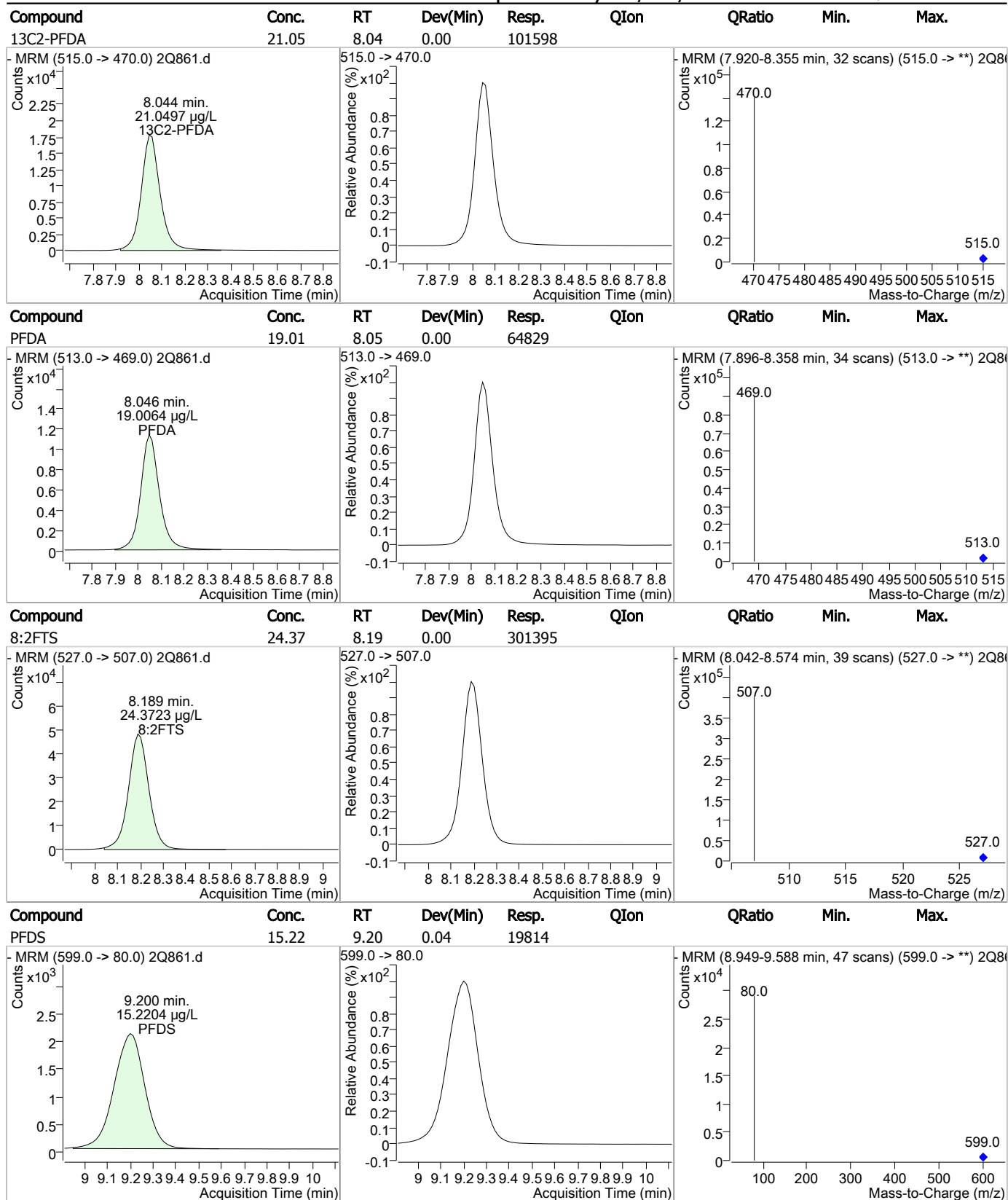
Perfluorinated Compounds by LC/MS/MS



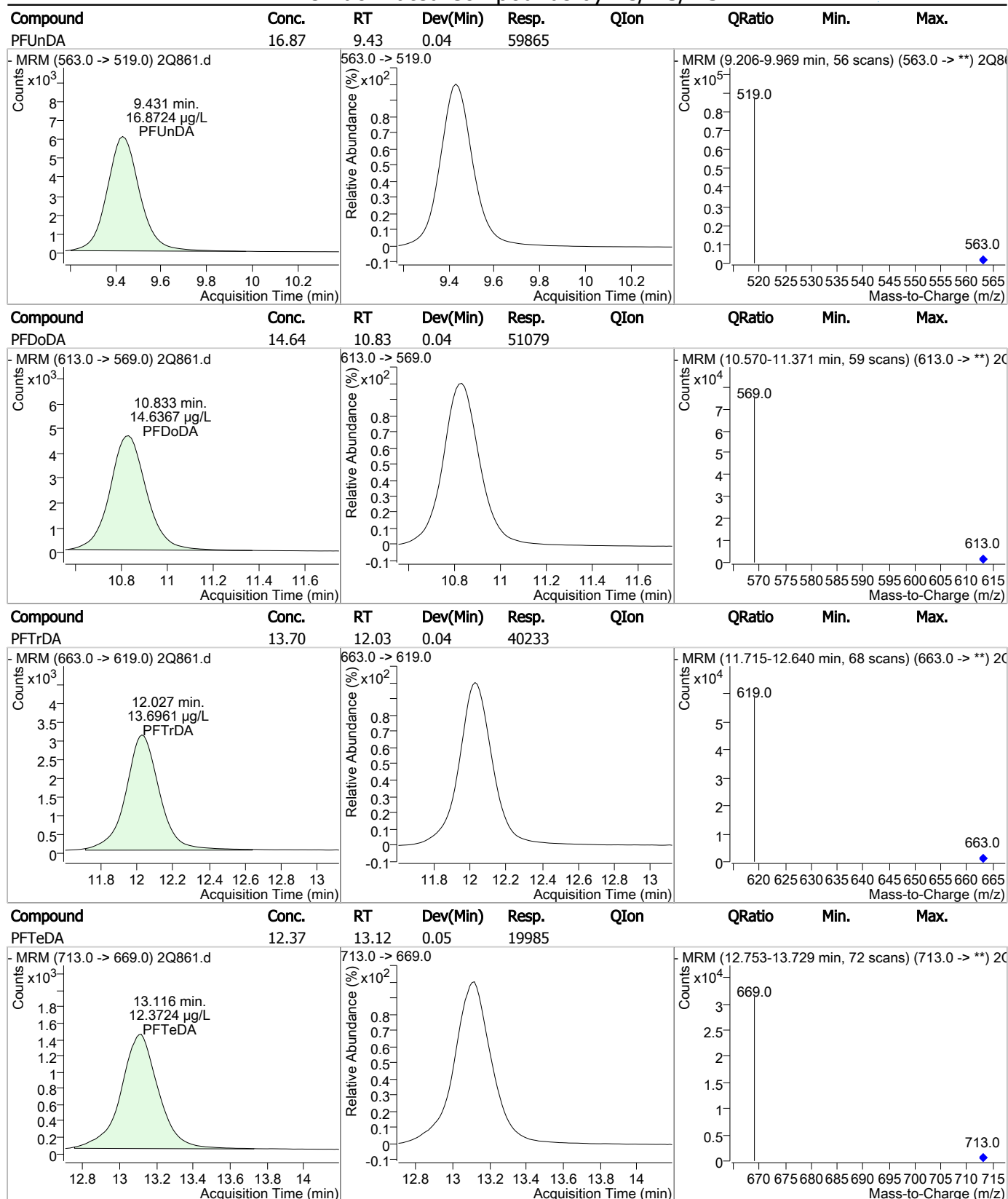
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



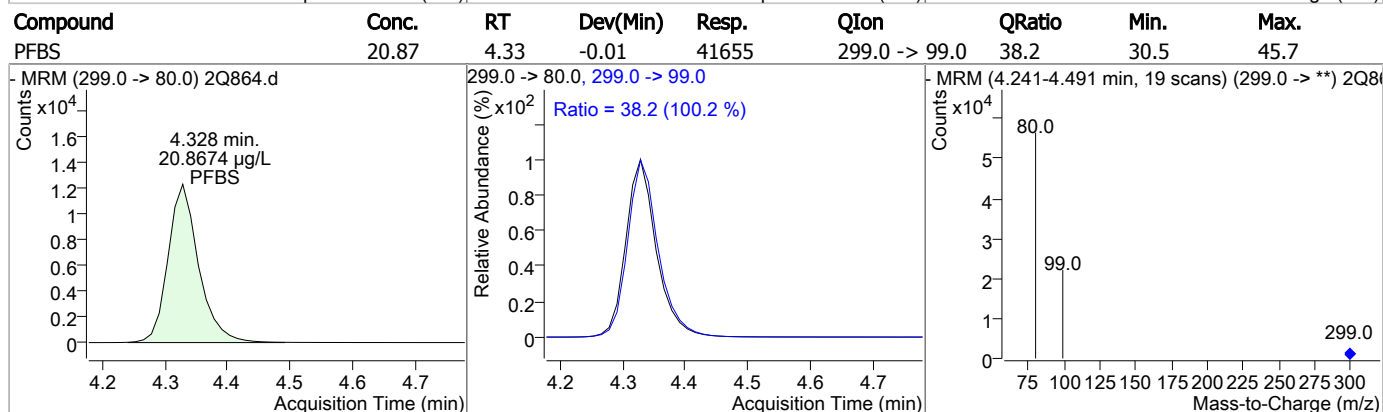
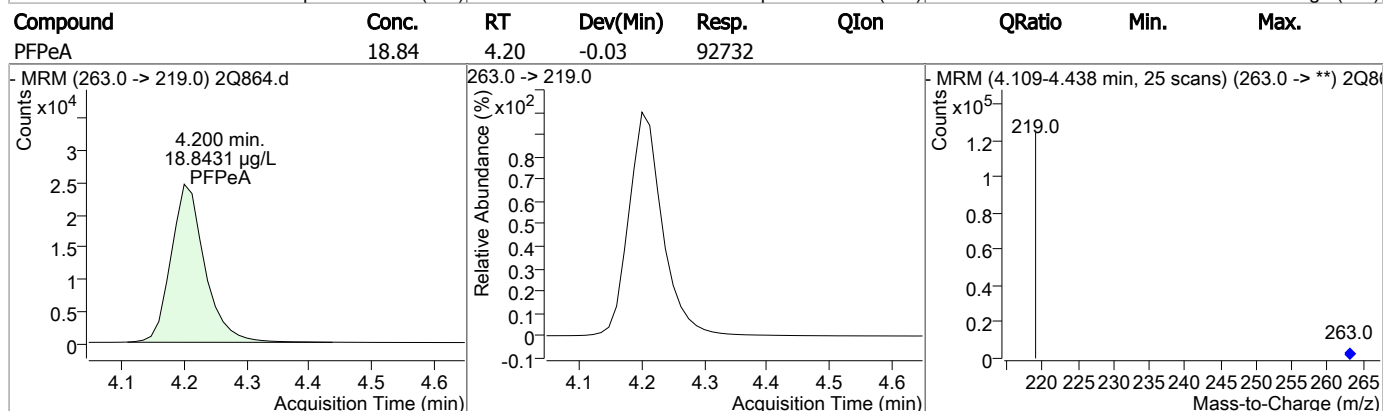
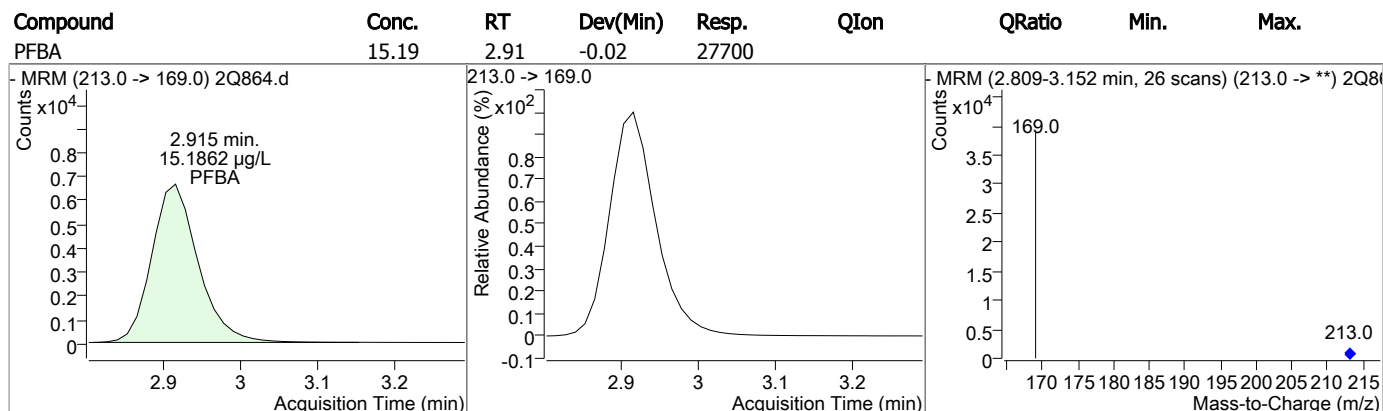
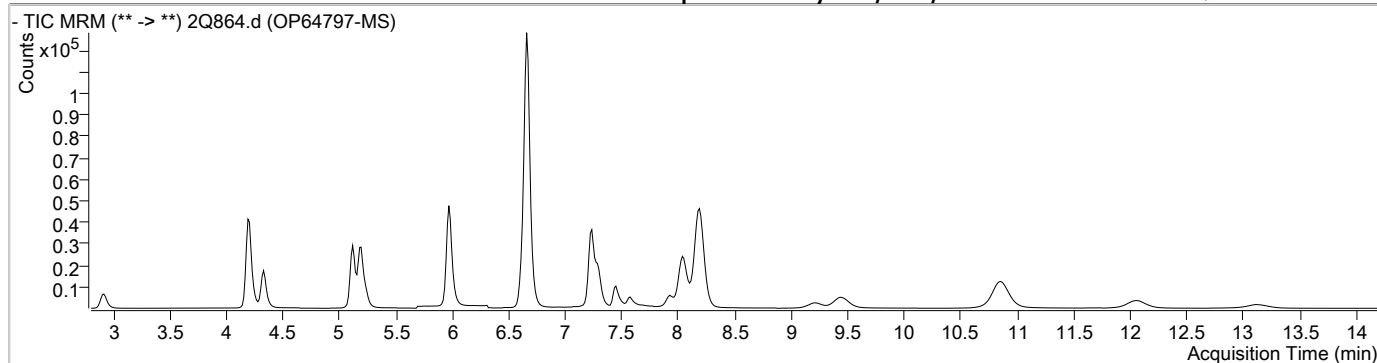
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q864.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 4:03:00 PM
 Sample Name : OP64797-MS
 Vial : Vial 10
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

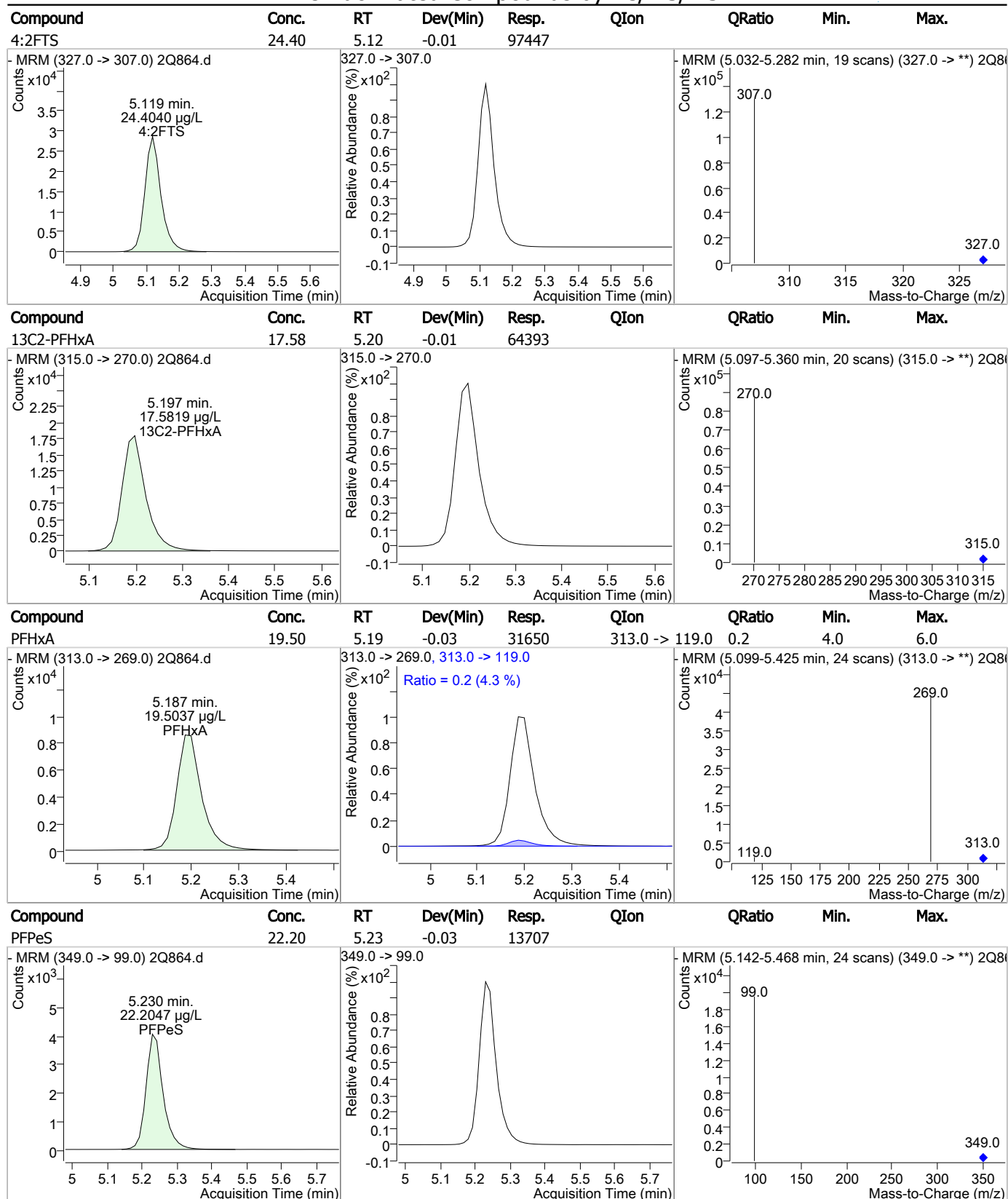
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.671	429.0 -> 409.0	158079	20.00	µg/L	0.000
13C2-PFDoDA	10.851	615.0 -> 570.0	83608	20.00	µg/L	0.063
13C2-PFOA	6.650	415.0 -> 370.0	69338	20.00	µg/L	-0.013
13C3-PFPeA	4.209	266.0 -> 222.0	64857	20.00	µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	50027	20.00	µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	29456	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-PFDA	8.044	515.0 -> 470.0	75207	15.50	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 77.5%			
13C2-PFHxA	5.197	315.0 -> 270.0	64393	17.58	µg/L	-0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 87.9%			
d5-EtFOSAA	7.572	589.0 -> 419.0	9778	13.88	µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 69.4%			
Target Compounds						QValue
4:2FTS	5.119	327.0 -> 307.0	97447	24.40	µg/L	100
6:2FTS	6.661	427.0 -> 407.0	176158	23.05	µg/L	100
8:2FTS	8.189	527.0 -> 507.0	282449	22.32	µg/L	100
EtFOSAA	7.573	584.0 -> 419.0	7007	10.70	µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.451	570.0 -> 419.0	10750	13.45	µg/L	100
PFBA	2.915	213.0 -> 169.0	27700	15.19	µg/L	100
PFBS	4.328	299.0 -> 80.0	41655	20.87	µg/L	100
PFDA	8.046	513.0 -> 469.0	54832	15.99	µg/L	100
PFDoDA	10.858	613.0 -> 569.0	52942	14.67	µg/L	100
PFDS	9.212	599.0 -> 80.0	22158	16.76	µg/L	100
PFHpA	5.973	363.0 -> 319.0	87477	18.20	µg/L	# 93
PFHpS	6.620	449.0 -> 80.0	45864	21.65	µg/L	100
PFHxA	5.187	313.0 -> 269.0	31650	19.50	µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	49346	23.62	µg/L	93
PFNA	7.294	463.0 -> 419.0	52752	17.03	µg/L	99
PFNS	7.929	549.0 -> 99.0	22407	17.74	µg/L	100
PFOA	6.652	413.0 -> 369.0	53146	18.44	µg/L	100
PFOS	7.226	499.0 -> 80.0	54333	18.82	µg/L	98
PFPeA	4.200	263.0 -> 219.0	92732	18.84	µg/L	100
PFPeS	5.230	349.0 -> 99.0	13707	22.20	µg/L	100
PFTeDA	13.128	713.0 -> 669.0	23620	14.08	µg/L	100
PFTTrDA	12.052	663.0 -> 619.0	46147	15.13	µg/L	100
PFUnDA	9.444	563.0 -> 519.0	50662	13.81	µg/L	100

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

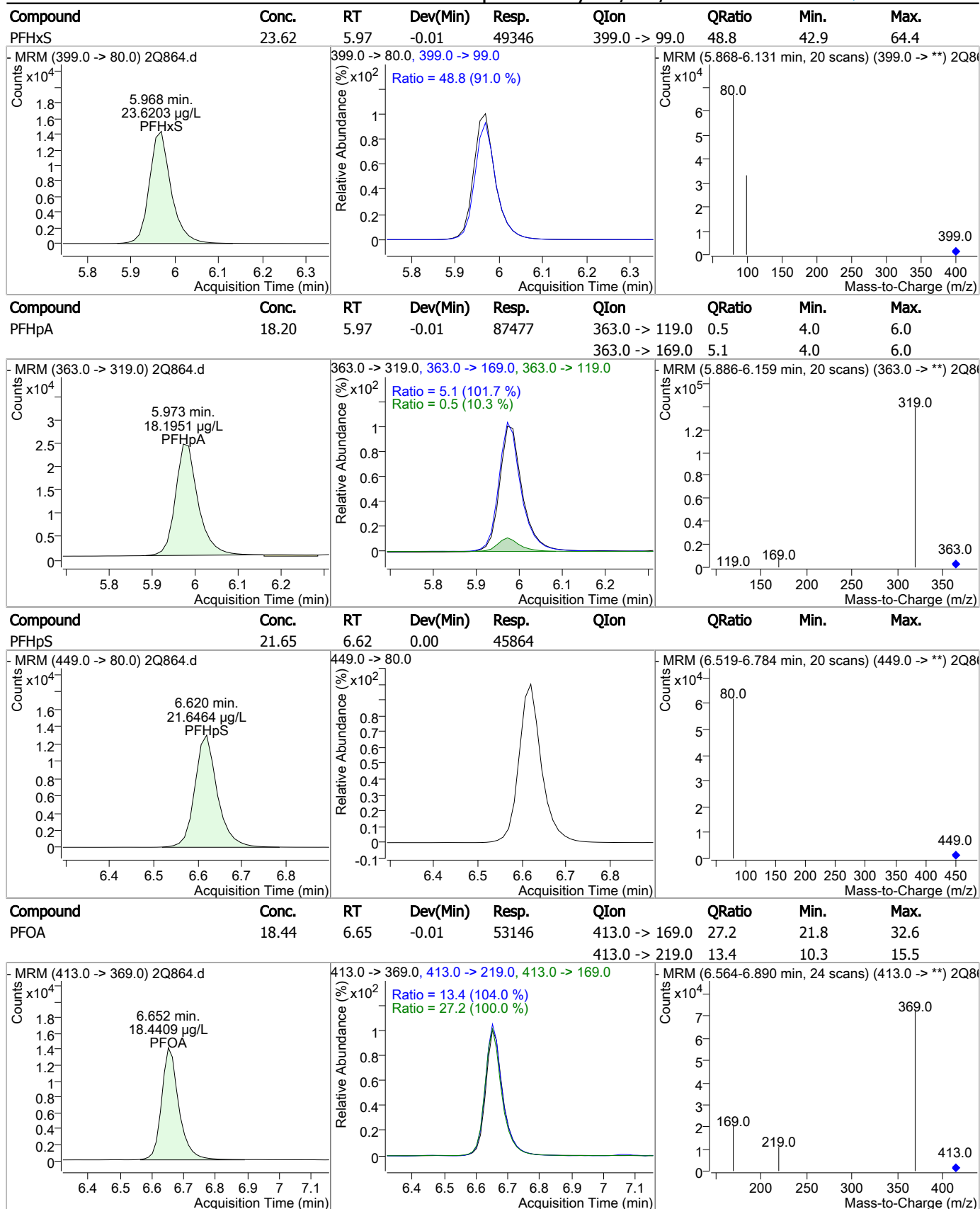
Perfluorinated Compounds by LC/MS/MS



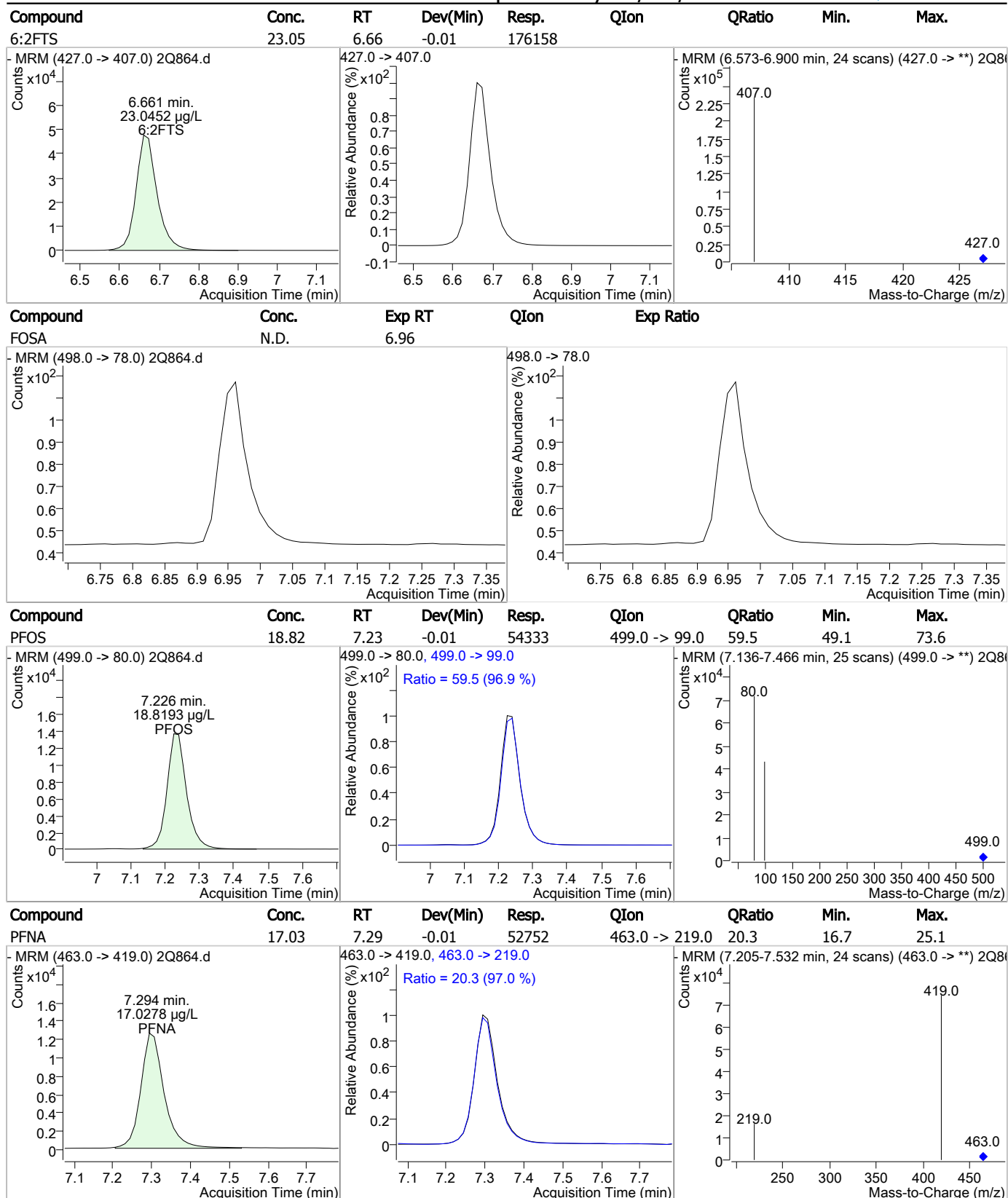
Perfluorinated Compounds by LC/MS/MS



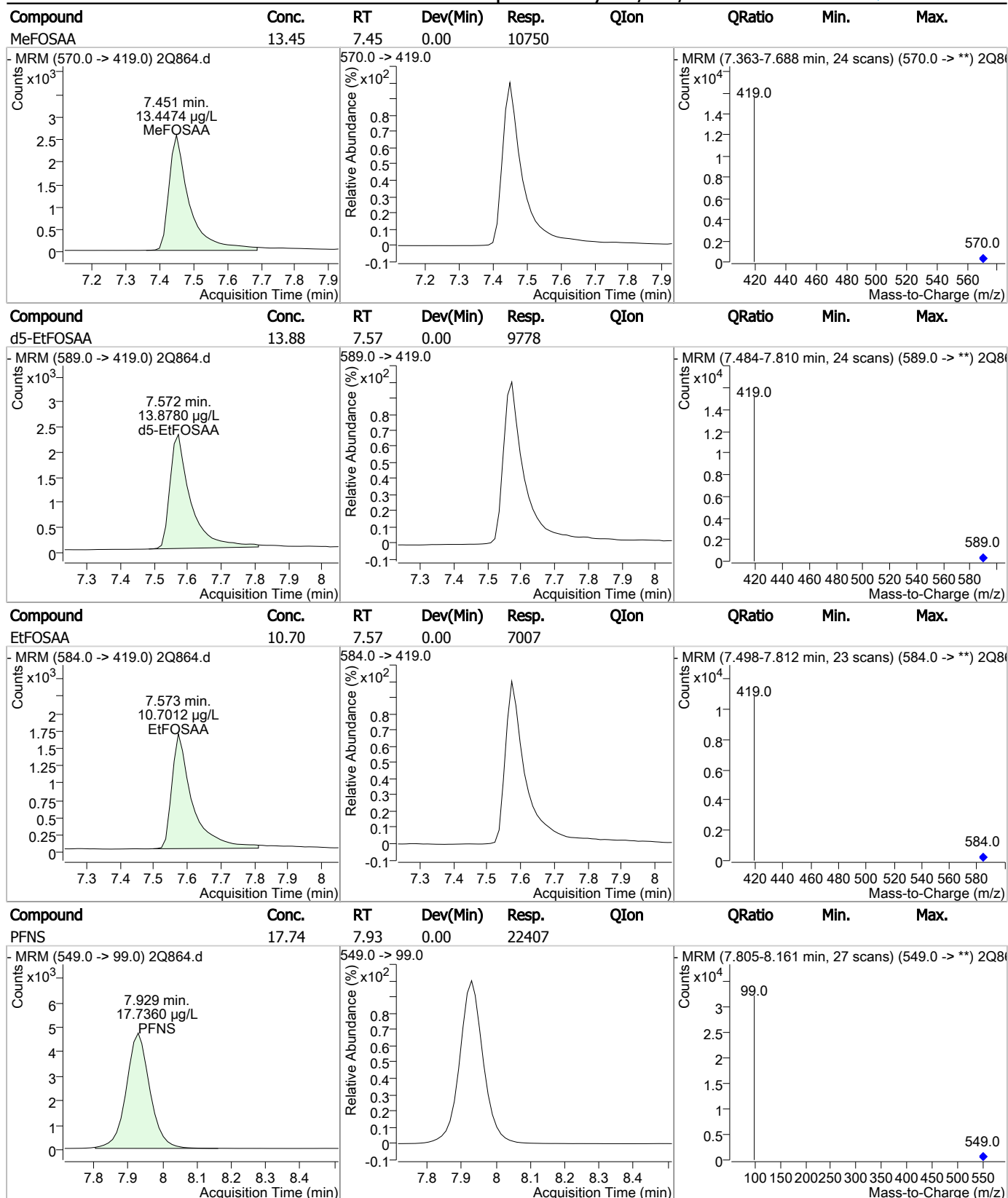
Perfluorinated Compounds by LC/MS/MS



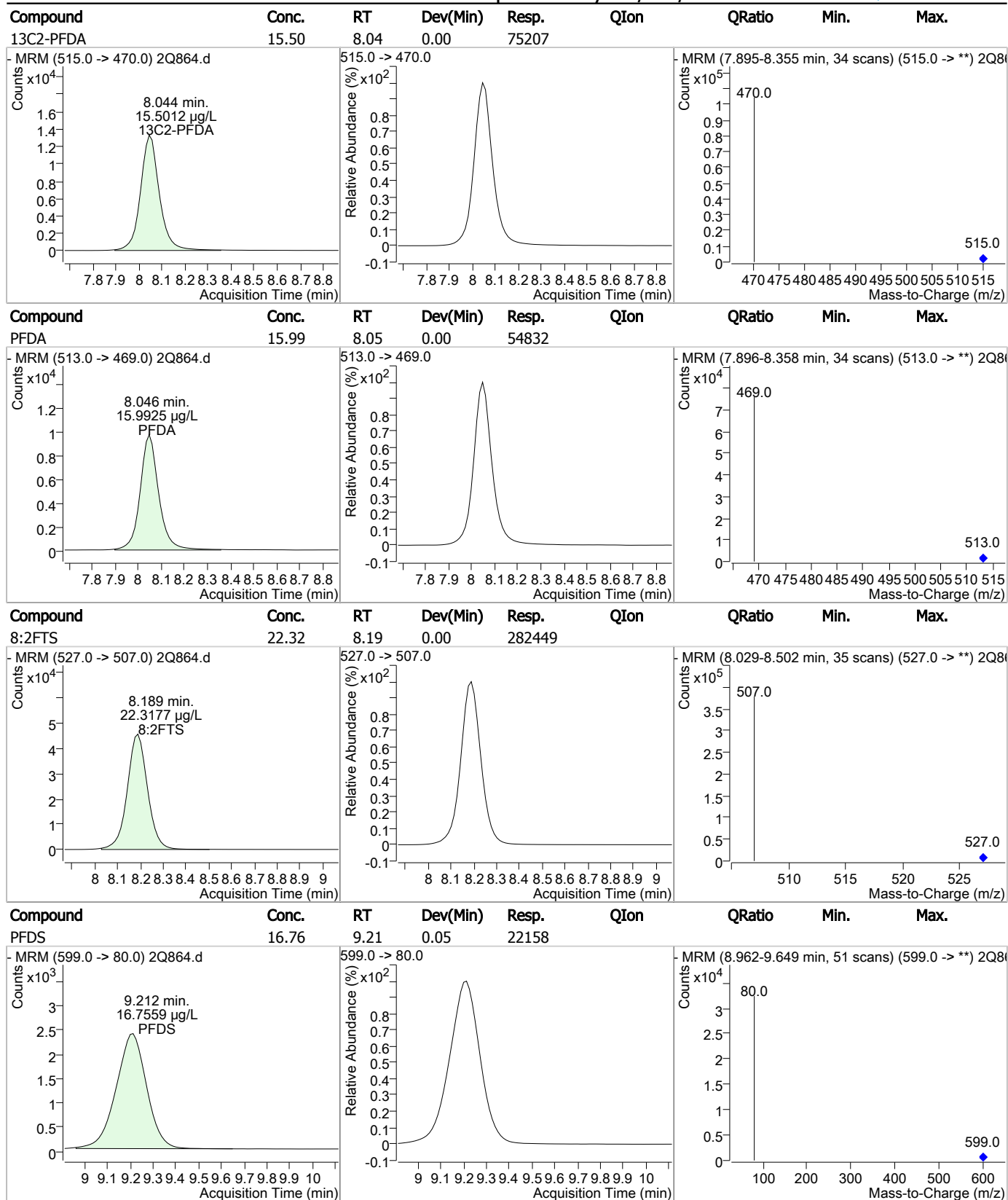
Perfluorinated Compounds by LC/MS/MS



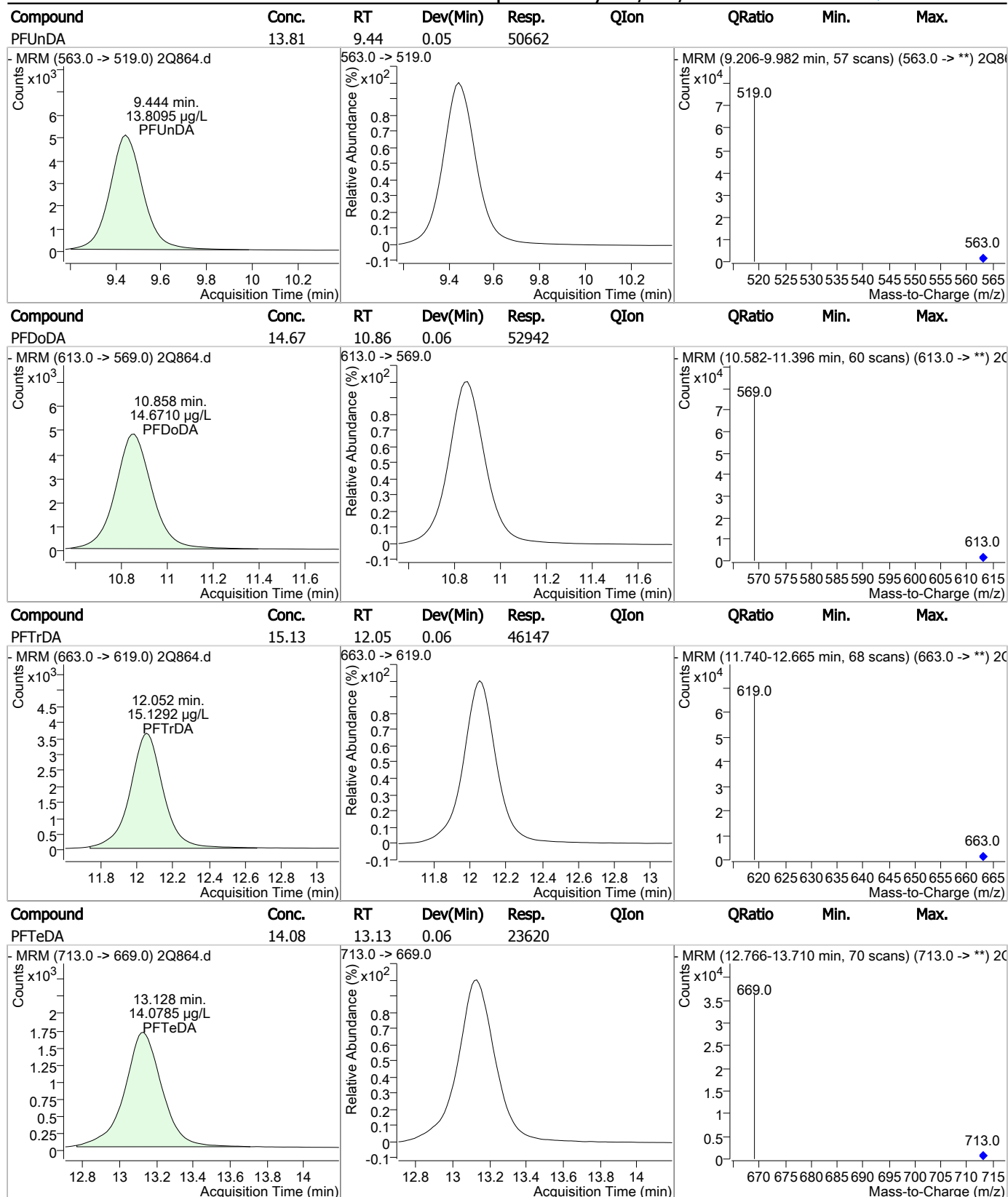
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

Data File : 2Q865.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 4:37:06 PM
 Sample Name : OP64797-MSD
 Vial : Vial 11
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.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	6.671	429.0 -> 409.0	160522	20.00 µg/L	0.000
13C2-PFDoDA	10.826	615.0 -> 570.0	69896	20.00 µg/L	0.038
13C2-PFOA	6.662	415.0 -> 370.0	66713	20.00 µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	64909	20.00 µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	51441	20.00 µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	31241	20.00 µg/L	0.000

System Monitoring Compounds

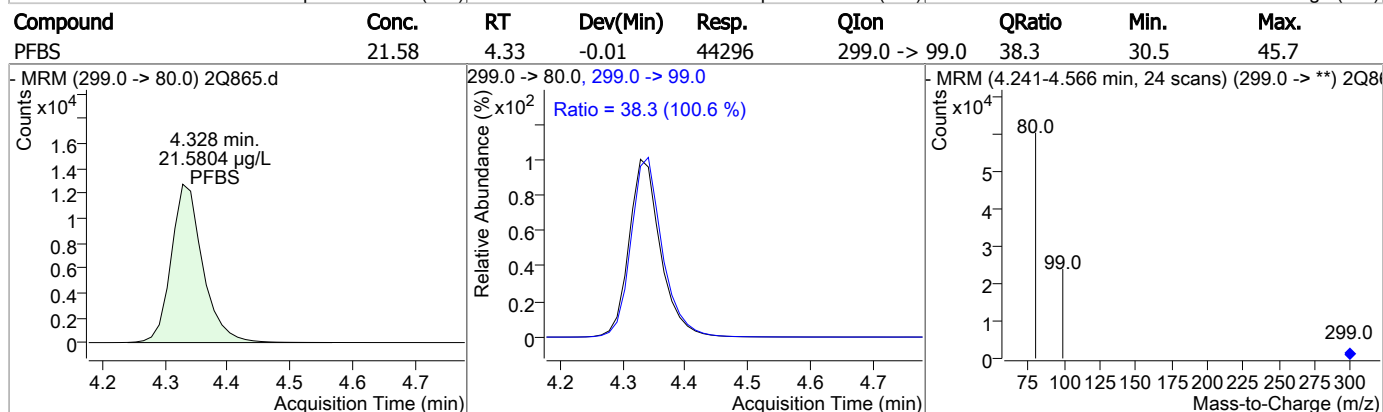
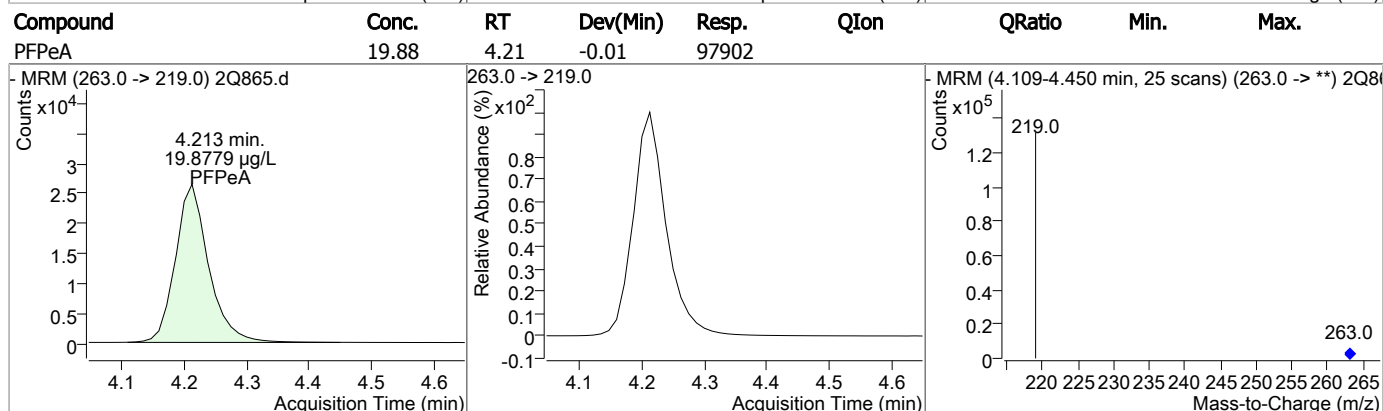
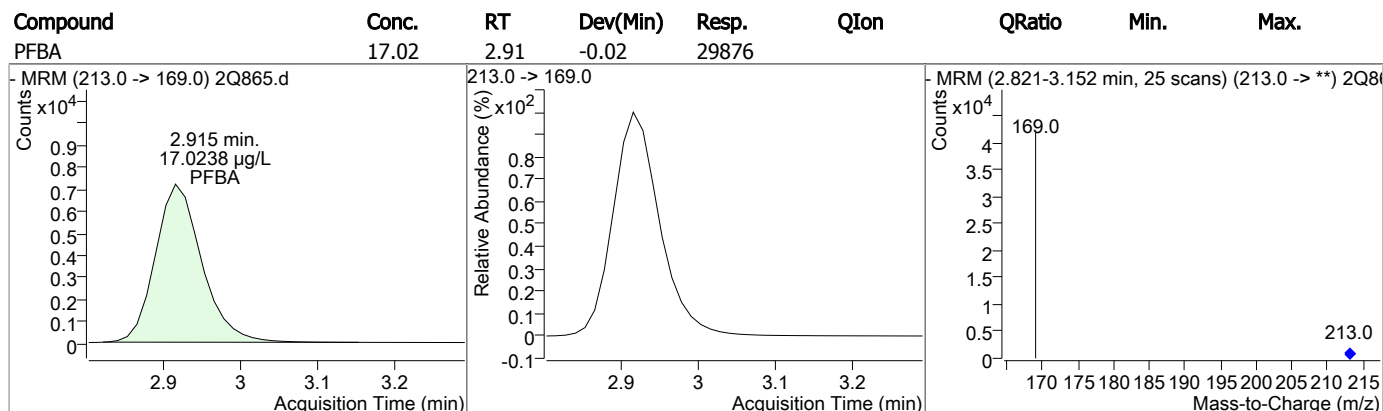
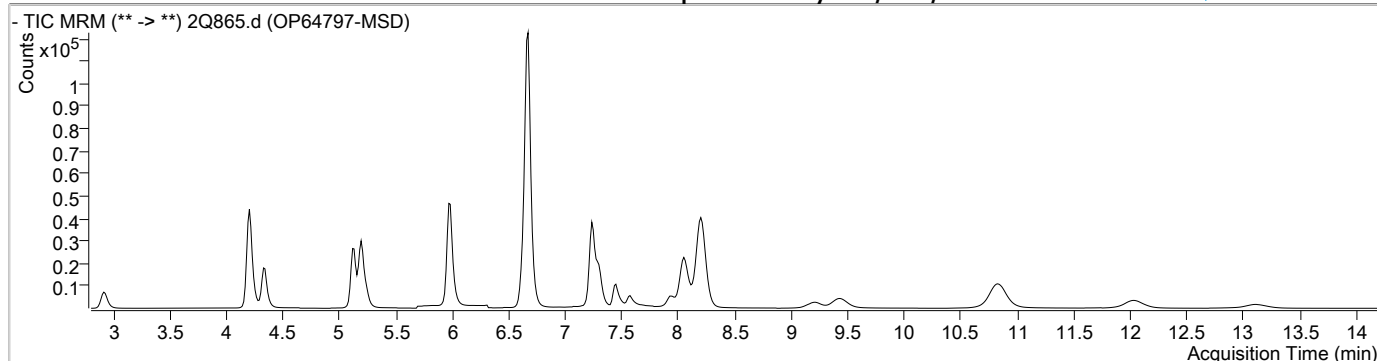
13C2-PFDA	8.057	515.0 -> 470.0	71957	15.41 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 77.1%		
13C2-PFHxA	5.197	315.0 -> 270.0	66594	18.90 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 94.5%		
d5-EtFOSAA	7.572	589.0 -> 419.0	10703	14.30 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 71.5%		

Target Compounds

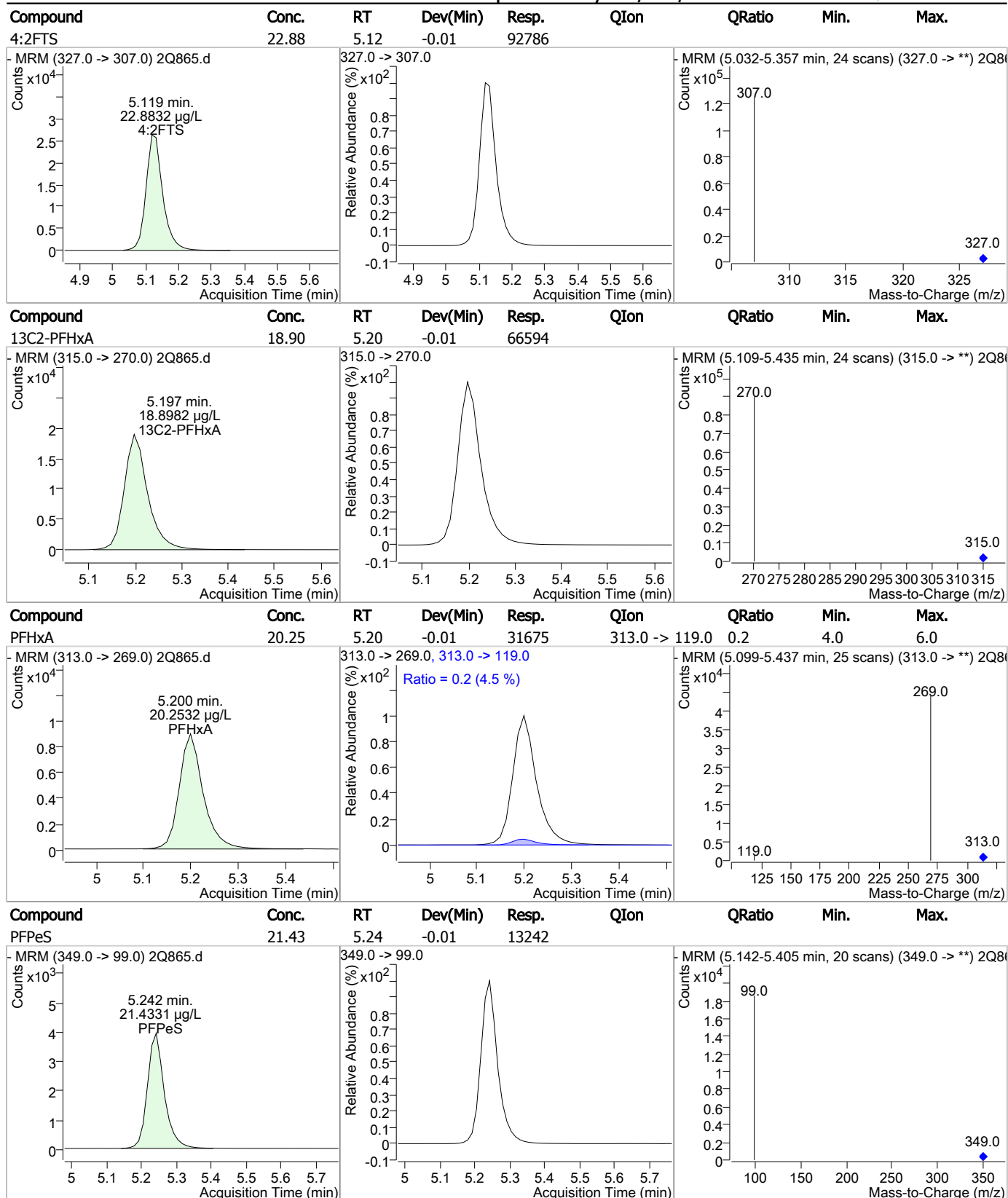
					QValue
4:2FTS	5.119	327.0 -> 307.0	92786	22.88 µg/L	100
6:2FTS	6.673	427.0 -> 407.0	167529	21.58 µg/L	100
8:2FTS	8.202	527.0 -> 507.0	248294	19.32 µg/L	100
EtFOSAA	7.573	584.0 -> 419.0	7919	11.38 µg/L	100
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.451	570.0 -> 419.0	11241	13.27 µg/L	100
PFBA	2.915	213.0 -> 169.0	29876	17.02 µg/L	100
PFBS	4.328	299.0 -> 80.0	44296	21.58 µg/L	100
PFDA	8.059	513.0 -> 469.0	50709	15.37 µg/L	100
PFDoDA	10.833	613.0 -> 569.0	50132	16.55 µg/L	100
PFDS	9.200	599.0 -> 80.0	23895	17.54 µg/L	100
PFHpA	5.986	363.0 -> 319.0	87128	18.82 µg/L	# 93
PFHpS	6.620	449.0 -> 80.0	42808	19.65 µg/L	100
PFHxA	5.200	313.0 -> 269.0	31675	20.25 µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	50950	23.72 µg/L	94
PFNA	7.306	463.0 -> 419.0	50956	17.10 µg/L	97
PFNS	7.940	549.0 -> 99.0	21456	16.52 µg/L	100
PFOA	6.664	413.0 -> 369.0	54156	19.53 µg/L	99
PFOS	7.240	499.0 -> 80.0	55897	18.83 µg/L	98
PFPeA	4.213	263.0 -> 219.0	97902	19.88 µg/L	100
PFPeS	5.242	349.0 -> 99.0	13242	21.43 µg/L	100
PFTeDA	13.116	713.0 -> 669.0	23933	16.94 µg/L	100
PFTTrDA	12.027	663.0 -> 619.0	45405	17.67 µg/L	100
PFUnDA	9.431	563.0 -> 519.0	43397	14.15 µg/L	100

