

1035.001

September 23, 2020

Mr. Frank Sowers, P.E.
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

Re: Groundwater Sampling and Analysis Results
Emerging Contaminants
Former Vacuum Oil Refinery
5 & 15 Flint Street
NYSDEC BCP Site # C828162, Rochester, Monroe County

Dear Mr. Sowers:

On July 30, 2020 Leader Professional Services, Inc. (“Leader”) conducted the groundwater sampling of selected monitoring wells on the above-referenced site. The sampling was conducted following the New York State Department of Environmental Conservation (“NYSDEC”) approved Emerging Contaminants Sampling Work Plan for 1 Flint Street, LLC for the above-referenced Brownfield Cleanup Program site (“BCP Site”), prepared by Ravi Engineering and Land Surveying, P.C.

Groundwater Sample Analysis Results

Table 1 provides the sample results and the location of the samples (monitoring wells) is shown on Figure 1. As discussed with you, Leader could not find monitoring well MW-8 and requested that an alternate monitoring well be used. With your agreement, monitoring well MW-7 was selected as the substitute. Appendix 1 provides the laboratory report for the groundwater samples. Appendix 2 provides the Data Usability Summary Report (“DUSR”) performed by MEH Consulting.

The sampling was conducted over a single day. Prior to the collection of each sample from the monitoring wells, chemical and physical parameters were measured including the depth to groundwater, temperature, pH, oxidation reduction potential, conductivity, dissolved oxygen and turbidity (see Table 2). Turbidity was the first parameter measured (once purging began), since the turbidity was to be reduced to less than 50 Nephelometric units before sampling and typically more difficult to lower to acceptable limits. Dedicated sampling equipment was used on each monitoring well.

Emerging Contaminants

All of the groundwater samples were analyzed for Per- and Polyfluoroalkyl (“PFA’s) substances and 1,4-Dioxane. ALS Global Laboratories performed the analysis.

The sample results show each sample found 1,4-dioxane at concentrations ranging from 0.036J (J indicating the concentration was below the laboratory's reporting limit but above the method detection limit) to 3.2 micrograms per liter ("µg/L"). The New York State adopted maximum contaminant concentration ("MCL") for 1,4-dioxane is 1.0 µg/L. The sample from monitoring well MW-04 contained 1,4-dioxane at a concentration of 3.2 µg/L. Monitoring well MW-04 is a location that is adjacent to the Genesee River and hydraulically downgradient from monitoring wells MW-06 and MW-07. Based on the 2014 groundwater contours drawn by Ravi Engineers and Land Surveyors, monitoring wells MW-06 and MW-07 are located across from each other, on the same or similar hydraulic isopleth contour and upgradient from monitoring well MW-04. Assuming there is a source of contamination upgradient of monitoring wells MW-06 and MW-07, these monitoring well samples would be expected to have higher concentrations than a downgradient monitoring well such as MW-04. The 1,4-dioxane concentrations found in monitoring wells MW-06 and MW-07 were 0.036 J and 0.063 µg/L.

The concentrations of Perfluorooctane sulfonic acid ("PFOS") found ranged from 2.1 nanograms per liter ("ng/L") in monitoring well MW-04 to 12.0 ng/L in monitoring well MW-07. The groundwater quality guidance concentration for PFOS is 10.0 ng/L. The concentration of PFOS in monitoring well MW-06 was 7.1 ng/L.

The concentrations of Perfluorooctanoic acid ("PFOA") found ranged from 0.074J nanograms per liter ("ng/L") in monitoring well MW-04 to 6.8 ng/L in monitoring well MW-07. The groundwater quality guidance concentration for PFOA is 10.0 ng/L. The concentration of PFOA in monitoring well MW-06 was found at 3.7 ng/L.

The other individual PFA compounds identified were found below the groundwater quality guidance concentration for PFA's 100 ng/L. In addition to the 100 ng/L guidance concentration for individual PFA's, the guidance value for the total sum of all the PFA compounds is 500 ng/L. The total sum of all PFA compounds, including PFOA and PFOS, did not exceed the 500 ng/L guidance level. 1,4-dioxane and PFAs were not found in the equipment blank sample collected for this project.

The DUSR was completed by MEH Consulting. The data was usable and no changes to the results or the qualifiers are required because of the analysis or sample handling.



If you have any questions regarding our report, please contact us 585-248-2413 or by email: mrumrill@leaderlink.com.

Very truly yours,
LEADER PROFESSIONAL SERVICES, INC.

A handwritten signature in black ink, appearing to read "Pete von Schondorf". The signature is fluid and cursive.

Pete von Schondorf
Senior Project Manager

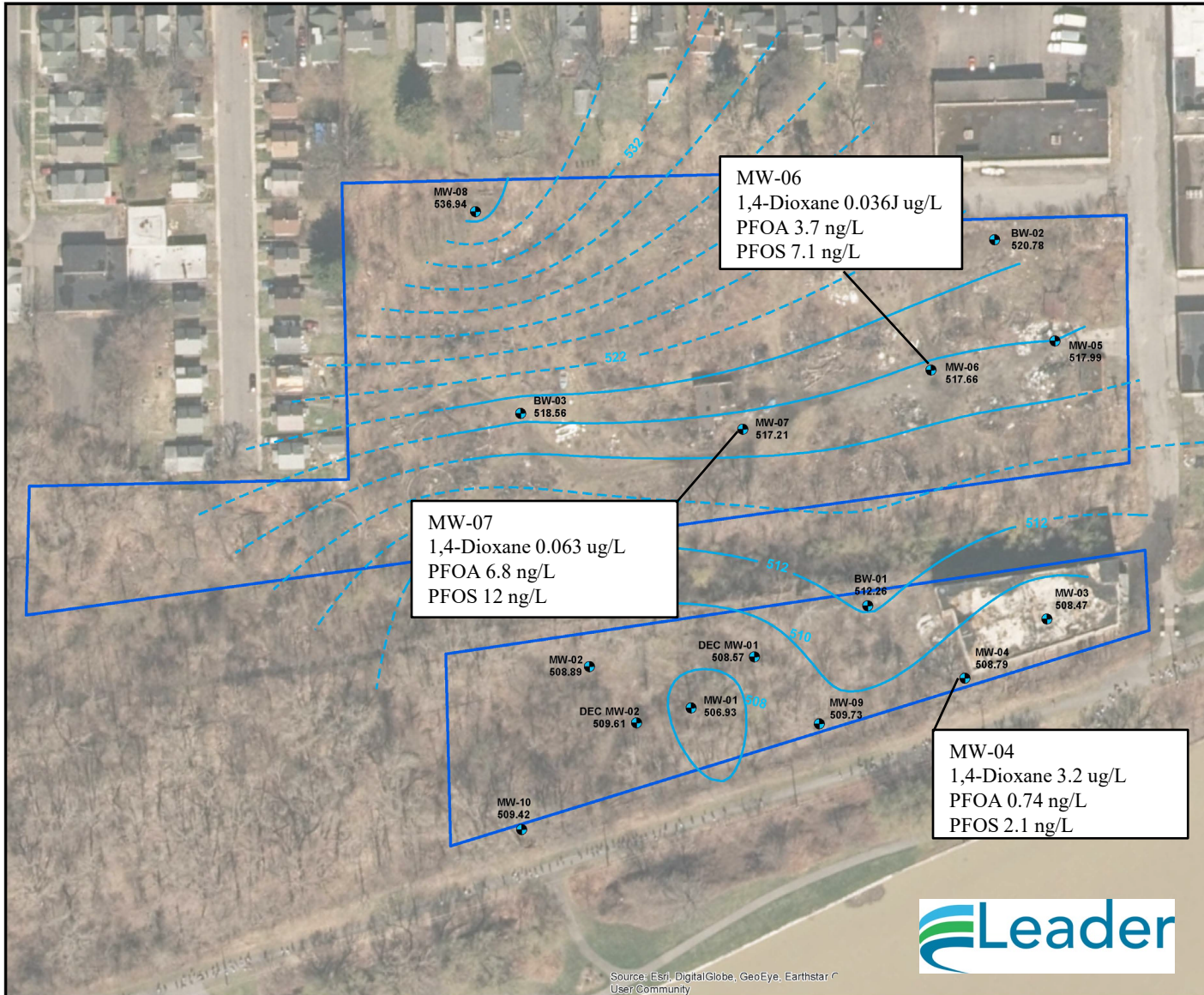
A handwritten signature in black ink, appearing to read "Michael P. Rumrill". The signature is fluid and cursive.

Michael P. Rumrill
President

Attachments

cc: Alan Knauf, Esq.

FIGURES AND TABLES



Legend

- MW ID
GW Elev (ft) 2014 RI Monitoring Well Location
- Groundwater Contour
- Dashed Contours are Inferred
Based on Limited Available Data
- Property Boundaries

SOURCES

- Aerial photography is a streaming world imagery layer provided by ESRI.

NOTES

- All features shown are approximate
- Groundwater elevations as measured on April 10, 2014
- Additional off-Site Roux (2008) Soil Boring/Monitoring Well locations south of the Site are not shown.
- RI = Remedial Investigation
- Groundwater elevations are in North American Vertical Datum 1988
- Contours are generated using Kriging methods in Golden Software Surfer Contour program



Title:
GROUNDWATER ELEVATION CONTOURS
APRIL 2014
 5 & 15 FLINT STREET
 ROCHESTER, NEW YORK



Source: Esri, DigitalGlobe, GeoEye, Earthstar, User/Community

Compiled by:	Date: 20MAY19	FIGURE
Prepared by:	Scale: AS SHOWN	1
Project Mgr:	Project:	
File: 5 & 15 Flint Street -- Figure 3		

TABLE 1
Groundwater Sample Analysis Results
Former Vacuum Oil Refinery
5 and 15 Flint Street
Site C828162
Rochester, New York

ANALYTE	RESULT REPORTED TO	UNITS	NYS DEC Guidance for Groundwater for Part 375 Programs* (January 2020)	MW 06 (7 30 20)	MW 07 (7 30 20)	MW 04 (7 30 20)	MW 06 DUP (7 30 20)	Equipment Blank
				- R2006768 001	- R2006768 002	- R2006768 003	- R2006768 004	- R2006768 005
Method: 8270D SIM/1,4-Dioxane								
1,4 Dioxane	MDL	ug/L	1**	0.036 J	0.063	3.2	0.033 J	0.027 U
Method: PFC/537M/PFAS								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	MDL	ng/L	100	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	MDL	ng/L	100	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
N Ethyl perfluorooctane sulfonamidoacetic acid	MDL	ng/L	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
N Methyl perfluorooctane sulfonamidoacetic acid	MDL	ng/L	100	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Perfluorobutane sulfonic acid (PFBS)	MDL	ng/L	100	2.2 J	3.2 J	0.28 U	2.7 J	0.28 U
Perfluorobutanoic acid (PFBA)	MDL	ng/L	100	26	16	1.6 J	29	0.40 U
Perfluorodecane sulfonic acid (PFDS)	MDL	ng/L	100	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Perfluorodecanoic acid (PFDA)	MDL	ng/L	100	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Perfluorododecanoic acid (PFDoDA)	MDL	ng/L	100	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Perfluoroheptane sulfonic acid (PFHpS)	MDL	ng/L	100	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Perfluoroheptanoic acid (PFHpA)	MDL	ng/L	100	2.7 J	3.1 J	0.63 U	1.8 J	0.63 U
Perfluorohexane sulfonic acid (PFHxS)	MDL	ng/L	100	2.2 J	2.7 J	1.3 U	3.3 J	1.3 U
Perfluorohexanoic acid (PFHxA)	MDL	ng/L	100	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U
Perfluorononanoic acid (PFNA)	MDL	ng/L	100	1.1 U	1.3 J	1.1 U	1.4 J	1.1 U
Perfluorooctane sulfonamide (FOSA)	MDL	ng/L	100	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
Perfluorooctane sulfonic acid (PFOS)	MDL	ng/L	10	7.1	12	2.1	8.1	0.44 U
Perfluorooctanoic acid (PFOA)	MDL	ng/L	10	3.7	6.8	0.74 J	4.6	0.35 U
Perfluoropentanoic acid (PFPeA)	MDL	ng/L	100	2.8 J	2.5 J	1.7 U	5.6	1.7 U
Perfluorotetradecanoic acid (PFTeDA)	MDL	ng/L	100	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Perfluorotridecanoic acid (PFTrDA)	MDL	ng/L	100	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Perfluoroundecanoic acid (PFUnDA)	MDL	ng/L	100	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U

Notes:

ng/L = nanograms per liter

ug/L = micrograms per liter

MDL = Method detection limit

J = Concentration is < the reporting limit but > the MDL

U = Compound not detected > the MDL

* = PFAS compounds

** = Adoption of MCL for drinking water

TABLE 2
Field Parameter Results
Former Vacuum Oil Refinery
5 and 15 Flint Street
Rochester, New York

	MW-06	MW-07	MW-04
Water depth from ground surface	3.82 ft	4.2 ft	4.2 ft
Water depth from top of casing	6.2 ft	7 ft	7 ft
Temperature in Centigrade	16.9	19.7	14.1
Dissolved Oxygen in milligrams per liter	0.38	0.03	0.58
Specific Conductance in millisiemens per centimeter	1.1	0.926	1.381
pH standard in units	6.81	6.71	6.39
Oxidation Reduction Potential in millivolts	-123.4	-110	-32.7
Turbidity in Nephelometric units	42.02	21.77	7.48

APPENDIX 1

Laboratory Results



August 24, 2020

Service Request No:R2006768

Mike Rumrill
Leader Professional Services, Inc.
271 Marsh Road
Suite 2
Pittsford, NY 14534

Laboratory Results for: 5115 Flint Street

Dear Mike,

Enclosed are the results of the sample(s) submitted to our laboratory July 30, 2020
For your reference, these analyses have been assigned our service request number **R2006768**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | **FAX** +1 585 288 8475

ALS Group USA, Corp.
dba ALS Environmental



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Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com



Client: Leader Professional Services, Inc.
Project: 5115 Flint Street
Sample Matrix: Water

Service Request: R2006768
Date Received: 07/30/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 07/30/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

A handwritten signature in black ink, appearing to read "Samantha", is written over a horizontal line.

Approved by _____

Date 08/24/2020



SAMPLE DETECTION SUMMARY

CLIENT ID: MW-06 (7-30-20)		Lab ID: R2006768-001					
Analyte	Results	Flag	MDL	MRL	Units	Method	
1,4-Dioxane	0.036	J	0.027	0.040	ug/L	8270D SIM	

CLIENT ID: MW-07 (7-30-20)		Lab ID: R2006768-002					
Analyte	Results	Flag	MDL	MRL	Units	Method	
1,4-Dioxane	0.063		0.027	0.040	ug/L	8270D SIM	

CLIENT ID: MW-04 (7-30-20)		Lab ID: R2006768-003					
Analyte	Results	Flag	MDL	MRL	Units	Method	
1,4-Dioxane	3.2		0.027	0.040	ug/L	8270D SIM	

CLIENT ID: MW-06 DUP (7-30-20)		Lab ID: R2006768-004					
Analyte	Results	Flag	MDL	MRL	Units	Method	
1,4-Dioxane	0.033	J	0.027	0.040	ug/L	8270D SIM	



Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2006768-001	MW-06 (7-30-20)	7/30/2020	0855
R2006768-002	MW-07 (7-30-20)	7/30/2020	1135
R2006768-003	MW-04 (7-30-20)	7/30/2020	1342
R2006768-004	MW-06 DUP (7-30-20)	7/30/2020	0855
R2006768-005	Equipment Blank	7/30/2020	0855



Cooler Receipt and Preservation Check Form

R2006768

5

Leader Professional Services, Inc.
6115 Flint Street



Project/Client Leader Folder Number _____

Cooler received on 7/30/2020 by SW

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="checkbox"/> Y N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/> Y N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="checkbox"/> Y N

5a	Perchlorate samples have required headspace?	Y N <u>N/A</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>N/A</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as:	Bulk Encore 5035set <u>N/A</u>

3. Temperature Readings Date: 7/30/2020 Time: 1545 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>17.3</u>	<u>15.40</u>					
Within 0-6°C?	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by SW on 7/30/2020 at 1545
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 7/31/2020 Time: 1425 by: SW

- 9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- 10. Did all bottle labels and tags agree with custody papers? YES NO
- 11. Were correct containers used for the tests indicated? YES NO
- 12. Were 5035 vials acceptable (no extra labels; not leaking)? YES NO
- 13. Air Samples: Cassettes / Tubes Intact with MS? _____ Canisters Pressurized _____ Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 062770-15MC

Explain all Discrepancies/ Other Comments: _____

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: SW

PC Secondary Review: SW 8/4/20 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R2006768-001.01					
	PFC/537M				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
R2006768-001.02					
		7/31/2020	1426	SMO / GLAFORCE	8/12/2020
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
R2006768-001.03					
	8270D SIM				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	
		8/5/2020	1435	R-002 / AFELSER	
R2006768-001.04					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	
		8/5/2020	1435	R-002 / AFELSER	
R2006768-001.05					
		7/31/2020	1427	R-002 / GLAFORCE	
		7/31/2020	1427	SMO / GLAFORCE	
R2006768-001.06					
		7/31/2020	1427	R-002 / GLAFORCE	
		7/31/2020	1427	SMO / GLAFORCE	
R2006768-001.07					
		7/31/2020	1427	R-002 / GLAFORCE	
		7/31/2020	1427	SMO / GLAFORCE	
R2006768-001.08					
		7/31/2020	1427	R-002 / GLAFORCE	

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
<hr/>					
R2006768-001.09		7/31/2020	1427	SMO / GLAFORCE	
<hr/>					
		7/31/2020	1427	R-002 / GLAFORCE	
		7/31/2020	1427	SMO / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
<hr/>					
R2006768-001.10					
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		7/31/2020	1427	SMO / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
<hr/>					
R2006768-001.11					
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		7/31/2020	1427	SMO / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
<hr/>					
R2006768-001.12					
		7/31/2020	1427	R-002 / GLAFORCE	
		7/31/2020	1427	SMO / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
<hr/>					
R2006768-002.01					
	PFC/537M				
		7/31/2020	1426	SMO / GLAFORCE	8/12/2020
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
<hr/>					
R2006768-002.02					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	

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Internal Chain of Custody Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
<hr/>					
R2006768-002.03					
	8270D SIM				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	
		8/5/2020	1435	R-002 / AFELSER	
<hr/>					
R2006768-002.04					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
<hr/>					
R2006768-003.01					
	PFC/537M,PFC/537M				
		7/31/2020	1426	SMO / GLAFORCE	8/12/2020
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
<hr/>					
R2006768-003.02					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
<hr/>					
R2006768-003.03					
	8270D SIM				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	
		8/5/2020	1435	R-002 / AFELSER	
<hr/>					
R2006768-003.04					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
<hr/>					
R2006768-004.01					
	PFC/537M				
		7/31/2020	1426	SMO / GLAFORCE	8/12/2020

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Internal Chain of Custody Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
	PFC/537M				
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
R2006768-004.02					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
R2006768-004.03					
	8270D SIM				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	
		8/5/2020	1435	R-002 / AFELSER	
R2006768-004.04					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
R2006768-005.01					
	PFC/537M				
		7/31/2020	1426	SMO / GLAFORCE	8/12/2020
		7/31/2020	1427	R-002 / GLAFORCE	8/12/2020
		8/5/2020	1356	K-OLC / SMO2	8/12/2020
		8/5/2020	1404	OLC 62 / SMO2	8/12/2020
		8/12/2020	1522	K-Disposed / KLMILLER	8/12/2020
R2006768-005.02					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1356	K-OLC / SMO2	
		8/5/2020	1404	OLC 62 / SMO2	
		8/19/2020	1738	K-DELILAH / BDAVIS	
R2006768-005.03					
	8270D SIM				
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	
		8/5/2020	1117	In Lab / AFELSER	

ALS Group USA, Corp.
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Internal Chain of Custody Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
	8270D SIM	8/5/2020	1435	R-002 / AFELSER	
<hr/>					
R2006768-005.04					
		7/31/2020	1426	SMO / GLAFORCE	
		7/31/2020	1427	R-002 / GLAFORCE	



Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

<p>U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p>J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p>	<p>+ Correlation coefficient for MSA is <0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.</p> <p>P Concentration >40% difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\times 100\%$ Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p>
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Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
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Analyst Summary report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
8270D SIM
PFC/537M

Extracted/Digested By
AFELSER
KLMILLER

Analyzed By
AFELSER
CMULLER

Sample Name: MW-07 (7-30-20)
Lab Code: R2006768-002
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
8270D SIM
PFC/537M

Extracted/Digested By
AFELSER
KLMILLER

Analyzed By
AFELSER
CMULLER

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
8270D SIM
PFC/537M

Extracted/Digested By
AFELSER
KLMILLER

Analyzed By
AFELSER
CMULLER

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003.R01
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
PFC/537M

Extracted/Digested By
KLMILLER

Analyzed By
CMULLER

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768

Sample Name: MW-06 DUP (7-30-20)
Lab Code: R2006768-004
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
8270D SIM
PFC/537M

Extracted/Digested By
AFELSER
KLMILLER

Analyzed By
AFELSER
CMULLER

Sample Name: Equipment Blank
Lab Code: R2006768-005
Sample Matrix: Water

Date Collected: 07/30/20
Date Received: 07/30/20

Analysis Method
8270D SIM
PFC/537M

Extracted/Digested By
AFELSER
KLMILLER

Analyzed By
AFELSER
CMULLER



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	



Sample Results

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Semivolatile Organic Compounds by GC/MS

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ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.036 J	0.040	0.027	1	08/05/20 20:17	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	78	64 - 124	08/05/20 20:17	

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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 11:35
Date Received: 07/30/20 15:41

Sample Name: MW-07 (7-30-20)
Lab Code: R2006768-002

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.063	0.040	0.027	1	08/05/20 21:13	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	79	64 - 124	08/05/20 21:13	

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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 13:42
Date Received: 07/30/20 15:41

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	3.2	0.040	0.027	1	08/05/20 21:32	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	81	64 - 124	08/05/20 21:32	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 DUP (7-30-20)
Lab Code: R2006768-004

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.033 J	0.040	0.027	1	08/05/20 21:51	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	73	64 - 124	08/05/20 21:51	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: Equipment Blank
Lab Code: R2006768-005

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.040 U	0.040	0.027	1	08/05/20 22:09	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	81	64 - 124	08/05/20 22:09	



QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768

SURROGATE RECOVERY SUMMARY
1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Extraction Method: EPA 3535A

Sample Name	Lab Code	1,4-Dioxane-d8
		64-124
MW-06 (7-30-20)	R2006768-001	78
MW-07 (7-30-20)	R2006768-002	79
MW-04 (7-30-20)	R2006768-003	81
MW-06 DUP (7-30-20)	R2006768-004	73
Equipment Blank	R2006768-005	81
Method Blank	RQ2008596-01	72
Lab Control Sample	RQ2008596-02	83
Duplicate Lab Control Sample	RQ2008596-03	84
MW-06 (7-30-20) MS	RQ2008596-04	80
MW-06 (7-30-20) DMS	RQ2008596-05	81

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20
Date Received: 07/30/20
Date Analyzed: 08/5/20
Date Extracted: 08/5/20

Duplicate Matrix Spike Summary
1,4-Dioxane by GC/MS

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001
Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Units: ug/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike RQ2008596-04		Duplicate Matrix Spike RQ2008596-05		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
1,4-Dioxane	0.036 J	9.31	10.0	93	9.63	10.0	96	33-146	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/05/20 19:01
Date Extracted: 08/05/20

Method Blank Summary
1,4-Dioxane by GC/MS

Sample Name: Method Blank
Lab Code: RQ2008596-01
Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Instrument ID: R-MS-56
File ID: I:\ACQUADATA\5975E\data\080520\AX289.D\
Analysis Lot: 689887
Extraction Lot: 362924

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ2008596-02	I:\ACQUADATA\5975E\data\080520\AX290.D\	08/05/20 19:19
Duplicate Lab Control Sample	RQ2008596-03	I:\ACQUADATA\5975E\data\080520\AX291.D\	08/05/20 19:38
MW-06 (7-30-20)	R2006768-001	I:\ACQUADATA\5975E\data\080520\AX293.D\	08/05/20 20:17
MW-06 (7-30-20)MS	RQ2008596-04	I:\ACQUADATA\5975E\data\080520\AX294.D\	08/05/20 20:37
MW-06 (7-30-20)DMS	RQ2008596-05	I:\ACQUADATA\5975E\data\080520\AX295.D\	08/05/20 20:55
MW-07 (7-30-20)	R2006768-002	I:\ACQUADATA\5975E\data\080520\AX296.D\	08/05/20 21:13
MW-04 (7-30-20)	R2006768-003	I:\ACQUADATA\5975E\data\080520\AX297.D\	08/05/20 21:32
MW-06 DUP (7-30-20)	R2006768-004	I:\ACQUADATA\5975E\data\080520\AX298.D\	08/05/20 21:51
Equipment Blank	R2006768-005	I:\ACQUADATA\5975E\data\080520\AX299.D\	08/05/20 22:09
Method Detection Limit Verification	RQ2008596-08	I:\ACQUADATA\5975E\data\080520\AX300.D\	08/05/20 22:29

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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2008596-01

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.040 U	0.040	0.027	1	08/05/20 19:01	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	72	64 - 124	08/05/20 19:01	

ALS Group USA, Corp.
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QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/05/20 19:19
Date Extracted: 08/05/20

Lab Control Sample Summary
1,4-Dioxane by GC/MS

Sample Name: Lab Control Sample
Lab Code: RQ2008596-02
Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Instrument ID:R-MS-56
File ID:I:\ACQUADATA\5975E\data\080520\AX290.D\
Analysis Lot:689887
Extraction Lot:362924

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ2008596-01	I:\ACQUADATA\5975E\data\080520\AX289.D\	08/05/20 19:01
Duplicate Lab Control Sample	RQ2008596-03	I:\ACQUADATA\5975E\data\080520\AX291.D\	08/05/20 19:38
MW-06 (7-30-20)	R2006768-001	I:\ACQUADATA\5975E\data\080520\AX293.D\	08/05/20 20:17
MW-06 (7-30-20)MS	RQ2008596-04	I:\ACQUADATA\5975E\data\080520\AX294.D\	08/05/20 20:37
MW-06 (7-30-20)DMS	RQ2008596-05	I:\ACQUADATA\5975E\data\080520\AX295.D\	08/05/20 20:55
MW-07 (7-30-20)	R2006768-002	I:\ACQUADATA\5975E\data\080520\AX296.D\	08/05/20 21:13
MW-04 (7-30-20)	R2006768-003	I:\ACQUADATA\5975E\data\080520\AX297.D\	08/05/20 21:32
MW-06 DUP (7-30-20)	R2006768-004	I:\ACQUADATA\5975E\data\080520\AX298.D\	08/05/20 21:51
Equipment Blank	R2006768-005	I:\ACQUADATA\5975E\data\080520\AX299.D\	08/05/20 22:09
Method Detection Limit Verification	RQ2008596-08	I:\ACQUADATA\5975E\data\080520\AX300.D\	08/05/20 22:29

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/05/20

Duplicate Lab Control Sample Summary
1,4-Dioxane by GC/MS

Units:ug/L
Basis:NA

Analyte Name	Analytical Method	Result	Lab Control Sample		Duplicate Lab Control Sample		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
1,4-Dioxane	8270D SIM	9.24	10.0	92	9.34	10.0	93	58-124	1	30

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768
Date Analyzed:08/05/20 15:23

Tune Summary
1,4-Dioxane by GC/MS

File ID: I:\ACQUADATA\5975E\data\080520\AX277.D\
Instrument ID: R-MS-56

Analytical Method: 8270D SIM
Analysis Lot: 689887

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	34.21	166259	Pass
68	69	0.00	2	1.85	3949	Pass
69	198	0.00	100	43.98	213786	Pass
70	69	0.00	2	0.48	1029	Pass
127	198	10	80	52.52	255275	Pass
197	198	0.00	2	0.00	0	Pass
198	198	100	100	100.00	486059	Pass
199	198	5	9	6.85	33301	Pass
275	198	10	60	25.04	121731	Pass
365	198	1	100	3.26	15865	Pass
441	442	0.01	24	16.26	83309	Pass
442	442	100	100	100.00	512320	Pass
443	442	15	24	19.73	101096	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	RQ2008672-02	I:\ACQUADATA\5975E\data\080520\AX288.D\	08/05/20 18:43	
Method Blank	RQ2008596-01	I:\ACQUADATA\5975E\data\080520\AX289.D\	08/05/20 19:01	
Lab Control Sample	RQ2008596-02	I:\ACQUADATA\5975E\data\080520\AX290.D\	08/05/20 19:19	
Duplicate Lab Control Sample	RQ2008596-03	I:\ACQUADATA\5975E\data\080520\AX291.D\	08/05/20 19:38	
MW-06 (7-30-20)	R2006768-001	I:\ACQUADATA\5975E\data\080520\AX293.D\	08/05/20 20:17	
MW-06 (7-30-20)	RQ2008596-04	I:\ACQUADATA\5975E\data\080520\AX294.D\	08/05/20 20:37	
MW-06 (7-30-20)	RQ2008596-05	I:\ACQUADATA\5975E\data\080520\AX295.D\	08/05/20 20:55	
MW-07 (7-30-20)	R2006768-002	I:\ACQUADATA\5975E\data\080520\AX296.D\	08/05/20 21:13	
MW-04 (7-30-20)	R2006768-003	I:\ACQUADATA\5975E\data\080520\AX297.D\	08/05/20 21:32	
MW-06 DUP (7-30-20)	R2006768-004	I:\ACQUADATA\5975E\data\080520\AX298.D\	08/05/20 21:51	
Equipment Blank	R2006768-005	I:\ACQUADATA\5975E\data\080520\AX299.D\	08/05/20 22:09	
Method Detection Limit Verification	RQ2008596-08	I:\ACQUADATA\5975E\data\080520\AX300.D\	08/05/20 22:29	
Continuing Calibration Verification	RQ2008672-03	I:\ACQUADATA\5975E\data\080520\AX304.D\	08/05/20 23:43	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768
Date Analyzed:08/05/20 18:43

Internal Standard Area and RT SUMMARY
1,4-Dioxane by GC/MS

File ID: I:\ACQUDATA\5975E\data\080520\AX288.D\
Instrument ID: R-MS-56
Analysis Method: 8270D SIM

Lab Code:RQ2008672-02
Analysis Lot:689887
Signal ID:1

	Tetrahydrofuran-d8	
	Area	RT
Result ==>	32,598	3.11
Upper Limit ==>	65,196	3.28
Lower Limit ==>	16,299	2.94

Associated Analyses

Continuing Calibration Verification	RQ2008672-02	32598	3.11
Method Blank	RQ2008596-01	37437	3.07
Lab Control Sample	RQ2008596-02	37945	3.11
Duplicate Lab Control Sample	RQ2008596-03	35925	3.06
MW-06 (7-30-20)	R2006768-001	37387	3.13
MW-06 (7-30-20)MS	RQ2008596-04	35171	3.11
MW-06 (7-30-20)DMS	RQ2008596-05	37441	3.11
MW-07 (7-30-20)	R2006768-002	33371	3.06
MW-04 (7-30-20)	R2006768-003	37540	3.15
MW-06 DUP (7-30-20)	R2006768-004	34413	3.06
Equipment Blank	R2006768-005	36313	3.13
Method Detection Limit Verification	RQ2008596-08	38069	3.12



Raw Data

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.036 J	0.040	0.027	1	08/05/20 20:17	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	78	64 - 124	08/05/20 20:17	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 11:35
Date Received: 07/30/20 15:41

Sample Name: MW-07 (7-30-20)
Lab Code: R2006768-002

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.063	0.040	0.027	1	08/05/20 21:13	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	79	64 - 124	08/05/20 21:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 13:42
Date Received: 07/30/20 15:41

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	3.2	0.040	0.027	1	08/05/20 21:32	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	81	64 - 124	08/05/20 21:32	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 DUP (7-30-20)
Lab Code: R2006768-004

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.033 J	0.040	0.027	1	08/05/20 21:51	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	73	64 - 124	08/05/20 21:51	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: Equipment Blank
Lab Code: R2006768-005

Units: ug/L
Basis: NA

1,4-Dioxane by GC/MS

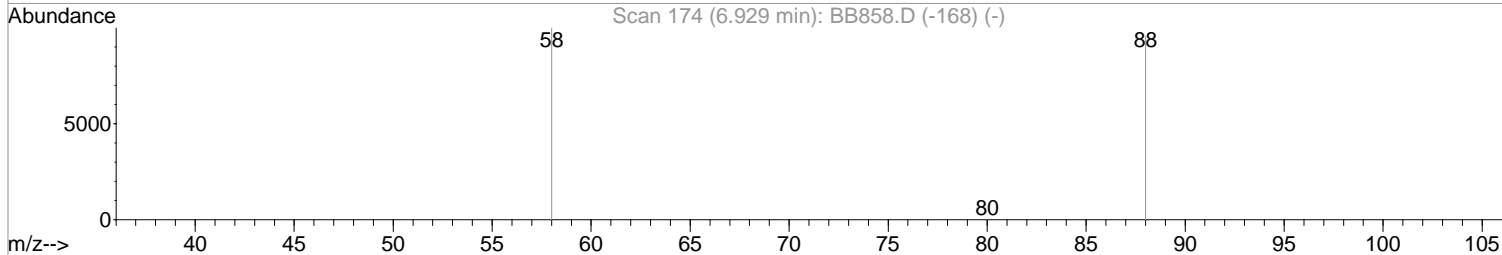
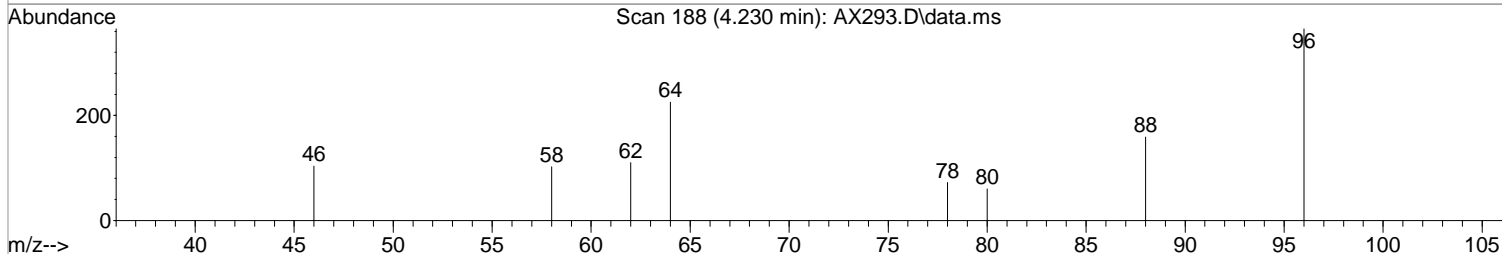
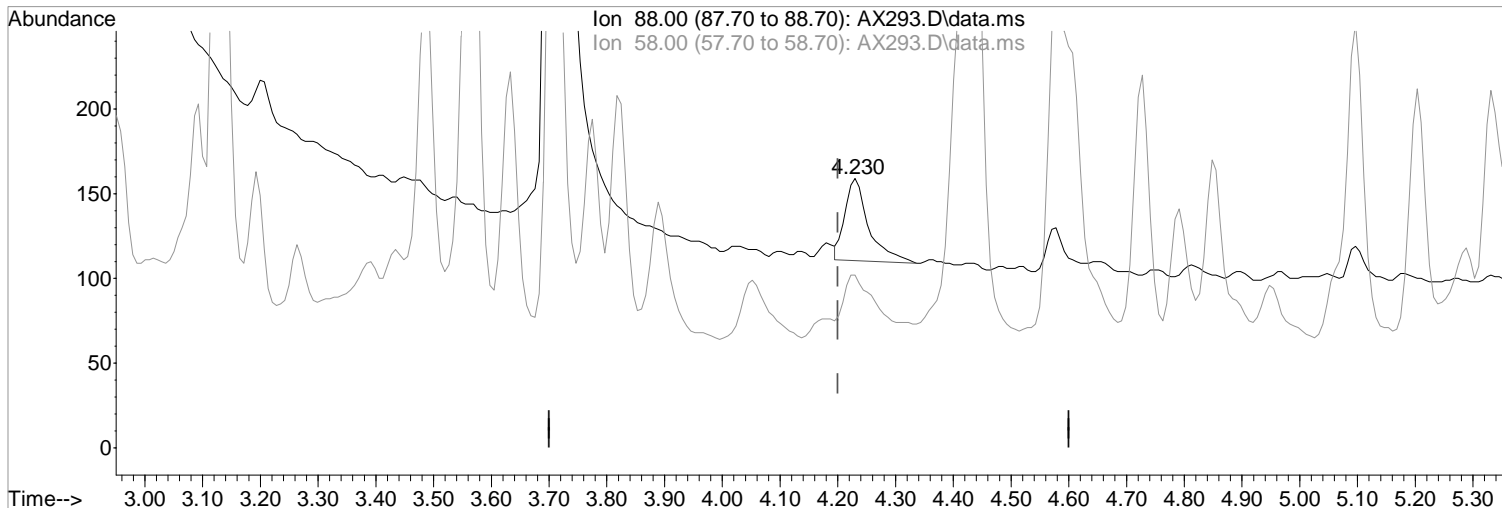
Analysis Method: 8270D SIM
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.040 U	0.040	0.027	1	08/05/20 22:09	8/5/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	81	64 - 124	08/05/20 22:09	

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX293.D
Acq On : 5 Aug 2020 8:17 pm
Operator : AFelser
Sample : R2006768-001 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 06 09:41:00 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration



(2) 1,4-Dioxane (T)

4.230min (+ 0.030) 1.78 PPB m

response 139

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	50.40	64.15
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

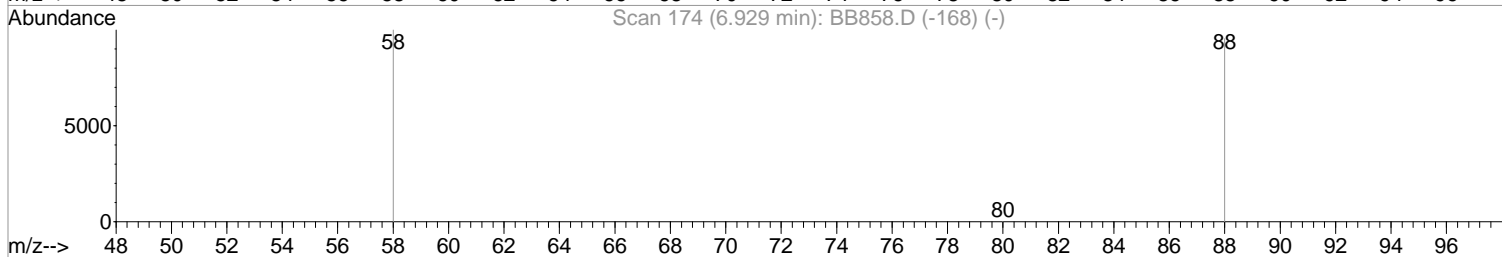
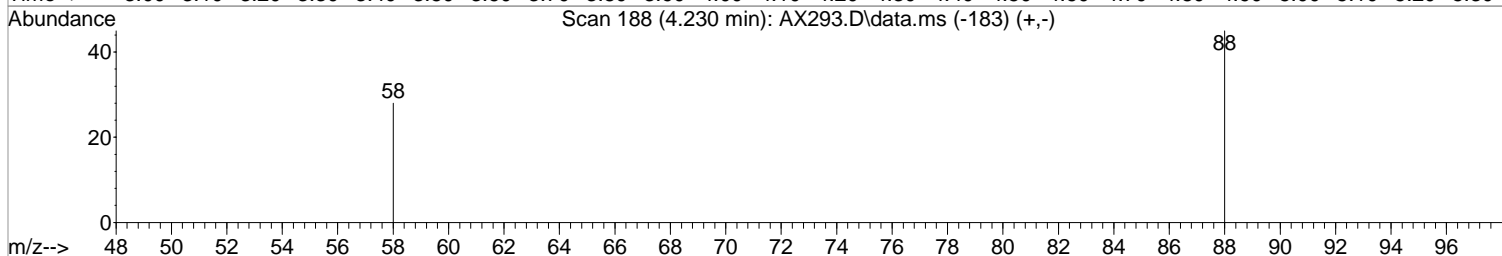
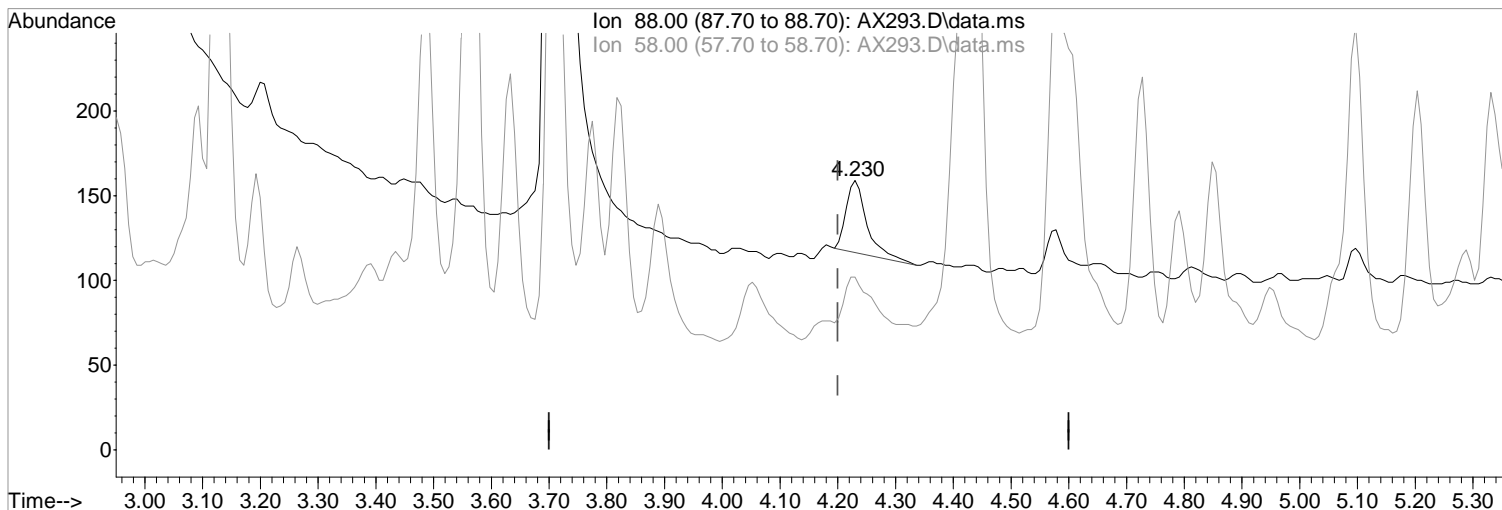
After

Poor integration.

08/06/20

Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX293.D
 Acq On : 5 Aug 2020 8:17 pm
 Operator : AFelser
 Sample : R2006768-001 Inst : 5975 E
 Misc : 362924 8270 DIOX
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 06 09:41:00 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration



TIC: AX293.D\data.ms

(2) 1,4-Dioxane (T)

4.230min (+ 0.030) 1.34 PPB

response 105

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	50.40	62.22
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integration:

Before

08/06/20

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX293.D
Acq On : 5 Aug 2020 8:17 pm
Operator : AFelser
Sample : R2006768-001 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 19 Sample Multiplier: 1

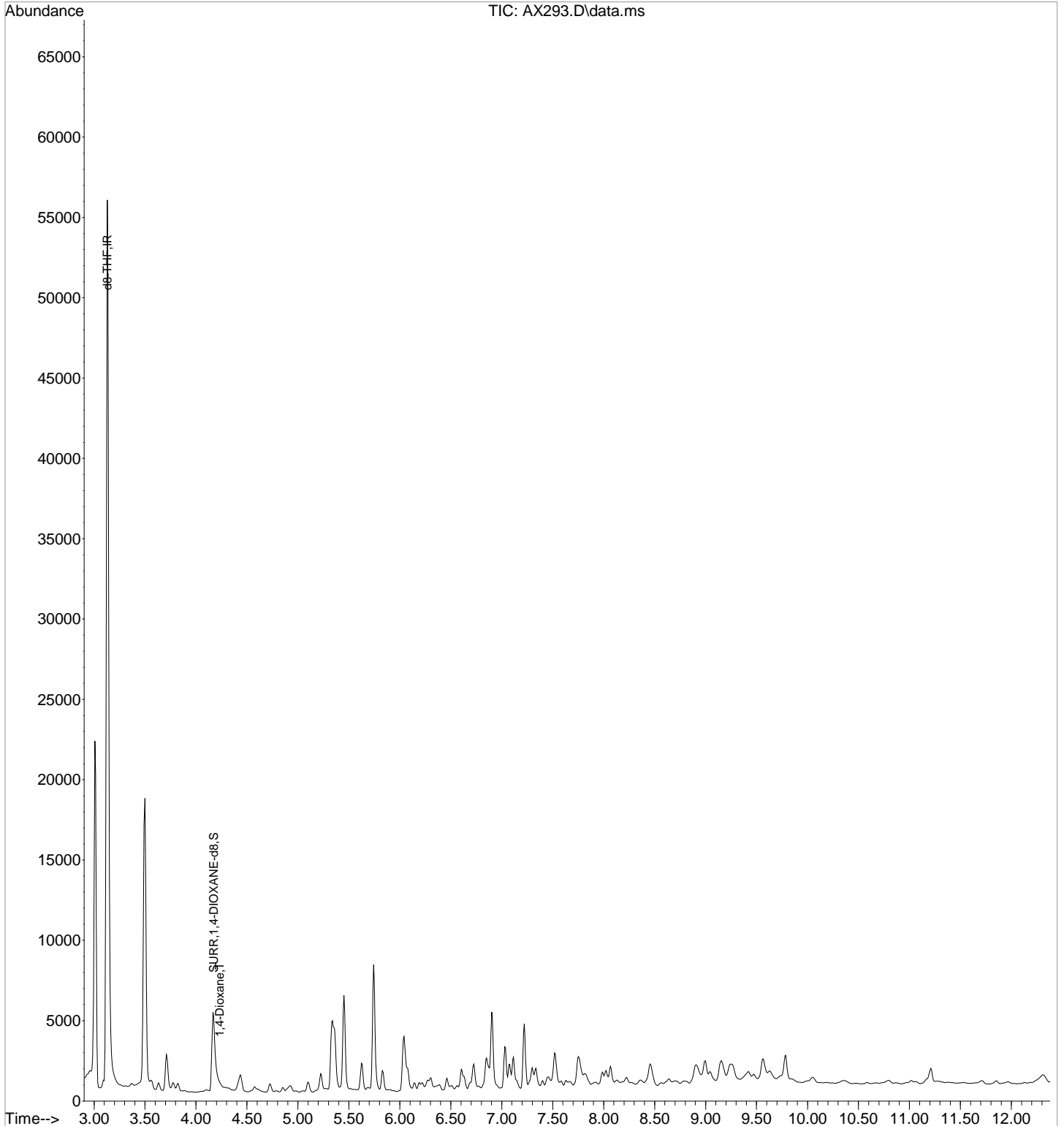
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Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

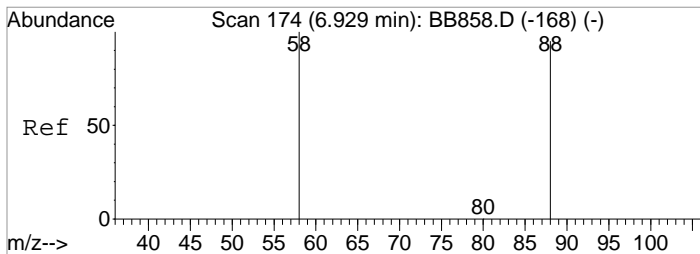
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.129	46	37387	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.173	96	6170	77.77	PPB	0.02
Spiked Amount	100.000	Range	70 - 130	Recovery	=	77.77%
Target Compounds						
2) 1,4-Dioxane	4.230	88	139m	1.78	PPB	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX293.D
Acq On : 5 Aug 2020 8:17 pm
Operator : AFelser
Sample : R2006768-001 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 19 Sample Multiplier: 1

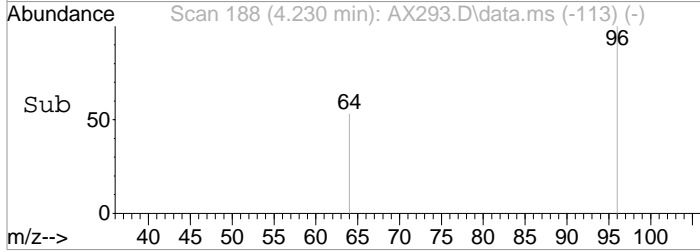
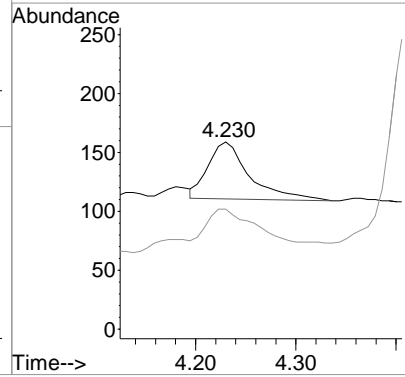
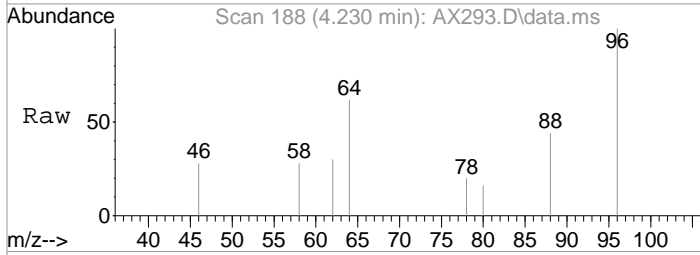
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Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1.78 PPB m
RT: 4.230 min Scan# 188
Delta R.T. 0.030 min
Lab File: AX293.D
Acq: 5 Aug 2020 8:17 pm

Tgt Ion	88	Resp	139
Ion Ratio	Lower	Upper	
88	100		
58	64.2	30.4	70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX296.D
 Acq On : 5 Aug 2020 9:13 pm
 Operator : AFelser
 Sample : R2006768-002 Inst : 5975 E
 Misc : 362924 8270 DIOX
 ALS Vial : 22 Sample Multiplier: 1

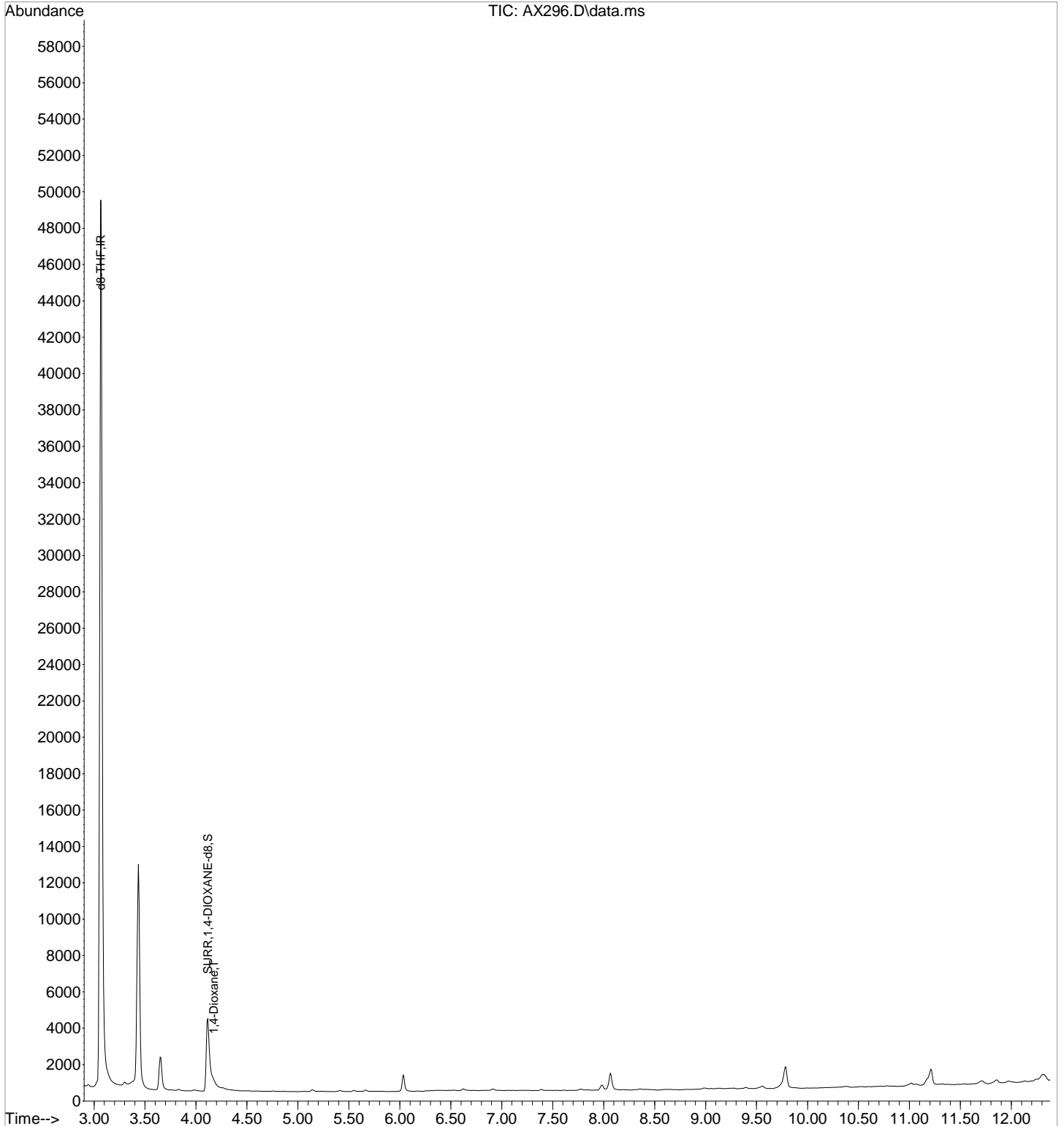
Quant Time: Aug 06 09:41:06 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

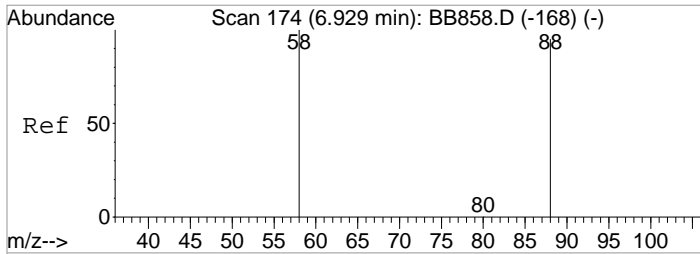
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.065	46	33371	500.00	PPB	-0.06
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.116	96	5592	78.96	PPB	-0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	=	78.96%
Target Compounds						
2) 1,4-Dioxane	4.173	88	219	3.16	PPB	Qvalue 83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX296.D
Acq On : 5 Aug 2020 9:13 pm
Operator : AFelser
Sample : R2006768-002 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 22 Sample Multiplier: 1

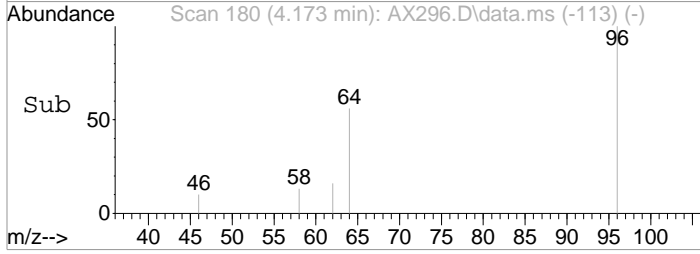
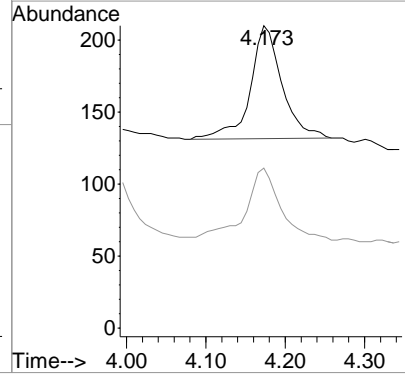
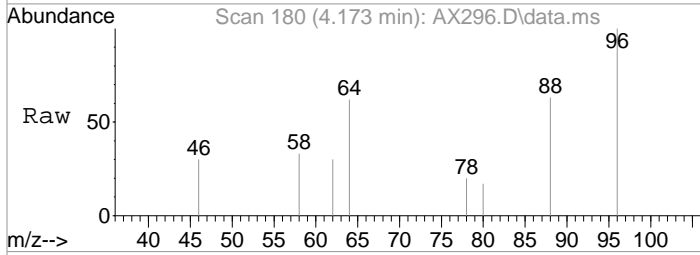
Quant Time: Aug 06 09:41:06 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 3.16 PPB
RT: 4.173 min Scan# 180
Delta R.T. -0.027 min
Lab File: AX296.D
Acq: 5 Aug 2020 9:13 pm

Tgt Ion: 88 Resp: 219
Ion Ratio Lower Upper
88 100
58 62.4 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX297.D
Acq On : 5 Aug 2020 9:32 pm
Operator : AFelser
Sample : R2006768-003 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 23 Sample Multiplier: 1

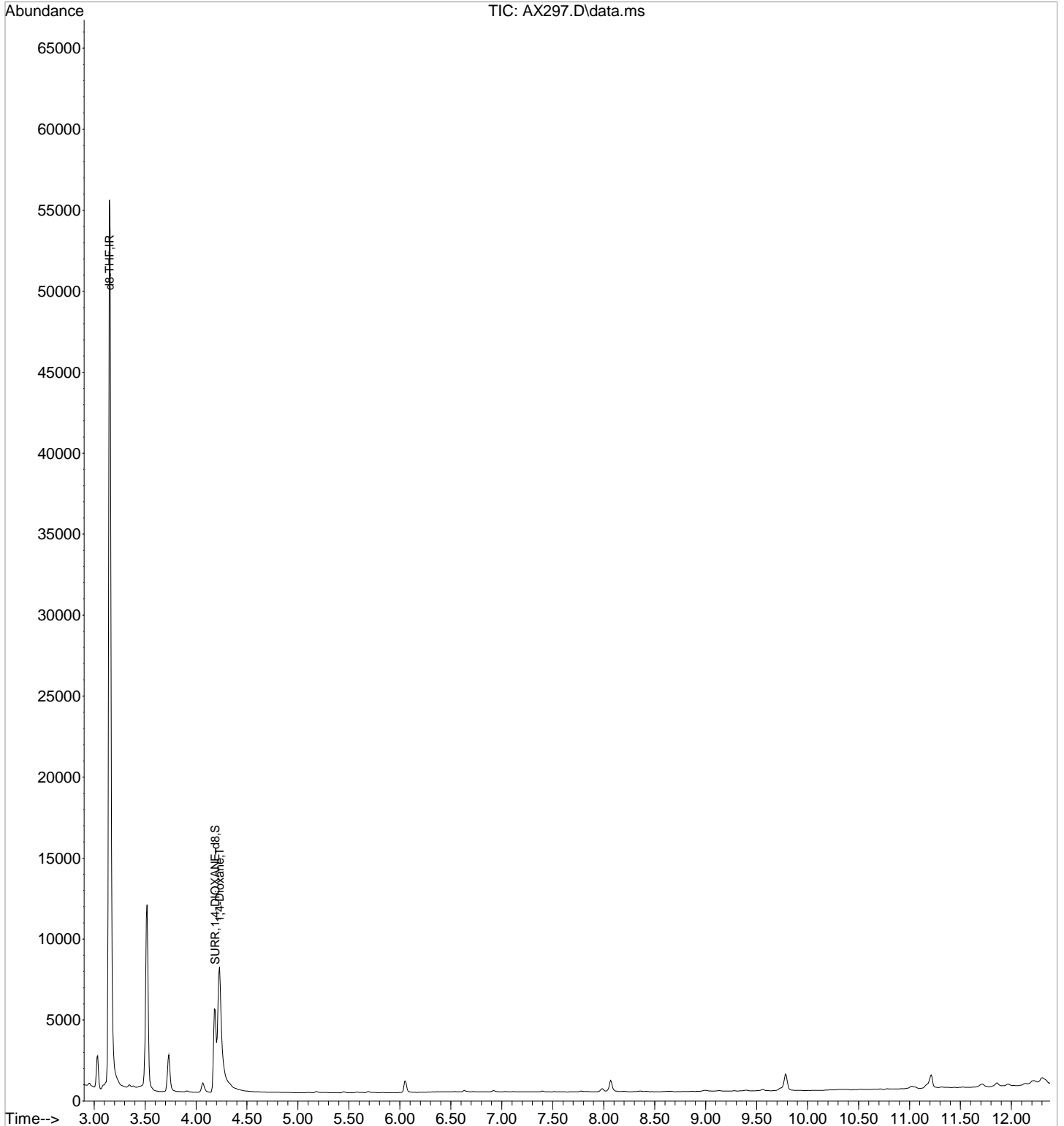
Quant Time: Aug 06 09:41:08 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

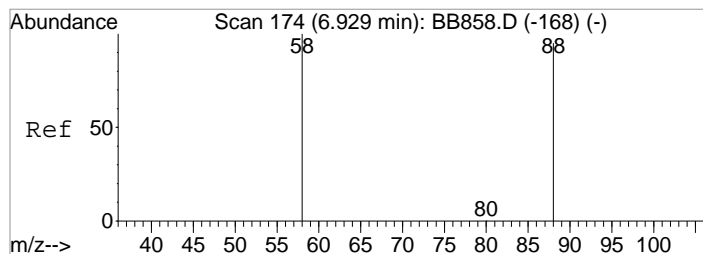
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.149	46	37540	500.00	PPB	0.03
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.187	96	6475	81.26	PPB	0.04
Spiked Amount	100.000	Range	70 - 130	Recovery	=	81.26%
Target Compounds						
2) 1,4-Dioxane	4.229	88	12349	158.35	PPB	Qvalue 88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX297.D
Acq On : 5 Aug 2020 9:32 pm
Operator : AFelser
Sample : R2006768-003 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 23 Sample Multiplier: 1

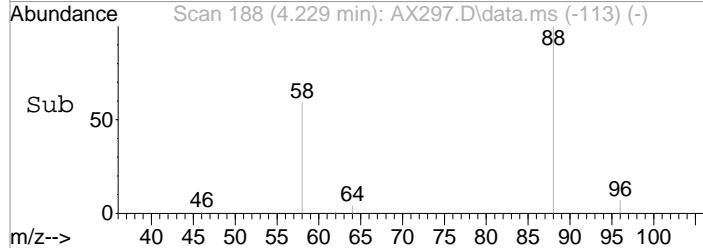
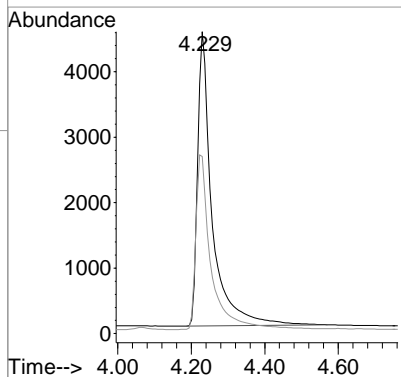
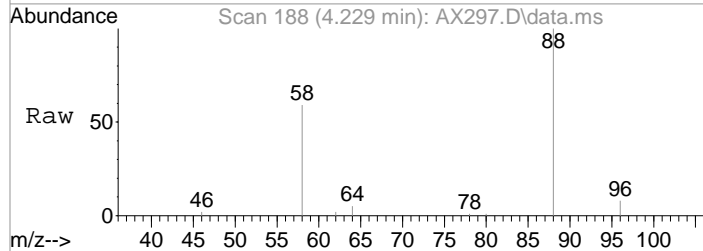
Quant Time: Aug 06 09:41:08 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 158.35 PPB
RT: 4.229 min Scan# 188
Delta R.T. 0.029 min
Lab File: AX297.D
Acq: 5 Aug 2020 9:32 pm

Tgt Ion: 88 Resp: 12349
Ion Ratio Lower Upper
88 100
58 58.7 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX298.D
Acq On : 5 Aug 2020 9:51 pm
Operator : AFelser
Sample : R2006768-004 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 24 Sample Multiplier: 1

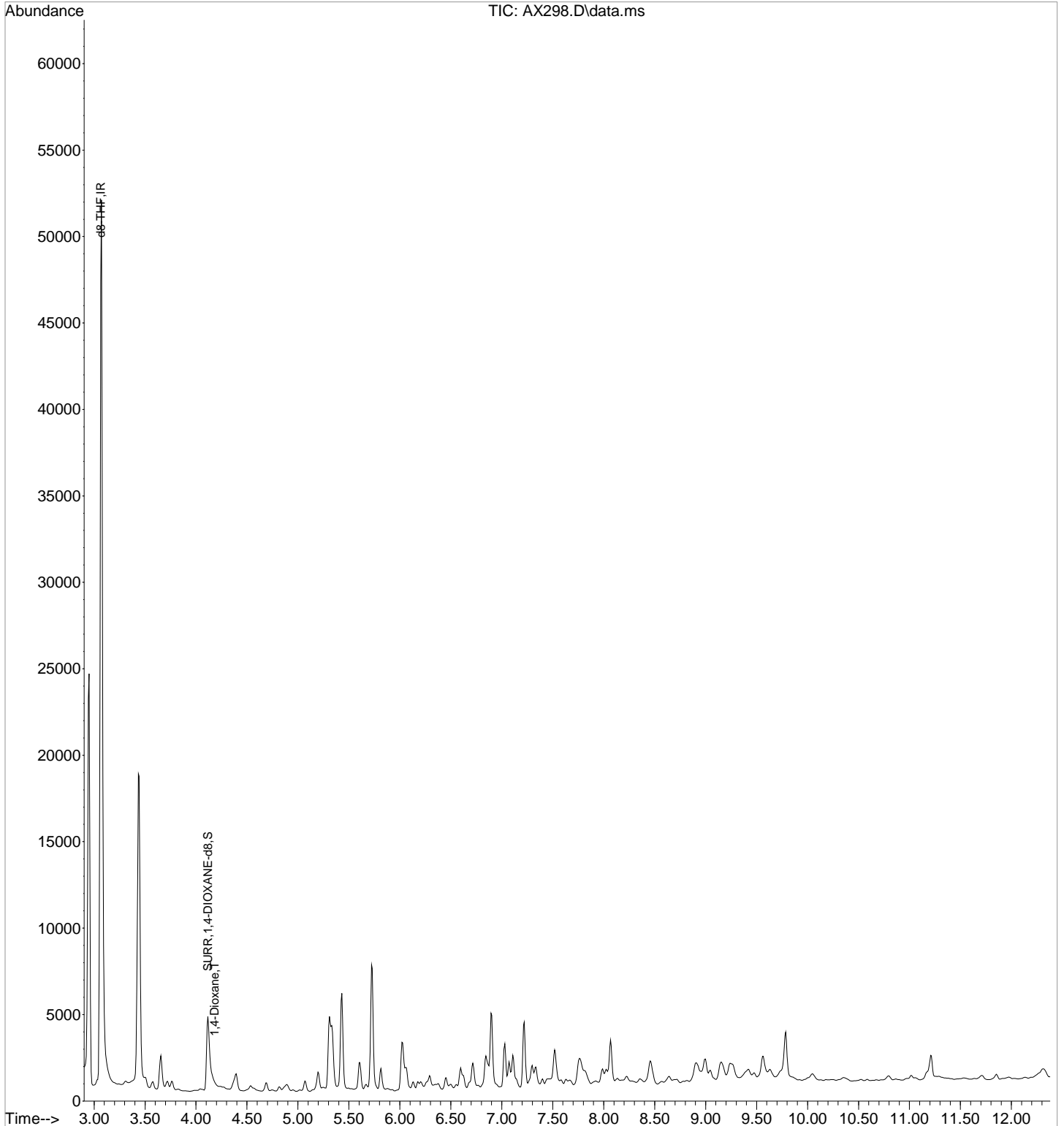
Quant Time: Aug 06 09:41:10 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

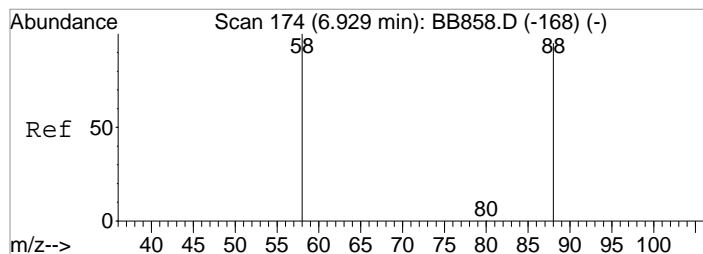
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.064	46	34413	500.00	PPB	-0.06
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.116	96	5357	73.38	PPB	-0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	=	73.38%
Target Compounds						
2) 1,4-Dioxane	4.180	88	119	1.66	PPB	Qvalue 74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX298.D
Acq On : 5 Aug 2020 9:51 pm
Operator : AFelser
Sample : R2006768-004 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 24 Sample Multiplier: 1

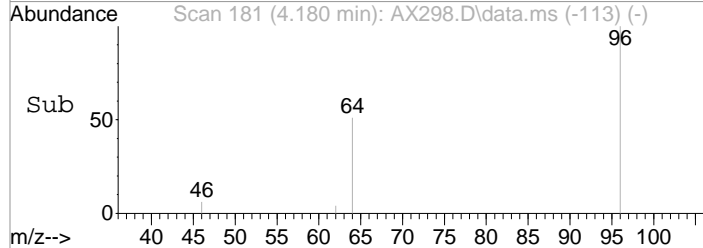
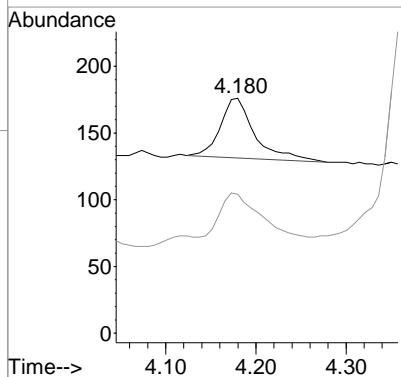
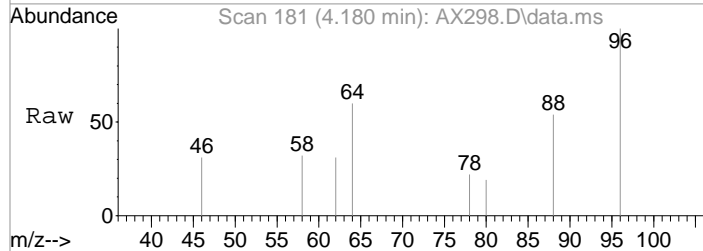
Quant Time: Aug 06 09:41:10 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1.66 PPB
RT: 4.180 min Scan# 181
Delta R.T. -0.020 min
Lab File: AX298.D
Acq: 5 Aug 2020 9:51 pm

Tgt Ion: 88 Resp: 119
Ion Ratio Lower Upper
88 100
58 68.1 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX299.D
 Acq On : 5 Aug 2020 10:09 pm
 Operator : AFelser
 Sample : R2006768-005 Inst : 5975 E
 Misc : 362924 8270 DIOX
 ALS Vial : 25 Sample Multiplier: 1

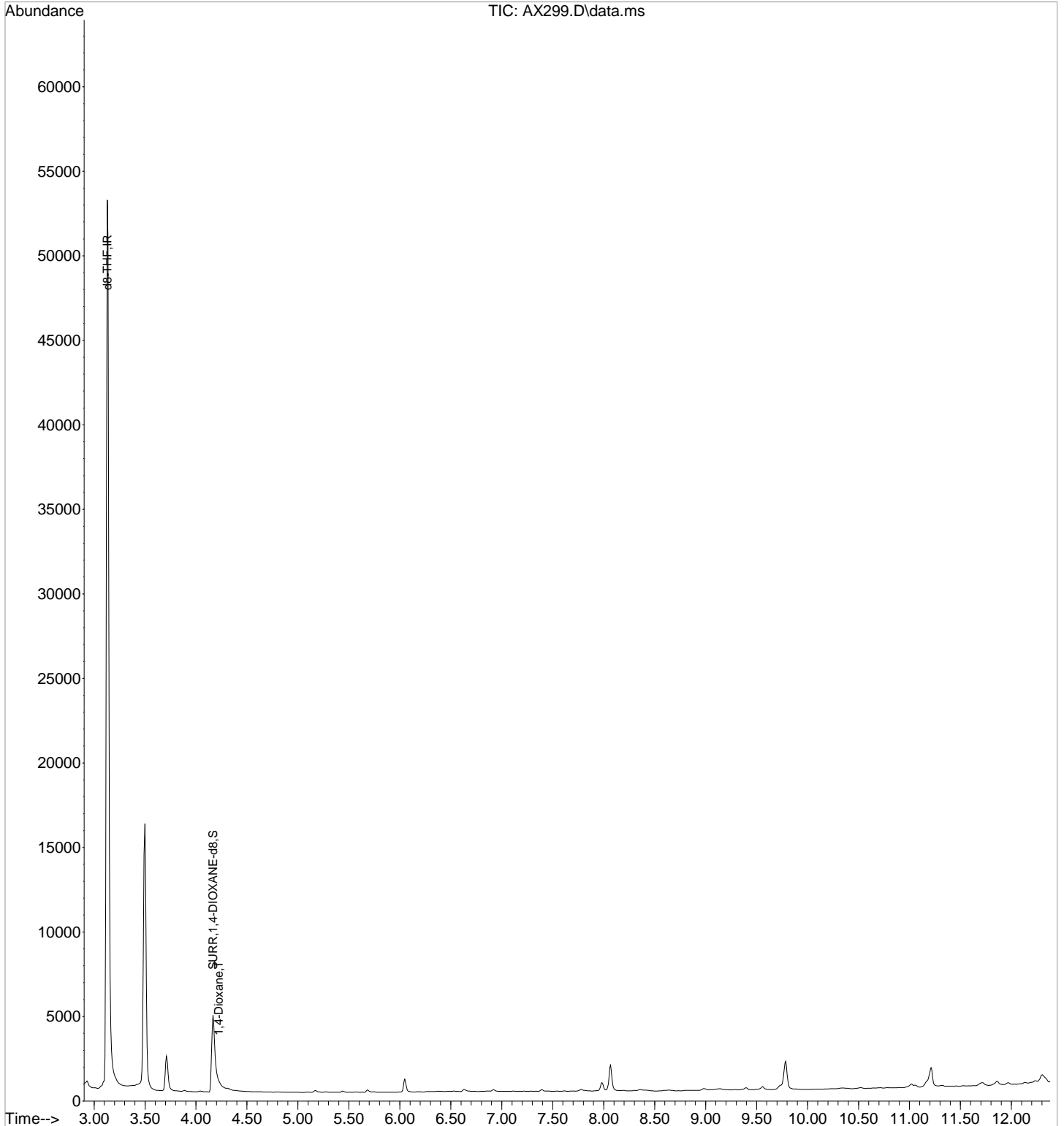
Quant Time: Aug 06 09:41:12 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

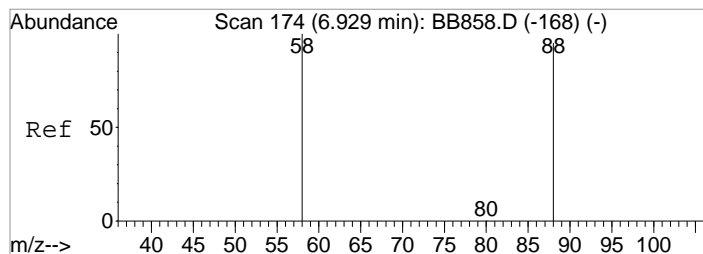
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.128	46	36313	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.166	96	6238	80.93	PPB	0.02
Spiked Amount	100.000	Range	70 - 130	Recovery	=	80.93%
Target Compounds						
2) 1,4-Dioxane	4.222	88	37	0.48	PPB	Qvalue 97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX299.D
Acq On : 5 Aug 2020 10:09 pm
Operator : AFelser
Sample : R2006768-005 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 25 Sample Multiplier: 1

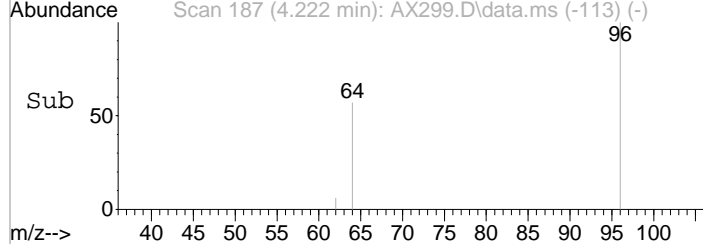
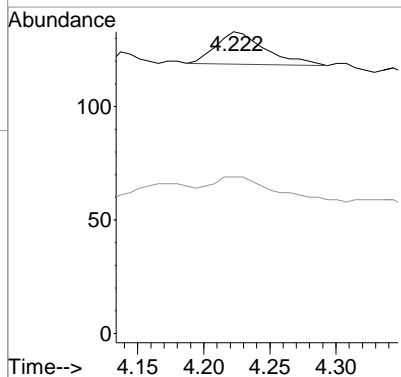
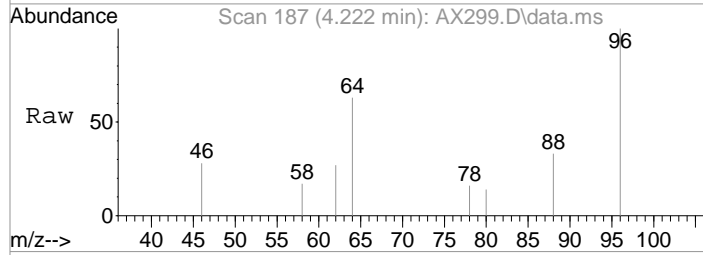
Quant Time: Aug 06 09:41:12 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 0.48 PPB
RT: 4.222 min Scan# 187
Delta R.T. 0.022 min
Lab File: AX299.D
Acq: 5 Aug 2020 10:09 pm

Tgt Ion	88	Resp	37
Ion Ratio	Lower	Upper	
88	100		
58	48.3	30.4	70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX289.D
Acq On : 5 Aug 2020 7:01 pm
Operator : AFelser
Sample : RQ2008596-01 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 15 Sample Multiplier: 1

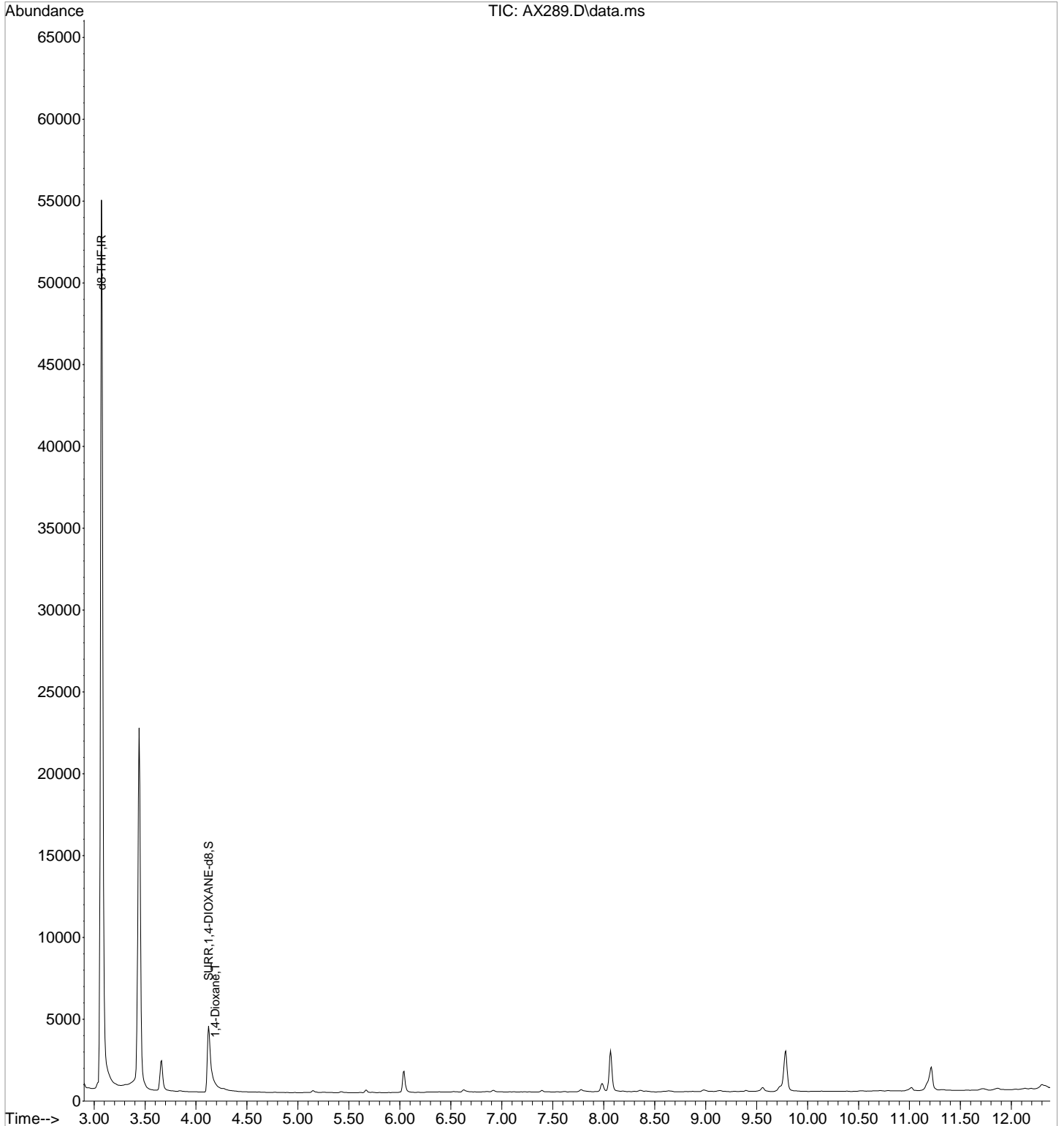
Quant Time: Aug 06 09:40:52 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

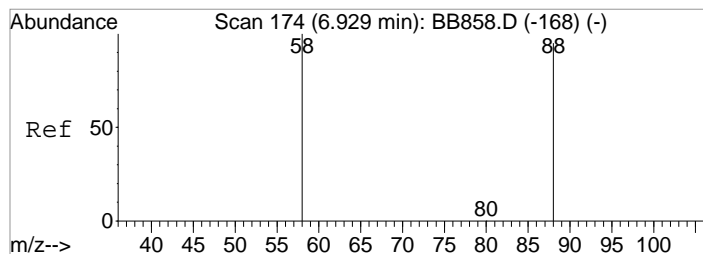
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.072	46	37437	500.00	PPB	-0.05
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.123	96	5678	71.50	PPB	-0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	=	71.50%
Target Compounds						
2) 1,4-Dioxane	4.187	88	38	0.48	PPB	Qvalue 91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX289.D
Acq On : 5 Aug 2020 7:01 pm
Operator : AFelser
Sample : RQ2008596-01 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 15 Sample Multiplier: 1

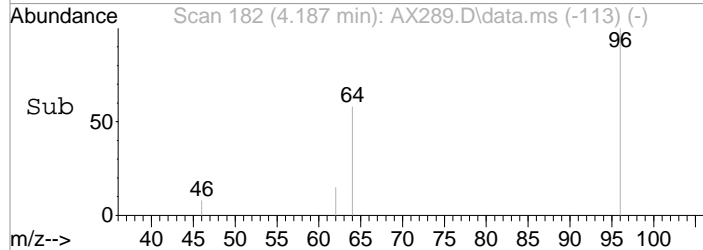
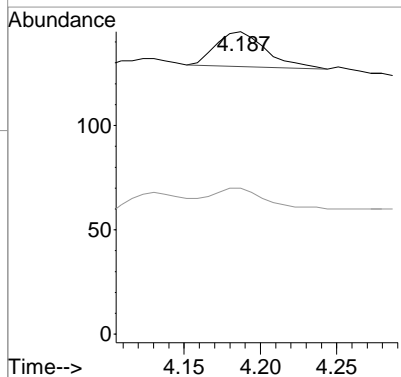
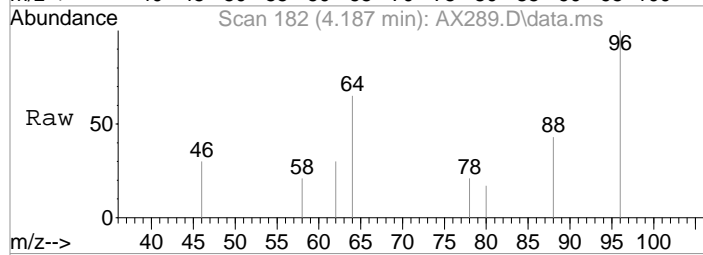
Quant Time: Aug 06 09:40:52 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 0.48 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.013 min
Lab File: AX289.D
Acq: 5 Aug 2020 7:01 pm

Tgt Ion: 88 Resp: 38
Ion Ratio Lower Upper
88 100
58 44.1 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX290.D
Acq On : 5 Aug 2020 7:19 pm
Operator : AFelser
Sample : RQ2008596-02 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 16 Sample Multiplier: 1

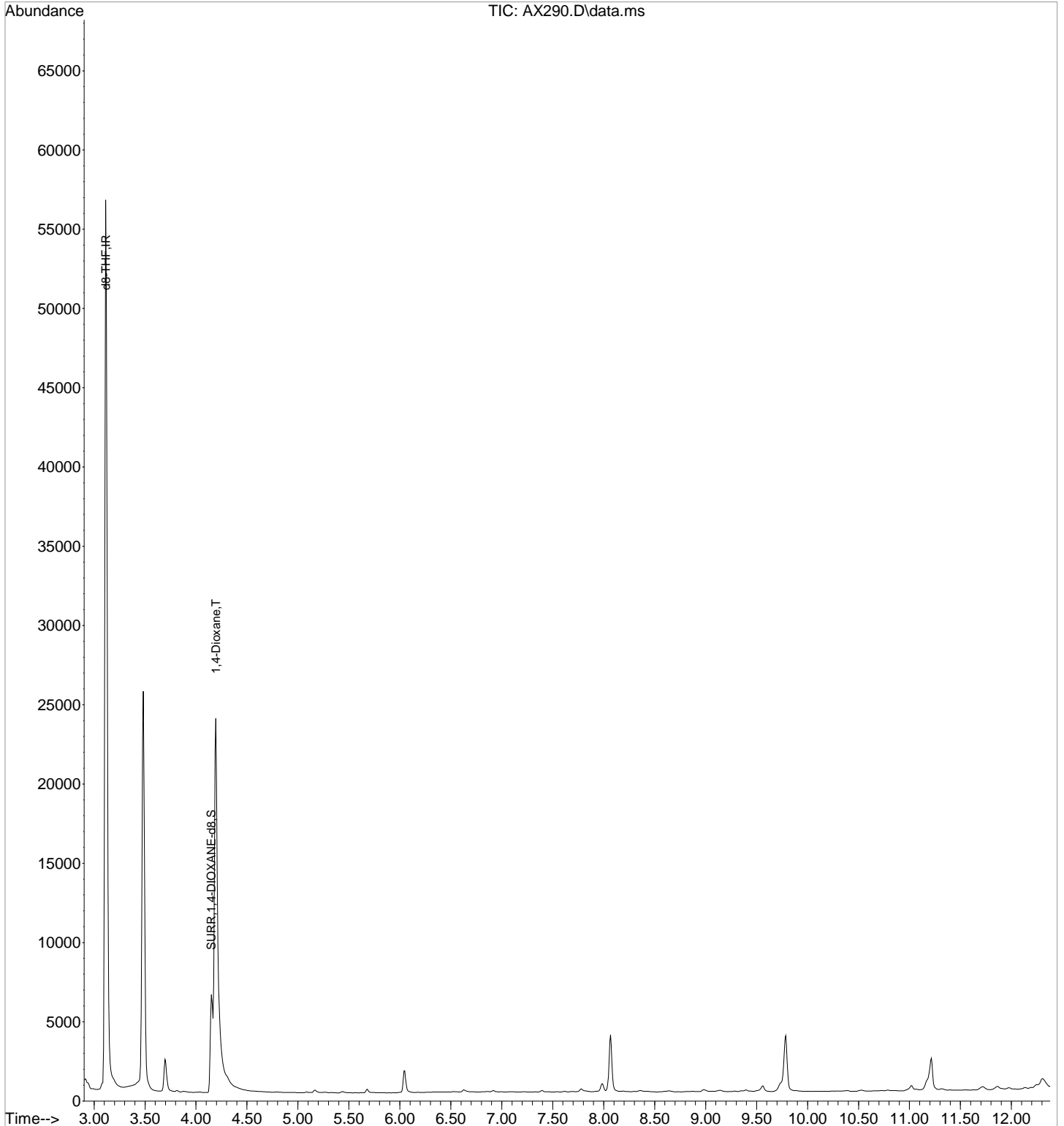
Quant Time: Aug 06 09:40:54 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

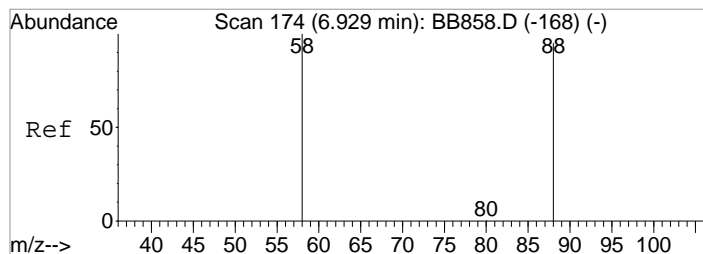
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.114	46	37945	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.151	96	6704	83.22	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	83.22%
Target Compounds						
2) 1,4-Dioxane	4.194	88	36809	462.24	PPB	Qvalue 89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX290.D
Acq On : 5 Aug 2020 7:19 pm
Operator : AFelser
Sample : RQ2008596-02 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 16 Sample Multiplier: 1

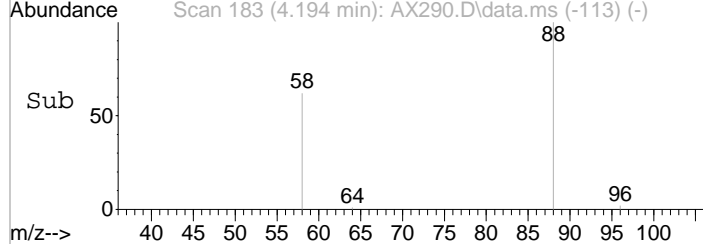
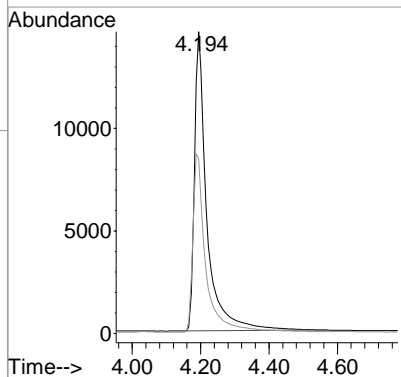
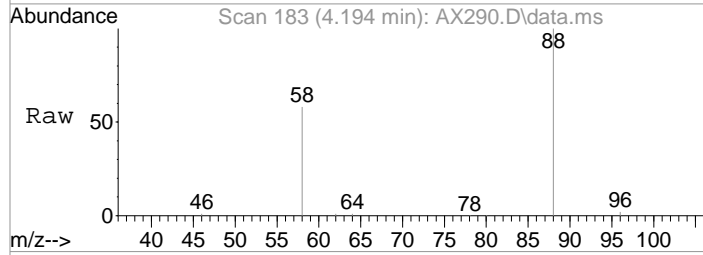
Quant Time: Aug 06 09:40:54 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 462.24 PPB
RT: 4.194 min Scan# 183
Delta R.T. -0.006 min
Lab File: AX290.D
Acq: 5 Aug 2020 7:19 pm

Tgt Ion: 88 Resp: 36809
Ion Ratio Lower Upper
88 100
58 58.0 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX291.D
 Acq On : 5 Aug 2020 7:38 pm
 Operator : AFelser
 Sample : RQ2008596-03 Inst : 5975 E
 Misc : 362924 8270 DIOX
 ALS Vial : 17 Sample Multiplier: 1

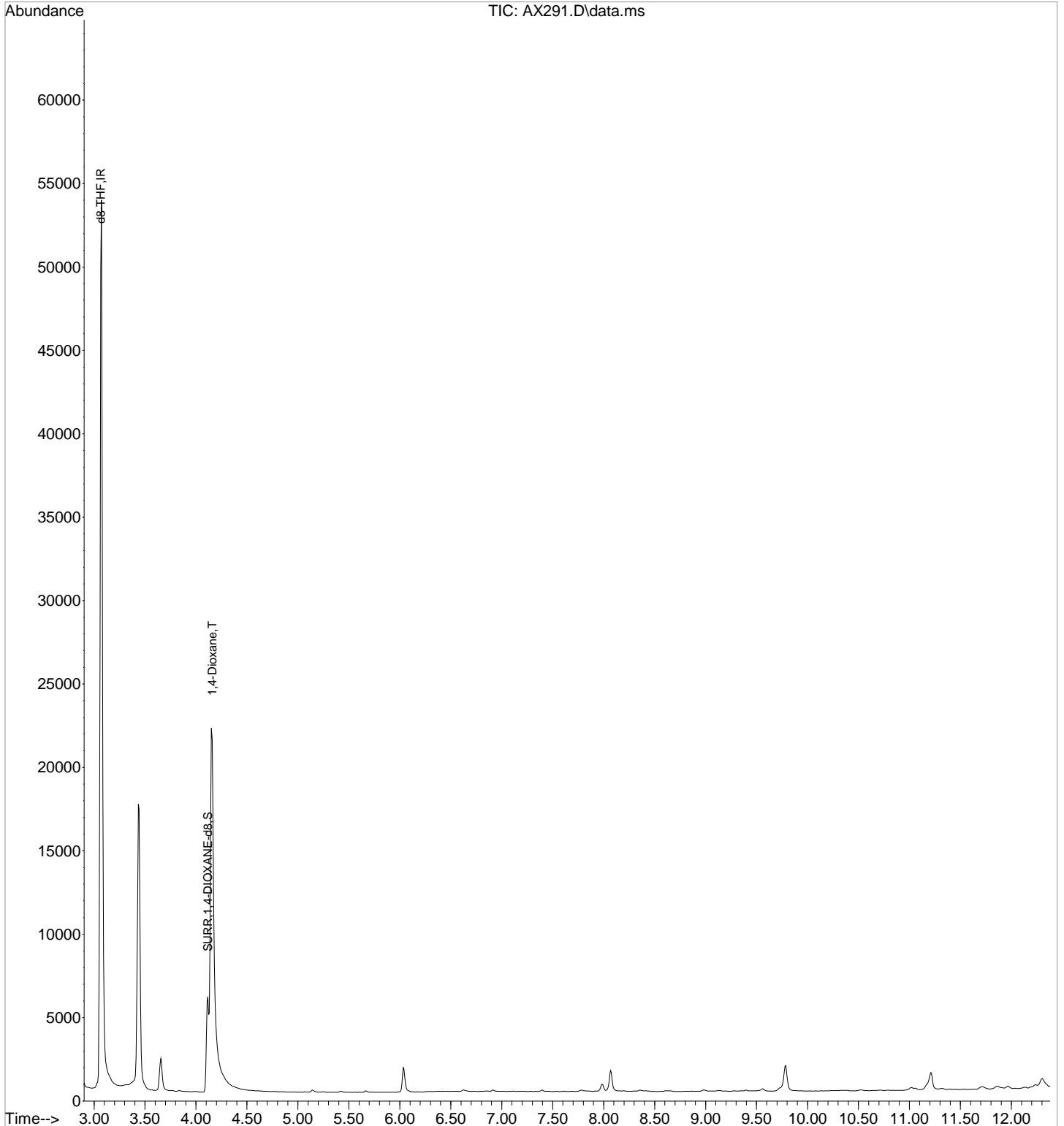
Quant Time: Aug 06 09:40:56 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

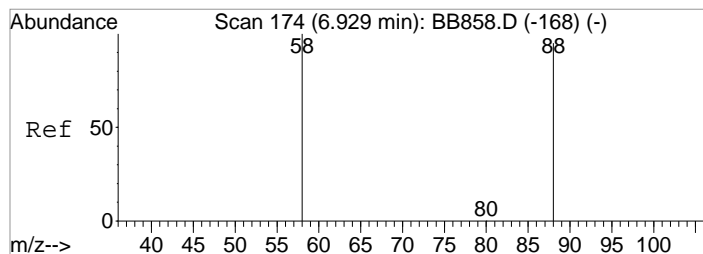
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.064	46	35925	500.00	PPB	-0.06
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.116	96	6404	83.97	PPB	-0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	=	83.97%
Target Compounds						
2) 1,4-Dioxane	4.159	88	35231	467.23	PPB	Qvalue 94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX291.D
Acq On : 5 Aug 2020 7:38 pm
Operator : AFelser
Sample : RQ2008596-03 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 17 Sample Multiplier: 1

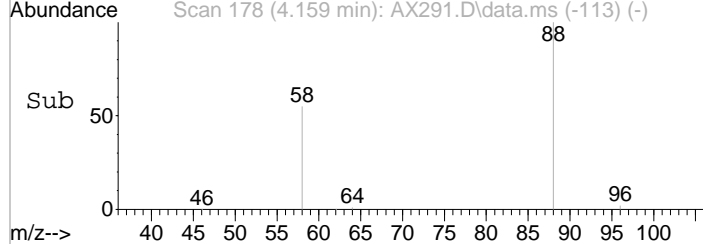
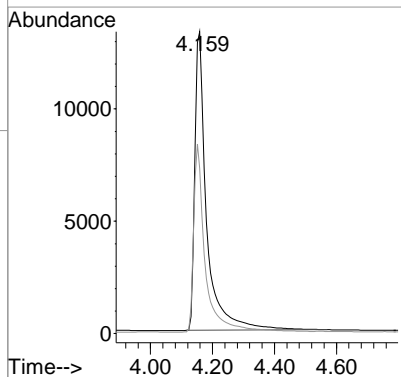
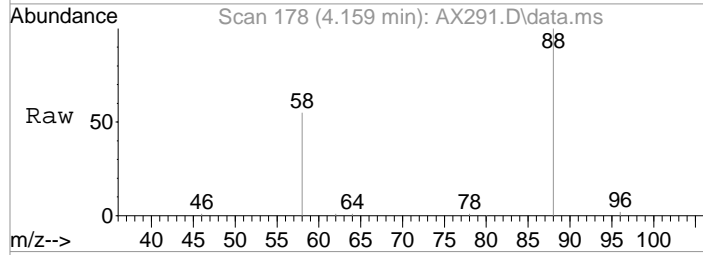
Quant Time: Aug 06 09:40:56 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 467.23 PPB
RT: 4.159 min Scan# 178
Delta R.T. -0.041 min
Lab File: AX291.D
Acq: 5 Aug 2020 7:38 pm

Tgt Ion: 88 Resp: 35231
Ion Ratio Lower Upper
88 100
58 54.7 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX294.D
 Acq On : 5 Aug 2020 8:37 pm
 Operator : AFelser
 Sample : RQ2008596-04 Inst : 5975 E
 Misc : 362924 8270 DIOX
 ALS Vial : 20 Sample Multiplier: 1

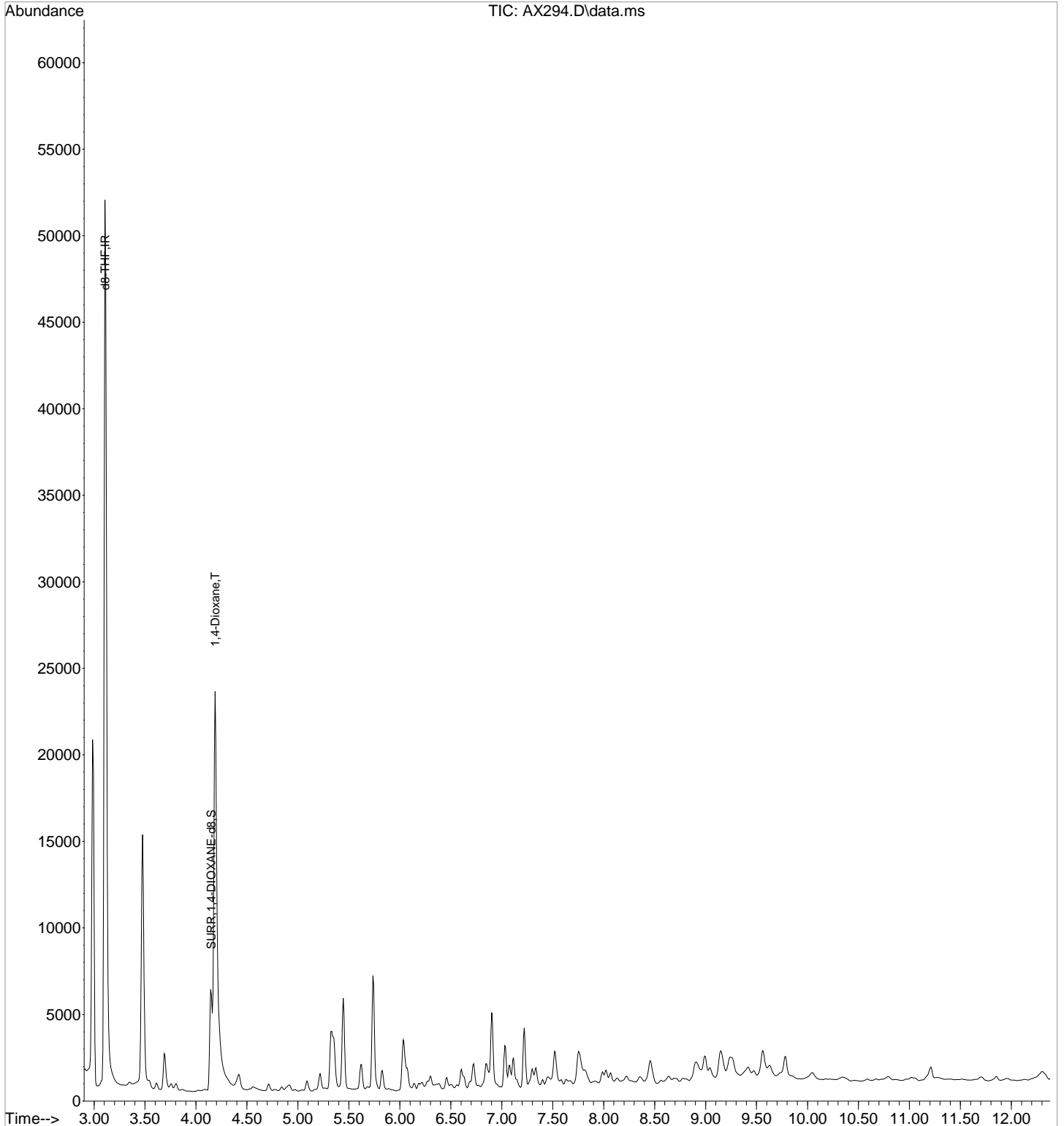
Quant Time: Aug 06 09:41:02 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

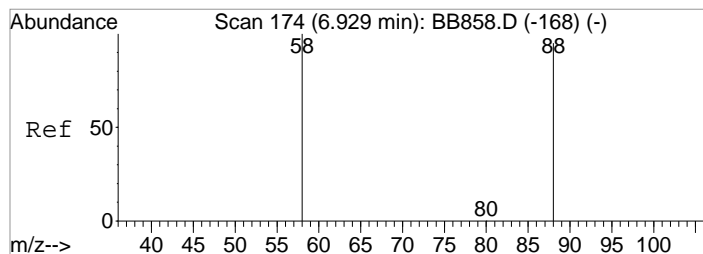
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.107	46	35171	500.00	PPB	-0.01
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.152	96	5994	80.29	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	80.29%
Target Compounds						
2) 1,4-Dioxane	4.187	88	34380	465.74	PPB	Qvalue 85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX294.D
Acq On : 5 Aug 2020 8:37 pm
Operator : AFelser
Sample : RQ2008596-04 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 20 Sample Multiplier: 1

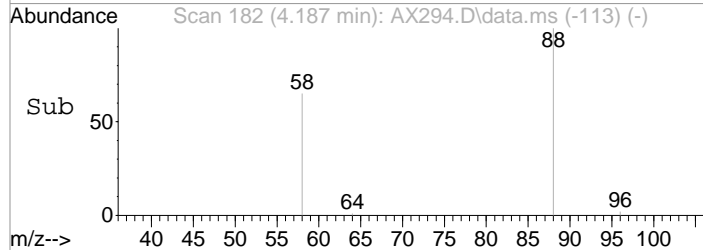
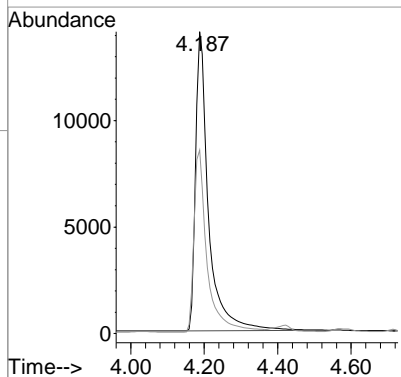
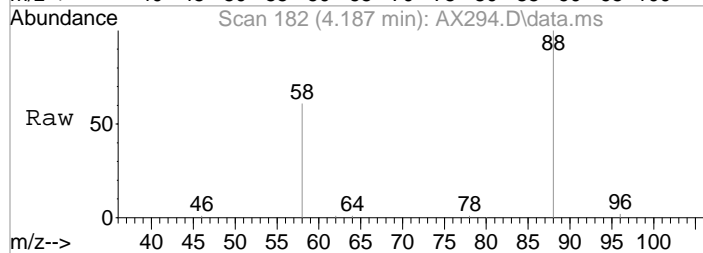
Quant Time: Aug 06 09:41:02 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 465.74 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.013 min
Lab File: AX294.D
Acq: 5 Aug 2020 8:37 pm

Tgt Ion: 88 Resp: 34380
Ion Ratio Lower Upper
88 100
58 60.6 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX295.D
Acq On : 5 Aug 2020 8:55 pm
Operator : AFelser
Sample : RQ2008596-05 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 21 Sample Multiplier: 1

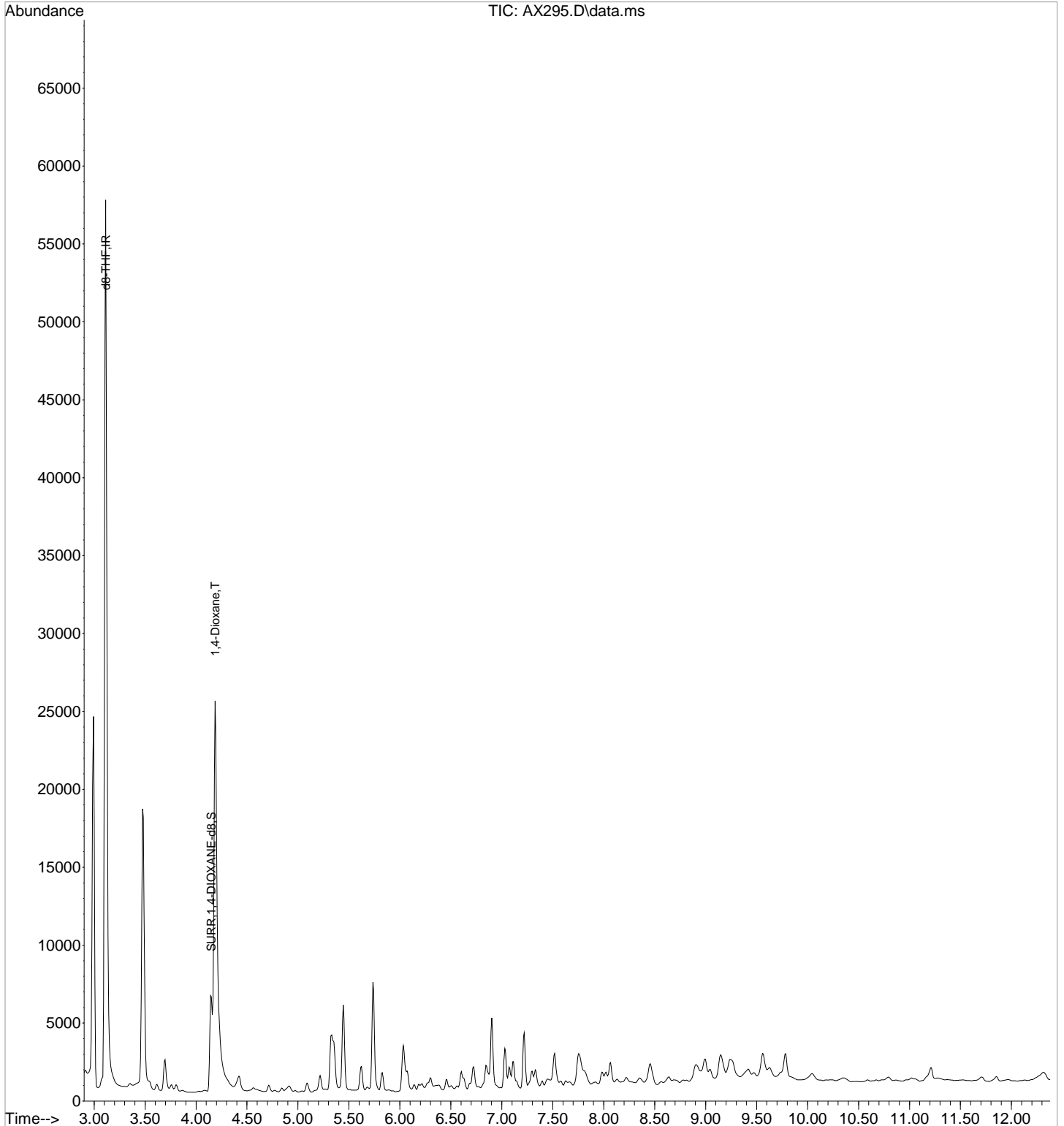
Quant Time: Aug 06 09:41:04 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

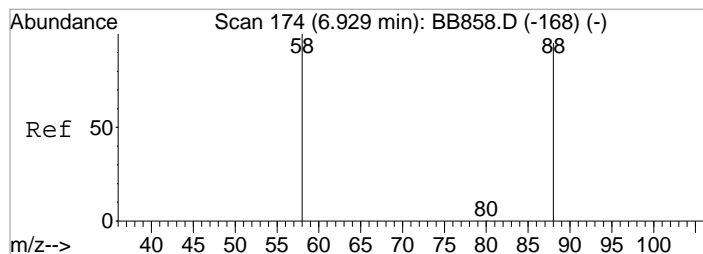
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.114	46	37441	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.151	96	6447	81.12	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	81.12%
Target Compounds						
2) 1,4-Dioxane	4.187	88	37856	481.48	PPB	Qvalue 83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX295.D
Acq On : 5 Aug 2020 8:55 pm
Operator : AFelser
Sample : RQ2008596-05 Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 21 Sample Multiplier: 1

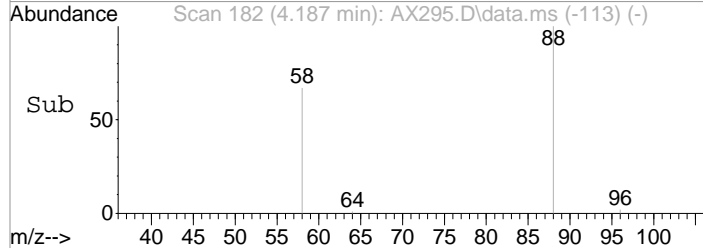
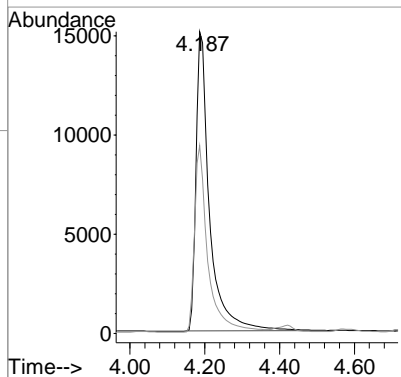
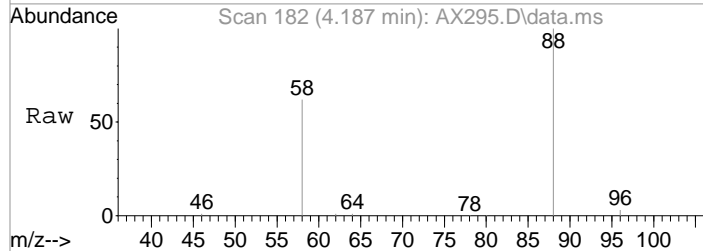
Quant Time: Aug 06 09:41:04 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 481.48 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.013 min
Lab File: AX295.D
Acq: 5 Aug 2020 8:55 pm

Tgt Ion	Resp	Lower	Upper
88	100		
58	62.2	30.4	70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX288.D
Acq On : 5 Aug 2020 6:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 200 ppb
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 06 09:40:50 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 IR d8-THF	500.000	500.000	0.0	90	0.00
2 T 1,4-Dioxane	200.000	202.496	-1.2	87	0.00
3 S SURR,1,4-DIOXANE-d8	200.000	198.041	1.0	86	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX288.D
Acq On : 5 Aug 2020 6:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 200 ppb
ALS Vial : 14 Sample Multiplier: 1

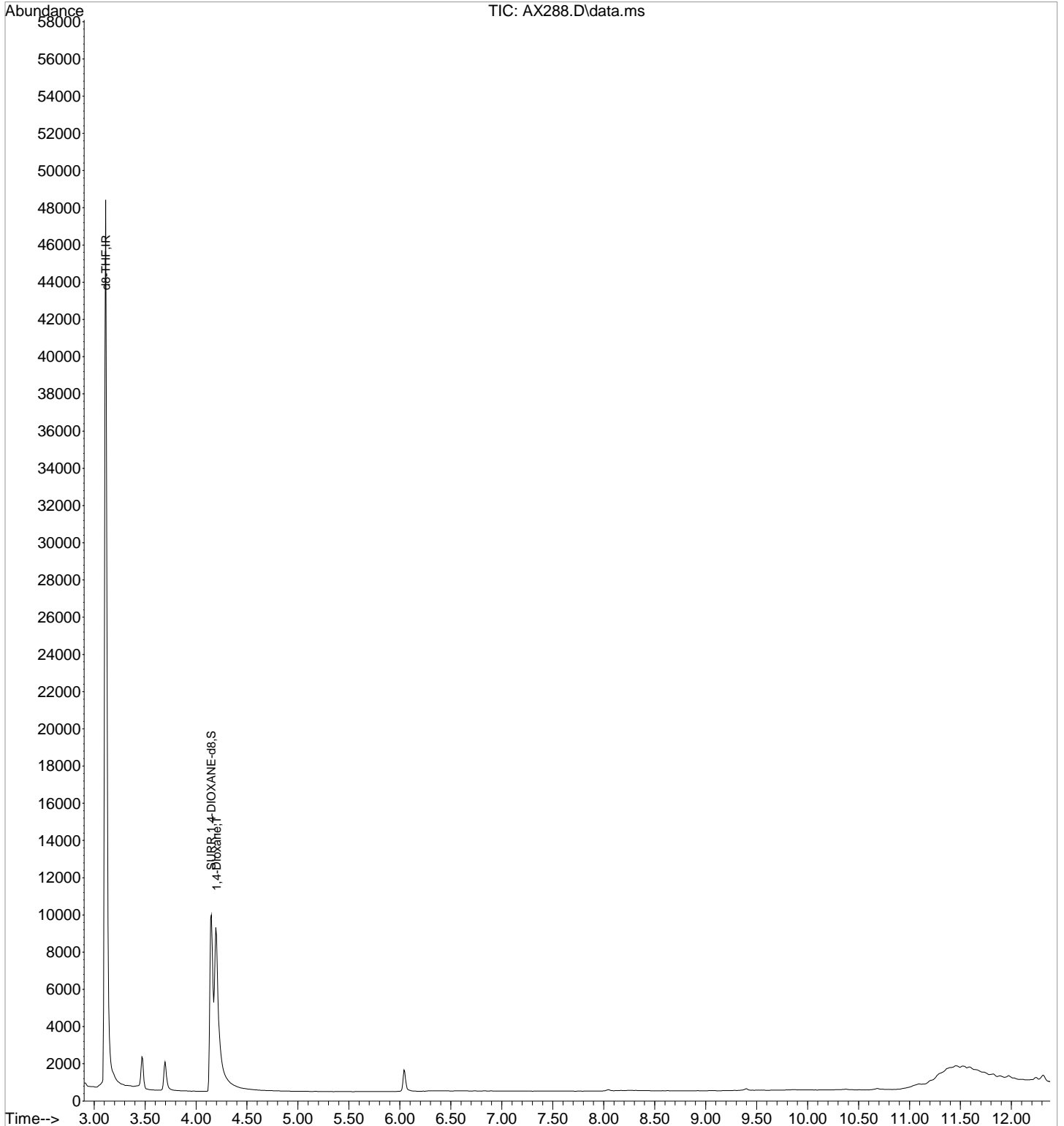
Quant Time: Aug 06 09:40:50 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

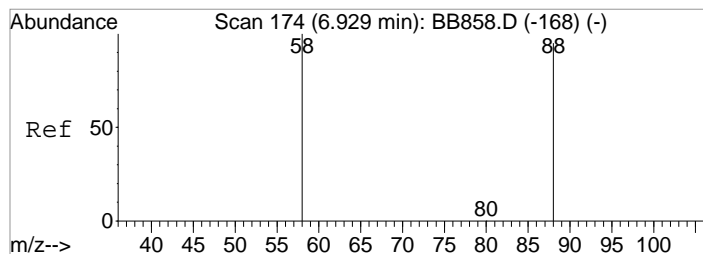
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.114	46	32598	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.151	96	13776	198.04	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	198.04%#
Target Compounds						
2) 1,4-Dioxane	4.201	88	13733	202.50	PPB	Qvalue 93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX288.D
Acq On : 5 Aug 2020 6:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 200 ppb
ALS Vial : 14 Sample Multiplier: 1

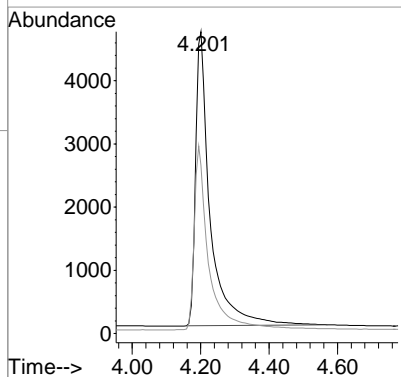
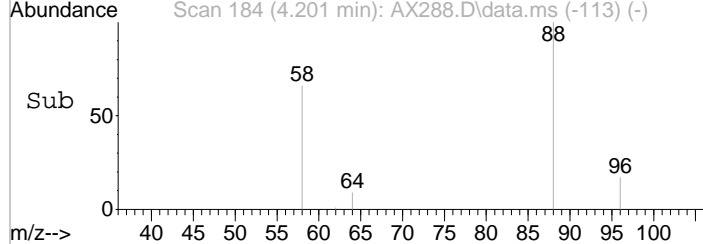
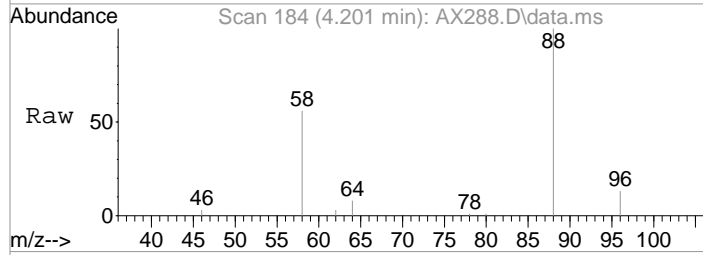
Quant Time: Aug 06 09:40:50 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 202.50 PPB
RT: 4.201 min Scan# 184
Delta R.T. 0.001 min
Lab File: AX288.D
Acq: 5 Aug 2020 6:43 pm

Tgt Ion: 88 Resp: 13733
Ion Ratio Lower Upper
88 100
58 55.6 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX304.D
Acq On : 5 Aug 2020 11:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 8270 DIOX 200ppb
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 06 09:41:22 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	IR d8-THF	500.000	500.000	0.0	98	0.00
2	T 1,4-Dioxane	200.000	201.534	-0.8	94	0.00
3	S SURR,1,4-DIOXANE-d8	200.000	197.324	1.3	92	0.00

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX304.D
Acq On : 5 Aug 2020 11:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 8270 DIOX 200ppb
ALS Vial : 14 Sample Multiplier: 1

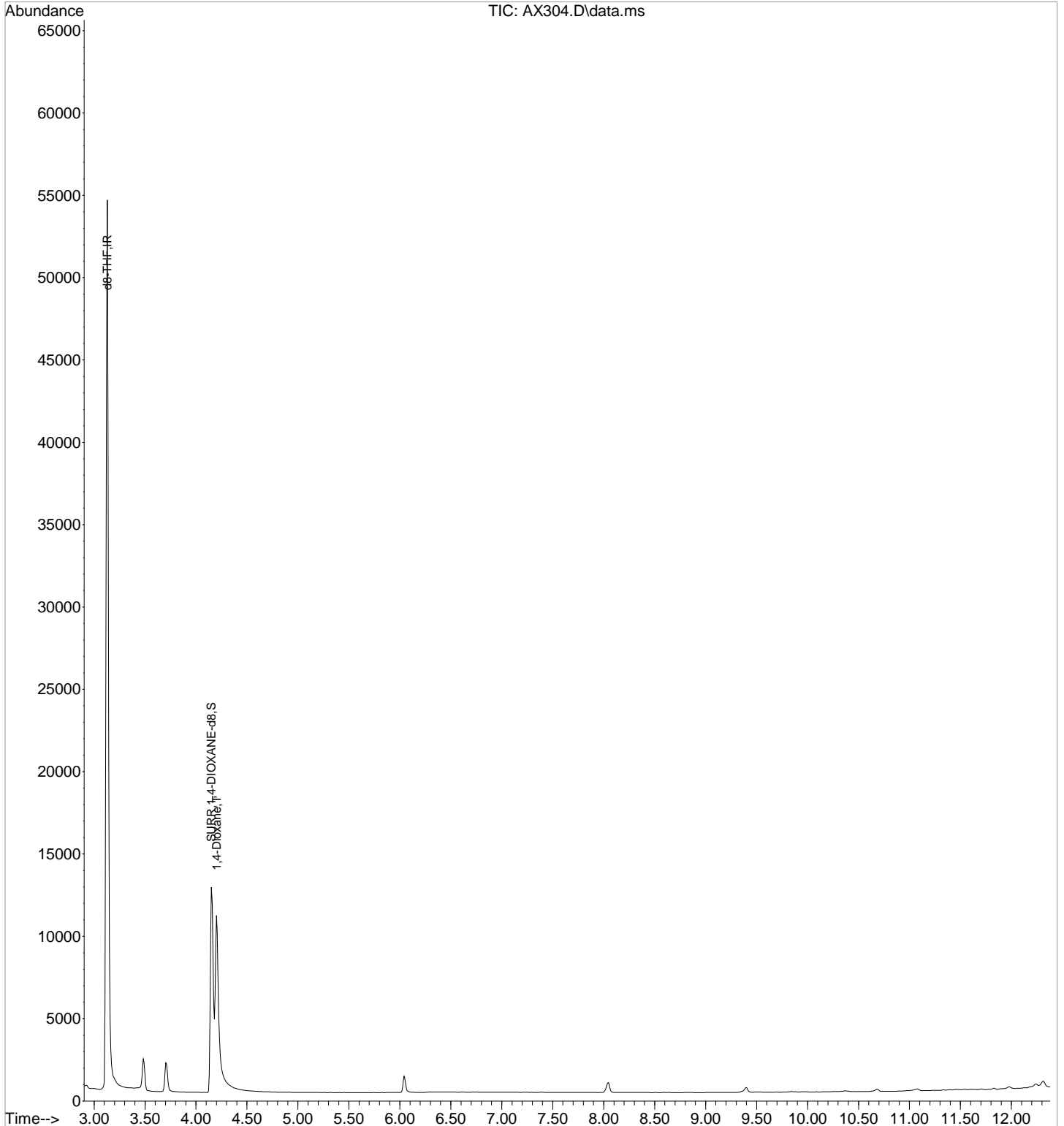
Quant Time: Aug 06 09:41:22 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

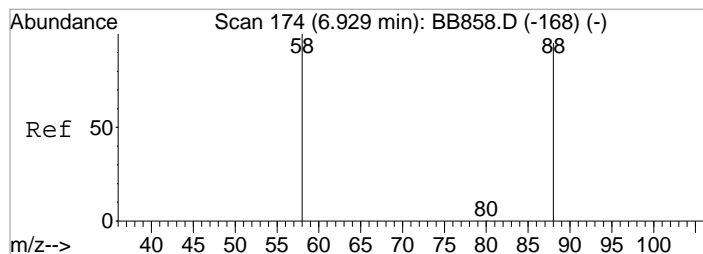
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.128	46	35185	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.151	96	14815	197.32	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	197.32%#
Target Compounds						
2) 1,4-Dioxane	4.201	88	14752	201.53	PPB	Qvalue 83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX304.D
Acq On : 5 Aug 2020 11:43 pm
Operator : AFelser
Sample : CCV Inst : 5975 E
Misc : 8270 DIOX 200ppb
ALS Vial : 14 Sample Multiplier: 1

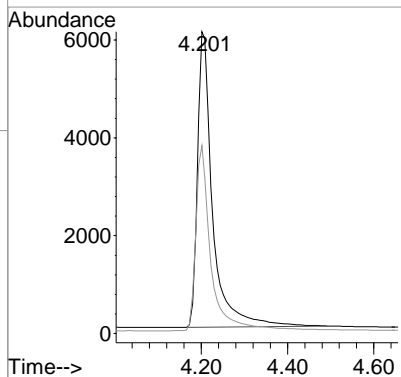
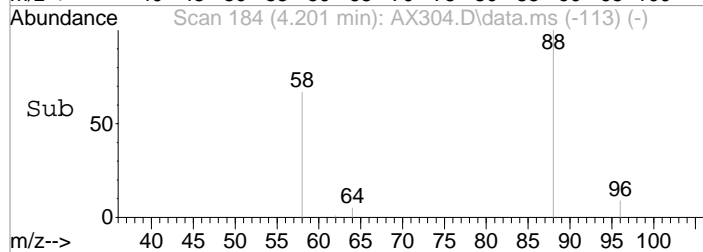
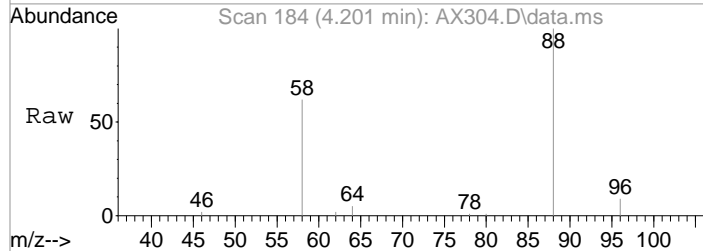
Quant Time: Aug 06 09:41:22 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 201.53 PPB
RT: 4.201 min Scan# 184
Delta R.T. 0.001 min
Lab File: AX304.D
Acq: 5 Aug 2020 11:43 pm

Tgt Ion: 88 Resp: 14752
Ion Ratio Lower Upper
88 100
58 62.5 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX300.D
Acq On : 5 Aug 2020 10:29 pm
Operator : AFelser
Sample : LOQ/MDL Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 26 Sample Multiplier: 1

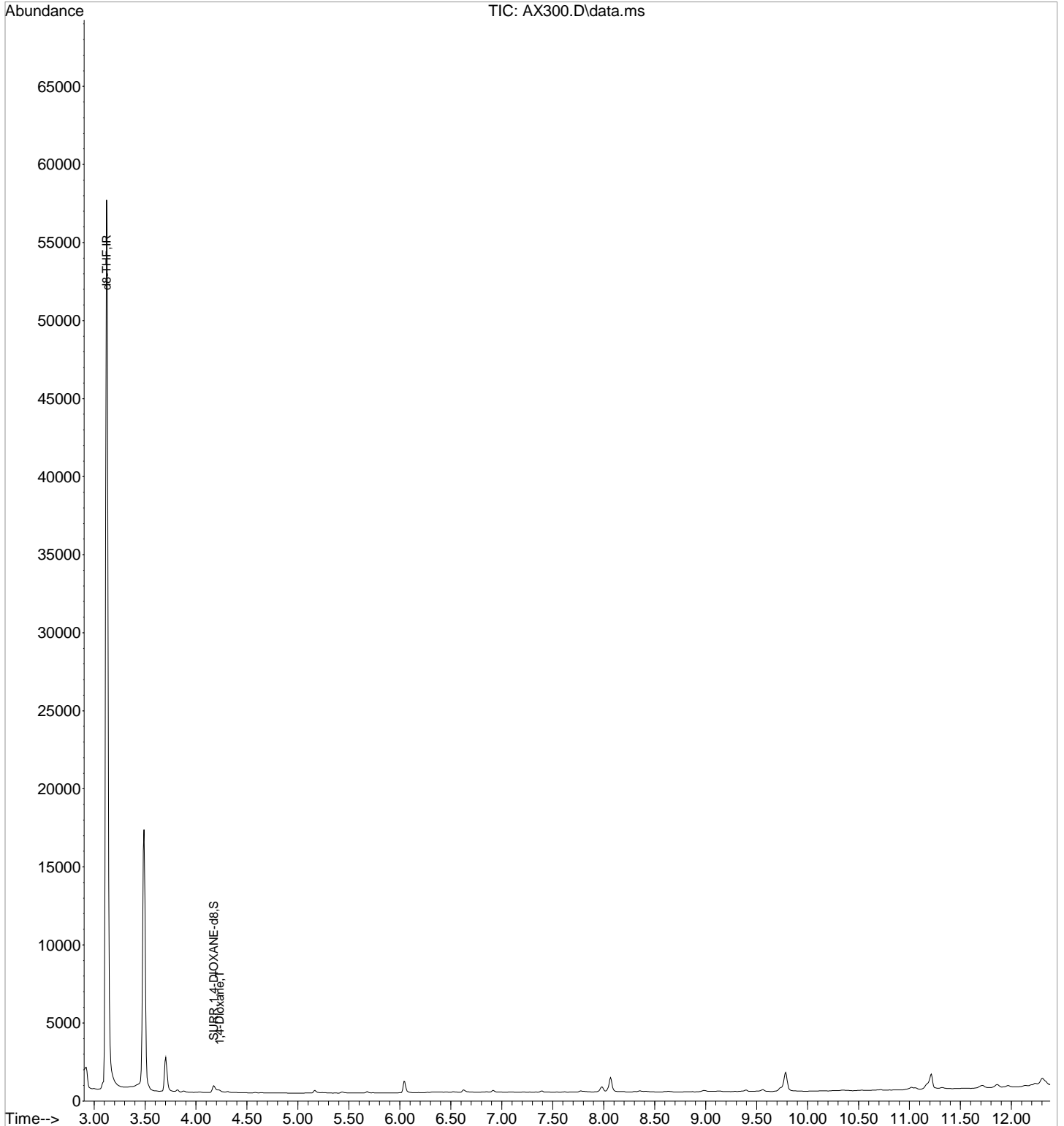
Quant Time: Aug 06 09:41:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

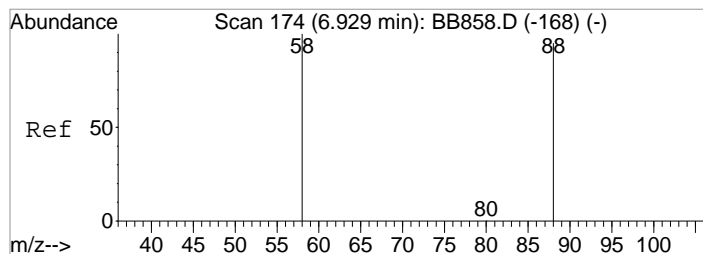
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.121	46	38069	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.173	96	589	7.52	PPB	0.02
Spiked Amount	100.000	Range	70 - 130	Recovery	=	7.52%#
Target Compounds						
2) 1,4-Dioxane	4.230	88	164	2.07	PPB	Qvalue 93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX300.D
Acq On : 5 Aug 2020 10:29 pm
Operator : AFelser
Sample : LOQ/MDL Inst : 5975 E
Misc : 362924 8270 DIOX
ALS Vial : 26 Sample Multiplier: 1

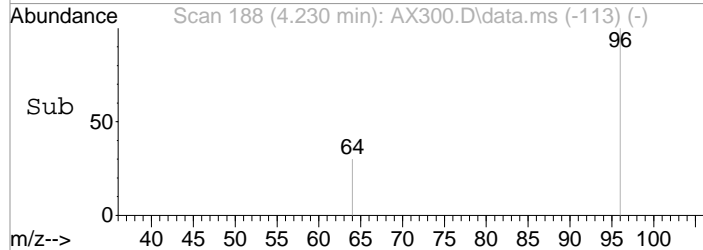
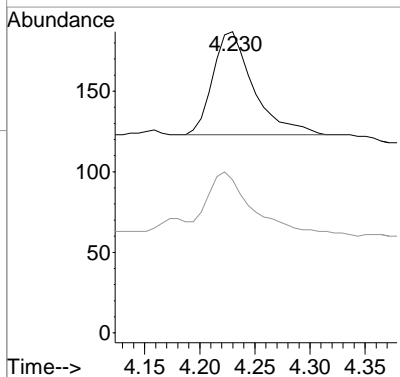
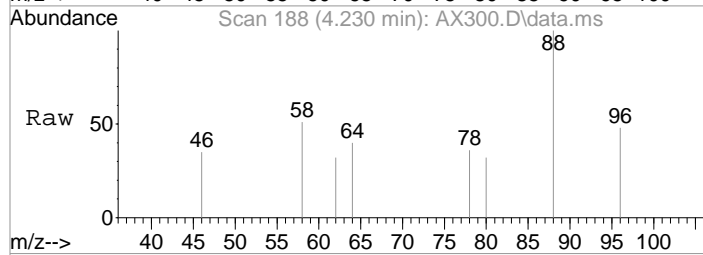
Quant Time: Aug 06 09:41:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 2.07 PPB
RT: 4.230 min Scan# 188
Delta R.T. 0.030 min
Lab File: AX300.D
Acq: 5 Aug 2020 10:29 pm

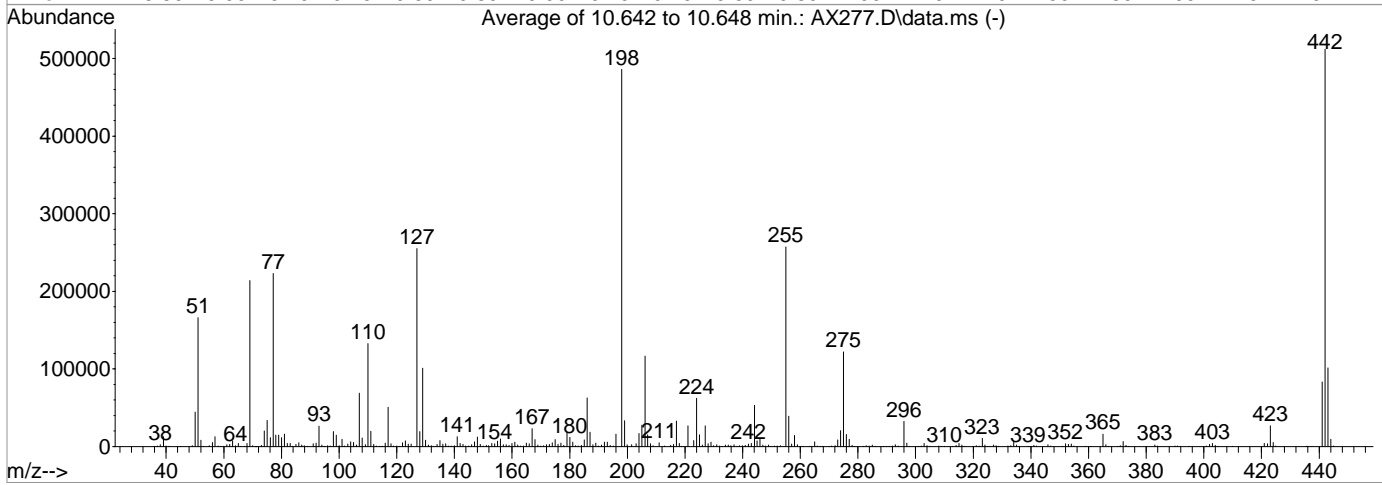
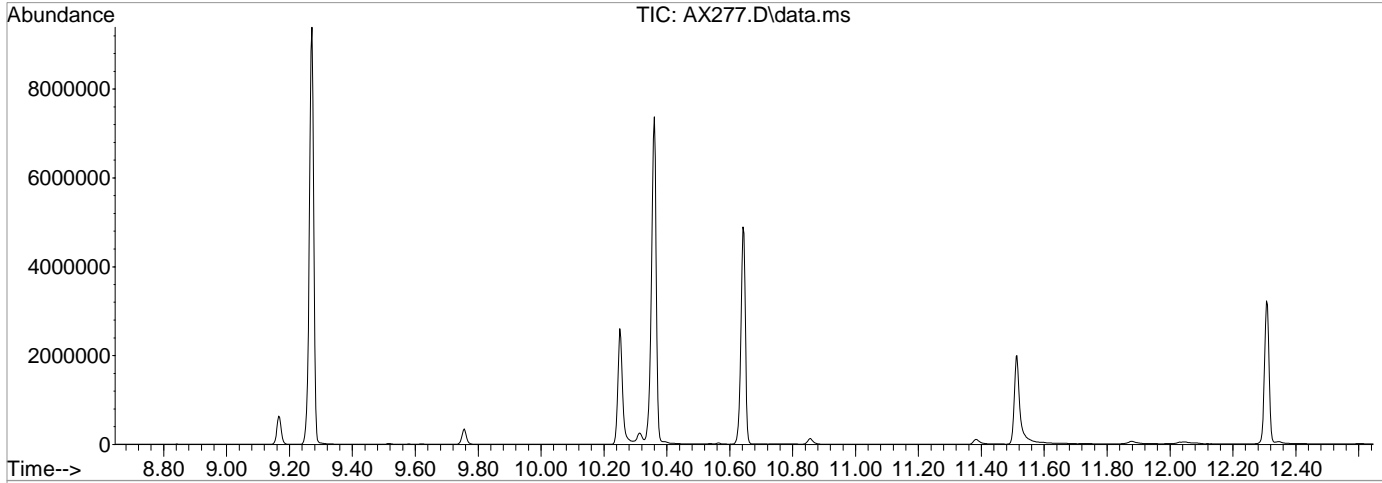
Tgt Ion: 88 Resp: 164
Ion Ratio Lower Upper
88 100
58 45.3 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Integration File: events.e

Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Title :
Last Update : Tue Jul 07 09:28:09 2020



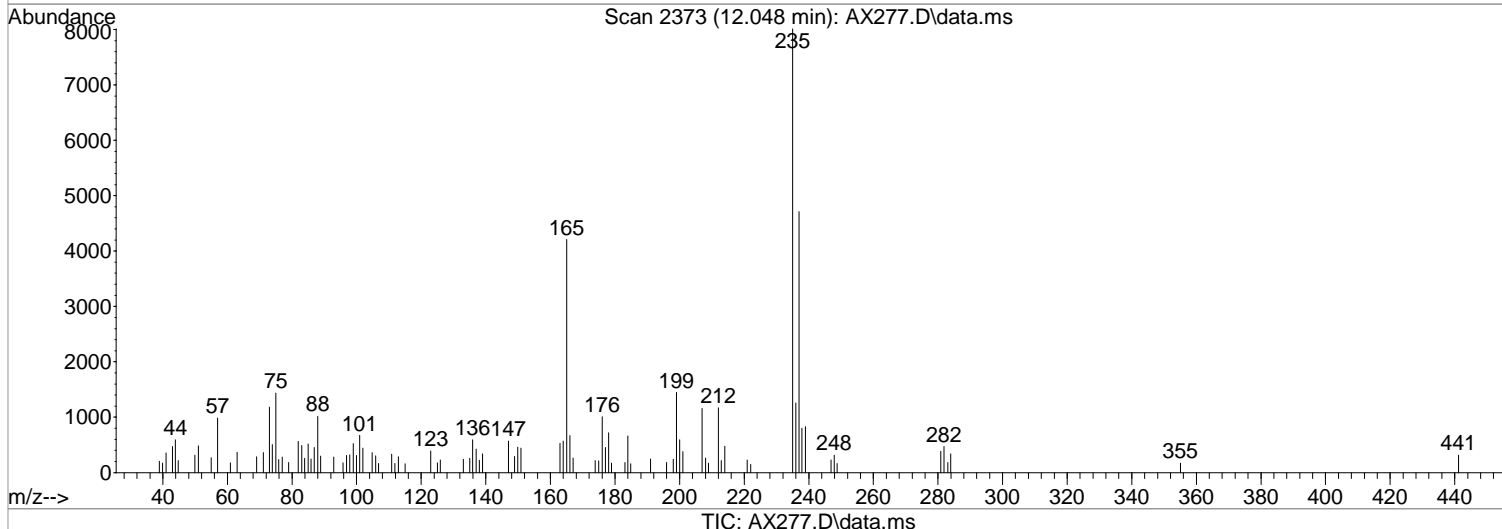
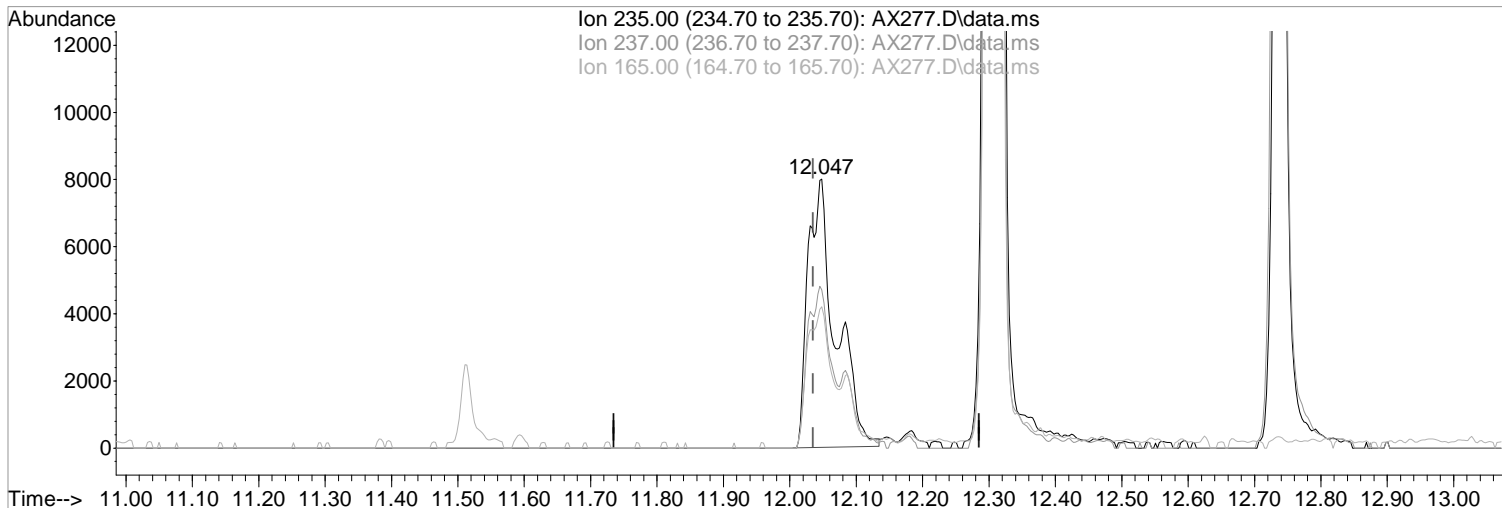
Spectrum Information: Average of 10.642 to 10.648 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	34.2	166259	PASS
68	69	0.00	2	1.8	3949	PASS
70	69	0.00	2	0.5	1029	PASS
127	198	10	80	52.5	255275	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	486059	PASS
199	198	5	9	6.9	33301	PASS
275	198	10	60	25.0	121731	PASS
365	198	1	500	3.3	15865	PASS
441	442	0.01	24	16.3	83309	PASS
442	442	100	100	100.0	512320	PASS
443	442	15	24	19.7	101096	PASS

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1

Inst : 5975 E

Quant Time: Aug 05 15:39:29 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(10) 4,4'-DDD (T)

12.048min (+ 0.013) 2.10 ppm m

response 230514

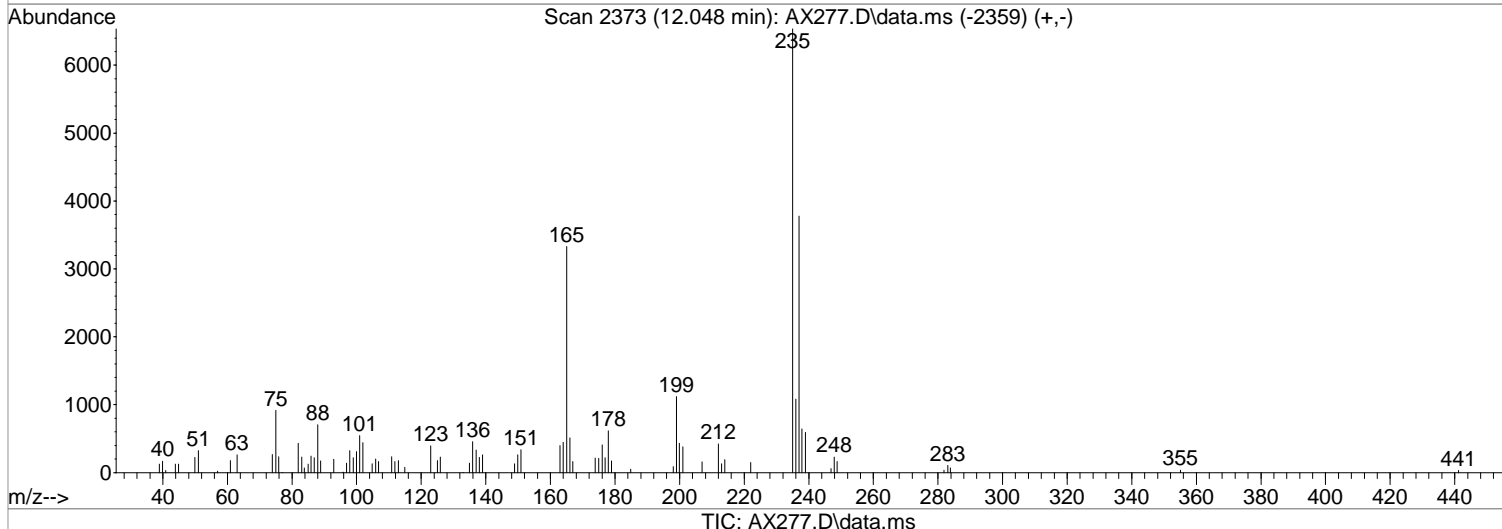
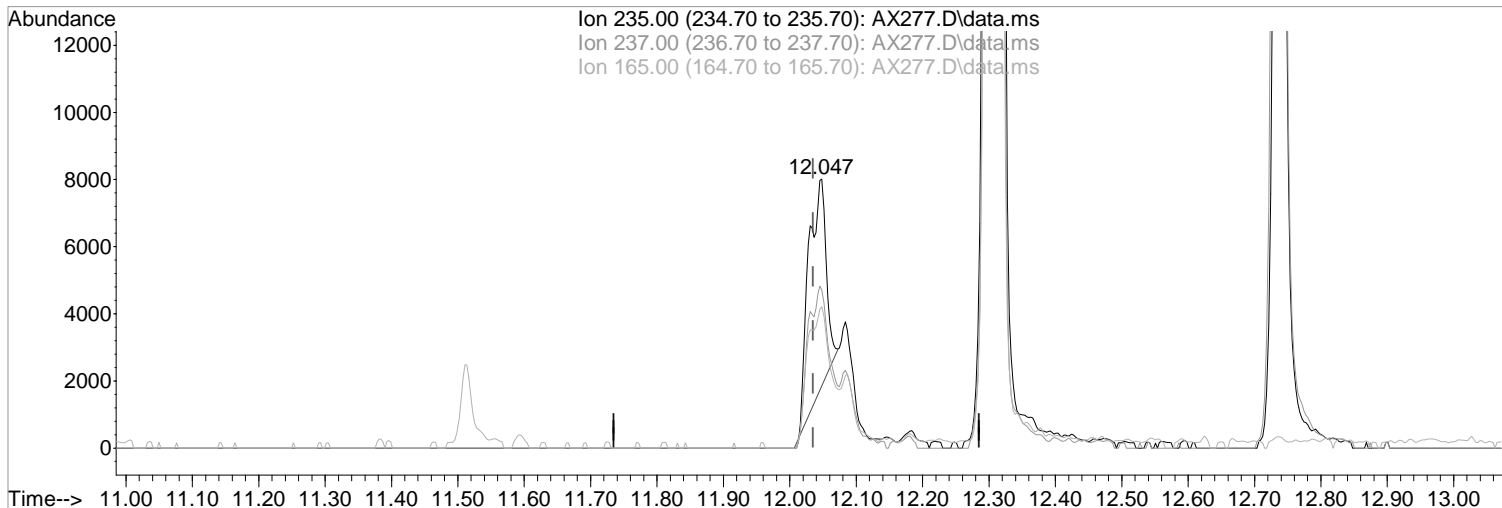
Ion	Exp%	Act%
235.00	100.00	100.00
237.00	62.20	58.82
165.00	61.60	52.53
0.00	0.00	0.00

Manual Integration:
After
Poor integration.
08/05/20

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1

Inst : 5975 E

Quant Time: Aug 05 15:39:29 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(10) 4,4'-DDD (T) Manual Integration:

12.048min (+ 0.013) 1.04 ppm Before

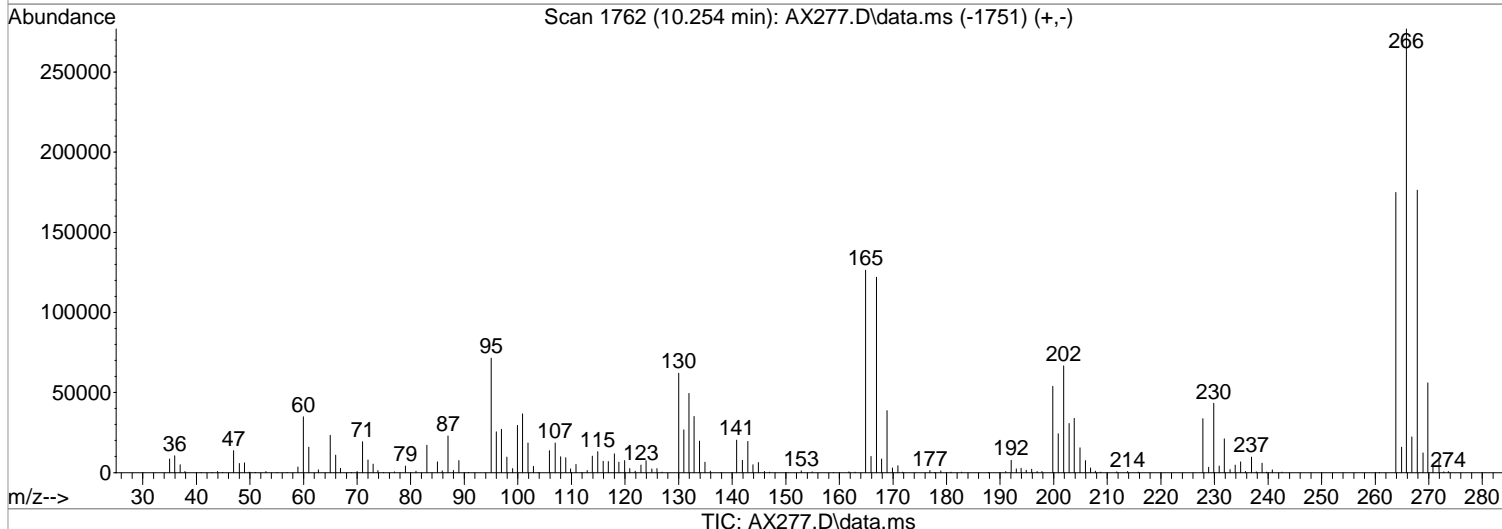
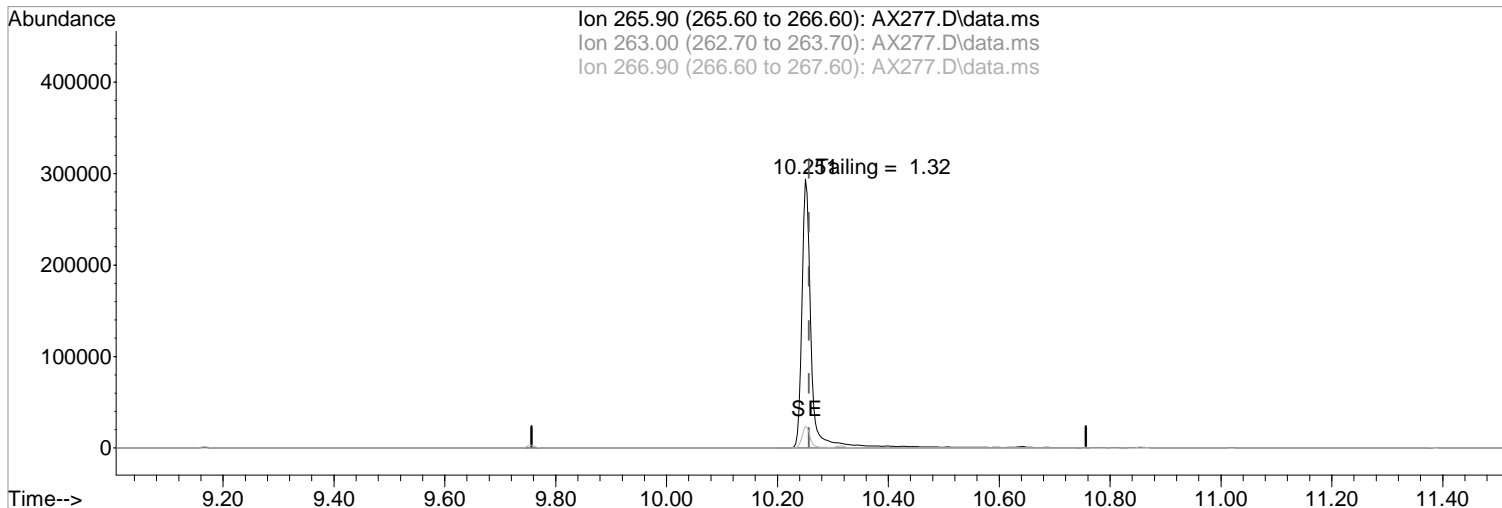
response 113826

Ion	Exp%	Act%
235.00	100.00	100.00
237.00	62.20	57.83
165.00	61.60	50.96
0.00	0.00	0.00

08/05/20

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Quant Time: Aug 05 15:39:29 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration

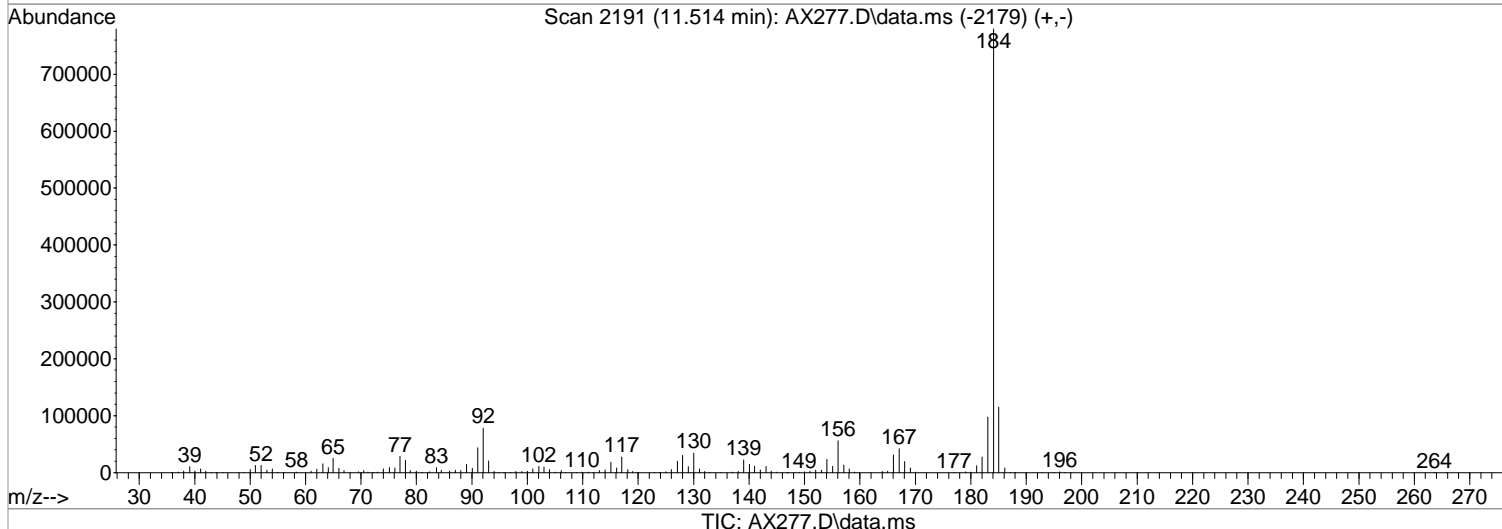
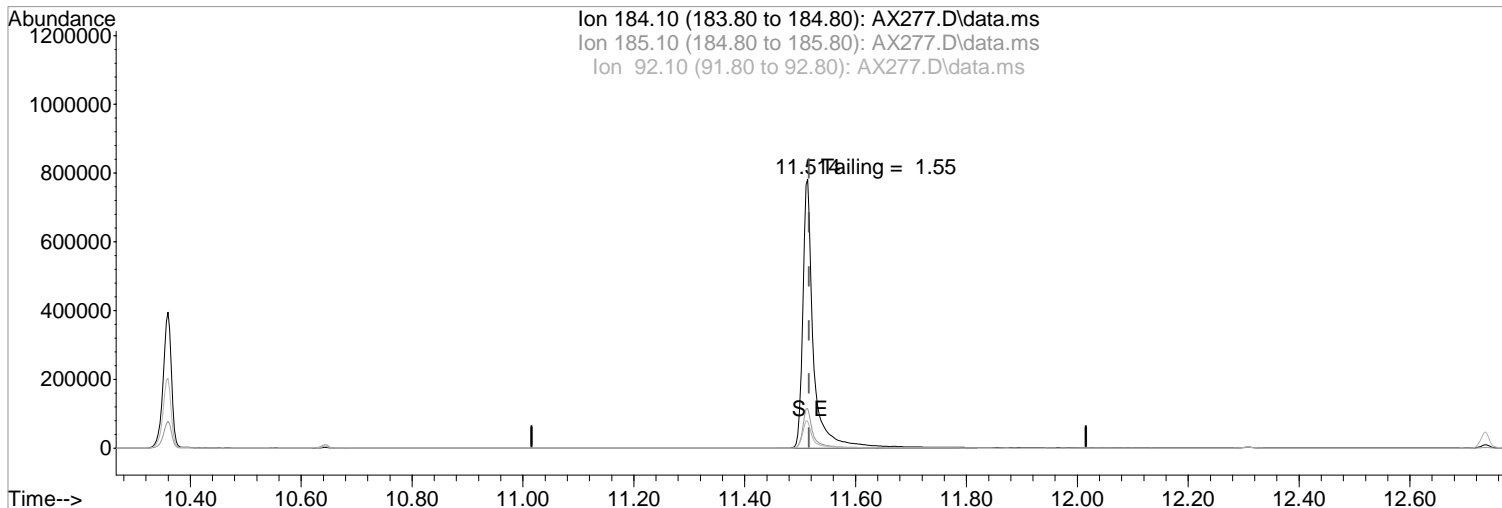


(5) Pentachlorophenol (T)
10.253min (-0.004) 53.13 ppm
response 3124135
Ion Exp% Act%
265.90 100.00 100.00
263.00 0.00 0.00
266.90 7.70 8.02
0.00 0.00 0.00

Manual Integration:
After
Other - TAILING
08/05/20

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Quant Time: Aug 05 15:39:29 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(8) Benzidine (T)

11.514min (-0.002) 50.62 ppm

response 10087573

Ion	Exp%	Act%
184.10	100.00	100.00
185.10	13.80	14.73
92.10	10.70	10.00
0.00	0.00	0.00

Manual Integration:

After

Other - TAILING

08/05/20

Data Path : I:\ACQUDATA\5975E\data\080520\
 Data File : AX277.D
 Acq On : 5 Aug 2020 3:23 pm
 Operator : AFelser
 Sample : TUNE Inst : 5975 E
 Misc : DFTPP
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 05 15:40:15 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
 Quant Title :
 QLast Update : Tue Jul 07 09:28:09 2020
 Response via : Initial Calibration

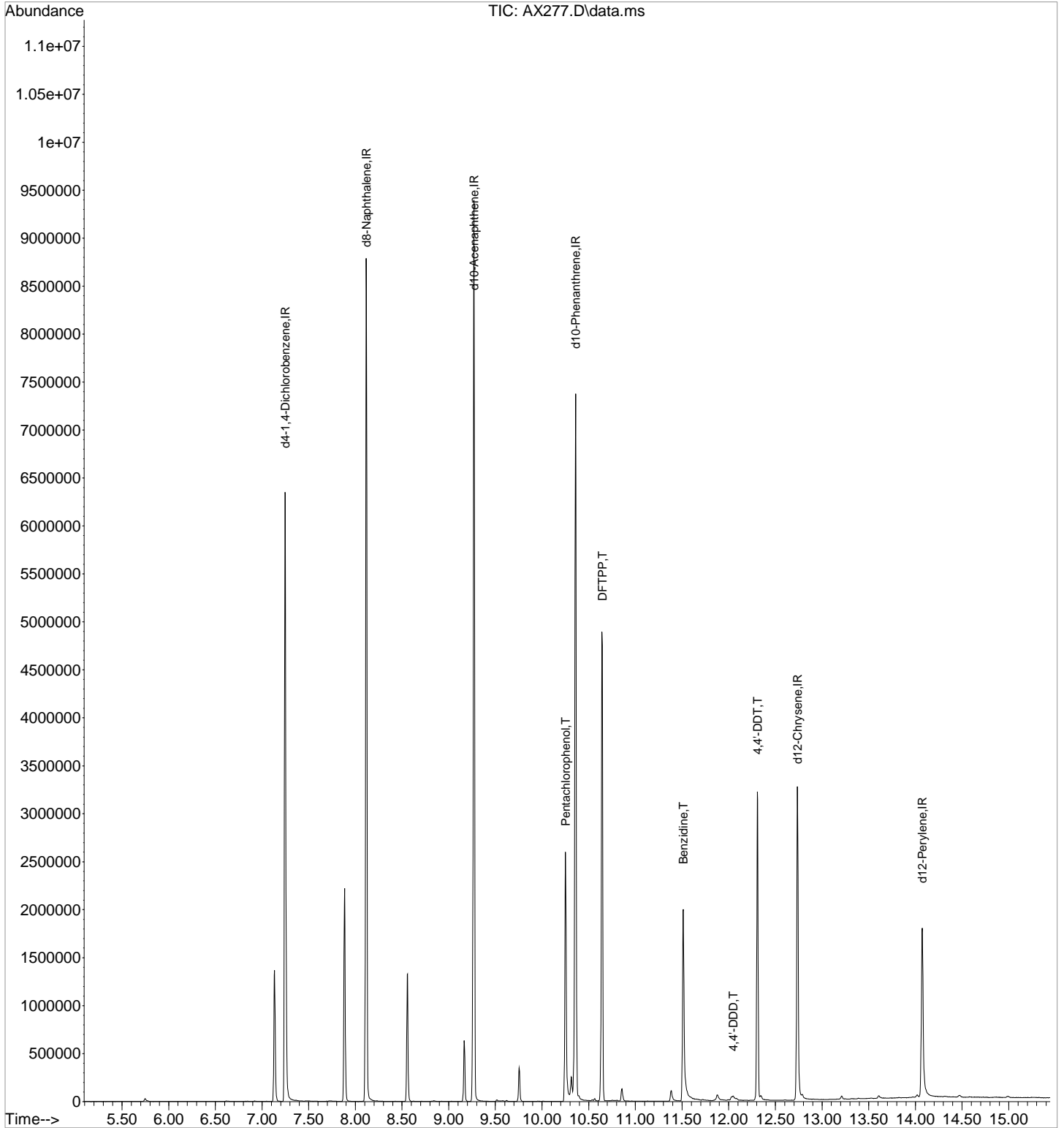
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)	
Internal Standards							
1) d4-1,4-Dichlorobenzene	7.248	152	11596000	20.00	ppm	0.00	
2) d8-Naphthalene	8.118	136	40137213	20.00	ppm	0.00	
3) d10-Acenaphthene	9.272	164	20585268	20.00	ppm	0.00	
4) d10-Phenanthrene	10.360	188	29562828	20.00	ppm	0.00	
7) d12-Chrysene	12.738	240	11798997	20.00	ppm	0.00	
12) d12-Perylene	14.075	264	7950074	20.00	ppm	0.00	
Target Compounds							
5) Pentachlorophenol	10.253	266	3124135	53.13	ppm		Qvalue 99
6) DFTPP	10.644	198	5212522	47.20	ppm		97
8) Benzidine	11.514	184	10087573	50.62	ppm		98
9) 4,4'-DDE	0.000		0	N.D.			
10) 4,4'-DDD	12.048	235	230514m	2.10	ppm		
11) 4,4'-DDT	12.309	235	5739201	52.34	ppm		99

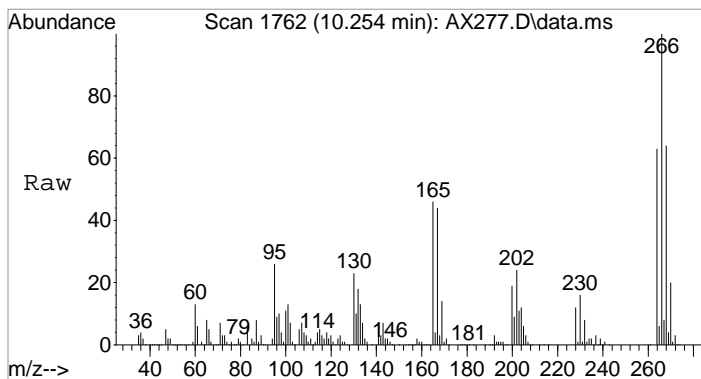
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\080520\
Data File : AX277.D
Acq On : 5 Aug 2020 3:23 pm
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1

Inst : 5975 E

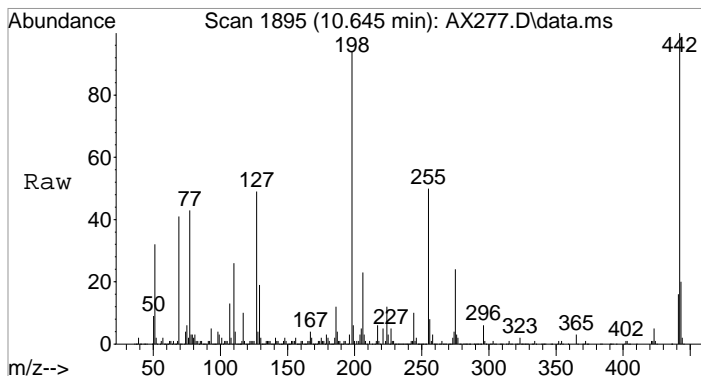
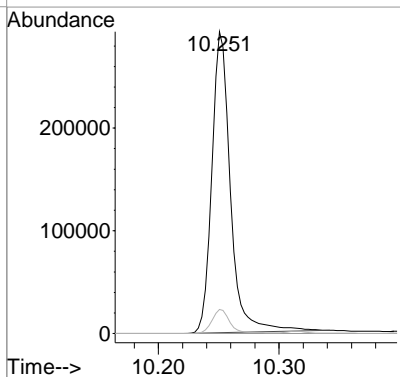
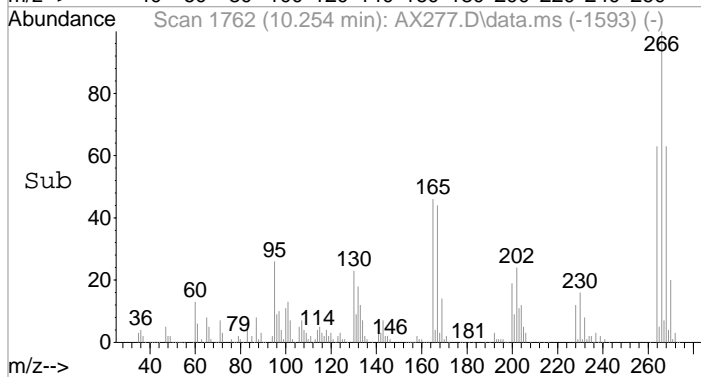
Quant Time: Aug 05 15:40:15 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration





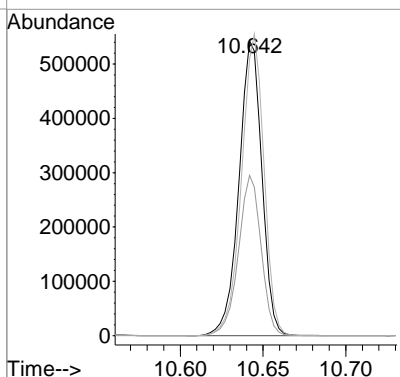
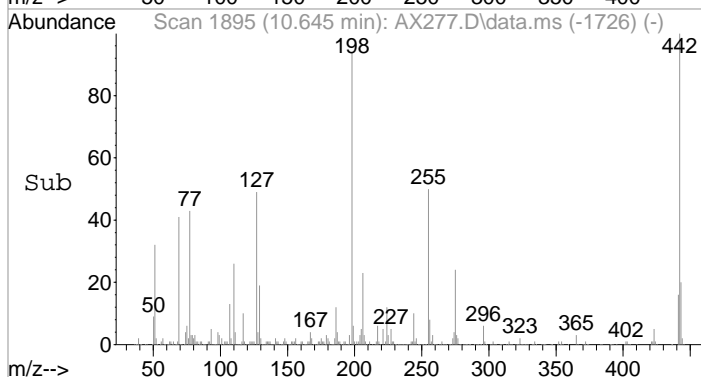
#5
 Pentachlorophenol
 Concen: 53.13 ppm
 RT: 10.253 min Scan# 1762
 Delta R.T. -0.004 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

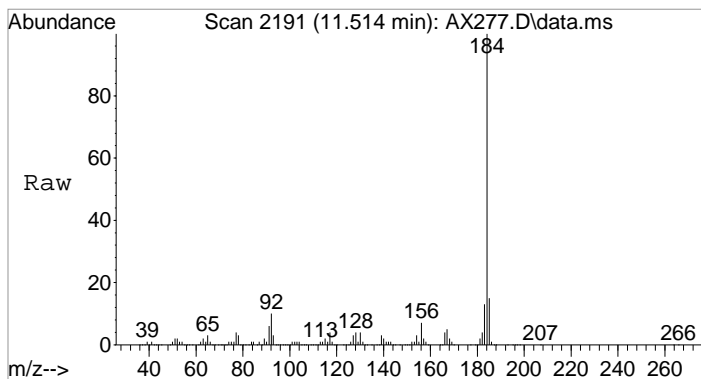
Tgt Ion	Resp	Lower	Upper
266	100		
263	0.0	0.0	20.0
267	8.0	0.0	27.7



#6
 DFTPP
 Concen: 47.20 ppm
 RT: 10.644 min Scan# 1895
 Delta R.T. -0.005 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

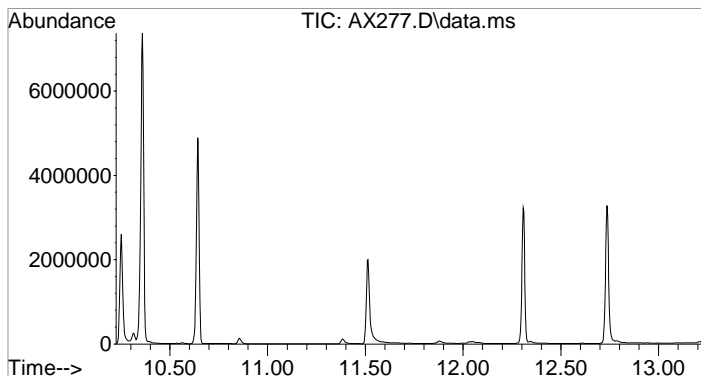
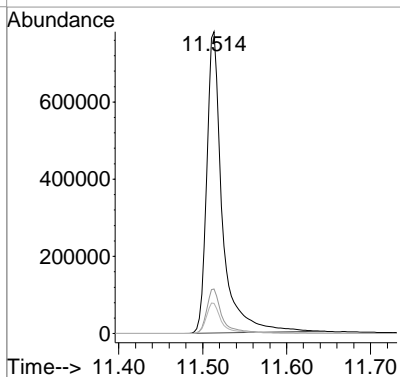
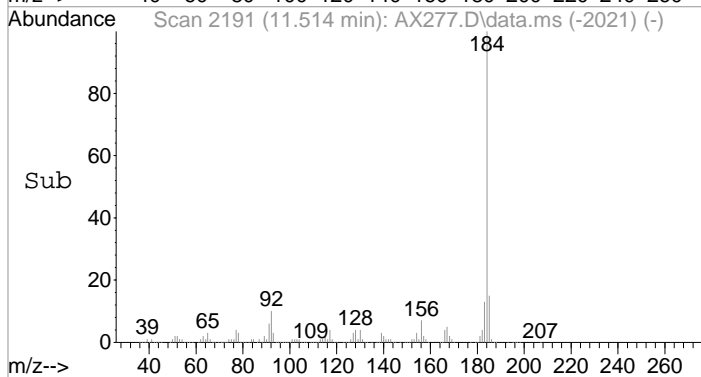
Tgt Ion	Resp	Lower	Upper
198	100		
127	52.2	36.9	76.9
442	106.1	86.7	126.7





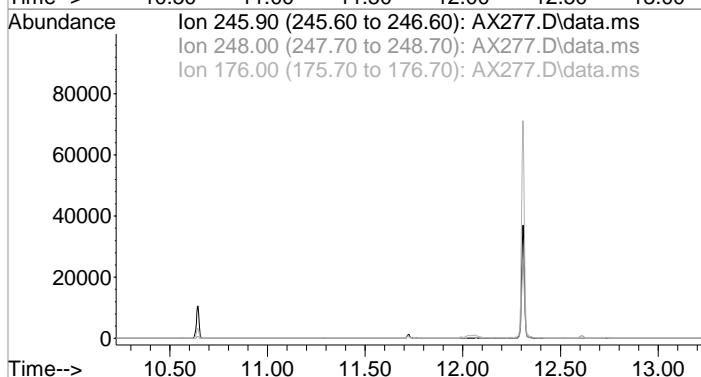
#8
 Benzidine
 Concen: 50.62 ppm
 RT: 11.514 min Scan# 2191
 Delta R.T. -0.002 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

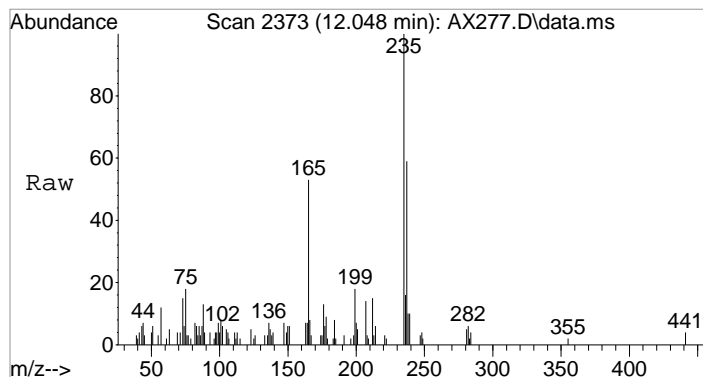
Tgt Ion	Resp	Lower	Upper
184	100		
185	14.7	0.0	33.8
92	10.0	0.0	30.7



#9
 4,4'-DDE
 Concen: N.D.
 Expected RT: 11.72 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

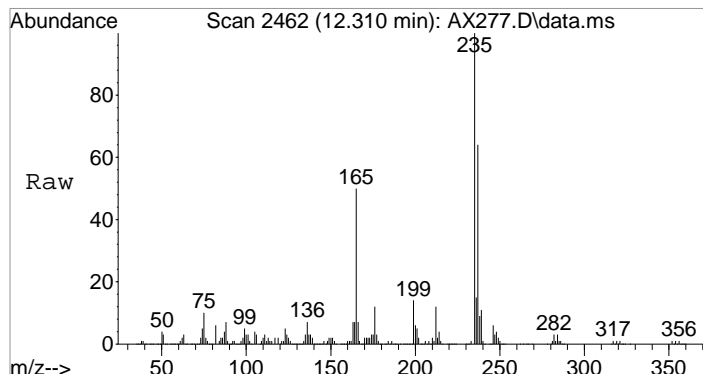
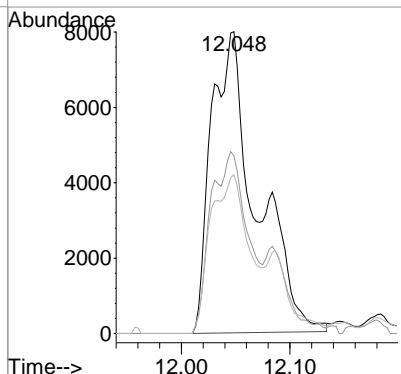
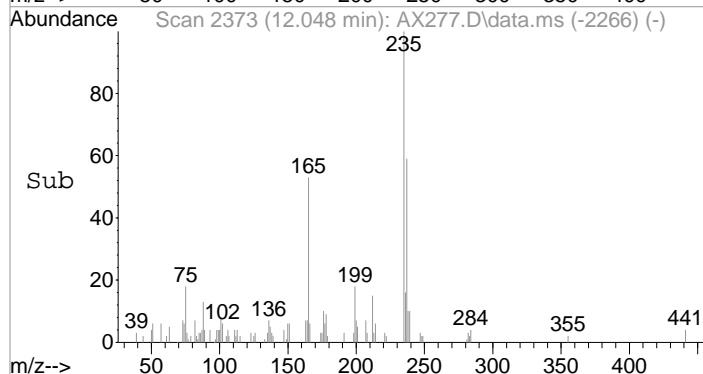
Tgt Ion	Sig	Exp Ratio
246		100
248		71.3
176		27.6





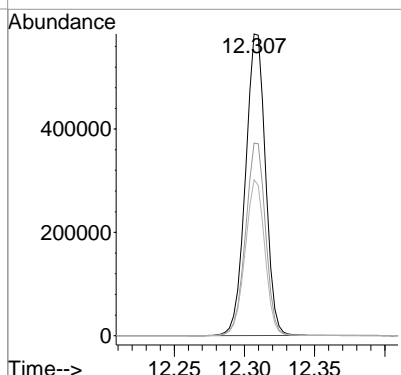
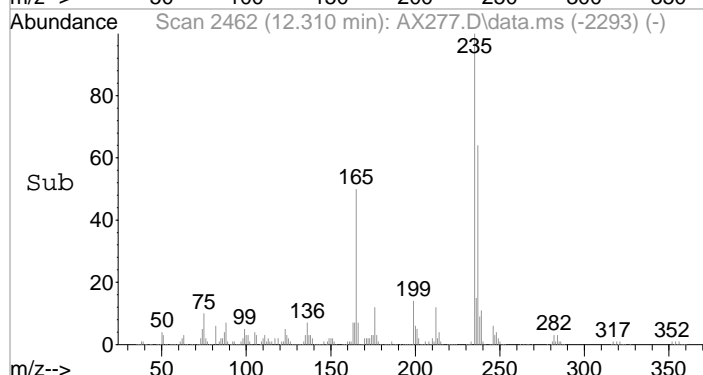
#10
 4,4'-DDD
 Concen: 2.10 ppm m
 RT: 12.048 min Scan# 2373
 Delta R.T. 0.013 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

Tgt Ion	Resp	Lower	Upper
235	100		
237	58.8	42.2	82.2
165	52.5	41.6	81.6



#11
 4,4'-DDT
 Concen: 52.34 ppm
 RT: 12.309 min Scan# 2462
 Delta R.T. -0.003 min
 Lab File: AX277.D
 Acq: 5 Aug 2020 3:23 pm

Tgt Ion	Resp	Lower	Upper
235	100		
237	63.9	43.5	83.5
165	50.0	31.9	71.9



ALS Group USA, Corp.

DBA ALS Environmental

QC/QC Report

Date Analyzed: 7/7/20 9:09

**ICAL Tune Summary
Semi Volatile Organic Compounds by GC/MS**

File ID: I:\ACQUDATA\5975E\data\070720\AX007.D
Instrument ID: R-MS-56

Analytical Method: 8270D

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Results Pass/Fail
51	198	10	80	33.1	155373	PASS
68	69	0	2	1.2	2452	PASS
69	198	0	100	42.3	198635	PASS
70	69	0	2	0.6	1197	PASS
127	198	10	80	51.6	242325	PASS
197	198	0	2	0.0	0	PASS
198	198	100	100	100.0	469611	PASS
199	198	5	9	6.7	31493	PASS
275	198	10	60	26.2	123003	PASS
365	198	1	100	3.7	17520	PASS
441	442	0.01	24	16.1	90629	PASS
442	442	100	100	100.0	562411	PASS
443	442	15	24	19.4	109000	PASS

Sample Name	Lab Code	File ID:	Date Analyzes: Q
BLK	BLK	I:\ACQUDATA\5975E\DATA\070720\AX009.D	7/7/20 9:49
1 ppb STD	1 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX010.D	7/7/20 10:08
2 ppb STD	2 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX011.D	7/7/20 10:26
10 ppb STD	10 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX012.D	7/7/20 10:44
20 ppb STD	20 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX013.D	7/7/20 11:03
100 ppb STD	100 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX014.D	7/7/20 11:21
200 ppb STD	200 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX015.D	7/7/20 11:39
500 ppb STD	500 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX016.D	7/7/20 11:58
1000 ppb STD	1000 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX017.D	7/7/20 12:17
5000 ppb STD	5000 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX018.D	7/7/20 12:36
ICV	ICV	I:\ACQUDATA\5975E\DATA\070720\AX019.D	7/7/20 12:55

ALS Group USA, Corp.

DBA ALS Environmental

QC/QC Report

Date Analyzed: 7/7/20 8:38

ICAL Tune Summary
Semi-Volatile Organic Compounds by GC/MS

File ID: I:\ACQUDATA\5975E\data\070720\AX006.D
 Instrument ID: R-MS-56

Analytical Method: 522

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Results Pass/Fail
50	95	15	40	16.6	7711	PASS
75	95	30	60	45.9	21245	PASS
95	95	100	100	100.0	46323	PASS
96	95	5	9	7.3	3369	PASS
173	174	0	2	0.0	0	PASS
174	95	50	120	84.6	39192	PASS
175	174	5	9	7.3	2870	PASS
176	174	95	101	99.9	39165	PASS
177	176	5	9	6.4	2511	PASS

Sample Name	Lab Code	File ID:	Date Analyzes: Q
BLK	BLK	I:\ACQUDATA\5975E\DATA\070720\AX009.D	7/7/20 9:49
1 ppb STD	1 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX010.D	7/7/20 10:08
2 ppb STD	2 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX011.D	7/7/20 10:26
10 ppb STD	10 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX012.D	7/7/20 10:44
20 ppb STD	20 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX013.D	7/7/20 11:03
100 ppb STD	100 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX014.D	7/7/20 11:21
200 ppb STD	200 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX015.D	7/7/20 11:39
500 ppb STD	500 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX016.D	7/7/20 11:58
1000 ppb STD	1000 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX017.D	7/7/20 12:17
5000 ppb STD	5000 ppb STD	I:\ACQUDATA\5975E\DATA\070720\AX018.D	7/7/20 12:36
ICV	ICV	I:\ACQUDATA\5975E\DATA\070720\AX019.D	7/7/20 12:55

Analysis: 522 / 8270 Diox
 Date: 07/07/2020
 Syringes: _____

Analyst: AFelner
 Instr: 5975E

Run Method: SOURCE1-E / DEST1-E / 1077.D
 Quant Method: SDiox 070720.M
 LIMS Run#: 686323

Pos.	Sample	Diln.	Stds. ID	File#	OK?	Comments
1	DLK			Ax001	---	
1	DLK			002	---	
2	TUNE REF		208992	06	Y	
3	TUNE DETP		2091653	07	Y	
4	DLK			08	---	
5	hit DLK			09	Y	
6	STD 1		210705	10	Y	
7	2		210706	11	Y	
8	3		210707	12	Y	
9	4		210708	13	Y	
10	5		210709	14	Y	
11	6		210710	15	Y	
12	7		210710	16	Y	
13	8		210711	17	Y	
14	9		210712	18	Y	
15	ICV		210587	19	Y	
2	TUNE REF		208992	20	Y	
7	CCV 2ppb		210706	21	Y	
18	R2006853-01			22	Y	>MDL
17	-02			23	Y	
18	-03			24	Y	
19	-04			25	Y	>150%
20	R2005357-001			26	Y	
21	R2006853-05			27	Y	
22	-06			28	Y	
23	R2005357-002			29	N	
24	-03			30	N	
25	-04			31	N	
11	CCV 200ppb		210704	32	Y	
26	R2005357-005			33	N	
27	-007			34	N	
28	-008			35	Y	
29	R2005364-001			36	N	
30	-003			37	N	
31	-004			38	Y	
32	-005			39	Y	
33	-006			40	N	
34	-007			41	Y	
35	R2006853-07			42	Y	
13	CCV 100ppb		210711	43	Y	

All samples = _____ mL + _____ uL Combined IS/Surr.;

Primary: _____ exp:
 Primary: _____ exp:
 Reagents:

Secondary: _____ exp:
 Secondary: _____ exp:

Runlog GCEXT r2 4/27/17

O-1025 Page 83

Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX019.D
 Acq On : 7 Jul 2020 12:55 pm
 Operator : AFelser
 Sample : ICV Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 15 Sample Multiplier: 1

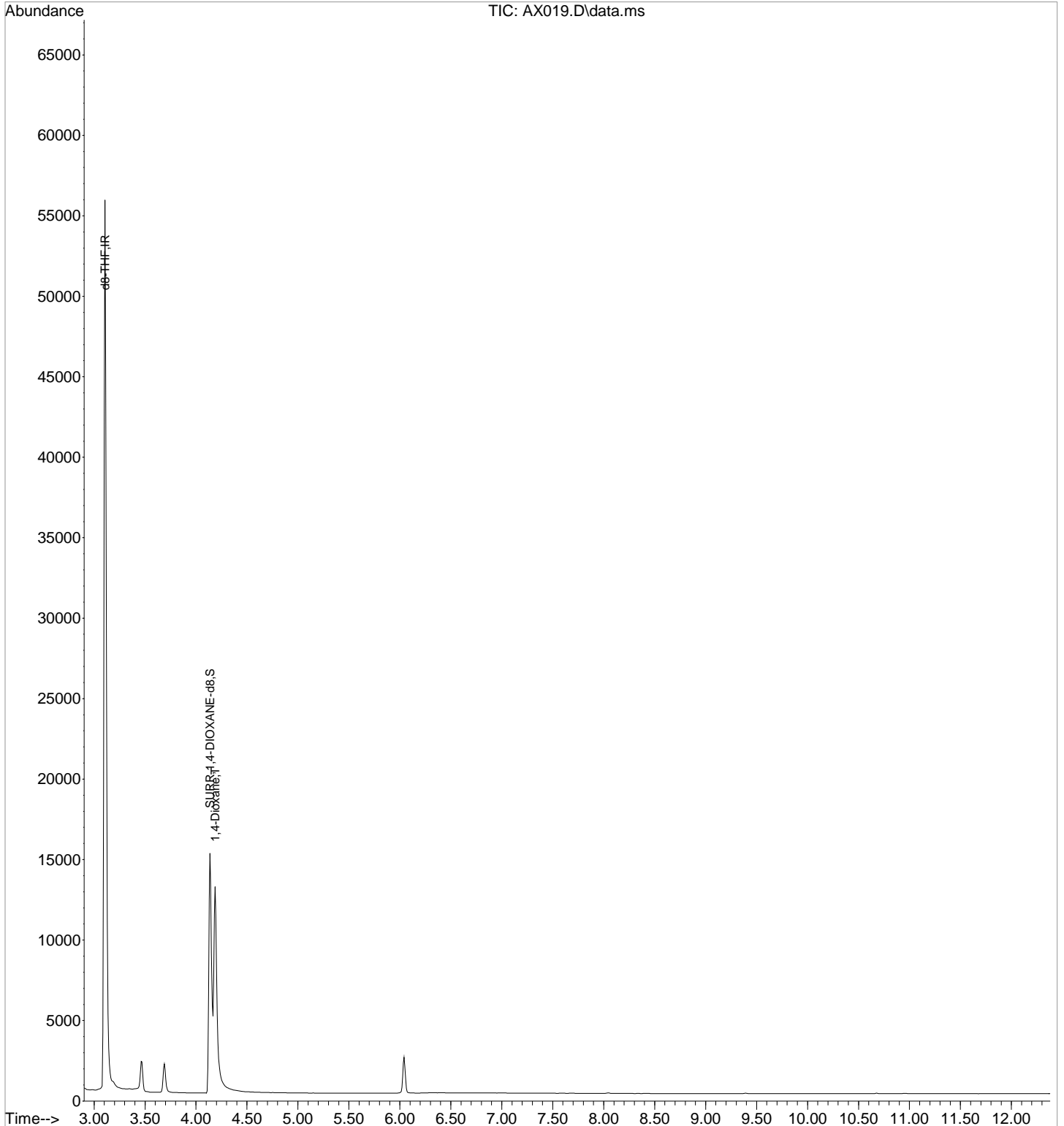
Quant Time: Jul 07 13:11:32 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

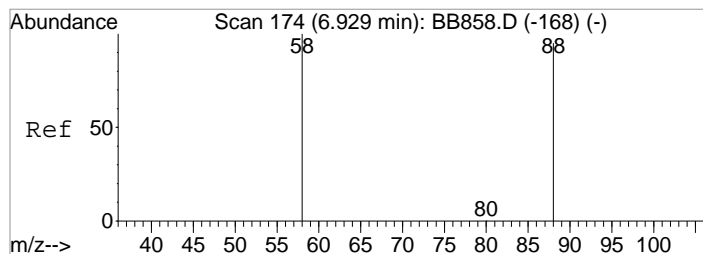
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.107	46	35640	500.00	PPB	-0.01
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.137	96	16042	210.84	PPB	-0.01
Spiked Amount	100.000	Range	70 - 130	Recovery	=	210.84%#
Target Compounds						
2) 1,4-Dioxane	4.187	88	17170	231.34	PPB	Qvalue 89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX019.D
Acq On : 7 Jul 2020 12:55 pm
Operator : AFelser
Sample : ICV
Misc : Initial Calibration 8270D/522
ALS Vial : 15 Sample Multiplier: 1
Inst : 5975 E

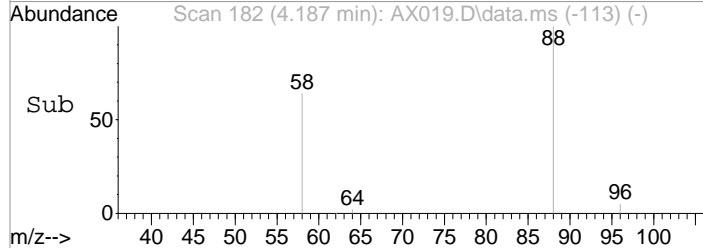
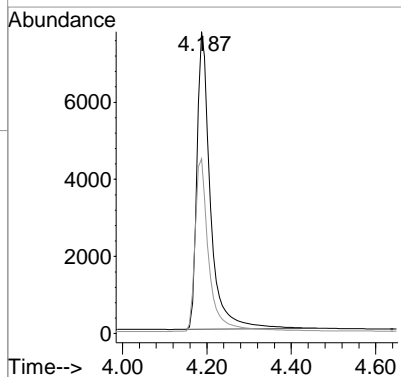
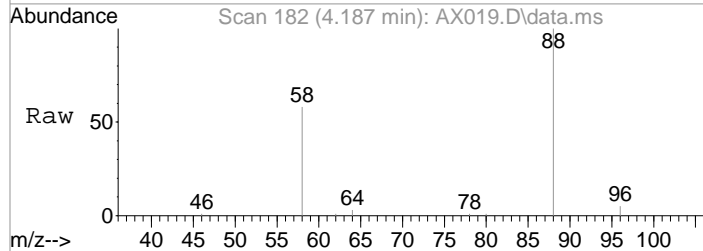
Quant Time: Jul 07 13:11:32 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 231.34 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.013 min
Lab File: AX019.D
Acq: 7 Jul 2020 12:55 pm

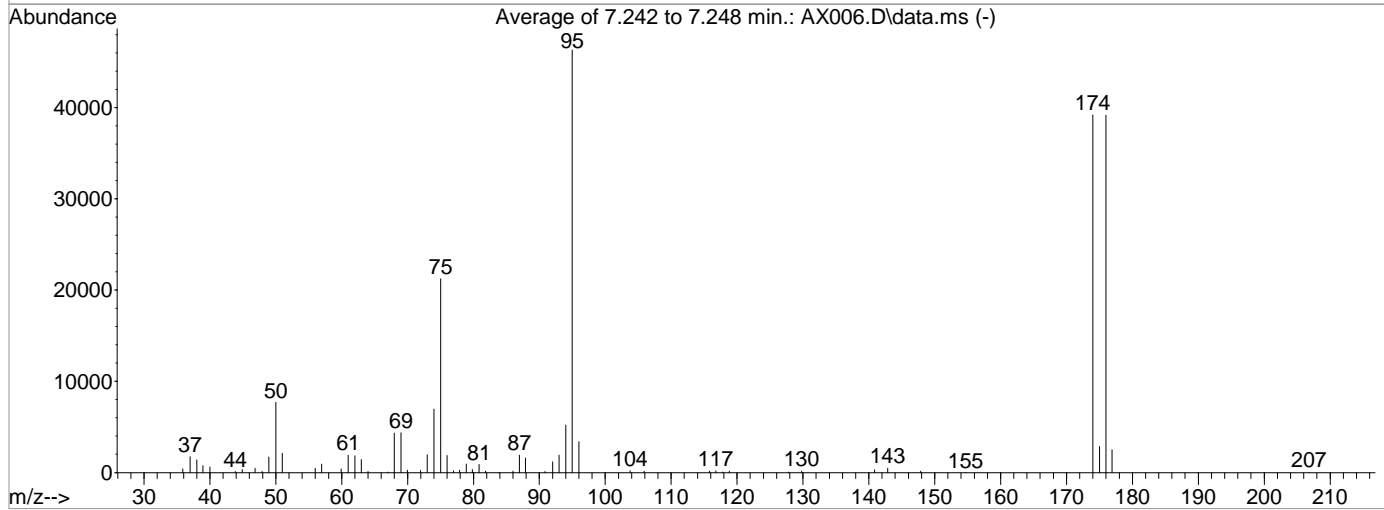
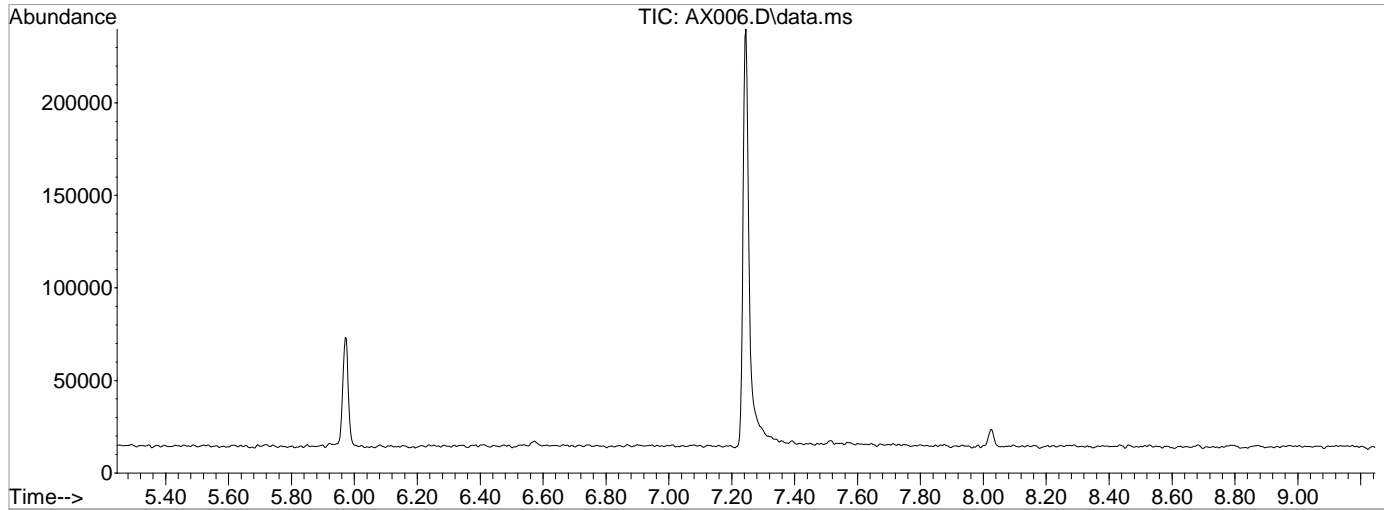
Tgt Ion: 88 Resp: 17170
Ion Ratio Lower Upper
88 100
58 57.9 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX006.D
 Acq On : 7 Jul 2020 8:38 am
 Operator : AFelser
 Sample : TUNE
 Misc : BFB
 ALS Vial : 2 Sample Multiplier: 1
 Inst : 5975 E

Integration File: events.e

Method : I:\ACQUDATA\5975E\METHODS\bfbtune.M
 Title :
 Last Update : Wed Mar 28 08:41:26 2012



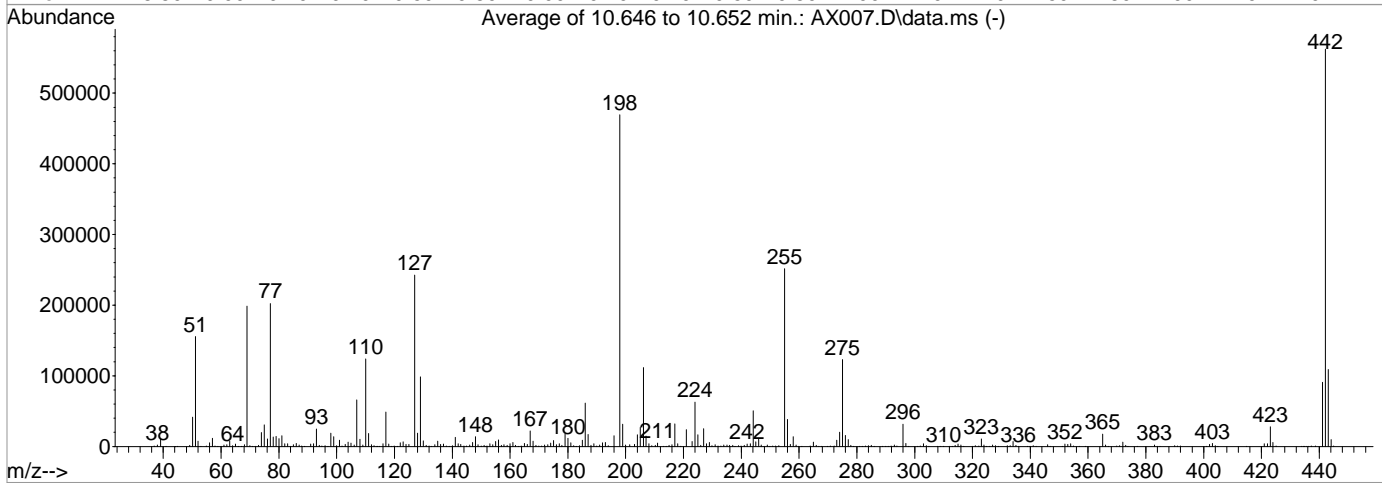
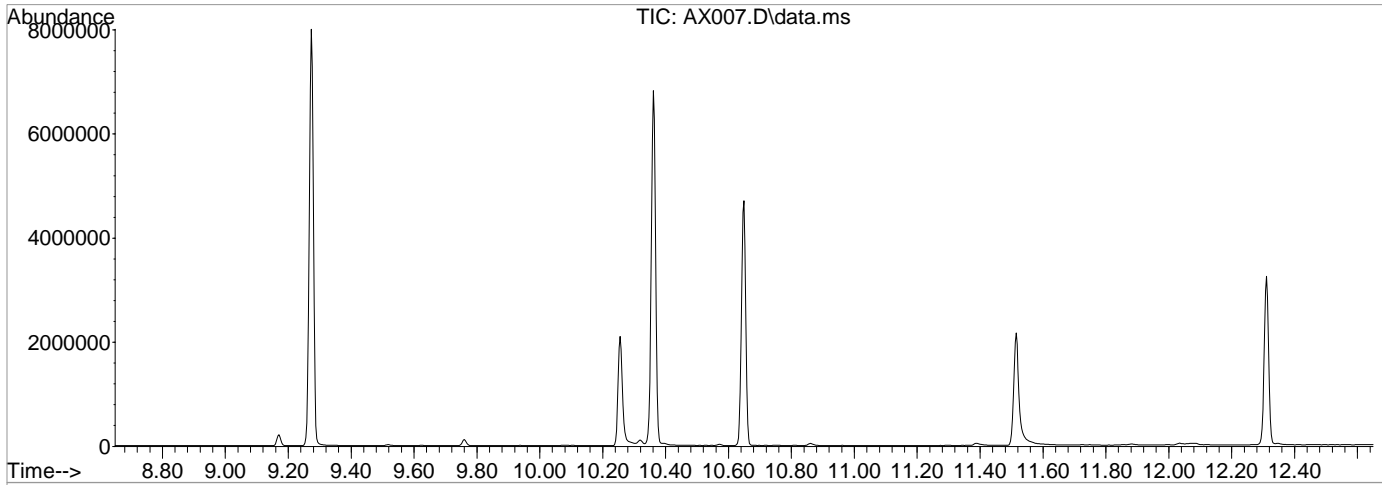
Spectrum Information: Average of 7.242 to 7.248 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.6	7711	PASS
75	95	30	60	45.9	21245	PASS
95	95	100	100	100.0	46323	PASS
96	95	5	9	7.3	3369	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	84.6	39192	PASS
175	174	5	9	7.3	2870	PASS
176	174	95	101	99.9	39165	PASS
177	176	5	9	6.4	2511	PASS

Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX007.D
 Acq On : 7 Jul 2020 9:09 am
 Operator : AFelser
 Sample : TUNE
 Misc : DFTPP
 ALS Vial : 3 Sample Multiplier: 1
 Inst : 5975 E

Integration File: events.e

Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
 Title :
 Last Update : Tue Jul 07 09:28:09 2020

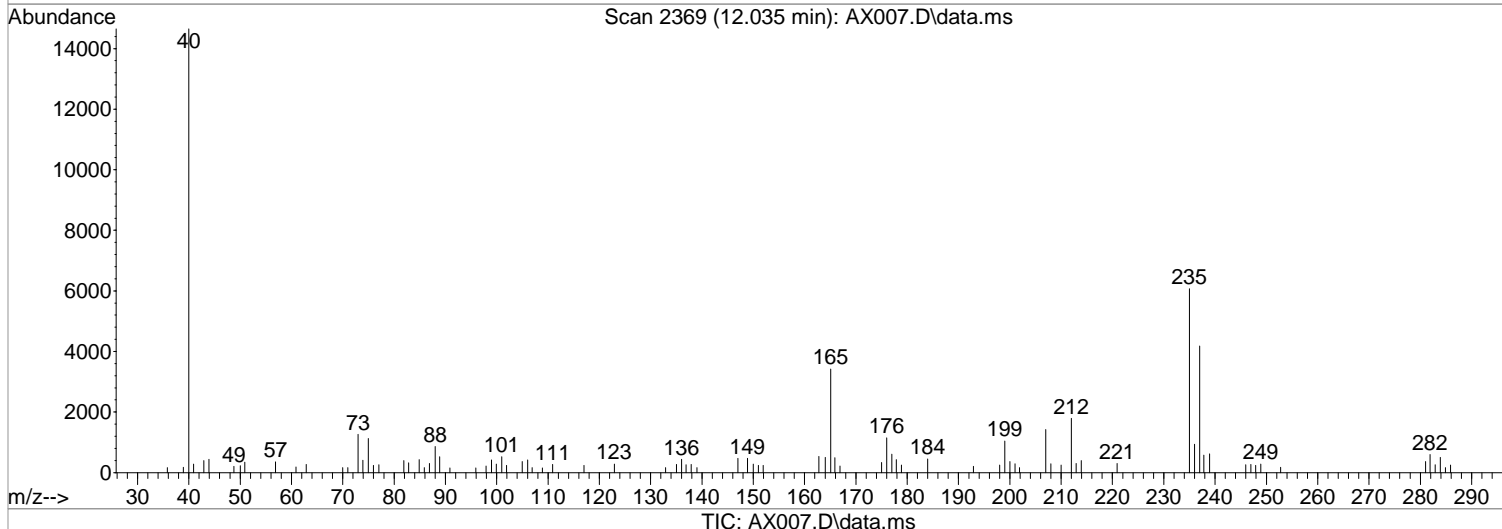
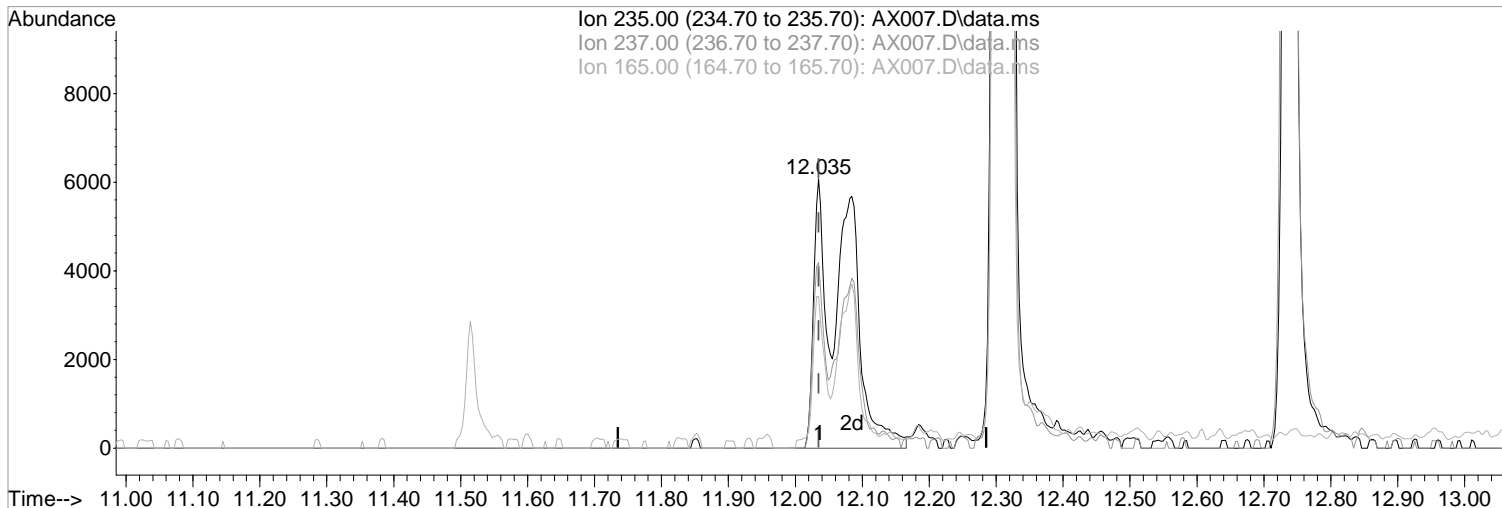


Spectrum Information: Average of 10.646 to 10.652 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	33.1	155373	PASS
68	69	0.00	2	1.2	2452	PASS
70	69	0.00	2	0.6	1197	PASS
127	198	10	80	51.6	242325	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	469611	PASS
199	198	5	9	6.7	31493	PASS
275	198	10	60	26.2	123003	PASS
365	198	1	500	3.7	17520	PASS
441	442	0.01	24	16.1	90629	PASS
442	442	100	100	100.0	562411	PASS
443	442	15	24	19.4	109000	PASS

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX007.D
Acq On : 7 Jul 2020 9:09 am
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Quant Time: Jul 07 09:28:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(10) 4,4'-DDD (T)

12.035min (-0.000) 1.80 ppm m

response 206532

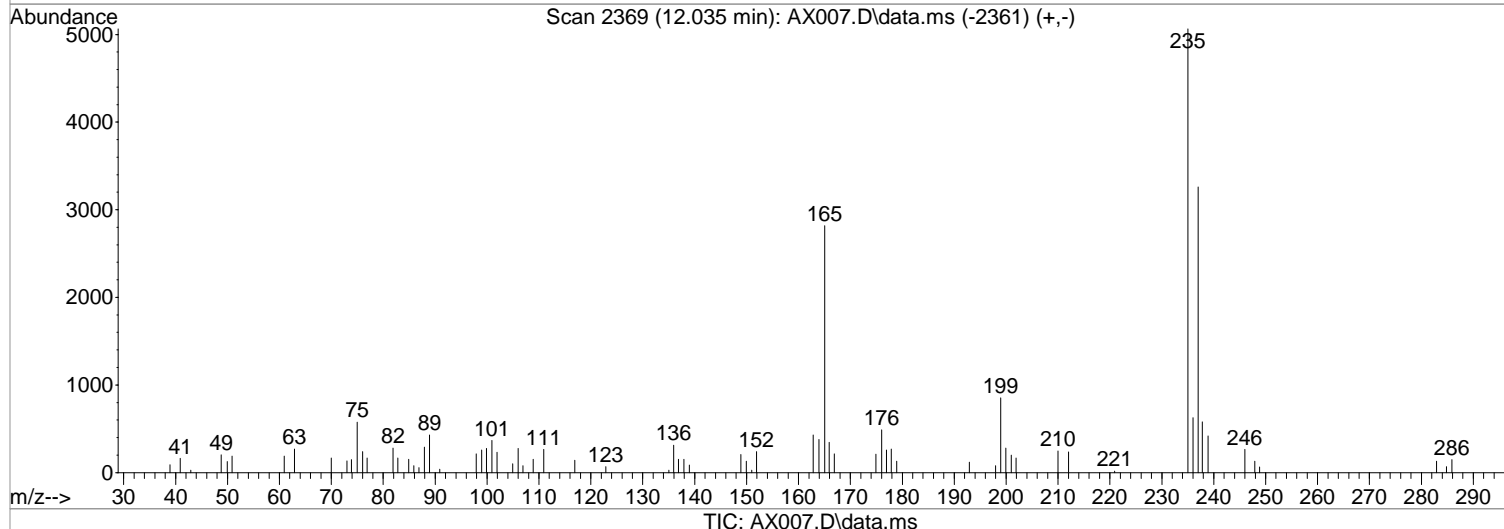
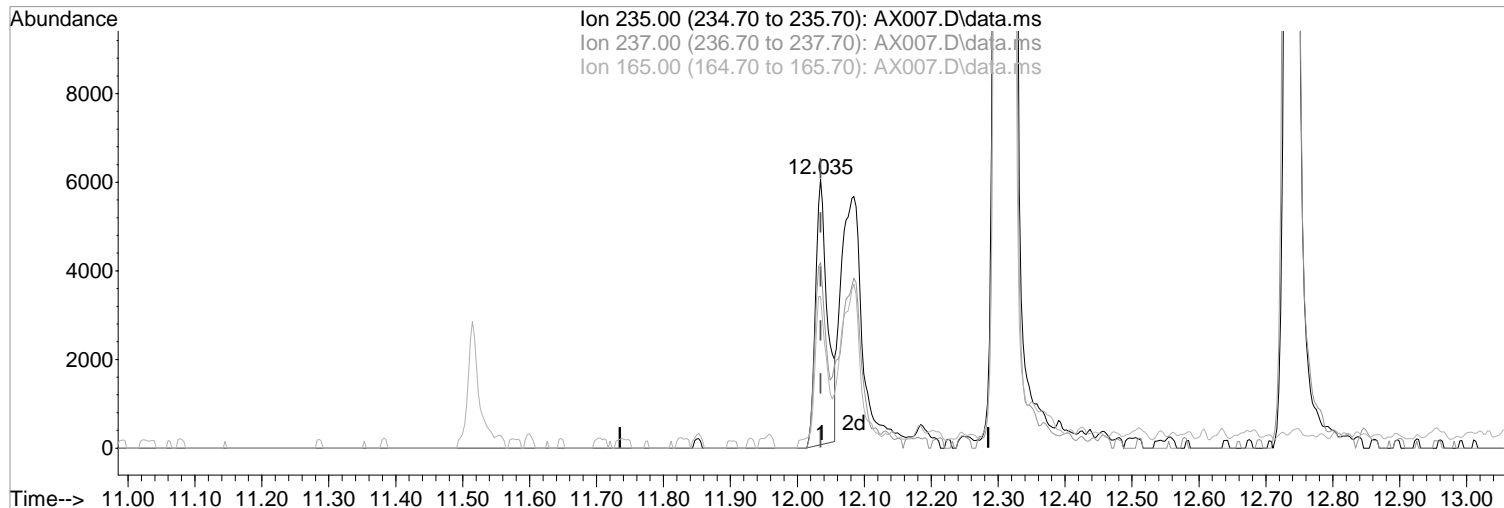
Ion	Exp%	Act%
235.00	100.00	100.00
237.00	62.20	68.88
165.00	61.60	56.33
0.00	0.00	0.00

Manual Integration:
After
Poor integration.
07/07/20

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX007.D
Acq On : 7 Jul 2020 9:09 am
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1

Inst : 5975 E

Quant Time: Jul 07 09:28:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(10) 4,4'-DDD (T)

12.036min (+ 0.001) 0.61 ppm

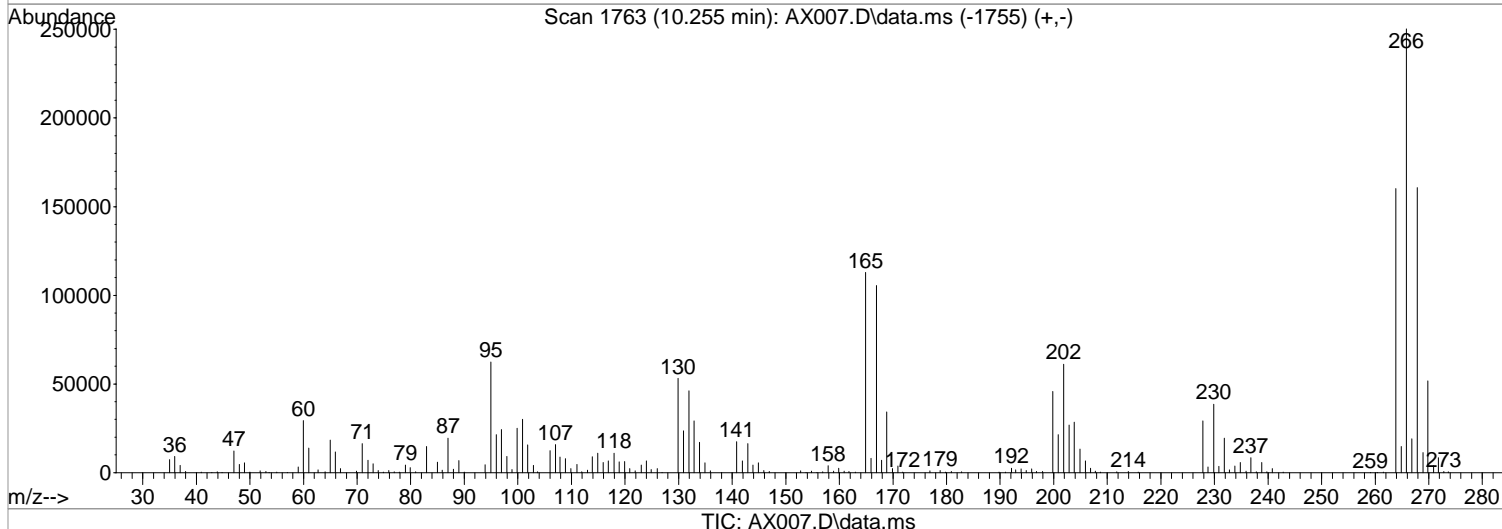
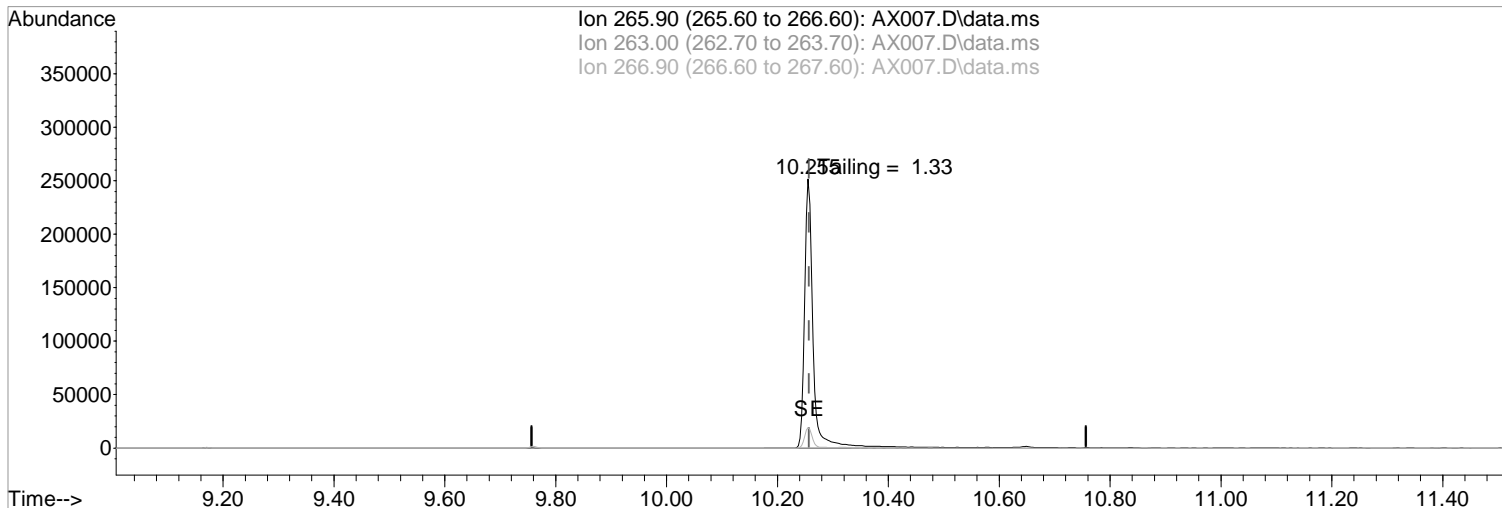
response 70332

Ion	Exp%	Act%
235.00	100.00	100.00
237.00	62.20	64.37
165.00	61.60	53.54
0.00	0.00	0.00

Manual Integration:
Before
07/07/20

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX007.D
Acq On : 7 Jul 2020 9:09 am
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Quant Time: Jul 07 09:28:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(5) Pentachlorophenol (T)

10.257min (0.000) 50.00 ppm

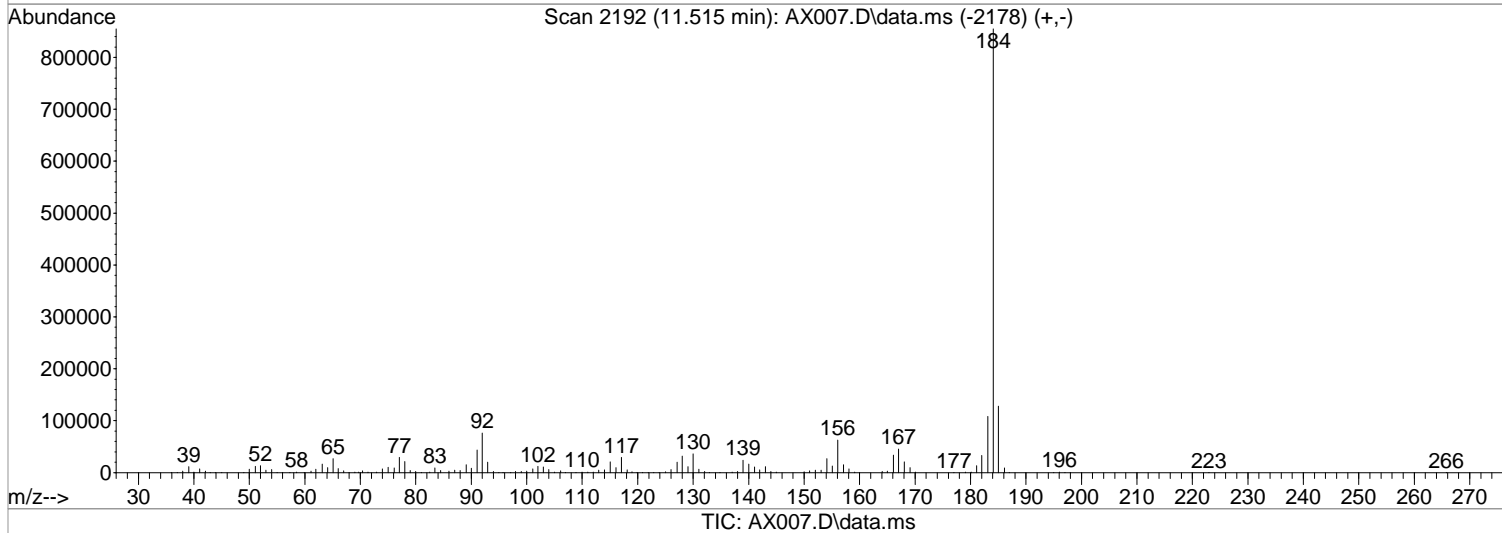
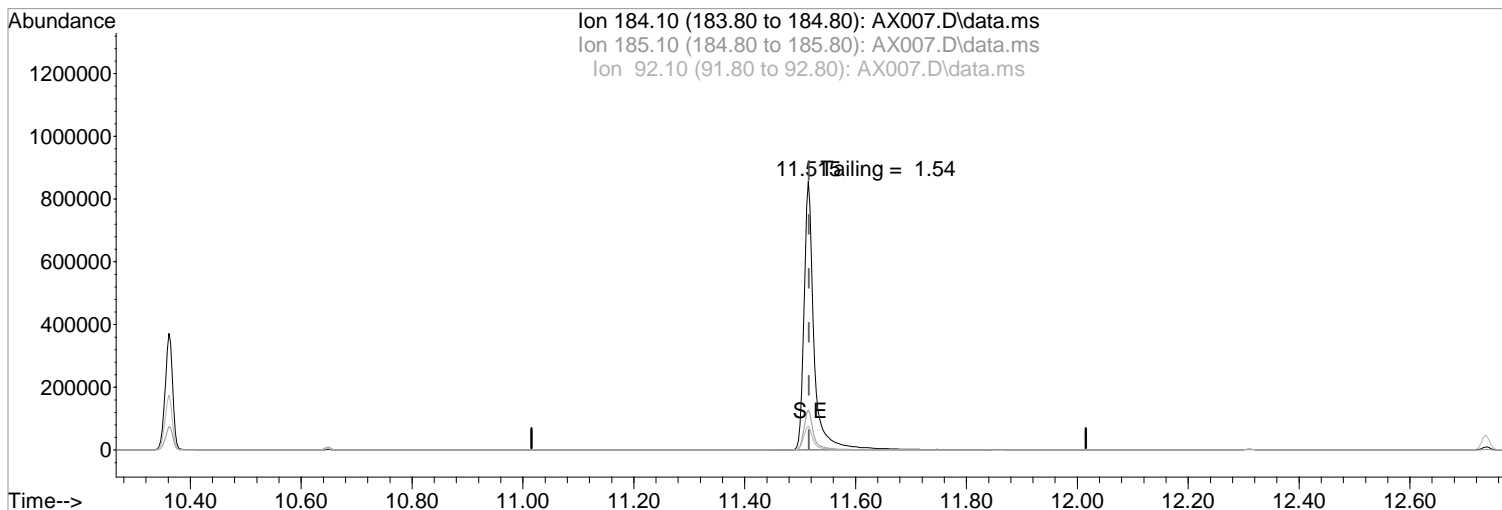
response 2473336

Ion	Exp%	Act%
265.90	100.00	100.00
263.00	0.00	0.00
266.90	7.70	7.59
0.00	0.00	0.00

Manual Integration:
After
Other - Tailing
07/07/20

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX007.D
Acq On : 7 Jul 2020 9:09 am
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1
Inst : 5975 E

Quant Time: Jul 07 09:28:14 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



(8) Benzidine (T)

Manual Integration:

11.516min (+ 0.000) 50.22 ppm

After

response 10446109

Other - Tailing

07/07/20

Ion	Exp%	Act%
184.10	100.00	100.00
185.10	13.80	14.98
92.10	10.70	8.87
0.00	0.00	0.00

Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX007.D
 Acq On : 7 Jul 2020 9:09 am
 Operator : AFelser
 Sample : TUNE Inst : 5975 E
 Misc : DFTPP
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 07 09:28:44 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
 Quant Title :
 QLast Update : Tue Jul 07 09:28:09 2020
 Response via : Initial Calibration

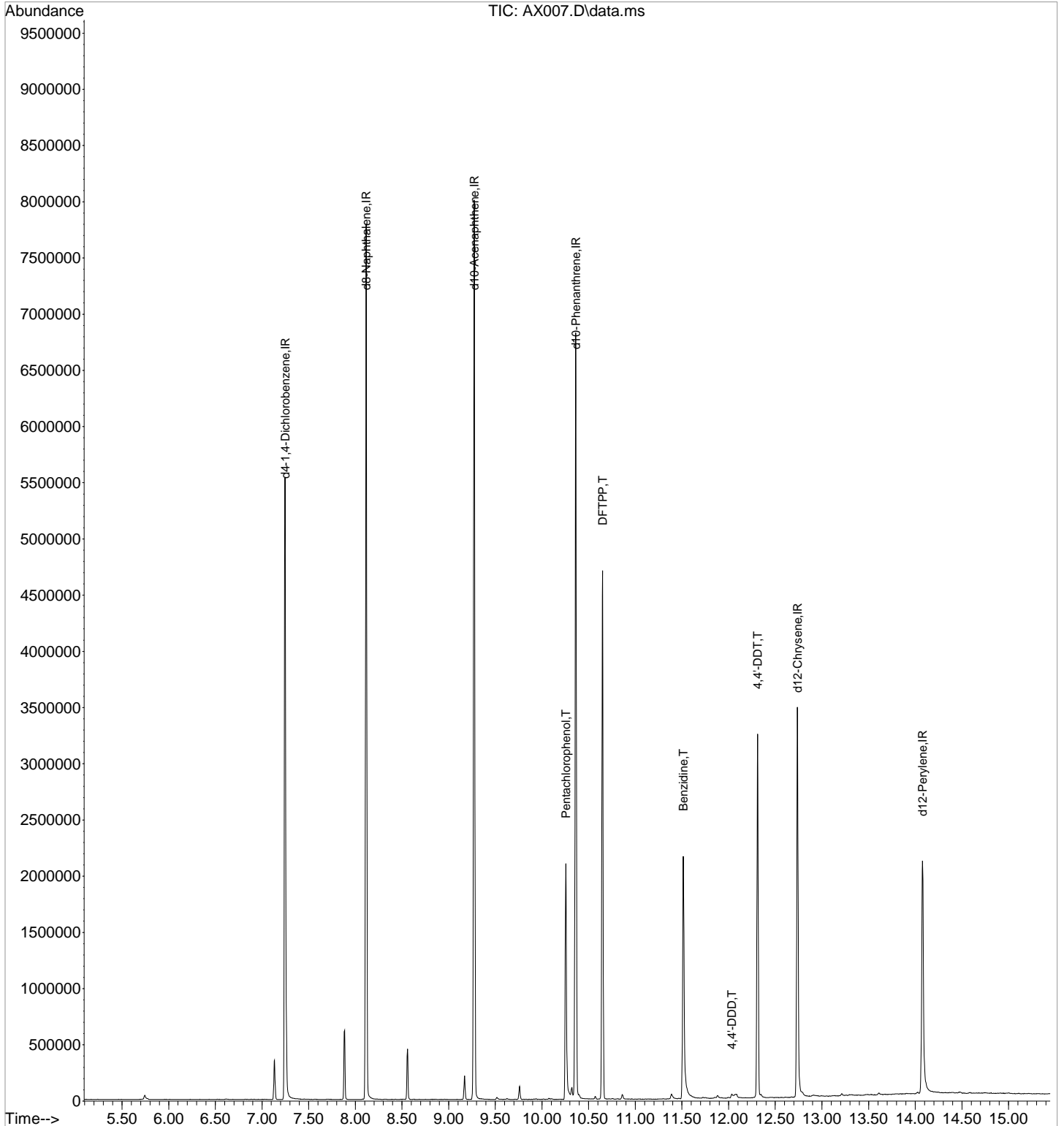
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)	
Internal Standards							
1) d4-1,4-Dichlorobenzene	7.247	152	9675462	20.00	ppm	0.00	
2) d8-Naphthalene	8.117	136	33005383	20.00	ppm	0.00	
3) d10-Acenaphthene	9.275	164	16677525	20.00	ppm	0.00	
4) d10-Phenanthrene	10.363	188	24867362	20.00	ppm	0.00	
7) d12-Chrysene	12.739	240	12316082	20.00	ppm	0.00	
12) d12-Perylene	14.080	264	9591309	20.00	ppm	0.00	
Target Compounds							
5) Pentachlorophenol	10.257	266	2473336	50.00	ppm		Qvalue 100
6) DFTPP	10.649	198	4645346	50.01	ppm		89
8) Benzidine	11.516	184	10446109	50.22	ppm		96
9) 4,4'-DDE	0.000		0		N.D.		
10) 4,4'-DDD	12.035	235	206532m	1.80	ppm		
11) 4,4'-DDT	12.312	235	5721502	49.98	ppm		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX007.D
Acq On : 7 Jul 2020 9:09 am
Operator : AFelser
Sample : TUNE
Misc : DFTPP
ALS Vial : 3 Sample Multiplier: 1

Inst : 5975 E

Quant Time: Jul 07 09:28:44 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\DFTPPDIO.M
Quant Title :
QLast Update : Tue Jul 07 09:28:09 2020
Response via : Initial Calibration



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX009.D
 Acq On : 7 Jul 2020 9:49 am
 Operator : AFelser
 Sample : BLK Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 5 Sample Multiplier: 1

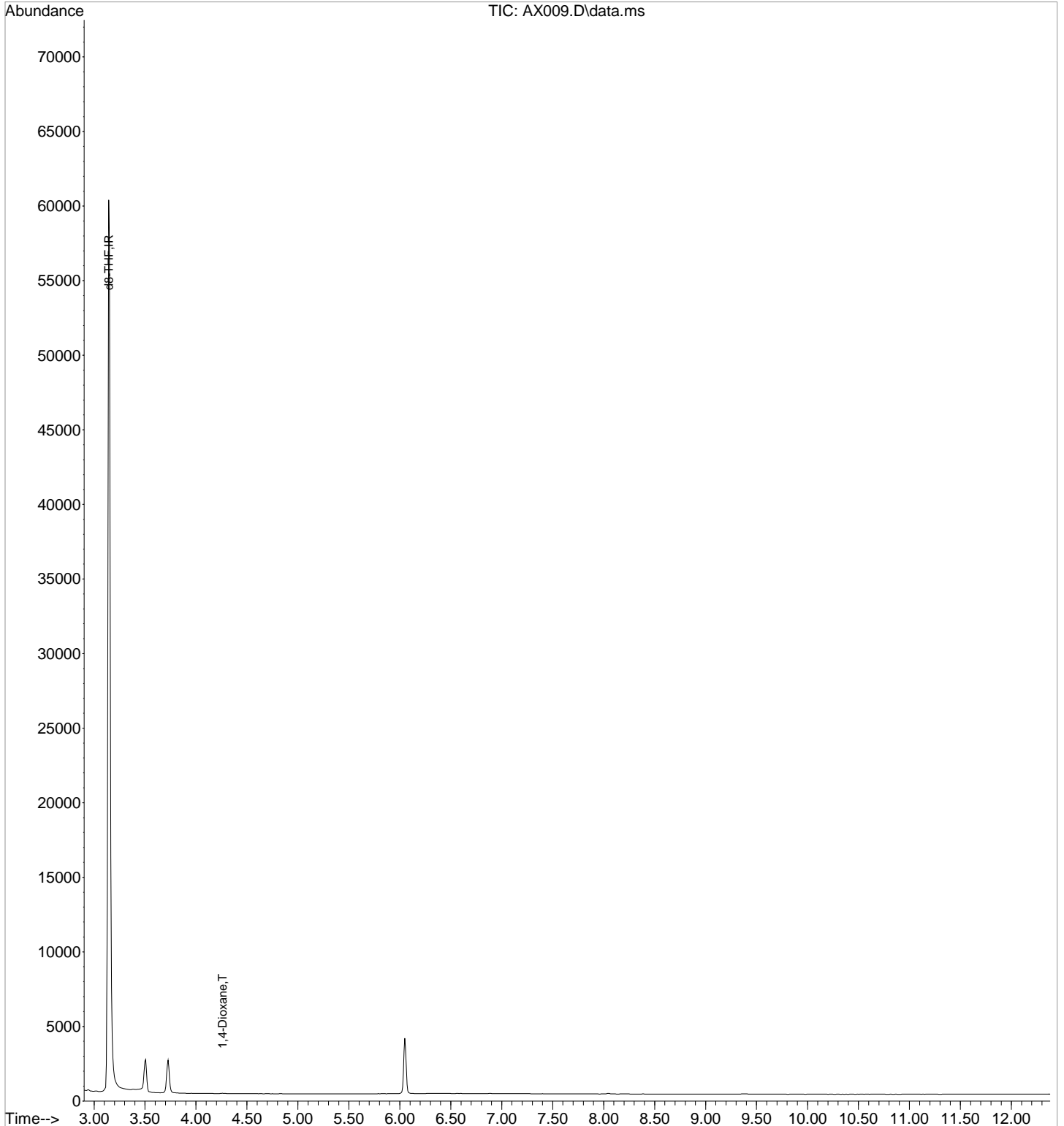
Quant Time: Jul 07 12:50:34 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:49:35 2020
 Response via : Initial Calibration

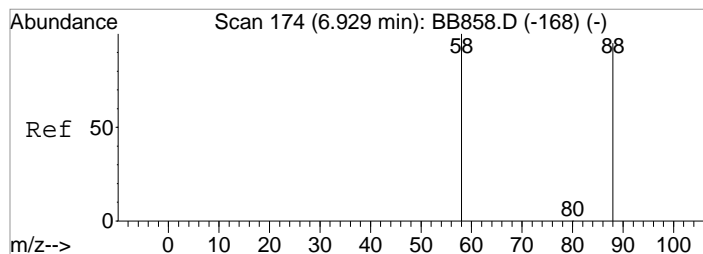
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.143	46	39841	500.00	PPB	0.02
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	0.000	96	0	0.00	PPB	
Spiked Amount	100.000	Range	70 - 130	Recovery	=	0.00%#
Target Compounds						
2) 1,4-Dioxane	4.258	88	40	0.47	PPB	Qvalue 80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

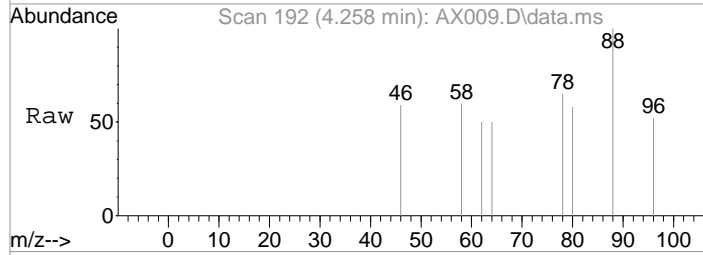
Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX009.D
Acq On : 7 Jul 2020 9:49 am
Operator : AFelser
Sample : BLK Inst : 5975 E
Misc : Initial Calibration 8270D/522
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 07 12:50:34 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

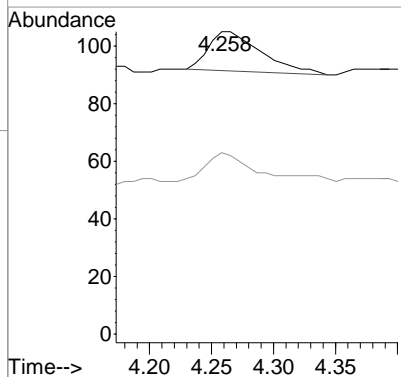
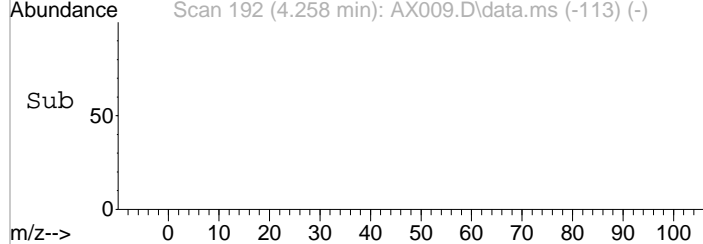




#2
1,4-Dioxane
Concen: 0.47 PPB
RT: 4.258 min Scan# 192
Delta R.T. 0.058 min
Lab File: AX009.D
Acq: 7 Jul 2020 9:49 am



Tgt Ion: 88 Resp: 40
Ion Ratio Lower Upper
88 100
58 64.3 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX010.D
Acq On : 7 Jul 2020 10:08 am
Operator : AFelser
Sample : 1 ppb STD Inst : 5975 E
Misc : Initial Calibration 8270D/522
ALS Vial : 6 Sample Multiplier: 1

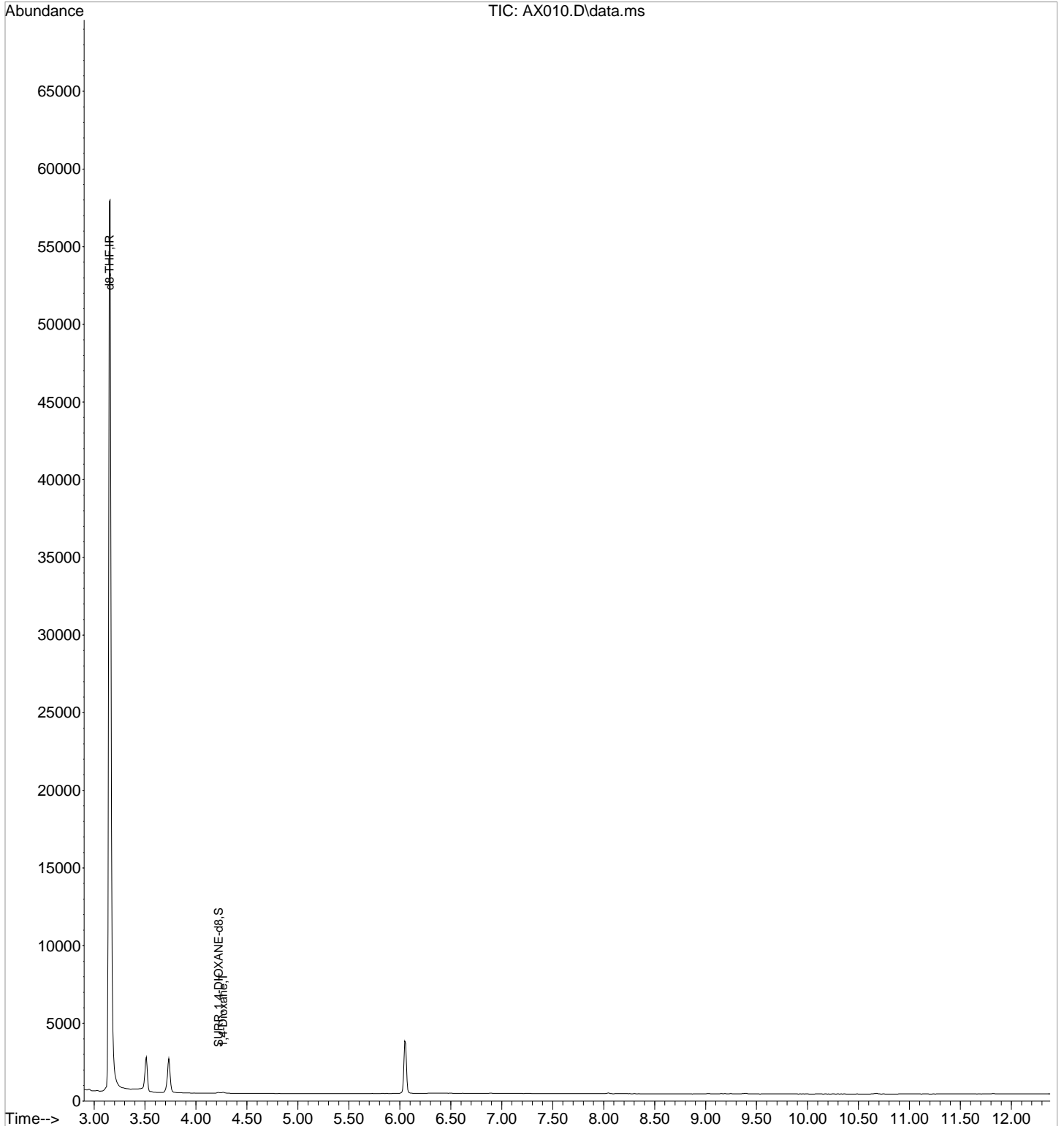
Quant Time: Jul 07 12:43:46 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration

