



**Groundwater Sample Results,  
Level 4 Data Report, Electronic Data Deliverable,  
Data Validation Report, Sample Location Report,  
SDG 20F214**

*NS*

*Treasure Island, CA*

April 2021



LABORATORIES, INC.  
 1835 W. 205th Street  
 Torrance, CA 90501  
 Tel: (310) 618-8889

Date: 07-27-2020  
 EMAX Batch No.: 20F214

Attn: Sevda Aleckson

NOREAS  
 16361 Scientific Way  
 Irvine, CA 92618

Subject: Laboratory Report  
 Project: TREASURE ISLAND, IR SITE 6

Enclosed is the Laboratory report for samples received on 06/25/20.  
 The data reported relate only to samples listed below :

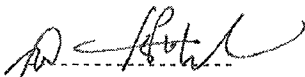
Sample ID	Control #	Col Date	Matrix	Analysis
06-MW25-0620	F214-01	06/22/20	WATER	PFCS
06-MW26-0620	F214-02	06/22/20	WATER	PFCS
06-MW30-0620	F214-03	06/22/20	WATER	PFCS
06-MW31-0620	F214-04	06/22/20	WATER	PFCS
06-MW31-0620 DUP	F214-05	06/22/20	WATER	PFCS
06-MW32-0620	F214-06	06/22/20	WATER	PFCS
06-MW33-0620	F214-07	06/22/20	WATER	PFCS
06-MW34-0620	F214-08	06/22/20	WATER	PFCS
06-MW35-0620	F214-09	06/22/20	WATER	PFCS
06-MW36-0620	F214-10	06/22/20	WATER	PFCS
QCFB-0620	F214-11	06/22/20	WATER	PFCS
06-MW30-0620MS	F214-03M	06/22/20	WATER	PFCS
06-MW30-0620MSD	F214-03S	06/22/20	WATER	PFCS

Note: PFCS was subcontracted to Bureau Veritas.

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,



-----  
 Caspar J. Pang  
 Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15  
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing  
 California ELAP Accredited Certificate Number 2672

**CHAIN-OF-CUSTODY RECORD**

<b>Project Name/No:</b> Former Naval Station Treasure Island, San Francisco, CA		<b>Purchase Order No.:</b> 17023		<b>Laboratory SDG No:</b> 20F214															
<b>Project Location:</b> IR Site 6 - 2020 PFAS 2Q20 Event		<b>Laboratory Name:</b> EMAX, Inc.		<b>ANALYSES REQUIRED</b>															
<b>Company Name:</b> NOREAS, Inc.		<b>Laboratory Contact:</b> Richard Beauvil																	
<b>Address:</b> 16361 Scientific Way, Irvine, CA 92618		<b>Laboratory Address:</b> 1835 W. 205th Street, Torrance, CA 90501																	
<b>Project Manager:</b> Hamlet Hamparsumian		<b>Laboratory Phone:</b> (310) 618-8889, ext. 118																	
<b>Phone/Fax No.:</b> (949) 877-3720		<b>Airbill No.:</b> COURIER																	
<b>Project Contact:</b> Ryley Robitaille		<b>Contact Phone:</b> (714) 273-5132																	
Sample ID	Sampling Location	Date	Time	Matrix	QC Level (3/4)	Unpreserved	Preserved	# of Containers	PFAS Table B-15 Compliant									MS/MSD	
1 06-MW25-0620	06-MW25	6/22/2020	1207	W	4	2	-	2	X										
2 06-MW26-0620	06-MW26	6/22/2020	0944	W	4	2	-	2	X										
3 06-MW30-0620	06-MW30	6/22/2020	1139	W	4	6	-	6	X										
4 06-MW31-0620	06-MW31	6/22/2020	1053	W	4	2	-	2	X									X	
5 06-MW31-0620 DUP	06-MW31	6/22/2020	1058	W	4	2	-	2	X										
6 06-MW32-0620	06-MW32	6/22/2020	0828	W	4	2	-	2	X										
7 06-MW33-0620	06-MW33	6/22/2020	0753	W	4	2	-	2	X										
8 06-MW34-0620	06-MW34	6/22/2020	0918	W	4	2	-	2	X										
9 06-MW35-0620	06-MW35	6/22/2020	0853	W	4	2	-	2	X										
10 06-MW36-0620	06-MW36	6/22/2020	1027	W	4	2	-	2	X										
11 QCFB-0620	Field Blank	6/22/2020	1215	W	4	2	-	2	X										
<b>Special Instructions:</b> All analytical and QC requirements specified in the Final Sampling and Analysis Plan (May 2017) must be followed.										<b>Turnaround Time:</b> <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR					<input checked="" type="checkbox"/> STANDARD OR <input type="checkbox"/>				
<b>Sampler(s) Name(s):</b> Michael Price										<b>Matrix:</b> W: Groundwater or Drinking water; S: Soil; W: Waste									
<b>Relinquished By (signature):</b>		<b>Date:</b> 6/25/2020		<b>Received By (signature):</b>				<b>Date:</b> 06/25/20				<b>Sample Condition Upon Receipt (For Laboratory Use)</b>							
<b>Company:</b> NOREAS, Inc.		<b>Time:</b> 1607		<b>Company:</b> EMAX				<b>Time:</b> 1607				<b>Cooler Temp (°C):</b> 4							
<b>Relinquished By (signature):</b>		<b>Date:</b>		<b>Received By (signature):</b>				<b>Date:</b>				<b>Sample Condition:</b>							
<b>Company:</b>		<b>Time:</b>		<b>Company:</b>				<b>Time:</b>				<input type="checkbox"/> Intact <input type="checkbox"/> Broken							
												<b>Cooler Seal:</b> <input type="checkbox"/> Intact <input type="checkbox"/> Broken							

Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <u>20F214</u> Recipient <u>Jenessa Nakagawa</u> Date <u>06/25/2020</u> Time <u>1007</u>
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**COC INSPECTION**

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input checked="" type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input type="checkbox"/> Matrix
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input checked="" type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> TAT
Safety Issues (if any)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note: \_\_\_\_\_

**PACKAGING INSPECTION**

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input type="checkbox"/> Cooler 1 _____ °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer:	<input type="checkbox"/> Cooler 6 _____ °C	<input checked="" type="checkbox"/> Cooler 7 <u>4.1</u> °C	<input type="checkbox"/> Cooler 8 _____ °C
	A - S/N <u>192381464</u>	B - S/N <u>20091755</u>	C - S/N <u>200291756</u>
			D - S/N <u>14025267</u>

Comments:  Temperature is out of range. PM was informed IMMEDIATELY.  
Note: \_\_\_\_\_

**DISCREPANCIES**

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

- Code Description-Sample Management**
- D1 Analysis is not indicated in \_\_\_\_\_
  - D2 Analysis mismatch COC vs label
  - D3 Sample ID mismatch COC vs label
  - D4 Sample ID is not indicated in \_\_\_\_\_
  - D5 Container -[improper] [leaking] [broken]
  - D6 Date/Time is not indicated in \_\_\_\_\_
  - D7 Date/Time mismatch COC vs label
  - D8 Sample listed in COC is not received
  - D9 Sample received is not listed in COC
  - D10 No initial/date on corrections in COC/label
  - D11 Container count mismatch COC vs received
  - D12 Container size mismatch COC vs received

- Code Description-Sample Management**
- D13 Out of Holding Time
  - D14 Bubble is >6mm
  - D15 No trip blank in cooler
  - D16 Preservation not indicated in \_\_\_\_\_
  - D17 Preservation mismatch COC vs label
  - D18 Insufficient chemical preservative
  - D19 Insufficient Sample
  - D20 No filtration info for dissolved analysis
  - D21 No sample for moisture determination
  - D22 \_\_\_\_\_
  - D23 \_\_\_\_\_
  - D24 \_\_\_\_\_

Continue to next page.

- Code Description-Sample Management**
- R1 Proceed as indicated in  COC  Label
  - R2 Refer to attached instruction
  - R3 Cancel the analysis
  - R4 Use vial with smallest bubble first
  - R5 Log-in with latest sampling date and time+1 min
  - R6 Adjust pH as necessary
  - R7 Filter and preserved as necessary
  - R8 \_\_\_\_\_
  - R9 \_\_\_\_\_
  - R10 \_\_\_\_\_
  - R11 \_\_\_\_\_
  - R12 \_\_\_\_\_

**REVIEWS:**

Sample Labeling Jenessa Nakagawa  
Date 06/26/20

SRF [Signature]  
Date 06/26/20

PM [Signature]  
Date 06/26/20

LABORATORY REPORT FOR

NOREAS

TREASURE ISLAND, IR SITE 12

PFCs

SDG#: 20F214



Prepared for: EMAX Laboratories Inc

Project: 20F214  
TREASURE ISLAND, IR SITE 6

# **Analytical Data Package (Level IV)**

Analysis: PFOS and PFOA in water (Method 537 mod.)

Bureau Veritas Job #: COG5477

Bureau Veritas Canada (2019) Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)



**BUREAU**  
**VERITAS**

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**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**

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**BUREAU  
VERITAS**

I hereby certify that to the best of my knowledge all analytical data presented in this report:

- Has been checked for completeness.
- Is accurate, legible and error free.
- Has been conducted in accordance with approved SOP's and that all deviations are clearly listed in the Case Narrative.
- This report has been generated in .pdf format.

Review Performed By:

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
www.bvlabs.com**

# Glossary of Terms

- **Detection Limit (DL)** this can also be called **Method Detection Limit (MDL)**: The lowest concentration or amount of the target analyte that can be identified, measured, and reported with confidence that the analyte concentration is not a false positive value. (Clarification): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. At the DL, the false positive rate (Type I error) is 1%.
- **Limit of Detection (LOD)**: An estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. (Clarification): The smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.
- **Limits of Quantitation (LOQ)** this can also be called **Reporting Detection Limit (RDL)**: The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. (Clarification): The lowest concentration that produces a quantitative result within specified limits of precision and bias. For DoD projects, the LOQ shall be set at or above the concentration of the lowest initial calibration standard.
- **Acceptance Criteria** are values used by the laboratory to determine that a process is in control.
- **Accuracy** is the degree of agreement of a measured value with the true or expected value.
- **Calibration Standards** are a set of solutions containing the analytes of interest at a specified concentration.
- **Calibration Verification Standard** consists of a calibration standard solution of intermediate concentration (mid-point initial calibration level) used to assess whether the initial calibration is still valid
- **Certified Reference Material** is a stable homogenous material that is certified by repetitive analysis from a supplier who is certified to generate said materials.

- **Internal Standard** a deuterated or  $^{13}\text{C}$ -labelled analyte that is added to a sample extract prior to instrumental analysis to compensate for injection variability.
- **Isomer** is a member of a group of compounds that differ from each other only in the locations of a specific number of common substituent atoms or groups of atoms on the parent compound.
- **Method Blank** is a laboratory control sample using reagents that are known to be free of contamination.
- **Precision** is the degree of agreement between the data generated from repetitive measurements under specific conditions.
- **Quality Assurance** is a system of activities whose purpose is to provide the producer or user of a product with the assurance that the product meets a defined standard of quality.
- **Quality Control** is the overall system of activities whose purpose is to control the quality of a product so that it meets the needs of the end user.
- **RSD** is the relative standard deviation.
- **Blank Spike** is a laboratory control sample that has been fortified with native analytes of interest.
- **Window Defining Mixture** is a solution containing only the earliest and latest eluting congeners within each homologous group of target analytes on a specified GC column.
- **RPD** or Relative Percent Difference. A measure used to compare duplicate sample analysis.
- **EMPC/NDR** – Peak detected does not meet ratio criteria and has resulted in a higher detection limit.



# 1.0 Project Narrative

**Bureau Veritas Canada (2019)  
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[www.bvlabs.com](http://www.bvlabs.com)**

## Bureau Veritas Laboratories Job: C0G5477

### Sample Analysis

Samples were initially pre-screened and estimated concentrations were obtained so that appropriate sample volumes could be extracted on QC batch 6819936 (2020/07/08). Due to high concentrations, the following samples were analyzed for selected analytes using reduced sample extraction volumes:

NAH700	06-MW25-0620	All target parameters <sup>1</sup>
NAH701	06-MW26-0620	Perfluorooctanesulfonic acid (PFOS)
NAH703	06-MW31-0620	Perfluorohexanesulfonic acid (PFHxS) & Perfluorooctanesulfonic acid (PFOS)
NAH705	06-MW31-0620 DUP	Perfluorohexanoic acid (PFHxA), Perfluorohexanesulfonic acid (PFHxS) & Perfluorooctanesulfonic acid (PFOS)
NAH706	06-MW32-0620	All target parameters <sup>1</sup>
NAH707	06-MW33-0620	All target parameters <sup>1</sup>
NAH708	06-MW34-0620	Perfluorooctanesulfonic acid (PFOS)
NAH709	06-MW35-0620	Perfluorooctanesulfonic acid (PFOS)

Detection limits were adjusted accordingly.

<sup>1</sup> Due to high concentrations of select parameters, sample was analyzed at more than one dilution resulting in elevated limits of detection (LOD) for non-detects. The lowest LOD was used for reporting non-detects.

### Manual Integrations

Due to poor automated integration, manual integration was performed for selected analytes in the following sample(s):

BV Sample ID	Client Sample ID	Parameter	Manual Integration (MI) Code
NAH700	06-MW25-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH701	06-MW26-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH702	06-MW30-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH703	06-MW31-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH705	06-MW31-0620 DUP	Perfluorooctanoic acid (PFOA)	MI-f
NAH706	06-MW32-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH707	06-MW33-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH708	06-MW34-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH709	06-MW35-0620	Perfluorooctanoic acid (PFOA)	MI-f
NAH710	06-MW36-0620	Perfluorooctanoic acid (PFOA)	MI-f
MS/MSD QC batch 6819936	N/A	Perfluorooctanoic acid (PFOA)	MI-f

MI-a: Peak missed by automated integration due to a slight shift in retention time.

MI-b: Misidentification of peak by the integration software.

- MI-c: Noisy baseline resulting in the automated integration of negative peak(s).
- MI-d: Noisy baseline resulting in poor automated baseline construction and the integration of area (noise) not associated with recognized analyte peak area.
- MI-e: Matrix interference peak partially co-eluting with analyte peak and area incorporated by automated integration.
- MI-f: Integration of PFAS branched isomer peak(s) not incorporated by automated integration. All identified branched and linear isomer peaks integrated and areas summed.
- MI-g: Peak missed by automated integration due to noisy baseline.

Mass Calibration

*LCMS04*

Mass calibration was completed on May 01, 2020 to original equipment manufacturer’s specifications. Mass accuracy was verified following the instrument manufacturer’s instructions for mass calibration verification using the instrument manufacturer’s recommended standards.

Quantitation of PFAS

Many PFAS (e.g. PFOS) have several isomeric forms that may show up as separate or partially-merged peaks in the analytical chromatograms. These peaks will be integrated and the areas summed such that the result represents the concentration of the sum of the linear and branched isomers, per USEPA 537.1 (2018). Instrumentation is calibrated using certified quantitative standards containing only the linear isomer for all target analytes, except Perfluorooctane sulfonic acid (PFOS) and Perfluorohexane sulfonic acid (PFHxS), which are calibrated using certified branched and linear isomer mixtures. For Perfluorooctanoic acid (PFOA) a quantitative branched and linear standard is not available, however, branched isomers can be identified by analyzing a qualitative standard that includes both branched and linear isomers to determine retention times, transitions and ion ratios. Quantitate samples by integrating the total response (i.e. accounting for peaks that are identified as linear and branched isomers in the standard) and relying on the initial calibration that used the linear isomer quantitative standard. If qualitative standards containing both the branched and linear isomers cannot be purchased (i.e. only linear isomer is available) only the linear isomer shall be quantitated in samples. As certified quantitative reference material(s) containing both linear and branched isomer become available commercially, they will be incorporated into the method.

Data Qualifiers

**U** – Analyte was not detected and is reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.

**J** – The reported result is an estimated value (e.g., matrix interference was observed, or the analyte was detected at a concentration outside the calibration range).

Precision and Bias

Water – Standard Analysis

Analytes	Abbreviation	Aqueous (µg/L)				
		Average Concentration (n=9)	Spike Concentration (µg/L)	Bias (%)	Standard Deviation	Precision (%)

		( $\bar{a}$ )	(T)	(B)	( $\sigma$ )	
Perfluorohexanoic acid	PFHxA	0.019	0.02	-5.6	0.0016	8.2
Perfluoroheptanoic acid	PFHpA	0.019	0.02	-6.2	0.00087	4.4
Perfluorooctanoic acid	PFOA	0.020	0.02	0.87	0.0012	6.1
Perfluorononanoic acid	PFNA	0.020	0.02	-0.0056	0.0019	9.7
Perfluorodecanoic acid	PFDA	0.021	0.02	3.6	0.0011	5.4
Perfluoroundecanoic acid	PFUnA	0.019	0.02	-3.5	0.0017	8.6
Perfluorododecanoic acid	PFDoA	0.019	0.02	-3.6	0.0012	6.1
Perfluorotridecanoic acid	PFTTrDA	0.021	0.02	3.0	0.0012	5.8
Perfluorotetradecanoic acid	PFTeDA	0.021	0.02	7.0	0.0016	8.2
Perfluorobutane sulfonic acid	PFBS	0.018	0.02	-9.0	0.0013	6.7
Perfluorohexane sulfonic acid	PFHxS	0.019	0.02	-3.5	0.0014	6.8
Perfluorooctane sulfonic acid	PFOS	0.020	0.02	-0.58	0.0021	10
Methylperfluorooctanesulfonamide	MeFOSA	0.040	0.04	-0.65	0.0026	6.5
Ethylperfluorooctanesulfonamide	EtFOSA	0.038	0.04	-4.4	0.0017	4.3

Bias is expressed as a percentage of the value of the standard:  $\%B = [100 (\bar{a} - T)] / T$

Precision is expressed as a percentage of the spiked value:  $\%RSD = (\sigma/T)*100$

**Adam Robinson**

Adam.Robinson@bvlabs.com

Office 905 817 5700, ext. 7064057

**PROJECT NARRATIVE**

**Bureau Veritas**  
**Client Project #: TREASURE ISLAND, IR SITE 6**



**Client: EMAX Laboratories Inc**  
**Client Project: TREASURE ISLAND, IR SITE 6**

**I. SAMPLE RECEIPT/ANALYSIS**

a) Sample Listing

Bureau Veritas ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Date Run	Initial Calibration
<b>PFAS in water by SPE/LC-MS/MS</b>						
NAH700	06-MW25-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH701	06-MW26-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH702	06-MW30-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH703	06-MW31-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH705	06-MW31-0620 DUP	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH706	06-MW32-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH707	06-MW33-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH708	06-MW34-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH709	06-MW35-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH710	06-MW36-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08
NAH711	QCFB-0620	2020/06/22	2020/07/03	2020/07/06	2020/07/08	2020/07/08

Run Date is defined as the date of injection of the last calibration standard (12 hours or less) prior to the samples analyzed within that run sequence. Therefore the time of calibration injection that defines the run date is always within 12 hours of the time of sample injection.

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

**II. SAMPLE PREP:**

No problems encountered

**III. SAMPLE ANALYSIS:**

See also comments within the appropriate Certificate of Analysis

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

c) Quality Control: All applicable QC meets control criteria, except where otherwise noted.

d) All analytes requiring manual intergration(s) are noted on the sample chromatograms

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for other than the conditions detailed above.

In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the cognizant laboratory official or his/her designee, as verified by this signature.

*Steph Fallon*  
Project Manager- Site Assessment  
and Remediation/ Ultra Trace

2020/07/24  
Date





**BUREAU**  
**VERITAS**

## **2. Sample Management Records**

**Bureau Veritas Canada (2019)  
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**BUREAU**  
**VERITAS**

## **2.1 Sample Custody**

**Bureau Veritas Canada (2019)  
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Mississauga, Ontario, Canada  
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1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**

**ATR**

**CHAIN OF CUSTODY**

<b>EMAX LABORATORIES, INC.</b> 1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX# : 310-618-0818 E-mail : info@emaxlabs.com		<b>EMAX CONTROL NO.</b> 20F214 (1) <b>PROJECT CODE:</b> NO 1904											
<b>CLIENT</b> NOREAS <b>PROJECT</b> TREASURE ISLAND, IR SITE 6 <b>COORDINATION</b> TEL FAX EMAIL		<b>ANALYSIS REQUIRED</b> <input type="checkbox"/> Rush 24 hrs. <input type="checkbox"/> Rush 48 hrs. <input type="checkbox"/> Rush 72 hrs. <input type="checkbox"/> 7 days <input type="checkbox"/> 14 days <input type="checkbox"/> 21 days <input type="checkbox"/> 30 days <input type="checkbox"/> days											
<b>SEND REPORT TO:</b> RICHARD DELUVA, RICHARDE@EMAXLABS.COM <b>COMPANY:</b> EMAX <b>ADDRESS:</b> <b>EMAX P/I</b>		<b>PRESERVATIVE CODE:</b> MS MSD <b>PFAS BY 537M</b>											
LAW	SAMPLE ID#	CLIENT	LOCATION	SAMPLING		DATE	TIME	NO.	SIZE	TYPE	MTRN CODE	QC	COMMENTS
				DATE	TIME								
1	06-MW25-0620		06-MW25	6/22/2020	12:07	1	1 L	POLY	GW	4	X		20F214-01
2	06-MW26-0620		06-MW26	6/22/2020	9:44	1	1 L	POLY	GW	4	X		20F214-02
3	06-MW30-0620		06-MW30	6/22/2020	11:39	3	1 L	POLY	GW	4	X		20F214-03 MS MSD
4	06-MW31-0620		06-MW31	6/22/2020	10:53	1	1 L	POLY	GW	4	X		20F214-04
5	06-MW31-0620 DUP		06-MW31	6/22/2020	10:58	1	1 L	POLY	GW	4	X		20F214-05
6	06-MW32-0620		06-MW32	6/22/2020	8:28	1	1 L	POLY	GW	4	X		20F214-06
7	06-MW33-0620		06-MW33	6/22/2020	7:53	1	1 L	POLY	GW	4	X		20F214-07
8	06-MW34-0620		06-MW34	6/22/2020	9:18	1	1 L	POLY	GW	4	X		20F214-08
9	06-MW35-0620		06-MW35	6/22/2020	8:53	1	1 L	POLY	GW	4	X		20F214-09
10	06-MW36-0620		06-MW36	6/22/2020	10:27	1	1 L	POLY	GW	4	X		20F214-10
Instructions: DATA PACKAGE: LEVEL 4 DMP QSM 5.3 FID: NEDD EDE 125 mL JP #2 / 16 Cooler # _____ Temp. (C) _____ Sample #s _____ BAXXAM/BVLABS (FEDEX Depot) 299 Cayuga Rd Cheektowaga, NY 14225 BSA Attn: Stephanie Pollen 800-668-0639													
<b>SAMPLER</b> RELINQUISHED BY: <i>Stephanie Pollen</i> RECEIVED BY: <i>[Signature]</i> Date: 6/27/20 Time: 14:30 COURIER AIRBILL: 020703 1730 431279.0												03-Jul-20 13:30 <b>Stephanie Pollen</b> <b>COG5477</b>	

NOTICE: This second issue (TAT) for samples that are frozen until all discrepancies have been resolved. For samples received after 1500 hrs. TAT shall start at 0800 hrs the next business day. The client is responsible for all prior to 1500 hrs (submit data) after issuance of analytical report unless a different sample disposal schedule is provided with BVA. For samples received by CA, the 22 hr non-harshness shall be less than per sample. BVA will not.

J.L. ENV-1311

**AIR**

**CHAIN OF CUSTODY**

<b>EMAX LABORATORIES, INC.</b> 1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8899 FAX#: 310-618-0818 Email: info@emaxlabs.com		<b>PO NUMBER:</b> 20F214(2) <b>EMAX CONTROL NO.:</b> 20F214(2) <b>PROJECT CODE:</b> NO 1904	
<b>CLIENT:</b> NOREAS <b>PROJECT:</b> TREASURE ISLAND, JR SITE 6 <b>COORDINATOR:</b> <b>TEL:</b> <b>FAX:</b> <b>SEND REPORT TO:</b> RICHARD BEAULIEU (RBEAULIEU@EMAXLABS.COM) <b>COMPANY:</b> EMAX <b>ADDRESS:</b> <b>EMAX P/N:</b>		<b>ANALYSIS REQUIRED:</b> <input type="checkbox"/> Rush 24 hrs. <input type="checkbox"/> Rush 48 hrs. <input type="checkbox"/> Rush 72 hrs. <input type="checkbox"/> 7 days <input type="checkbox"/> 14 days <input type="checkbox"/> 21 days <input type="checkbox"/> 30 days <input type="checkbox"/> days	
<b>MATRIX CODE:</b> DW - Drinking Water GW - Ground Water WW - Waste Water SW - Solid Waste: Sludge SS - Soil: Sediment WP - Waste: PP - from Product AF - Air O - WATER		<b>PRESERVATIVE CODE:</b> HC - Ice HC - HCl DN - DMSO ST - Na2S2O3 ZA - Zinc Acetate HS - H2SO4	
<b>CONTAINER NO.:</b> 1 <b>SIZE:</b> 15ml <b>TYPE:</b> POLY		<b>PRESERVATIVE CODE:</b> MS MSD PFS BY 537M	
<b>SAMPLING DATE:</b> 6/22/2020 <b>TIME:</b> 12:15		<b>MASS CODE:</b> QC <b>QC:</b> 4 X	
<b>CLIENT:</b> QCFB-620 <b>LOCATION:</b> QCFB		<b>TEMPERATURE:</b> Temp. (C)	
<b>RELINQUISHED BY:</b> <i>[Signature]</i>		<b>COOLER #:</b>	
<b>RECEIVED BY:</b> <i>[Signature]</i>		<b>Temp. (C):</b>	
<b>DATE:</b> 6/23/20 <b>TIME:</b> 14:30		<b>Sample #s:</b>	
<b>INSTRUCTIONS:</b>		<b>MAXXAM/BVLABS (FEDEX DEPOT):</b>	
<b>FEEDBACK:</b>		<b>299 Cayuga Rd</b>	
<b>RECEIVED BY:</b> <i>[Signature]</i>		<b>Cheektowaga, NY 14225</b>	
<b>RELINQUISHED BY:</b> <i>[Signature]</i>		<b>USA</b>	
<b>DATE:</b> 6/23/20 <b>TIME:</b> 14:30		<b>Attn: Stephanie Pollen</b>	
<b>RELINQUISHED BY:</b> <i>[Signature]</i>		<b>800-668-0639</b>	

NOTICE: Turn around time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancy resolved after 1500 hrs TAT shall start at 0600 hrs the next business day. The client is responsible for all costs associated with sample disposal. Samples shall be disposed of in a manner practical that not prior to fifteen (15) calendar days after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 in non-hazardous shall be \$5.00 per sample. EMAX will retain hazardous samples in the client's expense unless directed in writing otherwise.



**BUREAU**  
**VERITAS**

## **3. Analytical Results**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**



**BUREAU**  
**VERITAS**

## **3.1 Summary Report**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**



Your P.O. #: 20F214  
 Your Project #: TREASURE ISLAND, IR SITE 6  
 Site Location: SITE 6(T10000006825)  
 Your C.O.C. #: 20F214

**Attention: Richard Beauvil**

EMAX Laboratories Inc  
 1835 W 205th St  
 Torrance, CA  
 USA 90501

**Report Date: 2020/07/20**  
 Report #: R6253443  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C0G5477**

**Received: 2020/07/03, 13:30**

Sample Matrix: Ground Water  
 # Samples Received: 11

Analyses	Date		Laboratory Method	Analytical Method
	Quantity Extracted	Date Analyzed		
PFAS in water by SPE/LC-MS/MS (1)	11	2020/07/06	2020/07/08 CAM SOP-00894	EPA 537 m

**Remarks:**

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.



Your P.O. #: 20F214  
Your Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your C.O.C. #: 20F214

**Attention: Richard Beauvil**

EMAX Laboratories Inc  
1835 W 205th St  
Torrance, CA  
USA 90501

**Report Date: 2020/07/20**  
Report #: R6253443  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C0G5477**

**Received: 2020/07/03, 13:30**

Encryption Key

Stephanie Pollen  
Project Manager  
20 Jul 2020 14:01:08

Please direct all questions regarding this Certificate of Analysis to your Project Manager.  
Stephanie Pollen, Project Manager  
Email: Stephanie.Pollen@bvlabs.com  
Phone# (905)817-5830

=====  
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.





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BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH700				NAH701				
Sampling Date		2020/06/22 12:07				2020/06/22 09:44				
COC Number		20F214				20F214				
	UNITS	06-MW25-0620	DL	LOD	LOQ	06-MW26-0620	DL	LOD	LOQ	QC Batch
<b>Miscellaneous Parameters</b>										
Perfluorohexanoic acid (PFHxA)	ug/L	2.1 (1)	0.032	0.075	0.10	0.26	0.0070	0.017	0.022	6819936
Perfluoroheptanoic acid (PFHpA)	ug/L	0.49 (2)	0.036	0.075	0.10	0.15	0.0078	0.017	0.022	6819936
Perfluorooctanoic acid (PFOA)	ug/L	1.8 (1)	0.037	0.075	0.10	0.44	0.0081	0.017	0.022	6819936
Perfluorononanoic acid (PFNA)	ug/L	0.093 J (2)	0.025	0.050	0.10	0.021 J	0.0054	0.011	0.022	6819936
Perfluorodecanoic acid (PFDA)	ug/L	0.030 J (2)	0.021	0.050	0.10	0.011 J	0.0045	0.011	0.022	6819936
Perfluoroundecanoic acid (PFUnA)	ug/L	0.050 U (2)	0.022	0.050	0.10	0.011 U	0.0047	0.011	0.022	6819936
Perfluorododecanoic acid (PFDoA)	ug/L	0.075 U (2)	0.034	0.075	0.10	0.017 U	0.0075	0.017	0.022	6819936
Perfluorotridecanoic acid (PFTRDA)	ug/L	0.075 U (2)	0.035	0.075	0.10	0.017 U	0.0076	0.017	0.022	6819936
Perfluorotetradecanoic acid (PFTEDA)	ug/L	0.075 U (2)	0.034	0.075	0.10	0.017 U	0.0074	0.017	0.022	6819936
Perfluorobutanesulfonic acid (PFBS)	ug/L	0.14 (2)	0.026	0.075	0.10	0.027	0.0056	0.017	0.022	6819936
Perfluorohexanesulfonic acid (PFHxS)	ug/L	1.8 (1)	0.026	0.075	0.10	0.62	0.0057	0.017	0.022	6819936
Perfluorooctanesulfonic acid (PFOS)	ug/L	14 (3)	0.26	0.75	1.0	1.8 (4)	0.052	0.15	0.20	6819936
EtFOSA	ug/L	0.095 U (2)	0.045	0.095	0.20	0.021 U	0.0099	0.021	0.043	6819936
MeFOSA	ug/L	0.050 U (2)	0.018	0.050	0.20	0.011 U	0.0039	0.011	0.043	6819936
<b>Surrogate Recovery (%)</b>										
13C2-Perfluorodecanoic acid	%	101				105				6819936
13C2-Perfluorododecanoic acid	%	115				112				6819936
13C2-Perfluorohexanoic acid	%	112				120				6819936
13C2-perfluorotetradecanoic acid	%	103				106				6819936
13C2-Perfluoroundecanoic acid	%	117				118				6819936
13C3-Perfluorobutanesulfonic acid	%	102				112				6819936
13C4-Perfluoroheptanoic acid	%	119				125				6819936
13C4-Perfluorooctanesulfonic acid	%	114				111				6819936
13C4-Perfluorooctanoic acid	%	111				116				6819936
DL = Detection Limit LOD = Limit of Detection LOQ = Limit of Quantitation QC Batch = Quality Control Batch N/A = Not Applicable (1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (5x). (2) Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (5x). (3) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (50x). (4) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).										



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BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH700				NAH701				
Sampling Date		2020/06/22 12:07				2020/06/22 09:44				
COC Number		20F214				20F214				
	UNITS	06-MW25-0620	DL	LOD	LOQ	06-MW26-0620	DL	LOD	LOQ	QC Batch
13C5-Perfluorononanoic acid	%	106				108				6819936
18O2-Perfluorohexanesulfonic acid	%	102				101				6819936
D3-MeFOSA	%	52				80				6819936
D5-EtFOSA	%	57				86				6819936
DL = Detection Limit LOD = Limit of Detection LOQ = Limit of Quantitation QC Batch = Quality Control Batch N/A = Not Applicable										



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VERITAS

BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH702				NAH703				
Sampling Date		2020/06/22 11:39				2020/06/22 10:53				
COC Number		20F214				20F214				
	UNITS	06-MW30-0620	DL	LOD	LOQ	06-MW31-0620	DL	LOD	LOQ	QC Batch
<b>Miscellaneous Parameters</b>										
Perfluorohexanoic acid (PFHxA)	ug/L	0.0076 J	0.0064	0.015	0.020	1.1	0.0070	0.017	0.022	6819936
Perfluoroheptanoic acid (PFHpA)	ug/L	0.015 U	0.0071	0.015	0.020	0.51	0.0078	0.017	0.022	6819936
Perfluorooctanoic acid (PFOA)	ug/L	0.023	0.0074	0.015	0.020	0.38	0.0081	0.017	0.022	6819936
Perfluorononanoic acid (PFNA)	ug/L	0.010 U	0.0049	0.010	0.020	0.049	0.0054	0.011	0.022	6819936
Perfluorodecanoic acid (PFDA)	ug/L	0.010 U	0.0041	0.010	0.020	0.010 J	0.0045	0.011	0.022	6819936
Perfluoroundecanoic acid (PFUnA)	ug/L	0.010 U	0.0043	0.010	0.020	0.011 U	0.0047	0.011	0.022	6819936
Perfluorododecanoic acid (PFDoA)	ug/L	0.015 U	0.0068	0.015	0.020	0.017 U	0.0075	0.017	0.022	6819936
Perfluorotridecanoic acid (PFTRDA)	ug/L	0.015 U	0.0069	0.015	0.020	0.017 U	0.0076	0.017	0.022	6819936
Perfluorotetradecanoic acid (PFTEDA)	ug/L	0.015 U	0.0067	0.015	0.020	0.017 U	0.0074	0.017	0.022	6819936
Perfluorobutanesulfonic acid (PFBS)	ug/L	0.0067 J	0.0051	0.015	0.020	0.12	0.0056	0.017	0.022	6819936
Perfluorohexanesulfonic acid (PFHxS)	ug/L	0.023	0.0052	0.015	0.020	4.1 (1)	0.052	0.15	0.20	6819936
Perfluorooctanesulfonic acid (PFOS)	ug/L	0.050	0.0052	0.015	0.020	1.9 (1)	0.052	0.15	0.20	6819936
EtFOSA	ug/L	0.019 U	0.0090	0.019	0.040	0.021 U	0.0099	0.021	0.043	6819936
MeFOSA	ug/L	0.010 U	0.0035	0.010	0.040	0.011 U	0.0039	0.011	0.043	6819936
<b>Surrogate Recovery (%)</b>										
13C2-Perfluorodecanoic acid	%	109				119				6819936
13C2-Perfluorododecanoic acid	%	121				123				6819936
13C2-Perfluorohexanoic acid	%	123				133				6819936
13C2-perfluorotetradecanoic acid	%	105				106				6819936
13C2-Perfluoroundecanoic acid	%	126				128				6819936
13C3-Perfluorobutanesulfonic acid	%	112				116				6819936
13C4-Perfluoroheptanoic acid	%	132				143				6819936
13C4-Perfluorooctanesulfonic acid	%	113				125				6819936
13C4-Perfluorooctanoic acid	%	121				136				6819936
13C5-Perfluorononanoic acid	%	116				129				6819936
18O2-Perfluorohexanesulfonic acid	%	110				118				6819936
D3-MeFOSA	%	80				81				6819936
D5-EtFOSA	%	89				86				6819936
DL = Detection Limit LOD = Limit of Detection LOQ = Limit of Quantitation QC Batch = Quality Control Batch N/A = Not Applicable (1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).										



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BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH705				NAH706				
Sampling Date		2020/06/22 10:58				2020/06/22 08:28				
COC Number		20F214				20F214				
	UNITS	06-MW31-0620 DUP	DL	LOD	LOQ	06-MW32-0620	DL	LOD	LOQ	QC Batch
<b>Miscellaneous Parameters</b>										
Perfluorohexanoic acid (PFHxA)	ug/L	1.1	0.064	0.15	0.20	1.3 (1)	0.032	0.075	0.10	6819936
Perfluoroheptanoic acid (PFHpA)	ug/L	0.54	0.0075	0.016	0.021	0.90 (2)	0.036	0.075	0.10	6819936
Perfluorooctanoic acid (PFOA)	ug/L	0.39	0.0078	0.016	0.021	0.99 (2)	0.037	0.075	0.10	6819936
Perfluorononanoic acid (PFNA)	ug/L	0.051	0.0051	0.011	0.021	0.098 J (2)	0.025	0.050	0.10	6819936
Perfluorodecanoic acid (PFDA)	ug/L	0.011 J	0.0043	0.011	0.021	0.025 J (2)	0.021	0.050	0.10	6819936
Perfluoroundecanoic acid (PFUnA)	ug/L	0.011 U	0.0045	0.011	0.021	0.050 U (2)	0.022	0.050	0.10	6819936
Perfluorododecanoic acid (PFDoA)	ug/L	0.016 U	0.0071	0.016	0.021	0.075 U (2)	0.034	0.075	0.10	6819936
Perfluorotridecanoic acid (PFTRDA)	ug/L	0.016 U	0.0072	0.016	0.021	0.075 U (2)	0.035	0.075	0.10	6819936
Perfluorotetradecanoic acid (PFTEDA)	ug/L	0.016 U	0.0070	0.016	0.021	0.075 U (2)	0.034	0.075	0.10	6819936
Perfluorobutanesulfonic acid (PFBS)	ug/L	0.14	0.0054	0.016	0.021	0.11 (2)	0.026	0.075	0.10	6819936
Perfluorohexanesulfonic acid (PFHxS)	ug/L	4.1 (3)	0.052	0.15	0.20	6.9 (4)	0.26	0.75	1.0	6819936
Perfluorooctanesulfonic acid (PFOS)	ug/L	1.4 (3)	0.052	0.15	0.20	18 (4)	0.26	0.75	1.0	6819936
EtFOSA	ug/L	0.020 U	0.0095	0.020	0.042	0.095 U (2)	0.045	0.095	0.20	6819936
MeFOSA	ug/L	0.011 U	0.0037	0.011	0.042	0.050 U (2)	0.018	0.050	0.20	6819936
<b>Surrogate Recovery (%)</b>										
13C2-Perfluorodecanoic acid	%	73				80				6819936
13C2-Perfluorododecanoic acid	%	77				89				6819936
13C2-Perfluorohexanoic acid	%	91				87				6819936
13C2-perfluorotetradecanoic acid	%	64				80				6819936
13C2-Perfluoroundecanoic acid	%	79				93				6819936
13C3-Perfluorobutanesulfonic acid	%	74				85				6819936
13C4-Perfluoroheptanoic acid	%	88				92				6819936
13C4-Perfluorooctanesulfonic acid	%	88				94				6819936
13C4-Perfluorooctanoic acid	%	84				88				6819936
DL = Detection Limit LOD = Limit of Detection LOQ = Limit of Quantitation QC Batch = Quality Control Batch N/A = Not Applicable (1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (5x). (2) Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (5x). (3) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x). (4) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (50x).										



BUREAU  
VERITAS

BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH705				NAH706				
Sampling Date		2020/06/22 10:58				2020/06/22 08:28				
COC Number		20F214				20F214				
	UNITS	06-MW31-0620 DUP	DL	LOD	LOQ	06-MW32-0620	DL	LOD	LOQ	QC Batch
13C5-Perfluorononanoic acid	%	77				86				6819936
18O2-Perfluorohexanesulfonic acid	%	89				87				6819936
D3-MeFOSA	%	53				51				6819936
D5-EtFOSA	%	58				56				6819936
DL = Detection Limit LOD = Limit of Detection LOQ = Limit of Quantitation QC Batch = Quality Control Batch N/A = Not Applicable										



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BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID	NAH707					NAH708				
Sampling Date	2020/06/22 07:53					2020/06/22 09:18				
COC Number	20F214					20F214				
	UNITS	06-MW33-0620	DL	LOD	LOQ	06-MW34-0620	DL	LOD	LOQ	QC Batch

#### Miscellaneous Parameters

Perfluorohexanoic acid (PFHxA)	ug/L	1.3 (1)	0.013	0.030	0.040	0.19	0.0070	0.017	0.022	6819936
Perfluoroheptanoic acid (PFHpA)	ug/L	0.62 (2)	0.014	0.030	0.040	0.073	0.0078	0.017	0.022	6819936
Perfluorooctanoic acid (PFOA)	ug/L	1.5 (1)	0.015	0.030	0.040	0.16	0.0081	0.017	0.022	6819936
Perfluorononanoic acid (PFNA)	ug/L	0.059	0.0098	0.020	0.040	0.015 J	0.0054	0.011	0.022	6819936
Perfluorodecanoic acid (PFDA)	ug/L	0.018 J (2)	0.0082	0.020	0.040	0.0054 J	0.0045	0.011	0.022	6819936
Perfluoroundecanoic acid (PFUnA)	ug/L	0.020 U (2)	0.0086	0.020	0.040	0.011 U	0.0047	0.011	0.022	6819936
Perfluorododecanoic acid (PFDoA)	ug/L	0.030 U (2)	0.014	0.030	0.040	0.017 U	0.0075	0.017	0.022	6819936
Perfluorotridecanoic acid (PFTRDA)	ug/L	0.030 U (2)	0.014	0.030	0.040	0.017 U	0.0076	0.017	0.022	6819936
Perfluorotetradecanoic acid (PFTEDA)	ug/L	0.030 U (2)	0.013	0.030	0.040	0.017 U	0.0074	0.017	0.022	6819936
Perfluorobutanesulfonic acid (PFBS)	ug/L	0.097 (2)	0.010	0.030	0.040	0.031	0.0056	0.017	0.022	6819936
Perfluorohexanesulfonic acid (PFHxS)	ug/L	2.7 (3)	0.10	0.30	0.40	0.72	0.0057	0.017	0.022	6819936
Perfluorooctanesulfonic acid (PFOS)	ug/L	8.4 (3)	0.10	0.30	0.40	1.9 (4)	0.052	0.15	0.20	6819936
EtFOSA	ug/L	0.038 U (2)	0.018	0.038	0.080	0.021 U	0.0099	0.021	0.044	6819936
MeFOSA	ug/L	0.020 U (2)	0.0070	0.020	0.080	0.011 U	0.0039	0.011	0.044	6819936

#### Surrogate Recovery (%)

13C2-Perfluorodecanoic acid	%	80				84				6819936
13C2-Perfluorododecanoic acid	%	91				88				6819936
13C2-Perfluorohexanoic acid	%	88				91				6819936
13C2-perfluorotetradecanoic acid	%	81				81				6819936
13C2-Perfluoroundecanoic acid	%	92				90				6819936
13C3-Perfluorobutanesulfonic acid	%	85				82				6819936
13C4-Perfluoroheptanoic acid	%	95				94				6819936
13C4-Perfluorooctanesulfonic acid	%	95				99				6819936
13C4-Perfluorooctanoic acid	%	85				86				6819936

DL = Detection Limit

LOD = Limit of Detection

LOQ = Limit of Quantitation

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (2x).

(2) Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (2x).

(3) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (20x).

(4) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).



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VERITAS

BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH707				NAH708				
Sampling Date		2020/06/22 07:53				2020/06/22 09:18				
COC Number		20F214				20F214				
	UNITS	06-MW33-0620	DL	LOD	LOQ	06-MW34-0620	DL	LOD	LOQ	QC Batch
13C5-Perfluorononanoic acid	%	89				84				6819936
18O2-Perfluorohexanesulfonic acid	%	91				79				6819936
D3-MeFOSA	%	54				52				6819936
D5-EtFOSA	%	60				62				6819936

DL = Detection Limit  
 LOD = Limit of Detection  
 LOQ = Limit of Quantitation  
 QC Batch = Quality Control Batch  
 N/A = Not Applicable



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VERITAS

BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### RESULTS OF ANALYSES OF GROUND WATER

BV Labs ID		NAH709				NAH710	NAH711				
Sampling Date		2020/06/22 08:53				2020/06/22 10:27	2020/06/22 12:15				
COC Number		20F214				20F214	20F214				
	UNITS	06-MW35-0620	DL	LOD	LOQ	06-MW36-0620	QCFB-0620	DL	LOD	LOQ	QC Batch

Miscellaneous Parameters											
Perfluorohexanoic acid (PFHxA)	ug/L	0.24	0.0067	0.016	0.021	0.14	0.015 U	0.0064	0.015	0.020	6819936
Perfluoroheptanoic acid (PFHpA)	ug/L	0.13	0.0075	0.016	0.021	0.084	0.015 U	0.0071	0.015	0.020	6819936
Perfluorooctanoic acid (PFOA)	ug/L	0.18	0.0078	0.016	0.021	0.092	0.015 U	0.0074	0.015	0.020	6819936
Perfluorononanoic acid (PFNA)	ug/L	0.031	0.0051	0.011	0.021	0.013 J	0.010 U	0.0049	0.010	0.020	6819936
Perfluorodecanoic acid (PFDA)	ug/L	0.0068 J	0.0043	0.011	0.021	0.0047 J	0.010 U	0.0041	0.010	0.020	6819936
Perfluoroundecanoic acid (PFUnA)	ug/L	0.011 U	0.0045	0.011	0.021	0.010 U	0.010 U	0.0043	0.010	0.020	6819936
Perfluorododecanoic acid (PFDoA)	ug/L	0.016 U	0.0071	0.016	0.021	0.015 U	0.015 U	0.0068	0.015	0.020	6819936
Perfluorotridecanoic acid (PFTRDA)	ug/L	0.016 U	0.0072	0.016	0.021	0.015 U	0.015 U	0.0069	0.015	0.020	6819936
Perfluorotetradecanoic acid (PFTEDA)	ug/L	0.016 U	0.0070	0.016	0.021	0.015 U	0.015 U	0.0067	0.015	0.020	6819936
Perfluorobutanesulfonic acid (PFBS)	ug/L	0.037	0.0054	0.016	0.021	0.028	0.015 U	0.0051	0.015	0.020	6819936
Perfluorohexanesulfonic acid (PFHxS)	ug/L	1.0	0.0055	0.016	0.021	0.57	0.015 U	0.0052	0.015	0.020	6819936
Perfluorooctanesulfonic acid (PFOS)	ug/L	2.9 (1)	0.052	0.15	0.20	0.74	0.015 U	0.0052	0.015	0.020	6819936
EtFOSA	ug/L	0.020 U	0.0095	0.020	0.043	0.019 U	0.019 U	0.0090	0.019	0.040	6819936
MeFOSA	ug/L	0.011 U	0.0037	0.011	0.043	0.010 U	0.010 U	0.0035	0.010	0.040	6819936
Surrogate Recovery (%)											
13C2-Perfluorodecanoic acid	%	90				88	92				6819936
13C2-Perfluorododecanoic acid	%	100				95	98				6819936
13C2-Perfluorohexanoic acid	%	103				101	106				6819936
13C2-perfluorotetradecanoic acid	%	90				84	86				6819936
13C2-Perfluoroundecanoic acid	%	101				100	98				6819936
13C3-Perfluorobutanesulfonic acid	%	93				91	94				6819936
13C4-Perfluoroheptanoic acid	%	109				106	109				6819936
13C4-Perfluorooctanesulfonic acid	%	95				92	98				6819936
13C4-Perfluorooctanoic acid	%	100				98	100				6819936
13C5-Perfluorononanoic acid	%	97				98	98				6819936
18O2-Perfluorohexanesulfonic acid	%	94				91	93				6819936
D3-MeFOSA	%	66				58	60				6819936
D5-EtFOSA	%	72				65	68				6819936

DL = Detection Limit  
 LOD = Limit of Detection  
 LOQ = Limit of Quantitation  
 QC Batch = Quality Control Batch  
 N/A = Not Applicable  
 (1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).





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VERITAS

BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### TEST SUMMARY

**BV Labs ID:** NAH700  
**Sample ID:** 06-MW25-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH701  
**Sample ID:** 06-MW26-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH702  
**Sample ID:** 06-MW30-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH703  
**Sample ID:** 06-MW31-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH705  
**Sample ID:** 06-MW31-0620 DUP  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH706  
**Sample ID:** 06-MW32-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH707  
**Sample ID:** 06-MW33-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax



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VERITAS

BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

### TEST SUMMARY

**BV Labs ID:** NAH708  
**Sample ID:** 06-MW34-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH709  
**Sample ID:** 06-MW35-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH710  
**Sample ID:** 06-MW36-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax

**BV Labs ID:** NAH711  
**Sample ID:** QCFB-0620  
**Matrix:** Ground Water

**Collected:** 2020/06/22  
**Shipped:**  
**Received:** 2020/07/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFAS in water by SPE/LC-MS/MS	LCMS	6819936	2020/07/06	2020/07/08	Marian Godax



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VERITAS

BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

## GENERAL COMMENTS

Results relate only to the items tested.



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BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### QUALITY ASSURANCE REPORT

QA/QC		QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
Batch	Init							
6819936	M_G	Matrix Spike(NAH702)	13C2-Perfluorodecanoic acid	2020/07/08		109	%	50 - 150
			13C2-Perfluorododecanoic acid	2020/07/08		114	%	50 - 150
			13C2-Perfluorohexanoic acid	2020/07/08		115	%	50 - 150
			13C2-perfluorotetradecanoic acid	2020/07/08		103	%	50 - 150
			13C2-Perfluoroundecanoic acid	2020/07/08		115	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2020/07/08		108	%	50 - 150
			13C4-Perfluoroheptanoic acid	2020/07/08		123	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2020/07/08		109	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/07/08		118	%	50 - 150
			13C5-Perfluorononanoic acid	2020/07/08		115	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/07/08		107	%	50 - 150
			D3-MeFOSA	2020/07/08		83	%	50 - 150
			D5-EtFOSA	2020/07/08		88	%	50 - 150
			Perfluorohexanoic acid (PFHxA)	2020/07/08		96	%	72 - 129
			Perfluoroheptanoic acid (PFHpA)	2020/07/08		91	%	72 - 130
			Perfluorooctanoic acid (PFOA)	2020/07/08		97	%	71 - 133
			Perfluorononanoic acid (PFNA)	2020/07/08		101	%	69 - 130
			Perfluorodecanoic acid (PFDA)	2020/07/08		102	%	71 - 129
			Perfluoroundecanoic acid (PFUnA)	2020/07/08		98	%	69 - 133
			Perfluorododecanoic acid (PFDoA)	2020/07/08		98	%	72 - 134
			Perfluorotridecanoic acid (PFTRDA)	2020/07/08		107	%	65 - 144
			Perfluorotetradecanoic acid(PFTEDA)	2020/07/08		100	%	71 - 132
			Perfluorobutanesulfonic acid (PFBS)	2020/07/08		102	%	72 - 130
			Perfluorohexanesulfonic acid(PFHxS)	2020/07/08		104	%	68 - 131
			Perfluorooctanesulfonic acid (PFOS)	2020/07/08		99	%	65 - 140
			EtFOSA	2020/07/08		112	%	67 - 135
			MeFOSA	2020/07/08		120	%	68 - 141
6819936	M_G	Matrix Spike DUP(NAH702)	13C2-Perfluorodecanoic acid	2020/07/08		101	%	50 - 150
			13C2-Perfluorododecanoic acid	2020/07/08		110	%	50 - 150
			13C2-Perfluorohexanoic acid	2020/07/08		107	%	50 - 150
			13C2-perfluorotetradecanoic acid	2020/07/08		97	%	50 - 150
			13C2-Perfluoroundecanoic acid	2020/07/08		114	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2020/07/08		102	%	50 - 150
			13C4-Perfluoroheptanoic acid	2020/07/08		117	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2020/07/08		107	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/07/08		107	%	50 - 150
			13C5-Perfluorononanoic acid	2020/07/08		109	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/07/08		102	%	50 - 150
			D3-MeFOSA	2020/07/08		73	%	50 - 150
			D5-EtFOSA	2020/07/08		76	%	50 - 150
			Perfluorohexanoic acid (PFHxA)	2020/07/08		99	%	72 - 129
			Perfluoroheptanoic acid (PFHpA)	2020/07/08		90	%	72 - 130
			Perfluorooctanoic acid (PFOA)	2020/07/08		101	%	71 - 133
			Perfluorononanoic acid (PFNA)	2020/07/08		102	%	69 - 130
			Perfluorodecanoic acid (PFDA)	2020/07/08		104	%	71 - 129
			Perfluoroundecanoic acid (PFUnA)	2020/07/08		91	%	69 - 133
			Perfluorododecanoic acid (PFDoA)	2020/07/08		96	%	72 - 134
			Perfluorotridecanoic acid (PFTRDA)	2020/07/08		107	%	65 - 144
			Perfluorotetradecanoic acid(PFTEDA)	2020/07/08		101	%	71 - 132
			Perfluorobutanesulfonic acid (PFBS)	2020/07/08		100	%	72 - 130
			Perfluorohexanesulfonic acid(PFHxS)	2020/07/08		104	%	68 - 131



BUREAU  
VERITAS

BV Labs Job #: COG5477  
Report Date: 2020/07/20

EMAX Laboratories Inc  
Client Project #: TREASURE ISLAND, IR SITE 6  
Site Location: SITE 6(T10000006825)  
Your P.O. #: 20F214

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits		
6819936	M_G	MS/MSD RPD	Perfluorooctanesulfonic acid (PFOS)	2020/07/08			97	%	65 - 140		
			EtFOSA	2020/07/08			113	%	67 - 135		
			MeFOSA	2020/07/08			120	%	68 - 141		
			Perfluorohexanoic acid (PFHxA)	2020/07/08	2.2			%	30		
			Perfluoroheptanoic acid (PFHpA)	2020/07/08	0.94			%	30		
			Perfluorooctanoic acid (PFOA)	2020/07/08	4.4			%	30		
			Perfluorononanoic acid (PFNA)	2020/07/08	0.76			%	30		
			Perfluorodecanoic acid (PFDA)	2020/07/08	1.7			%	30		
			Perfluoroundecanoic acid (PFUnA)	2020/07/08	7.1			%	30		
			Perfluorododecanoic acid (PFDoA)	2020/07/08	2.0			%	30		
			Perfluorotridecanoic acid (PFTRDA)	2020/07/08	0.66			%	30		
			Perfluorotetradecanoic acid(PFTEDA)	2020/07/08	1.2			%	30		
			Perfluorobutanesulfonic acid (PFBS)	2020/07/08	1.5			%	30		
			Perfluorohexanesulfonic acid(PFHxS)	2020/07/08	0.48			%	30		
			Perfluorooctanesulfonic acid (PFOS)	2020/07/08	2.9			%	30		
6819936	M_G	Spiked Blank	EtFOSA	2020/07/08	0.86			%	30		
			MeFOSA	2020/07/08	0.47			%	30		
			13C2-Perfluorodecanoic acid	2020/07/08		110	%	50 - 150			
			13C2-Perfluorododecanoic acid	2020/07/08		116	%	50 - 150			
			13C2-Perfluorohexanoic acid	2020/07/08		112	%	50 - 150			
			13C2-perfluorotetradecanoic acid	2020/07/08		107	%	50 - 150			
			13C2-Perfluoroundecanoic acid	2020/07/08		124	%	50 - 150			
			13C3-Perfluorobutanesulfonic acid	2020/07/08		111	%	50 - 150			
			13C4-Perfluoroheptanoic acid	2020/07/08		124	%	50 - 150			
			13C4-Perfluorooctanesulfonic acid	2020/07/08		118	%	50 - 150			
			13C4-Perfluorooctanoic acid	2020/07/08		119	%	50 - 150			
			13C5-Perfluorononanoic acid	2020/07/08		116	%	50 - 150			
			18O2-Perfluorohexanesulfonic acid	2020/07/08		114	%	50 - 150			
			D3-MeFOSA	2020/07/08		83	%	50 - 150			
			D5-EtFOSA	2020/07/08		93	%	50 - 150			
			Perfluorohexanoic acid (PFHxA)	2020/07/08		99	%	72 - 129			
			Perfluoroheptanoic acid (PFHpA)	2020/07/08		90	%	72 - 130			
			Perfluorooctanoic acid (PFOA)	2020/07/08		97	%	71 - 133			
			Perfluorononanoic acid (PFNA)	2020/07/08		99	%	69 - 130			
			Perfluorodecanoic acid (PFDA)	2020/07/08		101	%	71 - 129			
			Perfluoroundecanoic acid (PFUnA)	2020/07/08		91	%	69 - 133			
			Perfluorododecanoic acid (PFDoA)	2020/07/08		100	%	72 - 134			
			Perfluorotridecanoic acid (PFTRDA)	2020/07/08		106	%	65 - 144			
			Perfluorotetradecanoic acid(PFTEDA)	2020/07/08		102	%	71 - 132			
			Perfluorobutanesulfonic acid (PFBS)	2020/07/08		101	%	72 - 130			
			Perfluorohexanesulfonic acid(PFHxS)	2020/07/08		100	%	68 - 131			
			Perfluorooctanesulfonic acid (PFOS)	2020/07/08		95	%	65 - 140			
			EtFOSA	2020/07/08		103	%	67 - 135			
			MeFOSA	2020/07/08		117	%	68 - 141			
			6819936	M_G	Method Blank	13C2-Perfluorodecanoic acid	2020/07/08		107	%	50 - 150
						13C2-Perfluorododecanoic acid	2020/07/08		110	%	50 - 150
						13C2-Perfluorohexanoic acid	2020/07/08		117	%	50 - 150
						13C2-perfluorotetradecanoic acid	2020/07/08		101	%	50 - 150
13C2-Perfluoroundecanoic acid	2020/07/08					110	%	50 - 150			
13C3-Perfluorobutanesulfonic acid	2020/07/08					106	%	50 - 150			
13C4-Perfluoroheptanoic acid	2020/07/08					123	%	50 - 150			



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BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			13C4-Perfluorooctanesulfonic acid	2020/07/08		108	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/07/08		114	%	50 - 150
			13C5-Perfluorononanoic acid	2020/07/08		108	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/07/08		102	%	50 - 150
			D3-MeFOSA	2020/07/08		83	%	50 - 150
			D5-EtFOSA	2020/07/08		92	%	50 - 150
			Perfluorohexanoic acid (PFHxA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluoroheptanoic acid (PFHpA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorooctanoic acid (PFOA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorononanoic acid (PFNA)	2020/07/08	0.010 U, LOD=0.010		ug/L	
			Perfluorodecanoic acid (PFDA)	2020/07/08	0.010 U, LOD=0.010		ug/L	
			Perfluoroundecanoic acid (PFUnA)	2020/07/08	0.010 U, LOD=0.010		ug/L	
			Perfluorododecanoic acid (PFDoA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorotridecanoic acid (PFTRDA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorotetradecanoic acid(PFTEDA)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorobutanesulfonic acid (PFBS)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorohexanesulfonic acid(PFHxS)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			Perfluorooctanesulfonic acid (PFOS)	2020/07/08	0.015 U, LOD=0.015		ug/L	
			EtFOSA	2020/07/08	0.019 U, LOD=0.019		ug/L	
			MeFOSA	2020/07/08	0.010 U, LOD=0.010		ug/L	

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.



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VERITAS

BV Labs Job #: COG5477

Report Date: 2020/07/20

EMAX Laboratories Inc

Client Project #: TREASURE ISLAND, IR SITE 6

Site Location: SITE 6(T10000006825)

Your P.O. #: 20F214

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Colm McNamara, Senior Analyst, Liquid Chromatography

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



**BUREAU  
VERITAS**

**METHOD 537 Modified**  
**DETERMINATION OF SELECTED PERFLUORINATED ALKYL  
ACIDS IN DRINKING WATER BY SOLID PHASE EXTRACTION  
AND LIQUID CHROMATOGRAPHY/TANDEM MASS SPECTROMETRY  
(LC/MS/MS)**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**





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**VERITAS**

## **3.2 Sample Chromatograms**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**

# Quantitative Analysis Report

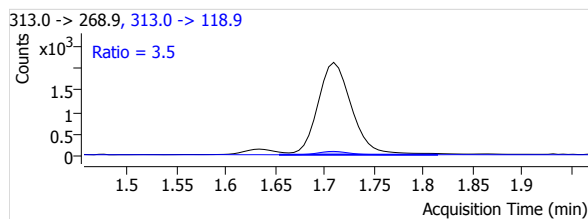
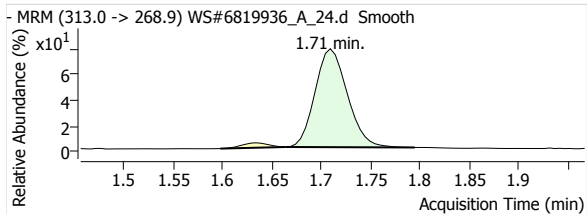
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bin

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Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 2:00:24 PM  
Comment Reported PFOS  
User Defined

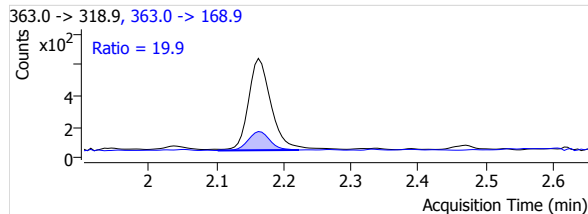
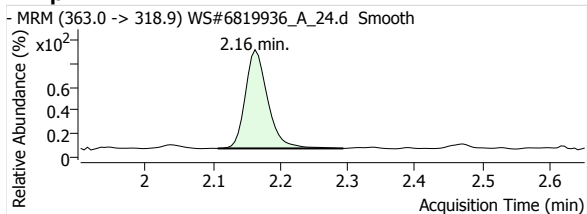
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Instrument LCMS04  
Position P2-C3  
Dil. 1.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	2.3428	--	4658	1.71	143	0.3890	165	1.71	35	3.5
PFHpA 1	µg/L	--	0.7151	--	1351	2.16	19	0.0817	269	2.16	10	19.9
PFOA 1	µg/L	--	1.8714	--	3854	2.64	103	0.2671	1042	2.64	110	27.0
PFNA 1	µg/L	--	0.2846	--	131	3.07	2	0.0123	30	3.08	4	22.9
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.2676	--	80	1.37	18	0.0208	26	1.37	4	32.5
PFHxS 1	µg/L	--	1.9208	--	696	2.08	219	0.2624	371	2.10	135	53.4
PFOS 1	µg/L	--	14.0260	--	3947	2.89	41	1.9098	1935	2.90	111	49.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	120.8884	--	11974	1.71	771	--	--	--	--	--
13C4-PFHpA	µg/L	--	130.0495	--	16541	2.16	642	--	--	--	--	--
13C4-PFOA	µg/L	--	121.8544	--	14430	2.64	708	--	--	--	--	--
13C5-PFNA	µg/L	--	114.0679	--	10622	3.08	174	--	--	--	--	--
13C2-PFDA	µg/L	--	108.0783	--	7733	3.47	339	--	--	--	--	--
13C2-PFUnA	µg/L	--	123.0373	--	10516	3.81	747	--	--	--	--	--
13C2-PFDaA	µg/L	--	121.1557	--	12685	4.11	644	--	--	--	--	--
13C2-PFTeDA	µg/L	--	107.6948	--	16487	4.61	918	--	--	--	--	--
13C3-PFBS	µg/L	--	114.0820	--	3840	1.36	503	--	--	--	--	--
18O2-PFHxS	µg/L	--	113.5760	--	2652	2.12	691	--	--	--	--	--
13C4-PFOS	µg/L	--	114.1989	--	2067	2.95	221	--	--	--	--	--
D3-MeFOSA	µg/L	--	85.4606	--	3850	5.21	49	--	--	--	--	--
D5-EtFOSA	µg/L	--	97.3290	--	3571	5.34	95	--	--	--	--	--

### PFHxA 1

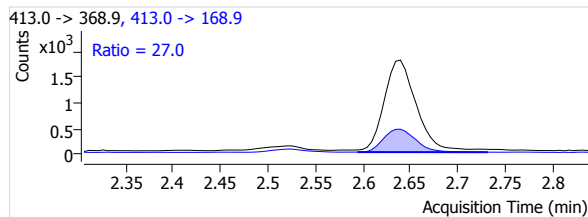
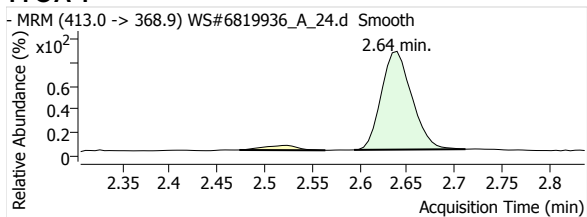


### PFHpA 1

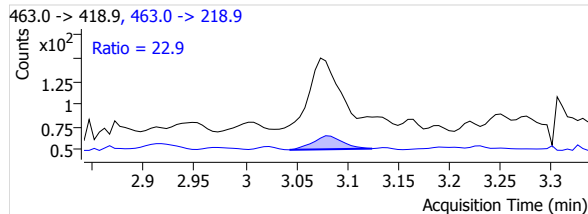
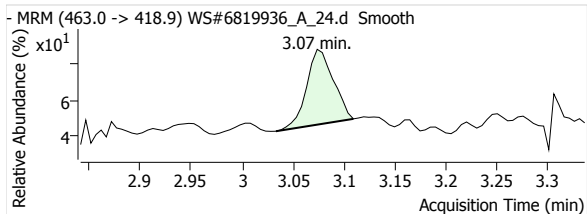


# Quantitative Analysis Report

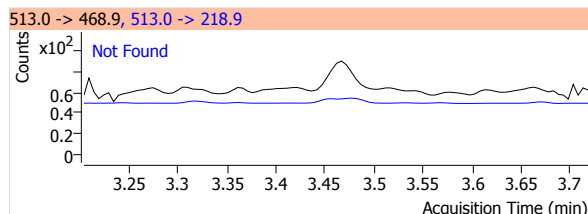
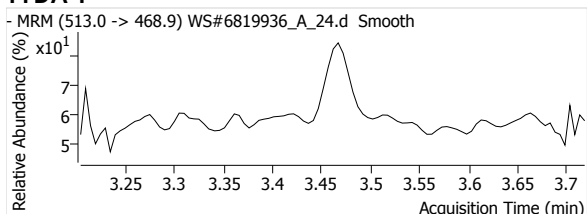
## PFOA 1



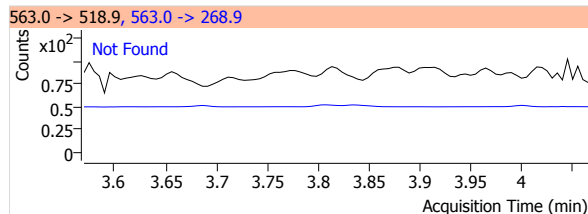
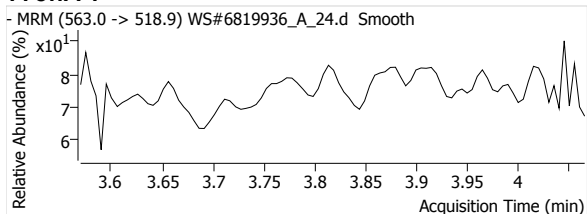
## PFNA 1



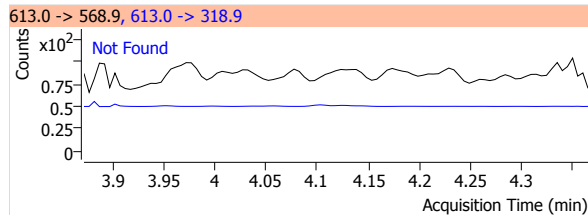
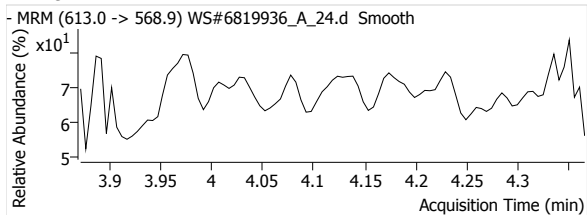
## PFDA 1



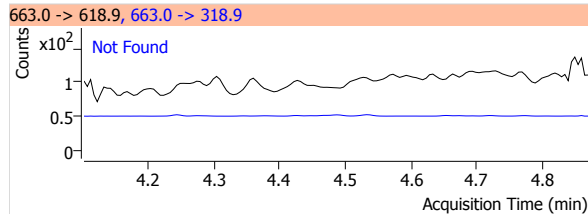
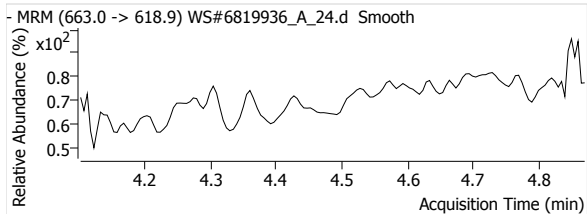
## PFUnA 1



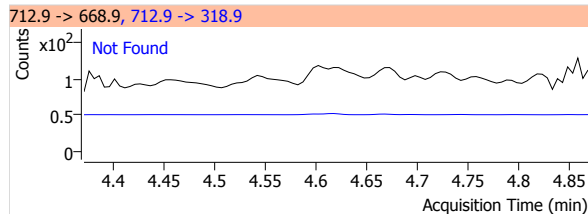
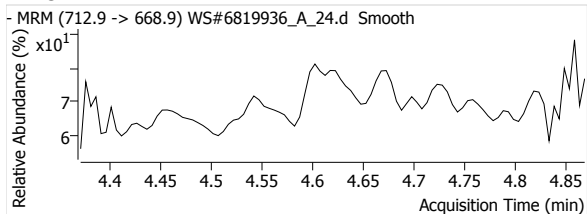
## PFDaA 1



## PFTrDA 1

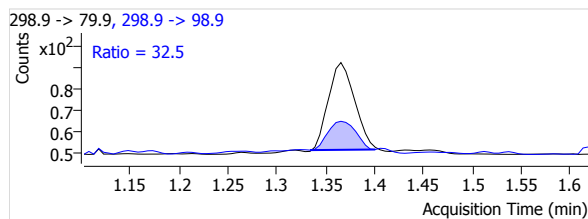
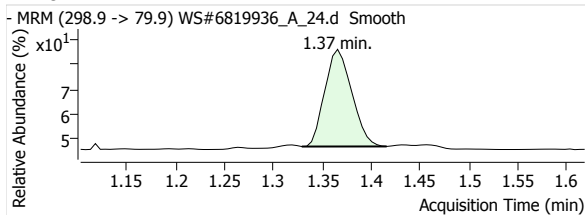


## PFTeDA 1

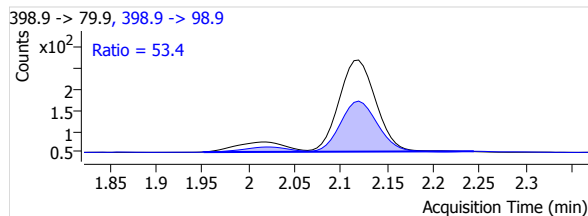
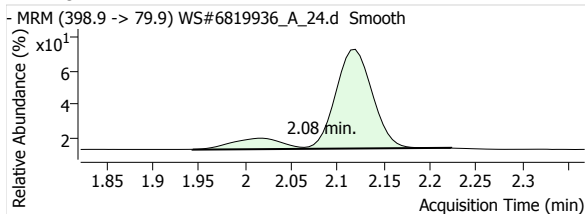


# Quantitative Analysis Report

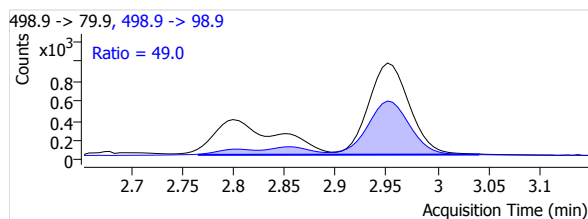
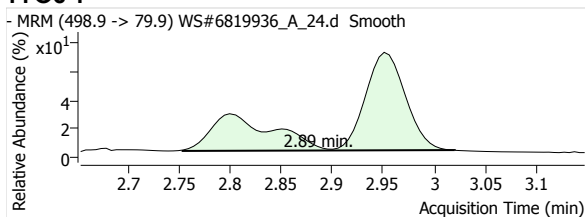
## PFBS 1



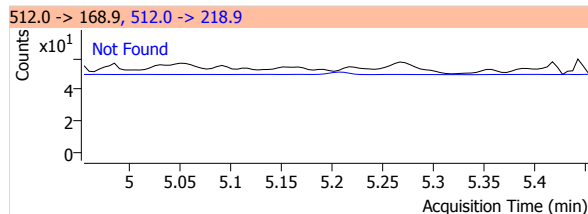
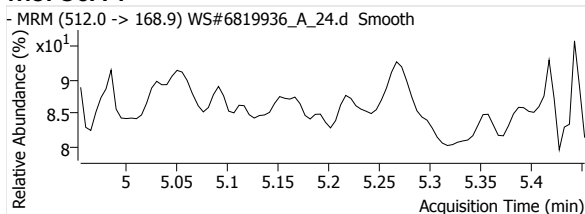
## PFHxS 1



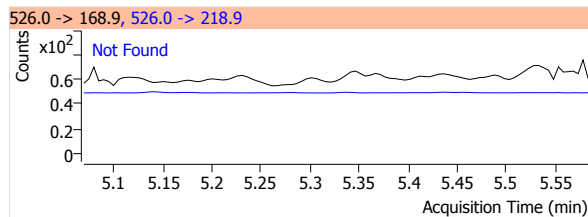
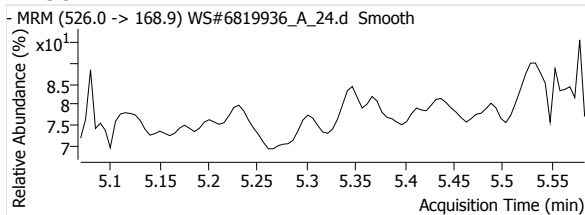
## PFOS 1



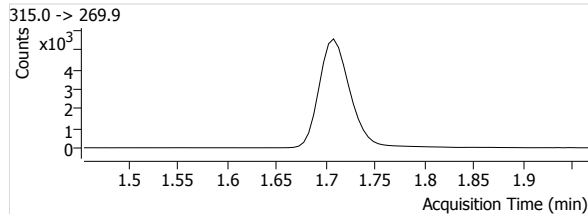
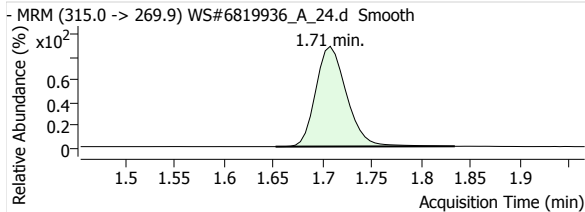
## MeFOSA 1



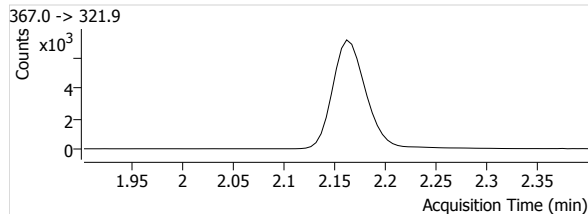
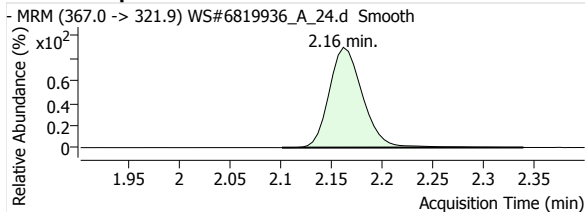
## eFOSA 1



## 13C2-PFHxA

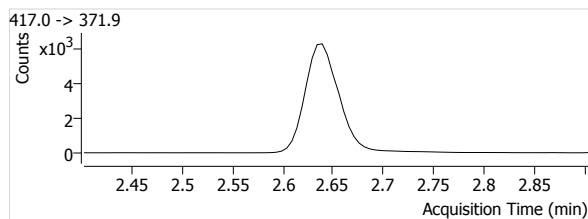
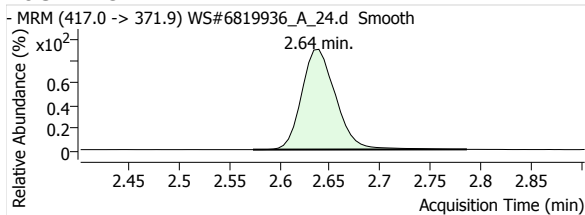


## 13C4-PFHpA

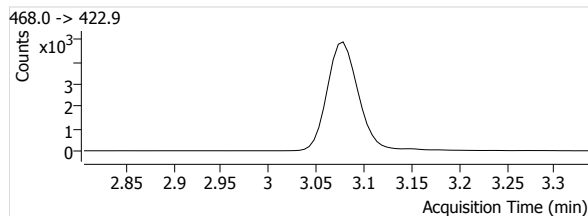
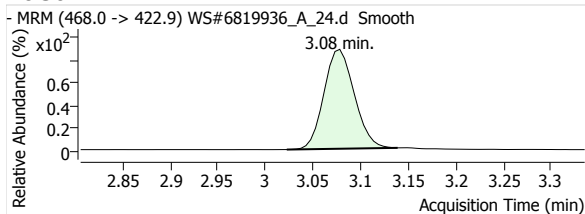


# Quantitative Analysis Report

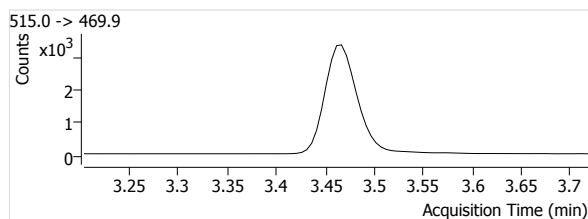
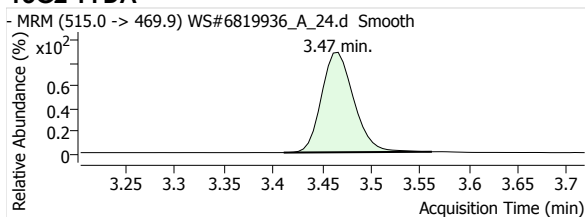
## 13C4-PFOA



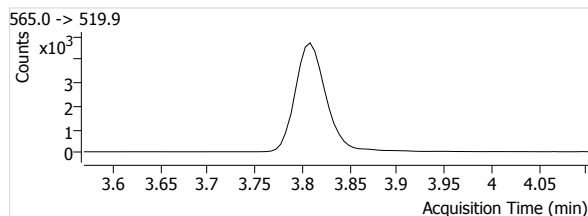
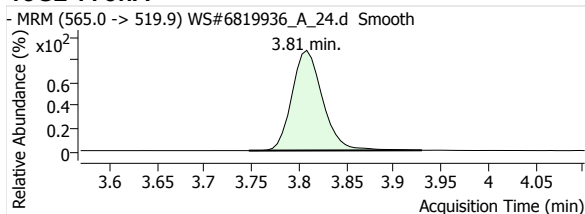
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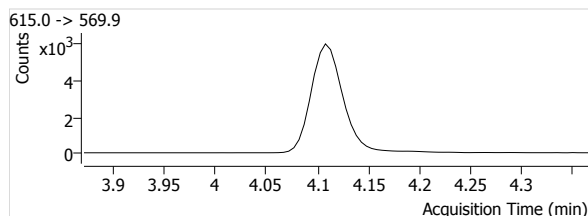
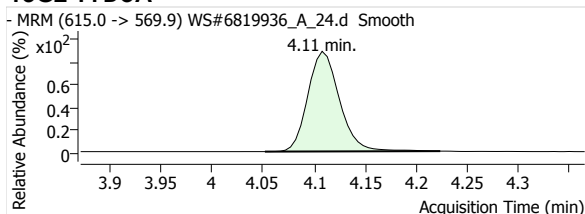
## 13C2-PFDA



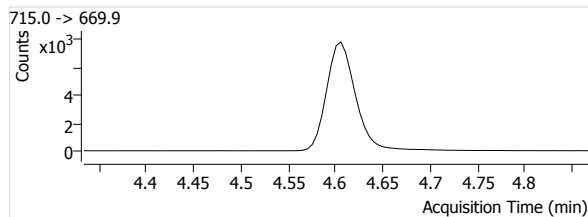
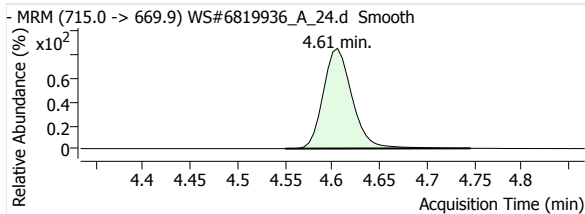
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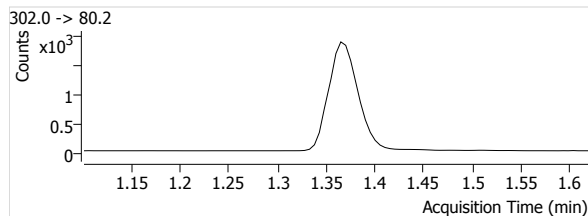
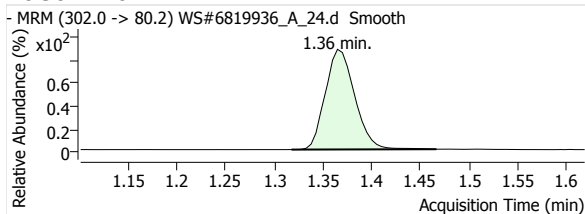
## 13C2-PFDoA



## 13C2-PFTeDA

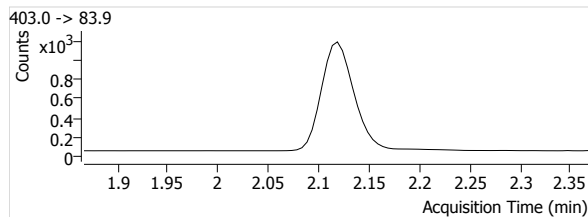
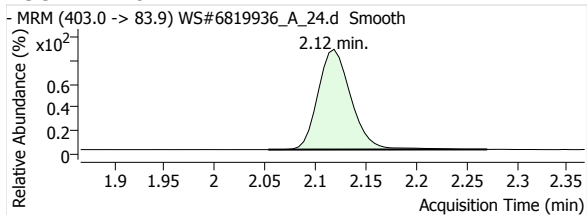


## 13C3-PFBS

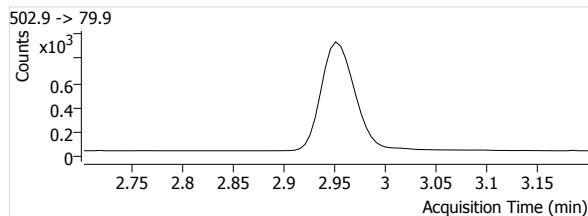
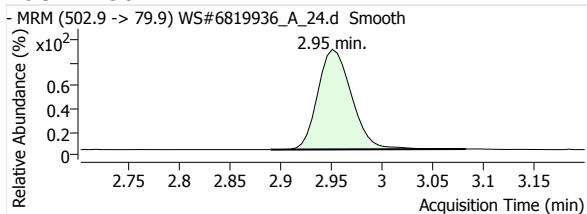


# Quantitative Analysis Report

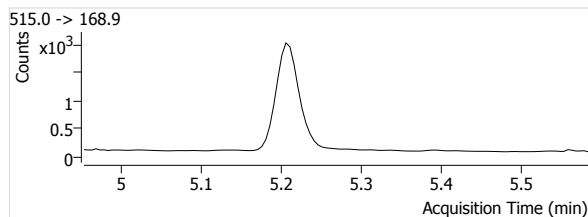
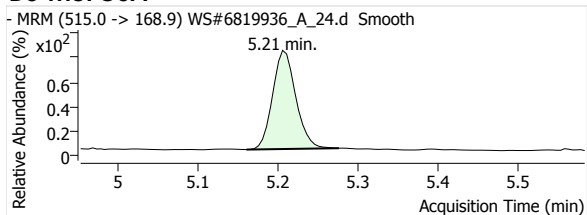
## 18O2-PFHxs



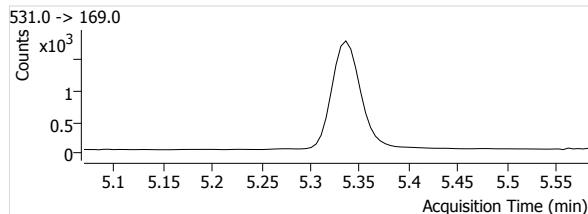
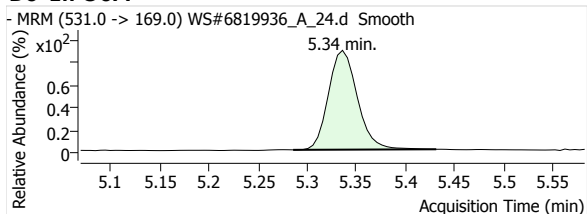
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

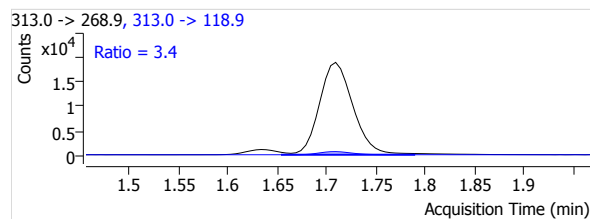
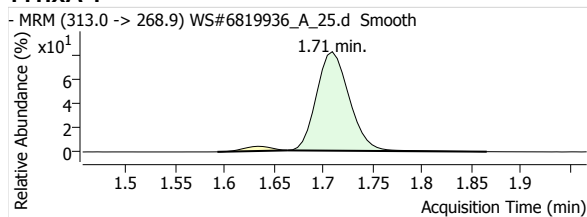
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Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 2:07:20 PM  
Comment -  
User Defined MI PFOA

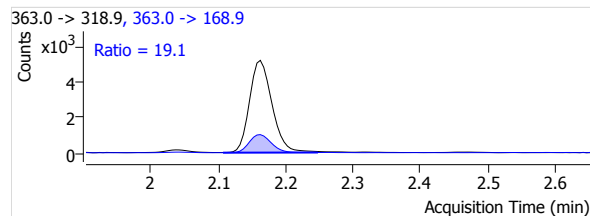
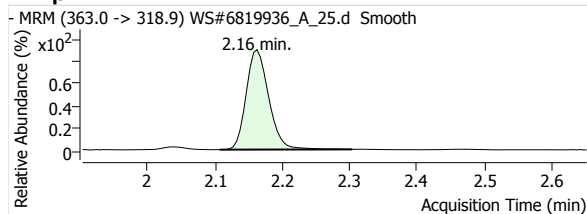
Data File WS#6819936\_A\_25.d  
Instrument LCMS04  
Position P2-C4  
Dil. 0.1

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	2.1325	--	43420	1.71	675	3.9202	1473	1.71	172	3.4
PFHpA 1	µg/L	--	0.4917	--	11995	2.16	395	0.7900	2291	2.16	144	19.1
PFOA 1	µg/L	--	1.8264	--	38298	2.63	438	2.9007	10212	2.63	582	26.7
PFNA 1	µg/L	--	0.0934	--	1087	3.08	13	0.1098	250	3.07	18	23.0
PFDA 1	µg/L	--	0.0302	--	258	3.46	8	0.0358	41	3.46	5	15.9
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1412	--	606	1.37	52	0.1773	276	1.37	47	45.5
PFHxS 1	µg/L	--	1.8301	--	6293	2.08	345	2.6487	3378	2.10	430	53.7
PFOS 1	µg/L	--	11.7907	--	29514	2.89	48	16.1986	14605	2.90	106	49.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	111.8223	--	11076	1.71	664	--	--	--	--	--
13C4-PFHpA	µg/L	--	119.3726	--	15183	2.16	855	--	--	--	--	--
13C4-PFOA	µg/L	--	111.4930	--	13203	2.63	771	--	--	--	--	--
13C5-PFNA	µg/L	--	106.2715	--	9896	3.08	479	--	--	--	--	--
13C2-PFDA	µg/L	--	100.7827	--	7211	3.47	682	--	--	--	--	--
13C2-PFUnA	µg/L	--	116.5906	--	9965	3.81	485	--	--	--	--	--
13C2-PFDaA	µg/L	--	114.9666	--	12037	4.11	683	--	--	--	--	--
13C2-PFTeDA	µg/L	--	102.9525	--	15761	4.61	1333	--	--	--	--	--
13C3-PFBS	µg/L	--	101.5449	--	3418	1.36	266	--	--	--	--	--
18O2-PFHxS	µg/L	--	101.7559	--	2376	2.11	327	--	--	--	--	--
13C4-PFOS	µg/L	--	100.6630	--	1822	2.95	154	--	--	--	--	--
D3-MeFOSA	µg/L	--	52.1865	--	2351	5.21	39	--	--	--	--	--
D5-EtFOSA	µg/L	--	57.1818	--	2098	5.34	80	--	--	--	--	--

### PFHxA 1

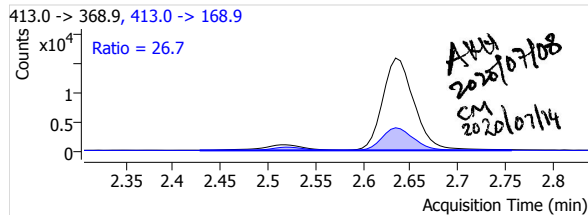
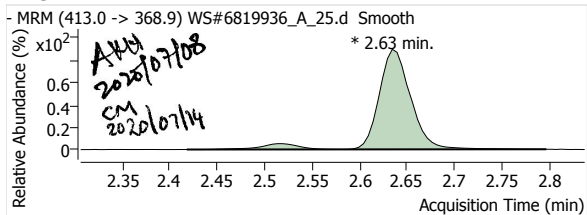


### PFHpA 1

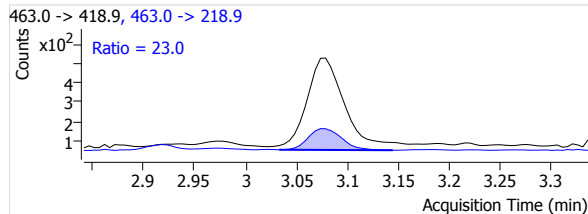
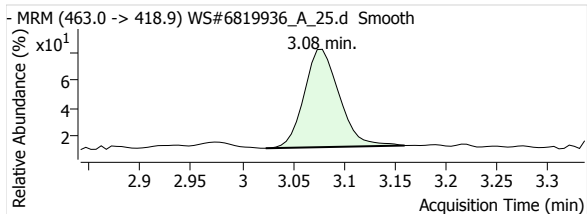


# Quantitative Analysis Report

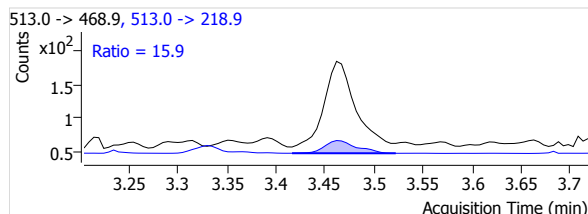
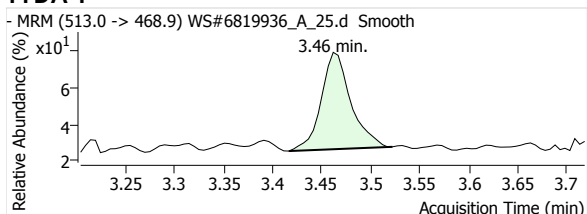
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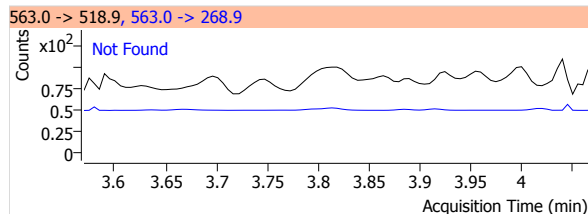
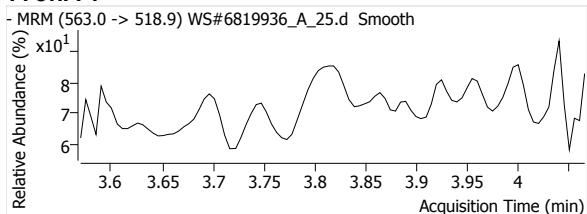
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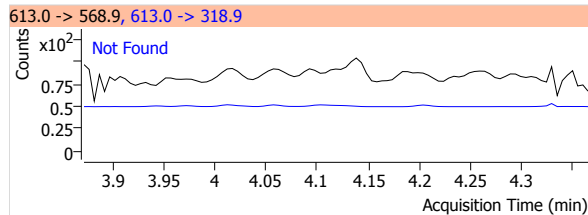
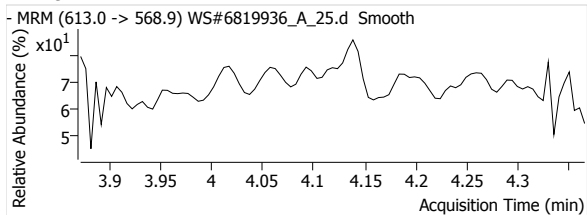
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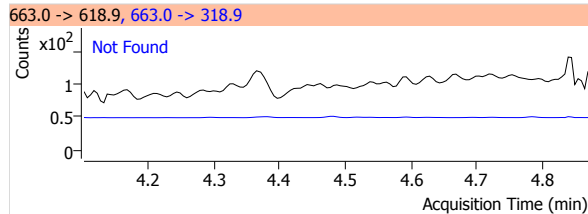
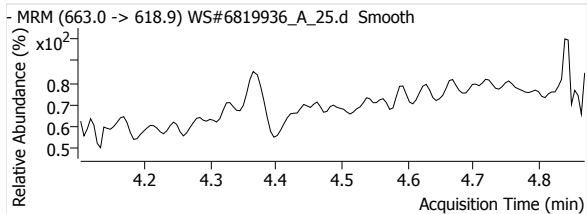
## PFUnA 1



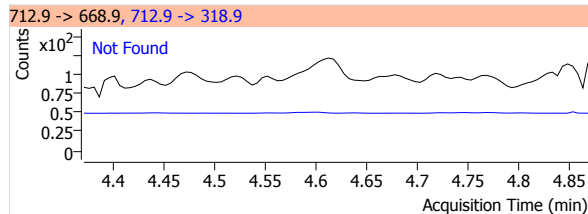
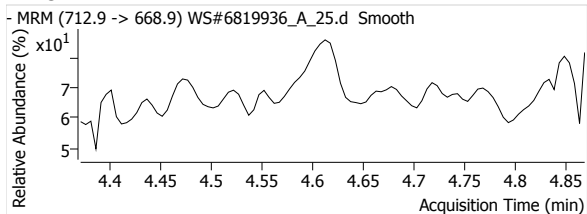
## PFDaA 1



## PFTrDA 1



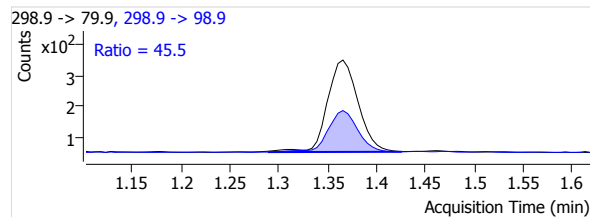
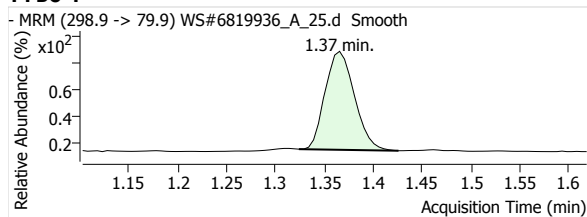
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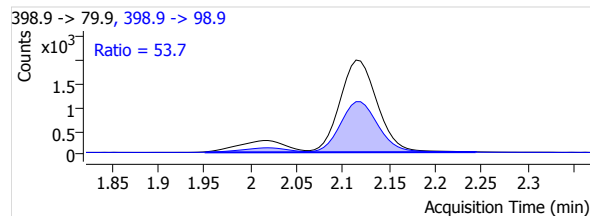
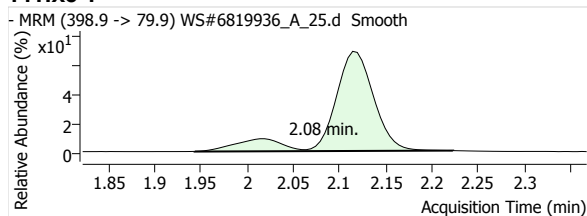


# Quantitative Analysis Report

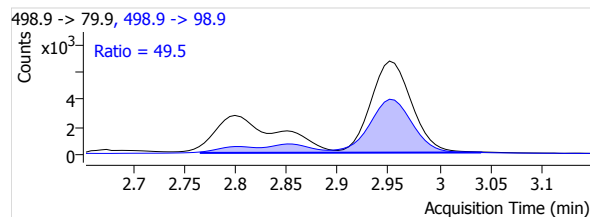
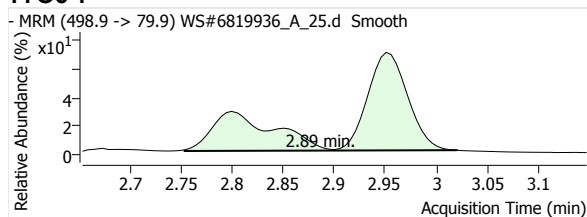
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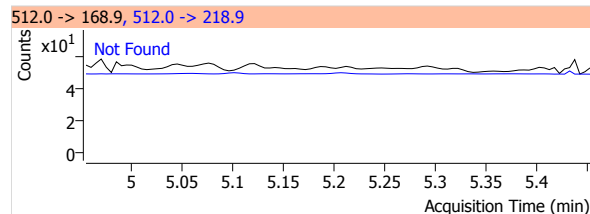
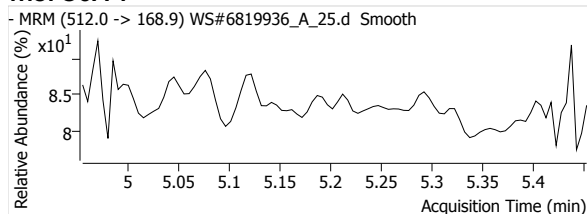
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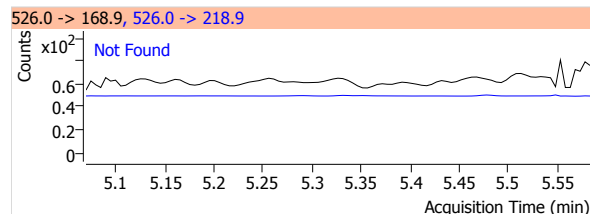
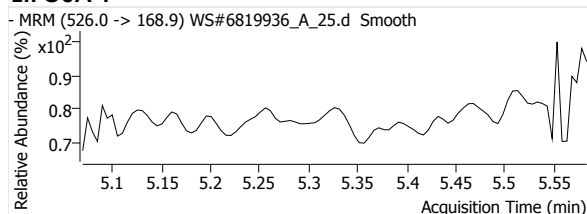
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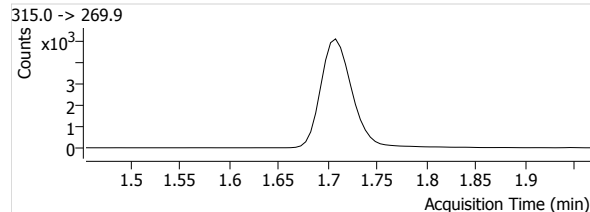
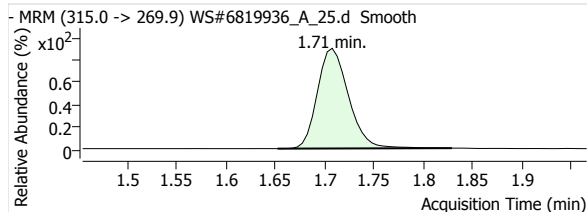
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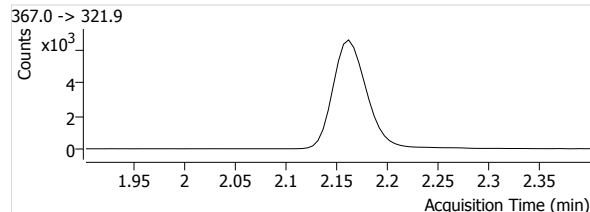
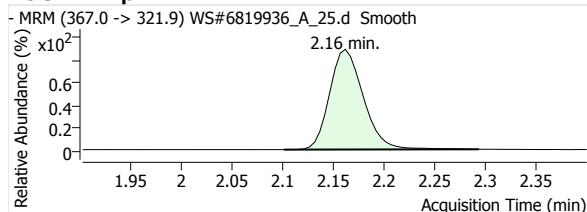
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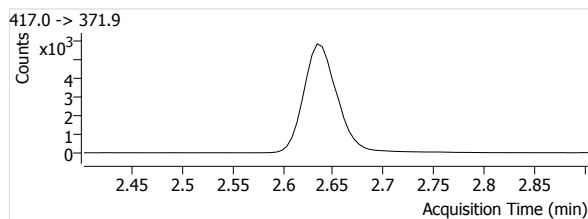
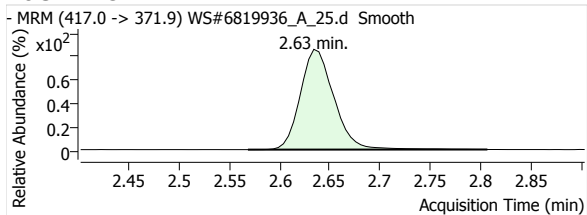


## 13C4-PFHpA

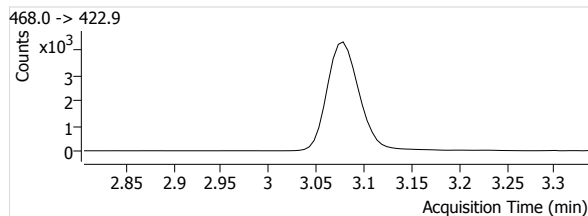
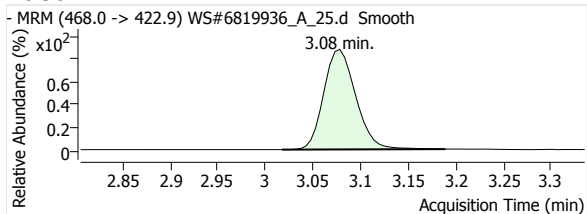


# Quantitative Analysis Report

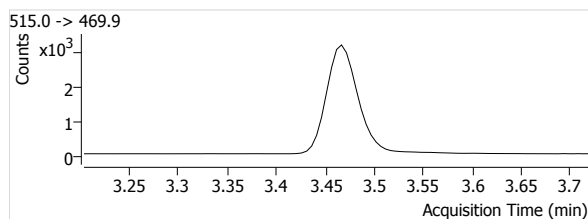
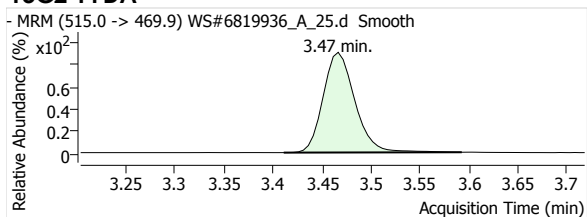
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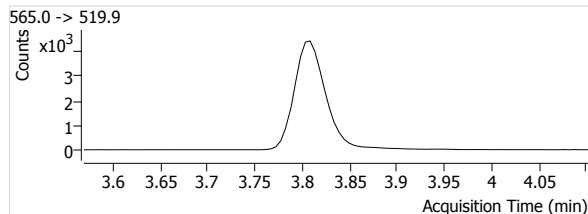
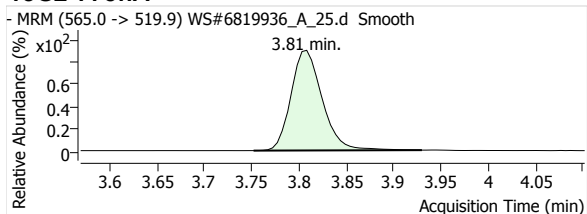
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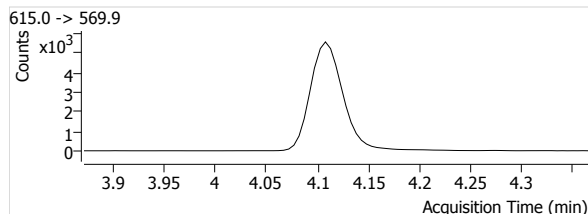
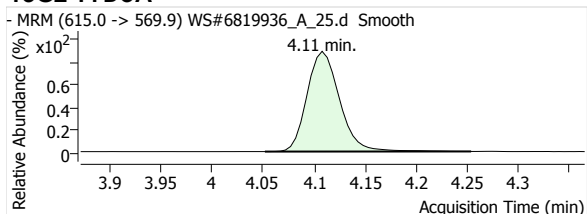
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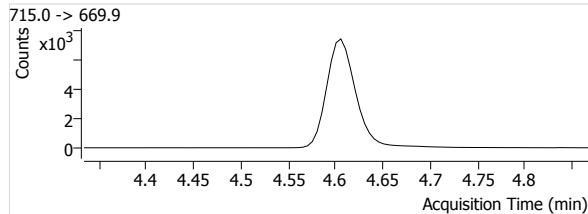
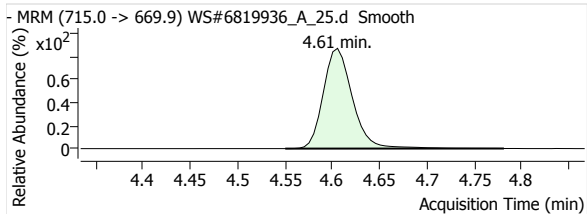
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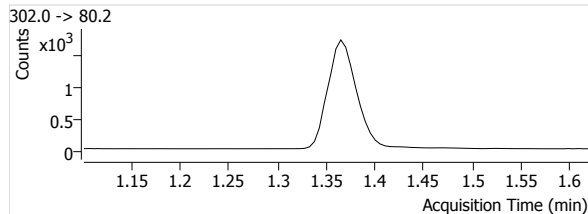
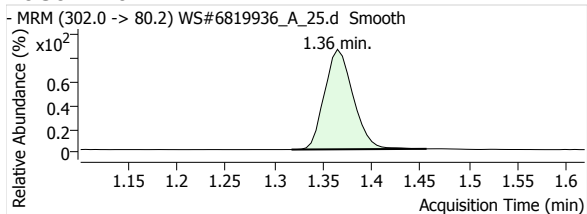
## 13C2-PFDoA



## 13C2-PFTeDA

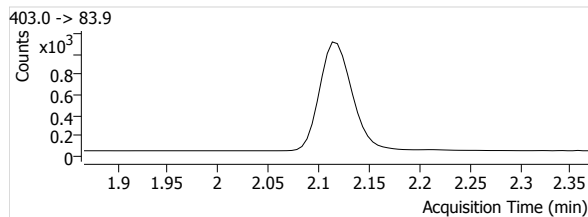
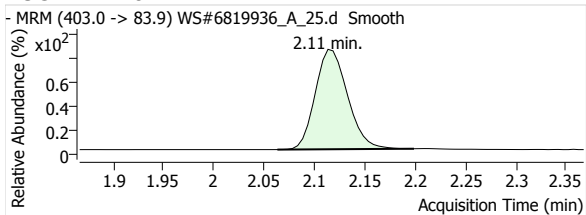


## 13C3-PFBS

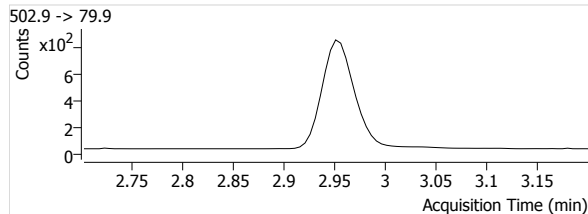
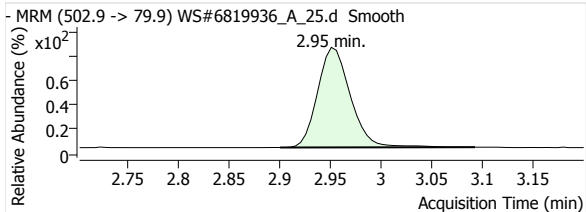


# Quantitative Analysis Report

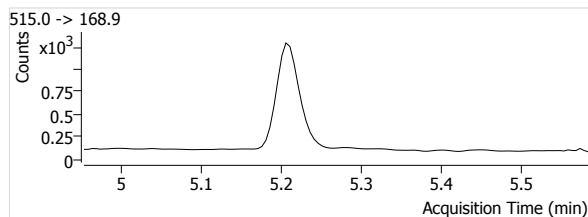
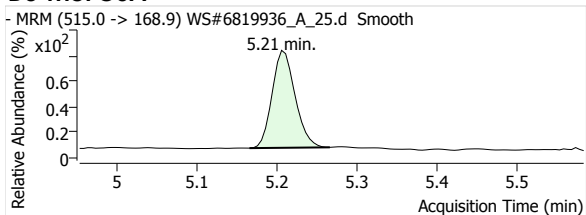
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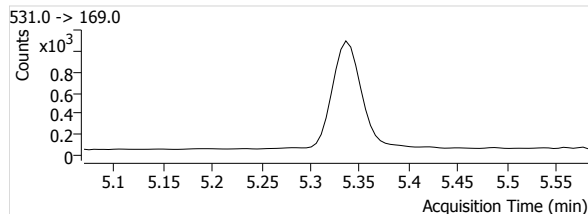
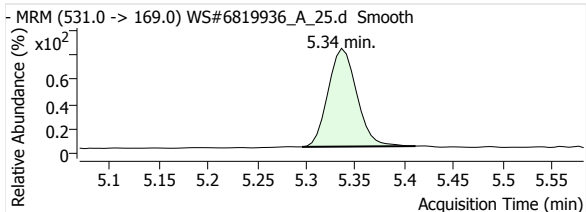
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

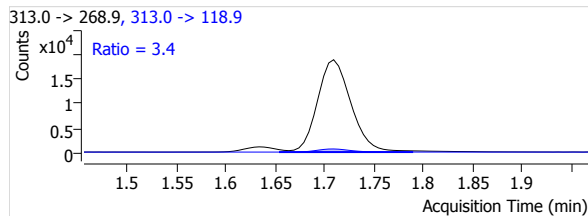
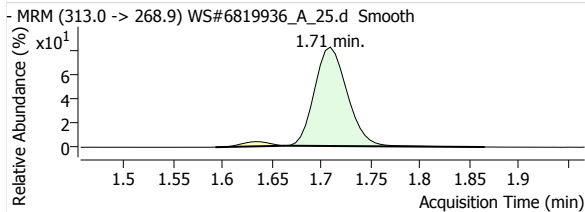
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 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 2:07:20 PM  
 Comment -  
 User Defined MI PFOA

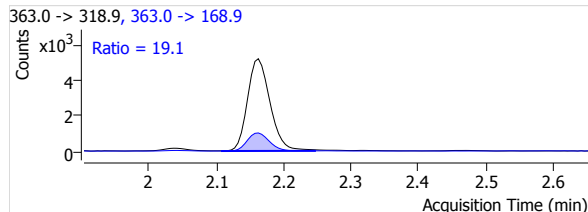
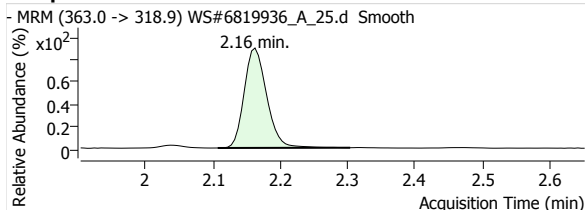
Data File WS#6819936\_A\_25.d  
 Instrument LCMS04  
 Position P2-C4  
 Dil. 0.1

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	2.1325	--	43420	1.71	675	3.9202	1473	1.71	172	3.4
PFHpA 1	µg/L	--	0.4917	--	11995	2.16	395	0.7900	2291	2.16	144	19.1
PFOA 1	µg/L	--	1.7063	--	35749	2.63	435	2.7076	8899	2.63	389	24.9
PFNA 1	µg/L	--	0.0934	--	1087	3.08	13	0.1098	250	3.07	18	23.0
PFDA 1	µg/L	--	0.0302	--	258	3.46	8	0.0358	41	3.46	5	15.9
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1412	--	606	1.37	52	0.1773	276	1.37	47	45.5
PFHxS 1	µg/L	--	1.8301	--	6293	2.08	345	2.6487	3378	2.10	430	53.7
PFOS 1	µg/L	--	11.7907	--	29514	2.89	48	16.1986	14605	2.90	106	49.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	111.8223	--	11076	1.71	664	--	--	--	--	--
13C4-PFHpA	µg/L	--	119.3726	--	15183	2.16	855	--	--	--	--	--
13C4-PFOA	µg/L	--	111.4930	--	13203	2.63	771	--	--	--	--	--
13C5-PFNA	µg/L	--	106.2715	--	9896	3.08	479	--	--	--	--	--
13C2-PFDA	µg/L	--	100.7827	--	7211	3.47	682	--	--	--	--	--
13C2-PFUnA	µg/L	--	116.5906	--	9965	3.81	485	--	--	--	--	--
13C2-PFDoA	µg/L	--	114.9666	--	12037	4.11	683	--	--	--	--	--
13C2-PFTeDA	µg/L	--	102.9525	--	15761	4.61	1333	--	--	--	--	--
13C3-PFBS	µg/L	--	101.5449	--	3418	1.36	266	--	--	--	--	--
18O2-PFHxS	µg/L	--	101.7559	--	2376	2.11	327	--	--	--	--	--
13C4-PFOS	µg/L	--	100.6630	--	1822	2.95	154	--	--	--	--	--
D3-MeFOSA	µg/L	--	52.1865	--	2351	5.21	39	--	--	--	--	--
D5-EtFOSA	µg/L	--	57.1818	--	2098	5.34	80	--	--	--	--	--

### PFHxA 1

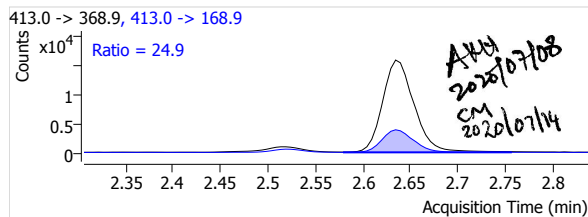
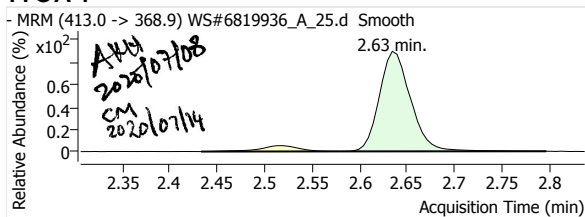


### PFHpA 1

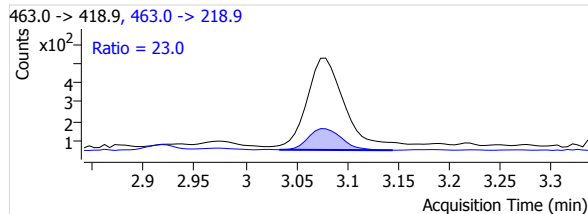
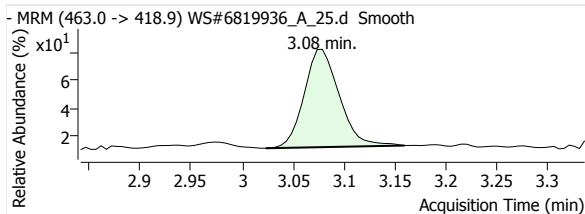


# Quantitative Analysis Report

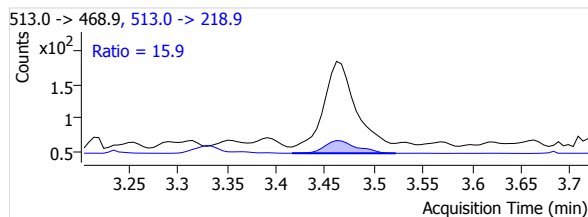
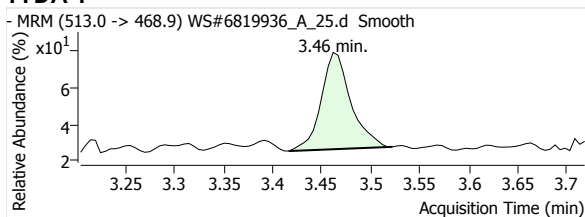
## PFOA 1



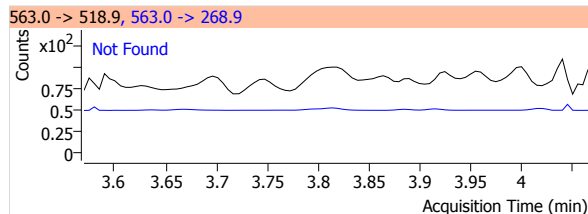
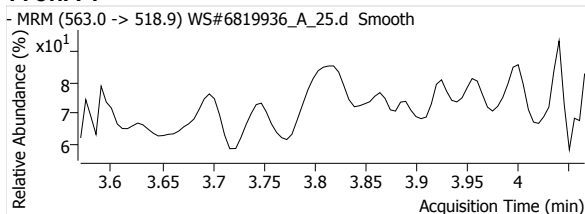
## PFNA 1



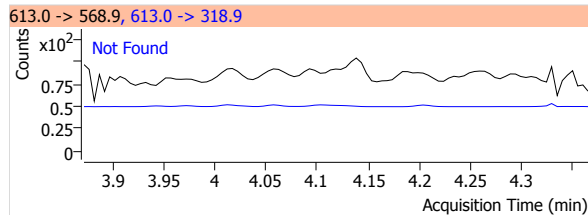
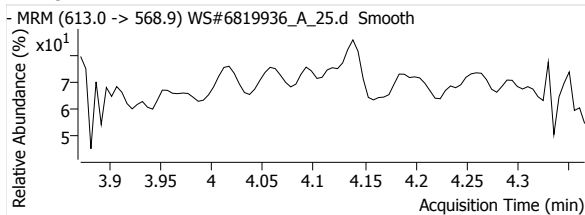
## PFDA 1



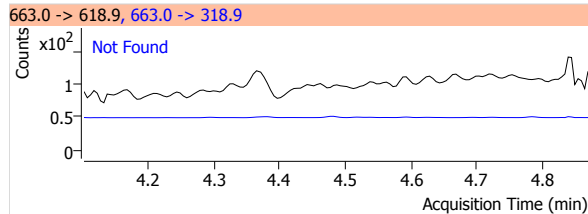
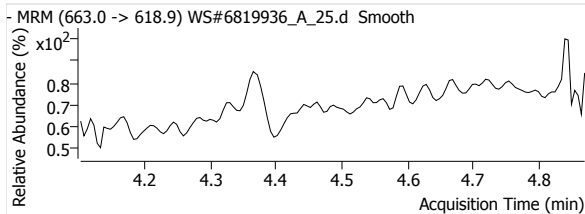
## PFUnA 1



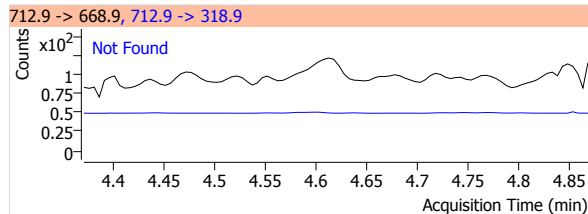
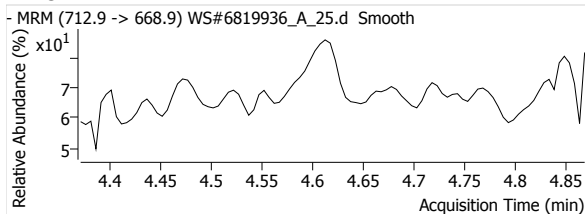
## PFDaA 1



## PFTrDA 1

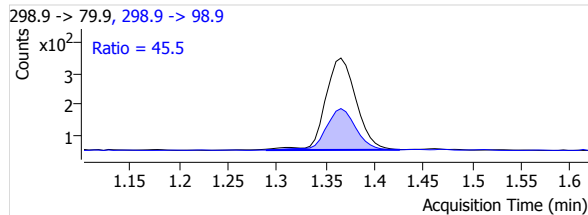
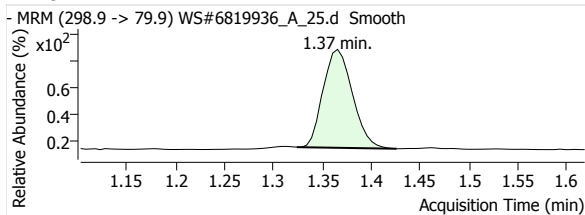


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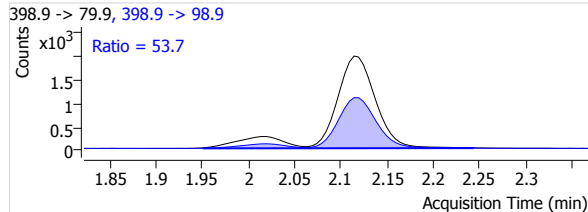
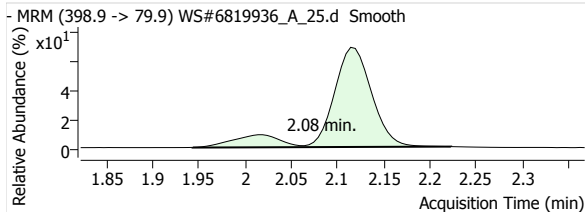


# Quantitative Analysis Report

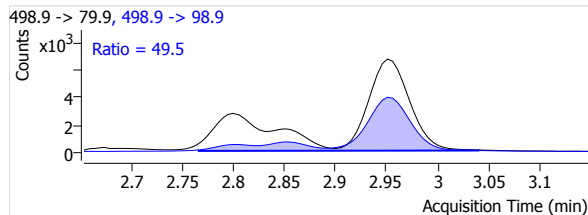
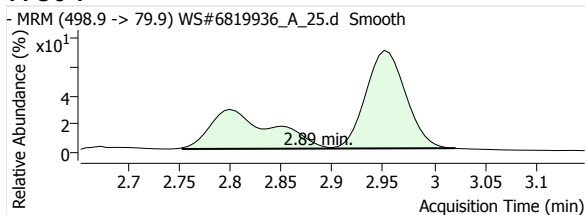
## PFBS 1



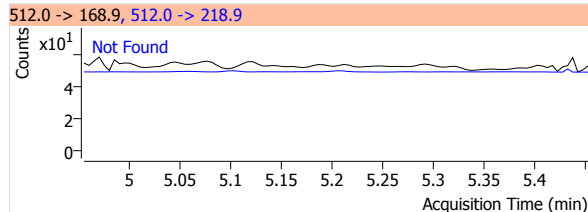
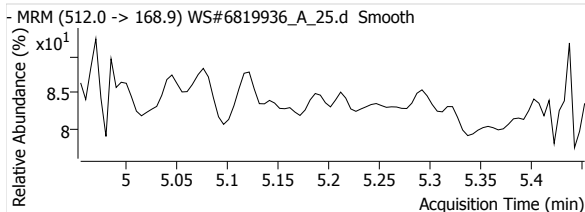
## PFHxS 1



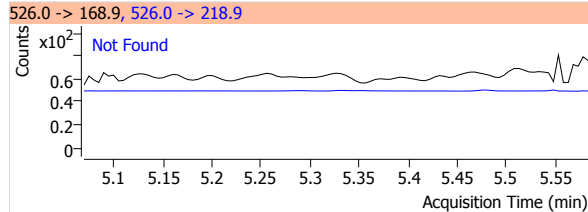
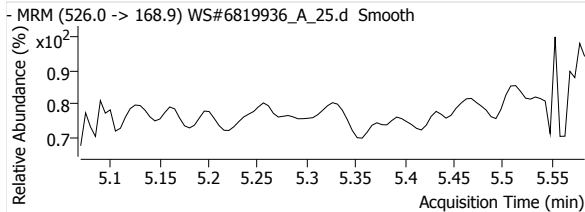
## PFOS 1



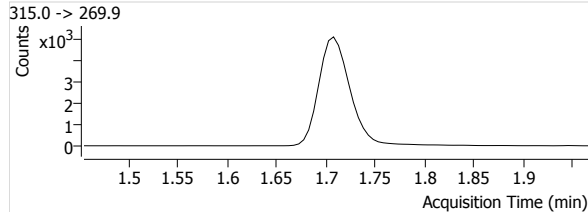
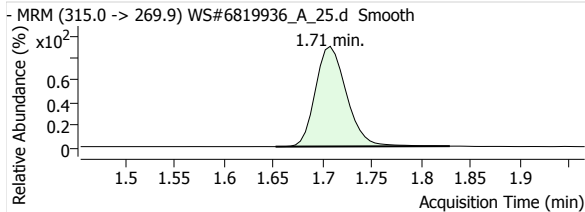
## MeFOSA 1



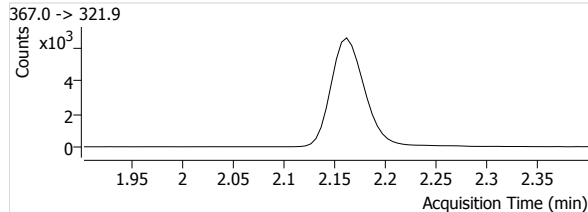
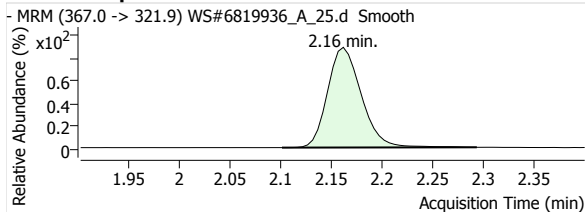
## eFOSA 1



## 13C2-PFHxA

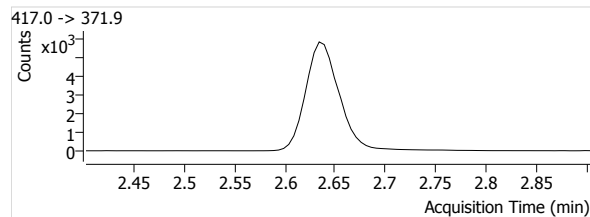
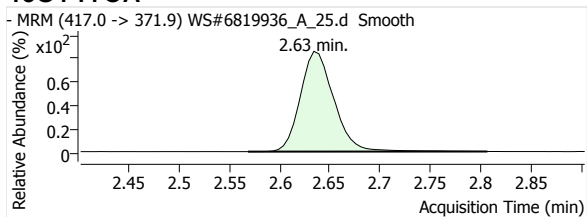


## 13C4-PFHpA

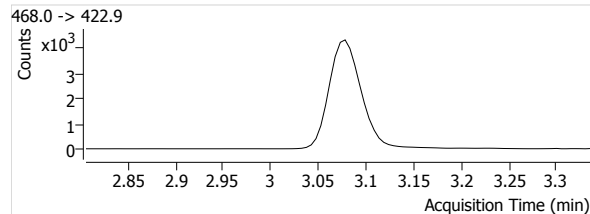
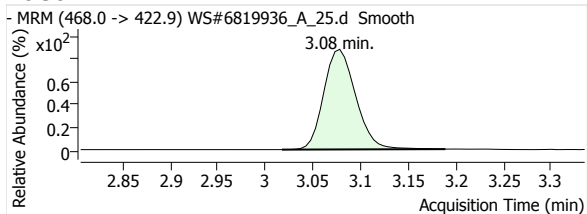


# Quantitative Analysis Report

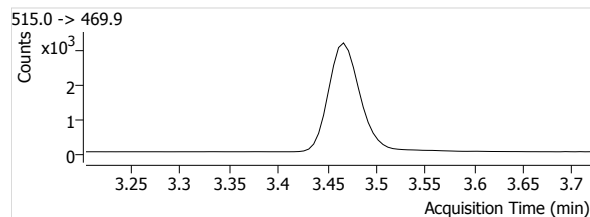
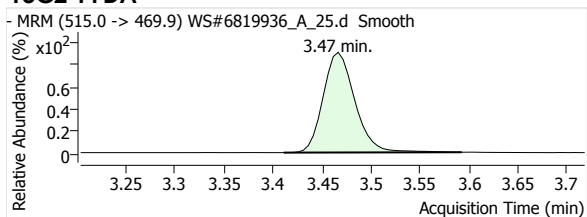
## 13C4-PFOA



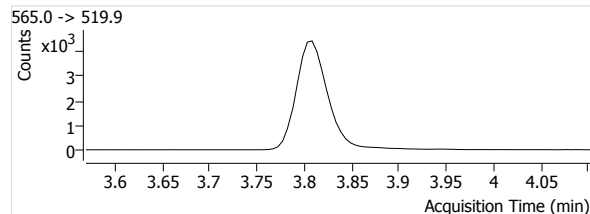
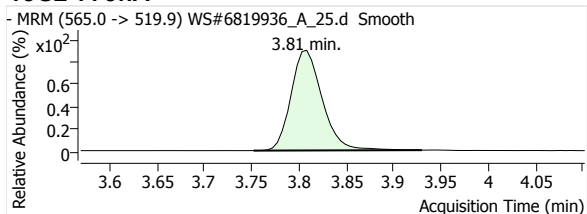
## 13C5-PFNA



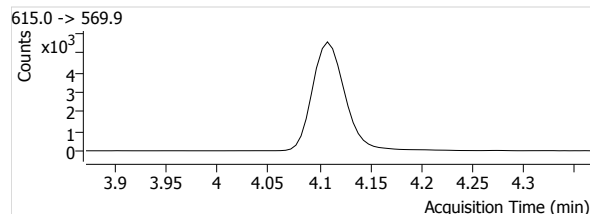
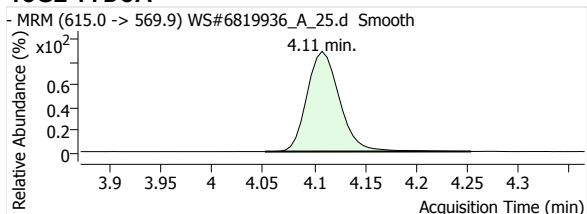
## 13C2-PFDA



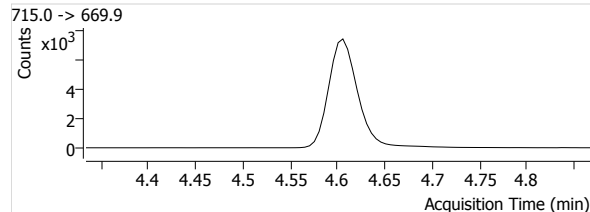
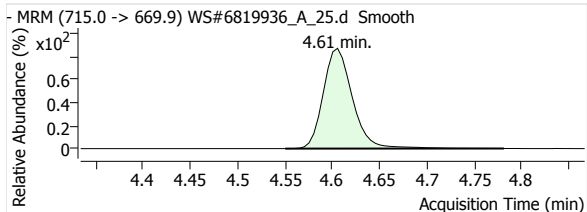
## 13C2-PFUnA



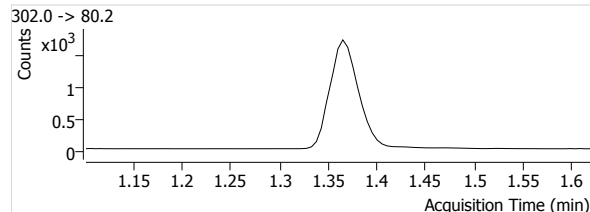
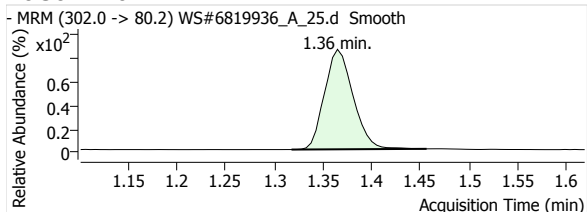
## 13C2-PFDoA



## 13C2-PFTeDA

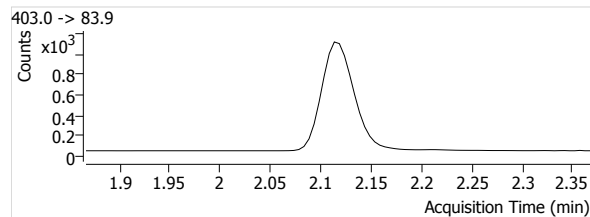
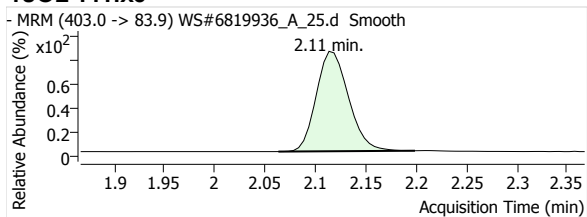


## 13C3-PFBS

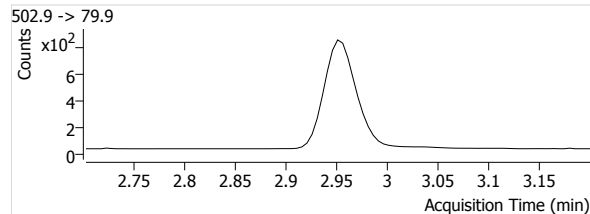
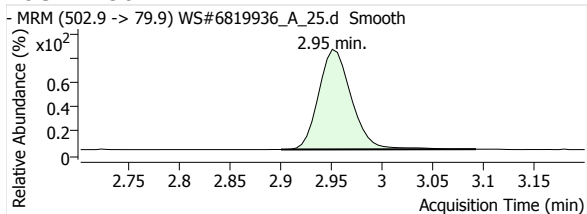


# Quantitative Analysis Report

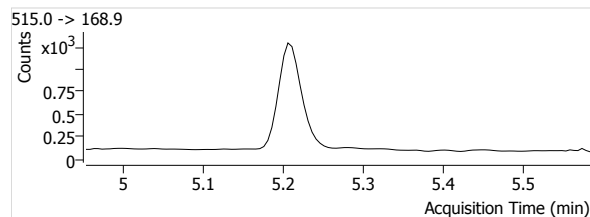
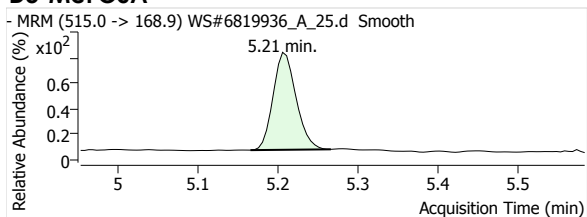
## 18O2-PFHxs



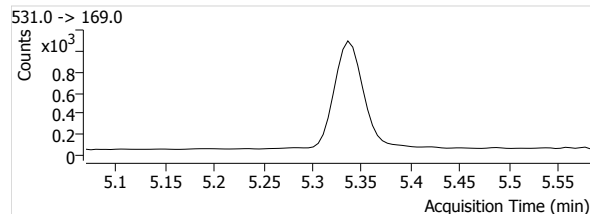
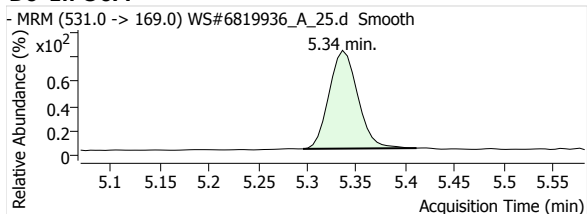
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA





# Quantitative Analysis Report

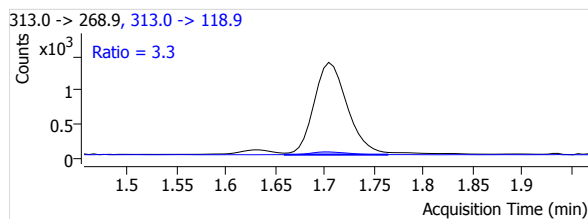
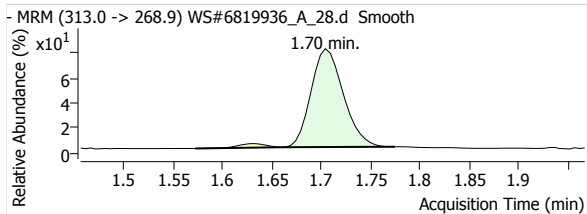
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**Sample Name** 6819936:NAH701-01:10x  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 2:28:11 PM  
**Comment** Reported PFOS  
**User Defined**

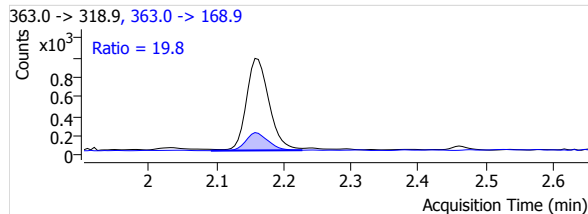
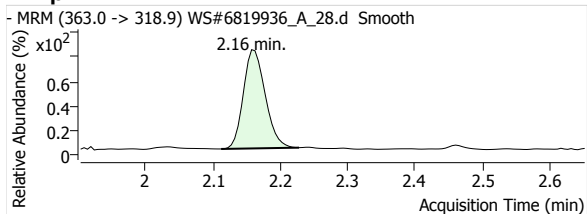
**Data File** WS#6819936\_A\_28.d  
**Instrument** LCMS04  
**Position** P2-C5  
**Dil.** 0.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.3251	--	3032	1.70	83	0.2556	100	1.70	9	3.3
PFHpA 1	µg/L	--	0.1993	--	2087	2.16	25	0.1291	413	2.16	23	19.8
PFOA 1	µg/L	--	0.4584	--	4676	2.63	91	0.3347	1193	2.63	105	25.5
PFNA 1	µg/L	--	0.0567	--	131	3.07	3	0.0122	31	3.07	7	23.7
PFDA 1	µg/L	--	0.0375	--	93	3.47	3	0.0116	12	3.45	8	12.9
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBs 1	µg/L	--	0.0448	--	57	1.37	10	0.0149	35	1.37	6	61.4
PFHxS 1	µg/L	--	0.6150	--	1140	2.08	124	0.4305	607	2.10	125	53.2
PFOS 1	µg/L	--	1.8198	--	2476	2.89	49	1.2321	1289	2.90	129	52.1
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	119.7779	--	11864	1.70	350	--	--	--	--	--
13C4-PFHpA	µg/L	--	127.0540	--	16160	2.16	571	--	--	--	--	--
13C4-PFOA	µg/L	--	117.9784	--	13971	2.63	554	--	--	--	--	--
13C5-PFNA	µg/L	--	115.4424	--	10750	3.08	752	--	--	--	--	--
13C2-PFDA	µg/L	--	111.8519	--	8003	3.47	954	--	--	--	--	--
13C2-PFUnA	µg/L	--	124.4764	--	10639	3.81	153	--	--	--	--	--
13C2-PFDoA	µg/L	--	121.6237	--	12734	4.11	471	--	--	--	--	--
13C2-PFTeDA	µg/L	--	113.0577	--	17308	4.61	1610	--	--	--	--	--
13C3-PFBs	µg/L	--	113.7255	--	3828	1.36	376	--	--	--	--	--
18O2-PFHxS	µg/L	--	113.3619	--	2647	2.11	538	--	--	--	--	--
13C4-PFOS	µg/L	--	111.0497	--	2010	2.95	284	--	--	--	--	--
D3-MeFOSA	µg/L	--	59.6448	--	2687	5.21	45	--	--	--	--	--
D5-EtFOSA	µg/L	--	66.3123	--	2433	5.34	67	--	--	--	--	--

### PFHxA 1

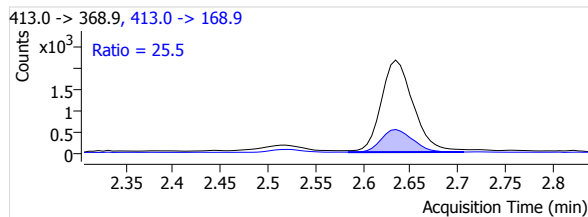
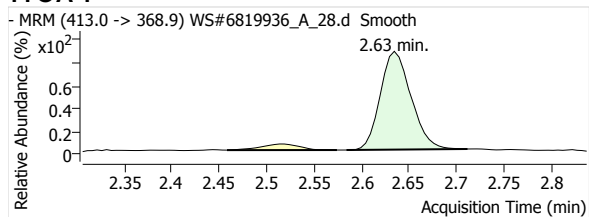


### PFHpA 1

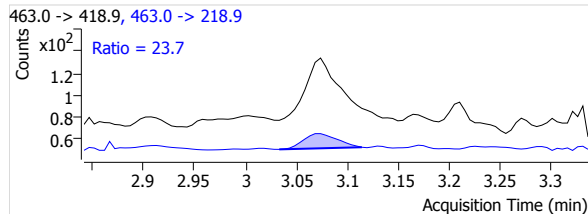
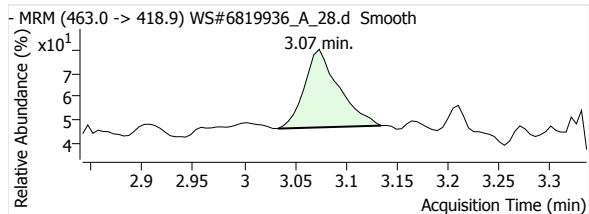


# Quantitative Analysis Report

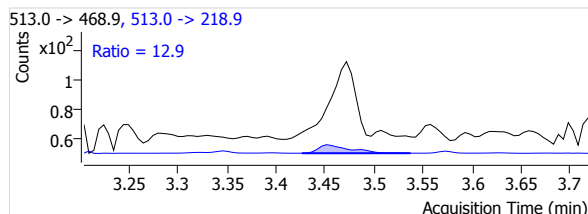
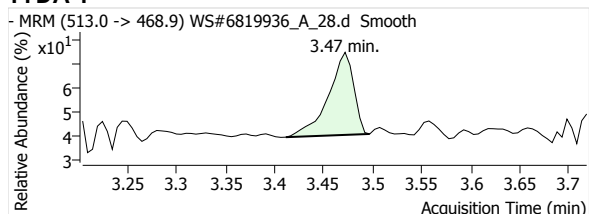
## PFOA 1



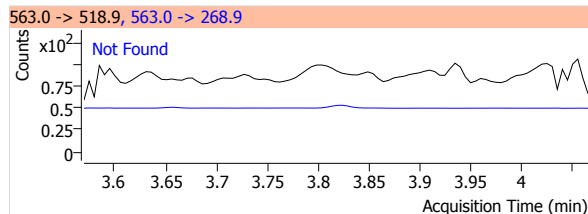
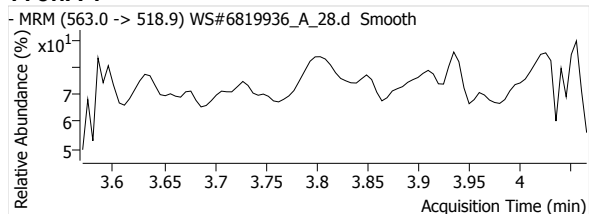
## PFNA 1



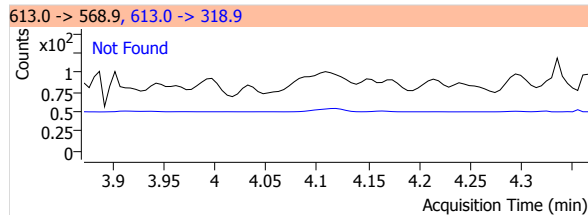
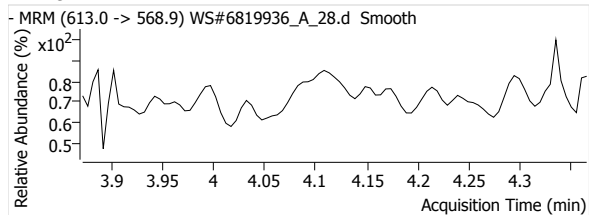
## PFDA 1



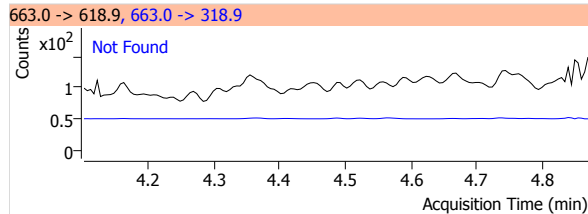
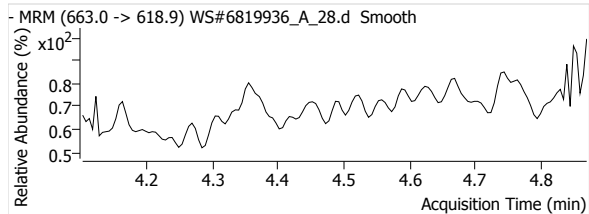
## PFUnA 1