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

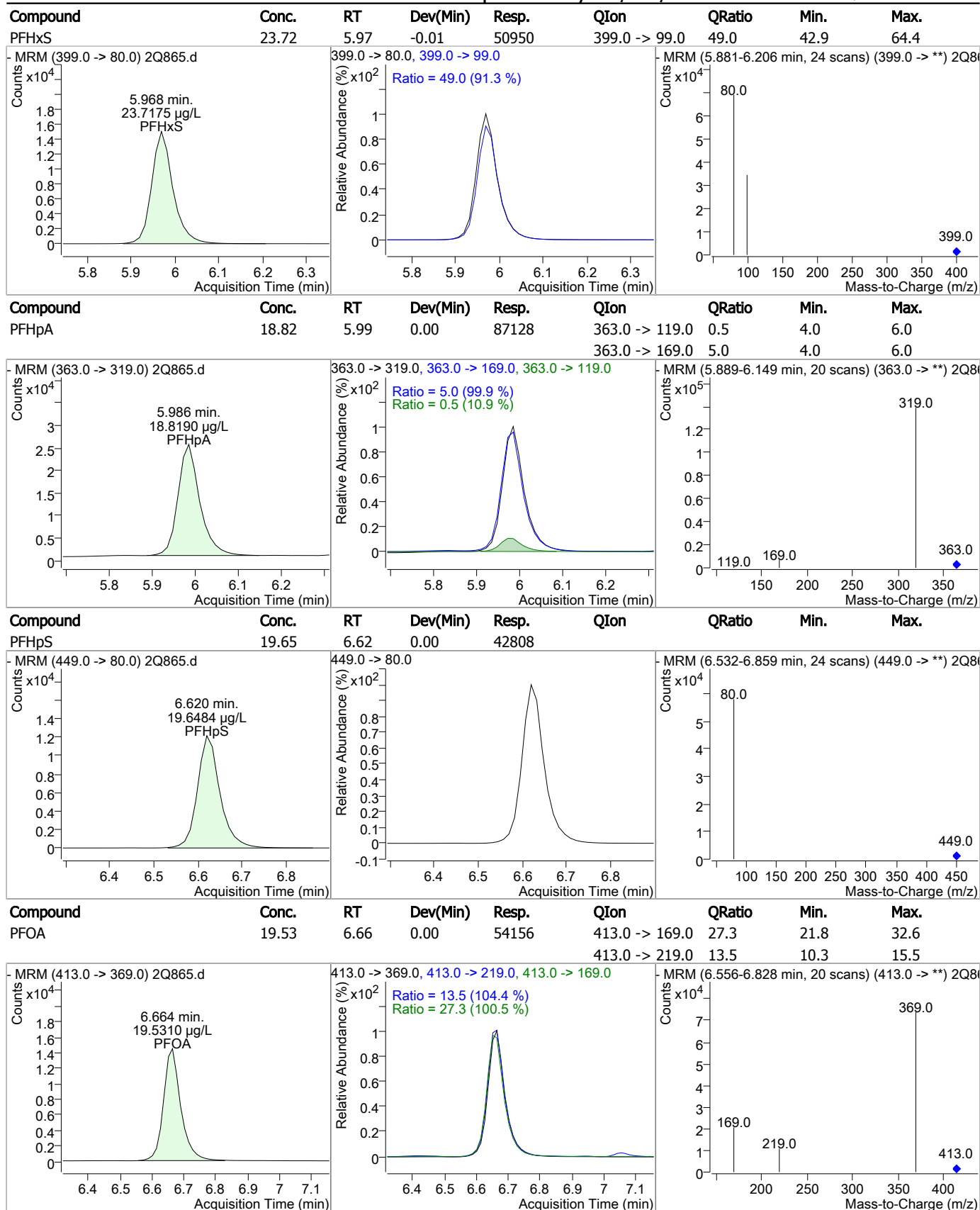
Perfluorinated Compounds by LC/MS/MS



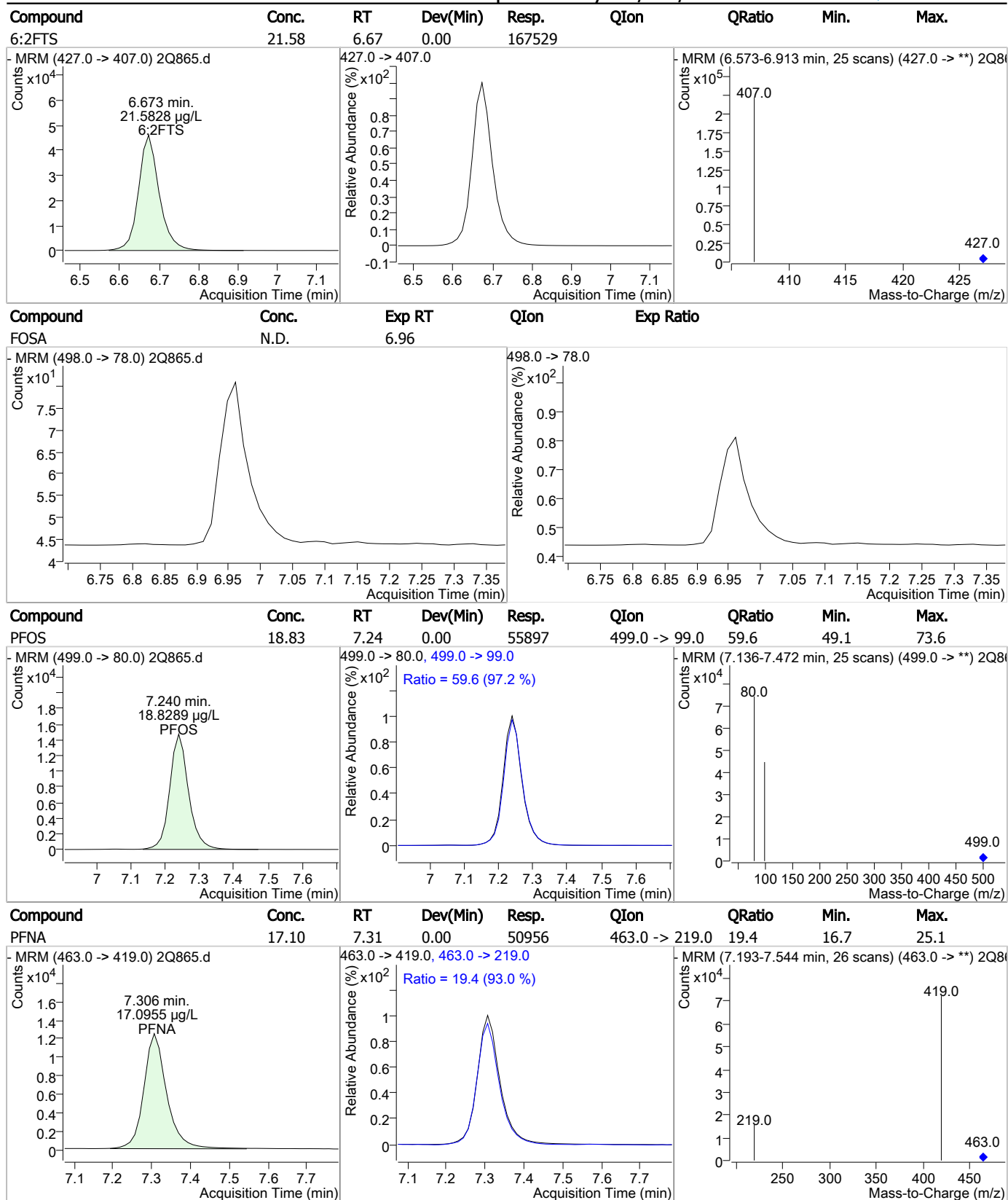
Perfluorinated Compounds by LC/MS/MS



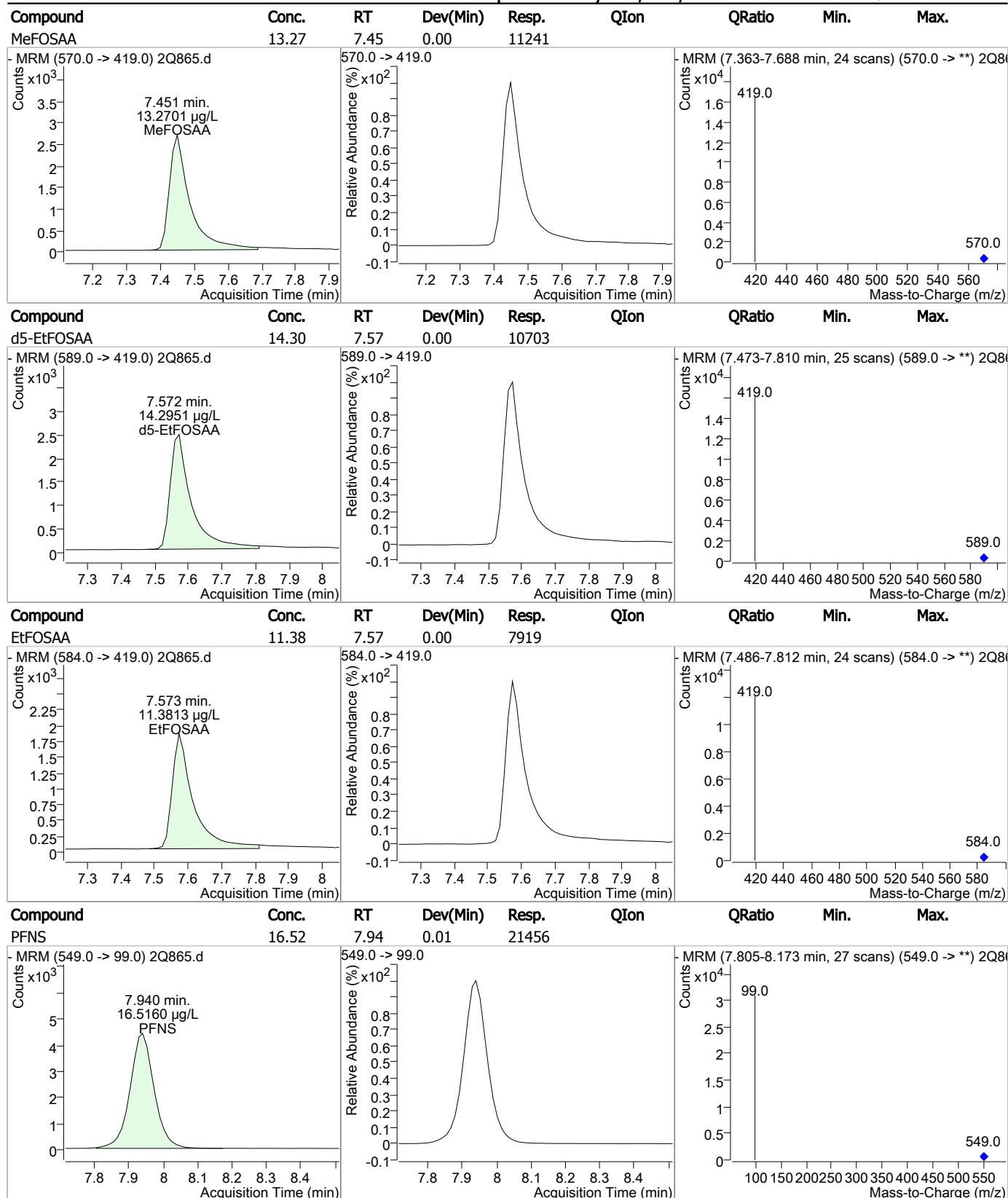
Perfluorinated Compounds by LC/MS/MS



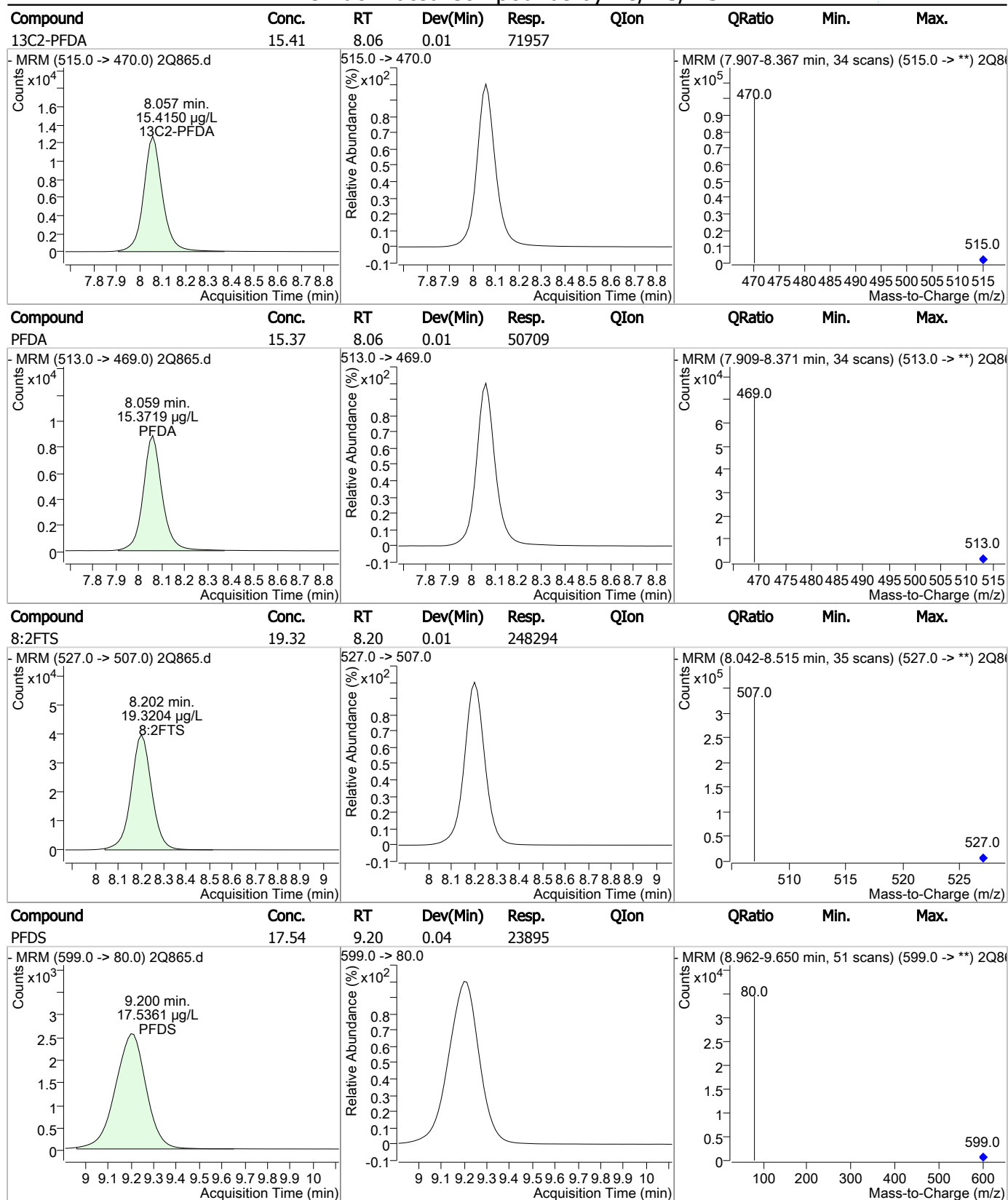
Perfluorinated Compounds by LC/MS/MS



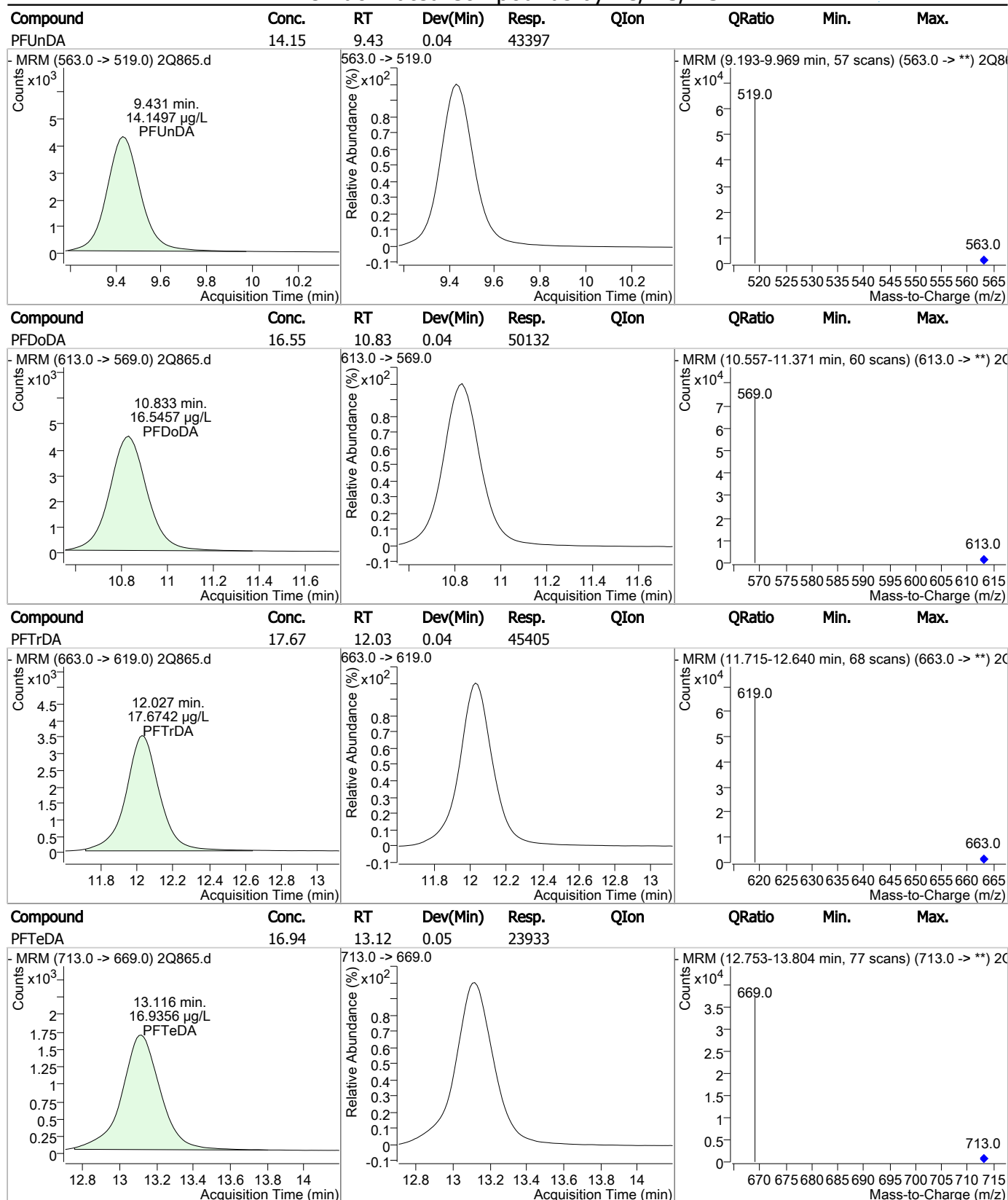
Perfluorinated Compounds by LC/MS/MS



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

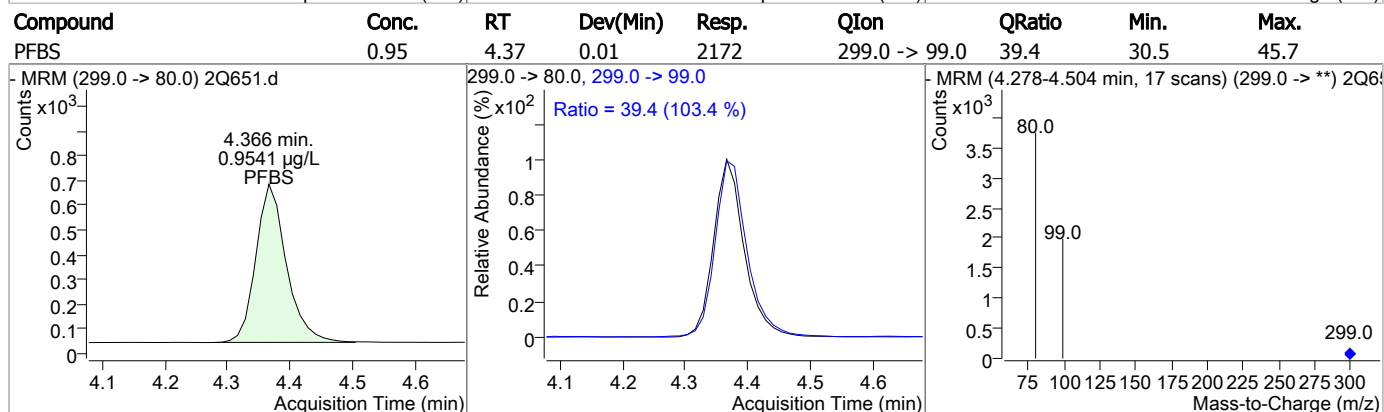
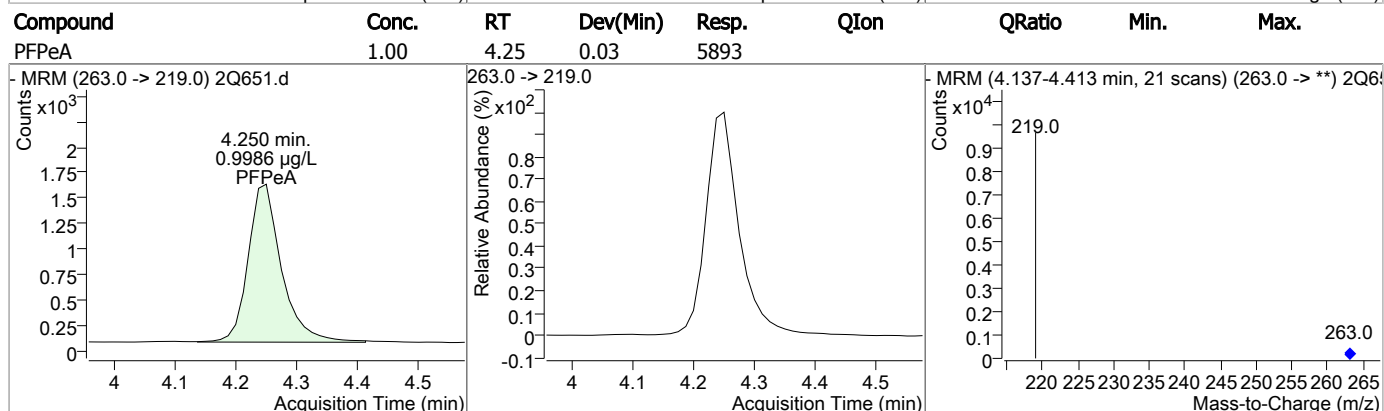
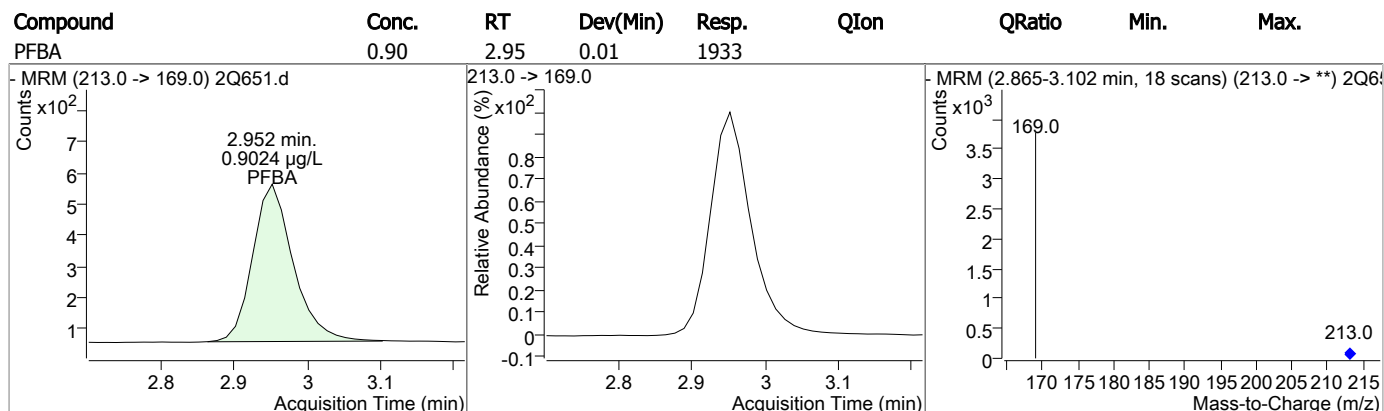
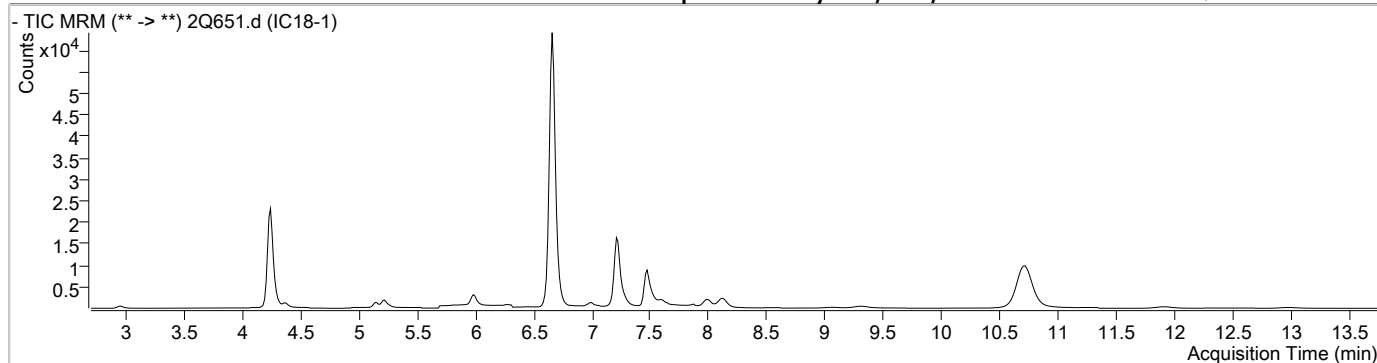
13C2-PFDA	7.994	515.0 -> 470.0	5647	0.99 µg/L	0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 5.0%	
13C2-PFHxA	5.222	315.0 -> 270.0	3970	0.92 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 4.6%	
d5-EtFOSAA	7.597	589.0 -> 419.0	1446	1.87 µg/L	0.000
Spiked Amount: 20.00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

Target Compounds

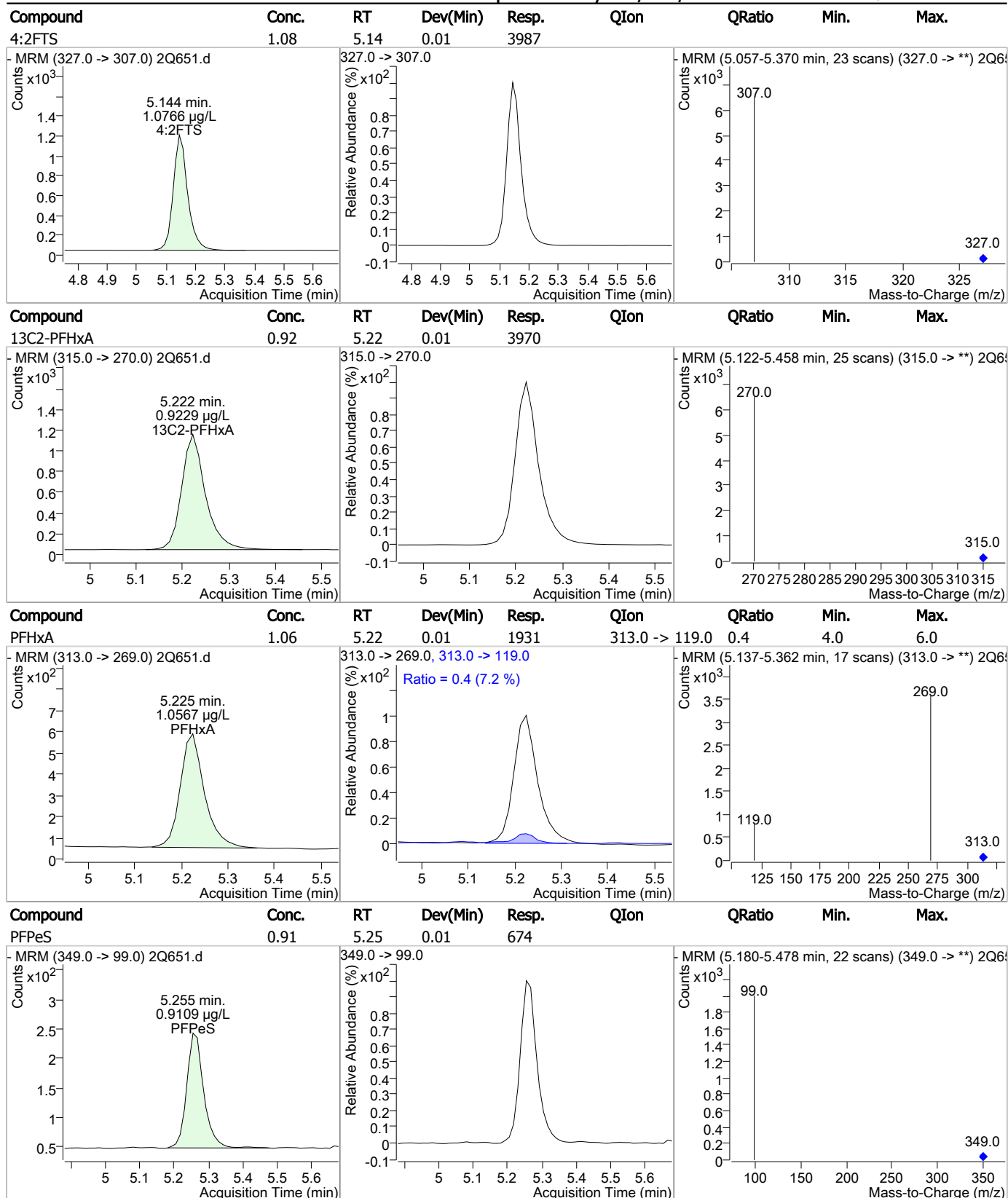
					QValue
4:2FTS	5.144	327.0 -> 307.0	3987	1.08 µg/L	100
6:2FTS	6.662	427.0 -> 407.0	10182	1.44 µg/L	100
8:2FTS	8.114	527.0 -> 507.0	12214	1.04 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	1377	1.85 µg/L	100
FOSA	6.986	498.0 -> 78.0	1869	1.01 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	1515	1.72 µg/L	100
PFBA	2.952	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

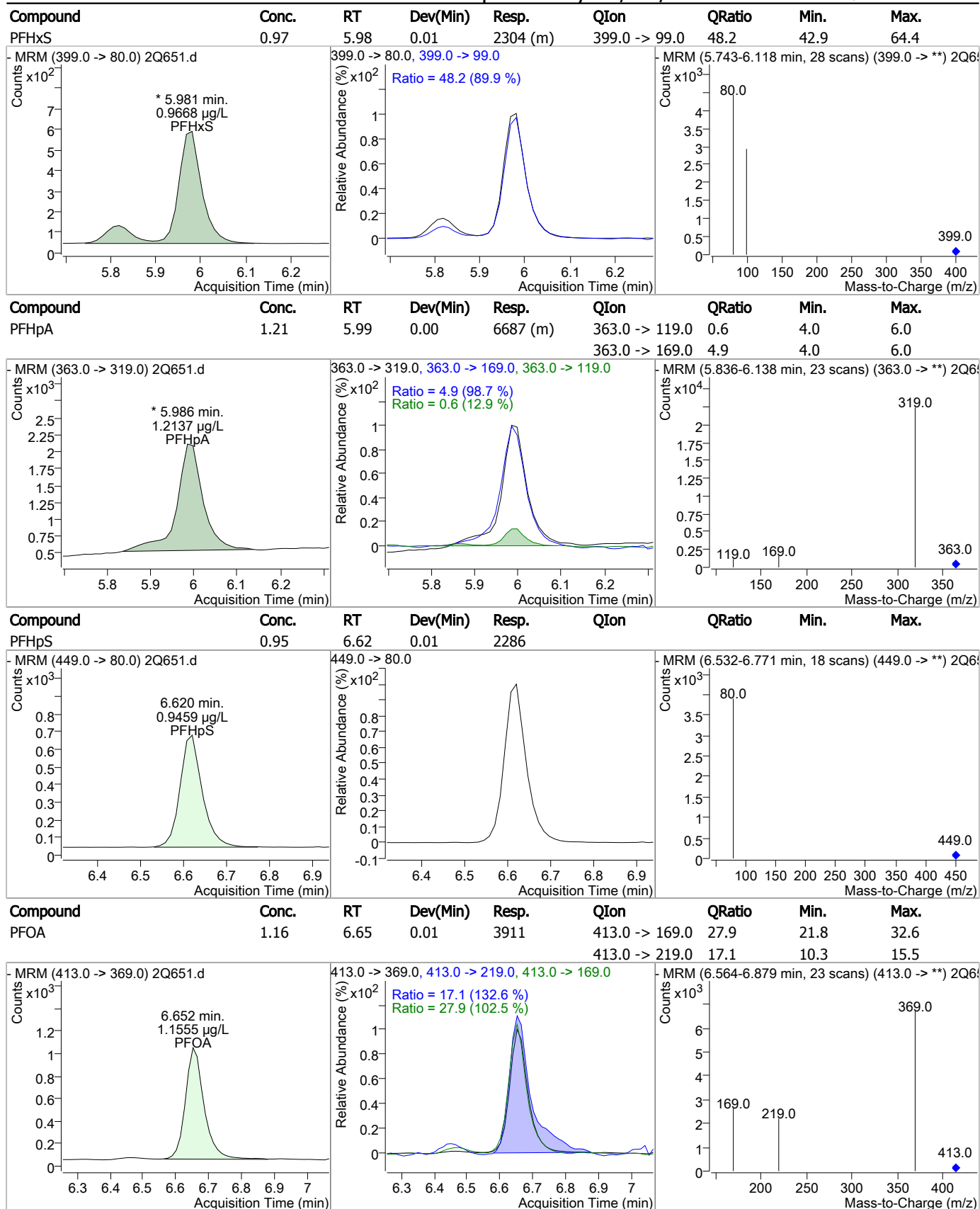
Perfluorinated Compounds by LC/MS/MS



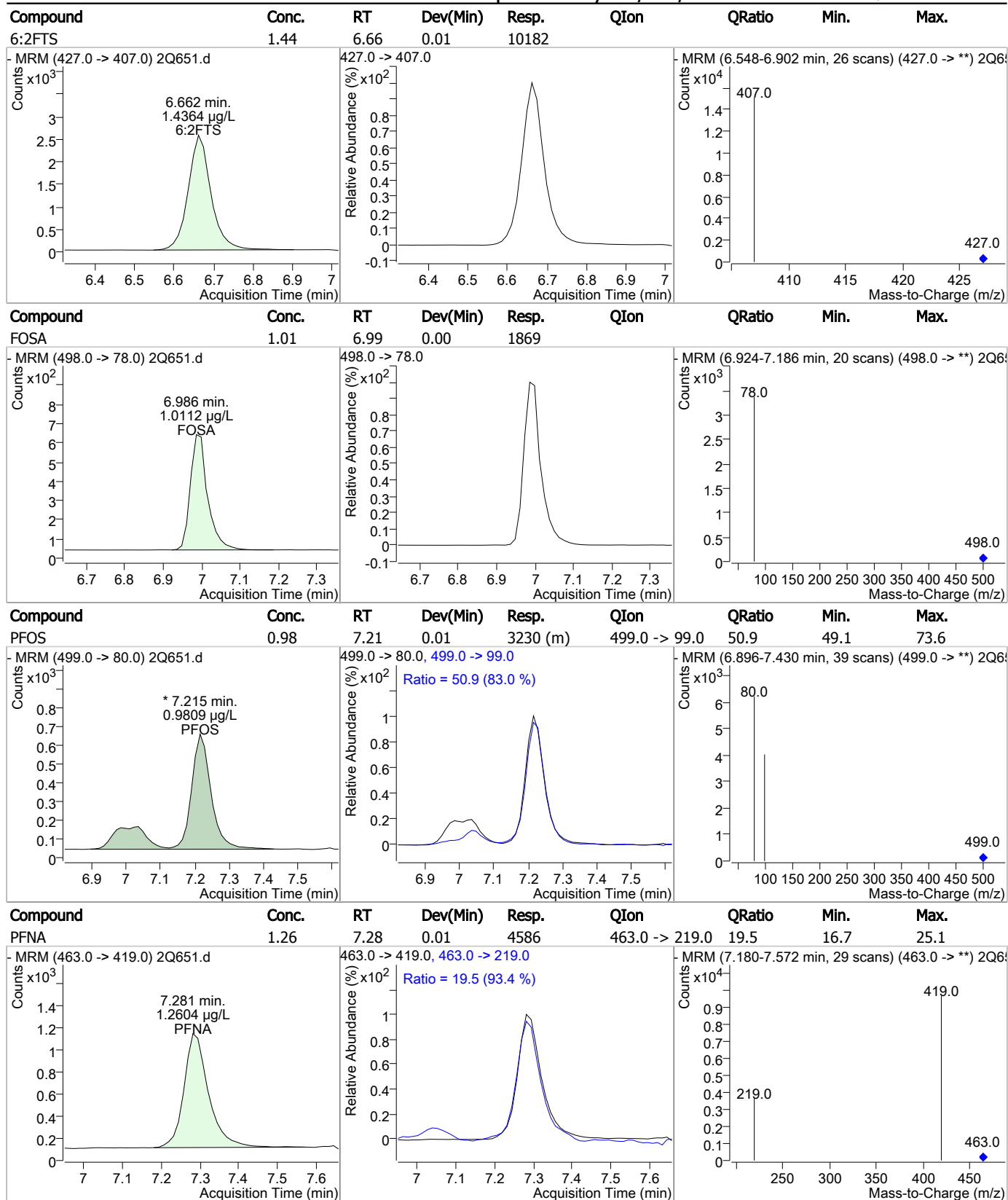
Perfluorinated Compounds by LC/MS/MS



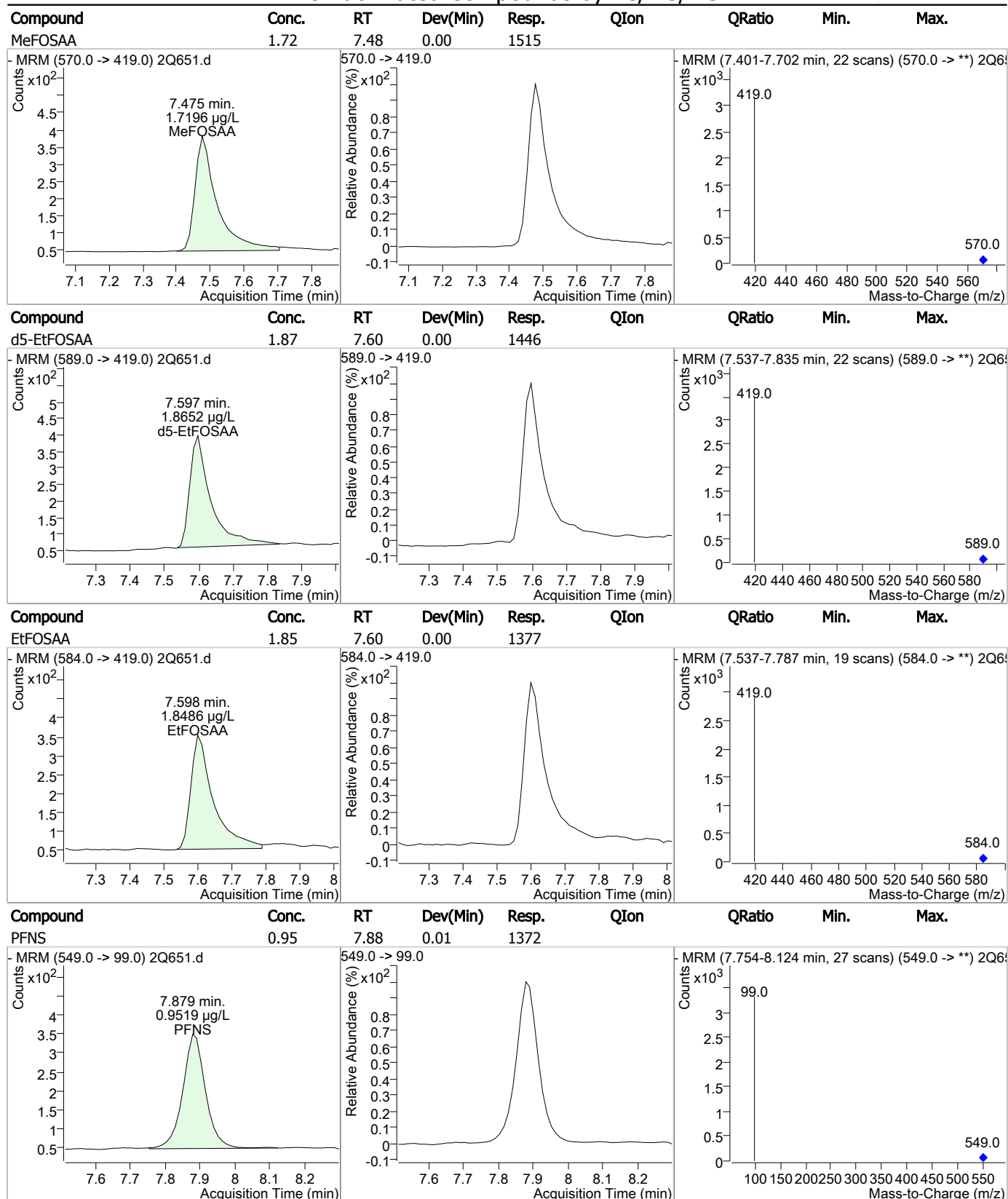
Perfluorinated Compounds by LC/MS/MS



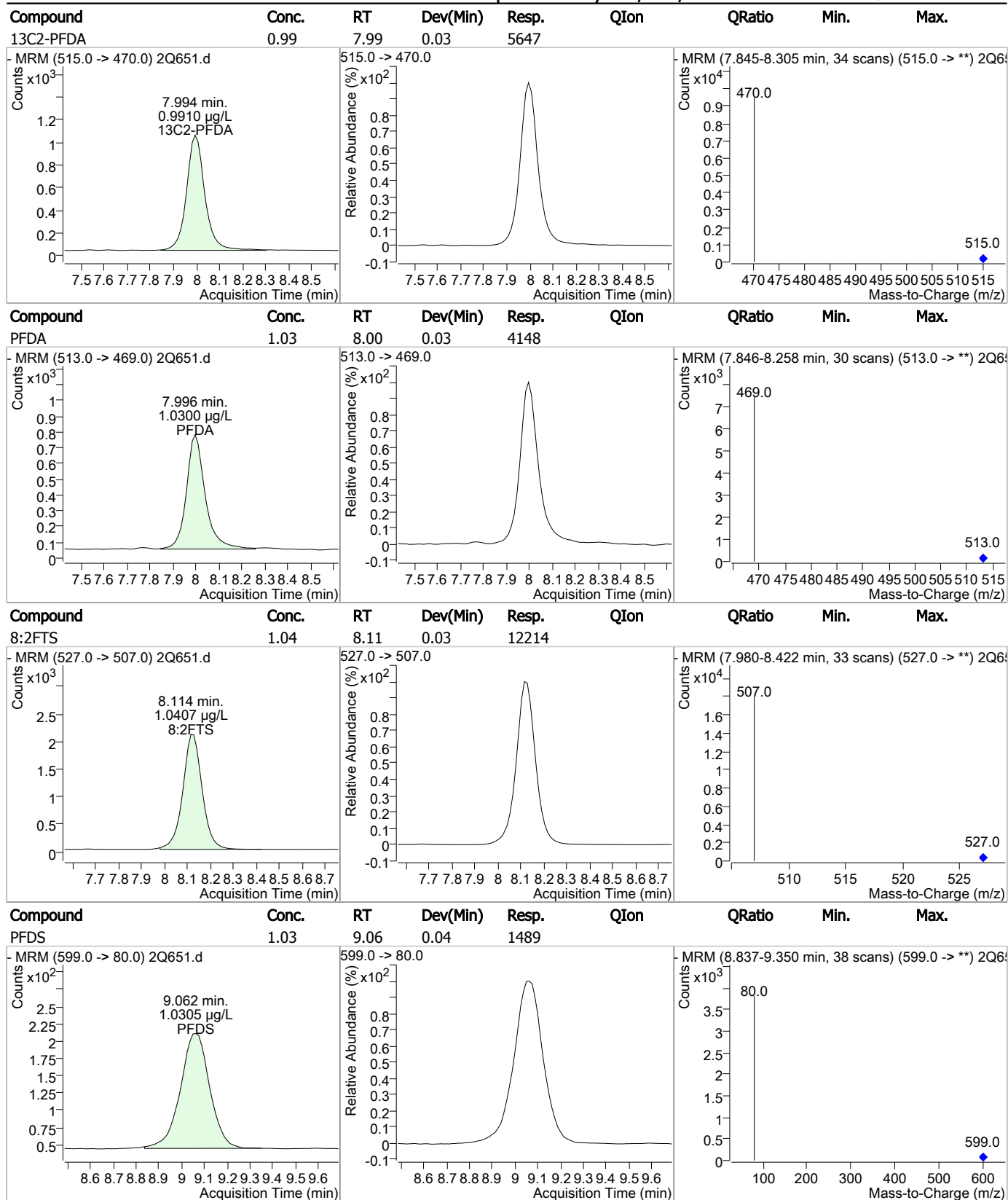
Perfluorinated Compounds by LC/MS/MS



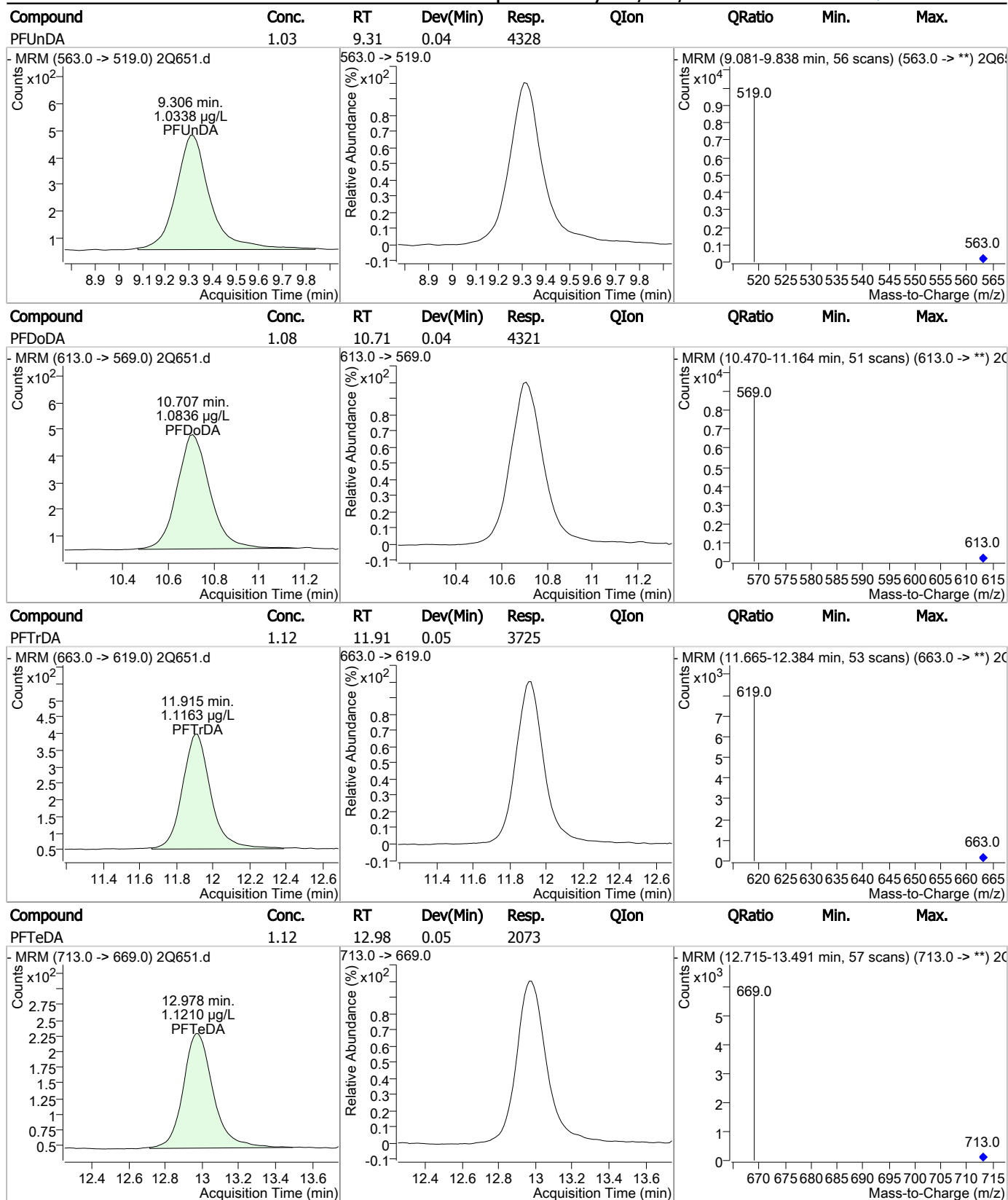
Perfluorinated Compounds by LC/MS/MS



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

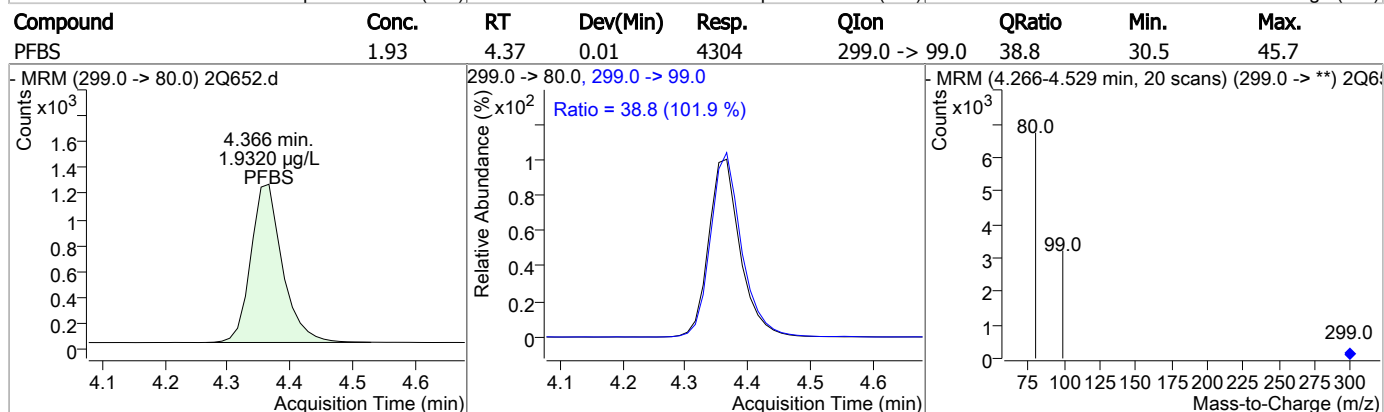
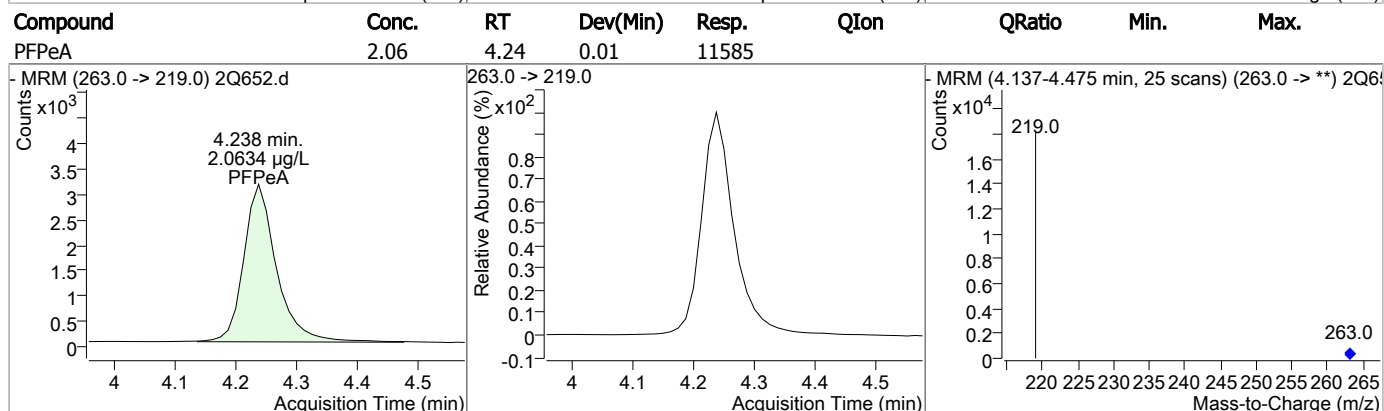
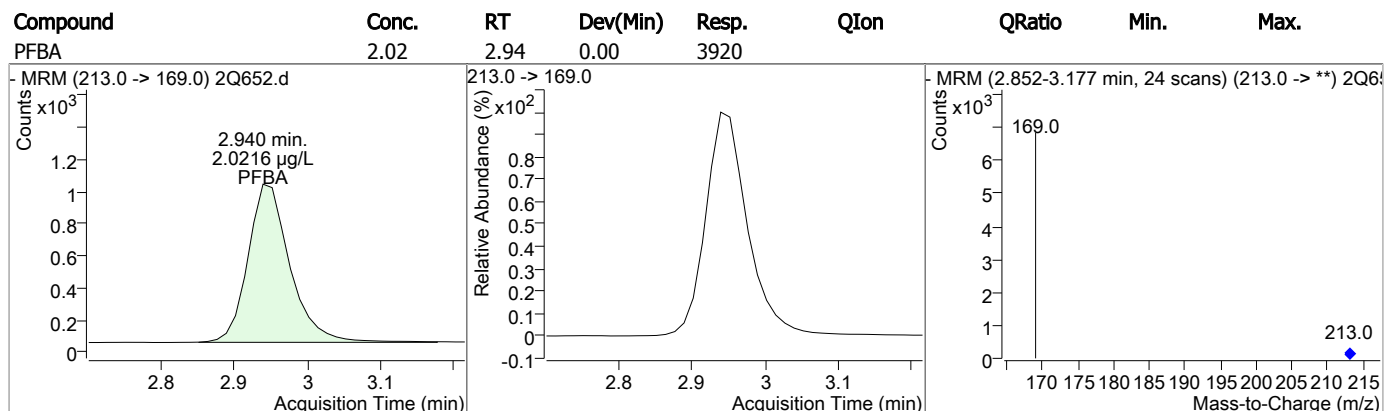
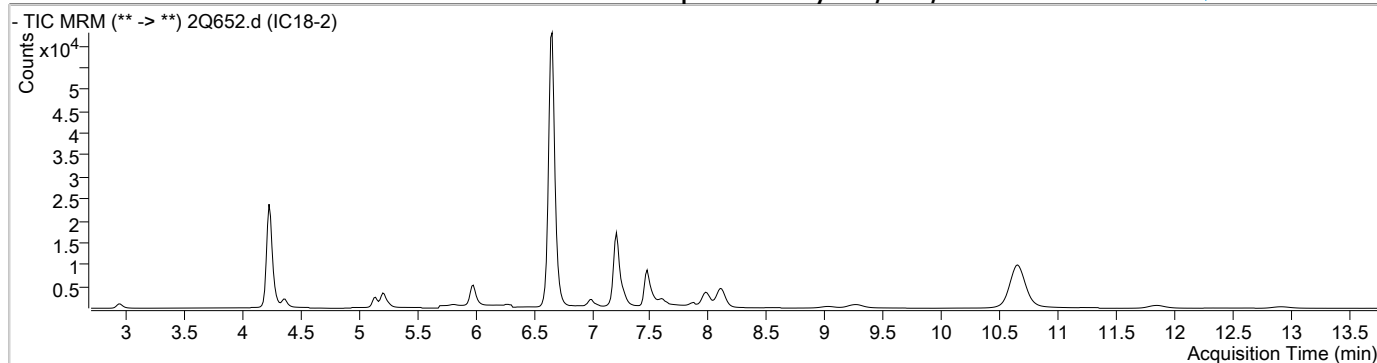
Perfluorinated Compounds by LC/MS/MS

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

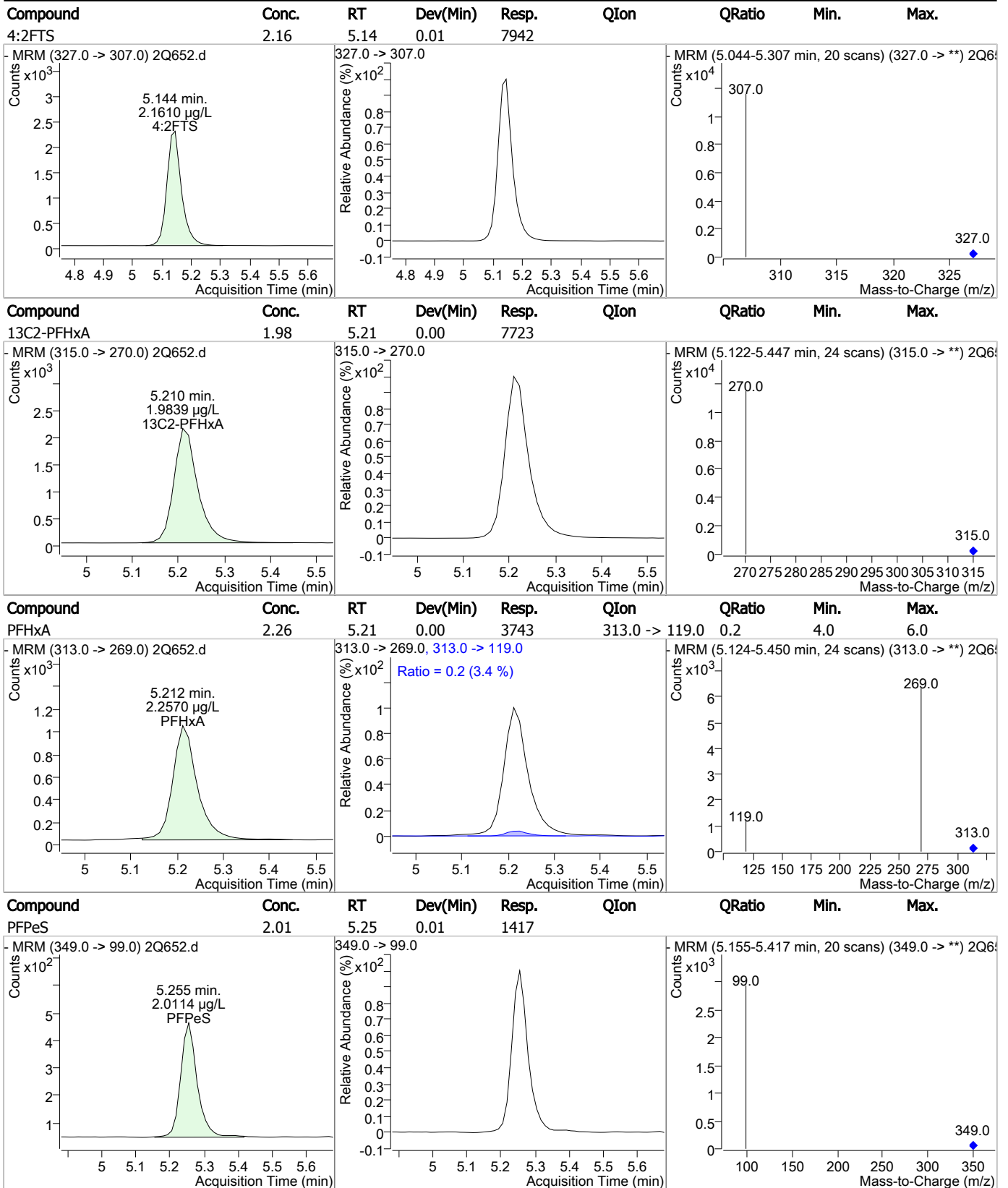
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	145491	20.00 µg/L	0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	90132	20.00 µg/L	-0.013
13C2-PFOA	6.651	415.0 -> 370.0	73705	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	73997	20.00 µg/L	0.000
13C4-PFOS	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