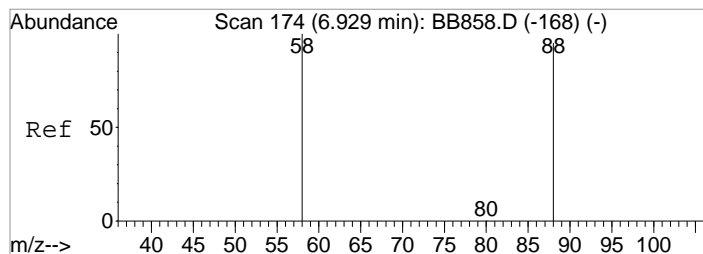
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.150	46	38770	500.00	PPB	0.03
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.223	96	67	1.31	PPB	0.08
Spiked Amount	100.000	Range	70 - 130	Recovery	=	1.31%#
Target Compounds						
2) 1,4-Dioxane	4.265	88	88	1.36	PPB	Qvalue 88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX010.D
Acq On : 7 Jul 2020 10:08 am
Operator : AFelser
Sample : 1 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 6 Sample Multiplier: 1
Inst : 5975 E

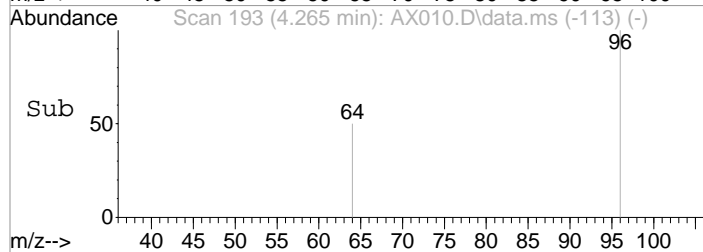
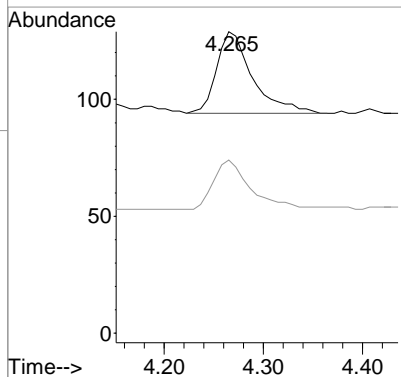
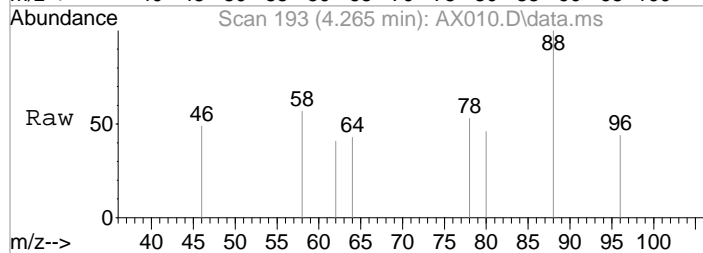
Quant Time: Jul 07 12:43:46 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1.36 PPB
RT: 4.265 min Scan# 193
Delta R.T. 0.068 min
Lab File: AX010.D
Acq: 7 Jul 2020 10:08 am

Tgt Ion: 88 Resp: 88
Ion Ratio Lower Upper
88 100
58 58.6 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX011.D
 Acq On : 7 Jul 2020 10:26 am
 Operator : AFelser
 Sample : 2 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 7 Sample Multiplier: 1

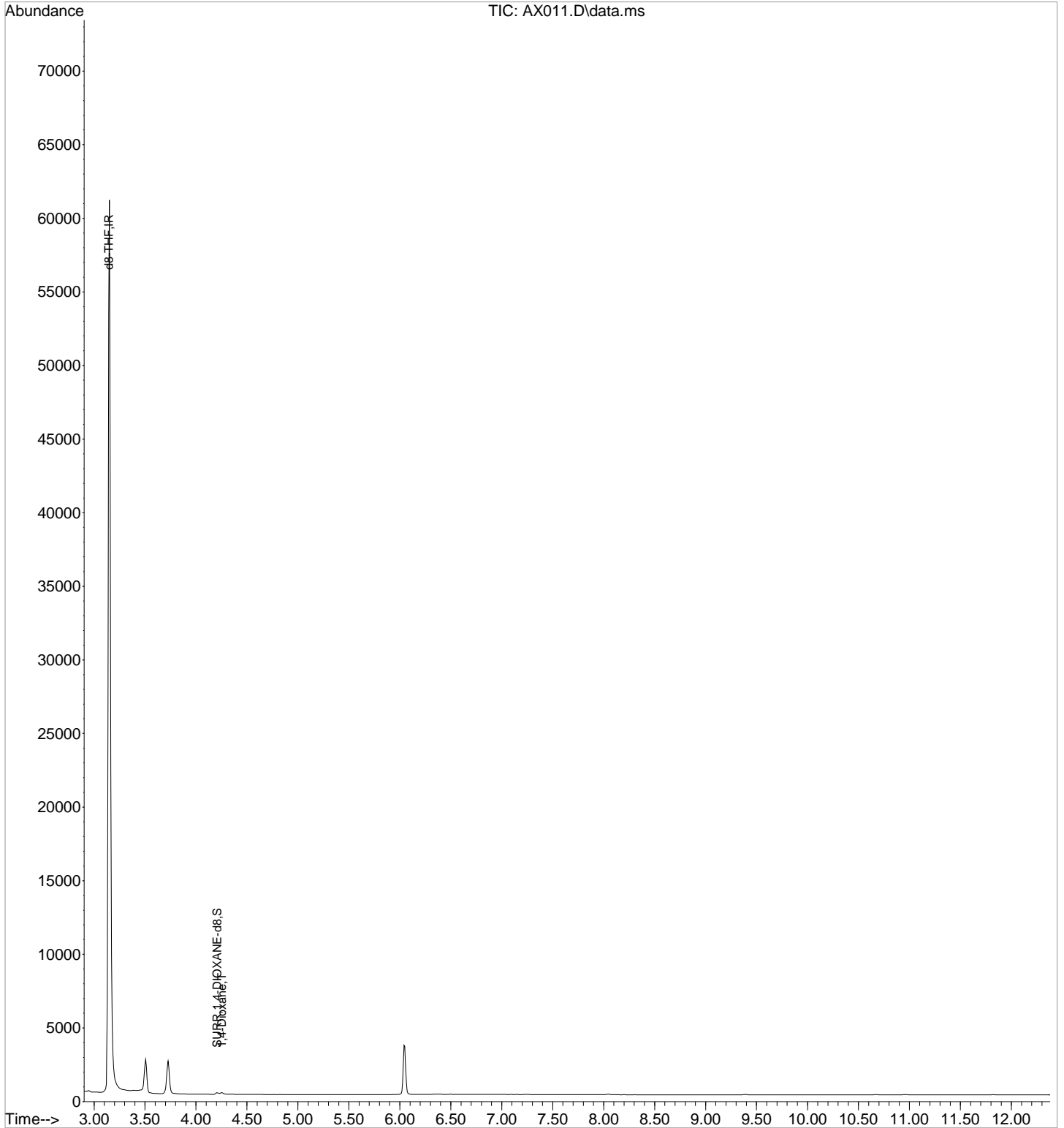
Quant Time: Jul 07 12:43:48 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

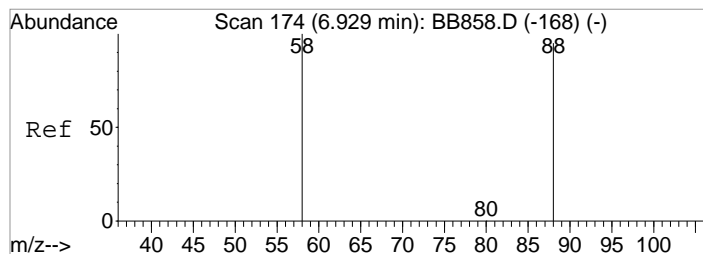
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.143	46	38302	500.00	PPB	0.02
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.208	96	130	2.03	PPB	0.06
Spiked Amount	100.000	Range	70 - 130	Recovery	=	2.03%#
Target Compounds						
2) 1,4-Dioxane	4.251	88	137	1.94	PPB	Qvalue 83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX011.D
Acq On : 7 Jul 2020 10:26 am
Operator : AFelser
Sample : 2 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 7 Sample Multiplier: 1
Inst : 5975 E

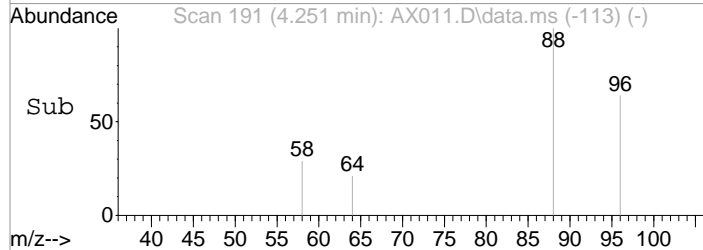
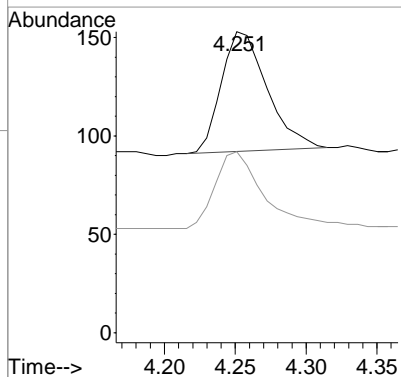
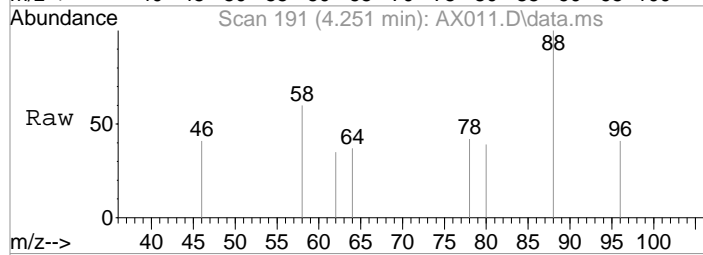
Quant Time: Jul 07 12:43:48 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1.94 PPB
RT: 4.251 min Scan# 191
Delta R.T. 0.054 min
Lab File: AX011.D
Acq: 7 Jul 2020 10:26 am

Tgt Ion: 88 Resp: 137
Ion Ratio Lower Upper
88 100
58 62.0 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX012.D
 Acq On : 7 Jul 2020 10:44 am
 Operator : AFelser
 Sample : 10 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 8 Sample Multiplier: 1

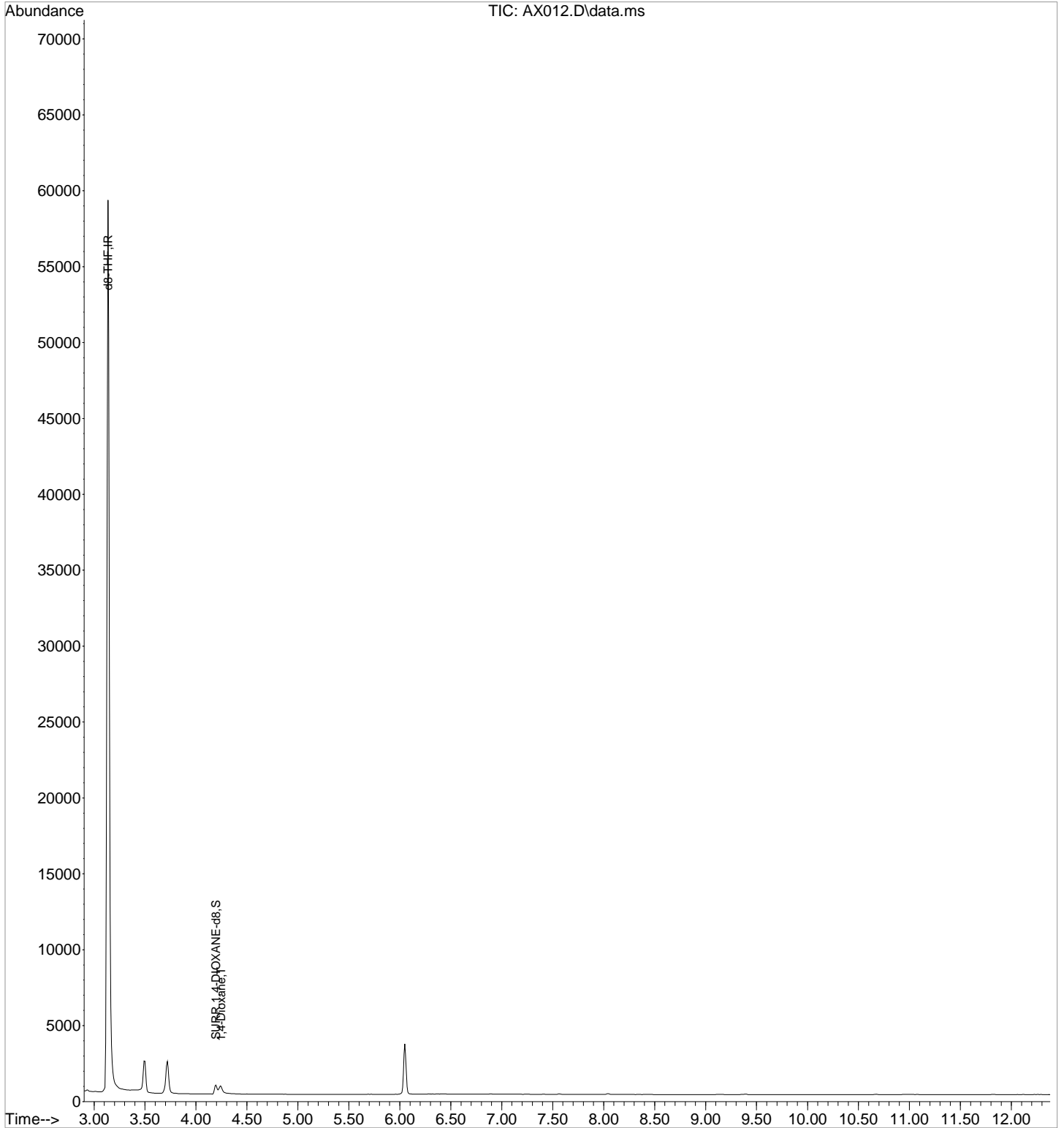
Quant Time: Jul 07 12:43:50 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

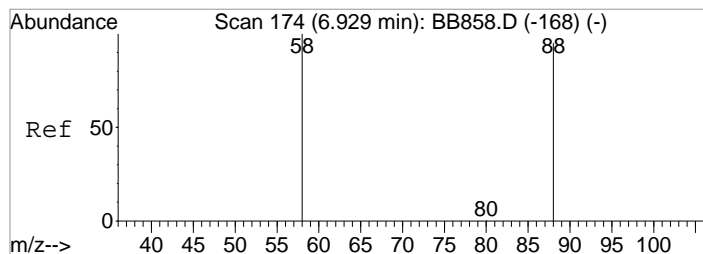
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.136	46	38390	500.00	PPB	0.02
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.194	96	708	8.57	PPB	0.05
Spiked Amount	100.000	Range	70 - 130	Recovery	=	8.57%#
Target Compounds						
2) 1,4-Dioxane	4.244	88	729	8.75	PPB	Qvalue 94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX012.D
Acq On : 7 Jul 2020 10:44 am
Operator : AFelser
Sample : 10 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 8 Sample Multiplier: 1
Inst : 5975 E

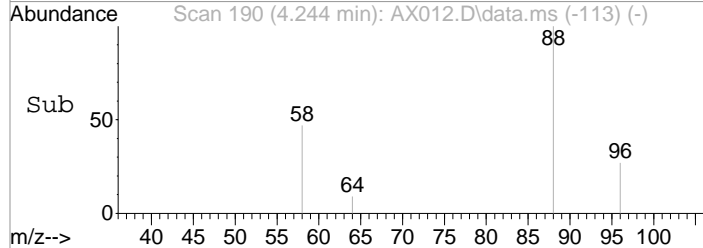
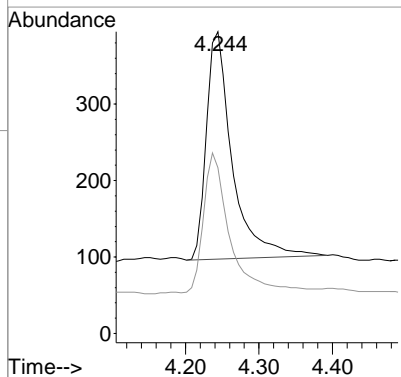
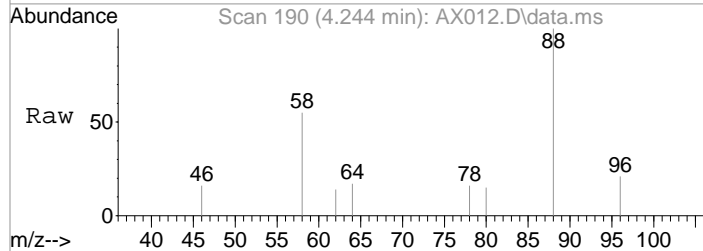
Quant Time: Jul 07 12:43:50 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 8.75 PPB
RT: 4.244 min Scan# 190
Delta R.T. 0.047 min
Lab File: AX012.D
Acq: 7 Jul 2020 10:44 am

Tgt Ion: 88 Resp: 729
Ion Ratio Lower Upper
88 100
58 54.2 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX013.D
 Acq On : 7 Jul 2020 11:03 am
 Operator : AFelser
 Sample : 20 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 9 Sample Multiplier: 1

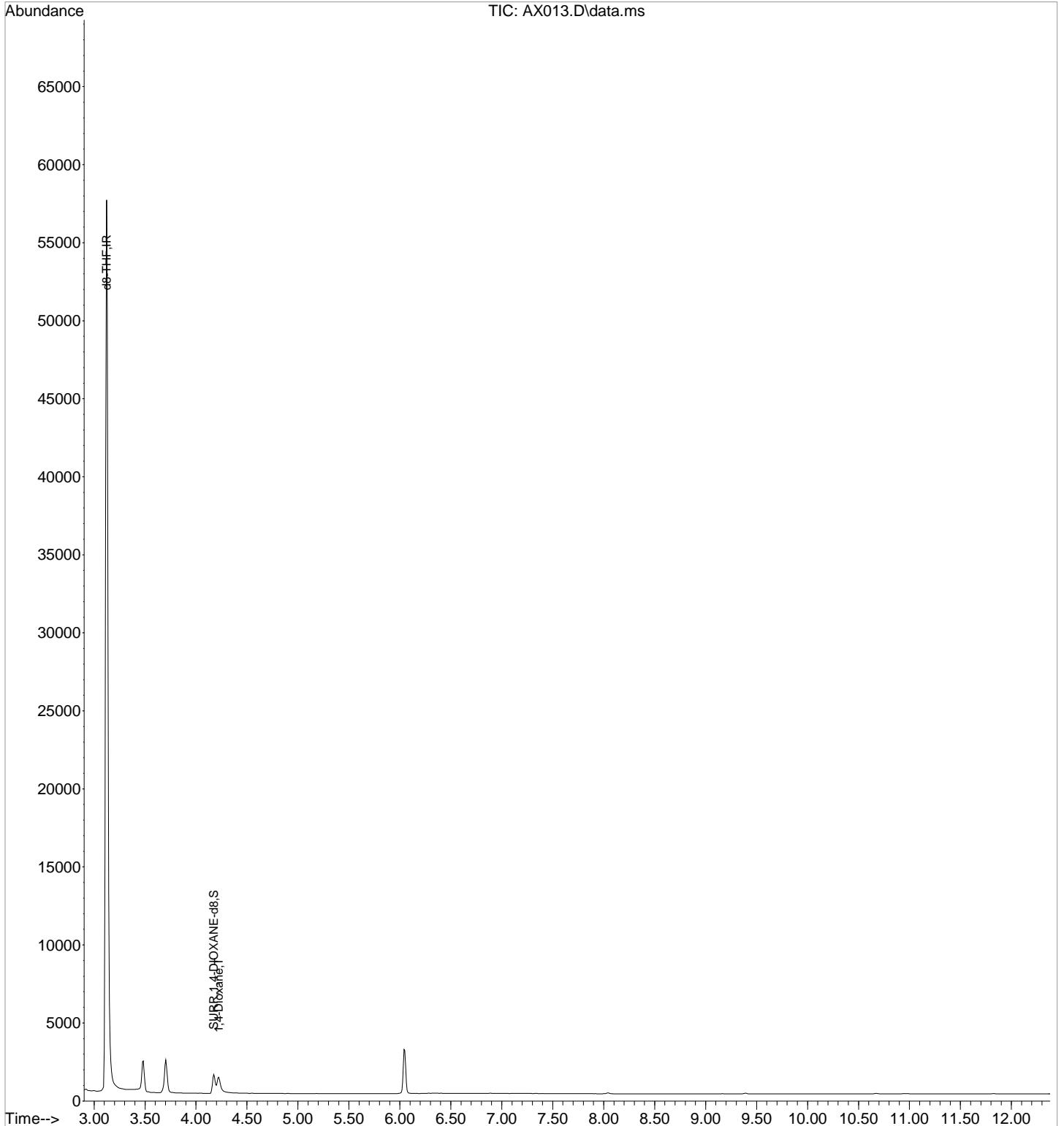
Quant Time: Jul 07 12:43:52 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

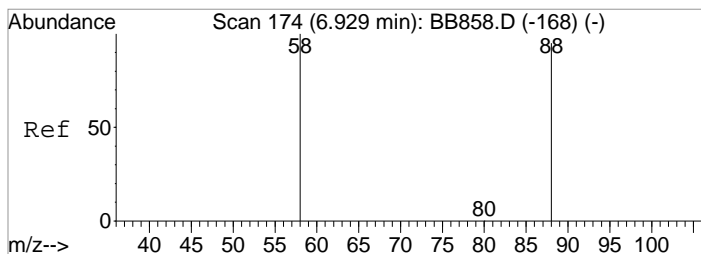
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.121	46	37504	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.173	96	1445	17.31	PPB	0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	=	17.31%#
Target Compounds						
2) 1,4-Dioxane	4.223	88	1407	16.94	PPB	Qvalue 91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX013.D
Acq On : 7 Jul 2020 11:03 am
Operator : AFelser
Sample : 20 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 9 Sample Multiplier: 1
Inst : 5975 E

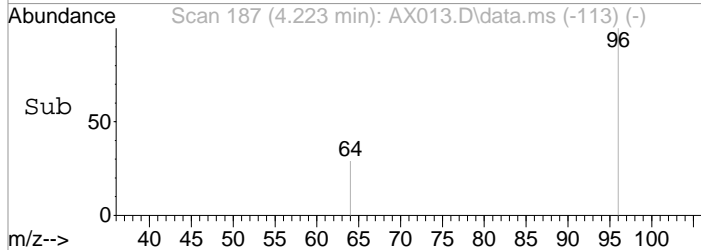
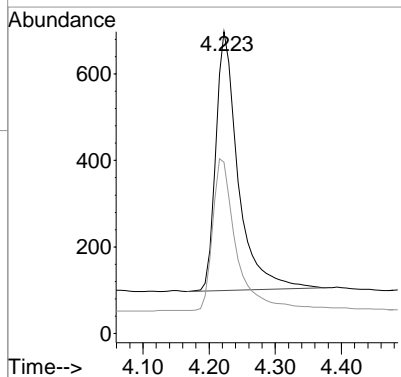
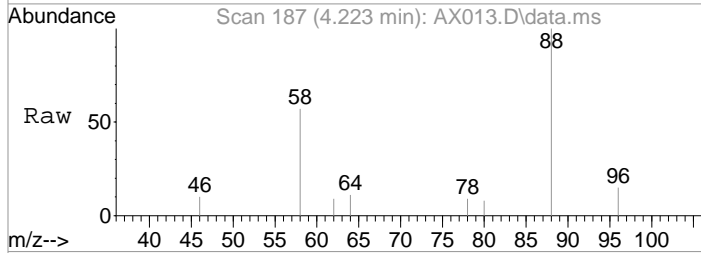
Quant Time: Jul 07 12:43:52 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 16.94 PPB
RT: 4.223 min Scan# 187
Delta R.T. 0.026 min
Lab File: AX013.D
Acq: 7 Jul 2020 11:03 am

Tgt Ion: 88 Resp: 1407
Ion Ratio Lower Upper
88 100
58 56.9 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX014.D
 Acq On : 7 Jul 2020 11:21 am
 Operator : AFelser
 Sample : 100 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 10 Sample Multiplier: 1

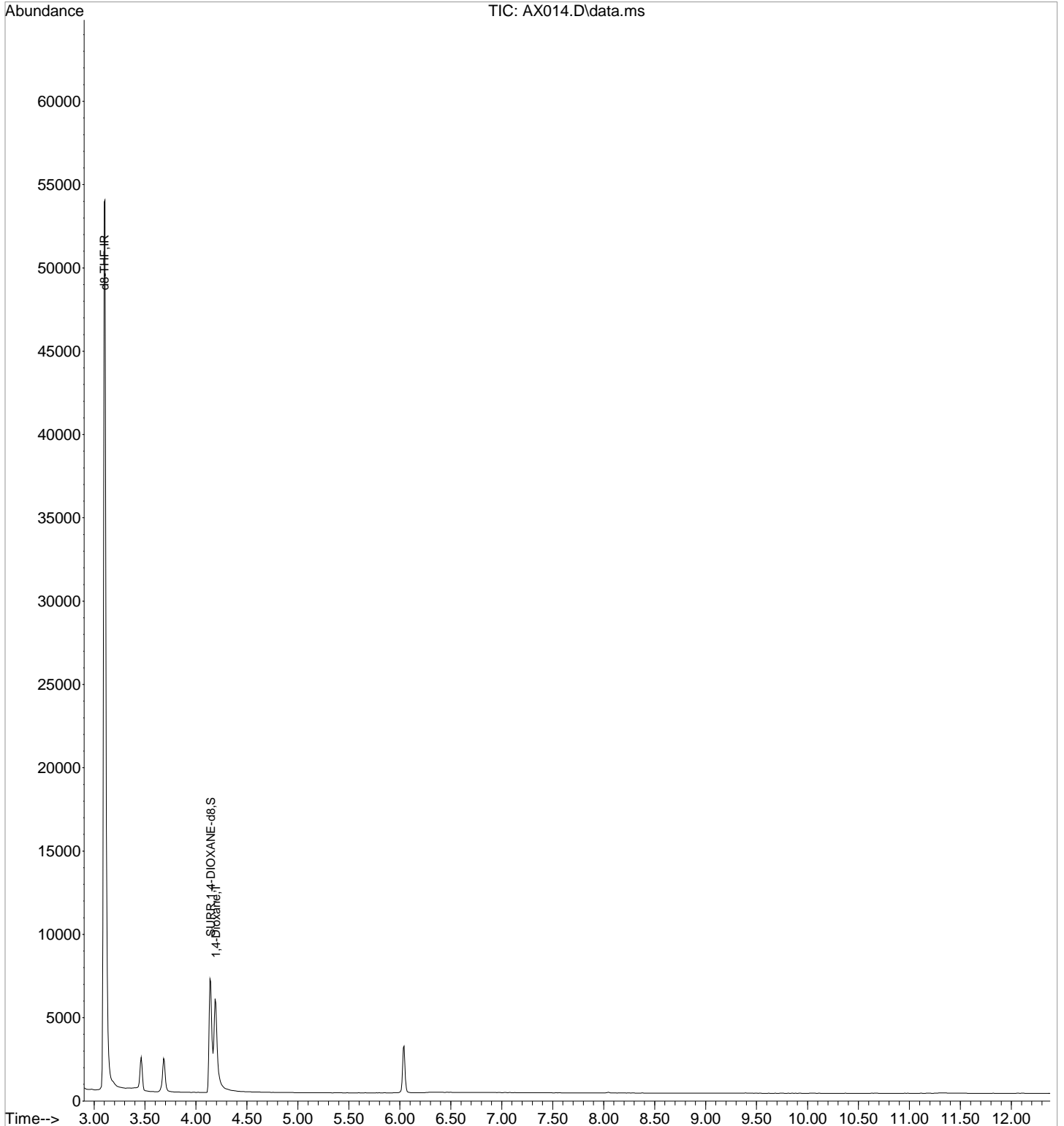
Quant Time: Jul 07 12:43:54 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

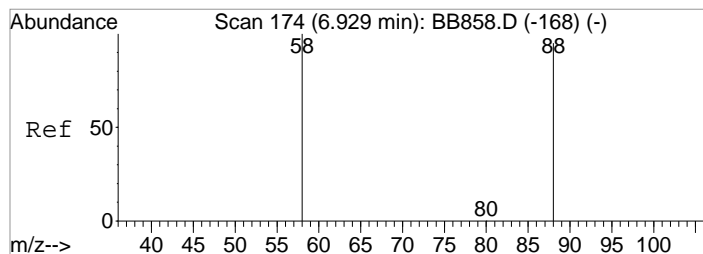
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.100	46	35913	500.00	PPB	-0.02
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.145	96	7928	96.49	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	96.49%
Target Compounds						
2) 1,4-Dioxane	4.194	88	7715	95.24	PPB	Qvalue 97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX014.D
Acq On : 7 Jul 2020 11:21 am
Operator : AFelser
Sample : 100 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 10 Sample Multiplier: 1
Inst : 5975 E

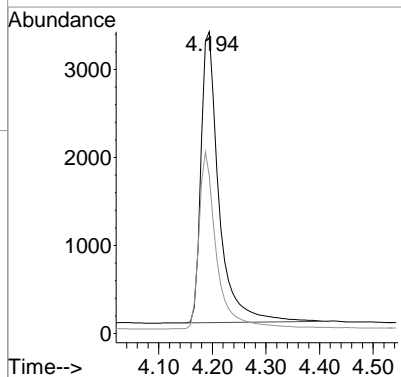
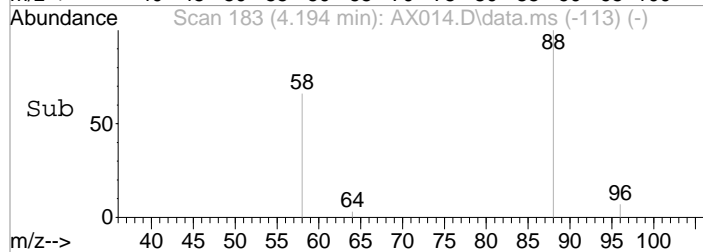
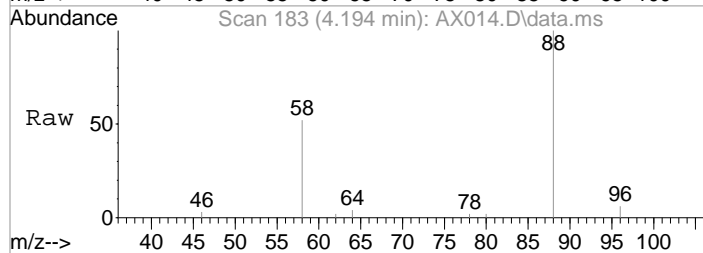
Quant Time: Jul 07 12:43:54 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 95.24 PPB
RT: 4.194 min Scan# 183
Delta R.T. -0.003 min
Lab File: AX014.D
Acq: 7 Jul 2020 11:21 am

Tgt Ion: 88 Resp: 7715
Ion Ratio Lower Upper
88 100
58 52.4 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX015.D
 Acq On : 7 Jul 2020 11:39 am
 Operator : AFelser
 Sample : 200 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 11 Sample Multiplier: 1

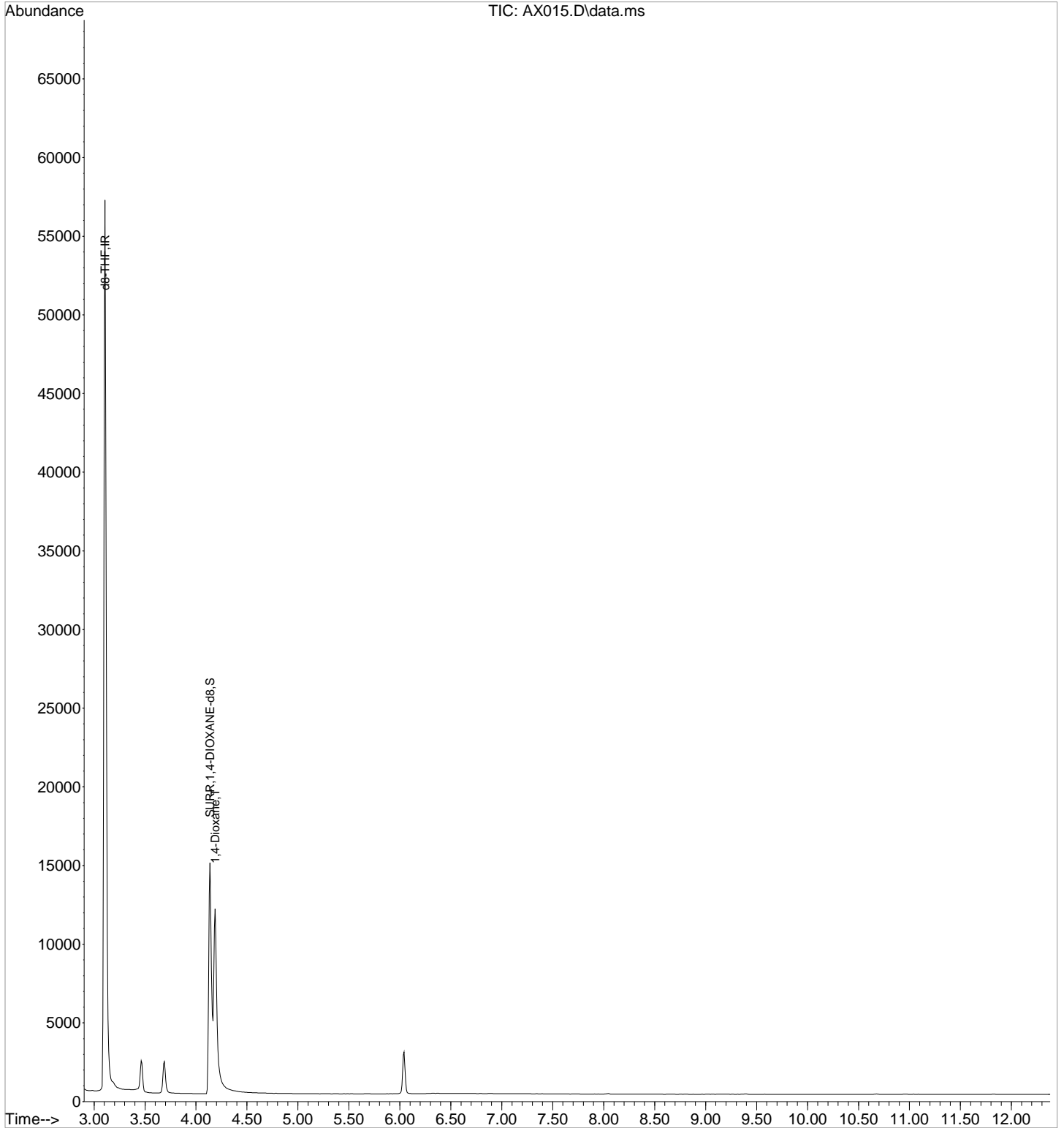
Quant Time: Jul 07 12:43:56 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

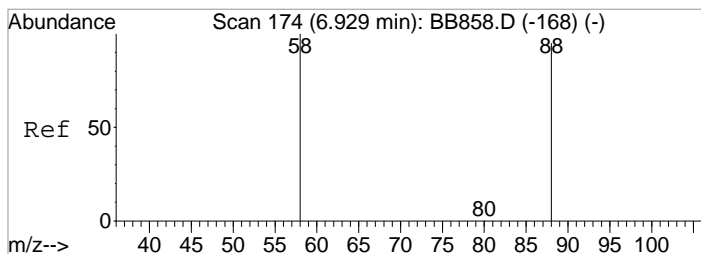
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.107	46	36031	500.00	PPB	-0.01
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.137	96	16073	194.25	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	=	194.25%#
Target Compounds						
2) 1,4-Dioxane	4.187	88	15699	192.64	PPB	Qvalue 90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX015.D
Acq On : 7 Jul 2020 11:39 am
Operator : AFelser
Sample : 200 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 11 Sample Multiplier: 1
Inst : 5975 E

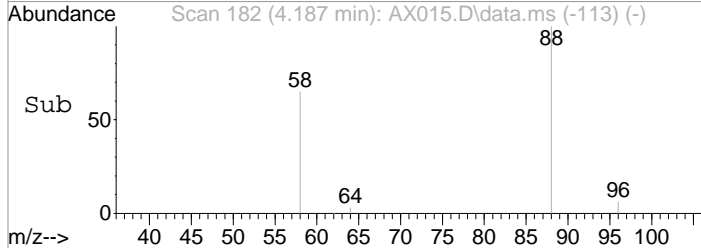
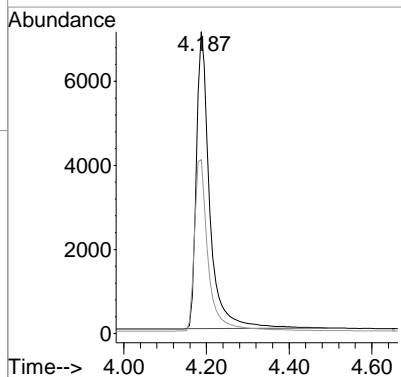
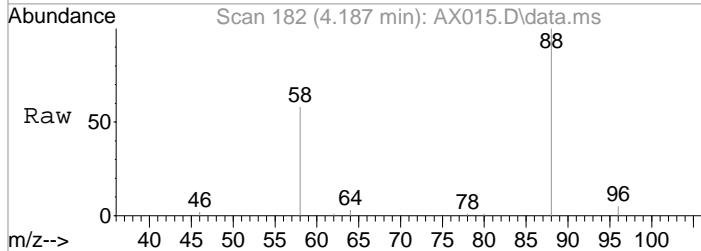
Quant Time: Jul 07 12:43:56 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 192.64 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.010 min
Lab File: AX015.D
Acq: 7 Jul 2020 11:39 am

Tgt Ion: 88 Resp: 15699
Ion Ratio Lower Upper
88 100
58 57.5 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX016.D
 Acq On : 7 Jul 2020 11:58 am
 Operator : AFelser
 Sample : 500 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 12 Sample Multiplier: 1

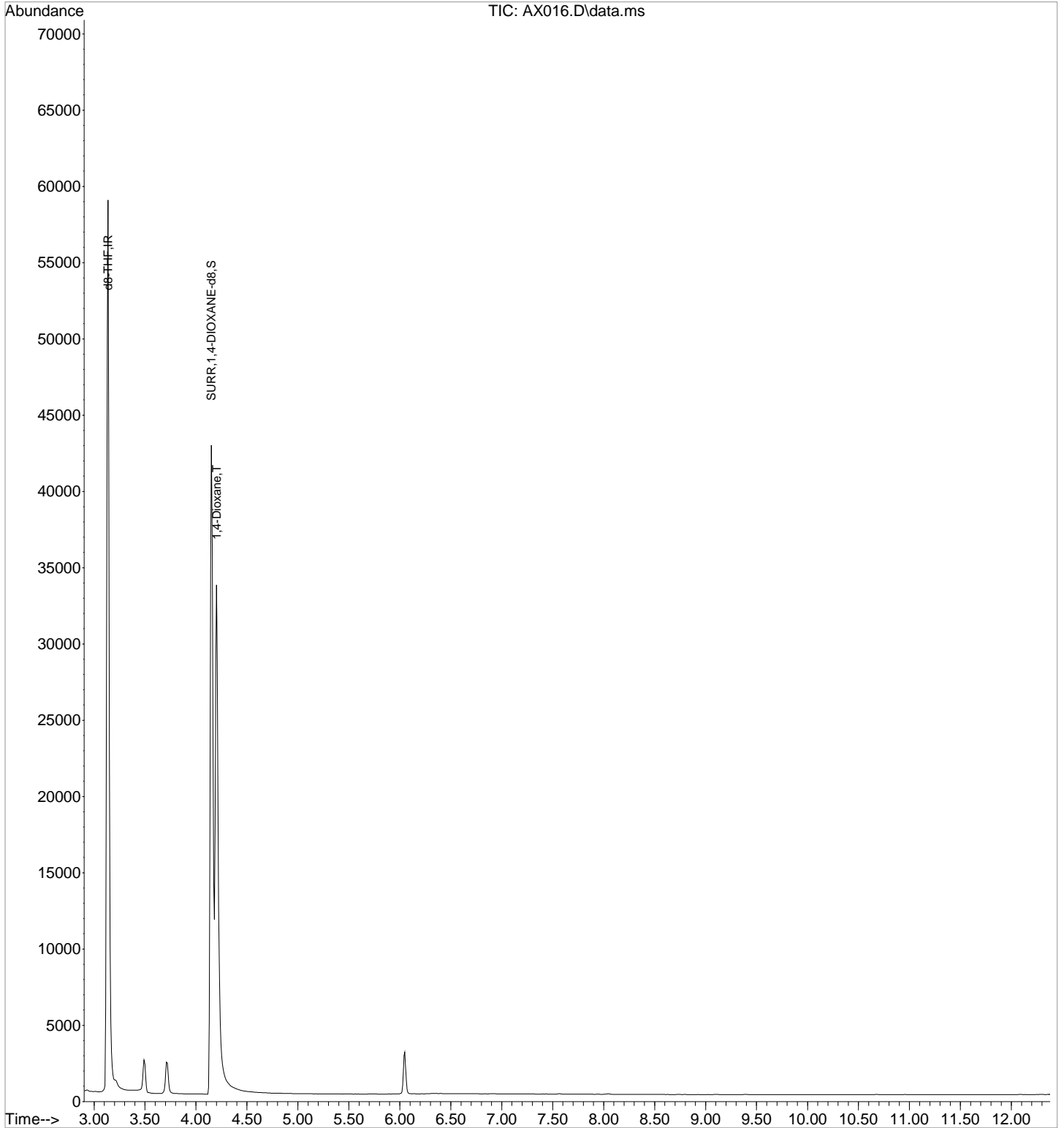
Quant Time: Jul 07 12:43:58 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

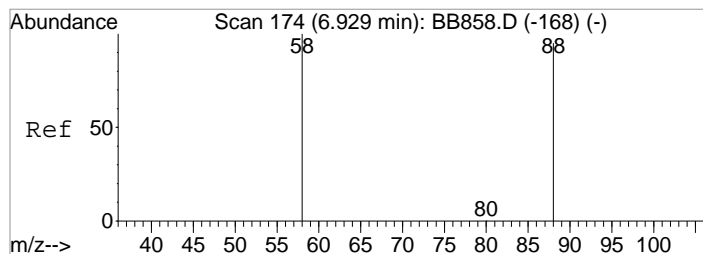
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.136	46	37381	500.00	PPB	0.02
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.152	96	43686	506.68	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	= 506.68%#	
Target Compounds						
2) 1,4-Dioxane	4.201	88	43084	507.61	PPB	Qvalue 88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX016.D
Acq On : 7 Jul 2020 11:58 am
Operator : AFelser
Sample : 500 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 12 Sample Multiplier: 1
Inst : 5975 E

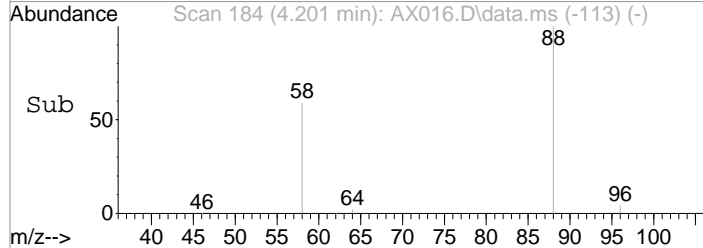
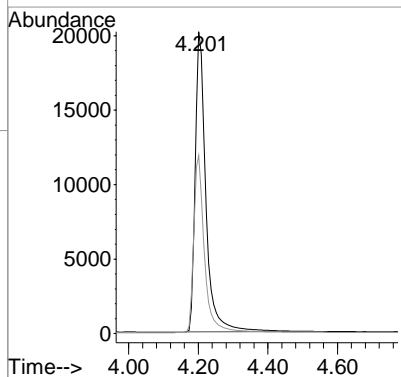
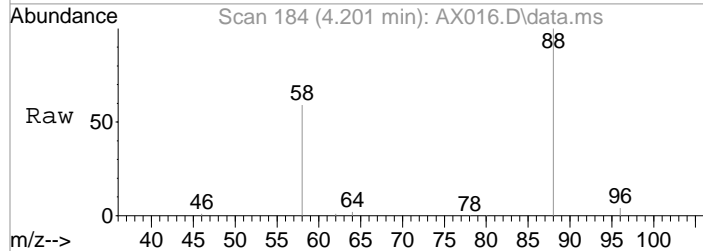
Quant Time: Jul 07 12:43:58 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 507.61 PPB
RT: 4.201 min Scan# 184
Delta R.T. 0.004 min
Lab File: AX016.D
Acq: 7 Jul 2020 11:58 am

Tgt Ion: 88 Resp: 43084
Ion Ratio Lower Upper
88 100
58 58.9 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX017.D
 Acq On : 7 Jul 2020 12:17 pm
 Operator : AFelser
 Sample : 1000 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 13 Sample Multiplier: 1

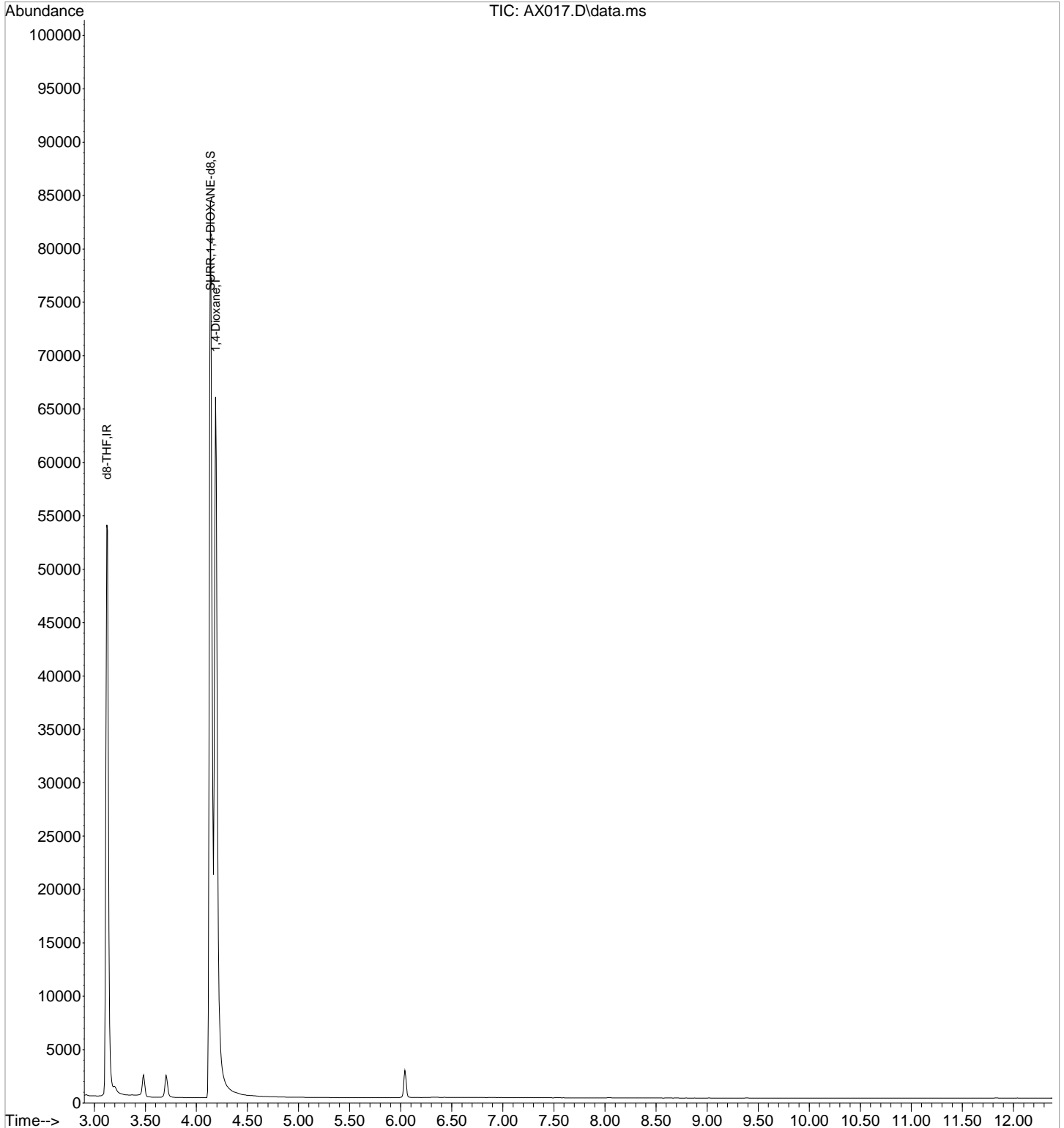
Quant Time: Jul 07 12:44:00 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

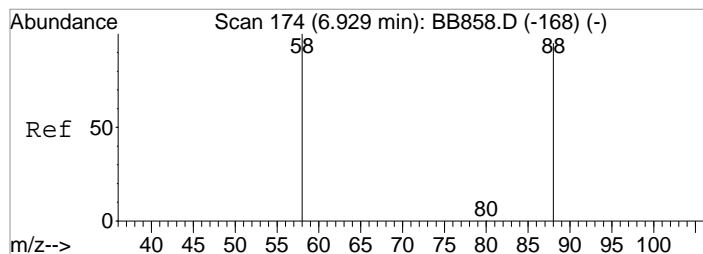
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.121	46	36394	500.00	PPB	0.00
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.137	96	85048	1008.36	PPB	0.00
Spiked Amount	100.000	Range	70 - 130	Recovery	= 1008.36%#	
Target Compounds						
2) 1,4-Dioxane	4.187	88	83838	1009.82	PPB	Qvalue 85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX017.D
Acq On : 7 Jul 2020 12:17 pm
Operator : AFelser
Sample : 1000 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 13 Sample Multiplier: 1
Inst : 5975 E

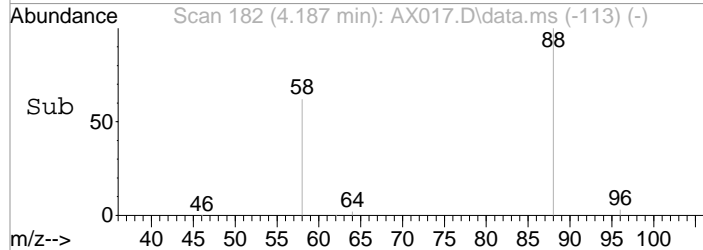
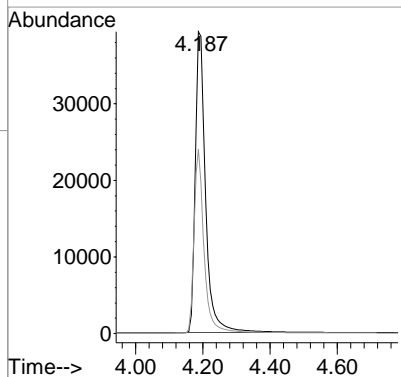
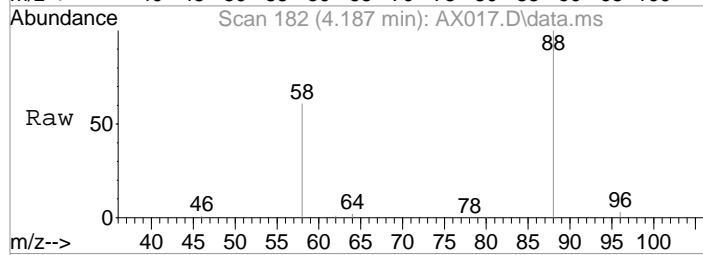
Quant Time: Jul 07 12:44:00 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 1009.82 PPB
RT: 4.187 min Scan# 182
Delta R.T. -0.010 min
Lab File: AX017.D
Acq: 7 Jul 2020 12:17 pm

Tgt Ion: 88 Resp: 83838
Ion Ratio Lower Upper
88 100
58 61.0 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
 Data File : AX018.D
 Acq On : 7 Jul 2020 12:36 pm
 Operator : AFelser
 Sample : 5000 ppb STD Inst : 5975 E
 Misc : Initial Calibration 8270D/522
 ALS Vial : 14 Sample Multiplier: 1

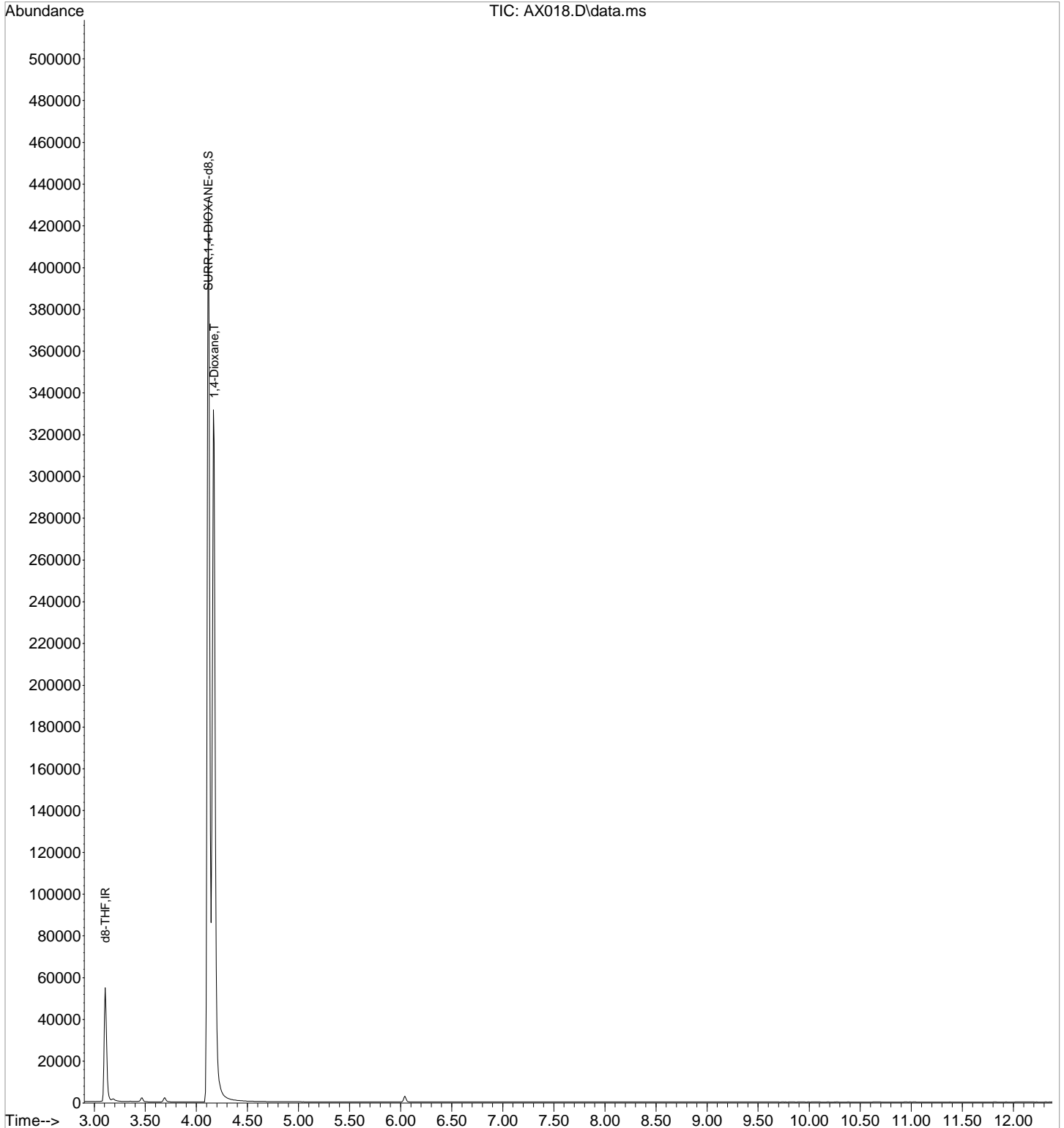
Quant Time: Jul 07 12:48:40 2020
 Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
 Quant Title : 8270 BNA ANALYSIS
 QLast Update : Tue Jul 07 12:43:00 2020
 Response via : Initial Calibration

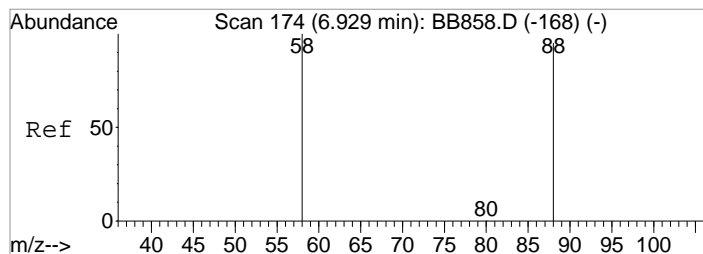
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) d8-THF	3.107	46	34262	500.00	PPB	-0.01
System Monitoring Compounds						
3) SURR,1,4-DIOXANE-d8	4.116	96	410298	4998.13	PPB	-0.03
Spiked Amount	100.000	Range	70 - 130	Recovery	= 4998.13%#	
Target Compounds						
2) 1,4-Dioxane	4.173	88	404100	4997.29	PPB	Qvalue 99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX018.D
Acq On : 7 Jul 2020 12:36 pm
Operator : AFelser
Sample : 5000 ppb STD
Misc : Initial Calibration 8270D/522
ALS Vial : 14 Sample Multiplier: 1
Inst : 5975 E

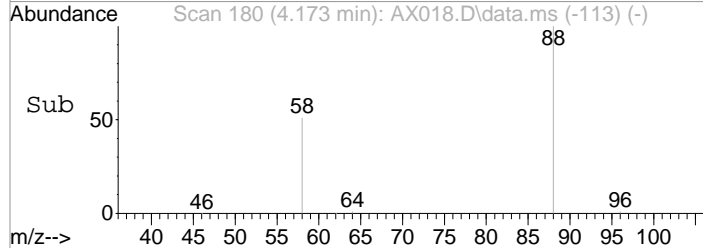
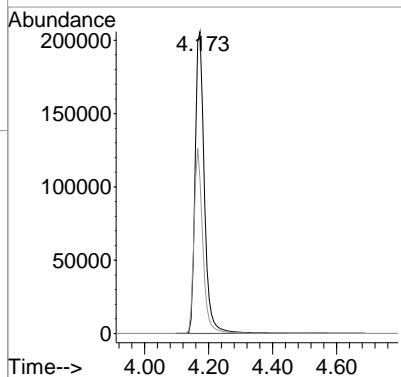
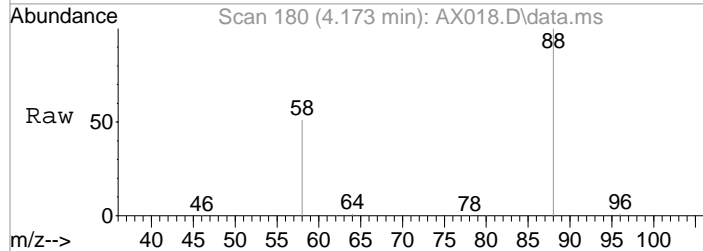
Quant Time: Jul 07 12:48:40 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:43:00 2020
Response via : Initial Calibration





#2
1,4-Dioxane
Concen: 4997.29 PPB
RT: 4.173 min Scan# 180
Delta R.T. -0.024 min
Lab File: AX018.D
Acq: 7 Jul 2020 12:36 pm

Tgt Ion: 88 Resp: 404100
Ion Ratio Lower Upper
88 100
58 51.1 30.4 70.4



Data Path : I:\ACQUDATA\5975E\data\070720\
Data File : AX019.D
Acq On : 7 Jul 2020 12:55 pm
Operator : AFelser
Sample : ICV Inst : 5975 E
Misc : Initial Calibration 8270D/522
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 07 13:11:32 2020
Quant Method : I:\ACQUDATA\5975E\METHODS\SDIOX070720.M
Quant Title : 8270 BNA ANALYSIS
QLast Update : Tue Jul 07 12:49:35 2020
Response via : Initial Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 IR d8-THF	500.000	500.000	0.0	99	-0.01
2 T 1,4-Dioxane	200.000	231.343	-15.7	109	-0.01
3 S SURR,1,4-DIOXANE-d8	200.000	210.836	-5.4	100	-0.01

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 7/7/2020

Initial Calibration Summary
1,4-Dioxane by GC/MS

Calibration ID: RC2000090
Instrument ID: R-MS-56

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	RC2000090-01	1 ppb STD	I:\ACQUDATA\5975E\data\070720\AX010.D	07/07/2020 10:08
02	RC2000090-02	2 ppb STD	I:\ACQUDATA\5975E\data\070720\AX011.D	07/07/2020 10:26
03	RC2000090-03	10 ppb STD	I:\ACQUDATA\5975E\data\070720\AX012.D	07/07/2020 10:44
04	RC2000090-04	20 ppb STD	I:\ACQUDATA\5975E\data\070720\AX013.D	07/07/2020 11:03
05	RC2000090-05	100 ppb STD	I:\ACQUDATA\5975E\data\070720\AX014.D	07/07/2020 11:21
06	RC2000090-06	200 ppb STD	I:\ACQUDATA\5975E\data\070720\AX015.D	07/07/2020 11:39
07	RC2000090-07	500 ppb STD	I:\ACQUDATA\5975E\data\070720\AX016.D	07/07/2020 11:58
08	RC2000090-08	1000 ppb STD	I:\ACQUDATA\5975E\data\070720\AX017.D	07/07/2020 12:17
09	RC2000090-09	5000 ppb STD	I:\ACQUDATA\5975E\data\070720\AX018.D	07/07/2020 12:36

Analyte

1,4-Dioxane											
#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	1.135	02	2.000	0.8942	03	10.000	0.9495	04	20.000	0.9379
05	100.000	1.074	06	200.000	1.089	07	500.000	1.153	08	1000.000	1.152
09	5000.000	1.179									

1,4-Dioxane-d8											
#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	0.8641	02	2.000	0.8485	03	10.000	0.9221	04	20.000	0.9632
05	100.000	1.104	06	200.000	1.115	07	500.000	1.169	08	1000.000	1.168
09	5000.000	1.198									

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 7/7/2020

Initial Calibration Summary
1,4-Dioxane by GC/MS

Calibration ID: RC2000090
Instrument ID: R-MS-56

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
1,4-Dioxane	TRG	Quadratic	COD	0.9988	0.99	1.063	
1,4-Dioxane-d8	SURR	Quadratic	COD	0.9991	0.99	1.039	

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 7/7/2020

Initial Calibration Verification Summary
1,4-Dioxane by GC/MS

Calibration ID: RC2000090
Instrument ID: R-MS-56

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
10	RC2000090-10	ICV	I:\ACQUDATA\5975E\data\070720\AX019.D	07/07/2020 12:55

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
1,4-Dioxane	200	231	1.063E0	1.204E0	15.67	±20	Quadratic

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
1,4-Dioxane-d8	200	211	1.039E0	1.125E0	5.42	±20	Quadratic

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768
Date Analyzed: 08/05/20 18:43

Continuing Calibration Verification (CCV) Summary
1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
File ID: I:\ACQUADATA\5975E\data\080520\AX288.D\
Signal ID: 1

Calibration Date: 7/7/2020
Calibration ID: RC2000090
Analysis Lot: 689887
Units: ppb

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
1,4-Dioxane	200	203	1.0626	1.0616	101	1.3	±20	Quadratic

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
1,4-Dioxane-d8	200	198	1.0391	1.065	99.0	-1.0	±20	Quadratic

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768
Date Analyzed: 08/05/20 23:43

Continuing Calibration Verification (CCV) Summary
1,4-Dioxane by GC/MS

Analysis Method: 8270D SIM
File ID: I:\ACQUADATA\5975E\data\080520\AX304.D\
Signal ID: 1

Calibration Date: 7/7/2020
Calibration ID: RC2000090
Analysis Lot: 689887
Units: ppb

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
1,4-Dioxane	200	202	1.0626	1.0566	101	0.8	±20	Quadratic

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
1,4-Dioxane-d8	200	197	1.0391	1.0611	98.7	-1.3	±20	Quadratic

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768

Analysis Run Log
1,4-Dioxane by GC/MS

Analysis Method:

Analysis Lot:689887
Instrument ID:R-MS-56

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
I:\ACQUDATA\5975E\data\080520\AX277.D	ZZZZZZZ	ZZZZZZZ	8/5/2020	15:23:00	
I:\ACQUDATA\5975E\data\080520\AX288.D	Continuing Calibration Verification	RQ2008672-02	8/5/2020	18:43:00	
I:\ACQUDATA\5975E\data\080520\AX289.D	Method Blank	RQ2008596-01	8/5/2020	19:01:00	
I:\ACQUDATA\5975E\data\080520\AX290.D	Lab Control Sample	RQ2008596-02	8/5/2020	19:19:00	
I:\ACQUDATA\5975E\data\080520\AX291.D	Duplicate Lab Control Sample	RQ2008596-03	8/5/2020	19:38:00	
I:\ACQUDATA\5975E\data\080520\AX292.D	ZZZZZZZ	ZZZZZZZ	8/5/2020	19:58:00	
I:\ACQUDATA\5975E\data\080520\AX293.D	MW-06 (7-30-20)	R2006768-001	8/5/2020	20:17:00	
I:\ACQUDATA\5975E\data\080520\AX294.D	MW-06 (7-30-20) MS	RQ2008596-04	8/5/2020	20:37:00	
I:\ACQUDATA\5975E\data\080520\AX295.D	MW-06 (7-30-20) DMS	RQ2008596-05	8/5/2020	20:55:00	
I:\ACQUDATA\5975E\data\080520\AX296.D	MW-07 (7-30-20)	R2006768-002	8/5/2020	21:13:00	
I:\ACQUDATA\5975E\data\080520\AX297.D	MW-04 (7-30-20)	R2006768-003	8/5/2020	21:32:00	
I:\ACQUDATA\5975E\data\080520\AX298.D	MW-06 DUP (7-30-20)	R2006768-004	8/5/2020	21:51:00	
I:\ACQUDATA\5975E\data\080520\AX299.D	Equipment Blank	R2006768-005	8/5/2020	22:09:00	
I:\ACQUDATA\5975E\data\080520\AX300.D	ZZZZZZZ	ZZZZZZZ	8/5/2020	22:29:00	
I:\ACQUDATA\5975E\data\080520\AX300.D	Method Detection Limit Verification	RQ2008596-08	8/5/2020	22:29:00	
I:\ACQUDATA\5975E\data\080520\AX302.D	ZZZZZZZ	ZZZZZZZ	8/5/2020	23:06:00	
I:\ACQUDATA\5975E\data\080520\AX303.D	ZZZZZZZ	ZZZZZZZ	8/5/2020	23:25:00	
I:\ACQUDATA\5975E\data\080520\AX304.D	Continuing Calibration Verification	RQ2008672-03	8/5/2020	23:43:00	

Analysis: 522/8270 Dup Analyst: Afeher Run Method: ALPHALAB/ALPHALAB/50111062-F
 Date: 08/06/2017 Instr. 5975E Quant Method: 50111062.D.M
 Syringes: _____ LIMS Run#: 689881 689887 689888

Pos.	Sample	Diln.	Stds. ID	File#	OK?	Comments
1	BLK			AX 273	—	
1	BLK			74	—	
2	TUNE REF		210932	75	N	
2	↓		↓	76	Y	
3	TUNE REF		209653	77	Y	
4	CCV 200ppb		210706	78	Y	50-150%
5	QG 2008595-01			79	Y	
6	↓ -02			80	Y	
7	↓ -03			81	Y	
8	↓ -04			82	Y	
9	R2005973-001			83	Y	
10	R2006796-001			84	Y	
11	RQ2008595-05			85	Y	
12	↓ -06			86	N	hit exposure
13	R2006819-015			87	Y	
14	CCV 200ppb		210704	88	Y	
15	RQ2008595-01			89	Y	
16	↓ -02			90	Y	
17	↓ -03			91	Y	
18	R2005973-001			92	Y	
19	R2006796-001			93	Y	
20	RQ2008596-04			94	Y	
21	↓ -05			95	Y	
22	R2006768-002			96	Y	
23	↓ -003			97	Y	
24	↓ -004			98	Y	
25	↓ -005			99	Y	
26	LOQ/MDL			300	Y	
27	LOD			01	Y	
28	R2006804-001			02	Y	
29	↓ -009			03	Y	
14	CCV 200ppb		210704	04	Y	

Afeher
08/06/2017

All samples = _____ mL + _____ uL Combined IS/Surr.;
 Primary: _____ exp: _____ Secondary: _____ exp: _____
 Primary: _____ exp: _____ Secondary: _____ exp: _____
 Reagents: _____
 Runlog GCEXT r2 4/27/17
 O-1025 Page 93

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request:R2006768

1,4-Dioxane by GC/MS

Prep Method: EPA 3535A
Analytical Method: 8270D SIM

Extraction Lot: 362924
Extraction Date: 08/05/20 12:30

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
MW-06 (7-30-20)	R2006768-001	7/30/20	7/30/20	100 mL	2 mL	
MW-07 (7-30-20)	R2006768-002	7/30/20	7/30/20	100 mL	2 mL	
MW-04 (7-30-20)	R2006768-003	7/30/20	7/30/20	100 mL	2 mL	
MW-06 DUP (7-30-20)	R2006768-004	7/30/20	7/30/20	100 mL	2 mL	
Equipment Blank	R2006768-005	7/30/20	7/30/20	100 mL	2 mL	
Method Blank	RQ2008596-01MB	NA	NA	100 mL	2 mL	
Lab Control Sample	RQ2008596-02LCS	NA	NA	100 mL	2 mL	
Duplicate Lab Control Sample	RQ2008596-03DLCS	NA	NA	100 mL	2 mL	
Matrix Spike	RQ2008596-04MS	7/30/20	7/30/20	100 mL	2 mL	
Duplicate Matrix Spike	RQ2008596-05DMS	7/30/20	7/30/20	100 mL	2 mL	
Method Detection Limit Verification	RQ2008596-08MDLV	NA	NA	100 mL	2 mL	

Preparation Information Benchsheet

Prep Run#: 362924
 Team: Semivoa GCMS/AFELSER

Prep WorkFlow: OrgExtSPEAq(7)
 Prep Method: EPA 3535A

Status: Prepped
 Prep Date/Time: 8/5/20 12:30

#	Lab Code	Client ID	B#	Amt. Ext.	Method /Test	pH	AE	BN	Final Vol	Sample Desc. (Initial/Final)	SpikeAmt./Inv. ID	Comments
1	RQ2008596-01	MB		100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL		10.0000 uL/210652; 200.0000 uL/210799	
2	RQ2008596-01	MB		100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		10.0000 uL/210652; 200.0000 uL/210799	
3	RQ2008596-02	LCS		100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL		200.0000 uL/209630; 10.0000 uL/210652; 200.0000 uL/210799	
4	RQ2008596-02	LCS		100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		200.0000 uL/209630; 10.0000 uL/210652; 200.0000 uL/210799	
5	RQ2008596-03	DLCS		100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL		200.0000 uL/210799; 200.0000 uL/209630; 10.0000 uL/210652	
6	RQ2008596-03	DLCS		100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		200.0000 uL/210799; 200.0000 uL/209630; 10.0000 uL/210652	
7	R2005973-001	RR-VOACUST-WS R26742-P	.01	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	10.0000 uL/210652; 200.0000 uL/210799	
8	R2006768-001	MW-06 (7-30-20)	.03	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	10.0000 uL/210652; 200.0000 uL/210799	
9	RQ2008596-04	R2006768-001 MS	.04	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/210799 10.0000 uL/210652; 200.0000 uL/209630; 200.0000 uL/210799	
10	RQ2008596-05	R2006768-001 DMS	.04	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/209630; 10.0000 uL/210652; 200.0000 uL/210799	
11	R2006768-002	MW-07 (7-30-20)	.03	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/210799 10.0000 uL/210652; 200.0000 uL/210799	
12	R2006768-003	MW-04 (7-30-20)	.03	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/210799 10.0000 uL/210652	
13	R2006768-004	MW-06 DUP (7-30-20)	.03	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/210799; 10.0000 uL/210652	
14	R2006768-005	Equipment Blank	.03	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL	Clear, Colorless	200.0000 uL/210799; 10.0000 uL/210652	
15	RQ2008596-06	LCS		100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		10.0000 uL/210652 1.0000 mL/209631; 10.0000 uL/210652; 20.0000 uL/210799	
16	R2006815-018	1,4-D LODV MS E W	.01	100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		10.0000 uL/210652; 0.5000 mL/209631; 10.0000 uL/210799	
17	RQ2008596-07	LODV		100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL		0.5000 mL/209631; 10.0000 uL/210799; 10.0000 uL/210652	
18	R2006819-015	MS E MDL Diox	.02	100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL		10.0000 uL/210652; 1.0000 mL/209631; 20.0000 uL/210799	
19	RQ2008596-08	MDLV		100mL	8270D SIM/1,4-Dioxane	7	X		2.00mL		20.0000 uL/210799; 1.0000 mL/209631; 10.0000 uL/210652	
20	R2006864-001	BP-GM-38-PS-RW1-8320	.06	100mL	8270D/1,4-Dioxane DOD	7	X		2.00mL	Clear, Colorless	10.0000 uL/210652; 10.0000 uL/210652; 200.0000 uL/210799	

Preparation Information Benchsheet

Prep Run#: 362924 **Prep WorkFlow:** OrgExtSPEaq(7) **Status:** Prepped
Team: Semivoa GCMS/AFELSER **Prep Method:** EPA 3535A **Prep Date/Time:** 8/5/20 12:30

21R2006864-009	BP-GM-38-PS-RW3-8320	.06	100mL	8270D/1,4-Dioxane DOD	7	X	2.00mL	Clear, Colorless	200.0000 uL/210799; 10.0000 uL/210652
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Spiking Solutions

Name:	EPA 522 LCS Spike 5ppm	Inventory ID	209630	Logbook Ref:	08/08/2020	Expires On:	08/08/2020
Name:	EPA 522 MDL Spike 4ppb	Inventory ID	209631	Logbook Ref:	08/08/2020	Expires On:	08/08/2020
Name:	SVOA Tetrahydrofuran-D8 100ppm	Inventory ID	210652	Logbook Ref:	09/28/2020	Expires On:	09/28/2020
Name:	1,4-Dioxane-d8 1ppm Surr. Std.	Inventory ID	210799	Logbook Ref:	01/04/2021	Expires On:	01/04/2021

Preparation Materials

Method 522 400mg charcoal filters	(210849)	Eppendorf Pipette Repeater	EXT #17 (175854)	Water Deionized H2O	Millipore System (2263)
Dichloromethane (Methylene Chloride) 99.9% MeCl2	(210986)	Methanol Purge & Trap MeOH	206449 (206449)	Sodium Bisulfate Monohydrate RG	(205160)
pH Paper 0-14	(210878)	Prepared Sodium Sulfate Na2SO4	(211163)		

Preparation Steps

1. Extraction
5. Spiked: 8/5/20 12:30
7. Finished: 8/5/20 14:00
- By: AFELSER

Comments

Comments:

Reviewed By:  Date: 8/5/20 Spike Witness: KSERCU Date: _____
 Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined
 Received By: _____ Date: _____ Yes No



Subcontracted Analytical Parameters

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
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www.alsglobal.com

August 20, 2020

Analytical Report for Service Request No: R2006768

Janice Jaeger
ALS Environmental
1565 Jefferson Rd, Building 300
Suite 360
Rochester, NY 14623

RE: 5115 Flint Street / 900.006

Dear Janice Jaeger,

Enclosed are the results of the sample(s) submitted to our laboratory July 30, 2020
For your reference, these analyses have been assigned our service request number **R2006768**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 3377. You may also contact me via email at Sydney.Wolf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Sydney Wolf
Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

PFAS by HPLCMSMS

Raw Data

 PFAS by HPLC/MS/MS

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street
Sample Matrix: Water

Service Request: R2006768
Date Received: 07/30/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 07/30/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Organic LC:

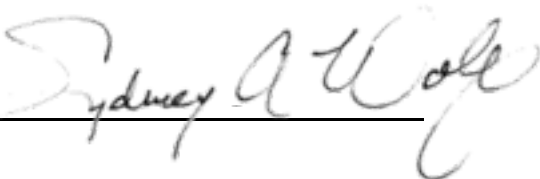
Method PFC/537M, 08/13/2020: The upper control criterion was exceeded for one or more surrogates in sample MW-07 (7-30-20) and Equipment Blank. The associated native analytes were not detected above the Method Reporting Limit (MRL) in this sample. The error associated with an elevated recovery equated to a high bias. Assuming the native analytes performed similar to the labeled analogs, the effect on the reported results was minimal. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

Method PFC/537M, 08/13/2020: The upper control criterion was exceeded for 13C4-PFOS in sample MW-04 (7-30-20) due to matrix interferences. A re-analysis of the sample was performed, with acceptable results. The results for both analyses were reported. No further corrective action was required.

Method PFC/537M, 08/13/2020: The control criteria were exceeded for D5-EtFOSAA in MW-06 (7-30-20) MS KQ2011026-01. The associated matrix spike recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier was flagged accordingly. No further corrective action was appropriate.

Method PFC/537M, 08/13/2020: The control criteria was exceeded for one or more surrogates in Continuing Calibration Verification (CCV) KQ2011599-01. The recoveries of the associated native analytes were within control criteria, which indicated the analysis was in control. No further corrective action was appropriate.

Approved by



Date

08/20/2020



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Intra-Network Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Janice Jaeger

Project Name: 5115 Flint Street
Project Number: 900.006
Project Manager: Peter von Schondorf
Company: Leader Professional Services, Inc.
QAP: LAB QAP

PFAS
PFC/537M

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample		Date	Send To	
				Date	Time	Received		
R2006768-001	MW-06 (7-30-20)	6	Water	7/30/20	0855	7/30/20	KELSO	IV
R2006768-002	MW-07 (7-30-20)	2	Water	7/30/20	1135	7/30/20	KELSO	IV
R2006768-003	MW-04 (7-30-20)	↓	Water	7/30/20	1342	7/30/20	KELSO	IV
R2006768-004	MW-06 DUP (7-30-20)	↓	Water	7/30/20	0855	7/30/20	KELSO	IV
R2006768-005	Equipment Blank	↓	Water	7/30/20	0855	7/30/20	KELSO	IV

Test Comments
 PFAS - PFC/537M R2006768-001,2,3,4,5 NY21 list
 Run QC on sample R2006768-001 for PFC/537M/PFAS

Special Instructions/Comments pH Checked _____	Turnaround Requirements _____ RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 <input checked="" type="checkbox"/> STANDARD	Report Requirements _____ I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries _____ III. Results + QC and Calibration Summaries <input checked="" type="checkbox"/> IV. Data Validation Report with Raw Data PQL/MDL/J <u> Y </u> EDD <u> Y </u>	Invoice Information PO# 58R2006768 Bill to
	Requested FAX Date: _____		
	Requested Report Date: <u>08/14/20</u>		

Relinquished By: *[Signature]* 8/4/2020/1545 Received By: *[Signature]* 8/5/20 1000 Airbill Number: _____



PC CL

Cooler Receipt and Preservation Form

Client ALS / Roch Service Request K20-210 22006768
 Received: 8/5/20 Opened: 8/5/20 By: [Signature] Unloaded: 8/5/20 By: [Signature]

- Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA (Y) N If yes, how many and where? One front
 If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID <u>(NA)</u>	Tracking Number <u>NA</u>	Filed
<u>N/A</u>	<u>3.5</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1R01</u>		<u>1730 2431 3508</u>	
<u>N/A</u>	<u>2.5</u>	<u>1.9</u>	<u>2.1</u>	<u>1.6</u>	<u>"</u>		<u>" " 3493</u>	
<u>N/A</u>	<u>1.8</u>	<u>2.7</u>	<u>2.0</u>	<u>2.5</u>	<u>"</u>		<u>" " 3482</u>	

- Packing material: Inserts (Baggies) (Bubble Wrap) Gel Packs (Wet Ice) Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
- Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
- Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
- Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
- Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



PFAS by HPLC/MS/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFASs)							
Perfluorobutane sulfonic acid (PFBS)	2.2 J	3.9	0.28	1	08/13/20 01:00	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	2.2 J	3.9	1.3	1	08/13/20 01:00	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	3.9	0.44	1	08/13/20 01:00	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	7.1	1.6	0.44	1	08/13/20 01:00	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	3.9	0.30	1	08/13/20 01:00	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	26	3.9	0.40	1	08/13/20 01:00	8/11/20	
Perfluoropentanoic acid (PFPeA)	2.8 J	3.9	1.7	1	08/13/20 01:00	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	9.2	8.8	1	08/13/20 01:00	8/11/20	
Perfluoroheptanoic acid (PFHpA)	2.7 J	3.9	0.63	1	08/13/20 01:00	8/11/20	
Perfluorooctanoic acid (PFOA)	3.7	1.6	0.35	1	08/13/20 01:00	8/11/20	
Perfluorononanoic acid (PFNA)	ND U	3.9	1.1	1	08/13/20 01:00	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	3.9	1.2	1	08/13/20 01:00	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	3.9	1.5	1	08/13/20 01:00	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	3.9	1.3	1	08/13/20 01:00	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	3.9	1.3	1	08/13/20 01:00	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	3.9	2.0	1	08/13/20 01:00	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	3.9	0.52	1	08/13/20 01:00	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	1.4	1	08/13/20 01:00	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	0.50	1	08/13/20 01:00	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	3.9	0.55	1	08/13/20 01:00	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	3.9	0.15	1	08/13/20 01:00	8/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 (7-30-20)
Lab Code: R2006768-001

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	78	20 - 109	08/13/20 01:00	
18O2-PFHxS	72	26 - 122	08/13/20 01:00	
13C4-PFOS	88	25 - 121	08/13/20 01:00	
13C4-PFBA	74	27 - 124	08/13/20 01:00	
13C5-PFPeA	57	27 - 138	08/13/20 01:00	
13C2-PFHxA	53	28 - 132	08/13/20 01:00	
13C4-PFHpA	65	19 - 139	08/13/20 01:00	
13C4-PFOA	69	22 - 130	08/13/20 01:00	
13C5-PFNA	72	20 - 127	08/13/20 01:00	
13C2-PFDA	69	24 - 125	08/13/20 01:00	
13C2-PFUnDA	81	22 - 125	08/13/20 01:00	
13C2-PFDoDA	72	19 - 122	08/13/20 01:00	
13C2-PFTeDA	97	13 - 124	08/13/20 01:00	
13C8-FOSA	65	18 - 109	08/13/20 01:00	
D3-MeFOSAA	87	9 - 123	08/13/20 01:00	
D5-EtFOSAA	104	12 - 126	08/13/20 01:00	
13C2-6:2 FTS	155	10 - 226	08/13/20 01:00	
13C2-8:2 FTS	107	10 - 202	08/13/20 01:00	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 11:35
Date Received: 07/30/20 15:41

Sample Name: MW-07 (7-30-20)
Lab Code: R2006768-002

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFASs)							
Perfluorobutane sulfonic acid (PFBS)	3.2 J	3.9	0.28	1	08/13/20 01:32	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	2.7 J	3.9	1.3	1	08/13/20 01:32	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	3.9	0.44	1	08/13/20 01:32	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	12	1.6	0.44	1	08/13/20 01:32	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	3.9	0.30	1	08/13/20 01:32	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	16	3.9	0.40	1	08/13/20 01:32	8/11/20	
Perfluoropentanoic acid (PFPeA)	2.5 J	3.9	1.7	1	08/13/20 01:32	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	9.2	8.8	1	08/13/20 01:32	8/11/20	
Perfluoroheptanoic acid (PFHpA)	3.1 J	3.9	0.63	1	08/13/20 01:32	8/11/20	
Perfluorooctanoic acid (PFOA)	6.8	1.6	0.35	1	08/13/20 01:32	8/11/20	
Perfluorononanoic acid (PFNA)	1.3 J	3.9	1.1	1	08/13/20 01:32	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	3.9	1.2	1	08/13/20 01:32	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	3.9	1.5	1	08/13/20 01:32	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	3.9	1.3	1	08/13/20 01:32	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	3.9	1.3	1	08/13/20 01:32	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	3.9	2.0	1	08/13/20 01:32	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	3.9	0.52	1	08/13/20 01:32	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	1.4	1	08/13/20 01:32	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	0.50	1	08/13/20 01:32	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	3.9	0.55	1	08/13/20 01:32	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	3.9	0.15	1	08/13/20 01:32	8/11/20	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 11:35
Date Received: 07/30/20 15:41

Sample Name: MW-07 (7-30-20)
Lab Code: R2006768-002

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	88	20 - 109	08/13/20 01:32	
18O2-PFHxS	92	26 - 122	08/13/20 01:32	
13C4-PFOS	109	25 - 121	08/13/20 01:32	
13C4-PFBA	81	27 - 124	08/13/20 01:32	
13C5-PFPeA	70	27 - 138	08/13/20 01:32	
13C2-PFHxA	57	28 - 132	08/13/20 01:32	
13C4-PFHpA	89	19 - 139	08/13/20 01:32	
13C4-PFOA	84	22 - 130	08/13/20 01:32	
13C5-PFNA	82	20 - 127	08/13/20 01:32	
13C2-PFDA	83	24 - 125	08/13/20 01:32	
13C2-PFUnDA	93	22 - 125	08/13/20 01:32	
13C2-PFDoDA	86	19 - 122	08/13/20 01:32	
13C2-PFTeDA	109	13 - 124	08/13/20 01:32	
13C8-FOSA	74	18 - 109	08/13/20 01:32	
D3-MeFOSAA	95	9 - 123	08/13/20 01:32	
D5-EtFOSAA	140	12 - 126	08/13/20 01:32	*
13C2-6:2 FTS	180	10 - 226	08/13/20 01:32	
13C2-8:2 FTS	116	10 - 202	08/13/20 01:32	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 13:42
Date Received: 07/30/20 15:41

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFASs)							
Perfluorobutane sulfonic acid (PFBS)	ND U	3.9	0.28	1	08/13/20 01:43	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	ND U	3.9	1.3	1	08/13/20 01:43	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	3.9	0.44	1	08/13/20 01:43	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	1.7	1.6	0.44	1	08/13/20 01:43	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	3.9	0.30	1	08/13/20 01:43	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	1.6 J	3.9	0.40	1	08/13/20 01:43	8/11/20	
Perfluoropentanoic acid (PFPeA)	ND U	3.9	1.7	1	08/13/20 01:43	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	9.2	8.8	1	08/13/20 01:43	8/11/20	
Perfluoroheptanoic acid (PFHpA)	ND U	3.9	0.63	1	08/13/20 01:43	8/11/20	
Perfluorooctanoic acid (PFOA)	0.74 J	1.6	0.35	1	08/13/20 01:43	8/11/20	
Perfluorononanoic acid (PFNA)	ND U	3.9	1.1	1	08/13/20 01:43	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	3.9	1.2	1	08/13/20 01:43	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	3.9	1.5	1	08/13/20 01:43	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	3.9	1.3	1	08/13/20 01:43	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	3.9	1.3	1	08/13/20 01:43	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	3.9	2.0	1	08/13/20 01:43	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	3.9	0.52	1	08/13/20 01:43	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	1.4	1	08/13/20 01:43	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	3.9	0.50	1	08/13/20 01:43	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	3.9	0.55	1	08/13/20 01:43	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	3.9	0.15	1	08/13/20 01:43	8/11/20	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 13:42
Date Received: 07/30/20 15:41

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	95	20 - 109	08/13/20 01:43	
18O2-PFHxS	114	26 - 122	08/13/20 01:43	
13C4-PFOS	140	25 - 121	08/13/20 01:43	*
13C4-PFBA	94	27 - 124	08/13/20 01:43	
13C5-PFPeA	74	27 - 138	08/13/20 01:43	
13C2-PFHxA	75	28 - 132	08/13/20 01:43	
13C4-PFHpA	106	19 - 139	08/13/20 01:43	
13C4-PFOA	117	22 - 130	08/13/20 01:43	
13C5-PFNA	115	20 - 127	08/13/20 01:43	
13C2-PFDA	103	24 - 125	08/13/20 01:43	
13C2-PFUnDA	94	22 - 125	08/13/20 01:43	
13C2-PFDoDA	78	19 - 122	08/13/20 01:43	
13C2-PFTeDA	83	13 - 124	08/13/20 01:43	
13C8-FOSA	71	18 - 109	08/13/20 01:43	
D3-MeFOSAA	76	9 - 123	08/13/20 01:43	
D5-EtFOSAA	107	12 - 126	08/13/20 01:43	
13C2-6:2 FTS	182	10 - 226	08/13/20 01:43	
13C2-8:2 FTS	100	10 - 202	08/13/20 01:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 13:42
Date Received: 07/30/20 15:41

Sample Name: MW-04 (7-30-20)
Lab Code: R2006768-003

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSA)s							
Perfluorohexane sulfonic acid (PFHxS)	1.4 J	3.9	1.3	1	08/19/20 14:48	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	2.1	1.6	0.44	1	08/19/20 14:48	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	3.9	0.55	1	08/19/20 14:48	8/11/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
18O2-PFHxS	82	26 - 122	08/19/20 14:48	
13C4-PFOS	88	25 - 121	08/19/20 14:48	
13C2-6:2 FTS	156	10 - 226	08/19/20 14:48	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 DUP (7-30-20)
Lab Code: R2006768-004

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFSAs)							
Perfluorobutane sulfonic acid (PFBS)	2.7 J	4.7	0.28	1	08/13/20 01:54	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	3.3 J	4.7	1.3	1	08/13/20 01:54	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	4.7	0.44	1	08/13/20 01:54	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	8.1	1.9	0.44	1	08/13/20 01:54	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	4.7	0.30	1	08/13/20 01:54	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	29	4.7	0.40	1	08/13/20 01:54	8/11/20	
Perfluoropentanoic acid (PFPeA)	5.6	4.7	1.7	1	08/13/20 01:54	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	9.4	8.8	1	08/13/20 01:54	8/11/20	
Perfluoroheptanoic acid (PFHpA)	1.8 J	4.7	0.63	1	08/13/20 01:54	8/11/20	
Perfluorooctanoic acid (PFOA)	4.6	1.9	0.35	1	08/13/20 01:54	8/11/20	
Perfluorononanoic acid (PFNA)	1.4 J	4.7	1.1	1	08/13/20 01:54	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	4.7	1.2	1	08/13/20 01:54	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	4.7	1.5	1	08/13/20 01:54	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	4.7	1.3	1	08/13/20 01:54	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	4.7	1.3	1	08/13/20 01:54	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	4.7	2.0	1	08/13/20 01:54	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	4.7	0.52	1	08/13/20 01:54	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	4.7	1.4	1	08/13/20 01:54	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	4.7	0.50	1	08/13/20 01:54	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	4.7	0.55	1	08/13/20 01:54	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	4.7	0.15	1	08/13/20 01:54	8/11/20	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: MW-06 DUP (7-30-20)
Lab Code: R2006768-004

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	73	20 - 109	08/13/20 01:54	
18O2-PFHxS	85	26 - 122	08/13/20 01:54	
13C4-PFOS	91	25 - 121	08/13/20 01:54	
13C4-PFBA	73	27 - 124	08/13/20 01:54	
13C5-PFPeA	55	27 - 138	08/13/20 01:54	
13C2-PFHxA	43	28 - 132	08/13/20 01:54	
13C4-PFHpA	72	19 - 139	08/13/20 01:54	
13C4-PFOA	72	22 - 130	08/13/20 01:54	
13C5-PFNA	68	20 - 127	08/13/20 01:54	
13C2-PFDA	66	24 - 125	08/13/20 01:54	
13C2-PFUnDA	71	22 - 125	08/13/20 01:54	
13C2-PFDoDA	64	19 - 122	08/13/20 01:54	
13C2-PFTeDA	86	13 - 124	08/13/20 01:54	
13C8-FOSA	60	18 - 109	08/13/20 01:54	
D3-MeFOSAA	81	9 - 123	08/13/20 01:54	
D5-EtFOSAA	125	12 - 126	08/13/20 01:54	
13C2-6:2 FTS	155	10 - 226	08/13/20 01:54	
13C2-8:2 FTS	100	10 - 202	08/13/20 01:54	

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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: Equipment Blank
Lab Code: R2006768-005

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFASs)							
Perfluorobutane sulfonic acid (PFBS)	ND U	4.1	0.28	1	08/13/20 02:04	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	ND U	4.1	1.3	1	08/13/20 02:04	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	4.1	0.44	1	08/13/20 02:04	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	ND U	1.6	0.44	1	08/13/20 02:04	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	4.1	0.30	1	08/13/20 02:04	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ND U	4.1	0.40	1	08/13/20 02:04	8/11/20	
Perfluoropentanoic acid (PFPeA)	ND U	4.1	1.7	1	08/13/20 02:04	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	9.2	8.8	1	08/13/20 02:04	8/11/20	
Perfluoroheptanoic acid (PFHpA)	ND U	4.1	0.63	1	08/13/20 02:04	8/11/20	
Perfluorooctanoic acid (PFOA)	ND U	1.6	0.35	1	08/13/20 02:04	8/11/20	
Perfluorononanoic acid (PFNA)	ND U	4.1	1.1	1	08/13/20 02:04	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	4.1	1.2	1	08/13/20 02:04	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	4.1	1.5	1	08/13/20 02:04	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	4.1	1.3	1	08/13/20 02:04	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	4.1	1.3	1	08/13/20 02:04	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	4.1	2.0	1	08/13/20 02:04	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	4.1	0.52	1	08/13/20 02:04	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	4.1	1.4	1	08/13/20 02:04	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	4.1	0.50	1	08/13/20 02:04	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	4.1	0.55	1	08/13/20 02:04	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	4.1	0.15	1	08/13/20 02:04	8/11/20	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20 08:55
Date Received: 07/30/20 15:41

Sample Name: Equipment Blank
Lab Code: R2006768-005

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	106	20 - 109	08/13/20 02:04	
18O2-PFHxS	143	26 - 122	08/13/20 02:04	*
13C4-PFOS	131	25 - 121	08/13/20 02:04	*
13C4-PFBA	121	27 - 124	08/13/20 02:04	
13C5-PFPeA	100	27 - 138	08/13/20 02:04	
13C2-PFHxA	98	28 - 132	08/13/20 02:04	
13C4-PFHpA	122	19 - 139	08/13/20 02:04	
13C4-PFOA	119	22 - 130	08/13/20 02:04	
13C5-PFNA	100	20 - 127	08/13/20 02:04	
13C2-PFDA	93	24 - 125	08/13/20 02:04	
13C2-PFUnDA	94	22 - 125	08/13/20 02:04	
13C2-PFDoDA	86	19 - 122	08/13/20 02:04	
13C2-PFTeDA	108	13 - 124	08/13/20 02:04	
13C8-FOSA	83	18 - 109	08/13/20 02:04	
D3-MeFOSAA	78	9 - 123	08/13/20 02:04	
D5-EtFOSAA	112	12 - 126	08/13/20 02:04	
13C2-6:2 FTS	127	10 - 226	08/13/20 02:04	
13C2-8:2 FTS	80	10 - 202	08/13/20 02:04	

Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2011026-04

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoroalkyl Sulfonic Acids (PFASs)							
Perfluorobutane sulfonic acid (PFBS)	ND U	5.0	0.28	1	08/12/20 23:55	8/11/20	
Perfluorohexane sulfonic acid (PFHxS)	ND U	5.0	1.3	1	08/12/20 23:55	8/11/20	
Perfluoroheptane sulfonic acid (PFHpS)	ND U	5.0	0.44	1	08/12/20 23:55	8/11/20	
Perfluorooctane sulfonic acid (PFOS)	ND U	2.0	0.44	1	08/12/20 23:55	8/11/20	
Perfluorodecane sulfonic acid (PFDS)	ND U	5.0	0.30	1	08/12/20 23:55	8/11/20	
Perfluoroalkyl Carboxylic Acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ND U	5.0	0.40	1	08/12/20 23:55	8/11/20	
Perfluoropentanoic acid (PFPeA)	ND U	5.0	1.7	1	08/12/20 23:55	8/11/20	
Perfluorohexanoic acid (PFHxA)	ND U	10	8.8	1	08/12/20 23:55	8/11/20	
Perfluoroheptanoic acid (PFHpA)	ND U	5.0	0.63	1	08/12/20 23:55	8/11/20	
Perfluorooctanoic acid (PFOA)	ND U	2.0	0.35	1	08/12/20 23:55	8/11/20	
Perfluorononanoic acid (PFNA)	ND U	5.0	1.1	1	08/12/20 23:55	8/11/20	
Perfluorodecanoic acid (PFDA)	ND U	5.0	1.2	1	08/12/20 23:55	8/11/20	
Perfluoroundecanoic acid (PFUnDA)	ND U	5.0	1.5	1	08/12/20 23:55	8/11/20	
Perfluorododecanoic acid (PFDoDA)	ND U	5.0	1.3	1	08/12/20 23:55	8/11/20	
Perfluorotridecanoic acid (PFTTrDA)	ND U	5.0	1.3	1	08/12/20 23:55	8/11/20	
Perfluorotetradecanoic acid (PFTeDA)	ND U	5.0	2.0	1	08/12/20 23:55	8/11/20	
Perfluoroalkyl Sulfonamido Substances							
Perfluorooctane sulfonamide (FOSA)	ND U	5.0	0.52	1	08/12/20 23:55	8/11/20	
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	5.0	1.4	1	08/12/20 23:55	8/11/20	
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	5.0	0.50	1	08/12/20 23:55	8/11/20	
n:2 Fluorotelomer Sulfonic Acids (n:2 FTSAs)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	5.0	0.55	1	08/12/20 23:55	8/11/20	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	5.0	0.15	1	08/12/20 23:55	8/11/20	

ALS Group USA, Corp.
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Analytical Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ2011026-04

Units: ng/L
Basis: NA

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C3-PFBS	72	20 - 109	08/12/20 23:55	
18O2-PFHxS	82	26 - 122	08/12/20 23:55	
13C4-PFOS	95	25 - 121	08/12/20 23:55	
13C4-PFBA	89	27 - 124	08/12/20 23:55	
13C5-PFPeA	70	27 - 138	08/12/20 23:55	
13C2-PFHxA	92	28 - 132	08/12/20 23:55	
13C4-PFHpA	84	19 - 139	08/12/20 23:55	
13C4-PFOA	105	22 - 130	08/12/20 23:55	
13C5-PFNA	102	20 - 127	08/12/20 23:55	
13C2-PFDA	89	24 - 125	08/12/20 23:55	
13C2-PFUnDA	91	22 - 125	08/12/20 23:55	
13C2-PFDoDA	83	19 - 122	08/12/20 23:55	
13C2-PFTeDA	104	13 - 124	08/12/20 23:55	
13C8-FOSA	68	18 - 109	08/12/20 23:55	
D3-MeFOSAA	63	9 - 123	08/12/20 23:55	
D5-EtFOSAA	74	12 - 126	08/12/20 23:55	
13C2-6:2 FTS	99	10 - 226	08/12/20 23:55	
13C2-8:2 FTS	80	10 - 202	08/12/20 23:55	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	MW-06 (7-30-20)	MW-07 (7-30-20)	MW-04 (7-30-20)
		R2006768-001	R2006768-002	R2006768-003
13C3-PFBS	20-109	78	88	95
18O2-PFHxS	26-122	72	92	114
13C4-PFOS	25-121	88	109	140*
13C4-PFBA	27-124	74	81	94
13C5-PFPeA	27-138	57	70	74
13C2-PFHxA	28-132	53	57	75
13C4-PFHpA	19-139	65	89	106
13C4-PFOA	22-130	69	84	117
13C5-PFNA	20-127	72	82	115
13C2-PFDA	24-125	69	83	103
13C2-PFUnDA	22-125	81	93	94
13C2-PFDoDA	19-122	72	86	78
13C2-PFTeDA	13-124	97	109	83
13C8-FOSA	18-109	65	74	71
D3-MeFOSAA	9-123	87	95	76
D5-EtFOSAA	12-126	104	140*	107
13C2-6:2 FTS	10-226	155	180	182
13C2-8:2 FTS	10-202	107	116	100

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not acceptable.

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	MW-04 (7-30-20)	MW-06 DUP (7-30-20)	Equipment Blank
		R2006768-003	R2006768-004	R2006768-005
13C3-PFBS	20-109		73	106
18O2-PFHxS	26-122	82	85	143*
13C4-PFOS	25-121	88	91	131*
13C4-PFBA	27-124		73	121
13C5-PFPeA	27-138		55	100
13C2-PFHxA	28-132		43	98
13C4-PFHpA	19-139		72	122
13C4-PFOA	22-130		72	119
13C5-PFNA	20-127		68	100
13C2-PFDA	24-125		66	93
13C2-PFUnDA	22-125		71	94
13C2-PFDoDA	19-122		64	86
13C2-PFTeDA	13-124		86	108
13C8-FOSA	18-109		60	83
D3-MeFOSAA	9-123		81	78
D5-EtFOSAA	12-126		125	112
13C2-6:2 FTS	10-226	156	155	127
13C2-8:2 FTS	10-202		100	80

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with an pound (#) indicate the control criteria is not acceptable.

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	Method Blank	Lab Control Sample	MW-06 (7-30-20)
		KQ2011026-04	KQ2011026-03	KQ2011026-01
13C3-PFBS	20-109	72	75	72
18O2-PFHxS	26-122	82	104	63
13C4-PFOS	25-121	95	99	97
13C4-PFBA	27-124	89	86	74
13C5-PFPeA	27-138	70	76	55
13C2-PFHxA	28-132	92	82	60
13C4-PFHpA	19-139	84	101	55
13C4-PFOA	22-130	105	106	76
13C5-PFNA	20-127	102	88	74
13C2-PFDA	24-125	89	90	69
13C2-PFUnDA	22-125	91	89	78
13C2-PFDoDA	19-122	83	86	79
13C2-PFTeDA	13-124	104	89	95
13C8-FOSA	18-109	68	71	68
D3-MeFOSAA	9-123	63	77	88
D5-EtFOSAA	12-126	74	98	131*
13C2-6:2 FTS	10-226	99	107	150
13C2-8:2 FTS	10-202	80	86	99

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not acceptable.

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768

SURROGATE RECOVERY SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Extraction Method: ALS SOP

Surrogate	Control Limits	MW-06 (7-30-20)
		KQ2011026-02
13C3-PFBS	20-109	81
18O2-PFHxS	26-122	70
13C4-PFOS	25-121	105
13C4-PFBA	27-124	87
13C5-PFPeA	27-138	62
13C2-PFHxA	28-132	69
13C4-PFHpA	19-139	58
13C4-PFOA	22-130	80
13C5-PFNA	20-127	79
13C2-PFDA	24-125	83
13C2-PFUnDA	22-125	90
13C2-PFDoDA	19-122	86
13C2-PFTeDA	13-124	104
13C8-FOSA	18-109	68
D3-MeFOSAA	9-123	92
D5-EtFOSAA	12-126	117
13C2-6:2 FTS	10-226	167
13C2-8:2 FTS	10-202	113

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not acceptable.

ALS Group USA, Corp.
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QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768
Date Analyzed:08/12/20 23:23

Internal Standard Area and RT SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

File ID: J:\LCMS06\Data\200812_b3\200812_061
Instrument ID: K-LCMS-06
Analysis Method: PFC/537M

Lab Code:KQ2011219-01
Analysis Lot:690911
Signal ID:1

	13C7-PFUnDA	
	Area	RT
Result ==>	5,669,122	5.179
Upper Limit ==>	11,338,244	6.18
Lower Limit ==>	2,834,561	4.18

Associated Analyses

Continuing Calibration Blank	KQ2011219-02	5994411	5.180
Lab Control Sample	KQ2011026-03	6880382	5.169
Method Blank	KQ2011026-04	6691146	5.176
MW-06 (7-30-20)	R2006768-001	5016115	5.176
MW-06 (7-30-20)MS	KQ2011026-01	5085599	5.163
MW-06 (7-30-20)DMS	KQ2011026-02	4530040	5.174
MW-07 (7-30-20)	R2006768-002	4533879	5.169
MW-04 (7-30-20)	R2006768-003	4093246	5.167
MW-06 DUP (7-30-20)	R2006768-004	5017571	5.168
Equipment Blank	R2006768-005	4542152	5.167

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768
Date Analyzed:08/19/20 14:27

Internal Standard Area and RT SUMMARY
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

File ID: J:\LCMS06\Data\200819_b1\200819_004
Instrument ID: K-LCMS-06
Analysis Method: PFC/537M

Lab Code:KQ2011599-01
Analysis Lot:691718
Signal ID:1

	13C7-PFUnDA	
	Area	RT
Result ==>	4,868,601	5.183
Upper Limit ==>	9,737,202	6.18
Lower Limit ==>	2,434,301	4.18

Associated Analyses

Continuing Calibration Blank	KQ2011599-02	5317901	5.179
MW-04 (7-30-20)	R2006768-003	5227297	5.184

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Collected: 07/30/20
Date Received: 07/30/20
Date Analyzed: 08/13/20
Date Extracted: 08/11/20

Duplicate Matrix Spike Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Sample Name: MW-06 (7-30-20) **Units:** ng/L
Lab Code: R2006768-001 **Basis:** NA
Analysis Method: PFC/537M
Prep Method: ALS SOP

Analyte Name	Sample Result	Matrix Spike KQ2011026-01			Duplicate Matrix Spike KQ2011026-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perfluorobutane sulfonic acid (PFBS)	2.2 J	22.8	22.2	93	22.8	22.2	93	61-140	<1	30
Perfluorohexane sulfonic acid (PFHxS)	2.2 J	22.3	22.8	88	23.0	22.8	91	69-144	3	30
Perfluoroheptane sulfonic acid (PFHpS)	ND U	28.8	23.8	121	28.7	23.8	120	62-178	<1	30
Perfluorooctane sulfonic acid (PFOS)	7.1	24.3	23.2	74	25.9	23.2	81	71-139	6	30
Perfluorodecane sulfonic acid (PFDS)	ND U	20.6	24.1	85	19.1	24.1	79	69-146	7	30
Perfluorobutanoic acid (PFBA)	26	46.5	25.0	82	45.2	25.0	76	51-157	3	30
Perfluoropentanoic acid (PFPeA)	2.8 J	23.2	25.0	82	22.8	25.0	80	67-127	2	30
Perfluoroheptanoic acid (PFHpA)	ND U	27.3	25.0	109	25.7	25.0	103	71-138	6	30
Perfluoroheptanoic acid (PFHpA)	2.7 J	25.3	25.0	91	23.3	25.0	83	72-133	8	30
Perfluorooctanoic acid (PFOA)	3.7	25.7	25.0	88	25.8	25.0	88	74-146	<1	30
Perfluorononanoic acid (PFNA)	ND U	24.1	25.0	96	21.4	25.0	85	69-148	12	30
Perfluorodecanoic acid (PFDA)	ND U	23.2	25.0	93	22.0	25.0	88	73-136	5	30
Perfluoroundecanoic acid (PFUnDA)	ND U	23.2	25.0	93	23.6	25.0	94	76-134	2	30
Perfluorododecanoic acid (PFDoDA)	ND U	26.5	25.0	106	23.1	25.0	92	71-138	14	30
Perfluorotridecanoic acid (PFTrDA)	ND U	20.9	25.0	84	20.4	25.0	82	65-140	2	30
Perfluorotetradecanoic acid (PFTeDA)	ND U	22.4	25.0	90	22.8	25.0	91	63-139	2	30
Perfluorooctane sulfonamide (FOSA)	ND U	23.3	25.0	93	23.4	25.0	94	64-135	<1	30
N-Methyl perfluorooctane sulfonamidoacetic acid	ND U	23.9	25.0	95	26.0	25.0	104	69-151	9	30
N-Ethyl perfluorooctane sulfonamidoacetic acid	ND U	24.0	25.0	96	30.8	25.0	123	58-155	25	30
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ND U	22.7	23.8	95	21.8	23.8	92	71-142	4	30
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND U	25.5	24.0	106	26.8	24.0	112	69-137	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/12/20
Date Extracted: 08/11/20

Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M
Prep Method: ALS SOP

Units: ng/L
Basis: NA
Analysis Lot: 690911

Lab Control Sample
KQ2011026-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	28.2	30.4	93	71-142
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	31.1	30.7	101	69-137
N-Ethyl perfluorooctane sulfonamidoacetic acid	27.0	32.0	84	58-155
N-Methyl perfluorooctane sulfonamidoacetic acid	27.3	32.0	85	69-151
Perfluorobutane sulfonic acid (PFBS)	27.1	28.4	96	61-140
Perfluorobutanoic acid (PFBA)	29.0	32.0	91	51-157
Perfluorodecane sulfonic acid (PFDS)	25.0	30.9	81	69-146
Perfluorodecanoic acid (PFDA)	26.6	32.0	83	73-136
Perfluorododecanoic acid (PFDoDA)	28.7	32.0	90	71-138
Perfluoroheptane sulfonic acid (PFHpS)	24.6	30.5	81	62-178
Perfluoroheptanoic acid (PFHpA)	27.6	32.0	86	72-133
Perfluoroheptane sulfonic acid (PFHxS)	22.8	29.2	78	69-144
Perfluoroheptanoic acid (PFHxA)	29.9	32.0	93	71-138
Perfluorononanoic acid (PFNA)	29.7	32.0	93	69-148
Perfluorooctane sulfonamide (FOSA)	30.0	32.0	94	64-135
Perfluorooctane sulfonic acid (PFOS)	25.8	29.7	87	71-139
Perfluorooctanoic acid (PFOA)	27.8	32.0	87	74-146
Perfluoropentanoic acid (PFPeA)	28.0	32.0	88	67-127
Perfluorotetradecanoic acid (PFTeDA)	28.8	32.0	90	63-139
Perfluorotridecanoic acid (PFTrDA)	29.4	32.0	92	65-140
Perfluoroundecanoic acid (PFUnDA)	29.3	32.0	92	76-134

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/12/20 23:55
Date Extracted: 08/11/20

Method Blank Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Sample Name: Method Blank **Instrument ID:** K-LCMS-06
Lab Code: KQ2011026-04 **File ID:** J:\LCMS06\Data\200812_b3\200812_064
Analysis Method: PFC/537M **Analysis Lot:** 690911,691718
Prep Method: ALS SOP **Extraction Lot:** 363266

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ2011026-03	J:\LCMS06\Data\200812_b3\200812_063	08/12/20 23:44
MW-06 (7-30-20)	R2006768-001	J:\LCMS06\Data\200812_b3\200812_070	08/13/20 01:00
MW-06 (7-30-20)MS	KQ2011026-01	J:\LCMS06\Data\200812_b3\200812_071	08/13/20 01:11
MW-06 (7-30-20)DMS	KQ2011026-02	J:\LCMS06\Data\200812_b3\200812_072	08/13/20 01:21
MW-07 (7-30-20)	R2006768-002	J:\LCMS06\Data\200812_b3\200812_073	08/13/20 01:32
MW-04 (7-30-20)	R2006768-003	J:\LCMS06\Data\200812_b3\200812_074	08/13/20 01:43
MW-06 DUP (7-30-20)	R2006768-004	J:\LCMS06\Data\200812_b3\200812_075	08/13/20 01:54
Equipment Blank	R2006768-005	J:\LCMS06\Data\200812_b3\200812_076	08/13/20 02:04
MW-04 (7-30-20)	R2006768-003	J:\LCMS06\Data\200819_b1\200819_006	08/19/20 14:48

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request: R2006768
Date Analyzed: 08/12/20 23:44
Date Extracted: 08/11/20

Lab Control Sample Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Sample Name: Lab Control Sample **Instrument ID:** K-LCMS-06
Lab Code: KQ2011026-03 **File ID:** J:\LCMS06\Data\200812_b3\200812_063
Analysis Method: PFC/537M **Analysis Lot:** 690911,691718
Prep Method: ALS SOP **Extraction Lot:** 363266

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ2011026-04	J:\LCMS06\Data\200812_b3\200812_064	08/12/20 23:55
MW-06 (7-30-20)	R2006768-001	J:\LCMS06\Data\200812_b3\200812_070	08/13/20 01:00
MW-06 (7-30-20)MS	KQ2011026-01	J:\LCMS06\Data\200812_b3\200812_071	08/13/20 01:11
MW-06 (7-30-20)DMS	KQ2011026-02	J:\LCMS06\Data\200812_b3\200812_072	08/13/20 01:21
MW-07 (7-30-20)	R2006768-002	J:\LCMS06\Data\200812_b3\200812_073	08/13/20 01:32
MW-04 (7-30-20)	R2006768-003	J:\LCMS06\Data\200812_b3\200812_074	08/13/20 01:43
MW-06 DUP (7-30-20)	R2006768-004	J:\LCMS06\Data\200812_b3\200812_075	08/13/20 01:54
Equipment Blank	R2006768-005	J:\LCMS06\Data\200812_b3\200812_076	08/13/20 02:04
MW-04 (7-30-20)	R2006768-003	J:\LCMS06\Data\200819_b1\200819_006	08/19/20 14:48

ALS Group USA, Corp.
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QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC2000408-01	0.05 PPB ICAL	200812_039	08/12/2020 19:28
02	KC2000408-02	0.10 PPB ICAL	200812_040	08/12/2020 19:39
03	KC2000408-03	0.50 PPB ICAL	200812_041	08/12/2020 19:49
04	KC2000408-04	1.0 PPB ICAL	200812_042	08/12/2020 20:00
05	KC2000408-05	5.0 PPB ICAL	200812_043	08/12/2020 20:11
06	KC2000408-06	10.0 PPB ICAL	200812_044	08/12/2020 20:21
07	KC2000408-07	15.0 PPB ICAL	200812_046	08/12/2020 20:43

Analyte

13C2-6:2 FTS

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.1054	02	5.0000	0.1078	03	5.0000	0.09866	04	5.0000	0.09543
05	5.0000	0.09127	06	5.0000	0.08904	07	5.0000	0.07781			

13C2-8:2 FTS

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.07778	02	5.0000	0.07826	03	5.0000	0.07566	04	5.0000	0.07153
05	5.0000	0.06699	06	5.0000	0.06895	07	5.0000	0.06441			

13C2-PFDA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.7684	02	5.0000	0.7128	03	5.0000	0.6711	04	5.0000	0.6967
05	5.0000	0.6744	06	5.0000	0.7187	07	5.0000	0.6626			

13C2-PFDoDA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.8405	02	5.0000	0.7835	03	5.0000	0.8081	04	5.0000	0.8311
05	5.0000	0.8154	06	5.0000	0.8603	07	5.0000	0.8502			

13C2-PFHxA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	1.117	02	5.0000	1.191	03	5.0000	1.185	04	5.0000	0.9673
05	5.0000	0.9907	06	5.0000	1.195	07	5.0000	1.043			

13C2-PFTeDA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.5521	02	5.0000	0.5115	03	5.0000	0.5214	04	5.0000	0.4969
05	5.0000	0.5128	06	5.0000	0.5602	07	5.0000	0.5579			

13C2-PFUnDA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.8616	02	5.0000	0.8481	03	5.0000	0.87	04	5.0000	0.8253
05	5.0000	0.8602	06	5.0000	0.8651	07	5.0000	0.8857			

13C3-PFBS

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.2381	02	5.0000	0.2181	03	5.0000	0.225	04	5.0000	0.2161

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte

13C3-PFBS			13C4-PFBA			13C4-PFHpA			13C4-PFOA			13C4-PFOS			13C5-PFNA			13C5-PFPeA			13C8-FOSA			18O2-PFHxS			6:2 Fluorotelomer sulfonic acid (6:2 FTS)		
#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	5.0000	0.233	06	5.0000	0.2584	07	5.0000	0.2634																					
01	5.0000	0.6305	02	5.0000	0.5913	03	5.0000	0.5945	04	5.0000	0.5752																		
05	5.0000	0.615	06	5.0000	0.6786	07	5.0000	0.6898																					
01	5.0000	0.9649	02	5.0000	0.7578	03	5.0000	0.7217	04	5.0000	0.8702																		
05	5.0000	0.7937	06	5.0000	0.6708	07	5.0000	0.7168																					
01	5.0000	1.252	02	5.0000	1.22	03	5.0000	1.108	04	5.0000	1.097																		
05	5.0000	1.04	06	5.0000	1.121	07	5.0000	0.9759																					
01	5.0000	0.1197	02	5.0000	0.1246	03	5.0000	0.1032	04	5.0000	0.1088																		
05	5.0000	0.1229	06	5.0000	0.1416	07	5.0000	0.1336																					
01	5.0000	0.7519	02	5.0000	0.8329	03	5.0000	0.8266	04	5.0000	0.7157																		
05	5.0000	0.7141	06	5.0000	0.7451	07	5.0000	0.7087																					
01	5.0000	0.3633	02	5.0000	0.3471	03	5.0000	0.3489	04	5.0000	0.3312																		
05	5.0000	0.3476	06	5.0000	0.3797	07	5.0000	0.3718																					
01	5.0000	0.4422	02	5.0000	0.4435	03	5.0000	0.4623	04	5.0000	0.4225																		
05	5.0000	0.441	06	5.0000	0.4809	07	5.0000	0.5005																					
01	5.0000	0.1465	02	5.0000	0.1023	03	5.0000	0.1116	04	5.0000	0.1124																		
05	5.0000	0.1122	06	5.0000	0.12	07	5.0000	0.1179																					
01	0.0476	1.1	02	0.0951	1.25	03	0.4756	1.075	04	0.9512	1.131																		
05	4.7558	1.037	06	9.5117	1.013	07	14.2676	1.066																					

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte

8:2 Fluorotelomer sulfonic acid (8:2 FTS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0480	0.8014	02	0.0960	0.7571	03	0.4800	0.7514	04	0.9600	0.7938
05	4.8002	0.7623	06	9.6005	0.7503	07	14.4007	0.7276			

D3-MeFOSAA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.08486	02	5.0000	0.08261	03	5.0000	0.08169	04	5.0000	0.07914
05	5.0000	0.08618	06	5.0000	0.08572	07	5.0000	0.09804			

D5-EtFOSAA

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5.0000	0.06002	02	5.0000	0.05721	03	5.0000	0.04737	04	5.0000	0.05858
05	5.0000	0.064	06	5.0000	0.06878	07	5.0000	0.06805			

N-Ethyl perfluorooctane sulfonamidoacetic acid

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	0.5618	02	0.1000	0.5171	03	0.5000	0.5969	04	1.0000	0.5913
05	5.0000	0.5608	06	10.0000	0.6353	07	15.0000	0.6005			

N-Methyl perfluorooctane sulfonamidoacetic acid

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	0.1000	0.8199	03	0.5000	0.6441	04	1.0000	0.7521	05	5.0000	0.7084
06	10.0000	0.8322	07	15.0000	0.7776						

Perfluorobutane sulfonic acid (PFBS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0444	1.215	02	0.0887	1.193	03	0.4437	1.125	04	0.8874	1.169
05	4.4369	1.082	06	8.8737	1.121	07	13.3106	1.165			

Perfluorobutanoic acid (PFBA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.163	02	0.1000	1.152	03	0.5000	1.104	04	1.0000	1.122
05	5.0000	1.052	06	10.0000	1.124	07	15.0000	1.155			

Perfluorodecane sulfonic acid (PFDS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0482	1.495	02	0.0965	1.429	03	0.4823	1.943	04	0.9647	1.735
05	4.8233	1.628	06	9.6467	1.571	07	14.4700	1.819			

Perfluorodecanoic acid (PFDA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	0.1000	1.286	03	0.5000	1.039	04	1.0000	1.013	05	5.0000	0.9639
06	10.0000	0.9919	07	15.0000	1.018						

Perfluorododecanoic acid (PFDoDA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.06	02	0.1000	0.998	03	0.5000	0.7749	04	1.0000	0.7803
05	5.0000	0.7831	06	10.0000	0.8186	07	15.0000	0.8756			

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte

Perfluoroheptane sulfonic acid (PFHpS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0477	0.6966	02	0.0953	0.9616	03	0.4767	0.8126	04	0.9534	0.8015
05	4.7672	0.8543	06	9.5344	0.8855	07	14.3016	0.9152			

Perfluoroheptanoic acid (PFHpA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.669	02	0.1000	1.534	03	0.5000	1.222	04	1.0000	1.333
05	5.0000	1.23	06	10.0000	1.279	07	15.0000	1.381			

Perfluorohexane sulfonic acid (PFHxS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0457	1.899	02	0.0913	2.018	03	0.4565	1.666	04	0.9131	1.657
05	4.5654	1.497	06	9.1308	1.636	07	13.6961	1.697			

Perfluorohexanoic acid (PFHxA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	2.315	02	0.1000	1.474	03	0.5000	1.146	04	1.0000	1.144
05	5.0000	1.024	06	10.0000	1.104	07	15.0000	1.135			

Perfluorononanoic acid (PFNA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.254	02	0.1000	1.147	03	0.5000	0.9494	04	1.0000	1.047
05	5.0000	0.9464	06	10.0000	0.9871	07	15.0000	1.048			

Perfluorooctane sulfonamide (FOSA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.481	02	0.1000	1.375	03	0.5000	1.388	04	1.0000	1.36
05	5.0000	1.364	06	10.0000	1.409	07	15.0000	1.468			

Perfluorooctane sulfonic acid (PFOS)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0465	1.245	02	0.0929	1.244	03	0.4646	1.23	04	0.9292	1.231
05	4.6461	1.136	06	9.2923	1.221	07	13.9385	1.28			

Perfluorooctanoic acid (PFOA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.582	02	0.1000	1.352	03	0.5000	1.054	04	1.0000	1.035
05	5.0000	0.9585	06	10.0000	1.019	07	15.0000	1.061			

Perfluoropentanoic acid (PFPeA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	6.741	02	0.1000	4.844	03	0.5000	3.357	04	1.0000	3.24
05	5.0000	2.989	06	10.0000	3.155	07	15.0000	3.27			

Perfluorotetradecanoic acid (PFTeDA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	2.272	02	0.1000	1.416	03	0.5000	0.7433	04	1.0000	0.7178
05	5.0000	0.6065	06	10.0000	0.614	07	15.0000	0.6304			

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte

Perfluorotridecanoic acid (PFTrDA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.635	02	0.1000	1.477	03	0.5000	1.18	04	1.0000	1.249
05	5.0000	1.178	06	10.0000	1.18	07	15.0000	1.266			

Perfluoroundecanoic acid (PFUnDA)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.0500	1.53	02	0.1000	1.133	03	0.5000	0.958	04	1.0000	1.001
05	5.0000	0.9224	06	10.0000	0.9781	07	15.0000	1.002			

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
13C2-6:2 FTS	SURR	Average RF	% RSD	10.8	20	0.09506	
13C2-8:2 FTS	SURR	Average RF	% RSD	7.6	20	0.07194	
13C2-PFDA	SURR	Average RF	% RSD	5.2	20	0.7007	
13C2-PFDoDA	SURR	Average RF	% RSD	3.2	20	0.827	
13C2-PFHxA	SURR	Average RF	% RSD	8.9	20	1.098	
13C2-PFTeDA	SURR	Average RF	% RSD	4.9	20	0.5304	
13C2-PFUnDA	SURR	Average RF	% RSD	2.2	20	0.8594	
13C3-PFBS	SURR	Average RF	% RSD	7.9	20	0.236	
13C4-PFBA	SURR	Average RF	% RSD	7.1	20	0.625	
13C4-PFHpA	SURR	Average RF	% RSD	13.0	20	0.7851	
13C4-PFOA	SURR	Average RF	% RSD	8.6	20	1.116	
13C4-PFOS	SURR	Average RF	% RSD	10.9	20	0.1221	
13C5-PFNA	SURR	Average RF	% RSD	7.0	20	0.7564	
13C5-PFPeA	SURR	Average RF	% RSD	4.7	20	0.3556	
13C8-FOSA	SURR	Average RF	% RSD	5.9	20	0.4561	
18O2-PFHxS	SURR	Average RF	% RSD	11.9	20	0.1175	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	TRG	Average RF	% RSD	7.1	20	1.096	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	TRG	Average RF	% RSD	3.4	20	0.7634	
D3-MeFOSAA	SURR	Average RF	% RSD	7.1	20	0.08546	
D5-EtFOSAA	SURR	Average RF	% RSD	12.1	20	0.06057	
N-Ethyl perfluorooctane sulfonamidoacetic acid	TRG	Average RF	% RSD	6.5	20	0.5805	
N-Methyl perfluorooctane sulfonamidoacetic acid	TRG	Average RF	% RSD	9.4	20	0.7557	
Perfluorobutane sulfonic acid (PFBS)	TRG	Average RF	% RSD	4.0	20	1.153	
Perfluorobutanoic acid (PFBA)	TRG	Average RF	% RSD	3.4	20	1.125	
Perfluorodecane sulfonic acid (PFDS)	TRG	Average RF	% RSD	11.0	20	1.66	
Perfluorodecanoic acid (PFDA)	TRG	Average RF	% RSD	11.2	20	1.052	
Perfluorododecanoic acid (PFDoDA)	TRG	Linear	R2	0.9955	0.99	0.8701	
Perfluoroheptane sulfonic acid (PFHpS)	TRG	Average RF	% RSD	10.3	20	0.8468	
Perfluoroheptanoic acid (PFHpA)	TRG	Linear	R2	0.9967	0.99	1.378	
Perfluorohexane sulfonic acid (PFHxS)	TRG	Average RF	% RSD	10.2	20	1.724	
Perfluorohexanoic acid (PFHxA)	TRG	Linear	R2	0.9913	0.99	1.335	

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Perfluorononanoic acid (PFNA)	TRG	Linear	R2	0.9973	0.99	1.054	
Perfluorooctane sulfonamide (FOSA)	TRG	Average RF	% RSD	3.5	20	1.406	
Perfluorooctane sulfonic acid (PFOS)	TRG	Average RF	% RSD	3.6	20	1.227	
Perfluorooctanoic acid (PFOA)	TRG	Linear	R2	0.9983	0.99	1.152	
Perfluoropentanoic acid (PFPeA)	TRG	Linear	R2	0.9986	0.99	3.942	
Perfluorotetradecanoic acid (PFTeDA)	TRG	Linear	R2	0.9985	0.99	1	
Perfluorotridecanoic acid (PFTrDA)	TRG	Linear	R2	0.9981	0.99	1.309	
Perfluoroundecanoic acid (PFUnDA)	TRG	Linear	R2	0.9963	0.99	1.075	

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Verification Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC2000408-08	1.0 PPB ICV	200812_048	08/12/2020 21:04

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Perfluorobutane sulfonic acid (PFBS)	0.887	0.865	1.153E0	1.124E0	-2.521	±30	Average RF
Perfluorohexane sulfonic acid (PFHxS)	0.913	0.783	1.724E0	1.478E0	-14.288	±30	Average RF
Perfluoroheptane sulfonic acid (PFHpS)	0.953	0.730	8.468E-1	6.479E-1	-23.482	±30	Average RF
Perfluorooctane sulfonic acid (PFOS)	0.929	0.874	1.227E0	1.154E0	-5.954	±30	Average RF
Perfluorodecane sulfonic acid (PFDS)	0.965	0.958	1.66E0	1.649E0	-0.667	±30	Average RF
Perfluorobutanoic acid (PFBA)	1.00	0.961	1.125E0	1.08E0	-3.933	±30	Average RF
Perfluoropentanoic acid (PFPeA)	1.00	0.977	3.942E0	3.187E0	-2.333	±30	Linear
Perfluorohexanoic acid (PFHxA)	1.00	1.03	1.335E0	1.149E0	3.35	±30	Linear
Perfluoroheptanoic acid (PFHpA)	1.00	0.899	1.378E0	1.173E0	-10.051	±30	Linear
Perfluorooctanoic acid (PFOA)	1.00	0.943	1.152E0	9.824E-1	-5.715	±30	Linear
Perfluorononanoic acid (PFNA)	1.00	0.964	1.054E0	9.679E-1	-3.580	±30	Linear
Perfluorodecanoic acid (PFDA)	1.00	0.972	1.052E0	1.023E0	-2.792	±30	Average RF
Perfluoroundecanoic acid (PFUnDA)	1.00	0.983	1.075E0	9.568E-1	-1.743	±30	Linear
Perfluorododecanoic acid (PFDoDA)	1.00	1.08	8.701E-1	8.789E-1	7.57	±30	Linear
Perfluorotridecanoic acid (PFTTrDA)	1.00	0.930	1.309E0	1.14E0	-6.995	±30	Linear
Perfluorotetradecanoic acid (PFTTeDA)	1.00	1.00	1.0E0	6.899E-1	0.318	±30	Linear
Perfluorooctane sulfonamide (FOSA)	1.00	0.943	1.406E0	1.326E0	-5.740	±30	Average RF
N-Methyl perfluorooctane sulfonamidoacetic acid	1.00	1.18	7.557E-1	8.925E-1	18.10	±30	Average RF
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.00	0.906	5.805E-1	5.257E-1	-9.446	±30	Average RF
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.951	0.986	1.096E0	1.137E0	3.70	±30	Average RF
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.960	1.05	7.634E-1	8.345E-1	9.31	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
13C3-PFBS	5.00	4.85	2.36E-1	2.288E-1	-3.050	±30	Average RF
18O2-PFHxS	5.00	5.93	1.175E-1	1.394E-1	18.64	±30	Average RF
13C4-PFOS	5.00	4.80	1.221E-1	1.173E-1	-3.903	±30	Average RF
13C4-PFBA	5.00	4.85	6.25E-1	6.066E-1	-2.950	±30	Average RF
13C5-PFPeA	5.00	4.94	3.556E-1	3.512E-1	-1.255	±30	Average RF
13C2-PFHxA	5.00	4.66	1.098E0	1.024E0	-6.752	±30	Average RF
13C4-PFHpA	5.00	5.87	7.851E-1	9.218E-1	17.41	±30	Average RF
13C4-PFOA	5.00	5.28	1.116E0	1.179E0	5.67	±30	Average RF

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street

Service Request: R2006768
Calibration Date: 8/12/2020

Initial Calibration Verification Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Calibration ID: KC2000408
Instrument ID: K-LCMS-06

Signal ID: 1

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
13C5-PFNA	5.00	4.69	7.564E-1	7.091E-1	-6.256	±30	Average RF
13C2-PFDA	5.00	5.15	7.007E-1	7.213E-1	2.94	±30	Average RF
13C2-PFUnDA	5.00	4.78	8.594E-1	8.222E-1	-4.333	±30	Average RF
13C2-PFDoDA	5.00	5.06	8.27E-1	8.375E-1	1.27	±30	Average RF
13C2-PFTeDA	5.00	4.96	5.304E-1	5.258E-1	-0.868	±30	Average RF
13C8-FOSA	5.00	4.86	4.561E-1	4.431E-1	-2.859	±30	Average RF
D3-MeFOSAA	5.00	4.78	8.546E-2	8.166E-2	-4.450	±30	Average RF
D5-EtFOSAA	5.00	4.54	6.057E-2	5.502E-2	-9.174	±30	Average RF
13C2-6:2 FTS	5.00	5.34	9.506E-2	1.015E-1	6.80	±30	Average RF
13C2-8:2 FTS	5.00	5.13	7.194E-2	7.377E-2	2.55	±30	Average RF

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768
Date Analyzed: 08/12/20 23:23

**Continuing Calibration Verification (CCV) Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS**

Analysis Method: PFC/537M
File ID: J:\LCMS06\Data\200812_b3\200812_061
Signal ID: 1

Calibration Date: 8/12/2020
Calibration ID: KC2000408
Analysis Lot: 690911
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
Perfluorobutane sulfonic acid (PFBS)	0.887	0.883	1.1528	1.1471	99.5	NA	±30	Average RF
Perfluorohexane sulfonic acid (PFHxS)	0.913	0.749	1.7243	1.4147	82.0	NA	±30	Average RF
Perfluoroheptane sulfonic acid (PFHpS)	0.953	0.759	0.8468	0.6736	79.6	NA	±30	Average RF
Perfluorooctane sulfonic acid (PFOS)	0.929	0.931	1.2267	1.229	100	NA	±30	Average RF
Perfluorodecane sulfonic acid (PFDS)	0.965	1.00	1.6599	1.7274	104	NA	±30	Average RF
Perfluorobutanoic acid (PFBA)	1.00	1.01	1.1246	1.1364	101	NA	±30	Average RF
Perfluoropentanoic acid (PFPeA)	1.00	1.04	3.9423	3.3774	104	3.9	±30	Linear
Perfluorohexanoic acid (PFHxA)	1.00	1.08	1.3347	1.1942	108	7.7	±30	Linear
Perfluoroheptanoic acid (PFHpA)	1.00	0.982	1.3783	1.279	98.2	-1.8	±30	Linear
Perfluorooctanoic acid (PFOA)	1.00	0.985	1.1517	1.0246	98.5	-1.5	±30	Linear
Perfluorononanoic acid (PFNA)	1.00	1.04	1.0542	1.0444	104	4.2	±30	Linear
Perfluorodecanoic acid (PFDA)	1.00	0.989	1.0519	1.0402	98.9	NA	±30	Average RF
Perfluoroundecanoic acid (PFUnDA)	1.00	1.03	1.0748	1.0062	103	3.5	±30	Linear
Perfluorododecanoic acid (PFDoDA)	1.00	1.10	0.8701	0.8982	110	10.0	±30	Linear
Perfluorotridecanoic acid (PFTrDA)	1.00	0.945	1.3094	1.1575	94.5	-5.5	±30	Linear
Perfluorotetradecanoic acid (PFTeDA)	1.00	1.01	1	0.696	101	1.3	±30	Linear
Perfluorooctane sulfonamide (FOSA)	1.00	0.991	1.4065	1.3932	99.1	NA	±30	Average RF
N-Methyl perfluorooctane sulfonamidoacetic acid	1.00	1.02	0.7557	0.7742	102	NA	±30	Average RF
N-Ethyl perfluorooctane sulfonamidoacetic acid	1.00	1.07	0.5805	0.6237	107	NA	±30	Average RF
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.951	0.973	1.0962	1.1217	102	NA	±30	Average RF
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.960	1.10	0.7634	0.8748	115	NA	±30	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
13C3-PFBS	5.00	5.10	0.236	0.2407	102	NA	±30	Average RF
18O2-PFHxS	5.00	6.31	0.1175	0.1483	126	NA	±30	Average RF
13C4-PFOS	5.00	4.94	0.1221	0.1206	98.8	NA	±30	Average RF
13C4-PFBA	5.00	4.93	0.625	0.6164	98.6	NA	±30	Average RF
13C5-PFPeA	5.00	4.98	0.3556	0.3545	99.7	NA	±30	Average RF
13C2-PFHxA	5.00	5.23	1.0984	1.1483	105	NA	±30	Average RF
13C4-PFHpA	5.00	5.35	0.7851	0.8401	107	NA	±30	Average RF
13C4-PFOA	5.00	5.23	1.1162	1.1671	105	NA	±30	Average RF
13C5-PFNA	5.00	4.66	0.7564	0.705	93.2	NA	±30	Average RF

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768
Date Analyzed: 08/12/20 23:23

**Continuing Calibration Verification (CCV) Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS**

Analysis Method: PFC/537M
File ID: J:\LCMS06\Data\200812_b3\200812_061
Signal ID: 1

Calibration Date: 8/12/2020
Calibration ID: KC2000408
Analysis Lot: 690911
Units: ng/mL

13C2-PFDA	5.00	5.10	0.7007	0.7148	102	NA	±30	Average RF
13C2-PFUnDA	5.00	4.69	0.8594	0.8063	93.8	NA	±30	Average RF
13C2-PFDoDA	5.00	4.90	0.827	0.8109	98.1	NA	±30	Average RF
13C2-PFTeDA	5.00	5.19	0.5304	0.5507	104	NA	±30	Average RF
13C8-FOSA	5.00	4.91	0.4561	0.4481	98.2	NA	±30	Average RF
D3-MeFOSAA	5.00	4.76	0.0855	0.0814	95.2	NA	±30	Average RF
D5-EtFOSAA	5.00	4.54	0.0606	0.055	90.8	NA	±30	Average RF
13C2-6:2 FTS	5.00	5.32	0.0951	0.1012	106	NA	±30	Average RF
13C2-8:2 FTS	5.00	4.87	0.0719	0.0701	97.4	NA	±30	Average RF

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request: R2006768
Date Analyzed: 08/19/20 14:27

**Continuing Calibration Verification (CCV) Summary
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS**

Analysis Method: PFC/537M
File ID: J:\LCMS06\Data\200819_b1\200819_004
Signal ID: 1

Calibration Date: 8/12/2020
Calibration ID: KC2000408
Analysis Lot: 691718
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
Perfluorohexane sulfonic acid (PFHxS)	0.913	0.797	1.7243	1.5052	87.3	NA	±30	Average RF
Perfluorooctane sulfonic acid (PFOS)	0.929	0.971	1.2267	1.282	104	NA	±30	Average RF
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.951	1.05	1.0962	1.2121	111	NA	±30	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
18O2-PFHxS	5.00	6.64	0.1175	0.1561	133*	NA	±30	Average RF
13C4-PFOS	5.00	4.79	0.1221	0.1169	95.7	NA	±30	Average RF
13C2-6:2 FTS	5.00	5.36	0.0951	0.1019	107	NA	±30	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768

Analysis Run Log
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M

Analysis Lot:690911

Instrument ID:K-LCMS-06

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\LCMS06\Data\200812_b3\200812_061	Continuing Calibration Verification	KQ2011219-01	8/12/2020	23:23	
J:\LCMS06\Data\200812_b3\200812_062	Continuing Calibration Blank	KQ2011219-02	8/12/2020	23:34	
J:\LCMS06\Data\200812_b3\200812_063	Lab Control Sample	KQ2011026-03	8/12/2020	23:44	
J:\LCMS06\Data\200812_b3\200812_064	Method Blank	KQ2011026-04	8/12/2020	23:55	
J:\LCMS06\Data\200812_b3\200812_065	ZZZZZZZ	ZZZZZZZ	8/13/2020	00:06	
J:\LCMS06\Data\200812_b3\200812_066	ZZZZZZZ	ZZZZZZZ	8/13/2020	00:17	
J:\LCMS06\Data\200812_b3\200812_067	ZZZZZZZ	ZZZZZZZ	8/13/2020	00:28	
J:\LCMS06\Data\200812_b3\200812_068	ZZZZZZZ	ZZZZZZZ	8/13/2020	00:38	
J:\LCMS06\Data\200812_b3\200812_069	ZZZZZZZ	ZZZZZZZ	8/13/2020	00:49	
J:\LCMS06\Data\200812_b3\200812_070	MW-06 (7-30-20)	R2006768-001	8/13/2020	01:00	
J:\LCMS06\Data\200812_b3\200812_071	MW-06 (7-30-20) MS	KQ2011026-01	8/13/2020	01:11	
J:\LCMS06\Data\200812_b3\200812_072	MW-06 (7-30-20) DMS	KQ2011026-02	8/13/2020	01:21	
J:\LCMS06\Data\200812_b3\200812_073	MW-07 (7-30-20)	R2006768-002	8/13/2020	01:32	
J:\LCMS06\Data\200812_b3\200812_074	MW-04 (7-30-20)	R2006768-003	8/13/2020	01:43	
J:\LCMS06\Data\200812_b3\200812_075	MW-06 DUP (7-30-20)	R2006768-004	8/13/2020	01:54	
J:\LCMS06\Data\200812_b3\200812_076	Equipment Blank	R2006768-005	8/13/2020	02:04	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006

Service Request:R2006768

Analysis Run Log
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Analysis Method: PFC/537M

Analysis Lot:691718

Instrument ID:K-LCMS-06

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\LCMS06\Data\200819_b1\200819_004	Continuing Calibration Verification	KQ2011599-01	8/19/2020	14:27	
J:\LCMS06\Data\200819_b1\200819_005	Continuing Calibration Blank	KQ2011599-02	8/19/2020	14:38	
J:\LCMS06\Data\200819_b1\200819_006	MW-04 (7-30-20)	R2006768-003	8/19/2020	14:48	
J:\LCMS06\Data\200819_b1\200819_007	ZZZZZZZ	ZZZZZZZ	8/19/2020	14:59	
J:\LCMS06\Data\200819_b1\200819_008	ZZZZZZZ	ZZZZZZZ	8/19/2020	15:09	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Leader Professional Services, Inc.
Project: 5115 Flint Street/900.006
Sample Matrix: Water

Service Request:R2006768

Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS

Prep Method: ALS SOP
Analytical Method: PFC/537M

Extraction Lot: 363266
Extraction Date: 08/11/20 08:34

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
Matrix Spike	KQ2011026-01MS	7/30/20	7/30/20	320.0000 mL	8 mL	
Duplicate Matrix Spike	KQ2011026-02DMS	7/30/20	7/30/20	320.0000 mL	8 mL	
Lab Control Sample	KQ2011026-03LCS	NA	NA	250 mL	8 mL	
Method Blank	KQ2011026-04MB	NA	NA	250 mL	8 mL	
MW-06 (7-30-20)	R2006768-001	7/30/20	7/30/20	320.0000 mL	8 mL	
MW-07 (7-30-20)	R2006768-002	7/30/20	7/30/20	320.0000 mL	8 mL	
MW-04 (7-30-20)	R2006768-003	7/30/20	7/30/20	320.0000 mL	8 mL	
MW-04 (7-30-20)	R2006768-003	7/30/20	7/30/20	320.0000 mL	8 mL	
MW-06 DUP (7-30-20)	R2006768-004	7/30/20	7/30/20	265.0000 mL	8 mL	
Equipment Blank	R2006768-005	7/30/20	7/30/20	305.0000 mL	8 mL	



Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



PFAS by HPLC/MS/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 363266

Team: Organic LC/KLMILLER

Number of Copies to make: 2

Prep Workflow: OLC_PFAS_SPE_L

Prep Method: ALS SOP

Status: Prepped

Prep Date/Time: 8/11/20 08:34

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	K2006675-001	WGMW02220200731	.01	PEC/537M/PFAS		Water	310.0000mL	8.00mL	
2	K2006675-002	WGMW03020200731	.01	PEC/537M/PFAS		Water	290.0000mL	8.00mL	
3	K2006675-003	WGMW03320200731	.01	PEC/537M/PFAS		Water	315.0000mL	8.00mL	
4	K2006675-004	WGMW99420200731	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
5	K2006675-005	FB20200731	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
6	R2006768-001	MW-06 (7-30-20)	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
7	R2006768-002	MW-07 (7-30-20)	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
8	R2006768-003	MW-04 (7-30-20)	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
9	R2006768-004	MW-06 DUP (7-30-20)	.01	PEC/537M/PFAS		Water	320.0000mL	8.00mL	
10	R2006768-005	Equipment Blank	.01	PEC/537M/PFAS		Water	305.0000mL	8.00mL	
11	KQ2011026-01	R2006768-001 MS	.10	PEC/537M/PFAS		Liquid	320.0000mL	8.00mL	
12	KQ2011026-02	R2006768-001 DMS	.11	PEC/537M/PFAS		Liquid	320.0000mL	8.00mL	
13	KQ2011026-03	LCS		PEC/537M/PFAS		Liquid	250mL	8.00mL	
14	KQ2011026-04	MB		PEC/537M/PFAS		Liquid	250mL	8.00mL	

Spiking Solutions

Name: PFC Targets 200ppb mix Inventory ID 210877 Logbook Ref: 19-OLC-01-91B Expires On: 10/14/2020

KQ2011026-01 40.00µL KQ2011026-02 40.00µL KQ2011026-03 40.00µL

Name: PFC IS Inventory ID 211006 Logbook Ref: 20-OLC-02-161 Expires On: 01/17/2021

K2006675-001 10.00µL	K2006675-002 10.00µL	K2006675-003 10.00µL	K2006675-004 10.00µL	K2006675-005 10.00µL
KQ2011026-02 10.00µL	KQ2011026-03 10.00µL	KQ2011026-04 10.00µL	R2006768-001 10.00µL	R2006768-002 10.00µL
R2006768-004 10.00µL	R2006768-005 10.00µL			

Name: PFC isotopes 2ppm Inventory ID 211072 Logbook Ref: 20-OLC-02-17B Expires On: 01/21/2021

K2006675-001 20.00µL	K2006675-002 20.00µL	K2006675-003 20.00µL	K2006675-004 20.00µL	K2006675-005 20.00µL
KQ2011026-02 20.00µL	KQ2011026-03 20.00µL	KQ2011026-04 20.00µL	R2006768-001 20.00µL	R2006768-002 20.00µL
R2006768-004 20.00µL	R2006768-005 20.00µL			

Name: PFC Isotopes 2ppm Inventory ID 211183 Logbook Ref: 19-OLC-01-88G Expires On: 12/04/2023

K2006675-001 20.00µL	K2006675-002 20.00µL	K2006675-003 20.00µL	K2006675-004 20.00µL	K2006675-005 20.00µL
KQ2011026-02 20.00µL	KQ2011026-03 20.00µL	KQ2011026-04 20.00µL	R2006768-001 20.00µL	R2006768-002 20.00µL
R2006768-004 20.00µL	R2006768-005 20.00µL			

Prep Run#: 363266
Team: Organic LC/KLMILLER

Prep Workflow: OLC_PFAS_SPE_L
Prep Method: ALS SOP

Status: Prepped
Prep Date/Time: 8/11/20 08:34

Preparation Information Benchsheet

Preparation Steps

Step:	Extraction Start	Step:	Extraction	Step:	Final Volume
Started:	8/11/20 08:34	Started:	8/11/20 16:07	Started:	8/12/20 15:19
Finished:	8/11/20 16:04	Finished:	8/11/20 16:07	Finished:	8/12/20 15:19
By:	KLMILLER	By:	KLMILLER	By:	KLMILLER
Comments		Comments		Comments	

Comments: NO vials Finished 8/12/20
paper work Finished 8/13/20

Reviewed By: Smiller Date: 8/19/2020

Chain of Custody

Relinquished By: <u>Sm</u>	Date: <u>8-13-20</u>	Extraes Examined
Received By: <u>Smiller</u>	Date: <u>8/12/20 20</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Preparation Information Benchsheet

Prep Run#: 363266

Team: Organic LC/KLMILLER

Number of Copies to make: 2

Prep Workflow: OLC_PFAS_SPE_L

Prep Method: ALS SOP

Status: Final Volume

Prep Date/Time: 8/11/20 08:34 AM

#	Lab Code	Client ID	B#	Method / Test	Matrix	Amt. Ext. mL	pH	Int. Vol	Final Vol mL	Surr Amt	Spike Amt
1	K2006675-001	WGMW02720200731	2	PEC/537M / PFAS	Water	310	3.5	N/A	8	20/20	—
2	K2006675-002	WGMW03020200731	2	PEC/537M / PFAS	Water	290					—
3	K2006675-003	WGMW03320200731	2	PEC/537M / PFAS	Water	315					—
4	K2006675-004	WGMW99420200731	1	PEC/537M / PFAS	Water	320					—
5	K2006675-005	FB20200731	2	PEC/537M / PFAS	Water	320					—
6	R2006768-001	MM-06 (7-30-20)	2	PEC/537M / PFAS	Water	320					—
7	R2006768-002	MM-07 (7-30-20)	2	PEC/537M / PFAS	Water	320					—
8	R2006768-003	MM-04 (7-30-20)	2	PEC/537M / PFAS	Water	320					—
9	R2006768-004	MM-06 DUP (7-30-20)	2	PEC/537M / PFAS	Water	320					—
10	R2006768-005	Equipment Blank	2	PEC/537M / PFAS	Water	305					—
11	KQ2011026-01	R2006768-001 MS	2	PEC/537M / PFAS	Liquid	320					40
12	KQ2011026-02	R2006768-001 DMS	2	PEC/537M / PFAS	Liquid	320					—
13	KQ2011026-03	LCS	2	PEC/537M / PFAS	Liquid	250					—
14	KQ2011026-04	MB	2	PEC/537M / PFAS	Liquid	250					—

① Bottle ID didn't match SR. Verified by SMO
 ② Light Sediment

Comments: Added Standards before pH adjusting. Prepared concurrently with Prep run 363278

Surrogate ID: 19-OLC-01-884 2ppm 20µL x P 12-4-23 8ppm DB
 20-OLC-02-178 8ppm 20µL x P 1-21-21 8ppm DB
 Spike ID: 20-OLC-02-91 19-OLC-01-918 200ppb 40µL x P 10-14-20 8ppm DB

Witnessed By: _____
 Analyst: _____
 Assisted By: _____
 Printed 8/11/20 16:16
 Preparation Information Benchsheet
 Page 1 of 1

Additional prep information for Perfluorinated Compounds
by HPLC/MS/MS – SOP: LCP-PFC (rev. 10)

Waters

Service Request K2006675, 6735, R6768 **Workgroup** KQ2011026

6cc 200mg Strata XL-AW Cartridge Sorbent Lot # S322-0028

Envi-Carb Lot # 122392 (DOD)

0.1% NH₄OH in MeOH Lot# 20-OLC-02-21D MeOH Lot# DZ118-US

Reagent Water Lot# 60036

Acetic Acid (LCMS Grade) Lot# SHBK4015

25% NH₄OH Lot# —

Centrifuge Used? (K-Sir-Spins-A-Lot): Yes No

Extraction (Manifold) Start (Time/Date/Initial): 13:40 8-11-20 K

Extraction (Manifold) Stop (Time/Date/Initial): 16:20 8-11-20 K

IS solution (13C7-PFUnDA 500ppb) Lot #: 20-OLC-02-16J

Nylon Filter Lot#: 91083103 / FG1123 DOD

Extract Storage: Country Fried

Completed(Time/Date/Initial): 13:45 8-12-20 K

Comments/Observations:

Bench Sheet Review Check List

- Hold Times Met (if no, Reason: _____)
- Prep date, dept, method, product code correct in stealth
- Spike Information correct
- Weights/Volumes and units correct on raw and final bench sheets
- Sample IDs have been checked—Bottle numbers appended if required
- Names present for: Started by, Completed by, relinquished by, and witnessed by.
- Training has been circled
- Extract Storage recorded
- Additional Prep Sheet completely filled out (NA or line out Blanks)
- All clean-ups have been noted on additional prep sheet
- Signed service request with Form V, if applicable, has been attached

Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_070
Lab ID: R2006768-001
RunType: N/A
Matrix: Water

Date Acquired: 8/13/20 01:00
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_070	Instrument: K-LCMS-06
Acqu Date: 8/13/20 01:00	Vial: 10
Run Type: N/A	Dilution: 1
Lab ID: R2006768-001	Raw Units: ng/mL

Bottle ID: R2006768-001.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.176	0.00	5016115	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.118	-0.01	920930	3.8896	78	20 - 109	Y
18O2-PFHxS	4.493	0.00	424401	3.5990	72	26 - 122	Y
13C4-PFOS	4.812	-0.01	536244	4.3789	88	25 - 121	Y
13C4-PFBA	3.460	-0.02	2322852	3.7047	74	27 - 124	Y
13C5-PFPeA	4.065	-0.01	1014531	2.8435	57	27 - 138	Y
13C2-PFHxA	4.320	-0.01	2937529	2.6658	53	28 - 132	Y
13C4-PFHpA	4.495	0.00	2561348	3.2519	65	19 - 139	Y
13C4-PFOA	4.655	-0.01	3844899	3.4335	69	22 - 130	Y
13C5-PFNA	4.826	0.00	2742198	3.6136	72	20 - 127	Y
13C2-PFDA	5.002	0.00	2415811	3.4368	69	24 - 125	Y
13C2-PFUnDA	5.176	0.00	3473648	4.0288	81	22 - 125	Y
13C2-PFDODA	5.340	0.00	2991658	3.6058	72	19 - 122	Y
13C2-PFTeDA	5.637	0.00	2581839	4.8521	97	13 - 124	Y
13C8-FOSA	5.290	0.00	1484417	3.2439	65	18 - 109	Y
D3-MeFOSAA	5.098	0.00	371382	4.3316	87	9 - 123	Y
D5-EtFOSAA	5.187	-0.01	314591	5.1768	104	12 - 126	Y
13C2-6:2 FTS	4.647	0.00	737406	7.7323	155	10 - 226	Y
13C2-8:2 FTS	5.003	0.00	385285	5.3384	107	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.118	-0.01	19012	0.0895	2.2	J	Y
Perfluorohexane sulfonic acid (PFHxS)	4.488	-0.01	13055	0.0892	2.2	J	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 11:35

\\alprews001\starlims\LIMSRpts\QuantValidation.rpt

Data File: J:\LCMS06\Data\200812_b3\200812_070
 Acqu Date: 8/13/20 01:00
 Run Type: N/A
 Lab ID: R2006768-001

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 10
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	4.643	-0.01	814	0.0113	0.28	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.757	-0.06	37429	0.2845	7.1		Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.459	-0.02	545255	1.0437	26		Y
Perfluoropentanoic acid (PFPeA)	4.064	-0.01	107158	0.1126	2.8	J	Y
Perfluorohexanoic acid (PFHxA)	4.318	-0.01	118064	0.1348	3.4	U	Y
Perfluoroheptanoic acid (PFHpA)	4.491	-0.01	80193	0.1064	2.7	J	Y
Perfluorooctanoic acid (PFOA)	4.654	-0.01	138893	0.1494	3.7		Y
Perfluorononanoic acid (PFNA)	4.829	0.00	23523	0.0297	0.74	U	Y
Perfluorodecanoic acid (PFDA)	5.002	0.00	14716	0.0290	0.73	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.174	-0.01	19632	0.0014	0.035	U	Y
Perfluorododecanoic acid (PFDoDA)	5.339	0.00	17692	0.0196	0.49	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.492	-0.01	16243	0.0073	0.18	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.637	0.00	50822	0.0258	0.65	U	Y
Perfluorooctane sulfonamide (FOSA)	5.290	0.00	1257	0.0030	0.075	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.106	+0.00	863	0.0154	0.39	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.648	0.00	645	0.0040	0.10	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.004	0.00	186	0.0032	0.080	U	Y

Prep Amount: 320.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Printed: 8/19/20 11:35

\alprews001\starlims\LIMSReps\QuantValidation.rpt

Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_070

Sample ID: R2006768-001
 Date Acquired: 8/13/2020 1:00:25 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_070.lcd
 Vial: 14 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.176	5016115	5016115	1	5.0000	ng/mL	----	----
PFBS_1	M	4.118	19012	920930	2	0.0895	ng/mL	----	50.74
PFBS-13C	Auto	4.118	920930	5016115	1	3.8896	ng/mL	----	----
PFBS-13C_IS	Auto	4.118	920930	920930	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	920930	2	----	ng/mL	----	----
PFHxS_1	M	4.488	13055	424401	3	0.0892	ng/mL	----	51.36
PFHxS-18O	Auto	4.493	424401	5016115	1	3.5990	ng/mL	----	----
PFHxS-18O_IS	Auto	4.493	424401	424401	3	5.0000	ng/mL	----	----
PFHpS_1	M	4.643	814	424401	3	0.0113	ng/mL	----	85.76
PFOS_1	M	4.757	37429	536244	4	0.2845	ng/mL	----	28.15
PFOS-13C	Auto	4.812	536244	5016115	1	4.3789	ng/mL	----	----
PFOS-13C_IS	Auto	4.812	536244	536244	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	536244	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	536244	4	----	ng/mL	----	----
PFBA	M	3.459	545255	2322852	5	1.0437	ng/mL	----	----
PFBA-13C	Auto	3.460	2322852	5016115	1	3.7047	ng/mL	----	----
PFBA-13C_IS	Auto	3.460	2322852	2322852	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.064	107158	1014531	6	0.1126	ng/mL	----	----
PFPeA-13C	Auto	4.065	1014531	5016115	1	2.8435	ng/mL	----	----
PFPeA-13C_IS	Auto	4.065	1014531	1014531	6	5.0000	ng/mL	----	----
PFHxA	M	4.318	118064	2937529	7	0.1348	ng/mL	----	3.46
PFHxA-13C	Auto	4.320	2937529	5016115	1	2.6658	ng/mL	----	----
PFHxA-13C_IS	Auto	4.320	2937529	2937529	7	5.0000	ng/mL	----	----
PFHpA	M	4.491	80193	2561348	8	0.1064	ng/mL	----	17.15
PFHpA-13C	Auto	4.495	2561348	5016115	1	3.2519	ng/mL	----	----
PFHpA-13C_IS	Auto	4.495	2561348	2561348	8	5.0000	ng/mL	----	----
PFOA	Auto	4.654	138893	3844899	9	0.1494	ng/mL	----	33.54
PFOA-13C	Auto	4.655	3844899	5016115	1	3.4335	ng/mL	----	----
PFOA-13C_IS	Auto	4.655	3844899	3844899	9	5.0000	ng/mL	----	----
PFNA	M	4.829	23523	2742198	10	0.0297	ng/mL	----	25.39
PFNA-13C	Auto	4.826	2742198	5016115	1	3.6136	ng/mL	----	----
PFNA-13C_IS	Auto	4.826	2742198	2742198	10	5.0000	ng/mL	----	----
PFDA	Auto	5.002	14716	2415811	11	0.0290	ng/mL	----	25.30
PFDA-13C	Auto	5.002	2415811	5016115	1	3.4368	ng/mL	----	----
PFDA-13C_IS	Auto	5.002	2415811	2415811	11	5.0000	ng/mL	----	----
PFUnA	M	5.174	19632	3473648	12	0.0014	ng/mL	----	15.21
PFUnA-13C	Auto	5.176	3473648	5016115	1	4.0288	ng/mL	----	----
PFUnA-13C_IS	Auto	5.176	3473648	3473648	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.339	17692	2991658	13	0.0196	ng/mL	----	15.73
PFDaA-13C	Auto	5.340	2991658	5016115	1	3.6058	ng/mL	----	----
PFDaA-13C_IS	Auto	5.340	2991658	2991658	13	5.0000	ng/mL	----	----
PFTrDA	Auto	5.492	16243	2581839	14	0.0073	ng/mL	----	25.04
PFTeDA	Auto	5.637	50822	2581839	14	0.0258	ng/mL	----	862.03
PFTeDA-13C	Auto	5.637	2581839	5016115	1	4.8521	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.637	2581839	2581839	14	5.0000	ng/mL	----	----
FOSA	M	5.290	1257	1484417	16	0.0030	ng/mL	----	14.17
FOSA-13C	Auto	5.290	1484417	5016115	1	3.2439	ng/mL	----	----
FOSA-13C_IS	Auto	5.290	1484417	1484417	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.654	1142	486025	17	0.0089	ng/mL	----	59.96
N-MeFOSA-d3	Auto	5.648	486025	5016115	1	4.2645	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.648	486025	486025	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	533028	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.775	533028	5016115	1	3.7530	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.775	533028	533028	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.623	175	184394	19	0.0015	ng/mL	----	----

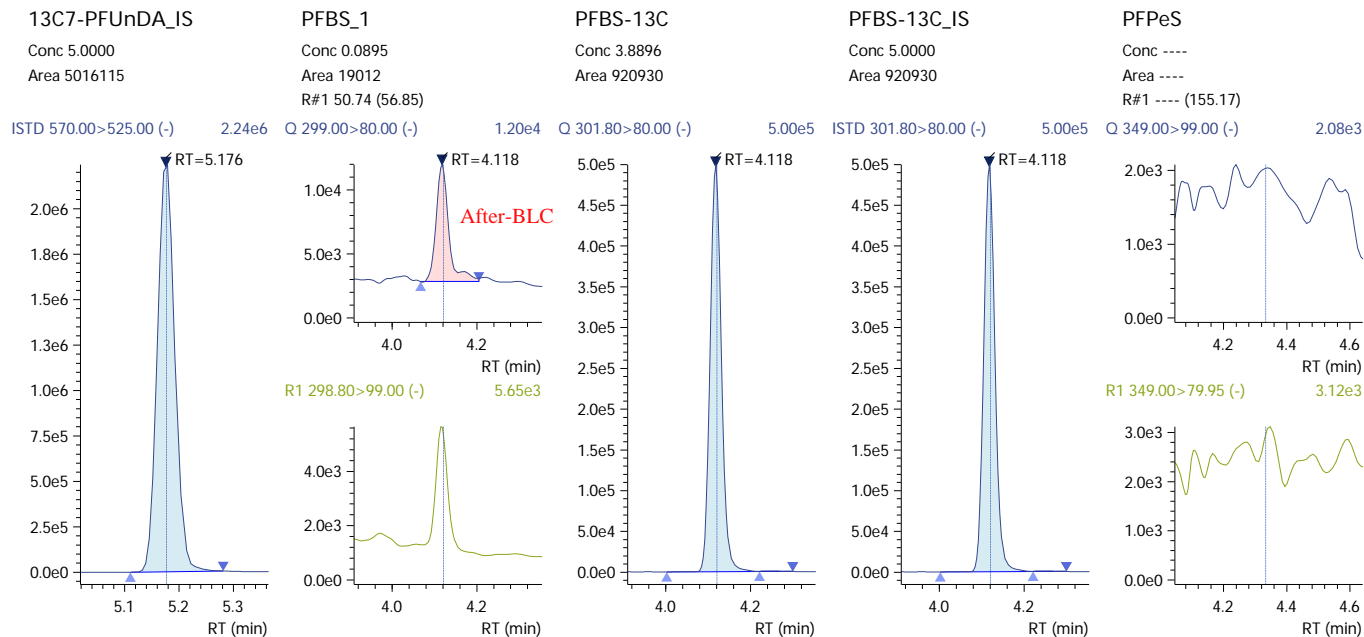
Insight Report

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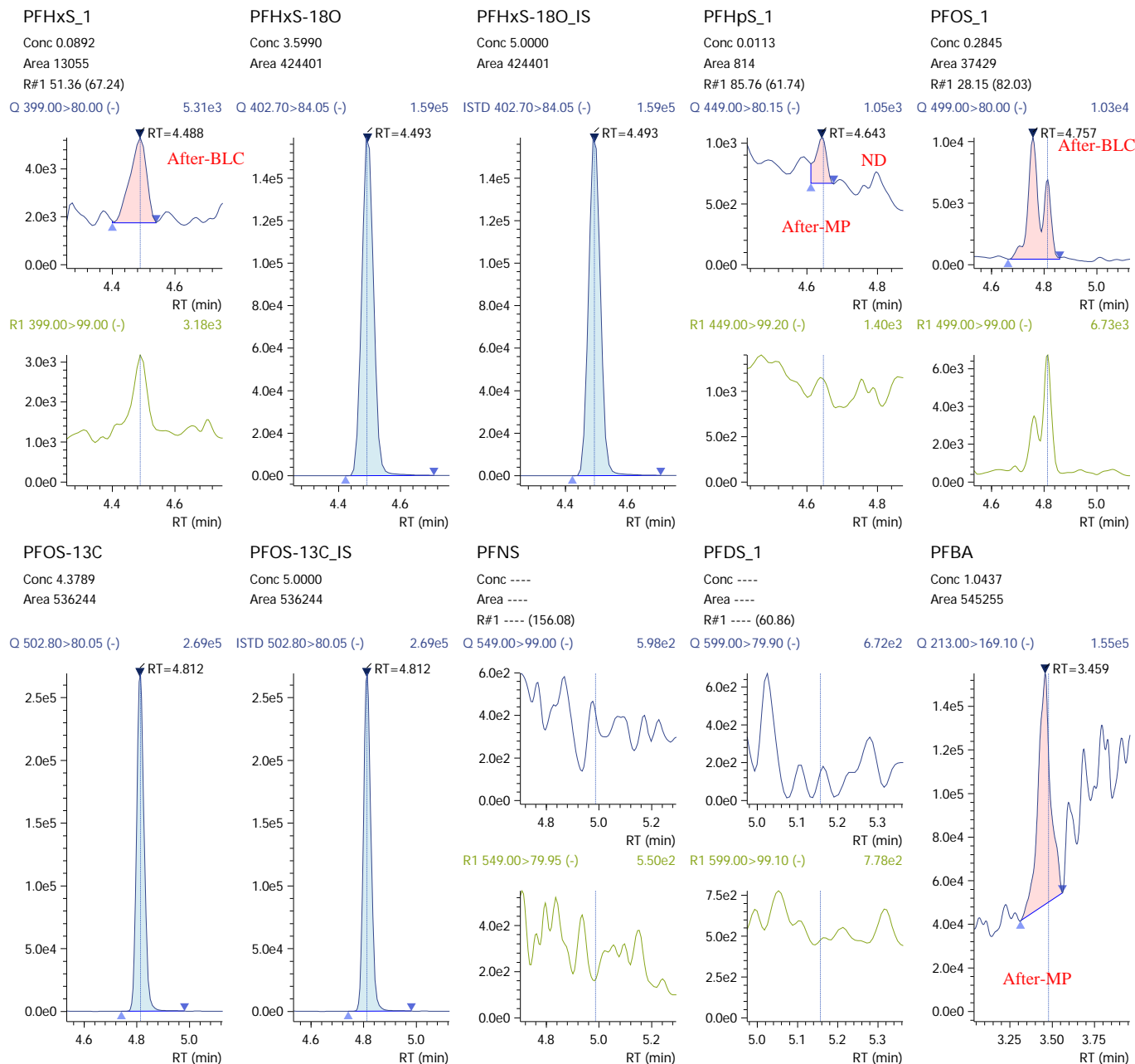
200812_070 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.621	184394	5016115	1	3.3839	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.621	184394	184394	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.732	2651	147830	20	0.0223	ng/mL	----	----
N-EtFOSE-d9	Auto	5.743	147830	5016115	1	3.3102	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.743	147830	147830	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.106	863	371382	21	0.0154	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.098	371382	5016115	1	4.3316	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.098	371382	371382	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	314591	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.187	314591	5016115	1	5.1768	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.187	314591	314591	22	5.0000	ng/mL	----	----
4_2-FTS_1	M	4.300	422	992166	23	0.0022	ng/mL	----	54656.80
4_2-FTS-13C	Auto	4.298	992166	5016115	1	5.6237	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.298	992166	992166	23	5.0000	ng/mL	----	----
6_2-FTS_1	M	4.648	645	737406	24	0.0040	ng/mL	----	80.77
6_2-FTS-13C	Auto	4.647	737406	5016115	1	7.7323	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.647	737406	737406	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	5.004	186	385285	25	0.0032	ng/mL	----	0.00
8_2-FTS-13C	Auto	5.003	385285	5016115	1	5.3384	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.003	385285	385285	25	5.0000	ng/mL	----	----
10_2-FTS_1	ND(W/B)	----	----	385285	25	----	ng/mL	----	----
HPFO_DA	ND(W/B)	----	----	410545	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.384	410545	5016115	1	2.0096	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.384	410545	410545	26	5.0000	ng/mL	----	----



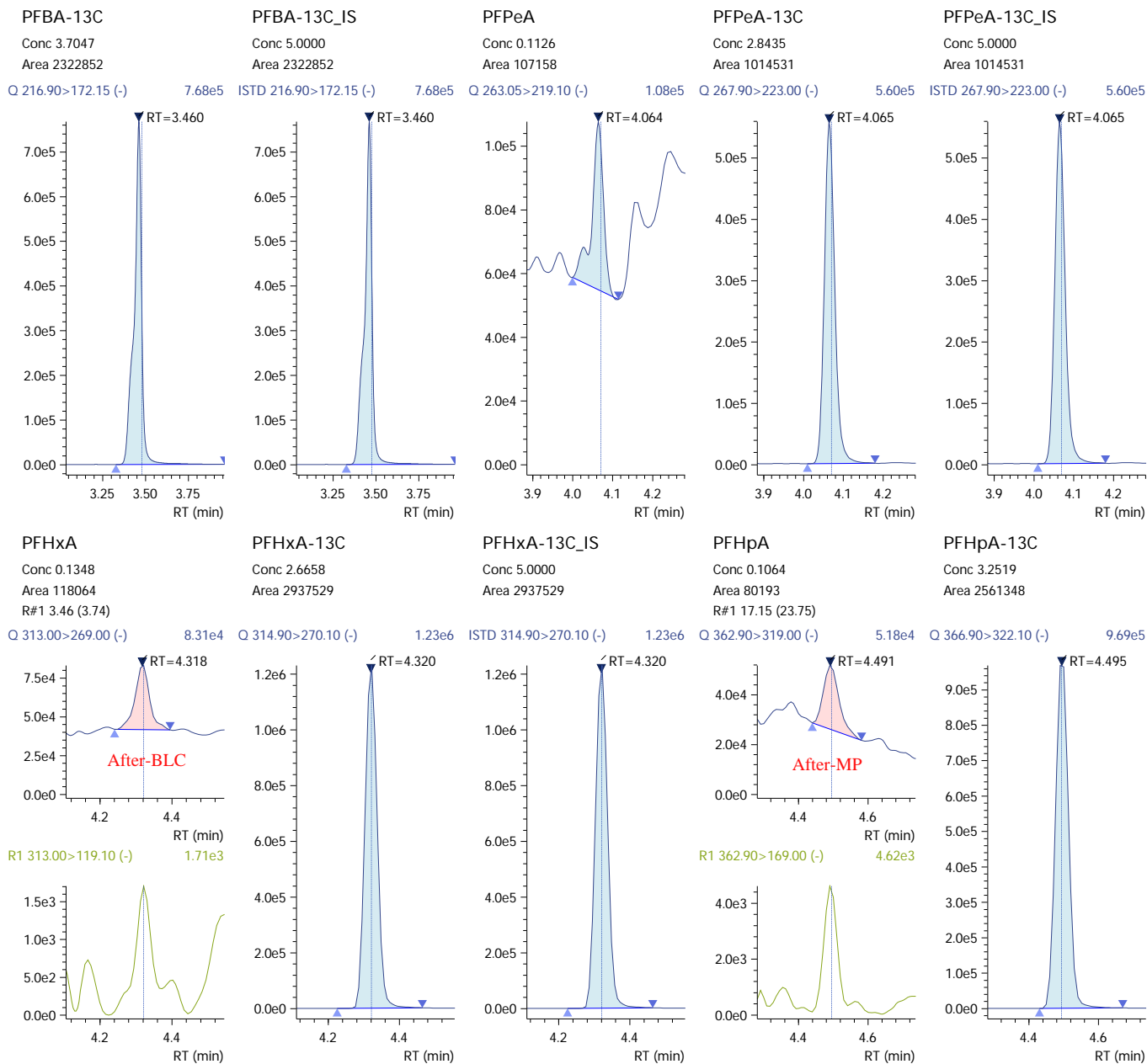
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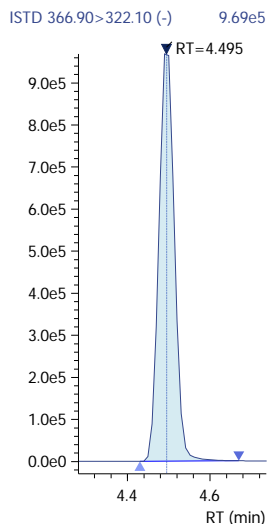
200812_070 (continued)



200812_070 (continued)

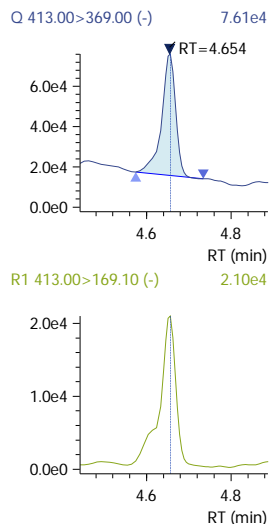
PFHpA-13C_IS

Conc 5.0000
 Area 2561348



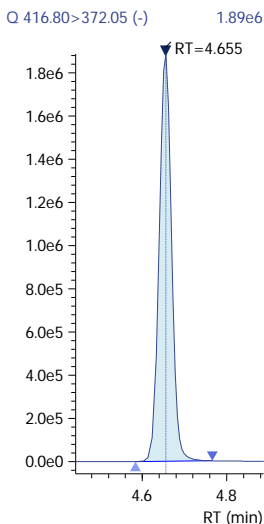
PFOA

Conc 0.1494
 Area 138893
 R#1 33.54 (34.80)



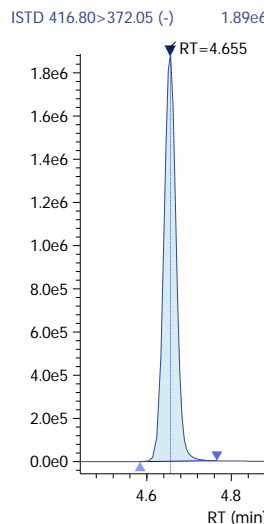
PFOA-13C

Conc 3.4335
 Area 3844899



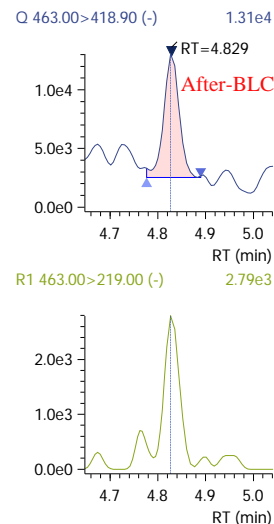
PFOA-13C_IS

Conc 5.0000
 Area 3844899



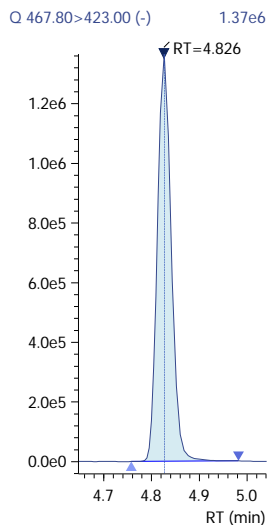
PFNA

Conc 0.0297
 Area 23523
 R#1 25.39 (22.71)



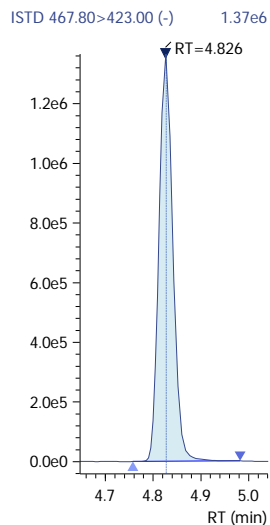
PFNA-13C

Conc 3.6136
 Area 2742198



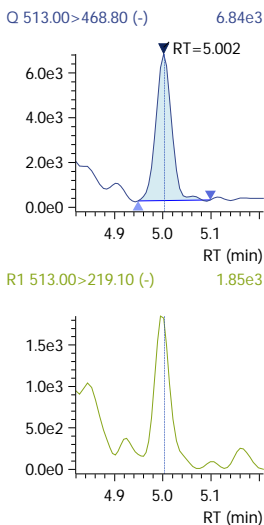
PFNA-13C_IS

Conc 5.0000
 Area 2742198



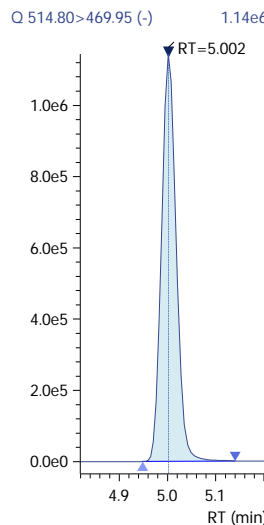
PFDA

Conc 0.0290
 Area 14716
 R#1 25.30 (22.06)



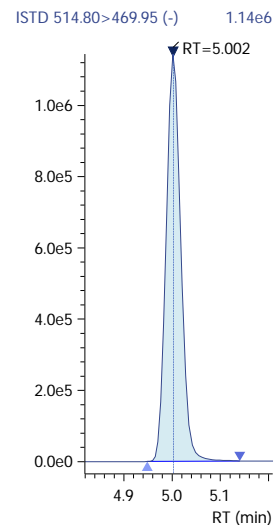
PFDA-13C

Conc 3.4368
 Area 2415811

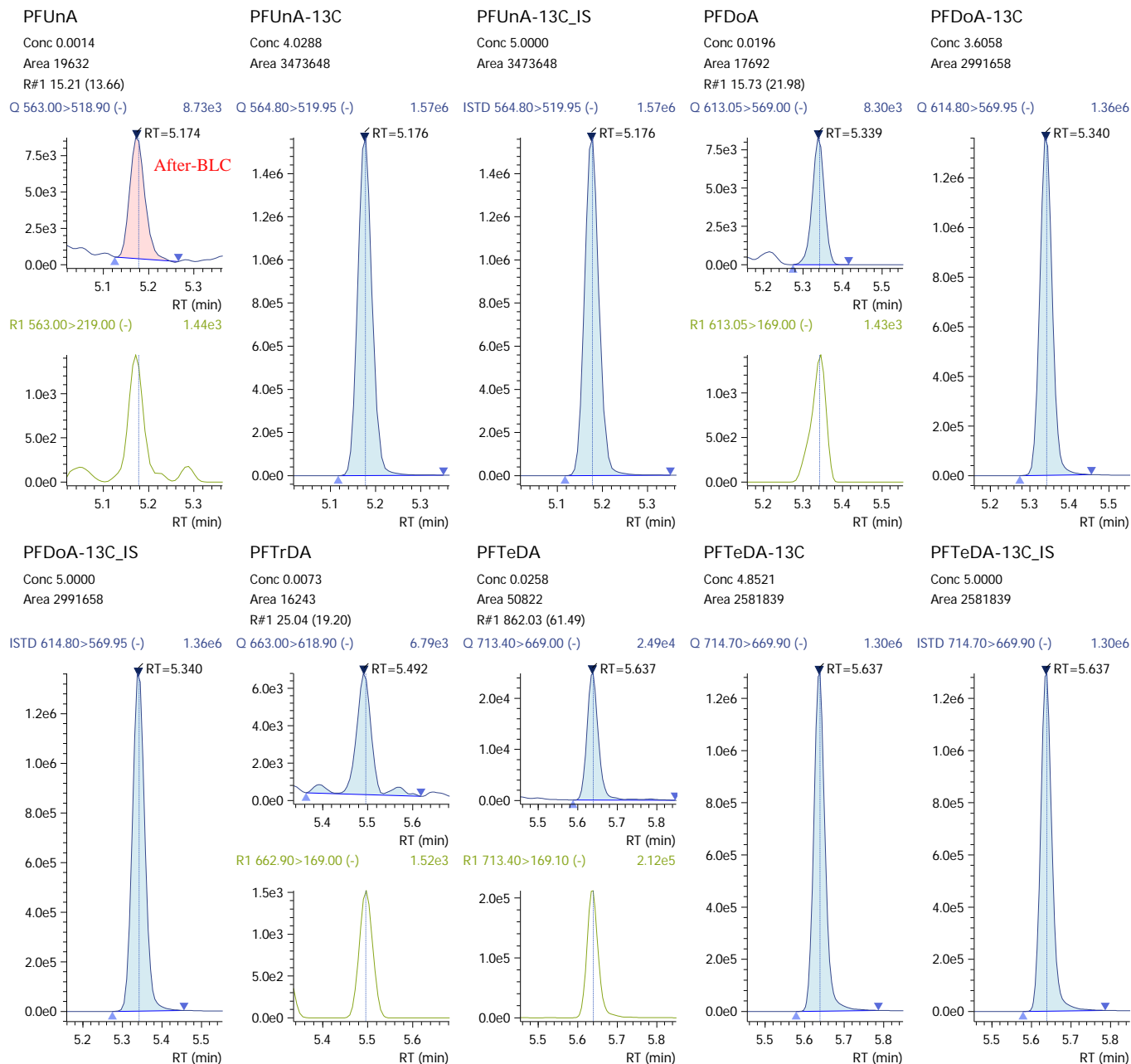


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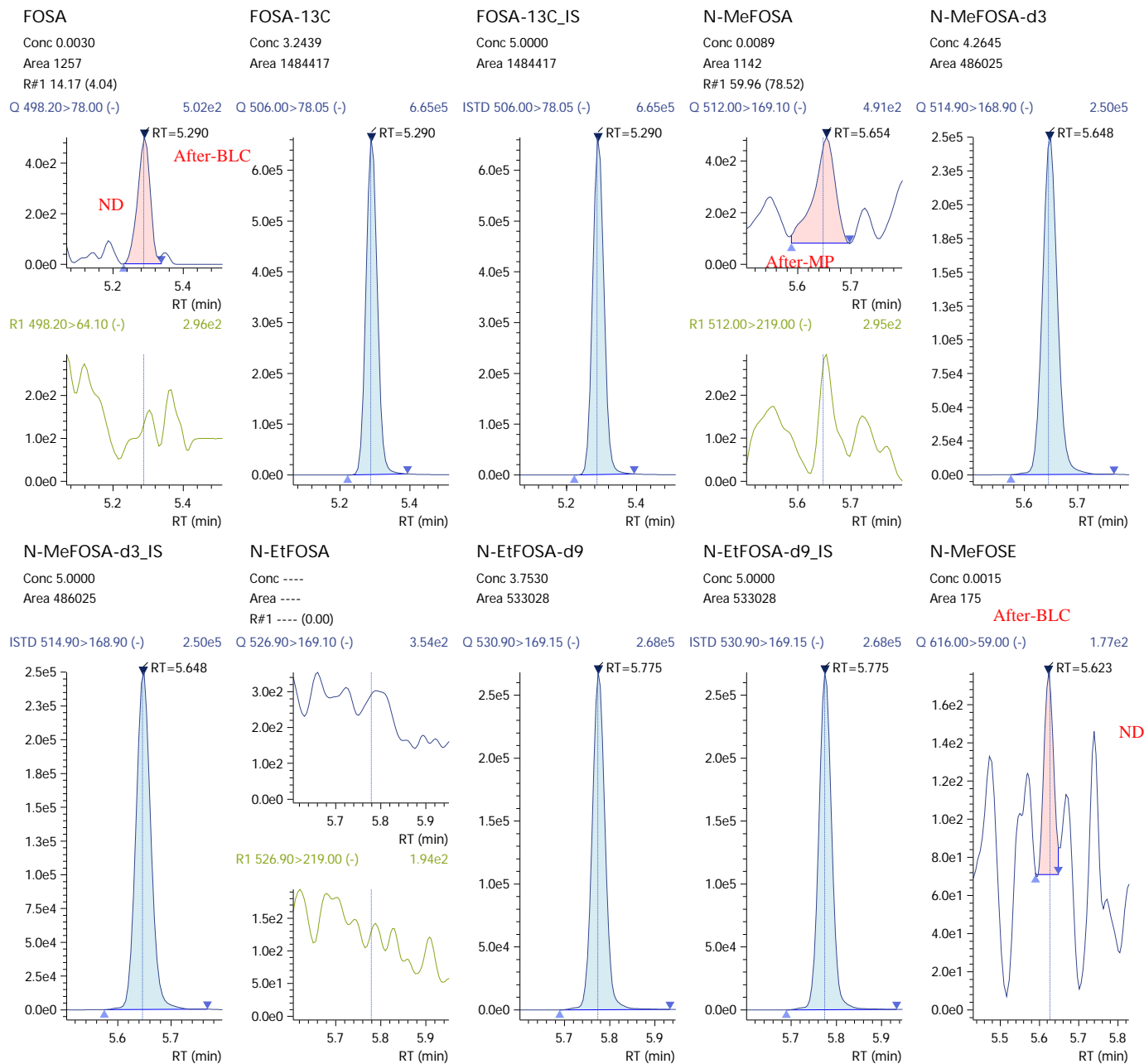
Conc 5.0000
 Area 2415811



200812_070 (continued)



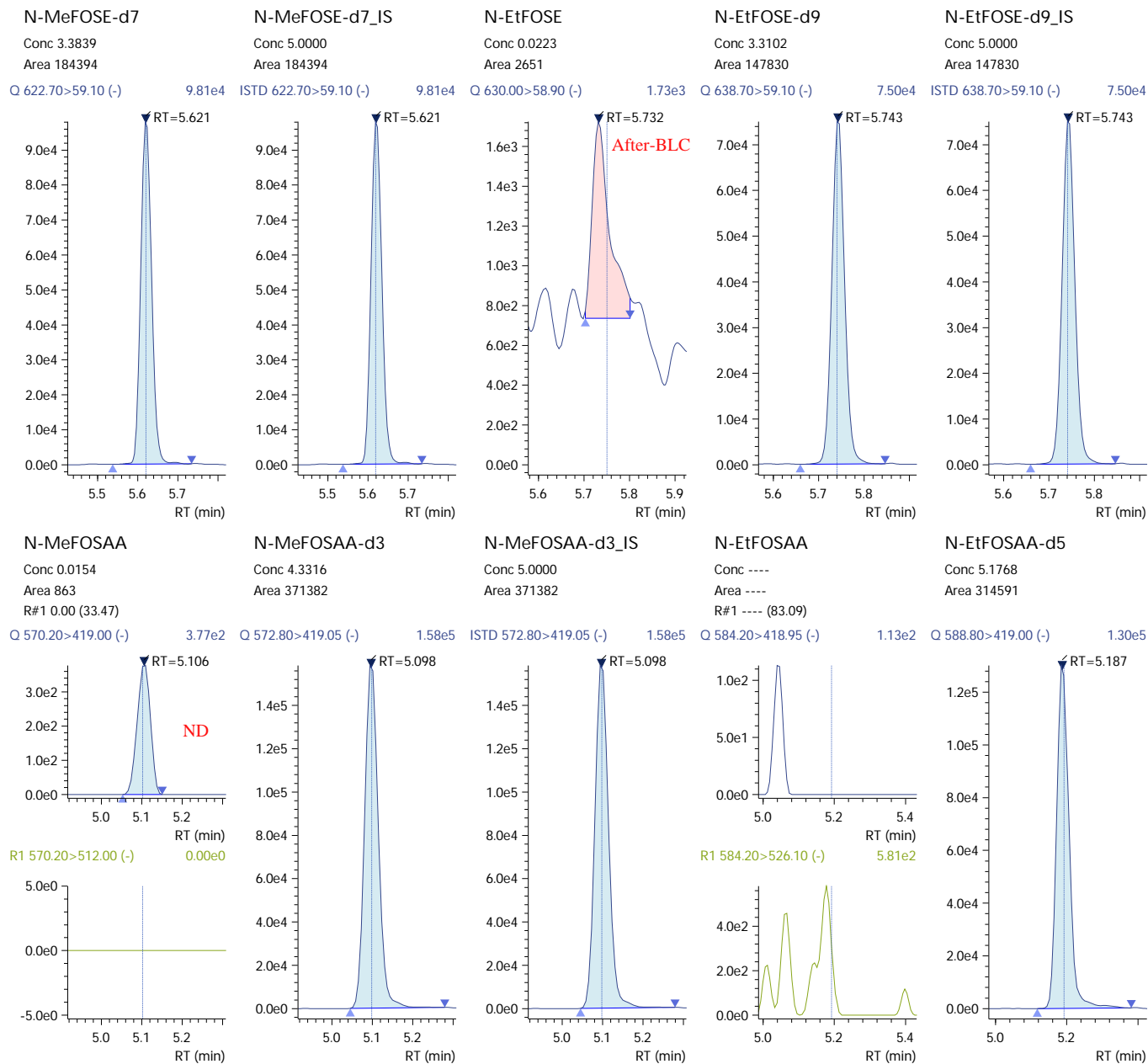
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200812_070 (continued)



Insight Report

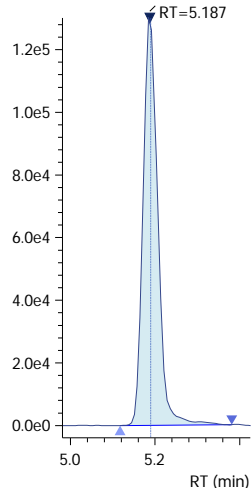
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200812_070 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 314591

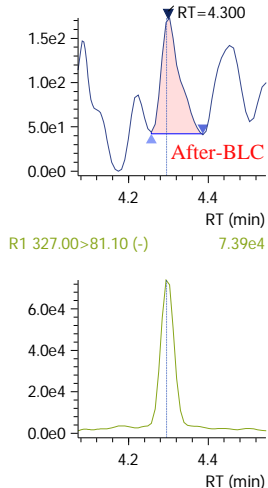
ISTD 588.80>419.00 (-) 1.30e5



4_2-FTS_1

Conc 0.0022
 Area 422
 R#1 54656.80 (54.93)

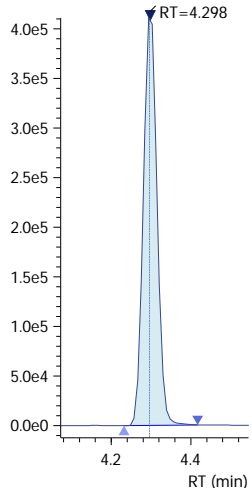
Q 327.00>307.05 (-) 1.73e2



4_2-FTS-13C

Conc 5.6237
 Area 992166

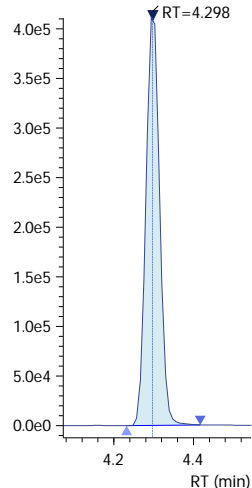
Q 328.80>309.05 (-) 4.11e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 992166

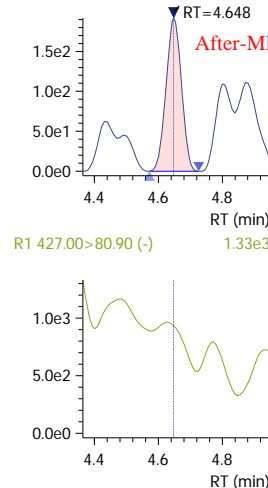
ISTD 328.80>309.05 (-) 4.11e5



6_2-FTS_1

Conc 0.0040
 Area 645
 R#1 80.77 (36.33)

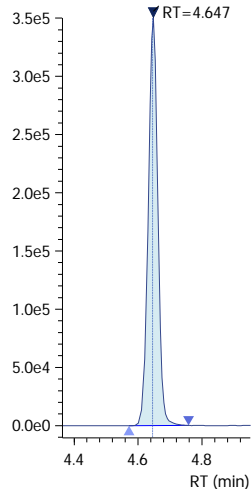
Q 427.00>407.00 (-) 1.92e2



6_2-FTS-13C

Conc 7.7323
 Area 737406

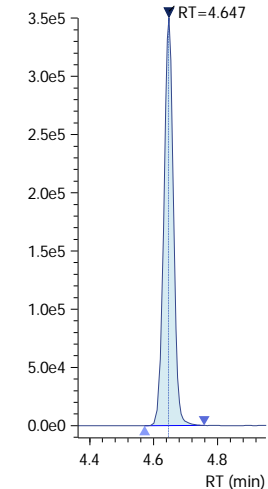
Q 428.90>409.00 (-) 3.50e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 737406

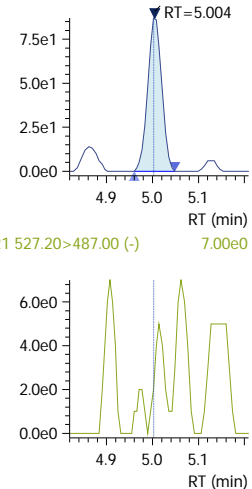
ISTD 428.90>409.00 (-) 3.50e5



8_2-FTS_1

Conc 0.0032
 Area 186
 R#1 0.00 (8.96)

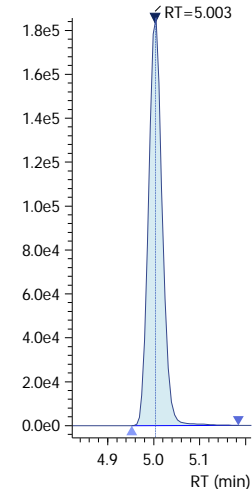
Q 527.10>506.90 (-) 8.70e1



8_2-FTS-13C

Conc 5.3384
 Area 385285

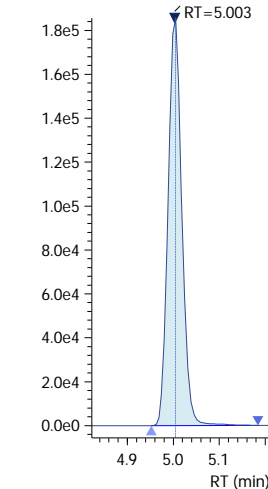
Q 528.80>509.00 (-) 1.86e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 385285

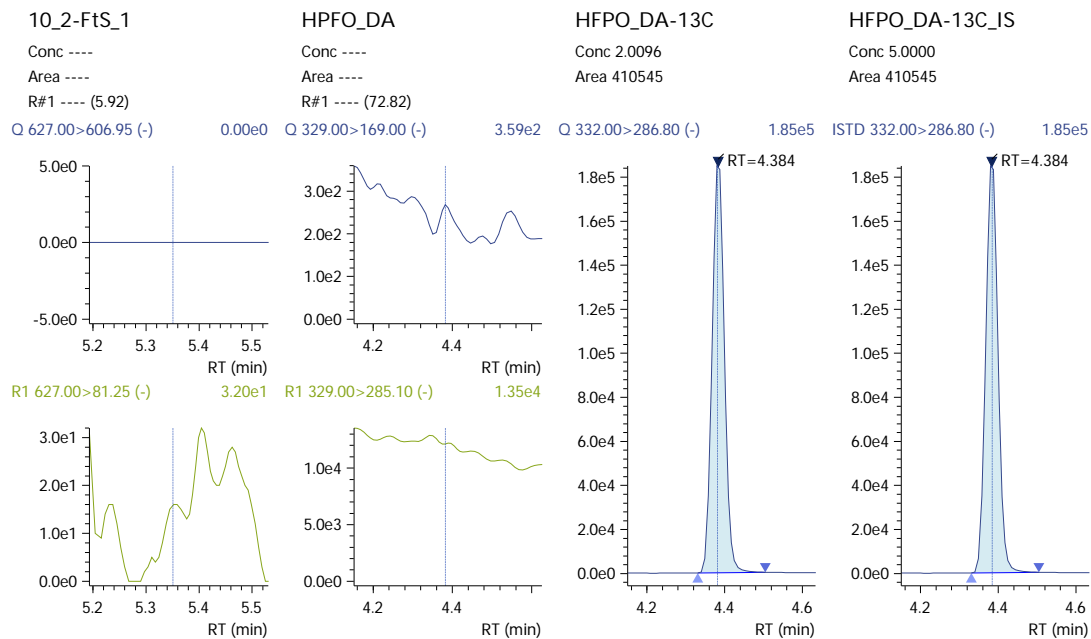
ISTD 528.80>509.00 (-) 1.86e5



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200812_070 (continued)

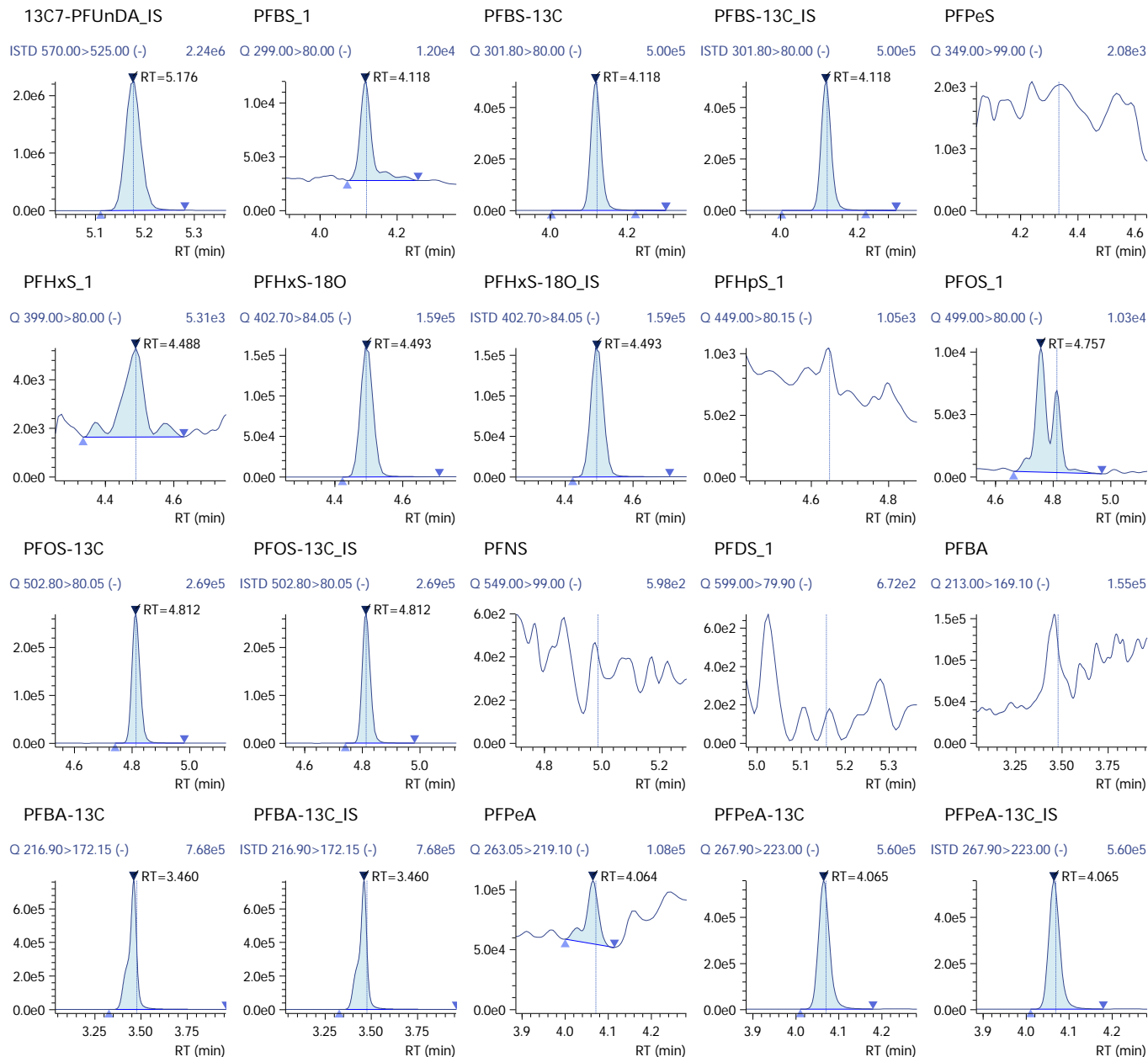


Insight Report

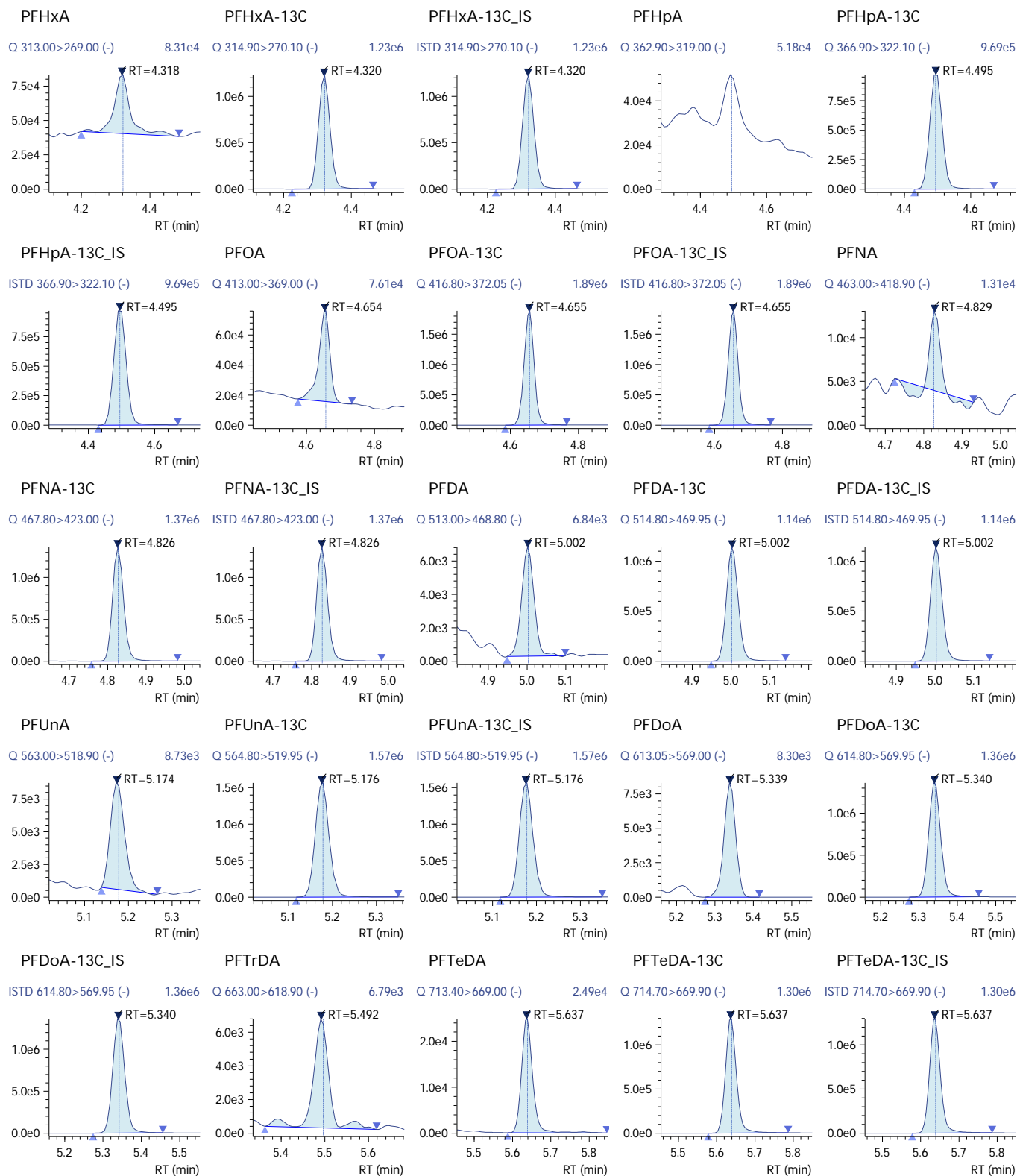
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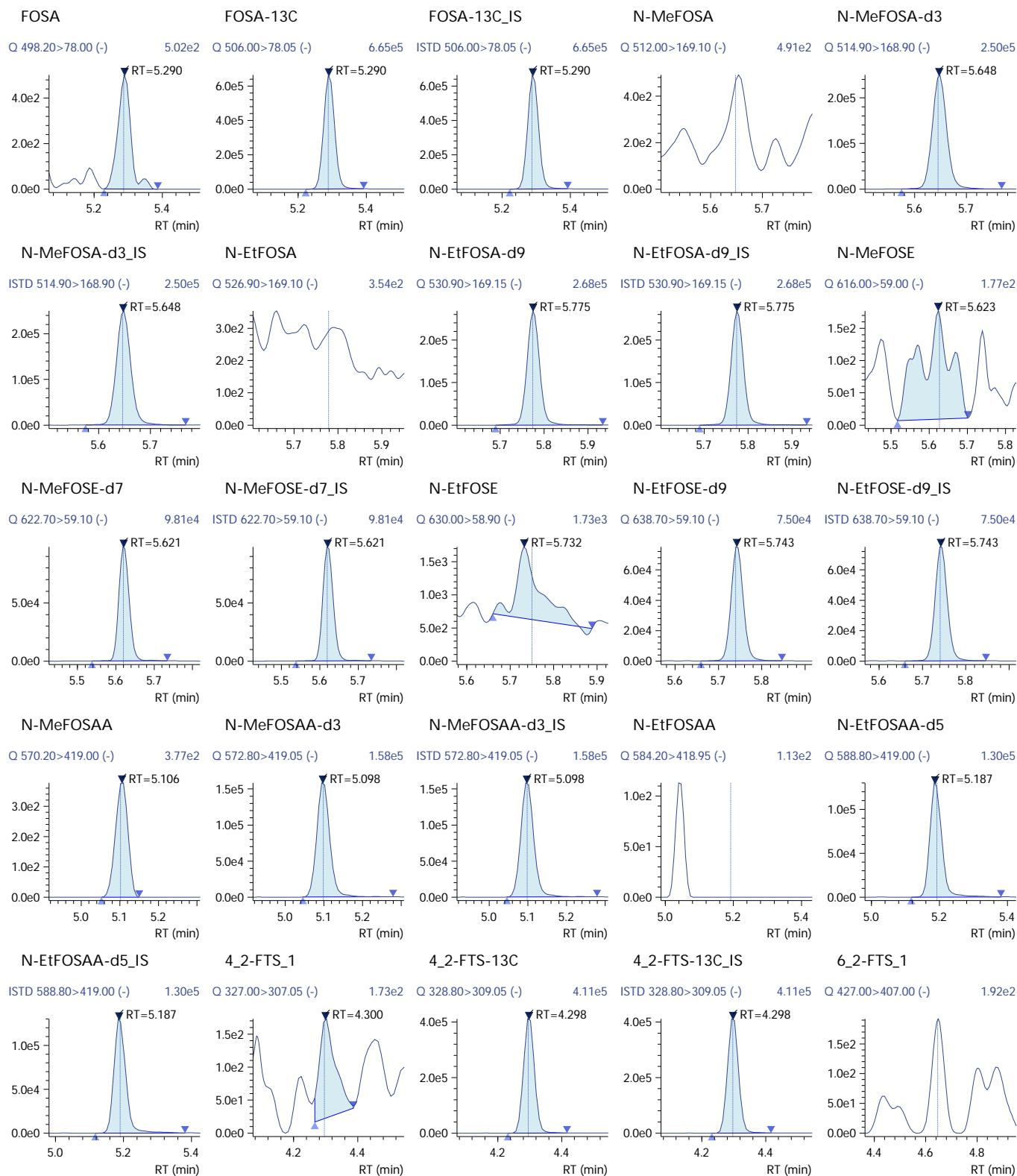
Sample ID: R2006768-001
Date Acquired: 8/13/2020 1:00:25 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_070.lcd
Vial: 14 | Inj. Volume: 15.0000uL | Tray: 3



200812_070 (continued)



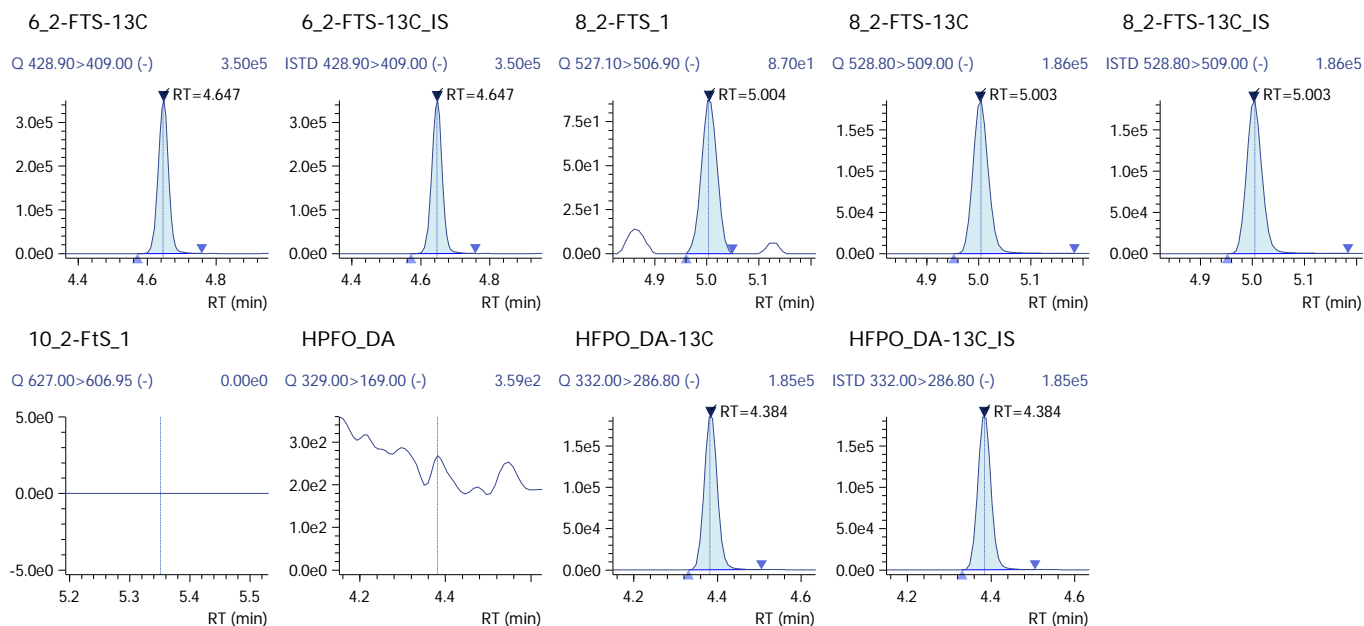
200812_070 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_070 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_073
Lab ID: R2006768-002
RunType: N/A
Matrix: Water

Date Acquired: 8/13/20 01:32
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates		X
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	D5-EtFOSAA	140	12	126	High bias ND

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_073	Instrument: K-LCMS-06
Acqu Date: 8/13/20 01:32	Vial: 13
Run Type: N/A	Dilution: 1
Lab ID: R2006768-002	Raw Units: ng/mL

Bottle ID: R2006768-002.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.169	-0.01	4533879	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.110	-0.01	942997	4.4064	88	20 - 109	Y
18O2-PFHxS	4.485	-0.01	491379	4.6103	92	26 - 122	Y
13C4-PFOS	4.807	-0.01	602877	5.4466	109	25 - 121	Y
13C4-PFBA	3.453	-0.03	2303863	4.0652	81	27 - 124	Y
13C5-PFPeA	4.057	-0.02	1129123	3.5012	70	27 - 138	Y
13C2-PFHxA	4.312	-0.01	2845572	2.8570	57	28 - 132	Y
13C4-PFHpA	4.486	-0.01	3176681	4.4621	89	19 - 139	Y
13C4-PFOA	4.647	-0.01	4238334	4.1874	84	22 - 130	Y
13C5-PFNA	4.819	-0.01	2810932	4.0982	82	20 - 127	Y
13C2-PFDA	4.995	-0.01	2646371	4.1652	83	24 - 125	Y
13C2-PFUnDA	5.169	-0.01	3604859	4.6257	93	22 - 125	Y
13C2-PFDODA	5.334	-0.01	3216679	4.2894	86	19 - 122	Y
13C2-PFTeDA	5.631	-0.01	2622975	5.4538	109	13 - 124	Y
13C8-FOSA	5.284	-0.01	1529793	3.6987	74	18 - 109	Y
D3-MeFOSAA	5.091	-0.01	368471	4.7548	95	9 - 123	Y
D5-EtFOSAA	5.182	-0.01	384553	7.0011	140 *	12 - 126	Y
13C2-6:2 FTS	4.638	-0.01	776609	9.0096	180	10 - 226	Y
13C2-8:2 FTS	4.996	-0.01	377241	5.7829	116	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.110	-0.01	27781	0.1278	3.2	J	Y
Perfluorohexane sulfonic acid (PFHxS)	4.482	-0.01	18043	0.1065	2.7	J	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 11:35

\\alprews001\starlims\LIMSRpts\QuantValidation.rpt

Data File: J:\LCMS06\Data\200812_b3\200812_073
 Acq Date: 8/13/20 01:32
 Run Type: N/A
 Lab ID: R2006768-002

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 13
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	0		0	0	0	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.749	-0.07	71899	0.4861	12		Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.454	-0.03	323820	0.6249	16		Y
Perfluoropentanoic acid (PFPeA)	4.057	-0.02	110170	0.0996	2.5	J	Y
Perfluorohexanoic acid (PFHxA)	4.309	-0.01	111556	0.1301	3.3	U	Y
Perfluoroheptanoic acid (PFHpA)	4.486	-0.01	114863	0.1253	3.1	J	Y
Perfluorooctanoic acid (PFOA)	4.646	-0.01	259185	0.2733	6.8		Y
Perfluorononanoic acid (PFNA)	4.819	-0.01	35978	0.0510	1.3	J	Y
Perfluorodecanoic acid (PFDA)	4.994	-0.01	25790	0.0463	1.2	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.169	-0.01	16261	-0.0046	0	U	Y
Perfluorododecanoic acid (PFDoDA)	5.333	-0.01	18498	0.0186	0.47	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.487	-0.01	16984	0.0081	0.20	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.631	-0.01	46265	0.0089	0.22	U	Y
Perfluorooctane sulfonamide (FOSA)	5.286	-0.01	3099	0.0072	0.18	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.082	-0.02	741	0.0133	0.33	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.168	-0.03	422	0.0095	0.24	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.645	-0.01	650	0.0038	0.095	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.997	-0.01	200	0.0035	0.088	U	Y

Prep Amount: 320.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_073

Sample ID: R2006768-002
 Date Acquired: 8/13/2020 1:32:30 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_073.lcd
 Vial: 17 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.169	4533879	4533879	1	5.0000	ng/mL	----	----
PFBS_1	M	4.110	27781	942997	2	0.1278	ng/mL	----	53.09
PFBS-13C	Auto	4.110	942997	4533879	1	4.4064	ng/mL	----	----
PFBS-13C_IS	Auto	4.110	942997	942997	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	942997	2	----	ng/mL	----	----
PFHxS_1	M	4.482	18043	491379	3	0.1065	ng/mL	----	50.96
PFHxS-18O	Auto	4.485	491379	4533879	1	4.6103	ng/mL	----	----
PFHxS-18O_IS	Auto	4.485	491379	491379	3	5.0000	ng/mL	----	----
PFHpS_1	ND(W/B)	----	----	491379	3	----	ng/mL	----	----
PFOS_1	Auto	4.749	71899	602877	4	0.4861	ng/mL	----	30.30
PFOS-13C	Auto	4.807	602877	4533879	1	5.4466	ng/mL	----	----
PFOS-13C_IS	Auto	4.807	602877	602877	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	602877	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	602877	4	----	ng/mL	----	----
PFBA	Auto	3.454	323820	2303863	5	0.6249	ng/mL	----	----
PFBA-13C	Auto	3.453	2303863	4533879	1	4.0652	ng/mL	----	----
PFBA-13C_IS	Auto	3.453	2303863	2303863	5	5.0000	ng/mL	----	----
PFPeA	M	4.057	110170	1129123	6	0.0996	ng/mL	----	----
PFPeA-13C	Auto	4.057	1129123	4533879	1	3.5012	ng/mL	----	----
PFPeA-13C_IS	Auto	4.057	1129123	1129123	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.309	111556	2845572	7	0.1301	ng/mL	----	5.47
PFHxA-13C	Auto	4.312	2845572	4533879	1	2.8570	ng/mL	----	----
PFHxA-13C_IS	Auto	4.312	2845572	2845572	7	5.0000	ng/mL	----	----
PFHpA	M	4.486	114863	3176681	8	0.1253	ng/mL	----	18.96
PFHpA-13C	Auto	4.486	3176681	4533879	1	4.4621	ng/mL	----	----
PFHpA-13C_IS	Auto	4.486	3176681	3176681	8	5.0000	ng/mL	----	----
PFOA	Auto	4.646	259185	4238334	9	0.2733	ng/mL	----	35.51
PFOA-13C	Auto	4.647	4238334	4533879	1	4.1874	ng/mL	----	----
PFOA-13C_IS	Auto	4.647	4238334	4238334	9	5.0000	ng/mL	----	----
PFNA	M	4.819	35978	2810932	10	0.0510	ng/mL	----	33.22
PFNA-13C	Auto	4.819	2810932	4533879	1	4.0982	ng/mL	----	----
PFNA-13C_IS	Auto	4.819	2810932	2810932	10	5.0000	ng/mL	----	----
PFDA	M	4.994	25790	2646371	11	0.0463	ng/mL	----	22.65
PFDA-13C	Auto	4.995	2646371	4533879	1	4.1652	ng/mL	----	----
PFDA-13C_IS	Auto	4.995	2646371	2646371	11	5.0000	ng/mL	----	----
PFUnA	M	5.169	16261	3604859	12	-0.0046	ng/mL	----	15.39
PFUnA-13C	Auto	5.169	3604859	4533879	1	4.6257	ng/mL	----	----
PFUnA-13C_IS	Auto	5.169	3604859	3604859	12	5.0000	ng/mL	----	----
PFDaA	M	5.333	18498	3216679	13	0.0186	ng/mL	----	36.20
PFDaA-13C	Auto	5.334	3216679	4533879	1	4.2894	ng/mL	----	----
PFDaA-13C_IS	Auto	5.334	3216679	3216679	13	5.0000	ng/mL	----	----
PFTrDA	M	5.487	16984	2622975	14	0.0081	ng/mL	----	12.37
PFTeDA	Auto	5.631	46265	2622975	14	0.0089	ng/mL	----	975.96
PFTeDA-13C	Auto	5.631	2622975	4533879	1	5.4538	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.631	2622975	2622975	14	5.0000	ng/mL	----	----
FOSA	M	5.286	3099	1529793	16	0.0072	ng/mL	----	0.00
FOSA-13C	Auto	5.284	1529793	4533879	1	3.6987	ng/mL	----	----
FOSA-13C_IS	Auto	5.284	1529793	1529793	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.649	814	509961	17	0.0061	ng/mL	----	108.37
N-MeFOSA-d3	Auto	5.643	509961	4533879	1	4.9504	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.643	509961	509961	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	538662	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.770	538662	4533879	1	4.1960	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.770	538662	538662	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.623	276	196132	19	0.0023	ng/mL	----	----

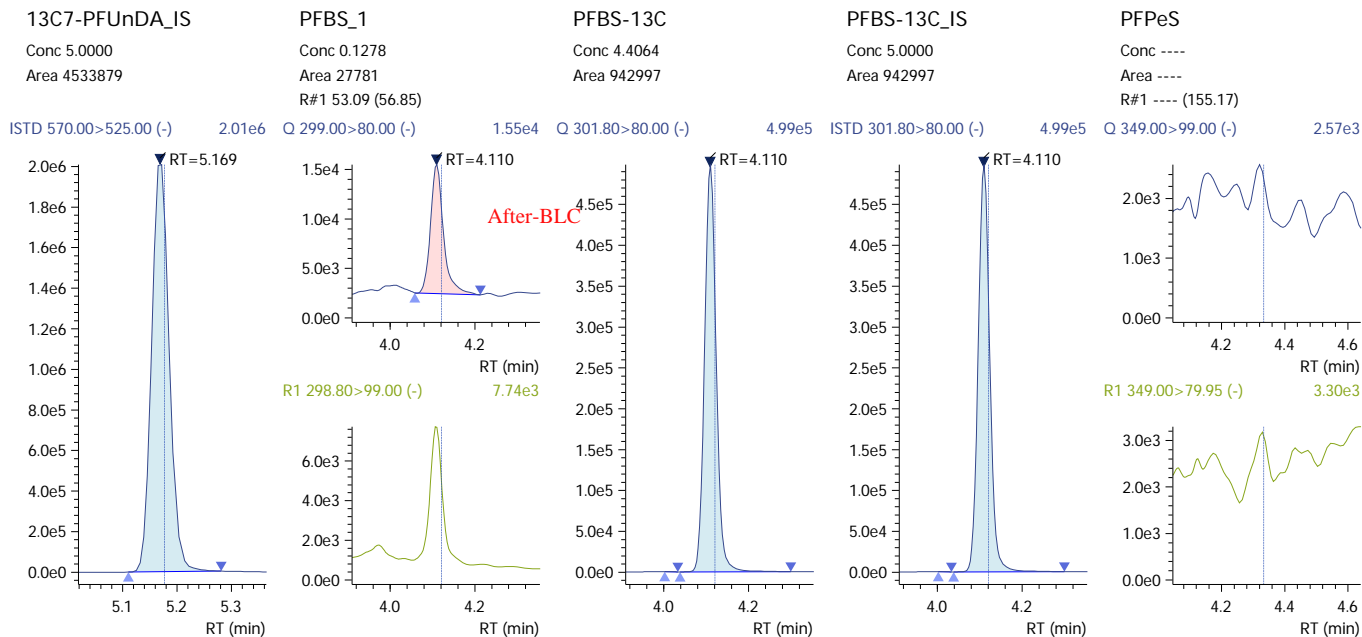
Insight Report

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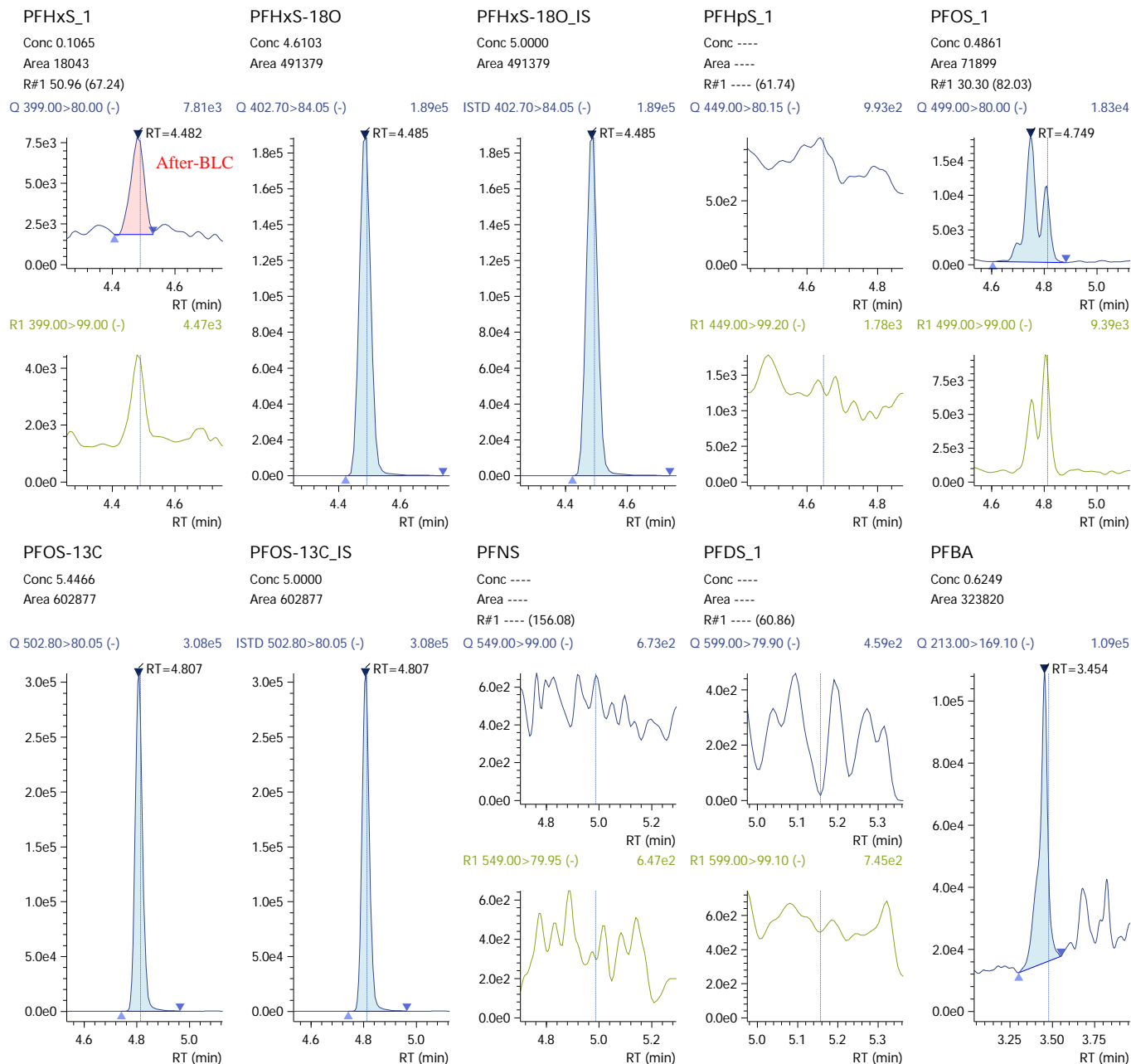
200812_073 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.616	196132	4533879	1	3.9821	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.616	196132	196132	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.754	934	161110	20	0.0072	ng/mL	----	----
N-EtFOSE-d9	Auto	5.738	161110	4533879	1	3.9912	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.738	161110	161110	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.082	741	368471	21	0.0133	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.091	368471	4533879	1	4.7548	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.091	368471	368471	21	5.0000	ng/mL	----	----
N-EtFOSAA	M	5.168	422	384553	22	0.0095	ng/mL	----	0.00
N-EtFOSAA-d5	Auto	5.182	384553	4533879	1	7.0011	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.182	384553	384553	22	5.0000	ng/mL	----	----
4_2-FTS_1	M	4.286	581	969860	23	0.0031	ng/mL	----	39209.14
4_2-FTS-13C	Auto	4.289	969860	4533879	1	6.0820	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.289	969860	969860	23	5.0000	ng/mL	----	----
6_2-FTS_1	M	4.645	650	776609	24	0.0038	ng/mL	----	26.07
6_2-FTS-13C	Auto	4.638	776609	4533879	1	9.0096	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.638	776609	776609	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	4.997	200	377241	25	0.0035	ng/mL	----	2.11
8_2-FTS-13C	M	4.996	377241	4533879	1	5.7829	ng/mL	----	----
8_2-FTS-13C_IS	M	4.996	377241	377241	25	5.0000	ng/mL	----	----
10_2-FTS_1	ND(W/B)	----	----	377241	25	----	ng/mL	----	----
HPFO_DA	ND(W/B)	----	----	483111	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.375	483111	4533879	1	2.6163	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.375	483111	483111	26	5.0000	ng/mL	----	----



200812_073 (continued)

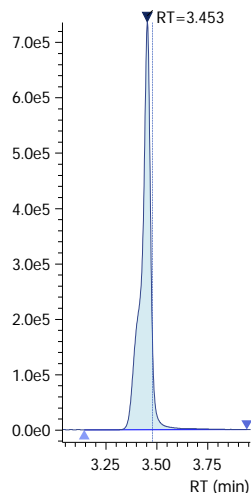


200812_073 (continued)

PFBA-13C

Conc 4.0652
Area 2303863

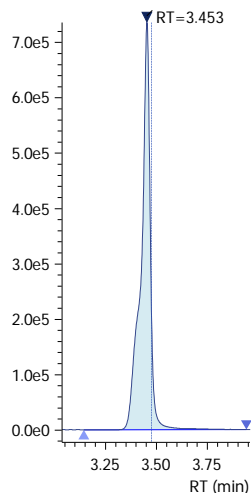
Q 216.90>172.15 (-) 7.36e5



PFBA-13C_IS

Conc 5.0000
Area 2303863

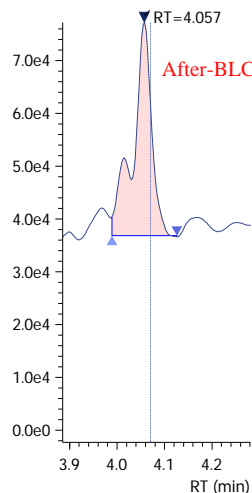
ISTD 216.90>172.15 (-) 7.36e5



PFPeA

Conc 0.0996
Area 110170

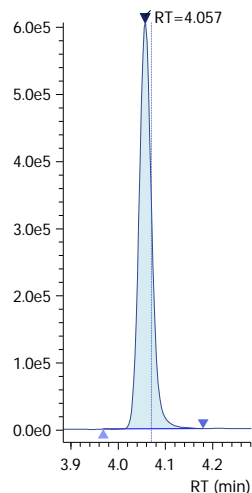
Q 263.05>219.10 (-) 7.72e4



PFPeA-13C

Conc 3.5012
Area 1129123

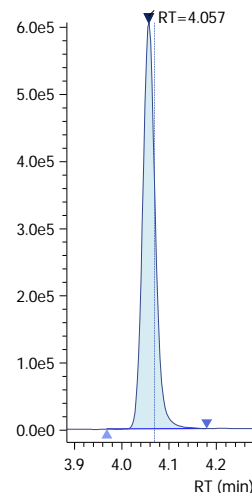
Q 267.90>223.00 (-) 6.07e5



PFPeA-13C_IS

Conc 5.0000
Area 1129123

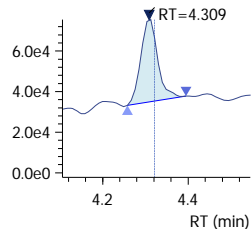
ISTD 267.90>223.00 (-) 6.07e5



PFHxA

Conc 0.1301
Area 111556
R#1 5.47 (3.74)

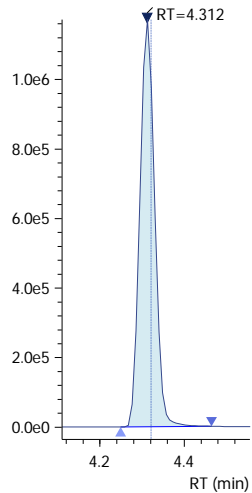
Q 313.00>269.00 (-) 7.55e4



PFHxA-13C

Conc 2.8570
Area 2845572

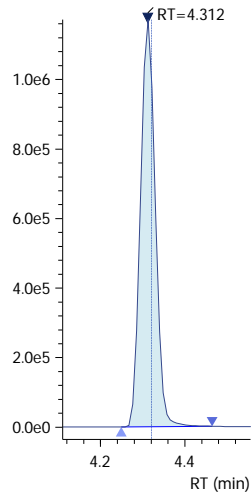
Q 314.90>270.10 (-) 1.17e6



PFHxA-13C_IS

Conc 5.0000
Area 2845572

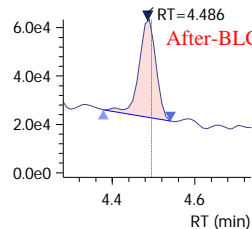
ISTD 314.90>270.10 (-) 1.17e6



PFHpA

Conc 0.1253
Area 114863
R#1 18.96 (23.75)

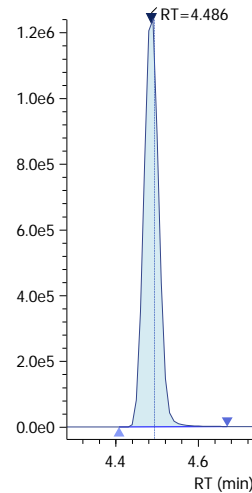
Q 362.90>319.00 (-) 6.34e4



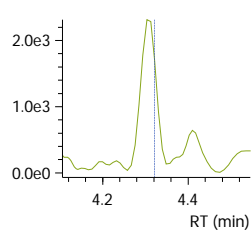
PFHpA-13C

Conc 4.4621
Area 3176681

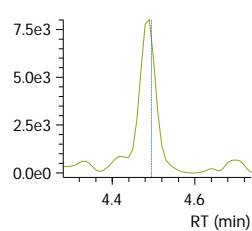
Q 366.90>322.10 (-) 1.24e6



R1 313.00>119.10 (-) 2.32e3



R1 362.90>169.00 (-) 8.02e3

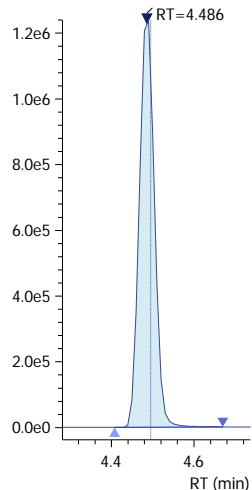


200812_073 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 3176681

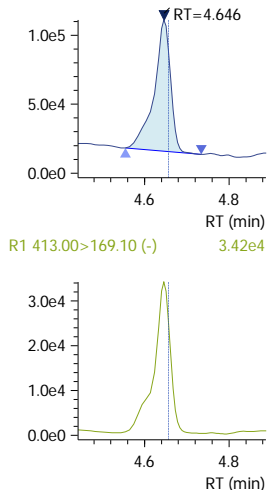
ISTD 366.90>322.10 (-) 1.24e6



PFOA

Conc 0.2733
Area 259185
R#1 35.51 (34.80)

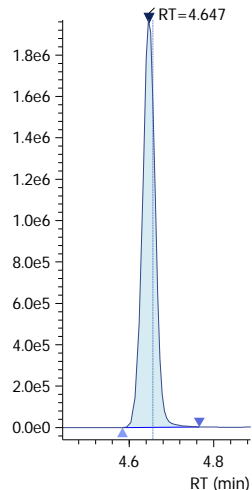
Q 413.00>369.00 (-) 1.11e5



PFOA-13C

Conc 4.1874
Area 4238334

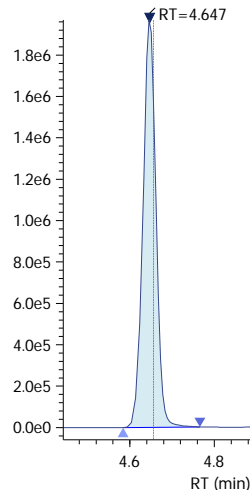
Q 416.80>372.05 (-) 1.97e6



PFOA-13C_IS

Conc 5.0000
Area 4238334

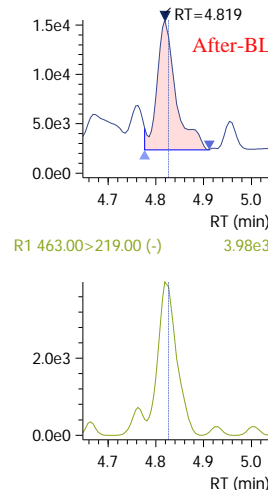
ISTD 416.80>372.05 (-) 1.97e6



PFNA

Conc 0.0510
Area 35978
R#1 33.22 (22.71)

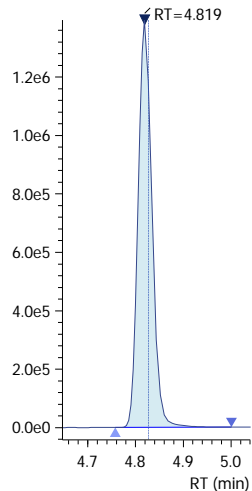
Q 463.00>418.90 (-) 1.55e4



PFNA-13C

Conc 4.0982
Area 2810932

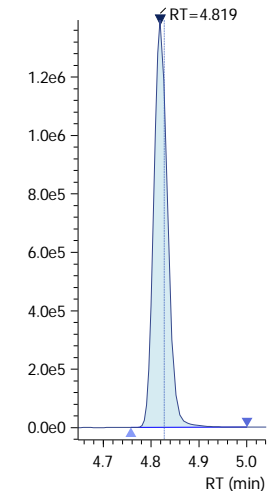
Q 467.80>423.00 (-) 1.40e6



PFNA-13C_IS

Conc 5.0000
Area 2810932

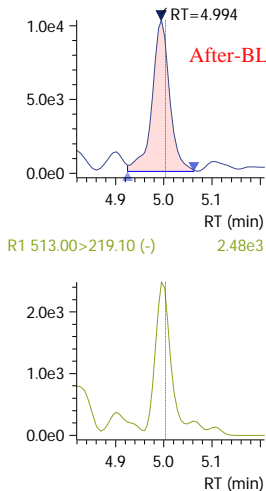
ISTD 467.80>423.00 (-) 1.40e6



PFDA

Conc 0.0463
Area 25790
R#1 22.65 (22.06)