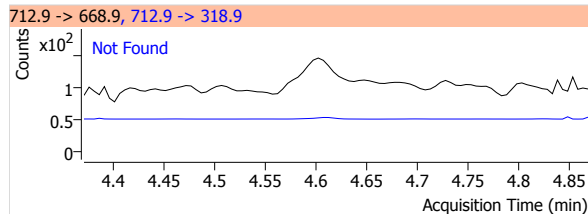
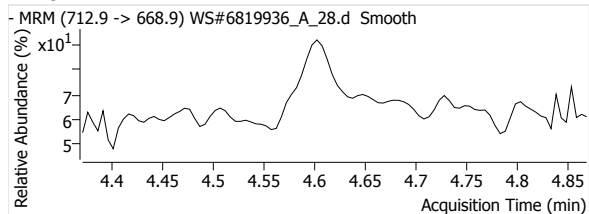
## PFDaA 1



## PFTrDA 1

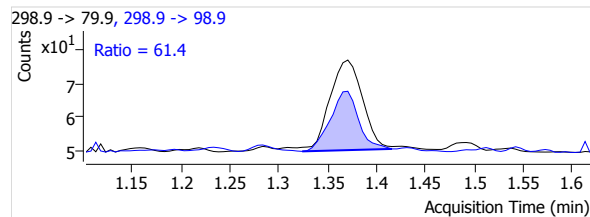
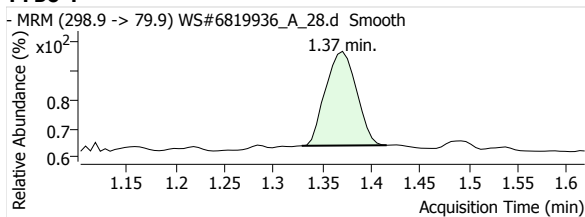


## PFTeDA 1

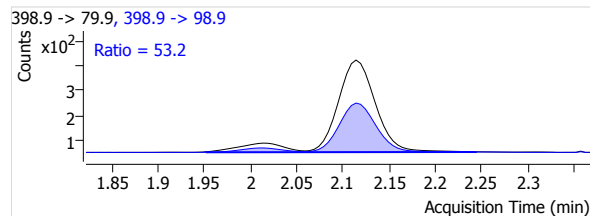
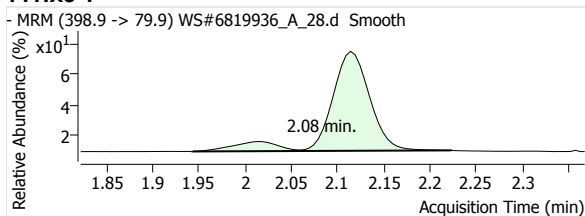


# Quantitative Analysis Report

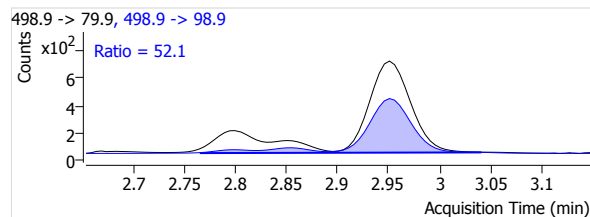
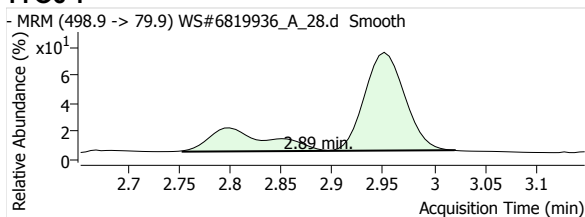
## PFBS 1



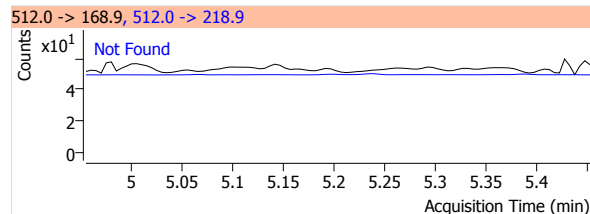
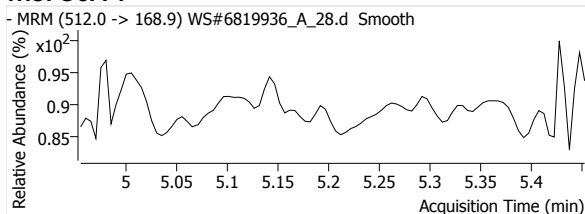
## PFHxS 1



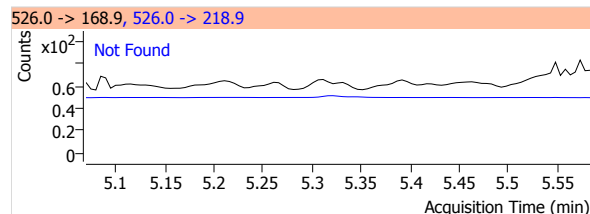
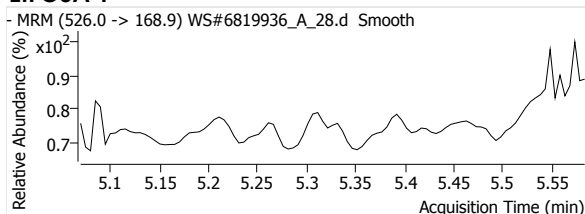
## PFOS 1



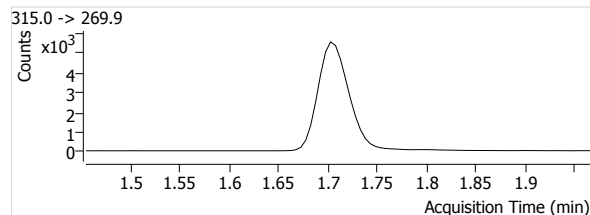
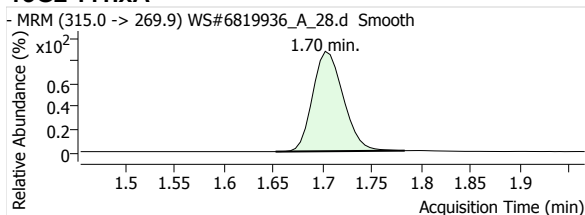
## MeFOSA 1



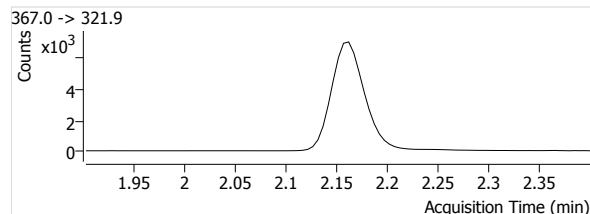
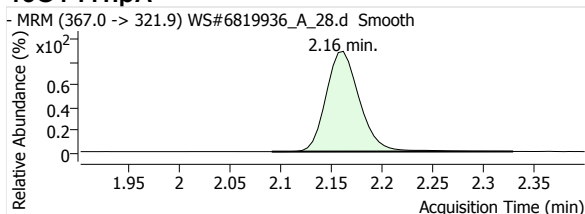
## eFOSA 1



## 13C2-PFHxA

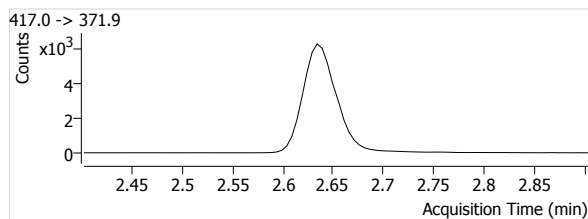
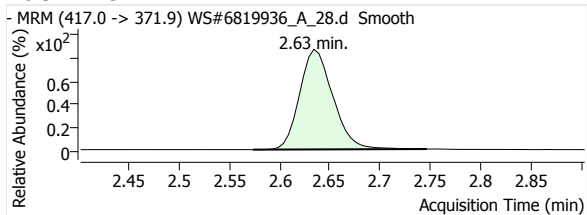


## 13C4-PFHpA

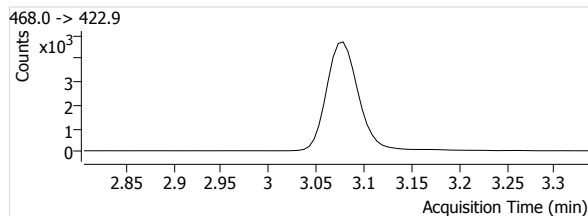
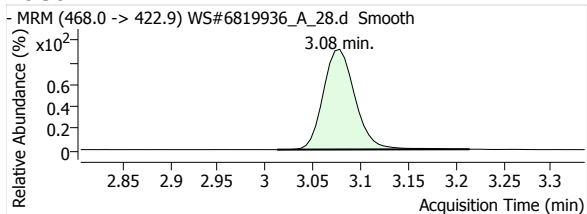


# Quantitative Analysis Report

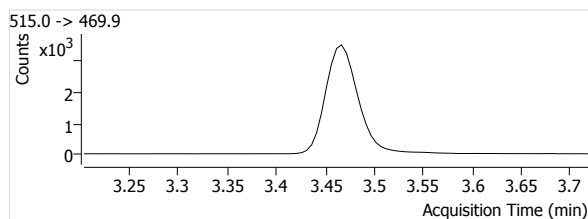
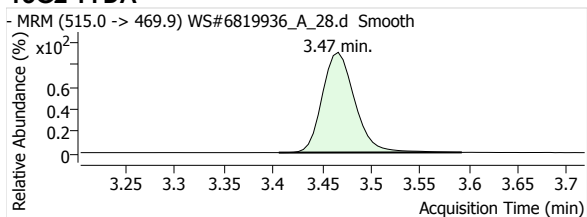
## 13C4-PFOA



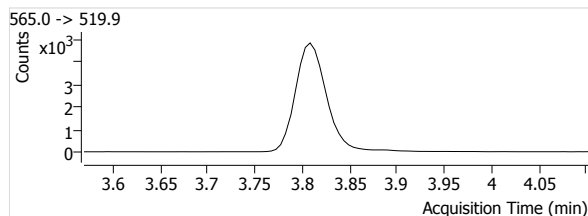
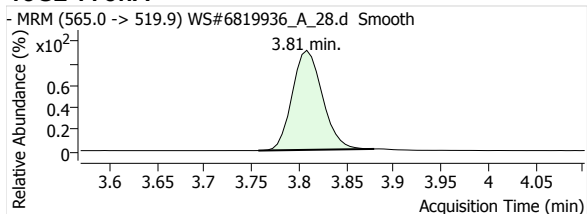
## 13C5-PFNA



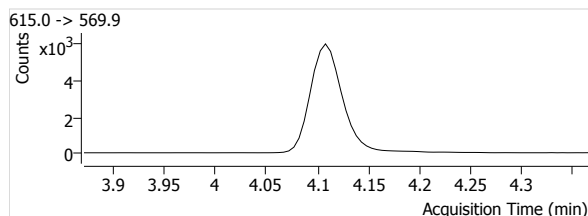
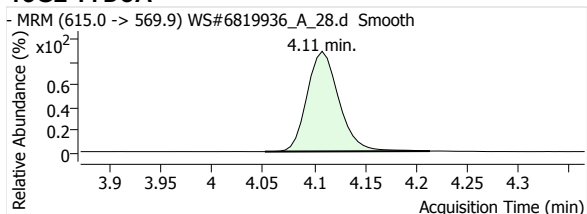
## 13C2-PFDA



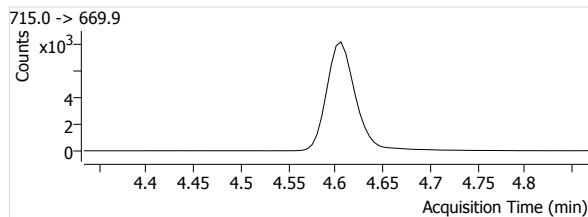
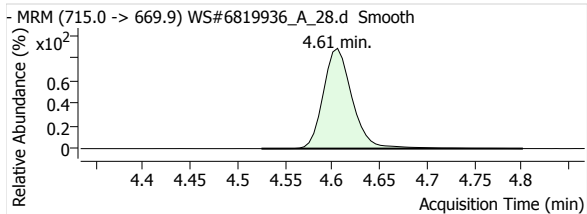
## 13C2-PFUnA



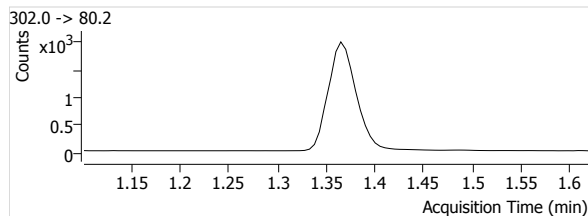
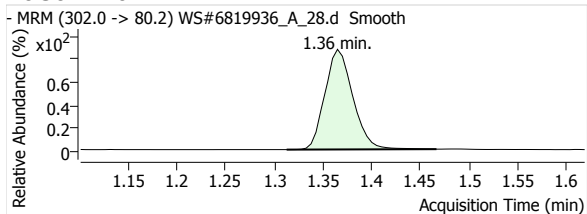
## 13C2-PFDoA



## 13C2-PFTeDA

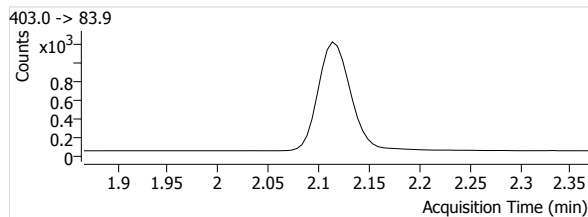
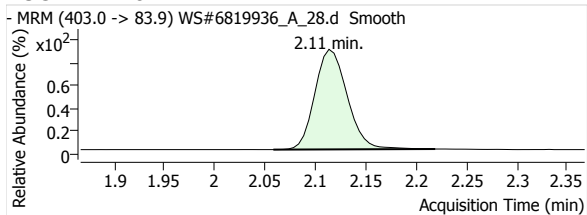


## 13C3-PFBS

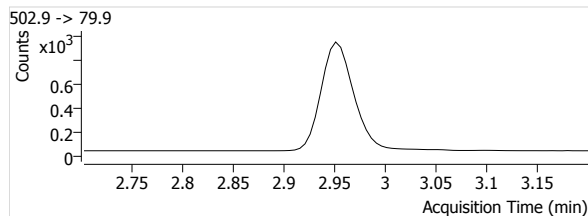
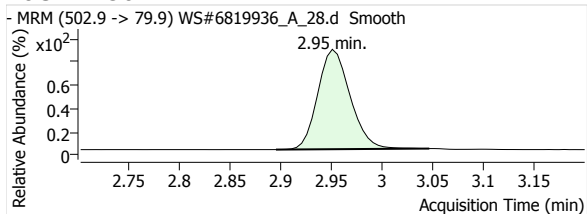


# Quantitative Analysis Report

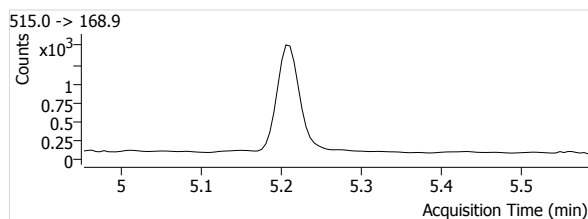
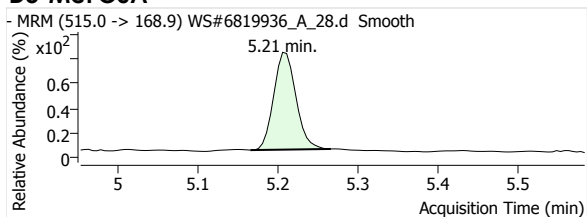
## 18O2-PFHxs



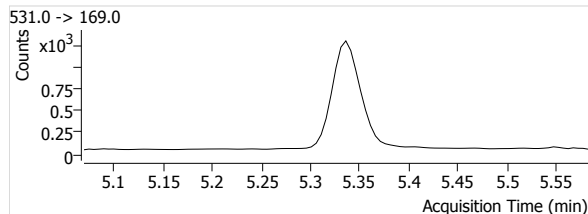
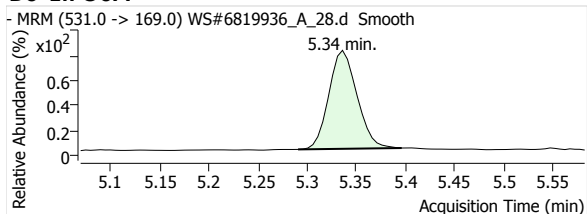
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

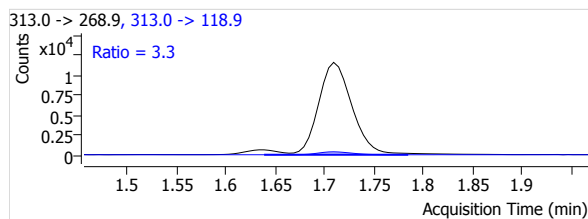
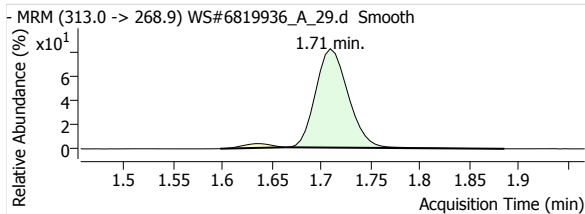
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**Sample Name** 6819936:NAH701-01  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 2:35:06 PM  
**Comment** -  
**User Defined** MI PFOA

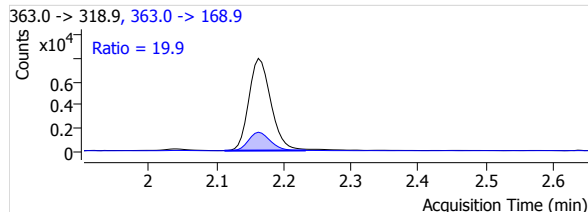
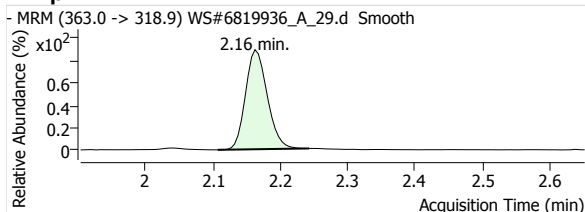
**Data File** WS#6819936\_A\_29.d  
**Instrument** LCMS04  
**Position** P2-C6  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.2638	--	26281	1.71	393	2.2180	871	1.71	157	3.3
PFHpA 1	µg/L	--	0.1490	--	17750	2.16	143	1.1201	3541	2.16	189	19.9
PFOA 1	µg/L	--	0.4377	--	44082	2.63	464	3.2118	12183	2.63	587	27.6
PFNA 1	µg/L	--	0.0212	--	1166	3.08	18	0.1164	262	3.07	20	22.5
PFDA 1	µg/L	--	0.0112	--	610	3.46	9	0.0813	99	3.46	17	16.2
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0269	--	583	1.37	32	0.1541	273	1.37	20	46.8
PFHxS 1	µg/L	--	0.6195	--	9744	2.08	360	4.1480	5094	2.10	345	52.3
PFOS 1	µg/L	--	1.7534	--	21535	2.89	101	11.1121	11582	2.90	160	53.8
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	119.6265	--	11849	1.71	662	--	--	--	--	--
13C4-PFHpA	µg/L	--	124.5931	--	15847	2.16	655	--	--	--	--	--
13C4-PFOA	µg/L	--	115.9010	--	13725	2.63	914	--	--	--	--	--
13C5-PFNA	µg/L	--	107.5279	--	10013	3.07	285	--	--	--	--	--
13C2-PFDA	µg/L	--	104.8218	--	7500	3.47	349	--	--	--	--	--
13C2-PFUnA	µg/L	--	118.3456	--	10115	3.80	341	--	--	--	--	--
13C2-PFDaA	µg/L	--	111.5377	--	11678	4.11	224	--	--	--	--	--
13C2-PFTeDA	µg/L	--	105.8136	--	16199	4.60	1008	--	--	--	--	--
13C3-PFBS	µg/L	--	112.3886	--	3783	1.36	331	--	--	--	--	--
18O2-PFHxS	µg/L	--	100.5996	--	2349	2.12	161	--	--	--	--	--
13C4-PFOS	µg/L	--	107.0718	--	1938	2.95	257	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.0000	--	3604	5.21	53	--	--	--	--	--
D5-EtFOSA	µg/L	--	86.1815	--	3162	5.34	66	--	--	--	--	--

### PFHxA 1

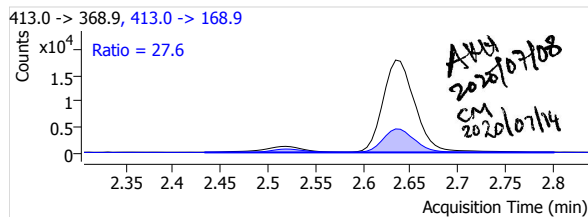
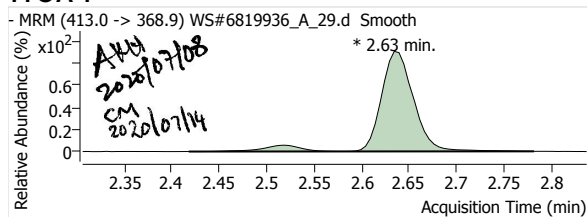


### PFHpA 1

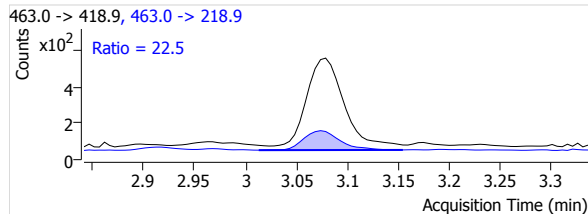
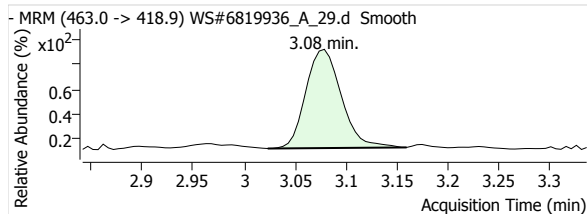


# Quantitative Analysis Report

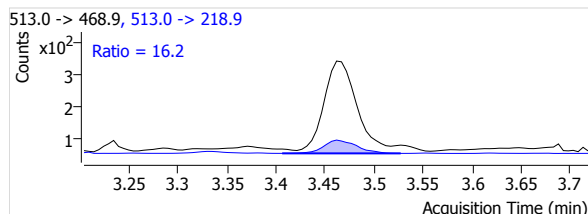
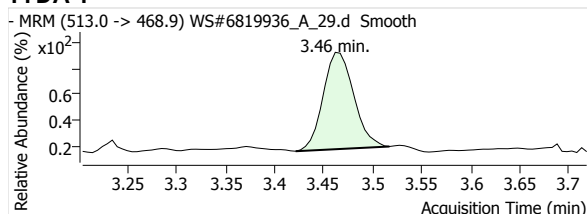
## PFOA 1



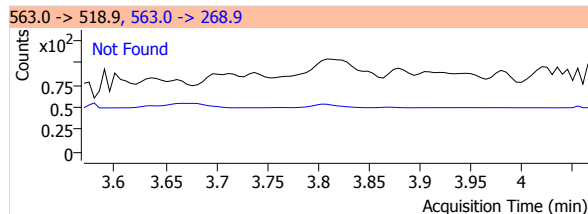
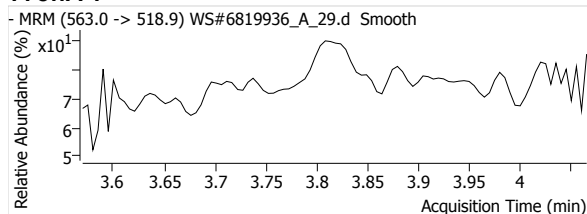
## PFNA 1



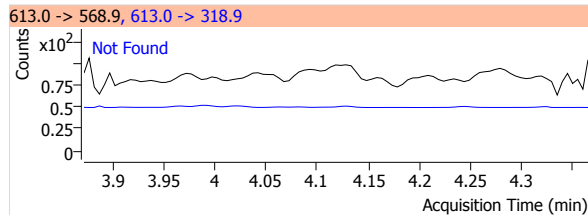
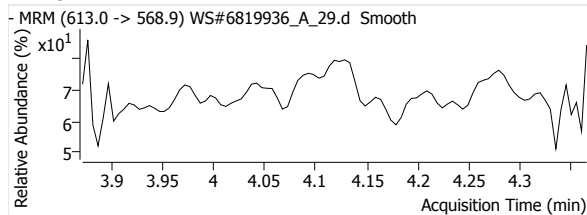
## PFDA 1



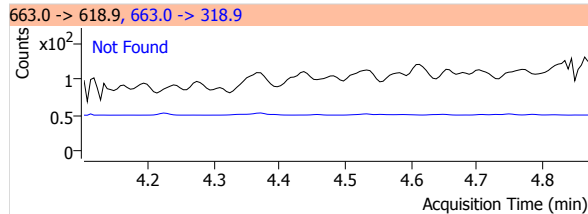
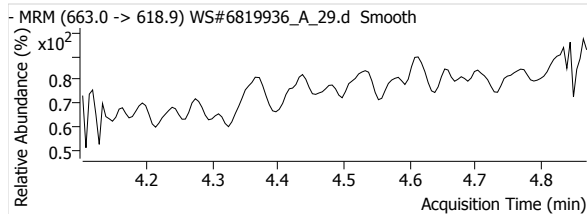
## PFUnA 1



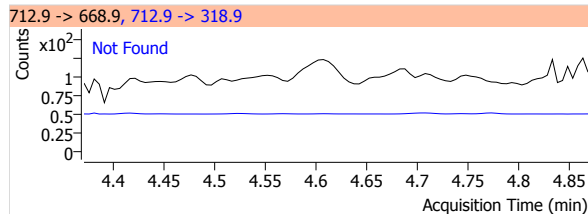
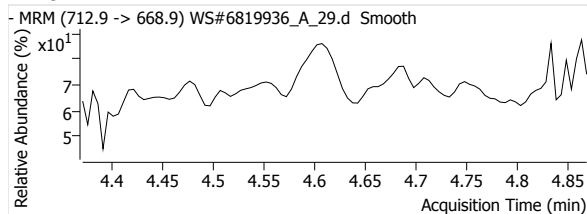
## PFDoA 1



## PFTrDA 1

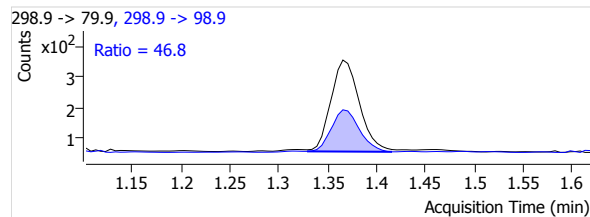
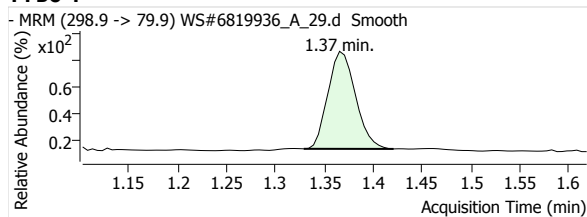


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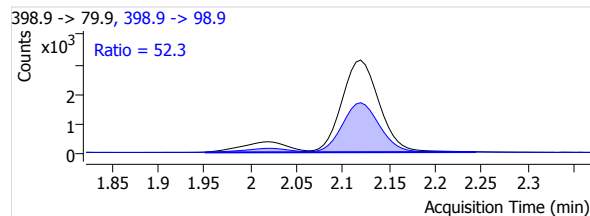
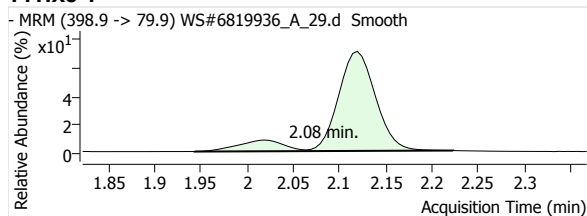


# Quantitative Analysis Report

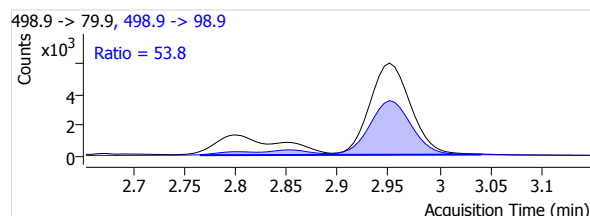
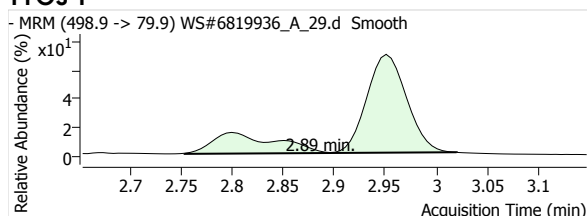
## PFBS 1



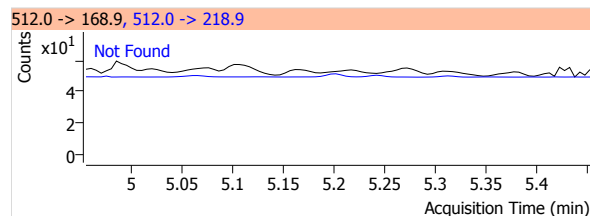
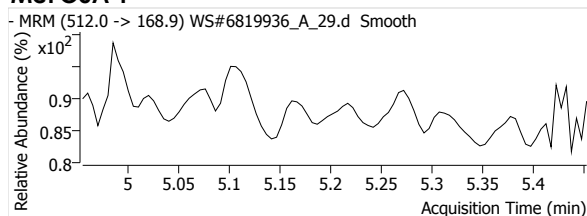
## PFHxS 1



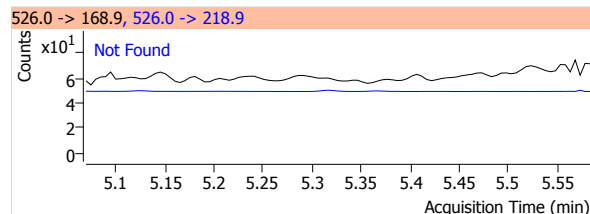
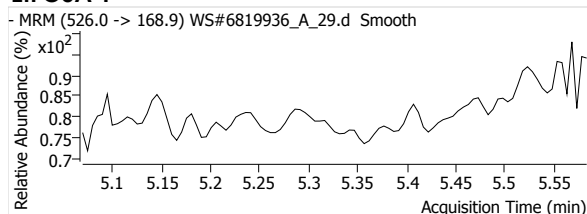
## PFOS 1



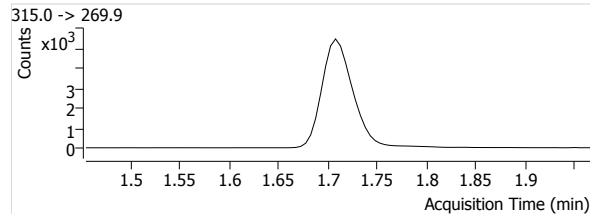
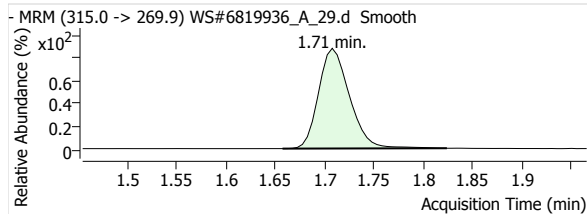
## MeFOSA 1



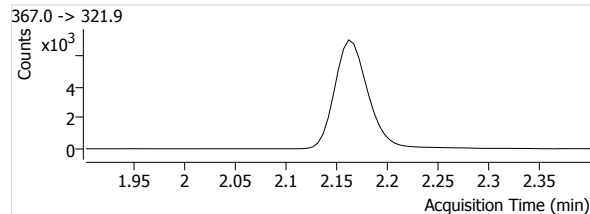
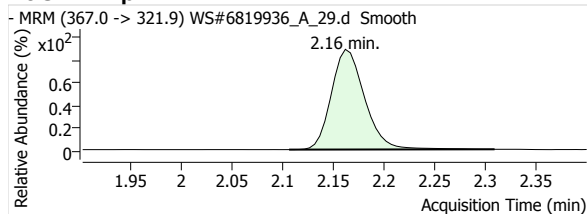
## eFOSA 1



## 13C2-PFHxA



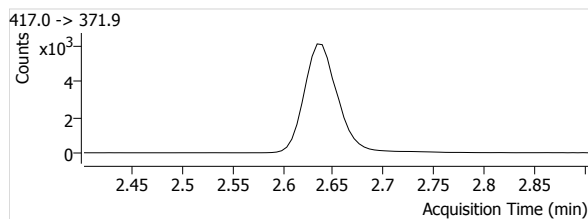
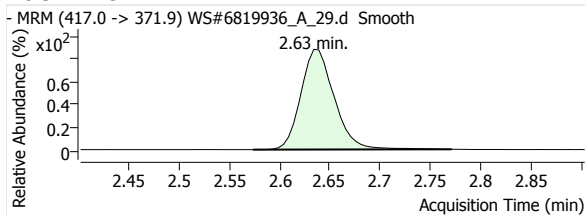
## 13C4-PFHpA



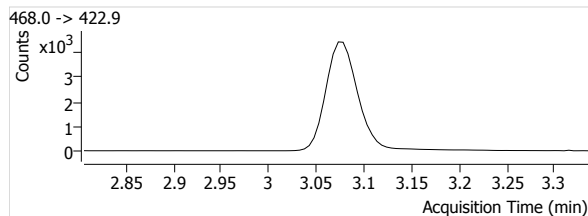
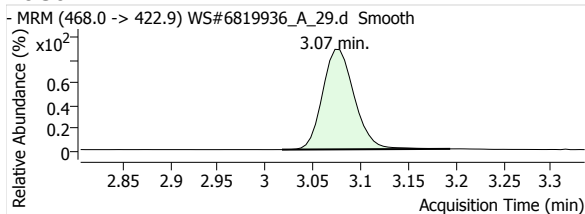


# Quantitative Analysis Report

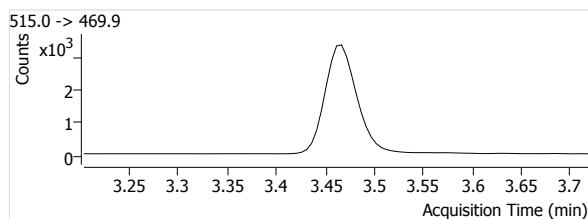
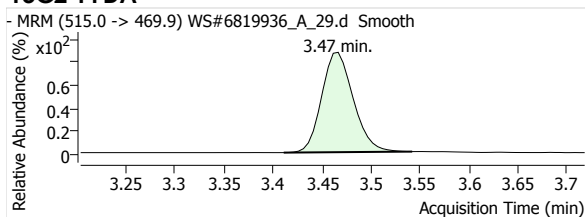
## 13C4-PFOA



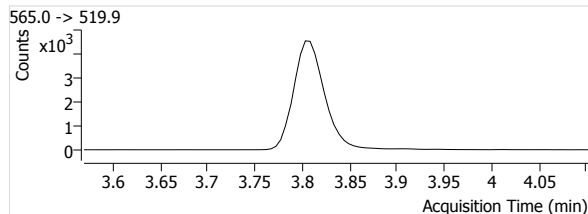
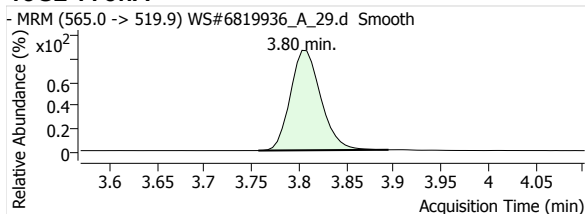
## 13C5-PFNA



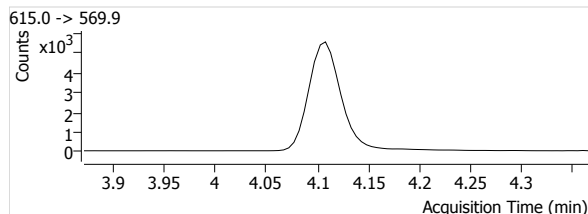
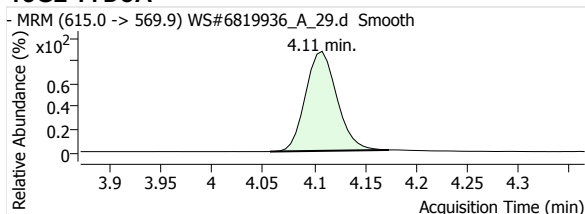
## 13C2-PFDA



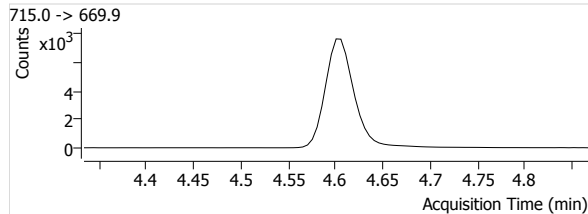
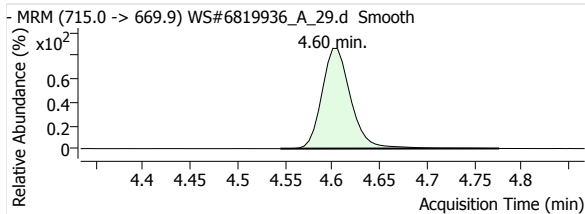
## 13C2-PFUnA



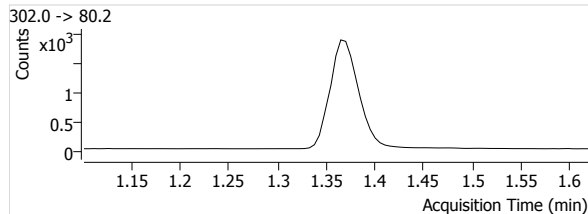
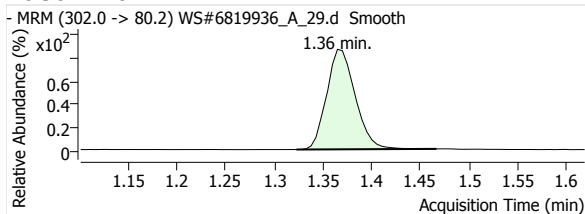
## 13C2-PFDoA



## 13C2-PFTeDA

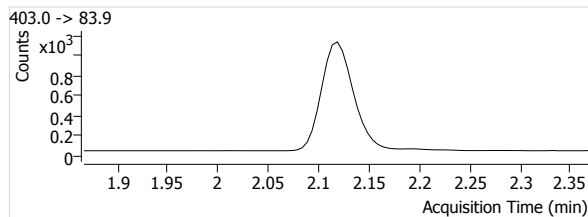
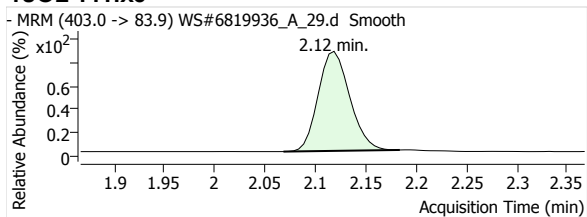


## 13C3-PFBS

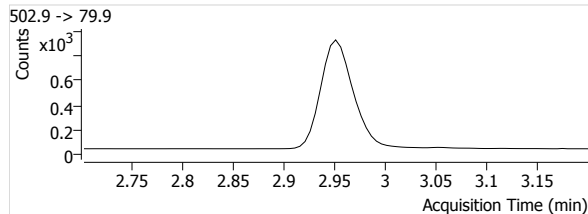
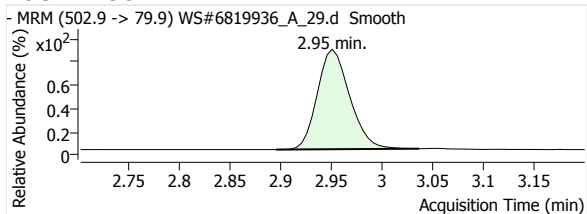


# Quantitative Analysis Report

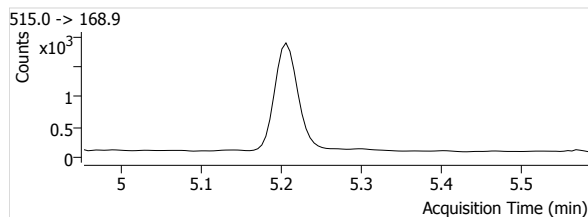
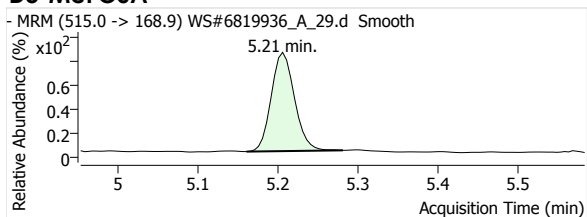
## 18O2-PFHxs



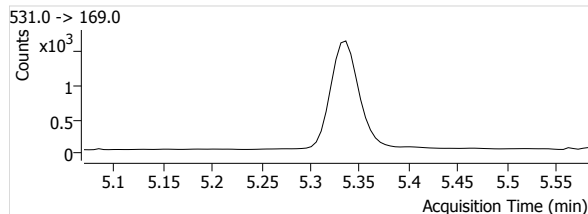
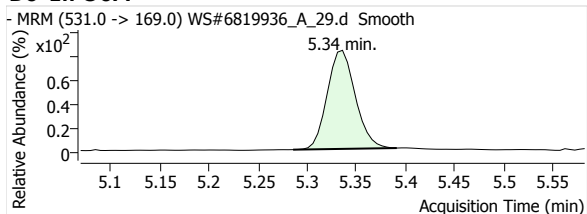
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

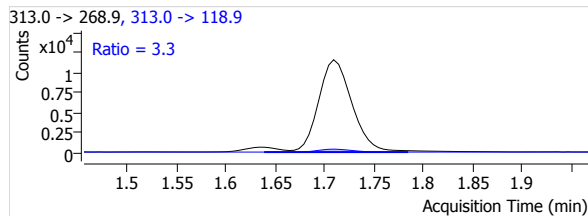
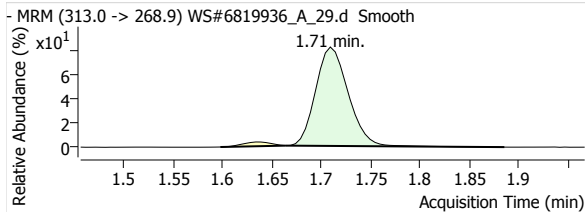
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**Sample Name** 6819936:NAH701-01  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 2:35:06 PM  
**Comment** -  
**User Defined** MI PFOA

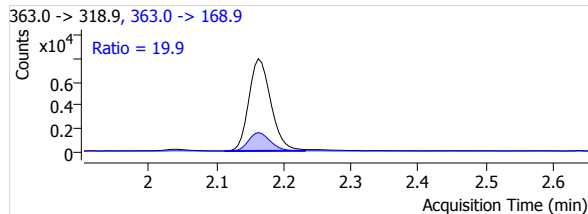
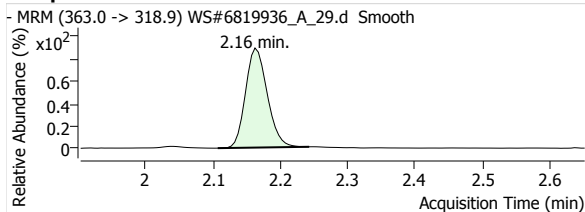
**Data File** WS#6819936\_A\_29.d  
**Instrument** LCMS04  
**Position** P2-C6  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.2638	--	26281	1.71	393	2.2180	871	1.71	157	3.3
PFHpA 1	µg/L	--	0.1490	--	17750	2.16	143	1.1201	3541	2.16	189	19.9
PFOA 1	µg/L	--	0.4073	--	40990	2.63	463	2.9865	10503	2.63	590	25.6
PFNA 1	µg/L	--	0.0212	--	1166	3.08	18	0.1164	262	3.07	20	22.5
PFDA 1	µg/L	--	0.0112	--	610	3.46	9	0.0813	99	3.46	17	16.2
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0269	--	583	1.37	32	0.1541	273	1.37	20	46.8
PFHxS 1	µg/L	--	0.6195	--	9744	2.08	360	4.1480	5094	2.10	345	52.3
PFOS 1	µg/L	--	1.7534	--	21535	2.89	101	11.1121	11582	2.90	160	53.8
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	119.6265	--	11849	1.71	662	--	--	--	--	--
13C4-PFHpA	µg/L	--	124.5931	--	15847	2.16	655	--	--	--	--	--
13C4-PFOA	µg/L	--	115.9010	--	13725	2.63	914	--	--	--	--	--
13C5-PFNA	µg/L	--	107.5279	--	10013	3.07	285	--	--	--	--	--
13C2-PFDA	µg/L	--	104.8218	--	7500	3.47	349	--	--	--	--	--
13C2-PFUnA	µg/L	--	118.3456	--	10115	3.80	341	--	--	--	--	--
13C2-PFDoA	µg/L	--	111.5377	--	11678	4.11	224	--	--	--	--	--
13C2-PFTeDA	µg/L	--	105.8136	--	16199	4.60	1008	--	--	--	--	--
13C3-PFBS	µg/L	--	112.3886	--	3783	1.36	331	--	--	--	--	--
18O2-PFHxS	µg/L	--	100.5996	--	2349	2.12	161	--	--	--	--	--
13C4-PFOS	µg/L	--	107.0718	--	1938	2.95	257	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.0000	--	3604	5.21	53	--	--	--	--	--
D5-EtFOSA	µg/L	--	86.1815	--	3162	5.34	66	--	--	--	--	--

### PFHxA 1

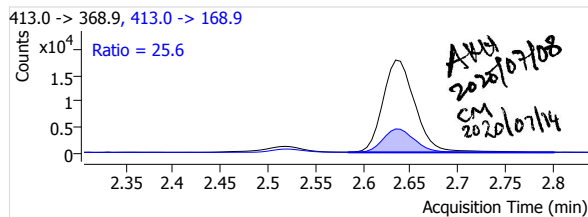
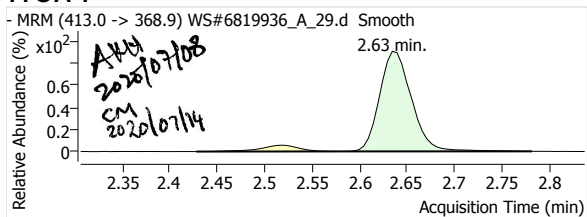


### PFHpA 1

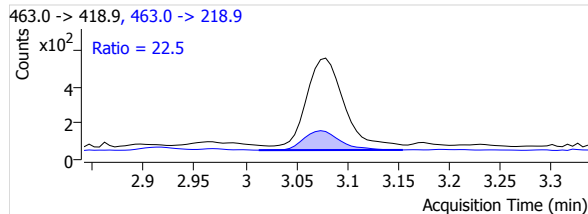
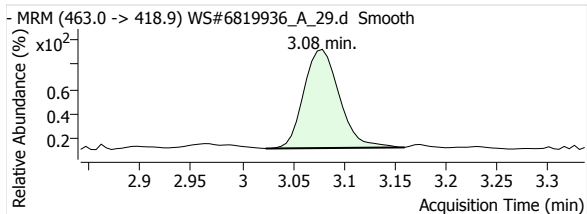


# Quantitative Analysis Report

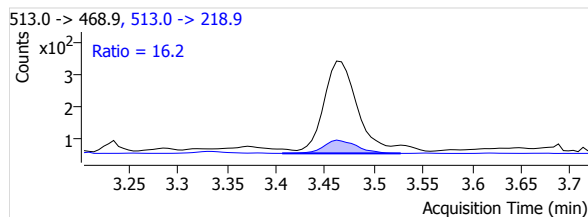
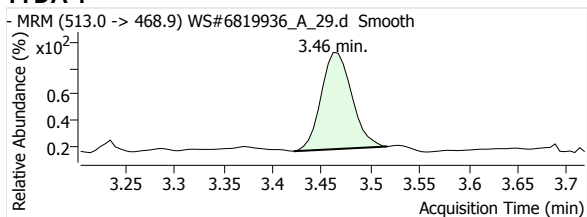
## PFOA 1



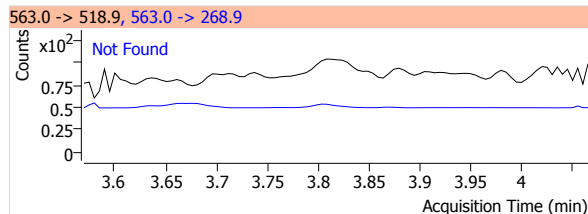
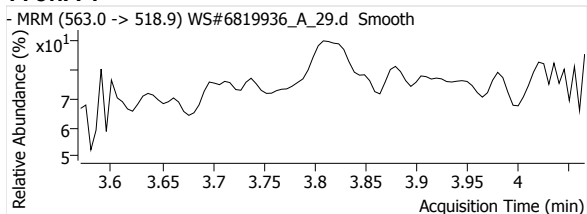
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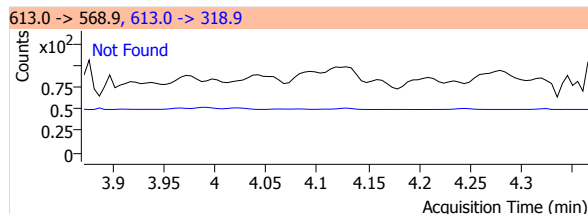
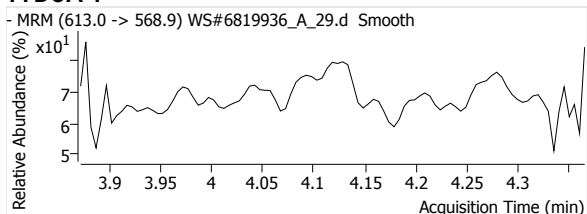
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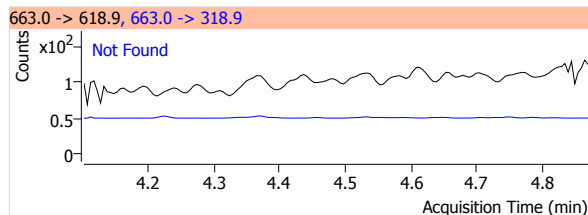
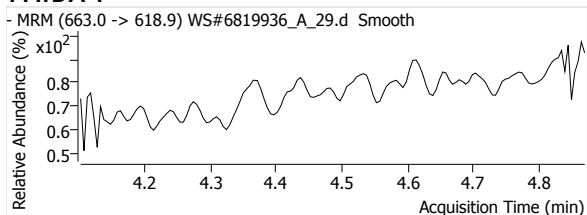
## PFUnA 1



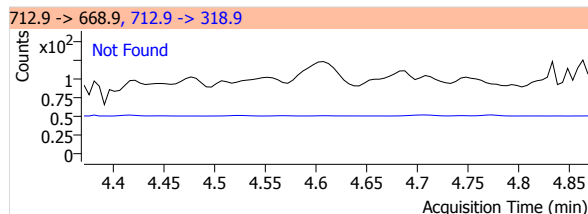
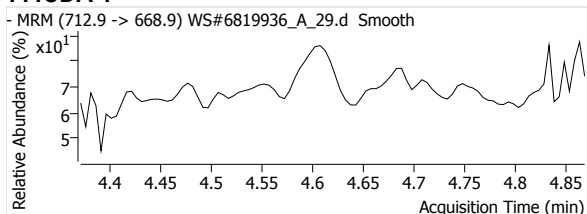
## PFDoA 1



## PFTrDA 1

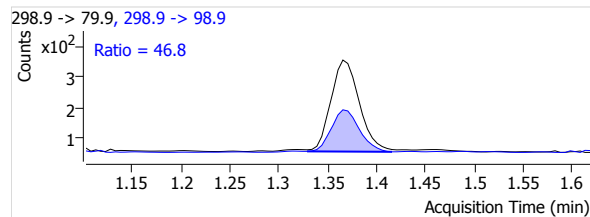
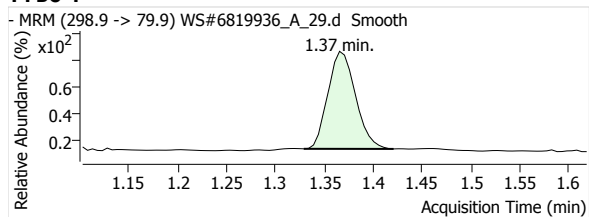


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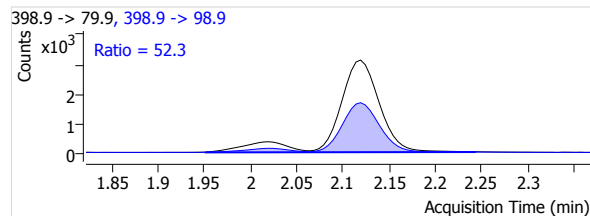
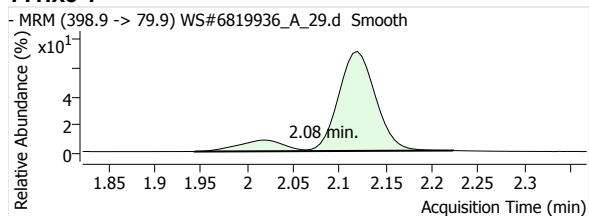


# Quantitative Analysis Report

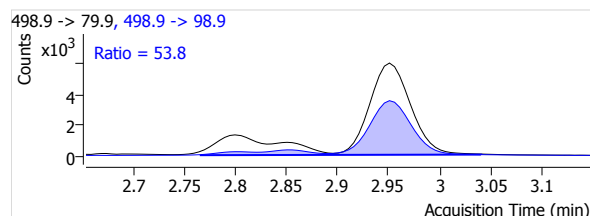
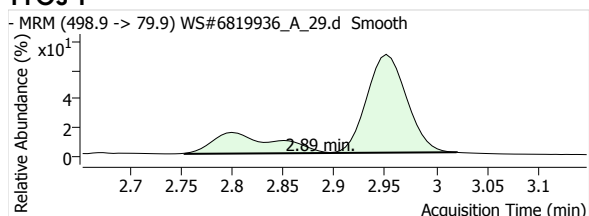
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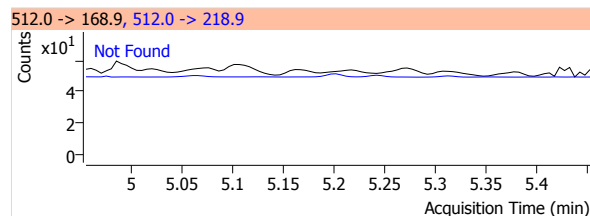
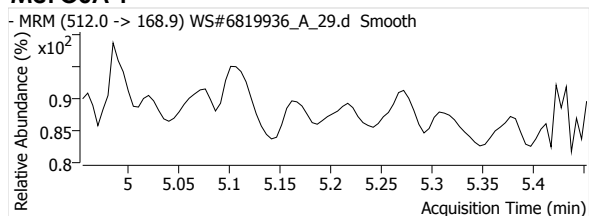
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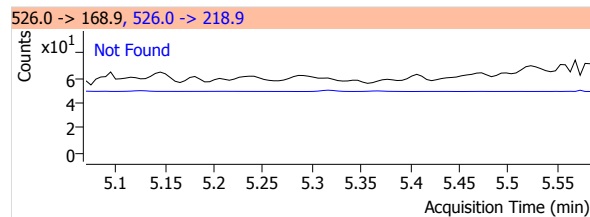
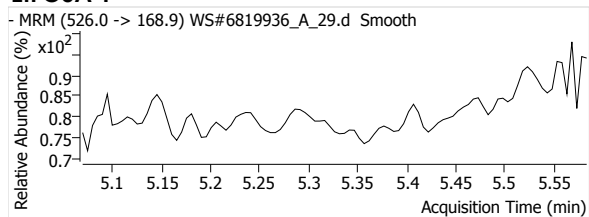
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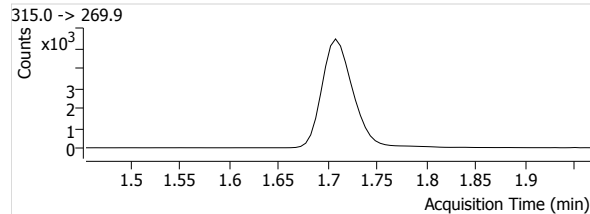
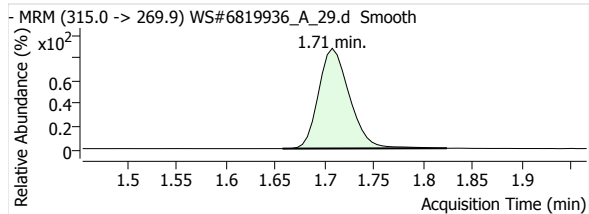
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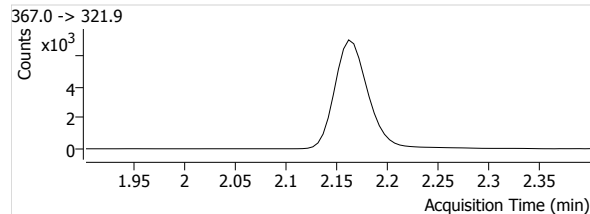
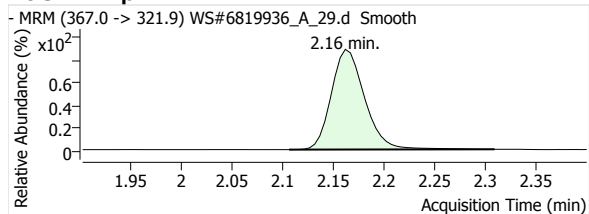
## eFOSA 1



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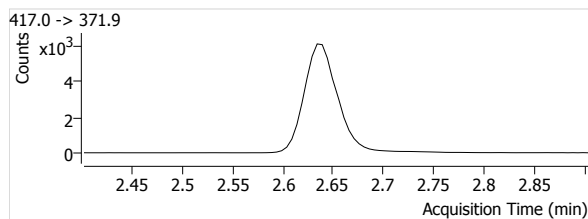
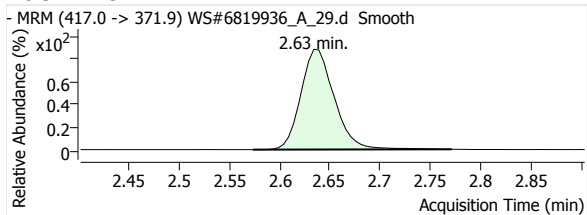


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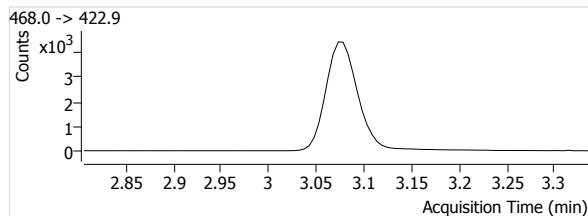
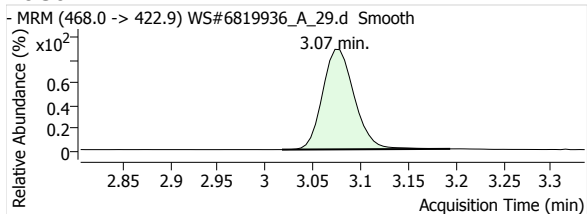


# Quantitative Analysis Report

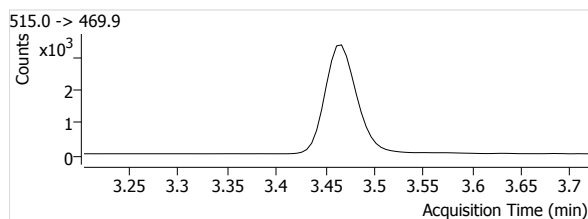
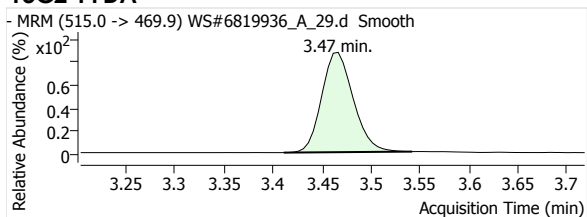
## 13C4-PFOA



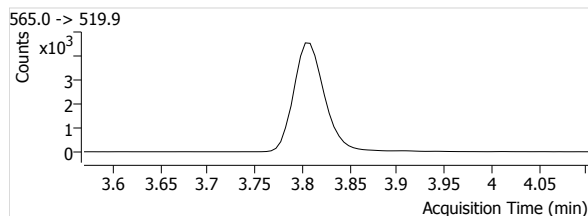
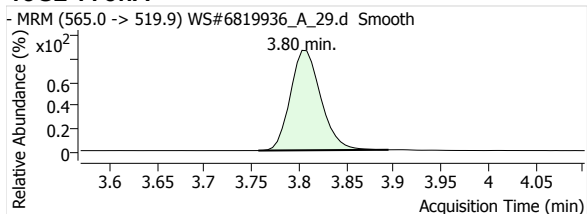
## 13C5-PFNA



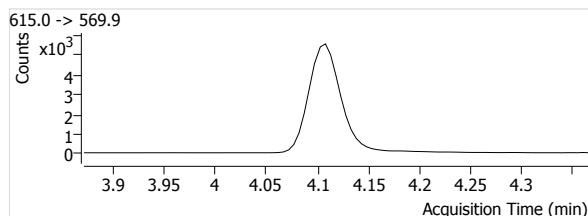
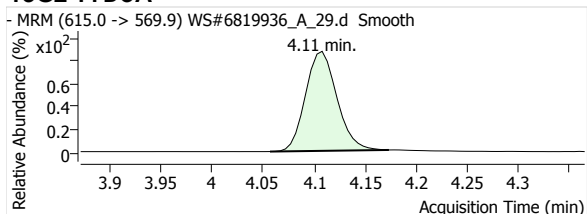
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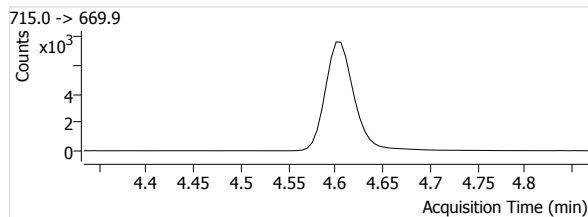
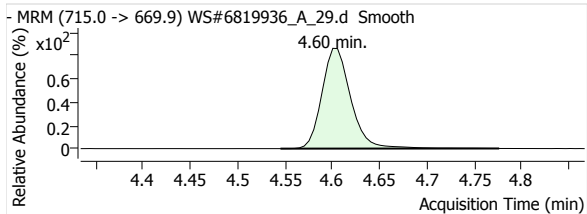
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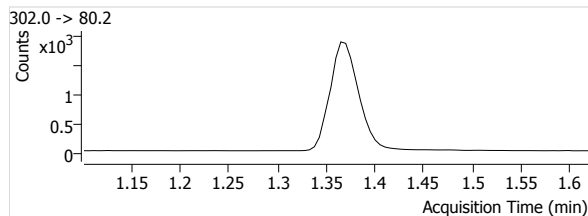
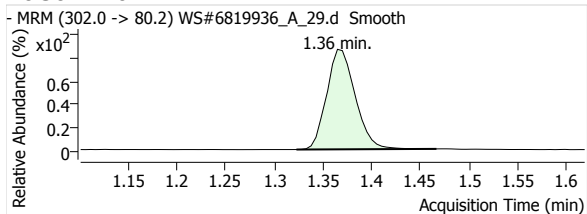
## 13C2-PFDoA



## 13C2-PFTeDA

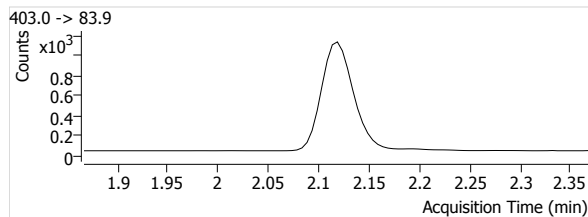
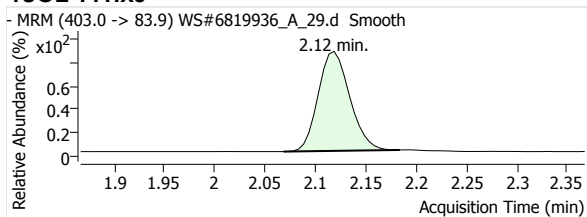


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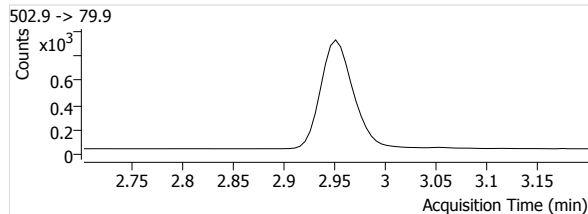
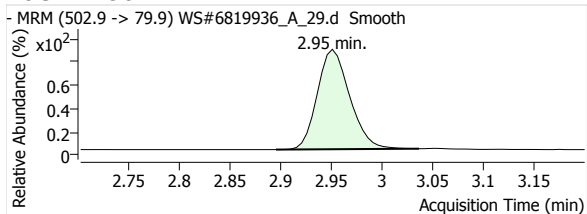


# Quantitative Analysis Report

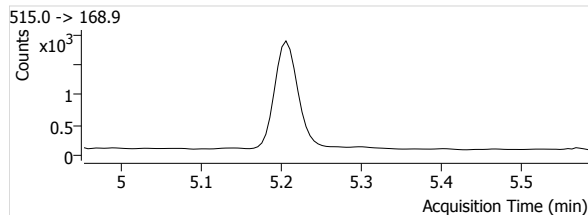
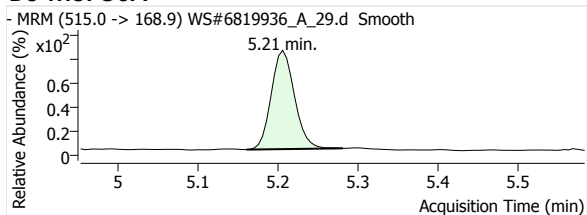
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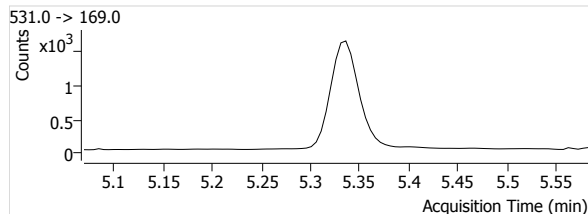
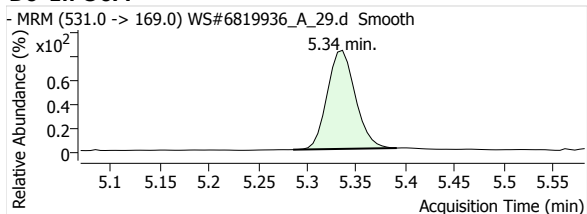
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

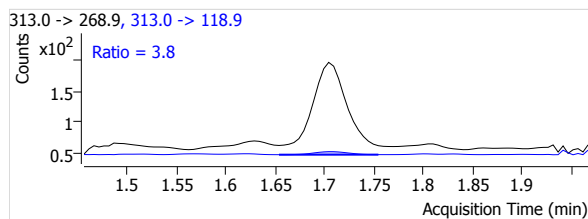
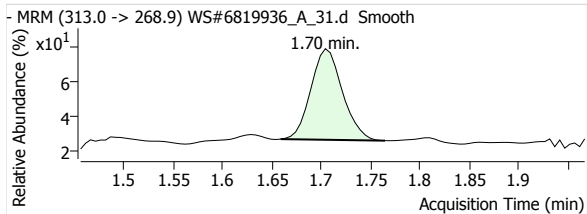
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Sample Name 6819936:NAH702-01  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 2:48:58 PM  
 Comment -  
 User Defined MI PFOA

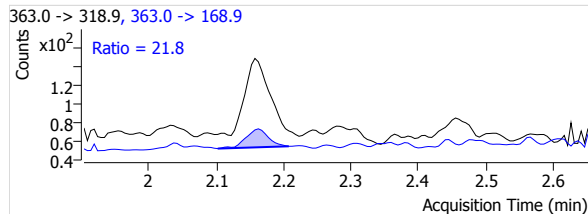
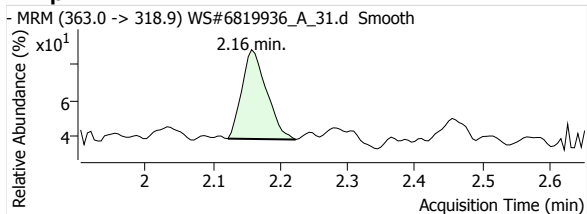
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 Instrument LCMS04  
 Position P2-C7  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.0076	--	291	1.70	9	0.0238	11	1.70	1	3.8
PFHpA 1	µg/L	--	0.0061	--	211	2.16	4	0.0126	46	2.16	2	21.8
PFOA 1	µg/L	--	0.0233	--	2200	2.63	43	0.1533	580	2.63	35	26.4
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0067	--	114	1.37	6	0.0302	58	1.37	9	50.9
PFHxS 1	µg/L	--	0.0233	--	391	2.08	50	0.1520	208	2.10	67	53.2
PFOS 1	µg/L	--	0.0499	--	664	2.89	18	0.3237	330	2.90	72	49.7
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	123.4023	--	12223	1.70	359	--	--	--	--	--
13C4-PFHpA	µg/L	--	131.5591	--	16733	2.16	766	--	--	--	--	--
13C4-PFOA	µg/L	--	121.1957	--	14352	2.63	1213	--	--	--	--	--
13C5-PFNA	µg/L	--	116.1405	--	10815	3.07	651	--	--	--	--	--
13C2-PFDA	µg/L	--	108.5255	--	7765	3.46	182	--	--	--	--	--
13C2-PFUnA	µg/L	--	125.6815	--	10742	3.80	1007	--	--	--	--	--
13C2-PFDoA	µg/L	--	121.0029	--	12669	4.10	653	--	--	--	--	--
13C2-PFTeDA	µg/L	--	105.1081	--	16091	4.61	1079	--	--	--	--	--
13C3-PFBS	µg/L	--	112.2698	--	3779	1.36	237	--	--	--	--	--
18O2-PFHxS	µg/L	--	110.2784	--	2575	2.11	300	--	--	--	--	--
13C4-PFOS	µg/L	--	113.3702	--	2052	2.95	333	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.1776	--	3612	5.21	54	--	--	--	--	--
D5-EtFOSA	µg/L	--	88.8525	--	3260	5.34	74	--	--	--	--	--

### PFHxA 1



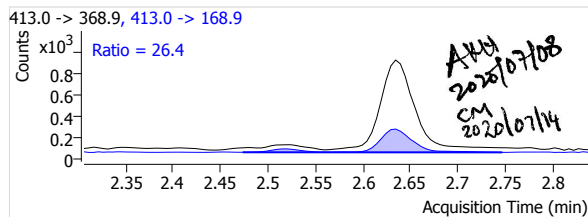
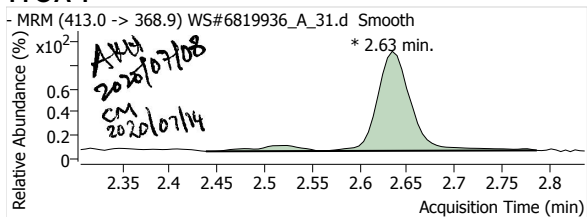
### PFHpA 1



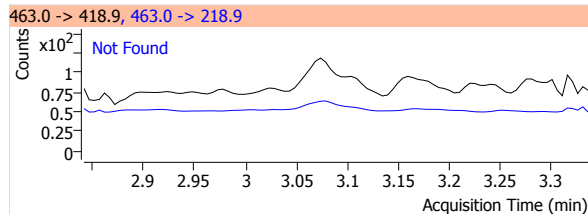
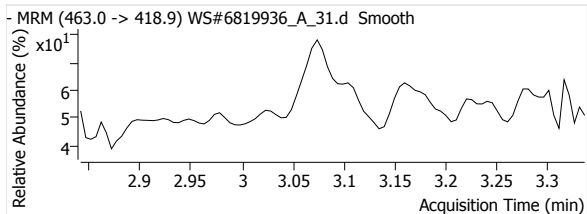


# Quantitative Analysis Report

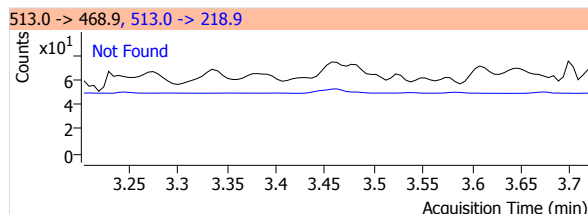
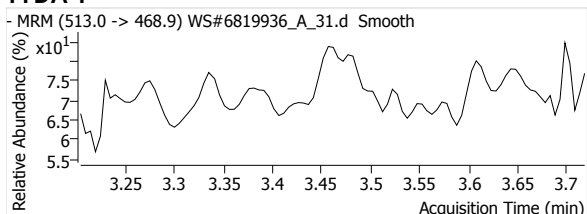
## PFOA 1



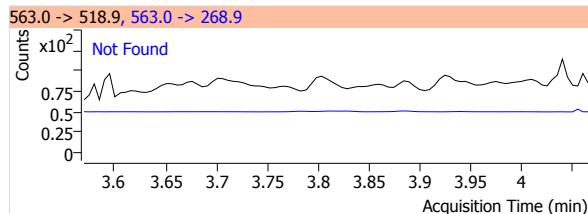
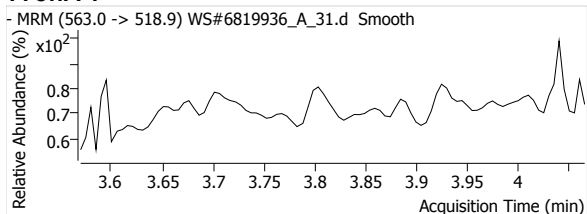
## PFNA 1



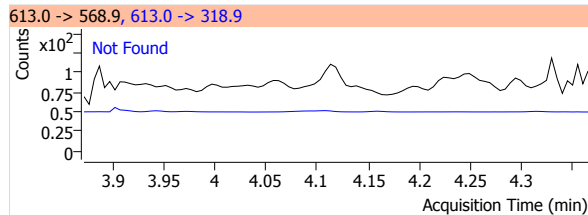
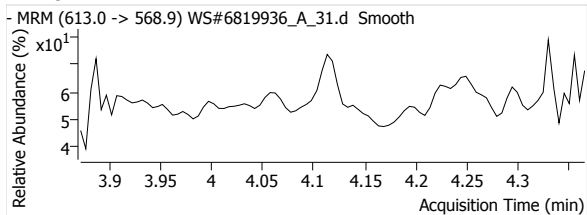
## PFDA 1



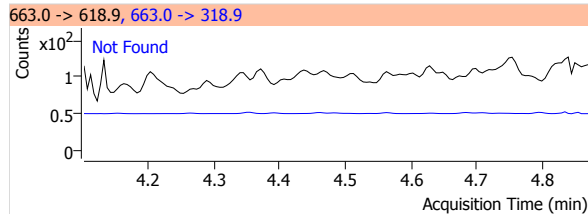
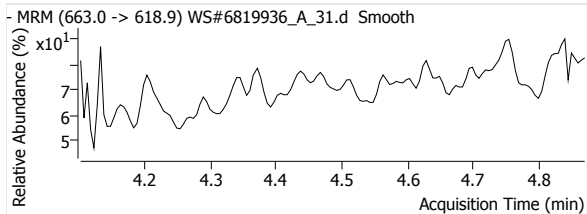
## PFUnA 1



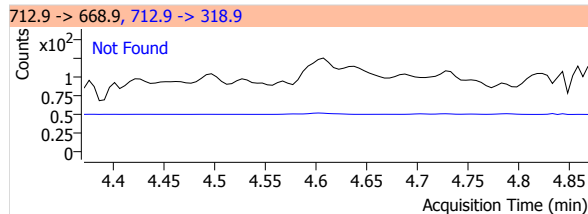
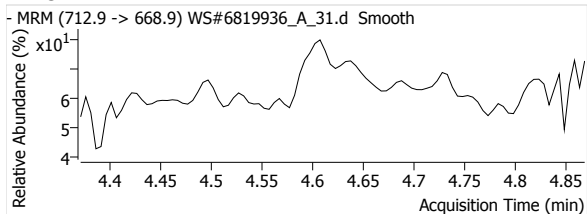
## PFDoA 1



## PFTrDA 1

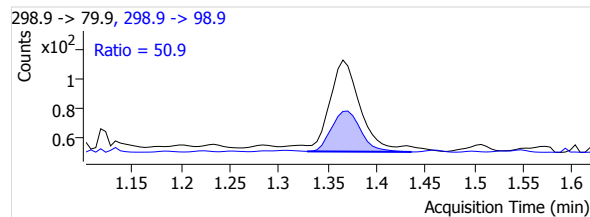
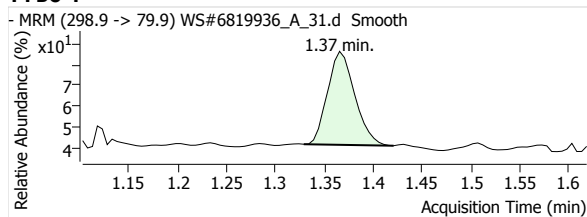


## PFTeDA 1

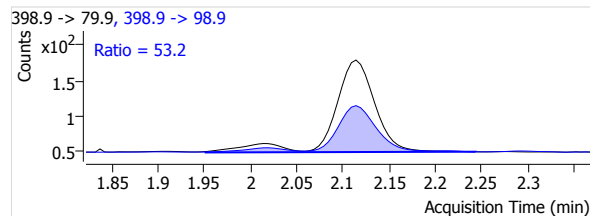
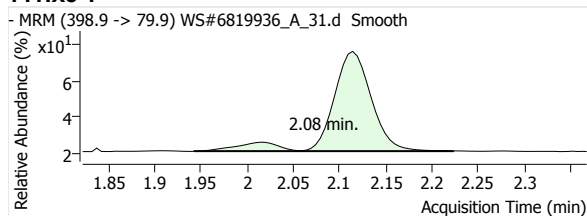


# Quantitative Analysis Report

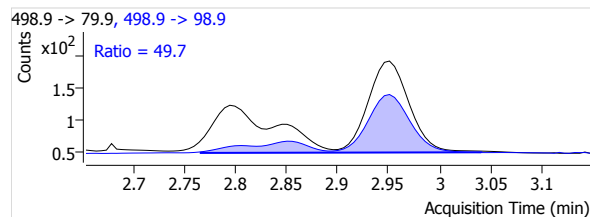
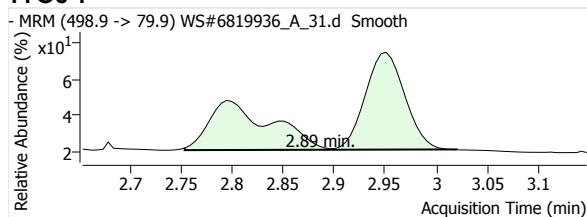
## PFBS 1



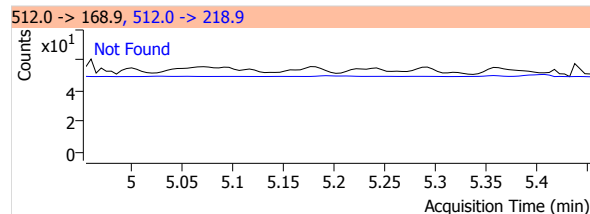
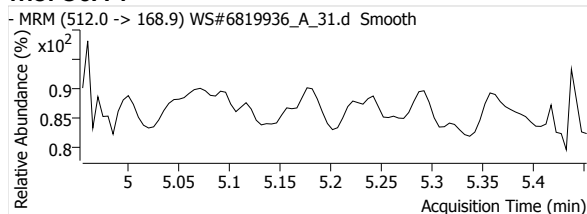
## PFHxS 1



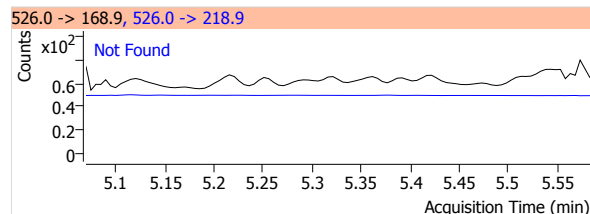
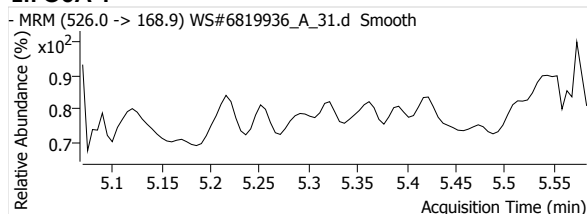
## PFOS 1



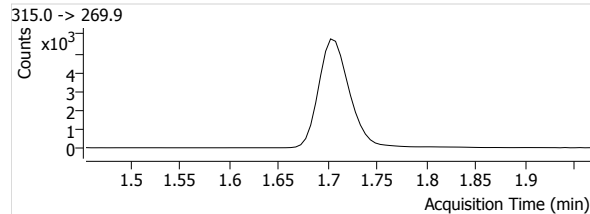
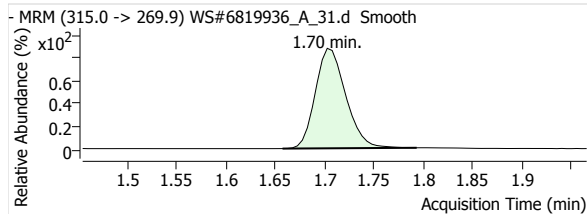
## MeFOSA 1



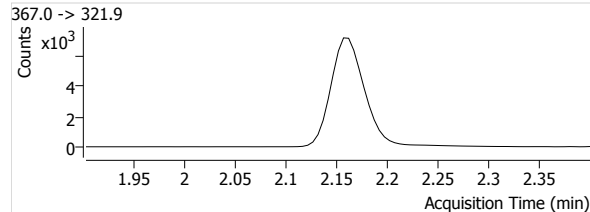
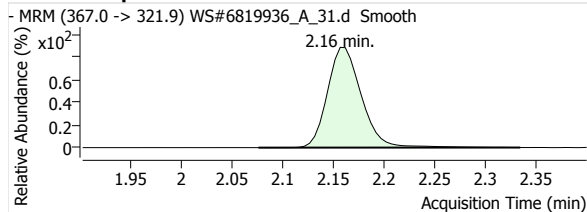
## eFOSA 1



## 13C2-PFHxA

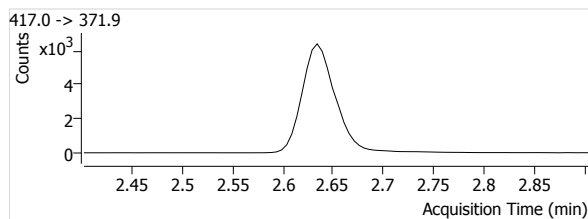
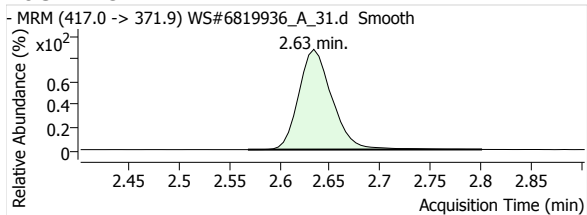


## 13C4-PFHpA

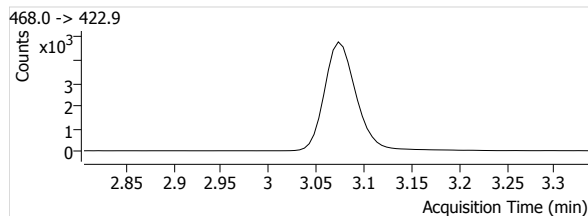
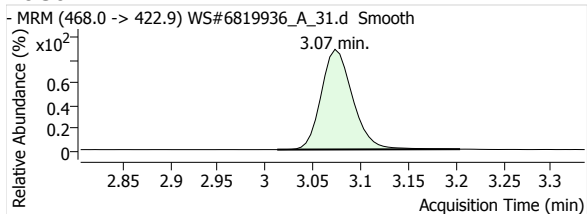


# Quantitative Analysis Report

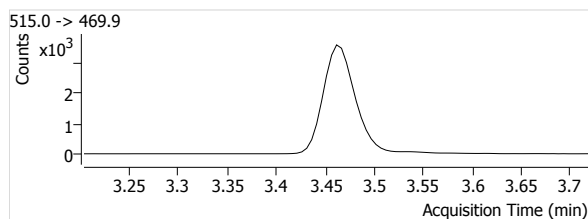
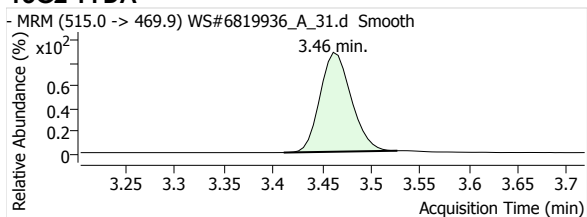
## 13C4-PFOA



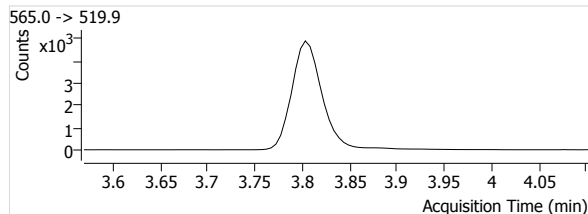
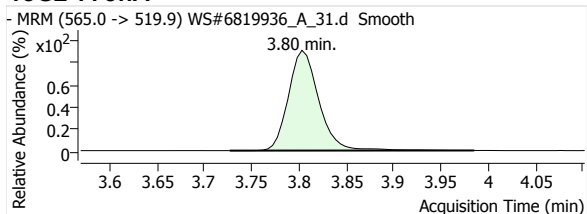
## 13C5-PFNA



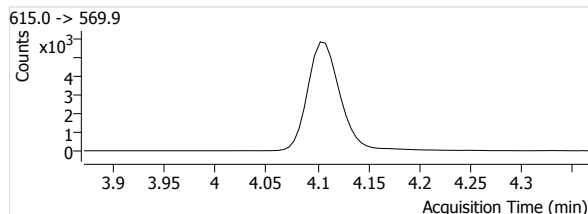
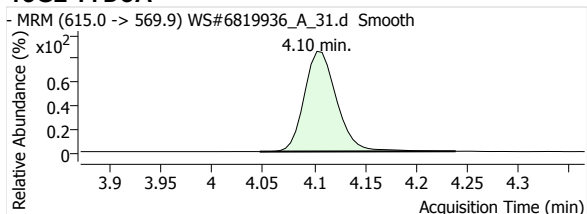
## 13C2-PFDA



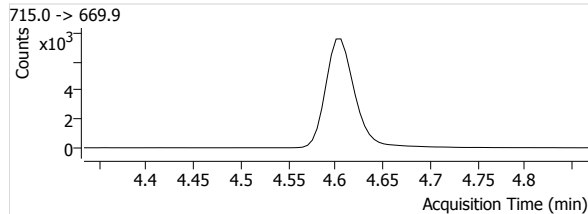
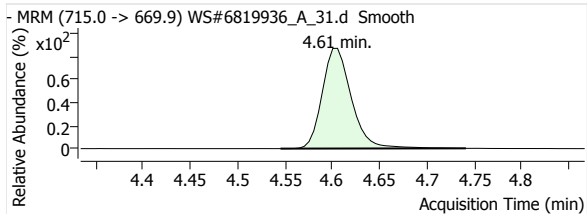
## 13C2-PFUnA



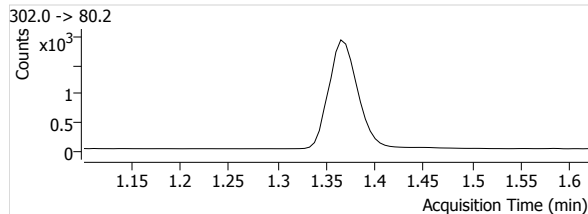
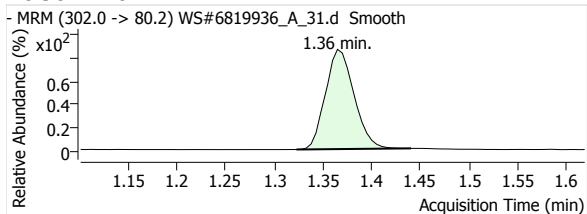
## 13C2-PFDoA



## 13C2-PFTeDA

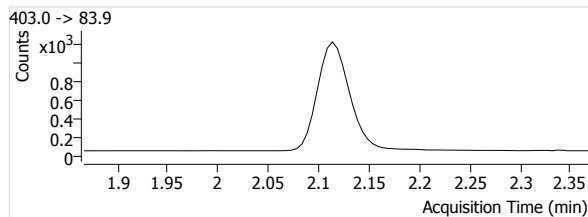
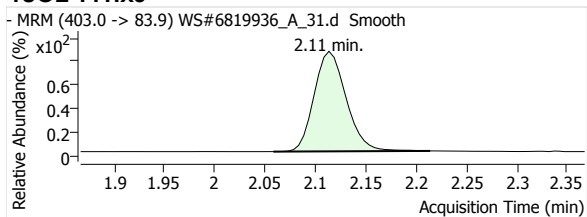


## 13C3-PFBS

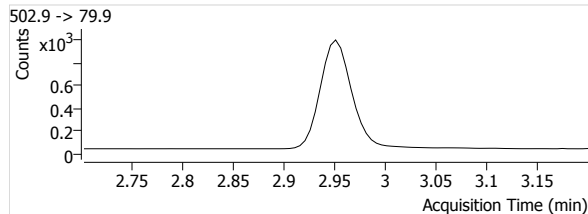
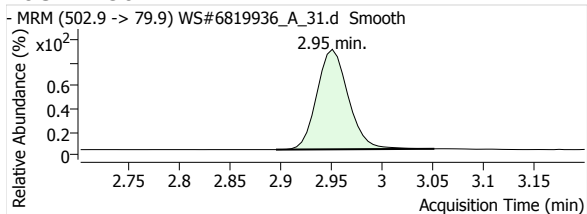


# Quantitative Analysis Report

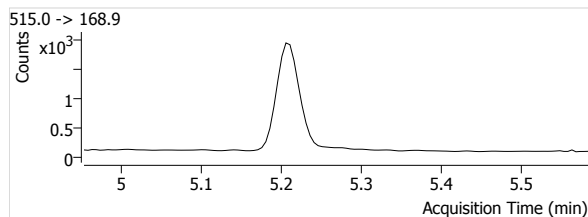
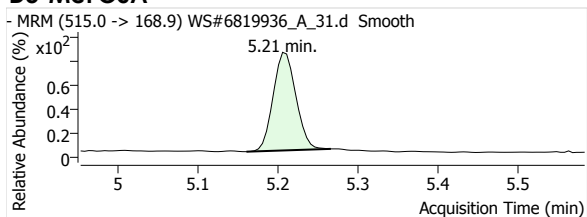
## 18O2-PFHxs



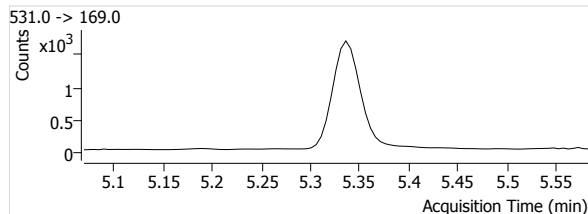
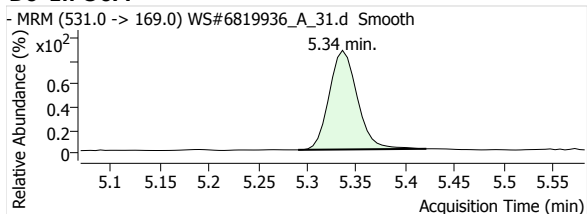
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



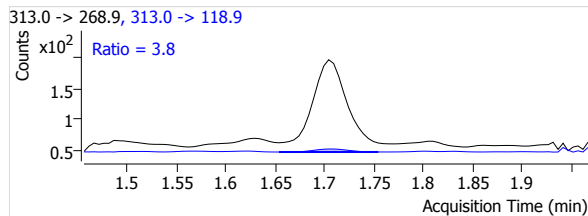
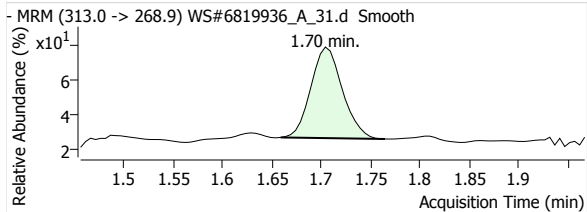
# Quantitative Analysis Report

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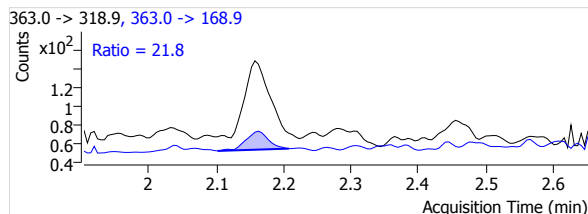
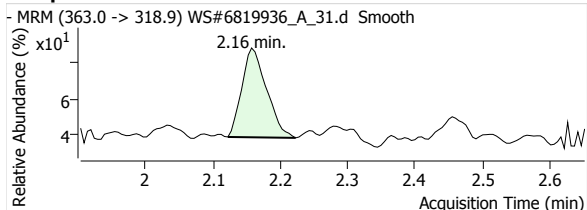
<b>Sample Name</b>	6819936:NAH702-01	<b>Data File</b>	WS#6819936_A_31.d
<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-C7
<b>Acq. Date-Time</b>	2020/07/08 2:48:58 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>	MI PFOA		

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.0076	--	291	1.70	9	0.0238	11	1.70	1	3.8
PFHpA 1	µg/L	--	0.0061	--	211	2.16	4	0.0126	46	2.16	2	21.8
PFOA 1	µg/L	--	0.0214	--	1981	2.63	37	0.1380	495	2.63	49	25.0
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0067	--	114	1.37	6	0.0302	58	1.37	9	50.9
PFHxS 1	µg/L	--	0.0233	--	391	2.08	50	0.1520	208	2.10	67	53.2
PFOS 1	µg/L	--	0.0499	--	664	2.89	18	0.3237	330	2.90	72	49.7
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	123.4023	--	12223	1.70	359	--	--	--	--	--
13C4-PFHpA	µg/L	--	131.5591	--	16733	2.16	766	--	--	--	--	--
13C4-PFOA	µg/L	--	121.1957	--	14352	2.63	1213	--	--	--	--	--
13C5-PFNA	µg/L	--	116.1405	--	10815	3.07	651	--	--	--	--	--
13C2-PFDA	µg/L	--	108.5255	--	7765	3.46	182	--	--	--	--	--
13C2-PFUnA	µg/L	--	125.6815	--	10742	3.80	1007	--	--	--	--	--
13C2-PFDaA	µg/L	--	121.0029	--	12669	4.10	653	--	--	--	--	--
13C2-PFTeDA	µg/L	--	105.1081	--	16091	4.61	1079	--	--	--	--	--
13C3-PFBS	µg/L	--	112.2698	--	3779	1.36	237	--	--	--	--	--
18O2-PFHxS	µg/L	--	110.2784	--	2575	2.11	300	--	--	--	--	--
13C4-PFOS	µg/L	--	113.3702	--	2052	2.95	333	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.1776	--	3612	5.21	54	--	--	--	--	--
D5-EtFOSA	µg/L	--	88.8525	--	3260	5.34	74	--	--	--	--	--

### PFHxA 1

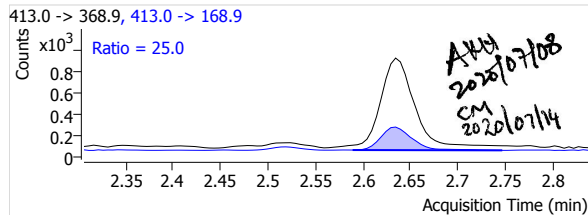
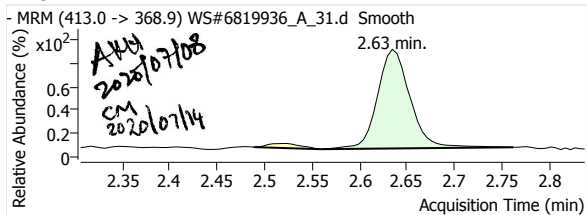


### PFHpA 1

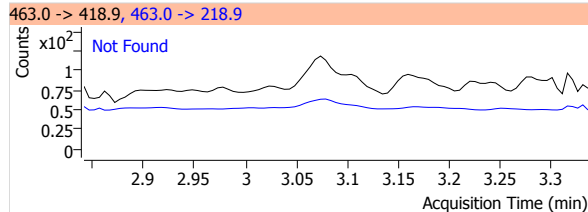
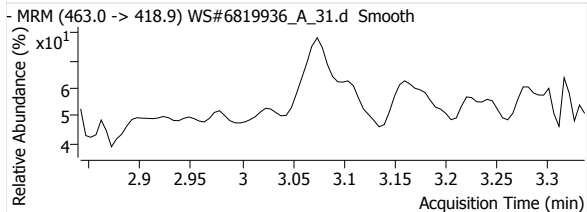


# Quantitative Analysis Report

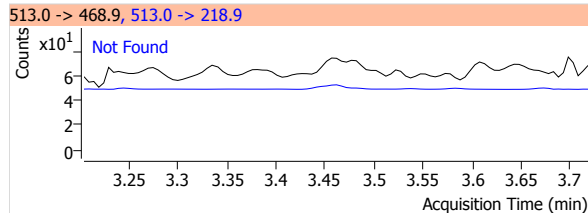
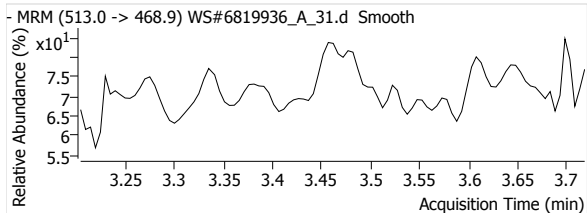
## PFOA 1



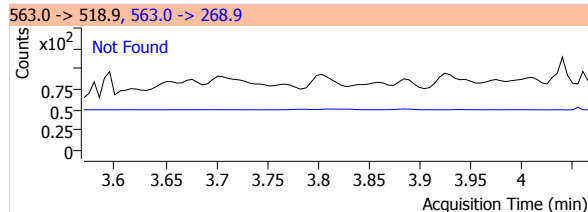
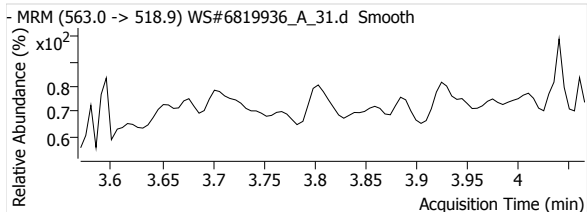
## PFNA 1



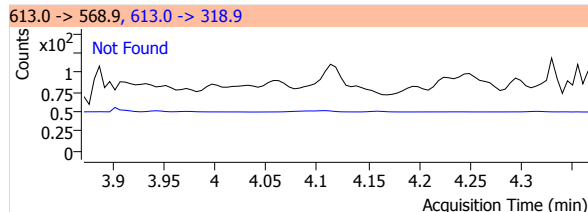
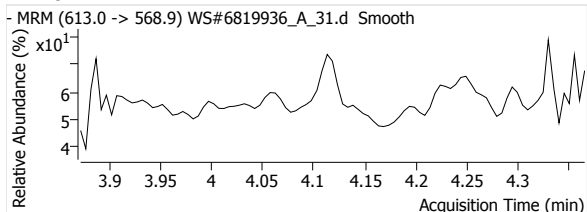
## PFDA 1



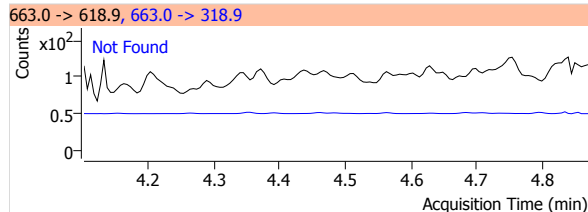
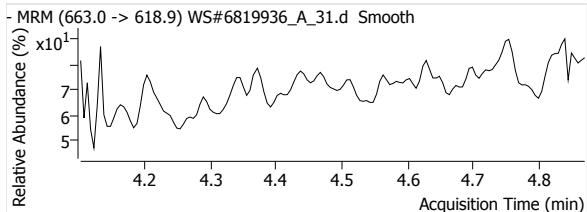
## PFUnA 1



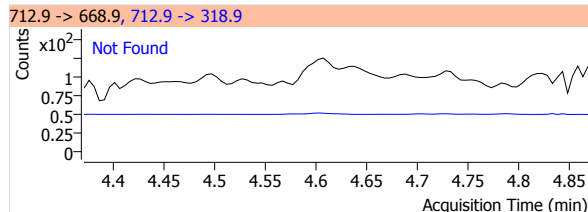
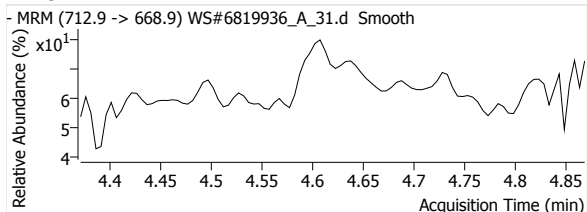
## PFDaA 1



## PFTrDA 1

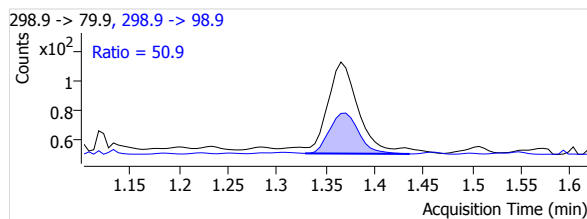
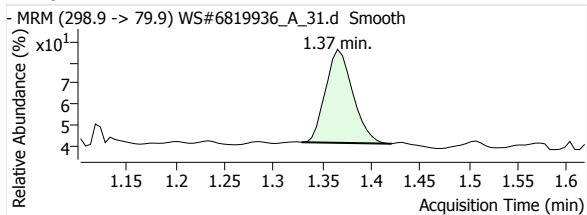


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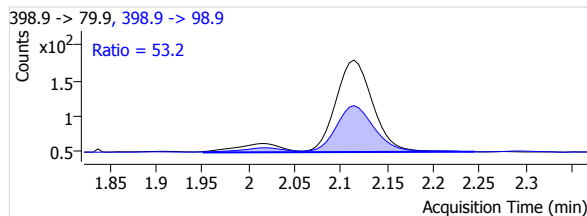
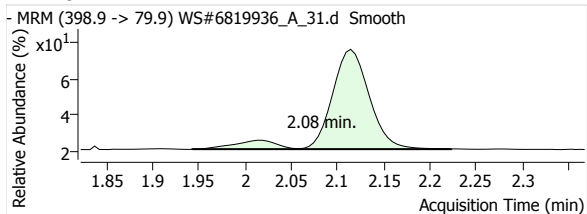


# Quantitative Analysis Report

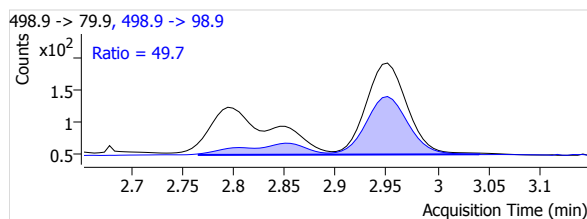
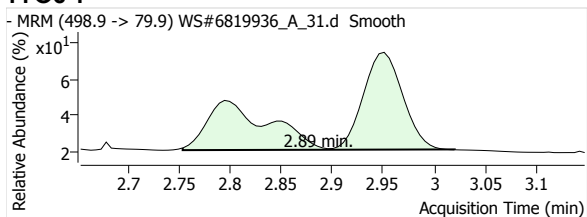
## PFBS 1



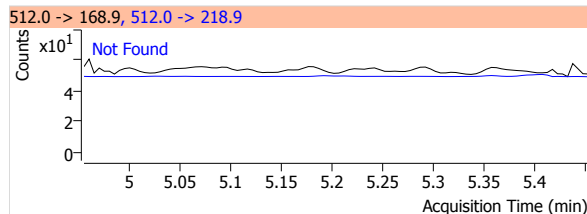
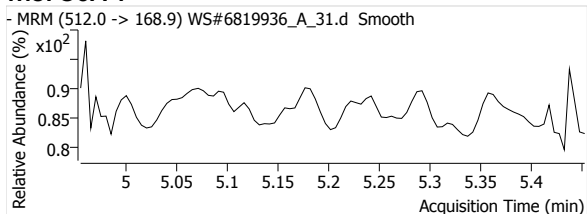
## PFHxS 1



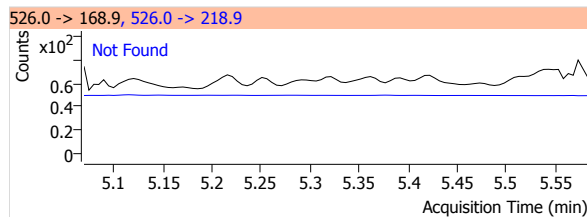
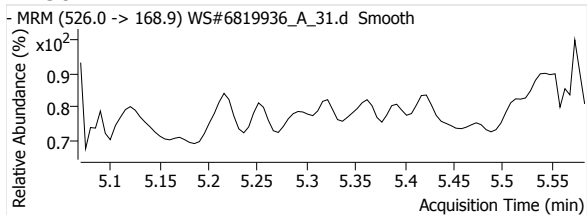
## PFOS 1



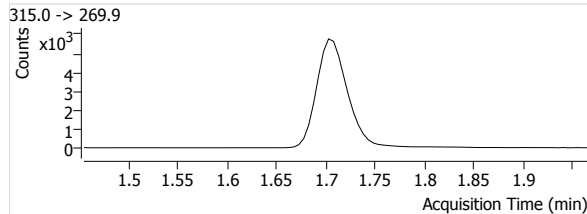
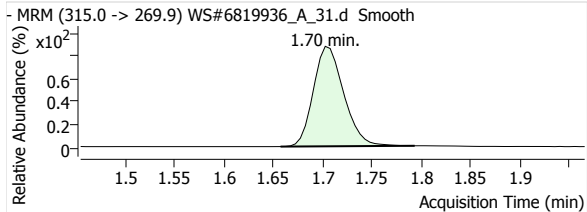
## MeFOSA 1



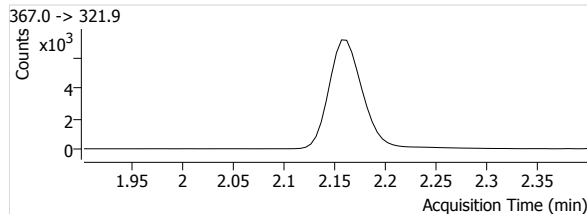
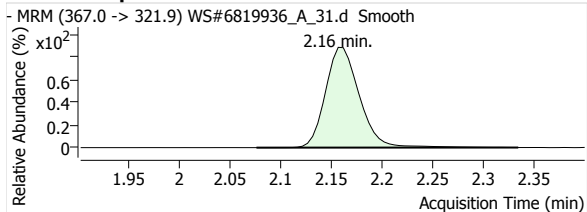
## eFOSA 1



## 13C2-PFHxA

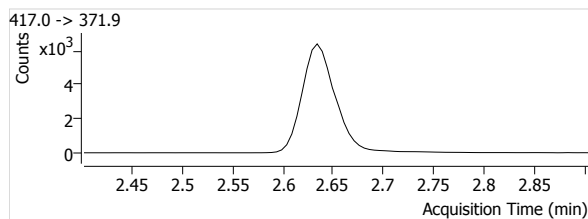
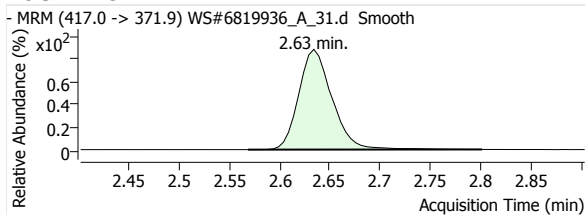


## 13C4-PFHpA

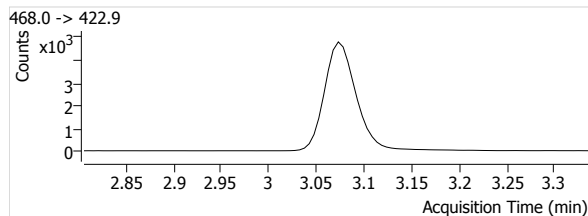
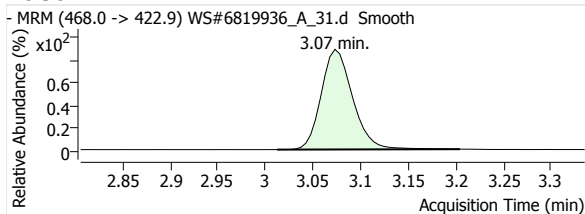


# Quantitative Analysis Report

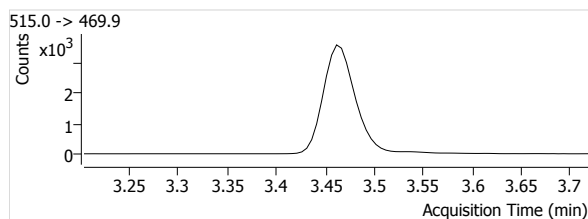
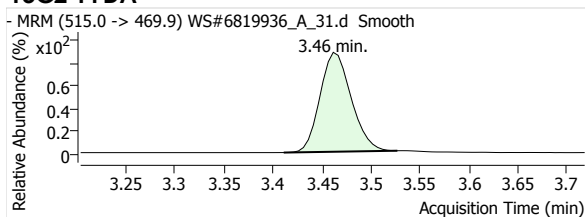
## 13C4-PFOA



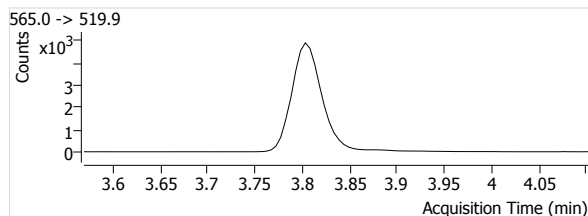
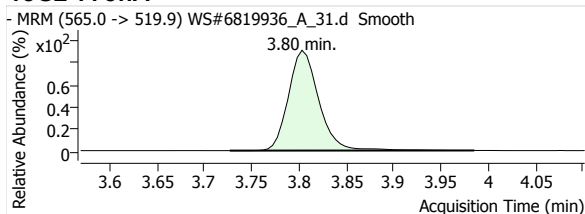
## 13C5-PFNA



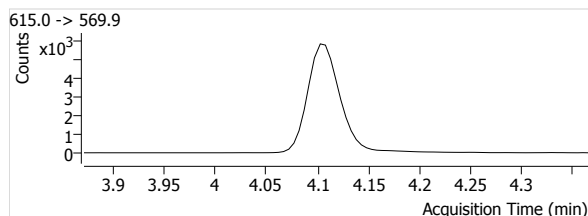
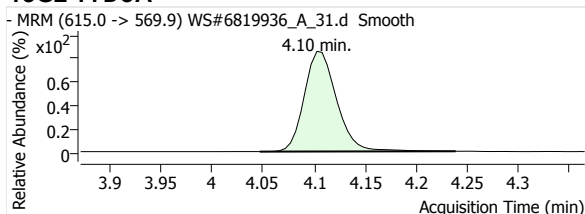
## 13C2-PFDA



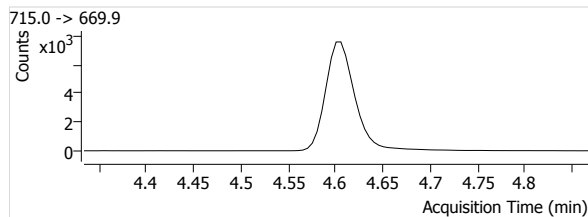
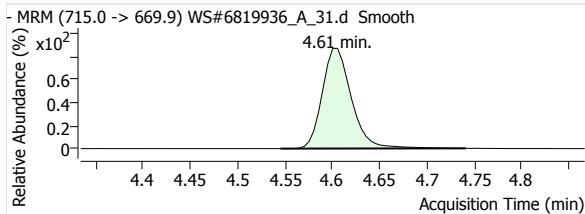
## 13C2-PFUnA



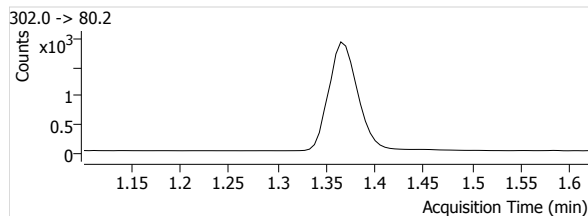
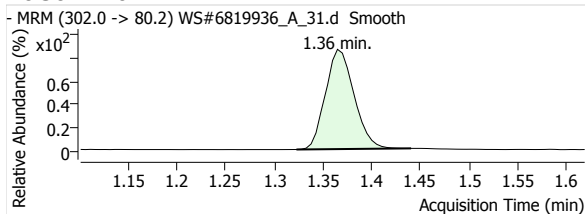
## 13C2-PFDoA



## 13C2-PFTeDA



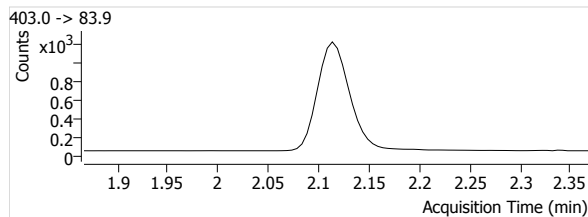
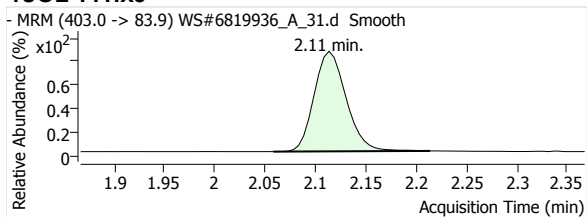
## 13C3-PFBS



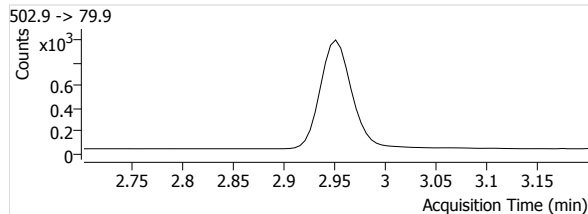
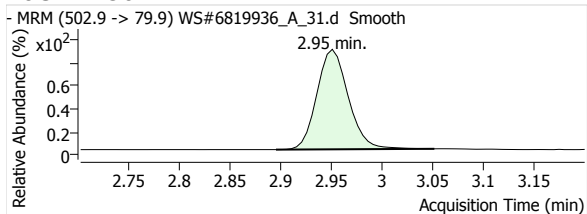


# Quantitative Analysis Report

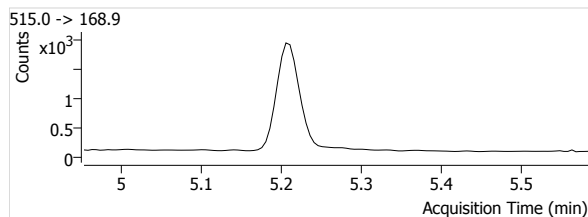
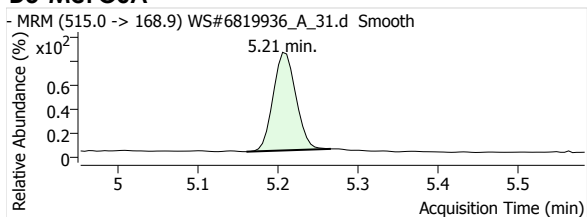
## 18O2-PFHxs



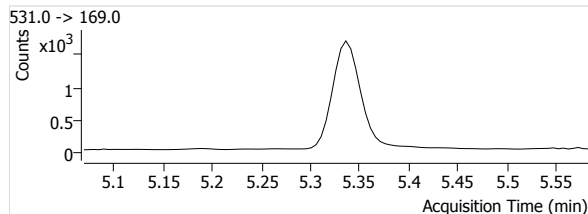
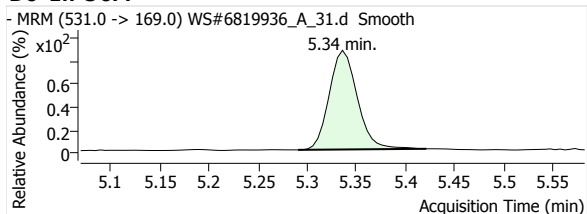
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



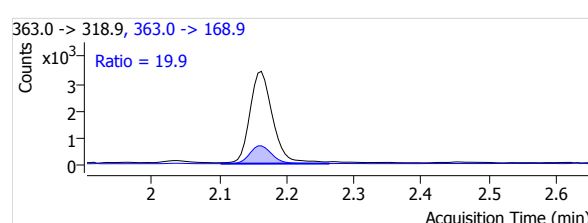
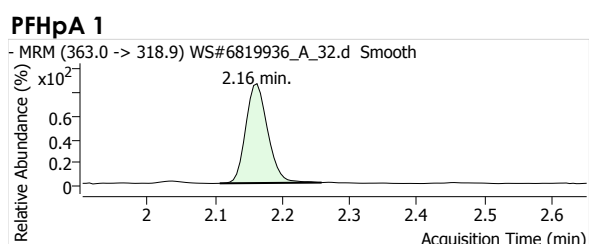
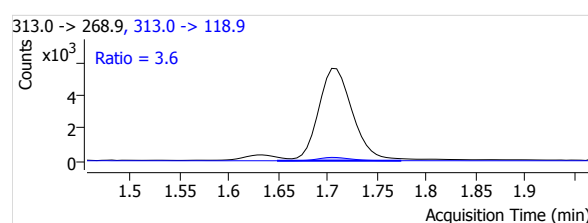
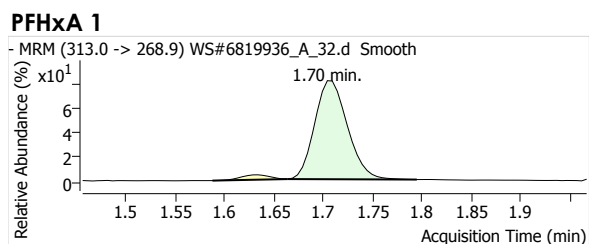
# Quantitative Analysis Report

**Batch Data Path File Name** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_ML.batch.  
bin

**Sample Name** 6819936:NAH703-01:10x  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 2:55:54 PM  
**Comment** Reported PFHxS, PFOS  
**User Defined**

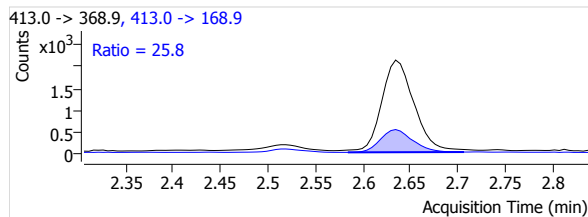
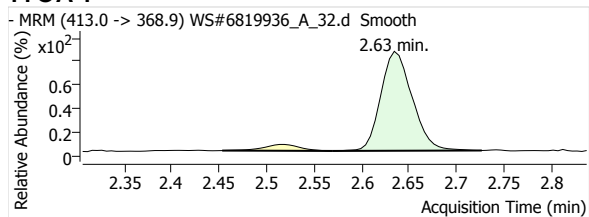
**Data File** WS#6819936\_A\_32.d  
**Instrument** LCMS04  
**Position** P2-C8  
**Dil.** 0.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.0713	--	12636	1.70	87	0.9496	459	1.70	46	3.6
PFHpA 1	µg/L	--	0.5765	--	7630	2.16	138	0.4471	1518	2.16	69	19.9
PFOA 1	µg/L	--	0.4201	--	4686	2.63	62	0.3039	1209	2.63	86	25.8
PFNA 1	µg/L	--	0.0870	--	404	3.07	8	0.0349	107	3.07	11	26.5
PFDA 1	µg/L	--	0.0394	--	120	3.47	3	0.0136	15	3.46	4	12.5
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1491	--	356	1.36	25	0.0862	149	1.37	19	41.9
PFHxS 1	µg/L	--	4.0567	--	8120	2.08	358	2.9376	4116	2.10	356	50.7
PFOS 1	µg/L	--	1.8960	--	2917	2.89	78	1.2845	1495	2.90	69	51.3
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	134.3362	--	13306	1.71	738	--	--	--	--	--
13C4-PFHpA	µg/L	--	134.1772	--	17066	2.16	653	--	--	--	--	--
13C4-PFOA	µg/L	--	130.2229	--	15421	2.63	906	--	--	--	--	--
13C5-PFNA	µg/L	--	124.4094	--	11585	3.08	378	--	--	--	--	--
13C2-PFDA	µg/L	--	123.3124	--	8823	3.47	1340	--	--	--	--	--
13C2-PFUnA	µg/L	--	136.9252	--	11703	3.80	812	--	--	--	--	--
13C2-PFDoA	µg/L	--	134.8997	--	14124	4.11	1053	--	--	--	--	--
13C2-PFTeDA	µg/L	--	118.1527	--	18088	4.61	1013	--	--	--	--	--
13C3-PFBS	µg/L	--	122.7273	--	4131	1.36	210	--	--	--	--	--
18O2-PFHxS	µg/L	--	118.3726	--	2764	2.11	420	--	--	--	--	--
13C4-PFOS	µg/L	--	125.4696	--	2271	2.95	412	--	--	--	--	--
D3-MeFOSA	µg/L	--	85.1054	--	3834	5.21	54	--	--	--	--	--
D5-EtFOSA	µg/L	--	91.8506	--	3370	5.34	80	--	--	--	--	--

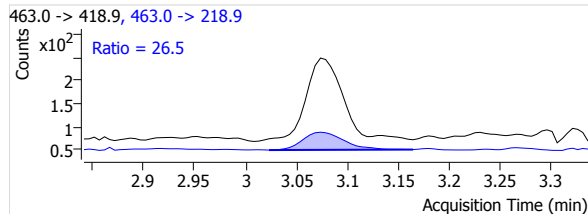
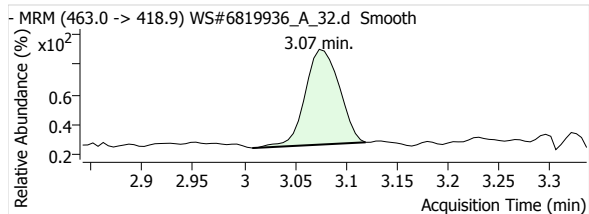


# Quantitative Analysis Report

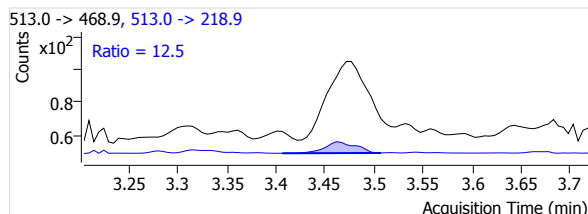
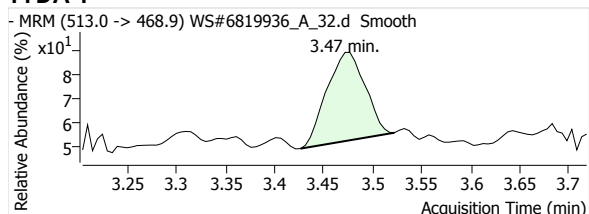
## PFOA 1



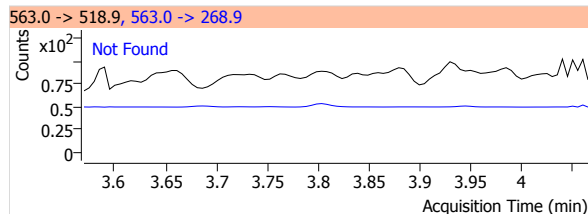
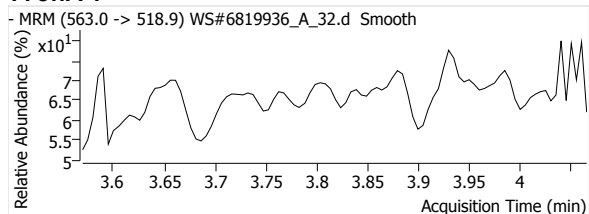
## PFNA 1



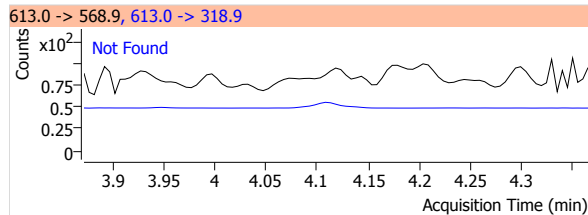
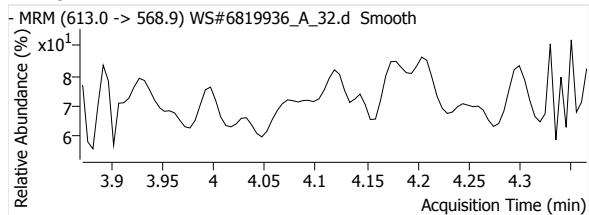
## PFDA 1



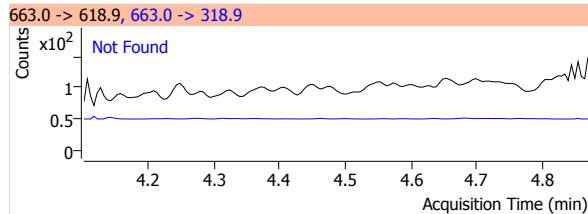
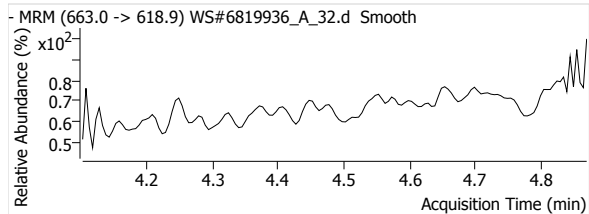
## PFUnA 1



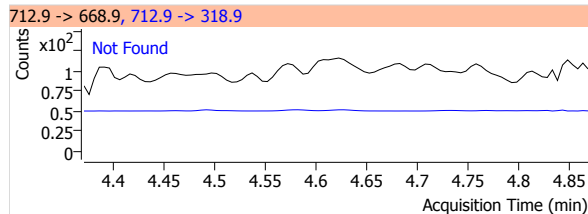
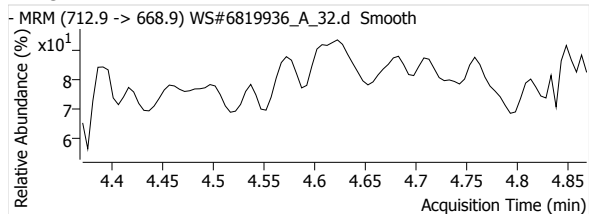
## PFDaA 1



## PFTrDA 1

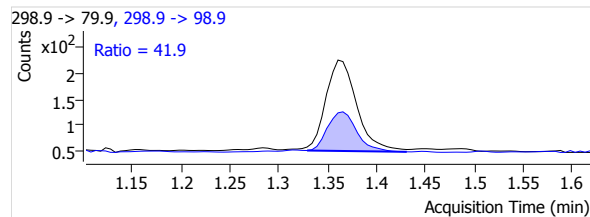
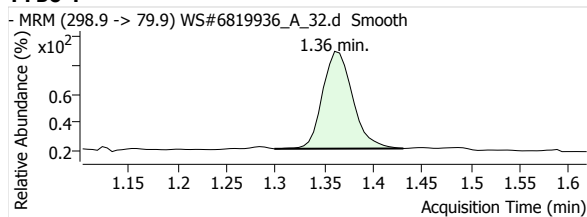


## PFTeDA 1

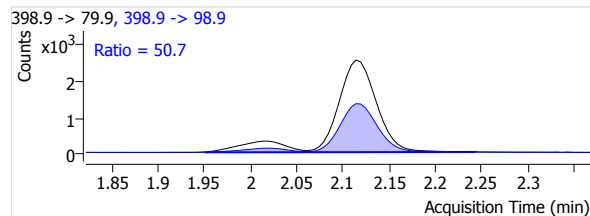
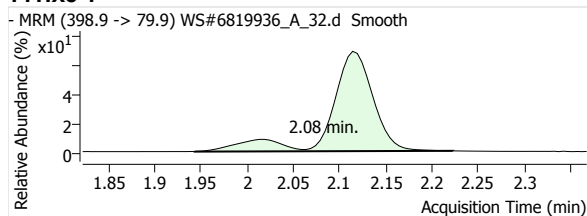


# Quantitative Analysis Report

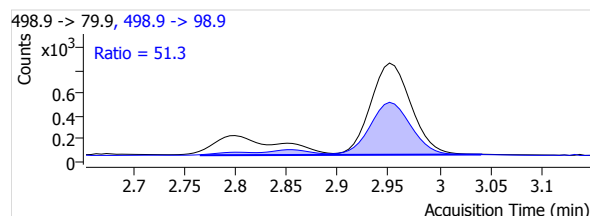
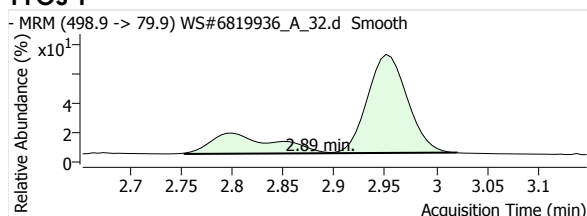
## PFBS 1



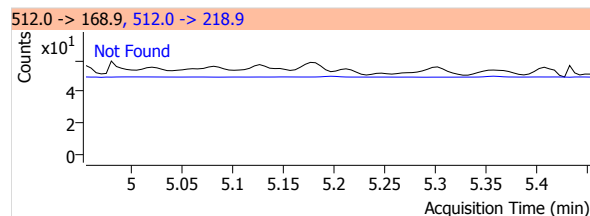
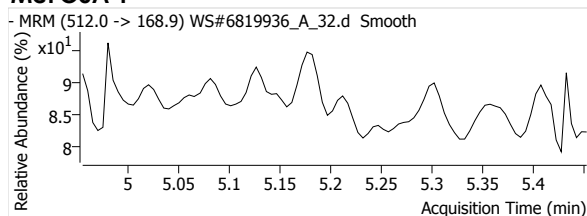
## PFHxS 1



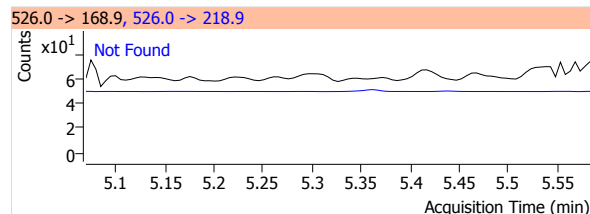
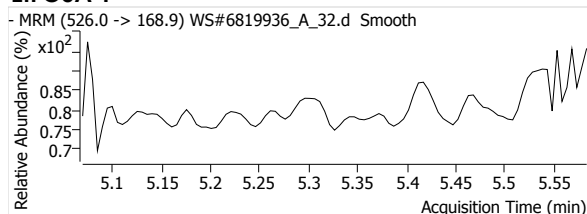
## PFOS 1



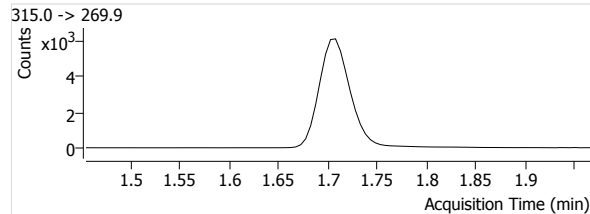
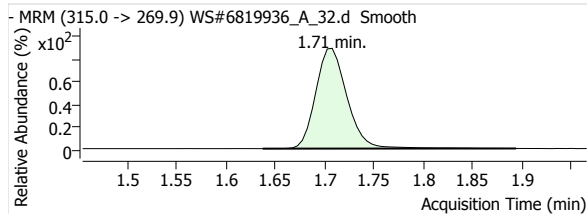
## MeFOSA 1



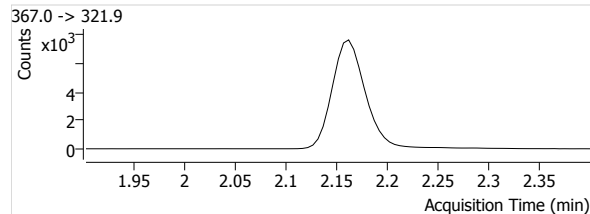
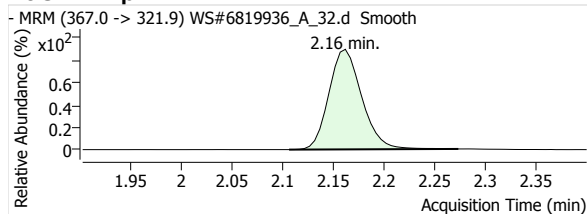
## eFOSA 1



## 13C2-PFHxA

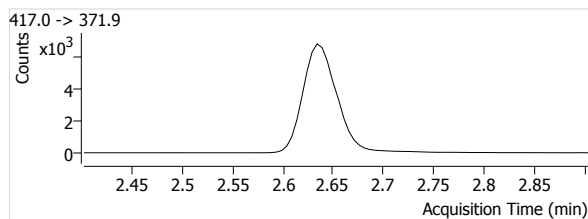
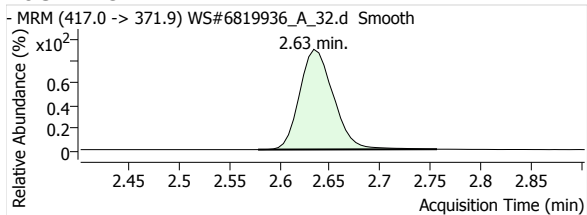


## 13C4-PFHpA

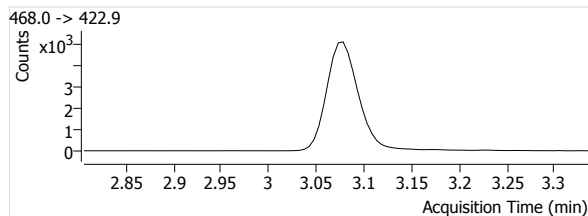
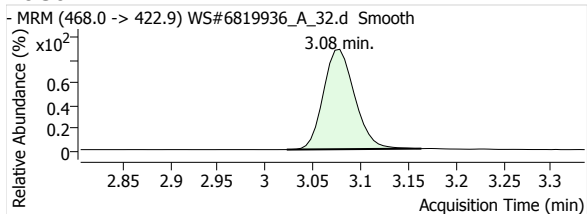


# Quantitative Analysis Report

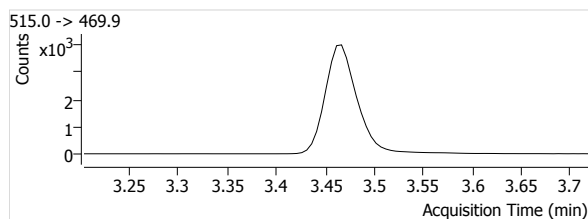
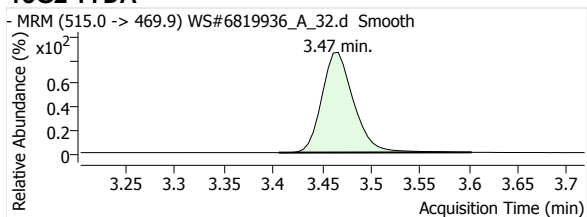
## 13C4-PFOA



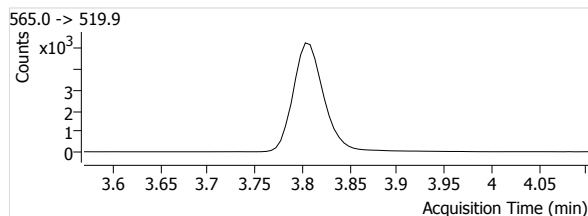
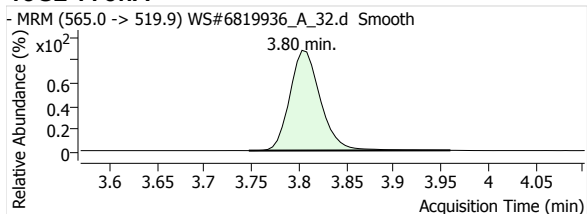
## 13C5-PFNA



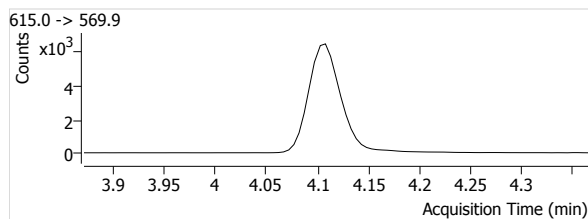
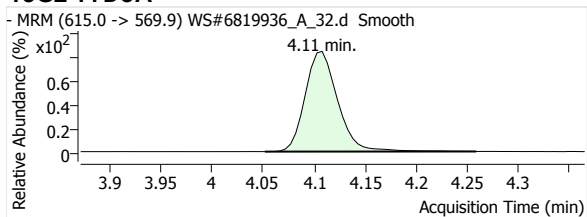
## 13C2-PFDA



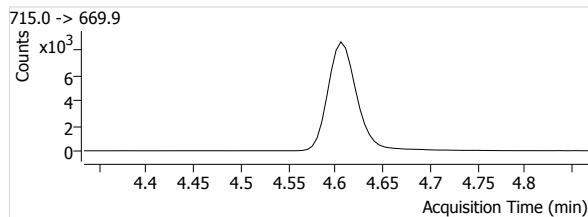
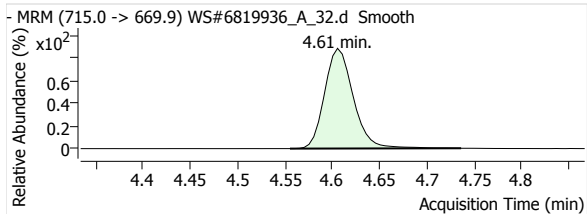
## 13C2-PFUnA



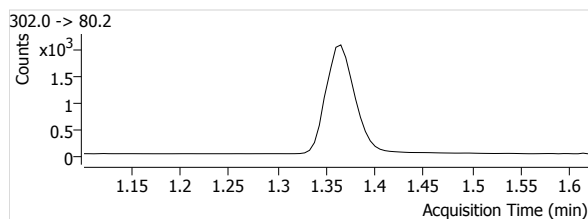
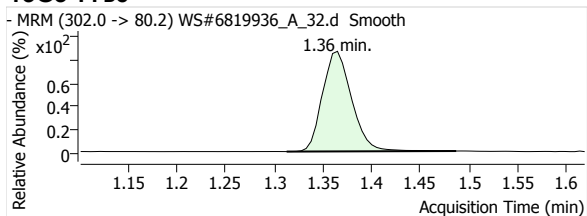
## 13C2-PFDoA



## 13C2-PFTeDA

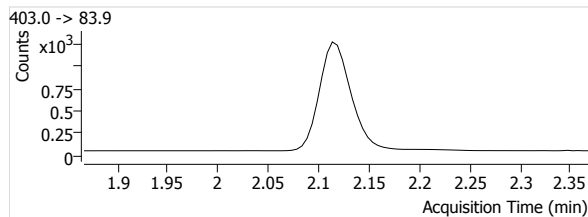
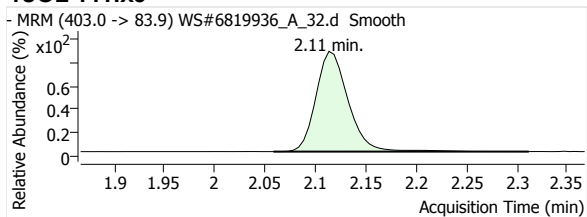


## 13C3-PFBS

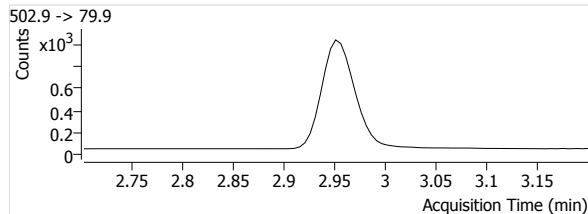
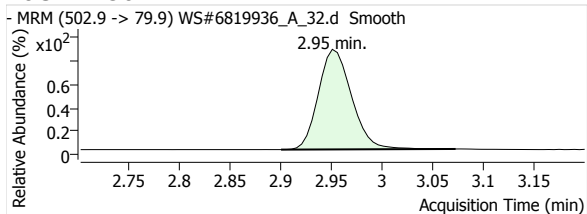


# Quantitative Analysis Report

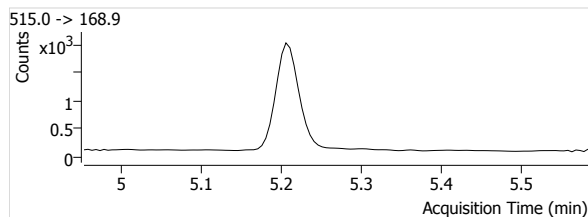
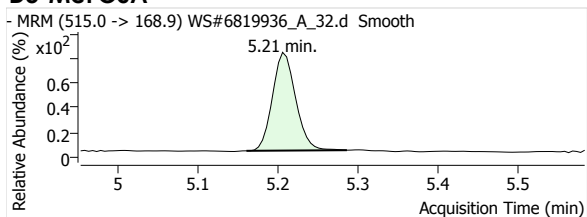
## 18O2-PFHxs



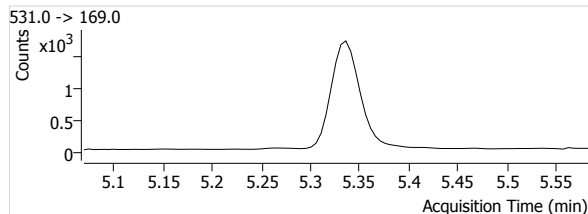
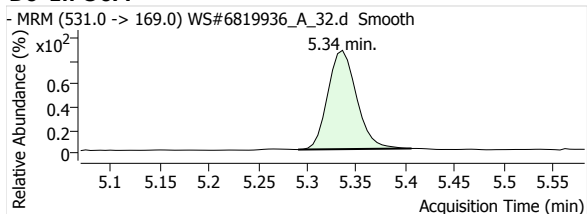
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

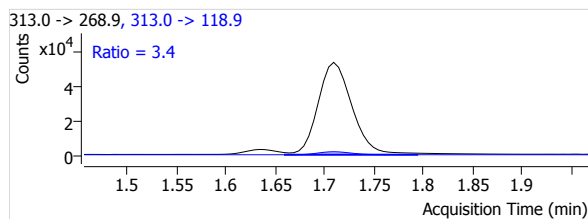
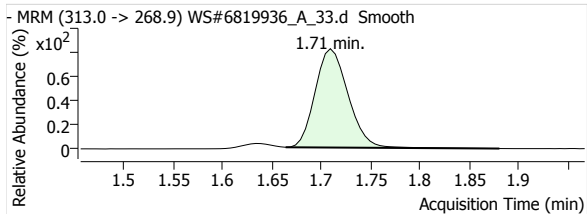
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Sample Name 6819936:NAH703-01  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 3:02:49 PM  
Comment -  
User Defined MI PFOA

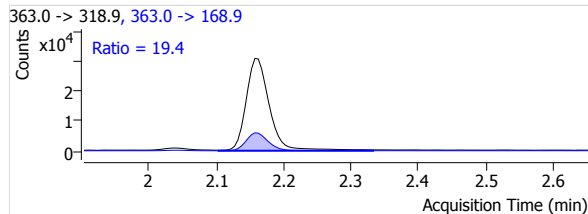
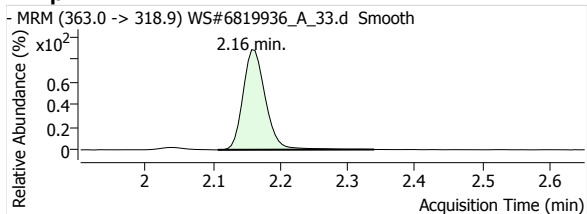
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Instrument LCMS04  
Position P2-C9  
Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.0774	--	121345	1.71	546	9.2033	4116	1.71	303	3.4
PFHpA 1	µg/L	--	0.5145	--	71867	2.16	378	3.9640	13912	2.16	789	19.4
PFOA 1	µg/L	--	0.3776	--	44698	2.63	376	2.7661	12188	2.63	385	27.3
PFNA 1	µg/L	--	0.0492	--	3716	3.07	47	0.3104	868	3.07	22	23.4
PFDA 1	µg/L	--	0.0103	--	618	3.47	10	0.0726	114	3.47	16	18.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1240	--	2985	1.37	47	0.7668	1347	1.37	84	45.1
PFHxS 1	µg/L	--	3.9650	--	68634	2.08	516	26.6436	35352	2.10	369	51.5
PFOS 1	µg/L	--	1.2959	--	16850	2.89	134	8.2075	8995	2.90	179	53.4
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	133.1146	--	13185	1.71	540	--	--	--	--	--
13C4-PFHpA	µg/L	--	142.5427	--	18130	2.16	836	--	--	--	--	--
13C4-PFOA	µg/L	--	136.4550	--	16159	2.63	922	--	--	--	--	--
13C5-PFNA	µg/L	--	128.5546	--	11971	3.07	697	--	--	--	--	--
13C2-PFDA	µg/L	--	119.0217	--	8516	3.47	467	--	--	--	--	--
13C2-PFUnA	µg/L	--	127.9513	--	10936	3.81	465	--	--	--	--	--
13C2-PFDaA	µg/L	--	122.7030	--	12847	4.11	1111	--	--	--	--	--
13C2-PFTeDA	µg/L	--	106.1728	--	16254	4.61	999	--	--	--	--	--
13C3-PFBS	µg/L	--	115.6566	--	3893	1.37	109	--	--	--	--	--
18O2-PFHxS	µg/L	--	110.3212	--	2576	2.11	344	--	--	--	--	--
13C4-PFOS	µg/L	--	113.4254	--	2053	2.95	151	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.8213	--	3641	5.21	71	--	--	--	--	--
D5-EtFOSA	µg/L	--	85.8545	--	3150	5.34	83	--	--	--	--	--