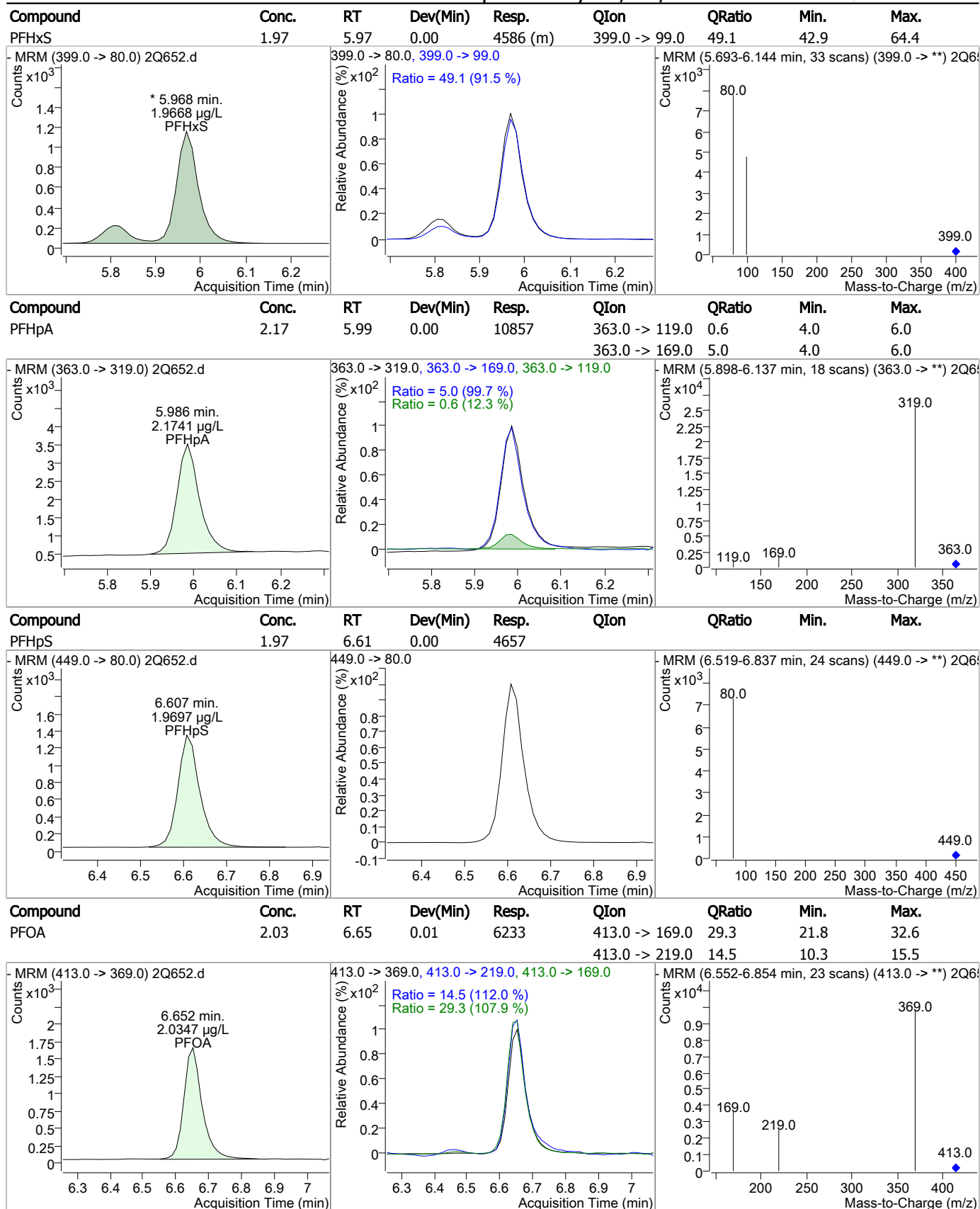
Perfluorinated Compounds by LC/MS/MS



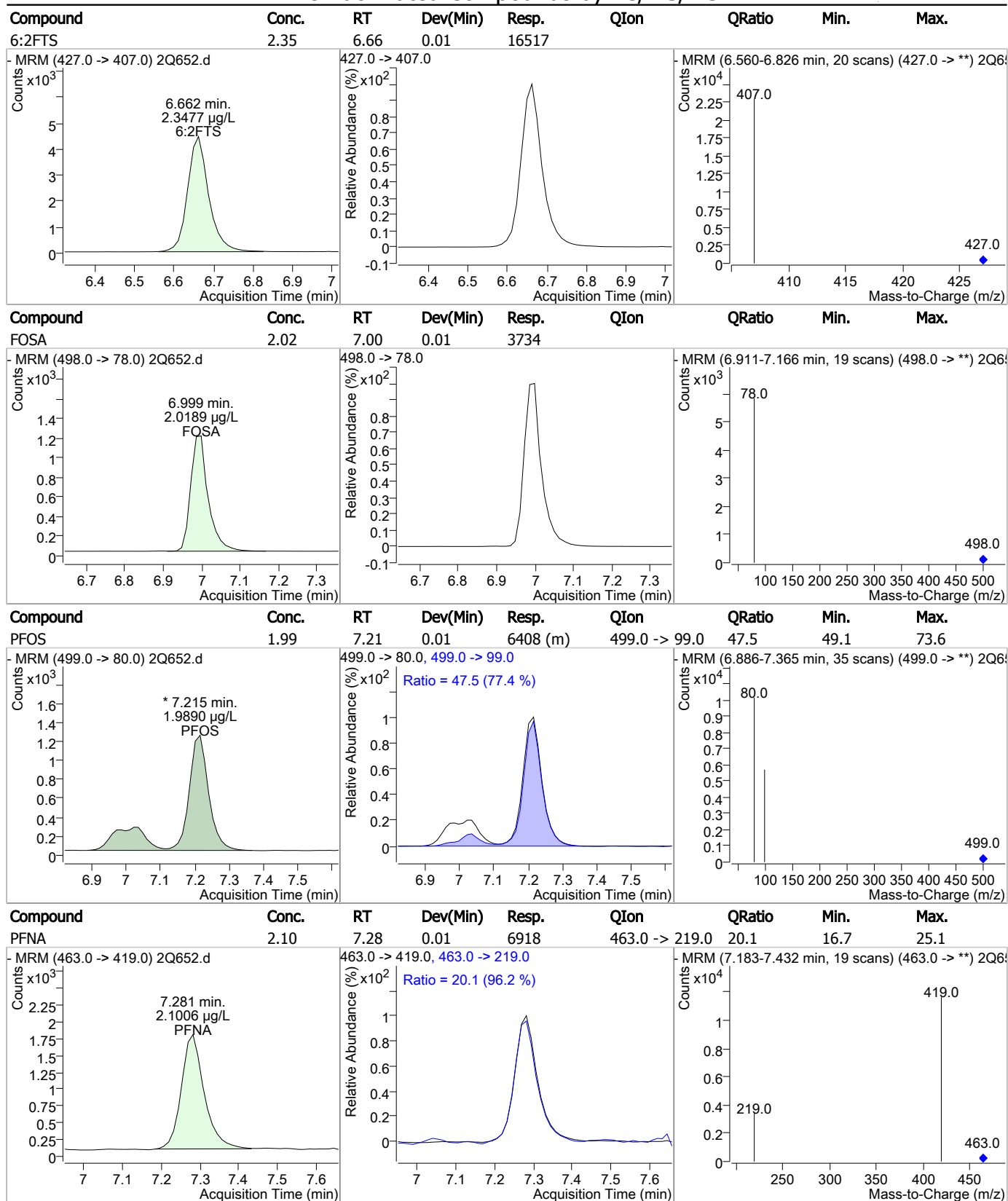
Perfluorinated Compounds by LC/MS/MS



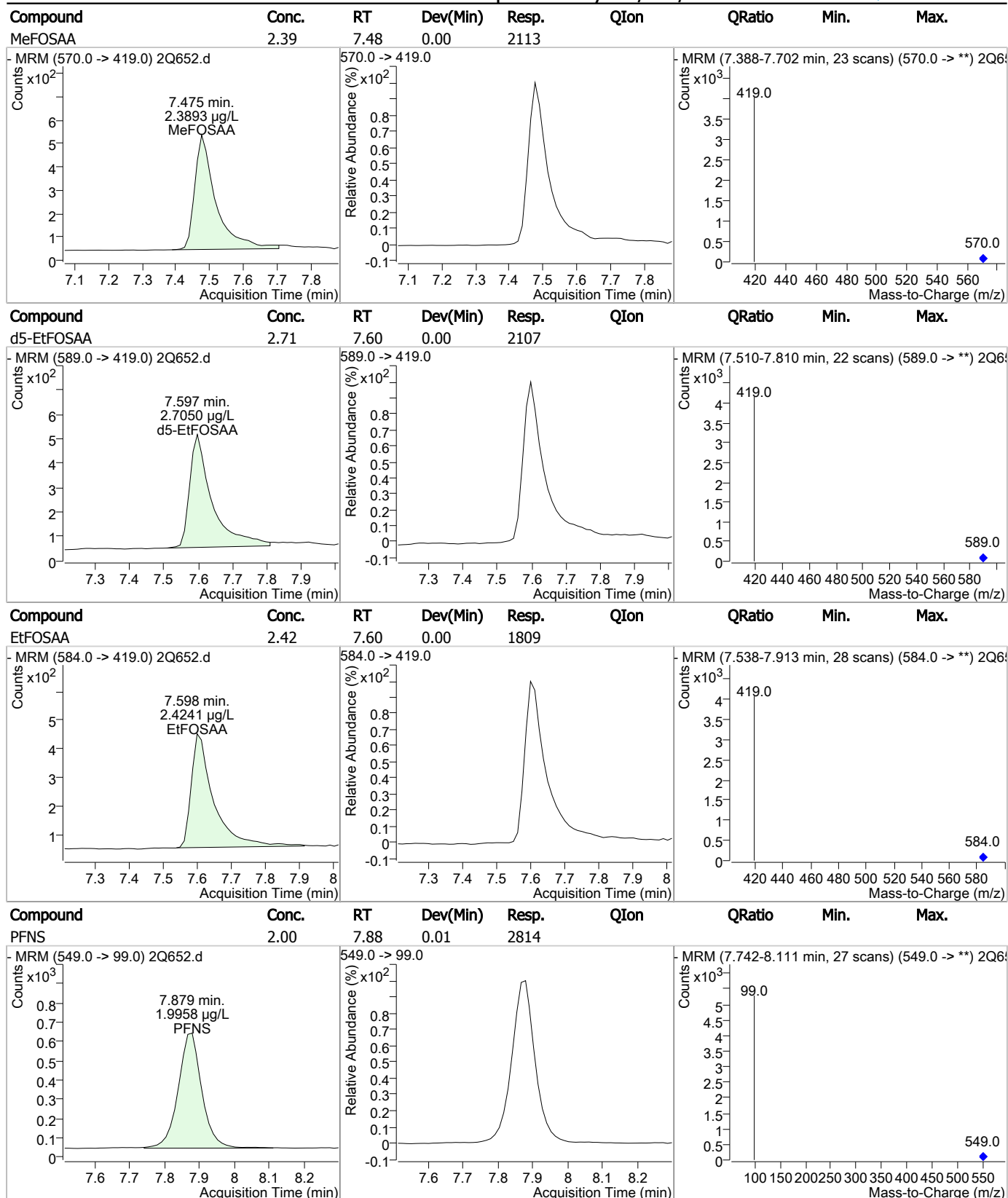
Perfluorinated Compounds by LC/MS/MS



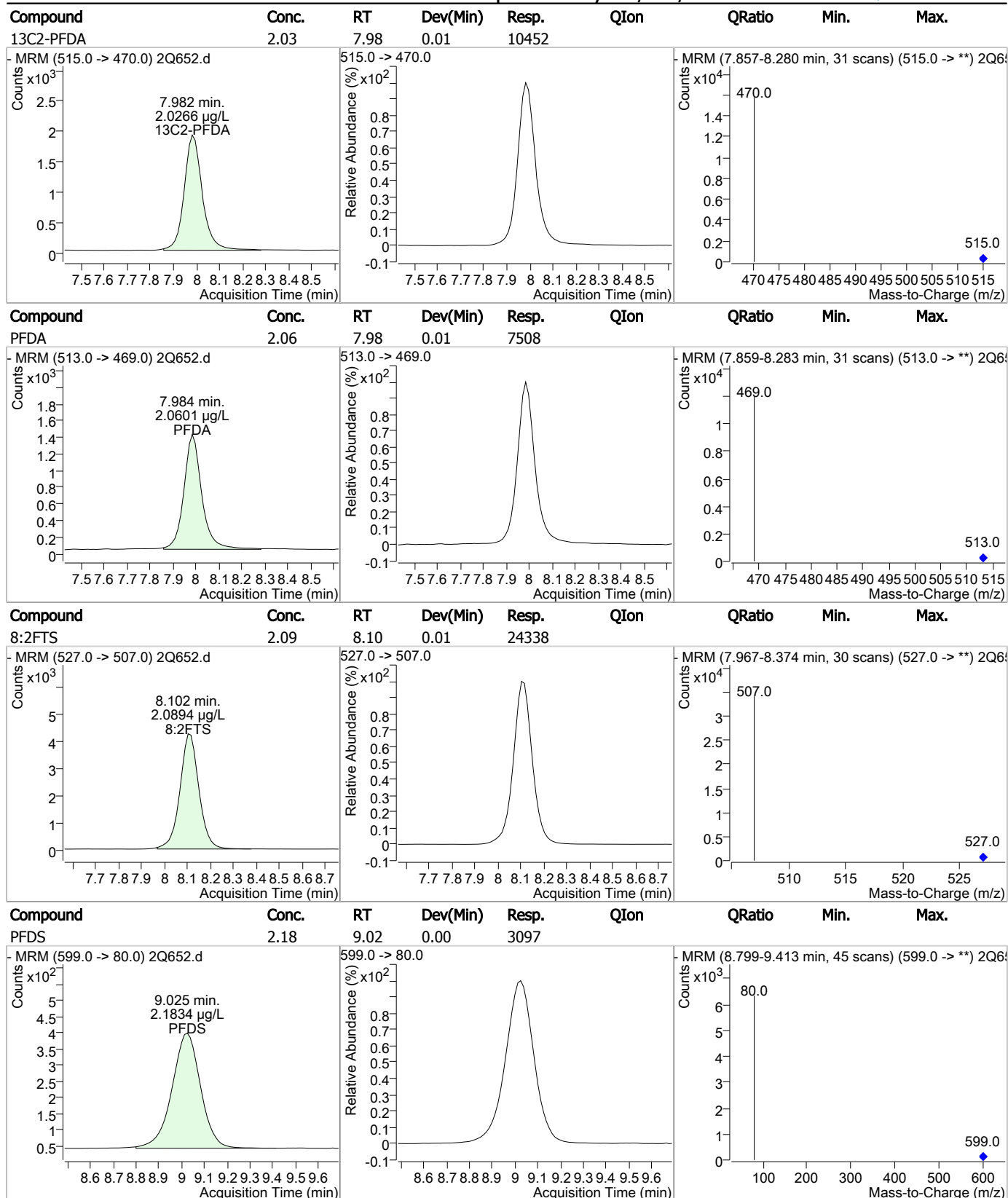
Perfluorinated Compounds by LC/MS/MS



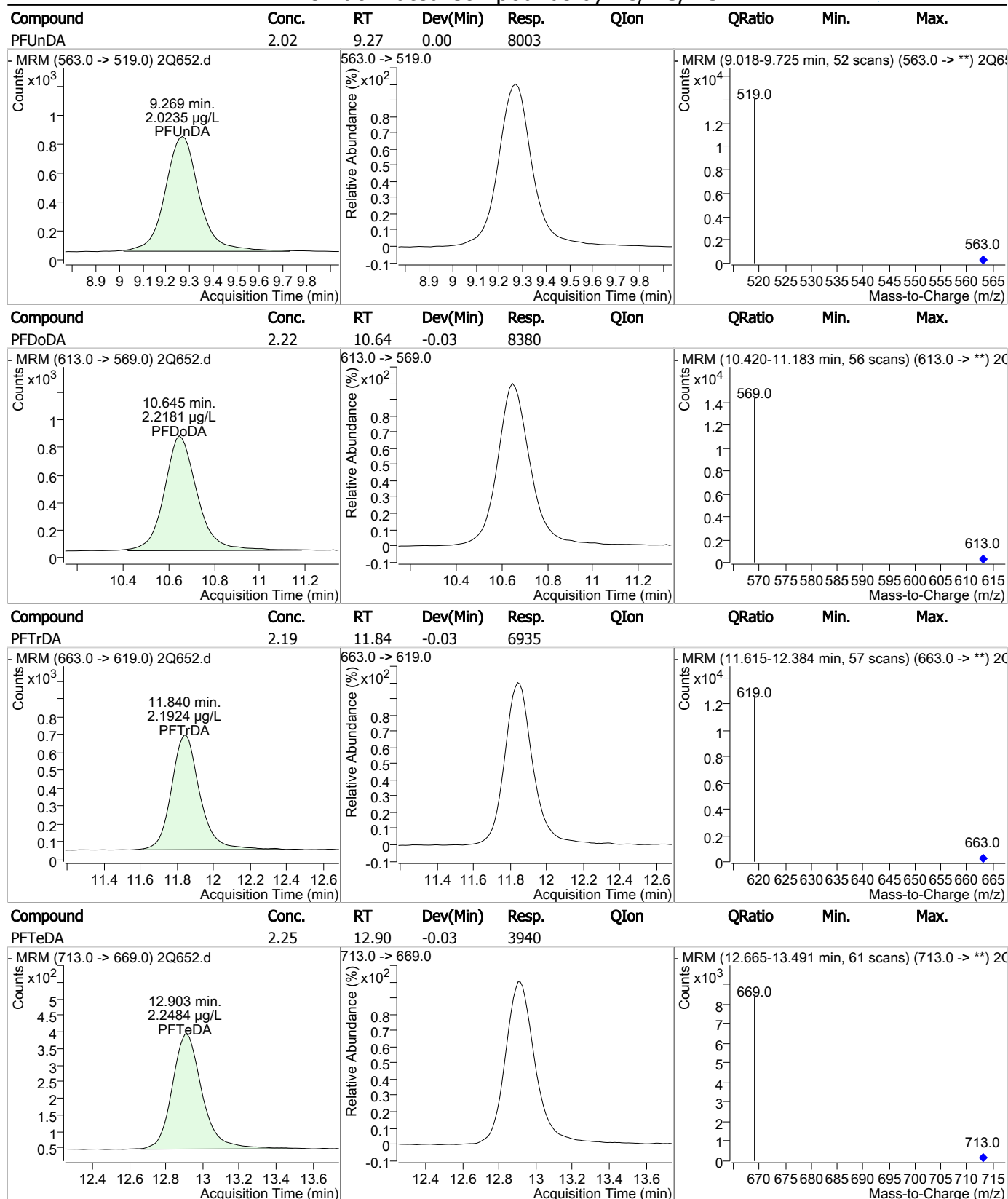
Perfluorinated Compounds by LC/MS/MS



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

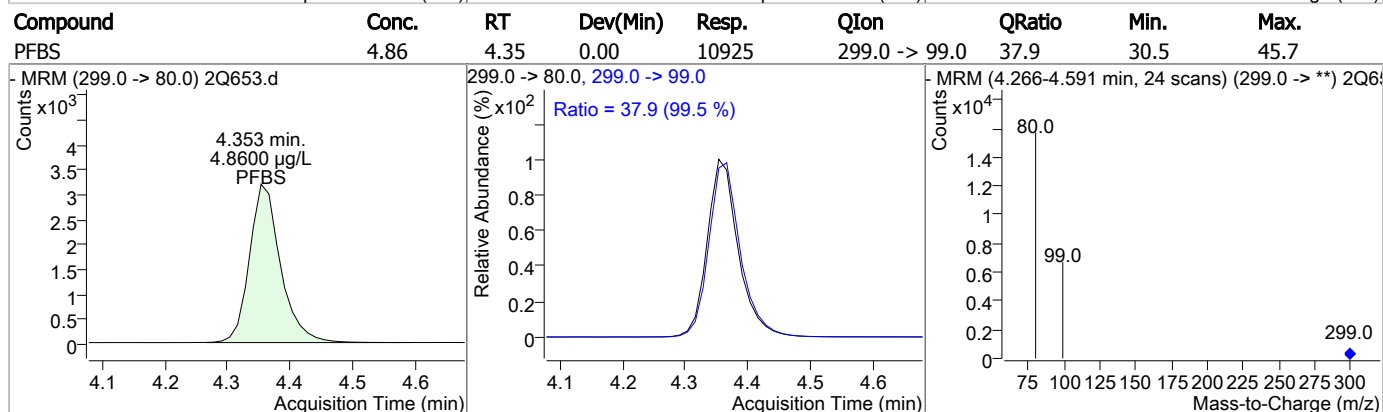
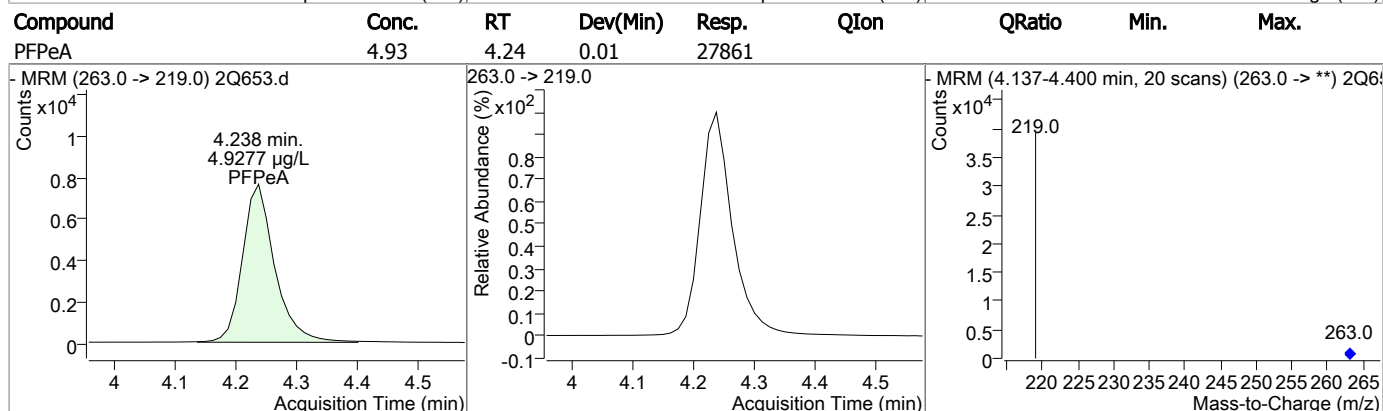
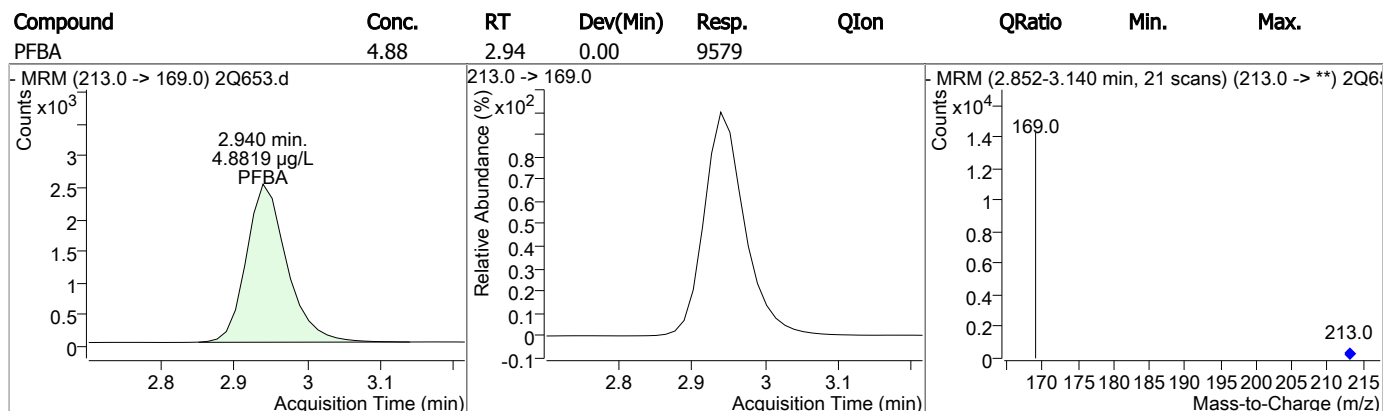
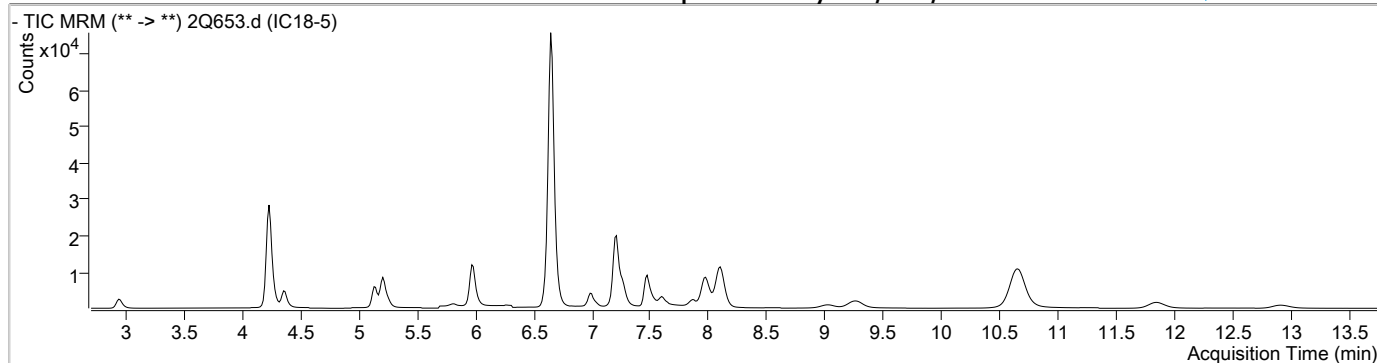
Perfluorinated Compounds by LC/MS/MS

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

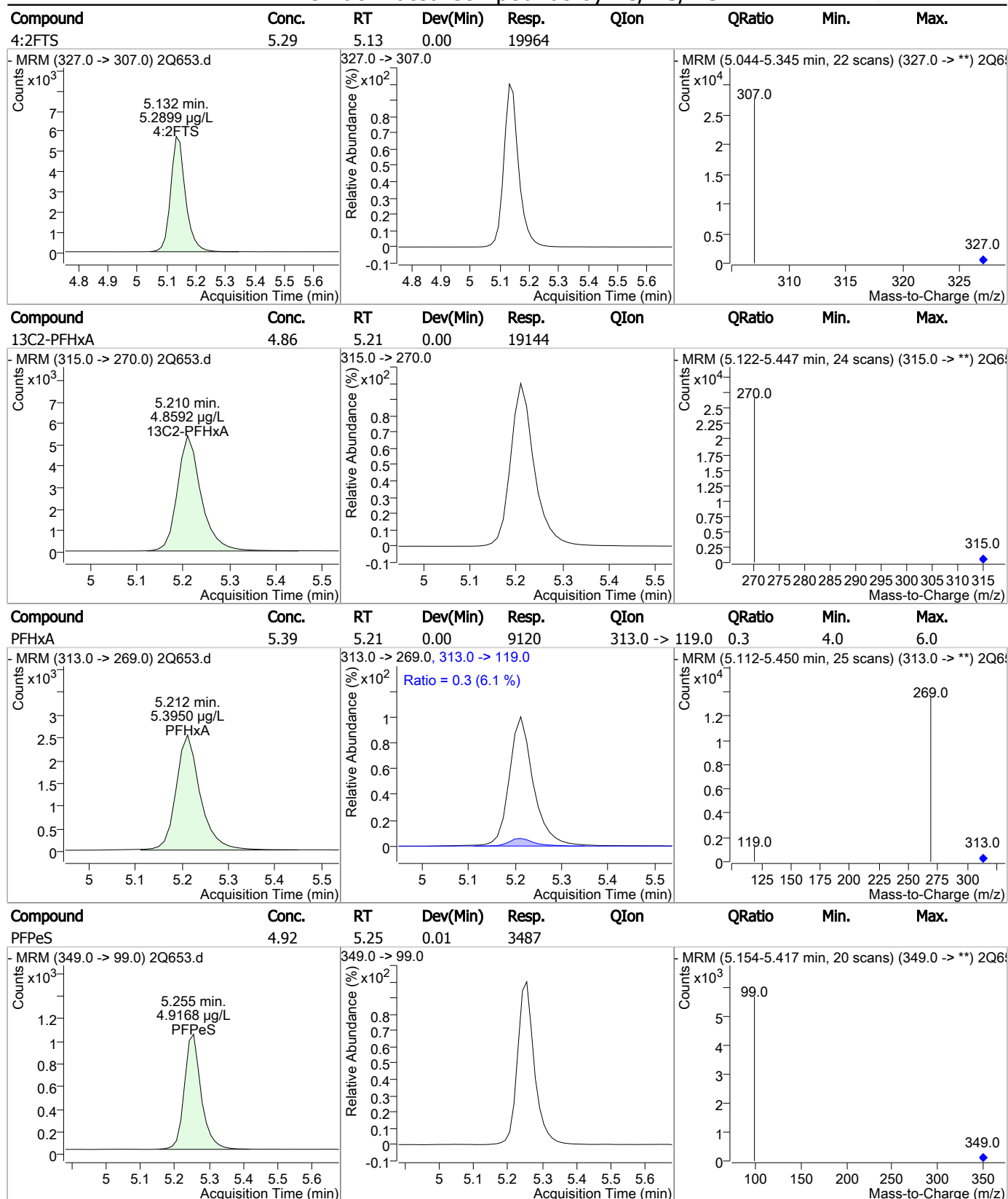
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	149408	20.00 µg/L	0.013
13C2-PFDoDA	10.651	615.0 -> 570.0	89183	20.00 µg/L	-0.013
13C2-PFOA	6.651	415.0 -> 370.0	74588	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74514	20.00 µg/L	0.000
13C4-PFOS	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

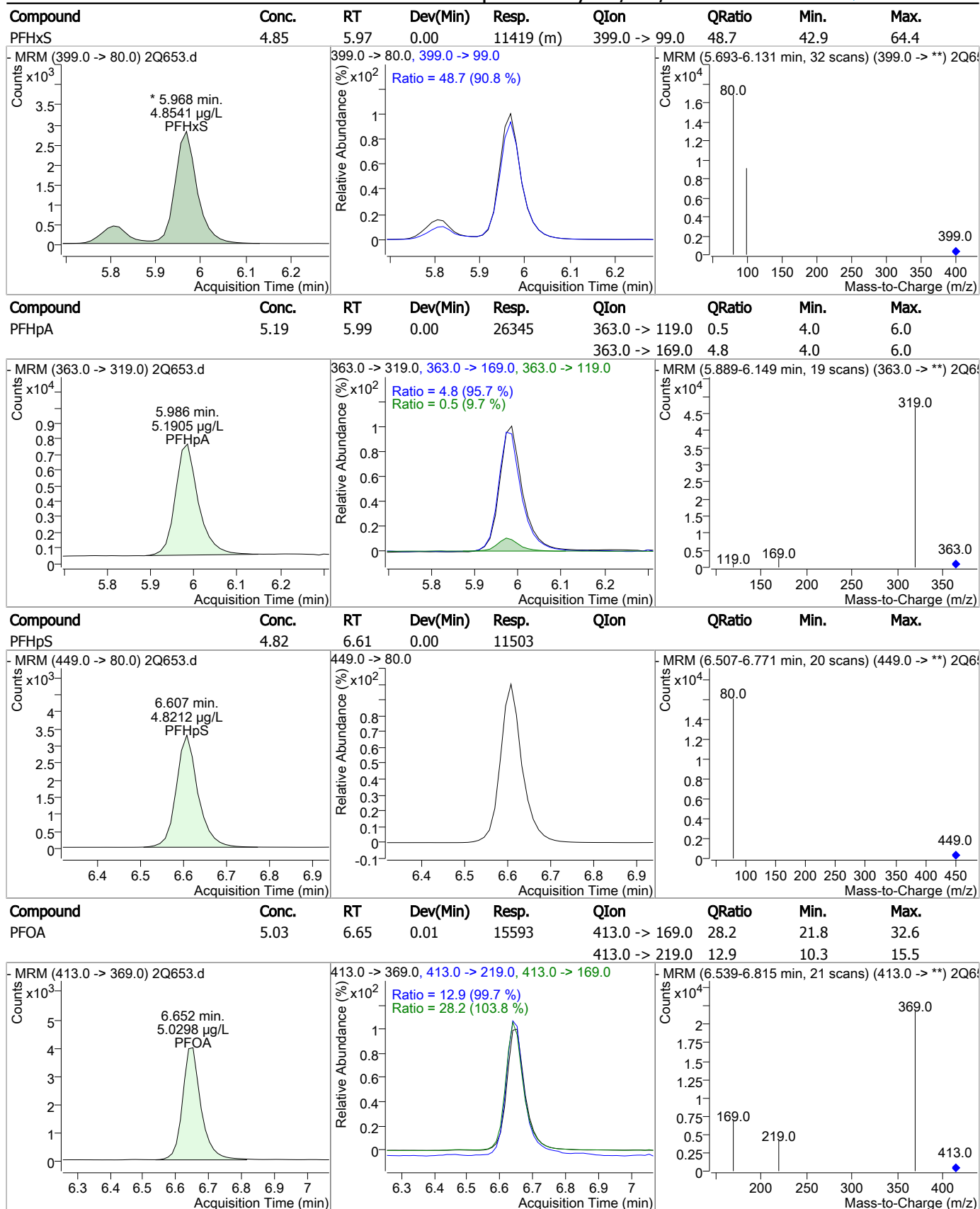
Perfluorinated Compounds by LC/MS/MS



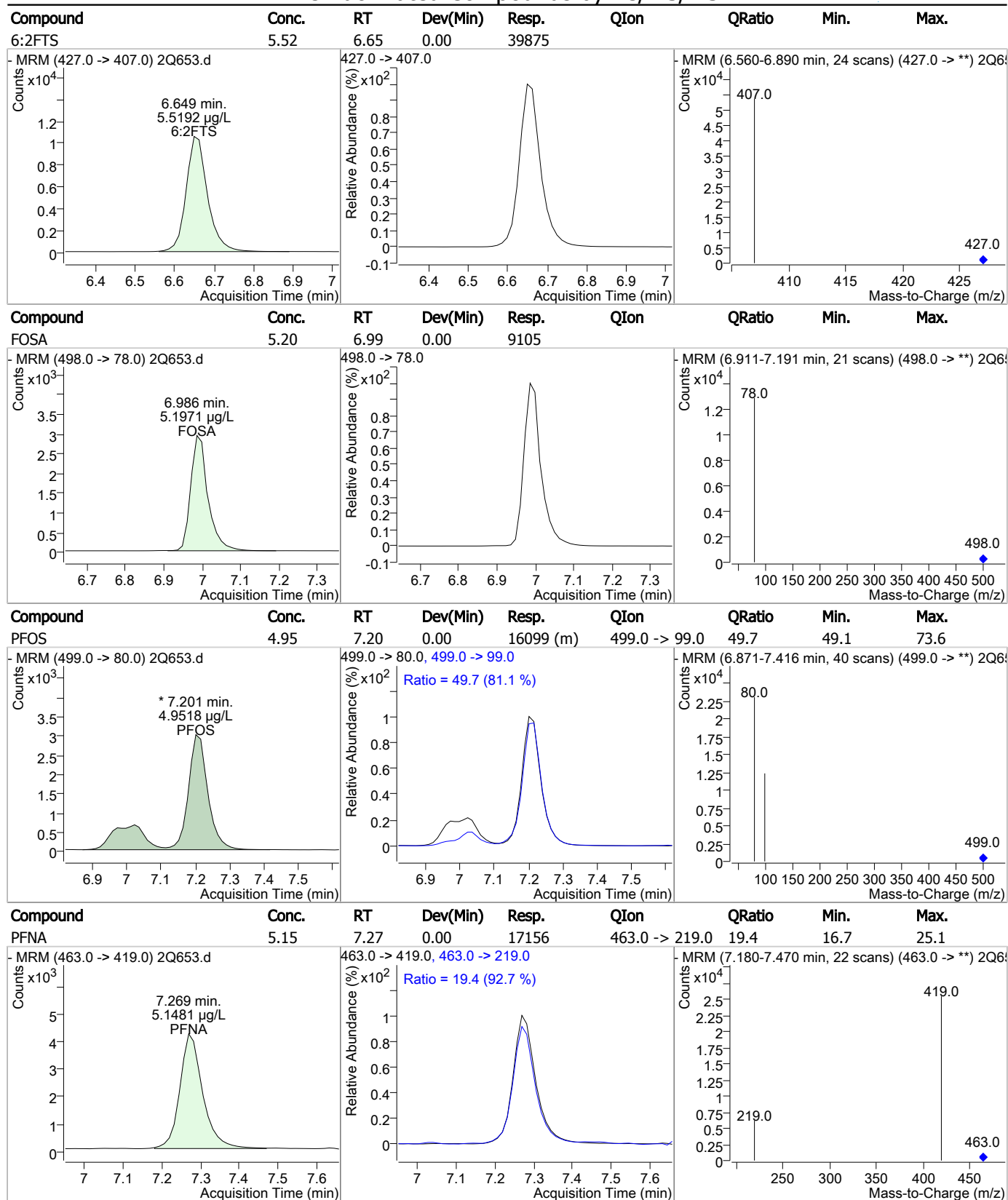
Perfluorinated Compounds by LC/MS/MS



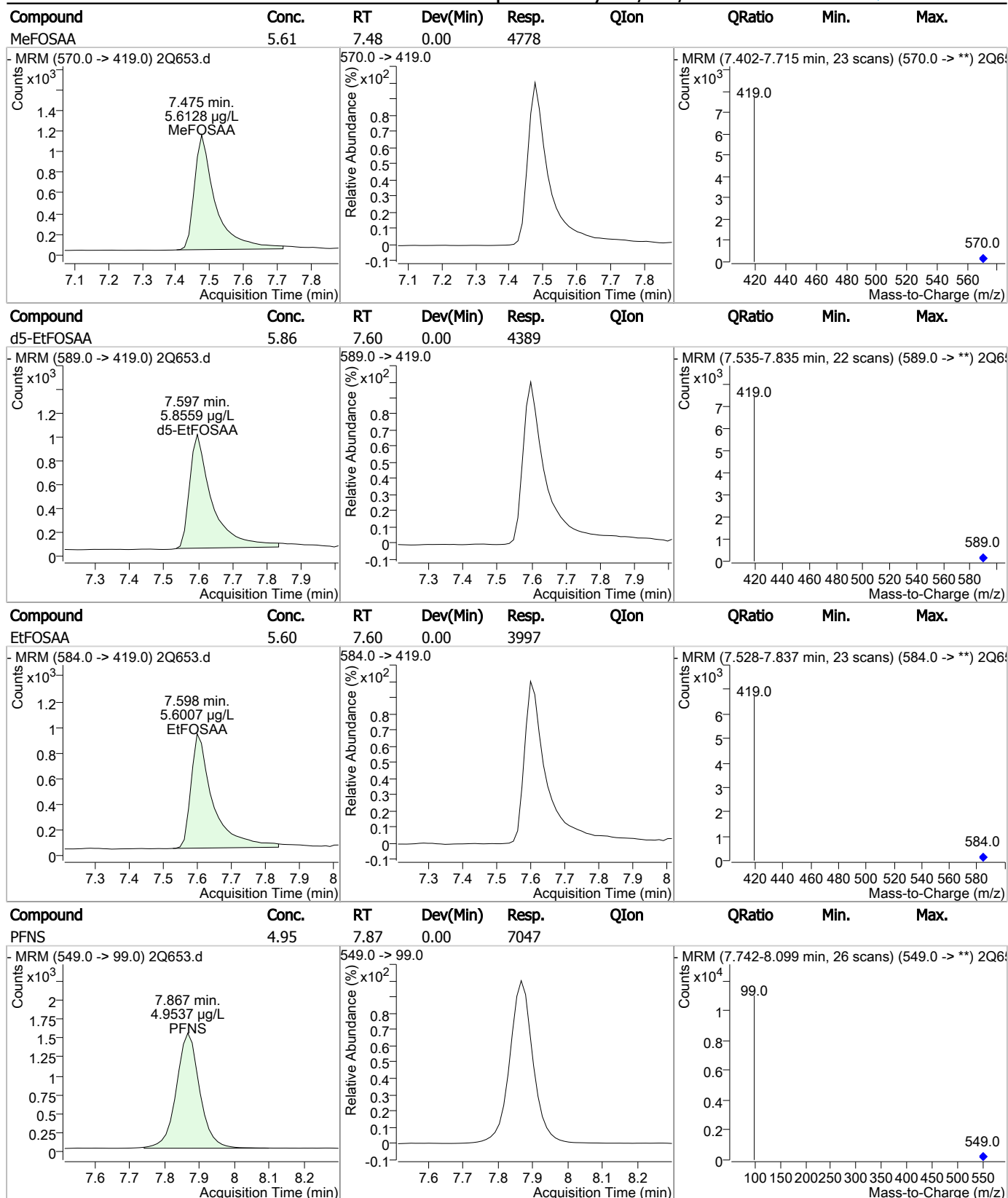
Perfluorinated Compounds by LC/MS/MS



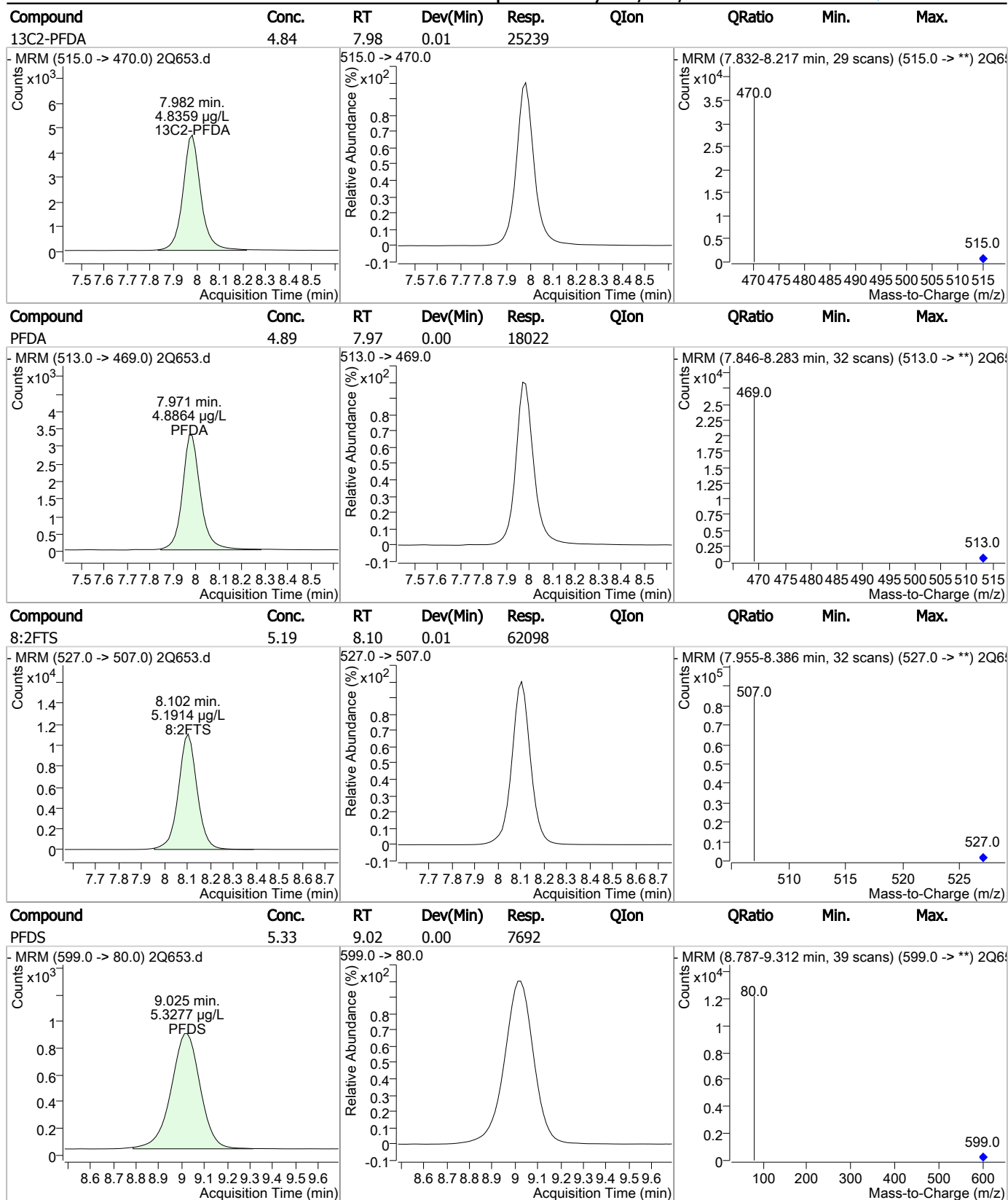
Perfluorinated Compounds by LC/MS/MS



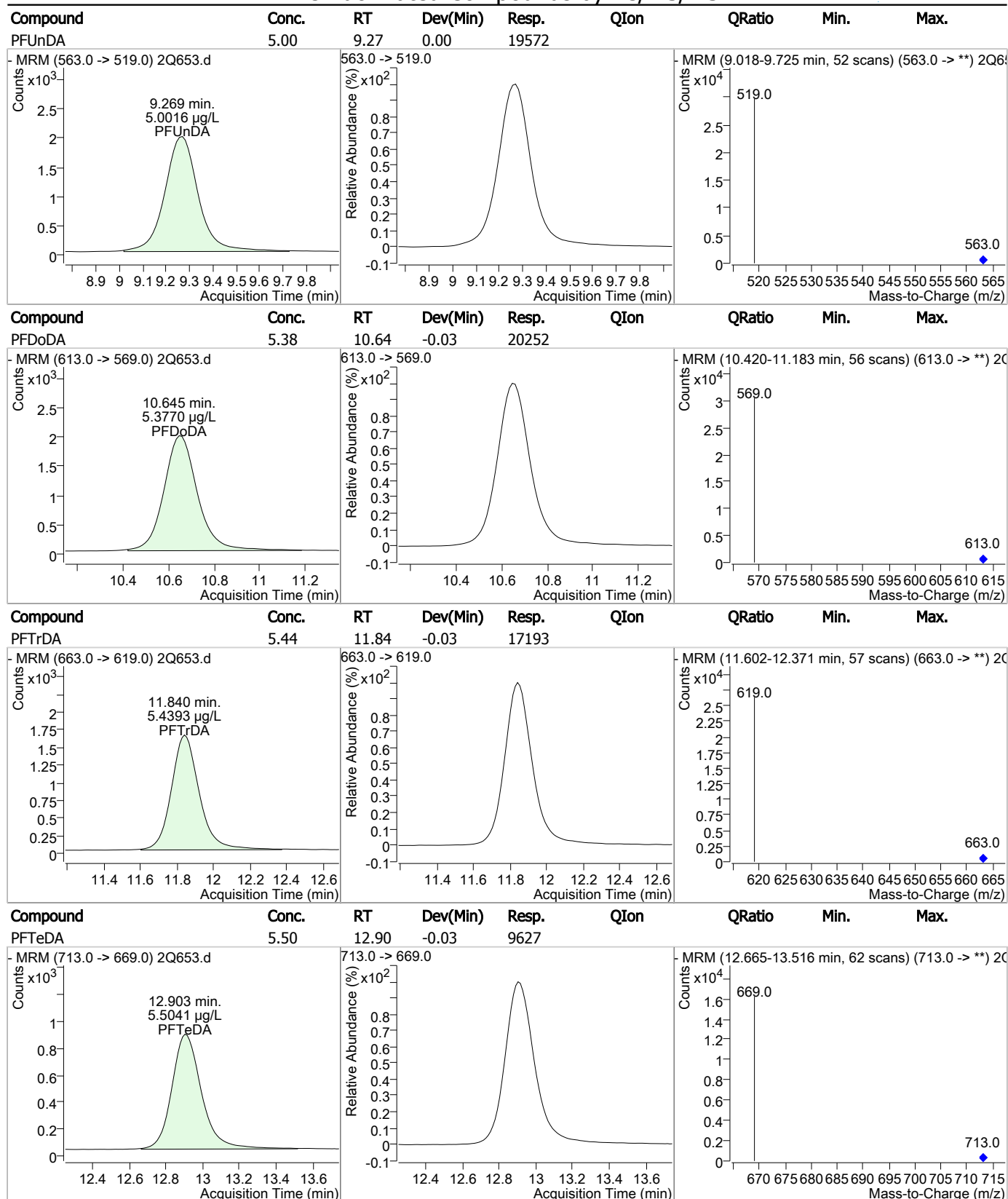
Perfluorinated Compounds by LC/MS/MS



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

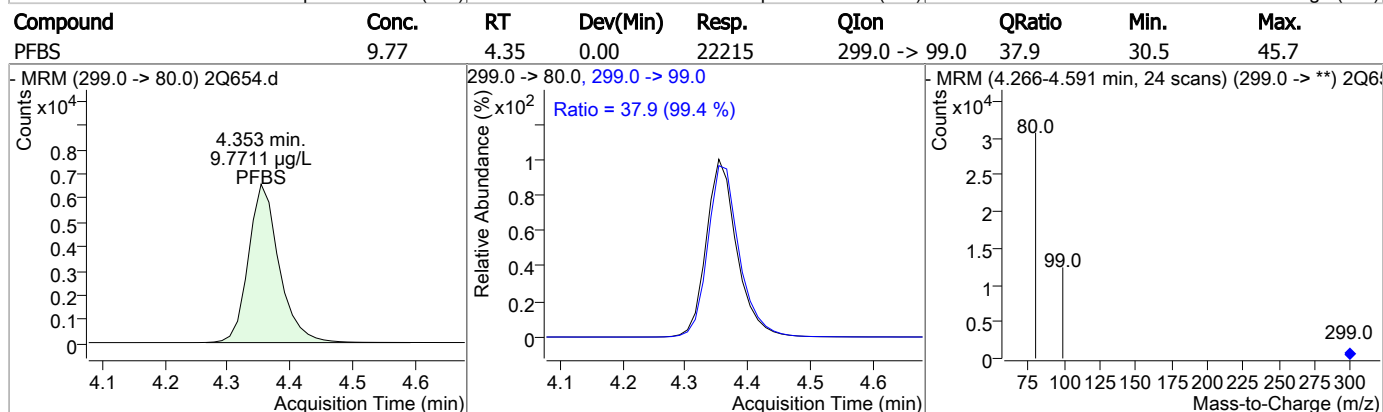
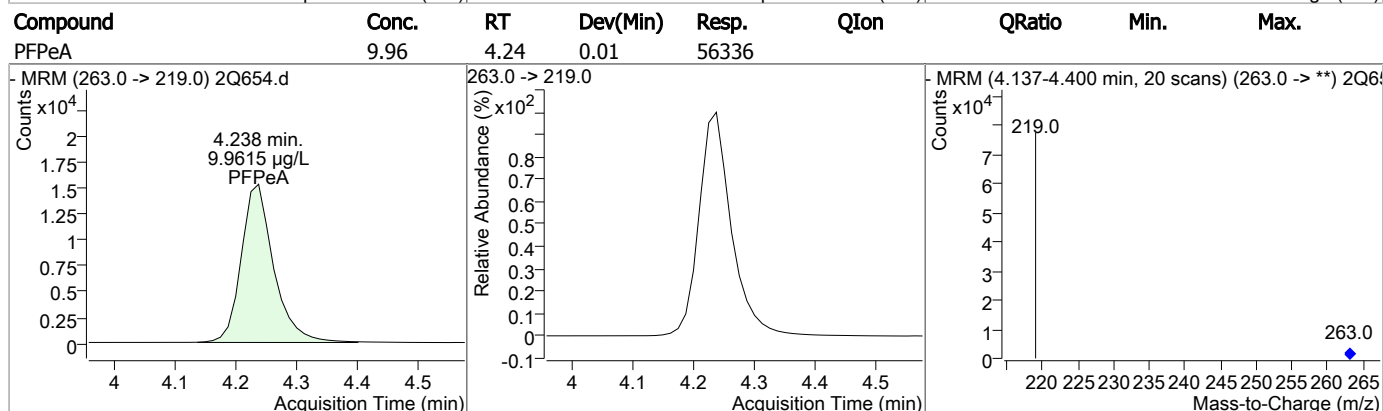
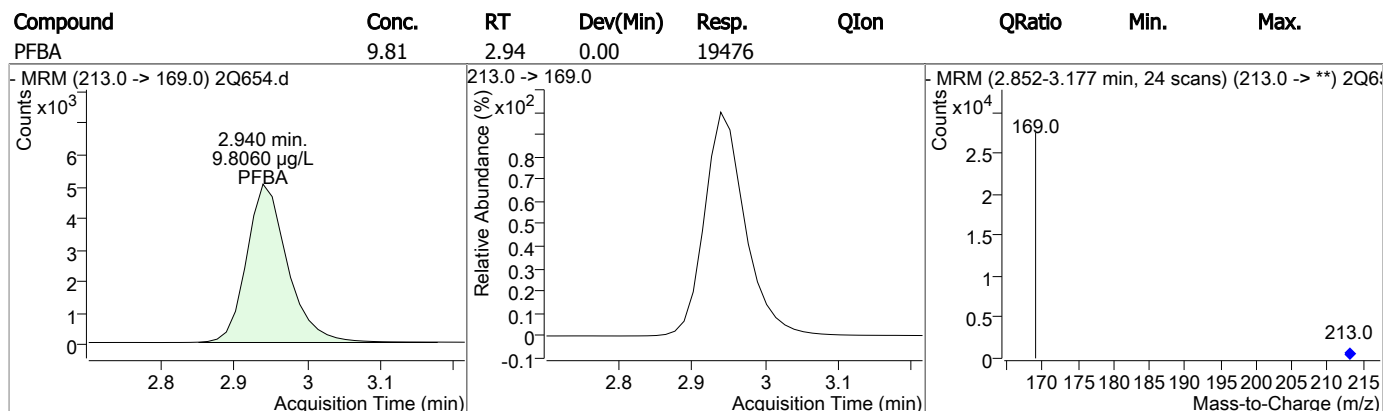
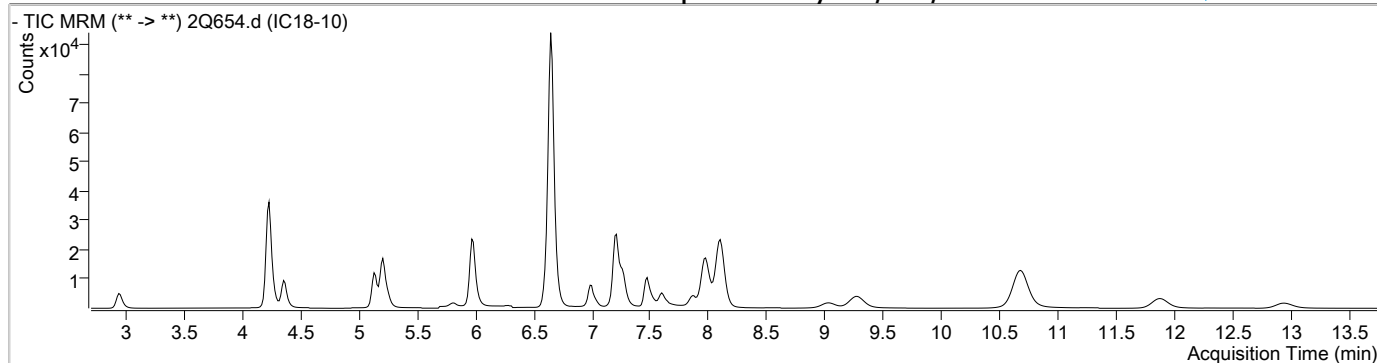
Perfluorinated Compounds by LC/MS/MS

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

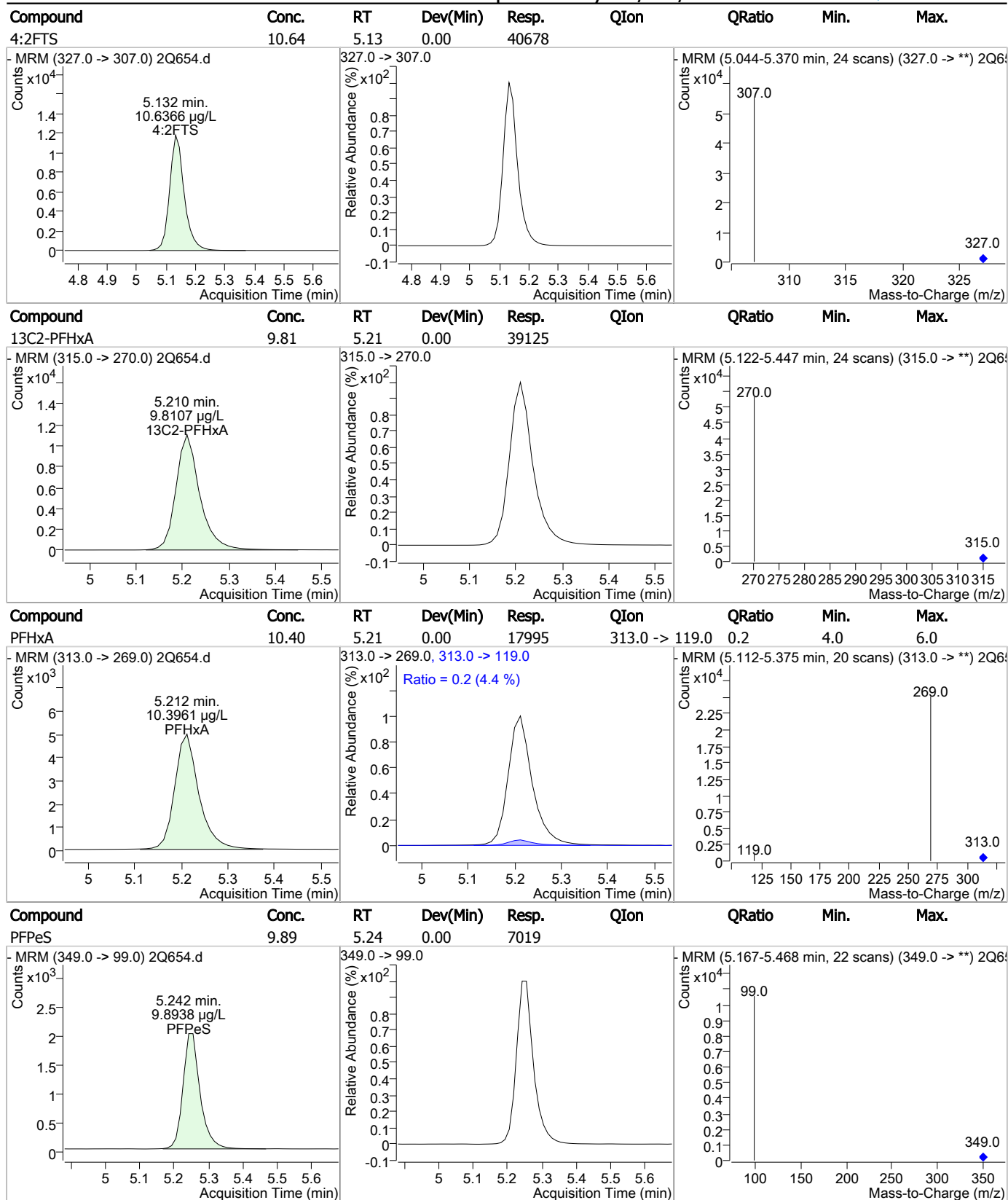
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.660	429.0 -> 409.0	151398	20.00 µg/L	0.013
13C2-PFDoDA	10.676	615.0 -> 570.0	90119	20.00 µg/L	0.013
13C2-PFOA	6.651	415.0 -> 370.0	75500	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	74532	20.00 µg/L	0.000
13C4-PFOS	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