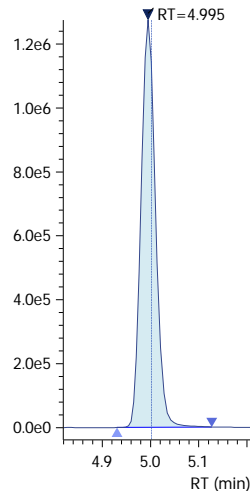
Q 513.00>468.80 (-) 1.04e4



PFDA-13C

Conc 4.1652
Area 2646371

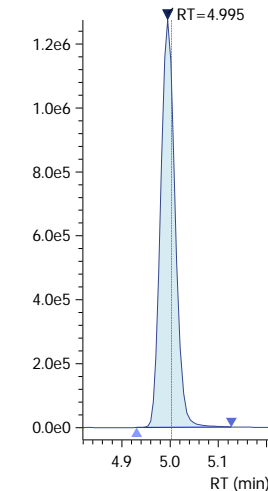
Q 514.80>469.95 (-) 1.28e6



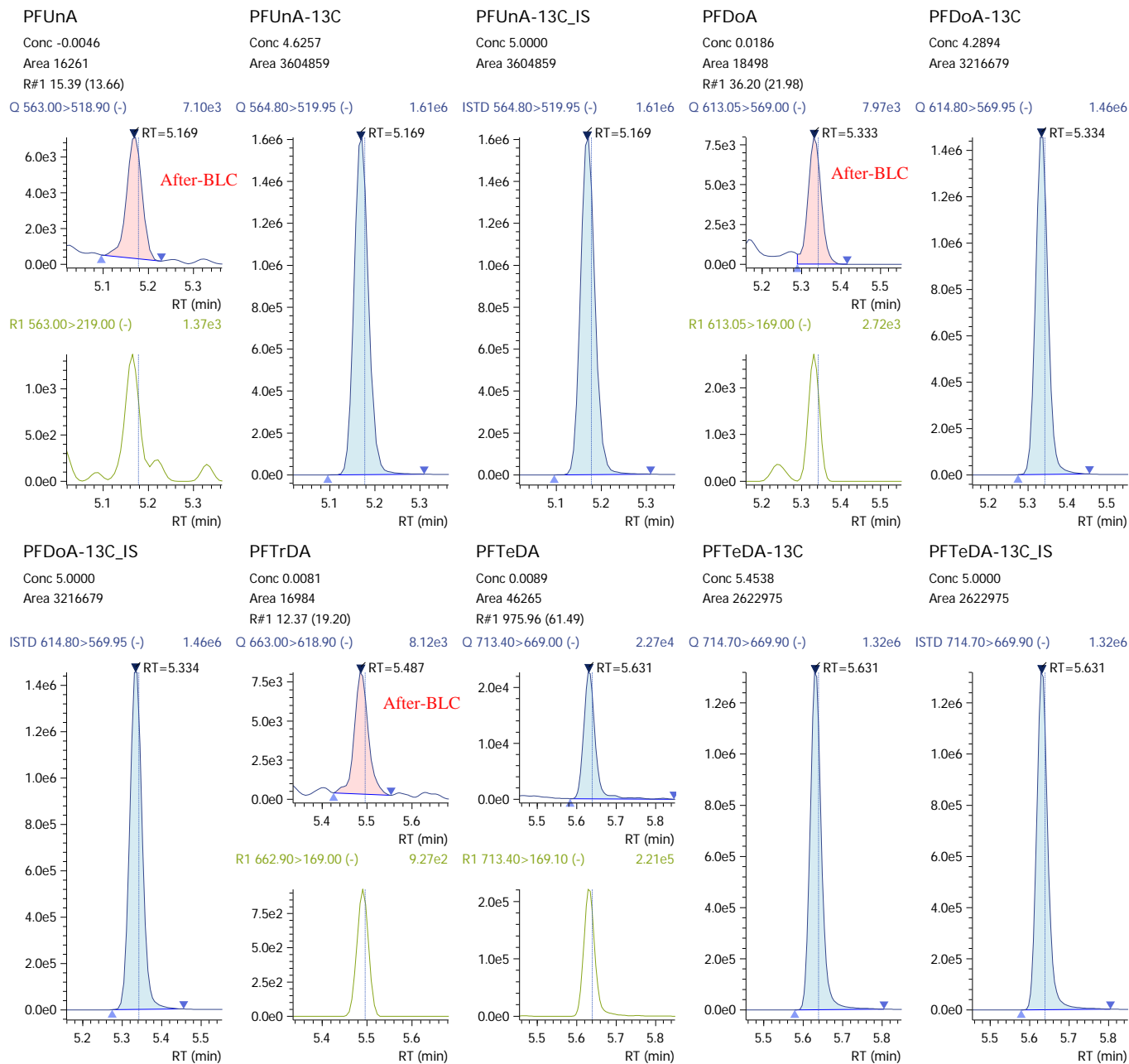
PFDA-13C_IS

Conc 5.0000
Area 2646371

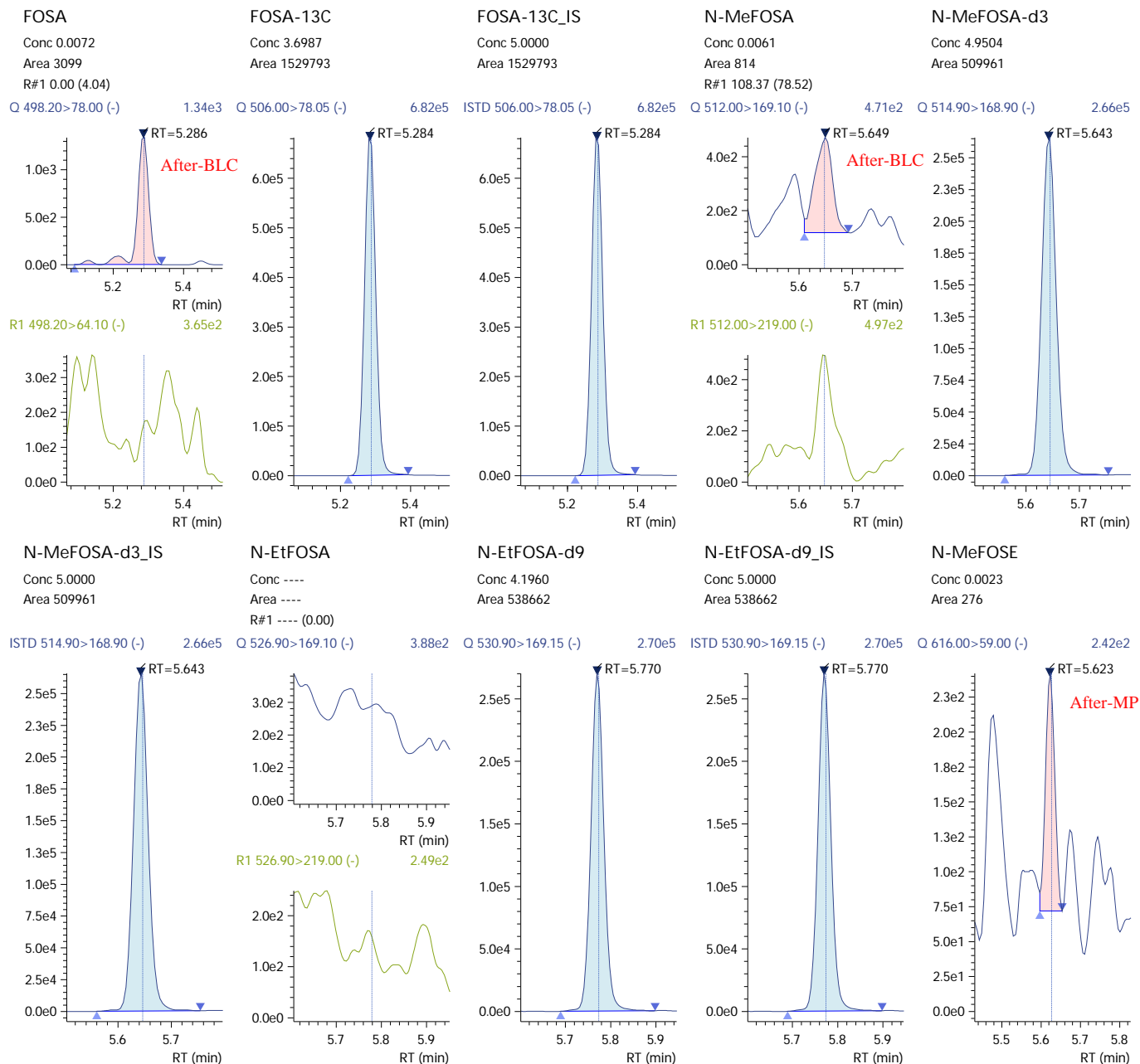
ISTD 514.80>469.95 (-) 1.28e6



200812_073 (continued)



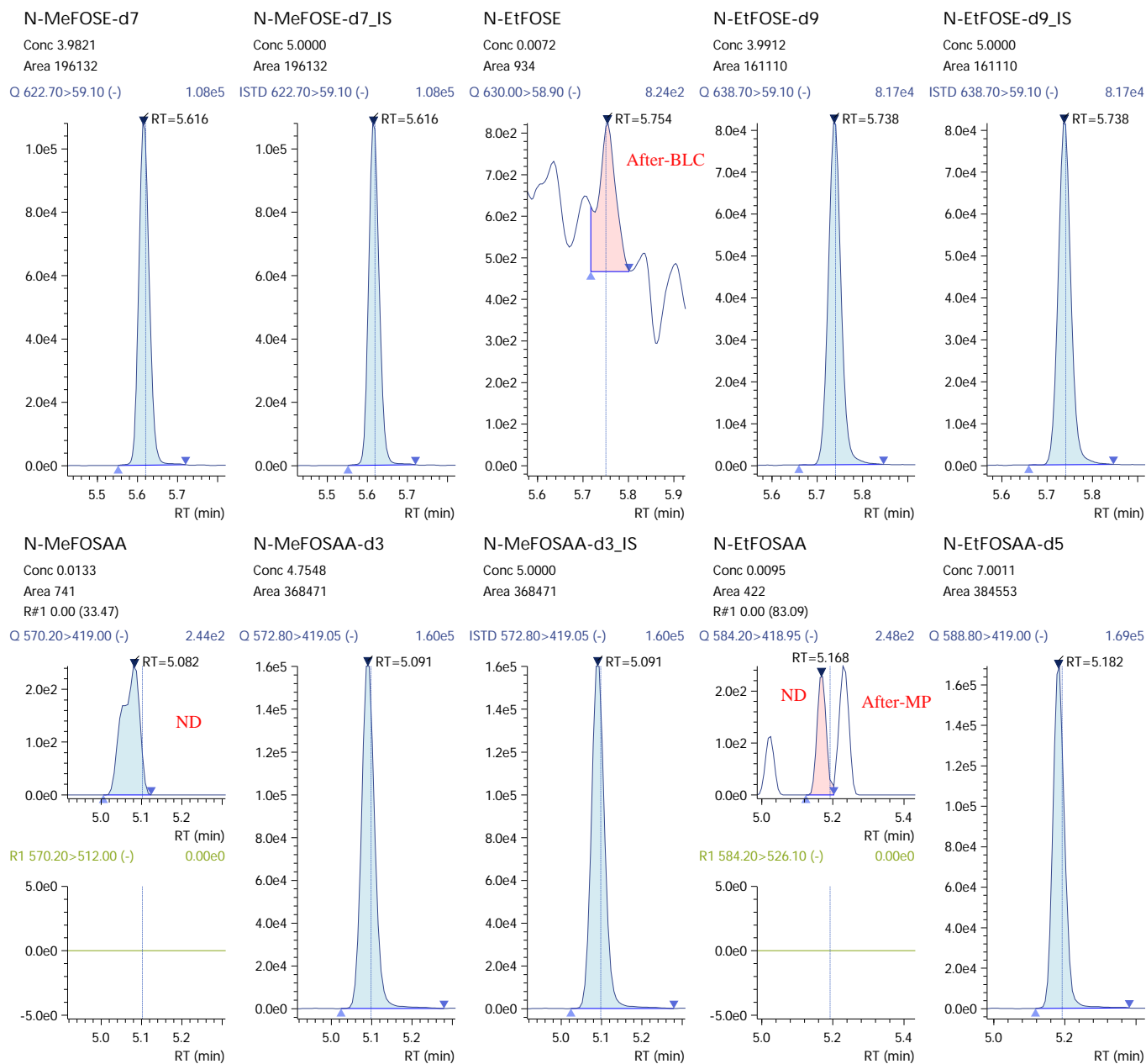
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200812_073 (continued)



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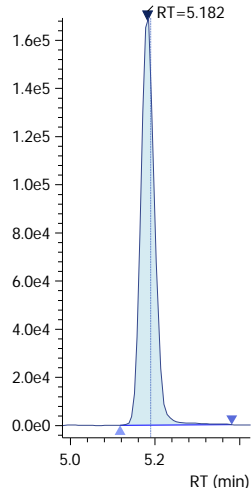
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200812_073 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 384553

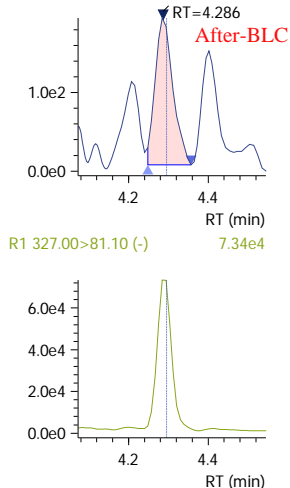
ISTD 588.80>419.00 (-) 1.69e5



4_2-FTS_1

Conc 0.0031
 Area 581
 R#1 39209.14 (54.93)

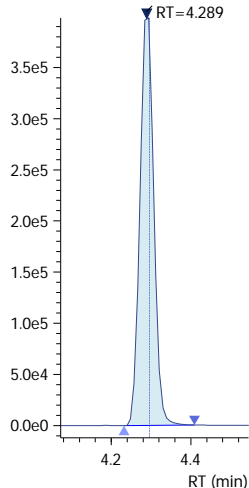
Q 327.00>307.05 (-) 1.95e2



4_2-FTS-13C

Conc 6.0820
 Area 969860

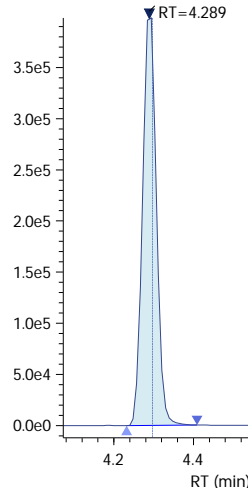
Q 328.80>309.05 (-) 3.98e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 969860

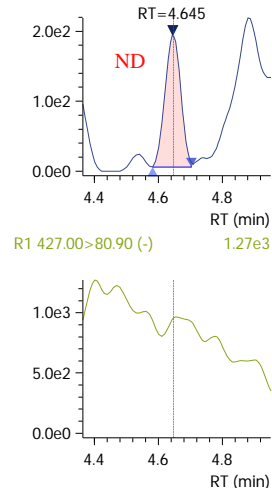
ISTD 328.80>309.05 (-) 3.98e5



6_2-FTS_1

Conc 0.0038
 Area 650
 R#1 26.07 (36.33) After-BLC

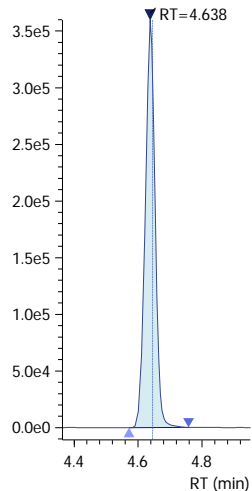
Q 427.00>407.00 (-) 2.19e2



6_2-FTS-13C

Conc 9.0096
 Area 776609

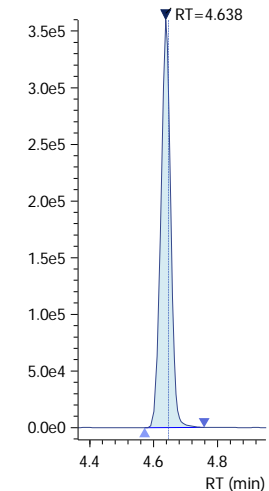
Q 428.90>409.00 (-) 3.60e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 776609

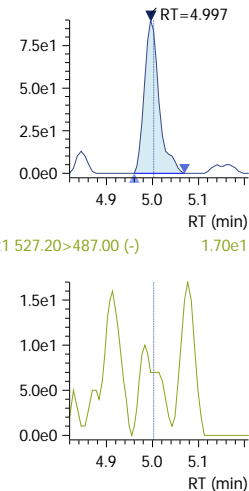
ISTD 428.90>409.00 (-) 3.60e5



8_2-FTS_1

Conc 0.0035
 Area 200
 R#1 2.11 (8.96)

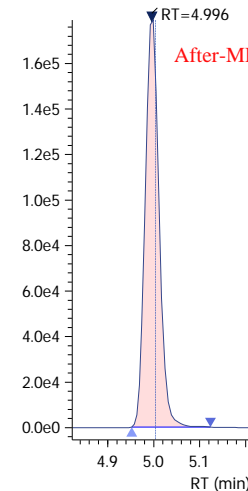
Q 527.10>506.90 (-) 9.00e1



8_2-FTS-13C

Conc 5.7829
 Area 377241

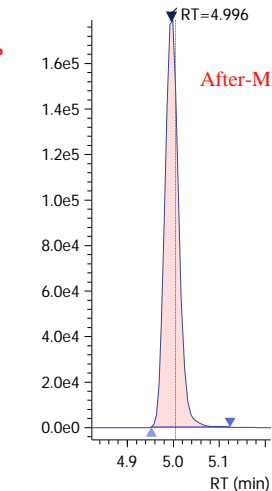
Q 528.80>509.00 (-) 1.79e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 377241

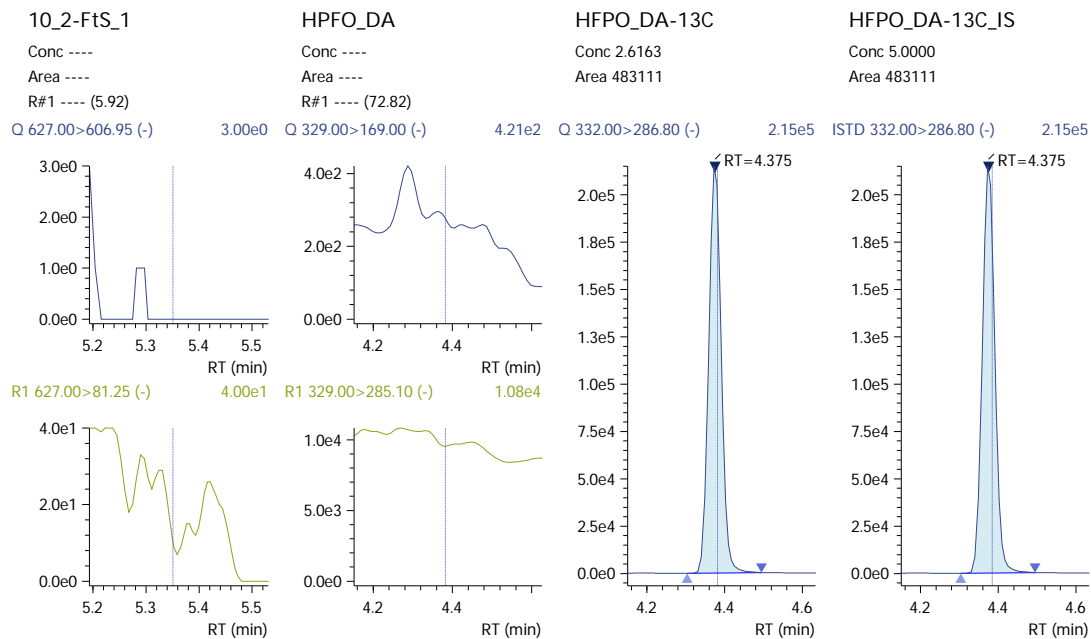
ISTD 528.80>509.00 (-) 1.79e5



Insight Report

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200812_073 (continued)

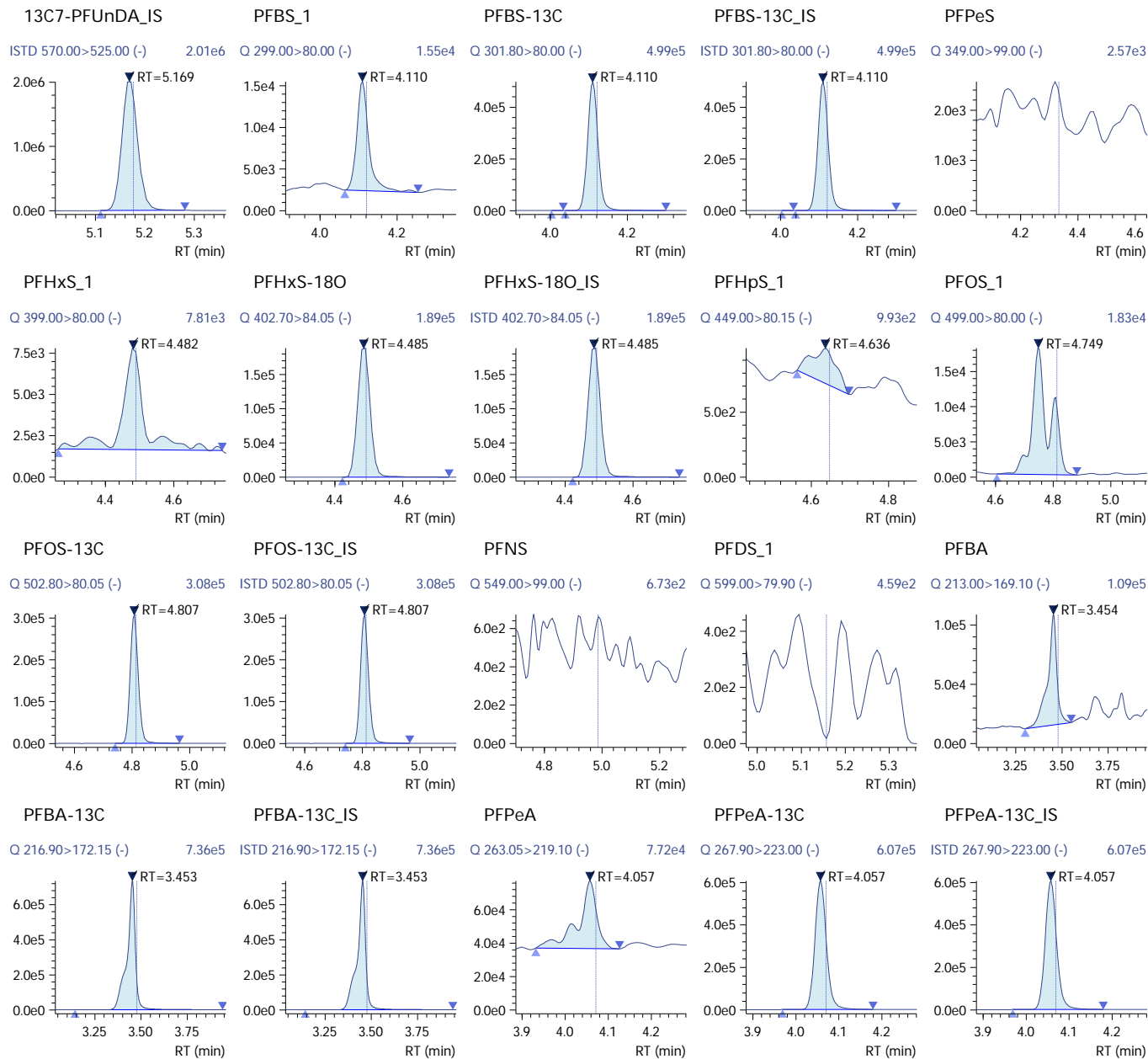


Insight Report

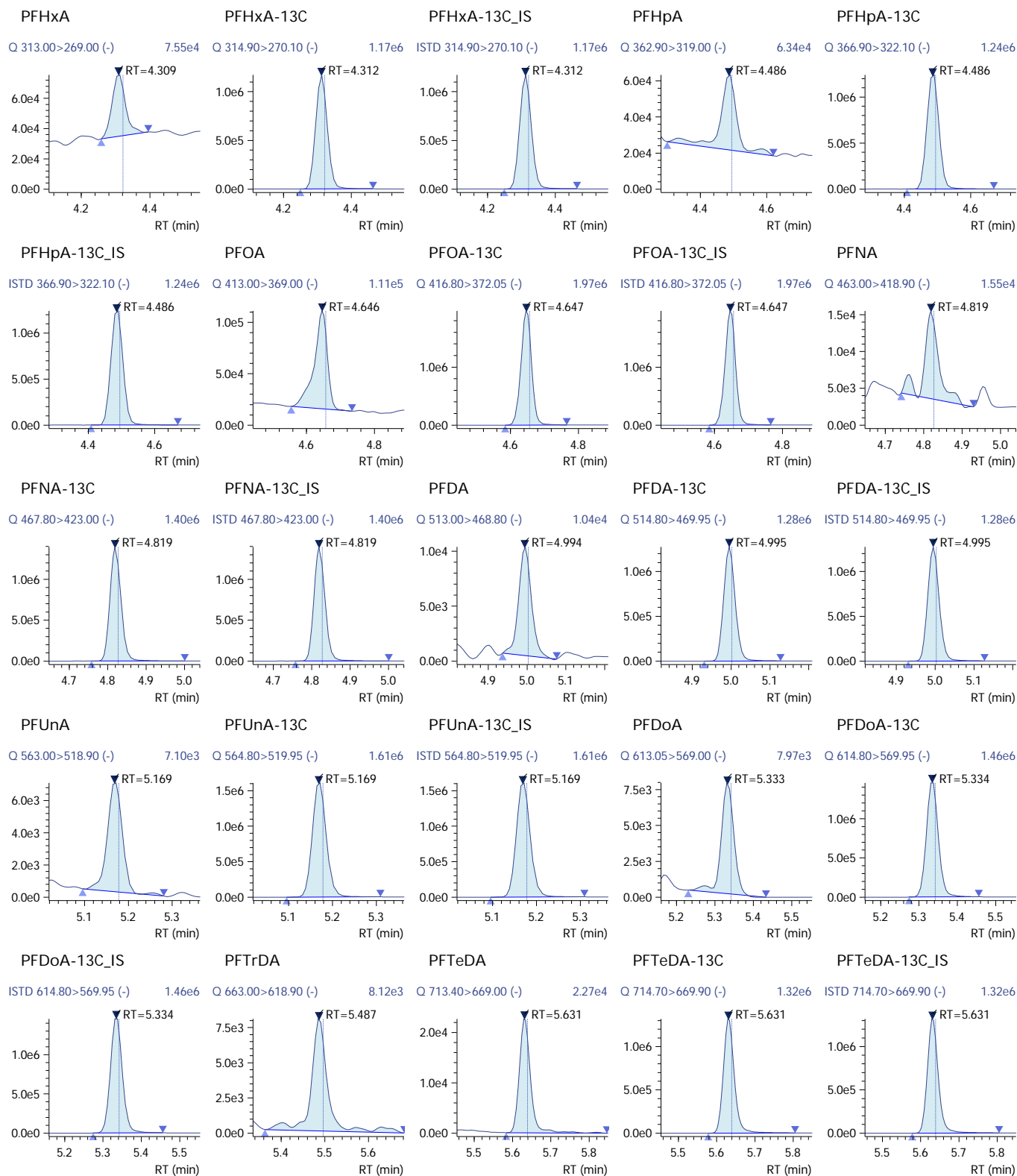
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200812_073

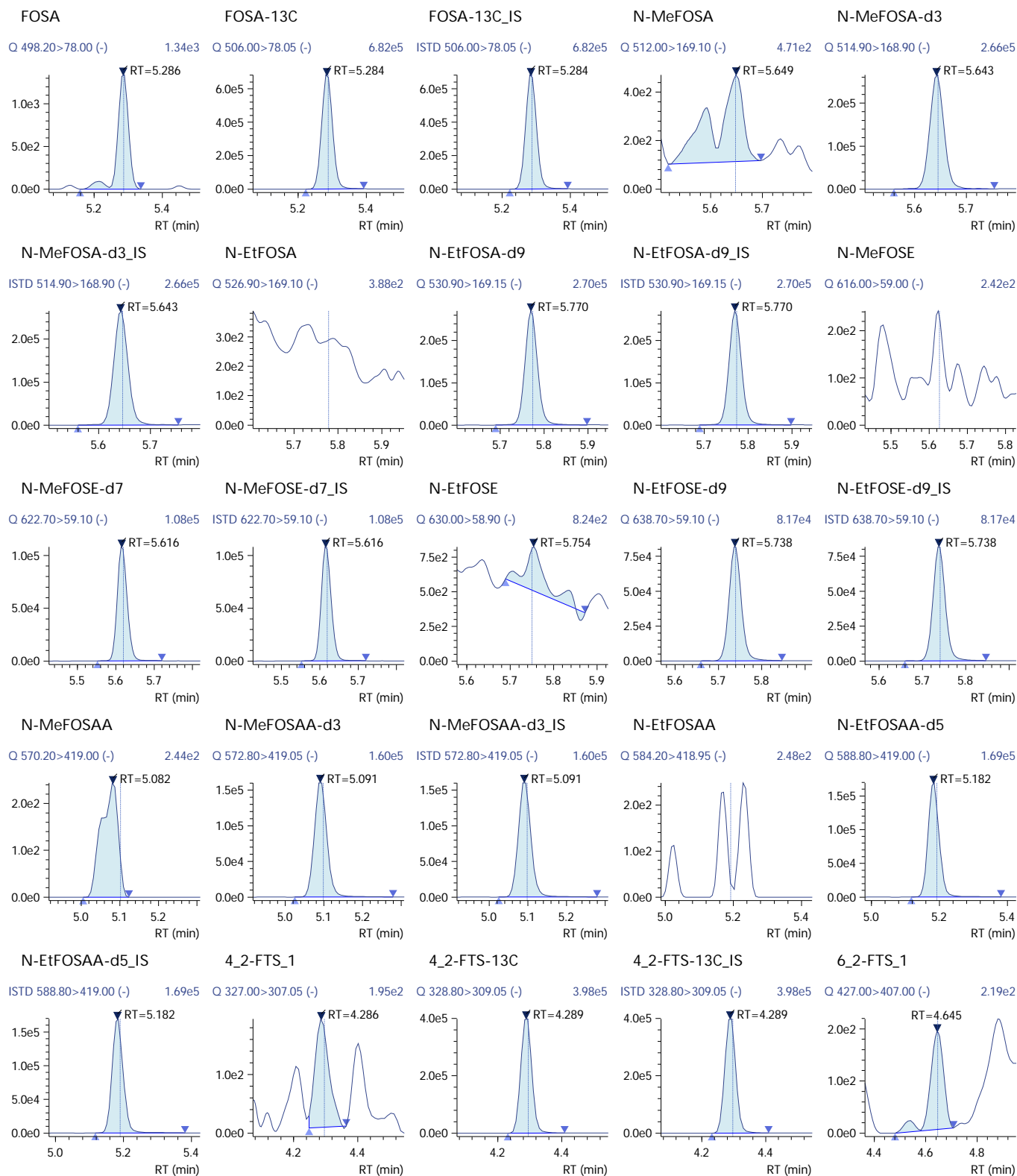
Sample ID: R2006768-002
Date Acquired: 8/13/2020 1:32:30 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_073.lcd
Vial: 17 | Inj. Volume: 15.0000uL | Tray: 3



200812_073 (continued)



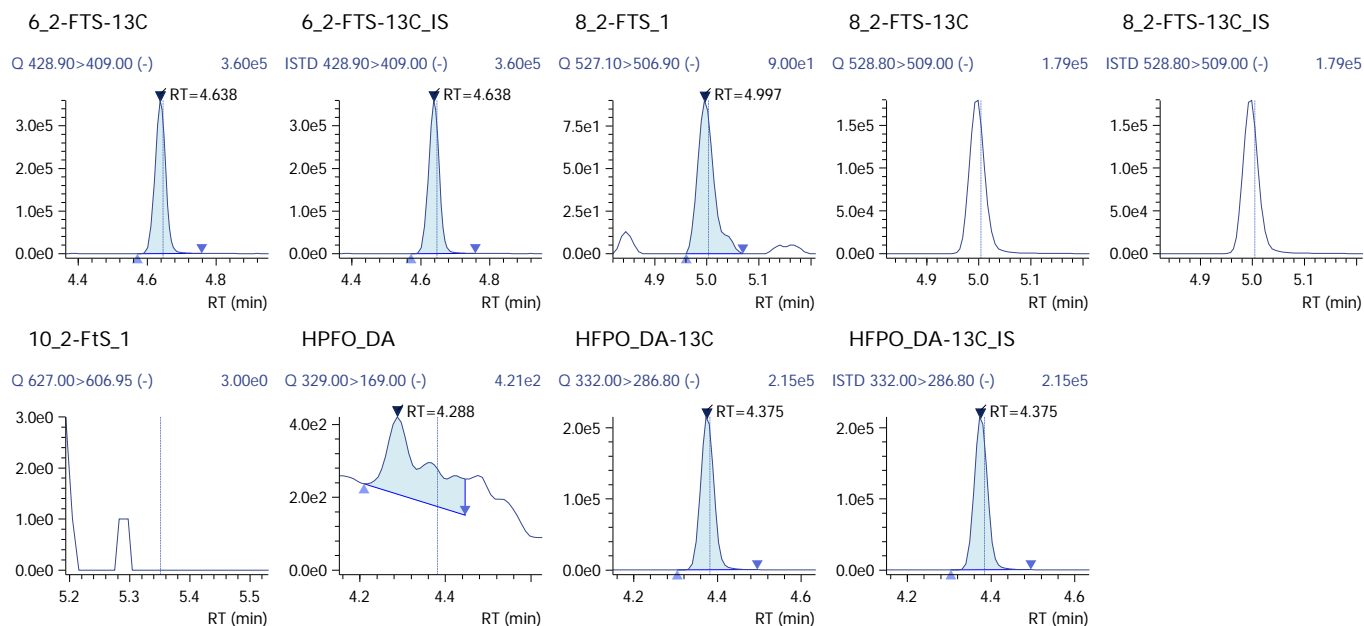
200812_073 (continued)



Insight Report

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200812_073 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_074
Lab ID: R2006768-003
RunType: N/A
Matrix: Water

Date Acquired: 8/13/20 01:43
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates		X
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	13C4-PFOS	140	25	121	RR to confirm

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_074	Instrument: K-LCMS-06
Acqu Date: 8/13/20 01:43	Vial: 14
Run Type: N/A	Dilution: 1
Lab ID: R2006768-003	Raw Units: ng/mL

Bottle ID: R2006768-003.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.167	-0.01	4093246	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.110	-0.01	913729	4.7292	95	20 - 109	Y
18O2-PFHxS	4.485	-0.01	548976	5.7051	114	26 - 122	Y
13C4-PFOS	4.807	-0.01	699593	7.0008	140 *	25 - 121	Y
13C4-PFBA	3.454	-0.02	2398080	4.6869	94	27 - 124	Y
13C5-PFPeA	4.057	-0.02	1080334	3.7106	74	27 - 138	Y
13C2-PFHxA	4.312	-0.01	3368604	3.7462	75	28 - 132	Y
13C4-PFHpA	4.486	-0.01	3397443	5.2859	106	19 - 139	Y
13C4-PFOA	4.647	-0.01	5345727	5.8500	117	22 - 130	Y
13C5-PFNA	4.819	-0.01	3563689	5.7550	115	20 - 127	Y
13C2-PFDA	4.994	-0.01	2948149	5.1397	103	24 - 125	Y
13C2-PFUnDA	5.168	-0.01	3316360	4.7136	94	22 - 125	Y
13C2-PFDODA	5.332	-0.01	2645558	3.9076	78	19 - 122	Y
13C2-PFTeDA	5.629	-0.01	1807457	4.1627	83	13 - 124	Y
13C8-FOSA	5.282	-0.01	1326361	3.5520	71	18 - 109	Y
D3-MeFOSAA	5.090	-0.01	265690	3.7976	76	9 - 123	Y
D5-EtFOSAA	5.181	-0.01	264304	5.3299	107	12 - 126	Y
13C2-6:2 FTS	4.638	-0.01	708178	9.1001	182	10 - 226	Y
13C2-8:2 FTS	4.995	-0.01	295310	5.0143	100	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	0		0	0	0	U	Y
Perfluorohexane sulfonic acid (PFHxS)	4.482	-0.01	7117	0.0376	0.94	U	Y

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Data File: J:\LCMS06\Data\200812_b3\200812_074
 Acq Date: 8/13/20 01:43
 Run Type: N/A
 Lab ID: R2006768-003

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 14
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	0		0	0	0	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.747	-0.07	11440	0.0666	1.7		Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.454	-0.03	34372	0.0637	1.6	J	Y
Perfluoropentanoic acid (PFPeA)	4.018	-0.06	65386	0.0394	0.99	U	Y
Perfluorohexanoic acid (PFHxA)	4.305	-0.02	37311	-0.0032	0	U	Y
Perfluoroheptanoic acid (PFHpA)	0		0	0	0	U	Y
Perfluorooctanoic acid (PFOA)	4.645	-0.02	63723	0.0297	0.74	J	Y
Perfluorononanoic acid (PFNA)	4.817	-0.01	23714	0.0200	0.50	U	Y
Perfluorodecanoic acid (PFDA)	4.992	-0.01	20844	0.0336	0.84	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.168	-0.01	12285	-0.0089	0	U	Y
Perfluorododecanoic acid (PFDoDA)	5.332	-0.01	19036	0.0276	0.69	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.485	-0.01	13165	0.0115	0.29	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.629	-0.01	35368	0.0248	0.62	U	Y
Perfluorooctane sulfonamide (FOSA)	5.283	-0.01	3374	0.0090	0.23	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.640	-0.01	771	0.0050	0.13	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.996	-0.01	118	0.0026	0.065	U	Y

Prep Amount: 320.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

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200812_074

Sample ID: R2006768-003
 Date Acquired: 8/13/2020 1:43:16 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_074.lcd
 Vial: 18 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.167	4093246	4093246	1	5.0000	ng/mL	----	----
PFBS_1	ND(W/B)	----	----	913729	2	----	ng/mL	----	----
PFBS-13C	Auto	4.110	913729	4093246	1	4.7292	ng/mL	----	----
PFBS-13C_IS	Auto	4.110	913729	913729	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	913729	2	----	ng/mL	----	----
PFHxS_1	M	4.482	7117	548976	3	0.0376	ng/mL	----	64.31
PFHxS-18O	Auto	4.485	548976	4093246	1	5.7051	ng/mL	----	----
PFHxS-18O_IS	Auto	4.485	548976	548976	3	5.0000	ng/mL	----	----
PFHpS_1	ND(W/B)	----	----	548976	3	----	ng/mL	----	----
PFOS_1	Auto	4.747	11440	699593	4	0.0666	ng/mL	----	20.04
PFOS-13C	Auto	4.807	699593	4093246	1	7.0008	ng/mL	----	----
PFOS-13C_IS	Auto	4.807	699593	699593	4	5.0000	ng/mL	----	----
PFNS	M	4.957	1153	699593	4	0.0097	ng/mL	----	11.38
PFDS_1	ND(W/B)	----	----	699593	4	----	ng/mL	----	----
PFBA	Auto	3.454	34372	2398080	5	0.0637	ng/mL	----	----
PFBA-13C	Auto	3.454	2398080	4093246	1	4.6869	ng/mL	----	----
PFBA-13C_IS	Auto	3.454	2398080	2398080	5	5.0000	ng/mL	----	----
PFPeA	M	4.018	65386	1080334	6	0.0394	ng/mL	----	----
PFPeA-13C	Auto	4.057	1080334	4093246	1	3.7106	ng/mL	----	----
PFPeA-13C_IS	Auto	4.057	1080334	1080334	6	5.0000	ng/mL	----	----
PFHxA	M	4.305	37311	3368604	7	-0.0032	ng/mL	----	4.50
PFHxA-13C	Auto	4.312	3368604	4093246	1	3.7462	ng/mL	----	----
PFHxA-13C_IS	Auto	4.312	3368604	3368604	7	5.0000	ng/mL	----	----
PFHpA	ND(W/B)	----	----	3397443	8	----	ng/mL	----	----
PFHpA-13C	Auto	4.486	3397443	4093246	1	5.2859	ng/mL	----	----
PFHpA-13C_IS	Auto	4.486	3397443	3397443	8	5.0000	ng/mL	----	----
PFOA	M	4.645	63723	5345727	9	0.0297	ng/mL	----	35.26
PFOA-13C	Auto	4.647	5345727	4093246	1	5.8500	ng/mL	----	----
PFOA-13C_IS	Auto	4.647	5345727	5345727	9	5.0000	ng/mL	----	----
PFNA	M	4.817	23714	3563689	10	0.0200	ng/mL	----	34.90
PFNA-13C	Auto	4.819	3563689	4093246	1	5.7550	ng/mL	----	----
PFNA-13C_IS	Auto	4.819	3563689	3563689	10	5.0000	ng/mL	----	----
PFDA	Auto	4.992	20844	2948149	11	0.0336	ng/mL	----	18.16
PFDA-13C	Auto	4.994	2948149	4093246	1	5.1397	ng/mL	----	----
PFDA-13C_IS	Auto	4.994	2948149	2948149	11	5.0000	ng/mL	----	----
PFUnA	M	5.168	12285	3316360	12	-0.0089	ng/mL	----	14.64
PFUnA-13C	Auto	5.168	3316360	4093246	1	4.7136	ng/mL	----	----
PFUnA-13C_IS	Auto	5.168	3316360	3316360	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.332	19036	2645558	13	0.0276	ng/mL	----	17.54
PFDaA-13C	Auto	5.332	2645558	4093246	1	3.9076	ng/mL	----	----
PFDaA-13C_IS	Auto	5.332	2645558	2645558	13	5.0000	ng/mL	----	----
PFTeDA	Auto	5.485	13165	1807457	14	0.0115	ng/mL	----	22.77
PFTeDA	Auto	5.629	35368	1807457	14	0.0248	ng/mL	----	884.96
PFTeDA-13C	Auto	5.629	1807457	4093246	1	4.1627	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.629	1807457	1807457	14	5.0000	ng/mL	----	----
FOSA	Auto	5.283	3374	1326361	16	0.0090	ng/mL	----	1.30
FOSA-13C	Auto	5.282	1326361	4093246	1	3.5520	ng/mL	----	----
FOSA-13C_IS	Auto	5.282	1326361	1326361	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.642	1028	452924	17	0.0086	ng/mL	----	61.65
N-MeFOSA-d3	Auto	5.640	452924	4093246	1	4.8700	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.640	452924	452924	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	508755	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.768	508755	4093246	1	4.3897	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.768	508755	508755	18	5.0000	ng/mL	----	----
N-MeFOSE	ND(W/B)	----	----	201430	19	----	ng/mL	----	----

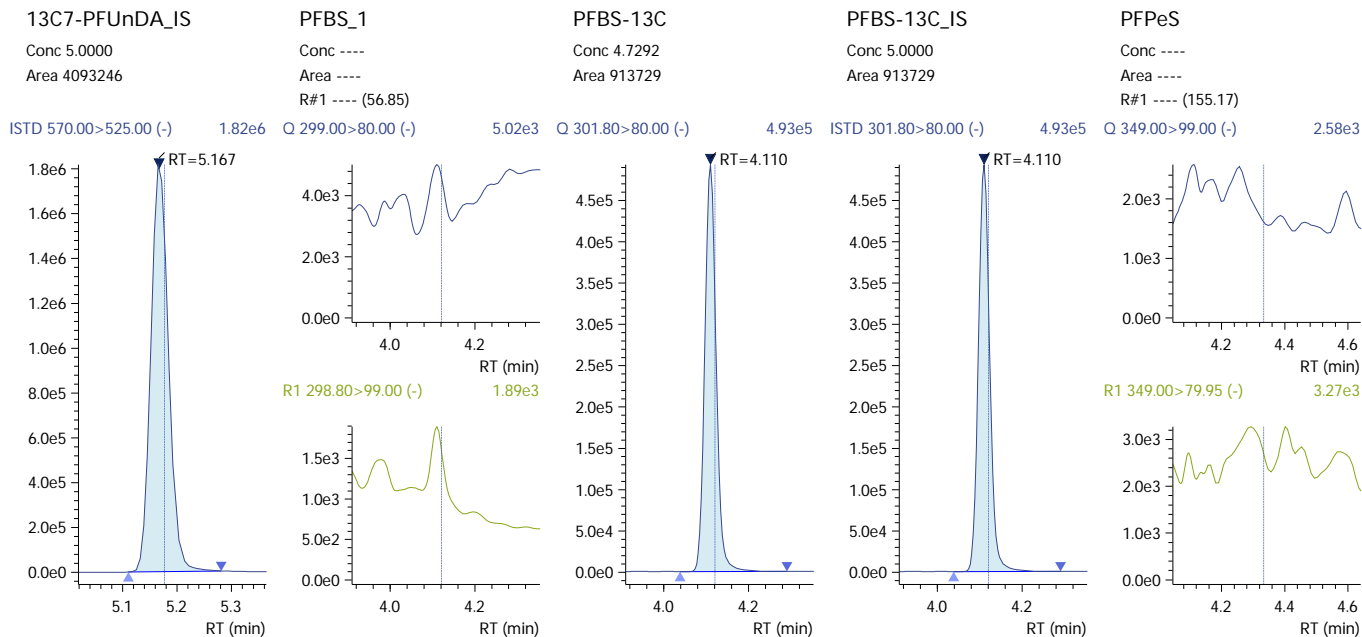
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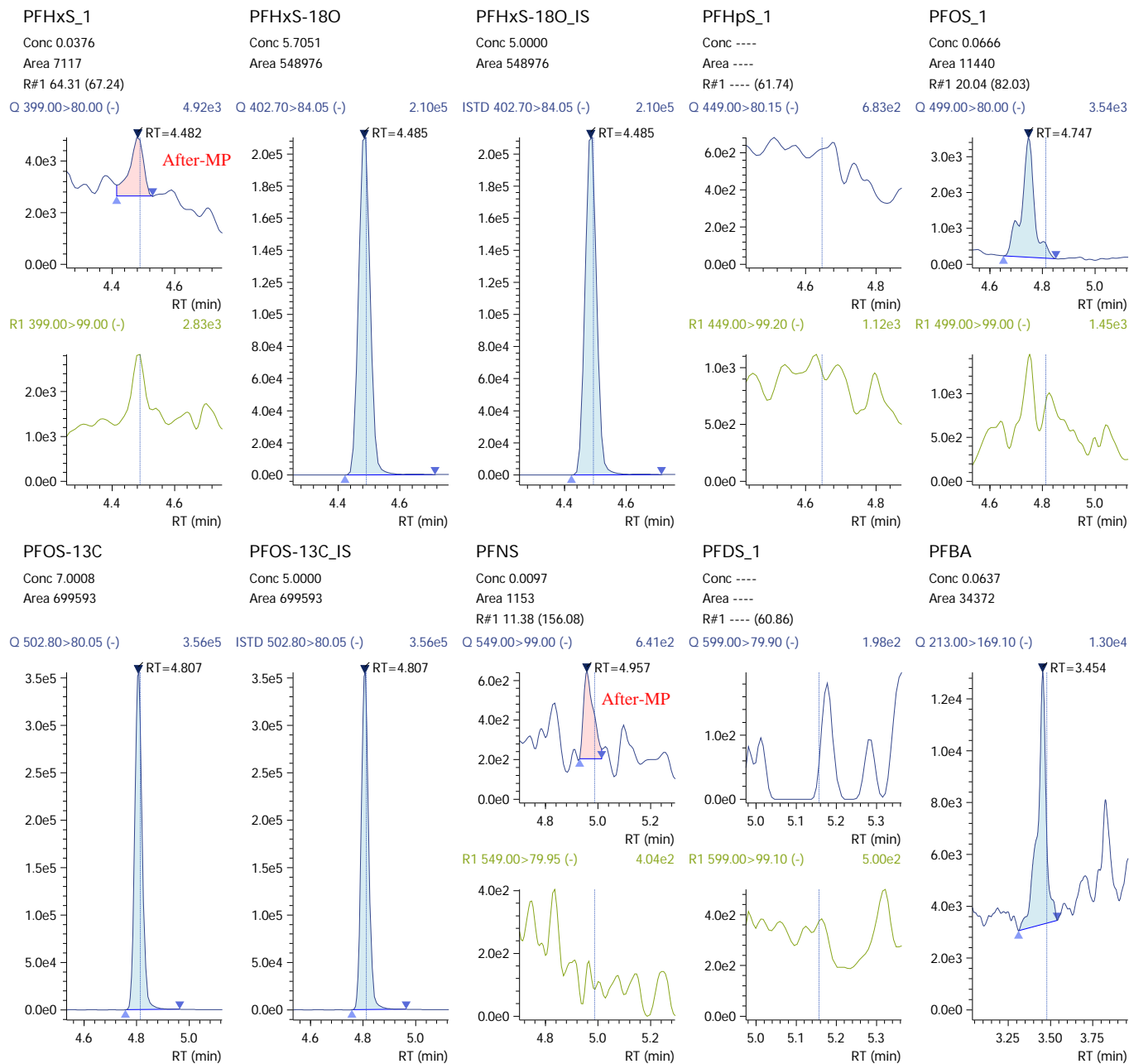
200812_074 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.614	201430	4093246	1	4.5299	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.614	201430	201430	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.746	790	163693	20	0.0060	ng/mL	----	----
N-EtFOSE-d9	Auto	5.736	163693	4093246	1	4.4918	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.736	163693	163693	20	5.0000	ng/mL	----	----
N-MeFOSAA	ND(W/B)	----	----	265690	21	----	ng/mL	----	----
N-MeFOSAA-d3	Auto	5.090	265690	4093246	1	3.7976	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.090	265690	265690	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	264304	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.181	264304	4093246	1	5.3299	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.181	264304	264304	22	5.0000	ng/mL	----	----
4_2-FTS_1	M	4.291	201	860197	23	0.0012	ng/mL	----	57476.60
4_2-FTS-13C	Auto	4.289	860197	4093246	1	5.9750	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.289	860197	860197	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.640	771	708178	24	0.0050	ng/mL	----	192.41
6_2-FTS-13C	Auto	4.638	708178	4093246	1	9.1001	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.638	708178	708178	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	4.996	118	295310	25	0.0026	ng/mL	----	11.32
8_2-FTS-13C	M	4.995	295310	4093246	1	5.0143	ng/mL	----	----
8_2-FTS-13C_IS	M	4.995	295310	295310	25	5.0000	ng/mL	----	----
10_2-FTS_1	ND(W/B)	----	----	295310	25	----	ng/mL	----	----
HPFO_DA	ND(W/B)	----	----	505614	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.375	505614	4093246	1	3.0330	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.375	505614	505614	26	5.0000	ng/mL	----	----



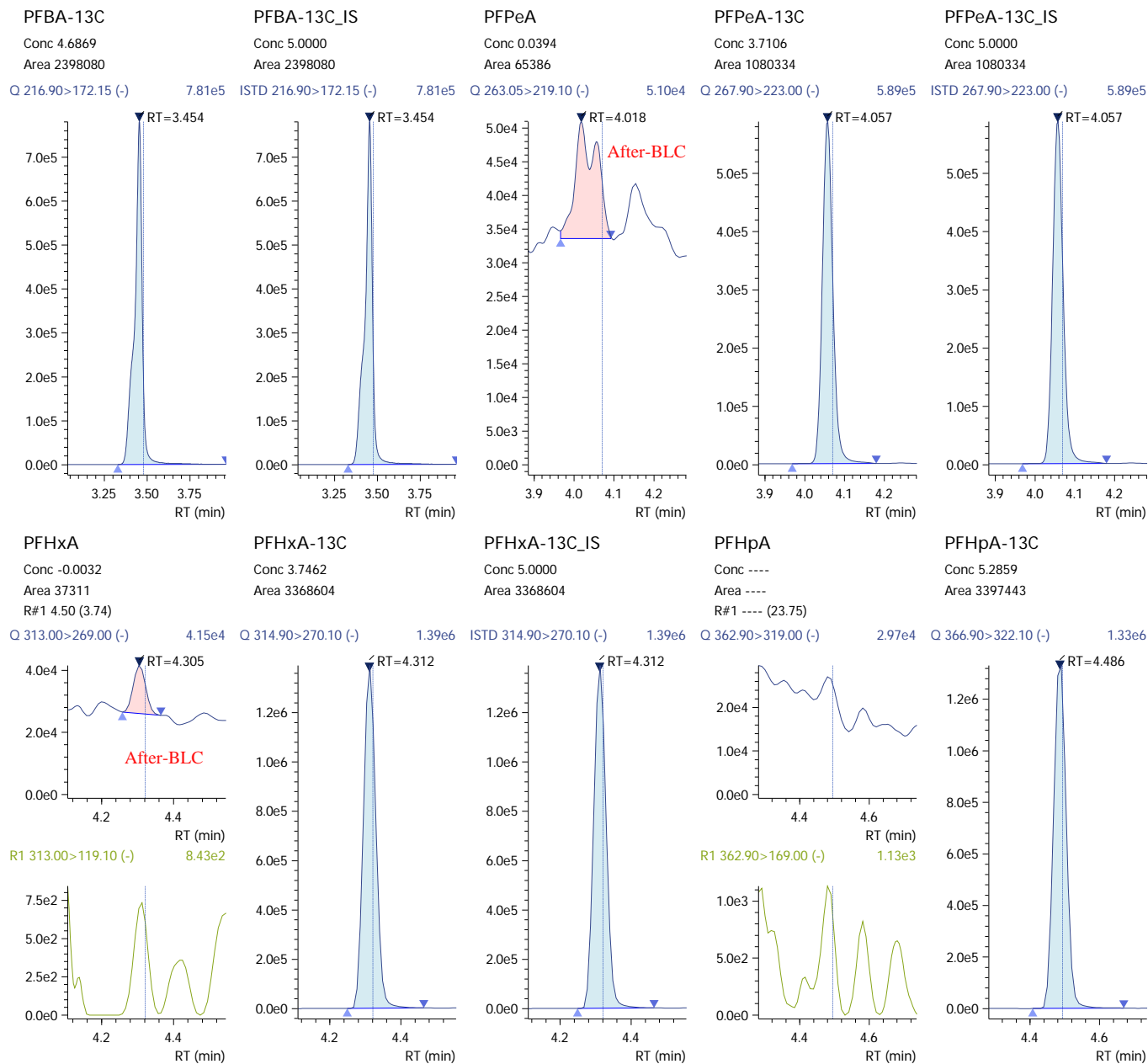
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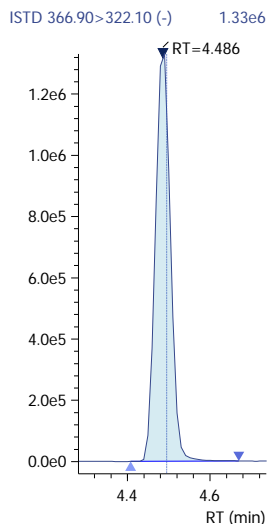
200812_074 (continued)



200812_074 (continued)

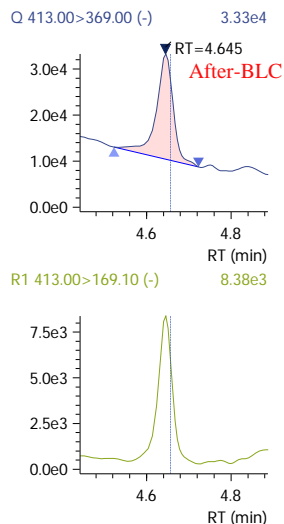
PFHpA-13C_IS

Conc 5.0000
Area 3397443



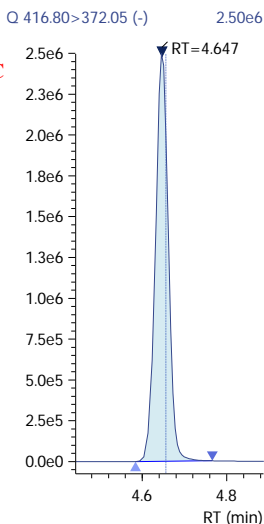
PFOA

Conc 0.0297
Area 63723
R#1 35.26 (34.80)



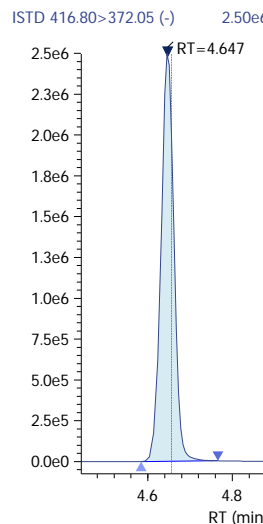
PFOA-13C

Conc 5.8500
Area 5345727



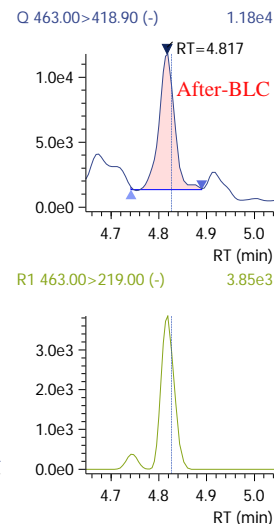
PFOA-13C_IS

Conc 5.0000
Area 5345727



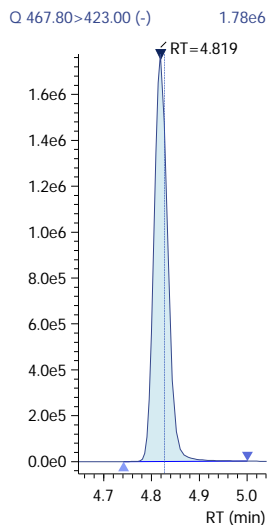
PFNA

Conc 0.0200
Area 23714
R#1 34.90 (22.71)



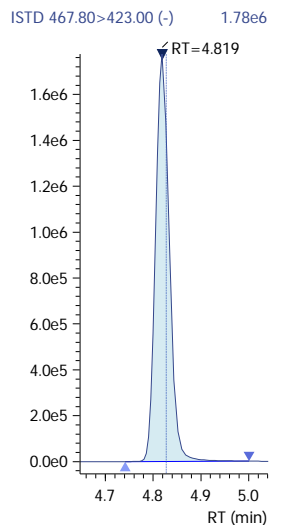
PFNA-13C

Conc 5.7550
Area 3563689



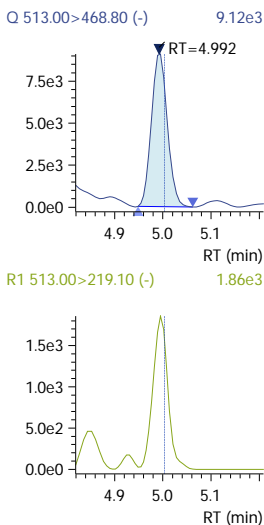
PFNA-13C_IS

Conc 5.0000
Area 3563689



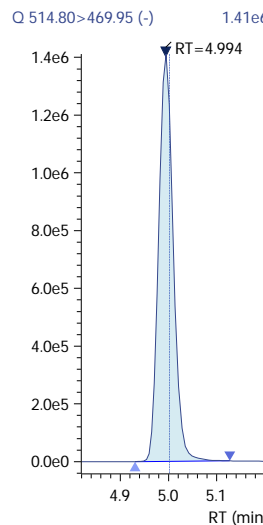
PFDA

Conc 0.0336
Area 20844
R#1 18.16 (22.06)



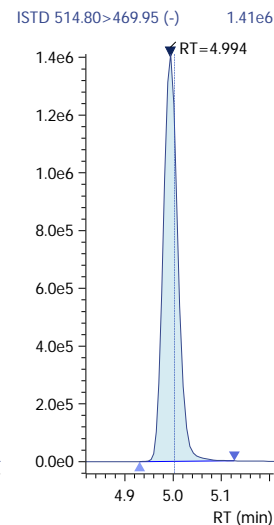
PFDA-13C

Conc 5.1397
Area 2948149

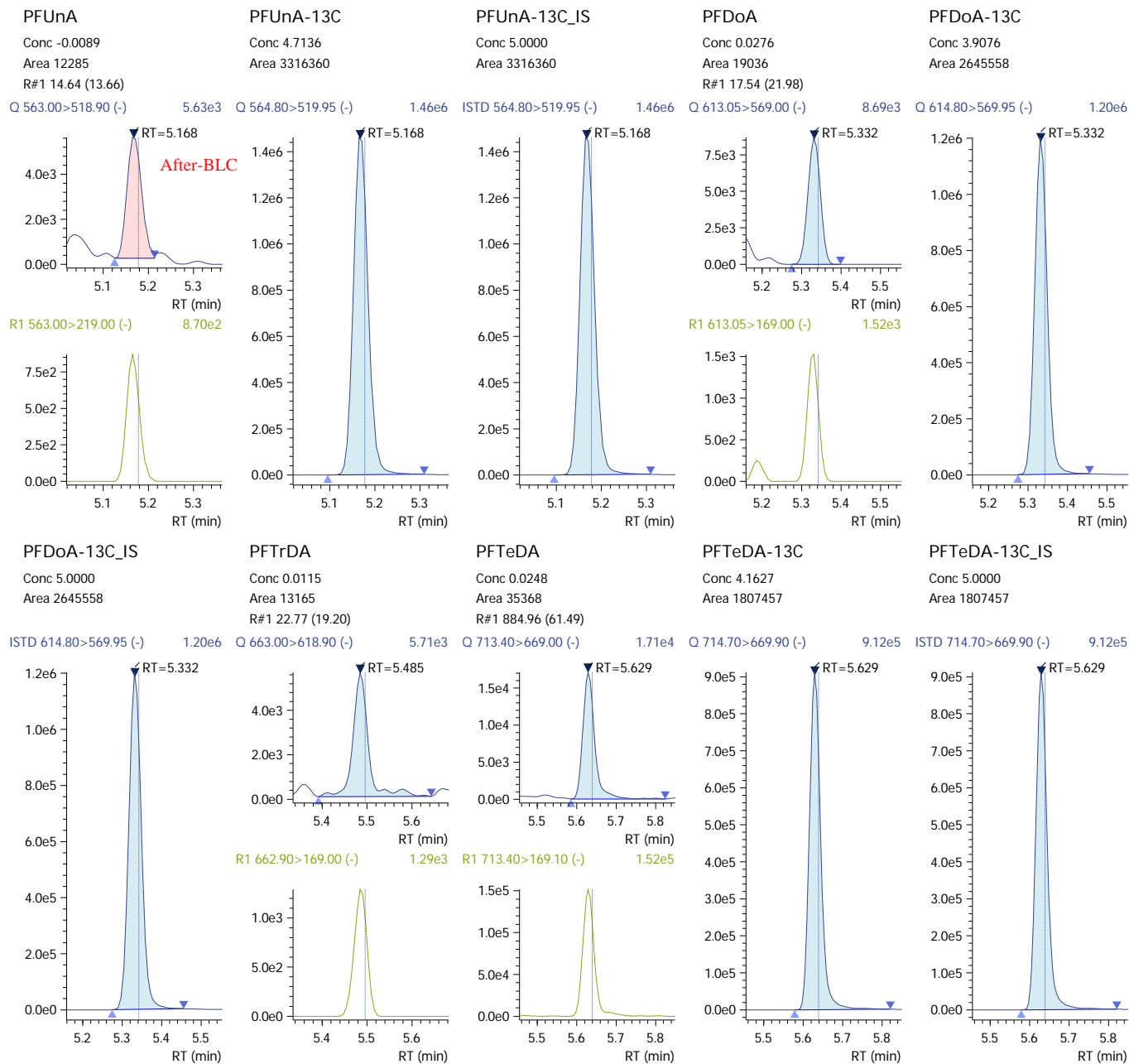


PFDA-13C_IS

Conc 5.0000
Area 2948149



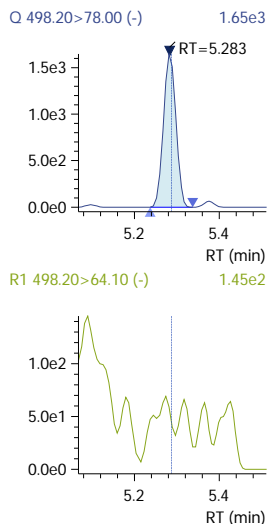
200812_074 (continued)



200812_074 (continued)

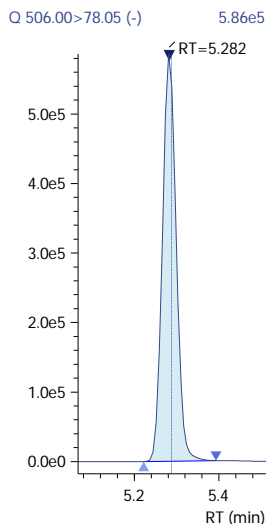
FOSA

Conc 0.0090
 Area 3374
 R#1 1.30 (4.04)



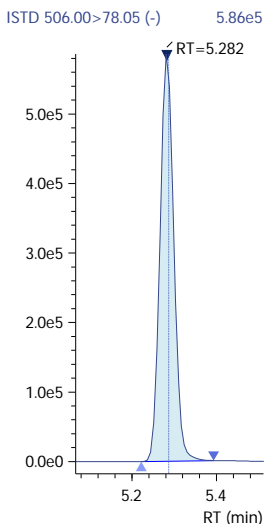
FOSA-13C

Conc 3.5520
 Area 1326361



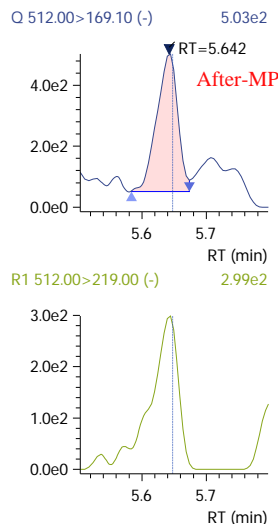
FOSA-13C_IS

Conc 5.0000
 Area 1326361



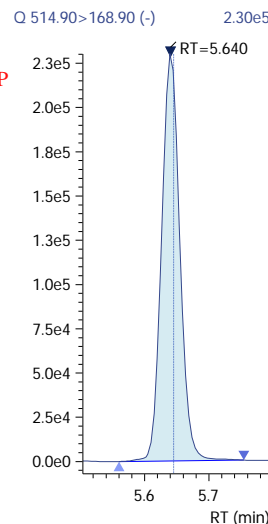
N-MeFOSA

Conc 0.0086
 Area 1028
 R#1 61.65 (78.52)



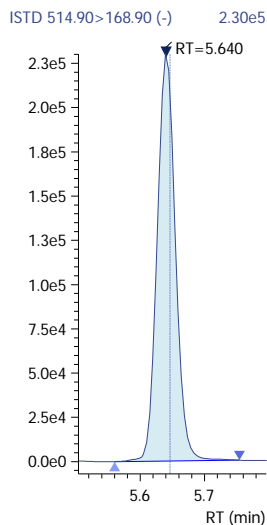
N-MeFOSA-d3

Conc 4.8700
 Area 452924



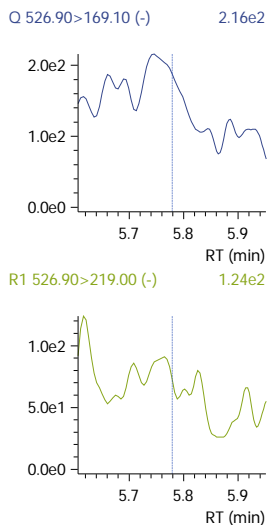
N-MeFOSA-d3_IS

Conc 5.0000
 Area 452924



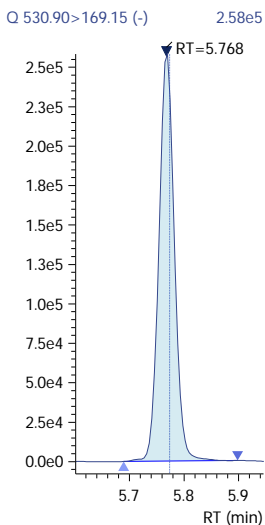
N-EtFOSA

Conc ----
 Area ----
 R#1 ---- (0.00)



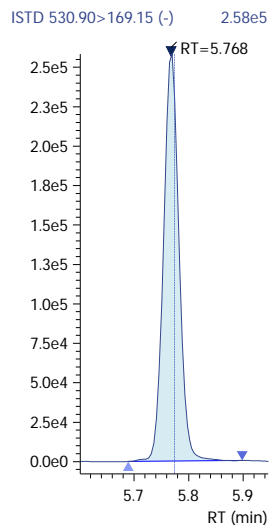
N-EtFOSA-d9

Conc 4.3897
 Area 508755



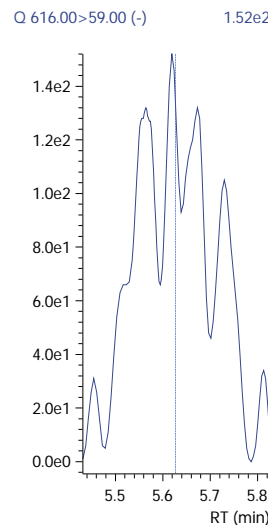
N-EtFOSA-d9_IS

Conc 5.0000
 Area 508755



N-MeFOSE

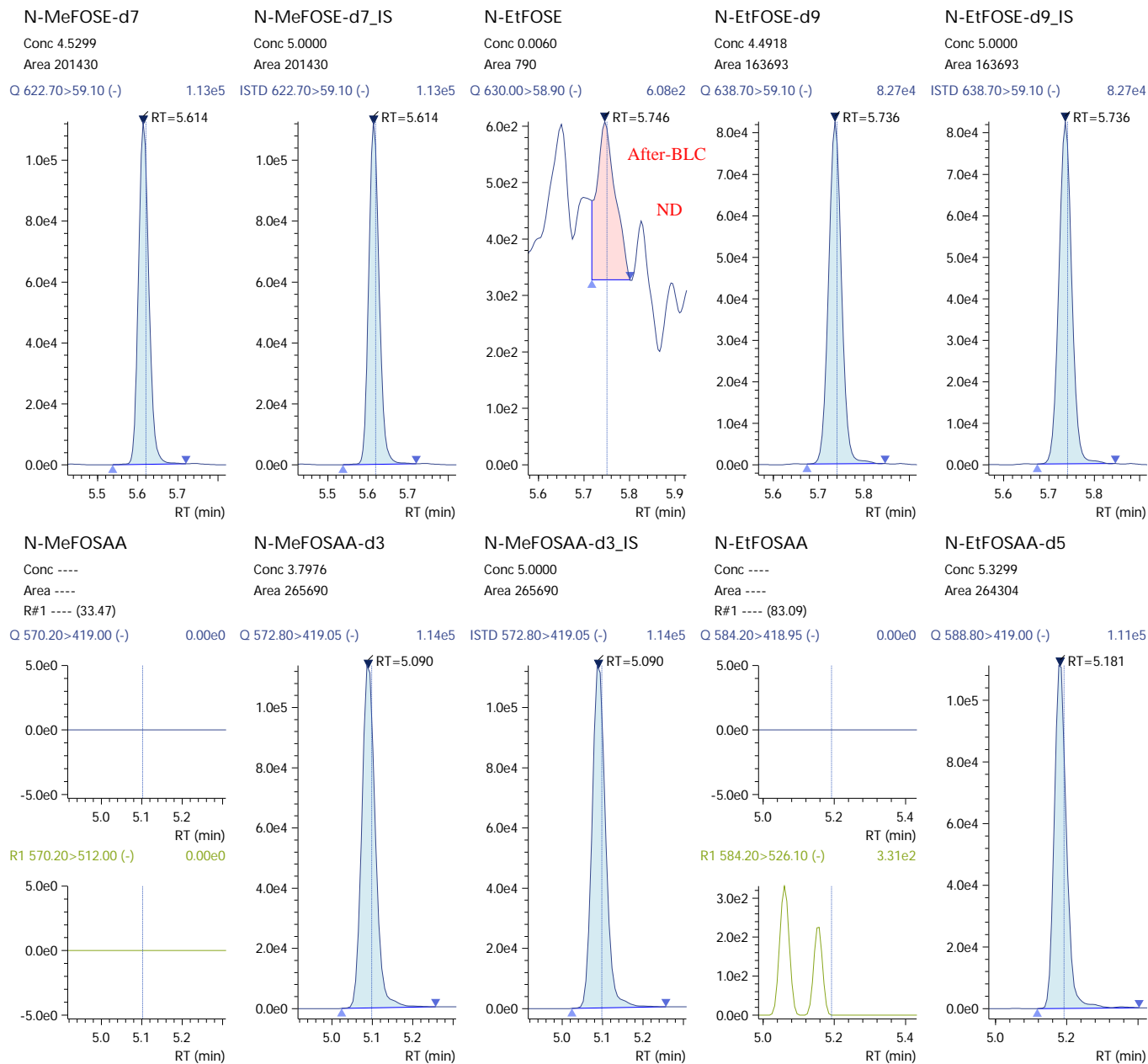
Conc ----
 Area ----



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200812_074 (continued)



Insight Report

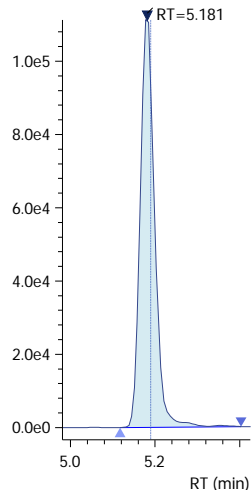
Printed at 8/19/2020 10:38:03 AM

200812_074 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 264304

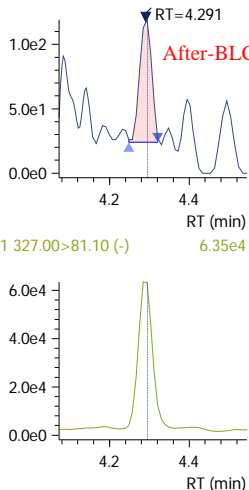
ISTD 588.80>419.00 (-) 1.11e5



4_2-FTS_1

Conc 0.0012
 Area 201
 R#1 57476.60 (54.93)

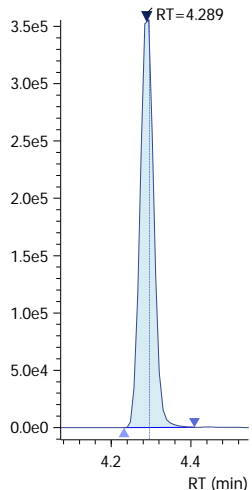
Q 327.00>307.05 (-) 1.19e2



4_2-FTS-13C

Conc 5.9750
 Area 860197

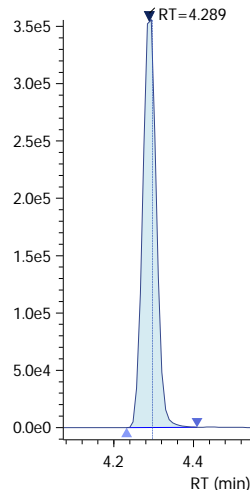
Q 328.80>309.05 (-) 3.56e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 860197

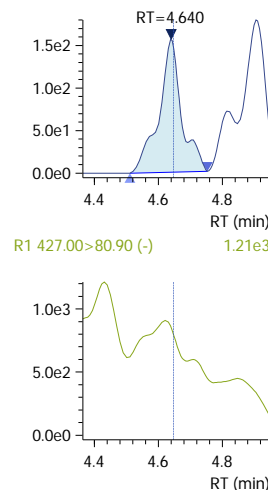
ISTD 328.80>309.05 (-) 3.56e5



6_2-FTS_1

Conc 0.0050
 Area 771
 R#1 192.41 (36.33)

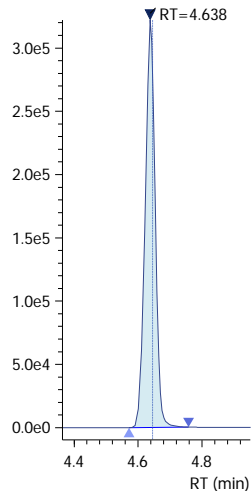
Q 427.00>407.00 (-) 1.80e2



6_2-FTS-13C

Conc 9.1001
 Area 708178

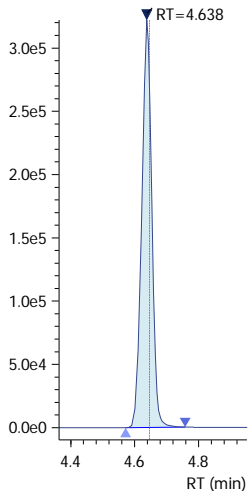
Q 428.90>409.00 (-) 3.22e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 708178

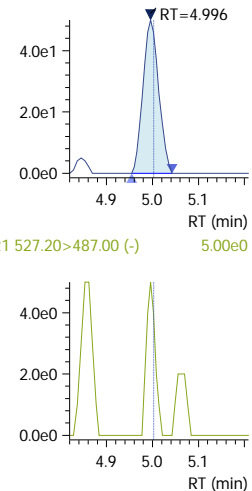
ISTD 428.90>409.00 (-) 3.22e5



8_2-FTS_1

Conc 0.0026
 Area 118
 R#1 11.32 (8.96)

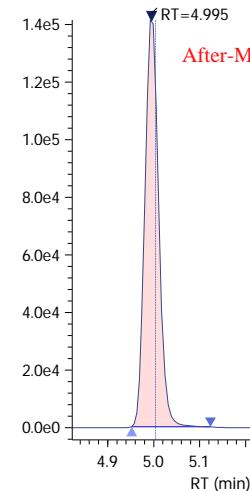
Q 527.10>506.90 (-) 5.00e1



8_2-FTS-13C

Conc 5.0143
 Area 295310

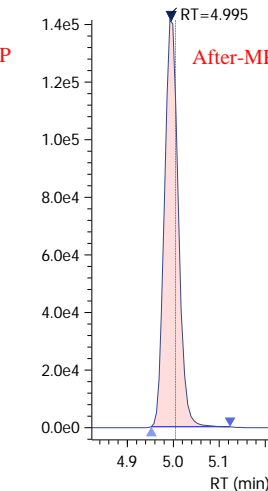
Q 528.80>509.00 (-) 1.42e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 295310

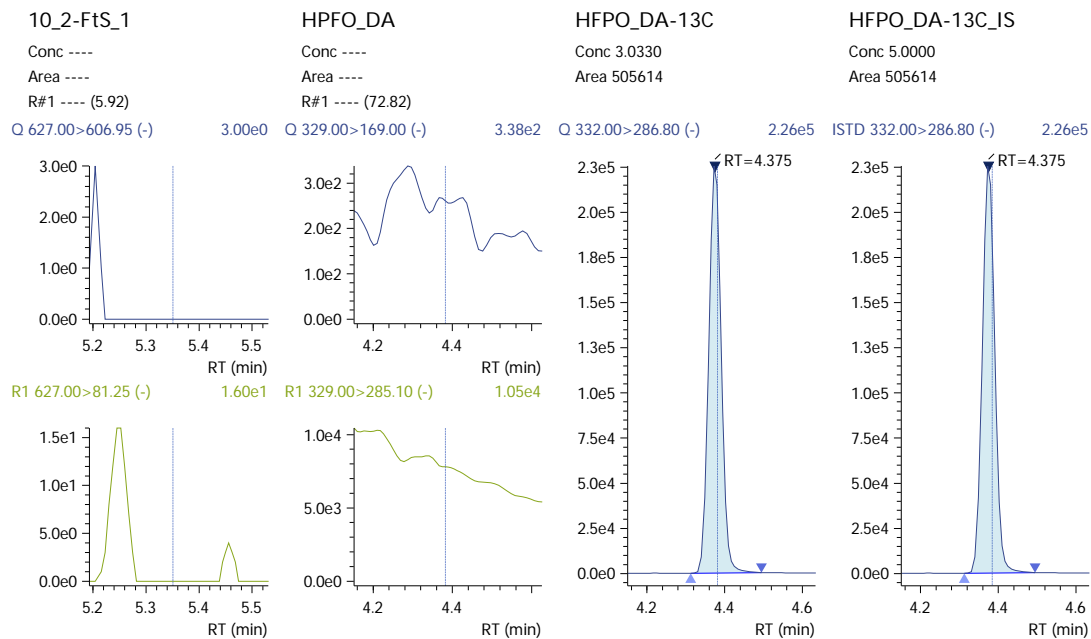
ISTD 528.80>509.00 (-) 1.42e5



Insight Report

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200812_074 (continued)

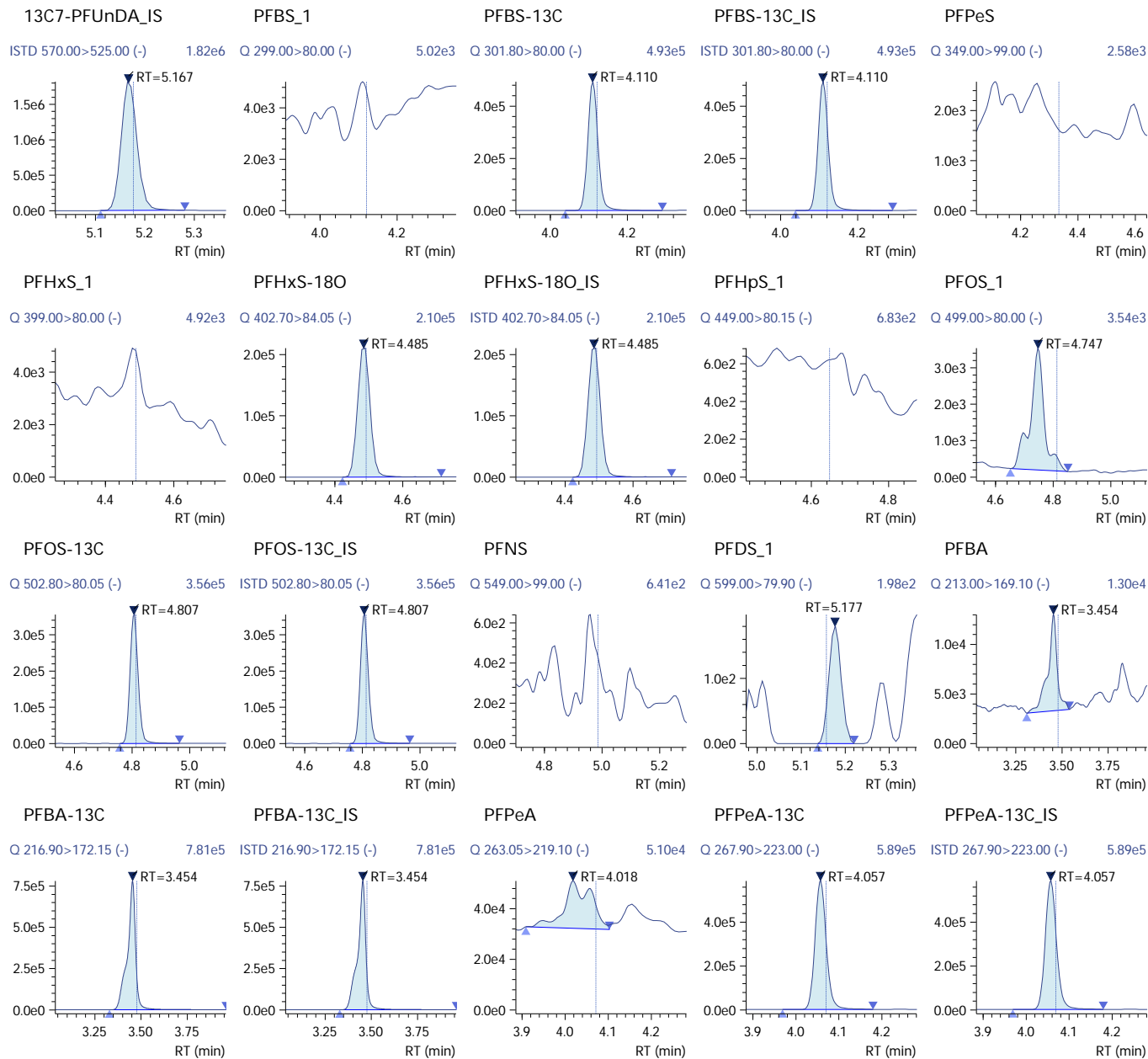


Insight Report

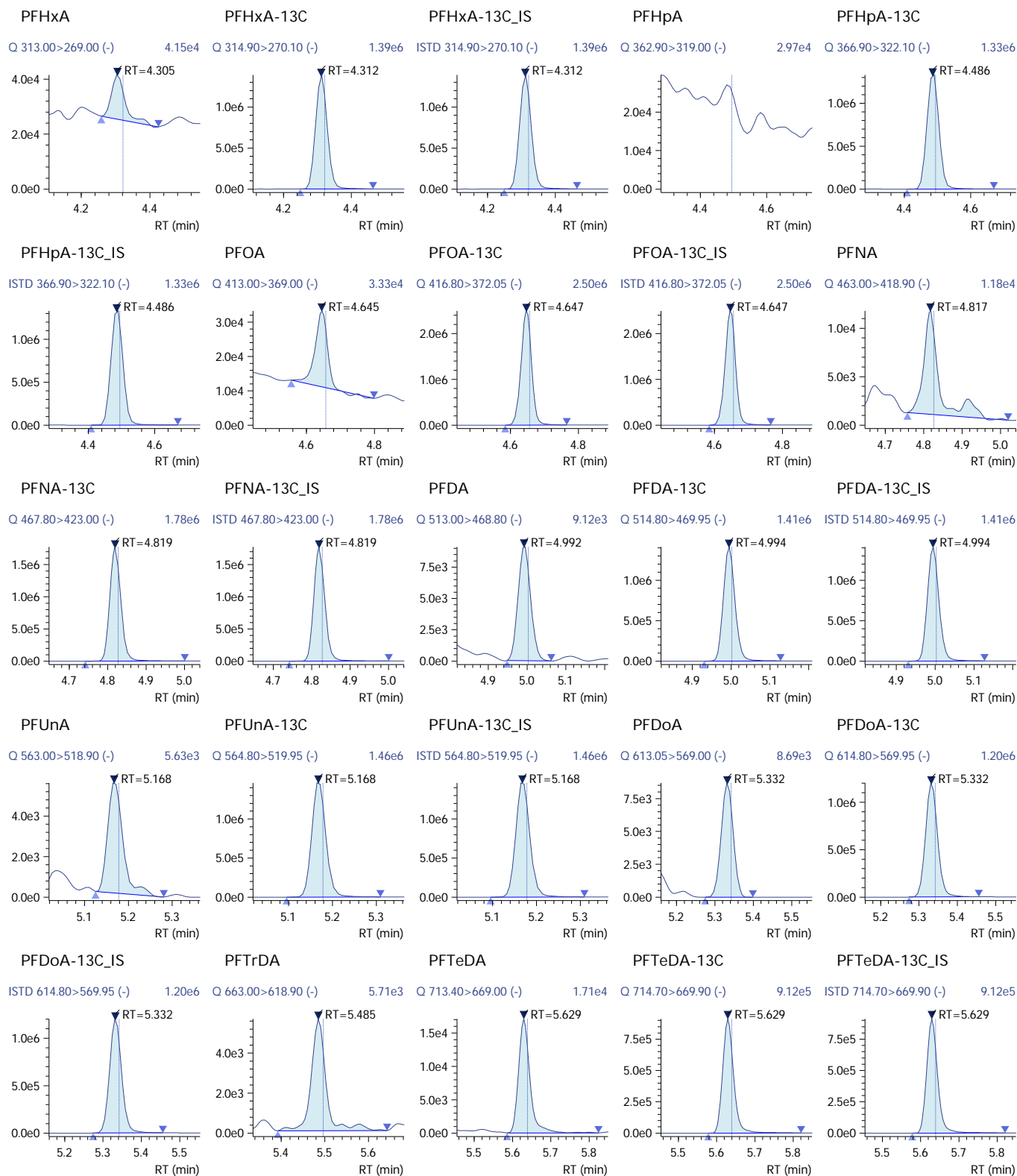
Printed at 8/19/2020 10:00:32 AM

200812_074

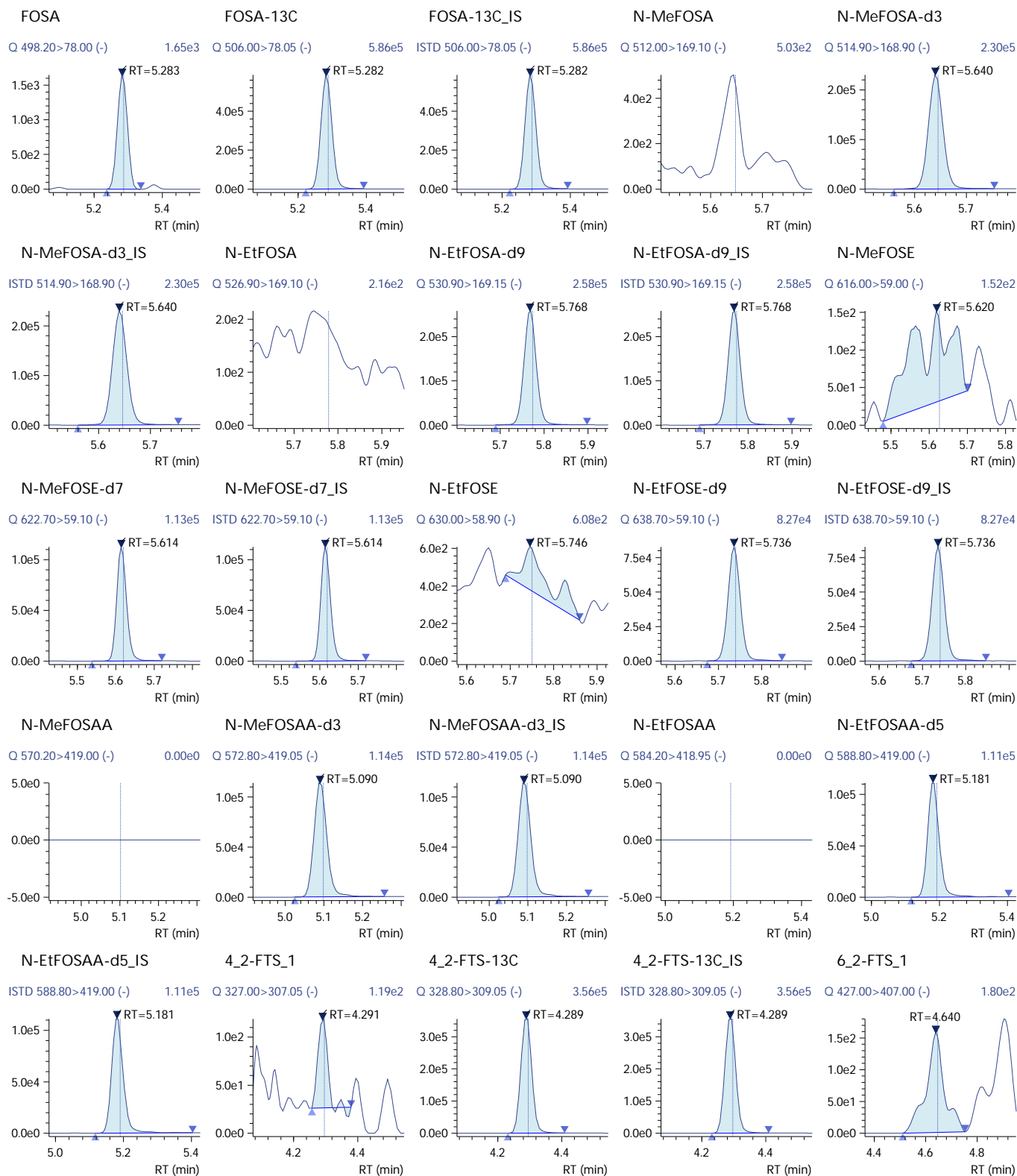
Sample ID: R2006768-003
Date Acquired: 8/13/2020 1:43:16 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_074.lcd
Vial: 18 | Inj. Volume: 15.0000uL | Tray: 3



200812_074 (continued)



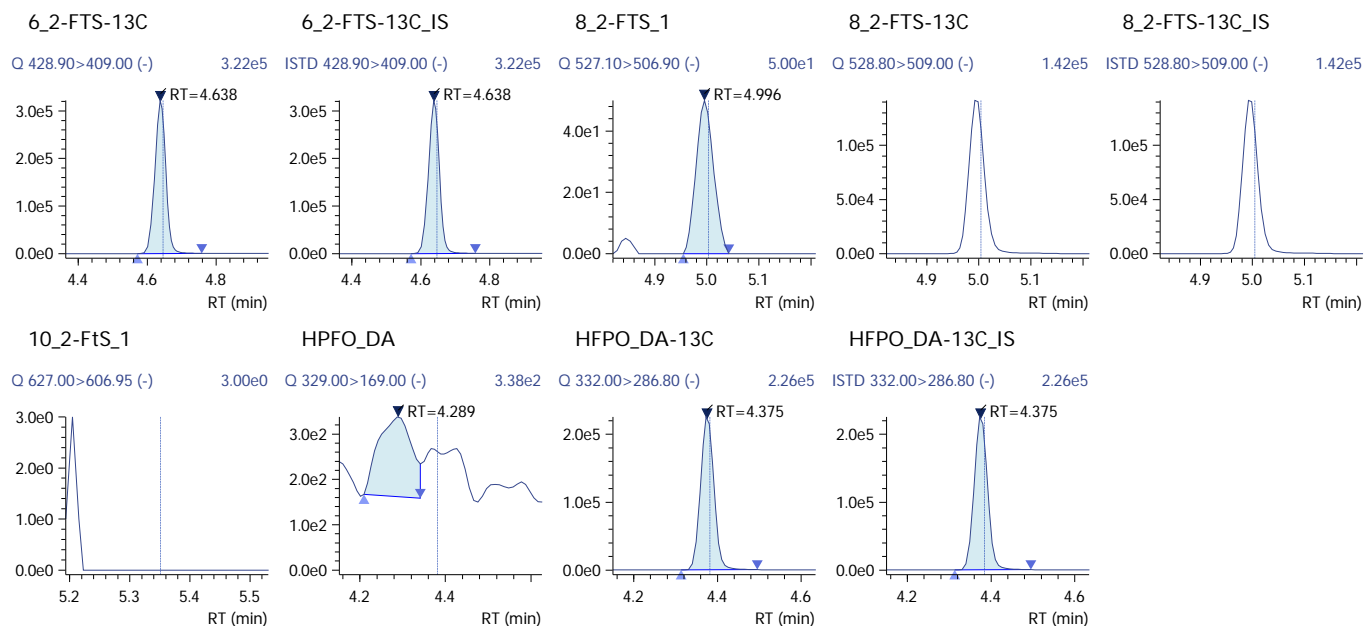
200812_074 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_074 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_006
Lab ID: R2006768-003
RunType: N/A
Matrix: Water

Date Acquired: 8/19/20 14:48
Batch ID: 691718
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery		X
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	18O2-PFHxS	133	70	130	Native ok

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_006	Instrument: K-LCMS-06
Acqu Date: 8/19/20 14:48	Vial: 5
Run Type: N/A	Dilution: 1
Lab ID: R2006768-003	Raw Units: ng/mL

Bottle ID: R2006768-003.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 691718	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.184	+0.00	5227297	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
18O2-PFHxS	4.499	+0.00	501214	4.0787	82	26 - 122	N
13C4-PFOS	4.822	+0.00	562211	4.4055	88	25 - 121	Y
13C2-6:2 FTS	4.657	+0.00	772819	7.7763	156	10 - 226	N

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorohexane sulfonic acid (PFHxS)	4.500	+0.01	9550	0.0552	1.4	J	N
Perfluorooctane sulfonic acid (PFOS)	4.764	-0.06	11603	0.0841	2.1	J	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.643	-0.01	682	0.0040	0.10	U	N

Prep Amount: 320.0000 mL **Dilution:** 1
Prep Final Amount: 8.00 mL **Basis Factor:** 100.00

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 15:56

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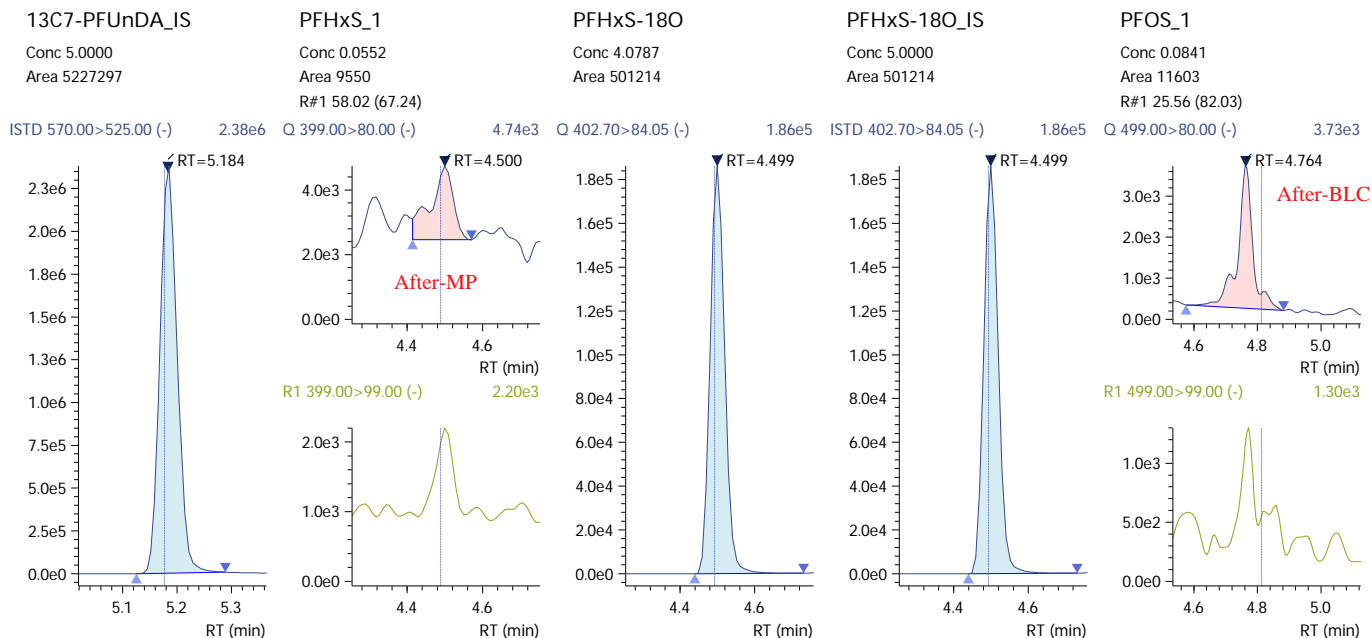
Insight Report

Printed at 8/19/2020 3:31:33 PM

200819_006

Sample ID: R2006768-003
 Date Acquired: 8/19/2020 2:48:48 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200819_b1\200819_006.lcd
 Vial: 1 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.184	5227297	5227297	1	5.0000	ng/mL	----	----
PFHxS_1	M	4.500	9550	501214	3	0.0552	ng/mL	----	58.02
PFHxS-18O	Auto	4.499	501214	5227297	1	4.0787	ng/mL	----	----
PFHxS-18O_IS	Auto	4.499	501214	501214	3	5.0000	ng/mL	----	----
PFOS_1	M	4.764	11603	562211	4	0.0841	ng/mL	----	25.56
PFOS-13C	Auto	4.822	562211	5227297	1	4.4055	ng/mL	----	----
PFOS-13C_IS	Auto	4.822	562211	562211	4	5.0000	ng/mL	----	----
6_2-FTS_1	M	4.643	682	772819	24	0.0040	ng/mL	----	331.47
6_2-FTS-13C	Auto	4.657	772819	5227297	1	7.7763	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.657	772819	772819	24	5.0000	ng/mL	----	----



Insight Report

Printed at 8/19/2020 3:31:33 PM

200819_006 (continued)

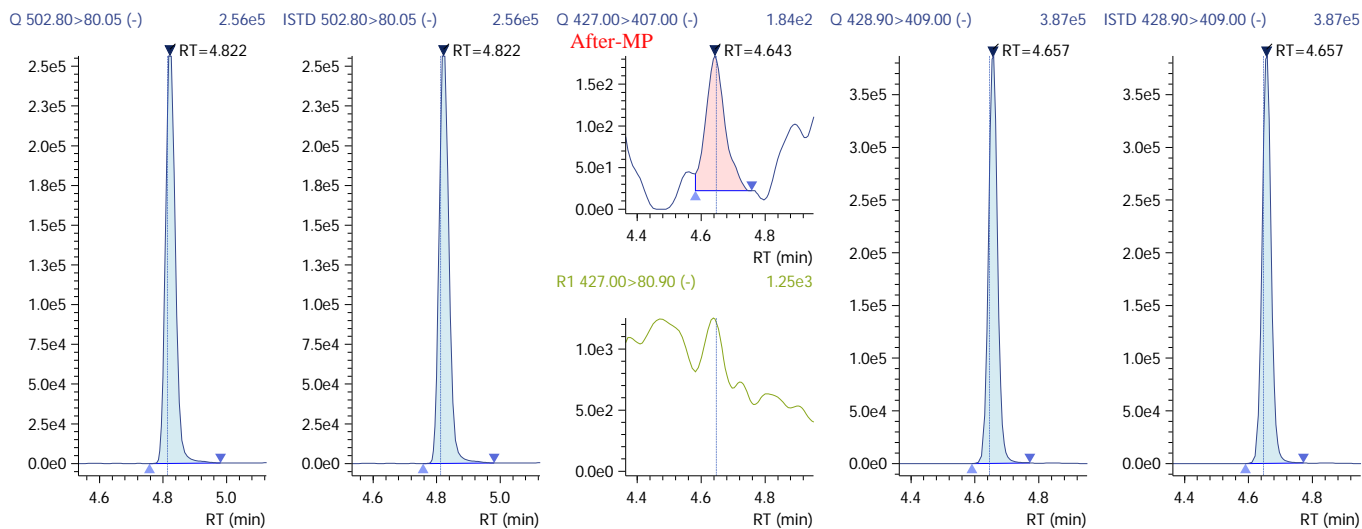
PFOS-13C
Conc 4.4055
Area 562211

PFOS-13C_IS
Conc 5.0000
Area 562211

6_2-FTS_1
Conc 0.0040
Area 682
R#1 331.47 (36.33)

6_2-FTS-13C
Conc 7.7763
Area 772819

6_2-FTS-13C_IS
Conc 5.0000
Area 772819

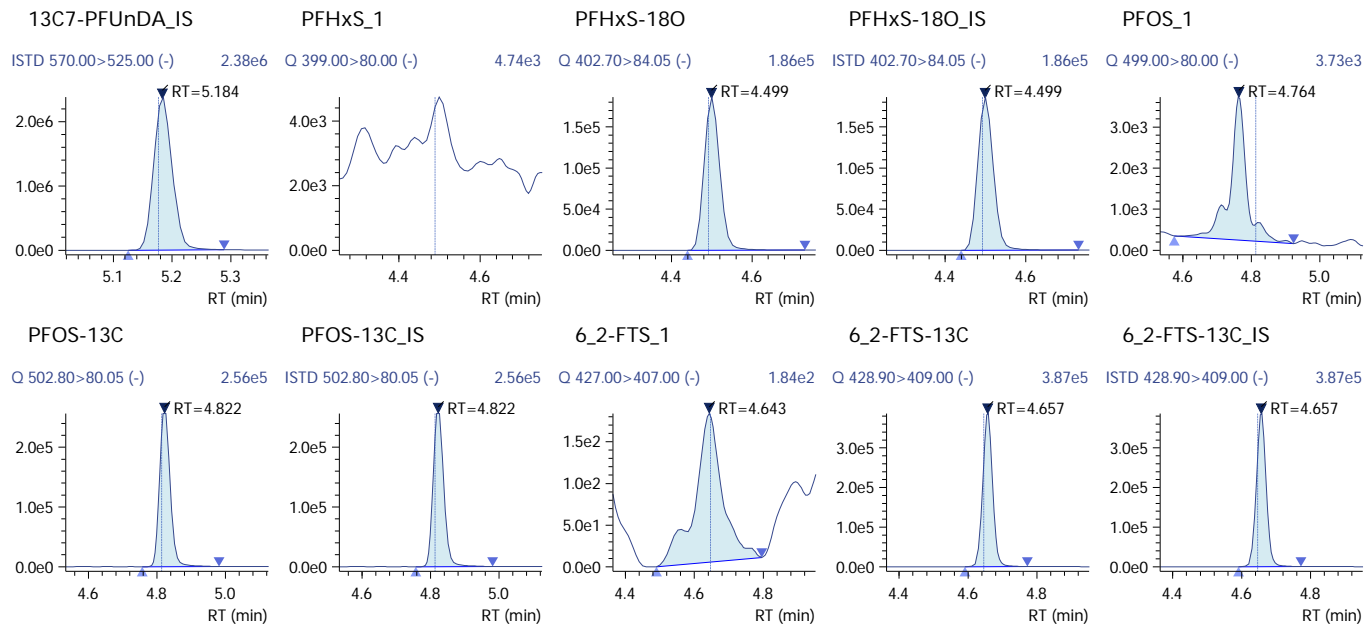


Insight Report

Printed at 8/19/2020 3:29:50 PM

200819_006

Sample ID: R2006768-003
Date Acquired: 8/19/2020 2:48:48 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200819_b1\200819_006.lcd
Vial: 1 | Inj. Volume: 15.0000uL | Tray: 3



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_075
Lab ID: R2006768-004
RunType: N/A
Matrix: Water

Date Acquired: 8/13/20 01:54
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_075	Instrument: K-LCMS-06
Acqu Date: 8/13/20 01:54	Vial: 15
Run Type: N/A	Dilution: 1
Lab ID: R2006768-004	Raw Units: ng/mL

Bottle ID: R2006768-004.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.168	-0.01	5017571	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.111	-0.01	859099	3.6274	73	20 - 109	Y
18O2-PFHxS	4.485	-0.01	503001	4.2644	85	26 - 122	Y
13C4-PFOS	4.807	-0.01	557062	4.5476	91	25 - 121	Y
13C4-PFBA	3.455	-0.02	2276481	3.6296	73	27 - 124	Y
13C5-PFPeA	4.059	-0.01	984618	2.7588	55	27 - 138	Y
13C2-PFHxA	4.313	-0.01	2366195	2.1467	43	28 - 132	Y
13C4-PFHpA	4.486	-0.01	2829068	3.5907	72	19 - 139	Y
13C4-PFOA	4.647	-0.01	4031087	3.5987	72	22 - 130	Y
13C5-PFNA	4.819	-0.01	2583293	3.4032	68	20 - 127	Y
13C2-PFDA	4.995	-0.01	2313861	3.2908	66	24 - 125	Y
13C2-PFUnDA	5.168	-0.01	3053855	3.5409	71	22 - 125	Y
13C2-PFDODA	5.334	-0.01	2668960	3.2159	64	19 - 122	Y
13C2-PFTeDA	5.631	-0.01	2277229	4.2784	86	13 - 124	Y
13C8-FOSA	5.284	-0.01	1369293	2.9915	60	18 - 109	Y
D3-MeFOSAA	5.090	-0.01	348984	4.0692	81	9 - 123	Y
D5-EtFOSAA	5.182	-0.01	381046	6.2685	125	12 - 126	Y
13C2-6:2 FTS	4.639	-0.01	740213	7.7595	155	10 - 226	Y
13C2-8:2 FTS	4.996	-0.01	359294	4.9768	100	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.111	-0.01	17664	0.0892	2.7	J	Y
Perfluorohexane sulfonic acid (PFHxS)	4.481	-0.01	19170	0.1105	3.3	J	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 11:35

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Data File: J:\LCMS06\Data\200812_b3\200812_075
Acqu Date: 8/13/20 01:54
Run Type: N/A
Lab ID: R2006768-004

Instrument: K-LCMS06 *206* 08/20/20
Vial: 15
Dilution: 1
Raw Units: ng/mL

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	0		0	0	0	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.749	-0.07	36784	0.2691	8.1		Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.452	-0.03	495777	0.9683	29		Y
Perfluoropentanoic acid (PFPeA)	4.058	-0.02	148825	0.1866	5.6		Y
Perfluorohexanoic acid (PFHxA)	4.311	-0.01	123387	0.1915	5.8	U	Y
Perfluoroheptanoic acid (PFHpA)	4.487	-0.01	54219	0.0590	1.8	J	Y
Perfluorooctanoic acid (PFOA)	4.646	-0.01	148101	0.1525	4.6		Y
Perfluorononanoic acid (PFNA)	4.818	-0.01	31538	0.0480	1.4	J	Y
Perfluorodecanoic acid (PFDA)	4.996	-0.01	14966	0.0307	0.93	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.168	-0.01	23095	0.0115	0.35	U	Y
Perfluorododecanoic acid (PFDoDA)	5.332	-0.01	19712	0.0288	0.87	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.489	-0.01	14054	0.0068	0.21	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.631	-0.01	43122	0.0196	0.59	U	Y
Perfluorooctane sulfonamide (FOSA)	5.286	-0.01	1285	0.0033	0.10	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.091	-0.01	843	0.0160	0.48	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.643	-0.01	1015	0.0063	0.19	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.993	-0.01	130	0.0024	0.072	U	Y

Prep Amount: 265.0000 mL
Prep Final Amount: 8.00 mL

Dilution: 1
Basis Factor: 100.00

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 11:35

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Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_075

Sample ID: R2006768-004
 Date Acquired: 8/13/2020 1:54:05 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_075.lcd
 Vial: 19 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.168	5017571	5017571	1	5.0000	ng/mL	----	----
PFBS_1	M	4.111	17664	859099	2	0.0892	ng/mL	----	46.04
PFBS-13C	Auto	4.111	859099	5017571	1	3.6274	ng/mL	----	----
PFBS-13C_IS	Auto	4.111	859099	859099	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	859099	2	----	ng/mL	----	----
PFHxS_1	M	4.481	19170	503001	3	0.1105	ng/mL	----	63.81
PFHxS-18O	Auto	4.485	503001	5017571	1	4.2644	ng/mL	----	----
PFHxS-18O_IS	Auto	4.485	503001	503001	3	5.0000	ng/mL	----	----
PFHpS_1	ND(W/B)	----	----	503001	3	----	ng/mL	----	----
PFOS_1	M	4.749	36784	557062	4	0.2691	ng/mL	----	26.70
PFOS-13C	Auto	4.807	557062	5017571	1	4.5476	ng/mL	----	----
PFOS-13C_IS	Auto	4.807	557062	557062	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	557062	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	557062	4	----	ng/mL	----	----
PFBA	M	3.452	495777	2276481	5	0.9683	ng/mL	----	----
PFBA-13C	Auto	3.455	2276481	5017571	1	3.6296	ng/mL	----	----
PFBA-13C_IS	Auto	3.455	2276481	2276481	5	5.0000	ng/mL	----	----
PFPeA	M	4.058	148825	984618	6	0.1866	ng/mL	----	----
PFPeA-13C	Auto	4.059	984618	5017571	1	2.7588	ng/mL	----	----
PFPeA-13C_IS	Auto	4.059	984618	984618	6	5.0000	ng/mL	----	----
PFHxA	M	4.311	123387	2366195	7	0.1915	ng/mL	----	6.02
PFHxA-13C	Auto	4.313	2366195	5017571	1	2.1467	ng/mL	----	----
PFHxA-13C_IS	Auto	4.313	2366195	2366195	7	5.0000	ng/mL	----	----
PFHpA	M	4.487	54219	2829068	8	0.0590	ng/mL	----	22.79
PFHpA-13C	Auto	4.486	2829068	5017571	1	3.5907	ng/mL	----	----
PFHpA-13C_IS	Auto	4.486	2829068	2829068	8	5.0000	ng/mL	----	----
PFOA	Auto	4.646	148101	4031087	9	0.1525	ng/mL	----	33.65
PFOA-13C	Auto	4.647	4031087	5017571	1	3.5987	ng/mL	----	----
PFOA-13C_IS	Auto	4.647	4031087	4031087	9	5.0000	ng/mL	----	----
PFNA	M	4.818	31538	2583293	10	0.0480	ng/mL	----	19.05
PFNA-13C	Auto	4.819	2583293	5017571	1	3.4032	ng/mL	----	----
PFNA-13C_IS	Auto	4.819	2583293	2583293	10	5.0000	ng/mL	----	----
PFDA	M	4.996	14966	2313861	11	0.0307	ng/mL	----	27.75
PFDA-13C	Auto	4.995	2313861	5017571	1	3.2908	ng/mL	----	----
PFDA-13C_IS	Auto	4.995	2313861	2313861	11	5.0000	ng/mL	----	----
PFUnA	M	5.168	23095	3053855	12	0.0115	ng/mL	----	12.36
PFUnA-13C	Auto	5.168	3053855	5017571	1	3.5409	ng/mL	----	----
PFUnA-13C_IS	Auto	5.168	3053855	3053855	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.332	19712	2668960	13	0.0288	ng/mL	----	21.92
PFDaA-13C	Auto	5.334	2668960	5017571	1	3.2159	ng/mL	----	----
PFDaA-13C_IS	Auto	5.334	2668960	2668960	13	5.0000	ng/mL	----	----
PFTeDA	M	5.489	14054	2277229	14	0.0068	ng/mL	----	16.69
PFTeDA	Auto	5.631	43122	2277229	14	0.0196	ng/mL	----	911.84
PFTeDA-13C	Auto	5.631	2277229	5017571	1	4.2784	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.631	2277229	2277229	14	5.0000	ng/mL	----	----
FOSA	Auto	5.286	1285	1369293	16	0.0033	ng/mL	----	0.00
FOSA-13C	Auto	5.284	1369293	5017571	1	2.9915	ng/mL	----	----
FOSA-13C_IS	Auto	5.284	1369293	1369293	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.644	500	479472	17	0.0040	ng/mL	----	101.70
N-MeFOSA-d3	Auto	5.642	479472	5017571	1	4.2057	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.642	479472	479472	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	530139	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.769	530139	5017571	1	3.7316	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.769	530139	530139	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.619	670	174324	19	0.0062	ng/mL	----	----

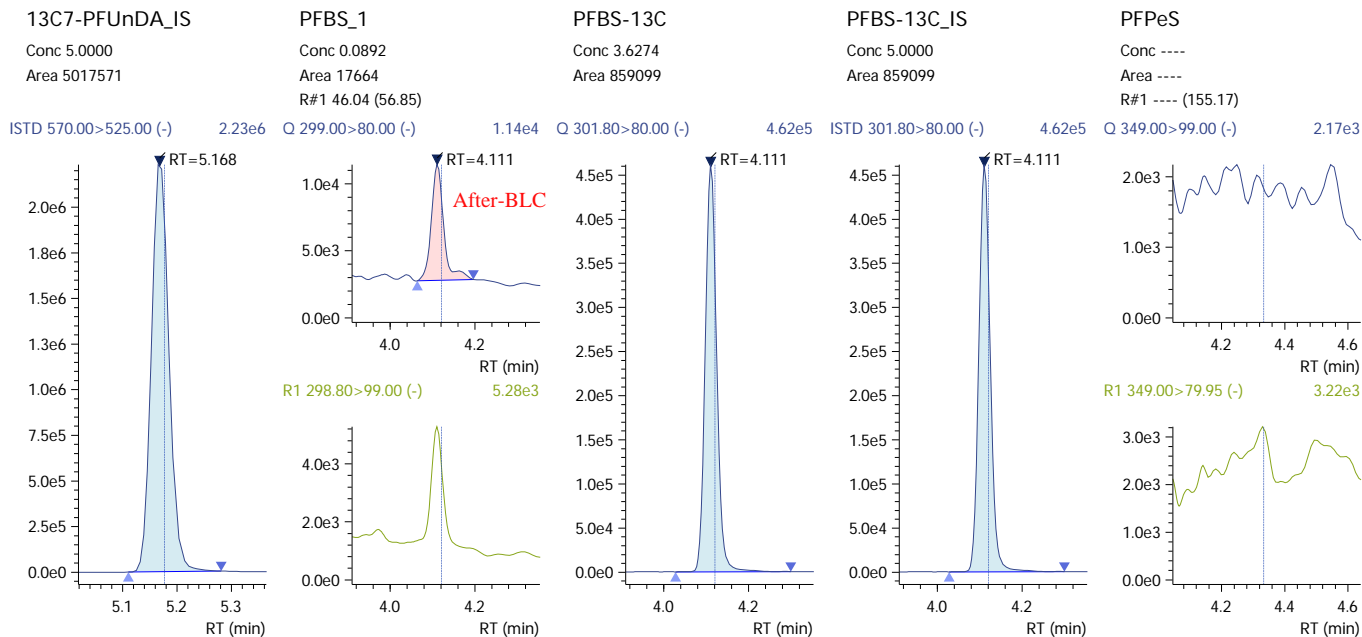
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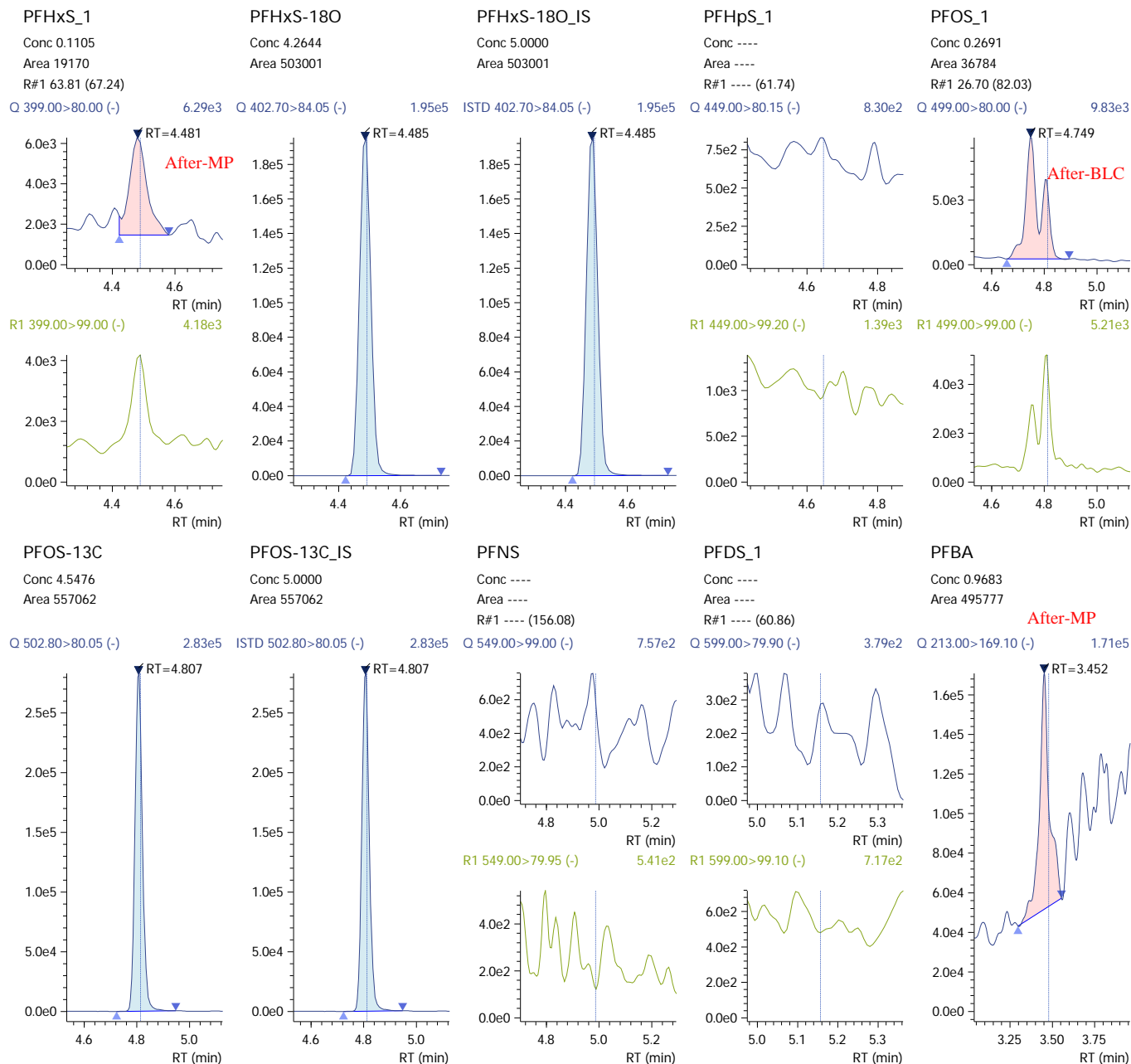
200812_075 (continued)

(Table continued from previous page)

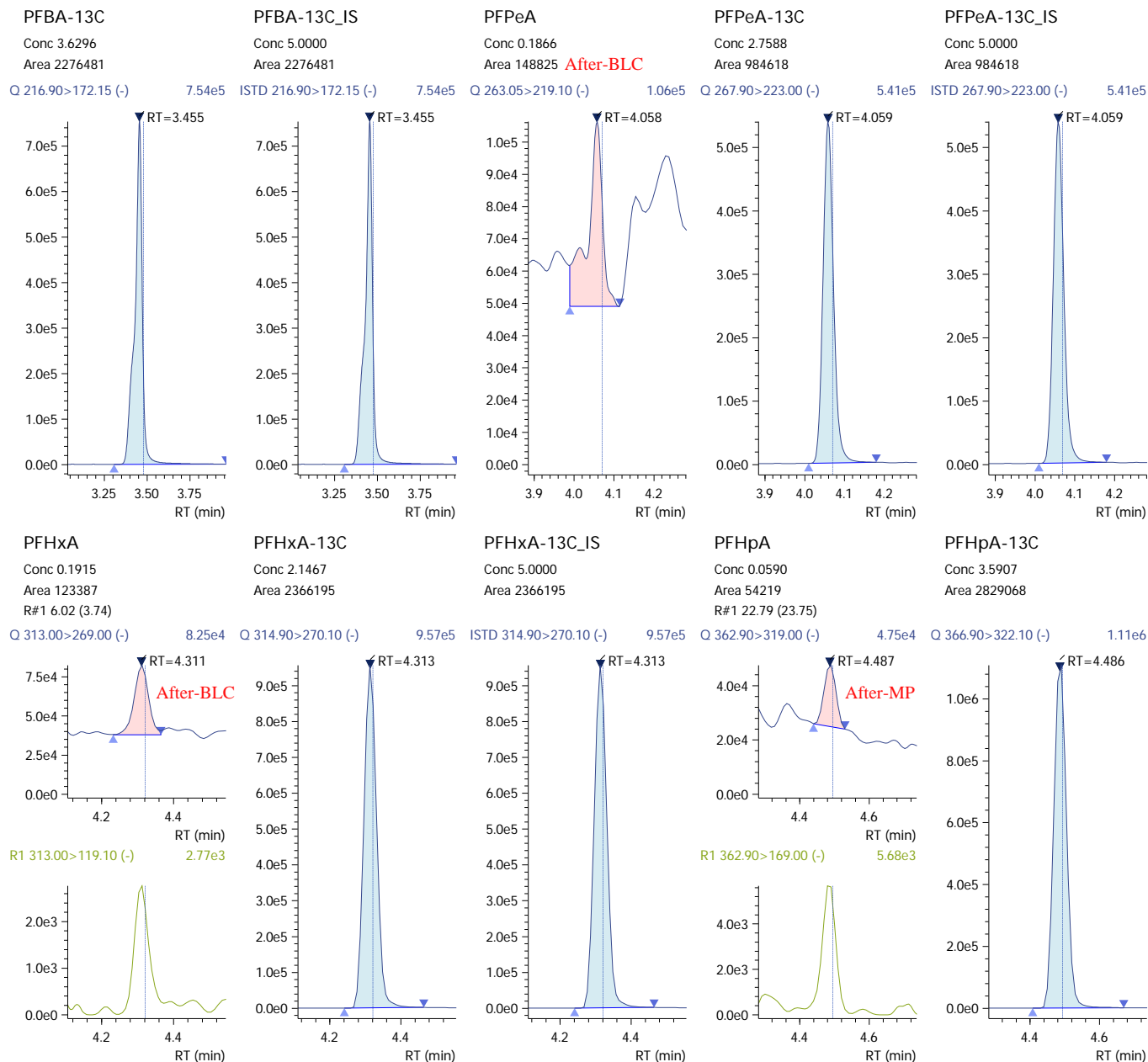
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.615	174324	5017571	1	3.1982	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.615	174324	174324	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.731	2888	136078	20	0.0264	ng/mL	----	----
N-EtFOSE-d9	Auto	5.737	136078	5017571	1	3.0461	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.737	136078	136078	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.091	843	348984	21	0.0160	ng/mL	----	7.88
N-MeFOSAA-d3	Auto	5.090	348984	5017571	1	4.0692	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.090	348984	348984	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	381046	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.182	381046	5017571	1	6.2685	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.182	381046	381046	22	5.0000	ng/mL	----	----
4_2-FTS_1	M	4.306	703	1052311	23	0.0035	ng/mL	----	30871.67
4_2-FTS-13C	Auto	4.290	1052311	5017571	1	5.9629	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.290	1052311	1052311	23	5.0000	ng/mL	----	----
6_2-FTS_1	M	4.643	1015	740213	24	0.0063	ng/mL	----	71.57
6_2-FTS-13C	Auto	4.639	740213	5017571	1	7.7595	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.639	740213	740213	24	5.0000	ng/mL	----	----
8_2-FTS_1	M	4.993	130	359294	25	0.0024	ng/mL	----	6.90
8_2-FTS-13C	M	4.996	359294	5017571	1	4.9768	ng/mL	----	----
8_2-FTS-13C_IS	M	4.996	359294	359294	25	5.0000	ng/mL	----	----
10_2-FTS_1	Auto	5.338	2	359294	25	0.0000	ng/mL	----	0.00
HPFO_DA	ND(W/B)	----	----	412043	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.376	412043	5017571	1	2.0163	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.376	412043	412043	26	5.0000	ng/mL	----	----



200812_075 (continued)



200812_075 (continued)

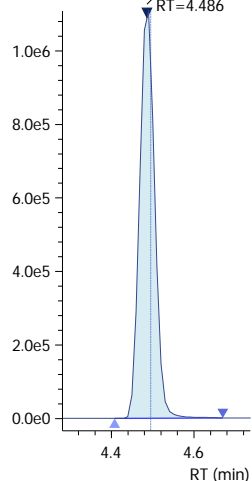


200812_075 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 2829068

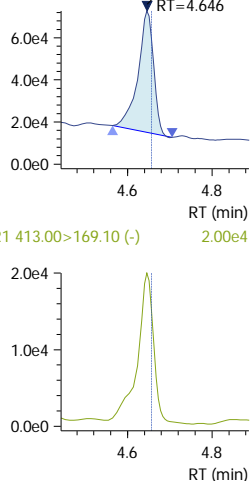
ISTD 366.90>322.10 (-) 1.11e6



PFOA

Conc 0.1525
Area 148101
R#1 33.65 (34.80)

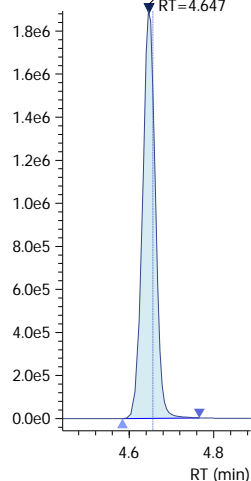
Q 413.00>369.00 (-) 7.27e4



PFOA-13C

Conc 3.5987
Area 4031087

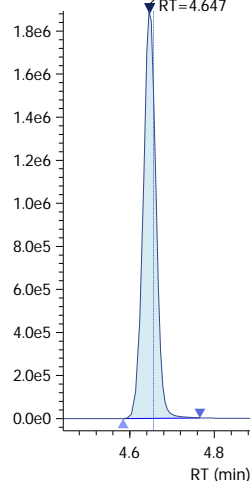
Q 416.80>372.05 (-) 1.89e6



PFOA-13C_IS

Conc 5.0000
Area 4031087

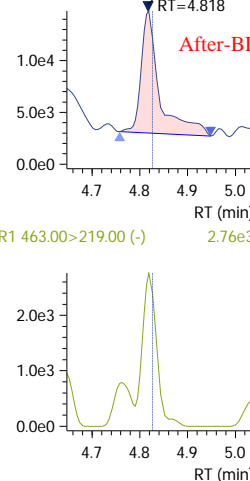
ISTD 416.80>372.05 (-) 1.89e6



PFNA

Conc 0.0480
Area 31538
R#1 19.05 (22.71)

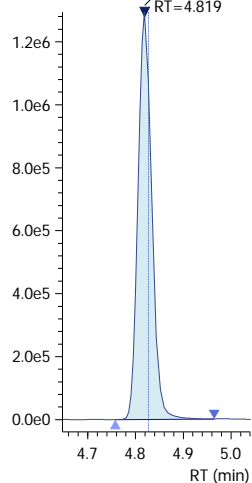
Q 463.00>418.90 (-) 1.48e4



PFNA-13C

Conc 3.4032
Area 2583293

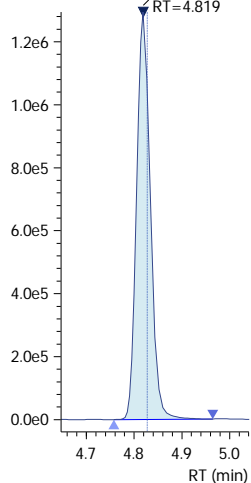
Q 467.80>423.00 (-) 1.29e6



PFNA-13C_IS

Conc 5.0000
Area 2583293

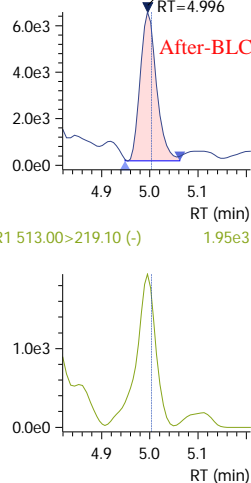
ISTD 467.80>423.00 (-) 1.29e6



PFDA

Conc 0.0307
Area 14966
R#1 27.75 (22.06)

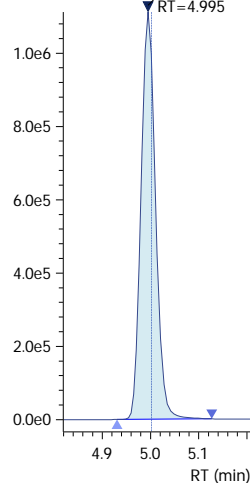
Q 513.00>468.80 (-) 6.59e3



PFDA-13C

Conc 3.2908
Area 2313861

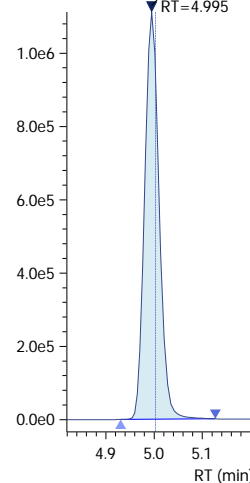
Q 514.80>469.95 (-) 1.11e6



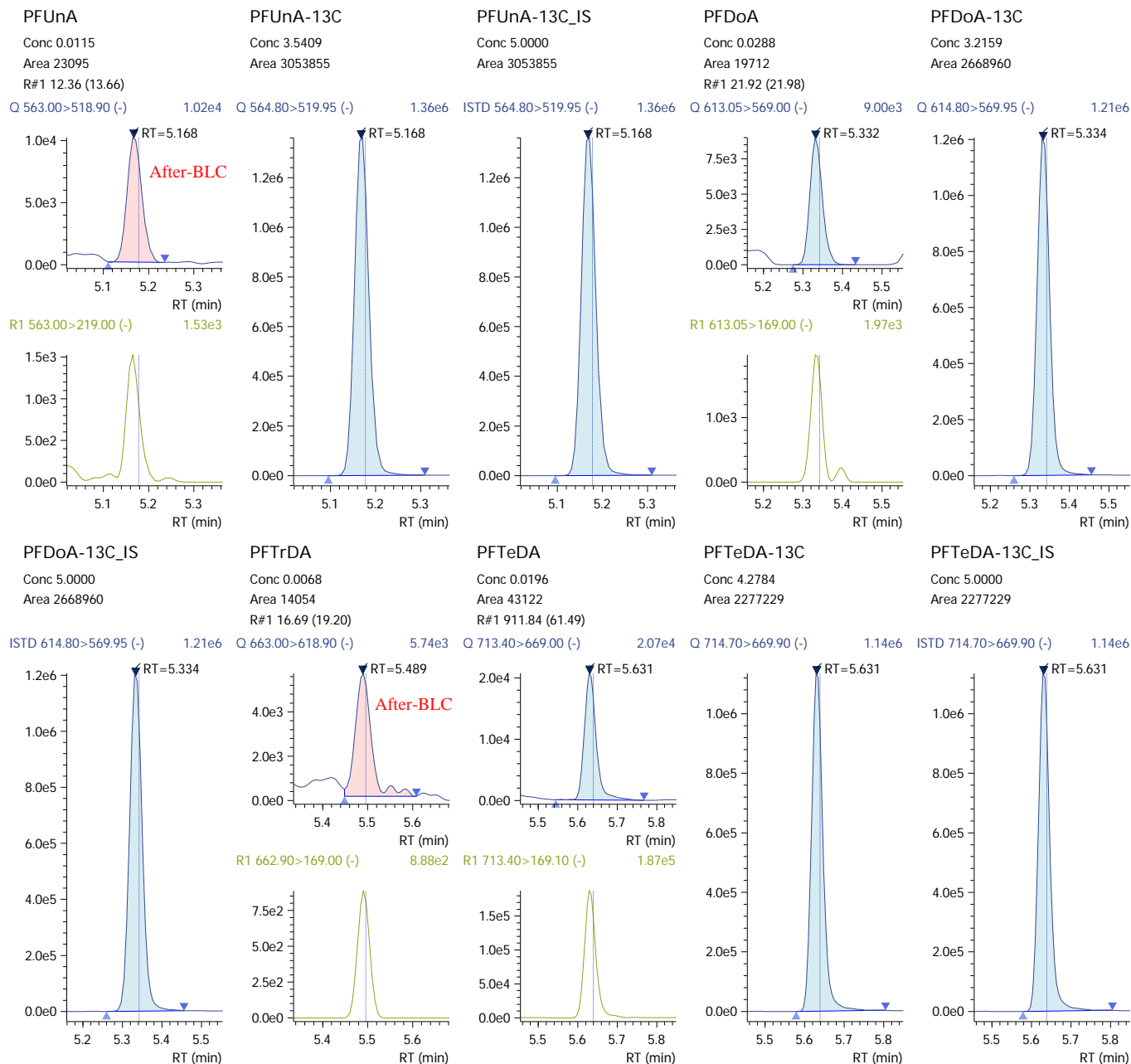
PFDA-13C_IS

Conc 5.0000
Area 2313861

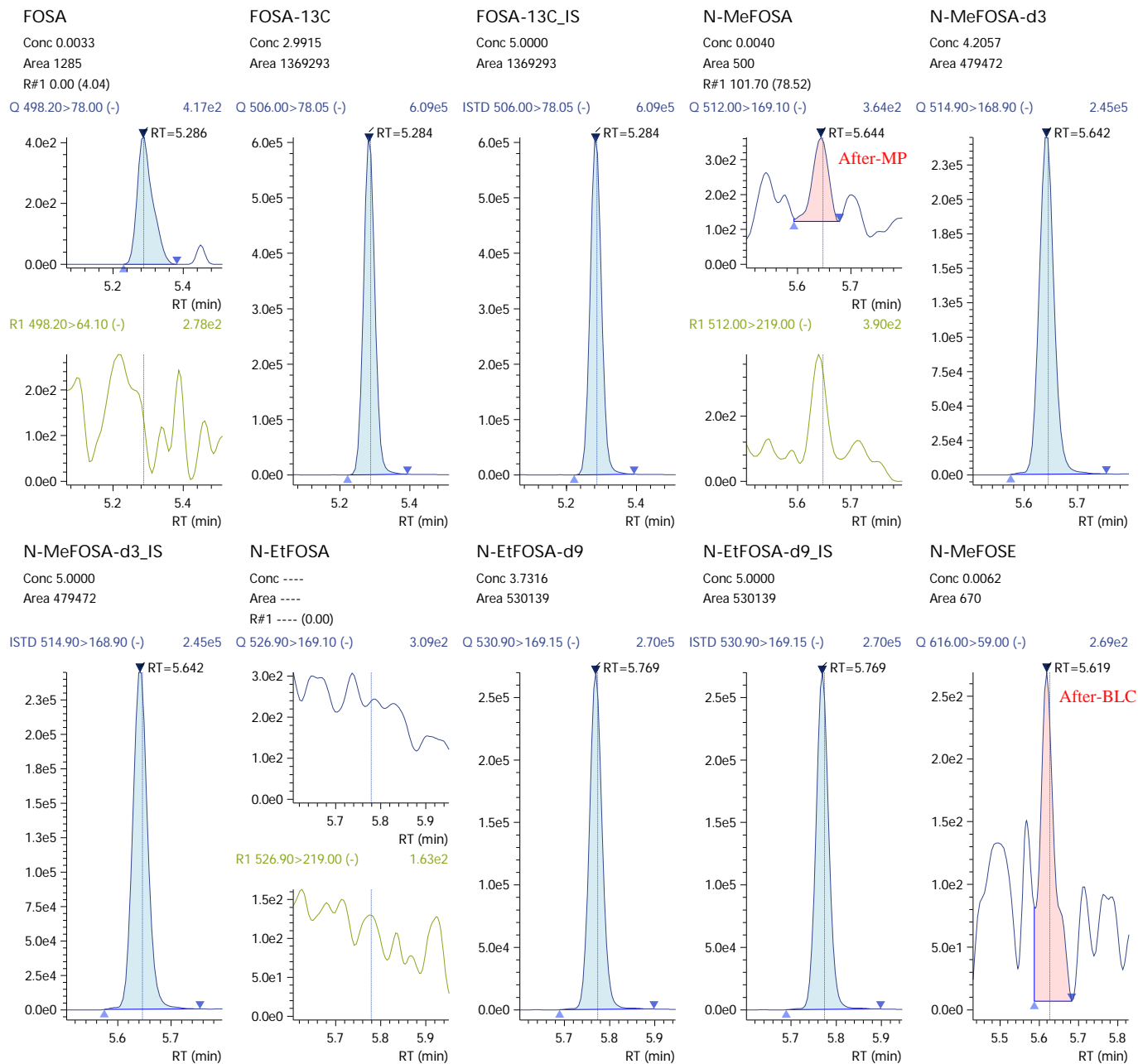
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200812_075 (continued)



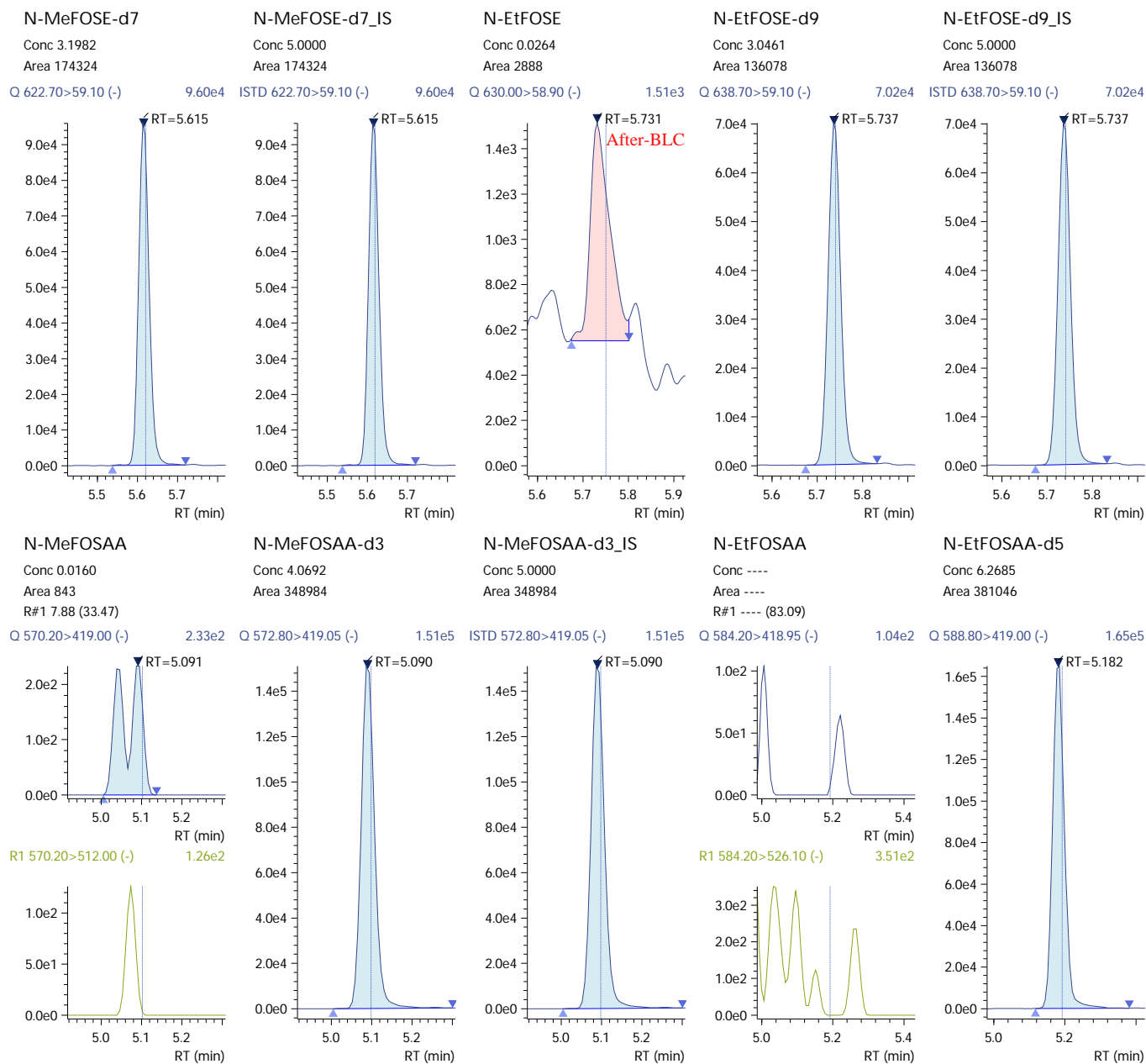
200812_075 (continued)



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200812_075 (continued)



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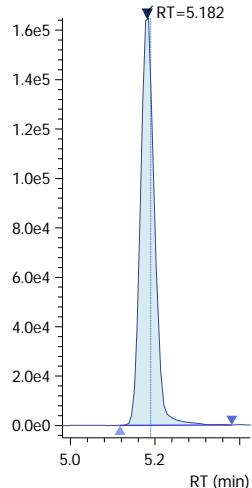
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200812_075 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 381046

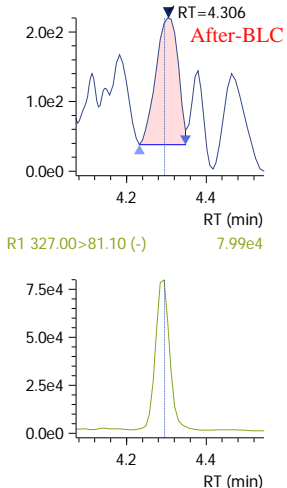
ISTD 588.80>419.00 (-) 1.65e5



4_2-FTS_1

Conc 0.0035
 Area 703
 R#1 30871.67 (54.93)

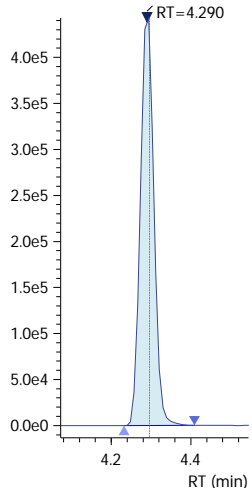
Q 327.00>307.05 (-) 2.20e2



4_2-FTS-13C

Conc 5.9629
 Area 1052311

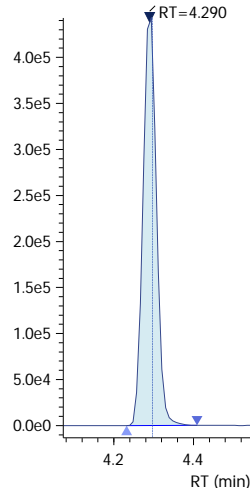
Q 328.80>309.05 (-) 4.43e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 1052311

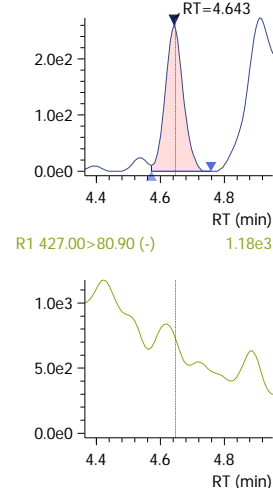
ISTD 328.80>309.05 (-) 4.43e5



6_2-FTS_1

Conc 0.0063
 Area 1015
 R#1 71.57 (36.33) **After-BLC**

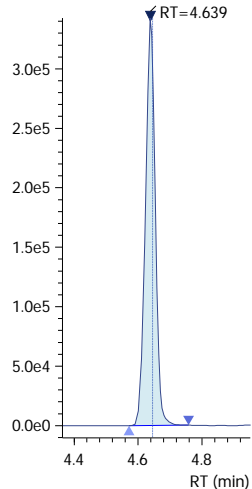
Q 427.00>407.00 (-) 2.73e2



6_2-FTS-13C

Conc 7.7595
 Area 740213

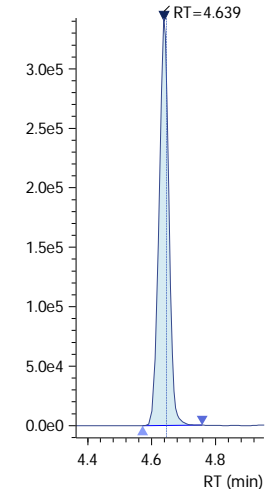
Q 428.90>409.00 (-) 3.43e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 740213

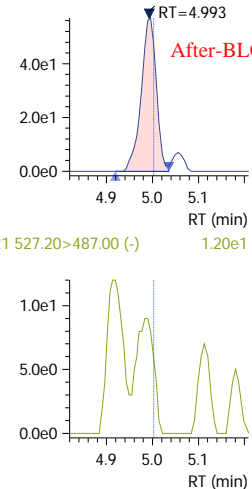
ISTD 428.90>409.00 (-) 3.43e5



8_2-FTS_1

Conc 0.0024
 Area 130
 R#1 6.90 (8.96)

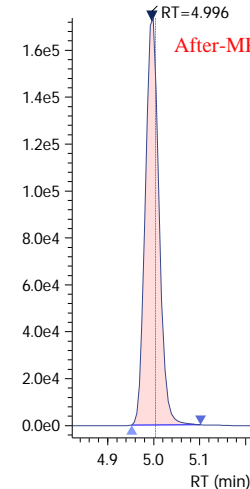
Q 527.10>506.90 (-) 5.70e1



8_2-FTS-13C

Conc 4.9768
 Area 359294

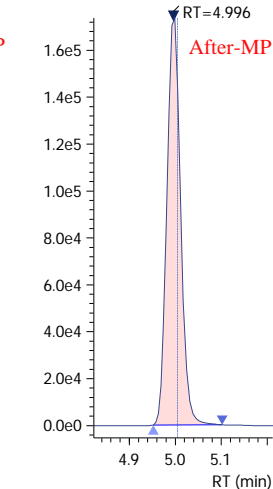
Q 528.80>509.00 (-) 1.74e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 359294

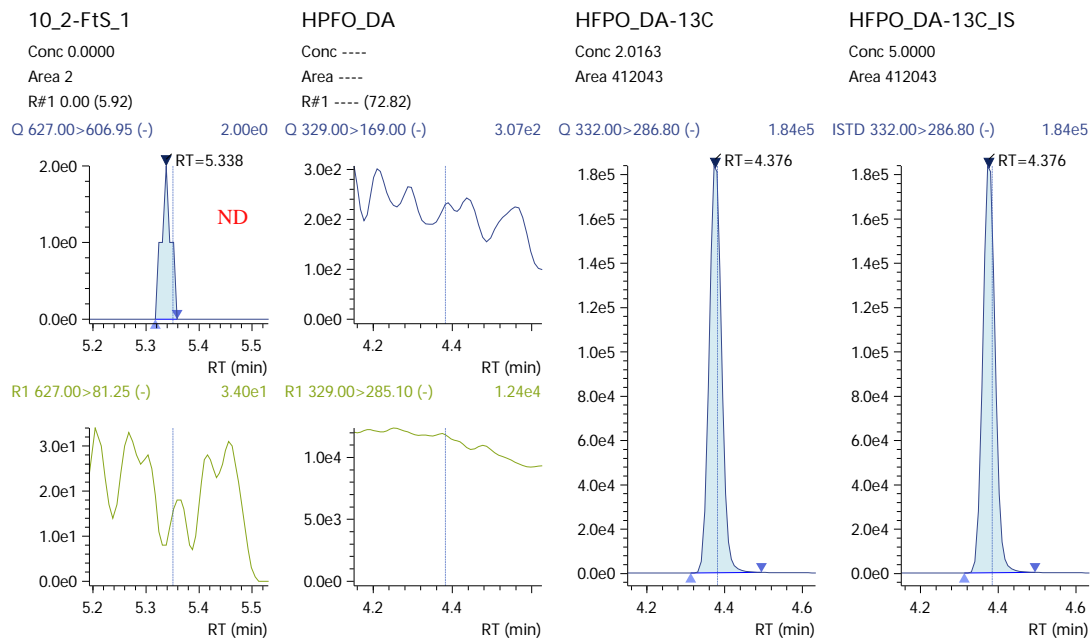
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200812_075 (continued)

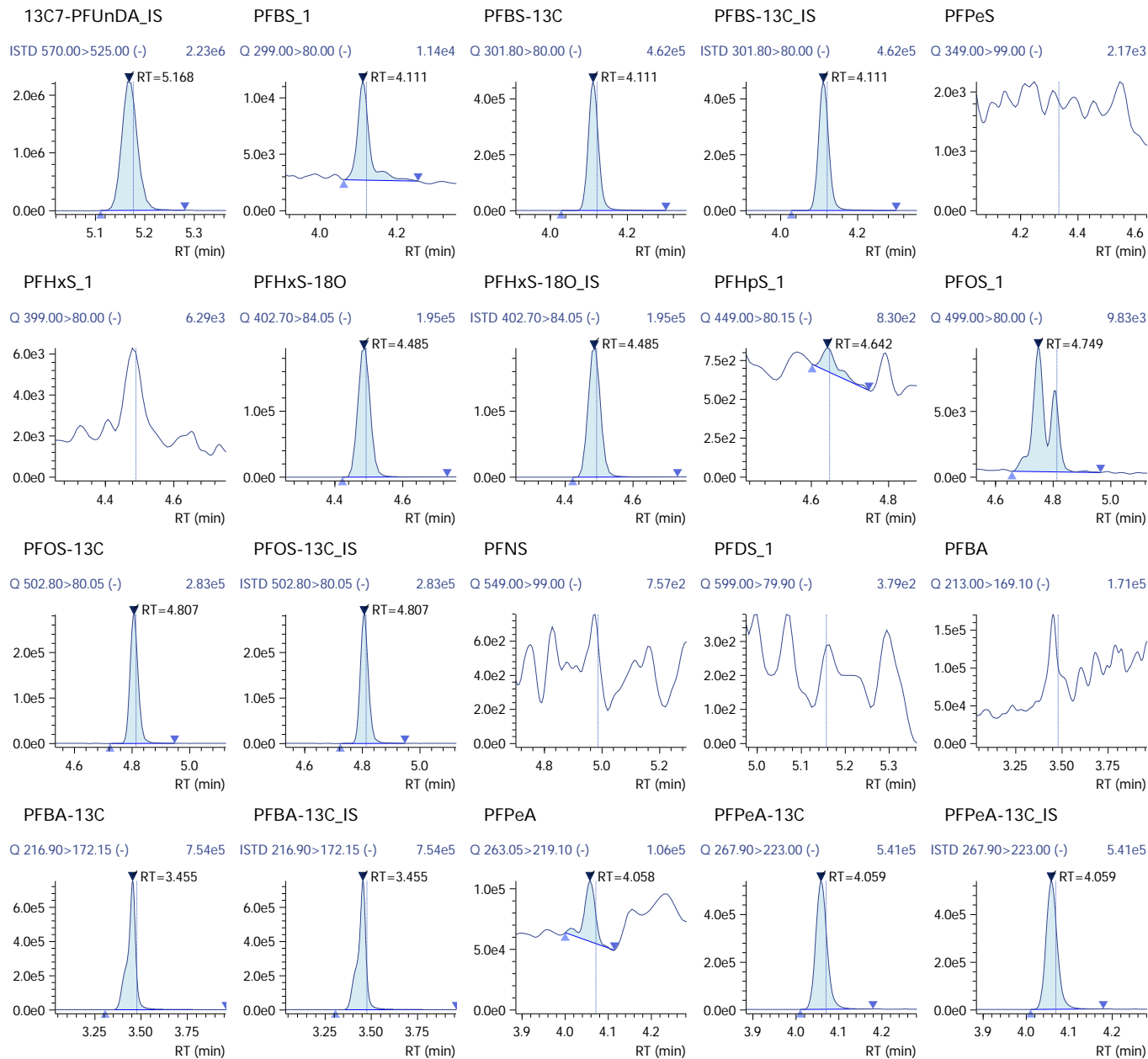


Insight Report

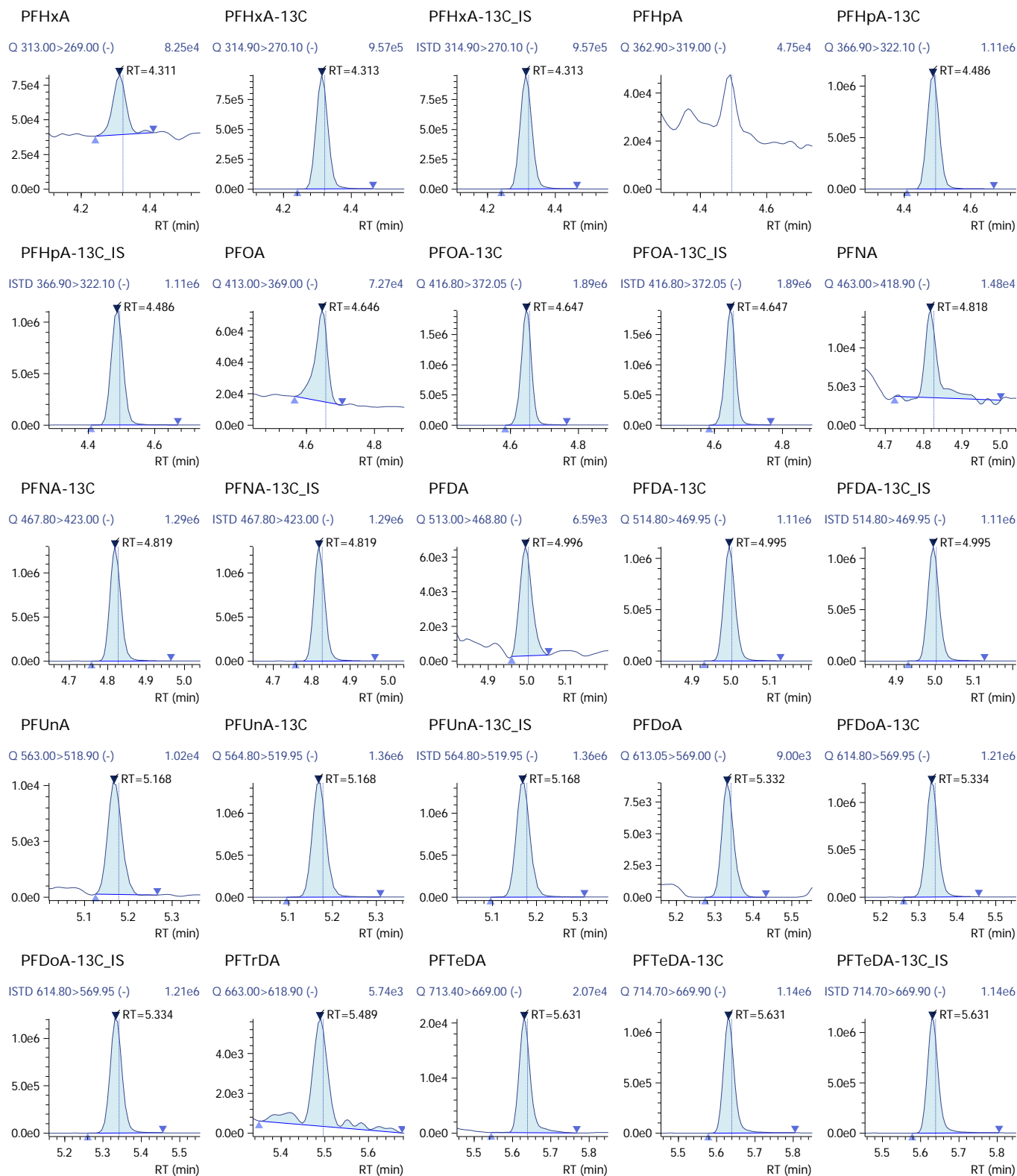
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200812_075

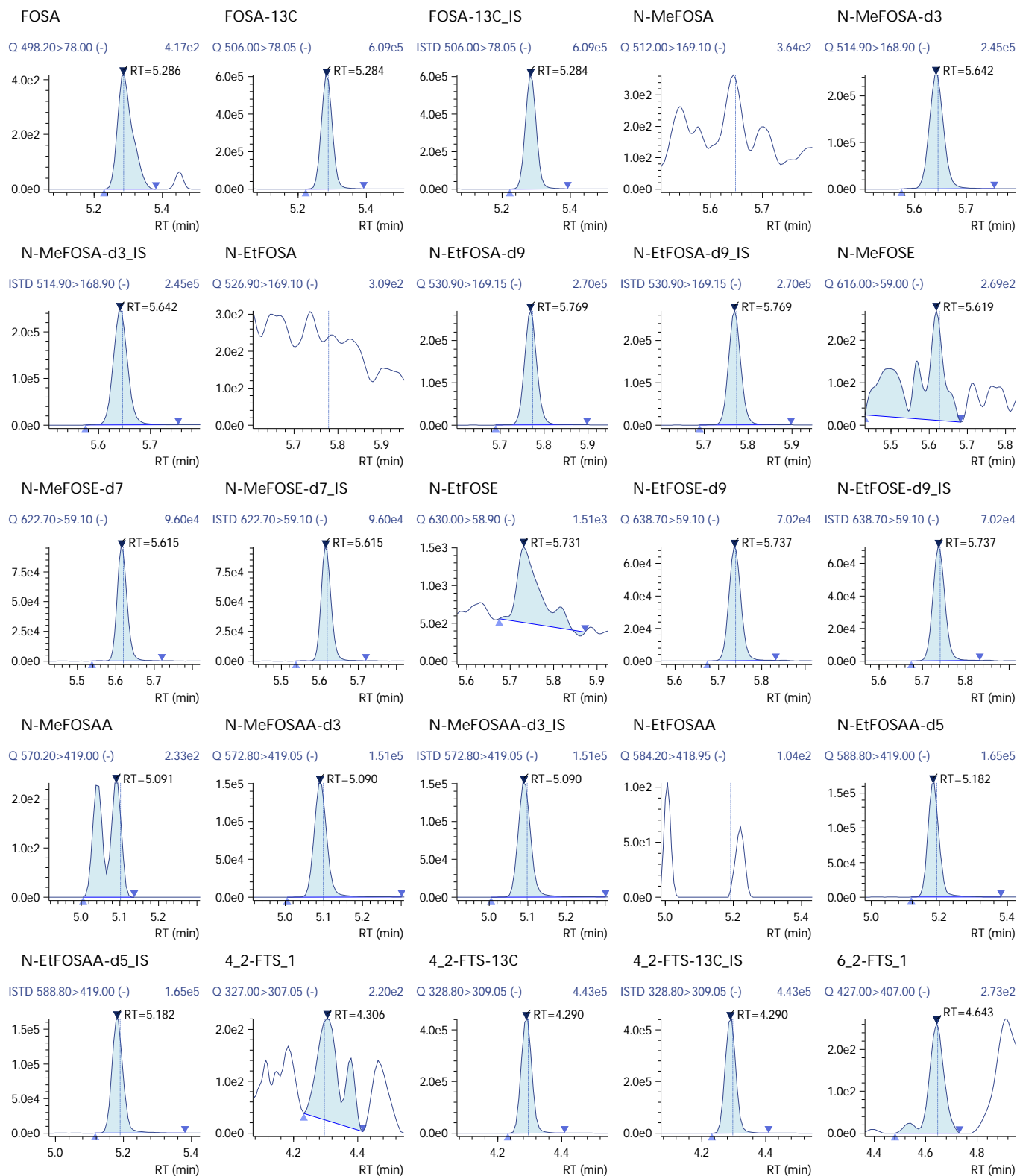
Sample ID: R2006768-004
Date Acquired: 8/13/2020 1:54:05 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_075.lcd
Vial: 19 | Inj. Volume: 15.0000uL | Tray: 3



200812_075 (continued)



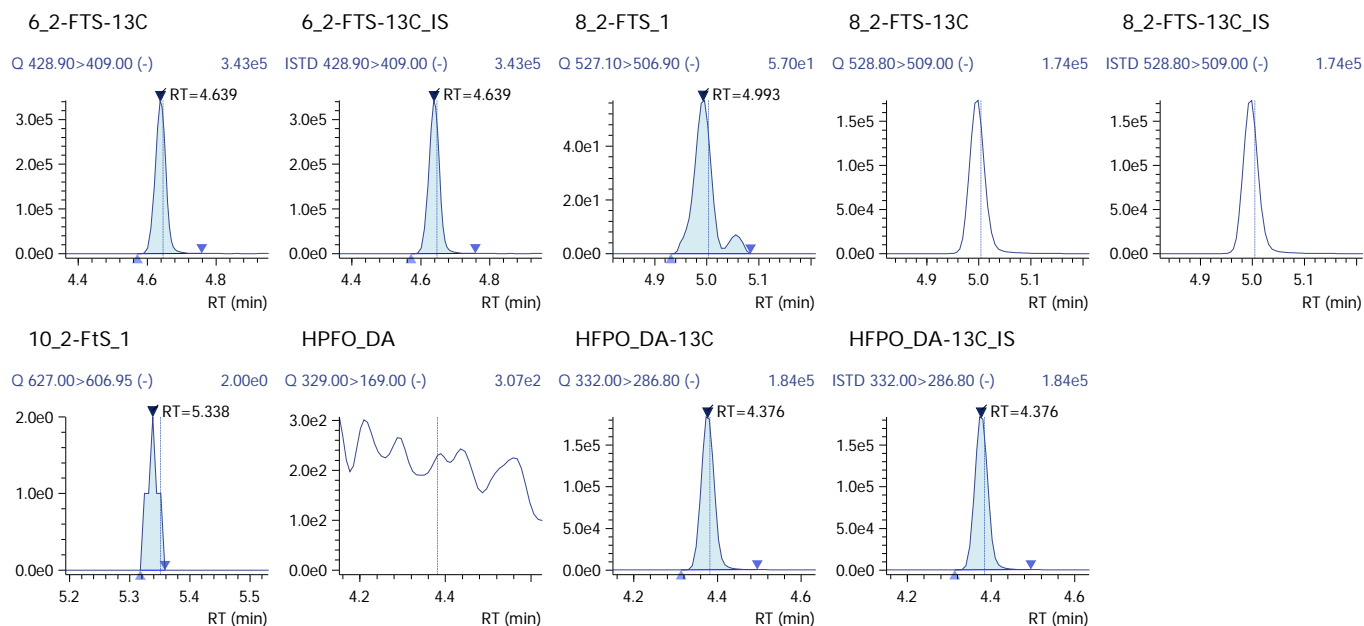
200812_075 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_075 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_076
Lab ID: R2006768-005
RunType: N/A
Matrix: Water

Date Acquired: 8/13/20 02:04
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Preparation Hold Time	X	
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Lab Control Sample Recovery	X	
Method Blank	X	
Method Blank Surrogates	X	
Internal Standards	X	
Surrogates		X
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	18O2-PFHxS	143	26	122	High bias ND
	13C4-PFOS	131	25	121	High bias ND

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *JS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_076	Instrument: K-LCMS-06
Acqu Date: 8/13/20 02:04	Vial: 16
Run Type: N/A	Dilution: 1
Lab ID: R2006768-005	Raw Units: ng/mL

Bottle ID: R2006768-005.01	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: R2006768
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.167	-0.01	4542152	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.113	-0.01	1139104	5.3130	106	20 - 109	Y
18O2-PFHxS	4.486	-0.01	764937	7.1638	143 *	26 - 122	Y
13C4-PFOS	4.806	-0.01	724205	6.5308	131 *	25 - 121	Y
13C4-PFBA	3.457	-0.02	3441617	6.0617	121	27 - 124	Y
13C5-PFPeA	4.060	-0.01	1622025	5.0205	100	27 - 138	Y
13C2-PFHxA	4.315	-0.01	4876783	4.8875	98	28 - 132	Y
13C4-PFHpA	4.487	-0.01	4337106	6.0809	122	19 - 139	Y
13C4-PFOA	4.648	-0.01	6022128	5.9389	119	22 - 130	Y
13C5-PFNA	4.819	-0.01	3428784	4.9899	100	20 - 127	Y
13C2-PFDA	4.994	-0.01	2970570	4.6669	93	24 - 125	Y
13C2-PFUnDA	5.167	-0.01	3656235	4.6831	94	22 - 125	Y
13C2-PFDODA	5.332	-0.01	3244586	4.3187	86	19 - 122	Y
13C2-PFTeDA	5.630	-0.01	2595230	5.3862	108	13 - 124	Y
13C8-FOSA	5.283	-0.01	1720499	4.1522	83	18 - 109	Y
D3-MeFOSAA	5.090	-0.01	301108	3.8784	78	9 - 123	Y
D5-EtFOSAA	5.181	-0.01	308588	5.6079	112	12 - 126	Y
13C2-6:2 FTS	4.639	-0.01	549248	6.3603	127	10 - 226	Y
13C2-8:2 FTS	4.995	-0.01	259901	3.9769	80	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.114	-0.01	1612	0.0061	0.16	U	Y
Perfluorohexane sulfonic acid (PFHxS)	4.486	-0.01	3747	0.0142	0.37	U	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 11:35

\\alprews001\starlims\LIMSReps\QuantValidation.rpt

Data File: J:\LCMS06\Data\200812_b3\200812_076
 Acq Date: 8/13/20 02:04
 Run Type: N/A
 Lab ID: R2006768-005

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 16
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	0		0	0	0	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.804	-0.01	1080	0.0061	0.16	U	Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.456	-0.02	5264	0.0068	0.18	U	Y
Perfluoropentanoic acid (PFPeA)	4.020	-0.05	74771	0.0159	0.42	U	Y
Perfluorohexanoic acid (PFHxA)	4.307	-0.02	53949	-0.0033	0	U	Y
Perfluoroheptanoic acid (PFHpA)	4.484	-0.01	40441	0.0206	0.54	U	Y
Perfluorooctanoic acid (PFOA)	4.646	-0.01	45973	0.0085	0.22	U	Y
Perfluorononanoic acid (PFNA)	4.816	-0.01	21803	0.0185	0.49	U	Y
Perfluorodecanoic acid (PFDA)	4.993	-0.01	19605	0.0314	0.82	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.166	-0.01	16815	-0.0042	0	U	Y
Perfluorododecanoic acid (PFDoDA)	5.332	-0.01	13399	0.0085	0.22	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.488	-0.01	14204	0.0039	0.10	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.630	-0.01	49139	0.0196	0.51	U	Y
Perfluorooctane sulfonamide (FOSA)	5.283	-0.01	2058	0.0043	0.11	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.645	-0.01	267	0.0022	0.058	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.994	-0.01	110	0.0028	0.073	U	Y

Prep Amount: 305.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

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200812_076

Sample ID: R2006768-005
 Date Acquired: 8/13/2020 2:04:44 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_076.lcd
 Vial: 20 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.167	4542152	4542152	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.114	1612	1139104	2	0.0061	ng/mL	----	49.88
PFBS-13C	Auto	4.113	1139104	4542152	1	5.3130	ng/mL	----	----
PFBS-13C_IS	Auto	4.113	1139104	1139104	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	1139104	2	----	ng/mL	----	----
PFHxS_1	Auto	4.486	3747	764937	3	0.0142	ng/mL	----	64.34
PFHxS-18O	Auto	4.486	764937	4542152	1	7.1638	ng/mL	----	----
PFHxS-18O_IS	Auto	4.486	764937	764937	3	5.0000	ng/mL	----	----
PFHpS_1	ND(W/B)	----	----	764937	3	----	ng/mL	----	----
PFOS_1	Auto	4.804	1080	724205	4	0.0061	ng/mL	----	123.68
PFOS-13C	Auto	4.806	724205	4542152	1	6.5308	ng/mL	----	----
PFOS-13C_IS	Auto	4.806	724205	724205	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	724205	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	724205	4	----	ng/mL	----	----
PFBA	M	3.456	5264	3441617	5	0.0068	ng/mL	----	----
PFBA-13C	Auto	3.457	3441617	4542152	1	6.0617	ng/mL	----	----
PFBA-13C_IS	Auto	3.457	3441617	3441617	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.020	74771	1622025	6	0.0159	ng/mL	----	----
PFPeA-13C	Auto	4.060	1622025	4542152	1	5.0205	ng/mL	----	----
PFPeA-13C_IS	Auto	4.060	1622025	1622025	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.307	53949	4876783	7	-0.0033	ng/mL	----	2.49
PFHxA-13C	Auto	4.315	4876783	4542152	1	4.8875	ng/mL	----	----
PFHxA-13C_IS	Auto	4.315	4876783	4876783	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.484	40441	4337106	8	0.0206	ng/mL	----	17.03
PFHpA-13C	Auto	4.487	4337106	4542152	1	6.0809	ng/mL	----	----
PFHpA-13C_IS	Auto	4.487	4337106	4337106	8	5.0000	ng/mL	----	----
PFOA	Auto	4.646	45973	6022128	9	0.0085	ng/mL	----	38.35
PFOA-13C	Auto	4.648	6022128	4542152	1	5.9389	ng/mL	----	----
PFOA-13C_IS	Auto	4.648	6022128	6022128	9	5.0000	ng/mL	----	----
PFNA	M	4.816	21803	3428784	10	0.0185	ng/mL	----	23.50
PFNA-13C	Auto	4.819	3428784	4542152	1	4.9899	ng/mL	----	----
PFNA-13C_IS	Auto	4.819	3428784	3428784	10	5.0000	ng/mL	----	----
PFDA	Auto	4.993	19605	2970570	11	0.0314	ng/mL	----	14.98
PFDA-13C	Auto	4.994	2970570	4542152	1	4.6669	ng/mL	----	----
PFDA-13C_IS	Auto	4.994	2970570	2970570	11	5.0000	ng/mL	----	----
PFUnA	M	5.166	16815	3656235	12	-0.0042	ng/mL	----	10.52
PFUnA-13C	Auto	5.167	3656235	4542152	1	4.6831	ng/mL	----	----
PFUnA-13C_IS	Auto	5.167	3656235	3656235	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.332	13399	3244586	13	0.0085	ng/mL	----	17.95
PFDaA-13C	Auto	5.332	3244586	4542152	1	4.3187	ng/mL	----	----
PFDaA-13C_IS	Auto	5.332	3244586	3244586	13	5.0000	ng/mL	----	----
PFTeDA	Auto	5.488	14204	2595230	14	0.0039	ng/mL	----	20.80
PFTeDA	Auto	5.630	49139	2595230	14	0.0196	ng/mL	----	976.59
PFTeDA-13C	Auto	5.630	2595230	4542152	1	5.3862	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.630	2595230	2595230	14	5.0000	ng/mL	----	----
FOSA	Auto	5.283	2058	1720499	16	0.0043	ng/mL	----	0.00
FOSA-13C	Auto	5.283	1720499	4542152	1	4.1522	ng/mL	----	----
FOSA-13C_IS	Auto	5.283	1720499	1720499	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.640	918	554105	17	0.0063	ng/mL	----	36.98
N-MeFOSA-d3	Auto	5.641	554105	4542152	1	5.3691	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.641	554105	554105	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	597280	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.768	597280	4542152	1	4.6442	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.768	597280	597280	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.620	546	248952	19	0.0035	ng/mL	----	----

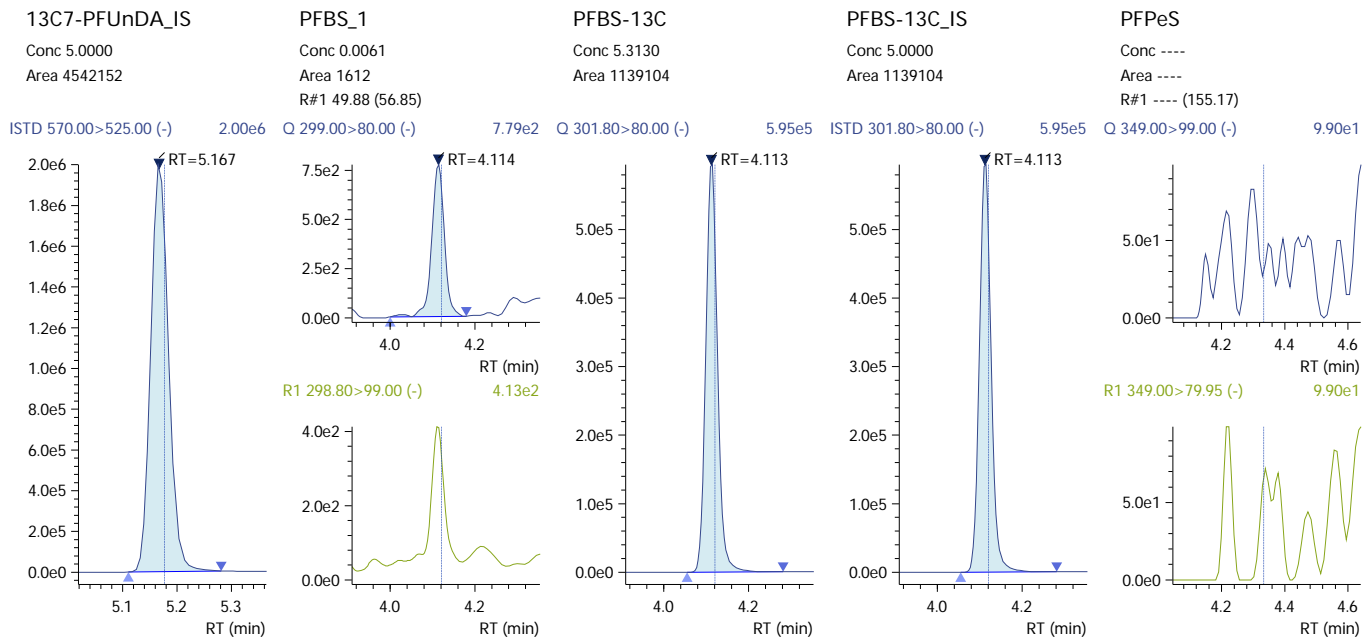
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200812_076 (continued)

(Table continued from previous page)

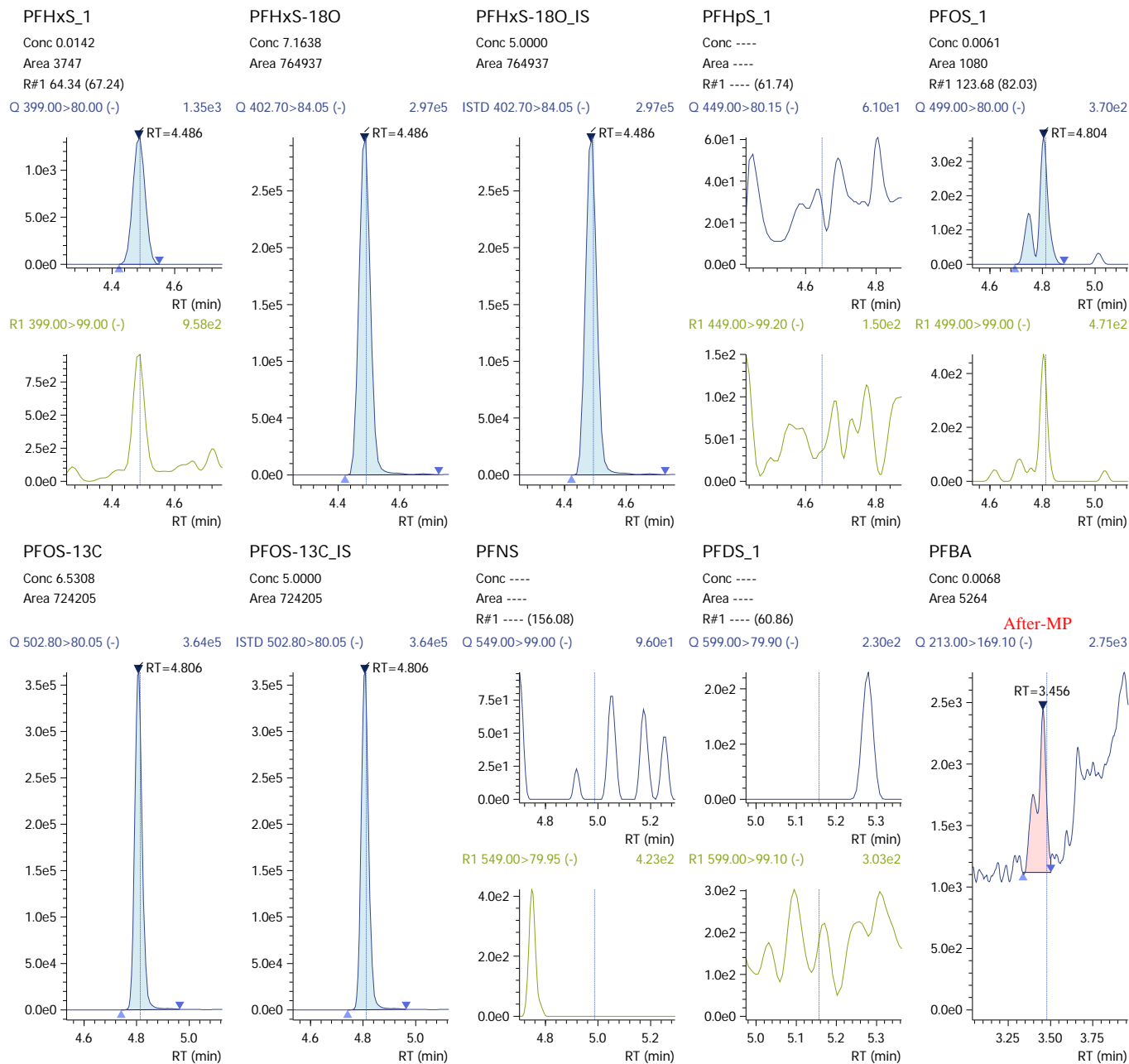
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.615	248952	4542152	1	5.0454	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.615	248952	248952	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.750	748	191512	20	0.0049	ng/mL	----	----
N-EtFOSE-d9	Auto	5.737	191512	4542152	1	4.7357	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.737	191512	191512	20	5.0000	ng/mL	----	----
N-MeFOSAA	ND(W/B)	----	----	299695	21	----	ng/mL	----	----
N-MeFOSAA-d3	M	5.090	301108	4542152	1	3.8784	ng/mL	----	----
N-MeFOSAA-d3_IS	M	5.090	299695	299695	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	308588	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.181	308588	4542152	1	5.6079	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.181	308588	308588	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.288	433	756642	23	0.0030	ng/mL	----	30626.84
4_2-FTS-13C	Auto	4.291	756642	4542152	1	4.7363	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.291	756642	756642	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.645	267	549248	24	0.0022	ng/mL	----	154.33
6_2-FTS-13C	Auto	4.639	549248	4542152	1	6.3603	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.639	549248	549248	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	4.994	110	259538	25	0.0028	ng/mL	----	0.00
8_2-FTS-13C	M	4.995	259901	4542152	1	3.9769	ng/mL	----	----
8_2-FTS-13C_IS	M	4.995	259538	259538	25	5.0000	ng/mL	----	----
10_2-FTS_1	ND(W/B)	----	----	259538	25	----	ng/mL	----	----
HPFO_DA	ND(W/B)	----	----	1100962	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.377	1100962	4542152	1	5.9515	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.377	1100962	1100962	26	5.0000	ng/mL	----	----



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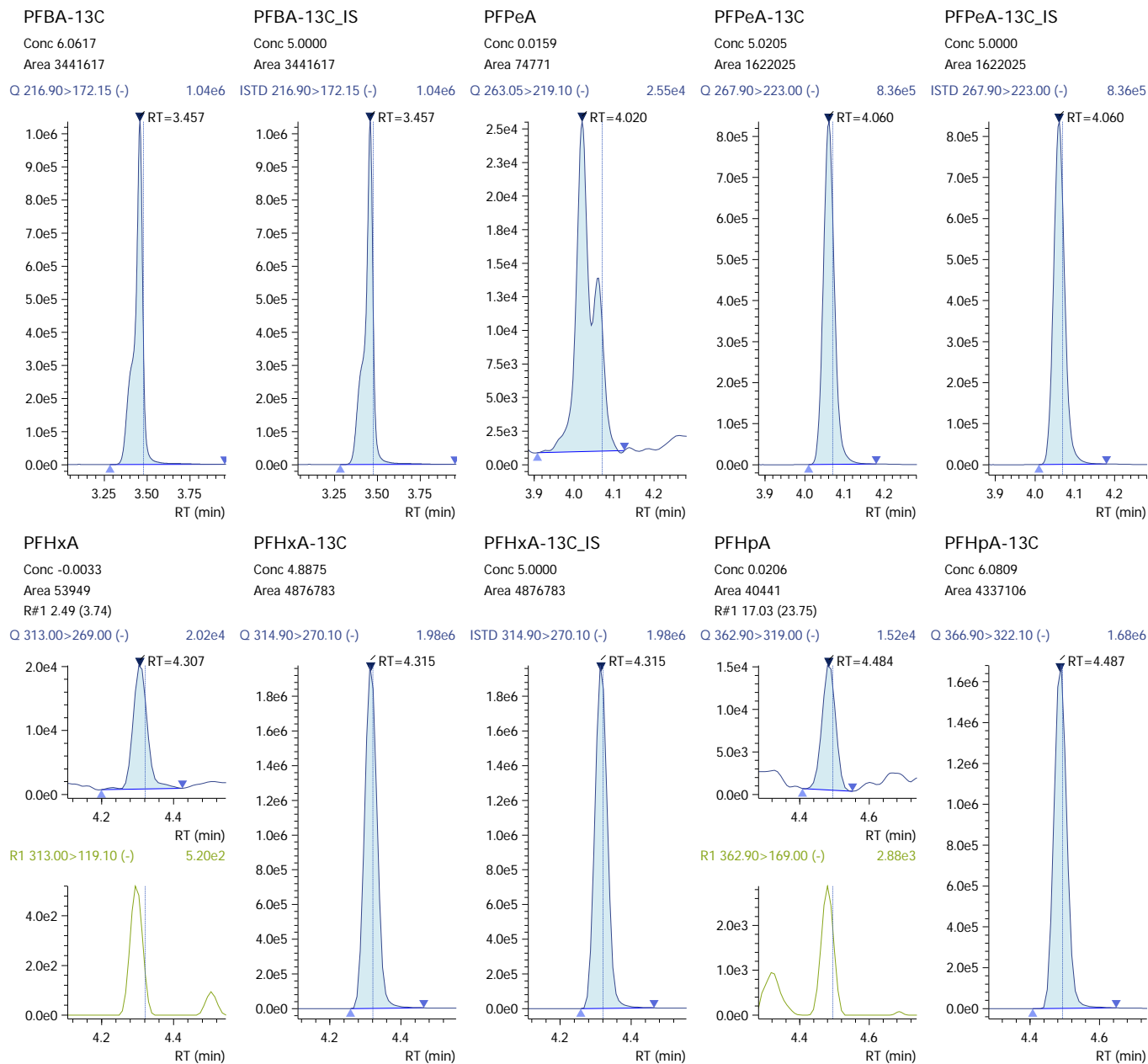
200812_076 (continued)



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200812_076 (continued)



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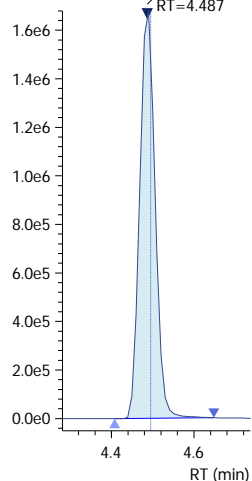
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200812_076 (continued)

PFHpA-13C_IS

Conc 5.0000
 Area 4337106

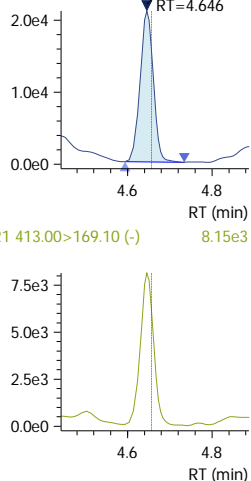
ISTD 366.90>322.10 (-) 1.68e6



PFOA

Conc 0.0085
 Area 45973
 R#1 38.35 (34.80)

Q 413.00>369.00 (-) 2.13e4

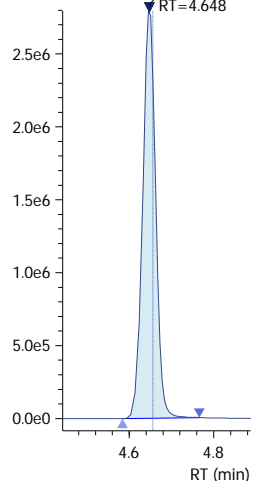


R1 413.00>169.10 (-) 8.15e3

PFOA-13C

Conc 5.9389
 Area 6022128

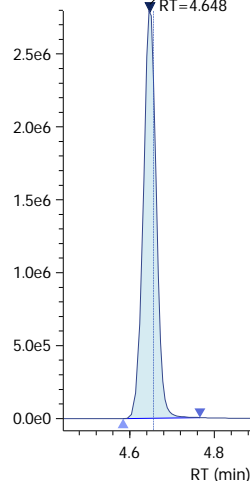
Q 416.80>372.05 (-) 2.79e6



PFOA-13C_IS

Conc 5.0000
 Area 6022128

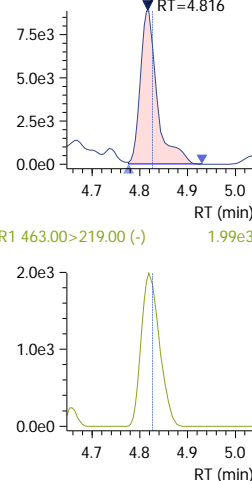
ISTD 416.80>372.05 (-) 2.79e6



PFNA

Conc 0.0185
 Area 21803 **After-BLC**
 R#1 23.50 (22.71)

Q 463.00>418.90 (-) 8.86e3

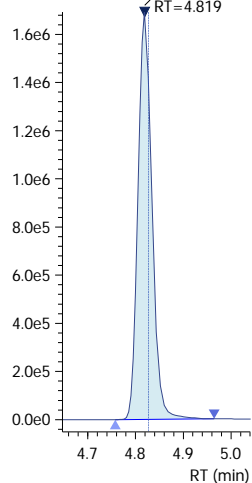


R1 463.00>219.00 (-) 1.99e3

PFNA-13C

Conc 4.9899
 Area 3428784

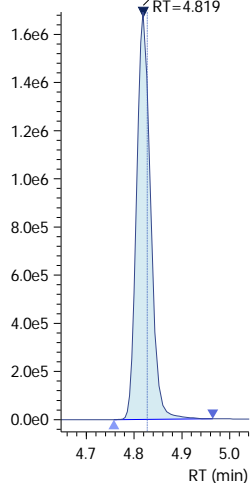
Q 467.80>423.00 (-) 1.69e6



PFNA-13C_IS

Conc 5.0000
 Area 3428784

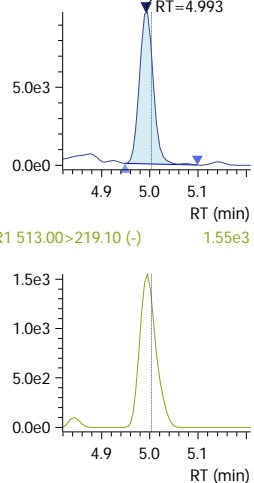
ISTD 467.80>423.00 (-) 1.69e6



PFDA

Conc 0.0314
 Area 19605
 R#1 14.98 (22.06)

Q 513.00>468.80 (-) 9.84e3

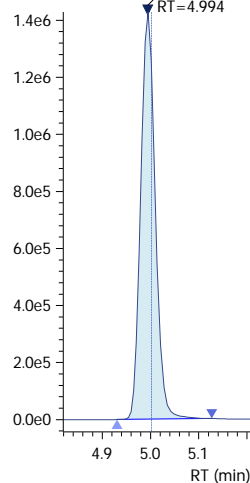


R1 513.00>219.10 (-) 1.55e3

PFDA-13C

Conc 4.6669
 Area 2970570

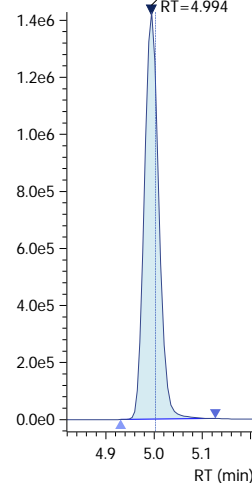
Q 514.80>469.95 (-) 1.43e6



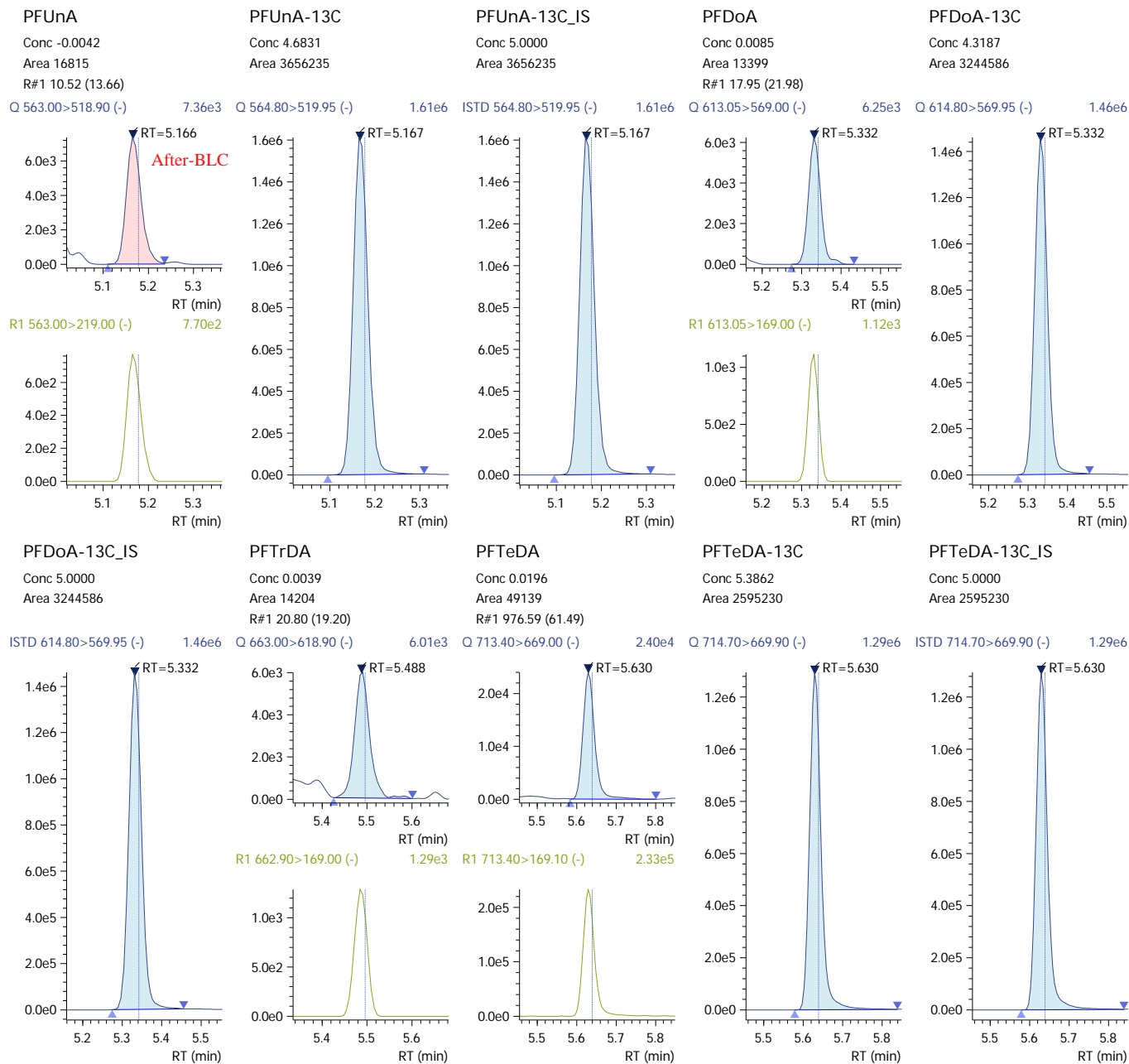
PFDA-13C_IS

Conc 5.0000
 Area 2970570

ISTD 514.80>469.95 (-) 1.43e6



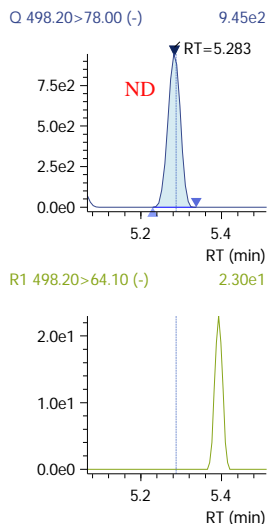
200812_076 (continued)



200812_076 (continued)

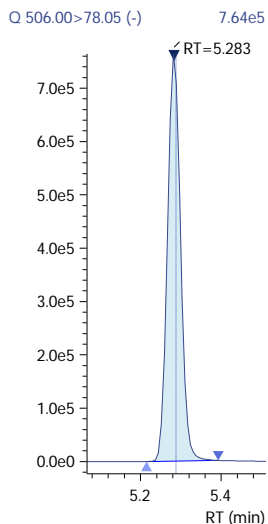
FOSA

Conc 0.0043
 Area 2058
 R#1 0.00 (4.04)



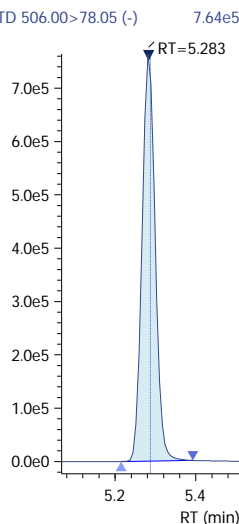
FOSA-13C

Conc 4.1522
 Area 1720499



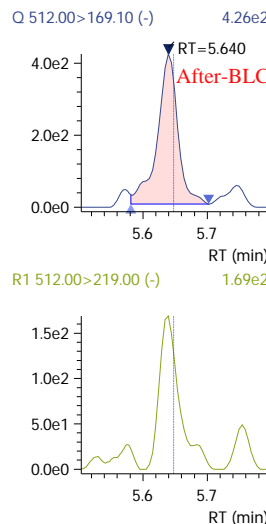
FOSA-13C_IS

Conc 5.0000
 Area 1720499



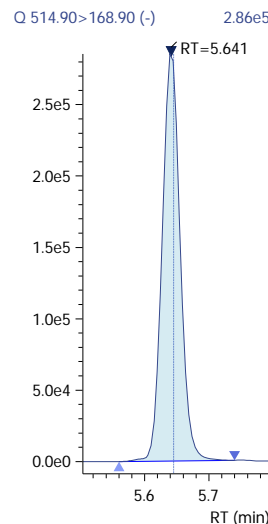
N-MeFOSA

Conc 0.0063
 Area 918
 R#1 36.98 (78.52)



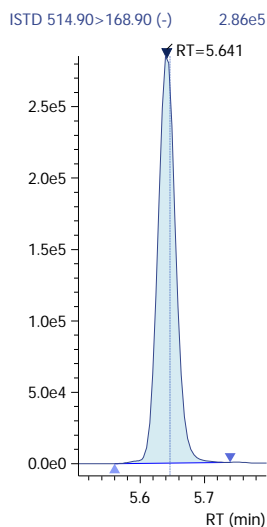
N-MeFOSA-d3

Conc 5.3691
 Area 554105



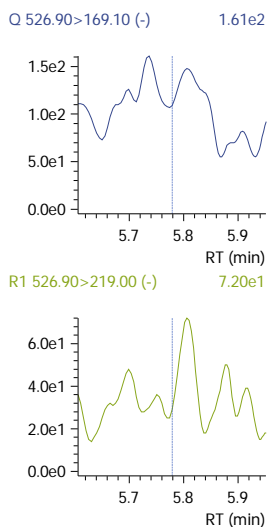
N-MeFOSA-d3_IS

Conc 5.0000
 Area 554105



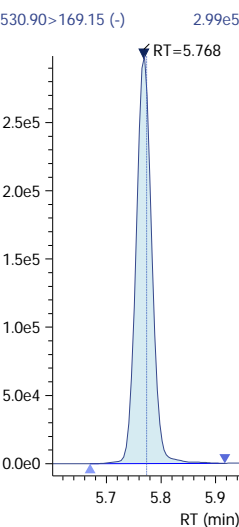
N-EtFOSA

Conc ---
 Area ---
 R#1 --- (0.00)



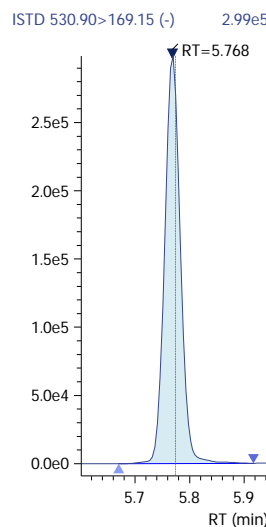
N-EtFOSA-d9

Conc 4.6442
 Area 597280



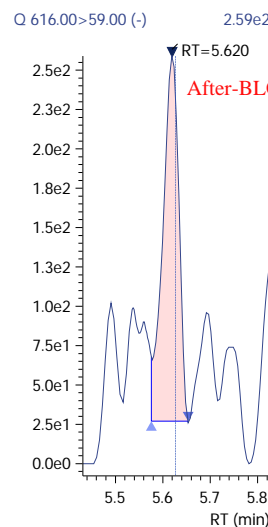
N-EtFOSA-d9_IS

Conc 5.0000
 Area 597280



N-MeFOSE

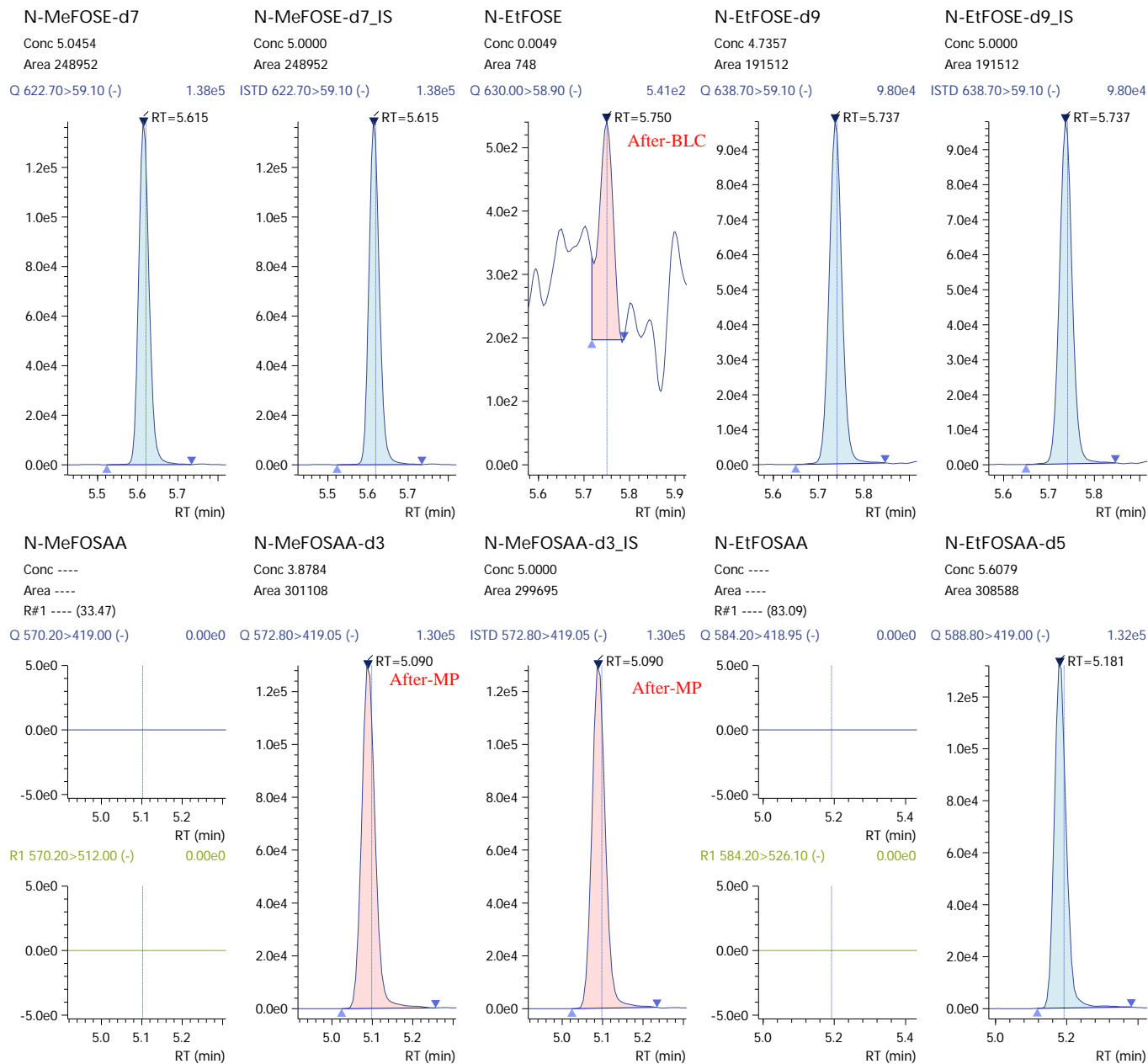
Conc 0.0035
 Area 546



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200812_076 (continued)



Insight Report

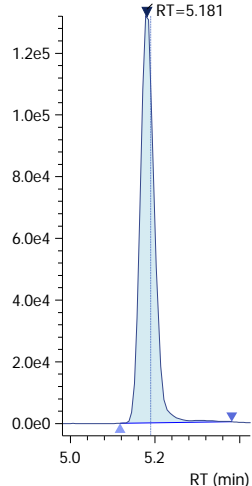
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200812_076 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 308588

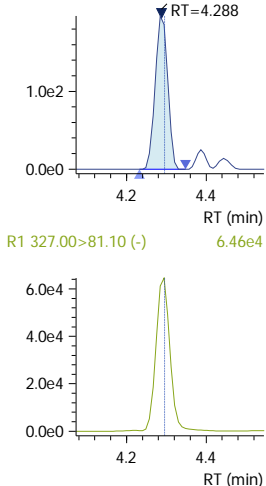
ISTD 588.80>419.00 (-) 1.32e5



4_2-FTS_1

Conc 0.0030
 Area 433
 R#1 30626.84 (54.93)

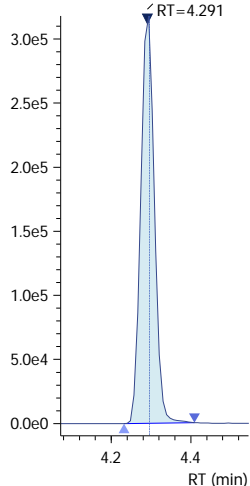
Q 327.00>307.05 (-) 1.97e2



4_2-FTS-13C

Conc 4.7363
 Area 756642

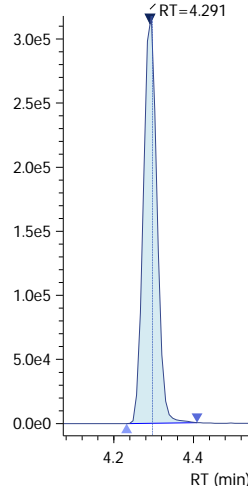
Q 328.80>309.05 (-) 3.18e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 756642

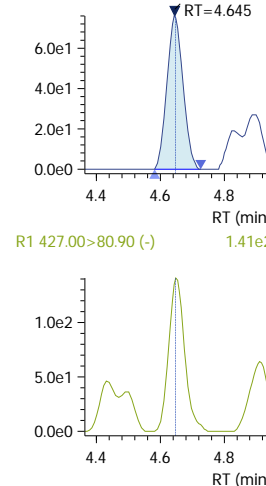
ISTD 328.80>309.05 (-) 3.18e5



6_2-FTS_1

Conc 0.0022
 Area 267
 R#1 154.33 (36.33)

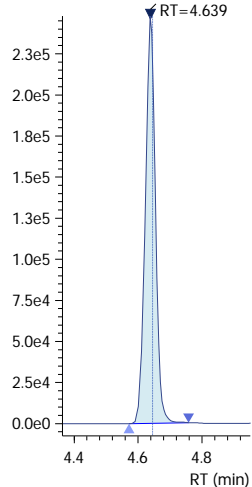
Q 427.00>407.00 (-) 7.60e1



6_2-FTS-13C

Conc 6.3603
 Area 549248

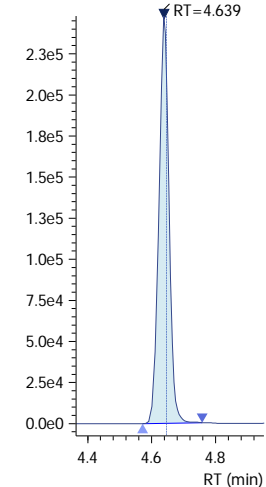
Q 428.90>409.00 (-) 2.48e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 549248

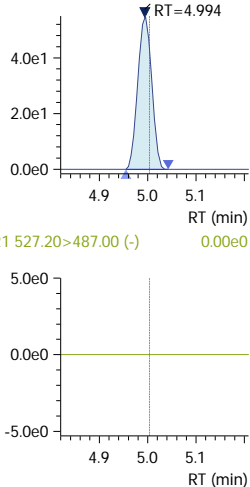
ISTD 428.90>409.00 (-) 2.48e5



8_2-FTS_1

Conc 0.0028
 Area 110
 R#1 0.00 (8.96)

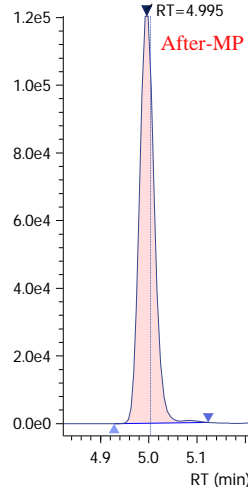
Q 527.10>506.90 (-) 5.50e1



8_2-FTS-13C

Conc 3.9769
 Area 259901

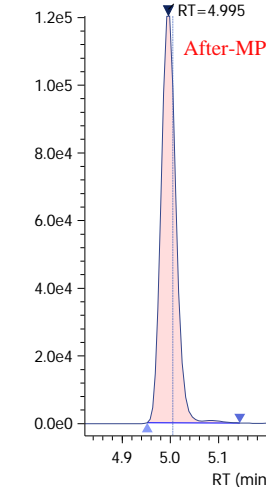
Q 528.80>509.00 (-) 1.20e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 259538

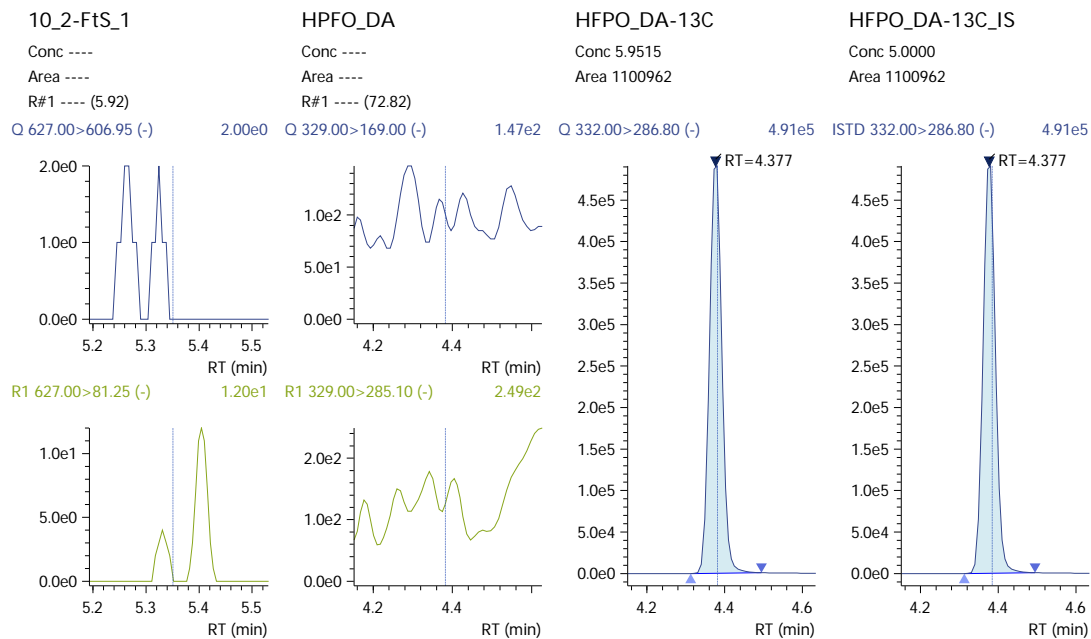
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Insight Report

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200812_076 (continued)

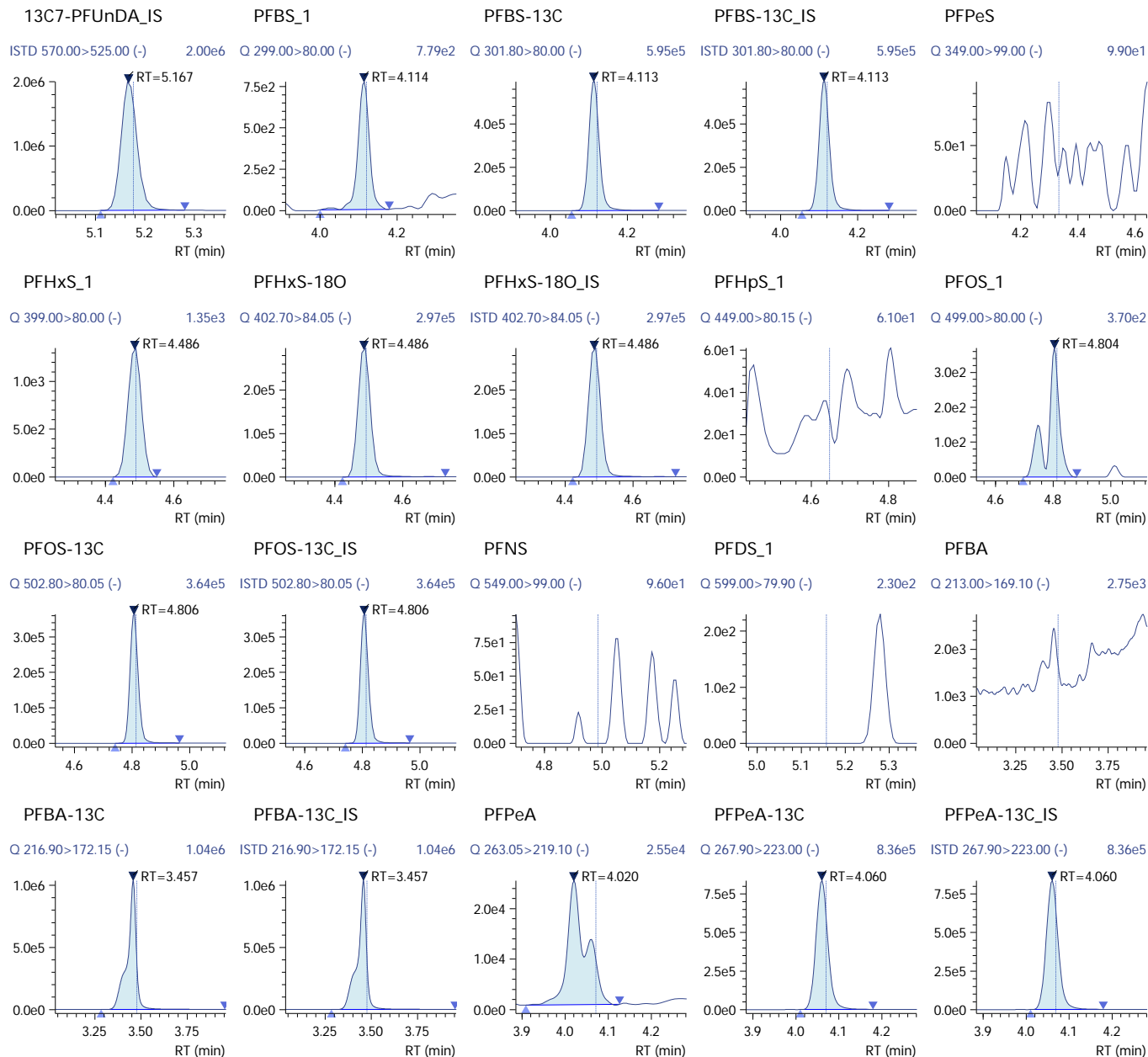


Insight Report

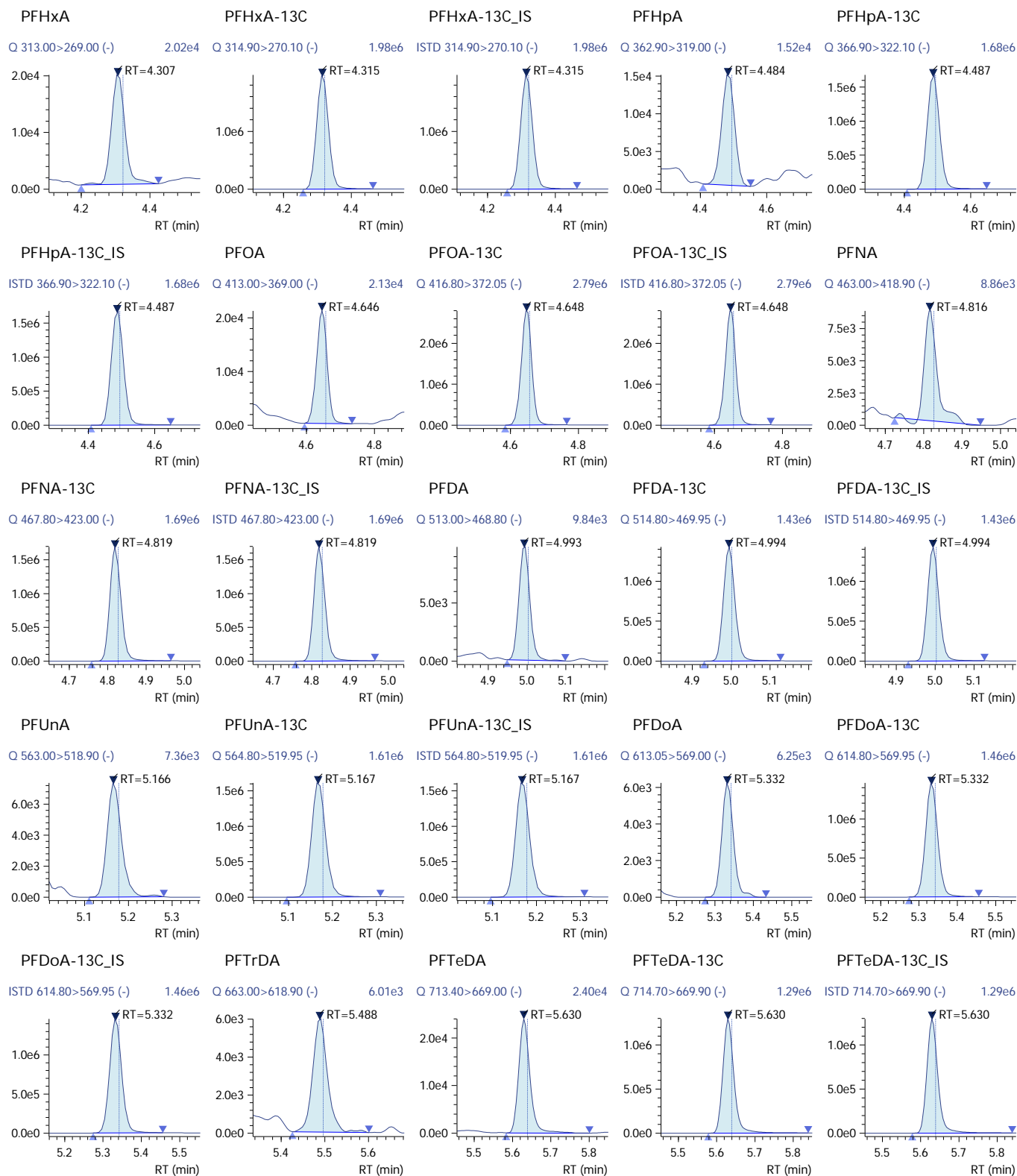
Printed at 8/19/2020 10:00:32 AM

200812_076

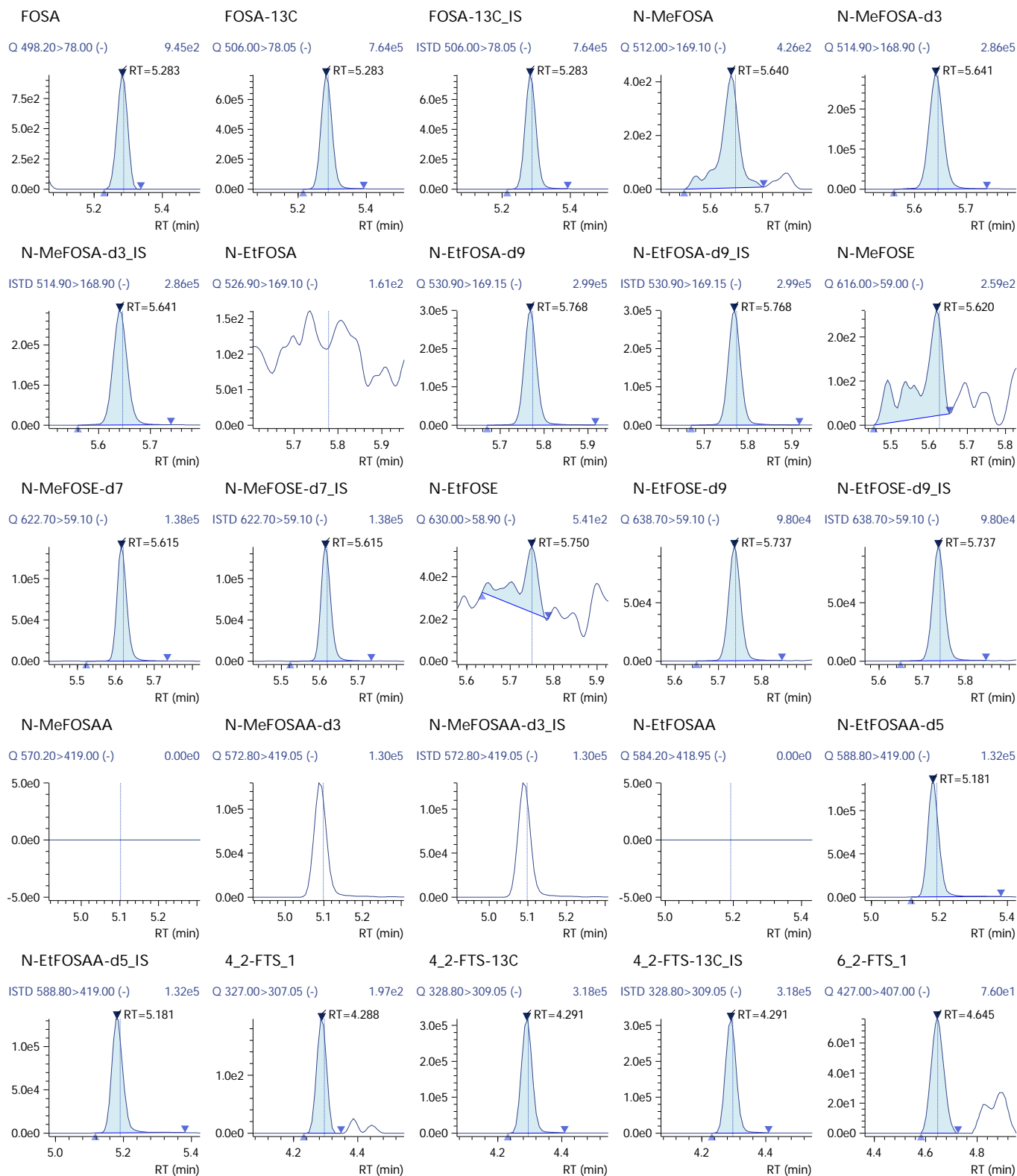
Sample ID: R2006768-005
Date Acquired: 8/13/2020 2:04:44 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_076.lcd
Vial: 20 | Inj. Volume: 15.0000uL | Tray: 3



200812_076 (continued)



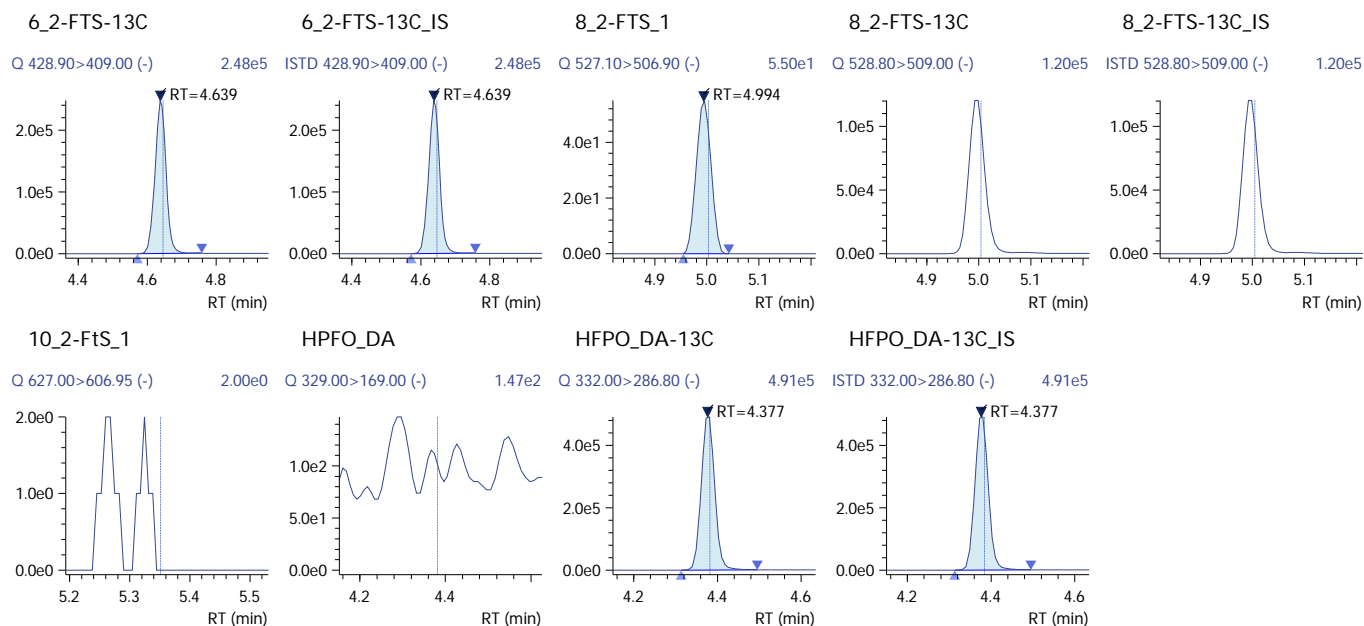
200812_076 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_076 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_064
Lab ID: KQ2011026-04
RunType: MB
Matrix: Water

Date Acquired: 8/12/20 23:55
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_064	Instrument: K-LCMS-06
Acqu Date: 8/12/20 23:55	Vial: 4
Run Type: MB	Dilution: 1
Lab ID: KQ2011026-04	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: KQ2011026
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 20091

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.176	0.00	6691146	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.118	-0.01	1135214	3.5943	72	20 - 109	Y
18O2-PFHxS	4.492	0.00	647798	4.1183	82	26 - 122	Y
13C4-PFOS	4.812	-0.01	773031	4.7322	95	25 - 121	Y
13C4-PFBA	3.463	-0.02	3718630	4.4461	89	27 - 124	Y
13C5-PFPeA	4.065	-0.01	1666632	3.5018	70	27 - 138	Y
13C2-PFHxA	4.319	-0.01	6733005	4.5806	92	28 - 132	Y
13C4-PFHpA	4.494	0.00	4428993	4.2154	84	19 - 139	Y
13C4-PFOA	4.655	-0.01	7826411	5.2394	105	22 - 130	Y
13C5-PFNA	4.826	0.00	5140784	5.0785	102	20 - 127	Y
13C2-PFDA	5.002	0.00	4174398	4.4519	89	24 - 125	Y
13C2-PFUnDA	5.176	0.00	5255632	4.5697	91	22 - 125	Y
13C2-PFDoDA	5.341	0.00	4601804	4.1580	83	19 - 122	Y
13C2-PFTeDA	5.639	0.00	3696772	5.2083	104	13 - 124	Y
13C8-FOSA	5.290	0.00	2062810	3.3794	68	18 - 109	Y
D3-MeFOSA	5.649	0.00	584244	3.8430	77	15 - 153	Y
D5-EtFOSA	5.776	0.00	649118	3.4262	69	25 - 107	Y
D7-MeFOSE	5.622	0.00	260722	3.5869	72	24 - 112	Y
D9-EtFOSE	5.743	0.00	203038	3.4082	68	19 - 109	Y
D3-MeFOSAA	5.097	0.00	360986	3.1564	63	9 - 123	Y
D5-EtFOSAA	5.187	-0.01	301721	3.7221	74	12 - 126	Y
13C2-4:2 FTS	4.297	0.00	807961	3.4332	69	10 - 197	Y
13C2-6:2 FTS	4.646	-0.01	627273	4.9309	99	10 - 226	Y
13C2-8:2 FTS	5.003	0.00	383502	3.9835	80	10 - 202	Y
13C3-HFPO-DA	4.383	0.00	1037114	3.8058	76	22 - 135	Y

Data File:	J:\LCMS06\Data\200812_b3\200812_064	Instrument:	K-LCMS06 <i>206</i> 08/20/20
Acqu Date:	8/12/20 23:55	Vial:	4
Run Type:	MB	Dilution:	1
Lab ID:	KQ2011026-04	Raw Units:	ng/mL

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.116	-0.01	1726	0.0066	0.21	U	Y
Perfluoropentane sulfonic acid (PFPeS)	0		0	0	0	U	Y
Perfluorohexane sulfonic acid (PFHxS)	4.492	0.00	2547	0.0114	0.36	U	Y
Perfluoroheptane sulfonic acid (PFHpS)	0		0	0	0	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.811	-0.01	1042	0.0055	0.18	U	Y
Perfluorononane sulfonic acid (PFNS)	0		0	0	0	U	Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.464	-0.02	5398	0.0065	0.21	U	Y
Perfluoropentanoic acid (PFPeA)	4.018	-0.06	77171	0.0163	0.52	U	Y
Perfluorohexanoic acid (PFHxA)	4.309	-0.01	68828	-0.0073	0	U	Y
Perfluoroheptanoic acid (PFHpA)	4.489	-0.01	38170	0.0179	0.57	U	Y
Perfluorooctanoic acid (PFOA)	4.652	-0.01	56183	0.0062	0.20	U	Y
Perfluorononanoic acid (PFNA)	4.825	-0.01	29446	0.0153	0.49	U	Y
Perfluorodecanoic acid (PFDA)	5.000	-0.01	21022	0.0239	0.76	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.174	-0.01	22872	-0.0055	0	U	Y
Perfluorododecanoic acid (PFDoDA)	5.339	0.00	19281	0.0089	0.28	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.494	0.00	20160	0.0039	0.12	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.638	0.00	66113	0.0109	0.35	U	Y
Perfluorooctane sulfonamide (FOSA)	5.290	0.00	4586	0.0079	0.25	U	Y
N-Methyl perfluorooctane sulfonamide (MeFOSA)	5.648	-0.01	968	0.0063	0.20	U	Y
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	0		0	0	0	U	Y
N-Methyl perfluorooctane sulfonamidoethanol	5.630	0.00	271	0.0017	0.054	U	Y
N-Ethyl perfluorooctane sulfonamidoethanol	5.752	0.00	1647	0.0101	0.32	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.098	0.00	215	0.0039	0.12	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	4.293	-0.01	393	0.0025	0.080	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.636	-0.02	493	0.0036	0.12	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.000	-0.01	76	0.0013	0.042	U	Y
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	0		0	0	0	U	Y
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0		0	0	0	U	Y

Prep Amount: 250 mL **Dilution:** 1
Prep Final Amount: 8.00 mL **Basis Factor:** 100.00

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound
D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_064

Sample ID: KQ2011026-04
 Date Acquired: 8/12/2020 11:55:39 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_064.lcd
 Vial: 8 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.176	6691146	6691146	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.116	1726	1135214	2	0.0066	ng/mL	----	54.11
PFBS-13C	Auto	4.118	1135214	6691146	1	3.5943	ng/mL	----	----
PFBS-13C_IS	Auto	4.118	1135214	1135214	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	1135214	2	----	ng/mL	----	----
PFHxS_1	M	4.492	2547	647798	3	0.0114	ng/mL	----	56.89
PFHxS-18O	Auto	4.492	647798	6691146	1	4.1183	ng/mL	----	----
PFHxS-18O_IS	Auto	4.492	647798	647798	3	5.0000	ng/mL	----	----
PFHpS_1	ND(W/B)	----	----	647798	3	----	ng/mL	----	----
PFOS_1	Auto	4.811	1042	773031	4	0.0055	ng/mL	----	56.62
PFOS-13C	Auto	4.812	773031	6691146	1	4.7322	ng/mL	----	----
PFOS-13C_IS	Auto	4.812	773031	773031	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	773031	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	773031	4	----	ng/mL	----	----
PFBA	Auto	3.464	5398	3718630	5	0.0065	ng/mL	----	----
PFBA-13C	Auto	3.463	3718630	6691146	1	4.4461	ng/mL	----	----
PFBA-13C_IS	Auto	3.463	3718630	3718630	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.018	77171	1666632	6	0.0163	ng/mL	----	----
PFPeA-13C	Auto	4.065	1666632	6691146	1	3.5018	ng/mL	----	----
PFPeA-13C_IS	Auto	4.065	1666632	1666632	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.309	68828	6733005	7	-0.0073	ng/mL	----	0.87
PFHxA-13C	Auto	4.319	6733005	6691146	1	4.5806	ng/mL	----	----
PFHxA-13C_IS	Auto	4.319	6733005	6733005	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.489	38170	4428993	8	0.0179	ng/mL	----	25.53
PFHpA-13C	Auto	4.494	4428993	6691146	1	4.2154	ng/mL	----	----
PFHpA-13C_IS	Auto	4.494	4428993	4428993	8	5.0000	ng/mL	----	----
PFOA	Auto	4.652	56183	7826411	9	0.0062	ng/mL	----	33.36
PFOA-13C	Auto	4.655	7826411	6691146	1	5.2394	ng/mL	----	----
PFOA-13C_IS	Auto	4.655	7826411	7826411	9	5.0000	ng/mL	----	----
PFNA	M	4.825	29446	5140784	10	0.0153	ng/mL	----	18.15
PFNA-13C	Auto	4.826	5140784	6691146	1	5.0785	ng/mL	----	----
PFNA-13C_IS	Auto	4.826	5140784	5140784	10	5.0000	ng/mL	----	----
PFDA	M	5.000	21022	4174398	11	0.0239	ng/mL	----	32.64
PFDA-13C	Auto	5.002	4174398	6691146	1	4.4519	ng/mL	----	----
PFDA-13C_IS	Auto	5.002	4174398	4174398	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.174	22872	5255632	12	-0.0055	ng/mL	----	7.84
PFUnA-13C	Auto	5.176	5255632	6691146	1	4.5697	ng/mL	----	----
PFUnA-13C_IS	Auto	5.176	5255632	5255632	12	5.0000	ng/mL	----	----
PFDaA	M	5.339	19281	4601804	13	0.0089	ng/mL	----	9.71
PFDaA-13C	Auto	5.341	4601804	6691146	1	4.1580	ng/mL	----	----
PFDaA-13C_IS	Auto	5.341	4601804	4601804	13	5.0000	ng/mL	----	----
PFTeDA	Auto	5.494	20160	3696772	14	0.0039	ng/mL	----	22.60
PFTeDA	Auto	5.638	66113	3696772	14	0.0109	ng/mL	----	881.86
PFTeDA-13C	Auto	5.639	3696772	6691146	1	5.2083	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.639	3696772	3696772	14	5.0000	ng/mL	----	----
FOSA	Auto	5.290	4586	2062810	16	0.0079	ng/mL	----	9.99
FOSA-13C	Auto	5.290	2062810	6691146	1	3.3794	ng/mL	----	----
FOSA-13C_IS	Auto	5.290	2062810	2062810	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.648	968	584244	17	0.0063	ng/mL	----	44.42
N-MeFOSA-d3	Auto	5.649	584244	6691146	1	3.8430	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.649	584244	584244	17	5.0000	ng/mL	----	----
N-EtFOSA	ND(W/B)	----	----	649118	18	----	ng/mL	----	----
N-EtFOSA-d9	Auto	5.776	649118	6691146	1	3.4262	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.776	649118	649118	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.630	271	260722	19	0.0017	ng/mL	----	----

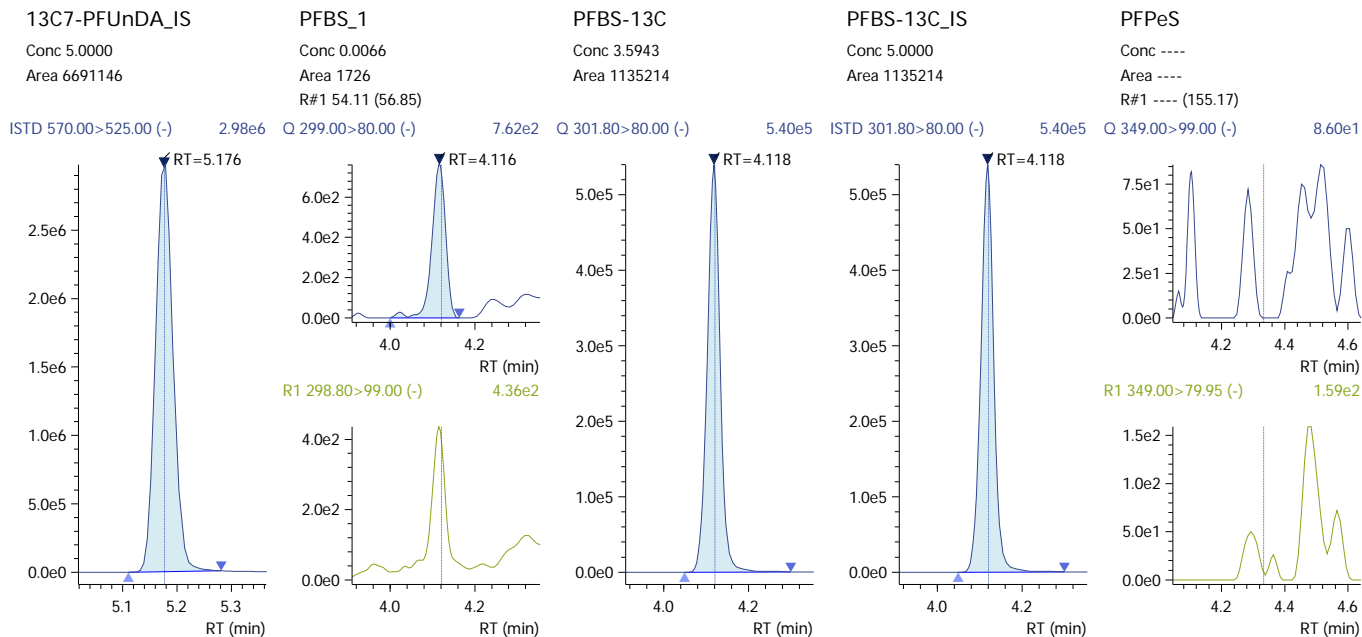
Insight Report

Printed at 8/19/2020 10:38:03 AM

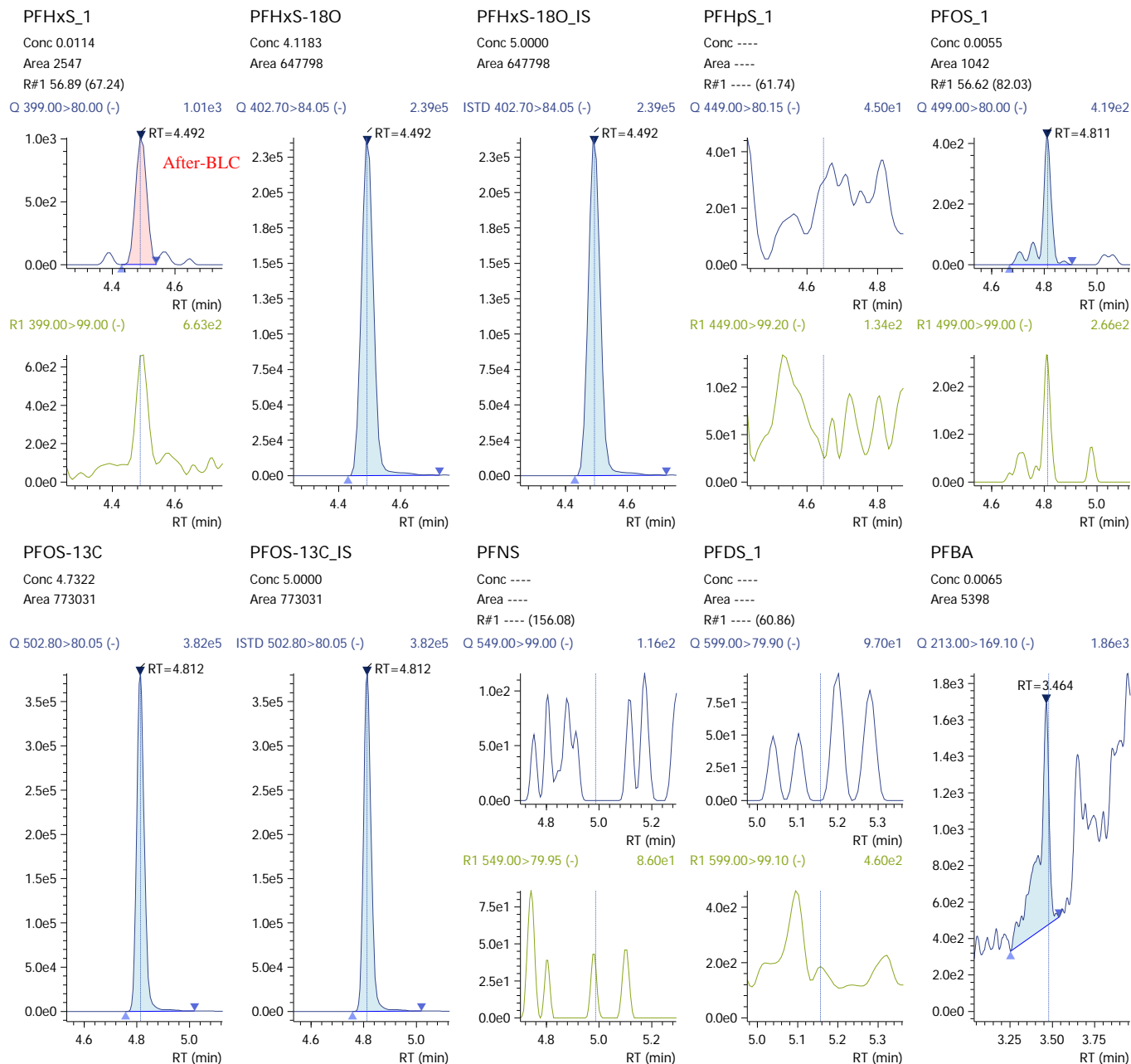
200812_064 (continued)

(Table continued from previous page)

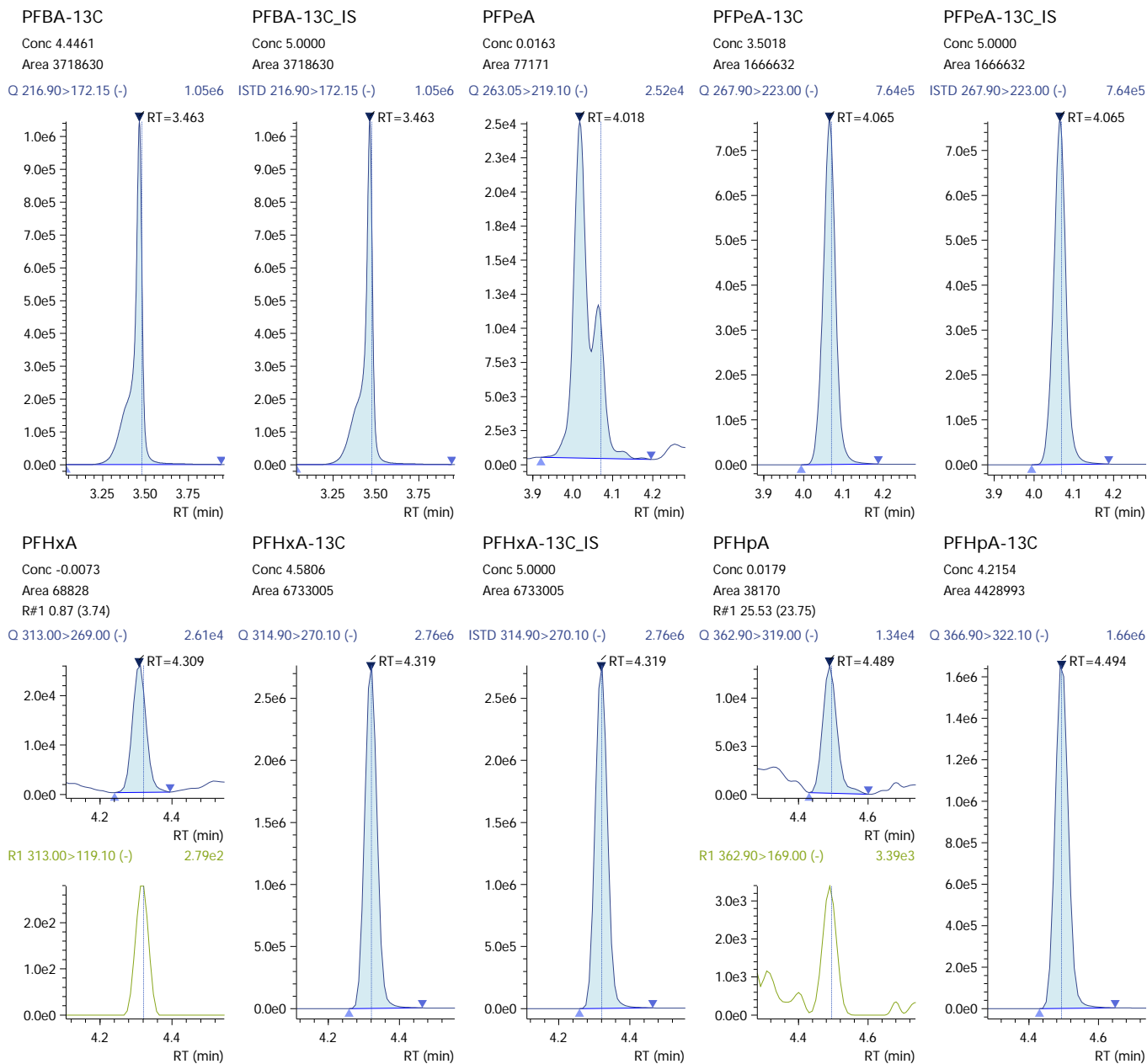
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.622	260722	6691146	1	3.5869	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.622	260722	260722	19	5.0000	ng/mL	----	----
N-EtFOSE	M	5.752	1647	203038	20	0.0101	ng/mL	----	----
N-EtFOSE-d9	Auto	5.743	203038	6691146	1	3.4082	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.743	203038	203038	20	5.0000	ng/mL	----	----
N-MeFOSAA	M	5.098	215	360986	21	0.0039	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.097	360986	6691146	1	3.1564	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.097	360986	360986	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	301721	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.187	301721	6691146	1	3.7221	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.187	301721	301721	22	5.0000	ng/mL	----	----
4_2-FTS_1	M	4.293	393	807961	23	0.0025	ng/mL	----	64492.31
4_2-FTS-13C	Auto	4.297	807961	6691146	1	3.4332	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.297	807961	807961	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.636	493	627273	24	0.0036	ng/mL	----	24.46
6_2-FTS-13C	Auto	4.646	627273	6691146	1	4.9309	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.646	627273	627273	24	5.0000	ng/mL	----	----
8_2-FTS_1	M	5.000	76	383502	25	0.0013	ng/mL	----	37.84
8_2-FTS-13C	Auto	5.003	383502	6691146	1	3.9835	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.003	383502	383502	25	5.0000	ng/mL	----	----
10_2-FTS_1	ND(W/B)	----	----	383502	25	----	ng/mL	----	----
HPFO_DA	ND(W/B)	----	----	1037114	26	----	ng/mL	----	----
HFPO_DA-13C	Auto	4.383	1037114	6691146	1	3.8058	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.383	1037114	1037114	26	5.0000	ng/mL	----	----