## PFHxA 1

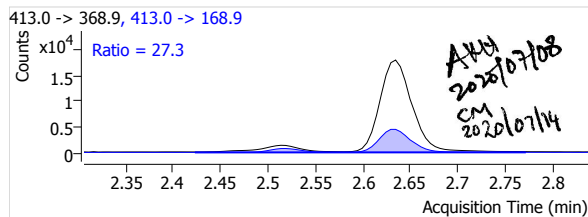
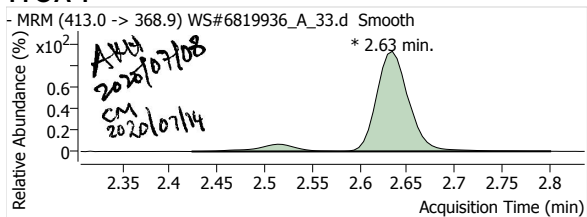


## PFHpA 1

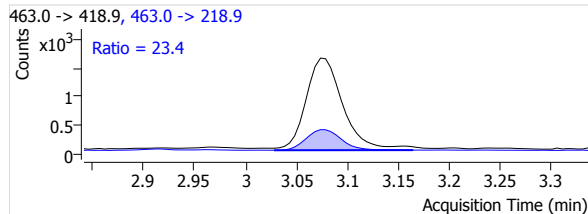
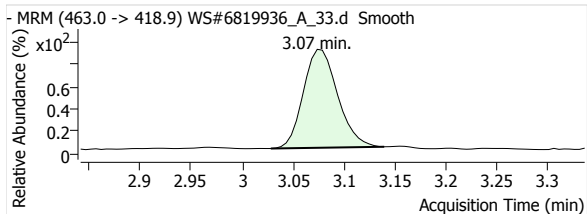


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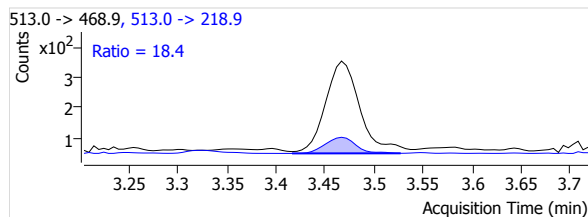
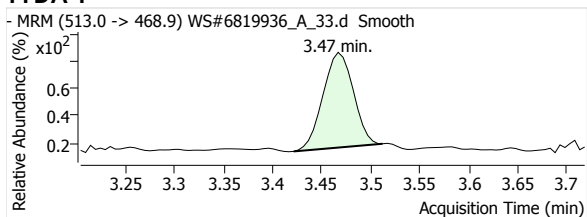
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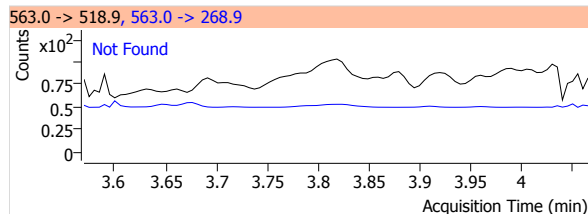
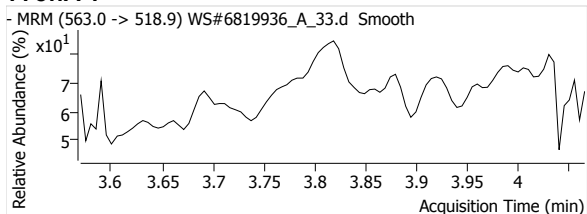
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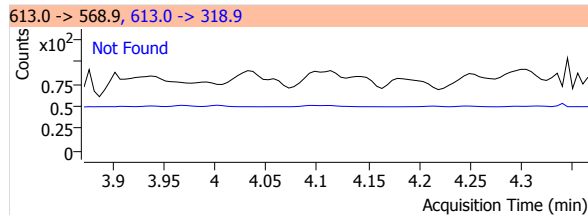
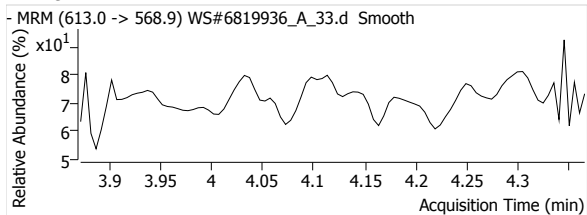
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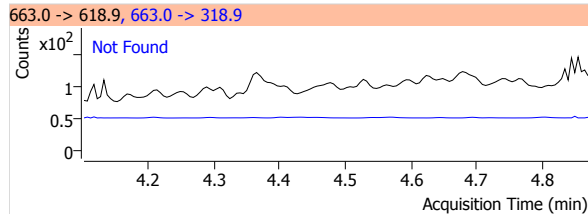
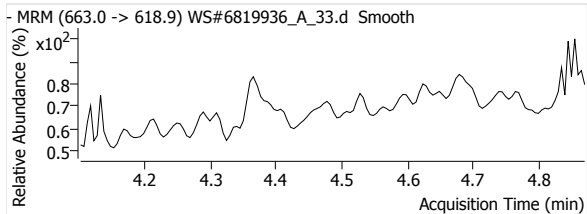
## PFUnA 1



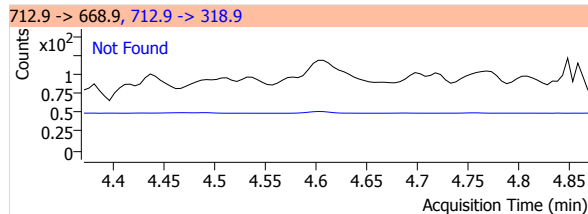
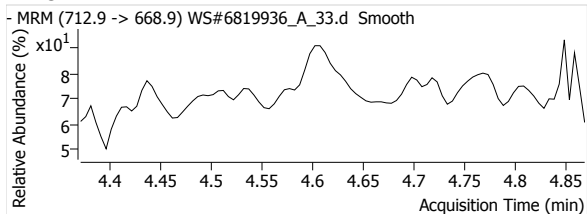
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## PFTrDA 1



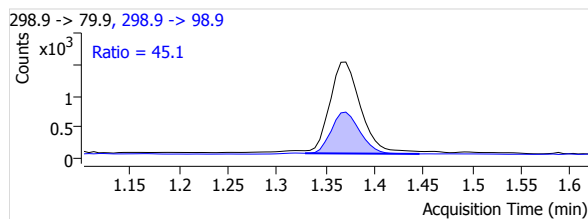
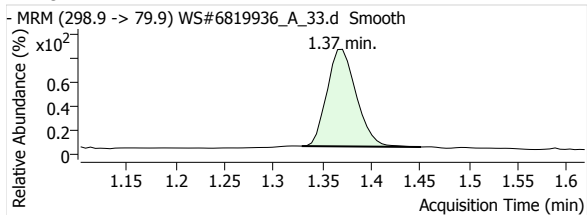
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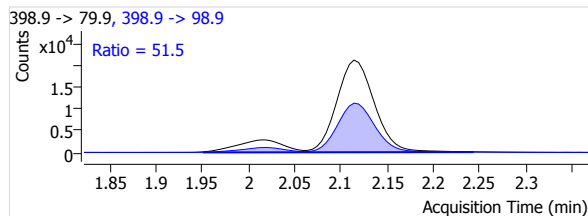
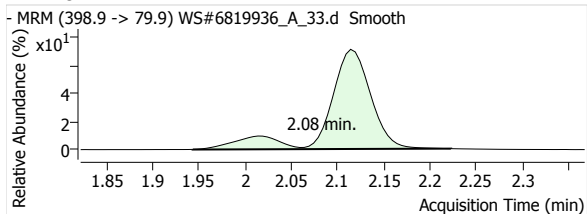


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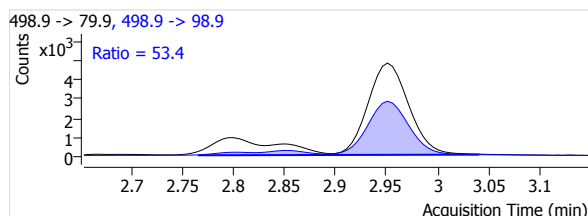
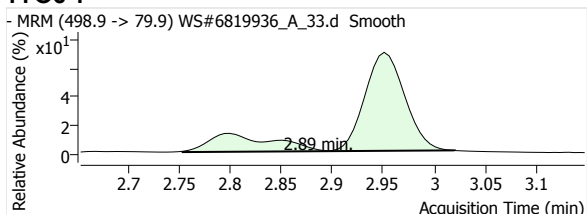
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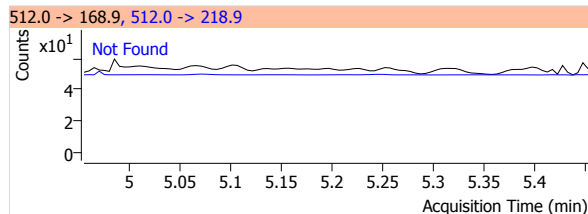
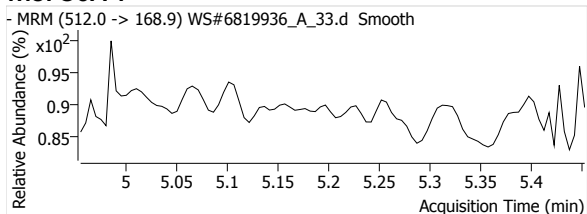
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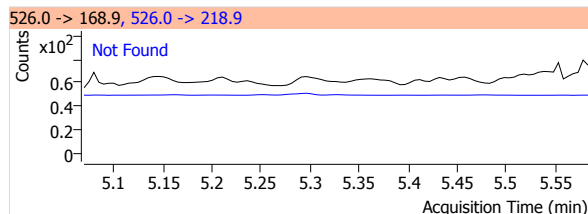
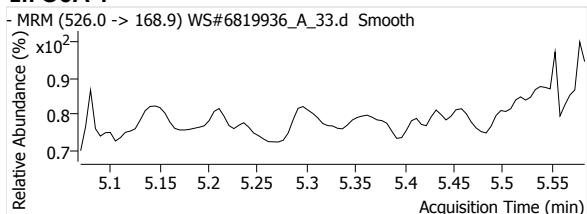
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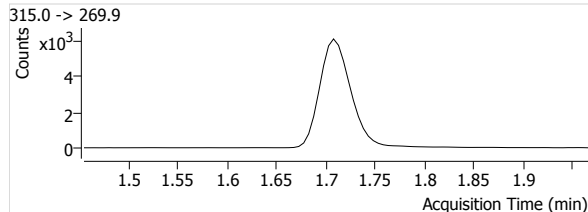
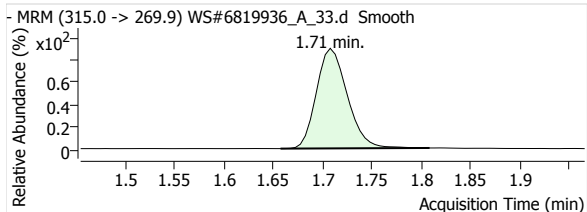
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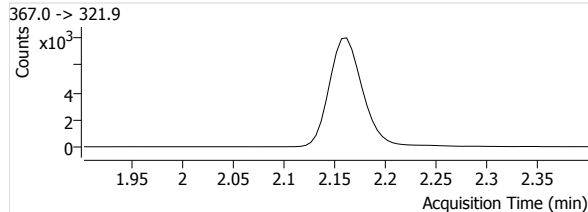
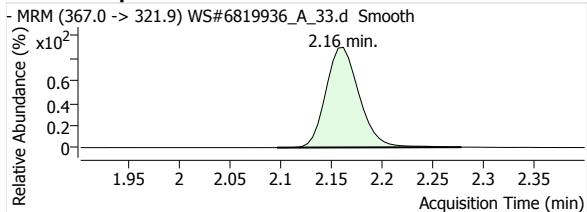
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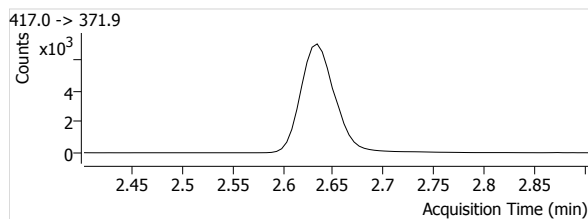
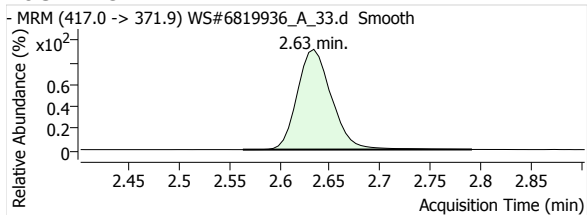


## 13C4-PFHpA

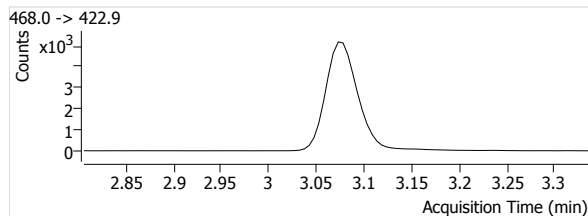
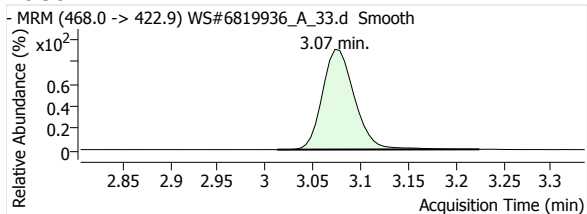


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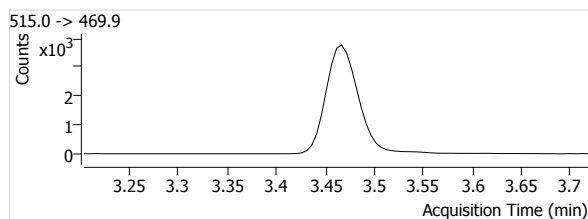
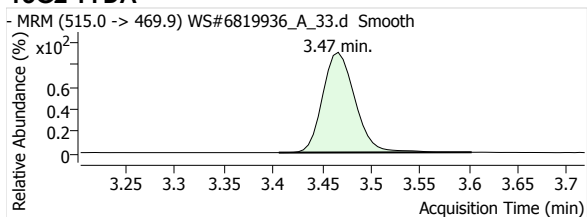
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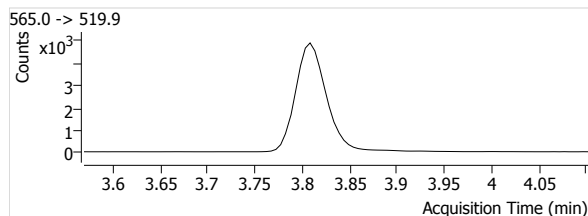
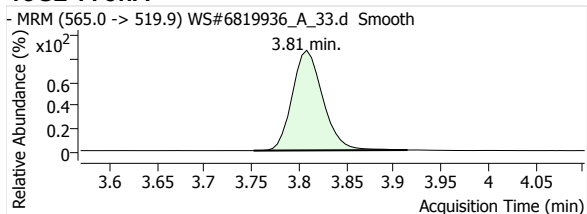
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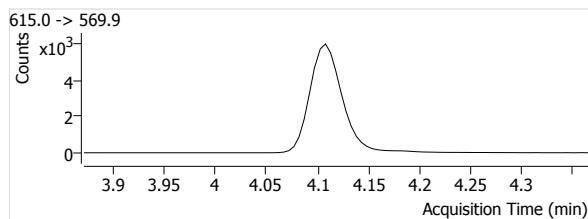
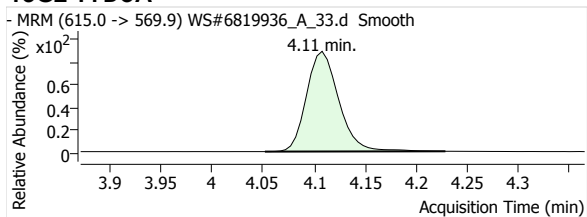
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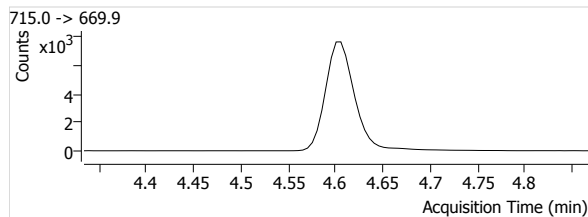
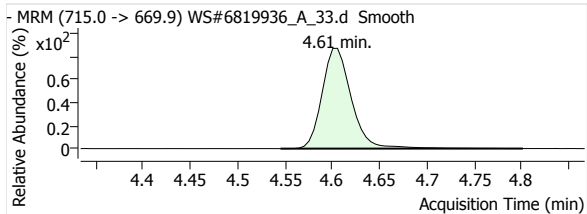
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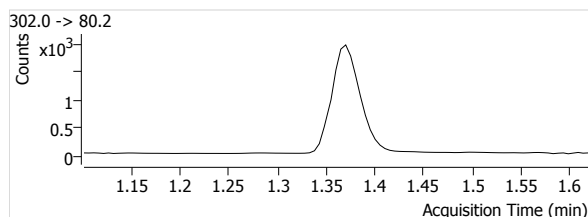
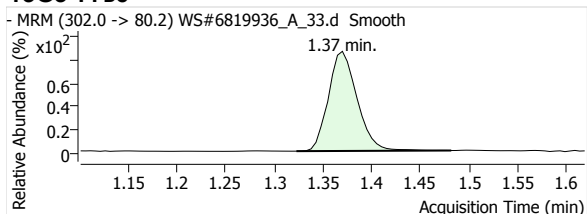
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## 13C2-PFTeDA

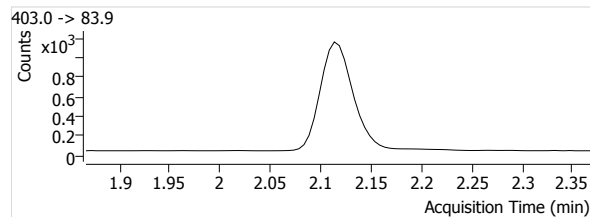
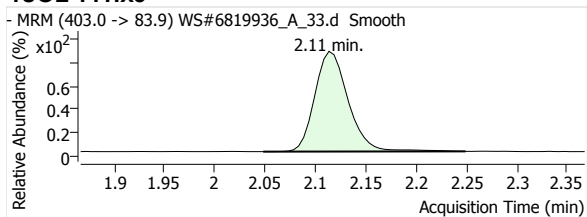


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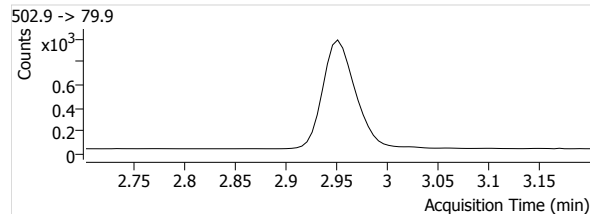
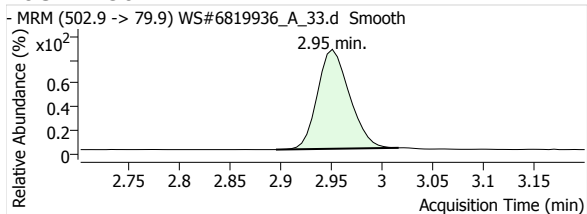


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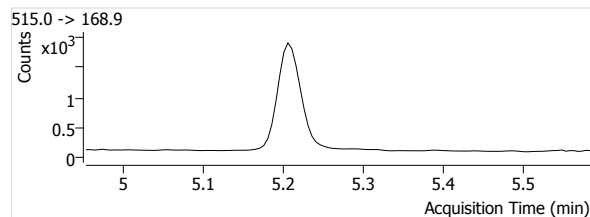
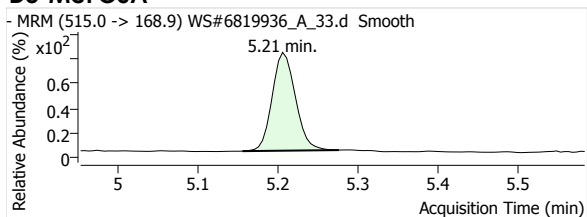
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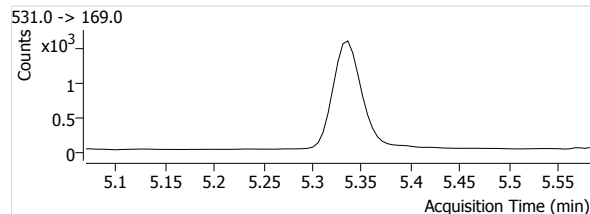
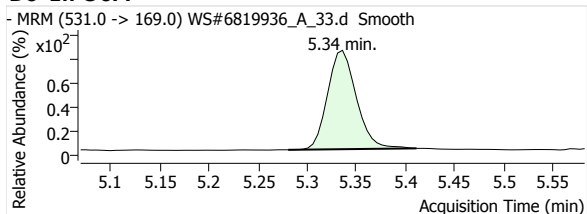
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



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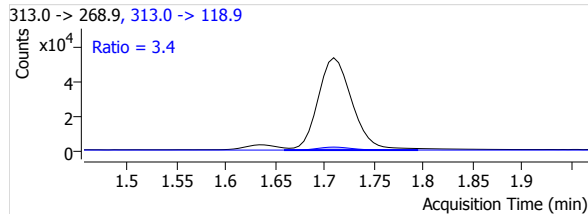
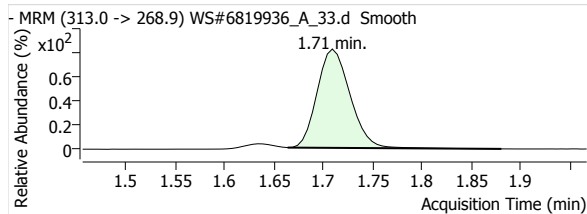
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 Type Sample  
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 Acq. Date-Time 2020/07/08 3:02:49 PM  
 Comment -  
 User Defined MI PFOA

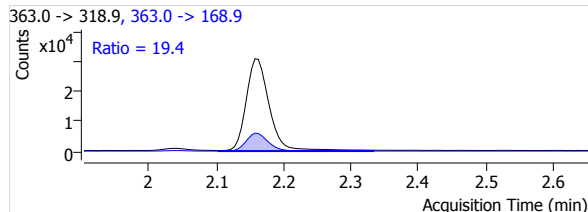
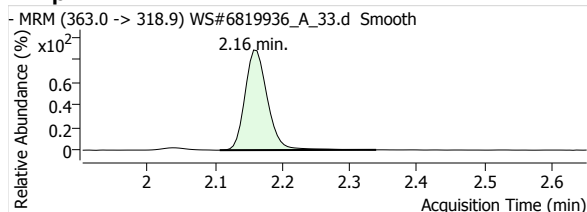
Data File WS#6819936\_A\_33.d  
 Instrument LCMS04  
 Position P2-C9  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.0774	--	121345	1.71	546	9.2033	4116	1.71	303	3.4
PFHpA 1	µg/L	--	0.5145	--	71867	2.16	378	3.9640	13912	2.16	789	19.4
PFOA 1	µg/L	--	0.3454	--	40841	2.63	375	2.5274	10364	2.63	177	25.4
PFNA 1	µg/L	--	0.0492	--	3716	3.07	47	0.3104	868	3.07	22	23.4
PFDA 1	µg/L	--	0.0103	--	618	3.47	10	0.0726	114	3.47	16	18.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1240	--	2985	1.37	47	0.7668	1347	1.37	84	45.1
PFHxS 1	µg/L	--	3.9650	--	68634	2.08	516	26.6436	35352	2.10	369	51.5
PFOS 1	µg/L	--	1.2959	--	16850	2.89	134	8.2075	8995	2.90	179	53.4
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	133.1146	--	13185	1.71	540	--	--	--	--	--
13C4-PFHpA	µg/L	--	142.5427	--	18130	2.16	836	--	--	--	--	--
13C4-PFOA	µg/L	--	136.4550	--	16159	2.63	922	--	--	--	--	--
13C5-PFNA	µg/L	--	128.5546	--	11971	3.07	697	--	--	--	--	--
13C2-PFDA	µg/L	--	119.0217	--	8516	3.47	467	--	--	--	--	--
13C2-PFUnA	µg/L	--	127.9513	--	10936	3.81	465	--	--	--	--	--
13C2-PFDaA	µg/L	--	122.7030	--	12847	4.11	1111	--	--	--	--	--
13C2-PFTeDA	µg/L	--	106.1728	--	16254	4.61	999	--	--	--	--	--
13C3-PFBS	µg/L	--	115.6566	--	3893	1.37	109	--	--	--	--	--
18O2-PFHxS	µg/L	--	110.3212	--	2576	2.11	344	--	--	--	--	--
13C4-PFOS	µg/L	--	113.4254	--	2053	2.95	151	--	--	--	--	--
D3-MeFOSA	µg/L	--	80.8213	--	3641	5.21	71	--	--	--	--	--
D5-EtFOSA	µg/L	--	85.8545	--	3150	5.34	83	--	--	--	--	--

### PFHxA 1

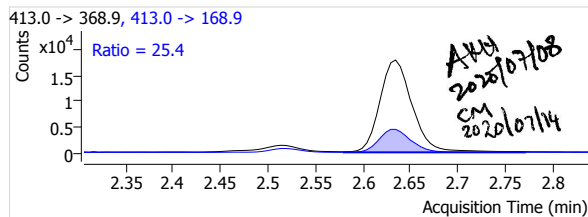
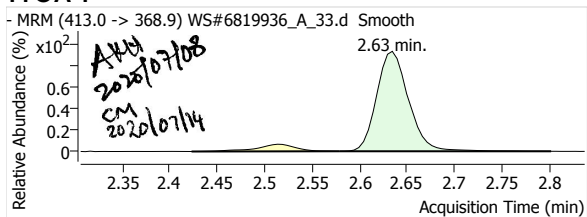


### PFHpA 1

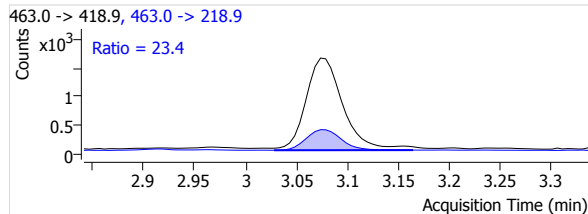
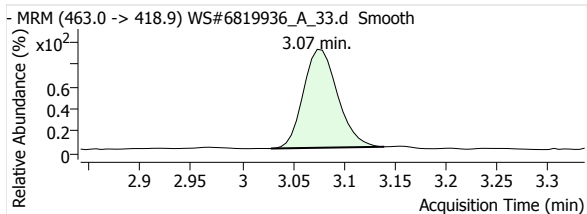


# Quantitative Analysis Report

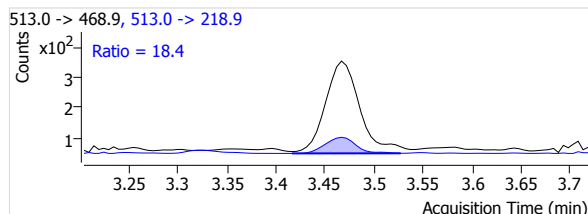
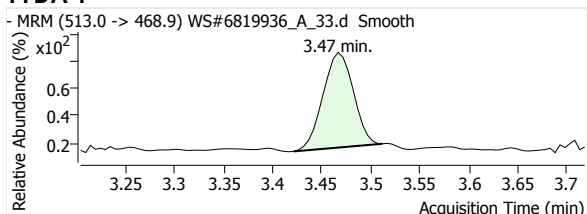
## PFOA 1



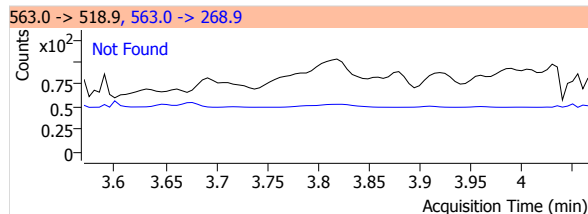
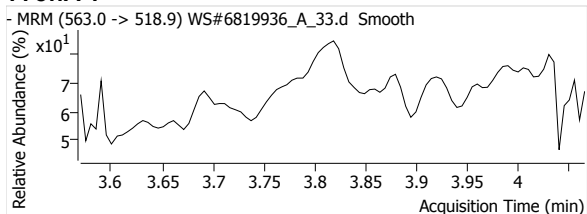
## PFNA 1



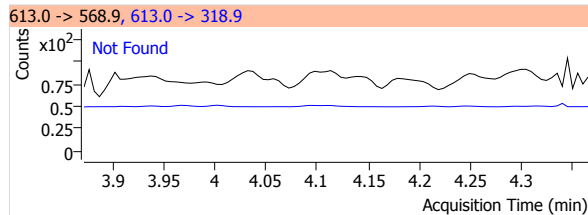
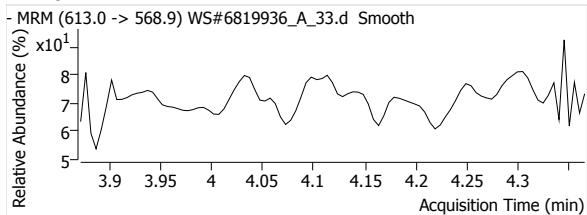
## PFDA 1



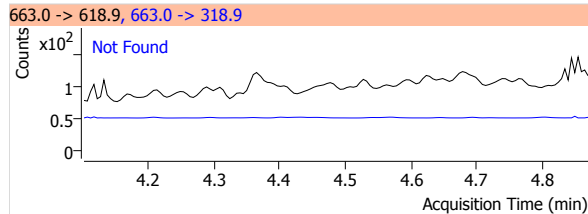
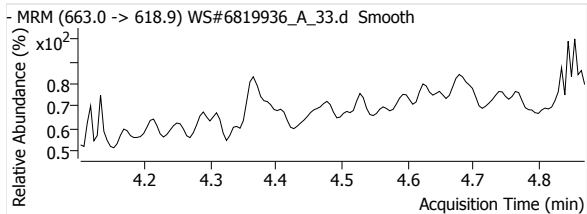
## PFUnA 1



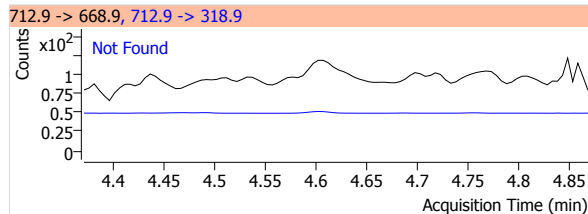
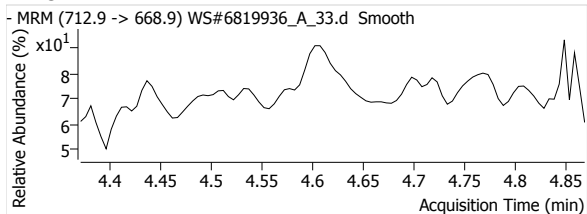
## PFDaA 1



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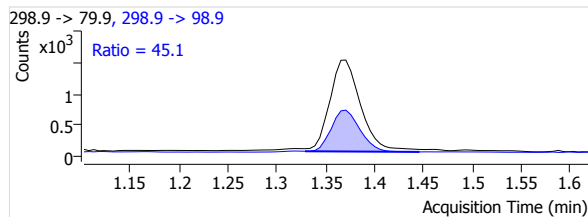
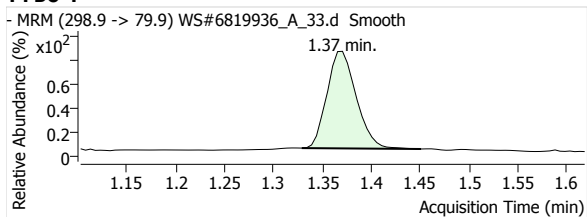


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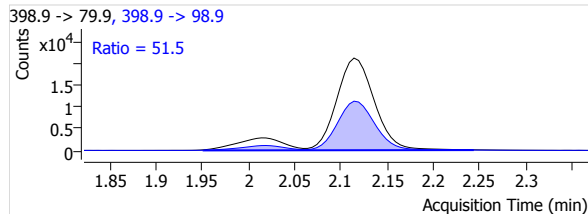
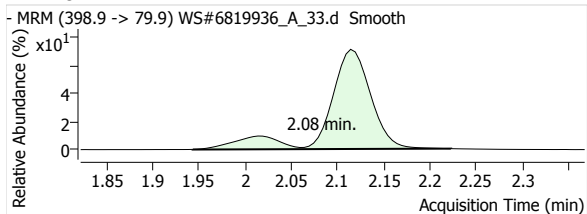


# Quantitative Analysis Report

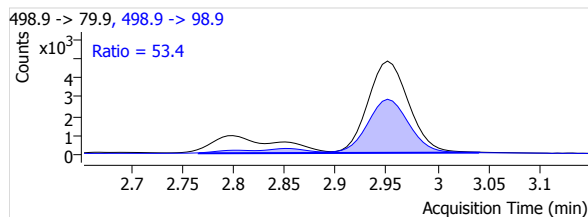
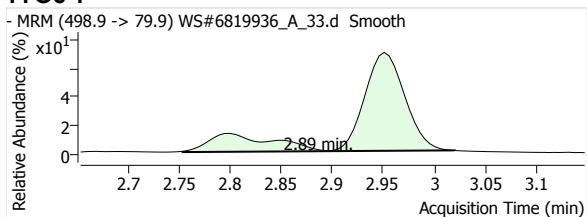
## PFBS 1



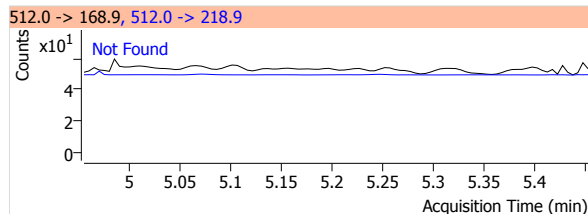
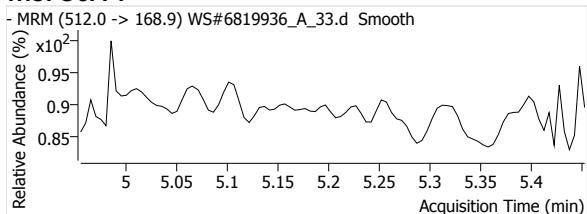
## PFHxS 1



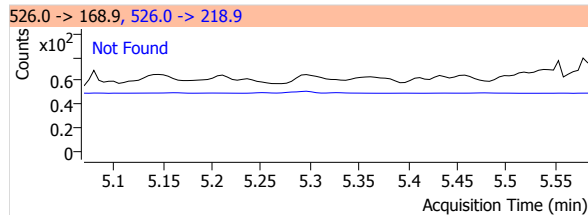
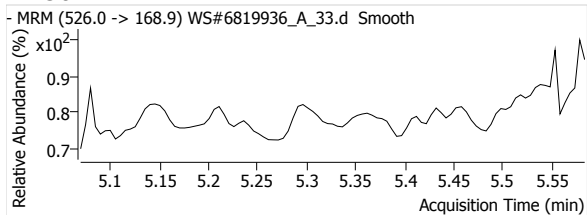
## PFOS 1



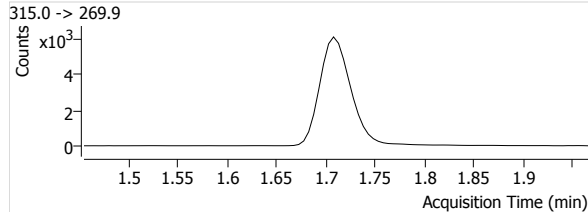
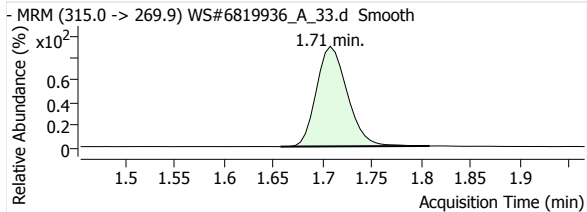
## MeFOSA 1



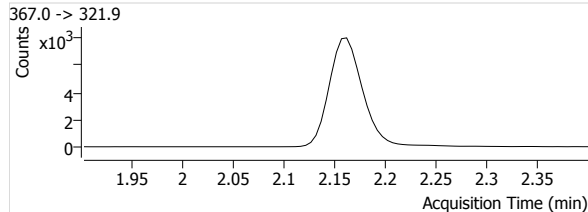
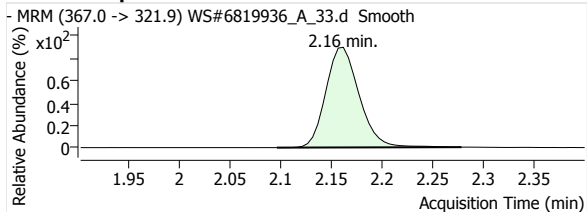
## eFOSA 1



## 13C2-PFHxA

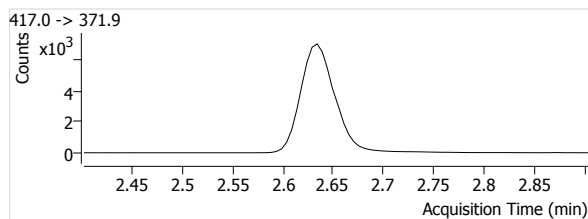
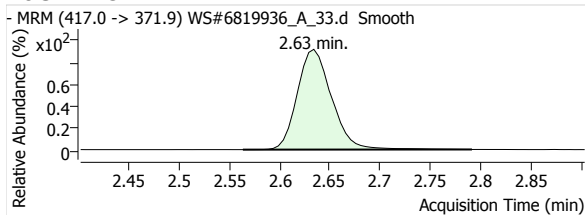


## 13C4-PFHpA

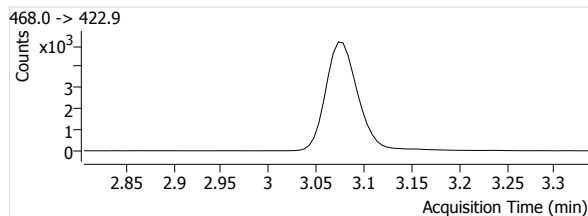
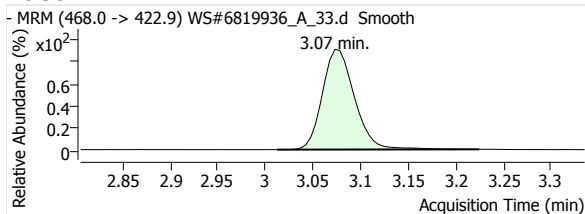


# Quantitative Analysis Report

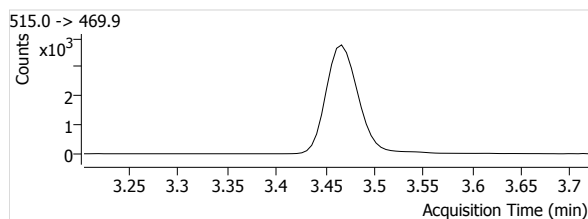
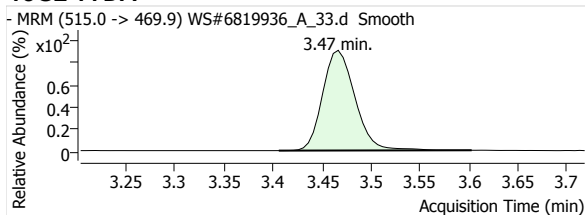
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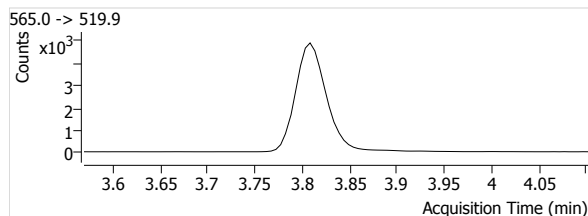
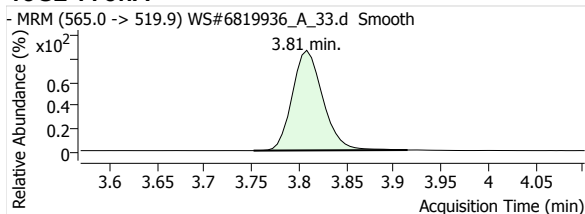
## 13C5-PFNA



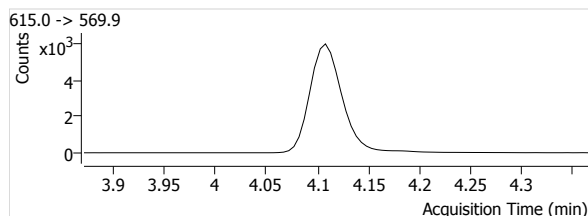
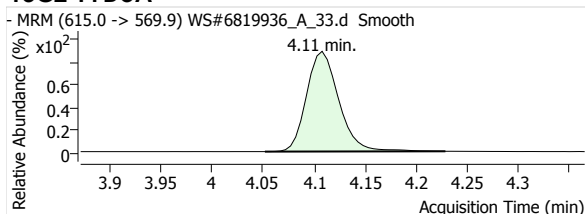
## 13C2-PFDA



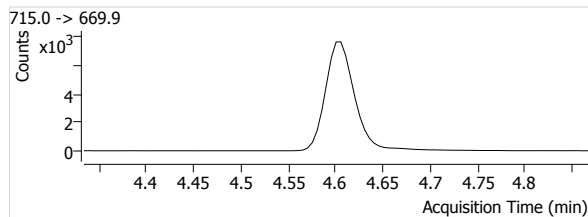
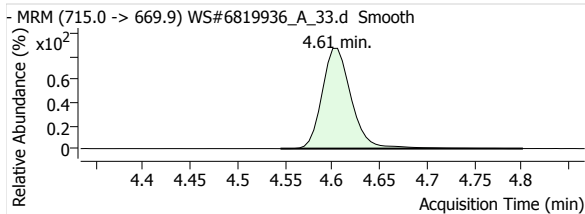
## 13C2-PFUnA



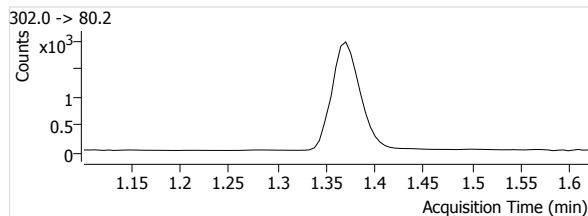
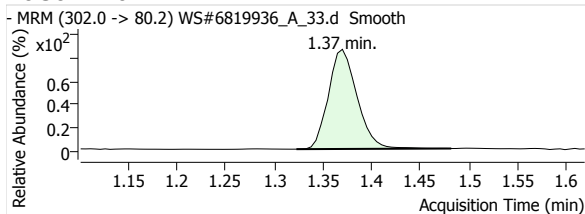
## 13C2-PFDoA



## 13C2-PFTeDA

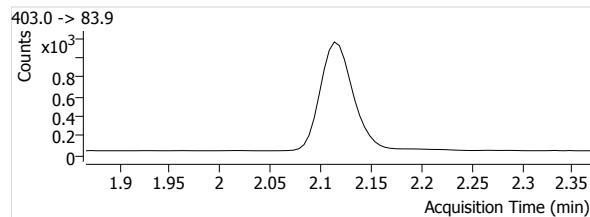
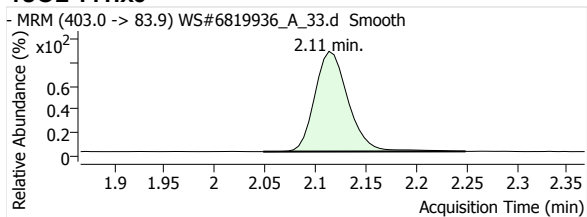


## 13C3-PFBS

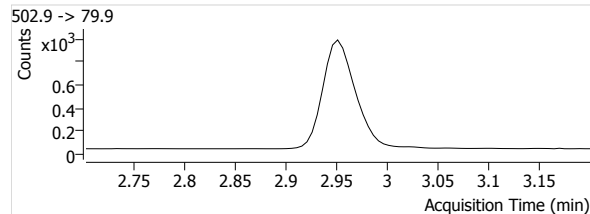
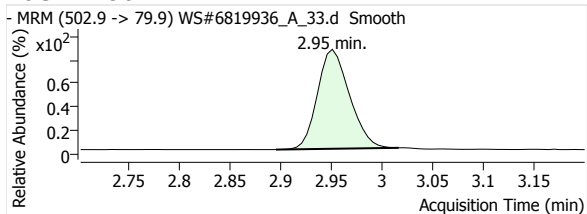


# Quantitative Analysis Report

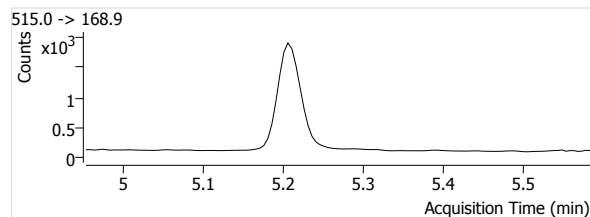
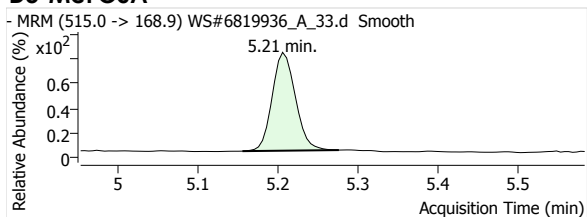
## 18O2-PFHxs



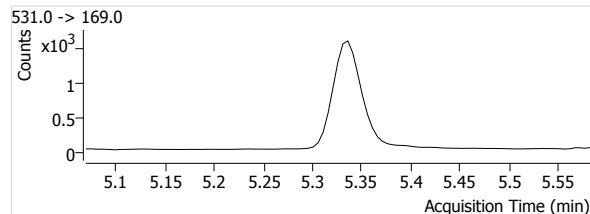
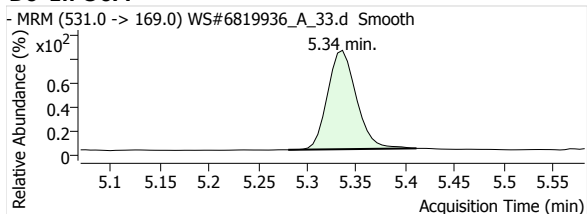
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA





# Quantitative Analysis Report

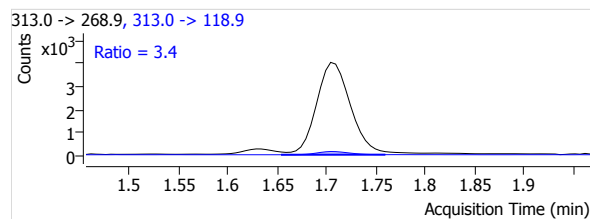
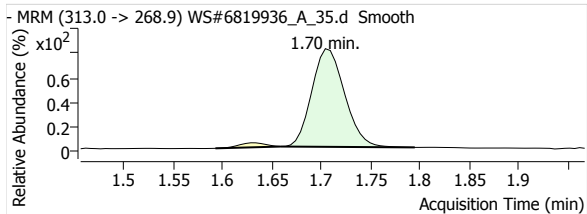
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Sample Name 6819936:NAH705-01:10x  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 3:16:42 PM  
 Comment Reported PFHxA, PFHxS, PFOS  
 User Defined

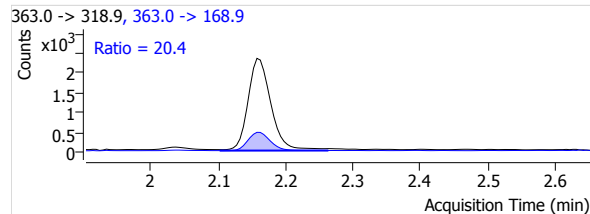
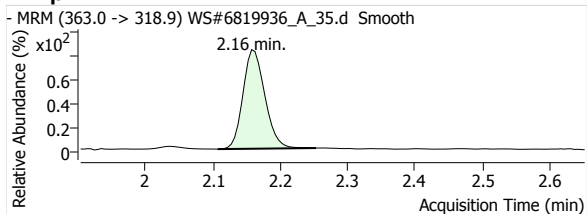
Data File WS#6819936\_A\_35.d  
 Instrument LCMS04  
 Position P2-D1  
 Dil. 0.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.1263	--	9066	1.70	89	1.0008	308	1.70	41	3.4
PFHpA 1	µg/L	--	0.5577	--	5166	2.16	83	0.4312	1055	2.16	33	20.4
PFOA 1	µg/L	--	0.3974	--	3007	2.63	61	0.2857	802	2.63	62	26.7
PFNA 1	µg/L	--	0.0923	--	301	3.07	7	0.0389	67	3.07	11	22.3
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1616	--	269	1.37	32	0.0947	116	1.37	16	43.1
PFHxS 1	µg/L	--	4.0602	--	6092	2.08	259	2.9401	3100	2.10	323	50.9
PFOS 1	µg/L	--	1.3620	--	1460	2.89	69	0.9172	795	2.90	103	54.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	91.4589	--	9059	1.70	965	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.1977	--	11981	2.16	556	--	--	--	--	--
13C4-PFOA	µg/L	--	88.8870	--	10526	2.63	1352	--	--	--	--	--
13C5-PFNA	µg/L	--	83.0863	--	7737	3.07	271	--	--	--	--	--
13C2-PFDA	µg/L	--	83.2565	--	5957	3.46	662	--	--	--	--	--
13C2-PFUnA	µg/L	--	91.5994	--	7829	3.80	361	--	--	--	--	--
13C2-PFDoA	µg/L	--	85.7880	--	8982	4.10	135	--	--	--	--	--
13C2-PFTeDA	µg/L	--	73.6495	--	11275	4.60	566	--	--	--	--	--
13C3-PFBS	µg/L	--	84.4029	--	2841	1.36	312	--	--	--	--	--
18O2-PFHxS	µg/L	--	88.7366	--	2072	2.11	454	--	--	--	--	--
13C4-PFOS	µg/L	--	87.9558	--	1592	2.95	185	--	--	--	--	--
D3-MeFOSA	µg/L	--	49.4562	--	2228	5.21	45	--	--	--	--	--
D5-EtFOSA	µg/L	--	52.7937	--	1937	5.34	81	--	--	--	--	--

### PFHxA 1

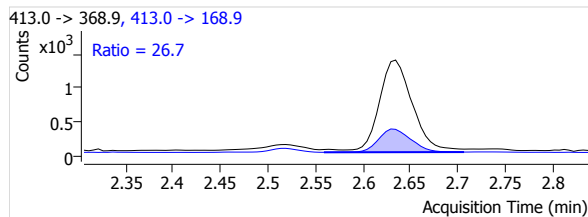
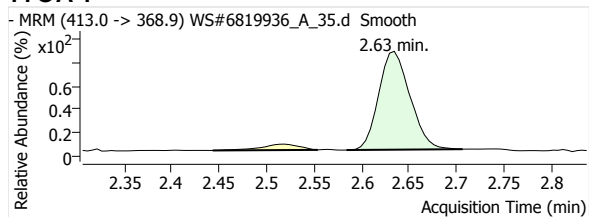


### PFHpA 1

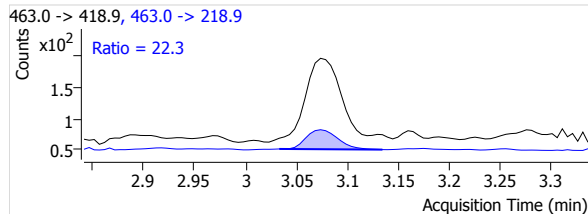
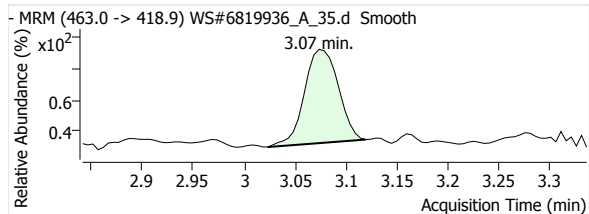


# Quantitative Analysis Report

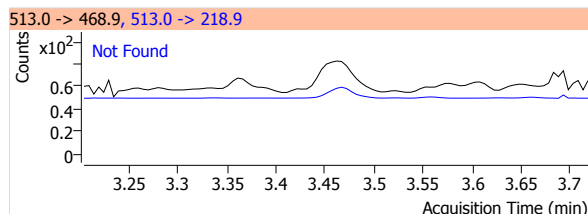
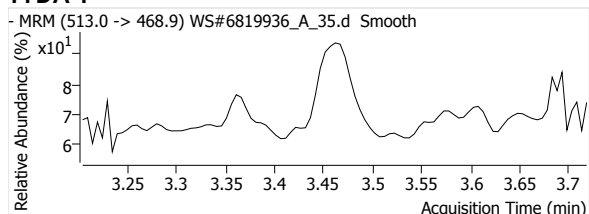
## PFOA 1



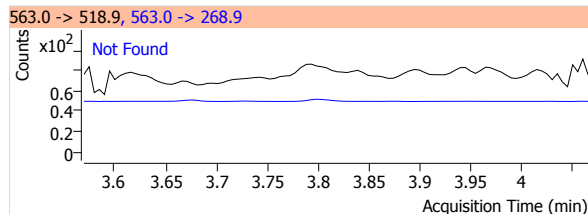
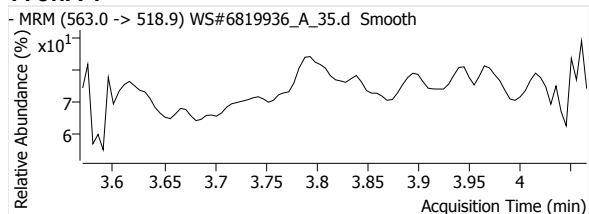
## PFNA 1



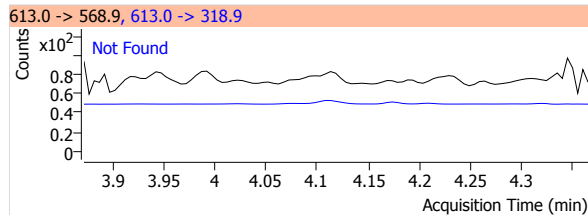
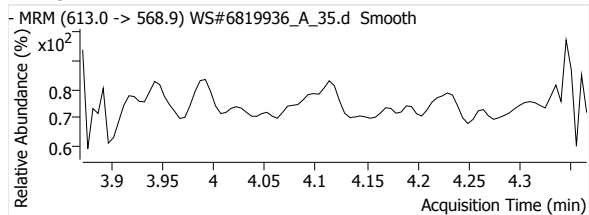
## PFDA 1



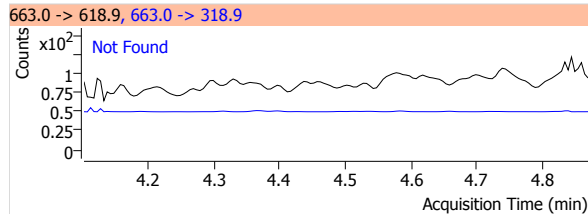
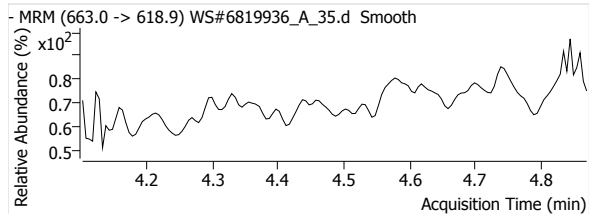
## PFUnA 1



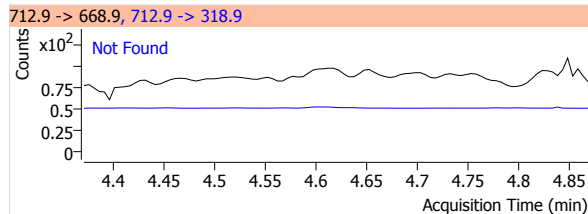
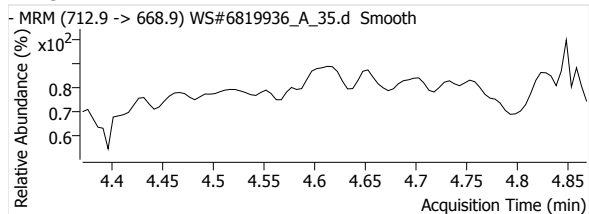
## PFDoA 1



## PFTrDA 1

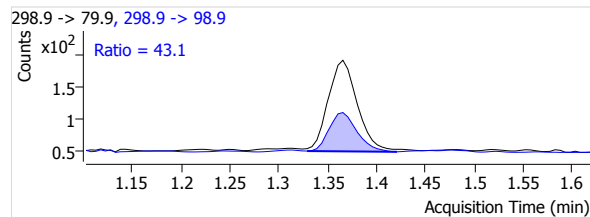
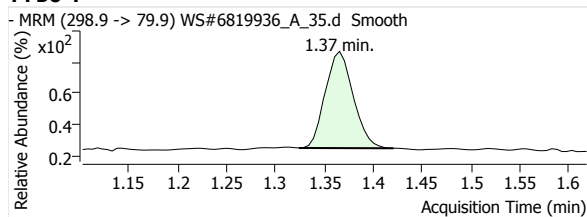


## PFTeDA 1

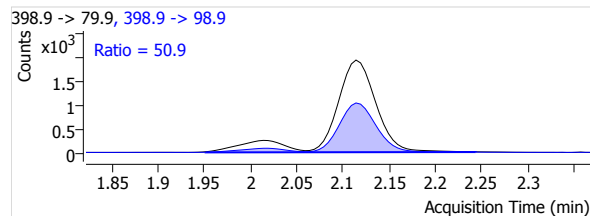
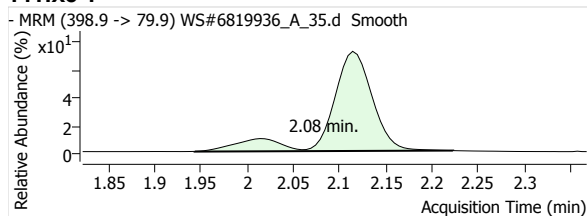


# Quantitative Analysis Report

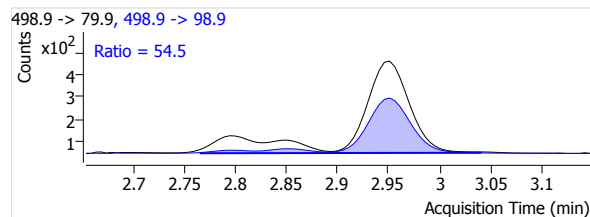
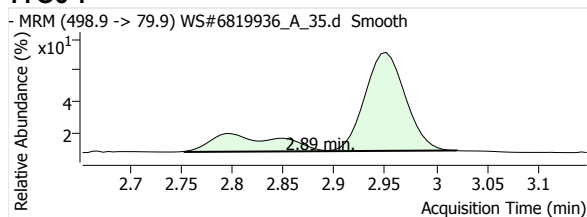
## PFBS 1



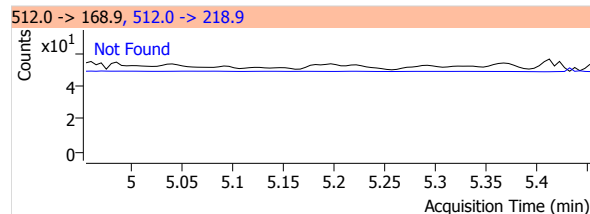
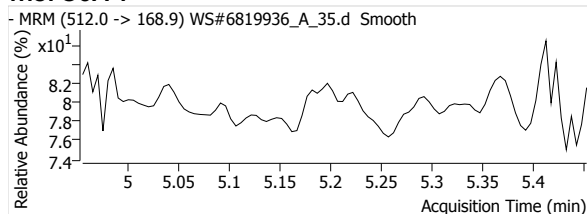
## PFHxS 1



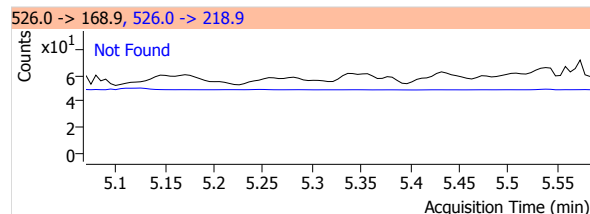
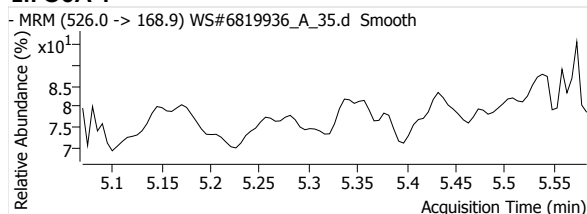
## PFOS 1



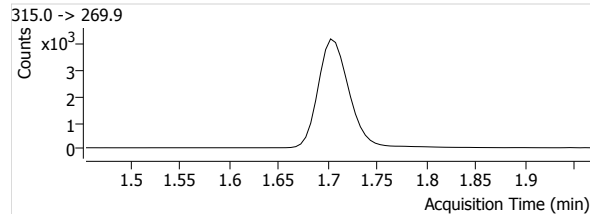
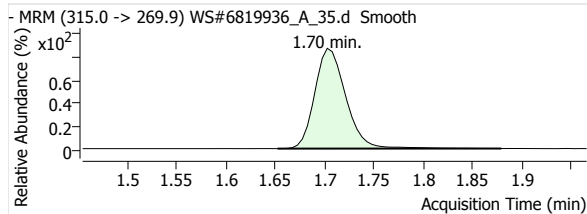
## MeFOSA 1



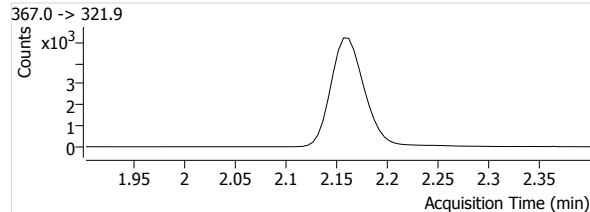
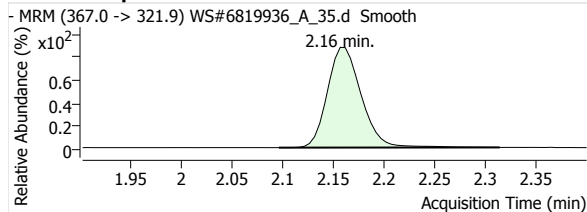
## eFOSA 1



## 13C2-PFHxA

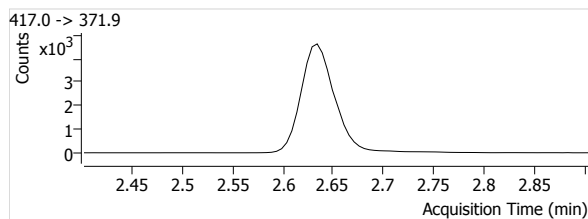
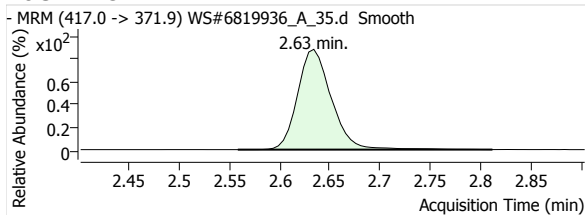


## 13C4-PFHpA

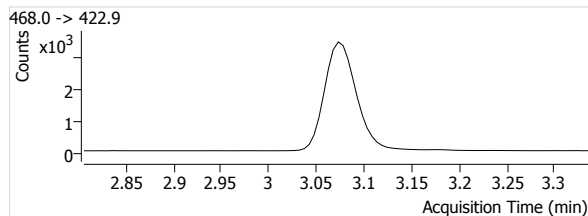
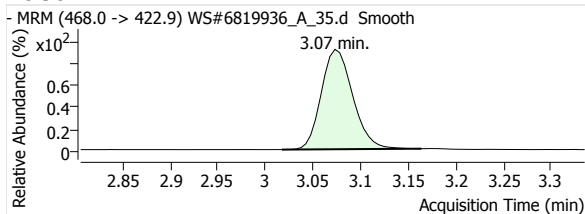


# Quantitative Analysis Report

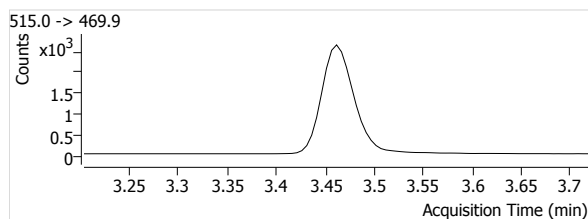
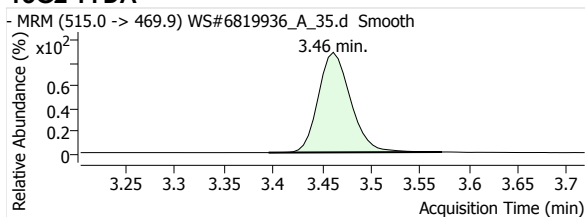
## 13C4-PFOA



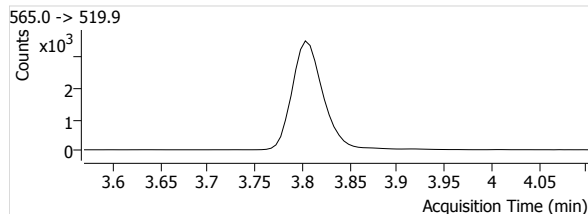
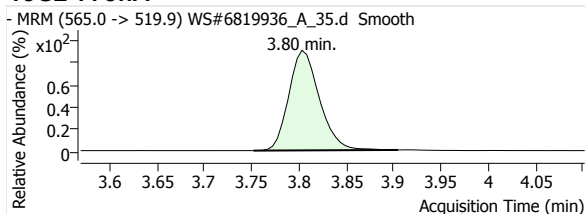
## 13C5-PFNA



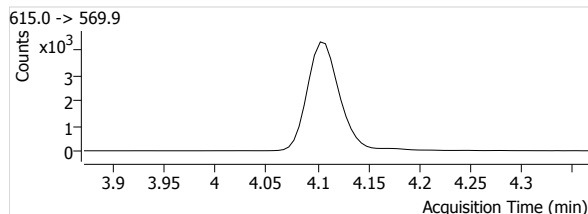
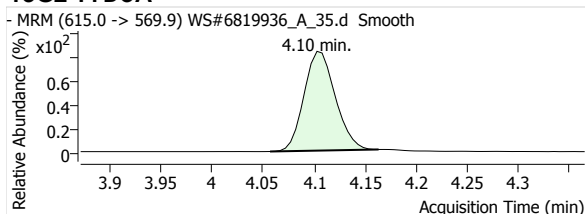
## 13C2-PFDA



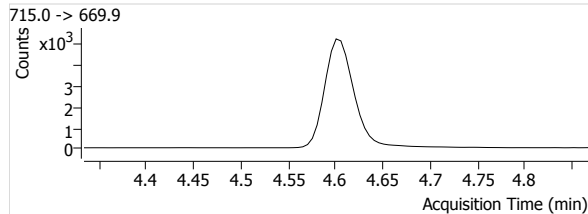
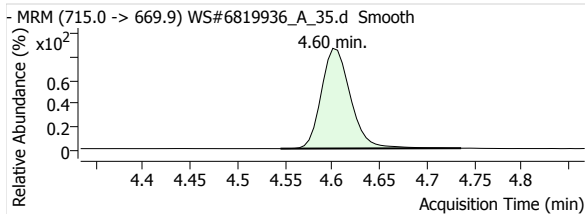
## 13C2-PFUnA



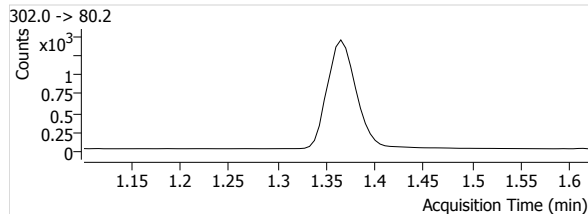
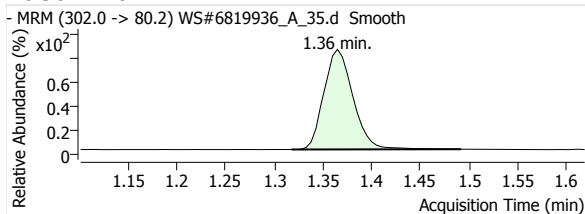
## 13C2-PFDoA



## 13C2-PFTeDA

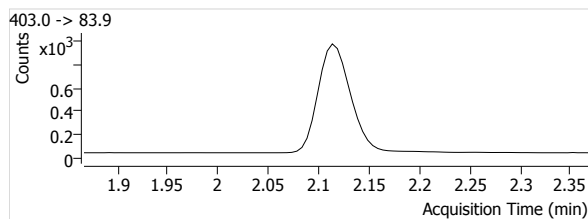
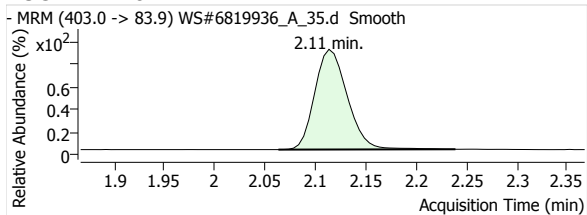


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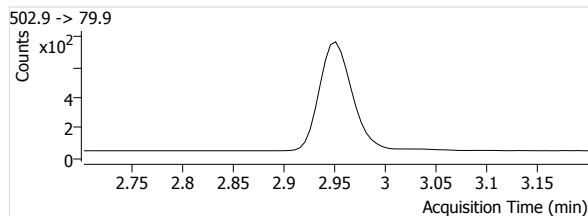
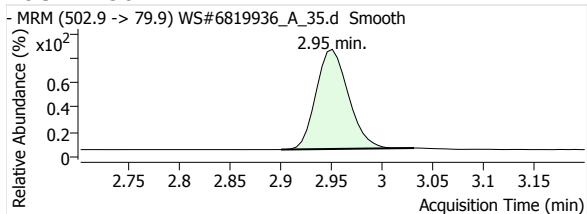


# Quantitative Analysis Report

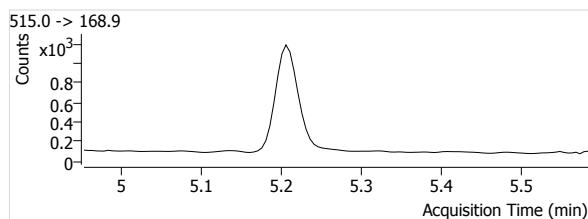
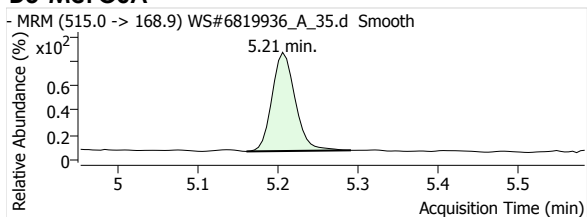
## 18O2-PFHxS



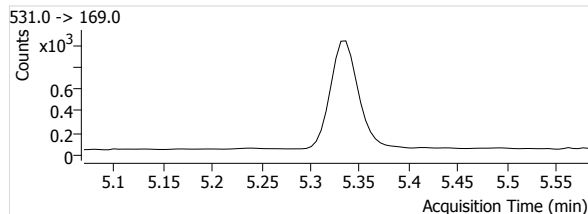
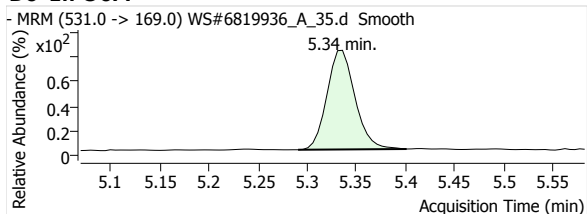
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

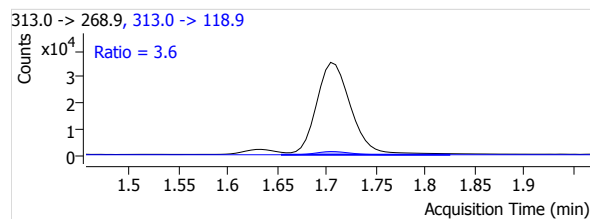
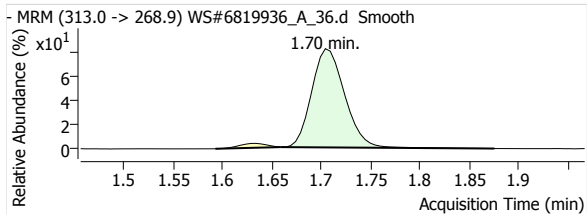
**Batch Data Path File Name** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_ML.batch.  
bin

**Sample Name** 6819936:NAH705-01  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 3:23:38 PM  
**Comment** -  
**User Defined** MI PFOA

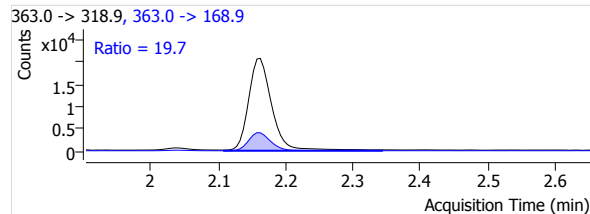
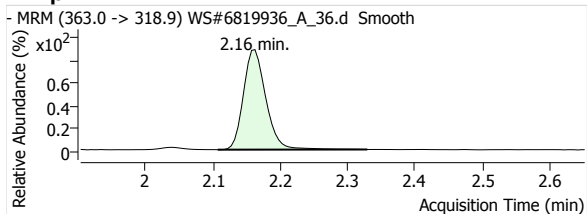
**Data File** WS#6819936\_A\_36.d  
**Instrument** LCMS04  
**Position** P2-D2  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.0865	--	81064	1.70	749	9.6551	2913	1.70	246	3.6
PFHpA 1	µg/L	--	0.5356	--	47822	2.16	276	4.2947	9409	2.16	382	19.7
PFOA 1	µg/L	--	0.3864	--	29454	2.63	404	2.9460	8170	2.63	864	27.7
PFNA 1	µg/L	--	0.0508	--	2409	3.07	43	0.3353	547	3.07	14	22.7
PFDA 1	µg/L	--	0.0106	--	413	3.46	14	0.0793	76	3.47	24	18.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1382	--	2214	1.37	61	0.8909	968	1.37	45	43.7
PFHxS 1	µg/L	--	4.1589	--	49471	2.08	427	29.0662	25029	2.10	450	50.6
PFOS 1	µg/L	--	1.2566	--	11911	2.89	122	8.2773	6198	2.90	172	52.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	84.7653	--	8396	1.70	464	--	--	--	--	--
13C4-PFHpA	µg/L	--	87.5462	--	11135	2.16	739	--	--	--	--	--
13C4-PFOA	µg/L	--	84.4283	--	9998	2.63	955	--	--	--	--	--
13C5-PFNA	µg/L	--	77.1585	--	7185	3.07	177	--	--	--	--	--
13C2-PFDA	µg/L	--	72.8022	--	5209	3.47	298	--	--	--	--	--
13C2-PFUnA	µg/L	--	79.3144	--	6779	3.81	289	--	--	--	--	--
13C2-PFDaA	µg/L	--	76.5330	--	8013	4.11	767	--	--	--	--	--
13C2-PFTeDA	µg/L	--	63.7403	--	9758	4.61	755	--	--	--	--	--
13C3-PFBS	µg/L	--	73.8265	--	2485	1.36	98	--	--	--	--	--
18O2-PFHxS	µg/L	--	72.8908	--	1702	2.11	159	--	--	--	--	--
13C4-PFOS	µg/L	--	79.5028	--	1439	2.95	218	--	--	--	--	--
D3-MeFOSA	µg/L	--	53.4961	--	2410	5.21	39	--	--	--	--	--
D5-EtFOSA	µg/L	--	58.3810	--	2142	5.34	88	--	--	--	--	--

### PFHxA 1

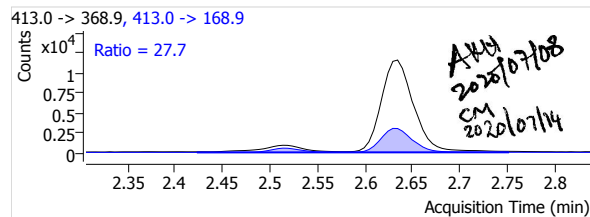
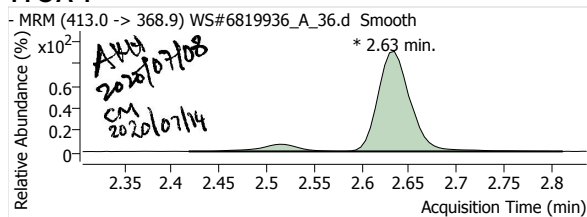


### PFHpA 1

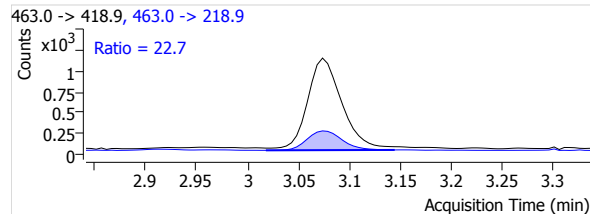
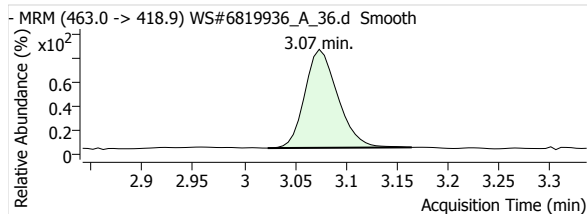


# Quantitative Analysis Report

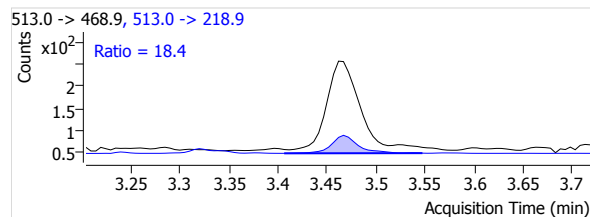
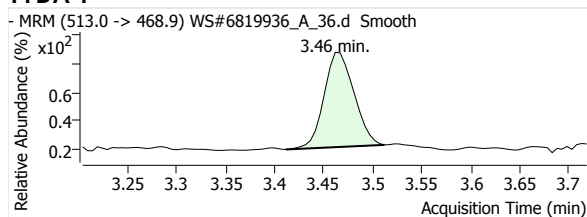
## PFOA 1



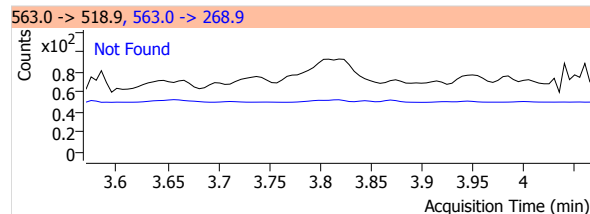
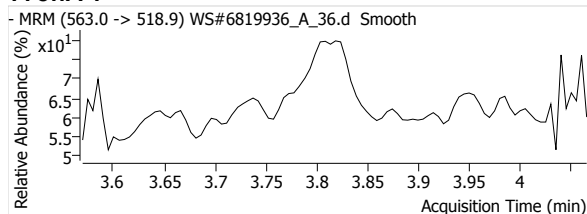
## PFNA 1



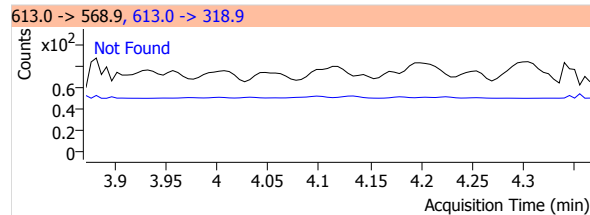
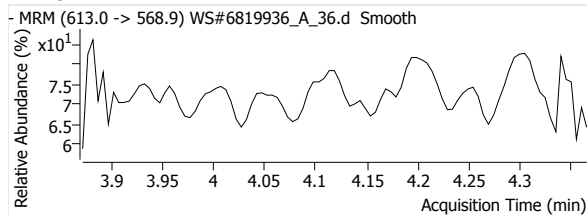
## PFDA 1



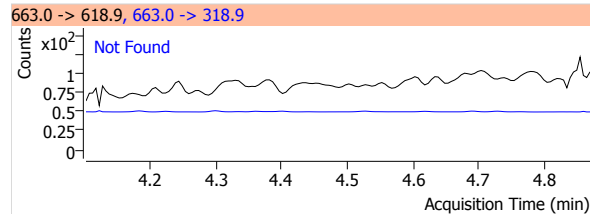
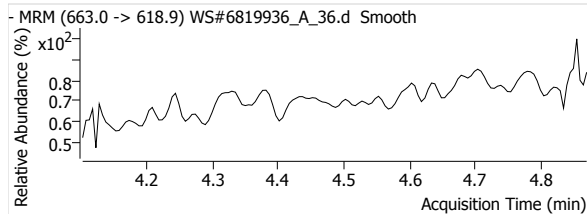
## PFUnA 1



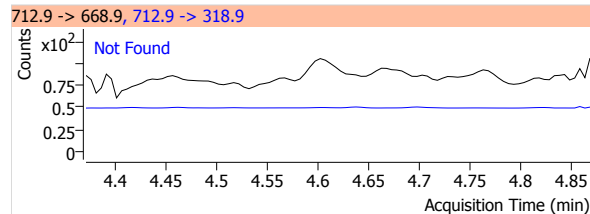
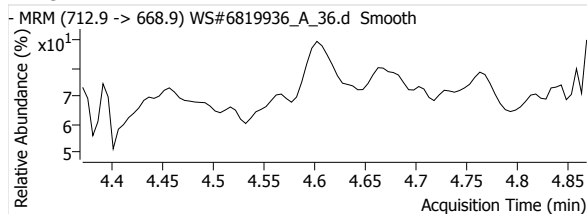
## PFDoA 1



## PFTrDA 1

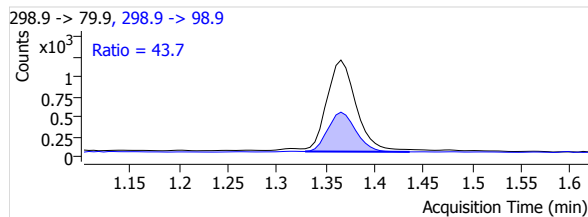
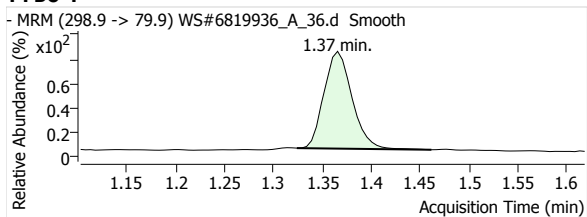


## PFTeDA 1

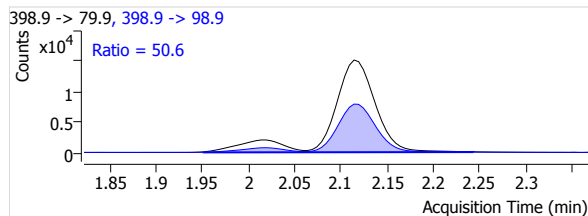
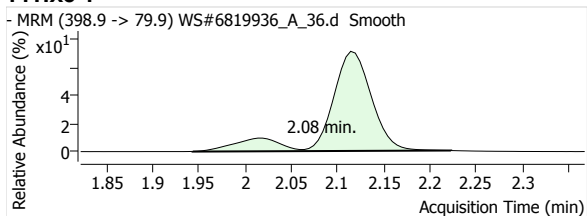


# Quantitative Analysis Report

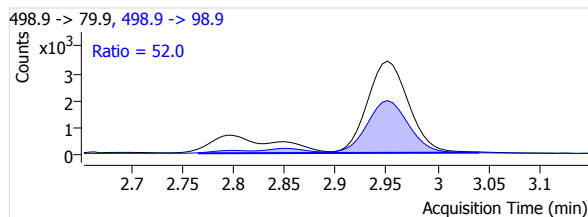
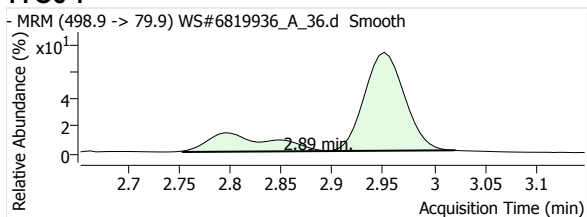
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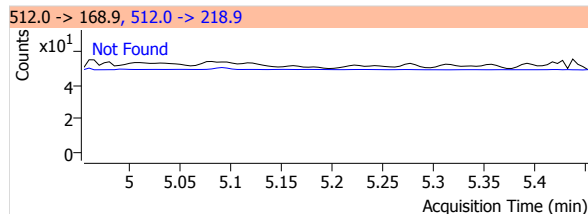
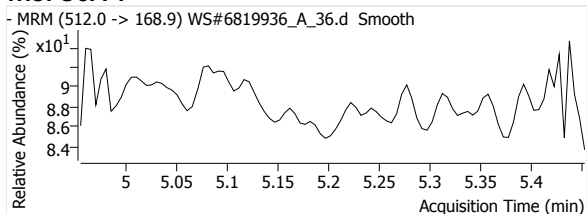
## PFHxS 1



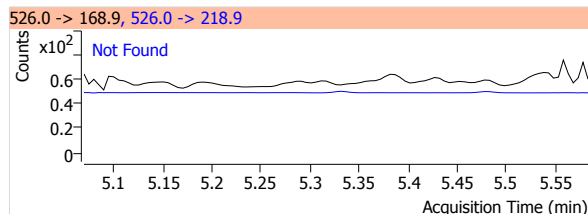
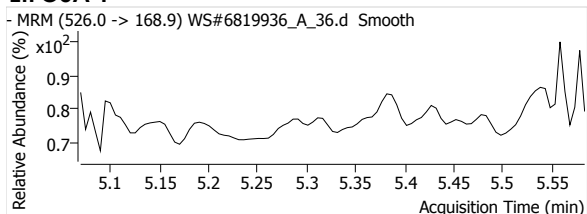
## PFOS 1



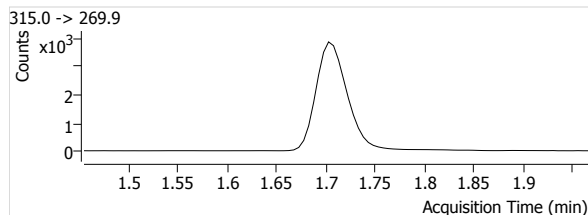
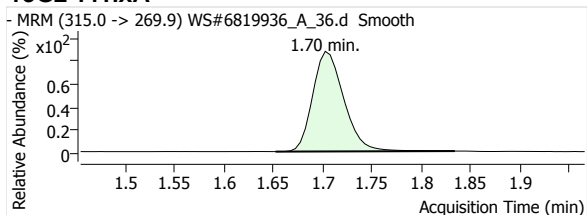
## MeFOSA 1



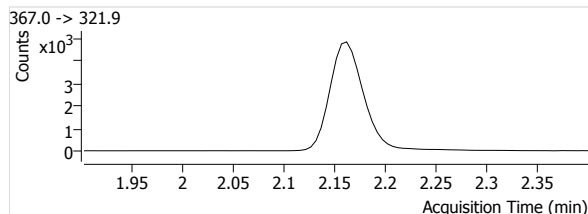
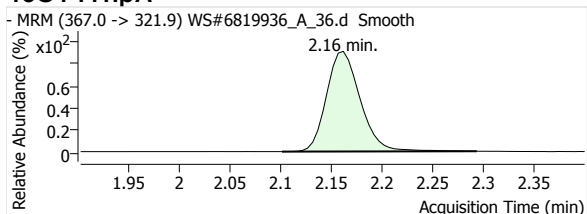
## eFOSA 1



## 13C2-PFHxA



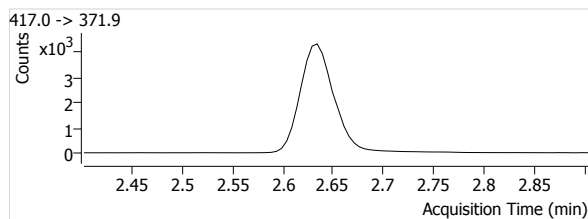
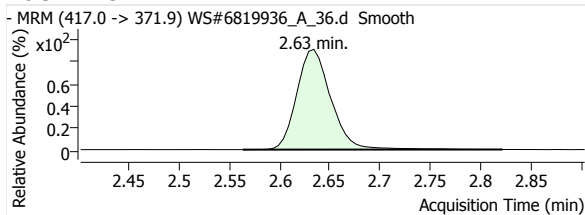
## 13C4-PFHpA



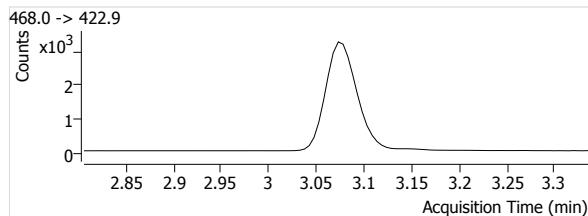
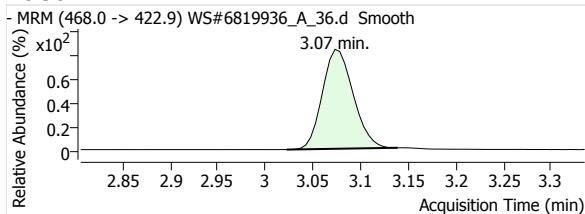


# Quantitative Analysis Report

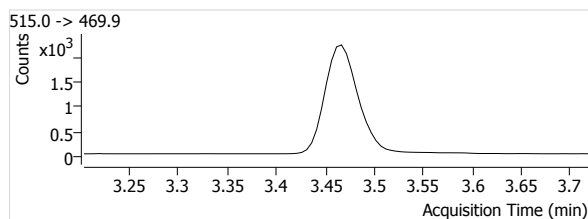
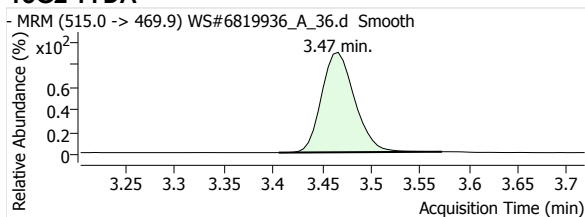
## 13C4-PFOA



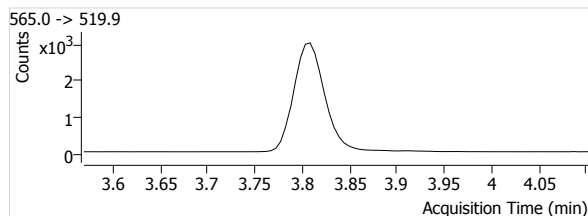
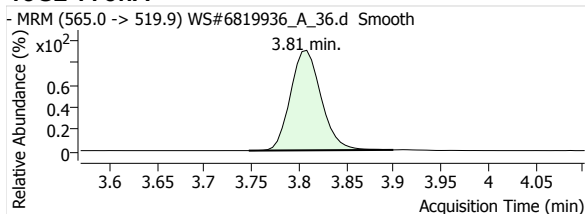
## 13C5-PFNA



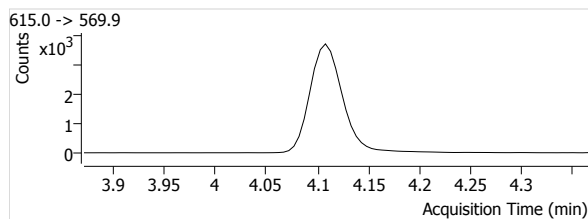
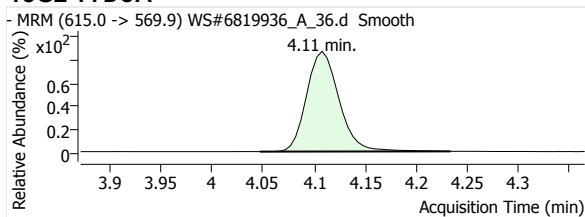
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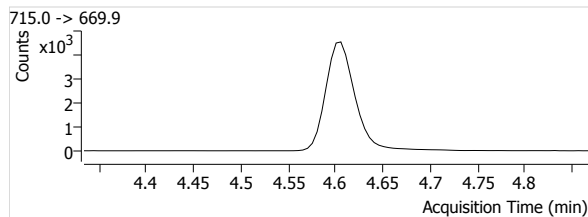
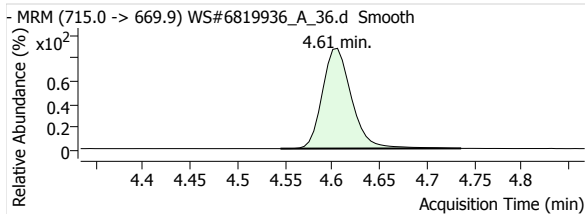
## 13C2-PFUnA



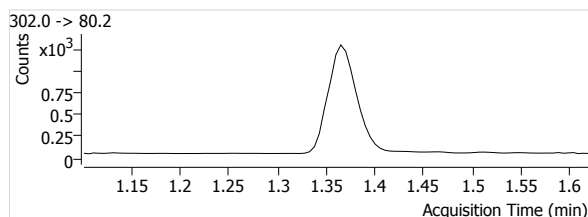
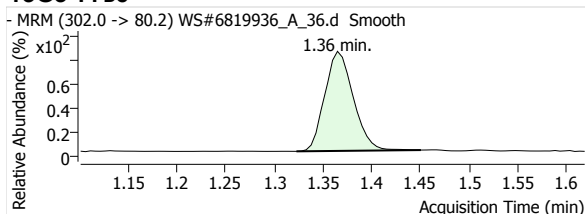
## 13C2-PFDoA



## 13C2-PFTeDA

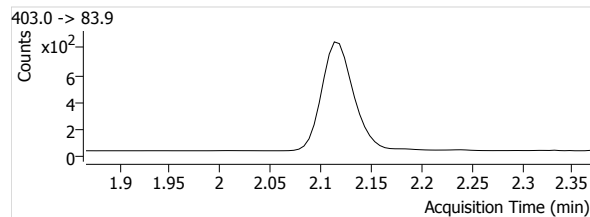
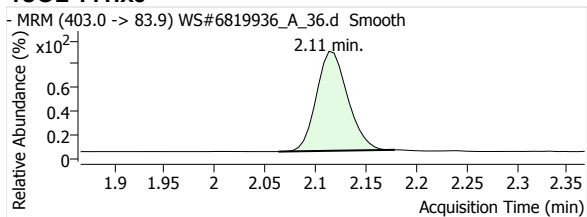


## 13C3-PFBS

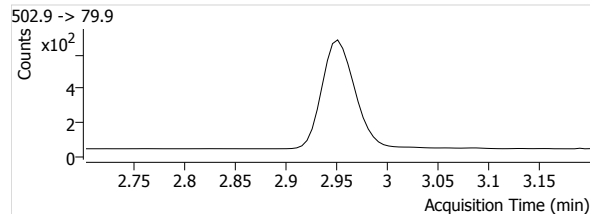
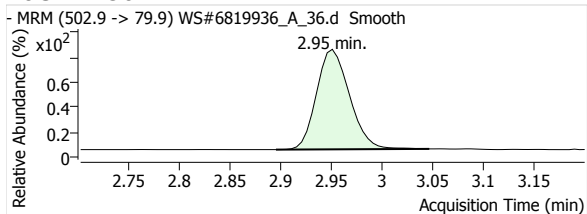


# Quantitative Analysis Report

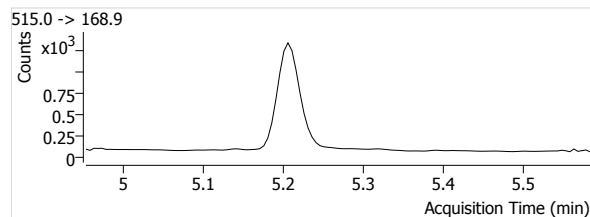
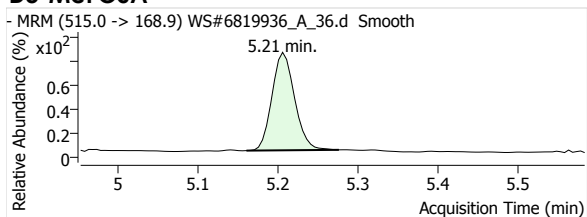
## 18O2-PFHxs



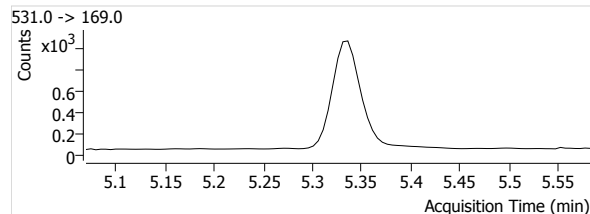
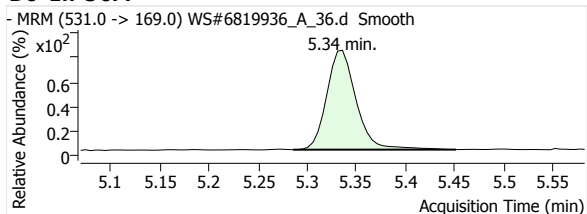
## 13C4-PFOS



## D3-MeFOXA



## D5-EtFOXA



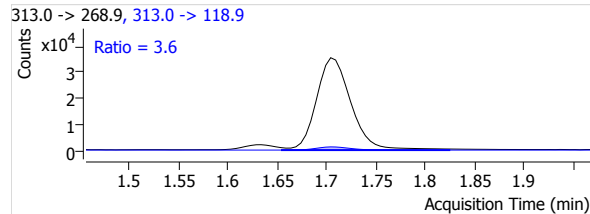
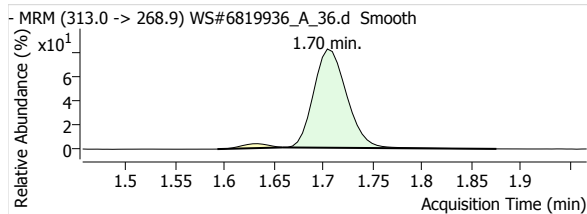
# Quantitative Analysis Report

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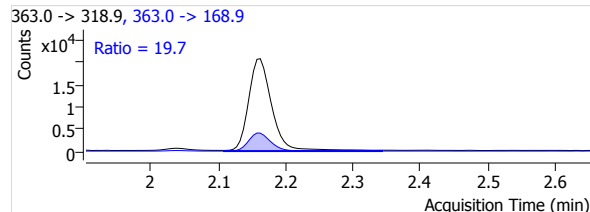
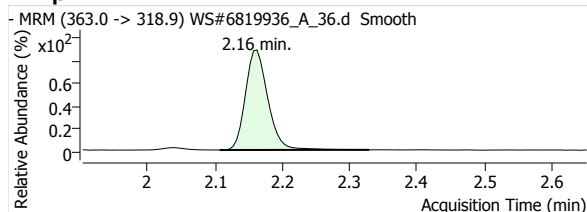
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-D2
<b>Acq. Date-Time</b>	2020/07/08 3:23:38 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>	MI PFOA		

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.0865	--	81064	1.70	749	9.6551	2913	1.70	246	3.6
PFHpA 1	µg/L	--	0.5356	--	47822	2.16	276	4.2947	9409	2.16	382	19.7
PFOA 1	µg/L	--	0.3542	--	26971	2.63	410	2.6976	6950	2.63	409	25.8
PFNA 1	µg/L	--	0.0508	--	2409	3.07	43	0.3353	547	3.07	14	22.7
PFDA 1	µg/L	--	0.0106	--	413	3.46	14	0.0793	76	3.47	24	18.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1382	--	2214	1.37	61	0.8909	968	1.37	45	43.7
PFHxS 1	µg/L	--	4.1589	--	49471	2.08	427	29.0662	25029	2.10	450	50.6
PFOS 1	µg/L	--	1.2566	--	11911	2.89	122	8.2773	6198	2.90	172	52.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	84.7653	--	8396	1.70	464	--	--	--	--	--
13C4-PFHpA	µg/L	--	87.5462	--	11135	2.16	739	--	--	--	--	--
13C4-PFOA	µg/L	--	84.4283	--	9998	2.63	955	--	--	--	--	--
13C5-PFNA	µg/L	--	77.1585	--	7185	3.07	177	--	--	--	--	--
13C2-PFDA	µg/L	--	72.8022	--	5209	3.47	298	--	--	--	--	--
13C2-PFUnA	µg/L	--	79.3144	--	6779	3.81	289	--	--	--	--	--
13C2-PFDoA	µg/L	--	76.5330	--	8013	4.11	767	--	--	--	--	--
13C2-PFTeDA	µg/L	--	63.7403	--	9758	4.61	755	--	--	--	--	--
13C3-PFBS	µg/L	--	73.8265	--	2485	1.36	98	--	--	--	--	--
18O2-PFHxS	µg/L	--	72.8908	--	1702	2.11	159	--	--	--	--	--
13C4-PFOS	µg/L	--	79.5028	--	1439	2.95	218	--	--	--	--	--
D3-MeFOSA	µg/L	--	53.4961	--	2410	5.21	39	--	--	--	--	--
D5-EtFOSA	µg/L	--	58.3810	--	2142	5.34	88	--	--	--	--	--

### PFHxA 1

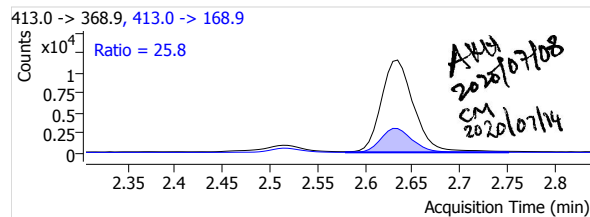
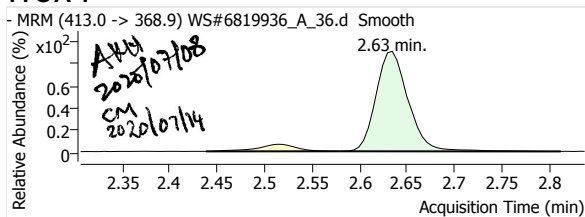


### PFHpA 1

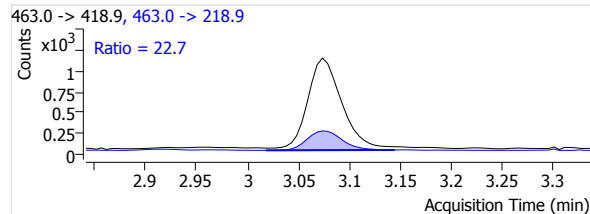
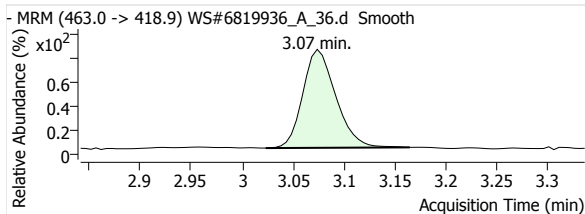


# Quantitative Analysis Report

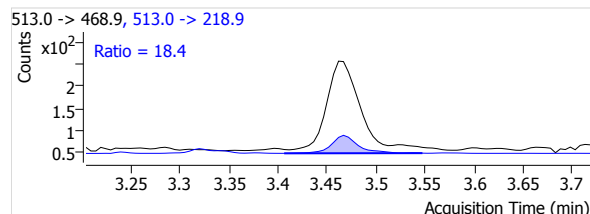
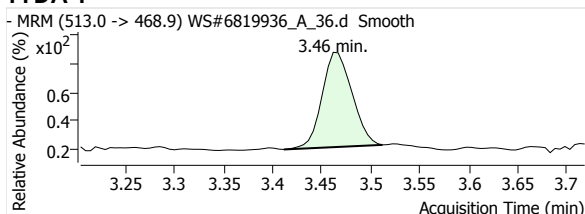
## PFOA 1



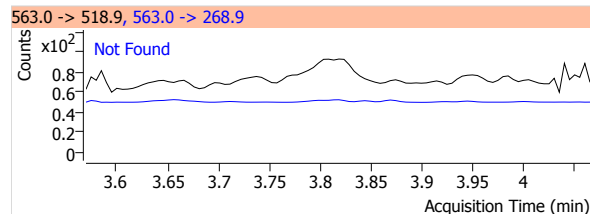
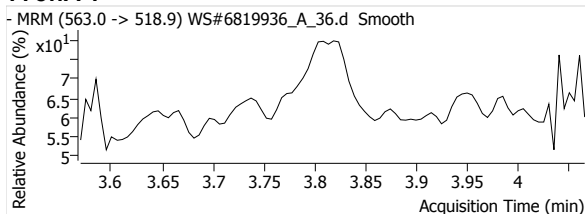
## PFNA 1



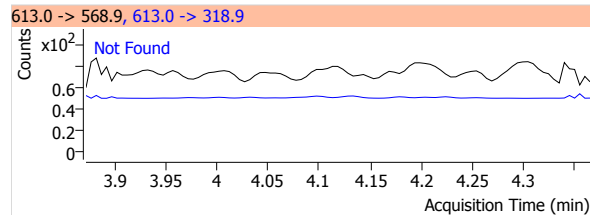
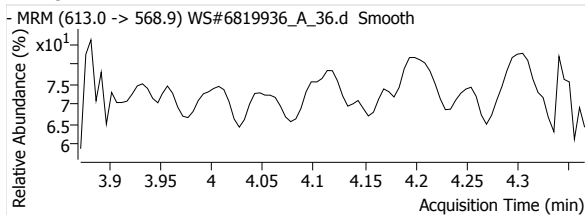
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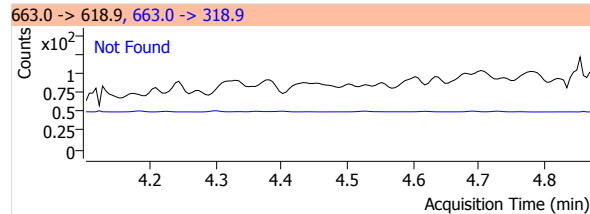
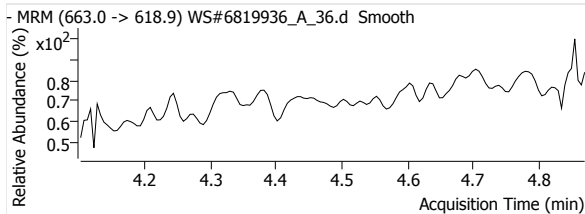
## PFUnA 1



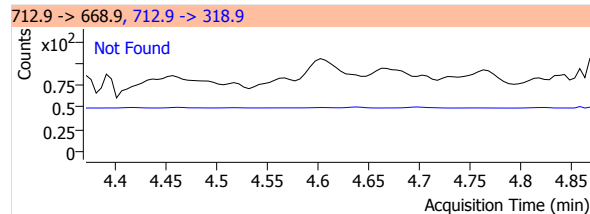
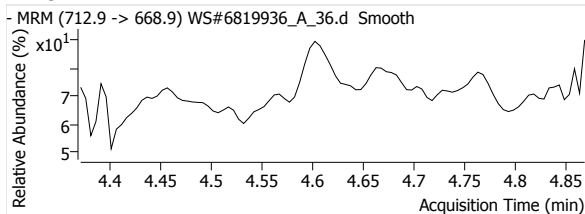
## PFDaA 1



## PFTrDA 1

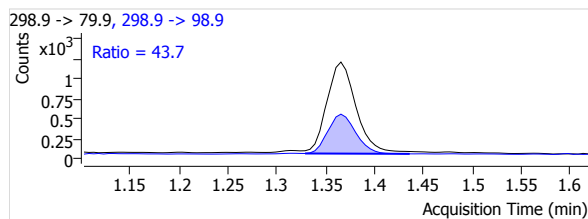
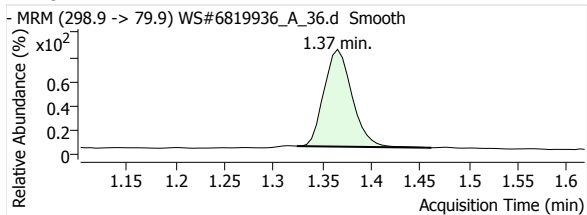


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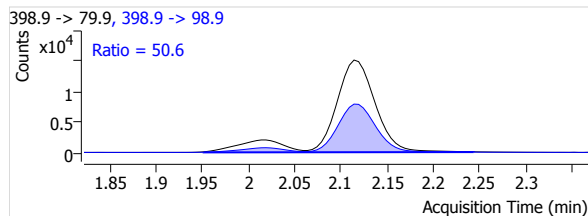
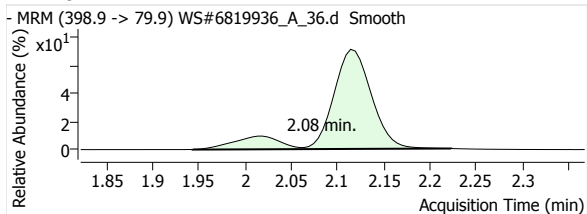


# Quantitative Analysis Report

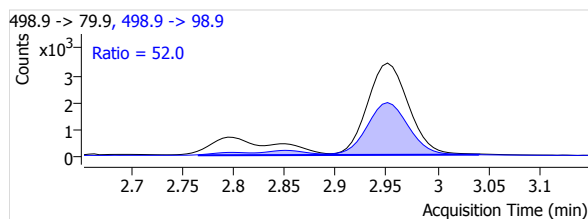
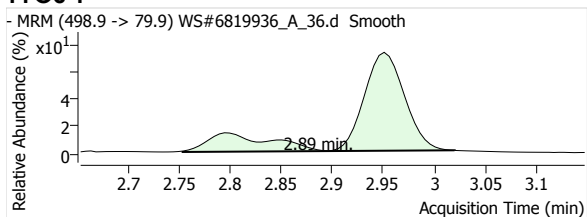
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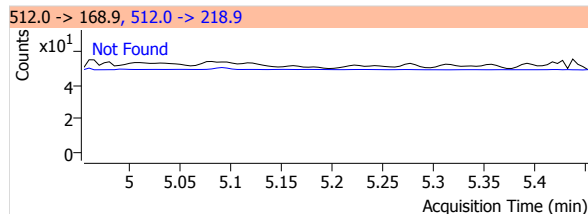
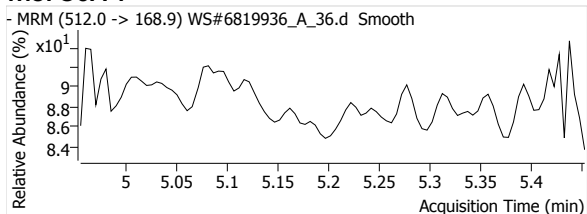
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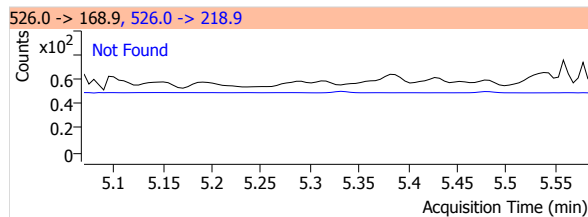
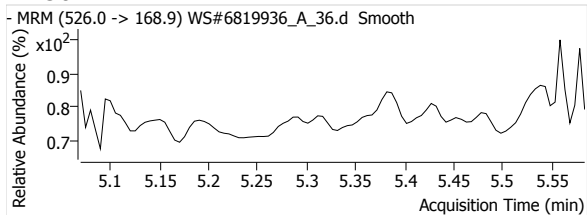
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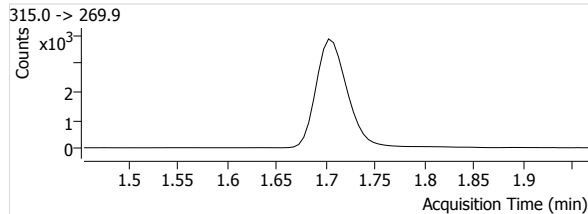
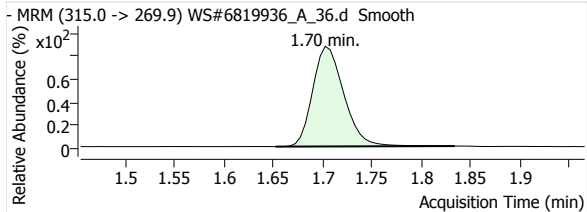
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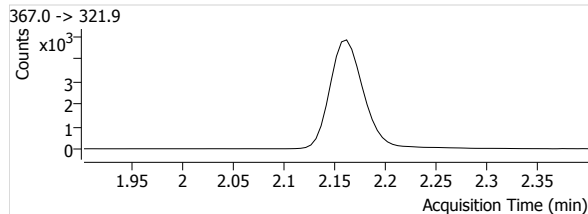
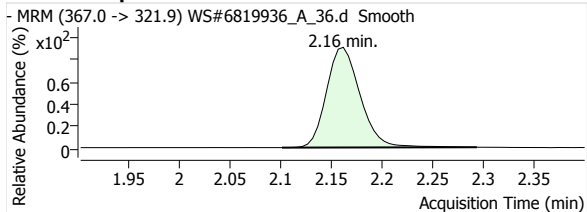
## eFOSA 1



## 13C2-PFHxA

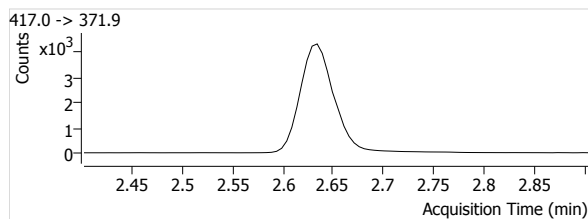
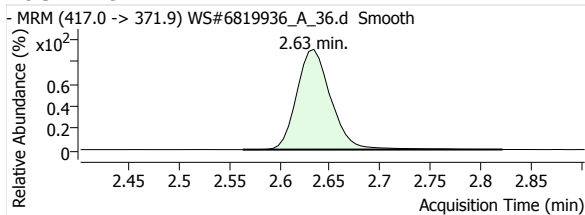


## 13C4-PFHpA

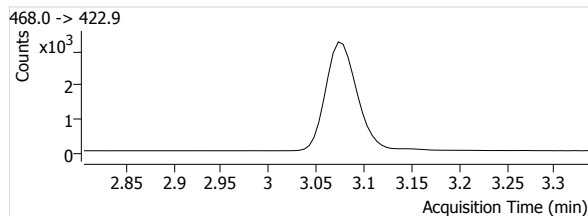
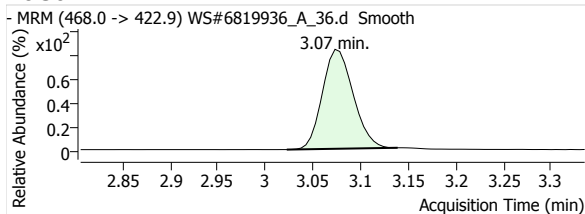


# Quantitative Analysis Report

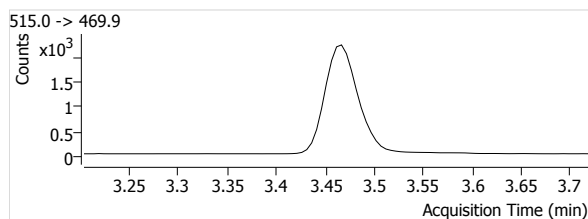
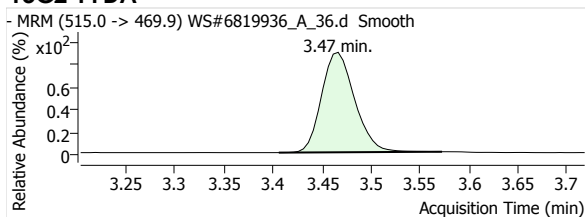
## 13C4-PFOA



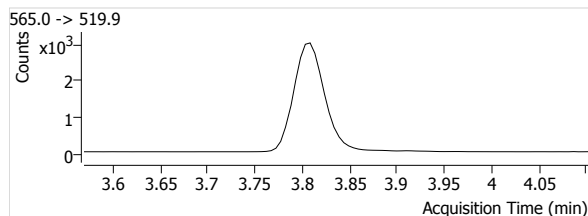
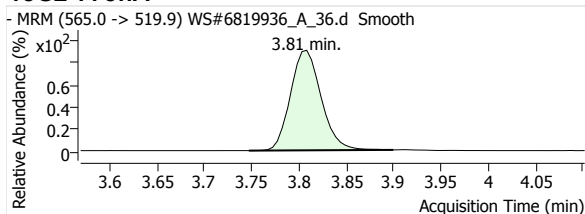
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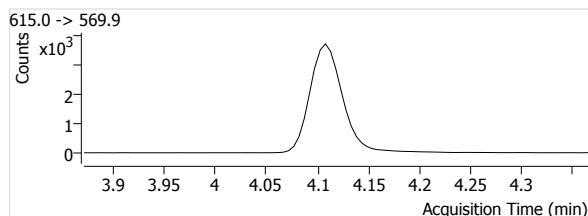
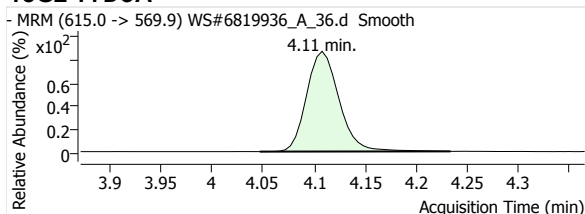
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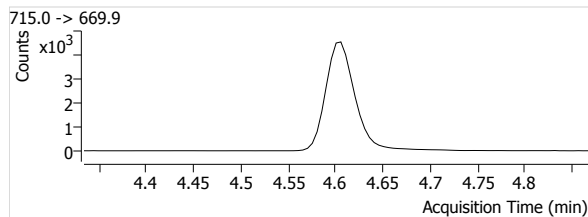
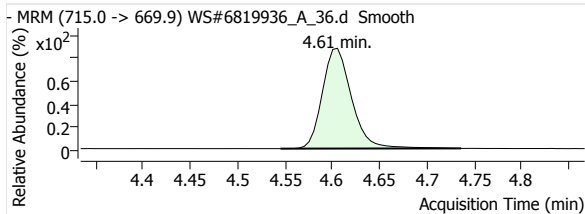
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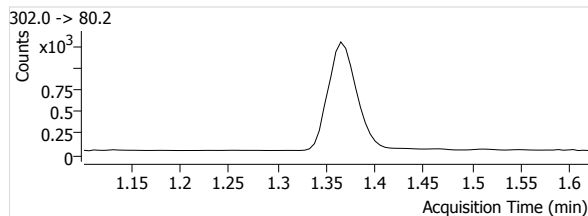
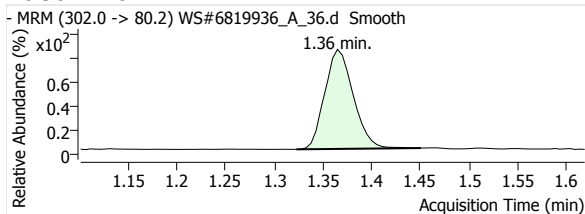
## 13C2-PFDoA



## 13C2-PFTeDA

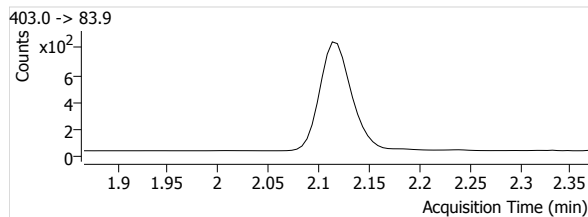
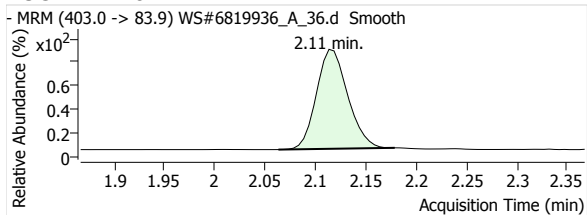


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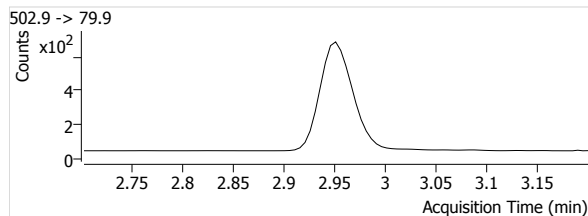
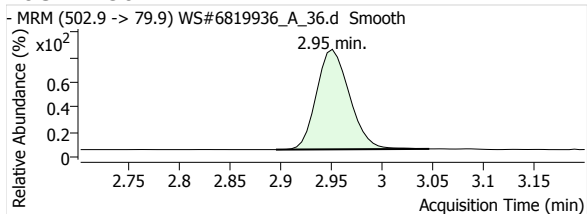


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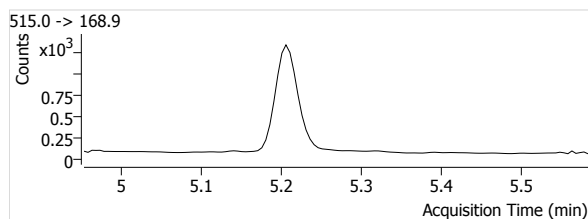
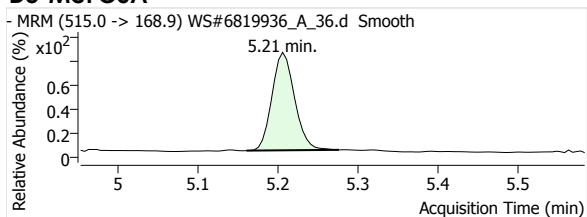
## 18O2-PFHxs



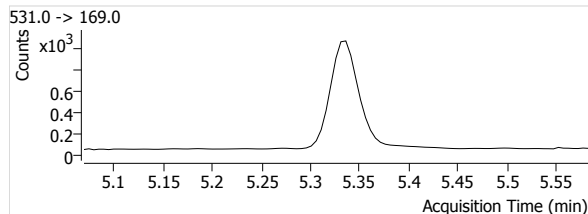
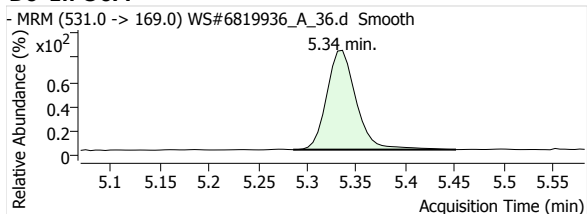
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

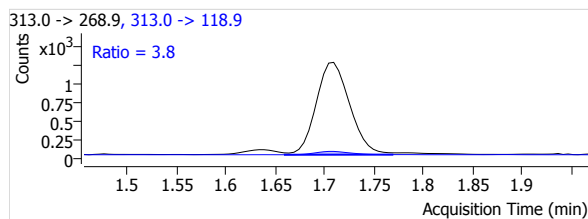
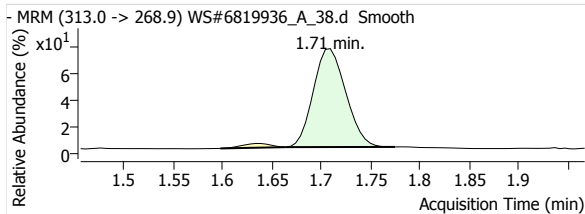
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 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 3:37:31 PM  
 Comment Reported PFHxS, PFOS  
 User Defined

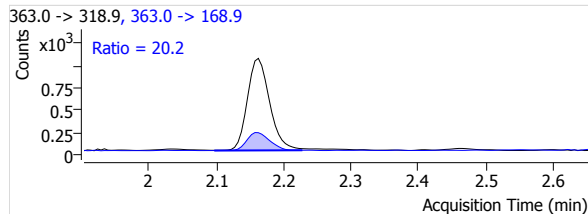
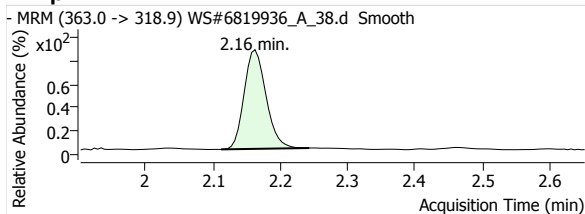
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 Instrument LCMS04  
 Position P2-D3  
 Dil. 1.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.8347	--	2785	1.71	78	0.2945	106	1.70	33	3.8
PFHpA 1	µg/L	--	1.3169	--	2315	2.16	44	0.1831	468	2.16	29	20.2
PFOA 1	µg/L	--	1.4313	--	2196	2.63	41	0.1964	548	2.63	91	25.0
PFNA 1	µg/L	--	0.3061	--	131	3.07	2	0.0156	27	3.07	7	20.6
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.2460	--	52	1.37	14	0.0179	23	1.37	5	44.2
PFHxS 1	µg/L	--	6.8988	--	2010	2.08	273	0.9876	1064	2.10	179	53.0
PFOS 1	µg/L	--	17.9279	--	4147	2.89	87	2.4465	2150	2.90	117	51.9
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	95.4770	--	9457	1.71	598	--	--	--	--	--
13C4-PFHpA	µg/L	--	99.3867	--	12641	2.16	1102	--	--	--	--	--
13C4-PFOA	µg/L	--	94.4266	--	11182	2.63	1186	--	--	--	--	--
13C5-PFNA	µg/L	--	90.4210	--	8420	3.07	722	--	--	--	--	--
13C2-PFDA	µg/L	--	83.7876	--	5995	3.47	406	--	--	--	--	--
13C2-PFUnA	µg/L	--	93.0502	--	7953	3.80	252	--	--	--	--	--
13C2-PFDoA	µg/L	--	92.1968	--	9653	4.11	584	--	--	--	--	--
13C2-PFTeDA	µg/L	--	81.3182	--	12449	4.60	692	--	--	--	--	--
13C3-PFBS	µg/L	--	86.3933	--	2908	1.36	207	--	--	--	--	--
18O2-PFHxS	µg/L	--	87.1520	--	2035	2.11	318	--	--	--	--	--
13C4-PFOS	µg/L	--	93.6464	--	1695	2.95	153	--	--	--	--	--
D3-MeFOSA	µg/L	--	65.7936	--	2964	5.21	76	--	--	--	--	--
D5-EtFOSA	µg/L	--	69.9373	--	2566	5.34	153	--	--	--	--	--

### PFHxA 1



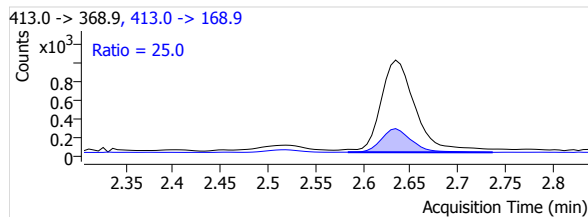
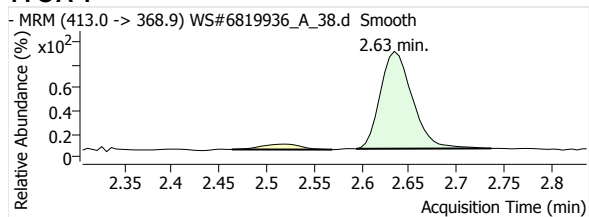
### PFHpA 1



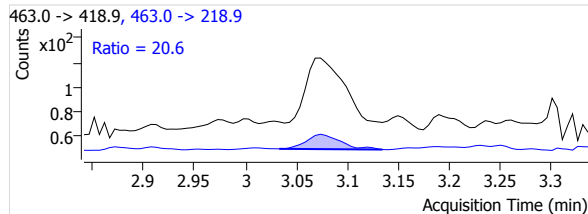
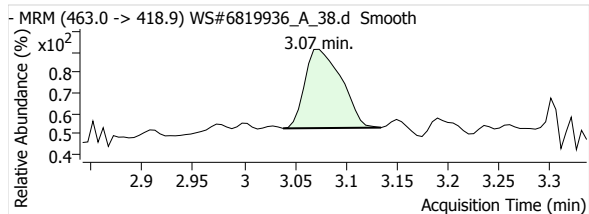


# Quantitative Analysis Report

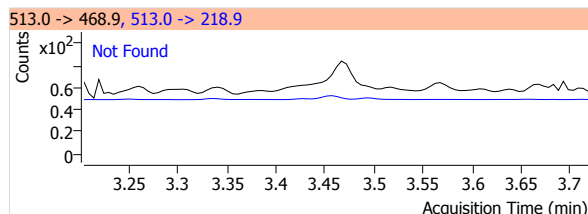
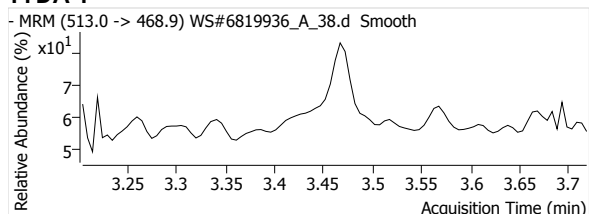
## PFOA 1



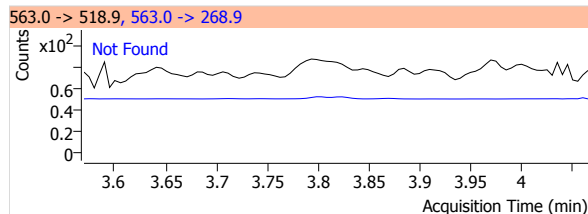
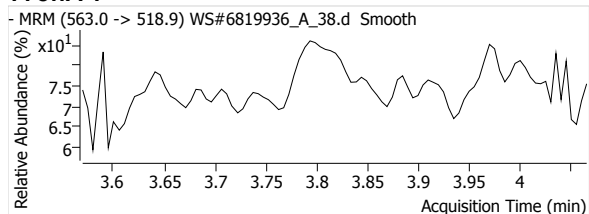
## PFNA 1



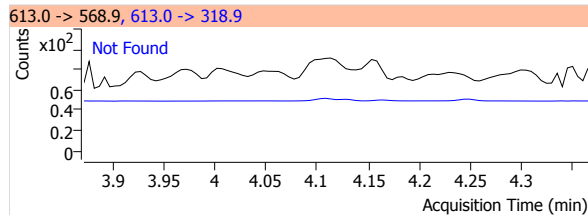
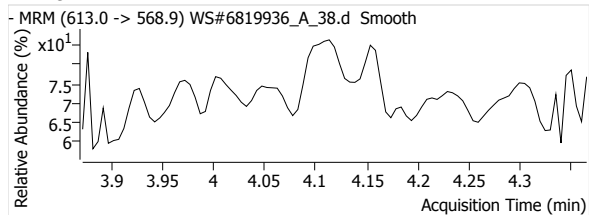
## PFDA 1



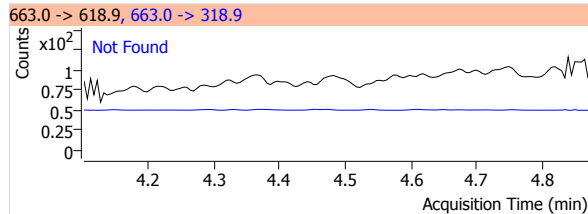
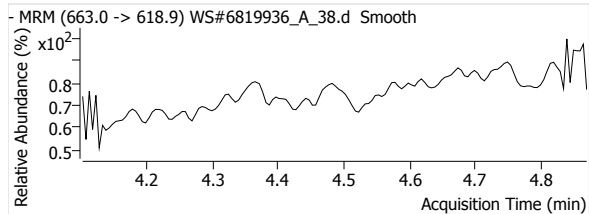
## PFUnA 1



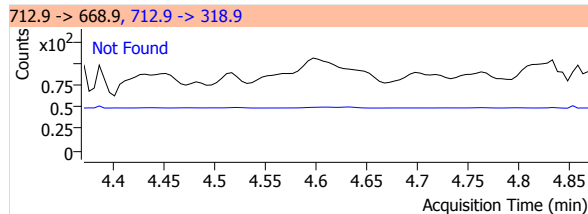
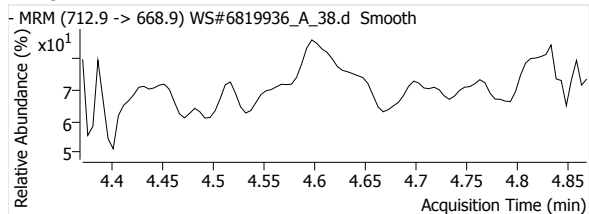
## PFDaA 1



## PFTrDA 1

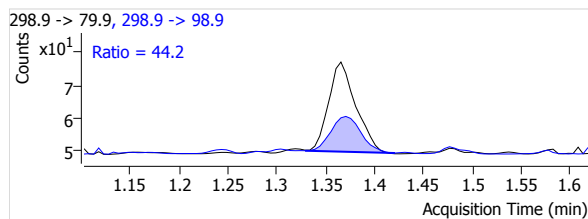
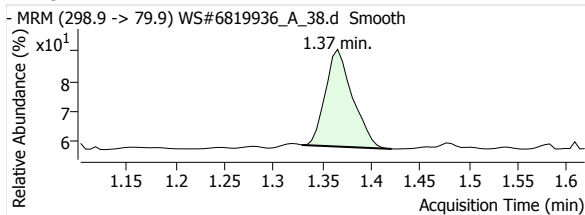


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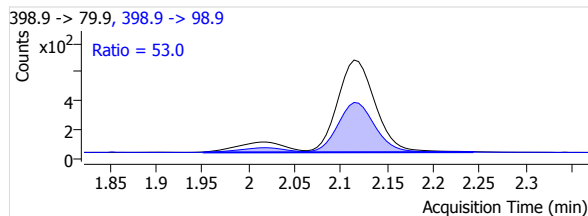
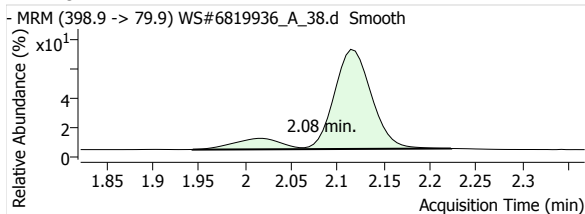


# Quantitative Analysis Report

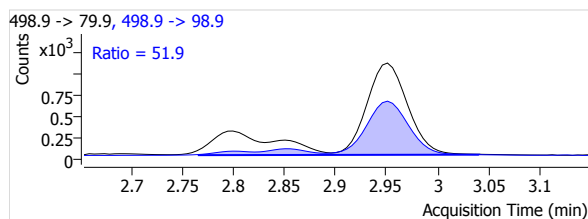
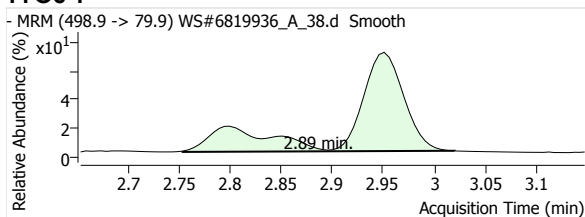
## PFBS 1



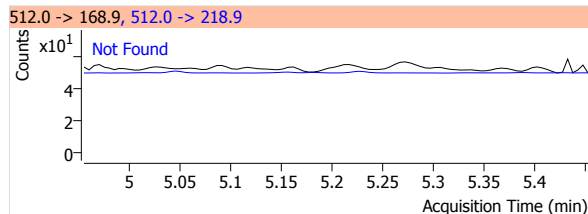
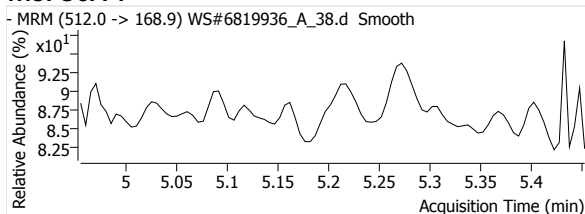
## PFHxS 1



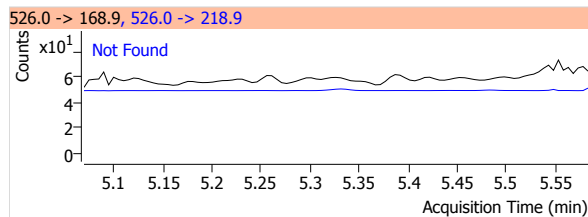
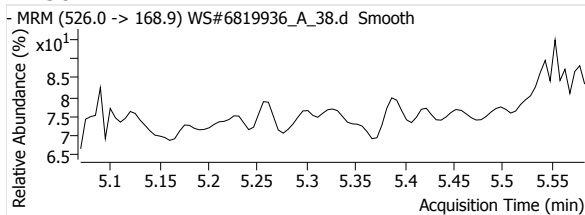
## PFOS 1



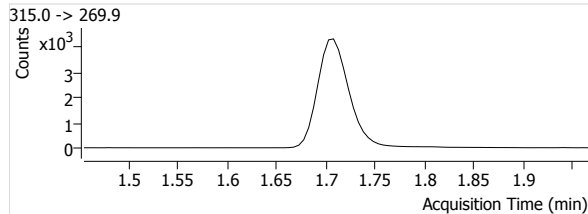
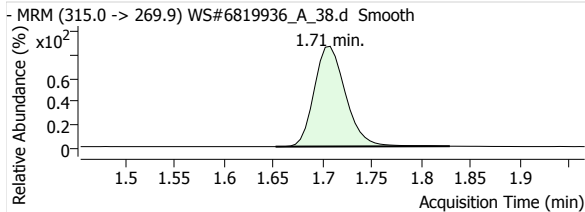
## MeFOSA 1



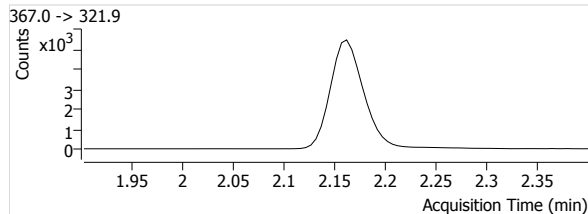
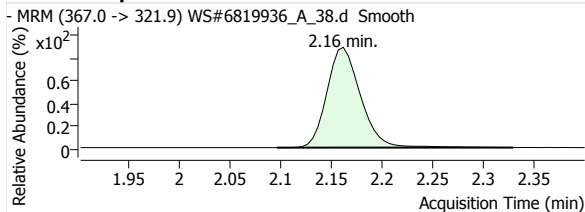
## eFOSA 1



## 13C2-PFHxA

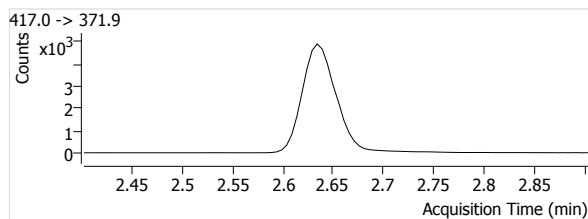
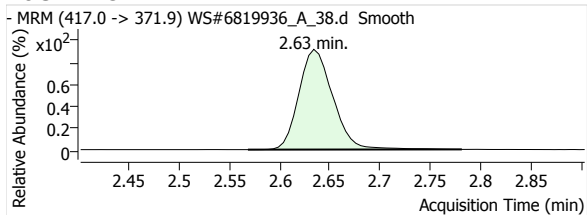


## 13C4-PFHpA

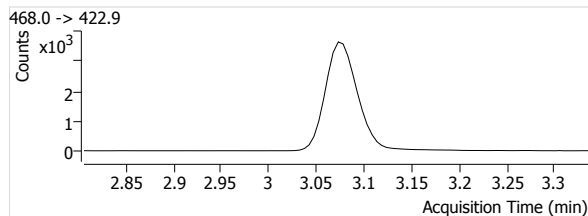
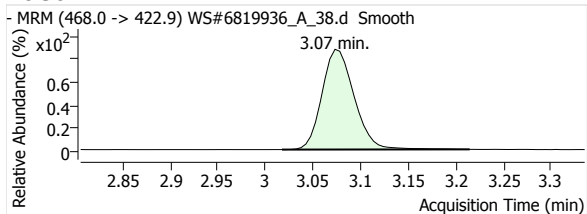


# Quantitative Analysis Report

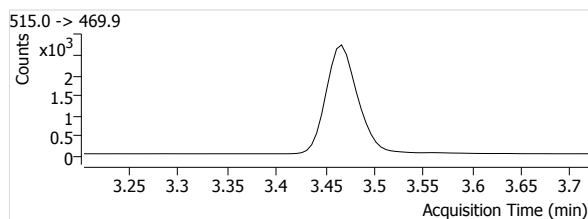
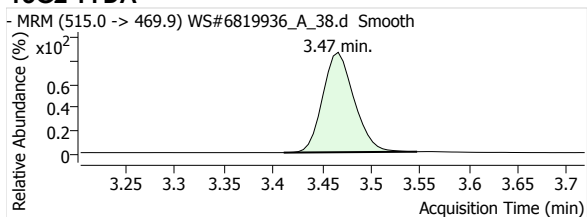
## 13C4-PFOA



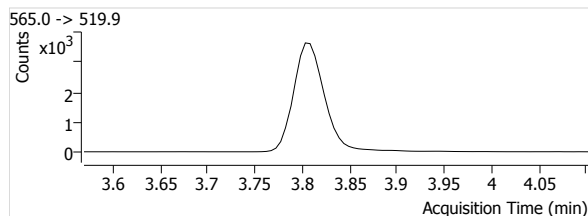
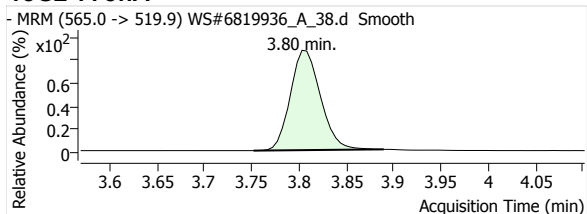
## 13C5-PFNA



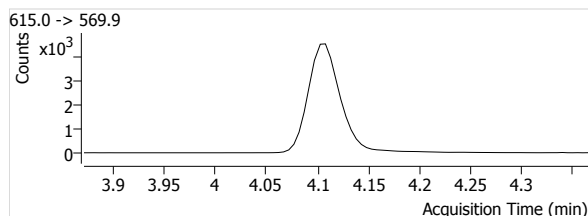
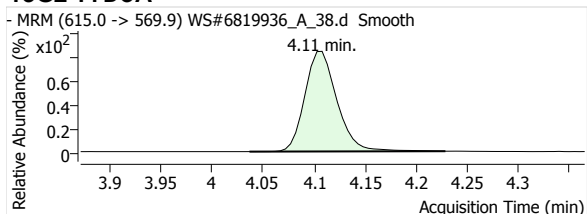
## 13C2-PFDA



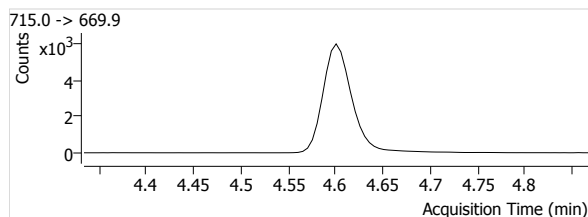
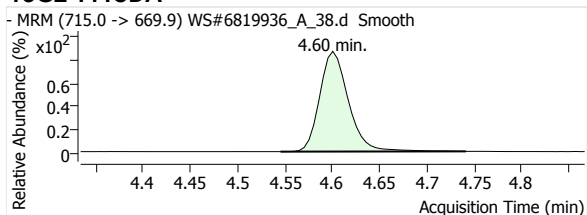
## 13C2-PFUnA



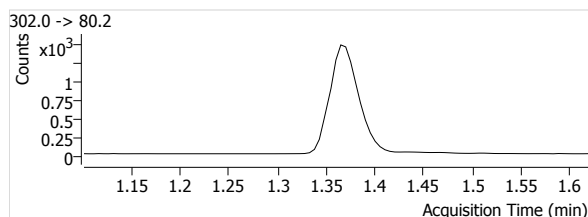
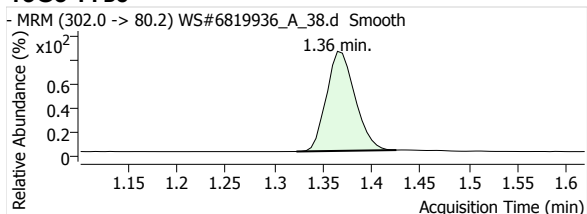
## 13C2-PFDoA