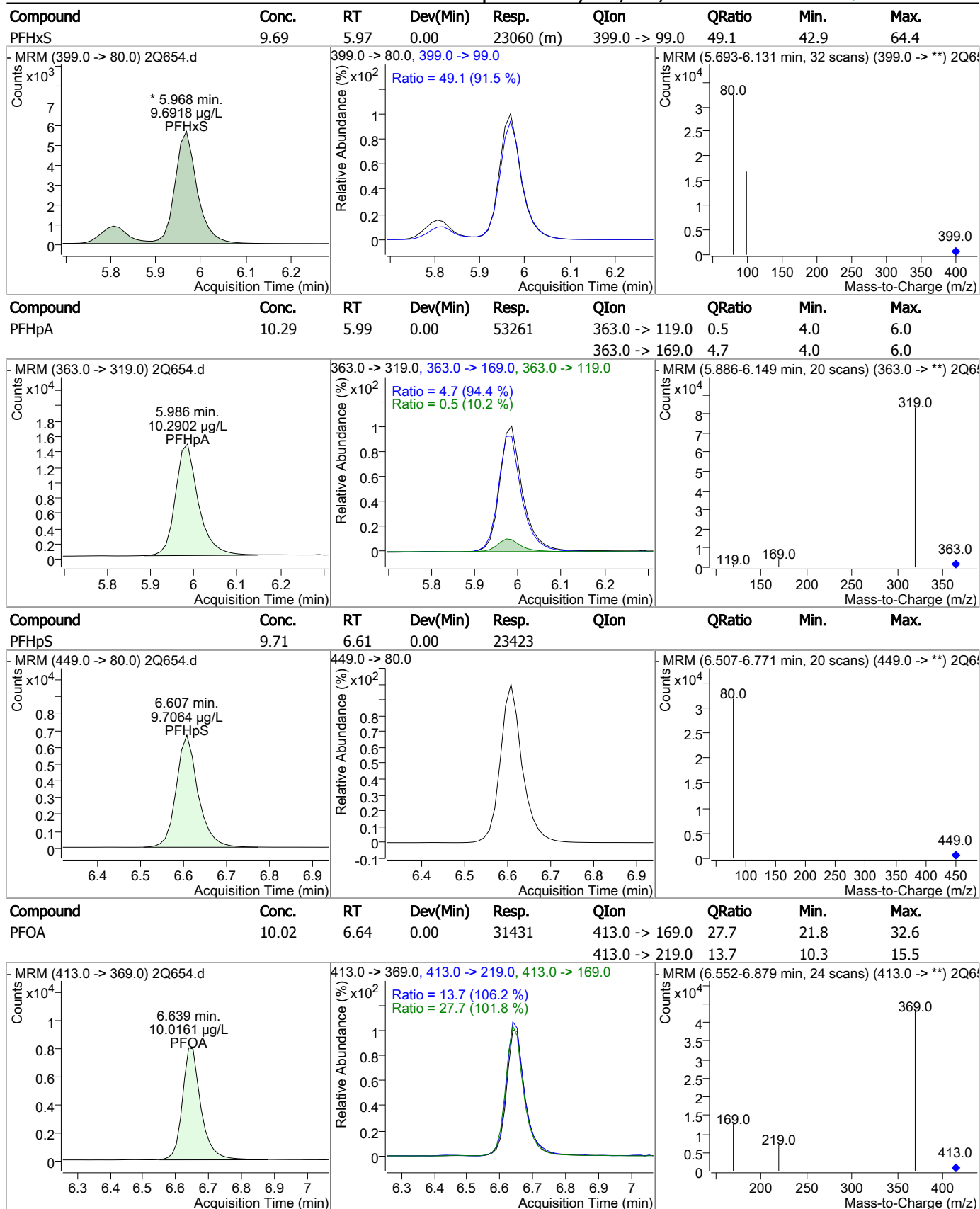
Perfluorinated Compounds by LC/MS/MS



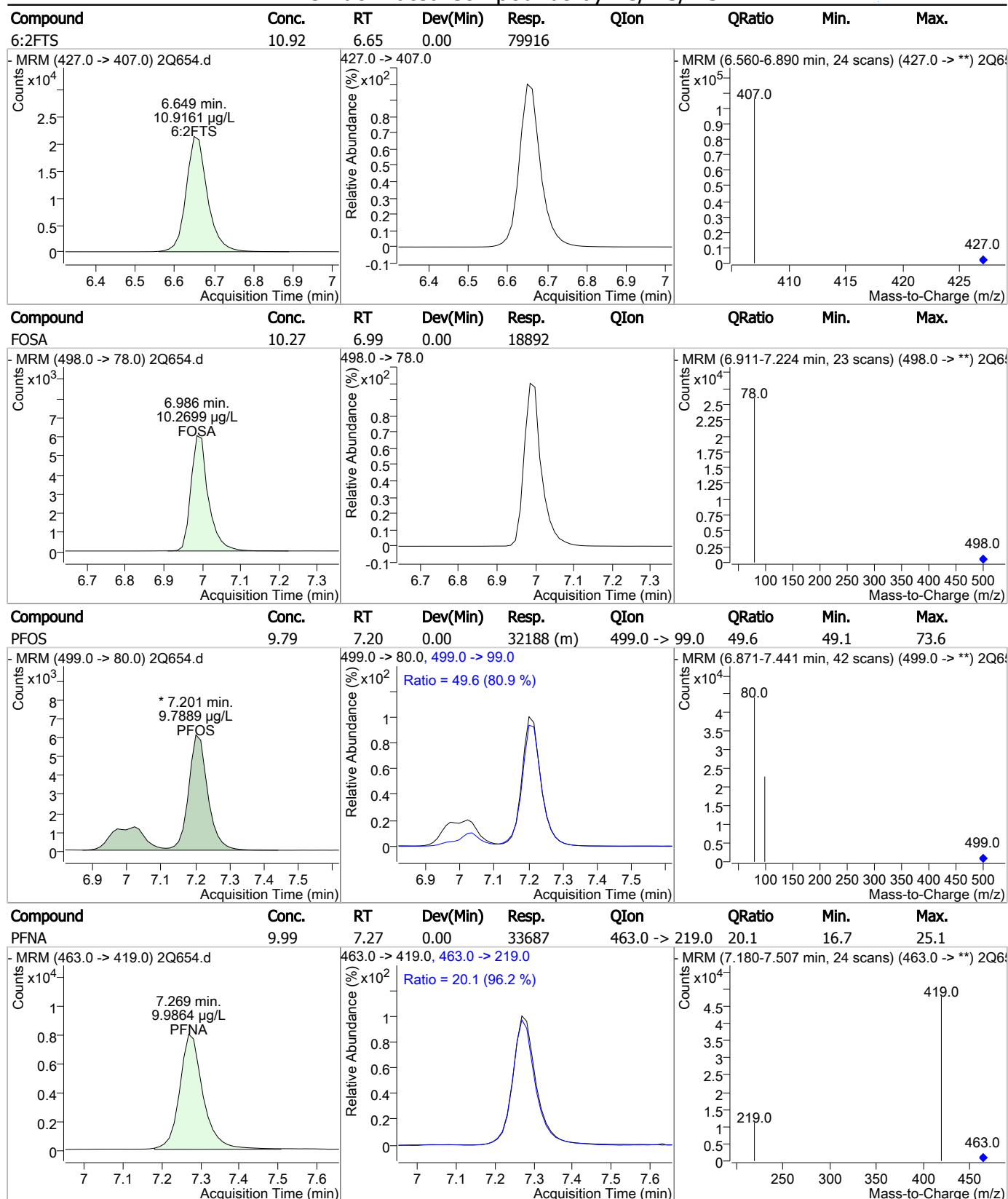
Perfluorinated Compounds by LC/MS/MS



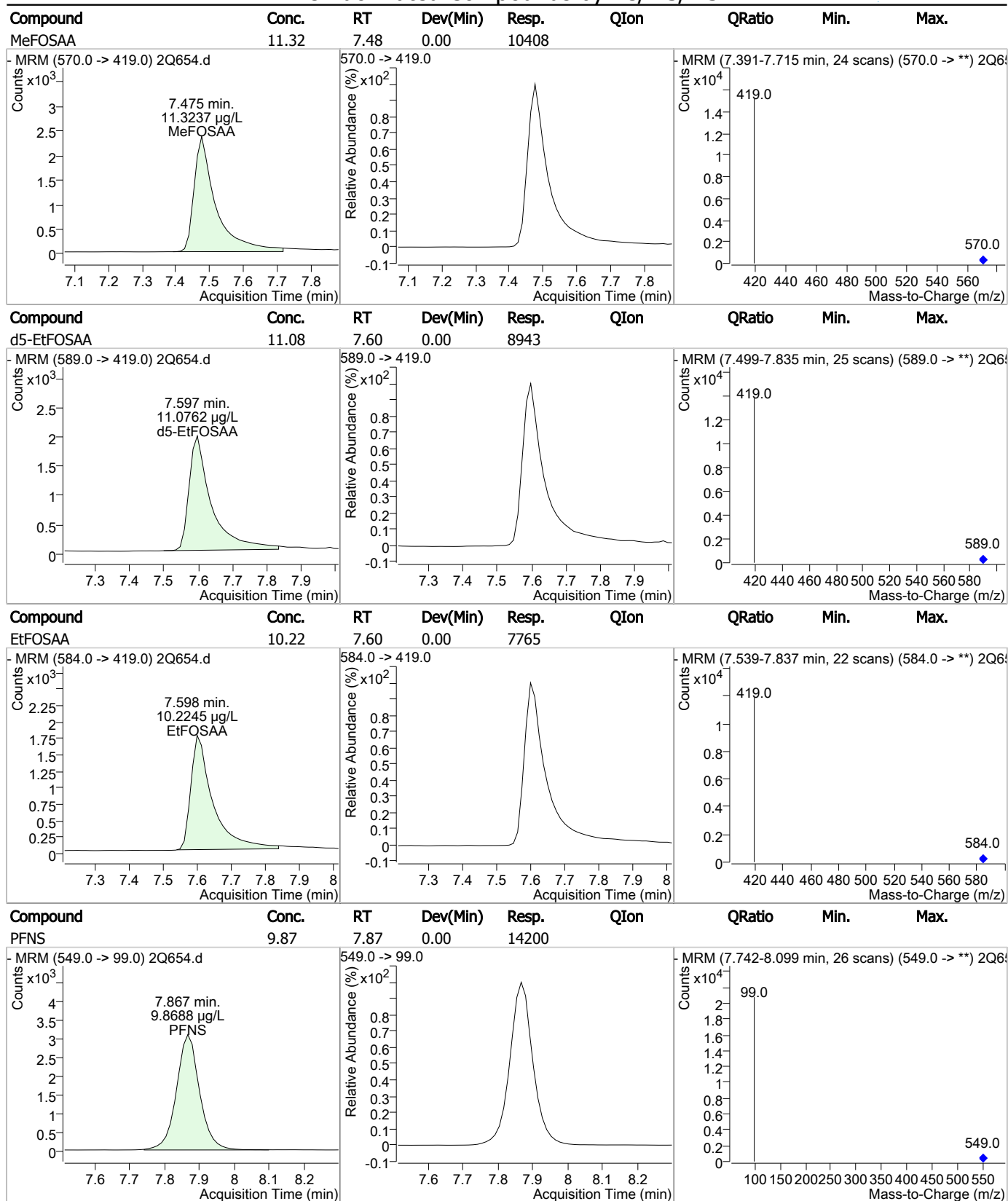
Perfluorinated Compounds by LC/MS/MS



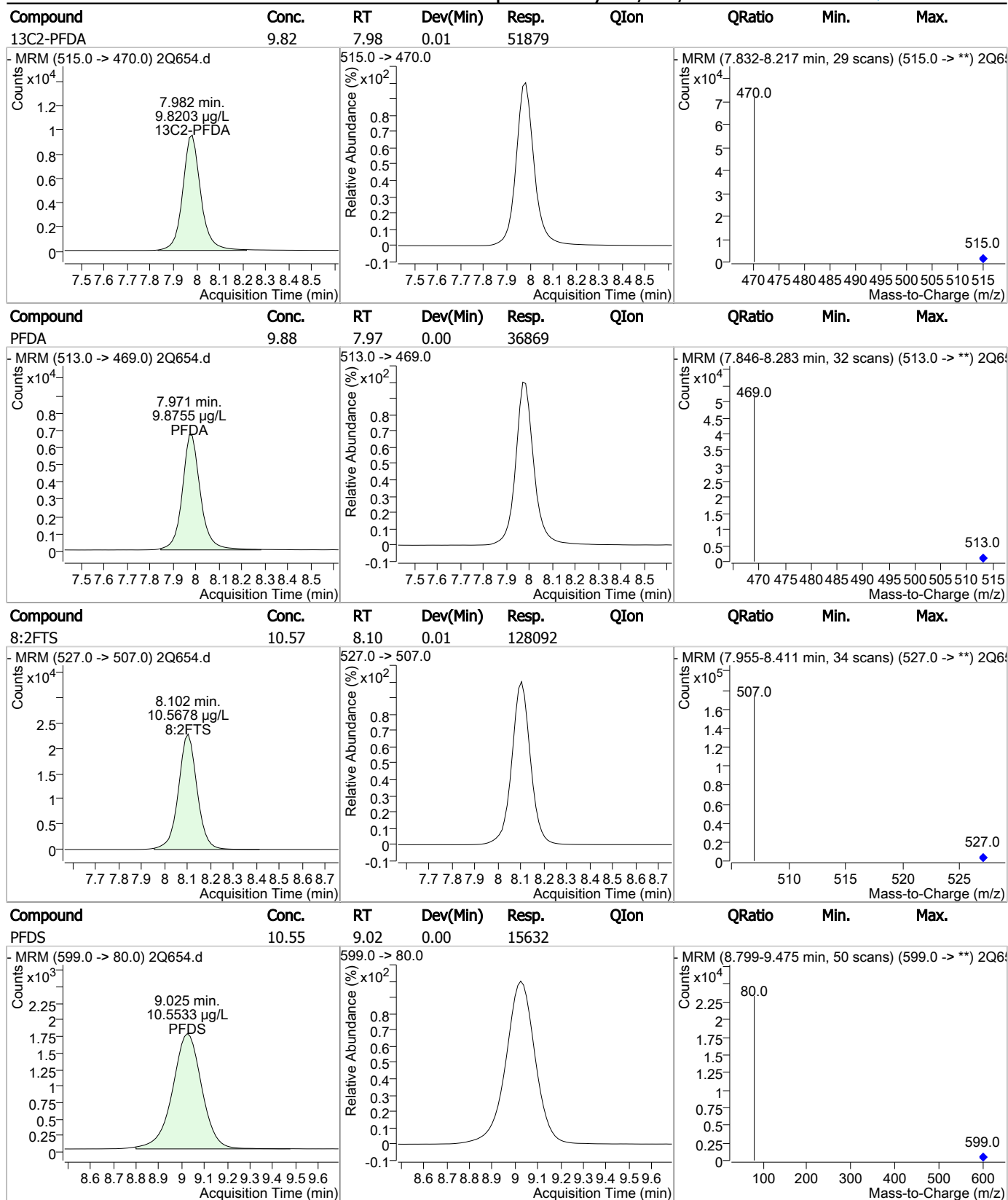
Perfluorinated Compounds by LC/MS/MS



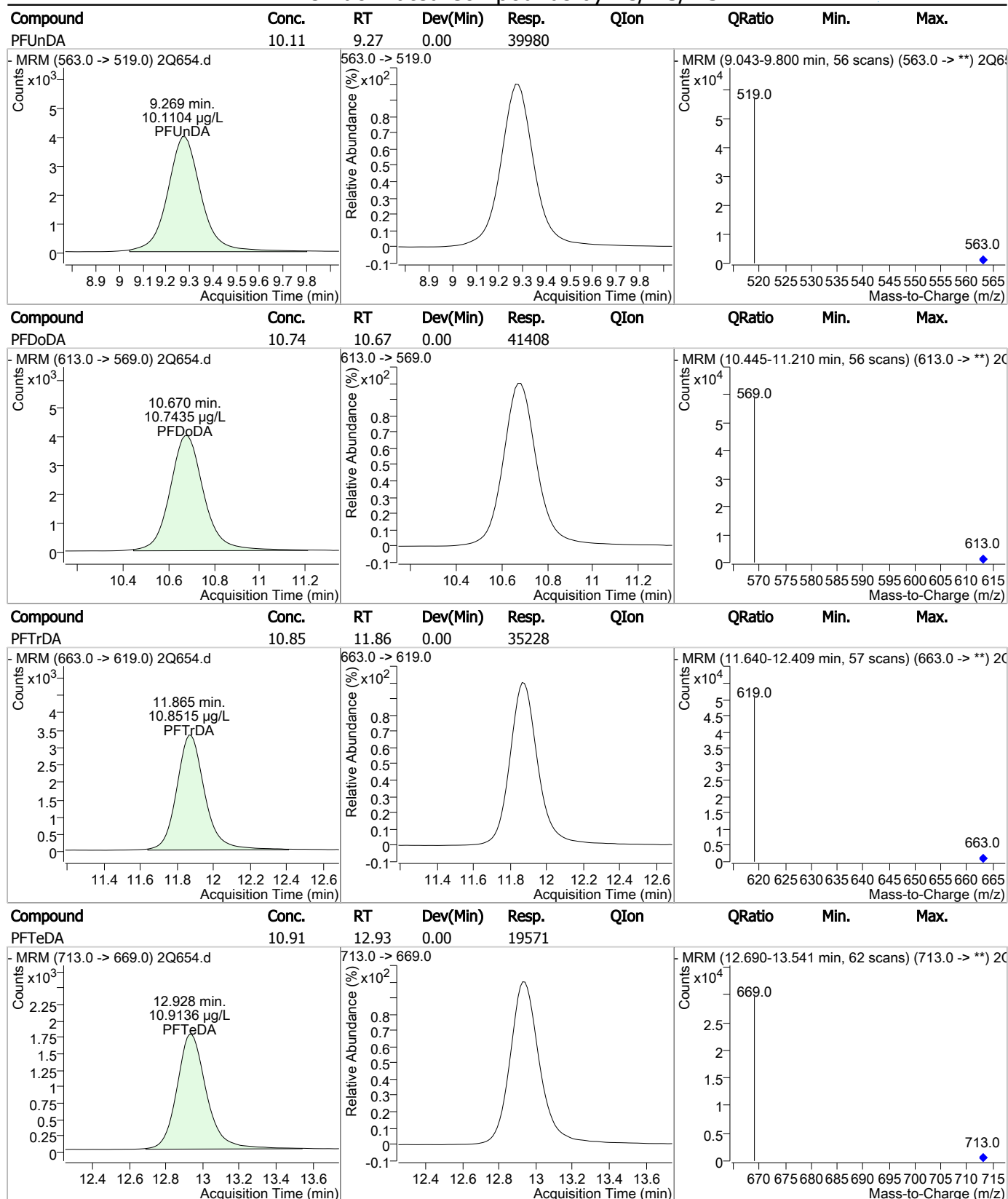
Perfluorinated Compounds by LC/MS/MS



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

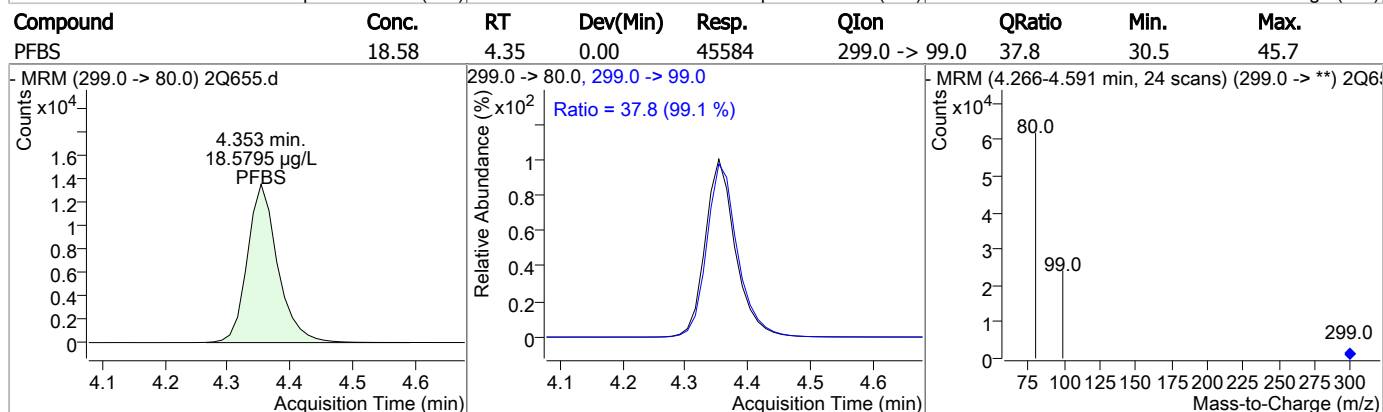
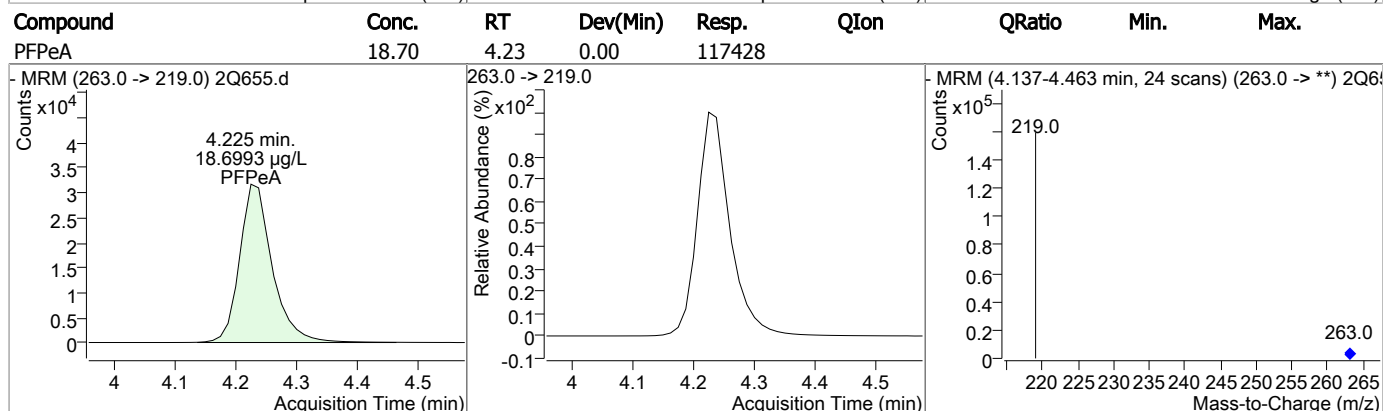
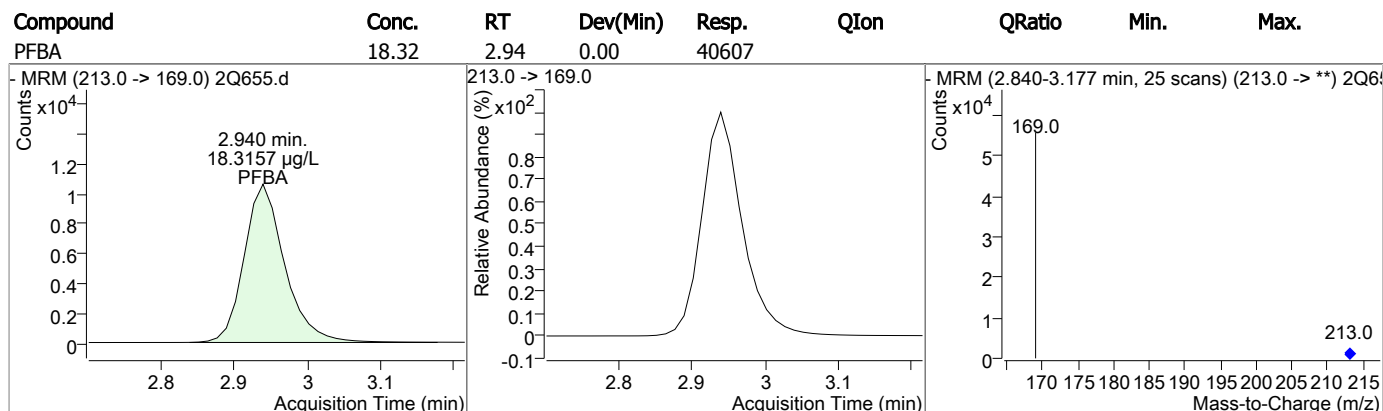
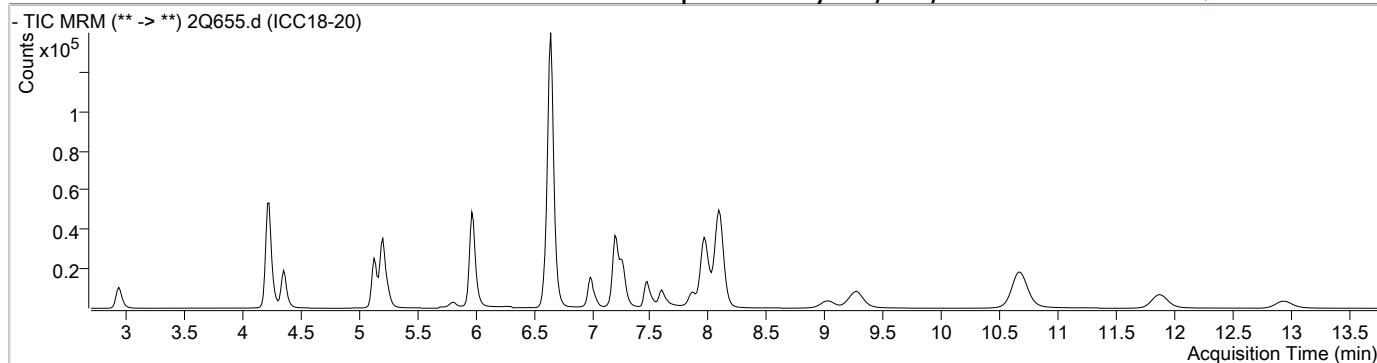
Perfluorinated Compounds by LC/MS/MS

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

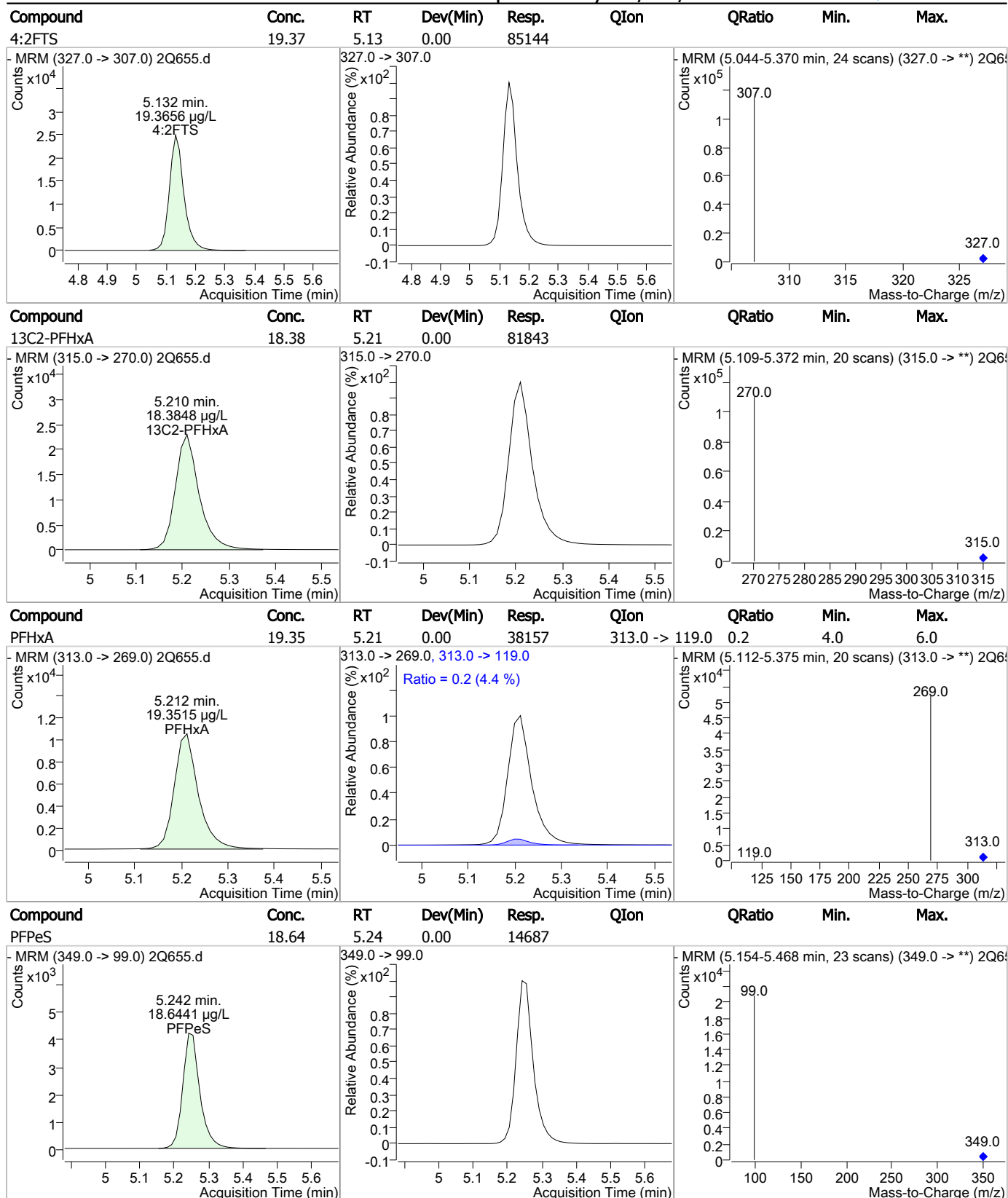
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-6:2FTS	6.648	429.0 -> 409.0	174056	20.00	µg/L	0.000
13C2-PFDoDA	10.664	615.0 -> 570.0	101125	20.00	µg/L	0.000
13C2-PFOA	6.637	415.0 -> 370.0	84279	20.00	µg/L	0.000
13C3-PFPeA	4.234	266.0 -> 222.0	82762	20.00	µg/L	0.000
13C4-PFOS	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

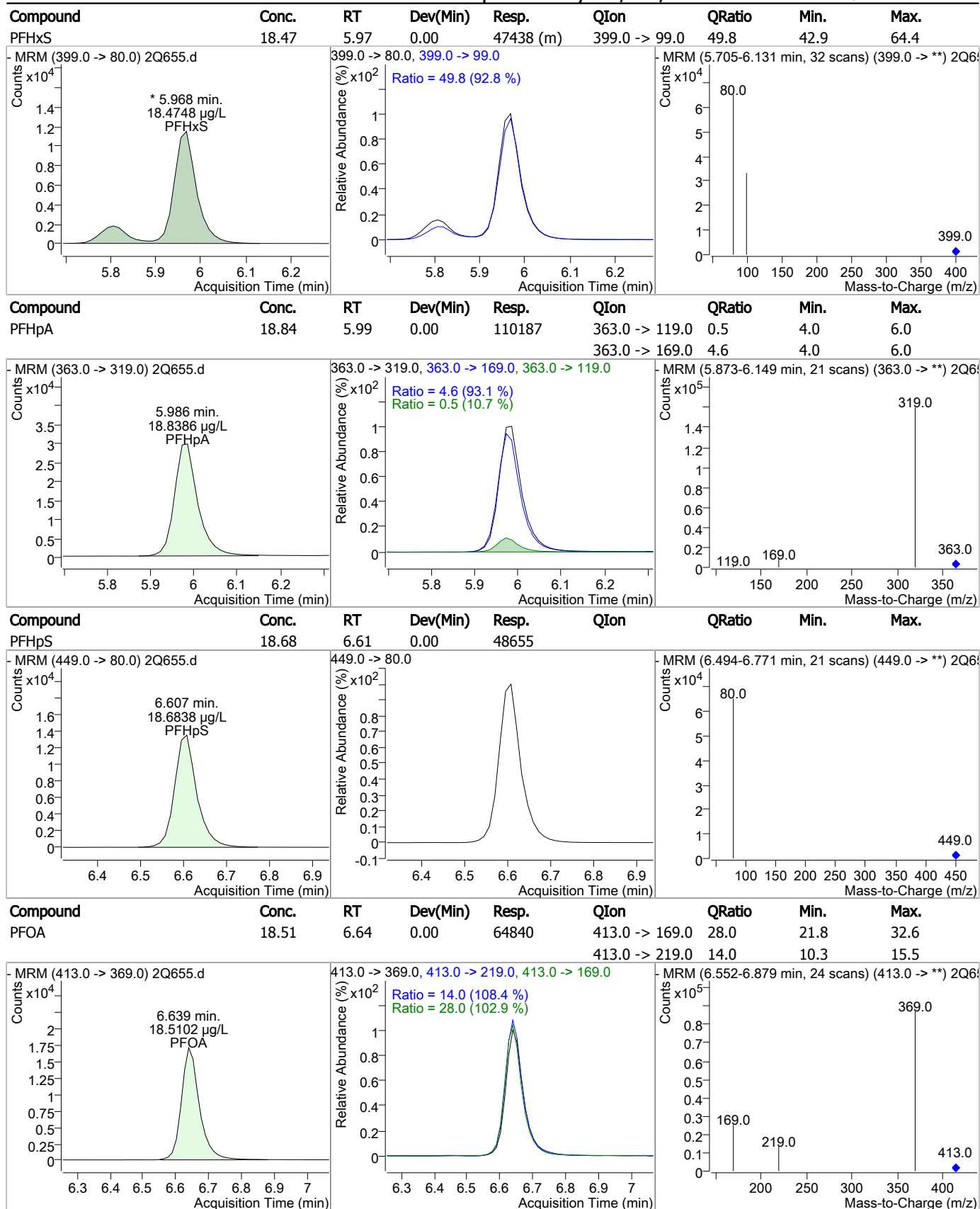
Perfluorinated Compounds by LC/MS/MS



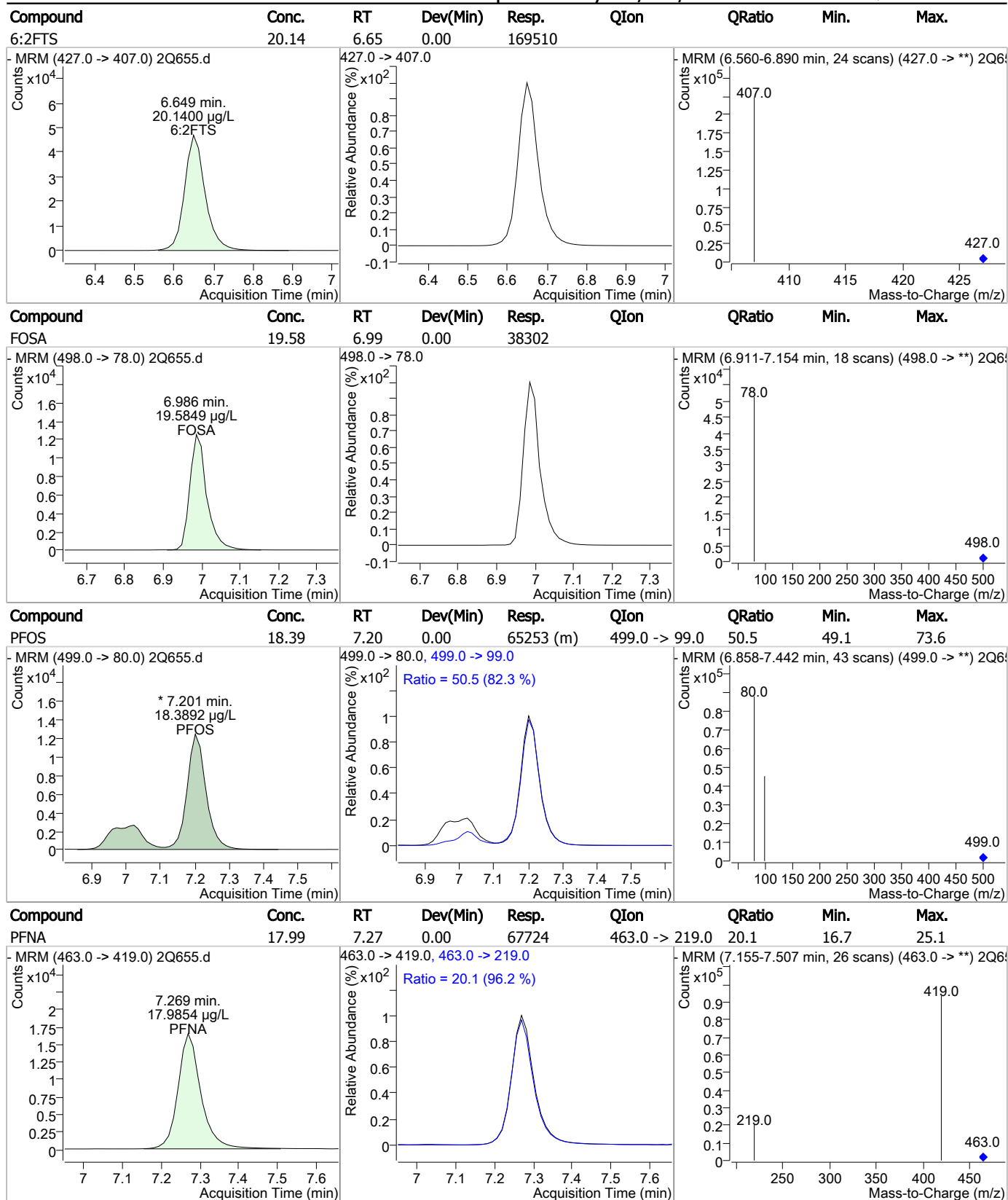
Perfluorinated Compounds by LC/MS/MS



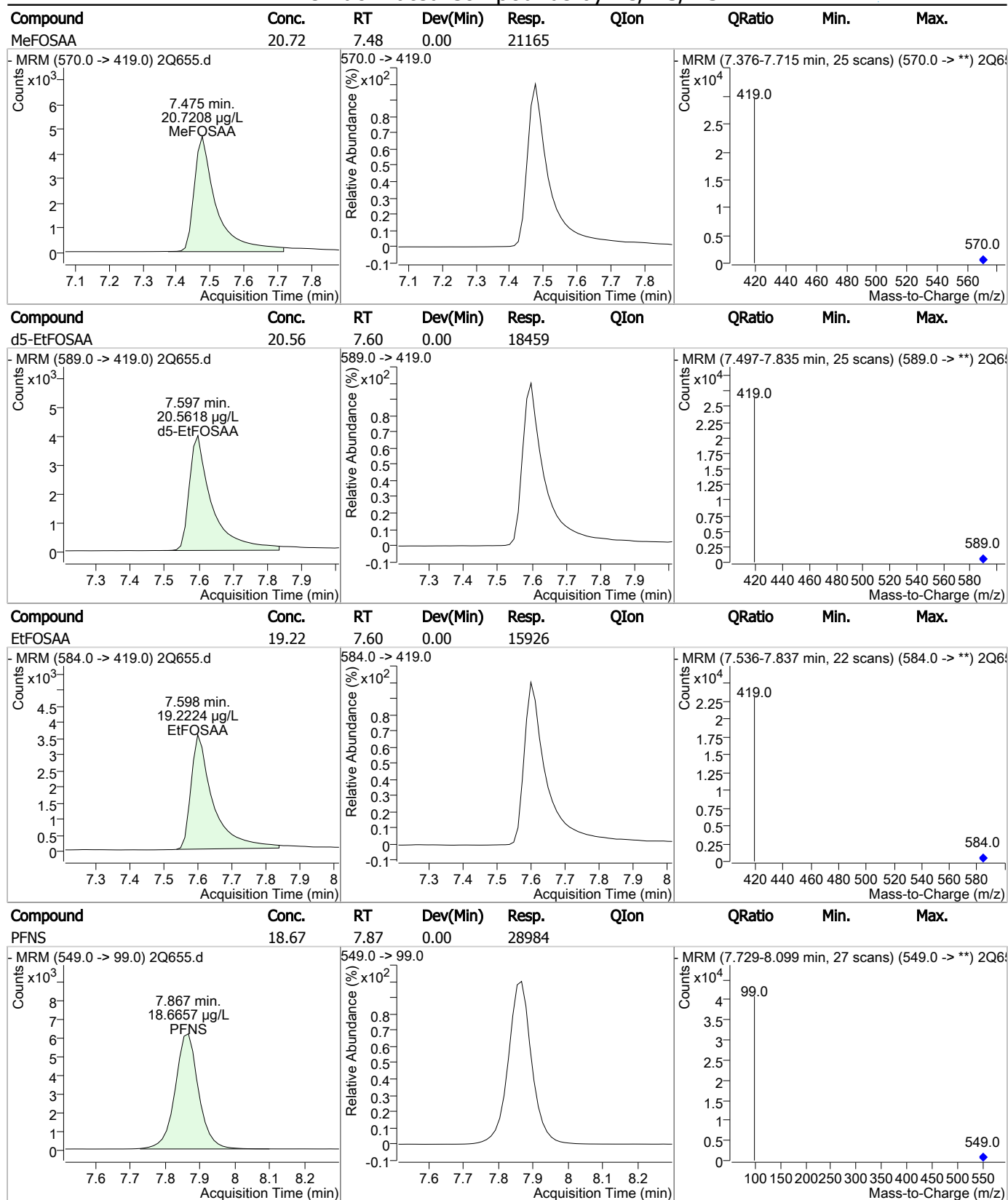
Perfluorinated Compounds by LC/MS/MS



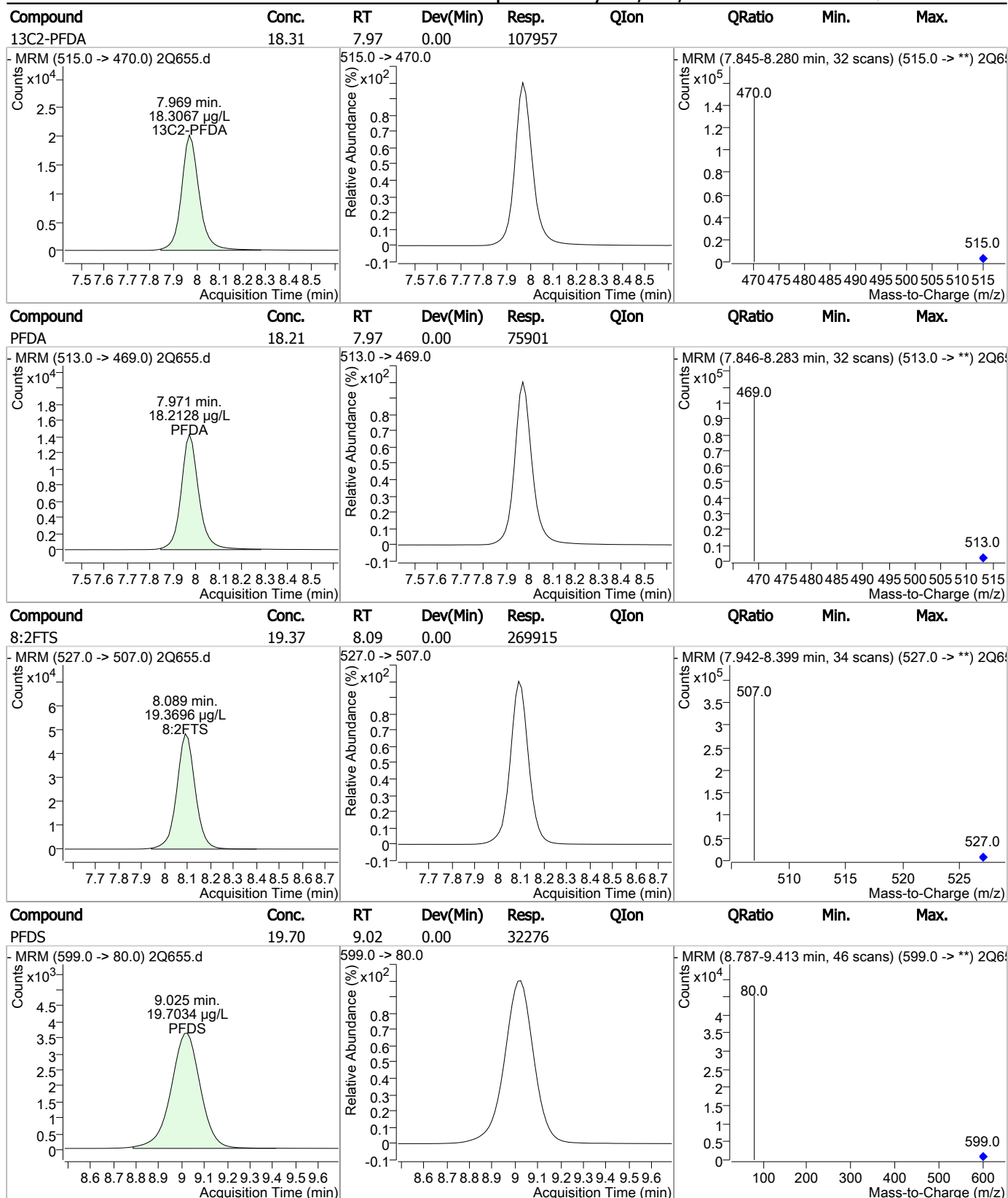
Perfluorinated Compounds by LC/MS/MS



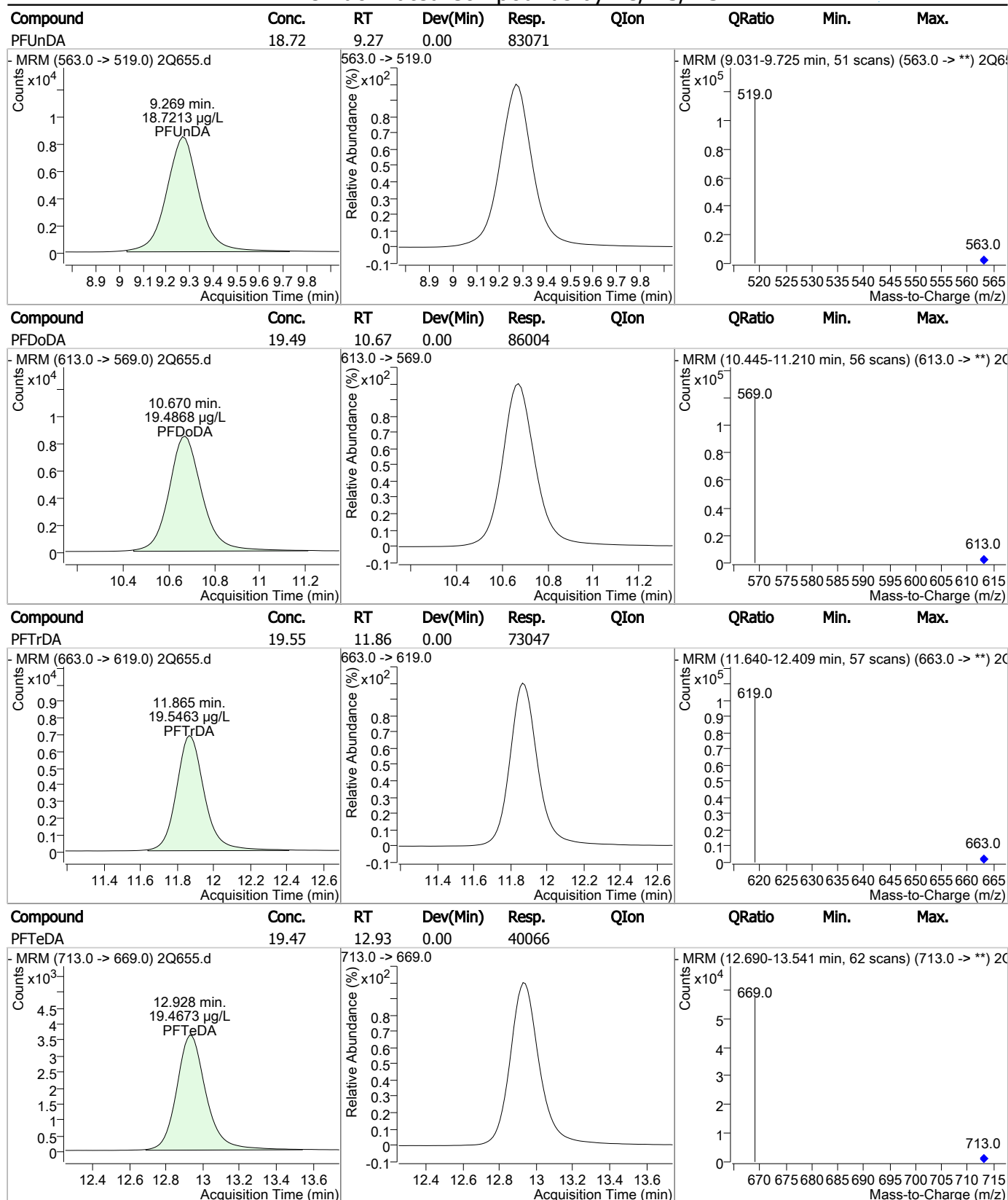
Perfluorinated Compounds by LC/MS/MS



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

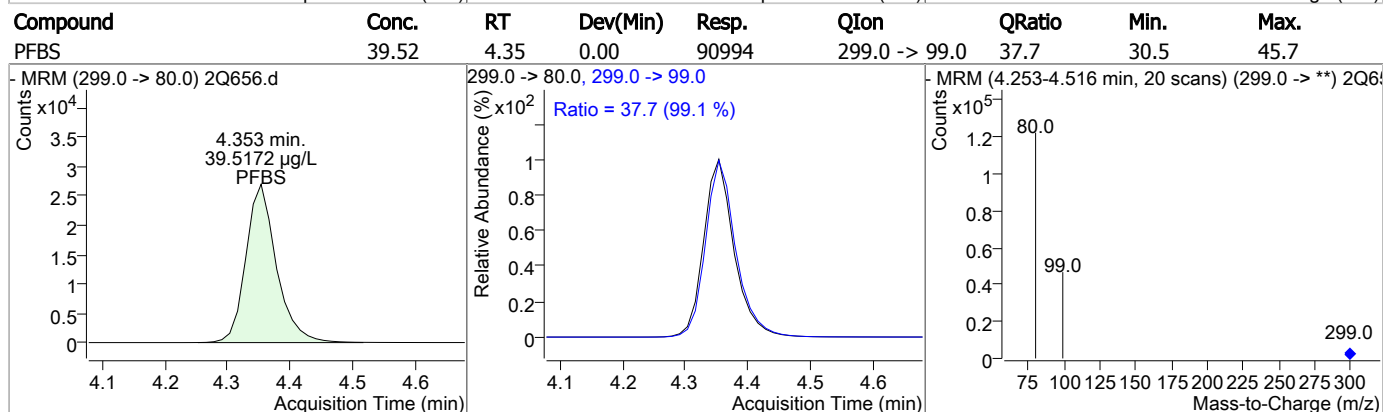
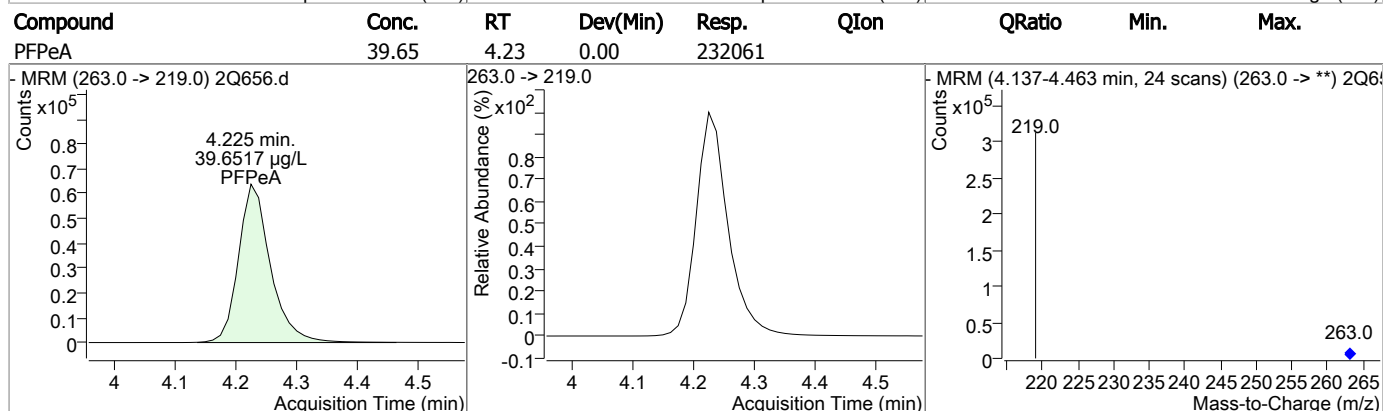
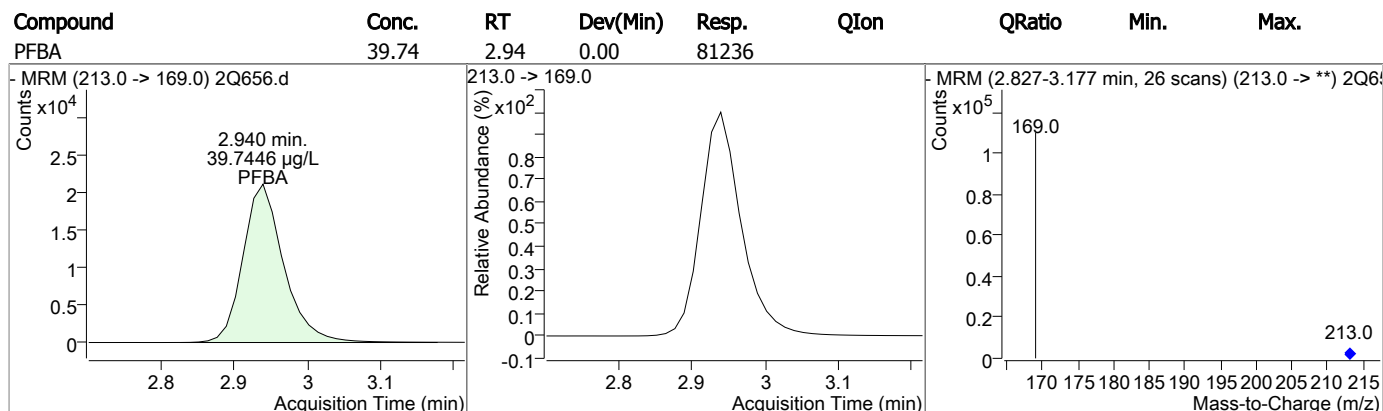
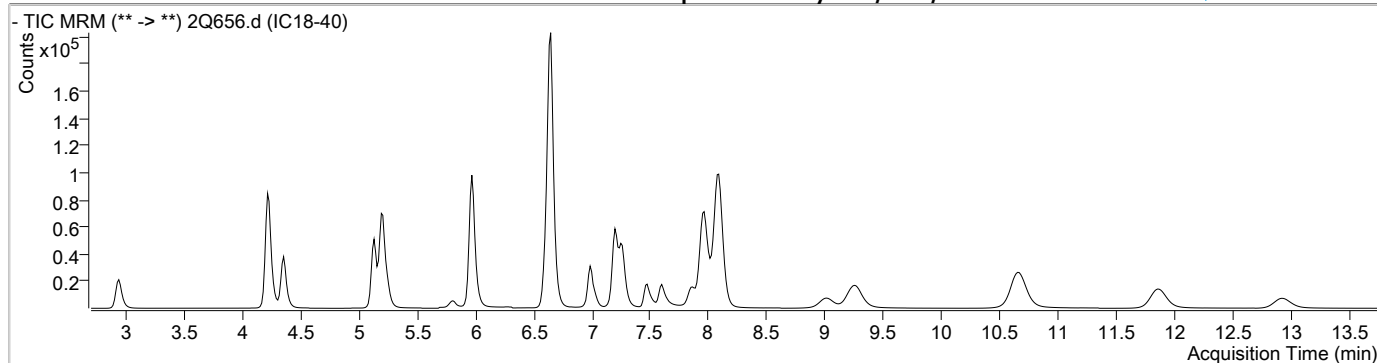
13C2-PFDA	7.969	515.0 -> 470.0	216770	39.87 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 199.4%		
13C2-PFHxA	5.210	315.0 -> 270.0	164933	40.19 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 200.9%		
d5-EtFOSAA	7.597	589.0 -> 419.0	37670	37.86 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 189.3%		