200812_064 (continued)



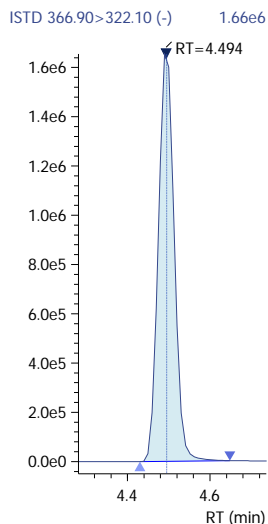
200812_064 (continued)



200812_064 (continued)

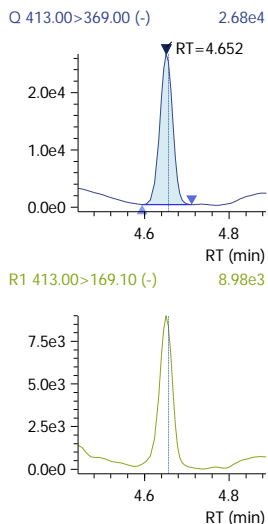
PFHpA-13C_IS

Conc 5.0000
 Area 4428993



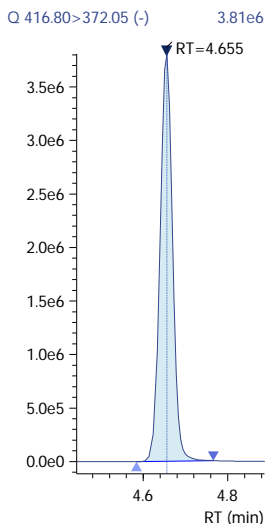
PFOA

Conc 0.0062
 Area 56183
 R#1 33.36 (34.80)



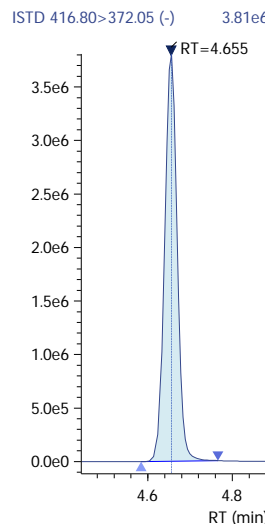
PFOA-13C

Conc 5.2394
 Area 7826411



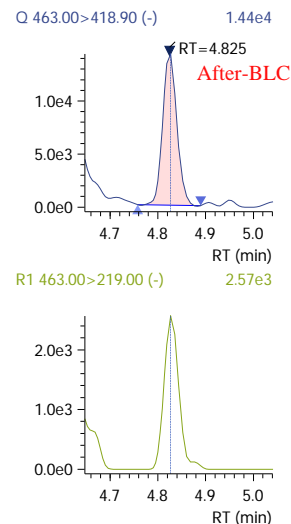
PFOA-13C_IS

Conc 5.0000
 Area 7826411



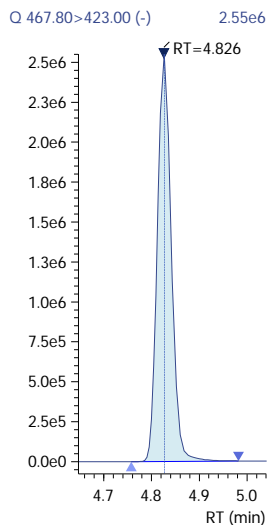
PFNA

Conc 0.0153
 Area 29446
 R#1 18.15 (22.71)



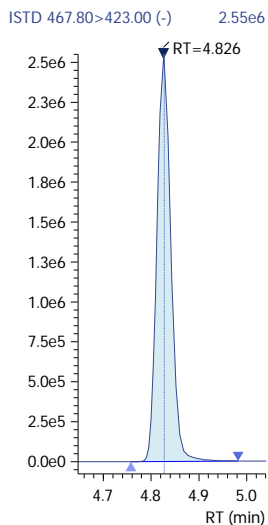
PFNA-13C

Conc 5.0785
 Area 5140784



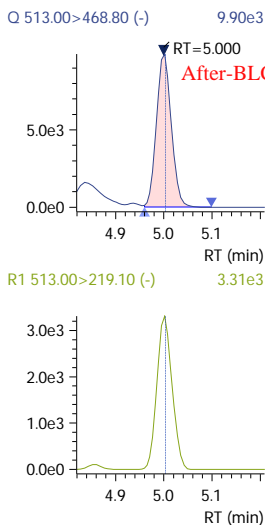
PFNA-13C_IS

Conc 5.0000
 Area 5140784



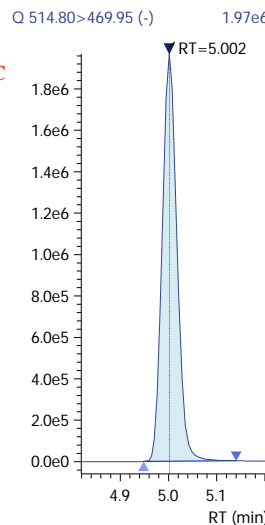
PFDA

Conc 0.0239
 Area 21022
 R#1 32.64 (22.06)



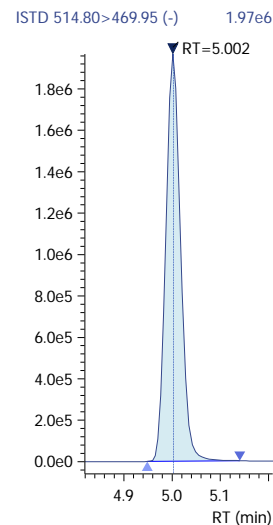
PFDA-13C

Conc 4.4519
 Area 4174398



PFDA-13C_IS

Conc 5.0000
 Area 4174398

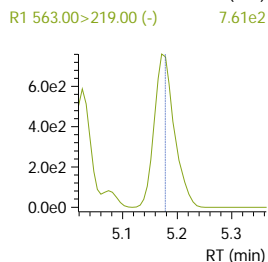
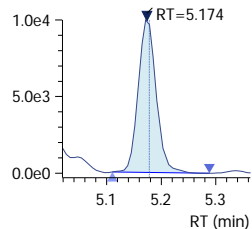


200812_064 (continued)

PFUnA

Conc -0.0055
Area 22872
R#1 7.84 (13.66)

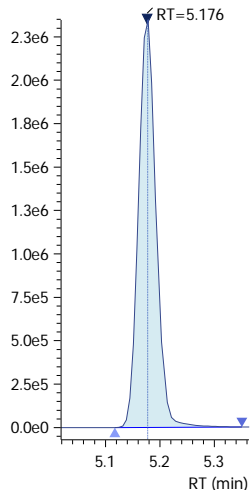
Q 563.00>518.90 (-) 1.00e4



PFUnA-13C

Conc 4.5697
Area 5255632

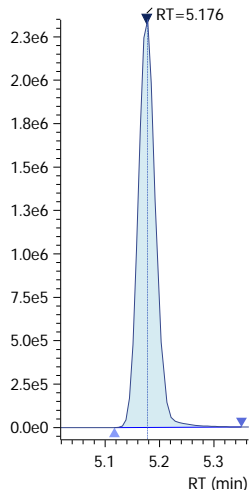
Q 564.80>519.95 (-) 2.35e6



PFUnA-13C_IS

Conc 5.0000
Area 5255632

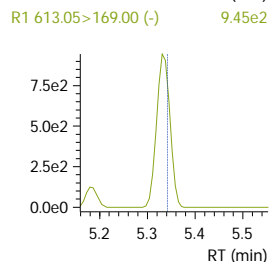
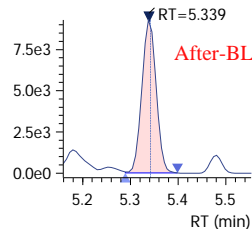
ISTD 564.80>519.95 (-) 2.35e6



PFDaA

Conc 0.0089
Area 19281
R#1 9.71 (21.98)

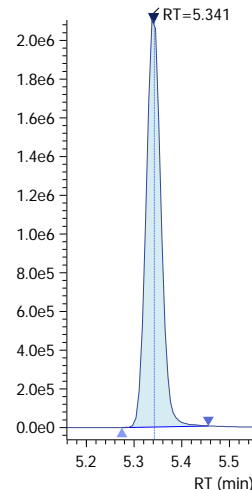
Q 613.05>569.00 (-) 9.30e3



PFDaA-13C

Conc 4.1580
Area 4601804

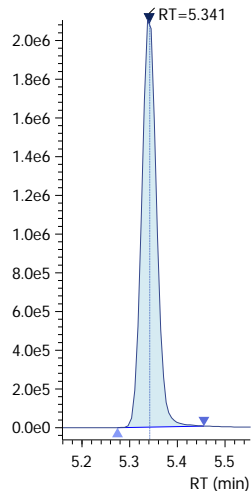
Q 614.80>569.95 (-) 2.11e6



PFDaA-13C_IS

Conc 5.0000
Area 4601804

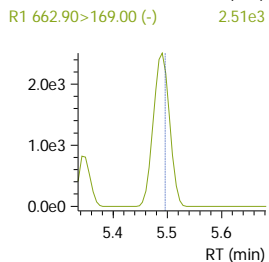
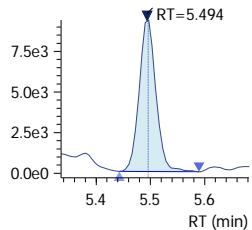
ISTD 614.80>569.95 (-) 2.11e6



PFTrDA

Conc 0.0039
Area 20160
R#1 22.60 (19.20)

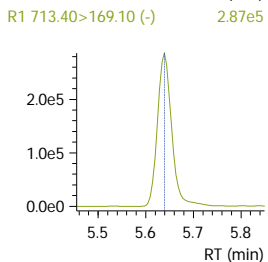
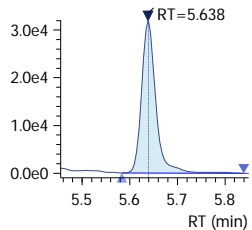
Q 663.00>618.90 (-) 9.43e3



PFTeDA

Conc 0.0109
Area 66113
R#1 881.86 (61.49)

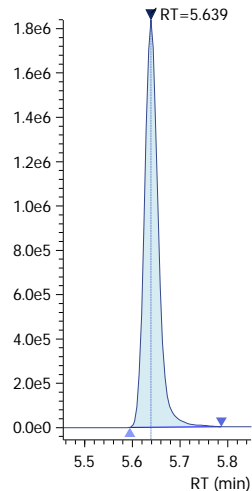
Q 713.40>669.00 (-) 3.21e4



PFTeDA-13C

Conc 5.2083
Area 3696772

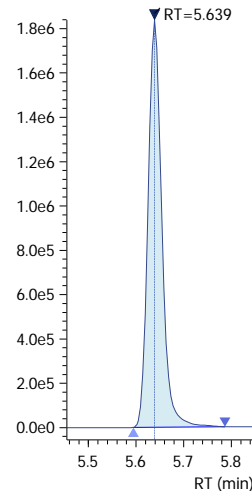
Q 714.70>669.90 (-) 1.84e6



PFTeDA-13C_IS

Conc 5.0000
Area 3696772

ISTD 714.70>669.90 (-) 1.84e6

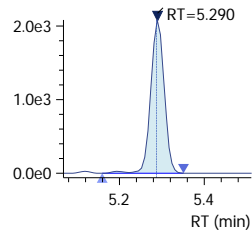


200812_064 (continued)

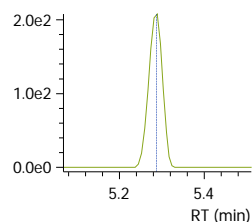
FOSA

Conc 0.0079
 Area 4586
 R#1 9.99 (4.04)

Q 498.20>78.00 (-) 2.08e3



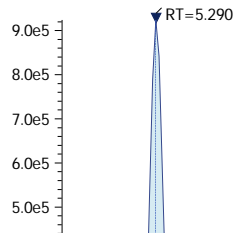
R1 498.20>64.10 (-) 2.08e2



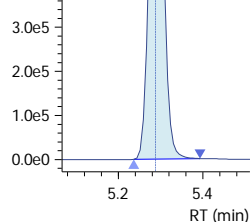
FOSA-13C

Conc 3.3794
 Area 2062810

Q 506.00>78.05 (-) 9.24e5



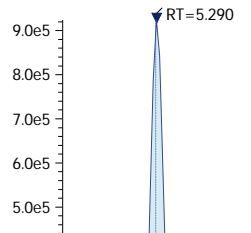
Q 506.00>78.05 (-) 9.24e5



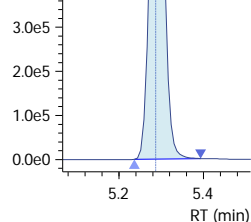
FOSA-13C_IS

Conc 5.0000
 Area 2062810

ISTD 506.00>78.05 (-) 9.24e5



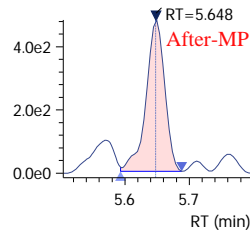
ISTD 506.00>78.05 (-) 9.24e5



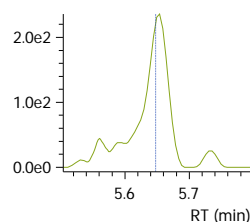
N-MeFOSA

Conc 0.0063
 Area 968
 R#1 44.42 (78.52)

Q 512.00>169.10 (-) 4.85e2



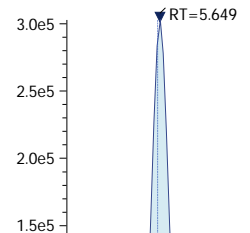
R1 512.00>219.00 (-) 2.36e2



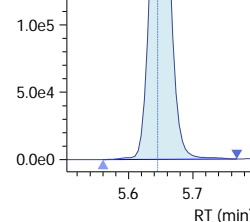
N-MeFOSA-d3

Conc 3.8430
 Area 584244

Q 514.90>168.90 (-) 3.03e5



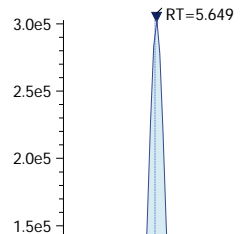
Q 514.90>168.90 (-) 3.03e5



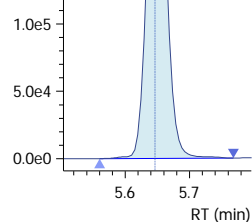
N-MeFOSA-d3_IS

Conc 5.0000
 Area 584244

ISTD 514.90>168.90 (-) 3.03e5



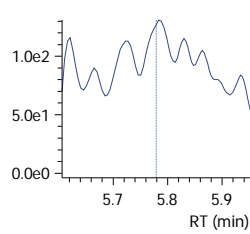
ISTD 514.90>168.90 (-) 3.03e5



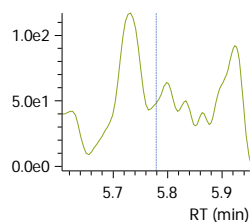
N-EtFOSA

Conc ----
 Area ----
 R#1 ---- (0.00)

Q 526.90>169.10 (-) 1.31e2



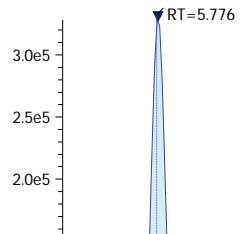
R1 526.90>219.00 (-) 1.17e2



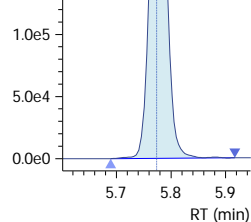
N-EtFOSA-d9

Conc 3.4262
 Area 649118

ISTD 530.90>169.15 (-) 3.28e5



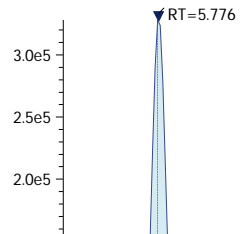
ISTD 530.90>169.15 (-) 3.28e5



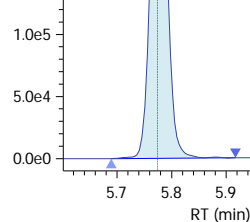
N-EtFOSA-d9_IS

Conc 5.0000
 Area 649118

ISTD 530.90>169.15 (-) 3.28e5



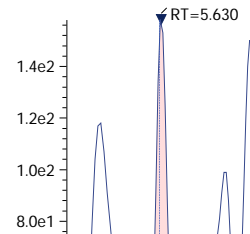
ISTD 530.90>169.15 (-) 3.28e5



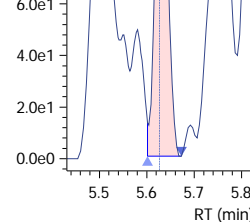
N-MeFOSE

Conc 0.0017
 Area 271

Q 616.00>59.00 (-) 1.58e2



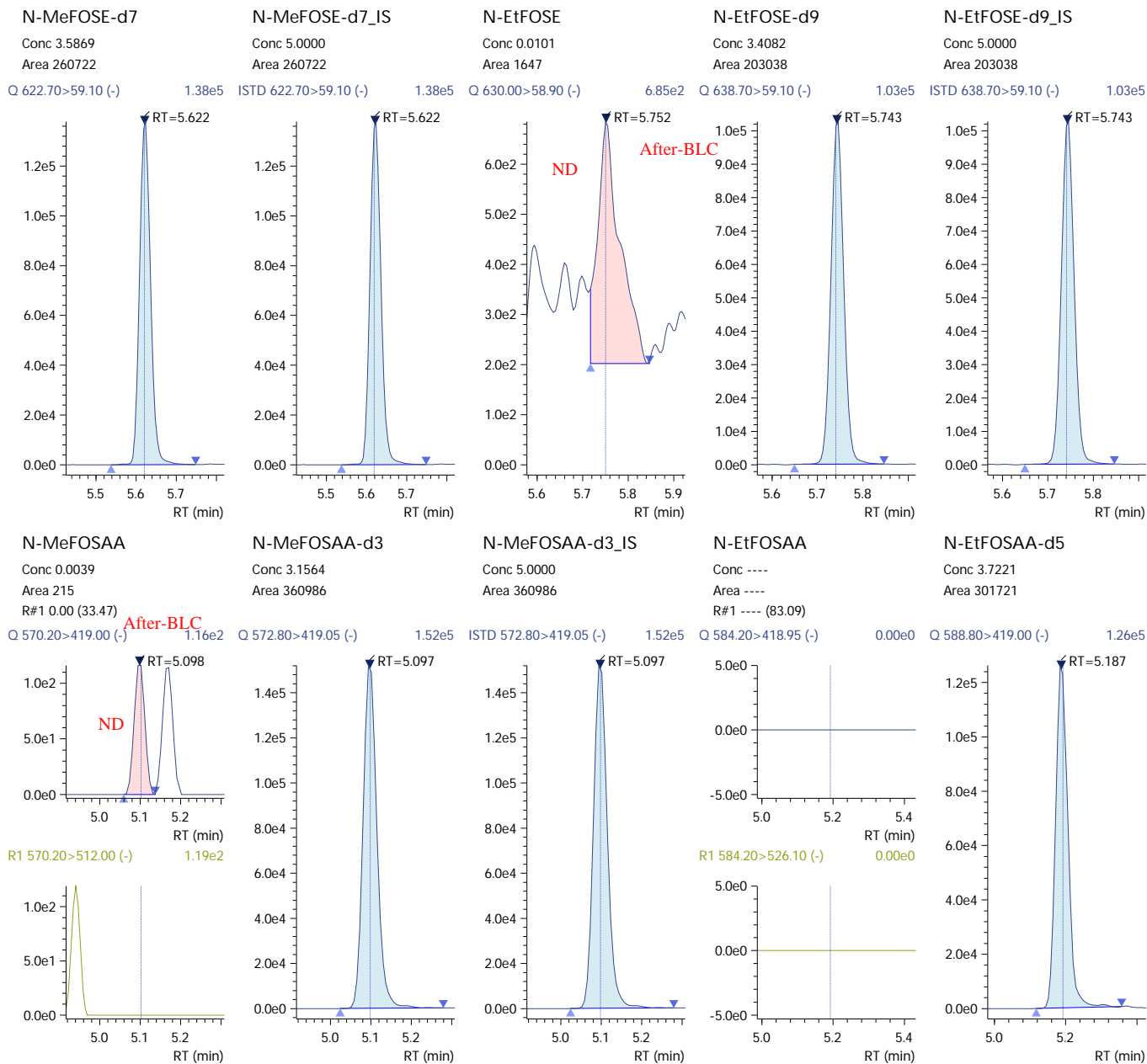
Q 616.00>59.00 (-) 1.58e2



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200812_064 (continued)



Insight Report

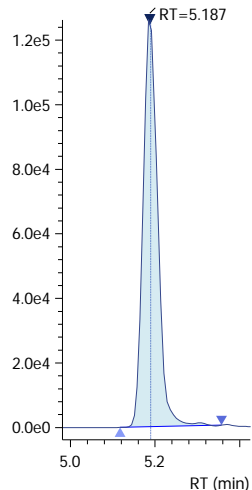
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200812_064 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 301721

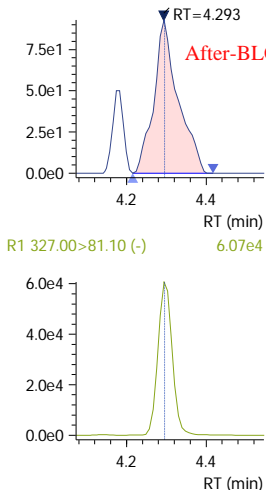
ISTD 588.80>419.00 (-) 1.26e5



4_2-FTS_1

Conc 0.0025
 Area 393
 R#1 64492.31 (54.93)

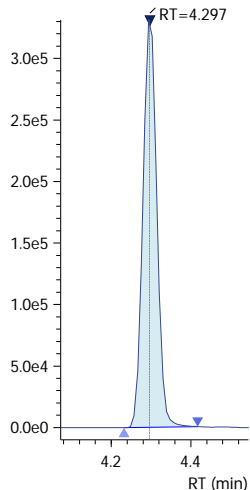
Q 327.00>307.05 (-) 9.30e1



4_2-FTS-13C

Conc 3.4332
 Area 807961

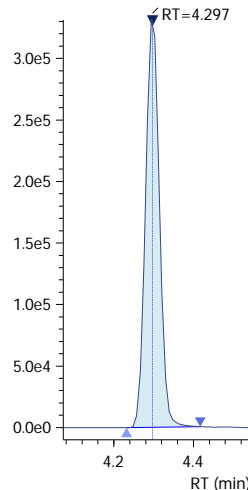
Q 328.80>309.05 (-) 3.31e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 807961

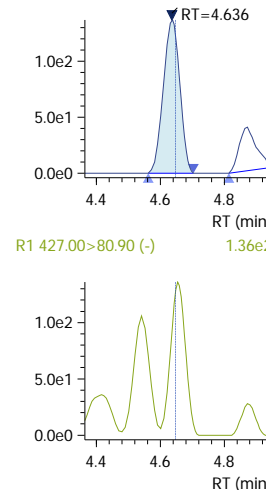
ISTD 328.80>309.05 (-) 3.31e5



6_2-FTS_1

Conc 0.0036
 Area 493
 R#1 24.46 (36.33)

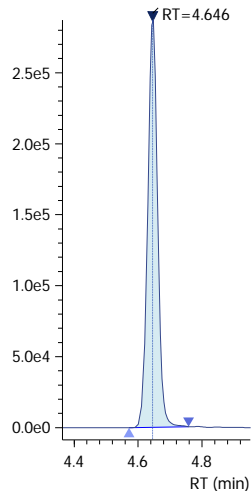
Q 427.00>407.00 (-) 1.37e2



6_2-FTS-13C

Conc 4.9309
 Area 627273

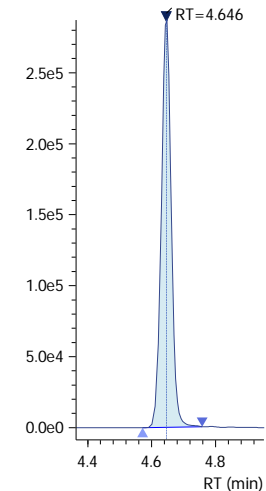
Q 428.90>409.00 (-) 2.87e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 627273

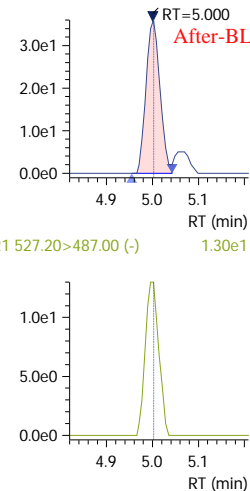
ISTD 428.90>409.00 (-) 2.87e5



8_2-FTS_1

Conc 0.0013
 Area 76
 R#1 37.84 (8.96)

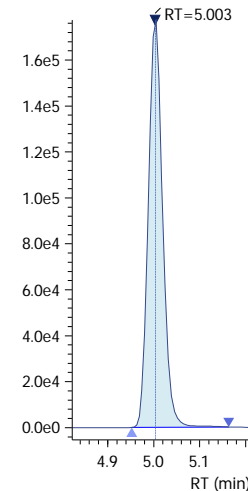
Q 527.10>506.90 (-) 3.60e1



8_2-FTS-13C

Conc 3.9835
 Area 383502

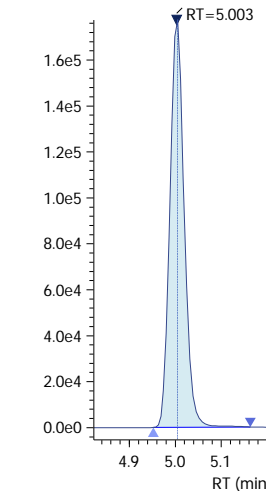
Q 528.80>509.00 (-) 1.77e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 383502

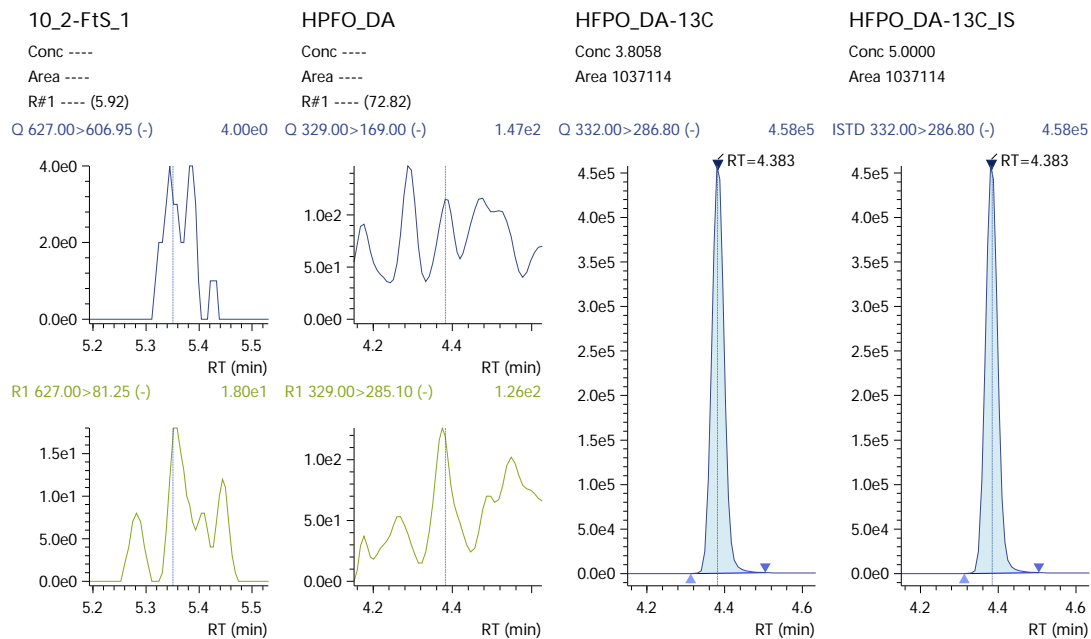
ISTD 528.80>509.00 (-) 1.77e5



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200812_064 (continued)

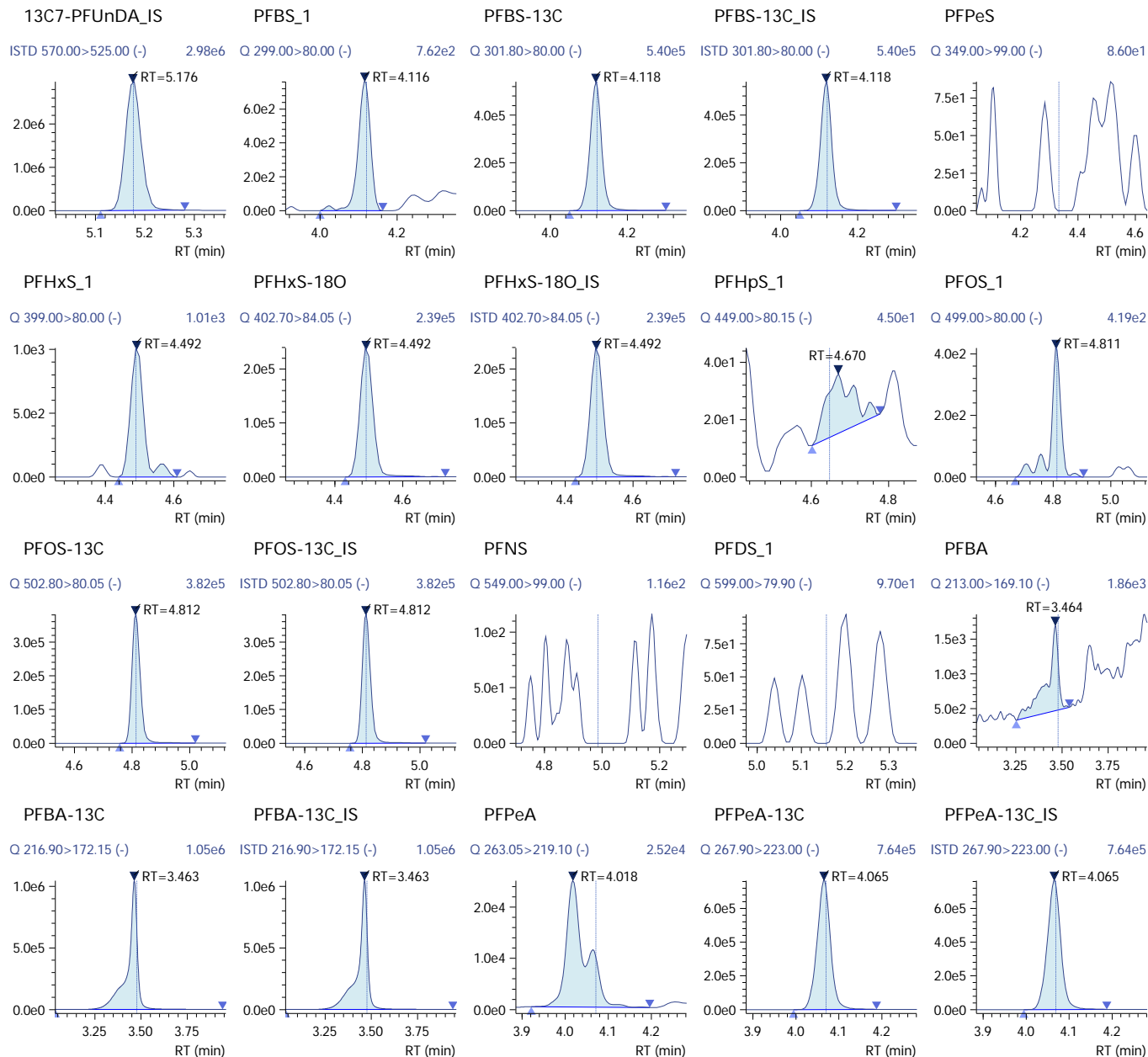


Insight Report

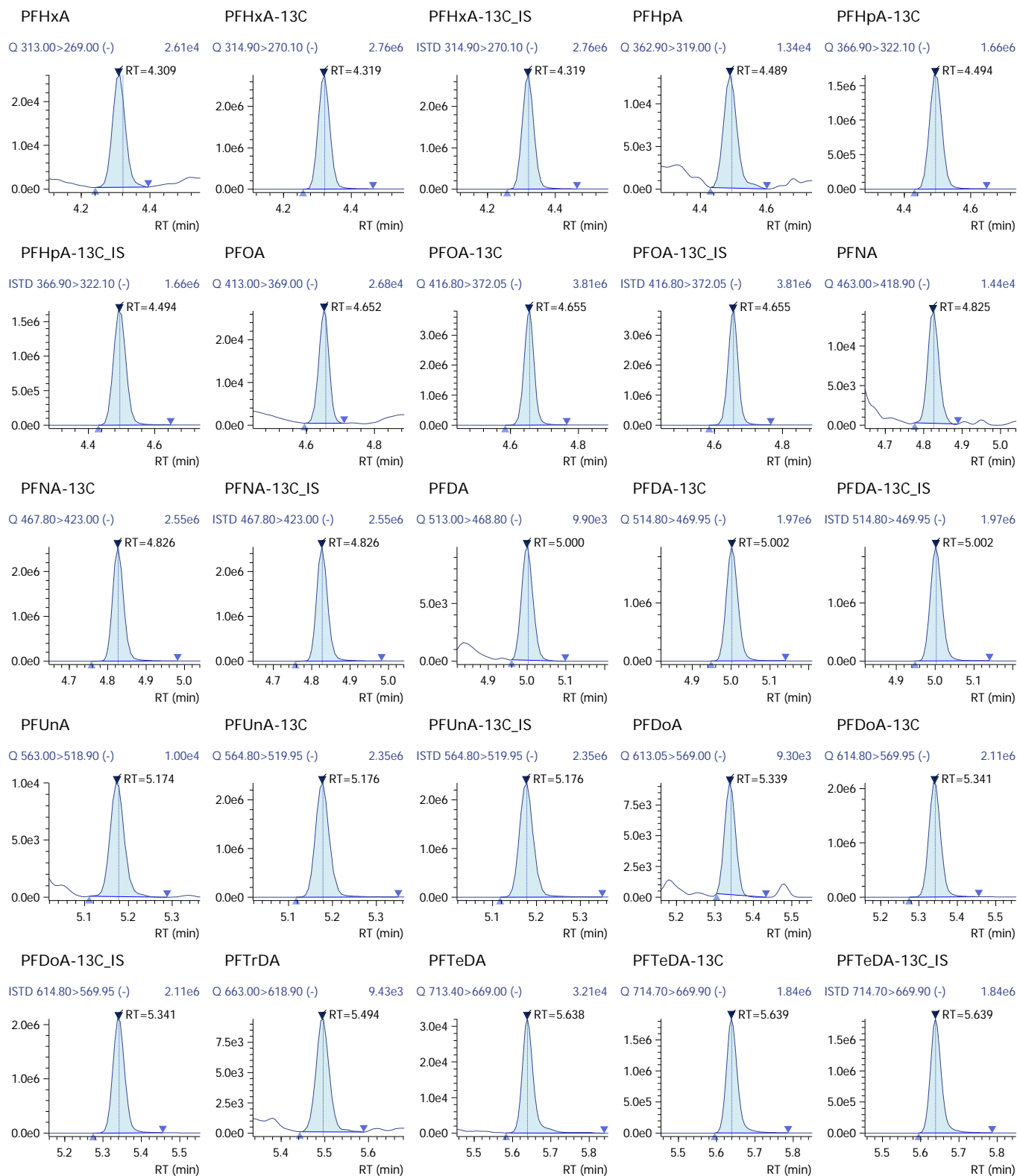
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200812_064

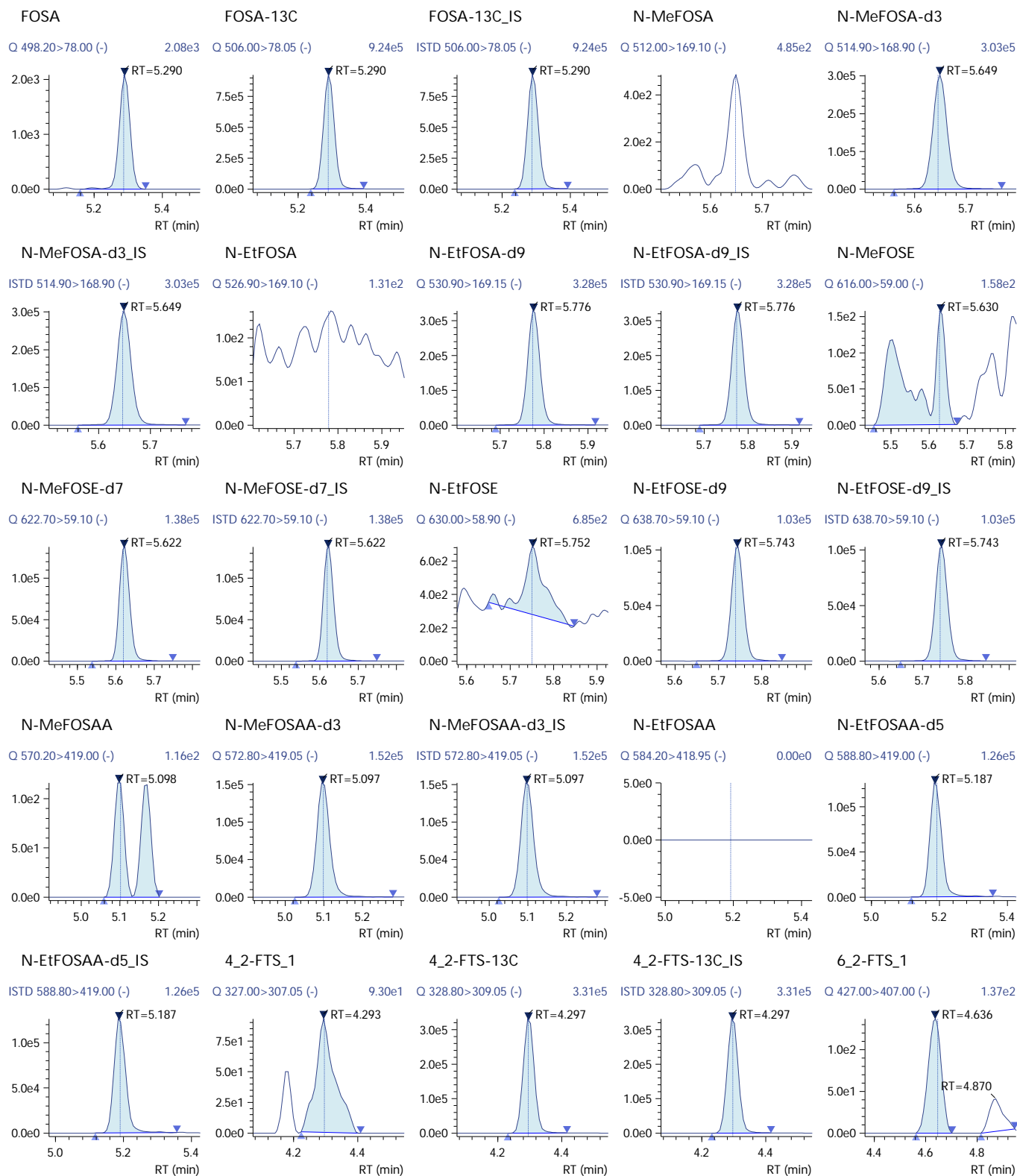
Sample ID: KQ2011026-04
Date Acquired: 8/12/2020 11:55:39 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_064.lcd
Vial: 8 | Inj. Volume: 15.0000uL | Tray: 3



200812_064 (continued)



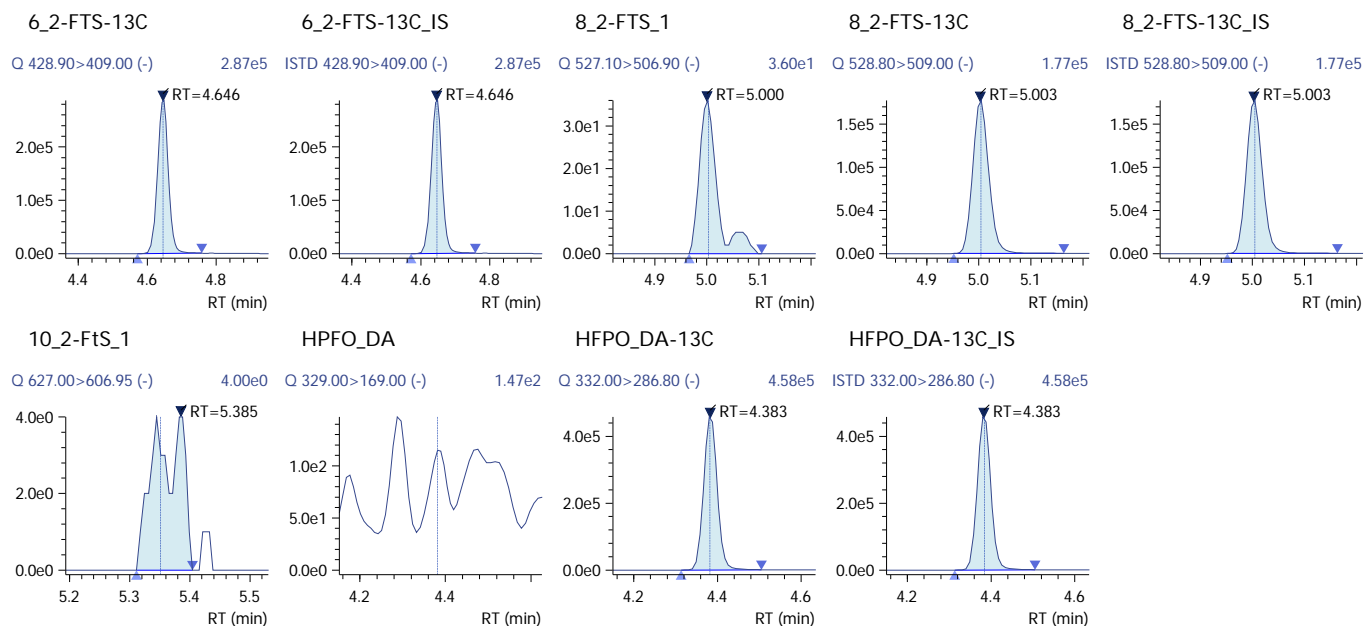
200812_064 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_064 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_063
Lab ID: KQ2011026-03
RunType: LCS
Matrix: Water

Date Acquired: 8/12/20 23:44
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_063	Instrument: K-LCMS-06
Acqu Date: 8/12/20 23:44	Vial: 3
Run Type: LCS	Dilution: 1
Lab ID: KQ2011026-03	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: KQ2011026
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 20091

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.169	-0.01	6880382	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.113	-0.01	1218928	3.7532	75	20 - 109	Y
18O2-PFHxS	4.485	-0.01	837451	5.1776	104	26 - 122	Y
13C4-PFOS	4.808	-0.01	832060	4.9535	99	25 - 121	Y
13C4-PFBA	3.460	-0.02	3700917	4.3032	86	27 - 124	Y
13C5-PFPeA	4.060	-0.01	1857623	3.7957	76	27 - 138	Y
13C2-PFHxA	4.314	-0.01	6203293	4.1042	82	28 - 132	Y
13C4-PFHpA	4.487	-0.01	5472768	5.0656	101	19 - 139	Y
13C4-PFOA	4.648	-0.01	8146466	5.3037	106	22 - 130	Y
13C5-PFNA	4.821	-0.01	4556876	4.3779	88	20 - 127	Y
13C2-PFDA	4.996	-0.01	4325064	4.4857	90	24 - 125	Y
13C2-PFUnDA	5.169	-0.01	5264670	4.4516	89	22 - 125	Y
13C2-PFDODA	5.334	-0.01	4868478	4.2780	86	19 - 122	Y
13C2-PFTeDA	5.631	-0.01	3251229	4.4546	89	13 - 124	Y
13C8-FOSA	5.283	-0.01	2232669	3.5571	71	18 - 109	Y
D3-MeFOSA	5.641	-0.01	585568	3.7457	75	15 - 153	Y
D5-EtFOSA	5.769	-0.01	648436	3.3285	67	25 - 107	Y
D7-MeFOSE	5.616	-0.01	258970	3.4648	69	24 - 112	Y
D9-EtFOSE	5.737	-0.01	202393	3.3040	66	19 - 109	Y
D3-MeFOSAA	5.091	-0.01	450562	3.8312	77	9 - 123	Y
D5-EtFOSAA	5.183	-0.01	408268	4.8980	98	12 - 126	Y
13C2-4:2 FTS	4.290	-0.01	870108	3.5956	72	10 - 197	Y
13C2-6:2 FTS	4.639	-0.01	697437	5.3317	107	10 - 226	Y
13C2-8:2 FTS	4.997	-0.01	426343	4.3067	86	10 - 202	Y
13C3-HFPO-DA	4.376	-0.01	1253930	4.4748	89	22 - 135	Y

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Printed: 8/19/20 11:35

\\alprews001\starlims\LIMSReps\QuantValidation.rpt

Data File: J:\LCMS06\Data\200812_b3\200812_063
 Acqu Date: 8/12/20 23:44
 Run Type: LCS
 Lab ID: KQ2011026-03

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 3
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.113	-0.01	238196	0.8475	27.1		Y
Perfluoropentane sulfonic acid (PFPeS)	4.326	-0.01	129702	1.0208	32.7		Y
Perfluorohexane sulfonic acid (PFHxS)	4.484	-0.01	206026	0.7133	22.8		Y
Perfluoroheptane sulfonic acid (PFHpS)	4.638	-0.01	108880	0.7677	24.6		Y
Perfluorooctane sulfonic acid (PFOS)	4.808	-0.01	164375	0.8051	25.8		Y
Perfluorononane sulfonic acid (PFNS)	4.979	-0.01	105163	0.7467	23.9		Y
Perfluorodecane sulfonic acid (PFDS)	5.148	-0.01	215638	0.7807	25.0		Y
Perfluorobutanoic acid (PFBA)	3.461	-0.02	755510	0.9076	29.0		Y
Perfluoropentanoic acid (PFPeA)	4.061	-0.01	1068862	0.8760	28.0		Y
Perfluorohexanoic acid (PFHxA)	4.313	-0.01	1294674	0.9338	29.9		Y
Perfluoroheptanoic acid (PFHpA)	4.487	-0.01	1232422	0.8624	27.6		Y
Perfluorooctanoic acid (PFOA)	4.648	-0.01	1477849	0.8683	27.8		Y
Perfluorononanoic acid (PFNA)	4.821	-0.01	849573	0.9281	29.7		Y
Perfluorodecanoic acid (PFDA)	4.996	-0.01	757698	0.8327	26.6		Y
Perfluoroundecanoic acid (PFUnDA)	5.170	-0.01	942221	0.9171	29.3		Y
Perfluorododecanoic acid (PFDoDA)	5.334	-0.01	715334	0.8963	28.7		Y
Perfluorotridecanoic acid (PFTrDA)	5.488	-0.01	732742	0.9191	29.4		Y
Perfluorotetradecanoic acid (PFTeDA)	5.631	-0.01	408291	0.9007	28.8		Y
Perfluorooctane sulfonamide (FOSA)	5.283	-0.01	589385	0.9384	30.0		Y
N-Methyl perfluorooctane sulfonamide (MeFOSA)	5.644	-0.01	125168	0.8114	26.0		Y
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	5.774	-0.01	24568	0.9246	29.6		Y
N-Methyl perfluorooctane sulfonamidoethanol	5.622	-0.01	161750	1.0068	32.2		Y
N-Ethyl perfluorooctane sulfonamidoethanol	5.747	-0.01	175534	1.0780	34.5		Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.093	-0.01	58087	0.8530	27.3		Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.185	-0.01	40046	0.8448	27.0		Y
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	4.290	-0.01	159226	0.9589	30.7		Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.639	-0.01	134762	0.8812	28.2		Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.997	-0.01	63276	0.9721	31.1		Y
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	5.342	-0.01	49846	0.9854	31.5		Y
Hexafluoropropylene oxide dimer acid (HFPO-DA)	4.376	-0.01	223297	0.8864	28.4		Y

Prep Amount: 250 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_063

Sample ID: KQ2011026-03
 Date Acquired: 8/12/2020 11:44:49 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_063.lcd
 Vial: 7 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.169	6880382	6880382	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.113	238196	1218928	2	0.8475	ng/mL	----	54.09
PFBS-13C	Auto	4.113	1218928	6880382	1	3.7532	ng/mL	----	----
PFBS-13C_IS	Auto	4.113	1218928	1218928	2	5.0000	ng/mL	----	----
PFPeS	Auto	4.326	129702	1218928	2	1.0208	ng/mL	----	159.70
PFHxS_1	Auto	4.484	206026	837451	3	0.7133	ng/mL	----	67.04
PFHxS-18O	Auto	4.485	837451	6880382	1	5.1776	ng/mL	----	----
PFHxS-18O_IS	Auto	4.485	837451	837451	3	5.0000	ng/mL	----	----
PFHpS_1	Auto	4.638	108880	837451	3	0.7677	ng/mL	----	55.64
PFOS_1	Auto	4.808	164375	832060	4	0.8051	ng/mL	----	78.72
PFOS-13C	Auto	4.808	832060	6880382	1	4.9535	ng/mL	----	----
PFOS-13C_IS	Auto	4.808	832060	832060	4	5.0000	ng/mL	----	----
PFNS	Auto	4.979	105163	832060	4	0.7467	ng/mL	----	159.23
PFDS_1	Auto	5.148	215638	832060	4	0.7807	ng/mL	----	60.60
PFBA	Auto	3.461	755510	3700917	5	0.9076	ng/mL	----	----
PFBA-13C	Auto	3.460	3700917	6880382	1	4.3032	ng/mL	----	----
PFBA-13C_IS	Auto	3.460	3700917	3700917	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.061	1068862	1857623	6	0.8760	ng/mL	----	----
PFPeA-13C	Auto	4.060	1857623	6880382	1	3.7957	ng/mL	----	----
PFPeA-13C_IS	Auto	4.060	1857623	1857623	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.313	1294674	6203293	7	0.9338	ng/mL	----	4.76
PFHxA-13C	Auto	4.314	6203293	6880382	1	4.1042	ng/mL	----	----
PFHxA-13C_IS	Auto	4.314	6203293	6203293	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.487	1232422	5472768	8	0.8624	ng/mL	----	26.23
PFHpA-13C	Auto	4.487	5472768	6880382	1	5.0656	ng/mL	----	----
PFHpA-13C_IS	Auto	4.487	5472768	5472768	8	5.0000	ng/mL	----	----
PFOA	Auto	4.648	1477849	8146466	9	0.8683	ng/mL	----	35.25
PFOA-13C	Auto	4.648	8146466	6880382	1	5.3037	ng/mL	----	----
PFOA-13C_IS	Auto	4.648	8146466	8146466	9	5.0000	ng/mL	----	----
PFNA	Auto	4.821	849573	4556876	10	0.9281	ng/mL	----	23.44
PFNA-13C	Auto	4.821	4556876	6880382	1	4.3779	ng/mL	----	----
PFNA-13C_IS	Auto	4.821	4556876	4556876	10	5.0000	ng/mL	----	----
PFDA	Auto	4.996	757698	4325064	11	0.8327	ng/mL	----	21.68
PFDA-13C	Auto	4.996	4325064	6880382	1	4.4857	ng/mL	----	----
PFDA-13C_IS	Auto	4.996	4325064	4325064	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.170	942221	5264670	12	0.9171	ng/mL	----	13.41
PFUnA-13C	Auto	5.169	5264670	6880382	1	4.4516	ng/mL	----	----
PFUnA-13C_IS	Auto	5.169	5264670	5264670	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.334	715334	4868478	13	0.8963	ng/mL	----	23.31
PFDaA-13C	Auto	5.334	4868478	6880382	1	4.2780	ng/mL	----	----
PFDaA-13C_IS	Auto	5.334	4868478	4868478	13	5.0000	ng/mL	----	----
PFTrDA	Auto	5.488	732742	3251229	14	0.9191	ng/mL	----	20.36
PFTeDA	Auto	5.631	408291	3251229	14	0.9007	ng/mL	----	158.64
PFTeDA-13C	Auto	5.631	3251229	6880382	1	4.4546	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.631	3251229	3251229	14	5.0000	ng/mL	----	----
FOSA	Auto	5.283	589385	2232669	16	0.9384	ng/mL	----	4.17
FOSA-13C	Auto	5.283	2232669	6880382	1	3.5571	ng/mL	----	----
FOSA-13C_IS	Auto	5.283	2232669	2232669	16	5.0000	ng/mL	----	----
N-MeFOSA	Auto	5.644	125168	585568	17	0.8114	ng/mL	----	79.15
N-MeFOSA-d3	Auto	5.641	585568	6880382	1	3.7457	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.641	585568	585568	17	5.0000	ng/mL	----	----
N-EtFOSA	Auto	5.774	24568	648436	18	0.9246	ng/mL	----	67.04
N-EtFOSA-d9	Auto	5.769	648436	6880382	1	3.3285	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.769	648436	648436	18	5.0000	ng/mL	----	----
N-MeFOSE	Auto	5.622	161750	258970	19	1.0068	ng/mL	----	----

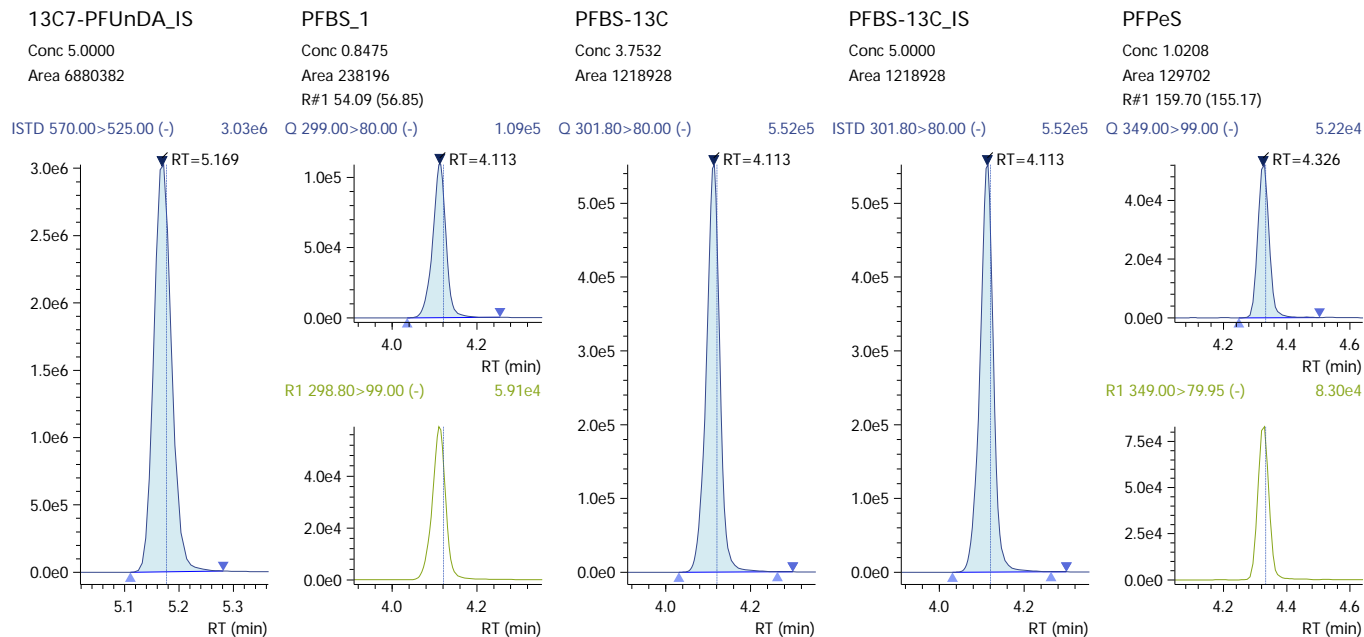
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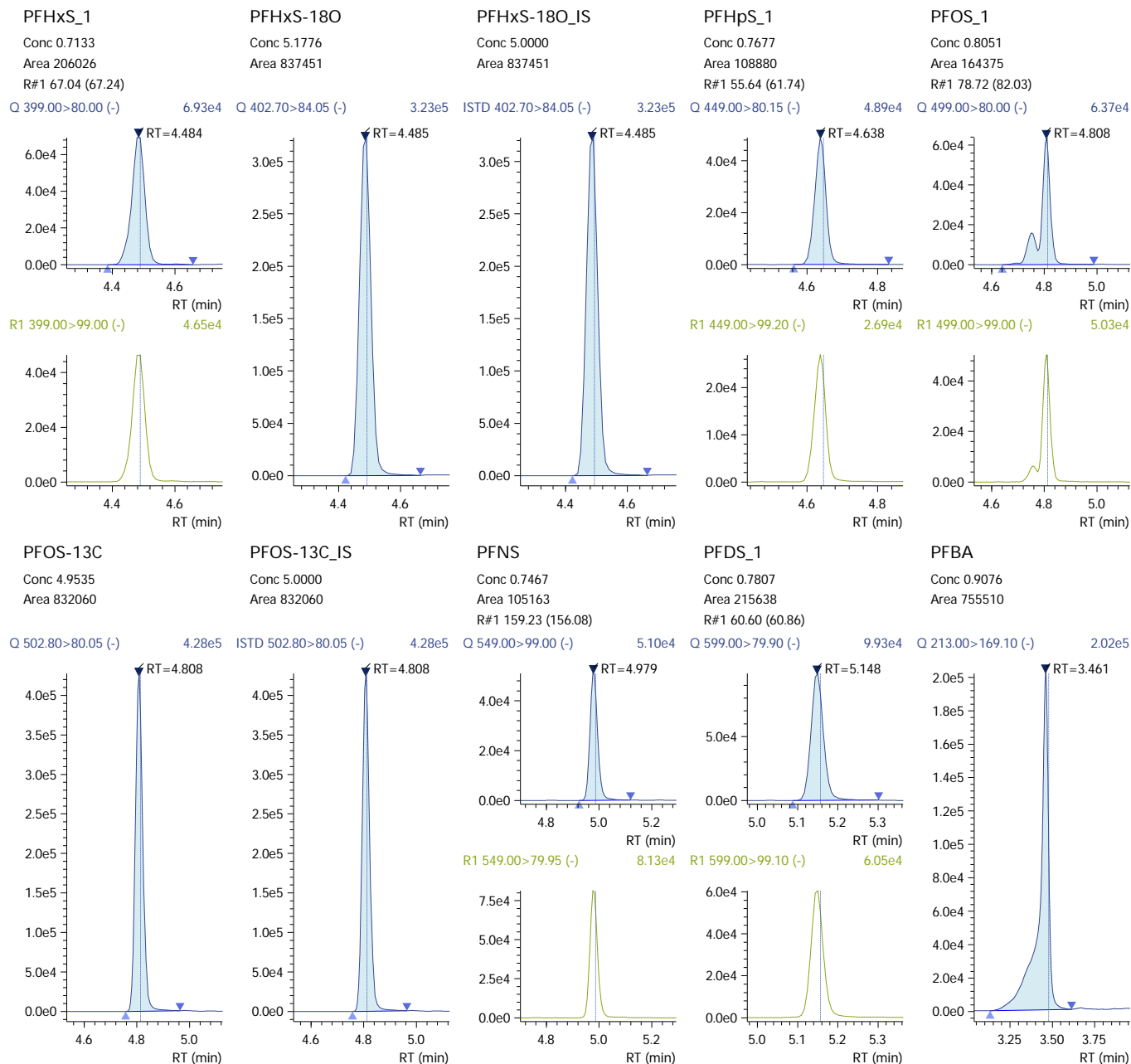
200812_063 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.616	258970	6880382	1	3.4648	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.616	258970	258970	19	5.0000	ng/mL	----	----
N-EtFOSE	Auto	5.747	175534	202393	20	1.0780	ng/mL	----	----
N-EtFOSE-d9	Auto	5.737	202393	6880382	1	3.3040	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.737	202393	202393	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.093	58087	450562	21	0.8530	ng/mL	----	41.44
N-MeFOSAA-d3	Auto	5.091	450562	6880382	1	3.8312	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.091	450562	450562	21	5.0000	ng/mL	----	----
N-EtFOSAA	Auto	5.185	40046	408268	22	0.8448	ng/mL	----	72.17
N-EtFOSAA-d5	Auto	5.183	408268	6880382	1	4.8980	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.183	408268	408268	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.290	159226	870108	23	0.9589	ng/mL	----	142.37
4_2-FTS-13C	Auto	4.290	870108	6880382	1	3.5956	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.290	870108	870108	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.639	134762	697437	24	0.8812	ng/mL	----	39.20
6_2-FTS-13C	Auto	4.639	697437	6880382	1	5.3317	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.639	697437	697437	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	4.997	63276	426343	25	0.9721	ng/mL	----	9.48
8_2-FTS-13C	Auto	4.997	426343	6880382	1	4.3067	ng/mL	----	----
8_2-FTS-13C_IS	Auto	4.997	426343	426343	25	5.0000	ng/mL	----	----
10_2-FTS_1	Auto	5.342	49846	426343	25	0.9854	ng/mL	----	5.54
HPFO_DA	Auto	4.376	223297	1253930	26	0.8864	ng/mL	----	69.75
HPFO_DA-13C	Auto	4.376	1253930	6880382	1	4.4748	ng/mL	----	----
HPFO_DA-13C_IS	Auto	4.376	1253930	1253930	26	5.0000	ng/mL	----	----



200812_063 (continued)



Insight Report

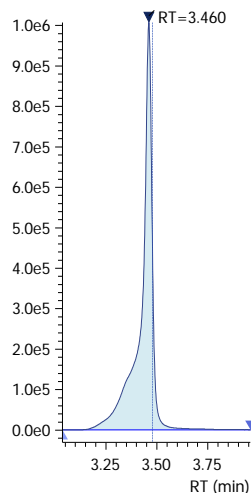
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200812_063 (continued)

PFBA-13C

Conc 4.3032
 Area 3700917

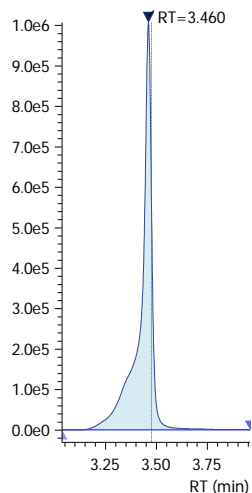
Q 216.90>172.15 (-) 1.01e6



PFBA-13C_IS

Conc 5.0000
 Area 3700917

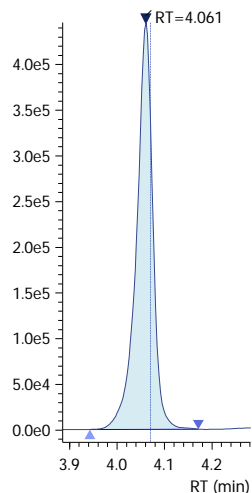
ISTD 216.90>172.15 (-) 1.01e6



PFPeA

Conc 0.8760
 Area 1068862

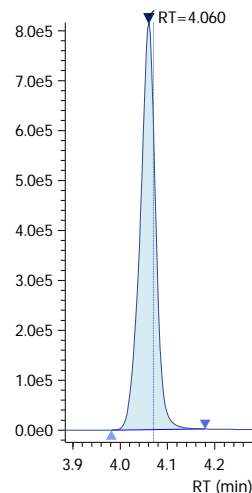
Q 263.05>219.10 (-) 4.46e5



PFPeA-13C

Conc 3.7957
 Area 1857623

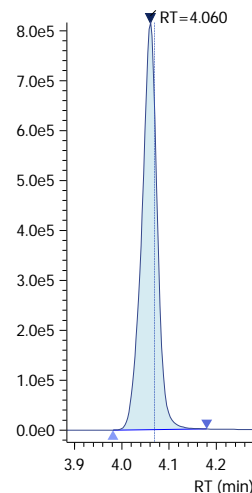
Q 267.90>223.00 (-) 8.16e5



PFPeA-13C_IS

Conc 5.0000
 Area 1857623

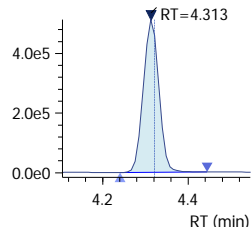
ISTD 267.90>223.00 (-) 8.16e5



PFHxA

Conc 0.9338
 Area 1294674
 R#1 4.76 (3.74)

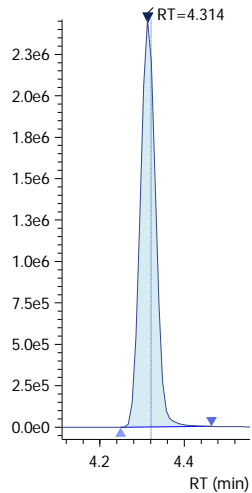
Q 313.00>269.00 (-) 5.14e5



PFHxA-13C

Conc 4.1042
 Area 6203293

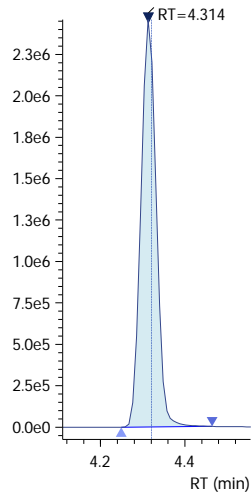
Q 314.90>270.10 (-) 2.46e6



PFHxA-13C_IS

Conc 5.0000
 Area 6203293

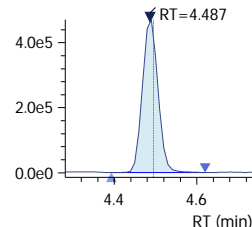
ISTD 314.90>270.10 (-) 2.46e6



PFHpA

Conc 0.8624
 Area 1232422
 R#1 26.23 (23.75)

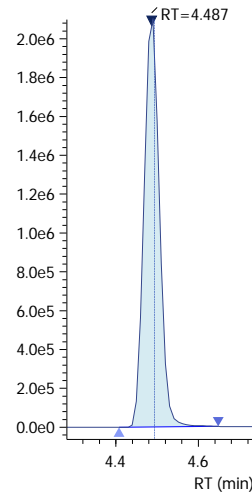
Q 362.90>319.00 (-) 4.71e5



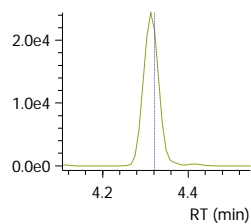
PFHpA-13C

Conc 5.0656
 Area 5472768

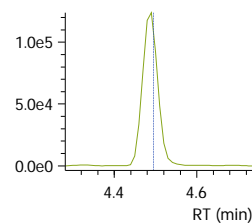
Q 366.90>322.10 (-) 2.10e6



R1 313.00>119.10 (-) 2.44e4



R1 362.90>169.00 (-) 1.24e5



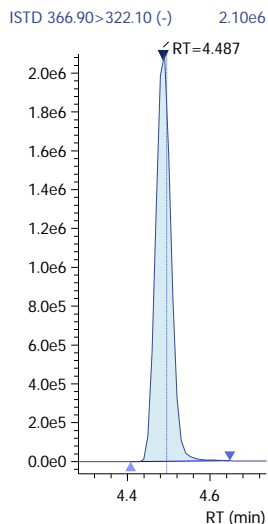
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200812_063 (continued)

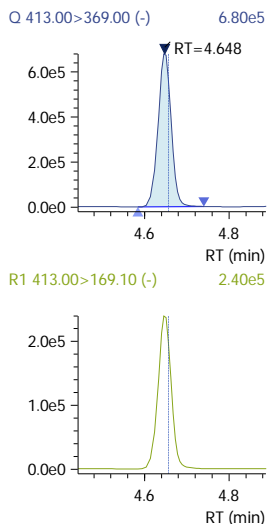
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Conc 5.0000
 Area 5472768



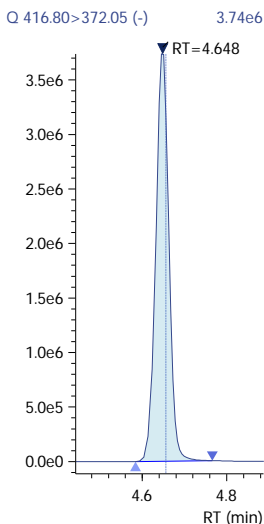
PFOA

Conc 0.8683
 Area 1477849
 R#1 35.25 (34.80)



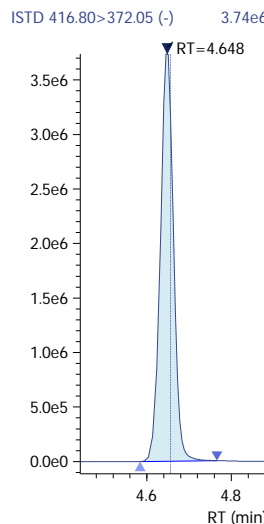
PFOA-13C

Conc 5.3037
 Area 8146466



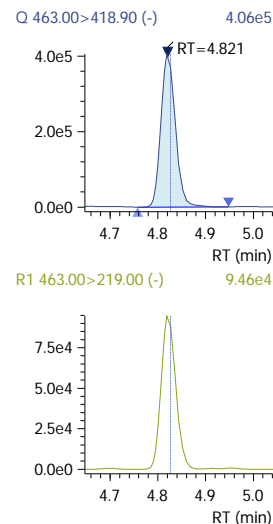
PFOA-13C_IS

Conc 5.0000
 Area 8146466



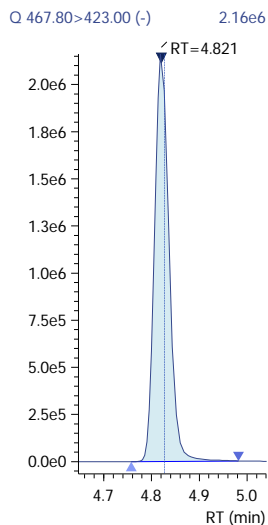
PFNA

Conc 0.9281
 Area 849573
 R#1 23.44 (22.71)



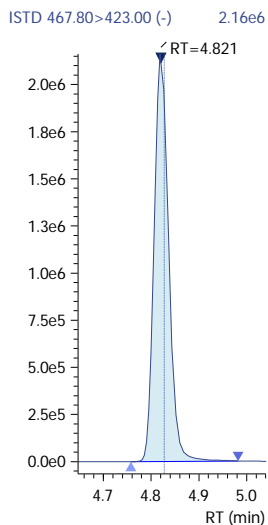
PFNA-13C

Conc 4.3779
 Area 4556876



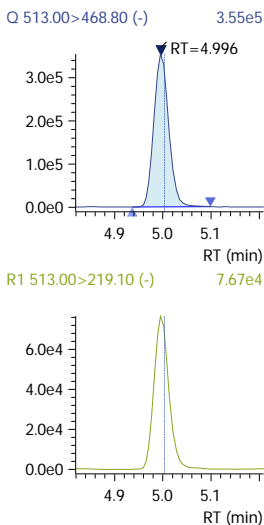
PFNA-13C_IS

Conc 5.0000
 Area 4556876



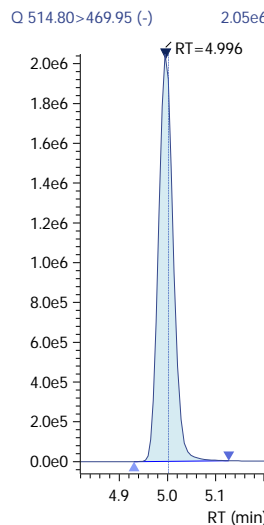
PFDA

Conc 0.8327
 Area 757698
 R#1 21.68 (22.06)



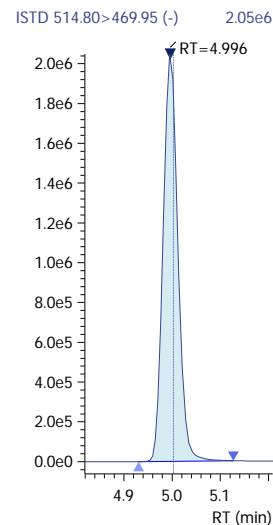
PFDA-13C

Conc 4.4857
 Area 4325064



PFDA-13C_IS

Conc 5.0000
 Area 4325064

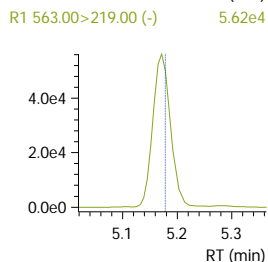
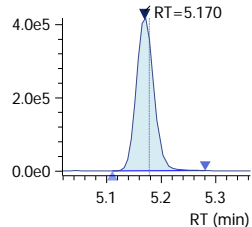


200812_063 (continued)

PFUnA

Conc 0.9171
Area 942221
R#1 13.41 (13.66)

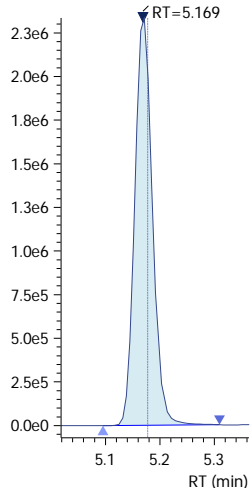
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PFUnA-13C

Conc 4.4516
Area 5264670

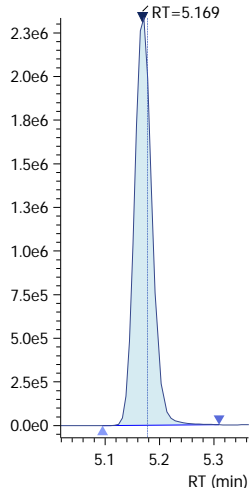
Q 564.80>519.95 (-) 2.34e6



PFUnA-13C_IS

Conc 5.0000
Area 5264670

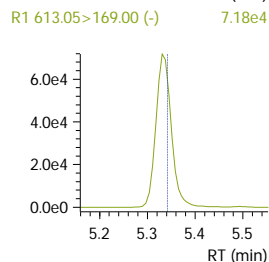
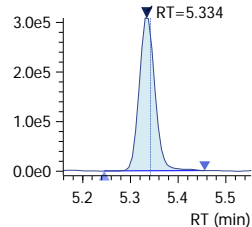
ISTD 564.80>519.95 (-) 2.34e6



PFDaA

Conc 0.8963
Area 715334
R#1 23.31 (21.98)

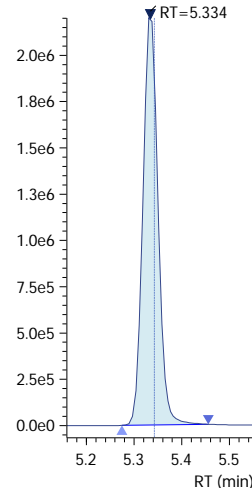
Q 613.05>569.00 (-) 3.09e5



PFDaA-13C

Conc 4.2780
Area 4868478

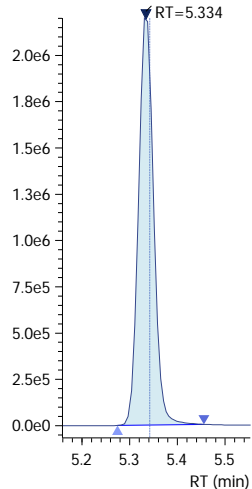
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PFDaA-13C_IS

Conc 5.0000
Area 4868478

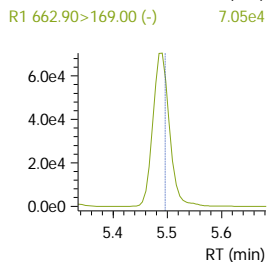
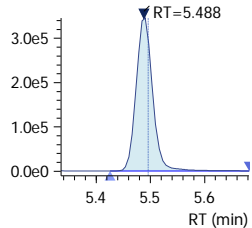
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PFTrDA

Conc 0.9191
Area 732742
R#1 20.36 (19.20)

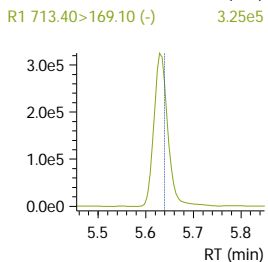
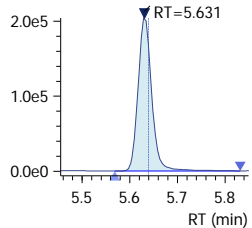
Q 663.00>618.90 (-) 3.46e5



PFTeDA

Conc 0.9007
Area 408291
R#1 158.64 (61.49)

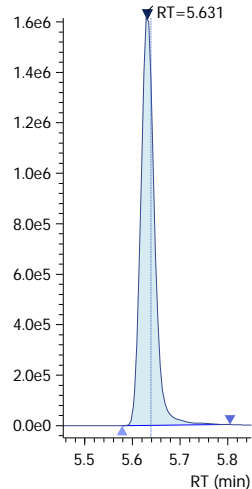
Q 713.40>669.00 (-) 2.04e5



PFTeDA-13C

Conc 4.4546
Area 3251229

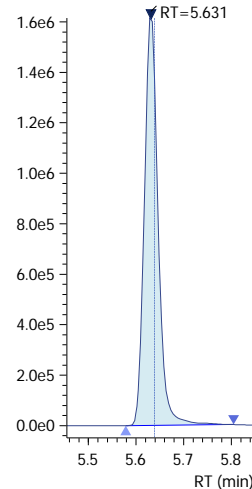
Q 714.70>669.90 (-) 1.62e6



PFTeDA-13C_IS

Conc 5.0000
Area 3251229

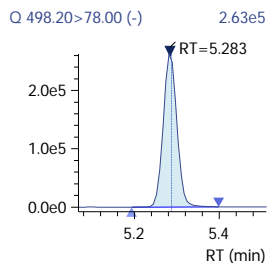
ISTD 714.70>669.90 (-) 1.62e6



200812_063 (continued)

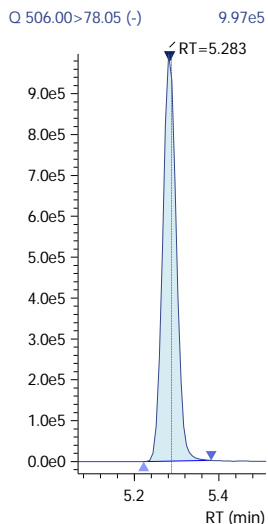
FOSA

Conc 0.9384
 Area 589385
 R#1 4.17 (4.04)



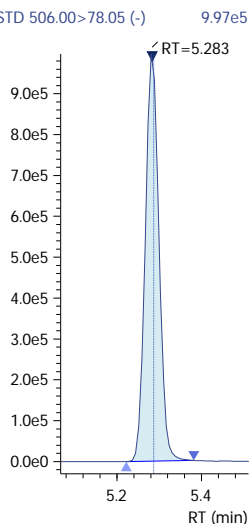
FOSA-13C

Conc 3.5571
 Area 2232669



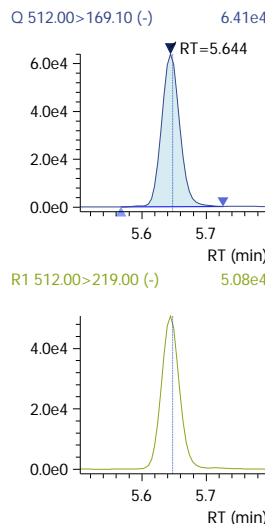
FOSA-13C_IS

Conc 5.0000
 Area 2232669



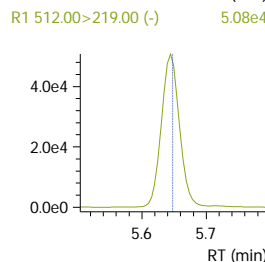
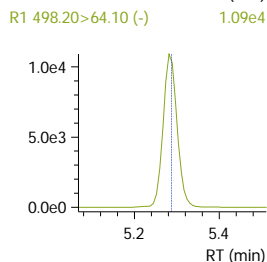
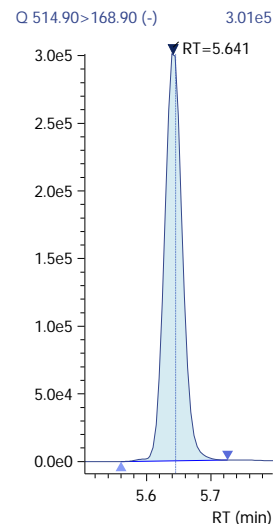
N-MeFOSA

Conc 0.8114
 Area 125168
 R#1 79.15 (78.52)



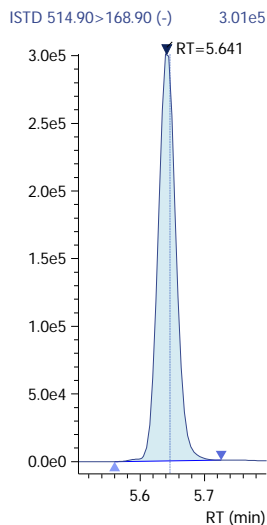
N-MeFOSA-d3

Conc 3.7457
 Area 585568



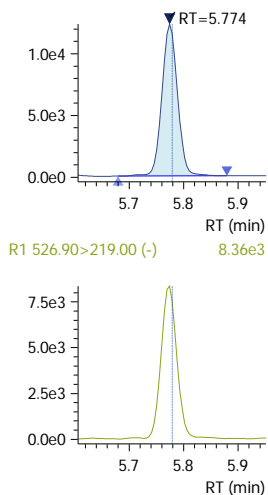
N-MeFOSA-d3_IS

Conc 5.0000
 Area 585568



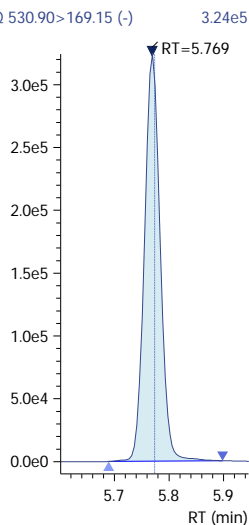
N-EtFOSA

Conc 0.9246
 Area 24568
 R#1 67.04 (0.00)



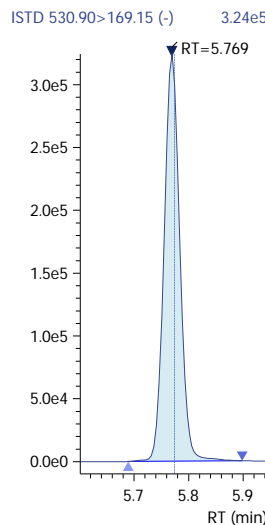
N-EtFOSA-d9

Conc 3.3285
 Area 648436



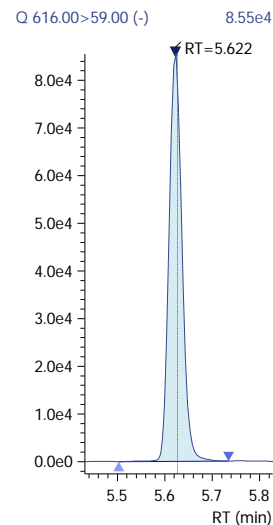
N-EtFOSA-d9_IS

Conc 5.0000
 Area 648436



N-MeFOSE

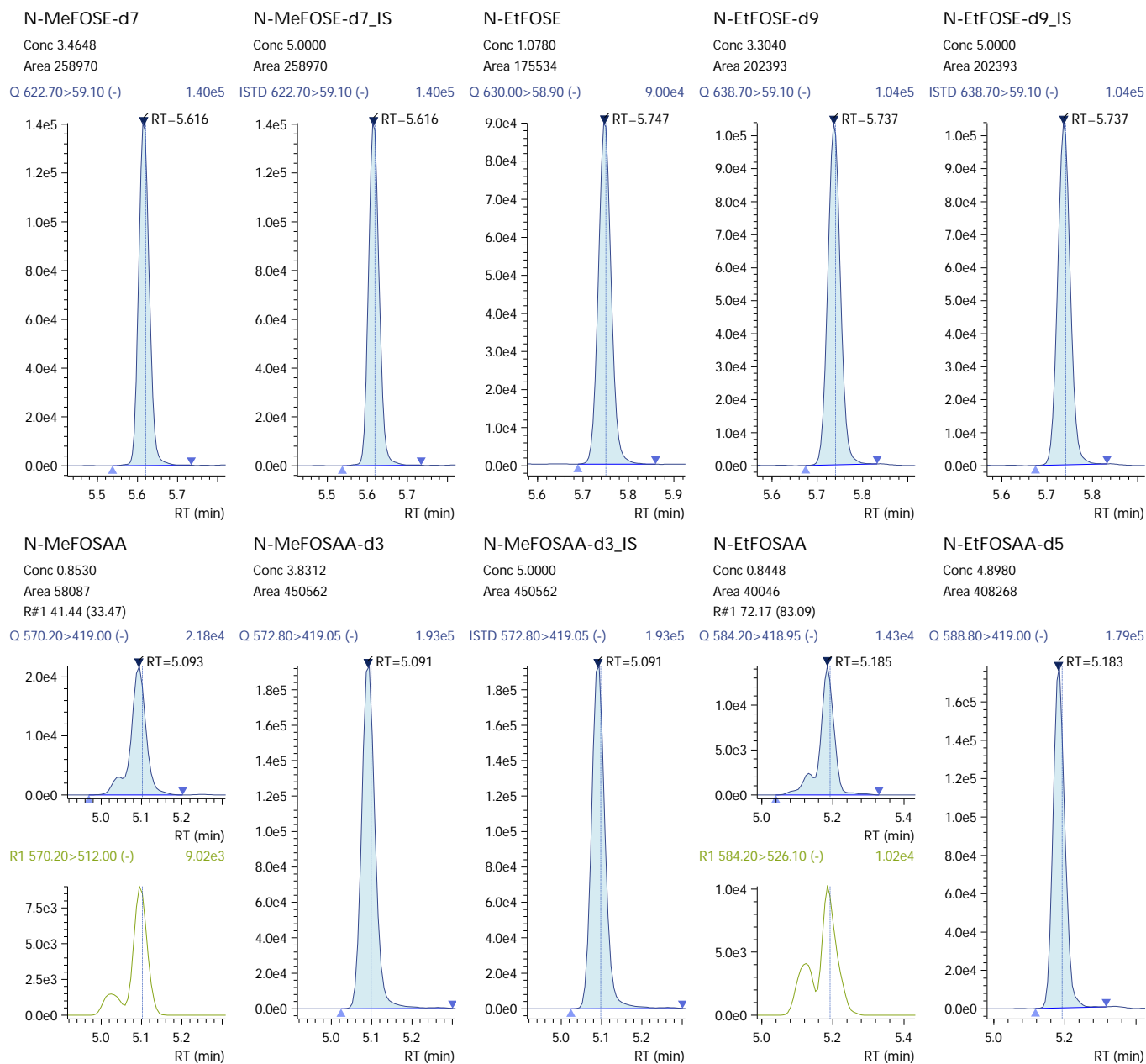
Conc 1.0068
 Area 161750



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200812_063 (continued)



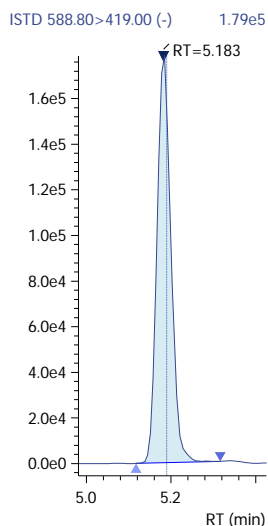
Insight Report

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200812_063 (continued)

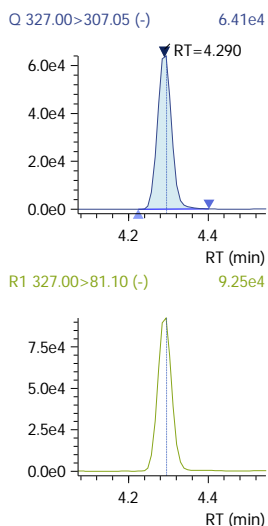
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 408268



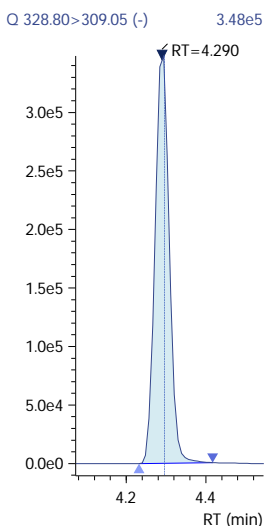
4_2-FTS_1

Conc 0.9589
 Area 159226
 R#1 142.37 (54.93)



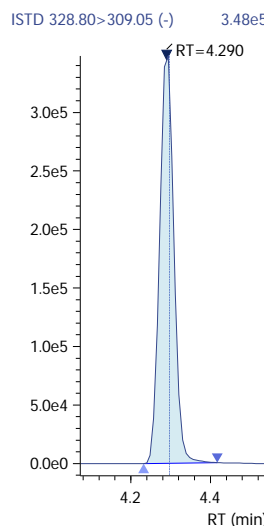
4_2-FTS-13C

Conc 3.5956
 Area 870108



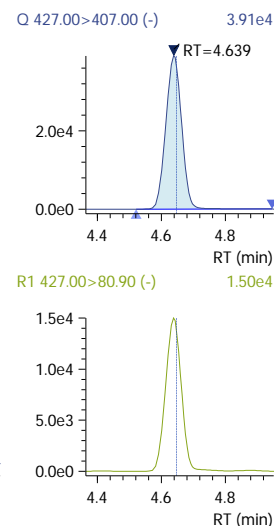
4_2-FTS-13C_IS

Conc 5.0000
 Area 870108



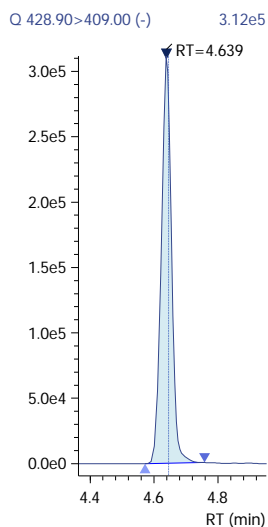
6_2-FTS_1

Conc 0.8812
 Area 134762
 R#1 39.20 (36.33)



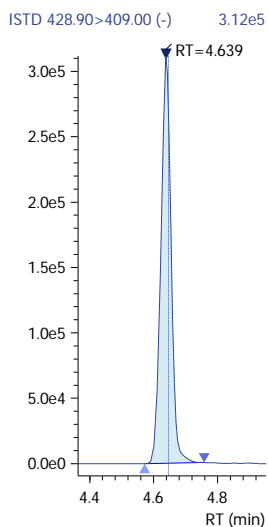
6_2-FTS-13C

Conc 5.3317
 Area 697437



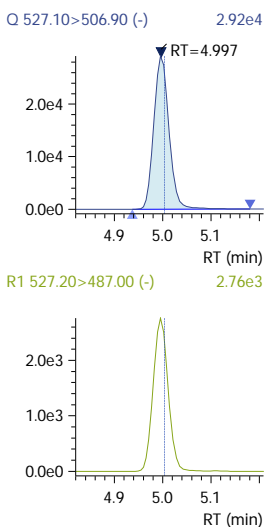
6_2-FTS-13C_IS

Conc 5.0000
 Area 697437



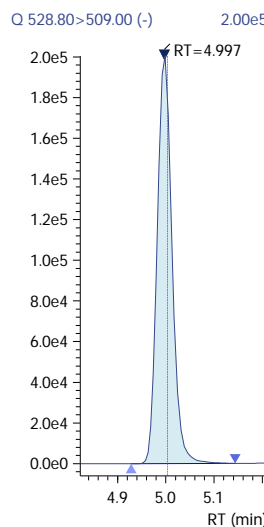
8_2-FTS_1

Conc 0.9721
 Area 63276
 R#1 9.48 (8.96)



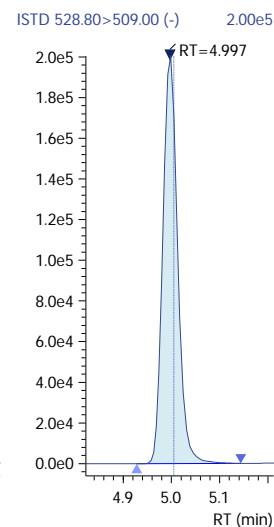
8_2-FTS-13C

Conc 4.3067
 Area 426343



8_2-FTS-13C_IS

Conc 5.0000
 Area 426343



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200812_063 (continued)

10_2-FtS_1

Conc 0.9854
Area 49846
R#1 5.54 (5.92)

HPFO_DA

Conc 0.8864
Area 223297
R#1 69.75 (72.82)

HFPO_DA-13C

Conc 4.4748
Area 1253930

HFPO_DA-13C_IS

Conc 5.0000
Area 1253930

Q 627.00>606.95 (-)

2.25e4

Q 329.00>169.00 (-)

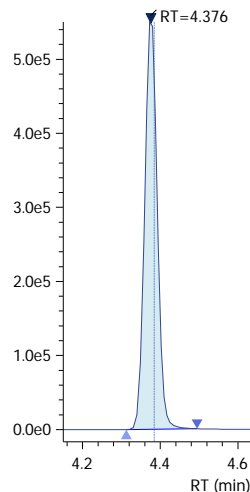
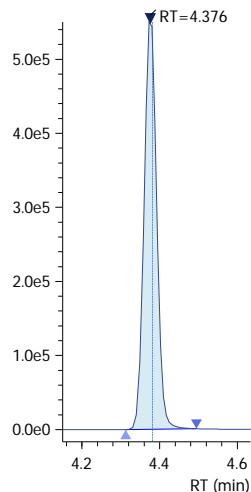
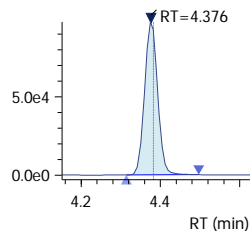
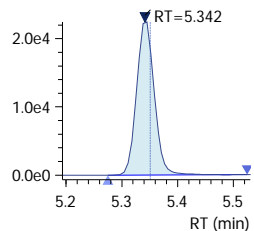
9.77e4

Q 332.00>286.80 (-)

5.50e5

ISTD 332.00>286.80 (-)

5.50e5

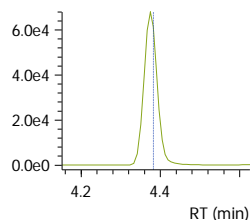
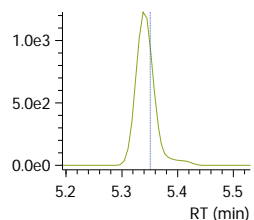


R1 627.00>81.25 (-)

1.23e3

R1 329.00>285.10 (-)

6.80e4

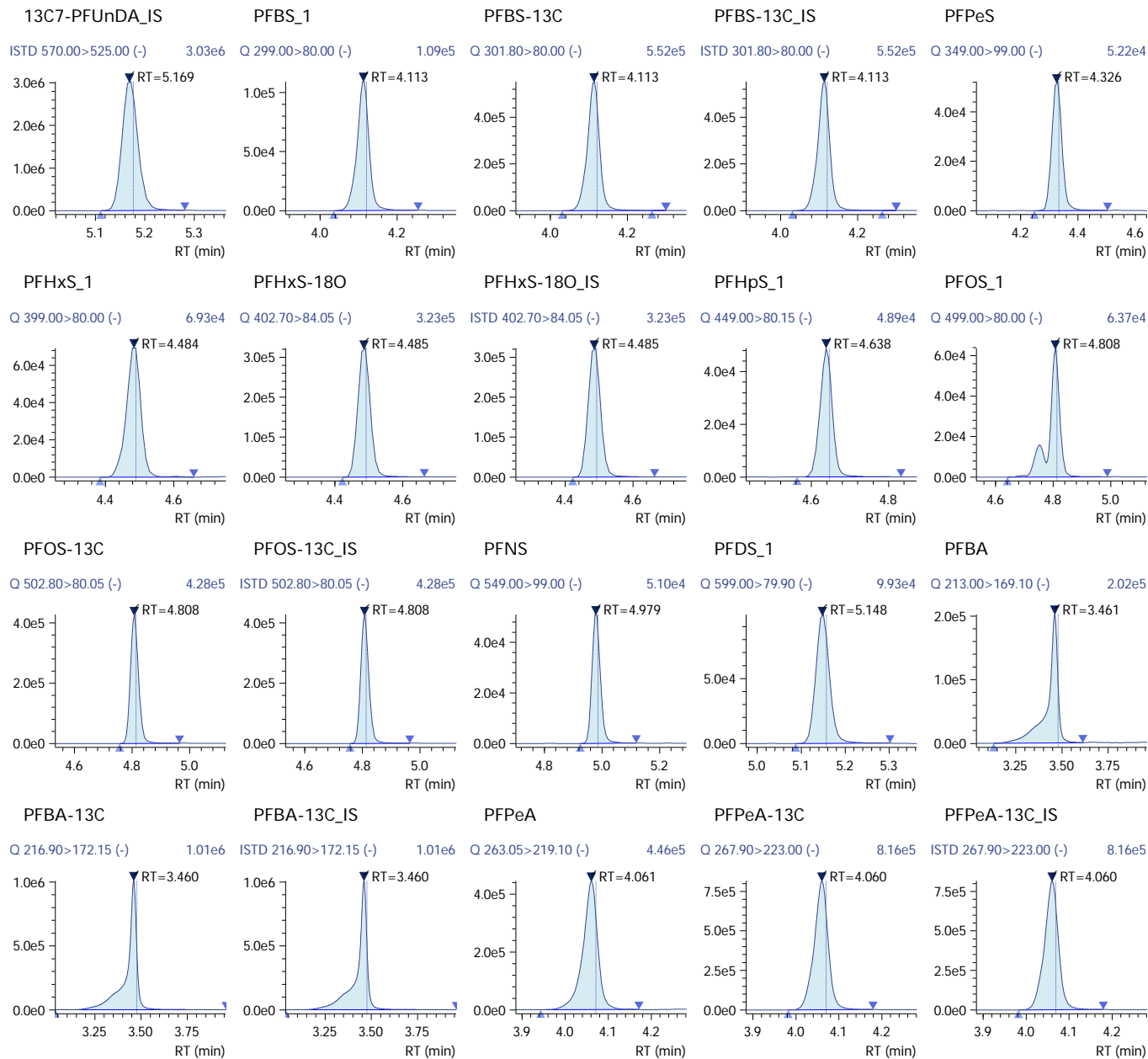


Insight Report

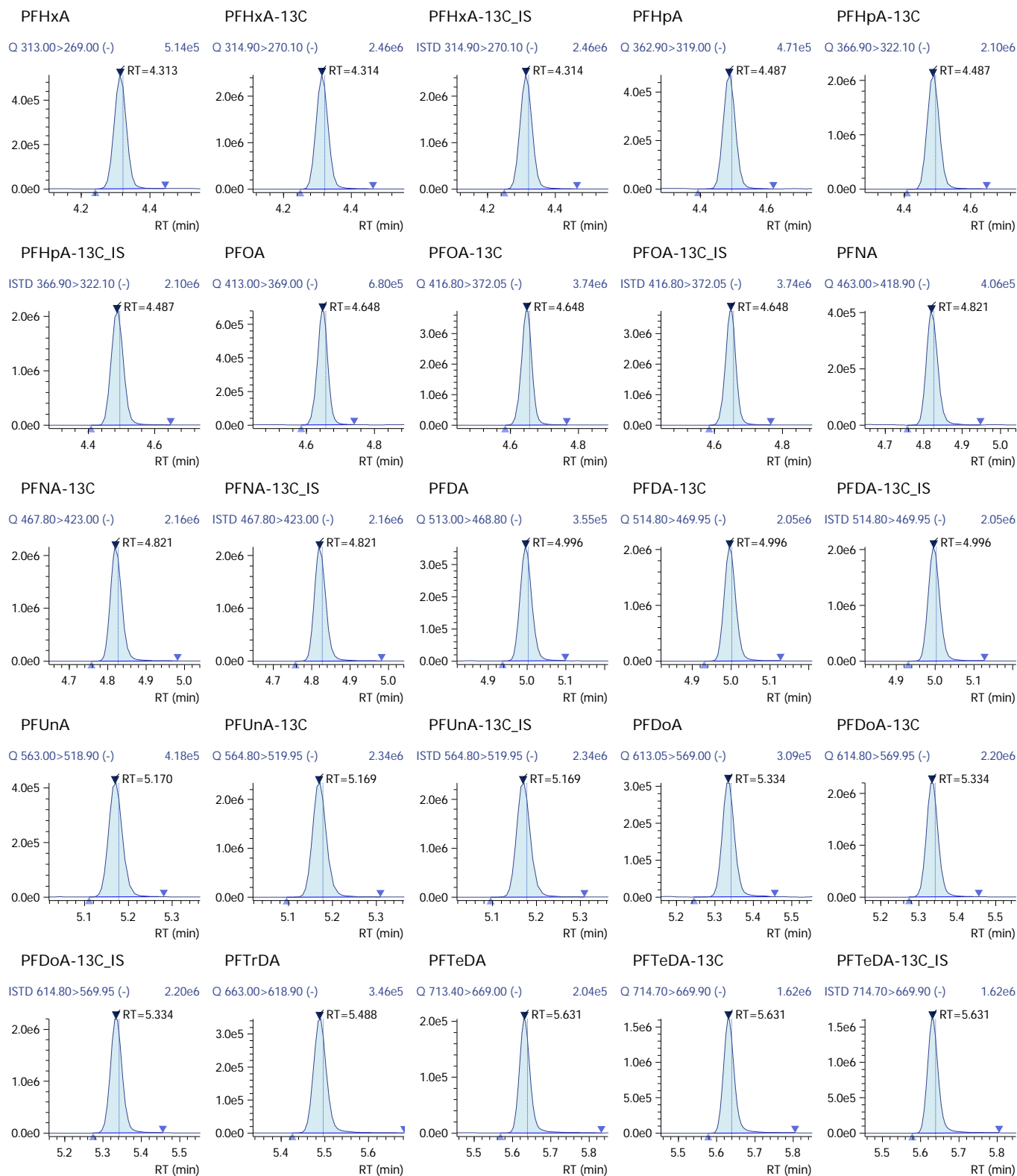
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200812_063

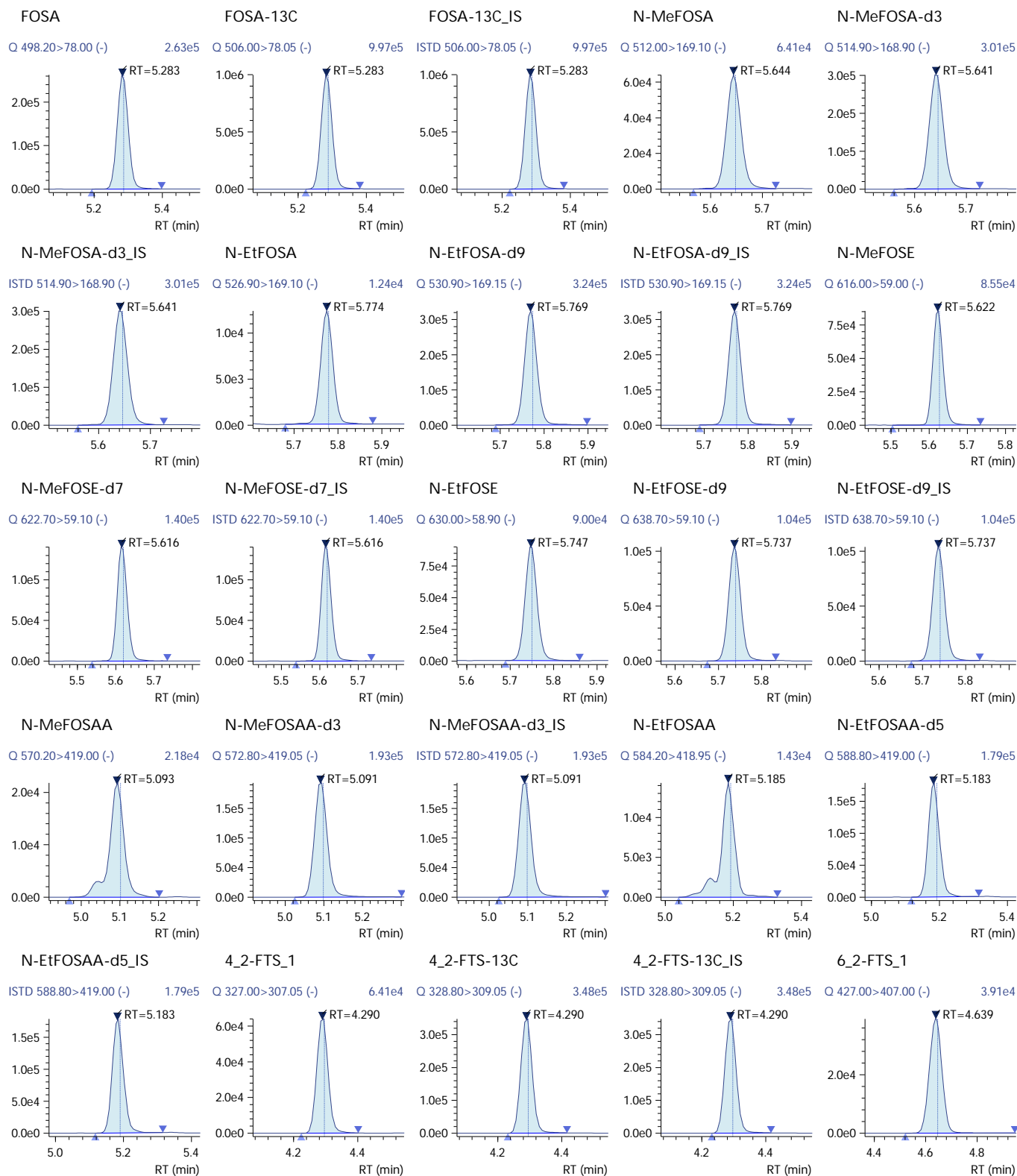
Sample ID: KQ2011026-03
Date Acquired: 8/12/2020 11:44:49 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_063.lcd
Vial: 7 | Inj. Volume: 15.0000uL | Tray: 3



200812_063 (continued)



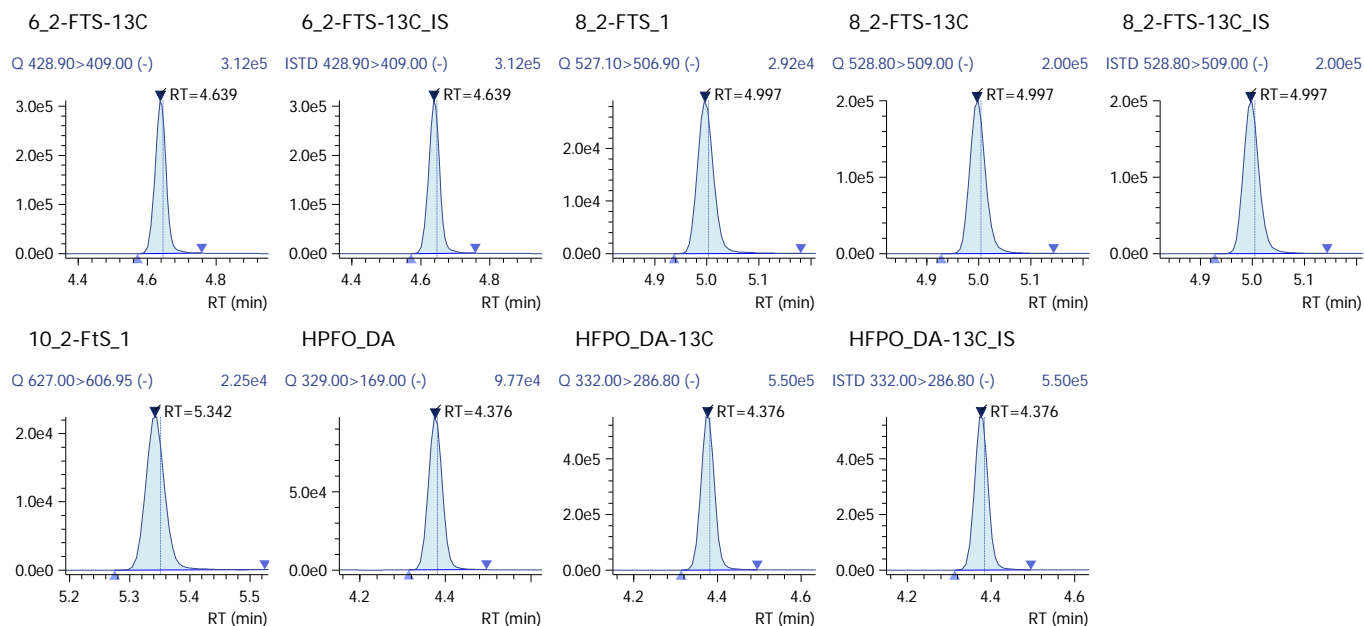
200812_063 (continued)



Insight Report

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200812_063 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_071
Lab ID: KQ2011026-01
RunType: MS
Matrix: Water

Date Acquired: 8/13/20 01:11
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Internal Standards	X	
Surrogates		X
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	D5-EtFOSAA	131	12	126	Native ok

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_071	Instrument: K-LCMS-06
Acqu Date: 8/13/20 01:11	Vial: 11
Run Type: MS	Dilution: 1
Lab ID: KQ2011026-01	Raw Units: ng/mL

Bottle ID: R2006768-001.10	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 690911	Prep Lot: 363266	Report Group: KQ2011026
Analysis: PFC/537M	Prep Method: ALS SOP	
	Prep Date: 8/11/20	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.163	-0.02	5085599	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.107	-0.02	858549	3.5765	72	20 - 109	Y
18O2-PFHxS	4.481	-0.02	379380	3.1733	63	26 - 122	Y
13C4-PFOS	4.802	-0.02	600915	4.8399	97	25 - 121	Y
13C4-PFBA	3.450	-0.03	2360978	3.7140	74	27 - 124	Y
13C5-PFPeA	4.054	-0.02	997697	2.7581	55	27 - 138	Y
13C2-PFHxA	4.309	-0.02	3376914	3.0227	60	28 - 132	Y
13C4-PFHpA	4.483	-0.01	2176213	2.7252	55	19 - 139	Y
13C4-PFOA	4.642	-0.02	4334218	3.8176	76	22 - 130	Y
13C5-PFNA	4.815	-0.01	2863204	3.7215	74	20 - 127	Y
13C2-PFDA	4.991	-0.02	2447949	3.4349	69	24 - 125	Y
13C2-PFUnDA	5.164	-0.02	3428725	3.9224	78	22 - 125	Y
13C2-PFDODA	5.329	-0.02	3315163	3.9411	79	19 - 122	Y
13C2-PFTeDA	5.627	-0.01	2551927	4.7304	95	13 - 124	Y
13C8-FOSA	5.279	-0.01	1577399	3.4000	68	18 - 109	Y
D3-MeFOSAA	5.086	-0.02	380498	4.3773	88	9 - 123	Y
D5-EtFOSAA	5.177	-0.02	403735	6.5529	131 *	12 - 126	Y
13C2-6:2 FTS	4.635	-0.02	724091	7.4890	150	10 - 226	Y
13C2-8:2 FTS	4.991	-0.02	363078	4.9620	99	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.107	-0.02	180880	0.9137	22.8		Y
Perfluorohexane sulfonic acid (PFHxS)	4.478	-0.02	116551	0.8907	22.3		Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

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Data File: J:\LCMS06\Data\200812_b3\200812_071
 Acq Date: 8/13/20 01:11
 Run Type: MS
 Lab ID: KQ2011026-01

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 11
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	4.633	-0.02	74129	1.1538	28.8		Y
Perfluorooctane sulfonic acid (PFOS)	4.802	-0.02	143414	0.9727	24.3		Y
Perfluorodecane sulfonic acid (PFDS)	5.143	-0.02	164058	0.8224	20.6		Y
Perfluorobutanoic acid (PFBA)	3.451	-0.03	987772	1.8601	46.5		Y
Perfluoropentanoic acid (PFPeA)	4.054	-0.02	605962	0.9279	23.2		Y
Perfluorohexanoic acid (PFHxA)	4.309	-0.01	816745	1.0910	27.3		Y
Perfluoroheptanoic acid (PFHpA)	4.483	-0.01	573814	1.0125	25.3		Y
Perfluorooctanoic acid (PFOA)	4.642	-0.02	924380	1.0260	25.7		Y
Perfluorononanoic acid (PFNA)	4.814	-0.02	553507	0.9629	24.1		Y
Perfluorodecanoic acid (PFDA)	4.990	-0.02	478644	0.9294	23.2		Y
Perfluoroundecanoic acid (PFUnDA)	5.164	-0.02	621378	0.9290	23.2		Y
Perfluorododecanoic acid (PFDoDA)	5.330	-0.01	573464	1.0582	26.5		Y
Perfluorotridecanoic acid (PFTrDA)	5.485	-0.01	524372	0.8363	20.9		Y
Perfluorotetradecanoic acid (PFTeDA)	5.627	-0.01	318852	0.8955	22.4		Y
Perfluorooctane sulfonamide (FOSA)	5.279	-0.01	412849	0.9304	23.3		Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.087	-0.02	54883	0.9543	23.9		Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.180	-0.02	45084	0.9618	24.0		Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.633	-0.02	143879	0.9062	22.7		Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.991	-0.02	56598	1.0210	25.5		Y

Prep Amount: 320.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

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200812_071

Sample ID: KQ2011026-01
 Date Acquired: 8/13/2020 1:11:04 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_071.lcd
 Vial: 15 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.163	5085599	5085599	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.107	180880	858549	2	0.9137	ng/mL	----	55.82
PFBS-13C	Auto	4.107	858549	5085599	1	3.5765	ng/mL	----	----
PFBS-13C_IS	Auto	4.107	858549	858549	2	5.0000	ng/mL	----	----
PFPeS	Auto	4.322	71233	858549	2	0.7959	ng/mL	----	150.43
PFHxS_1	M	4.478	116551	379380	3	0.8907	ng/mL	----	64.04
PFHxS-18O	Auto	4.481	379380	5085599	1	3.1733	ng/mL	----	----
PFHxS-18O_IS	Auto	4.481	379380	379380	3	5.0000	ng/mL	----	----
PFHpS_1	M	4.633	74129	379380	3	1.1538	ng/mL	----	54.06
PFOS_1	M	4.802	143414	600915	4	0.9727	ng/mL	----	79.89
PFOS-13C	Auto	4.802	600915	5085599	1	4.8399	ng/mL	----	----
PFOS-13C_IS	Auto	4.802	600915	600915	4	5.0000	ng/mL	----	----
PFNS	M	4.973	75269	600915	4	0.7400	ng/mL	----	154.34
PFDS_1	M	5.143	164058	600915	4	0.8224	ng/mL	----	53.08
PFBA	Auto	3.451	987772	2360978	5	1.8601	ng/mL	----	----
PFBA-13C	Auto	3.450	2360978	5085599	1	3.7140	ng/mL	----	----
PFBA-13C_IS	Auto	3.450	2360978	2360978	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.054	605962	997697	6	0.9279	ng/mL	----	----
PFPeA-13C	Auto	4.054	997697	5085599	1	2.7581	ng/mL	----	----
PFPeA-13C_IS	Auto	4.054	997697	997697	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.309	816745	3376914	7	1.0910	ng/mL	----	3.26
PFHxA-13C	Auto	4.309	3376914	5085599	1	3.0227	ng/mL	----	----
PFHxA-13C_IS	Auto	4.309	3376914	3376914	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.483	573814	2176213	8	1.0125	ng/mL	----	23.53
PFHpA-13C	Auto	4.483	2176213	5085599	1	2.7252	ng/mL	----	----
PFHpA-13C_IS	Auto	4.483	2176213	2176213	8	5.0000	ng/mL	----	----
PFOA	Auto	4.642	924380	4334218	9	1.0260	ng/mL	----	34.75
PFOA-13C	Auto	4.642	4334218	5085599	1	3.8176	ng/mL	----	----
PFOA-13C_IS	Auto	4.642	4334218	4334218	9	5.0000	ng/mL	----	----
PFNA	Auto	4.814	553507	2863204	10	0.9629	ng/mL	----	23.12
PFNA-13C	Auto	4.815	2863204	5085599	1	3.7215	ng/mL	----	----
PFNA-13C_IS	Auto	4.815	2863204	2863204	10	5.0000	ng/mL	----	----
PFDA	Auto	4.990	478644	2447949	11	0.9294	ng/mL	----	19.11
PFDA-13C	Auto	4.991	2447949	5085599	1	3.4349	ng/mL	----	----
PFDA-13C_IS	Auto	4.991	2447949	2447949	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.164	621378	3428725	12	0.9290	ng/mL	----	13.66
PFUnA-13C	Auto	5.164	3428725	5085599	1	3.9224	ng/mL	----	----
PFUnA-13C_IS	Auto	5.164	3428725	3428725	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.330	573464	3315163	13	1.0582	ng/mL	----	16.74
PFDaA-13C	Auto	5.329	3315163	5085599	1	3.9411	ng/mL	----	----
PFDaA-13C_IS	Auto	5.329	3315163	3315163	13	5.0000	ng/mL	----	----
PFTeDA	Auto	5.485	524372	2551927	14	0.8363	ng/mL	----	18.18
PFTeDA	Auto	5.627	318852	2551927	14	0.8955	ng/mL	----	166.31
PFTeDA-13C	Auto	5.627	2551927	5085599	1	4.7304	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.627	2551927	2551927	14	5.0000	ng/mL	----	----
FOSA	Auto	5.279	412849	1577399	16	0.9304	ng/mL	----	3.93
FOSA-13C	Auto	5.279	1577399	5085599	1	3.4000	ng/mL	----	----
FOSA-13C_IS	Auto	5.279	1577399	1577399	16	5.0000	ng/mL	----	----
N-MeFOSA	Auto	5.641	105531	459046	17	0.8727	ng/mL	----	75.94
N-MeFOSA-d3	Auto	5.638	459046	5085599	1	3.9727	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.638	459046	459046	17	5.0000	ng/mL	----	----
N-EtFOSA	Auto	5.770	19746	518458	18	0.9294	ng/mL	----	71.28
N-EtFOSA-d9	Auto	5.765	518458	5085599	1	3.6005	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.765	518458	518458	18	5.0000	ng/mL	----	----
N-MeFOSE	Auto	5.619	103491	164182	19	1.0160	ng/mL	----	----

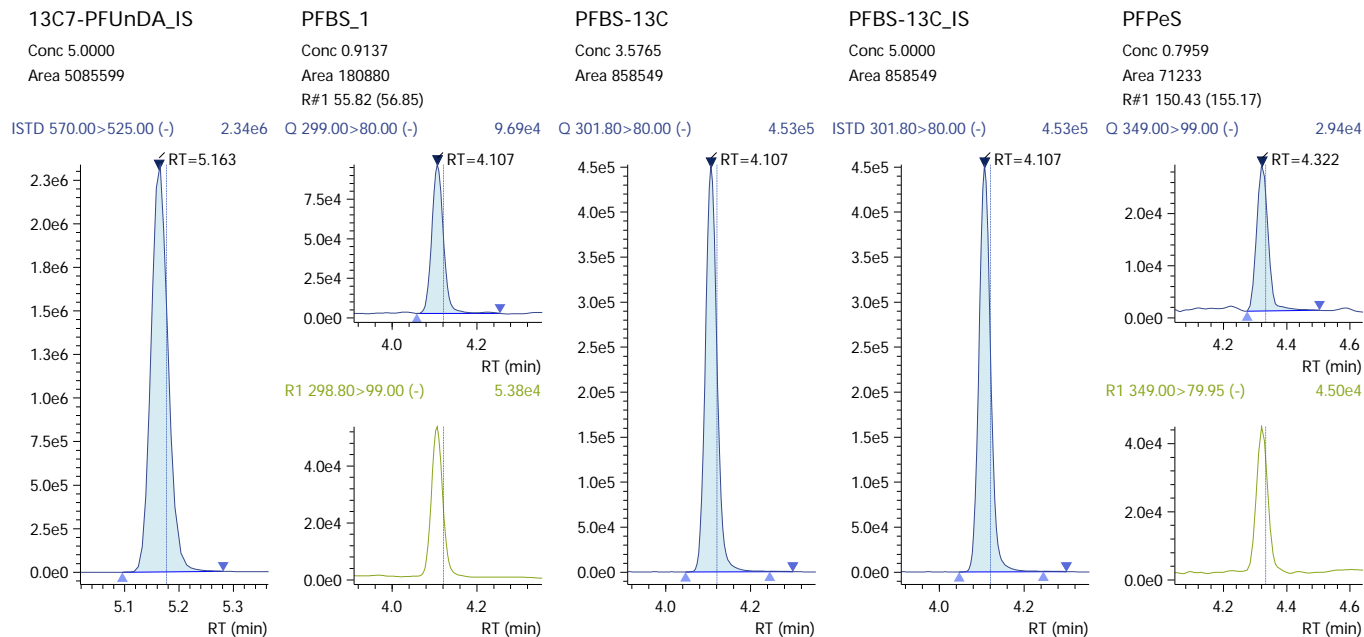
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200812_071 (continued)

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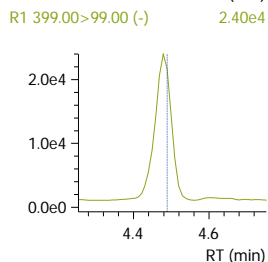
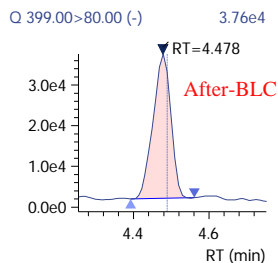
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.612	164182	5085599	1	2.9718	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.612	164182	164182	19	5.0000	ng/mL	----	----
N-EtFOSE	Auto	5.743	130680	147584	20	1.1006	ng/mL	----	----
N-EtFOSE-d9	Auto	5.734	147584	5085599	1	3.2595	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.734	147584	147584	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.087	54883	380498	21	0.9543	ng/mL	----	41.91
N-MeFOSAA-d3	Auto	5.086	380498	5085599	1	4.3773	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.086	380498	380498	21	5.0000	ng/mL	----	----
N-EtFOSAA	Auto	5.180	45084	403735	22	0.9618	ng/mL	----	85.62
N-EtFOSAA-d5	Auto	5.177	403735	5085599	1	6.5529	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.177	403735	403735	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.286	137720	795011	23	0.9077	ng/mL	----	144.62
4_2-FTS-13C	Auto	4.286	795011	5085599	1	4.4447	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.286	795011	795011	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.633	143879	724091	24	0.9062	ng/mL	----	36.57
6_2-FTS-13C	Auto	4.635	724091	5085599	1	7.4890	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.635	724091	724091	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	4.991	56598	363078	25	1.0210	ng/mL	----	9.45
8_2-FTS-13C	Auto	4.991	363078	5085599	1	4.9620	ng/mL	----	----
8_2-FTS-13C_IS	Auto	4.991	363078	363078	25	5.0000	ng/mL	----	----
10_2-FTS_1	Auto	5.337	32698	363078	25	0.7590	ng/mL	----	5.89
HPFO_DA	Auto	4.371	82786	384325	26	1.0723	ng/mL	----	79.76
HPFO_DA-13C	Auto	4.371	384325	5085599	1	1.8555	ng/mL	----	----
HPFO_DA-13C_IS	Auto	4.371	384325	384325	26	5.0000	ng/mL	----	----



200812_071 (continued)

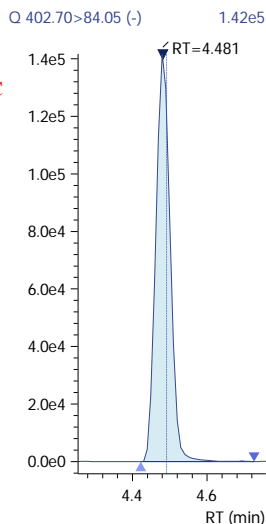
PFHxS_1

Conc 0.8907
Area 116551
R#1 64.04 (67.24)



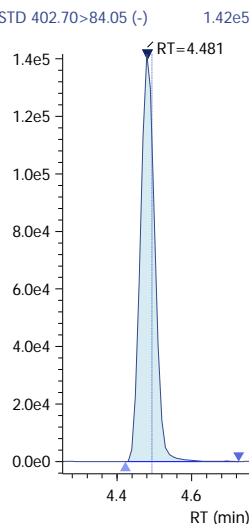
PFHxS-180

Conc 3.1733
Area 379380



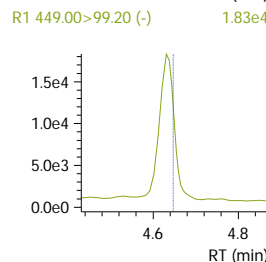
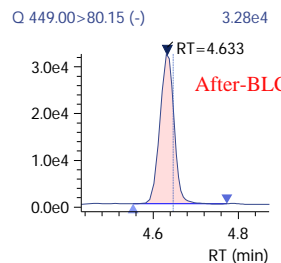
PFHxS-180_IS

Conc 5.0000
Area 379380



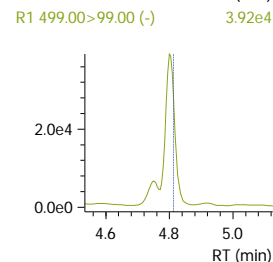
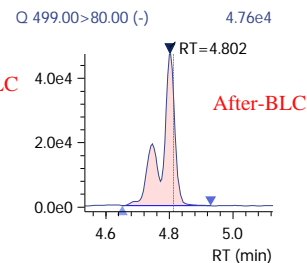
PFHps_1

Conc 1.1538
Area 74129
R#1 54.06 (61.74)



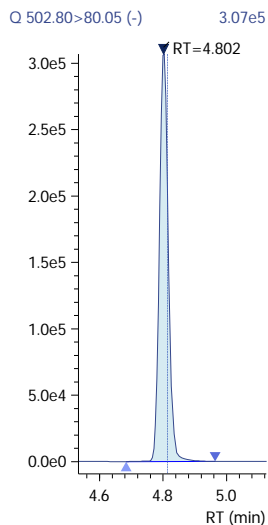
PFOS_1

Conc 0.9727
Area 143414
R#1 79.89 (82.03)



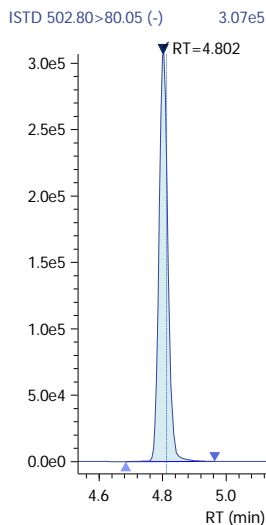
PFOS-13C

Conc 4.8399
Area 600915



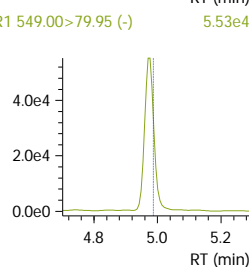
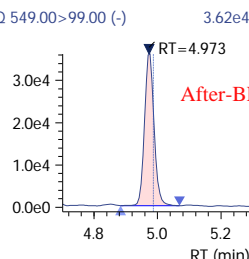
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Conc 5.0000
Area 600915



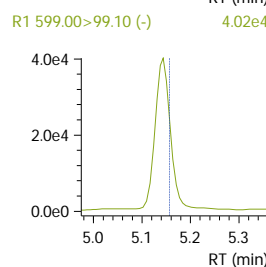
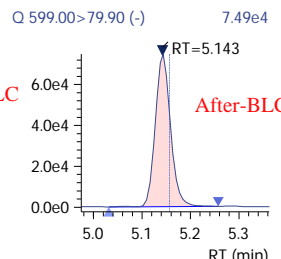
PFNS

Conc 0.7400
Area 75269
R#1 154.34 (156.08)



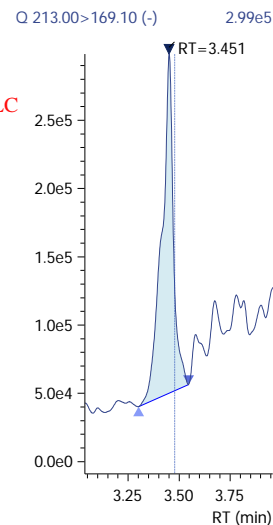
PFDS_1

Conc 0.8224
Area 164058
R#1 53.08 (60.86)



PFBA

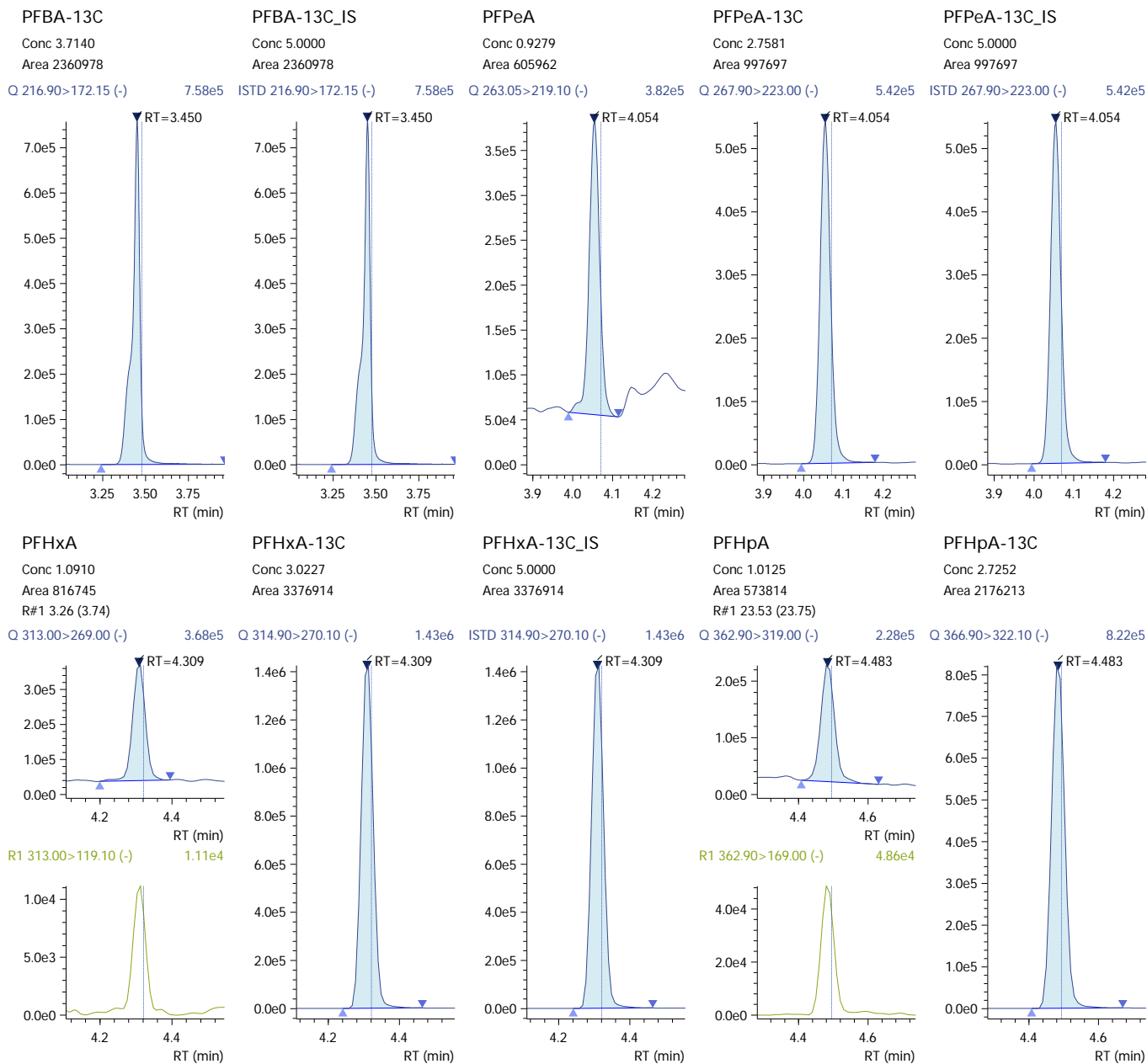
Conc 1.8601
Area 987772



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Insight Report

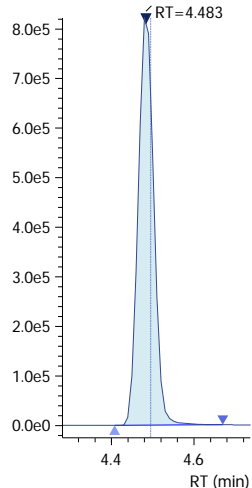
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200812_071 (continued)

PFHpA-13C_IS

Conc 5.0000
 Area 2176213

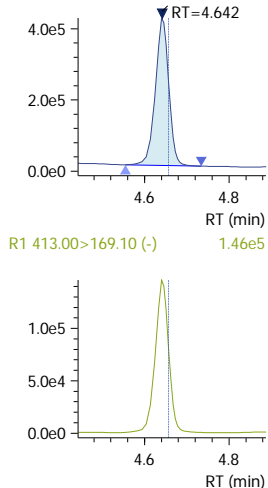
ISTD 366.90>322.10 (-) 8.22e5



PFOA

Conc 1.0260
 Area 924380
 R#1 34.75 (34.80)

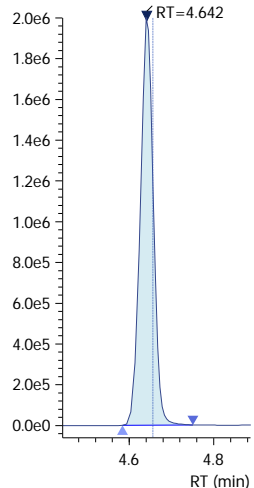
Q 413.00>369.00 (-) 4.30e5



PFOA-13C

Conc 3.8176
 Area 4334218

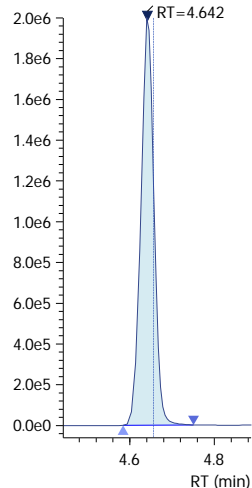
Q 416.80>372.05 (-) 2.00e6



PFOA-13C_IS

Conc 5.0000
 Area 4334218

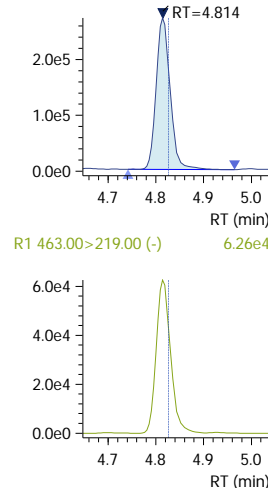
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PFNA

Conc 0.9629
 Area 553507
 R#1 23.12 (22.71)

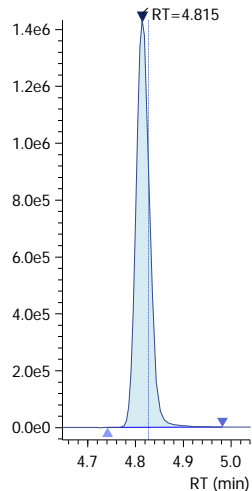
Q 463.00>418.90 (-) 2.75e5



PFNA-13C

Conc 3.7215
 Area 2863204

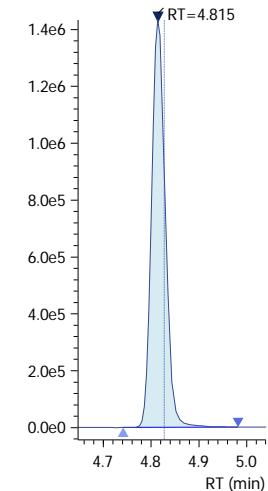
Q 467.80>423.00 (-) 1.43e6



PFNA-13C_IS

Conc 5.0000
 Area 2863204

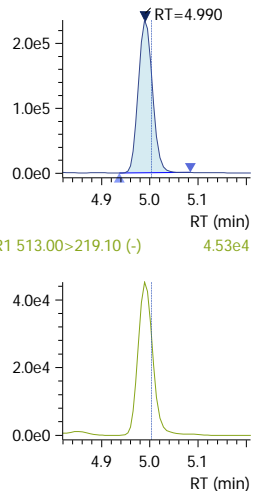
ISTD 467.80>423.00 (-) 1.43e6



PFDA

Conc 0.9294
 Area 478644
 R#1 19.11 (22.06)

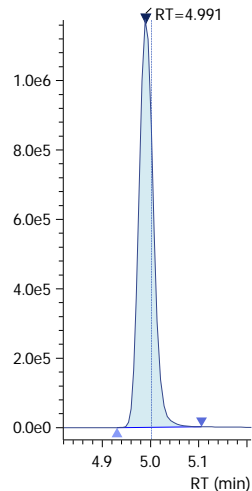
Q 513.00>468.80 (-) 2.36e5



PFDA-13C

Conc 3.4349
 Area 2447949

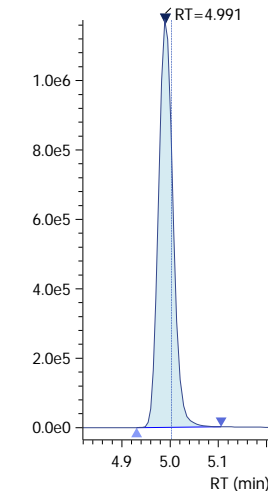
Q 514.80>469.95 (-) 1.17e6



PFDA-13C_IS

Conc 5.0000
 Area 2447949

ISTD 514.80>469.95 (-) 1.17e6

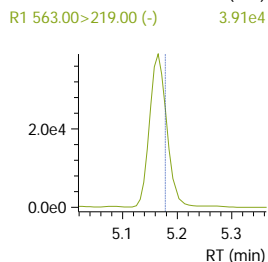
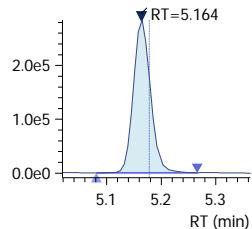


200812_071 (continued)

PFUnA

Conc 0.9290
Area 621378
R#1 13.66 (13.66)

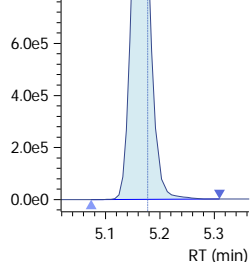
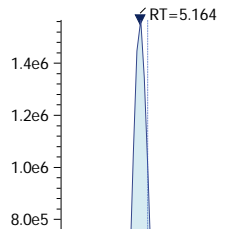
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PFUnA-13C

Conc 3.9224
Area 3428725

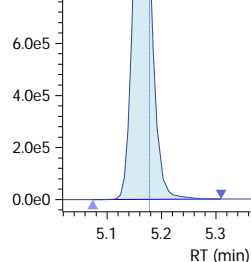
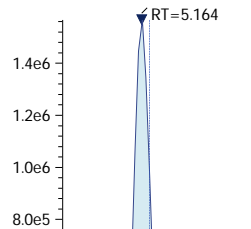
Q 564.80>519.95 (-) 1.57e6



PFUnA-13C_IS

Conc 5.0000
Area 3428725

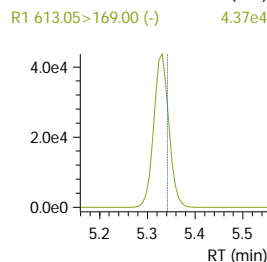
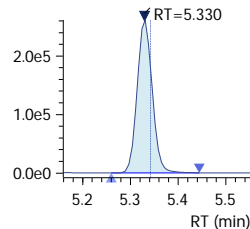
ISTD 564.80>519.95 (-) 1.57e6



PFDaA

Conc 1.0582
Area 573464
R#1 16.74 (21.98)

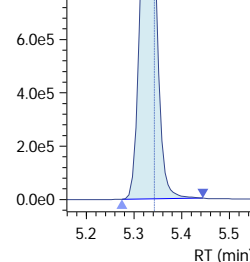
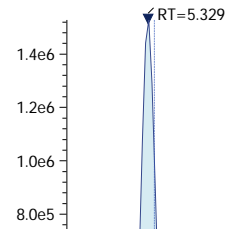
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PFDaA-13C

Conc 3.9411
Area 3315163

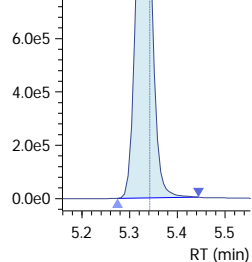
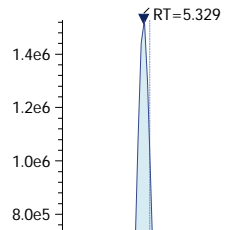
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PFDaA-13C_IS

Conc 5.0000
Area 3315163

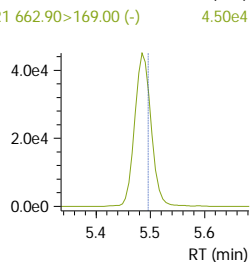
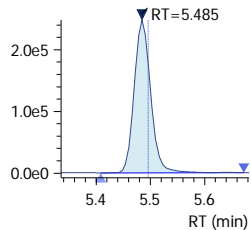
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PFTrDA

Conc 0.8363
Area 524372
R#1 18.18 (19.20)

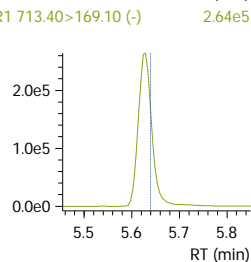
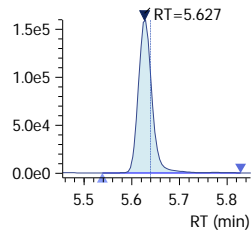
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PFTeDA

Conc 0.8955
Area 318852
R#1 166.31 (61.49)

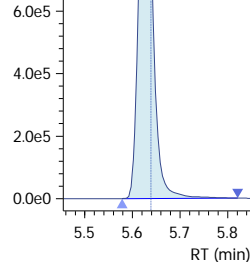
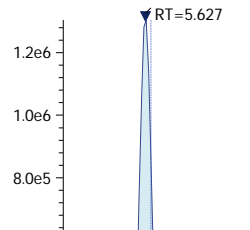
Q 713.40>669.00 (-) 1.60e5



PFTeDA-13C

Conc 4.7304
Area 2551927

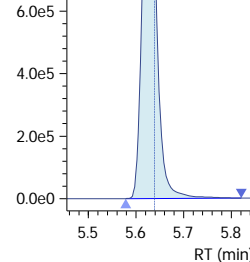
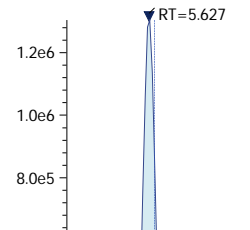
Q 714.70>669.90 (-) 1.30e6



PFTeDA-13C_IS

Conc 5.0000
Area 2551927

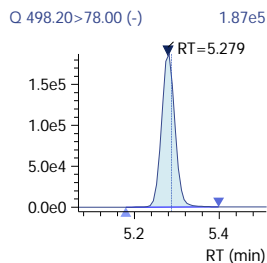
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200812_071 (continued)

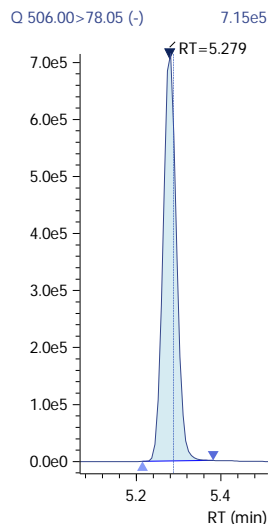
FOSA

Conc 0.9304
 Area 412849
 R#1 3.93 (4.04)



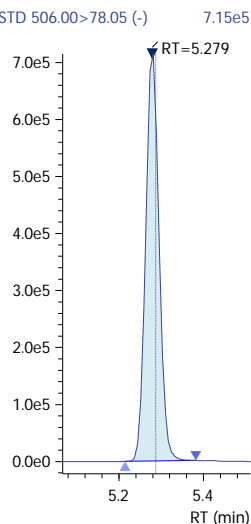
FOSA-13C

Conc 3.4000
 Area 1577399



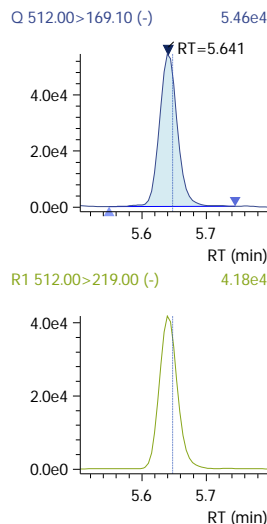
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Conc 5.0000
 Area 1577399



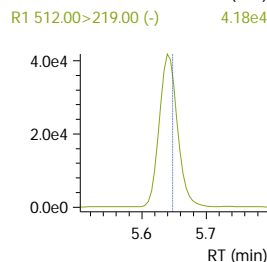
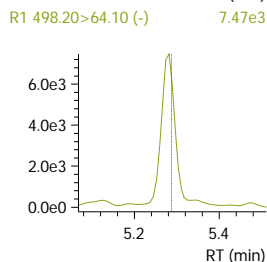
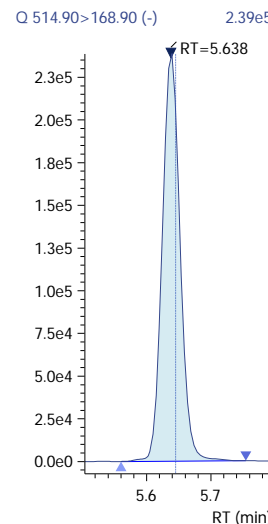
N-MeFOSA

Conc 0.8727
 Area 105531
 R#1 75.94 (78.52)



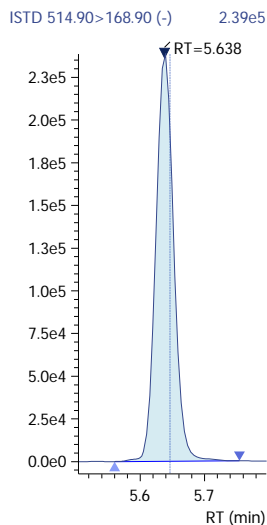
N-MeFOSA-d3

Conc 3.9727
 Area 459046



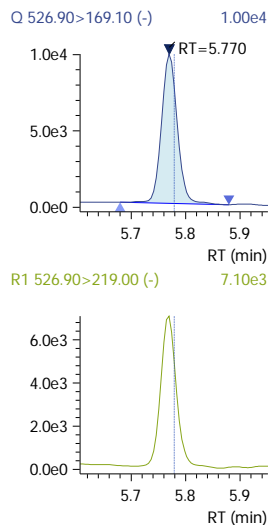
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Conc 5.0000
 Area 459046



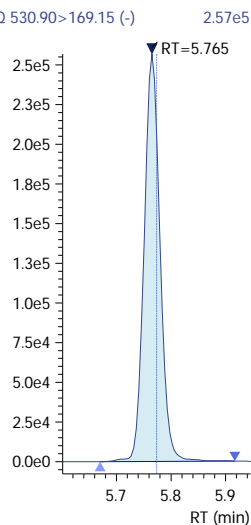
N-EtFOSA

Conc 0.9294
 Area 19746
 R#1 71.28 (0.00)



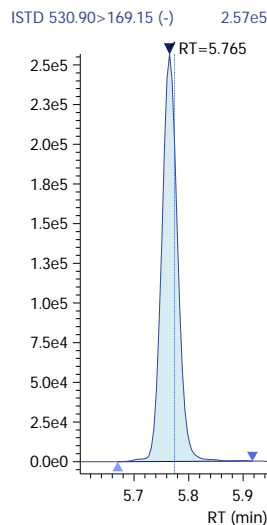
N-EtFOSA-d9

Conc 3.6005
 Area 518458



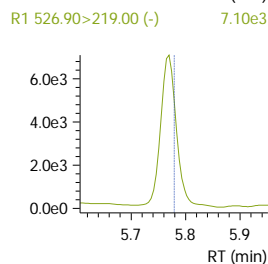
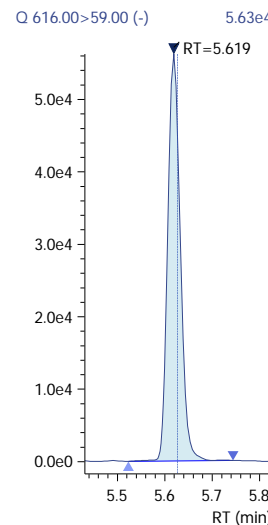
N-EtFOSA-d9_IS

Conc 5.0000
 Area 518458



N-MeFOSE

Conc 1.0160
 Area 103491



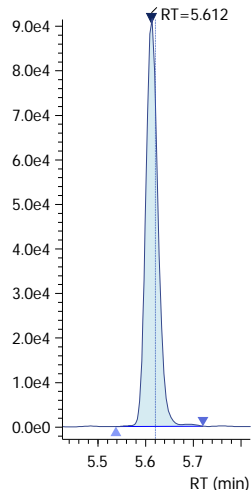
200812_071 (continued)

N-MeFOSE-d7

Conc 2.9718
Area 164182

Q 622.70>59.10 (-)

9.15e4

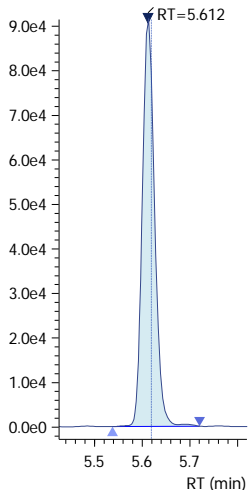


N-MeFOSE-d7_IS

Conc 5.0000
Area 164182

ISTD 622.70>59.10 (-)

9.15e4

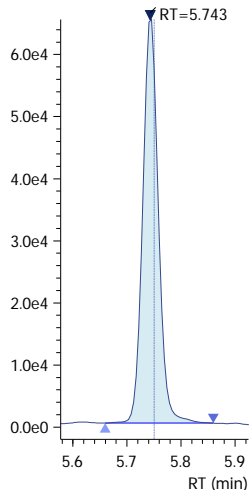


N-EtFOSE

Conc 1.1006
Area 130680

Q 630.00>58.90 (-)

6.56e4

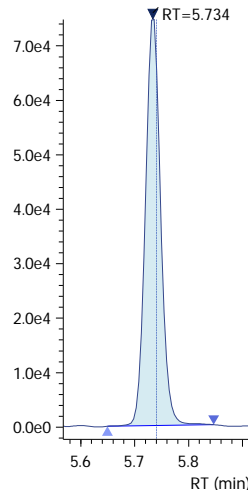


N-EtFOSE-d9

Conc 3.2595
Area 147584

Q 638.70>59.10 (-)

7.48e4

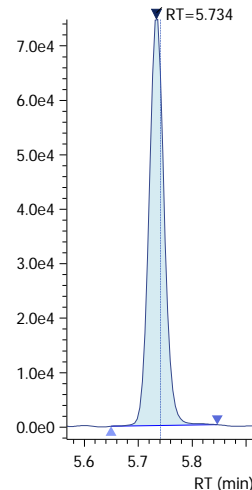


N-EtFOSE-d9_IS

Conc 5.0000
Area 147584

ISTD 638.70>59.10 (-)

7.48e4

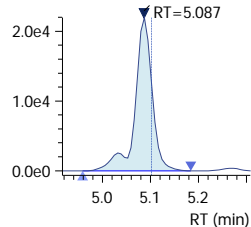


N-MeFOSAA

Conc 0.9543
Area 54883
R#1 41.91 (33.47)

Q 570.20>419.00 (-)

2.20e4

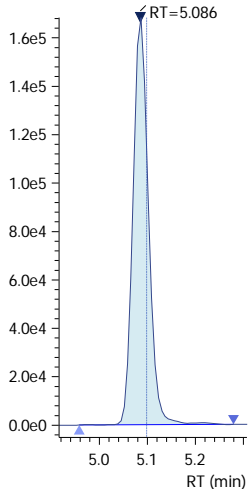


N-MeFOSAA-d3

Conc 4.3773
Area 380498

Q 572.80>419.05 (-)

1.68e5

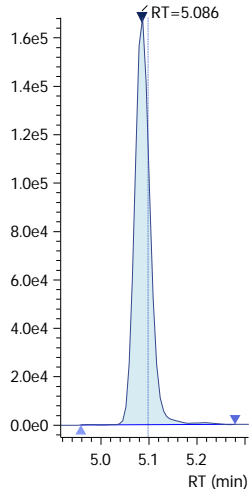


N-MeFOSAA-d3_IS

Conc 5.0000
Area 380498

ISTD 572.80>419.05 (-)

1.68e5

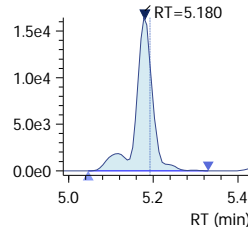


N-EtFOSAA

Conc 0.9618
Area 45084
R#1 85.62 (83.09)

Q 584.20>418.95 (-)

1.65e4

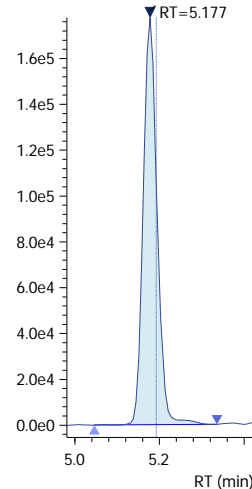


N-EtFOSAA-d5

Conc 6.5529
Area 403735

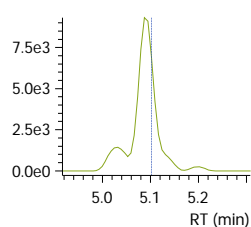
Q 588.80>419.00 (-)

1.78e5



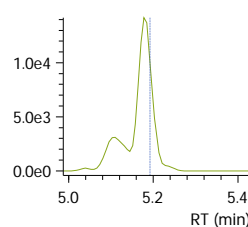
R1 570.20>512.00 (-)

9.32e3



R1 584.20>526.10 (-)

1.42e4



Insight Report

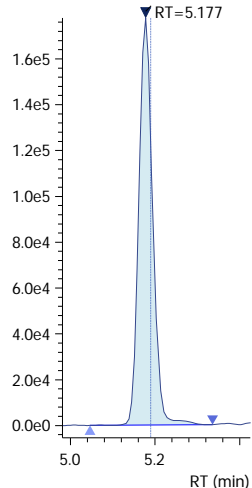
Printed at 8/19/2020 10:38:03 AM

200812_071 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 403735

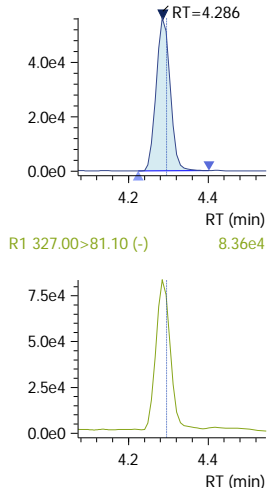
ISTD 588.80>419.00 (-) 1.78e5



4_2-FTS_1

Conc 0.9077
 Area 137720
 R#1 144.62 (54.93)

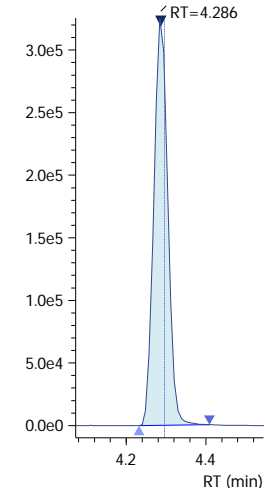
Q 327.00>307.05 (-) 5.64e4



4_2-FTS-13C

Conc 4.4447
 Area 795011

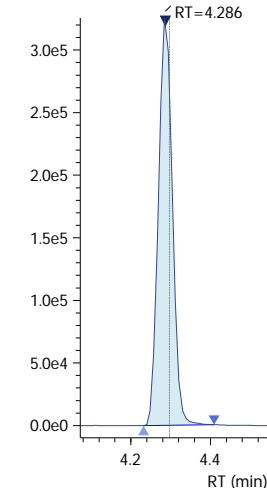
Q 328.80>309.05 (-) 3.26e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 795011

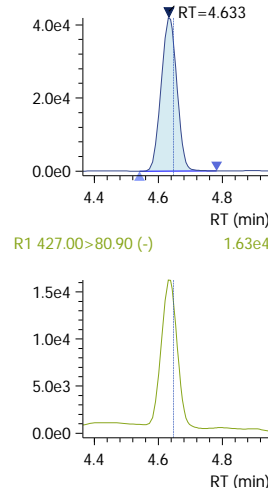
ISTD 328.80>309.05 (-) 3.26e5



6_2-FTS_1

Conc 0.9062
 Area 143879
 R#1 36.57 (36.33)

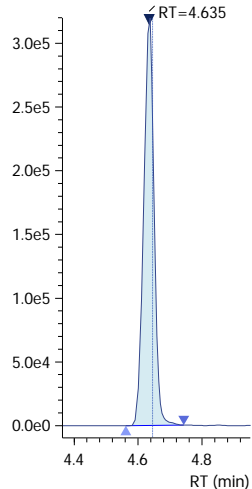
Q 427.00>407.00 (-) 4.19e4



6_2-FTS-13C

Conc 7.4890
 Area 724091

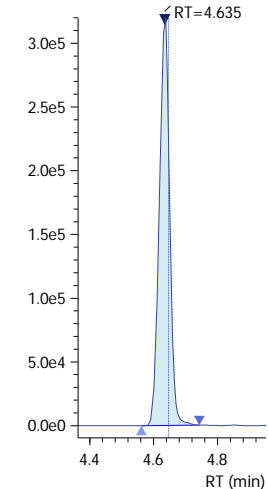
Q 428.90>409.00 (-) 3.20e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 724091

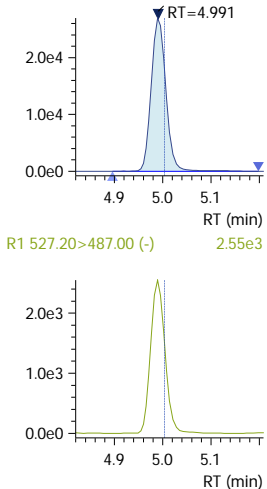
ISTD 428.90>409.00 (-) 3.20e5



8_2-FTS_1

Conc 1.0210
 Area 56598
 R#1 9.45 (8.96)

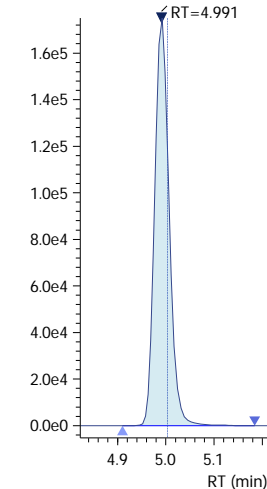
Q 527.10>506.90 (-) 2.70e4



8_2-FTS-13C

Conc 4.9620
 Area 363078

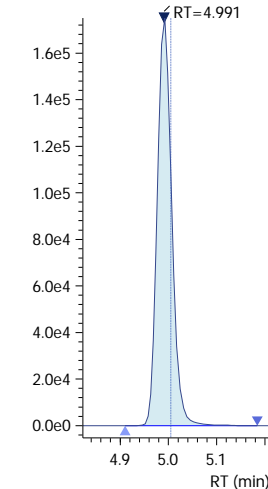
Q 528.80>509.00 (-) 1.75e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 363078

ISTD 528.80>509.00 (-) 1.75e5



Insight Report

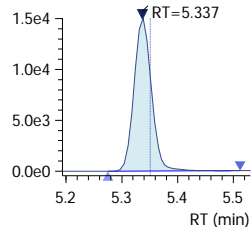
Printed at 8/19/2020 10:38:03 AM

200812_071 (continued)

10_2-FtS_1

Conc 0.7590
Area 32698
R#1 5.89 (5.92)

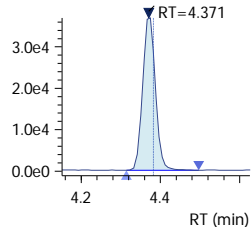
Q 627.00>606.95 (-) 1.51e4



HPFO_DA

Conc 1.0723
Area 82786
R#1 79.76 (72.82)

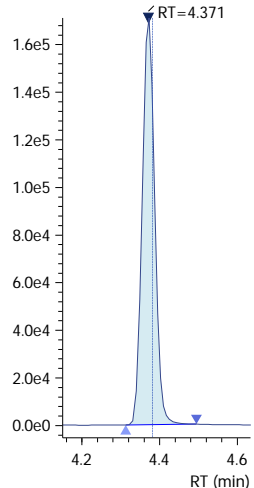
Q 329.00>169.00 (-) 3.70e4



HPFO_DA-13C

Conc 1.8555
Area 384325

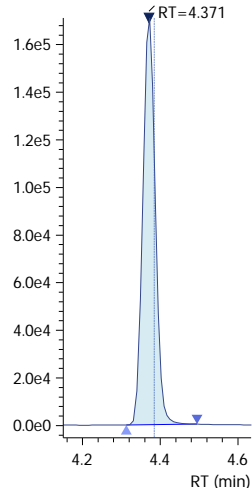
Q 332.00>286.80 (-) 1.71e5



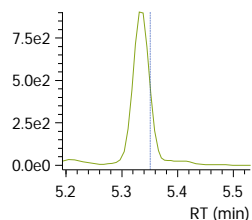
HPFO_DA-13C_IS

Conc 5.0000
Area 384325

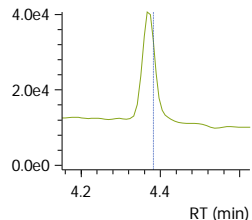
ISTD 332.00>286.80 (-) 1.71e5



R1 627.00>81.25 (-) 9.03e2



R1 329.00>285.10 (-) 4.07e4

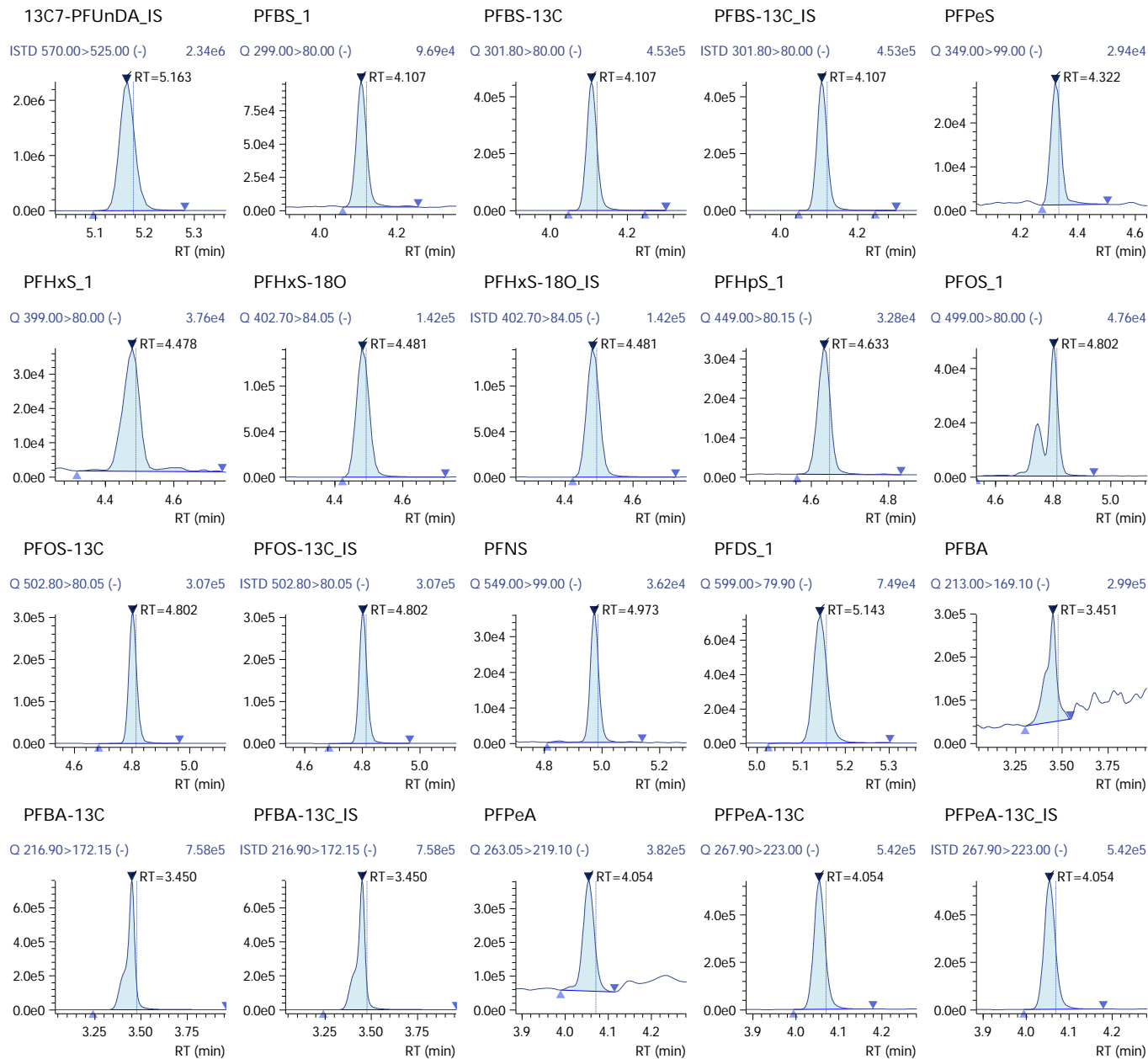


Insight Report

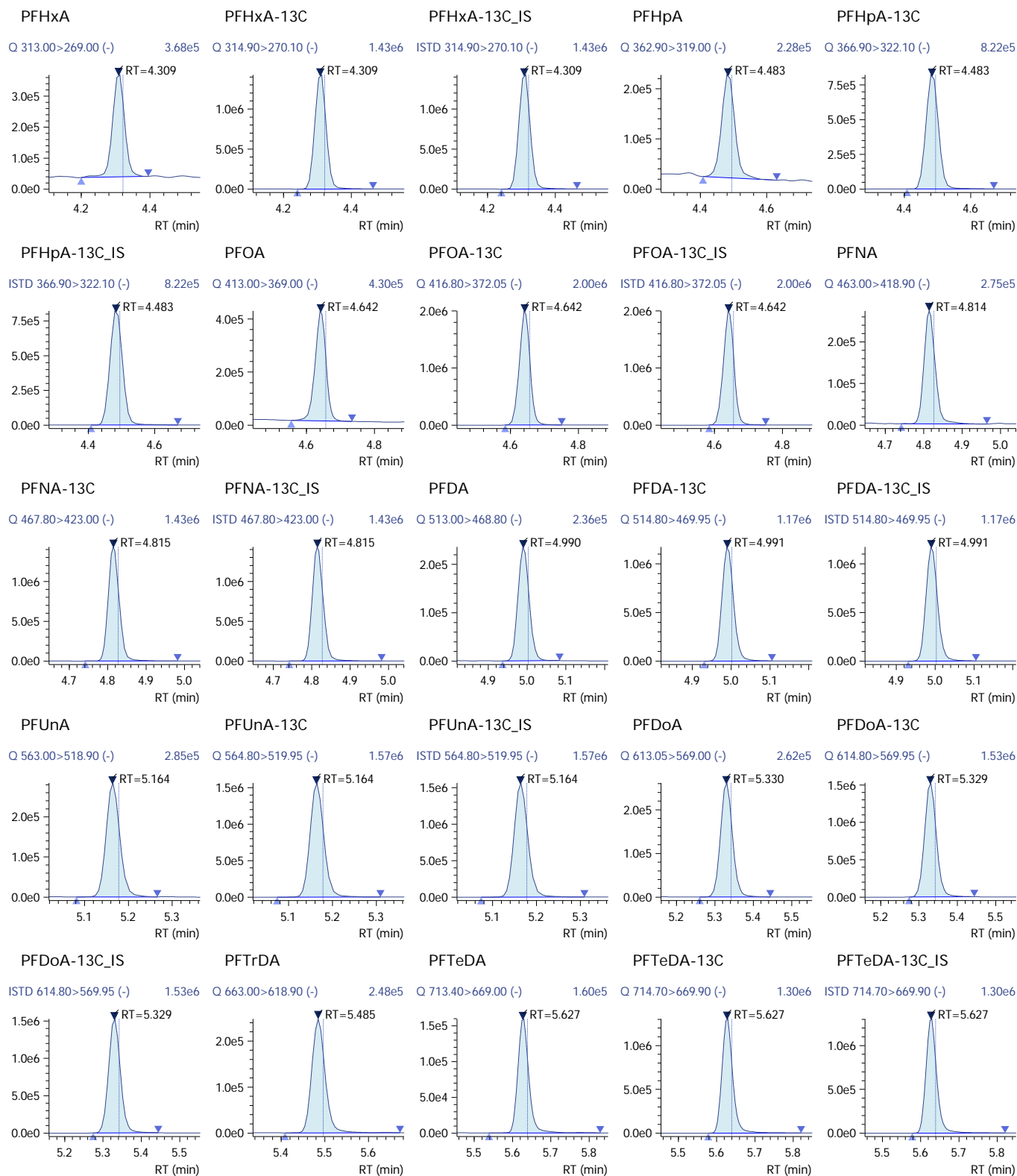
Printed at 8/19/2020 10:00:32 AM

200812_071

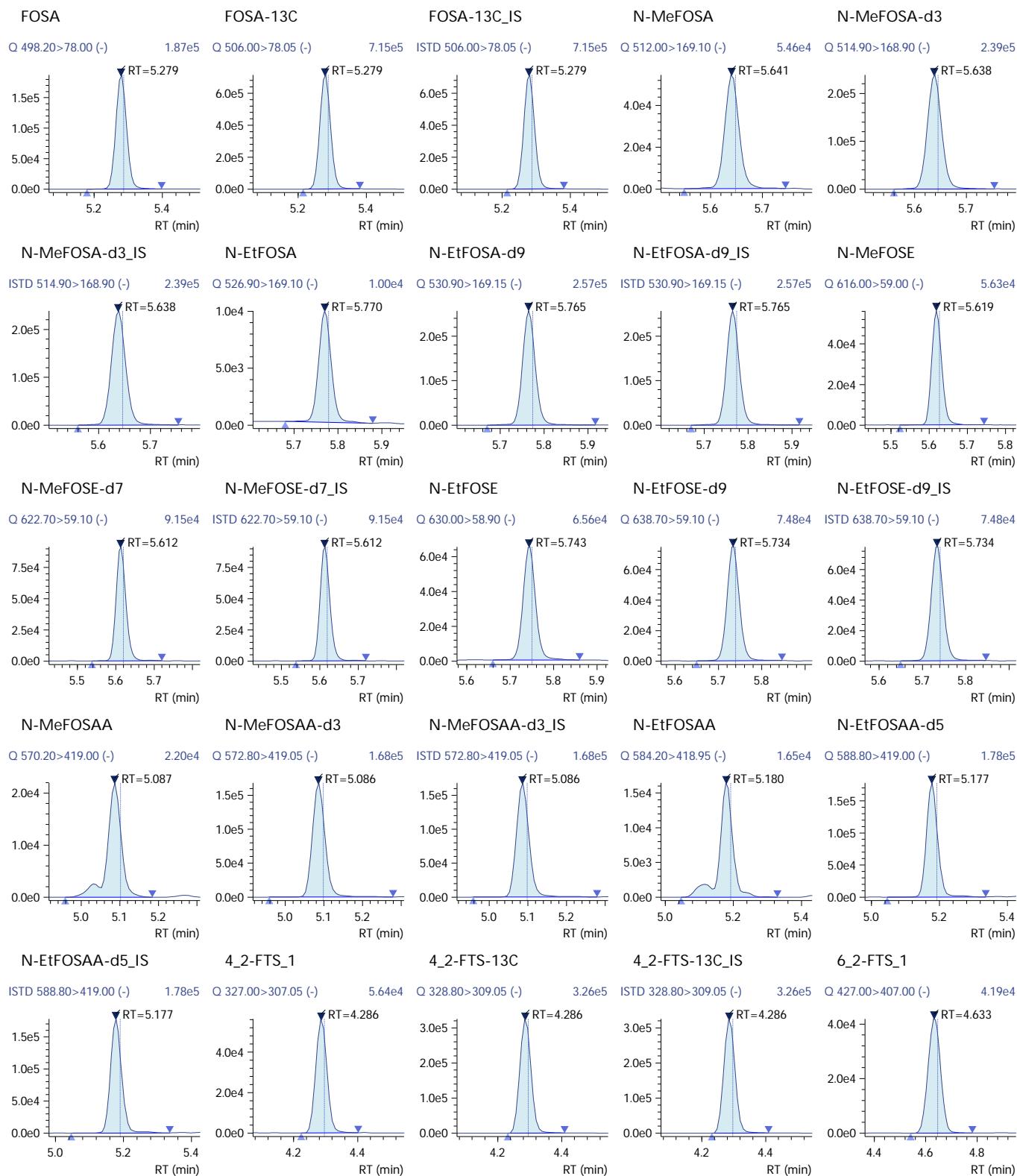
Sample ID: KQ2011026-01
Date Acquired: 8/13/2020 1:11:04 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_071.lcd
Vial: 15 | Inj. Volume: 15.0000uL | Tray: 3



200812_071 (continued)



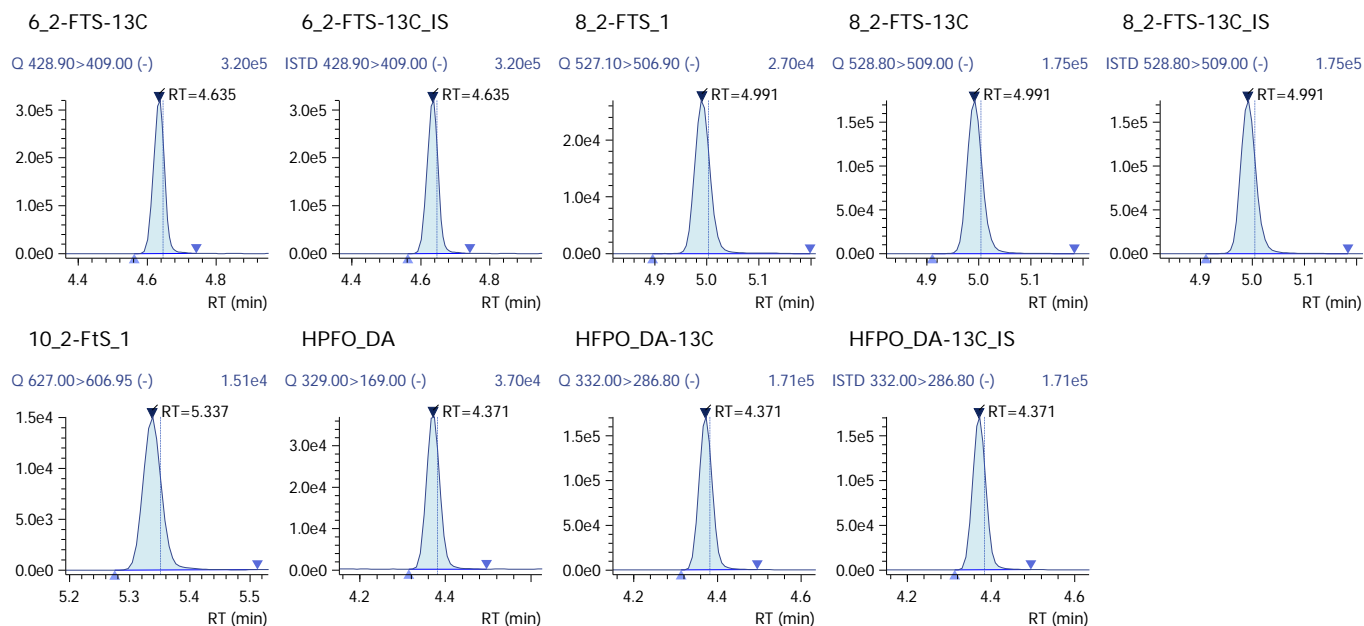
200812_071 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_071 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_072
Lab ID: KQ2011026-02
RunType: DMS
Matrix: Water

Date Acquired: 8/13/20 01:21
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
Analytical Hold Time	X	
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Internal Standards	X	
Surrogates	X	
Std MRL Unsupported by ICAL	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File:	J:\LCMS06\Data\200812_b3\200812_072	Instrument:	K-LCMS-06
Acqu Date:	8/13/20 01:21	Vial:	12
Run Type:	DMS	Dilution:	1
Lab ID:	KQ2011026-02	Raw Units:	ng/mL

Bottle ID:	R2006768-001.11	Tier:	IV
Prod Code:	PFAS	Collect Date:	7/30/20
		Matrix:	Water
		Receive Date:	7/30/20

Analysis Lot:	690911	Prep Lot:	363266
Analysis	PFC/537M	Prep Method:	ALS SOP
		Prep Date:	8/11/20
		Report Group:	KQ2011026

Title:	Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID:	KC2000408
		Report List ID:	19884

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.174	0.00	4530040	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.115	-0.01	867665	4.0578	81	20 - 109	Y
18O2-PFHxS	4.490	-0.01	373668	3.5088	70	26 - 122	Y
13C4-PFOS	4.811	-0.01	582035	5.2628	105	25 - 121	Y
13C4-PFBA	3.457	-0.02	2457604	4.3401	87	27 - 124	Y
13C5-PFPeA	4.062	-0.01	992842	3.0813	62	27 - 138	Y
13C2-PFHxA	4.318	-0.01	3415975	3.4326	69	28 - 132	Y
13C4-PFHpA	4.492	-0.01	2073449	2.9149	58	19 - 139	Y
13C4-PFOA	4.654	-0.01	4034108	3.9890	80	22 - 130	Y
13C5-PFNA	4.825	-0.01	2698521	3.9376	79	20 - 127	Y
13C2-PFDA	5.001	-0.01	2639271	4.1575	83	24 - 125	Y
13C2-PFUnDA	5.175	-0.01	3503053	4.4989	90	22 - 125	Y
13C2-PFDODA	5.339	0.00	3206065	4.2789	86	19 - 122	Y
13C2-PFTeDA	5.635	-0.01	2495861	5.1939	104	13 - 124	Y
13C8-FOSA	5.289	0.00	1406658	3.4038	68	18 - 109	Y
D3-MeFOSAA	5.096	-0.01	355766	4.5947	92	9 - 123	Y
D5-EtFOSAA	5.186	-0.01	321947	5.8663	117	12 - 126	Y
13C2-6:2 FTS	4.646	-0.01	717584	8.3319	167	10 - 226	Y
13C2-8:2 FTS	5.002	-0.01	368865	5.6593	113	10 - 202	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.115	-0.01	182380	0.9116	22.8		Y
Perfluorohexane sulfonic acid (PFHxS)	4.487	-0.01	118798	0.9218	23.0		Y

Data File: J:\LCMS06\Data\200812_b3\200812_072
 Acq Date: 8/13/20 01:21
 Run Type: DMS
 Lab ID: KQ2011026-02

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 12
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluoroheptane sulfonic acid (PFHpS)	4.644	-0.01	72548	1.1464	28.7		Y
Perfluorooctane sulfonic acid (PFOS)	4.811	-0.01	148020	1.0365	25.9		Y
Perfluorodecane sulfonic acid (PFDS)	5.153	-0.01	147921	0.7656	19.1		Y
Perfluorobutanoic acid (PFBA)	3.458	-0.02	998406	1.8062	45.2		Y
Perfluoropentanoic acid (PFPeA)	4.063	-0.01	594306	0.9137	22.8		Y
Perfluorohexanoic acid (PFHxA)	4.318	-0.01	780279	1.0273	25.7		Y
Perfluoroheptanoic acid (PFHpA)	4.492	-0.01	504376	0.9329	23.3		Y
Perfluorooctanoic acid (PFOA)	4.653	-0.01	864373	1.0309	25.8		Y
Perfluorononanoic acid (PFNA)	4.826	0.00	463642	0.8543	21.4		Y
Perfluorodecanoic acid (PFDA)	5.001	-0.01	488836	0.8804	22.0		Y
Perfluoroundecanoic acid (PFUnDA)	5.175	-0.01	644522	0.9436	23.6		Y
Perfluorododecanoic acid (PFDoDA)	5.339	0.00	485366	0.9240	23.1		Y
Perfluorotridecanoic acid (PFTrDA)	5.493	-0.01	501002	0.8165	20.4		Y
Perfluorotetradecanoic acid (PFTeDA)	5.635	-0.01	316982	0.9125	22.8		Y
Perfluorooctane sulfonamide (FOSA)	5.289	0.00	370088	0.9353	23.4		Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.098	0.00	55878	1.0392	26.0		Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.187	-0.01	45998	1.2306	30.8		Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.645	-0.01	137394	0.8732	21.8		Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.001	-0.01	60382	1.0722	26.8		Y

Prep Amount: 320.0000 mL
 Prep Final Amount: 8.00 mL

Dilution: 1
 Basis Factor: 100.00

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Printed: 8/19/20 11:35

\alprews001\starlims\LIMSReps\QuantValidation.rpt

Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_072

Sample ID: KQ2011026-02
 Date Acquired: 8/13/2020 1:21:43 AM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_072.lcd
 Vial: 16 | Inj. Volume: 15.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.174	4530040	4530040	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.115	182380	867665	2	0.9116	ng/mL	----	54.91
PFBS-13C	Auto	4.115	867665	4530040	1	4.0578	ng/mL	----	----
PFBS-13C_IS	Auto	4.115	867665	867665	2	5.0000	ng/mL	----	----
PFPeS	M	4.331	72497	867665	2	0.8015	ng/mL	----	150.81
PFHxS_1	Auto	4.487	118798	373668	3	0.9218	ng/mL	----	70.53
PFHxS-18O	Auto	4.490	373668	4530040	1	3.5088	ng/mL	----	----
PFHxS-18O_IS	Auto	4.490	373668	373668	3	5.0000	ng/mL	----	----
PFHpS_1	Auto	4.644	72548	373668	3	1.1464	ng/mL	----	62.55
PFOS_1	Auto	4.811	148020	582035	4	1.0365	ng/mL	----	82.07
PFOS-13C	Auto	4.811	582035	4530040	1	5.2628	ng/mL	----	----
PFOS-13C_IS	Auto	4.811	582035	582035	4	5.0000	ng/mL	----	----
PFNS	M	4.984	68971	582035	4	0.7001	ng/mL	----	145.16
PFDS_1	Auto	5.153	147921	582035	4	0.7656	ng/mL	----	57.12
PFBA	Auto	3.458	998406	2457604	5	1.8062	ng/mL	----	----
PFBA-13C	Auto	3.457	2457604	4530040	1	4.3401	ng/mL	----	----
PFBA-13C_IS	Auto	3.457	2457604	2457604	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.063	594306	992842	6	0.9137	ng/mL	----	----
PFPeA-13C	Auto	4.062	992842	4530040	1	3.0813	ng/mL	----	----
PFPeA-13C_IS	Auto	4.062	992842	992842	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.318	780279	3415975	7	1.0273	ng/mL	----	3.66
PFHxA-13C	Auto	4.318	3415975	4530040	1	3.4326	ng/mL	----	----
PFHxA-13C_IS	Auto	4.318	3415975	3415975	7	5.0000	ng/mL	----	----
PFHpA	M	4.492	504376	2073449	8	0.9329	ng/mL	----	28.17
PFHpA-13C	Auto	4.492	2073449	4530040	1	2.9149	ng/mL	----	----
PFHpA-13C_IS	Auto	4.492	2073449	2073449	8	5.0000	ng/mL	----	----
PFOA	Auto	4.653	864373	4034108	9	1.0309	ng/mL	----	33.89
PFOA-13C	Auto	4.654	4034108	4530040	1	3.9890	ng/mL	----	----
PFOA-13C_IS	Auto	4.654	4034108	4034108	9	5.0000	ng/mL	----	----
PFNA	Auto	4.826	463642	2698521	10	0.8543	ng/mL	----	25.47
PFNA-13C	Auto	4.825	2698521	4530040	1	3.9376	ng/mL	----	----
PFNA-13C_IS	Auto	4.825	2698521	2698521	10	5.0000	ng/mL	----	----
PFDA	Auto	5.001	488836	2639271	11	0.8804	ng/mL	----	22.88
PFDA-13C	Auto	5.001	2639271	4530040	1	4.1575	ng/mL	----	----
PFDA-13C_IS	Auto	5.001	2639271	2639271	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.175	644522	3503053	12	0.9436	ng/mL	----	12.52
PFUnA-13C	Auto	5.175	3503053	4530040	1	4.4989	ng/mL	----	----
PFUnA-13C_IS	Auto	5.175	3503053	3503053	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.339	485366	3206065	13	0.9240	ng/mL	----	22.07
PFDaA-13C	Auto	5.339	3206065	4530040	1	4.2789	ng/mL	----	----
PFDaA-13C_IS	Auto	5.339	3206065	3206065	13	5.0000	ng/mL	----	----
PFTrDA	Auto	5.493	501002	2495861	14	0.8165	ng/mL	----	20.83
PFTeDA	Auto	5.635	316982	2495861	14	0.9125	ng/mL	----	158.97
PFTeDA-13C	Auto	5.635	2495861	4530040	1	5.1939	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.635	2495861	2495861	14	5.0000	ng/mL	----	----
FOSA	Auto	5.289	370088	1406658	16	0.9353	ng/mL	----	3.94
FOSA-13C	Auto	5.289	1406658	4530040	1	3.4038	ng/mL	----	----
FOSA-13C_IS	Auto	5.289	1406658	1406658	16	5.0000	ng/mL	----	----
N-MeFOSA	Auto	5.649	110270	468180	17	0.8941	ng/mL	----	75.08
N-MeFOSA-d3	Auto	5.647	468180	4530040	1	4.5487	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.647	468180	468180	17	5.0000	ng/mL	----	----
N-EtFOSA	Auto	5.779	19339	496210	18	0.9511	ng/mL	----	73.05
N-EtFOSA-d9	Auto	5.774	496210	4530040	1	3.8686	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.774	496210	496210	18	5.0000	ng/mL	----	----
N-MeFOSE	Auto	5.627	114352	186863	19	0.9864	ng/mL	----	----

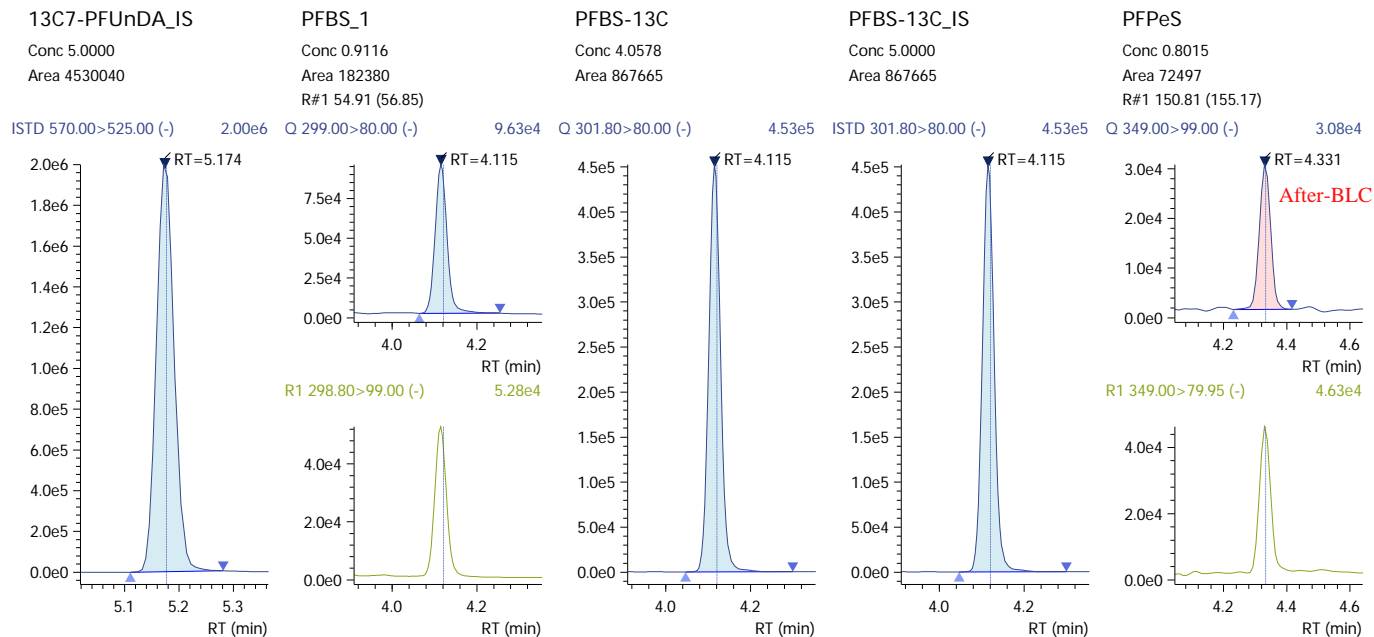
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200812_072 (continued)

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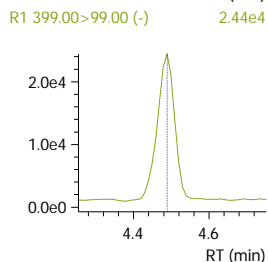
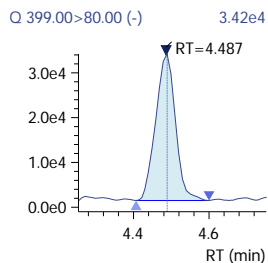
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.620	186863	4530040	1	3.7972	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.620	186863	186863	19	5.0000	ng/mL	----	----
N-EtFOSE	Auto	5.752	131877	156572	20	1.0469	ng/mL	----	----
N-EtFOSE-d9	Auto	5.742	156572	4530040	1	3.8821	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.742	156572	156572	20	5.0000	ng/mL	----	----
N-MeFOSAA	M	5.098	55878	355766	21	1.0392	ng/mL	----	35.05
N-MeFOSAA-d3	Auto	5.096	355766	4530040	1	4.5947	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.096	355766	355766	21	5.0000	ng/mL	----	----
N-EtFOSAA	M	5.187	45998	321947	22	1.2306	ng/mL	----	69.01
N-EtFOSAA-d5	Auto	5.186	321947	4530040	1	5.8663	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.186	321947	321947	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.295	145960	821546	23	0.9309	ng/mL	----	141.67
4_2-FTS-13C	Auto	4.295	821546	4530040	1	5.1563	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.295	821546	821546	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.645	137394	717584	24	0.8732	ng/mL	----	37.54
6_2-FTS-13C	Auto	4.646	717584	4530040	1	8.3319	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.646	717584	717584	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	5.001	60382	368865	25	1.0722	ng/mL	----	9.25
8_2-FTS-13C	Auto	5.002	368865	4530040	1	5.6593	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.002	368865	368865	25	5.0000	ng/mL	----	----
10_2-FTS_1	Auto	5.346	30587	368865	25	0.6989	ng/mL	----	5.46
HPFO_DA	Auto	4.381	72498	356612	26	1.0120	ng/mL	----	88.01
HPFO_DA-13C	Auto	4.381	356612	4530040	1	1.9329	ng/mL	----	----
HPFO_DA-13C_IS	Auto	4.381	356612	356612	26	5.0000	ng/mL	----	----



200812_072 (continued)

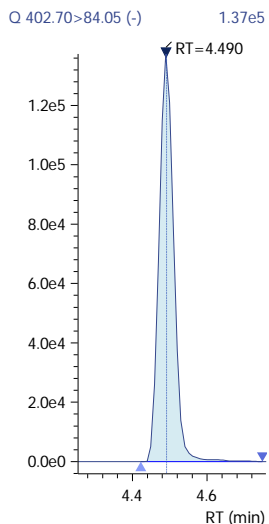
PFHxS_1

Conc 0.9218
Area 118798
R#1 70.53 (67.24)



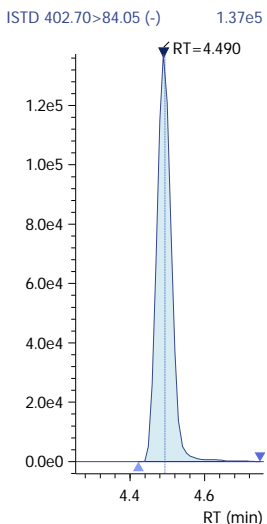
PFHxS-180

Conc 3.5088
Area 373668



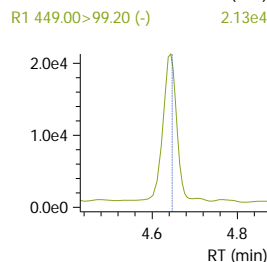
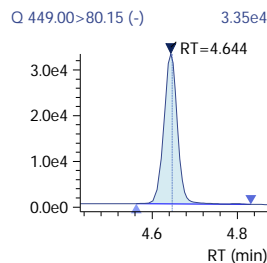
PFHxS-180_IS

Conc 5.0000
Area 373668



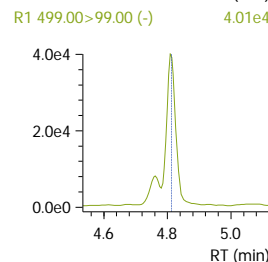
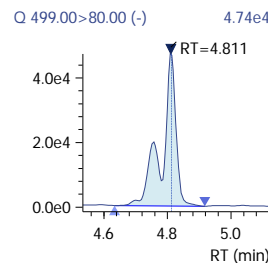
PFHps_1

Conc 1.1464
Area 72548
R#1 62.55 (61.74)



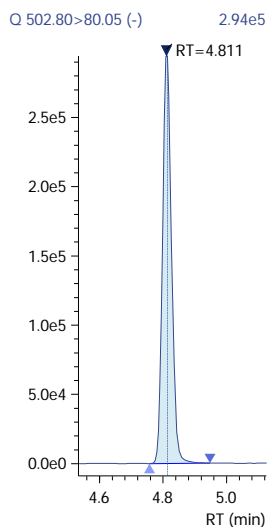
PFOS_1

Conc 1.0365
Area 148020
R#1 82.07 (82.03)



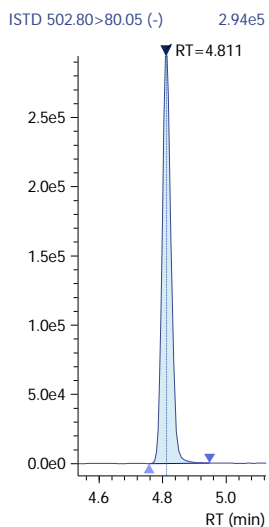
PFOS-13C

Conc 5.2628
Area 582035



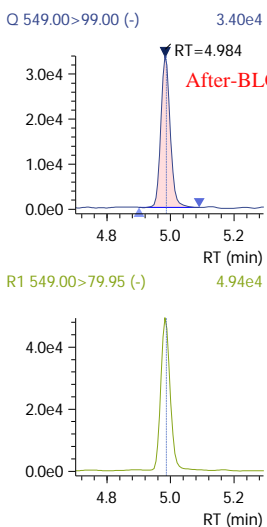
PFOS-13C_IS

Conc 5.0000
Area 582035



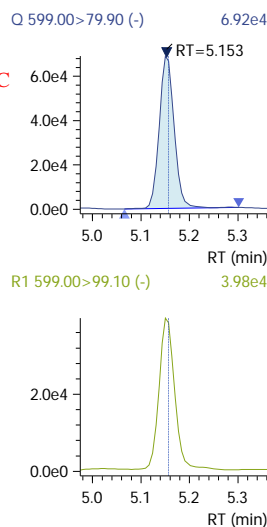
PFNS

Conc 0.7001
Area 68971
R#1 145.16 (156.08)



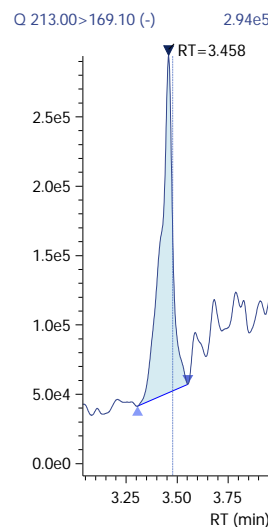
PFDS_1

Conc 0.7656
Area 147921
R#1 57.12 (60.86)



PFBA

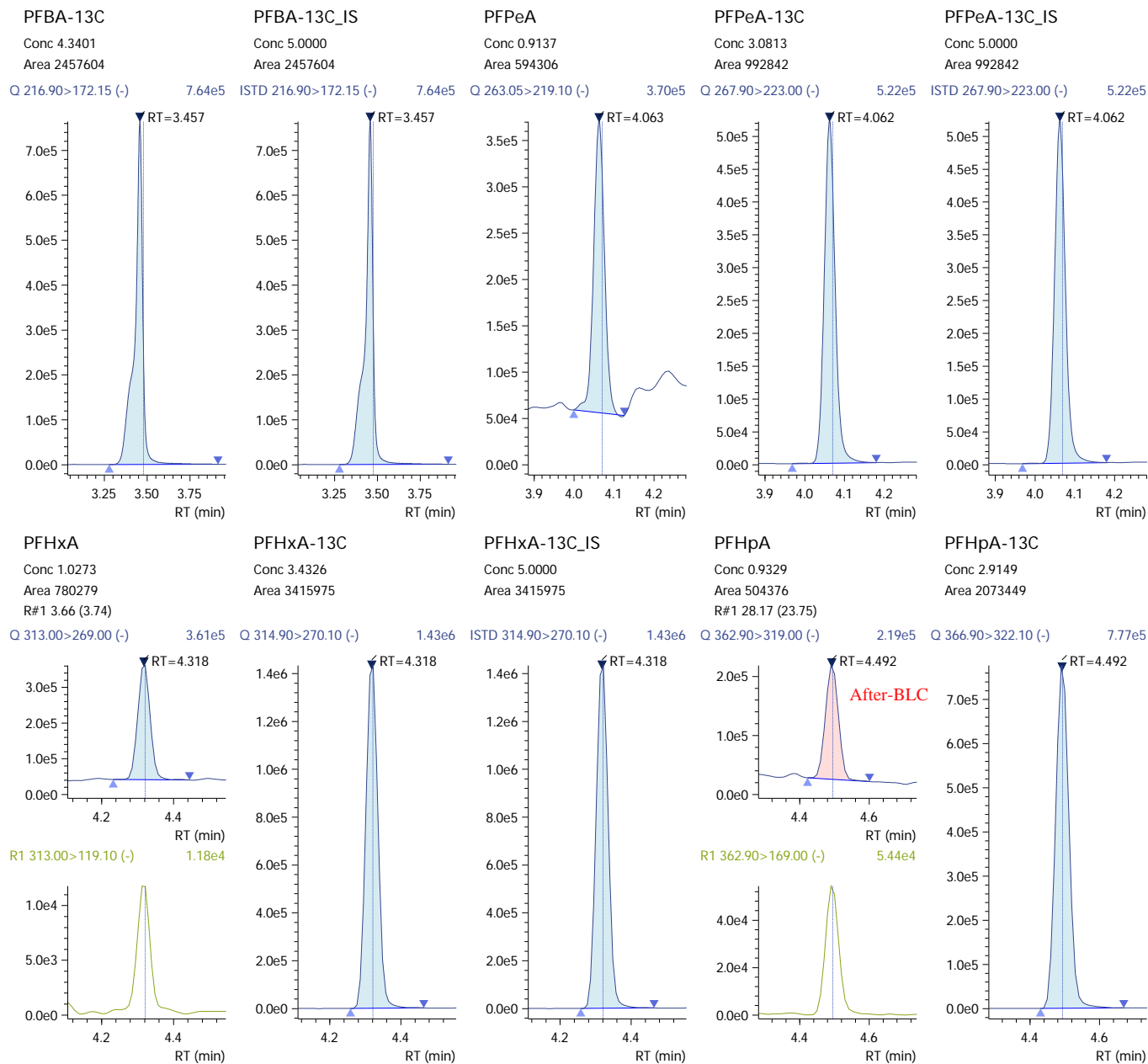
Conc 1.8062
Area 998406



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200812_072 (continued)



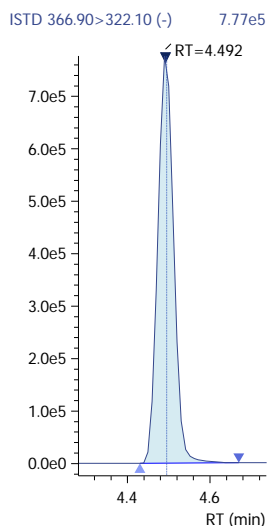
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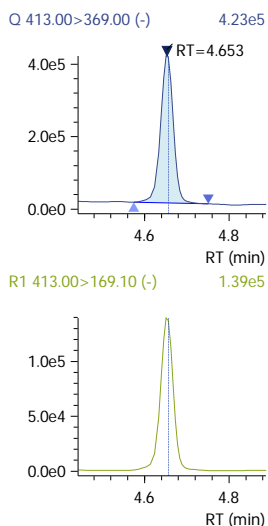
PFHpA-13C_IS

Conc 5.0000
Area 2073449



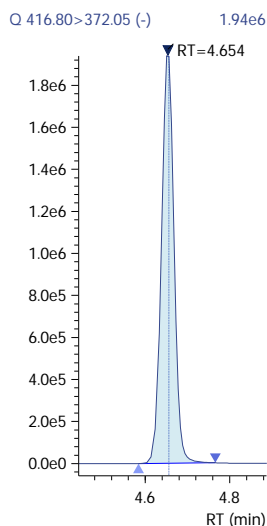
PFOA

Conc 1.0309
Area 864373
R#1 33.89 (34.80)



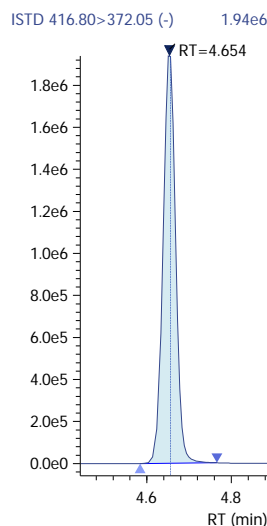
PFOA-13C

Conc 3.9890
Area 4034108



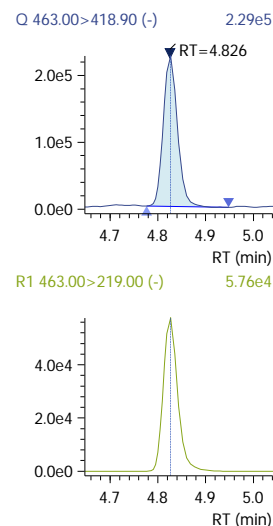
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Conc 5.0000
Area 4034108



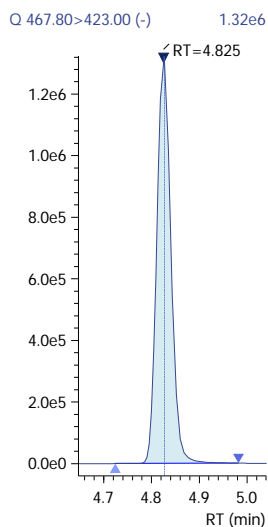
PFNA

Conc 0.8543
Area 463642
R#1 25.47 (22.71)



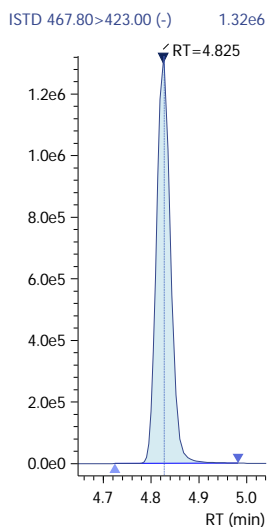
PFNA-13C

Conc 3.9376
Area 2698521



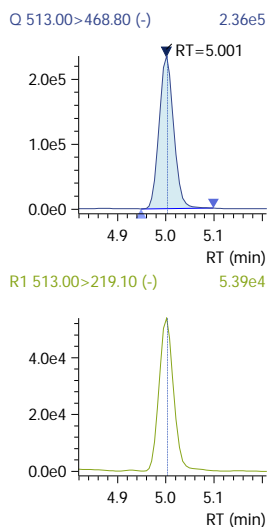
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Conc 5.0000
Area 2698521



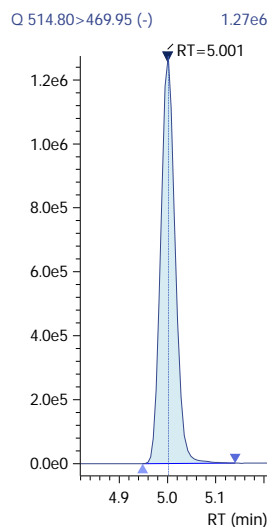
PFDA

Conc 0.8804
Area 488836
R#1 22.88 (22.06)



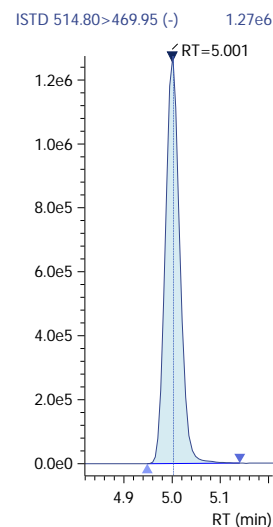
PFDA-13C

Conc 4.1575
Area 2639271



PFDA-13C_IS

Conc 5.0000
Area 2639271

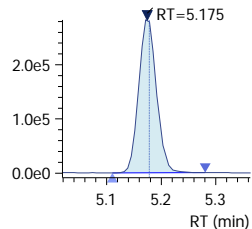


200812_072 (continued)

PFUnA

Conc 0.9436
Area 644522
R#1 12.52 (13.66)

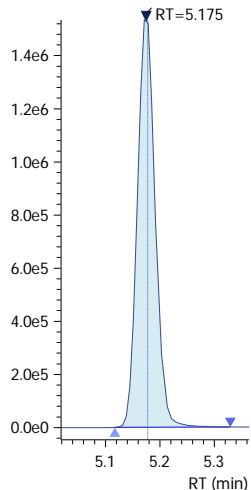
Q 563.00>518.90 (-) 2.83e5



PFUnA-13C

Conc 4.4989
Area 3503053

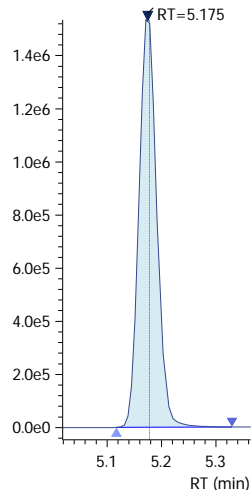
Q 564.80>519.95 (-) 1.53e6



PFUnA-13C_IS

Conc 5.0000
Area 3503053

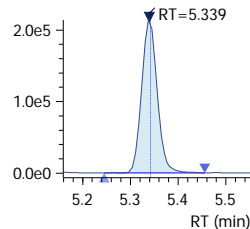
ISTD 564.80>519.95 (-) 1.53e6



PFDaA

Conc 0.9240
Area 485366
R#1 22.07 (21.98)

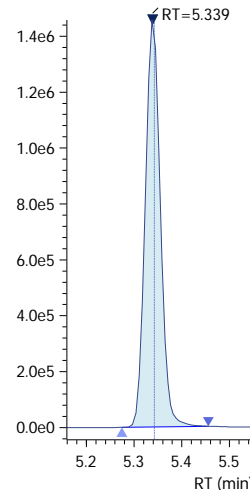
Q 613.05>569.00 (-) 2.14e5



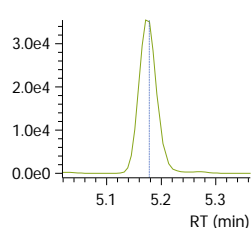
PFDaA-13C

Conc 4.2789
Area 3206065

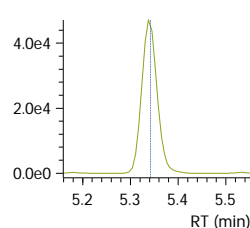
Q 614.80>569.95 (-) 1.46e6



R1 563.00>219.00 (-) 3.55e4



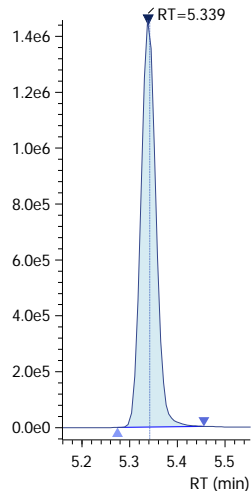
R1 613.05>169.00 (-) 4.71e4



PFDaA-13C_IS

Conc 5.0000
Area 3206065

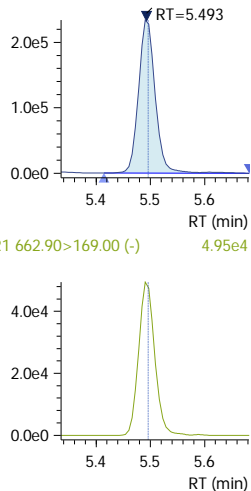
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PFTrDA

Conc 0.8165
Area 501002
R#1 20.83 (19.20)

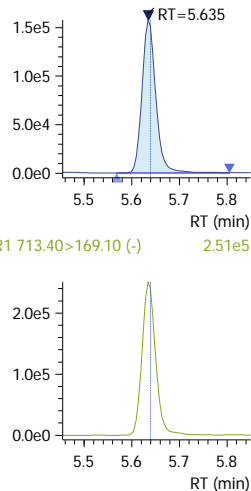
Q 663.00>618.90 (-) 2.34e5



PFTeDA

Conc 0.9125
Area 316982
R#1 158.97 (61.49)

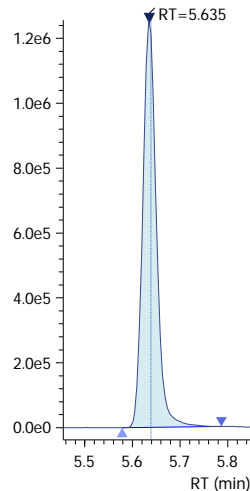
Q 713.40>669.00 (-) 1.58e5



PFTeDA-13C

Conc 5.1939
Area 2495861

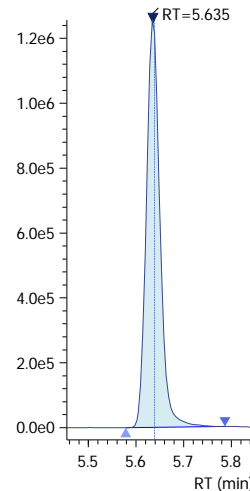
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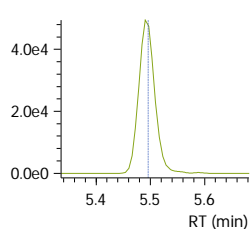
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Conc 5.0000
Area 2495861

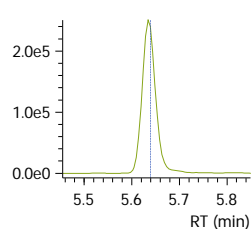
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R1 662.90>169.00 (-) 4.95e4



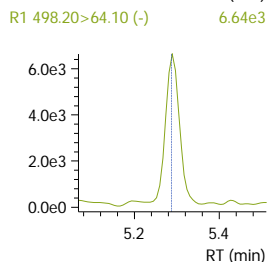
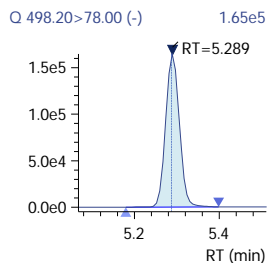
R1 713.40>169.10 (-) 2.51e5



200812_072 (continued)

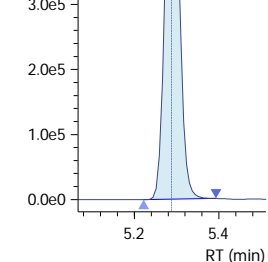
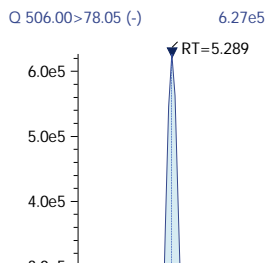
FOSA

Conc 0.9353
 Area 370088
 R#1 3.94 (4.04)



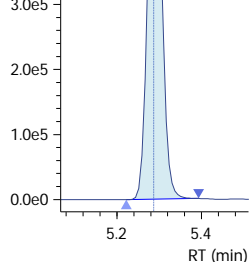
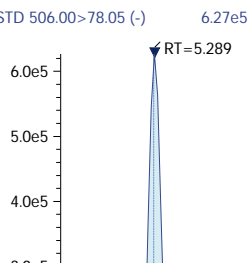
FOSA-13C

Conc 3.4038
 Area 1406658



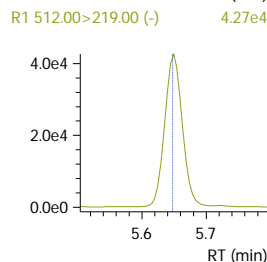
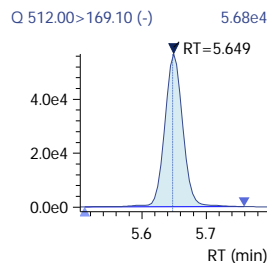
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Conc 5.0000
 Area 1406658



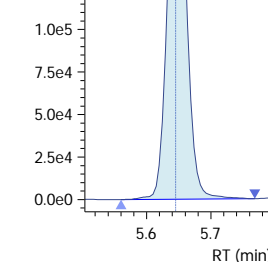
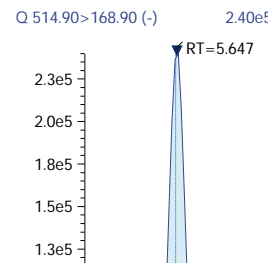
N-MeFOSA

Conc 0.8941
 Area 110270
 R#1 75.08 (78.52)



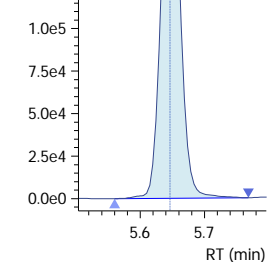
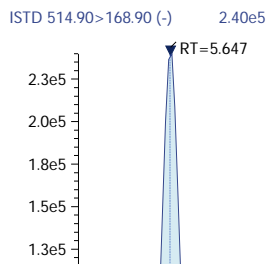
N-MeFOSA-d3

Conc 4.5487
 Area 468180



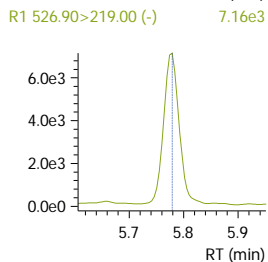
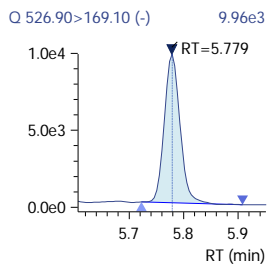
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Conc 5.0000
 Area 468180



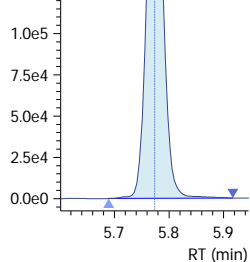
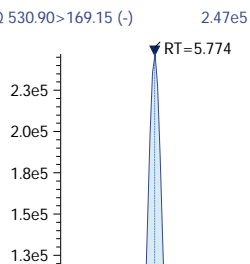
N-EtFOSA

Conc 0.9511
 Area 19339
 R#1 73.05 (0.00)



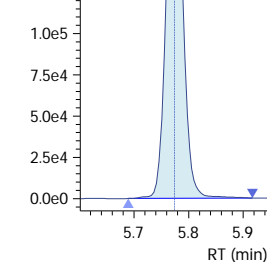
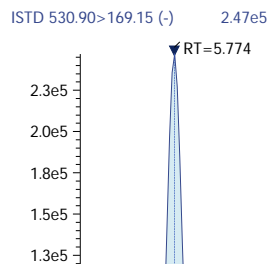
N-EtFOSA-d9

Conc 3.8686
 Area 496210



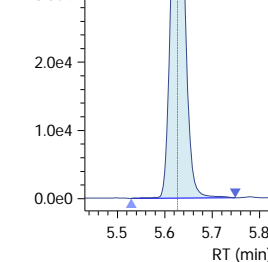
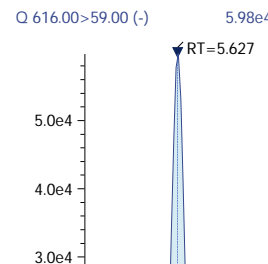
N-EtFOSA-d9_IS

Conc 5.0000
 Area 496210



N-MeFOSE

Conc 0.9864
 Area 114352

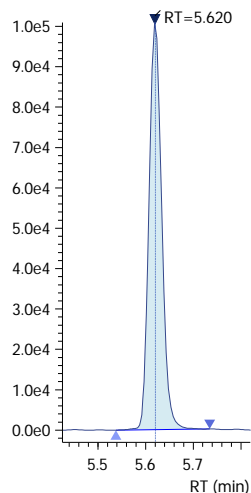


200812_072 (continued)

N-MeFOSE-d7

Conc 3.7972
Area 186863

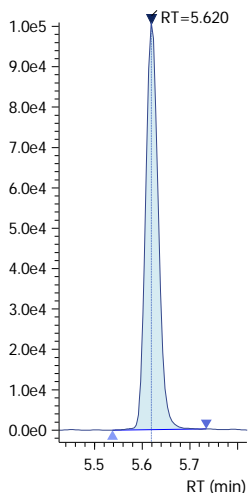
Q 622.70>59.10 (-)



N-MeFOSE-d7_IS

Conc 5.0000
Area 186863

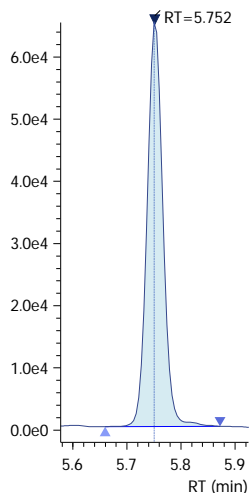
ISTD 622.70>59.10 (-)



N-EtFOSE

Conc 1.0469
Area 131877

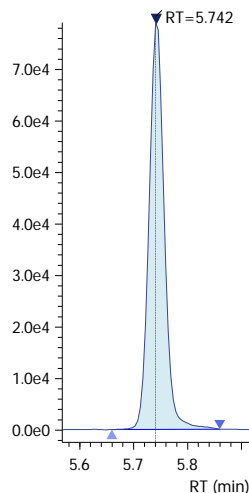
Q 630.00>58.90 (-)



N-EtFOSE-d9

Conc 3.8821
Area 156572

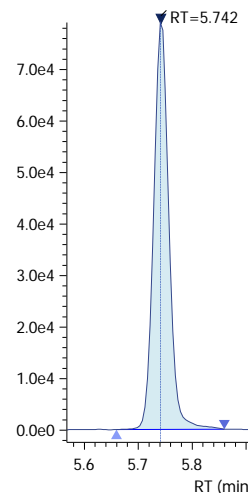
Q 638.70>59.10 (-)



N-EtFOSE-d9_IS

Conc 5.0000
Area 156572

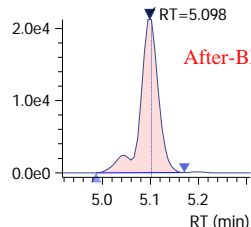
ISTD 638.70>59.10 (-)



N-MeFOSAA

Conc 1.0392
Area 55878
R#1 35.05 (33.47)

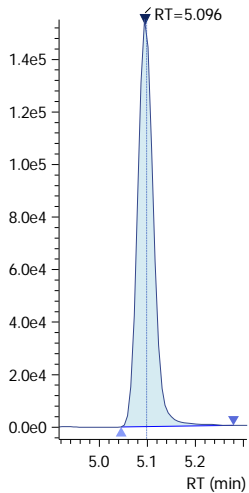
Q 570.20>419.00 (-)



N-MeFOSAA-d3

Conc 4.5947
Area 355766

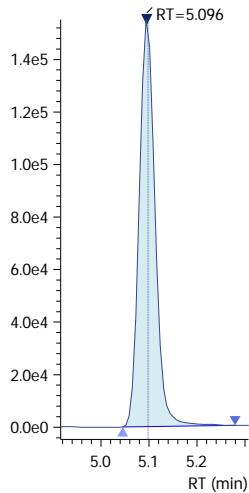
Q 572.80>419.05 (-)



N-MeFOSAA-d3_IS

Conc 5.0000
Area 355766

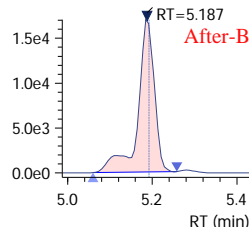
ISTD 572.80>419.05 (-)



N-EtFOSAA

Conc 1.2306
Area 45998
R#1 69.01 (83.09)

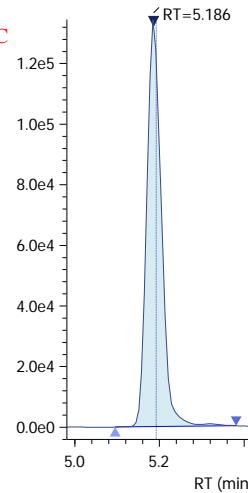
Q 584.20>418.95 (-)



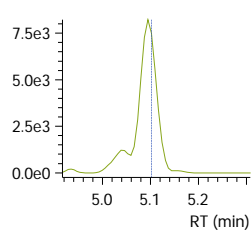
N-EtFOSAA-d5

Conc 5.8663
Area 321947

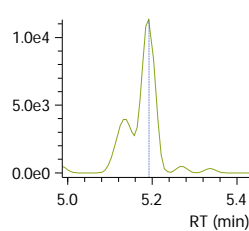
Q 588.80>419.00 (-)



R1 570.20>512.00 (-)



R1 584.20>526.10 (-)



Insight Report

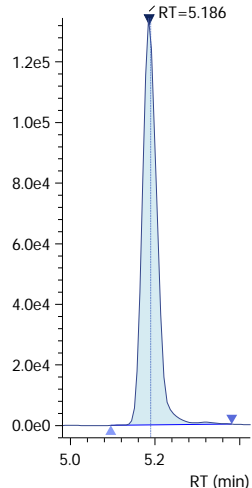
Printed at 8/19/2020 10:38:03 AM

200812_072 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 321947

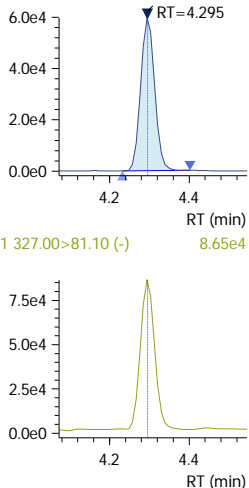
ISTD 588.80>419.00 (-) 1.35e5



4_2-FTS_1

Conc 0.9309
 Area 145960
 R#1 141.67 (54.93)

Q 327.00>307.05 (-) 5.97e4

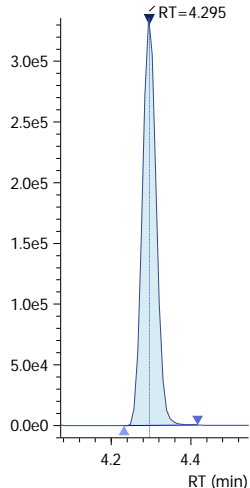


R1 327.00>81.10 (-) 8.65e4

4_2-FTS-13C

Conc 5.1563
 Area 821546

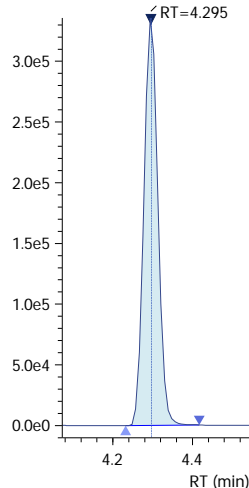
Q 328.80>309.05 (-) 3.36e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 821546

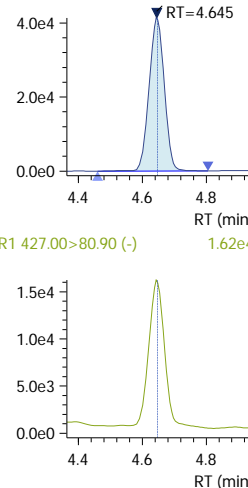
ISTD 328.80>309.05 (-) 3.36e5



6_2-FTS_1

Conc 0.8732
 Area 137394
 R#1 37.54 (36.33)

Q 427.00>407.00 (-) 4.14e4

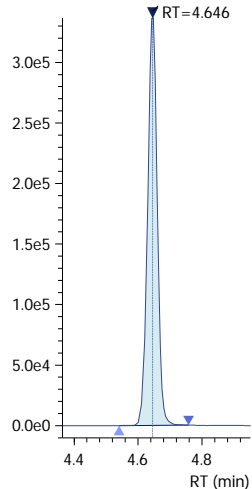


R1 427.00>80.90 (-) 1.62e4

6_2-FTS-13C

Conc 8.3319
 Area 717584

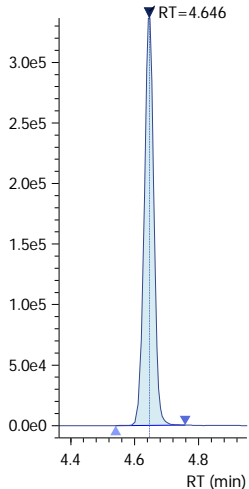
Q 428.90>409.00 (-) 3.37e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 717584

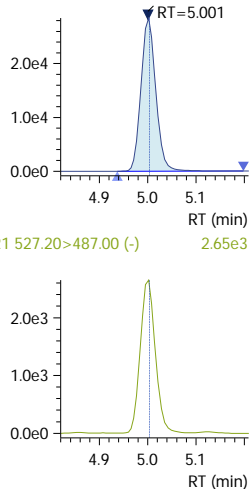
ISTD 428.90>409.00 (-) 3.37e5



8_2-FTS_1

Conc 1.0722
 Area 60382
 R#1 9.25 (8.96)

Q 527.10>506.90 (-) 2.85e4

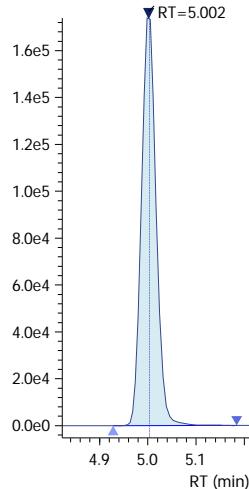


R1 527.20>487.00 (-) 2.65e3

8_2-FTS-13C

Conc 5.6593
 Area 368865

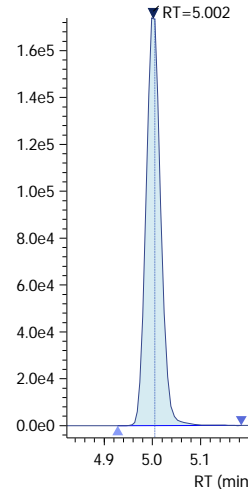
Q 528.80>509.00 (-) 1.74e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 368865

ISTD 528.80>509.00 (-) 1.74e5



Insight Report

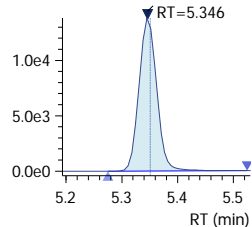
Printed at 8/19/2020 10:38:03 AM

200812_072 (continued)

10_2-FtS_1

Conc 0.6989
Area 30587
R#1 5.46 (5.92)

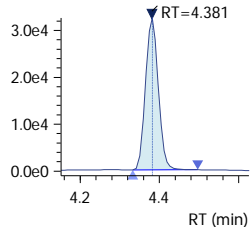
Q 627.00>606.95 (-) 1.38e4



HPFO_DA

Conc 1.0120
Area 72498
R#1 88.01 (72.82)

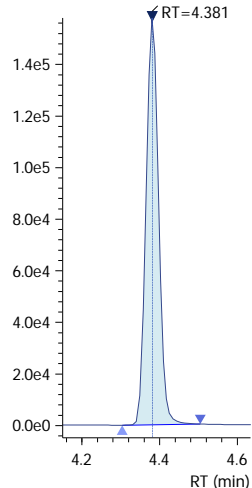
Q 329.00>169.00 (-) 3.27e4



HPFO_DA-13C

Conc 1.9329
Area 356612

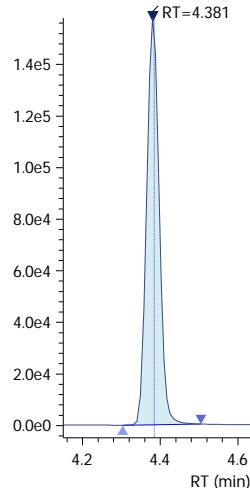
Q 332.00>286.80 (-) 1.58e5



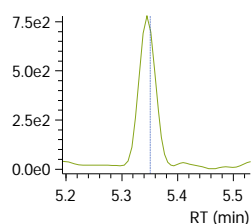
HPFO_DA-13C_IS

Conc 5.0000
Area 356612

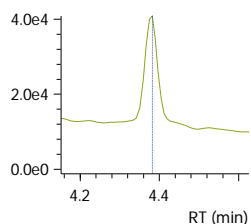
ISTD 332.00>286.80 (-) 1.58e5



R1 627.00>81.25 (-) 7.79e2



R1 329.00>285.10 (-) 4.09e4

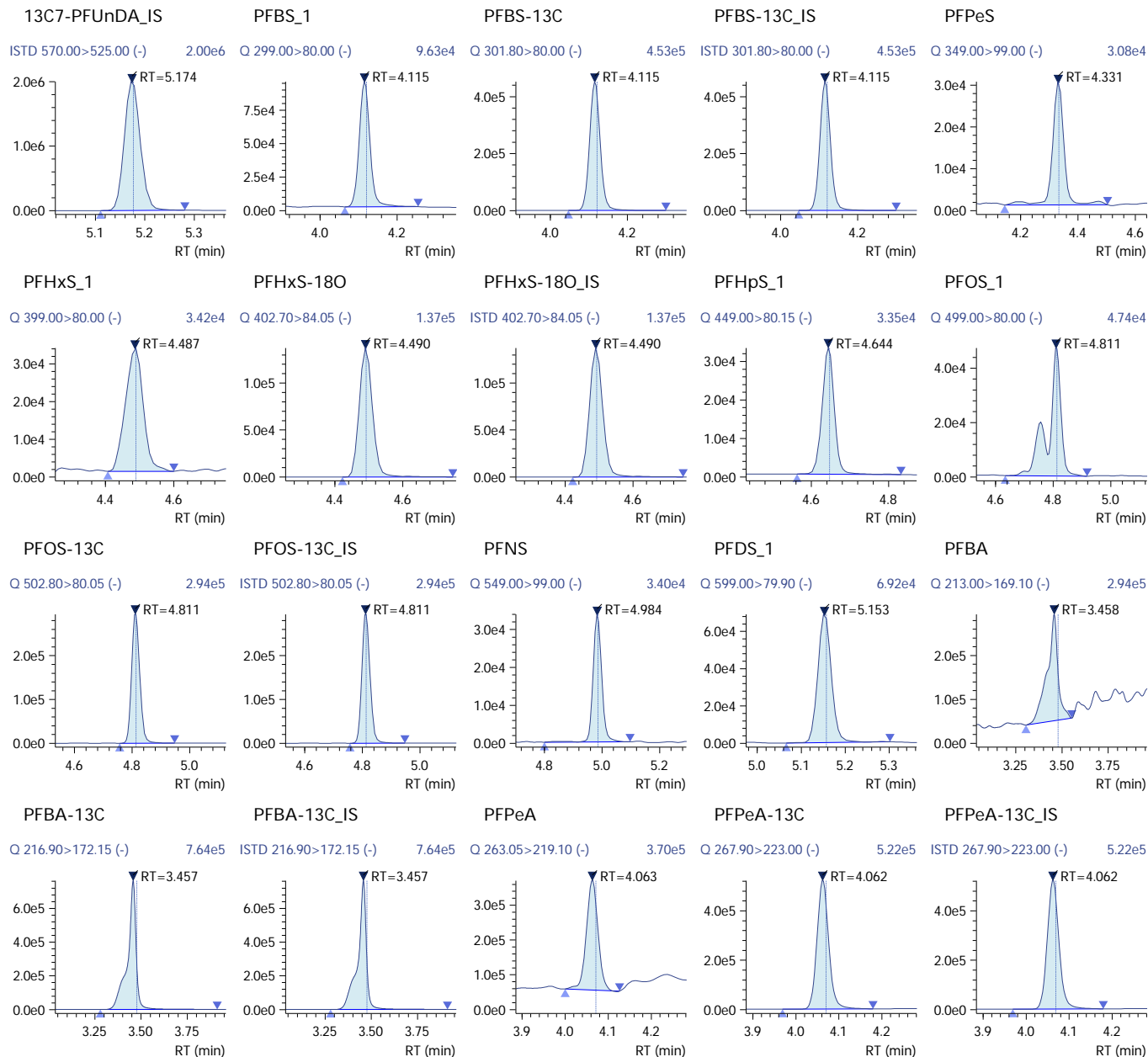


Insight Report

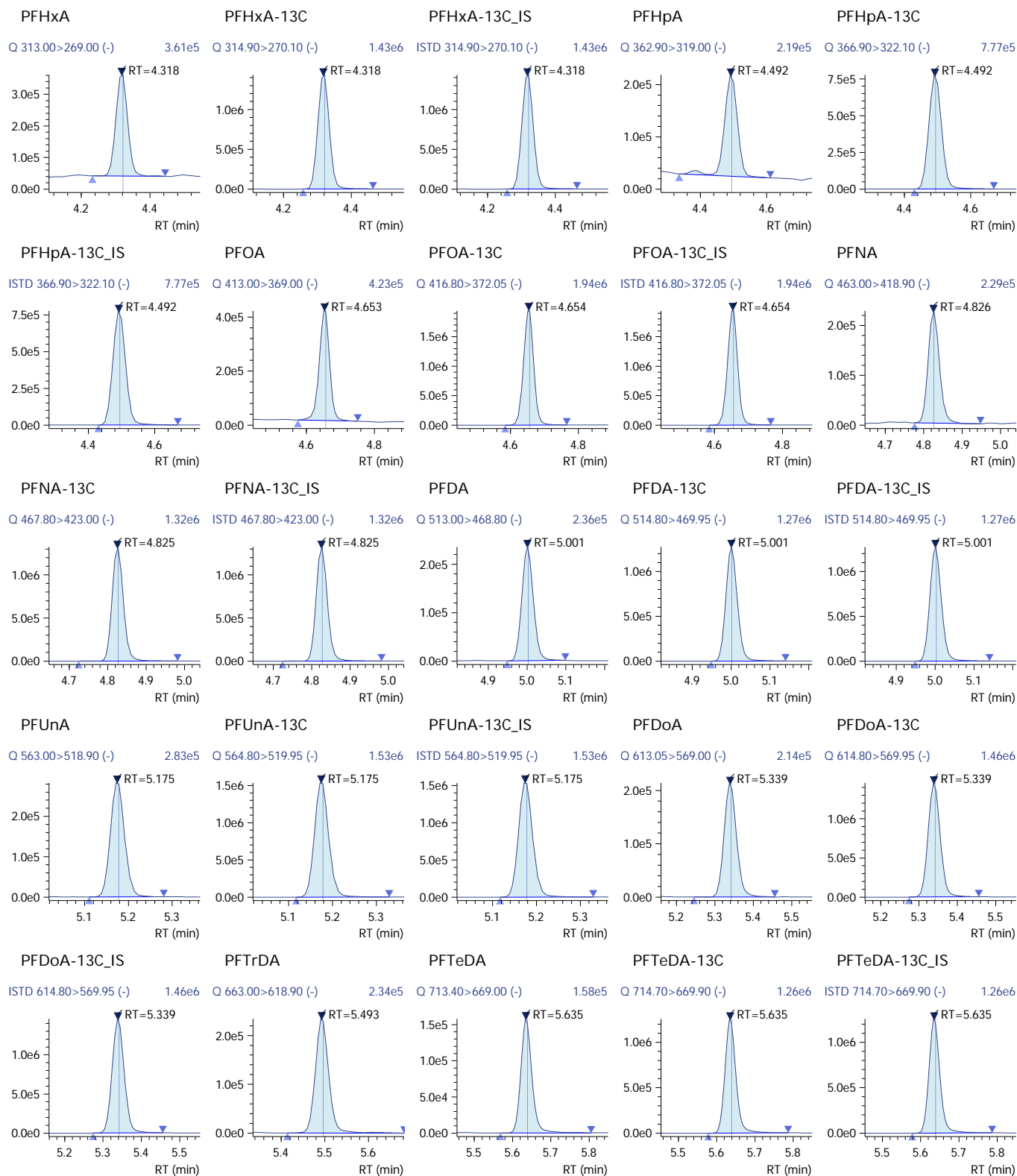
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200812_072

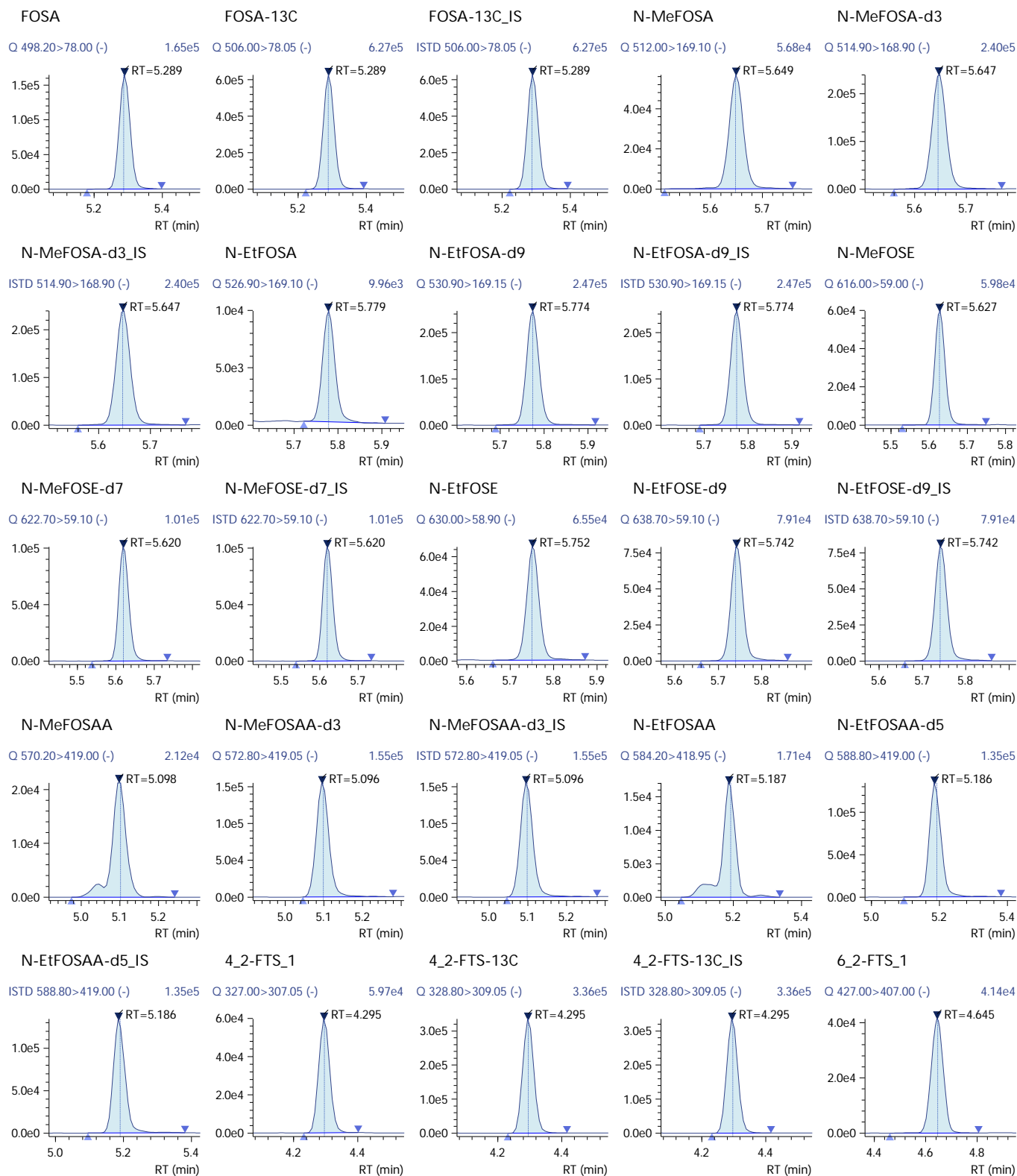
Sample ID: KQ2011026-02
Date Acquired: 8/13/2020 1:21:43 AM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_072.lcd
Vial: 16 | Inj. Volume: 15.0000uL | Tray: 3