## 13C2-PFTeDA

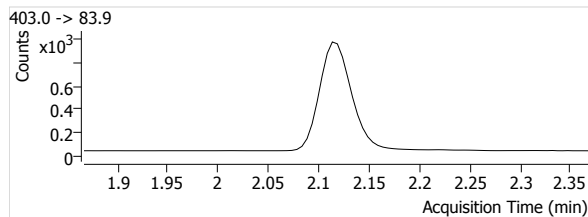
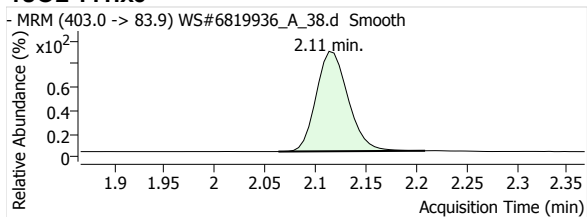


## 13C3-PFBS

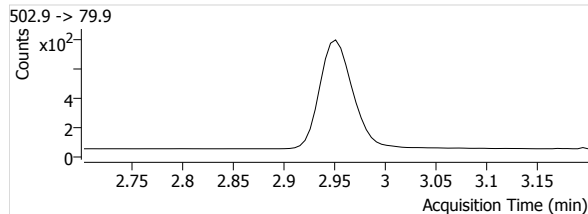
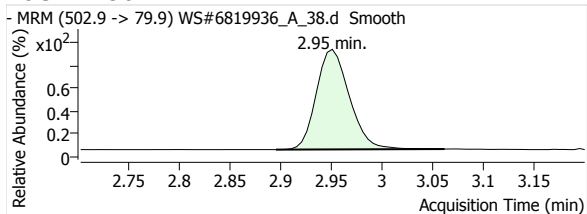


# Quantitative Analysis Report

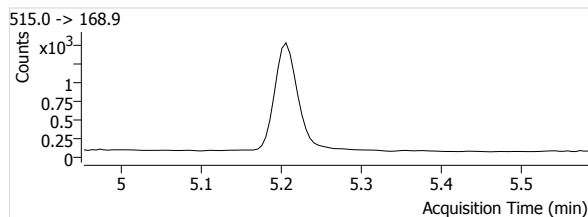
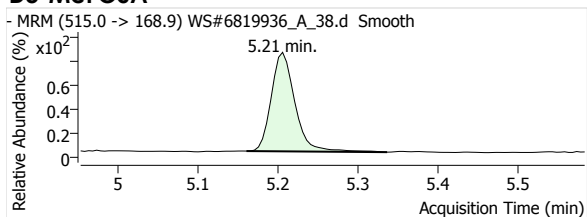
## 18O2-PFHxS



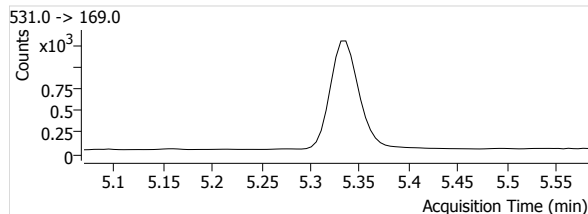
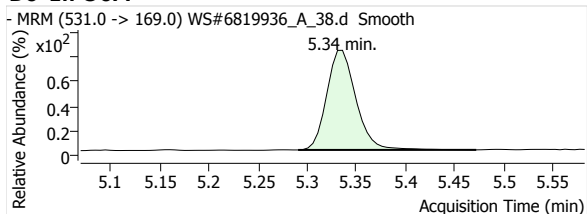
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

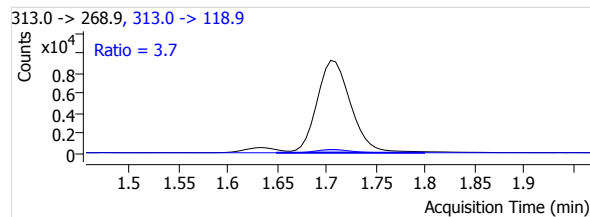
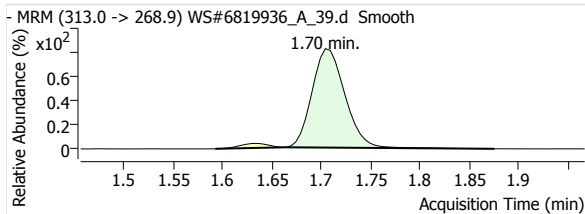
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bin

Sample Name 6819936:NAH706-01:5x  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 3:44:27 PM  
Comment -  
User Defined MI PFOA

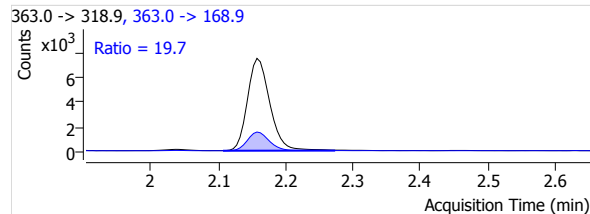
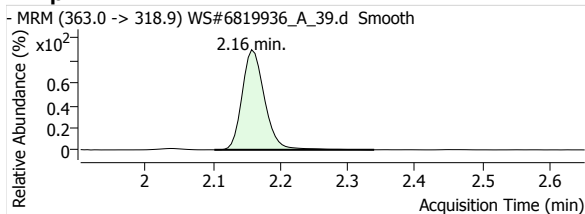
Data File WS#6819936\_A\_39.d  
Instrument LCMS04  
Position P2-D4  
Dil. 0.1

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.3372	--	21065	1.70	599	2.4406	775	1.70	91	3.7
PFHpA 1	µg/L	--	0.9023	--	17394	2.16	491	1.4822	3435	2.16	215	19.7
PFOA 1	µg/L	--	0.9877	--	16162	2.63	223	1.5532	4500	2.63	274	27.8
PFNA 1	µg/L	--	0.0978	--	932	3.07	16	0.1164	199	3.07	20	21.4
PFDA 1	µg/L	--	0.0247	--	138	3.46	4	0.0241	17	3.47	10	12.3
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1090	--	382	1.37	33	0.1333	165	1.36	22	43.2
PFHxS 1	µg/L	--	5.2304	--	14780	2.08	393	7.6027	7503	2.10	381	50.8
PFOS 1	µg/L	--	12.5348	--	26419	2.89	83	17.2221	13341	2.90	127	50.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	87.1378	--	8631	1.70	295	--	--	--	--	--
13C4-PFHpA	µg/L	--	92.2635	--	11735	2.16	1060	--	--	--	--	--
13C4-PFOA	µg/L	--	87.8737	--	10406	2.63	1147	--	--	--	--	--
13C5-PFNA	µg/L	--	86.0073	--	8009	3.07	526	--	--	--	--	--
13C2-PFDA	µg/L	--	79.8882	--	5716	3.46	408	--	--	--	--	--
13C2-PFUnA	µg/L	--	92.8513	--	7936	3.80	565	--	--	--	--	--
13C2-PFDaA	µg/L	--	89.2646	--	9346	4.10	533	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.2012	--	12278	4.60	1540	--	--	--	--	--
13C3-PFBS	µg/L	--	85.1456	--	2866	1.36	377	--	--	--	--	--
18O2-PFHxS	µg/L	--	83.2548	--	1944	2.11	300	--	--	--	--	--
13C4-PFOS	µg/L	--	84.7514	--	1534	2.95	698	--	--	--	--	--
D3-MeFOSA	µg/L	--	50.9878	--	2297	5.20	37	--	--	--	--	--
D5-EtFOSA	µg/L	--	55.9826	--	2054	5.33	80	--	--	--	--	--

## PFHxA 1

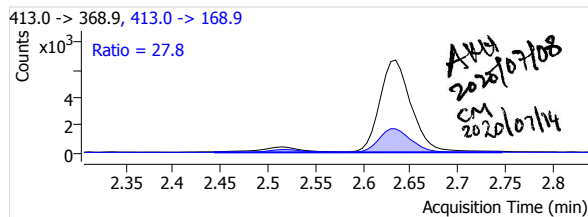
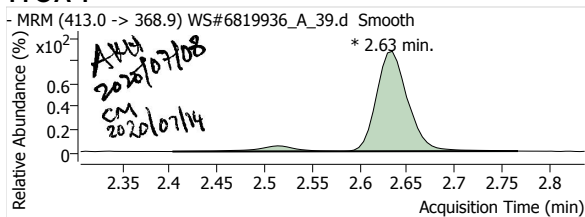


## PFHpA 1

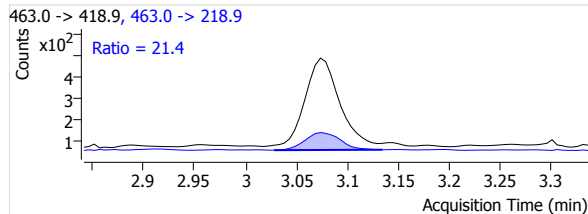
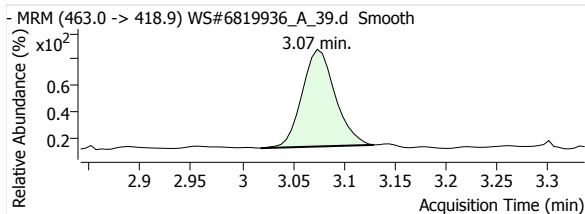


# Quantitative Analysis Report

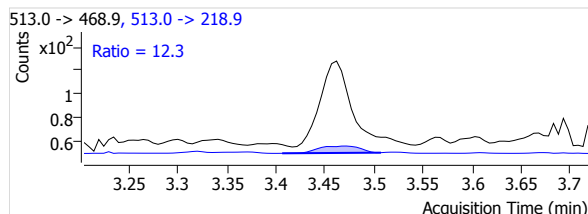
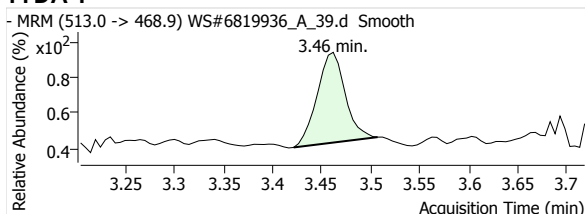
## PFOA 1



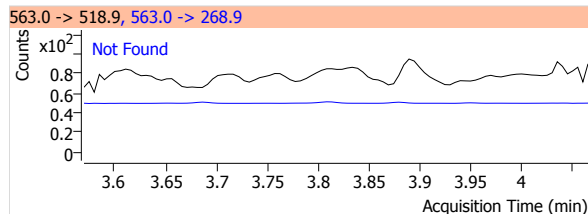
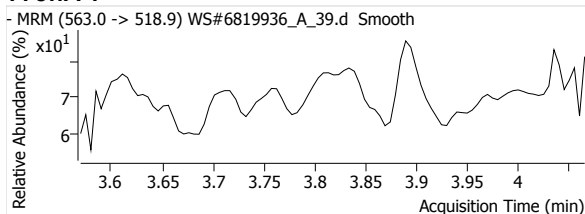
## PFNA 1



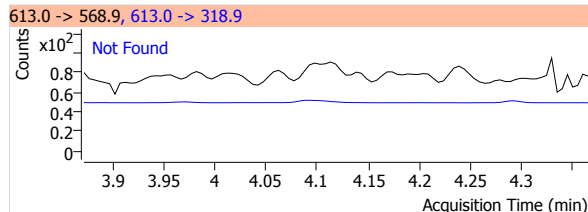
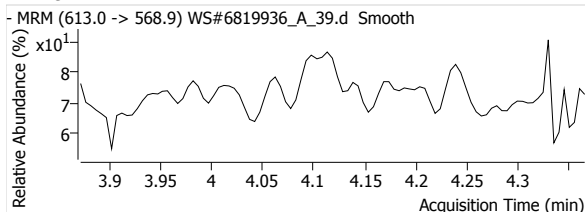
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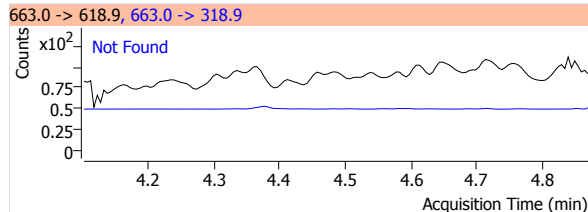
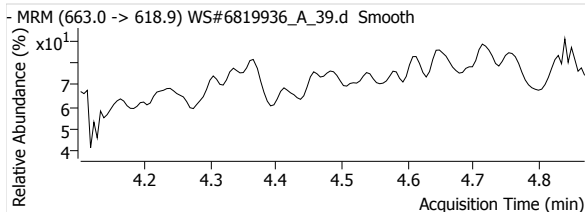
## PFUnA 1



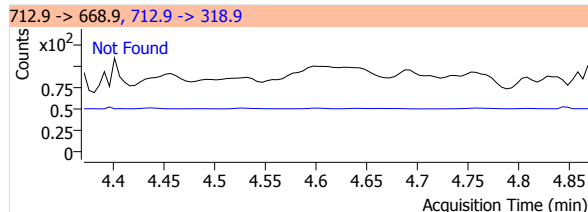
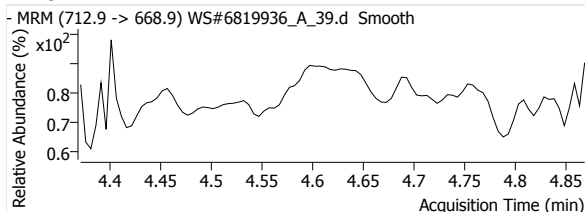
## PFDoA 1



## PFTrDA 1

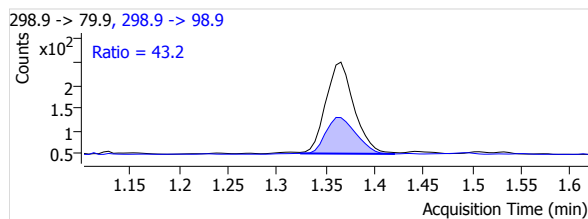
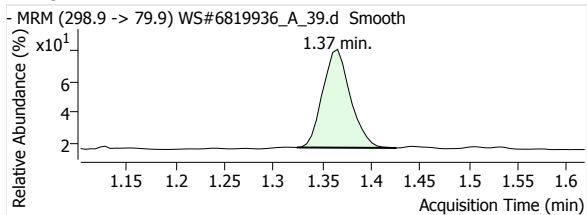


## PFTeDA 1

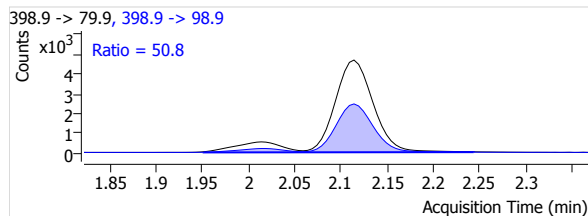
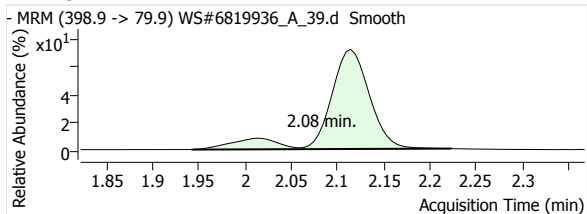


# Quantitative Analysis Report

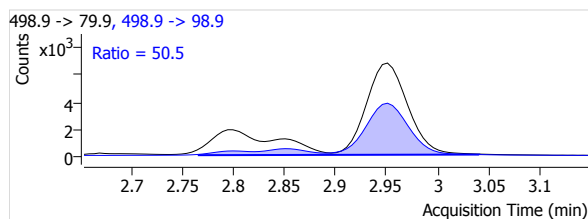
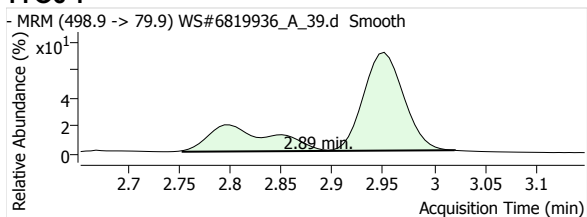
## PFBS 1



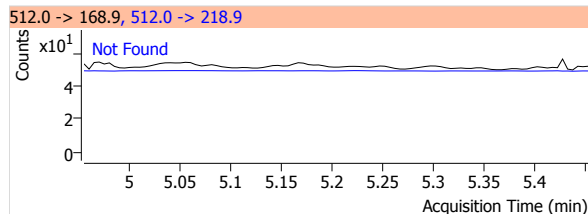
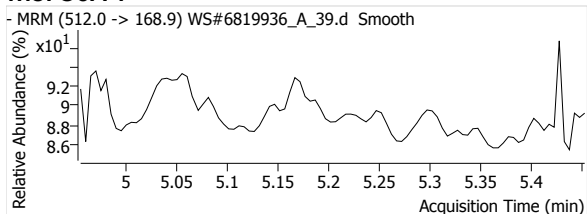
## PFHxS 1



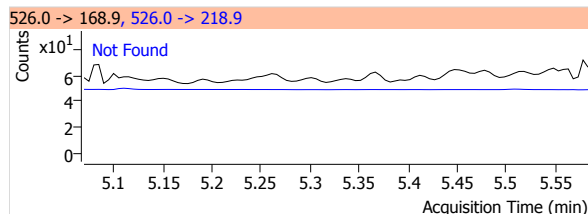
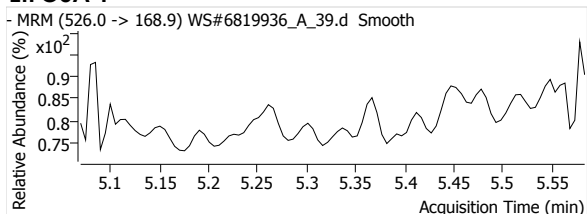
## PFOS 1



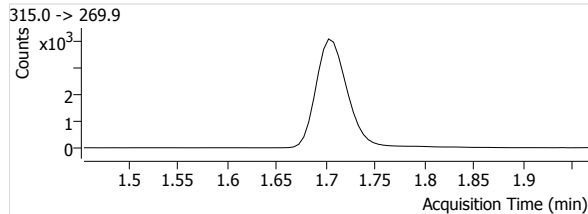
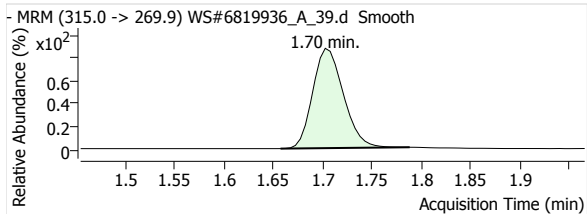
## MeFOSA 1



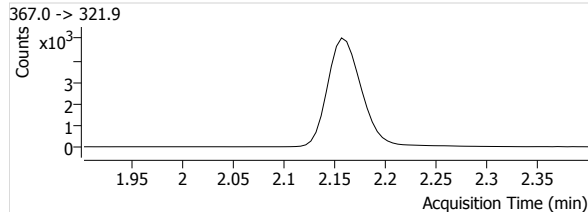
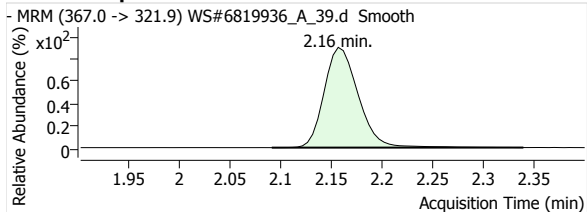
## eFOSA 1



## 13C2-PFHxA

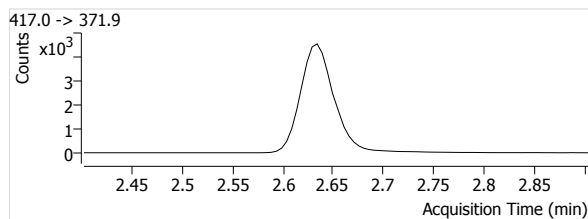
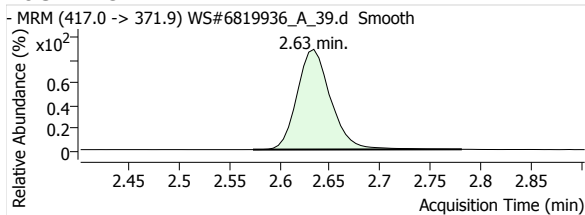


## 13C4-PFHpA

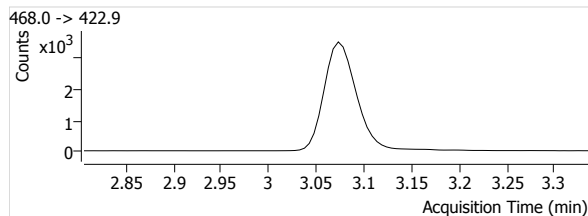
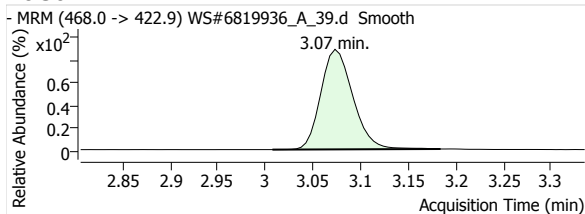


# Quantitative Analysis Report

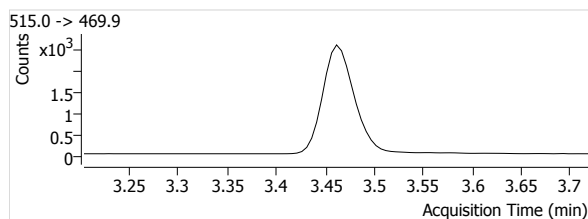
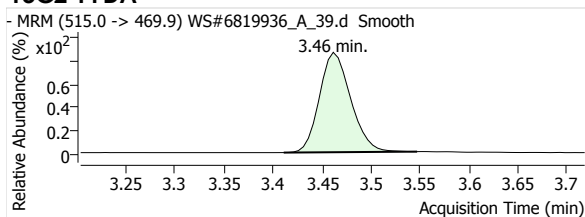
## 13C4-PFOA



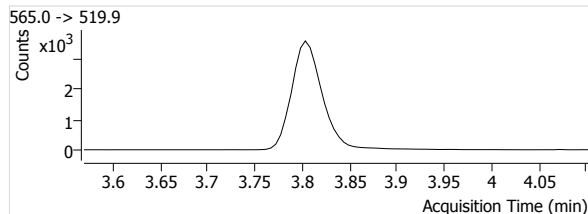
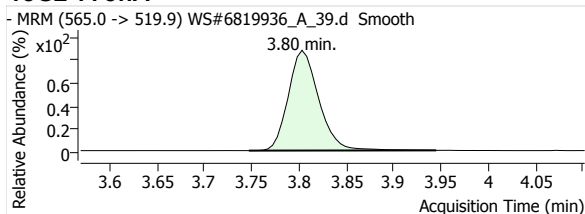
## 13C5-PFNA



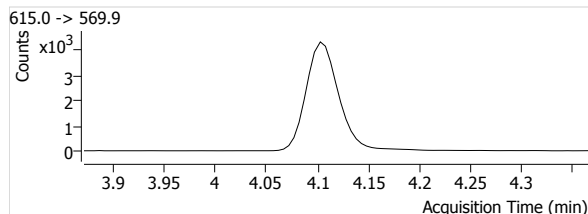
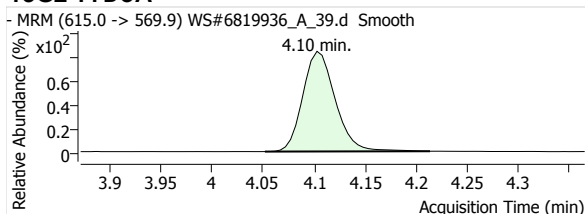
## 13C2-PFDA



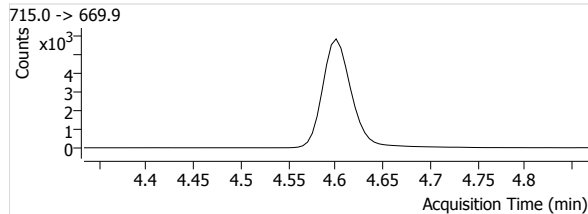
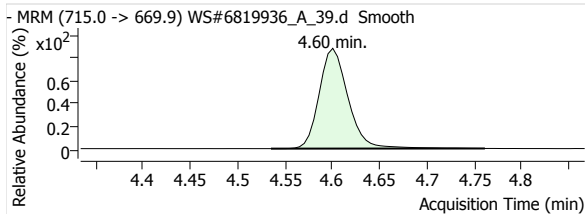
## 13C2-PFUnA



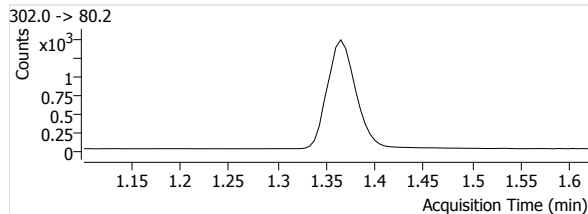
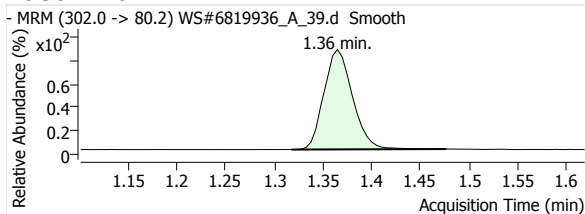
## 13C2-PFDoA



## 13C2-PFTeDA



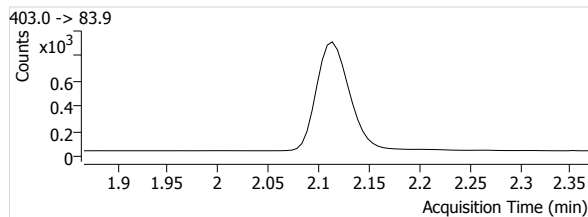
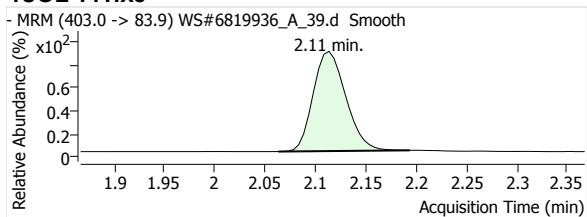
## 13C3-PFBS



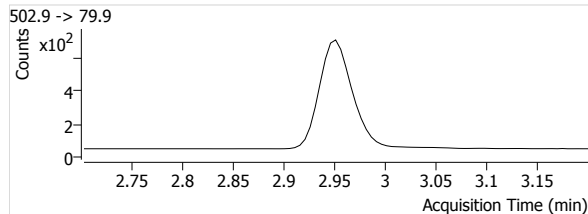
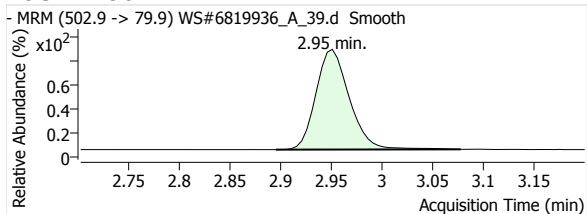


# Quantitative Analysis Report

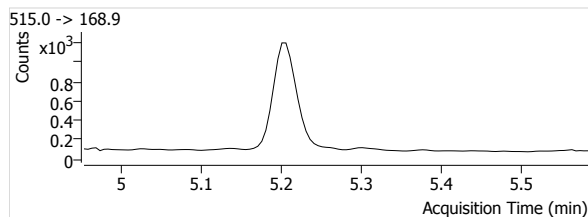
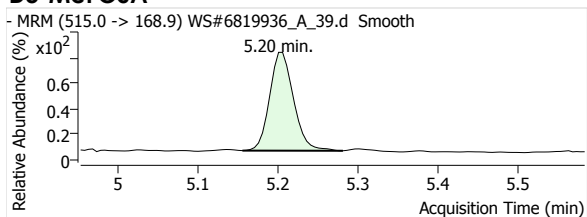
## 18O2-PFHxS



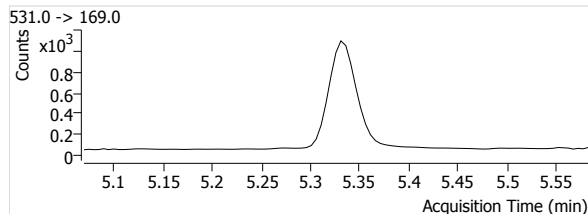
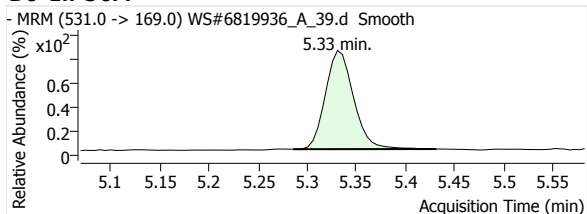
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

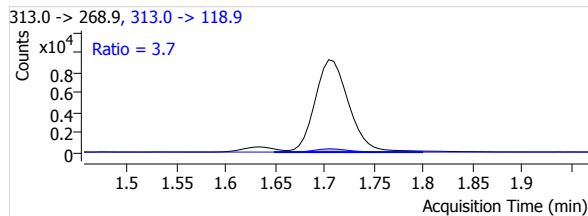
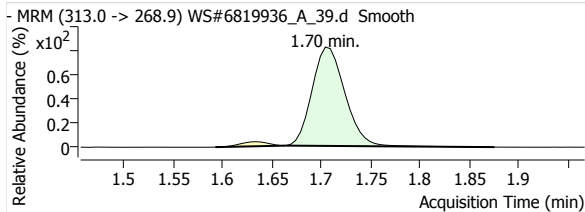
**Batch Data Path File Name** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A.batch.bin

**Sample Name** 6819936:NAH706-01:5x  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 3:44:27 PM  
**Comment** -  
**User Defined** MI PFOA

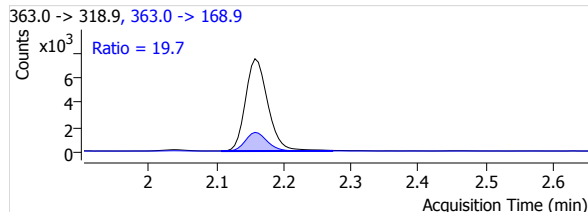
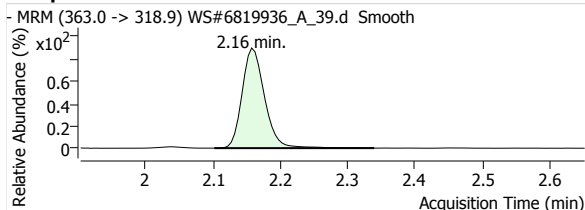
**Data File** WS#6819936\_A\_39.d  
**Instrument** LCMS04  
**Position** P2-D4  
**Dil.** 0.1

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.3372	--	21065	1.70	599	2.4406	775	1.70	91	3.7
PFHpA 1	µg/L	--	0.9023	--	17394	2.16	491	1.4822	3435	2.16	215	19.7
PFOA 1	µg/L	--	0.9266	--	15141	2.63	223	1.4550	3938	2.63	152	26.0
PFNA 1	µg/L	--	0.0978	--	932	3.07	16	0.1164	199	3.07	20	21.4
PFDA 1	µg/L	--	0.0247	--	138	3.46	4	0.0241	17	3.47	10	12.3
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1090	--	382	1.37	33	0.1333	165	1.36	22	43.2
PFHxS 1	µg/L	--	5.2304	--	14780	2.08	393	7.6027	7503	2.10	381	50.8
PFOS 1	µg/L	--	12.5348	--	26419	2.89	83	17.2221	13341	2.90	127	50.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	87.1378	--	8631	1.70	295	--	--	--	--	--
13C4-PFHpA	µg/L	--	92.2635	--	11735	2.16	1060	--	--	--	--	--
13C4-PFOA	µg/L	--	87.8737	--	10406	2.63	1147	--	--	--	--	--
13C5-PFNA	µg/L	--	86.0073	--	8009	3.07	526	--	--	--	--	--
13C2-PFDA	µg/L	--	79.8882	--	5716	3.46	408	--	--	--	--	--
13C2-PFUnA	µg/L	--	92.8513	--	7936	3.80	565	--	--	--	--	--
13C2-PFDaA	µg/L	--	89.2646	--	9346	4.10	533	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.2012	--	12278	4.60	1540	--	--	--	--	--
13C3-PFBS	µg/L	--	85.1456	--	2866	1.36	377	--	--	--	--	--
18O2-PFHxS	µg/L	--	83.2548	--	1944	2.11	300	--	--	--	--	--
13C4-PFOS	µg/L	--	84.7514	--	1534	2.95	698	--	--	--	--	--
D3-MeFOSA	µg/L	--	50.9878	--	2297	5.20	37	--	--	--	--	--
D5-EtFOSA	µg/L	--	55.9826	--	2054	5.33	80	--	--	--	--	--

### PFHxA 1

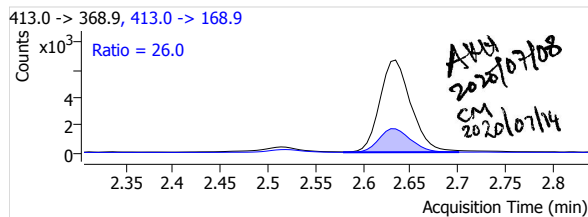
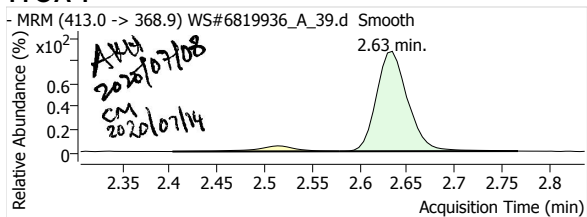


### PFHpA 1

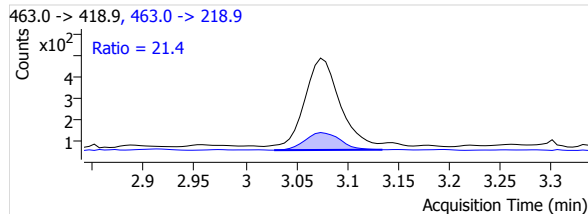
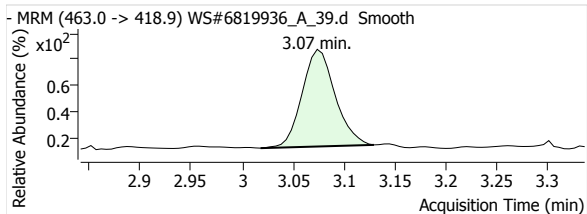


# Quantitative Analysis Report

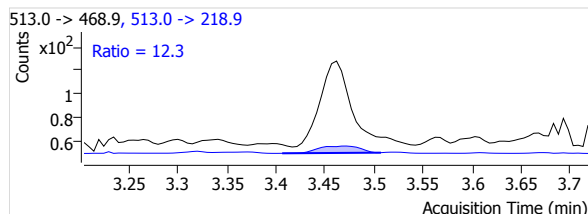
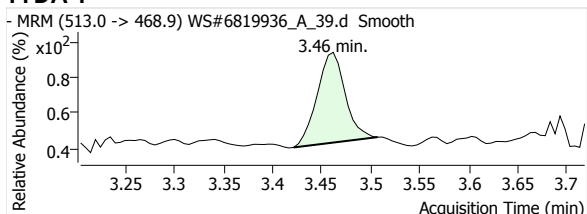
## PFOA 1



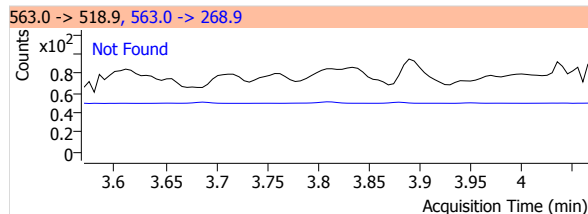
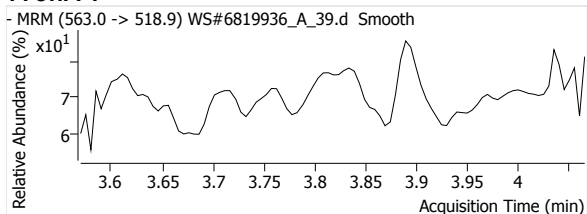
## PFNA 1



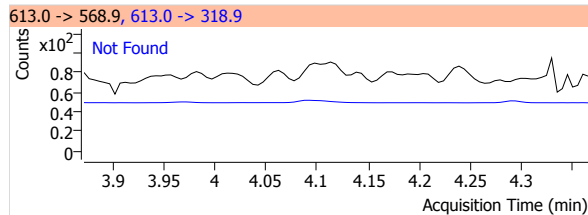
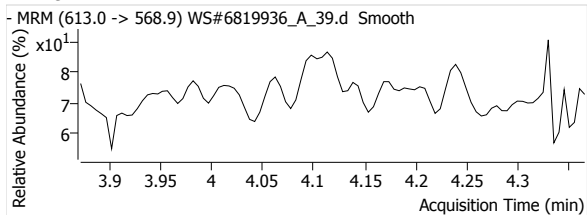
## PFDA 1



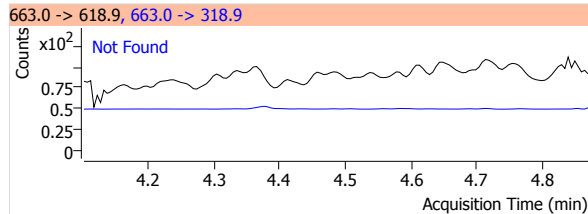
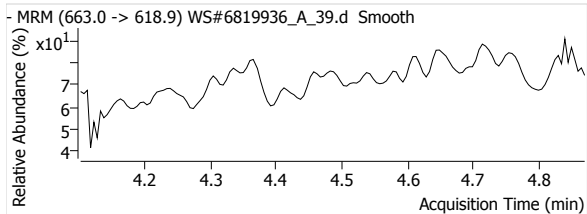
## PFUnA 1



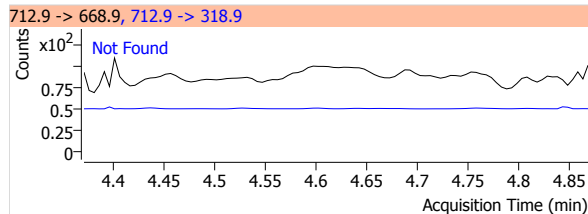
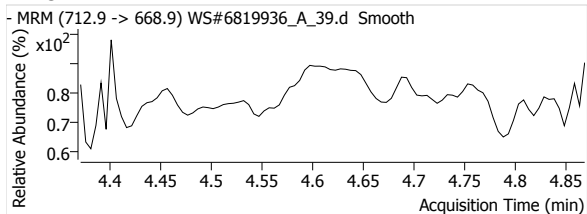
## PFDoA 1



## PFTrDA 1

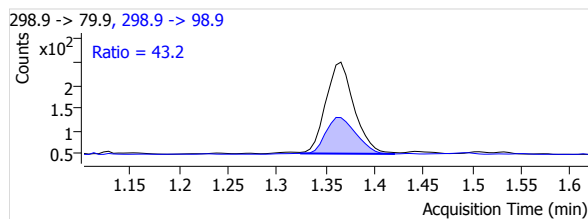
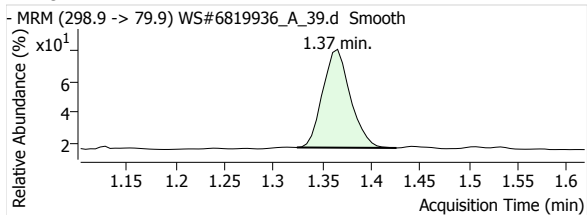


## PFTeDA 1

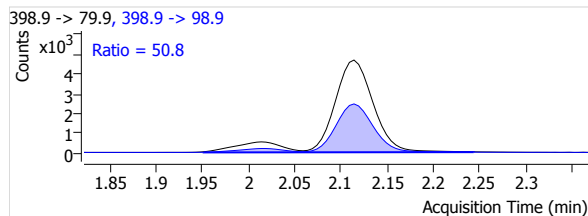
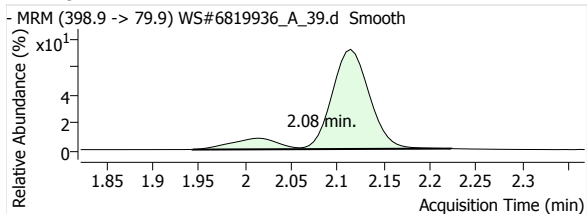


# Quantitative Analysis Report

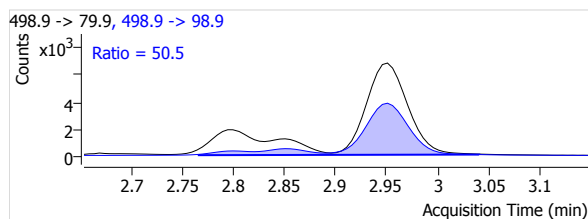
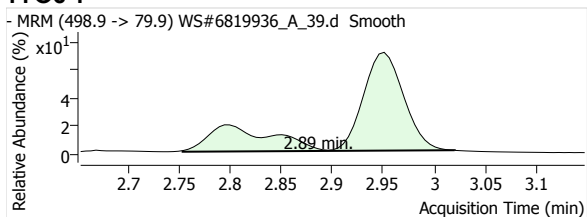
## PFBS 1



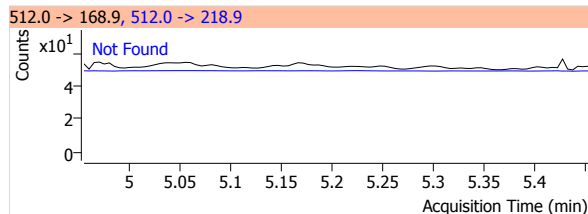
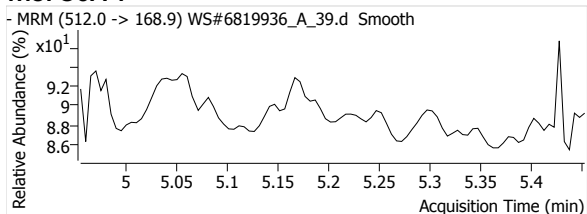
## PFHxS 1



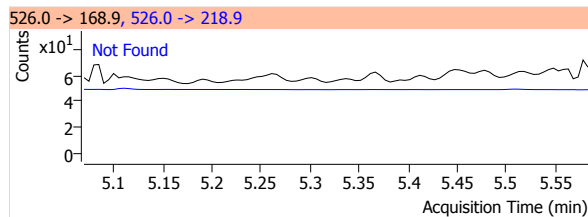
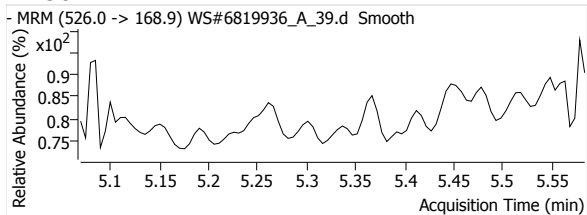
## PFOS 1



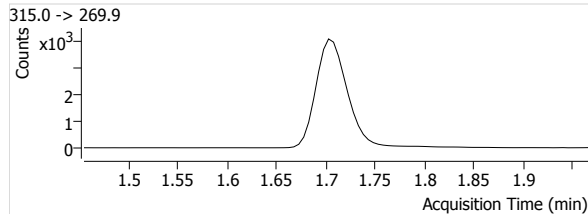
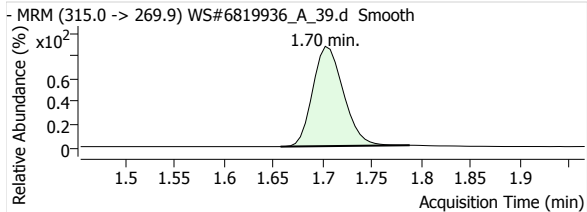
## MeFOSA 1



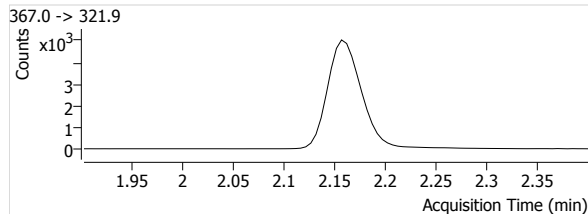
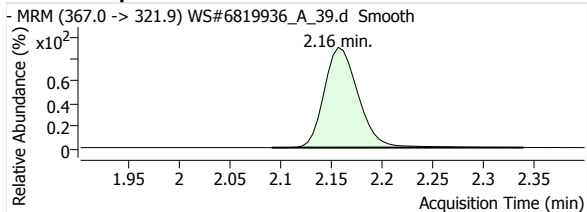
## eFOSA 1



## 13C2-PFHxA

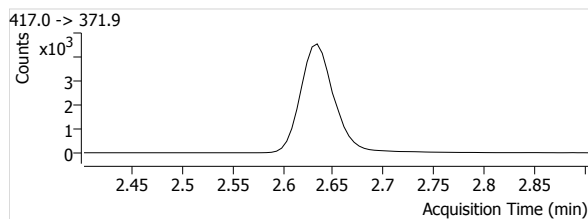
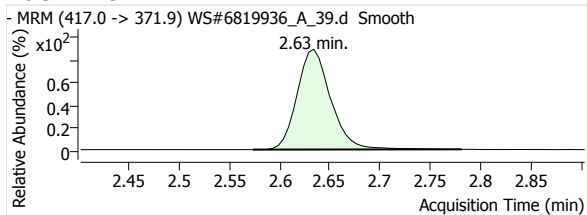


## 13C4-PFHpA

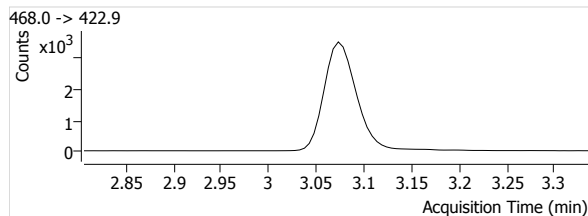
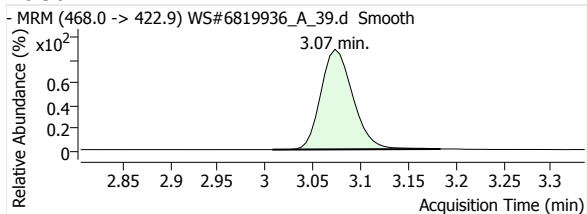


# Quantitative Analysis Report

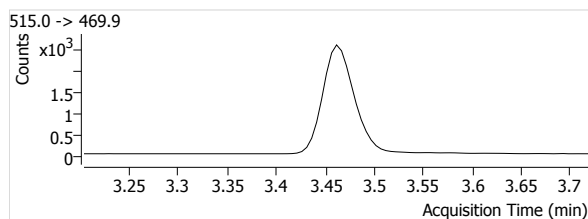
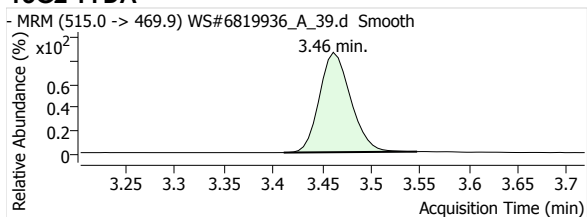
## 13C4-PFOA



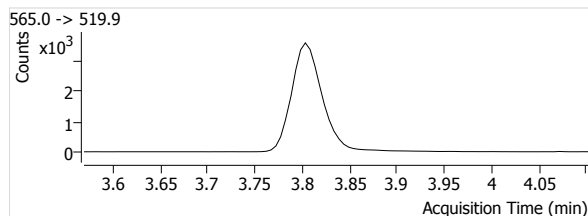
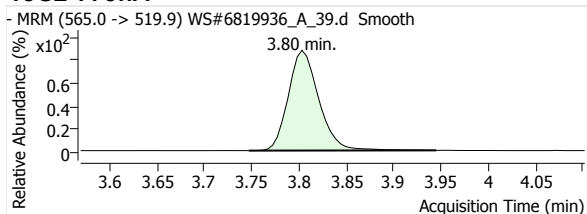
## 13C5-PFNA



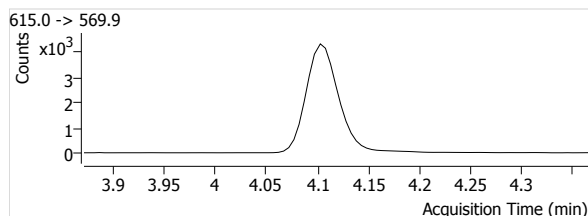
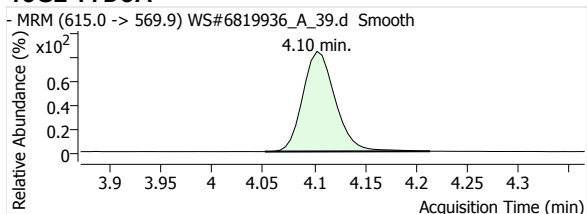
## 13C2-PFDA



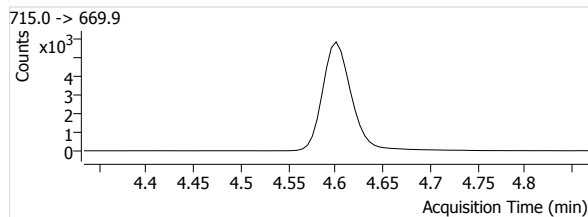
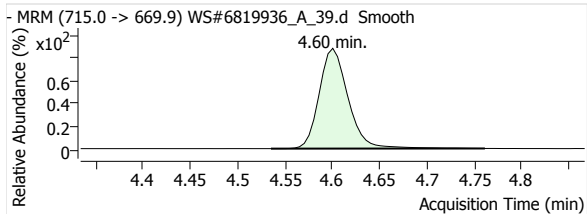
## 13C2-PFUnA



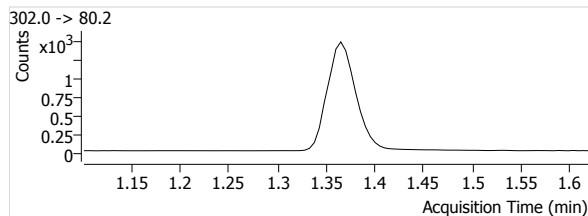
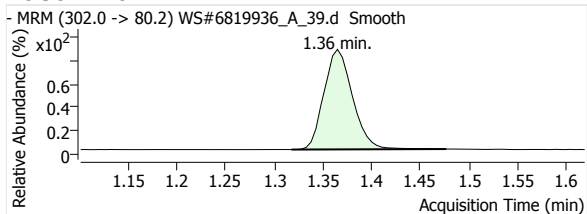
## 13C2-PFDoA



## 13C2-PFTeDA

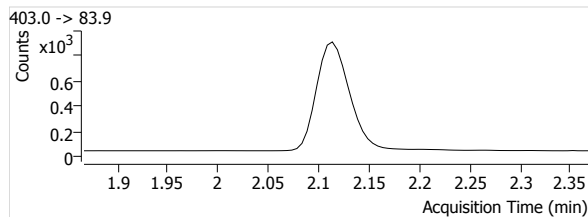
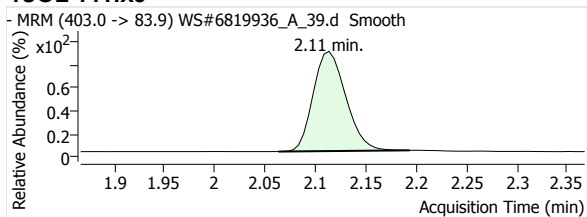


## 13C3-PFBS

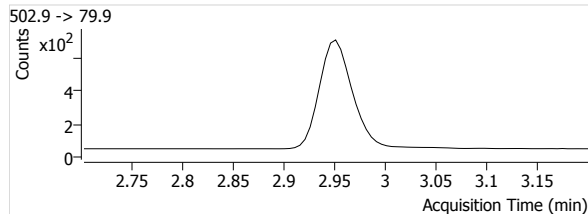
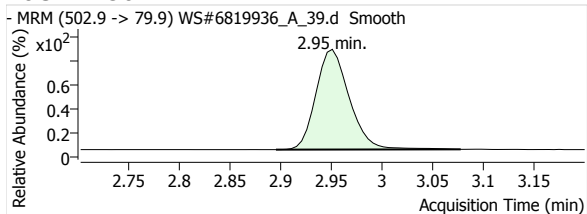


# Quantitative Analysis Report

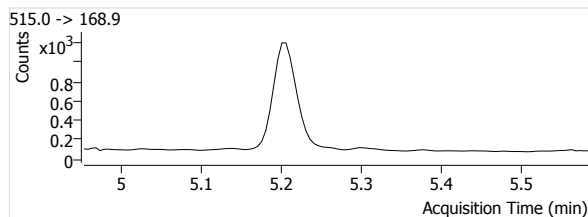
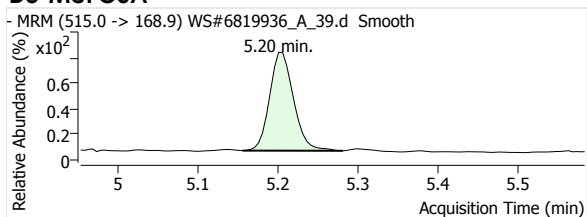
## 18O2-PFHxs



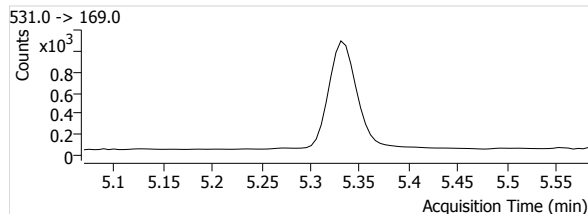
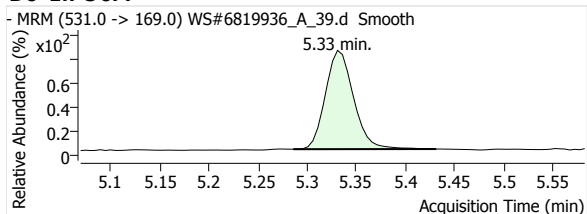
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



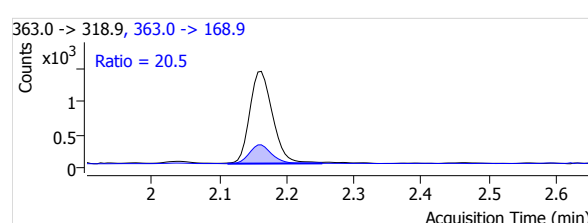
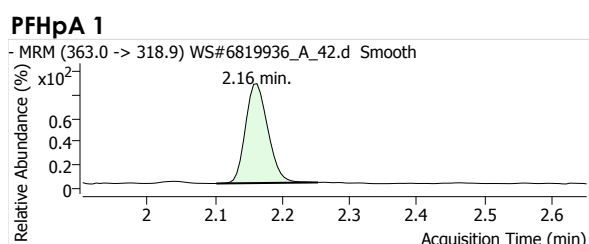
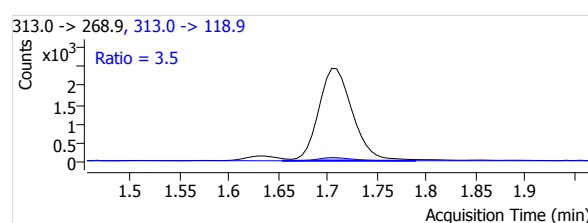
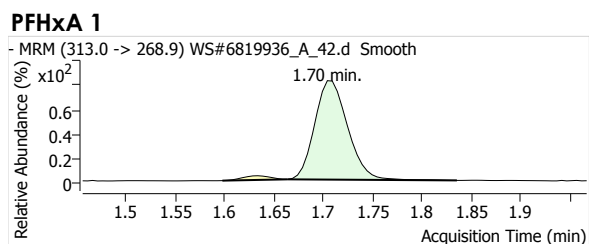
# Quantitative Analysis Report

**Batch Data Path File Name** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_ML.batch.bin

**Sample Name** 6819936:NAH707-01:20x  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 4:05:16 PM  
**Comment** Reported PFHxS, PFOS  
**User Defined**

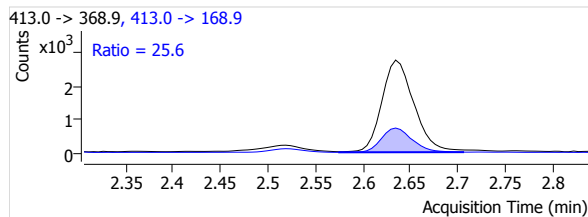
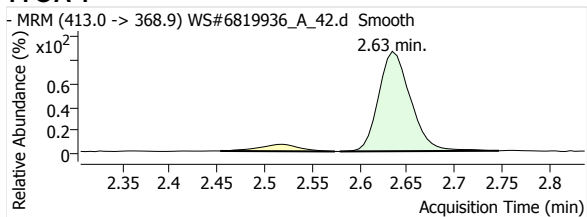
**Data File** WS#6819936\_A\_42.d  
**Instrument** LCMS04  
**Position** P2-D5  
**Dil.** 0.5

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.3213	--	5495	1.70	177	0.5677	190	1.70	66	3.5
PFHpA 1	µg/L	--	0.6890	--	3272	2.16	55	0.2515	670	2.16	55	20.5
PFOA 1	µg/L	--	1.4233	--	6180	2.63	132	0.5381	1580	2.63	79	25.6
PFNA 1	µg/L	--	0.1388	--	184	3.08	3	0.0217	50	3.08	4	27.2
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.1472	--	104	1.37	17	0.0346	50	1.37	5	48.1
PFHxS 1	µg/L	--	2.7314	--	2073	2.08	266	0.9773	1073	2.10	124	51.8
PFOS 1	µg/L	--	8.3968	--	4910	2.89	135	2.8680	2600	2.90	151	53.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	97.7284	--	9680	1.71	332	--	--	--	--	--
13C4-PFHpA	µg/L	--	102.2879	--	13010	2.16	339	--	--	--	--	--
13C4-PFOA	µg/L	--	96.9853	--	11485	2.63	1625	--	--	--	--	--
13C5-PFNA	µg/L	--	91.1512	--	8488	3.08	232	--	--	--	--	--
13C2-PFDA	µg/L	--	89.1964	--	6382	3.47	265	--	--	--	--	--
13C2-PFUnA	µg/L	--	96.7825	--	8272	3.81	263	--	--	--	--	--
13C2-PFDoA	µg/L	--	99.3314	--	10400	4.11	447	--	--	--	--	--
13C2-PFTeDA	µg/L	--	85.7600	--	13129	4.61	912	--	--	--	--	--
13C3-PFBS	µg/L	--	89.4236	--	3010	1.36	388	--	--	--	--	--
18O2-PFHxS	µg/L	--	90.8351	--	2121	2.11	159	--	--	--	--	--
13C4-PFOS	µg/L	--	94.5856	--	1712	2.95	311	--	--	--	--	--
D3-MeFOSA	µg/L	--	47.9689	--	2161	5.21	48	--	--	--	--	--
D5-EtFOSA	µg/L	--	57.8904	--	2124	5.34	96	--	--	--	--	--

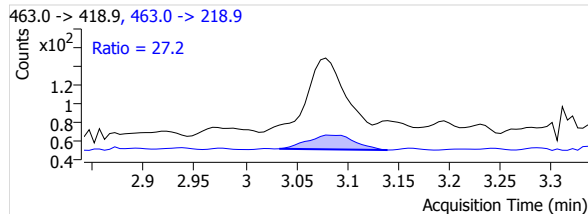
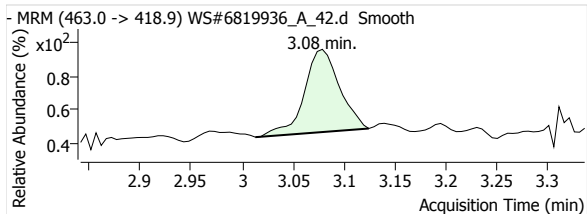


# Quantitative Analysis Report

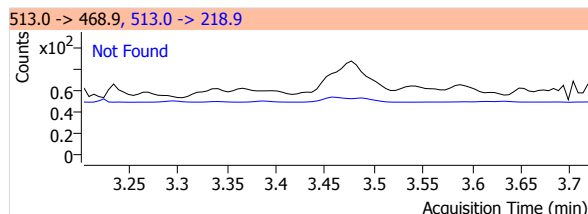
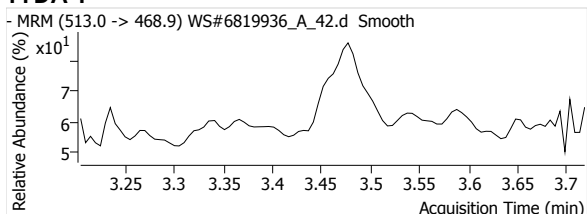
## PFOA 1



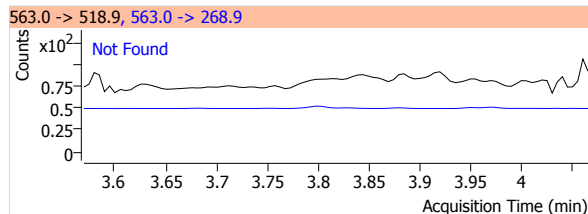
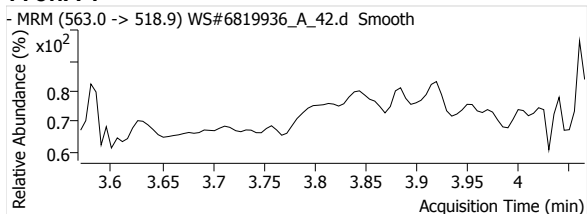
## PFNA 1



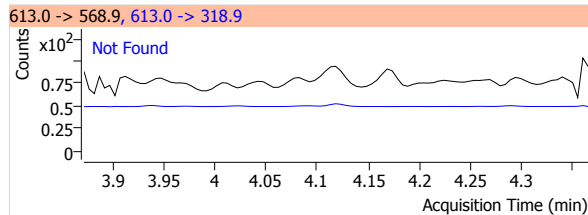
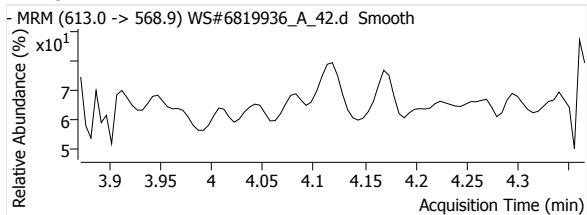
## PFDA 1



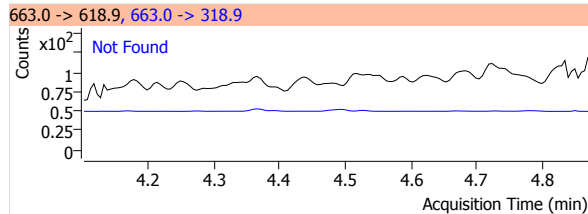
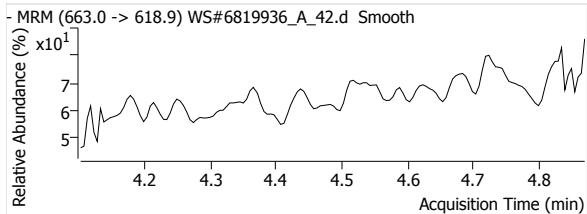
## PFUnA 1



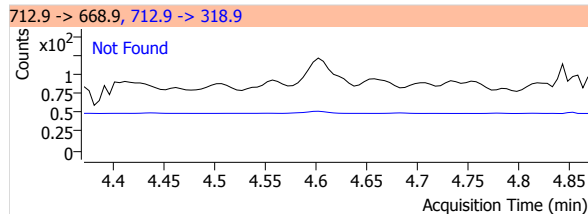
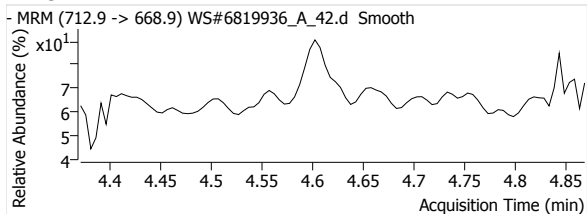
## PFDaA 1



## PFTrDA 1



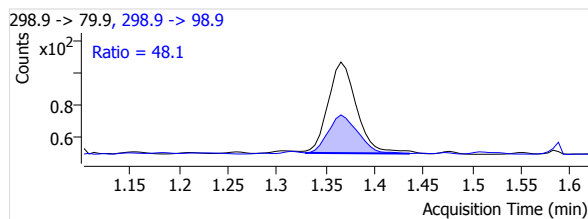
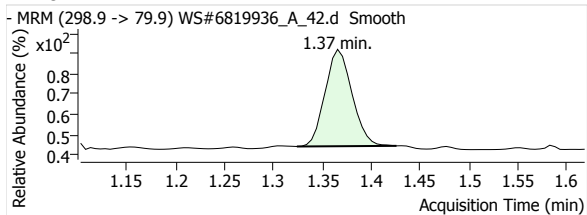
## PFTeDA 1



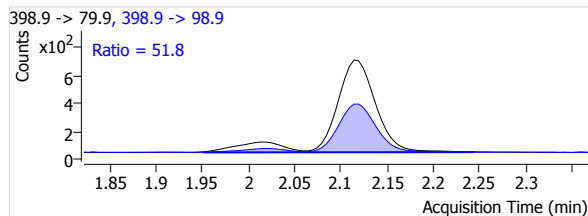
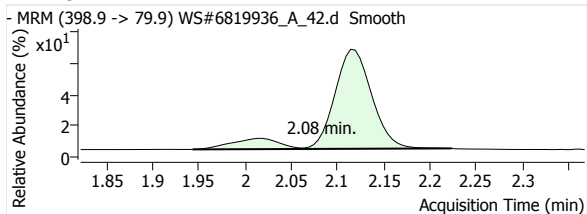


# Quantitative Analysis Report

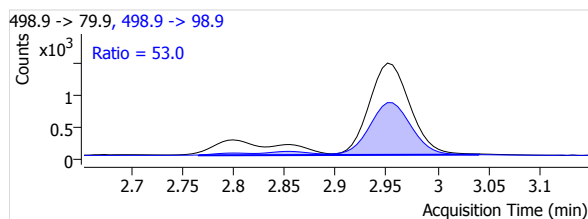
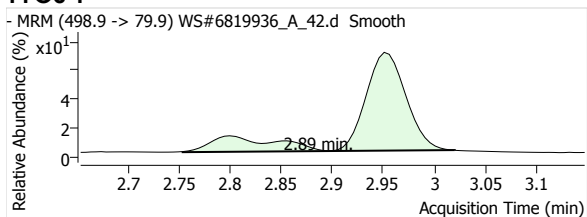
## PFBS 1



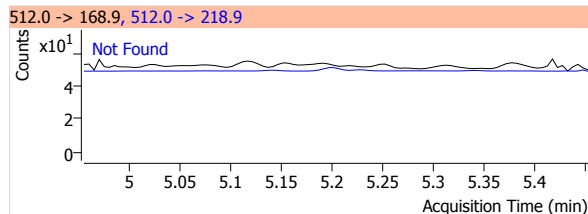
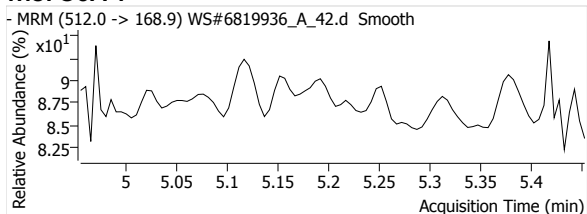
## PFHxS 1



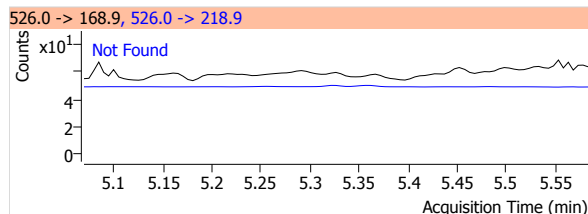
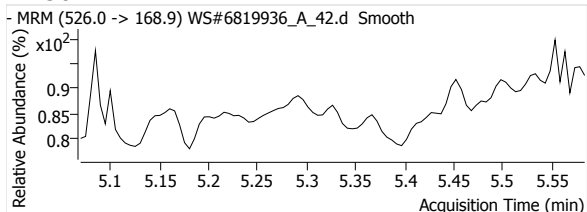
## PFOS 1



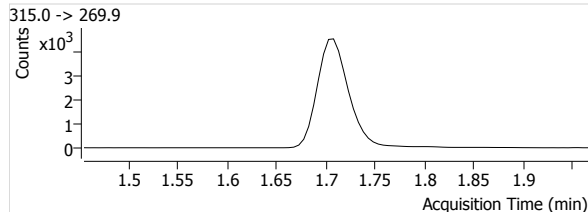
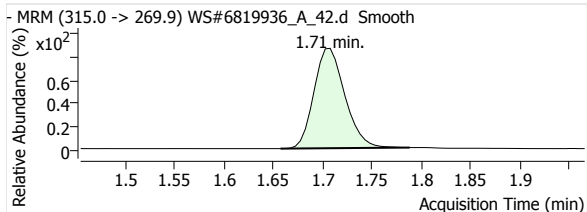
## MeFOSA 1



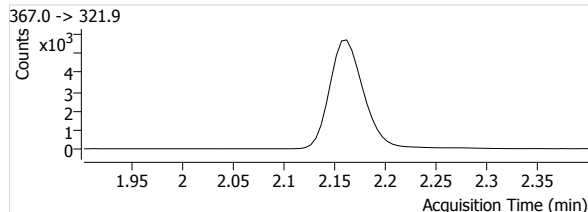
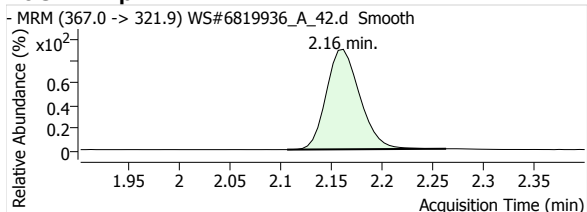
## eFOSA 1



## 13C2-PFHxA

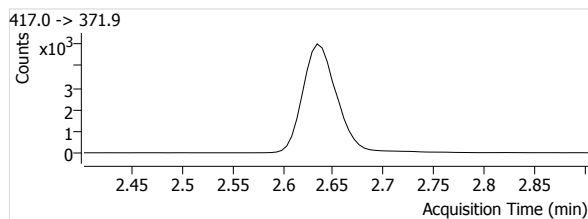
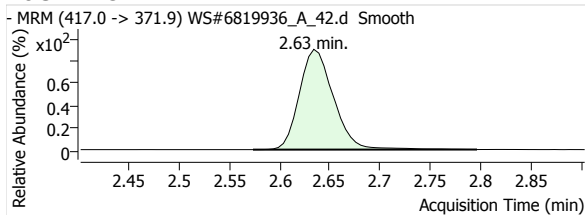


## 13C4-PFHpA

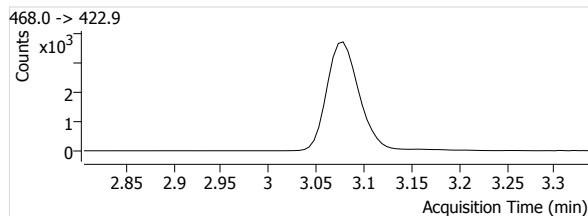
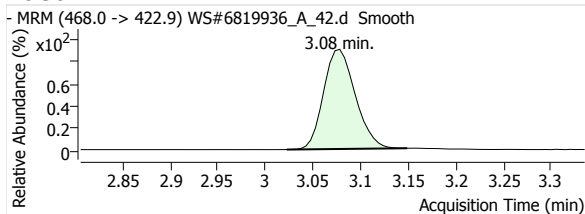


# Quantitative Analysis Report

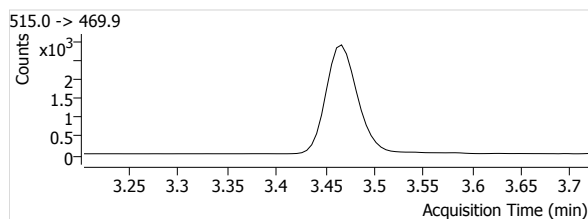
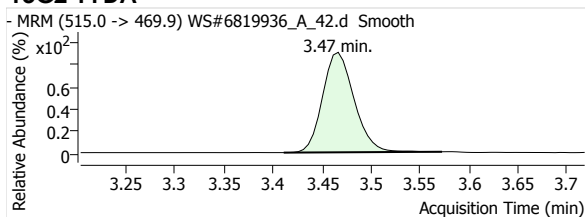
## 13C4-PFOA



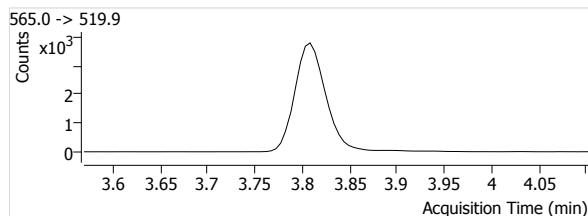
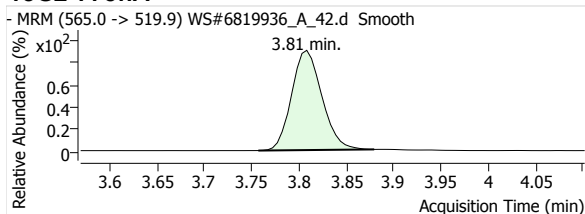
## 13C5-PFNA



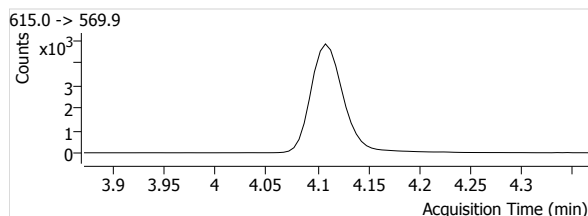
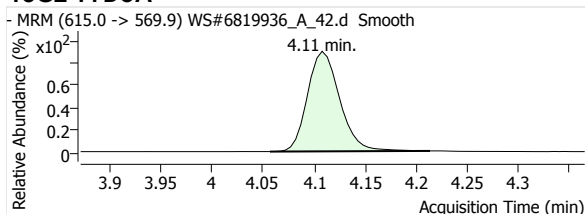
## 13C2-PFDA



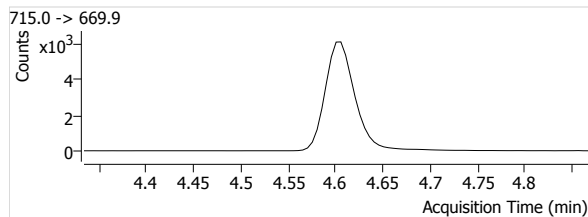
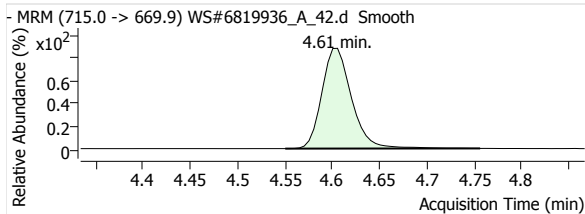
## 13C2-PFUnA



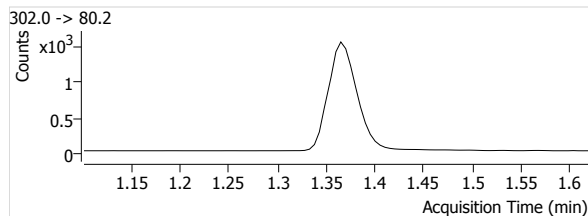
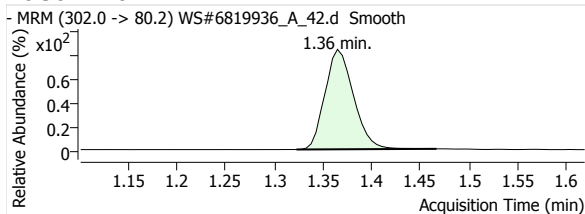
## 13C2-PFDoA



## 13C2-PFTeDA

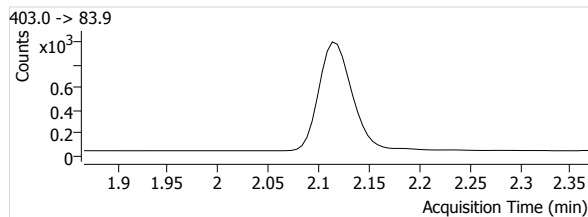
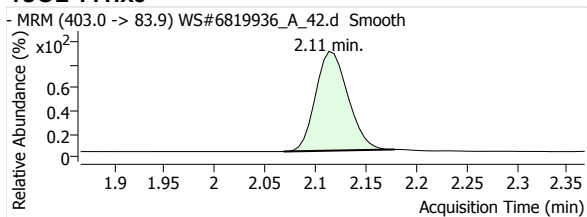


## 13C3-PFBS

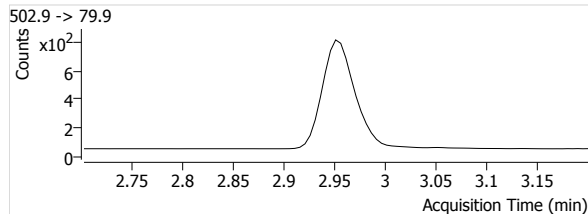
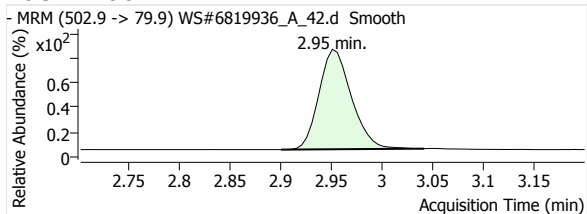


# Quantitative Analysis Report

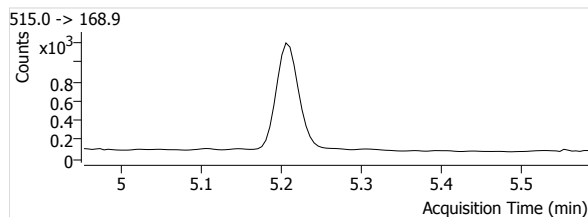
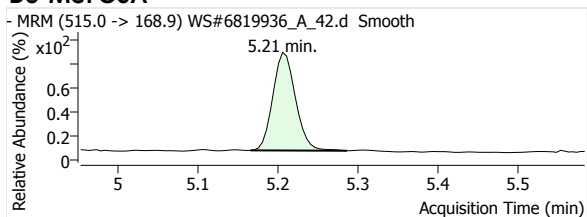
## 18O2-PFHxs



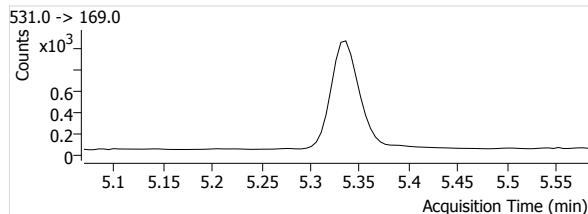
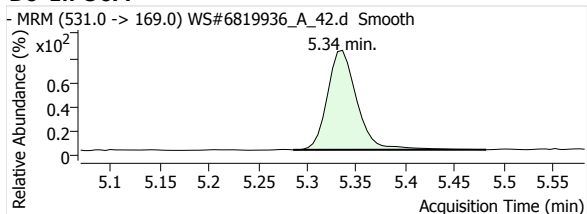
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

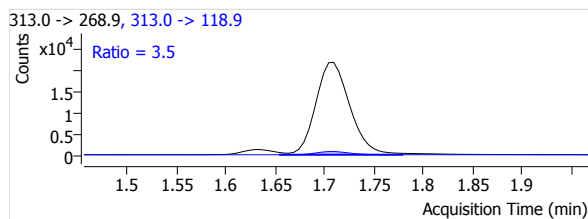
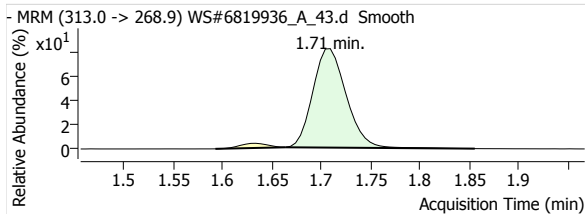
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Sample Name 6819936:NAH707-01:2x  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 4:12:12 PM  
Comment -  
User Defined MI PFOA

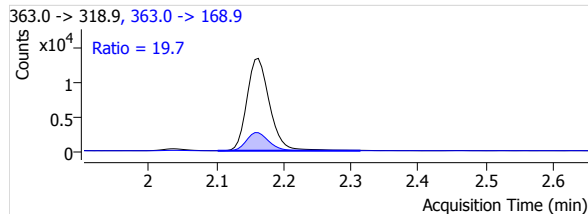
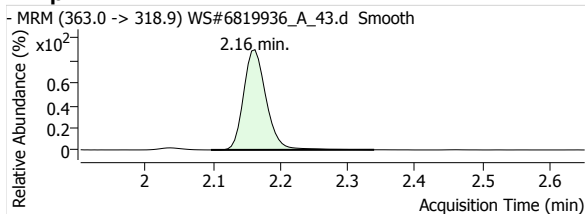
Data File WS#6819936\_A\_43.d  
Instrument LCMS04  
Position P2-D6  
Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.2590	--	50776	1.71	1052	5.8083	1758	1.71	187	3.5
PFHpA 1	µg/L	--	0.6207	--	31096	2.16	474	2.5772	6134	2.16	352	19.7
PFOA 1	µg/L	--	1.5066	--	60892	2.63	567	6.0176	16916	2.63	1325	27.8
PFNA 1	µg/L	--	0.0592	--	1582	3.07	21	0.1917	388	3.07	25	24.5
PFDA 1	µg/L	--	0.0178	--	379	3.46	11	0.0661	66	3.46	32	17.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0971	--	902	1.37	57	0.3160	398	1.37	36	44.1
PFHxS 1	µg/L	--	2.5361	--	18734	2.08	350	9.2195	9614	2.10	432	51.3
PFOS 1	µg/L	--	8.7883	--	42191	2.89	121	30.2012	22467	2.90	219	53.3
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	88.2585	--	8742	1.70	420	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.8659	--	12066	2.16	530	--	--	--	--	--
13C4-PFOA	µg/L	--	85.4501	--	10119	2.63	207	--	--	--	--	--
13C5-PFNA	µg/L	--	88.6168	--	8252	3.08	642	--	--	--	--	--
13C2-PFDA	µg/L	--	80.1817	--	5737	3.46	480	--	--	--	--	--
13C2-PFUnA	µg/L	--	91.9972	--	7863	3.80	1076	--	--	--	--	--
13C2-PFDaA	µg/L	--	90.6208	--	9488	4.11	275	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.5735	--	12335	4.61	899	--	--	--	--	--
13C3-PFBS	µg/L	--	84.7891	--	2854	1.36	309	--	--	--	--	--
18O2-PFHxS	µg/L	--	87.0236	--	2032	2.11	433	--	--	--	--	--
13C4-PFOS	µg/L	--	77.1823	--	1397	2.95	188	--	--	--	--	--
D3-MeFOSA	µg/L	--	53.9845	--	2432	5.21	48	--	--	--	--	--
D5-EtFOSA	µg/L	--	59.8528	--	2196	5.34	77	--	--	--	--	--

### PFHxA 1

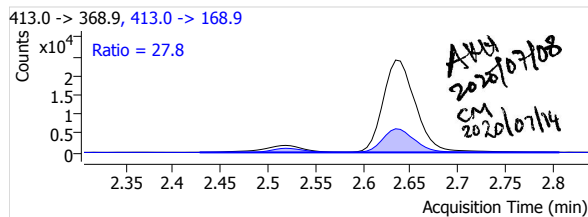
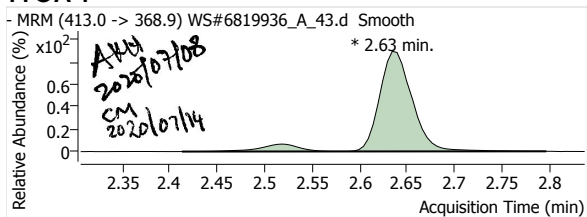


### PFHpA 1

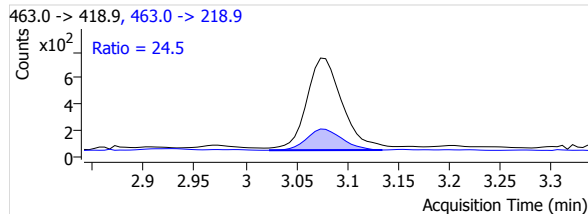
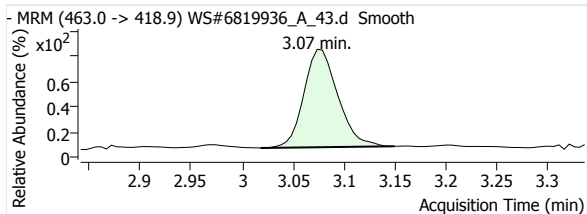


# Quantitative Analysis Report

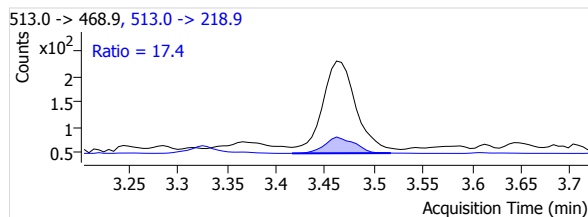
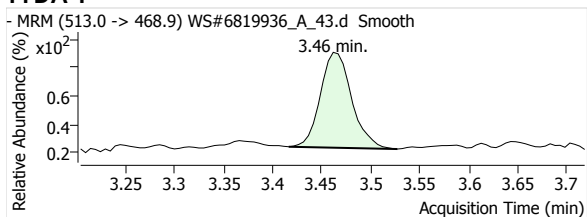
## PFOA 1



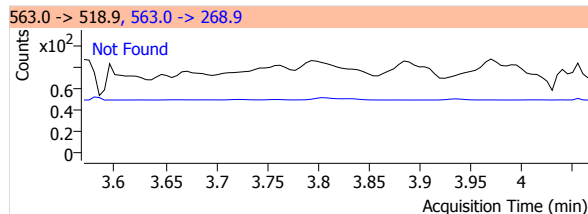
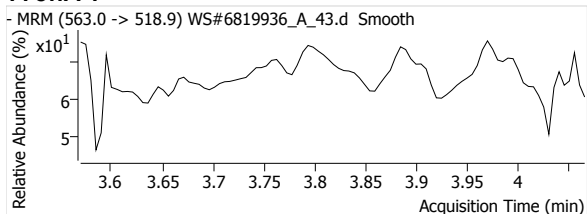
## PFNA 1



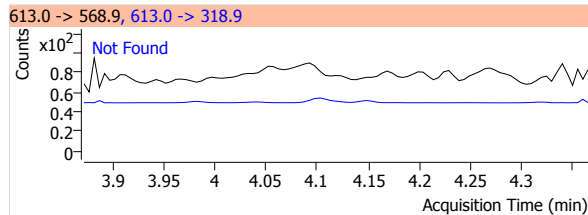
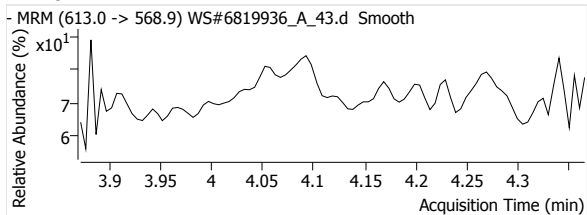
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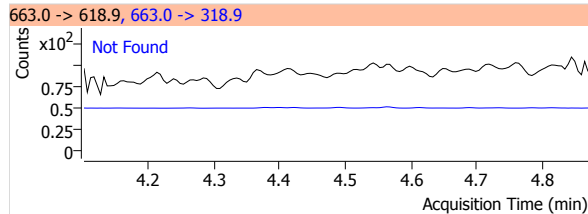
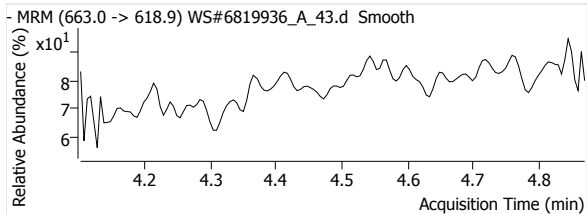
## PFUnA 1



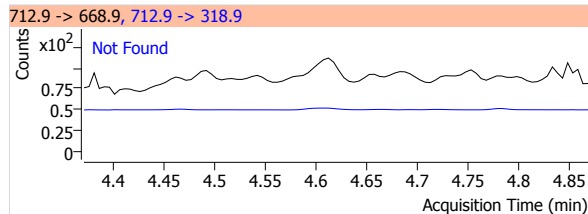
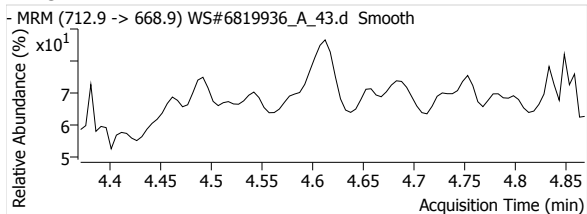
## PFDoA 1



## PFTrDA 1

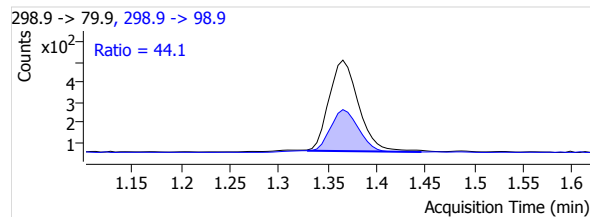
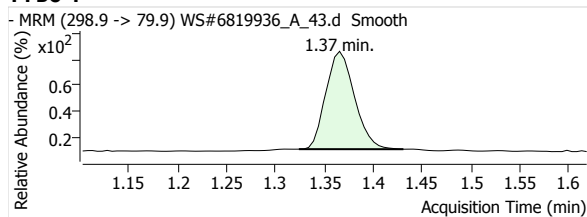


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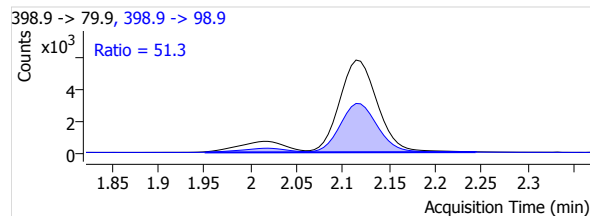
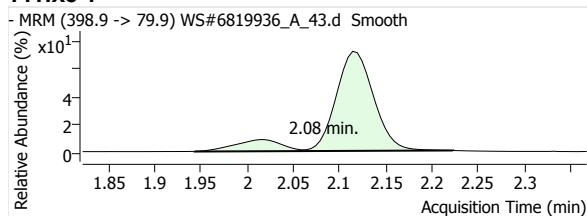


# Quantitative Analysis Report

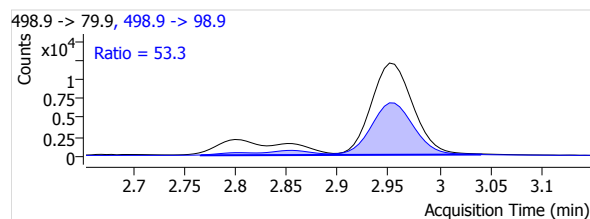
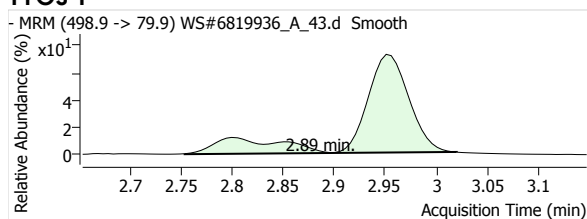
## PFBS 1



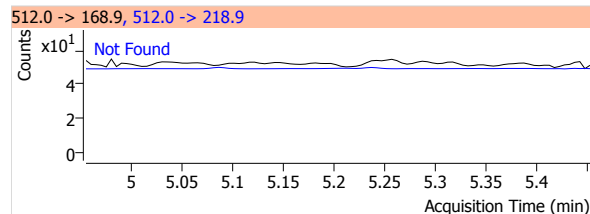
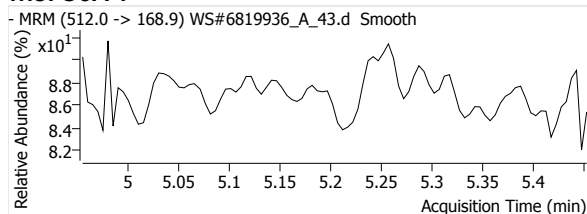
## PFHxS 1



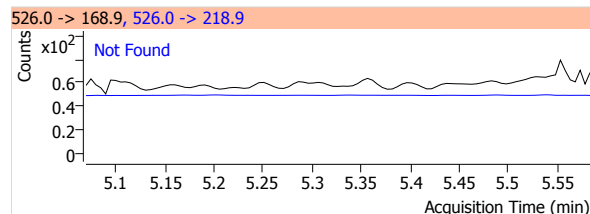
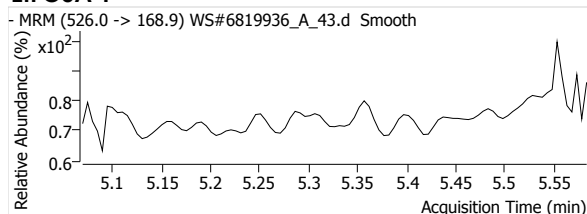
## PFOS 1



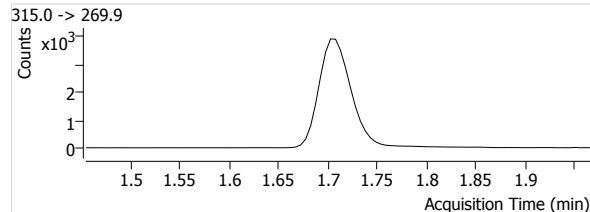
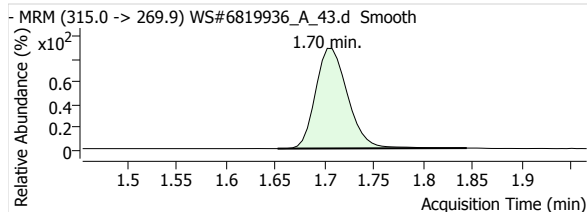
## MeFOSA 1



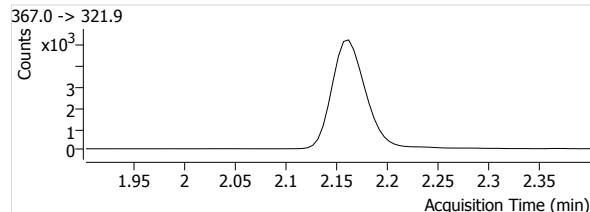
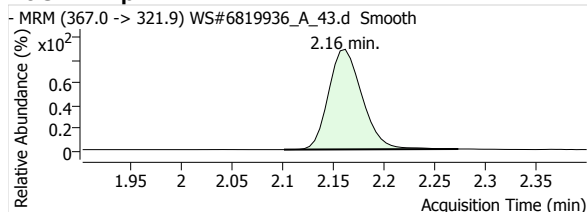
## eFOSA 1



## 13C2-PFHxA

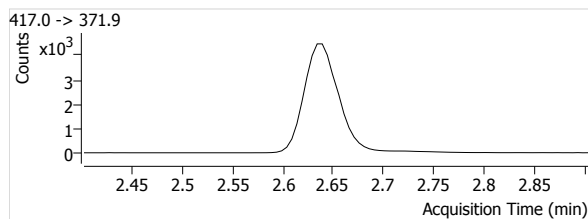
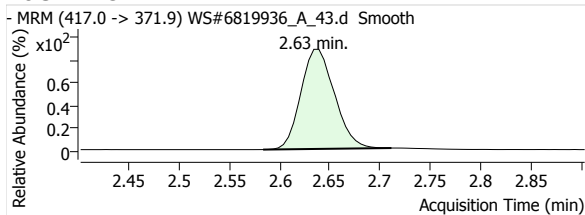


## 13C4-PFHpA

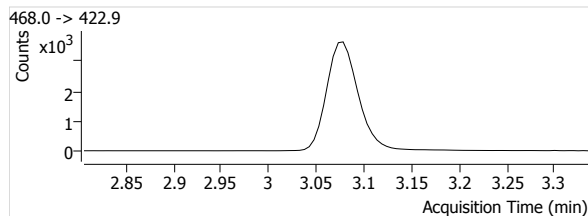
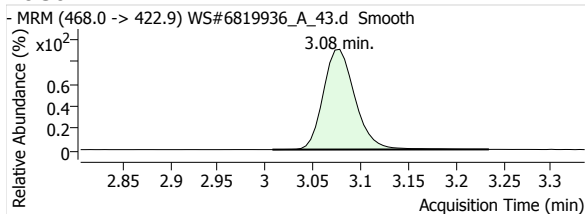


# Quantitative Analysis Report

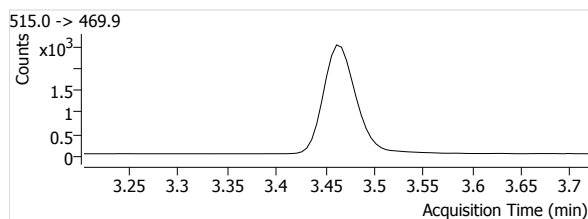
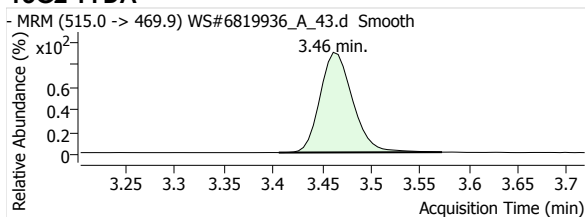
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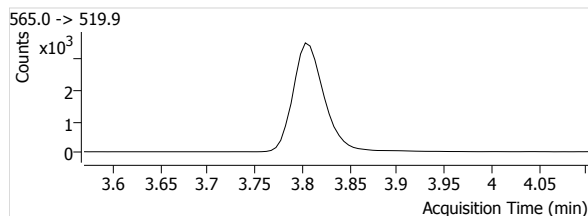
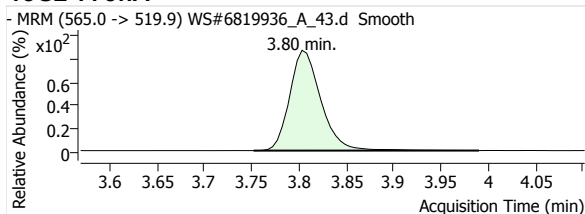
## 13C5-PFNA



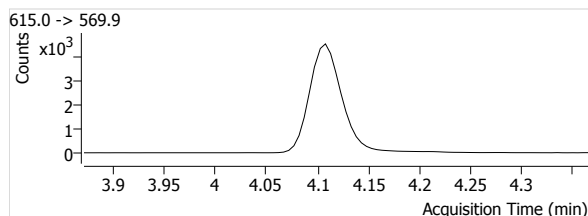
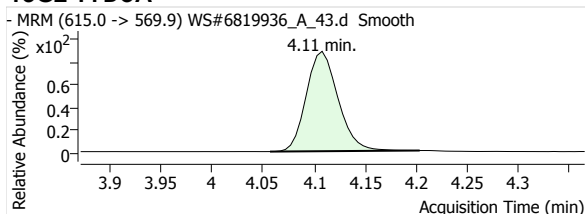
## 13C2-PFDA



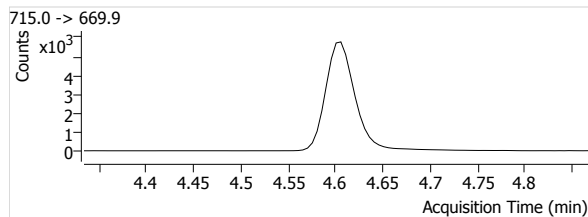
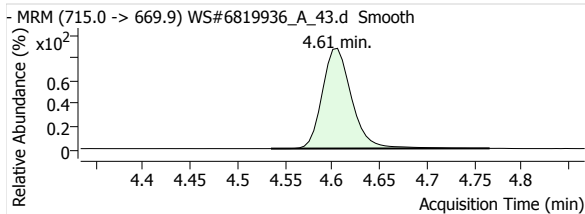
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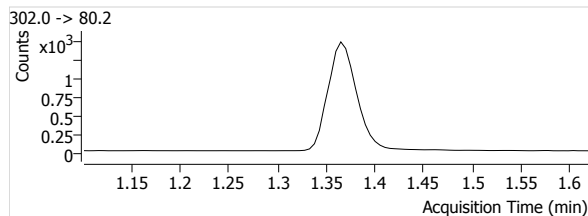
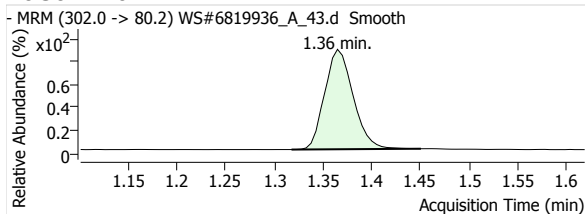
## 13C2-PFDoA



## 13C2-PFTeDA

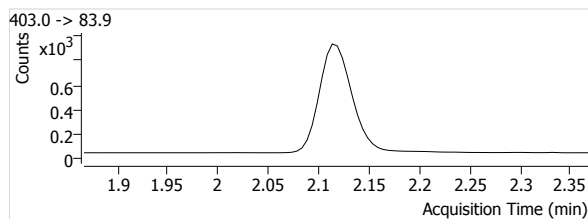
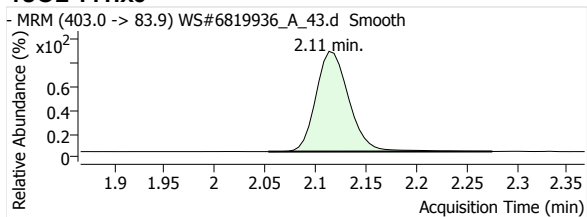


## 13C3-PFBS

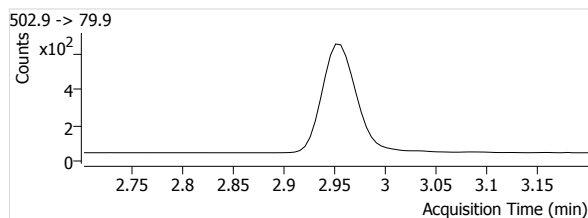
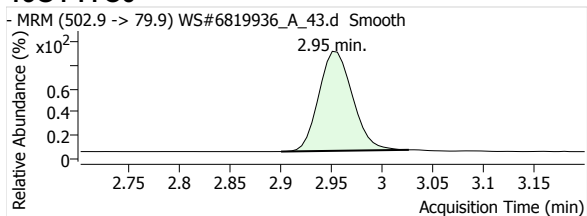


# Quantitative Analysis Report

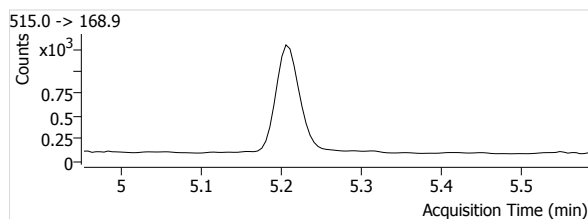
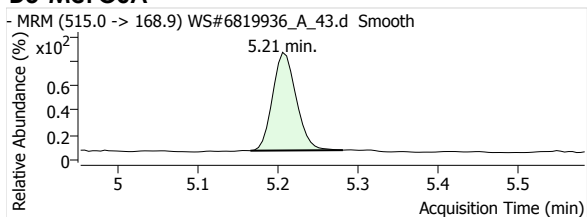
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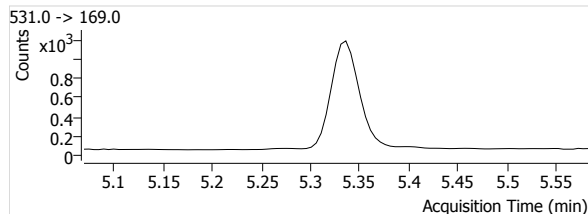
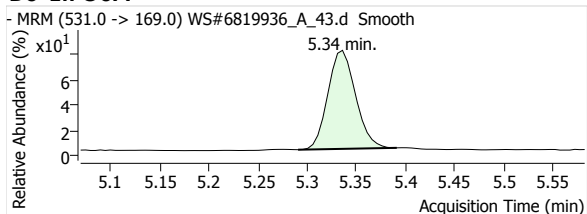
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA





# Quantitative Analysis Report

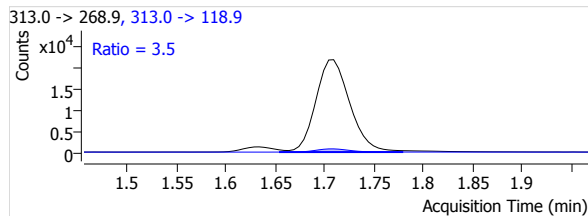
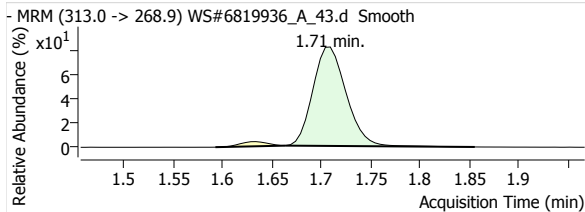
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**Sample Name** 6819936:NAH707-01:2x  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 4:12:12 PM  
**Comment** -  
**User Defined** MI PFOA

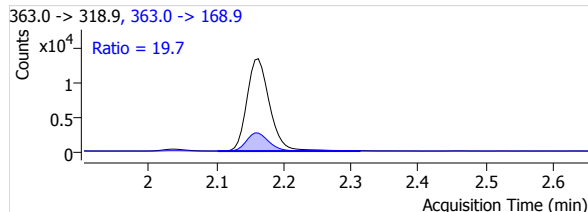
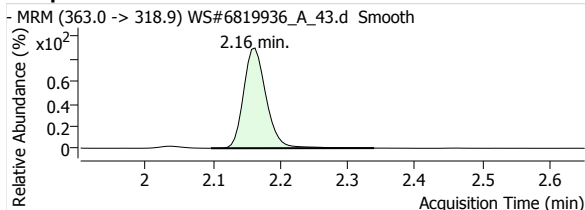
**Data File** WS#6819936\_A\_43.d  
**Instrument** LCMS04  
**Position** P2-D6  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	1.2590	--	50776	1.71	1052	5.8083	1758	1.71	187	3.5
PFHpA 1	µg/L	--	0.6207	--	31096	2.16	474	2.5772	6134	2.16	352	19.7
PFOA 1	µg/L	--	1.3798	--	55738	2.63	571	5.5083	14236	2.63	1286	25.5
PFNA 1	µg/L	--	0.0592	--	1582	3.07	21	0.1917	388	3.07	25	24.5
PFDA 1	µg/L	--	0.0178	--	379	3.46	11	0.0661	66	3.46	32	17.4
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0971	--	902	1.37	57	0.3160	398	1.37	36	44.1
PFHxS 1	µg/L	--	2.5361	--	18734	2.08	350	9.2195	9614	2.10	432	51.3
PFOS 1	µg/L	--	8.7883	--	42191	2.89	121	30.2012	22467	2.90	219	53.3
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	88.2585	--	8742	1.70	420	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.8659	--	12066	2.16	530	--	--	--	--	--
13C4-PFOA	µg/L	--	85.4501	--	10119	2.63	207	--	--	--	--	--
13C5-PFNA	µg/L	--	88.6168	--	8252	3.08	642	--	--	--	--	--
13C2-PFDA	µg/L	--	80.1817	--	5737	3.46	480	--	--	--	--	--
13C2-PFUnA	µg/L	--	91.9972	--	7863	3.80	1076	--	--	--	--	--
13C2-PFDoA	µg/L	--	90.6208	--	9488	4.11	275	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.5735	--	12335	4.61	899	--	--	--	--	--
13C3-PFBS	µg/L	--	84.7891	--	2854	1.36	309	--	--	--	--	--
18O2-PFHxS	µg/L	--	87.0236	--	2032	2.11	433	--	--	--	--	--
13C4-PFOS	µg/L	--	77.1823	--	1397	2.95	188	--	--	--	--	--
D3-MeFOSA	µg/L	--	53.9845	--	2432	5.21	48	--	--	--	--	--
D5-EtFOSA	µg/L	--	59.8528	--	2196	5.34	77	--	--	--	--	--

### PFHxA 1

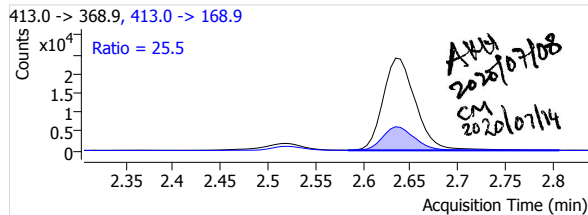
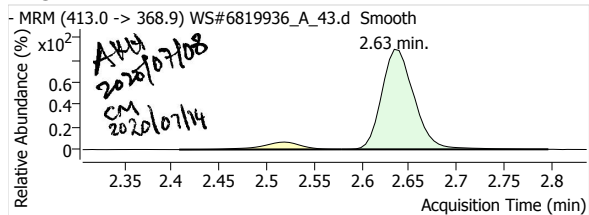


### PFHpA 1

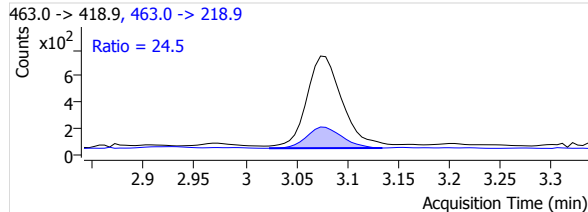
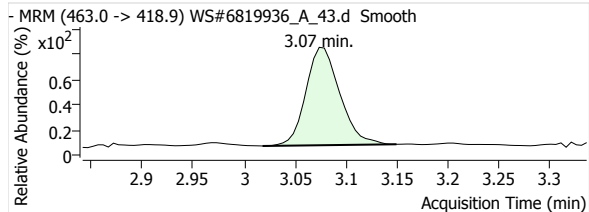


# Quantitative Analysis Report

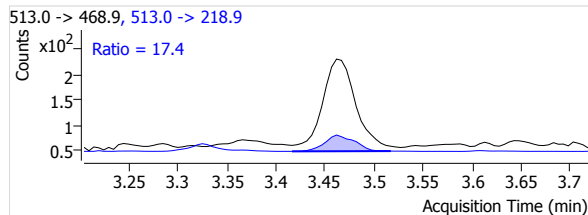
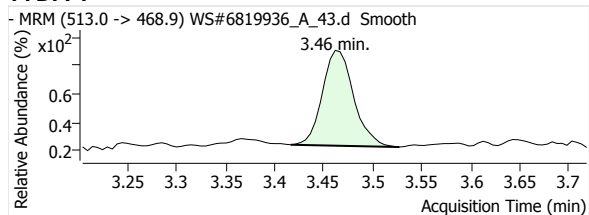
## PFOA 1



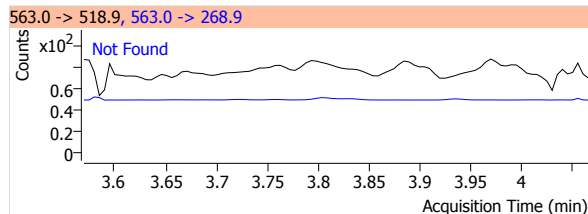
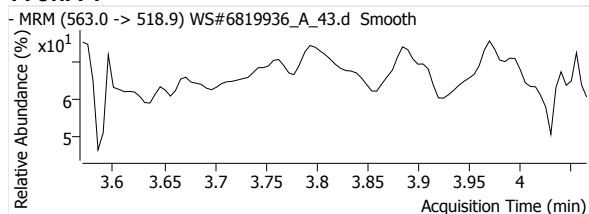
## PFNA 1



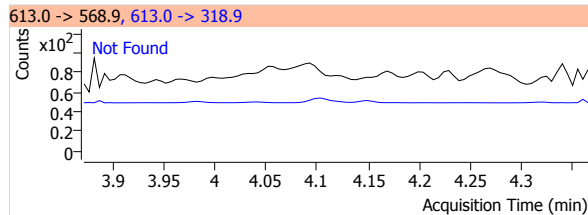
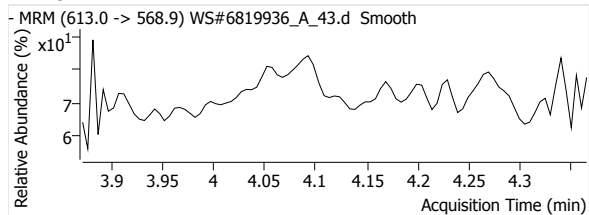
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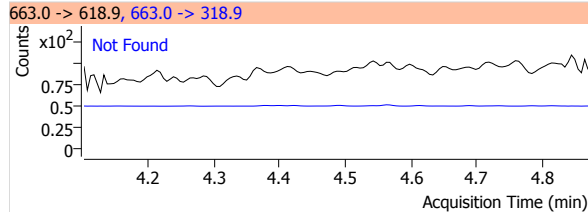
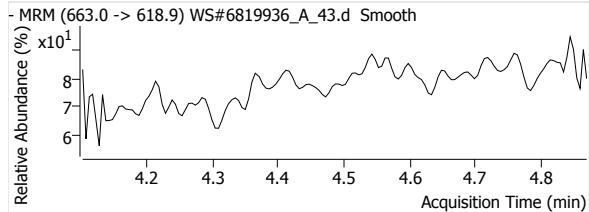
## PFUnA 1



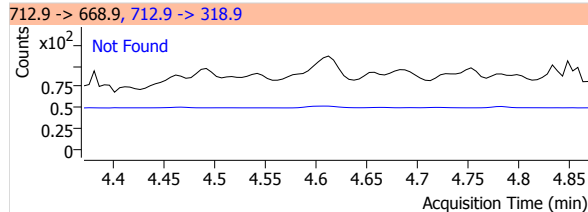
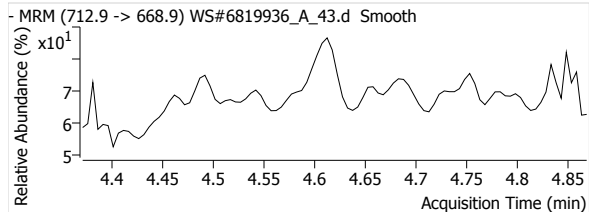
## PFDoA 1



## PFTrDA 1

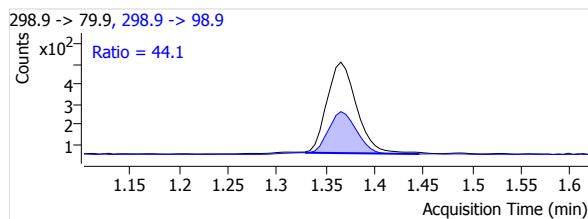
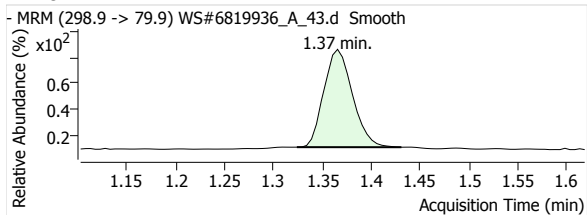


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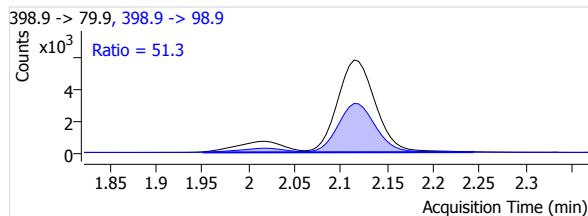
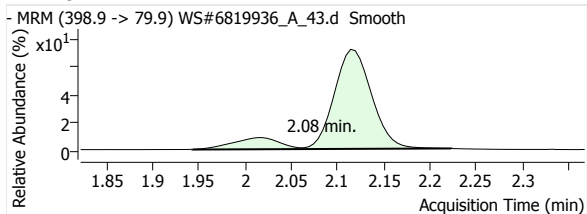


# Quantitative Analysis Report

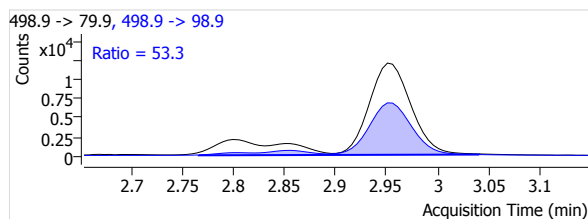
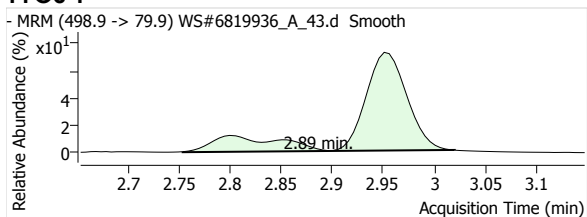
## PFBS 1



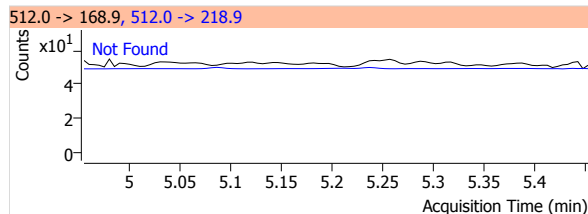
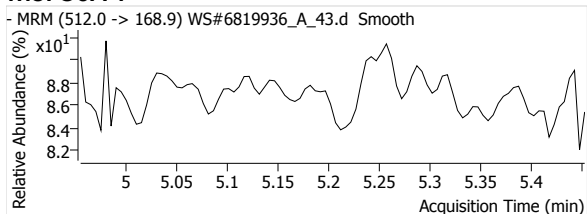
## PFHxS 1



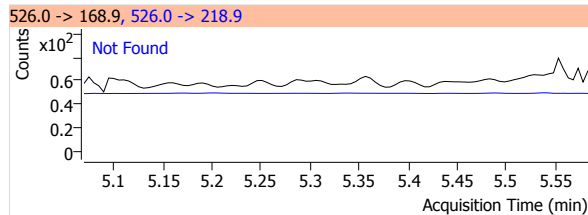
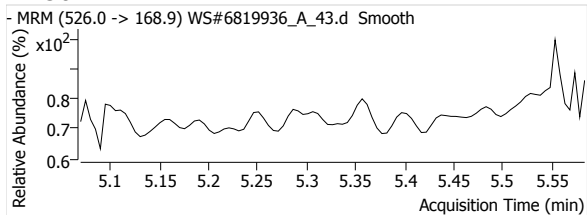
## PFOS 1



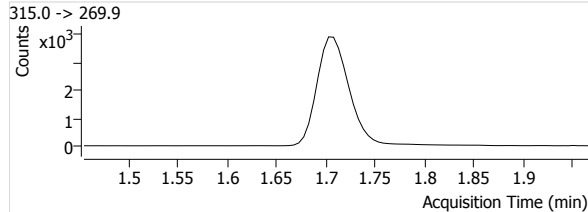
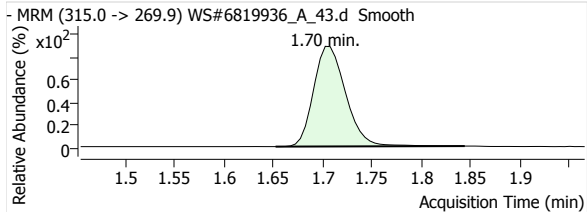
## MeFOSA 1



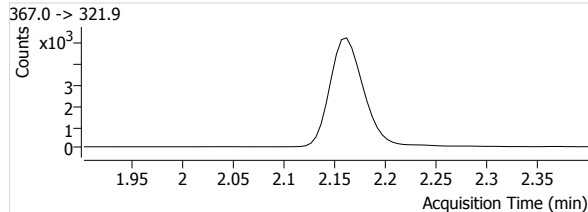
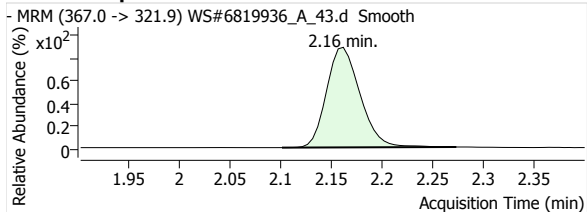
## eFOSA 1



## 13C2-PFHxA

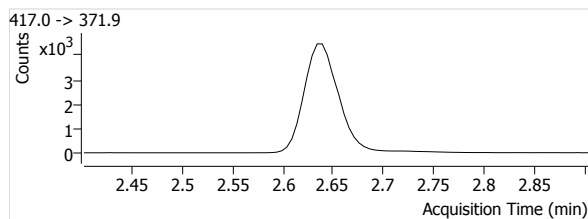
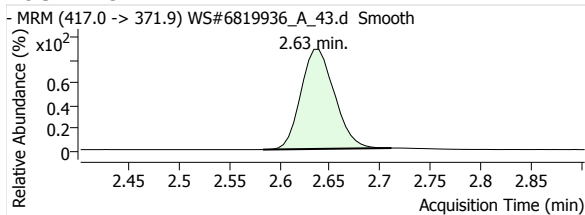


## 13C4-PFHpA

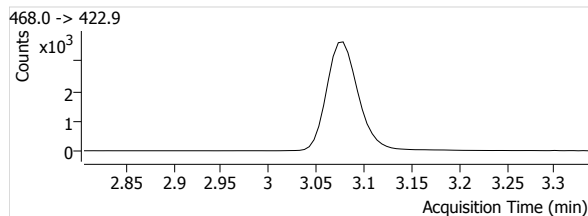
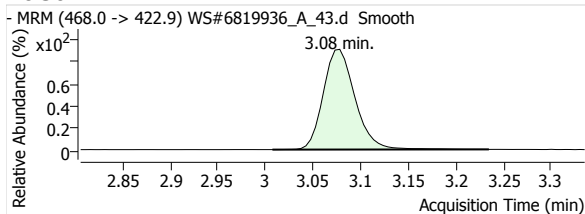


# Quantitative Analysis Report

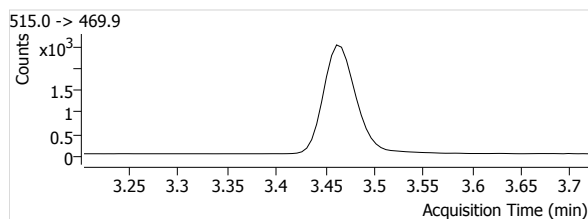
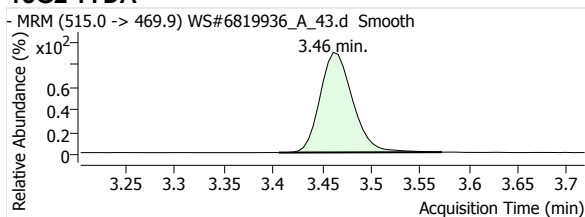
## 13C4-PFOA



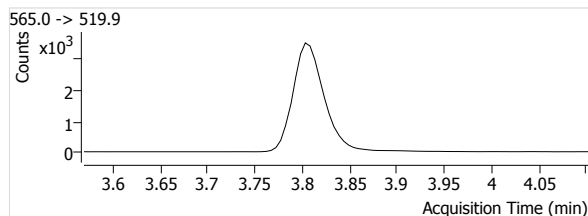
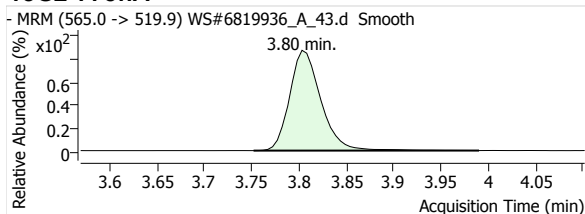
## 13C5-PFNA



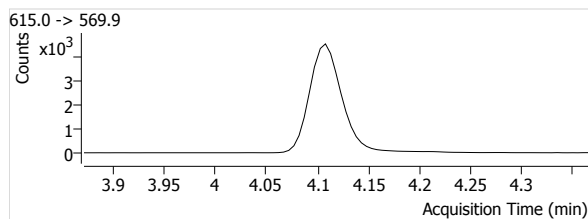
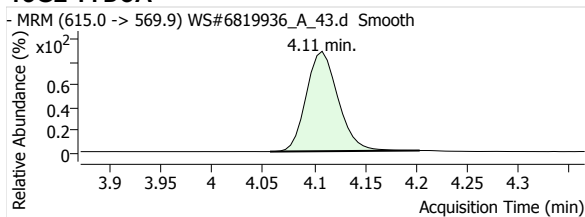
## 13C2-PFDA



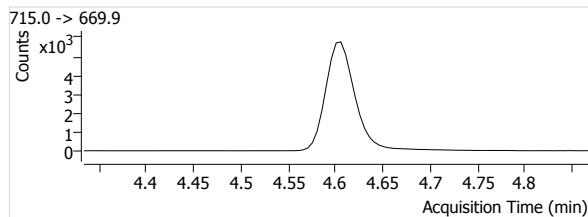
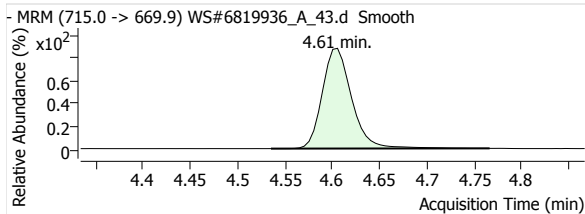
## 13C2-PFUnA



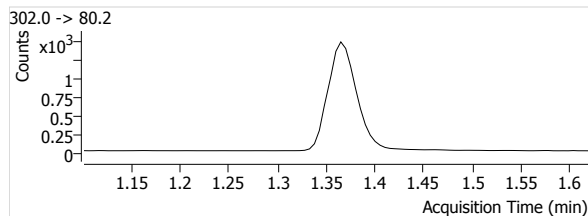
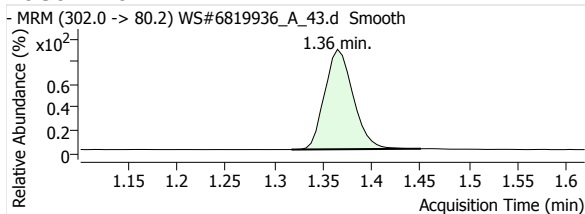
## 13C2-PFDoA



## 13C2-PFTeDA

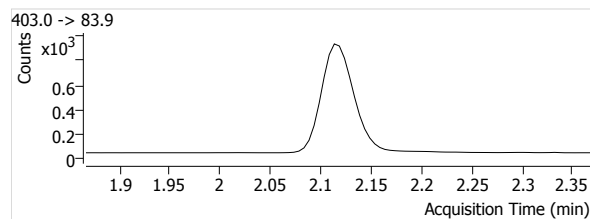
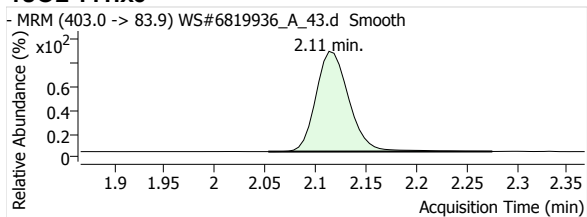


## 13C3-PFBS

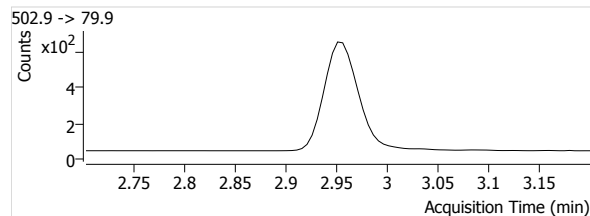
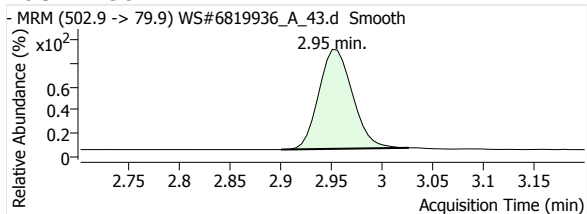


# Quantitative Analysis Report

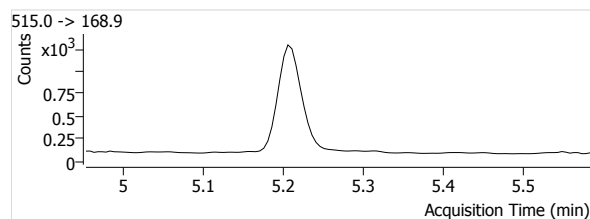
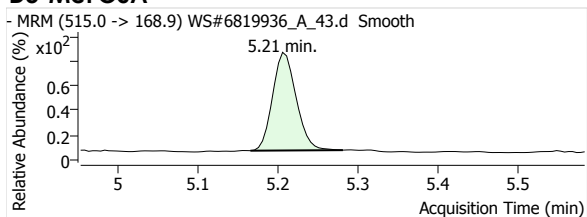
## 18O2-PFHxs



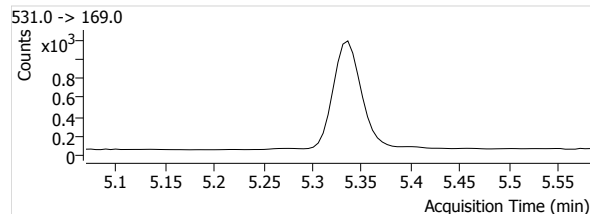
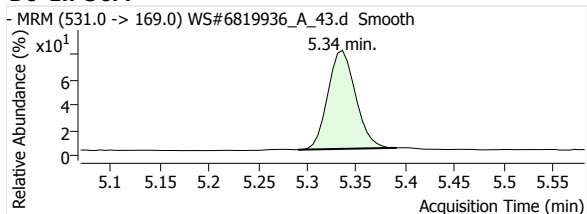
## 13C4-PFOS



## D3-MeFOXA



## D5-EtFOXA



# Quantitative Analysis Report

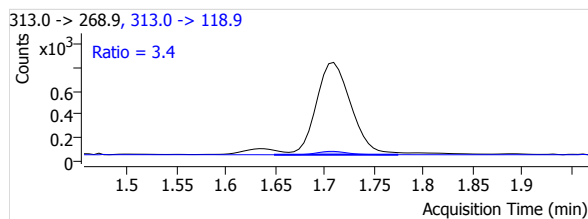
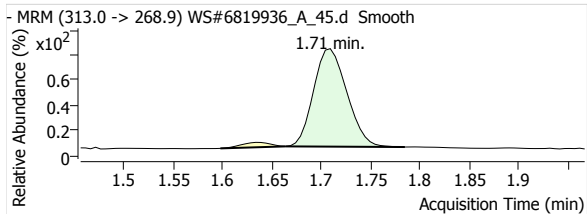
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bin

Sample Name 6819936:NAH708-01:10x  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 4:26:05 PM  
Comment Reported PFOS  
User Defined

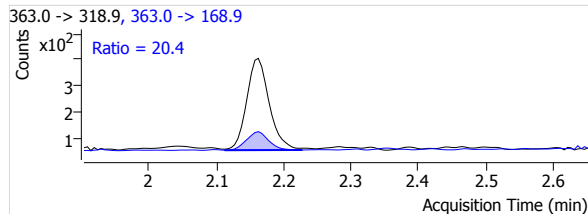
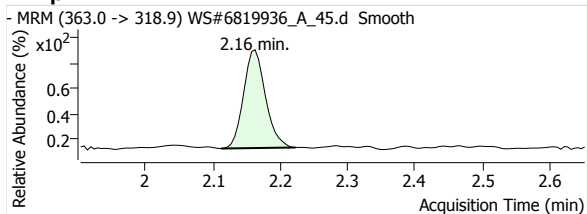
Data File WS#6819936\_A\_45.d  
Instrument LCMS04  
Position P2-D7  
Dil. 0.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.2506	--	1837	1.71	71	0.1862	62	1.71	10	3.4
PFHpA 1	µg/L	--	0.1126	--	788	2.16	24	0.0560	161	2.16	9	20.4
PFOA 1	µg/L	--	0.1772	--	1310	2.63	24	0.1087	369	2.63	41	28.2
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0553	--	72	1.37	9	0.0221	39	1.37	6	54.2
PFHxS 1	µg/L	--	0.7554	--	1183	2.08	320	0.5328	601	2.10	118	50.8
PFOS 1	µg/L	--	1.8701	--	2276	2.89	121	1.2667	1162	2.90	109	51.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	99.5861	--	9864	1.71	207	--	--	--	--	--
13C4-PFHpA	µg/L	--	110.5669	--	14063	2.16	877	--	--	--	--	--
13C4-PFOA	µg/L	--	101.7227	--	12046	2.63	590	--	--	--	--	--
13C5-PFNA	µg/L	--	96.9180	--	9025	3.07	389	--	--	--	--	--
13C2-PFDA	µg/L	--	94.6611	--	6773	3.47	289	--	--	--	--	--
13C2-PFUnA	µg/L	--	105.4288	--	9011	3.80	662	--	--	--	--	--
13C2-PFDaA	µg/L	--	102.8558	--	10769	4.10	437	--	--	--	--	--
13C2-PFTeDA	µg/L	--	90.2672	--	13819	4.60	419	--	--	--	--	--
13C3-PFBS	µg/L	--	96.9103	--	3262	1.36	330	--	--	--	--	--
18O2-PFHxS	µg/L	--	95.0749	--	2220	2.11	141	--	--	--	--	--
13C4-PFOS	µg/L	--	99.2818	--	1797	2.95	605	--	--	--	--	--
D3-MeFOSA	µg/L	--	50.3663	--	2269	5.21	55	--	--	--	--	--
D5-EtFOSA	µg/L	--	57.7542	--	2119	5.34	76	--	--	--	--	--

### PFHxA 1

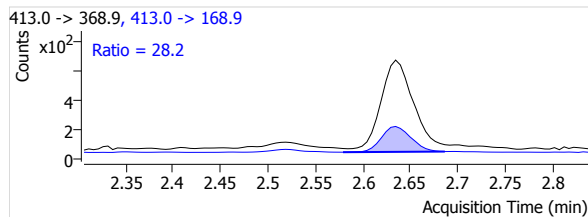
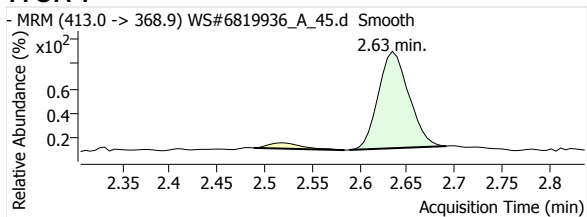


### PFHpA 1

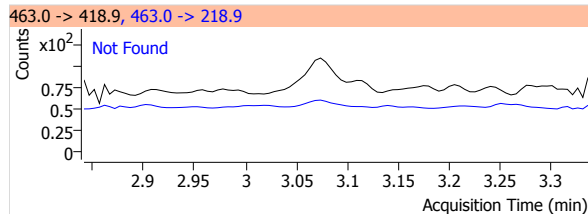
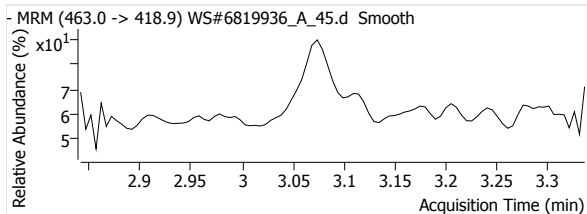


# Quantitative Analysis Report

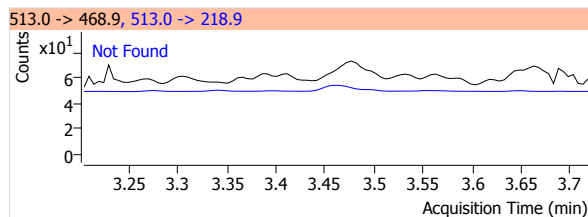
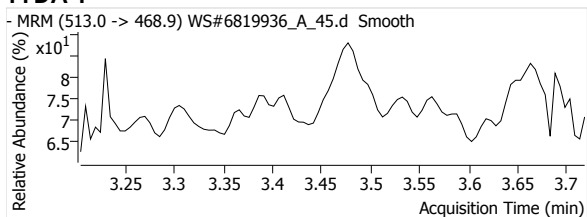
## PFOA 1



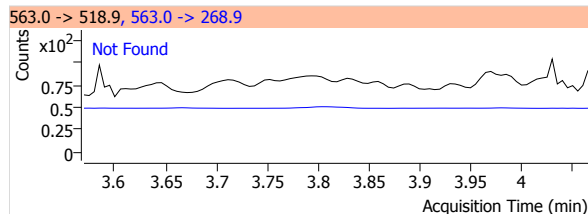
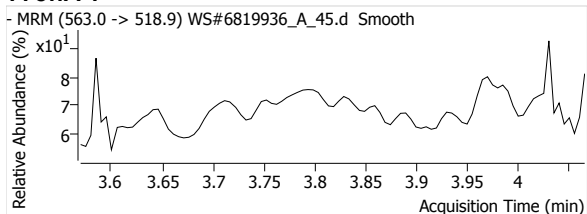
## PFNA 1



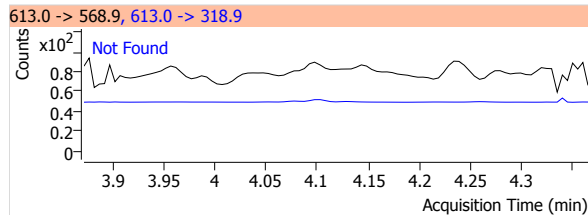
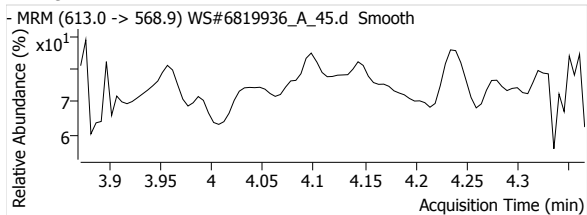
## PFDA 1



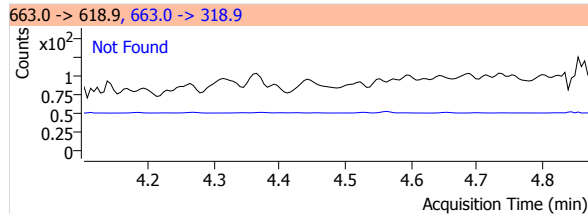
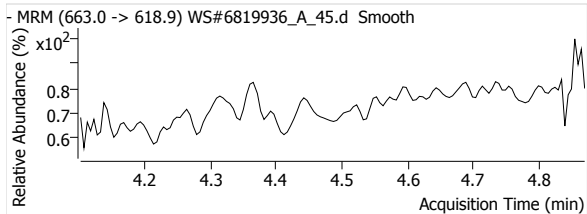
## PFUnA 1



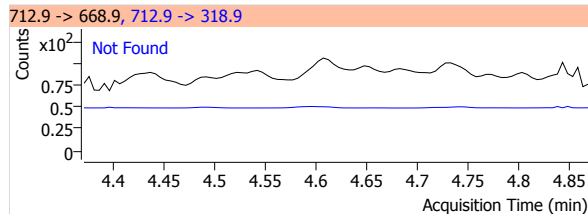
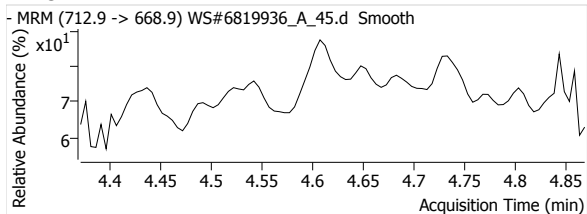
## PFDoA 1



## PFTrDA 1

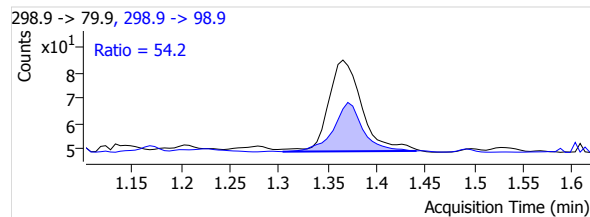
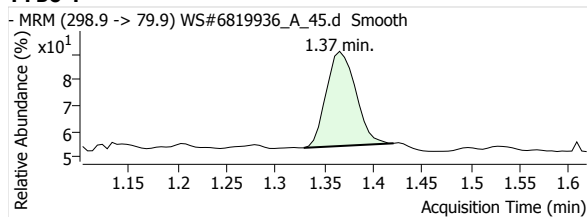


## PFTeDA 1

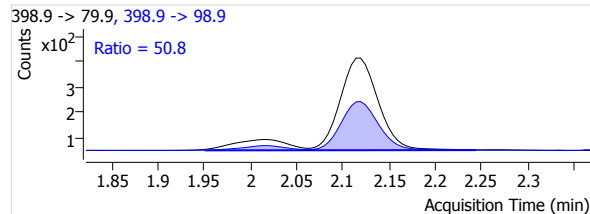
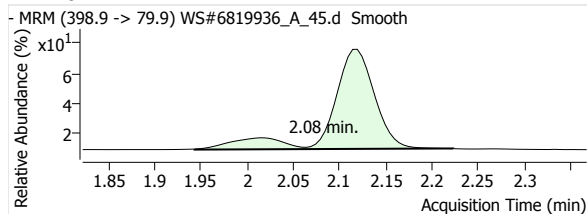


# Quantitative Analysis Report

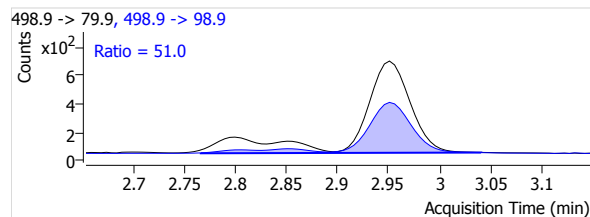
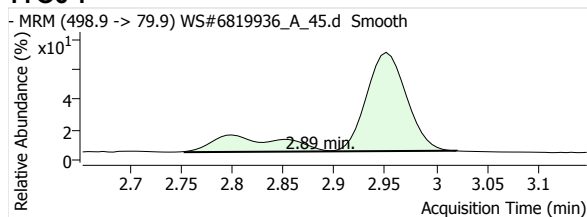
## PFBS 1



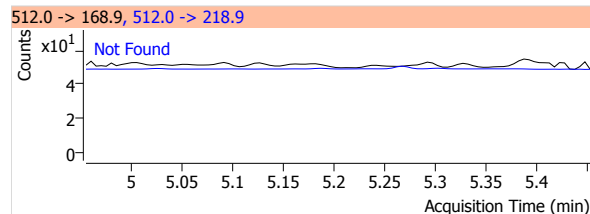
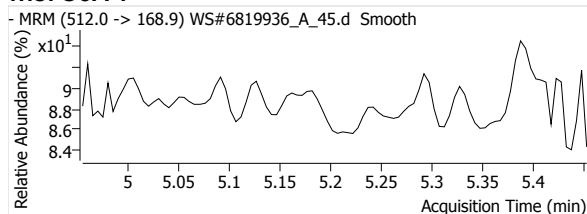
## PFHxS 1



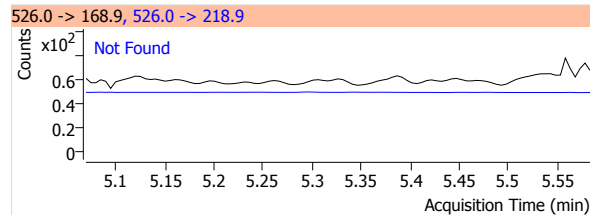
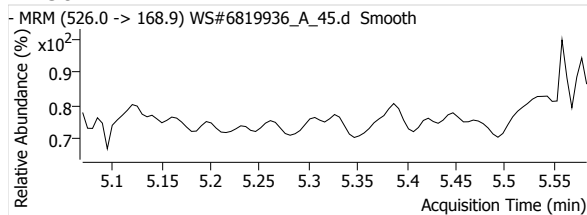
## PFOS 1



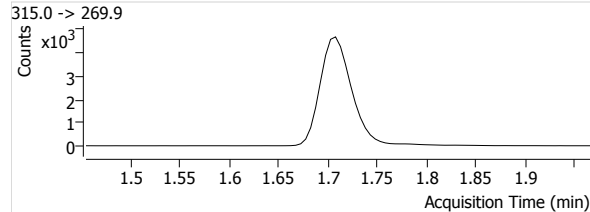
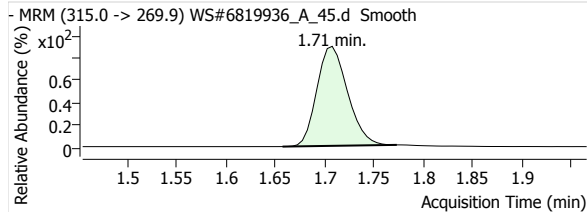
## MeFOSA 1