Target Compounds

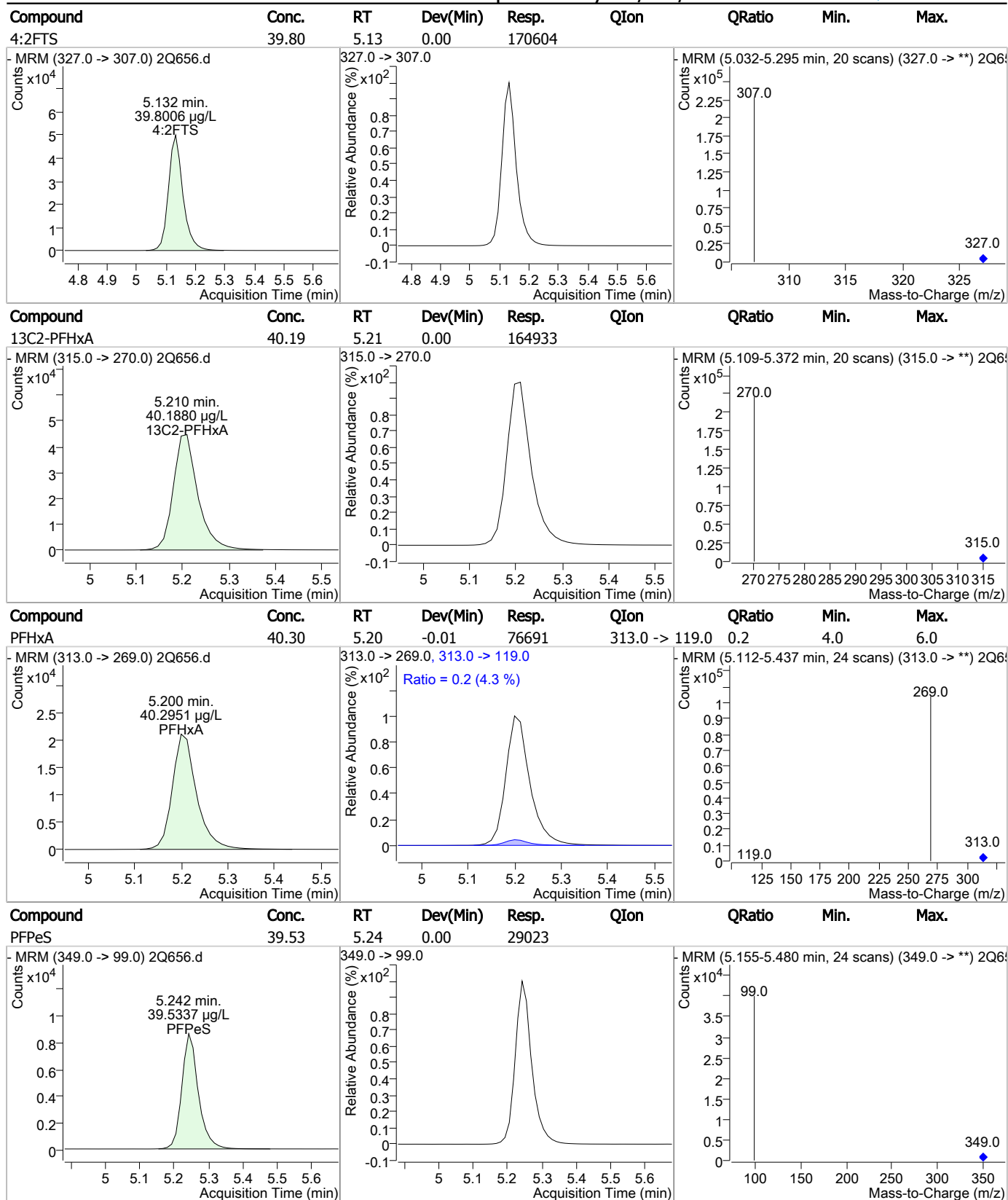
					QValue
4:2FTS	5.132	327.0 -> 307.0	170604	39.80 µg/L	100
6:2FTS	6.649	427.0 -> 407.0	326949	39.84 µg/L	100
8:2FTS	8.089	527.0 -> 507.0	539797	39.73 µg/L	100
EtFOSAA	7.598	584.0 -> 419.0	33444	37.40 µg/L	100
FOSA	6.986	498.0 -> 78.0	76229	37.98 µg/L	100
MeFOSAA	7.475	570.0 -> 419.0	42603	37.69 µg/L	100
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

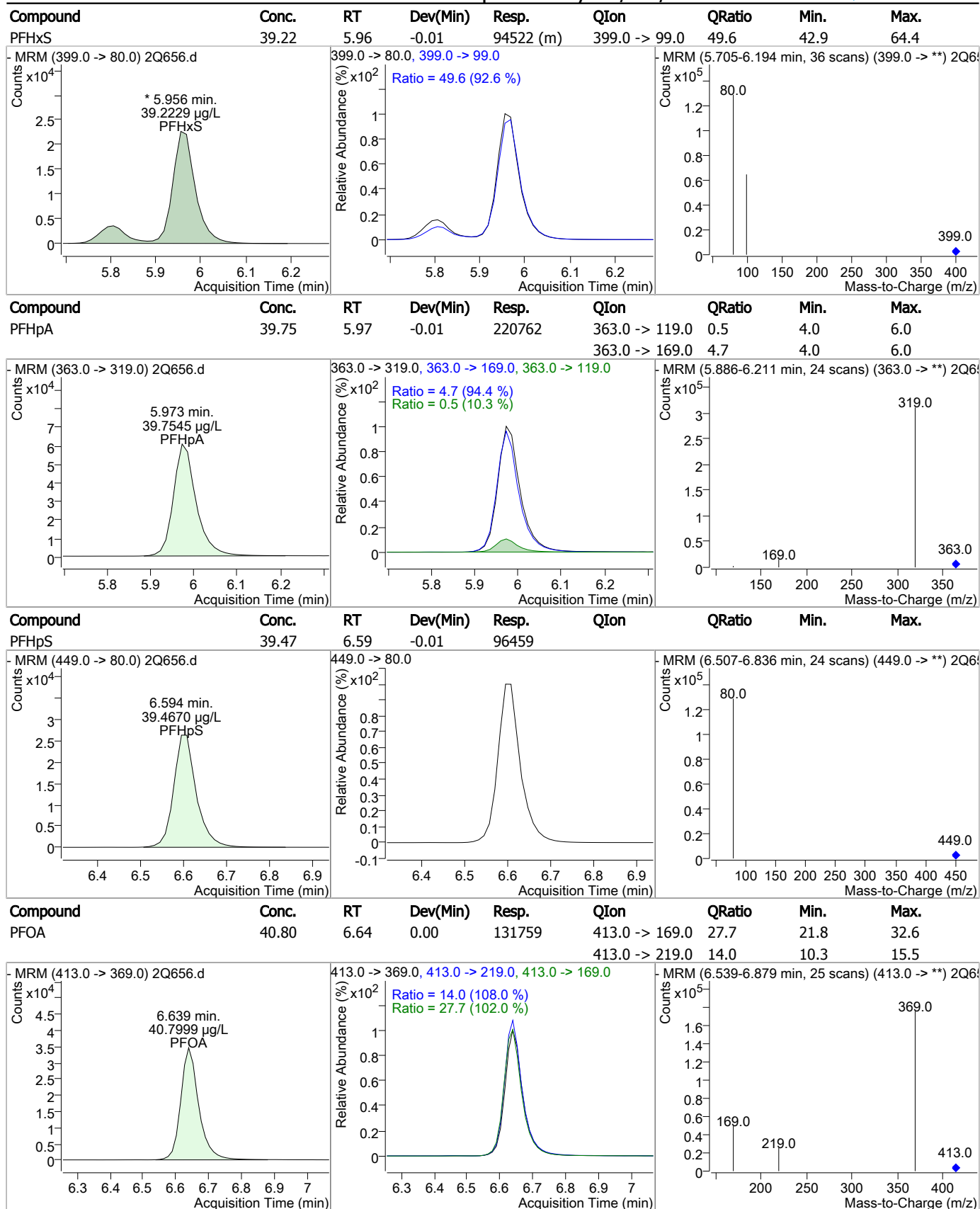
Perfluorinated Compounds by LC/MS/MS



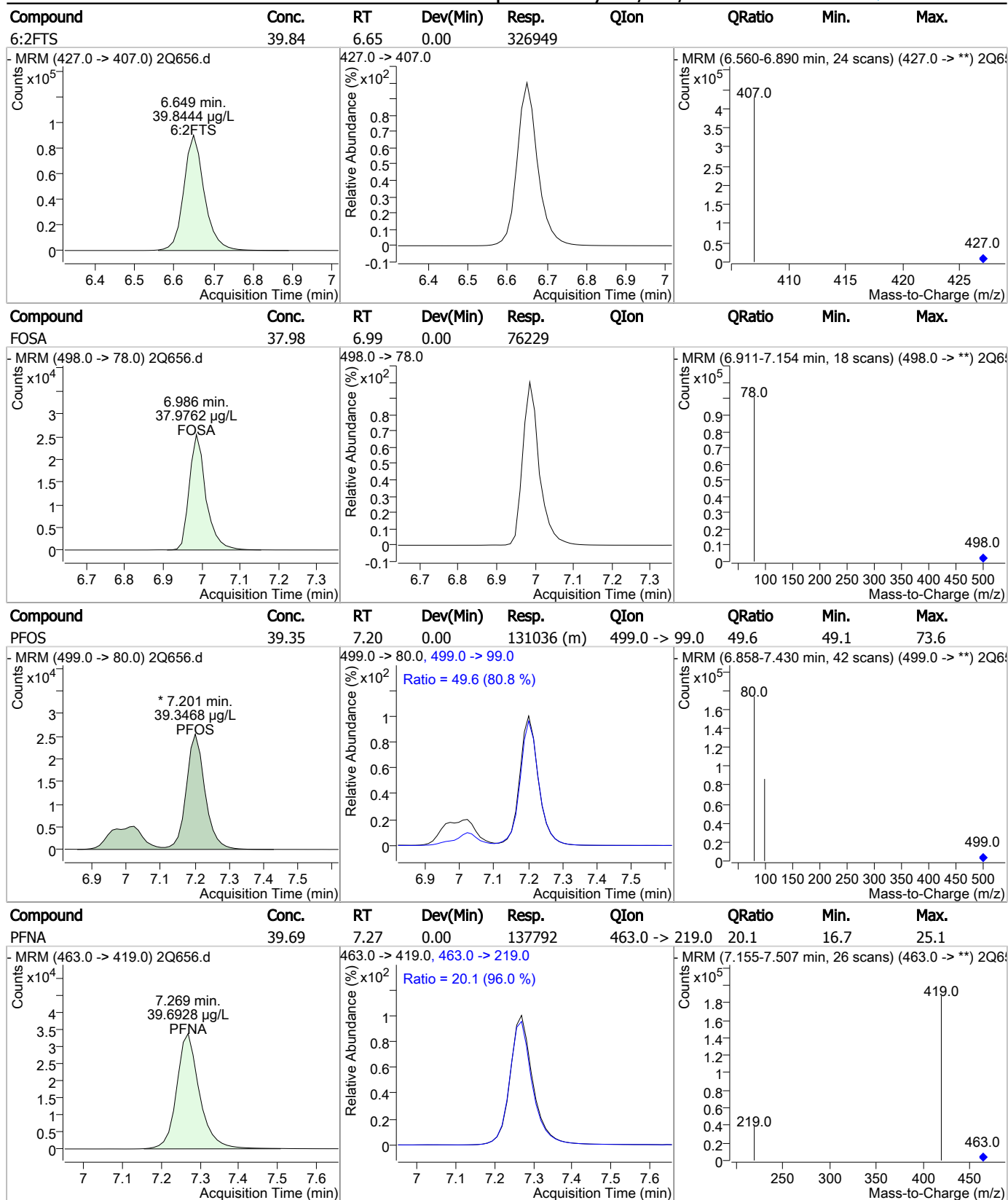
Perfluorinated Compounds by LC/MS/MS



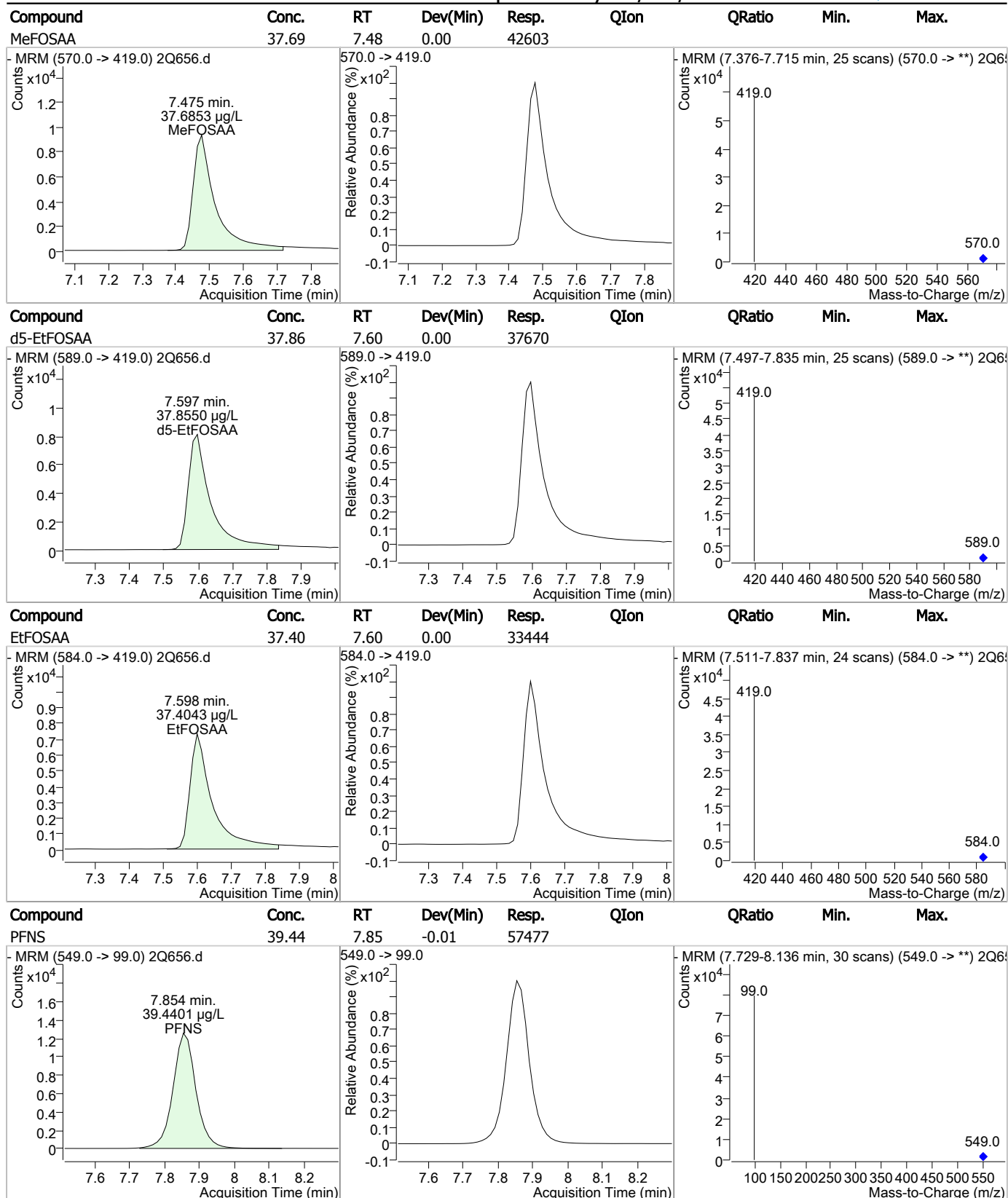
Perfluorinated Compounds by LC/MS/MS



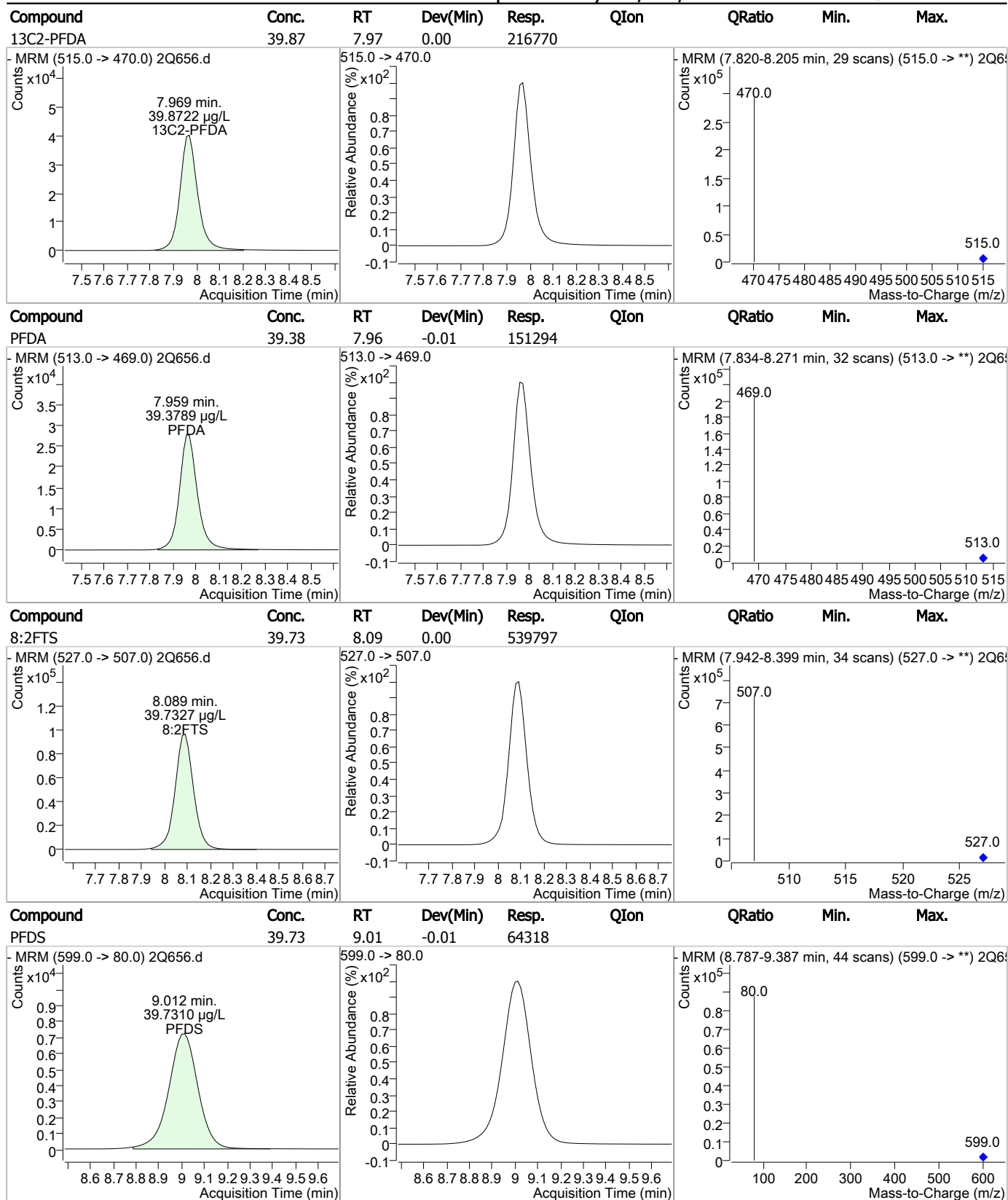
Perfluorinated Compounds by LC/MS/MS



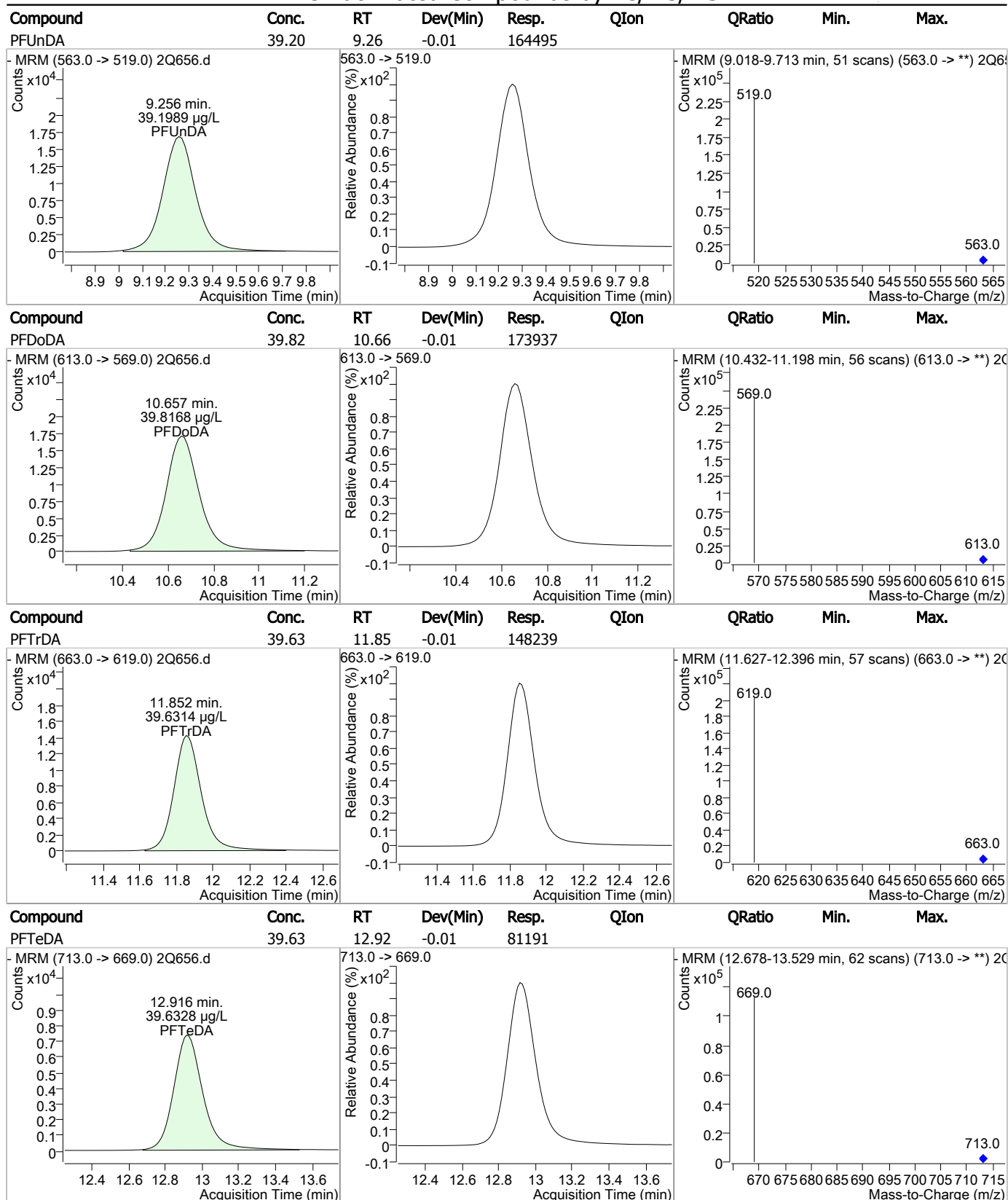
Perfluorinated Compounds by LC/MS/MS



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

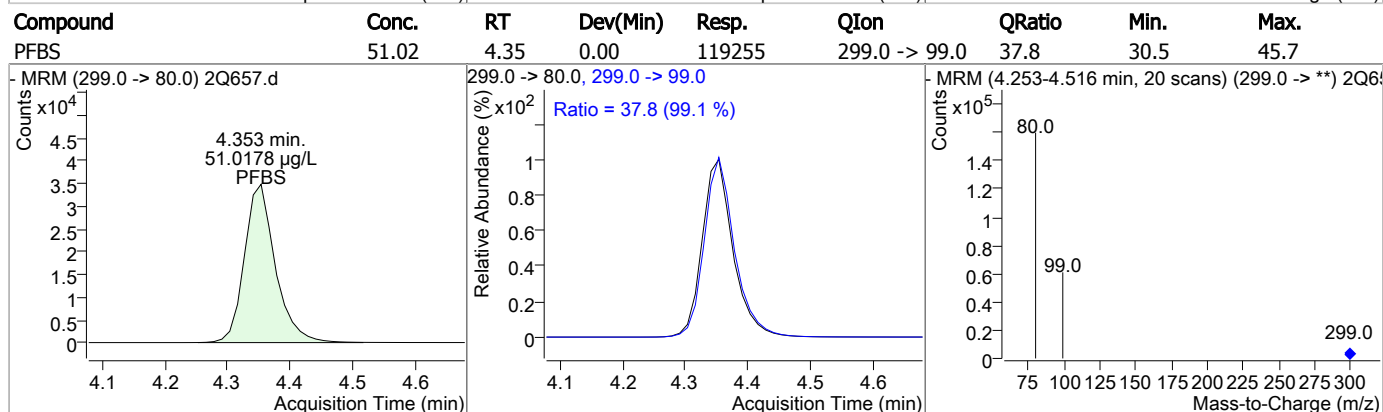
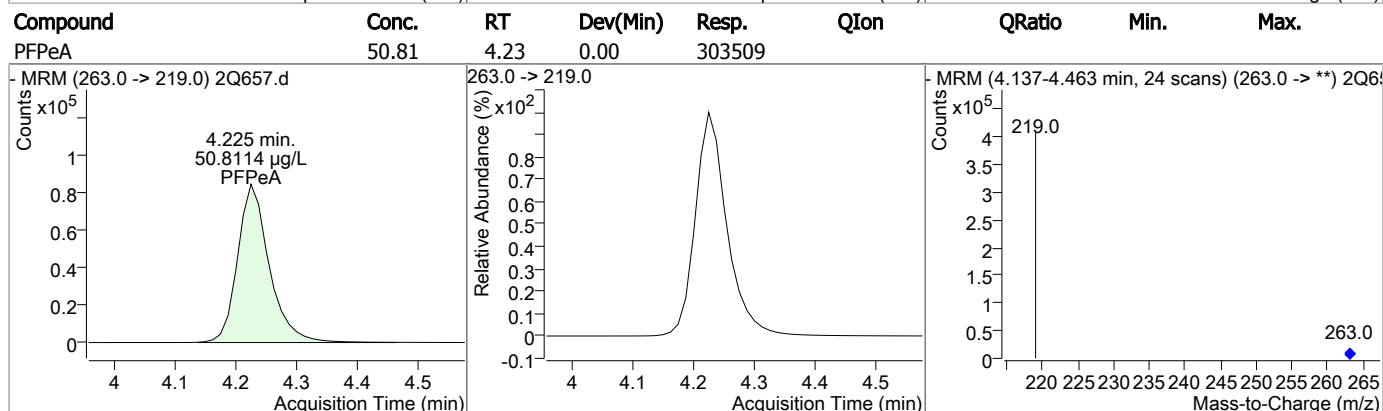
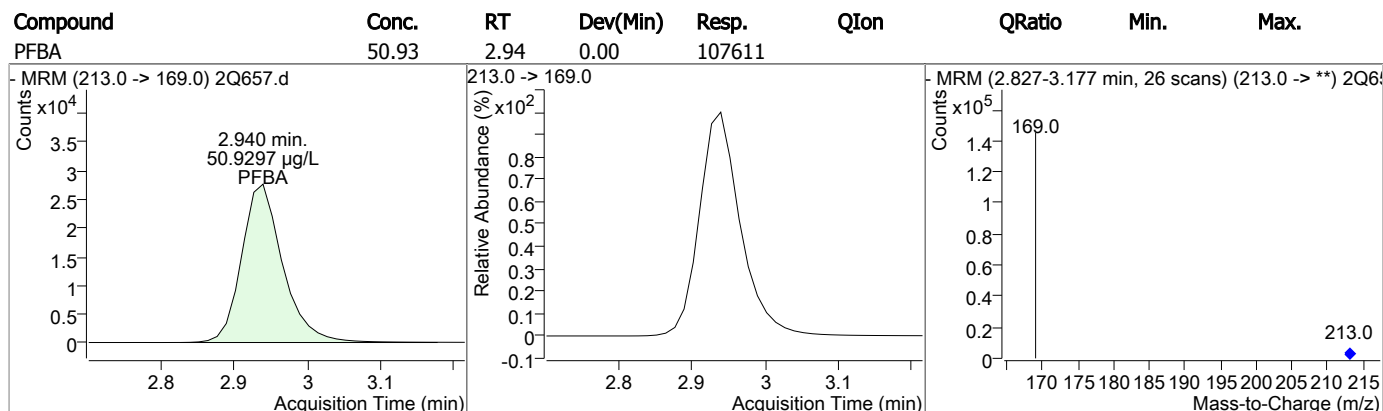
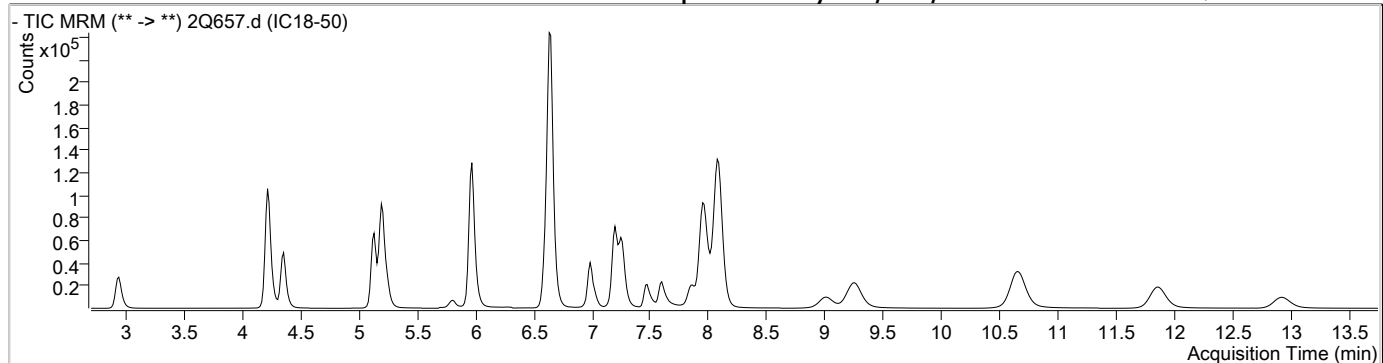
Perfluorinated Compounds by LC/MS/MS

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

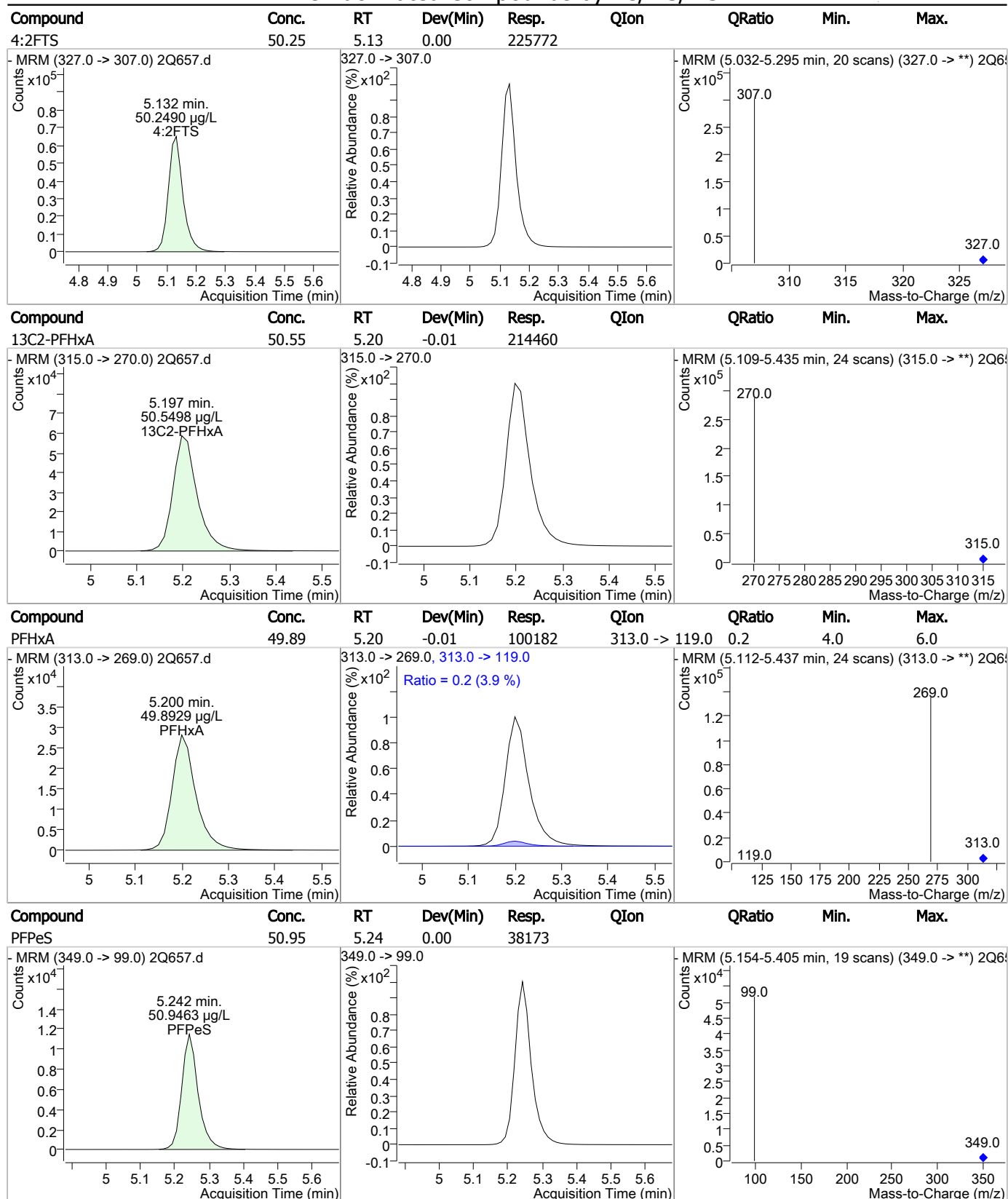
Compound	RT	Qion	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.648	429.0 -> 409.0	177873	20.00 µg/L	0.000
13C2-PFDoDA	10.651	615.0 -> 570.0	97502	20.00 µg/L	-0.013
13C2-PFOA	6.637	415.0 -> 370.0	80320	20.00 µg/L	0.000
13C3-PFPeA	4.222	266.0 -> 222.0	78721	20.00 µg/L	-0.013
13C4-PFOS	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

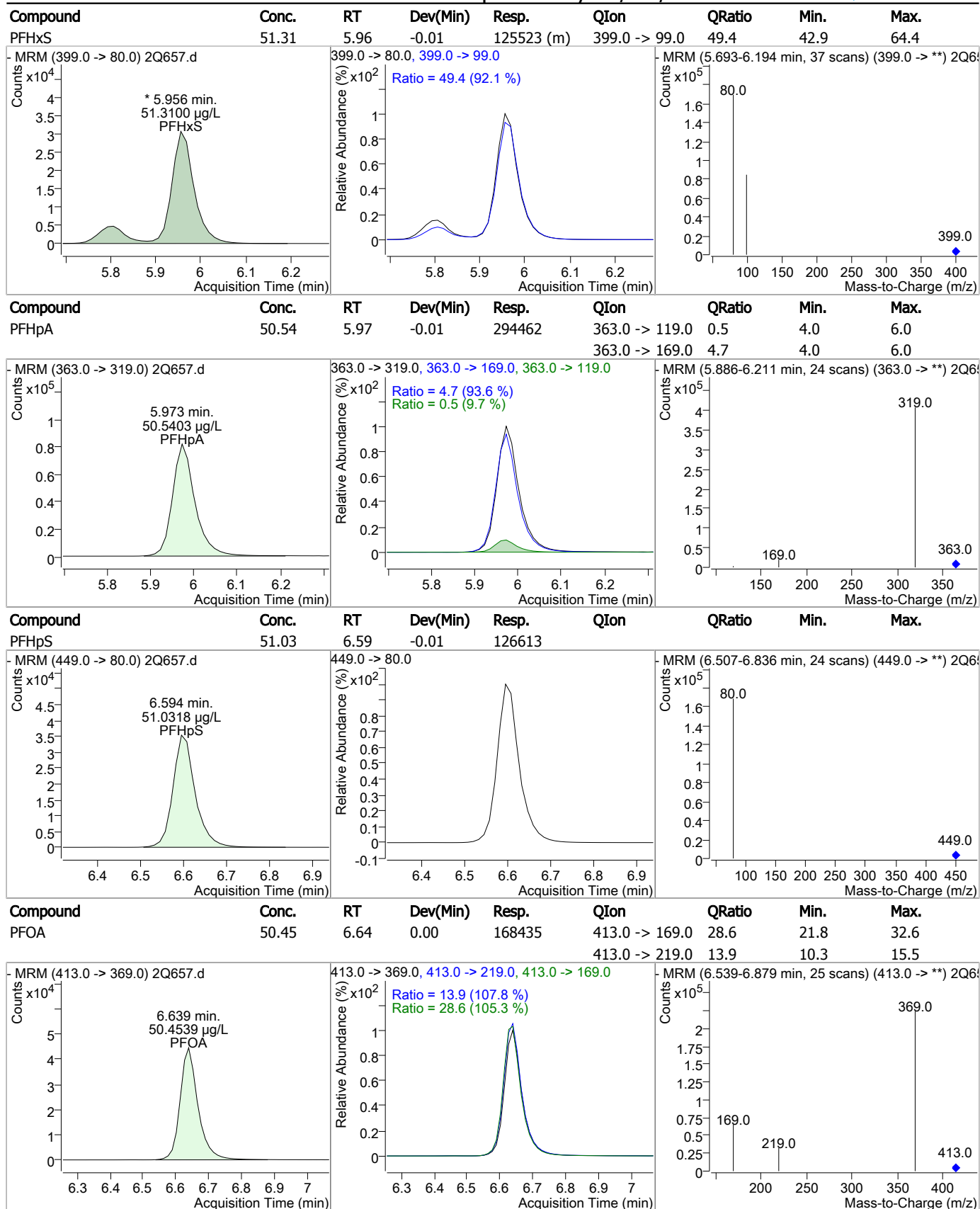
Perfluorinated Compounds by LC/MS/MS



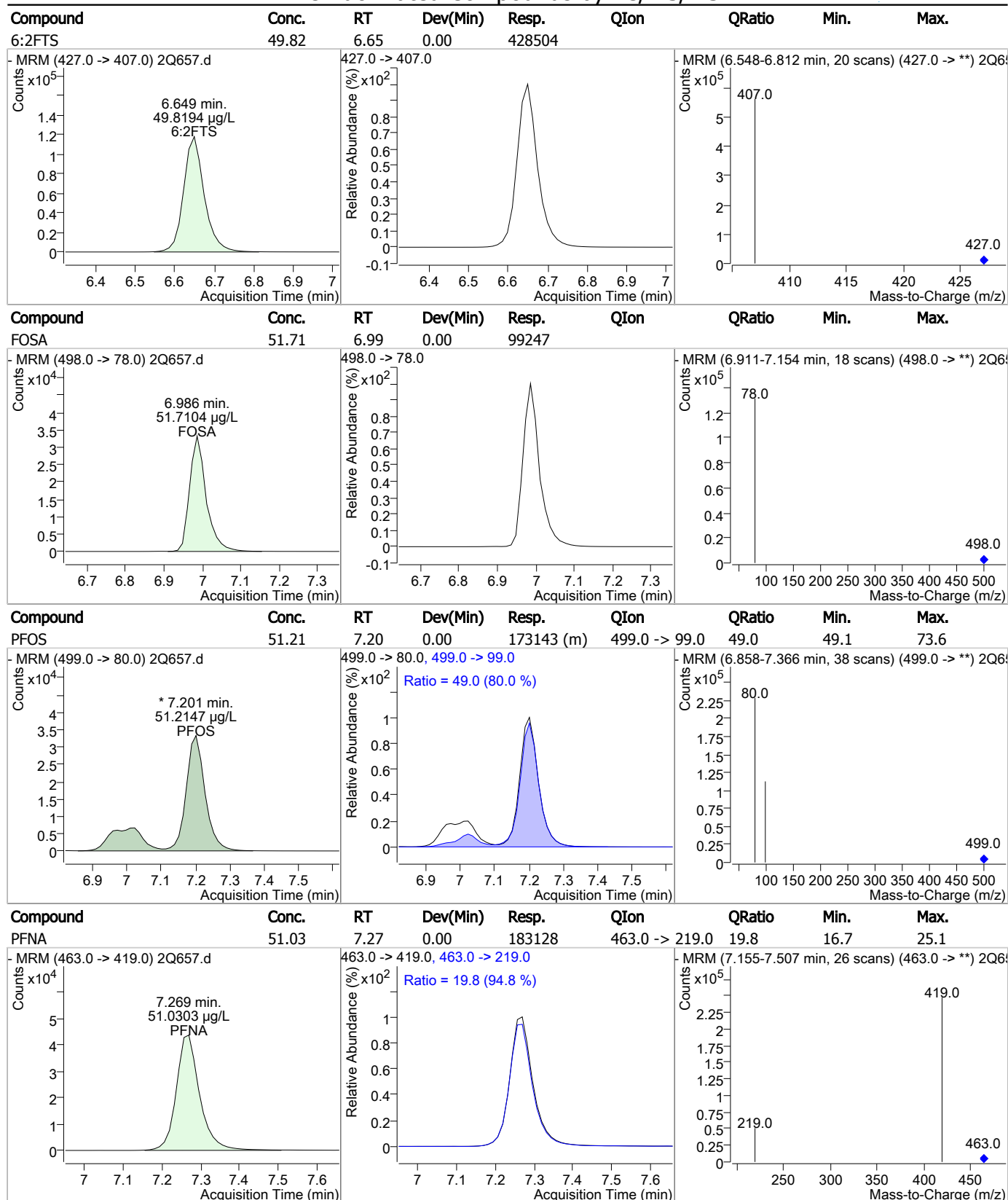
Perfluorinated Compounds by LC/MS/MS



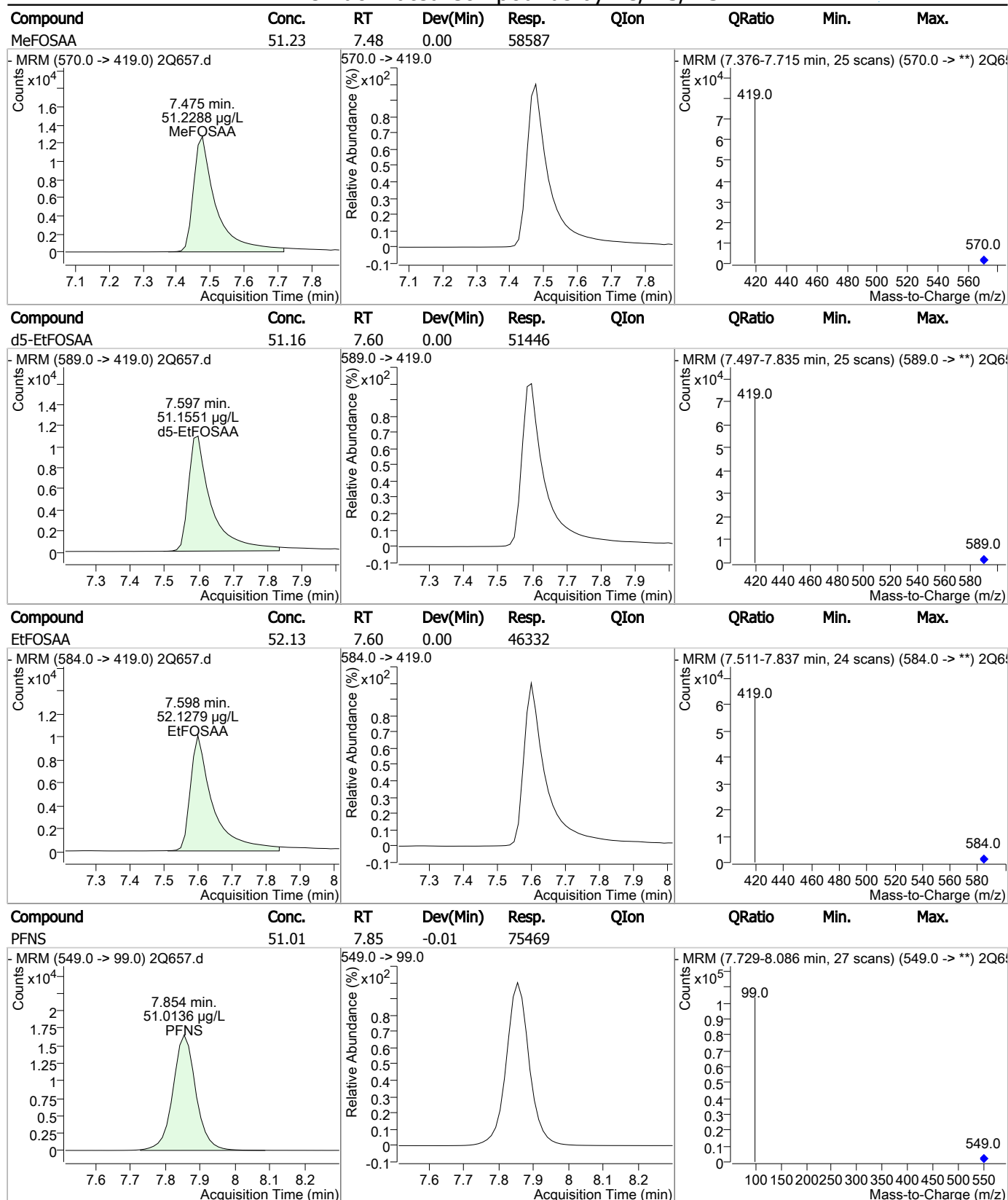
Perfluorinated Compounds by LC/MS/MS



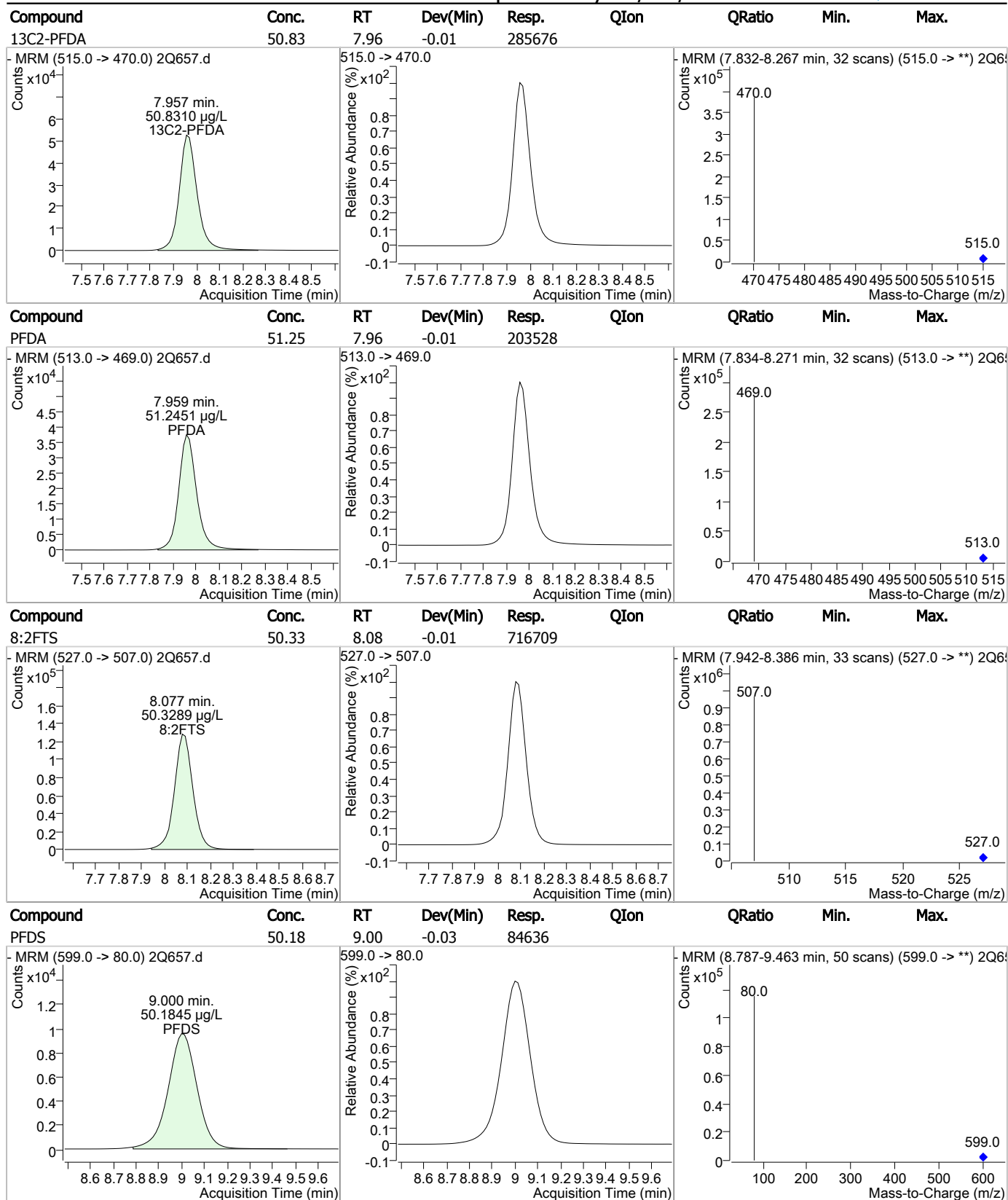
Perfluorinated Compounds by LC/MS/MS



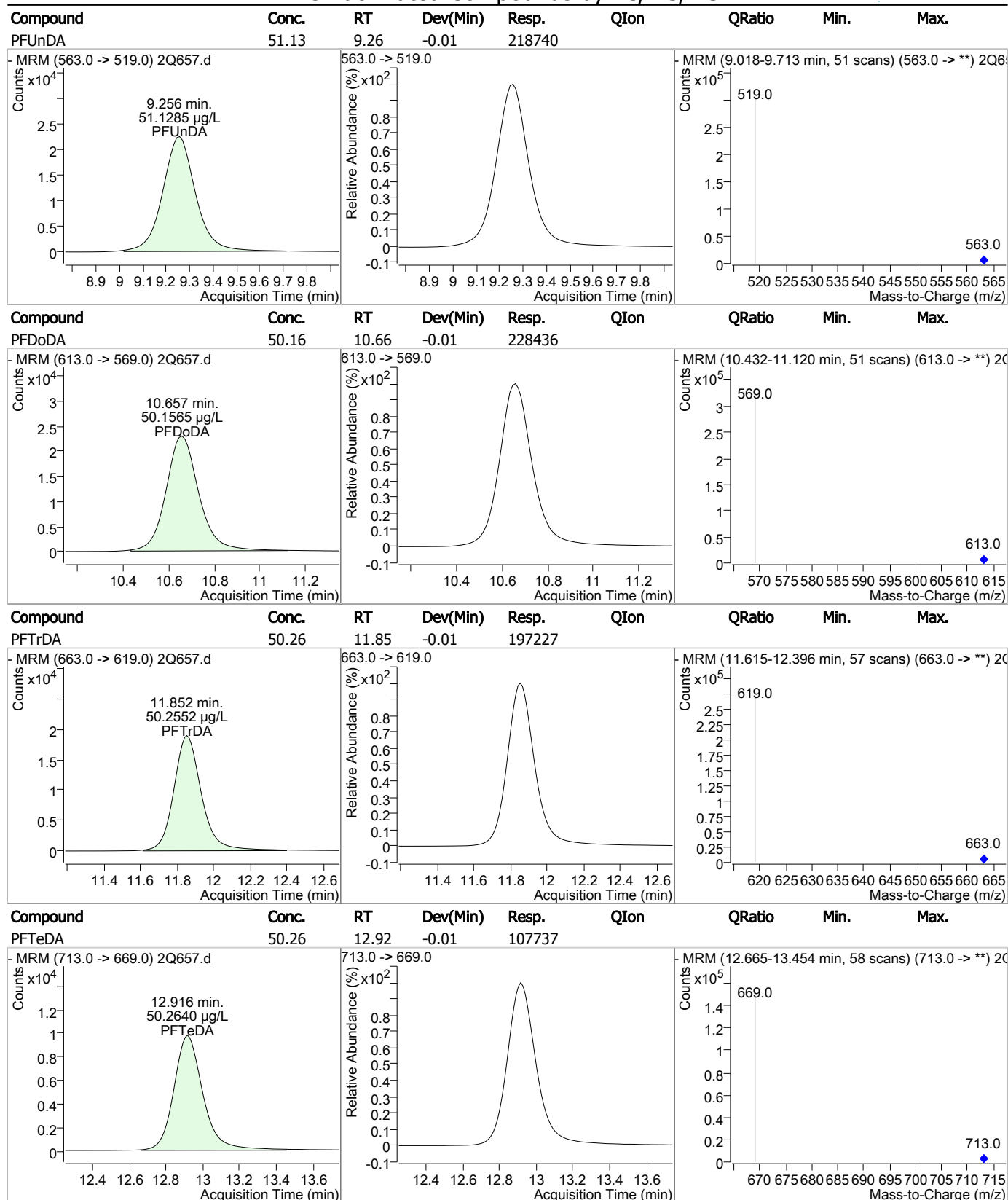
Perfluorinated Compounds by LC/MS/MS



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

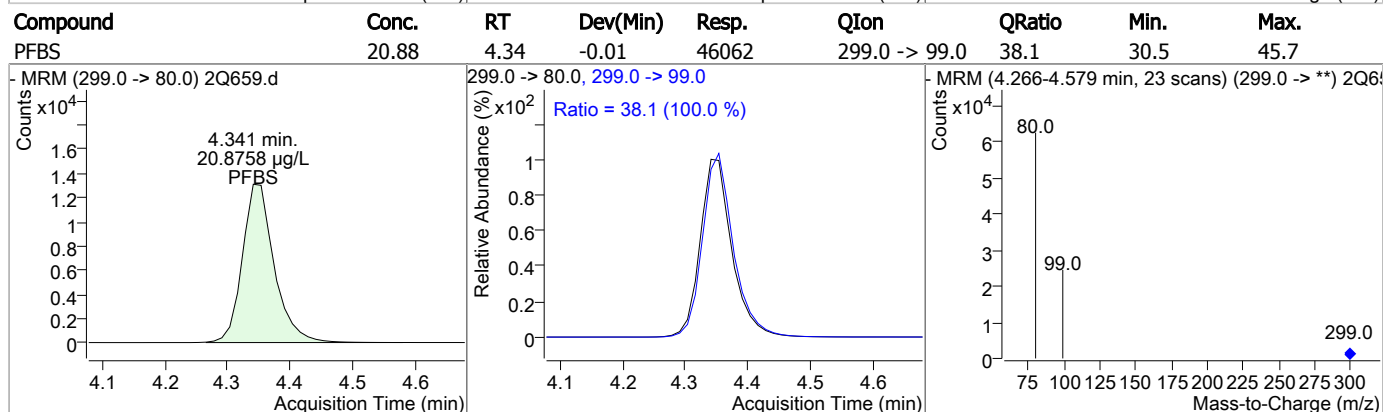
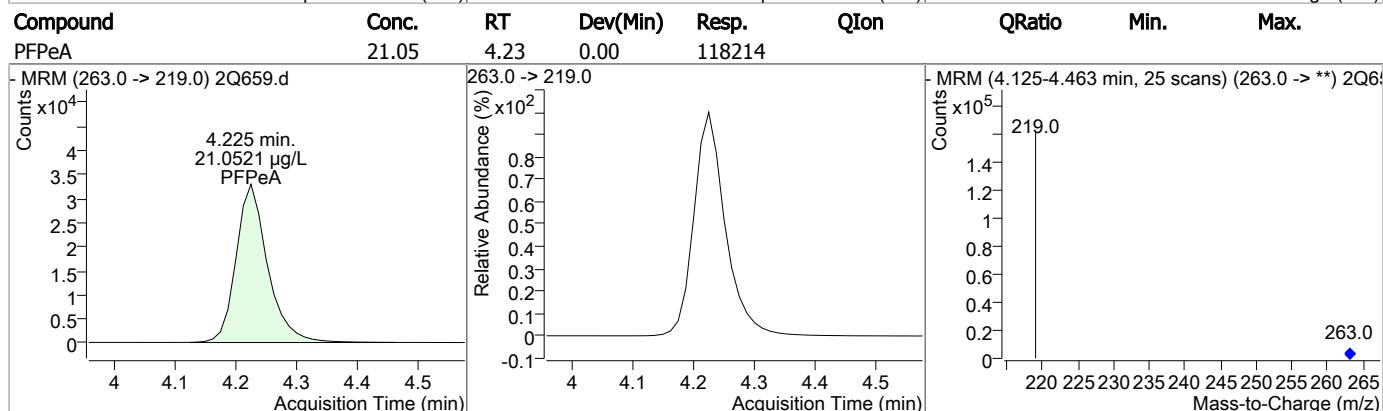
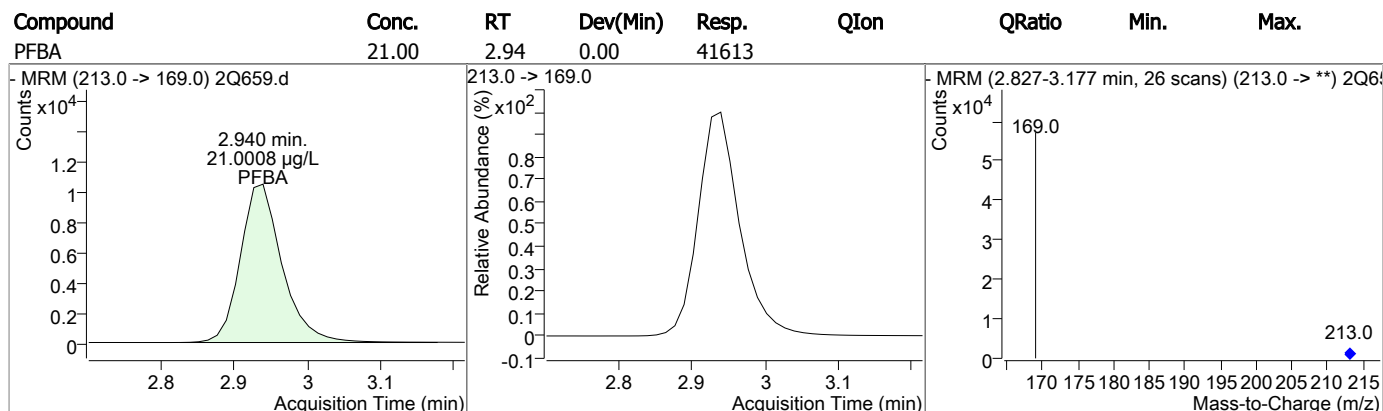
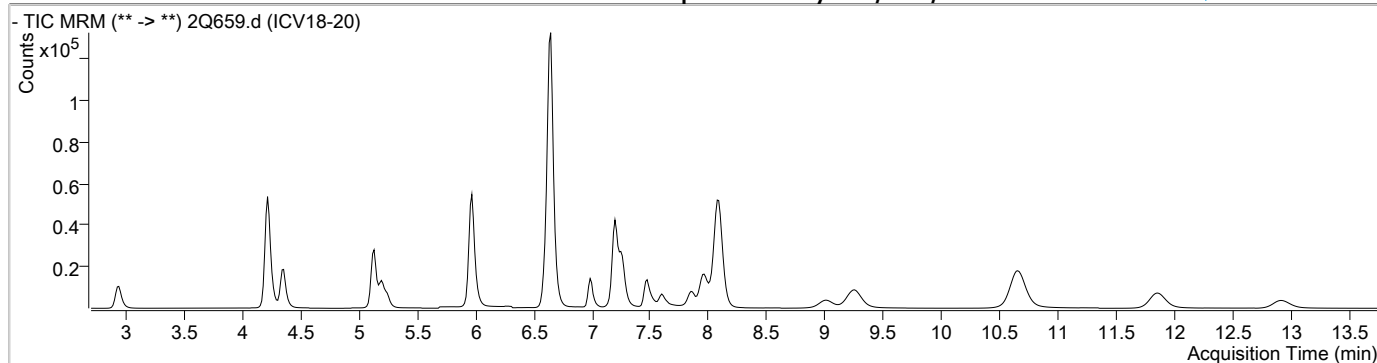
13C2-PFDA	7.969	515.0 -> 470.0	0	0.00 µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%			
13C2-PFHxA	-	315.0 -> 270.0	-	N.D.		
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = NA%			
d5-EtFOSAA	7.597	589.0 -> 419.0	0	0.00 µg/L	m	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%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