200812_072 (continued)



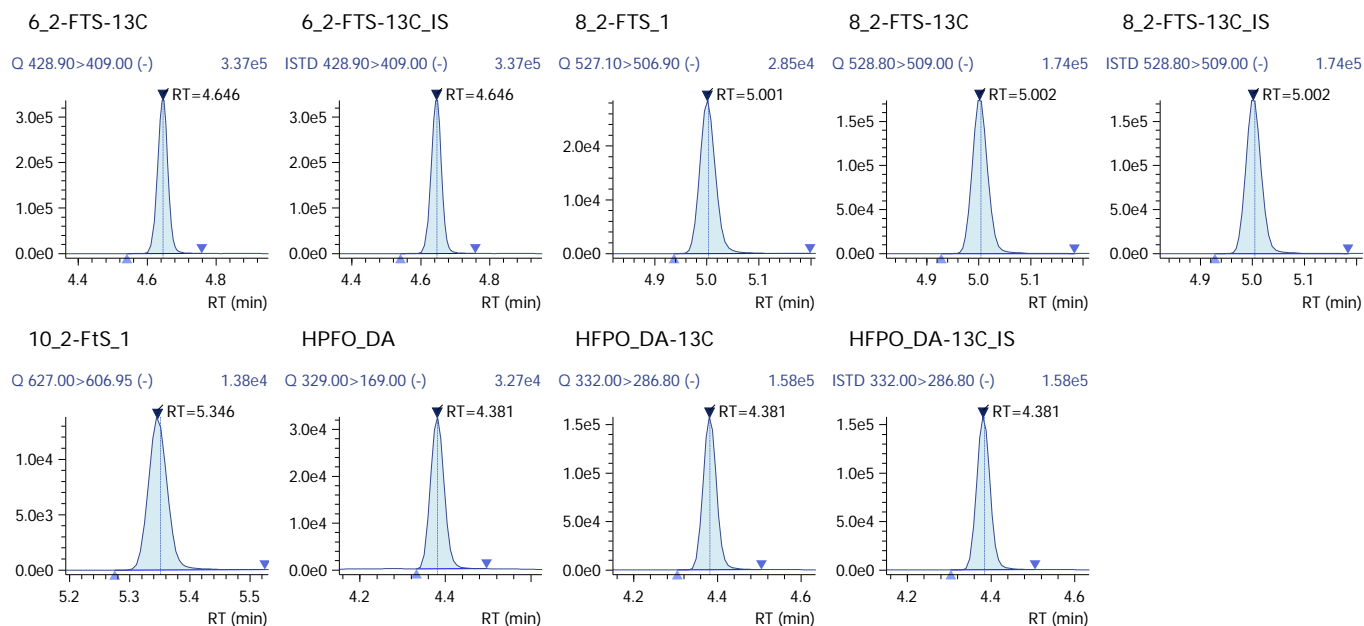
200812_072 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_072 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_062
Lab ID: KQ2011219-02
RunType: CCB
Matrix: Water

Date Acquired: 8/12/20 23:34
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery	X	
Internal Standards	X	
Surrogates	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File:	J:\LCMS06\Data\200812_b3\200812_062	Instrument:	K-LCMS-06
Acqu Date:	8/12/20 23:34	Vial:	2
Run Type:	CCB	Dilution:	1
Lab ID:	KQ2011219-02	Raw Units:	ng/mL

Bottle ID:		Tier:	II	Matrix:	Water
Prod Code:	PFAS	Collect Date:	7/31/20	Receive Date:	8/5/20

Analysis Lot:	690911	Prep Lot:		Report Group:	KQ2011219
Analysis	PFC/537M	Prep Method:			
		Prep Date:			

Title:	Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID:	KC2000408
		Report List ID:	20091

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.180	+0.00	5994411	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
13C3-PFBS	4.126	+0.00	1403774	4.9613	99	20 - 109	Y
18O2-PFHxS	4.496		856324	6.0767	122	26 - 122	Y
13C4-PFOS	4.818	+0.00	684289	4.6759	94	25 - 121	Y
13C4-PFBA	3.479	+0.00	3616239	4.8262	97	27 - 124	Y
13C5-PFPeA	4.075	+0.00	2128546	4.9921	100	27 - 138	Y
13C2-PFHxA	4.325		7193957	5.4631	109	28 - 132	Y
13C4-PFHpA	4.498	+0.00	5025970	5.3396	107	19 - 139	Y
13C4-PFOA	4.660		7159783	5.3502	107	22 - 130	Y
13C5-PFNA	4.831	+0.00	4661878	5.1407	103	20 - 127	Y
13C2-PFDA	5.007	+0.00	4197262	4.9966	100	24 - 125	Y
13C2-PFUnDA	5.180		5163886	5.0118	100	22 - 125	Y
13C2-PFDODA	5.345	+0.00	4834867	4.8764	98	19 - 122	Y
13C2-PFTeDA	5.642	+0.00	3393803	5.3372	107	13 - 124	Y
13C8-FOSA	5.293	+0.00	2780800	5.0852	102	18 - 109	Y
D3-MeFOSA	5.651		639305	4.6939	94	15 - 153	Y
D5-EtFOSA	5.778		816993	4.8135	96	25 - 107	Y
D7-MeFOSE	5.624		311012	4.7760	96	24 - 112	Y
D9-EtFOSE	5.746		226406	4.2422	85	19 - 109	Y
D3-MeFOSAA	5.102	+0.00	491310	4.7952	96	9 - 123	Y
D5-EtFOSAA	5.193	+0.00	330709	4.5539	91	12 - 126	Y
13C2-4:2 FTS	4.301	+0.00	1024604	4.8598	97	10 - 197	Y
13C2-6:2 FTS	4.652		663289	5.8201	116	10 - 226	Y
13C2-8:2 FTS	5.008	+0.00	473783	5.4933	110	10 - 202	Y
13C3-HFPO-DA	4.388	+0.00	1071826	4.3903	88	22 - 135	Y

Data File: J:\LCMS06\Data\200812_b3\200812_062
 Acq Date: 8/12/20 23:34
 Run Type: CCB
 Lab ID: KQ2011219-02

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 2
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Final Conc. Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.125		1647	0.0051	0.16	U	Y
Perfluoropentane sulfonic acid (PFPeS)	0		0	0	0	U	Y
Perfluorohexane sulfonic acid (PFHxS)	4.490	0.00	2183	0.0074	0.24	U	Y
Perfluoroheptane sulfonic acid (PFHpS)	4.650	0.00	45	0.0003	0.0096	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.819	+0.00	533	0.0032	0.10	U	Y
Perfluorononane sulfonic acid (PFNS)	0		0	0	0	U	Y
Perfluorodecane sulfonic acid (PFDS)	0		0	0	0	U	Y
Perfluorobutanoic acid (PFBA)	3.480	+0.00	3583	0.0044	0.14	U	Y
Perfluoropentanoic acid (PFPeA)	4.024	-0.05	83883	0.0050	0.16	U	Y
Perfluorohexanoic acid (PFHxA)	4.311	-0.01	69490	-0.0099	0	U	Y
Perfluoroheptanoic acid (PFHpA)	4.489	-0.01	41457	0.0164	0.52	U	Y
Perfluorooctanoic acid (PFOA)	4.657	0.00	51456	0.0063	0.20	U	Y
Perfluorononanoic acid (PFNA)	4.827	0.00	26428	0.0150	0.48	U	Y
Perfluorodecanoic acid (PFDA)	5.004	0.00	22679	0.0257	0.82	U	Y
Perfluoroundecanoic acid (PFUnDA)	5.179	0.00	25455	-0.0024	0	U	Y
Perfluorododecanoic acid (PFDoDA)	5.343	0.00	20221	0.0088	0.28	U	Y
Perfluorotridecanoic acid (PFTrDA)	5.498		16433	0.0013	0.042	U	Y
Perfluorotetradecanoic acid (PFTeDA)	5.641		62375	0.0150	0.48	U	Y
Perfluorooctane sulfonamide (FOSA)	5.291	0.00	3565	0.0046	0.15	U	Y
N-Methyl perfluorooctane sulfonamide (MeFOSA)	5.649	-0.01	1482	0.0088	0.28	U	Y
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	5.783		142	0.0042	0.13	U	Y
N-Methyl perfluorooctane sulfonamidoethanol	5.636	+0.01	158	0.0008	0.026	U	Y
N-Ethyl perfluorooctane sulfonamidoethanol	0		0	0	0	U	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.107	+0.00	973	0.0131	0.42	U	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	0		0	0	0	U	Y
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	4.302	+0.00	487	0.0025	0.080	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.657	+0.01	777	0.0053	0.17	U	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.008	+0.00	139	0.0019	0.061	U	Y
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	5.347	-0.01	18	0.0003	0.0096	U	Y
Hexafluoropropylene oxide dimer acid (HFPO-DA)	4.387		565	0.0026	0.083	U	Y

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Printed: 8/19/20 11:35

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Insight Report

Printed at 8/19/2020 10:38:03 AM

200812_062

Sample ID: CCB
 Date Acquired: 8/12/2020 11:34:07 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_062.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.180	5994411	5994411	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.125	1647	1403774	2	0.0051	ng/mL	----	36.87
PFBS-13C	Auto	4.126	1403774	5994411	1	4.9613	ng/mL	----	----
PFBS-13C_IS	Auto	4.126	1403774	1403774	2	5.0000	ng/mL	----	----
PFPeS	ND(W/B)	----	----	1403774	2	----	ng/mL	----	----
PFHxS_1	M	4.490	2183	856324	3	0.0074	ng/mL	----	115.16
PFHxS-18O	Auto	4.496	856324	5994411	1	6.0767	ng/mL	----	----
PFHxS-18O_IS	Auto	4.496	856324	856324	3	5.0000	ng/mL	----	----
PFHpS_1	M	4.650	45	856324	3	0.0003	ng/mL	----	0.00
PFOS_1	Auto	4.819	533	684289	4	0.0032	ng/mL	----	66.25
PFOS-13C	Auto	4.818	684289	5994411	1	4.6759	ng/mL	----	----
PFOS-13C_IS	Auto	4.818	684289	684289	4	5.0000	ng/mL	----	----
PFNS	ND(W/B)	----	----	684289	4	----	ng/mL	----	----
PFDS_1	ND(W/B)	----	----	684289	4	----	ng/mL	----	----
PFBA	M	3.480	3583	3616239	5	0.0044	ng/mL	----	----
PFBA-13C	Auto	3.479	3616239	5994411	1	4.8262	ng/mL	----	----
PFBA-13C_IS	Auto	3.479	3616239	3616239	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.024	83883	2128546	6	0.0050	ng/mL	----	----
PFPeA-13C	Auto	4.075	2128546	5994411	1	4.9921	ng/mL	----	----
PFPeA-13C_IS	Auto	4.075	2128546	2128546	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.311	69490	7193957	7	-0.0099	ng/mL	----	2.48
PFHxA-13C	Auto	4.325	7193957	5994411	1	5.4631	ng/mL	----	----
PFHxA-13C_IS	Auto	4.325	7193957	7193957	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.489	41457	5025970	8	0.0164	ng/mL	----	23.08
PFHpA-13C	Auto	4.498	5025970	5994411	1	5.3396	ng/mL	----	----
PFHpA-13C_IS	Auto	4.498	5025970	5025970	8	5.0000	ng/mL	----	----
PFOA	Auto	4.657	51456	7159783	9	0.0063	ng/mL	----	34.42
PFOA-13C	Auto	4.660	7159783	5994411	1	5.3502	ng/mL	----	----
PFOA-13C_IS	Auto	4.660	7159783	7159783	9	5.0000	ng/mL	----	----
PFNA	Auto	4.827	26428	4661878	10	0.0150	ng/mL	----	19.88
PFNA-13C	Auto	4.831	4661878	5994411	1	5.1407	ng/mL	----	----
PFNA-13C_IS	Auto	4.831	4661878	4661878	10	5.0000	ng/mL	----	----
PFDA	Auto	5.004	22679	4197262	11	0.0257	ng/mL	----	18.15
PFDA-13C	Auto	5.007	4197262	5994411	1	4.9966	ng/mL	----	----
PFDA-13C_IS	Auto	5.007	4197262	4197262	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.179	25455	5163886	12	-0.0024	ng/mL	----	13.21
PFUnA-13C	Auto	5.180	5163886	5994411	1	5.0118	ng/mL	----	----
PFUnA-13C_IS	Auto	5.180	5163886	5163886	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.343	20221	4834867	13	0.0088	ng/mL	----	28.22
PFDaA-13C	Auto	5.345	4834867	5994411	1	4.8764	ng/mL	----	----
PFDaA-13C_IS	Auto	5.345	4834867	4834867	13	5.0000	ng/mL	----	----
PFTeDA	M	5.498	16433	3393803	14	0.0013	ng/mL	----	13.87
PFTeDA	Auto	5.641	62375	3393803	14	0.0150	ng/mL	----	917.75
PFTeDA-13C	Auto	5.642	3393803	5994411	1	5.3372	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.642	3393803	3393803	14	5.0000	ng/mL	----	----
FOSA	Auto	5.291	3565	2780800	16	0.0046	ng/mL	----	6.07
FOSA-13C	Auto	5.293	2780800	5994411	1	5.0852	ng/mL	----	----
FOSA-13C_IS	Auto	5.293	2780800	2780800	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.649	1482	639305	17	0.0088	ng/mL	----	61.86
N-MeFOSA-d3	Auto	5.651	639305	5994411	1	4.6939	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.651	639305	639305	17	5.0000	ng/mL	----	----
N-EtFOSA	M	5.783	142	816993	18	0.0042	ng/mL	----	46.91
N-EtFOSA-d9	Auto	5.778	816993	5994411	1	4.8135	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.778	816993	816993	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.636	158	311012	19	0.0008	ng/mL	----	----

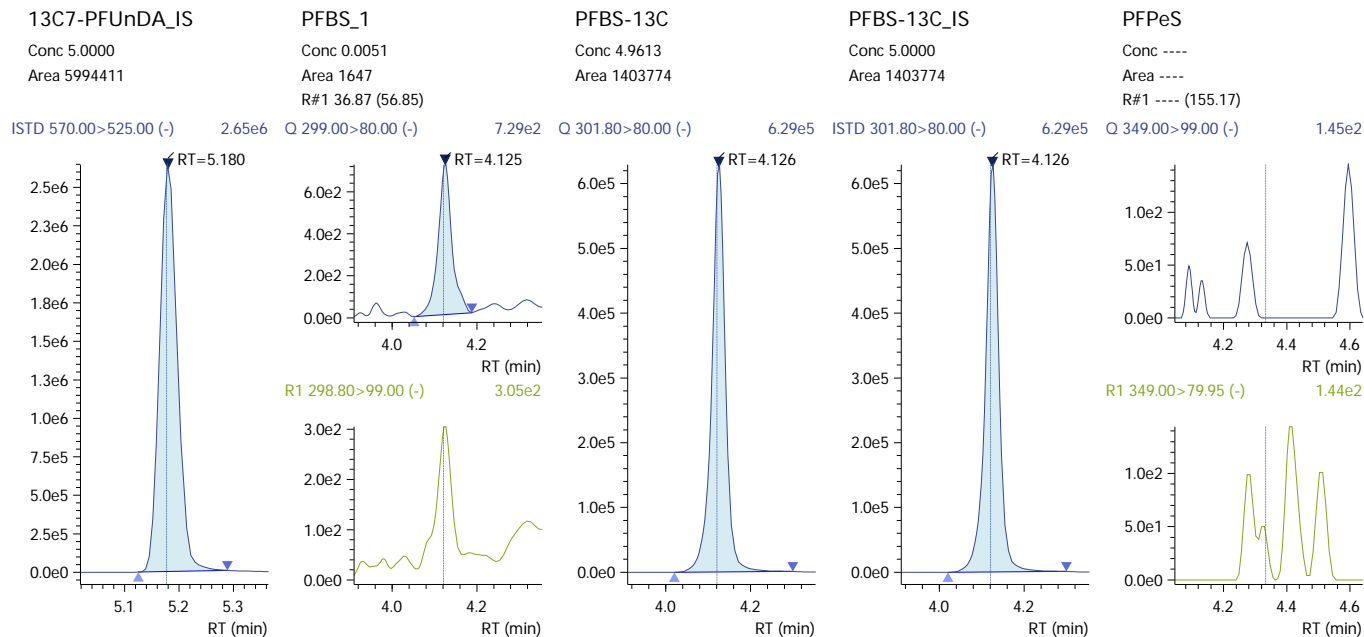
Insight Report

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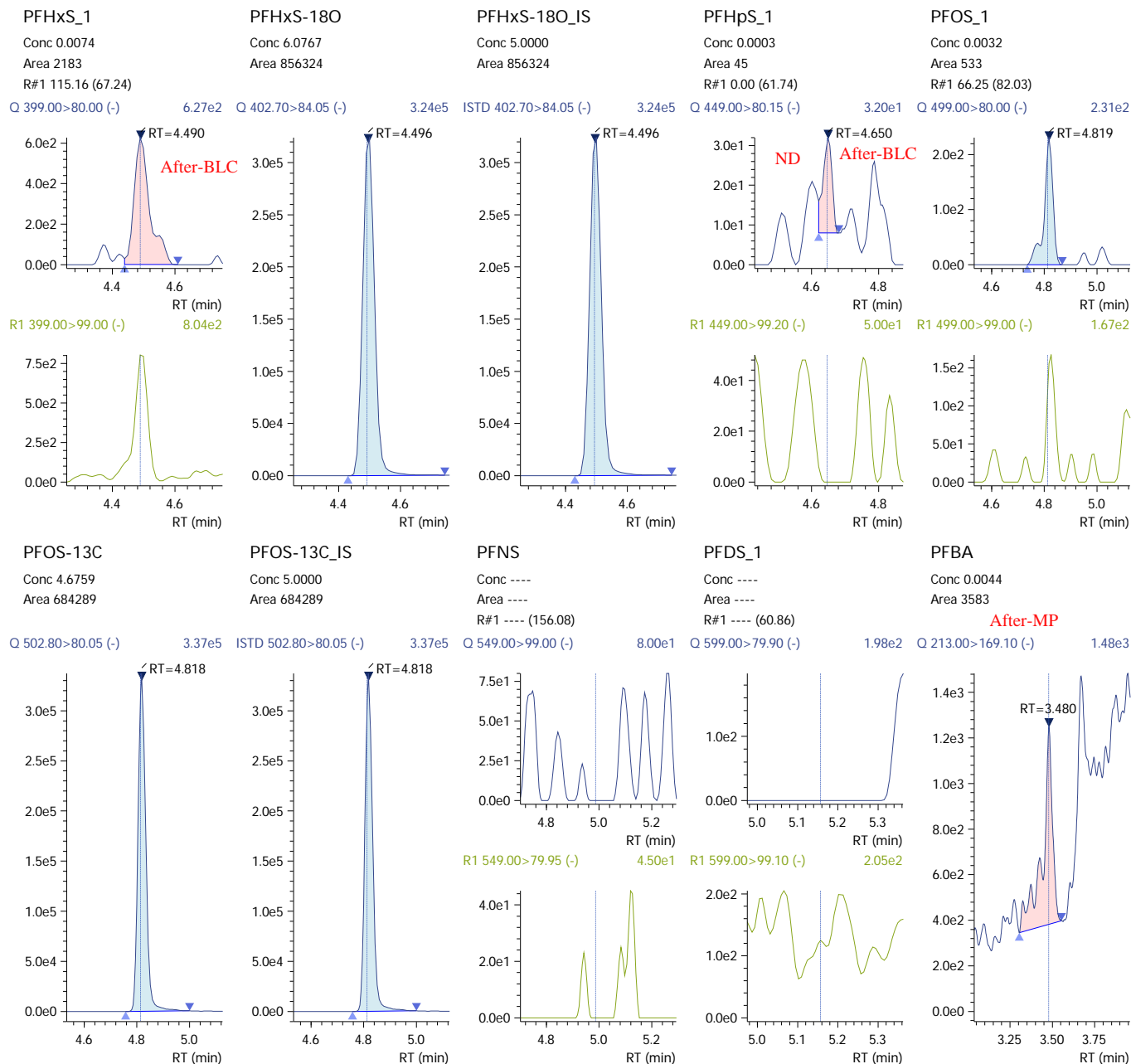
200812_062 (continued)

(Table continued from previous page)

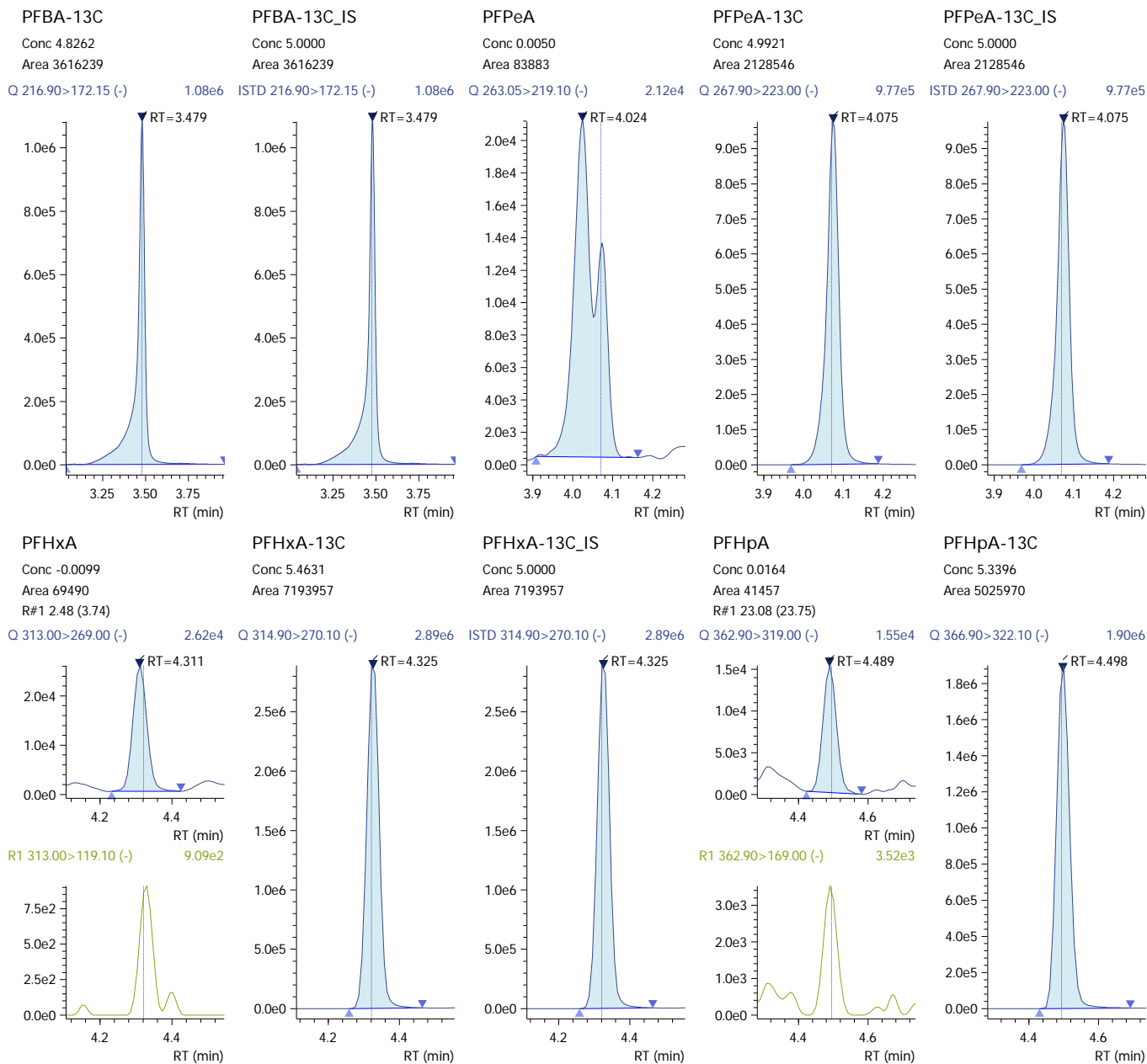
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.624	311012	5994411	1	4.7760	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.624	311012	311012	19	5.0000	ng/mL	----	----
N-EtFOSE	ND(W/B)	----	----	226406	20	----	ng/mL	----	----
N-EtFOSE-d9	Auto	5.746	226406	5994411	1	4.2422	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.746	226406	226406	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.107	973	491310	21	0.0131	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.102	491310	5994411	1	4.7952	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.102	491310	491310	21	5.0000	ng/mL	----	----
N-EtFOSAA	ND(W/B)	----	----	330709	22	----	ng/mL	----	----
N-EtFOSAA-d5	Auto	5.193	330709	5994411	1	4.5539	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.193	330709	330709	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.302	487	1024604	23	0.0025	ng/mL	----	40945.40
4_2-FTS-13C	Auto	4.301	1024604	5994411	1	4.8598	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.301	1024604	1024604	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.657	777	663289	24	0.0053	ng/mL	----	95.95
6_2-FTS-13C	Auto	4.652	663289	5994411	1	5.8201	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.652	663289	663289	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	5.008	139	473783	25	0.0019	ng/mL	----	0.00
8_2-FTS-13C	Auto	5.008	473783	5994411	1	5.4933	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.008	473783	473783	25	5.0000	ng/mL	----	----
10_2-FTS_1	Auto	5.347	18	473783	25	0.0003	ng/mL	----	0.00
HPFO_DA	M	4.387	565	1071826	26	0.0026	ng/mL	----	71.91
HPFO_DA-13C	Auto	4.388	1071826	5994411	1	4.3903	ng/mL	----	----
HPFO_DA-13C_IS	Auto	4.388	1071826	1071826	26	5.0000	ng/mL	----	----



200812_062 (continued)



200812_062 (continued)



Insight Report

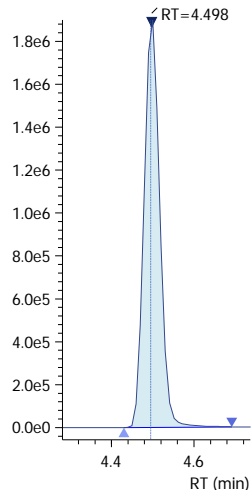
Printed at 8/19/2020 10:38:03 AM

200812_062 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 5025970

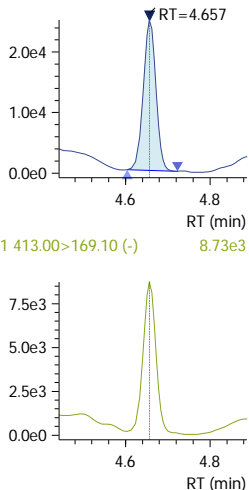
ISTD 366.90>322.10 (-) 1.90e6



PFOA

Conc 0.0063
Area 51456
R#1 34.42 (34.80)

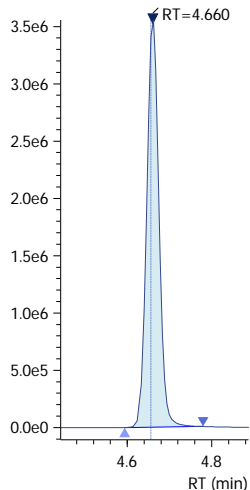
Q 413.00>369.00 (-) 2.53e4



PFOA-13C

Conc 5.3502
Area 7159783

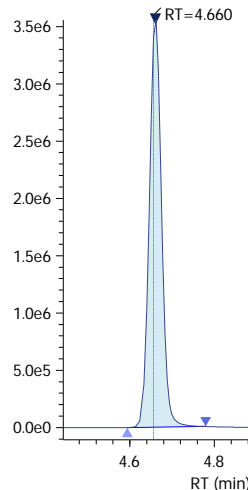
Q 416.80>372.05 (-) 3.56e6



PFOA-13C_IS

Conc 5.0000
Area 7159783

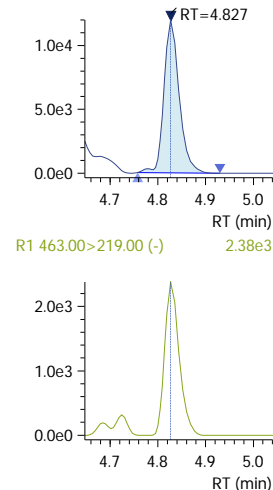
ISTD 416.80>372.05 (-) 3.56e6



PFNA

Conc 0.0150
Area 26428
R#1 19.88 (22.71)

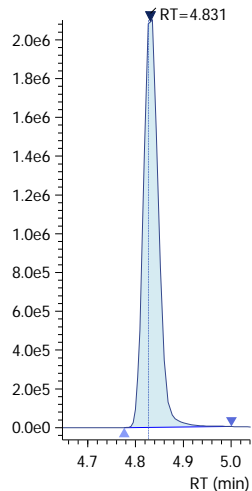
Q 463.00>418.90 (-) 1.20e4



PFNA-13C

Conc 5.1407
Area 4661878

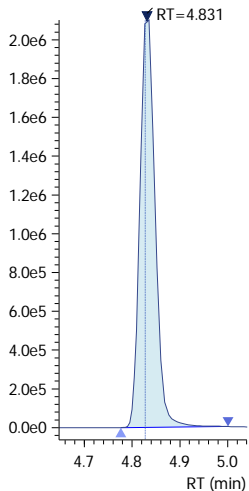
Q 467.80>423.00 (-) 2.10e6



PFNA-13C_IS

Conc 5.0000
Area 4661878

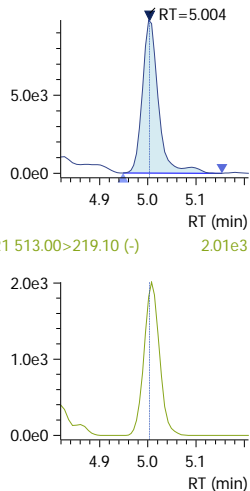
ISTD 467.80>423.00 (-) 2.10e6



PFDA

Conc 0.0257
Area 22679
R#1 18.15 (22.06)

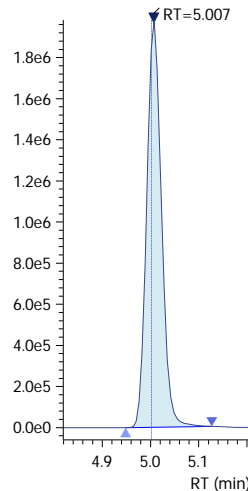
Q 513.00>468.80 (-) 9.83e3



PFDA-13C

Conc 4.9966
Area 4197262

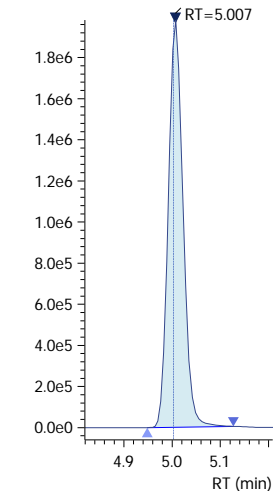
Q 514.80>469.95 (-) 1.98e6



PFDA-13C_IS

Conc 5.0000
Area 4197262

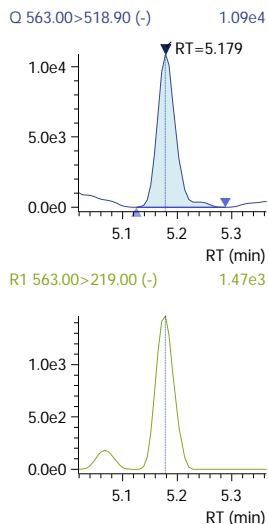
ISTD 514.80>469.95 (-) 1.98e6



200812_062 (continued)

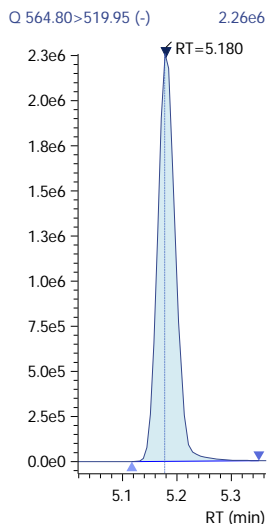
PfUnA

Conc -0.0024
 Area 25455
 R#1 13.21 (13.66)



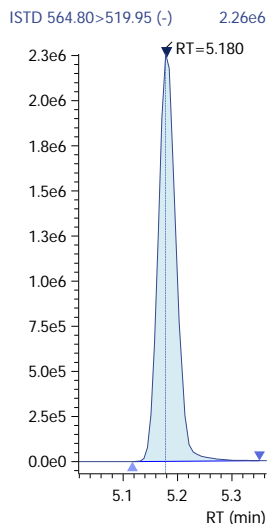
PfUnA-13C

Conc 5.0118
 Area 5163886



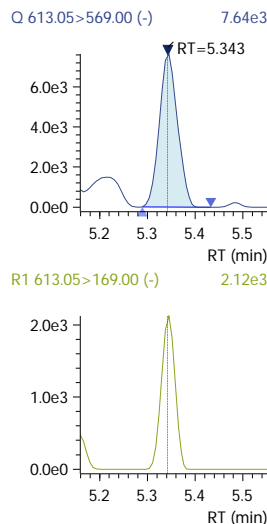
PfUnA-13C_IS

Conc 5.0000
 Area 5163886



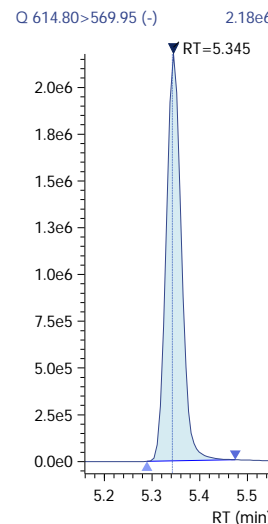
PfDoA

Conc 0.0088
 Area 20221
 R#1 28.22 (21.98)



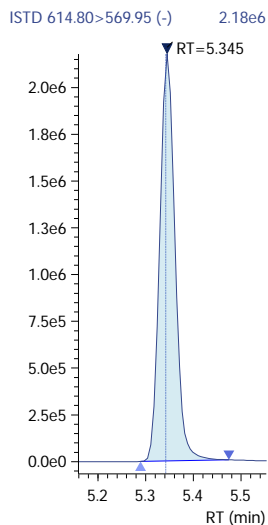
PfDoA-13C

Conc 4.8764
 Area 4834867



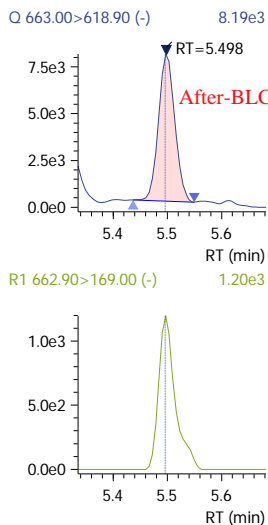
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Conc 5.0000
 Area 4834867



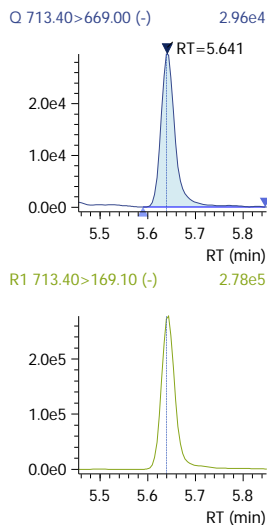
PfTrDA

Conc 0.0013
 Area 16433
 R#1 13.87 (19.20)



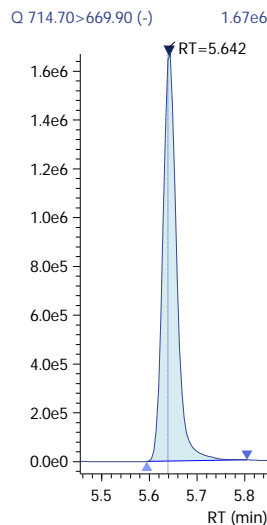
PfTeDA

Conc 0.0150
 Area 62375
 R#1 917.75 (61.49)



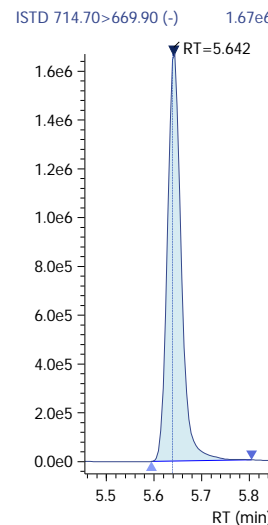
PfTeDA-13C

Conc 5.3372
 Area 3393803

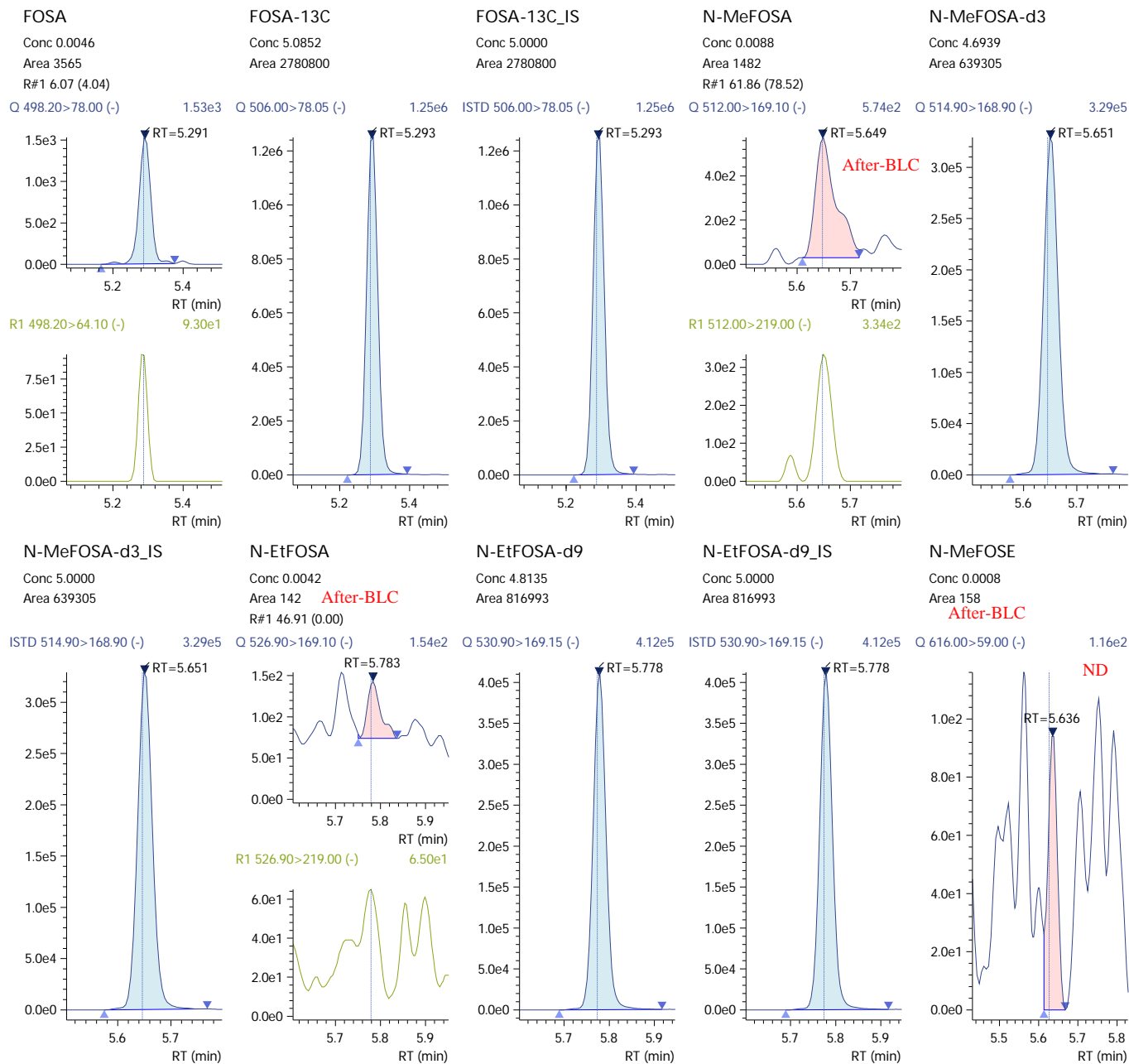


PfTeDA-13C_IS

Conc 5.0000
 Area 3393803



200812_062 (continued)



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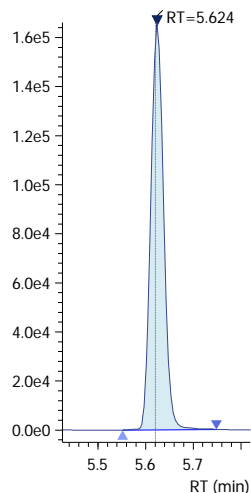
200812_062 (continued)

N-MeFOSE-d7

Conc 4.7760
Area 311012

Q 622.70>59.10 (-)

1.66e5

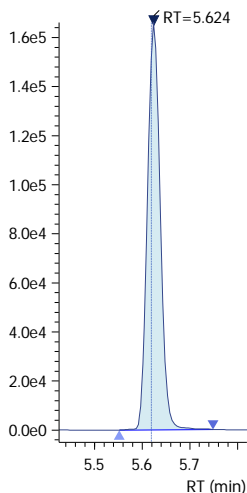


N-MeFOSE-d7_IS

Conc 5.0000
Area 311012

ISTD 622.70>59.10 (-)

1.66e5

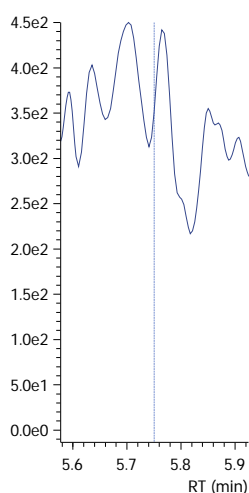


N-EtFOSE

Conc ----
Area ----

Q 630.00>58.90 (-)

4.50e2

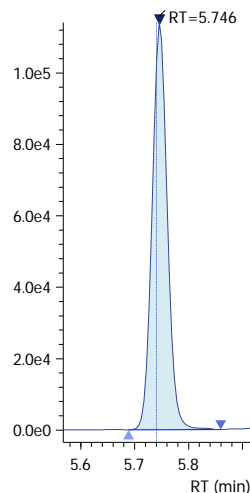


N-EtFOSE-d9

Conc 4.2422
Area 226406

Q 638.70>59.10 (-)

1.14e5

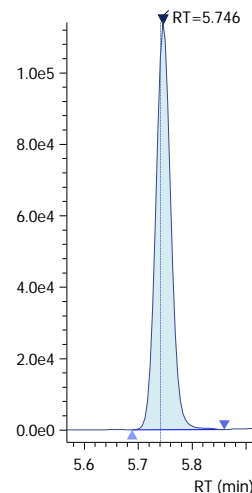


N-EtFOSE-d9_IS

Conc 5.0000
Area 226406

ISTD 638.70>59.10 (-)

1.14e5

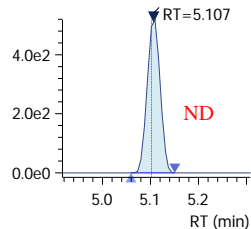


N-MeFOSAA

Conc 0.0131
Area 973
R#1 0.00 (33.47)

Q 570.20>419.00 (-)

5.19e2

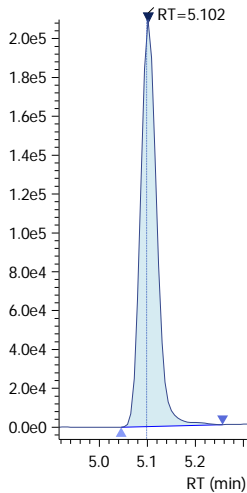


N-MeFOSAA-d3

Conc 4.7952
Area 491310

Q 572.80>419.05 (-)

2.10e5

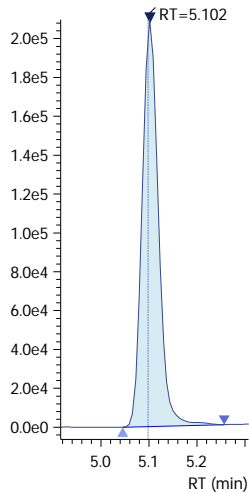


N-MeFOSAA-d3_IS

Conc 5.0000
Area 491310

ISTD 572.80>419.05 (-)

2.10e5

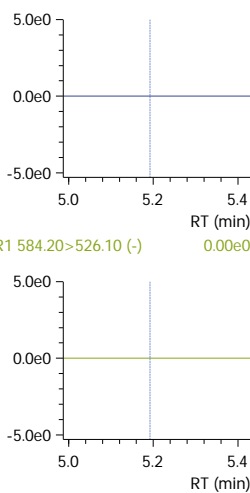


N-EtFOSAA

Conc ----
Area ----
R#1 ---- (83.09)

Q 584.20>418.95 (-)

0.00e0

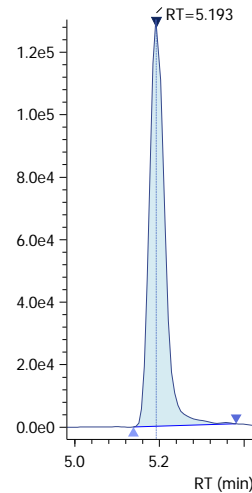


N-EtFOSAA-d5

Conc 4.5539
Area 330709

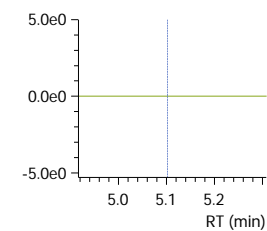
Q 588.80>419.00 (-)

1.30e5



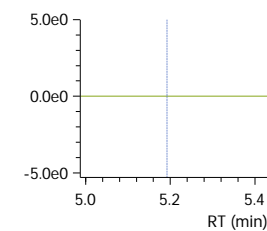
R1 570.20>512.00 (-)

0.00e0



R1 584.20>526.10 (-)

0.00e0



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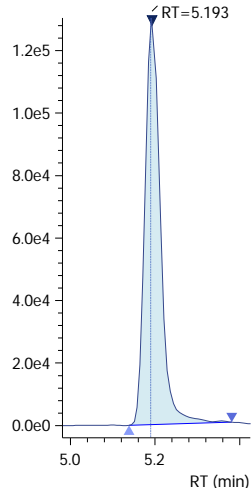
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200812_062 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
Area 330709

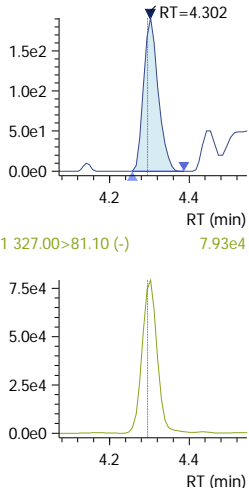
ISTD 588.80>419.00 (-) 1.30e5



4_2-FTS_1

Conc 0.0025
Area 487
R#1 40945.40 (54.93)

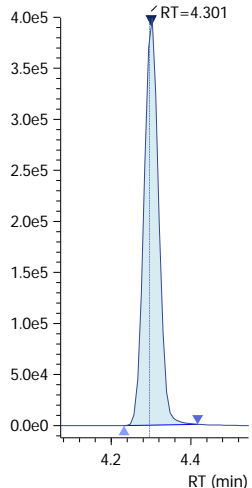
Q 327.00>307.05 (-) 1.91e2



4_2-FTS-13C

Conc 4.8598
Area 1024604

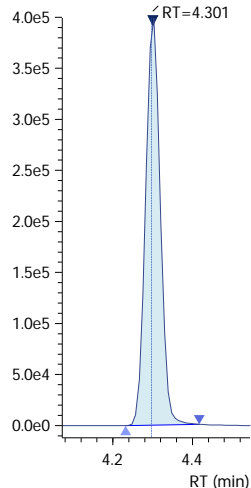
Q 328.80>309.05 (-) 3.99e5



4_2-FTS-13C_IS

Conc 5.0000
Area 1024604

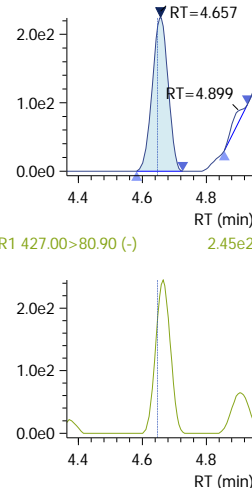
ISTD 328.80>309.05 (-) 3.99e5



6_2-FTS_1

Conc 0.0053
Area 777
R#1 95.95 (36.33)

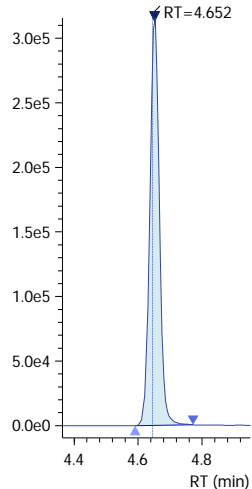
Q 427.00>407.00 (-) 2.24e2



6_2-FTS-13C

Conc 5.8201
Area 663289

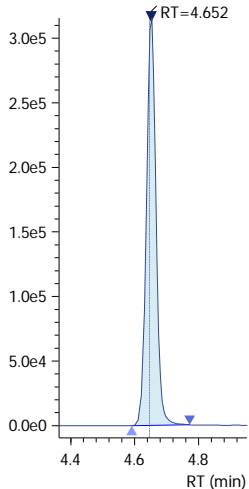
Q 428.90>409.00 (-) 3.16e5



6_2-FTS-13C_IS

Conc 5.0000
Area 663289

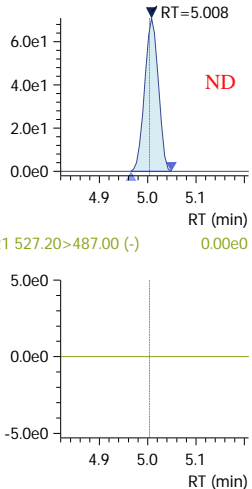
ISTD 428.90>409.00 (-) 3.16e5



8_2-FTS_1

Conc 0.0019
Area 139
R#1 0.00 (8.96)

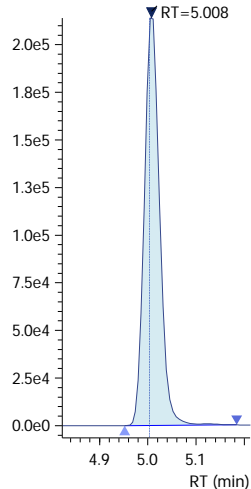
Q 527.10>506.90 (-) 7.10e1



8_2-FTS-13C

Conc 5.4933
Area 473783

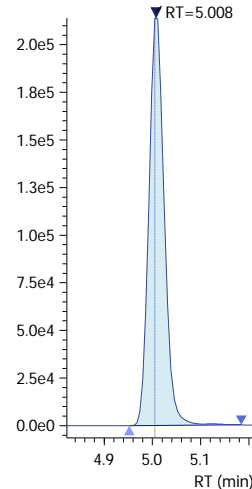
Q 528.80>509.00 (-) 2.14e5



8_2-FTS-13C_IS

Conc 5.0000
Area 473783

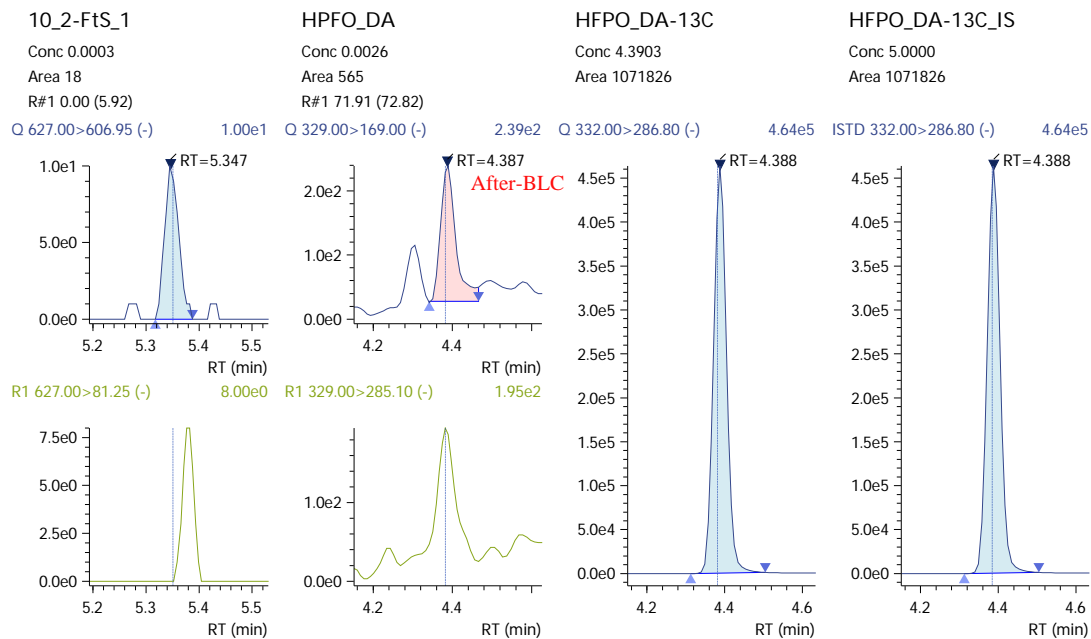
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200812_062 (continued)

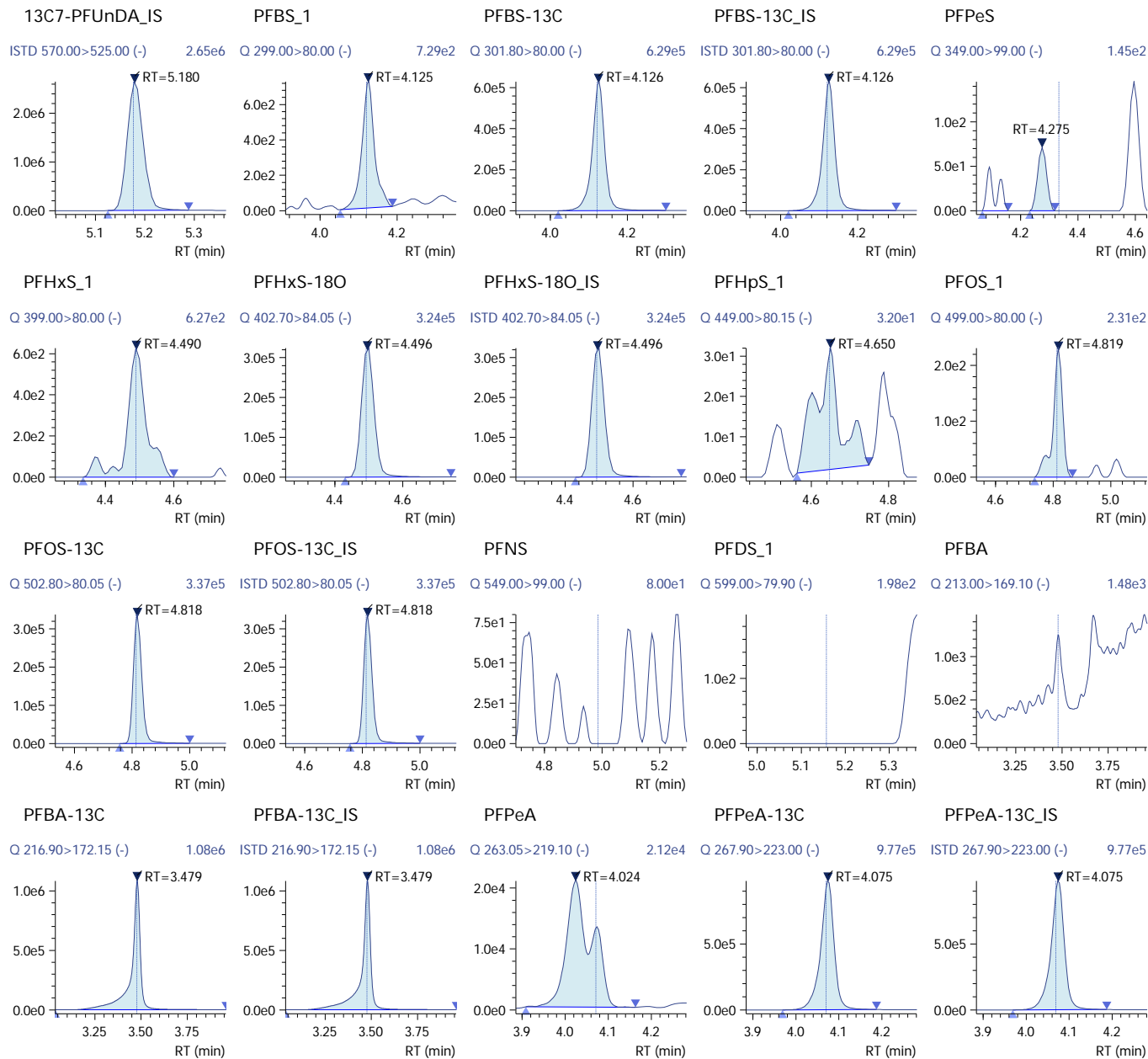


Insight Report

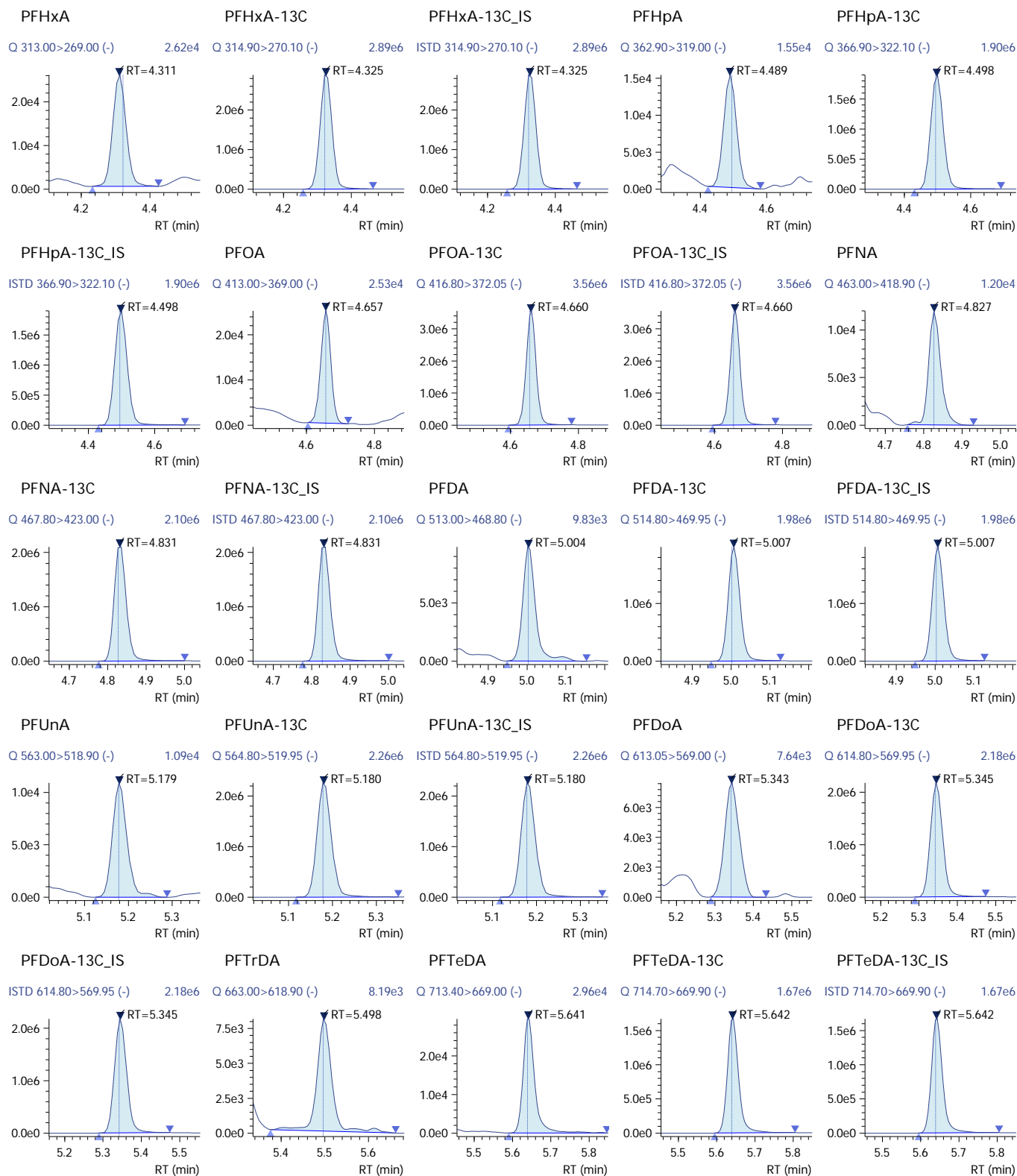
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200812_062

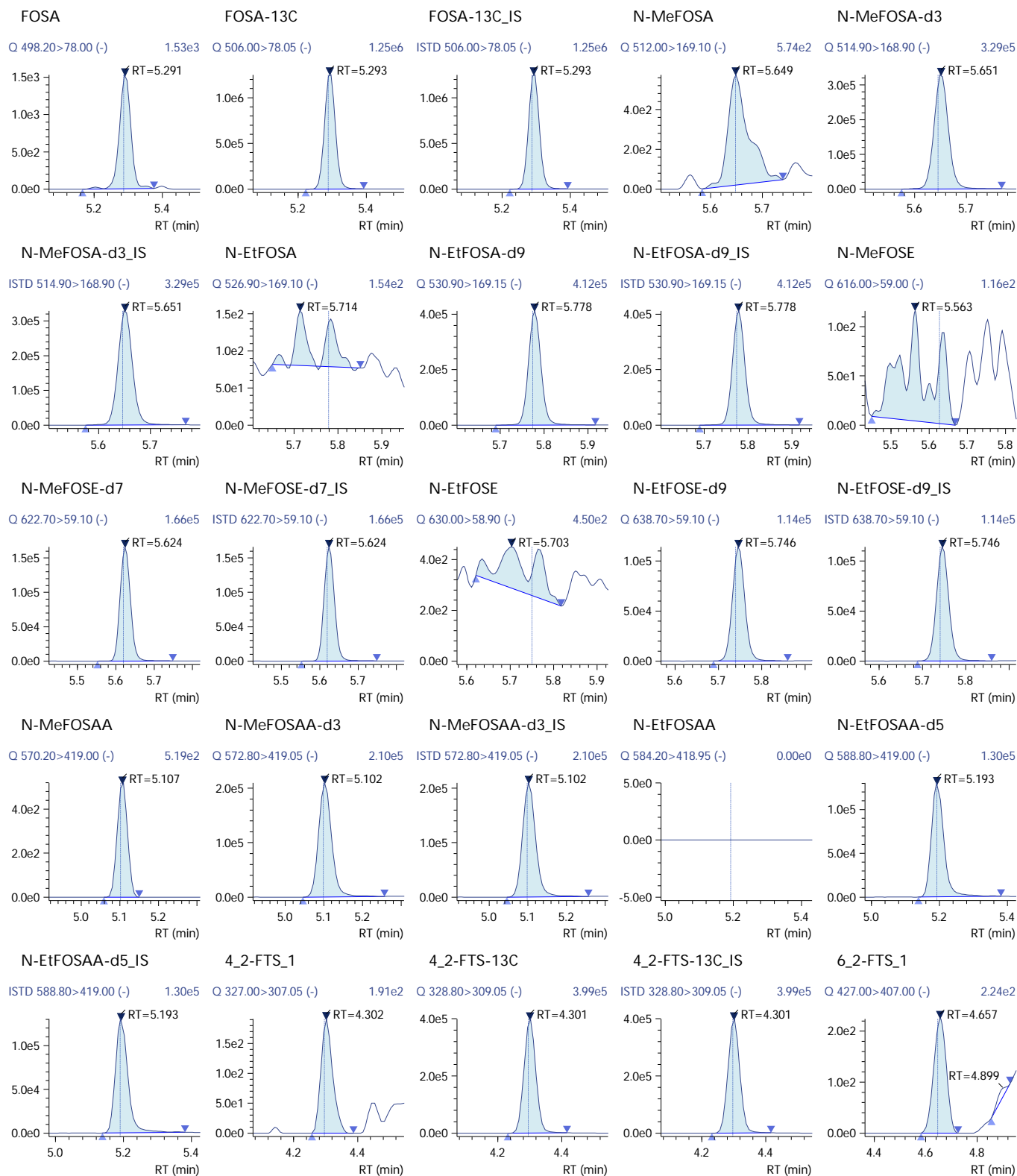
Sample ID: CCB
Date Acquired: 8/12/2020 11:34:07 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_062.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



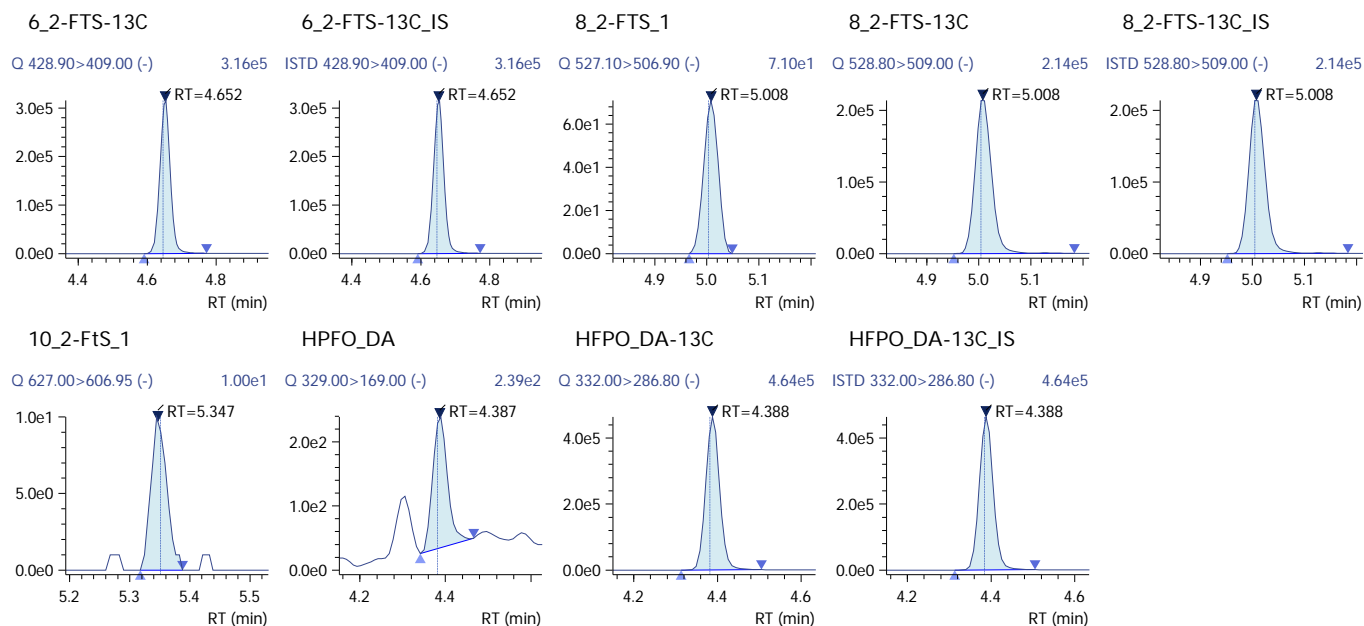
200812_062 (continued)



200812_062 (continued)



200812_062 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_005
Lab ID: KQ2011599-02
RunType: CCB
Matrix: Water

Date Acquired: 8/19/20 14:38
Batch ID: 691718
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery		X
Internal Standards	X	
Surrogates		X
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	18O2-PFHxS	133	70	130	Native ok
Surrogates	18O2-PFHxS	123	26	122	High bias ND

Primary Review: _____

Secondary Review: _____

Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_005
Lab ID: KQ2011599-02
RunType: CCB
Matrix: Water

Date Acquired: 8/19/20 14:38
Batch ID: 691718
Analysis Method: PFC/537M/PFAS_SCREEN

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Continuing Calibration Recovery		X
Internal Standards	X	
Surrogates	X	
Above Highest ICAL Level	X	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	18O2-PFHxS	133	70	130	Native ok

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_005	Instrument: K-LCMS-06
Acqu Date: 8/19/20 14:38	Vial: 3
Run Type: CCB	Dilution: 1
Lab ID: KQ2011599-02	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 691718	Prep Lot:	Report Group: KQ2011599
Analysis: PFC/537M	Prep Method:	
	Prep Date:	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19837

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.179	0.00	5317901	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
18O2-PFHxS	4.494	0.00	767617	6.1402	123	* 26 - 122	Y
13C4-PFOS	4.817	0.00	685310	5.2786	106	25 - 121	Y
13C2-6:2 FTS	4.651	0.00	589698	5.8326	117	10 - 226	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorohexane sulfonic acid (PFHxS)	4.495	+0.00	3643	0.0138	0.44	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.817	0.00	808	0.0048	0.15	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.643	-0.01	1133	0.0088	0.28	U	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

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Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_005	Instrument: K-LCMS-06
Acqu Date: 8/19/20 14:38	Vial: 4
Run Type: CCB	Dilution: 1
Lab ID: KQ2011599-02	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS_SCREEN	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 691718	Prep Lot:	Report Group: KQ2011599
Analysis: PFC/537M	Prep Method:	
	Prep Date:	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 20357

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.179	0.00	5317901	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	% Rec	% Rec Criteria	Rpt?
18O2-PFHxS	4.494	0.00	767617	6.1402	123	70 - 130	Y
13C4-PFOS	4.817	0.00	685310	5.2786	106	70 - 130	Y
13C2-6:2 FTS	4.651	0.00	589698	5.8326	117	70 - 130	Y

Target Compounds

Final Conc.Units: ng/L

Parameter Name	RT	RT Dev	Response	Solution Conc	Final Conc	Q	Rpt?
Perfluorohexane sulfonic acid (PFHxS)	4.495	+0.00	3643	0.0138	140	U	Y
Perfluorooctane sulfonic acid (PFOS)	4.817	0.00	808	0.0048	48	U	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.643	-0.01	1133	0.0088	88	U	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 15:56

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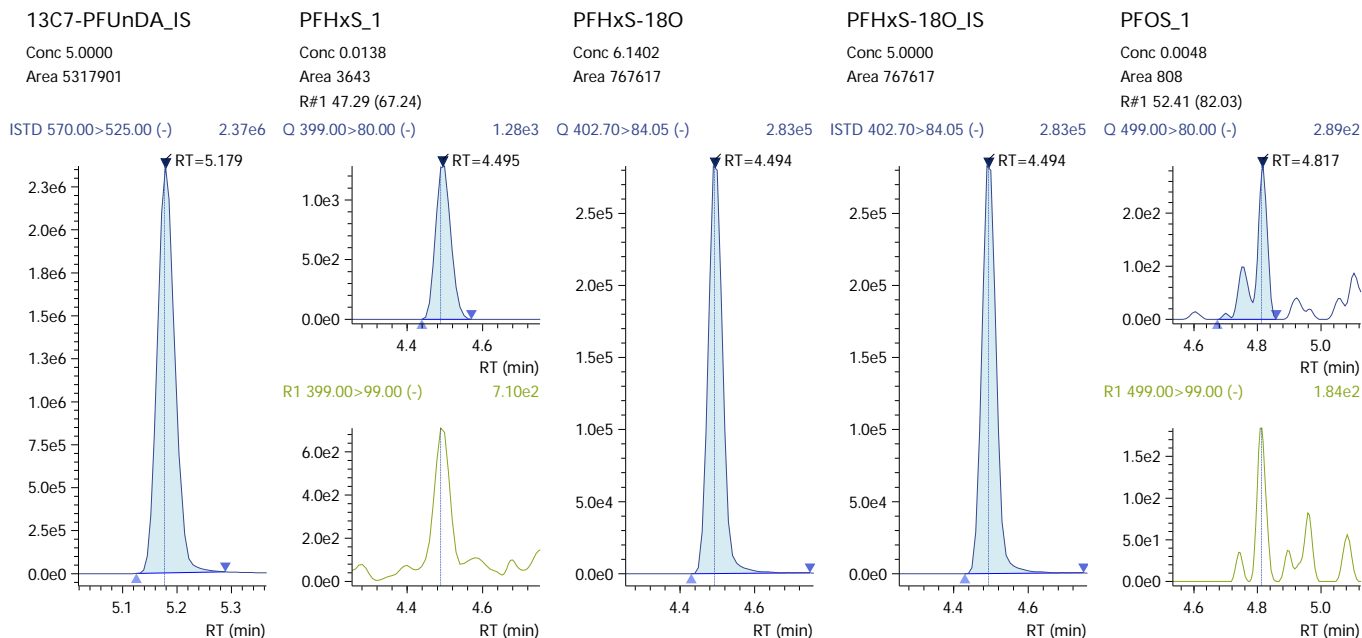
Insight Report

Printed at 8/19/2020 3:31:33 PM

200819_005

Sample ID: CCB
 Date Acquired: 8/19/2020 2:38:24 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200819_b1\200819_005.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.179	5317901	5317901	1	5.0000	ng/mL	----	----
PFHxS_1	Auto	4.495	3643	767617	3	0.0138	ng/mL	----	47.29
PFHxS-18O	Auto	4.494	767617	5317901	1	6.1402	ng/mL	----	----
PFHxS-18O_IS	Auto	4.494	767617	767617	3	5.0000	ng/mL	----	----
PFOS_1	Auto	4.817	808	683336	4	0.0048	ng/mL	----	52.41
PFOS-13C	M	4.817	685310	5317901	1	5.2786	ng/mL	----	----
PFOS-13C_IS	M	4.817	683336	683336	4	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.643	1133	589698	24	0.0088	ng/mL	----	37.83
6_2-FTS-13C	Auto	4.651	589698	5317901	1	5.8326	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.651	589698	589698	24	5.0000	ng/mL	----	----



Insight Report

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200819_005 (continued)

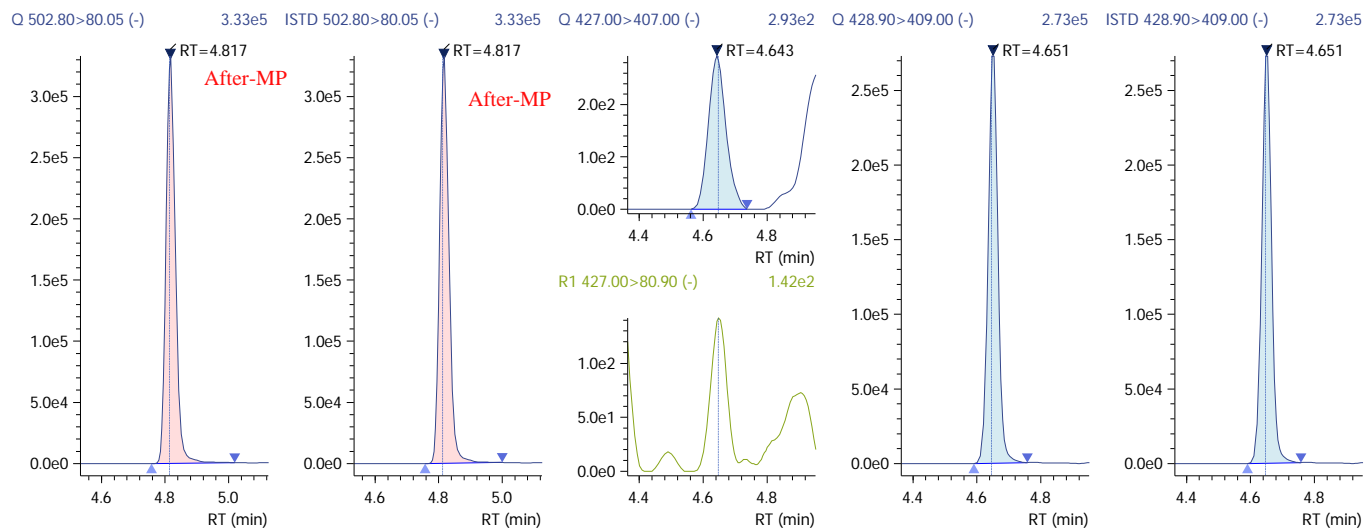
PFOS-13C
Conc 5.2786
Area 685310

PFOS-13C_IS
Conc 5.0000
Area 683336

6_2-FTS_1
Conc 0.0088
Area 1133
R#1 37.83 (36.33)

6_2-FTS-13C
Conc 5.8326
Area 589698

6_2-FTS-13C_IS
Conc 5.0000
Area 589698

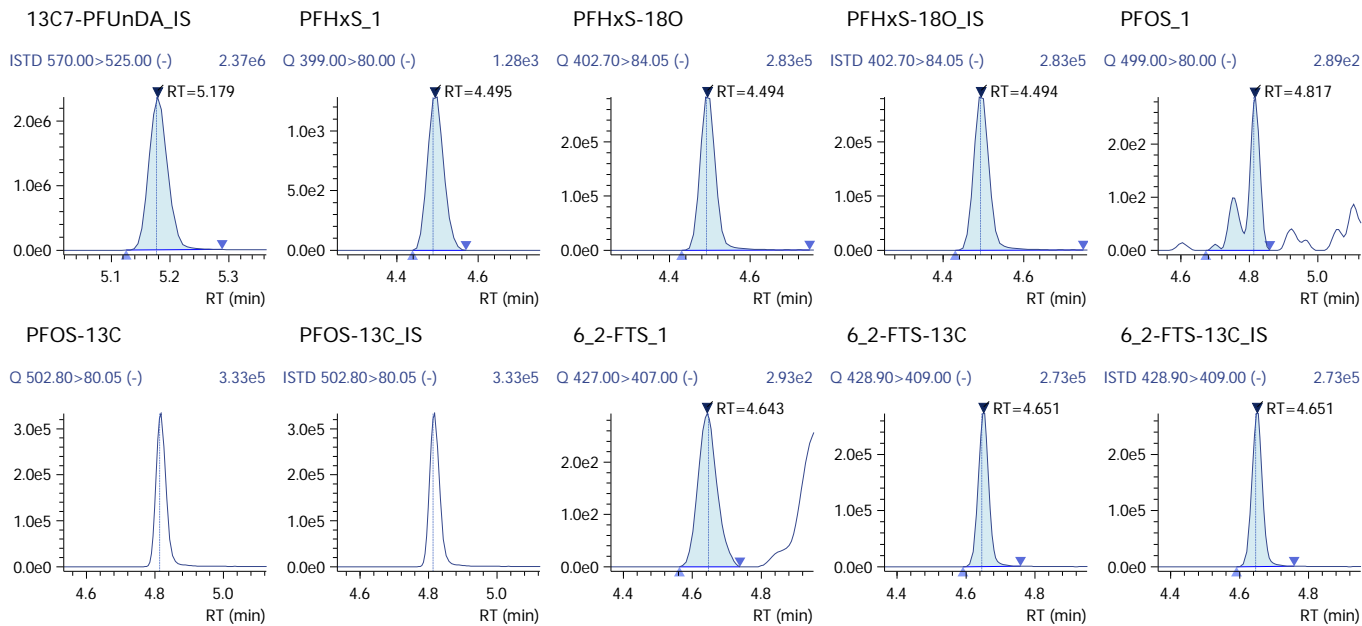


Insight Report

Printed at 8/19/2020 3:29:50 PM

200819_005

Sample ID: CCB
Date Acquired: 8/19/2020 2:38:24 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200819_b1\200819_005.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



Validation Report

1st *CM* 08/19/20
2nd *[Signature]* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_061
Lab ID: KQ2011219-01
RunType: CCV
Matrix: Water

Date Acquired: 8/12/20 23:23
Batch ID: 690911
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Internal Standards	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200812_b3\200812_061	Instrument: K-LCMS-06
Acqu Date: 8/12/20 23:23	Vial: 1
Run Type: CCV	Dilution: 1
Lab ID: KQ2011219-01	Raw Units: ng/mL

Bottle ID:	Tier: II	Matrix: Water
Prod Code: PFAS	Collect Date: 7/31/20	Receive Date: 8/5/20

Analysis Lot: 690911	Prep Lot:	Report Group: KQ2011219
Analysis: PFC/537M	Prep Method:	
	Prep Date:	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 20091

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.179		5669122	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
13C3-PFBS	4.125		1364493	5.0991	Y
18O2-PFHxS	4.496		840960	6.3101	Y
13C4-PFOS	4.817		683726	4.9401	Y
13C4-PFBA	3.478		3494246	4.9310	Y
13C5-PFPeA	4.074		2009941	4.9844	Y
13C2-PFHxA	4.325		6509610	5.2270	Y
13C4-PFHpA	4.497		4762651	5.3501	Y
13C4-PFOA	4.660		6616386	5.2279	Y
13C5-PFNA	4.830		3996552	4.6599	Y
13C2-PFDA	5.006		4052372	5.1009	Y
13C2-PFUnDA	5.180		4571205	4.6911	Y
13C2-PFDoDA	5.344		4596977	4.9025	Y
13C2-PFTeDA	5.641		3122189	5.1918	Y
13C8-FOSA	5.292		2540315	4.9120	Y
D3-MeFOSA	5.651		659775	5.1222	Y
D5-EtFOSA	5.778		836514	5.2114	Y
D7-MeFOSE	5.624		311059	5.0508	Y
D9-EtFOSE	5.746		228234	4.5219	Y
D3-MeFOSAA	5.101		461445	4.7621	Y
D5-EtFOSAA	5.192		311722	4.5387	Y
13C2-4:2 FTS	4.300		980519	4.9175	Y
13C2-6:2 FTS	4.652		573772	5.3235	Y
13C2-8:2 FTS	5.007		397270	4.8704	Y
13C3-HFPO-DA	4.387		1059313	4.5880	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

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Data File: J:\LCMS06\Data\200812_b3\200812_061
 Acqu Date: 8/12/20 23:23
 Run Type: CCV
 Lab ID: KQ2011219-01

Instrument: K-LCMS06 *206* 08/20/20
 Vial: 1
 Dilution: 1
 Raw Units: ng/mL

Target Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
Perfluorobutane sulfonic acid (PFBS)	4.125		277779	0.8829	Y
Perfluoropentane sulfonic acid (PFPeS)	4.337		121880	0.8569	Y
Perfluorohexane sulfonic acid (PFHxS)	4.494		217258	0.7490	Y
Perfluoroheptane sulfonic acid (PFHpS)	4.651		108020	0.7585	Y
Perfluorooctane sulfonic acid (PFOS)	4.817		156163	0.9309	Y
Perfluorononane sulfonic acid (PFNS)	4.988		121705	1.0516	Y
Perfluorodecane sulfonic acid (PFDS)	5.159		227867	1.0040	Y
Perfluorobutanoic acid (PFBA)	3.479		794169	1.0105	Y
Perfluoropentanoic acid (PFPeA)	4.074		1357670	1.0386	Y
Perfluorohexanoic acid (PFHxA)	4.324		1554814	1.0767	Y
Perfluoroheptanoic acid (PFHpA)	4.497		1218283	0.9818	Y
Perfluorooctanoic acid (PFOA)	4.660		1355766	0.9846	Y
Perfluorononanoic acid (PFNA)	4.830		834822	1.0415	Y
Perfluorodecanoic acid (PFDA)	5.006		843042	0.9889	Y
Perfluoroundecanoic acid (PFUnDA)	5.180		919951	1.0348	Y
Perfluorododecanoic acid (PFDoDA)	5.344		825765	1.0996	Y
Perfluorotridecanoic acid (PFTrDA)	5.498		722812	0.9446	Y
Perfluorotetradecanoic acid (PFTeDA)	5.641		434586	1.0132	Y
Perfluorooctane sulfonamide (FOSA)	5.292		707848	0.9906	Y
N-Methyl perfluorooctane sulfonamide (MeFOSA)	5.654		171979	0.9895	Y
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	5.783		34249	0.9991	Y
N-Methyl perfluorooctane sulfonamidoethanol	5.631		188392	0.9762	Y
N-Ethyl perfluorooctane sulfonamidoethanol	5.756		207826	1.1319	Y
N-Methyl perfluorooctane sulfonamidoacetic acid	5.103		71446	1.0244	Y
N-Ethyl perfluorooctane sulfonamidoacetic acid	5.197		38885	1.0744	Y
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	4.300		185274	0.9901	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.652		122430	0.9731	Y
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	5.006		66727	1.1001	Y
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	5.353		45221	0.9594	Y
Hexafluoropropylene oxide dimer acid (HFPO-DA)	4.387		226164	1.0628	Y

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

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Insight Report

Printed at 8/19/2020 10:38:03 AM

Method File: J:\LCMS06\Data\200812_b3\200812_b3.lcm
 Project File: J:\LCMS06\Data\200812_b3\200812_b3.damlp

200812_061

Sample ID: 1.0 PPB CCV
 Date Acquired: 8/12/2020 11:23:21 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_b3\200812_061.lcd
 Vial: 37 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.179	5669122	5669122	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.125	277779	1364493	2	0.8829	ng/mL	0.8874	57.29
PFBS-13C	Auto	4.125	1364493	5669122	1	5.0991	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.125	1364493	1364493	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.337	121880	1364493	2	0.8569	ng/mL	0.9409	166.35
PFHxS_1	Auto	4.494	217258	840960	3	0.7490	ng/mL	0.9131	69.23
PFHxS-18O	Auto	4.496	840960	5669122	1	6.3101	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.496	840960	840960	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.651	108020	840960	3	0.7585	ng/mL	0.9534	60.57
PFOS_1	Auto	4.817	156163	683726	4	0.9309	ng/mL	0.9292	84.40
PFOS-13C	Auto	4.817	683726	5669122	1	4.9401	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.817	683726	683726	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.988	121705	683726	4	1.0516	ng/mL	0.9616	148.03
PFDS_1	Auto	5.159	227867	683726	4	1.0040	ng/mL	0.9647	59.02
PFBA	Auto	3.479	794169	3494246	5	1.0105	ng/mL	1.0000	----
PFBA-13C	Auto	3.478	3494246	5669122	1	4.9310	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.478	3494246	3494246	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.074	1357670	2009941	6	1.0386	ng/mL	1.0000	----
PFPeA-13C	Auto	4.074	2009941	5669122	1	4.9844	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.074	2009941	2009941	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.324	1554814	6509610	7	1.0767	ng/mL	1.0000	4.34
PFHxA-13C	Auto	4.325	6509610	5669122	1	5.2270	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.325	6509610	6509610	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.497	1218283	4762651	8	0.9818	ng/mL	1.0000	23.79
PFHpA-13C	Auto	4.497	4762651	5669122	1	5.3501	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.497	4762651	4762651	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.660	1355766	6616386	9	0.9846	ng/mL	1.0000	35.16
PFOA-13C	Auto	4.660	6616386	5669122	1	5.2279	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.660	6616386	6616386	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.830	834822	3996552	10	1.0415	ng/mL	1.0000	21.98
PFNA-13C	Auto	4.830	3996552	5669122	1	4.6599	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.830	3996552	3996552	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.006	843042	4052372	11	0.9889	ng/mL	1.0000	24.21
PFDA-13C	Auto	5.006	4052372	5669122	1	5.1009	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.006	4052372	4052372	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.180	919951	4571205	12	1.0348	ng/mL	1.0000	12.29
PFUnA-13C	Auto	5.180	4571205	5669122	1	4.6911	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.180	4571205	4571205	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.344	825765	4596977	13	1.0996	ng/mL	1.0000	19.77
PFDaA-13C	Auto	5.344	4596977	5669122	1	4.9025	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.344	4596977	4596977	13	5.0000	ng/mL	5.0000	----
PFTrDA	Auto	5.498	722812	3122189	14	0.9446	ng/mL	1.0000	19.22
PFTeDA	Auto	5.641	434586	3122189	14	1.0132	ng/mL	1.0000	152.12
PFTeDA-13C	Auto	5.641	3122189	5669122	1	5.1918	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.641	3122189	3122189	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.292	707848	2540315	16	0.9906	ng/mL	1.0000	4.10
FOSA-13C	Auto	5.292	2540315	5669122	1	4.9120	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.292	2540315	2540315	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.654	171979	659775	17	0.9895	ng/mL	1.0000	76.03
N-MeFOSA-d3	Auto	5.651	659775	5669122	1	5.1222	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.651	659775	659775	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.783	34249	836514	18	0.9991	ng/mL	1.0000	73.77
N-EtFOSA-d9	Auto	5.778	836514	5669122	1	5.2114	ng/mL	5.0000	----

Insight Report

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200812_061 (continued)

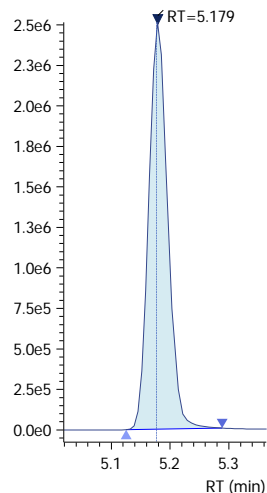
(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-EtFOSA-d9_IS	Auto	5.778	836514	836514	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.631	188392	311059	19	0.9762	ng/mL	1.0000	----
N-MeFOSE-d7	Auto	5.624	311059	5669122	1	5.0508	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.624	311059	311059	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.756	207826	228234	20	1.1319	ng/mL	1.0000	----
N-EtFOSE-d9	Auto	5.746	228234	5669122	1	4.5219	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.746	228234	228234	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	M	5.103	71446	461445	21	1.0244	ng/mL	1.0000	28.15
N-MeFOSAA-d3	Auto	5.101	461445	5669122	1	4.7621	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.101	461445	461445	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	M	5.197	38885	311722	22	1.0744	ng/mL	1.0000	78.04
N-EtFOSAA-d5	Auto	5.192	311722	5669122	1	4.5387	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.192	311722	311722	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.300	185274	980519	23	0.9901	ng/mL	0.9372	137.79
4_2-FTS-13C	Auto	4.300	980519	5669122	1	4.9175	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.300	980519	980519	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.652	122430	573772	24	0.9731	ng/mL	0.9512	36.84
6_2-FTS-13C	Auto	4.652	573772	5669122	1	5.3235	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.652	573772	573772	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.006	66727	397270	25	1.1001	ng/mL	0.9600	9.18
8_2-FTS-13C	Auto	5.007	397270	5669122	1	4.8704	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.007	397270	397270	25	5.0000	ng/mL	5.0000	----
10_2-FIS_1	Auto	5.353	45221	397270	25	0.9594	ng/mL	0.9662	5.71
HPFO_DA	Auto	4.387	226164	1059313	26	1.0628	ng/mL	1.0000	81.78
HFPO_DA-13C	Auto	4.387	1059313	5669122	1	4.5880	ng/mL	5.0000	----
HFPO_DA-13C_IS	Auto	4.387	1059313	1059313	26	5.0000	ng/mL	5.0000	----

13C7-PFUnDA_IS

Conc 5.0000
Area 5669122

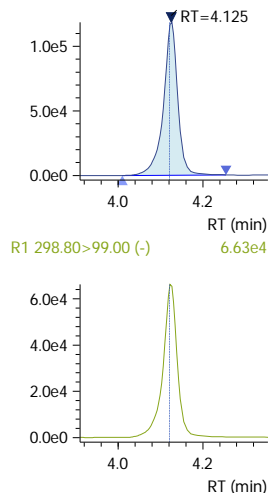
ISTD 570.00>525.00 (-)



PFBS_1

Conc 0.8829
Area 277779
R#1 57.29 (56.85)

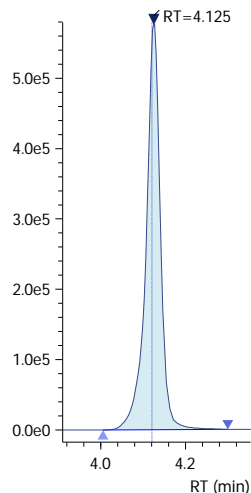
Q 299.00>80.00 (-)



PFBS-13C

Conc 5.0991
Area 1364493

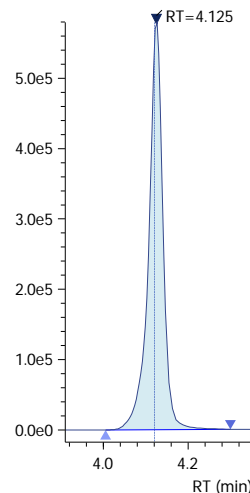
Q 301.80>80.00 (-)



PFBS-13C_IS

Conc 5.0000
Area 1364493

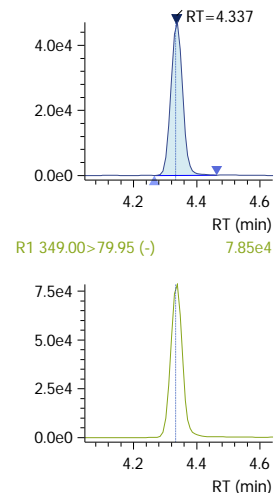
ISTD 301.80>80.00 (-)



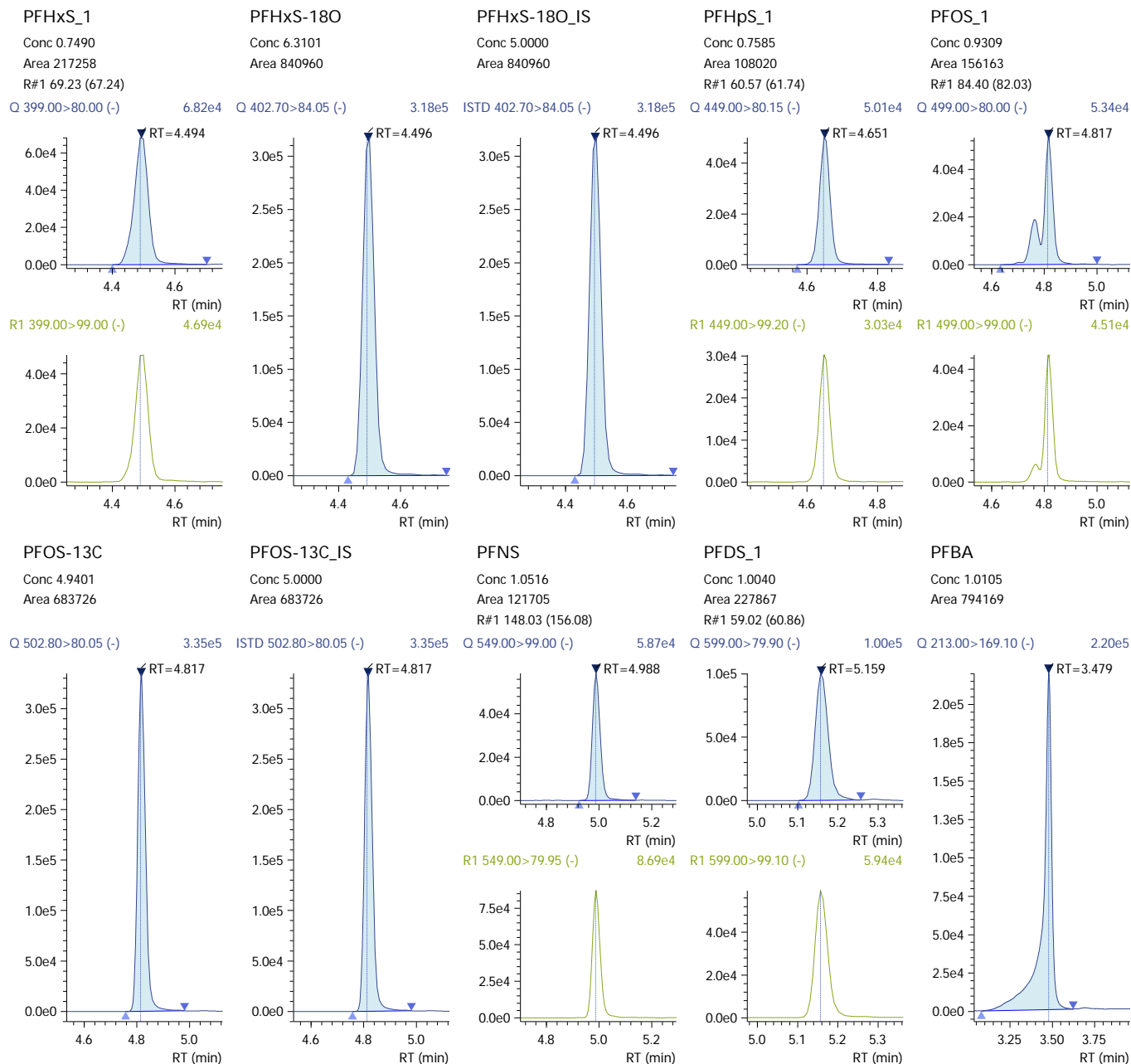
PFPeS

Conc 0.8569
Area 121880
R#1 166.35 (155.17)

Q 349.00>99.00 (-)



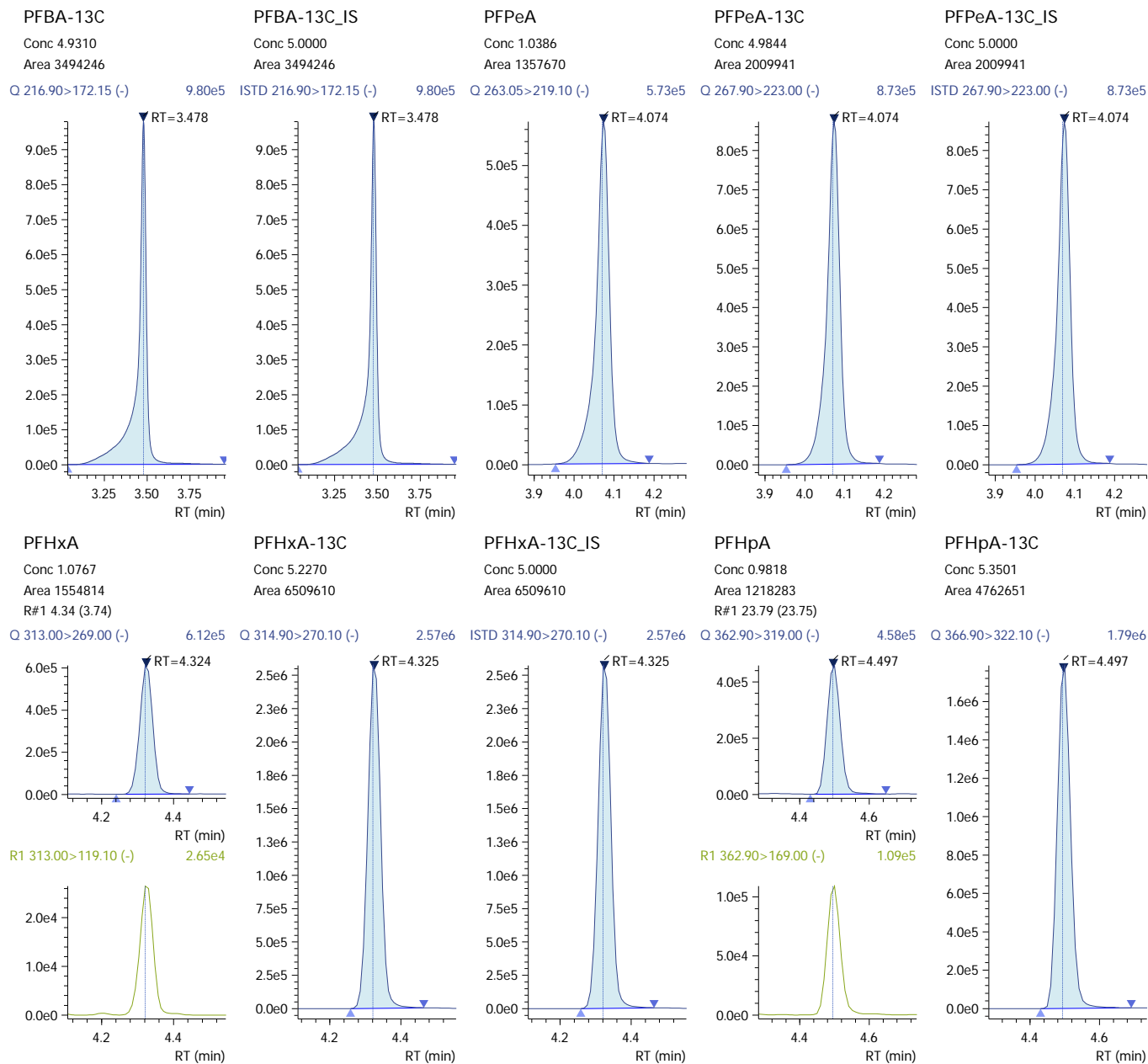
200812_061 (continued)



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200812_061 (continued)



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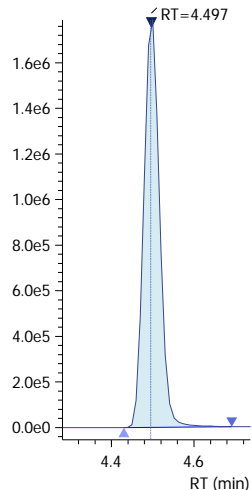
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200812_061 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 4762651

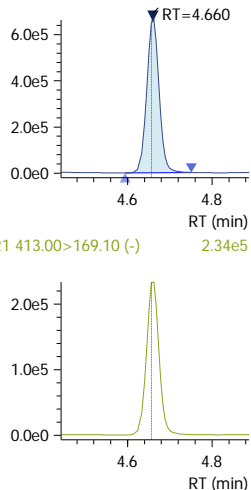
ISTD 366.90>322.10 (-) 1.79e6



PFOA

Conc 0.9846
Area 1355766
R#1 35.16 (34.80)

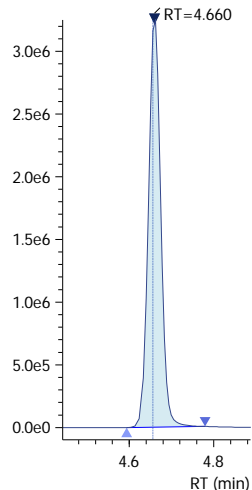
Q 413.00>369.00 (-) 6.64e5



PFOA-13C

Conc 5.2279
Area 6616386

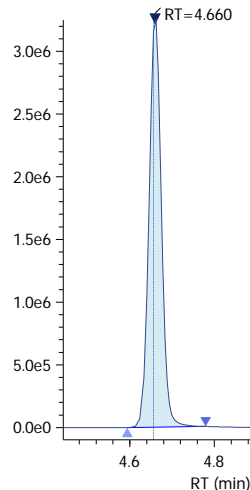
Q 416.80>372.05 (-) 3.25e6



PFOA-13C_IS

Conc 5.0000
Area 6616386

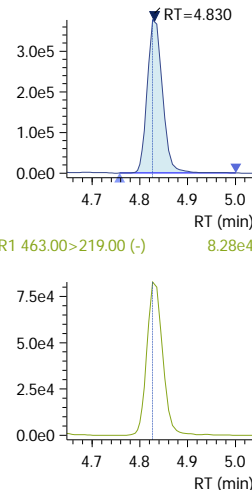
ISTD 416.80>372.05 (-) 3.25e6



PFNA

Conc 1.0415
Area 834822
R#1 21.98 (22.71)

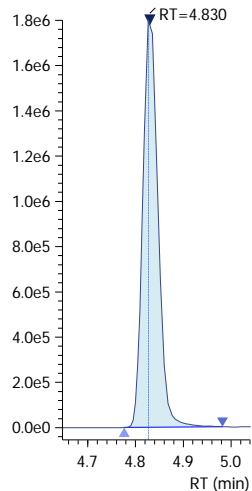
Q 463.00>418.90 (-) 3.77e5



PFNA-13C

Conc 4.6599
Area 3996552

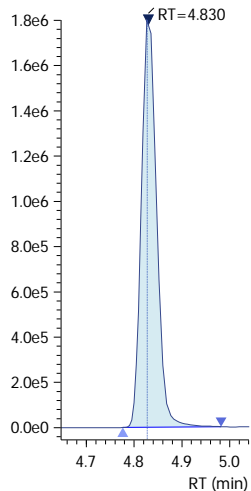
Q 467.80>423.00 (-) 1.80e6



PFNA-13C_IS

Conc 5.0000
Area 3996552

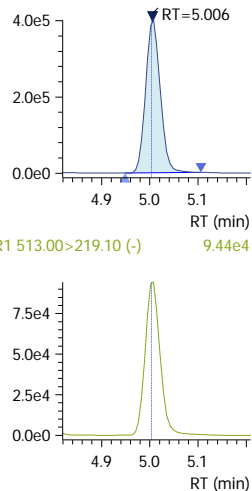
ISTD 467.80>423.00 (-) 1.80e6



PFDA

Conc 0.9889
Area 843042
R#1 24.21 (22.06)

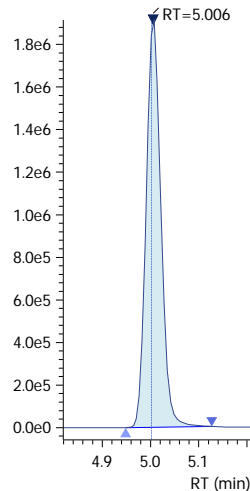
Q 513.00>468.80 (-) 4.02e5



PFDA-13C

Conc 5.1009
Area 4052372

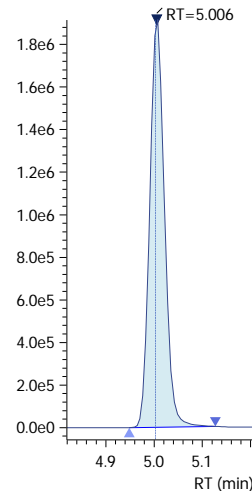
Q 514.80>469.95 (-) 1.91e6



PFDA-13C_IS

Conc 5.0000
Area 4052372

ISTD 514.80>469.95 (-) 1.91e6

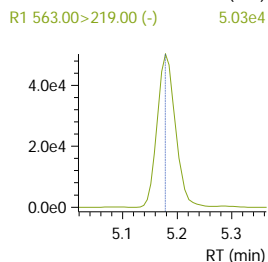
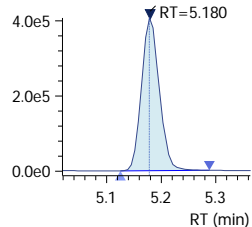


200812_061 (continued)

PFUnA

Conc 1.0348
Area 919951
R#1 12.29 (13.66)

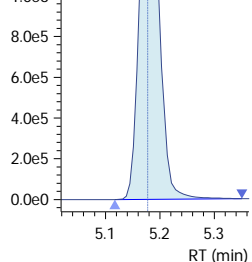
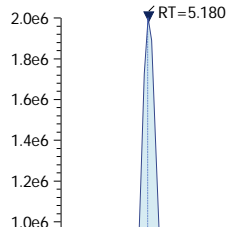
Q 563.00>518.90 (-) 4.08e5



PFUnA-13C

Conc 4.6911
Area 4571205

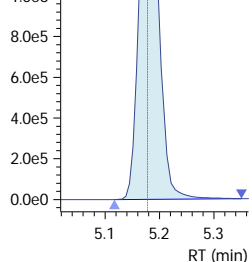
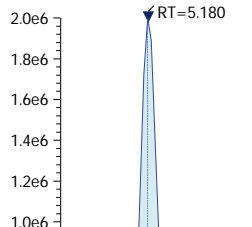
Q 564.80>519.95 (-) 2.00e6



PFUnA-13C_IS

Conc 5.0000
Area 4571205

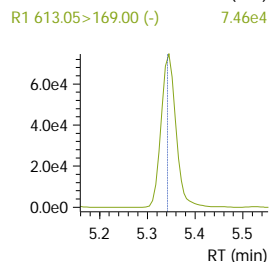
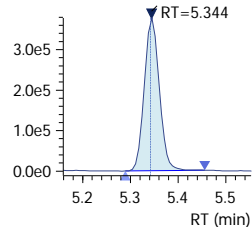
ISTD 564.80>519.95 (-) 2.00e6



PFDaA

Conc 1.0996
Area 825765
R#1 19.77 (21.98)

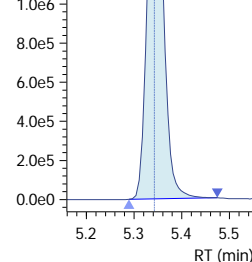
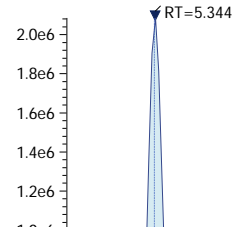
Q 613.05>569.00 (-) 3.78e5



PFDaA-13C

Conc 4.9025
Area 4596977

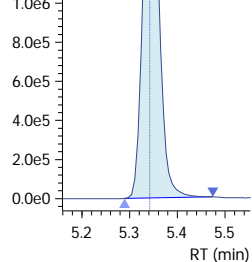
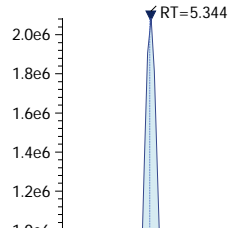
Q 614.80>569.95 (-) 2.09e6



PFDaA-13C_IS

Conc 5.0000
Area 4596977

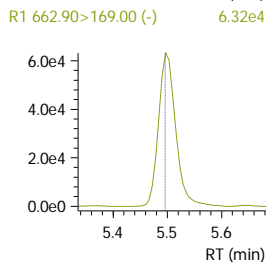
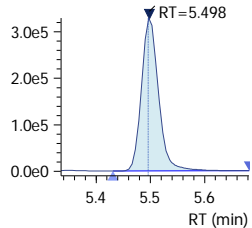
ISTD 614.80>569.95 (-) 2.09e6



PFTrDA

Conc 0.9446
Area 722812
R#1 19.22 (19.20)

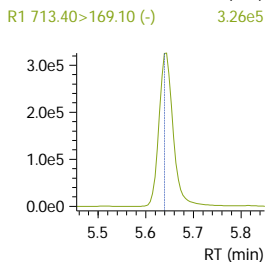
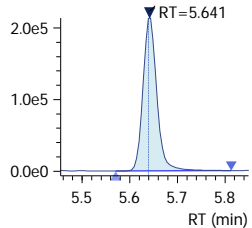
Q 663.00>618.90 (-) 3.30e5



PFTeDA

Conc 1.0132
Area 434586
R#1 152.12 (61.49)

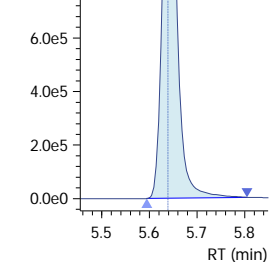
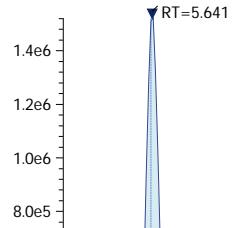
Q 713.40>669.00 (-) 2.14e5



PFTeDA-13C

Conc 5.1918
Area 3122189

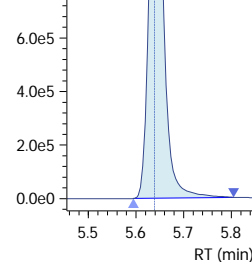
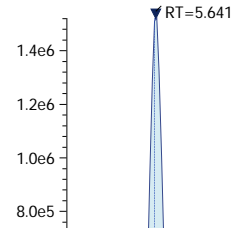
Q 714.70>669.90 (-) 1.52e6



PFTeDA-13C_IS

Conc 5.0000
Area 3122189

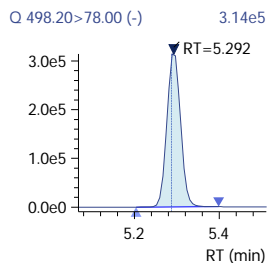
ISTD 714.70>669.90 (-) 1.52e6



200812_061 (continued)

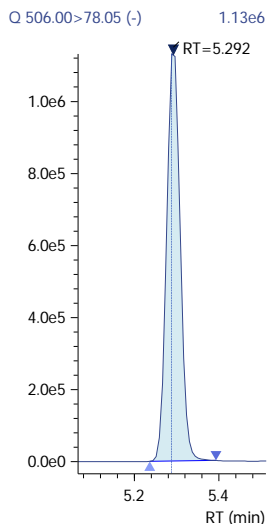
FOSA

Conc 0.9906
 Area 707848
 R#1 4.10 (4.04)



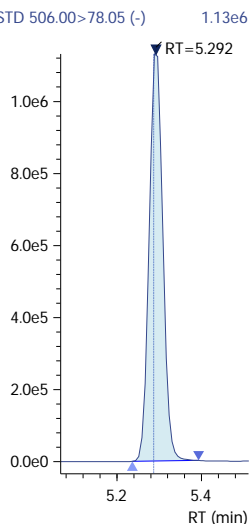
FOSA-13C

Conc 4.9120
 Area 2540315



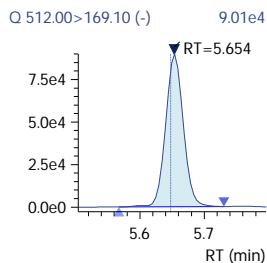
FOSA-13C_IS

Conc 5.0000
 Area 2540315



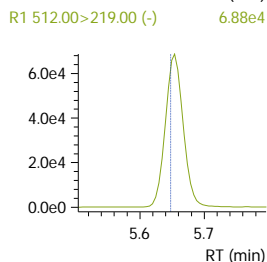
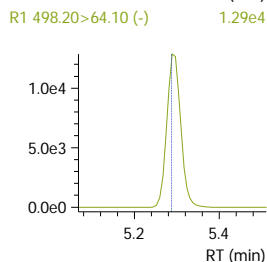
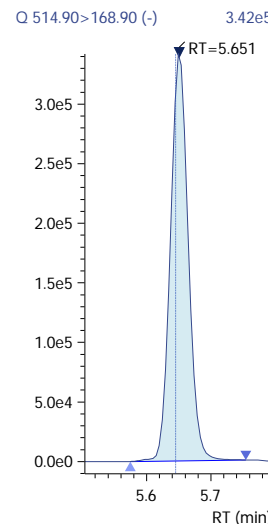
N-MeFOSA

Conc 0.9895
 Area 171979
 R#1 76.03 (78.52)



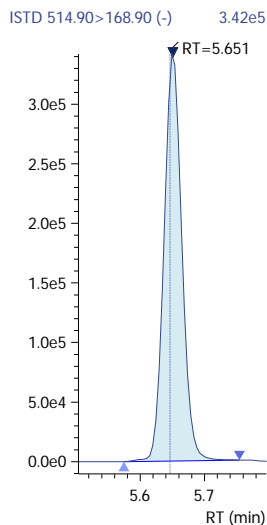
N-MeFOSA-d3

Conc 5.1222
 Area 659775



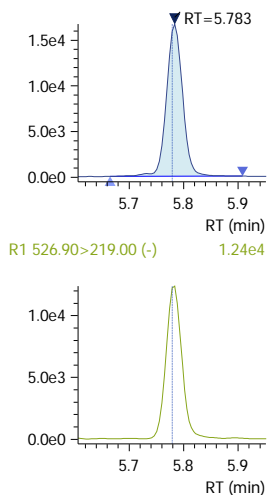
N-MeFOSA-d3_IS

Conc 5.0000
 Area 659775



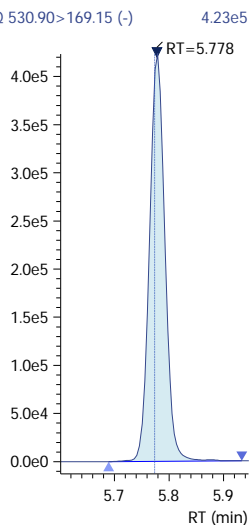
N-EtFOSA

Conc 0.9991
 Area 34249
 R#1 73.77 (0.00)



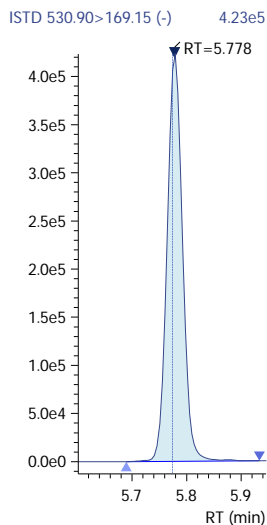
N-EtFOSA-d9

Conc 5.2114
 Area 836514



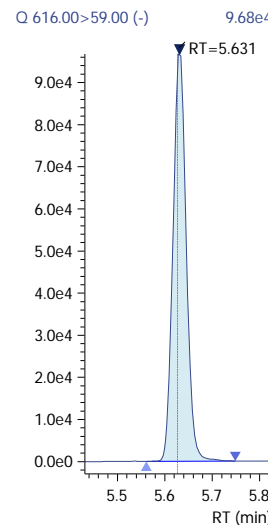
N-EtFOSA-d9_IS

Conc 5.0000
 Area 836514



N-MeFOSE

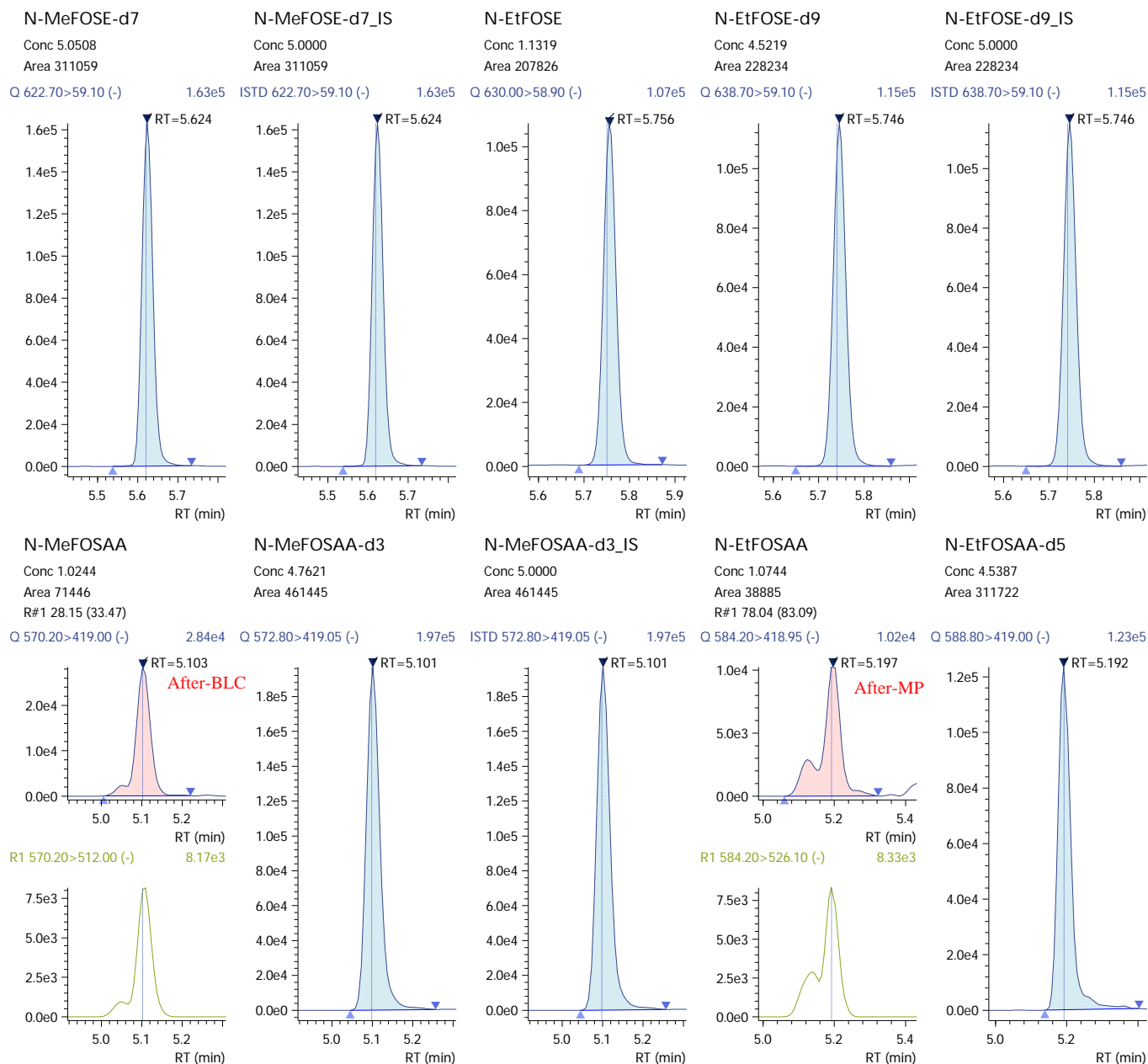
Conc 0.9762
 Area 188392



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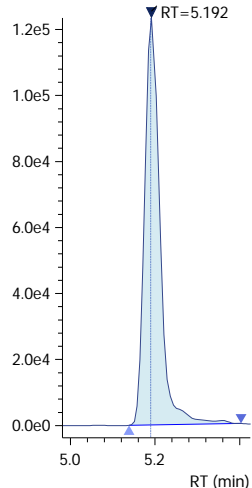
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N-EtFOSAA-d5_IS

Conc 5.0000
Area 311722

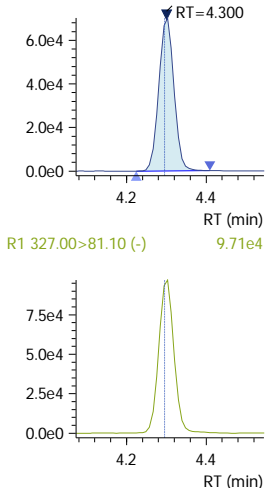
ISTD 588.80>419.00 (-) 1.23e5



4_2-FTS_1

Conc 0.9901
Area 185274
R#1 137.79 (54.93)

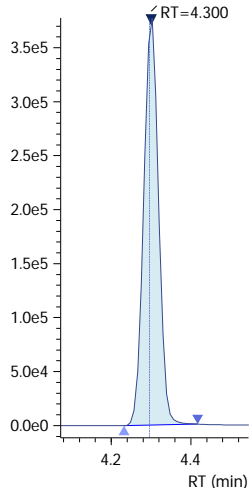
Q 327.00>307.05 (-) 7.03e4



4_2-FTS-13C

Conc 4.9175
Area 980519

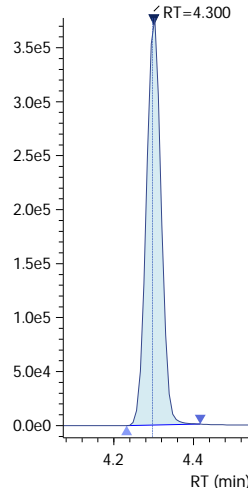
Q 328.80>309.05 (-) 3.78e5



4_2-FTS-13C_IS

Conc 5.0000
Area 980519

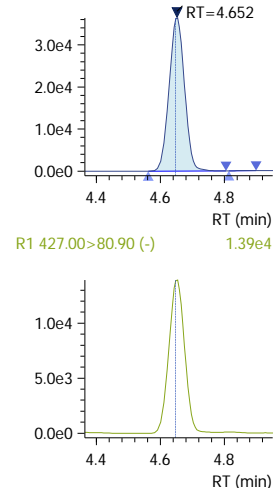
ISTD 328.80>309.05 (-) 3.78e5



6_2-FTS_1

Conc 0.9731
Area 122430
R#1 36.84 (36.33)

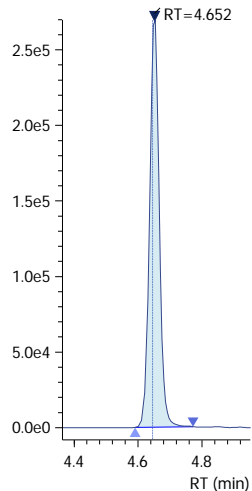
Q 427.00>407.00 (-) 3.64e4



6_2-FTS-13C

Conc 5.3235
Area 573772

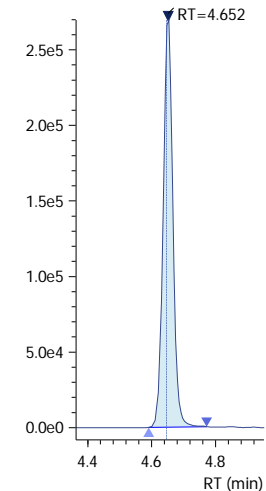
Q 428.90>409.00 (-) 2.70e5



6_2-FTS-13C_IS

Conc 5.0000
Area 573772

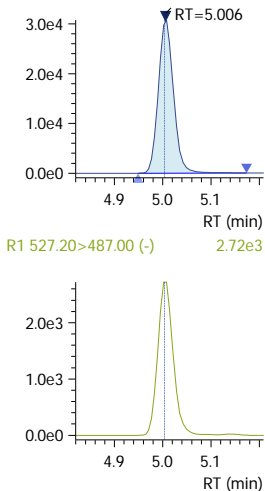
ISTD 428.90>409.00 (-) 2.70e5



8_2-FTS_1

Conc 1.1001
Area 66727
R#1 9.18 (8.96)

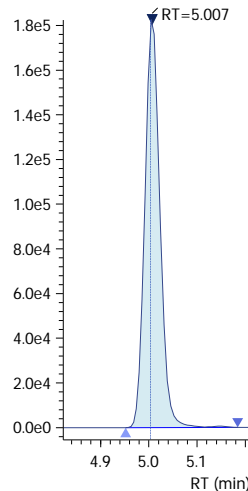
Q 527.10>506.90 (-) 3.08e4



8_2-FTS-13C

Conc 4.8704
Area 397270

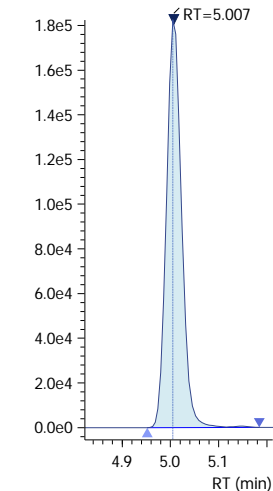
Q 528.80>509.00 (-) 1.82e5



8_2-FTS-13C_IS

Conc 5.0000
Area 397270

ISTD 528.80>509.00 (-) 1.82e5



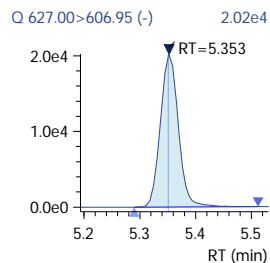
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200812_061 (continued)

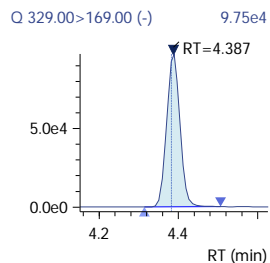
10_2-FtS_1

Conc 0.9594
Area 45221
R#1 5.71 (5.92)



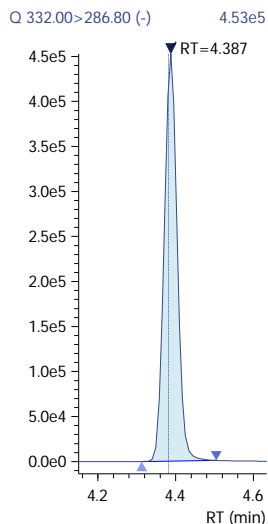
HPFO_DA

Conc 1.0628
Area 226164
R#1 81.78 (72.82)



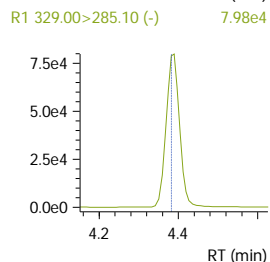
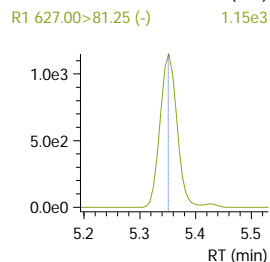
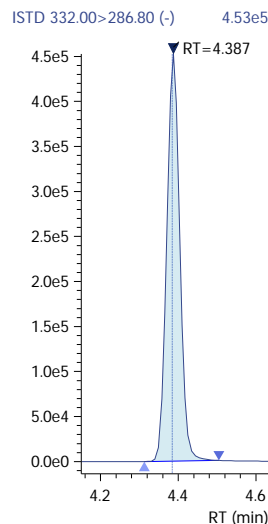
HPFO_DA-13C

Conc 4.5880
Area 1059313



HPFO_DA-13C_IS

Conc 5.0000
Area 1059313



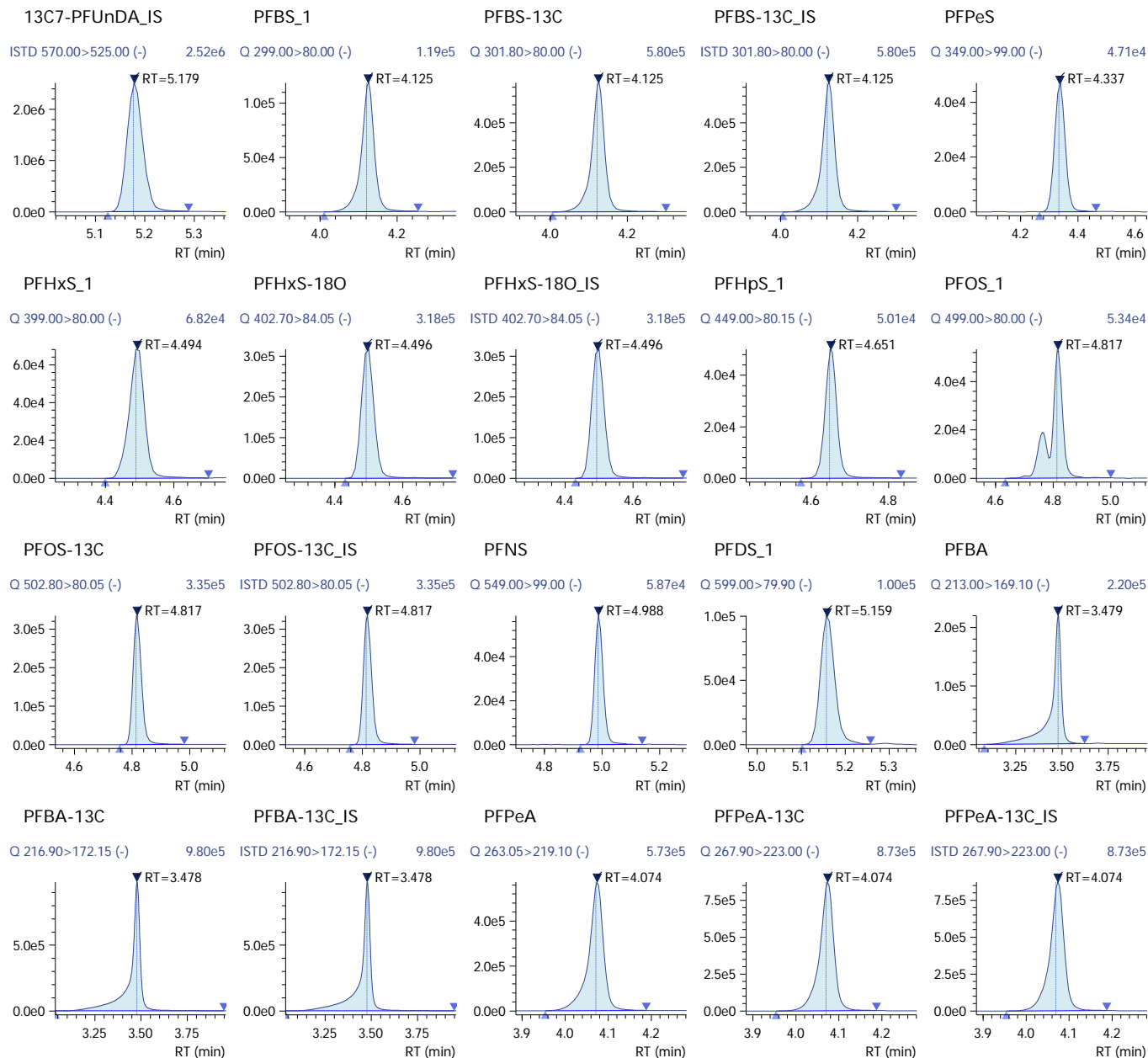
Insight Report

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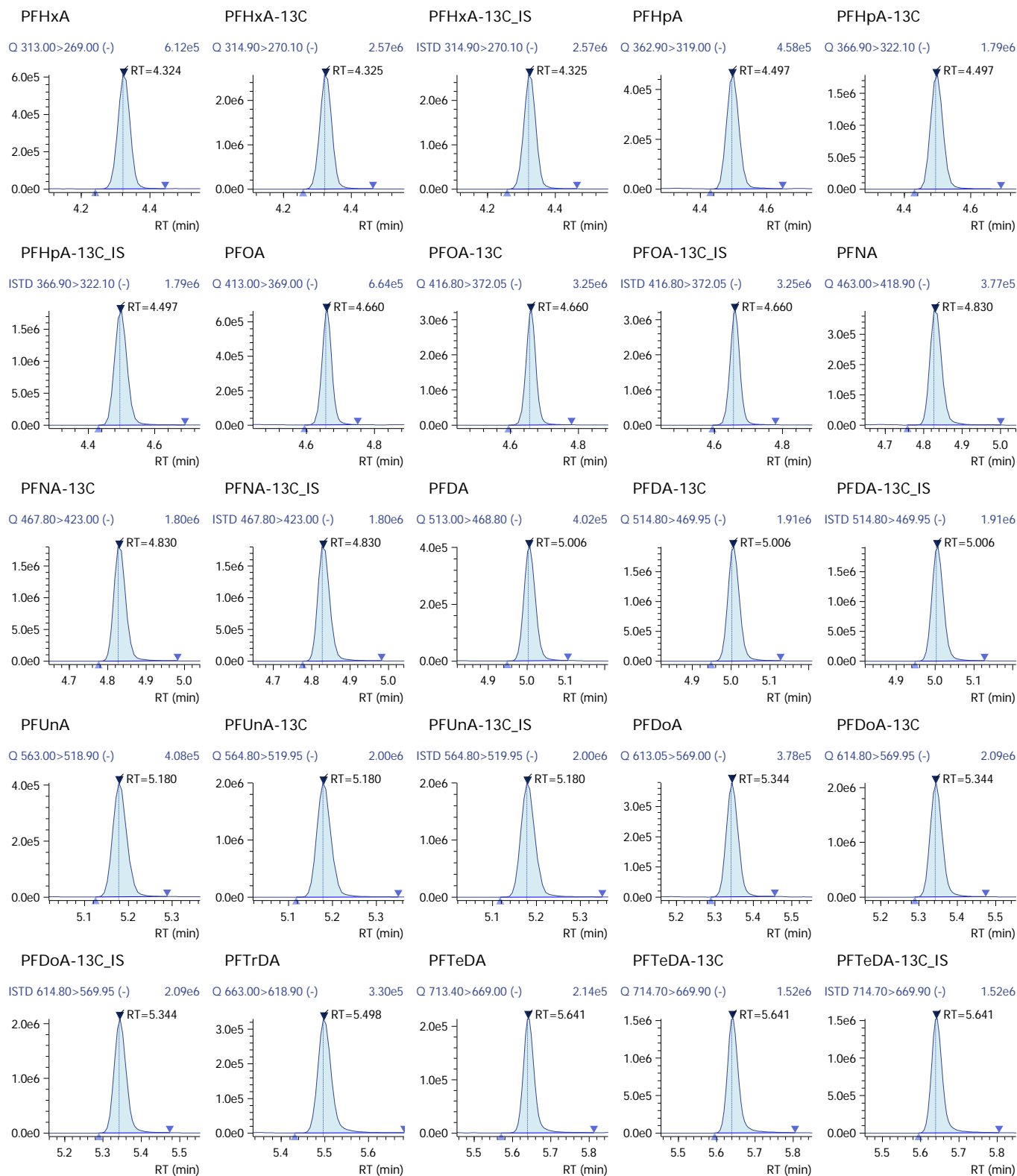
Method File: J:\LCMS06\Data\200812_b3\200812_b3.lcm
Project File: J:\LCMS06\Data\200812_b3\200812_b3.damp

200812_061

Sample ID: 1.0 PPB CCV
Date Acquired: 8/12/2020 11:23:21 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_b3\200812_061.lcd
Vial: 37 | Inj. Volume: 15.0000uL | Tray: 1



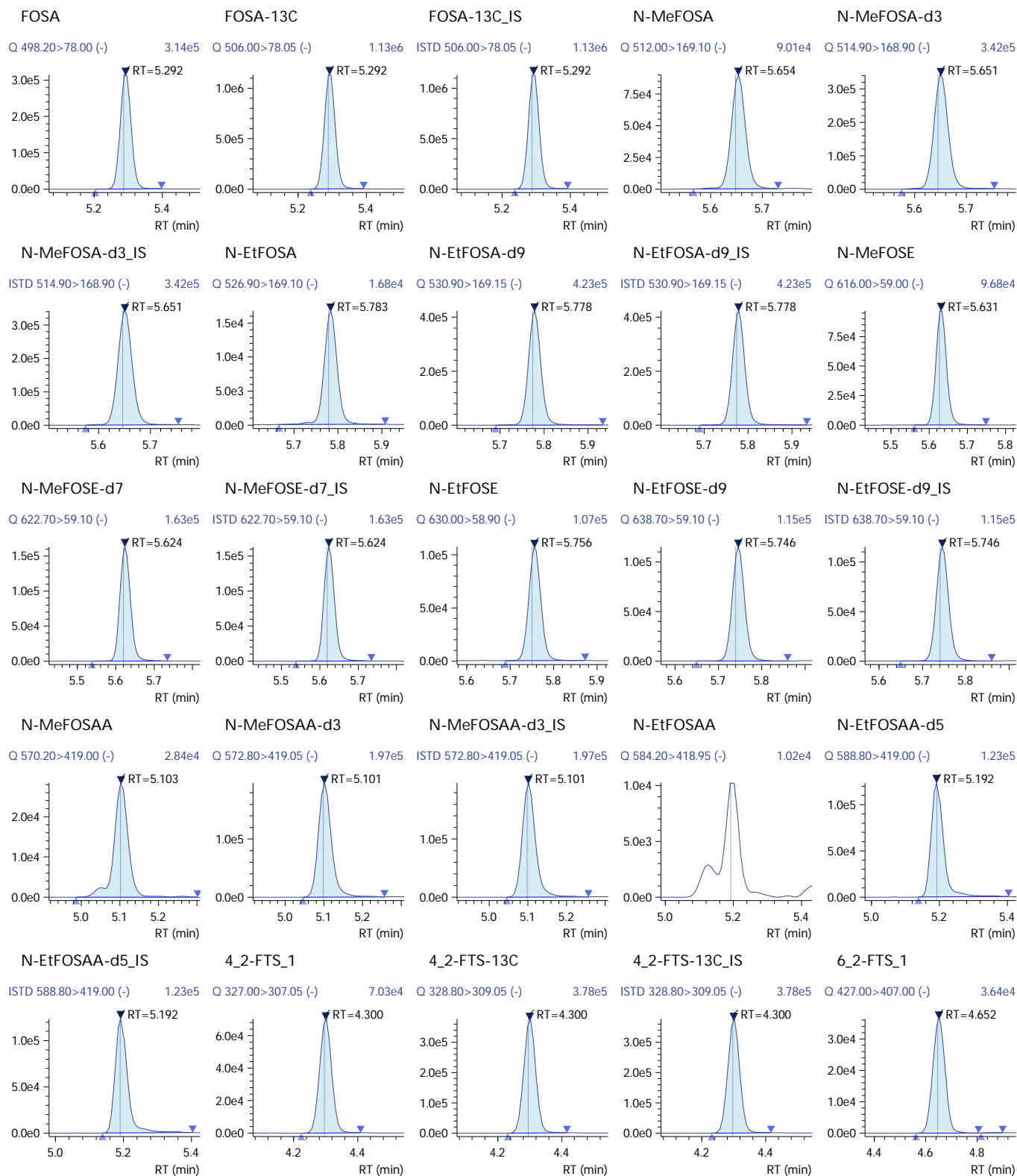
200812_061 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

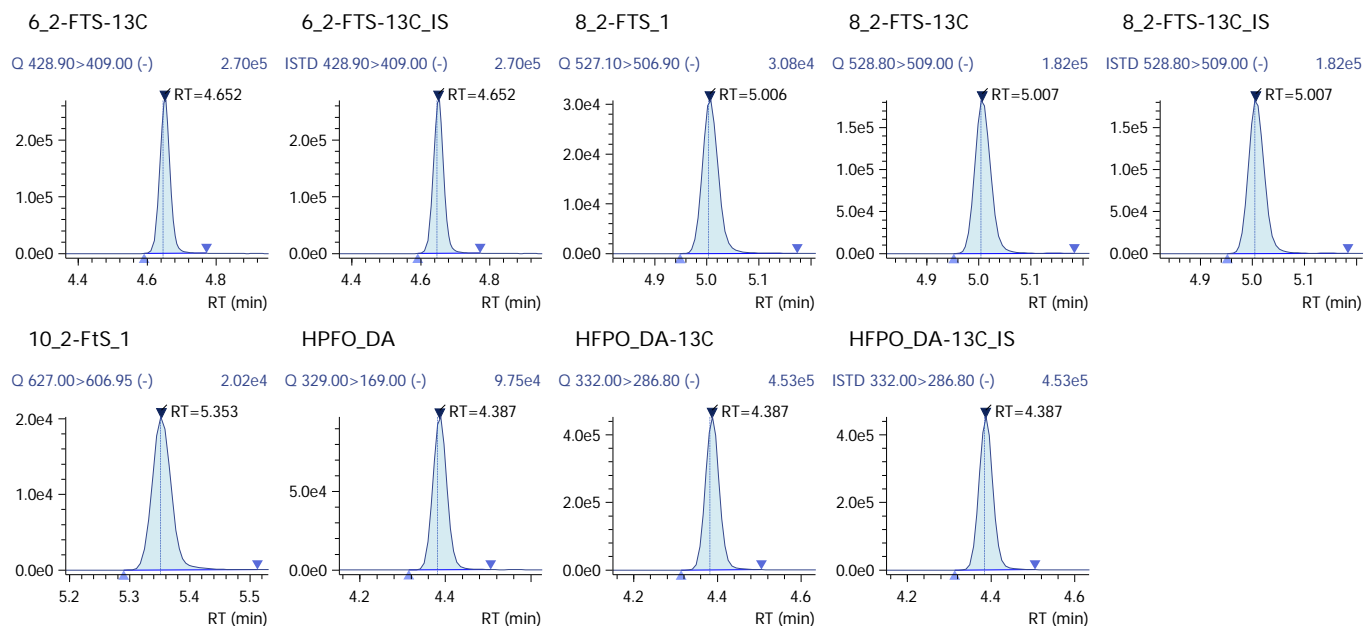
200812_061 (continued)



Insight Report

Printed at 8/19/2020 10:00:32 AM

200812_061 (continued)



Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_004
Lab ID: KQ2011599-01
RunType: CCV
Matrix: Water

Date Acquired: 8/19/20 14:27
Batch ID: 691718
Analysis Method: PFC/537M/PFAS

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Internal Standards	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Validation Report

1st *CM* 08/19/20
2nd *st* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_004
Lab ID: KQ2011599-01
RunType: CCV
Matrix: Water

Date Acquired: 8/19/20 14:27
Batch ID: 691718
Analysis Method: PFC/537M/PFAS_SCREEN

Validations

Validation Categories	Pass	Fail
ICAL Analyte Recovery	X	
Second Source ICAL Verification	X	
Internal Standards	X	
Above Highest ICAL Level	X	

Primary Review: _____

Secondary Review: _____

Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_004	Instrument: K-LCMS-06
Acqu Date: 8/19/20 14:27	Vial: 1
Run Type: CCV	Dilution: 1
Lab ID: KQ2011599-01	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 691718	Prep Lot:	Report Group: KQ2011599
Analysis: PFC/537M	Prep Method:	
	Prep Date:	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 19837

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.183		4868601	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
18O2-PFHxS	4.496		759762	6.6382	Y
13C4-PFOS	4.821		569014	4.7873	Y
13C2-6:2 FTS	4.655		496055	5.3592	Y

Target Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
Perfluorohexane sulfonic acid (PFHxS)	4.494		208834	0.7970	Y
Perfluorooctane sulfonic acid (PFOS)	4.821		135565	0.9710	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.655		114383	1.0516	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 15:56

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Quantitation Report

1st *CM* 08/19/20
2nd *HS* 08/20/20

Data File: J:\LCMS06\Data\200819_b1\200819_004	Instrument: K-LCMS-06
Acqu Date: 8/19/20 14:27	Vial: 2
Run Type: CCV	Dilution: 1
Lab ID: KQ2011599-01	Raw Units: ng/mL

Bottle ID:	Tier: IV	Matrix: Water
Prod Code: PFAS_SCREEN	Collect Date: 7/30/20	Receive Date: 7/30/20

Analysis Lot: 691718	Prep Lot:	Report Group: KQ2011599
Analysis: PFC/537M	Prep Method:	
	Prep Date:	

Title: Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	Calibration ID: KC2000408
	Report List ID: 20357

Internal Standard Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Area Criteria
13C7-PFUnDA	5.183		4868601	5.0000	OK

Surrogate Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
18O2-PFHxS	4.496		759762	6.6382	Y
13C4-PFOS	4.821		569014	4.7873	Y
13C2-6:2 FTS	4.655		496055	5.3592	Y

Target Compounds

Parameter Name	RT	RT Dev	Response	Solution Conc	Rpt?
Perfluorohexane sulfonic acid (PFHxS)	4.494		208834	0.7970	Y
Perfluorooctane sulfonic acid (PFOS)	4.821		135565	0.9710	Y
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	4.655		114383	1.0516	Y

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 8/19/20 15:56

\\alprews001\starlims\LIMSReps\QuantValidation.rpt

Insight Report

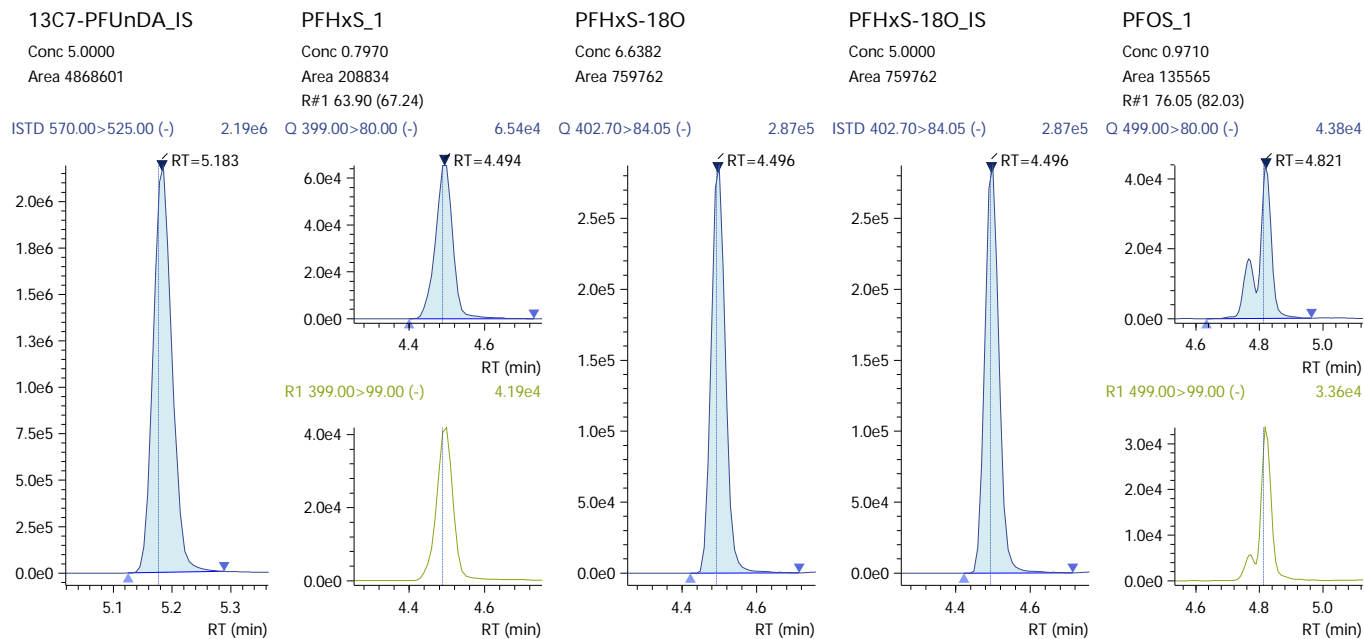
Printed at 8/19/2020 3:31:33 PM

Method File: J:\LCMS06\Data\200819_b1\200819_b1.lcm
 Project File: J:\LCMS06\Data\200819_b1\200819_b1.damlp

200819_004

Sample ID: 1.0 PPB CCV
 Date Acquired: 8/19/2020 2:27:53 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200819_b1\200819_004.lcd
 Vial: 37 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.183	4868601	4868601	1	5.0000	ng/mL	5.0000	----
PFHxS_1	Auto	4.494	208834	759762	3	0.7970	ng/mL	0.9131	63.90
PFHxS-18O	Auto	4.496	759762	4868601	1	6.6382	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.496	759762	759762	3	5.0000	ng/mL	5.0000	----
PFOS_1	Auto	4.821	135565	569014	4	0.9710	ng/mL	0.9292	76.05
PFOS-13C	Auto	4.821	569014	4868601	1	4.7873	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.821	569014	569014	4	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.655	114383	496055	24	1.0516	ng/mL	0.9512	39.46
6_2-FTS-13C	Auto	4.655	496055	4868601	1	5.3592	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.655	496055	496055	24	5.0000	ng/mL	5.0000	----



Insight Report

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200819_004 (continued)

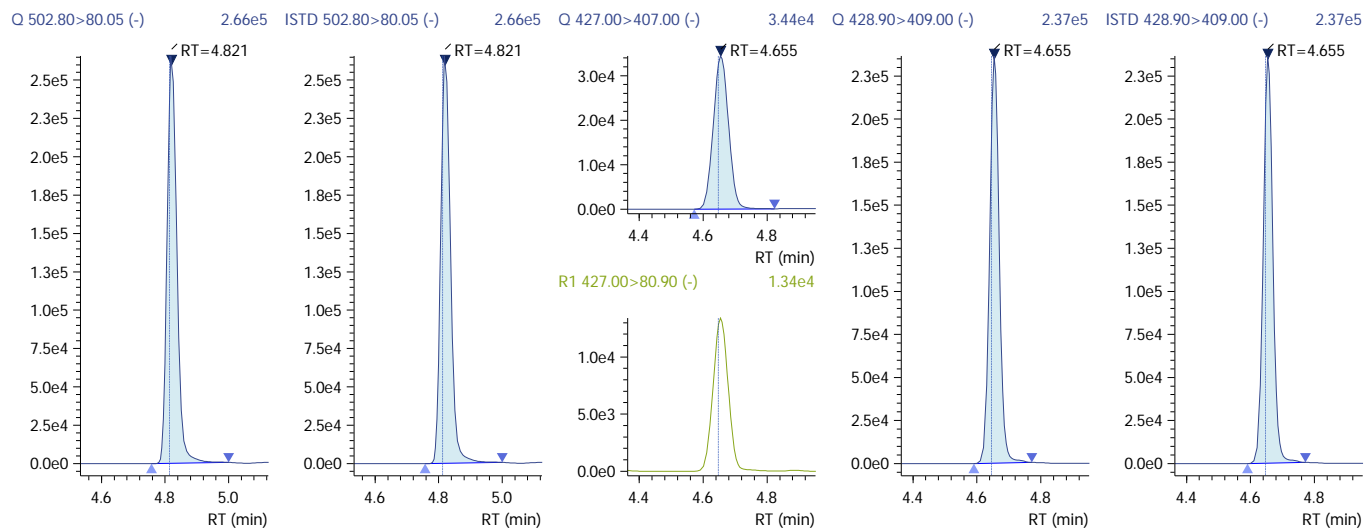
PFOS-13C
Conc 4.7873
Area 569014

PFOS-13C_IS
Conc 5.0000
Area 569014

6_2-FTS_1
Conc 1.0516
Area 114383
R#1 39.46 (36.33)

6_2-FTS-13C
Conc 5.3592
Area 496055

6_2-FTS-13C_IS
Conc 5.0000
Area 496055



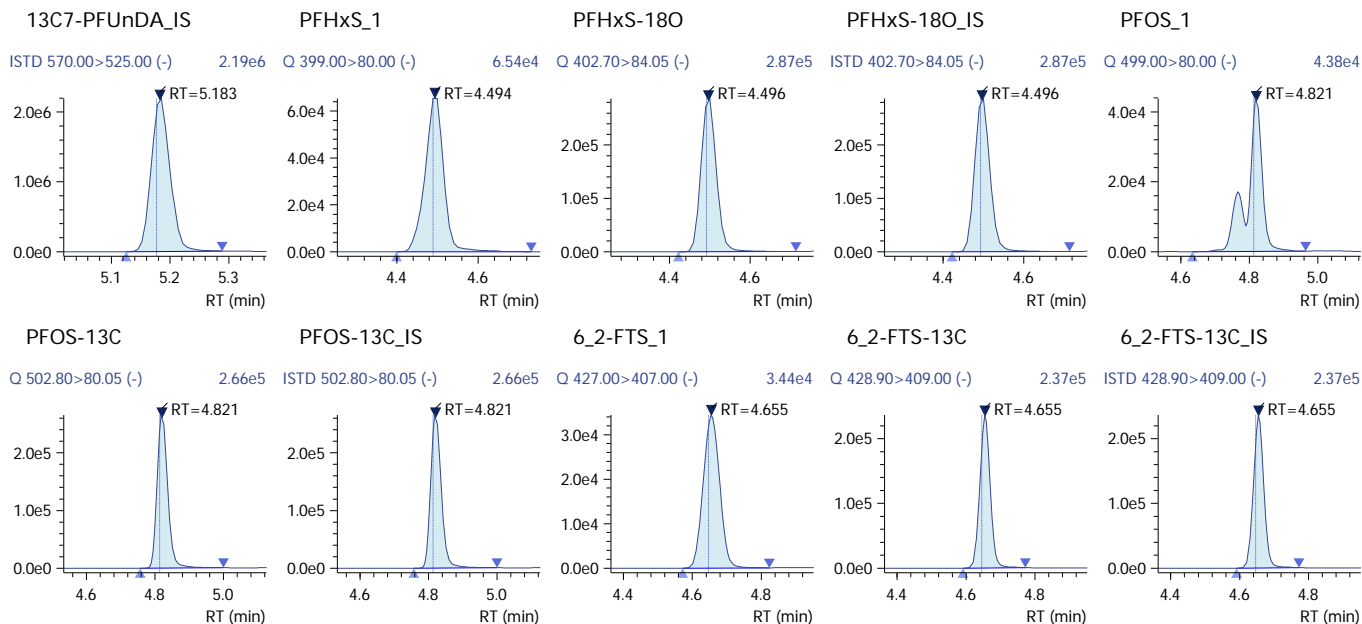
Insight Report

Printed at 8/19/2020 3:29:50 PM

Method File: J:\LCMS06\Data\200819_b1\200819_b1.lcm
Project File: J:\LCMS06\Data\200819_b1\200819_b1.damp

200819_004

Sample ID: 1.0 PPB CCV
Date Acquired: 8/19/2020 2:27:53 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200819_b1\200819_004.lcd
Vial: 37 | Inj. Volume: 15.0000uL | Tray: 1



200812_curve

Ist Review:
2nd Review:
Column:
Mobile Phases

Cmuller



Phenomenex EVO-C18 100X4.6 mm S/N: H20-136087

A: 5mM Ammonium Acetate in H2O 20-OLC-02-23F

B: 5mM Ammonium Acetate in MeOH 20-OLC-02-23G

ICAL Date: 8/12/2020

Std. xp: 10/14/2020

ICAL ID: KC2000408

LIMS ID: N/A

	Sample Name	File Name	Acquisition Method	Dilution	R	
1	CCB	20-OLC-02-22G	200812_038 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
2	0.05 PPB ICAL	20-OLC-02-03A	200812_039 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
3	0.10 PPB ICAL	20-OLC-02-03B	200812_040 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
4	0.50 PPB ICAL	20-OLC-02-03C	200812_041 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
5	1.0 PPB ICAL	20-OLC-02-03D	200812_042 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
6	5.0 PPB ICAL	20-OLC-02-03E	200812_043 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
7	10.0 PPB ICAL	20-OLC-02-03F	200812_044 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
8	CCB	20-OLC-02-22G	200812_045 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
9	15.0 PPB ICAL	20-OLC-02-03G	200812_046 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
10	CCB	20-OLC-02-22G	200812_047 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
11	1.0 PPB ICV	20-OLC-02-03L	200812_048 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
12	CCB	20-OLC-02-22G	200812_049 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA
13	T-PFOA	19-OLC-08-80Q	200812_050 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Not valid for DOD for MeFOSAA

Sample Information

Sample Type: PEG+PPG+Raffinose

Neutritizing Gas flow: 1.50(settings : 1.50) L/min

Drying Gas Flow: 0.00(settings : 10.00) L/min

CID Gas Flow: 270(settings : 270) kPa

Interface Bias: +4.00 kV

Interface Current: 0.71 uA

DL Temp.: 250(settings : 250) C

Heat Block Temp.: 400(settings : 400) C

Q1 RF Gain: 4999

Q1 RF Offset: 5000

Q3 RF Gain: ---

Q3 RF Offset: ---

Q1 Post-rod Bias: -5.0 V

CID CELL Exit Lens: -4.0 V

Conversion Dynode: -10.00 kV

Detector: -2.16(-2.16) kV

PG Vacuum: 1.3e+02 Pa

IG Vacuum: 2.1e-03 Pa

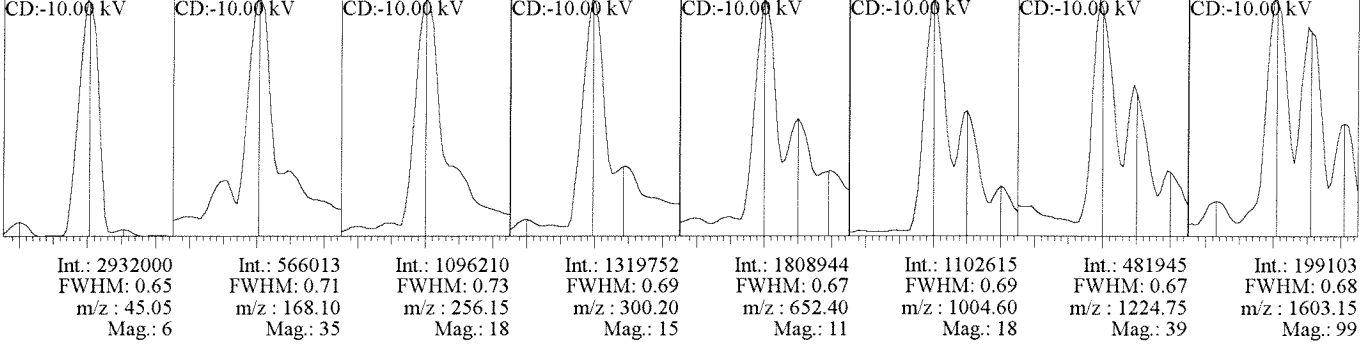
Tuning Condition

Detector Adjustment: On
Resolution Adjustment: On
FWHM of Spectrum: 0.70
Sensitivity Adjustment: On
Mass Calibration: On

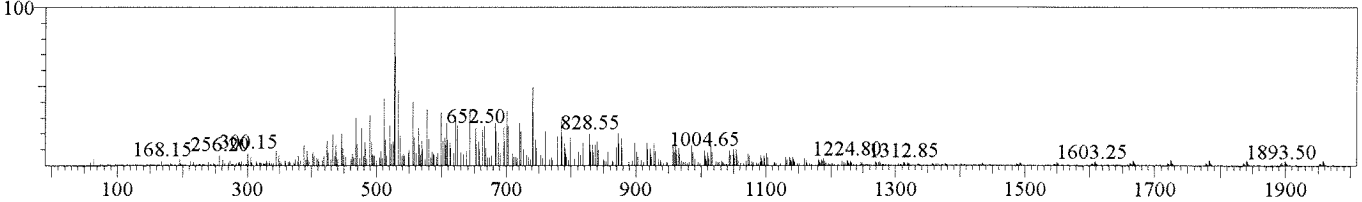
Tuning Result

Model: LCMS-8050
Interface: ESI
Polarity: Pos
Tuning Mode: Auto
Tuning Date: 8/12/2020 2:49:10 PM
Acquisition Mode: Q1 Scan(Use CID Gas)

Tuning Profile



Scan Range: 2.00 - 2000.00 Scan Speed: 30 u/s Base Peak: 527.15 (20000000)



m/z(Target)	m/z(Actual)	Difference	Width	Intensiv
45.05	45.10	0.05	0.65	2932000
168.10	168.15	0.05	0.71	566013
256.15	256.20	0.05	0.73	1096210
300.20	300.15	-0.05	0.69	1319752
652.40	652.50	0.10	0.67	1808944
1004.60	1004.65	0.05	0.69	1102615
1224.75	1224.80	0.05	0.67	481945
1603.15	1603.25	0.10	0.68	199103

*DL-0.5
cm
8/13/2020*

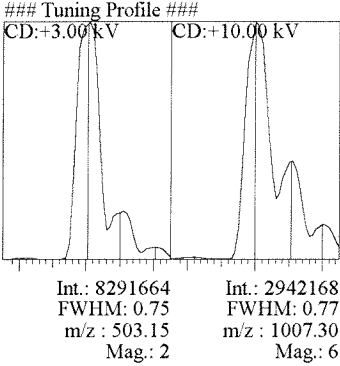
8/11/20

		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Multipole2 Bias	Const	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Multipole2 Lens	Const	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Q1 Bias	Const	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
CC Lens3	Const	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
CC RF	Scan	+200.0	+70.0	+90.0	+170.0	+300.0	+300.0	+300.0	+300.0
CE	Scan	-15.0	-15.0	-15.0	-16.0	-17.0	-21.0	-25.0	-25.0
Q3 Bias	Scan	-15.0	-15.0	-15.0	-15.1	-15.2	-15.6	-16.0	-17.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				
Q3 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				

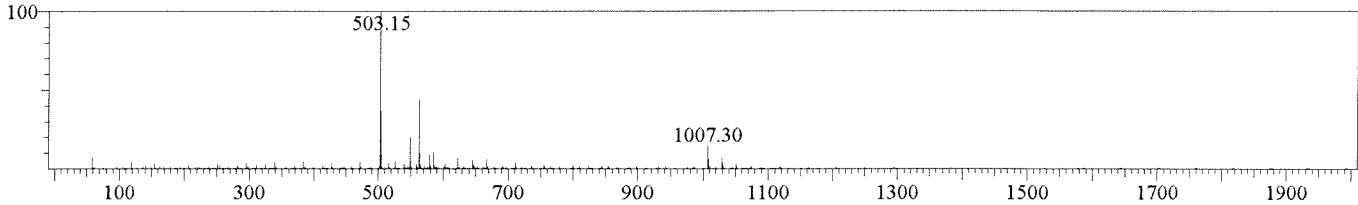
Tuning Condition ###
 Detector Adjustment: On
 Resolution Adjustment: On
 FWHM of Spectrum: 0.70
 Sensitivity Adjustment: On
 Mass Calibration: On

CID Gas Flow: 2.00(settings : 2.00) mL/min
 Interface Bias: -3.00 kV
 Interface Current: 0.51 uA
 DL Temp.: 249(settings : 250) C
 Heat Block Temp.: 400(settings : 400) C
 Q1 RF Gain: 5000
 Q1 RF Offset: 5000
 Q3 RF Gain: ---
 Q3 RF Offset: ---
 Q1 Post-rod Bias: 5.0 V
 CID CELL Exit Lens: 3.5 V
 Conversion Dynode: +10.00 kV
 Detector: -2.16(-2.16) kV
 PG Vacuum: 1.3e+02 Pa
 IG Vacuum: 2.1e-03 Pa

Tuning Result ###
 Model: LCMS-8050
 Interface: ESI
 Polarity: Neg
 Tuning Mode: Auto
 Tuning Date: 8/12/2020 2:53:45 PM
 Acquisition Mode: Q1 Scan(Use CID Gas)



Scan Range: 2.00 - 2000.00 Scan Speed: 30 u/s Base Peak: 503.15 (20000000)



m/z(Target)	m/z(Actual)	Difference	Width	Intensity
503.15	503.15	0.00	0.75	8291664
1007.30	1007.30	0.00	0.77	2942168

DL-0.5
 CM
 8/13/2020

8/14/20

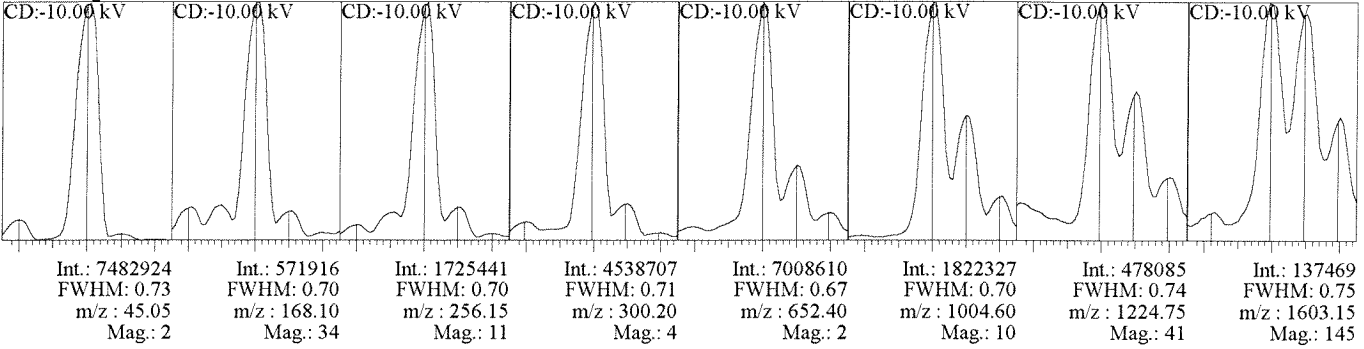
		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6
Multipole2 Bias	Const	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0
Multipole2 Lens	Const	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6
Q1 Bias	Const	+3.5	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0
CC Lens3	Const	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0
		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
CC RF	Scan	+200.0	+70.0	+90.0	+170.0	+300.0	+300.0	+300.0	+300.0
CE	Scan	+15.0	+15.0	+15.0	+16.0	+17.0	+21.0	+25.0	+25.0
Q3 Bias	Scan	+15.0	+15.0	+15.0	+15.1	+15.2	+15.6	+16.0	+17.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				
Q3 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				

Tuning Condition ###
 Detector Adjustment: On
 Resolution Adjustment: On
 FWHM of Spectrum: 0.70
 Sensitivity Adjustment: On
 Mass Calibration: On

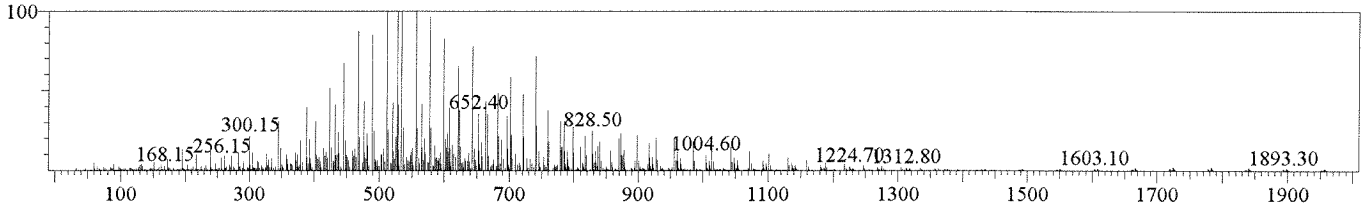
CID Gas Flow: 2.70(settings : 2.70) mL a
 Interface Bias: +4.00 kV
 Interface Current: 0.76 uA
 DL Temp.: 249(settings : 250) C
 Heat Block Temp.: 399(settings : 400) C
 Q1 RF Gain: ---
 Q1 RF Offset: ---
 Q3 RF Gain: 4997
 Q3 RF Offset: 4990
 Q1 Post-rod Bias: -5.0 V
 CID CELL Exit Lens: -4.0 V
 Conversion Dynode: -10.00 kV
 Detector: -2.16(-2.16) kV
 PG Vacuum: 1.3e+02 Pa
 IG Vacuum: 2.0e-03 Pa

Tuning Result ###
 Model: LCMS-8050
 Interface: ESI
 Polarity: Pos
 Tuning Mode: Auto
 Tuning Date: 8/12/2020 2:57:07 PM
 Acquisition Mode: Q3 Scan(Use CID Gas)

Tuning Profile



Scan Range: 2.00 - 2000.00 Scan Speed: 30 u/s Base Peak: 527.05 (20000000)



m/z(Target)	m/z(Actual)	Difference	Width	Intensity
45.05	45.05	0.00	0.73	7482924
168.10	168.15	0.05	0.70	571916
256.15	256.15	0.00	0.70	1725441
300.20	300.15	-0.05	0.71	4538707
652.40	652.40	0.00	0.67	7008610
1004.60	1004.60	0.00	0.70	1822327
1224.75	1224.70	-0.05	0.74	478085
1603.15	1603.10	-0.05	0.75	137469

D < 0.5 cm 8/13/20 ZD

8/14/20

		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Multipole2 Bias	Const	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Multipole2 Lens	Const	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Q1 Bias	Const	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
CC Lens3	Const	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
CC RF	Scan	+200.0	+70.0	+90.0	+170.0	+300.0	+300.0	+300.0	+300.0
CE	Scan	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0
Q3 Bias	Scan	-7.0	-7.0	-7.0	-7.1	-7.2	-7.6	-8.0	-9.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				
Q3 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				

Tuning Condition

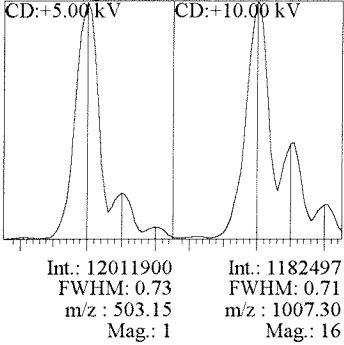
Detector Adjustment: On
 Resolution Adjustment: On
 FWHM of Spectrum: 0.70
 Sensitivity Adjustment: On
 Mass Calibration: On

CID Gas Flow: 200(settings : 270) uA
 Interface Bias: -3.00 kV
 Interface Current: 0.54 uA
 DL Temp.: 249(settings : 250) C
 Heat Block Temp.: 399(settings : 400) C
 Q1 RF Gain: ---
 Q1 RF Offset: ---
 Q3 RF Gain: 4999
 Q3 RF Offset: 5000
 Q1 Post-rod Bias: 5.0 V
 CID CELL Exit Lens: 3.5 V
 Conversion Dynode: +10.00 kV
 Detector: -2.16(-2.16) kV
 PG Vacuum: 1.3e+02 Pa
 IG Vacuum: 2.1e-03 Pa

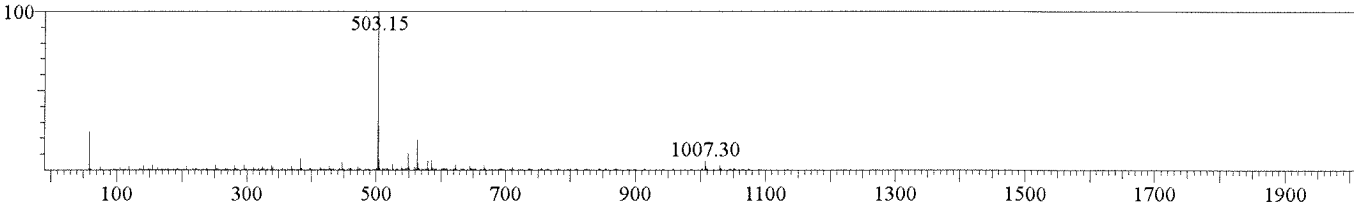
Tuning Result

Model: LCMS-8050
 Interface: ESI
 Polarity: Neg
 Tuning Mode: Auto
 Tuning Date: 8/12/2020 3:00:13 PM
 Acquisition Mode: Q3 Scan(Use CID Gas)

Tuning Profile



Scan Range: 2.00 - 2000.00 Scan Speed: 30 u/s Base Peak: 503.15 (20000000)



m/z(Target)	m/z(Actual)	Difference	Width	Intensity
503.15	503.15	0.00	0.73	12011900
1007.30	1007.30	0.00	0.71	1182497

*DL0.5
 CM 8/13/2020*

**
 8/14/20*

		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6
Multipole2 Bias	Const	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0
Multipole2 Lens	Const	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6
Q1 Bias	Const	+3.5	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0
CC Lens3	Const	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0
		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
CC RF	Scan	+200.0	+70.0	+90.0	+170.0	+300.0	+300.0	+300.0	+300.0
CE	Scan	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0	+5.0
Q3 Bias	Scan	+7.0	+7.0	+7.0	+7.1	+7.2	+7.6	+8.0	+9.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				
Q3 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				

Tuning Condition

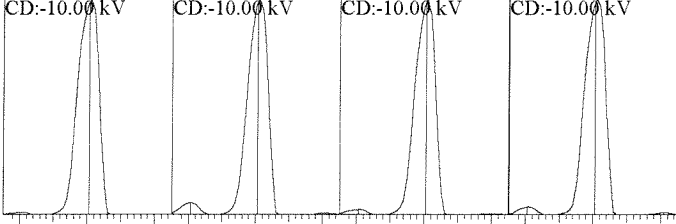
Detector Adjustment: On
 Resolution Adjustment: On
 FWHM of Spectrum: 0.70
 Sensitivity Adjustment: On
 Mass Calibration: On

CID Gas Flow: 2.70 (settings : 2.70) mL/min
 Interface Bias: +4.00 kV
 Interface Current: 0.98 uA
 DL Temp.: 250 (settings : 250) C
 Heat Block Temp.: 399 (settings : 400) C
 Q1 RF Gain: 4999
 Q1 RF Offset: 5000
 Q3 RF Gain: 4997
 Q3 RF Offset: 4985
 Q1 Post-rod Bias: -5.0 V
 CID CELL Exit Lens: -1.5 V
 Conversion Dynode: -10.00 kV
 Detector: -2.16 (-2.16) kV
 PG Vacuum: 1.3e+02 Pa
 IG Vacuum: 2.1e-03 Pa

Tuning Result

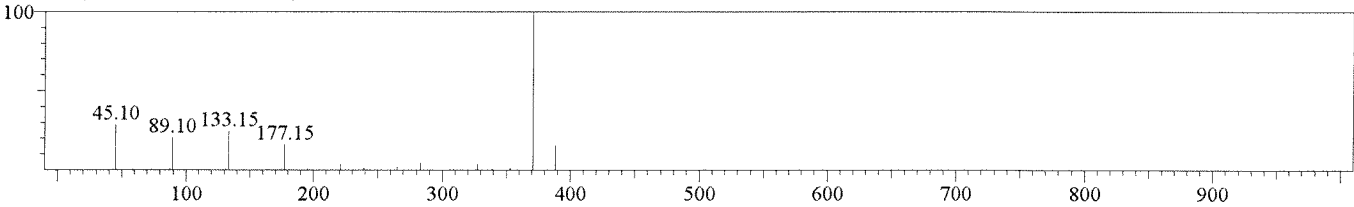
Model: LCMS-8050
 Interface: ESI
 Polarity: Pos
 Tuning Mode: Auto
 Tuning Date: 8/12/2020 3:03:48 PM
 Acquisition Mode: Product Scan

Tuning Profile



Int.: 854969	Int.: 612166	Int.: 810624	Int.: 504062
FWHM: 0.72	FWHM: 0.68	FWHM: 0.68	FWHM: 0.70
m/z: 45.05	m/z: 89.05	m/z: 133.10	m/z: 177.10
Pre m/z: 388.25	Pre m/z: 388.25	Pre m/z: 388.25	Pre m/z: 388.25
Mag.: 22	Mag.: 32	Mag.: 24	Mag.: 38

Scan Range: 2.00 - 438.25 Scan Speed: 30 u/s Base Peak: 371.20 (3045591) Pre m/z: 388.25



m/z(Target)	m/z(Actual)	Difference	Width	Intensity
388.25 > 45.05	45.10	0.05	0.72	854969
388.25 > 89.05	89.10	0.05	0.68	612166
388.25 > 133.10	133.15	0.05	0.68	810624
388.25 > 177.10	177.15	0.05	0.70	504062

0 < 0.5
 cm
 8/17/2020

8/19/20

		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Multipole2 Bias	Const	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Multipole2 Lens	Const	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Q1 Bias	Const	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
CC Lens3	Const	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
		Const	45.05	89.05	133.10	168.10	1893.40		
CC RF	Scan	+100.0	+100.0	+160.0	+300.0	+300.0	+300.0		
CE	Scan	-20.0	-25.0	-15.0	-15.0	-15.0	-15.0		
Q3 Bias	Scan	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0		-9.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				
Q3 Pre Bias	Scan	-15.0	-5.0	-50.0	-50.0				

Tuning Condition

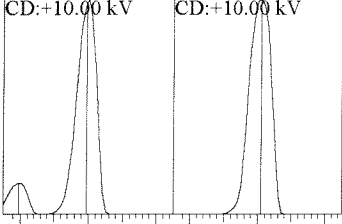
Detector Adjustment: On
 Resolution Adjustment: On
 FWHM of Spectrum: 0.70
 Sensitivity Adjustment: On
 Mass Calibration: On

CID Gas Flow: 2.70(settings : 2.70) L/min
 Interface Bias: -3.00 kV
 Interface Current: 0.54 uA
 DL Temp.: 249(settings : 250) C
 Heat Block Temp.: 399(settings : 400) C
 Q1 RF Gain: 5000
 Q1 RF Offset: 5000
 Q3 RF Gain: 4999
 Q3 RF Offset: 5004
 Q1 Post-rod Bias: 5.0 V
 CID CELL Exit Lens: -0.1 V
 Conversion Dynode: +10.00 kV
 Detector: -2.16(-2.16) kV
 PG Vacuum: 1.3e+02 Pa
 IG Vacuum: 2.0e-03 Pa

Tuning Result

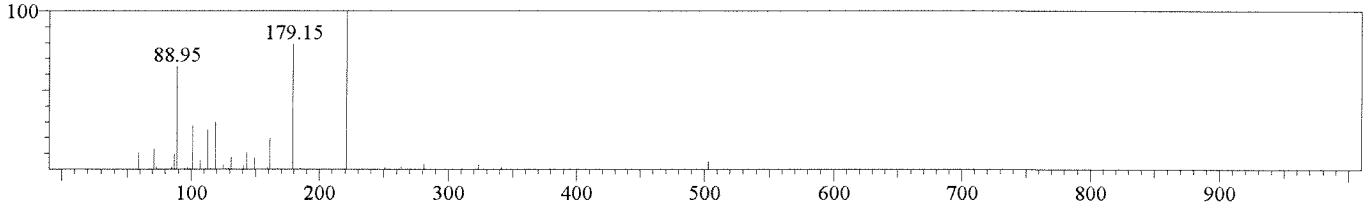
Model: LCMS-8050
 Interface: ESI
 Polarity: Neg
 Tuning Mode: Auto
 Tuning Date: 8/12/2020 3:03:49 PM
 Acquisition Mode: Product Scan

Tuning Profile



Int.: 1741513 Int.: 2131692
 FWHM: 0.65 FWHM: 0.76
 m/z: 89.00 m/z: 179.05
 Pre m/z: 503.15 Pre m/z: 503.15
 Mag.: 11 Mag.: 9

Scan Range: 2.00 - 553.15 Scan Speed: 30 u/s Base Peak: 221.15 (2660955) Pre m/z: 503.15



m/z(Target)	m/z(Actual)	Difference	Width	Intensity
503.15 > 89.00	88.95	-0.05	0.65	1741513
503.15 > 179.05	179.15	0.10	0.76	2131692

D < 0.5
cm
8/12/2020

8/14/20

		Const	65.05	168.10	256.15	344.20	652.40	1004.60	1893.40
DL Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Qarray RF	Scan	+50.0	+34.8	+90.0	+130.0	+130.0	+130.0	+130.0	+130.0
Multipole RF	Scan	+100.0	+30.0	+80.0	+150.0	+210.0	+300.0	+300.0	+300.0
Multipole1 Bias	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Multipole1 Lens	Const	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6	+0.6
Multipole2 Bias	Const	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0	+1.0
Multipole2 Lens	Const	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6	+1.6
Q1 Bias	Const	+3.5	+3.5	+3.5	+3.5	+3.5	+3.5	+3.5	+3.5
CC Lens1	Const	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
CC Lens2	Const	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0	+100.0
CC Lens3	Const	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0	+20.0
		Const	45.05	89.05	133.10	168.10	1893.40		
CC RF	Scan	+100.0	+100.0	+160.0	+300.0	+300.0	+300.0		
CE	Scan	+30.0	+30.0	+30.0	+30.0	+30.0	+30.0		
Q3 Bias	Scan	+7.0	+7.0	+7.0	+7.0	+7.0	+7.0		+9.0
		Const	107.15	1071.50	1893.40				
Q1 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				
Q3 Pre Bias	Scan	+15.0	+5.0	+50.0	+50.0				

Insight Report

Printed at 8/13/2020 12:34:07 PM

Method File: J:\LCMS06\Data\200812_curve\200812_curve.lcm
 Project File: J:\LCMS06\Data\200812_curve\200812_curve.damp

200812_038

Sample ID: CCB
 Date Acquired: 8/12/2020 7:17:55 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_038.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.179	6383232	6383232	1	5.0000	ng/mL	----	----
PFBS_1	Auto	4.123	1740	1403236	2	0.0054	ng/mL	----	46.12
PFBS-13C	Auto	4.123	1403236	6383232	1	4.6573	ng/mL	----	----
PFBS-13C_IS	Auto	4.123	1403236	1403236	2	5.0000	ng/mL	----	----
PFPeS	Auto	4.334	105	1403236	2	0.0007	ng/mL	----	100.00
PFHxS_1	M	4.495	4110	817016	3	0.0146	ng/mL	----	47.13
PFHxS-18O	Auto	4.495	817016	6383232	1	5.4446	ng/mL	----	----
PFHxS-18O_IS	Auto	4.495	817016	817016	3	5.0000	ng/mL	----	----
PFHpS_1	M	4.658	214	817016	3	0.0015	ng/mL	----	0.00
PFOS_1	Auto	4.817	657	698238	4	0.0038	ng/mL	----	83.83
PFOS-13C	Auto	4.817	698238	6383232	1	4.4806	ng/mL	----	----
PFOS-13C_IS	Auto	4.817	698238	698238	4	5.0000	ng/mL	----	----
PFNS	M	4.982	70	698238	4	0.0006	ng/mL	----	0.00
PFDS_1	ND(W /B)	----	----	698238	4	----	ng/mL	----	----
PFBA	M	3.483	3438	3727954	5	0.0041	ng/mL	----	----
PFBA-13C	Auto	3.480	3727954	6383232	1	4.6722	ng/mL	----	----
PFBA-13C_IS	Auto	3.480	3727954	3727954	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.020	86929	2204284	6	0.0051	ng/mL	----	----
PFPeA-13C	Auto	4.072	2204284	6383232	1	4.8549	ng/mL	----	----
PFPeA-13C_IS	Auto	4.072	2204284	2204284	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.309	74713	6712576	7	-0.0030	ng/mL	----	3.94
PFHxA-13C	Auto	4.323	6712576	6383232	1	4.7870	ng/mL	----	----
PFHxA-13C_IS	Auto	4.323	6712576	6712576	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.487	47446	5860785	8	0.0158	ng/mL	----	14.57
PFHpA-13C	Auto	4.496	5860785	6383232	1	5.8472	ng/mL	----	----
PFHpA-13C_IS	Auto	4.496	5860785	5860785	8	5.0000	ng/mL	----	----
PFOA	Auto	4.654	52156	7353885	9	0.0058	ng/mL	----	34.92
PFOA-13C	Auto	4.658	7353885	6383232	1	5.1605	ng/mL	----	----
PFOA-13C_IS	Auto	4.658	7353885	7353885	9	5.0000	ng/mL	----	----
PFNA	M	4.825	24256	4535222	10	0.0134	ng/mL	----	15.91
PFNA-13C	Auto	4.829	4535222	6383232	1	4.6964	ng/mL	----	----
PFNA-13C_IS	Auto	4.829	4535222	4535222	10	5.0000	ng/mL	----	----
PFDA	Auto	5.004	25520	4635454	11	0.0262	ng/mL	----	27.52
PFDA-13C	Auto	5.006	4635454	6383232	1	5.1821	ng/mL	----	----
PFDA-13C_IS	Auto	5.006	4635454	4635454	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.177	24325	5217364	12	-0.0041	ng/mL	----	9.76
PFUnA-13C	Auto	5.179	5217364	6383232	1	4.7552	ng/mL	----	----
PFUnA-13C_IS	Auto	5.179	5217364	5217364	12	5.0000	ng/mL	----	----
PFDoA	Auto	5.342	17208	5345778	13	0.0028	ng/mL	----	35.05
PFDoA-13C	Auto	5.343	5345778	6383232	1	5.0633	ng/mL	----	----
PFDoA-13C_IS	Auto	5.343	5345778	5345778	13	5.0000	ng/mL	----	----
PFTTrDA	M	5.495	18636	3245941	14	0.0051	ng/mL	----	2.57
PFTeDA	M	5.640	55126	3245941	14	0.0035	ng/mL	----	933.85
PFTeDA-13C	Auto	5.640	3245941	6383232	1	4.7937	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.640	3245941	3245941	14	5.0000	ng/mL	----	----
FOSA	Auto	5.289	2164	2559792	16	0.0030	ng/mL	----	0.00
FOSA-13C	Auto	5.288	2559792	6383232	1	4.3959	ng/mL	----	----
FOSA-13C_IS	Auto	5.288	2559792	2559792	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.648	978	649147	17	0.0057	ng/mL	----	27.36
N-MeFOSA-d3	Auto	5.646	649147	6383232	1	4.4759	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.646	649147	649147	17	5.0000	ng/mL	----	----
N-EtFOSA	M	5.790	272	818989	18	0.0081	ng/mL	----	21.69

Insight Report

Printed at 8/13/2020 12:34:07 PM

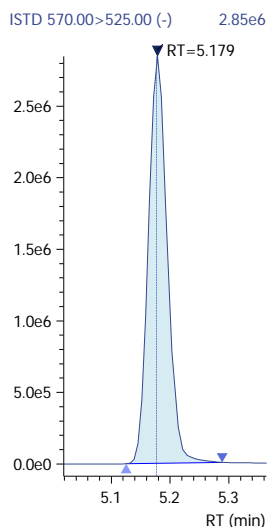
200812_038 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-EtFOSA-d9	Auto	5.773	818989	6383232	1	4.5314	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.773	818989	818989	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.628	284	285136	19	0.0016	ng/mL	----	----
N-MeFOSE-d7	Auto	5.619	285136	6383232	1	4.1120	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.619	285136	285136	19	5.0000	ng/mL	----	----
N-EtFOSE	ND(W /B)	----	----	236463	20	----	ng/mL	----	----
N-EtFOSE-d9	Auto	5.741	236463	6383232	1	4.1608	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.741	236463	236463	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.095	107	513184	21	0.0014	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.101	513184	6383232	1	4.7036	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.101	513184	513184	21	5.0000	ng/mL	----	----
N-EtFOSAA	Auto	5.203	621	368365	22	0.0145	ng/mL	----	0.00
N-EtFOSAA-d5	Auto	5.191	368365	6383232	1	4.7634	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.191	368365	368365	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.298	434	1119059	23	0.0020	ng/mL	----	51686.31
4_2-FTS-13C	Auto	4.298	1119059	6383232	1	4.9845	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.298	1119059	1119059	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.645	777	641260	24	0.0055	ng/mL	----	35.38
6_2-FTS-13C	Auto	4.650	641260	6383232	1	5.2840	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.650	641260	641260	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	5.003	197	479616	25	0.0027	ng/mL	----	6.86
8_2-FTS-13C	Auto	5.006	479616	6383232	1	5.2222	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.006	479616	479616	25	5.0000	ng/mL	----	----
10_2-Fts_1	Auto	5.346	16	479616	25	0.0003	ng/mL	----	0.00
HPFO_DA	Auto	4.388	483	1211416	26	0.0020	ng/mL	----	58.08
HFPO_DA-13C	Auto	4.386	1211416	6383232	1	4.6598	ng/mL	----	----
HFPO_DA-13C_IS	Auto	4.386	1211416	1211416	26	5.0000	ng/mL	----	----

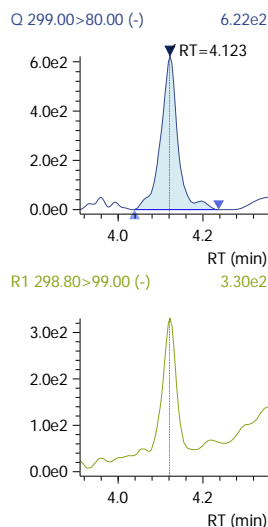
13C7-PFUnDA_IS

Conc 5.0000
Area 6383232



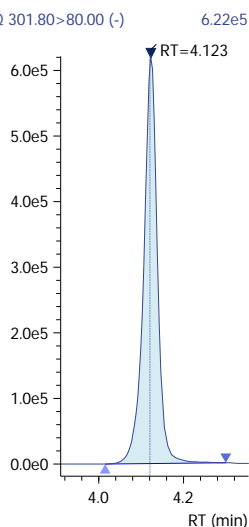
PFBS_1

Conc 0.0054
Area 1740
R#1 46.12 (56.85)



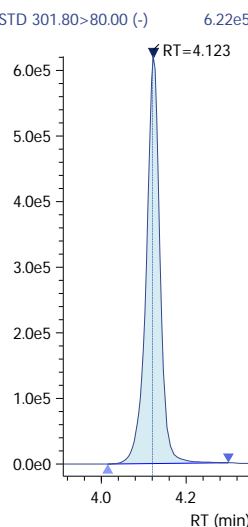
PFBS-13C

Conc 4.6573
Area 1403236



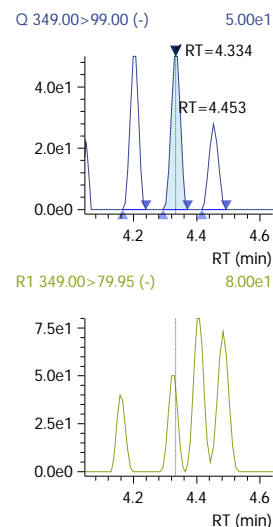
PFBS-13C_IS

Conc 5.0000
Area 1403236

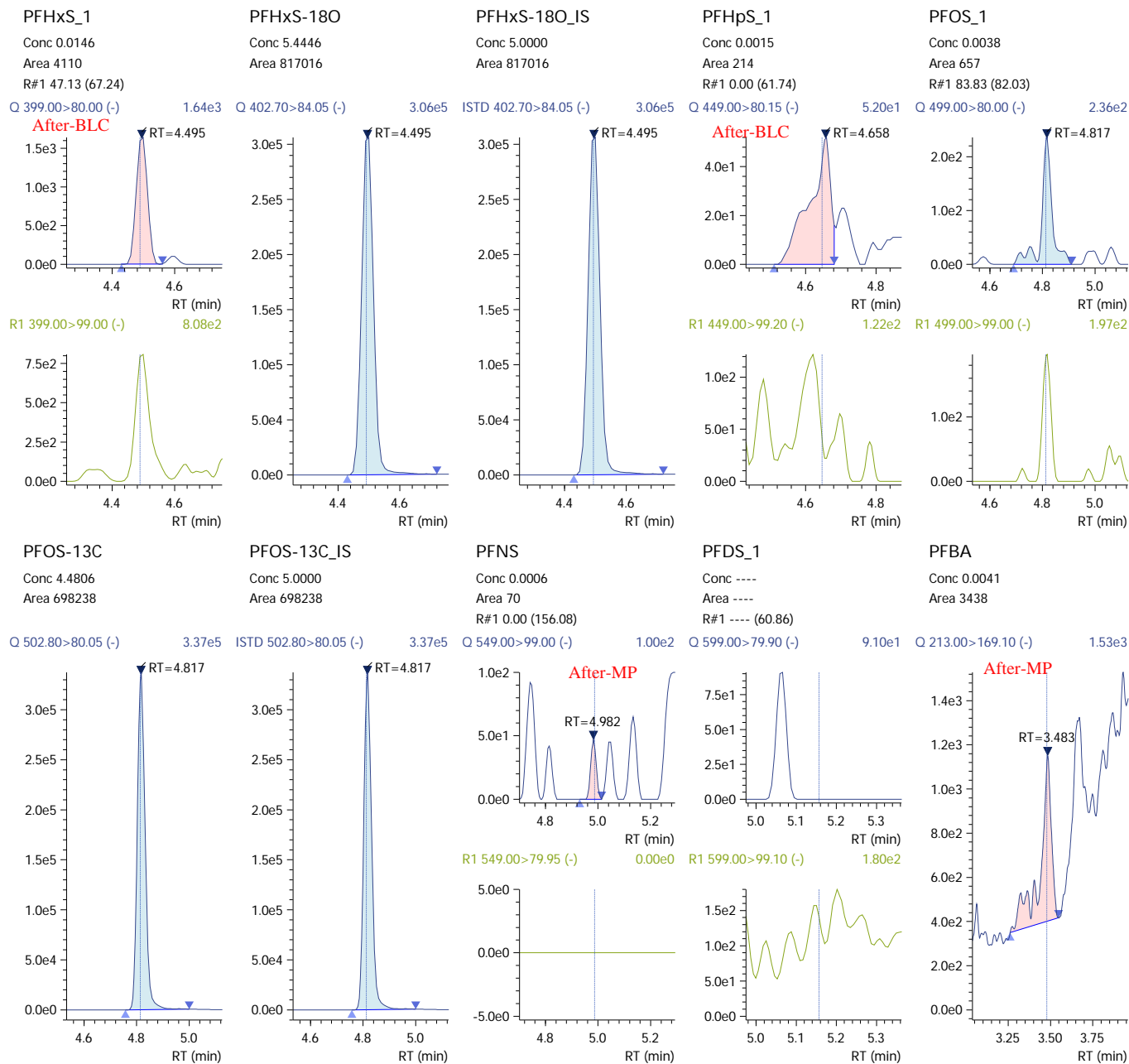


PFPeS

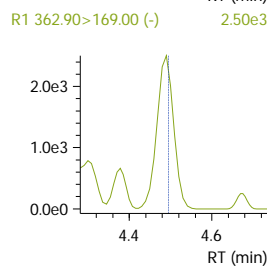
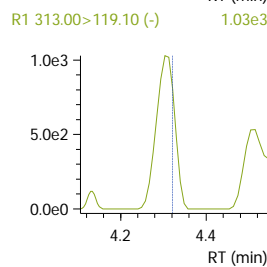
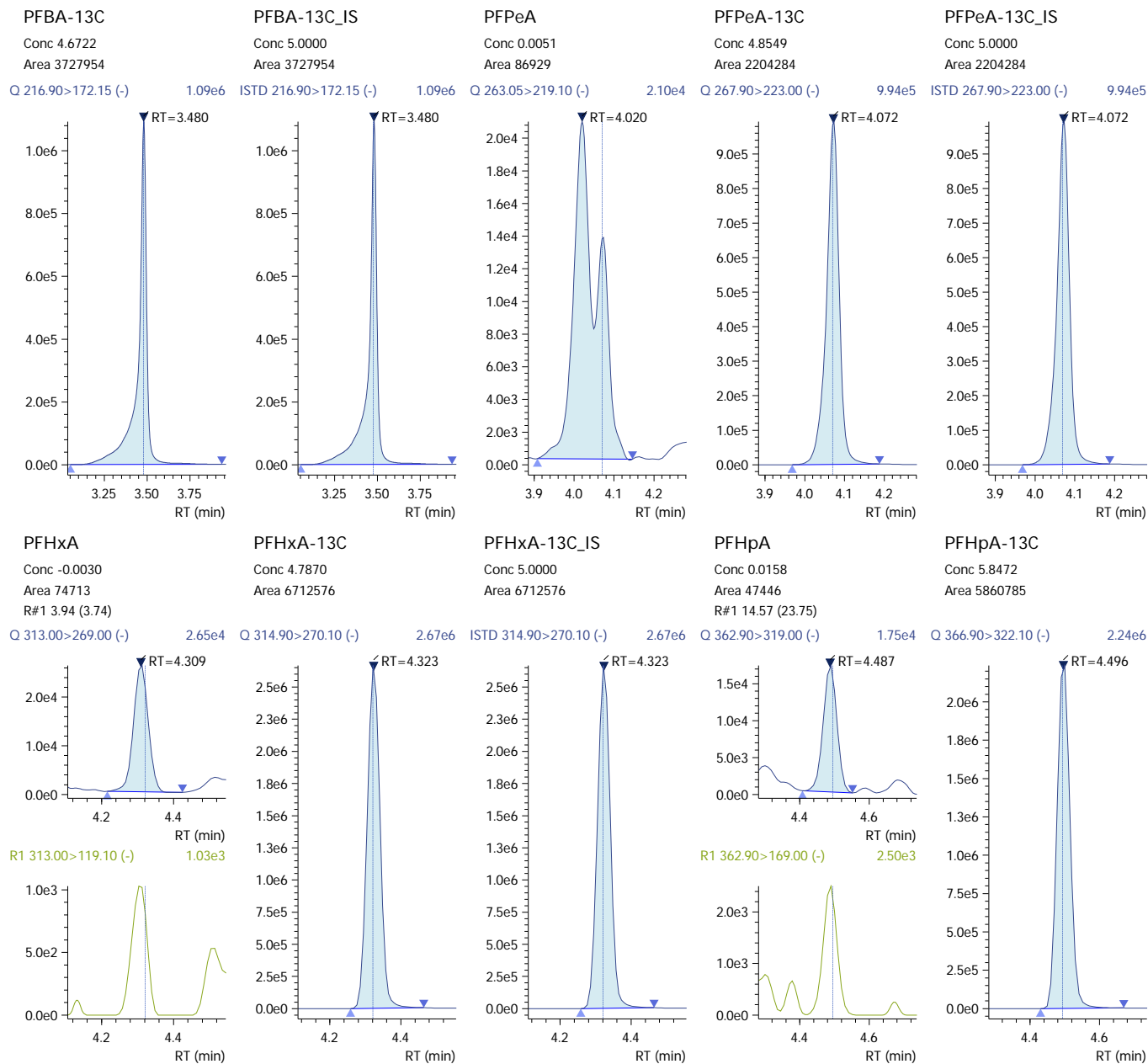
Conc 0.0007
Area 105
R#1 100.00 (155.17)



200812_038 (continued)



200812_038 (continued)



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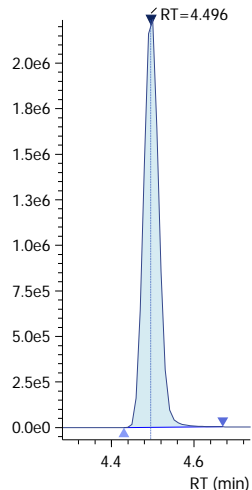
Printed at 8/13/2020 12:34:07 PM

200812_038 (continued)

PFHpA-13C_IS

Conc 5.0000
 Area 5860785

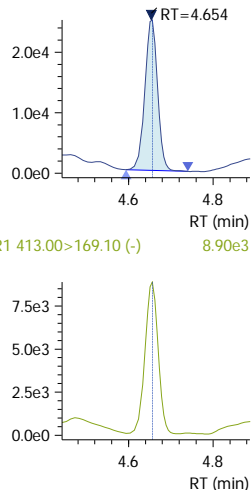
ISTD 366.90>322.10 (-) 2.24e6



PFOA

Conc 0.0058
 Area 52156
 R#1 34.92 (34.80)

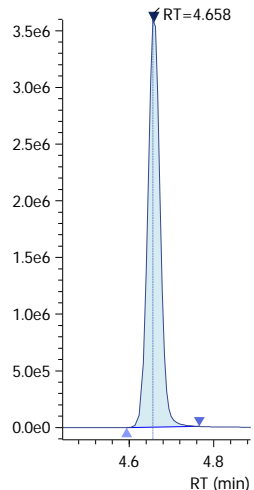
Q 413.00>369.00 (-) 2.54e4



PFOA-13C

Conc 5.1605
 Area 7353885

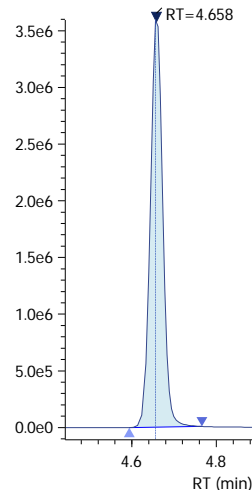
Q 416.80>372.05 (-) 3.59e6



PFOA-13C_IS

Conc 5.0000
 Area 7353885

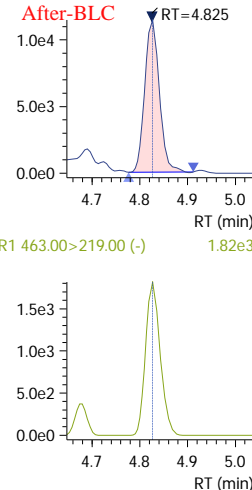
ISTD 416.80>372.05 (-) 3.59e6



PFNA

Conc 0.0134
 Area 24256
 R#1 15.91 (22.71)

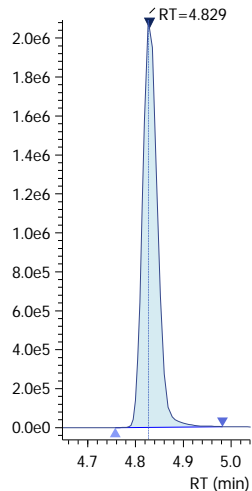
Q 463.00>418.90 (-) 1.15e4



PFNA-13C

Conc 4.6964
 Area 4535222

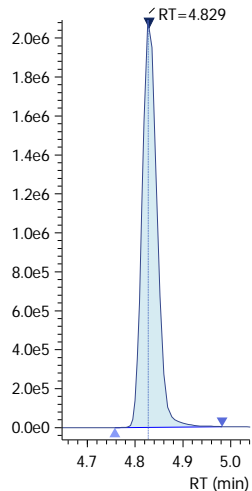
Q 467.80>423.00 (-) 2.09e6



PFNA-13C_IS

Conc 5.0000
 Area 4535222

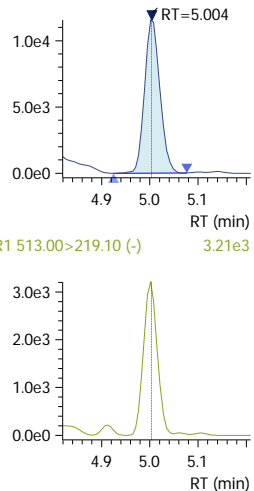
ISTD 467.80>423.00 (-) 2.09e6



PFDA

Conc 0.0262
 Area 25520
 R#1 27.52 (22.06)

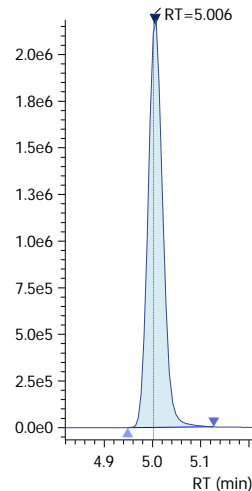
Q 513.00>468.80 (-) 1.16e4



PFDA-13C

Conc 5.1821
 Area 4635454

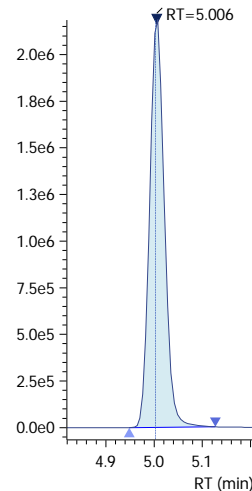
Q 514.80>469.95 (-) 2.19e6



PFDA-13C_IS

Conc 5.0000
 Area 4635454

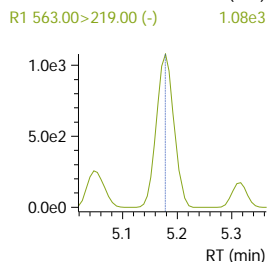
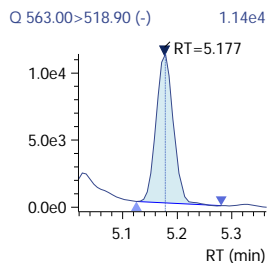
ISTD 514.80>469.95 (-) 2.19e6



200812_038 (continued)

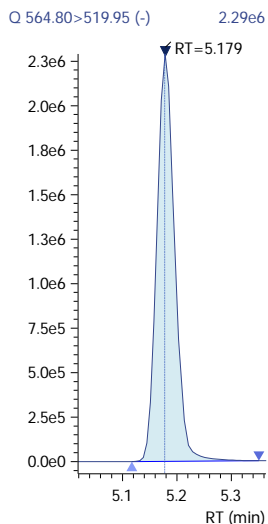
PFUnA

Conc -0.0041
 Area 24325
 R#1 9.76 (13.66)



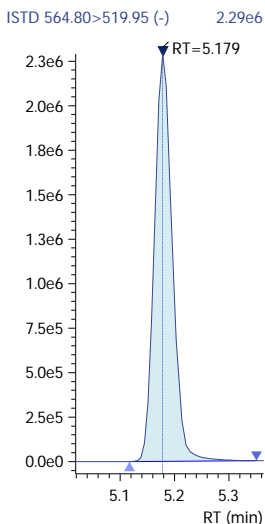
PFUnA-13C

Conc 4.7552
 Area 5217364



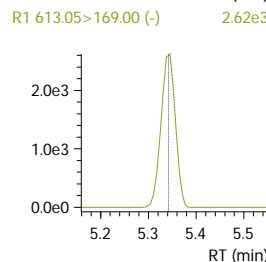
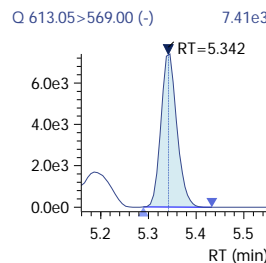
PFUnA-13C_IS

Conc 5.0000
 Area 5217364



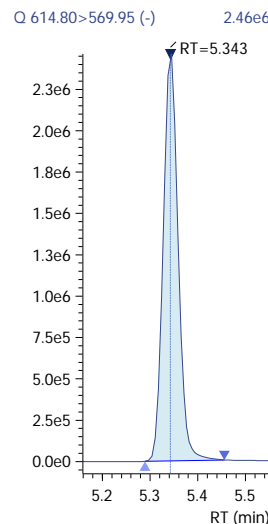
PFDaA

Conc 0.0028
 Area 17208
 R#1 35.05 (21.98)



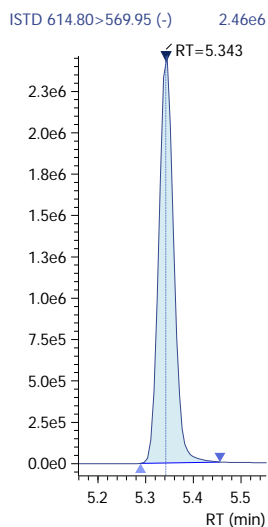
PFDaA-13C

Conc 5.0633
 Area 5345778



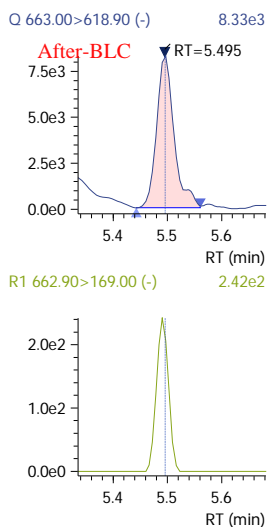
PFDaA-13C_IS

Conc 5.0000
 Area 5345778



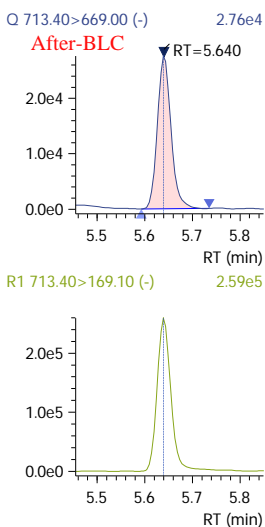
PFTrDA

Conc 0.0051
 Area 18636
 R#1 2.57 (19.20)



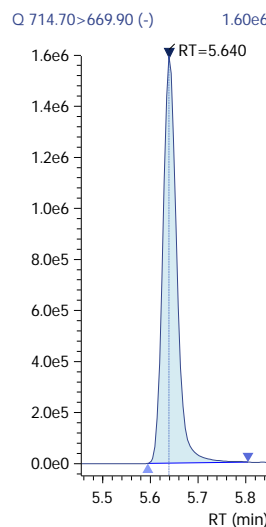
PFTeDA

Conc 0.0035
 Area 55126
 R#1 933.85 (61.49)



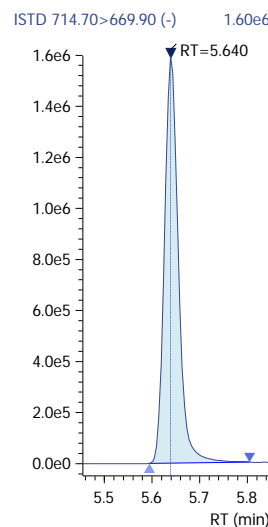
PFTeDA-13C

Conc 4.7937
 Area 3245941

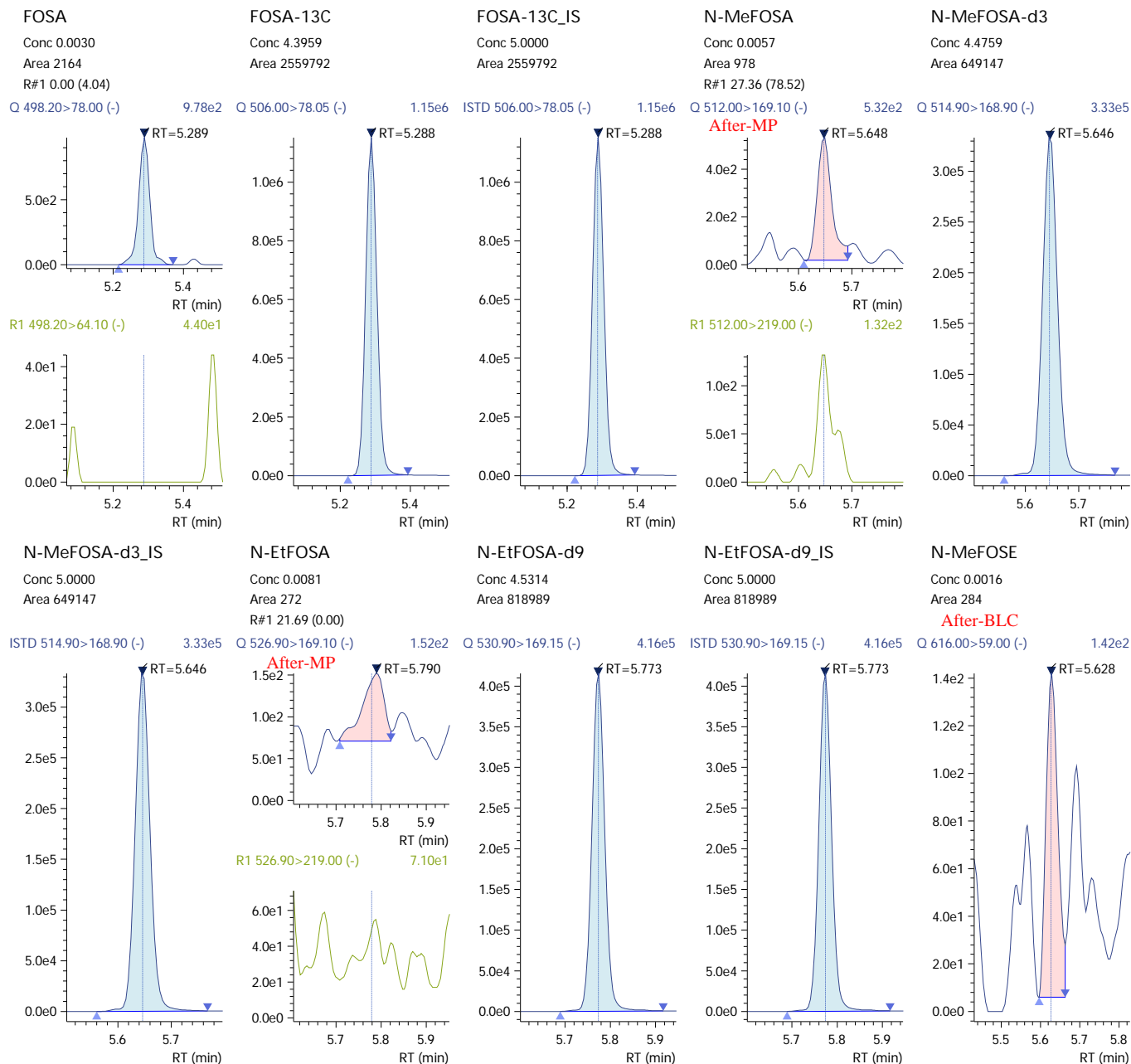


PFTeDA-13C_IS

Conc 5.0000
 Area 3245941



200812_038 (continued)



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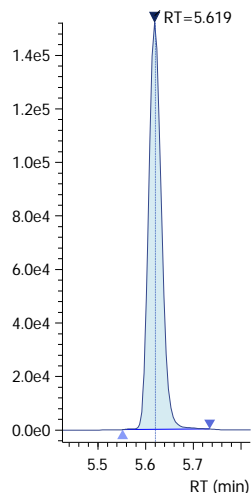
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200812_038 (continued)

N-MeFOSE-d7

Conc 4.1120
Area 285136

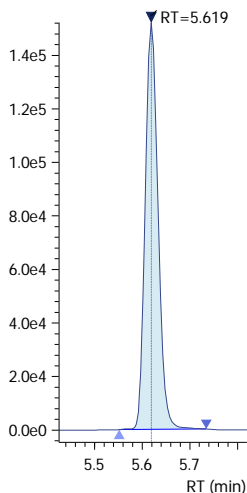
Q 622.70>59.10 (-)



N-MeFOSE-d7_IS

Conc 5.0000
Area 285136

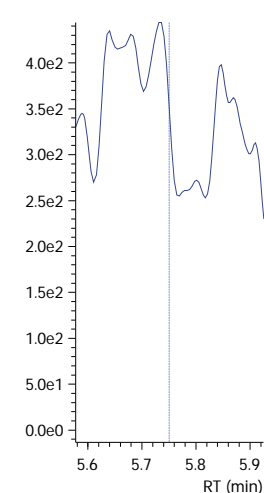
ISTD 622.70>59.10 (-)



N-EtFOSE

Conc ----
Area ----

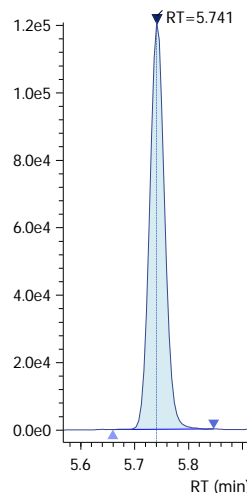
Q 630.00>58.90 (-)



N-EtFOSE-d9

Conc 4.1608
Area 236463

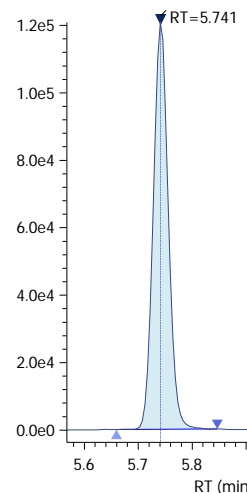
Q 638.70>59.10 (-)



N-EtFOSE-d9_IS

Conc 5.0000
Area 236463

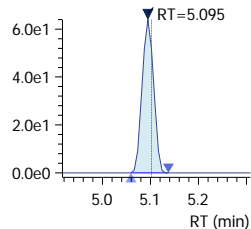
ISTD 638.70>59.10 (-)



N-MeFOSAA

Conc 0.0014
Area 107
R#1 0.00 (33.47)

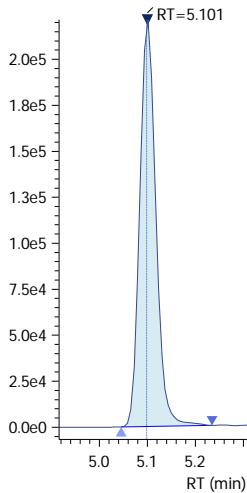
Q 570.20>419.00 (-)



N-MeFOSAA-d3

Conc 4.7036
Area 513184

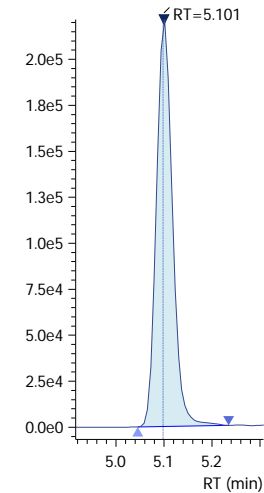
Q 572.80>419.05 (-)



N-MeFOSAA-d3_IS

Conc 5.0000
Area 513184

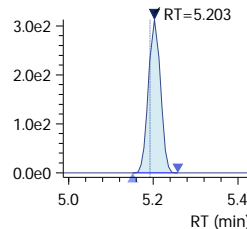
ISTD 572.80>419.05 (-)



N-EtFOSAA

Conc 0.0145
Area 621
R#1 0.00 (83.09)

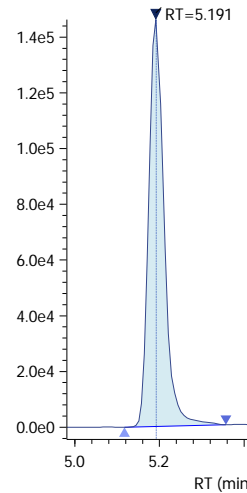
Q 584.20>418.95 (-)



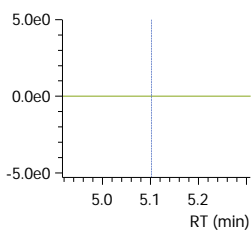
N-EtFOSAA-d5

Conc 4.7634
Area 368365

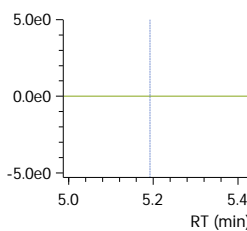
Q 588.80>419.00 (-)



R1 570.20>512.00 (-) 0.00e0



R1 584.20>526.10 (-) 0.00e0



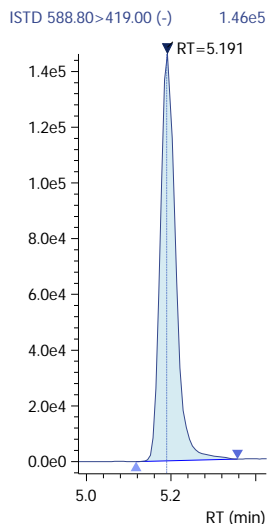
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200812_038 (continued)

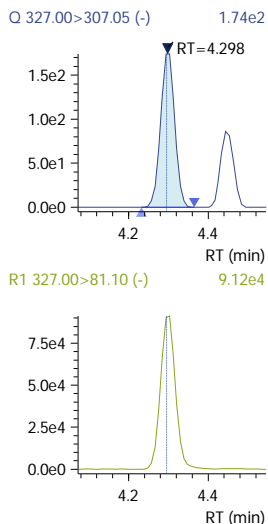
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 368365



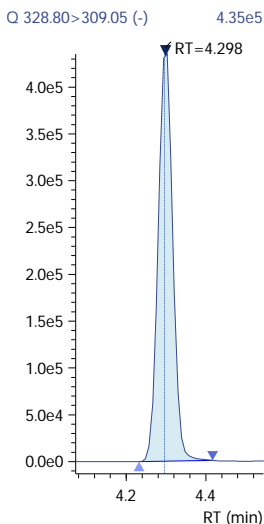
4_2-FTS_1

Conc 0.0020
 Area 434
 R#1 51686.31 (54.93)



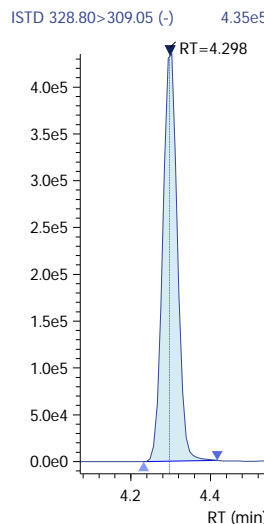
4_2-FTS-13C

Conc 4.9845
 Area 1119059



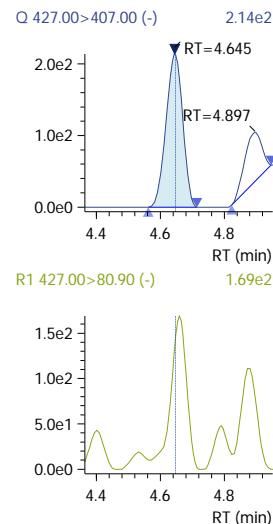
4_2-FTS-13C_IS

Conc 5.0000
 Area 1119059



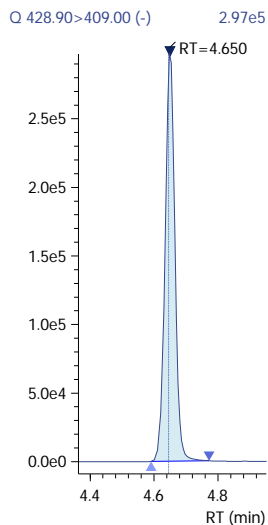
6_2-FTS_1

Conc 0.0055
 Area 777
 R#1 35.38 (36.33)



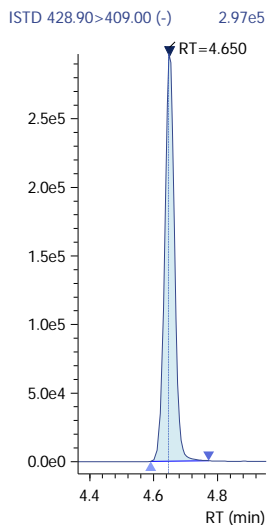
6_2-FTS-13C

Conc 5.2840
 Area 641260



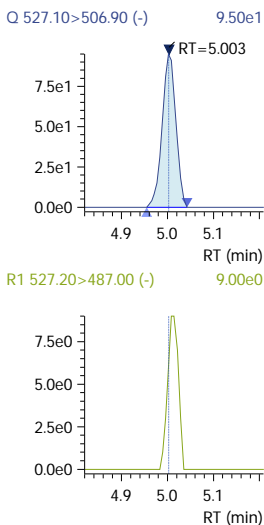
6_2-FTS-13C_IS

Conc 5.0000
 Area 641260



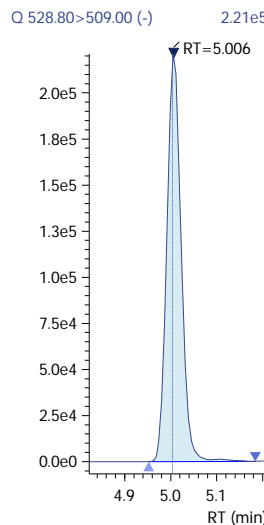
8_2-FTS_1

Conc 0.0027
 Area 197
 R#1 6.86 (8.96)



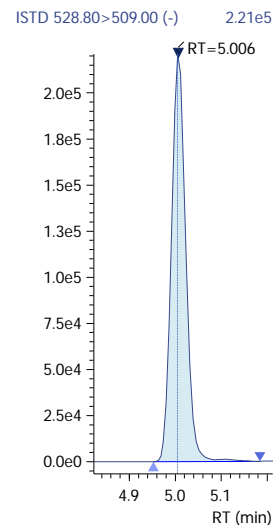
8_2-FTS-13C

Conc 5.2222
 Area 479616



8_2-FTS-13C_IS

Conc 5.0000
 Area 479616



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200812_038 (continued)

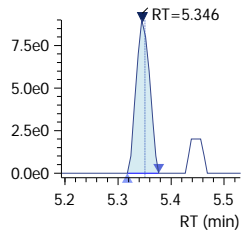
10_2-FtS_1

Conc 0.0003

Area 16

R#1 0.00 (5.92)

Q 627.00>606.95 (-) 9.00e0



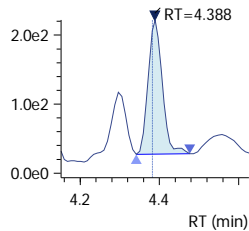
HPFO_DA

Conc 0.0020

Area 483

R#1 58.08 (72.82)

Q 329.00>169.00 (-) 2.22e2

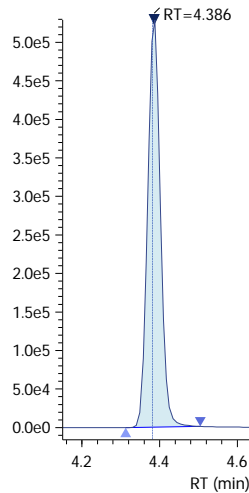


HFPO_DA-13C

Conc 4.6598

Area 1211416

Q 332.00>286.80 (-) 5.29e5

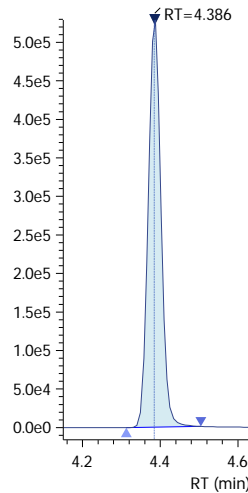


HFPO_DA-13C_IS

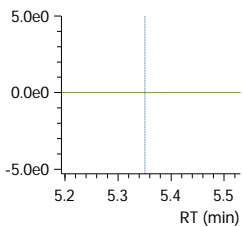
Conc 5.0000

Area 1211416

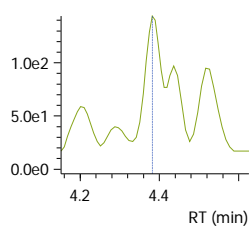
ISTD 332.00>286.80 (-) 5.29e5



R1 627.00>81.25 (-) 0.00e0



R1 329.00>285.10 (-) 1.44e2



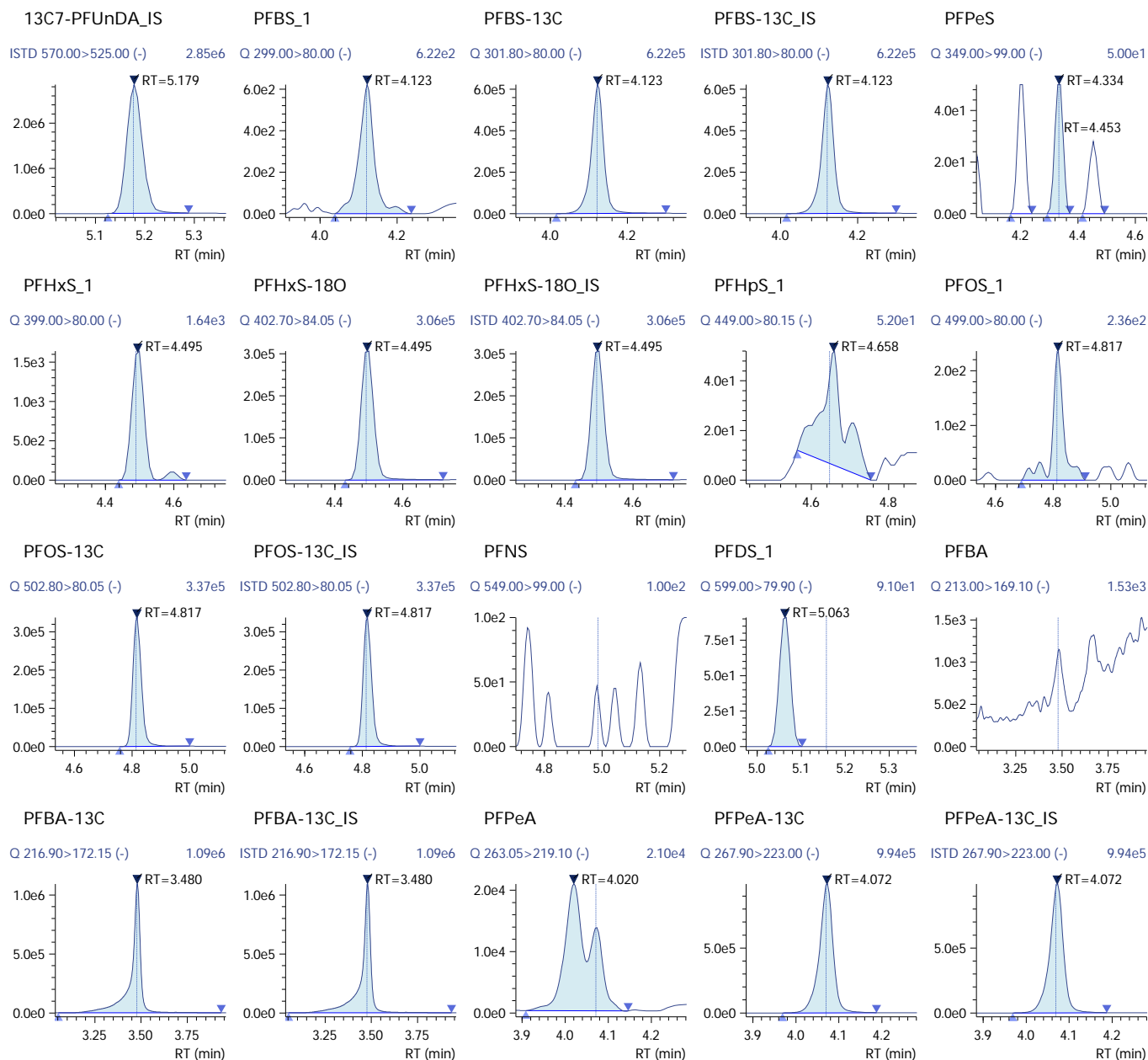
Insight Report

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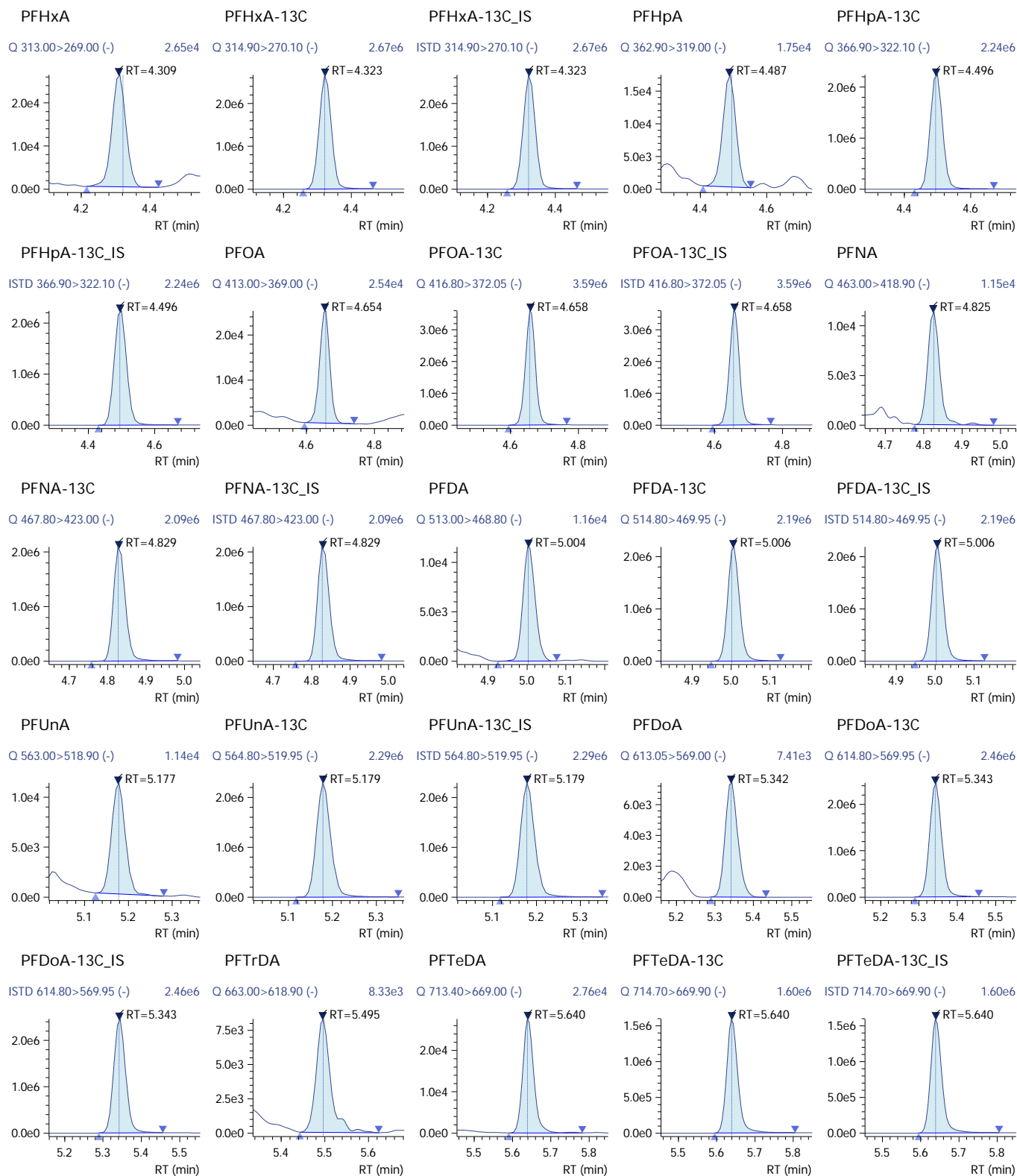
Method File: J:\LCMS06\Data\200812_curve\200812_curve.lcm
Project File: J:\LCMS06\Data\200812_curve\200812_curve.damp

200812_038

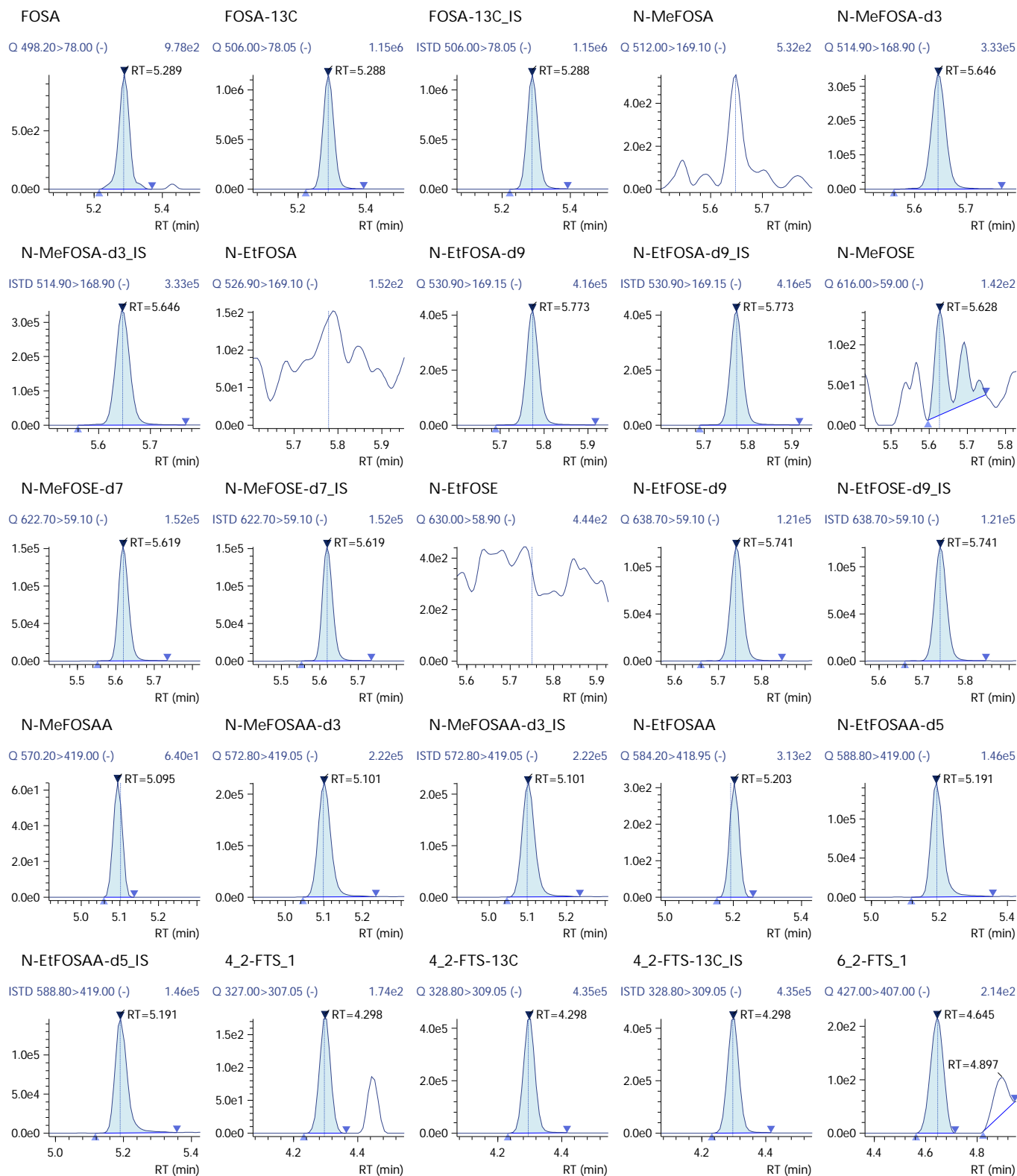
Sample ID: CCB
Date Acquired: 8/12/2020 7:17:55 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_038.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



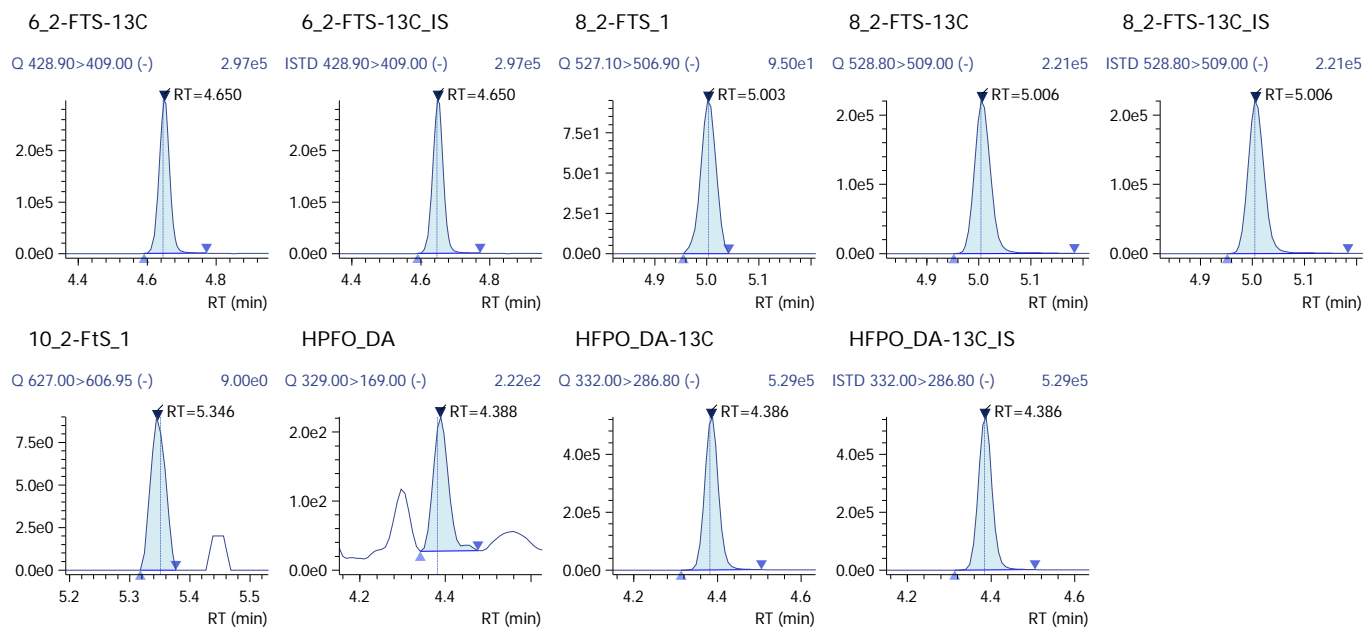
200812_038 (continued)