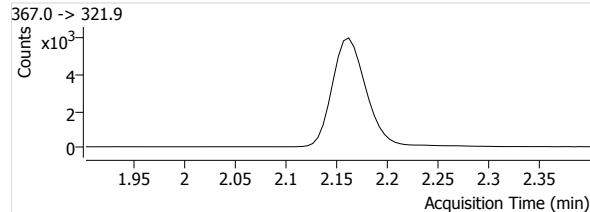
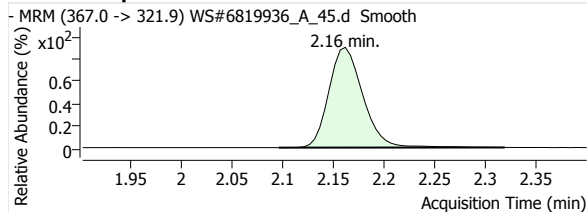
## eFOSA 1



## 13C2-PFHxA



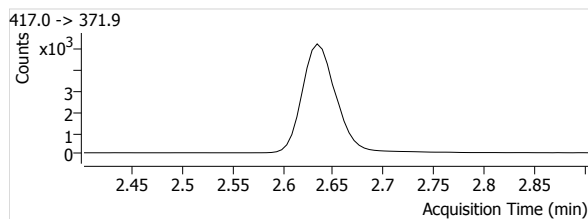
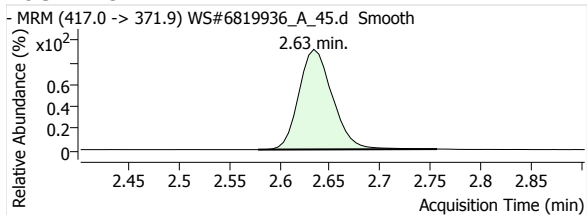
## 13C4-PFHpA



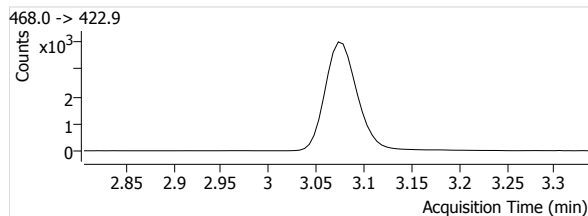
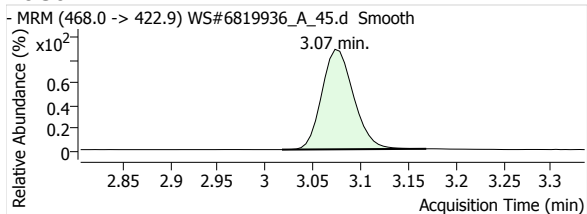


# Quantitative Analysis Report

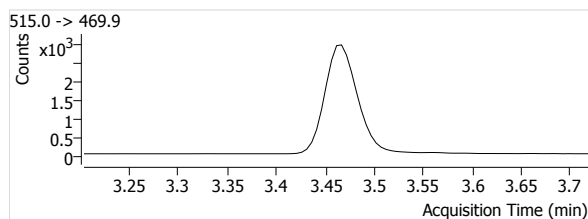
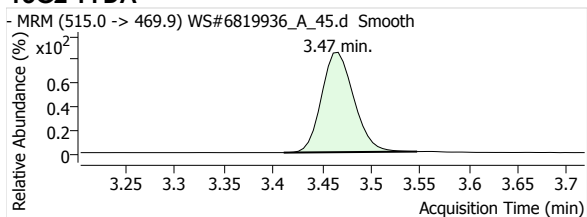
## 13C4-PFOA



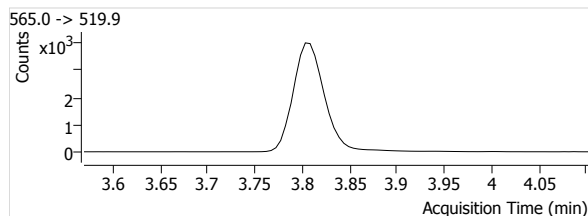
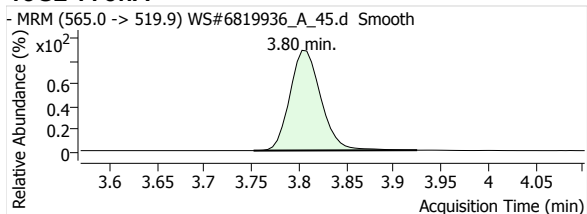
## 13C5-PFNA



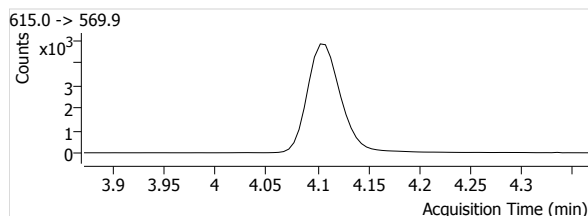
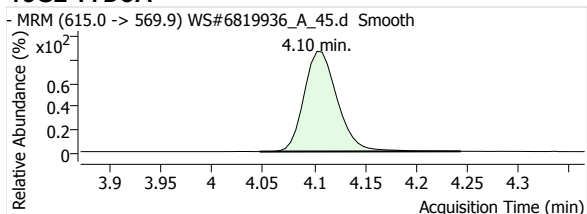
## 13C2-PFDA



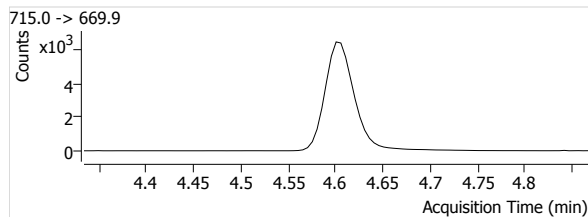
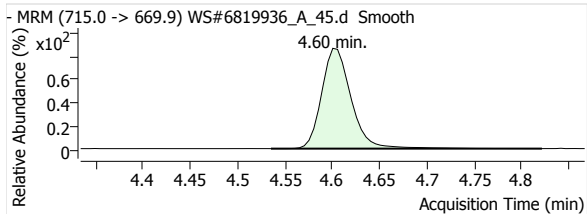
## 13C2-PFUnA



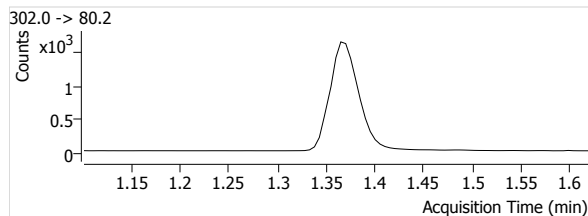
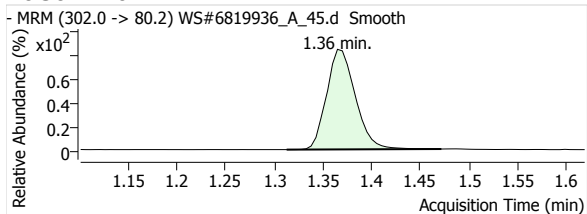
## 13C2-PFDoA



## 13C2-PFTeDA

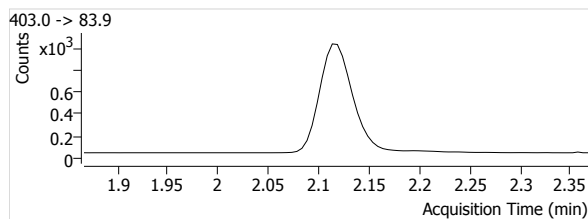
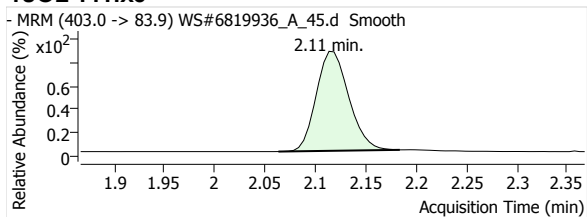


## 13C3-PFBS

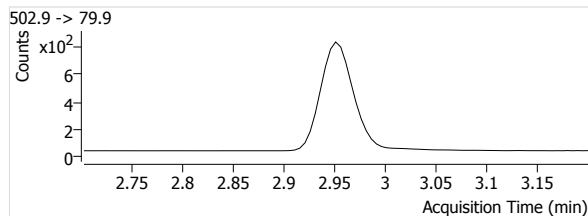
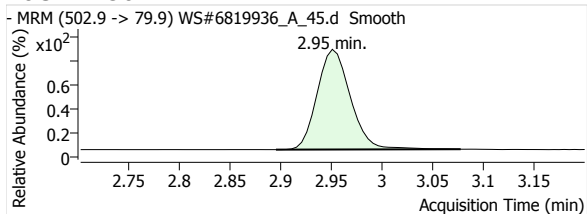


# Quantitative Analysis Report

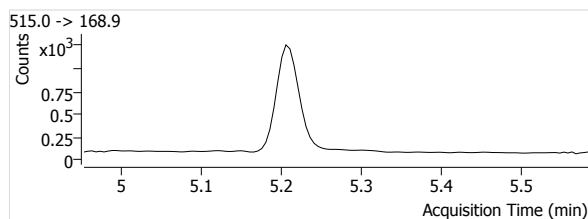
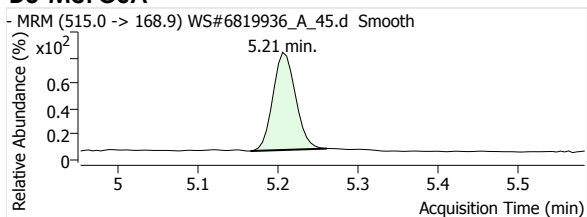
## 18O2-PFHxs



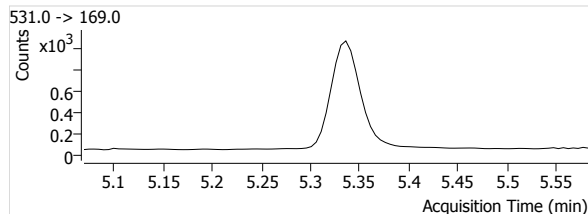
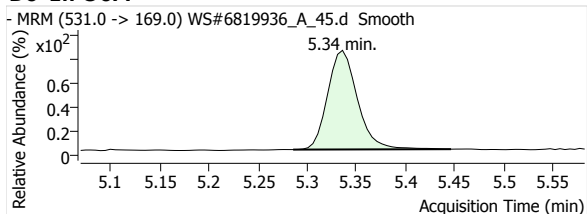
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

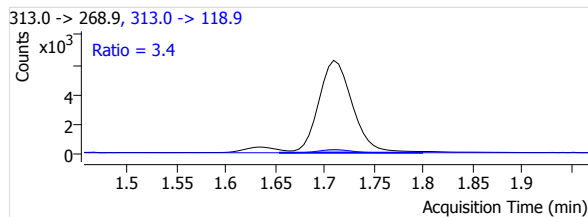
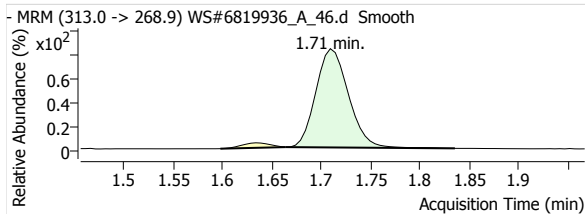
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bin

Sample Name 6819936:NAH708-01  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 4:33:01 PM  
 Comment -  
 User Defined MI PFOA

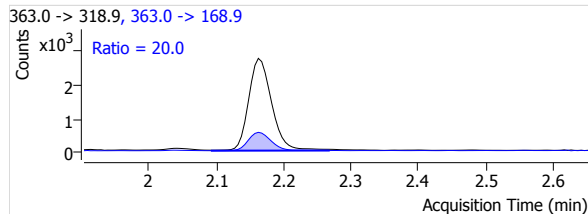
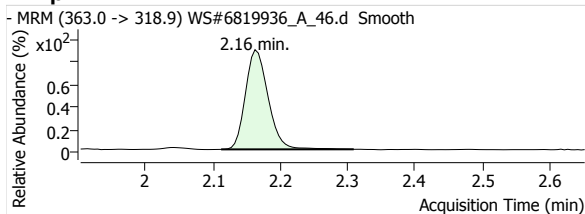
Data File WS#6819936\_A\_46.d  
 Instrument LCMS04  
 Position P2-D8  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.1884	--	14142	1.71	202	1.5710	479	1.71	80	3.4
PFHpA 1	µg/L	--	0.0733	--	6366	2.16	184	0.5313	1276	2.16	68	20.0
PFOA 1	µg/L	--	0.1569	--	11569	2.64	214	1.1297	3164	2.63	267	27.4
PFNA 1	µg/L	--	0.0148	--	564	3.08	11	0.0721	124	3.07	23	22.0
PFDA 1	µg/L	--	0.0054	--	146	3.47	3	0.0242	41	3.47	25	28.1
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0314	--	502	1.37	27	0.1822	245	1.37	38	48.8
PFHxS 1	µg/L	--	0.7231	--	8987	2.08	384	4.8448	4518	2.10	449	50.3
PFOS 1	µg/L	--	1.8249	--	17279	2.89	81	11.5657	9173	2.90	216	53.1
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	90.8834	--	9002	1.71	905	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.1977	--	11981	2.16	568	--	--	--	--	--
13C4-PFOA	µg/L	--	86.4803	--	10241	2.64	324	--	--	--	--	--
13C5-PFNA	µg/L	--	84.0206	--	7824	3.08	533	--	--	--	--	--
13C2-PFDA	µg/L	--	84.2348	--	6027	3.47	360	--	--	--	--	--
13C2-PFUnA	µg/L	--	89.7157	--	7668	3.81	275	--	--	--	--	--
13C2-PFDaA	µg/L	--	88.1280	--	9227	4.11	602	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.7368	--	12360	4.61	624	--	--	--	--	--
13C3-PFBS	µg/L	--	81.8479	--	2755	1.36	200	--	--	--	--	--
18O2-PFHxS	µg/L	--	79.4433	--	1855	2.12	153	--	--	--	--	--
13C4-PFOS	µg/L	--	82.5414	--	1494	2.96	479	--	--	--	--	--
D3-MeFOSA	µg/L	--	52.0977	--	2347	5.21	44	--	--	--	--	--
D5-EtFOSA	µg/L	--	62.3603	--	2288	5.34	81	--	--	--	--	--

### PFHxA 1

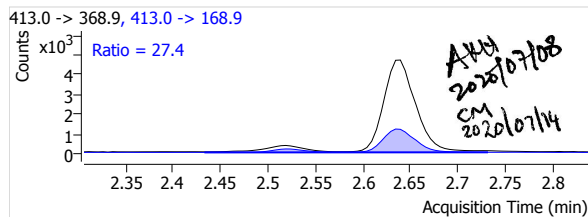
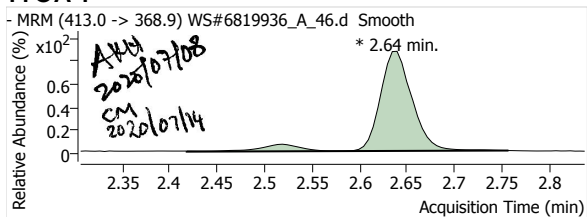


### PFHpA 1

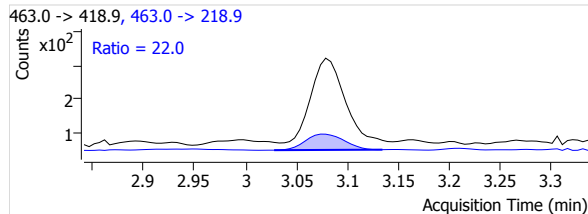
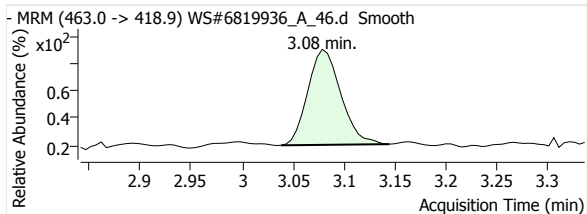


# Quantitative Analysis Report

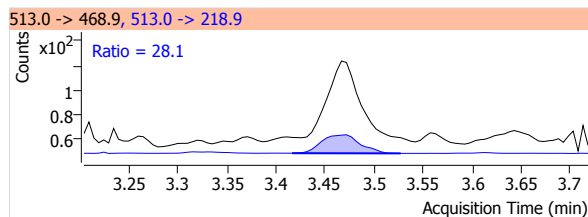
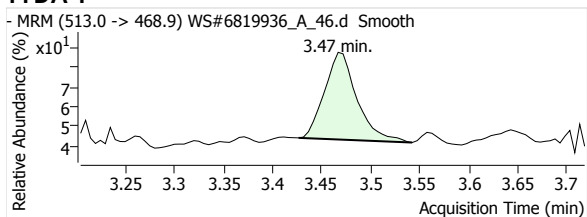
## PFOA 1



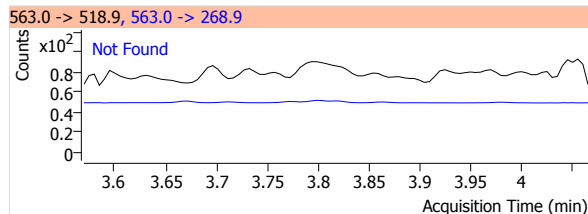
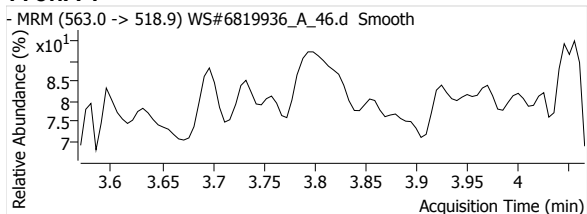
## PFNA 1



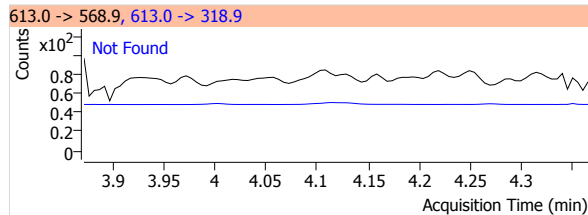
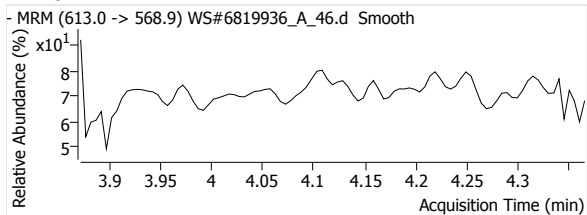
## PFDA 1



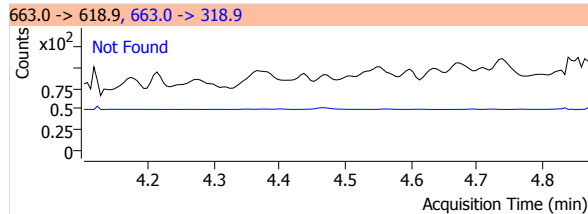
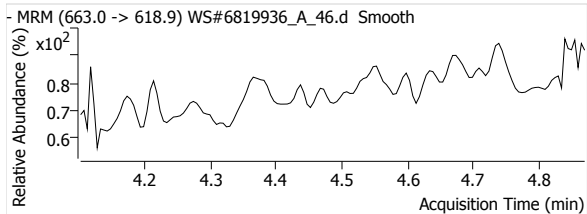
## PFUnA 1



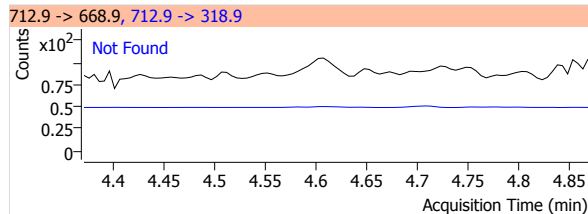
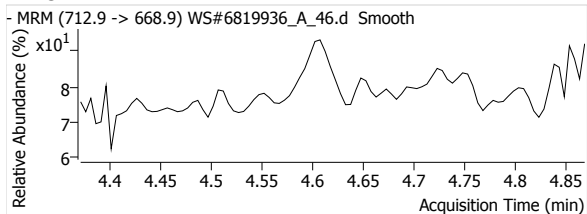
## PFDoA 1



## PFTrDA 1

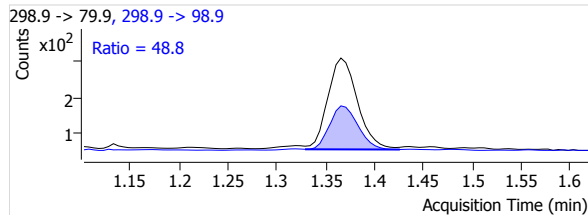
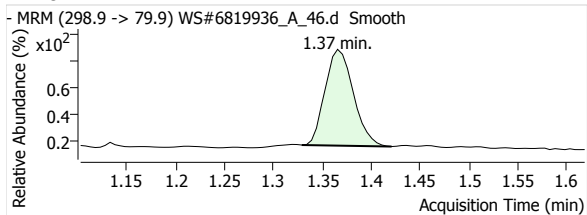


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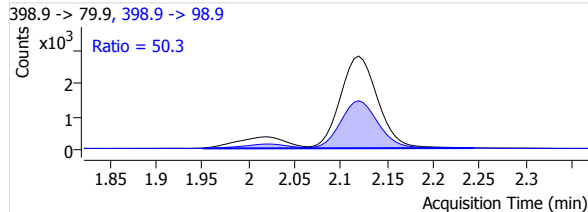
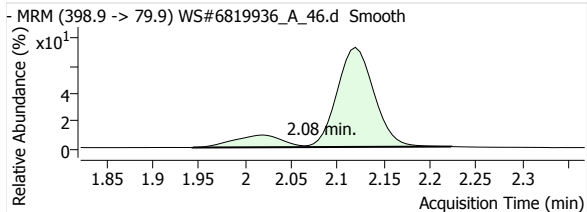


# Quantitative Analysis Report

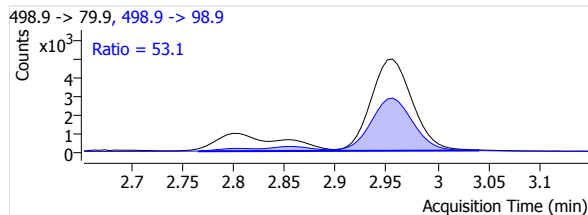
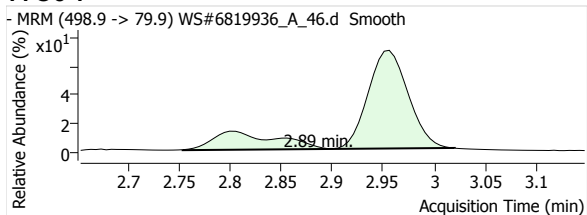
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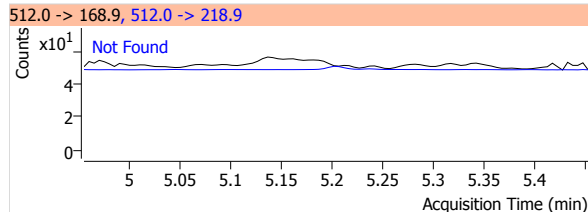
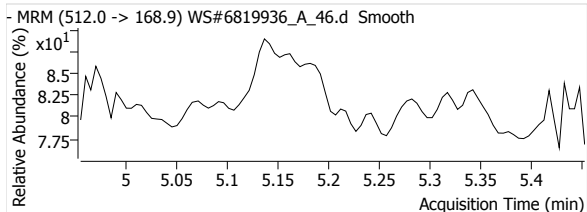
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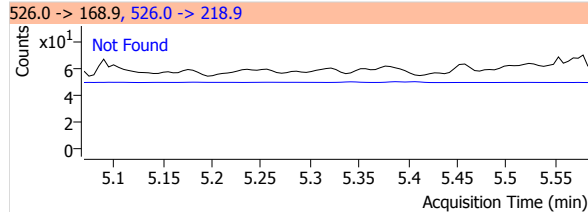
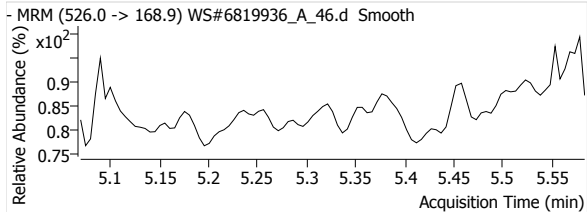
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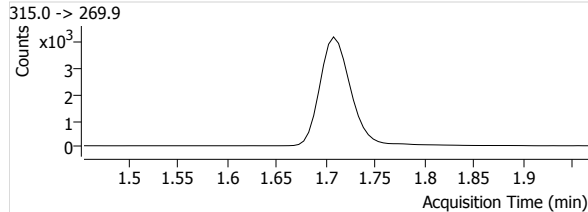
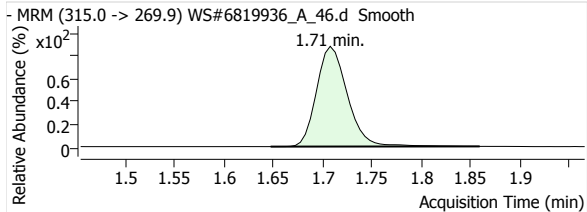
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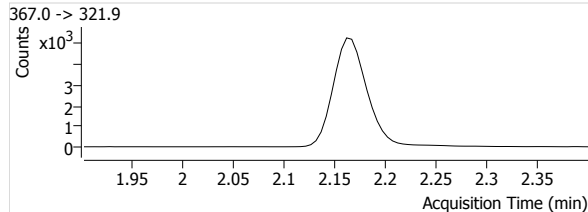
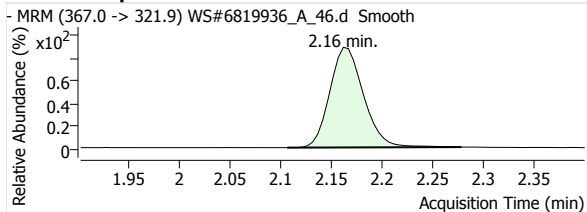
## eFOSA 1



## 13C2-PFHxA

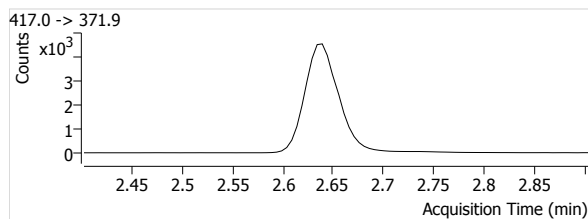
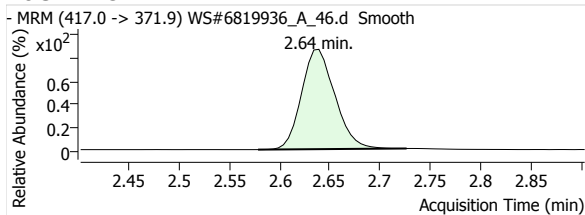


## 13C4-PFHpA

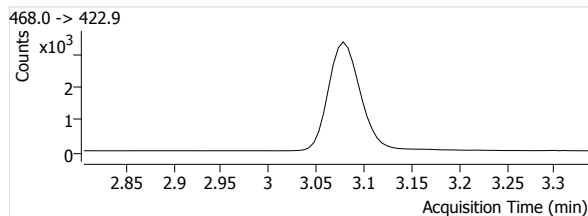
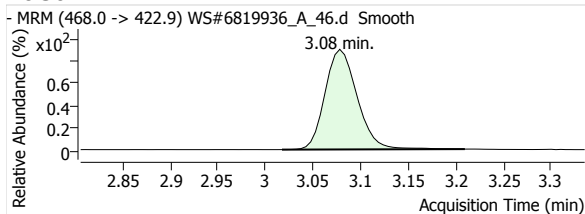


# Quantitative Analysis Report

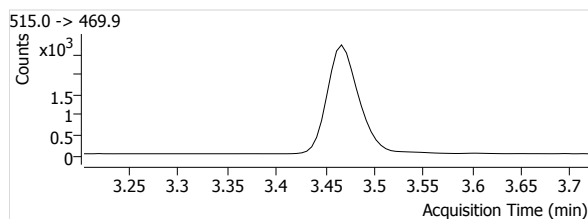
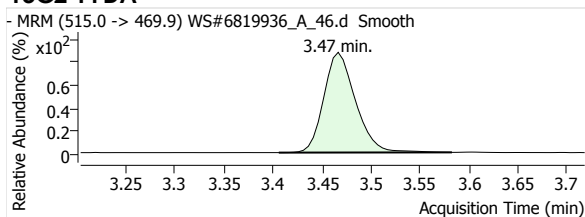
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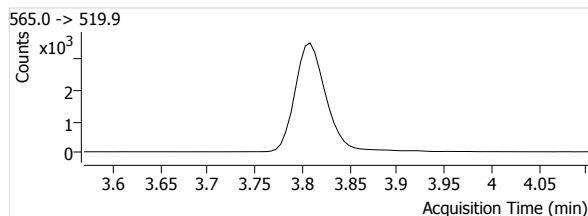
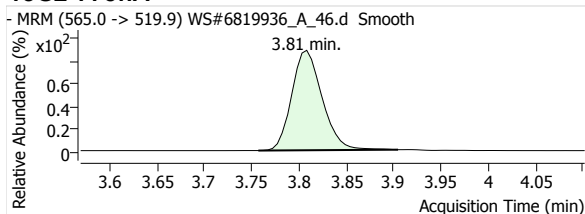
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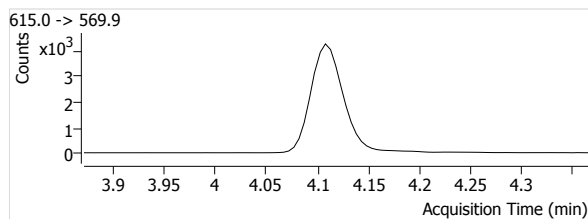
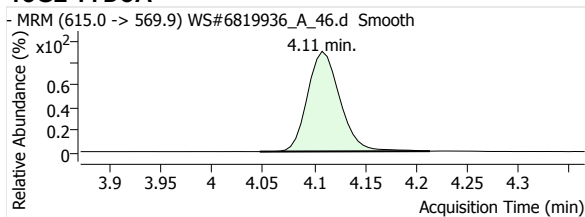
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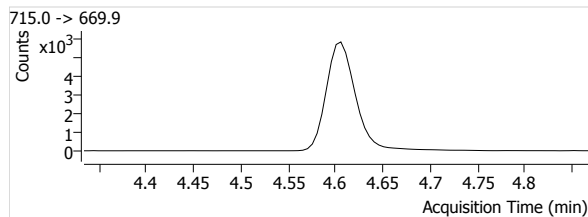
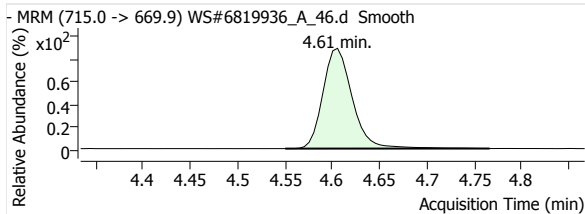
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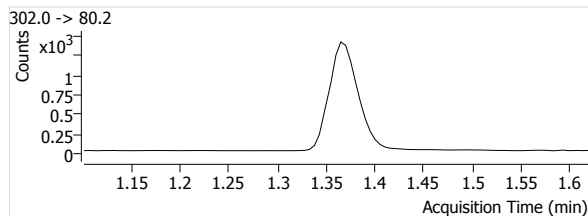
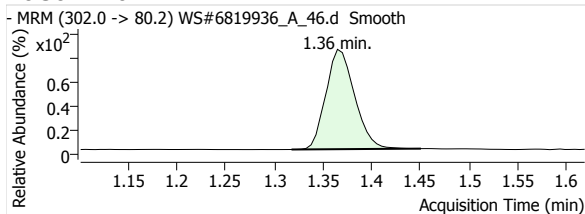
## 13C2-PFDoA



## 13C2-PFTeDA

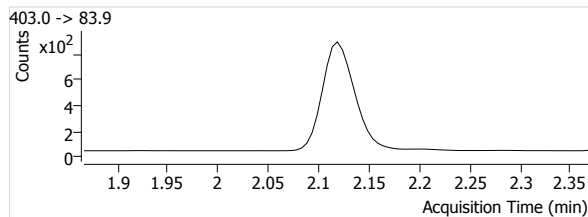
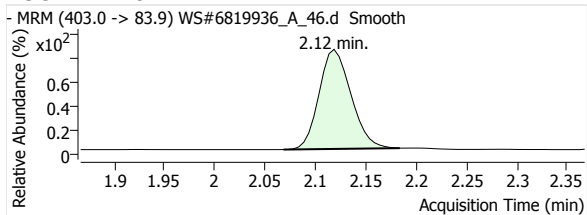


## 13C3-PFBS

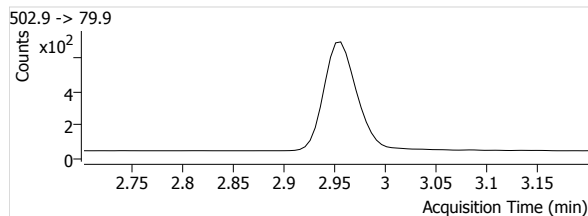
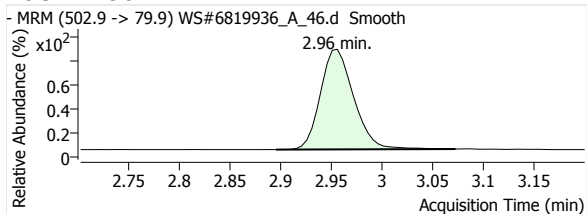


# Quantitative Analysis Report

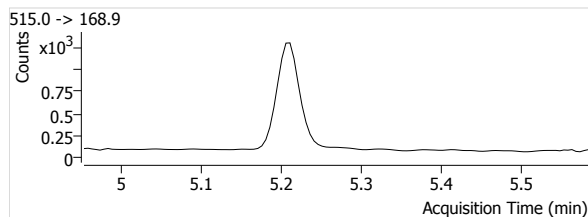
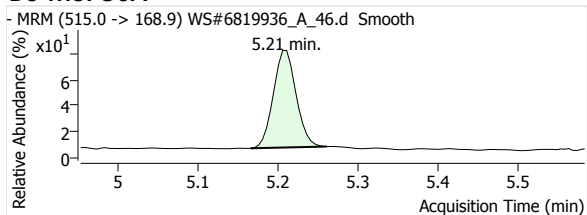
## 18O2-PFHxs



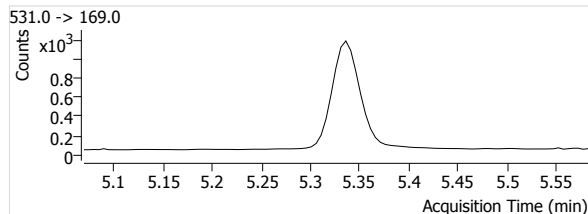
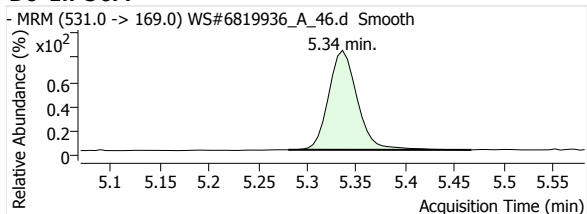
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



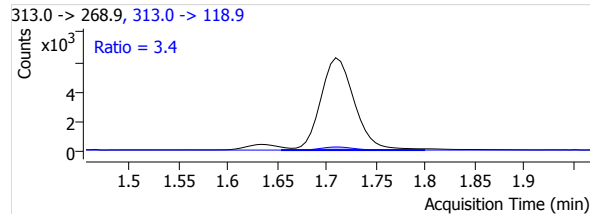
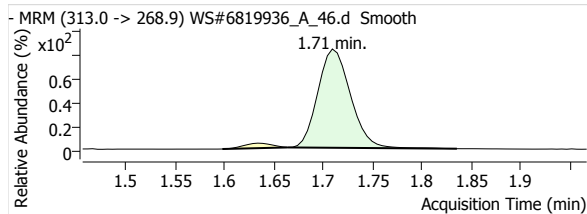
# Quantitative Analysis Report

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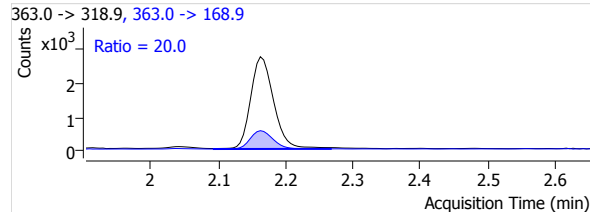
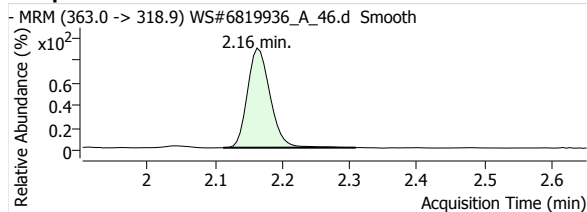
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-D8
<b>Acq. Date-Time</b>	2020/07/08 4:33:01 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>	MI PFOA		

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.1884	--	14142	1.71	202	1.5710	479	1.71	80	3.4
PFHpA 1	µg/L	--	0.0733	--	6366	2.16	184	0.5313	1276	2.16	68	20.0
PFOA 1	µg/L	--	0.1419	--	10428	2.64	265	1.0183	2751	2.63	318	26.4
PFNA 1	µg/L	--	0.0148	--	564	3.08	11	0.0721	124	3.07	23	22.0
PFDA 1	µg/L	--	0.0054	--	146	3.47	3	0.0242	41	3.47	25	28.1
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0314	--	502	1.37	27	0.1822	245	1.37	38	48.8
PFHxS 1	µg/L	--	0.7231	--	8987	2.08	384	4.8448	4518	2.10	449	50.3
PFOS 1	µg/L	--	1.8249	--	17279	2.89	81	11.5657	9173	2.90	216	53.1
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	90.8834	--	9002	1.71	905	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.1977	--	11981	2.16	568	--	--	--	--	--
13C4-PFOA	µg/L	--	86.4803	--	10241	2.64	324	--	--	--	--	--
13C5-PFNA	µg/L	--	84.0206	--	7824	3.08	533	--	--	--	--	--
13C2-PFDA	µg/L	--	84.2348	--	6027	3.47	360	--	--	--	--	--
13C2-PFUnA	µg/L	--	89.7157	--	7668	3.81	275	--	--	--	--	--
13C2-PFDoA	µg/L	--	88.1280	--	9227	4.11	602	--	--	--	--	--
13C2-PFTeDA	µg/L	--	80.7368	--	12360	4.61	624	--	--	--	--	--
13C3-PFBS	µg/L	--	81.8479	--	2755	1.36	200	--	--	--	--	--
18O2-PFHxS	µg/L	--	79.4433	--	1855	2.12	153	--	--	--	--	--
13C4-PFOS	µg/L	--	82.5414	--	1494	2.96	479	--	--	--	--	--
D3-MeFOSA	µg/L	--	52.0977	--	2347	5.21	44	--	--	--	--	--
D5-EtFOSA	µg/L	--	62.3603	--	2288	5.34	81	--	--	--	--	--

### PFHxA 1



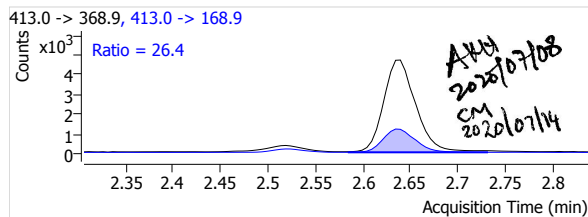
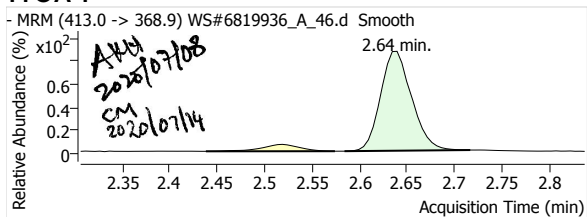
### PFHpA 1



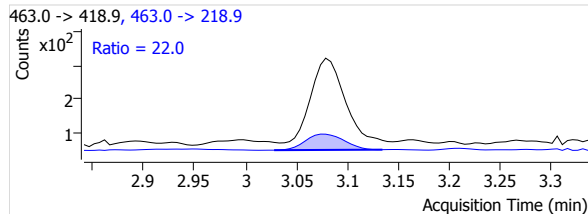
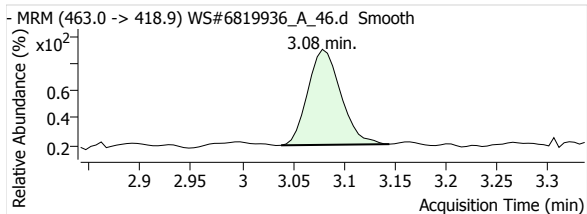


# Quantitative Analysis Report

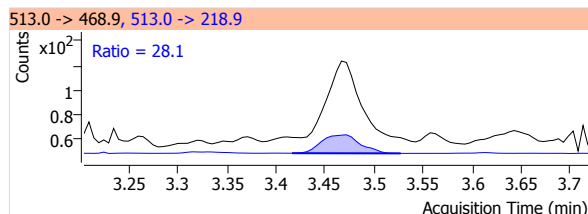
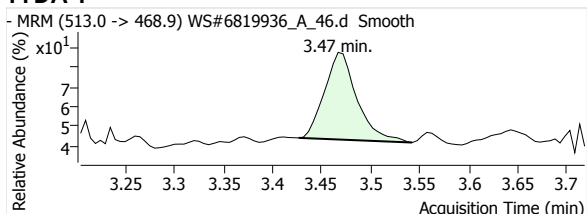
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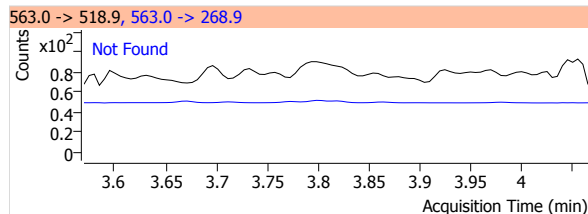
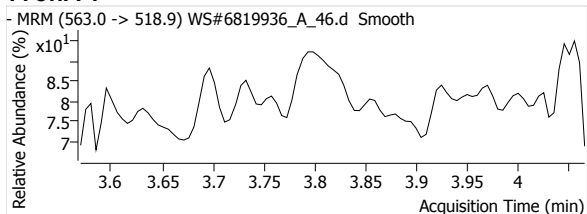
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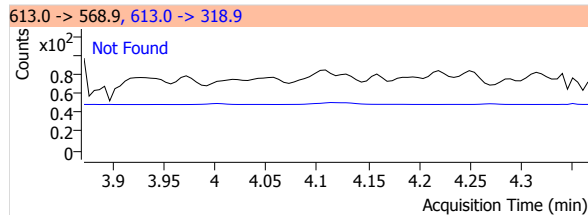
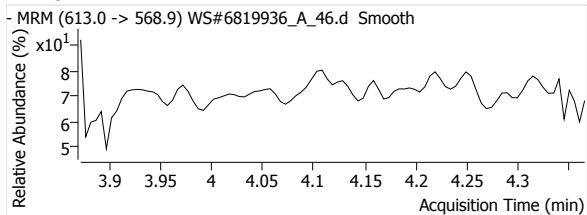
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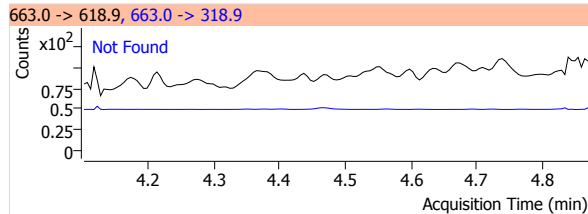
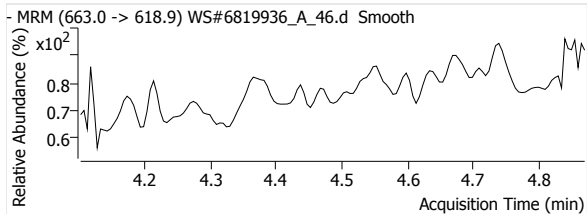
## PFUnA 1



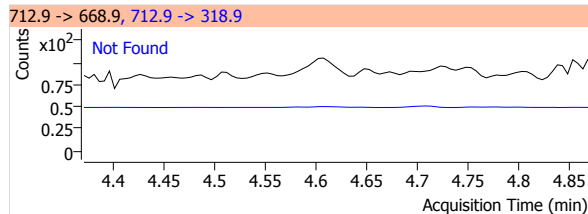
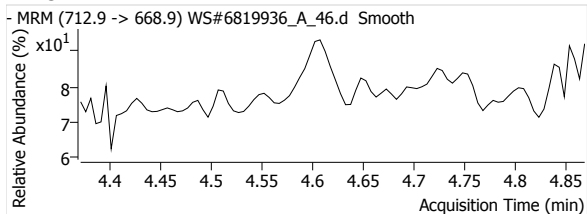
## PFDoA 1



## PFTrDA 1

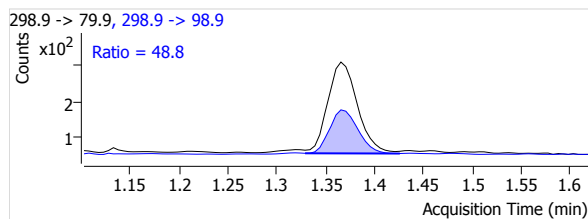
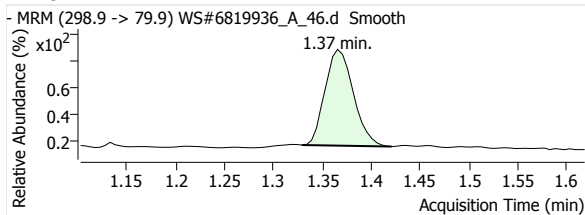


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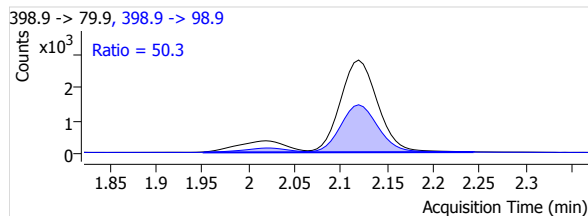
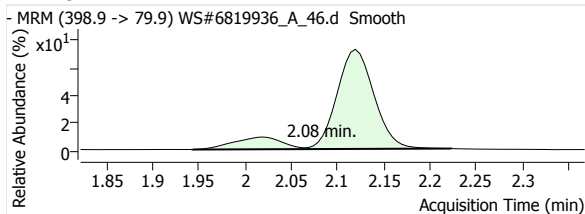


# Quantitative Analysis Report

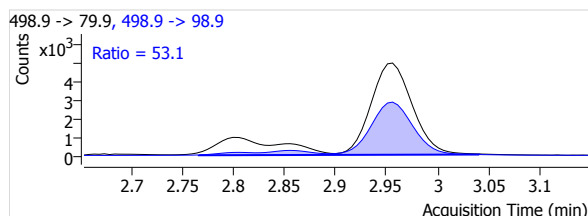
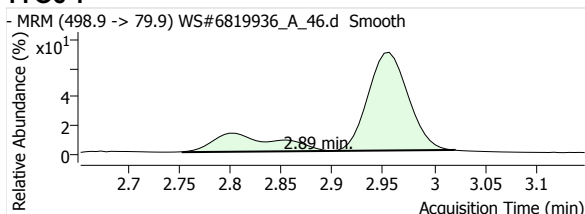
## PFBS 1



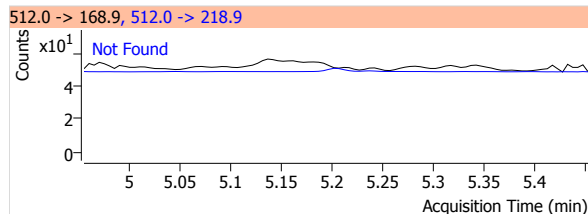
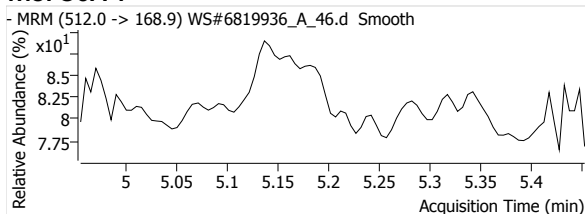
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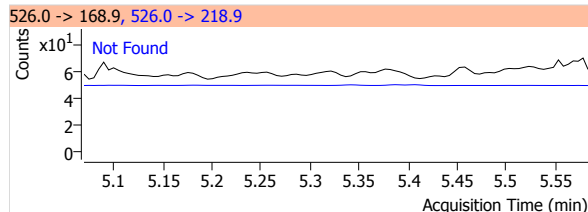
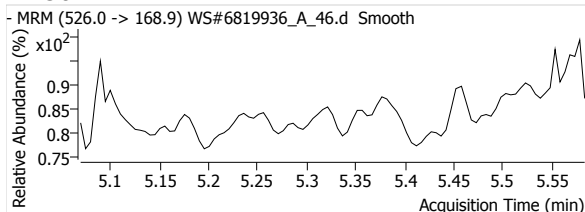
## PFOS 1



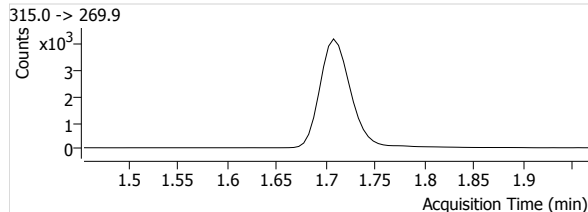
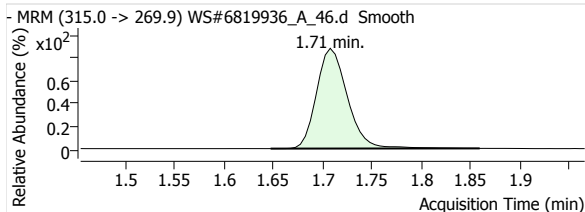
## MeFOSA 1



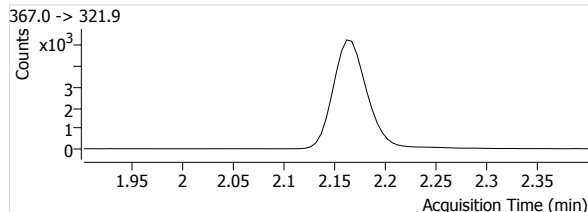
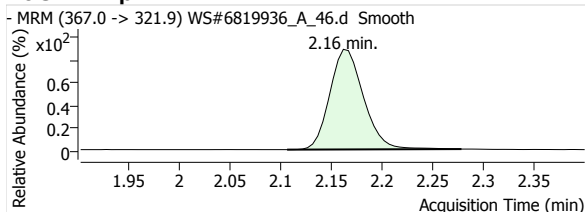
## eFOSA 1



## 13C2-PFHxA

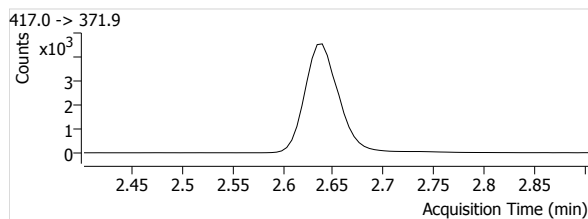
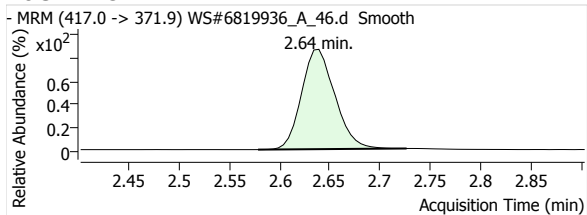


## 13C4-PFHpA

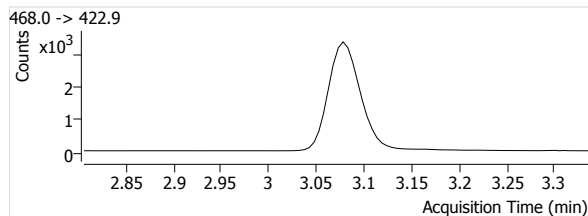
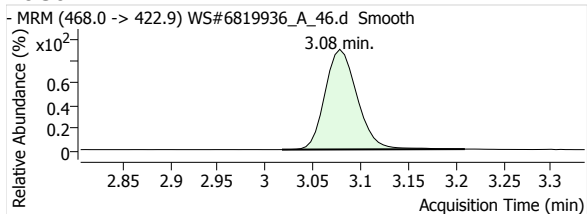


# Quantitative Analysis Report

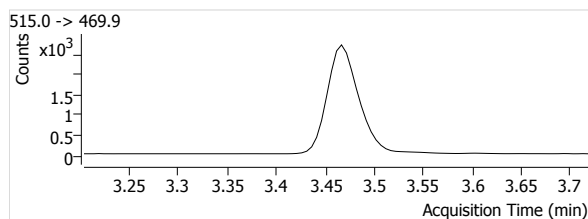
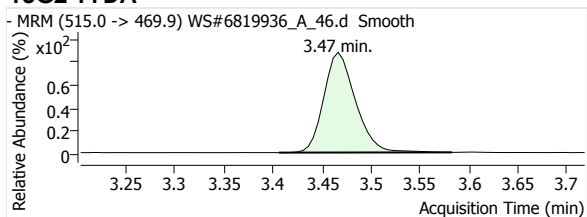
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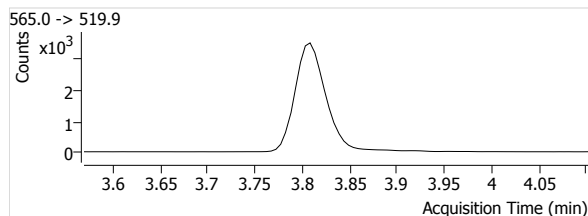
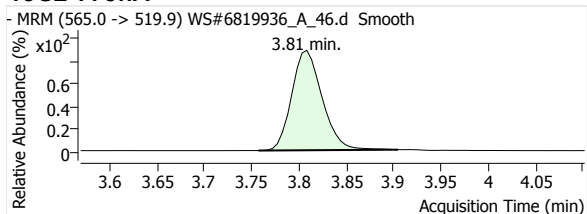
## 13C5-PFNA



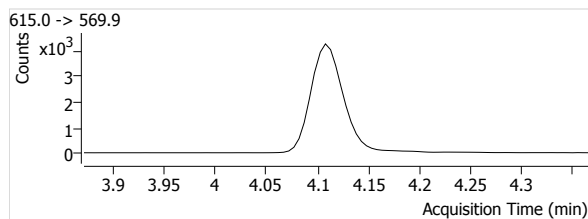
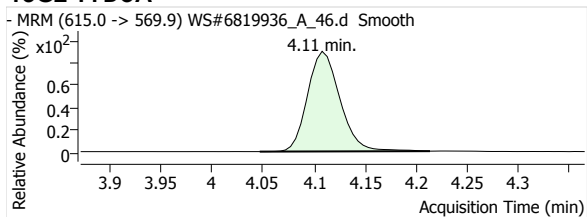
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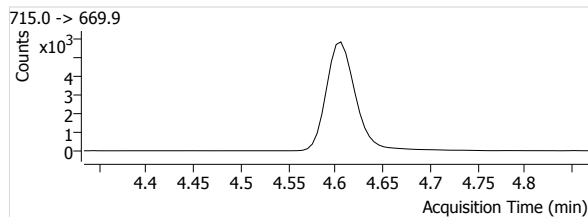
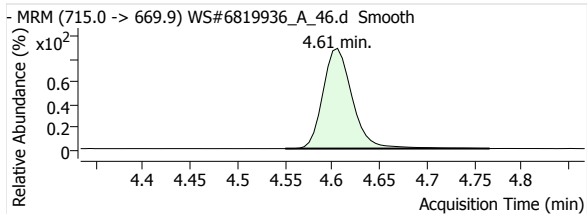
## 13C2-PFUnA



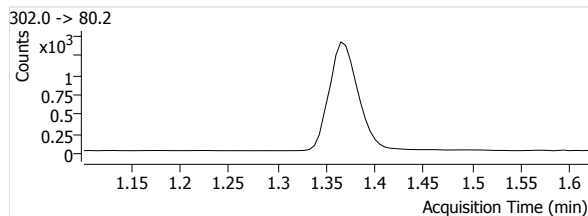
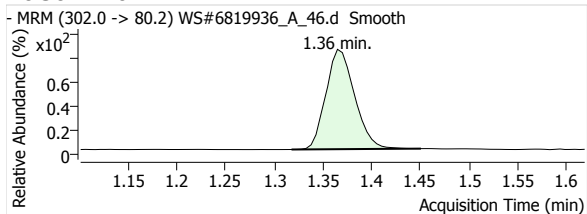
## 13C2-PFDoA



## 13C2-PFTeDA

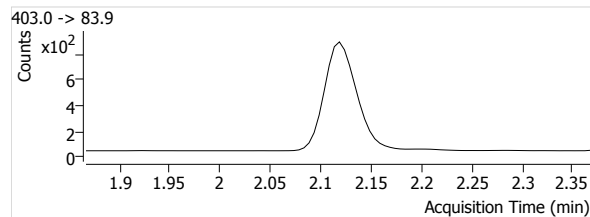
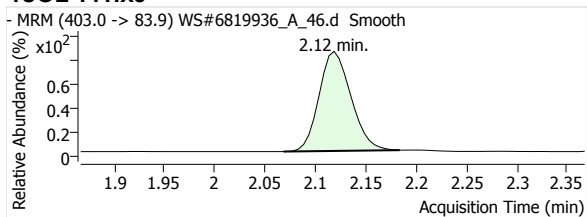


## 13C3-PFBS

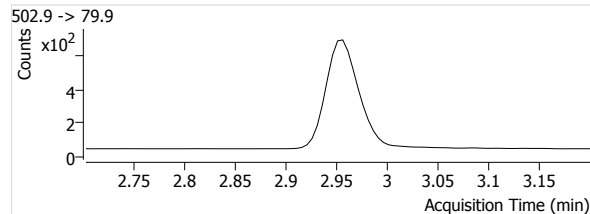
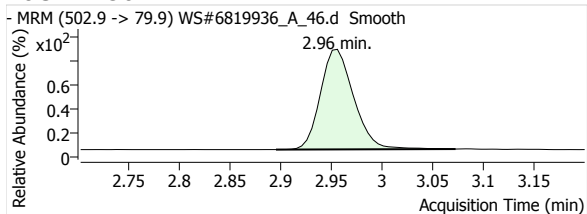


# Quantitative Analysis Report

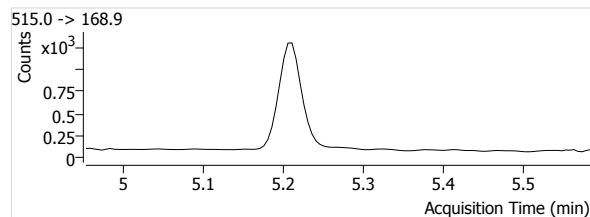
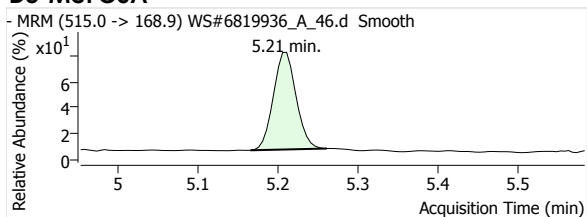
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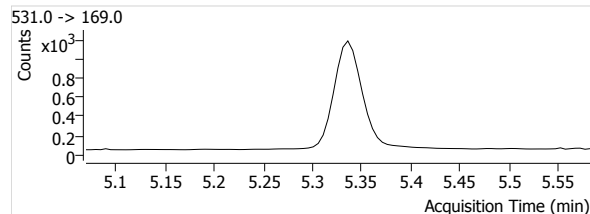
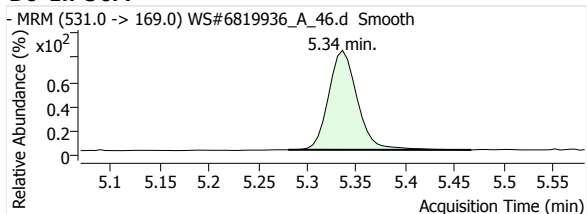
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

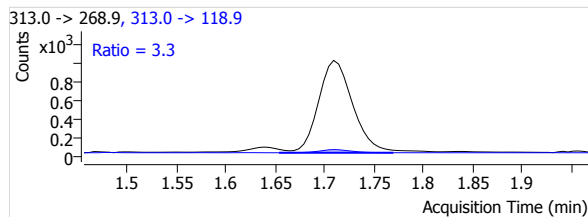
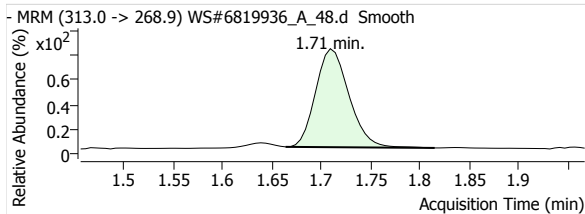
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Sample Name 6819936:NAH709-01:10x  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 4:46:54 PM  
 Comment Reported PFOS  
 User Defined

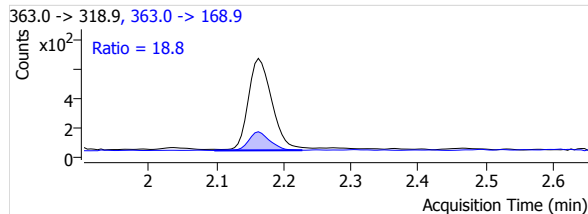
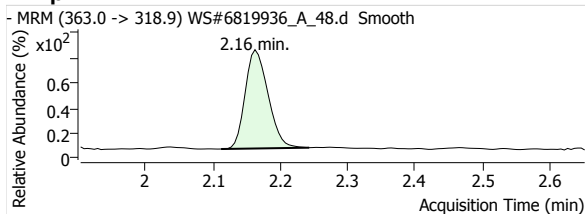
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 Instrument LCMS04  
 Position P2-D9  
 Dil. 0.2

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.3115	--	2271	1.71	31	0.2429	74	1.71	14	3.3
PFHpA 1	µg/L	--	0.1827	--	1439	2.16	41	0.1151	270	2.16	15	18.8
PFOA 1	µg/L	--	0.2101	--	1538	2.64	23	0.1352	389	2.63	28	25.3
PFNA 1	µg/L	--	0.0736	--	212	3.08	5	0.0248	51	3.08	8	24.1
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0570	--	69	1.37	9	0.0232	25	1.37	4	36.2
PFHxS 1	µg/L	--	1.0622	--	1553	2.08	293	0.7563	810	2.10	184	52.1
PFOS 1	µg/L	--	2.8926	--	3370	2.89	110	1.9699	1820	2.90	142	54.0
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	94.3968	--	9350	1.71	317	--	--	--	--	--
13C4-PFHpA	µg/L	--	98.2939	--	12502	2.16	275	--	--	--	--	--
13C4-PFOA	µg/L	--	96.0817	--	11378	2.64	1646	--	--	--	--	--
13C5-PFNA	µg/L	--	91.6237	--	8532	3.08	546	--	--	--	--	--
13C2-PFDA	µg/L	--	87.8407	--	6285	3.47	654	--	--	--	--	--
13C2-PFUnA	µg/L	--	100.1755	--	8562	3.81	536	--	--	--	--	--
13C2-PFDaA	µg/L	--	99.0831	--	10374	4.11	1012	--	--	--	--	--
13C2-PFTeDA	µg/L	--	86.0344	--	13171	4.61	793	--	--	--	--	--
13C3-PFBS	µg/L	--	88.3541	--	2974	1.36	227	--	--	--	--	--
18O2-PFHxS	µg/L	--	87.9229	--	2053	2.12	387	--	--	--	--	--
13C4-PFOS	µg/L	--	94.5304	--	1711	2.96	241	--	--	--	--	--
D3-MeFOSA	µg/L	--	50.7880	--	2288	5.21	58	--	--	--	--	--
D5-EtFOSA	µg/L	--	54.2110	--	1989	5.34	74	--	--	--	--	--

### PFHxA 1

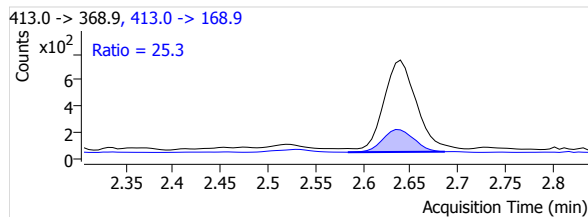
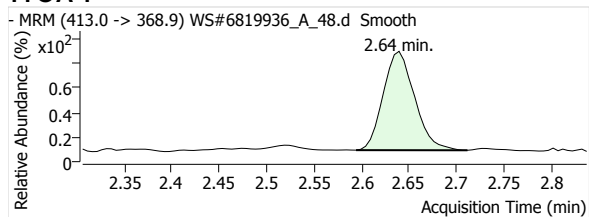


### PFHpA 1

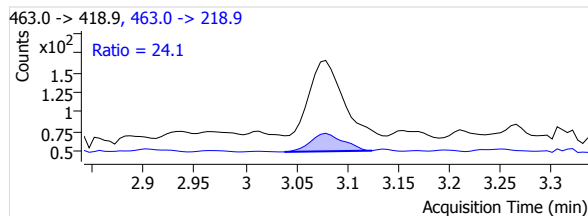
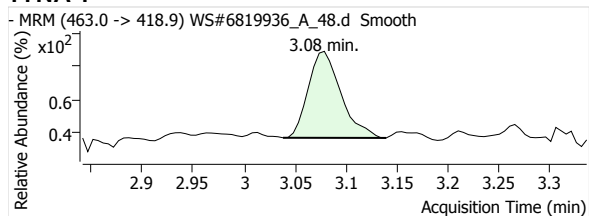


# Quantitative Analysis Report

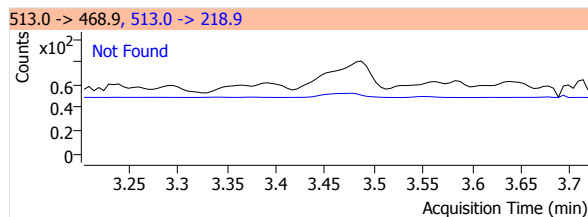
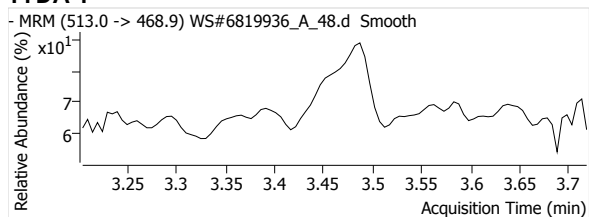
## PFOA 1



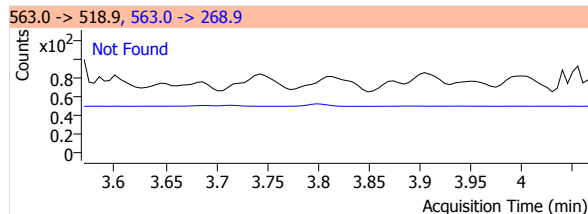
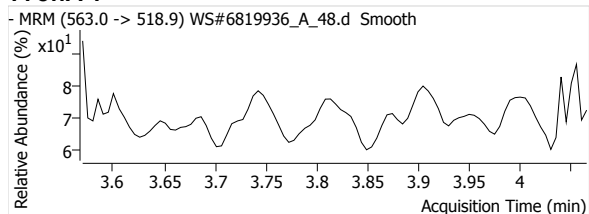
## PFNA 1



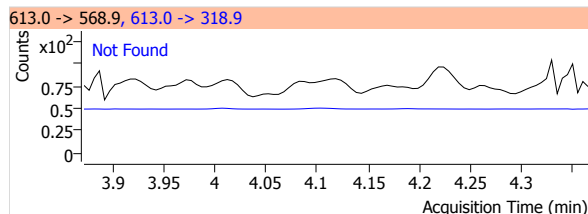
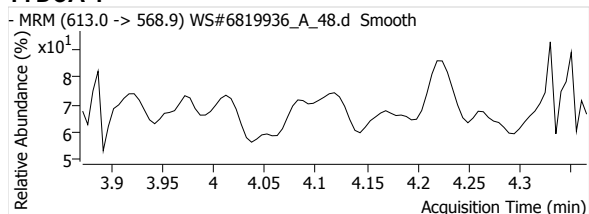
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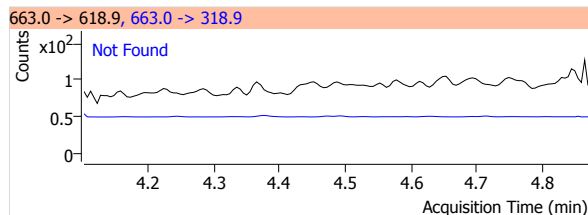
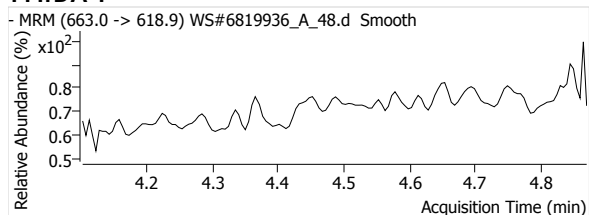
## PFUnA 1



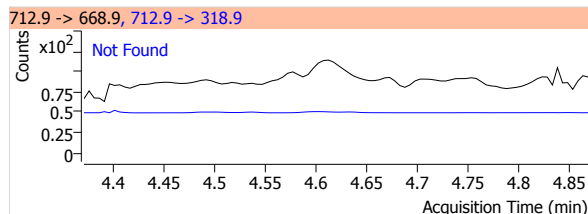
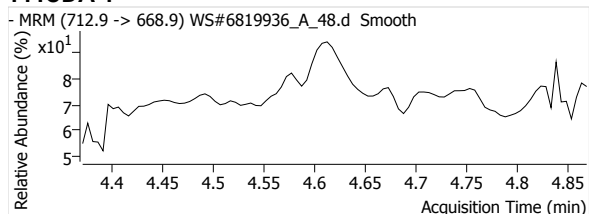
## PFDaA 1



## PFTrDA 1

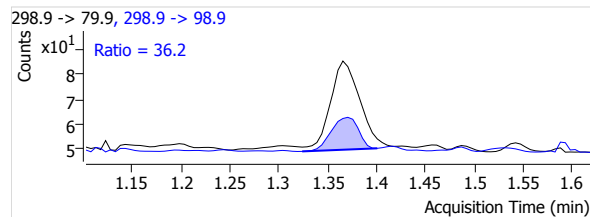
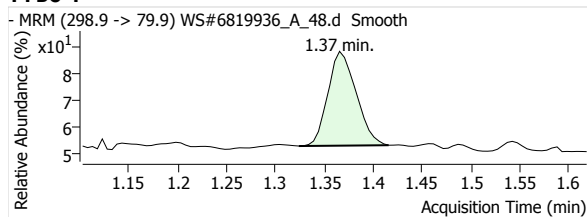


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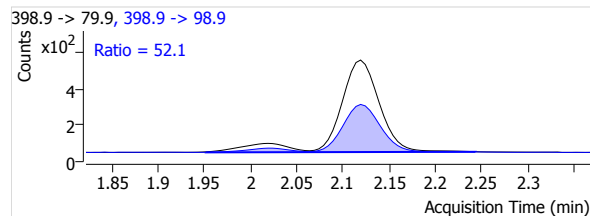
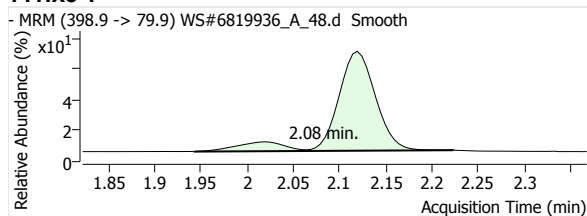


# Quantitative Analysis Report

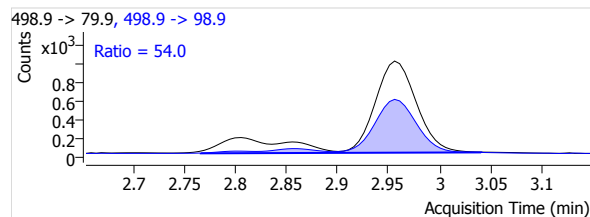
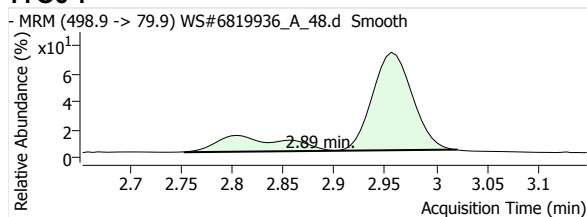
## PFBS 1



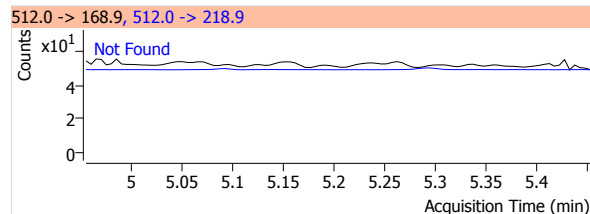
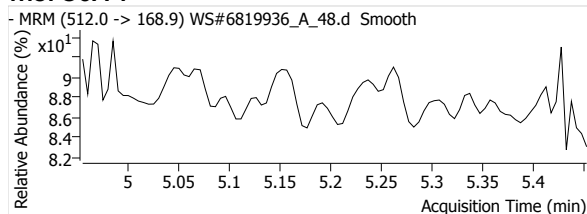
## PFHxS 1



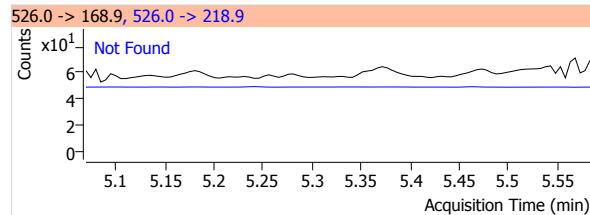
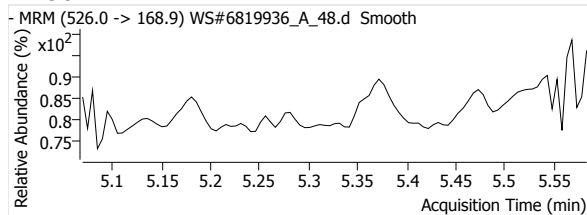
## PFOS 1



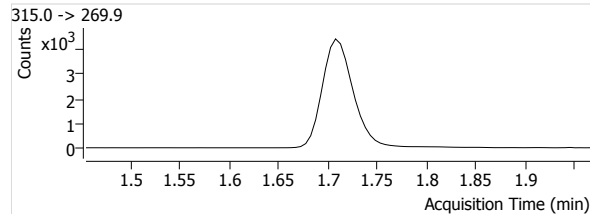
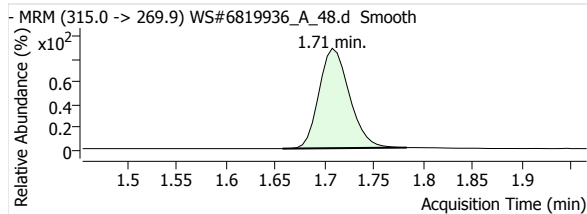
## MeFOSA 1



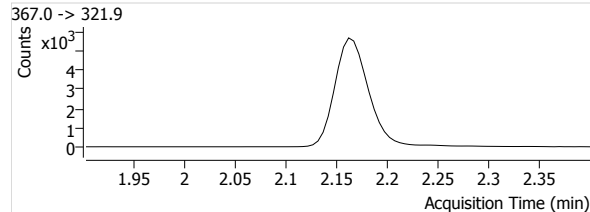
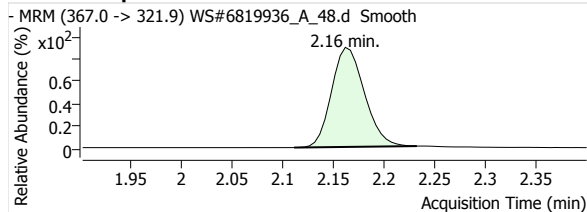
## eFOSA 1



## 13C2-PFHxA

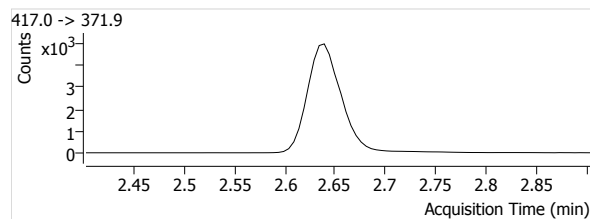
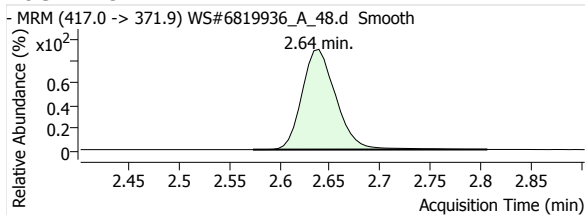


## 13C4-PFHpA

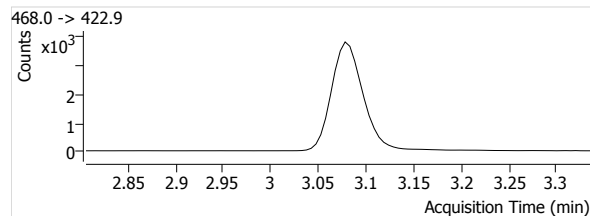
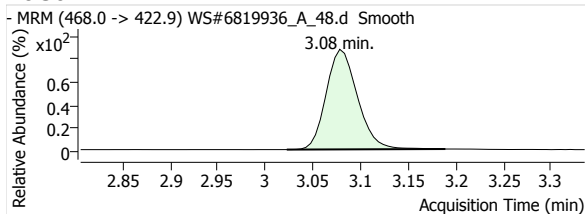


# Quantitative Analysis Report

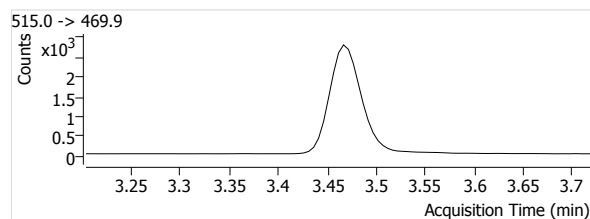
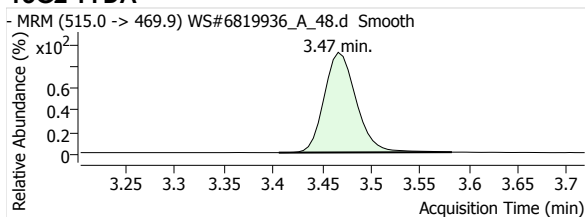
## 13C4-PFOA



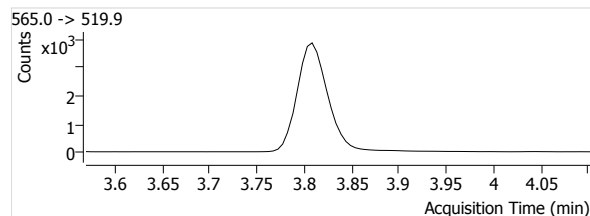
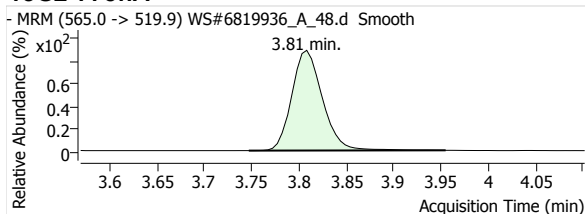
## 13C5-PFNA



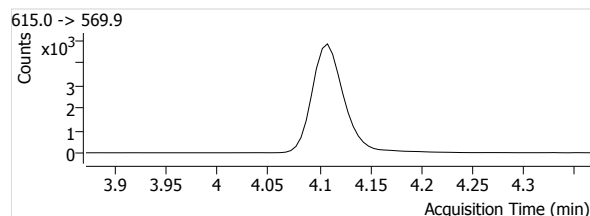
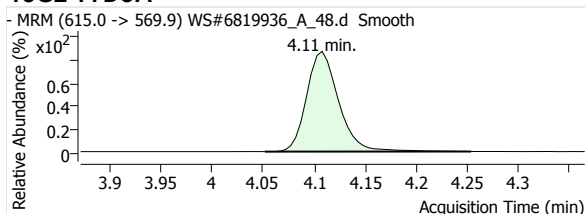
## 13C2-PFDA



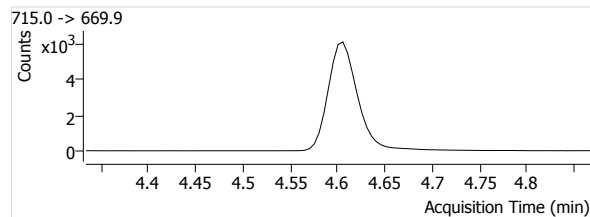
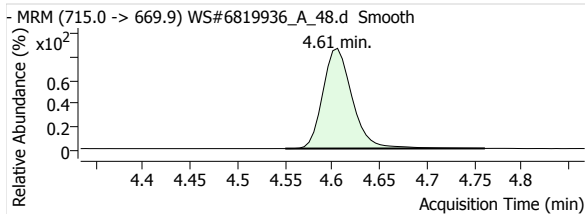
## 13C2-PFUnA



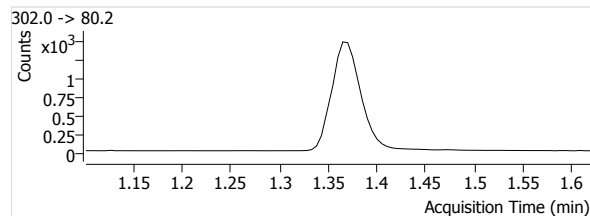
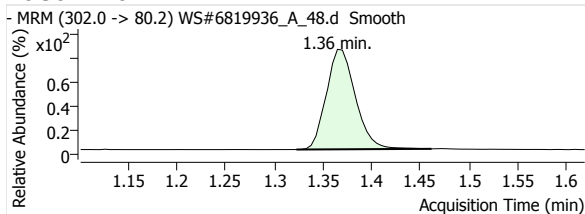
## 13C2-PFDoA



## 13C2-PFTeDA



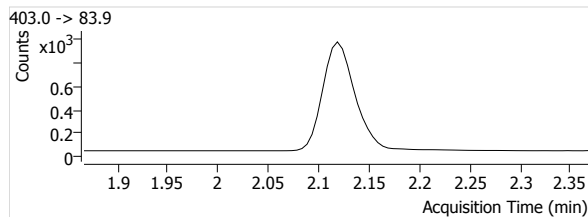
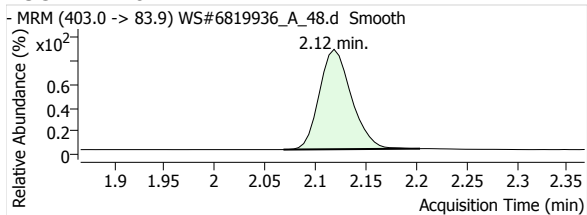
## 13C3-PFBS



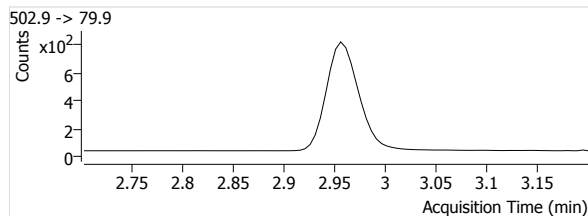
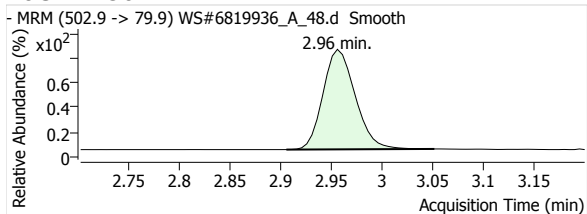


# Quantitative Analysis Report

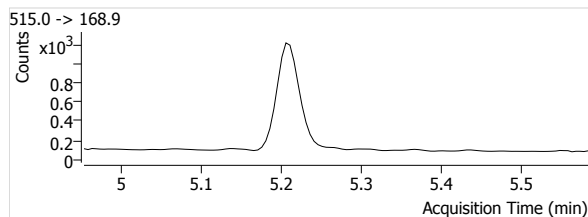
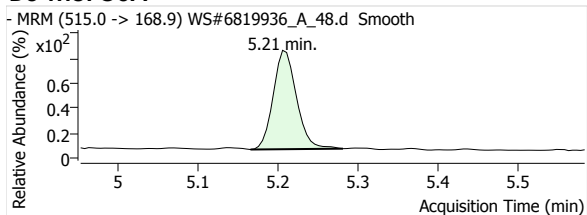
## 18O2-PFHxs



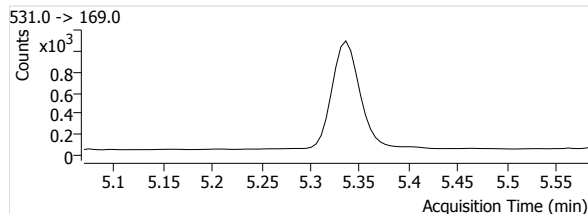
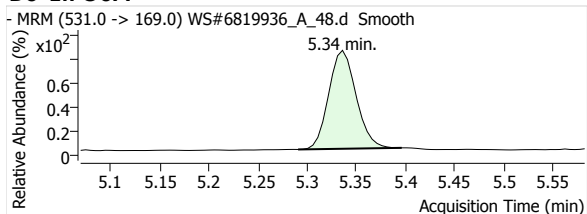
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

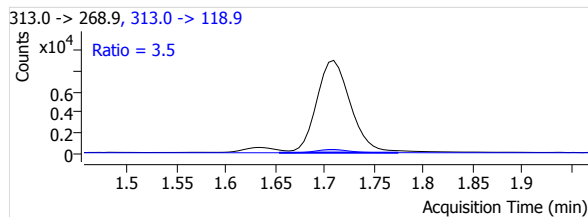
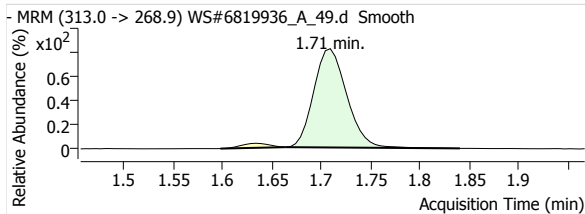
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bin

Sample Name 6819936:NAH709-01  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 4:53:49 PM  
Comment -  
User Defined MI PFOA

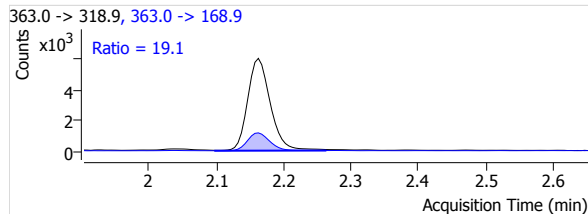
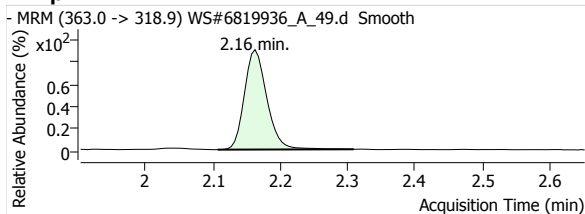
Data File WS#6819936\_A\_49.d  
Instrument LCMS04  
Position P2-E1  
Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.2415	--	20736	1.71	338	2.0266	726	1.71	111	3.5
PFHpA 1	µg/L	--	0.1330	--	13745	2.16	230	0.9959	2625	2.16	113	19.1
PFOA 1	µg/L	--	0.1786	--	15352	2.64	214	1.2904	4102	2.64	186	26.7
PFNA 1	µg/L	--	0.0315	--	1691	3.08	32	0.1877	400	3.07	27	23.7
PFDA 1	µg/L	--	0.0068	--	249	3.47	7	0.0385	52	3.46	52	20.9
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0367	--	679	1.37	36	0.2160	317	1.37	35	46.7
PFHxS 1	µg/L	--	1.0138	--	14870	2.08	430	6.7992	7541	2.10	513	50.7
PFOS 1	µg/L	--	3.1641	--	32169	2.89	119	20.0678	16901	2.90	222	52.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	103.3014	--	10232	1.71	1150	--	--	--	--	--
13C4-PFHpA	µg/L	--	108.5148	--	13802	2.16	631	--	--	--	--	--
13C4-PFOA	µg/L	--	100.4644	--	11897	2.64	980	--	--	--	--	--
13C5-PFNA	µg/L	--	96.7569	--	9010	3.08	606	--	--	--	--	--
13C2-PFDA	µg/L	--	90.3424	--	6464	3.47	376	--	--	--	--	--
13C2-PFUnA	µg/L	--	101.3104	--	8659	3.81	488	--	--	--	--	--
13C2-PFDaA	µg/L	--	99.5033	--	10418	4.11	1209	--	--	--	--	--
13C2-PFTeDA	µg/L	--	89.8818	--	13760	4.61	900	--	--	--	--	--
13C3-PFBS	µg/L	--	93.3749	--	3143	1.36	115	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.6617	--	2187	2.12	418	--	--	--	--	--
13C4-PFOS	µg/L	--	88.5635	--	1603	2.96	290	--	--	--	--	--
D3-MeFOSA	µg/L	--	65.8602	--	2967	5.21	66	--	--	--	--	--
D5-EtFOSA	µg/L	--	72.1450	--	2647	5.34	105	--	--	--	--	--

### PFHxA 1

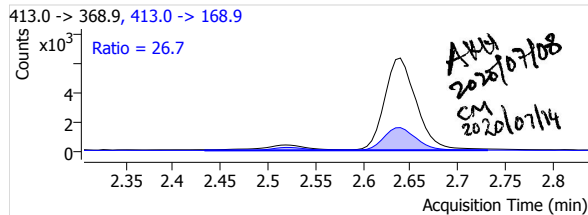
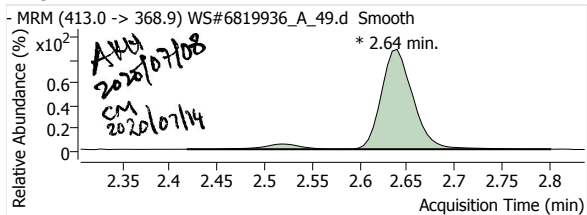


### PFHpA 1

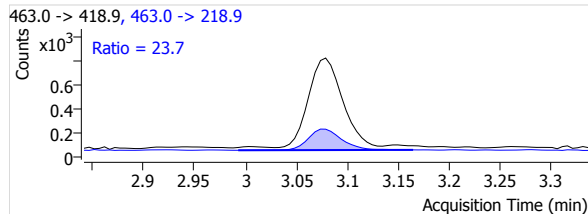
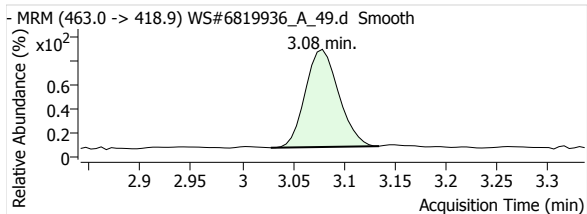


# Quantitative Analysis Report

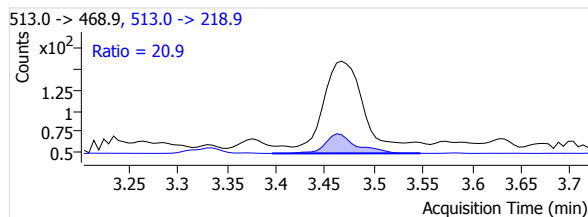
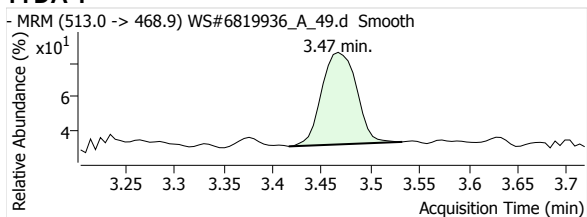
## PFOA 1



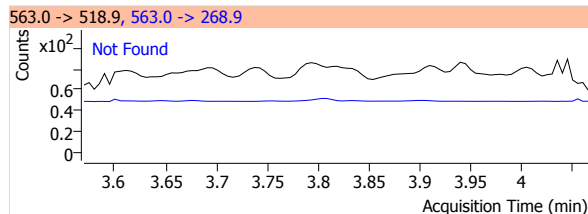
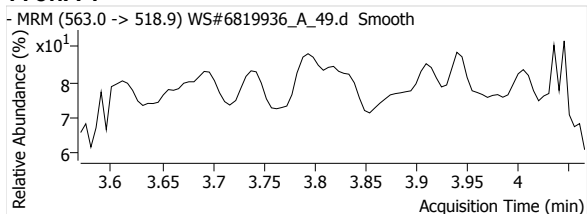
## PFNA 1



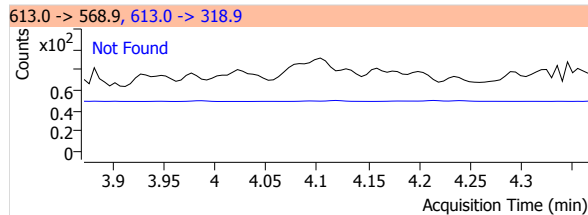
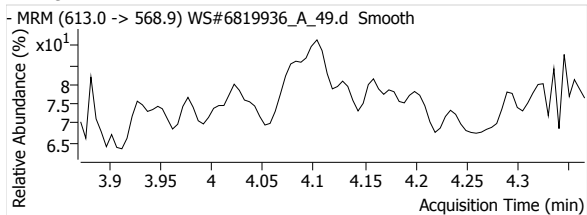
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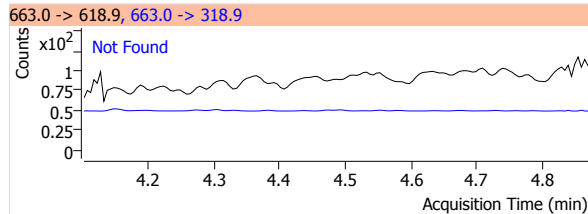
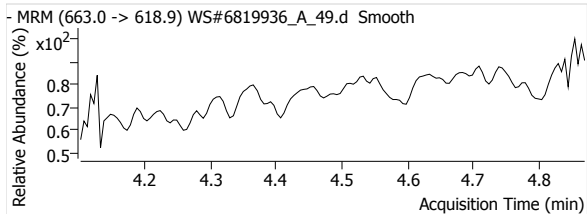
## PFUnA 1



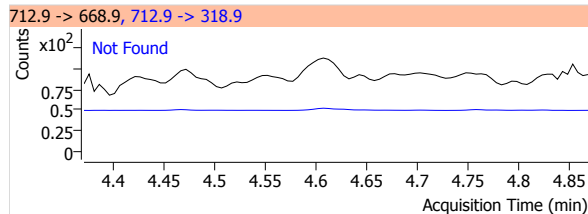
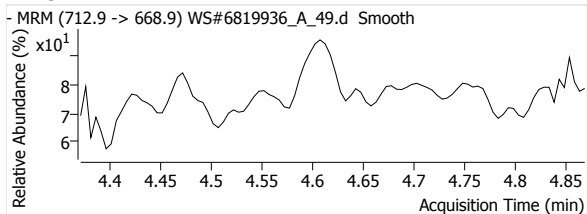
## PFDaA 1



## PFTrDA 1

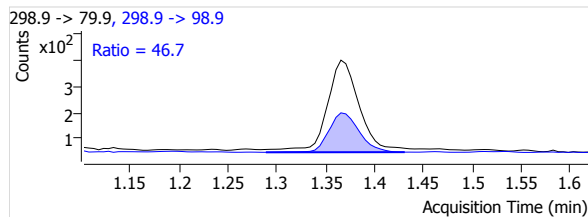
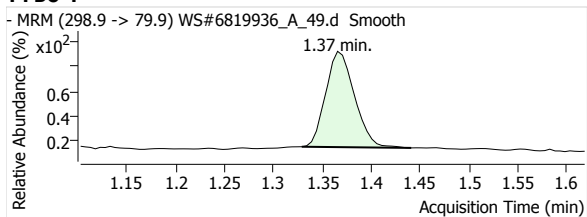


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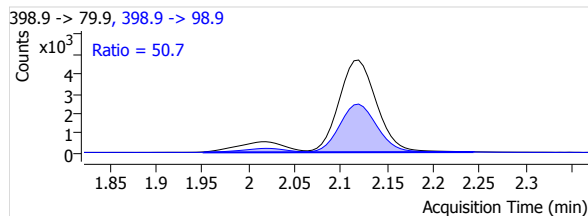
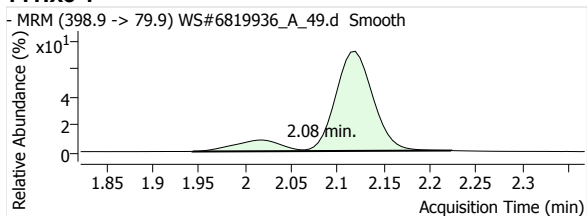


# Quantitative Analysis Report

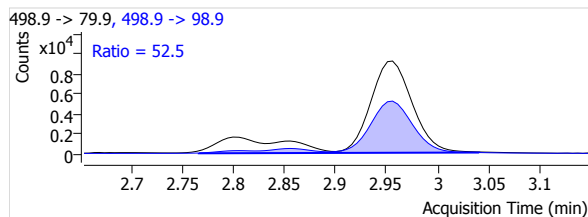
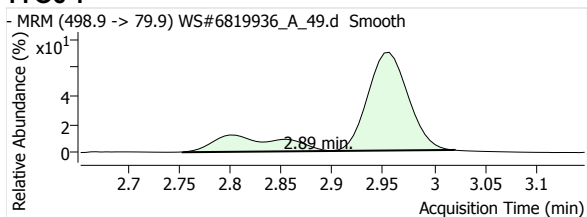
## PFBS 1



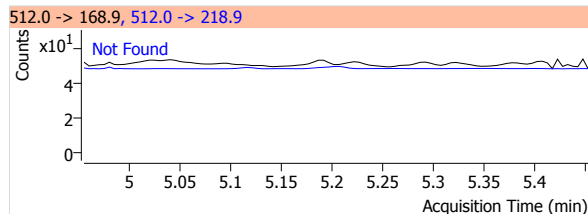
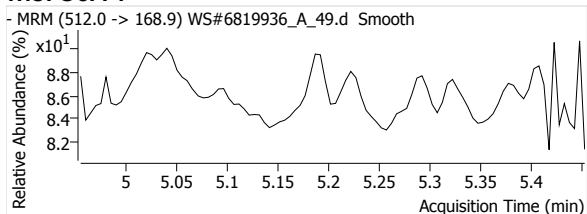
## PFHxS 1



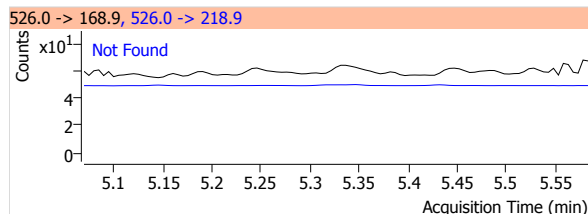
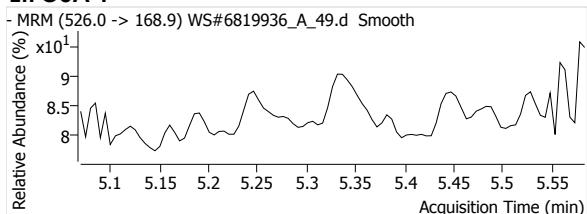
## PFOS 1



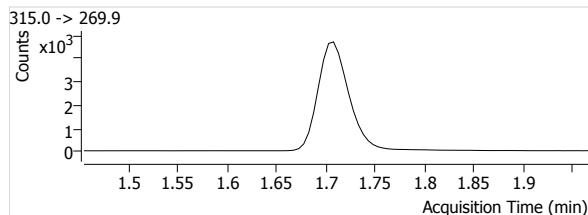
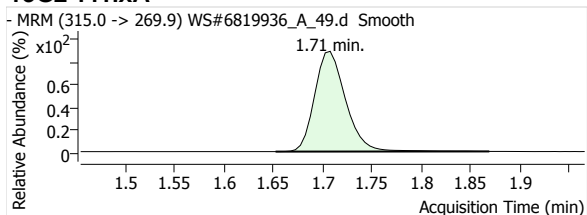
## MeFOSA 1



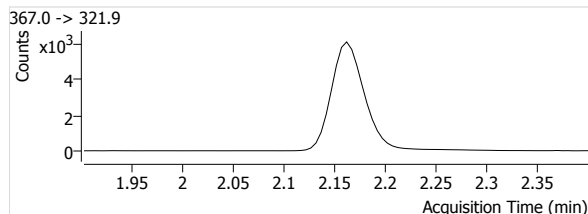
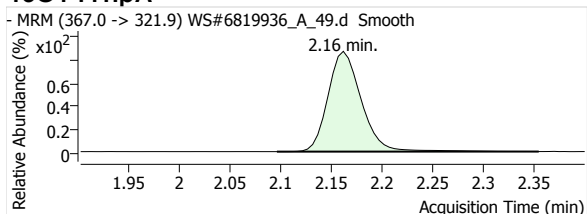
## eFOSA 1



## 13C2-PFHxA

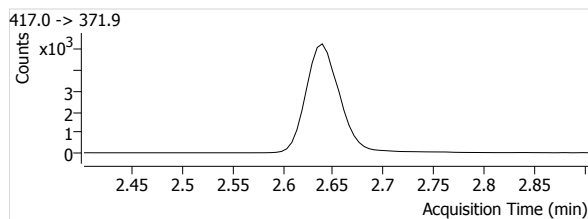
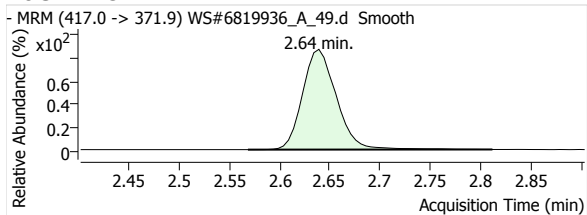


## 13C4-PFHpA

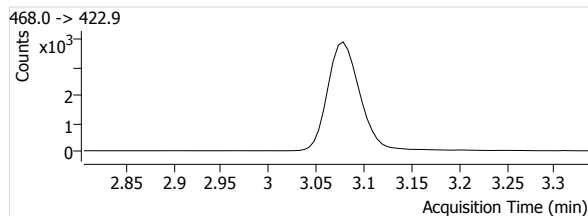
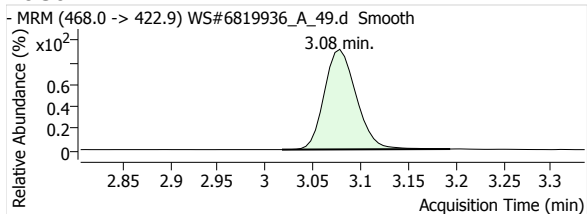


# Quantitative Analysis Report

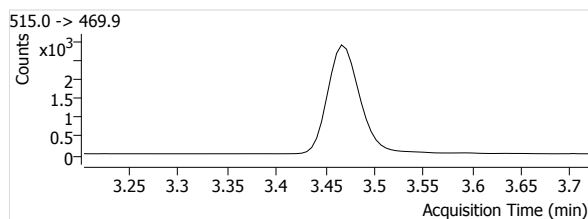
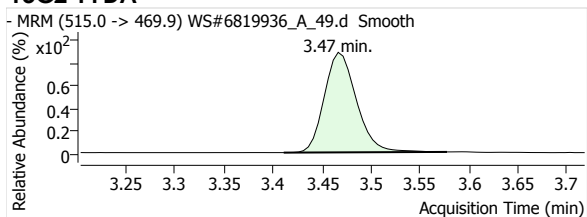
## 13C4-PFOA



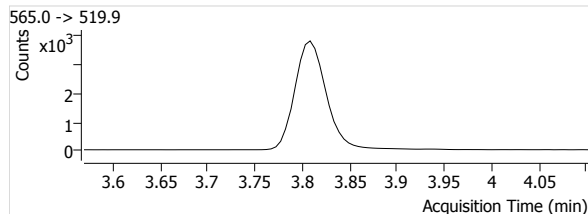
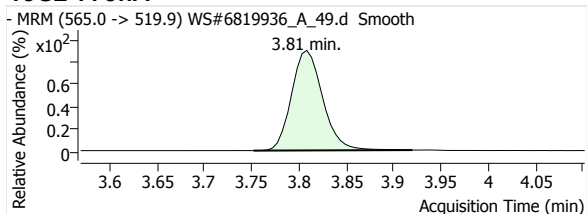
## 13C5-PFNA



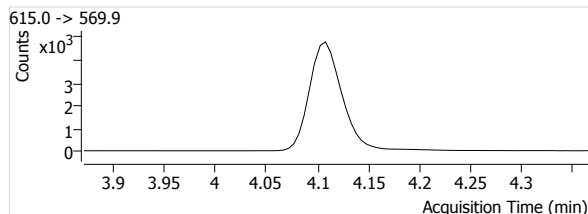
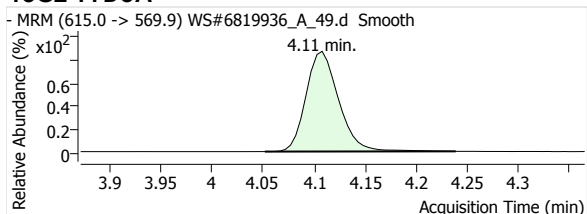
## 13C2-PFDA



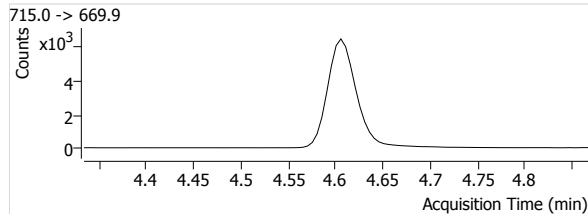
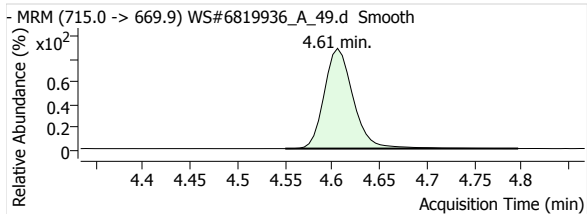
## 13C2-PFUnA



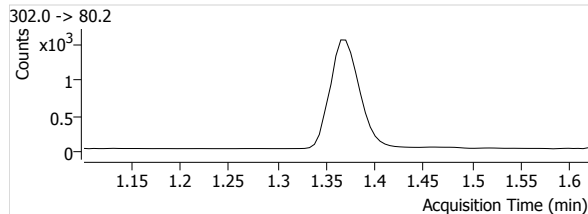
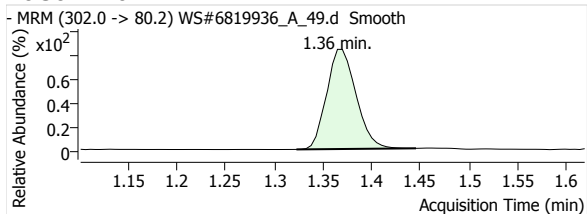
## 13C2-PFDoA



## 13C2-PFTeDA

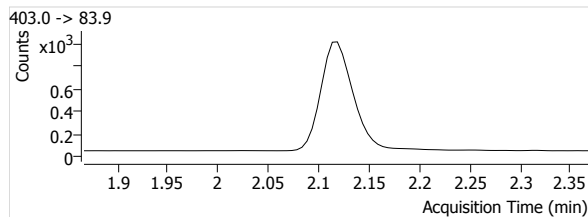
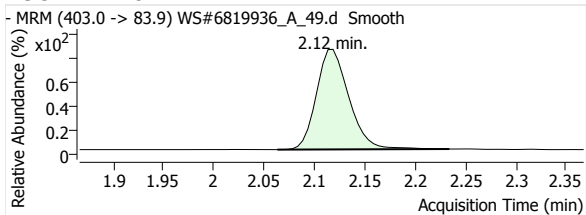


## 13C3-PFBS

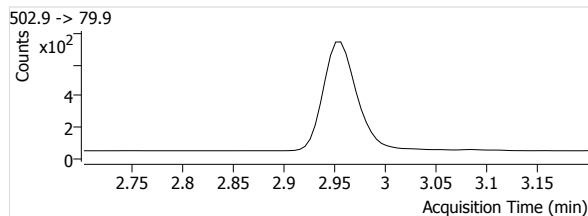
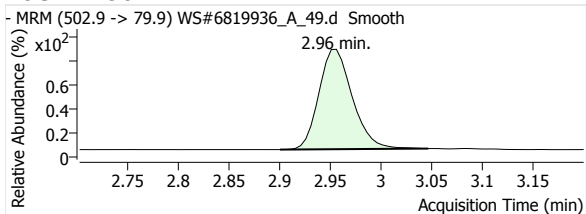


# Quantitative Analysis Report

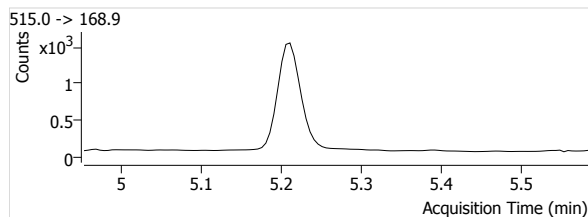
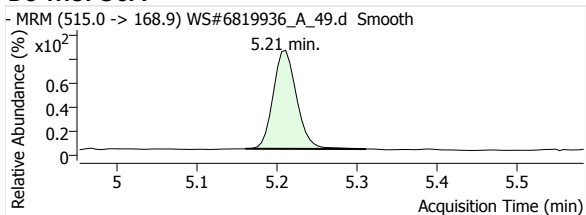
## 18O2-PFHxS



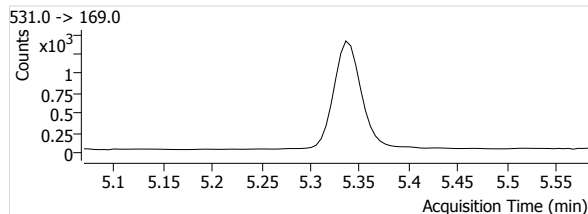
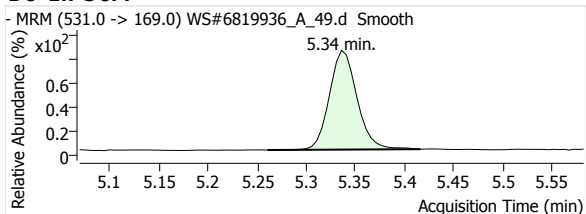
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

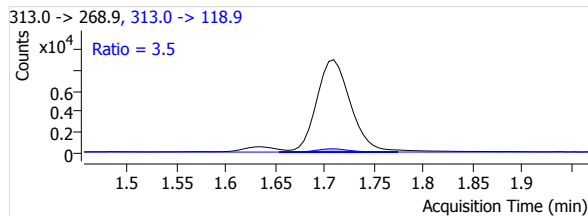
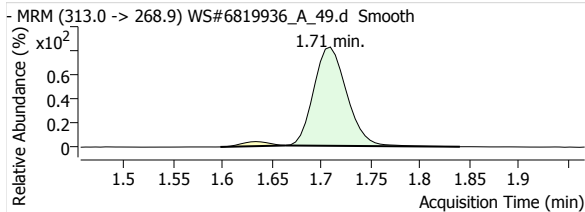
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Sample Name 6819936:NAH709-01  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 4:53:49 PM  
 Comment -  
 User Defined MI PFOA

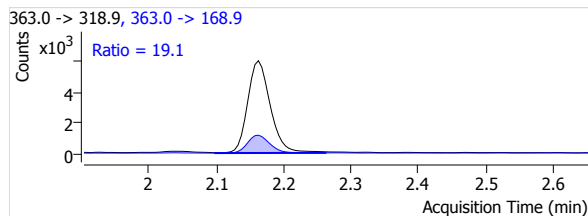
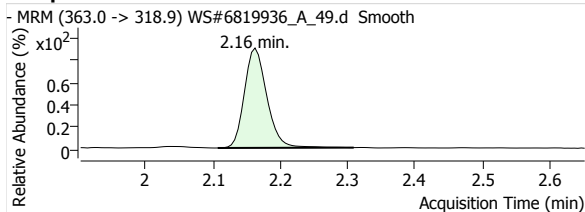
Data File WS#6819936\_A\_49.d  
 Instrument LCMS04  
 Position P2-E1  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.2415	--	20736	1.71	338	2.0266	726	1.71	111	3.5
PFHpA 1	µg/L	--	0.1330	--	13745	2.16	230	0.9959	2625	2.16	113	19.1
PFOA 1	µg/L	--	0.1680	--	14424	2.64	215	1.2124	3644	2.64	186	25.3
PFNA 1	µg/L	--	0.0315	--	1691	3.08	32	0.1877	400	3.07	27	23.7
PFDA 1	µg/L	--	0.0068	--	249	3.47	7	0.0385	52	3.46	52	20.9
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0367	--	679	1.37	36	0.2160	317	1.37	35	46.7
PFHxS 1	µg/L	--	1.0138	--	14870	2.08	430	6.7992	7541	2.10	513	50.7
PFOS 1	µg/L	--	3.1641	--	32169	2.89	119	20.0678	16901	2.90	222	52.5
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	103.3014	--	10232	1.71	1150	--	--	--	--	--
13C4-PFHpA	µg/L	--	108.5148	--	13802	2.16	631	--	--	--	--	--
13C4-PFOA	µg/L	--	100.4644	--	11897	2.64	980	--	--	--	--	--
13C5-PFNA	µg/L	--	96.7569	--	9010	3.08	606	--	--	--	--	--
13C2-PFDA	µg/L	--	90.3424	--	6464	3.47	376	--	--	--	--	--
13C2-PFUnA	µg/L	--	101.3104	--	8659	3.81	488	--	--	--	--	--
13C2-PFDaA	µg/L	--	99.5033	--	10418	4.11	1209	--	--	--	--	--
13C2-PFTeDA	µg/L	--	89.8818	--	13760	4.61	900	--	--	--	--	--
13C3-PFBS	µg/L	--	93.3749	--	3143	1.36	115	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.6617	--	2187	2.12	418	--	--	--	--	--
13C4-PFOS	µg/L	--	88.5635	--	1603	2.96	290	--	--	--	--	--
D3-MeFOSA	µg/L	--	65.8602	--	2967	5.21	66	--	--	--	--	--
D5-EtFOSA	µg/L	--	72.1450	--	2647	5.34	105	--	--	--	--	--

### PFHxA 1

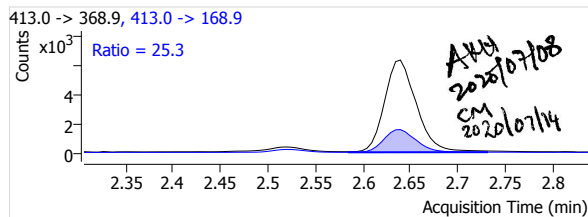
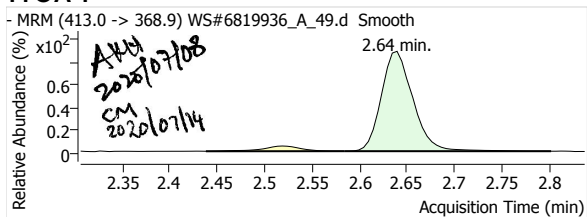


### PFHpA 1

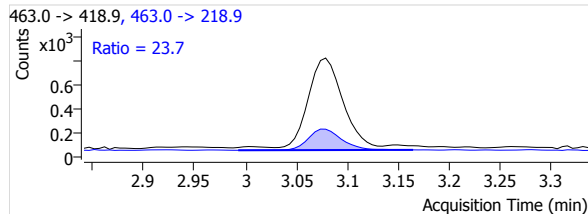
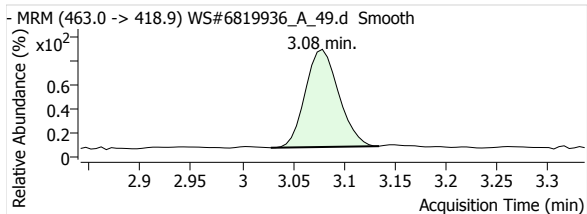


# Quantitative Analysis Report

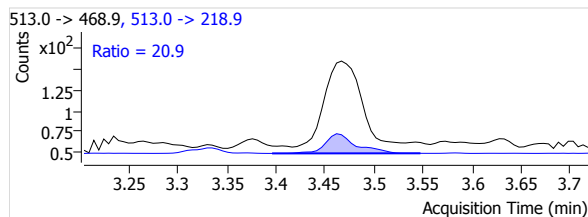
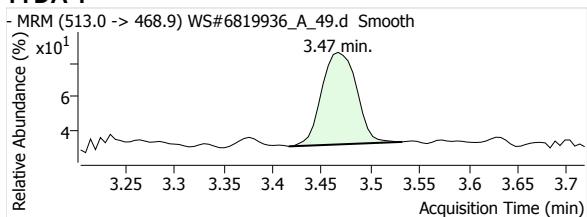
## PFOA 1



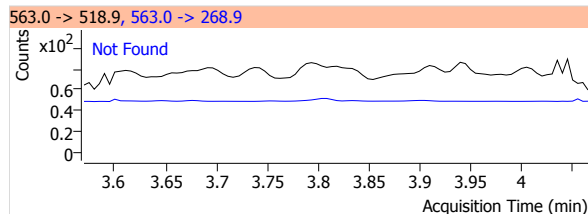
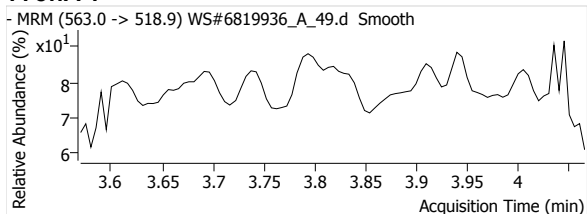
## PFNA 1



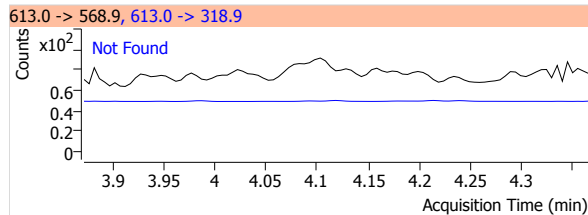
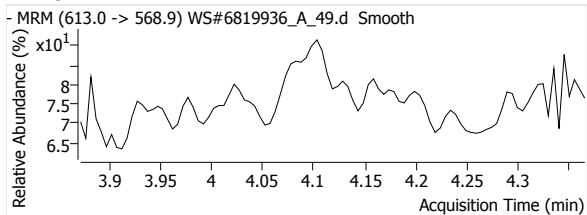
## PFDA 1



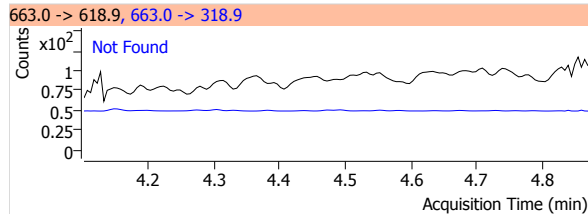
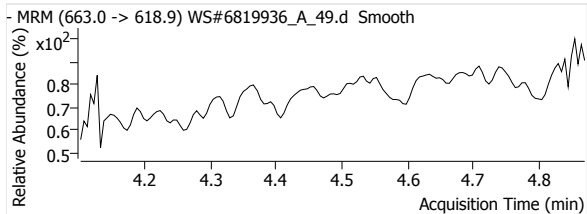
## PFUnA 1



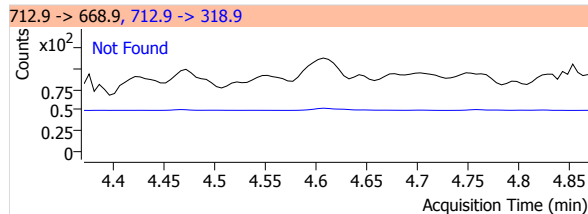
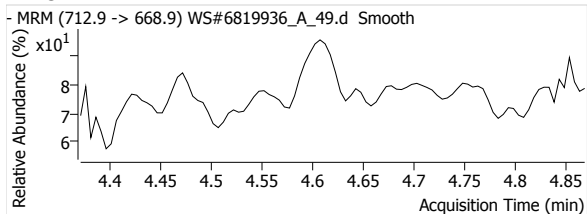
## PFDoA 1



## PFTrDA 1



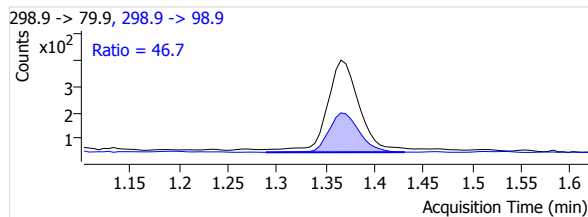
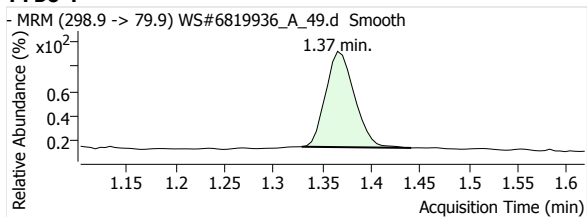
## PFTeDA 1



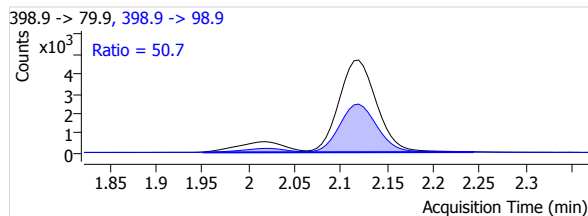
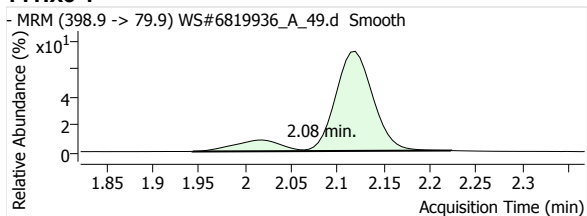


# Quantitative Analysis Report

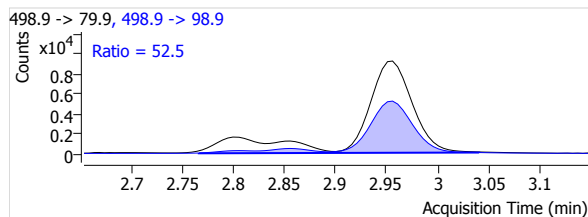
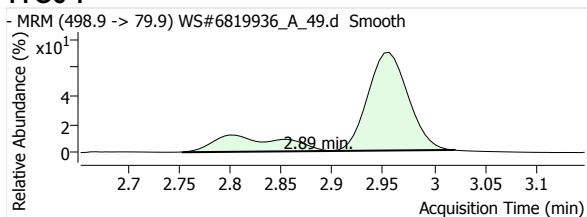
## PFBS 1



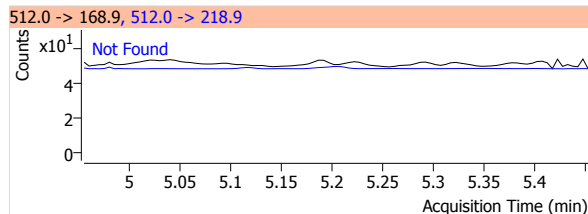
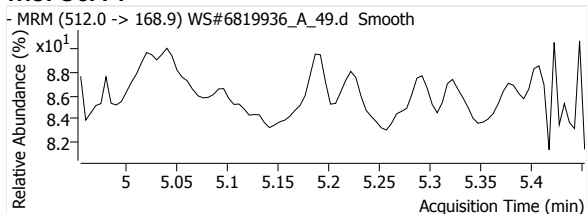
## PFHxS 1



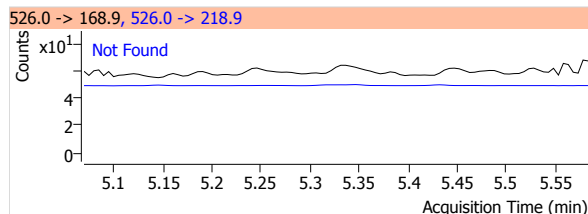
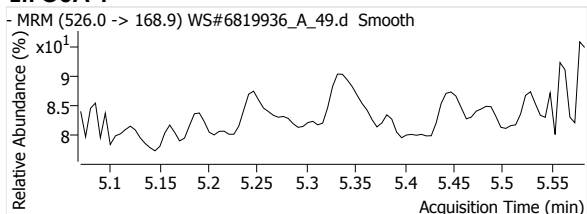
## PFOS 1



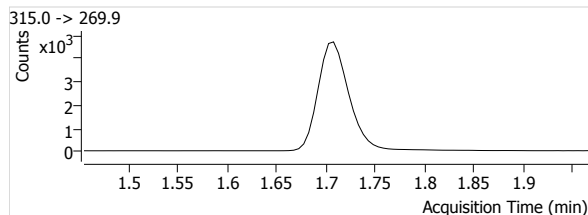
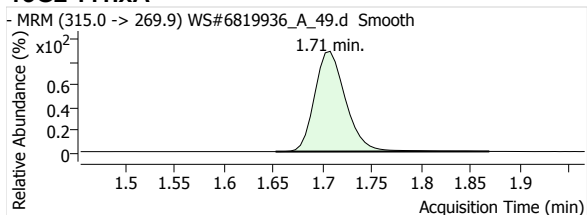
## MeFOSA 1



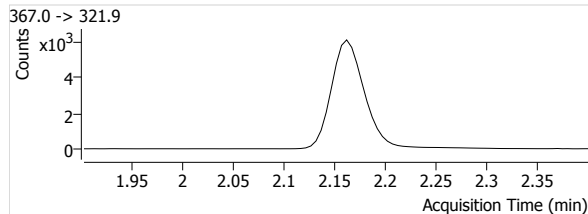
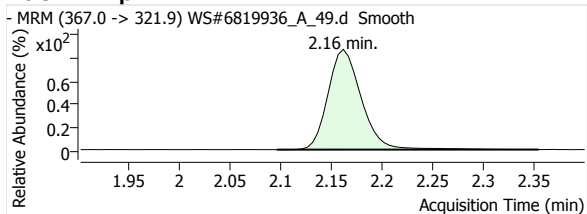
## eFOSA 1



## 13C2-PFHxA

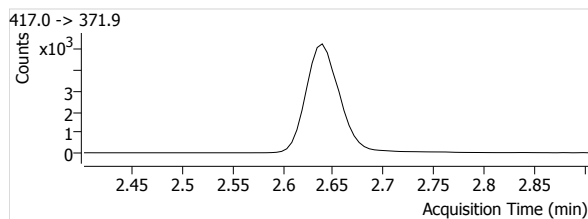
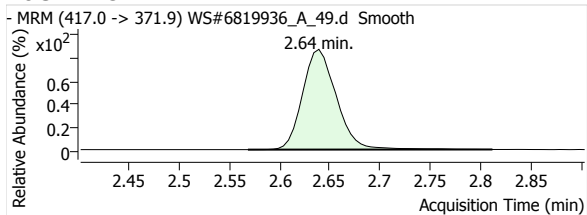


## 13C4-PFHpA

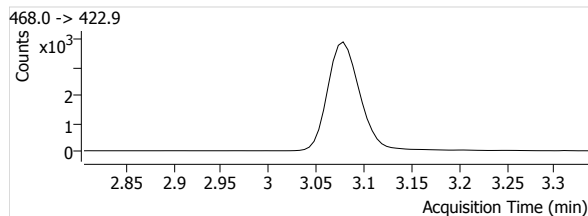
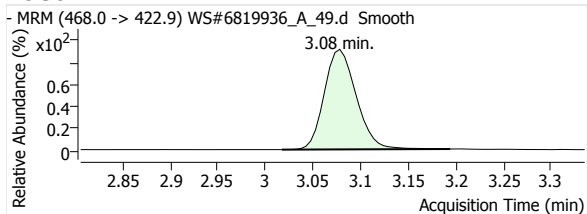


# Quantitative Analysis Report

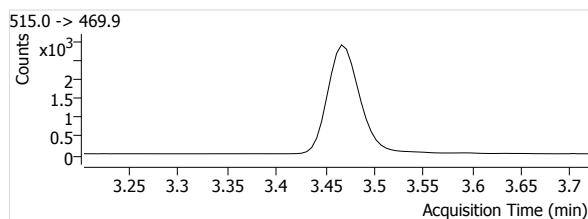
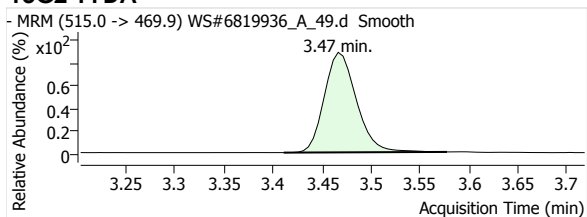
## 13C4-PFOA



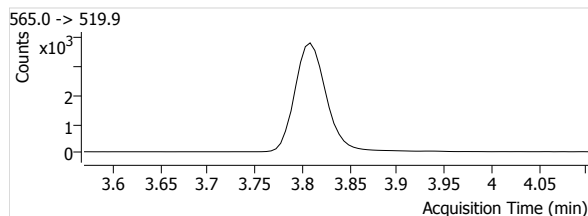
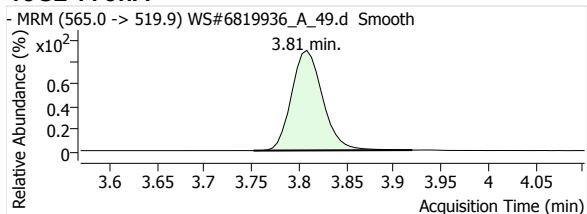
## 13C5-PFNA



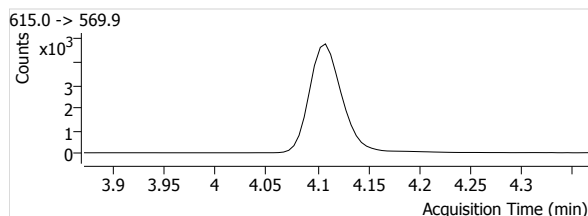
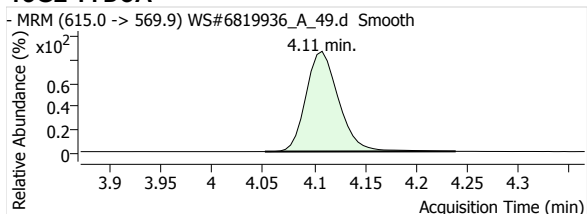
## 13C2-PFDA



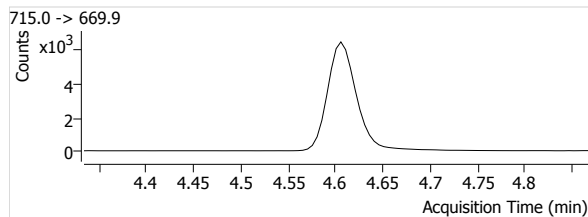
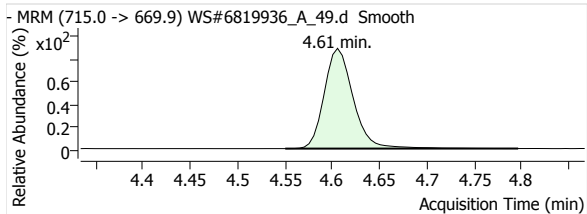
## 13C2-PFUnA



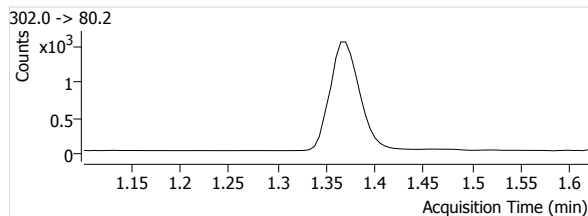
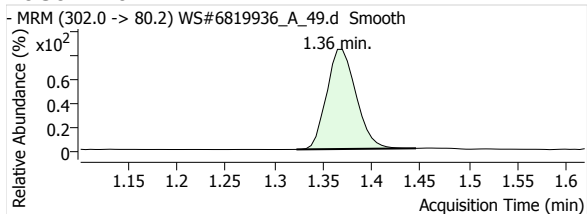
## 13C2-PFDoA



## 13C2-PFTeDA

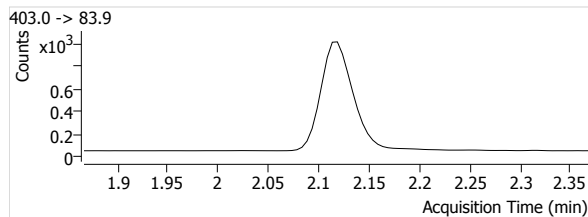
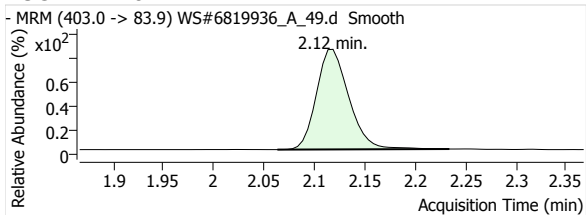


## 13C3-PFBS

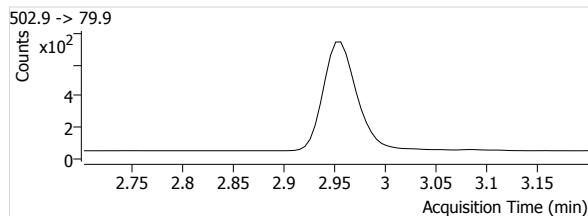
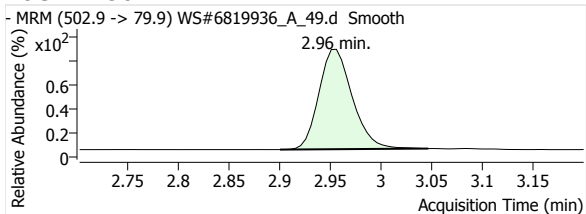


# Quantitative Analysis Report

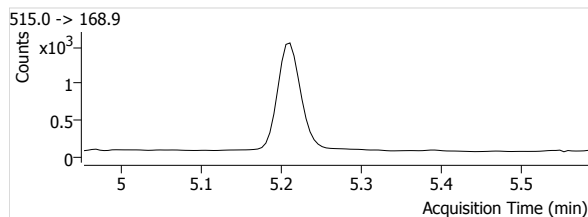
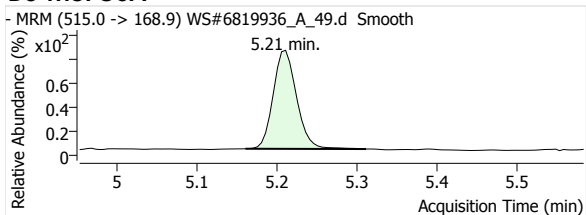
## 18O2-PFHxS



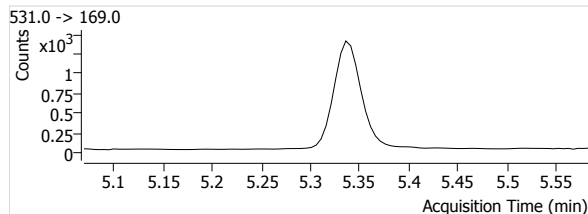
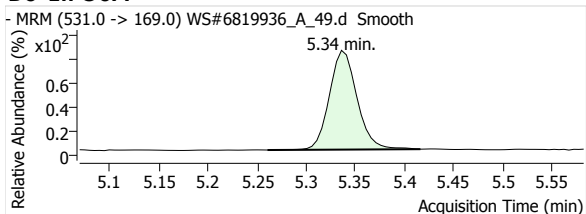
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

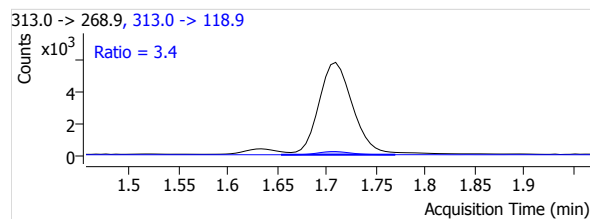
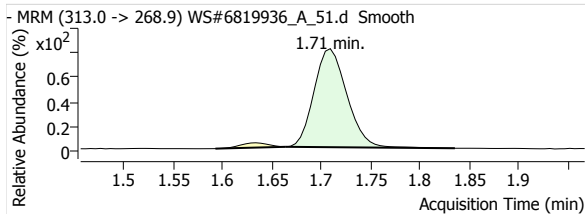
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Sample Name 6819936:NAH710-01  
Type Sample  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 5:07:43 PM  
Comment -  
User Defined MI PFOA

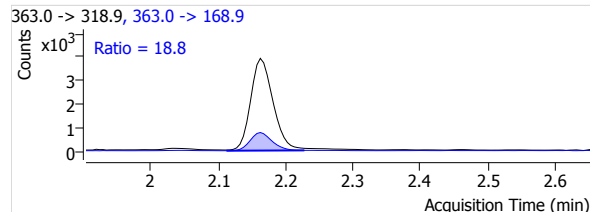
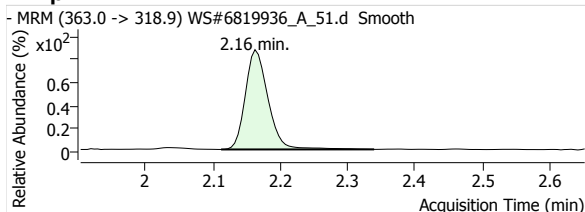
Data File WS#6819936\_A\_51.d  
Instrument LCMS04  
Position P2-E2  
Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.1449	--	13016	1.71	180	1.3009	449	1.71	68	3.4
PFHpA 1	µg/L	--	0.0842	--	9080	2.16	101	0.6710	1710	2.16	72	18.8
PFOA 1	µg/L	--	0.0923	--	8204	2.63	144	0.7080	2244	2.63	191	27.4
PFNA 1	µg/L	--	0.0126	--	585	3.08	12	0.0644	138	3.08	13	23.6
PFDA 1	µg/L	--	0.0047	--	133	3.47	4	0.0211	25	3.46	28	18.8
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0276	--	528	1.37	31	0.1727	219	1.37	23	41.5
PFHxS 1	µg/L	--	0.5745	--	8851	2.08	404	4.1671	4523	2.10	228	51.1
PFOS 1	µg/L	--	0.7449	--	8482	2.89	84	5.1034	4464	2.90	147	52.6
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	101.0096	--	10005	1.71	765	--	--	--	--	--
13C4-PFHpA	µg/L	--	106.3999	--	13533	2.16	593	--	--	--	--	--
13C4-PFOA	µg/L	--	97.8551	--	11588	2.63	563	--	--	--	--	--
13C5-PFNA	µg/L	--	97.5408	--	9083	3.08	733	--	--	--	--	--
13C2-PFDA	µg/L	--	87.9525	--	6293	3.47	514	--	--	--	--	--
13C2-PFUnA	µg/L	--	100.1404	--	8559	3.80	910	--	--	--	--	--
13C2-PFDaA	µg/L	--	95.1385	--	9961	4.11	781	--	--	--	--	--
13C2-PFTeDA	µg/L	--	84.1400	--	12881	4.61	1479	--	--	--	--	--
13C3-PFBS	µg/L	--	90.8200	--	3057	1.36	160	--	--	--	--	--
18O2-PFHxS	µg/L	--	90.9636	--	2124	2.12	519	--	--	--	--	--
13C4-PFOS	µg/L	--	91.8232	--	1662	2.95	217	--	--	--	--	--
D3-MeFOSA	µg/L	--	58.0022	--	2613	5.21	46	--	--	--	--	--
D5-EtFOSA	µg/L	--	64.7043	--	2374	5.34	96	--	--	--	--	--

### PFHxA 1

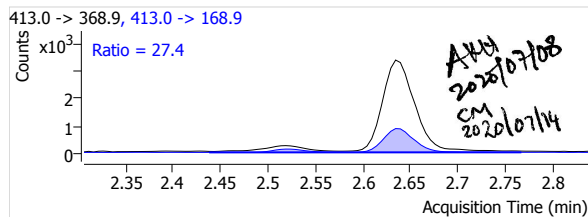
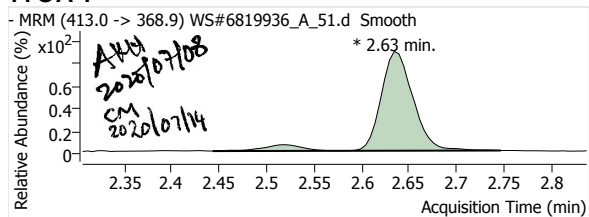


### PFHpA 1

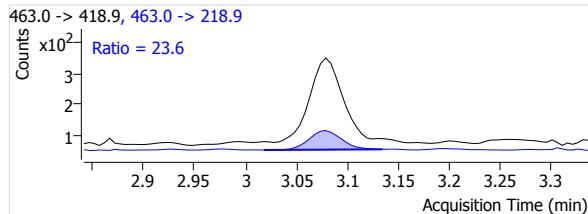
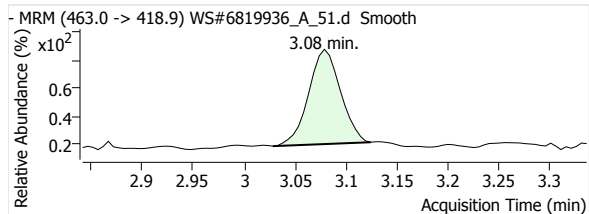


# Quantitative Analysis Report

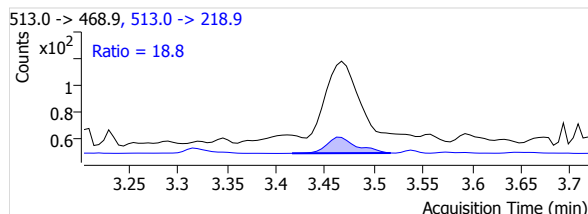
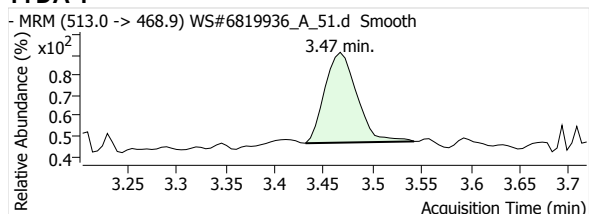
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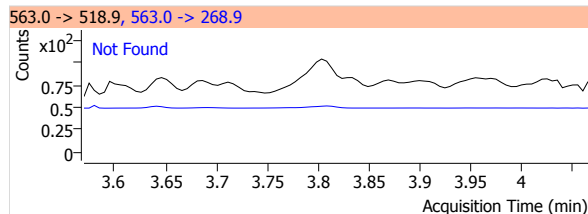
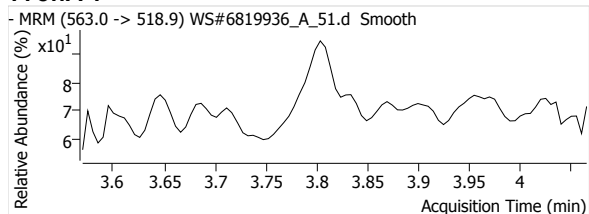
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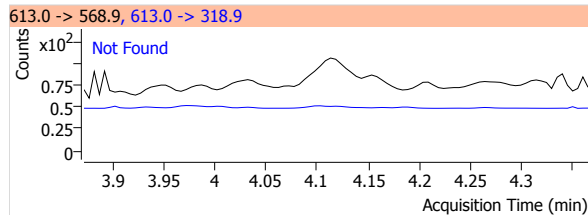
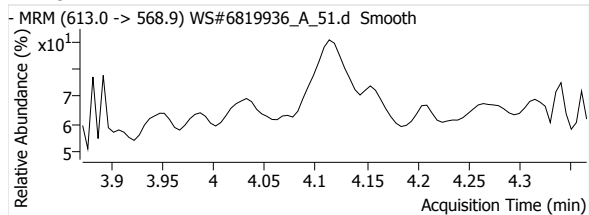
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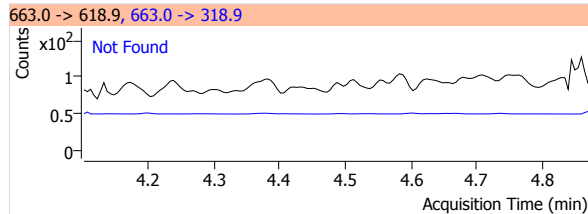
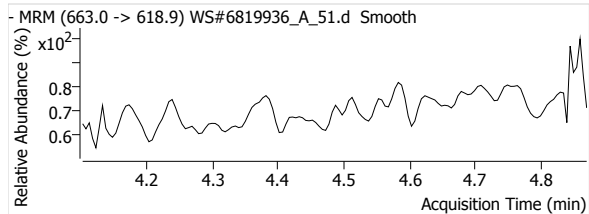
## PFUnA 1