Target Compounds

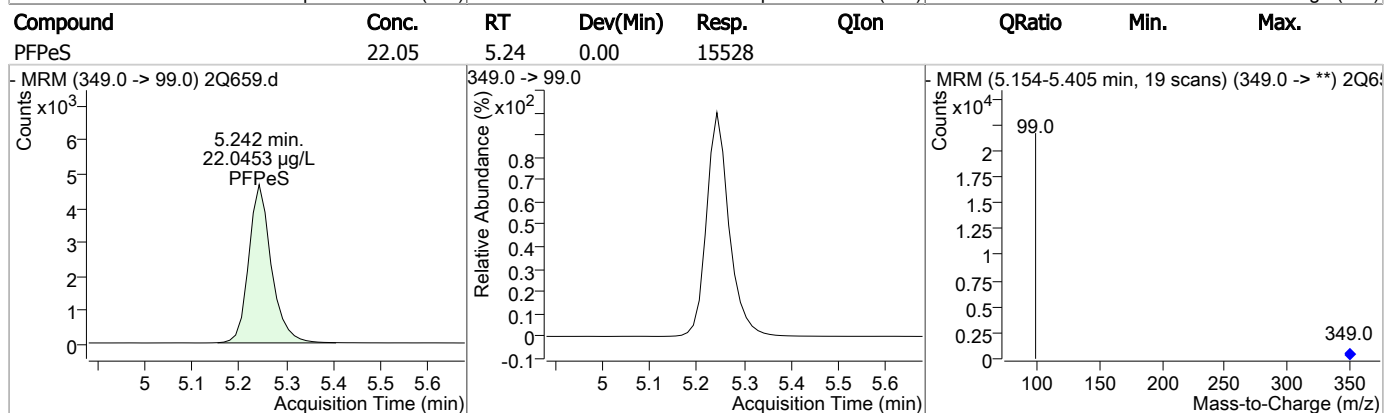
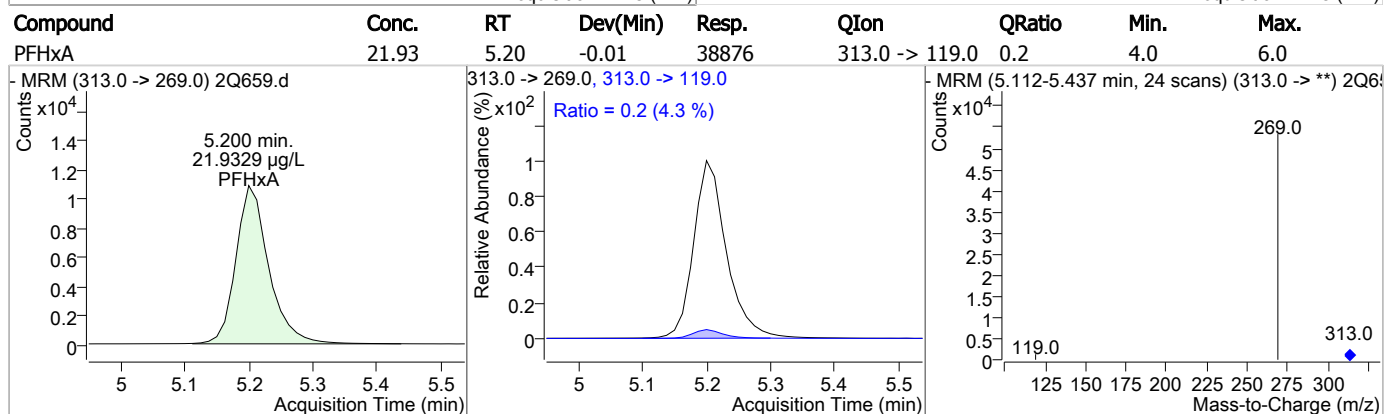
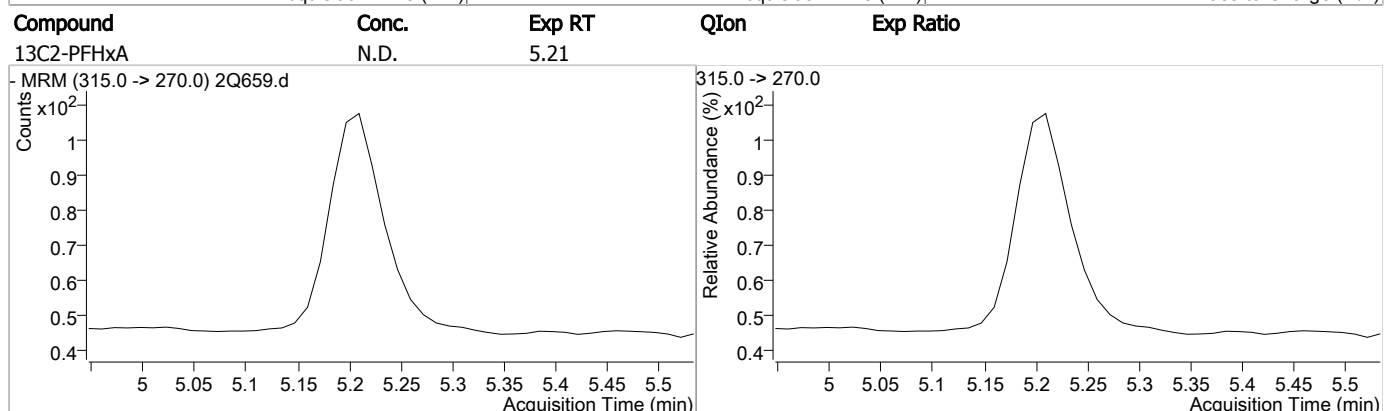
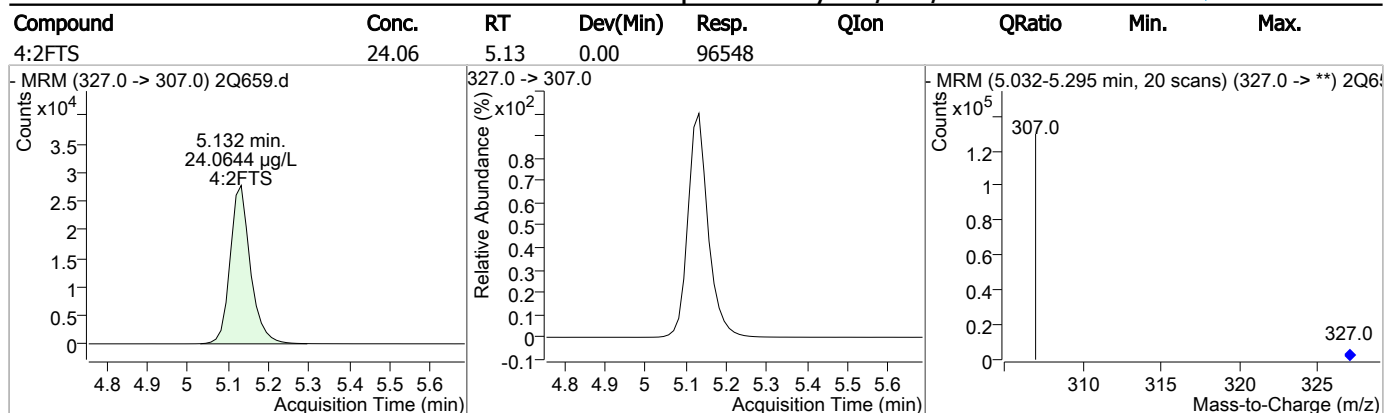
						QValue
4:2FTS	5.132	327.0 -> 307.0	96548	24.06 µg/L		100
6:2FTS	6.649	427.0 -> 407.0	172861	22.51 µg/L		100
8:2FTS	8.077	527.0 -> 507.0	286680	22.54 µg/L		100
EtFOSAA	7.598	584.0 -> 419.0	18871	23.57 µg/L		100
FOSA	6.986	498.0 -> 78.0	40260	21.57 µg/L		100
MeFOSAA	7.475	570.0 -> 419.0	24006	24.23 µg/L		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

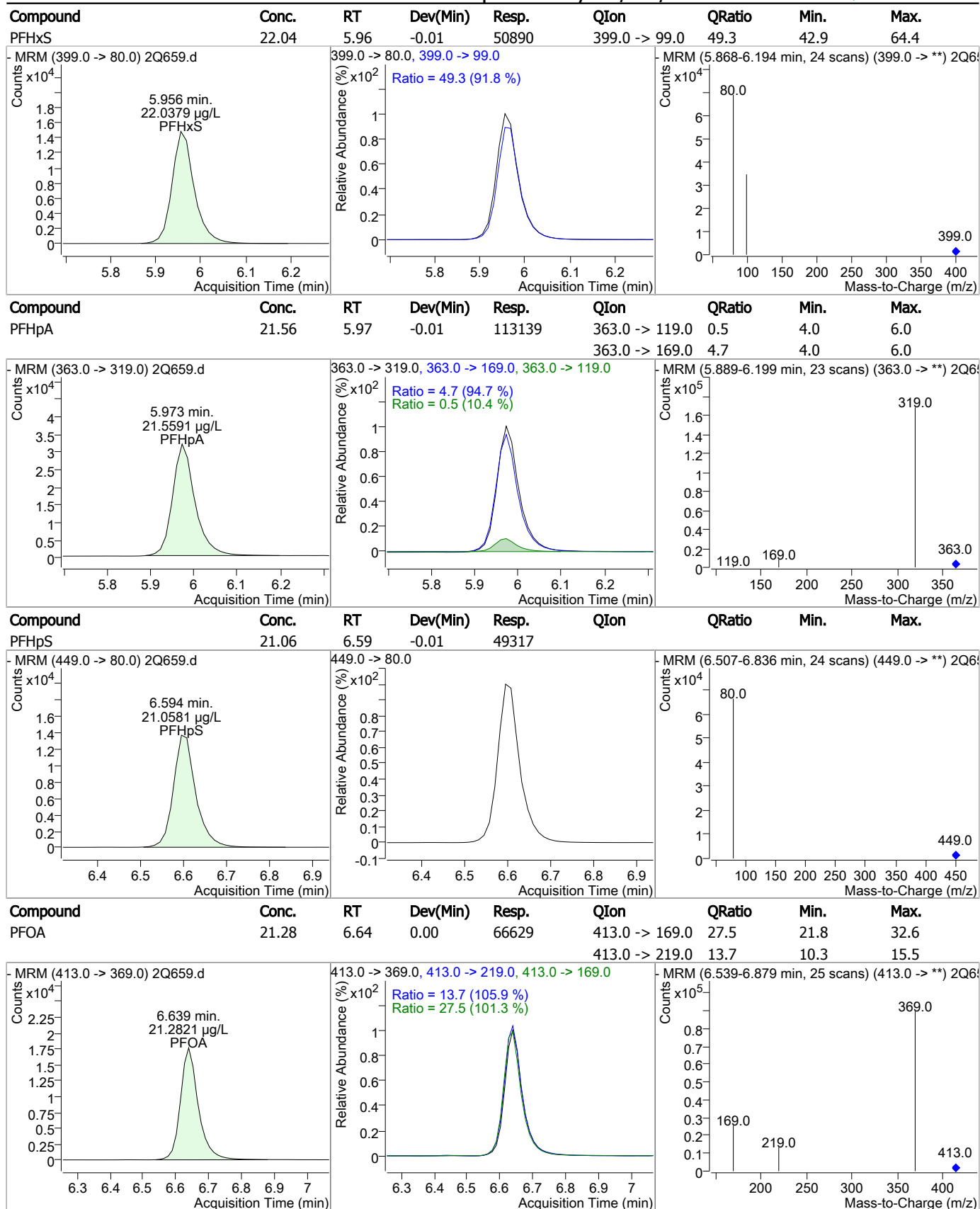
Perfluorinated Compounds by LC/MS/MS



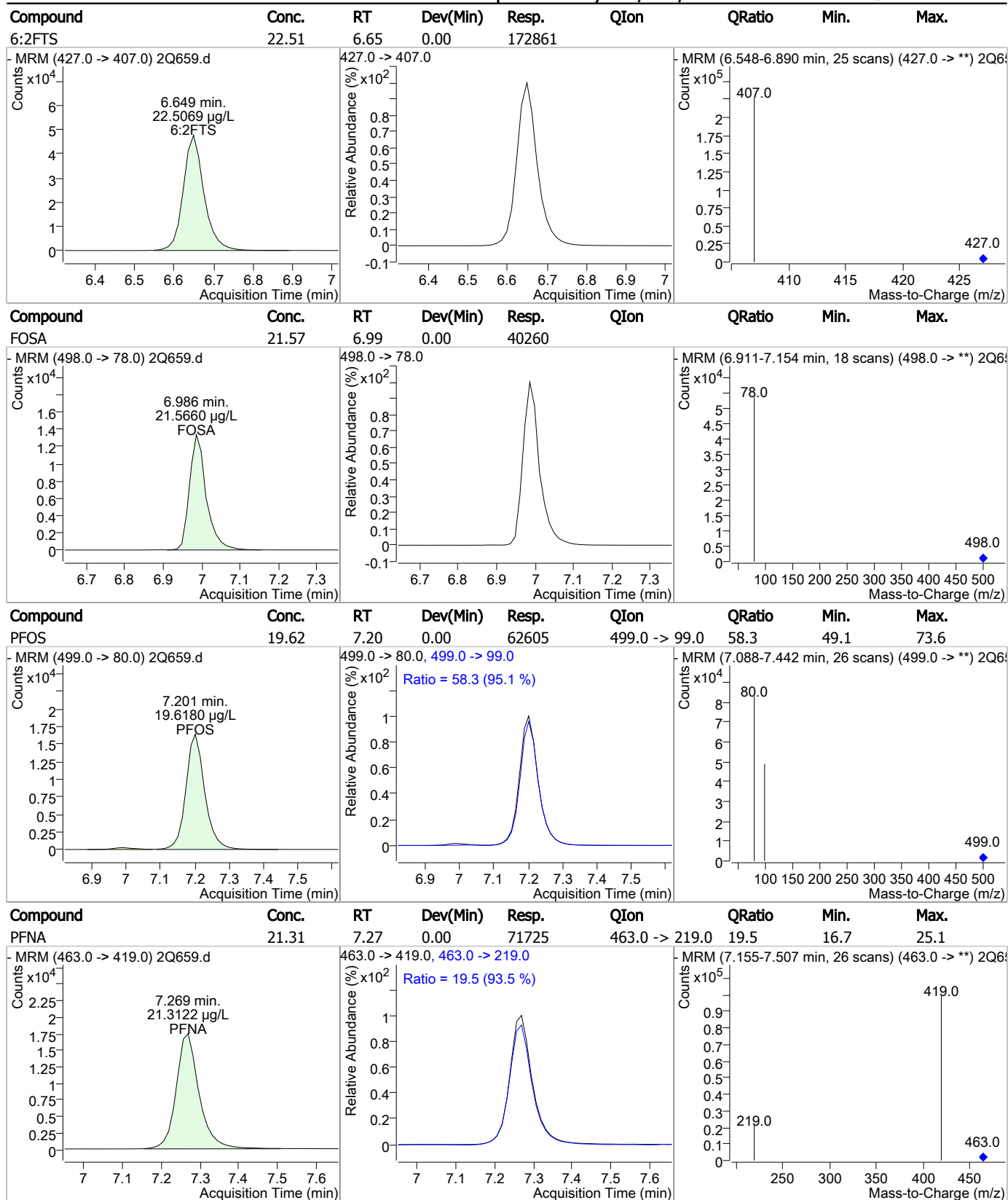
Perfluorinated Compounds by LC/MS/MS



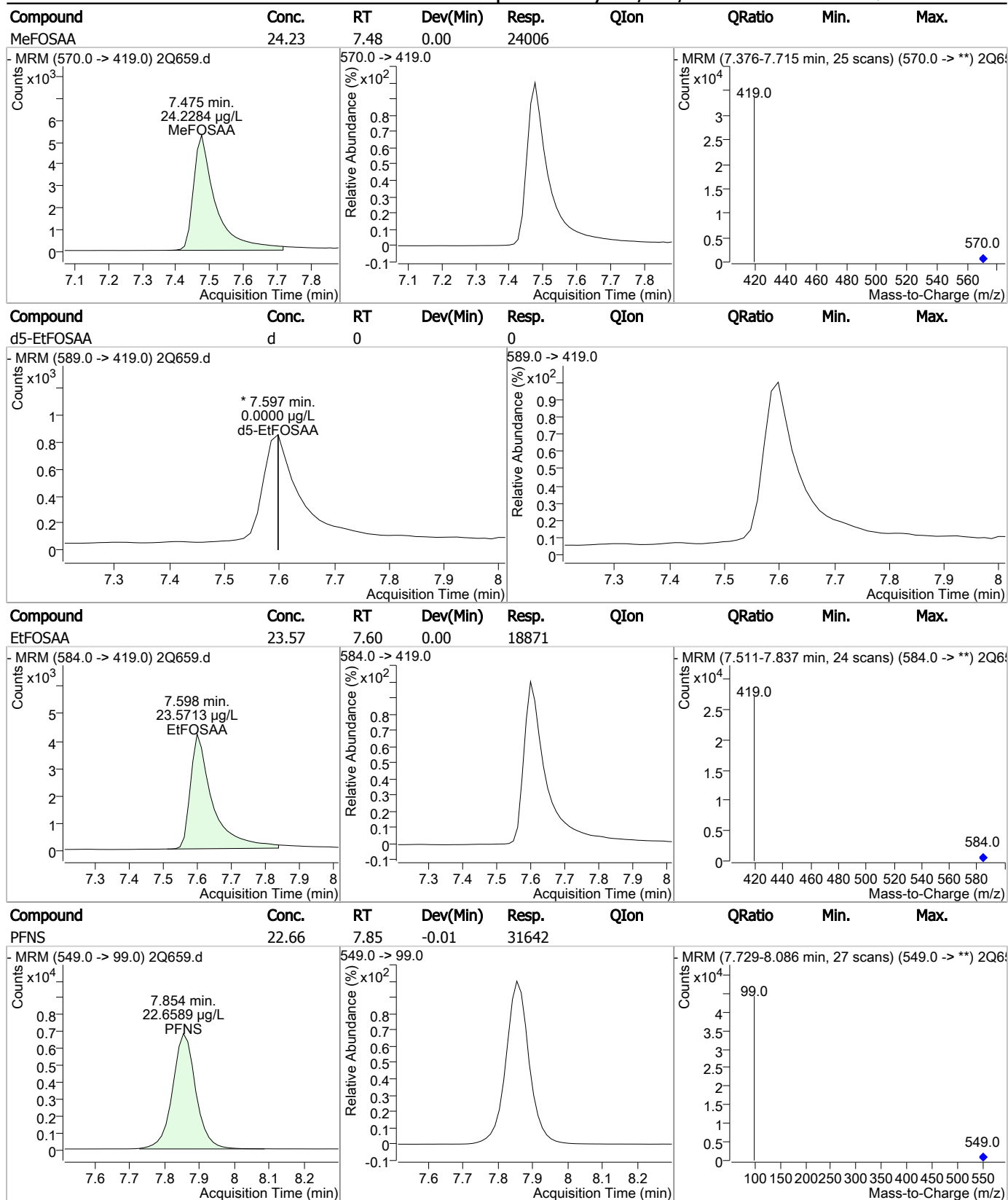
Perfluorinated Compounds by LC/MS/MS



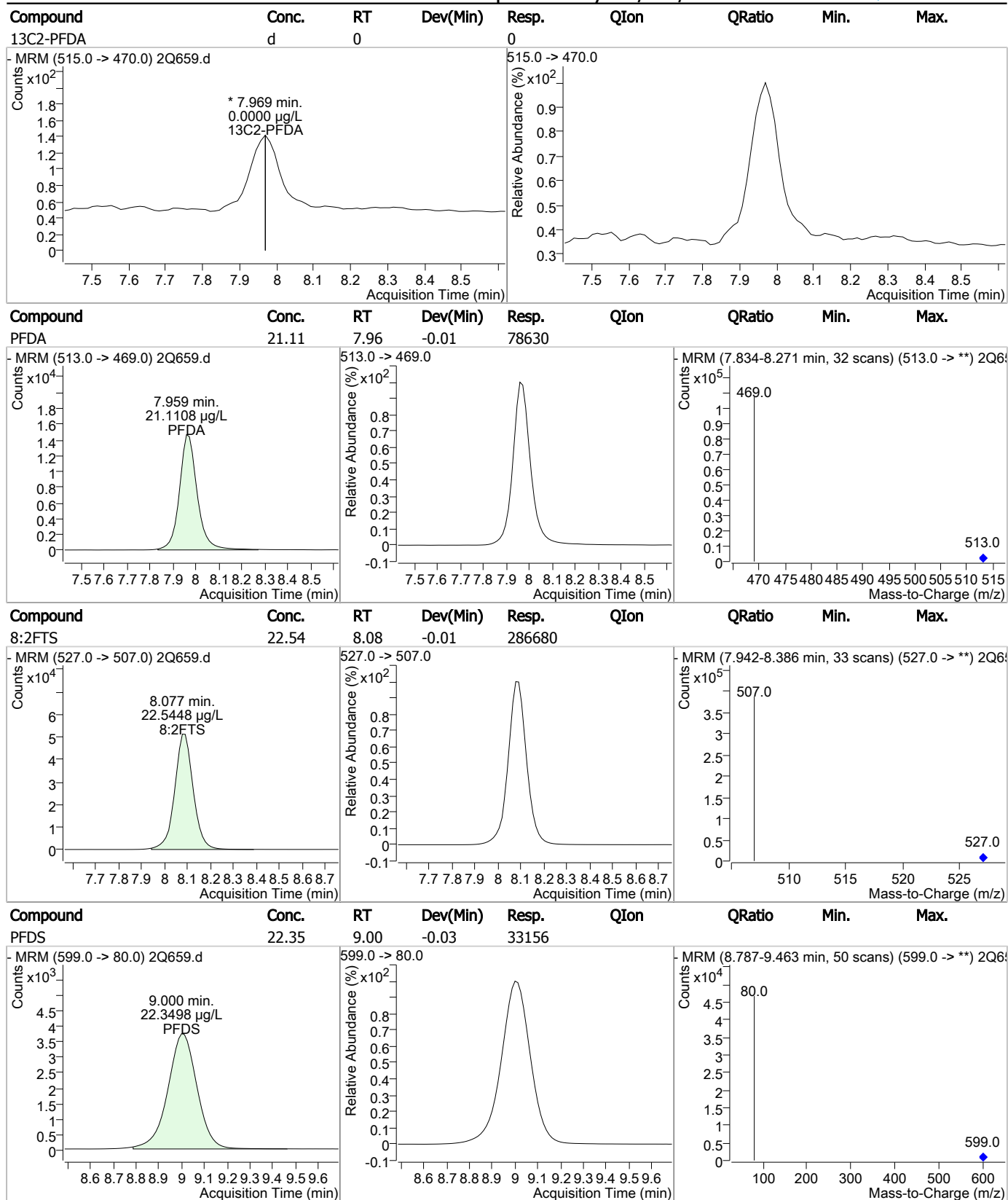
Perfluorinated Compounds by LC/MS/MS



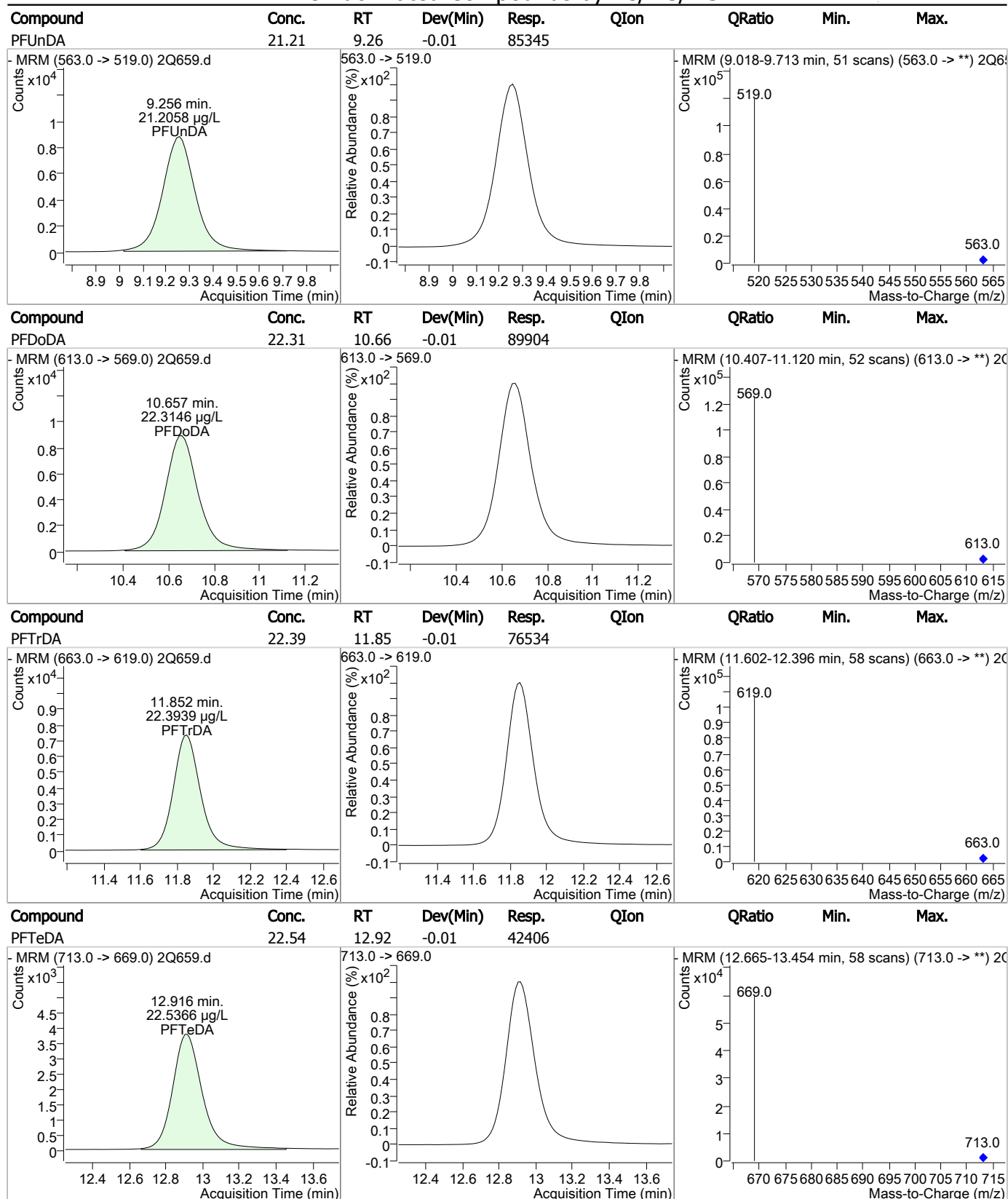
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



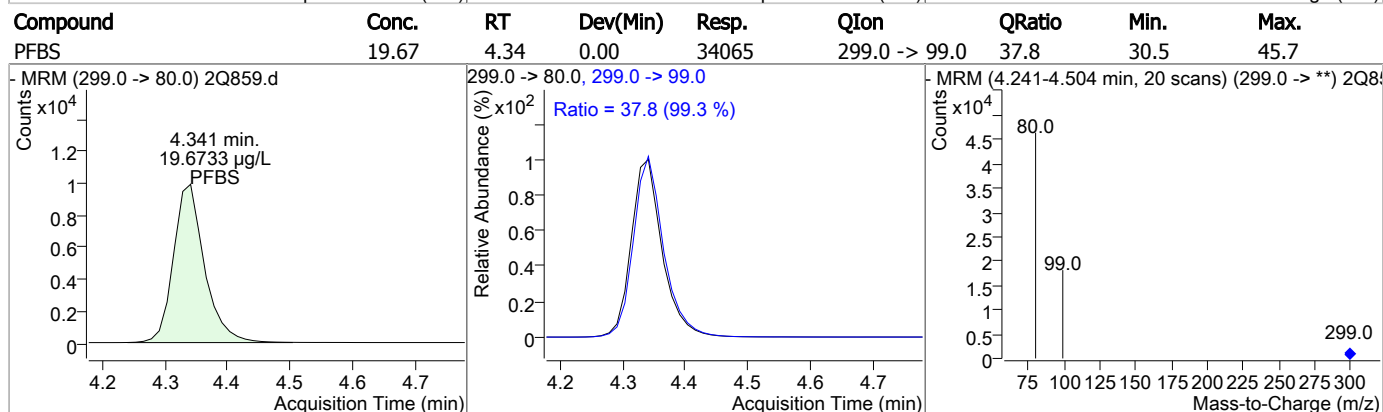
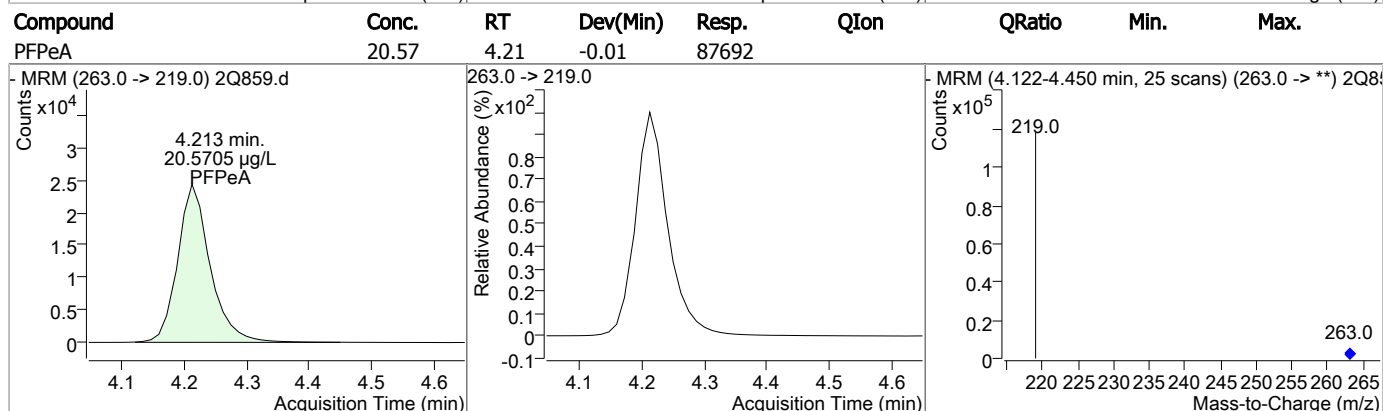
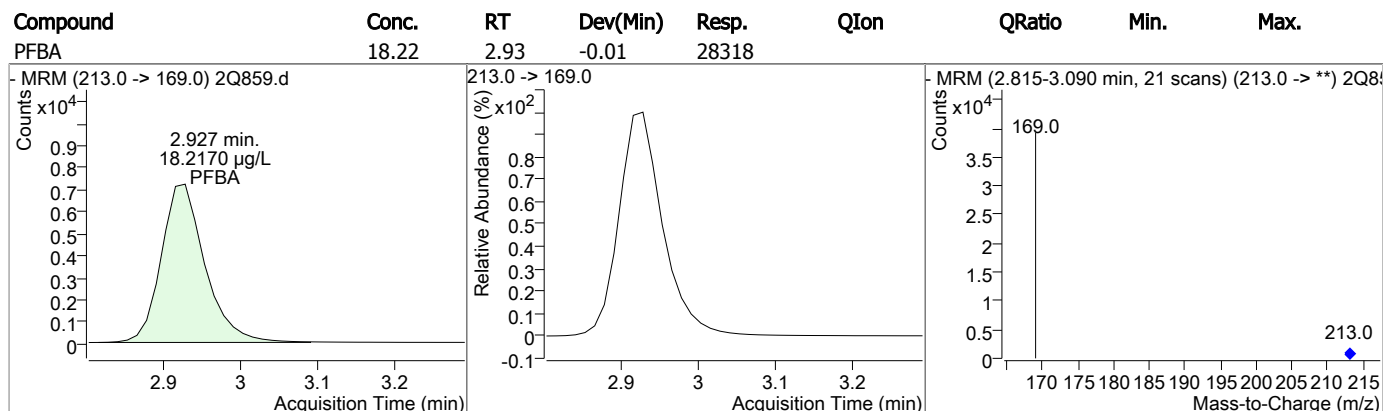
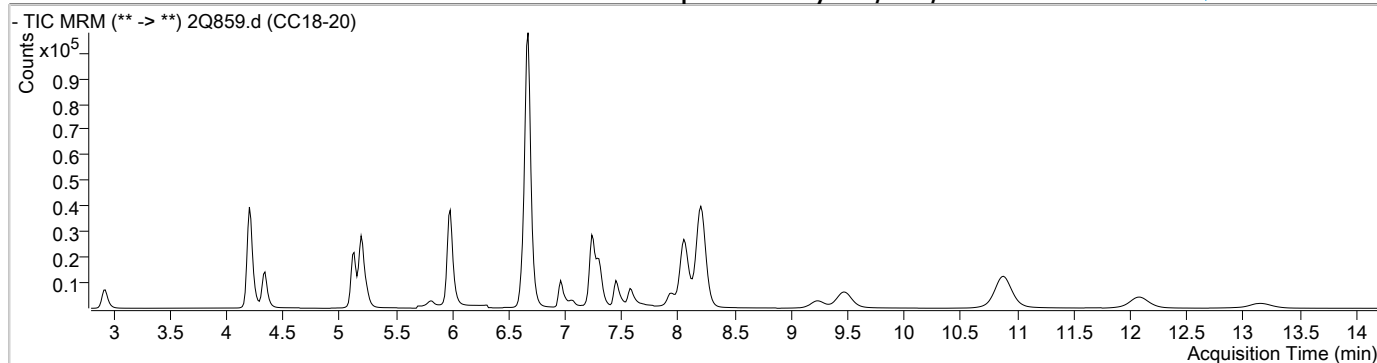
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q859.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 2:24:17 PM
 Sample Name : CC18-20
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

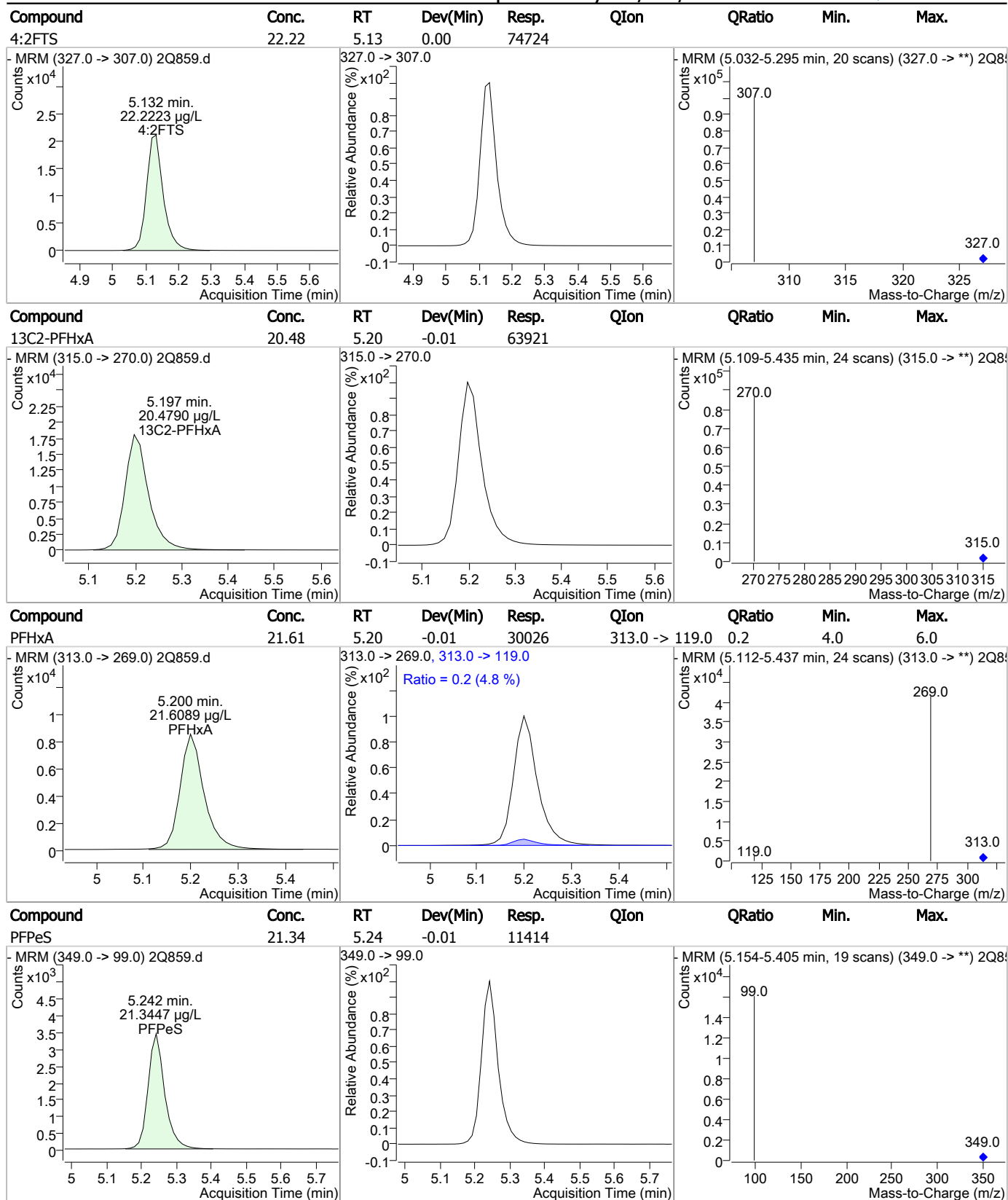
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.671	429.0 -> 409.0	133118	20.00 µg/L	0.000
13C2-PFDoDA	10.876	615.0 -> 570.0	71752	20.00 µg/L	0.088
13C2-PFOA	6.662	415.0 -> 370.0	59092	20.00 µg/L	0.000
13C3-PFPeA	4.209	266.0 -> 222.0	56182	20.00 µg/L	-0.013
13C4-PFOS	7.239	503.0 -> 80.0	43394	20.00 µg/L	0.000
d3-MeFOSAA	7.450	573.0 -> 419.0	26014	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-PFDA	8.057	515.0 -> 470.0	87298	21.11 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 105.6%		
13C2-PFHxA	5.197	315.0 -> 270.0	63921	20.48 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 102.4%		
d5-EtFOSAA	7.572	589.0 -> 419.0	15276	23.48 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 117.4%		
Target Compounds					QValue
4:2FTS	5.132	327.0 -> 307.0	74724	22.22 µg/L	100
6:2FTS	6.673	427.0 -> 407.0	142697	22.17 µg/L	100
8:2FTS	8.202	527.0 -> 507.0	243037	22.80 µg/L	100
EtFOSAA	7.586	584.0 -> 419.0	12489	20.97 µg/L	100
FOSA	6.961	498.0 -> 78.0	28435	20.33 µg/L	100
MeFOSAA	7.451	570.0 -> 419.0	16347	22.22 µg/L	100
PFBA	2.927	213.0 -> 169.0	28318	18.22 µg/L	100
PFBS	4.341	299.0 -> 80.0	34065	19.67 µg/L	100
PFDA	8.059	513.0 -> 469.0	59739	20.44 µg/L	100
PFDoDA	10.883	613.0 -> 569.0	69426	22.04 µg/L	100
PFDS	9.225	599.0 -> 80.0	25718	22.10 µg/L	100
PFHpA	5.986	363.0 -> 319.0	84414	20.53 µg/L	# 93
PFHpS	6.620	449.0 -> 80.0	39396	21.44 µg/L	100
PFHxA	5.200	313.0 -> 269.0	30026	21.61 µg/L	# 86
PFHxS	5.968	399.0 -> 80.0	37381	20.63 µg/L	m 93
PFNA	7.306	463.0 -> 419.0	53971	20.44 µg/L	99
PFNS	7.940	549.0 -> 99.0	23264	21.23 µg/L	100
PFOA	6.664	413.0 -> 369.0	52831	21.51 µg/L	100
PFOS	7.240	499.0 -> 80.0	50914	20.33 µg/L	m 85
PFPeA	4.213	263.0 -> 219.0	87692	20.57 µg/L	100
PFPeS	5.242	349.0 -> 99.0	11414	21.34 µg/L	100
PFTeDA	13.153	713.0 -> 669.0	28509	19.52 µg/L	100
PFTTrDA	12.077	663.0 -> 619.0	57580	21.59 µg/L	100
PFUnDA	9.469	563.0 -> 519.0	64462	20.47 µg/L	100

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

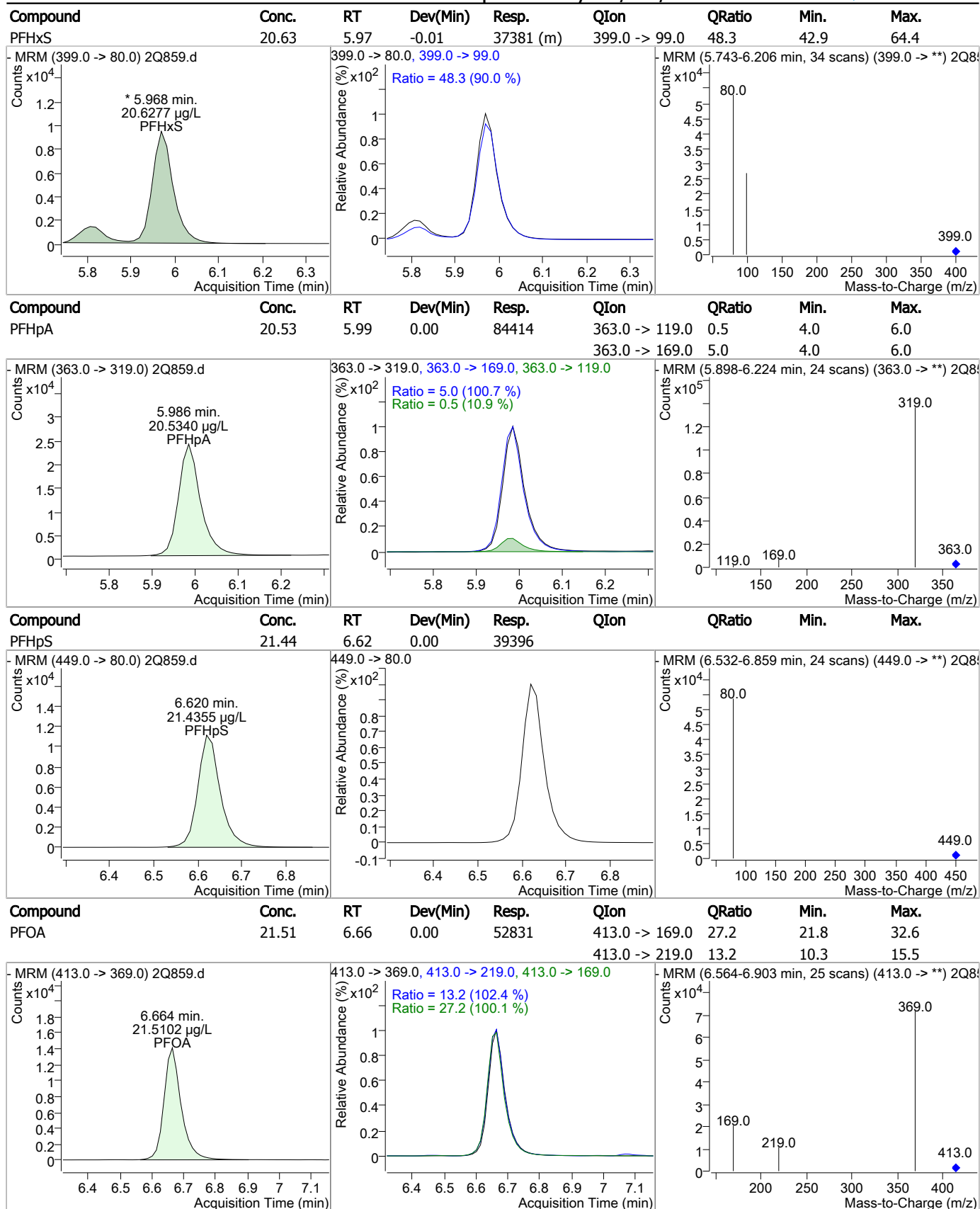
Perfluorinated Compounds by LC/MS/MS



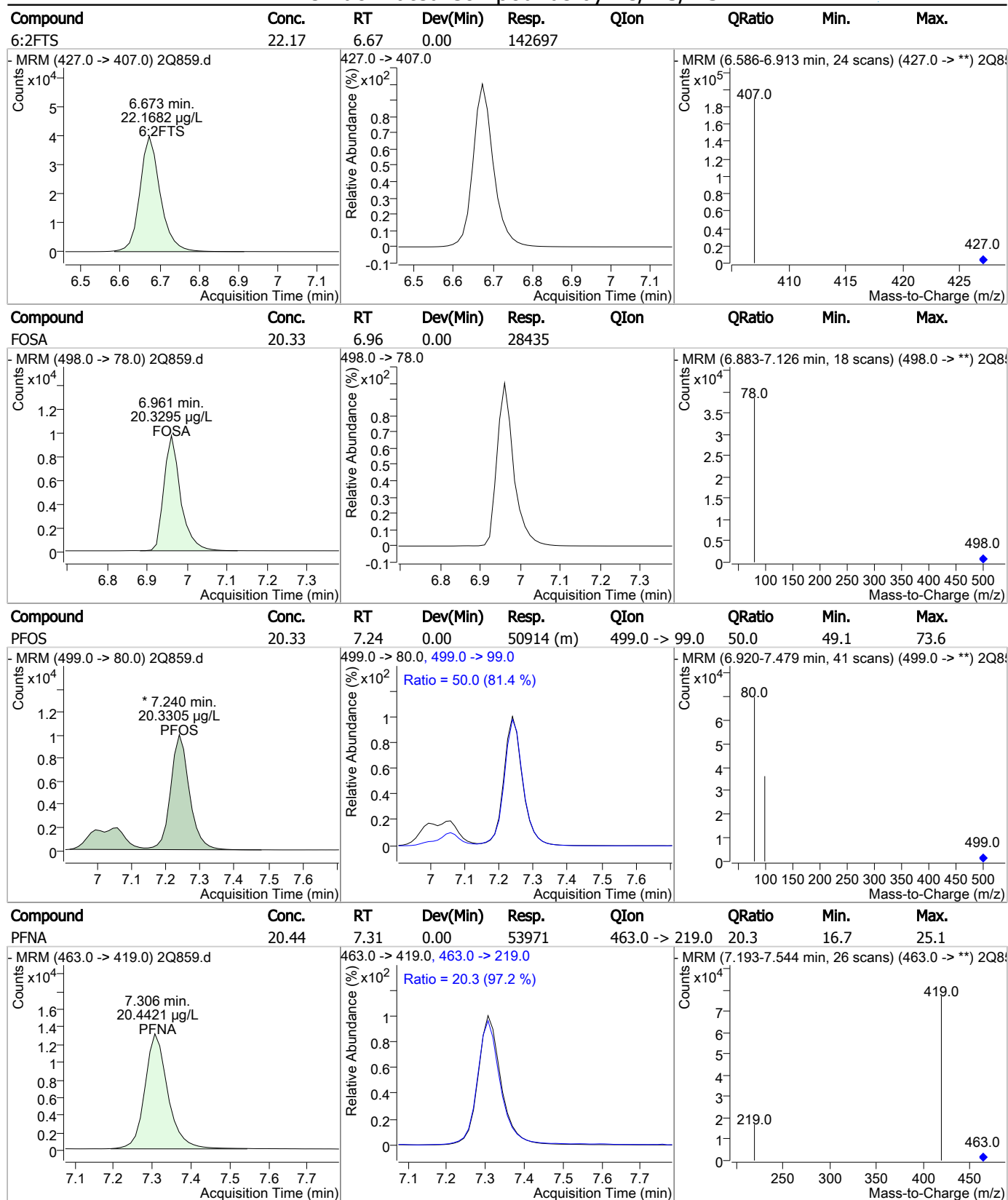
Perfluorinated Compounds by LC/MS/MS



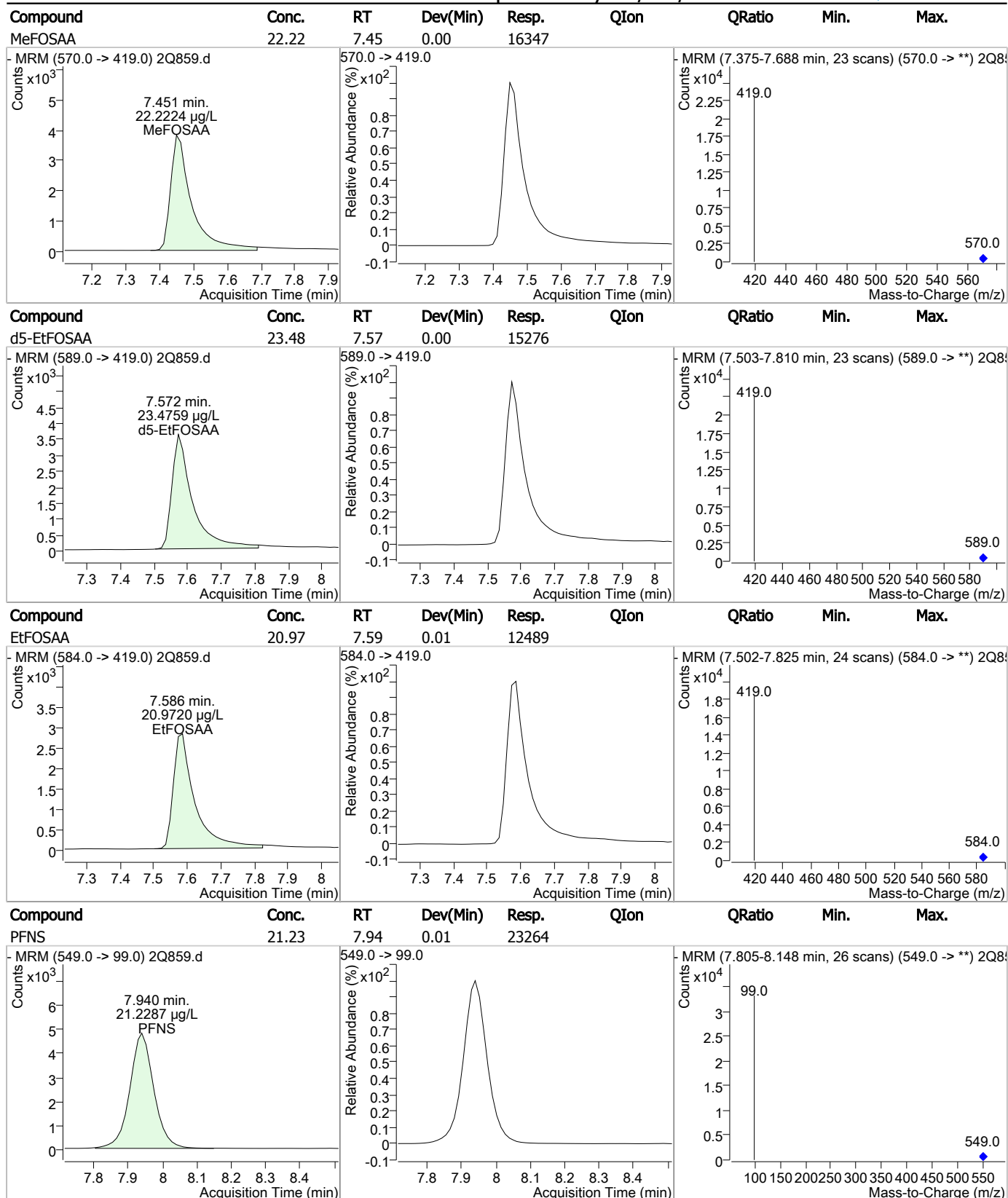
Perfluorinated Compounds by LC/MS/MS



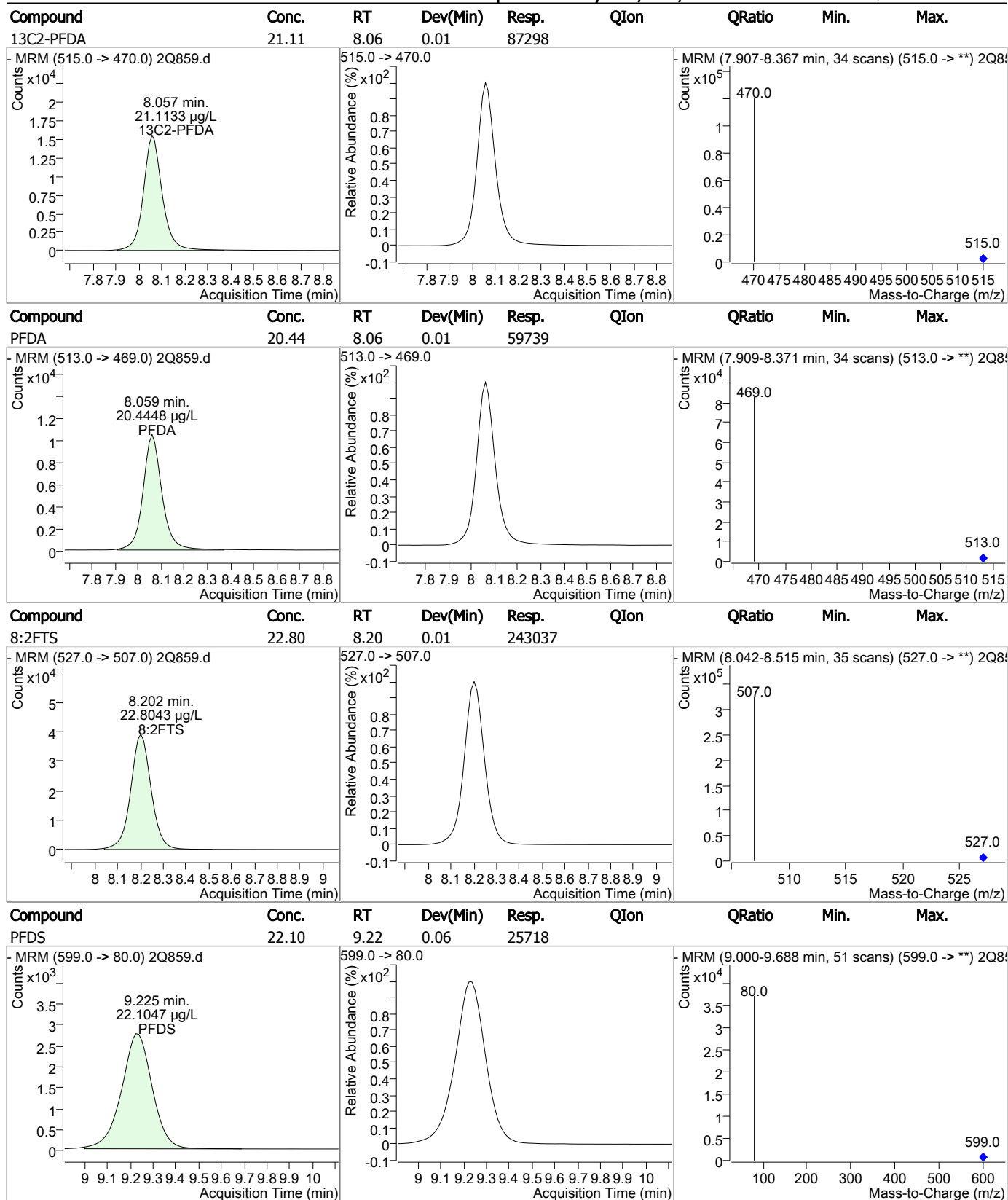
Perfluorinated Compounds by LC/MS/MS



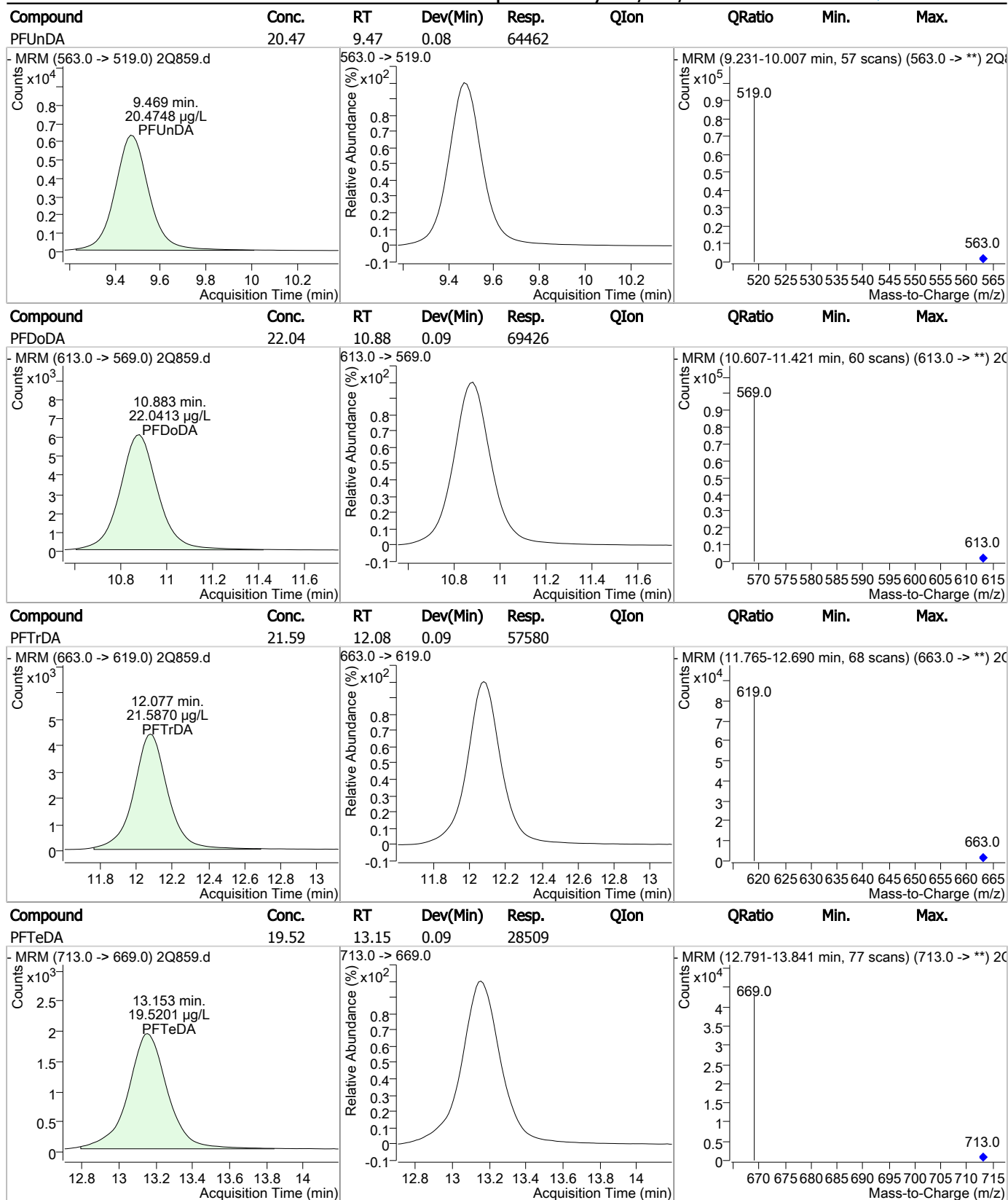
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q25-CC18