200812_038 (continued)



200812_038 (continued)



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Printed at 8/13/2020 12:34:07 PM

200812_039

Sample ID: 0.05 PPB ICAL
 Date Acquired: 8/12/2020 7:28:42 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_039.lcd
 Vial: 1 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.179	6016415	6016415	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.124	15455	1432593	2	0.0468	ng/mL	0.0444	55.56
PFBS-13C	Auto	4.124	1432593	6016415	1	5.0446	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.124	1432593	1432593	2	5.0000	ng/mL	5.0000	----
PFPeS	M	4.333	6710	1432593	2	0.0449	ng/mL	0.0470	132.06
PFHxS_1	M	4.492	15297	881358	3	0.0503	ng/mL	0.0457	64.22
PFHxS-18O	Auto	4.495	881358	6016415	1	6.2315	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.495	881358	881358	3	5.0000	ng/mL	5.0000	----
PFHpS_1	M	4.649	5857	881358	3	0.0392	ng/mL	0.0477	55.03
PFOS_1	Auto	4.816	8340	720330	4	0.0472	ng/mL	0.0465	116.06
PFOS-13C	Auto	4.817	720330	6016415	1	4.9041	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.817	720330	720330	4	5.0000	ng/mL	5.0000	----
PFNS	M	4.988	6188	720330	4	0.0508	ng/mL	0.0481	117.62
PFDS_1	Auto	5.157	10384	720330	4	0.0434	ng/mL	0.0482	75.64
PFBA	Auto	3.479	44132	3793422	5	0.0517	ng/mL	0.0500	----
PFBA-13C	Auto	3.478	3793422	6016415	1	5.0441	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.478	3793422	3793422	5	5.0000	ng/mL	5.0000	----
PFPeA	M	4.072	147331	2185556	6	0.0505	ng/mL	0.0500	----
PFPeA-13C	Auto	4.073	2185556	6016415	1	5.1071	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.073	2185556	2185556	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.317	155660	6722774	7	0.0540	ng/mL	0.0500	3.13
PFHxA-13C	Auto	4.324	6722774	6016415	1	5.0866	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.324	6722774	6722774	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.494	96892	5805118	8	0.0494	ng/mL	0.0500	21.20
PFHpA-13C	Auto	4.496	5805118	6016415	1	6.1448	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.496	5805118	5805118	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.657	119184	7532144	9	0.0490	ng/mL	0.0500	38.39
PFOA-13C	Auto	4.659	7532144	6016415	1	5.6079	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.659	7532144	7532144	9	5.0000	ng/mL	5.0000	----
PFNA	M	4.828	56709	4523443	10	0.0497	ng/mL	0.0500	27.28
PFNA-13C	Auto	4.830	4523443	6016415	1	4.9698	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.830	4523443	4523443	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.005	68912	4623187	11	0.0709	ng/mL	0.0500	19.59
PFDA-13C	Auto	5.006	4623187	6016415	1	5.4835	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.006	4623187	4623187	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.178	79296	5183660	12	0.0516	ng/mL	0.0500	10.40
PFUnA-13C	Auto	5.179	5183660	6016415	1	5.0125	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.179	5183660	5183660	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.344	53602	5056509	13	0.0487	ng/mL	0.0500	18.82
PFDaA-13C	Auto	5.344	5056509	6016415	1	5.0813	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.344	5056509	5056509	13	5.0000	ng/mL	5.0000	----
PFTrDA	M	5.499	54307	3321469	14	0.0492	ng/mL	0.0500	16.50
PFTeDA	Auto	5.641	75452	3321469	14	0.0508	ng/mL	0.0500	725.01
PFTeDA-13C	Auto	5.642	3321469	6016415	1	5.2043	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.642	3321469	3321469	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.290	39396	2660662	16	0.0526	ng/mL	0.0500	3.94
FOSA-13C	Auto	5.290	2660662	6016415	1	4.8477	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.290	2660662	2660662	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	M	5.650	10074	699164	17	0.0547	ng/mL	0.0500	82.07
N-MeFOSA-d3	Auto	5.648	699164	6016415	1	5.1146	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.648	699164	699164	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.780	2847	825894	18	0.0841	ng/mL	0.0500	60.43
N-EtFOSA-d9	Auto	5.775	825894	6016415	1	4.8482	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.775	825894	825894	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.628	10662	346468	19	0.0496	ng/mL	0.0500	----

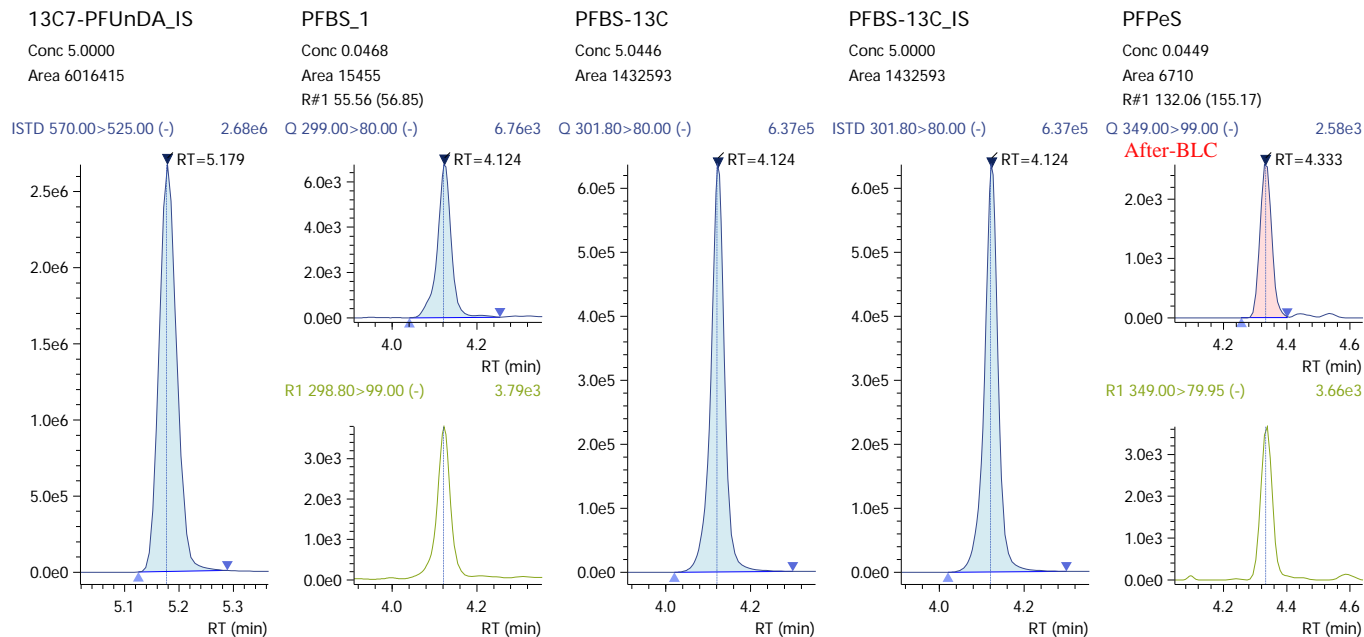
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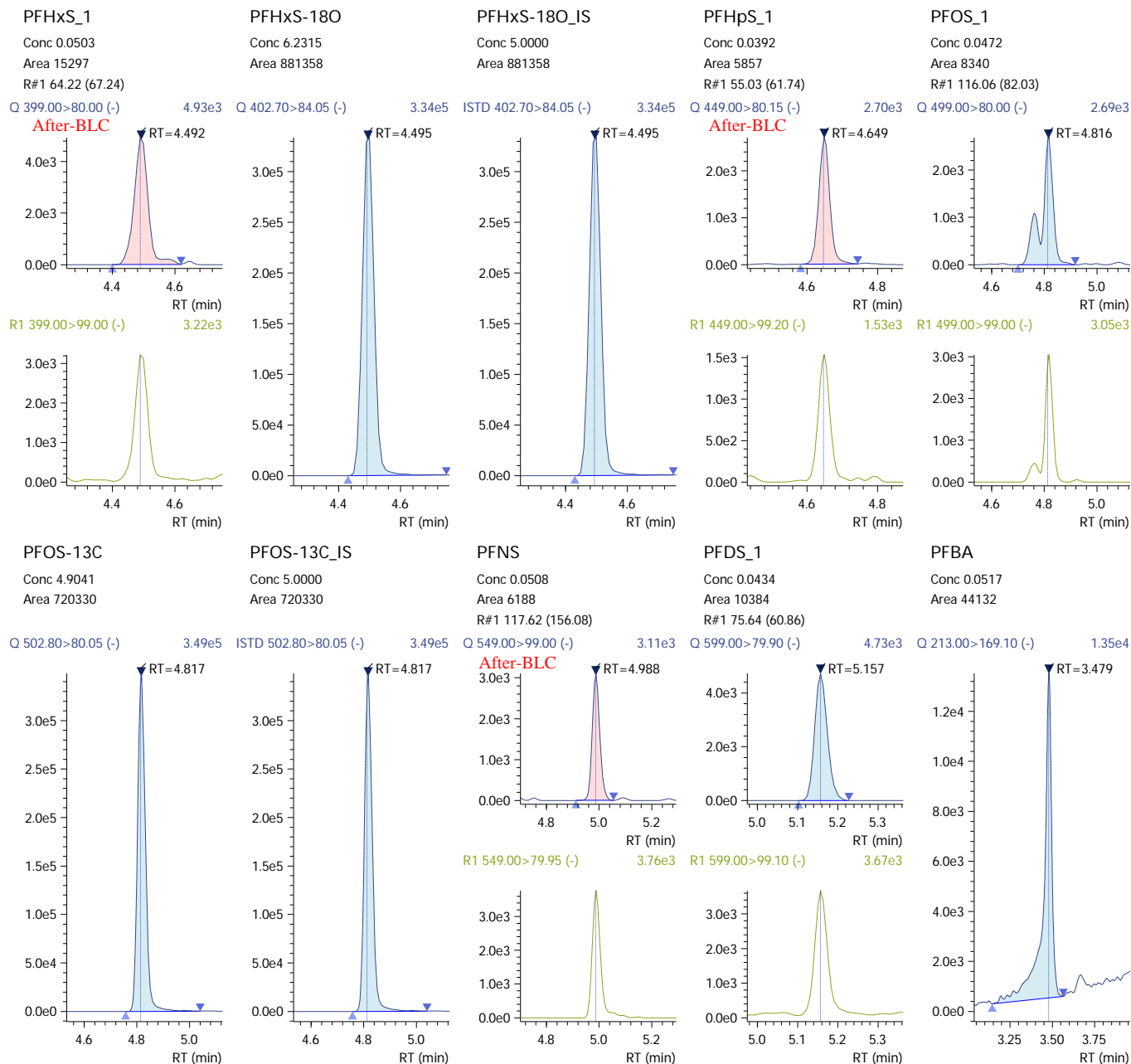
200812_039 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.621	346468	6016415	1	5.3011	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.621	346468	346468	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	M	5.754	10470	266367	20	0.0489	ng/mL	0.0500	----
N-EtFOSE-d9	Auto	5.743	266367	6016415	1	4.9727	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.743	266367	266367	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	M	5.111	2639	510582	21	0.0342	ng/mL	0.0500	28.59
N-MeFOSAA-d3	Auto	5.101	510582	6016415	1	4.9651	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.101	510582	510582	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.194	2029	361132	22	0.0484	ng/mL	0.0500	160.58
N-EtFOSAA-d5	Auto	5.191	361132	6016415	1	4.9546	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.191	361132	361132	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.300	9276	1071414	23	0.0454	ng/mL	0.0469	2656.35
4_2-FTS-13C	Auto	4.299	1071414	6016415	1	5.0632	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.299	1071414	1071414	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	M	4.650	6642	634126	24	0.0478	ng/mL	0.0476	59.65
6_2-FTS-13C	Auto	4.650	634126	6016415	1	5.5438	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.650	634126	634126	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	M	5.006	3600	467958	25	0.0504	ng/mL	0.0480	11.73
8_2-FTS-13C	Auto	5.007	467958	6016415	1	5.4059	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.007	467958	467958	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.353	2646	467958	25	0.0477	ng/mL	0.0483	5.08
HPFO_DA	M	4.386	13309	1220584	26	0.0543	ng/mL	0.0500	76.91
HPFO_DA-13C	Auto	4.386	1220584	6016415	1	4.9813	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.386	1220584	1220584	26	5.0000	ng/mL	5.0000	----



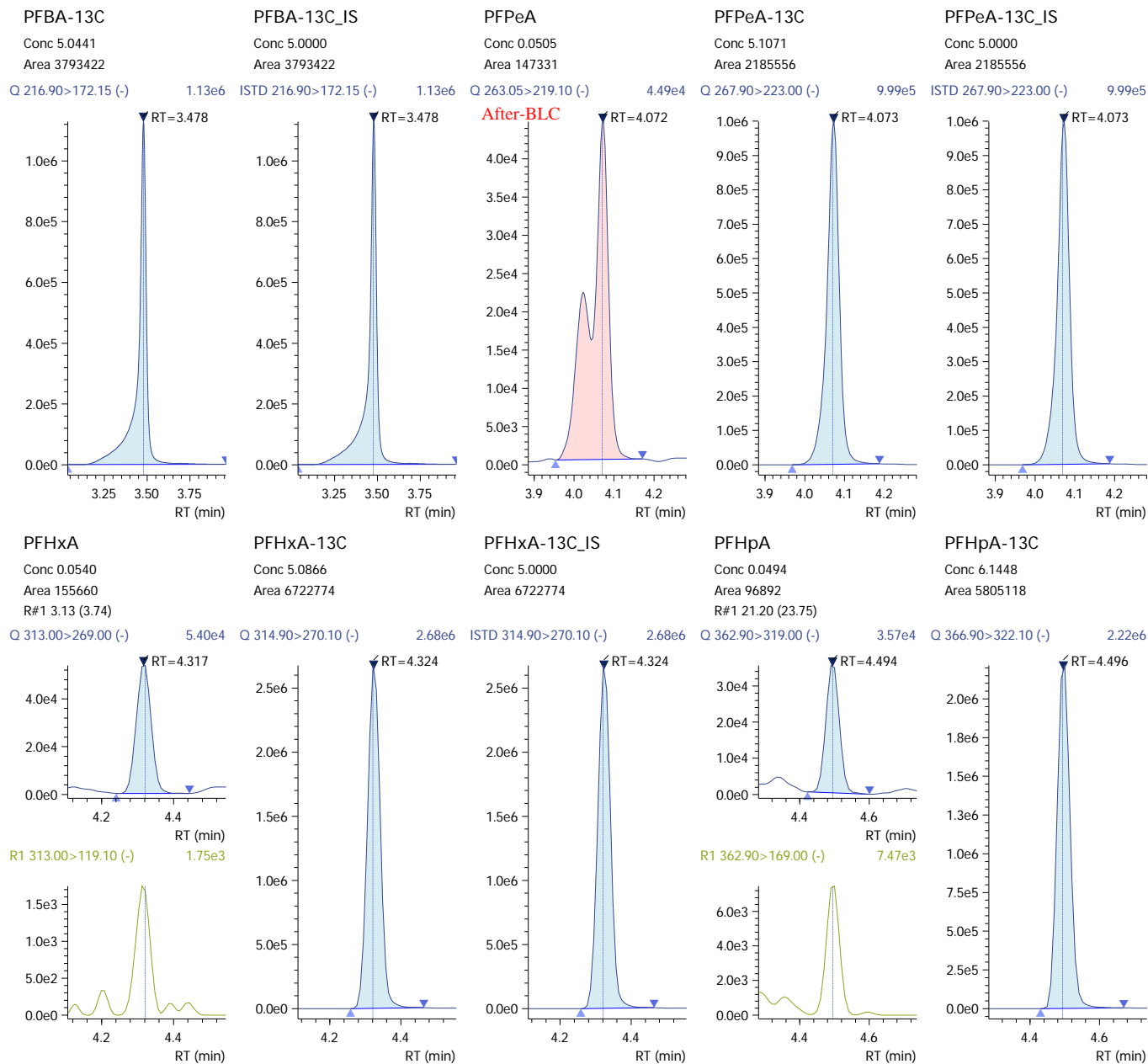
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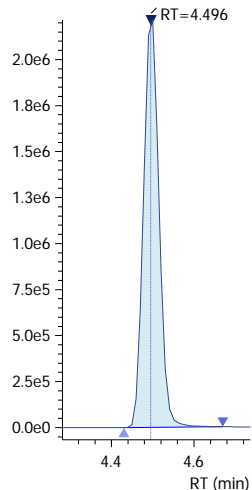
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200812_039 (continued)

PFHpA-13C_IS

Conc 5.0000
 Area 5805118

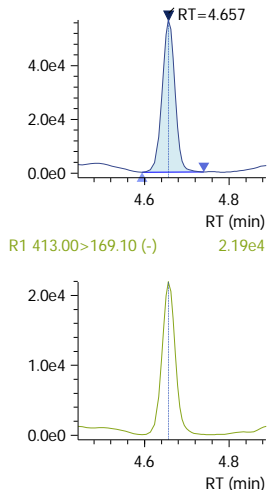
ISTD 366.90>322.10 (-) 2.22e6



PFOA

Conc 0.0490
 Area 119184
 R#1 38.39 (34.80)

Q 413.00>369.00 (-) 5.70e4

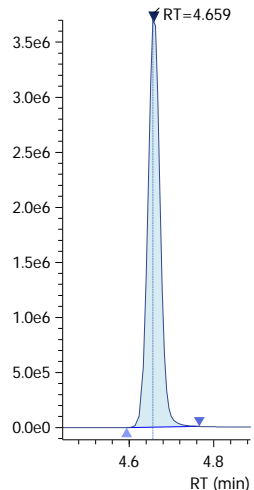


R1 413.00>169.10 (-) 2.19e4

PFOA-13C

Conc 5.6079
 Area 7532144

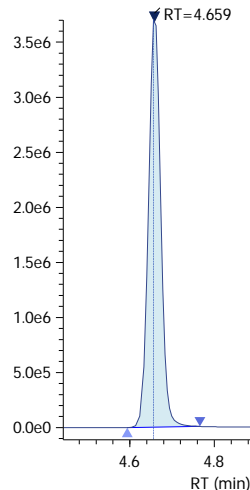
Q 416.80>372.05 (-) 3.70e6



PFOA-13C_IS

Conc 5.0000
 Area 7532144

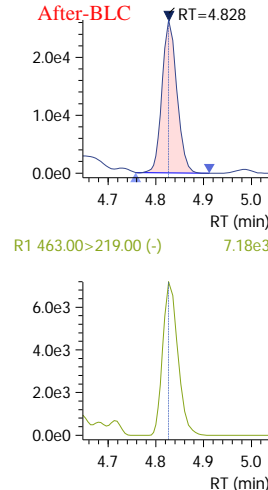
ISTD 416.80>372.05 (-) 3.70e6



PFNA

Conc 0.0497
 Area 56709
 R#1 27.28 (22.71)

Q 463.00>418.90 (-) 2.65e4

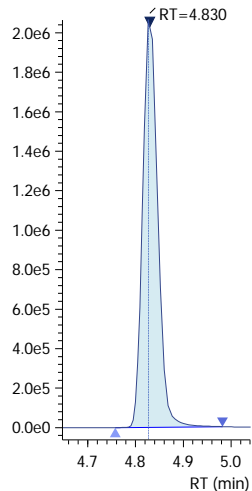


R1 463.00>219.00 (-) 7.18e3

PFNA-13C

Conc 4.9698
 Area 4523443

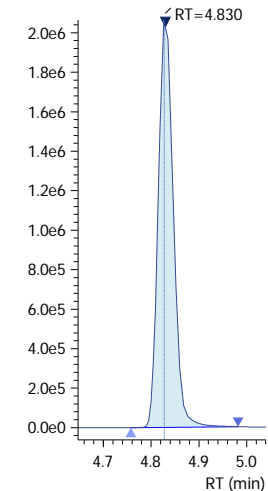
Q 467.80>423.00 (-) 2.06e6



PFNA-13C_IS

Conc 5.0000
 Area 4523443

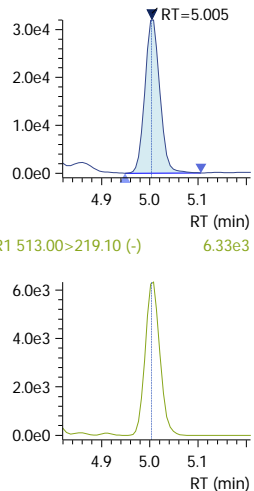
ISTD 467.80>423.00 (-) 2.06e6



PFDA

Conc 0.0709
 Area 68912
 R#1 19.59 (22.06)

Q 513.00>468.80 (-) 3.20e4

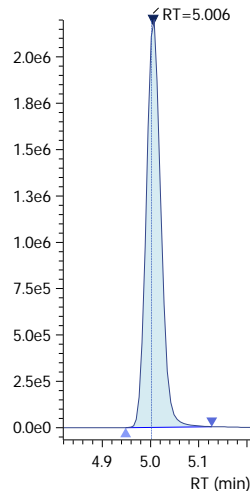


R1 513.00>219.10 (-) 6.33e3

PFDA-13C

Conc 5.4835
 Area 4623187

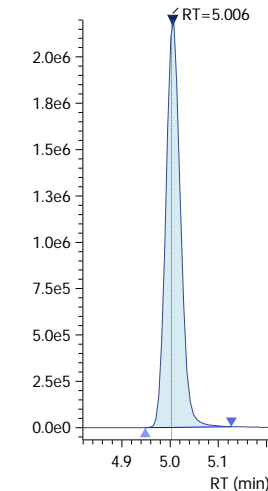
Q 514.80>469.95 (-) 2.20e6



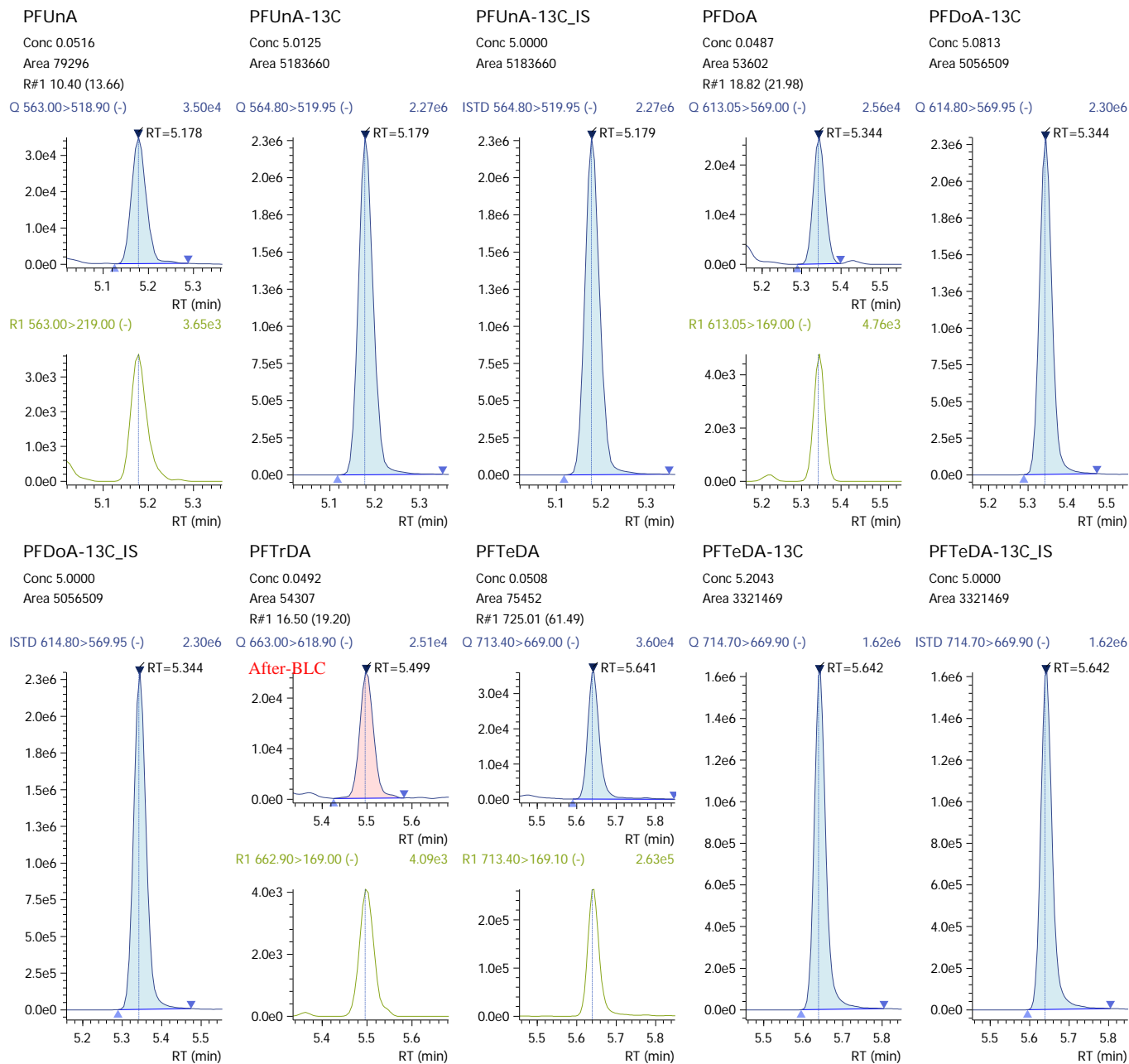
PFDA-13C_IS

Conc 5.0000
 Area 4623187

ISTD 514.80>469.95 (-) 2.20e6



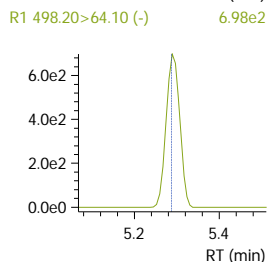
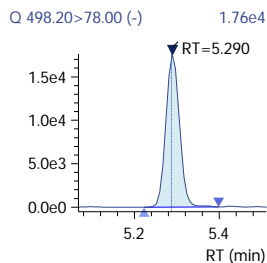
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200812_039 (continued)

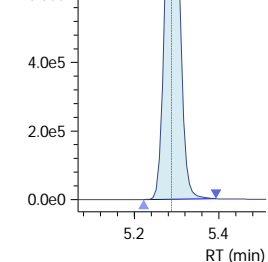
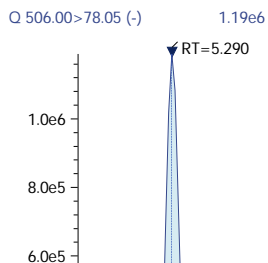
FOSA

Conc 0.0526
 Area 39396
 R#1 3.94 (4.04)



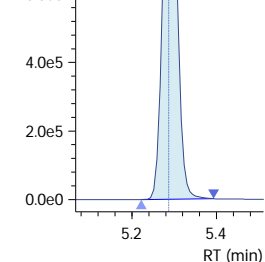
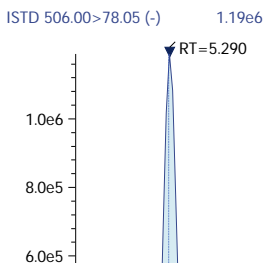
FOSA-13C

Conc 4.8477
 Area 2660662



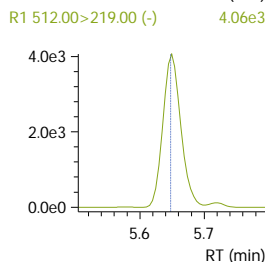
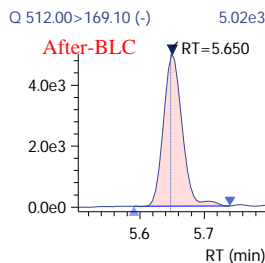
FOSA-13C_IS

Conc 5.0000
 Area 2660662



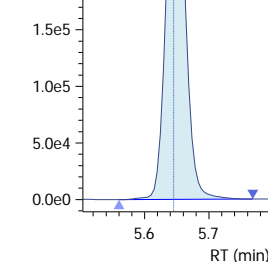
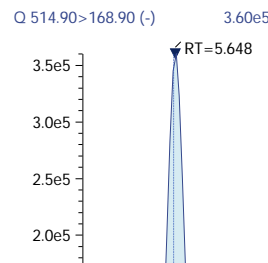
N-MeFOSA

Conc 0.0547
 Area 10074
 R#1 82.07 (78.52)



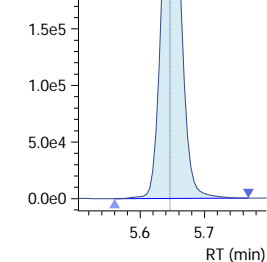
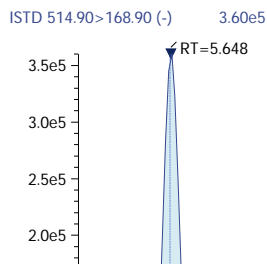
N-MeFOSA-d3

Conc 5.1146
 Area 699164



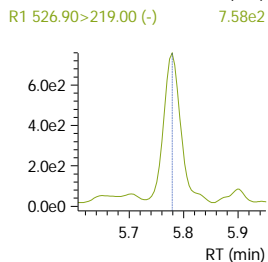
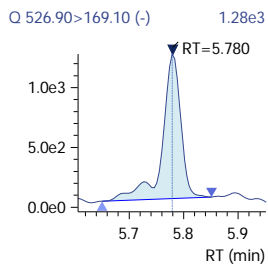
N-MeFOSA-d3_IS

Conc 5.0000
 Area 699164



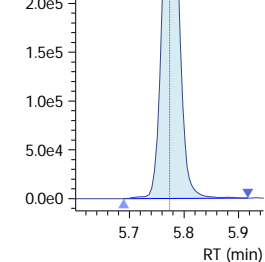
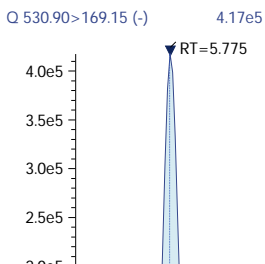
N-EtFOSA

Conc 0.0841
 Area 2847
 R#1 60.43 (0.00)



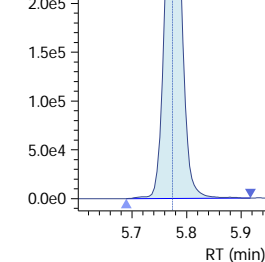
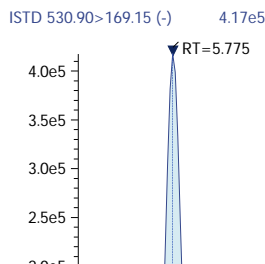
N-EtFOSA-d9

Conc 4.8482
 Area 825894



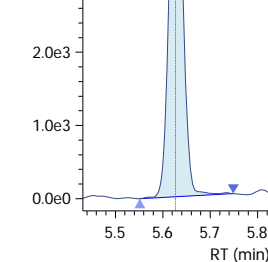
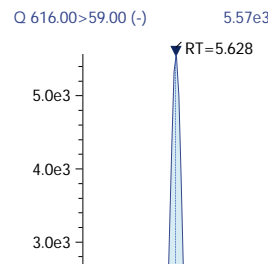
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Conc 5.0000
 Area 825894



N-MeFOSE

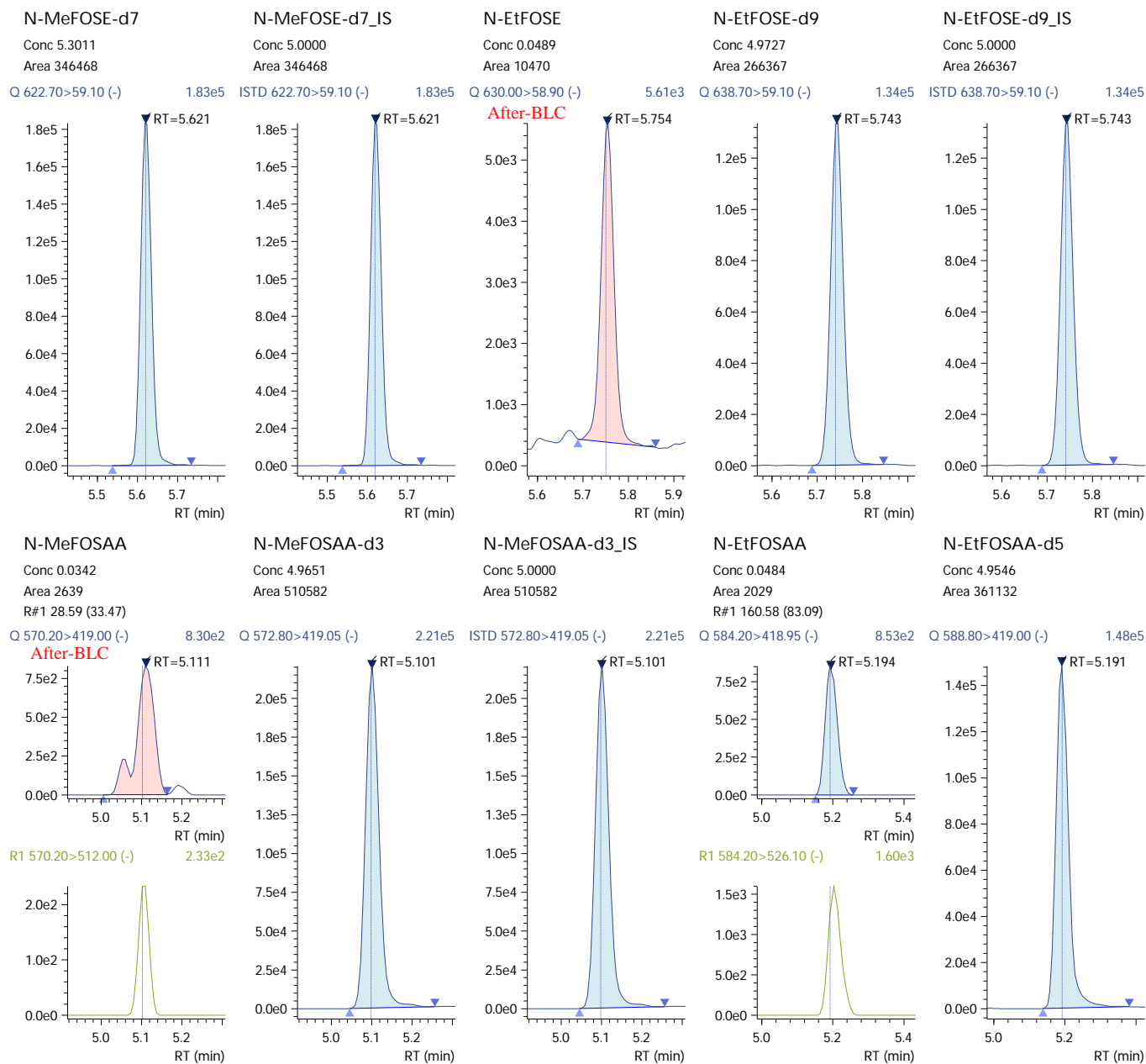
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 Area 10662



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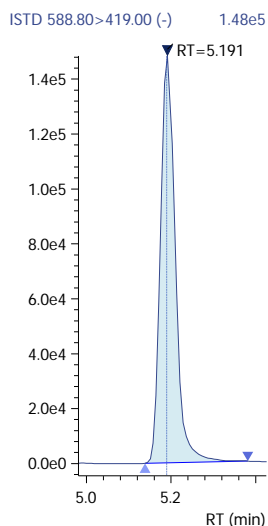
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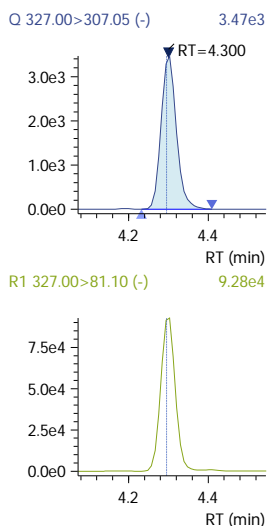
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 361132



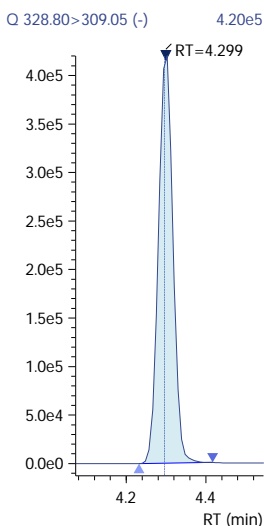
4_2-FTS_1

Conc 0.0454
 Area 9276
 R#1 2656.35 (54.93)



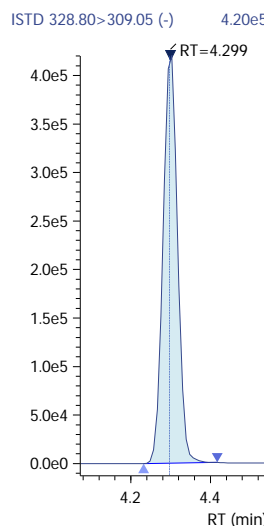
4_2-FTS-13C

Conc 5.0632
 Area 1071414



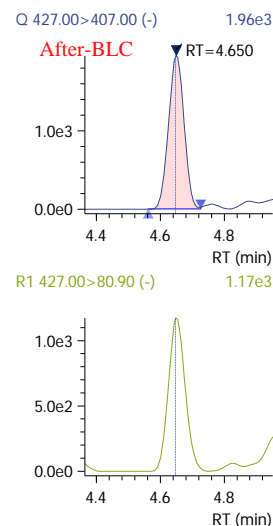
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Conc 5.0000
 Area 1071414



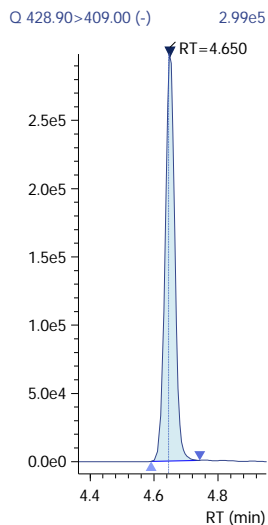
6_2-FTS_1

Conc 0.0478
 Area 6642
 R#1 59.65 (36.33)



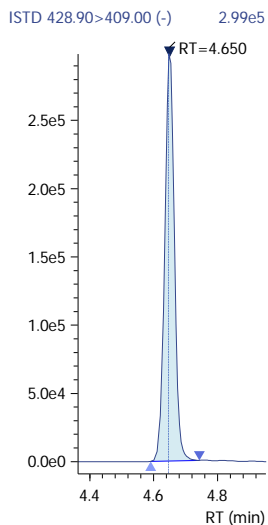
6_2-FTS-13C

Conc 5.5438
 Area 634126



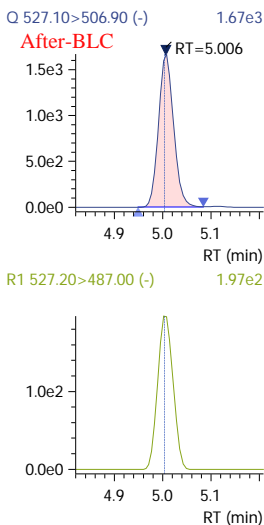
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Conc 5.0000
 Area 634126



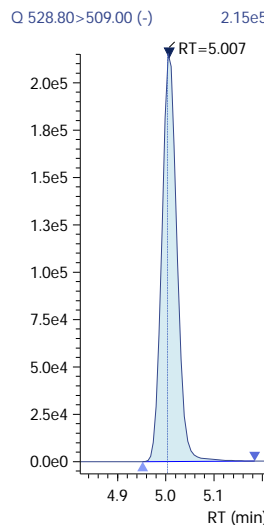
8_2-FTS_1

Conc 0.0504
 Area 3600
 R#1 11.73 (8.96)



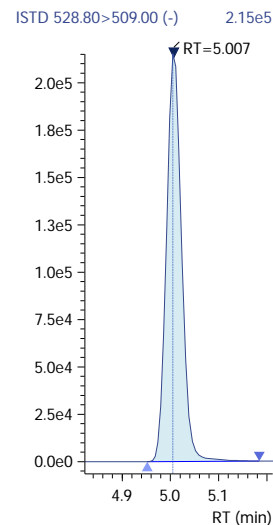
8_2-FTS-13C

Conc 5.4059
 Area 467958



8_2-FTS-13C_IS

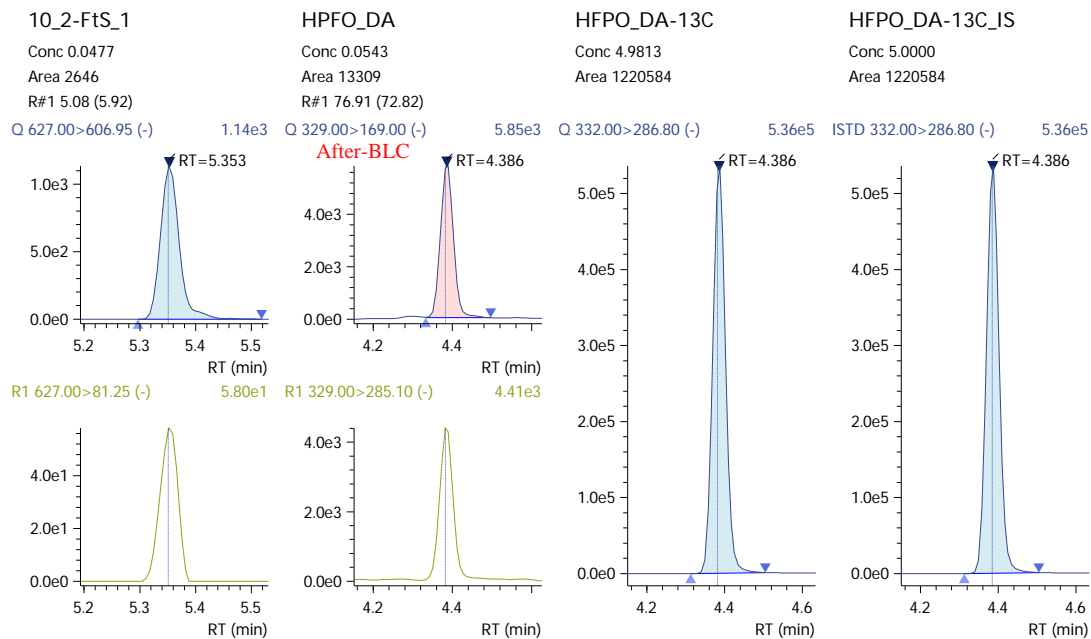
Conc 5.0000
 Area 467958



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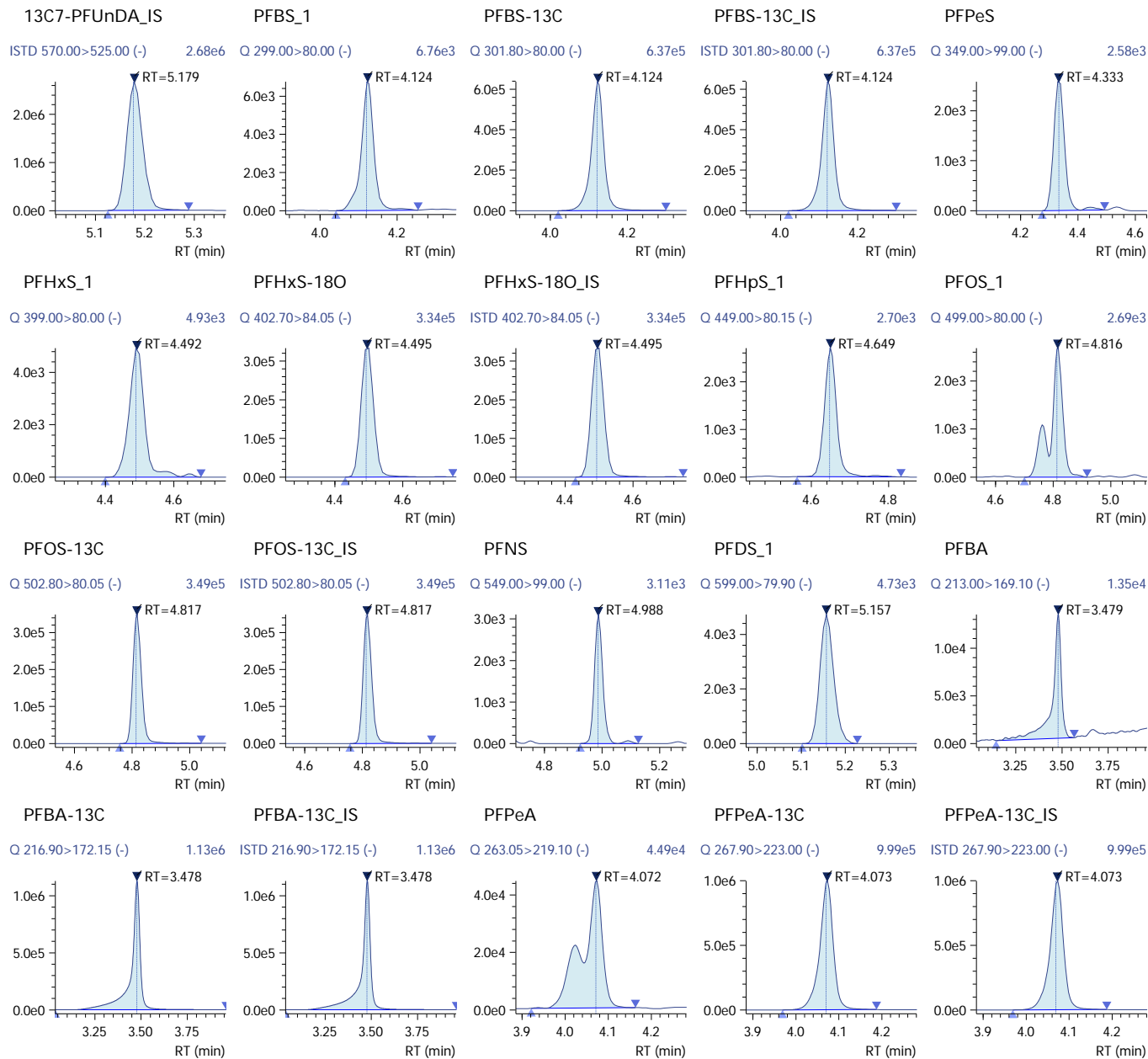


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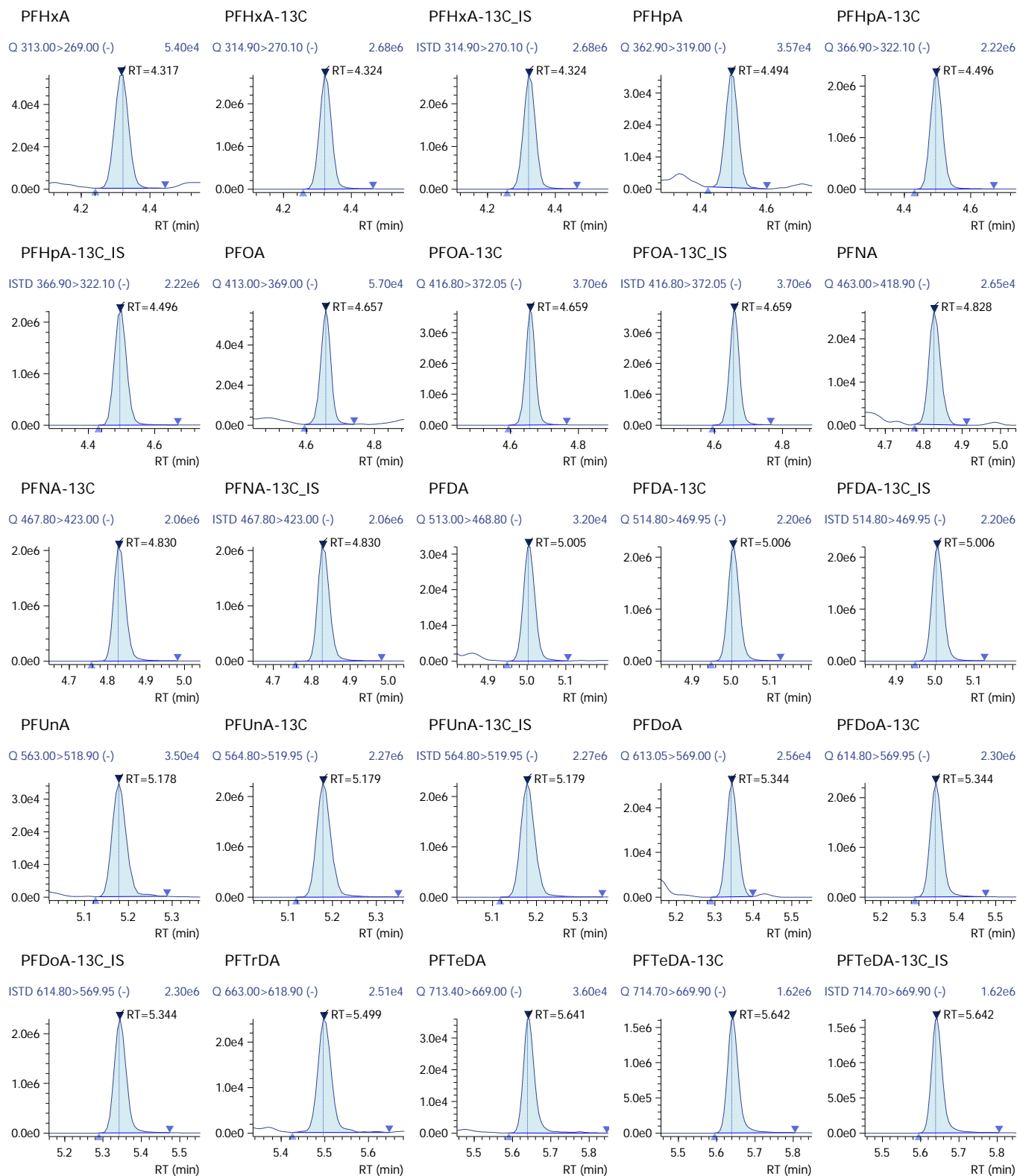
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200812_039

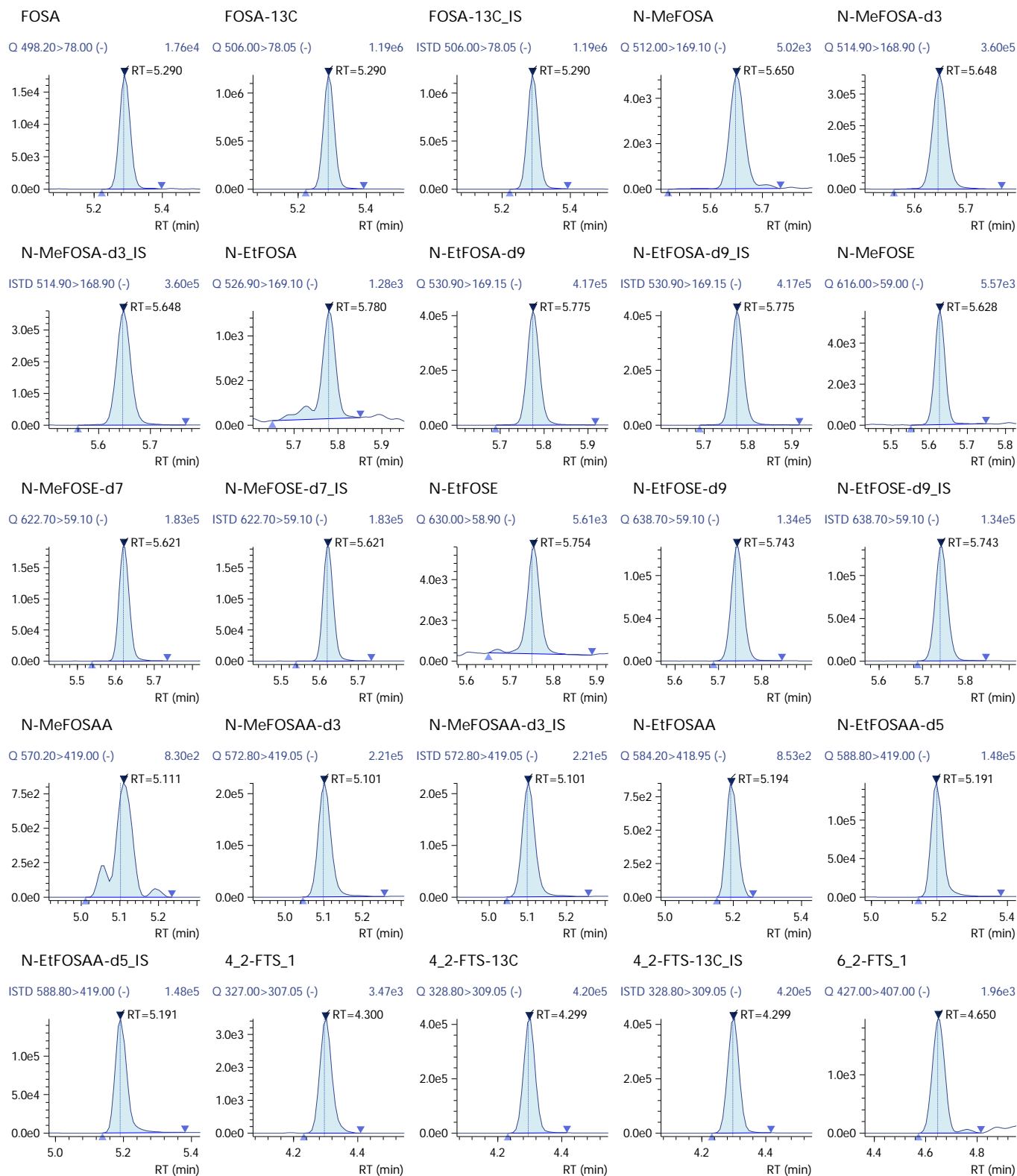
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Date Acquired: 8/12/2020 7:28:42 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_039.lcd
Vial: 1 | Inj. Volume: 15.0000uL | Tray: 0



200812_039 (continued)



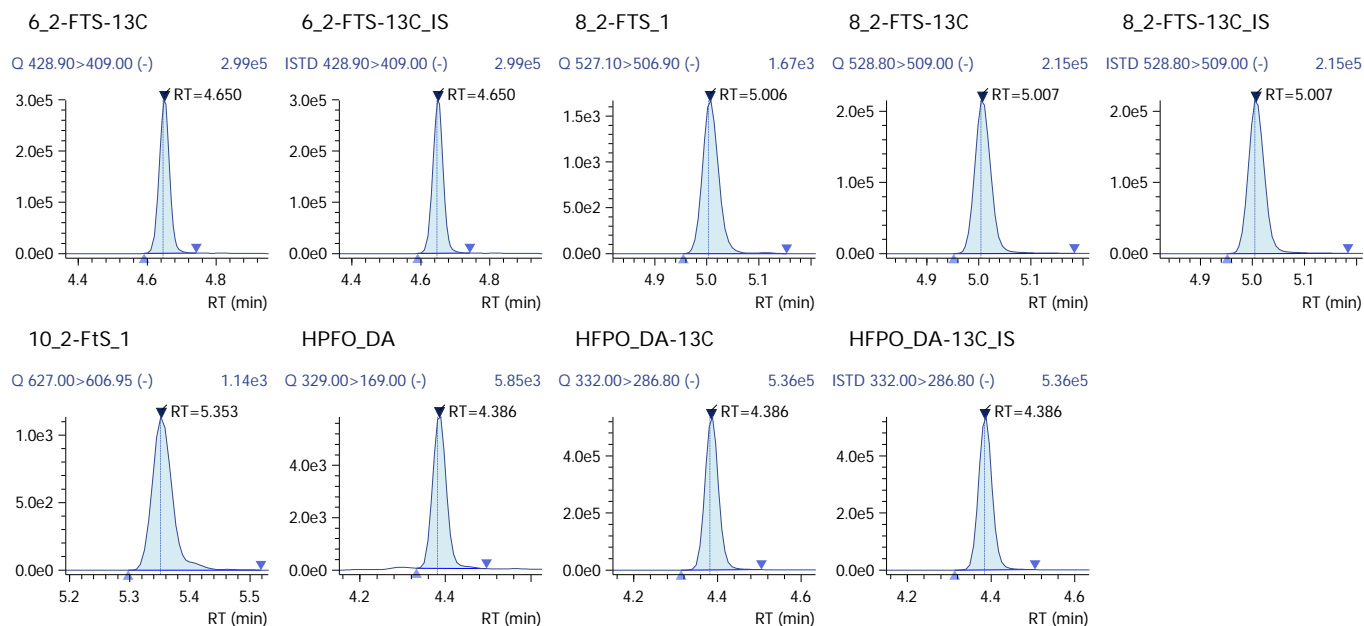
200812_039 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_039 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_040

Sample ID: 0.10 PPB ICAL
 Date Acquired: 8/12/2020 7:39:15 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_040.lcd
 Vial: 2 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.174	6476904	6476904	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.118	29888	1412469	2	0.0918	ng/mL	0.0887	53.59
PFBS-13C	Auto	4.118	1412469	6476904	1	4.6201	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.118	1412469	1412469	2	5.0000	ng/mL	5.0000	----
PFPeS	M	4.331	15180	1412469	2	0.1031	ng/mL	0.0941	167.52
PFHxS_1	Auto	4.486	24407	662459	3	0.1068	ng/mL	0.0913	45.32
PFHxS-18O	Auto	4.490	662459	6476904	1	4.3508	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.490	662459	662459	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.645	12142	662459	3	0.1082	ng/mL	0.0953	51.93
PFOS_1	M	4.811	18649	806881	4	0.0942	ng/mL	0.0929	96.47
PFOS-13C	Auto	4.812	806881	6476904	1	5.1028	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.812	806881	806881	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.984	10050	806881	4	0.0736	ng/mL	0.0962	175.94
PFDS_1	Auto	5.152	22256	806881	4	0.0831	ng/mL	0.0965	69.40
PFBA	Auto	3.472	88247	3829951	5	0.1024	ng/mL	0.1000	----
PFBA-13C	Auto	3.471	3829951	6476904	1	4.7306	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.471	3829951	3829951	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.068	217809	2248424	6	0.0984	ng/mL	0.1000	----
PFPeA-13C	Auto	4.067	2248424	6476904	1	4.8805	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.067	2248424	2248424	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.315	227401	7713624	7	0.0840	ng/mL	0.1000	4.37
PFHxA-13C	Auto	4.317	7713624	6476904	1	5.4213	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.317	7713624	7713624	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.489	150558	4908047	8	0.1039	ng/mL	0.1000	27.73
PFHpA-13C	Auto	4.492	4908047	6476904	1	4.8259	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.492	4908047	4908047	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.653	213622	7898737	9	0.1045	ng/mL	0.1000	35.80
PFOA-13C	Auto	4.654	7898737	6476904	1	5.4627	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.654	7898737	7898737	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.825	123772	5394480	10	0.1023	ng/mL	0.1000	23.70
PFNA-13C	Auto	4.826	5394480	6476904	1	5.5054	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.826	5394480	5394480	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.001	118775	4616826	11	0.1223	ng/mL	0.1000	20.37
PFDA-13C	Auto	5.001	4616826	6476904	1	5.0866	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.001	4616826	4616826	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.174	124453	5492908	12	0.0903	ng/mL	0.1000	14.12
PFUnA-13C	Auto	5.175	5492908	6476904	1	4.9339	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.175	5492908	5492908	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.338	101295	5074775	13	0.1069	ng/mL	0.1000	25.44
PFDaA-13C	Auto	5.338	5074775	6476904	1	4.7371	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.338	5074775	5074775	13	5.0000	ng/mL	5.0000	----
PFTeDA	Auto	5.492	97880	3312623	14	0.1041	ng/mL	0.1000	18.07
PFTeDA	Auto	5.635	93812	3312623	14	0.0971	ng/mL	0.1000	620.82
PFTeDA-13C	Auto	5.635	3312623	6476904	1	4.8214	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.635	3312623	3312623	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.284	78987	2872288	16	0.0978	ng/mL	0.1000	4.12
FOSA-13C	Auto	5.285	2872288	6476904	1	4.8612	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.285	2872288	2872288	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.646	18948	708510	17	0.1015	ng/mL	0.1000	83.62
N-MeFOSA-d3	Auto	5.642	708510	6476904	1	4.8145	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.642	708510	708510	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.774	3575	835305	18	0.1044	ng/mL	0.1000	72.77
N-EtFOSA-d9	Auto	5.770	835305	6476904	1	4.5548	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.770	835305	835305	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.623	21384	330628	19	0.1043	ng/mL	0.1000	----

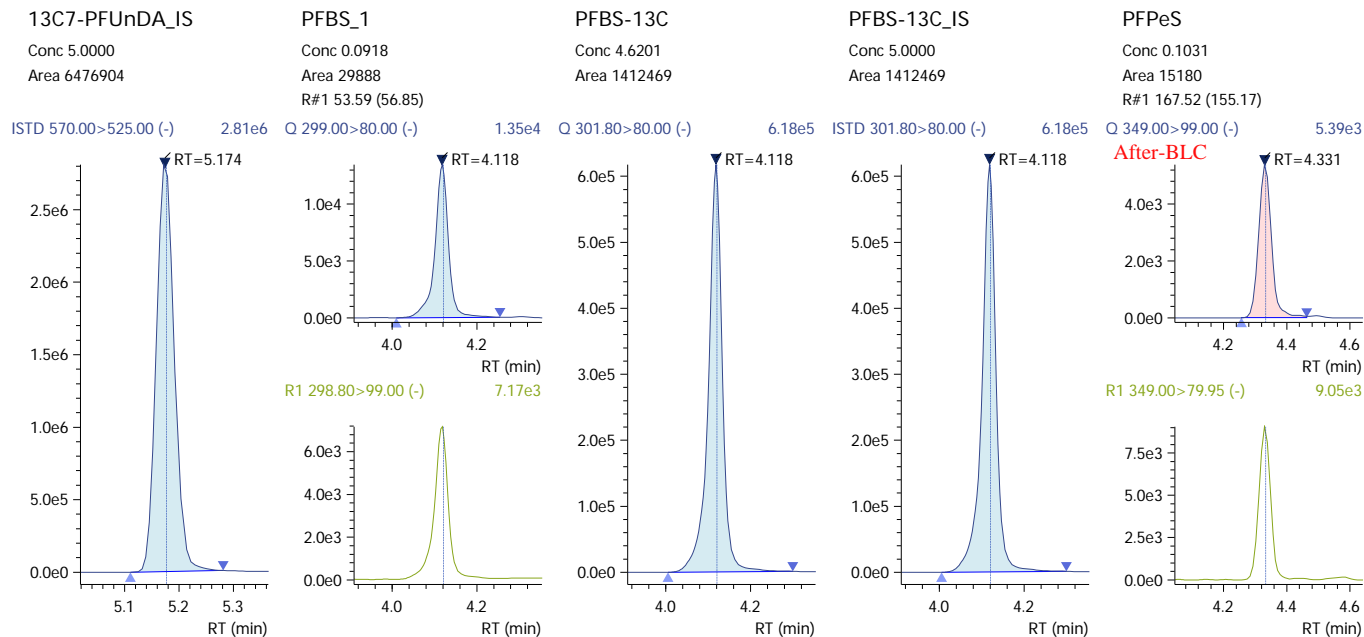
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200812_040 (continued)

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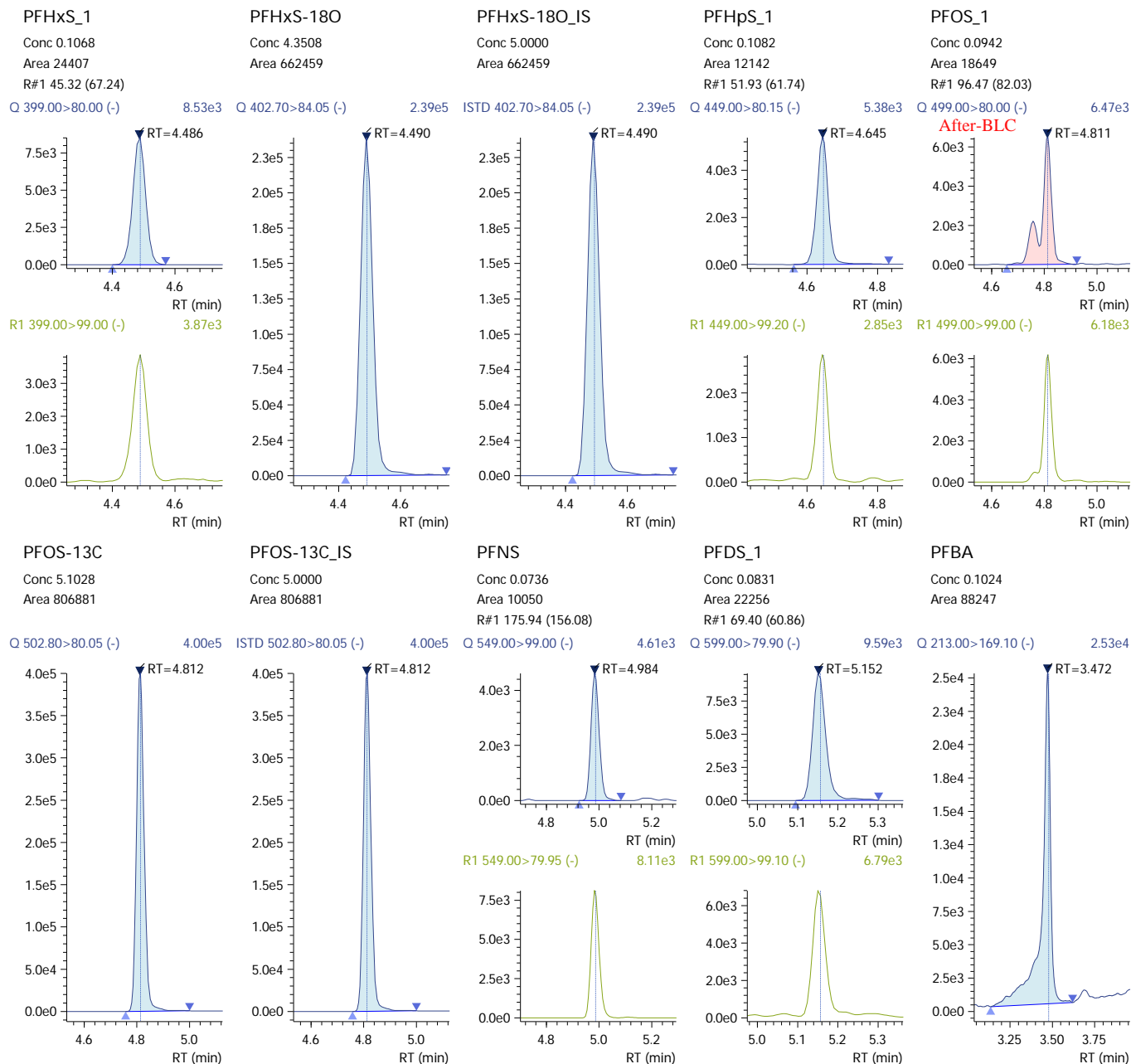
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N-MeFOSE-d7_IS	Auto	5.616	330628	330628	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	M	5.748	21906	251159	20	0.1084	ng/mL	0.1000	----
N-EtFOSE-d9	Auto	5.738	251159	6476904	1	4.3555	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.738	251159	251159	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	Auto	5.099	8773	535027	21	0.1085	ng/mL	0.1000	29.09
N-MeFOSAA-d3	Auto	5.096	535027	6476904	1	4.8329	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.096	535027	535027	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.188	3832	370534	22	0.0891	ng/mL	0.1000	55.45
N-EtFOSAA-d5	Auto	5.186	370534	6476904	1	4.7222	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.186	370534	370534	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.294	22004	1073742	23	0.1074	ng/mL	0.0937	885.26
4_2-FTS-13C	Auto	4.294	1073742	6476904	1	4.7135	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.294	1073742	1073742	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.644	16602	698185	24	0.1084	ng/mL	0.0951	36.85
6_2-FTS-13C	Auto	4.645	698185	6476904	1	5.6699	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.645	698185	698185	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	M	5.001	7368	506880	25	0.0952	ng/mL	0.0960	10.14
8_2-FTS-13C	Auto	5.002	506880	6476904	1	5.4392	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.002	506880	506880	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.346	5290	506880	25	0.0880	ng/mL	0.0966	8.65
HPFO_DA	M	4.381	25718	1210486	26	0.1058	ng/mL	0.1000	79.93
HPFO_DA-13C	Auto	4.381	1210486	6476904	1	4.5889	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.381	1210486	1210486	26	5.0000	ng/mL	5.0000	----



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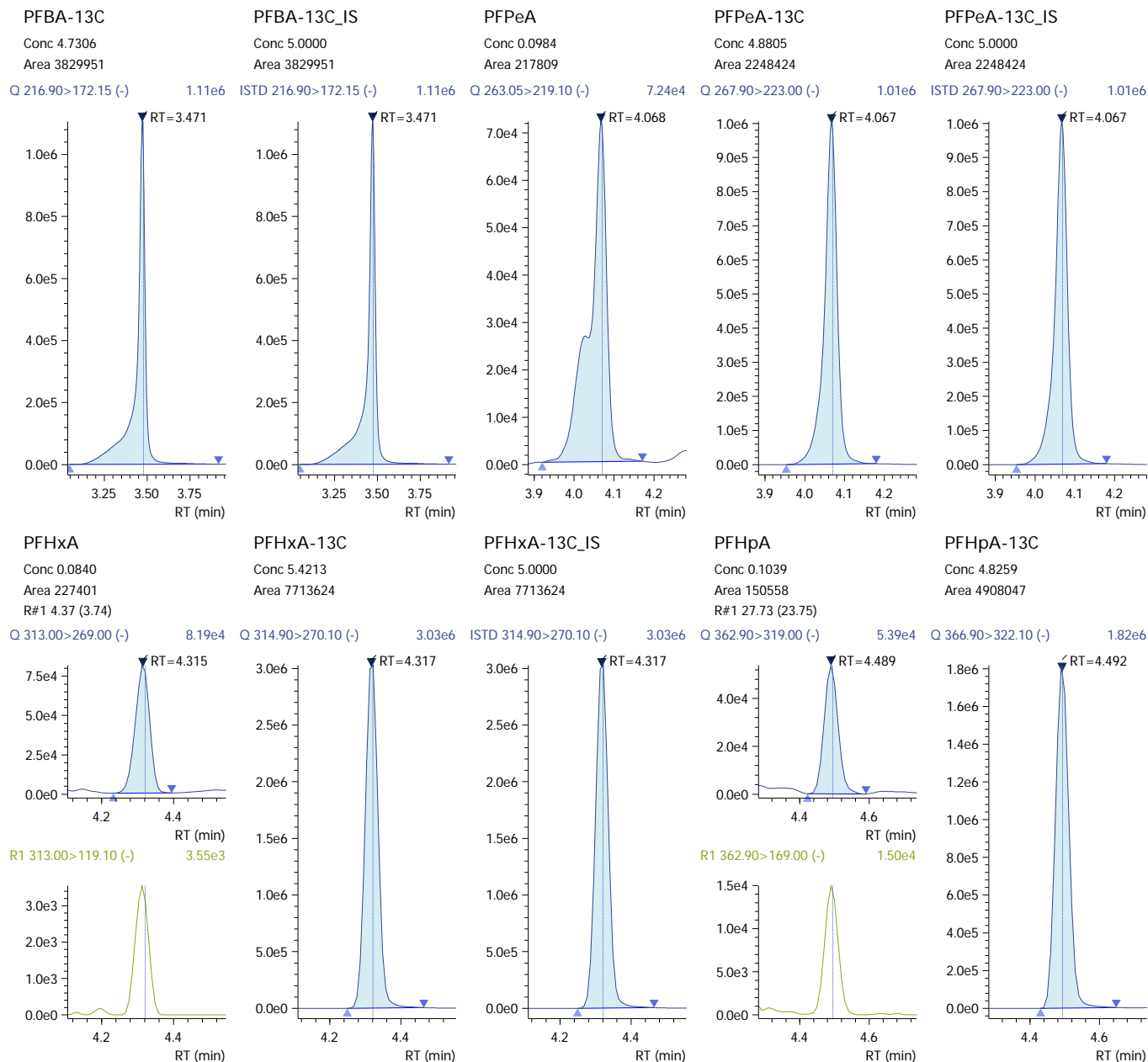
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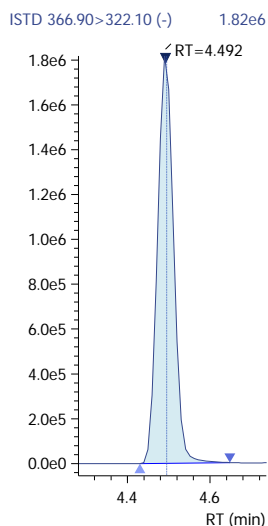
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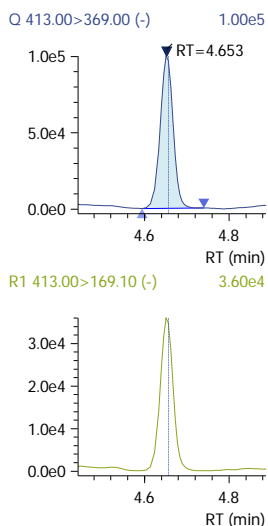
PFHpA-13C_IS

Conc 5.0000
Area 4908047



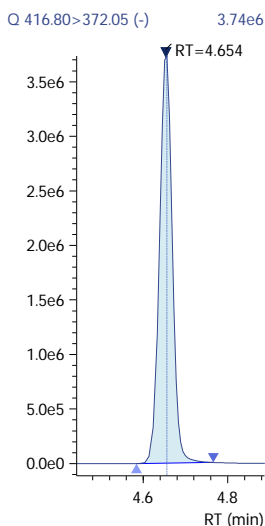
PFOA

Conc 0.1045
Area 213622
R#1 35.80 (34.80)



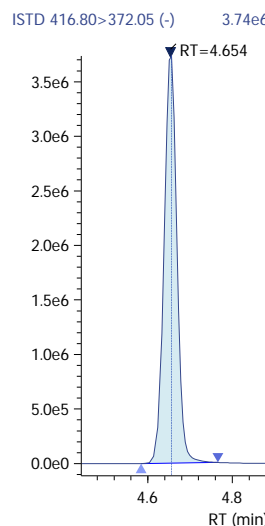
PFOA-13C

Conc 5.4627
Area 7898737



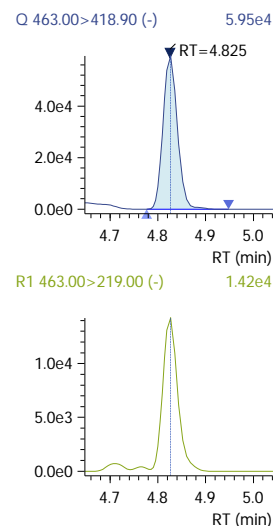
PFOA-13C_IS

Conc 5.0000
Area 7898737



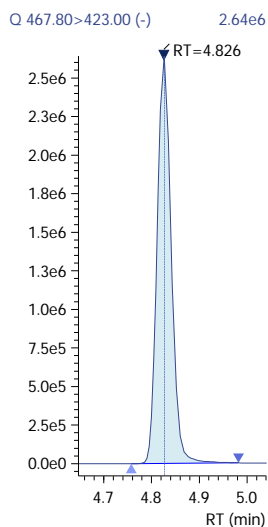
PFNA

Conc 0.1023
Area 123772
R#1 23.70 (22.71)



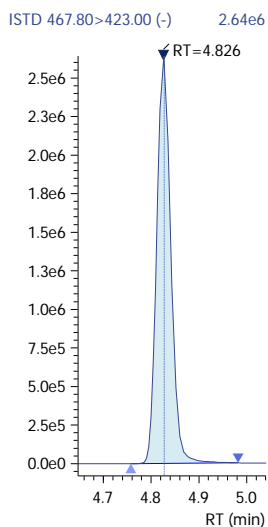
PFNA-13C

Conc 5.5054
Area 5394480



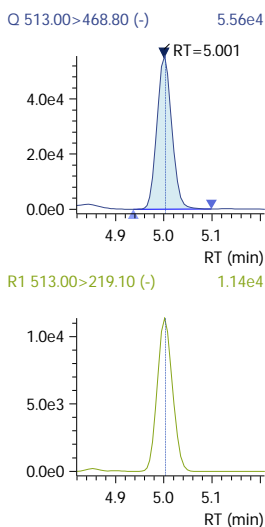
PFNA-13C_IS

Conc 5.0000
Area 5394480



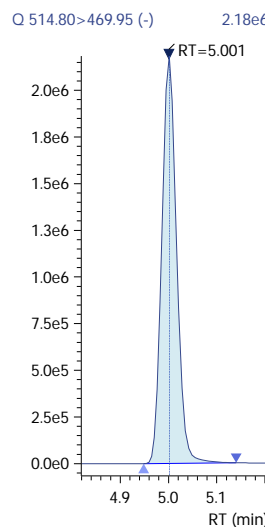
PFDA

Conc 0.1223
Area 118775
R#1 20.37 (22.06)



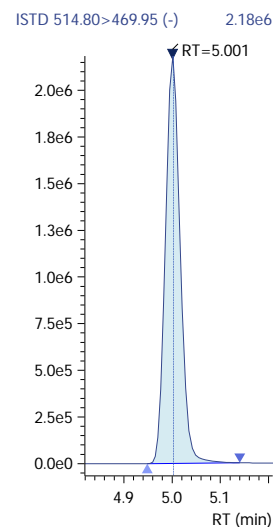
PFDA-13C

Conc 5.0866
Area 4616826



PFDA-13C_IS

Conc 5.0000
Area 4616826

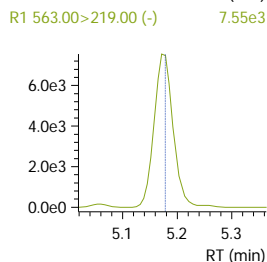
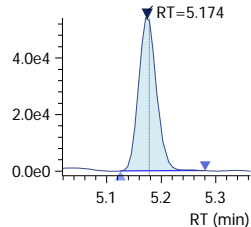


200812_040 (continued)

PFUnA

Conc 0.0903
Area 124453
R#1 14.12 (13.66)

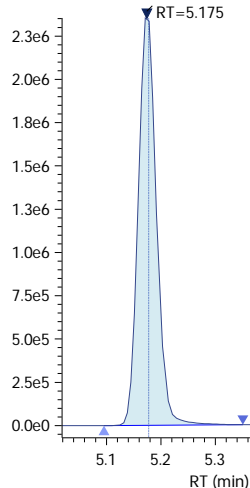
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PFUnA-13C

Conc 4.9339
Area 5492908

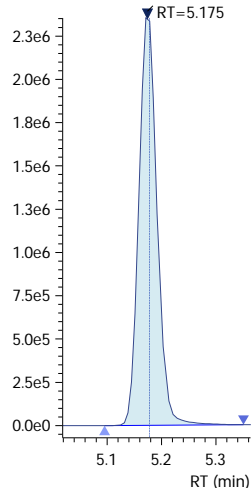
Q 564.80>519.95 (-) 2.35e6



PFUnA-13C_IS

Conc 5.0000
Area 5492908

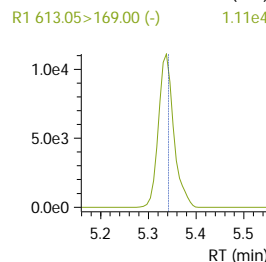
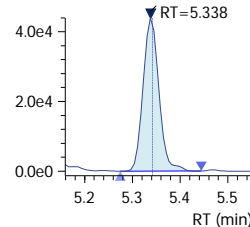
ISTD 564.80>519.95 (-) 2.35e6



PFDaA

Conc 0.1069
Area 101295
R#1 25.44 (21.98)

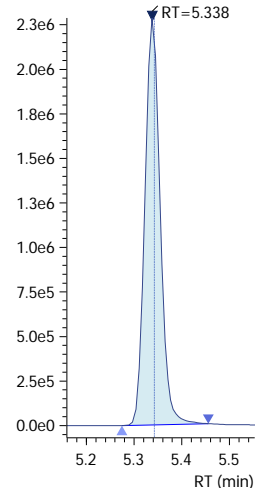
Q 613.05>569.00 (-) 4.40e4



PFDaA-13C

Conc 4.7371
Area 5074775

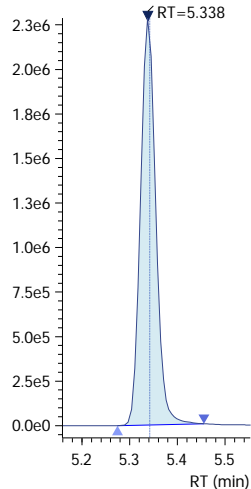
Q 614.80>569.95 (-) 2.29e6



PFDaA-13C_IS

Conc 5.0000
Area 5074775

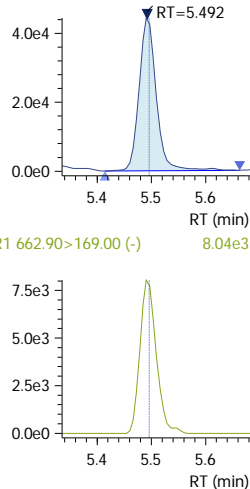
ISTD 614.80>569.95 (-) 2.29e6



PFTrDA

Conc 0.1041
Area 97880
R#1 18.07 (19.20)

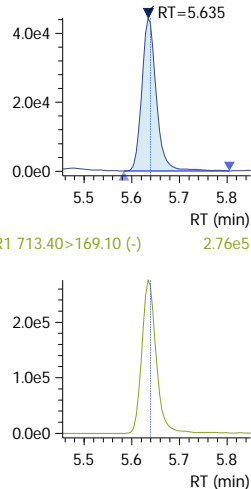
Q 663.00>618.90 (-) 4.44e4



PFTeDA

Conc 0.0971
Area 93812
R#1 620.82 (61.49)

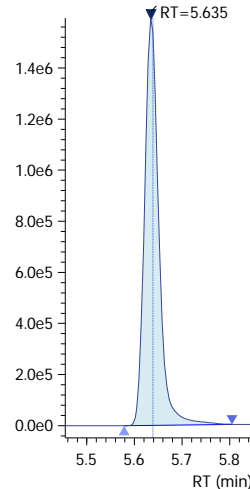
Q 713.40>669.00 (-) 4.45e4



PFTeDA-13C

Conc 4.8214
Area 3312623

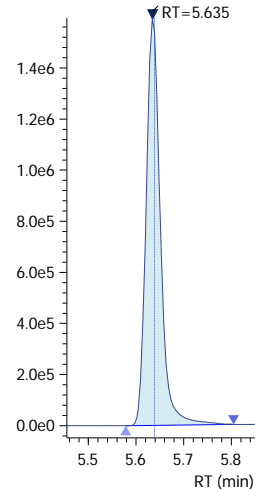
Q 714.70>669.90 (-) 1.60e6



PFTeDA-13C_IS

Conc 5.0000
Area 3312623

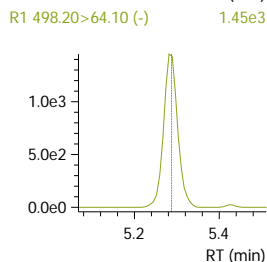
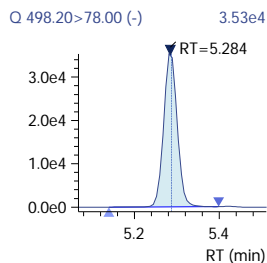
ISTD 714.70>669.90 (-) 1.60e6



200812_040 (continued)

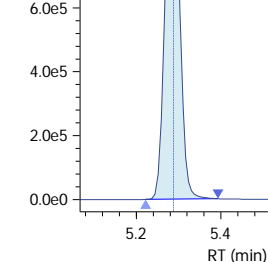
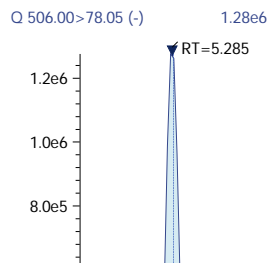
FOSA

Conc 0.0978
 Area 78987
 R#1 4.12 (4.04)



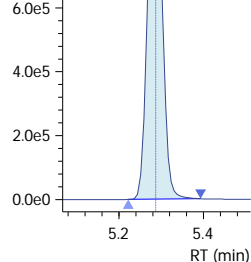
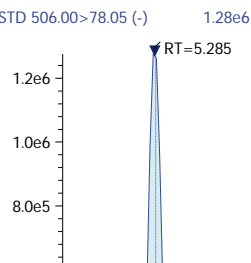
FOSA-13C

Conc 4.8612
 Area 2872288



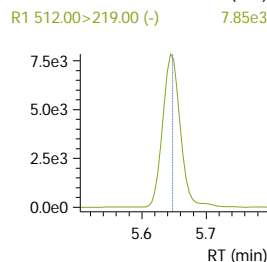
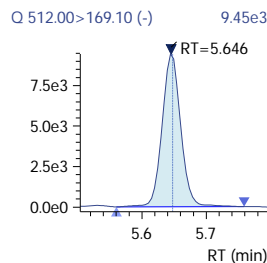
FOSA-13C_IS

Conc 5.0000
 Area 2872288



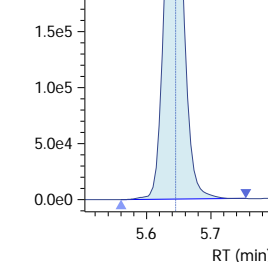
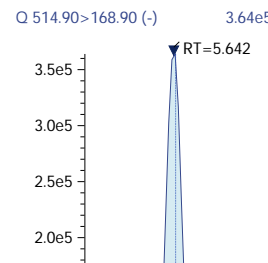
N-MeFOSA

Conc 0.1015
 Area 18948
 R#1 83.62 (78.52)



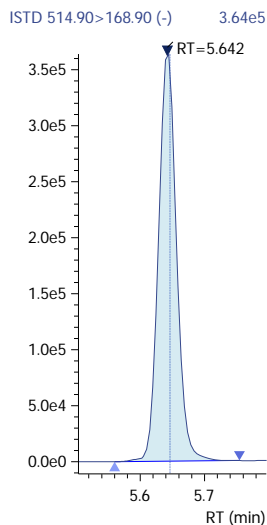
N-MeFOSA-d3

Conc 4.8145
 Area 708510



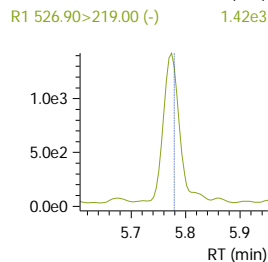
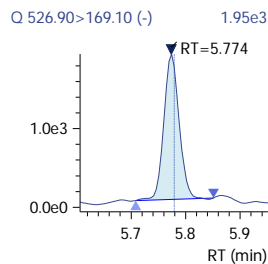
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Conc 5.0000
 Area 708510



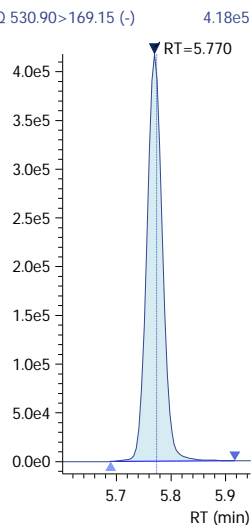
N-EtFOSA

Conc 0.1044
 Area 3575
 R#1 72.77 (0.00)



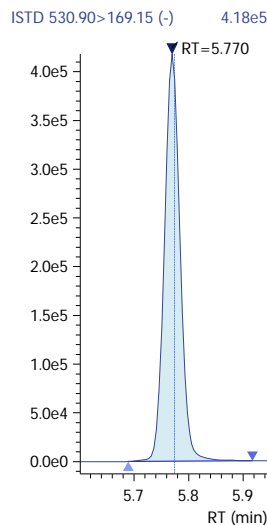
N-EtFOSA-d9

Conc 4.5548
 Area 835305



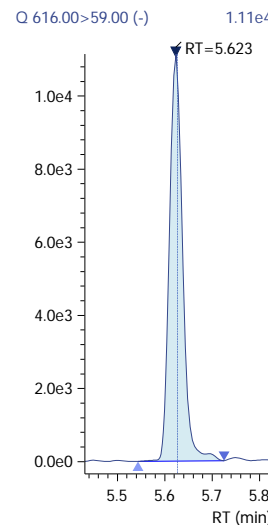
N-EtFOSA-d9_IS

Conc 5.0000
 Area 835305



N-MeFOSE

Conc 0.1043
 Area 21384



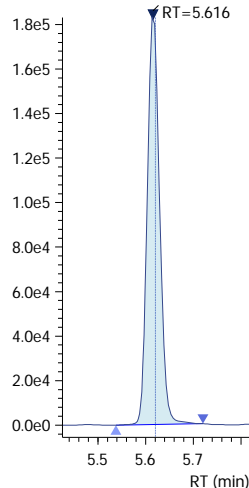
200812_040 (continued)

N-MeFOSE-d7

Conc 4.6990
Area 330628

Q 622.70>59.10 (-)

1.83e5

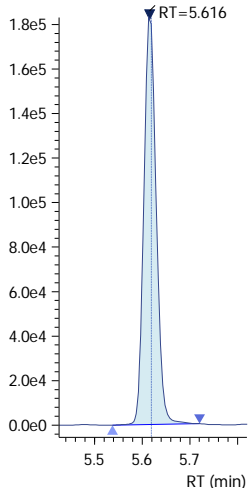


N-MeFOSE-d7_IS

Conc 5.0000
Area 330628

ISTD 622.70>59.10 (-)

1.83e5

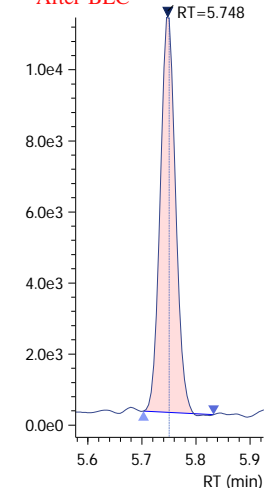


N-EtFOSE

Conc 0.1084
Area 21906

Q 630.00>58.90 (-)

1.15e4

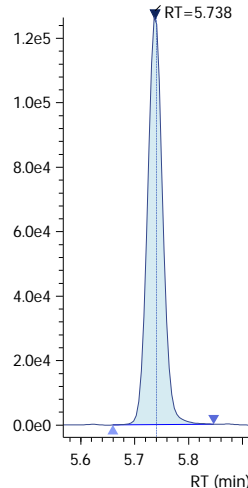


N-EtFOSE-d9

Conc 4.3555
Area 251159

Q 638.70>59.10 (-)

1.26e5

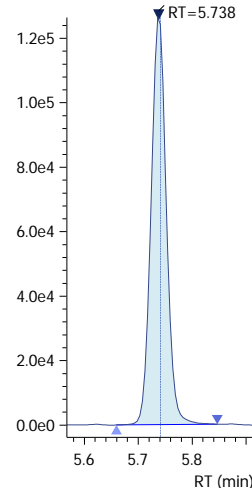


N-EtFOSE-d9_IS

Conc 5.0000
Area 251159

ISTD 638.70>59.10 (-)

1.26e5

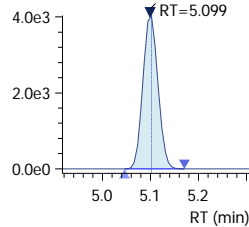


N-MeFOSAA

Conc 0.1085
Area 8773
R#1 29.09 (33.47)

Q 570.20>419.00 (-)

4.04e3

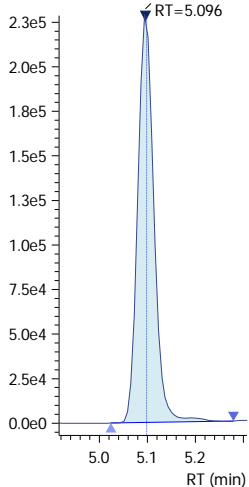


N-MeFOSAA-d3

Conc 4.8329
Area 535027

Q 572.80>419.05 (-)

2.29e5

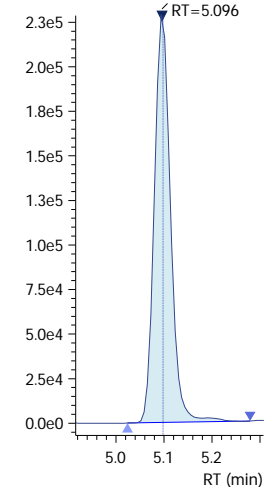


N-MeFOSAA-d3_IS

Conc 5.0000
Area 535027

ISTD 572.80>419.05 (-)

2.29e5

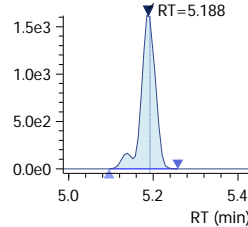


N-EtFOSAA

Conc 0.0891
Area 3832
R#1 55.45 (83.09)

Q 584.20>418.95 (-)

1.62e3

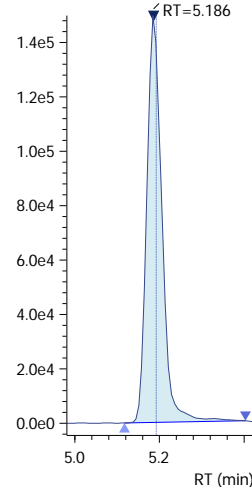


N-EtFOSAA-d5

Conc 4.7222
Area 370534

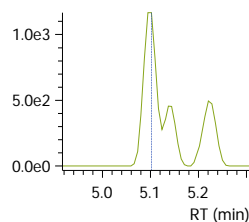
Q 588.80>419.00 (-)

1.50e5



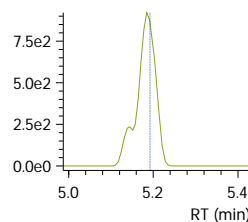
R1 570.20>512.00 (-)

1.17e3



R1 584.20>526.10 (-)

9.21e2



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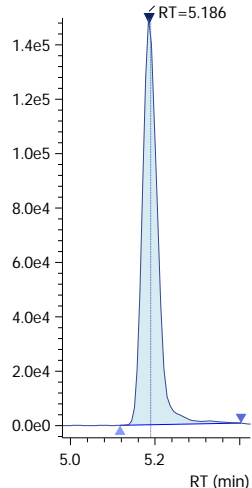
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200812_040 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 370534

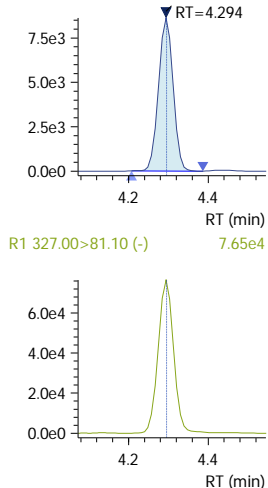
ISTD 588.80>419.00 (-) 1.50e5



4_2-FTS_1

Conc 0.1074
 Area 22004
 R#1 885.26 (54.93)

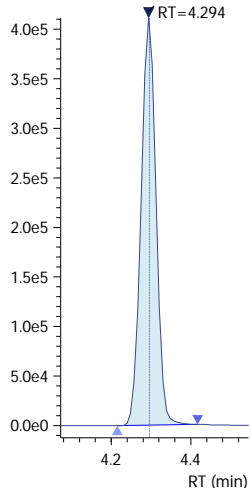
Q 327.00>307.05 (-) 8.63e3



4_2-FTS-13C

Conc 4.7135
 Area 1073742

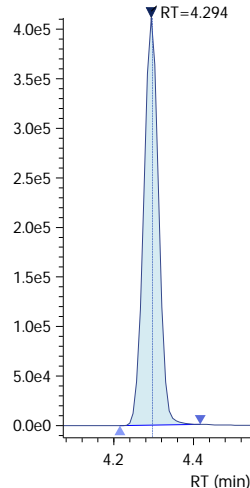
Q 328.80>309.05 (-) 4.11e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 1073742

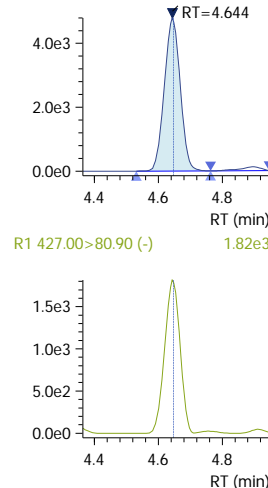
ISTD 328.80>309.05 (-) 4.11e5



6_2-FTS_1

Conc 0.1084
 Area 16602
 R#1 36.85 (36.33)

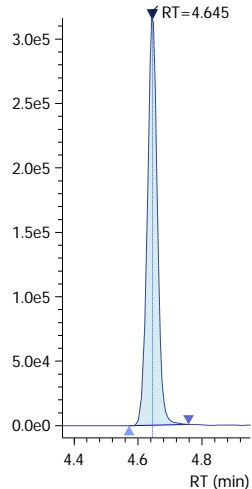
Q 427.00>407.00 (-) 4.80e3



6_2-FTS-13C

Conc 5.6699
 Area 698185

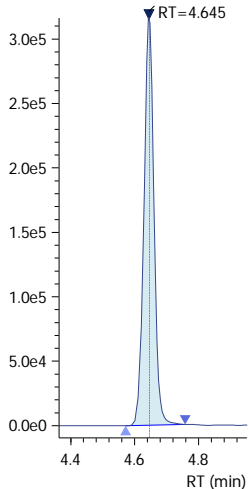
Q 428.90>409.00 (-) 3.16e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 698185

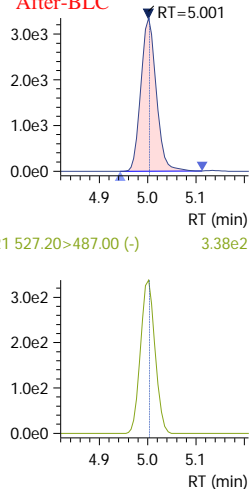
ISTD 428.90>409.00 (-) 3.16e5



8_2-FTS_1

Conc 0.0952
 Area 7368
 R#1 10.14 (8.96)

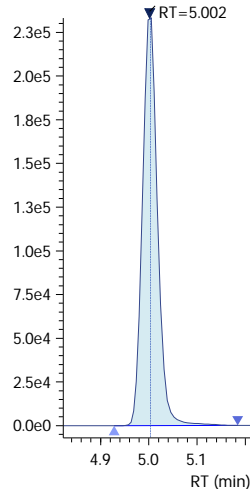
Q 527.10>506.90 (-) 3.35e3



8_2-FTS-13C

Conc 5.4392
 Area 506880

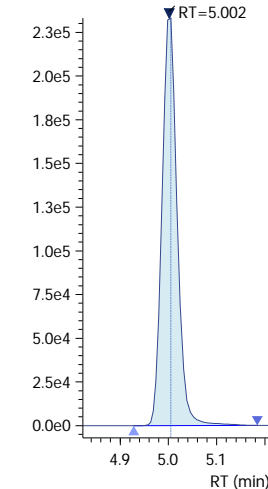
Q 528.80>509.00 (-) 2.33e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 506880

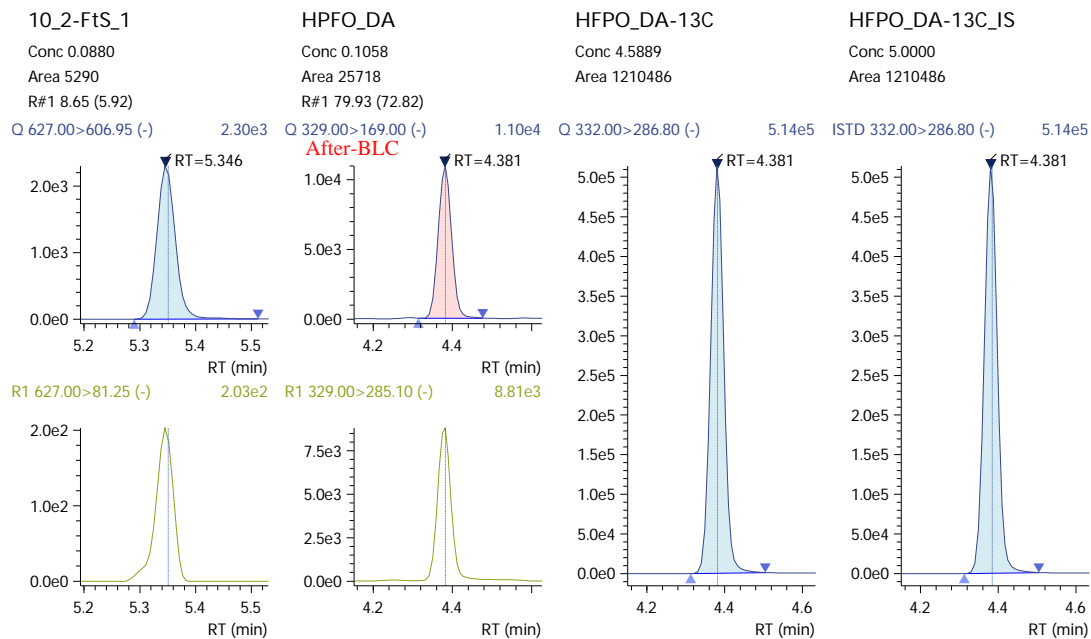
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200812_040 (continued)

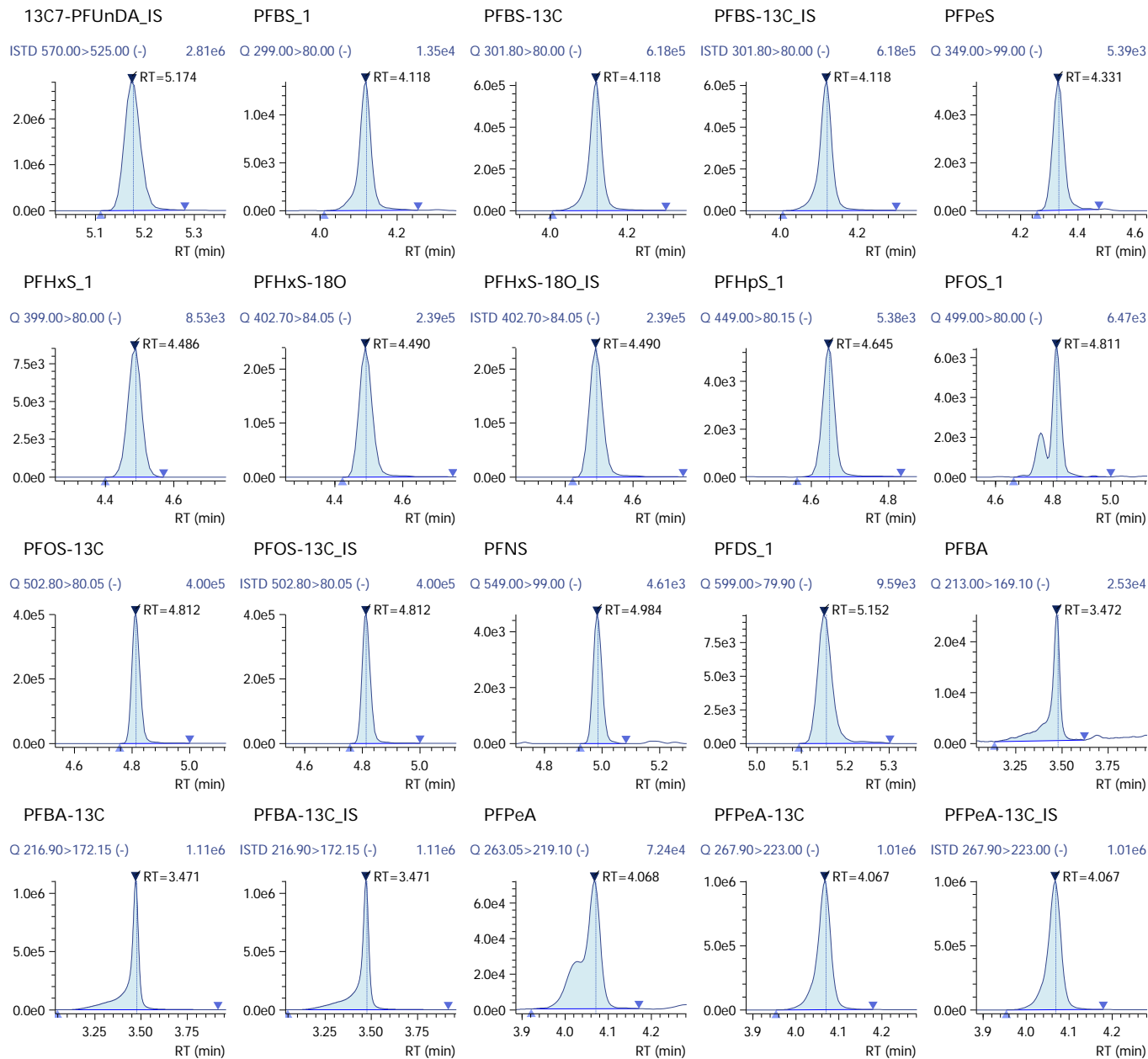


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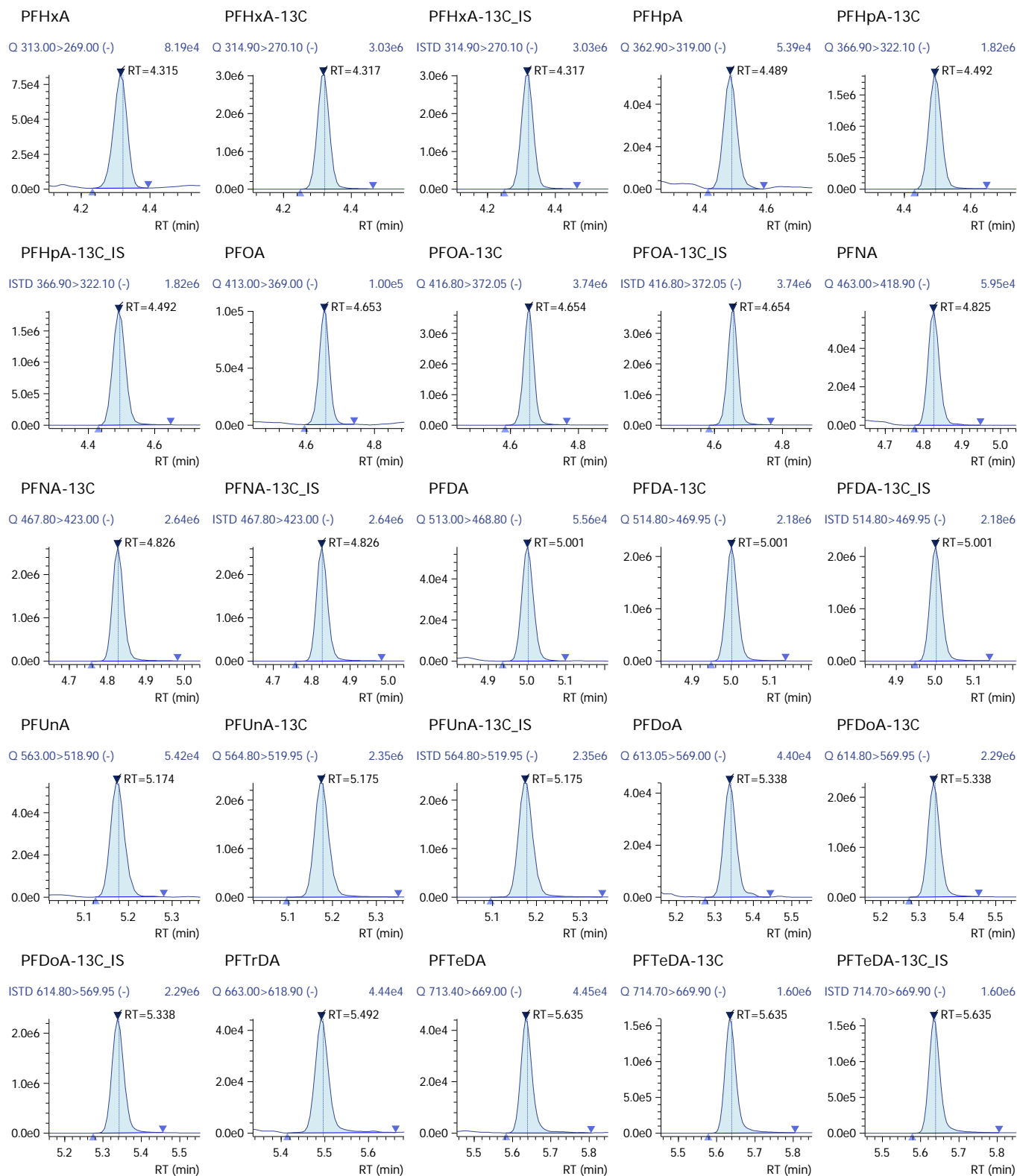
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200812_040

Sample ID: 0.10 PPB ICAL
Date Acquired: 8/12/2020 7:39:15 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_040.lcd
Vial: 2 | Inj. Volume: 15.0000uL | Tray: 0



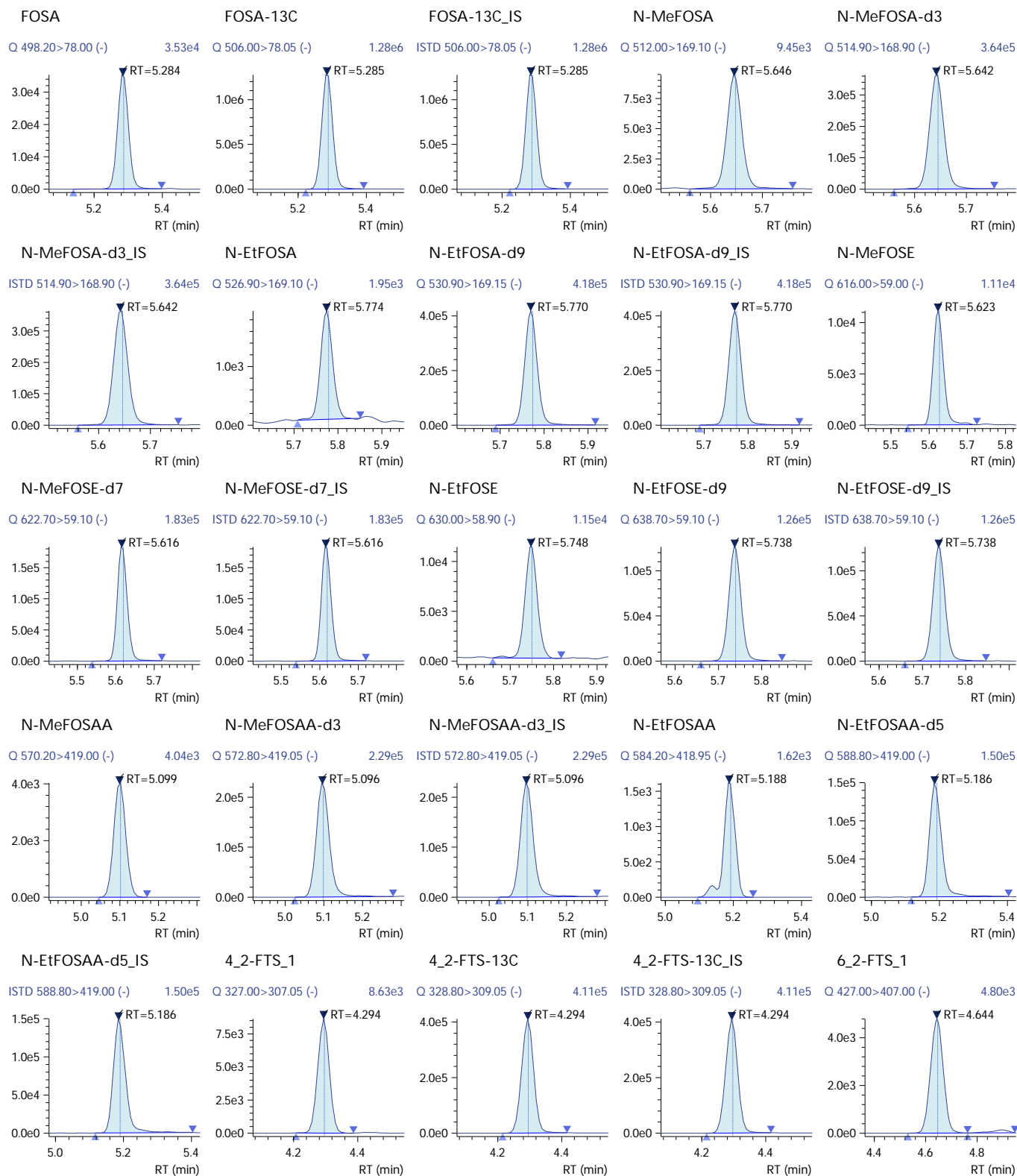
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Insight Report

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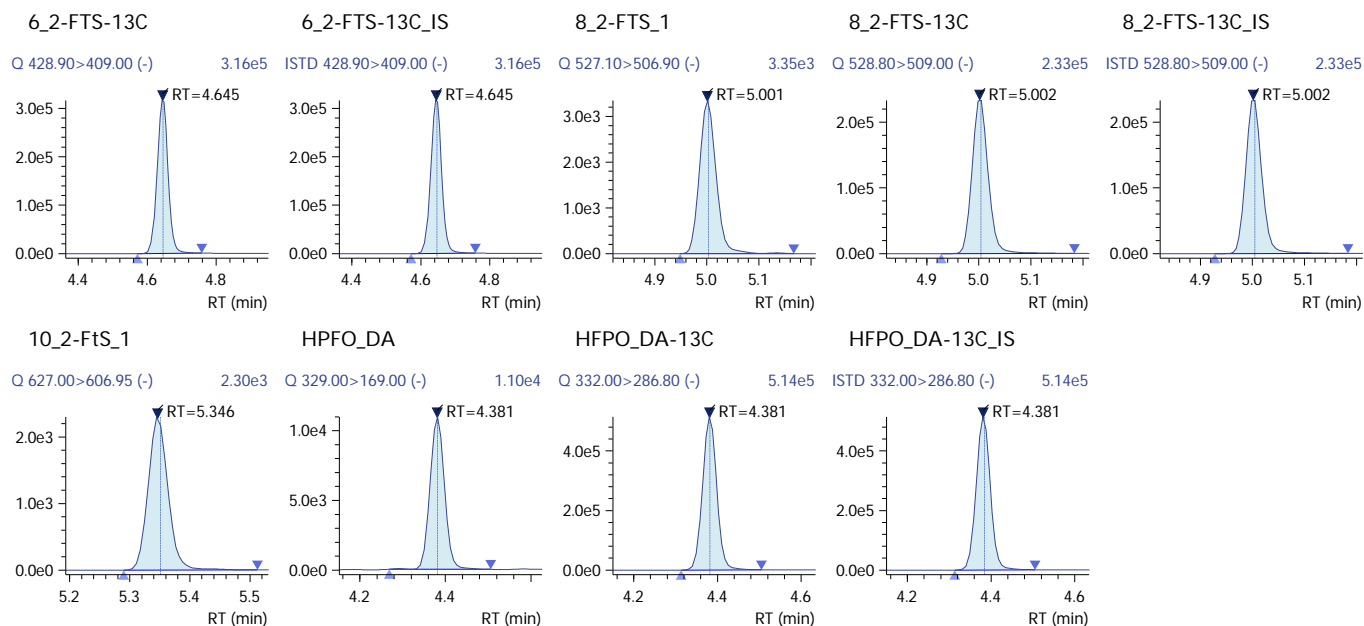
200812_040 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_040 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_041

Sample ID: 0.50 PPB ICAL
 Date Acquired: 8/12/2020 7:49:49 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_041.lcd
 Vial: 3 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.182	6386216	6386216	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.127	143444	1436841	2	0.4330	ng/mL	0.4437	56.19
PFBS-13C	Auto	4.127	1436841	6386216	1	4.7666	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.127	1436841	1436841	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.340	63337	1436841	2	0.4229	ng/mL	0.4705	150.51
PFHxS_1	Auto	4.495	108366	712448	3	0.4410	ng/mL	0.4565	63.37
PFHxS-18O	Auto	4.497	712448	6386216	1	4.7456	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.497	712448	712448	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.653	55197	712448	3	0.4575	ng/mL	0.4767	60.00
PFOS_1	Auto	4.820	75374	659334	4	0.4659	ng/mL	0.4646	88.44
PFOS-13C	Auto	4.819	659334	6386216	1	4.2289	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.819	659334	659334	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.992	64336	659334	4	0.5765	ng/mL	0.4808	151.49
PFDS_1	Auto	5.162	123559	659334	4	0.5645	ng/mL	0.4823	61.17
PFBA	Auto	3.482	419190	3796305	5	0.4909	ng/mL	0.5000	----
PFBA-13C	Auto	3.481	3796305	6386216	1	4.7557	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.481	3796305	3796305	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.076	748013	2227905	6	0.4866	ng/mL	0.5000	----
PFPeA-13C	Auto	4.075	2227905	6386216	1	4.9046	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.075	2227905	2227905	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.326	867665	7570133	7	0.4877	ng/mL	0.5000	3.24
PFHxA-13C	Auto	4.326	7570133	6386216	1	5.3960	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.326	7570133	7570133	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.500	563238	4608728	8	0.4608	ng/mL	0.5000	27.88
PFHpA-13C	Auto	4.500	4608728	6386216	1	4.5959	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.500	4608728	4608728	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.662	745813	7076587	9	0.4922	ng/mL	0.5000	36.29
PFOA-13C	Auto	4.662	7076587	6386216	1	4.9636	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.662	7076587	7076587	9	5.0000	ng/mL	5.0000	----
PFNA	M	4.833	501198	5278895	10	0.4660	ng/mL	0.5000	22.45
PFNA-13C	Auto	4.833	5278895	6386216	1	5.4640	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.833	5278895	5278895	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.009	445170	4285610	11	0.4938	ng/mL	0.5000	20.78
PFDA-13C	Auto	5.009	4285610	6386216	1	4.7888	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.009	4285610	4285610	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.182	532246	5556063	12	0.4739	ng/mL	0.5000	13.01
PFUnA-13C	Auto	5.182	5556063	6386216	1	5.0615	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.182	5556063	5556063	12	5.0000	ng/mL	5.0000	----
PFDoA	Auto	5.347	399895	5160787	13	0.4646	ng/mL	0.5000	20.02
PFDoA-13C	Auto	5.347	5160787	6386216	1	4.8858	ng/mL	5.0000	----
PFDoA-13C_IS	Auto	5.347	5160787	5160787	13	5.0000	ng/mL	5.0000	----
PFTeDA	Auto	5.501	393033	3329887	14	0.4724	ng/mL	0.5000	21.49
PFTeDA	Auto	5.644	247510	3329887	14	0.4773	ng/mL	0.5000	241.71
PFTeDA-13C	Auto	5.644	3329887	6386216	1	4.9154	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.644	3329887	3329887	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.293	409686	2952042	16	0.4934	ng/mL	0.5000	4.01
FOSA-13C	Auto	5.293	2952042	6386216	1	5.0671	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.293	2952042	2952042	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.653	87115	697841	17	0.4739	ng/mL	0.5000	79.44
N-MeFOSA-d3	Auto	5.651	697841	6386216	1	4.8093	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.651	697841	697841	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.783	17359	877612	18	0.4827	ng/mL	0.5000	69.51
N-EtFOSA-d9	Auto	5.778	877612	6386216	1	4.8535	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.778	877612	877612	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.631	101170	338090	19	0.4823	ng/mL	0.5000	----

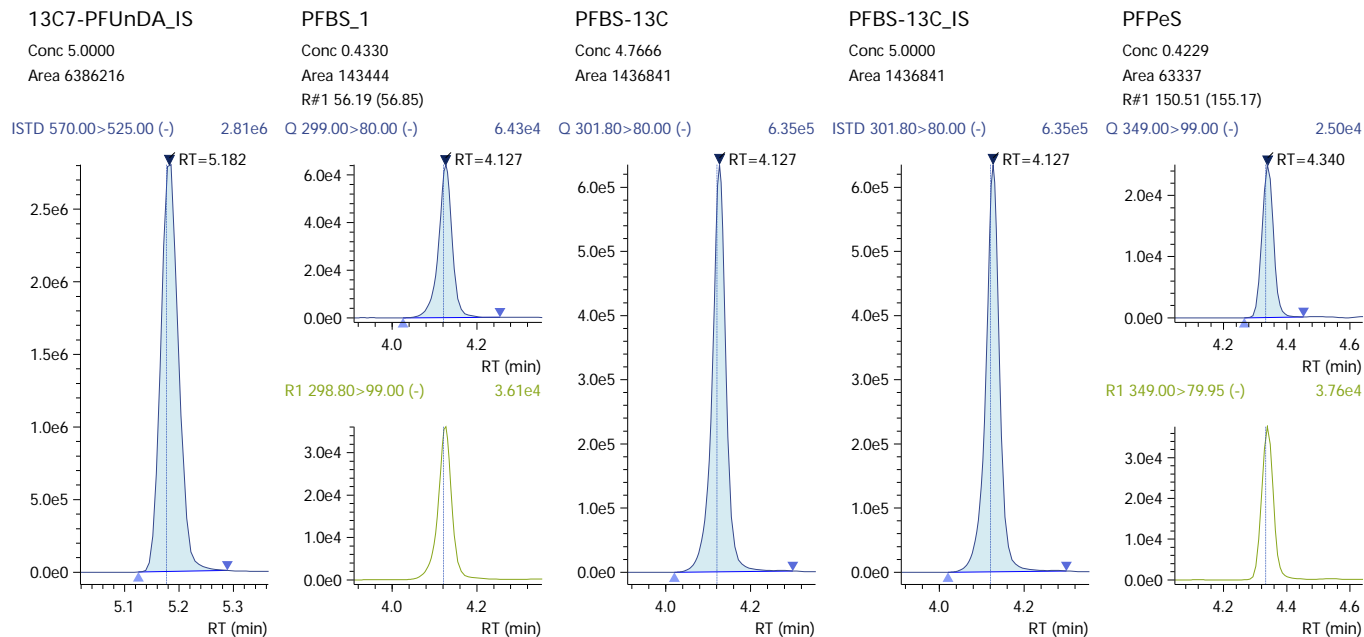
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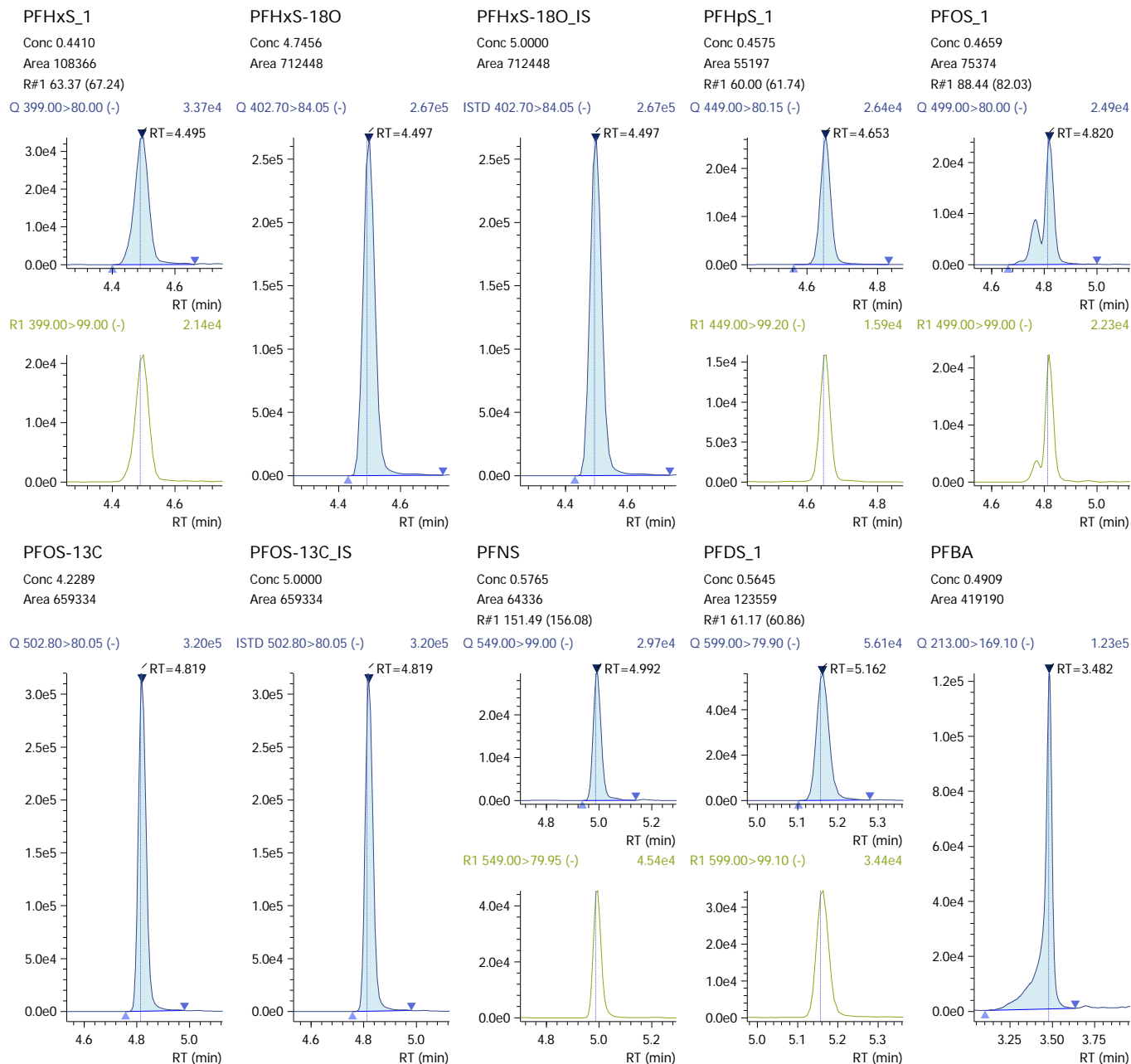
200812_041 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.624	338090	6386216	1	4.8733	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.624	338090	338090	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.756	109329	273260	20	0.4973	ng/mL	0.5000	----
N-EtFOSE-d9	Auto	5.746	273260	6386216	1	4.8060	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.746	273260	273260	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	M	5.106	33603	521676	21	0.4262	ng/mL	0.5000	53.45
N-MeFOSAA-d3	Auto	5.105	521676	6386216	1	4.7792	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.105	521676	521676	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	M	5.200	18058	302545	22	0.5141	ng/mL	0.5000	70.92
N-EtFOSAA-d5	Auto	5.196	302545	6386216	1	3.9105	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.196	302545	302545	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.303	93834	1036366	23	0.4744	ng/mL	0.4686	226.96
4_2-FTS-13C	Auto	4.303	1036366	6386216	1	4.6140	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.303	1036366	1036366	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	M	4.654	64454	630085	24	0.4665	ng/mL	0.4756	37.79
6_2-FTS-13C	Auto	4.654	630085	6386216	1	5.1895	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.654	630085	630085	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.009	34857	483210	25	0.4725	ng/mL	0.4800	9.91
8_2-FTS-13C	Auto	5.010	483210	6386216	1	5.2588	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.010	483210	483210	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.355	27648	483210	25	0.4822	ng/mL	0.4831	3.97
HPFO_DA	Auto	4.390	114183	1242392	26	0.4575	ng/mL	0.5000	80.46
HPFO_DA-13C	Auto	4.390	1242392	6386216	1	4.7767	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.390	1242392	1242392	26	5.0000	ng/mL	5.0000	----



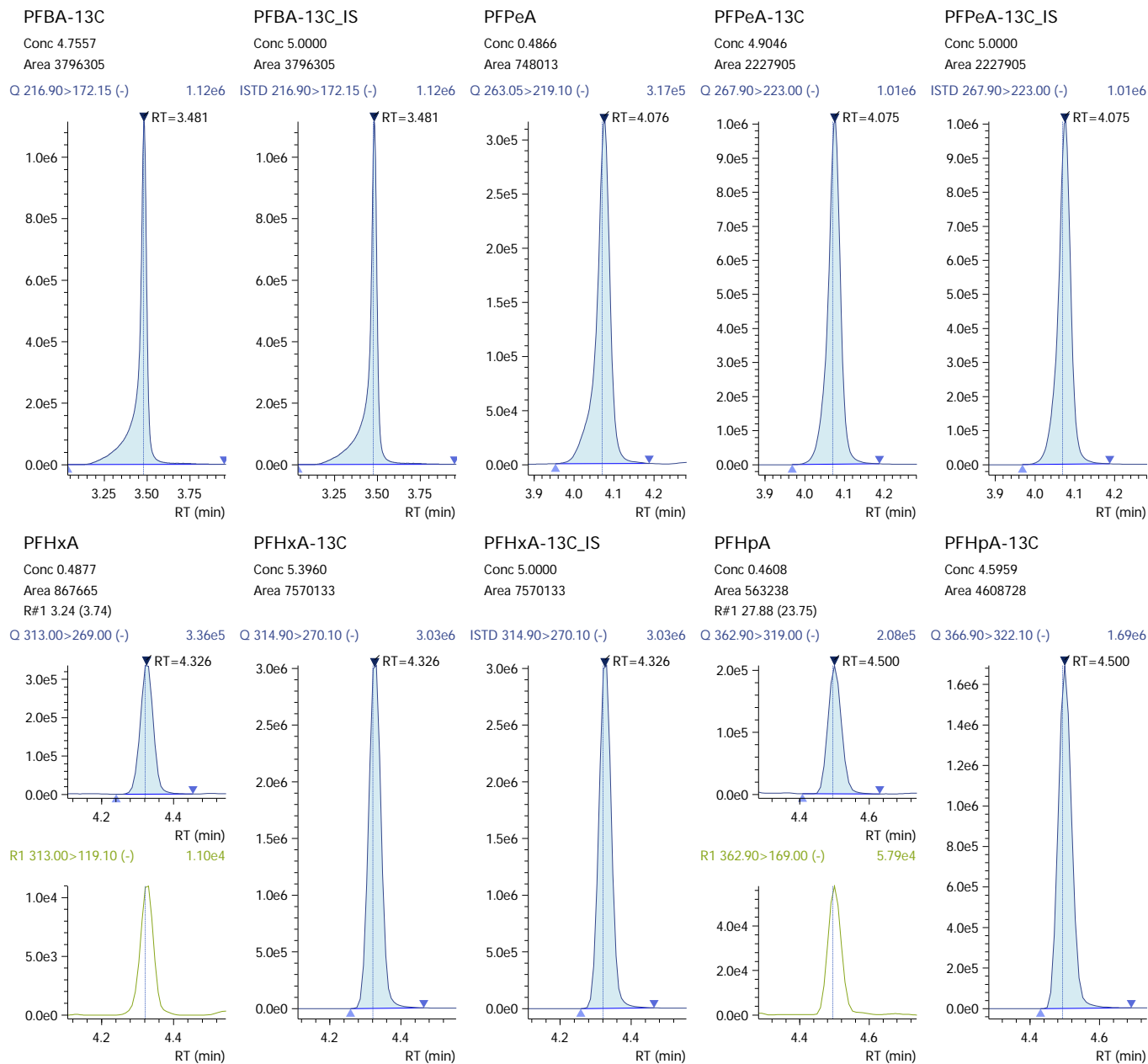
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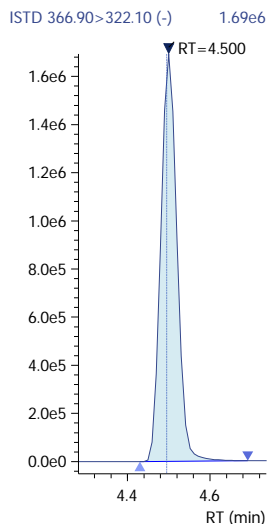
200812_041 (continued)



200812_041 (continued)

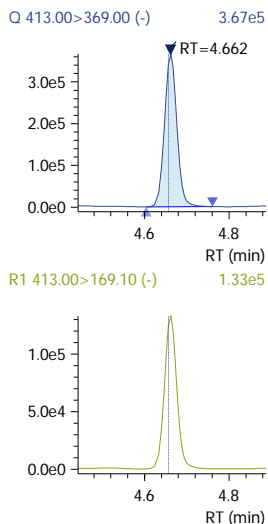
PFHpA-13C_IS

Conc 5.0000
Area 4608728



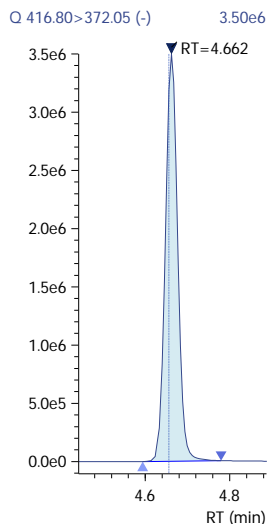
PFOA

Conc 0.4922
Area 745813
R#1 36.29 (34.80)



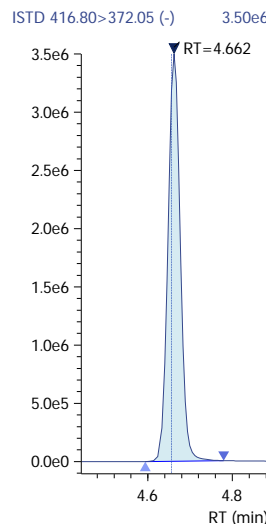
PFOA-13C

Conc 4.9636
Area 7076587



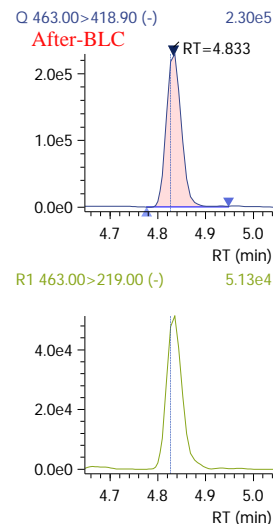
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Conc 5.0000
Area 7076587



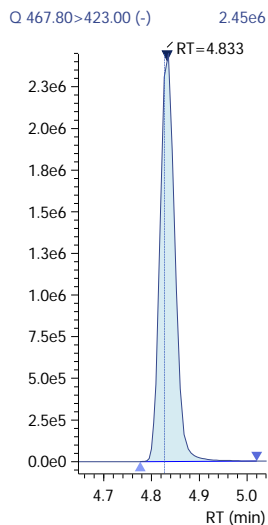
PFNA

Conc 0.4660
Area 501198
R#1 22.45 (22.71)



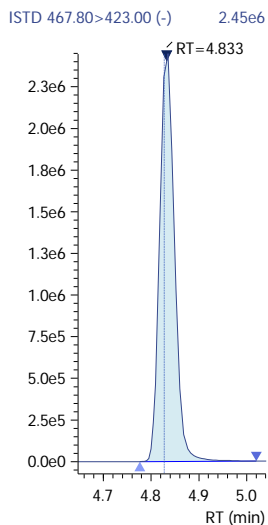
PFNA-13C

Conc 5.4640
Area 5278895



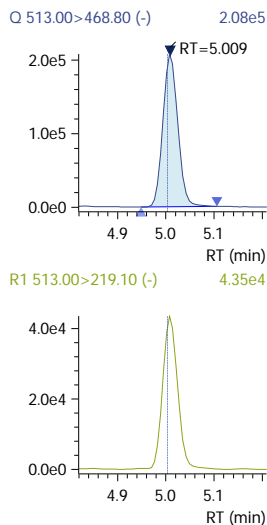
PFNA-13C_IS

Conc 5.0000
Area 5278895



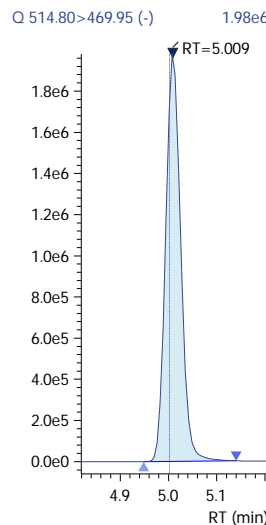
PFDA

Conc 0.4938
Area 445170
R#1 20.78 (22.06)



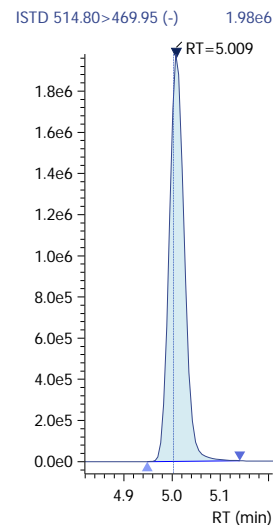
PFDA-13C

Conc 4.7888
Area 4285610



PFDA-13C_IS

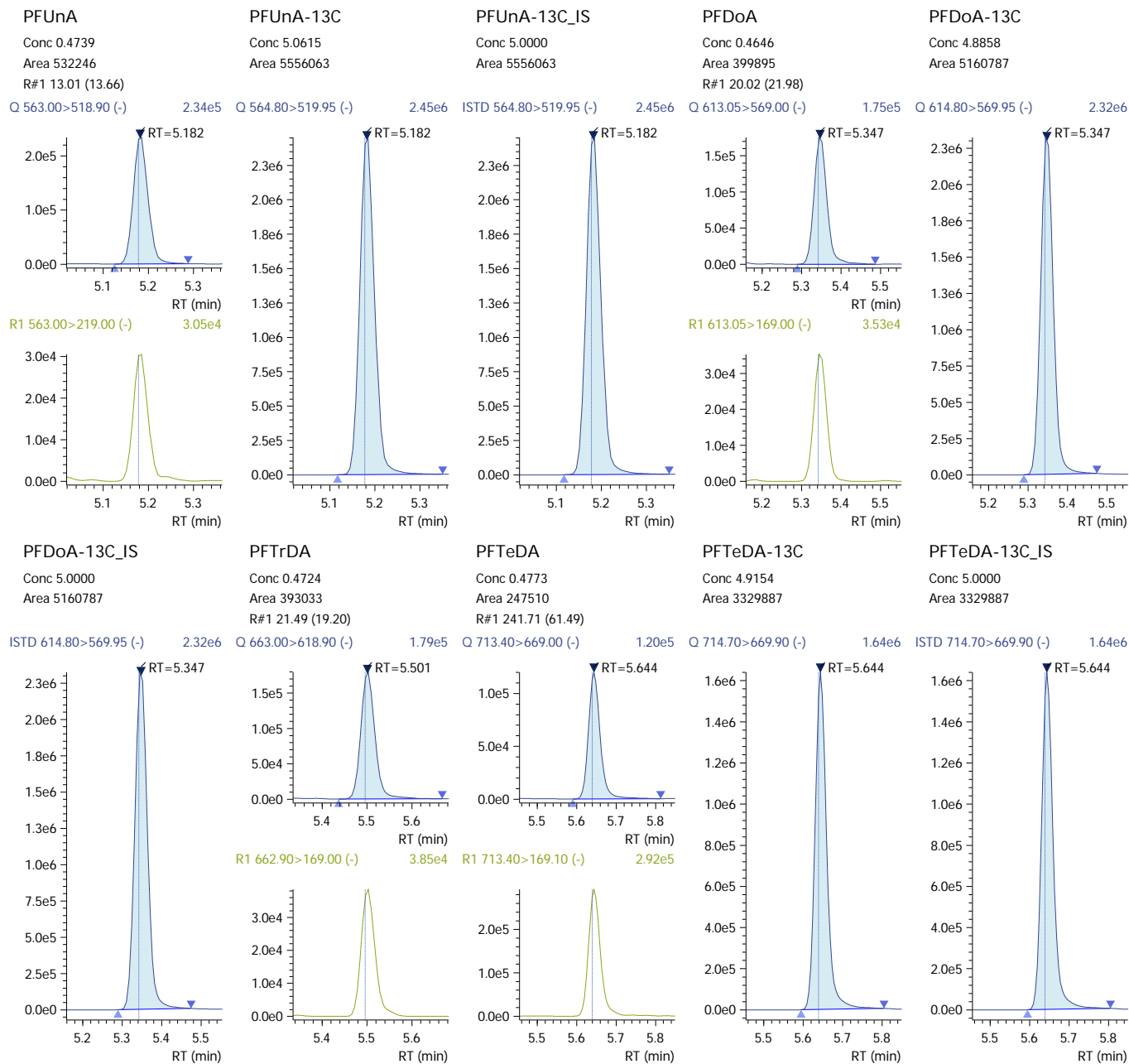
Conc 5.0000
Area 4285610



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200812_041 (continued)



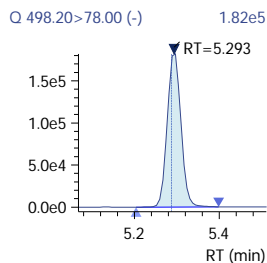
Insight Report

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200812_041 (continued)

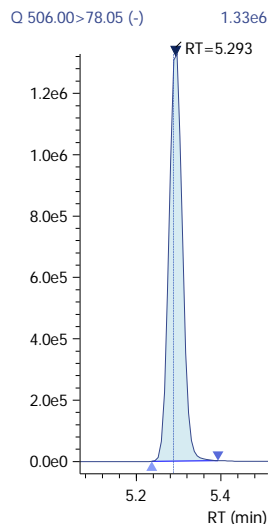
FOSA

Conc 0.4934
 Area 409686
 R#1 4.01 (4.04)



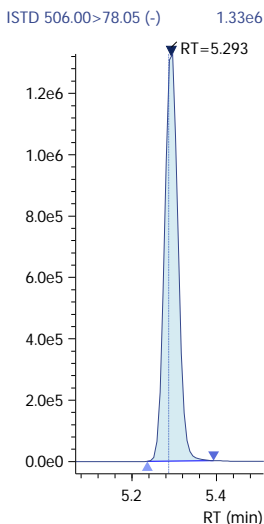
FOSA-13C

Conc 5.0671
 Area 2952042



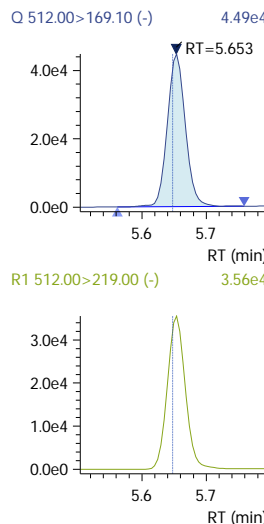
FOSA-13C_IS

Conc 5.0000
 Area 2952042



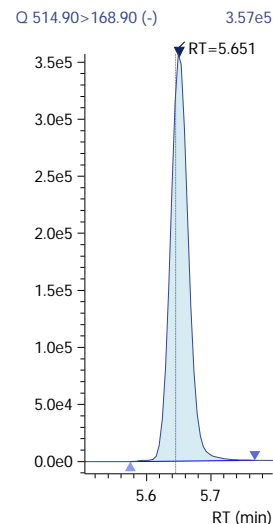
N-MeFOSA

Conc 0.4739
 Area 87115
 R#1 79.44 (78.52)



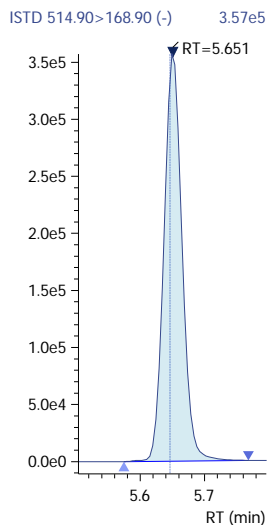
N-MeFOSA-d3

Conc 4.8093
 Area 697841



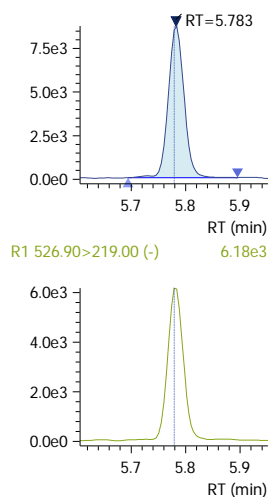
N-MeFOSA-d3_IS

Conc 5.0000
 Area 697841



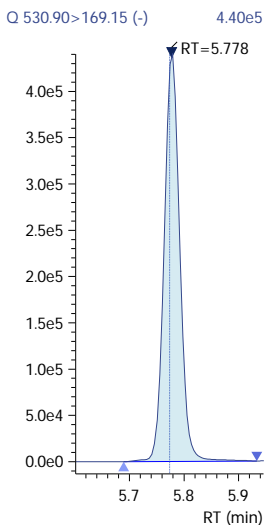
N-EtFOSA

Conc 0.4827
 Area 17359
 R#1 69.51 (0.00)



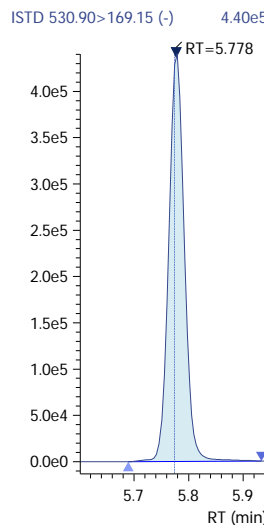
N-EtFOSA-d9

Conc 4.8535
 Area 877612



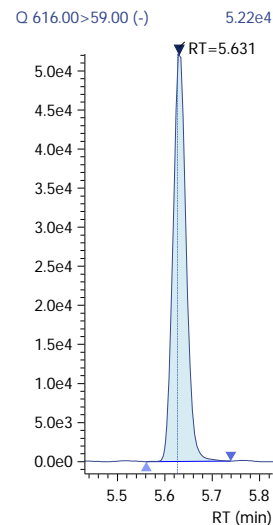
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Conc 5.0000
 Area 877612



N-MeFOSE

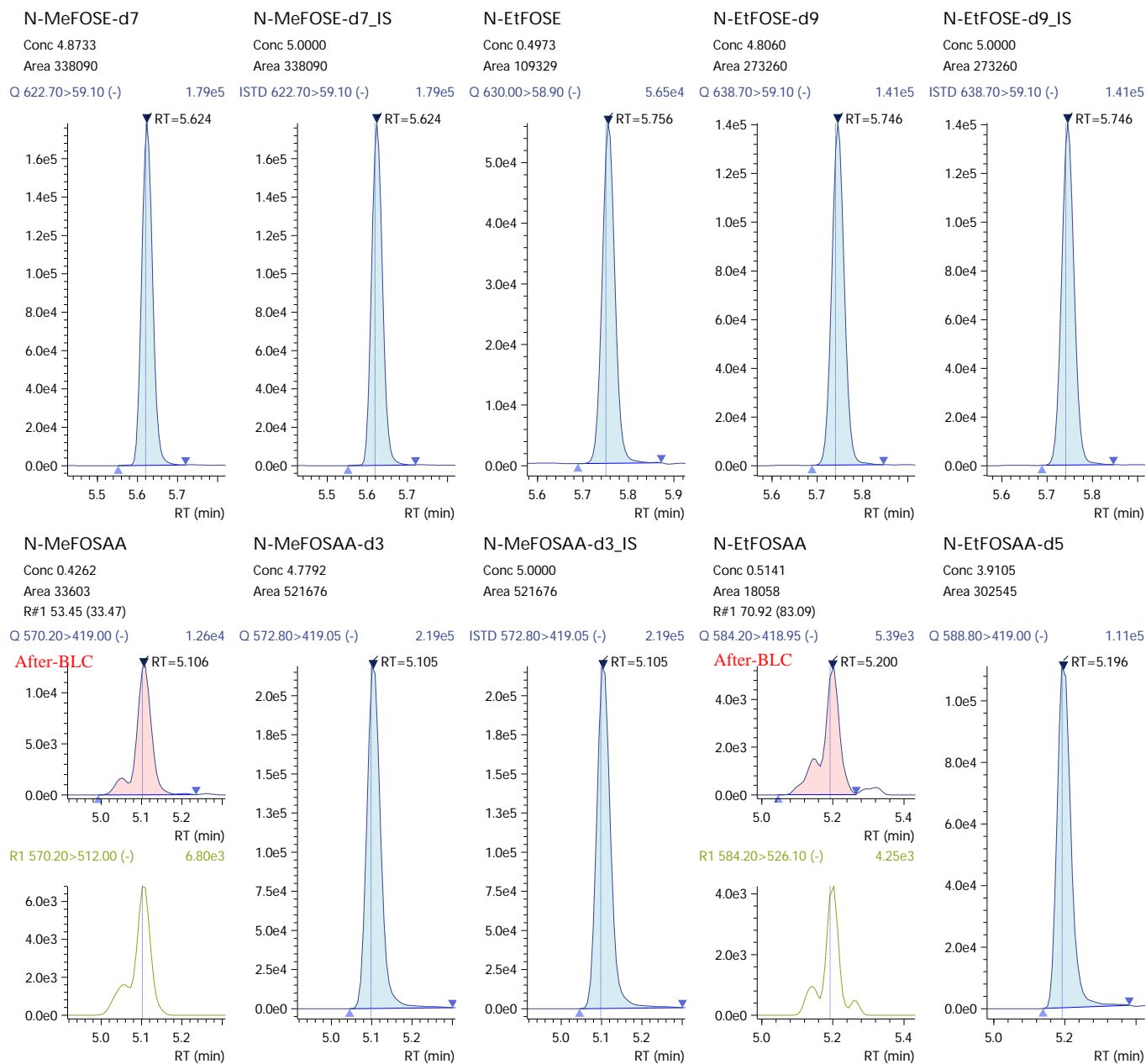
Conc 0.4823
 Area 101170



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200812_041 (continued)



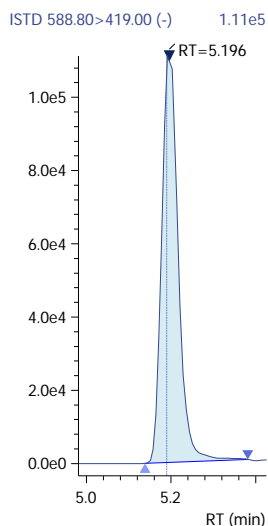
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200812_041 (continued)

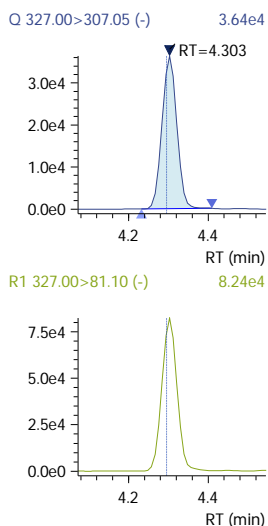
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Conc 5.0000
 Area 302545



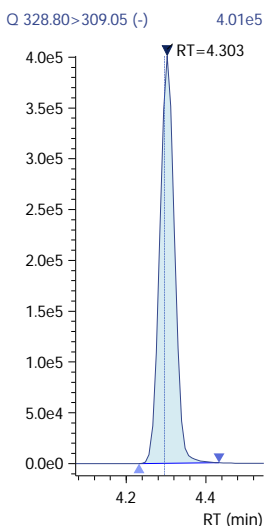
4_2-FTS_1

Conc 0.4744
 Area 93834
 R#1 226.96 (54.93)



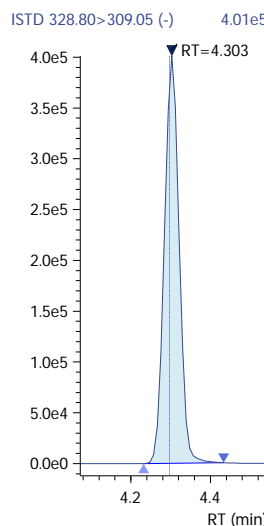
4_2-FTS-13C

Conc 4.6140
 Area 1036366



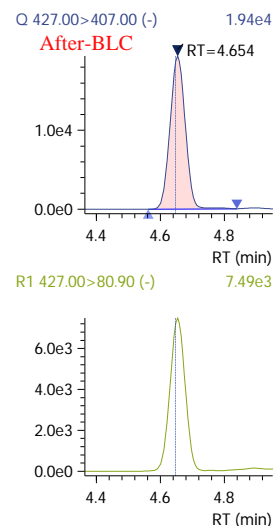
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Conc 5.0000
 Area 1036366



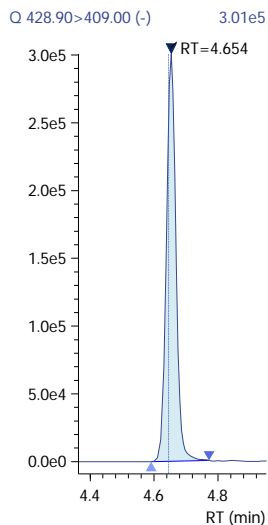
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Conc 0.4665
 Area 64454
 R#1 37.79 (36.33)



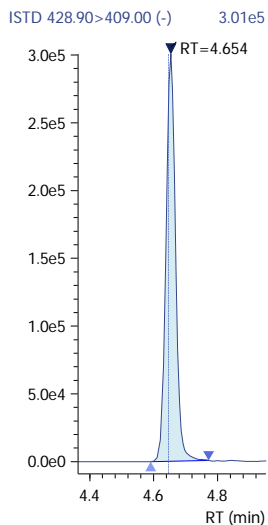
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Conc 5.1895
 Area 630085



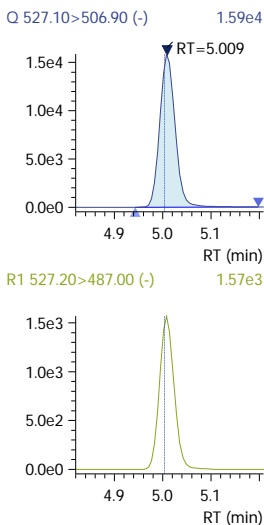
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Conc 5.0000
 Area 630085



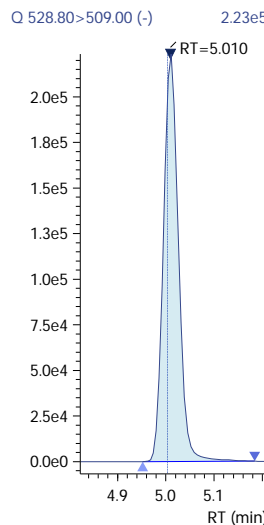
8_2-FTS_1

Conc 0.4725
 Area 34857
 R#1 9.91 (8.96)



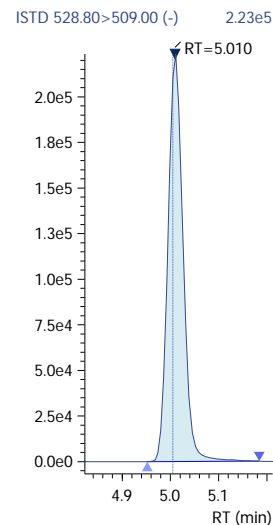
8_2-FTS-13C

Conc 5.2588
 Area 483210



8_2-FTS-13C_IS

Conc 5.0000
 Area 483210



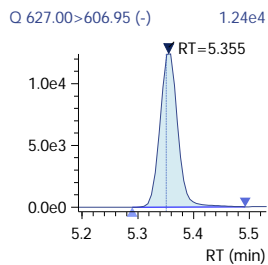
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200812_041 (continued)

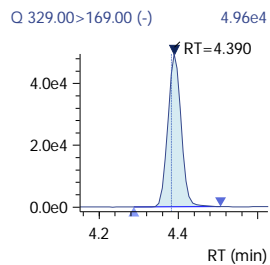
10_2-FtS_1

Conc 0.4822
Area 27648
R#1 3.97 (5.92)



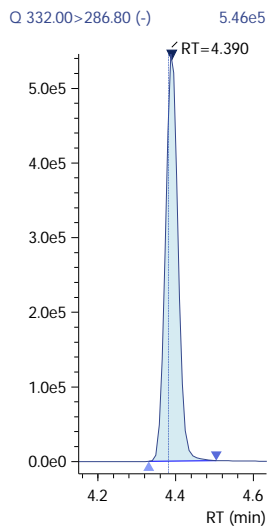
HPFO_DA

Conc 0.4575
Area 114183
R#1 80.46 (72.82)



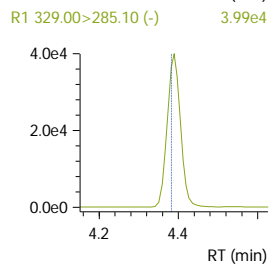
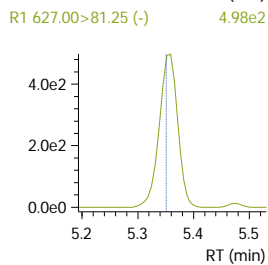
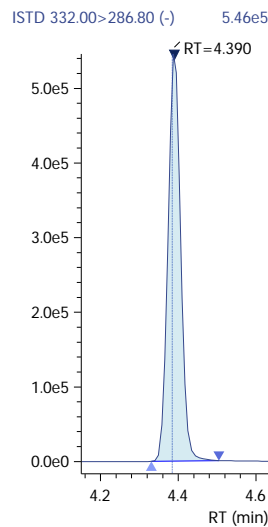
HPFO_DA-13C

Conc 4.7767
Area 1242392



HPFO_DA-13C_IS

Conc 5.0000
Area 1242392

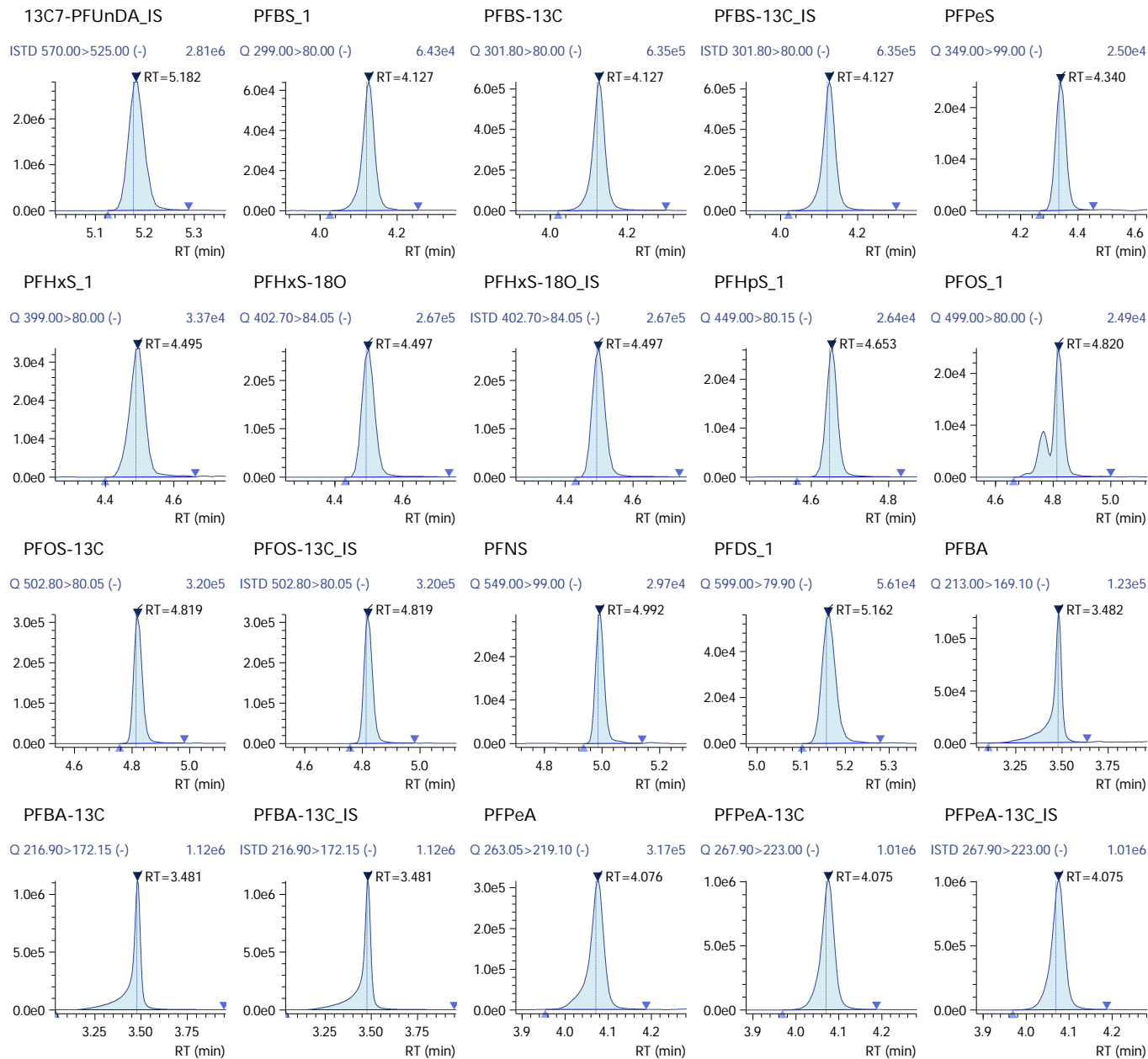


Insight Report

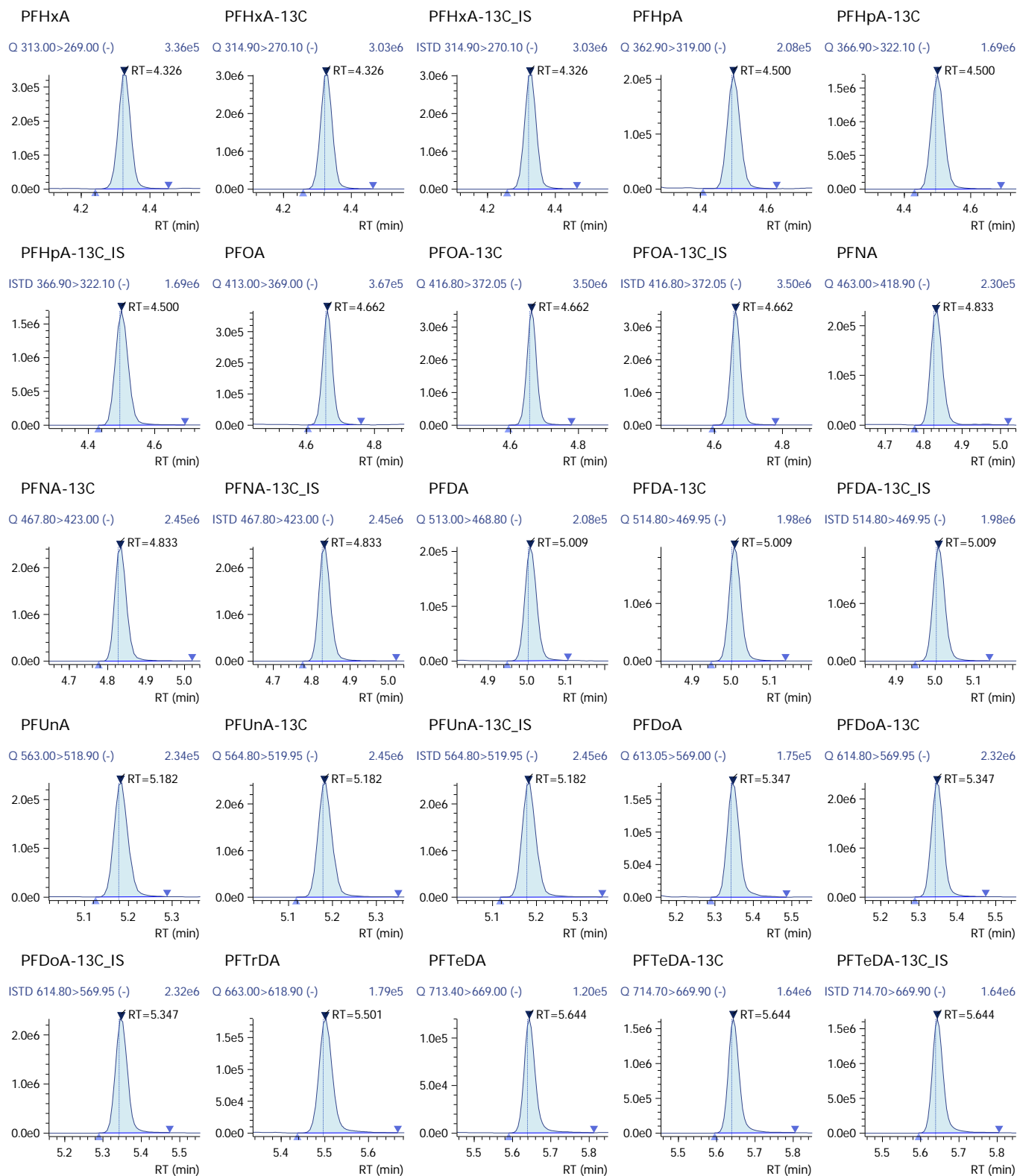
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200812_041

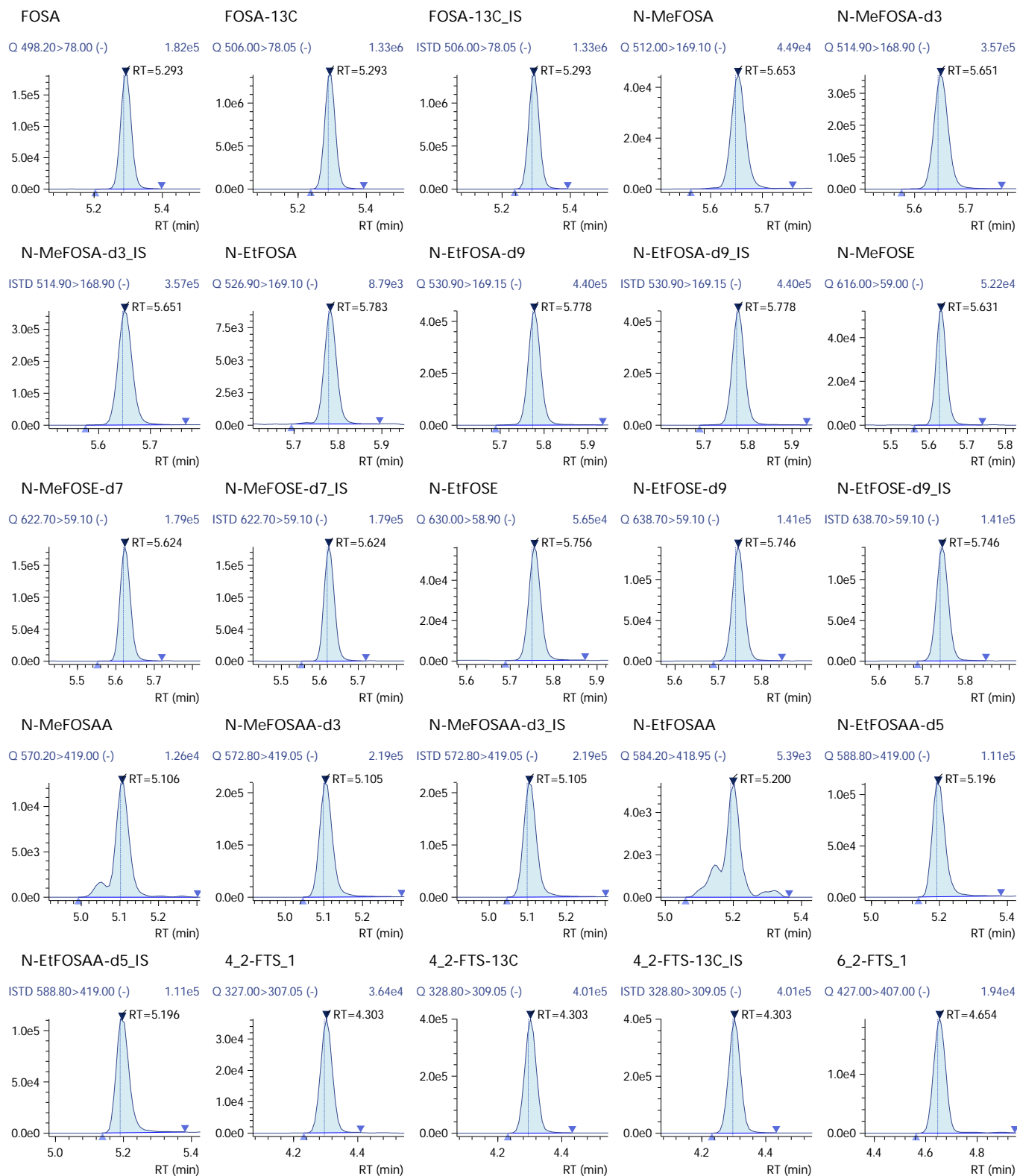
Sample ID: 0.50 PPB ICAL
Date Acquired: 8/12/2020 7:49:49 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_041.lcd
Vial: 3 | Inj. Volume: 15.0000uL | Tray: 0



200812_041 (continued)



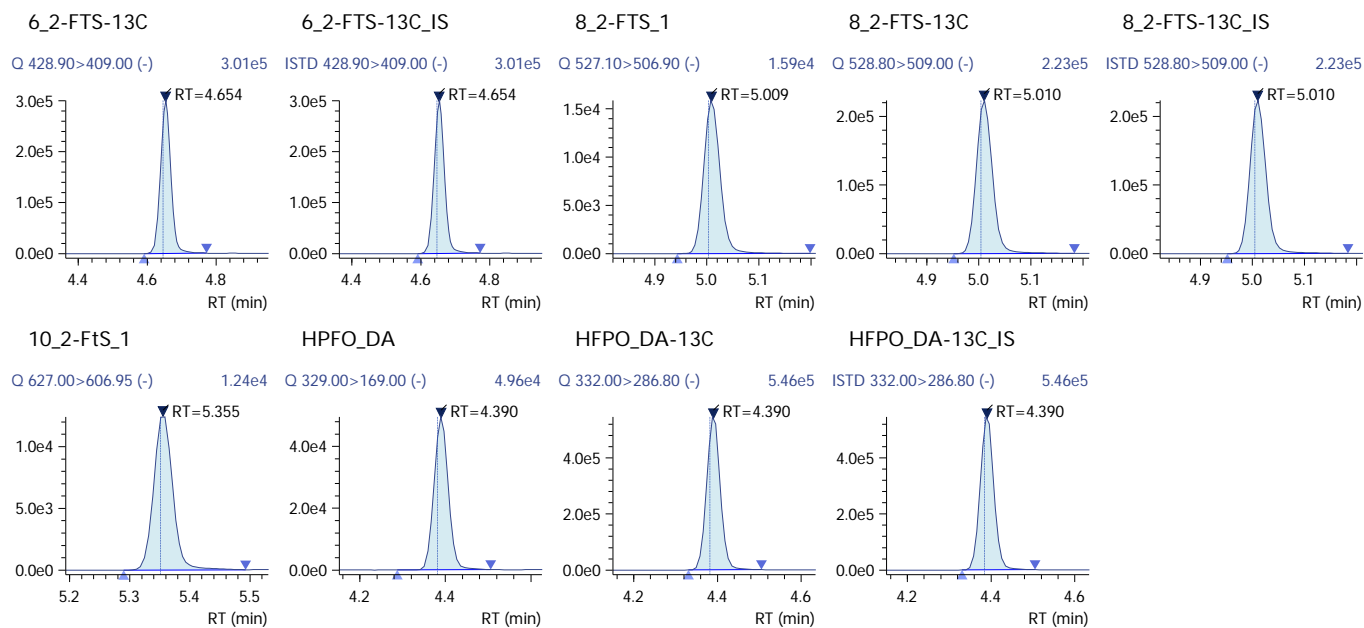
200812_041 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_041 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_042

Sample ID: 1.0 PPB ICAL
 Date Acquired: 8/12/2020 8:00:30 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_042.lcd
 Vial: 4 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.178	6543060	6543060	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.122	293300	1414121	2	0.8995	ng/mL	0.8874	57.89
PFBS-13C	Auto	4.121	1414121	6543060	1	4.5787	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.121	1414121	1414121	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.334	158837	1414121	2	1.0775	ng/mL	0.9409	151.55
PFHxS_1	Auto	4.492	222611	735489	3	0.8776	ng/mL	0.9131	67.44
PFHxS-18O	Auto	4.494	735489	6543060	1	4.7816	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.494	735489	735489	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.648	112407	735489	3	0.9025	ng/mL	0.9534	60.53
PFOS_1	Auto	4.815	162818	711865	4	0.9322	ng/mL	0.9292	86.54
PFOS-13C	Auto	4.815	711865	6543060	1	4.4564	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.815	711865	711865	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.987	124641	711865	4	1.0344	ng/mL	0.9616	158.91
PFDS_1	Auto	5.157	238234	711865	4	1.0081	ng/mL	0.9647	61.42
PFBA	Auto	3.478	844417	3763857	5	0.9975	ng/mL	1.0000	----
PFBA-13C	Auto	3.477	3763857	6543060	1	4.6020	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.477	3763857	3763857	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.070	1404546	2167253	6	0.9941	ng/mL	1.0000	----
PFPeA-13C	Auto	4.070	2167253	6543060	1	4.6567	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.070	2167253	2167253	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.321	1447913	6328848	7	1.0290	ng/mL	1.0000	4.08
PFHxA-13C	Auto	4.321	6328848	6543060	1	4.4031	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.321	6328848	6328848	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.495	1517970	5694009	8	1.0239	ng/mL	1.0000	23.12
PFHpA-13C	Auto	4.495	5694009	6543060	1	5.5420	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.495	5694009	5694009	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.657	1485491	7175089	9	0.9951	ng/mL	1.0000	34.38
PFOA-13C	Auto	4.657	7175089	6543060	1	4.9121	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.657	7175089	7175089	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.828	980819	4683092	10	1.0443	ng/mL	1.0000	24.56
PFNA-13C	Auto	4.828	4683092	6543060	1	4.7311	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.828	4683092	4683092	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.004	923400	4558332	11	0.9629	ng/mL	1.0000	22.66
PFDA-13C	Auto	5.004	4558332	6543060	1	4.9714	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.004	4558332	4558332	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.178	1080794	5400297	12	1.0212	ng/mL	1.0000	13.20
PFUnA-13C	Auto	5.178	5400297	6543060	1	4.8017	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.178	5400297	5400297	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.342	848638	5437691	13	0.9531	ng/mL	1.0000	19.55
PFDaA-13C	Auto	5.342	5437691	6543060	1	5.0245	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.342	5437691	5437691	13	5.0000	ng/mL	5.0000	----
PFTrDA	Auto	5.496	812020	3251545	14	1.0204	ng/mL	1.0000	18.83
PFTeDA	Auto	5.639	466798	3251545	14	1.0493	ng/mL	1.0000	147.73
PFTeDA-13C	Auto	5.639	3251545	6543060	1	4.6847	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.639	3251545	3251545	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.288	751748	2764564	16	0.9667	ng/mL	1.0000	4.33
FOSA-13C	Auto	5.288	2764564	6543060	1	4.6316	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.288	2764564	2764564	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.649	177326	693793	17	0.9702	ng/mL	1.0000	76.63
N-MeFOSA-d3	Auto	5.646	693793	6543060	1	4.6668	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.646	693793	693793	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.778	35943	842146	18	1.0415	ng/mL	1.0000	72.23
N-EtFOSA-d9	Auto	5.773	842146	6543060	1	4.5457	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.773	842146	842146	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.626	207644	326665	19	1.0246	ng/mL	1.0000	----

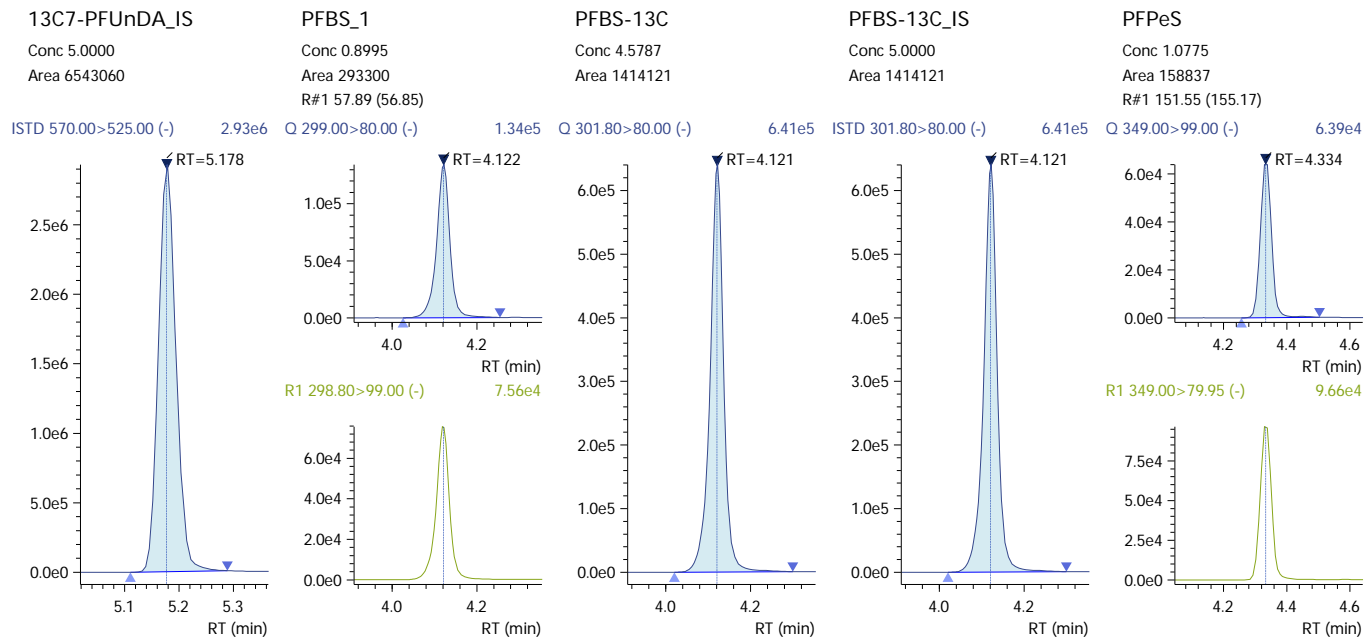
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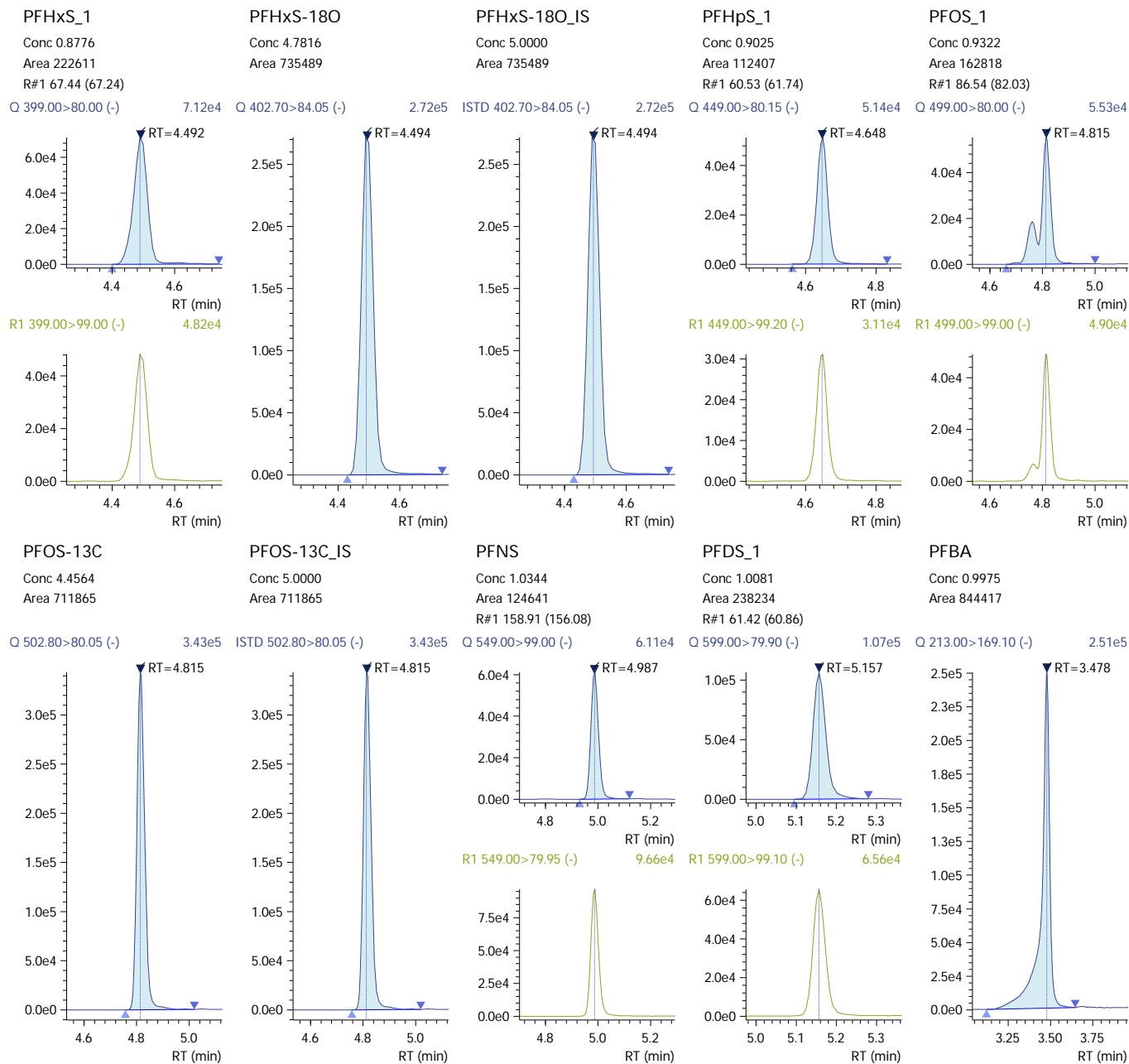
200812_042 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.619	326665	6543060	1	4.5958	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.619	326665	326665	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.751	218303	279477	20	0.9709	ng/mL	1.0000	----
N-EtFOSE-d9	Auto	5.741	279477	6543060	1	4.7975	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.741	279477	279477	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	Auto	5.103	77889	517798	21	0.9952	ng/mL	1.0000	40.96
N-MeFOSAA-d3	Auto	5.099	517798	6543060	1	4.6300	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.099	517798	517798	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.194	45327	383295	22	1.0185	ng/mL	1.0000	67.84
N-EtFOSAA-d5	Auto	5.190	383295	6543060	1	4.8354	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.190	383295	383295	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.298	221312	1193320	23	0.9718	ng/mL	0.9372	130.56
4_2-FTS-13C	Auto	4.298	1193320	6543060	1	5.1854	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.298	1193320	1193320	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.649	134392	624433	24	0.9815	ng/mL	0.9512	37.44
6_2-FTS-13C	Auto	4.649	624433	6543060	1	5.0197	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.649	624433	624433	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.004	71333	468050	25	0.9982	ng/mL	0.9600	9.56
8_2-FTS-13C	Auto	5.005	468050	6543060	1	4.9717	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.005	468050	468050	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.350	55106	468050	25	0.9923	ng/mL	0.9662	5.53
HPFO_DA	Auto	4.385	256337	1318072	26	0.9681	ng/mL	1.0000	70.97
HPFO_DA-13C	Auto	4.384	1318072	6543060	1	4.9462	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.384	1318072	1318072	26	5.0000	ng/mL	5.0000	----



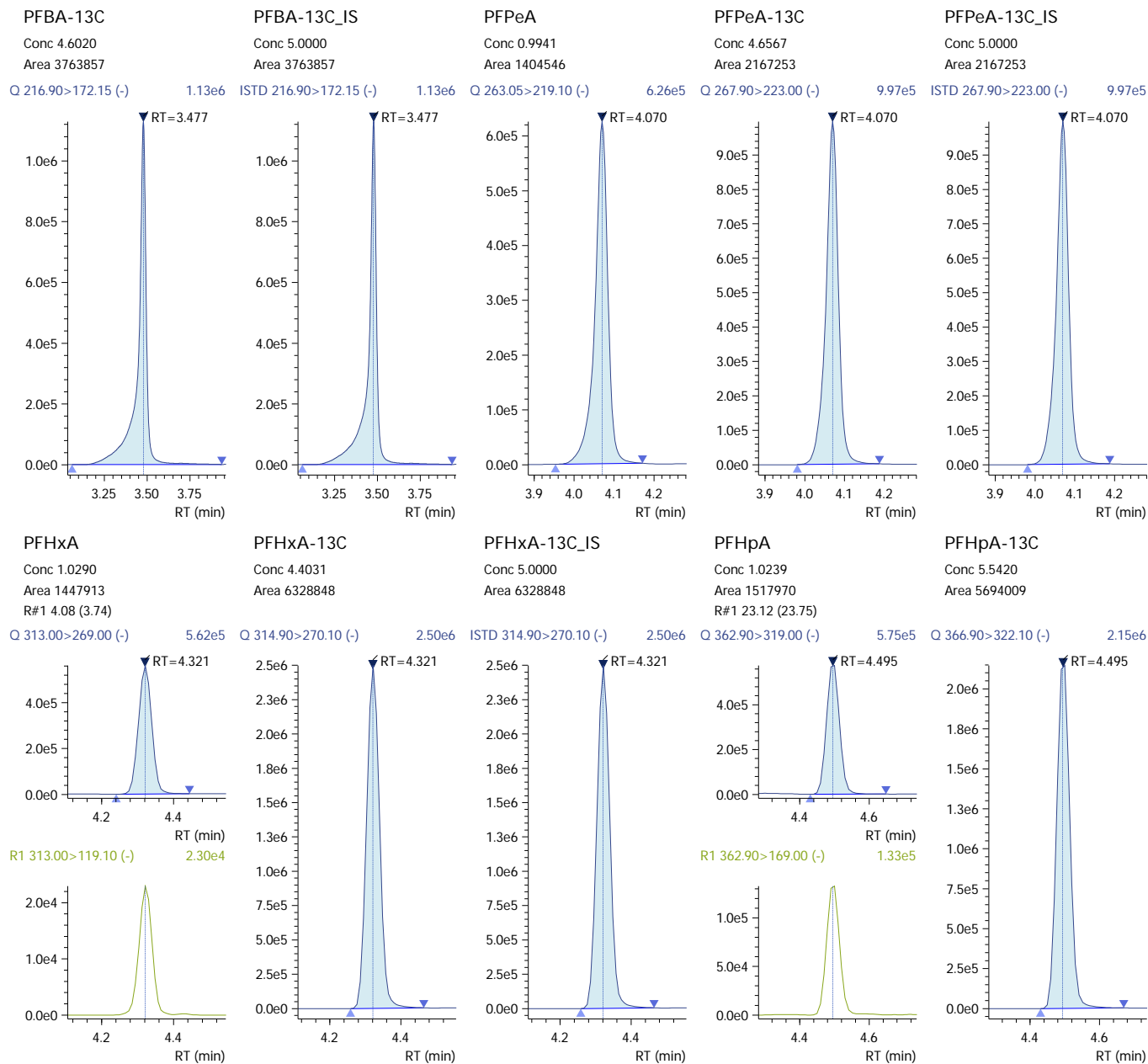
200812_042 (continued)



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200812_042 (continued)



Insight Report

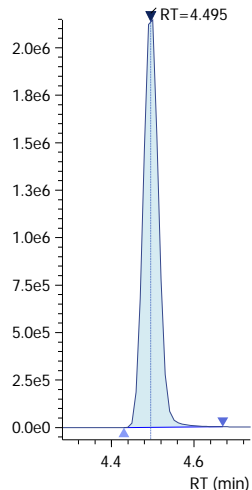
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200812_042 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 5694009

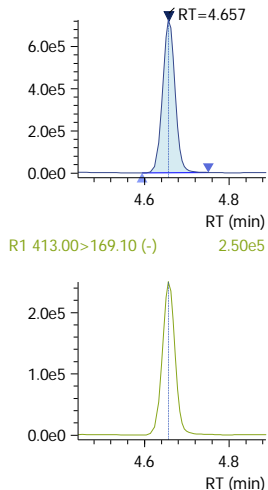
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PFOA

Conc 0.9951
Area 1485491
R#1 34.38 (34.80)

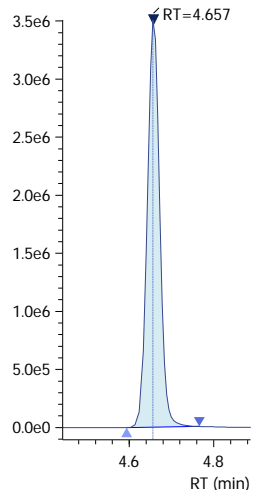
Q 413.00>369.00 (-) 7.25e5



PFOA-13C

Conc 4.9121
Area 7175089

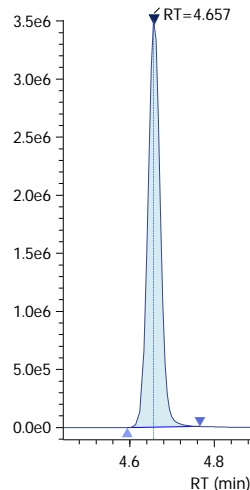
Q 416.80>372.05 (-) 3.51e6



PFOA-13C_IS

Conc 5.0000
Area 7175089

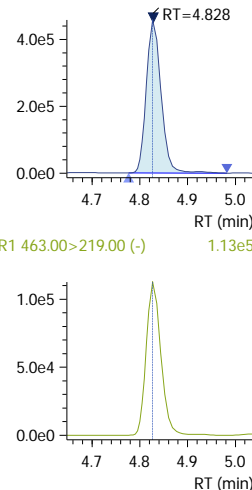
ISTD 416.80>372.05 (-) 3.51e6



PFNA

Conc 1.0443
Area 980819
R#1 24.56 (22.71)

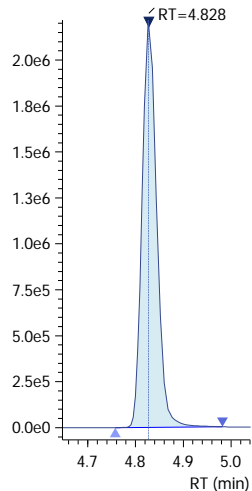
Q 463.00>418.90 (-) 4.58e5



PFNA-13C

Conc 4.7311
Area 4683092

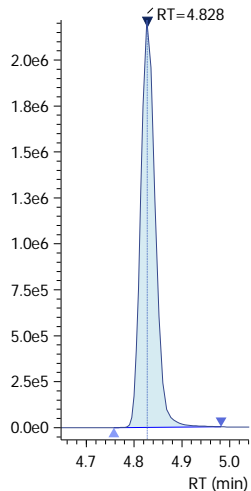
Q 467.80>423.00 (-) 2.22e6



PFNA-13C_IS

Conc 5.0000
Area 4683092

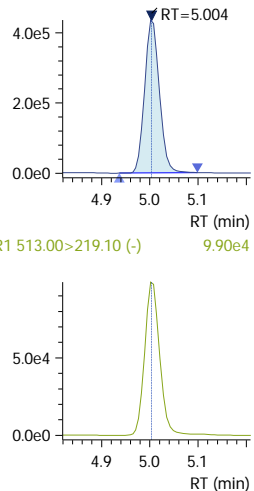
ISTD 467.80>423.00 (-) 2.22e6



PFDA

Conc 0.9629
Area 923400
R#1 22.66 (22.06)

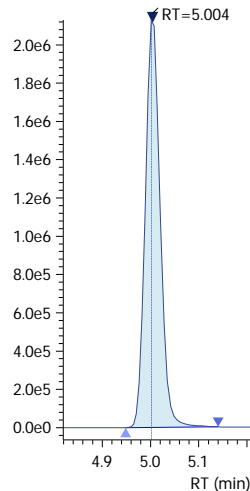
Q 513.00>468.80 (-) 4.37e5



PFDA-13C

Conc 4.9714
Area 4558332

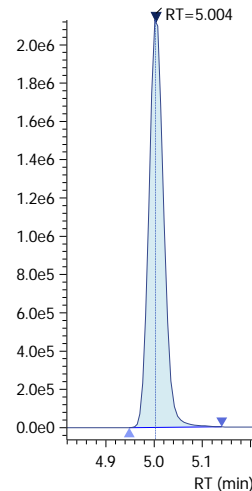
Q 514.80>469.95 (-) 2.13e6



PFDA-13C_IS

Conc 5.0000
Area 4558332

ISTD 514.80>469.95 (-) 2.13e6

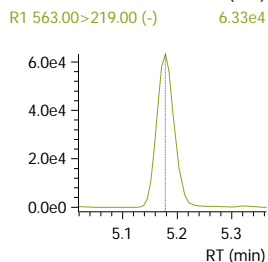
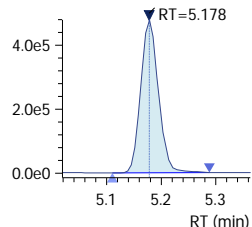


200812_042 (continued)

PFUnA

Conc 1.0212
Area 1080794
R#1 13.20 (13.66)

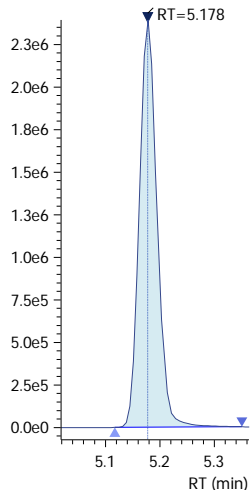
Q 563.00>518.90 (-) 4.79e5



PFUnA-13C

Conc 4.8017
Area 5400297

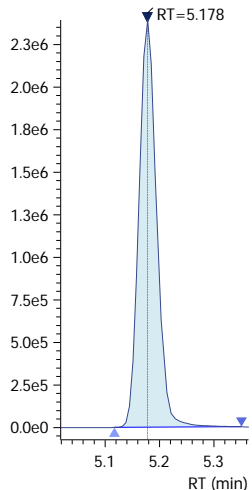
Q 564.80>519.95 (-) 2.39e6



PFUnA-13C_IS

Conc 5.0000
Area 5400297

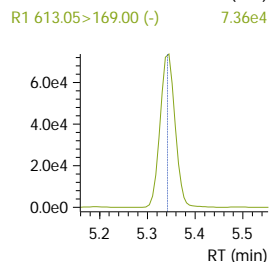
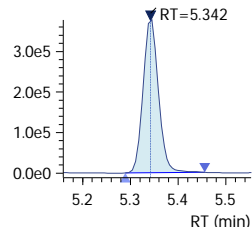
ISTD 564.80>519.95 (-) 2.39e6



PFDaA

Conc 0.9531
Area 848638
R#1 19.55 (21.98)

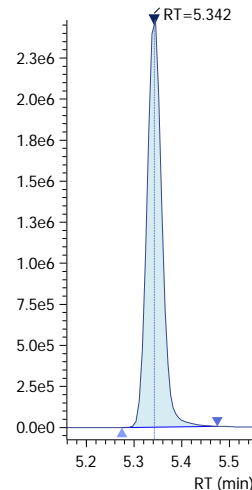
Q 613.05>569.00 (-) 3.78e5



PFDaA-13C

Conc 5.0245
Area 5437691

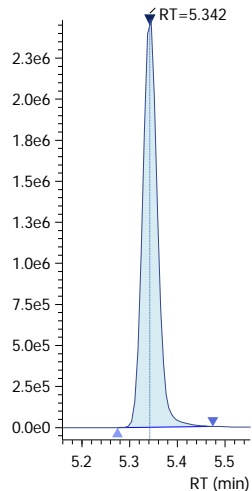
Q 614.80>569.95 (-) 2.48e6



PFDaA-13C_IS

Conc 5.0000
Area 5437691

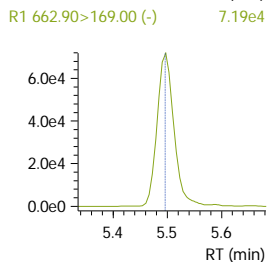
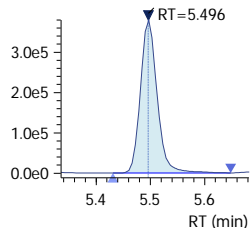
ISTD 614.80>569.95 (-) 2.48e6



PFTrDA

Conc 1.0204
Area 812020
R#1 18.83 (19.20)

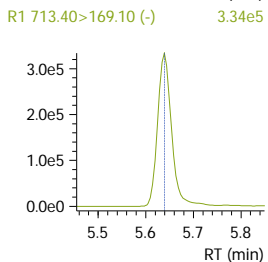
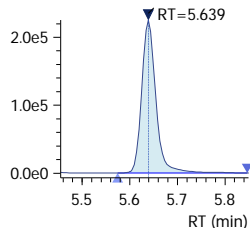
Q 663.00>618.90 (-) 3.80e5



PFTeDA

Conc 1.0493
Area 466798
R#1 147.73 (61.49)

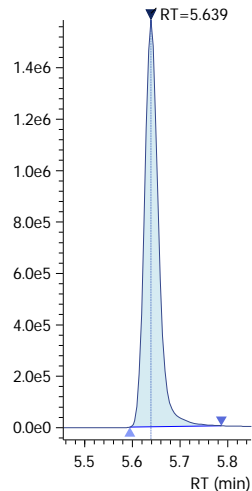
Q 713.40>669.00 (-) 2.25e5



PFTeDA-13C

Conc 4.6847
Area 3251545

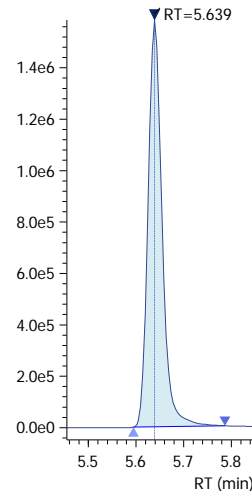
Q 714.70>669.90 (-) 1.59e6



PFTeDA-13C_IS

Conc 5.0000
Area 3251545

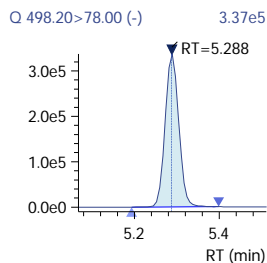
ISTD 714.70>669.90 (-) 1.59e6



200812_042 (continued)

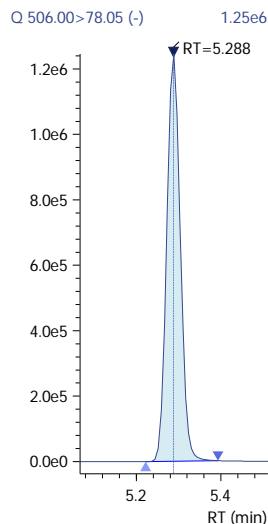
FOSA

Conc 0.9667
Area 751748
R#1 4.33 (4.04)



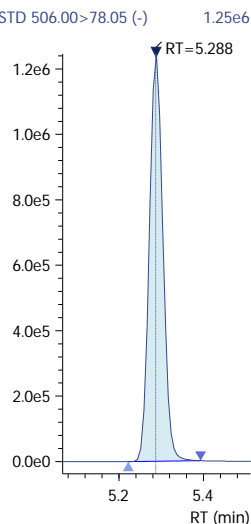
FOSA-13C

Conc 4.6316
Area 2764564



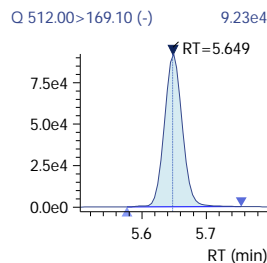
FOSA-13C_IS

Conc 5.0000
Area 2764564



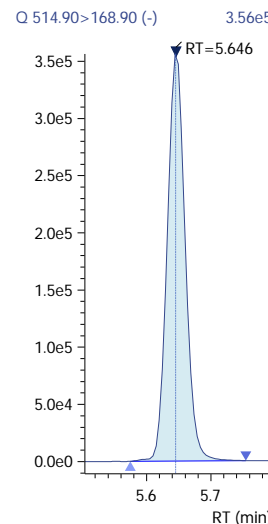
N-MeFOSA

Conc 0.9702
Area 177326
R#1 76.63 (78.52)



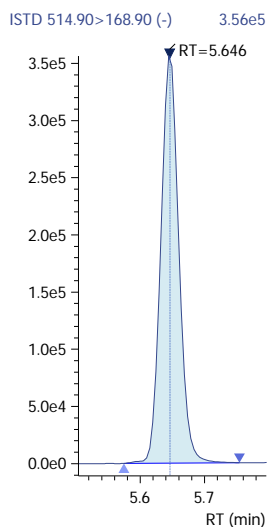
N-MeFOSA-d3

Conc 4.6668
Area 693793



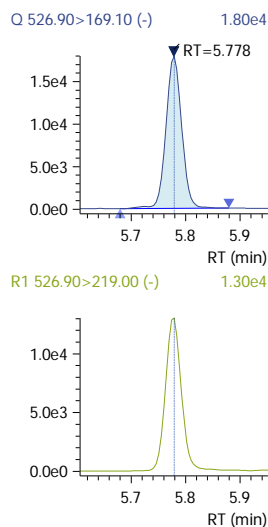
N-MeFOSA-d3_IS

Conc 5.0000
Area 693793



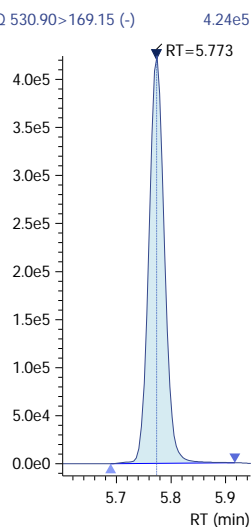
N-EtFOSA

Conc 1.0415
Area 35943
R#1 72.23 (0.00)



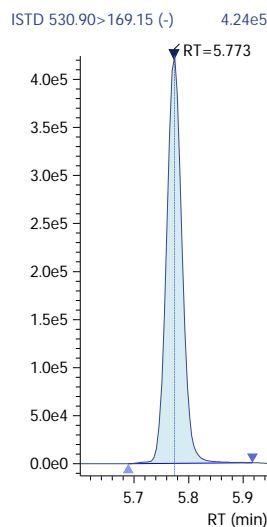
N-EtFOSA-d9

Conc 4.5457
Area 842146



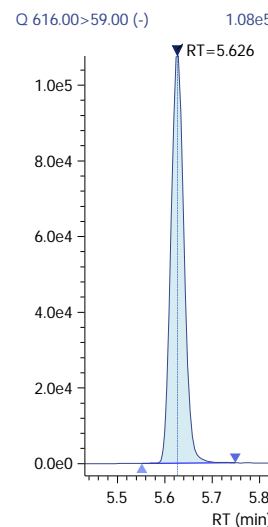
N-EtFOSA-d9_IS

Conc 5.0000
Area 842146



N-MeFOSE

Conc 1.0246
Area 207644



Insight Report

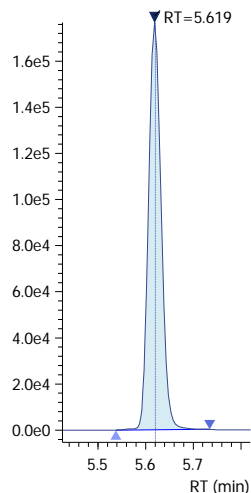
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200812_042 (continued)

N-MeFOSE-d7

Conc 4.5958
Area 326665

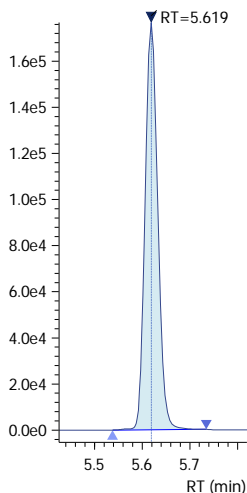
Q 622.70>59.10 (-)



N-MeFOSE-d7_IS

Conc 5.0000
Area 326665

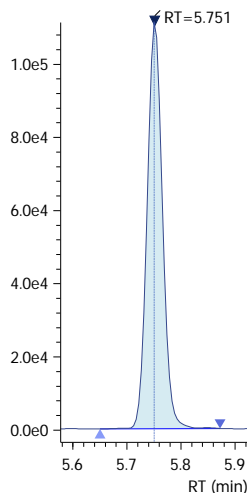
ISTD 622.70>59.10 (-)



N-EtFOSE

Conc 0.9709
Area 218303

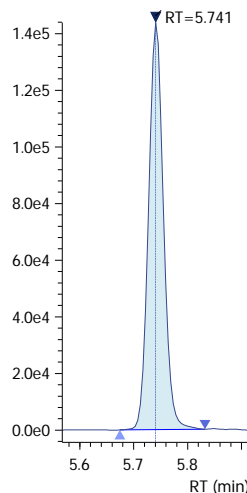
Q 630.00>58.90 (-)



N-EtFOSE-d9

Conc 4.7975
Area 279477

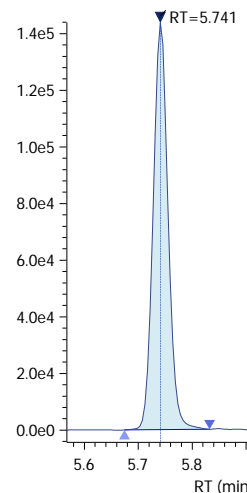
Q 638.70>59.10 (-)



N-EtFOSE-d9_IS

Conc 5.0000
Area 279477

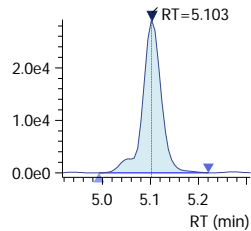
ISTD 638.70>59.10 (-)



N-MeFOSAA

Conc 0.9952
Area 77889
R#1 40.96 (33.47)

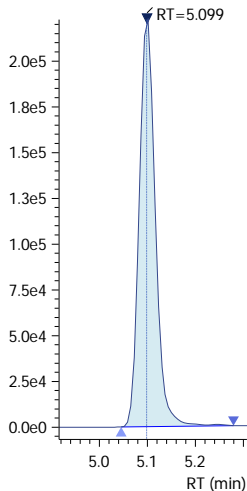
Q 570.20>419.00 (-)



N-MeFOSAA-d3

Conc 4.6300
Area 517798

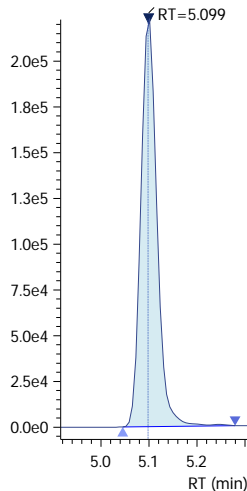
Q 572.80>419.05 (-)



N-MeFOSAA-d3_IS

Conc 5.0000
Area 517798

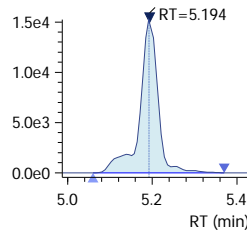
ISTD 572.80>419.05 (-)



N-EtFOSAA

Conc 1.0185
Area 45327
R#1 67.84 (83.09)

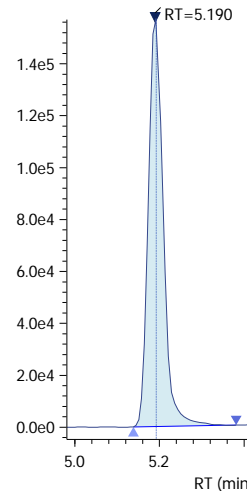
Q 584.20>418.95 (-)



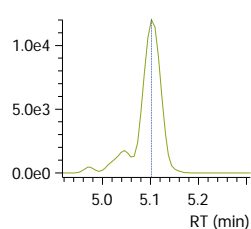
N-EtFOSAA-d5

Conc 4.8354
Area 383295

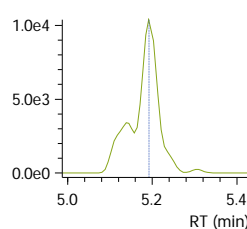
Q 588.80>419.00 (-)



R1 570.20>512.00 (-)



R1 584.20>526.10 (-)



Insight Report

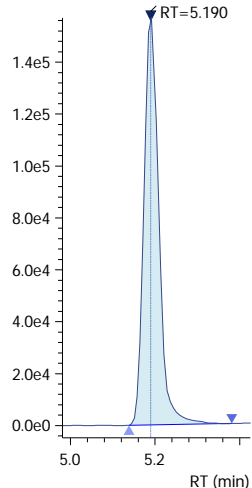
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200812_042 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
Area 383295

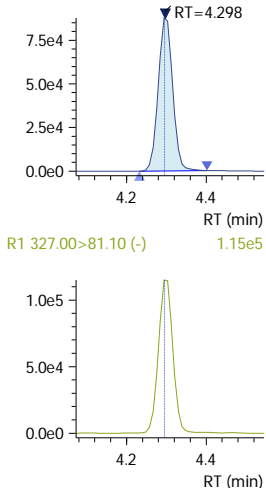
ISTD 588.80>419.00 (-) 1.57e5



4_2-FTS_1

Conc 0.9718
Area 221312
R#1 130.56 (54.93)

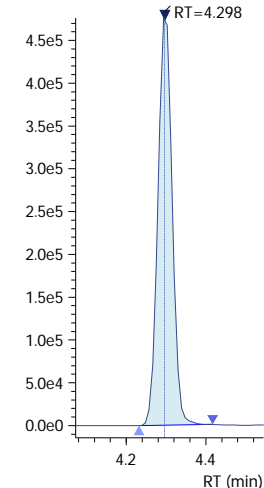
Q 327.00>307.05 (-) 8.78e4



4_2-FTS-13C

Conc 5.1854
Area 1193320

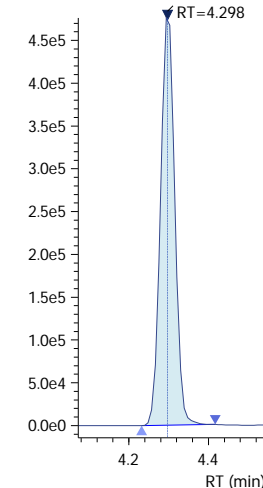
Q 328.80>309.05 (-) 4.76e5



4_2-FTS-13C_IS

Conc 5.0000
Area 1193320

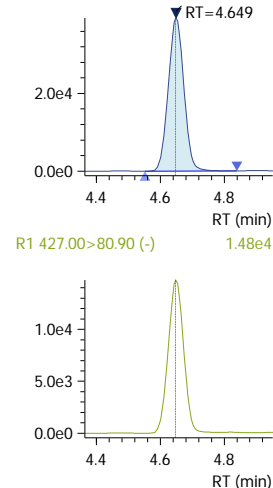
ISTD 328.80>309.05 (-) 4.76e5



6_2-FTS_1

Conc 0.9815
Area 134392
R#1 37.44 (36.33)

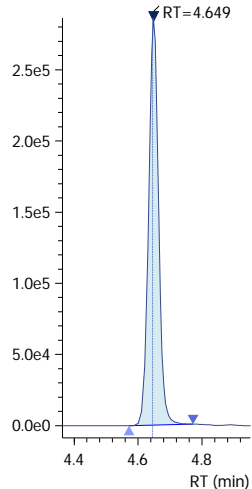
Q 427.00>407.00 (-) 3.94e4



6_2-FTS-13C

Conc 5.0197
Area 624433

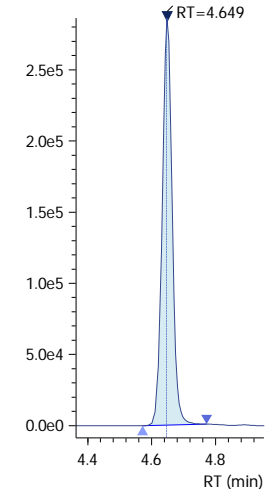
Q 428.90>409.00 (-) 2.86e5



6_2-FTS-13C_IS

Conc 5.0000
Area 624433

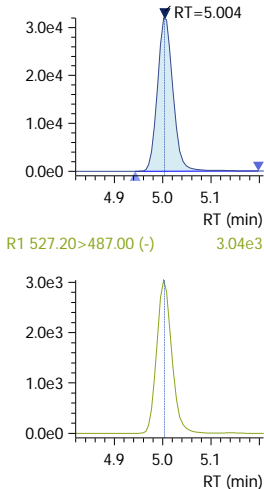
ISTD 428.90>409.00 (-) 2.86e5



8_2-FTS_1

Conc 0.9982
Area 71333
R#1 9.56 (8.96)

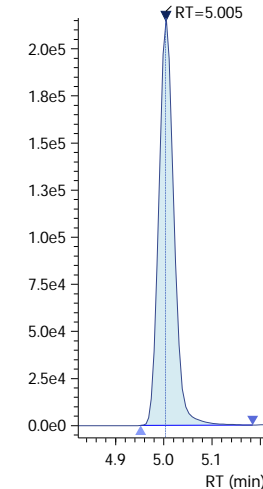
Q 527.10>506.90 (-) 3.20e4



8_2-FTS-13C

Conc 4.9717
Area 468050

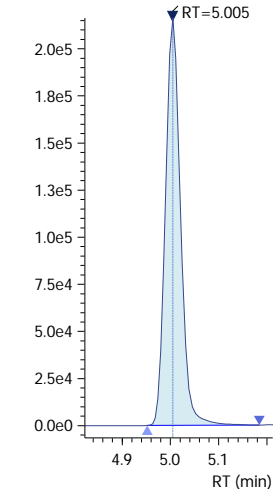
Q 528.80>509.00 (-) 2.16e5



8_2-FTS-13C_IS

Conc 5.0000
Area 468050

ISTD 528.80>509.00 (-) 2.16e5



Insight Report

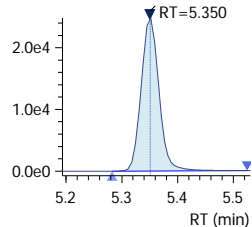
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200812_042 (continued)

10_2-FtS_1

Conc 0.9923
Area 55106
R#1 5.53 (5.92)

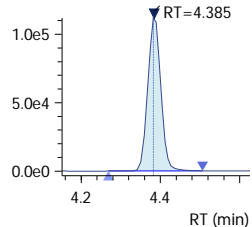
Q 627.00>606.95 (-) 2.48e4



HPFO_DA

Conc 0.9681
Area 256337
R#1 70.97 (72.82)

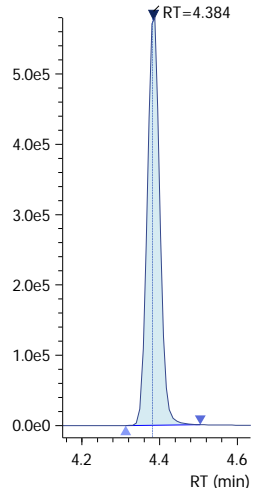
Q 329.00>169.00 (-) 1.12e5



HFPO_DA-13C

Conc 4.9462
Area 1318072

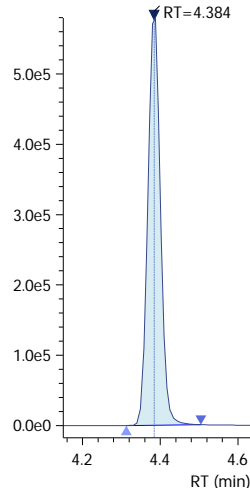
Q 332.00>286.80 (-) 5.80e5



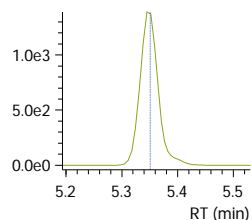
HFPO_DA-13C_IS

Conc 5.0000
Area 1318072

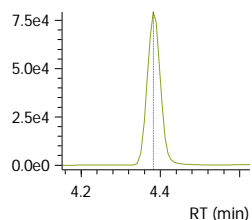
ISTD 332.00>286.80 (-) 5.80e5



R1 627.00>81.25 (-) 1.39e3



R1 329.00>285.10 (-) 7.93e4

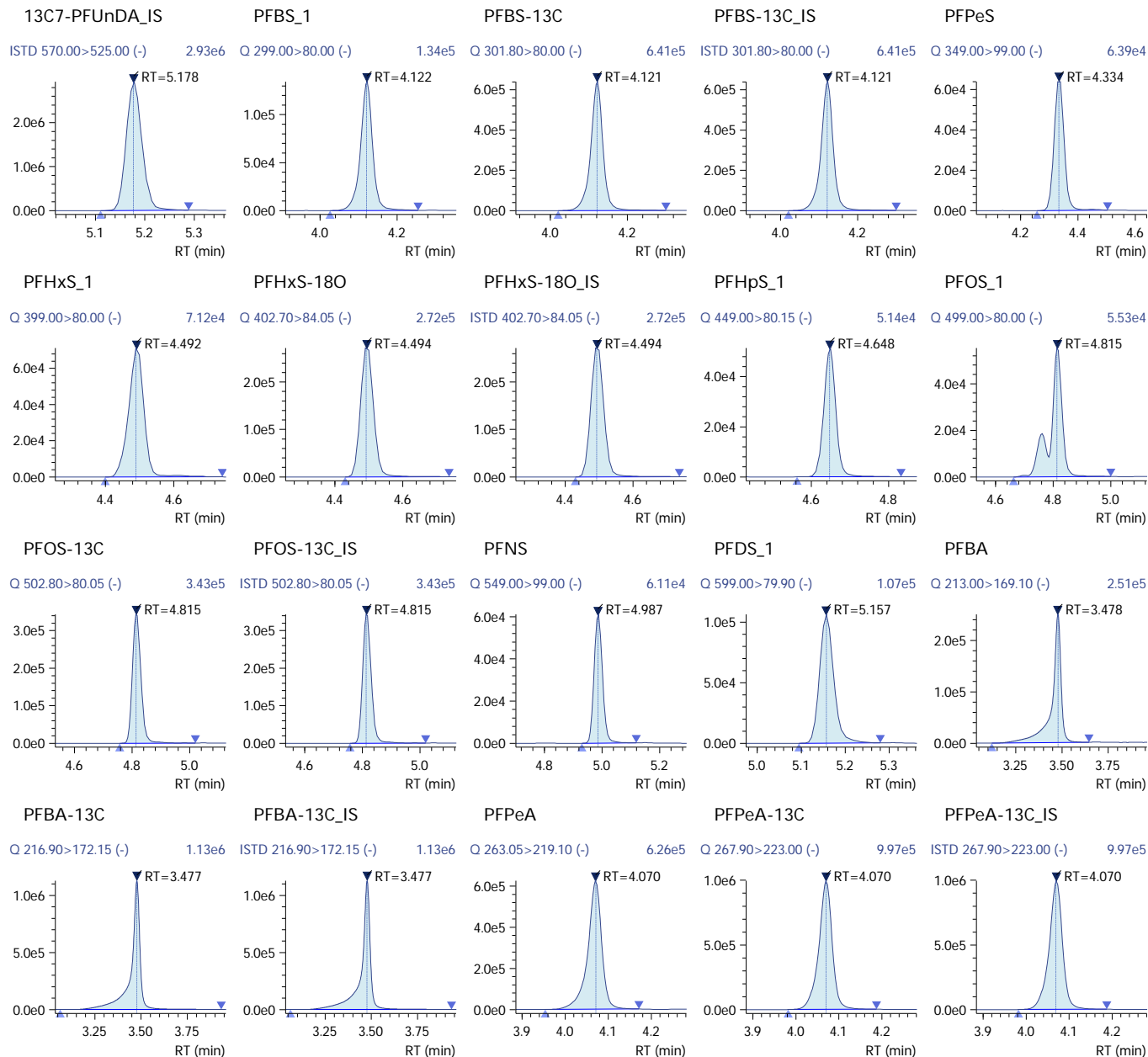


Insight Report

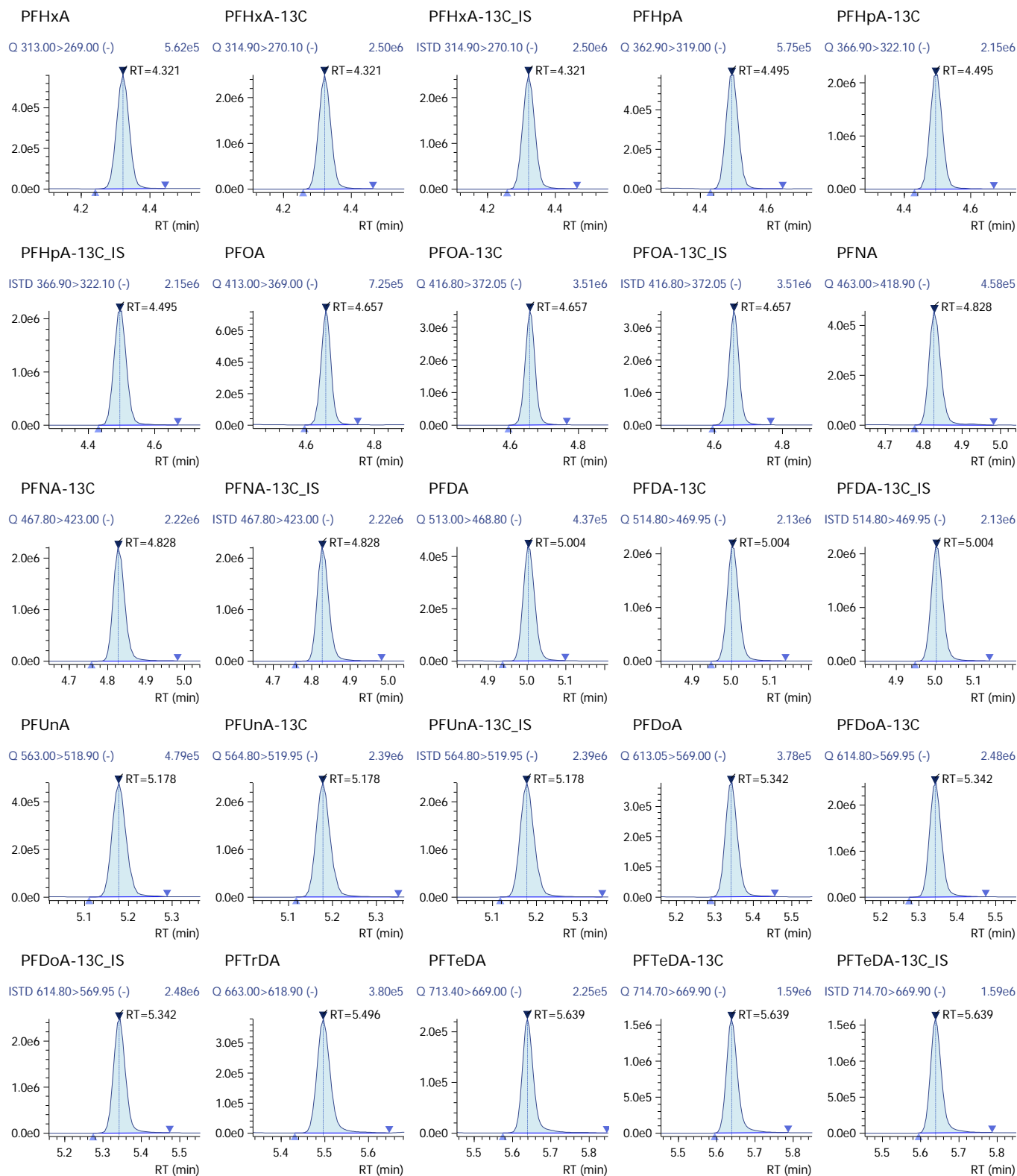
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200812_042

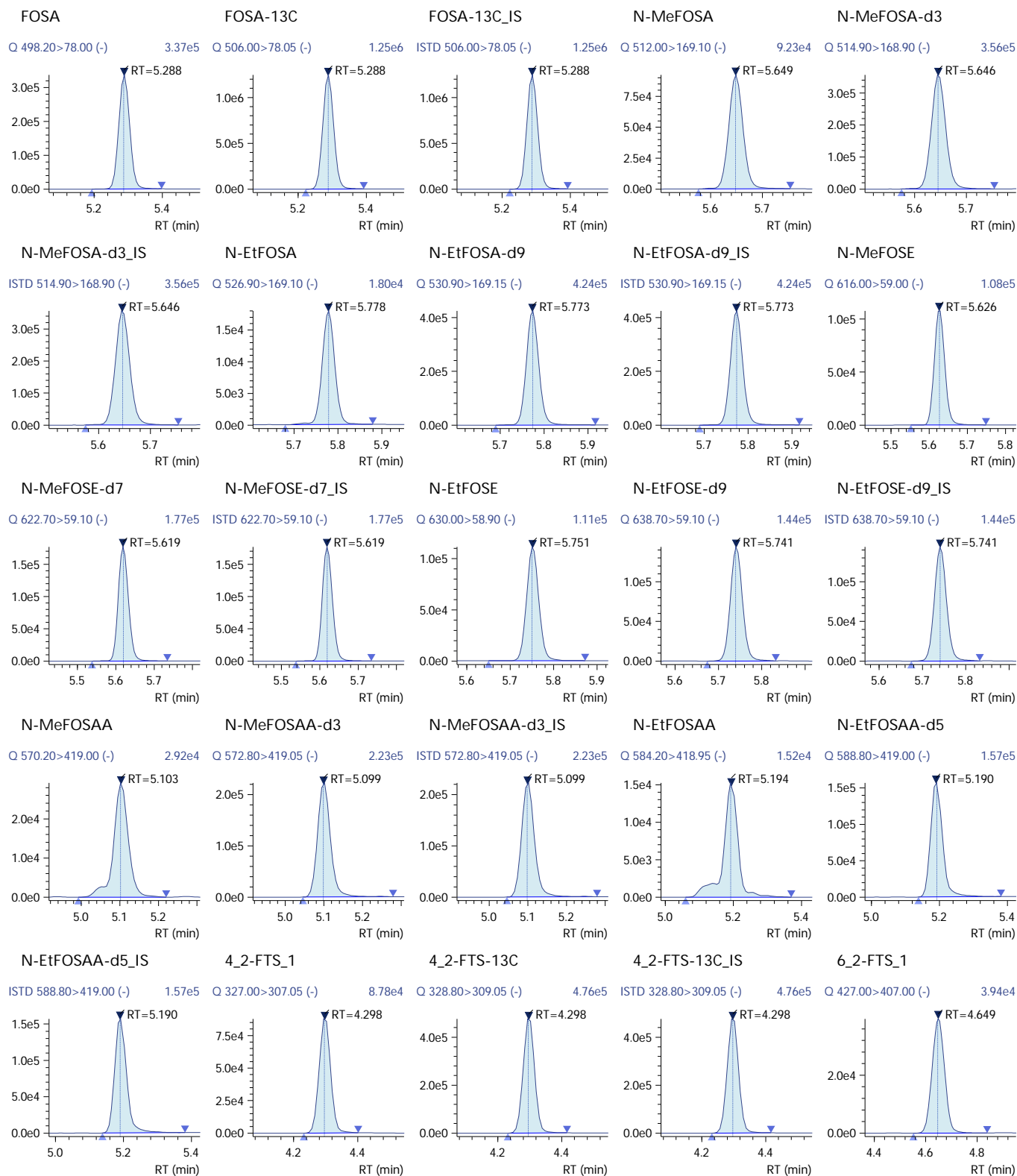
Sample ID: 1.0 PPB ICAL
Date Acquired: 8/12/2020 8:00:30 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_042.lcd
Vial: 4 | Inj. Volume: 15.0000uL | Tray: 0



200812_042 (continued)



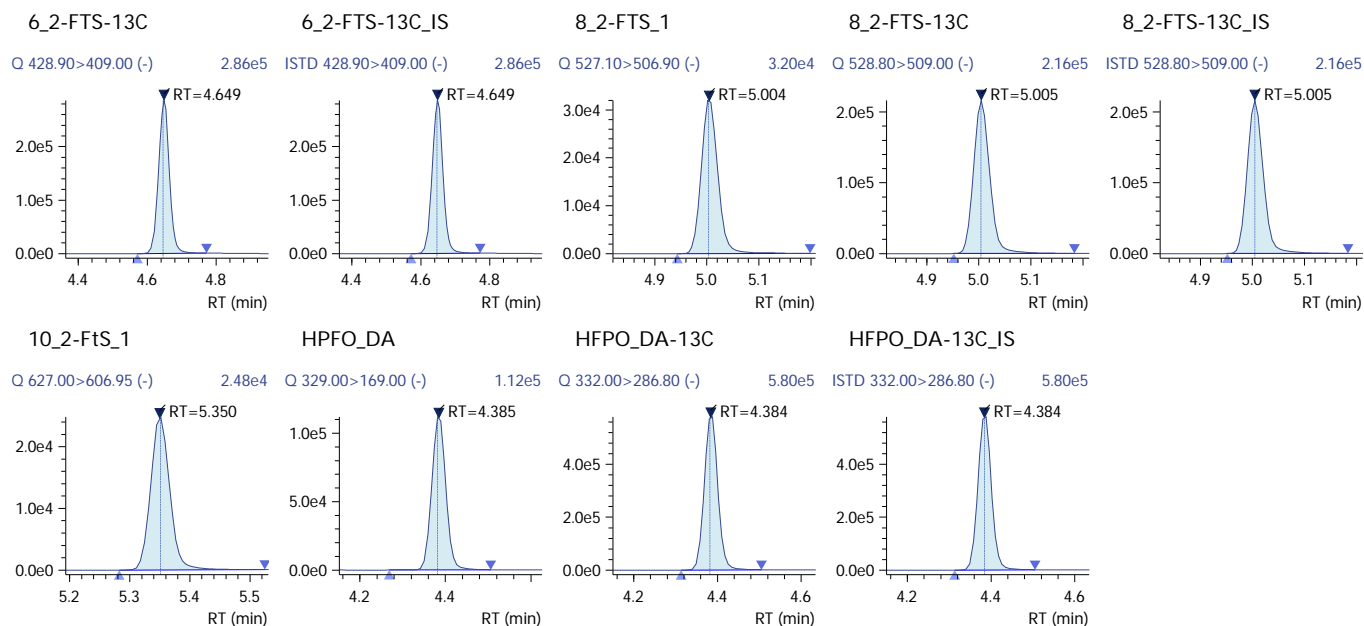
200812_042 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_042 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_043

Sample ID: 5.0 PPB ICAL
 Date Acquired: 8/12/2020 8:11:16 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_043.lcd
 Vial: 5 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.177	6263179	6263179	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.121	1400381	1459162	2	4.1624	ng/mL	4.4369	56.86
PFBS-13C	Auto	4.121	1459162	6263179	1	4.9357	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.121	1459162	1459162	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.333	712152	1459162	2	4.6819	ng/mL	4.7046	155.15
PFHxS_1	Auto	4.490	960871	702801	3	3.9641	ng/mL	4.5654	67.21
PFHxS-18O	Auto	4.493	702801	6263179	1	4.7733	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.493	702801	702801	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.647	572459	702801	3	4.8097	ng/mL	4.7672	61.74
PFOS_1	Auto	4.814	812736	769979	4	4.3019	ng/mL	4.6461	82.05
PFOS-13C	Auto	4.814	769979	6263179	1	5.0356	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.814	769979	769979	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.986	610265	769979	4	4.6823	ng/mL	4.8079	156.09
PFDS_1	Auto	5.156	1209219	769979	4	4.7308	ng/mL	4.8233	60.91
PFBA	Auto	3.478	4052445	3852079	5	4.6773	ng/mL	5.0000	----
PFBA-13C	Auto	3.477	3852079	6263179	1	4.9203	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.477	3852079	3852079	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.070	6505753	2176900	6	4.7970	ng/mL	5.0000	----
PFPeA-13C	Auto	4.070	2176900	6263179	1	4.8864	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.070	2176900	2176900	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.320	6355604	6204908	7	4.8009	ng/mL	5.0000	3.74
PFHxA-13C	Auto	4.320	6204908	6263179	1	4.5098	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.320	6204908	6204908	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.495	6115163	4971067	8	4.7813	ng/mL	5.0000	23.74
PFHpA-13C	Auto	4.494	4971067	6263179	1	5.0546	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.494	4971067	4971067	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.657	6245490	6515736	9	4.7134	ng/mL	5.0000	34.80
PFOA-13C	Auto	4.657	6515736	6263179	1	4.6600	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.657	6515736	6515736	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.828	4232514	4472368	10	4.7669	ng/mL	5.0000	22.73
PFNA-13C	Auto	4.828	4472368	6263179	1	4.7201	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.828	4472368	4472368	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.004	4071122	4223778	11	4.5815	ng/mL	5.0000	22.06
PFDA-13C	Auto	5.004	4223778	6263179	1	4.8124	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.004	4223778	4223778	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.177	4969560	5387759	12	4.8099	ng/mL	5.0000	13.66
PFUnA-13C	Auto	5.177	5387759	6263179	1	5.0046	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.177	5387759	5387759	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.342	3999174	5106890	13	4.8511	ng/mL	5.0000	21.98
PFDaA-13C	Auto	5.342	5106890	6263179	1	4.9297	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.342	5106890	5106890	13	5.0000	ng/mL	5.0000	----
PFTeDA	Auto	5.496	3783266	3211731	14	4.8833	ng/mL	5.0000	19.20
PFTeDA	Auto	5.639	1948054	3211731	14	4.8745	ng/mL	5.0000	61.52
PFTeDA-13C	Auto	5.639	3211731	6263179	1	4.8341	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.639	3211731	3211731	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.288	3768687	2762292	16	4.8502	ng/mL	5.0000	4.05
FOSA-13C	Auto	5.287	2762292	6263179	1	4.8346	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.287	2762292	2762292	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.648	853454	684654	17	4.7320	ng/mL	5.0000	78.50
N-MeFOSA-d3	Auto	5.646	684654	6263179	1	4.8112	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.646	684654	684654	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.777	171618	880198	18	4.7581	ng/mL	5.0000	69.20
N-EtFOSA-d9	Auto	5.772	880198	6263179	1	4.9634	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.772	880198	880198	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.626	985391	318829	19	4.9817	ng/mL	5.0000	----

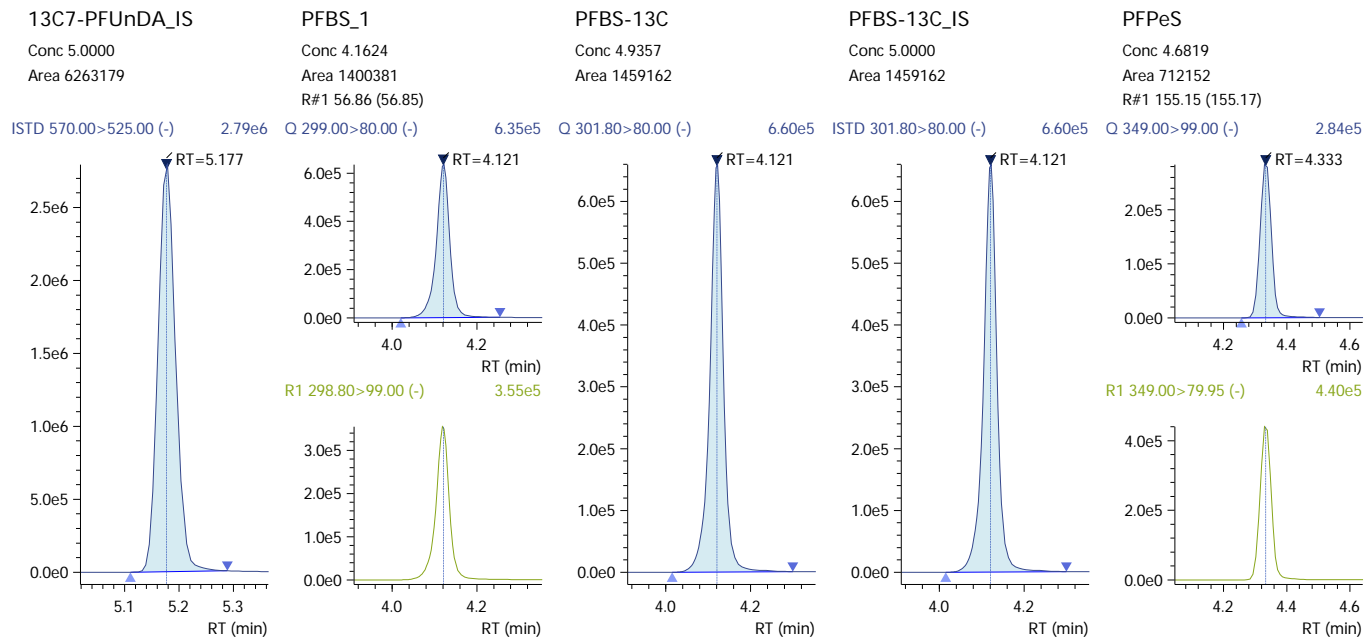
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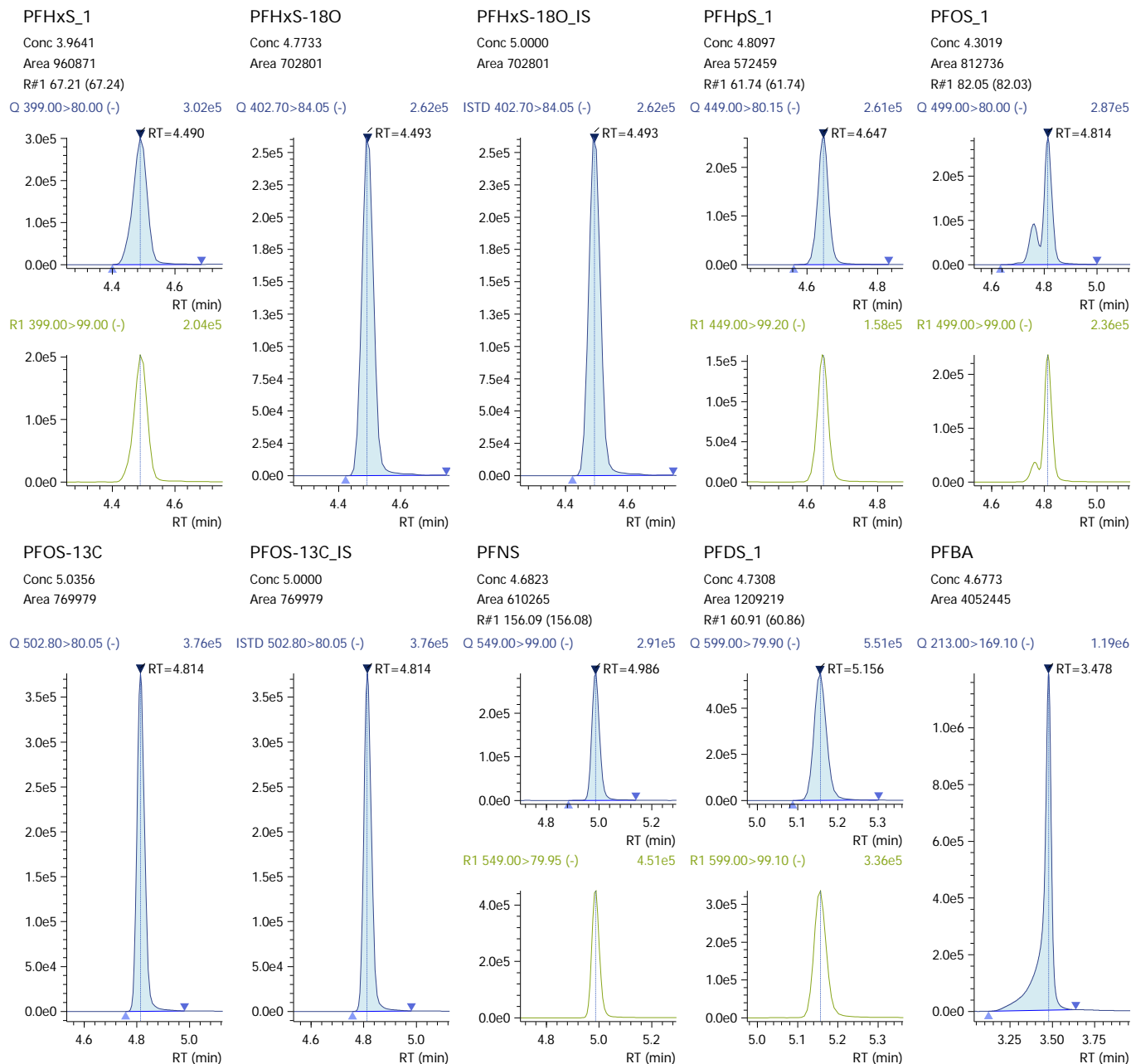
200812_043 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.619	318829	6263179	1	4.6860	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.619	318829	318829	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.750	1044634	278859	20	4.6564	ng/mL	5.0000	----
N-EtFOSE-d9	Auto	5.740	278859	6263179	1	5.0009	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.740	278859	278859	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	M	5.101	382345	539734	21	4.6869	ng/mL	5.0000	33.44
N-MeFOSAA-d3	Auto	5.099	539734	6263179	1	5.0418	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.099	539734	539734	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.192	224803	400853	22	4.8302	ng/mL	5.0000	83.09
N-EtFOSAA-d5	Auto	5.189	400853	6263179	1	5.2829	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.189	400853	400853	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.297	959996	1153235	23	4.3618	ng/mL	4.6861	54.93
4_2-FTS-13C	Auto	4.297	1153235	6263179	1	5.2352	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.297	1153235	1153235	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.647	564119	571656	24	4.5005	ng/mL	4.7558	36.33
6_2-FTS-13C	Auto	4.647	571656	6263179	1	4.8008	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.647	571656	571656	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.004	307063	419567	25	4.7935	ng/mL	4.8002	8.96
8_2-FTS-13C	Auto	5.005	419567	6263179	1	4.6559	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.005	419567	419567	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.350	239760	419567	25	4.8163	ng/mL	4.8310	5.92
HPFO_DA	Auto	4.384	1182985	1306512	26	4.5072	ng/mL	5.0000	72.82
HPFO_DA-13C	Auto	4.384	1306512	6263179	1	5.1219	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.384	1306512	1306512	26	5.0000	ng/mL	5.0000	----