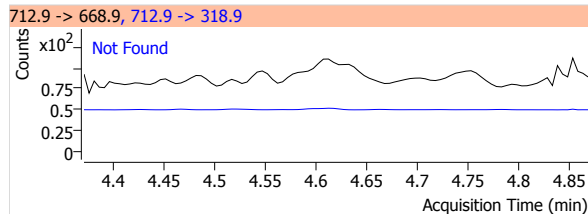
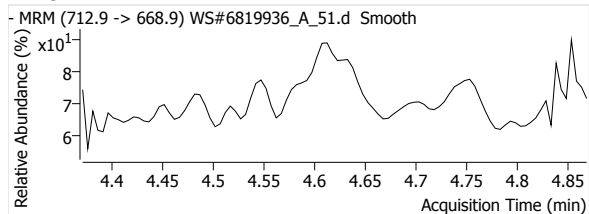
## PFDaA 1



## PFTrDA 1

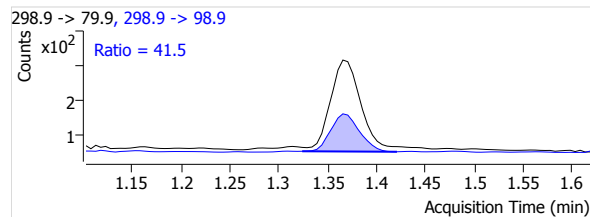
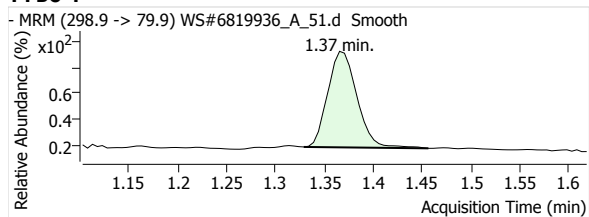


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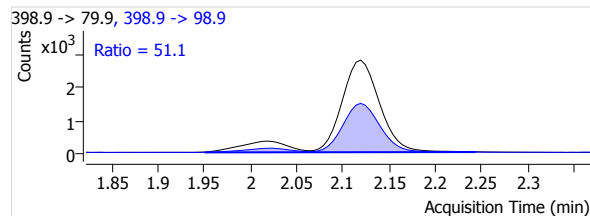
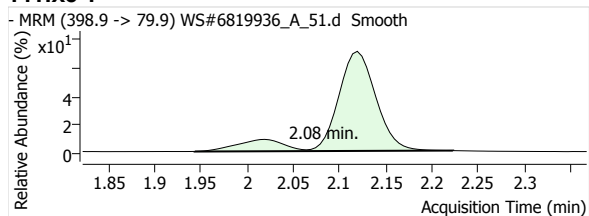


# Quantitative Analysis Report

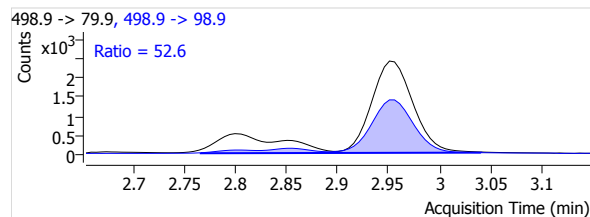
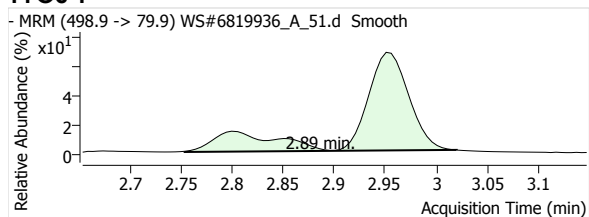
## PFBS 1



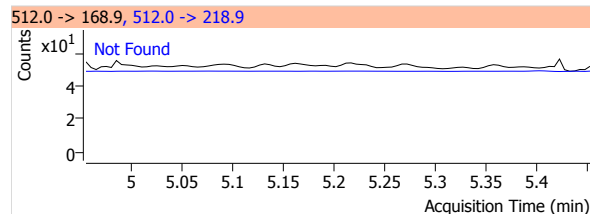
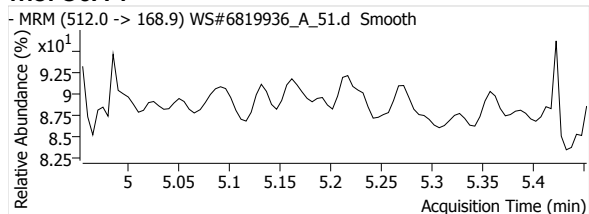
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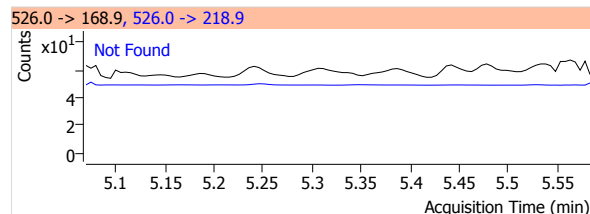
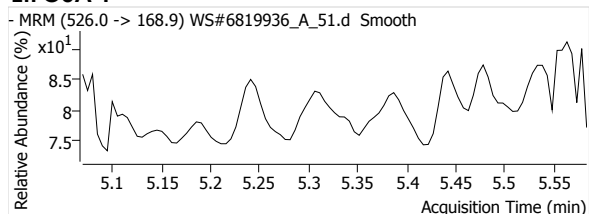
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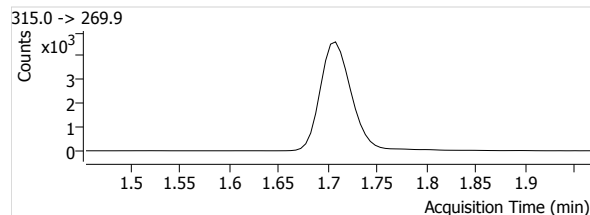
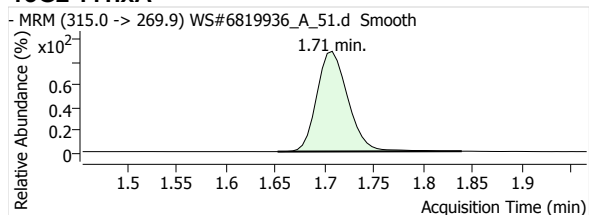
## MeFOSA 1



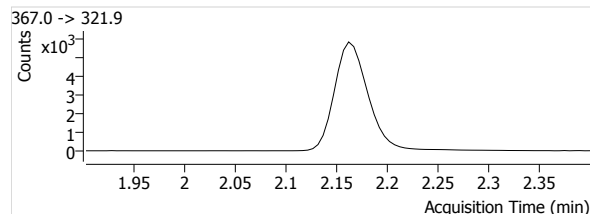
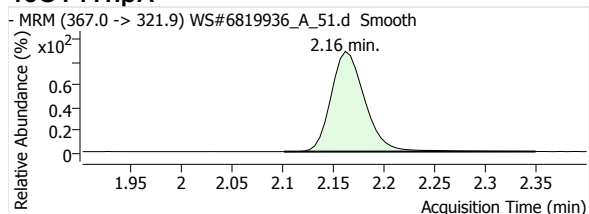
## eFOSA 1



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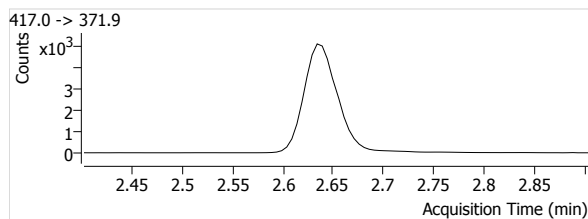
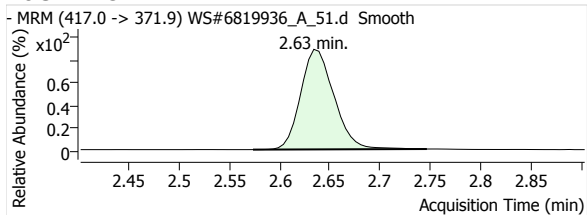


## 13C4-PFHpA

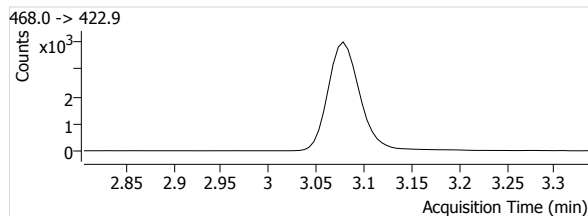
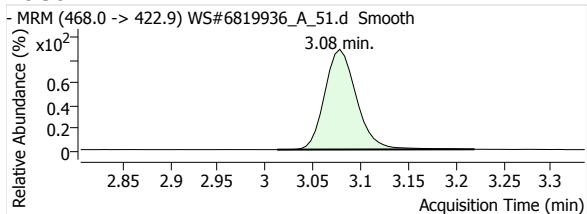


# Quantitative Analysis Report

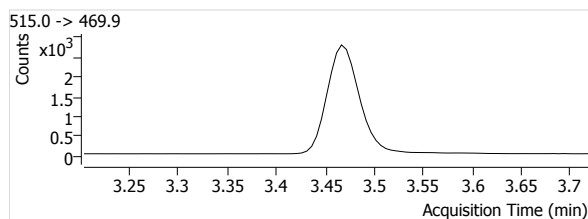
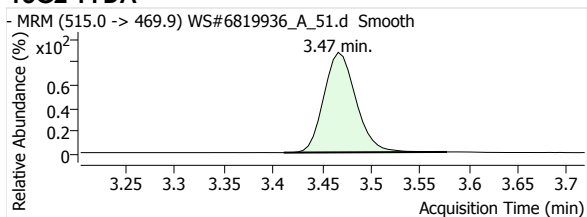
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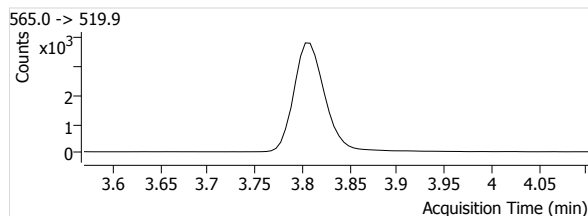
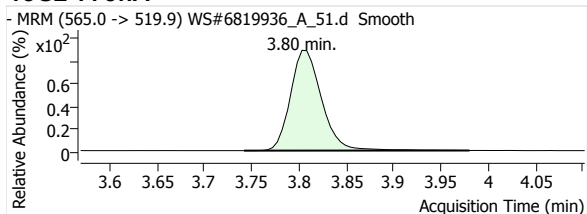
## 13C5-PFNA



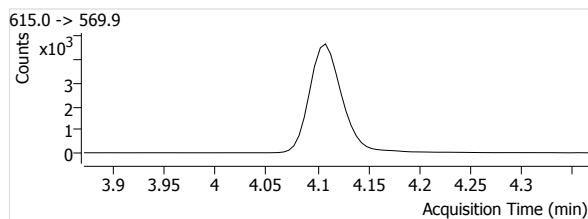
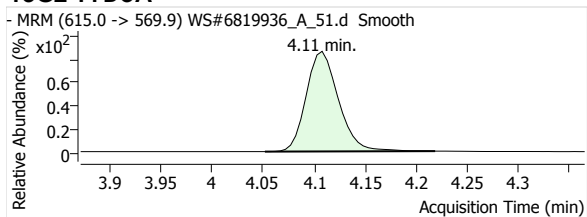
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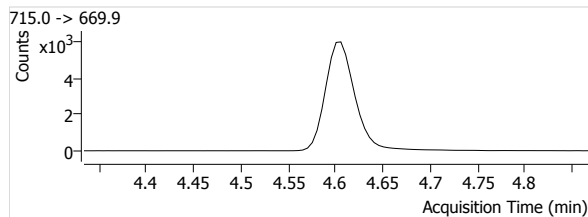
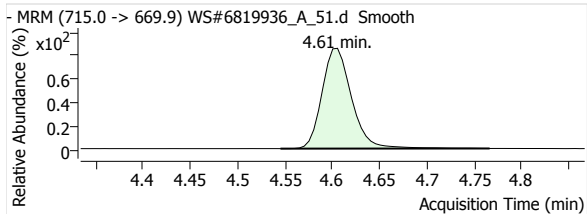
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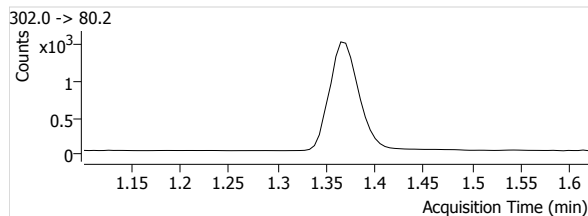
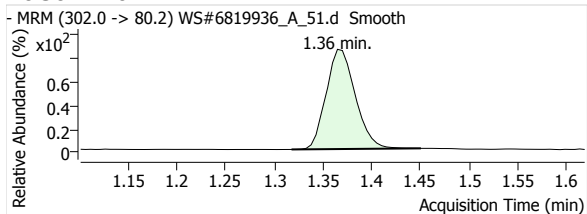
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## 13C2-PFTeDA

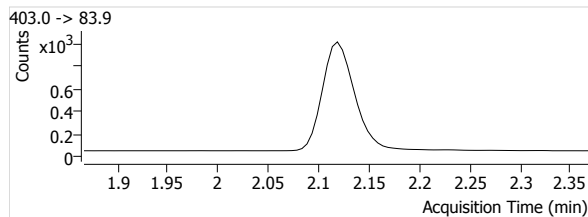
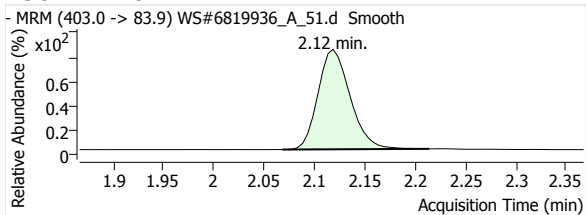


## 13C3-PFBS

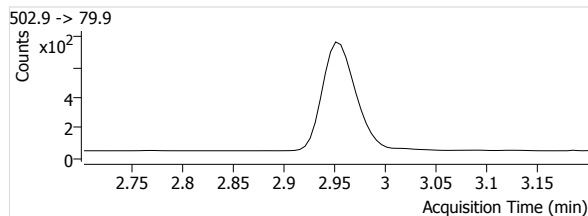
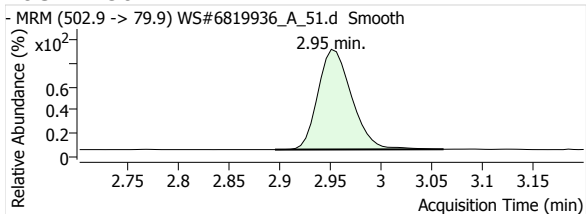


# Quantitative Analysis Report

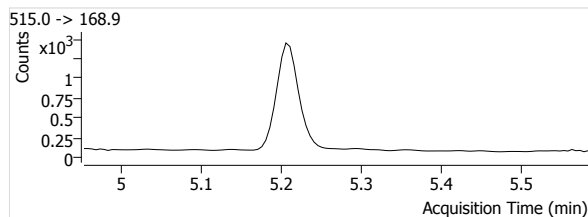
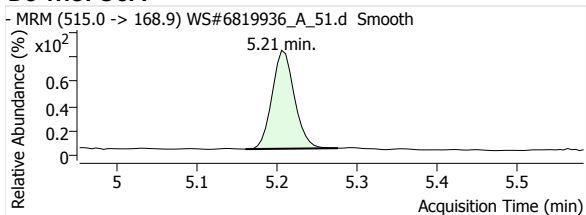
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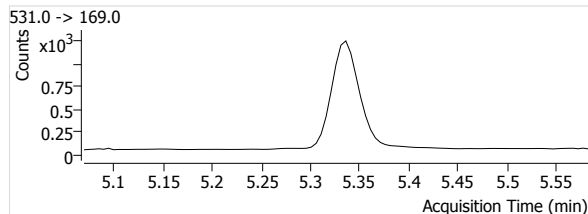
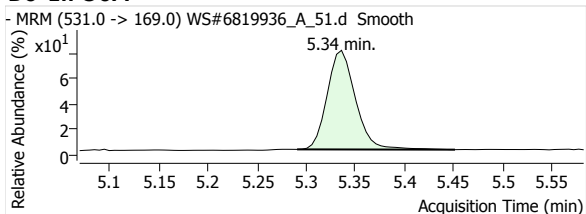
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA





# Quantitative Analysis Report

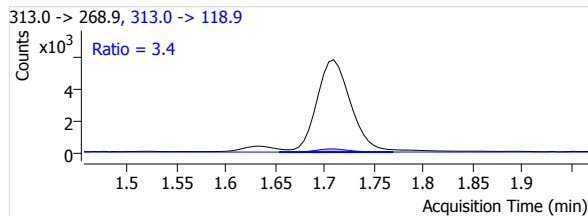
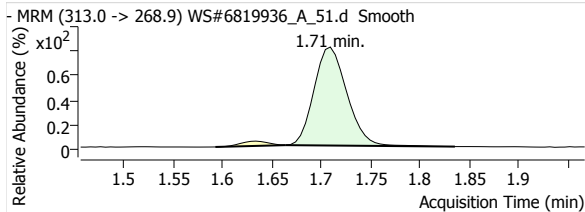
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Sample Name 6819936:NAH710-01  
 Type Sample  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 5:07:43 PM  
 Comment -  
 User Defined MI PFOA

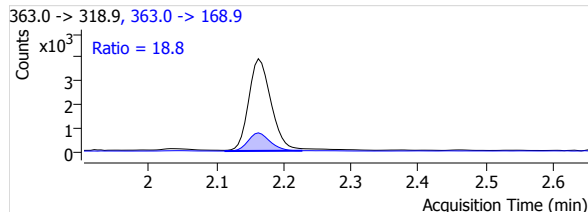
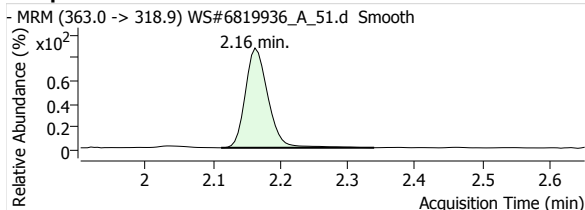
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 Instrument LCMS04  
 Position P2-E2  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	0.1449	--	13016	1.71	180	1.3009	449	1.71	68	3.4
PFHpA 1	µg/L	--	0.0842	--	9080	2.16	101	0.6710	1710	2.16	72	18.8
PFOA 1	µg/L	--	0.0849	--	7515	2.63	128	0.6485	1919	2.63	131	25.5
PFNA 1	µg/L	--	0.0126	--	585	3.08	12	0.0644	138	3.08	13	23.6
PFDA 1	µg/L	--	0.0047	--	133	3.47	4	0.0211	25	3.46	28	18.8
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	0.0276	--	528	1.37	31	0.1727	219	1.37	23	41.5
PFHxS 1	µg/L	--	0.5745	--	8851	2.08	404	4.1671	4523	2.10	228	51.1
PFOS 1	µg/L	--	0.7449	--	8482	2.89	84	5.1034	4464	2.90	147	52.6
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	101.0096	--	10005	1.71	765	--	--	--	--	--
13C4-PFHpA	µg/L	--	106.3999	--	13533	2.16	593	--	--	--	--	--
13C4-PFOA	µg/L	--	97.8551	--	11588	2.63	563	--	--	--	--	--
13C5-PFNA	µg/L	--	97.5408	--	9083	3.08	733	--	--	--	--	--
13C2-PFDA	µg/L	--	87.9525	--	6293	3.47	514	--	--	--	--	--
13C2-PFUnA	µg/L	--	100.1404	--	8559	3.80	910	--	--	--	--	--
13C2-PFDaA	µg/L	--	95.1385	--	9961	4.11	781	--	--	--	--	--
13C2-PFTeDA	µg/L	--	84.1400	--	12881	4.61	1479	--	--	--	--	--
13C3-PFBS	µg/L	--	90.8200	--	3057	1.36	160	--	--	--	--	--
18O2-PFHxS	µg/L	--	90.9636	--	2124	2.12	519	--	--	--	--	--
13C4-PFOS	µg/L	--	91.8232	--	1662	2.95	217	--	--	--	--	--
D3-MeFOSA	µg/L	--	58.0022	--	2613	5.21	46	--	--	--	--	--
D5-EtFOSA	µg/L	--	64.7043	--	2374	5.34	96	--	--	--	--	--

### PFHxA 1

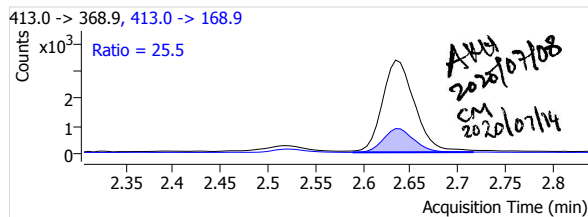
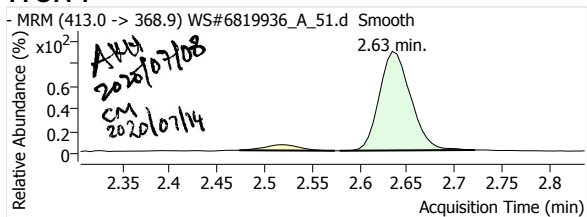


### PFHpA 1

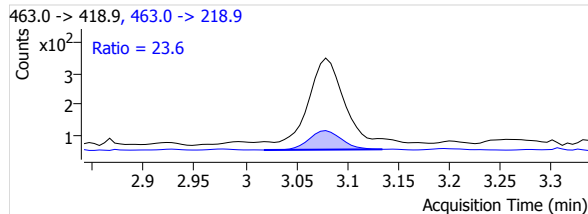
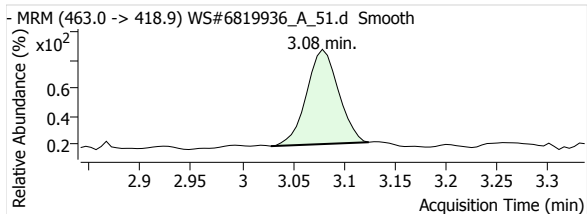


# Quantitative Analysis Report

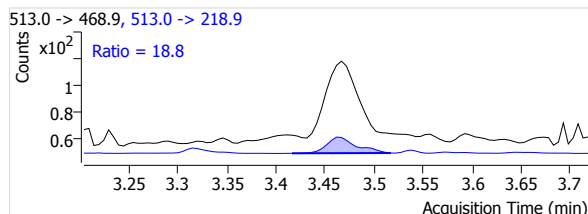
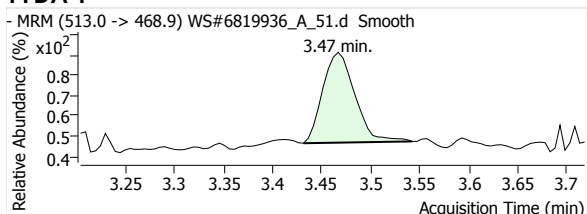
## PFOA 1



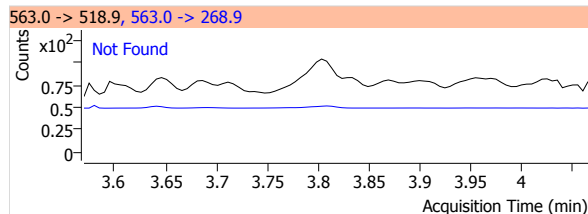
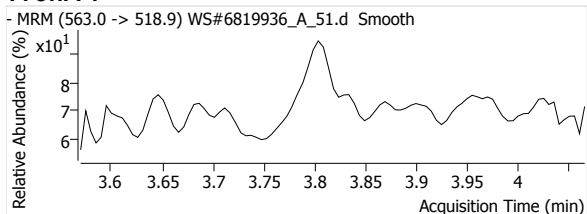
## PFNA 1



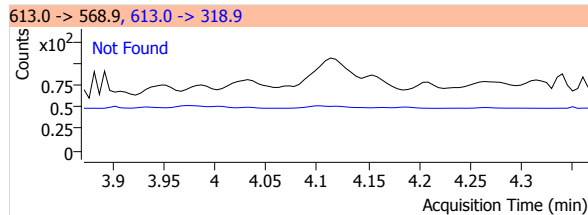
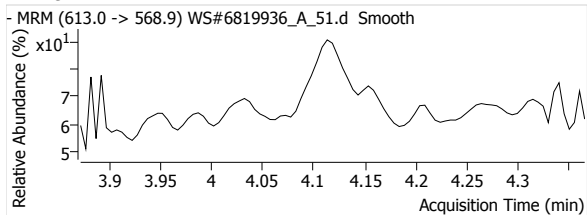
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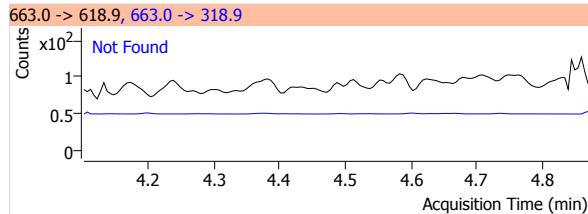
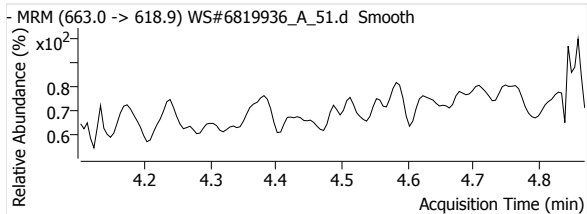
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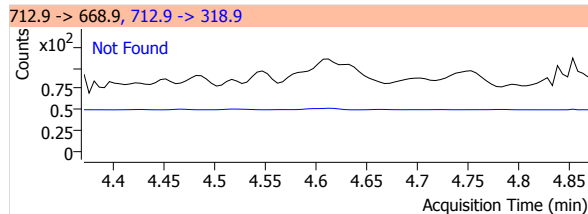
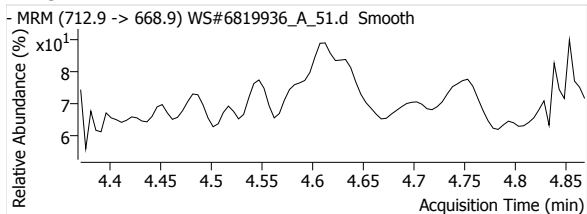
## PFDaA 1



## PFTrDA 1

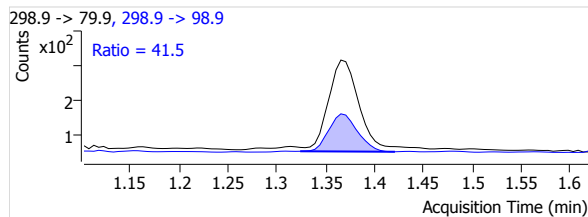
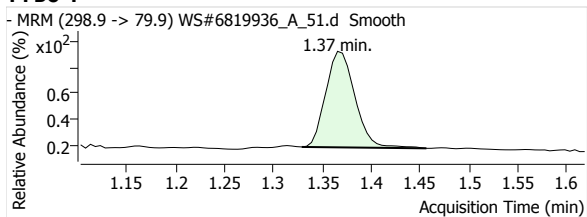


## PFTeDA 1

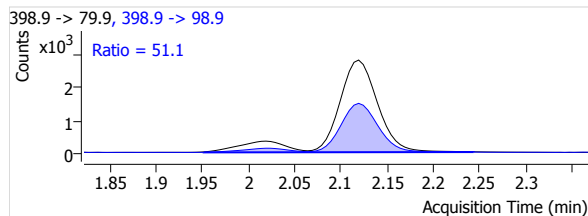
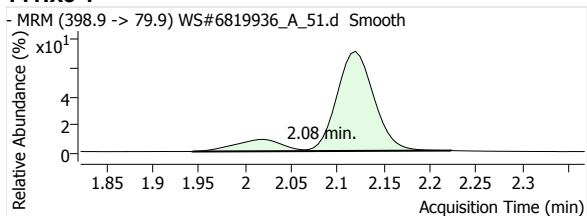


# Quantitative Analysis Report

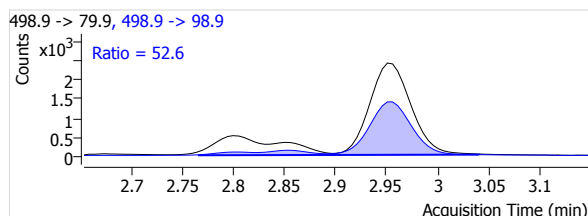
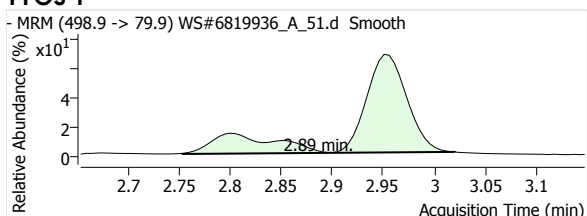
## PFBS 1



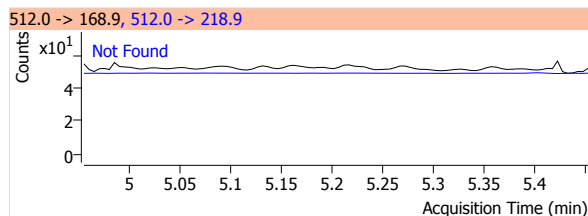
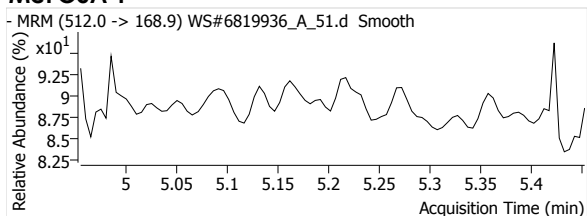
## PFHxS 1



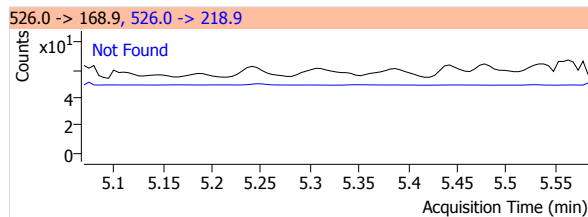
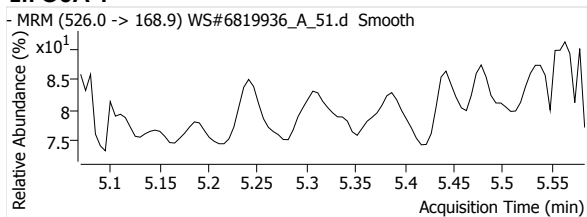
## PFOS 1



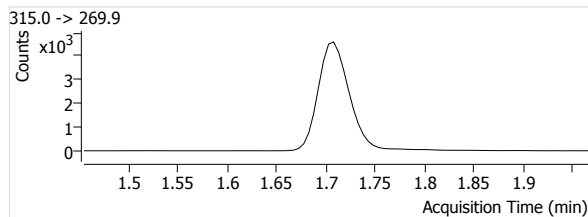
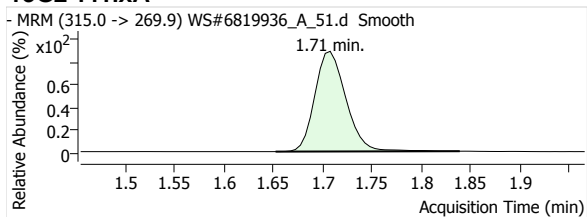
## MeFOSA 1



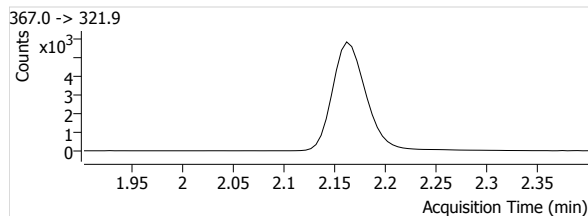
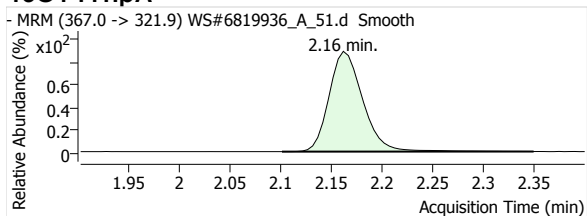
## eFOSA 1



## 13C2-PFHxA

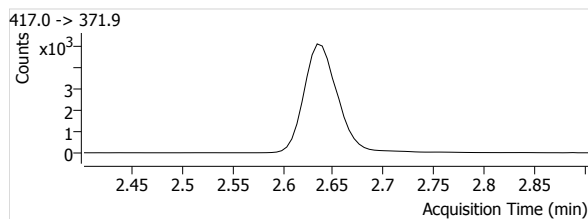
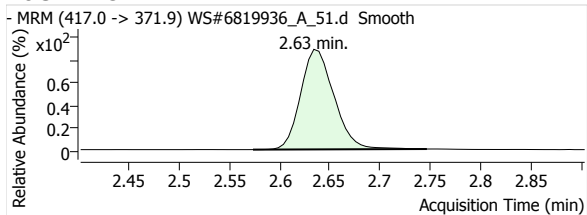


## 13C4-PFHpA

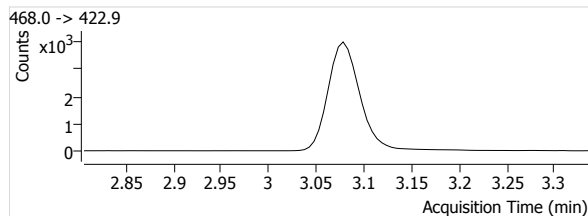
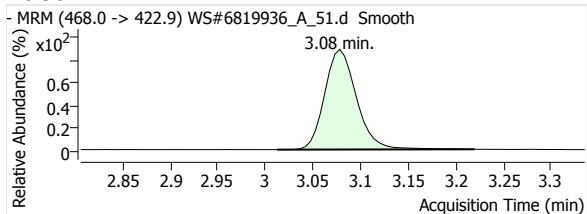


# Quantitative Analysis Report

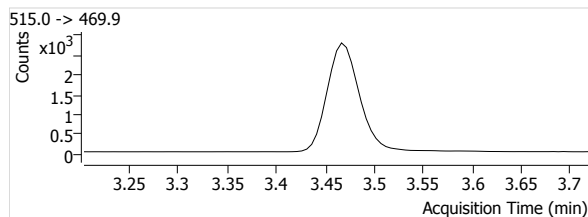
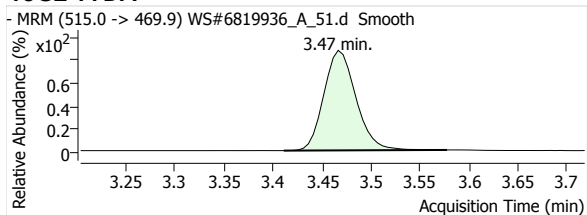
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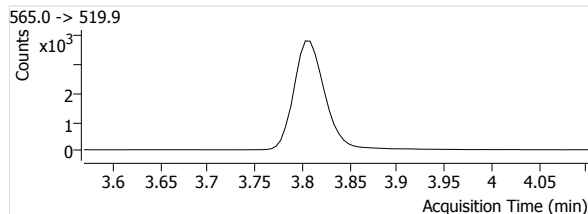
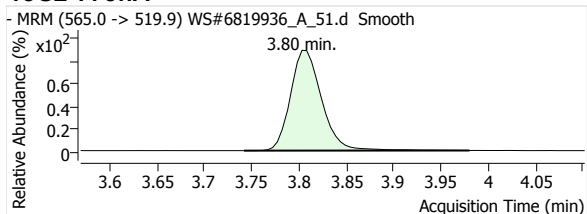
## 13C5-PFNA



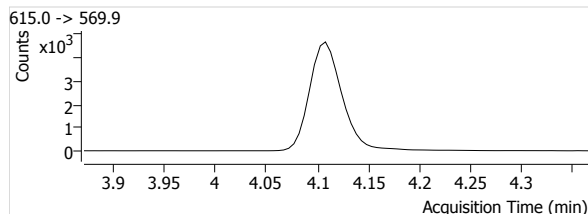
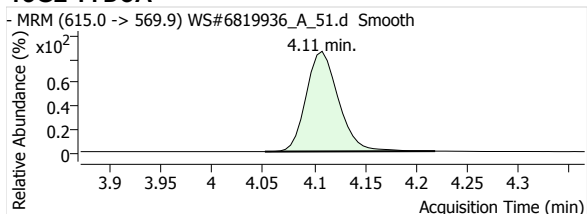
## 13C2-PFDA



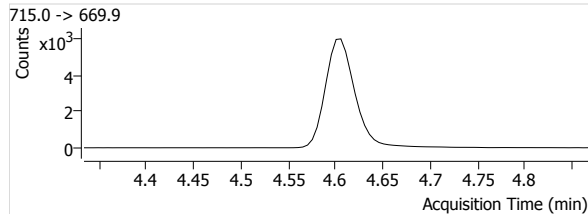
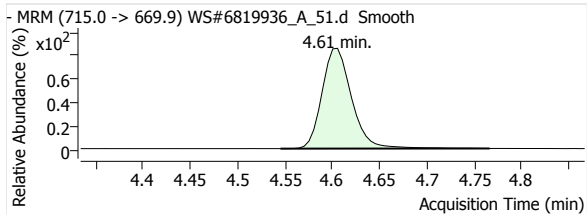
## 13C2-PFUnA



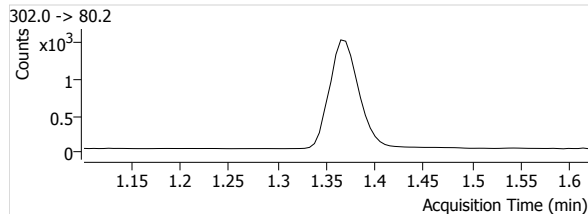
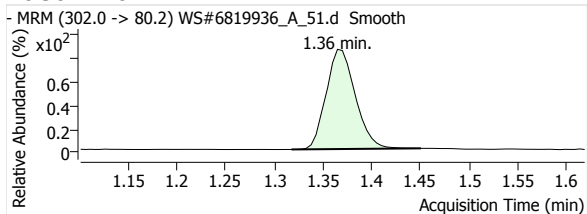
## 13C2-PFDoA



## 13C2-PFTeDA

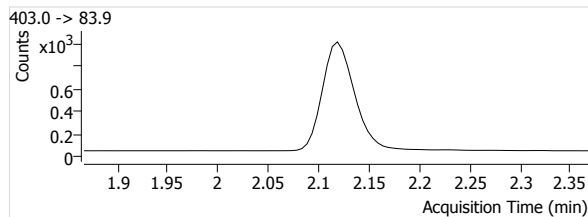
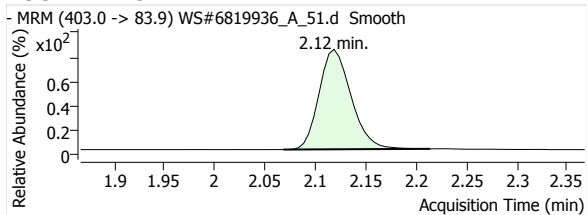


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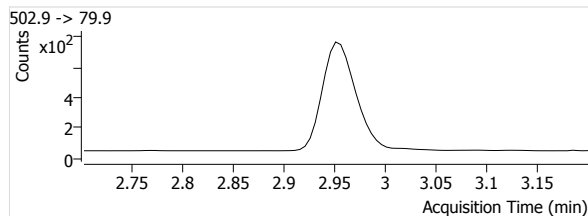
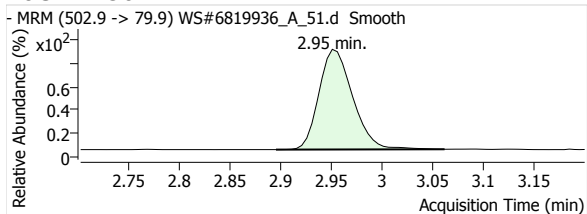


# Quantitative Analysis Report

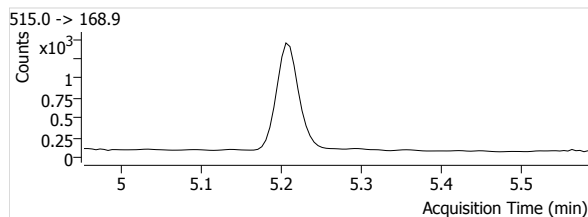
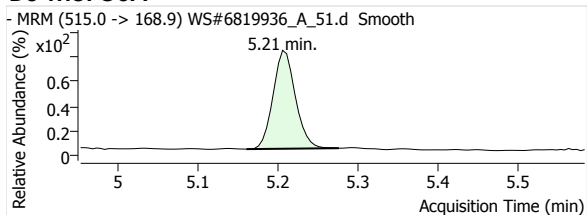
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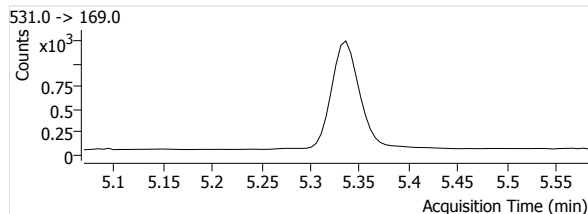
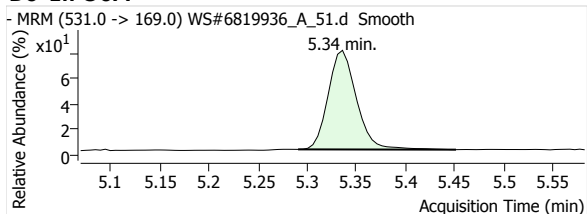
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

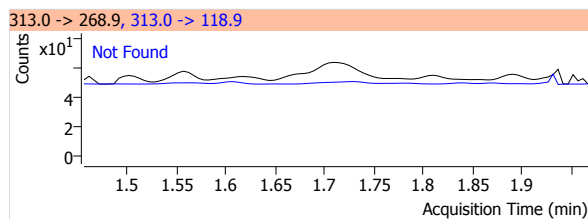
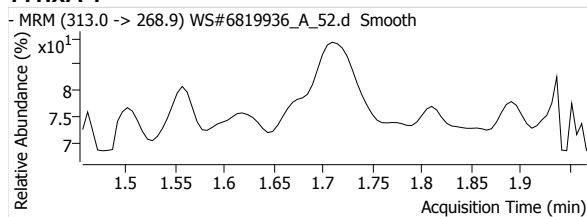
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**Sample Name** 6819936:NAH711-01  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 5:14:39 PM  
**Comment** -  
**User Defined**

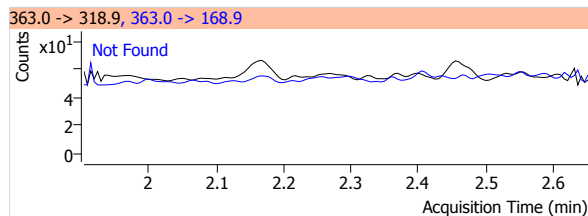
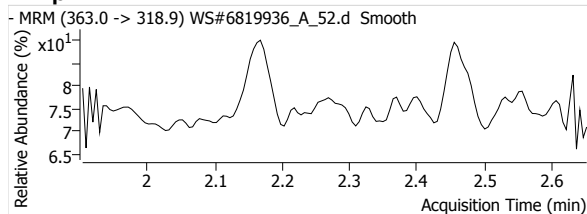
**Data File** WS#6819936\_A\_52.d  
**Instrument** LCMS04  
**Position** P2-E3  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	106.2797	--	10527	1.71	1156	--	--	--	--	--
13C4-PFHpA	µg/L	--	108.9001	--	13851	2.16	850	--	--	--	--	--
13C4-PFOA	µg/L	--	100.0169	--	11844	2.64	249	--	--	--	--	--
13C5-PFNA	µg/L	--	98.3999	--	9163	3.08	772	--	--	--	--	--
13C2-PFDA	µg/L	--	91.6422	--	6557	3.47	689	--	--	--	--	--
13C2-PFUnA	µg/L	--	97.5313	--	8336	3.81	363	--	--	--	--	--
13C2-PFDoA	µg/L	--	98.0611	--	10267	4.11	657	--	--	--	--	--
13C2-PFTeDA	µg/L	--	86.1715	--	13192	4.61	1405	--	--	--	--	--
13C3-PFBS	µg/L	--	93.9691	--	3163	1.37	259	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.4047	--	2181	2.12	234	--	--	--	--	--
13C4-PFOS	µg/L	--	98.0110	--	1774	2.96	586	--	--	--	--	--
D3-MeFOSA	µg/L	--	60.4661	--	2724	5.21	46	--	--	--	--	--
D5-EtFOSA	µg/L	--	67.7024	--	2484	5.34	75	--	--	--	--	--

### PFHxA 1

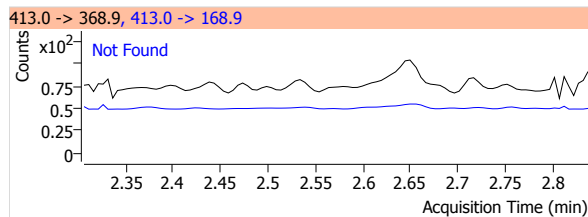
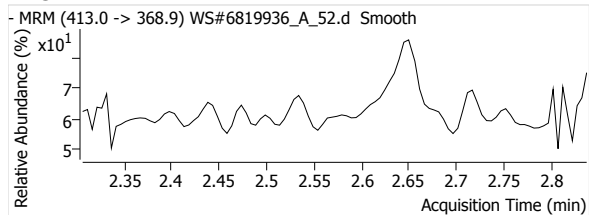


### PFHpA 1

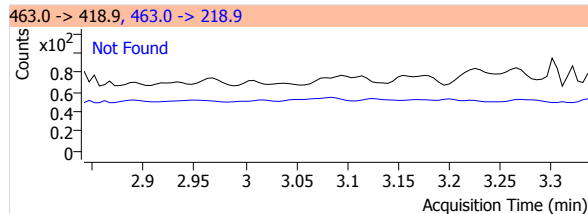
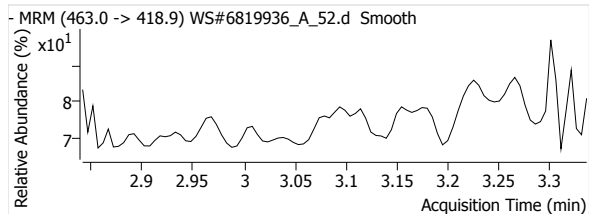


# Quantitative Analysis Report

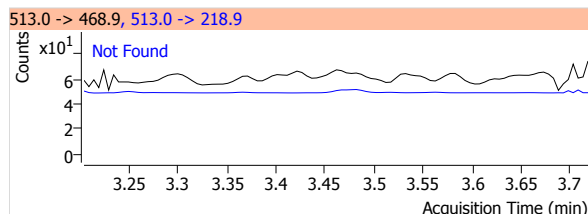
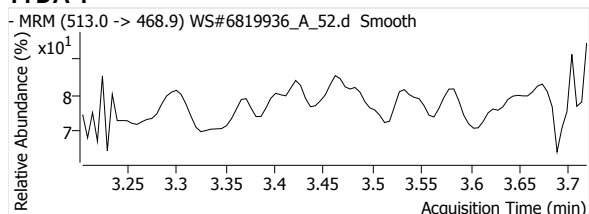
## PFOA 1



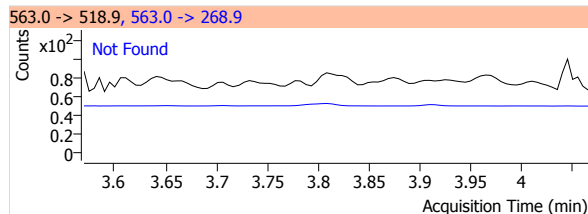
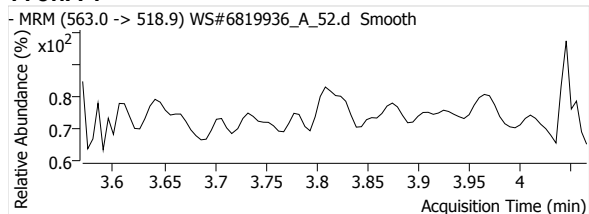
## PFNA 1



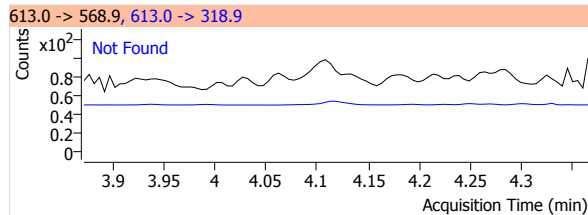
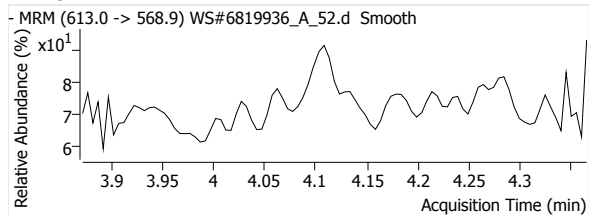
## PFDA 1



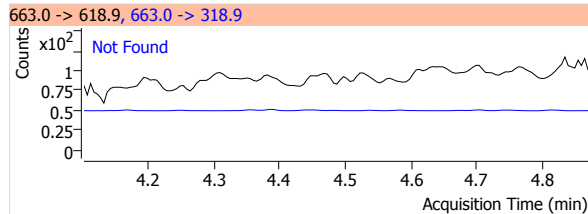
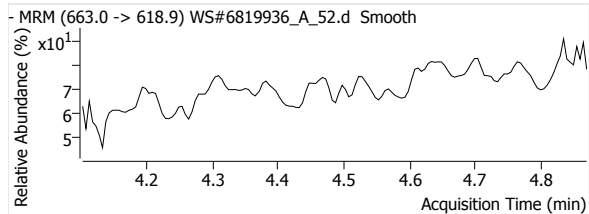
## PFUnA 1



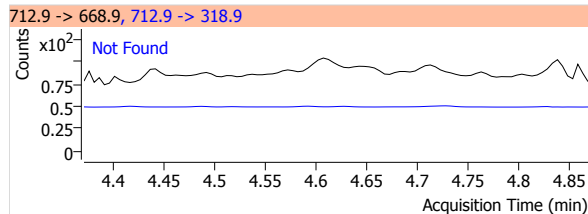
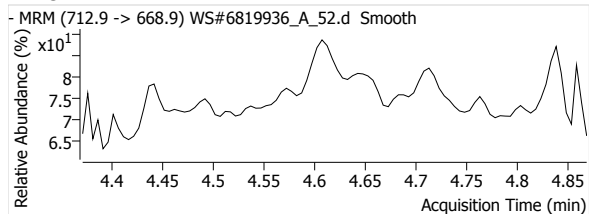
## PFDaA 1



## PFTrDA 1

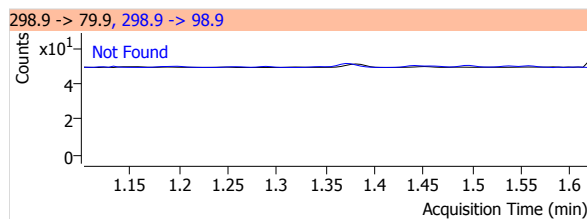
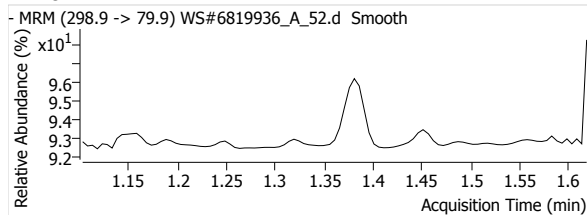


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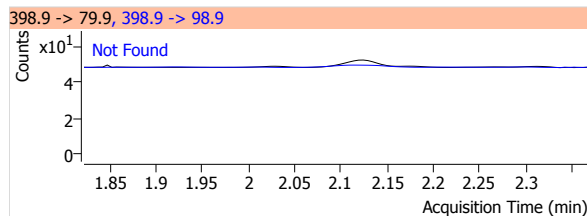
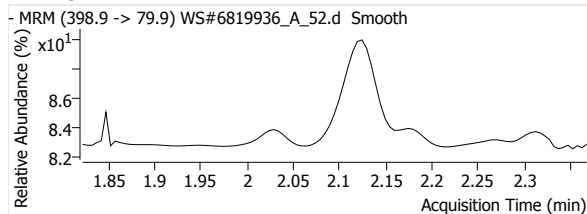


# Quantitative Analysis Report

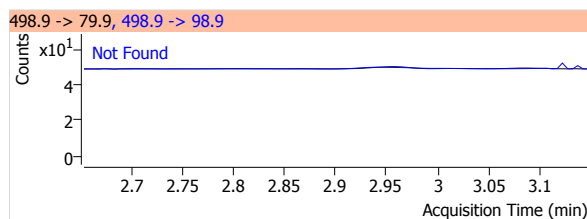
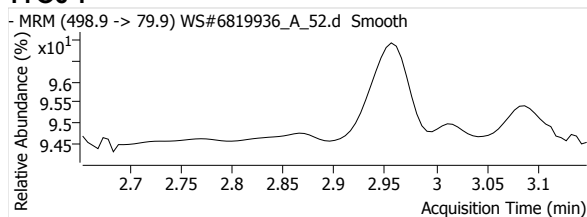
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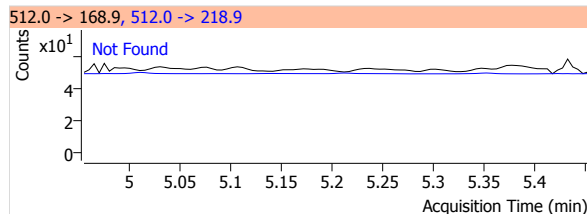
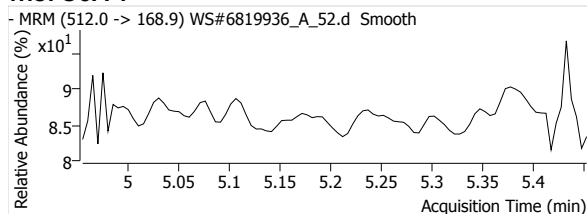
## PFHxS 1



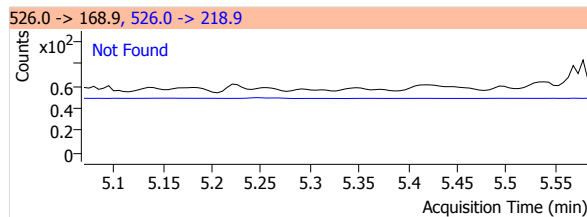
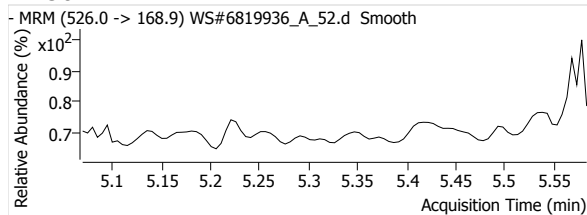
## PFOS 1



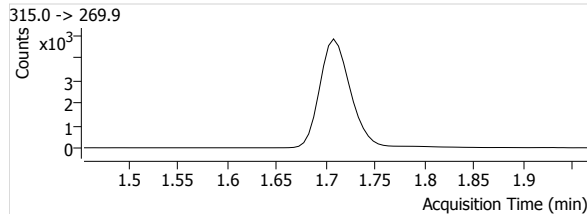
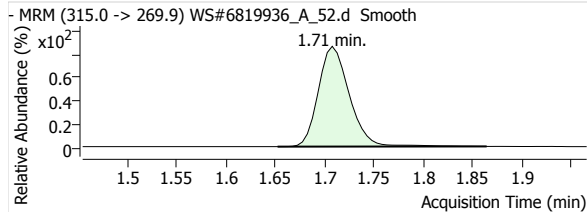
## MeFOSA 1



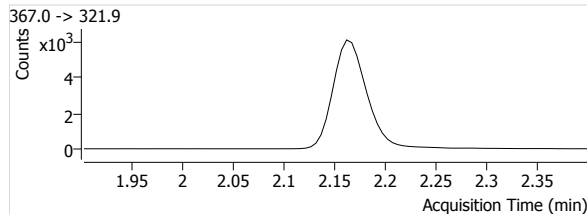
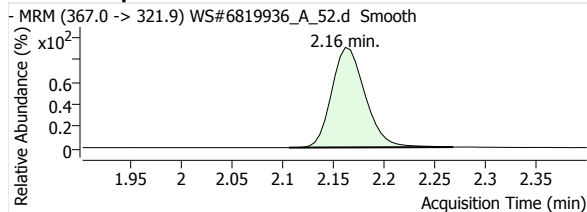
## eFOSA 1



## 13C2-PFHxA



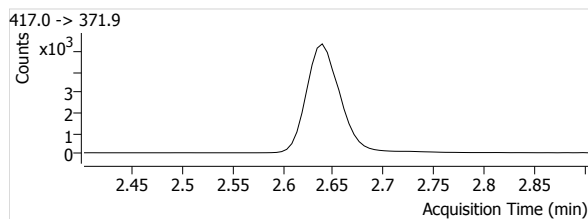
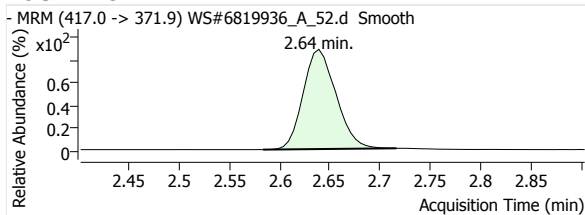
## 13C4-PFHpA



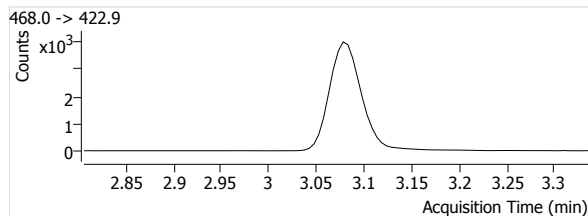
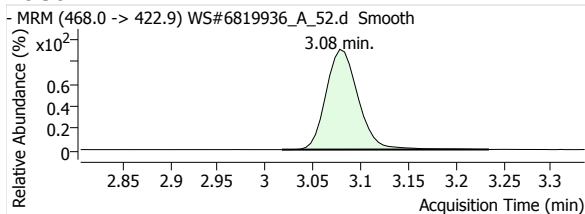


# Quantitative Analysis Report

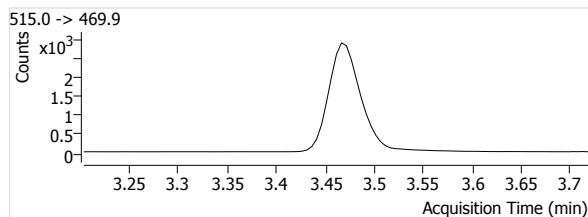
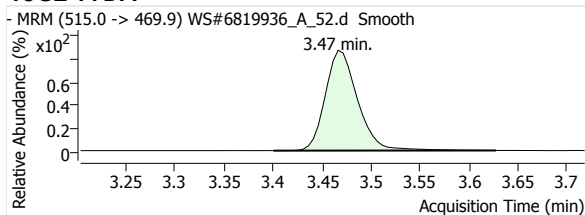
## 13C4-PFOA



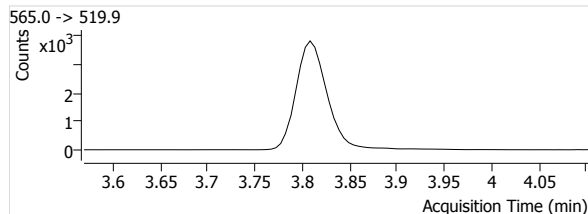
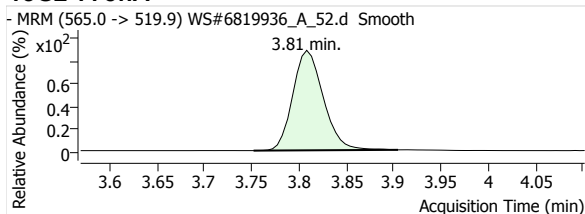
## 13C5-PFNA



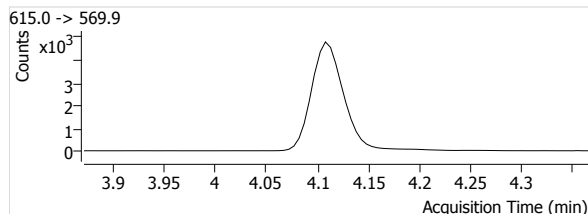
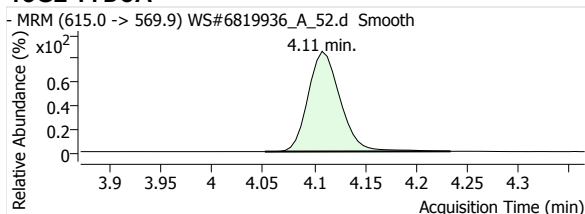
## 13C2-PFDA



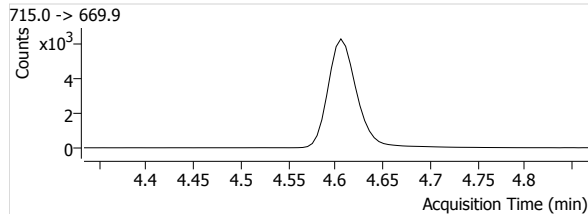
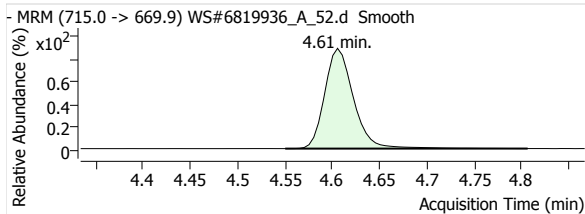
## 13C2-PFUnA



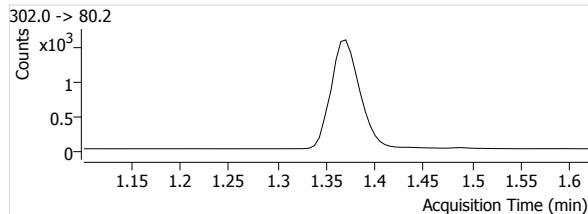
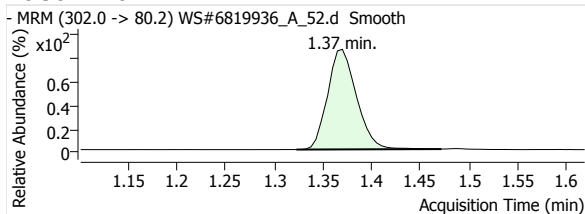
## 13C2-PFDoA



## 13C2-PFTeDA

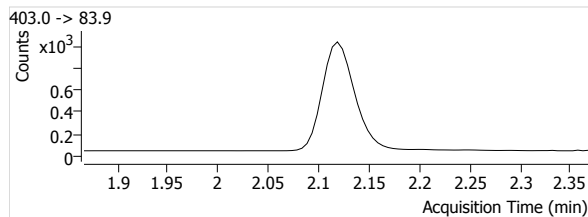
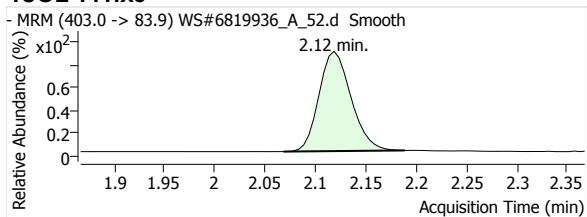


## 13C3-PFBS

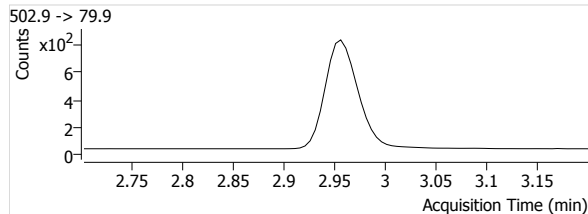
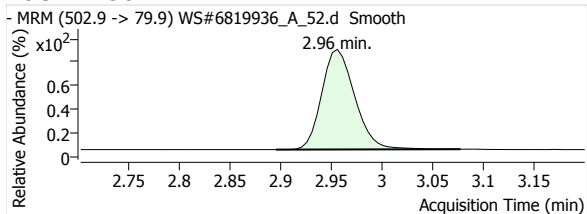


# Quantitative Analysis Report

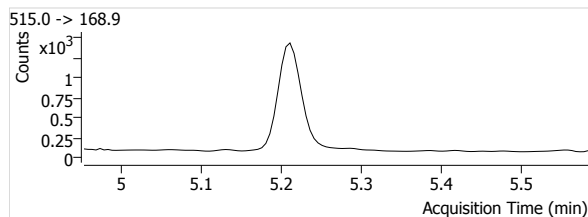
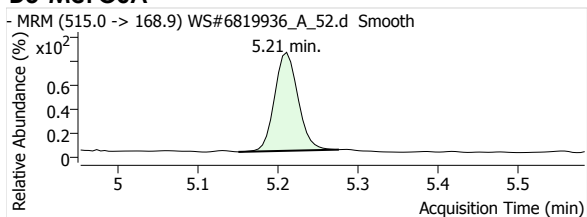
## 18O2-PFHxS



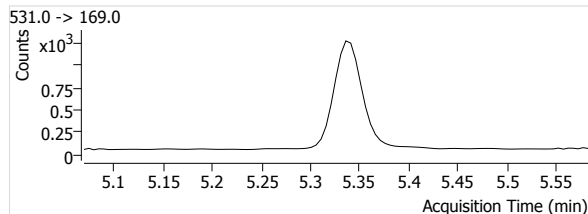
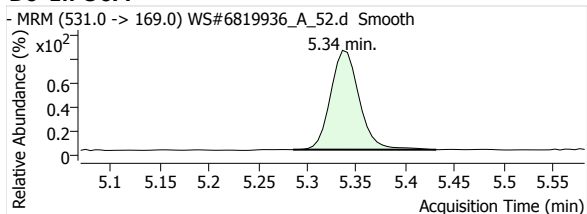
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA





**BUREAU**  
**VERITAS**

## **4. QA/QC Data**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**

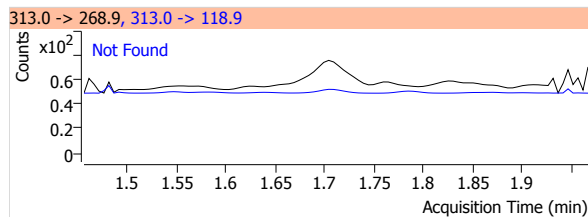
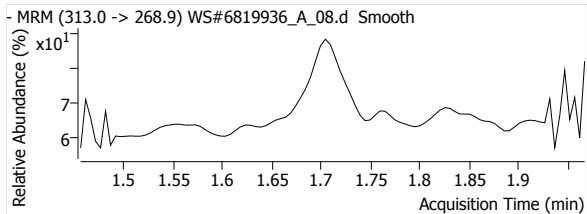
# Quantitative Analysis Report

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bin

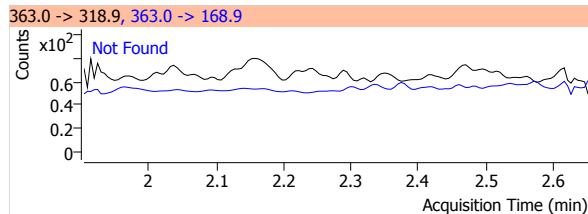
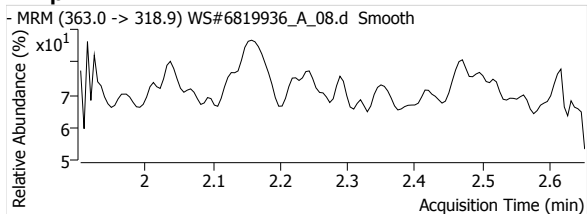
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 12:09:23 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	0.0051	--	145	4.61	2	0.0082	7	4.60	8	4.8
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	115.3963	--	11430	1.71	373	--	--	--	--	--
13C4-PFHpA	µg/L	--	113.0278	--	14376	2.16	438	--	--	--	--	--
13C4-PFOA	µg/L	--	114.9299	--	13610	2.63	1318	--	--	--	--	--
13C5-PFNA	µg/L	--	111.7698	--	10408	3.07	663	--	--	--	--	--
13C2-PFDA	µg/L	--	105.8840	--	7576	3.47	238	--	--	--	--	--
13C2-PFUnA	µg/L	--	113.5135	--	9702	3.81	1006	--	--	--	--	--
13C2-PFDaA	µg/L	--	116.0172	--	12147	4.11	617	--	--	--	--	--
13C2-PFTeDA	µg/L	--	115.4288	--	17671	4.61	1750	--	--	--	--	--
13C3-PFBS	µg/L	--	110.6655	--	3725	1.36	256	--	--	--	--	--
18O2-PFHxS	µg/L	--	111.9486	--	2614	2.11	264	--	--	--	--	--
13C4-PFOS	µg/L	--	110.1105	--	1993	2.95	212	--	--	--	--	--
D3-MeFOSA	µg/L	--	110.1443	--	4962	5.21	61	--	--	--	--	--
D5-EtFOSA	µg/L	--	111.7743	--	4101	5.34	94	--	--	--	--	--

### PFHxA 1

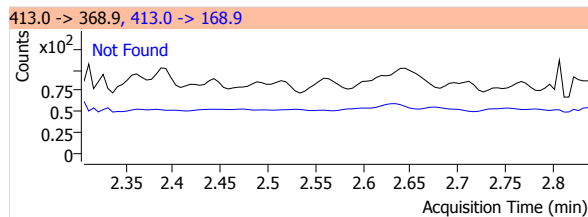
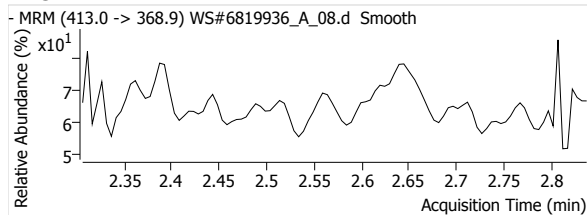


### PFHpA 1

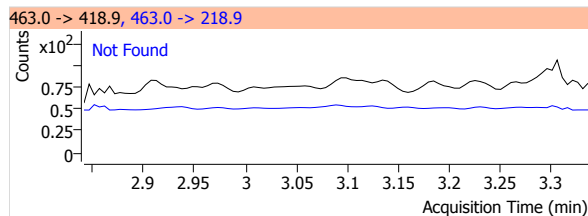
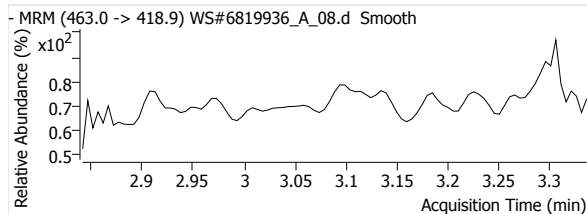


# Quantitative Analysis Report

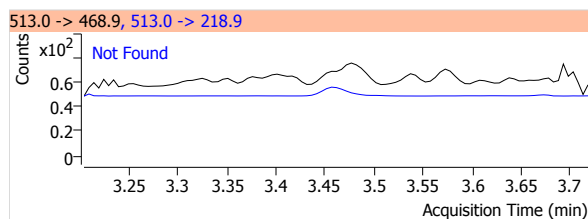
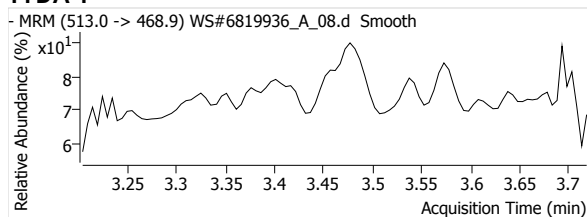
## PFOA 1



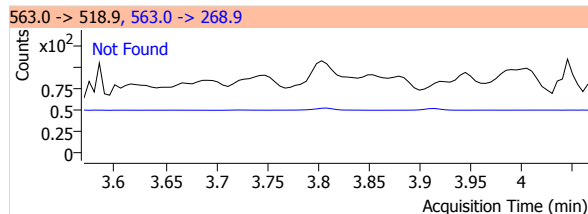
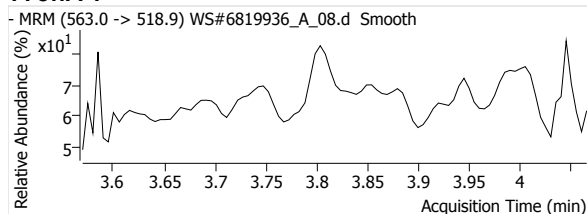
## PFNA 1



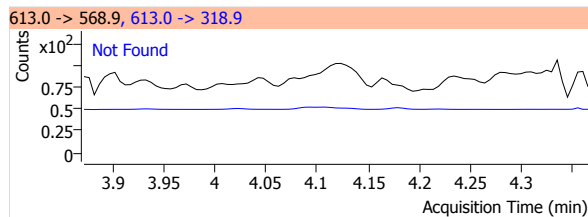
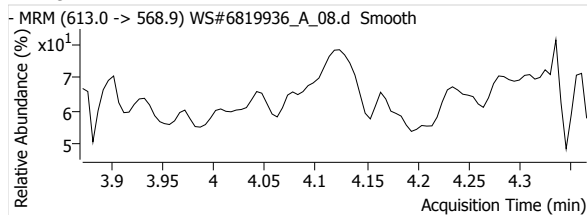
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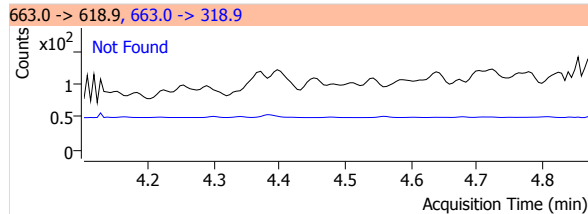
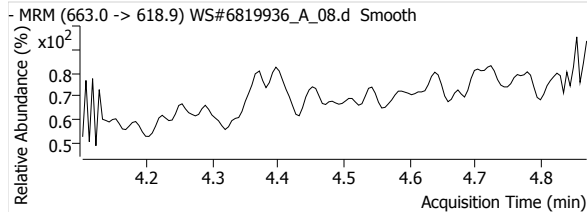
## PFUnA 1



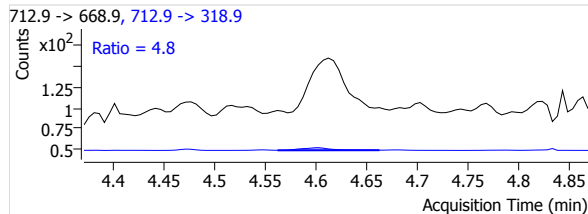
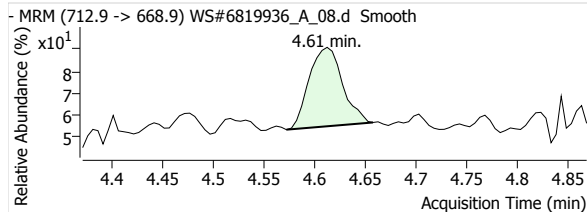
## PFDoA 1



## PFTrDA 1

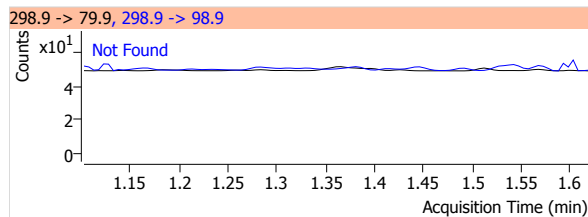
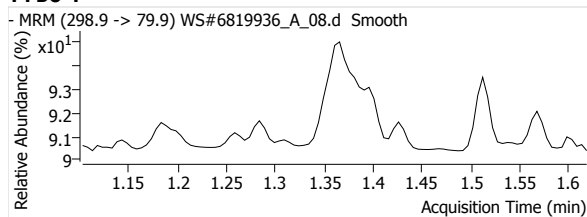


## PFTeDA 1

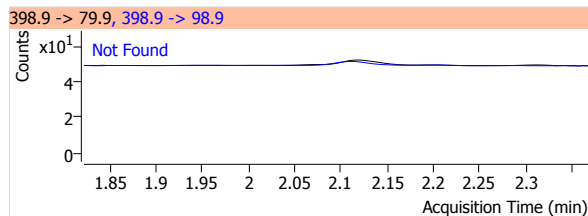
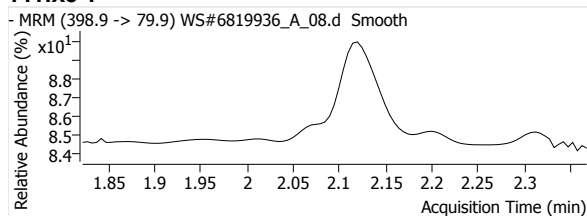


# Quantitative Analysis Report

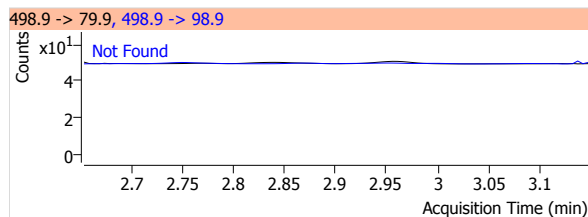
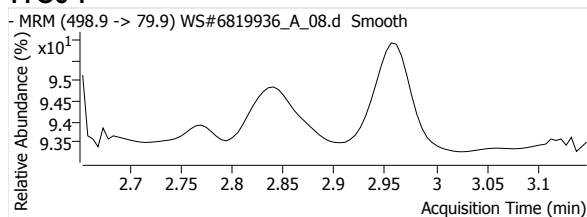
## PFBS 1



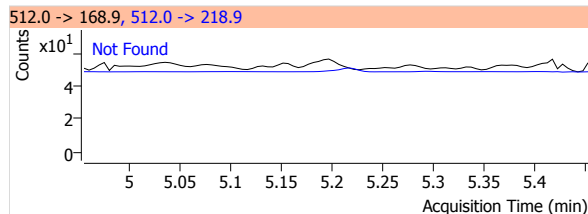
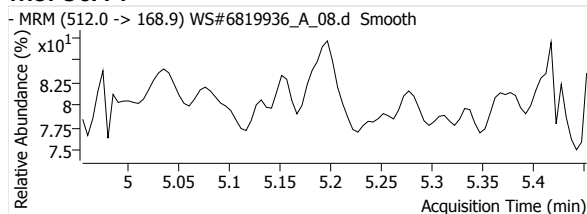
## PFHxS 1



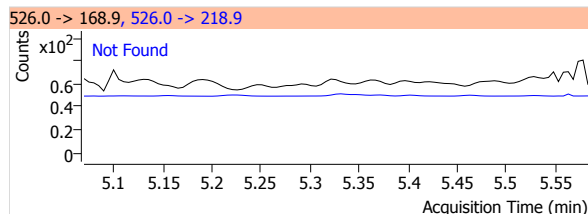
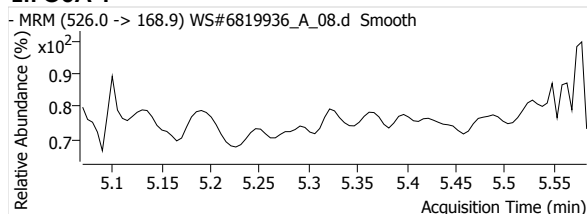
## PFOS 1



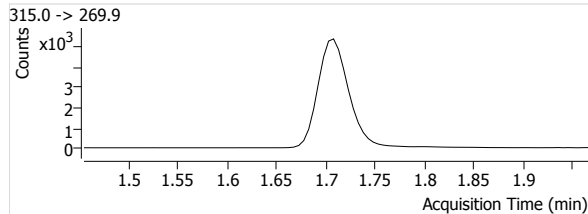
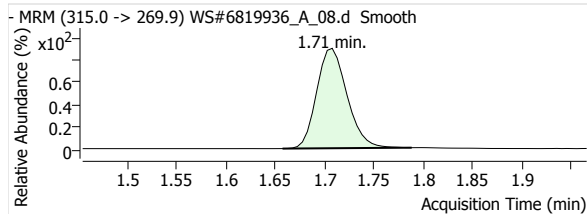
## MeFOSA 1



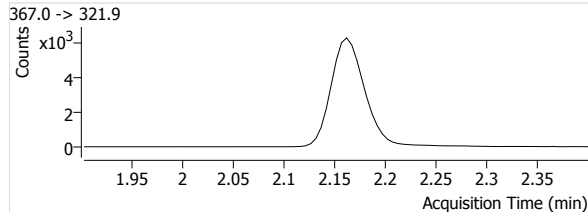
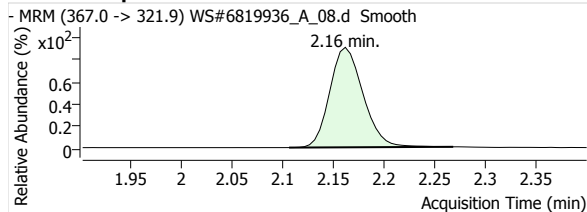
## eFOSA 1



## 13C2-PFHxA

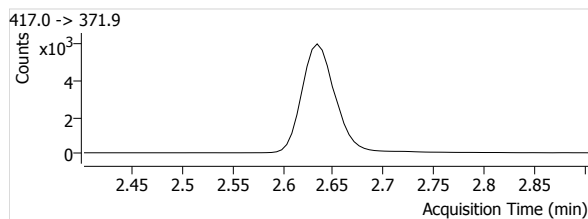
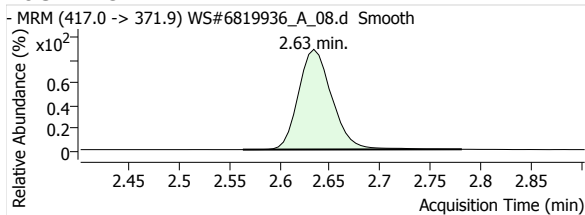


## 13C4-PFHpA

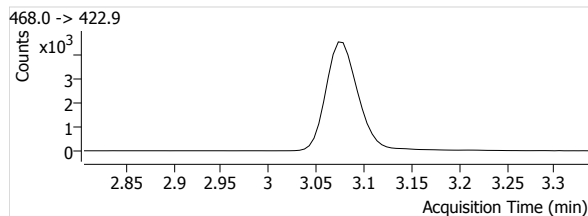
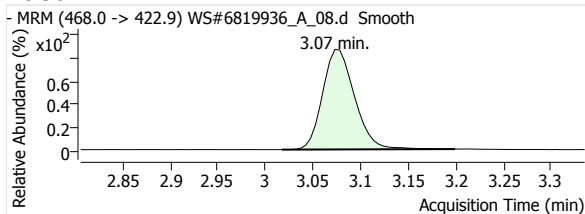


# Quantitative Analysis Report

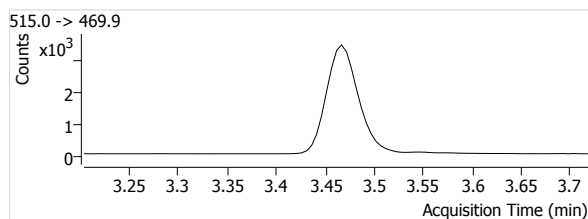
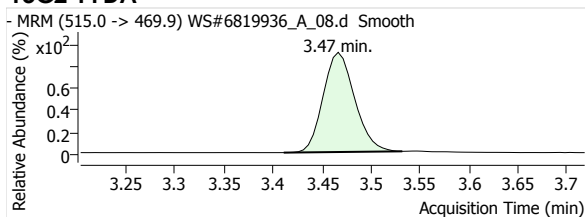
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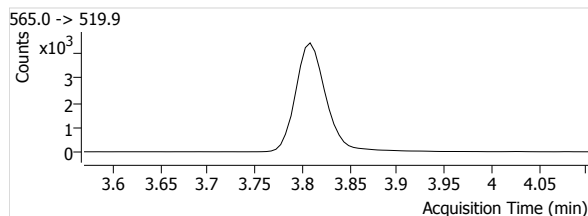
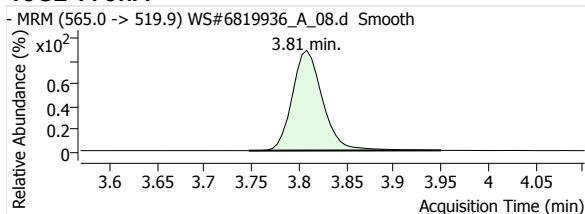
## 13C5-PFNA



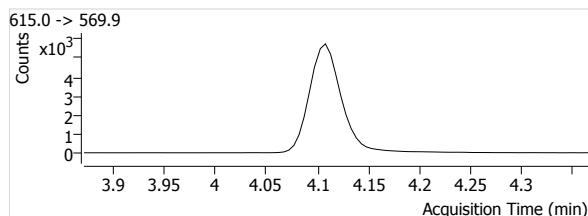
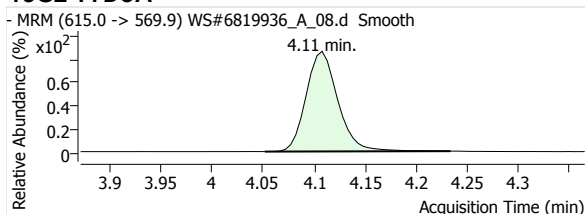
## 13C2-PFDA



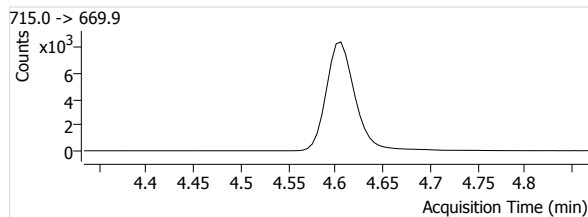
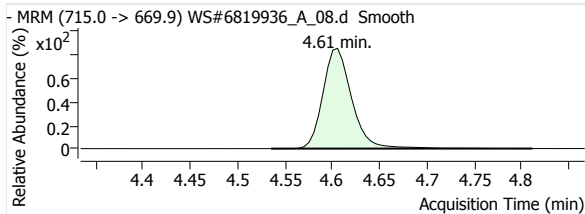
## 13C2-PFUnA



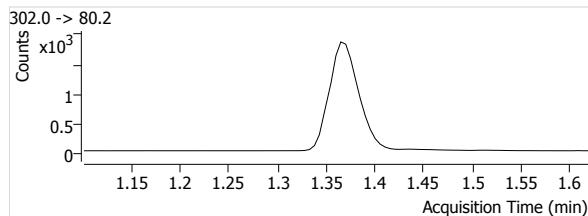
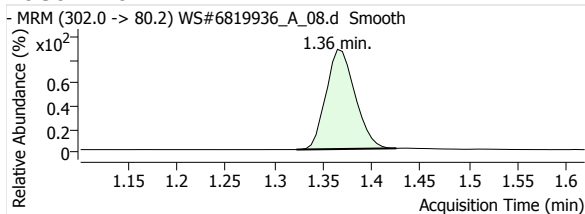
## 13C2-PFDoA



## 13C2-PFTeDA

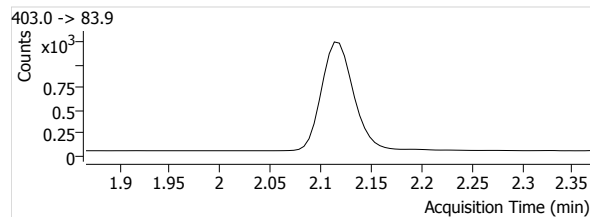
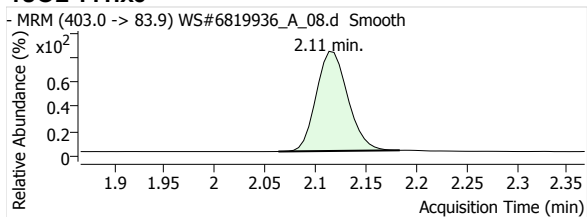


## 13C3-PFBS

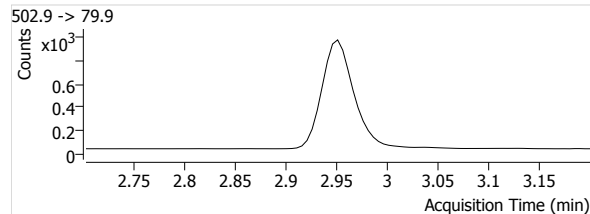
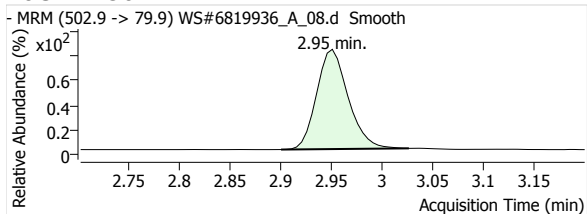


# Quantitative Analysis Report

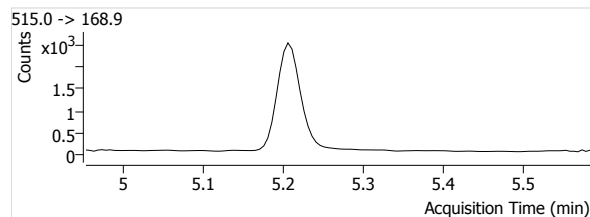
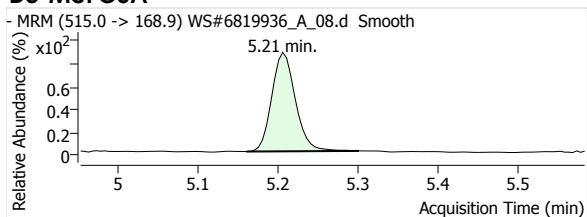
## 18O2-PFHxs



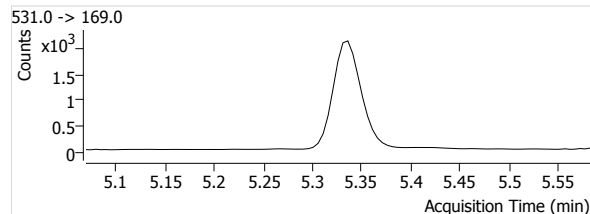
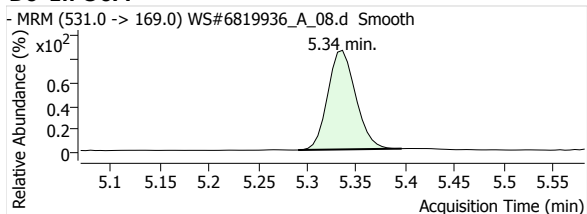
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA





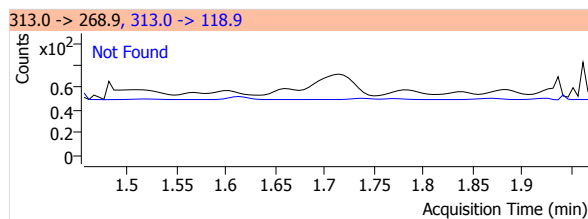
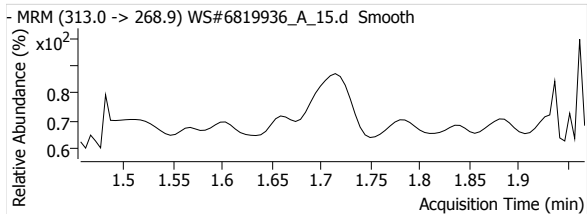
# Quantitative Analysis Report

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bin

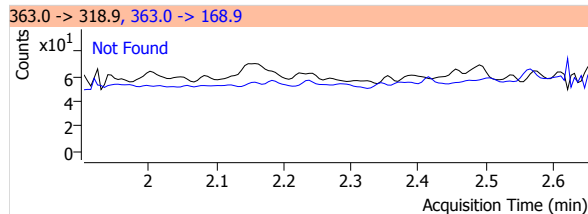
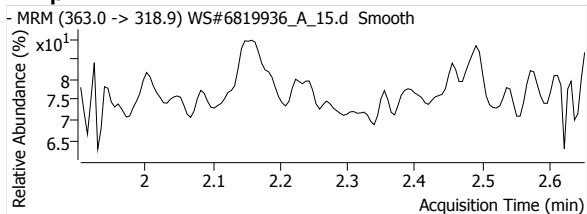
<b>Sample Name</b>	IB	<b>Data File</b>	WS#6819936_A_15.d
<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 12:57:56 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	121.6759	--	12052	1.70	508	--	--	--	--	--
13C4-PFHpA	µg/L	--	123.4374	--	15700	2.16	830	--	--	--	--	--
13C4-PFOA	µg/L	--	119.9628	--	14206	2.63	1088	--	--	--	--	--
13C5-PFNA	µg/L	--	118.0735	--	10995	3.07	572	--	--	--	--	--
13C2-PFDA	µg/L	--	113.9064	--	8150	3.46	230	--	--	--	--	--
13C2-PFUnA	µg/L	--	119.5741	--	10220	3.81	670	--	--	--	--	--
13C2-PFDaA	µg/L	--	125.2245	--	13111	4.11	454	--	--	--	--	--
13C2-PFTeDA	µg/L	--	122.3986	--	18738	4.61	1212	--	--	--	--	--
13C3-PFBS	µg/L	--	112.7748	--	3796	1.36	546	--	--	--	--	--
18O2-PFHxS	µg/L	--	112.7623	--	2633	2.11	192	--	--	--	--	--
13C4-PFOS	µg/L	--	112.1547	--	2030	2.95	482	--	--	--	--	--
D3-MeFOSA	µg/L	--	116.8257	--	5263	5.21	80	--	--	--	--	--
D5-EtFOSA	µg/L	--	117.8523	--	4324	5.34	130	--	--	--	--	--

### PFHxA 1

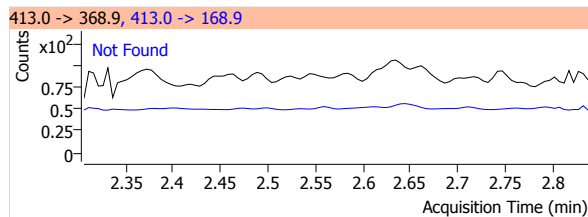
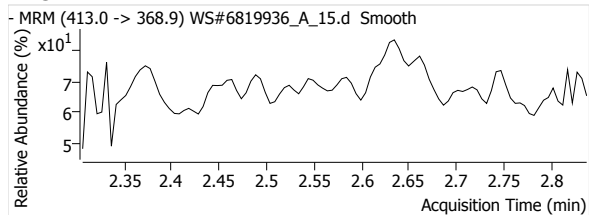


### PFHpA 1

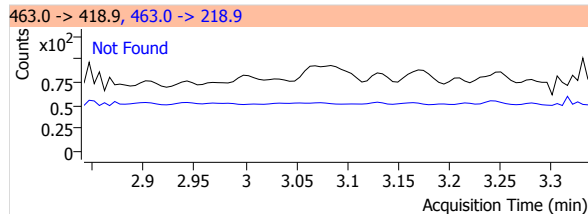
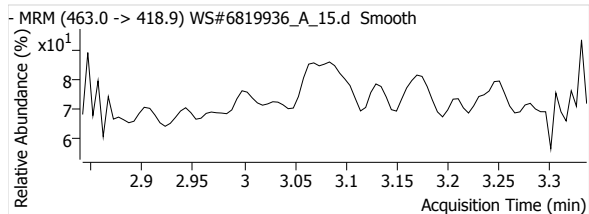


# Quantitative Analysis Report

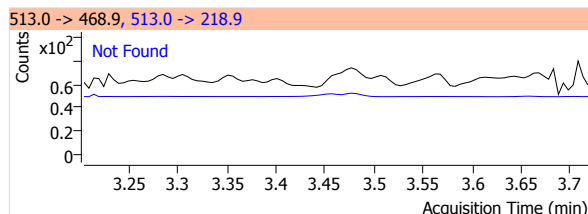
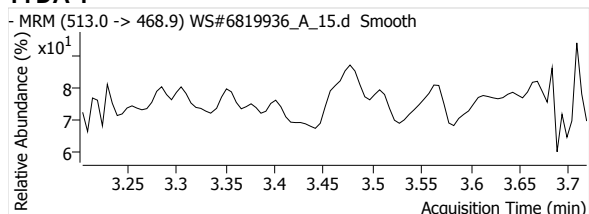
## PFOA 1



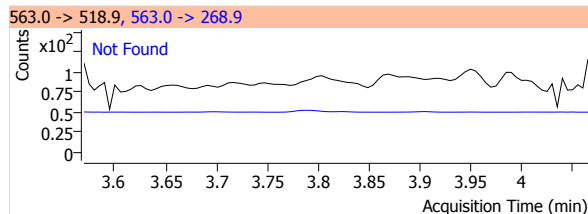
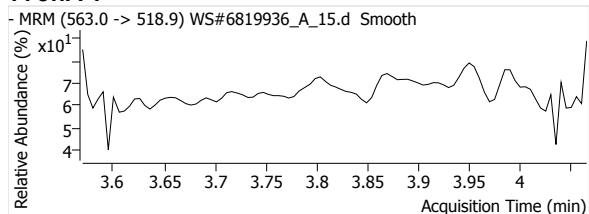
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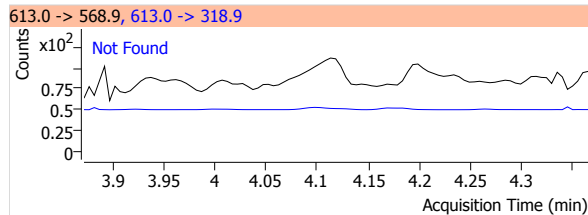
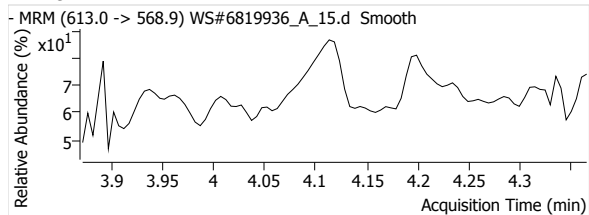
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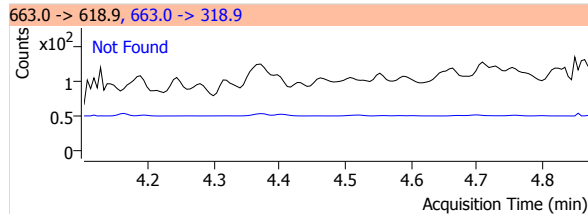
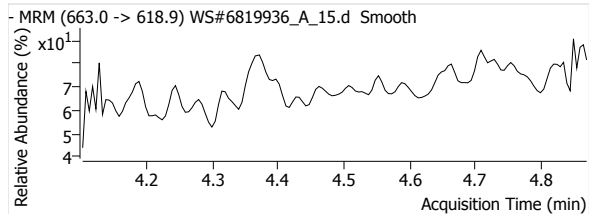
## PFUnA 1



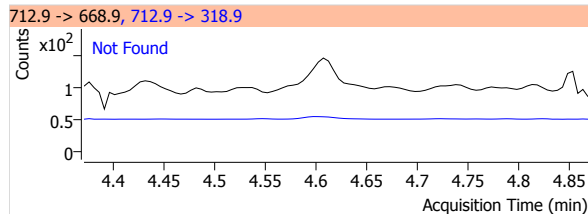
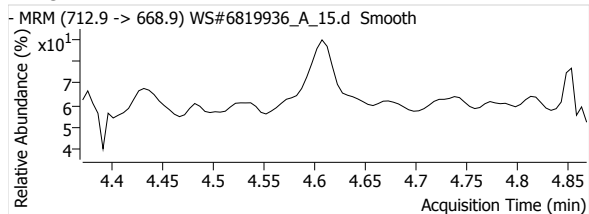
## PFDaA 1



## PFTrDA 1

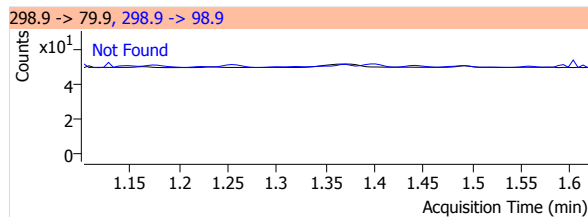
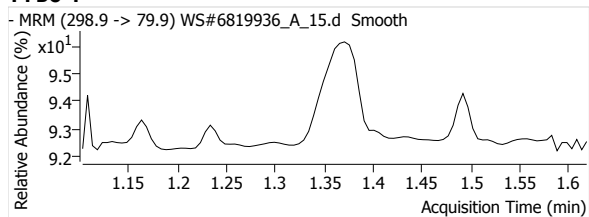


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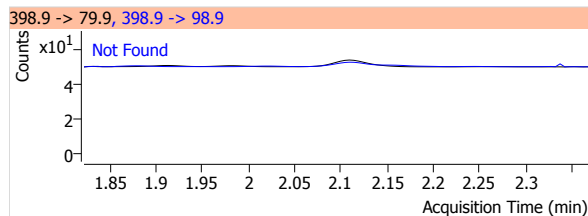
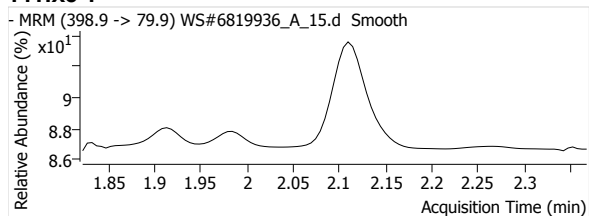


# Quantitative Analysis Report

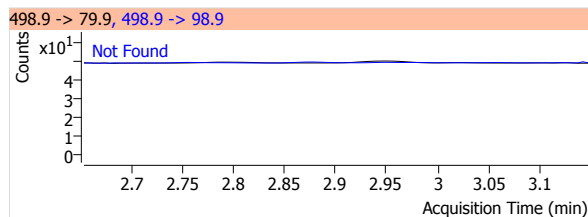
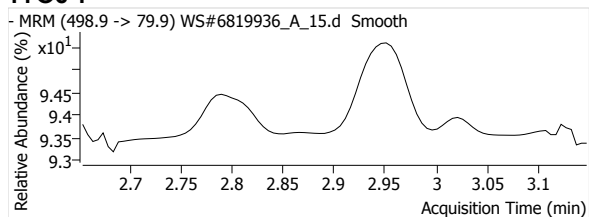
## PFBS 1



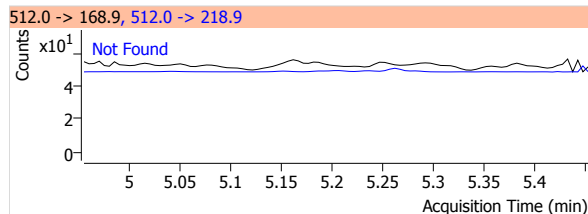
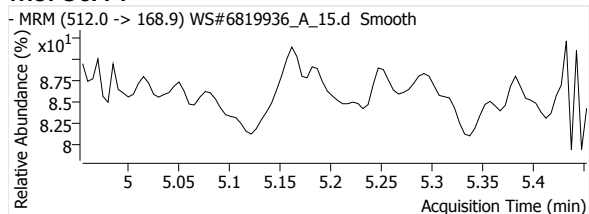
## PFHxS 1



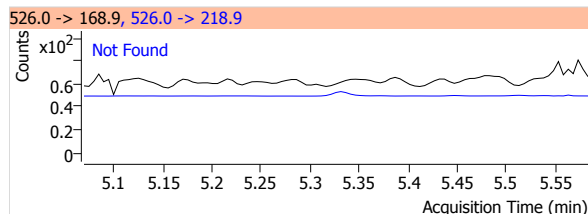
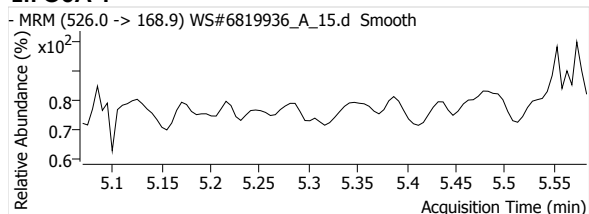
## PFOS 1



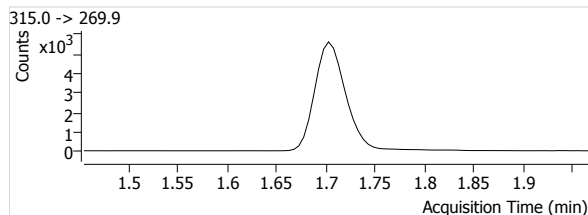
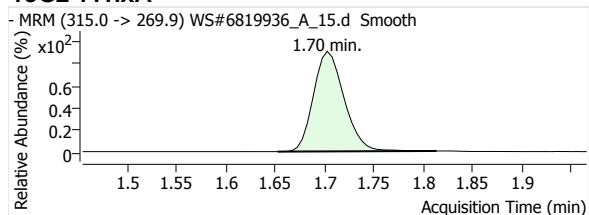
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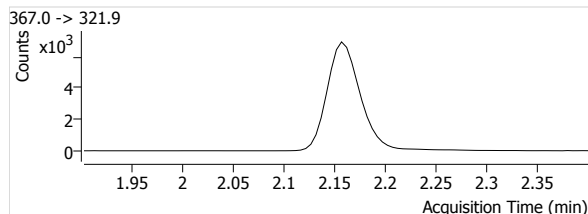
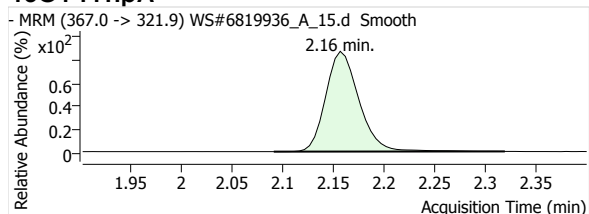
## eFOSA 1



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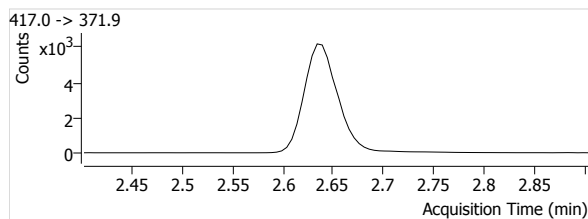
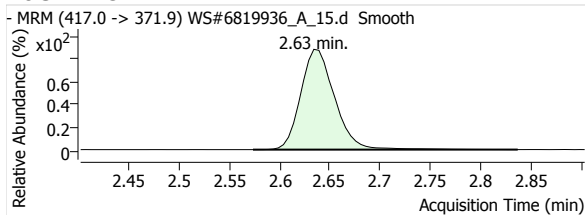


## 13C4-PFHpA

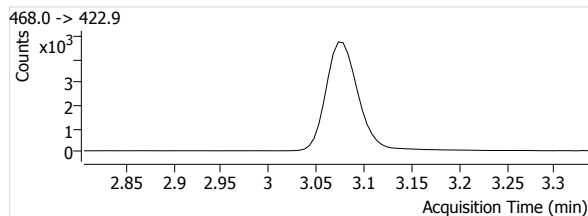
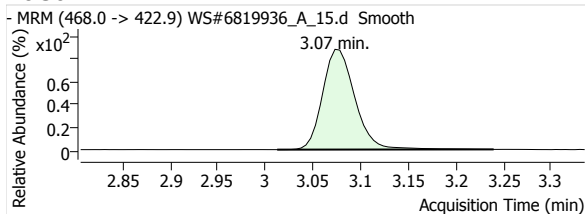


# Quantitative Analysis Report

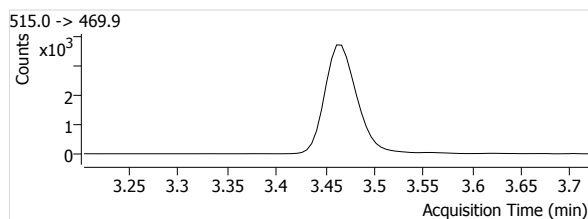
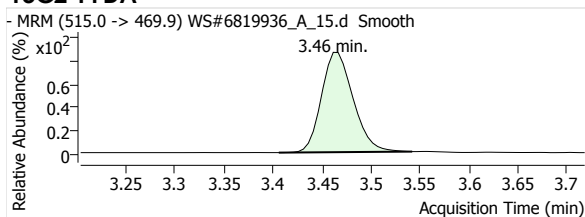
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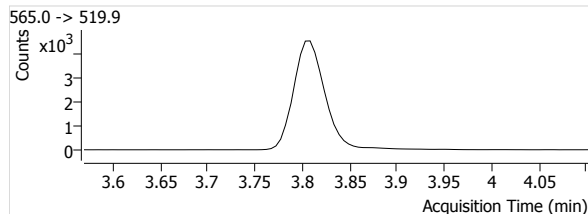
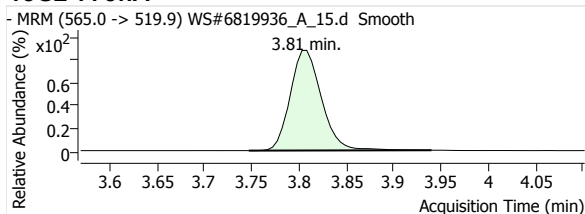
## 13C5-PFNA



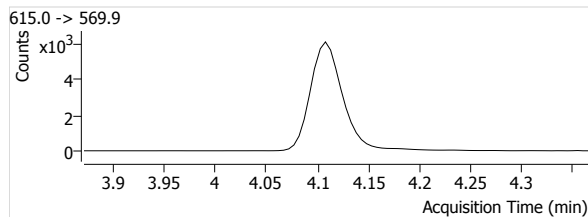
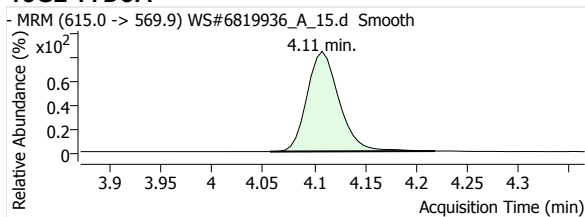
## 13C2-PFDA



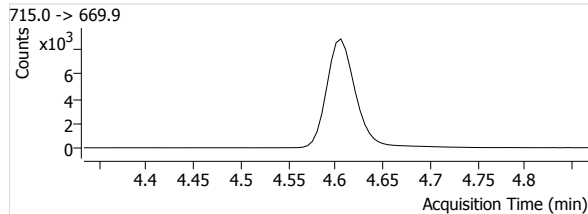
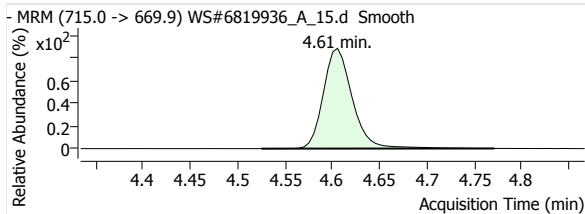
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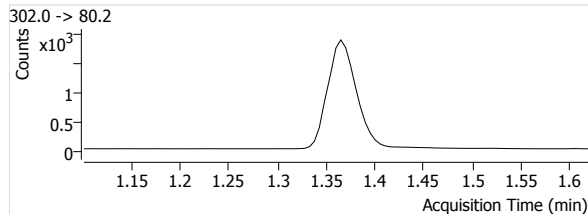
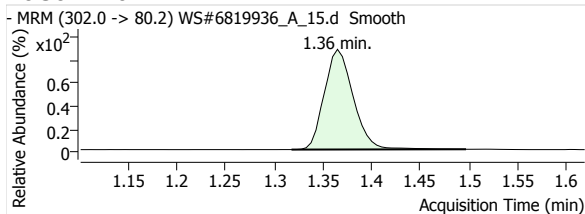
## 13C2-PFDoA



## 13C2-PFTeDA

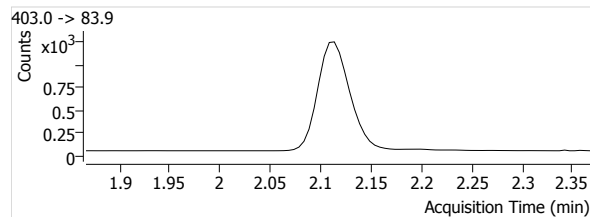
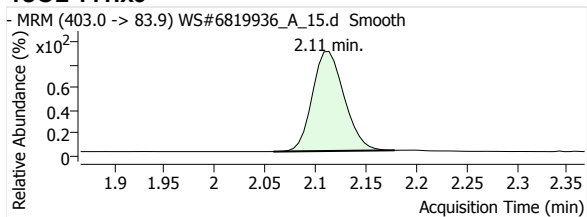


## 13C3-PFBS

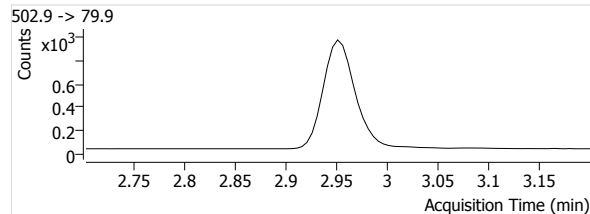
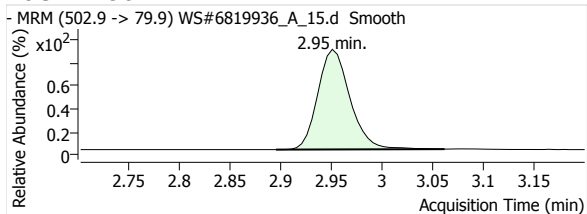


# Quantitative Analysis Report

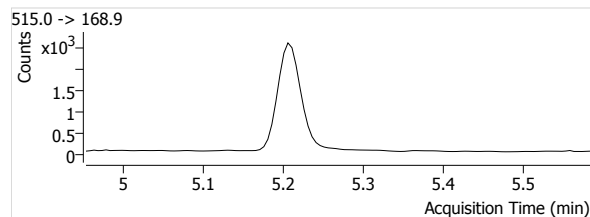
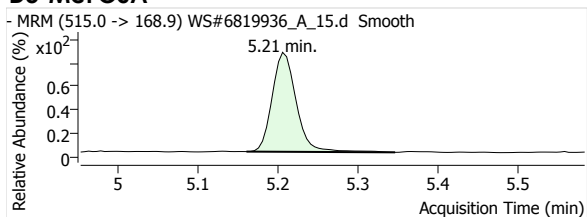
## 18O2-PFHxs



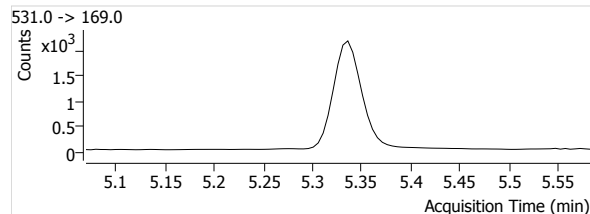
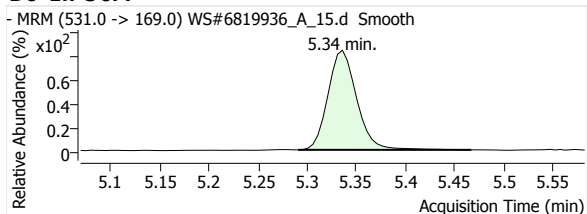
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



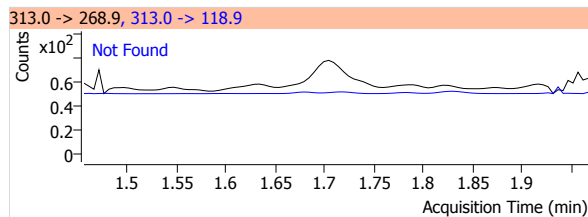
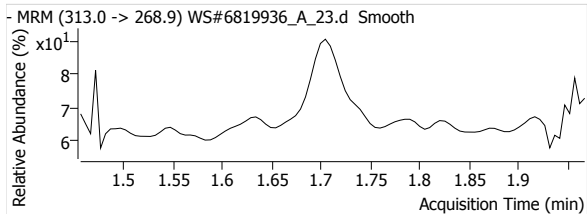
# Quantitative Analysis Report

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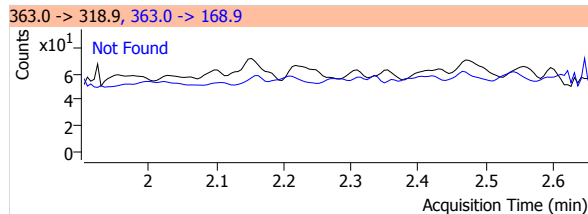
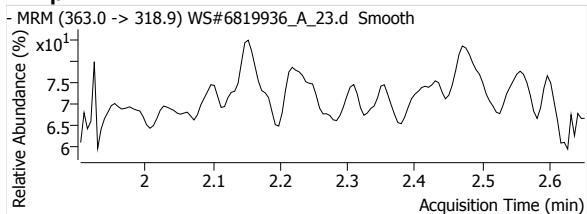
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 1:53:27 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	122.9884	--	12182	1.71	1266	--	--	--	--	--
13C4-PFHpA	µg/L	--	118.2011	--	15034	2.16	546	--	--	--	--	--
13C4-PFOA	µg/L	--	119.2366	--	14120	2.63	1032	--	--	--	--	--
13C5-PFNA	µg/L	--	116.2264	--	10823	3.07	251	--	--	--	--	--
13C2-PFDA	µg/L	--	115.3459	--	8253	3.47	368	--	--	--	--	--
13C2-PFUnA	µg/L	--	116.6959	--	9974	3.81	212	--	--	--	--	--
13C2-PFDaA	µg/L	--	124.9952	--	13087	4.11	1081	--	--	--	--	--
13C2-PFTeDA	µg/L	--	121.5625	--	18610	4.61	973	--	--	--	--	--
13C3-PFBS	µg/L	--	112.0321	--	3771	1.36	663	--	--	--	--	--
18O2-PFHxS	µg/L	--	108.9507	--	2544	2.11	586	--	--	--	--	--
13C4-PFOS	µg/L	--	107.8453	--	1952	2.95	219	--	--	--	--	--
D3-MeFOSA	µg/L	--	112.8968	--	5086	5.21	81	--	--	--	--	--
D5-EtFOSA	µg/L	--	114.8814	--	4215	5.34	119	--	--	--	--	--

### PFHxA 1

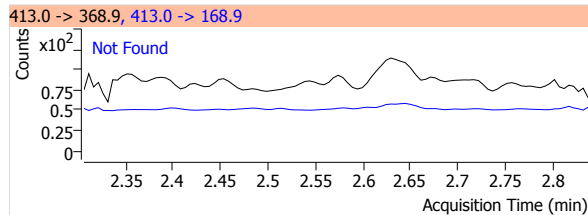
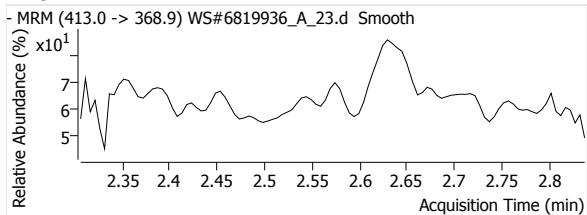


### PFHpA 1

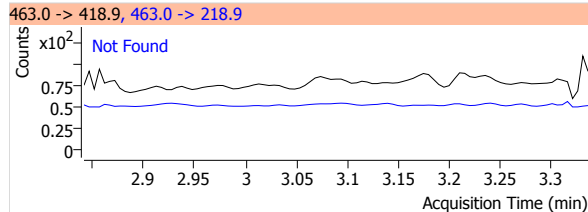
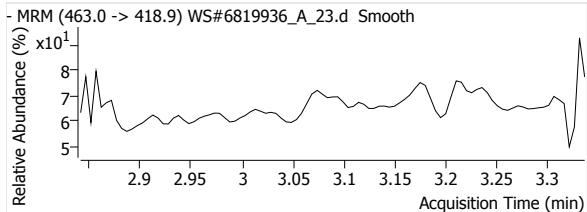


# Quantitative Analysis Report

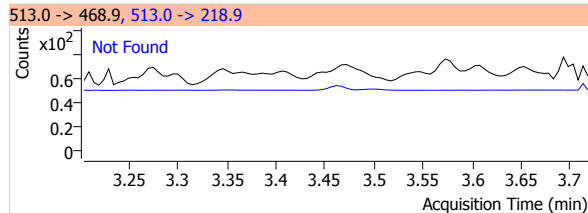
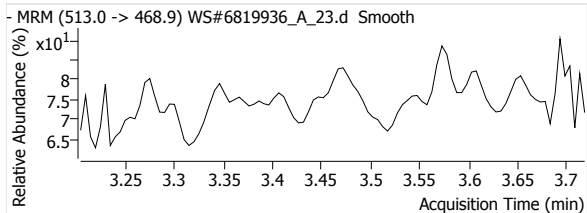
## PFOA 1



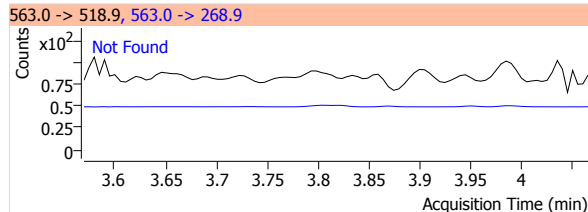
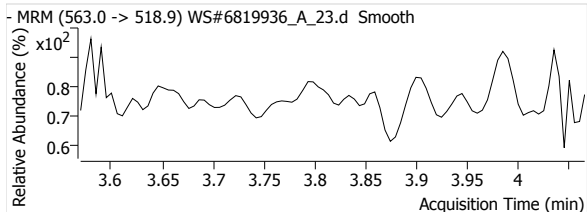
## PFNA 1



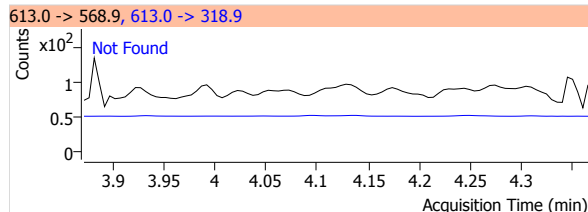
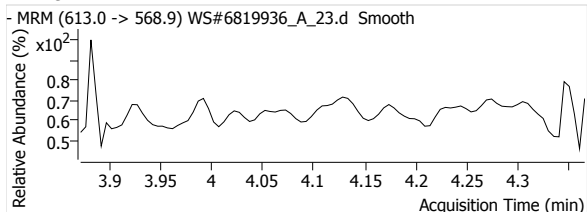
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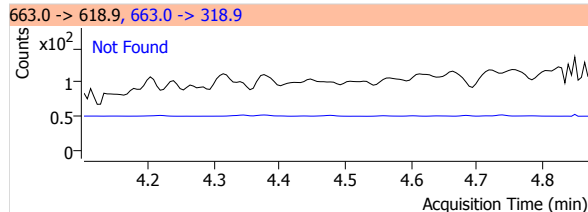
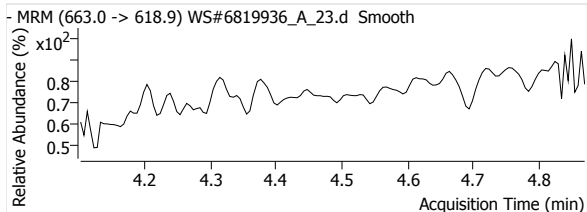
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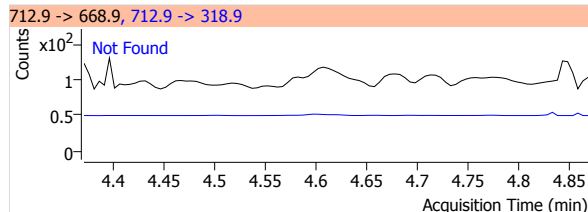
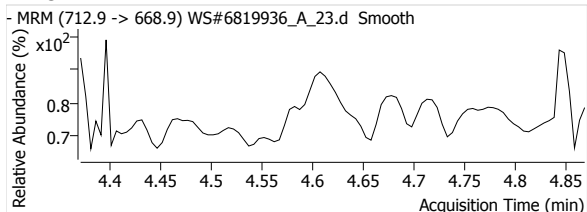
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## PFTrDA 1

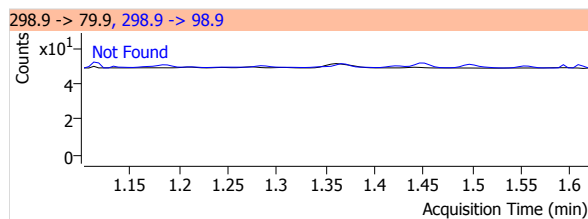
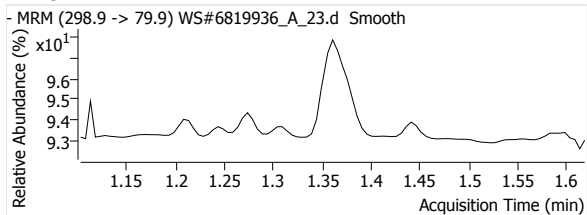


## PFTeDA 1

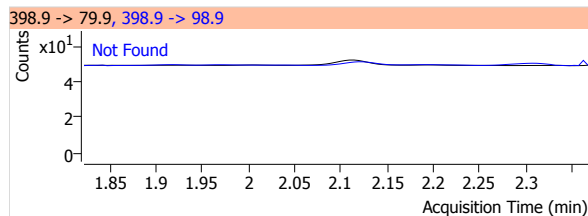
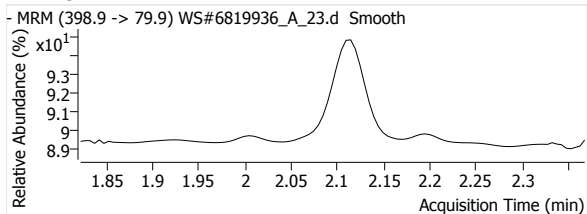


# Quantitative Analysis Report

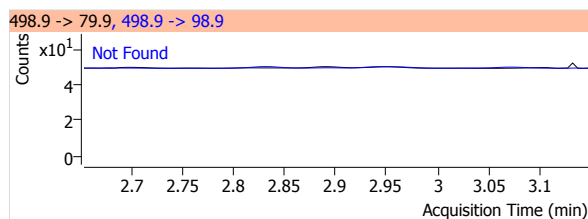
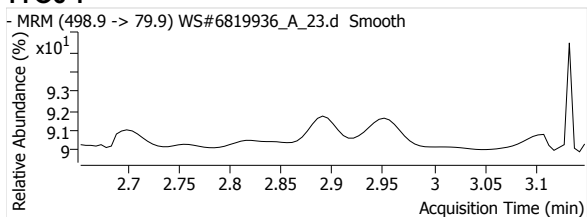
## PFBS 1



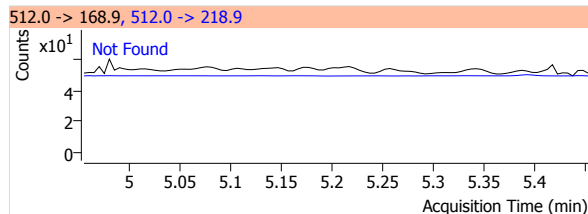
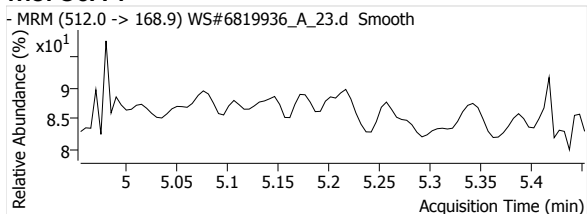
## PFHxS 1



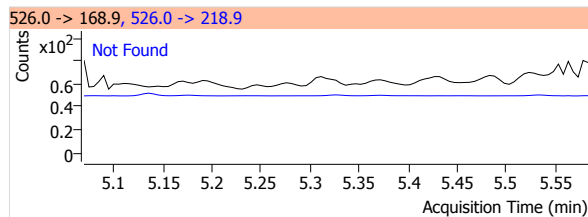
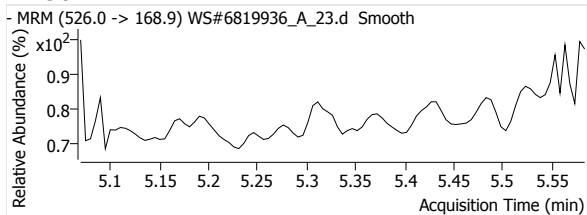
## PFOS 1



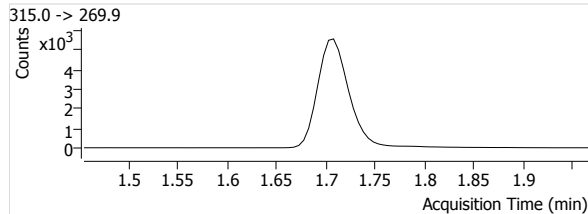
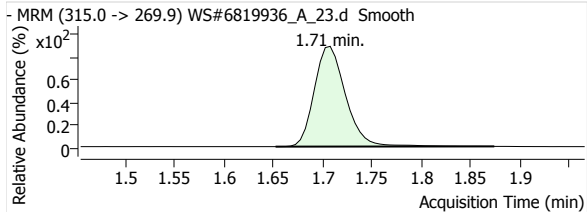
## MeFOSA 1



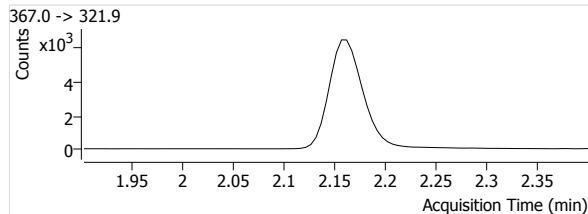
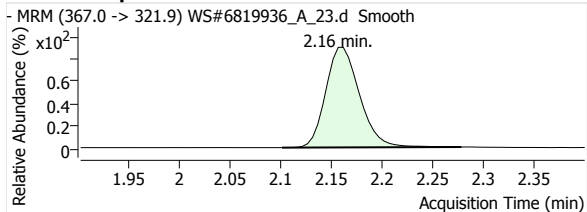
## eFOSA 1



## 13C2-PFHxA



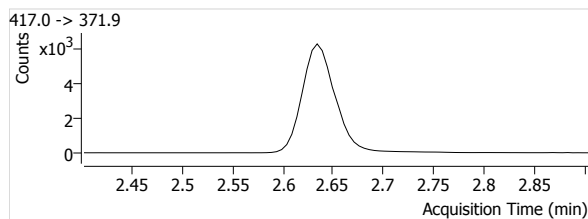
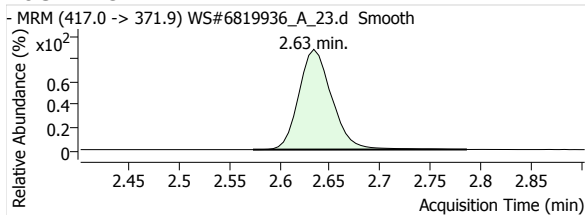
## 13C4-PFHpA



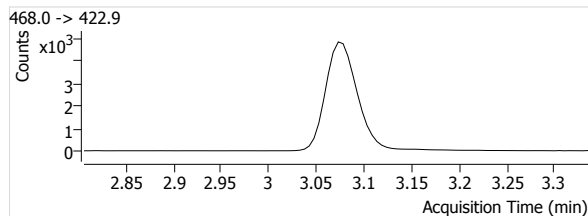
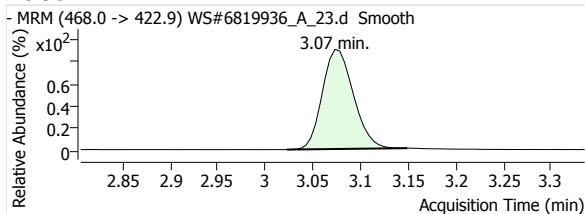


# Quantitative Analysis Report

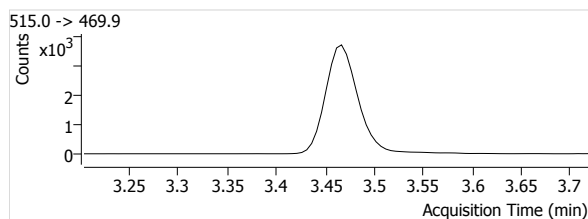
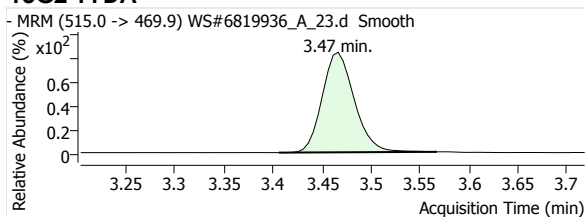
## 13C4-PFOA



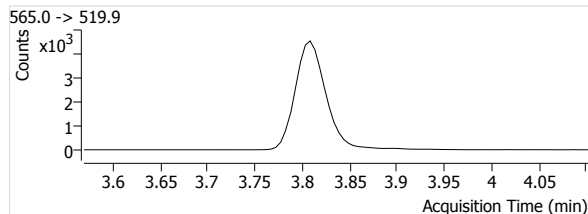
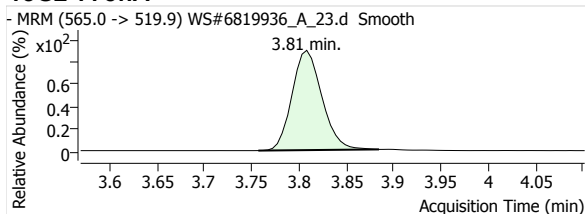
## 13C5-PFNA



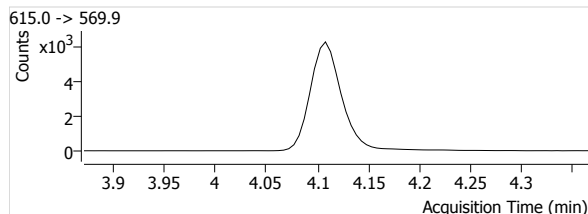
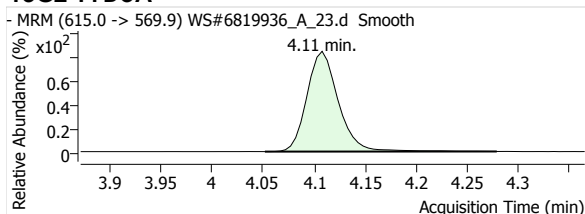
## 13C2-PFDA



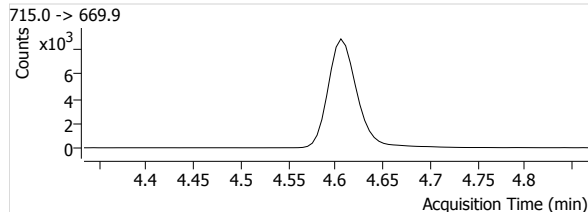
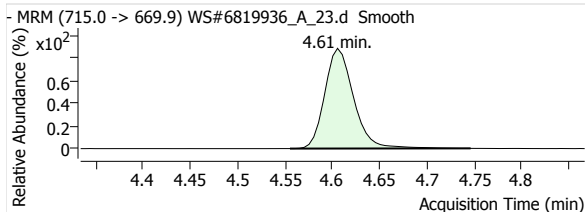
## 13C2-PFUnA



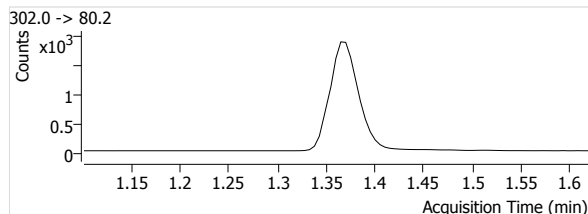
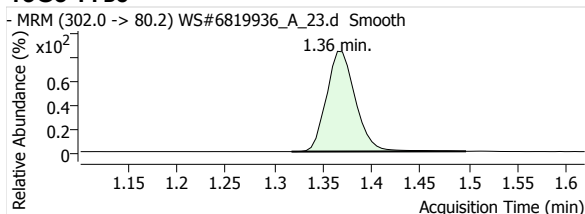
## 13C2-PFDoA



## 13C2-PFTeDA

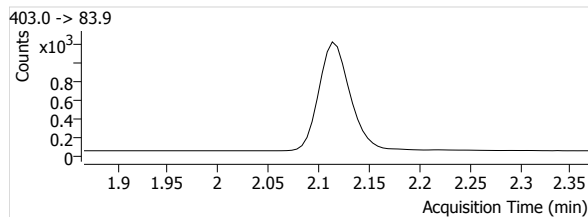
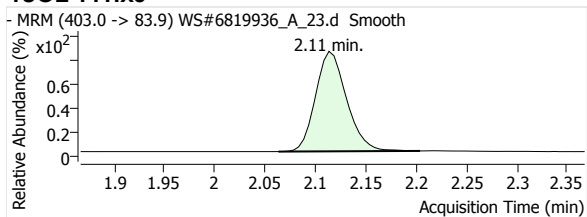


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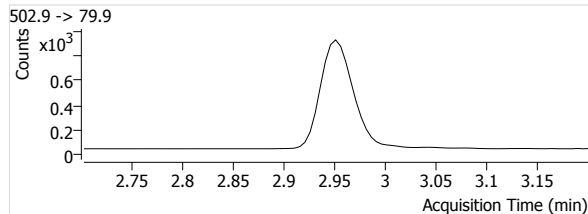
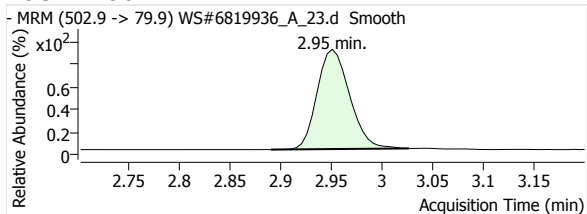


# Quantitative Analysis Report

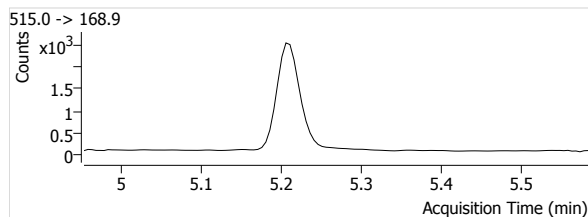
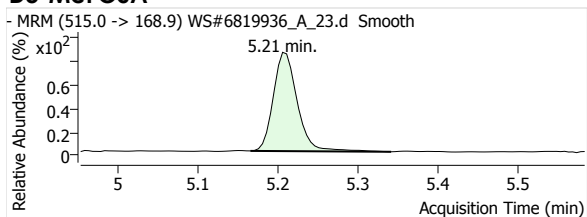
## 18O2-PFHxs



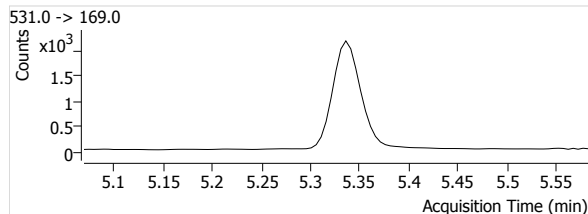
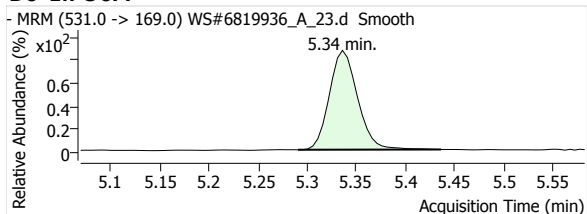
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



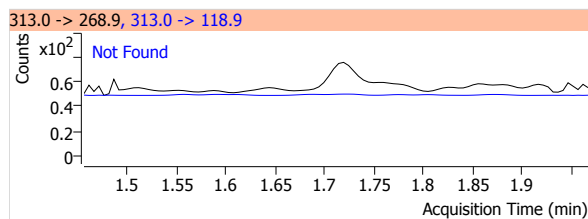
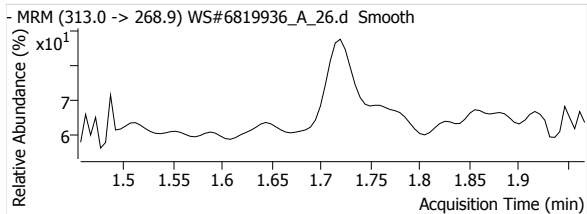
# Quantitative Analysis Report

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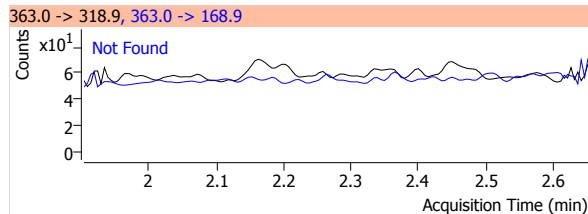
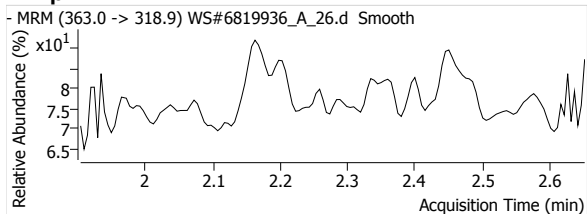
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 2:14:16 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	120.0808	--	11894	1.71	313	--	--	--	--	--
13C4-PFHpA	µg/L	--	120.2374	--	15293	2.16	967	--	--	--	--	--
13C4-PFOA	µg/L	--	118.6708	--	14053	2.63	583	--	--	--	--	--
13C5-PFNA	µg/L	--	119.7595	--	11152	3.08	773	--	--	--	--	--
13C2-PFDA	µg/L	--	112.9280	--	8080	3.47	328	--	--	--	--	--
13C2-PFUnA	µg/L	--	120.1474	--	10269	3.81	852	--	--	--	--	--
13C2-PFDaA	µg/L	--	122.7030	--	12847	4.11	301	--	--	--	--	--
13C2-PFTeDA	µg/L	--	123.0518	--	18838	4.60	1253	--	--	--	--	--
13C3-PFBS	µg/L	--	115.2704	--	3880	1.37	486	--	--	--	--	--
18O2-PFHxS	µg/L	--	111.3490	--	2600	2.12	367	--	--	--	--	--
13C4-PFOS	µg/L	--	110.9392	--	2008	2.95	226	--	--	--	--	--
D3-MeFOSA	µg/L	--	110.5216	--	4979	5.21	69	--	--	--	--	--
D5-EtFOSA	µg/L	--	113.1643	--	4152	5.34	91	--	--	--	--	--

### PFHxA 1

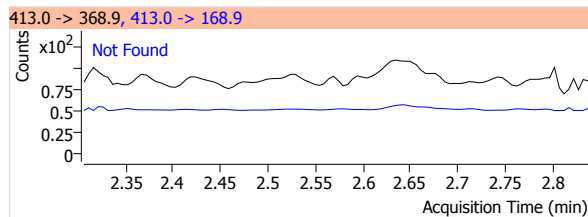
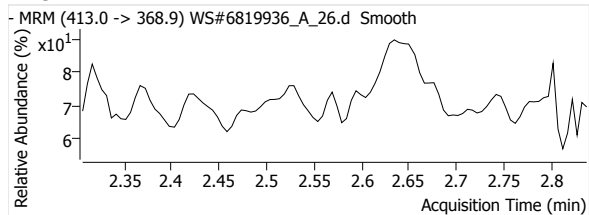


### PFHpA 1

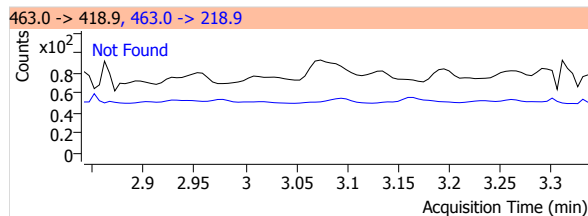
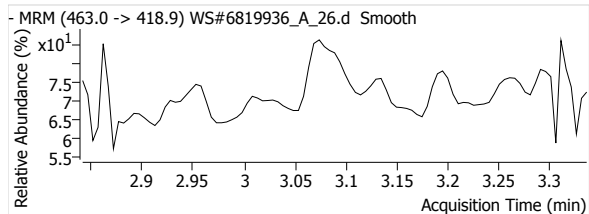


# Quantitative Analysis Report

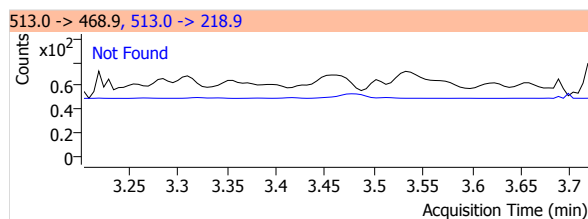
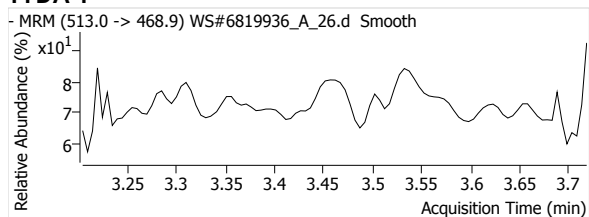
## PFOA 1