Method: EPA 537 MOD

Lab FileID: 2Q859.D

Analyst approved: 05/01/17 09:23 Nancy Saunders

Injection Time: 04/28/17 14:24

Supervisor approved: 05/01/17 12:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.24	Split peak

7.5.9.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q867.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 5:16:36 PM
 Sample Name : CC18-20
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.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	6.659	429.0 -> 409.0	121980	20.00 µg/L	-0.012
13C2-PFDoDA	10.801	615.0 -> 570.0	61580	20.00 µg/L	0.013
13C2-PFOA	6.650	415.0 -> 370.0	57261	20.00 µg/L	-0.012
13C3-PFPeA	4.197	266.0 -> 222.0	55655	20.00 µg/L	-0.025
13C4-PFOS	7.224	503.0 -> 80.0	42716	20.00 µg/L	-0.014
d3-MeFOSAA	7.437	573.0 -> 419.0	25853	20.00 µg/L	-0.012

System Monitoring Compounds

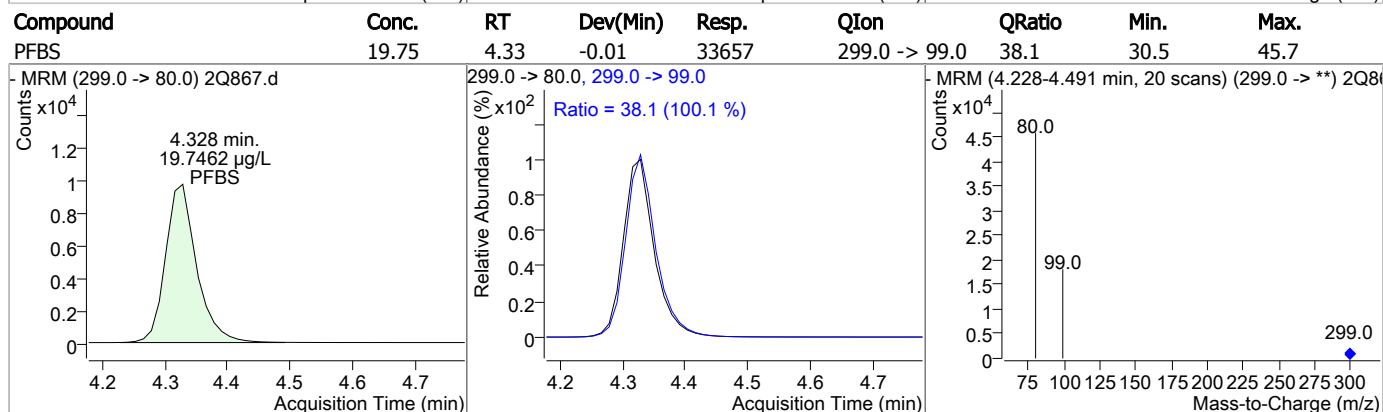
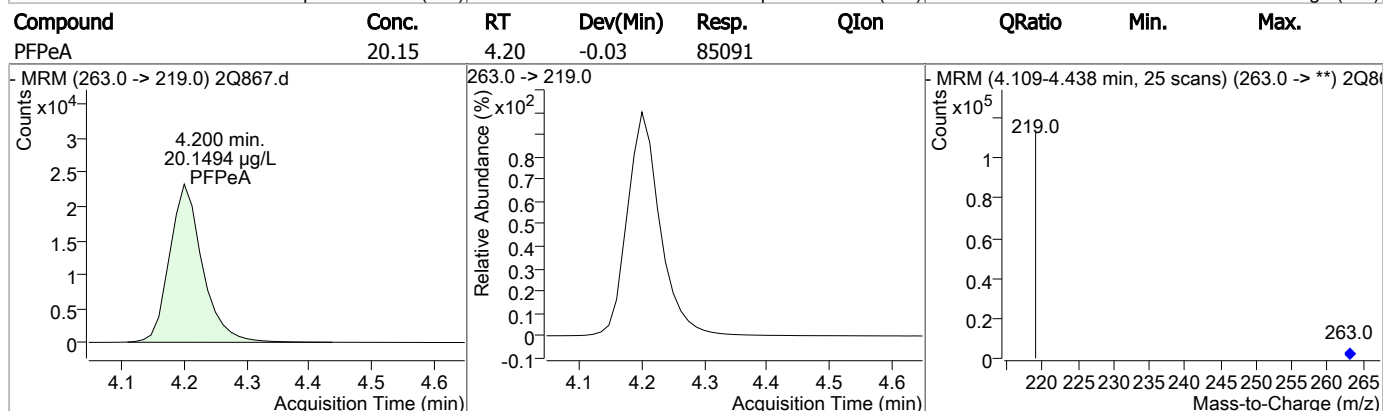
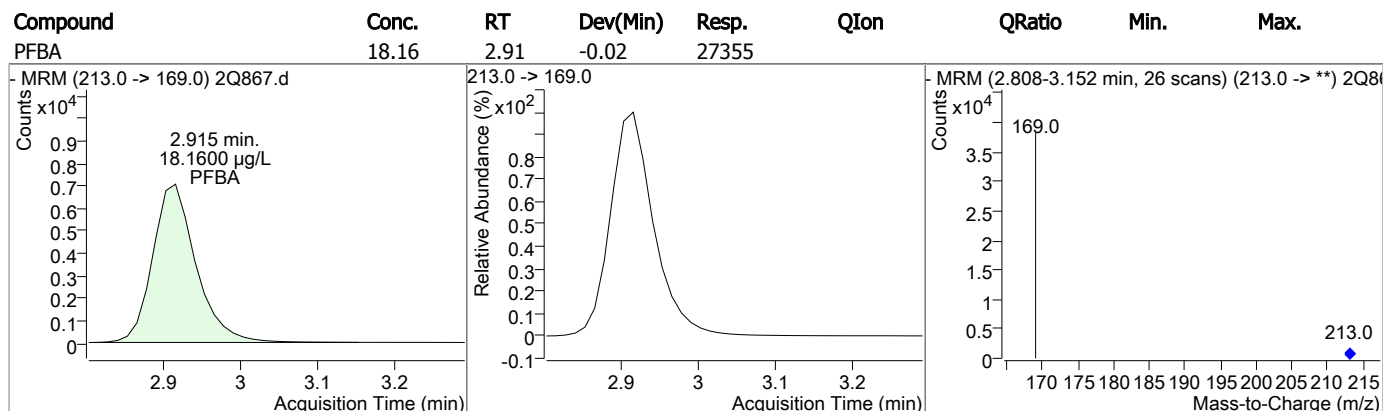
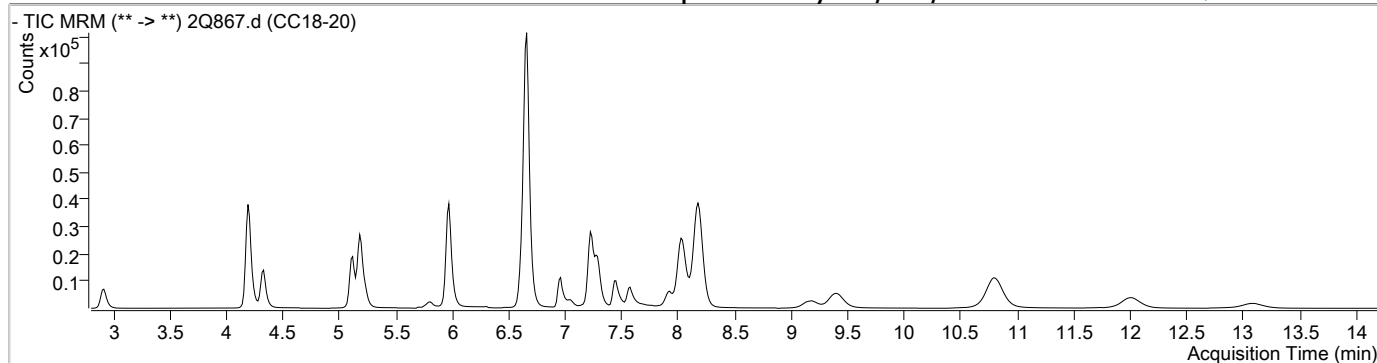
13C2-PFDA	8.032	515.0 -> 470.0	82509	20.59 µg/L	-0.012
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 103.0%	
13C2-PFHxA	5.185	315.0 -> 270.0	61239	20.25 µg/L	-0.025
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 101.2%	
d5-EtFOSAA	7.572	589.0 -> 419.0	15827	24.37 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%			Recovery = 121.9%	

Target Compounds

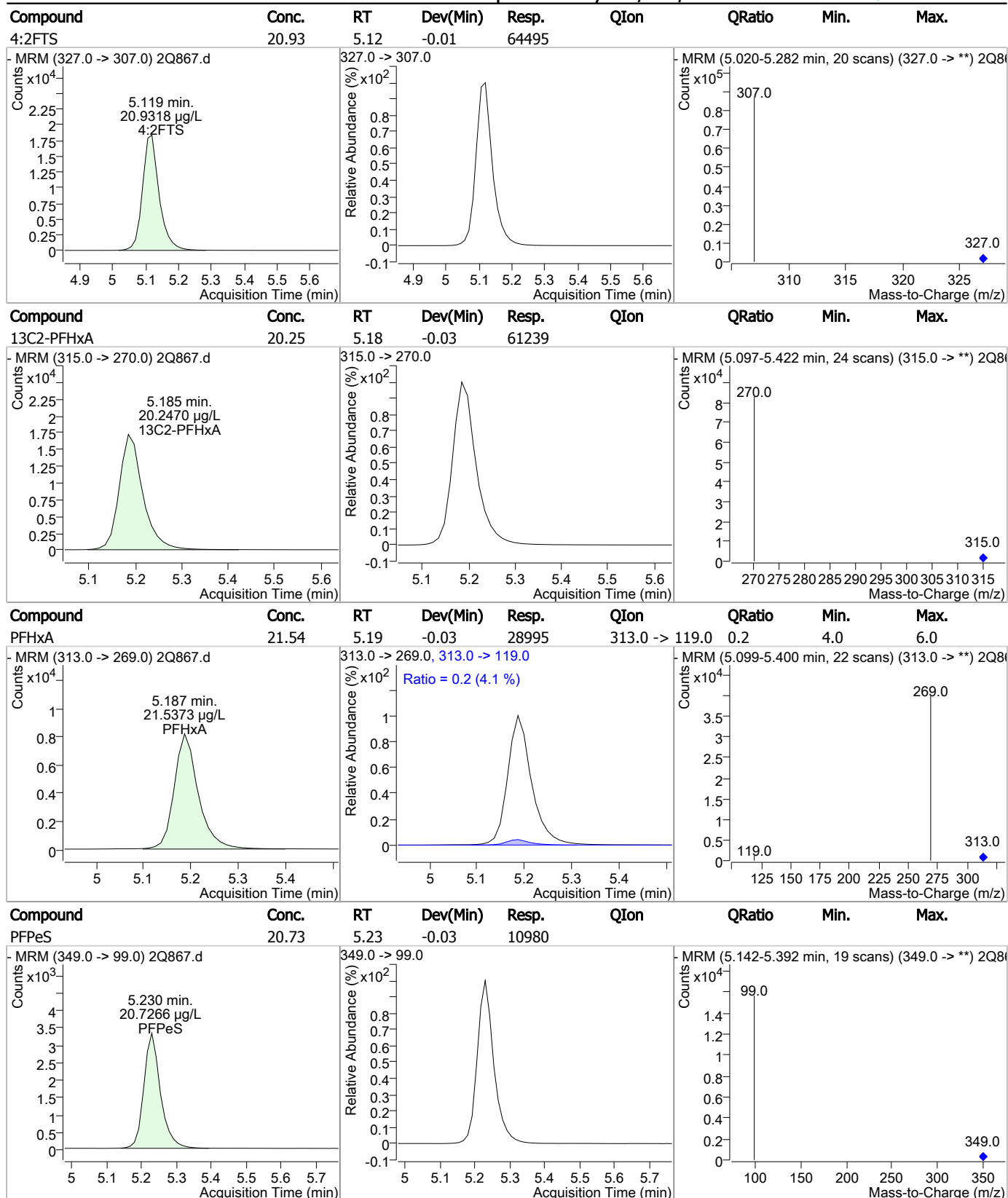
					QValue
4:2FTS	5.119	327.0 -> 307.0	64495	20.93 µg/L	100
6:2FTS	6.661	427.0 -> 407.0	130379	22.10 µg/L	100
8:2FTS	8.177	527.0 -> 507.0	229729	23.52 µg/L	100
EtFOSAA	7.573	584.0 -> 419.0	12771	21.55 µg/L	100
FOSA	6.961	498.0 -> 78.0	29785	21.43 µg/L	100
MeFOSAA	7.451	570.0 -> 419.0	15995	21.91 µg/L	100
PFBA	2.915	213.0 -> 169.0	27355	18.16 µg/L	100
PFBS	4.328	299.0 -> 80.0	33657	19.75 µg/L	100
PFDA	8.034	513.0 -> 469.0	57165	20.19 µg/L	100
PFDoDA	10.795	613.0 -> 569.0	59116	21.88 µg/L	100
PFDS	9.162	599.0 -> 80.0	24865	21.73 µg/L	100
PFHpA	5.973	363.0 -> 319.0	84493	21.19 µg/L	# 93
PFHpS	6.607	449.0 -> 80.0	38723	21.40 µg/L	100
PFHxA	5.187	313.0 -> 269.0	28995	21.54 µg/L	# 86
PFHxS	5.956	399.0 -> 80.0	39710	22.26 µg/L	m 88
PFNA	7.294	463.0 -> 419.0	53215	20.80 µg/L	97
PFNS	7.917	549.0 -> 99.0	23070	21.39 µg/L	100
PFOA	6.652	413.0 -> 369.0	50237	21.11 µg/L	98
PFOS	7.226	499.0 -> 80.0	50479	20.48 µg/L	m 86
PFPeA	4.200	263.0 -> 219.0	85091	20.15 µg/L	100
PFPeS	5.230	349.0 -> 99.0	10980	20.73 µg/L	100
PFTeDA	13.078	713.0 -> 669.0	24320	19.41 µg/L	100
PFTTrDA	12.002	663.0 -> 619.0	50978	22.23 µg/L	100
PFUnDA	9.406	563.0 -> 519.0	53102	19.65 µg/L	100

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

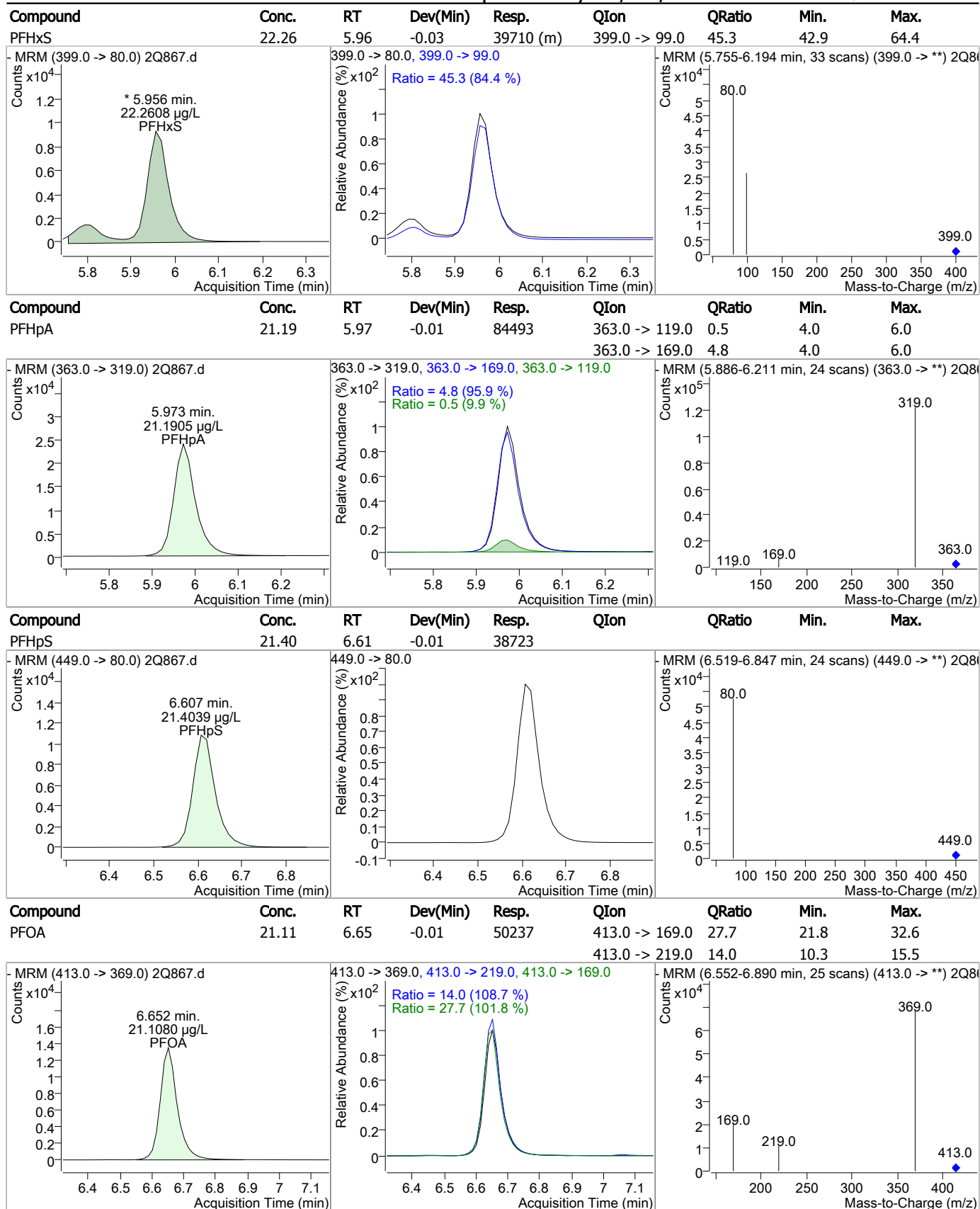
Perfluorinated Compounds by LC/MS/MS



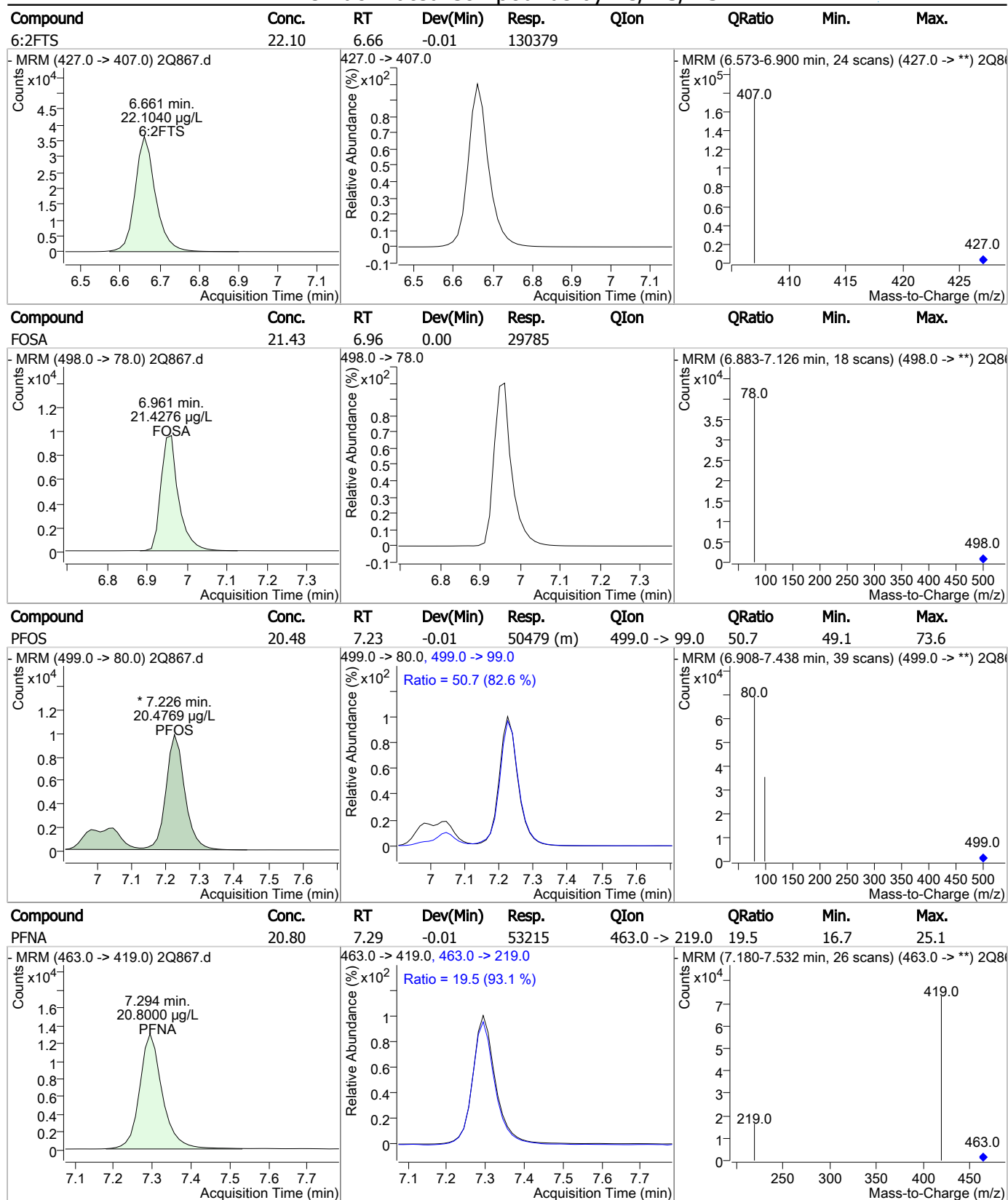
Perfluorinated Compounds by LC/MS/MS



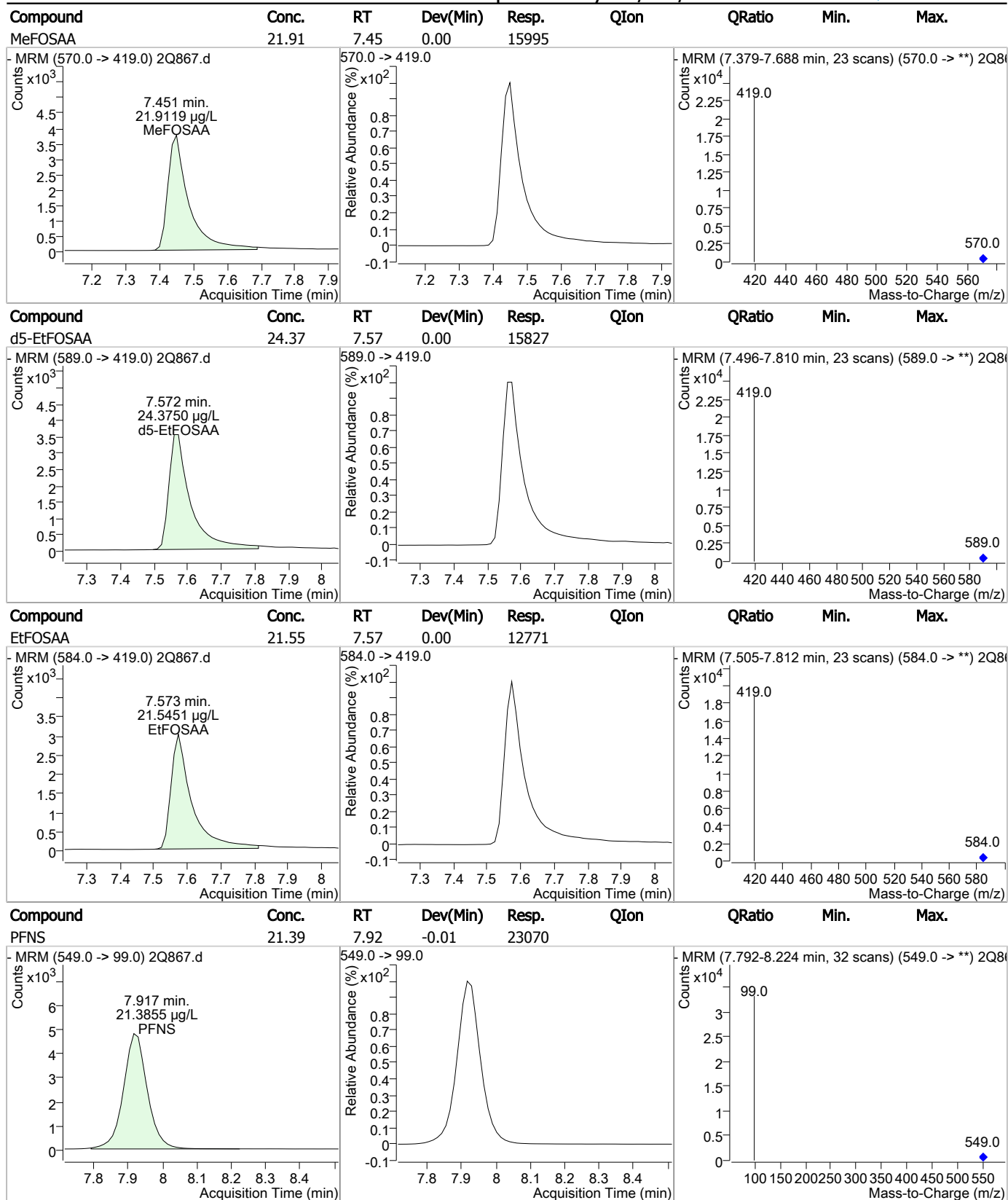
Perfluorinated Compounds by LC/MS/MS



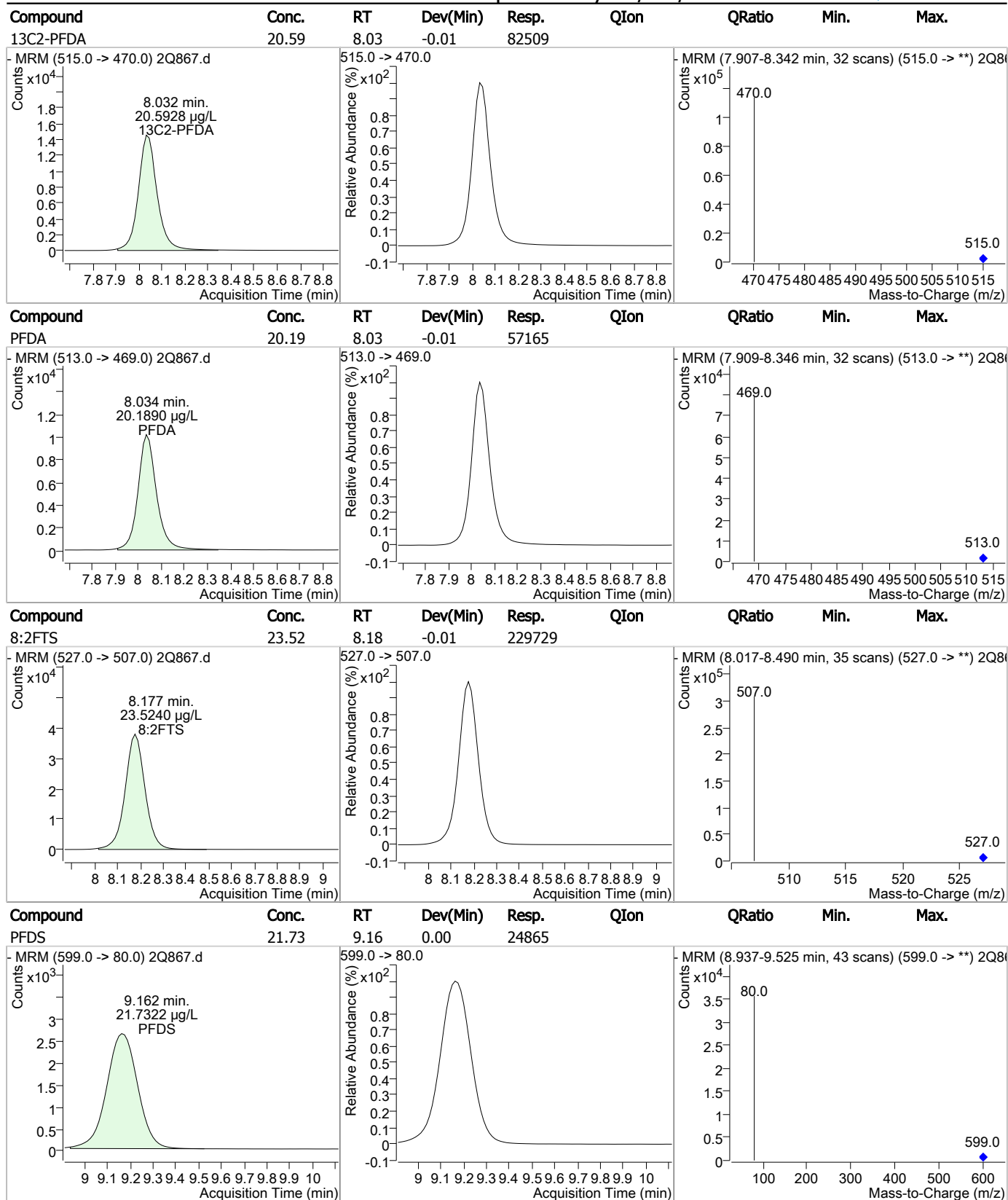
Perfluorinated Compounds by LC/MS/MS



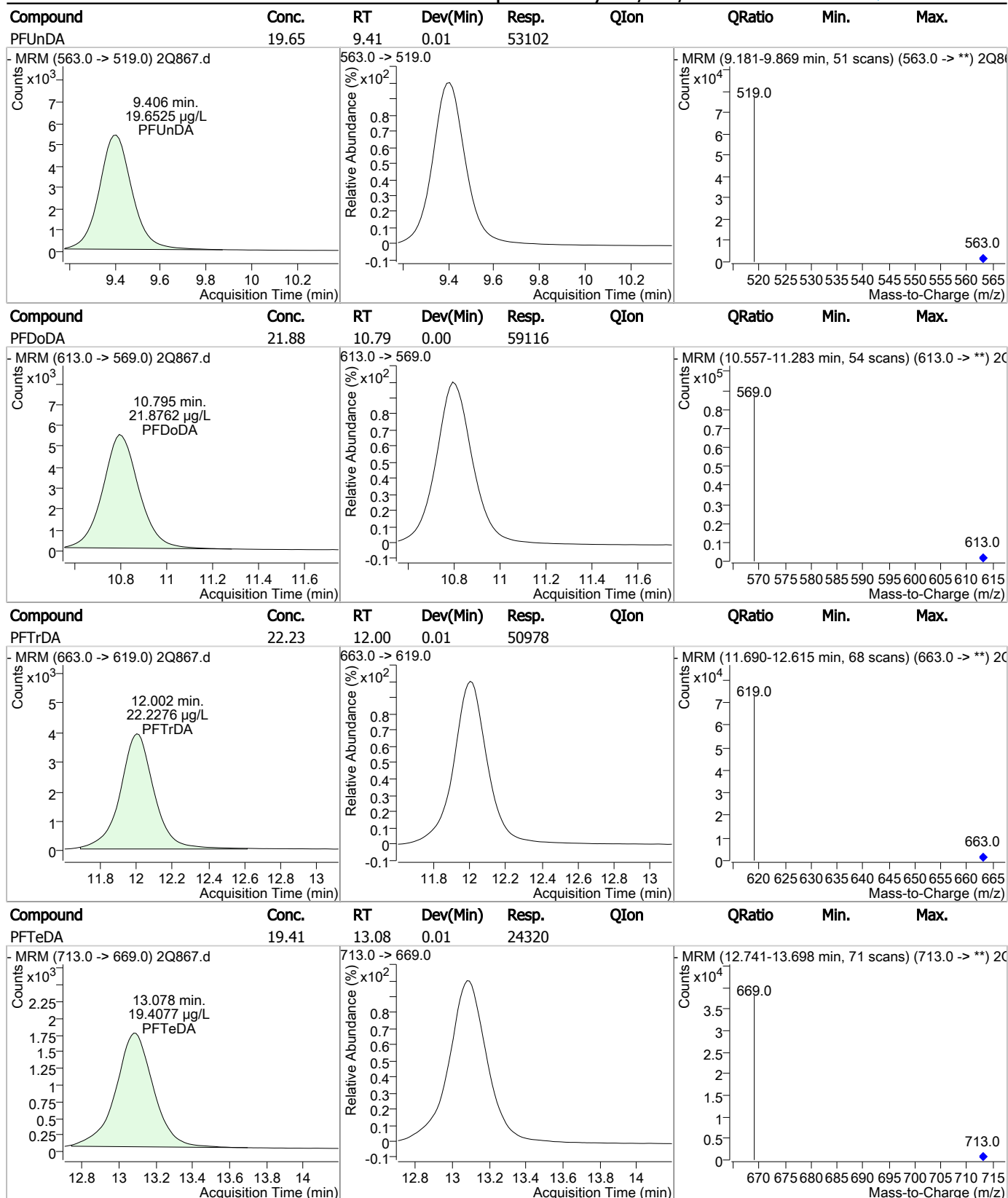
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number:

S2Q25-CC18

Lab FileID:

2Q867.D

Injection Time:

04/28/17 17:16

Method:

EPA 537

Analyst approved:

05/01/17 09:23 Nancy Saunders

Supervisor approved:

05/01/17 12:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.23	Split peak

7.5.10.1
7

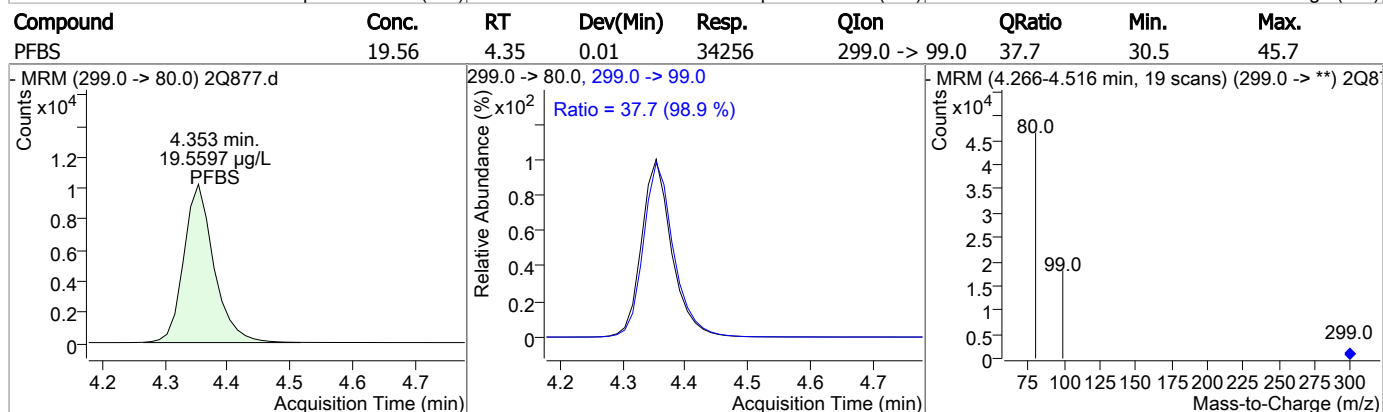
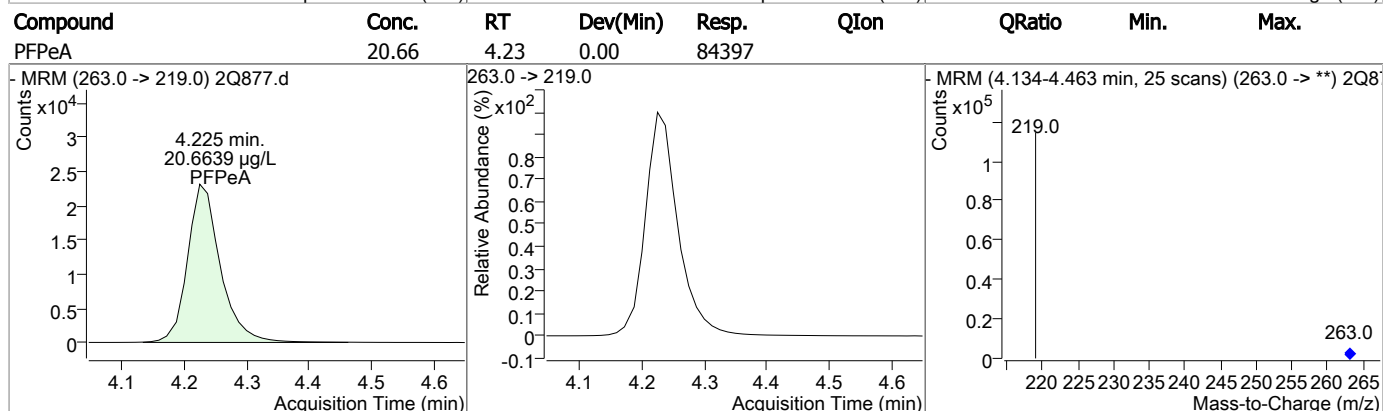
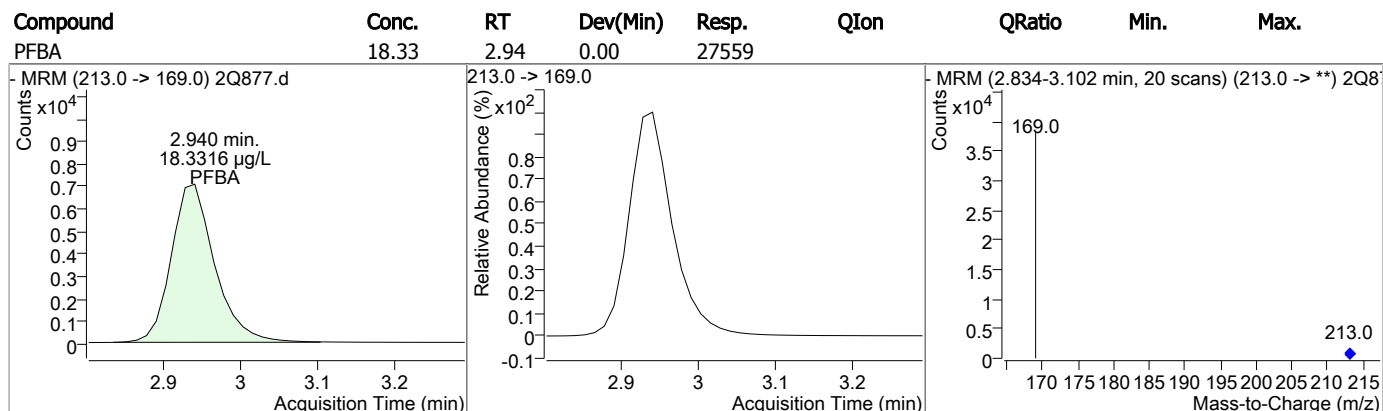
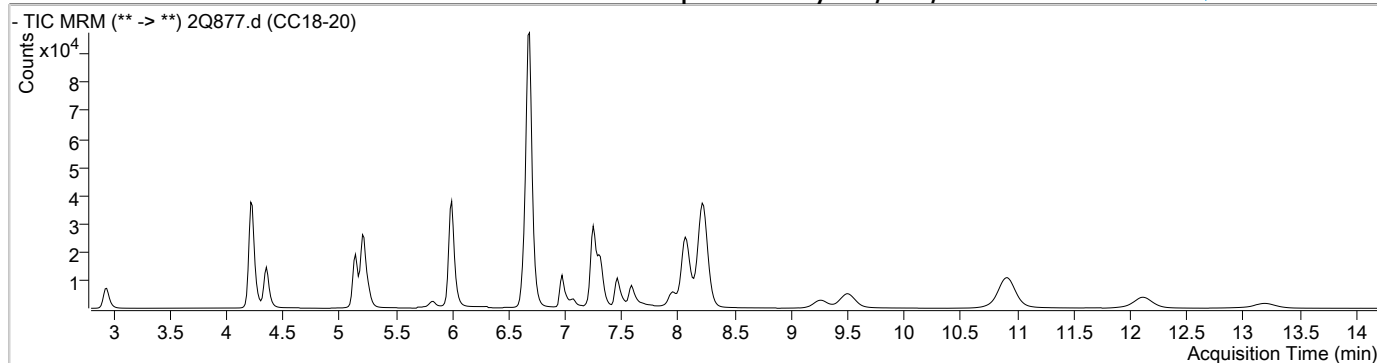
Perfluorinated Compounds by LC/MS/MS

Data File : 2Q877.d
 Operator : NANCYF
 Acq. Method : dMRM_PFOA_PFOS_LIST.m
 Acq. Date-Time : 4/28/2017 8:31:19 PM
 Sample Name : CC18-20
 Vial : Vial 2
 DA Method File : PFCLISTDW_0420_S2Q18.m
 Batch Name : 2SQ25.batch.bin
 Last Calib Update : 4/21/2017 7:57:04 AM

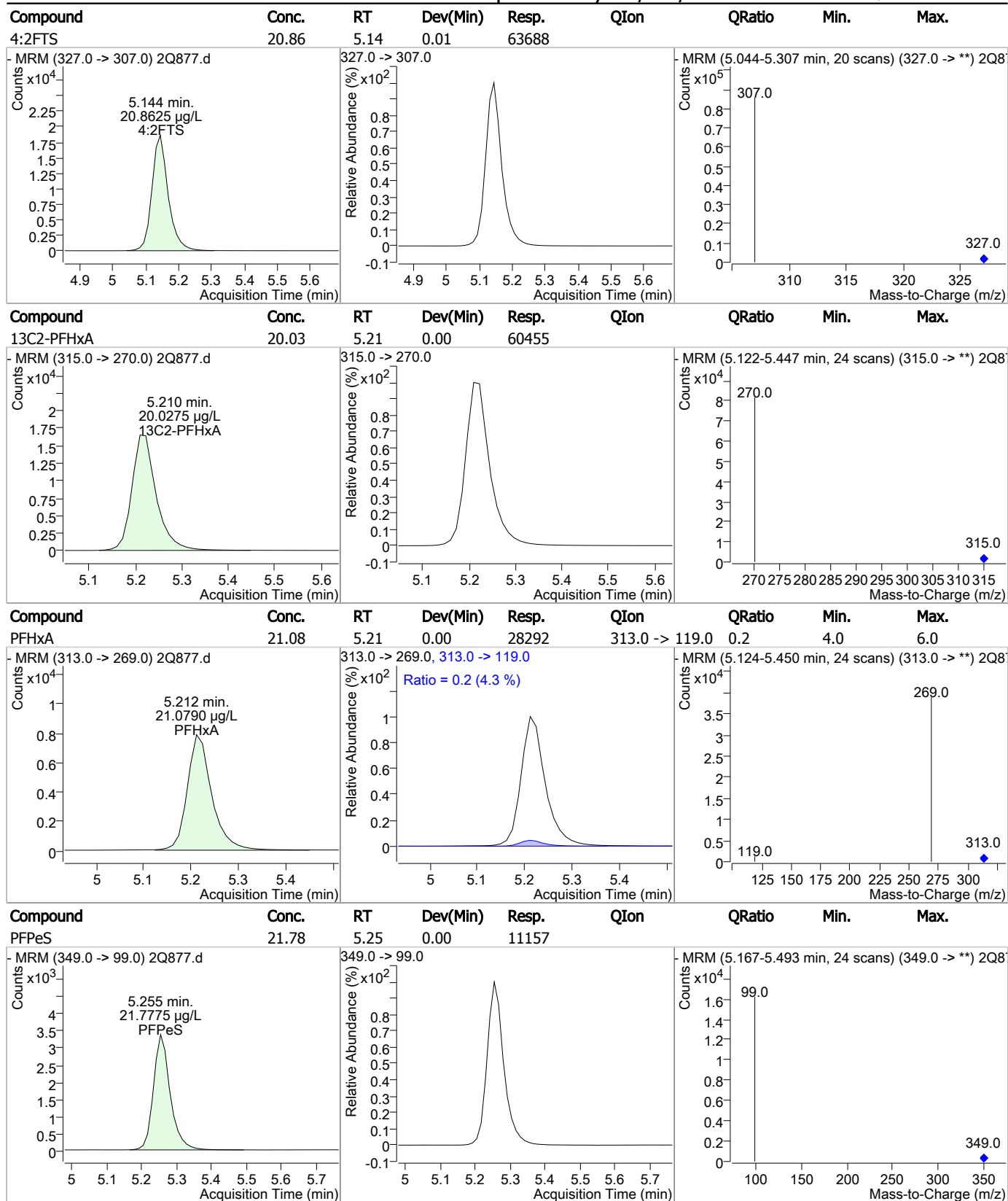
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-6:2FTS	6.684	429.0 -> 409.0	120852	20.00 µg/L	0.013
13C2-PFDoDA	10.914	615.0 -> 570.0	63694	20.00 µg/L	0.125
13C2-PFOA	6.675	415.0 -> 370.0	57148	20.00 µg/L	0.013
13C3-PFPeA	4.234	266.0 -> 222.0	53826	20.00 µg/L	0.013
13C4-PFOS	7.251	503.0 -> 80.0	43891	20.00 µg/L	0.013
d3-MeFOSAA	7.462	573.0 -> 419.0	26723	20.00 µg/L	0.013
System Monitoring Compounds					
13C2-PFDA	8.067	515.0 -> 470.0	83070	20.77 µg/L	0.023
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 103.9%		
13C2-PFHxA	5.210	315.0 -> 270.0	60455	20.03 µg/L	0.000
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 100.1%		
d5-EtFOSAA	7.585	589.0 -> 419.0	16869	25.06 µg/L	0.013
Spiked Amount: 20.00	Range: 70.0 - 130.0%		Recovery = 125.3%		
Target Compounds					QValue
4:2FTS	5.144	327.0 -> 307.0	63688	20.86 µg/L	100
6:2FTS	6.686	427.0 -> 407.0	129390	22.14 µg/L	100
8:2FTS	8.214	527.0 -> 507.0	232811	24.06 µg/L	100
EtFOSAA	7.586	584.0 -> 419.0	12662	20.72 µg/L	100
FOSA	6.973	498.0 -> 78.0	30550	21.26 µg/L	100
MeFOSAA	7.463	570.0 -> 419.0	15856	21.09 µg/L	100
PFBA	2.940	213.0 -> 169.0	27559	18.33 µg/L	100
PFBS	4.353	299.0 -> 80.0	34256	19.56 µg/L	99
PFDA	8.070	513.0 -> 469.0	56069	19.84 µg/L	100
PFDoDA	10.908	613.0 -> 569.0	61611	22.04 µg/L	100
PFDS	9.262	599.0 -> 80.0	25304	21.53 µg/L	100
PFHpA	5.998	363.0 -> 319.0	84815	21.31 µg/L	# 93
PFHpS	6.632	449.0 -> 80.0	39694	21.35 µg/L	100
PFHxA	5.212	313.0 -> 269.0	28292	21.08 µg/L	# 86
PFHxS	5.981	399.0 -> 80.0	37345	20.37 µg/L	m 95
PFNA	7.319	463.0 -> 419.0	50821	19.90 µg/L	100
PFNS	7.952	549.0 -> 99.0	23319	21.04 µg/L	100
PFOA	6.677	413.0 -> 369.0	49314	20.76 µg/L	98
PFOS	7.252	499.0 -> 80.0	52648	20.78 µg/L	m 85
PFPeA	4.225	263.0 -> 219.0	84397	20.66 µg/L	100
PFPeS	5.255	349.0 -> 99.0	11157	21.78 µg/L	100
PFTeDA	13.191	713.0 -> 669.0	25755	19.85 µg/L	100
PFTTrDA	12.115	663.0 -> 619.0	51469	21.73 µg/L	100
PFUnDA	9.506	563.0 -> 519.0	53140	19.01 µg/L	100