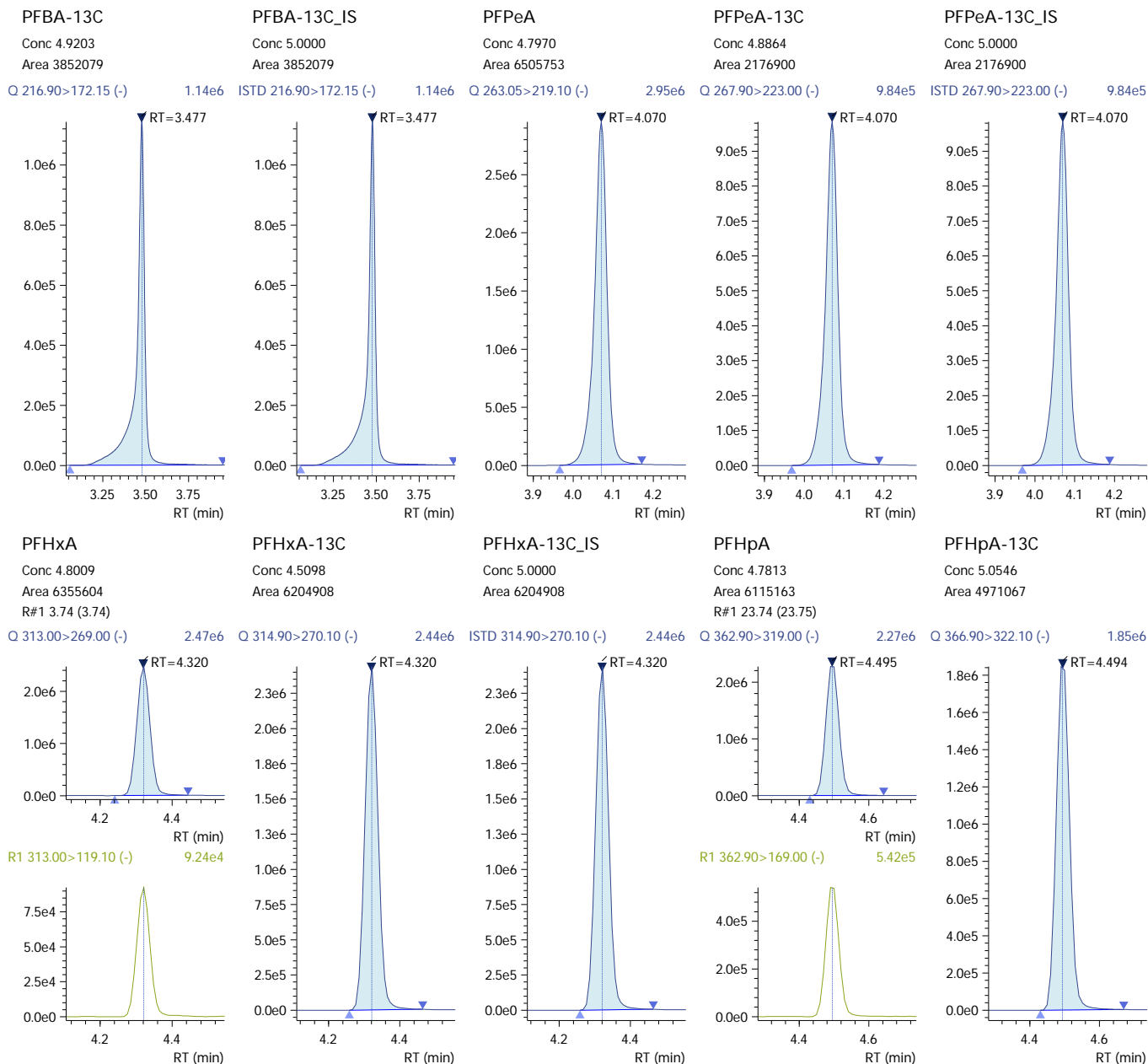
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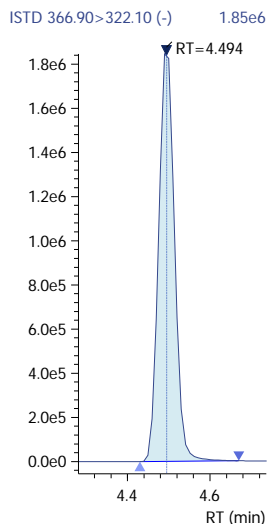
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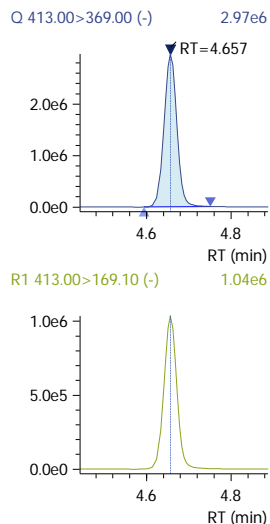
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Conc 5.0000
Area 4971067



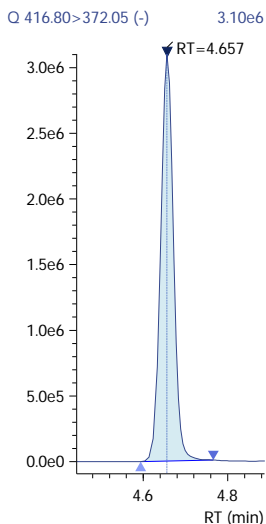
PFOA

Conc 4.7134
Area 6245490
R#1 34.80 (34.80)



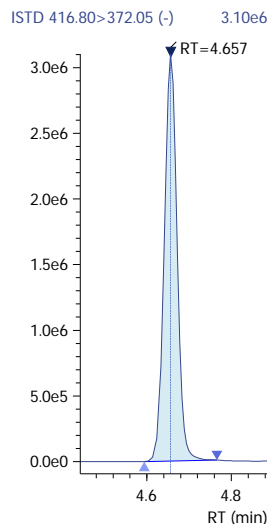
PFOA-13C

Conc 4.6600
Area 6515736



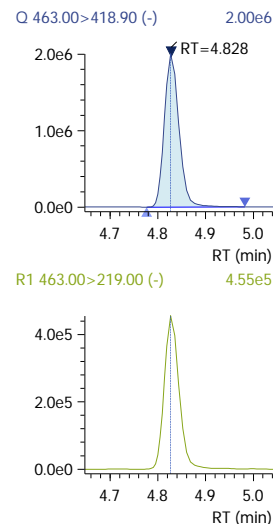
PFOA-13C_IS

Conc 5.0000
Area 6515736



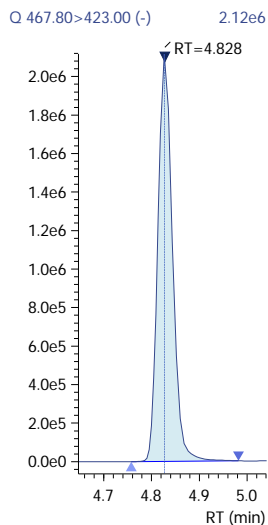
PFNA

Conc 4.7669
Area 4232514
R#1 22.73 (22.71)



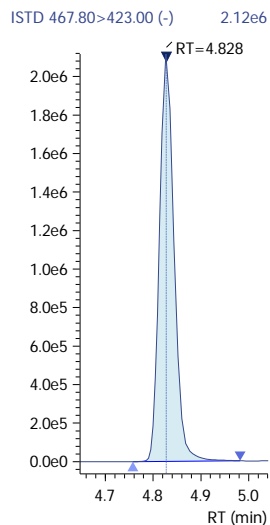
PFNA-13C

Conc 4.7201
Area 4472368



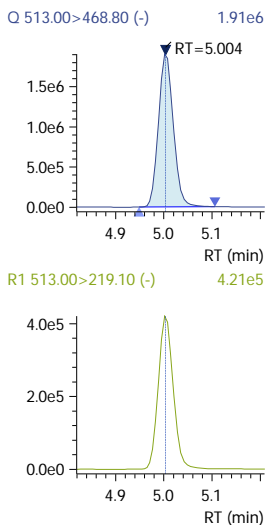
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Conc 5.0000
Area 4472368



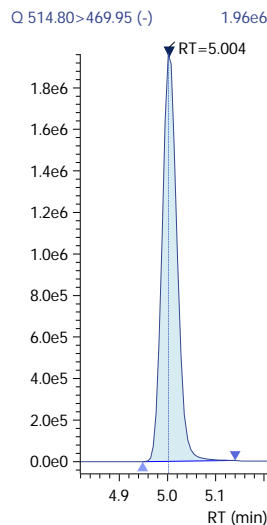
PFDA

Conc 4.5815
Area 4071122
R#1 22.06 (22.06)



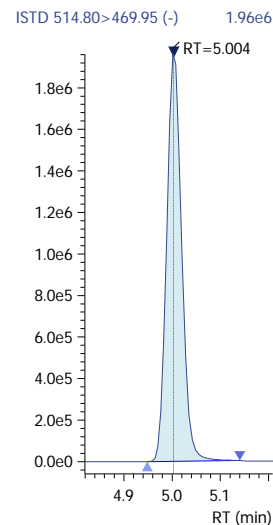
PFDA-13C

Conc 4.8124
Area 4223778



PFDA-13C_IS

Conc 5.0000
Area 4223778



Insight Report

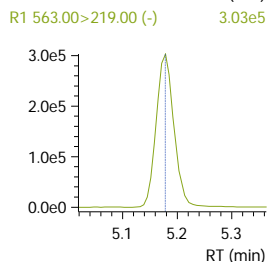
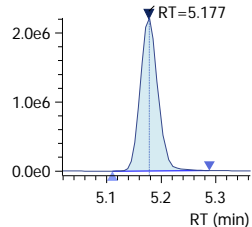
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200812_043 (continued)

PFUnA

Conc 4.8099
Area 4969560
R#1 13.66 (13.66)

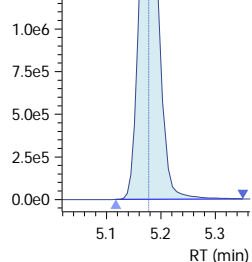
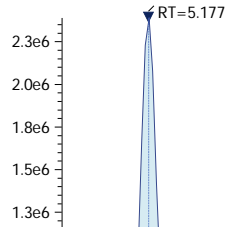
Q 563.00>518.90 (-) 2.22e6



PFUnA-13C

Conc 5.0046
Area 5387759

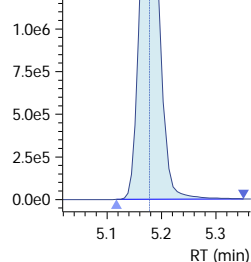
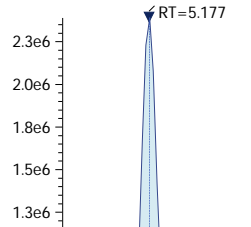
Q 564.80>519.95 (-) 2.39e6



PFUnA-13C_IS

Conc 5.0000
Area 5387759

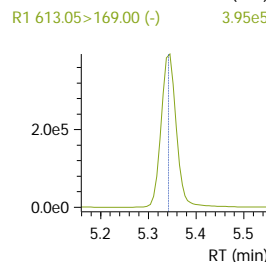
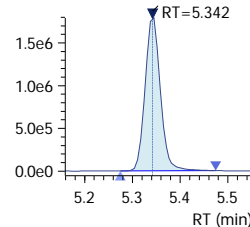
ISTD 564.80>519.95 (-) 2.39e6



PFDoA

Conc 4.8511
Area 3999174
R#1 21.98 (21.98)

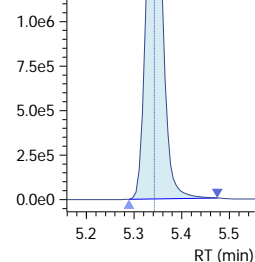
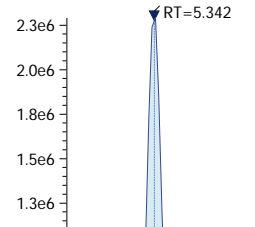
Q 613.05>569.00 (-) 1.79e6



PFDoA-13C

Conc 4.9297
Area 5106890

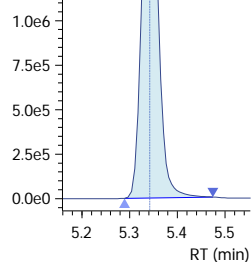
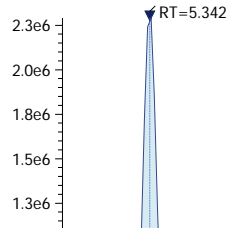
Q 614.80>569.95 (-) 2.29e6



PFDoA-13C_IS

Conc 5.0000
Area 5106890

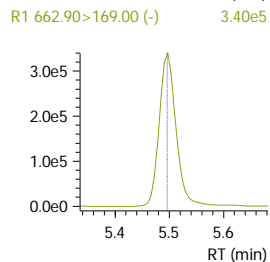
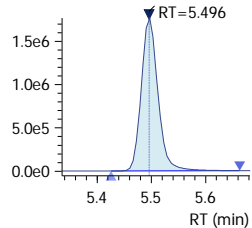
ISTD 614.80>569.95 (-) 2.29e6



PFTTrDA

Conc 4.8833
Area 3783266
R#1 19.20 (19.20)

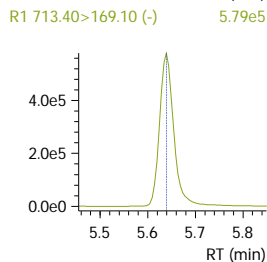
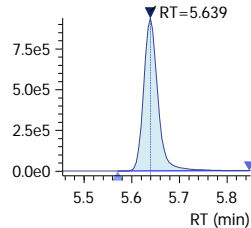
Q 663.00>618.90 (-) 1.77e6



PFTeDA

Conc 4.8745
Area 1948054
R#1 61.52 (61.49)

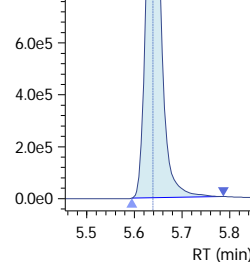
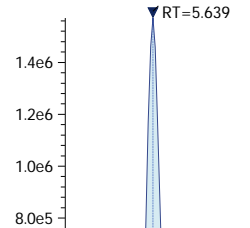
Q 713.40>669.00 (-) 9.40e5



PFTeDA-13C

Conc 4.8341
Area 3211731

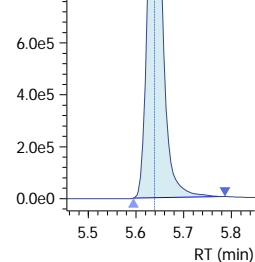
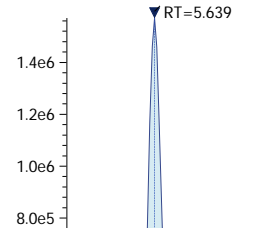
Q 714.70>669.90 (-) 1.57e6



PFTeDA-13C_IS

Conc 5.0000
Area 3211731

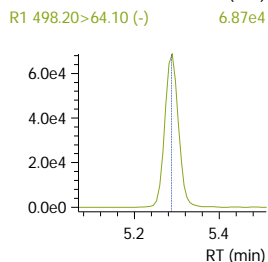
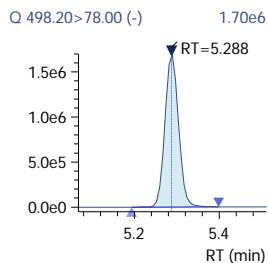
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200812_043 (continued)

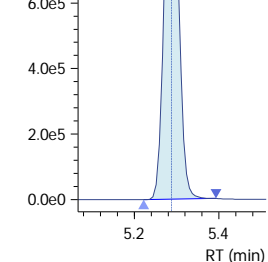
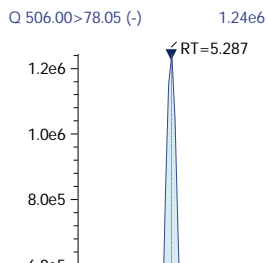
FOSA

Conc 4.8502
 Area 3768687
 R#1 4.05 (4.04)



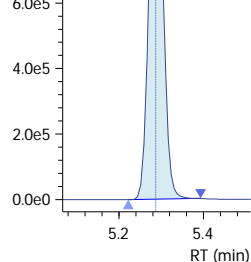
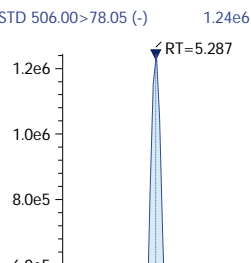
FOSA-13C

Conc 4.8346
 Area 2762292



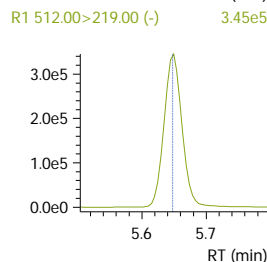
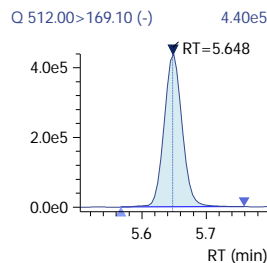
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Conc 5.0000
 Area 2762292



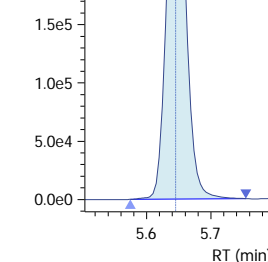
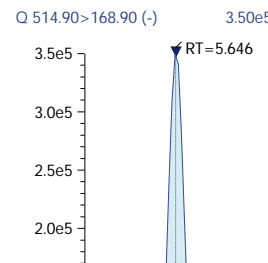
N-MeFOSA

Conc 4.7320
 Area 853454
 R#1 78.50 (78.52)



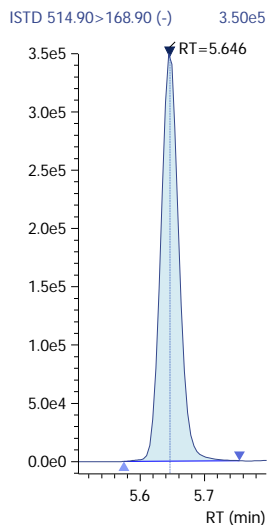
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Conc 4.8112
 Area 684654



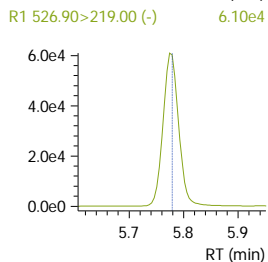
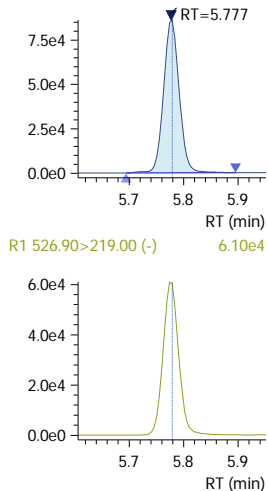
N-MeFOSA-d3_IS

Conc 5.0000
 Area 684654



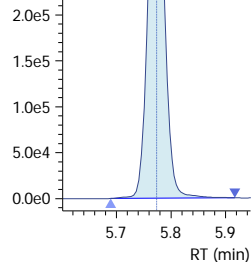
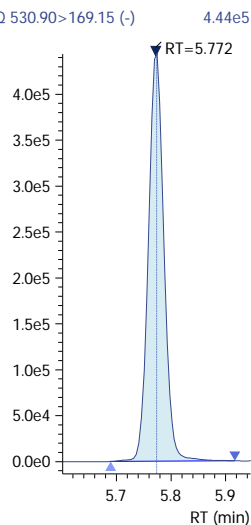
N-EtFOSA

Conc 4.7581
 Area 171618
 R#1 69.20 (0.00)



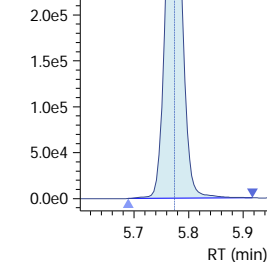
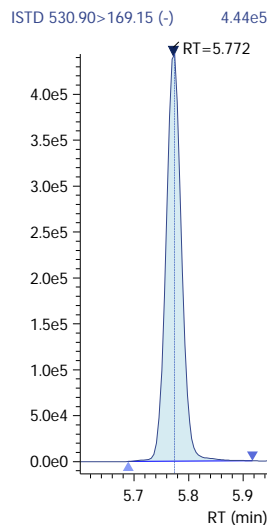
N-EtFOSA-d9

Conc 4.9634
 Area 880198



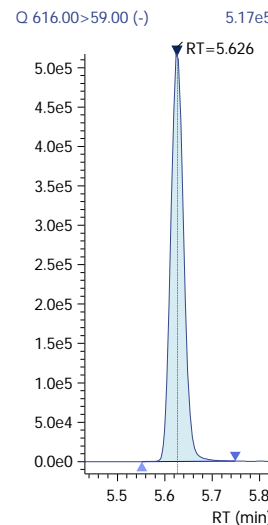
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Conc 5.0000
 Area 880198



N-MeFOSE

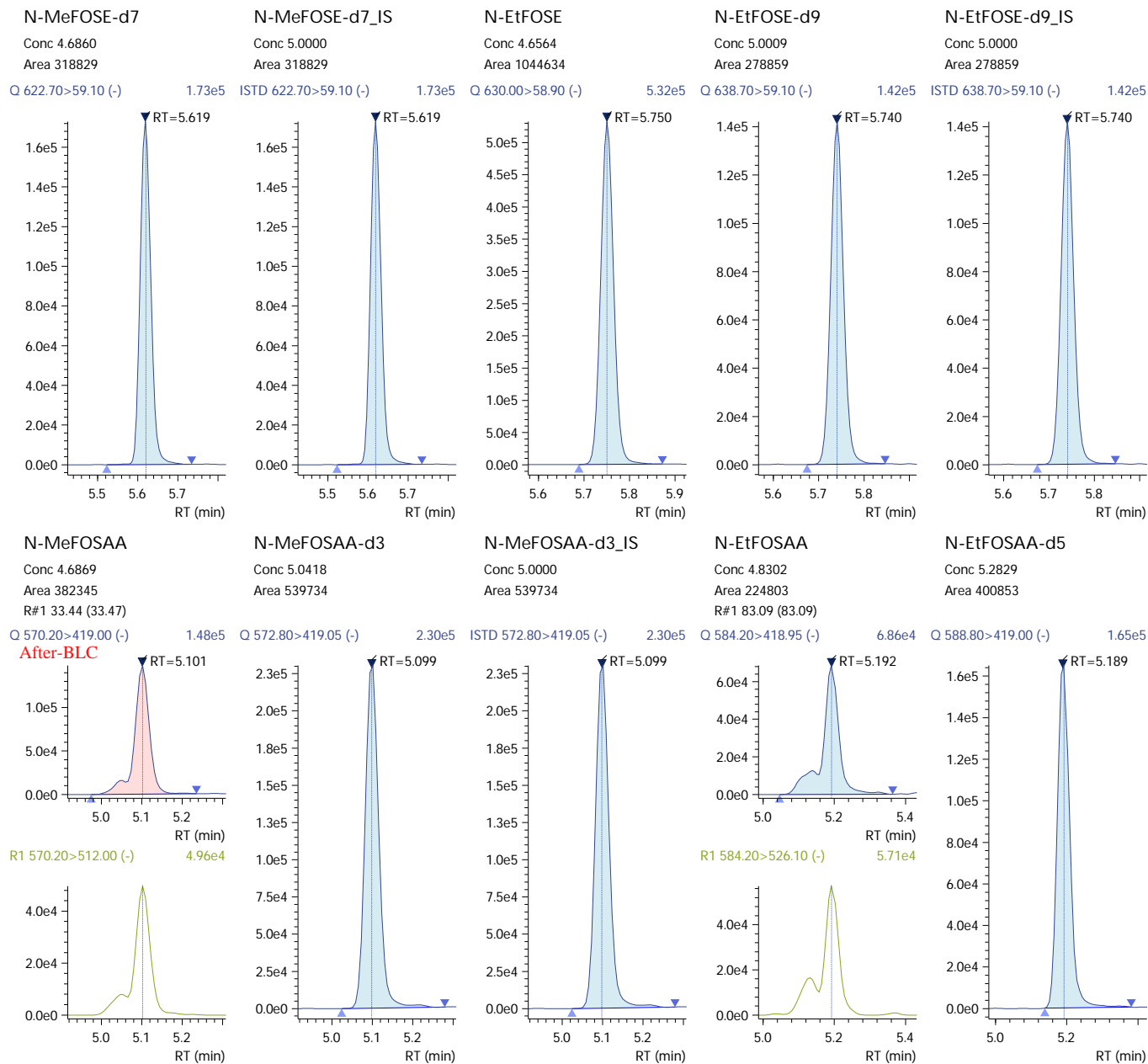
Conc 4.9817
 Area 985391



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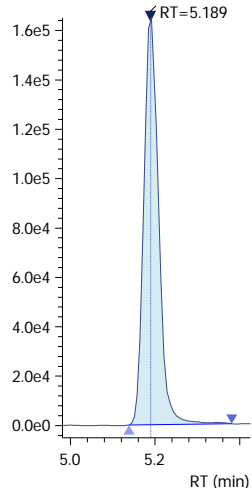
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200812_043 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 400853

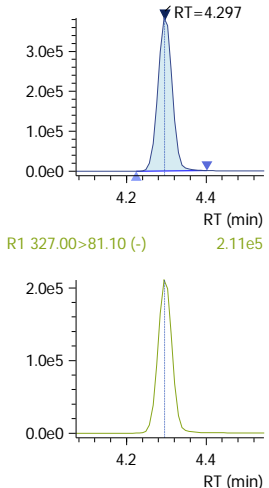
ISTD 588.80>419.00 (-) 1.65e5



4_2-FTS_1

Conc 4.3618
 Area 959996
 R#1 54.93 (54.93)

Q 327.00>307.05 (-) 3.84e5

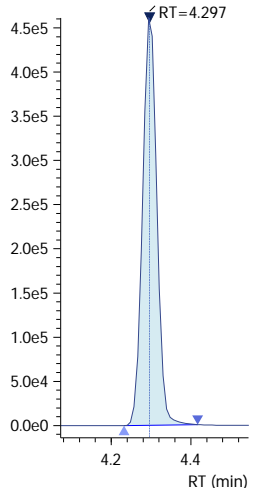


R1 327.00>81.10 (-) 2.11e5

4_2-FTS-13C

Conc 5.2352
 Area 1153235

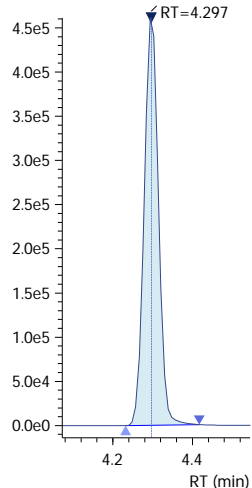
Q 328.80>309.05 (-) 4.61e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 1153235

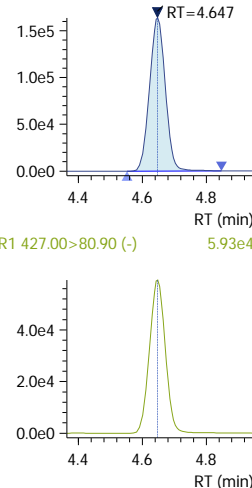
ISTD 328.80>309.05 (-) 4.61e5



6_2-FTS_1

Conc 4.5005
 Area 564119
 R#1 36.33 (36.33)

Q 427.00>407.00 (-) 1.64e5

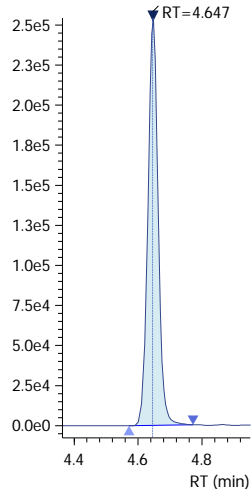


R1 427.00>80.90 (-) 5.93e4

6_2-FTS-13C

Conc 4.8008
 Area 571656

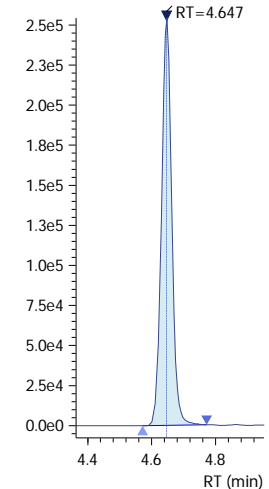
Q 428.90>409.00 (-) 2.54e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 571656

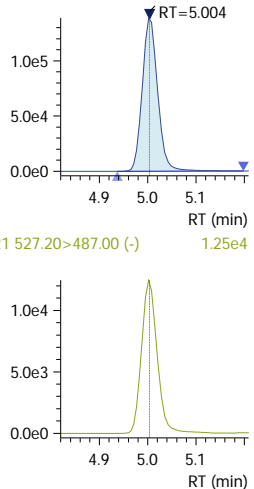
ISTD 428.90>409.00 (-) 2.54e5



8_2-FTS_1

Conc 4.7935
 Area 307063
 R#1 8.96 (8.96)

Q 527.10>506.90 (-) 1.39e5

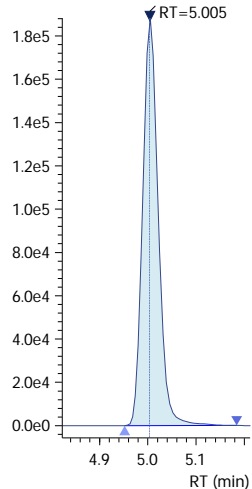


R1 527.20>487.00 (-) 1.25e4

8_2-FTS-13C

Conc 4.6559
 Area 419567

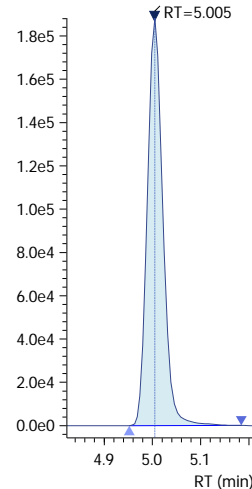
Q 528.80>509.00 (-) 1.88e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 419567

ISTD 528.80>509.00 (-) 1.88e5



Insight Report

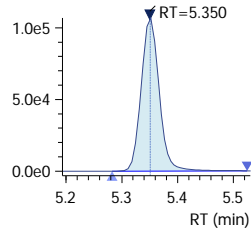
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200812_043 (continued)

10_2-FtS_1

Conc 4.8163
Area 239760
R#1 5.92 (5.92)

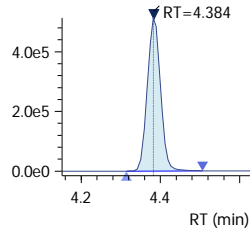
Q 627.00>606.95 (-) 1.07e5



HPFO_DA

Conc 4.5072
Area 1182985
R#1 72.82 (72.82)

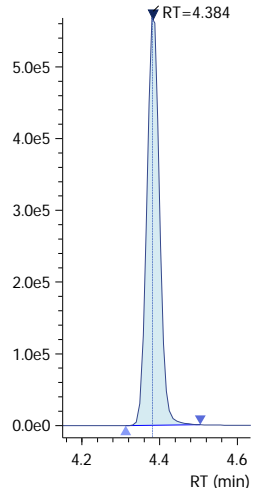
Q 329.00>169.00 (-) 5.13e5



HPFO_DA-13C

Conc 5.1219
Area 1306512

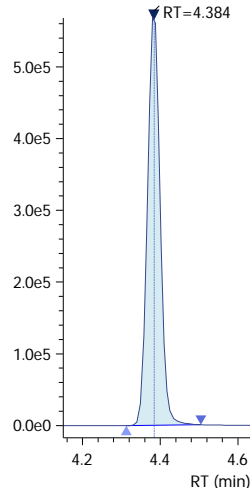
Q 332.00>286.80 (-) 5.68e5



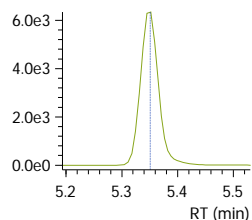
HPFO_DA-13C_IS

Conc 5.0000
Area 1306512

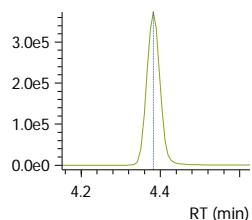
ISTD 332.00>286.80 (-) 5.68e5



R1 627.00>81.25 (-) 6.34e3



R1 329.00>285.10 (-) 3.73e5

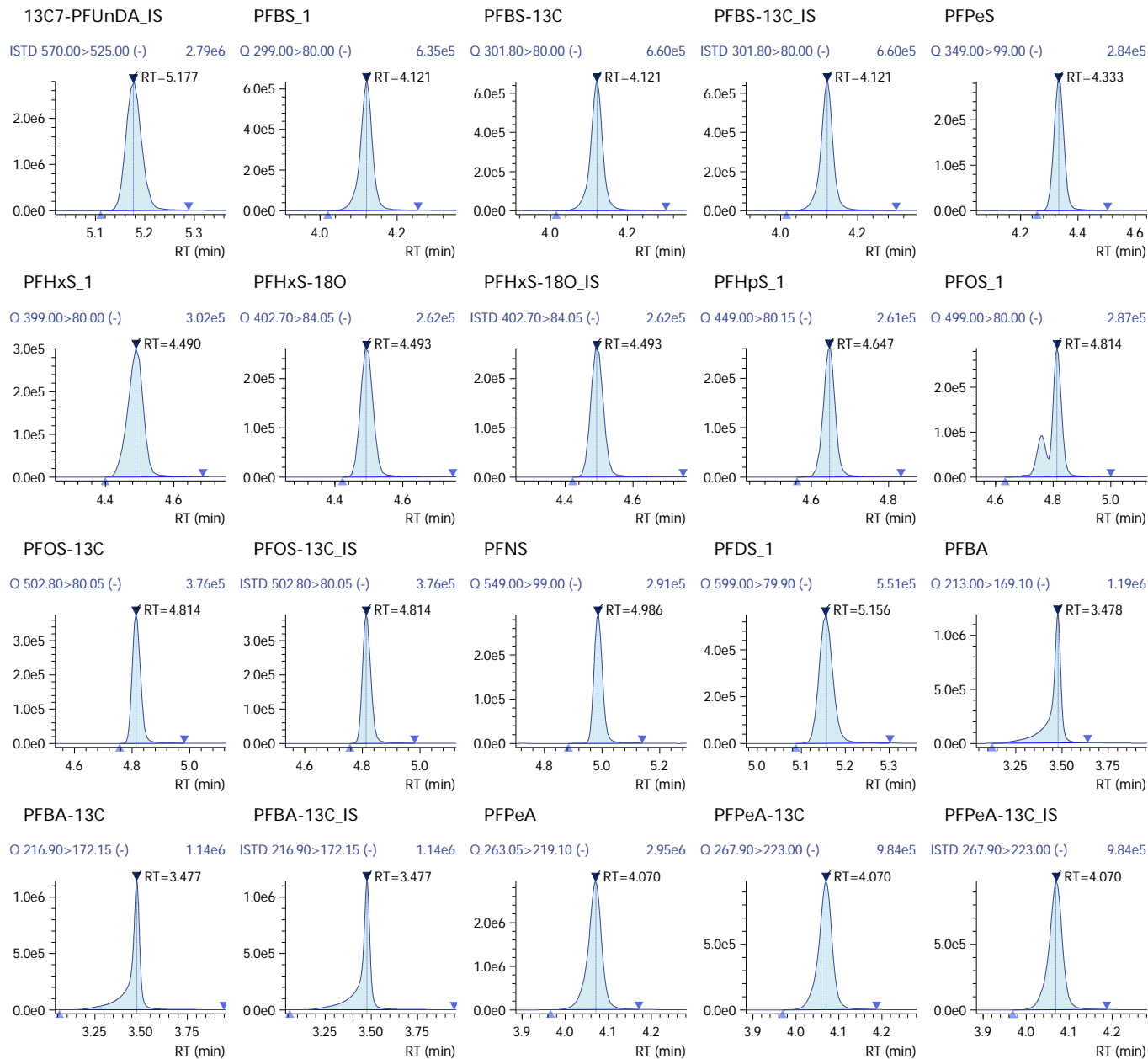


Insight Report

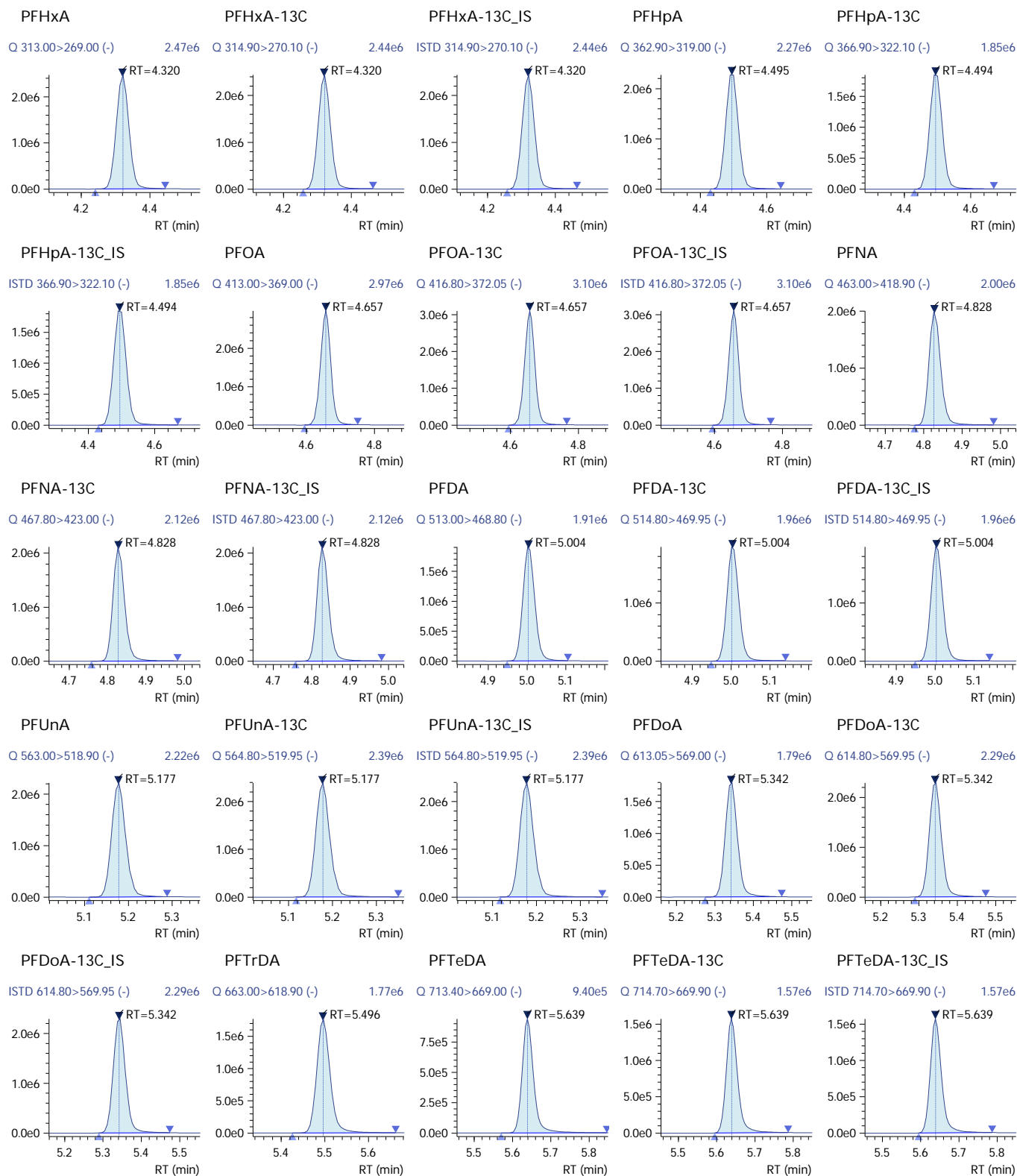
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200812_043

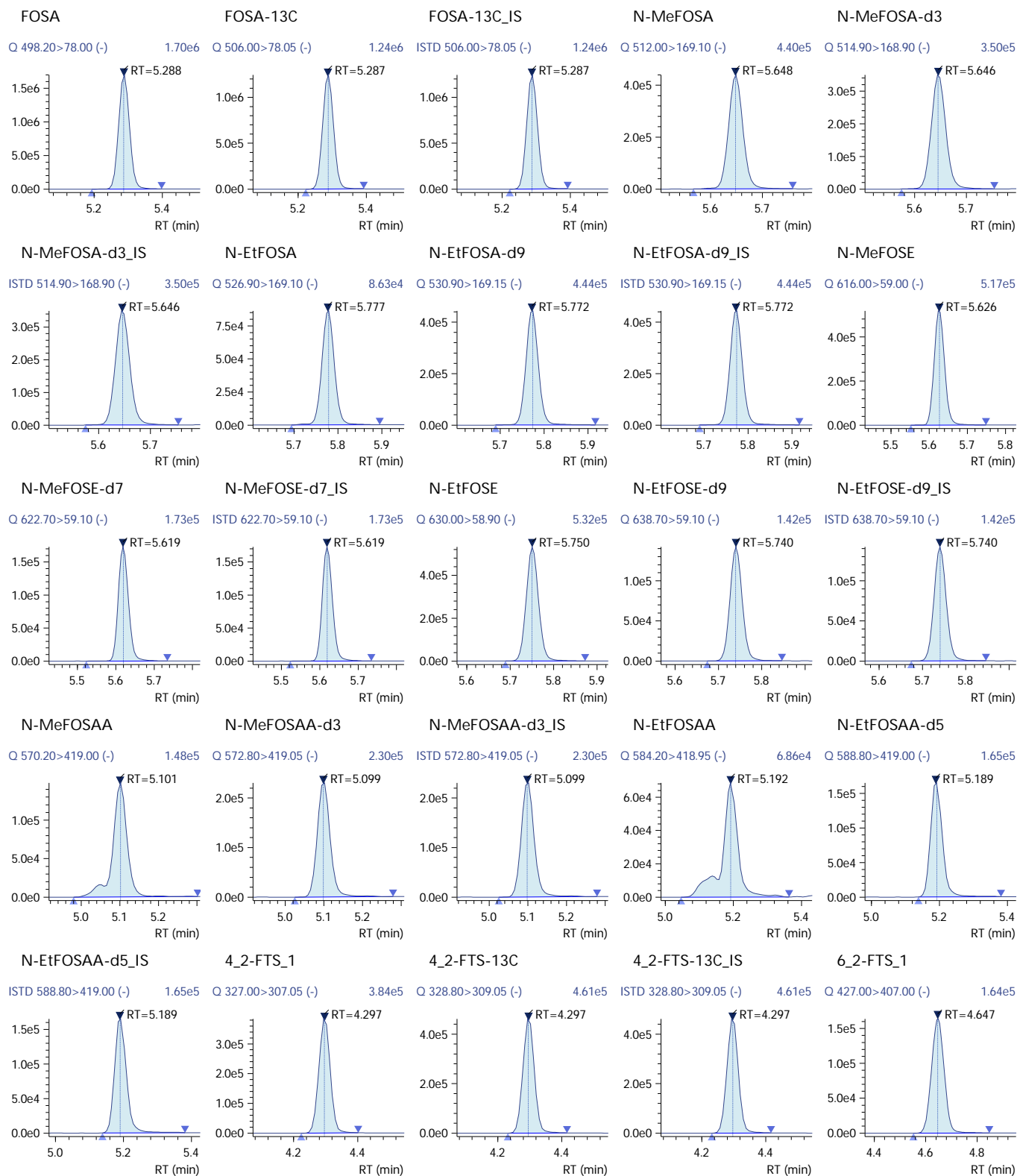
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Date Acquired: 8/12/2020 8:11:16 PM
Acquired by: System Administrator
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Vial: 5 | Inj. Volume: 15.0000uL | Tray: 0



200812_043 (continued)



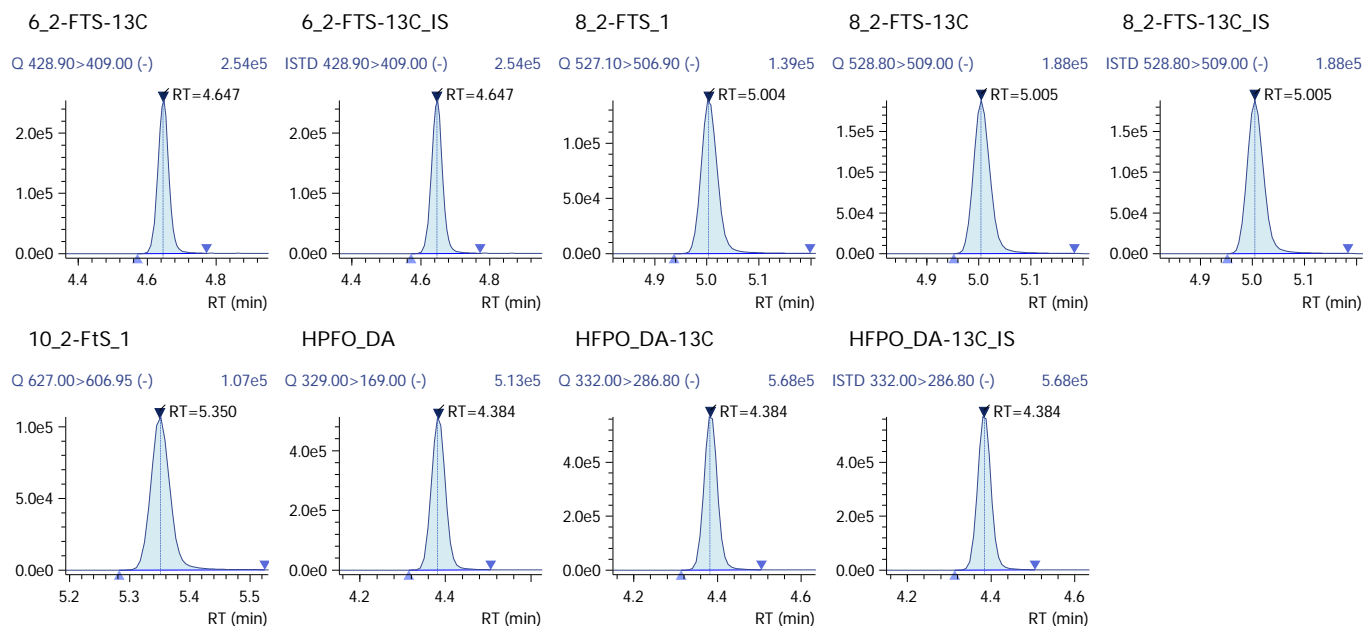
200812_043 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_043 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_044

Sample ID: 10.0 PPB ICAL
 Date Acquired: 8/12/2020 8:21:57 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_044.lcd
 Vial: 6 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.173	5374793	5374793	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.117	2763869	1388958	2	8.6303	ng/mL	8.8737	57.57
PFBS-13C	Auto	4.117	1388958	5374793	1	5.4748	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.117	1388958	1388958	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.329	1201007	1388958	2	8.2949	ng/mL	9.4092	157.00
PFHxS_1	Auto	4.485	1926216	644750	3	8.6621	ng/mL	9.1308	64.69
PFHxS-18O	Auto	4.488	644750	5374793	1	5.1028	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.488	644750	644750	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.643	1088676	644750	3	9.9705	ng/mL	9.5344	61.48
PFOS_1	Auto	4.810	1726444	760891	4	9.2475	ng/mL	9.2923	80.76
PFOS-13C	Auto	4.810	760891	5374793	1	5.7987	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.810	760891	760891	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.982	1137521	760891	4	8.8320	ng/mL	9.6158	159.02
PFDS_1	Auto	5.152	2305824	760891	4	9.1289	ng/mL	9.6467	59.68
PFBA	Auto	3.472	8196124	3647576	5	9.9904	ng/mL	10.0000	----
PFBA-13C	Auto	3.472	3647576	5374793	1	5.4292	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.472	3647576	3647576	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.066	12879231	2040843	6	10.1952	ng/mL	10.0000	----
PFPeA-13C	Auto	4.066	2040843	5374793	1	5.3382	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.066	2040843	2040843	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.316	14182088	6420257	7	10.4179	ng/mL	10.0000	3.47
PFHxA-13C	Auto	4.316	6420257	5374793	1	5.4376	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.316	6420257	6420257	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.491	9225584	3605443	8	9.9623	ng/mL	10.0000	23.53
PFHpA-13C	Auto	4.491	3605443	5374793	1	4.2720	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.491	3605443	3605443	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.654	12277205	6025893	9	10.0516	ng/mL	10.0000	34.22
PFOA-13C	Auto	4.654	6025893	5374793	1	5.0220	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.654	6025893	6025893	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.826	7905550	4004523	10	9.9587	ng/mL	10.0000	24.74
PFNA-13C	Auto	4.826	4004523	5374793	1	4.9249	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.826	4004523	4004523	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.000	7663607	3863024	11	9.4298	ng/mL	10.0000	22.23
PFDA-13C	Auto	5.000	3863024	5374793	1	5.1288	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.000	3863024	3863024	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.174	9095311	4649676	12	10.2325	ng/mL	10.0000	12.63
PFUnA-13C	Auto	5.174	4649676	5374793	1	5.0329	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.174	4649676	4649676	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.337	7570638	4623999	13	10.1611	ng/mL	10.0000	19.44
PFDaA-13C	Auto	5.337	4623999	5374793	1	5.2013	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.337	4623999	4623999	13	5.0000	ng/mL	5.0000	----
PFTrDA	Auto	5.492	7104784	3010801	14	9.8015	ng/mL	10.0000	20.91
PFTeDA	Auto	5.634	3697287	3010801	14	10.0091	ng/mL	10.0000	46.34
PFTeDA-13C	Auto	5.634	3010801	5374793	1	5.2807	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.634	3010801	3010801	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.284	7286093	2584674	16	10.0213	ng/mL	10.0000	4.01
FOSA-13C	Auto	5.284	2584674	5374793	1	5.2714	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.284	2584674	2584674	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.644	1693830	664412	17	9.6776	ng/mL	10.0000	78.28
N-MeFOSA-d3	Auto	5.641	664412	5374793	1	5.4406	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.641	664412	664412	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.773	342298	847236	18	9.8593	ng/mL	10.0000	71.74
N-EtFOSA-d9	Auto	5.768	847236	5374793	1	5.5672	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.768	847236	847236	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.622	1932399	300926	19	10.3507	ng/mL	10.0000	----

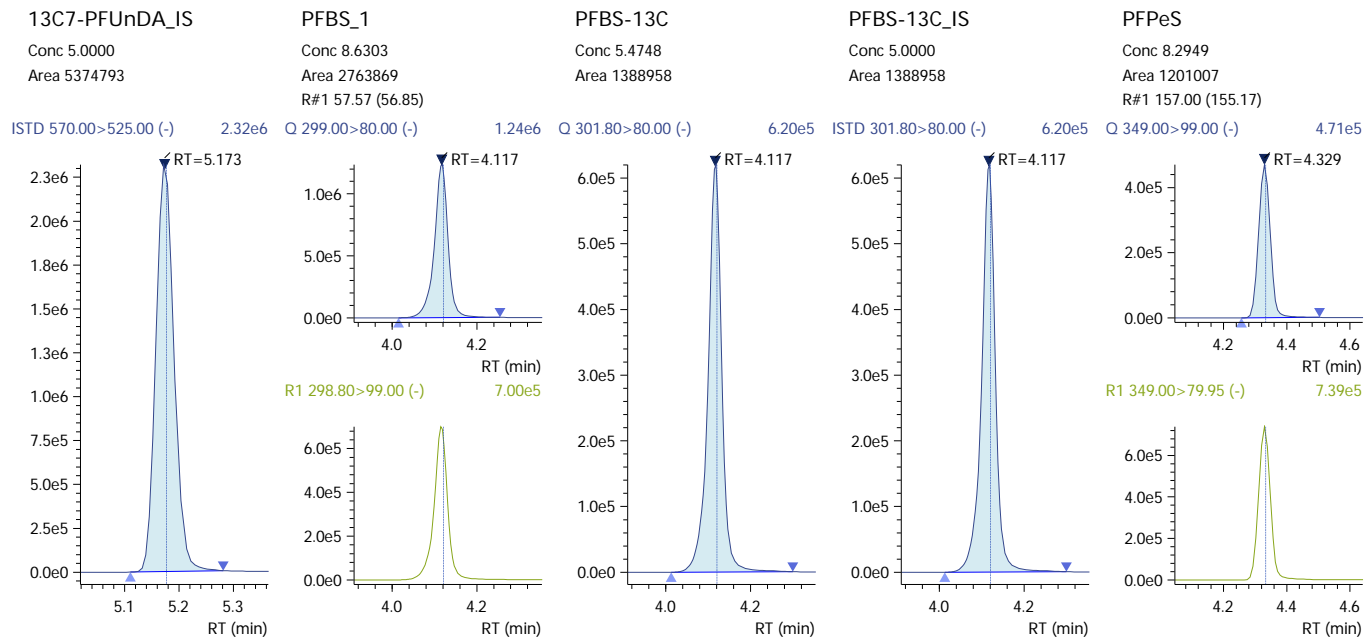
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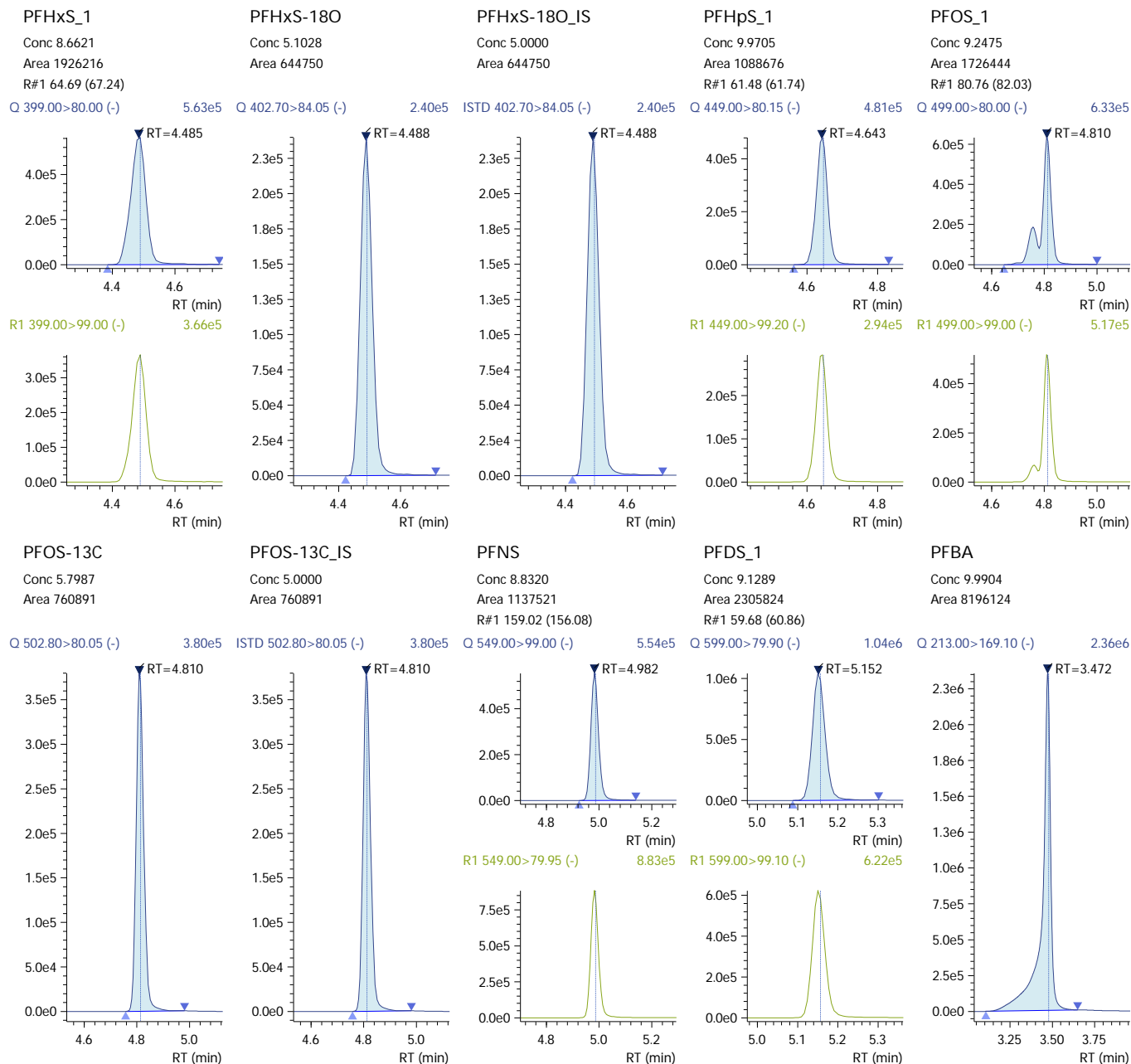
200812_044 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.615	300926	5374793	1	5.1539	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.615	300926	300926	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.746	2118780	260272	20	10.1188	ng/mL	10.0000	----
N-EtFOSE-d9	Auto	5.737	260272	5374793	1	5.4390	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.737	260272	260272	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	Auto	5.098	766883	460747	21	11.0123	ng/mL	10.0000	40.36
N-MeFOSAA-d3	Auto	5.095	460747	5374793	1	5.0153	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.095	460747	460747	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.188	469766	369702	22	10.9440	ng/mL	10.0000	87.30
N-EtFOSAA-d5	Auto	5.185	369702	5374793	1	5.6777	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.185	369702	369702	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.292	1585510	911080	23	9.1185	ng/mL	9.3722	42.21
4_2-FTS-13C	Auto	4.292	911080	5374793	1	4.8195	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.292	911080	911080	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.643	922004	478594	24	8.7860	ng/mL	9.5117	37.70
6_2-FTS-13C	Auto	4.643	478594	5374793	1	4.6836	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.643	478594	478594	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.001	533882	370588	25	9.4359	ng/mL	9.6005	9.41
8_2-FTS-13C	Auto	5.001	370588	5374793	1	4.7921	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.001	370588	370588	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.346	417646	370588	25	9.4985	ng/mL	9.6619	5.89
HPFO_DA	Auto	4.380	2400247	1100614	26	10.8557	ng/mL	10.0000	80.61
HPFO_DA-13C	Auto	4.380	1100614	5374793	1	5.0279	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.380	1100614	1100614	26	5.0000	ng/mL	5.0000	----



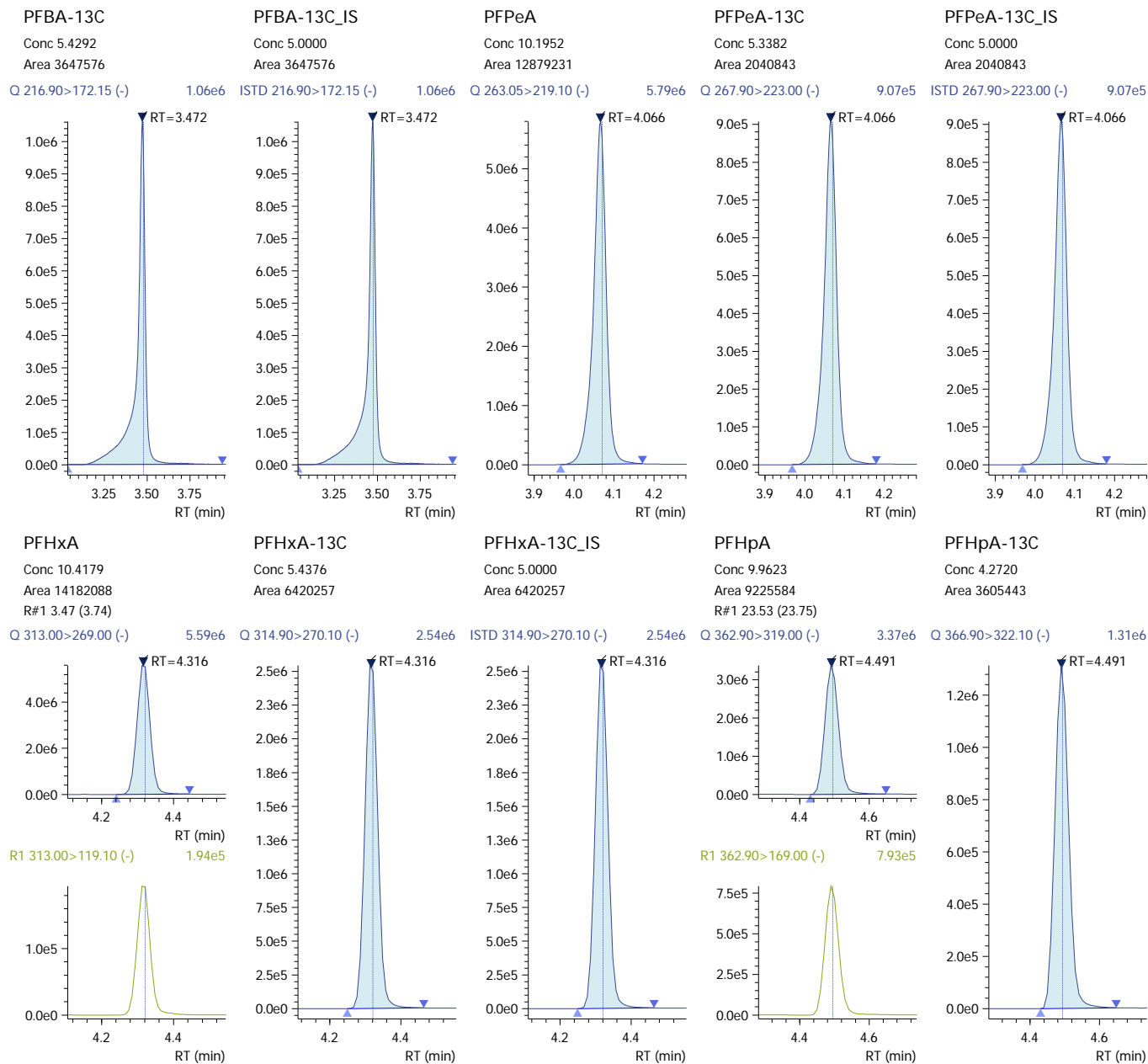
200812_044 (continued)



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200812_044 (continued)



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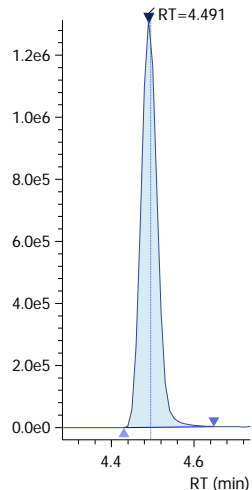
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200812_044 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 3605443

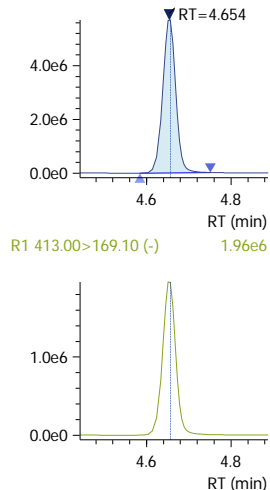
ISTD 366.90>322.10 (-) 1.31e6



PFOA

Conc 10.0516
Area 12277205
R#1 34.22 (34.80)

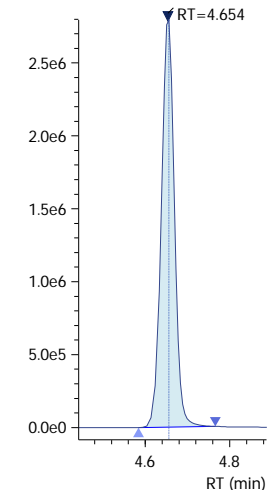
Q 413.00>369.00 (-) 5.71e6



PFOA-13C

Conc 5.0220
Area 6025893

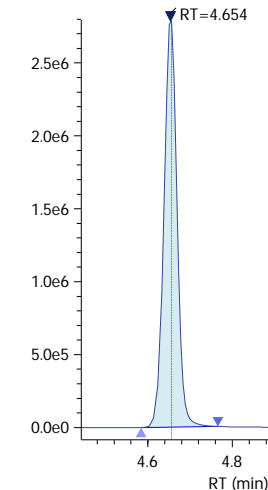
Q 416.80>372.05 (-) 2.79e6



PFOA-13C_IS

Conc 5.0000
Area 6025893

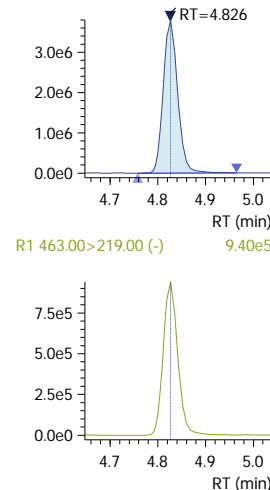
ISTD 416.80>372.05 (-) 2.79e6



PFNA

Conc 9.9587
Area 7905550
R#1 24.74 (22.71)

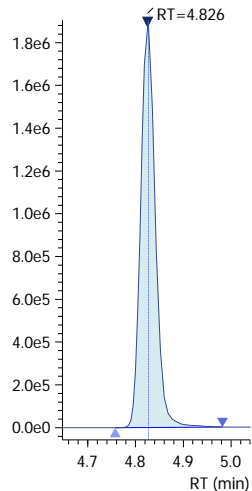
Q 463.00>418.90 (-) 3.80e6



PFNA-13C

Conc 4.9249
Area 4004523

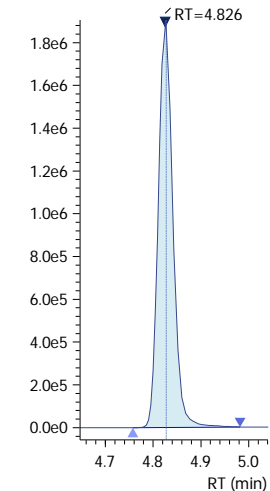
Q 467.80>423.00 (-) 1.91e6



PFNA-13C_IS

Conc 5.0000
Area 4004523

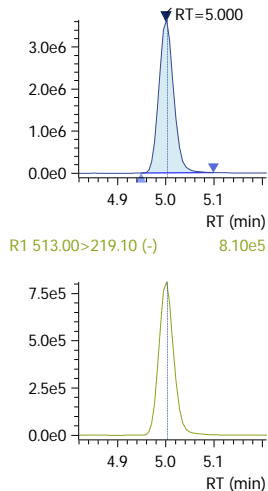
ISTD 467.80>423.00 (-) 1.91e6



PFDA

Conc 9.4298
Area 7663607
R#1 22.23 (22.06)

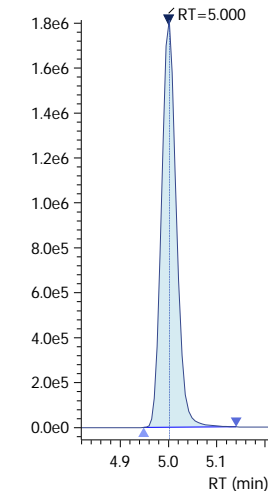
Q 513.00>468.80 (-) 3.64e6



PFDA-13C

Conc 5.1288
Area 3863024

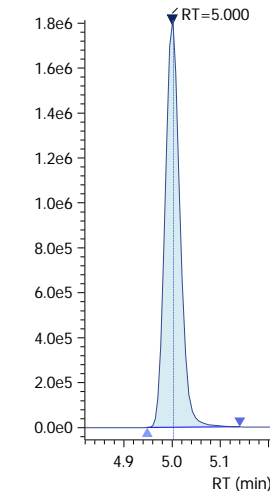
Q 514.80>469.95 (-) 1.81e6



PFDA-13C_IS

Conc 5.0000
Area 3863024

ISTD 514.80>469.95 (-) 1.81e6



Insight Report

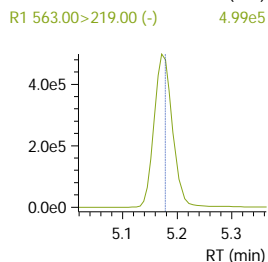
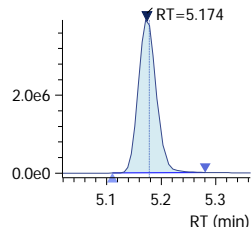
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200812_044 (continued)

PFUnA

Conc 10.2325
Area 9095311
R#1 12.63 (13.66)

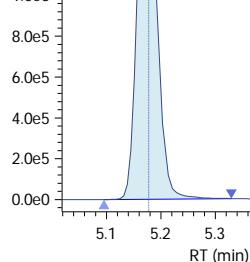
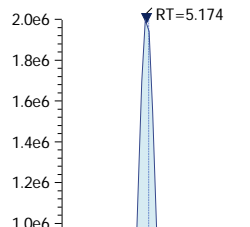
Q 563.00>518.90 (-) 3.94e6



PFUnA-13C

Conc 5.0329
Area 4649676

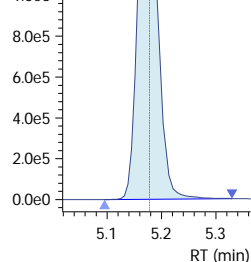
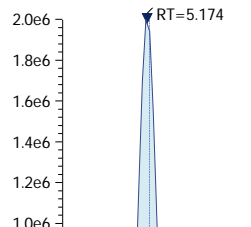
Q 564.80>519.95 (-) 2.00e6



PFUnA-13C_IS

Conc 5.0000
Area 4649676

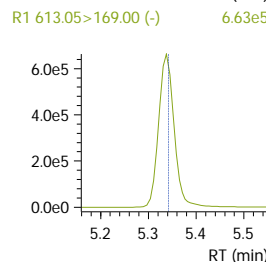
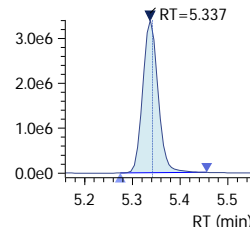
ISTD 564.80>519.95 (-) 2.00e6



PFDoA

Conc 10.1611
Area 7570638
R#1 19.44 (21.98)

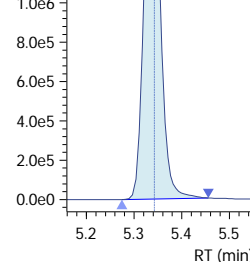
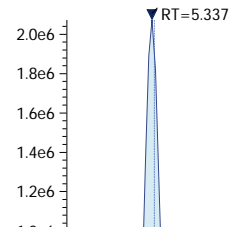
Q 613.05>569.00 (-) 3.41e6



PFDoA-13C

Conc 5.2013
Area 4623999

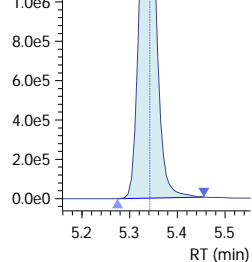
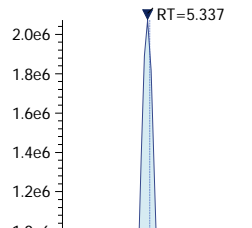
Q 614.80>569.95 (-) 2.07e6



PFDoA-13C_IS

Conc 5.0000
Area 4623999

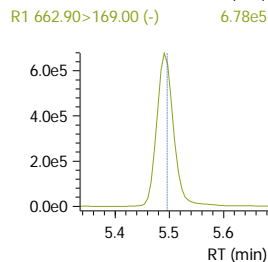
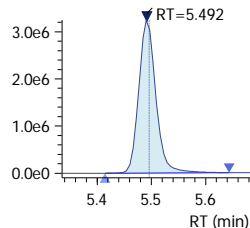
ISTD 614.80>569.95 (-) 2.07e6



PFTTrDA

Conc 9.8015
Area 7104784
R#1 20.91 (19.20)

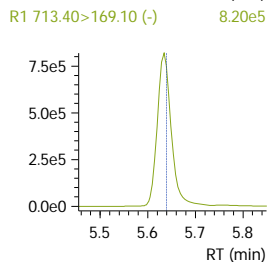
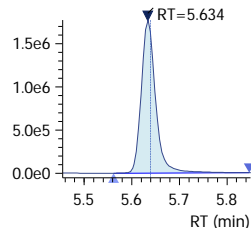
Q 663.00>618.90 (-) 3.25e6



PFTeDA

Conc 10.0091
Area 3697287
R#1 46.34 (61.49)

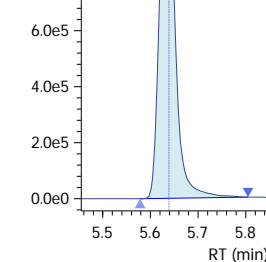
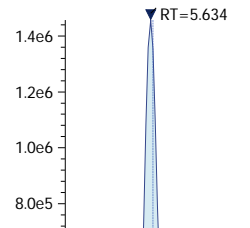
Q 713.40>669.00 (-) 1.77e6



PFTeDA-13C

Conc 5.2807
Area 3010801

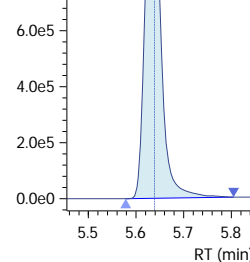
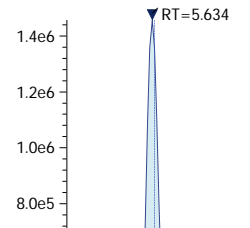
Q 714.70>669.90 (-) 1.46e6



PFTeDA-13C_IS

Conc 5.0000
Area 3010801

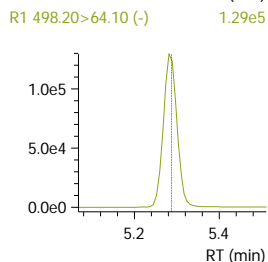
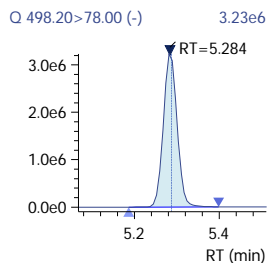
ISTD 714.70>669.90 (-) 1.46e6



200812_044 (continued)

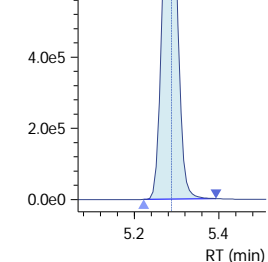
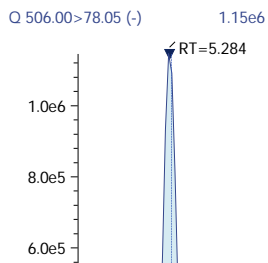
FOSA

Conc 10.0213
 Area 7286093
 R#1 4.01 (4.04)



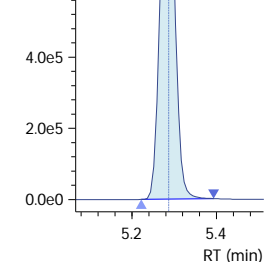
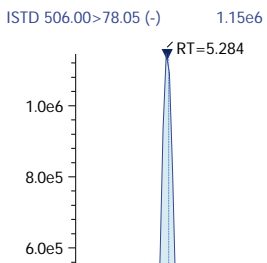
FOSA-13C

Conc 5.2714
 Area 2584674



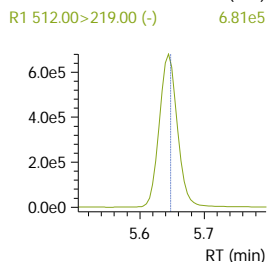
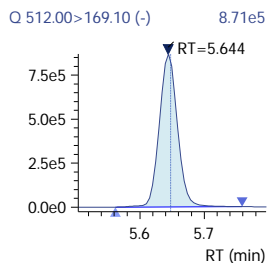
FOSA-13C_IS

Conc 5.0000
 Area 2584674



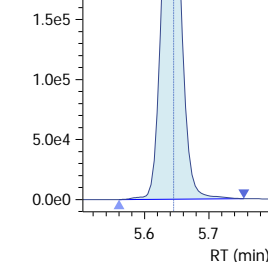
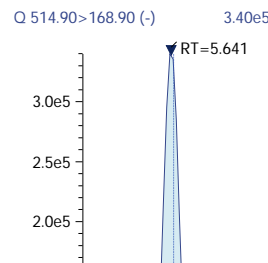
N-MeFOSA

Conc 9.6776
 Area 1693830
 R#1 78.28 (78.52)



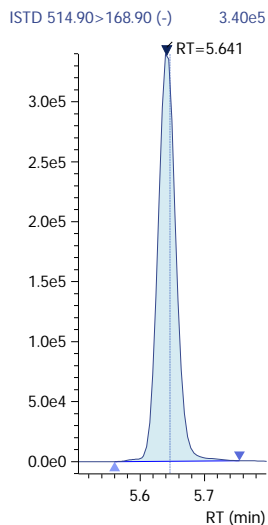
N-MeFOSA-d3

Conc 5.4406
 Area 664412



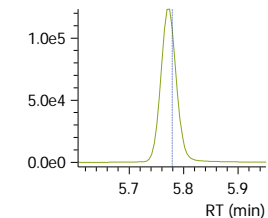
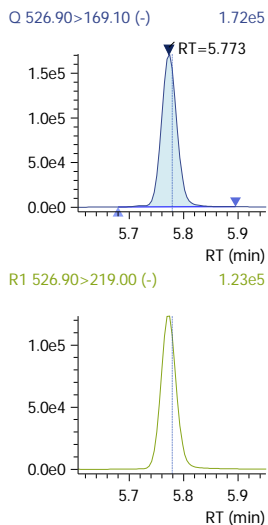
N-MeFOSA-d3_IS

Conc 5.0000
 Area 664412



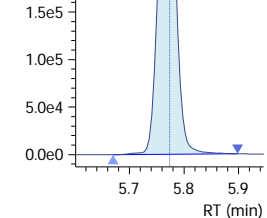
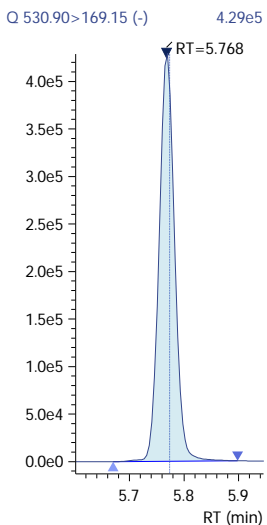
N-EtFOSA

Conc 9.8593
 Area 342298
 R#1 71.74 (0.00)



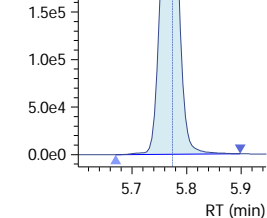
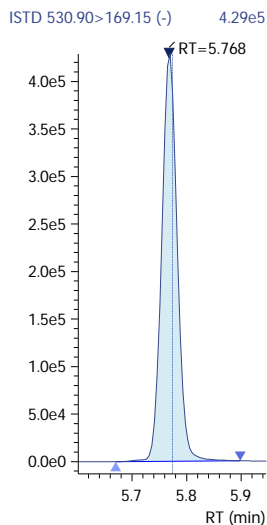
N-EtFOSA-d9

Conc 5.5672
 Area 847236



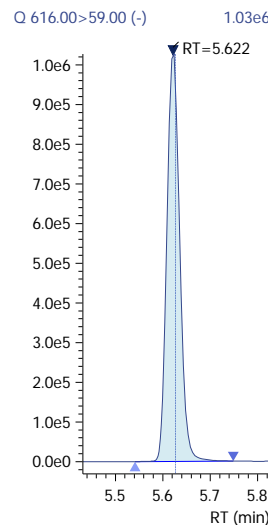
N-EtFOSA-d9_IS

Conc 5.0000
 Area 847236



N-MeFOSE

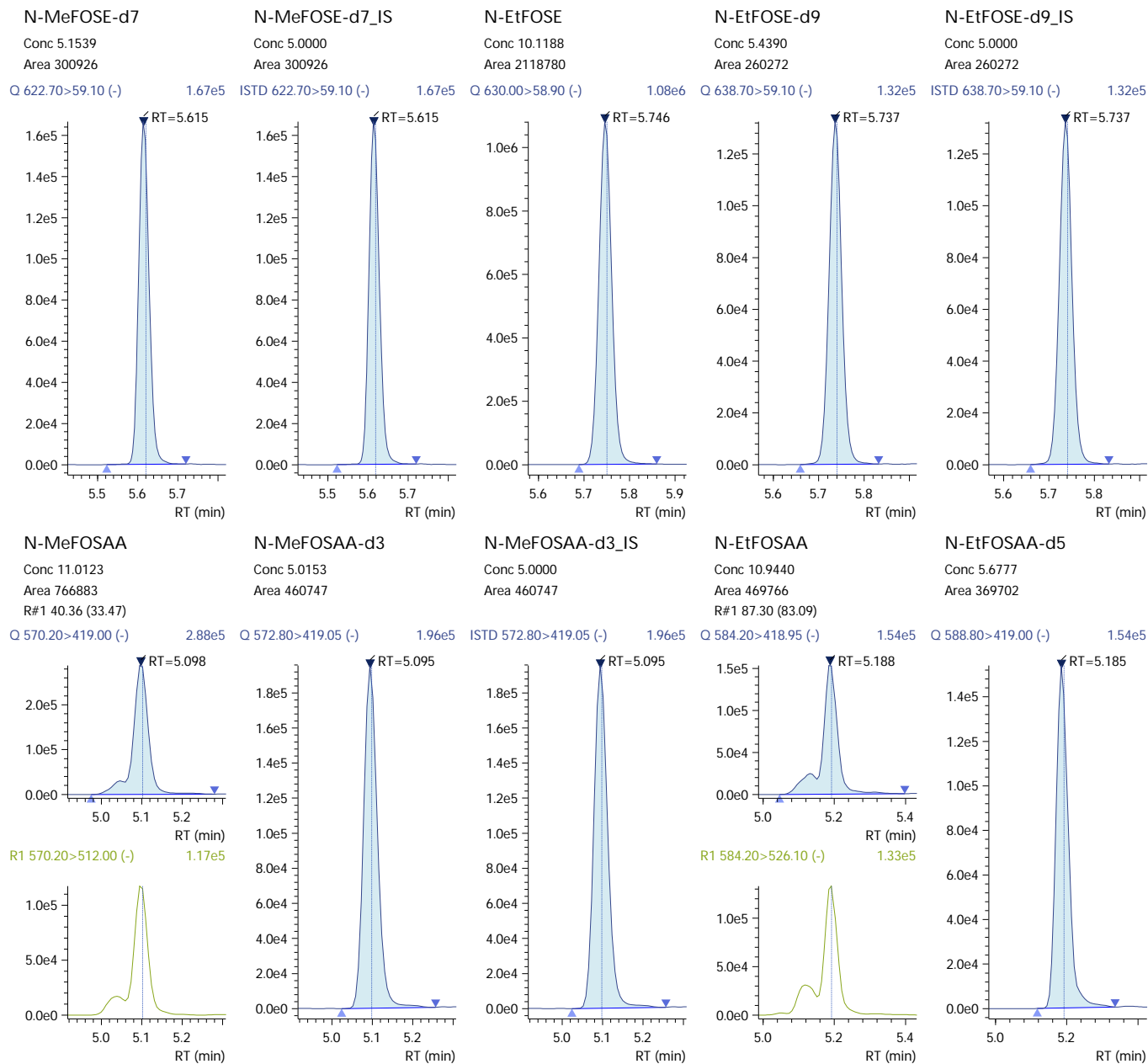
Conc 10.3507
 Area 1932399



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200812_044 (continued)



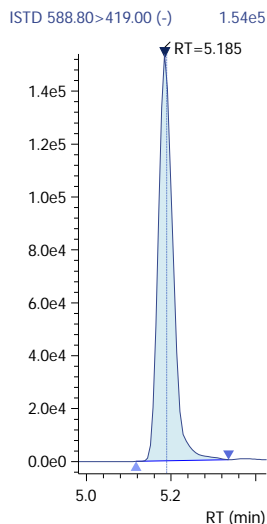
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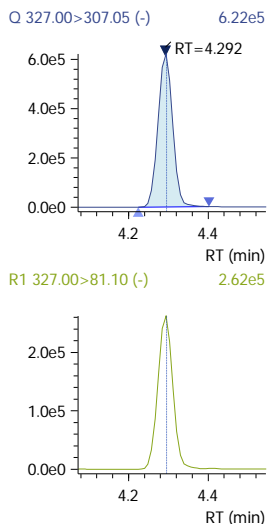
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 369702



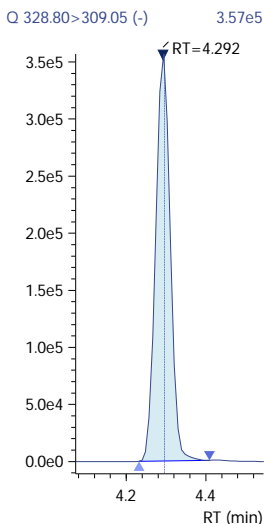
4_2-FTS_1

Conc 9.1185
 Area 1585510
 R#1 42.21 (54.93)



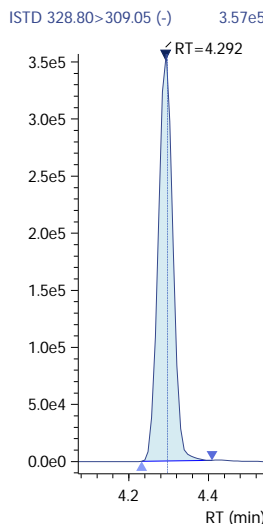
4_2-FTS-13C

Conc 4.8195
 Area 911080



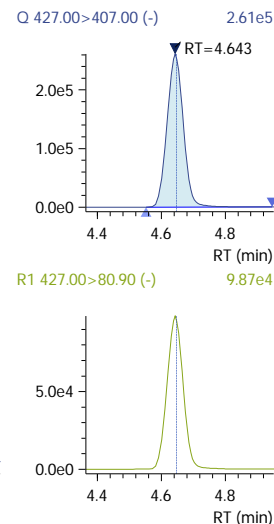
4_2-FTS-13C_IS

Conc 5.0000
 Area 911080



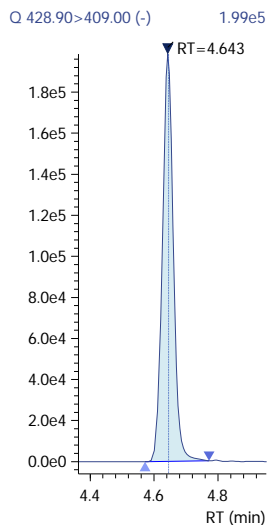
6_2-FTS_1

Conc 8.7860
 Area 922004
 R#1 37.70 (36.33)



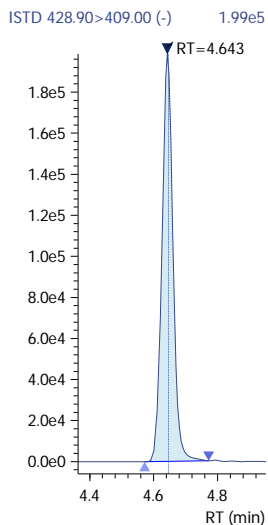
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Conc 4.6836
 Area 478594



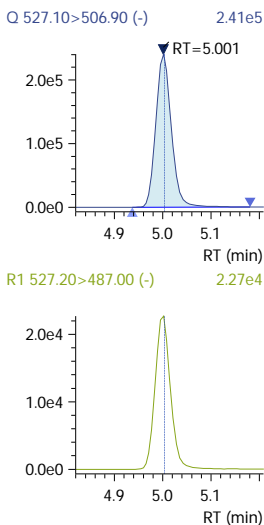
6_2-FTS-13C_IS

Conc 5.0000
 Area 478594



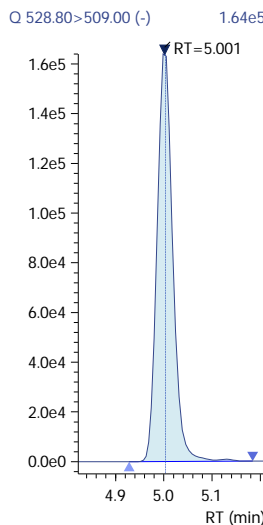
8_2-FTS_1

Conc 9.4359
 Area 533882
 R#1 9.41 (8.96)



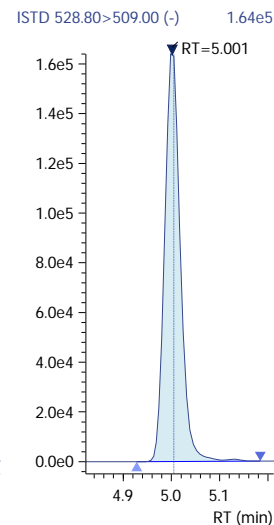
8_2-FTS-13C

Conc 4.7921
 Area 370588



8_2-FTS-13C_IS

Conc 5.0000
 Area 370588



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200812_044 (continued)

10_2-FtS_1

Conc 9.4985
Area 417646
R#1 5.89 (5.92)

HPFO_DA

Conc 10.8557
Area 2400247
R#1 80.61 (72.82)

HFPO_DA-13C

Conc 5.0279
Area 1100614

HFPO_DA-13C_IS

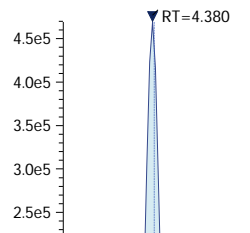
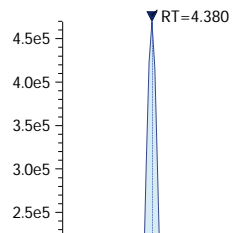
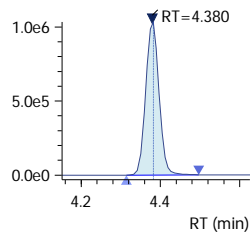
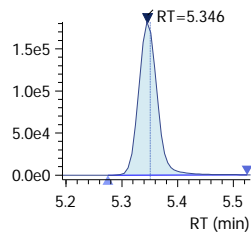
Conc 5.0000
Area 1100614

Q 627.00>606.95 (-) 1.82e5

Q 329.00>169.00 (-) 1.03e6

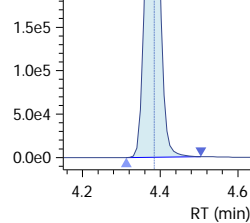
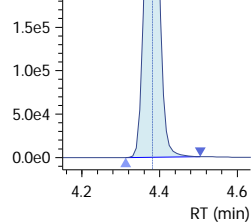
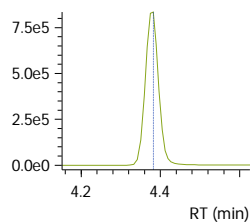
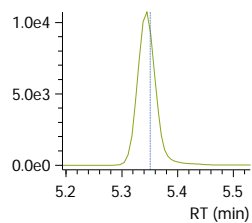
Q 332.00>286.80 (-) 4.69e5

ISTD 332.00>286.80 (-) 4.69e5



R1 627.00>81.25 (-) 1.07e4

R1 329.00>285.10 (-) 8.35e5

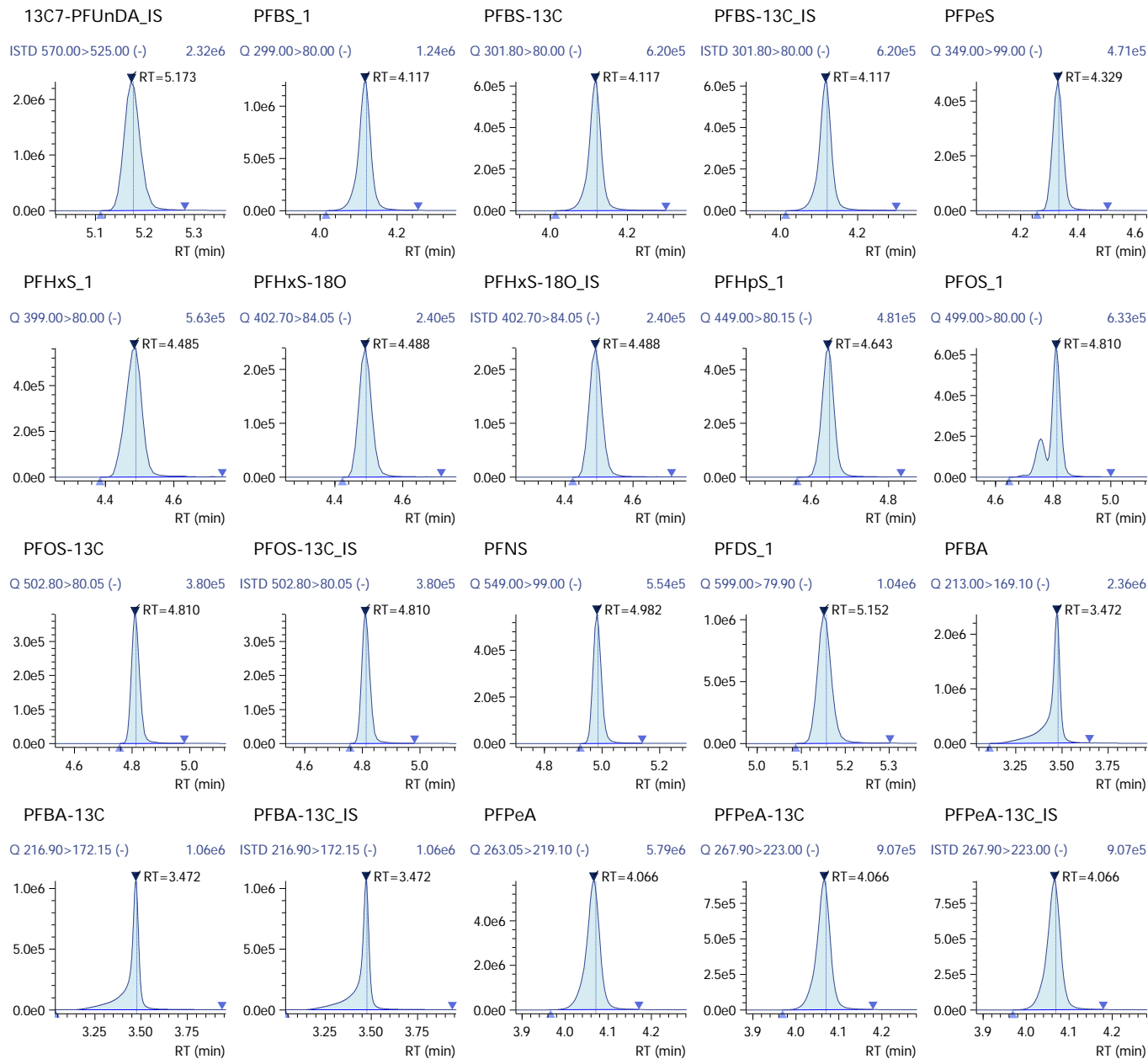


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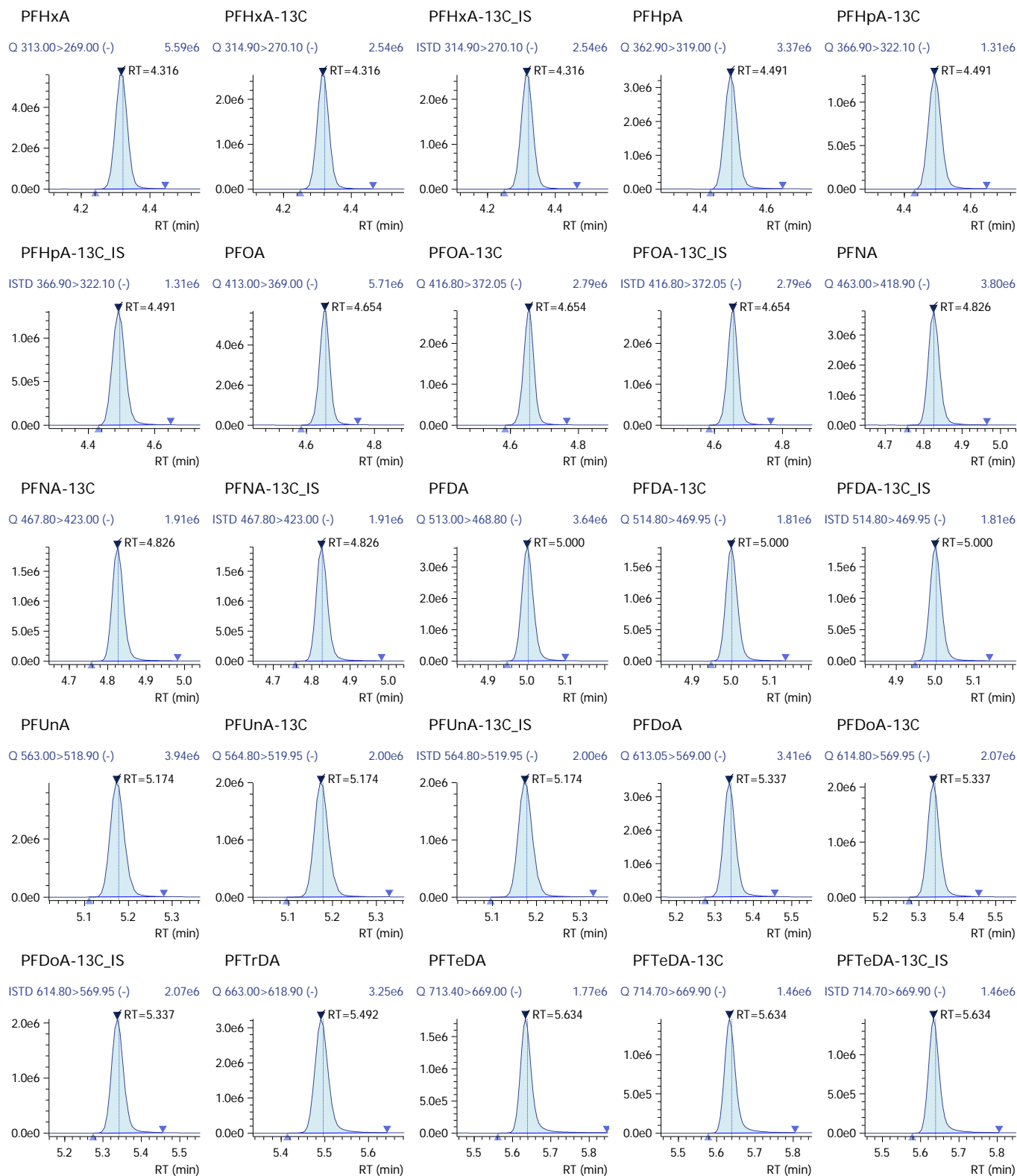
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200812_044

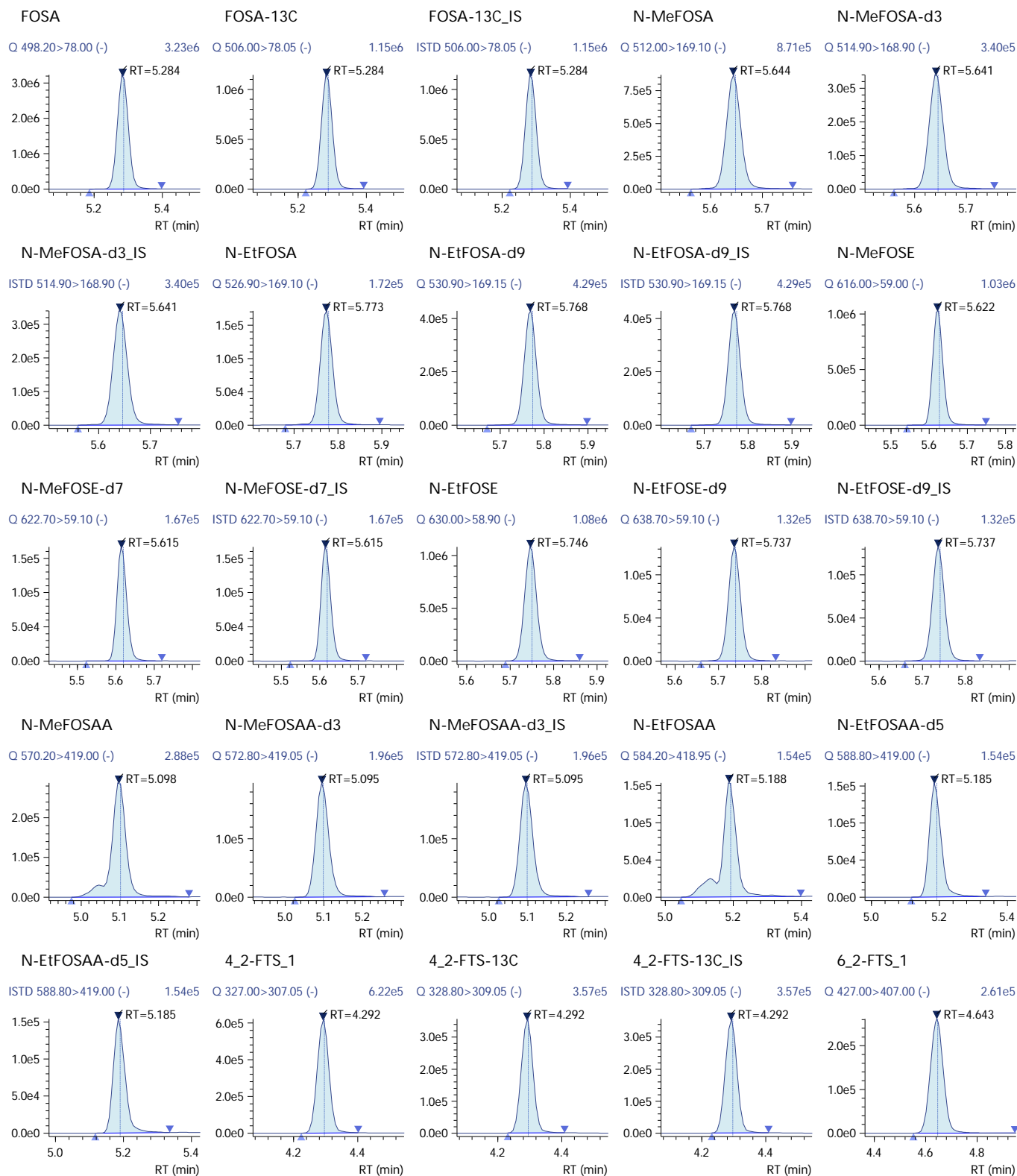
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Date Acquired: 8/12/2020 8:21:57 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_044.lcd
Vial: 6 | Inj. Volume: 15.0000uL | Tray: 0



200812_044 (continued)



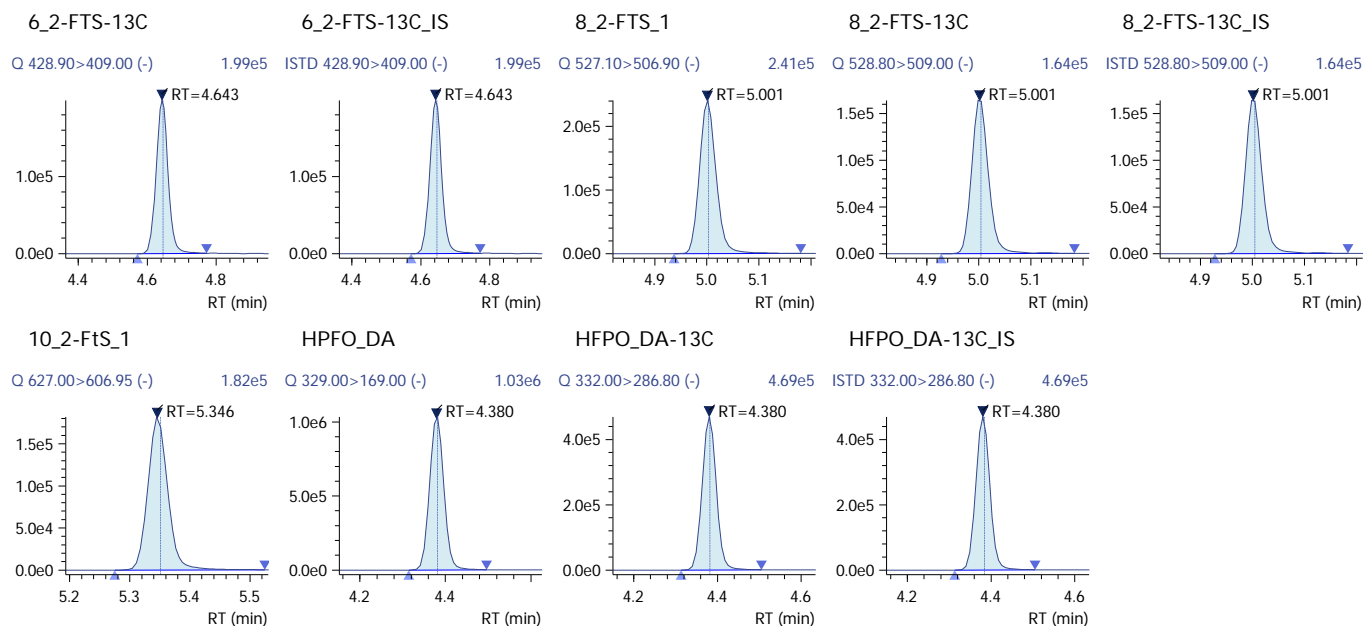
200812_044 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_044 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_045

Sample ID: CCB
 Date Acquired: 8/12/2020 8:32:45 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_045.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.181	6241402	6241402	1	5.0000	ng/mL	0.0000	----
PFBS_1	M	4.126	1627	1434309	2	0.0049	ng/mL	0.0000	59.63
PFBS-13C	Auto	4.126	1434309	6241402	1	4.8686	ng/mL	0.0000	----
PFBS-13C_IS	Auto	4.126	1434309	1434309	2	5.0000	ng/mL	0.0000	----
PFPeS	Auto	4.326	574	1434309	2	0.0038	ng/mL	0.0000	0.00
PFHxS_1	Auto	4.495	3745	803553	3	0.0135	ng/mL	0.0000	88.07
PFHxS-18O	Auto	4.496	803553	6241402	1	5.4766	ng/mL	0.0000	----
PFHxS-18O_IS	Auto	4.496	803553	803553	3	5.0000	ng/mL	0.0000	----
PFHpS_1	M	4.654	155	803553	3	0.0011	ng/mL	0.0000	0.00
PFOS_1	Auto	4.817	803	701501	4	0.0047	ng/mL	0.0000	68.29
PFOS-13C	Auto	4.818	701501	6241402	1	4.6038	ng/mL	0.0000	----
PFOS-13C_IS	Auto	4.818	701501	701501	4	5.0000	ng/mL	0.0000	----
PFNS	ND(W /B)	----	----	701501	4	----	ng/mL	0.0000	----
PFDS_1	M	5.151	239	701501	4	0.0010	ng/mL	0.0000	69.50
PFBA	M	3.486	3171	3752648	5	0.0038	ng/mL	0.0000	----
PFBA-13C	Auto	3.481	3752648	6241402	1	4.8100	ng/mL	0.0000	----
PFBA-13C_IS	Auto	3.481	3752648	3752648	5	5.0000	ng/mL	0.0000	----
PFPeA	Auto	4.027	87268	2219650	6	0.0049	ng/mL	0.0000	----
PFPeA-13C	Auto	4.075	2219650	6241402	1	4.9998	ng/mL	0.0000	----
PFPeA-13C_IS	Auto	4.075	2219650	2219650	6	5.0000	ng/mL	0.0000	----
PFHxA	Auto	4.312	76689	7484934	7	-0.0072	ng/mL	0.0000	1.73
PFHxA-13C	Auto	4.325	7484934	6241402	1	5.4591	ng/mL	0.0000	----
PFHxA-13C_IS	Auto	4.325	7484934	7484934	7	5.0000	ng/mL	0.0000	----
PFHpA	M	4.490	55012	5250470	8	0.0251	ng/mL	0.0000	14.50
PFHpA-13C	Auto	4.498	5250470	6241402	1	5.3573	ng/mL	0.0000	----
PFHpA-13C_IS	Auto	4.498	5250470	5250470	8	5.0000	ng/mL	0.0000	----
PFOA	M	4.656	55366	7516533	9	0.0071	ng/mL	0.0000	31.43
PFOA-13C	Auto	4.660	7516533	6241402	1	5.3945	ng/mL	0.0000	----
PFOA-13C_IS	Auto	4.660	7516533	7516533	9	5.0000	ng/mL	0.0000	----
PFNA	M	4.827	28592	4849645	10	0.0161	ng/mL	0.0000	18.74
PFNA-13C	Auto	4.831	4849645	6241402	1	5.1362	ng/mL	0.0000	----
PFNA-13C_IS	Auto	4.831	4849645	4849645	10	5.0000	ng/mL	0.0000	----
PFDA	Auto	5.005	27663	4355478	11	0.0302	ng/mL	0.0000	17.43
PFDA-13C	Auto	5.007	4355478	6241402	1	4.9798	ng/mL	0.0000	----
PFDA-13C_IS	Auto	5.007	4355478	4355478	11	5.0000	ng/mL	0.0000	----
PFUnA	Auto	5.179	29649	5354044	12	0.0004	ng/mL	0.0000	12.23
PFUnA-13C	Auto	5.181	5354044	6241402	1	4.9907	ng/mL	0.0000	----
PFUnA-13C_IS	Auto	5.181	5354044	5354044	12	5.0000	ng/mL	0.0000	----
PFDaA	M	5.343	29731	5081621	13	0.0192	ng/mL	0.0000	3.30
PFDaA-13C	Auto	5.346	5081621	6241402	1	4.9224	ng/mL	0.0000	----
PFDaA-13C_IS	Auto	5.346	5081621	5081621	13	5.0000	ng/mL	0.0000	----
PFTrDA	Auto	5.499	25952	3438968	14	0.0126	ng/mL	0.0000	20.70
PFTeDA	Auto	5.642	67254	3438968	14	0.0247	ng/mL	0.0000	858.89
PFTeDA-13C	Auto	5.642	3438968	6241402	1	5.1942	ng/mL	0.0000	----
PFTeDA-13C_IS	Auto	5.642	3438968	3438968	14	5.0000	ng/mL	0.0000	----
FOSA	M	5.292	5096	2800993	16	0.0065	ng/mL	0.0000	4.14
FOSA-13C	Auto	5.292	2800993	6241402	1	4.9194	ng/mL	0.0000	----
FOSA-13C_IS	Auto	5.292	2800993	2800993	16	5.0000	ng/mL	0.0000	----
N-MeFOSA	Auto	5.650	1741	655908	17	0.0101	ng/mL	0.0000	53.79
N-MeFOSA-d3	Auto	5.649	655908	6241402	1	4.6252	ng/mL	0.0000	----
N-MeFOSA-d3_IS	Auto	5.649	655908	655908	17	5.0000	ng/mL	0.0000	----
N-EtFOSA	ND(W /B)	----	----	798637	18	----	ng/mL	0.0000	----
N-EtFOSA-d9	Auto	5.776	798637	6241402	1	4.5192	ng/mL	0.0000	----

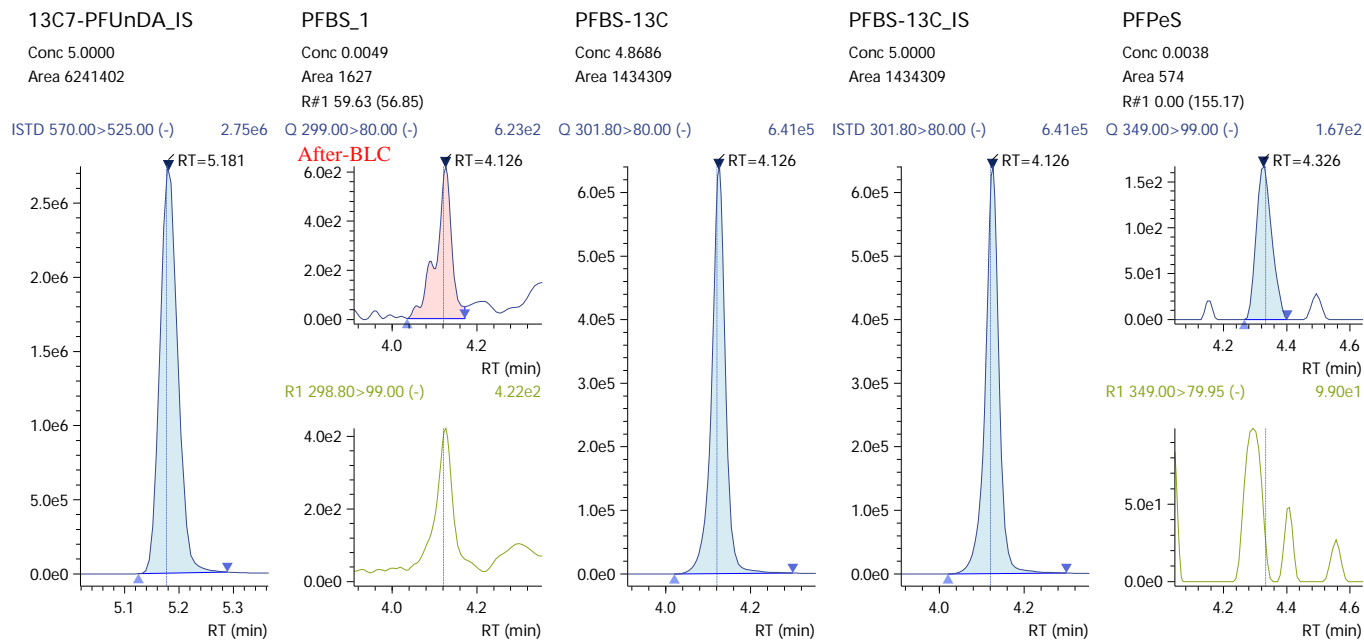
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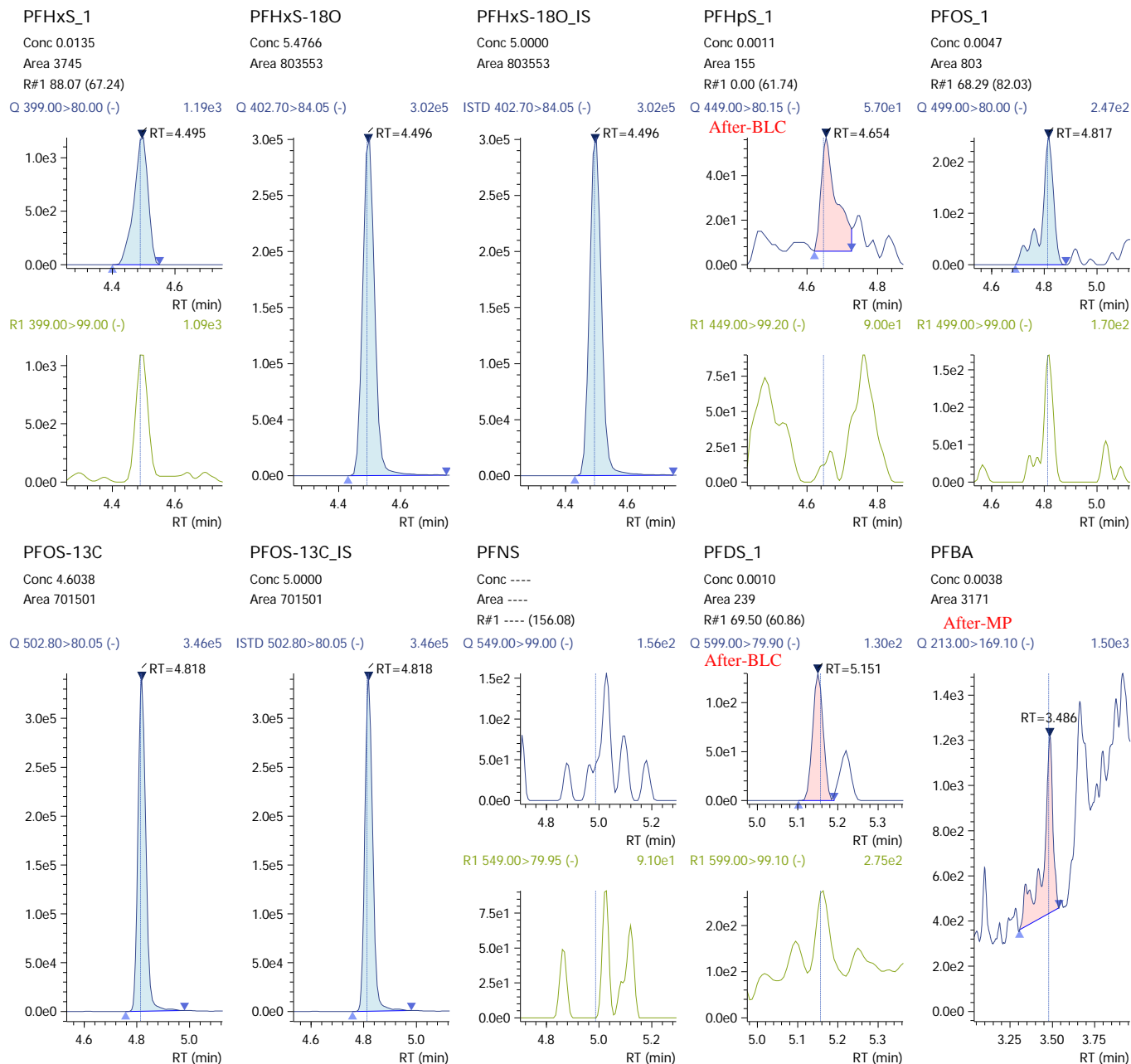
200812_045 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-EtFOSA-d9_IS	Auto	5.776	798637	798637	18	5.0000	ng/mL	0.0000	----
N-MeFOSE	M	5.629	758	325512	19	0.0038	ng/mL	0.0000	----
N-MeFOSE-d7	Auto	5.622	325512	6241402	1	4.8009	ng/mL	0.0000	----
N-MeFOSE-d7_IS	Auto	5.622	325512	325512	19	5.0000	ng/mL	0.0000	----
N-EtFOSE	M	5.755	974	249327	20	0.0049	ng/mL	0.0000	----
N-EtFOSE-d9	Auto	5.745	249327	6241402	1	4.4868	ng/mL	0.0000	----
N-EtFOSE-d9_IS	Auto	5.745	249327	249327	20	5.0000	ng/mL	0.0000	----
N-MeFOSAA	Auto	5.109	6642	508581	21	0.0864	ng/mL	0.0000	44.57
N-MeFOSAA-d3	Auto	5.103	508581	6241402	1	4.7673	ng/mL	0.0000	----
N-MeFOSAA-d3_IS	Auto	5.103	508581	508581	21	5.0000	ng/mL	0.0000	----
N-EtFOSAA	Auto	5.202	2563	328058	22	0.0673	ng/mL	0.0000	61.06
N-EtFOSAA-d5	Auto	5.194	328058	6241402	1	4.3386	ng/mL	0.0000	----
N-EtFOSAA-d5_IS	Auto	5.194	328058	328058	22	5.0000	ng/mL	0.0000	----
4_2-FTS_1	Auto	4.303	643	1009966	23	0.0033	ng/mL	0.0000	46539.88
4_2-FTS-13C	Auto	4.301	1009966	6241402	1	4.6008	ng/mL	0.0000	----
4_2-FTS-13C_IS	Auto	4.301	1009966	1009966	23	5.0000	ng/mL	0.0000	----
6_2-FTS_1	Auto	4.650	789	667742	24	0.0054	ng/mL	0.0000	25.67
6_2-FTS-13C	Auto	4.652	667742	6241402	1	5.6273	ng/mL	0.0000	----
6_2-FTS-13C_IS	Auto	4.652	667742	667742	24	5.0000	ng/mL	0.0000	----
8_2-FTS_1	Auto	5.006	233	495554	25	0.0031	ng/mL	0.0000	10.35
8_2-FTS-13C	Auto	5.008	495554	6241402	1	5.5183	ng/mL	0.0000	----
8_2-FTS-13C_IS	Auto	5.008	495554	495554	25	5.0000	ng/mL	0.0000	----
10_2-FTS_1	M	5.354	114	495554	25	0.0019	ng/mL	0.0000	0.00
HPFO_DA	M	4.388	368	1121784	26	0.0016	ng/mL	0.0000	147.83
HPFO_DA-13C	Auto	4.388	1121784	6241402	1	4.4131	ng/mL	0.0000	----
HPFO_DA-13C_IS	Auto	4.388	1121784	1121784	26	5.0000	ng/mL	0.0000	----



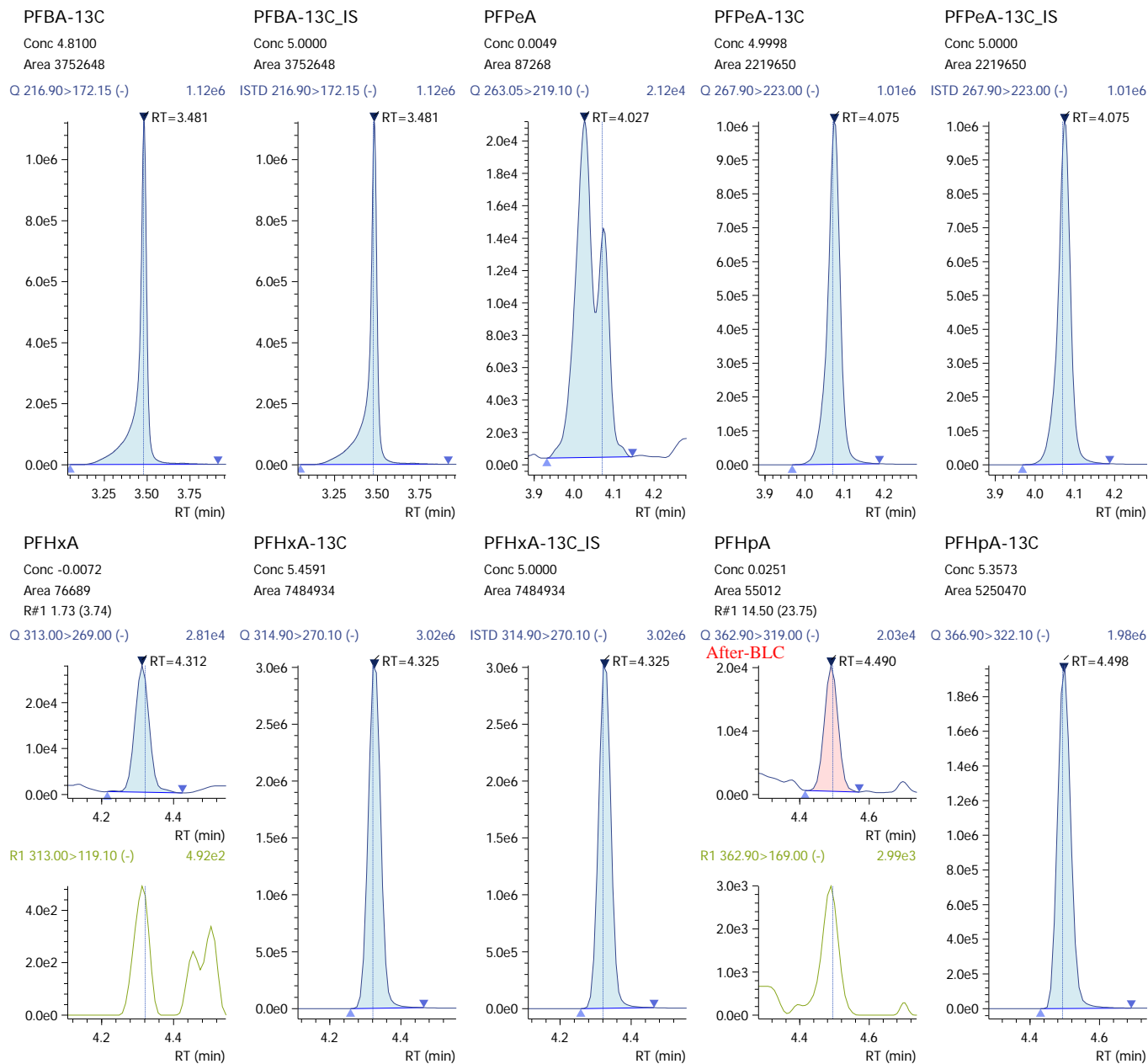
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200812_045 (continued)



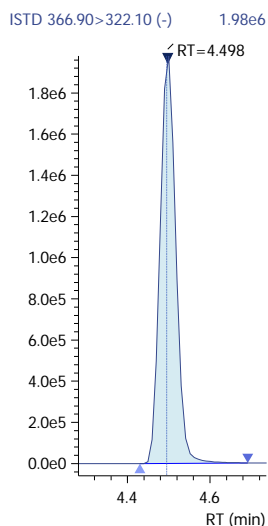
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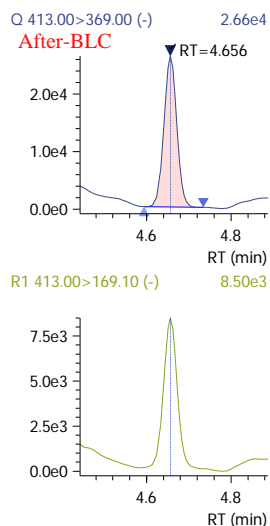
PFHpA-13C_IS

Conc 5.0000
 Area 5250470



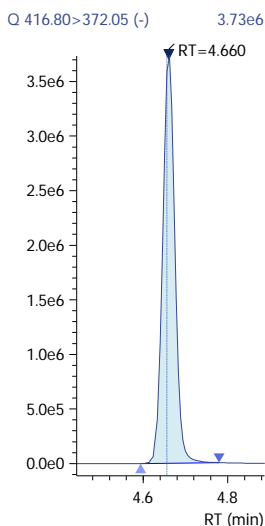
PFOA

Conc 0.0071
 Area 55366
 R#1 31.43 (34.80)



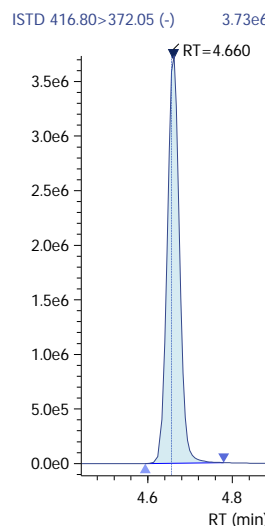
PFOA-13C

Conc 5.3945
 Area 7516533



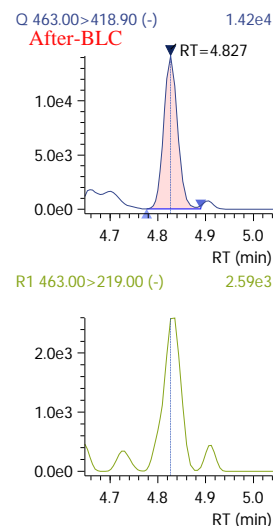
PFOA-13C_IS

Conc 5.0000
 Area 7516533



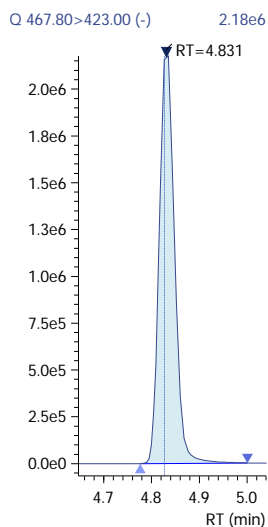
PFNA

Conc 0.0161
 Area 28592
 R#1 18.74 (22.71)



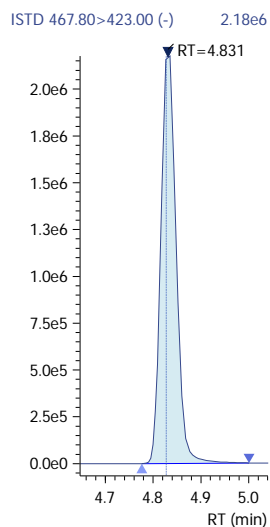
PFNA-13C

Conc 5.1362
 Area 4849645



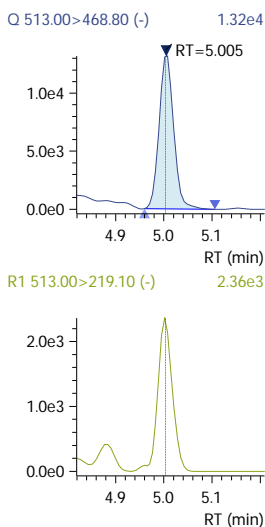
PFNA-13C_IS

Conc 5.0000
 Area 4849645



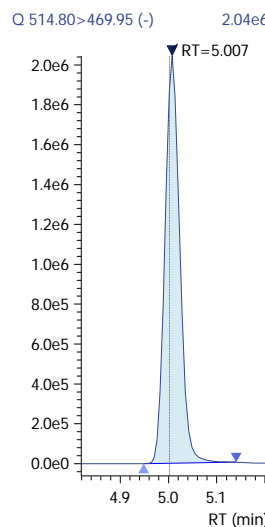
PFDA

Conc 0.0302
 Area 27663
 R#1 17.43 (22.06)



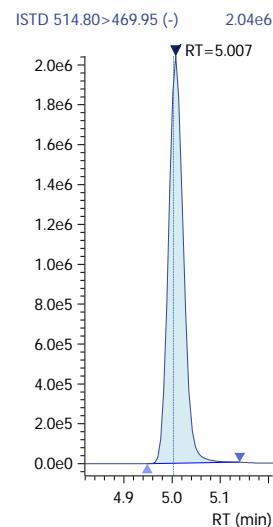
PFDA-13C

Conc 4.9798
 Area 4355478



PFDA-13C_IS

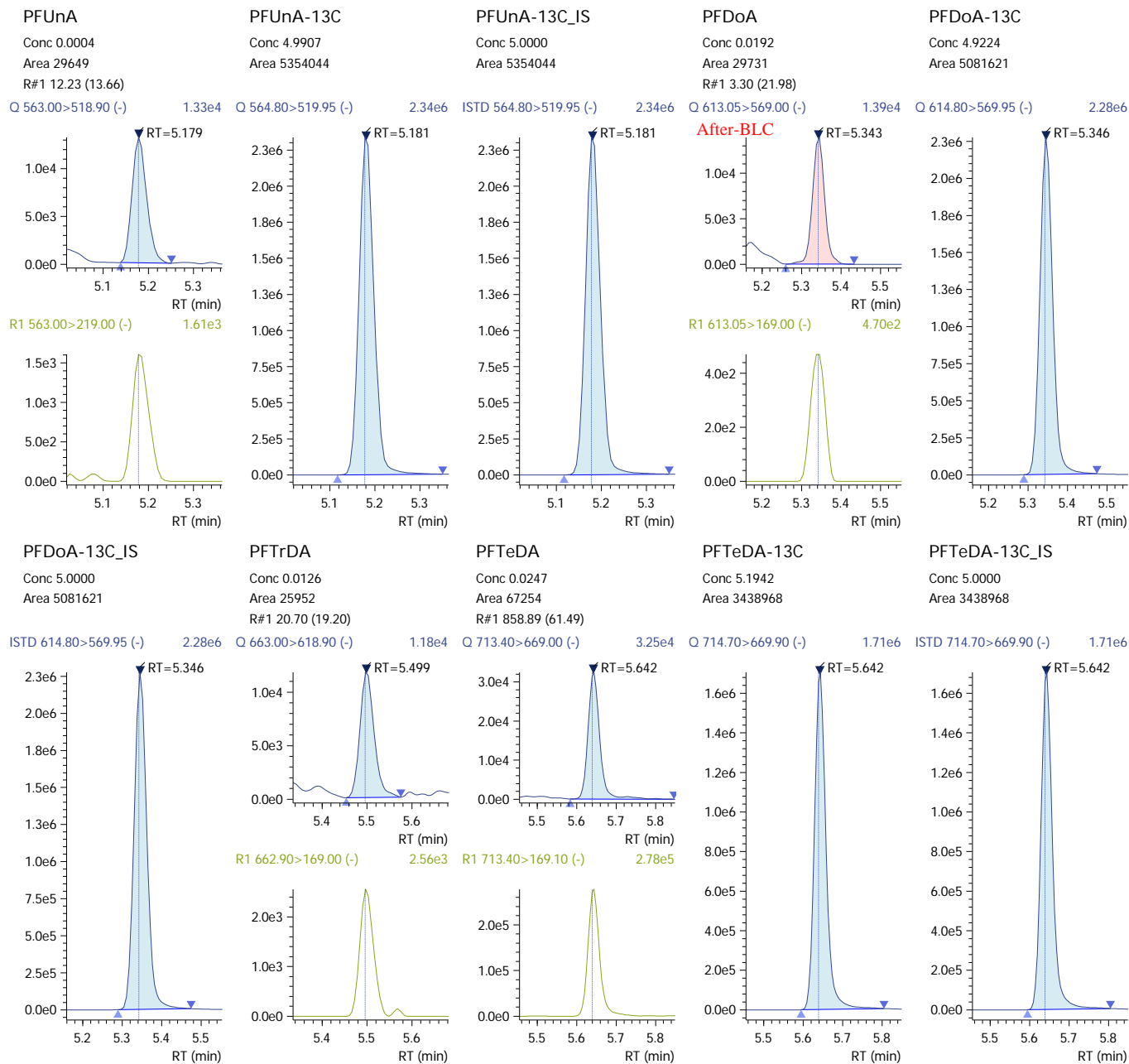
Conc 5.0000
 Area 4355478



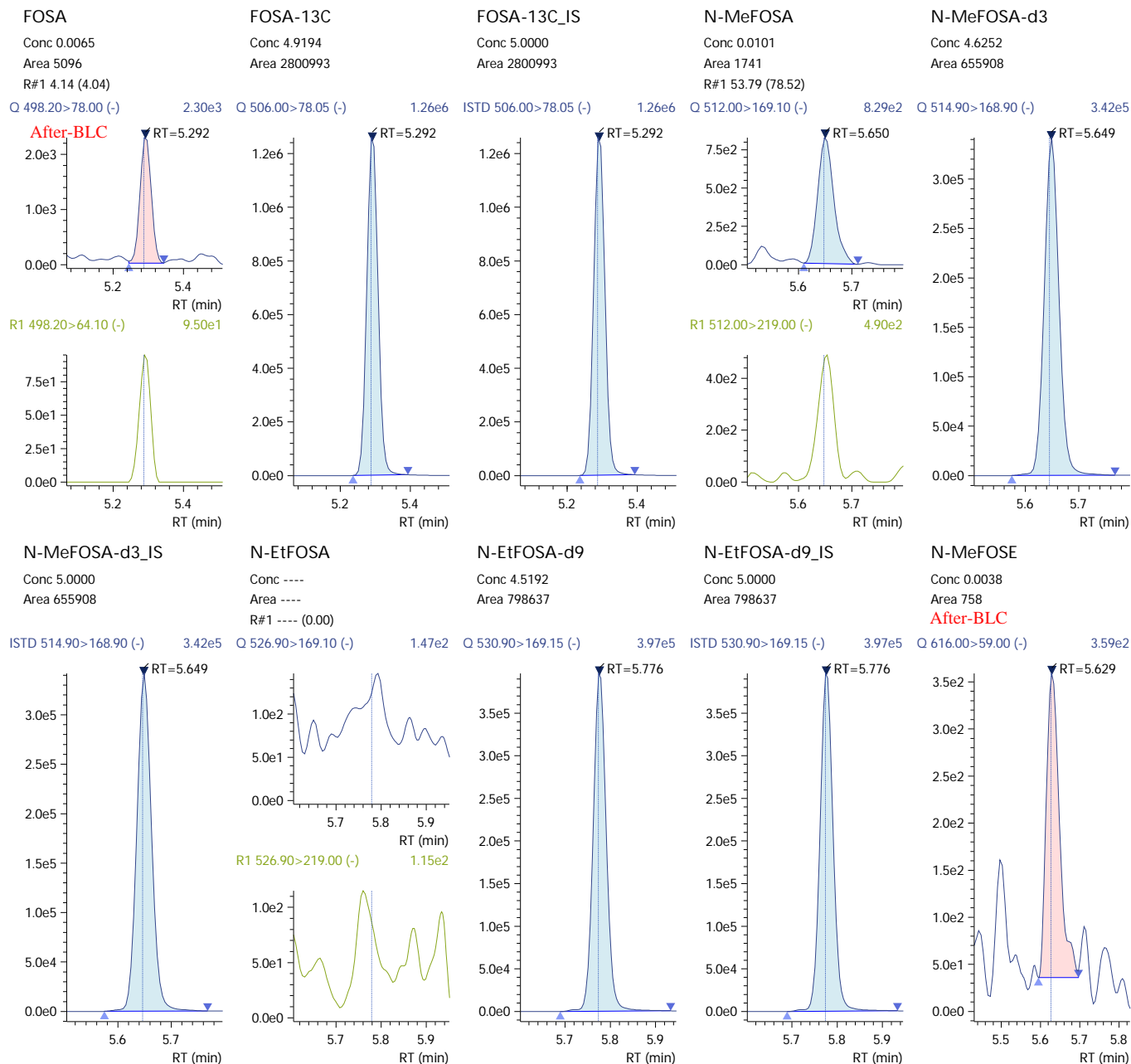
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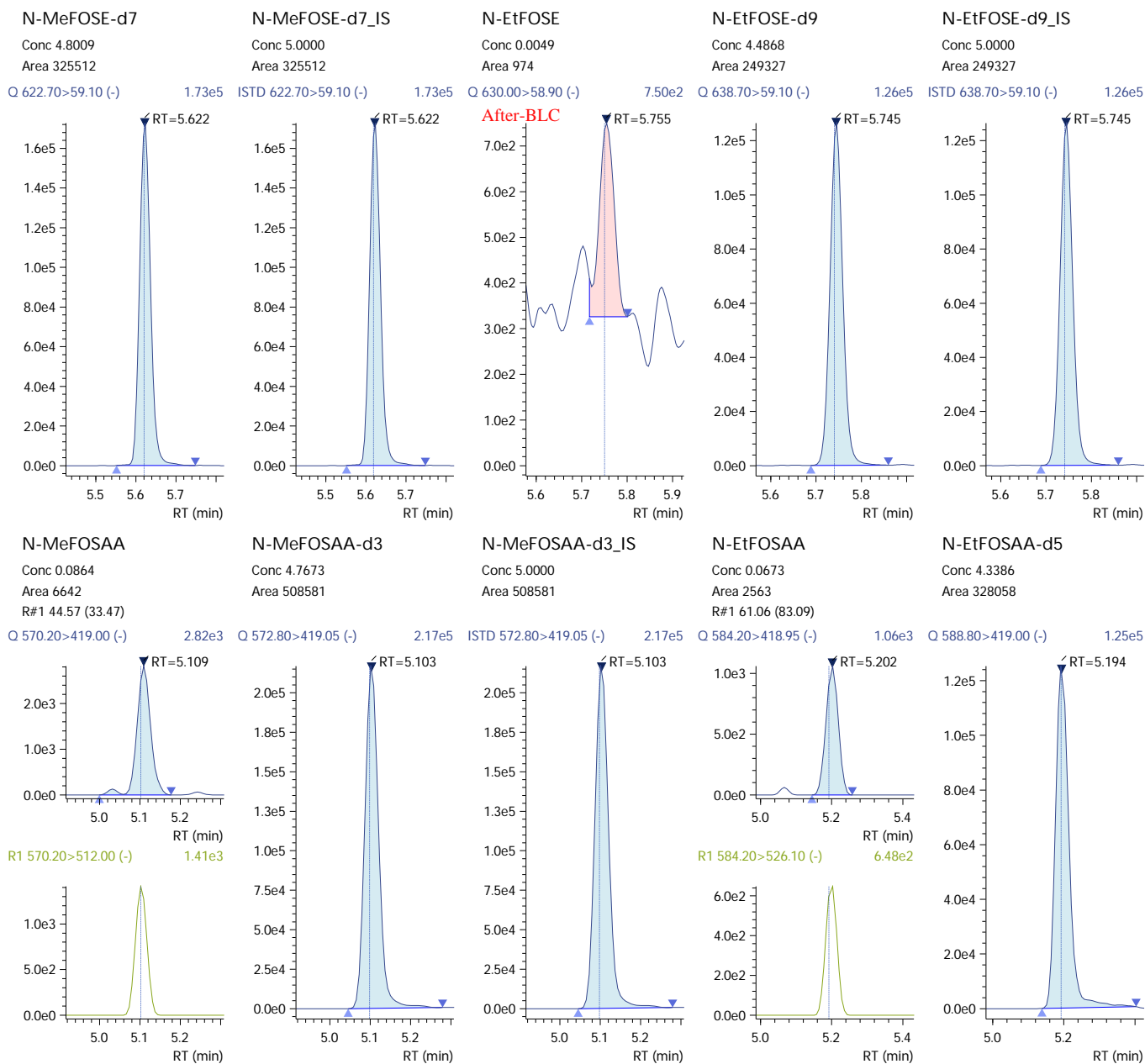
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200812_045 (continued)



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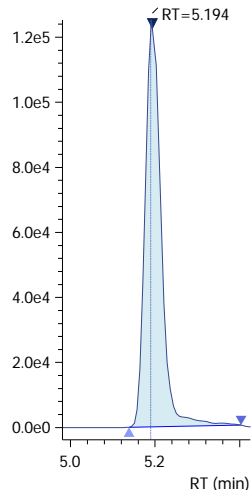
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200812_045 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 328058

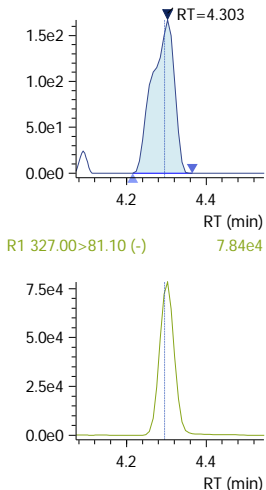
ISTD 588.80>419.00 (-) 1.25e5



4_2-FTS_1

Conc 0.0033
 Area 643
 R#1 46539.88 (54.93)

Q 327.00>307.05 (-) 1.67e2

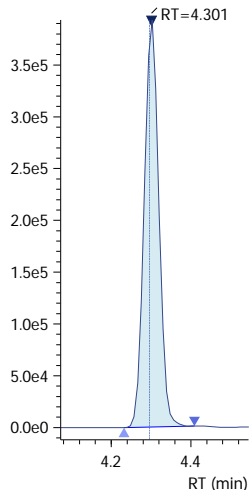


R1 327.00>81.10 (-) 7.84e4

4_2-FTS-13C

Conc 4.6008
 Area 1009966

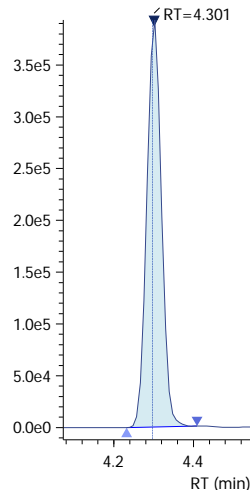
Q 328.80>309.05 (-) 3.93e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 1009966

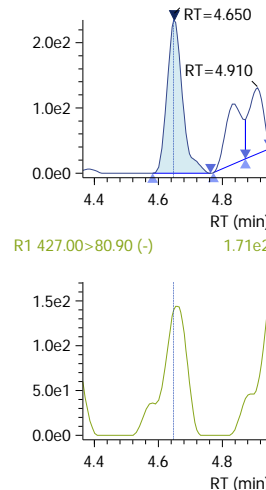
ISTD 328.80>309.05 (-) 3.93e5



6_2-FTS_1

Conc 0.0054
 Area 789
 R#1 25.67 (36.33)

Q 427.00>407.00 (-) 2.35e2

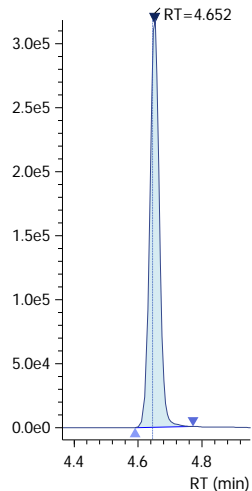


R1 427.00>80.90 (-) 1.71e2

6_2-FTS-13C

Conc 5.6273
 Area 667742

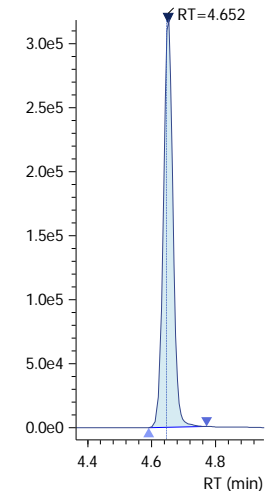
Q 428.90>409.00 (-) 3.18e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 667742

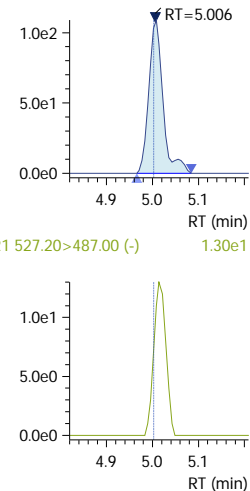
ISTD 428.90>409.00 (-) 3.18e5



8_2-FTS_1

Conc 0.0031
 Area 233
 R#1 10.35 (8.96)

Q 527.10>506.90 (-) 1.09e2

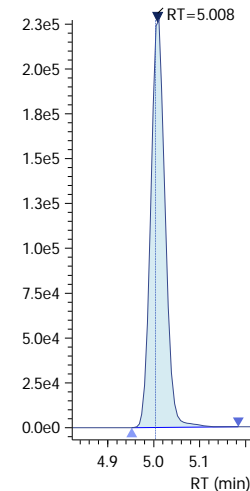


R1 527.20>487.00 (-) 1.30e1

8_2-FTS-13C

Conc 5.5183
 Area 495554

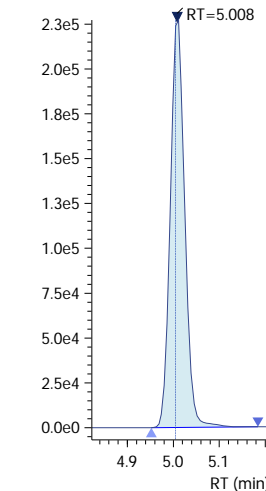
Q 528.80>509.00 (-) 2.27e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 495554

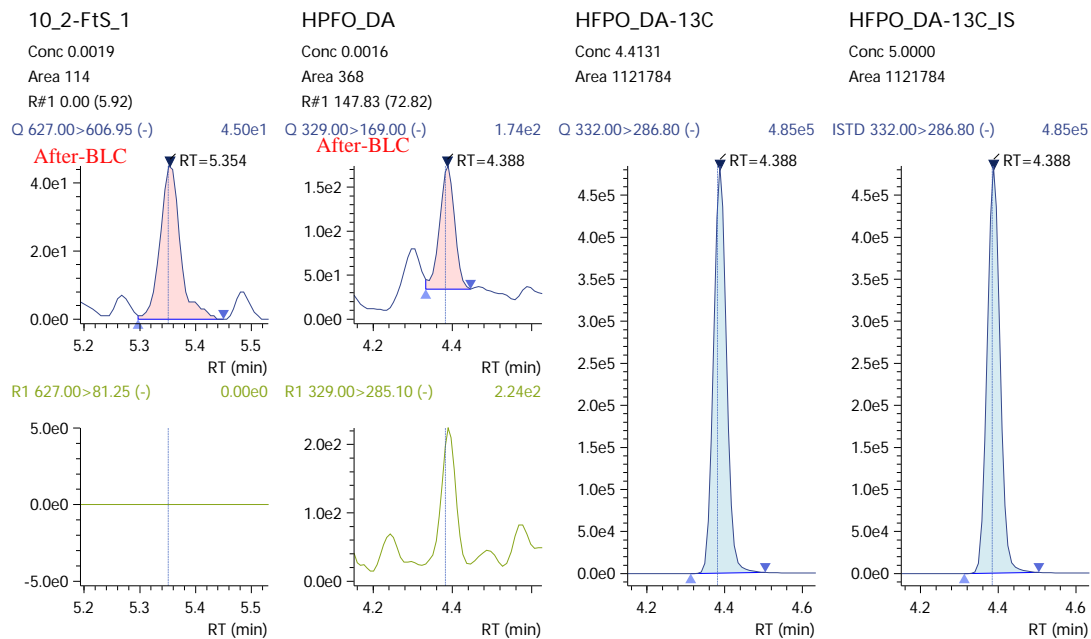
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200812_045 (continued)

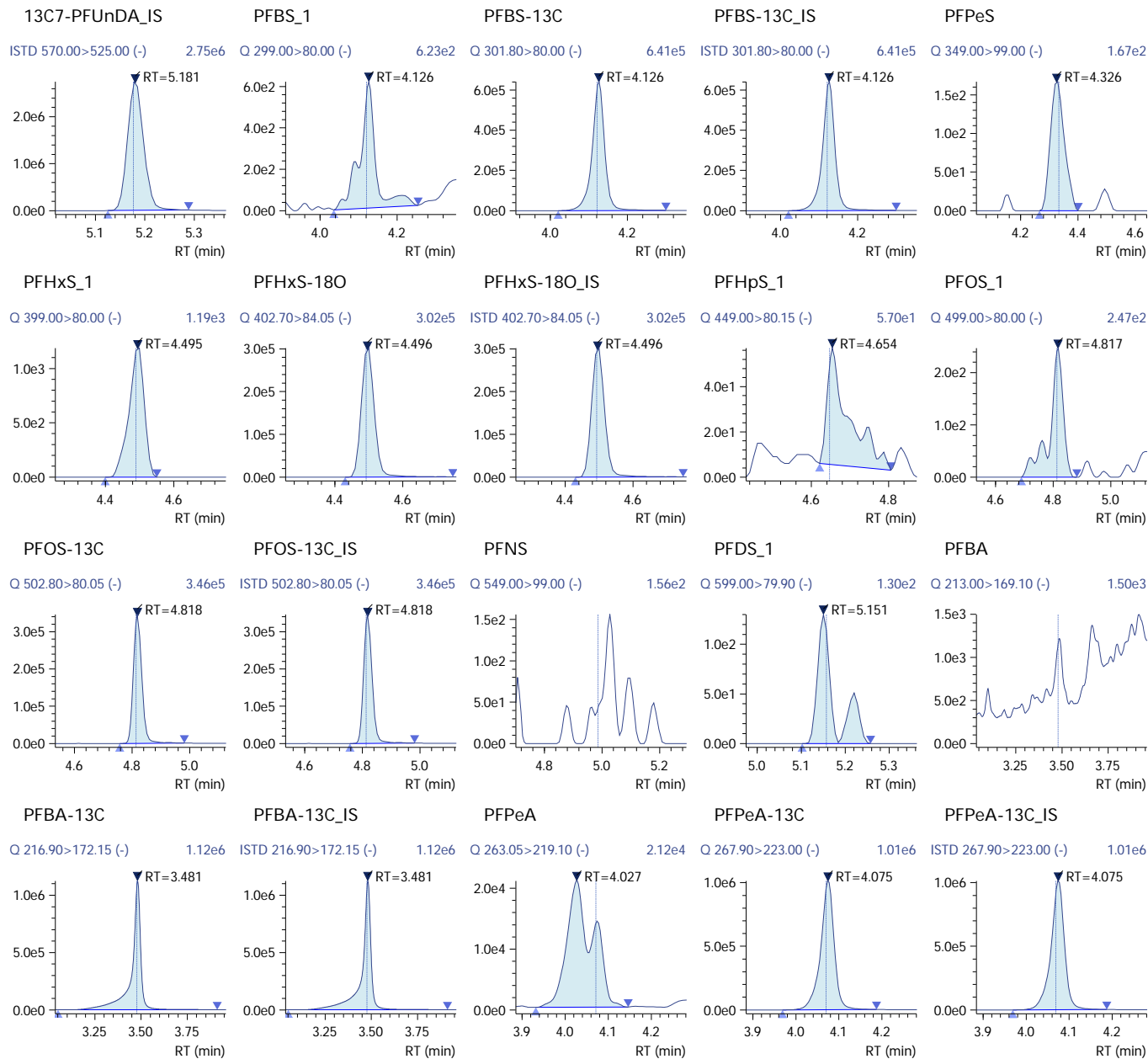


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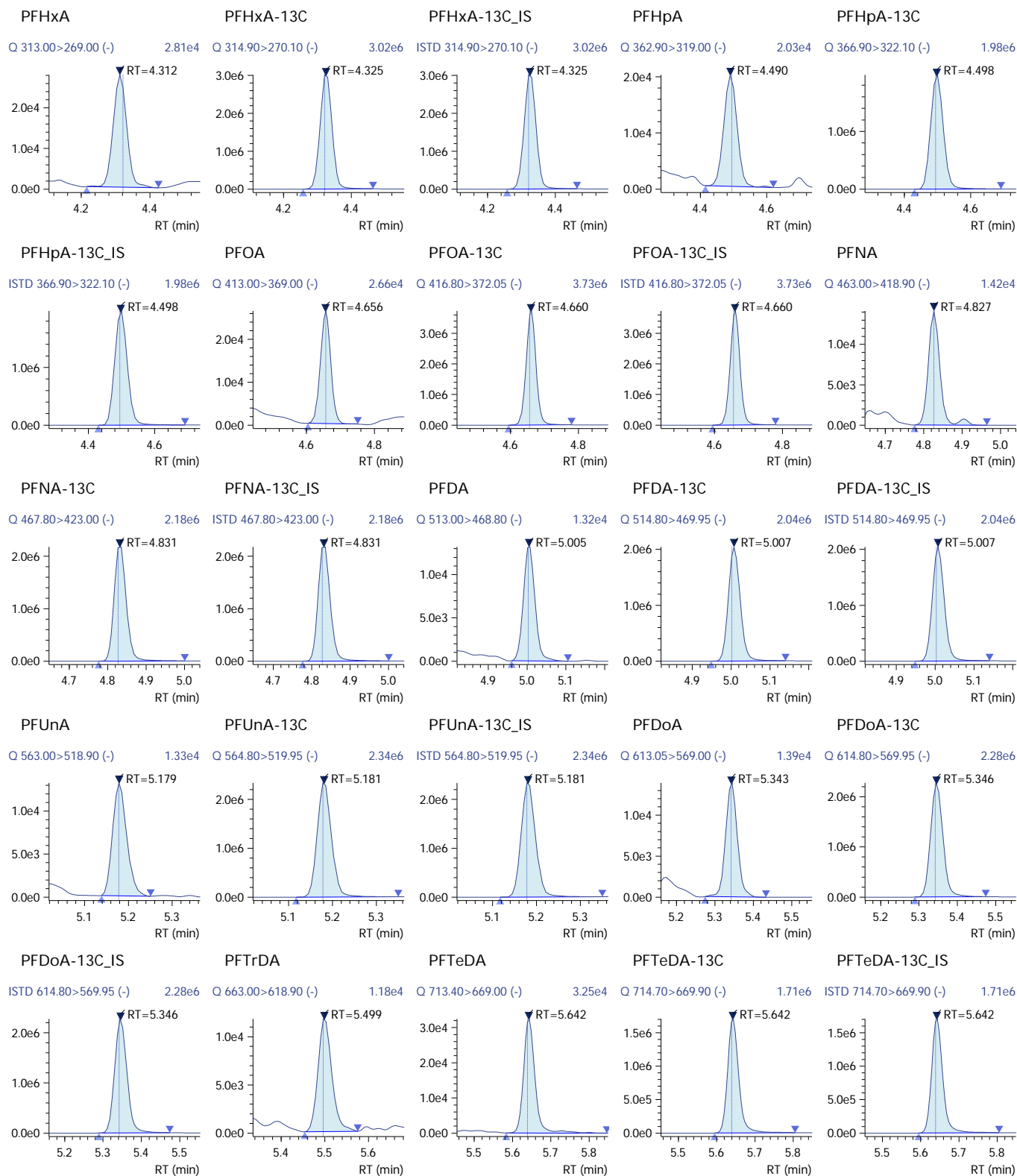
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200812_045

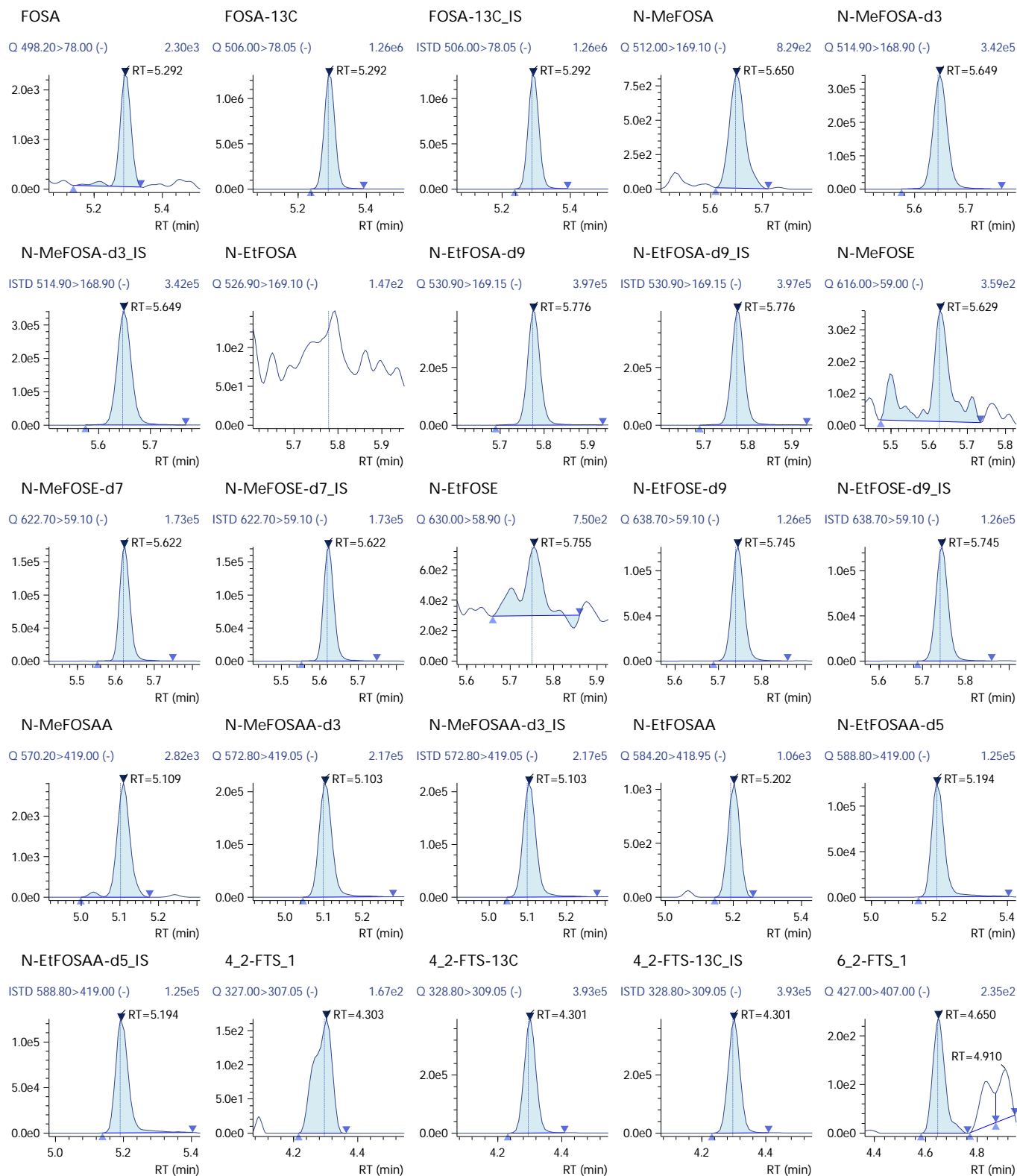
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Date Acquired: 8/12/2020 8:32:45 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_045.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



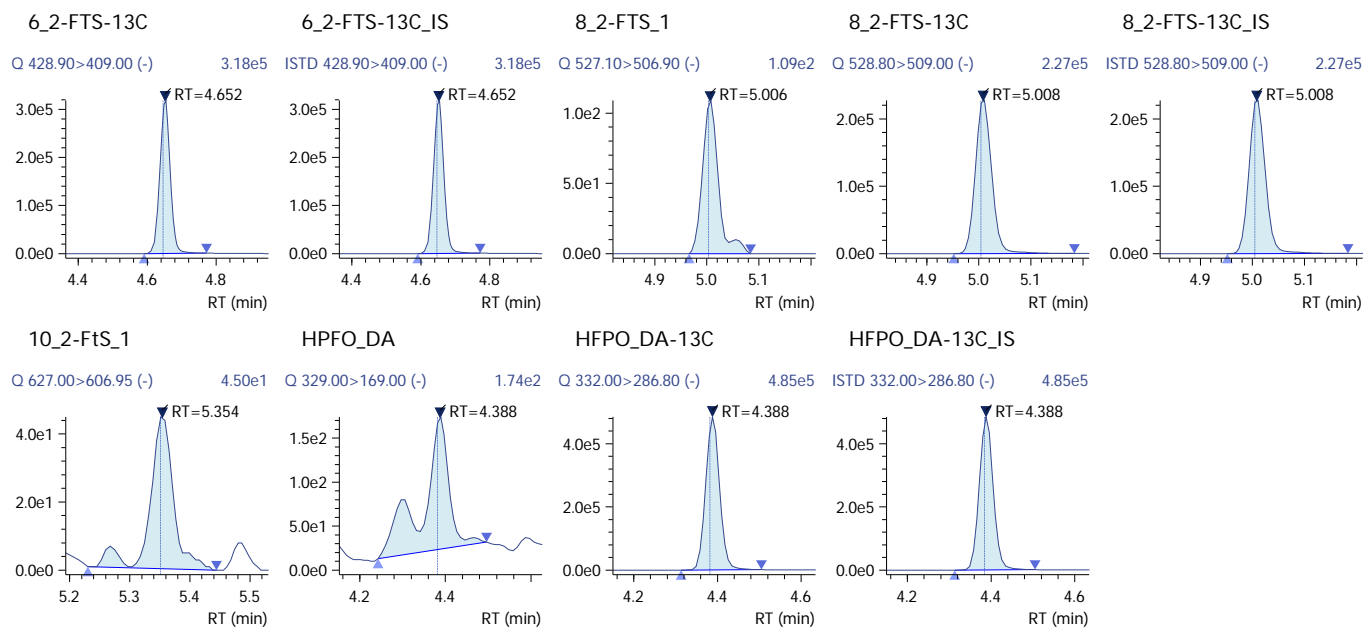
200812_045 (continued)



200812_045 (continued)



200812_045 (continued)



Insight Report

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200812_046

Sample ID: 15.0 PPB ICAL
 Date Acquired: 8/12/2020 8:43:34 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_046.lcd
 Vial: 7 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.177	5251815	5251815	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.120	4291132	1383123	2	13.4558	ng/mL	13.3106	54.37
PFBS-13C	Auto	4.120	1383123	5251815	1	5.5795	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.120	1383123	1383123	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.333	2092974	1383123	2	14.5163	ng/mL	14.1138	154.47
PFHxS_1	Auto	4.489	2876994	619089	3	13.4739	ng/mL	13.6961	64.43
PFHxS-18O	Auto	4.492	619089	5251815	1	5.0144	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.492	619089	619089	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.645	1620714	619089	3	15.4584	ng/mL	14.3016	58.17
PFOS_1	Auto	4.812	2504629	701766	4	14.5460	ng/mL	13.9385	81.26
PFOS-13C	Auto	4.812	701766	5251815	1	5.4733	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.812	701766	701766	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.985	1734041	701766	4	14.5979	ng/mL	14.4237	157.60
PFDS_1	Auto	5.155	3693565	701766	4	15.8550	ng/mL	14.4700	58.19
PFBA	Auto	3.477	12553835	3622444	5	15.4082	ng/mL	15.0000	----
PFBA-13C	Auto	3.476	3622444	5251815	1	5.5181	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.476	3622444	3622444	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.070	19152022	1952408	6	15.8802	ng/mL	15.0000	----
PFPeA-13C	Auto	4.069	1952408	5251815	1	5.2265	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.069	1952408	1952408	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.319	18641122	5475100	7	16.0875	ng/mL	15.0000	3.82
PFHxA-13C	Auto	4.319	5475100	5251815	1	4.7457	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.319	5475100	5475100	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.494	15590834	3764456	8	16.1344	ng/mL	15.0000	22.75
PFHpA-13C	Auto	4.494	3764456	5251815	1	4.5648	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.494	3764456	3764456	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.656	16314770	5125412	9	15.7204	ng/mL	15.0000	33.86
PFOA-13C	Auto	4.656	5125412	5251815	1	4.3716	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.656	5125412	5125412	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.827	11707233	3721963	10	15.8754	ng/mL	15.0000	23.82
PFNA-13C	Auto	4.827	3721963	5251815	1	4.6846	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.827	3721963	3721963	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.003	10624484	3479988	11	14.5119	ng/mL	15.0000	21.64
PFDA-13C	Auto	5.003	3479988	5251815	1	4.7285	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.003	3479988	3479988	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.177	13986166	4651386	12	15.7445	ng/mL	15.0000	12.80
PFUnA-13C	Auto	5.177	4651386	5251815	1	5.1527	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.177	4651386	4651386	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.340	11729274	4465236	13	16.3129	ng/mL	15.0000	18.51
PFDaA-13C	Auto	5.341	4465236	5251815	1	5.1404	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.341	4465236	4465236	13	5.0000	ng/mL	5.0000	----
PFTrDA	Auto	5.495	11131433	2930046	14	15.7912	ng/mL	15.0000	19.77
PFTeDA	Auto	5.637	5541293	2930046	14	15.4884	ng/mL	15.0000	40.58
PFTeDA-13C	Auto	5.637	2930046	5251815	1	5.2594	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.637	2930046	2930046	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.287	11579689	2628519	16	15.6611	ng/mL	15.0000	3.82
FOSA-13C	Auto	5.287	2628519	5251815	1	5.4864	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.287	2628519	2628519	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.647	2667060	637549	17	15.8802	ng/mL	15.0000	78.63
N-MeFOSA-d3	Auto	5.645	637549	5251815	1	5.3429	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.645	637549	637549	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.776	523759	842732	18	15.1667	ng/mL	15.0000	70.14
N-EtFOSA-d9	Auto	5.771	842732	5251815	1	5.6673	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.771	842732	842732	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.625	2854599	324680	19	14.1716	ng/mL	15.0000	----

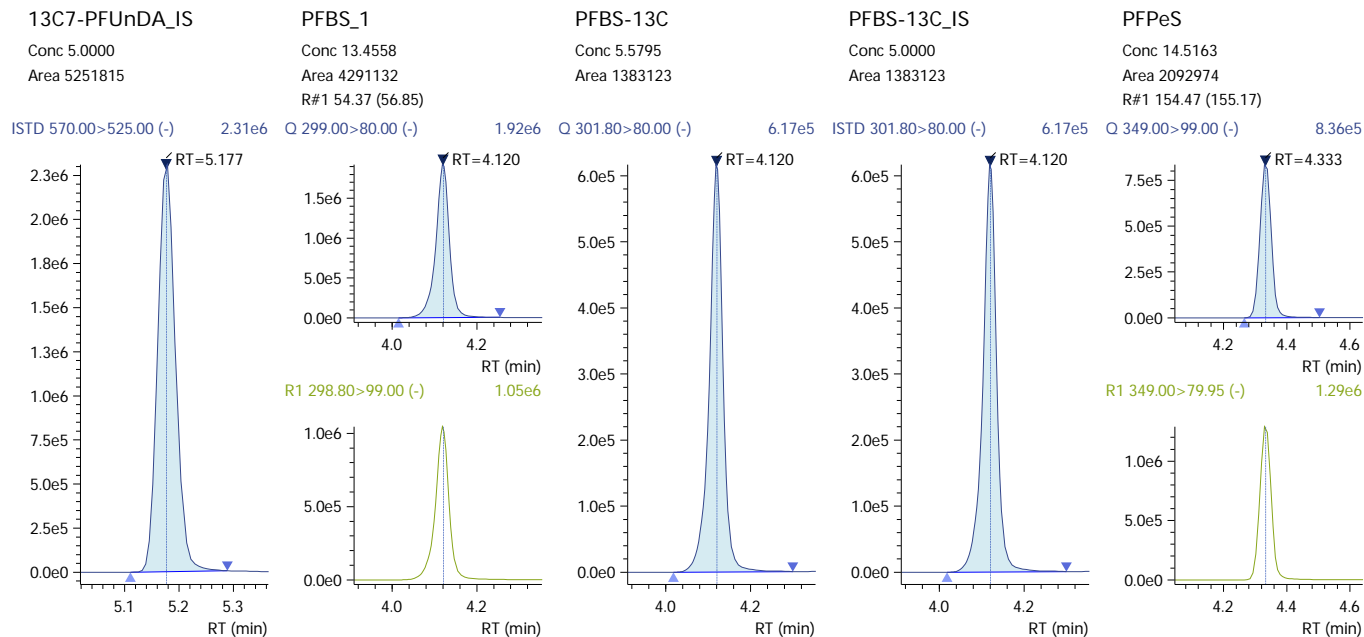
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200812_046 (continued)

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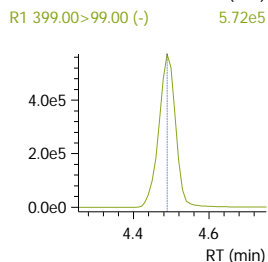
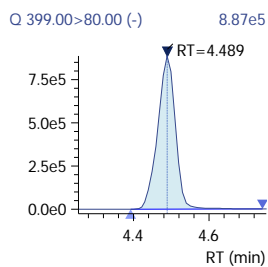
Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.617	324680	5251815	1	5.6909	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.617	324680	324680	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.749	3270922	263170	20	15.4492	ng/mL	15.0000	----
N-EtFOSE-d9	Auto	5.739	263170	5251815	1	5.6283	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.739	263170	263170	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	Auto	5.100	1201092	514883	21	15.4340	ng/mL	15.0000	35.45
N-MeFOSAA-d3	Auto	5.098	514883	5251815	1	5.7358	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.098	514883	514883	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.192	643742	357365	22	15.5149	ng/mL	15.0000	86.04
N-EtFOSAA-d5	Auto	5.188	357365	5251815	1	5.6167	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.188	357365	357365	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.295	2483426	991773	23	13.1205	ng/mL	14.0583	40.18
4_2-FTS-13C	Auto	4.295	991773	5251815	1	5.3692	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.295	991773	991773	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.645	1243267	408645	24	13.8753	ng/mL	14.2676	36.74
6_2-FTS-13C	Auto	4.645	408645	5251815	1	4.0927	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.645	408645	408645	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.004	708787	338244	25	13.7251	ng/mL	14.4007	8.95
8_2-FTS-13C	Auto	5.004	338244	5251815	1	4.4763	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.004	338244	338244	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.349	638534	338244	25	15.9108	ng/mL	14.4929	4.89
HPFO_DA	Auto	4.383	3534536	1188578	26	14.8027	ng/mL	15.0000	73.01
HPFO_DA-13C	Auto	4.383	1188578	5251815	1	5.5569	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.383	1188578	1188578	26	5.0000	ng/mL	5.0000	----



200812_046 (continued)

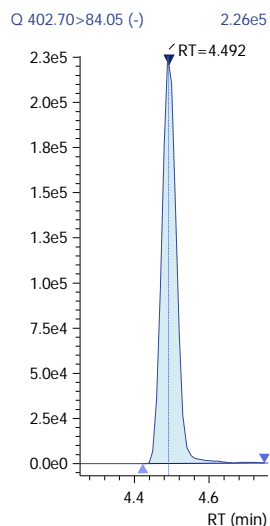
PFHxS_1

Conc 13.4739
Area 2876994
R#1 64.43 (67.24)



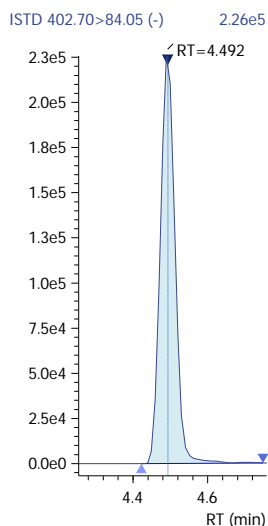
PFHxS-180

Conc 5.0144
Area 619089



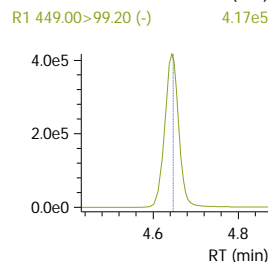
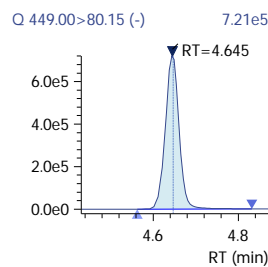
PFHxS-180_IS

Conc 5.0000
Area 619089



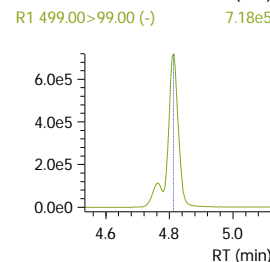
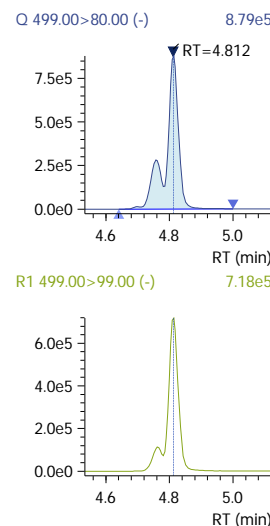
PFHps_1

Conc 15.4584
Area 1620714
R#1 58.17 (61.74)



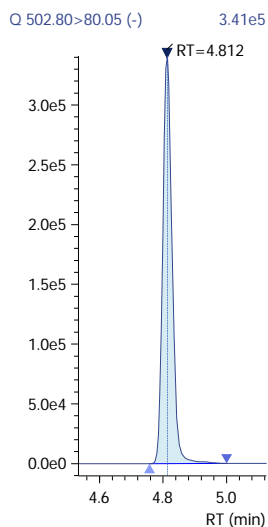
PFOS_1

Conc 14.5460
Area 2504629
R#1 81.26 (82.03)



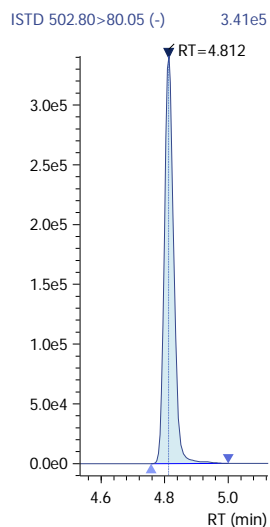
PFOS-13C

Conc 5.4733
Area 701766



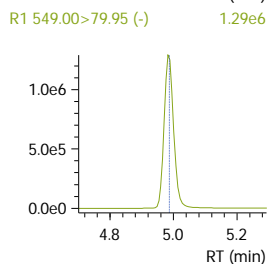
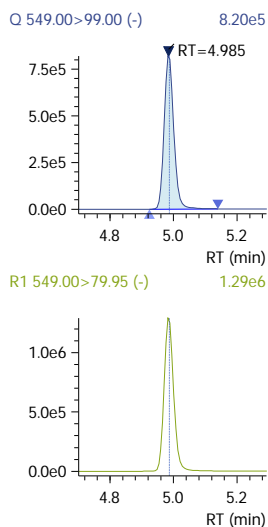
PFOS-13C_IS

Conc 5.0000
Area 701766



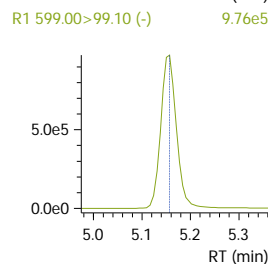
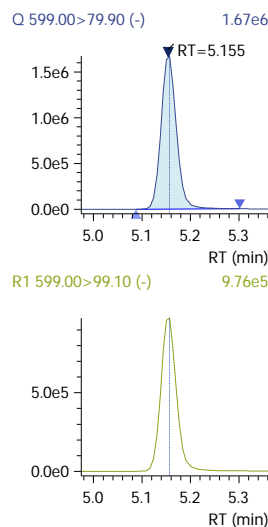
PFNS

Conc 14.5979
Area 1734041
R#1 157.60 (156.08)



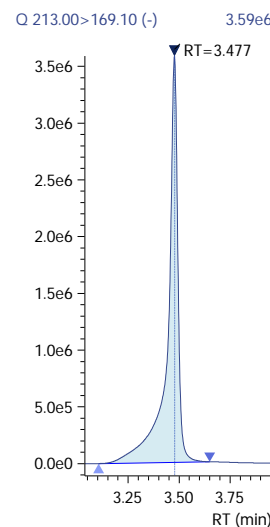
PFDS_1

Conc 15.8550
Area 3693565
R#1 58.19 (60.86)



PFBA

Conc 15.4082
Area 12553835



Insight Report

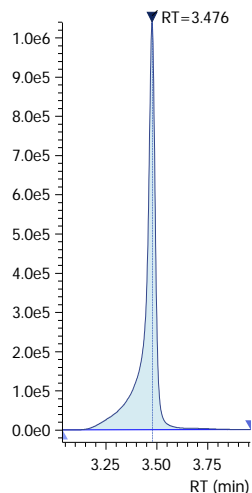
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200812_046 (continued)

PFBA-13C

Conc 5.5181
 Area 3622444

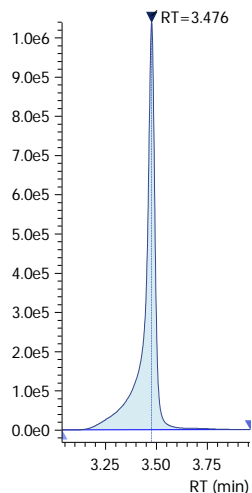
Q 216.90>172.15 (-) 1.04e6



PFBA-13C_IS

Conc 5.0000
 Area 3622444

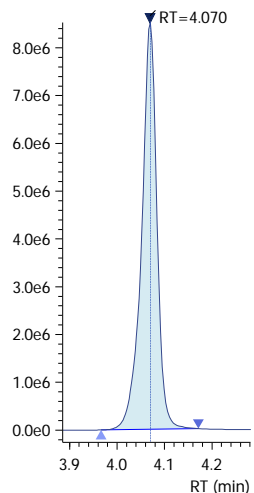
ISTD 216.90>172.15 (-) 1.04e6



PFPeA

Conc 15.8802
 Area 19152022

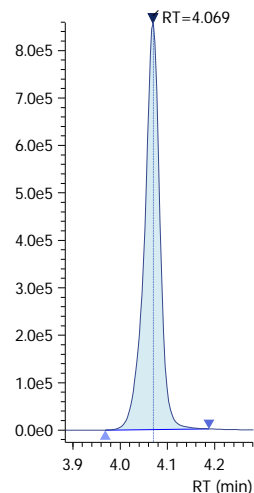
Q 263.05>219.10 (-) 8.53e6



PFPeA-13C

Conc 5.2265
 Area 1952408

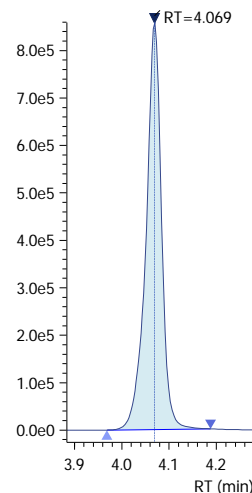
Q 267.90>223.00 (-) 8.59e5



PFPeA-13C_IS

Conc 5.0000
 Area 1952408

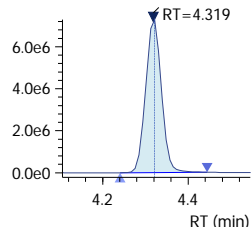
ISTD 267.90>223.00 (-) 8.59e5



PFHxA

Conc 16.0875
 Area 18641122
 R#1 3.82 (3.74)

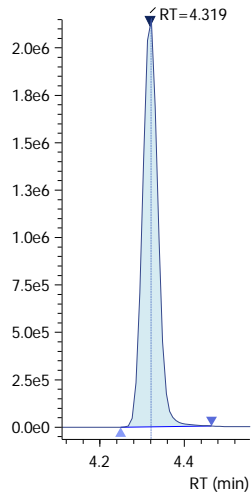
Q 313.00>269.00 (-) 7.29e6



PFHxA-13C

Conc 4.7457
 Area 5475100

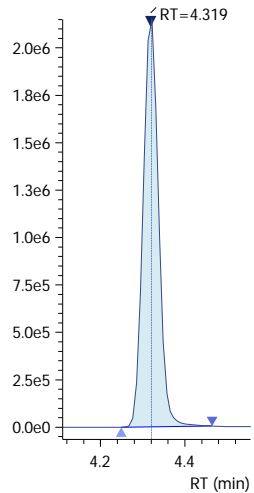
Q 314.90>270.10 (-) 2.15e6



PFHxA-13C_IS

Conc 5.0000
 Area 5475100

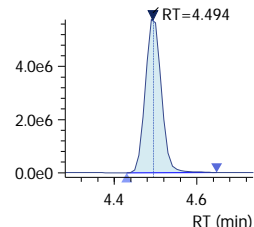
ISTD 314.90>270.10 (-) 2.15e6



PFHpA

Conc 16.1344
 Area 15590834
 R#1 22.75 (23.75)

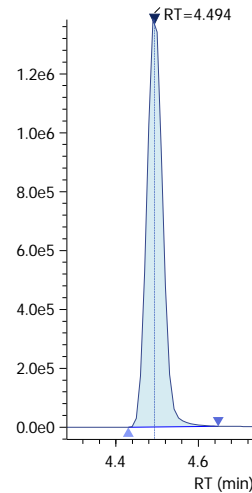
Q 362.90>319.00 (-) 5.76e6



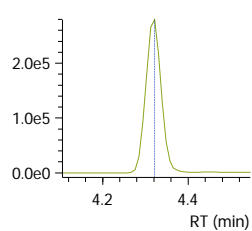
PFHpA-13C

Conc 4.5648
 Area 3764456

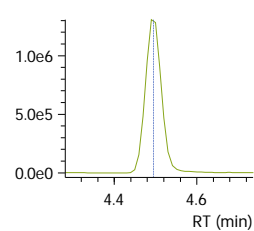
Q 366.90>322.10 (-) 1.38e6



R1 313.00>119.10 (-) 2.79e5



R1 362.90>169.00 (-) 1.31e6



Insight Report

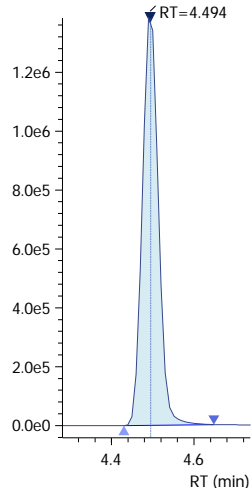
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200812_046 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 3764456

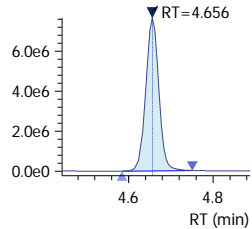
ISTD 366.90>322.10 (-) 1.38e6



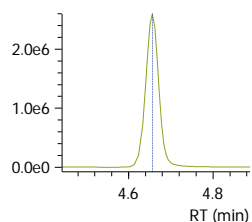
PFOA

Conc 15.7204
Area 16314770
R#1 33.86 (34.80)

Q 413.00>369.00 (-) 7.66e6



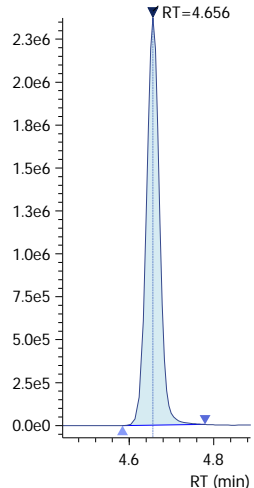
R1 413.00>169.10 (-) 2.60e6



PFOA-13C

Conc 4.3716
Area 5125412

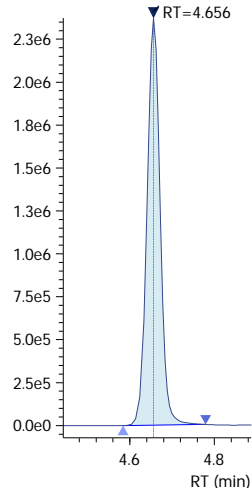
Q 416.80>372.05 (-) 2.37e6



PFOA-13C_IS

Conc 5.0000
Area 5125412

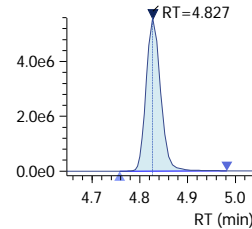
ISTD 416.80>372.05 (-) 2.37e6



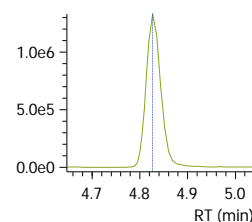
PFNA

Conc 15.8754
Area 11707233
R#1 23.82 (22.71)

Q 463.00>418.90 (-) 5.59e6



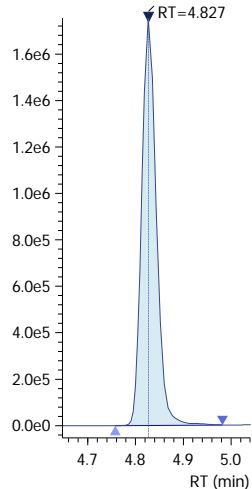
R1 463.00>219.00 (-) 1.33e6



PFNA-13C

Conc 4.6846
Area 3721963

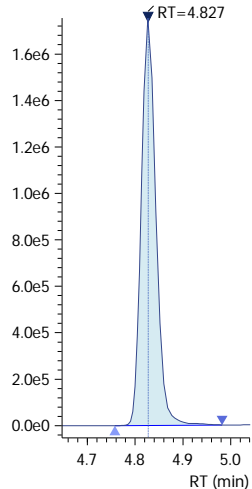
Q 467.80>423.00 (-) 1.76e6



PFNA-13C_IS

Conc 5.0000
Area 3721963

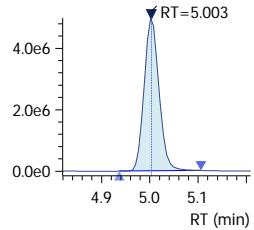
ISTD 467.80>423.00 (-) 1.76e6



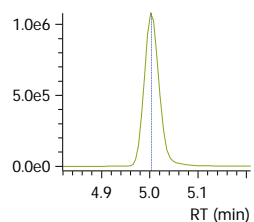
PFDA

Conc 14.5119
Area 10624484
R#1 21.64 (22.06)

Q 513.00>468.80 (-) 4.99e6



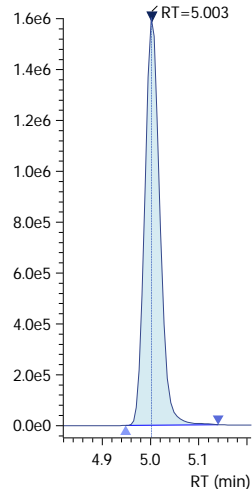
R1 513.00>219.10 (-) 1.08e6



PFDA-13C

Conc 4.7285
Area 3479988

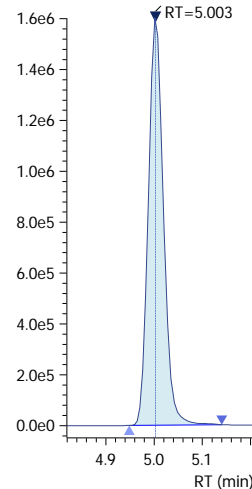
Q 514.80>469.95 (-) 1.60e6



PFDA-13C_IS

Conc 5.0000
Area 3479988

ISTD 514.80>469.95 (-) 1.60e6

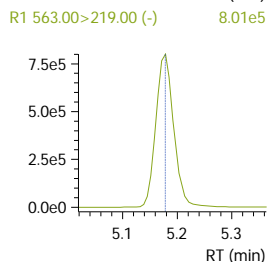
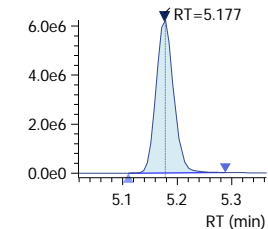


200812_046 (continued)

PFUnA

Conc 15.7445
Area 13986166
R#1 12.80 (13.66)

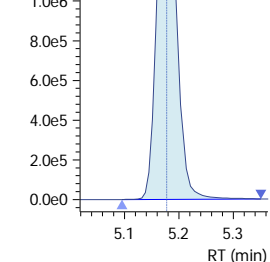
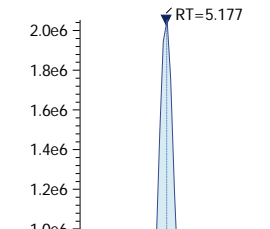
Q 563.00>518.90 (-) 6.25e6



PFUnA-13C

Conc 5.1527
Area 4651386

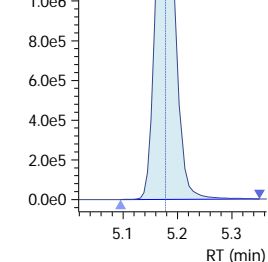
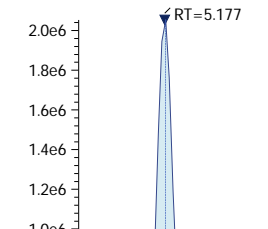
Q 564.80>519.95 (-) 2.05e6



PFUnA-13C_IS

Conc 5.0000
Area 4651386

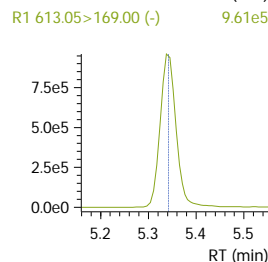
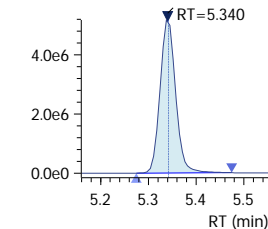
ISTD 564.80>519.95 (-) 2.05e6



PFDaA

Conc 16.3129
Area 11729274
R#1 18.51 (21.98)

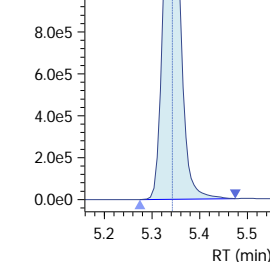
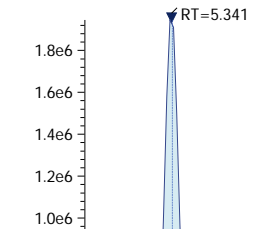
Q 613.05>569.00 (-) 5.18e6



PFDaA-13C

Conc 5.1404
Area 4465236

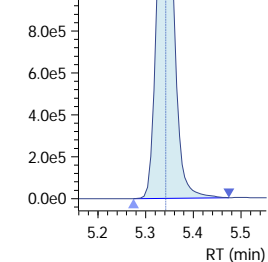
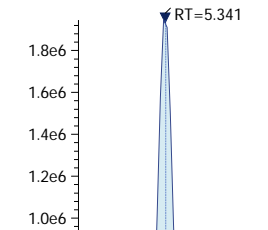
Q 614.80>569.95 (-) 1.95e6



PFDaA-13C_IS

Conc 5.0000
Area 4465236

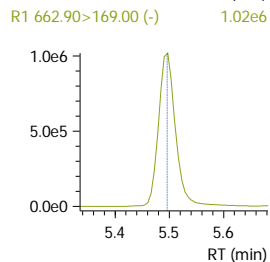
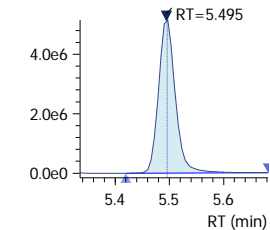
ISTD 614.80>569.95 (-) 1.95e6



PFTrDA

Conc 15.7912
Area 111131433
R#1 19.77 (19.20)

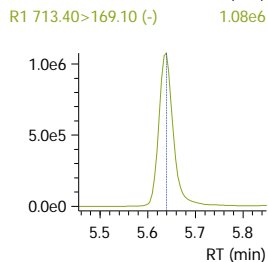
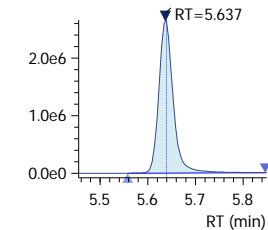
Q 663.00>618.90 (-) 5.15e6



PFTeDA

Conc 15.4884
Area 5541293
R#1 40.58 (61.49)

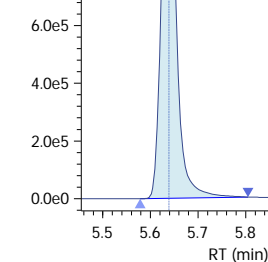
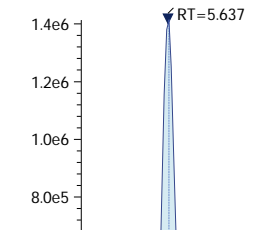
Q 713.40>669.00 (-) 2.66e6



PFTeDA-13C

Conc 5.2594
Area 2930046

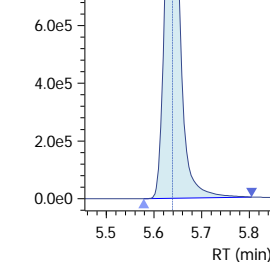
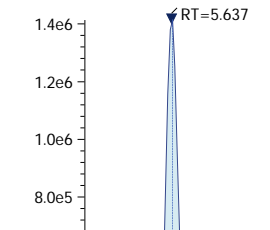
Q 714.70>669.90 (-) 1.41e6



PFTeDA-13C_IS

Conc 5.0000
Area 2930046

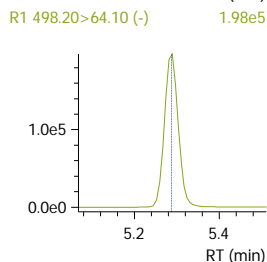
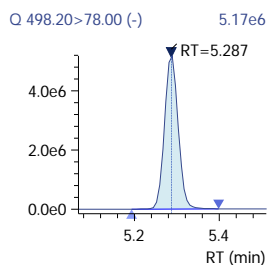
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200812_046 (continued)

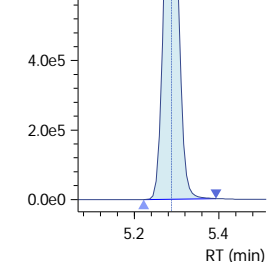
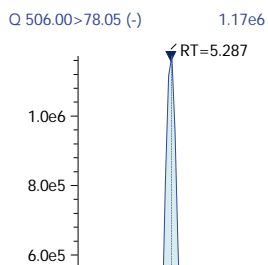
FOSA

Conc 15.6611
 Area 11579689
 R#1 3.82 (4.04)



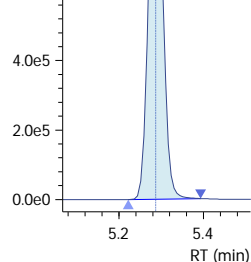
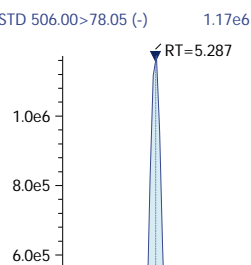
FOSA-13C

Conc 5.4864
 Area 2628519



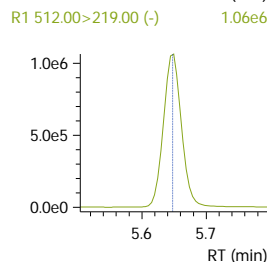
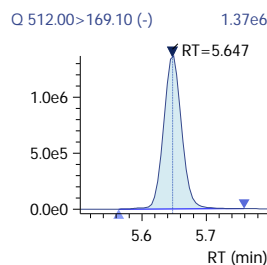
FOSA-13C_IS

Conc 5.0000
 Area 2628519



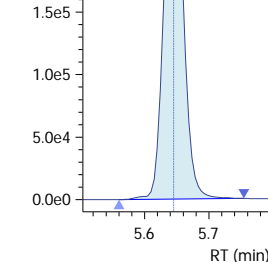
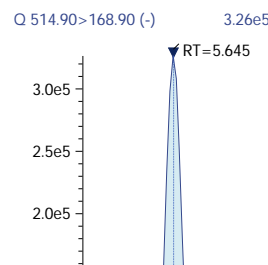
N-MeFOSA

Conc 15.8802
 Area 2667060
 R#1 78.63 (78.52)



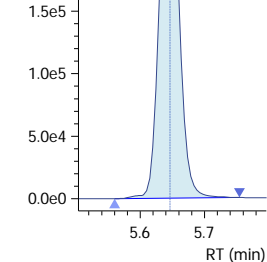
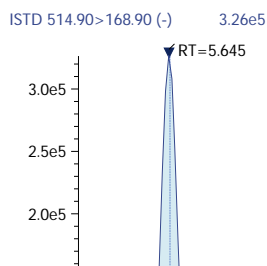
N-MeFOSA-d3

Conc 5.3429
 Area 637549



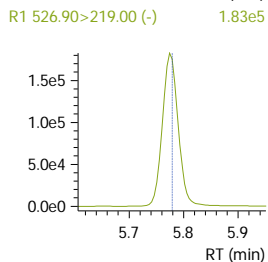
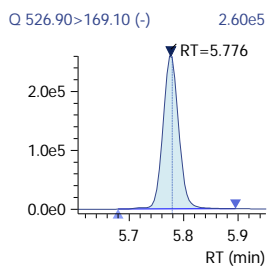
N-MeFOSA-d3_IS

Conc 5.0000
 Area 637549



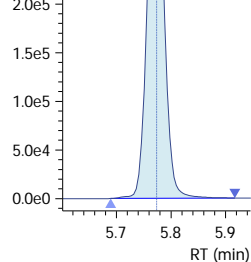
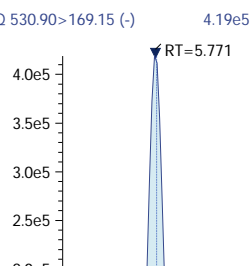
N-EtFOSA

Conc 15.1667
 Area 523759
 R#1 70.14 (0.00)



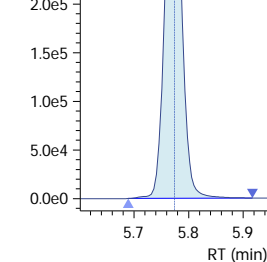
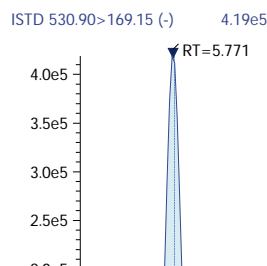
N-EtFOSA-d9

Conc 5.6673
 Area 842732



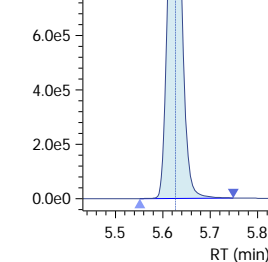
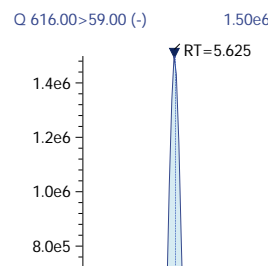
N-EtFOSA-d9_IS

Conc 5.0000
 Area 842732

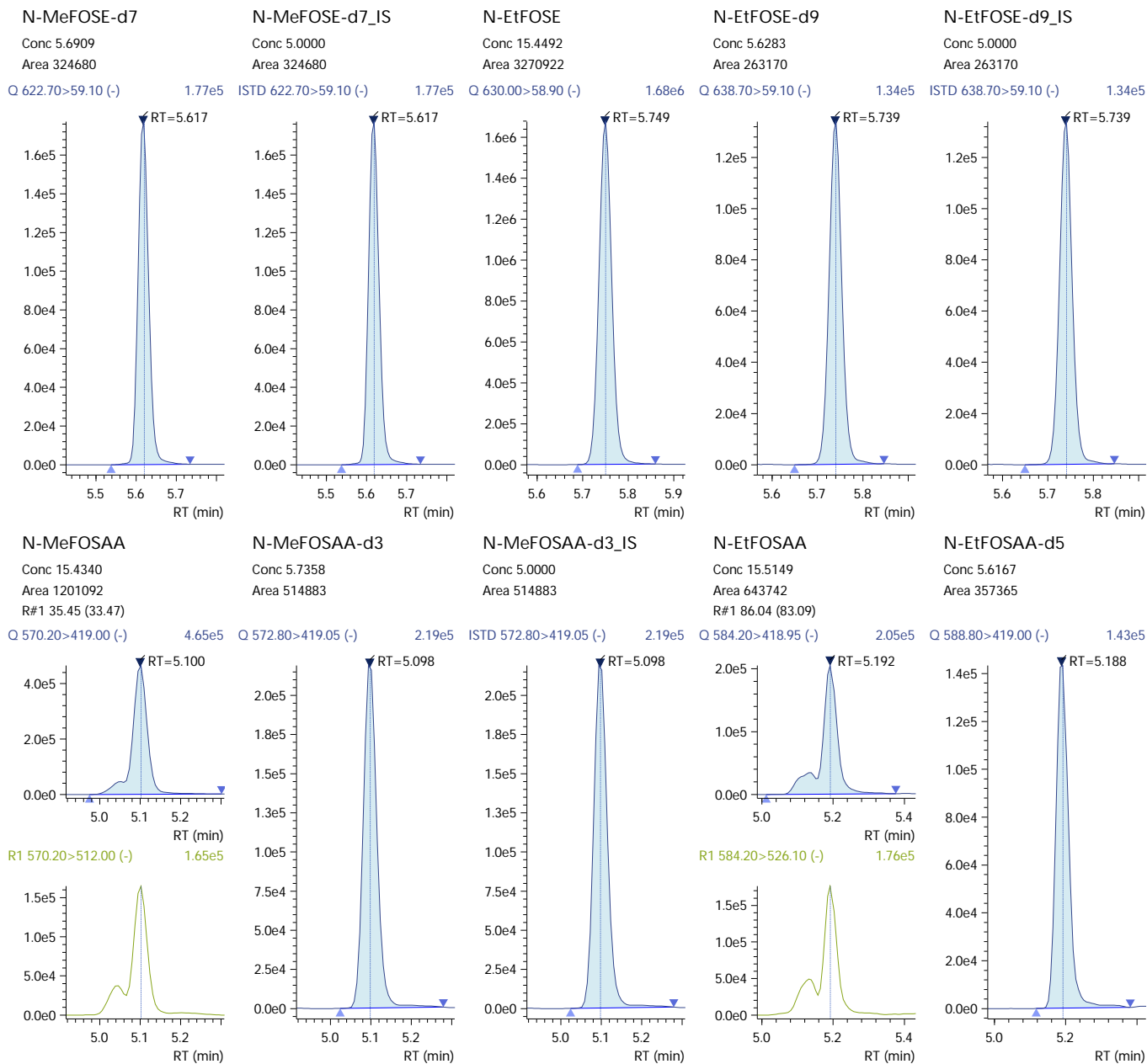


N-MeFOSE

Conc 14.1716
 Area 2854599



200812_046 (continued)



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200812_046 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
Area 357365

4_2-FTS_1

Conc 13.1205
Area 2483426
R#1 40.18 (54.93)

4_2-FTS-13C

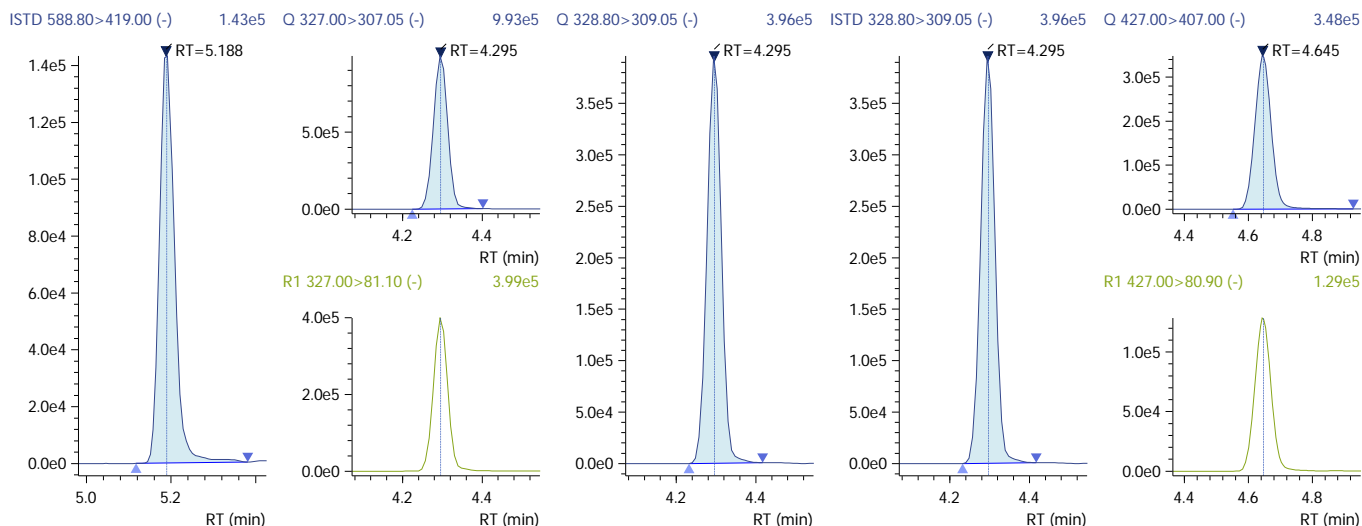
Conc 5.3692
Area 991773

4_2-FTS-13C_IS

Conc 5.0000
Area 991773

6_2-FTS_1

Conc 13.8753
Area 1243267
R#1 36.74 (36.33)



6_2-FTS-13C

Conc 4.0927
Area 408645

6_2-FTS-13C_IS

Conc 5.0000
Area 408645

8_2-FTS_1

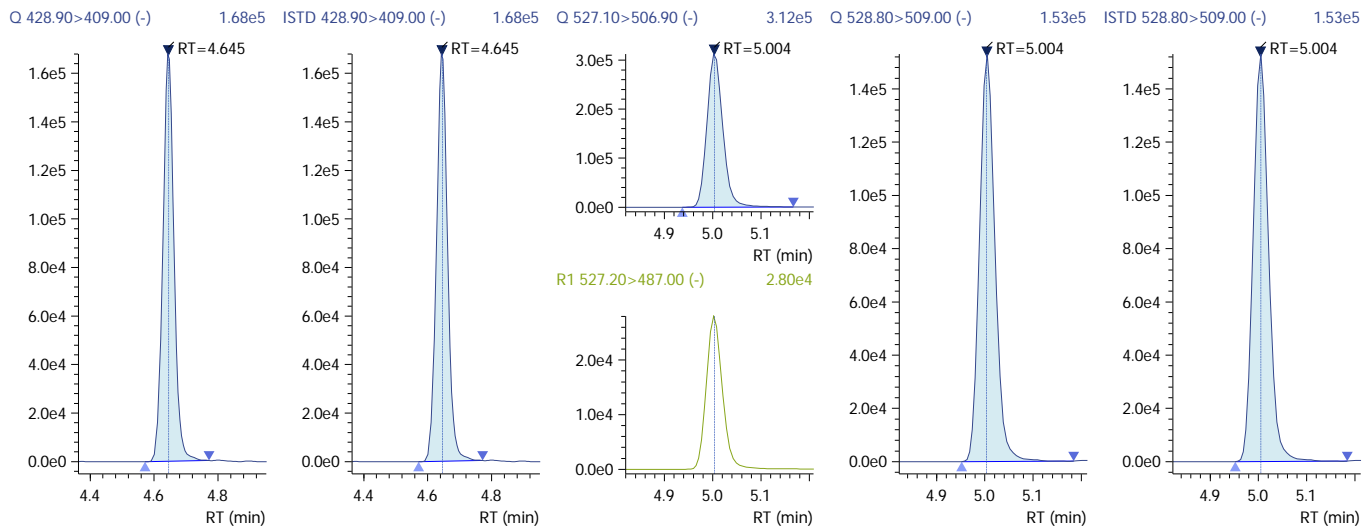
Conc 13.7251
Area 708787
R#1 8.95 (8.96)

8_2-FTS-13C

Conc 4.4763
Area 338244

8_2-FTS-13C_IS

Conc 5.0000
Area 338244



Insight Report

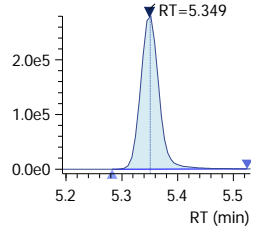
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200812_046 (continued)

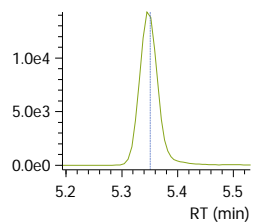
10_2-FtS_1

Conc 15.9108
Area 638534
R#1 4.89 (5.92)

Q 627.00>606.95 (-) 2.80e5



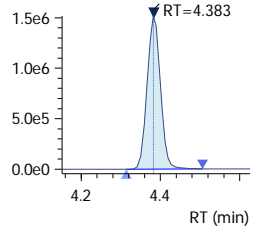
R1 627.00>81.25 (-) 1.43e4



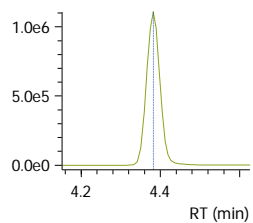
HPFO_DA

Conc 14.8027
Area 3534536
R#1 73.01 (72.82)

Q 329.00>169.00 (-) 1.52e6



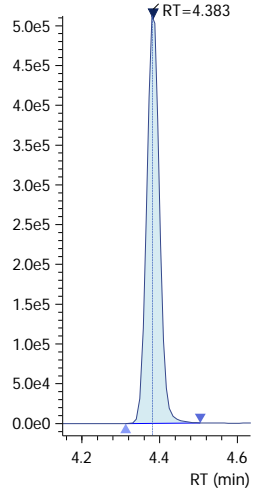
R1 329.00>285.10 (-) 1.11e6



HFPO_DA-13C

Conc 5.5569
Area 1188578

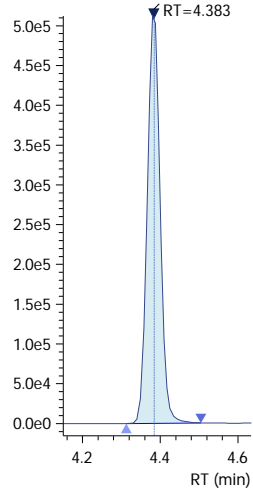
Q 332.00>286.80 (-) 5.12e5



HFPO_DA-13C_IS

Conc 5.0000
Area 1188578

ISTD 332.00>286.80 (-) 5.12e5

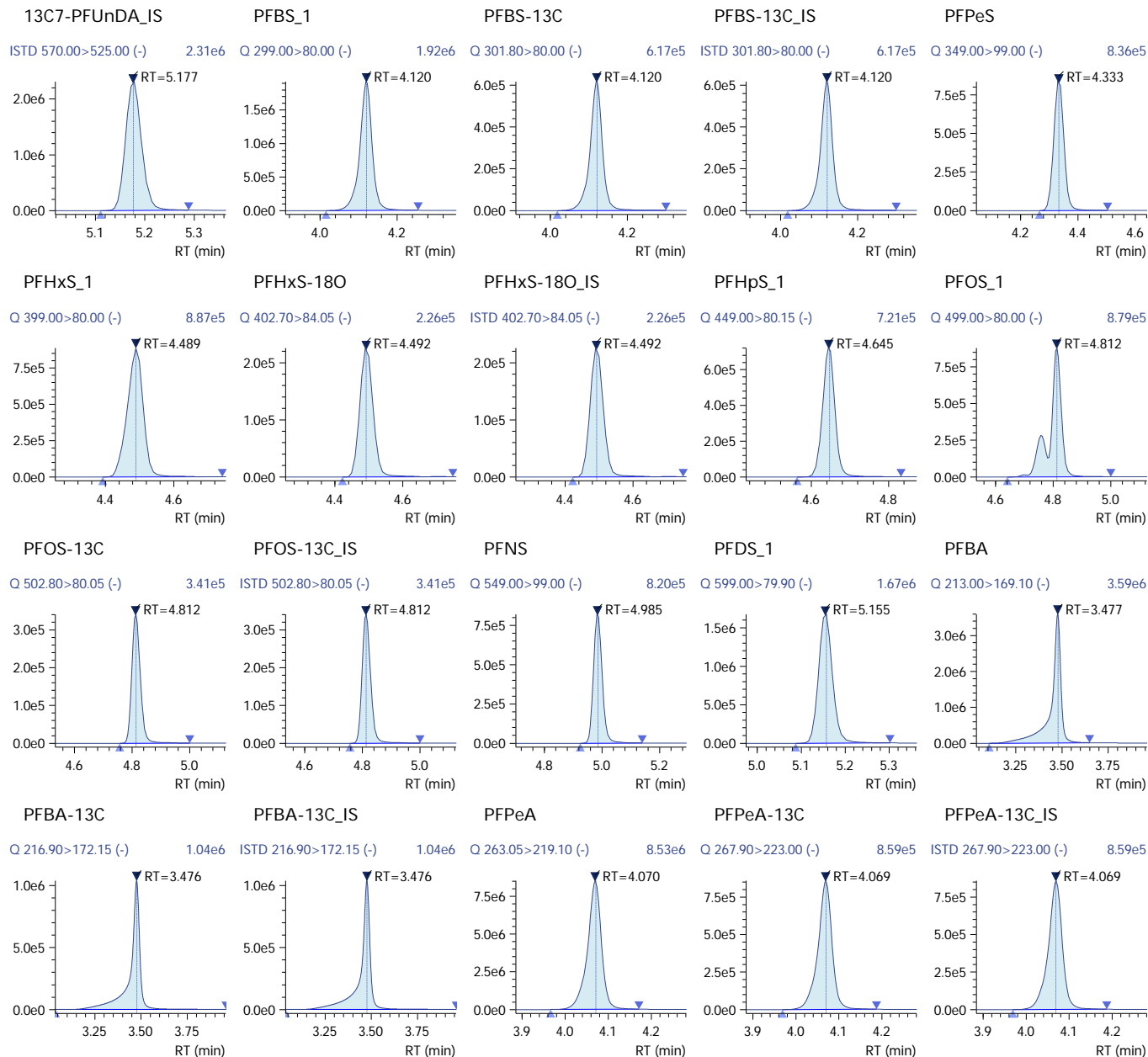


Insight Report

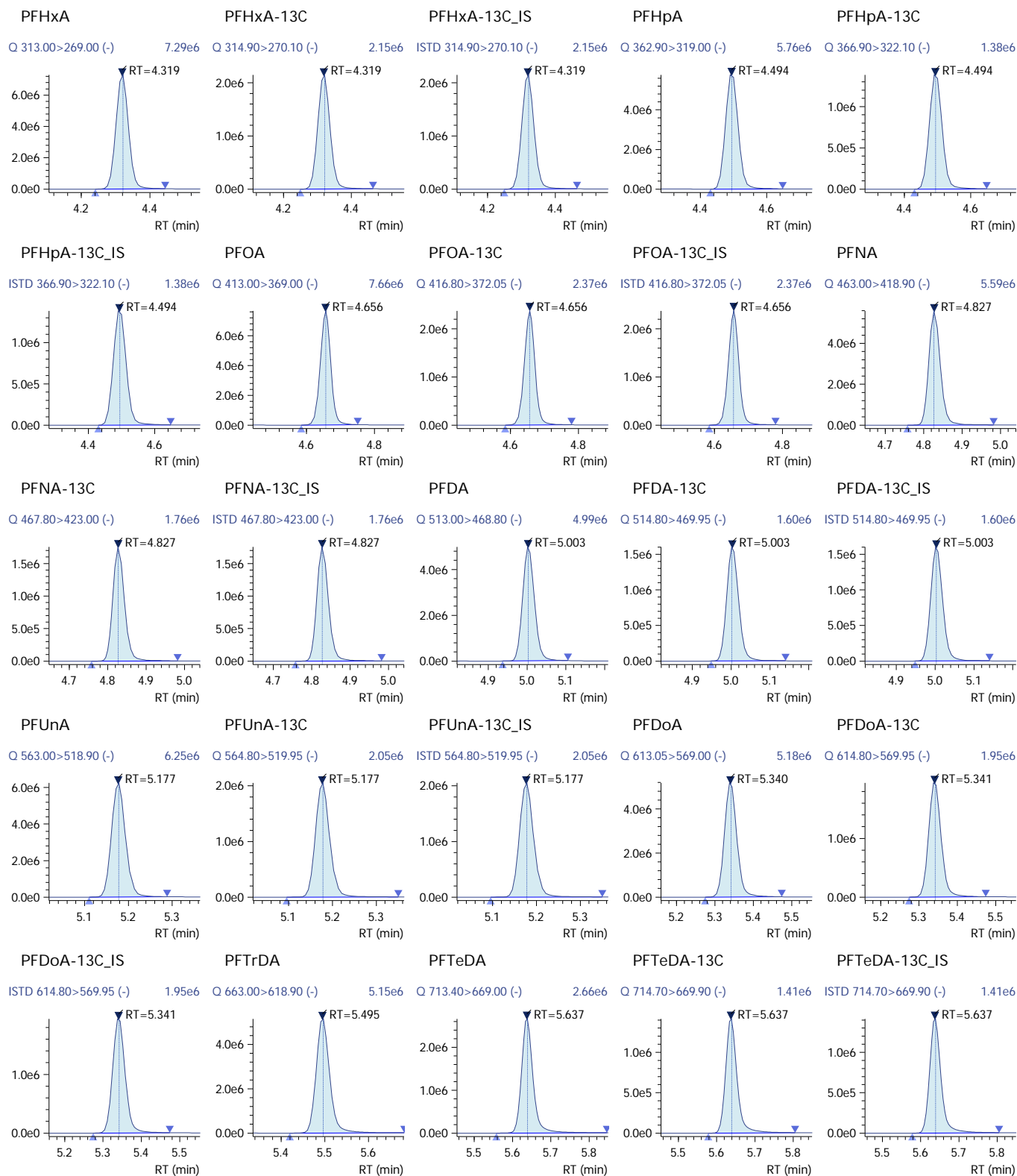
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200812_046

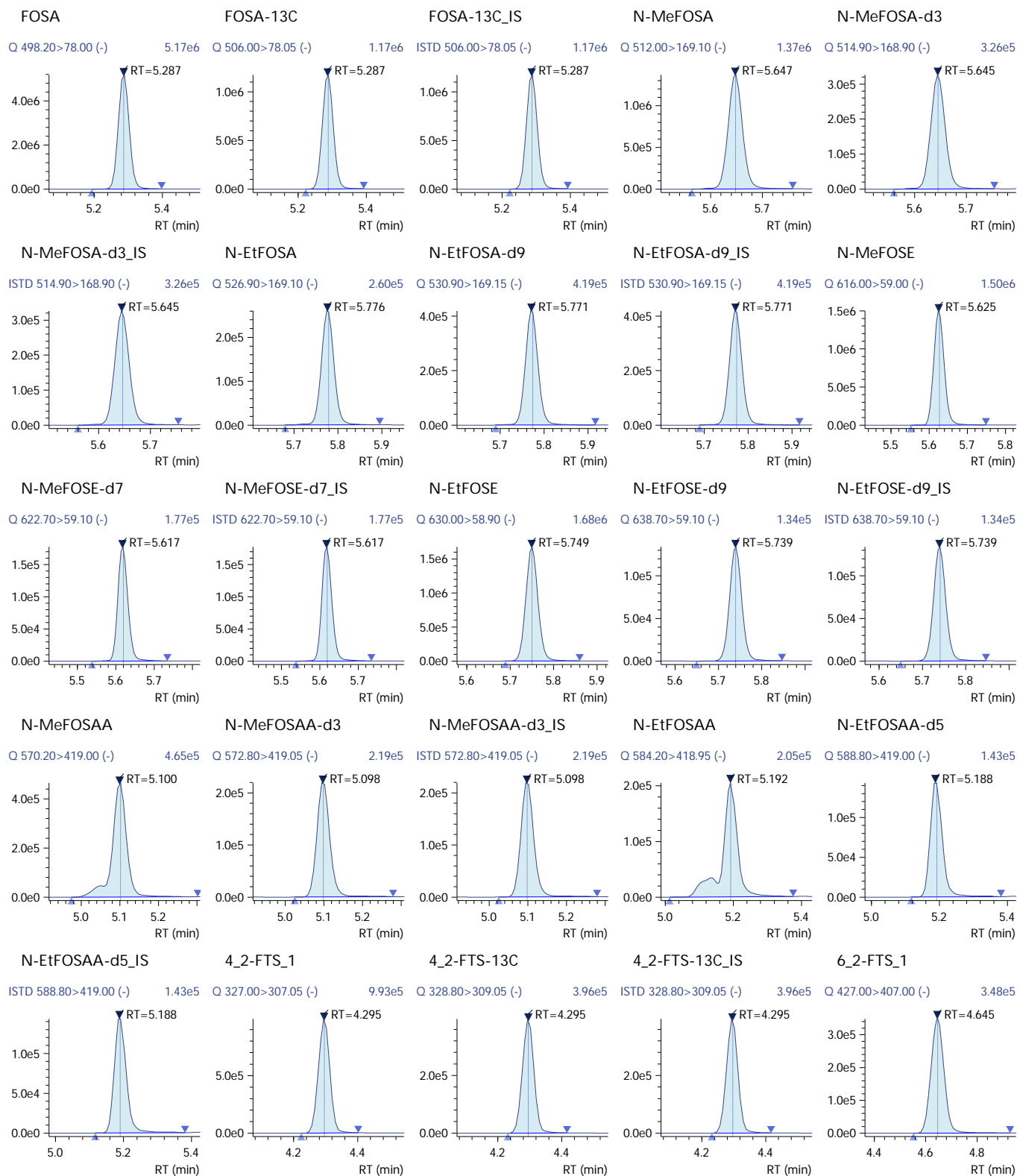
Sample ID: 15.0 PPB ICAL
Date Acquired: 8/12/2020 8:43:34 PM
Acquired by: System Administrator
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Vial: 7 | Inj. Volume: 15.0000uL | Tray: 0



200812_046 (continued)



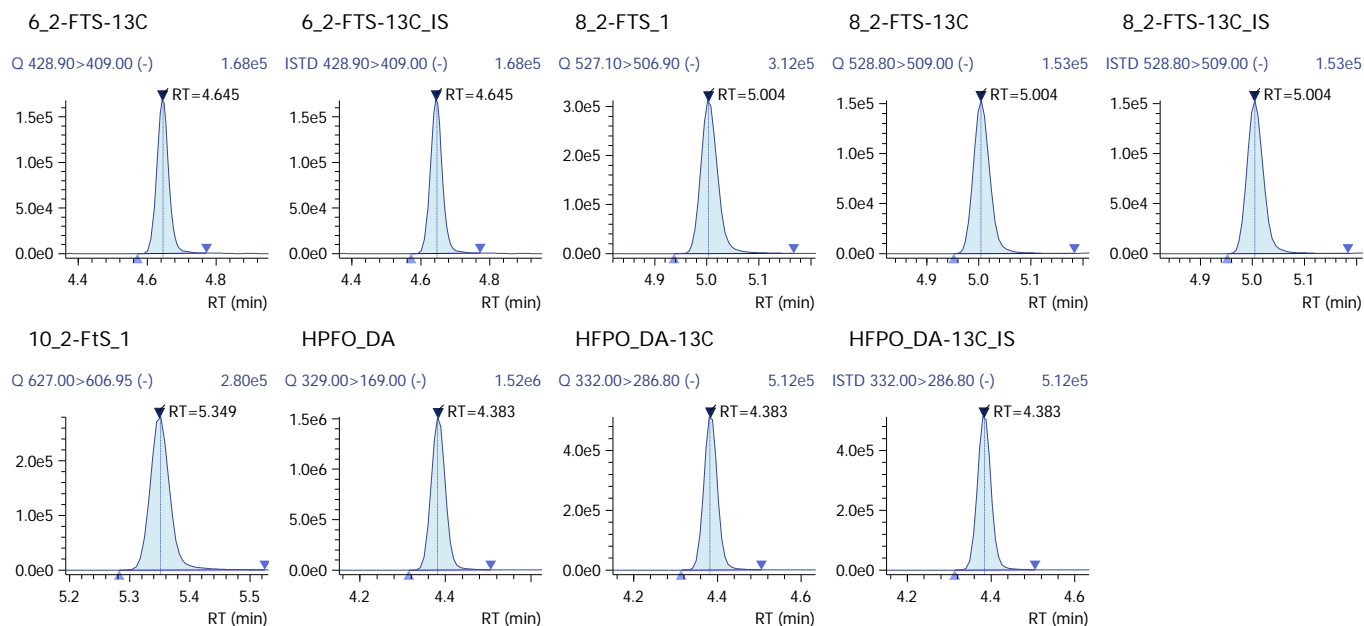
200812_046 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_046 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_047

Sample ID: CCB
 Date Acquired: 8/12/2020 8:54:21 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_047.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.181	6333973	6333973	1	5.0000	ng/mL	0.0000	----
PFBS_1	M	4.123	1578	1413406	2	0.0048	ng/mL	0.0000	65.74
PFBS-13C	Auto	4.125	1413406	6333973	1	4.7275	ng/mL	0.0000	----
PFBS-13C_IS	Auto	4.125	1413406	1413406	2	5.0000	ng/mL	0.0000	----
PFPeS	M	4.318	355	1413406	2	0.0024	ng/mL	0.0000	0.00
PFHxS_1	Auto	4.496	4491	819233	3	0.0159	ng/mL	0.0000	62.55
PFHxS-18O	Auto	4.496	819233	6333973	1	5.5019	ng/mL	0.0000	----
PFHxS-18O_IS	Auto	4.496	819233	819233	3	5.0000	ng/mL	0.0000	----
PFHpS_1	M	4.649	209	819233	3	0.0015	ng/mL	0.0000	83.05
PFOS_1	Auto	4.818	766	701877	4	0.0044	ng/mL	0.0000	46.88
PFOS-13C	Auto	4.819	701877	6333973	1	4.5389	ng/mL	0.0000	----
PFOS-13C_IS	Auto	4.819	701877	701877	4	5.0000	ng/mL	0.0000	----
PFNS	M	4.971	179	701877	4	0.0015	ng/mL	0.0000	22.86
PFDS_1	Auto	5.171	171	701877	4	0.0007	ng/mL	0.0000	37.08
PFBA	M	3.483	4242	3734338	5	0.0051	ng/mL	0.0000	----
PFBA-13C	Auto	3.481	3734338	6333973	1	4.7166	ng/mL	0.0000	----
PFBA-13C_IS	Auto	3.481	3734338	3734338	5	5.0000	ng/mL	0.0000	----
PFPeA	Auto	4.024	84455	2199295	6	0.0034	ng/mL	0.0000	----
PFPeA-13C	Auto	4.074	2199295	6333973	1	4.8815	ng/mL	0.0000	----
PFPeA-13C_IS	Auto	4.074	2199295	2199295	6	5.0000	ng/mL	0.0000	----
PFHxA	M	4.311	79041	7509628	7	-0.0058	ng/mL	0.0000	1.33
PFHxA-13C	Auto	4.325	7509628	6333973	1	5.3970	ng/mL	0.0000	----
PFHxA-13C_IS	Auto	4.325	7509628	7509628	7	5.0000	ng/mL	0.0000	----
PFHpA	Auto	4.492	41004	5119189	8	0.0155	ng/mL	0.0000	26.31
PFHpA-13C	Auto	4.498	5119189	6333973	1	5.1470	ng/mL	0.0000	----
PFHpA-13C_IS	Auto	4.498	5119189	5119189	8	5.0000	ng/mL	0.0000	----
PFOA	Auto	4.657	53831	7385921	9	0.0068	ng/mL	0.0000	35.51
PFOA-13C	Auto	4.661	7385921	6333973	1	5.2233	ng/mL	0.0000	----
PFOA-13C_IS	Auto	4.661	7385921	7385921	9	5.0000	ng/mL	0.0000	----
PFNA	M	4.830	23993	5061091	10	0.0103	ng/mL	0.0000	12.82
PFNA-13C	Auto	4.832	5061091	6333973	1	5.2818	ng/mL	0.0000	----
PFNA-13C_IS	Auto	4.832	5061091	5061091	10	5.0000	ng/mL	0.0000	----
PFDA	Auto	5.005	25888	4448488	11	0.0277	ng/mL	0.0000	16.32
PFDA-13C	Auto	5.007	4448488	6333973	1	5.0118	ng/mL	0.0000	----
PFDA-13C_IS	Auto	5.007	4448488	4448488	11	5.0000	ng/mL	0.0000	----
PFUnA	Auto	5.179	27653	5322502	12	-0.0013	ng/mL	0.0000	12.39
PFUnA-13C	Auto	5.181	5322502	6333973	1	4.8888	ng/mL	0.0000	----
PFUnA-13C_IS	Auto	5.181	5322502	5322502	12	5.0000	ng/mL	0.0000	----
PFDaA	Auto	5.345	32881	5048294	13	0.0233	ng/mL	0.0000	13.53
PFDaA-13C	Auto	5.345	5048294	6333973	1	4.8187	ng/mL	0.0000	----
PFDaA-13C_IS	Auto	5.345	5048294	5048294	13	5.0000	ng/mL	0.0000	----
PFTrDA	M	5.500	26992	3409809	14	0.0141	ng/mL	0.0000	24.09
PFTeDA	Auto	5.642	72736	3409809	14	0.0394	ng/mL	0.0000	783.59
PFTeDA-13C	Auto	5.643	3409809	6333973	1	5.0749	ng/mL	0.0000	----
PFTeDA-13C_IS	Auto	5.643	3409809	3409809	14	5.0000	ng/mL	0.0000	----
FOSA	Auto	5.291	7246	2787937	16	0.0092	ng/mL	0.0000	2.49
FOSA-13C	Auto	5.292	2787937	6333973	1	4.8249	ng/mL	0.0000	----
FOSA-13C_IS	Auto	5.292	2787937	2787937	16	5.0000	ng/mL	0.0000	----
N-MeFOSA	M	5.654	1820	658009	17	0.0105	ng/mL	0.0000	72.79
N-MeFOSA-d3	Auto	5.650	658009	6333973	1	4.5722	ng/mL	0.0000	----
N-MeFOSA-d3_IS	Auto	5.650	658009	658009	17	5.0000	ng/mL	0.0000	----
N-EtFOSA	M	5.782	242	838061	18	0.0070	ng/mL	0.0000	45.40
N-EtFOSA-d9	Auto	5.777	838061	6333973	1	4.6730	ng/mL	0.0000	----
N-EtFOSA-d9_IS	Auto	5.777	838061	838061	18	5.0000	ng/mL	0.0000	----
N-MeFOSE	M	5.630	907	323295	19	0.0045	ng/mL	0.0000	----

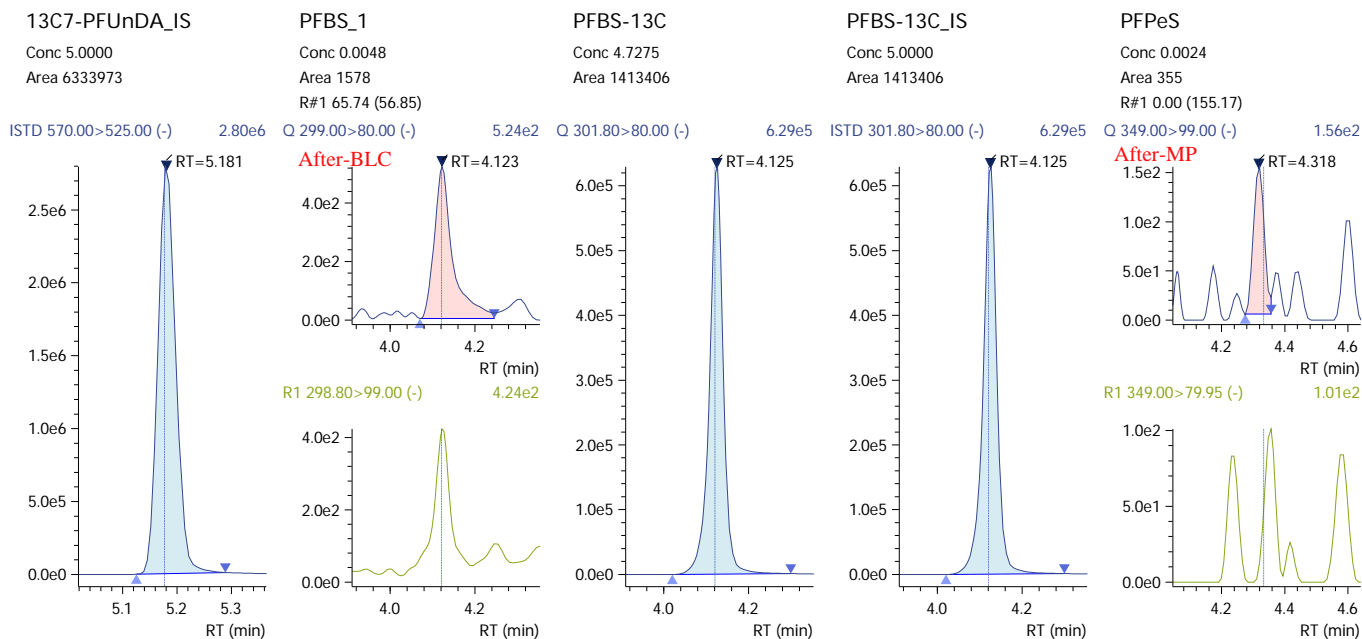
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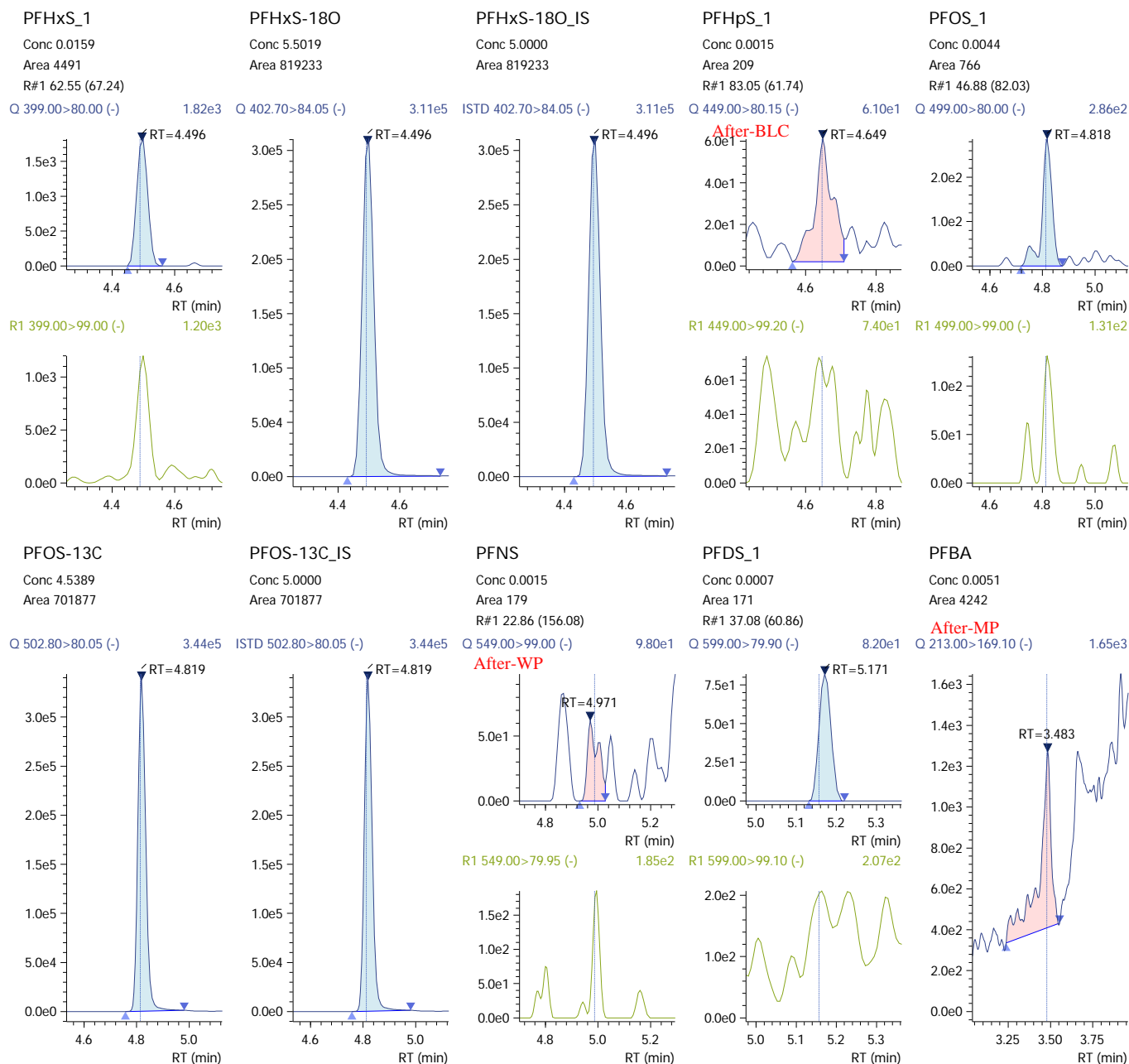
200812_047 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.623	323295	6333973	1	4.6985	ng/mL	0.0000	----
N-MeFOSE-d7_IS	Auto	5.623	323295	323295	19	5.0000	ng/mL	0.0000	----
N-EtFOSE	ND(W /B)	----	----	267737	20	----	ng/mL	0.0000	----
N-EtFOSE-d9	Auto	5.745	267737	6333973	1	4.7477	ng/mL	0.0000	----
N-EtFOSE-d9_IS	Auto	5.745	267737	267737	20	5.0000	ng/mL	0.0000	----
N-MeFOSAA	M	5.106	6203	510701	21	0.0804	ng/mL	0.0000	34.87
N-MeFOSAA-d3	Auto	5.103	510701	6333973	1	4.7172	ng/mL	0.0000	----
N-MeFOSAA-d3_IS	Auto	5.103	510701	510701	21	5.0000	ng/mL	0.0000	----
N-EtFOSAA	Auto	5.197	1754	314878	22	0.0480	ng/mL	0.0000	30.67
N-EtFOSAA-d5	Auto	5.193	314878	6333973	1	4.1034	ng/mL	0.0000	----
N-EtFOSAA-d5_IS	Auto	5.193	314878	314878	22	5.0000	ng/mL	0.0000	----
4_2-FTS_1	M	4.307	773	1004056	23	0.0040	ng/mL	0.0000	53357.64
4_2-FTS-13C	Auto	4.301	1004056	6333973	1	4.5070	ng/mL	0.0000	----
4_2-FTS-13C_IS	Auto	4.301	1004056	1004056	23	5.0000	ng/mL	0.0000	----
6_2-FTS_1	Auto	4.650	777	642886	24	0.0055	ng/mL	0.0000	101.81
6_2-FTS-13C	Auto	4.652	642886	6333973	1	5.3386	ng/mL	0.0000	----
6_2-FTS-13C_IS	Auto	4.652	642886	642886	24	5.0000	ng/mL	0.0000	----
8_2-FTS_1	Auto	5.007	221	483738	25	0.0030	ng/mL	0.0000	4.04
8_2-FTS-13C	Auto	5.009	483738	6333973	1	5.3080	ng/mL	0.0000	----
8_2-FTS-13C_IS	Auto	5.009	483738	483738	25	5.0000	ng/mL	0.0000	----
10_2-FTS_1	M	5.352	231	483738	25	0.0040	ng/mL	0.0000	0.00
HPFO_DA	M	4.389	477	1123588	26	0.0021	ng/mL	0.0000	80.12
HPFO_DA-13C	Auto	4.388	1123588	6333973	1	4.3556	ng/mL	0.0000	----
HPFO_DA-13C_IS	Auto	4.388	1123588	1123588	26	5.0000	ng/mL	0.0000	----