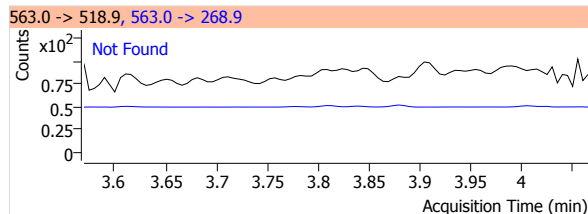
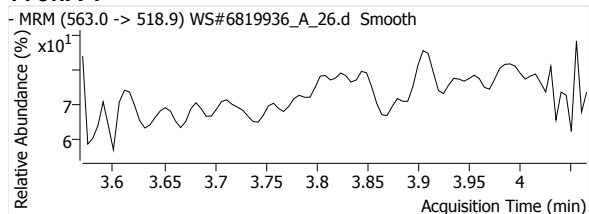
## PFNA 1



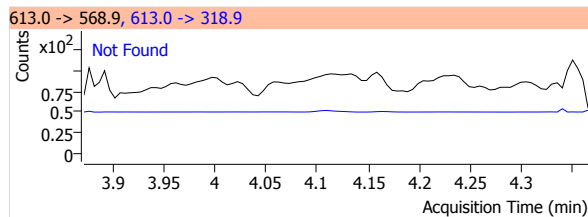
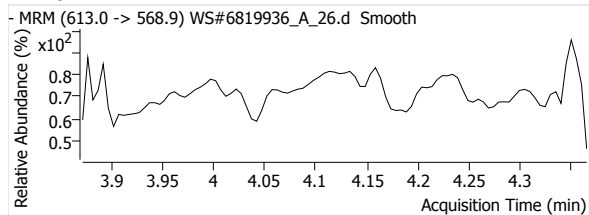
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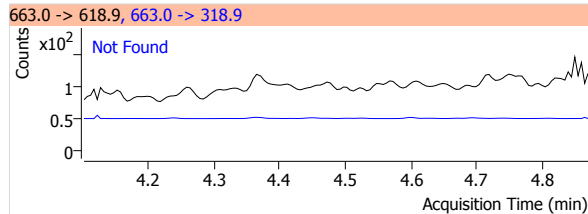
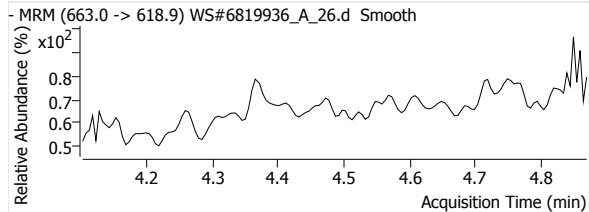
## PFUnA 1



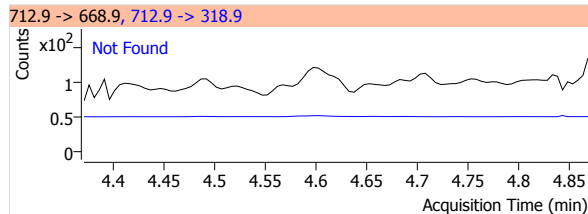
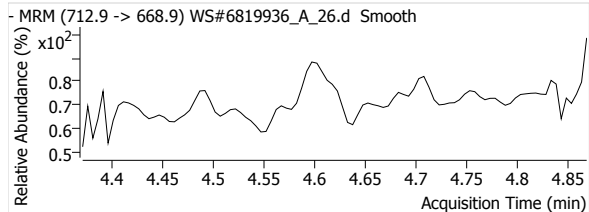
## PFDoA 1



## PFTrDA 1

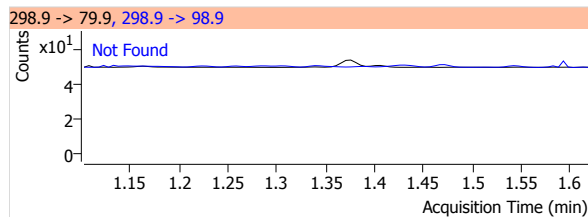
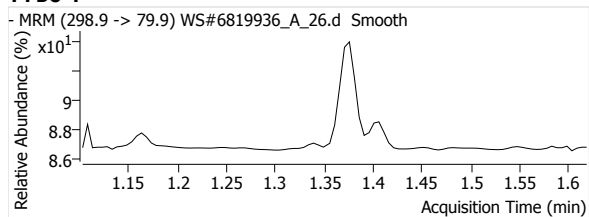


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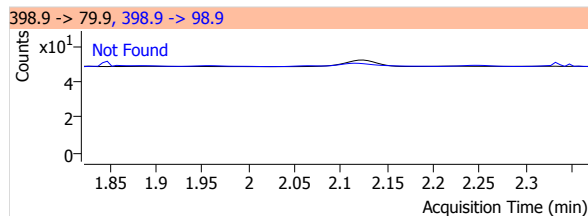
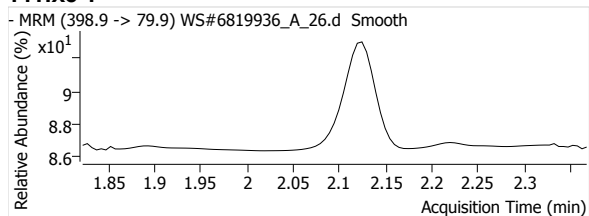


# Quantitative Analysis Report

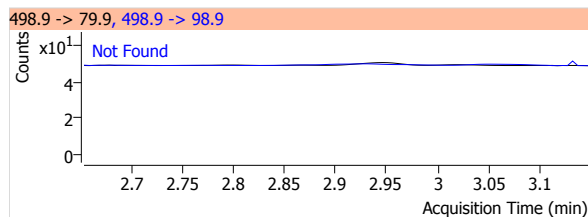
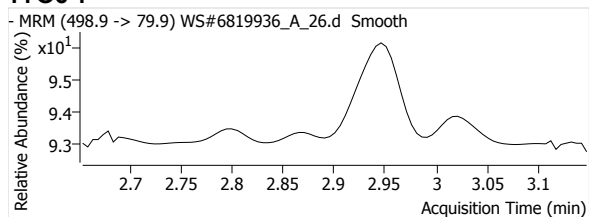
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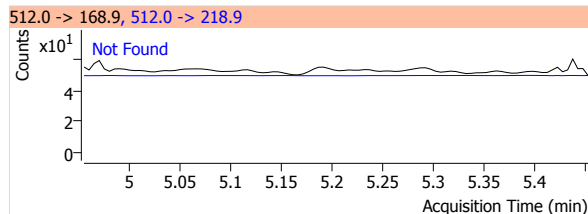
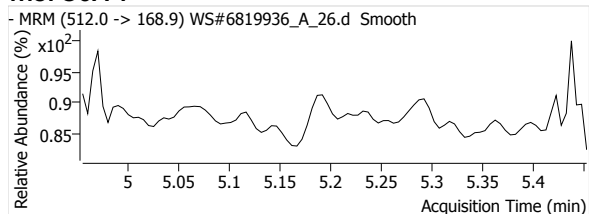
## PFHxS 1



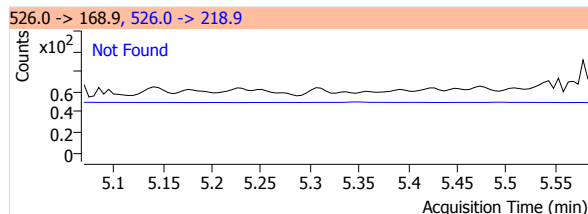
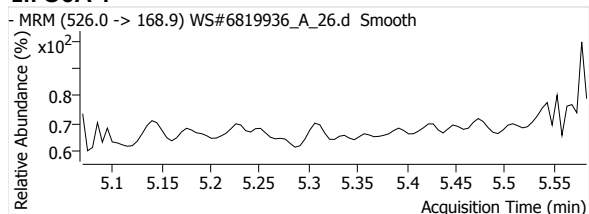
## PFOS 1



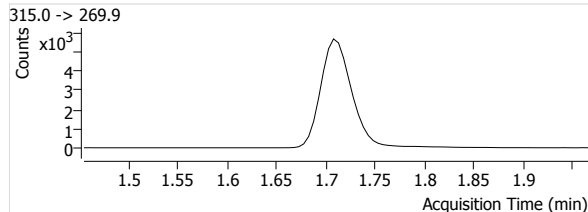
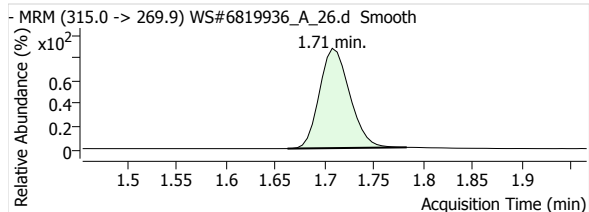
## MeFOSA 1



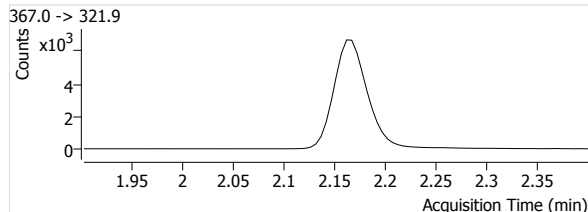
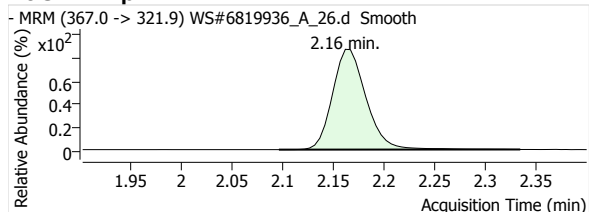
## eFOSA 1



## 13C2-PFHxA

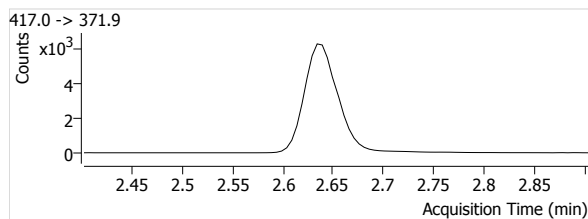
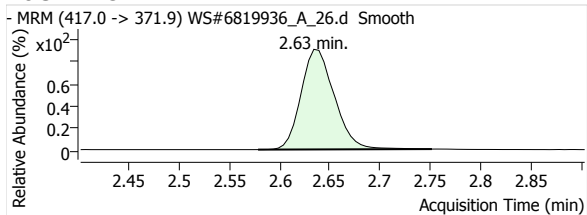


## 13C4-PFHpA

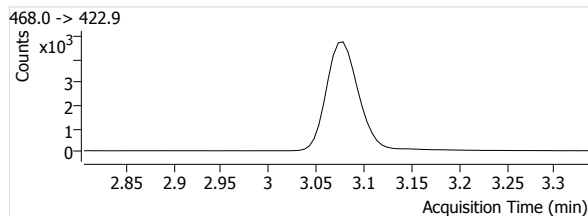
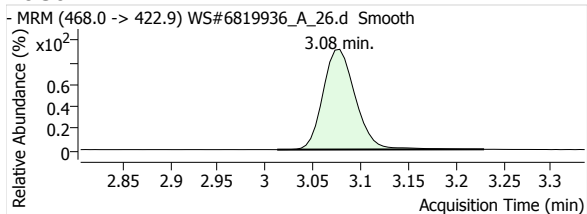


# Quantitative Analysis Report

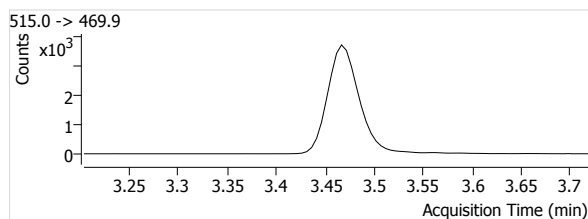
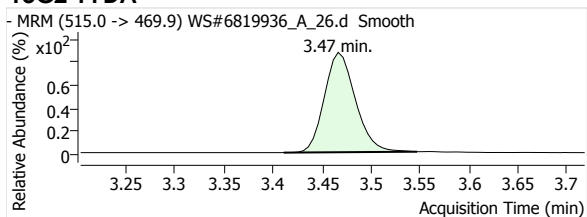
## 13C4-PFOA



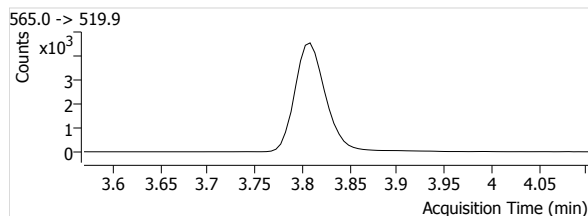
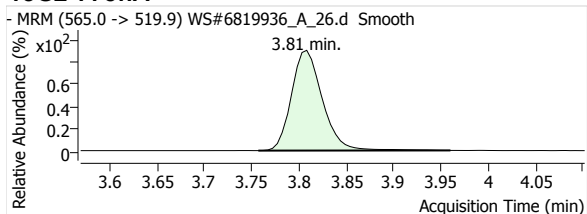
## 13C5-PFNA



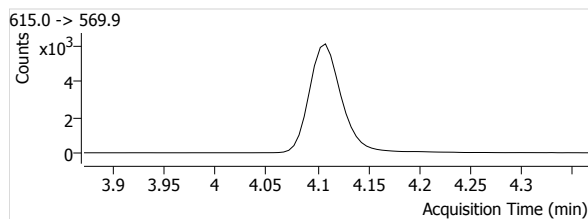
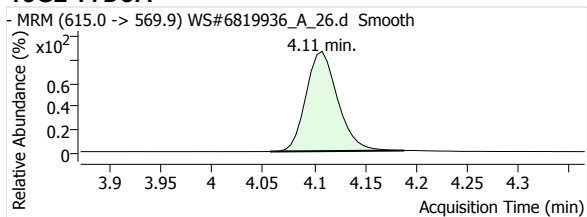
## 13C2-PFDA



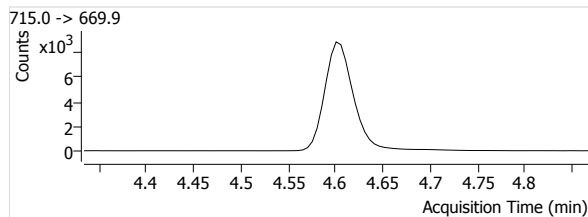
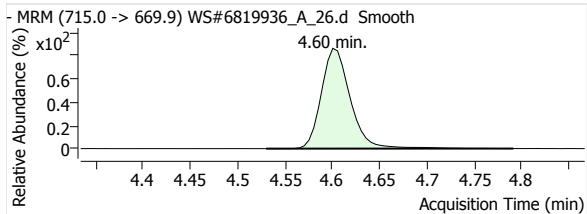
## 13C2-PFUnA



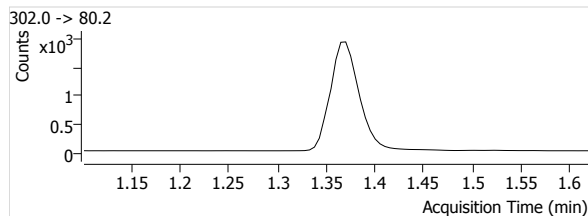
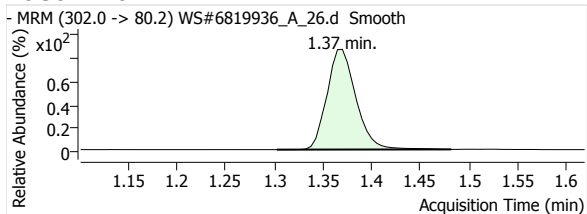
## 13C2-PFDoA



## 13C2-PFTeDA

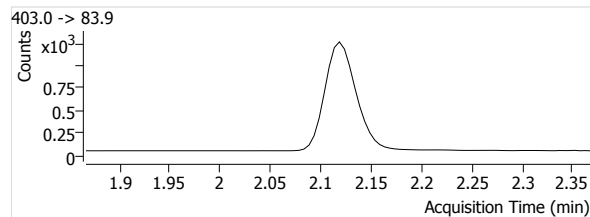
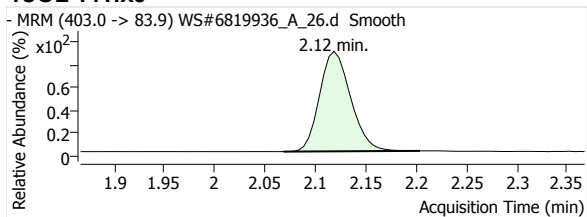


## 13C3-PFBS

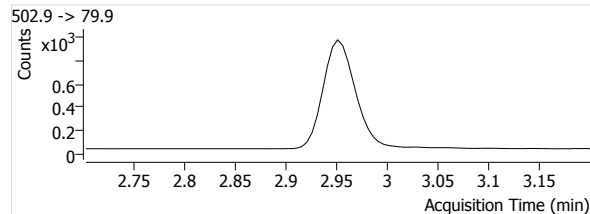
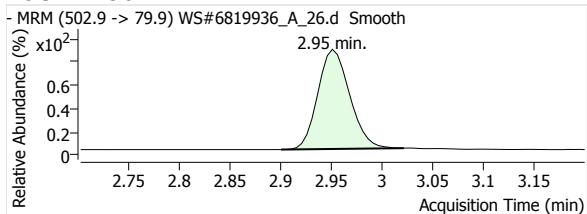


# Quantitative Analysis Report

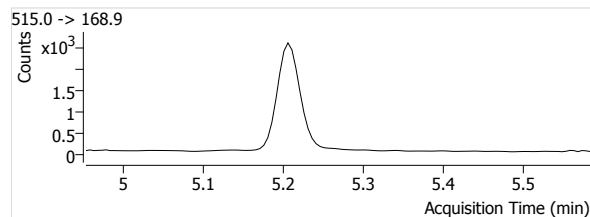
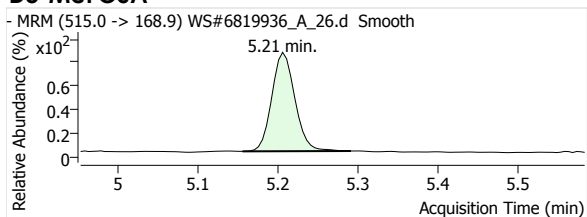
## 18O2-PFHxs



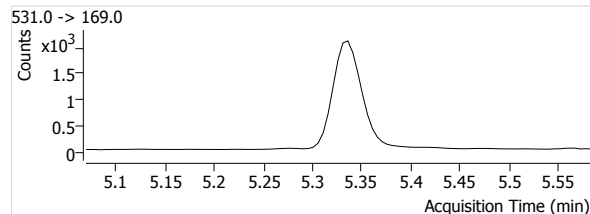
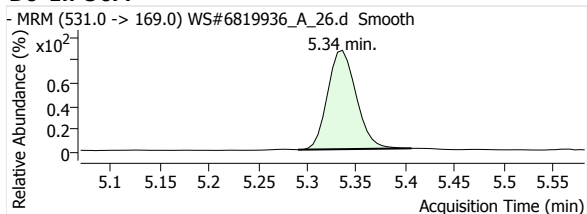
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



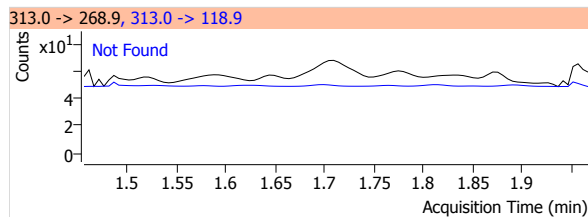
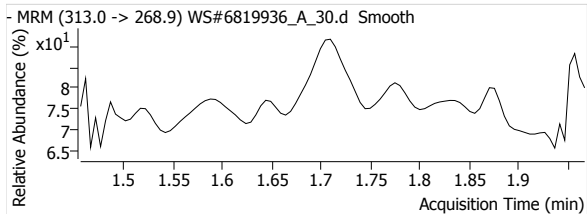
# Quantitative Analysis Report

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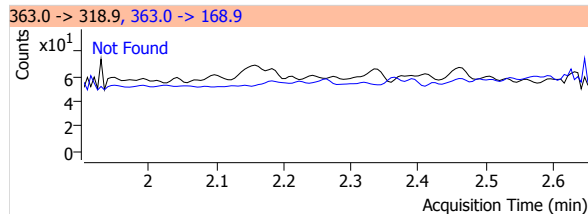
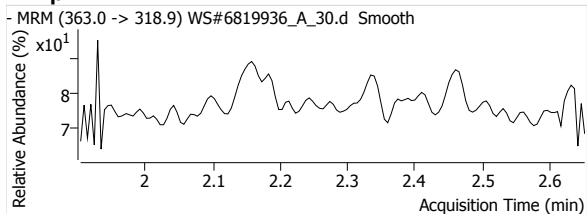
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 2:42:02 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	119.6466	--	11851	1.70	272	--	--	--	--	--
13C4-PFHpA	µg/L	--	120.9215	--	15380	2.16	612	--	--	--	--	--
13C4-PFOA	µg/L	--	120.1486	--	14228	2.63	265	--	--	--	--	--
13C5-PFNA	µg/L	--	121.1018	--	11277	3.08	513	--	--	--	--	--
13C2-PFDA	µg/L	--	112.5786	--	8055	3.47	307	--	--	--	--	--
13C2-PFUnA	µg/L	--	119.0476	--	10175	3.80	351	--	--	--	--	--
13C2-PFDaA	µg/L	--	125.7498	--	13166	4.11	903	--	--	--	--	--
13C2-PFTeDA	µg/L	--	123.8226	--	18956	4.61	1233	--	--	--	--	--
13C3-PFBS	µg/L	--	113.6067	--	3824	1.36	290	--	--	--	--	--
18O2-PFHxS	µg/L	--	111.0064	--	2592	2.11	514	--	--	--	--	--
13C4-PFOS	µg/L	--	109.6685	--	1985	2.95	162	--	--	--	--	--
D3-MeFOSA	µg/L	--	109.4118	--	4929	5.21	77	--	--	--	--	--
D5-EtFOSA	µg/L	--	118.6427	--	4353	5.33	159	--	--	--	--	--

## PFHxA 1



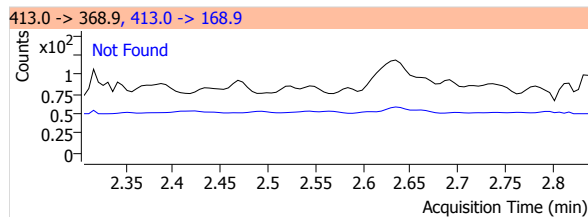
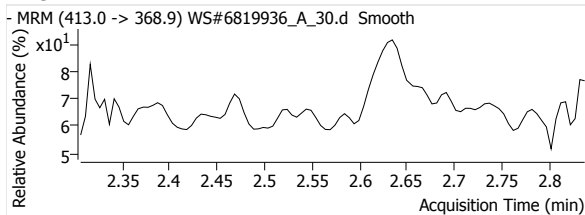
## PFHpA 1



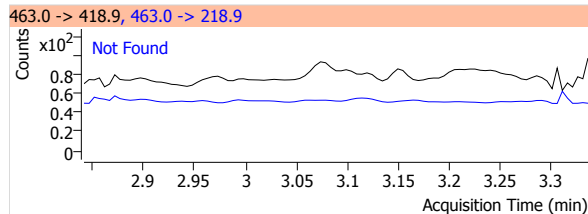
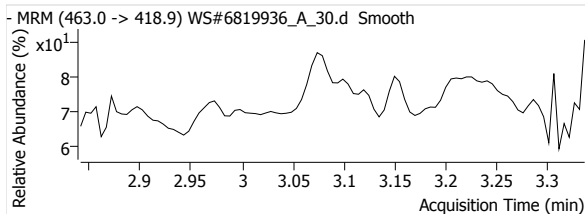


# Quantitative Analysis Report

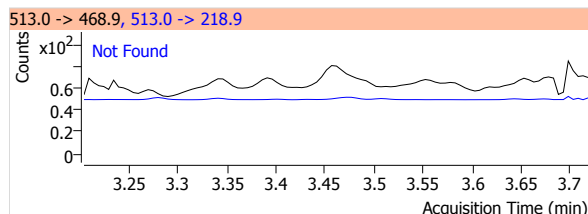
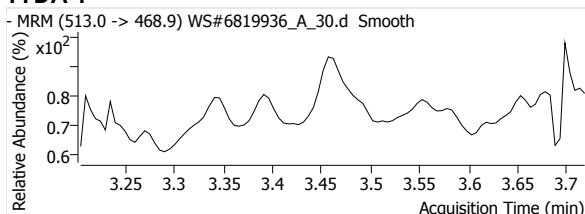
## PFOA 1



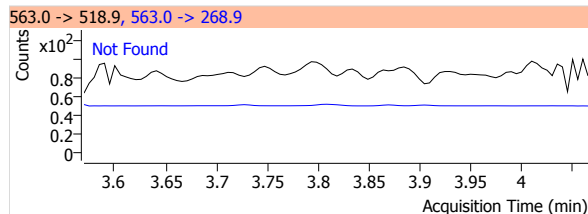
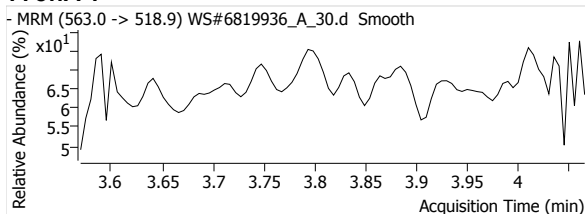
## PFNA 1



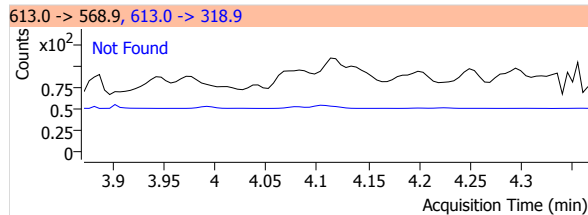
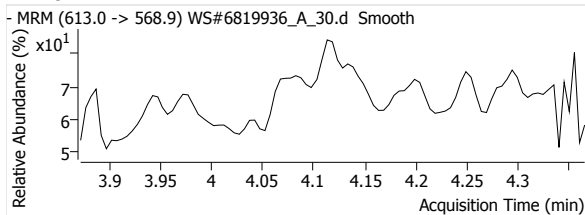
## PFDA 1



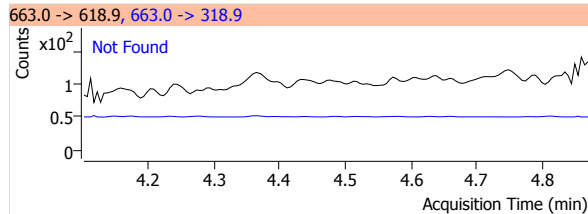
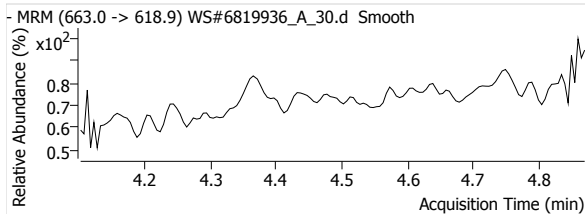
## PFUnA 1



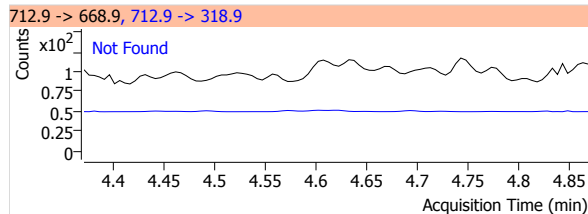
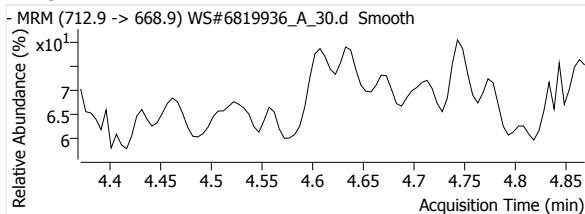
## PFDoA 1



## PFTrDA 1

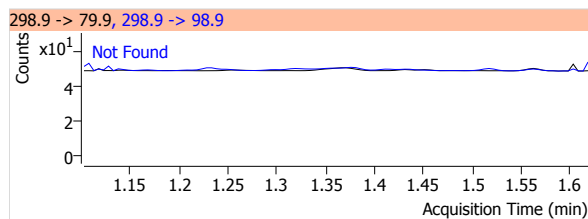
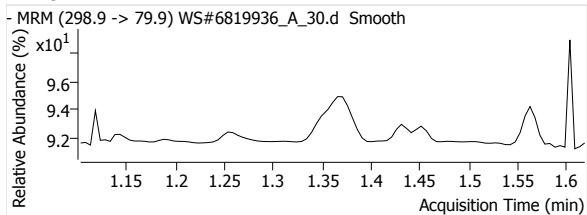


## PFTeDA 1

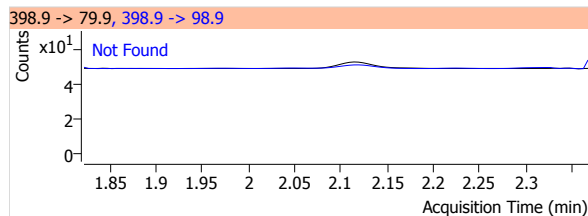
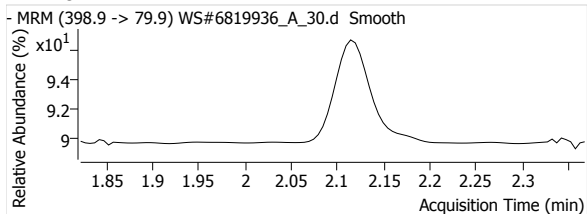


# Quantitative Analysis Report

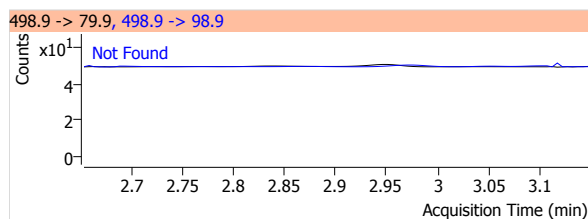
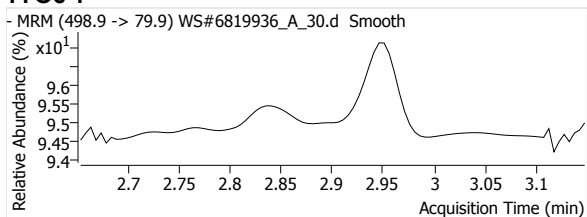
## PFBS 1



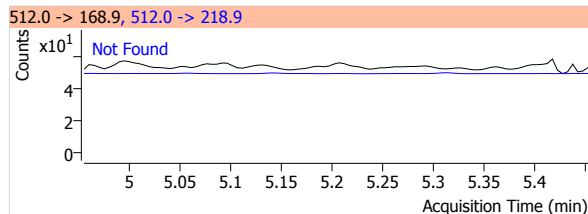
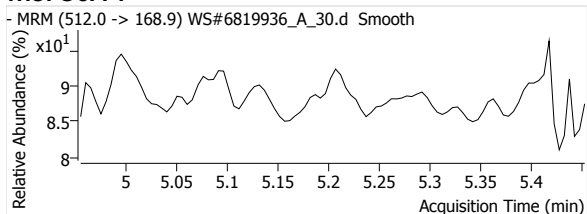
## PFHxS 1



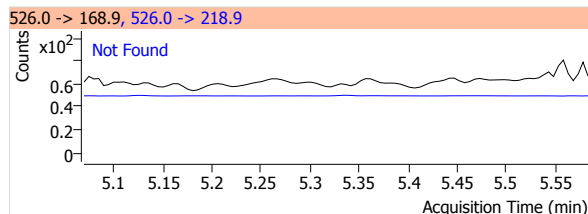
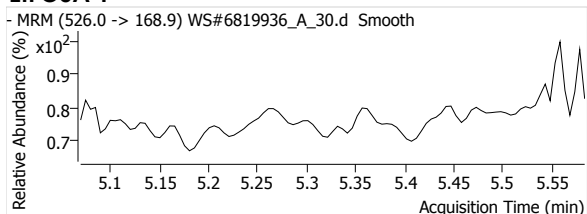
## PFOS 1



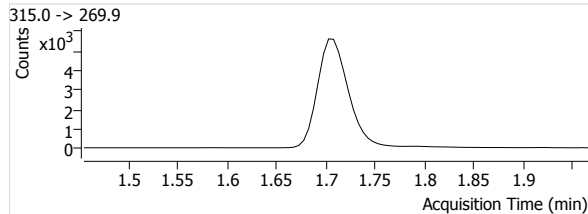
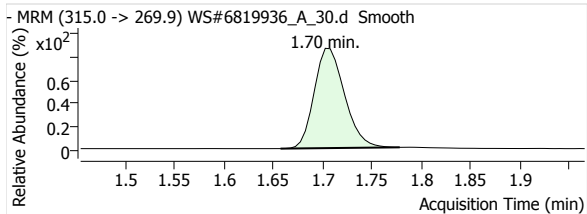
## MeFOSA 1



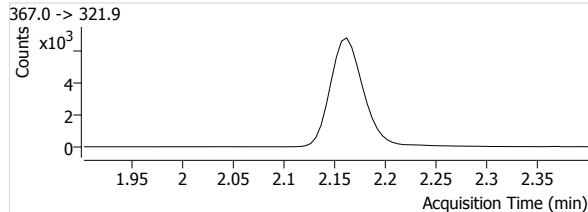
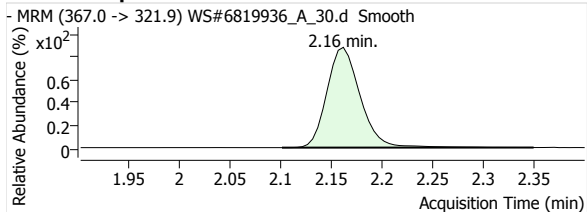
## eFOSA 1



## 13C2-PFHxA

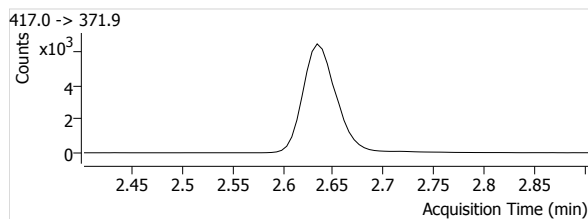
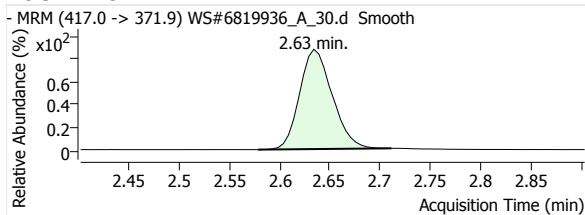


## 13C4-PFHpA

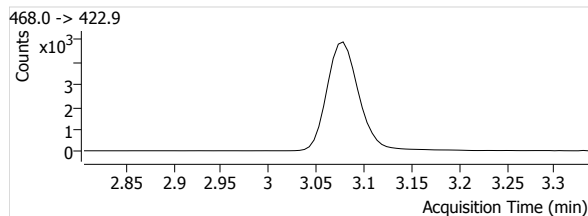
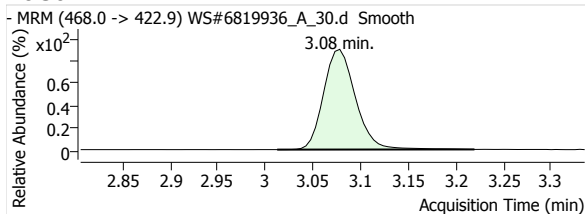


# Quantitative Analysis Report

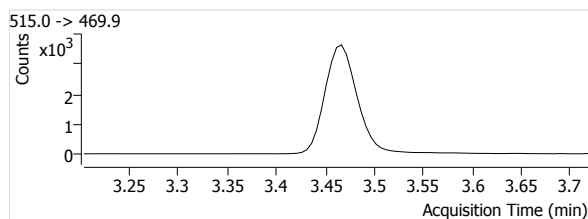
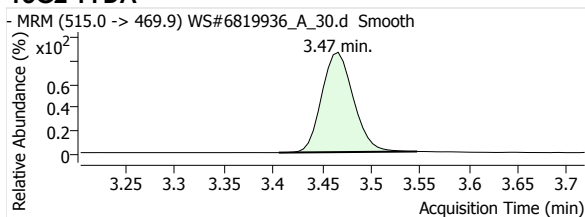
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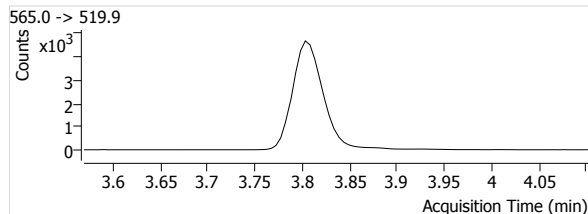
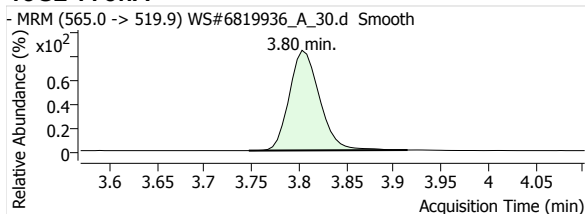
## 13C5-PFNA



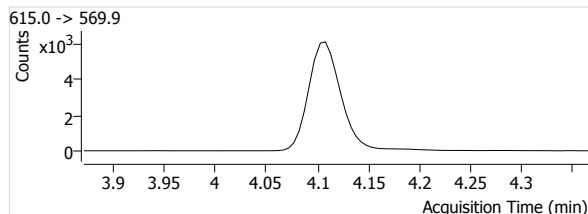
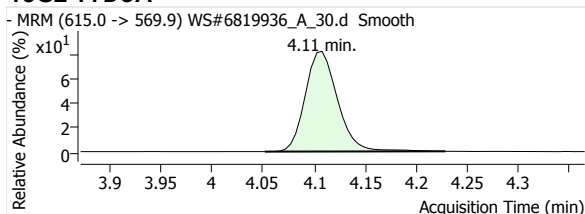
## 13C2-PFDA



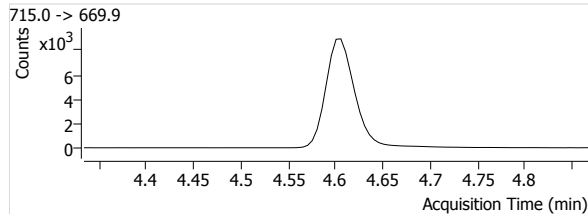
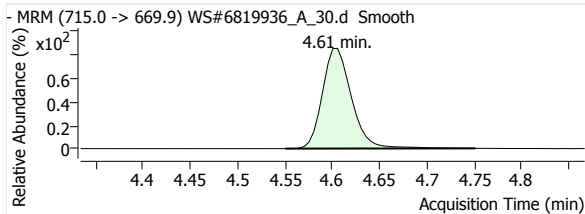
## 13C2-PFUnA



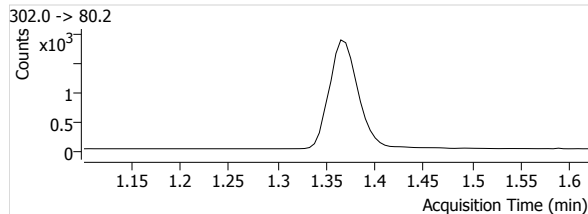
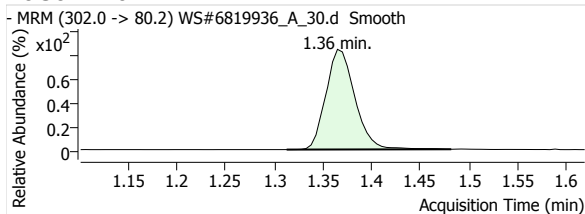
## 13C2-PFDoA



## 13C2-PFTeDA

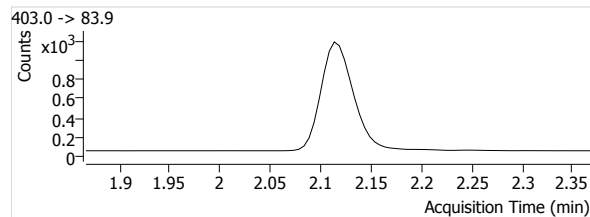
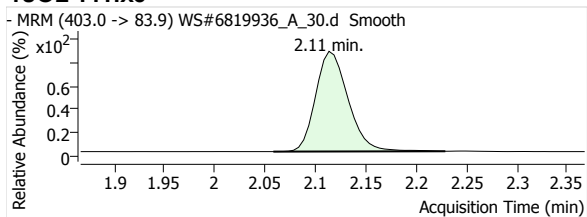


## 13C3-PFBS

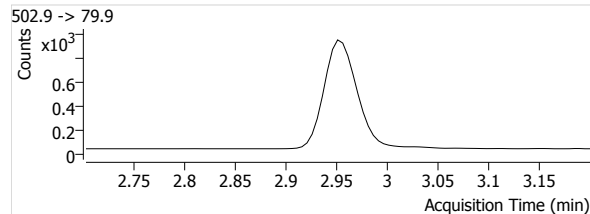
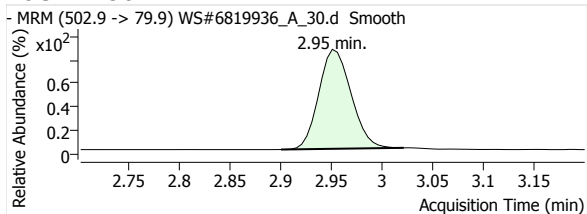


# Quantitative Analysis Report

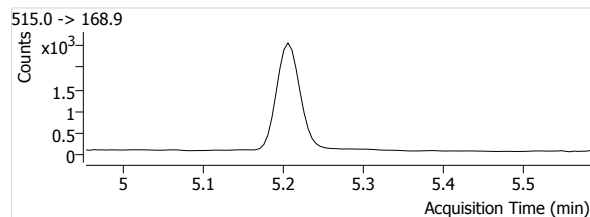
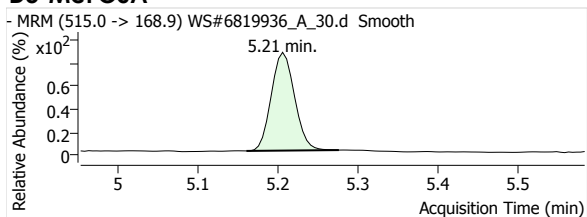
## 18O2-PFHxs



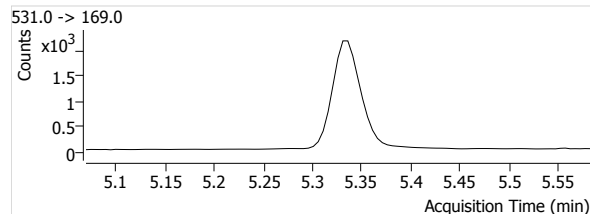
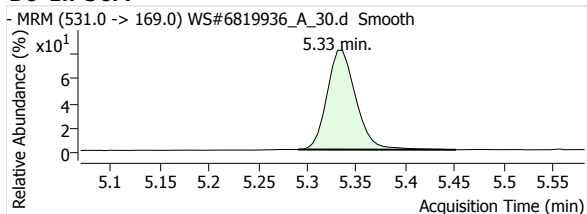
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



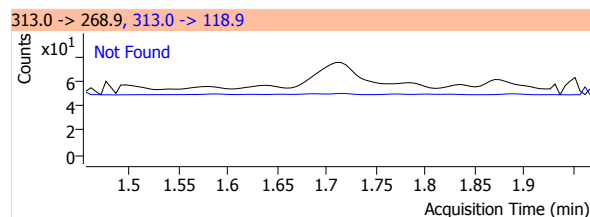
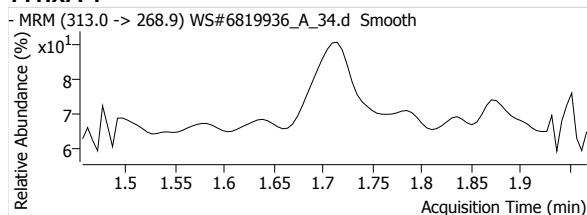
# Quantitative Analysis Report

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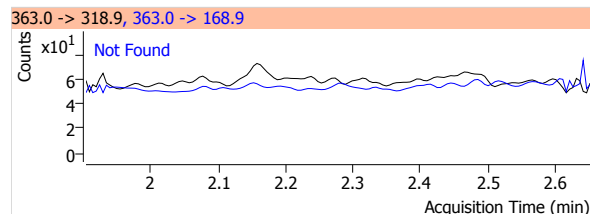
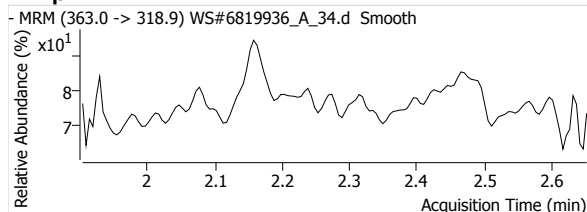
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<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 3:09:45 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	124.3513	--	12317	1.71	421	--	--	--	--	--
13C4-PFHpA	µg/L	--	123.4924	--	15707	2.16	602	--	--	--	--	--
13C4-PFOA	µg/L	--	123.8558	--	14667	2.63	1031	--	--	--	--	--
13C5-PFNA	µg/L	--	120.1246	--	11186	3.08	293	--	--	--	--	--
13C2-PFDA	µg/L	--	114.4794	--	8191	3.46	434	--	--	--	--	--
13C2-PFUnA	µg/L	--	126.6643	--	10826	3.80	1437	--	--	--	--	--
13C2-PFDaA	µg/L	--	128.5100	--	13455	4.11	1021	--	--	--	--	--
13C2-PFTeDA	µg/L	--	125.5144	--	19215	4.61	898	--	--	--	--	--
13C3-PFBS	µg/L	--	110.4872	--	3719	1.36	324	--	--	--	--	--
18O2-PFHxS	µg/L	--	116.1028	--	2711	2.11	300	--	--	--	--	--
13C4-PFOS	µg/L	--	111.3812	--	2016	2.95	414	--	--	--	--	--
D3-MeFOSA	µg/L	--	113.6737	--	5121	5.21	77	--	--	--	--	--
D5-EtFOSA	µg/L	--	114.5544	--	4203	5.33	120	--	--	--	--	--

## PFHxA 1

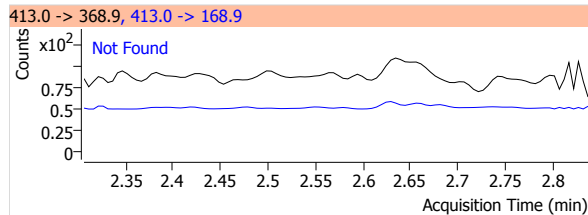
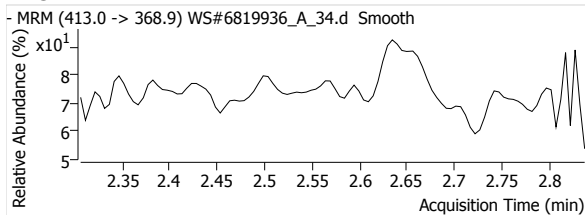


## PFHpA 1

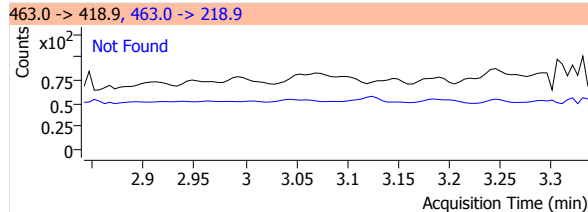
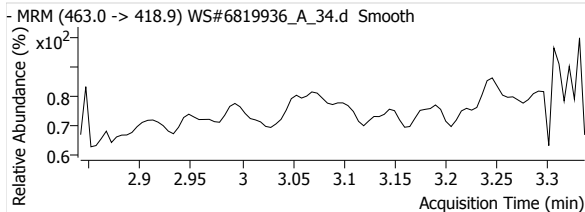


# Quantitative Analysis Report

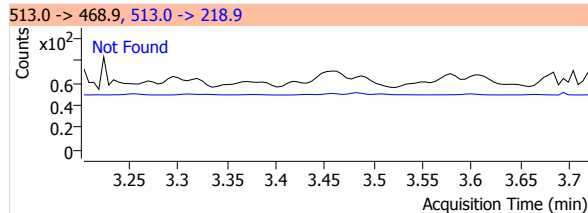
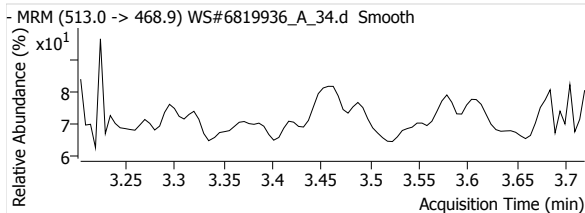
## PFOA 1



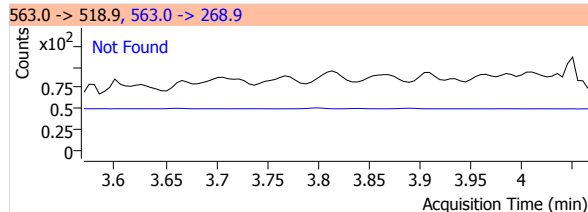
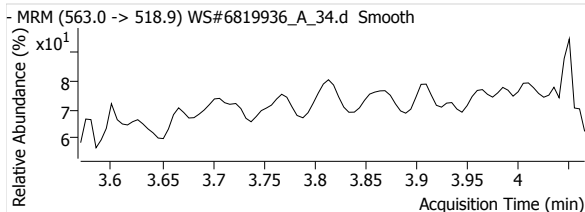
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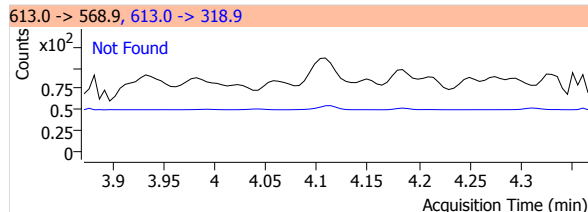
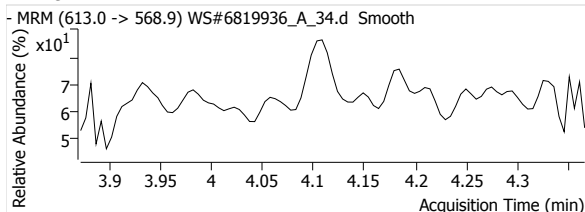
## PFDA 1



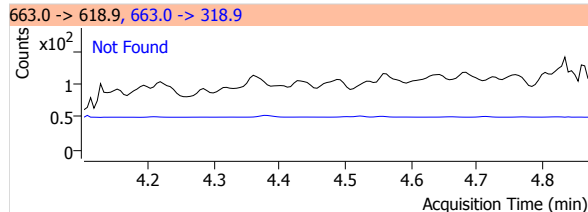
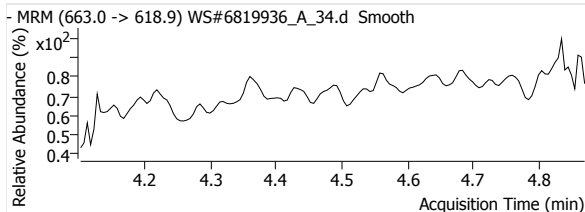
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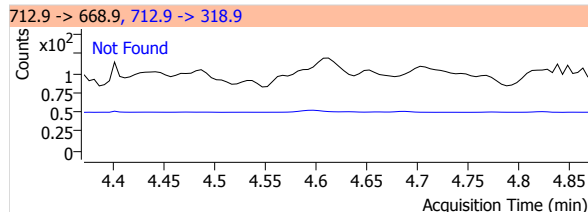
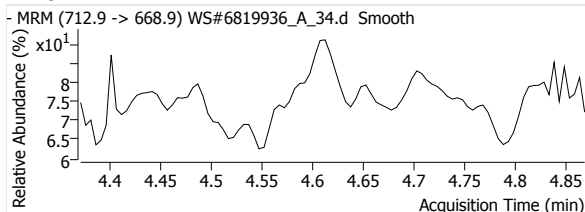
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## PFTrDA 1

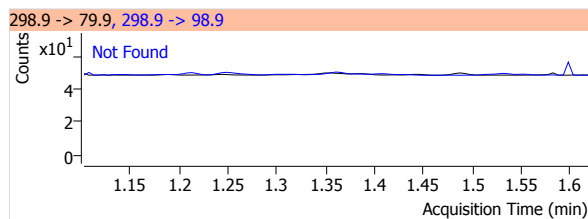
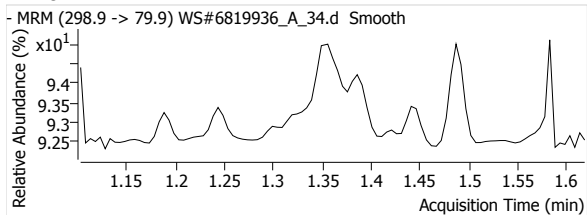


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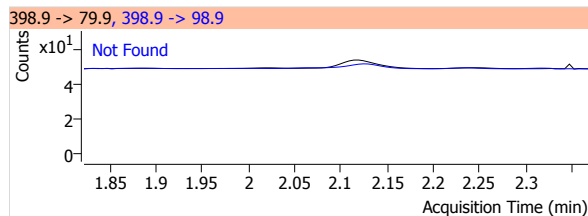
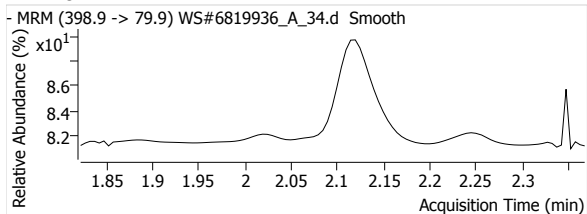


# Quantitative Analysis Report

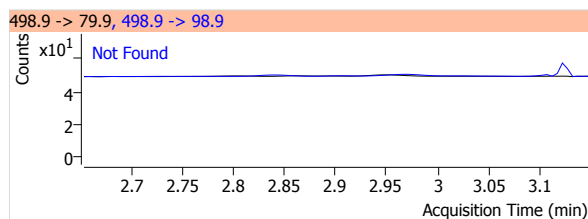
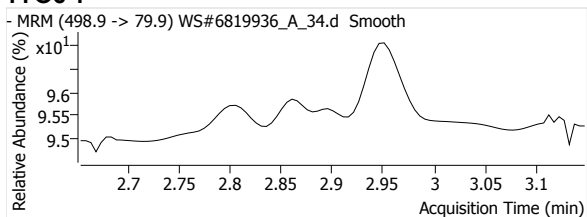
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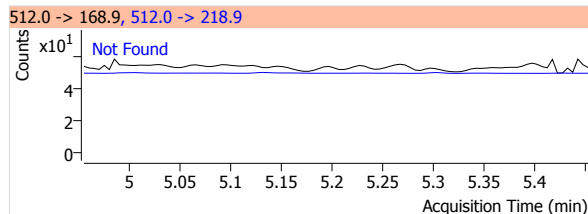
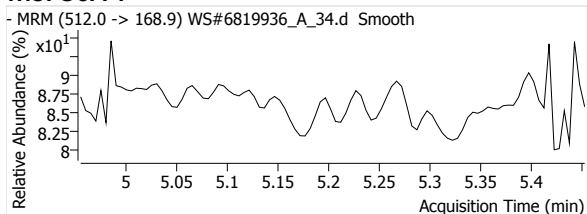
## PFHxS 1



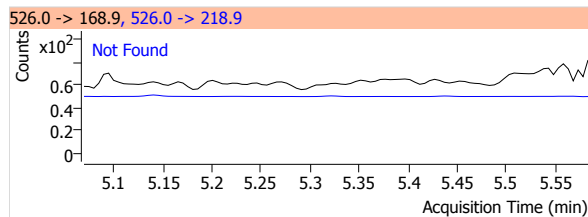
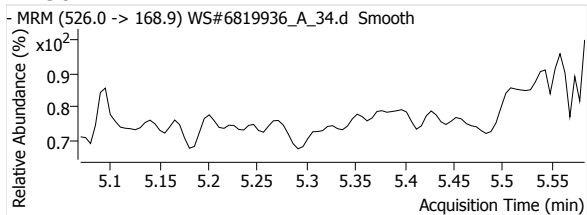
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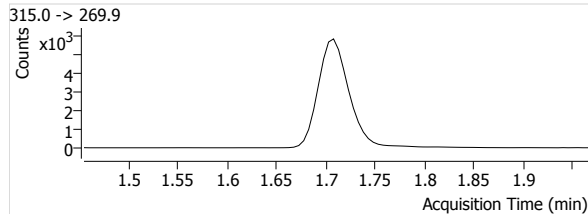
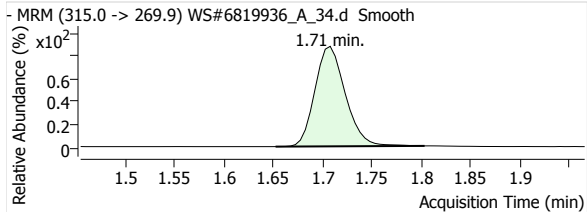
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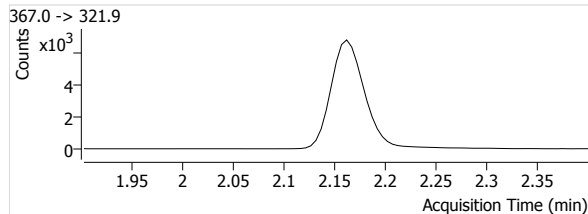
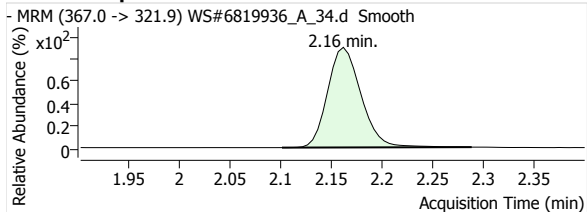
## eFOSA 1



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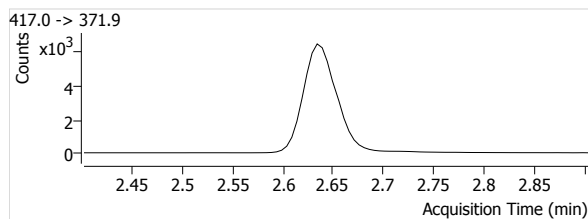
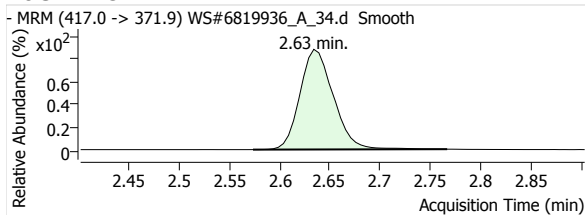


## 13C4-PFHpA

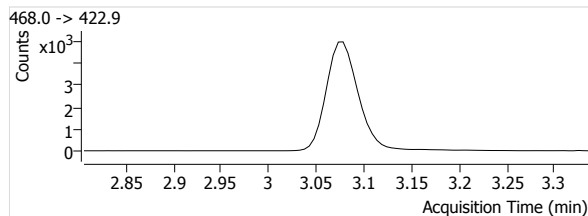
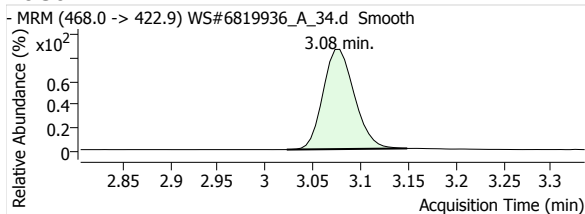


# Quantitative Analysis Report

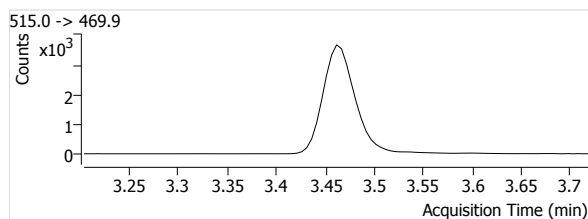
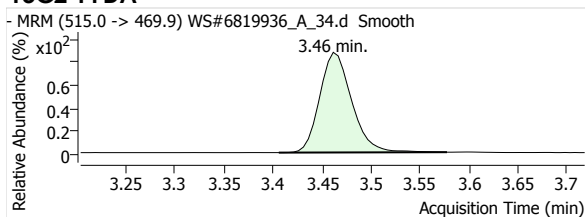
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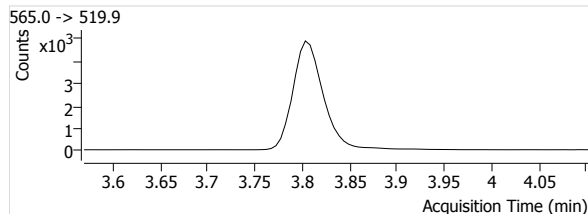
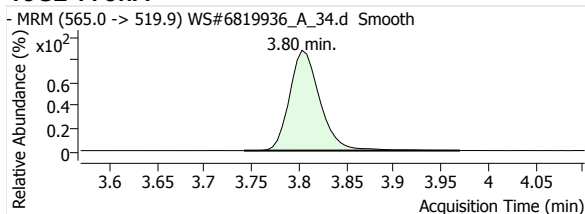
## 13C5-PFNA



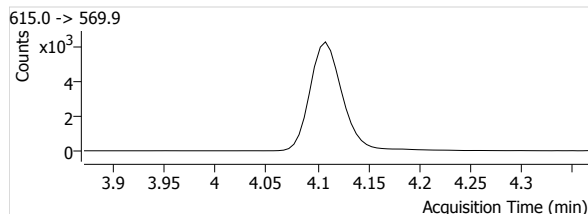
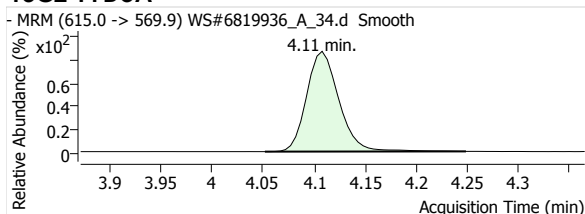
## 13C2-PFDA



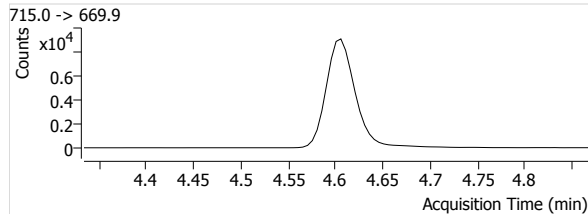
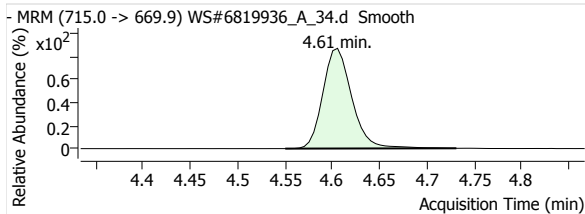
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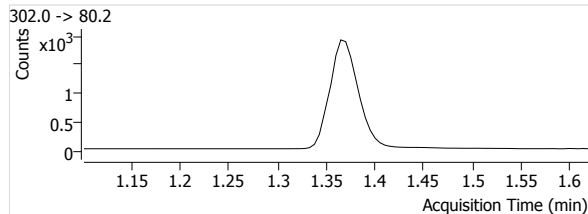
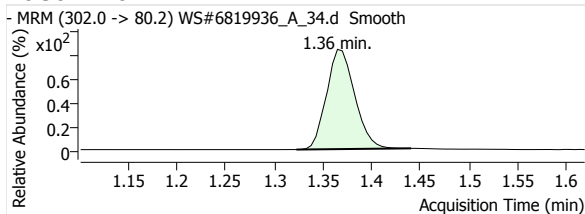
## 13C2-PFDoA



## 13C2-PFTeDA



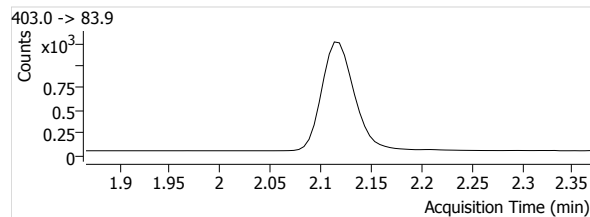
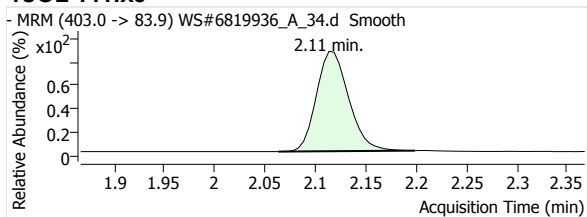
## 13C3-PFBS



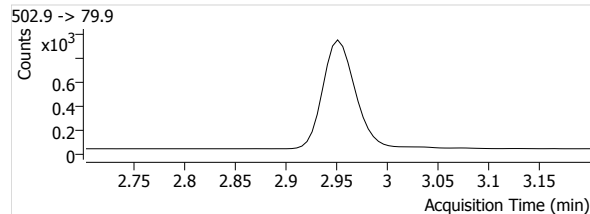
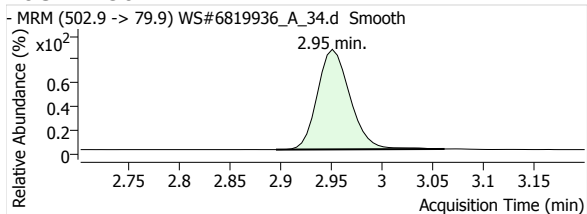


# Quantitative Analysis Report

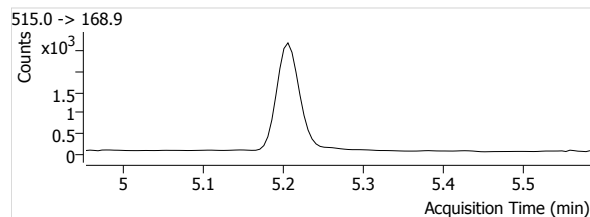
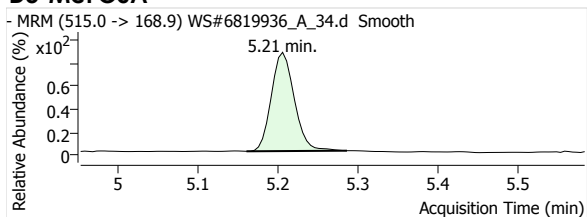
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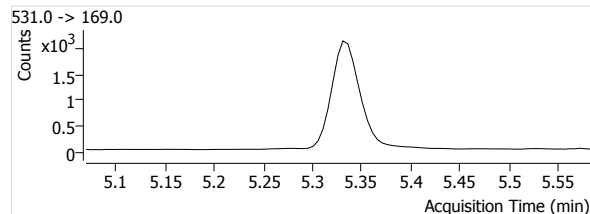
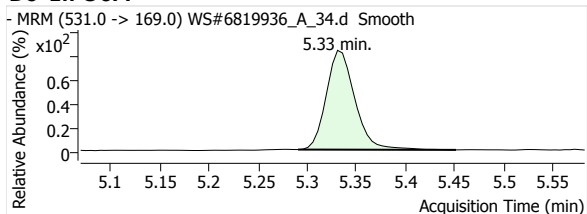
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



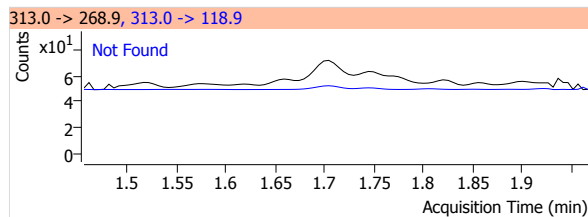
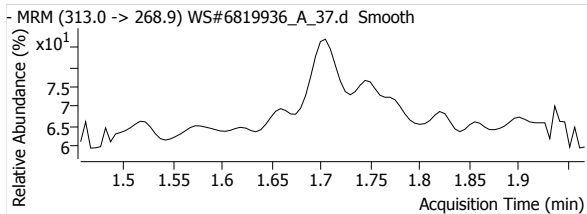
# Quantitative Analysis Report

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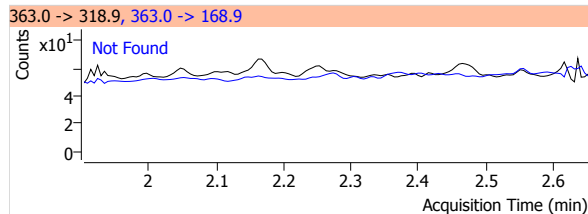
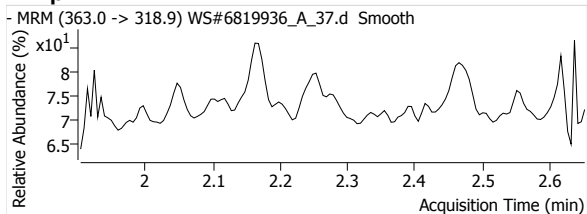
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 3:30:34 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	94.4573	--	9356	1.71	1966	--	--	--	--	--
13C4-PFHpA	µg/L	--	94.7244	--	12048	2.16	1042	--	--	--	--	--
13C4-PFOA	µg/L	--	93.3626	--	11056	2.63	1916	--	--	--	--	--
13C5-PFNA	µg/L	--	91.4948	--	8520	3.08	556	--	--	--	--	--
13C2-PFDA	µg/L	--	88.1062	--	6304	3.47	458	--	--	--	--	--
13C2-PFUnA	µg/L	--	90.3943	--	7726	3.81	348	--	--	--	--	--
13C2-PFDaA	µg/L	--	93.2474	--	9763	4.11	963	--	--	--	--	--
13C2-PFTeDA	µg/L	--	90.9138	--	13918	4.61	2062	--	--	--	--	--
13C3-PFBS	µg/L	--	86.8390	--	2923	1.36	252	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.5760	--	2185	2.11	240	--	--	--	--	--
13C4-PFOS	µg/L	--	93.4254	--	1691	2.95	468	--	--	--	--	--
D3-MeFOSA	µg/L	--	87.7691	--	3954	5.21	74	--	--	--	--	--
D5-EtFOSA	µg/L	--	88.6890	--	3254	5.34	94	--	--	--	--	--

### PFHxA 1

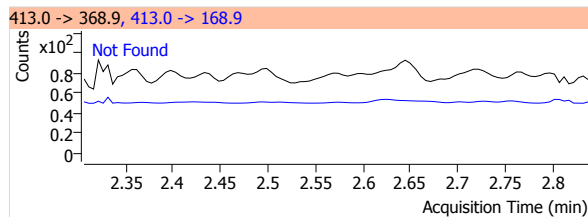
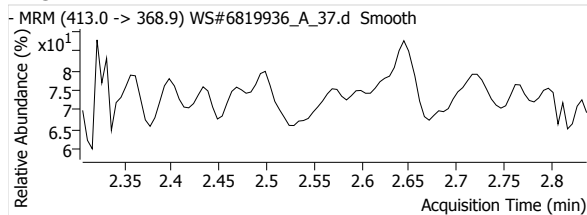


### PFHpA 1

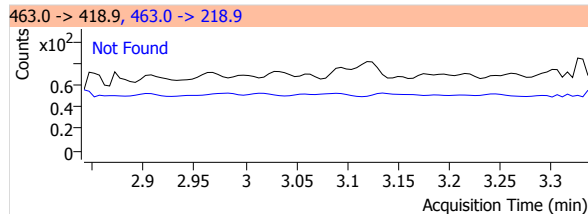
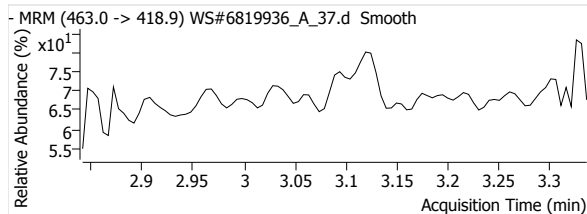


# Quantitative Analysis Report

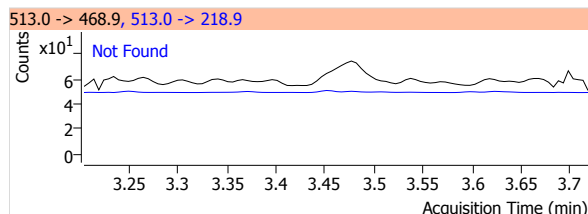
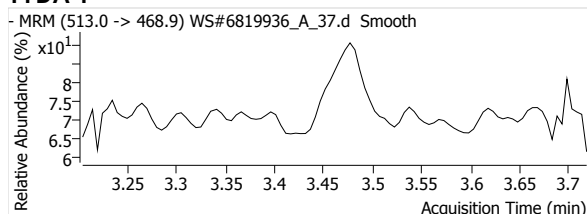
## PFOA 1



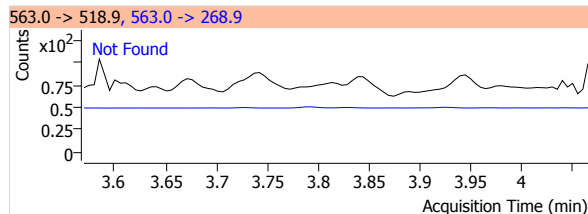
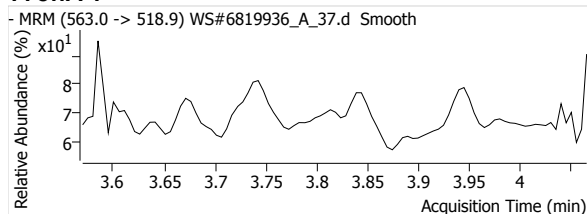
## PFNA 1



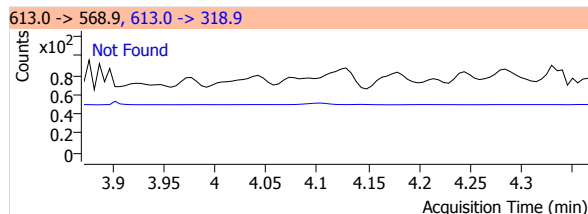
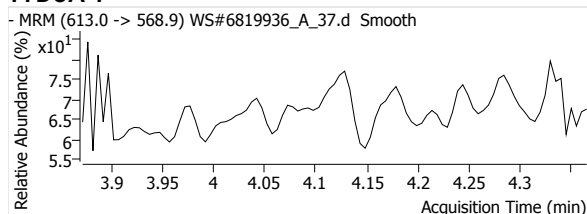
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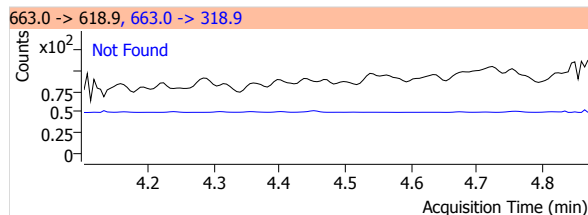
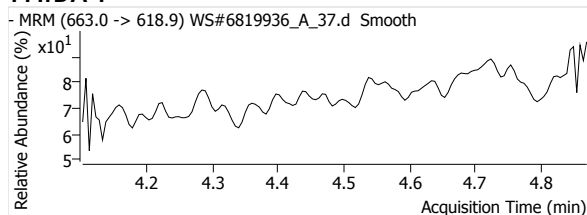
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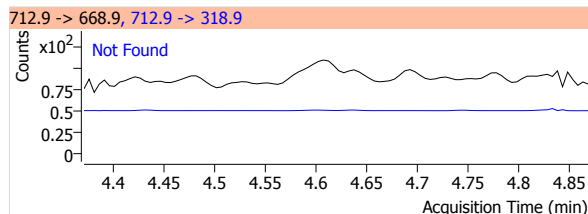
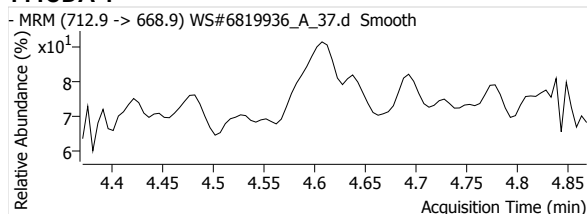
## PFDoA 1



## PFTrDA 1

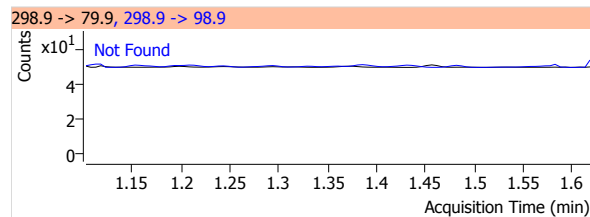
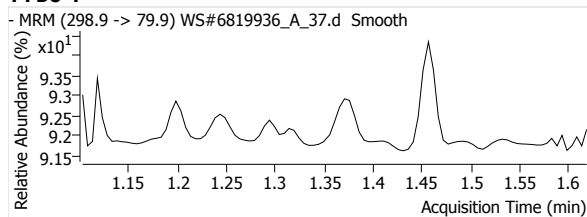


## PFTeDA 1

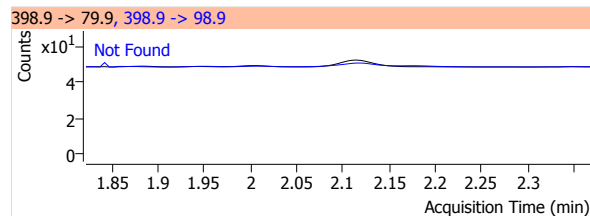
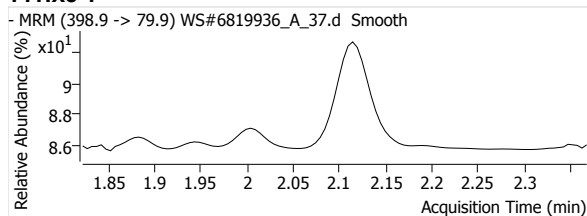


# Quantitative Analysis Report

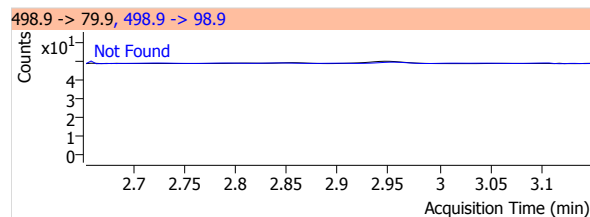
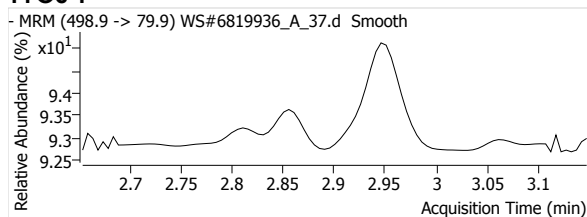
## PFBS 1



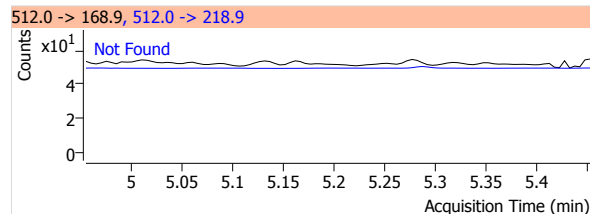
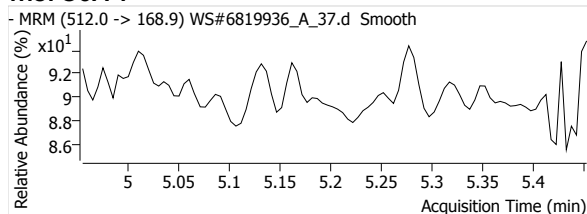
## PFHxS 1



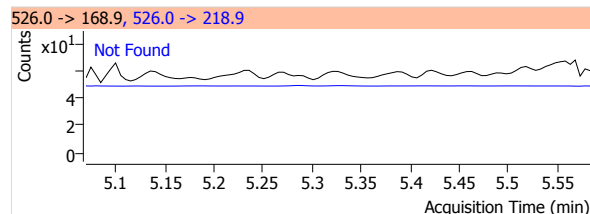
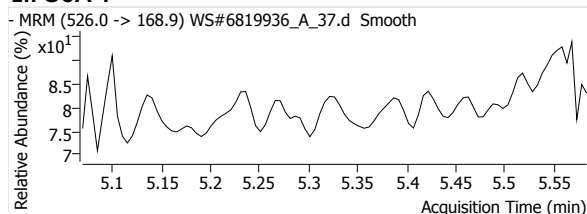
## PFOS 1



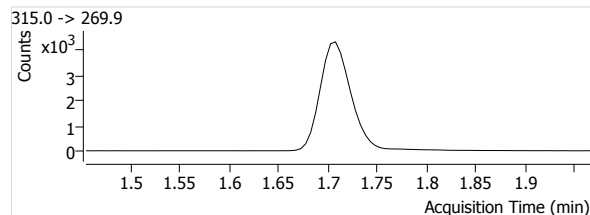
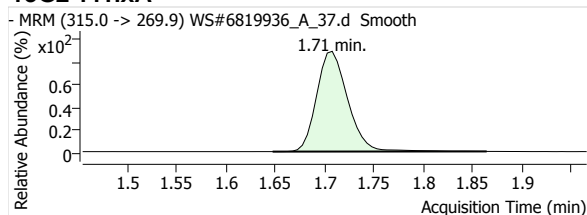
## MeFOSA 1



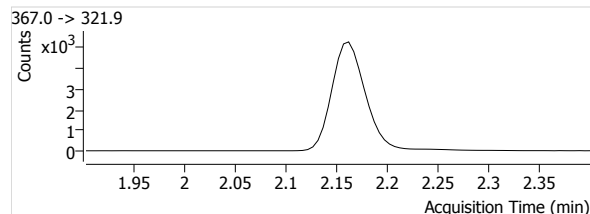
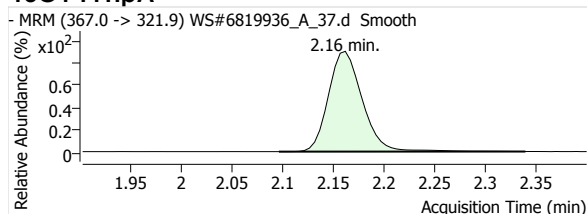
## eFOSA 1



## 13C2-PFHxA

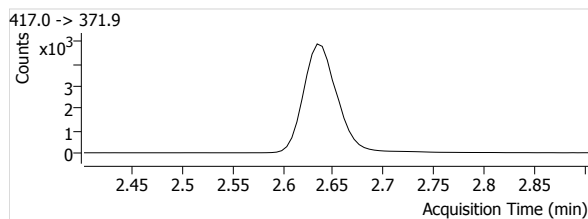
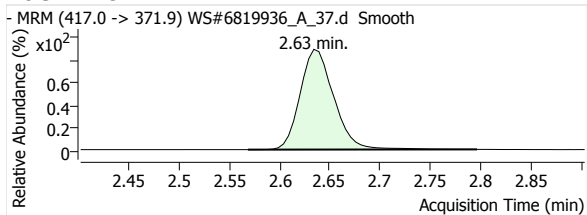


## 13C4-PFHpA

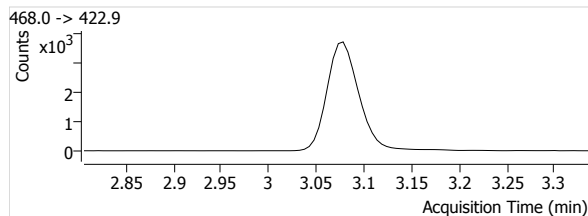
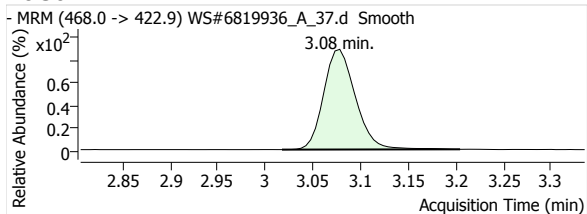


# Quantitative Analysis Report

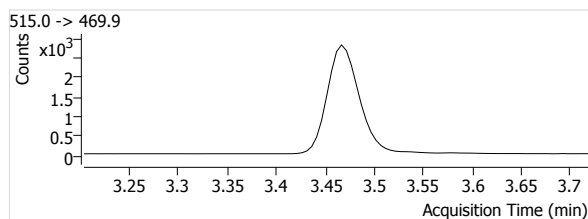
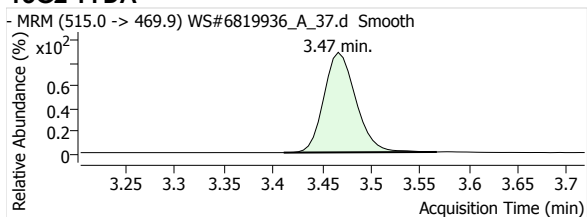
## 13C4-PFOA



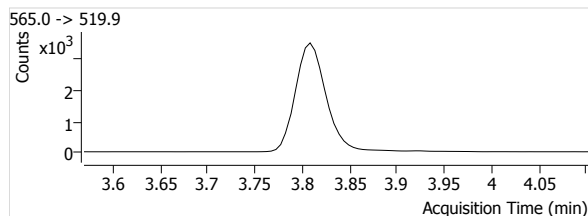
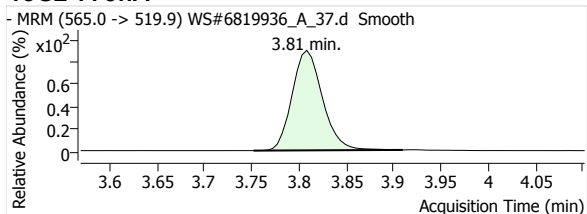
## 13C5-PFNA



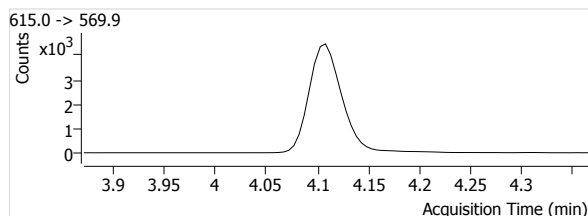
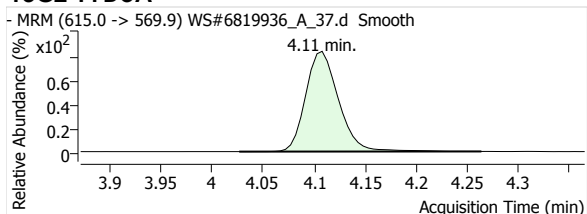
## 13C2-PFDA



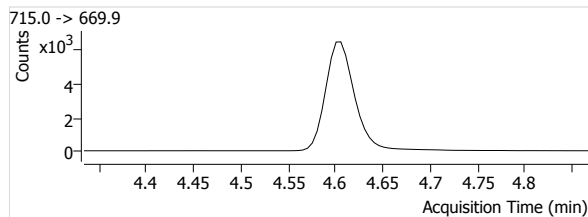
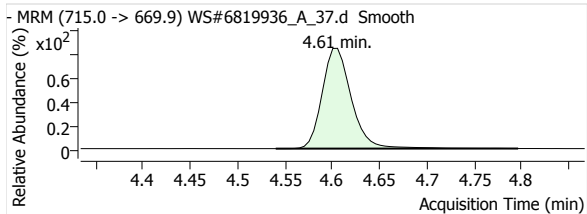
## 13C2-PFUnA



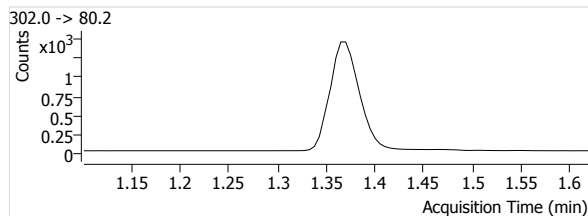
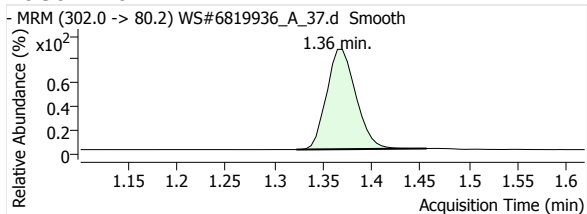
## 13C2-PFDoA



## 13C2-PFTeDA

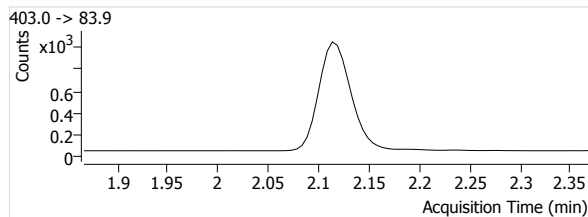
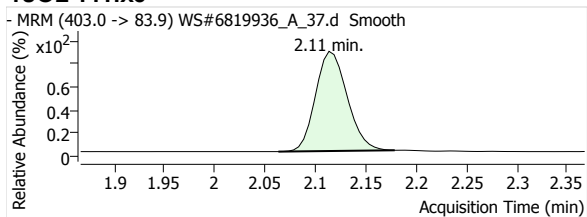


## 13C3-PFBS

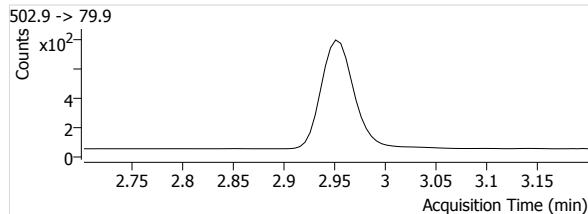
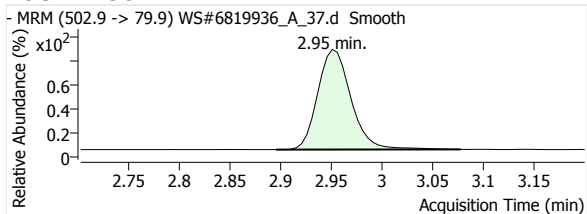


# Quantitative Analysis Report

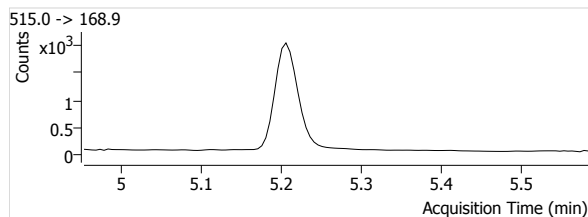
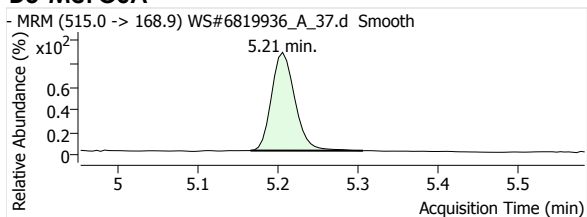
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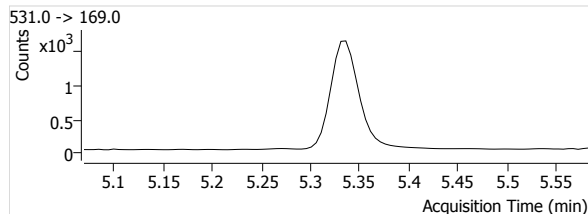
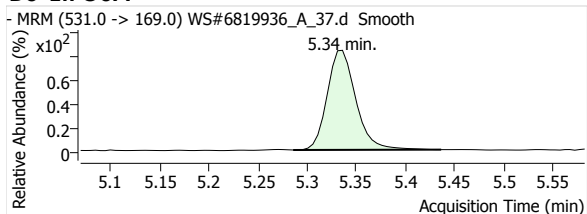
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



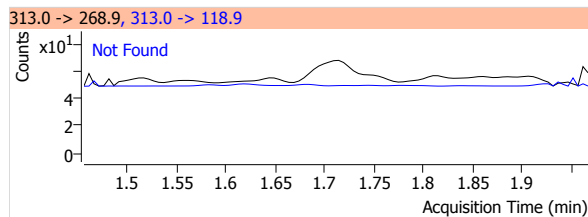
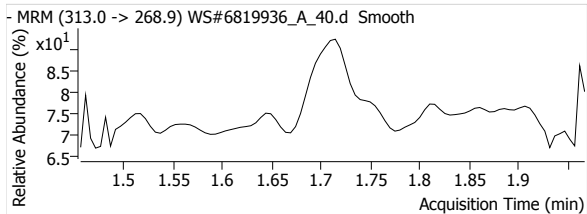
# Quantitative Analysis Report

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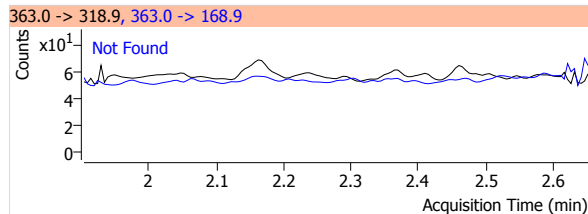
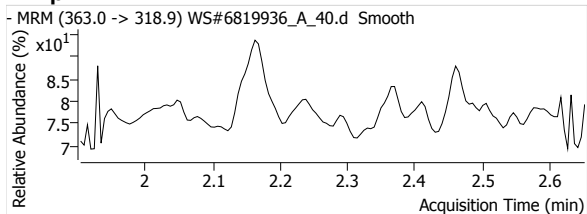
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 3:51:23 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	97.8698	--	9694	1.70	798	--	--	--	--	--
13C4-PFHpA	µg/L	--	95.0940	--	12095	2.16	763	--	--	--	--	--
13C4-PFOA	µg/L	--	95.6849	--	11331	2.63	1171	--	--	--	--	--
13C5-PFNA	µg/L	--	91.2264	--	8495	3.07	389	--	--	--	--	--
13C2-PFDA	µg/L	--	91.5863	--	6553	3.47	624	--	--	--	--	--
13C2-PFUnA	µg/L	--	95.8114	--	8189	3.81	1069	--	--	--	--	--
13C2-PFDoA	µg/L	--	96.0554	--	10057	4.11	662	--	--	--	--	--
13C2-PFTeDA	µg/L	--	93.9578	--	14384	4.61	895	--	--	--	--	--
13C3-PFBS	µg/L	--	90.6120	--	3050	1.36	324	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.7045	--	2188	2.11	193	--	--	--	--	--
13C4-PFOS	µg/L	--	93.2597	--	1688	2.95	361	--	--	--	--	--
D3-MeFOSA	µg/L	--	90.1443	--	4061	5.21	91	--	--	--	--	--
D5-EtFOSA	µg/L	--	88.8798	--	3261	5.34	120	--	--	--	--	--

### PFHxA 1

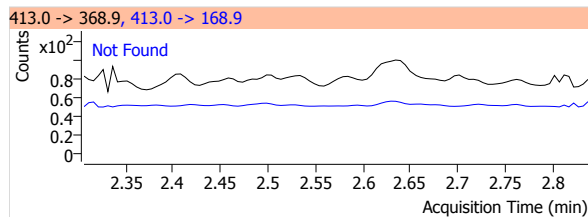
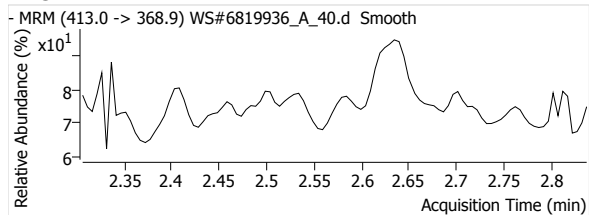


### PFHpA 1

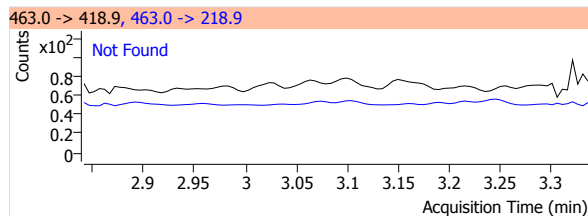
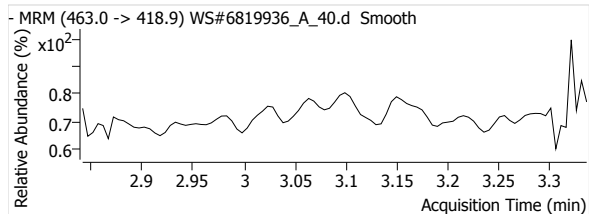


# Quantitative Analysis Report

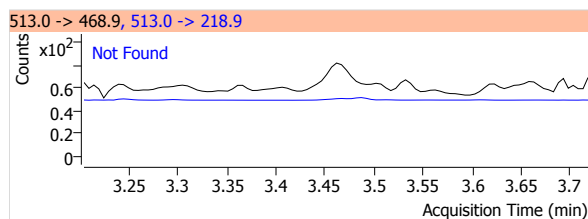
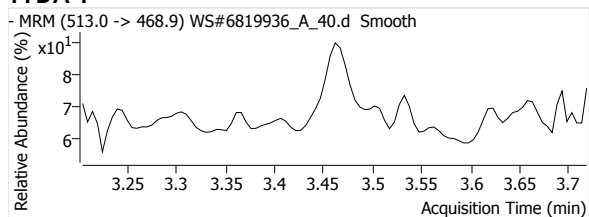
## PFOA 1



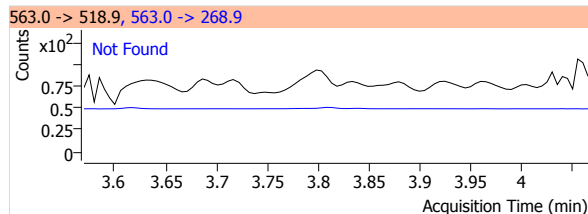
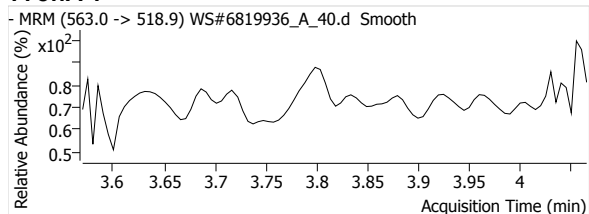
## PFNA 1



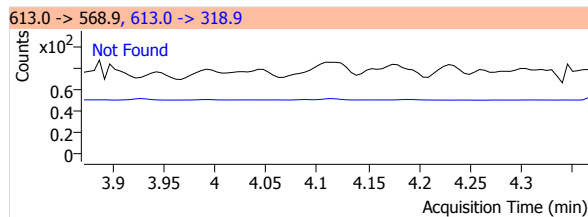
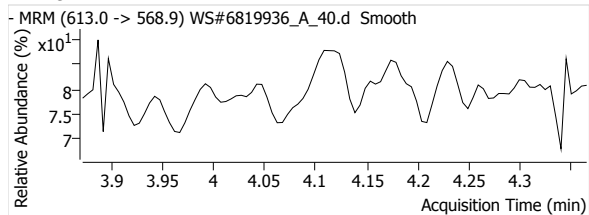
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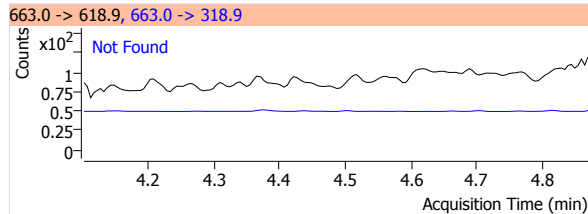
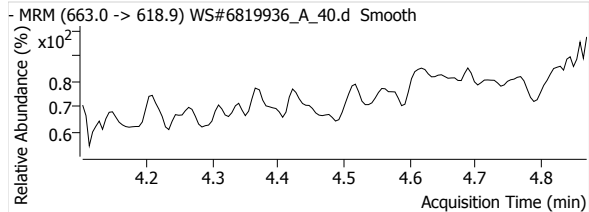
## PFUnA 1



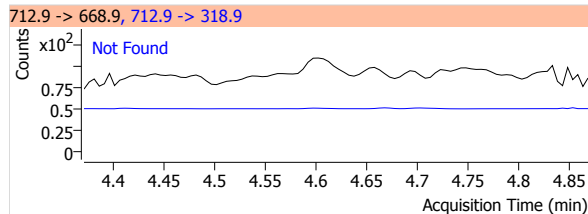
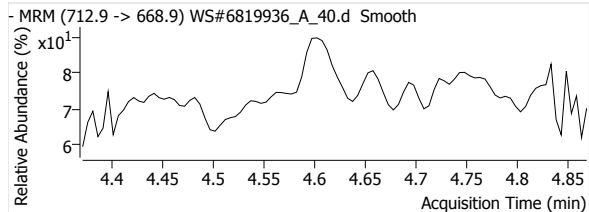
## PFDaA 1



## PFTrDA 1



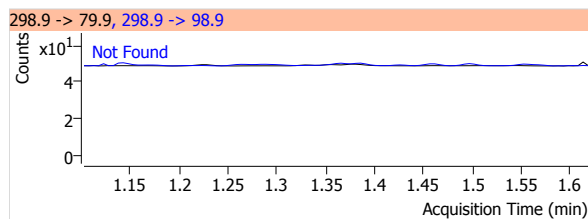
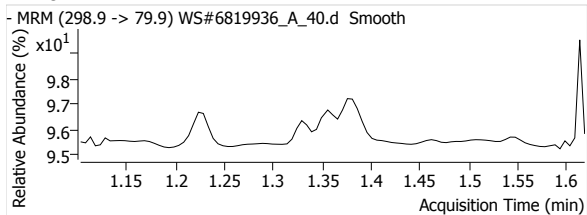
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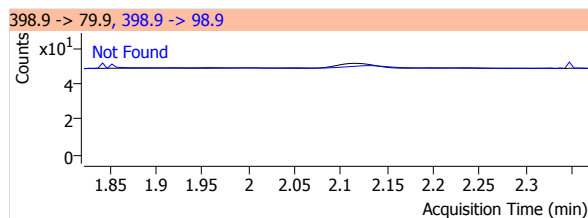
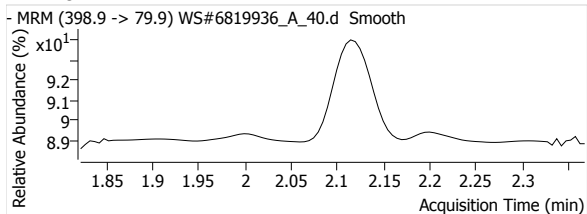


# Quantitative Analysis Report

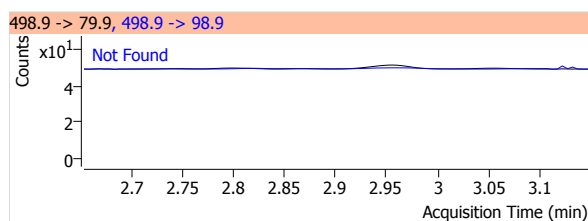
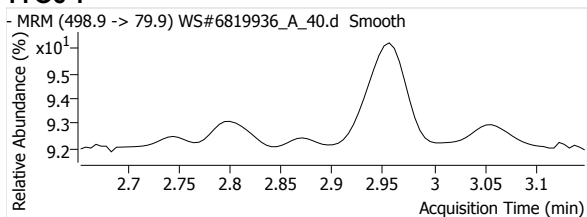
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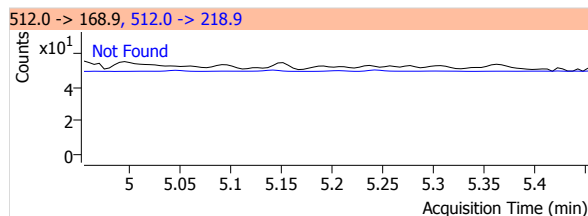
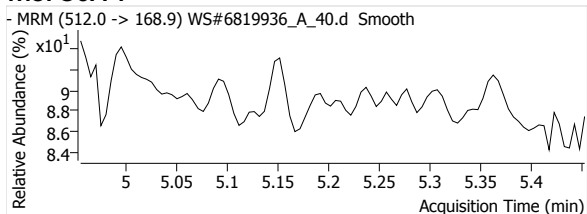
## PFHxS 1



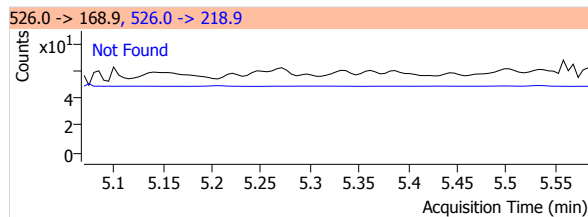
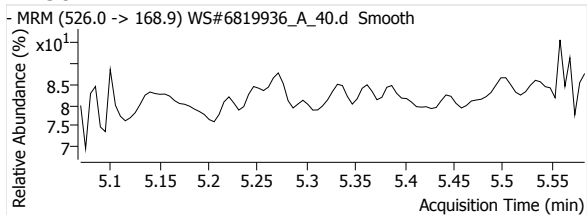
## PFOS 1



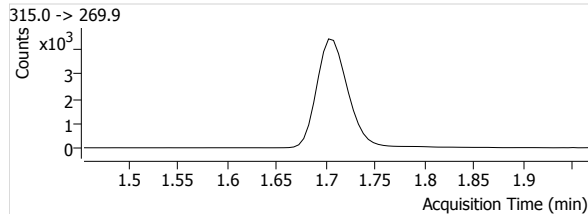
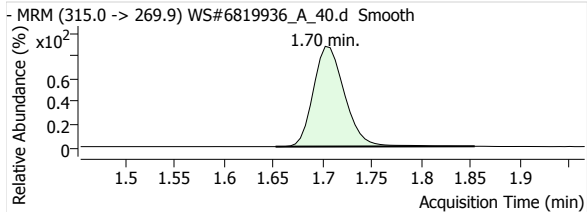
## MeFOSA 1



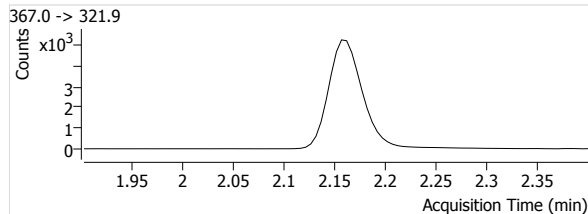
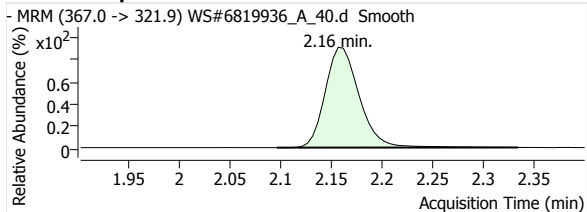
## eFOSA 1



## 13C2-PFHxA

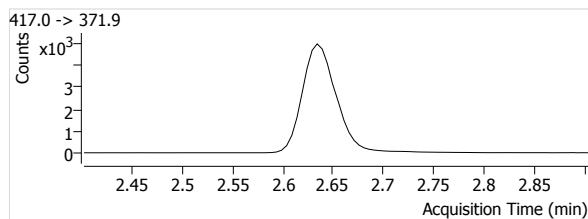
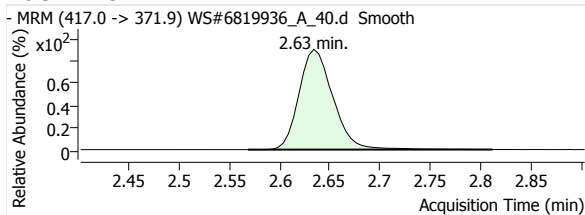


## 13C4-PFHpA

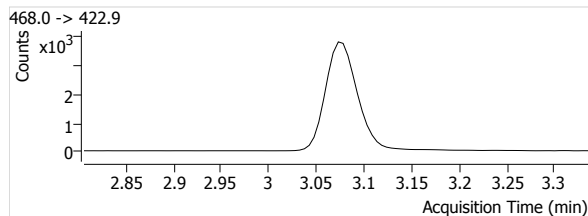
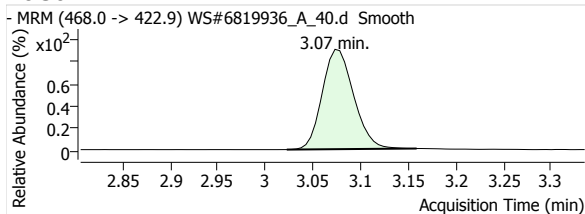


# Quantitative Analysis Report

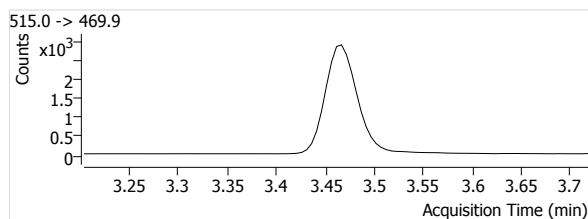
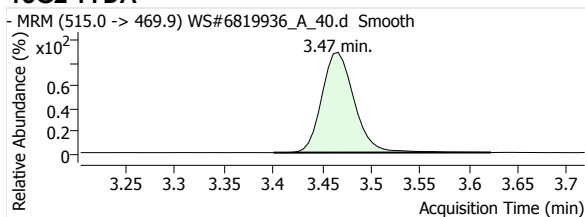
## 13C4-PFOA



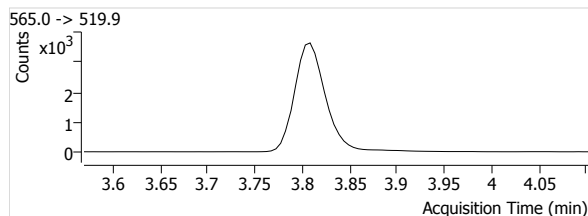
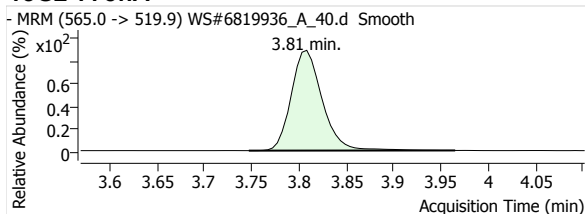
## 13C5-PFNA



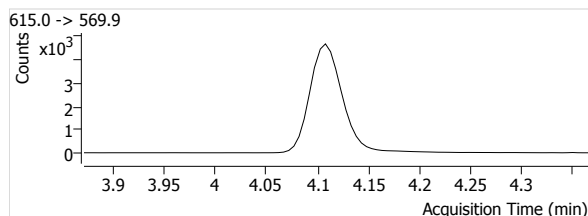
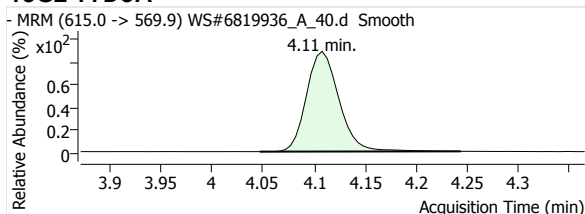
## 13C2-PFDA



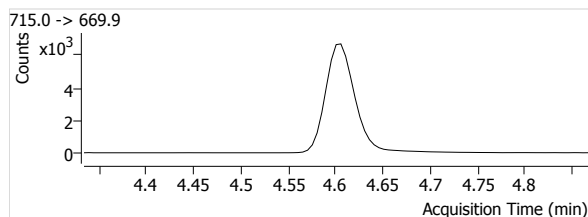
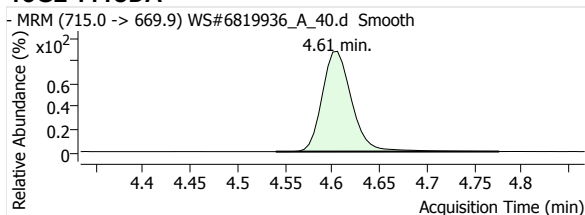
## 13C2-PFUnA



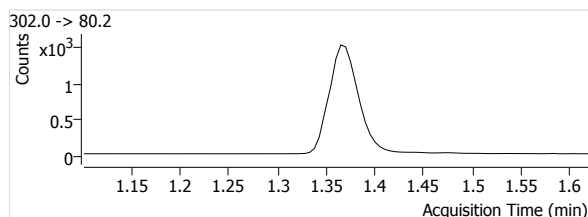
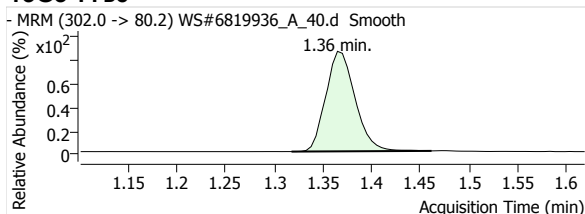
## 13C2-PFDoA



## 13C2-PFTeDA

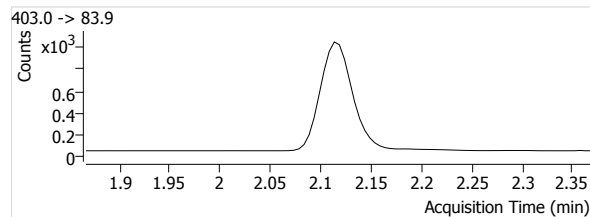
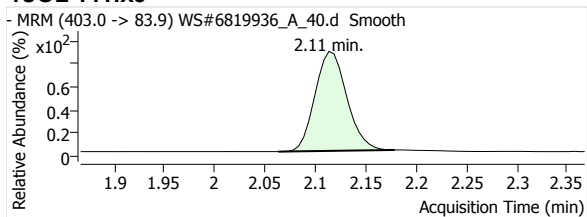


## 13C3-PFBS

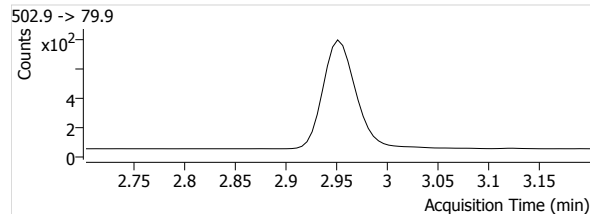
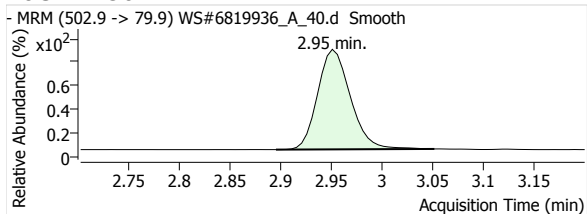


# Quantitative Analysis Report

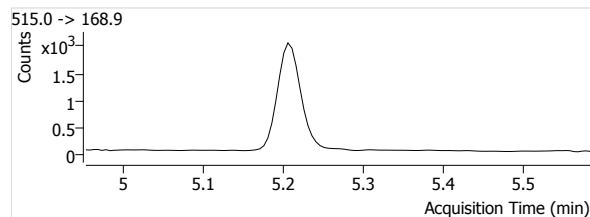
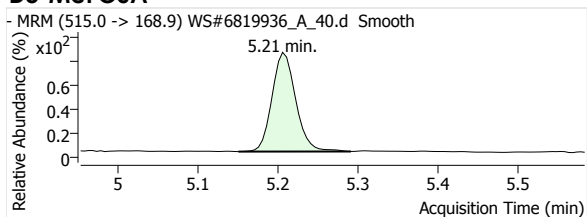
## 18O2-PFHxs



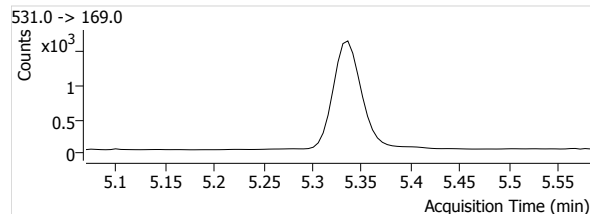
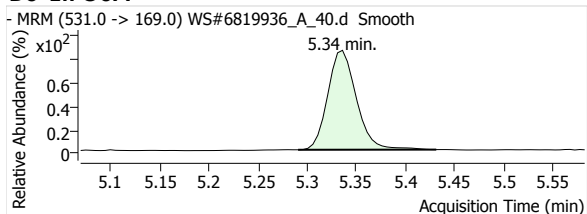
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



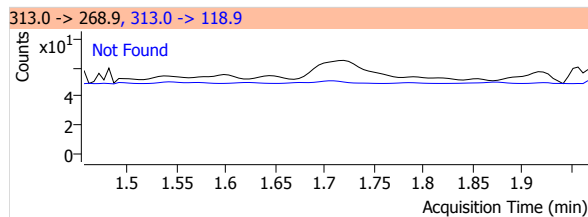
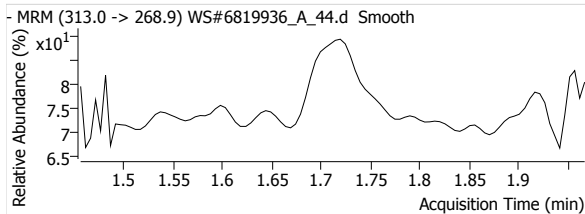
# Quantitative Analysis Report

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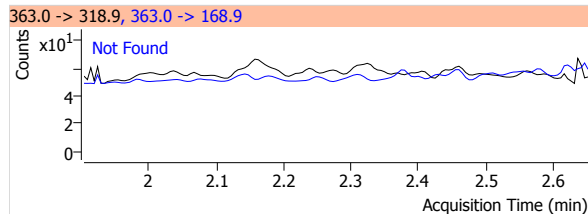
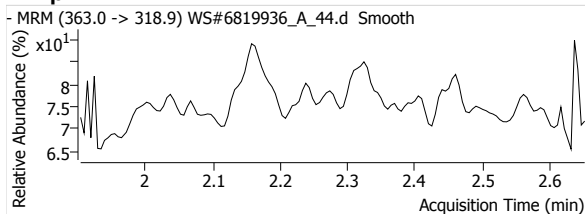
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 4:19:08 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDoA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	98.2635	--	9733	1.70	901	--	--	--	--	--
13C4-PFHpA	µg/L	--	99.7012	--	12681	2.16	1037	--	--	--	--	--
13C4-PFOA	µg/L	--	99.8311	--	11822	2.63	1322	--	--	--	--	--
13C5-PFNA	µg/L	--	98.7328	--	9194	3.08	881	--	--	--	--	--
13C2-PFDA	µg/L	--	91.6143	--	6555	3.47	247	--	--	--	--	--
13C2-PFUnA	µg/L	--	97.3207	--	8318	3.81	520	--	--	--	--	--
13C2-PFDoA	µg/L	--	99.4747	--	10415	4.11	574	--	--	--	--	--
13C2-PFTeDA	µg/L	--	99.1574	--	15180	4.61	1381	--	--	--	--	--
13C3-PFBS	µg/L	--	88.7701	--	2988	1.36	202	--	--	--	--	--
18O2-PFHxS	µg/L	--	93.5332	--	2184	2.11	159	--	--	--	--	--
13C4-PFOS	µg/L	--	93.6464	--	1695	2.95	152	--	--	--	--	--
D3-MeFOSA	µg/L	--	91.5205	--	4123	5.21	84	--	--	--	--	--
D5-EtFOSA	µg/L	--	91.9052	--	3372	5.34	112	--	--	--	--	--

## PFHxA 1

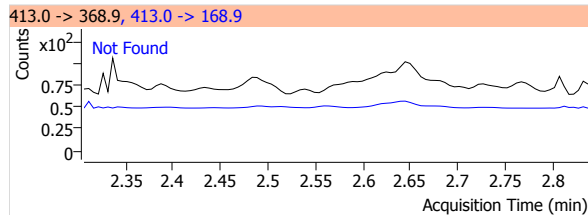
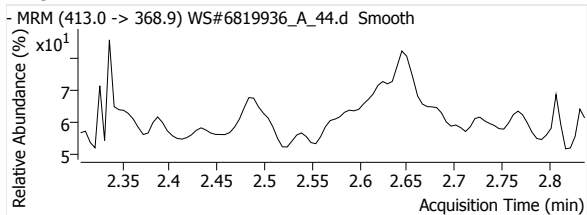


## PFHpA 1

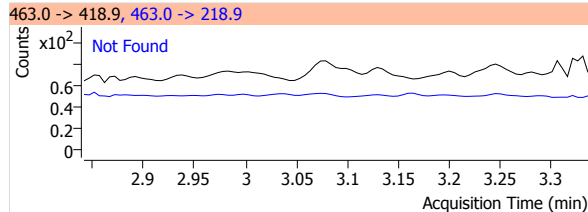
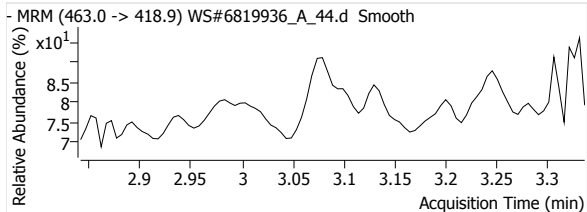


# Quantitative Analysis Report

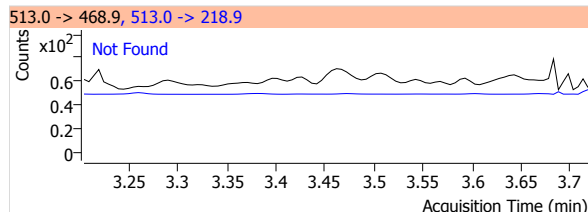
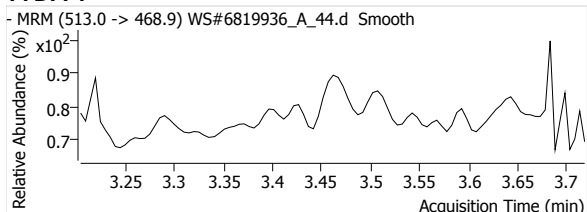
## PFOA 1



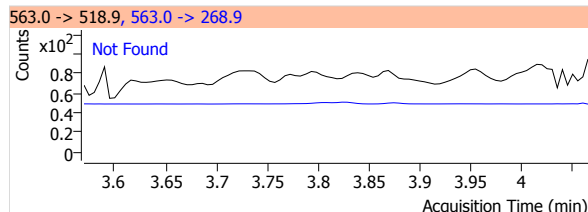
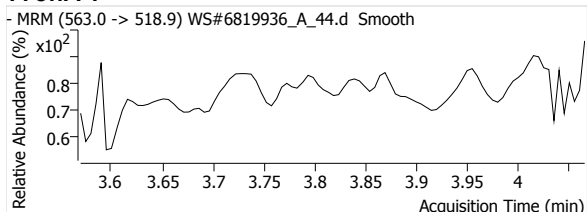
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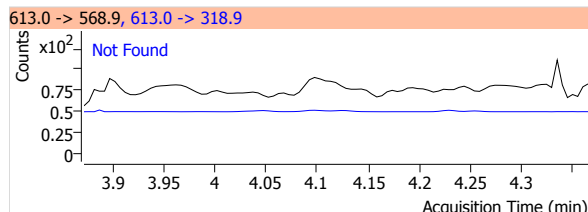
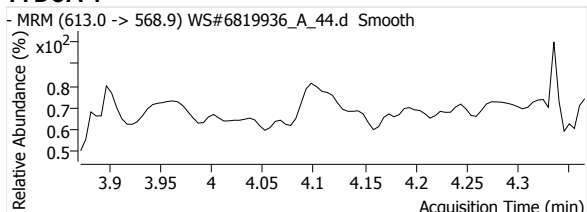
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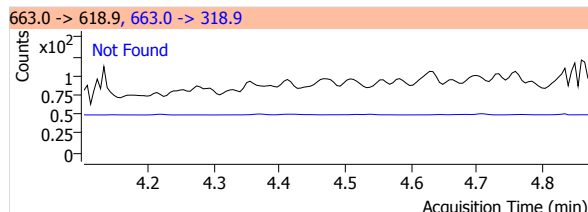
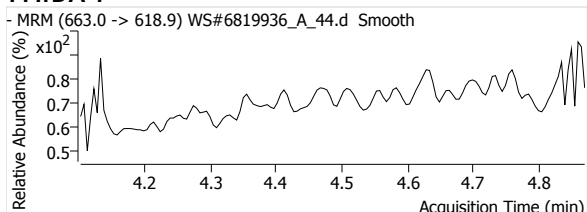
## PFUnA 1



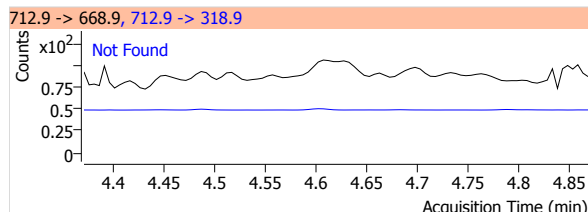
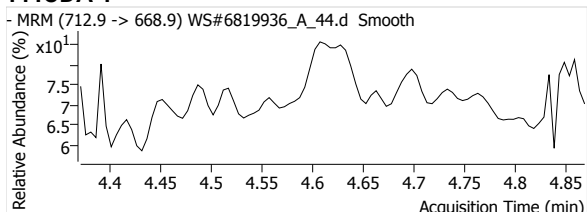
## PFDoA 1



## PFTrDA 1

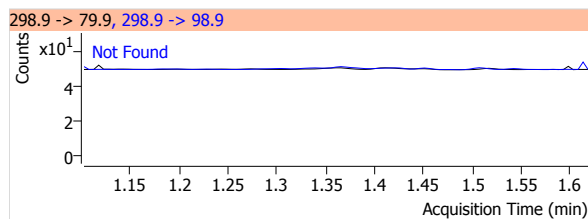
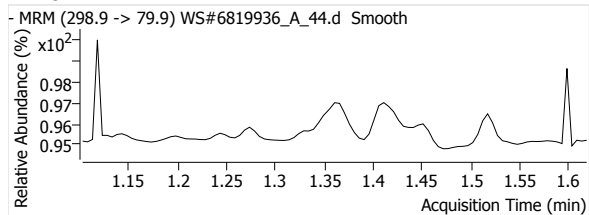


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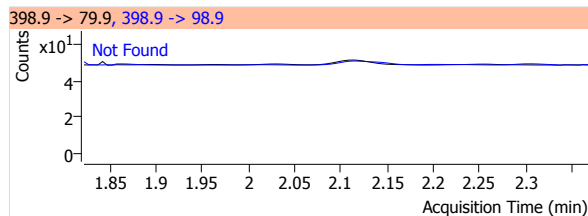
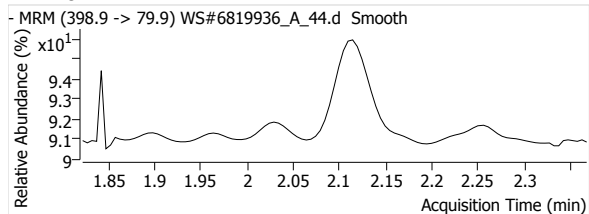


# Quantitative Analysis Report

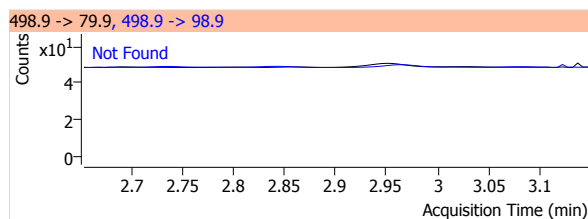
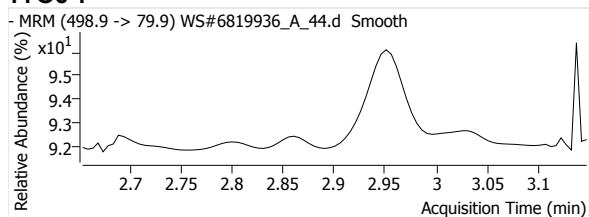
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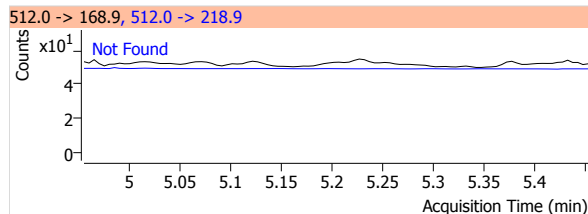
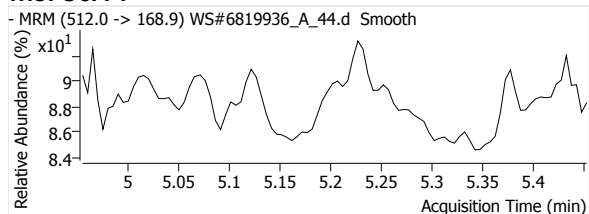
## PFHxS 1



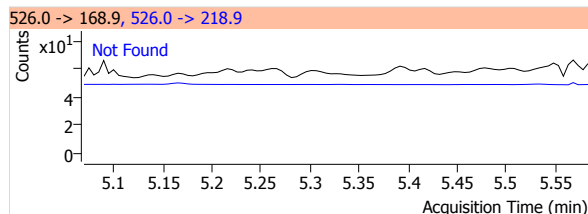
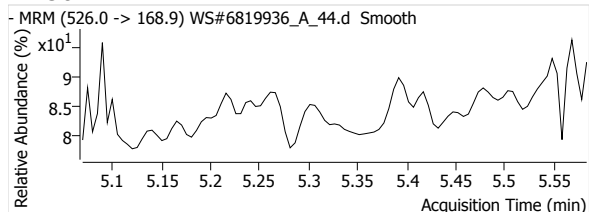
## PFOS 1



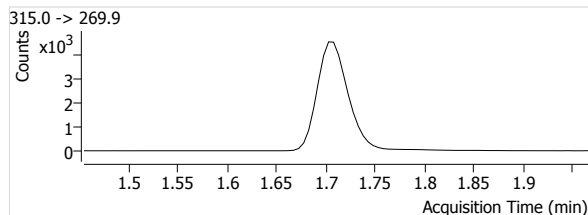
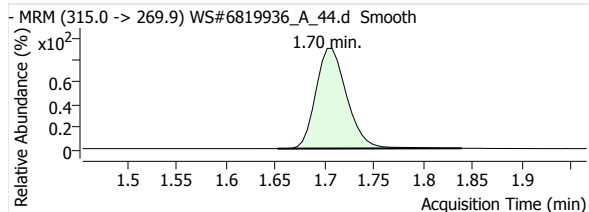
## MeFOSA 1



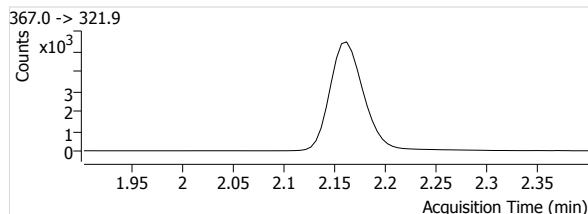
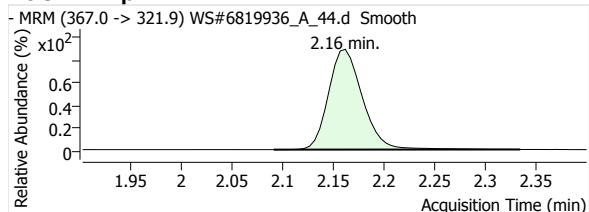
## eFOSA 1



## 13C2-PFHxA

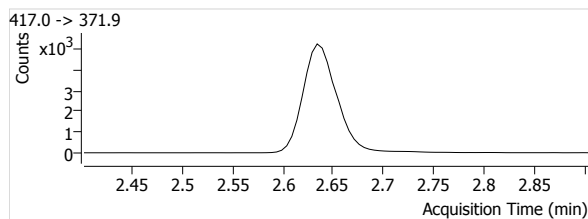
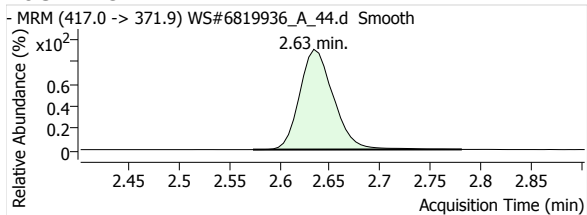


## 13C4-PFHpA

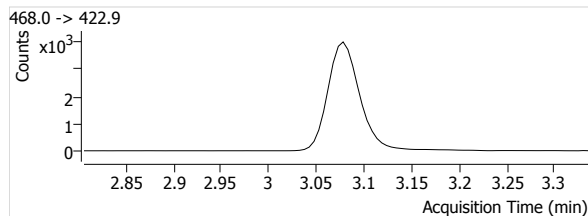
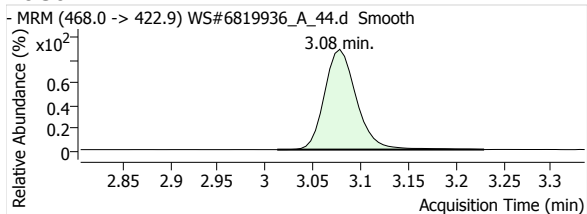


# Quantitative Analysis Report

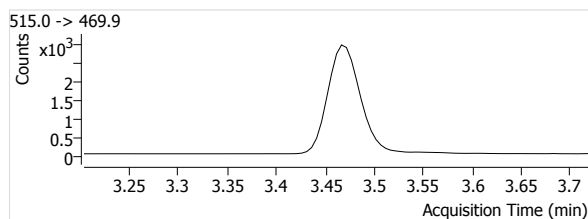
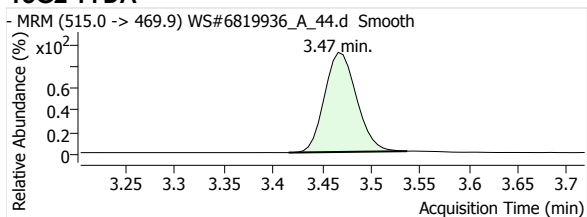
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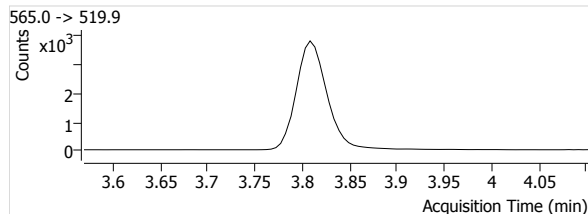
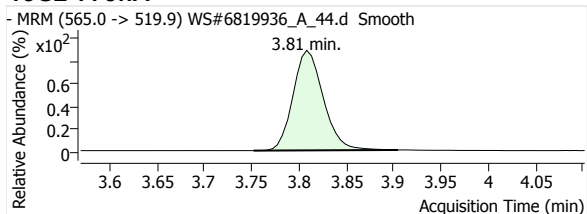
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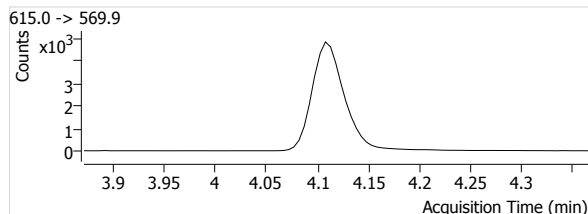
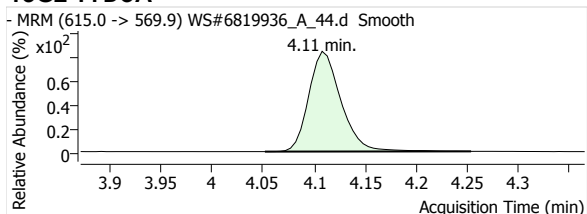
## 13C2-PFDA



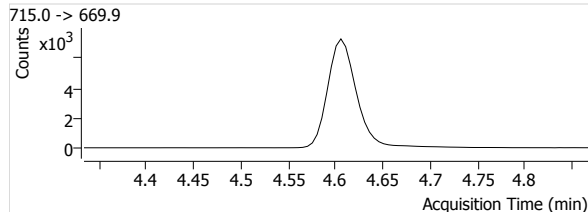
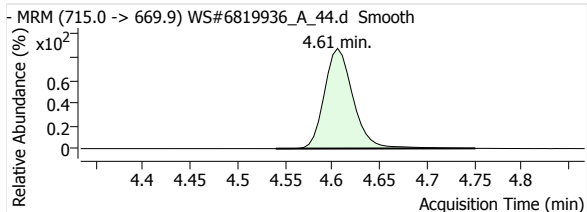
## 13C2-PFUnA



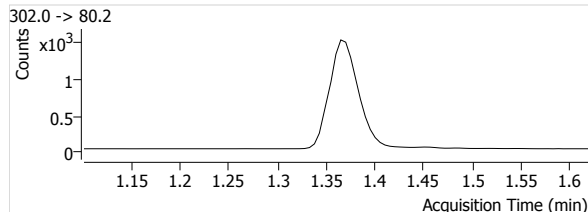
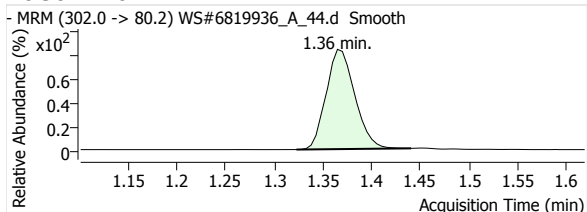
## 13C2-PFDoA



## 13C2-PFTeDA

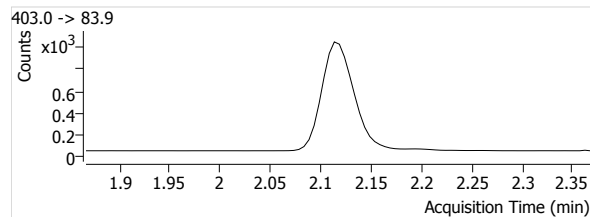
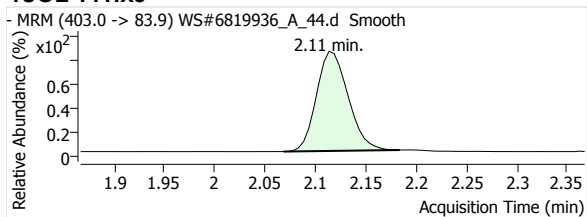


## 13C3-PFBS

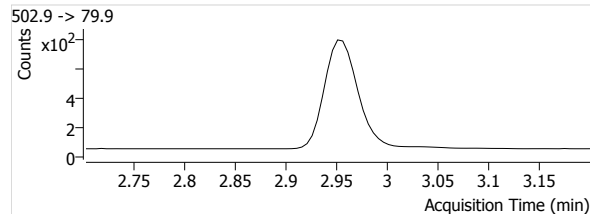
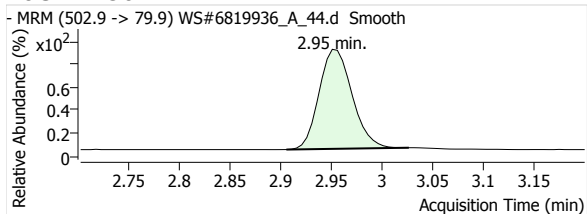


# Quantitative Analysis Report

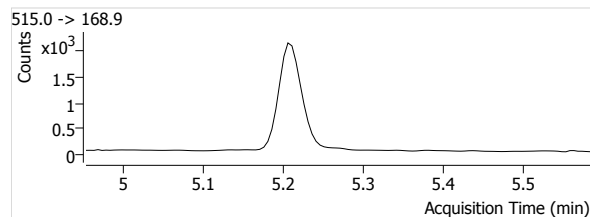
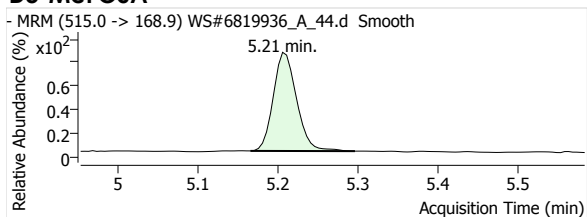
## 18O2-PFHxs



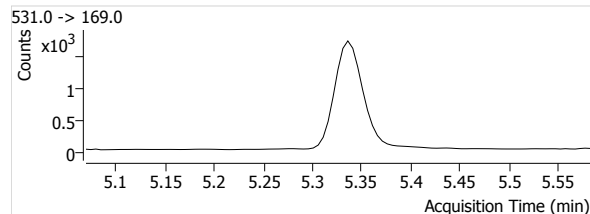
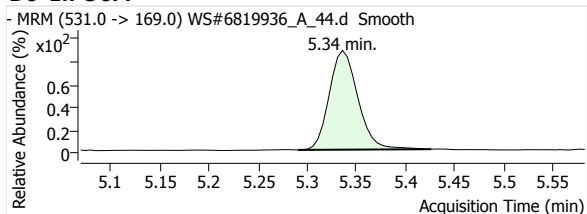
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA





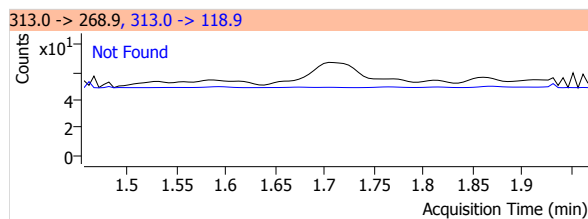
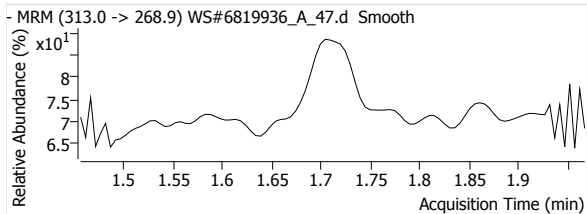
# Quantitative Analysis Report

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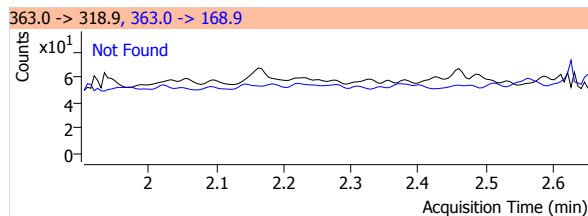
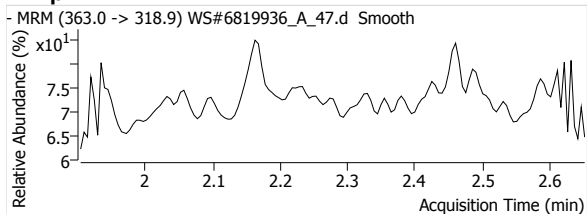
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<b>Acq. Date-Time</b>	2020/07/08 4:39:59 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	98.4351	--	9750	1.71	259	--	--	--	--	--
13C4-PFHpA	µg/L	--	99.3474	--	12636	2.16	671	--	--	--	--	--
13C4-PFOA	µg/L	--	97.2302	--	11514	2.64	1249	--	--	--	--	--
13C5-PFNA	µg/L	--	97.5623	--	9085	3.08	277	--	--	--	--	--
13C2-PFDA	µg/L	--	92.2292	--	6599	3.47	187	--	--	--	--	--
13C2-PFUnA	µg/L	--	97.2037	--	8308	3.81	360	--	--	--	--	--
13C2-PFDaA	µg/L	--	102.9513	--	10779	4.11	2019	--	--	--	--	--
13C2-PFTeDA	µg/L	--	98.8569	--	15134	4.61	1470	--	--	--	--	--
13C3-PFBS	µg/L	--	95.7219	--	3222	1.36	285	--	--	--	--	--
18O2-PFHxS	µg/L	--	95.8887	--	2239	2.12	209	--	--	--	--	--
13C4-PFOS	µg/L	--	94.4751	--	1710	2.96	196	--	--	--	--	--
D3-MeFOSA	µg/L	--	90.2775	--	4067	5.21	75	--	--	--	--	--
D5-EtFOSA	µg/L	--	92.2595	--	3385	5.34	121	--	--	--	--	--

### PFHxA 1

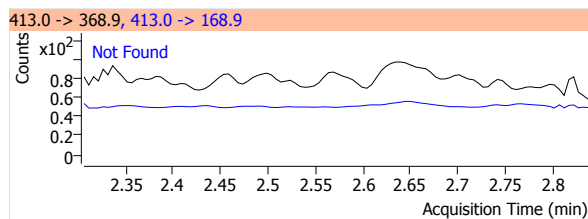
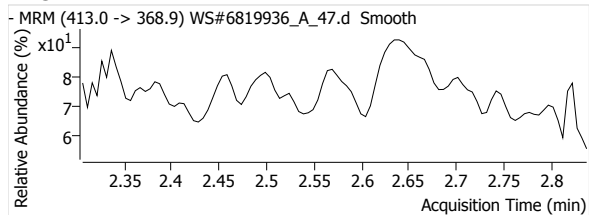


### PFHpA 1

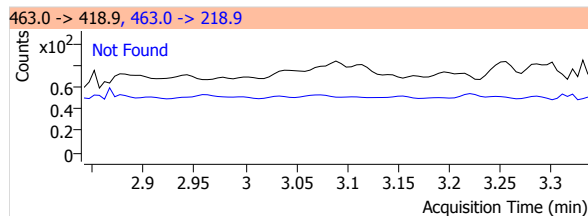
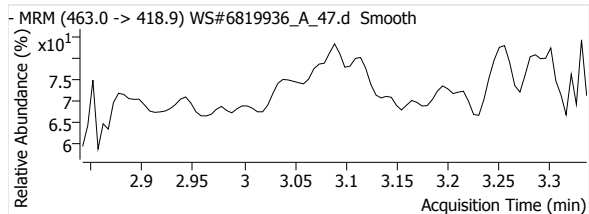