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

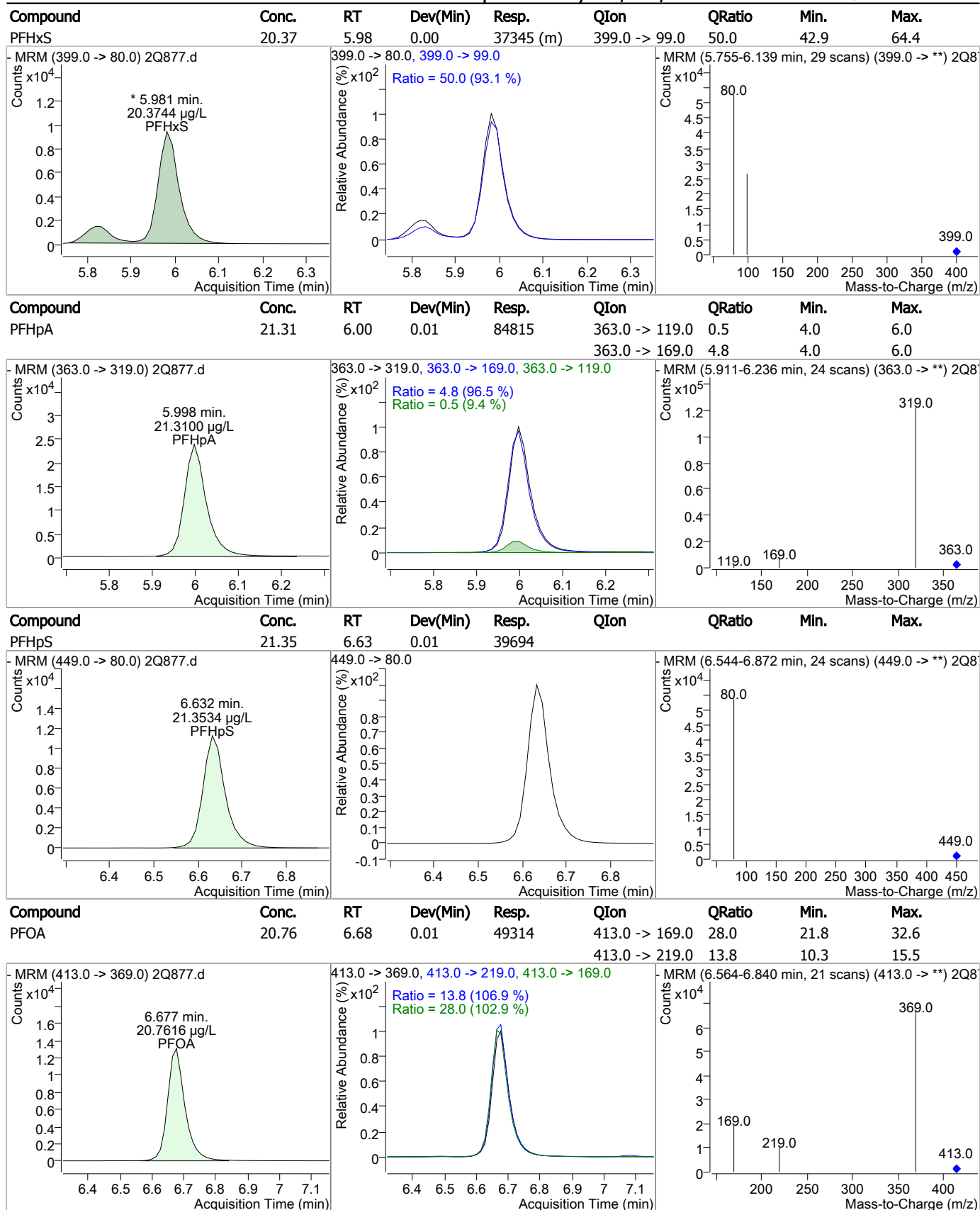
Perfluorinated Compounds by LC/MS/MS



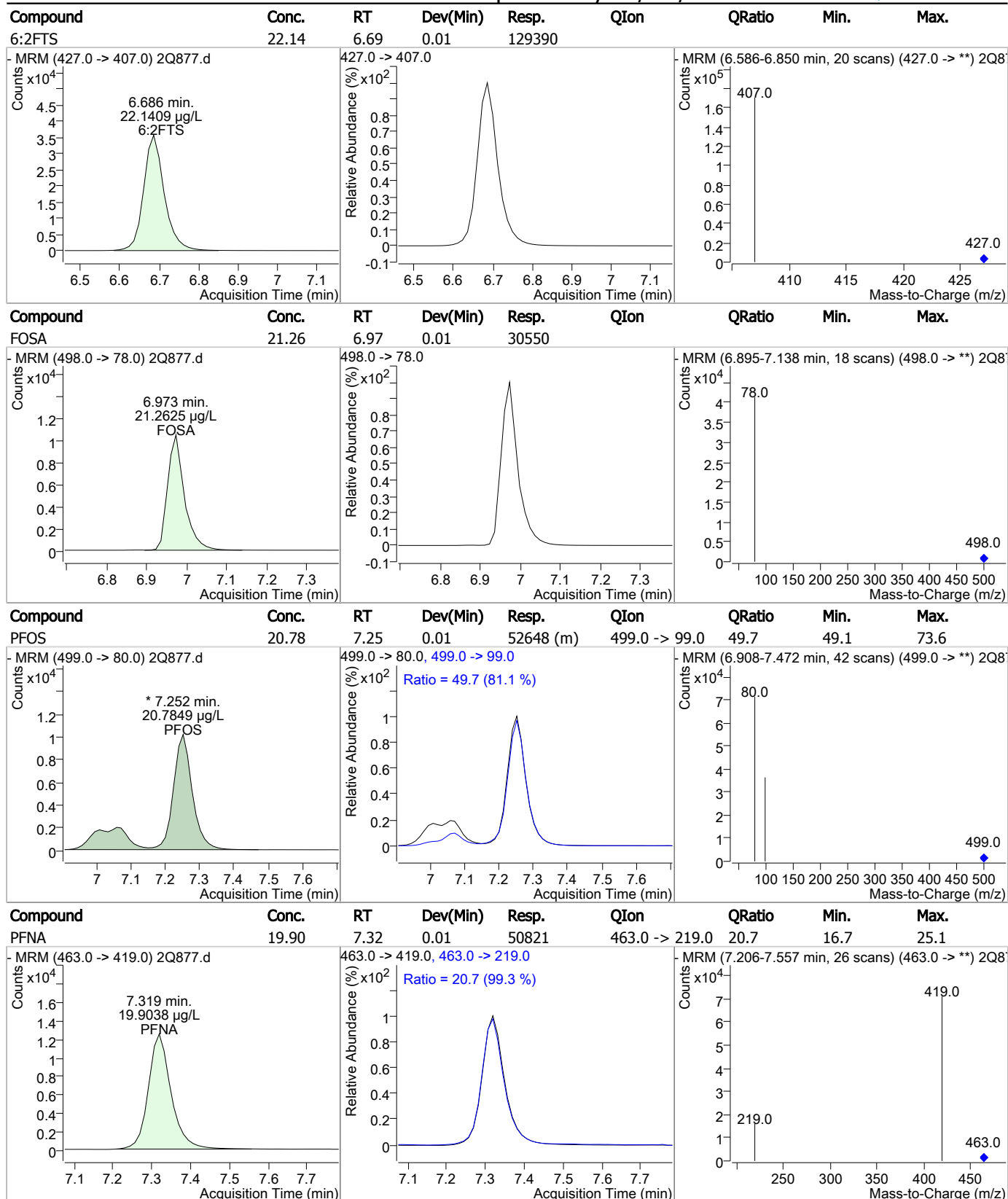
Perfluorinated Compounds by LC/MS/MS



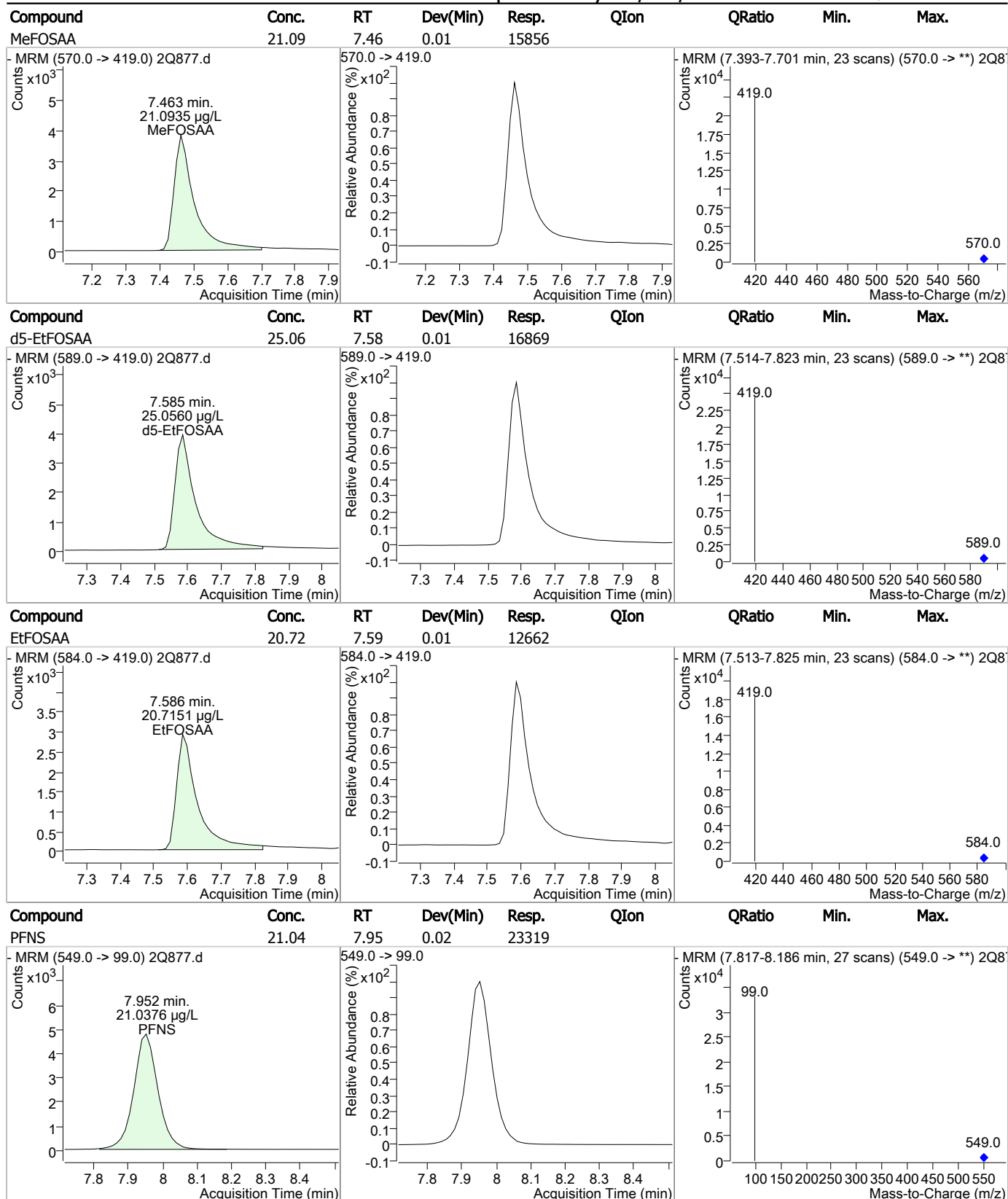
Perfluorinated Compounds by LC/MS/MS



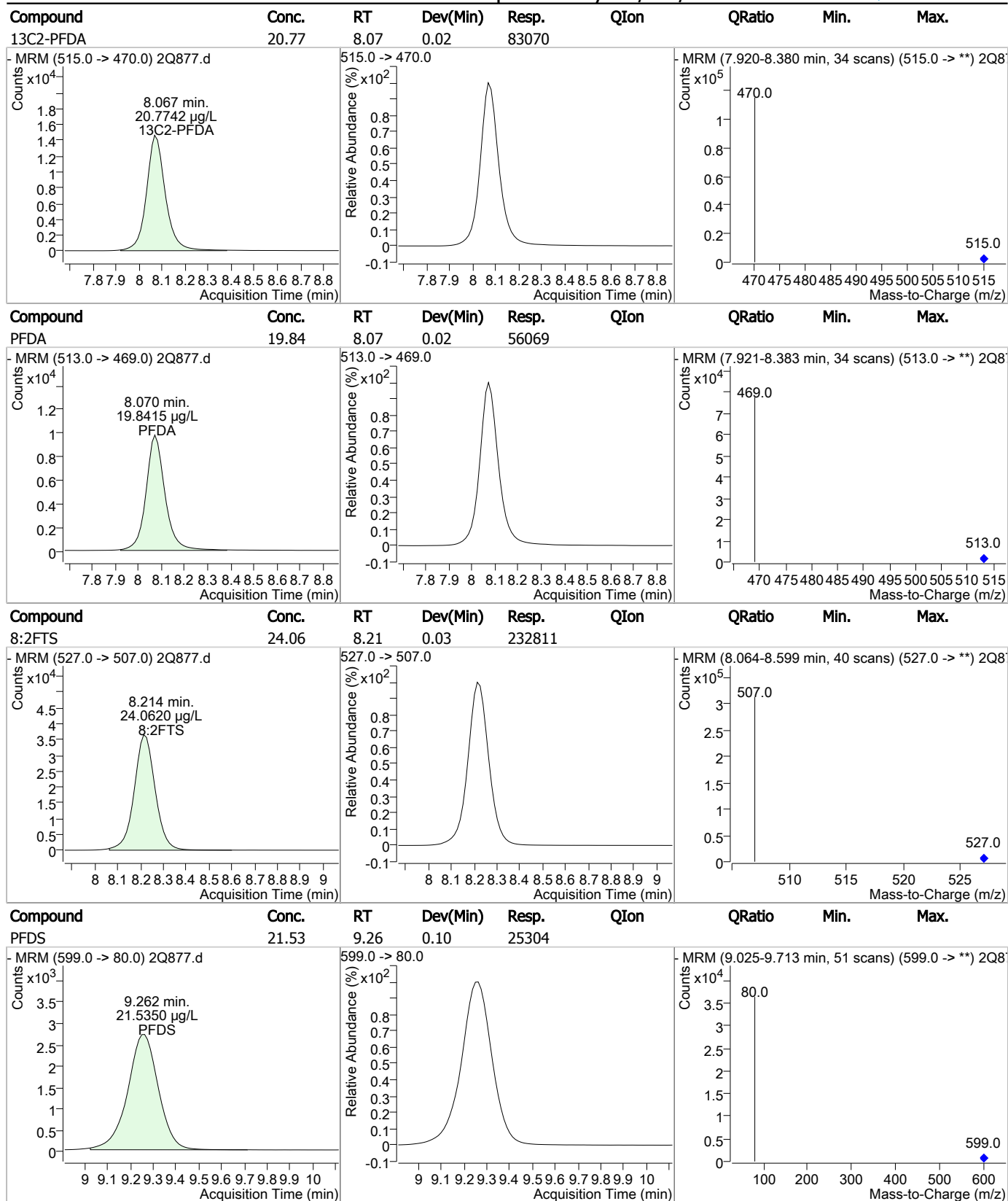
Perfluorinated Compounds by LC/MS/MS



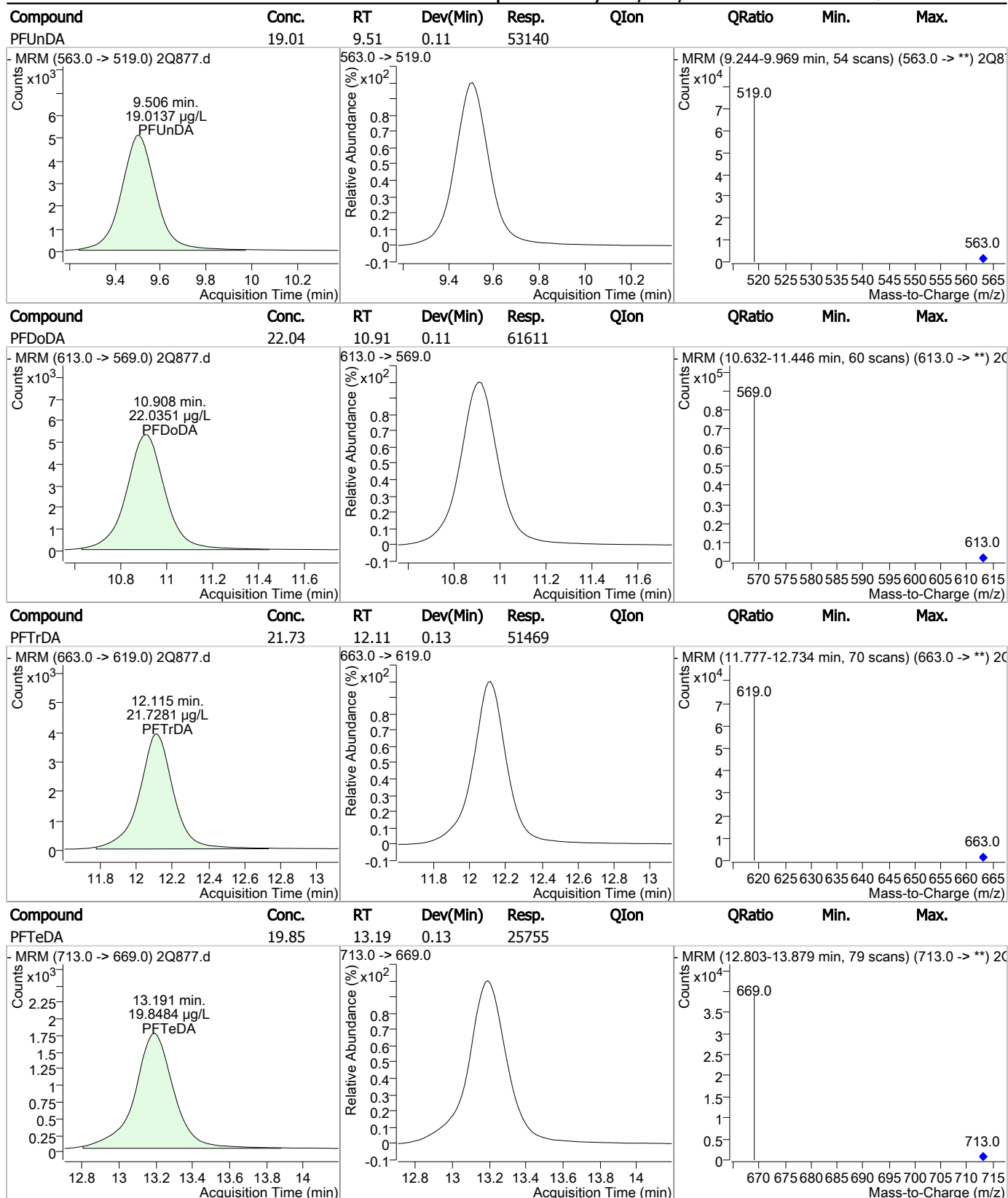
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



Manual Integration Approval Summary

Sample Number: S2Q25-CC18

Method: EPA 537

Lab FileID: 2Q877.D

Analyst approved: 05/01/17 09:23 Nancy Saunders

Injection Time: 04/28/17 20:31

Supervisor approved: 05/01/17 12:10 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.98	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 #: 16836

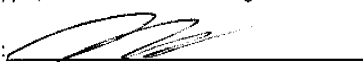
DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 644	1	CCB	PFC						✓
2Q 45	1	CCB							✓
2Q 46	1	CCB							✓
2Q 47	2	CC16-20		LC838	100/100				SS ↓ AmCura
2Q 48	1	CCB							✓
2Q 49	1	CCB							✓
2Q 50	2	FC18-1		LC838	5/100				X Fix AT RA
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: 330

LCMS2-2Q ANALYSIS LOG

METHODS: 537 M03
 ACQ. METHOD: JMEM PLOT ACQS LIST
 PROC. METHOD: PFC LIST BW 3420 3420 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	PFC	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	FA412877-1		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		

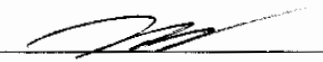
*< Conductivity Limit For Perchlorate by SW846 6850

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: Porusil 11 FC10
AMOUNT INJECTED: 5 ul
INSTRUMENT: LCMS2-2Q
HEAD PRESSURE: 330

LCMS2-2Q ANALYSIS LOG

METHODS: S37 MOD
ACQ. METHOD: dmam PDA ACOS List
PROC. METHOD: PFC List 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									
2Q									
2Q									
2Q									
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

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Analyst's Signature:



SGS ACCUTEST-ORLANDO

DATE: 04-28-17
 COLUMN TYPE: Porosil 9 FCB
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 316

LCMS2-2Q ANALYSIS LOG

METHODS: 537 MO
 ACQ. METHOD: dnam PFAA PFAA List
 PROC. METHOD: PFAA List 0420 52913
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 25

ANALYST: MRE NAs
 ELUENT A LOT #: 167424 - Acetone
 ELUENT B LOT #: 166757 -
 WATER LOT #: 167421
 ISTD Lot #: LC636

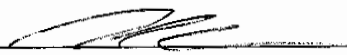
DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 850	1	CLB	PCL						✓
2Q 51	1	CLB							✓
2Q 52	1	CLB							✓
2Q 53	2	CLB-20		LC636	100/100		SP		Pass
2Q 54	3	FA 43036-3		OP64760	24				✓ 15610 uA2
2Q 55	4	FA 43116-9			57		SP		✓ Am 10x
2Q 56	5	-10			14				✓
2Q 57	6	-12			54				✓ Am 10x
2Q 58	3	FA 43036-3			24				✓ multi-peak integrated
2Q 59	2	CLB-20		LC636	100/100		SP		Pass
2Q 60	1	CLB							✓
2Q 61	7	OP64797-85		OP64797	14				✓
2Q 62	8	-m10							✓ E.T. me
2Q 63	9	FA 43000-1							Am
2Q 64	10	OP64797-m5							✓
2Q 65	11	-m10							✓
2Q 66	12	FA 43000-2							BDL
2Q 67	2	CLB-20		LC636	100/100		SP		Pass
2Q 68	1	CLB							✓
2Q 69	13	FA 42998-7		OP64797	14				BDL

*< 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: 04-28-17
 COLUMN TYPE: Porosil 11 EC15
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 516

LCMS2-2Q ANALYSIS LOG

METHODS: 537 M00
 ACQ. METHOD: dman Prot P005 List
 PROC. METHOD: PFLIST 0920 S2015
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 25

ANALYST: M2E NIS
 ELUENT A LOT #: 167421 v Acetic
 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 870	14	FA 42448-2	PFL	0P64797	17		SP		✓ ISADOL
2Q 71	15	LA 42449-1							BAR ISADOL
2Q 72	16	-2							ADOL
2Q 73	17	-3							ADOL ISADOL
2Q 74	18	0P64815-85		0P64815					✓
2Q 75	19	-MB							✓ E+
2Q 76	20	ML 50152-4							ADOL
2Q 77	2	CL 18-20		LC838	100/500		SP		POSS dFE+P
2Q 78	1	CCB							✓
2Q 79	21	ML 50152-5		0P64815	14				ADOL
2Q 80	22	0P64815-M3							✓
2Q 81	23	-M30							✓
2Q 82	24	ML 50152-6					SP		✓
2Q 83	25	-9					SP		✓
2Q 84	26	-10					SP		✓
2Q 85	27	-11					SP		ADOL
2Q 86	28	-14							ADOL
2Q 87	2	CL 18-20		LC838	100/500		SP		POSS
2Q 88	1	CCB							✓
2Q 89	29	ML 50152-15		0P64815	14				ADOL

*< 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: 04-25-17
 COLUMN TYPE: Porasil HFC18
 AMOUNT INJECTED: 5 ul
 INSTRUMENT: LCMS2-2Q
 HEAD PRESSURE: 316

LCMS2-2Q ANALYSIS LOG

METHODS: F37.M02
 ACQ. METHOD: 1 main PRVA PRV3 List
 PROC. METHOD: PFC List BW 2420 S2016
 CALIB. DATE: 04-20-17
 RUN BATCH: S2Q 25

ANALYST: MAC NAS
 ELUENT A LOT #: 167421 W 76212
 ELUENT B LOT #: 166781 L
 WATER LOT #: 167421
 ISTD Lot #: L636

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
POS-0117									
2Q 8A90	30	MC 50152-16	PFC	0P64815	1x		SP		BDL
2Q 91	31	-17					SP		BDL
2Q 92	32	-18					SP POS-0117		BDL
2Q 93	2	CC18-20		LC636	100/TW		SP		PUS
2Q 94	1	CCB							✓
2Q 95	33	FA42153-1		0P64815	1x		SP		✓ Pm 2x
2Q 96	34	-2					SP		✓ Pm 2x
2Q 97	35	-3					SP		✓
2Q 98	36	-4							✓ BODA TSTOMIXING
2Q 99	37	-5					SP		✓ ↓
2Q 100	38	-6					SP		✓
2Q 01	39	-7					SP		✓
2Q 02	40	-8							BDL
2Q 03	41	-9					SP		✓
2Q POS-0117	04	VCCL18-20		LC636	60/TW		SP		POSS IT-RT
2Q 05	1	CCB							✓
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

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Analyst's Signature: 

SGS ACCUTEST - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 04/26/17 1000
Started (mm/dd/yy 24:00)Prep Method: 3535A or Method (Circle)Date/Time: 04/26/17
Finished (mm/dd/yy 24:00)Analytical Method: LC537 DWBatch#: OP64797 Ext. By: MB Conc. By: kl Viald By: MB

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Comments
OP 64797 MB	X	250	6	N/A	20ul		1 ml	
OP 64797 BS	X	250				10+10ul	1 ml	10 ml na 04/26/17
FA42998-1	1	260						
-2	1	260						
FA42999-1	1	250						
-2	1	250						
-3	1	260						
FA43000-1	1	260						
-2	1	250						
MB 04/26/17								
FA43000-1MS	2	250	6	N/A	20ul	10+10ul		
-1MSD	3	250	+	+	+	+		
DUP								

Comments:

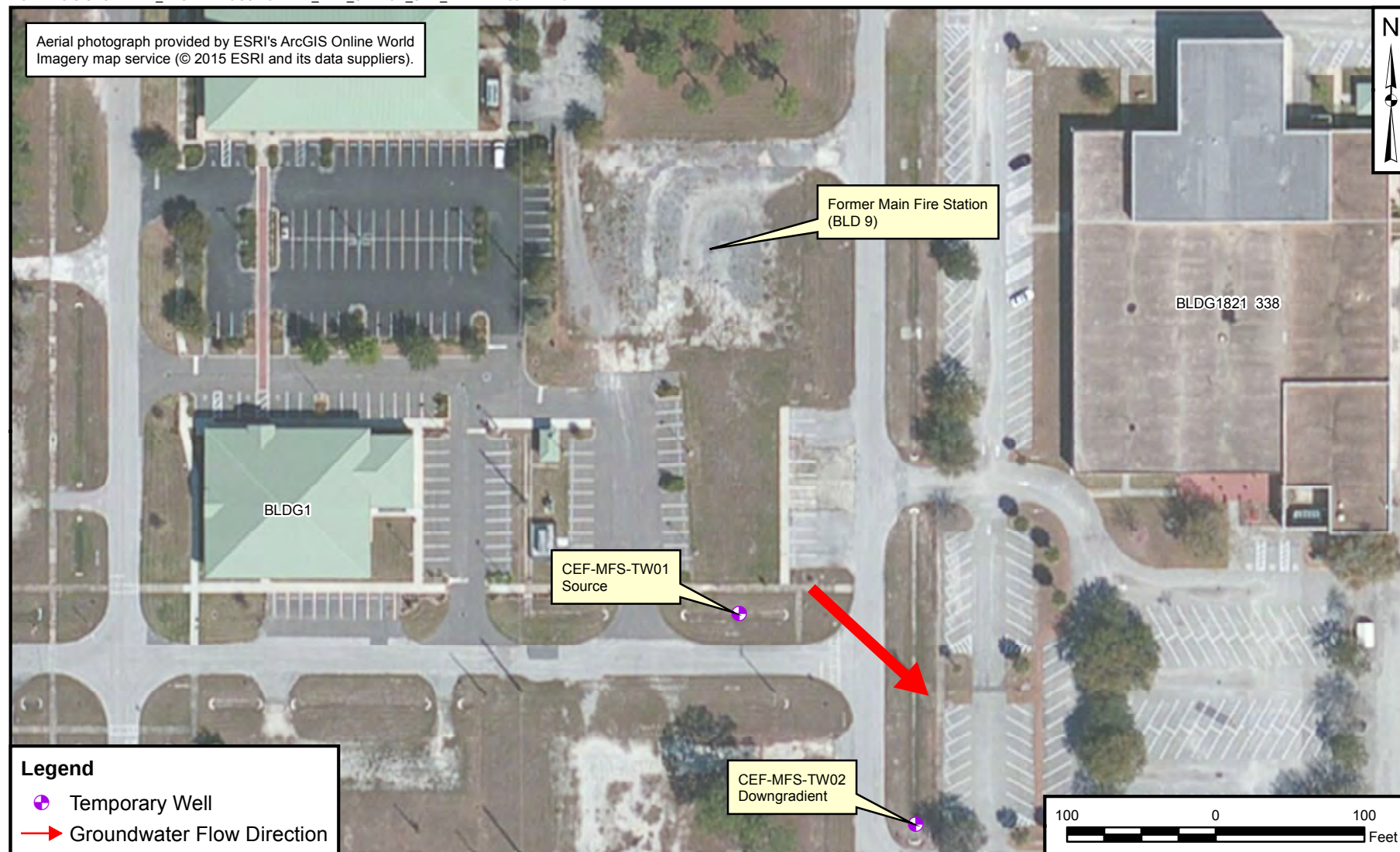
Surr.1 ID: LCB34 Conc: 1 ppm Exp. Date: 10/05/17 Inj. By: MB Ver. By: MB
 Surr.2 ID: Conc: Exp. Date: Inj. By: Ver. By:
 Spk.1 ID: LCB39 Conc: 2 ppm Exp. Date: 08/25/17 Inj. By: MB Ver. By: MB
 Spk.2 ID: B4B7A Conc: 2 ppm Exp. Date: 07/19/18 Inj. By: MB Ver. By: MB

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

Methanol Lot # 170294 SPE Lot # 5308-0072 pH Paper # 230016
 Acetonitrile Lot # SPE Lot # Reagent #
 Water Lot # OP64208 Syringe Filter Lot # Solvent #

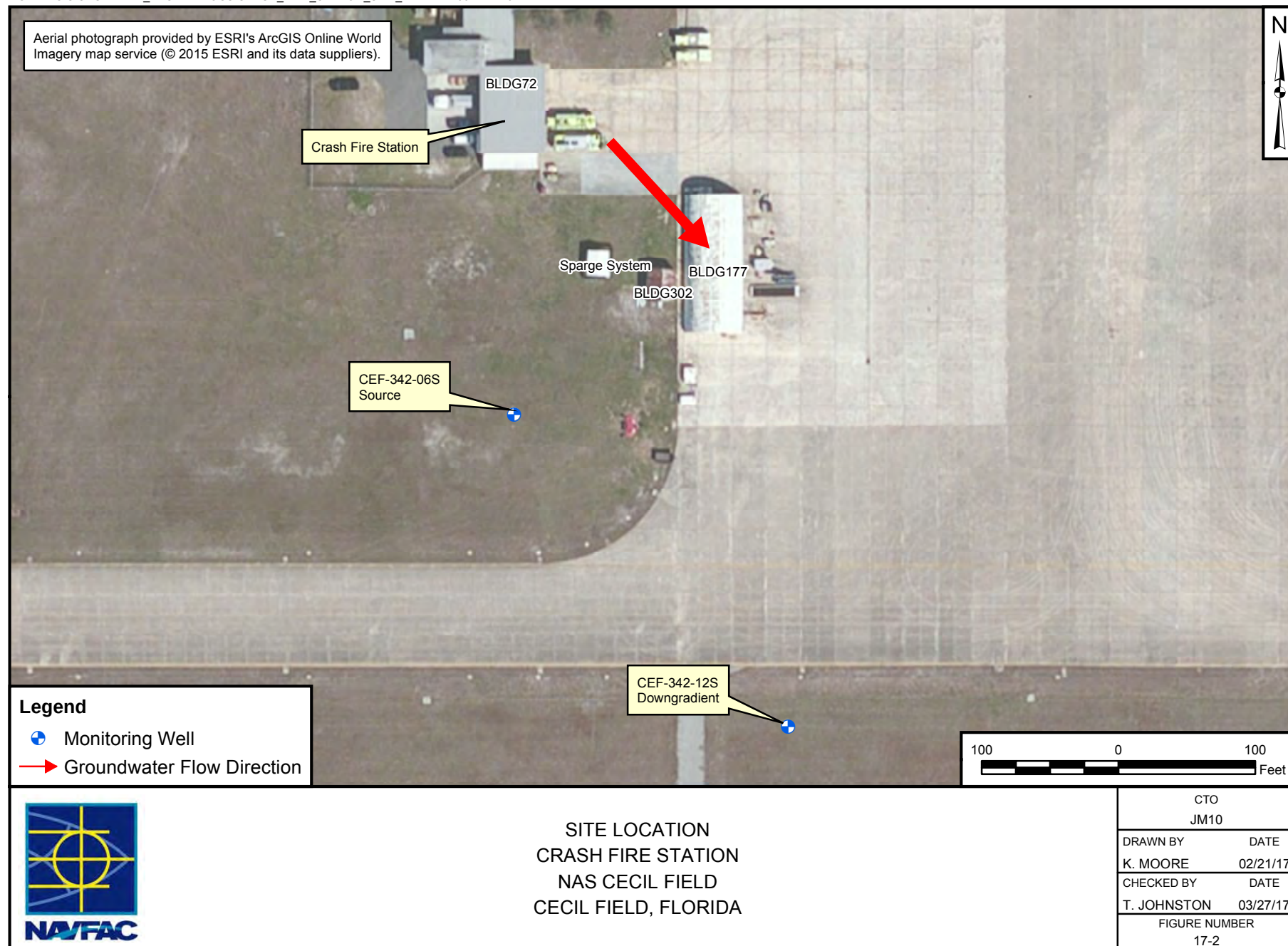
Relinquished By:
 Accepted By:

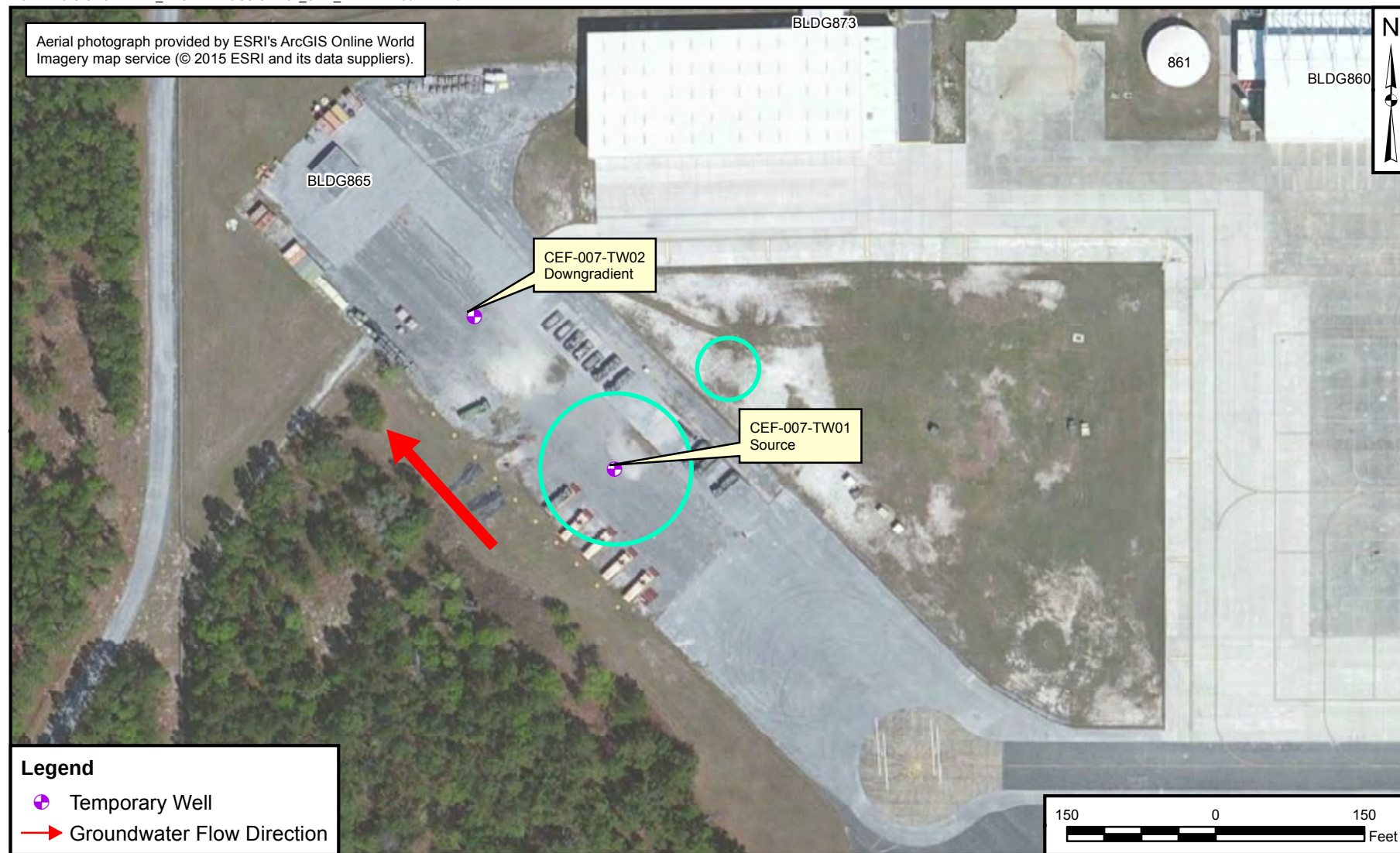
Date: 4/26/17
 Date: 4/28/17



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	

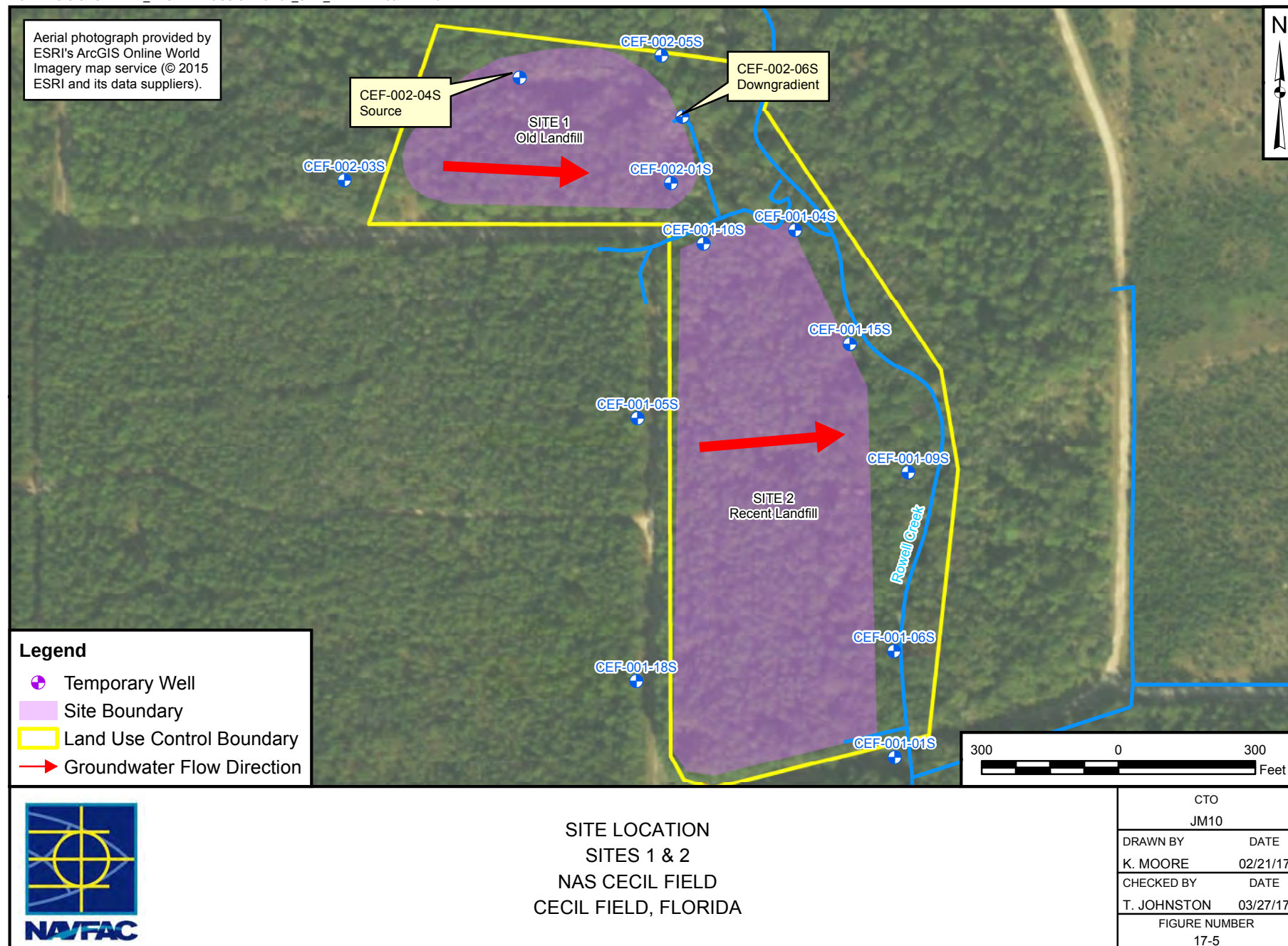


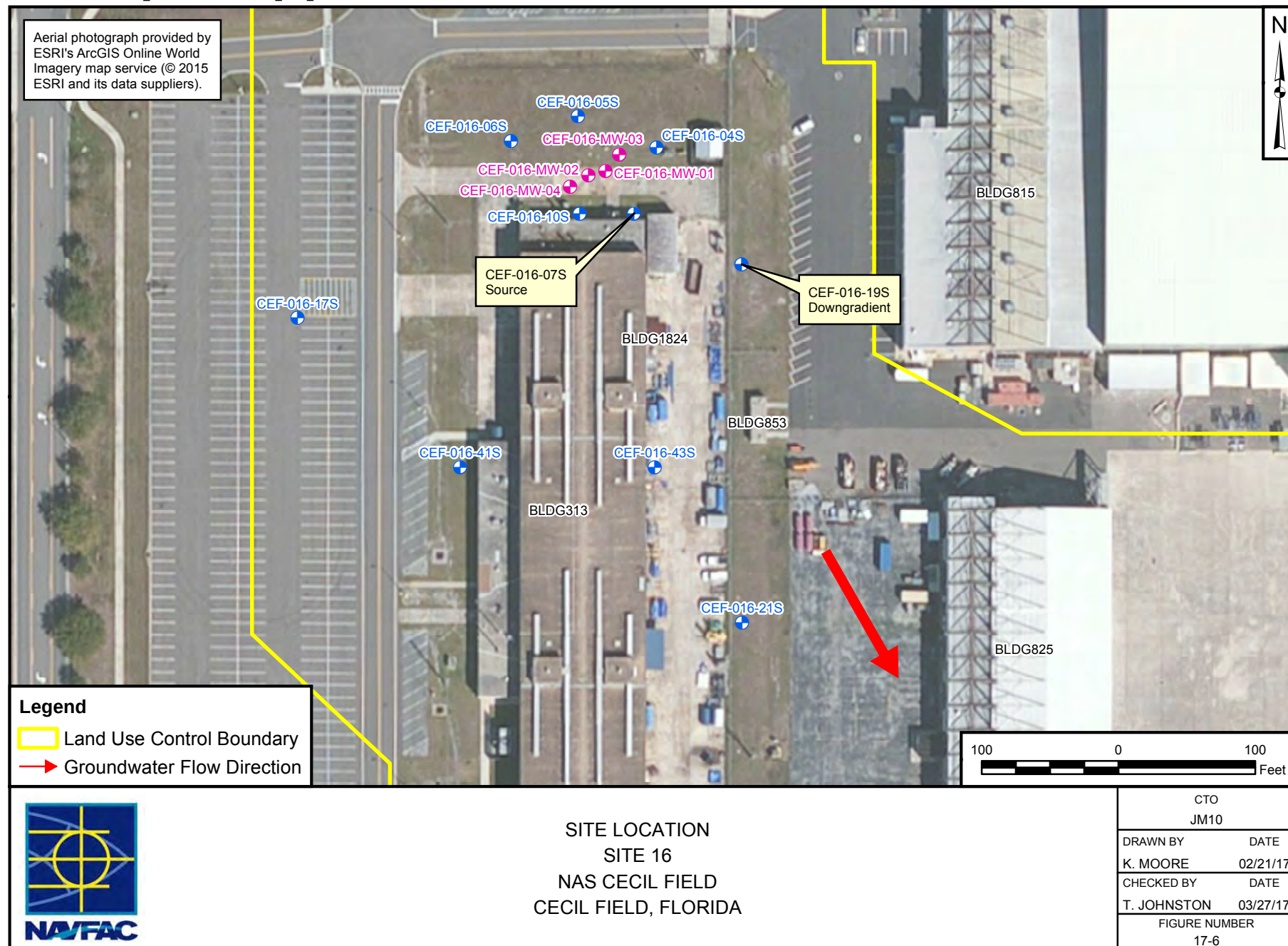


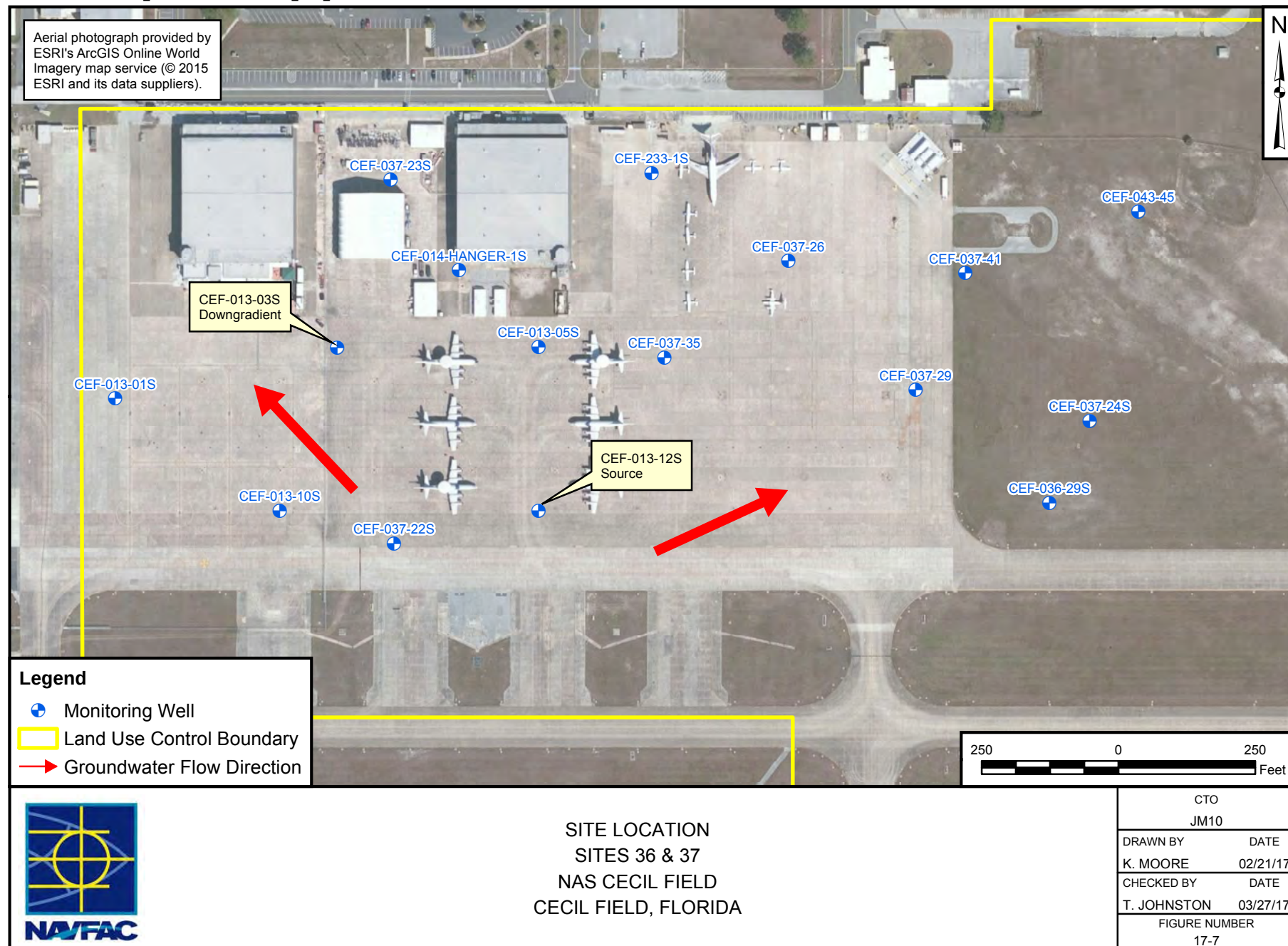
SITE LOCATION
SITE 7
NAS CECIL FIELD
CECIL FIELD, FLORIDA

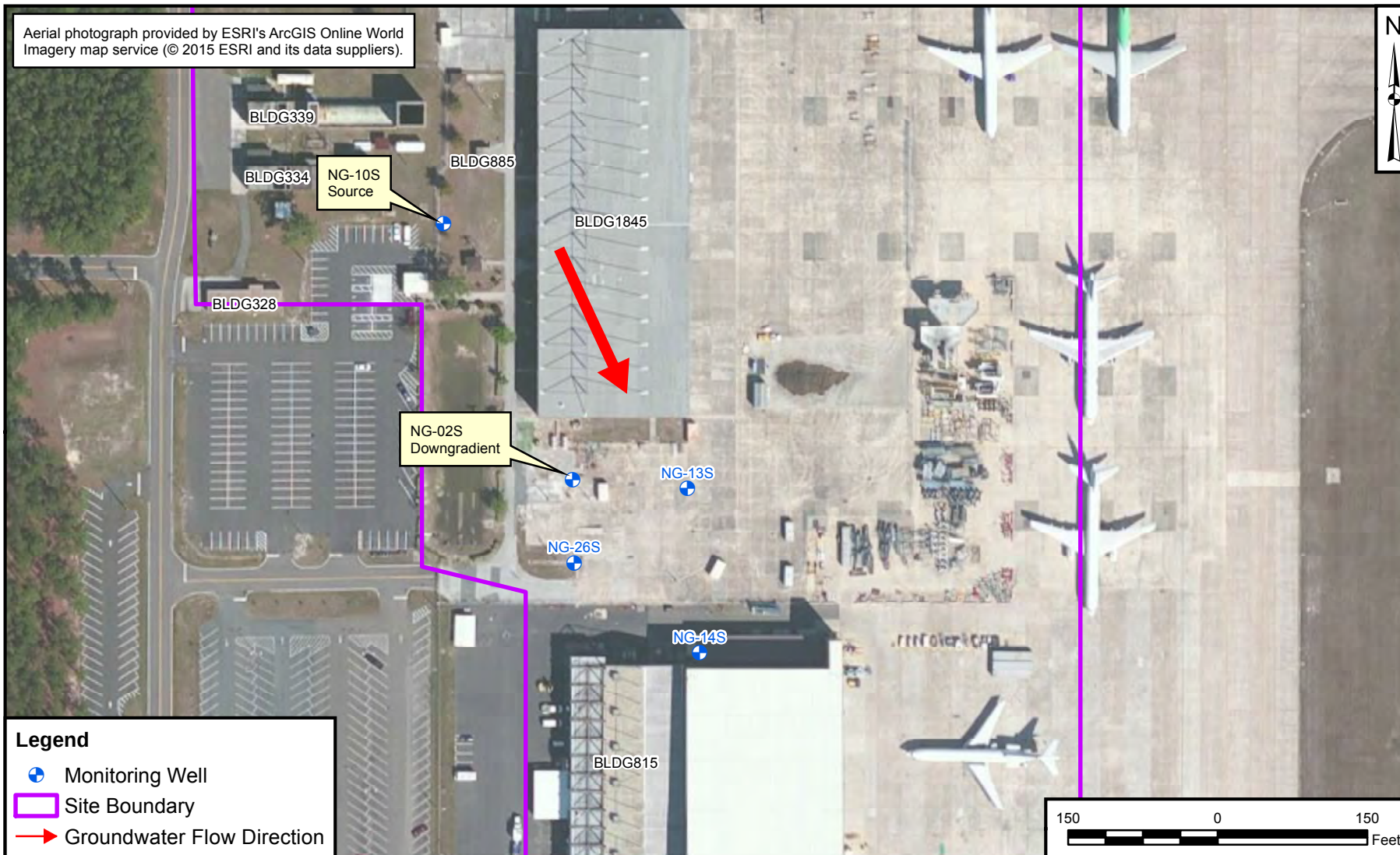
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-3	











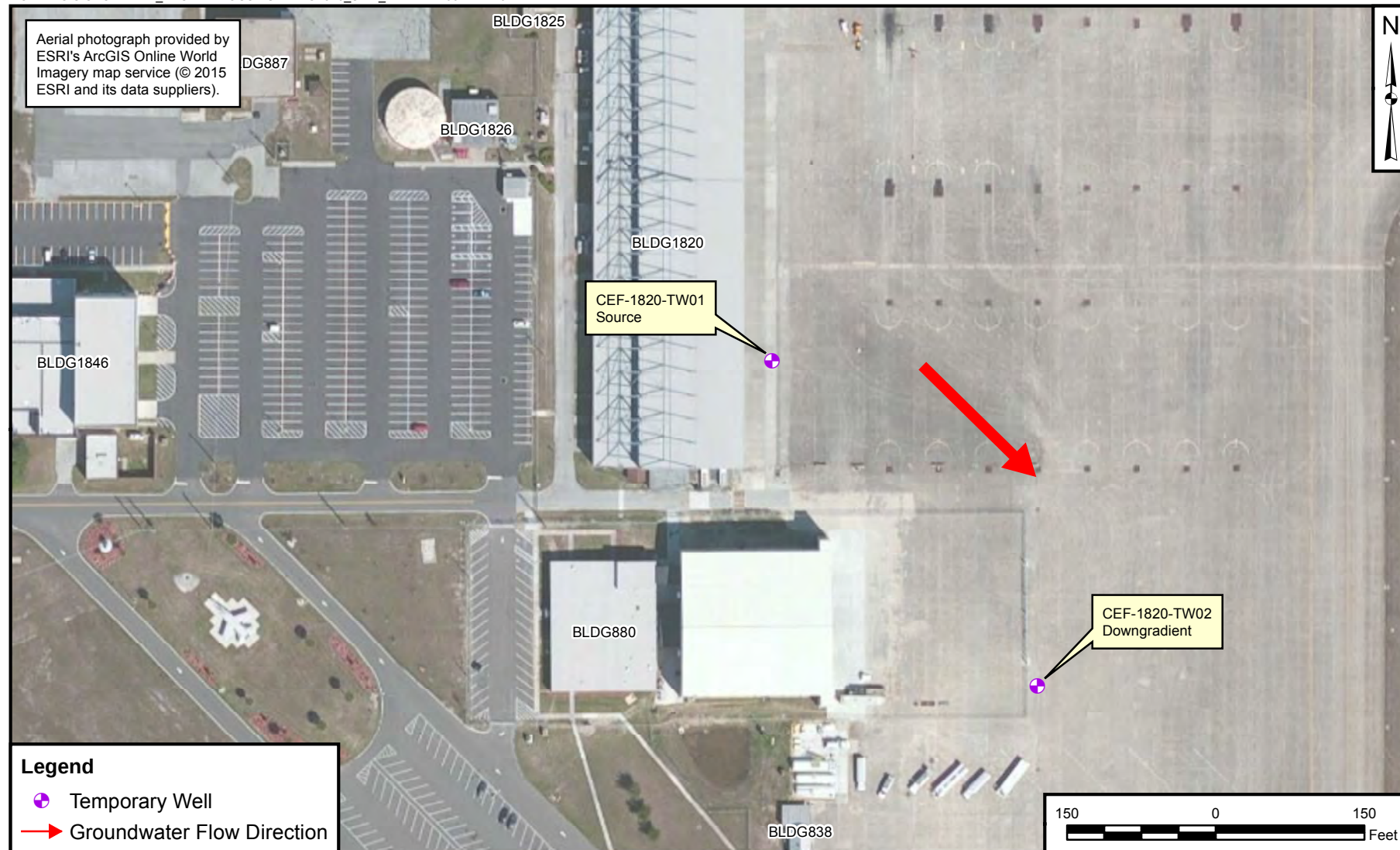
SITE LOCATION
SITE 59
NAS CECIL FIELD
CECIL FIELD, FLORIDA

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

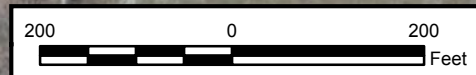
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-10	

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

CTO JM10	
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).



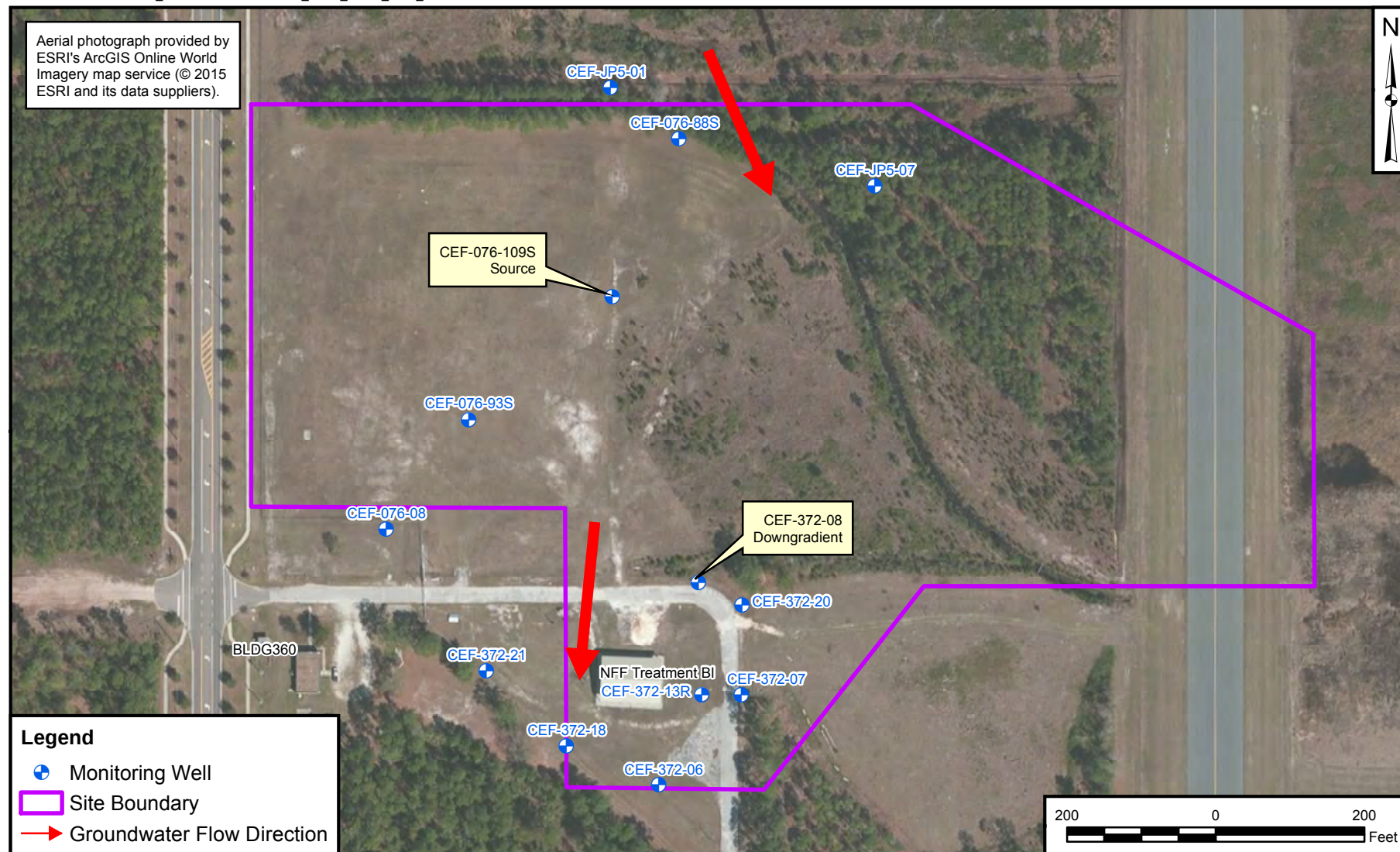
Legend

-  Monitoring Well
-  Groundwater Flow Direction



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

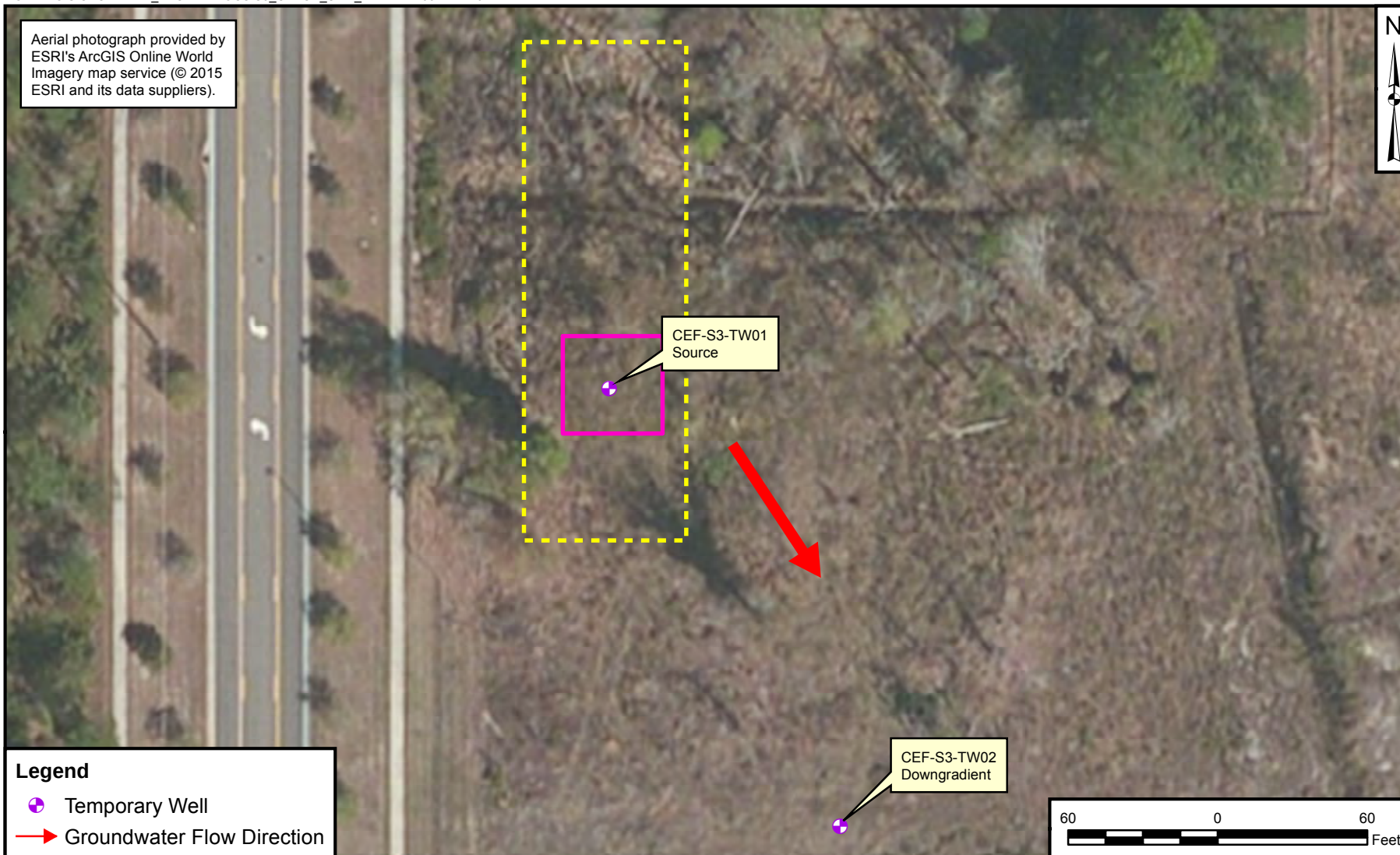
CTO JM10	
DRAWN BY	DATE
K. MOORE	02/21/17
CHECKED BY	DATE
T. JOHNSTON	03/27/17
FIGURE NUMBER 17-12	



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
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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	