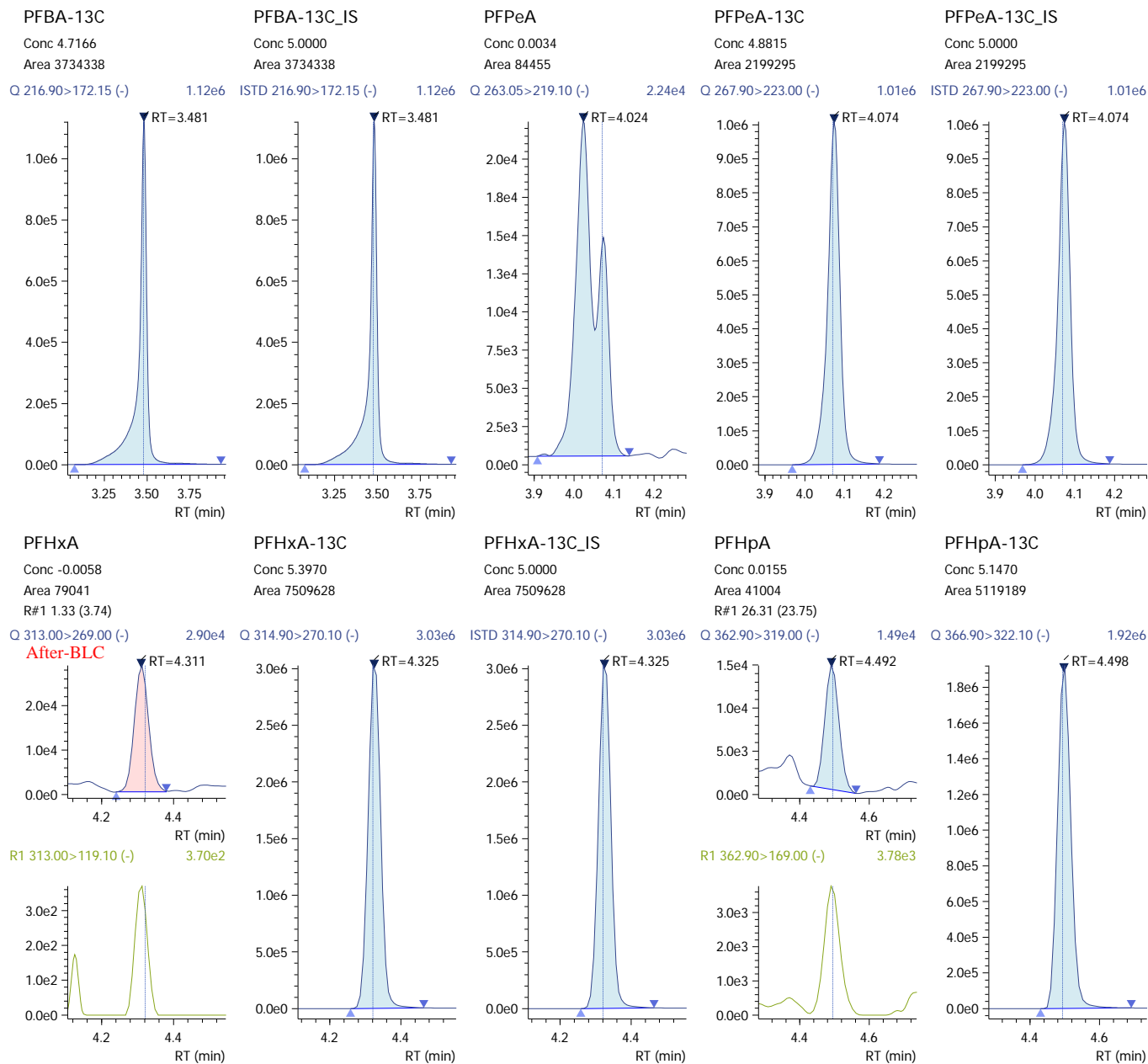
200812_047 (continued)



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200812_047 (continued)



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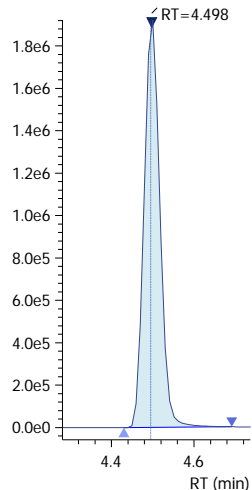
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200812_047 (continued)

PFHpA-13C_IS

Conc 5.0000
 Area 5119189

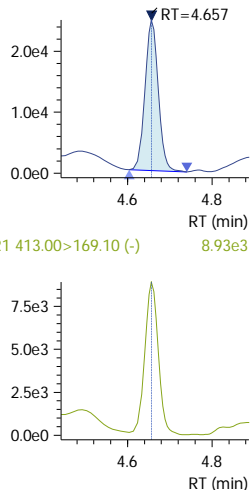
ISTD 366.90>322.10 (-) 1.92e6



PFOA

Conc 0.0068
 Area 53831
 R#1 35.51 (34.80)

Q 413.00>369.00 (-) 2.52e4

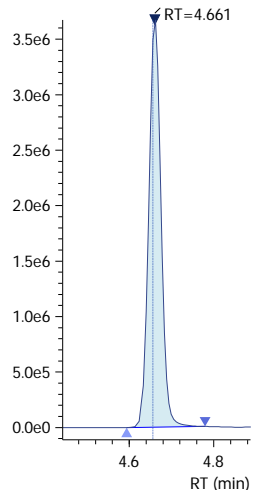


R1 413.00>169.10 (-) 8.93e3

PFOA-13C

Conc 5.2233
 Area 7385921

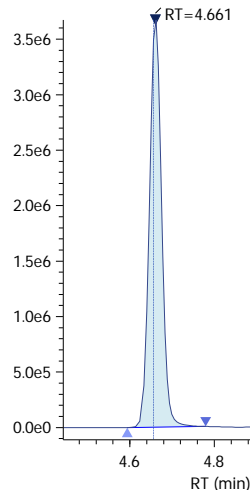
Q 416.80>372.05 (-) 3.67e6



PFOA-13C_IS

Conc 5.0000
 Area 7385921

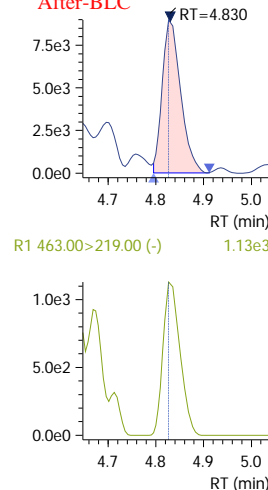
ISTD 416.80>372.05 (-) 3.67e6



PFNA

Conc 0.0103
 Area 23993
 R#1 12.82 (22.71)

Q 463.00>418.90 (-) 8.99e3

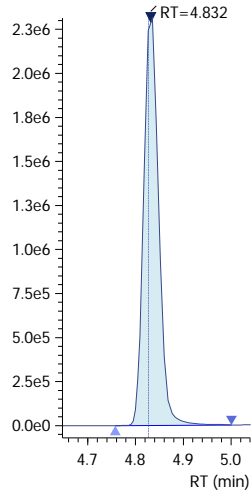


R1 463.00>219.00 (-) 1.13e3

PFNA-13C

Conc 5.2818
 Area 5061091

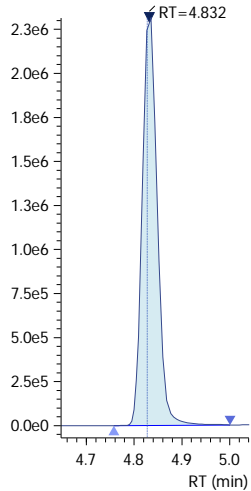
Q 467.80>423.00 (-) 2.31e6



PFNA-13C_IS

Conc 5.0000
 Area 5061091

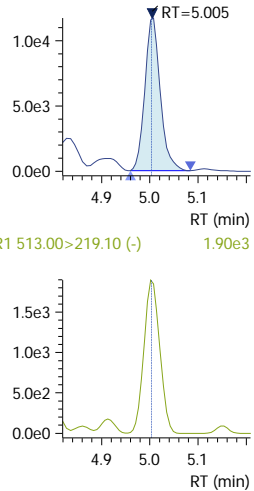
ISTD 467.80>423.00 (-) 2.31e6



PFDA

Conc 0.0277
 Area 25888
 R#1 16.32 (22.06)

Q 513.00>468.80 (-) 1.17e4

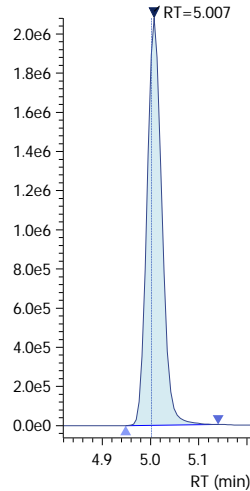


R1 513.00>219.10 (-) 1.90e3

PFDA-13C

Conc 5.0118
 Area 4448488

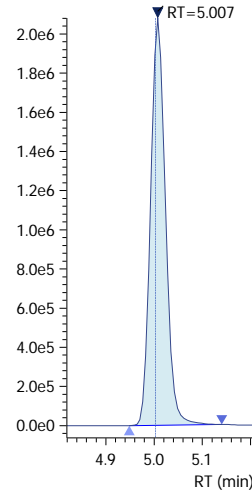
Q 514.80>469.95 (-) 2.08e6



PFDA-13C_IS

Conc 5.0000
 Area 4448488

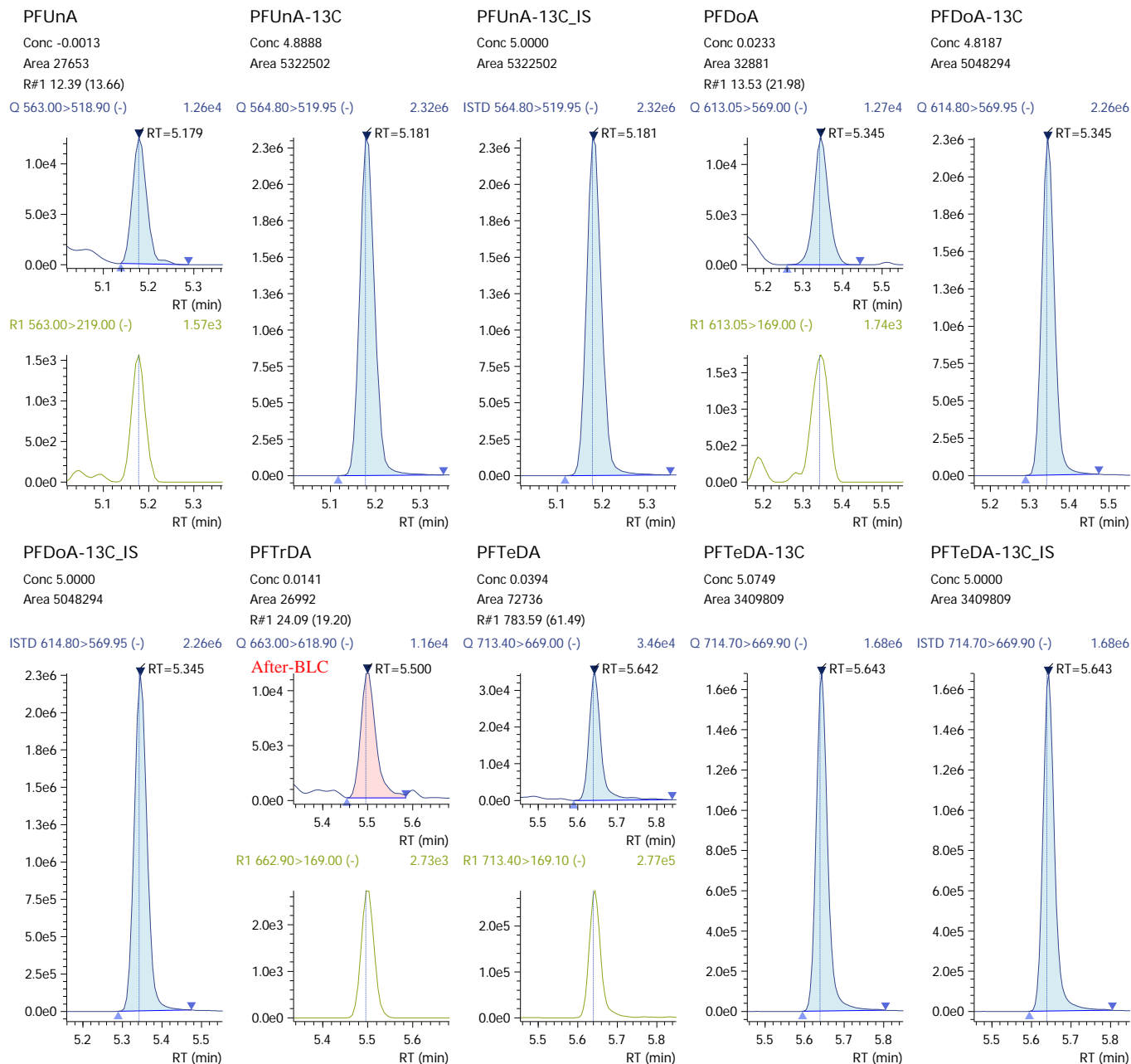
ISTD 514.80>469.95 (-) 2.08e6



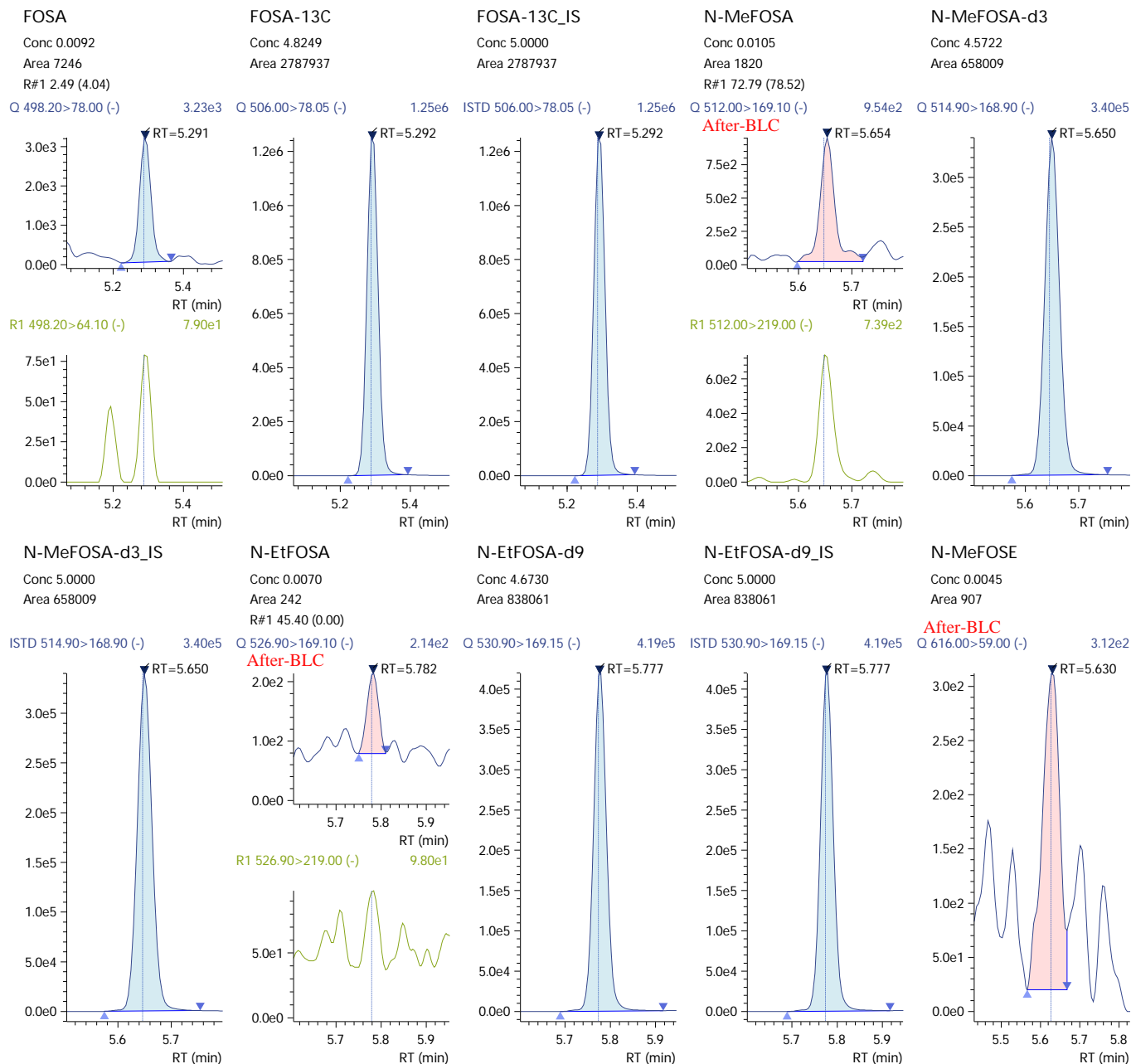
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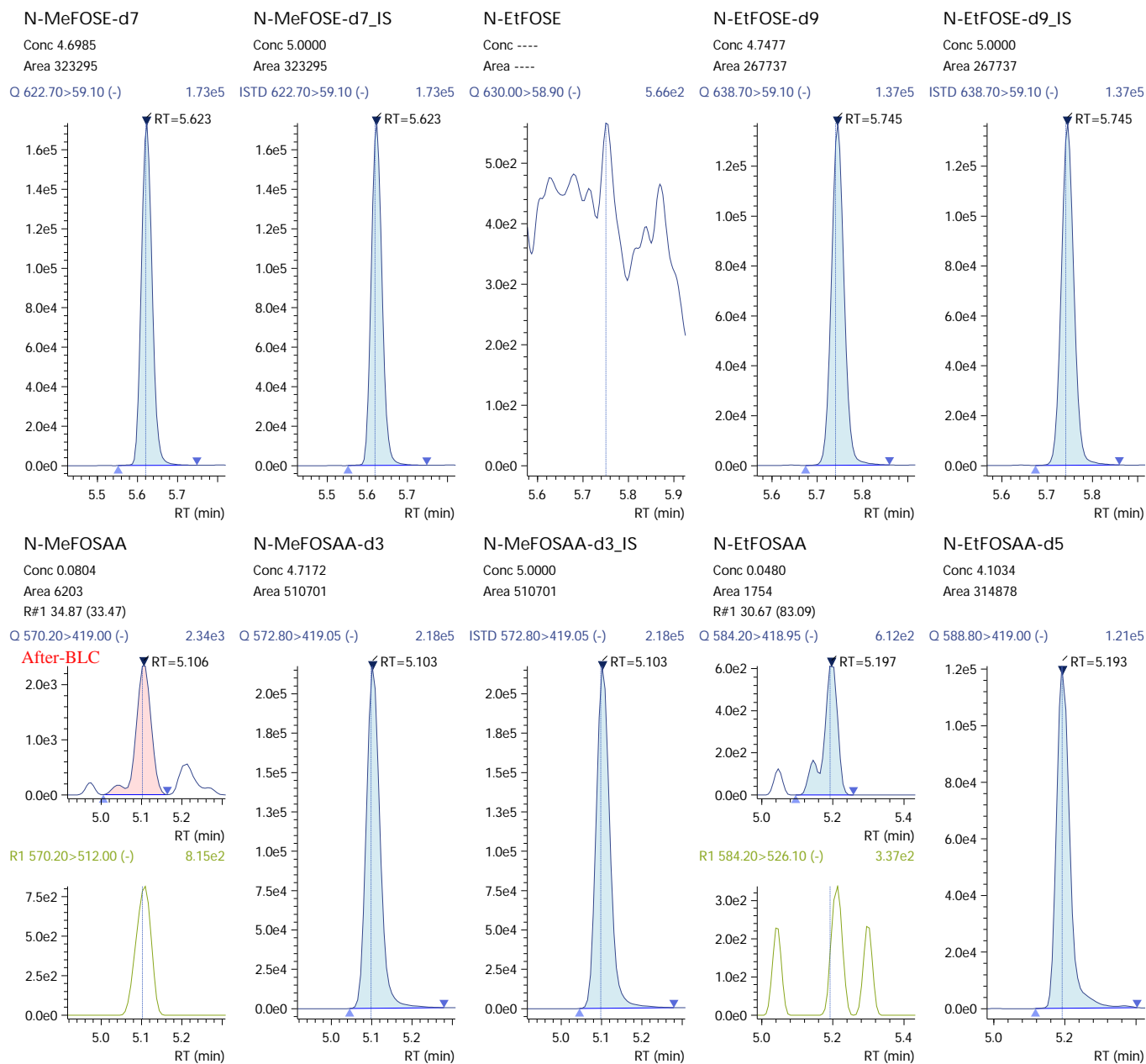
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200812_047 (continued)



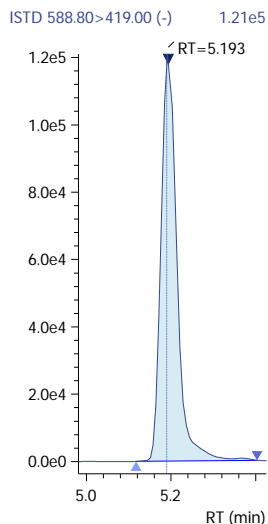
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200812_047 (continued)

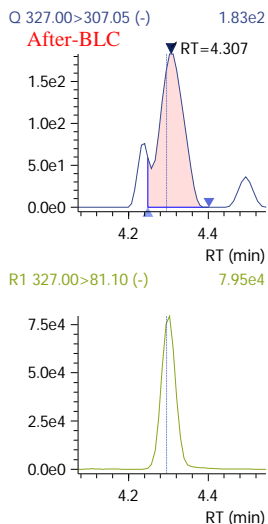
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 314878



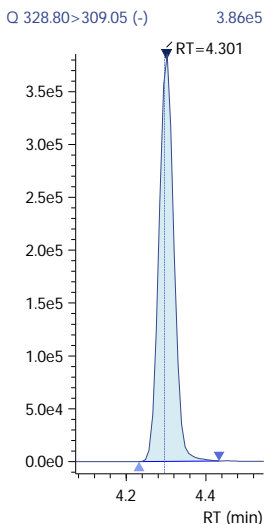
4_2-FTS_1

Conc 0.0040
 Area 773
 R#1 53357.64 (54.93)



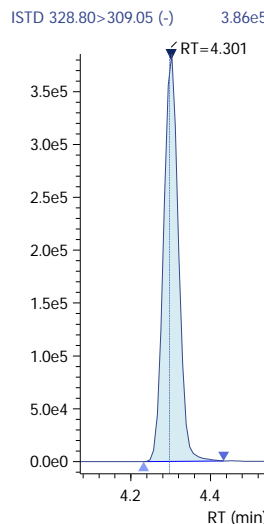
4_2-FTS-13C

Conc 4.5070
 Area 1004056



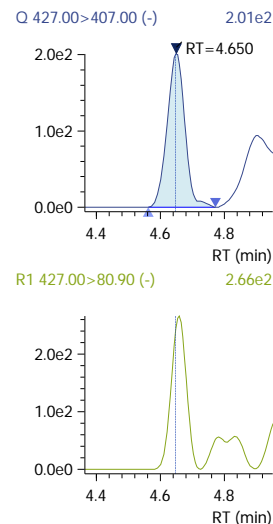
4_2-FTS-13C_IS

Conc 5.0000
 Area 1004056



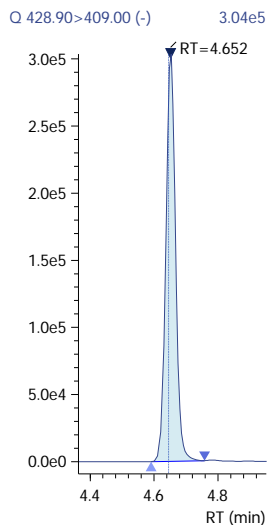
6_2-FTS_1

Conc 0.0055
 Area 777
 R#1 101.81 (36.33)



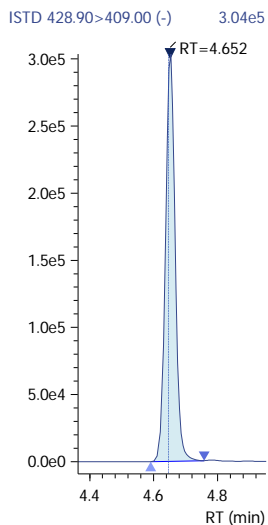
6_2-FTS-13C

Conc 5.3386
 Area 642886



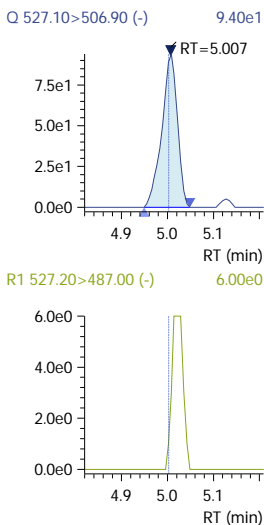
6_2-FTS-13C_IS

Conc 5.0000
 Area 642886



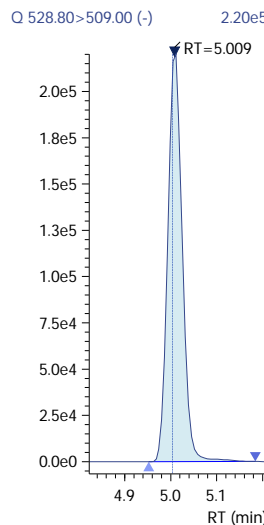
8_2-FTS_1

Conc 0.0030
 Area 221
 R#1 4.04 (8.96)



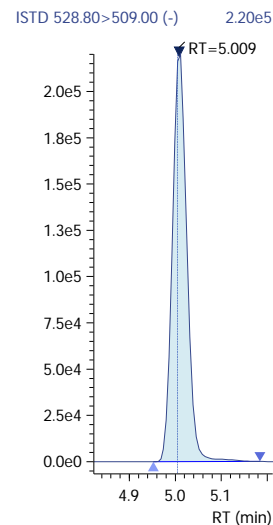
8_2-FTS-13C

Conc 5.3080
 Area 483738



8_2-FTS-13C_IS

Conc 5.0000
 Area 483738



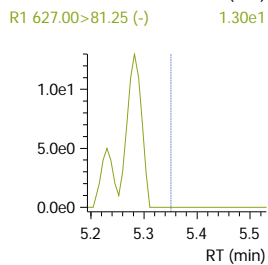
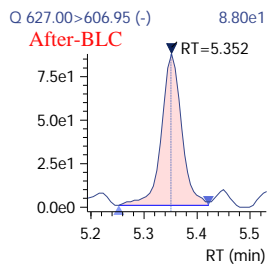
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200812_047 (continued)

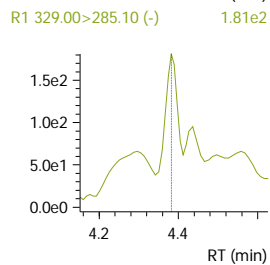
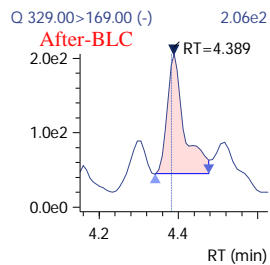
10_2-FtS_1

Conc 0.0040
Area 231
R#1 0.00 (5.92)



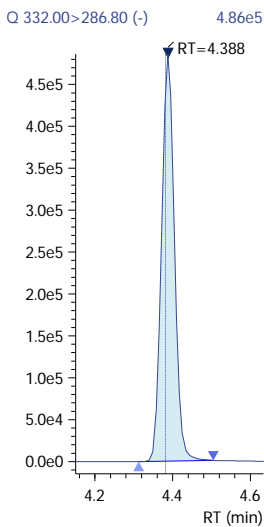
HPFO_DA

Conc 0.0021
Area 477
R#1 80.12 (72.82)



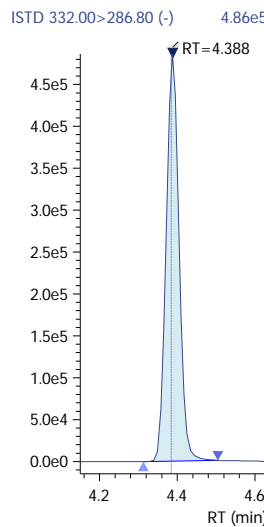
HFPO_DA-13C

Conc 4.3556
Area 1123588



HFPO_DA-13C_IS

Conc 5.0000
Area 1123588

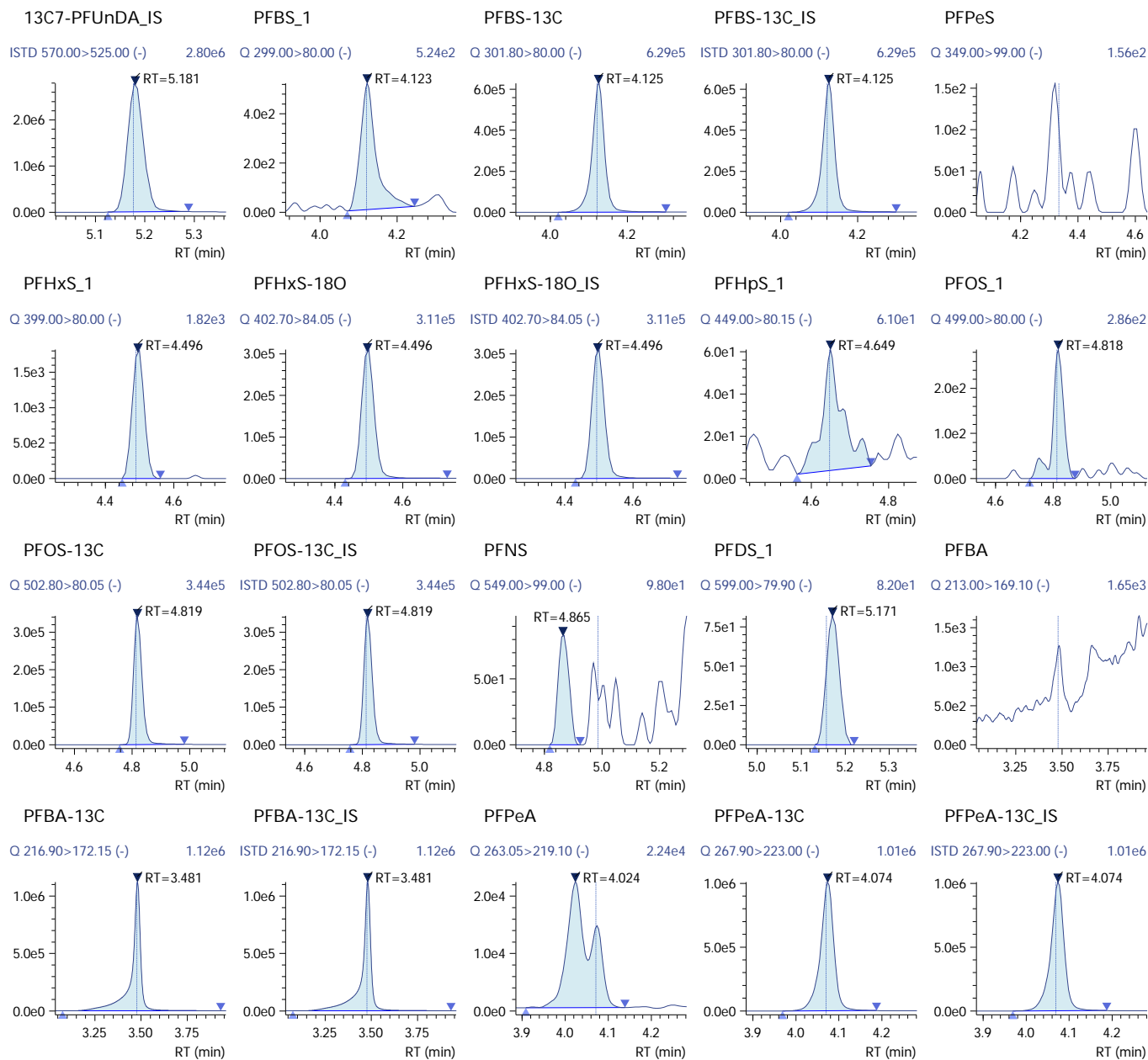


Insight Report

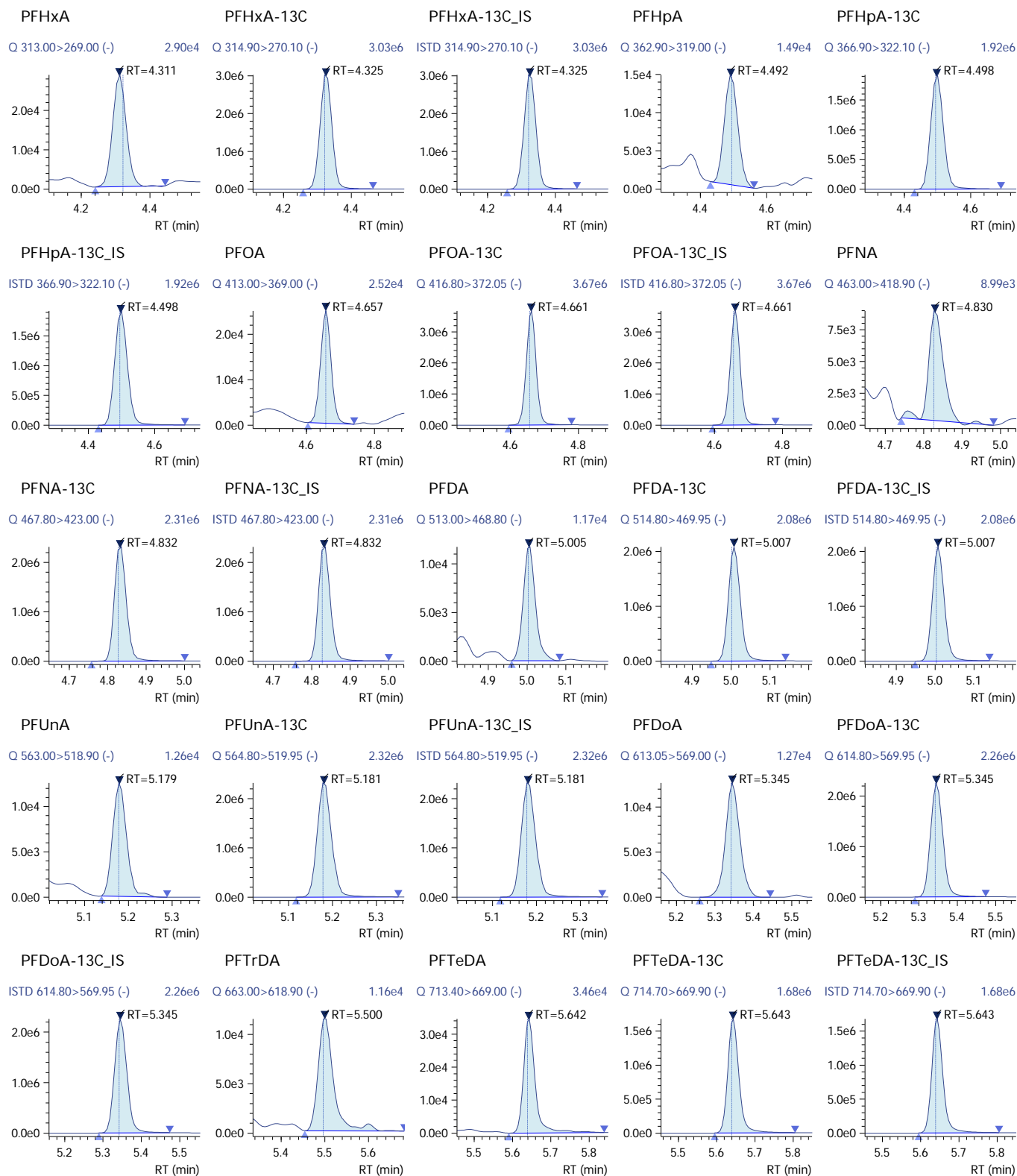
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200812_047

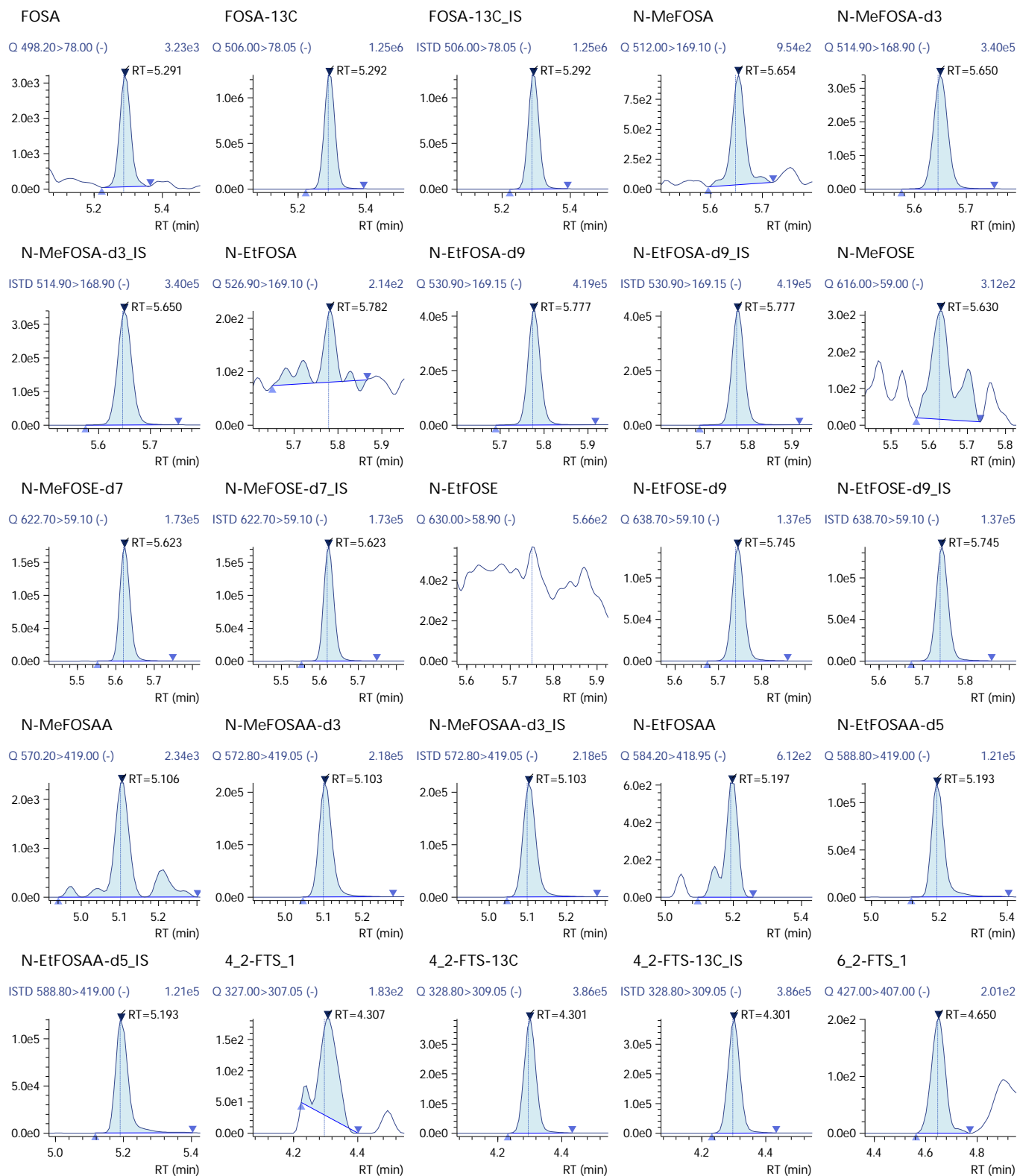
Sample ID: CCB
Date Acquired: 8/12/2020 8:54:21 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_047.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



200812_047 (continued)



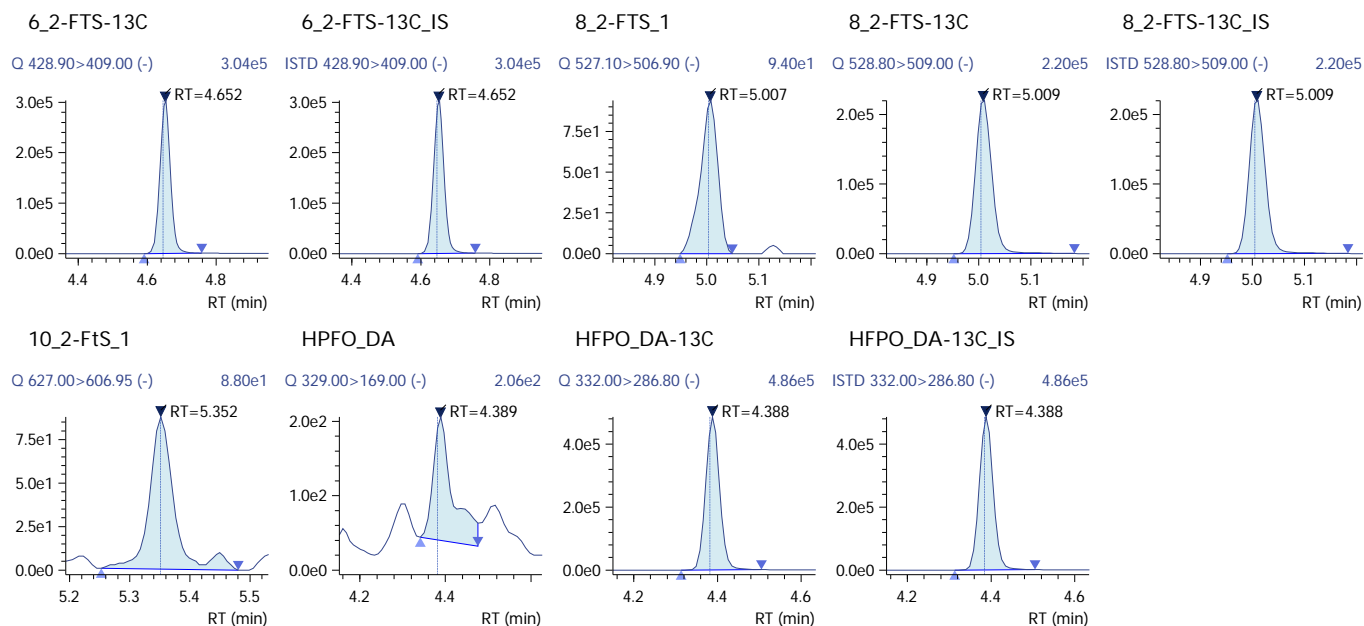
200812_047 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_047 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_048

Sample ID: 1.0 PPB ICV
 Date Acquired: 8/12/2020 9:04:59 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_048.lcd
 Vial: 8 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.180	6119221	6119221	1	5.0000	ng/mL	5.0000	----
PFBS_1	Auto	4.123	279242	1400149	2	0.8650	ng/mL	0.8874	56.12
PFBS-13C	Auto	4.123	1400149	6119221	1	4.8475	ng/mL	5.0000	----
PFBS-13C_IS	Auto	4.123	1400149	1400149	2	5.0000	ng/mL	5.0000	----
PFPeS	Auto	4.335	138107	1400149	2	0.9462	ng/mL	0.9409	169.05
PFHxS_1	Auto	4.493	230306	853319	3	0.7825	ng/mL	0.9131	68.99
PFHxS-18O	Auto	4.495	853319	6119221	1	5.9319	ng/mL	5.0000	----
PFHxS-18O_IS	Auto	4.495	853319	853319	3	5.0000	ng/mL	5.0000	----
PFHpS_1	Auto	4.650	105426	853319	3	0.7295	ng/mL	0.9534	57.94
PFOS_1	Auto	4.816	153897	717805	4	0.8738	ng/mL	0.9292	81.25
PFOS-13C	Auto	4.817	717805	6119221	1	4.8049	ng/mL	5.0000	----
PFOS-13C_IS	Auto	4.817	717805	717805	4	5.0000	ng/mL	5.0000	----
PFNS	Auto	4.989	120361	717805	4	0.9906	ng/mL	0.9616	157.48
PFDS_1	Auto	5.159	228350	717805	4	0.9583	ng/mL	0.9647	57.41
PFBA	Auto	3.478	801979	3711643	5	0.9607	ng/mL	1.0000	----
PFBA-13C	Auto	3.477	3711643	6119221	1	4.8525	ng/mL	5.0000	----
PFBA-13C_IS	Auto	3.477	3711643	3711643	5	5.0000	ng/mL	5.0000	----
PFPeA	Auto	4.072	1369694	2148973	6	0.9767	ng/mL	1.0000	----
PFPeA-13C	Auto	4.072	2148973	6119221	1	4.9372	ng/mL	5.0000	----
PFPeA-13C_IS	Auto	4.072	2148973	2148973	6	5.0000	ng/mL	5.0000	----
PFHxA	Auto	4.323	1439741	6267439	7	1.0334	ng/mL	1.0000	3.55
PFHxA-13C	Auto	4.323	6267439	6119221	1	4.6624	ng/mL	5.0000	----
PFHxA-13C_IS	Auto	4.323	6267439	6267439	7	5.0000	ng/mL	5.0000	----
PFHpA	Auto	4.496	1323840	5640572	8	0.8995	ng/mL	1.0000	24.89
PFHpA-13C	Auto	4.496	5640572	6119221	1	5.8703	ng/mL	5.0000	----
PFHpA-13C_IS	Auto	4.496	5640572	5640572	8	5.0000	ng/mL	5.0000	----
PFOA	Auto	4.659	1418071	7217388	9	0.9429	ng/mL	1.0000	35.35
PFOA-13C	Auto	4.659	7217388	6119221	1	5.2833	ng/mL	5.0000	----
PFOA-13C_IS	Auto	4.659	7217388	7217388	9	5.0000	ng/mL	5.0000	----
PFNA	Auto	4.830	839948	4339102	10	0.9642	ng/mL	1.0000	25.26
PFNA-13C	Auto	4.830	4339102	6119221	1	4.6872	ng/mL	5.0000	----
PFNA-13C_IS	Auto	4.830	4339102	4339102	10	5.0000	ng/mL	5.0000	----
PFDA	Auto	5.006	902626	4413702	11	0.9721	ng/mL	1.0000	23.05
PFDA-13C	Auto	5.006	4413702	6119221	1	5.1471	ng/mL	5.0000	----
PFDA-13C_IS	Auto	5.006	4413702	4413702	11	5.0000	ng/mL	5.0000	----
PFUnA	Auto	5.180	962813	5031191	12	0.9753	ng/mL	1.0000	13.72
PFUnA-13C	Auto	5.180	5031191	6119221	1	4.7834	ng/mL	5.0000	----
PFUnA-13C_IS	Auto	5.180	5031191	5031191	12	5.0000	ng/mL	5.0000	----
PFDaA	Auto	5.344	900915	5125044	13	1.0757	ng/mL	1.0000	19.77
PFDaA-13C	Auto	5.344	5125044	6119221	1	5.0636	ng/mL	5.0000	----
PFDaA-13C_IS	Auto	5.344	5125044	5125044	13	5.0000	ng/mL	5.0000	----
PFTrDA	Auto	5.498	733608	3217418	14	0.9300	ng/mL	1.0000	20.06
PFTeDA	Auto	5.641	443952	3217418	14	1.0032	ng/mL	1.0000	149.53
PFTeDA-13C	Auto	5.641	3217418	6119221	1	4.9566	ng/mL	5.0000	----
PFTeDA-13C_IS	Auto	5.641	3217418	3217418	14	5.0000	ng/mL	5.0000	----
FOSA	Auto	5.291	718909	2711336	16	0.9426	ng/mL	1.0000	4.24
FOSA-13C	Auto	5.291	2711336	6119221	1	4.8570	ng/mL	5.0000	----
FOSA-13C_IS	Auto	5.291	2711336	2711336	16	5.0000	ng/mL	5.0000	----
N-MeFOSA	Auto	5.651	158415	673825	17	0.8925	ng/mL	1.0000	79.68
N-MeFOSA-d3	Auto	5.648	673825	6119221	1	4.8465	ng/mL	5.0000	----
N-MeFOSA-d3_IS	Auto	5.648	673825	673825	17	5.0000	ng/mL	5.0000	----
N-EtFOSA	Auto	5.781	34169	817005	18	1.0206	ng/mL	1.0000	73.87
N-EtFOSA-d9	Auto	5.776	817005	6119221	1	4.7154	ng/mL	5.0000	----
N-EtFOSA-d9_IS	Auto	5.776	817005	817005	18	5.0000	ng/mL	5.0000	----
N-MeFOSE	Auto	5.629	180299	327883	19	0.8863	ng/mL	1.0000	----

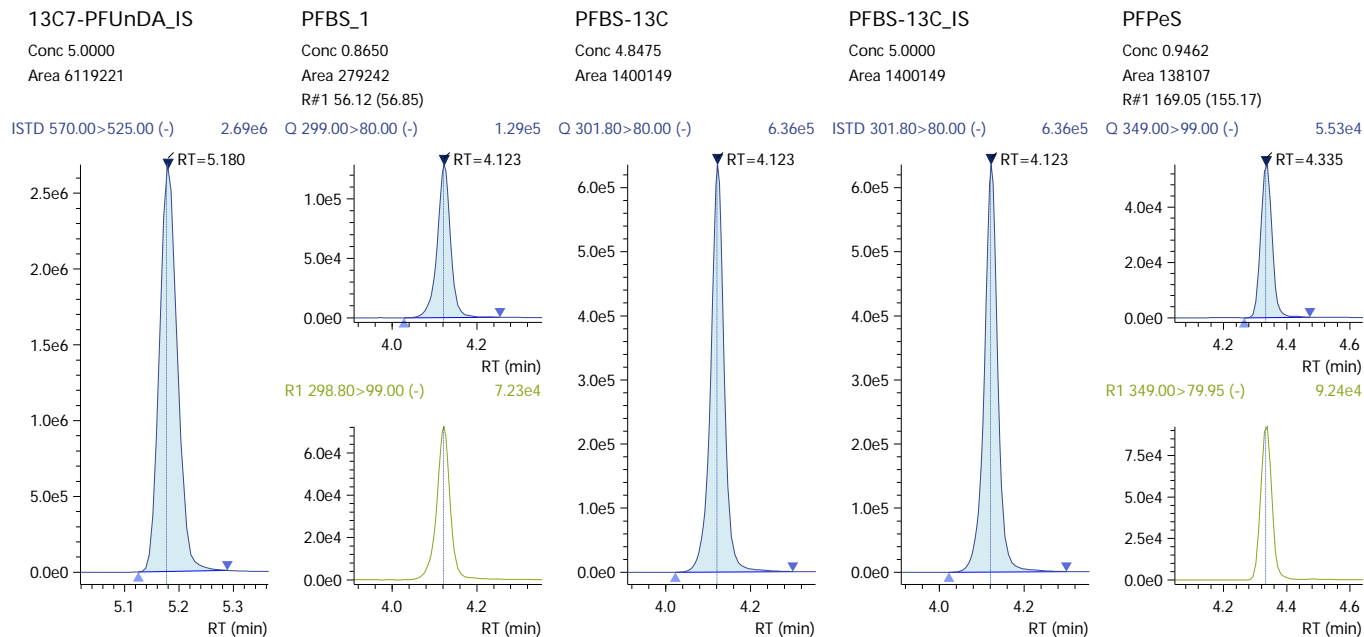
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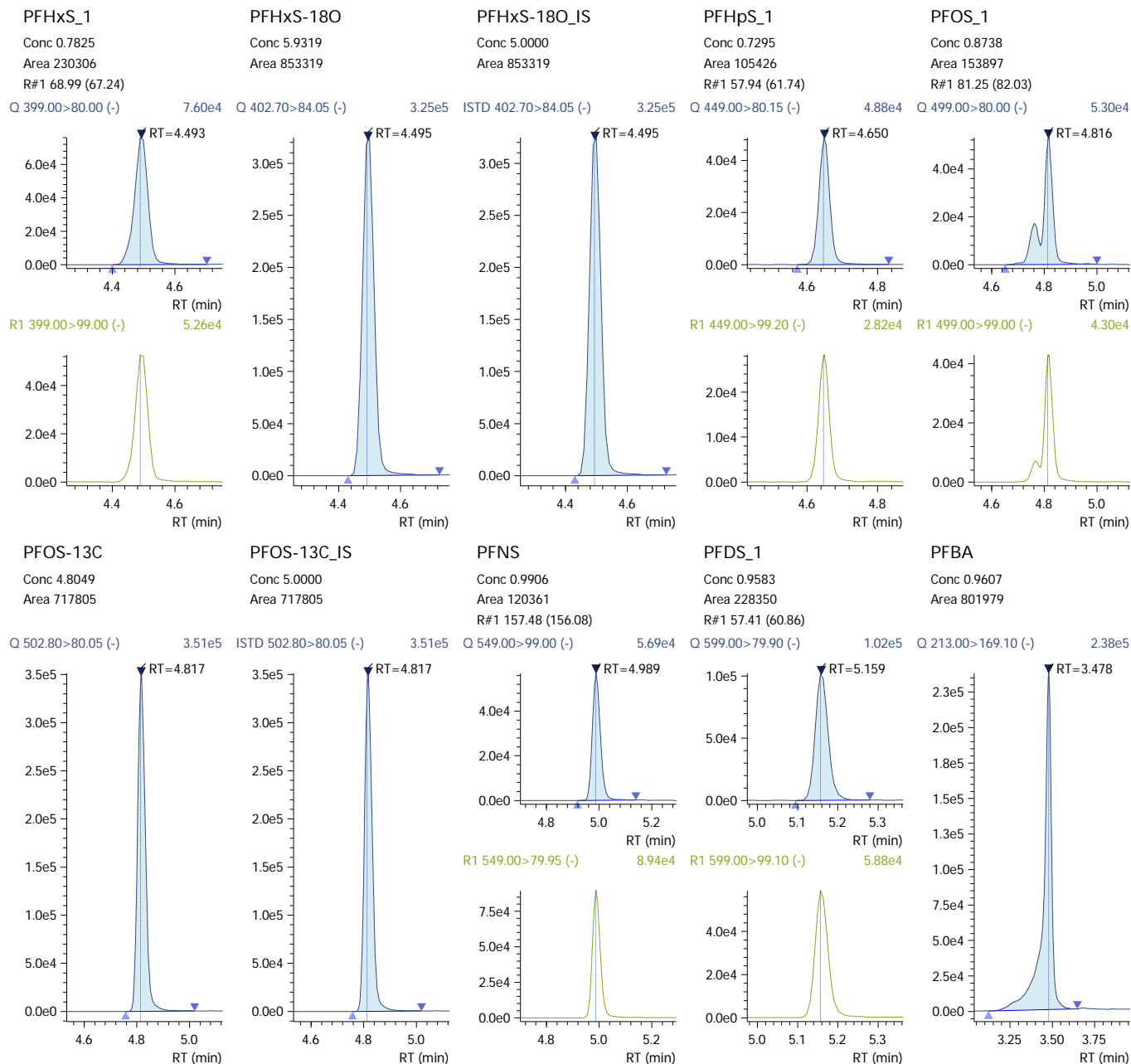
200812_048 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.621	327883	6119221	1	4.9324	ng/mL	5.0000	----
N-MeFOSE-d7_IS	Auto	5.621	327883	327883	19	5.0000	ng/mL	5.0000	----
N-EtFOSE	Auto	5.754	211472	261952	20	1.0035	ng/mL	1.0000	----
N-EtFOSE-d9	Auto	5.744	261952	6119221	1	4.8082	ng/mL	5.0000	----
N-EtFOSE-d9_IS	Auto	5.744	261952	261952	20	5.0000	ng/mL	5.0000	----
N-MeFOSAA	M	5.104	89192	499691	21	1.1810	ng/mL	1.0000	31.53
N-MeFOSAA-d3	Auto	5.102	499691	6119221	1	4.7775	ng/mL	5.0000	----
N-MeFOSAA-d3_IS	Auto	5.102	499691	499691	21	5.0000	ng/mL	5.0000	----
N-EtFOSAA	Auto	5.197	35396	336662	22	0.9055	ng/mL	1.0000	104.64
N-EtFOSAA-d5	Auto	5.192	336662	6119221	1	4.5413	ng/mL	5.0000	----
N-EtFOSAA-d5_IS	Auto	5.192	336662	336662	22	5.0000	ng/mL	5.0000	----
4_2-FTS_1	Auto	4.299	181011	1063971	23	0.8914	ng/mL	0.9372	162.80
4_2-FTS-13C	Auto	4.299	1063971	6119221	1	4.9436	ng/mL	5.0000	----
4_2-FTS-13C_IS	Auto	4.299	1063971	1063971	23	5.0000	ng/mL	5.0000	----
6_2-FTS_1	Auto	4.650	134351	621269	24	0.9862	ng/mL	0.9512	37.68
6_2-FTS-13C	Auto	4.651	621269	6119221	1	5.3402	ng/mL	5.0000	----
6_2-FTS-13C_IS	Auto	4.651	621269	621269	24	5.0000	ng/mL	5.0000	----
8_2-FTS_1	Auto	5.006	72327	451436	25	1.0494	ng/mL	0.9600	9.05
8_2-FTS-13C	Auto	5.007	451436	6119221	1	5.1274	ng/mL	5.0000	----
8_2-FTS-13C_IS	Auto	5.007	451436	451436	25	5.0000	ng/mL	5.0000	----
10_2-FTS_1	Auto	5.353	45619	451436	25	0.8517	ng/mL	0.9662	6.43
HPFO_DA	Auto	4.386	251006	1183800	26	1.0555	ng/mL	1.0000	73.27
HPFO_DA-13C	Auto	4.386	1183800	6119221	1	4.7501	ng/mL	5.0000	----
HPFO_DA-13C_IS	Auto	4.386	1183800	1183800	26	5.0000	ng/mL	5.0000	----



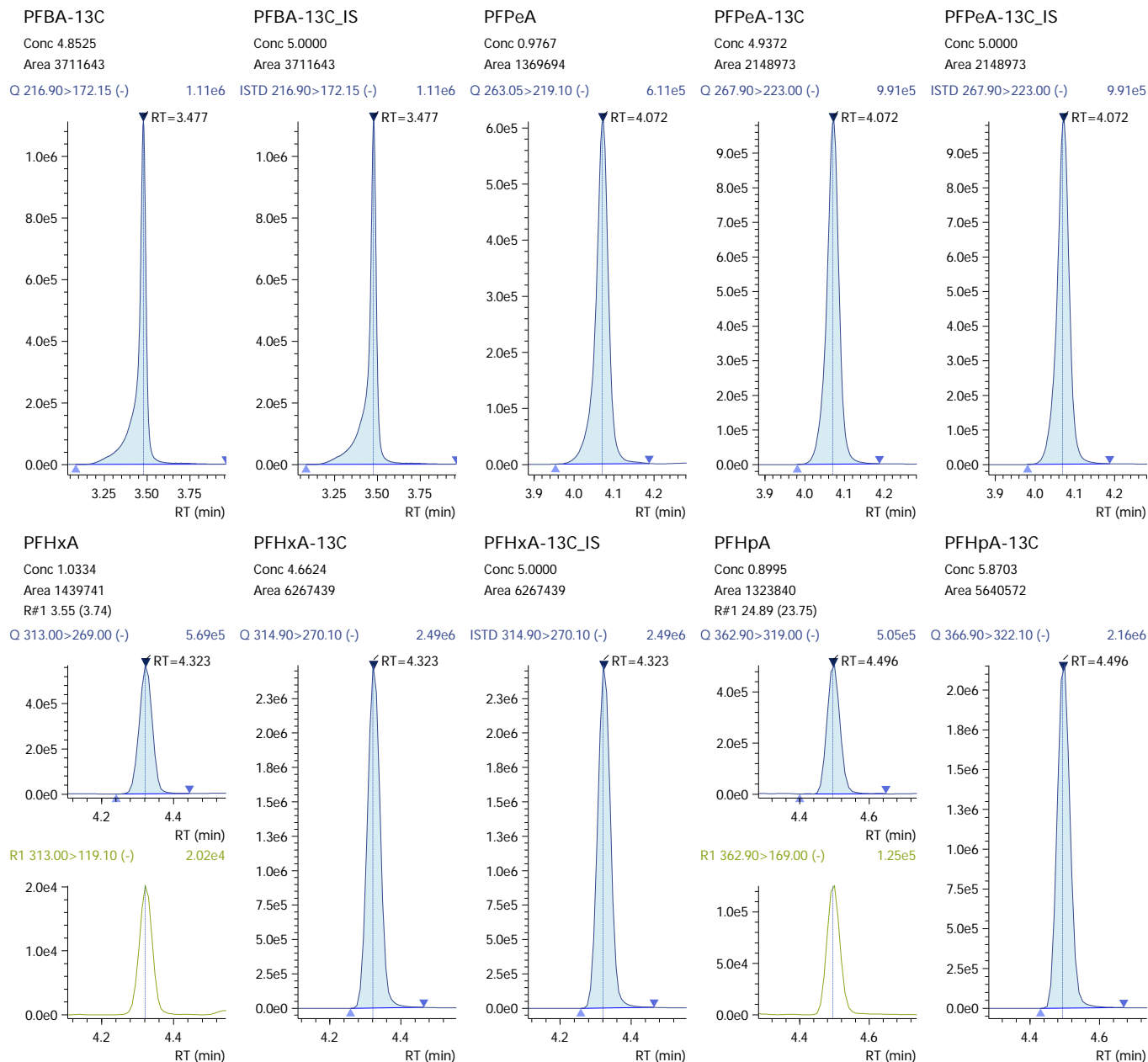
200812_048 (continued)



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200812_048 (continued)



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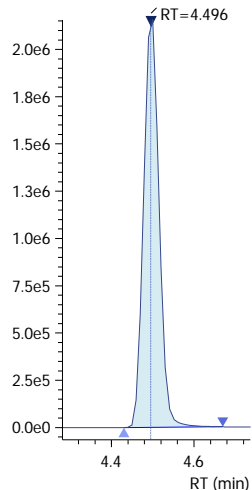
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200812_048 (continued)

PFHpA-13C_IS

Conc 5.0000
Area 5640572

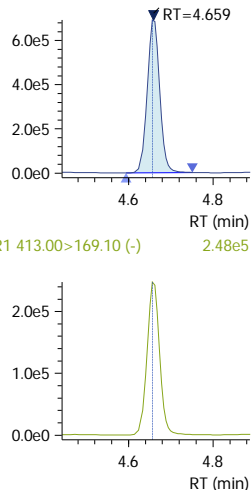
ISTD 366.90>322.10 (-) 2.16e6



PFOA

Conc 0.9429
Area 1418071
R#1 35.35 (34.80)

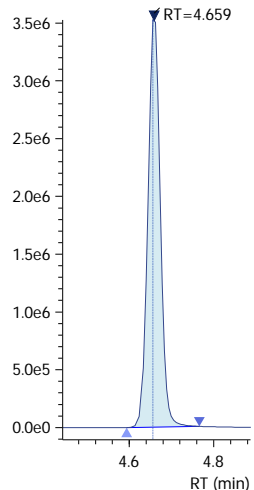
Q 413.00>369.00 (-) 6.93e5



PFOA-13C

Conc 5.2833
Area 7217388

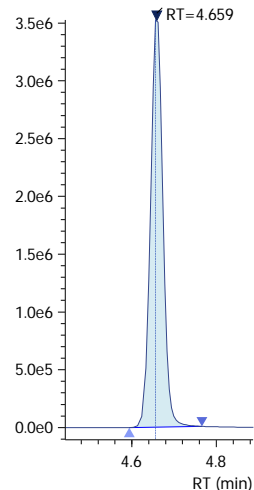
Q 416.80>372.05 (-) 3.53e6



PFOA-13C_IS

Conc 5.0000
Area 7217388

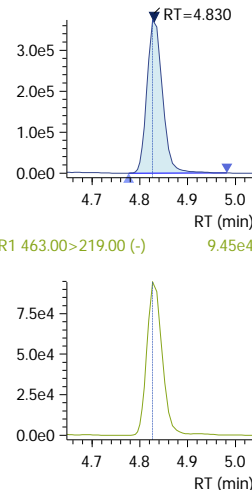
ISTD 416.80>372.05 (-) 3.53e6



PFNA

Conc 0.9642
Area 839948
R#1 25.26 (22.71)

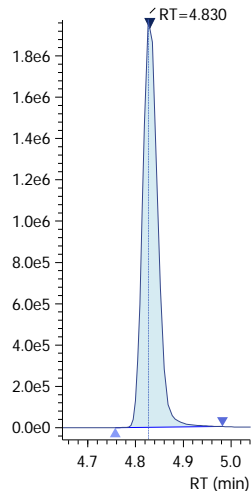
Q 463.00>418.90 (-) 3.74e5



PFNA-13C

Conc 4.6872
Area 4339102

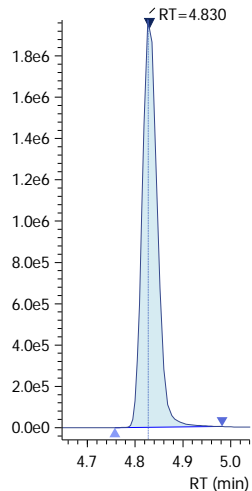
Q 467.80>423.00 (-) 1.97e6



PFNA-13C_IS

Conc 5.0000
Area 4339102

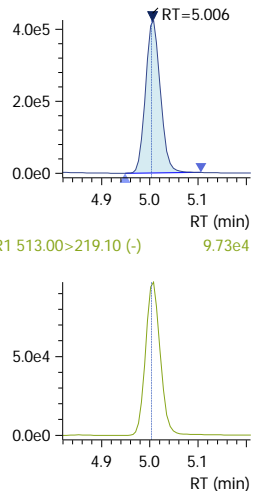
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PFDA

Conc 0.9721
Area 902626
R#1 23.05 (22.06)

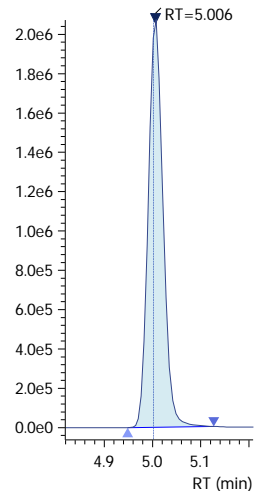
Q 513.00>468.80 (-) 4.26e5



PFDA-13C

Conc 5.1471
Area 4413702

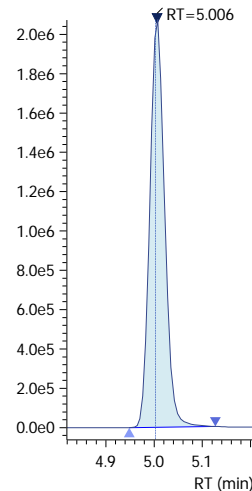
Q 514.80>469.95 (-) 2.07e6



PFDA-13C_IS

Conc 5.0000
Area 4413702

ISTD 514.80>469.95 (-) 2.07e6



Insight Report

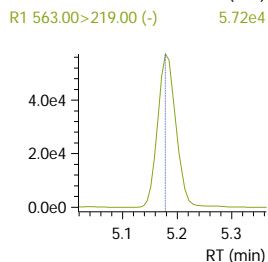
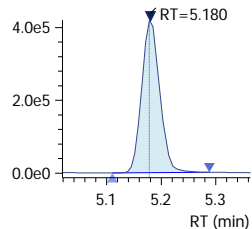
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200812_048 (continued)

PFUnA

Conc 0.9753
Area 962813
R#1 13.72 (13.66)

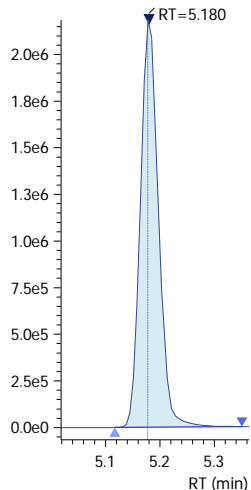
Q 563.00>518.90 (-) 4.21e5



PFUnA-13C

Conc 4.7834
Area 5031191

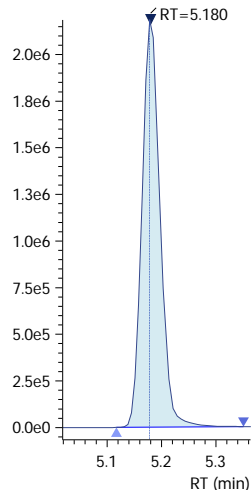
Q 564.80>519.95 (-) 2.19e6



PFUnA-13C_IS

Conc 5.0000
Area 5031191

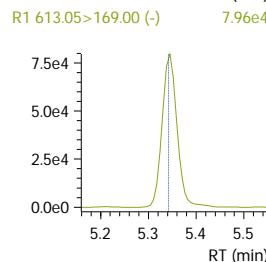
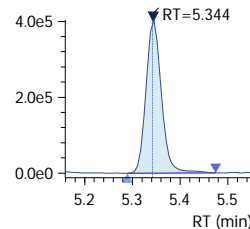
ISTD 564.80>519.95 (-) 2.19e6



PFDaA

Conc 1.0757
Area 900915
R#1 19.77 (21.98)

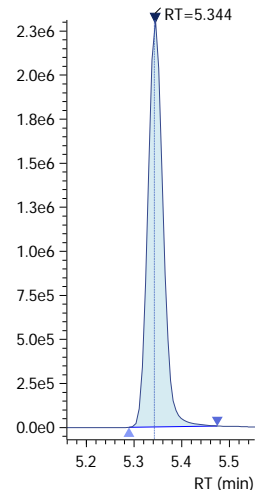
Q 613.05>569.00 (-) 4.04e5



PFDaA-13C

Conc 5.0636
Area 5125044

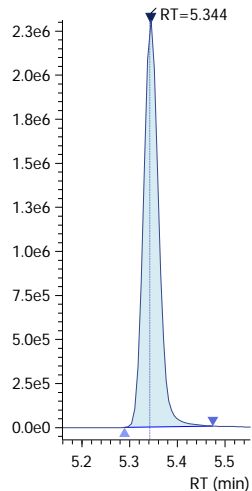
Q 614.80>569.95 (-) 2.31e6



PFDaA-13C_IS

Conc 5.0000
Area 5125044

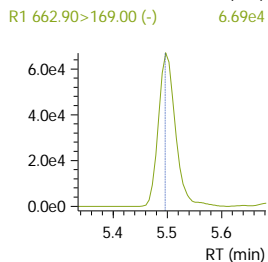
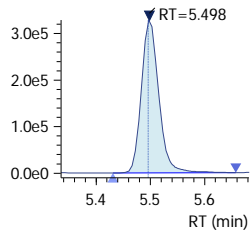
ISTD 614.80>569.95 (-) 2.31e6



PFTrDA

Conc 0.9300
Area 733608
R#1 20.06 (19.20)

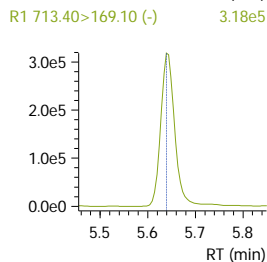
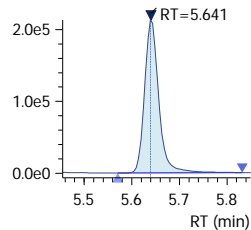
Q 663.00>618.90 (-) 3.29e5



PFTeDA

Conc 1.0032
Area 443952
R#1 149.53 (61.49)

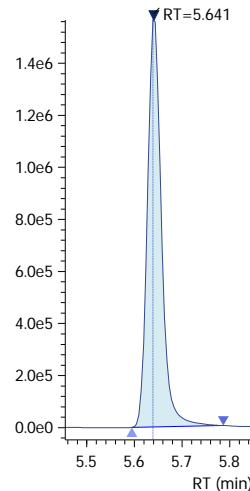
Q 713.40>669.00 (-) 2.13e5



PFTeDA-13C

Conc 4.9566
Area 3217418

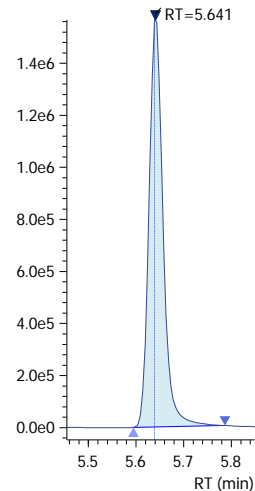
Q 714.70>669.90 (-) 1.57e6



PFTeDA-13C_IS

Conc 5.0000
Area 3217418

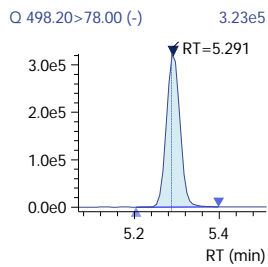
ISTD 714.70>669.90 (-) 1.57e6



200812_048 (continued)

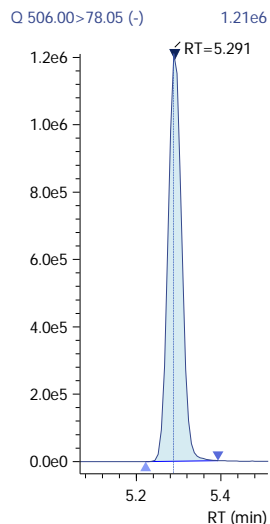
FOSA

Conc 0.9426
 Area 718909
 R#1 4.24 (4.04)



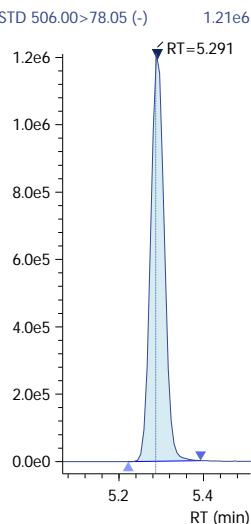
FOSA-13C

Conc 4.8570
 Area 2711336



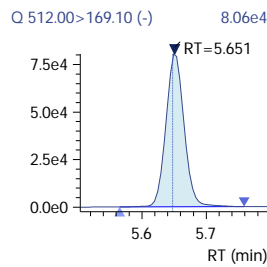
FOSA-13C_IS

Conc 5.0000
 Area 2711336



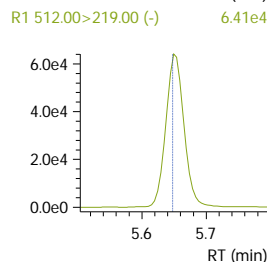
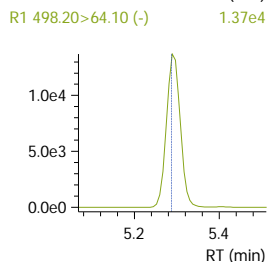
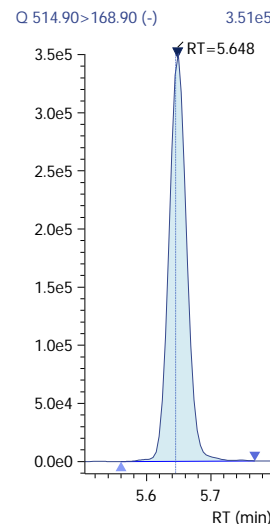
N-MeFOSA

Conc 0.8925
 Area 158415
 R#1 79.68 (78.52)



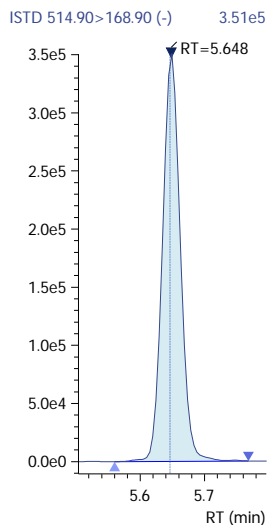
N-MeFOSA-d3

Conc 4.8465
 Area 673825



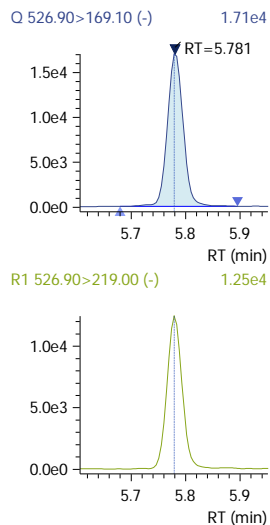
N-MeFOSA-d3_IS

Conc 5.0000
 Area 673825



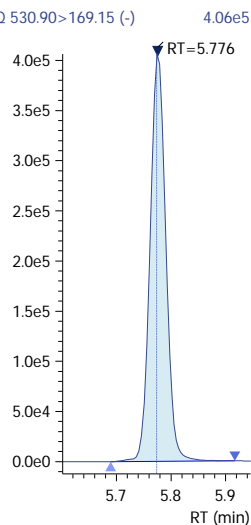
N-EtFOSA

Conc 1.0206
 Area 34169
 R#1 73.87 (0.00)



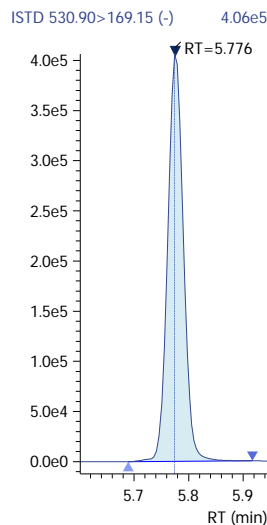
N-EtFOSA-d9

Conc 4.7154
 Area 817005



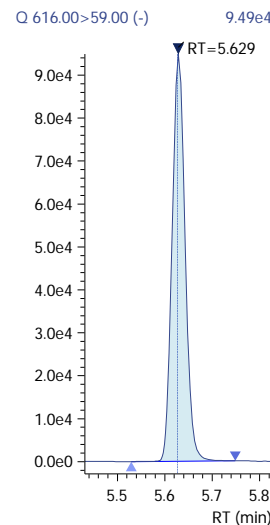
N-EtFOSA-d9_IS

Conc 5.0000
 Area 817005



N-MeFOSE

Conc 0.8863
 Area 180299



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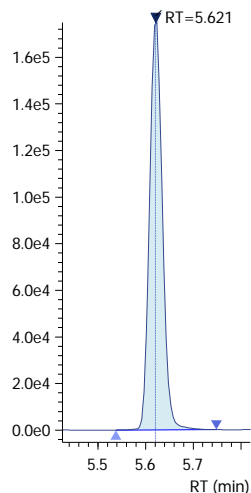
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200812_048 (continued)

N-MeFOSE-d7

Conc 4.9324
Area 327883

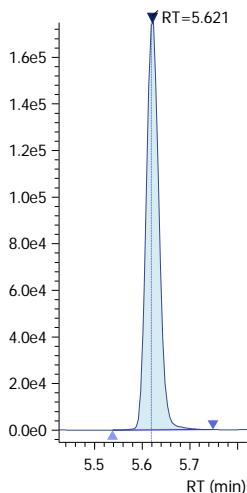
Q 622.70>59.10 (-)



N-MeFOSE-d7_IS

Conc 5.0000
Area 327883

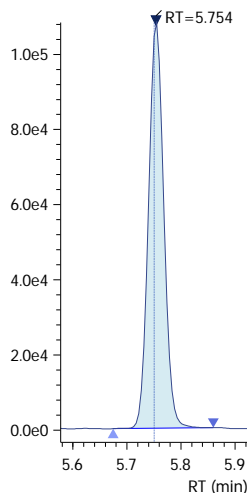
ISTD 622.70>59.10 (-)



N-EtFOSE

Conc 1.0035
Area 211472

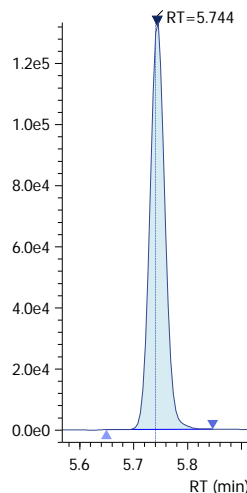
Q 630.00>58.90 (-)



N-EtFOSE-d9

Conc 4.8082
Area 261952

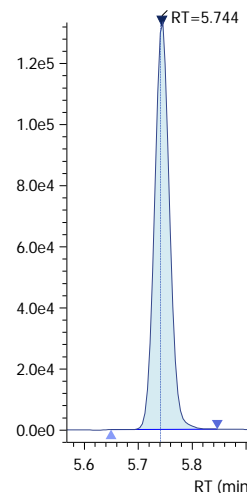
Q 638.70>59.10 (-)



N-EtFOSE-d9_IS

Conc 5.0000
Area 261952

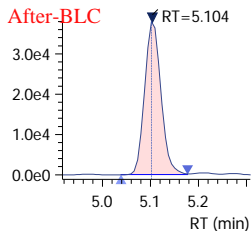
ISTD 638.70>59.10 (-)



N-MeFOSAA

Conc 1.1810
Area 89192
R#1 31.53 (33.47)

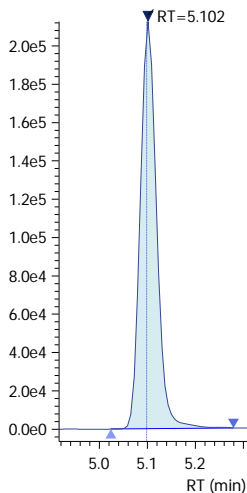
Q 570.20>419.00 (-)



N-MeFOSAA-d3

Conc 4.7775
Area 499691

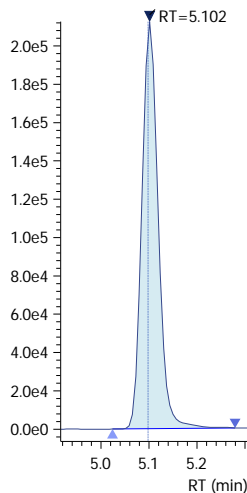
Q 572.80>419.05 (-)



N-MeFOSAA-d3_IS

Conc 5.0000
Area 499691

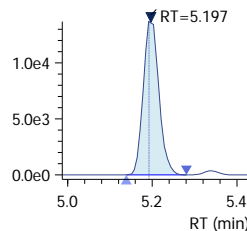
ISTD 572.80>419.05 (-)



N-EtFOSAA

Conc 0.9055
Area 35396
R#1 104.64 (83.09)

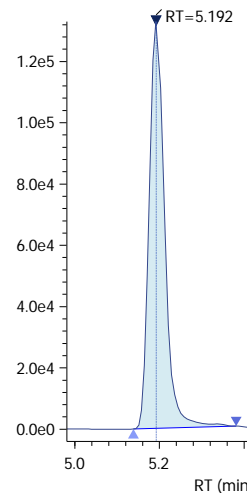
Q 584.20>418.95 (-)



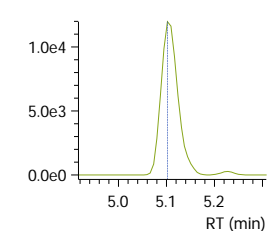
N-EtFOSAA-d5

Conc 4.5413
Area 336662

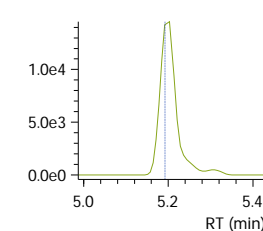
Q 588.80>419.00 (-)



R1 570.20>512.00 (-)



R1 584.20>526.10 (-)



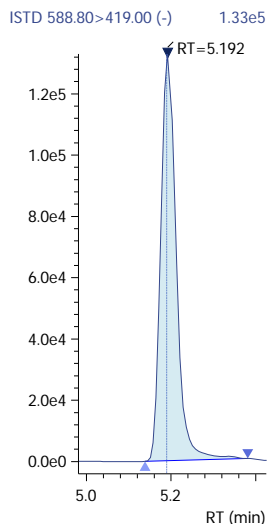
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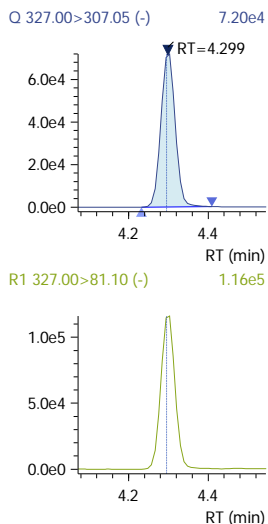
N-EtFOSAA-d5_IS

Conc 5.0000
 Area 336662



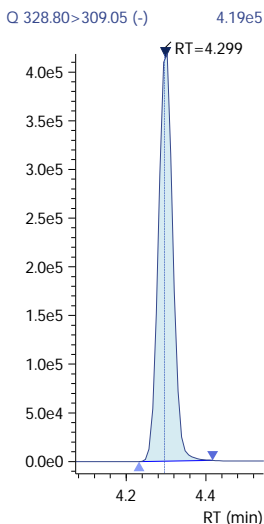
4_2-FTS_1

Conc 0.8914
 Area 181011
 R#1 162.80 (54.93)



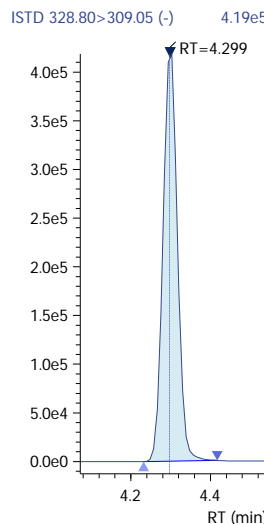
4_2-FTS-13C

Conc 4.9436
 Area 1063971



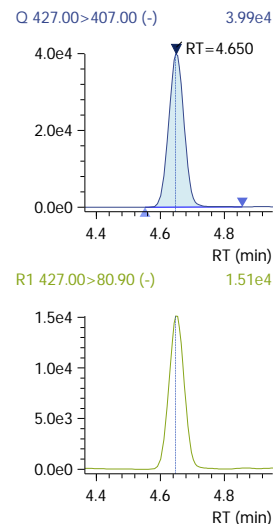
4_2-FTS-13C_IS

Conc 5.0000
 Area 1063971



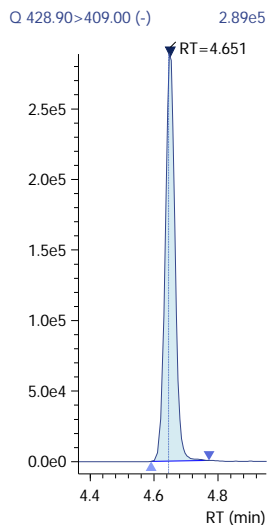
6_2-FTS_1

Conc 0.9862
 Area 134351
 R#1 37.68 (36.33)



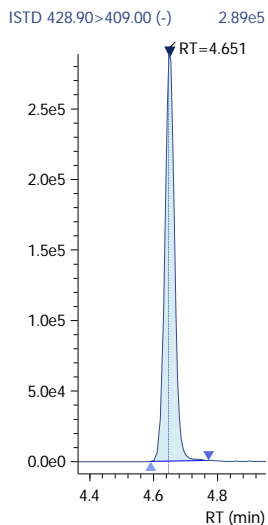
6_2-FTS-13C

Conc 5.3402
 Area 621269



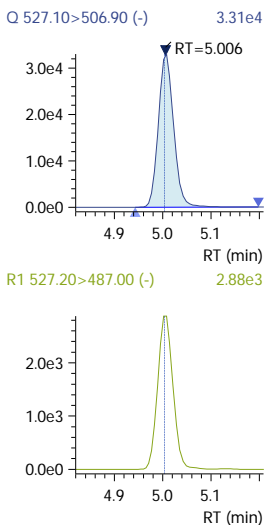
6_2-FTS-13C_IS

Conc 5.0000
 Area 621269



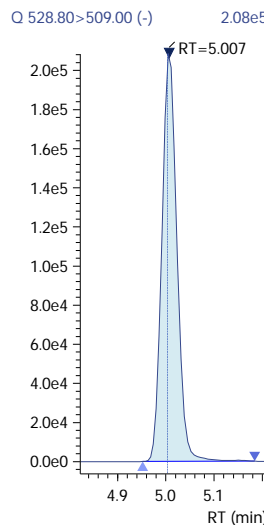
8_2-FTS_1

Conc 1.0494
 Area 72327
 R#1 9.05 (8.96)



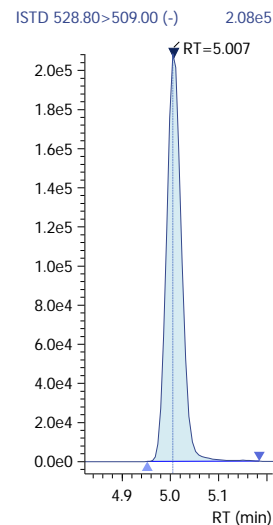
8_2-FTS-13C

Conc 5.1274
 Area 451436



8_2-FTS-13C_IS

Conc 5.0000
 Area 451436



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200812_048 (continued)

10_2-FtS_1

Conc 0.8517
Area 45619
R#1 6.43 (5.92)

HPFO_DA

Conc 1.0555
Area 251006
R#1 73.27 (72.82)

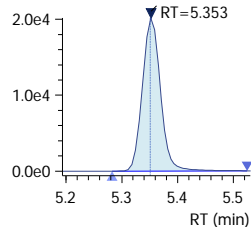
HFPO_DA-13C

Conc 4.7501
Area 1183800

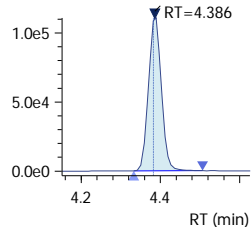
HFPO_DA-13C_IS

Conc 5.0000
Area 1183800

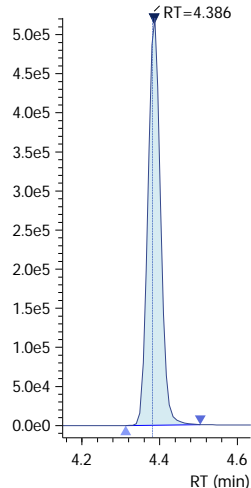
Q 627.00>606.95 (-) 2.02e4



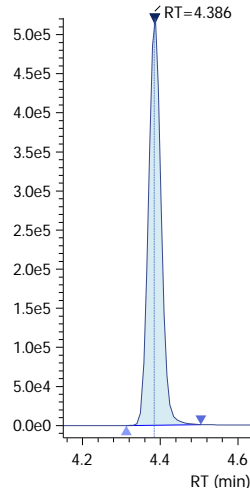
Q 329.00>169.00 (-) 1.11e5



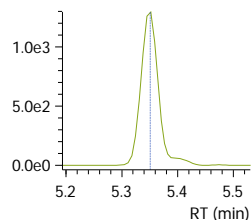
Q 332.00>286.80 (-) 5.21e5



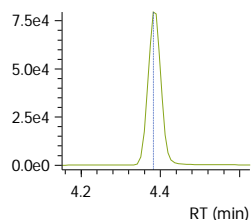
ISTD 332.00>286.80 (-) 5.21e5



R1 627.00>81.25 (-) 1.30e3



R1 329.00>285.10 (-) 7.95e4

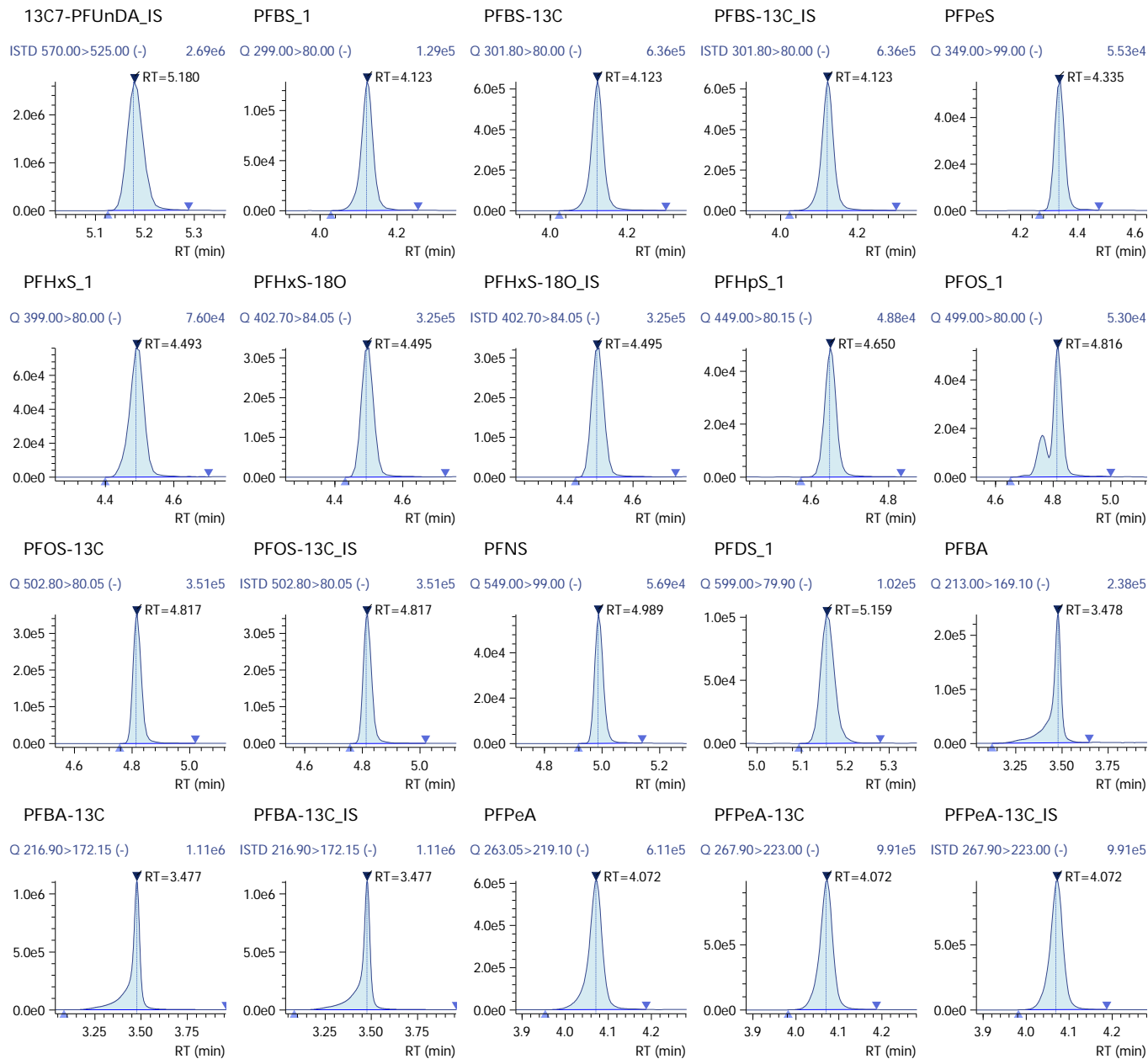


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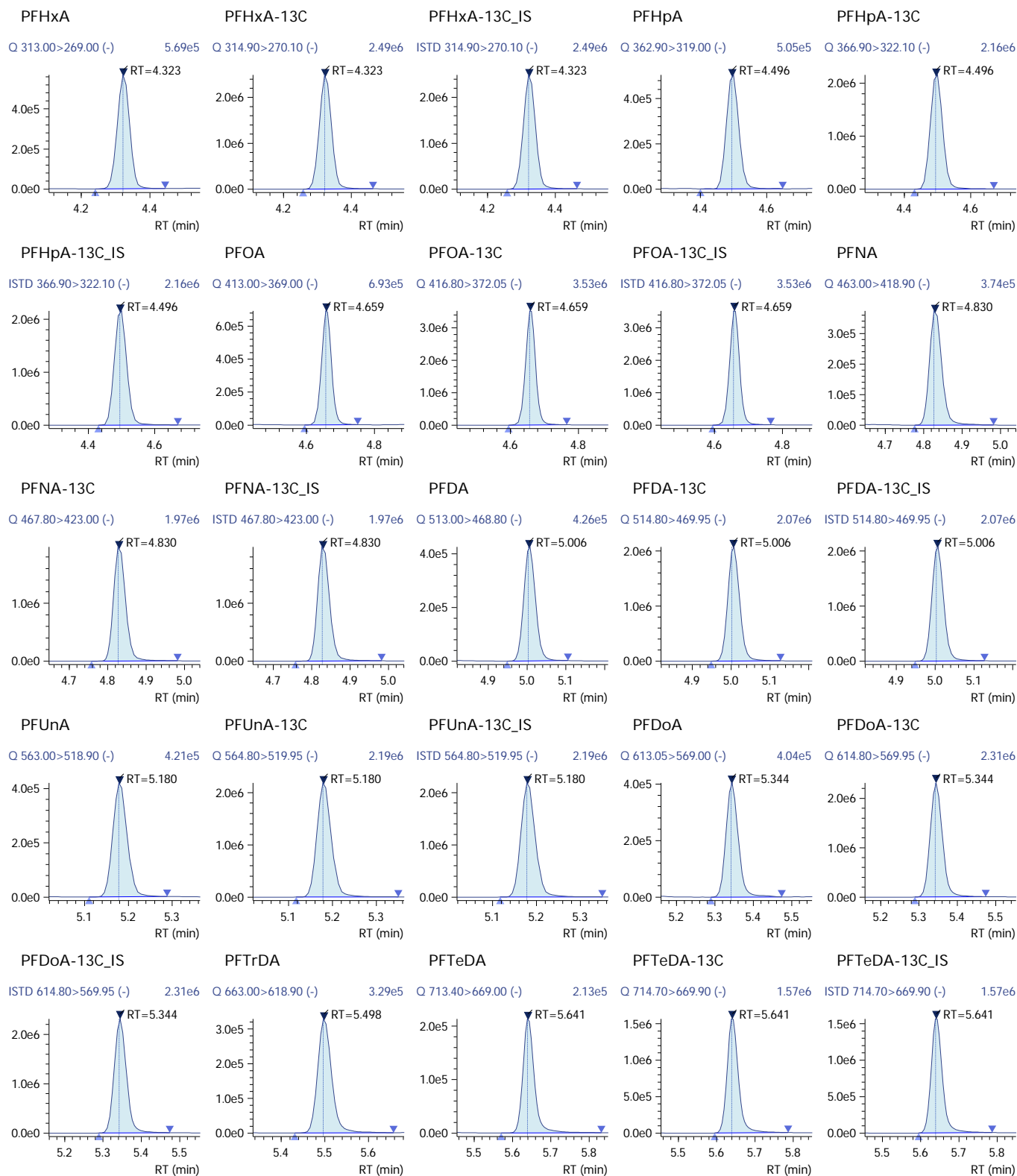
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200812_048

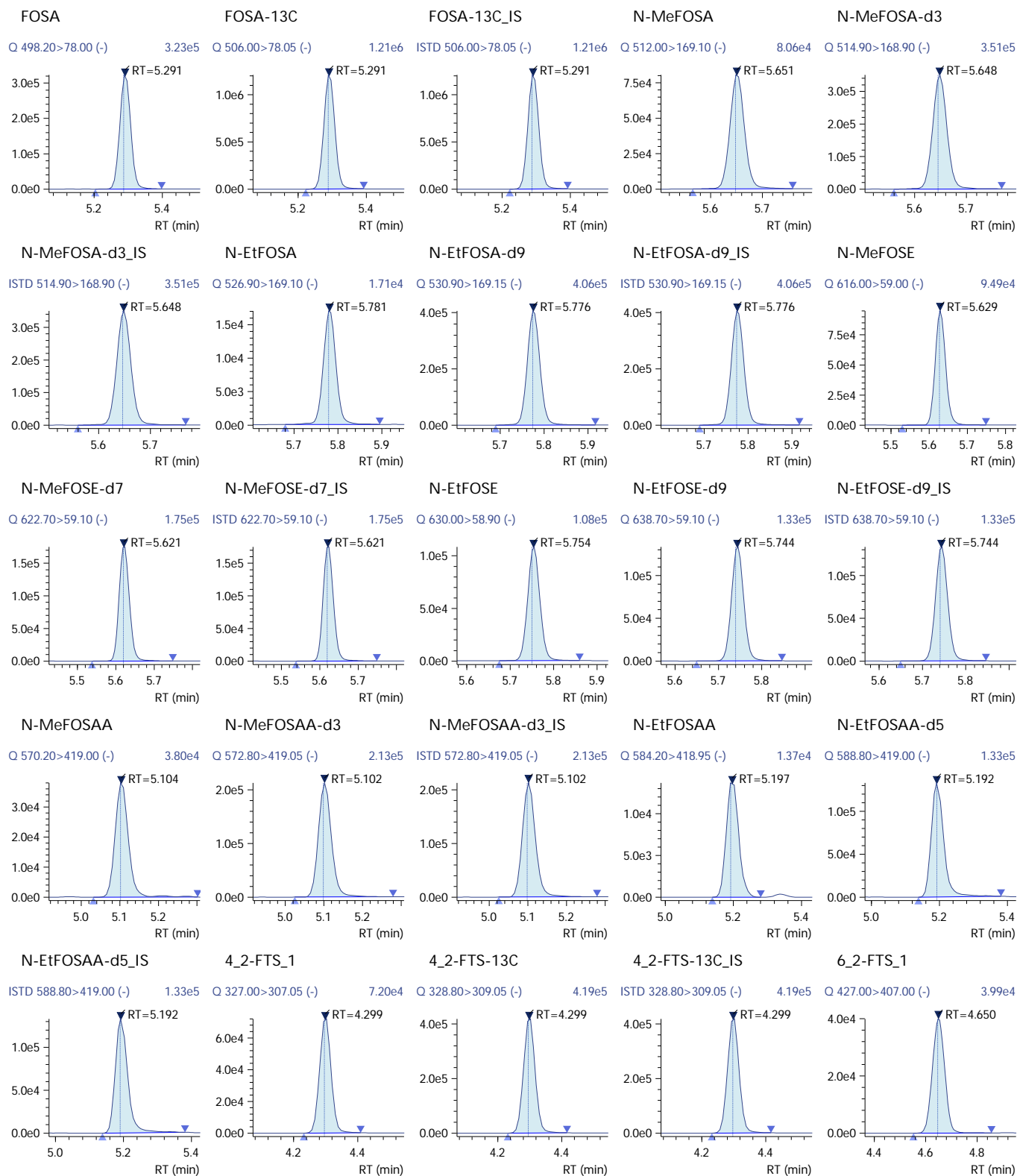
Sample ID: 1.0 PPB ICV
Date Acquired: 8/12/2020 9:04:59 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_048.lcd
Vial: 8 | Inj. Volume: 15.0000uL | Tray: 0



200812_048 (continued)



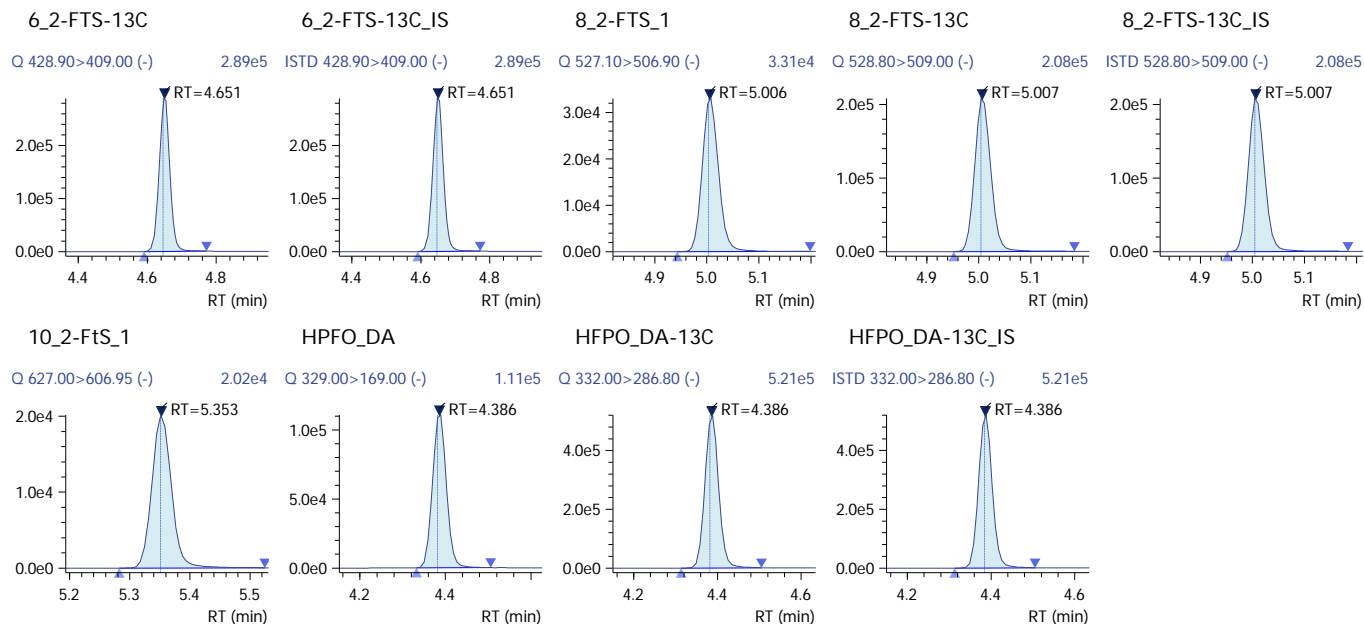
200812_048 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_048 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_049

Sample ID: CCB
 Date Acquired: 8/12/2020 9:15:50 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_049.lcd
 Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.177	6860314	6860314	1	5.0000	ng/mL	----	----
PFBS_1	M	4.121	1492	1414436	2	0.0046	ng/mL	----	54.28
PFBS-13C	Auto	4.122	1414436	6860314	1	4.3680	ng/mL	----	----
PFBS-13C_IS	Auto	4.122	1414436	1414436	2	5.0000	ng/mL	----	----
PFPeS	Auto	4.316	106	1414436	2	0.0007	ng/mL	----	0.00
PFHxS_1	Auto	4.493	2663	764648	3	0.0101	ng/mL	----	76.90
PFHxS-18O	Auto	4.494	764648	6860314	1	4.7413	ng/mL	----	----
PFHxS-18O_IS	Auto	4.494	764648	764648	3	5.0000	ng/mL	----	----
PFHpS_1	M	4.652	114	764648	3	0.0009	ng/mL	----	0.00
PFOS_1	Auto	4.817	651	725915	4	0.0037	ng/mL	----	73.80
PFOS-13C	Auto	4.814	725915	6860314	1	4.3342	ng/mL	----	----
PFOS-13C_IS	Auto	4.814	725915	725915	4	5.0000	ng/mL	----	----
PFNS	M	4.968	67	725915	4	0.0005	ng/mL	----	0.00
PFDS_1	M	5.154	158	725915	4	0.0007	ng/mL	----	61.46
PFBA	M	3.478	3609	3739320	5	0.0043	ng/mL	----	----
PFBA-13C	Auto	3.478	3739320	6860314	1	4.3606	ng/mL	----	----
PFBA-13C_IS	Auto	3.478	3739320	3739320	5	5.0000	ng/mL	----	----
PFPeA	Auto	4.020	87907	2180062	6	0.0065	ng/mL	----	----
PFPeA-13C	Auto	4.071	2180062	6860314	1	4.4676	ng/mL	----	----
PFPeA-13C_IS	Auto	4.071	2180062	2180062	6	5.0000	ng/mL	----	----
PFHxA	Auto	4.308	82443	6252893	7	0.0068	ng/mL	----	1.56
PFHxA-13C	Auto	4.321	6252893	6860314	1	4.1491	ng/mL	----	----
PFHxA-13C_IS	Auto	4.321	6252893	6252893	7	5.0000	ng/mL	----	----
PFHpA	Auto	4.487	48189	6005472	8	0.0156	ng/mL	----	19.77
PFHpA-13C	Auto	4.495	6005472	6860314	1	5.5749	ng/mL	----	----
PFHpA-13C_IS	Auto	4.495	6005472	6005472	8	5.0000	ng/mL	----	----
PFOA	Auto	4.653	56169	7328760	9	0.0086	ng/mL	----	33.83
PFOA-13C	Auto	4.657	7328760	6860314	1	4.7853	ng/mL	----	----
PFOA-13C_IS	Auto	4.657	7328760	7328760	9	5.0000	ng/mL	----	----
PFNA	M	4.825	30614	4813960	10	0.0185	ng/mL	----	22.33
PFNA-13C	Auto	4.828	4813960	6860314	1	4.6384	ng/mL	----	----
PFNA-13C_IS	Auto	4.828	4813960	4813960	10	5.0000	ng/mL	----	----
PFDA	Auto	5.003	25059	4521895	11	0.0263	ng/mL	----	24.30
PFDA-13C	Auto	5.003	4521895	6860314	1	4.7036	ng/mL	----	----
PFDA-13C_IS	Auto	5.003	4521895	4521895	11	5.0000	ng/mL	----	----
PFUnA	Auto	5.177	23593	5711174	12	-0.0069	ng/mL	----	19.83
PFUnA-13C	Auto	5.177	5711174	6860314	1	4.8433	ng/mL	----	----
PFUnA-13C_IS	Auto	5.177	5711174	5711174	12	5.0000	ng/mL	----	----
PFDaA	Auto	5.340	15655	5577551	13	0.0003	ng/mL	----	22.23
PFDaA-13C	Auto	5.342	5577551	6860314	1	4.9154	ng/mL	----	----
PFDaA-13C_IS	Auto	5.342	5577551	5577551	13	5.0000	ng/mL	----	----
PFTeDA	M	5.495	20509	3337940	14	0.0067	ng/mL	----	17.51
PFTeDA	Auto	5.639	59827	3337940	14	0.0112	ng/mL	----	974.27
PFTeDA-13C	Auto	5.639	3337940	6860314	1	4.5868	ng/mL	----	----
PFTeDA-13C_IS	Auto	5.639	3337940	3337940	14	5.0000	ng/mL	----	----
FOSA	M	5.288	3201	2656959	16	0.0043	ng/mL	----	0.00
FOSA-13C	Auto	5.288	2656959	6860314	1	4.2455	ng/mL	----	----
FOSA-13C_IS	Auto	5.288	2656959	2656959	16	5.0000	ng/mL	----	----
N-MeFOSA	M	5.652	1108	653431	17	0.0064	ng/mL	----	33.88
N-MeFOSA-d3	Auto	5.646	653431	6860314	1	4.1921	ng/mL	----	----
N-MeFOSA-d3_IS	Auto	5.646	653431	653431	17	5.0000	ng/mL	----	----
N-EtFOSA	M	5.777	159	819455	18	0.0047	ng/mL	----	7.35
N-EtFOSA-d9	Auto	5.773	819455	6860314	1	4.2187	ng/mL	----	----
N-EtFOSA-d9_IS	Auto	5.773	819455	819455	18	5.0000	ng/mL	----	----
N-MeFOSE	M	5.630	497	295573	19	0.0027	ng/mL	----	----

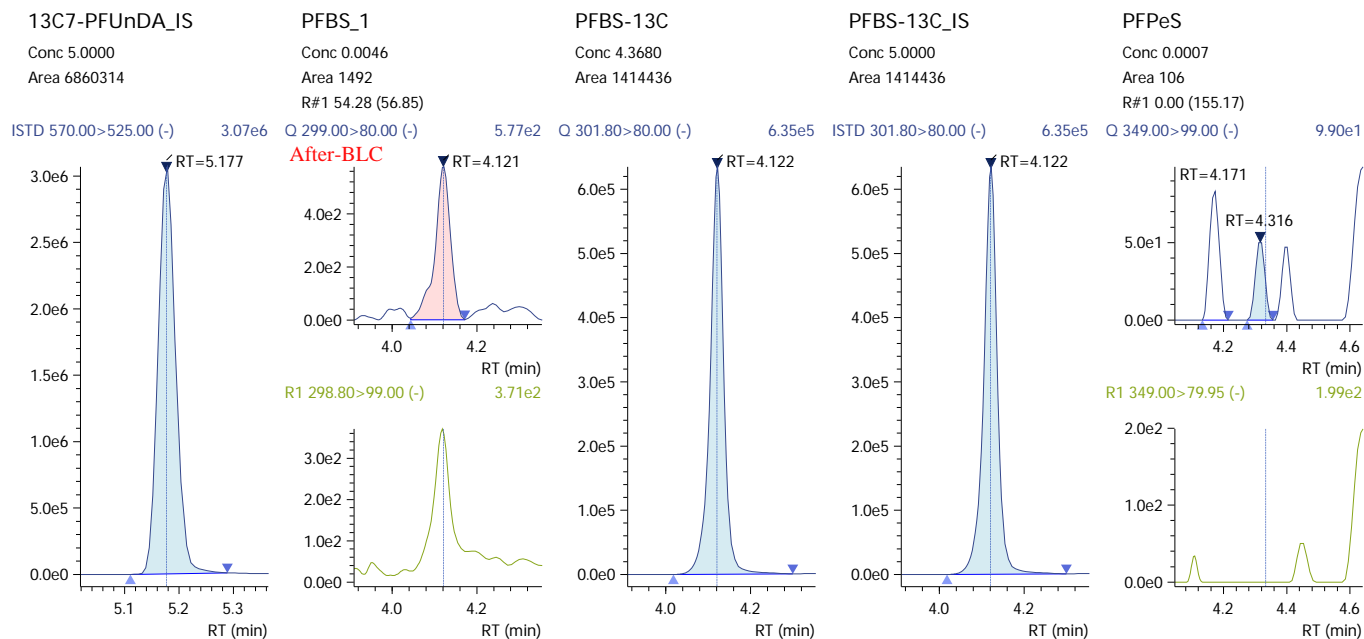
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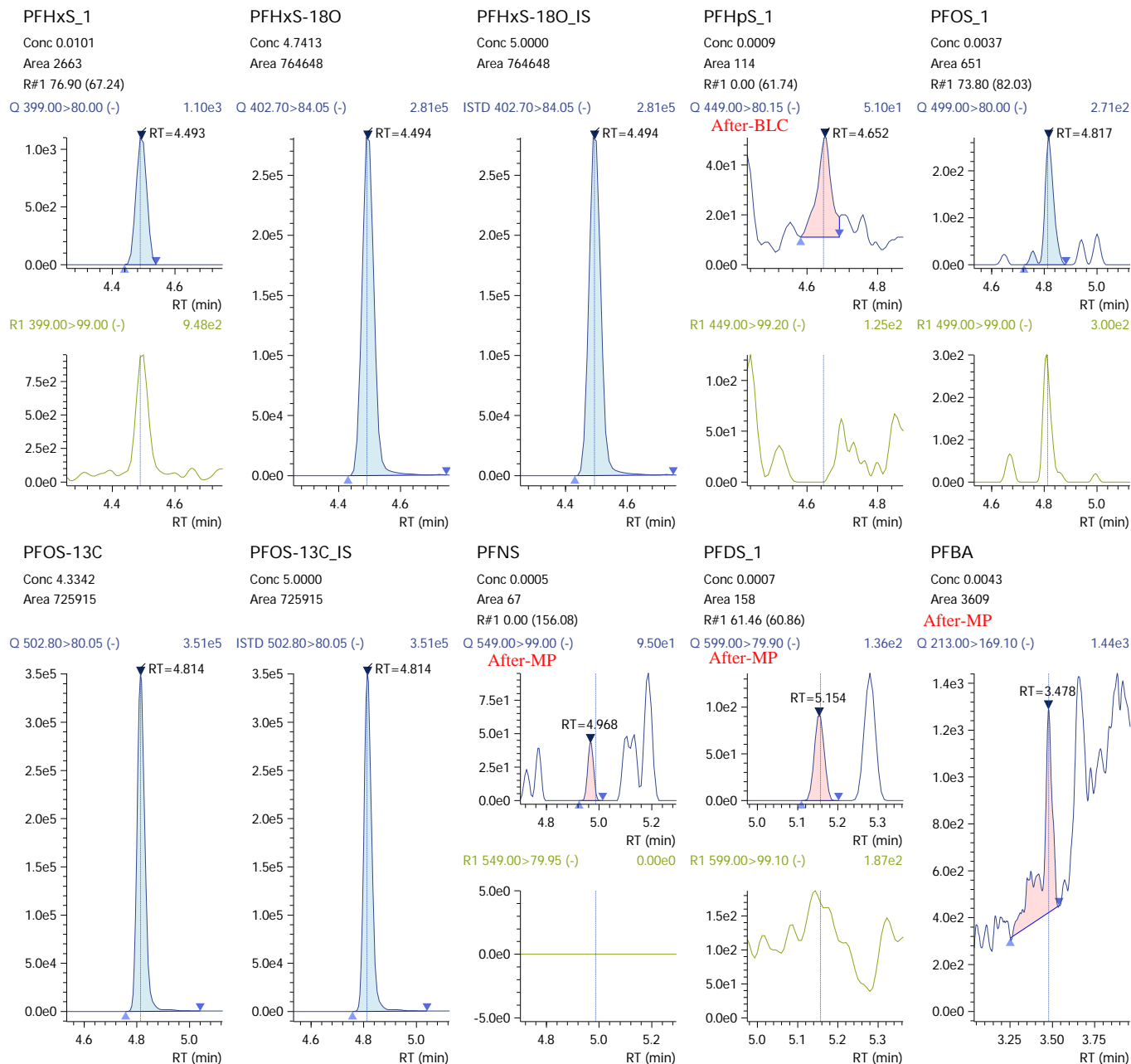
200812_049 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
N-MeFOSE-d7	Auto	5.619	295573	6860314	1	3.9660	ng/mL	----	----
N-MeFOSE-d7_IS	Auto	5.619	295573	295573	19	5.0000	ng/mL	----	----
N-EtFOSE	ND(W /B)	----	----	235217	20	----	ng/mL	----	----
N-EtFOSE-d9	Auto	5.741	235217	6860314	1	3.8510	ng/mL	----	----
N-EtFOSE-d9_IS	Auto	5.741	235217	235217	20	5.0000	ng/mL	----	----
N-MeFOSAA	Auto	5.092	2370	537396	21	0.0292	ng/mL	----	0.00
N-MeFOSAA-d3	Auto	5.099	537396	6860314	1	4.5830	ng/mL	----	----
N-MeFOSAA-d3_IS	Auto	5.099	537396	537396	21	5.0000	ng/mL	----	----
N-EtFOSAA	M	5.194	117	391789	22	0.0026	ng/mL	----	188.53
N-EtFOSAA-d5	Auto	5.189	391789	6860314	1	4.7140	ng/mL	----	----
N-EtFOSAA-d5_IS	Auto	5.189	391789	391789	22	5.0000	ng/mL	----	----
4_2-FTS_1	Auto	4.305	188	1218861	23	0.0008	ng/mL	----	107277.60
4_2-FTS-13C	Auto	4.298	1218861	6860314	1	5.0515	ng/mL	----	----
4_2-FTS-13C_IS	Auto	4.298	1218861	1218861	23	5.0000	ng/mL	----	----
6_2-FTS_1	Auto	4.645	633	629600	24	0.0046	ng/mL	----	45.13
6_2-FTS-13C	Auto	4.649	629600	6860314	1	4.8272	ng/mL	----	----
6_2-FTS-13C_IS	Auto	4.649	629600	629600	24	5.0000	ng/mL	----	----
8_2-FTS_1	Auto	5.004	207	494962	25	0.0027	ng/mL	----	0.00
8_2-FTS-13C	Auto	5.004	494962	6860314	1	5.0145	ng/mL	----	----
8_2-FTS-13C_IS	Auto	5.004	494962	494962	25	5.0000	ng/mL	----	----
10_2-FIS_1	Auto	5.352	32	494962	25	0.0005	ng/mL	----	0.00
HPFO_DA	M	4.385	469	1294333	26	0.0018	ng/mL	----	56.86
HPFO_DA-13C	Auto	4.385	1294333	6860314	1	4.6325	ng/mL	----	----
HPFO_DA-13C_IS	Auto	4.385	1294333	1294333	26	5.0000	ng/mL	----	----



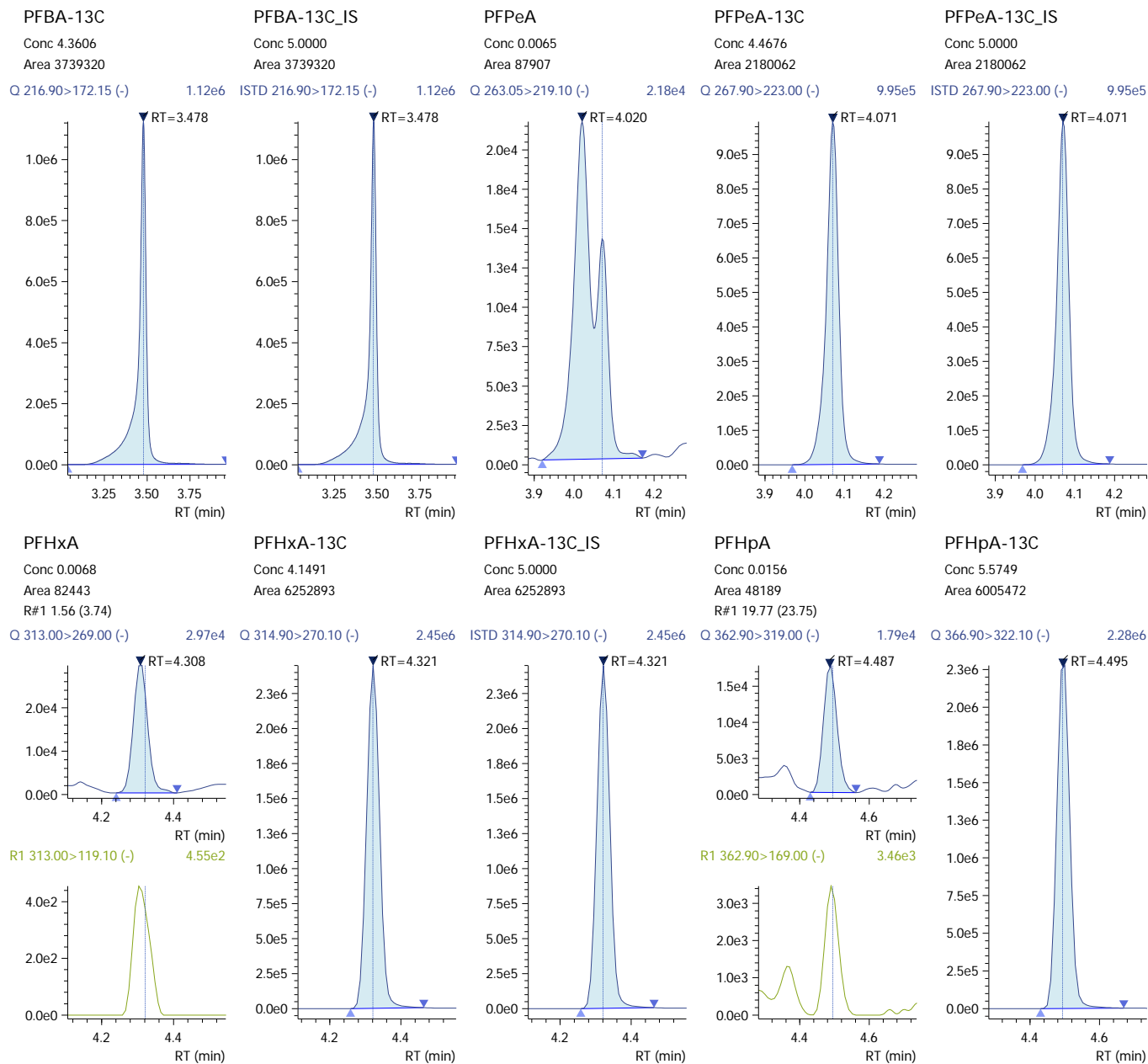
200812_049 (continued)



Insight Report

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200812_049 (continued)



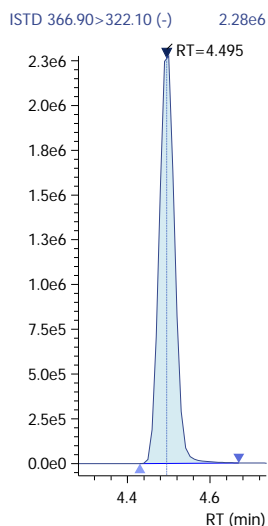
Insight Report

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200812_049 (continued)

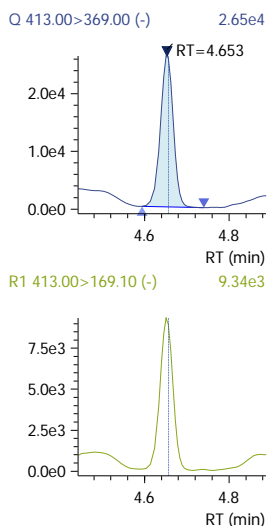
PFHpA-13C_IS

Conc 5.0000
Area 6005472



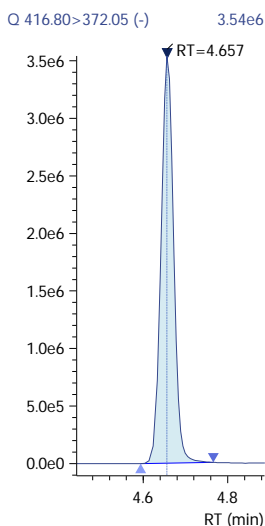
PFOA

Conc 0.0086
Area 56169
R#1 33.83 (34.80)



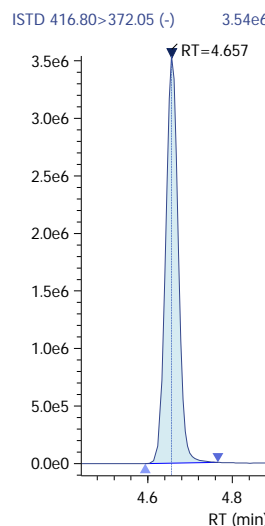
PFOA-13C

Conc 4.7853
Area 7328760



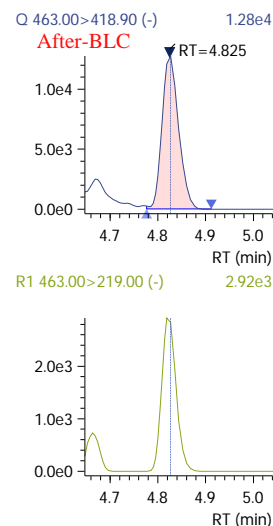
PFOA-13C_IS

Conc 5.0000
Area 7328760



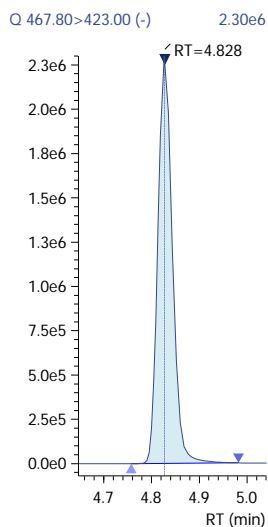
PFNA

Conc 0.0185
Area 30614
R#1 22.33 (22.71)



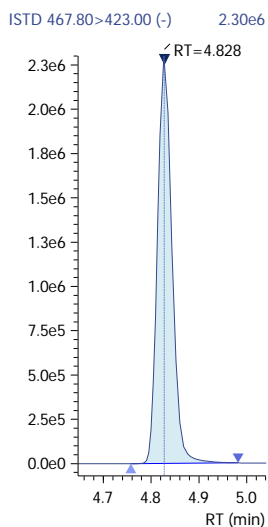
PFNA-13C

Conc 4.6384
Area 4813960



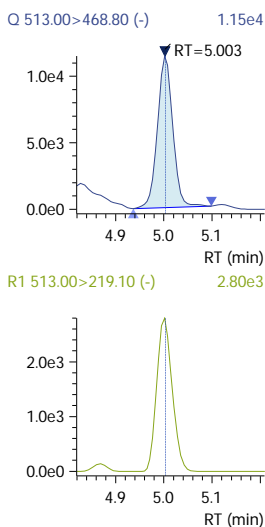
PFNA-13C_IS

Conc 5.0000
Area 4813960



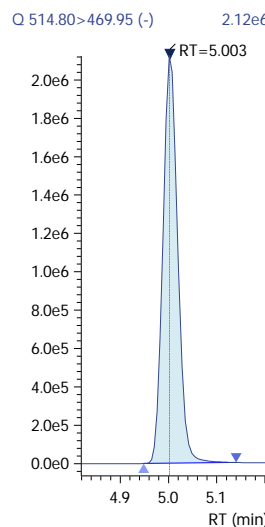
PFDA

Conc 0.0263
Area 25059
R#1 24.30 (22.06)



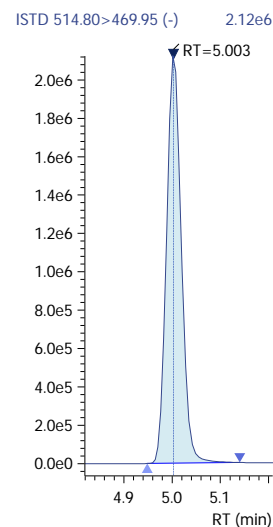
PFDA-13C

Conc 4.7036
Area 4521895



PFDA-13C_IS

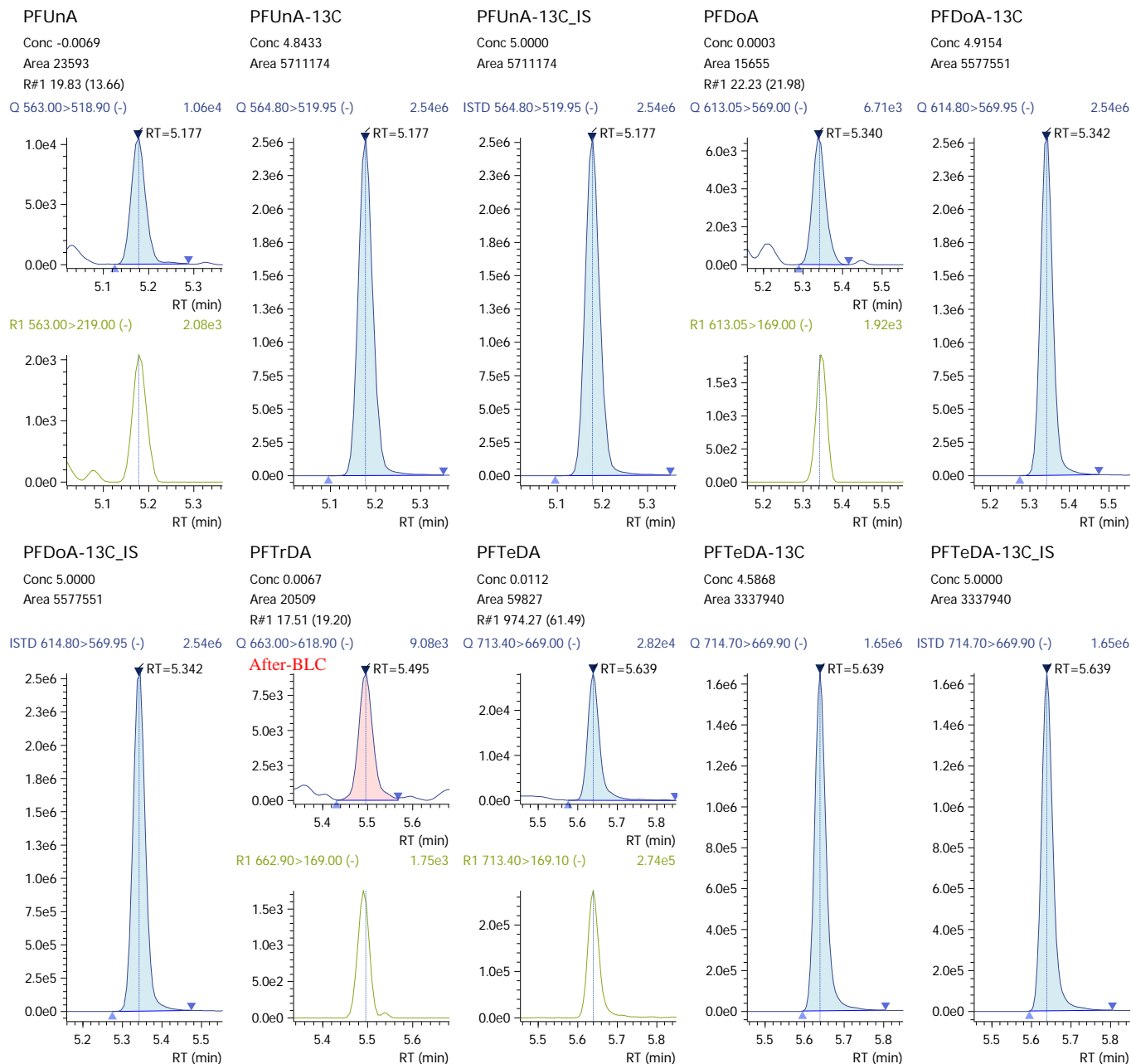
Conc 5.0000
Area 4521895



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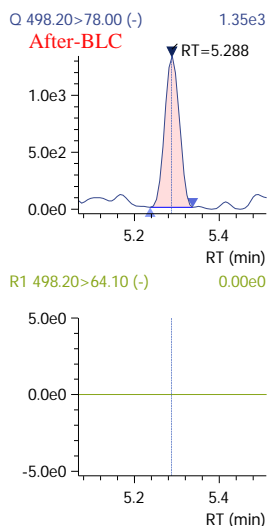
200812_049 (continued)



200812_049 (continued)

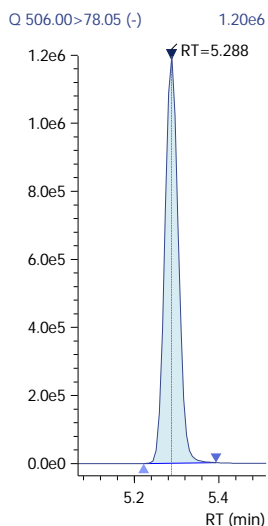
FOSA

Conc 0.0043
Area 3201
R#1 0.00 (4.04)



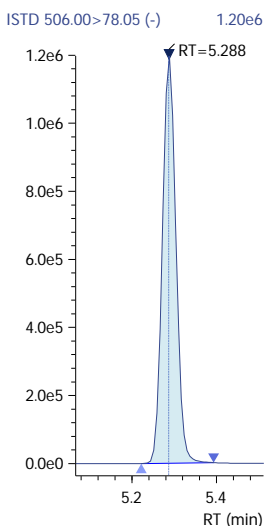
FOSA-13C

Conc 4.2455
Area 2656959



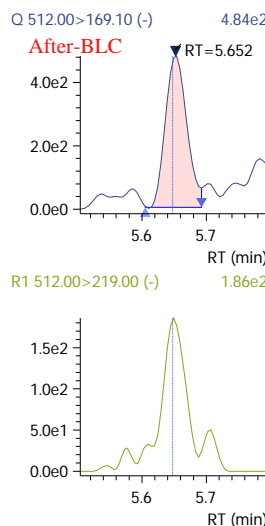
FOSA-13C_IS

Conc 5.0000
Area 2656959



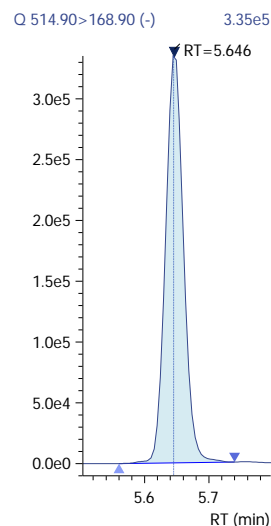
N-MeFOSA

Conc 0.0064
Area 1108
R#1 33.88 (78.52)



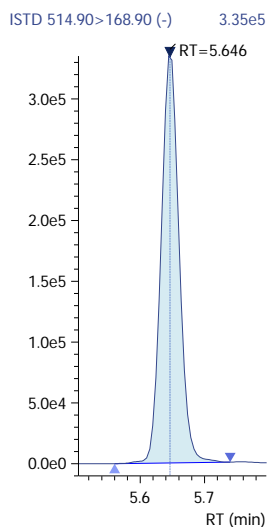
N-MeFOSA-d3

Conc 4.1921
Area 653431



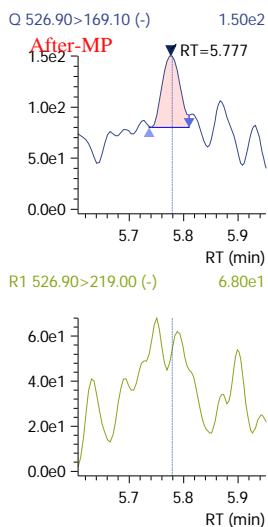
N-MeFOSA-d3_IS

Conc 5.0000
Area 653431



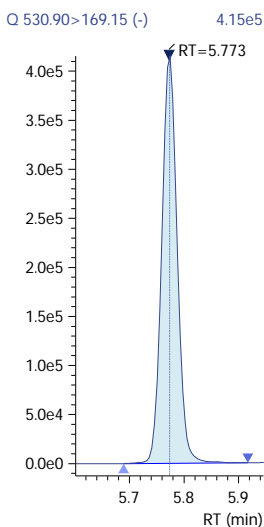
N-EtFOSA

Conc 0.0047
Area 159
R#1 7.35 (0.00)



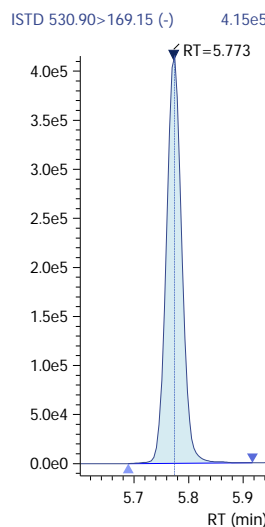
N-EtFOSA-d9

Conc 4.2187
Area 819455



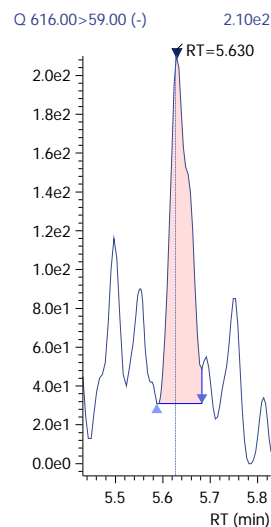
N-EtFOSA-d9_IS

Conc 5.0000
Area 819455



N-MeFOSE

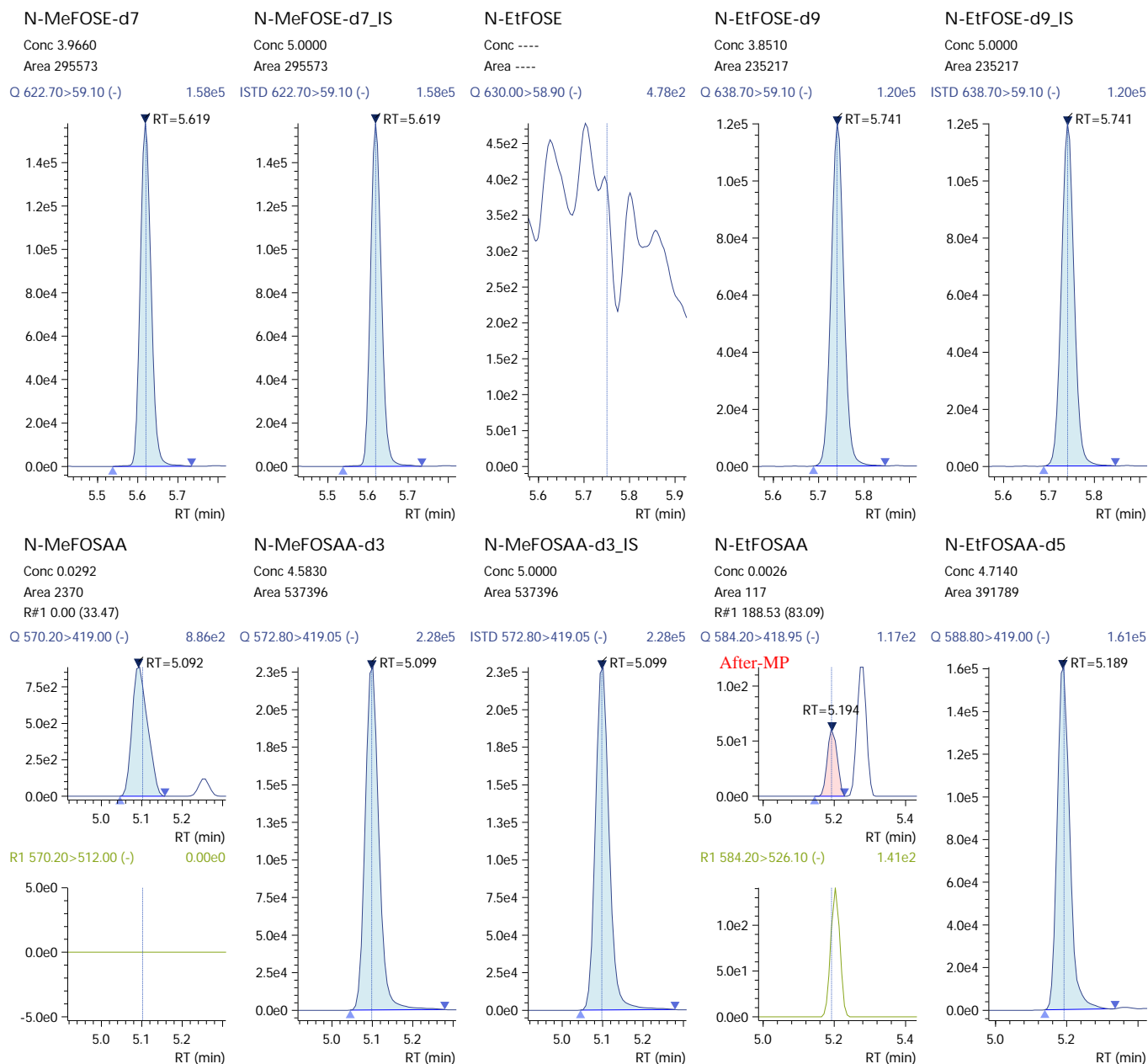
Conc 0.0027
Area 497
After-BLC



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200812_049 (continued)



Insight Report

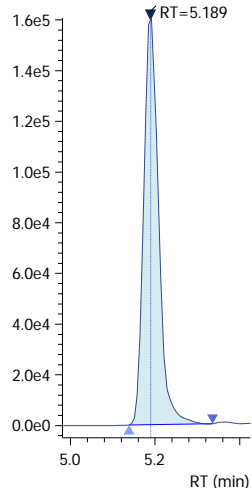
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200812_049 (continued)

N-EtFOSAA-d5_IS

Conc 5.0000
 Area 391789

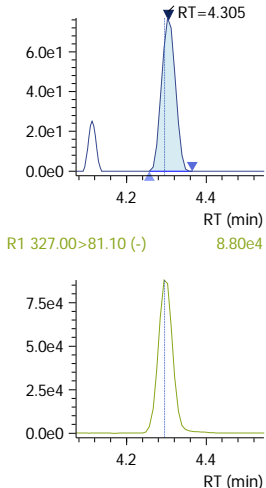
ISTD 588.80>419.00 (-) 1.61e5



4_2-FTS_1

Conc 0.0008
 Area 188
 R#1 107277.60 (54.93)

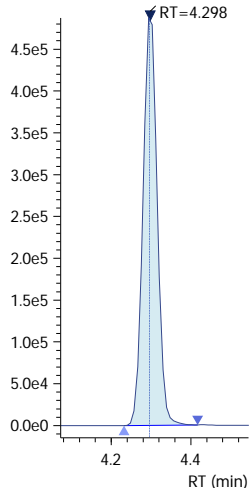
Q 327.00>307.05 (-) 7.70e1



4_2-FTS-13C

Conc 5.0515
 Area 1218861

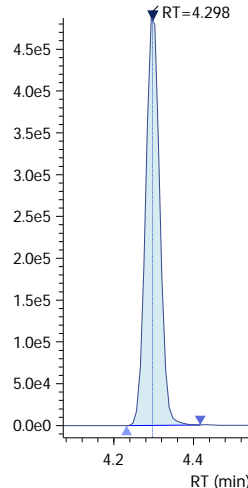
Q 328.80>309.05 (-) 4.87e5



4_2-FTS-13C_IS

Conc 5.0000
 Area 1218861

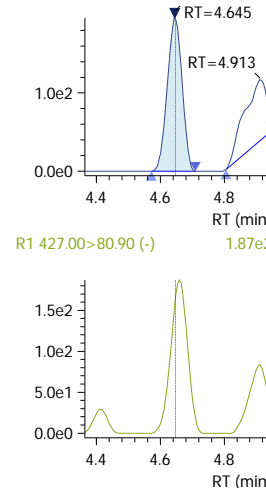
ISTD 328.80>309.05 (-) 4.87e5



6_2-FTS_1

Conc 0.0046
 Area 633
 R#1 45.13 (36.33)

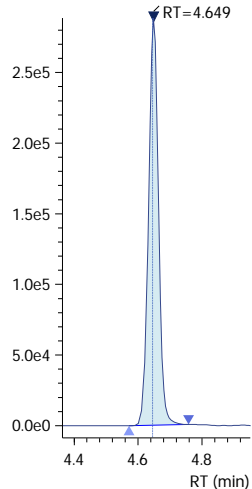
Q 427.00>407.00 (-) 1.96e2



6_2-FTS-13C

Conc 4.8272
 Area 629600

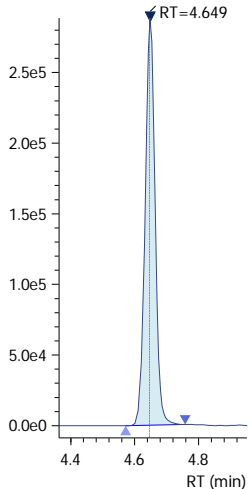
Q 428.90>409.00 (-) 2.89e5



6_2-FTS-13C_IS

Conc 5.0000
 Area 629600

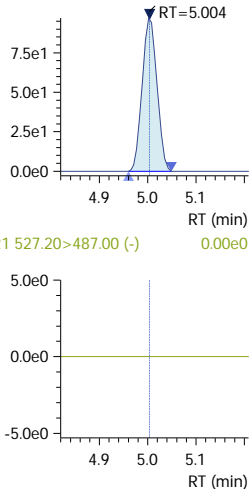
ISTD 428.90>409.00 (-) 2.89e5



8_2-FTS_1

Conc 0.0027
 Area 207
 R#1 0.00 (8.96)

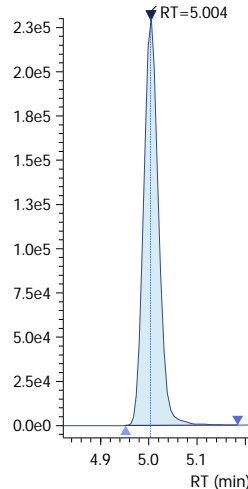
Q 527.10>506.90 (-) 9.70e1



8_2-FTS-13C

Conc 5.0145
 Area 494962

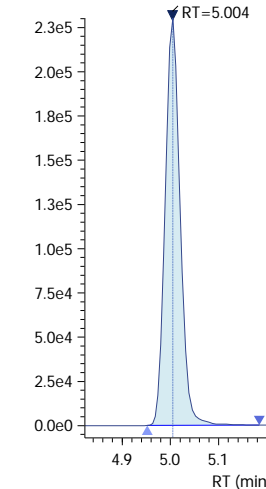
Q 528.80>509.00 (-) 2.30e5



8_2-FTS-13C_IS

Conc 5.0000
 Area 494962

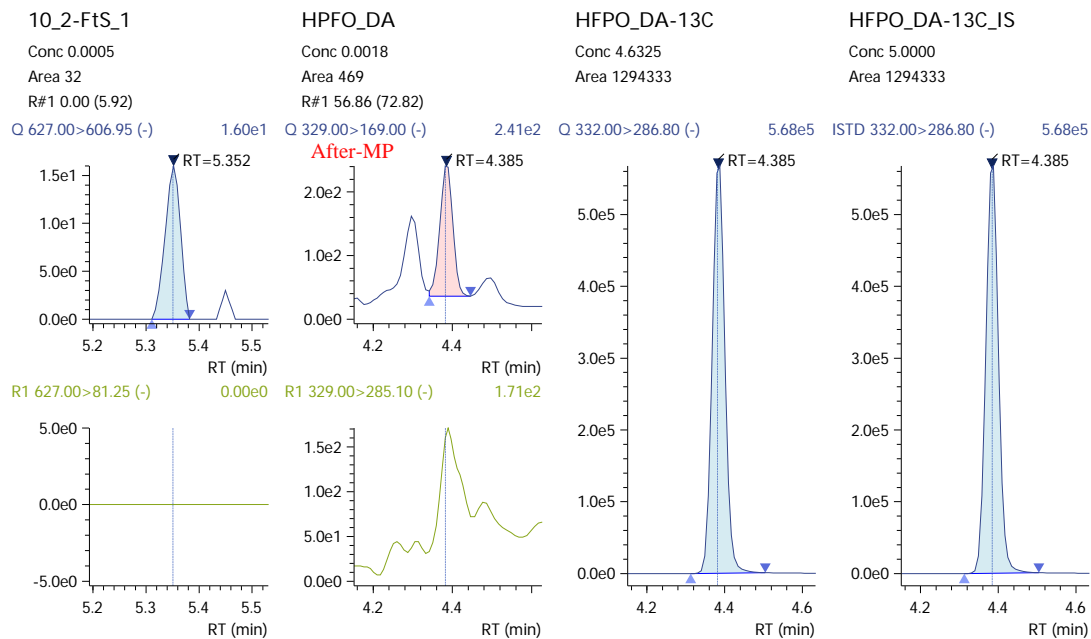
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200812_049 (continued)

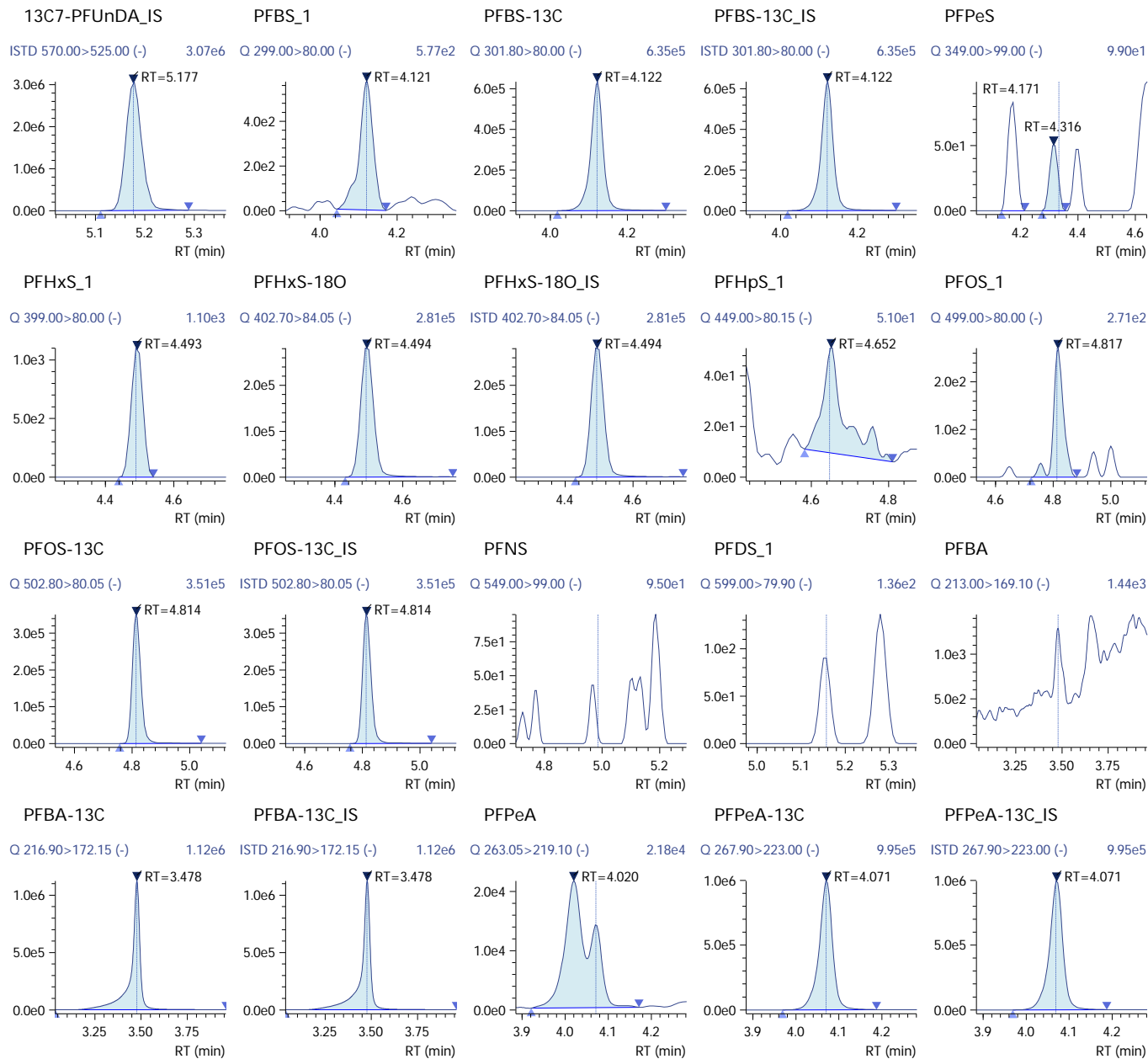


Insight Report

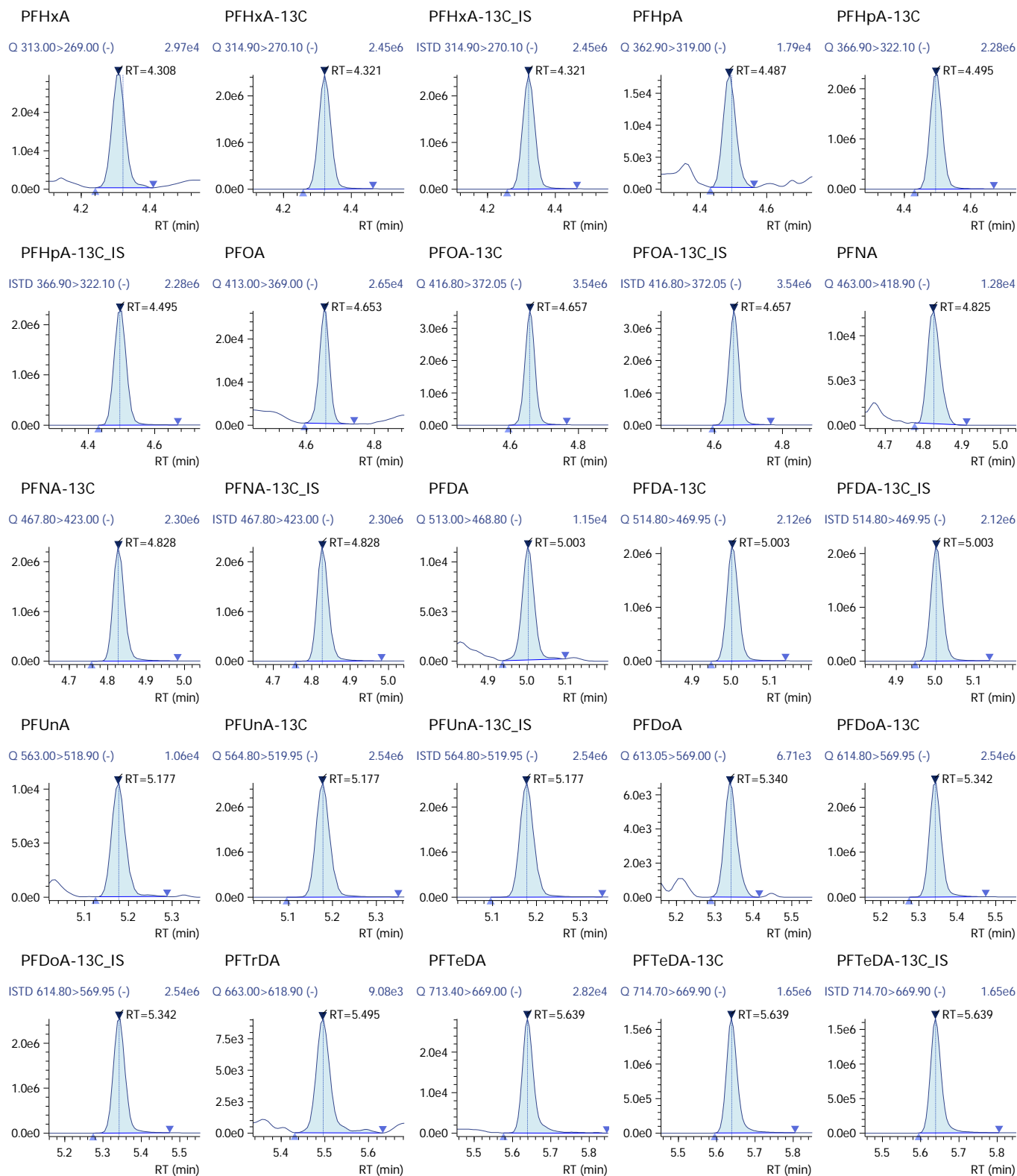
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200812_049

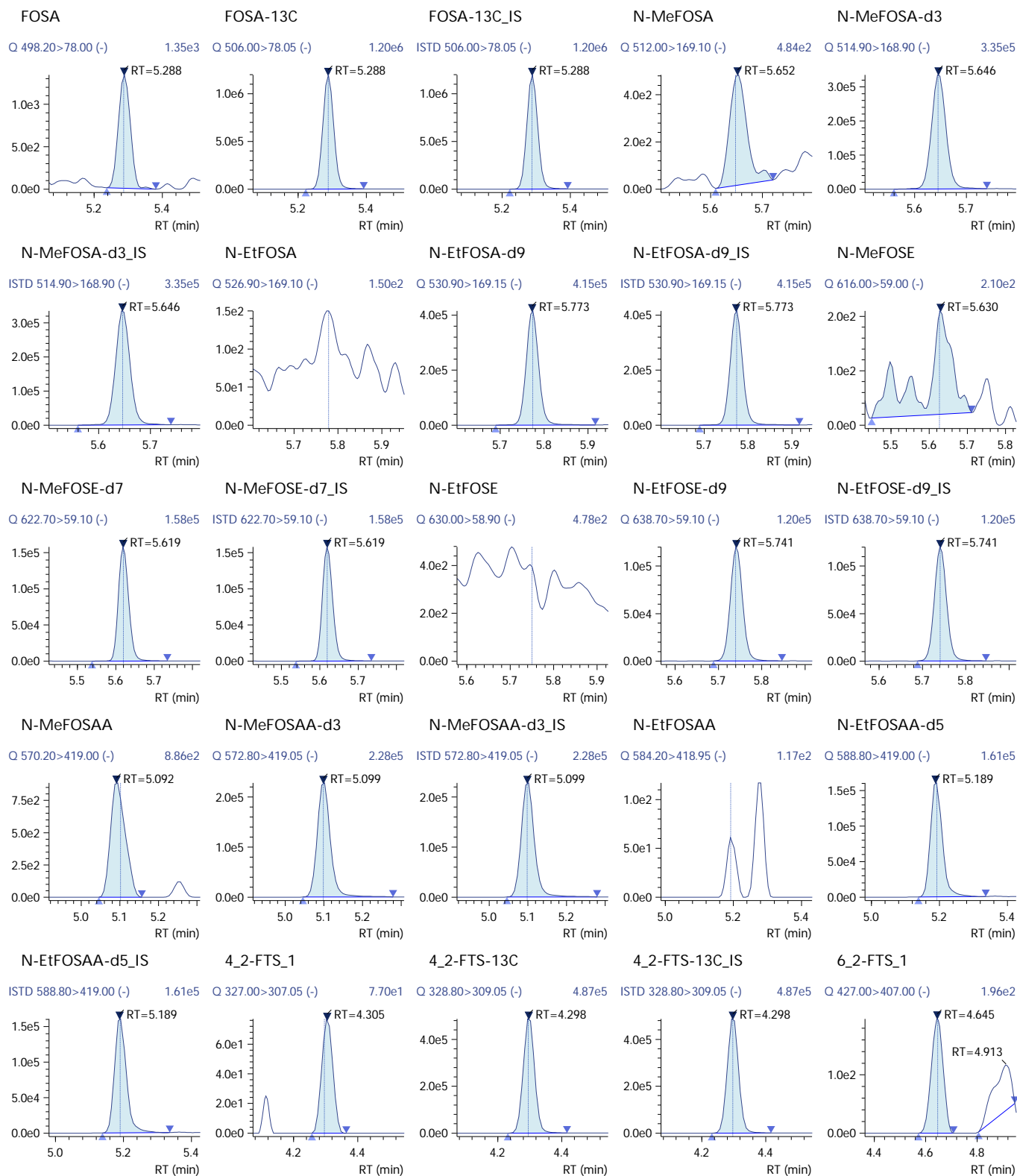
Sample ID: CCB
Date Acquired: 8/12/2020 9:15:50 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_049.lcd
Vial: 44 | Inj. Volume: 15.0000uL | Tray: 1



200812_049 (continued)



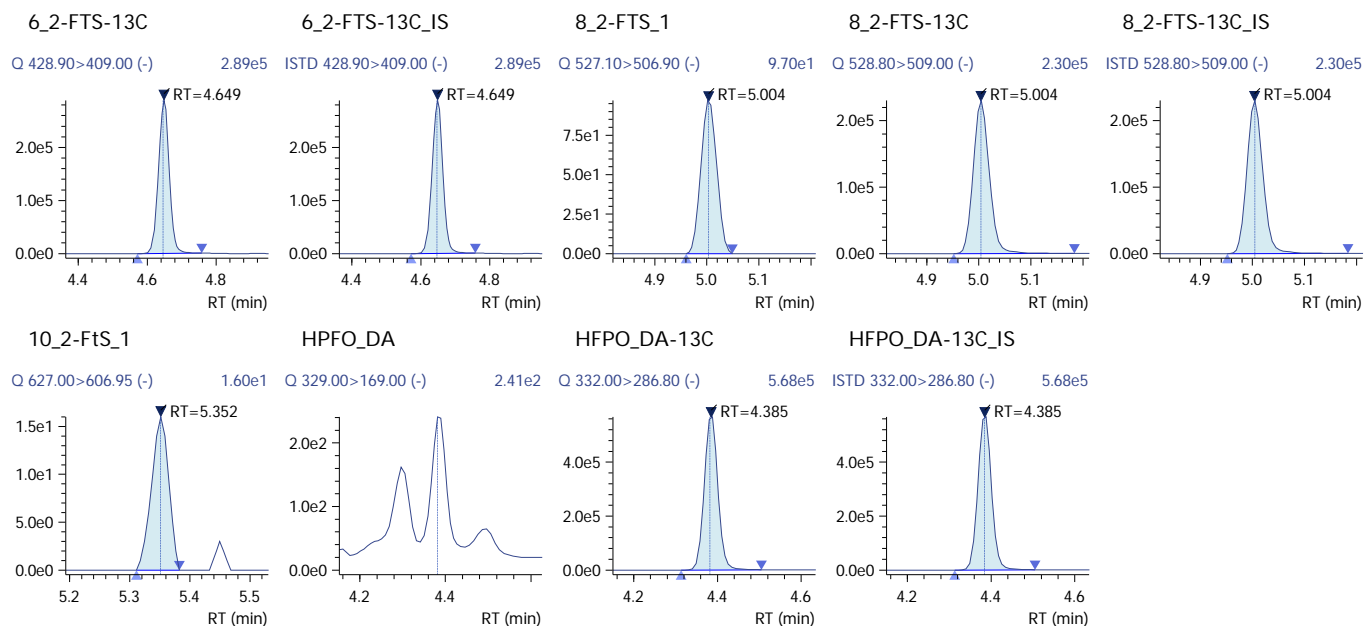
200812_049 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_049 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_050

Sample ID: T-PFOA
 Date Acquired: 8/12/2020 9:26:33 PM
 Acquired by: System Administrator
 Data File: J:\LCMS06\Data\200812_curve\200812_050.lcd
 Vial: 9 | Inj. Volume: 15.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
13C7-PFUnDA_IS	Auto	5.181	3048	3048	1	5.0000	ng/mL	0.0000	----
PFBS_1	ND(W /B)	----	----	53	2	----	ng/mL	0.0000	----
PFBS-13C	Auto	4.094	53	3048	1	0.3684	ng/mL	0.0000	----
PFBS-13C_IS	Auto	4.094	53	53	2	5.0000	ng/mL	0.0000	----
PFPeS	ND(W /B)	----	----	53	2	----	ng/mL	0.0000	----
PFHxS_1	Auto	4.484	239	----	3	0.0000	ng/mL	0.0000	0.00
PFHxS-18O	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFHxS-18O_IS	ND(W /B)	----	----	----	3	----	ng/mL	0.0000	----
PFHpS_1	Auto	4.721	90	----	3	0.0000	ng/mL	0.0000	0.00
PFOS_1	Auto	4.816	171	----	4	0.0000	ng/mL	0.0000	134.09
PFOS-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFOS-13C_IS	ND(W /B)	----	----	----	4	----	ng/mL	0.0000	----
PFNS	ND(W /B)	----	----	----	4	----	ng/mL	0.0000	----
PFDS_1	ND(W /B)	----	----	----	4	----	ng/mL	0.0000	----
PFBA	ND(W /B)	----	----	----	5	----	ng/mL	0.0000	----
PFBA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFBA-13C_IS	ND(W /B)	----	----	----	5	----	ng/mL	0.0000	----
PFPeA	Auto	4.010	56084	464	6	196.2900	ng/mL	0.0000	----
PFPeA-13C	Auto	4.052	464	3048	1	2.1407	ng/mL	0.0000	----
PFPeA-13C_IS	Auto	4.052	464	464	6	5.0000	ng/mL	0.0000	----
PFHxA	Auto	4.301	74977	----	7	0.0000	ng/mL	0.0000	4.41
PFHxA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFHxA-13C_IS	ND(W /B)	----	----	----	7	----	ng/mL	0.0000	----
PFHpA	Auto	4.488	63455	----	8	0.0000	ng/mL	0.0000	21.40
PFHpA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFHpA-13C_IS	ND(W /B)	----	----	----	8	----	ng/mL	0.0000	----
PFOA	Auto	4.657	2127029	757	9	13900.4876	ng/mL	0.0000	33.98
PFOA-13C	Auto	4.665	757	3048	1	1.1127	ng/mL	0.0000	----
PFOA-13C_IS	Auto	4.665	757	757	9	5.0000	ng/mL	0.0000	----
PFNA	Auto	4.824	30754	----	10	0.0000	ng/mL	0.0000	24.10
PFNA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PFNA-13C_IS	ND(W /B)	----	----	----	10	----	ng/mL	0.0000	----
PFDA	Auto	5.003	22575	1268	11	84.6188	ng/mL	0.0000	22.97
PFDA-13C	Auto	5.003	1268	3048	1	2.9689	ng/mL	0.0000	----
PFDA-13C_IS	Auto	5.003	1268	1268	11	5.0000	ng/mL	0.0000	----
PFUnA	Auto	5.177	23664	----	12	0.0000	ng/mL	0.0000	12.99
PFUnA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----

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200812_050 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
PfUnA-13C_IS	ND(W /B)	----	----	----	12	----	ng/mL	0.0000	----
PfDoA	Auto	5.343	15162	4755	13	19.8070	ng/mL	0.0000	25.51
PfDoA-13C	Auto	5.347	4755	3048	1	9.4313	ng/mL	0.0000	----
PfDoA-13C_IS	Auto	5.347	4755	4755	13	5.0000	ng/mL	0.0000	----
PfTrDA	Auto	5.496	18005	----	14	0.0000	ng/mL	0.0000	20.56
PfTeDA	Auto	5.638	8561	----	14	0.0000	ng/mL	0.0000	20.22
PfTeDA-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
PfTeDA-13C_IS	ND(W /B)	----	----	----	14	----	ng/mL	0.0000	----
FOSA	ND(W /B)	----	----	1482	16	----	ng/mL	0.0000	----
FOSA-13C	Auto	5.298	1482	3048	1	5.3297	ng/mL	0.0000	----
FOSA-13C_IS	Auto	5.298	1482	1482	16	5.0000	ng/mL	0.0000	----
N-MeFOSA	Auto	5.663	660	2140	17	1.1710	ng/mL	0.0000	0.00
N-MeFOSA-d3	Auto	5.647	2140	3048	1	30.8952	ng/mL	0.0000	----
N-MeFOSA-d3_IS	Auto	5.647	2140	2140	17	5.0000	ng/mL	0.0000	----
N-EtFOSA	ND(W /B)	----	----	----	18	----	ng/mL	0.0000	----
N-EtFOSA-d9	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
N-EtFOSA-d9_IS	ND(W /B)	----	----	----	18	----	ng/mL	0.0000	----
N-MeFOSE	Auto	5.629	819	----	19	0.0000	ng/mL	0.0000	----
N-MeFOSE-d7	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
N-MeFOSE-d7_IS	ND(W /B)	----	----	----	19	----	ng/mL	0.0000	----
N-EtFOSE	ND(W /B)	----	----	305	20	----	ng/mL	0.0000	----
N-EtFOSE-d9	Auto	5.751	305	3048	1	11.2254	ng/mL	0.0000	----
N-EtFOSE-d9_IS	Auto	5.751	305	305	20	5.0000	ng/mL	0.0000	----
N-MeFOSAA	ND(W /B)	----	----	3621	21	----	ng/mL	0.0000	----
N-MeFOSAA-d3	Auto	5.100	3621	3048	1	69.4980	ng/mL	0.0000	----
N-MeFOSAA-d3_IS	Auto	5.100	3621	3621	21	5.0000	ng/mL	0.0000	----
N-EtFOSAA	ND(W /B)	----	----	2051	22	----	ng/mL	0.0000	----
N-EtFOSAA-d5	Auto	5.195	2051	3048	1	55.5471	ng/mL	0.0000	----
N-EtFOSAA-d5_IS	Auto	5.195	2051	2051	22	5.0000	ng/mL	0.0000	----
4_2-FTS_1	ND(W /B)	----	----	----	23	----	ng/mL	0.0000	----
4_2-FTS-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
4_2-FTS-13C_IS	ND(W /B)	----	----	----	23	----	ng/mL	0.0000	----
6_2-FTS_1	Auto	4.651	3415	----	24	0.0000	ng/mL	0.0000	43.20
6_2-FTS-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
6_2-FTS-13C_IS	ND(W /B)	----	----	----	24	----	ng/mL	0.0000	----
8_2-FTS_1	Auto	5.005	15	----	25	0.0000	ng/mL	0.0000	0.00
8_2-FTS-13C	ND(W /B)	----	----	3048	1	----	ng/mL	0.0000	----
8_2-FTS-13C_IS	ND(W /B)	----	----	----	25	----	ng/mL	0.0000	----
10_2-Fts_1	ND(W /B)	----	----	----	25	----	ng/mL	0.0000	----

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200812_050 (continued)

(Table continued from previous page)

Name	Mode ID	Found RT	Area	ISTD Area	ISTD Group	Conc.	Unit	Std. Conc.	Ref 1 Actual Ratio
HPFO_DA	ND(W/B)	----	----	----	26	----	ng/mL	0.0000	----
HFPO_DA-13C	ND(W/B)	----	----	3048	1	----	ng/mL	0.0000	----
HFPO_DA-13C_IS	ND(W/B)	----	----	----	26	----	ng/mL	0.0000	----

13C7-PFUnDA_IS

Conc 5.0000
Area 3048

PFBS_1

Conc ----
Area ----
R#1 ---- (56.85)

PFBS-13C

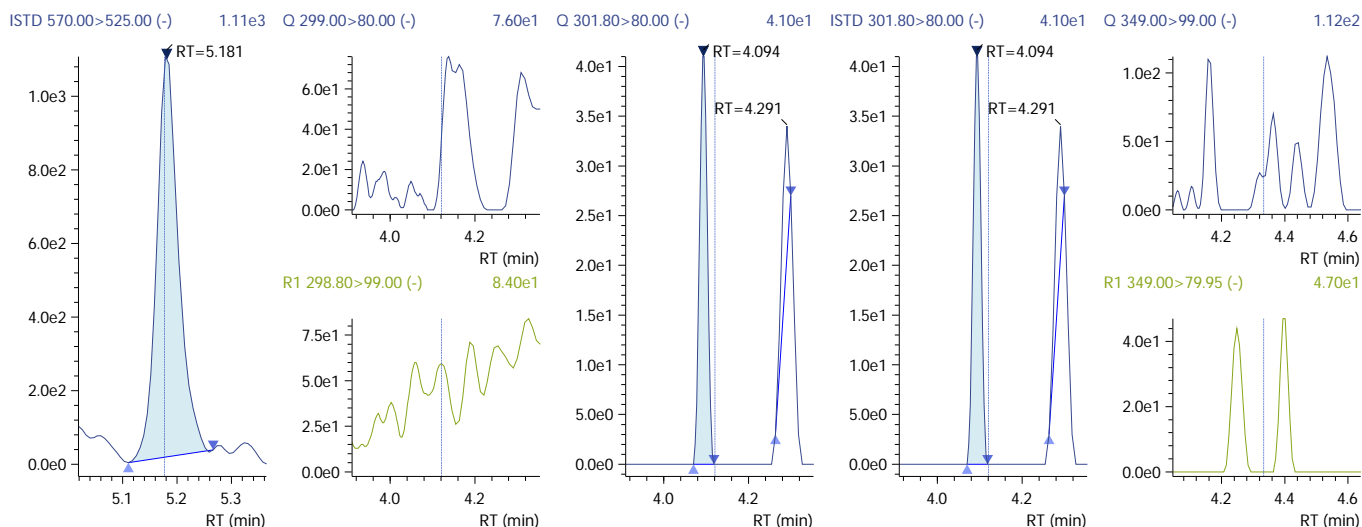
Conc 0.3684
Area 53

PFBS-13C_IS

Conc 5.0000
Area 53

PFPeS

Conc ----
Area ----
R#1 ---- (155.17)



PFHxS_1

Conc 0.0000
Area 239
R#1 0.00 (67.24)

PFHxS-180

Conc ----
Area ----

PFHxS-180_IS

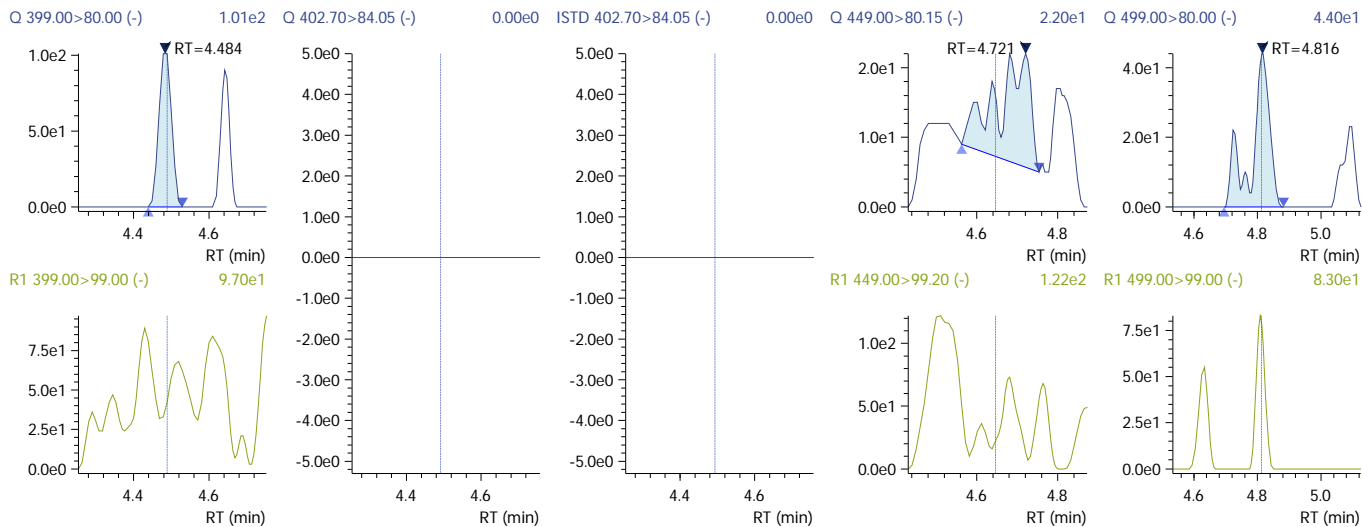
Conc ----
Area ----

PFHpS_1

Conc 0.0000
Area 90
R#1 0.00 (61.74)

PFOS_1

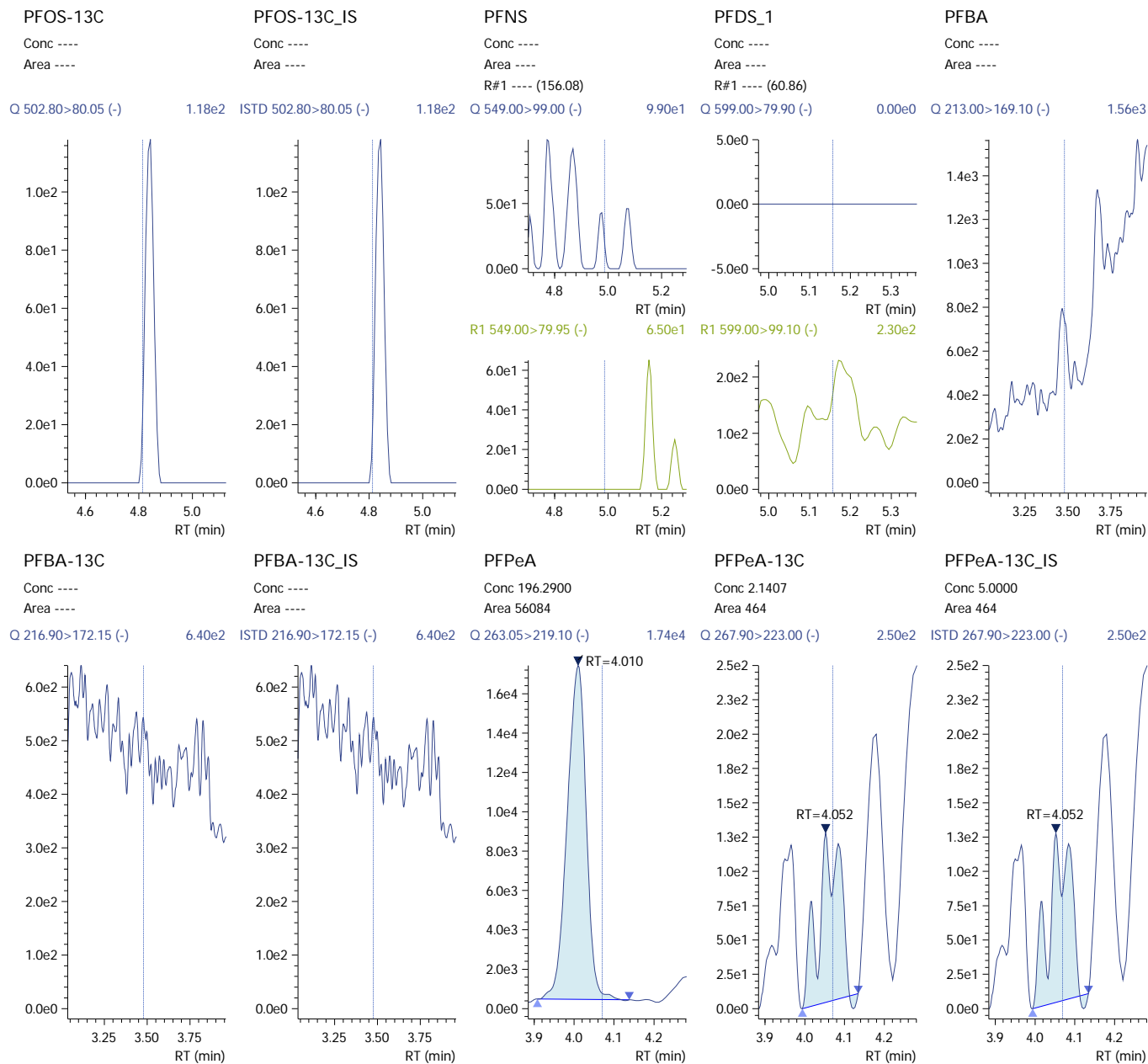
Conc 0.0000
Area 171
R#1 134.09 (82.03)



Insight Report

Printed at 8/13/2020 12:34:07 PM

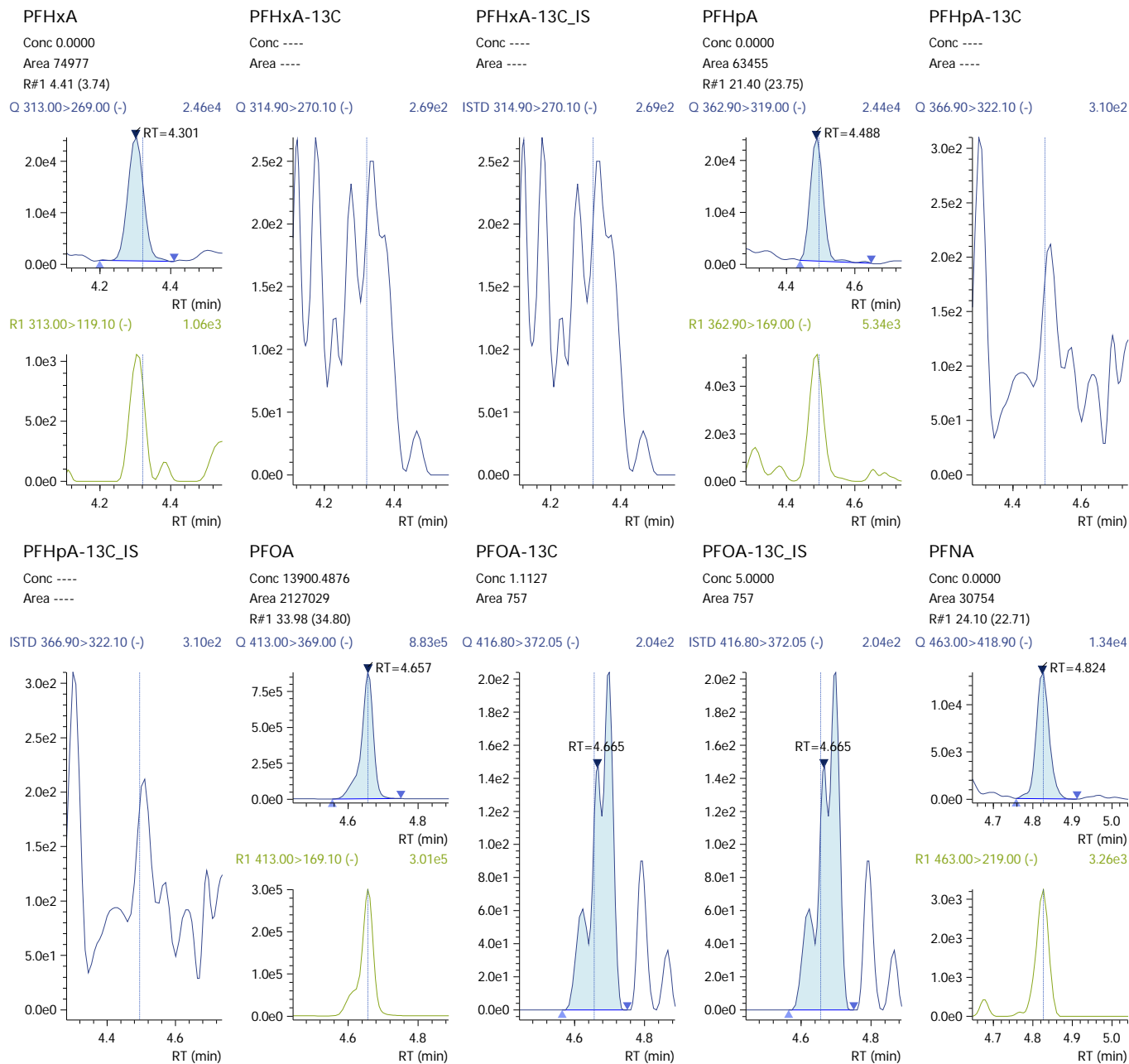
200812_050 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)

PFNA-13C

Conc ----
 Area ----

PFNA-13C_IS

Conc ----
 Area ----

PFDA

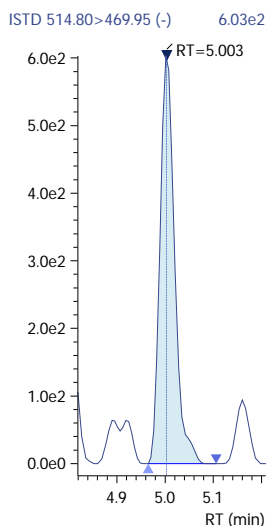
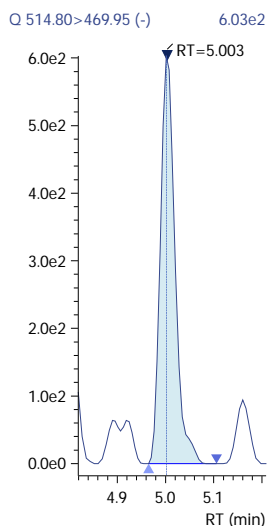
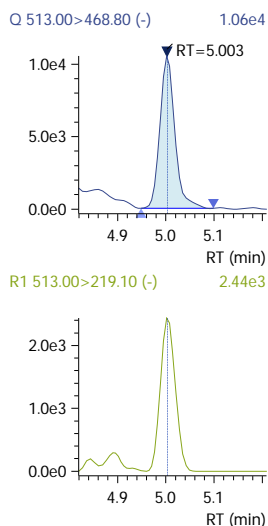
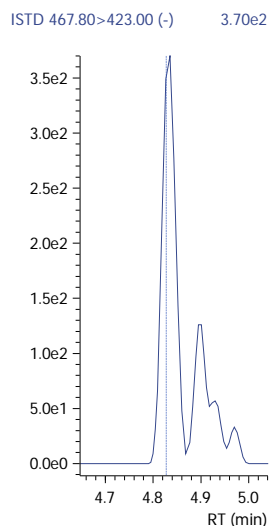
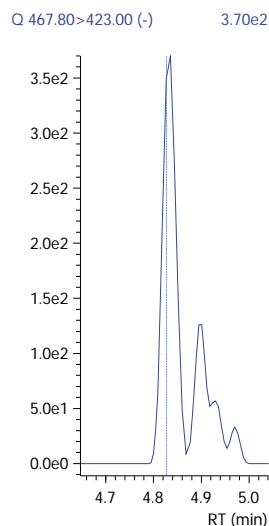
Conc 84.6188
 Area 22575
 R#1 22.97 (22.06)

PFDA-13C

Conc 2.9689
 Area 1268

PFDA-13C_IS

Conc 5.0000
 Area 1268



PFUnA

Conc 0.0000
 Area 23664
 R#1 12.99 (13.66)

PFUnA-13C

Conc ----
 Area ----

PFUnA-13C_IS

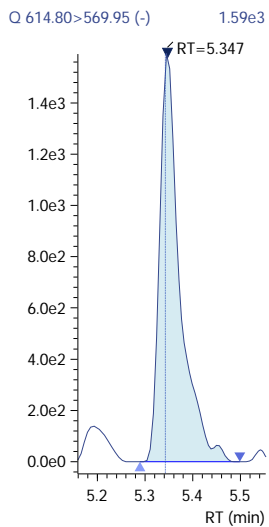
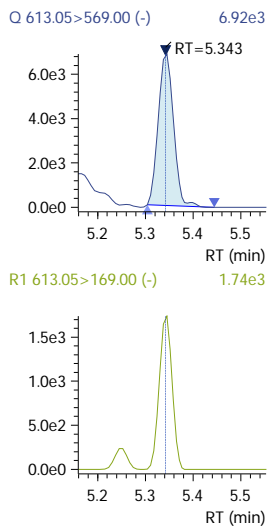
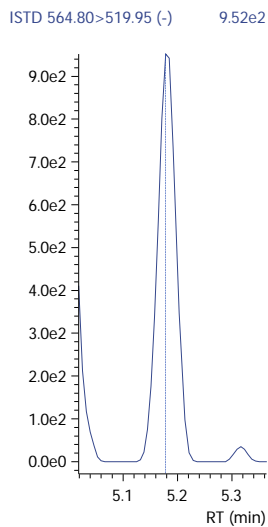
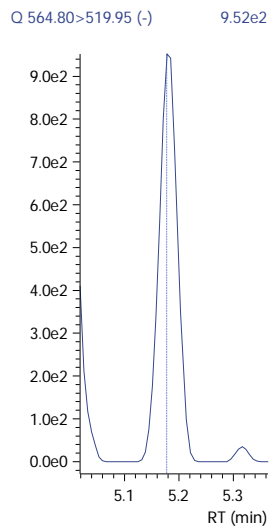
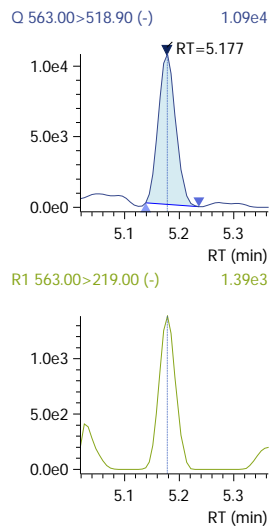
Conc ----
 Area ----

PFDaA

Conc 19.8070
 Area 15162
 R#1 25.51 (21.98)

PFDaA-13C

Conc 9.4313
 Area 4755



Insight Report

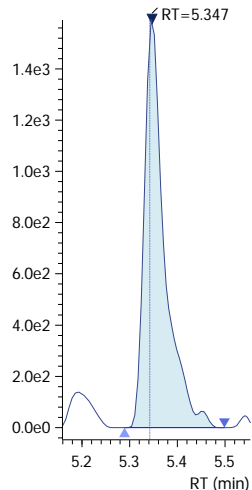
Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)

PFDa-13C_IS

Conc 5.0000
 Area 4755

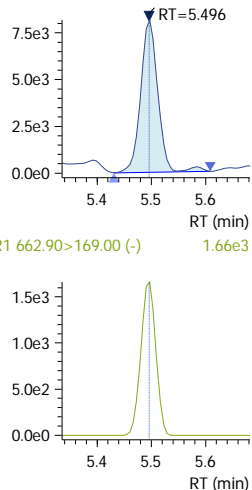
ISTD 614.80>569.95 (-) 1.59e3



PFTrDA

Conc 0.0000
 Area 18005
 R#1 20.56 (19.20)

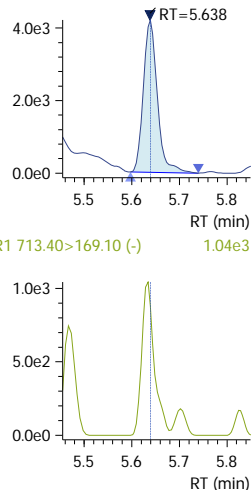
Q 663.00>618.90 (-) 8.19e3



PFTeDA

Conc 0.0000
 Area 8561
 R#1 20.22 (61.49)

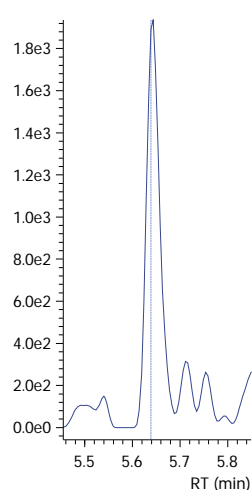
Q 713.40>669.00 (-) 4.22e3



PFTeDA-13C

Conc ----
 Area ----

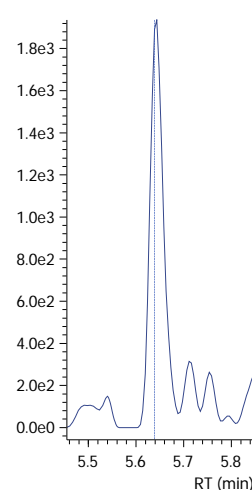
Q 714.70>669.90 (-) 1.94e3



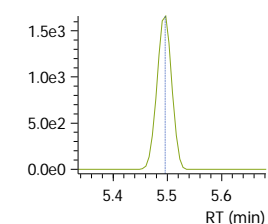
PFTeDA-13C_IS

Conc ----
 Area ----

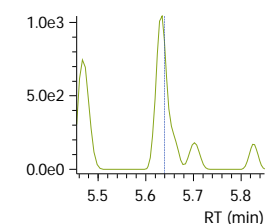
ISTD 714.70>669.90 (-) 1.94e3



R1 662.90>169.00 (-) 1.66e3



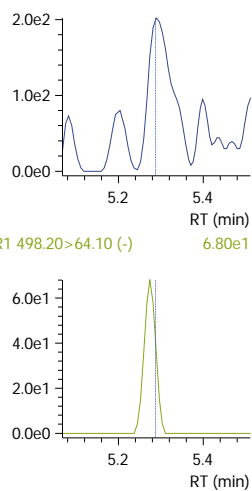
R1 713.40>169.10 (-) 1.04e3



FOSA

Conc ----
 Area ----
 R#1 ---- (4.04)

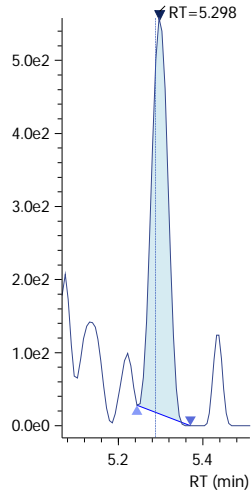
Q 498.20>78.00 (-) 2.02e2



FOSA-13C

Conc 5.3297
 Area 1482

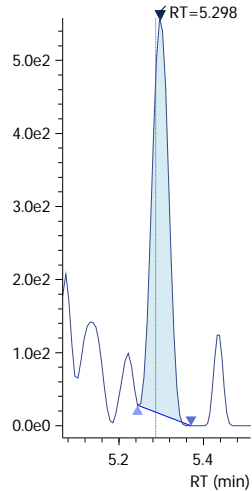
Q 506.00>78.05 (-) 5.58e2



FOSA-13C_IS

Conc 5.0000
 Area 1482

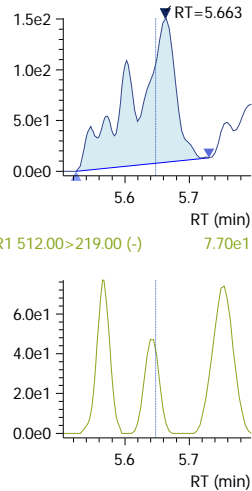
ISTD 506.00>78.05 (-) 5.58e2



N-MeFOSA

Conc 1.1710
 Area 660
 R#1 0.00 (78.52)

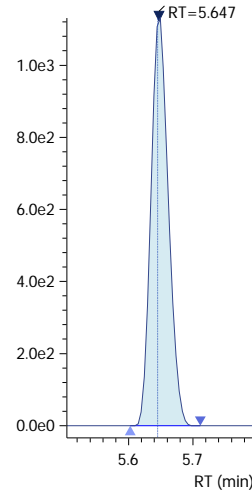
Q 512.00>169.10 (-) 1.51e2



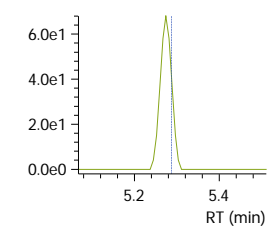
N-MeFOSA-d3

Conc 30.8952
 Area 2140

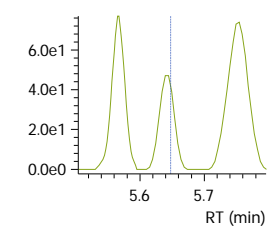
Q 514.90>168.90 (-) 1.13e3



R1 498.20>64.10 (-) 6.80e1



R1 512.00>219.00 (-) 7.70e1



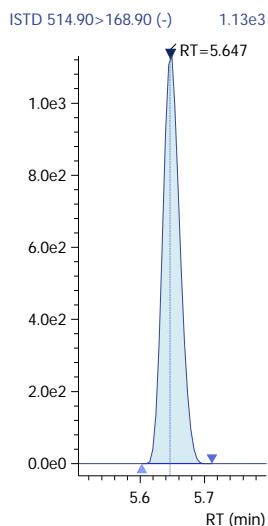
Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)

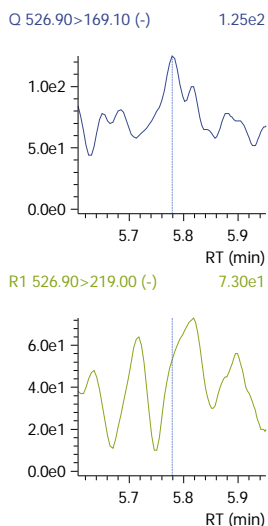
N-MeFOSA-d3_IS

Conc 5.0000
 Area 2140



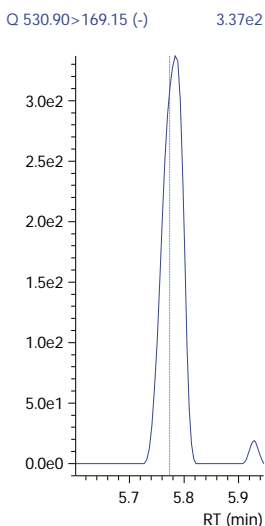
N-EtFOSA

Conc ----
 Area ----
 R#1 ---- (0.00)



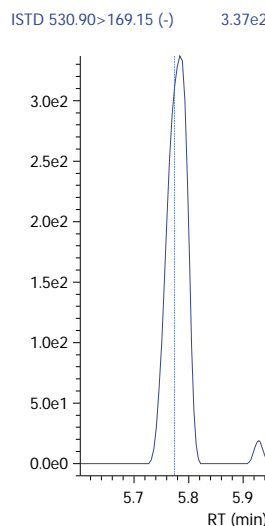
N-EtFOSA-d9

Conc ----
 Area ----



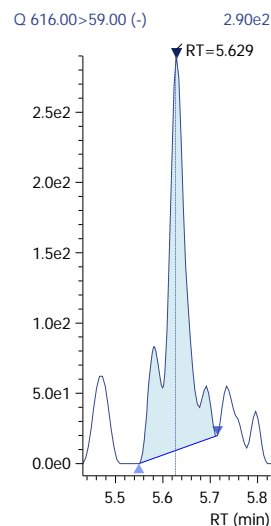
N-EtFOSA-d9_IS

Conc ----
 Area ----



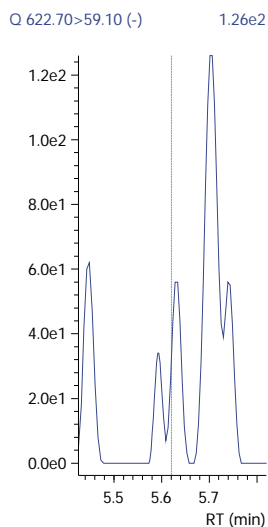
N-MeFOSE

Conc 0.0000
 Area 819



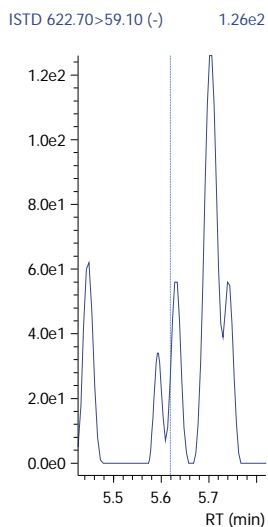
N-MeFOSE-d7

Conc ----
 Area ----



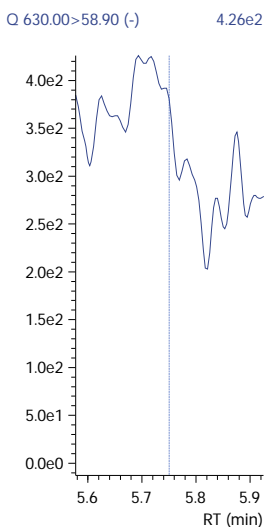
N-MeFOSE-d7_IS

Conc ----
 Area ----



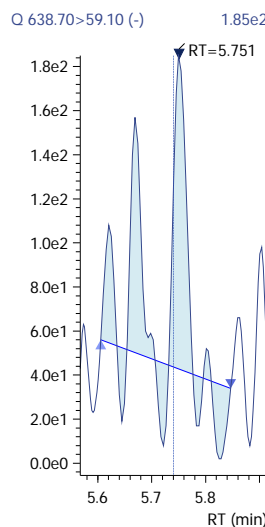
N-EtFOSE

Conc ----
 Area ----



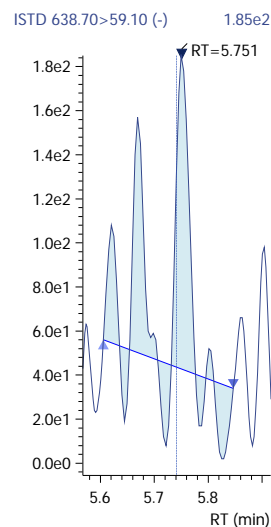
N-EtFOSE-d9

Conc 11.2254
 Area 305



N-EtFOSE-d9_IS

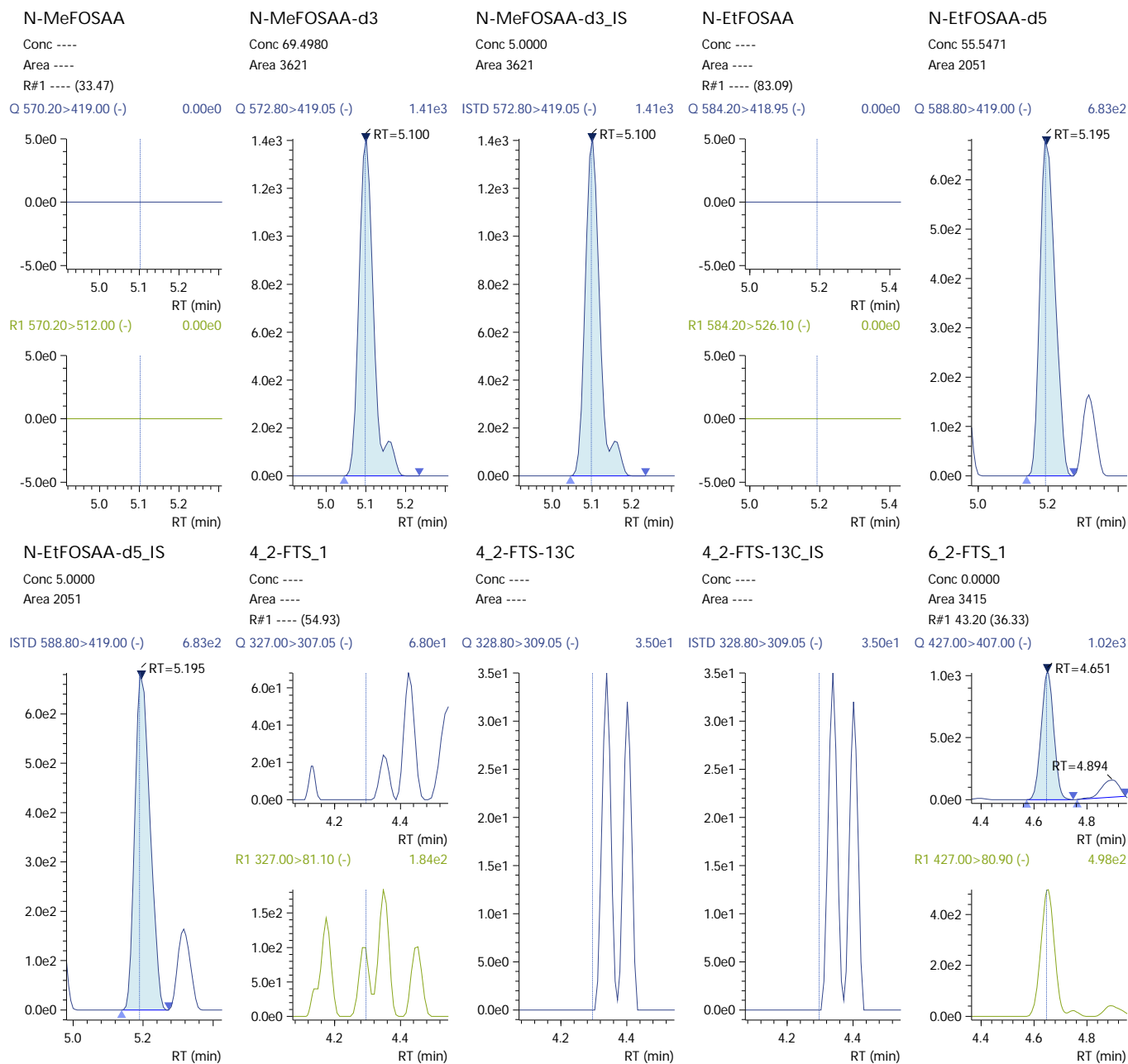
Conc 5.0000
 Area 305



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Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)



Insight Report

Printed at 8/13/2020 12:34:07 PM

200812_050 (continued)

6_2-FTS-13C

Conc ----
Area ----

6_2-FTS-13C_IS

Conc ----
Area ----

8_2-FTS_1

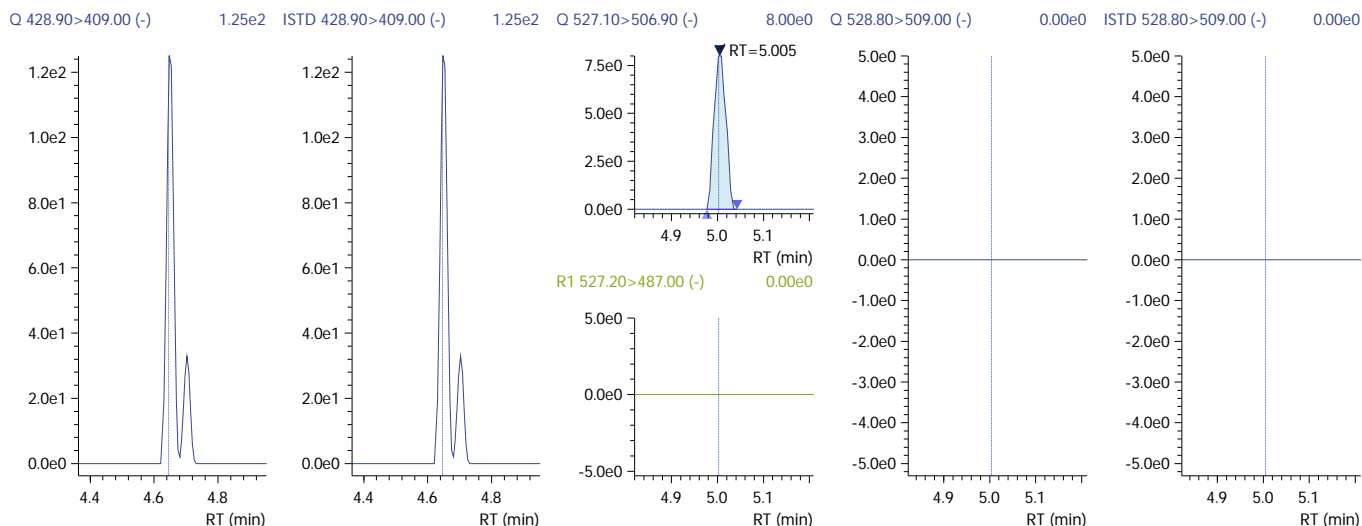
Conc 0.0000
Area 15
R#1 0.00 (8.96)

8_2-FTS-13C

Conc ----
Area ----

8_2-FTS-13C_IS

Conc ----
Area ----



10_2-FtS_1

Conc ----
Area ----
R#1 ---- (5.92)

HPFO_DA

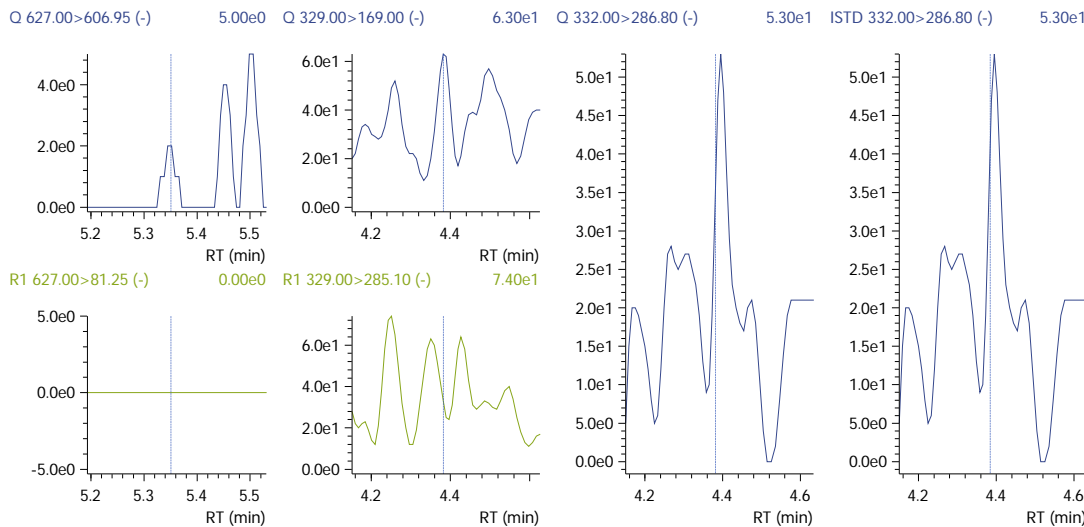
Conc ----
Area ----
R#1 ---- (72.82)

HPFO_DA-13C

Conc ----
Area ----

HPFO_DA-13C_IS

Conc ----
Area ----

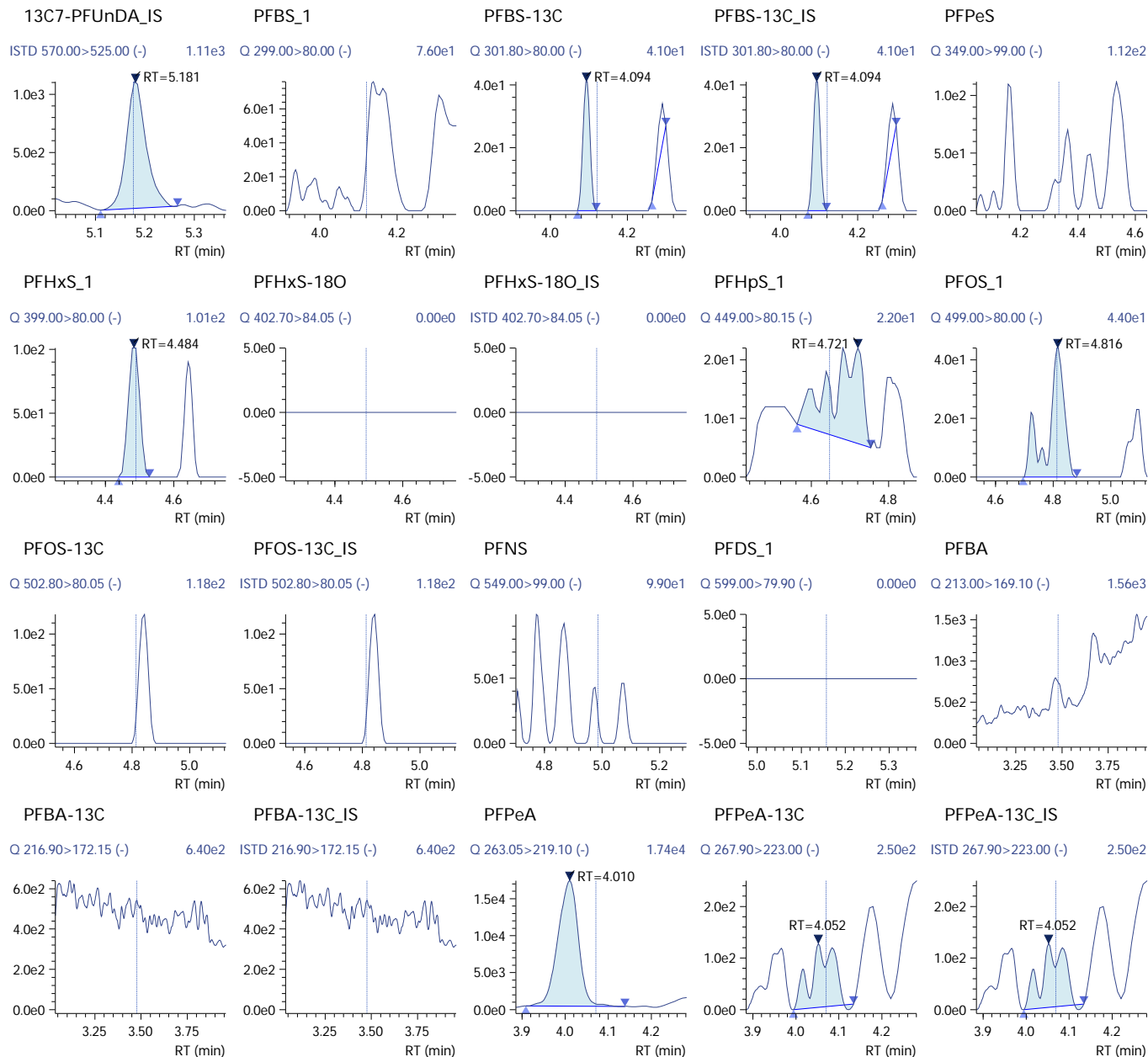


Insight Report

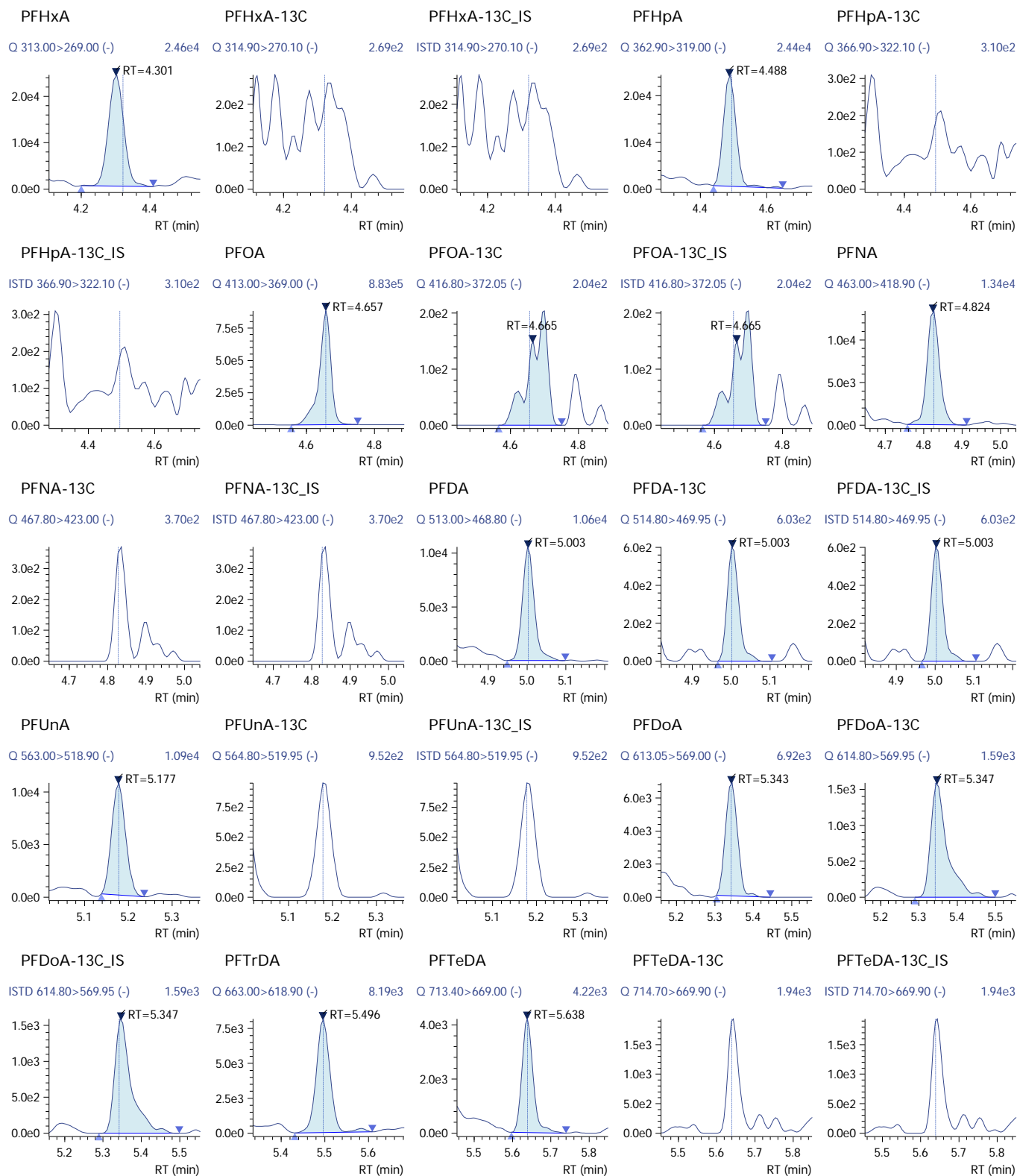
Printed at 8/13/2020 11:29:11 AM

200812_050

Sample ID: T-PFOA
Date Acquired: 8/12/2020 9:26:33 PM
Acquired by: System Administrator
Data File: J:\LCMS06\Data\200812_curve\200812_050.lcd
Vial: 9 | Inj. Volume: 15.0000uL | Tray: 0



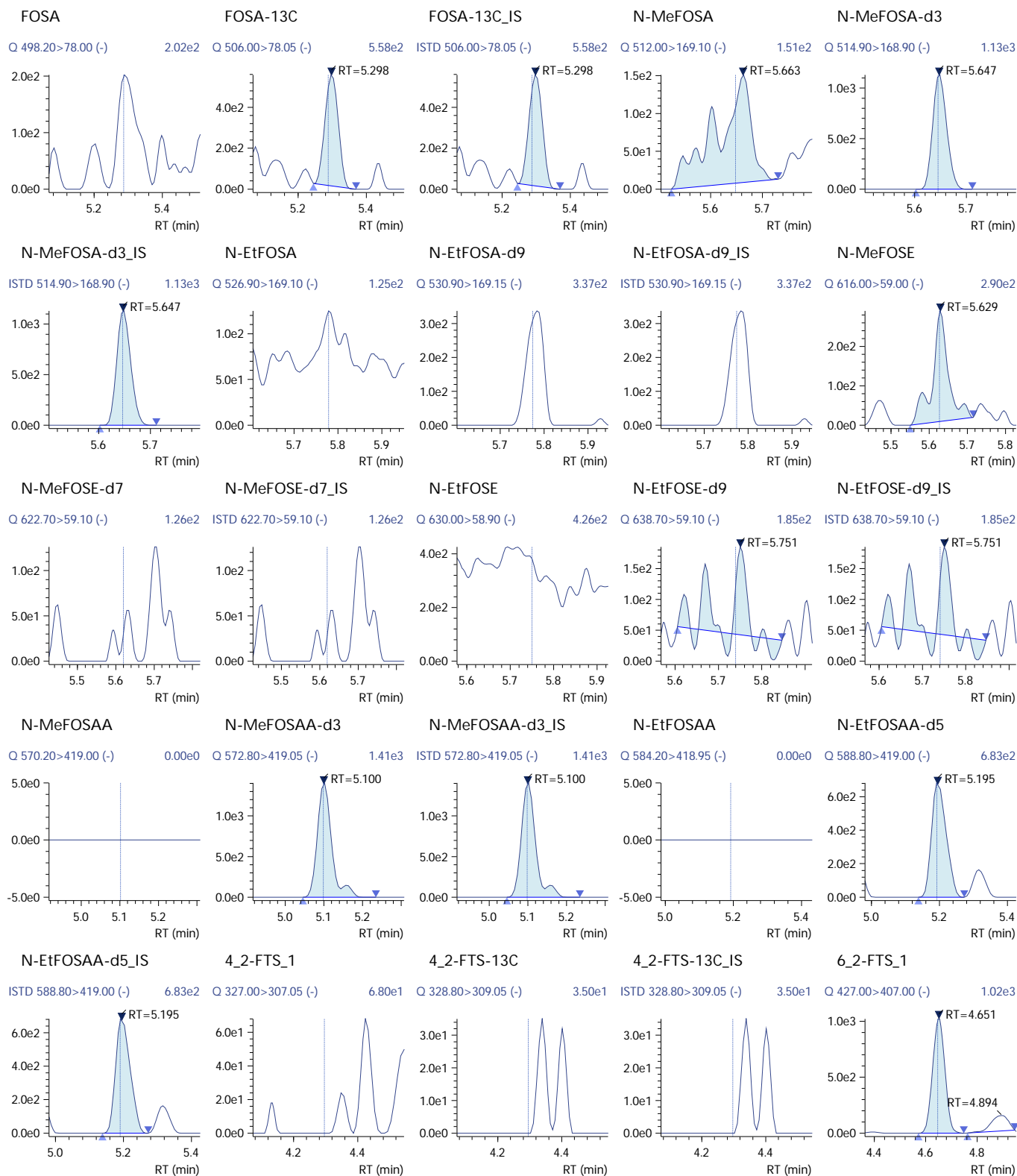
200812_050 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

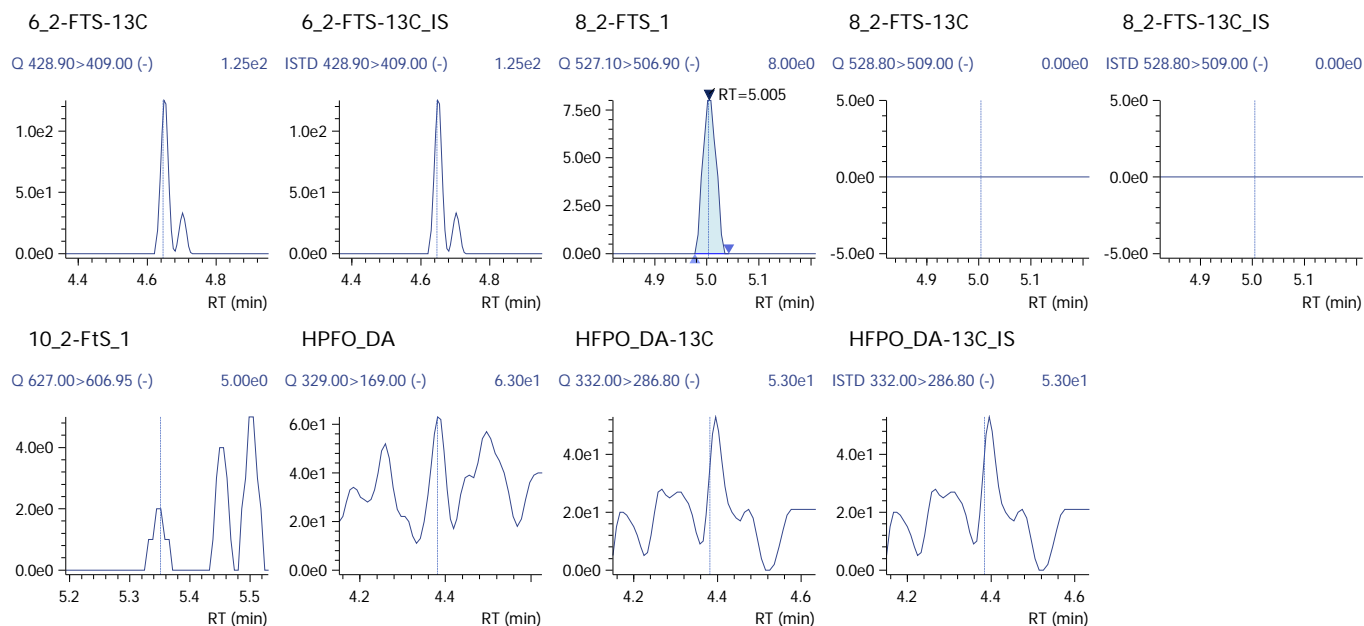
200812_050 (continued)



Insight Report

Printed at 8/13/2020 11:29:11 AM

200812_050 (continued)



200819_b1



ICAL Date: 8/12/2020
Std. xp: 10/14/2020
ICAL ID: KC2000408
LIMS ID: 691718

1st Review: Cmuller
2nd Review:
Column: Phenomenex EVO-C18 100X4.6 mm S/N: H20-136087
Mobile Phases A: 5mM Ammonium Acetate in H2O 20-OLC-02-23F B: 5mM Ammonium Acetate In MeOH 20-OLC-02-23G

	Sample Name	File Name	Acquisition Method	Dilution	R		
1	I.0 PPB CCV	20-OLC-02-24A	200819_004	PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Hihg HxS surr, native ok
2	CCB	20-OLC-02-22G	200819_005	PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	
3	R2006768-003		200819_006	PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	
4	K2006776-001	10X OF 1KX	200819_007	PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	High HxS, 6:2 surr, ODL
5	K2006776-001 DUP	10X OF 1KX	200819_008	PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	High 6:2 surr, ODL

Analysis: PFC		IS/Lot/Exp.: 20-0LC-02-16J		Filter lot: _____		Solvent/Lot: 700 02-118-49	
Pipette: Cori'e, Newton, NY			Envi-Carb: _____		Centrifuge: _____		
Sample ID	IS Amount	Sample Aliquot	Final Volume	Dilution Factor	Date Prepared	Analyst	Analyte for dilution
k2006776-001	10 uL	100 uL	1 mL	10x	8/19/2020	CM	PFOS, 6:2, HxS
k2006776-001 dup	10 uL	100 uL	1 mL	10x	↓	CM	PFOS, 6:2, HxS

Analysis: PFC		IS/Lot/Exp.: 20-OLC-02-16J		Filter lot: AA 91043107		Solvent/Lot: _____	
Pipette: Curie, WU			Envi-Carb: _____		Centrifuge: _____		
Sample ID	IS Amount	Sample Aliquot	Final Volume	Dilution Factor	Date Prepared	Analyst	Analyte for dilution
R2006768-003	10 uL	990 uL	1 mL	1x	9/19/2020	CM	High PFOS surr w/ hit

Country Fried

200812_b3



ICAL Date: 8/12/2020

Std. xp: 10/14/2020

ICAL ID: KC2000408

LIMS ID: 690911

1st Review:

Cmuller

2nd Review:

Column:

Phenomenex EVO-C18 100X4.6 mm S/N: H20-136087

Mobile Phases

A: 5mM Ammonium Acetate in H2O 20-OLC-02-23F

B: 5mM Ammonium Acetate in MeOH 20-OLC-02-23G

	Sample Name	File Name	Acquisition Method	Dilution	R	
1	1.0 PPB CCV	20-OLC-02-24A	200812_061	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
2	CCB	20-OLC-02-22G	200812_062	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
3	KQ2011026-03	LCS	200812_063	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
4	KQ2011026-04	MB	200812_064	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
5	K2006675-001		200812_065	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
6	K2006675-002		200812_066	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
7	K2006675-003		200812_067	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
8	K2006675-004		200812_068	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
9	K2006675-005		200812_069	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
10	R2006768-001		200812_070	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
11	KQ2011026-01	R2006768-001 MS	200812_071	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
12	KQ2011026-02	R2006768-001 DMS	200812_072	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
13	R2006768-002		200812_073	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
14	R2006768-003		200812_074	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
15	R2006768-004		200812_075	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>
16	R2006768-005		200812_076	PFAS 200812_30_LCMS06.lcm	1x	<input checked="" type="checkbox"/>

RR to confirm hihg PFOS surrr w/ hit

High EtFOSAA surr, native ok

High EtFOSAA surr, ND













High PFOS surr, RR to confirm

High HxS, PFOS surr, ND

Analytical Run Worksheet

Run #: 690911
 Instrument: K-LCMS-06
 Run Status: Draft

CAS Lab: KELSO
 Team: Organic LC
 Assigned To: CMULLER

Seq#	Lab Sample ID	Bottle	QC Type	Container Barcode	Client Sample ID	Method / Test / Prep Method	Df	Parent
1	KQ2011219-01		CCV		Continuing Calibration Verification	PFC/537M / PFAS /	1	
2	KQ2011219-02		CCB		Continuing Calibration Blank	PFC/537M / PFAS /	1	
3	KQ2011026-03 ✓		LCS		Lab Control Sample	PFC/537M / PFAS / ALS SOP	1	
4	KQ2011026-04 ✓		MB		Method Blank	PFC/537M / PFAS / ALS SOP	1	
5	K2006675-001 ✓	.01			WGMW02720200731	PFC/537M / PFAS / ALS SOP	1	
6	K2006675-002 ✓	.01			WGMW03020200731	PFC/537M / PFAS / ALS SOP	1	
7	K2006675-003 ✓	.01			WGMW03320200731	PFC/537M / PFAS / ALS SOP	1	
8	K2006675-004 ✓	.01			WGMW99420200731	PFC/537M / PFAS / ALS SOP	1	
9	K2006675-005 ✓	.01			FB20200731	PFC/537M / PFAS / ALS SOP	1	
10	R2006768-001 ✓	.01			MW-06 (7-30-20)	PFC/537M / PFAS / ALS SOP	1	
11	KQ2011026-01 ✓	.10	MS		Matrix Spike	PFC/537M / PFAS / ALS SOP	1	R2006768-001
12	KQ2011026-02 ✓	.11	DMS		Duplicate Matrix Spike	PFC/537M / PFAS / ALS SOP	1	R2006768-001
13	R2006768-002 ✓	.01			MW-07 (7-30-20)	PFC/537M / PFAS / ALS SOP	1	
14	R2006768-003 ✓	.01			MW-04 (7-30-20)	PFC/537M / PFAS / ALS SOP	1	
15	R2006768-004 ✓	.01			MW-06 DUP (7-30-20)	PFC/537M / PFAS / ALS SOP	1	
16	R2006768-005 ✓	.01			Equipment Blank	PFC/537M / PFAS / ALS SOP	1	

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200818_b1



ICAL Date: 8/12/2020

Std. xp: 10/14/2020

ICAL ID: KC2000408

LIMS ID: 691542

1st Review:

Cmuller

2nd Review:

Phenomenex EVO-C18 100X4.6 mm S/N: H20-136087

Column:

A: 5mM Ammonium Acetate in H2O 20-OLC-02-23F

B: 5mM Ammonium Acetate In MeOH 20-OLC-02-23G

Mobile Phases

	Sample Name	File Name	Acquisition Method	Dilution	R	
1	1.0 PPB CCV	20-OLC-02-24A	200818_040 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	
2	CCB	20-OLC-02-22G	200818_041 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	
3	K2006675-004		200818_042 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	
4	k2006444-002	5X	200818_043 PFAS 200812_30 LCMS06.lcm	5x	<input checked="" type="checkbox"/>	Matrix interference on HxS
5	k2006444-002	1X	200818_044 PFAS 200812_30 LCMS06.lcm	1x	<input checked="" type="checkbox"/>	Matrix interference on HxS

Analysis: PFC		IS/Lot/Exp.: 20-OLC-02165		Filter lot: 91093103		Solvent/Lot: 02118-45	
Pipette: oxford, newton, pascal			Envi-Carb: _____		Centrifuge: K-Sir 5th spins-A-LOT		
Sample ID	IS Amount	Sample Aliquot	Final Volume	Dilution Factor	Date Prepared	Analyst	Analyte for dilution
K2006444-002	10 uL	200 uL	1 mL	5x	8/19/20	CM	Low IS
K2006675-004	10 uL	990 uL	1 mL	1x			High PFOS surr w/ hit

6444-002 10 uL 990 uL 1 mL 5x + CM Low IS

6444- Cascade Creek

6675 Country Fried

APPENDIX 2

Data Usability Summary Report



**Data Usability Summary Report
July 2020 Sampling Event
Former Vacuum Oil Refinery Site – BCP #C828193
Rochester, New York
MEHC Project No. 14-223**

DATA USABILITY

The Quality Assurance Project Plan (“QAPP”) was prepared for this project by Ravi Engineering and Land Surveying, PC (“Ravi”). The QAPP presents the policies, organization, objectives, functional activities, and specific Quality Assurance (“QA”) and Quality Control (“QC”) measures designed to achieve the data quality goals associated with this investigation. The QAPP identifies procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses, and reporting that were implemented during this investigation to ensure the accuracy and integrity of the data generated during the investigation.

Leader Professional Services, Inc. (“LPSI”) conducted the sampling event as part of the remedial activities at the Former Vacuum Oil Refinery Site (“Site”) located at 5 and 15 Flint Street in the City of Rochester, New York.

DATA SUMMARY

The Data Usability Review and Data Validation Compliance Chart has been completed for the laboratory deliverable packages generated by ALS Laboratories (“ALS”), pertaining to samples collected at the Site on July 30, 2020. A total of five (5) water samples were collected, including Quality Control samples, during the July 2020 sampling event as part of 6 NYCRR Part 375, Environmental Remediation Programs. The following USEPA Methodologies were used to analyze these samples for the following analytes:

PFAS (Per- and Polyfluoroalkyl Substances)	USEPA Method 573M
1,4-Dioxane	USEPA 8270D

Trip blank, field duplicate, surrogates, internal standards, reference samples, field (equipment) blank, matrix spikes, and matrix spike duplicates were included in the sample set and processed

Data usability and validation was performed with guidance from the most current editions of the USEPA CLP National Functional Guidelines for Inorganic and Organic Data Review. The following items were reviewed:

- Data Completeness;
- Custody Documentation;
- Holding Times;
- Sample Blanks Review;
- Field Duplicate Samples;
- Matrix Spike Samples and Duplicates; and
- Control Spike/Laboratory Control Samples.

Those items showing deficiencies, if any, are discussed in the attached Data Validation Compliance Chart. All others were found to be acceptable as outlined in the above-mentioned usability procedures, and as applicable for the methodology. Unless noted specifically in the following text, reported results are substantiated by the reported data, and generated in compliance with protocol requirements.

In summary, sample preservation, handling, and processing was conducted with compliance to protocol requirements and with adherence to quality criteria and the reported results are considered “usable”.

The Data Validation Compliance Chart is included with this report.

CUSTODY DOCUMENTATION

Chain of Custody (“COC”) forms are used to document the history of sample possession from the time the sample containers leave their point of origin (usually the laboratory performing the analyses) to the time the samples are received by the laboratory. COCs are considered legal documents.

The laboratory report, R2006768, associated with the three (3) groundwater samples plus a duplicate and equipment blank collected on July 30, 2020 is detailed below:

1. MW-04
2. MW-06
3. MW-06 Duplicate
4. MW-07
5. Equipment Blank

Sample MW-06 was collected in duplicate as well as the Matrix Spike (MS) and Matrix Spike Duplicate (MSD).

The Chain of Custody (“COC”) documents the sample collection efforts. The Equipment Blanks were not listed on the COC. The samples were added by the ALS after confirmation with LPSI.

PRESERVATION AND TECHNICAL HOLDING TIMES

The cooler temperatures were 16.1°C and 18.0°C, above the 6.0°C limit; however, the samples were delivered the same day as the sample collection. This is considered the “Same Day Rule” and does not adversely impact the sampling results.

The samples sent to ALS Kelso were below the 6.0°C limit.

All sample holding times were met.

ACCURACY, PRECISION, AND SENSITIVITY OF ANALYSES

The fundamental QA objective with respect to the accuracy, precision, and sensitivity of analytical data is to achieve the QC acceptance of each analytical protocol. Accuracy and precision are determined using matrix spike (“MS”) and matrix spike duplicate (“MSD”) samples.

Accuracy is a measure of the difference of a set of analytical results to the accepted or expected values. Accuracy was assessed by using the MS/MSD and surrogate spike recovery data.

Recovery values were reported within the QC limits for each analytical parameter group.

Precision is a measure of the mutual agreement between measurements of the same parameter.

The sample results for the Site are considered “usable”.

COMPLETENESS, REPRESENTATIVENESS, AND COMPARABILITY OF DATA

Completeness is the measure of the amount of valid data obtained from a measurement system compared with the amount expected to be obtained under normal conditions. Review of the analytical data packages provided by ALS indicates that the requested parameters were analyzed for and reported by the laboratory for each sample submitted under proper chain-of-custody procedures. Based upon MEHC’s review of the laboratory data, a usable data level was achieved.

Representativeness of the data is obtained through the design of the sampling program and the adherence to established sample collection procedures, sample-handling SOPs, and analytical procedures. The sampling program outlined in the Work Plan was designed to provide for data representative of site conditions taking into consideration past disposal practices, existing data from past studies, and the physical site setting. Collection of the groundwater samples were conducted in accordance with established industry and regulatory protocols.

The laboratory maintained all holding times for the specific analytical protocols.

Comparability of the data is derived from the evaluation of field duplicate samples and the adherence to established sampling and analytical procedures. A field duplicate is an independent sample collected as close as possible to the original location from the same sampling point. All of the groundwater samples were analyzed utilizing standardized USEPA methodologies performed in accordance with the latest version of the NYSDEC ASP protocols.

QUALITY CONTROL CHECKS

Field (Equipment) Blanks

A field (equipment) blank was collected on July 30, 2020 as part of this project.

There were no PFASs or 1,4-Dioxane found in the Equipment Blank.

Method Blanks

A method blank is a sample of reagent water, which is carried through the analytical procedure alongside the project samples to determine the level of laboratory background and reagent contamination.

For this investigation, a method blank was analyzed alongside the water samples collected on July 30, 2020. There were no PFASs or 1,4-Dioxane found in the Method Blank.

Matrix Spike/Matrix Spike Duplicate Samples

For the Site, one (1) MS/MSD was collected and analyzed for the groundwater samples. The sample results are considered acceptable and were within the control limits.

These results are detailed in the Data Validation Compliance Chart.

Surrogate Analyses

Surrogates are compounds added directly to every standard, blank, MS/MSD, and sample at a known concentration, prior to extraction or analysis; and used to evaluate the analytical efficiency by measuring percent recovery of those compounds upon analysis. The laboratory reported surrogate recoveries were within established QC limits or noted Data Validation Chart.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control samples (LCS), and MS/MSD, % Recovery values, with the exceptions noted in the above narrative.

The sample results for the Site, as qualified, are considered acceptable for use.

PREPARED BY: ME Holvey Consulting, LLC



Mary Ellen Holvey, CIH
Senior Industrial Hygienist

September 16, 2020

Data Validation Compliance Chart
Former Vacuum Oil Refinery Site – 5 and 15 Flint Street

July 30, 2020 Sampling Event

Sample ID	R2006768	
Matrix	Groundwater	
Analysis	PFAS	1,4-Dioxane
Holding Times	Samples were extracted and analyzed within USEPA holding times.	Samples were extracted and analyzed within USEPA holding times.
Sample Preservation	The samples were collected and preserved in accordance with laboratory protocols.	The samples were collected and preserved in accordance with laboratory protocols.
Calibration	The control criteria for the Continuing Calibration Verification (CCV) was exceeded for 1802-PFHxS. The recoveries of the native samples were within the control criteria – no further correction action was required. All applicable quality assurance parameters were met for these analyses.	In the initial and continuing calibrations were within method requirements.
Detection Limits	No issues identified.	No issues identified.
Method Blanks	All quality assurance parameters were met for these analyses.	All quality assurance parameters were met for these analyses.

Data Validation Compliance Chart
Former Vacuum Oil Refinery Site – 5 and 15 Flint Street

July 30, 2020 Sampling Event

Sample ID	R2006768	
Matrix	Groundwater	
Analysis	PFAS	1,4-Dioxane
Matrix Spike/Matrix Spike Duplicate	All quality assurance parameters were met for these analyses.	All quality assurance parameters were met for these analyses.
Surrogates	<p>MW-07 and Equipment Blank - The upper control criterion was exceeded for one or more surrogates. The associated native analytes were not detected above the Method Reporting Limit (MRL) in these samples. The error associated with an elevated recovery equated to a high bias. The quality of the sample data was not significantly affected. No further corrective action was appropriate.</p> <p>MW-06: The upper control criterion was exceeded for 13C4-PFOS due to a matrix interference. A re-analysis of the sample was performed with acceptable results. The results for both analyses were reported. No further corrective action was required. The control criteria were exceeded for D5-EtFOSAA. The associated matrix spike recoveries of target compounds were in control, indicating the analysis was in control. No further corrective action was appropriate.</p> <p>All applicable quality assurance parameters were met for these analyses.</p>	All quality assurance parameters were met for these analyses.

Data Validation Compliance Chart
Former Vacuum Oil Refinery Site – 5 and 15 Flint Street

July 30, 2020 Sampling Event

Sample ID	R2006768	
Matrix	Groundwater	
Analysis	PFAS	1,4-Dioxane
Internal Standards	All quality assurance parameters were met for these analyses.	All quality assurance parameters were met for these analyses.
Laboratory Control Sample	All quality assurance parameters were met for these analyses.	All quality assurance parameters were met for these analyses.
Data Usability	Data is acceptable for use.	Data is acceptable for use.