# Quantitative Analysis Report

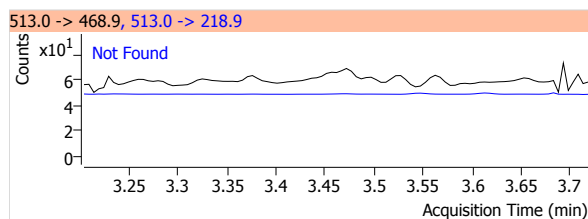
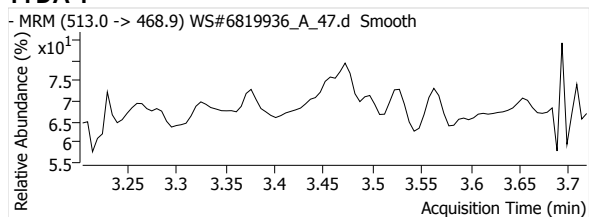
## PFOA 1



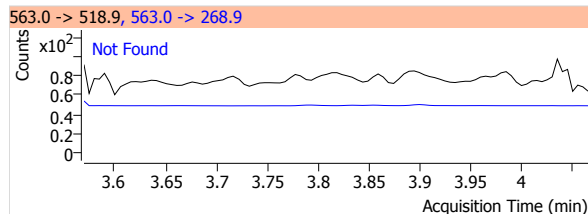
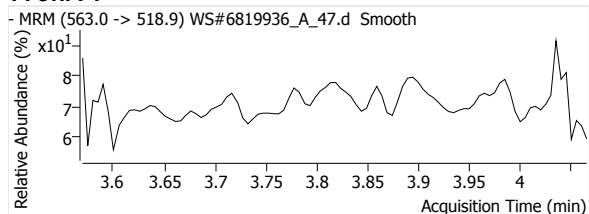
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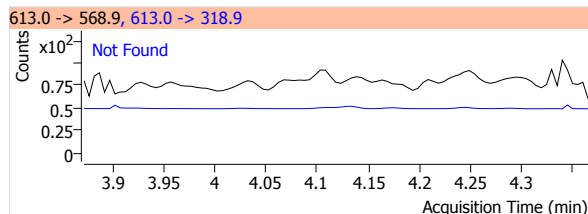
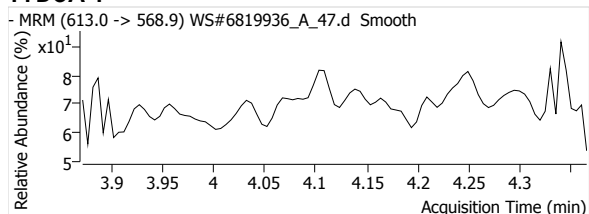
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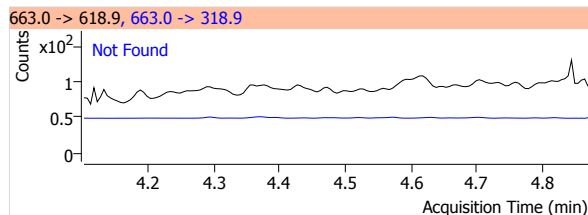
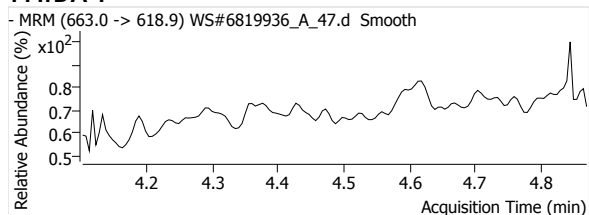
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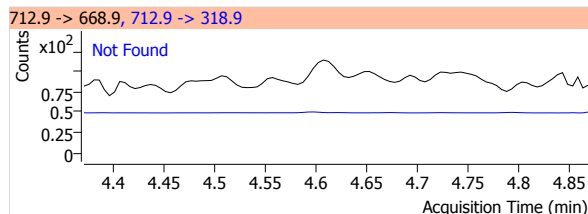
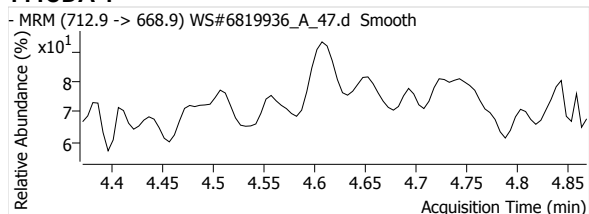
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## PFTrDA 1

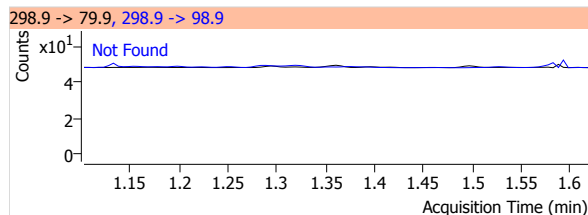
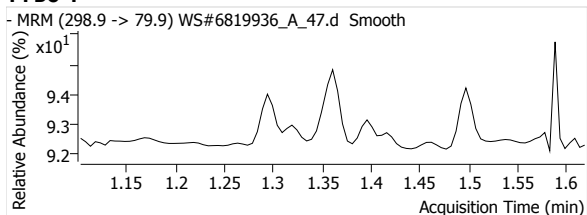


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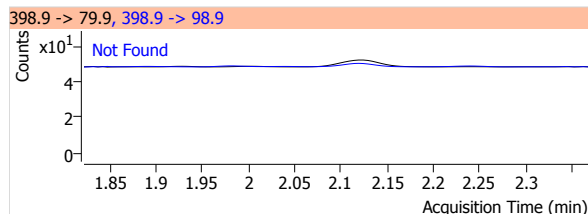
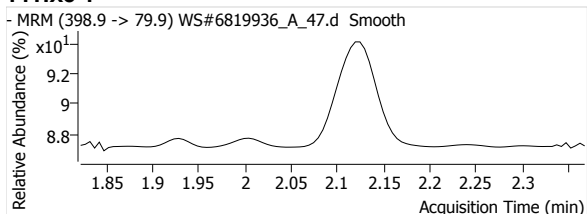


# Quantitative Analysis Report

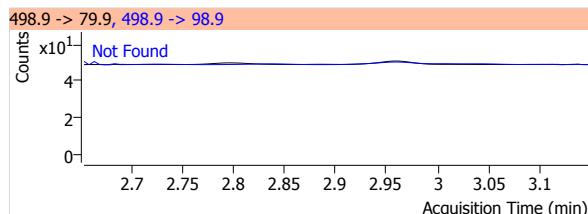
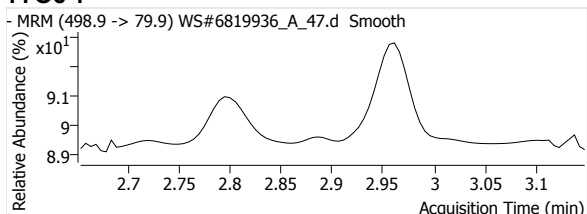
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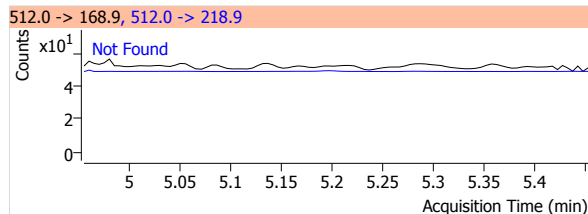
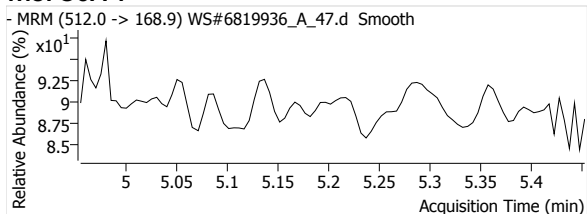
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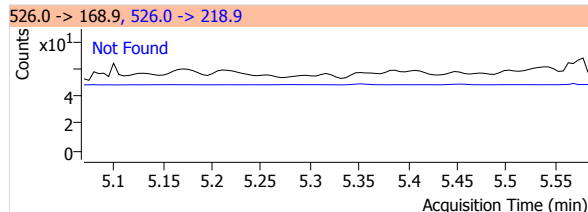
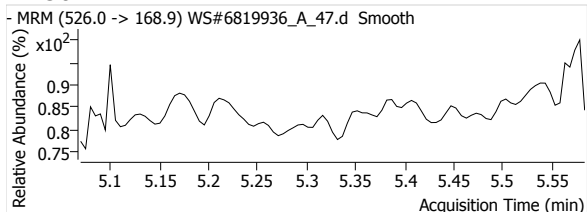
## PFOS 1



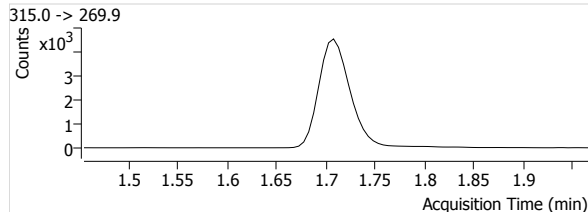
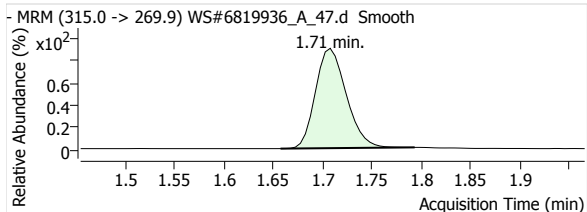
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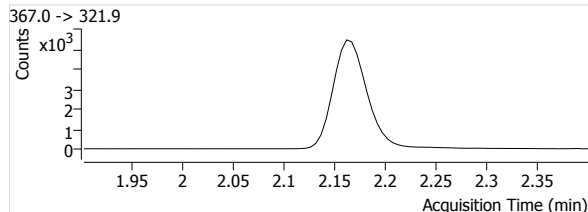
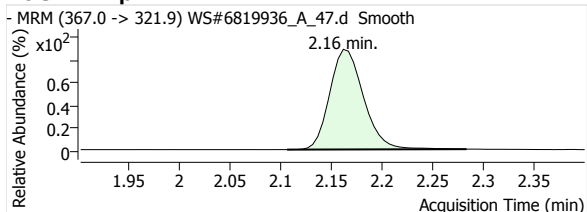
## eFOSA 1



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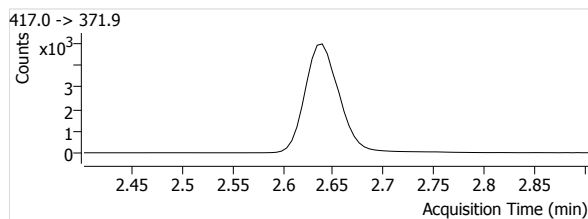
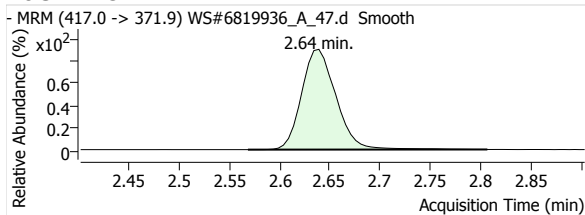


## 13C4-PFHpA

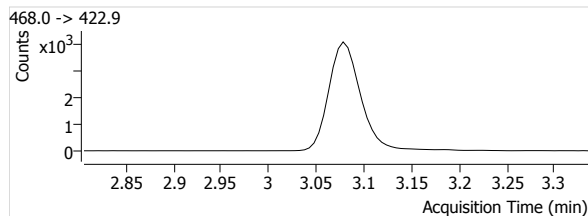
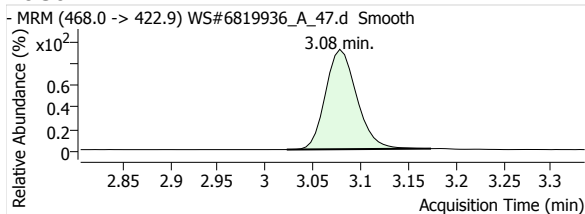


# Quantitative Analysis Report

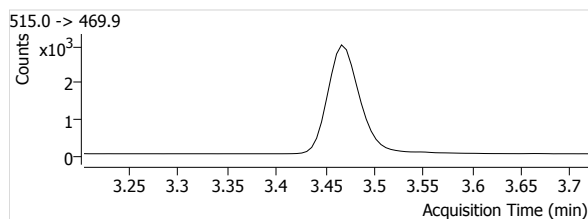
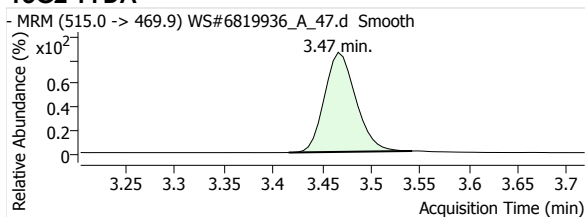
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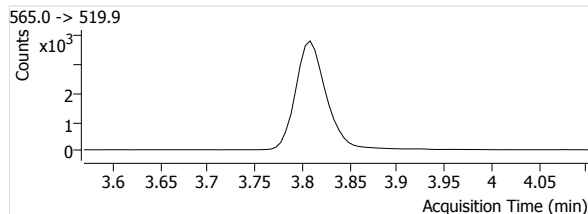
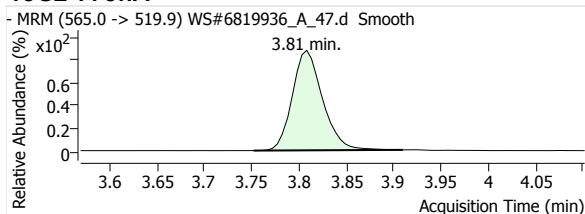
## 13C5-PFNA



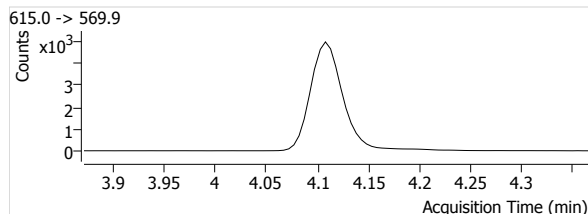
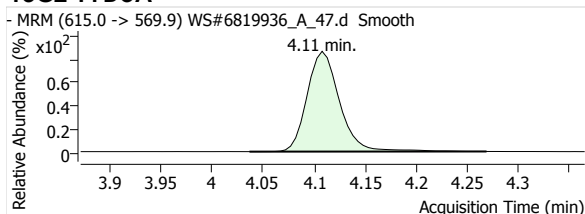
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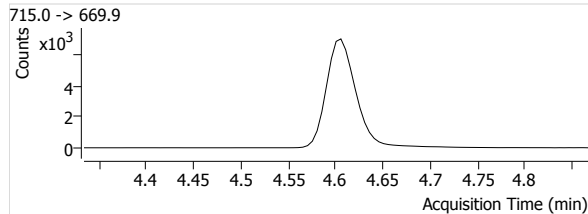
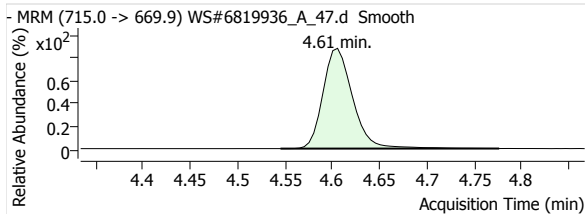
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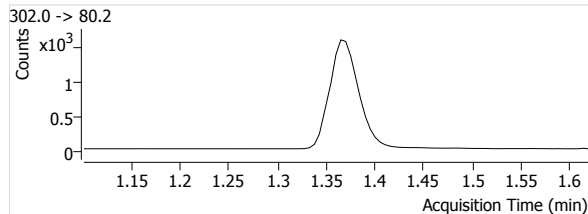
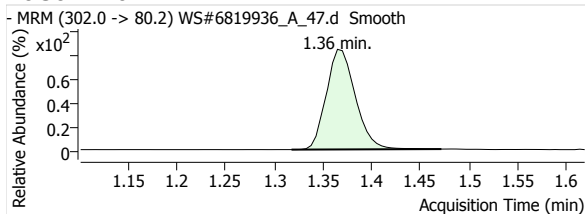
## 13C2-PFDoA



## 13C2-PFTeDA

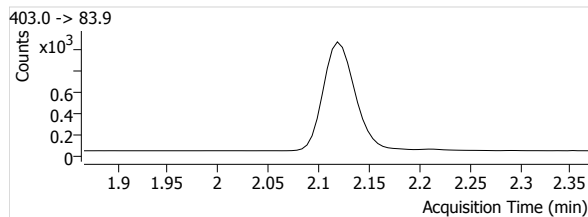
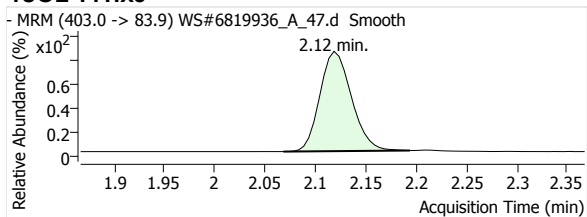


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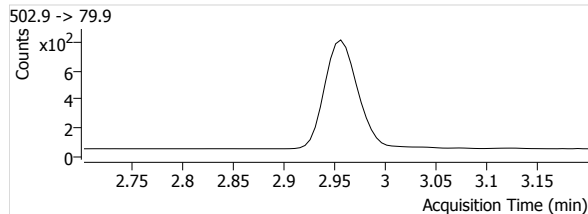
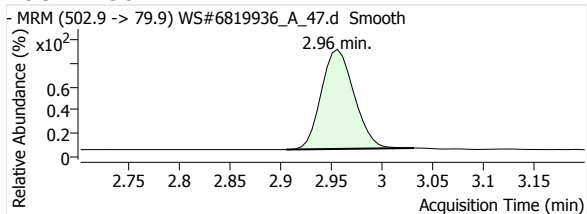


# Quantitative Analysis Report

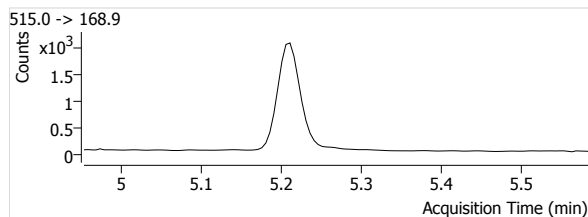
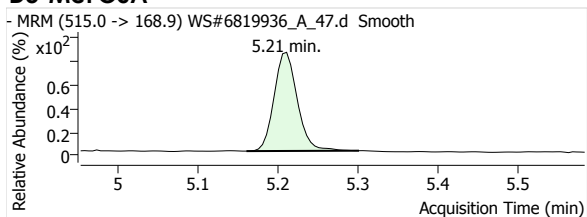
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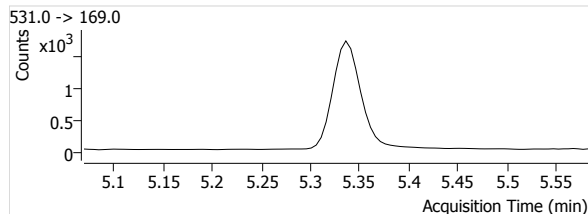
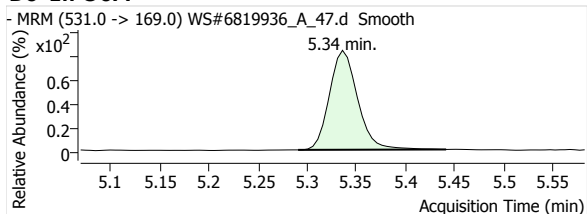
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



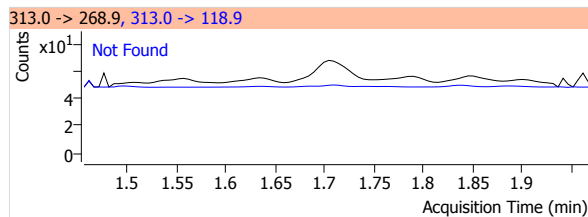
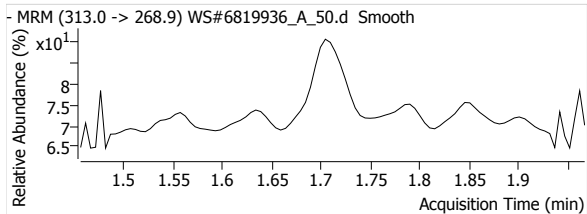
# Quantitative Analysis Report

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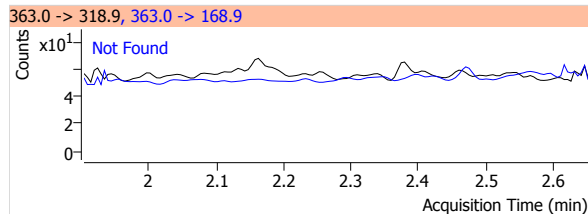
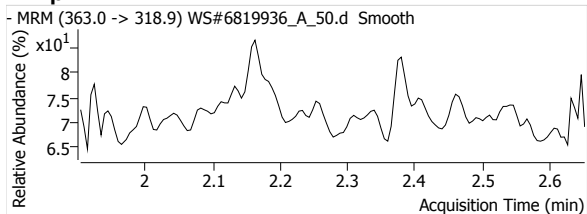
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<b>Type</b>	Sample	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A8
<b>Acq. Date-Time</b>	2020/07/08 5:00:46 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	99.0005	--	9806	1.71	255	--	--	--	--	--
13C4-PFHpA	µg/L	--	101.3287	--	12888	2.16	783	--	--	--	--	--
13C4-PFOA	µg/L	--	100.0169	--	11844	2.64	1952	--	--	--	--	--
13C5-PFNA	µg/L	--	99.2161	--	9239	3.08	555	--	--	--	--	--
13C2-PFDA	µg/L	--	95.1642	--	6809	3.47	1032	--	--	--	--	--
13C2-PFUnA	µg/L	--	100.7254	--	8609	3.81	670	--	--	--	--	--
13C2-PFDaA	µg/L	--	104.6609	--	10958	4.11	928	--	--	--	--	--
13C2-PFTeDA	µg/L	--	100.3985	--	15370	4.61	1344	--	--	--	--	--
13C3-PFBS	µg/L	--	94.2959	--	3174	1.36	587	--	--	--	--	--
18O2-PFHxS	µg/L	--	97.0450	--	2266	2.12	432	--	--	--	--	--
13C4-PFOS	µg/L	--	97.3481	--	1762	2.96	201	--	--	--	--	--
D3-MeFOSA	µg/L	--	95.9378	--	4322	5.21	84	--	--	--	--	--
D5-EtFOSA	µg/L	--	94.3036	--	3460	5.34	144	--	--	--	--	--

### PFHxA 1

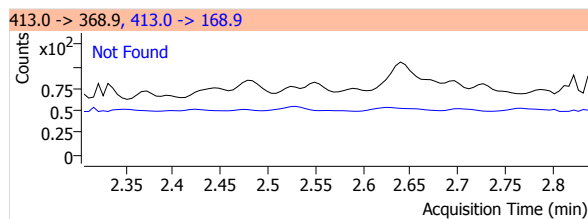
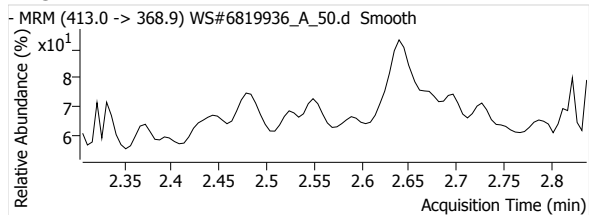


### PFHpA 1

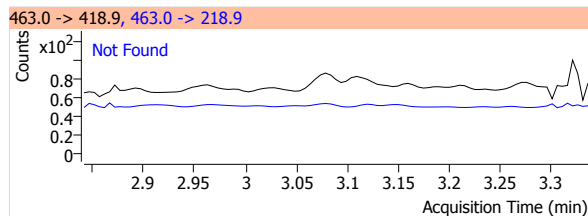
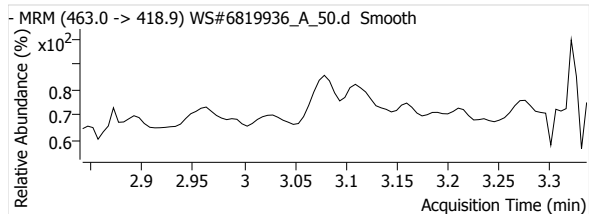


# Quantitative Analysis Report

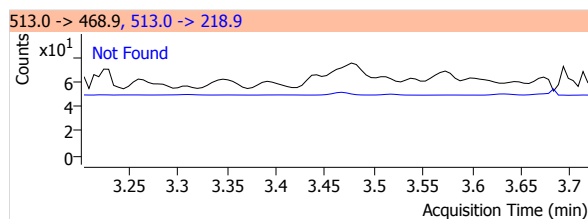
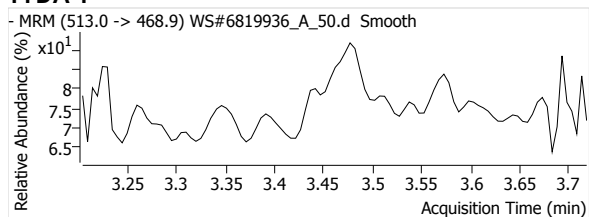
## PFOA 1



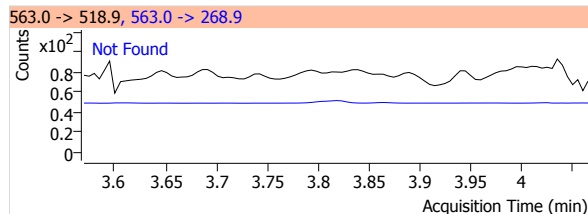
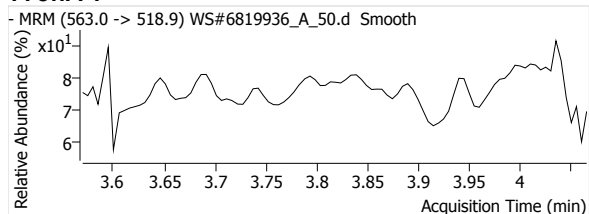
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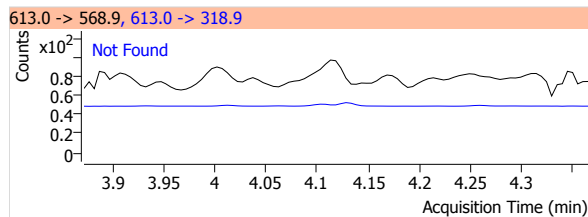
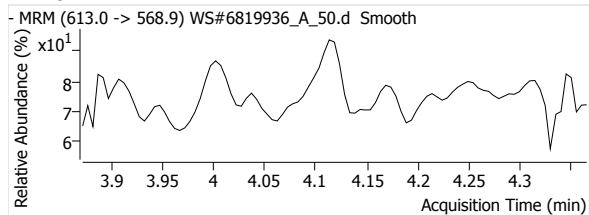
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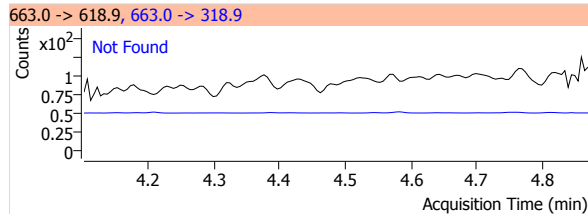
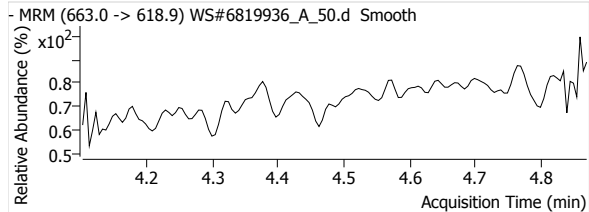
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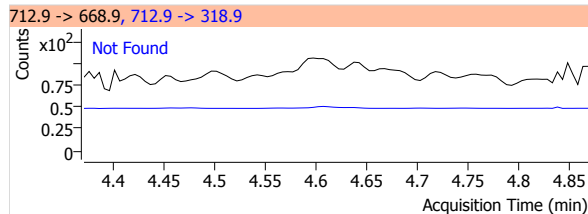
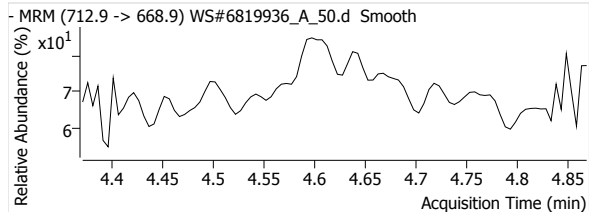
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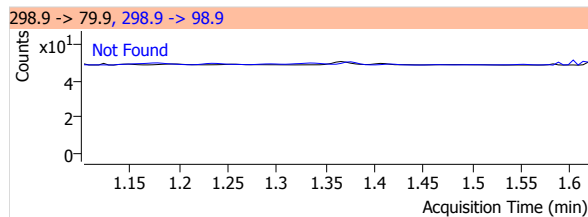
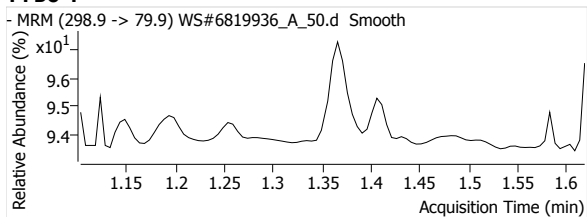


## PFTeDA 1

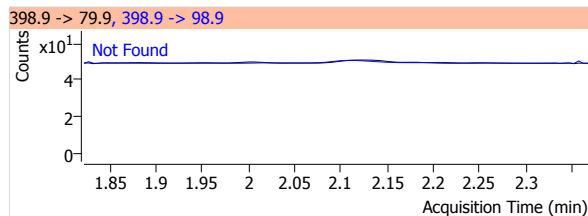
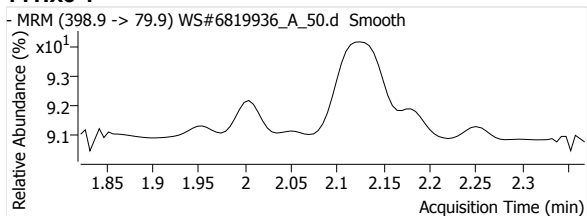


# Quantitative Analysis Report

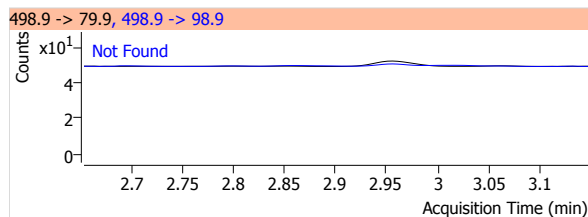
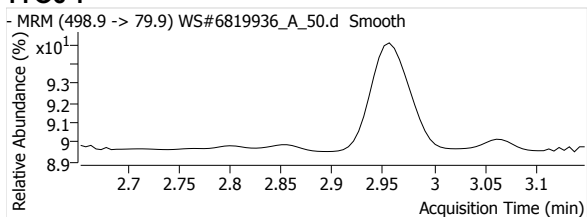
## PFBS 1



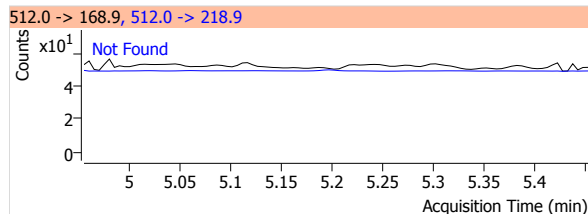
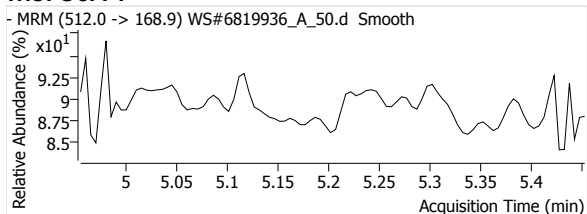
## PFHxS 1



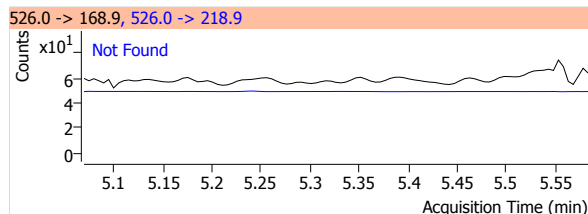
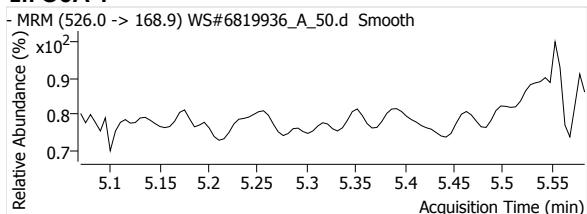
## PFOS 1



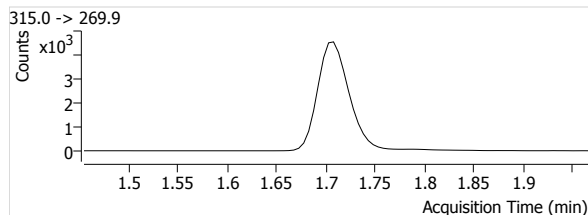
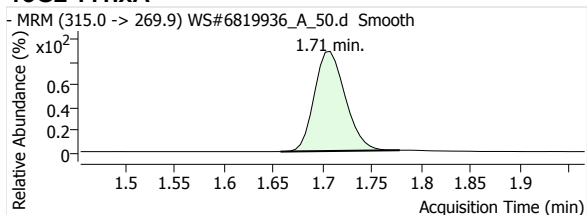
## MeFOSA 1



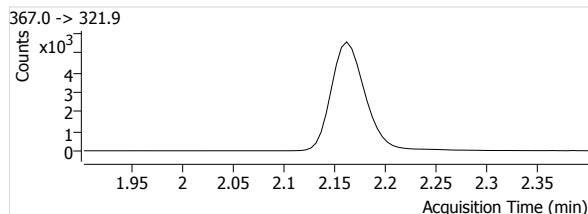
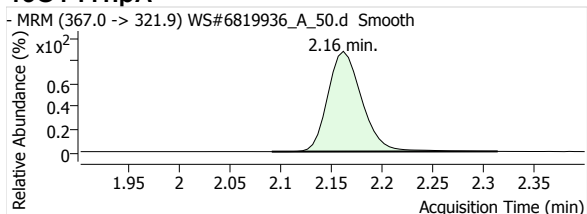
## eFOSA 1



## 13C2-PFHxA



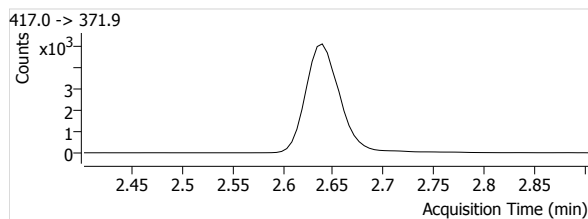
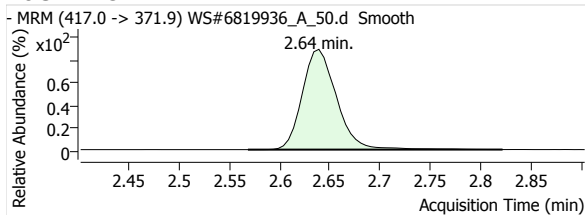
## 13C4-PFHpA



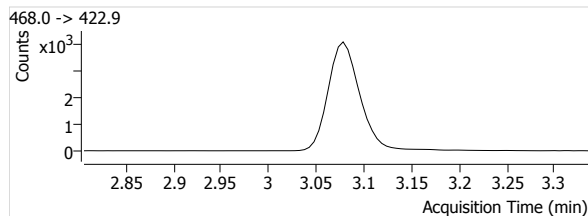
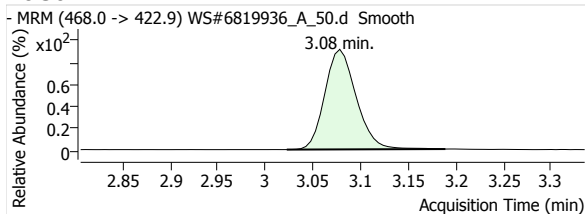


# Quantitative Analysis Report

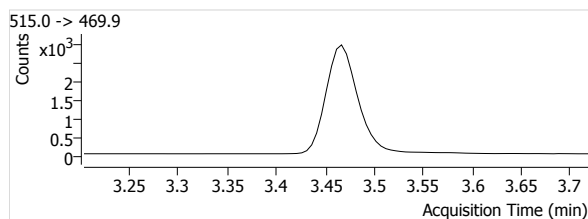
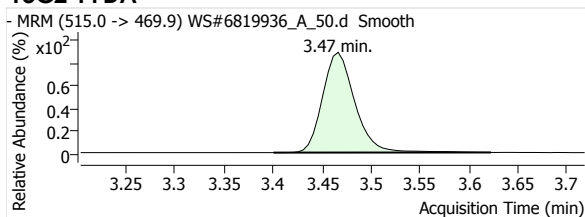
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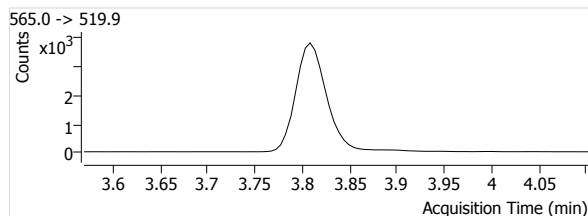
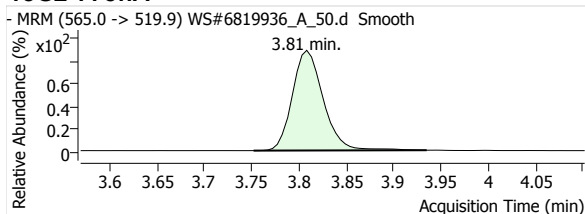
## 13C5-PFNA



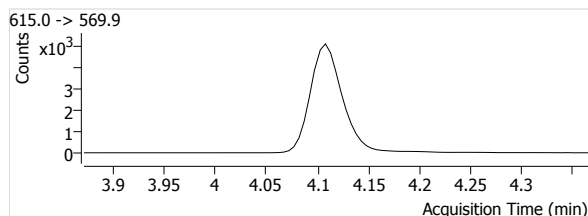
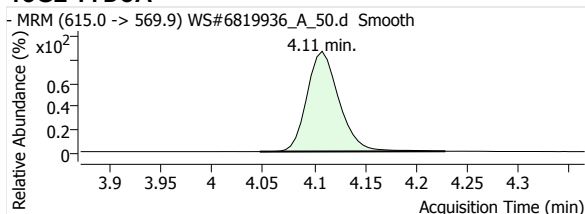
## 13C2-PFDA



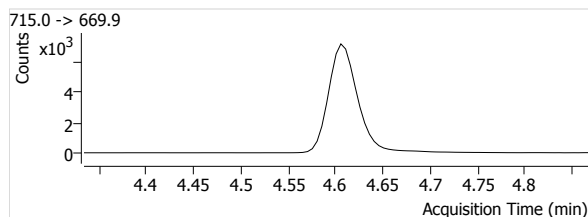
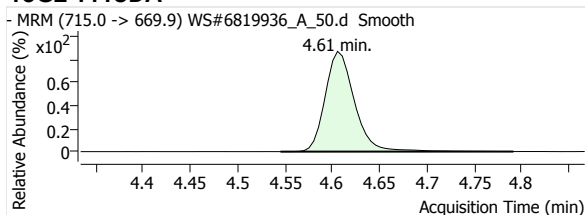
## 13C2-PFUnA



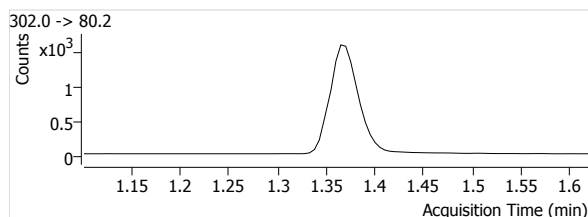
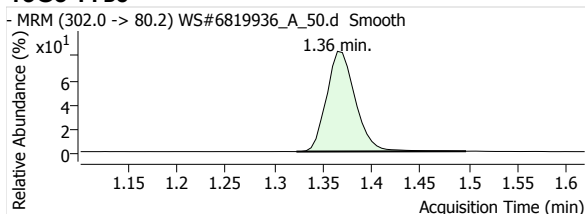
## 13C2-PFDoA



## 13C2-PFTeDA

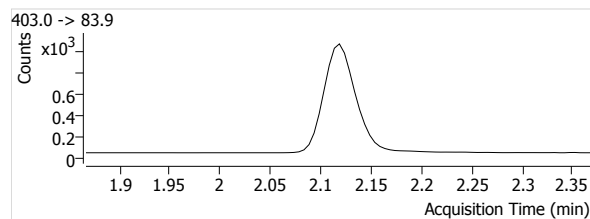
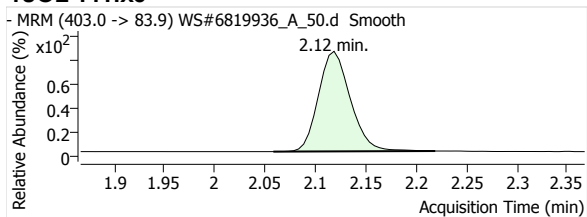


## 13C3-PFBS

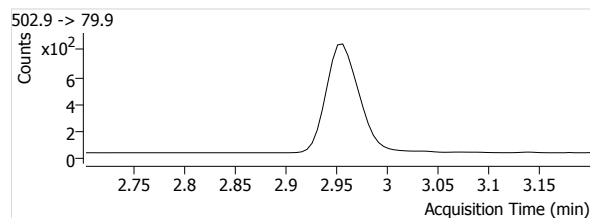
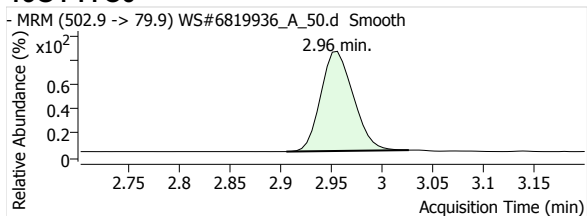


# Quantitative Analysis Report

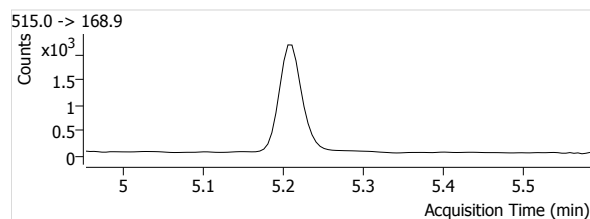
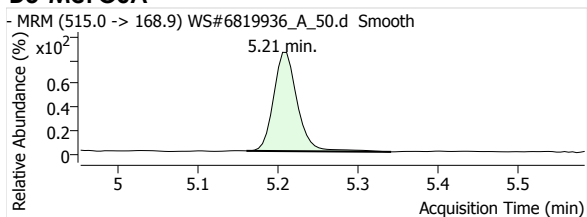
## 18O2-PFHxs



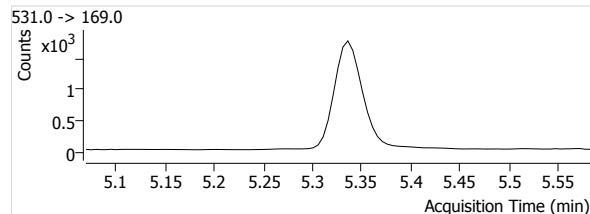
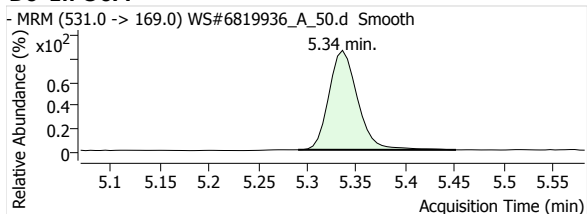
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

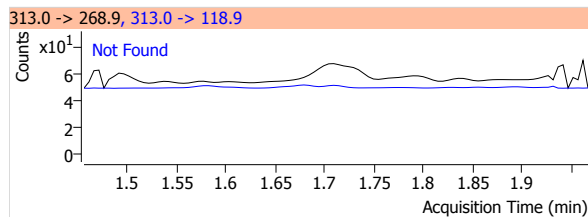
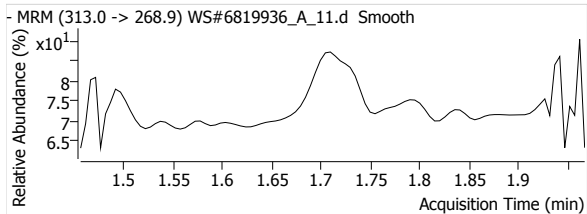
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bin

**Sample Name** 6819936:BLANK  
**Type** Sample  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 12:30:13 PM  
**Comment** -  
**User Defined**

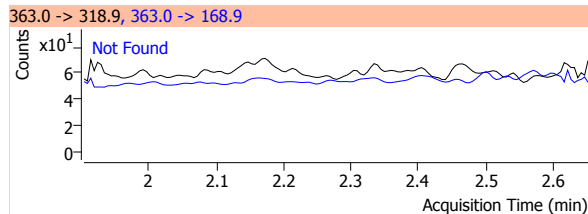
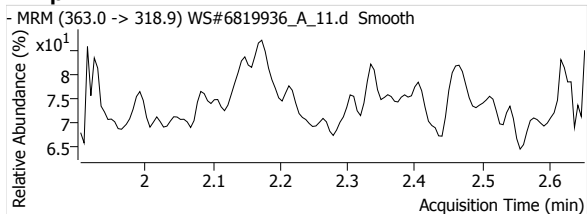
**Data File** WS#6819936\_A\_11.d  
**Instrument** LCMS04  
**Position** P2-B1  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHpA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFNA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFUnA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFDaA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTrDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFTeDA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFBS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFHxS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
PFOS 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
MeFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
EtFOSA 1	µg/L	--	--	--	--	--	--	--	--	--	--	--
13C2-PFHxA	µg/L	--	116.9712	--	11586	1.71	527	--	--	--	--	--
13C4-PFHpA	µg/L	--	122.7455	--	15612	2.16	818	--	--	--	--	--
13C4-PFOA	µg/L	--	114.1361	--	13516	2.64	1228	--	--	--	--	--
13C5-PFNA	µg/L	--	107.7105	--	10030	3.08	690	--	--	--	--	--
13C2-PFDA	µg/L	--	106.6527	--	7631	3.47	911	--	--	--	--	--
13C2-PFUnA	µg/L	--	109.6759	--	9374	3.81	258	--	--	--	--	--
13C2-PFDaA	µg/L	--	110.0573	--	11523	4.11	1423	--	--	--	--	--
13C2-PFTeDA	µg/L	--	101.4175	--	15526	4.61	1458	--	--	--	--	--
13C3-PFBS	µg/L	--	106.1200	--	3572	1.36	251	--	--	--	--	--
18O2-PFHxS	µg/L	--	102.3555	--	2390	2.11	244	--	--	--	--	--
13C4-PFOS	µg/L	--	108.3978	--	1962	2.95	338	--	--	--	--	--
D3-MeFOSA	µg/L	--	83.2630	--	3751	5.21	51	--	--	--	--	--
D5-EtFOSA	µg/L	--	91.8506	--	3370	5.34	101	--	--	--	--	--

### PFHxA 1

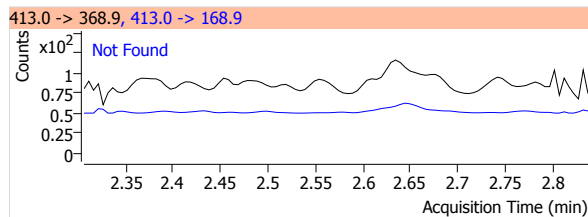
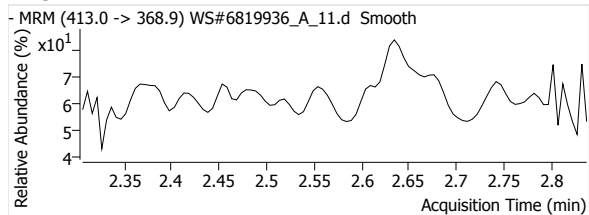


### PFHpA 1

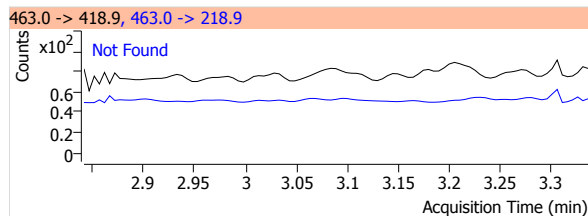
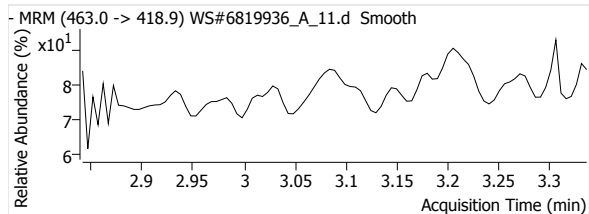


# Quantitative Analysis Report

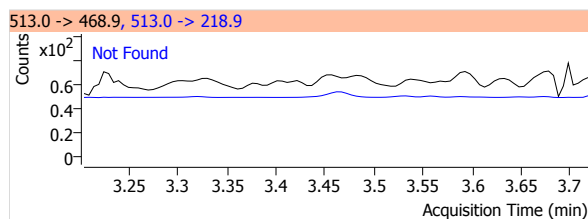
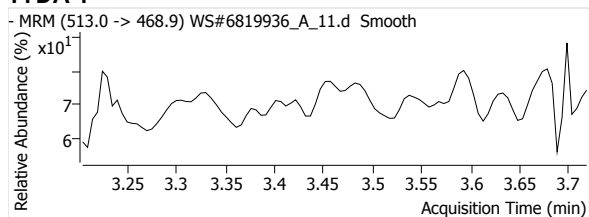
## PFOA 1



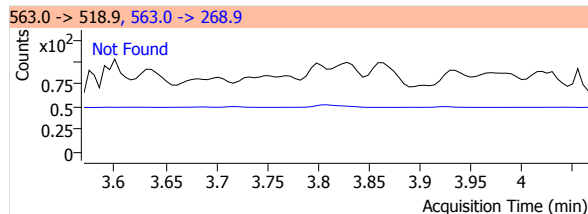
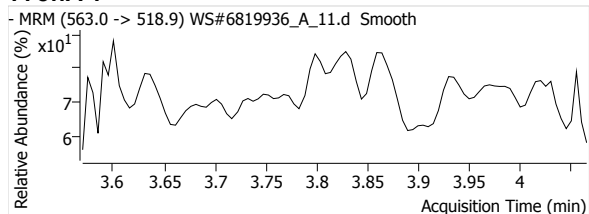
## PFNA 1



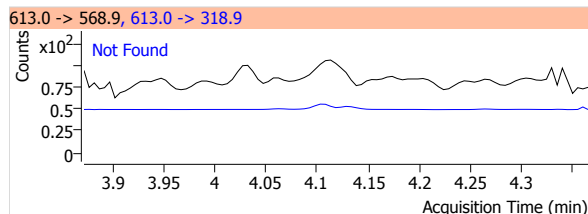
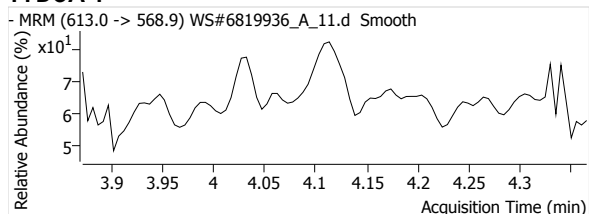
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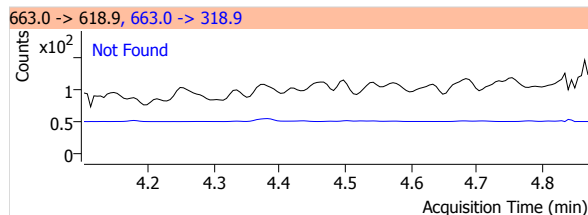
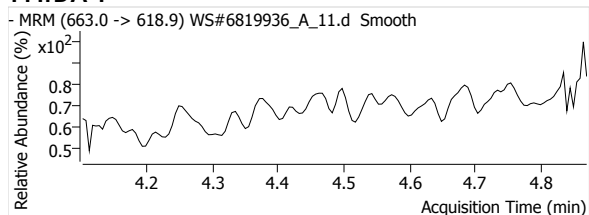
## PFUnA 1



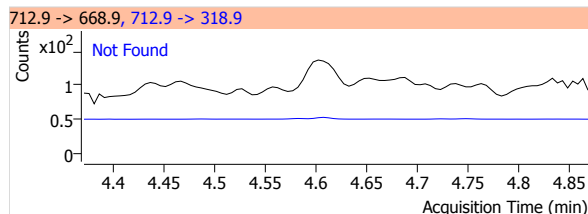
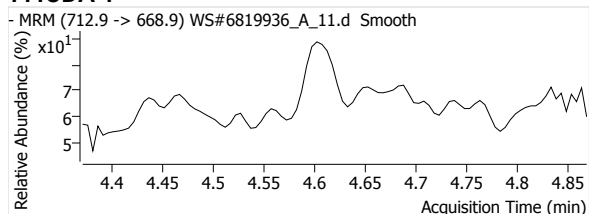
## PFDaA 1



## PFTrDA 1

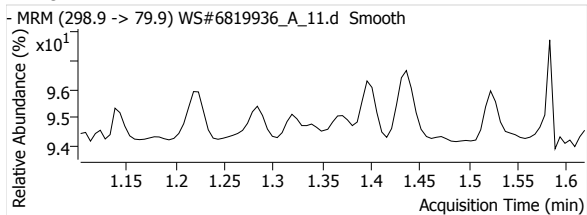


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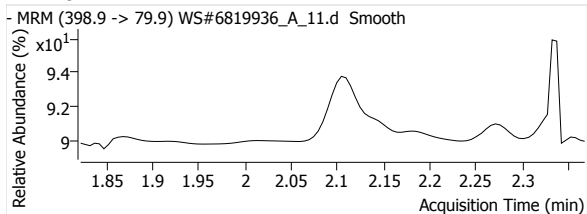


# Quantitative Analysis Report

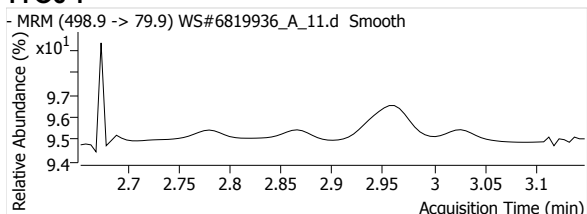
## PFBS 1



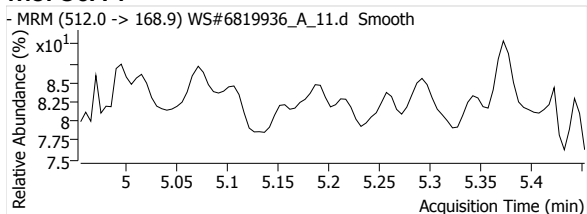
## PFHxS 1



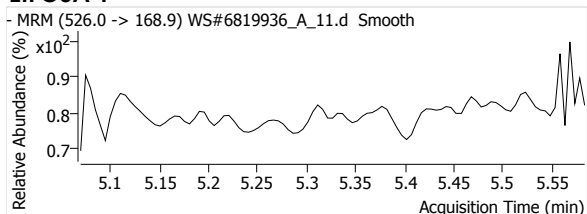
## PFOS 1



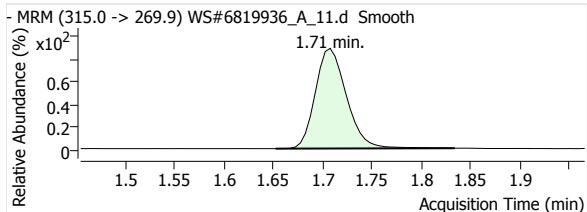
## MeFOSA 1



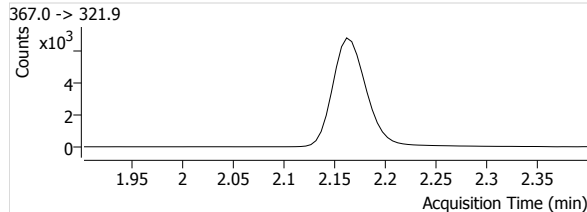
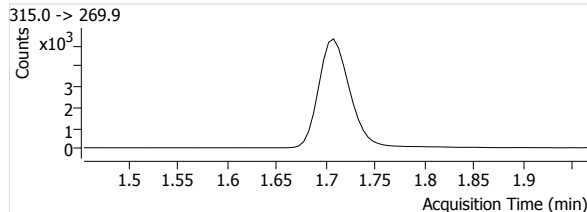
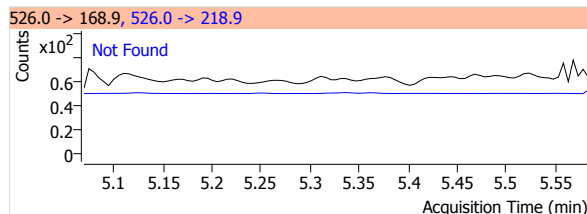
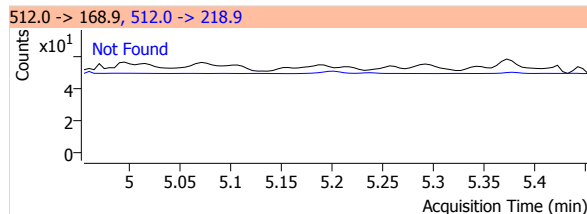
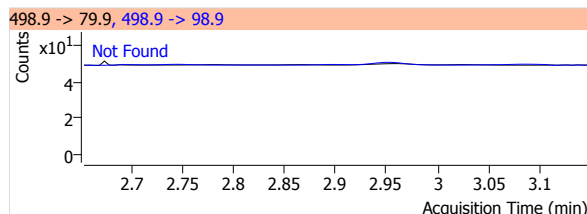
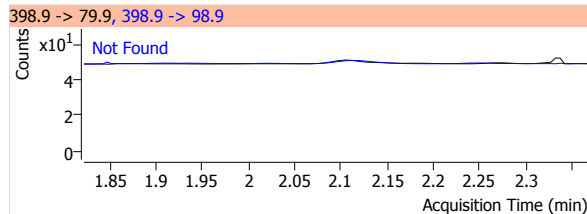
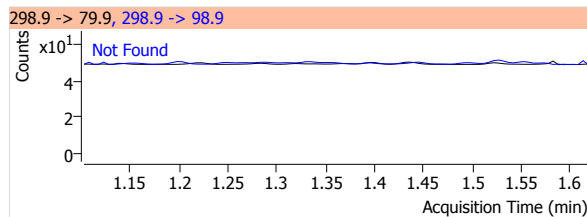
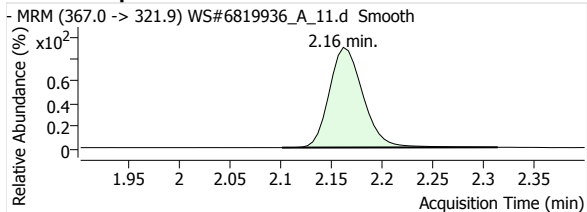
## eFOSA 1



## 13C2-PFHxA

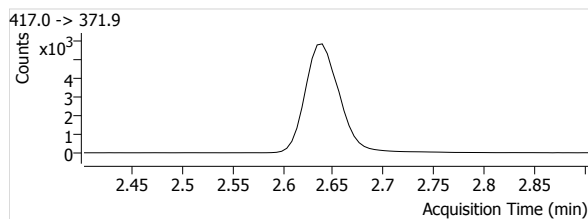
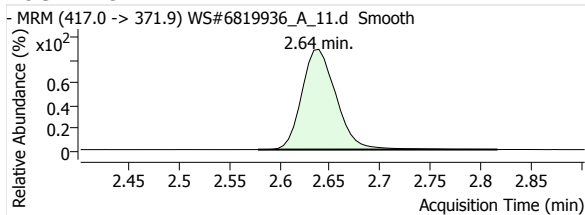


## 13C4-PFHpA

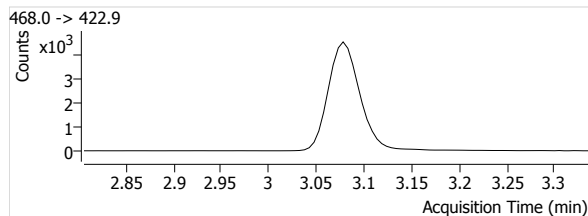
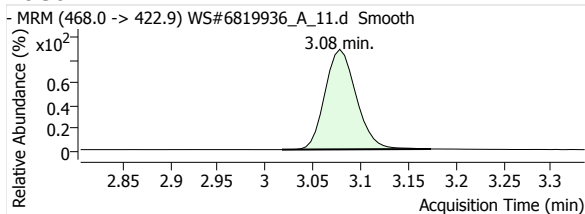


# Quantitative Analysis Report

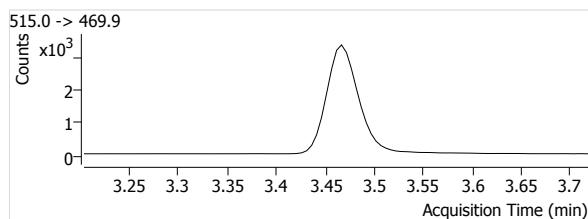
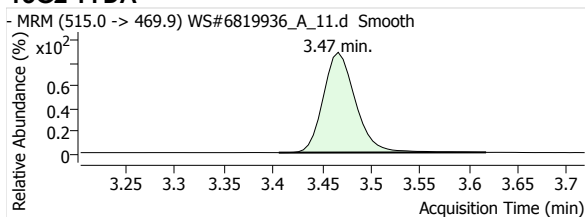
## 13C4-PFOA



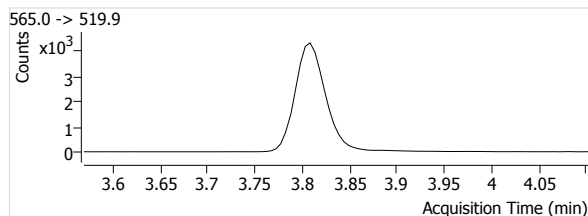
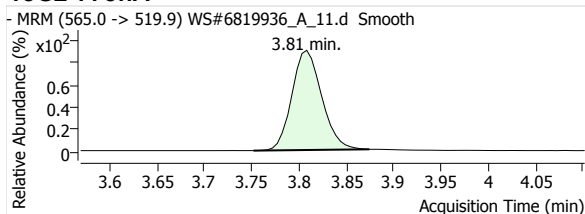
## 13C5-PFNA



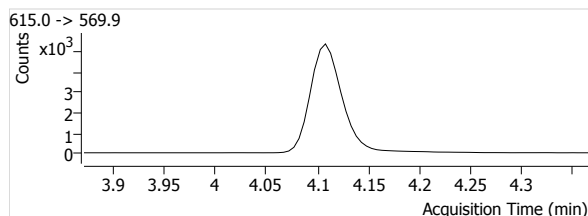
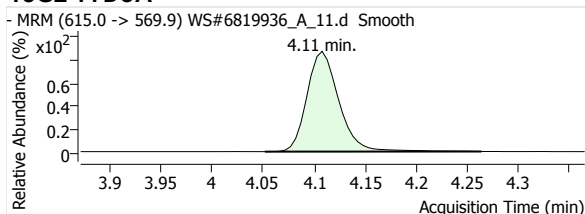
## 13C2-PFDA



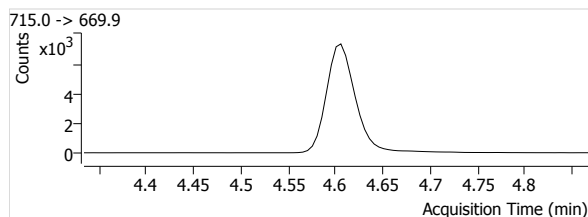
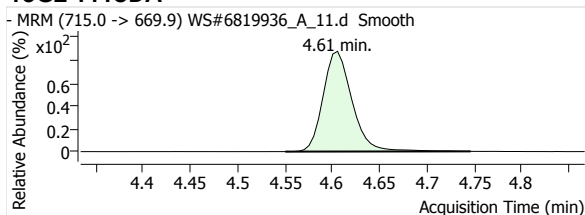
## 13C2-PFUnA



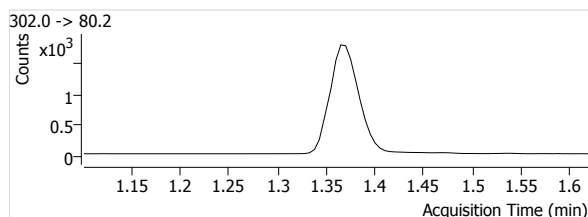
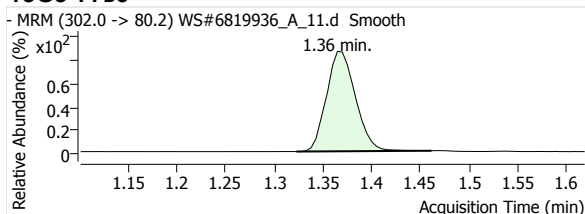
## 13C2-PFDoA



## 13C2-PFTeDA

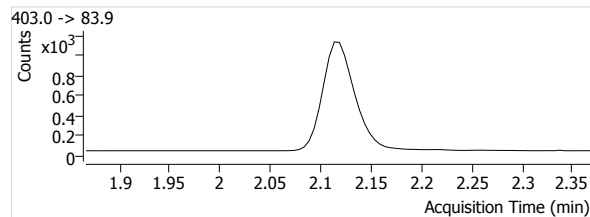
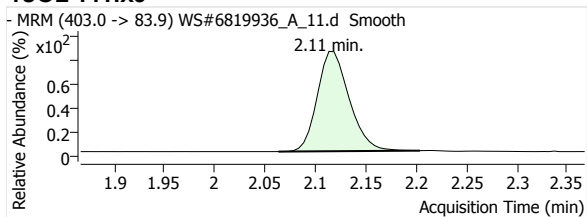


## 13C3-PFBS

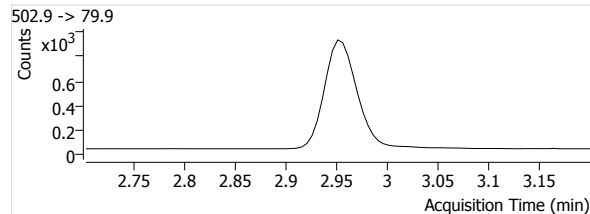
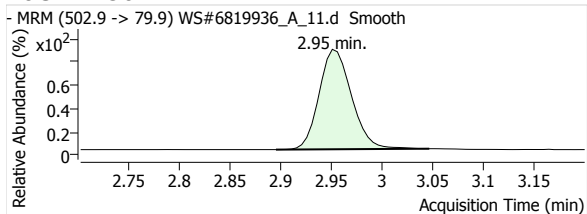


# Quantitative Analysis Report

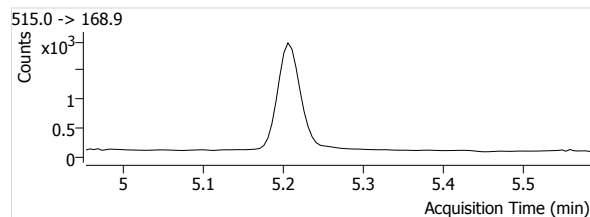
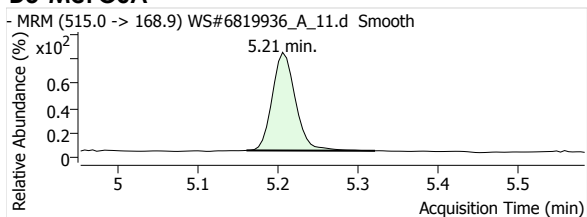
## 18O2-PFHxs



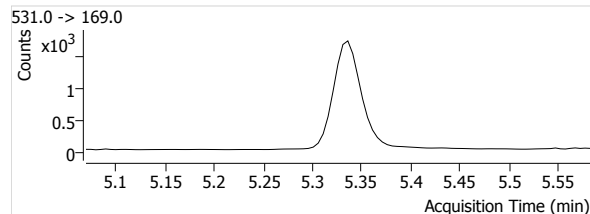
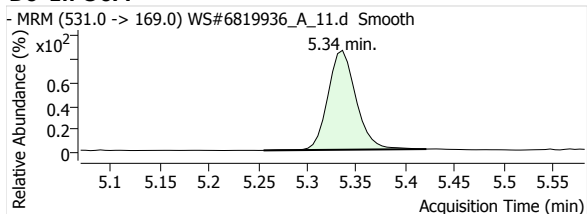
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



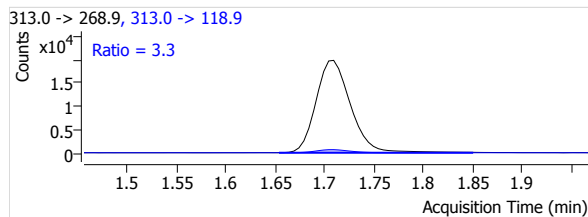
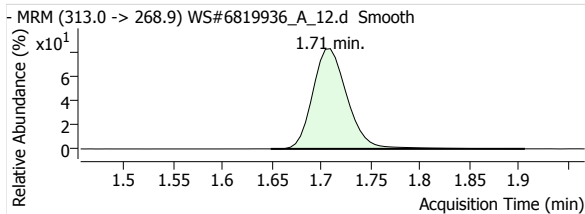
# Quantitative Analysis Report

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bin

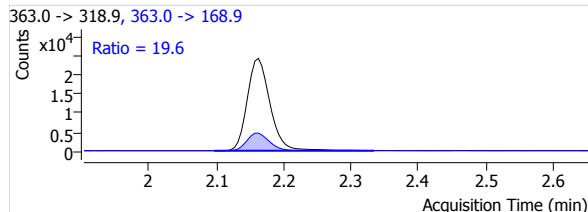
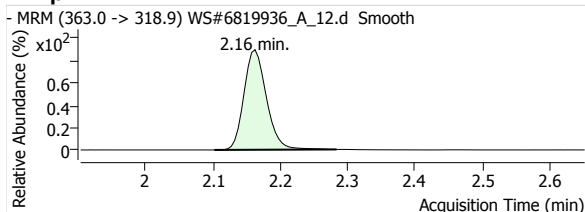
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<b>Type</b>	QC	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-B2
<b>Acq. Date-Time</b>	2020/07/08 12:37:09 PM	<b>Dil.</b>	0.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	0.4775	99.5	48540	1.71	867	4.3944	1626	1.71	268	3.3
PFHpA 1	µg/L	20.000	0.4313	89.9	56507	2.16	414	3.5969	11050	2.16	513	19.6
PFOA 1	µg/L	20.000	0.4674	97.4	52330	2.63	693	3.7211	13269	2.63	1164	25.4
PFNA 1	µg/L	20.000	0.4731	98.6	38150	3.07	782	3.5197	8418	3.07	427	22.1
PFDA 1	µg/L	20.000	0.4849	101.0	39918	3.47	760	5.0832	6754	3.47	529	16.9
PFUnA 1	µg/L	20.000	0.4351	90.7	36172	3.81	343	3.4225	5586	3.80	1071	15.4
PFDoA 1	µg/L	20.000	0.4806	100.1	42979	4.11	435	3.5461	5166	4.10	209	12.0
PFTrDA 1	µg/L	20.000	0.5081	105.9	47351	4.37	593	2.8894	3942	4.37	115	8.3
PFTeDA 1	µg/L	20.000	0.4914	102.4	53574	4.60	862	3.2691	2681	4.60	293	5.0
PFBS 1	µg/L	20.000	0.4825	100.5	12318	1.37	470	3.2822	5366	1.37	458	43.6
PFHxS 1	µg/L	20.000	0.4781	99.6	9187	2.08	361	3.4654	4766	2.10	296	51.9
PFOS 1	µg/L	20.000	0.4566	95.1	6648	2.89	123	3.1209	3558	2.90	212	53.5
MeFOSA 1	µg/L	20.000	0.5618	117.0	6331	5.20	164	1.6874	5227	5.20	461	82.6
EtFOSA 1	µg/L	20.000	0.4962	103.4	6129	5.33	507	1.8053	5506	5.33	1175	89.8
13C2-PFHxA	µg/L	100.000	111.5194	111.5	11046	1.70	499		--	--	--	--
13C4-PFHpA	µg/L	100.000	123.5160	123.5	15710	2.16	955		--	--	--	--
13C4-PFOA	µg/L	100.000	118.7553	118.8	14063	2.63	395		--	--	--	--
13C5-PFNA	µg/L	100.000	116.3982	116.4	10839	3.07	1378		--	--	--	--
13C2-PFDA	µg/L	100.000	109.7554	109.8	7853	3.47	1108		--	--	--	--
13C2-PFUnA	µg/L	100.000	123.6574	123.7	10569	3.81	298		--	--	--	--
13C2-PFDoA	µg/L	100.000	115.7593	115.8	12120	4.11	309		--	--	--	--
13C2-PFTeDA	µg/L	100.000	107.0481	107.0	16388	4.61	1047		--	--	--	--
13C3-PFBS	µg/L	100.000	111.4973	111.5	3753	1.36	247		--	--	--	--
18O2-PFHxS	µg/L	100.000	113.5332	113.5	2651	2.11	527		--	--	--	--
13C4-PFOS	µg/L	100.000	117.6796	117.7	2130	2.95	420		--	--	--	--
D3-MeFOSA	µg/L	100.000	83.2852	83.3	3752	5.21	58		--	--	--	--
D5-EtFOSA	µg/L	100.000	92.5320	92.5	3395	5.33	110		--	--	--	--

## PFHxA 1



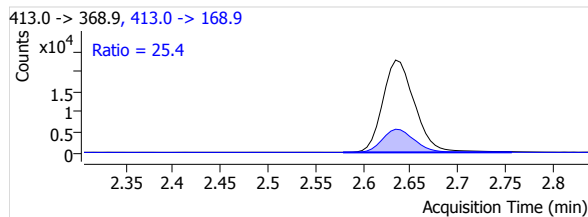
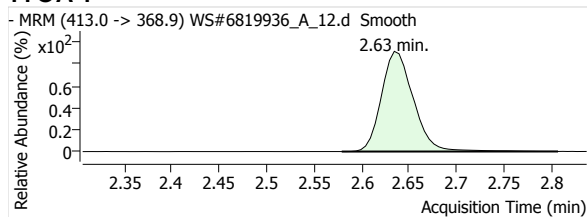
## PFHpA 1



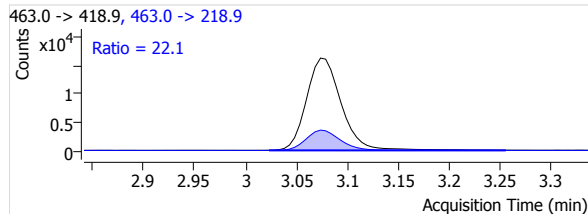
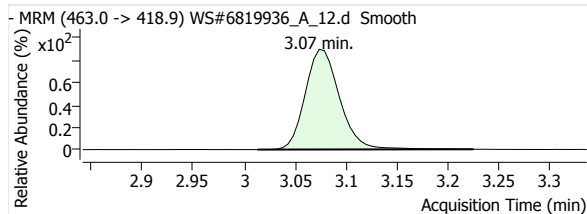


# Quantitative Analysis Report

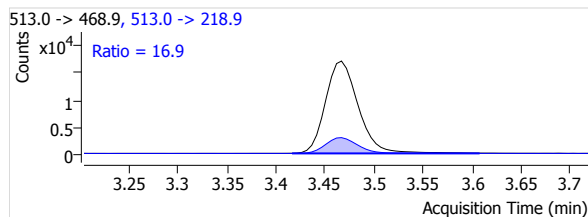
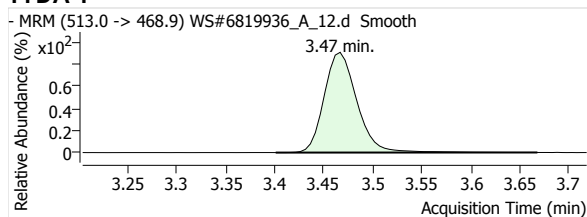
## PFOA 1



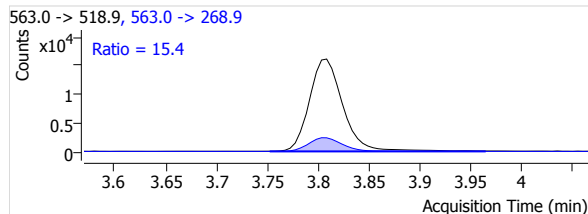
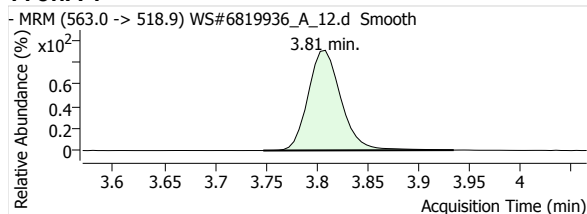
## PFNA 1



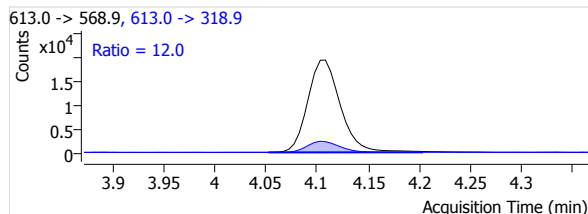
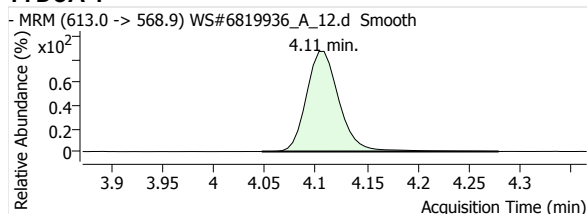
## PFDA 1



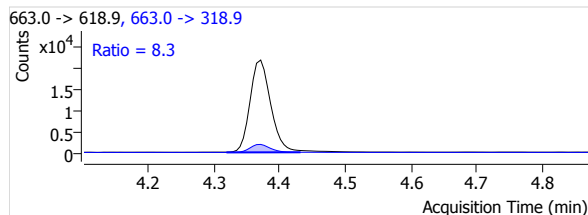
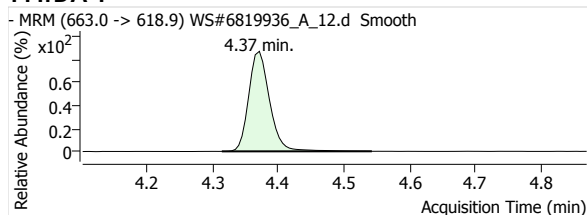
## PFUnA 1



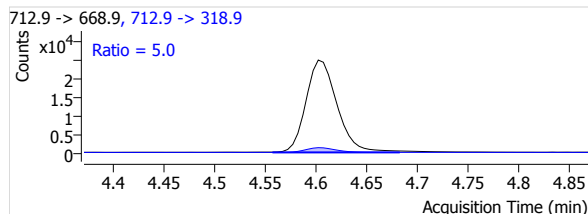
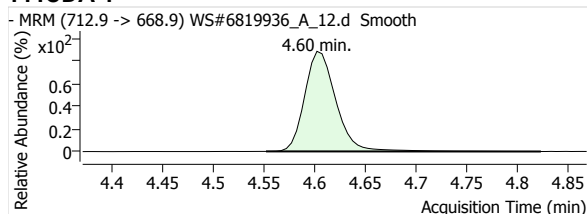
## PFDaA 1



## PFTrDA 1

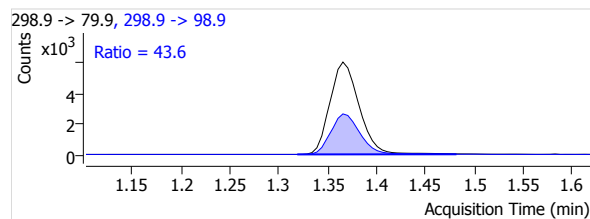
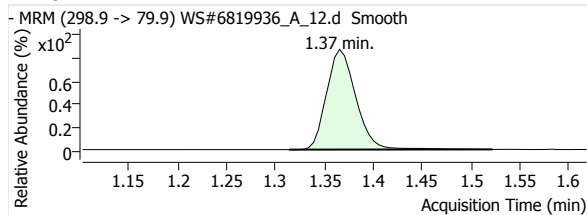


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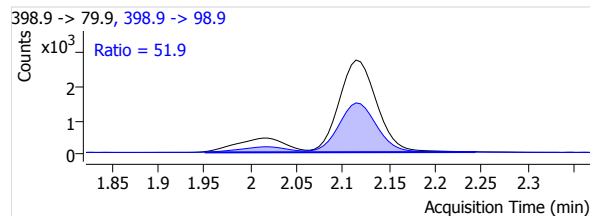
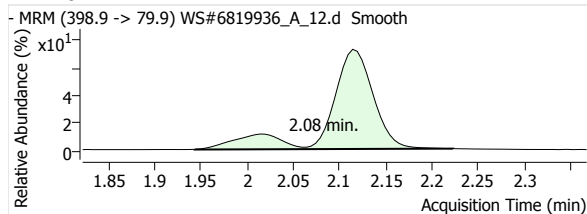


# Quantitative Analysis Report

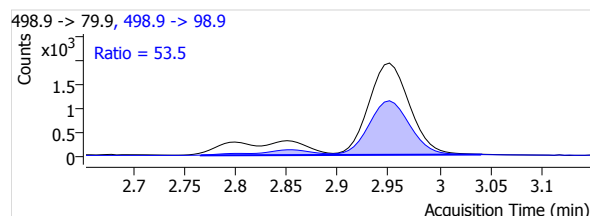
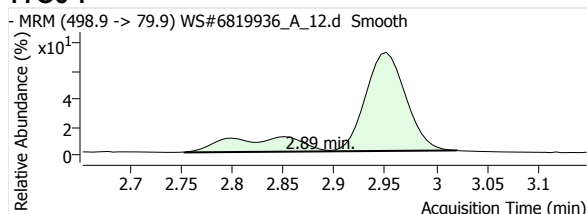
## PFBS 1



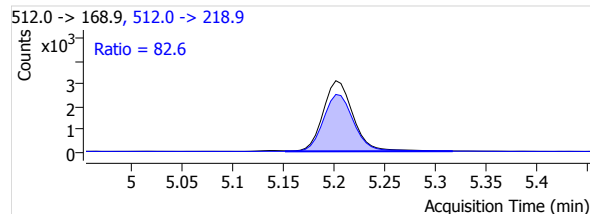
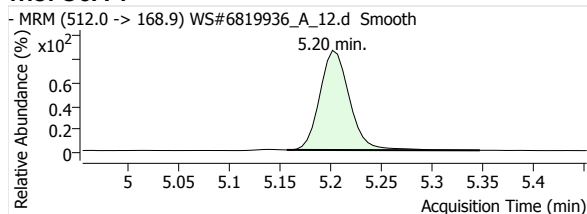
## PFHxS 1



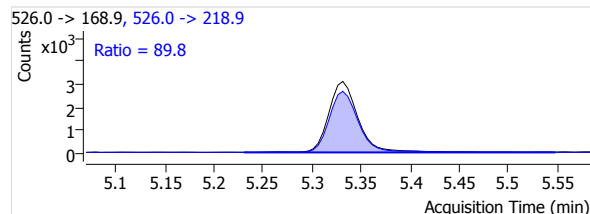
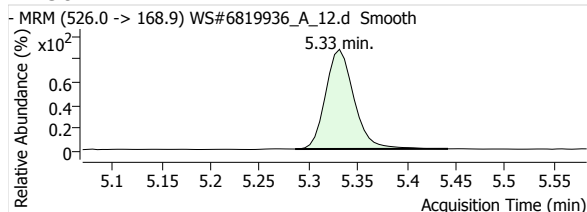
## PFOS 1



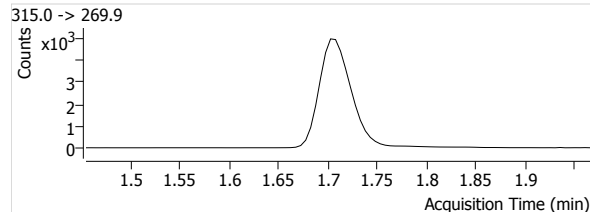
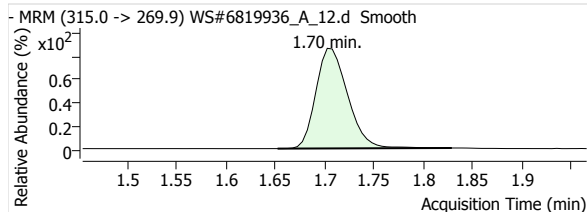
## MeFOSA 1



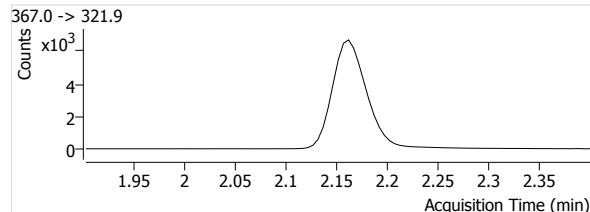
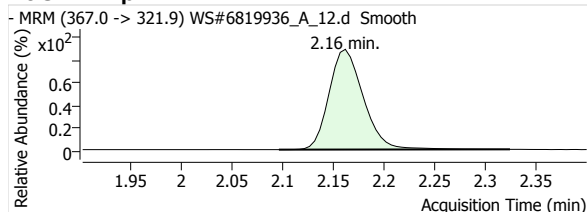
## eFOSA 1



## 13C2-PFHxA

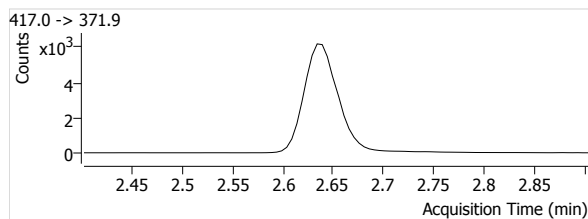
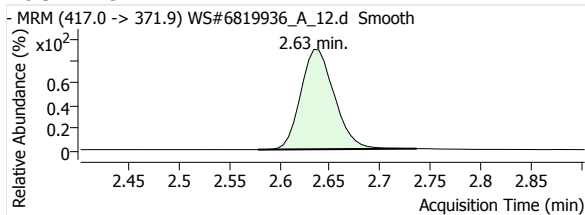


## 13C4-PFHpA

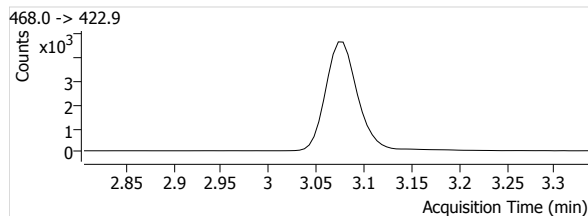
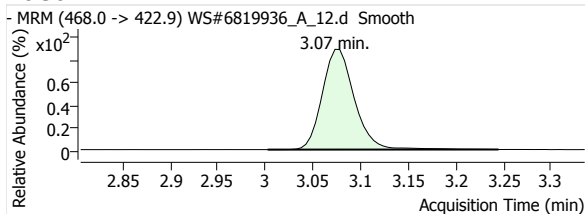


# Quantitative Analysis Report

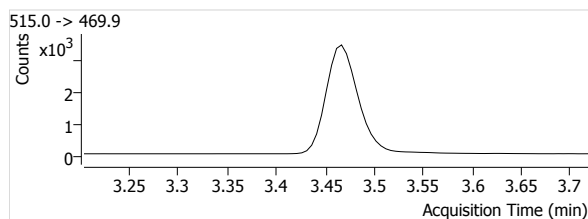
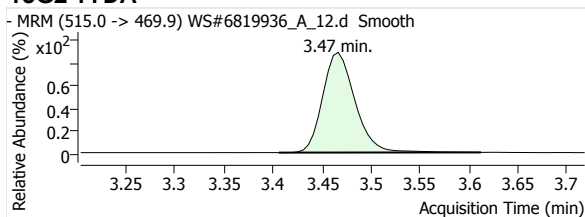
## 13C4-PFOA



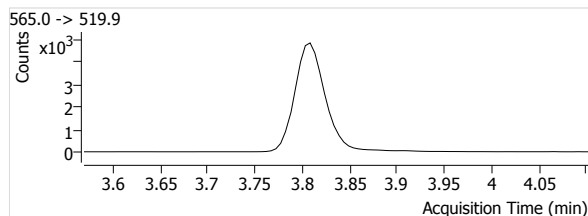
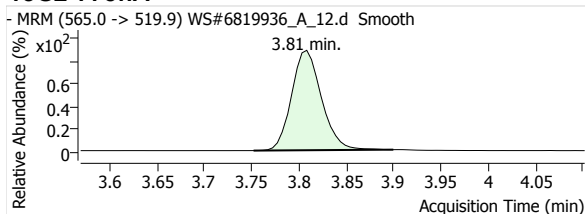
## 13C5-PFNA



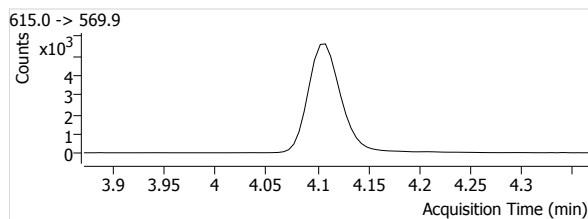
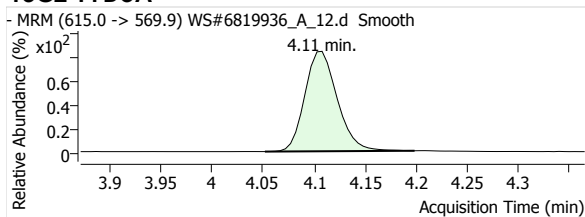
## 13C2-PFDA



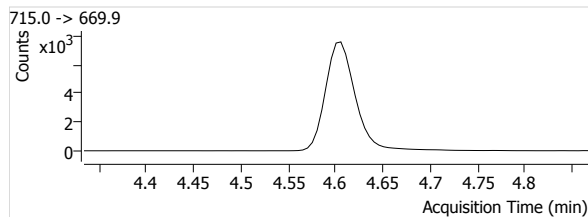
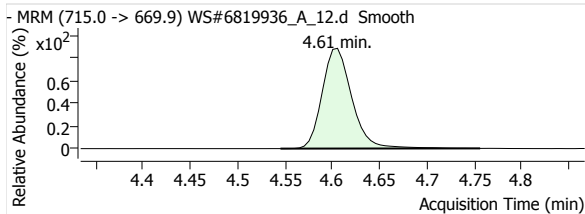
## 13C2-PFUnA



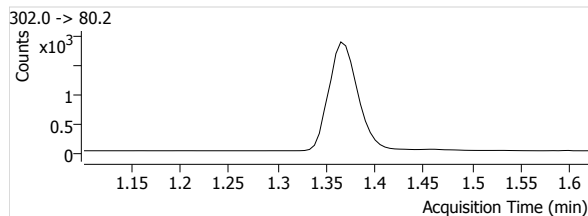
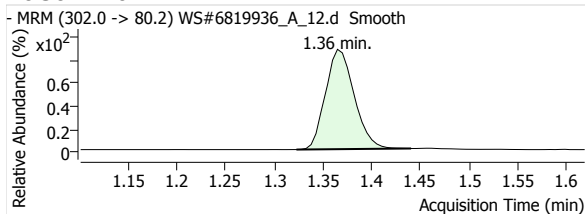
## 13C2-PFDoA



## 13C2-PFTeDA

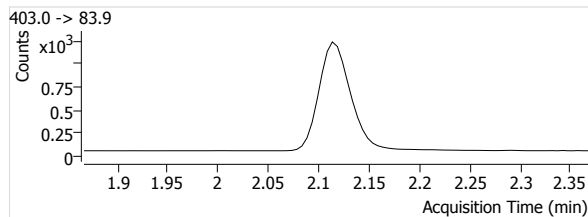
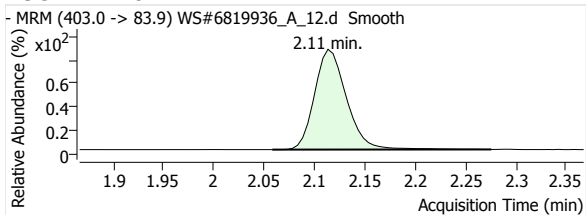


## 13C3-PFBS

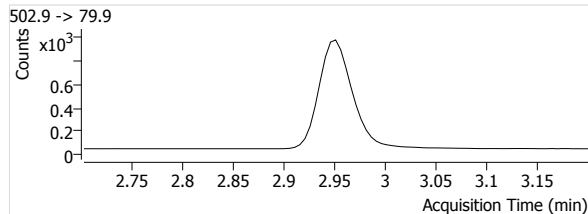
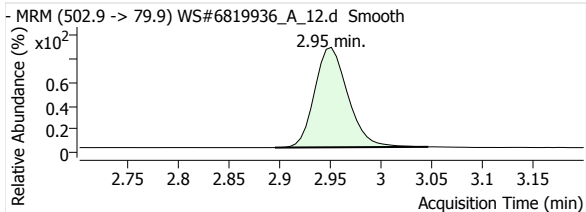


# Quantitative Analysis Report

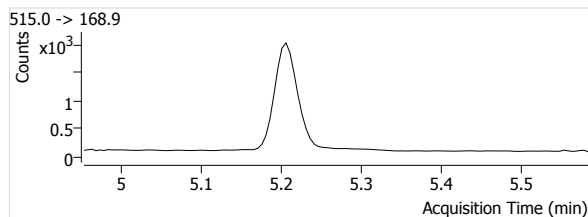
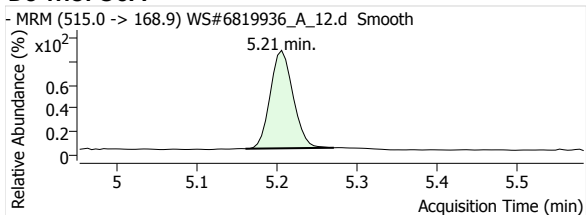
## 18O2-PFHxs



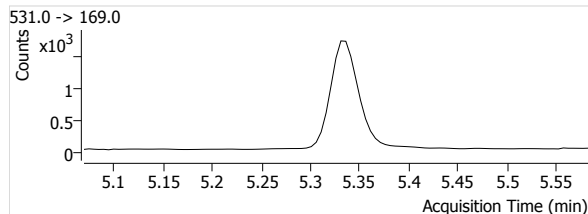
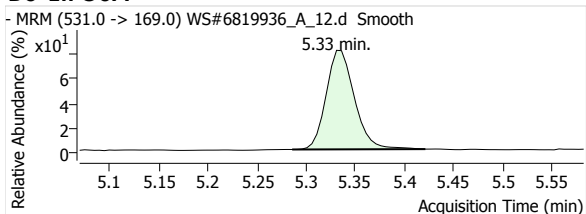
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

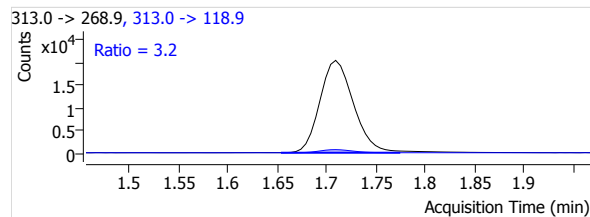
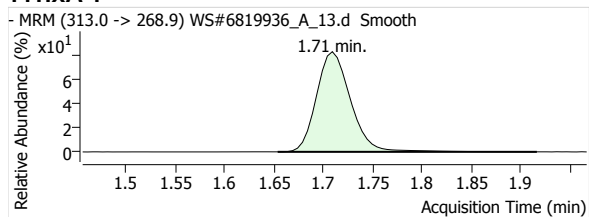
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bin

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**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 12:44:04 PM  
**Comment** NAH702-01  
**User Defined** MI PFOA

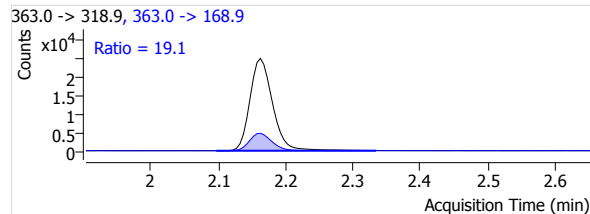
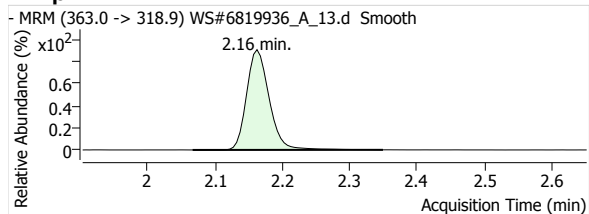
**Data File** WS#6819936\_A\_13.d  
**Instrument** LCMS04  
**Position** P2-B3  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	0.4705	98.0	49421	1.71	653	4.3291	1597	1.71	195	3.2
PFHpA 1	µg/L	20.000	0.4431	92.3	57805	2.16	987	3.6957	11059	2.16	705	19.1
PFOA 1	µg/L	20.000	0.4867	101.4	54355	2.64	543	3.8764	13547	2.64	465	24.9
PFNA 1	µg/L	20.000	0.4866	101.4	38690	3.08	475	3.6210	8394	3.08	436	21.7
PFDA 1	µg/L	20.000	0.4915	102.4	40035	3.47	676	5.1525	6912	3.47	818	17.3
PFUnA 1	µg/L	20.000	0.4685	97.6	36362	3.80	327	3.6871	5550	3.80	642	15.3
PFDoA 1	µg/L	20.000	0.4707	98.1	41454	4.11	692	3.4724	5113	4.11	412	12.3
PFTeDA 1	µg/L	20.000	0.5151	107.3	46330	4.37	462	2.9291	3804	4.37	179	8.2
PFTeDA 1	µg/L	20.000	0.4809	100.2	50591	4.61	870	3.1985	2675	4.60	454	5.3
PFBS 1	µg/L	20.000	0.4952	103.2	12260	1.37	543	3.3691	5241	1.37	250	42.7
PFHxS 1	µg/L	20.000	0.5227	108.9	9441	2.08	362	3.7901	4918	2.10	333	52.1
PFOS 1	µg/L	20.000	0.5272	109.8	7090	2.89	91	3.6065	3791	2.90	202	53.5
MeFOSA 1	µg/L	20.000	0.5768	120.2	6470	5.21	605	1.7327	5462	5.21	196	84.4
EtFOSA 1	µg/L	20.000	0.5383	112.2	6299	5.33	397	1.9599	5346	5.33	525	84.9
13C2-PFHxA	µg/L	100.000	115.2549	115.3	11416	1.71	1020		--	--	--	--
13C4-PFHpA	µg/L	100.000	122.9735	123.0	15641	2.16	885		--	--	--	--
13C4-PFOA	µg/L	100.000	118.4091	118.4	14022	2.64	855		--	--	--	--
13C5-PFNA	µg/L	100.000	114.7444	114.7	10685	3.08	654		--	--	--	--
13C2-PFDA	µg/L	100.000	108.5954	108.6	7770	3.47	531		--	--	--	--
13C2-PFUnA	µg/L	100.000	115.3855	115.4	9862	3.81	198		--	--	--	--
13C2-PFDoA	µg/L	100.000	114.0210	114.0	11938	4.11	556		--	--	--	--
13C2-PFTeDA	µg/L	100.000	103.3183	103.3	15817	4.61	1729		--	--	--	--
13C3-PFBS	µg/L	100.000	108.1105	108.1	3639	1.36	237		--	--	--	--
18O2-PFHxS	µg/L	100.000	106.6809	106.7	2491	2.11	172		--	--	--	--
13C4-PFOS	µg/L	100.000	108.6188	108.6	1966	2.95	223		--	--	--	--
D3-MeFOSA	µg/L	100.000	82.8857	82.9	3734	5.21	53		--	--	--	--
D5-EtFOSA	µg/L	100.000	87.5988	87.6	3214	5.34	64		--	--	--	--

### PFHxA 1

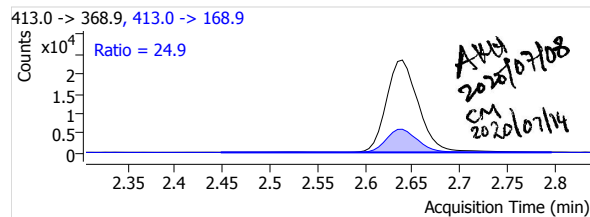
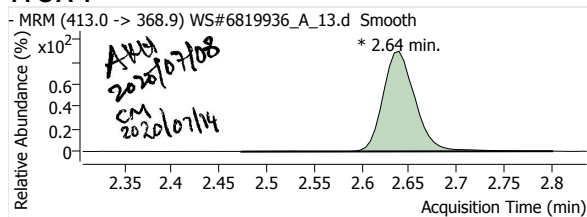


### PFHpA 1

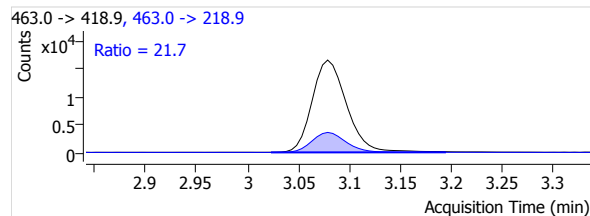
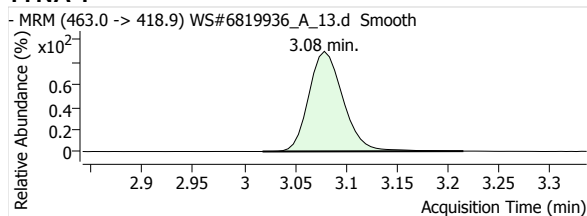


# Quantitative Analysis Report

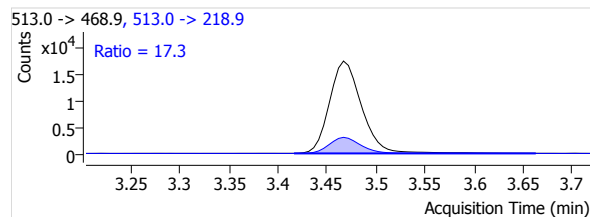
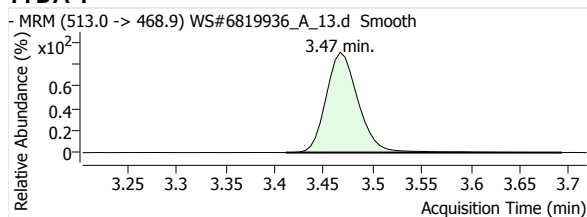
## PFOA 1



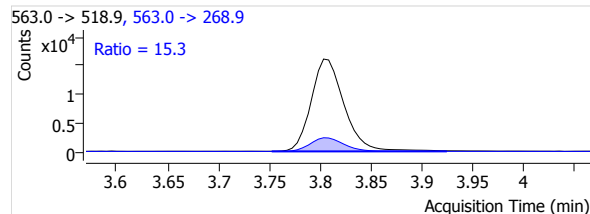
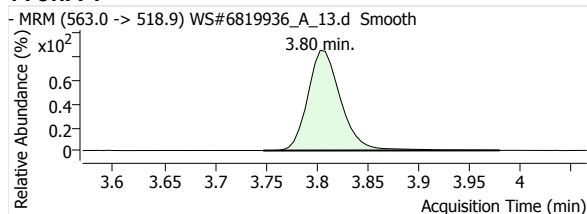
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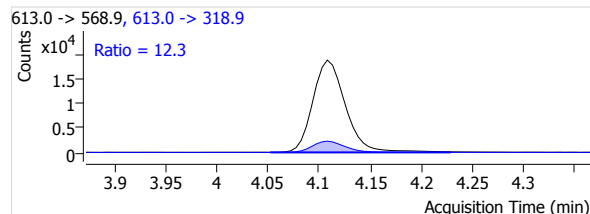
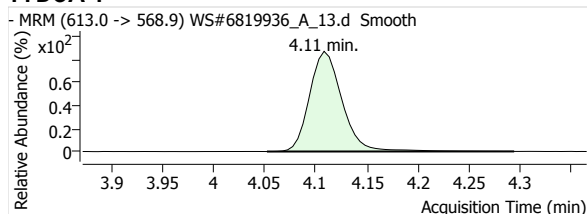
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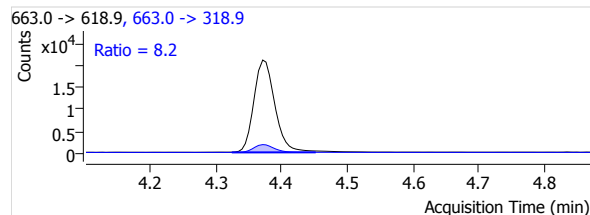
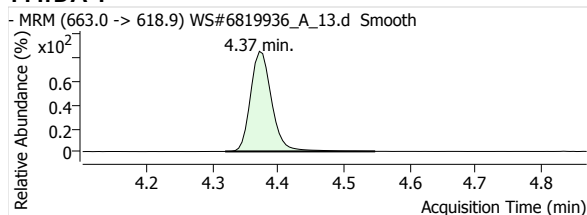
## PFUnA 1



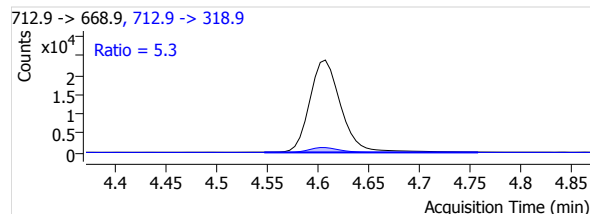
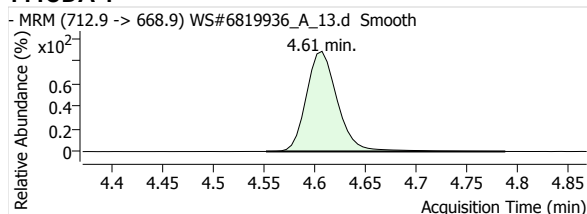
## PFDaA 1



## PFTrDA 1

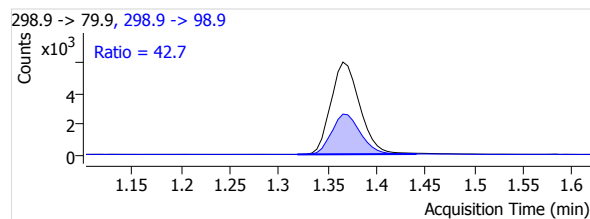
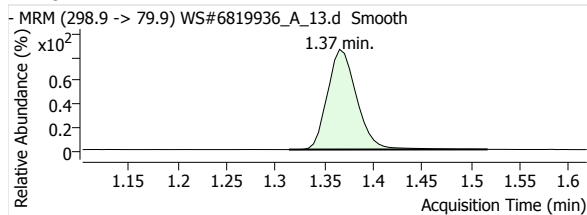


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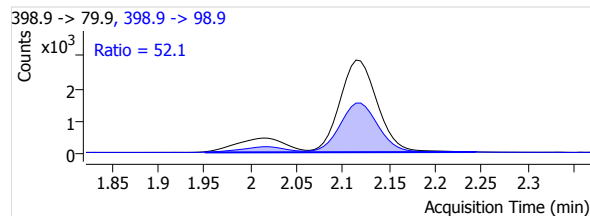
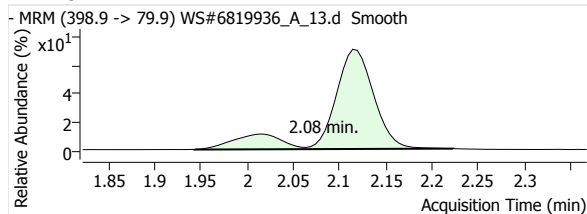


# Quantitative Analysis Report

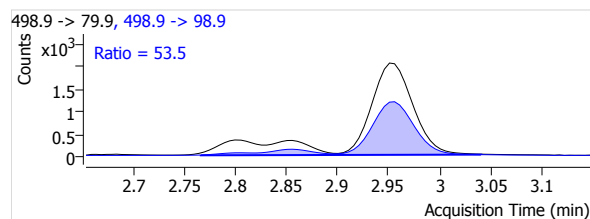
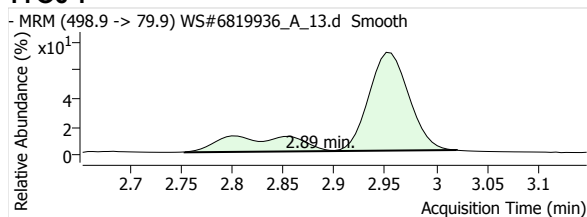
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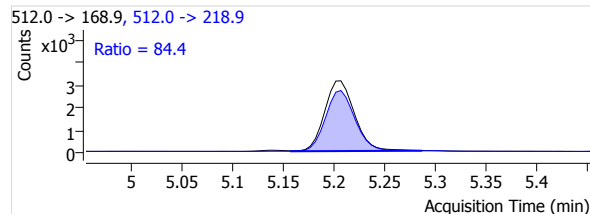
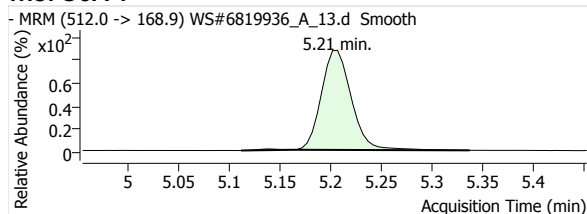
## PFHxS 1



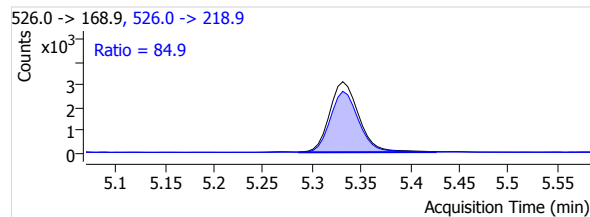
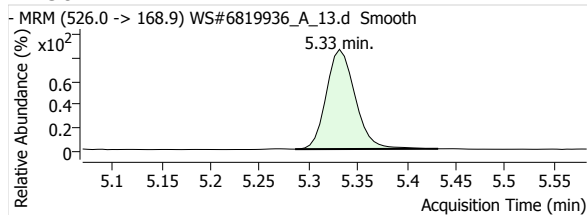
## PFOS 1



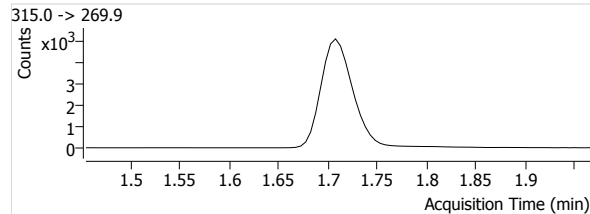
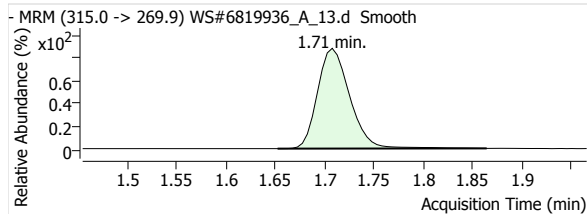
## MeFOSA 1



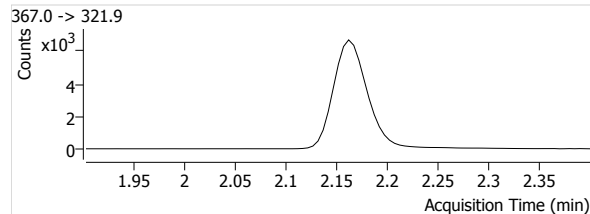
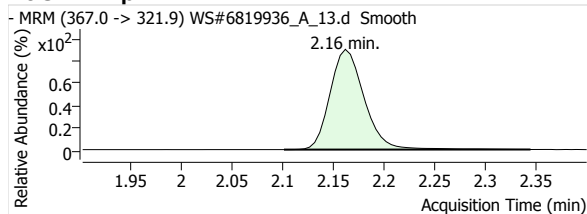
## eFOSA 1



## 13C2-PFHxA

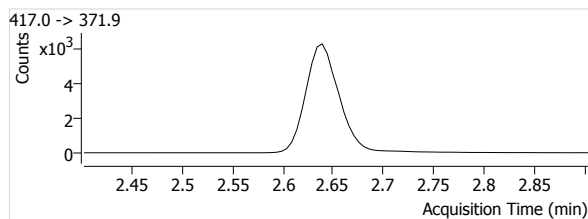
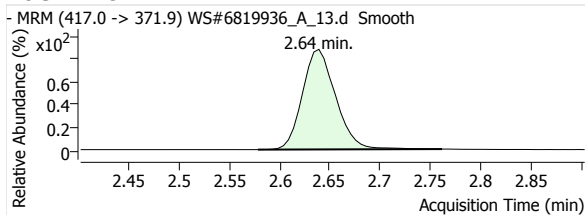


## 13C4-PFHpA

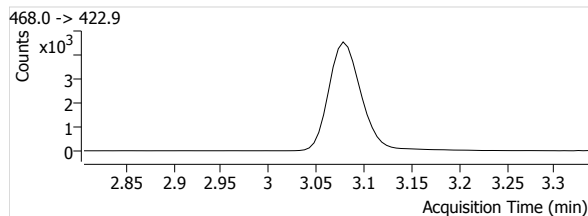
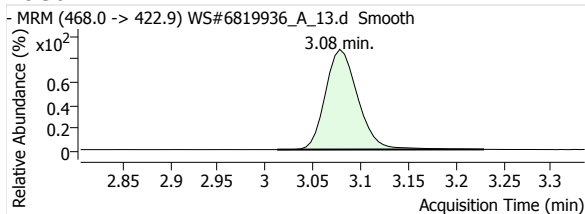


# Quantitative Analysis Report

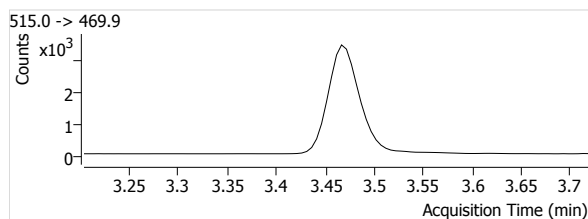
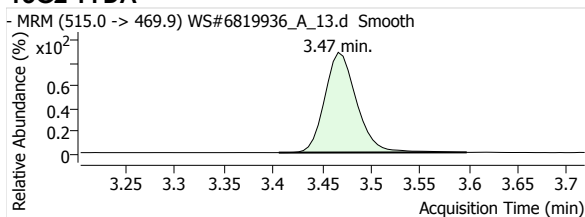
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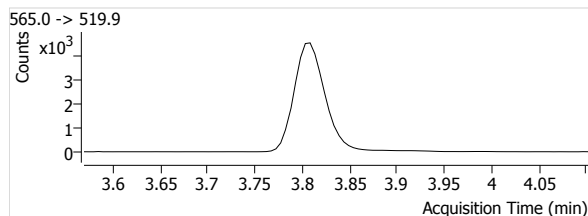
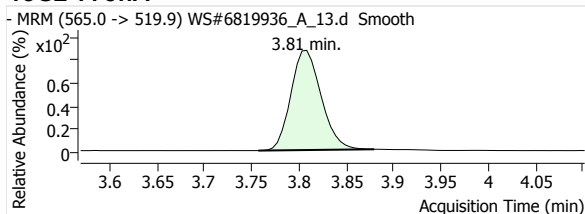
## 13C5-PFNA



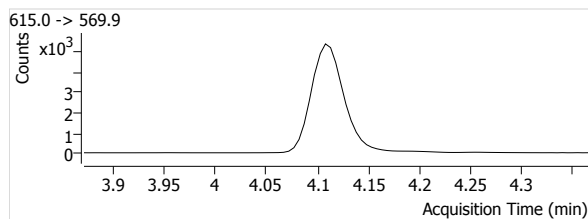
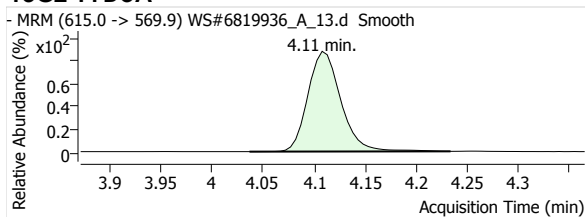
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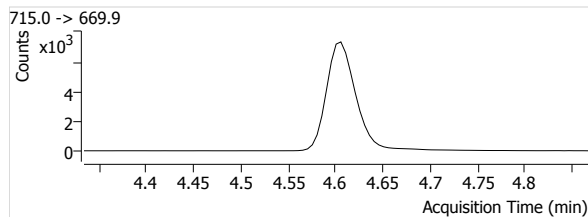
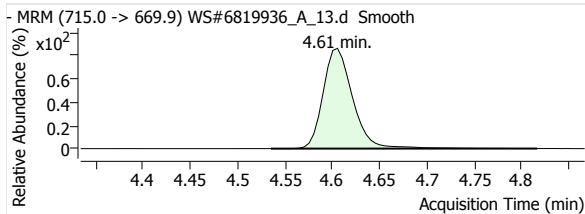
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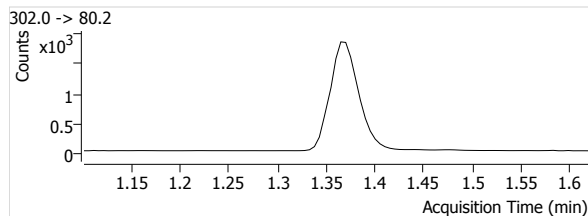
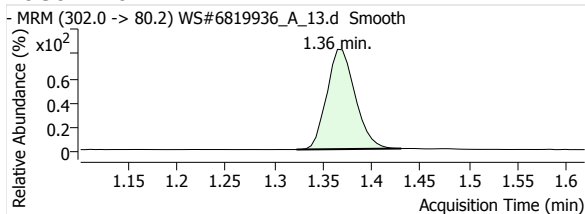
## 13C2-PFDoA



## 13C2-PFTeDA



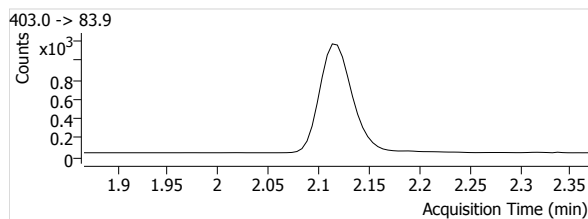
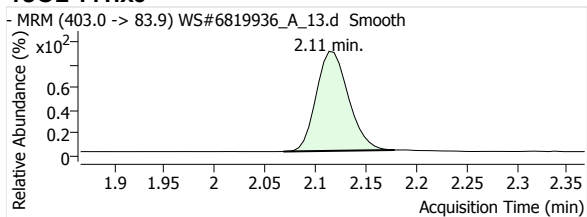
## 13C3-PFBS



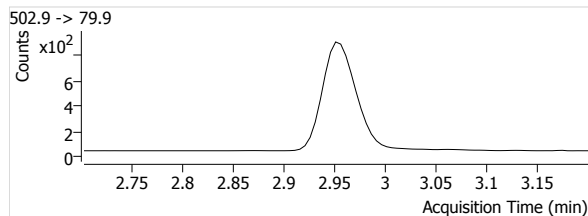
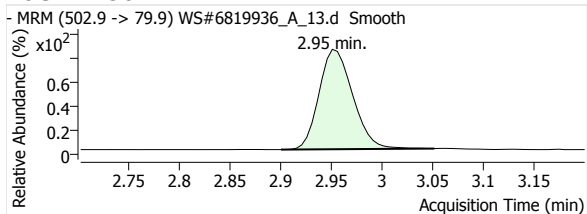


# Quantitative Analysis Report

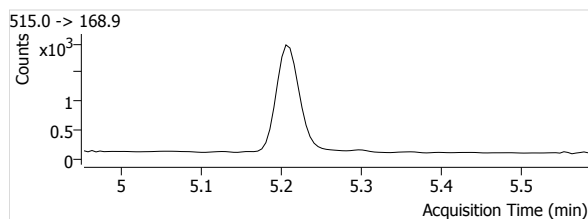
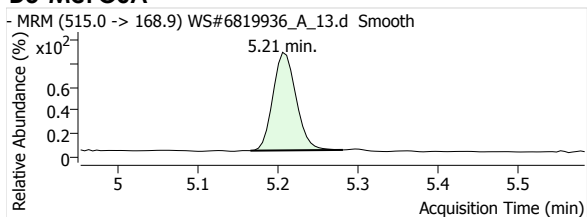
## 18O2-PFHxs



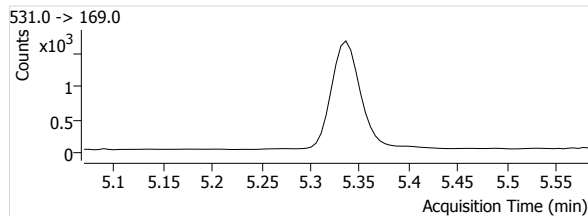
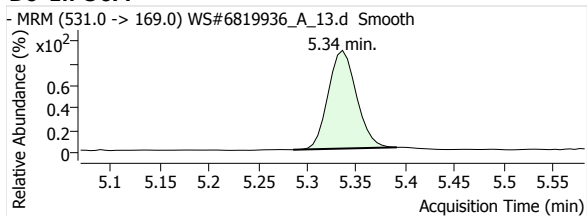
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

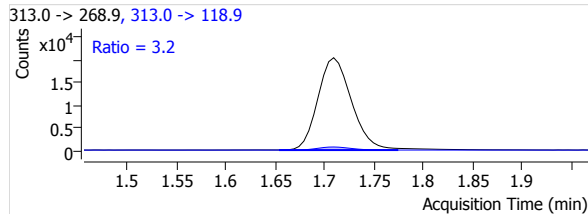
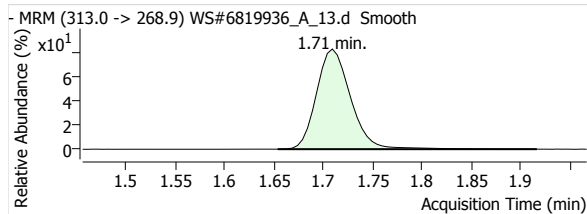
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**Sample Name** 6819936:MTRX SPK  
**Type** QC  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 12:44:04 PM  
**Comment** NAH702-01  
**User Defined** MI PFOA

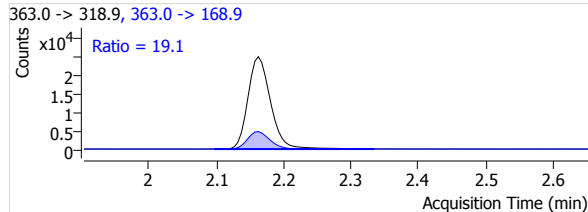
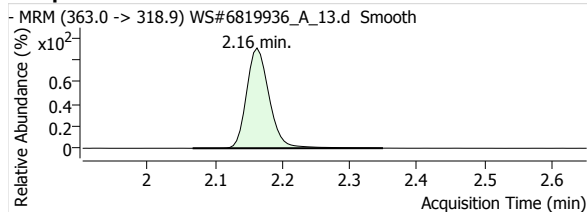
**Data File** WS#6819936\_A\_13.d  
**Instrument** LCMS04  
**Position** P2-B3  
**Dil.** 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	0.4705	98.0	49421	1.71	653	4.3291	1597	1.71	195	3.2
PFHpA 1	µg/L	20.000	0.4431	92.3	57805	2.16	987	3.6957	11059	2.16	705	19.1
PFOA 1	µg/L	20.000	0.4833	100.7	53972	2.64	530	3.8491	13552	2.64	471	25.1
PFNA 1	µg/L	20.000	0.4866	101.4	38690	3.08	475	3.6210	8394	3.08	436	21.7
PFDA 1	µg/L	20.000	0.4915	102.4	40035	3.47	676	5.1525	6912	3.47	818	17.3
PFUnA 1	µg/L	20.000	0.4685	97.6	36362	3.80	327	3.6871	5550	3.80	642	15.3
PFDoA 1	µg/L	20.000	0.4707	98.1	41454	4.11	692	3.4724	5113	4.11	412	12.3
PFTTrDA 1	µg/L	20.000	0.5151	107.3	46330	4.37	462	2.9291	3804	4.37	179	8.2
PFTeDA 1	µg/L	20.000	0.4809	100.2	50591	4.61	870	3.1985	2675	4.60	454	5.3
PFBS 1	µg/L	20.000	0.4952	103.2	12260	1.37	543	3.3691	5241	1.37	250	42.7
PFHxS 1	µg/L	20.000	0.5227	108.9	9441	2.08	362	3.7901	4918	2.10	333	52.1
PFOS 1	µg/L	20.000	0.5272	109.8	7090	2.89	91	3.6065	3791	2.90	202	53.5
MeFOSA 1	µg/L	20.000	0.5768	120.2	6470	5.21	605	1.7327	5462	5.21	196	84.4
EtFOSA 1	µg/L	20.000	0.5383	112.2	6299	5.33	397	1.9599	5346	5.33	525	84.9
13C2-PFHxA	µg/L	100.000	115.2549	115.3	11416	1.71	1020		--	--	--	--
13C4-PFHpA	µg/L	100.000	122.9735	123.0	15641	2.16	885		--	--	--	--
13C4-PFOA	µg/L	100.000	118.4091	118.4	14022	2.64	855		--	--	--	--
13C5-PFNA	µg/L	100.000	114.7444	114.7	10685	3.08	654		--	--	--	--
13C2-PFDA	µg/L	100.000	108.5954	108.6	7770	3.47	531		--	--	--	--
13C2-PFUnA	µg/L	100.000	115.3855	115.4	9862	3.81	198		--	--	--	--
13C2-PFDoA	µg/L	100.000	114.0210	114.0	11938	4.11	556		--	--	--	--
13C2-PFTeDA	µg/L	100.000	103.3183	103.3	15817	4.61	1729		--	--	--	--
13C3-PFBS	µg/L	100.000	108.1105	108.1	3639	1.36	237		--	--	--	--
18O2-PFHxS	µg/L	100.000	106.6809	106.7	2491	2.11	172		--	--	--	--
13C4-PFOS	µg/L	100.000	108.6188	108.6	1966	2.95	223		--	--	--	--
D3-MeFOSA	µg/L	100.000	82.8857	82.9	3734	5.21	53		--	--	--	--
D5-EtFOSA	µg/L	100.000	87.5988	87.6	3214	5.34	64		--	--	--	--

### PFHxA 1

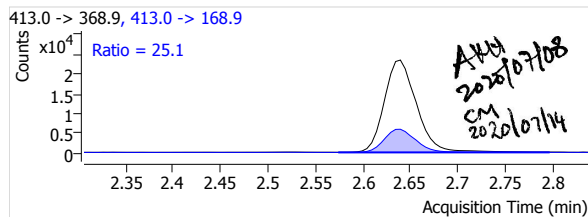
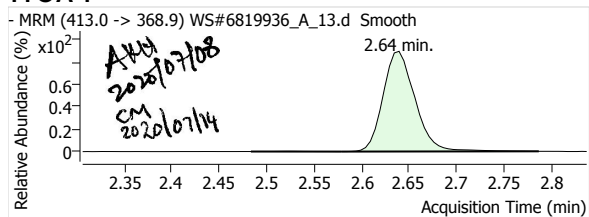


### PFHpA 1

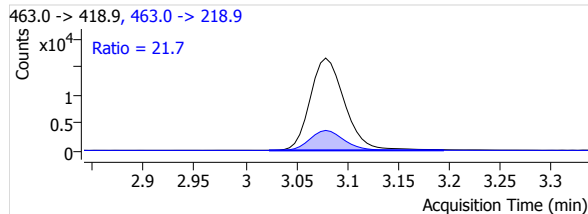
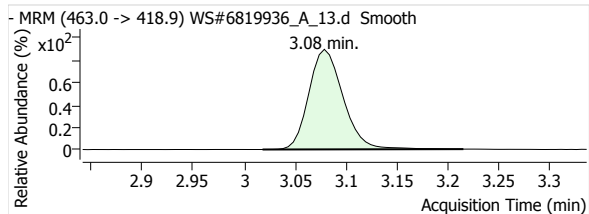


# Quantitative Analysis Report

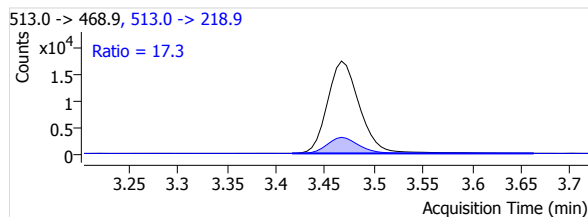
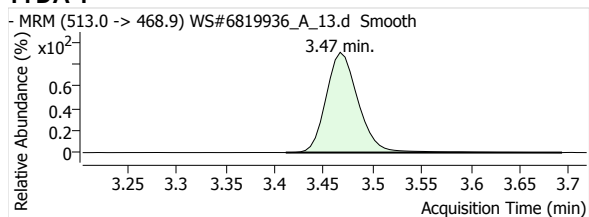
## PFOA 1



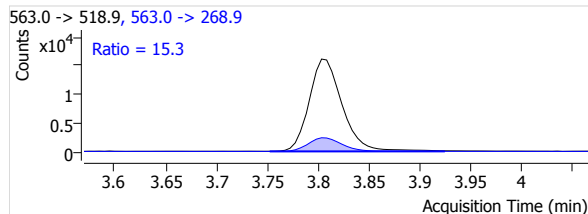
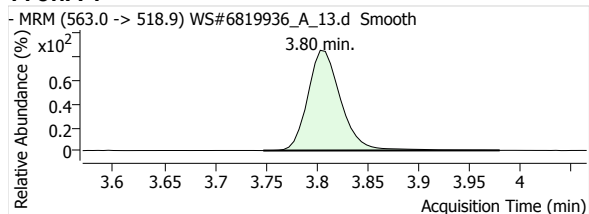
## PFNA 1



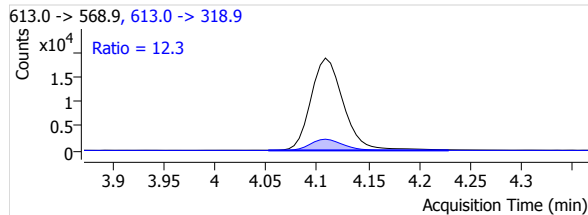
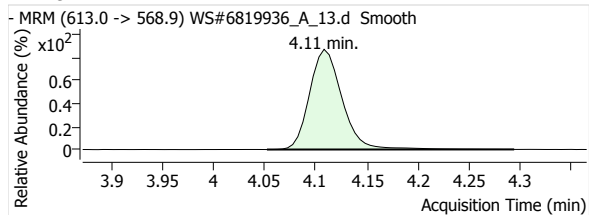
## PFDA 1



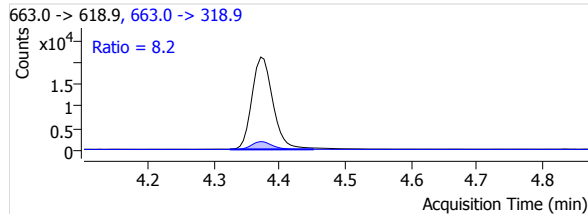
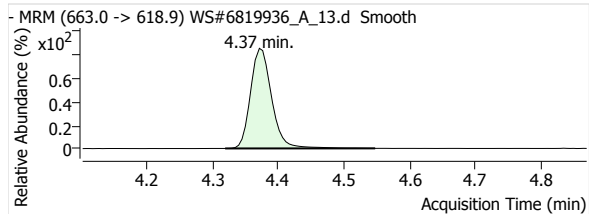
## PFUnA 1



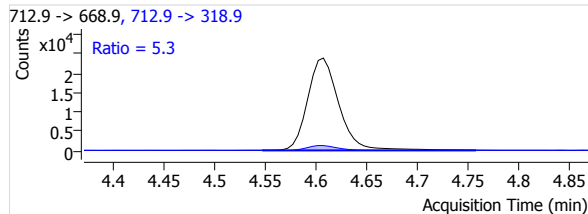
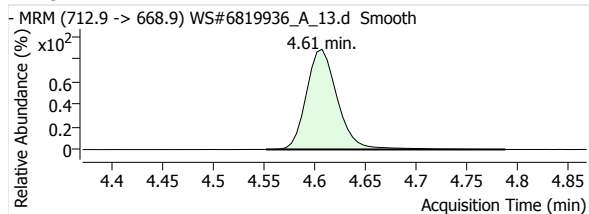
## PFDaA 1



## PFTrDA 1

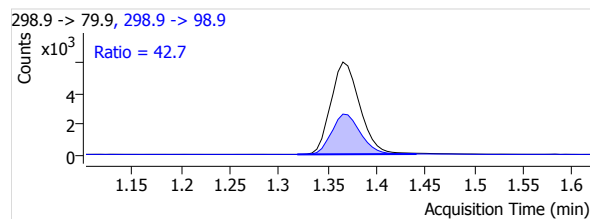
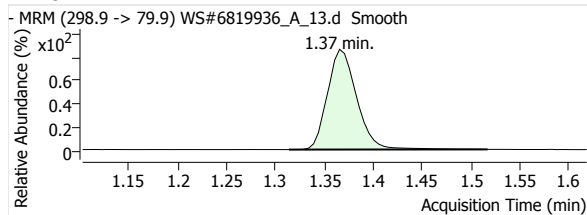


## PFTeDA 1

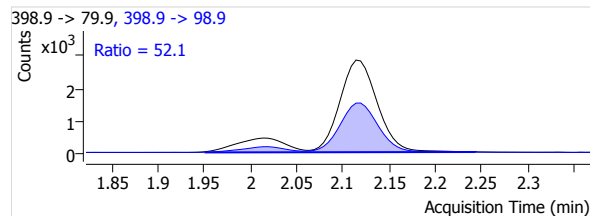
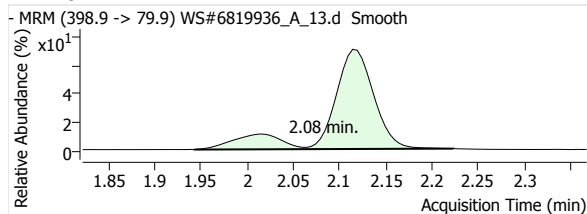


# Quantitative Analysis Report

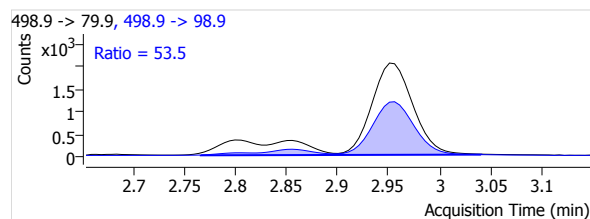
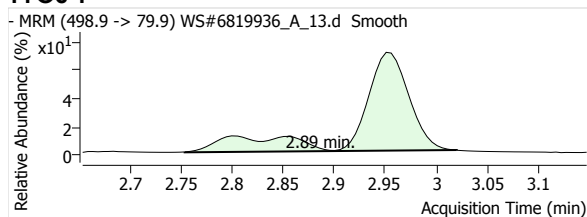
## PFBS 1



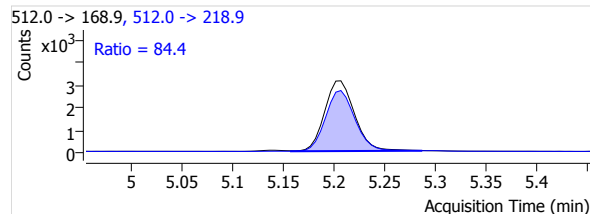
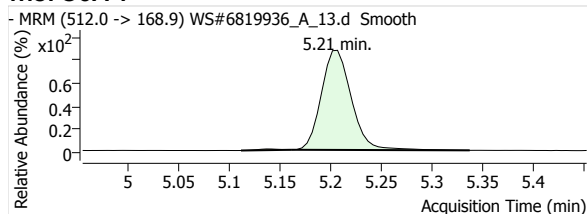
## PFHxS 1



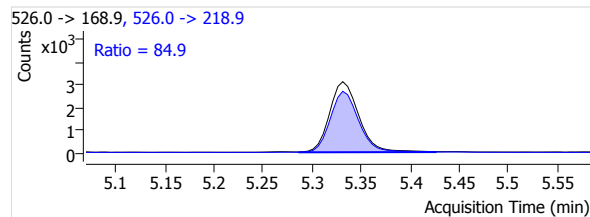
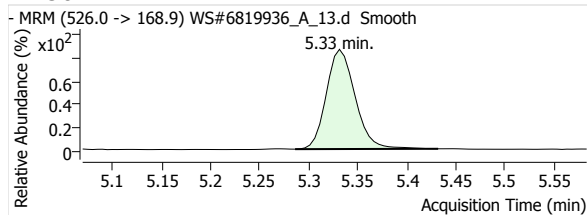
## PFOS 1



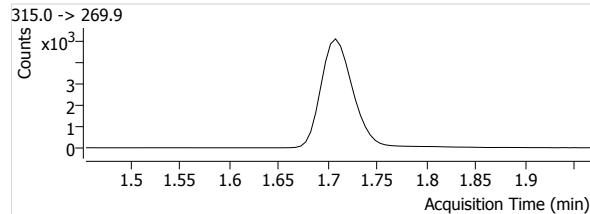
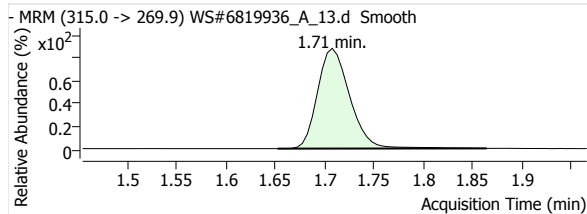
## MeFOSA 1



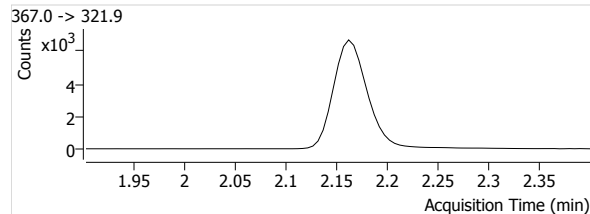
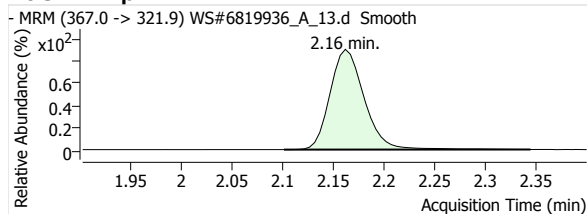
## eFOSA 1



## 13C2-PFHxA

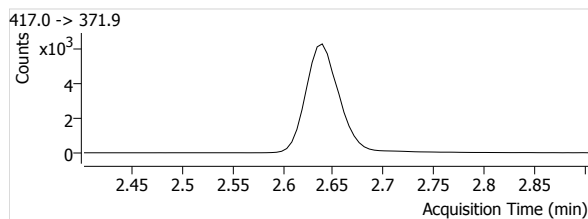
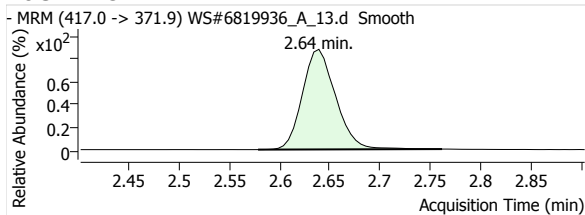


## 13C4-PFHpA

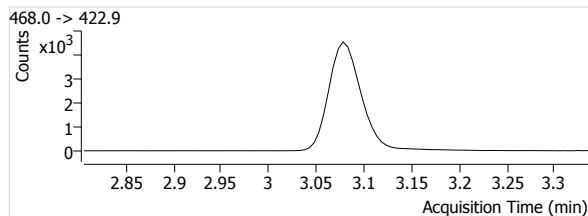
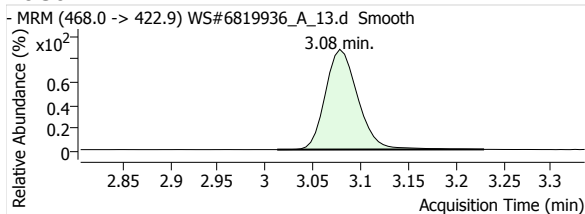


# Quantitative Analysis Report

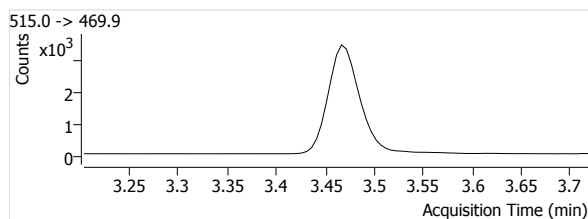
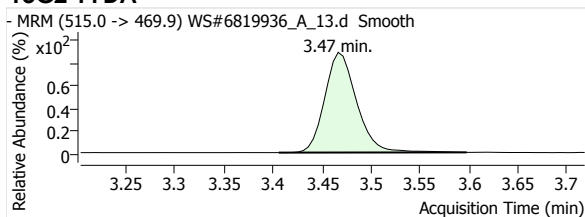
## 13C4-PFOA



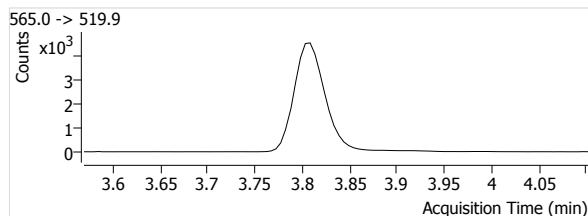
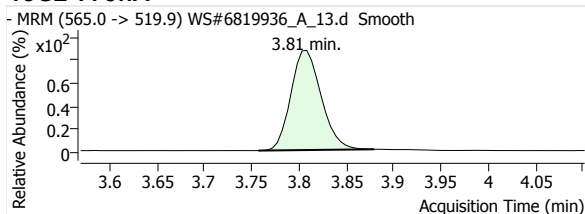
## 13C5-PFNA



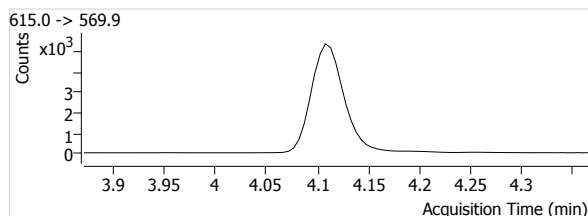
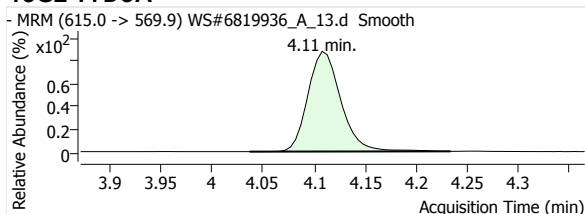
## 13C2-PFDA



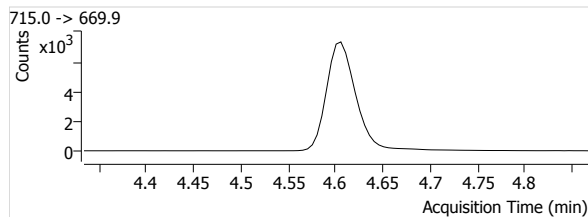
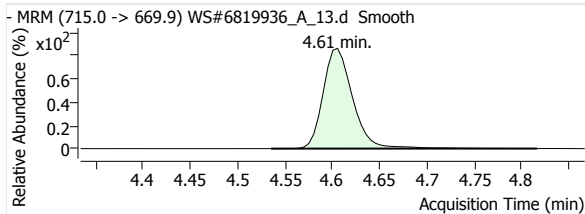
## 13C2-PFUnA



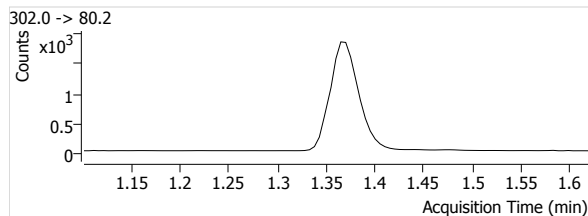
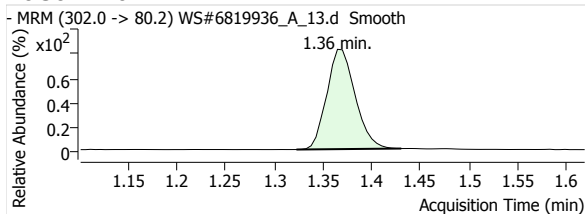
## 13C2-PFDoA



## 13C2-PFTeDA

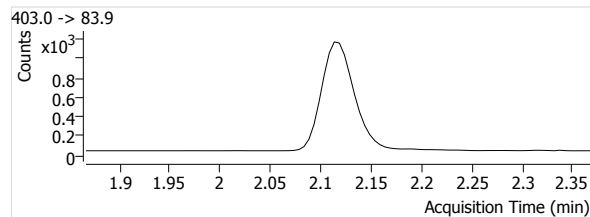
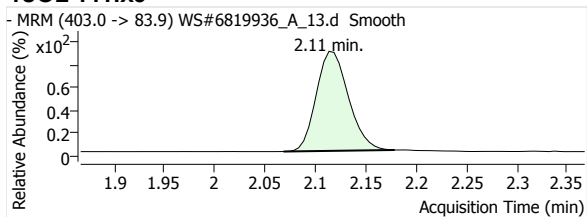


## 13C3-PFBS

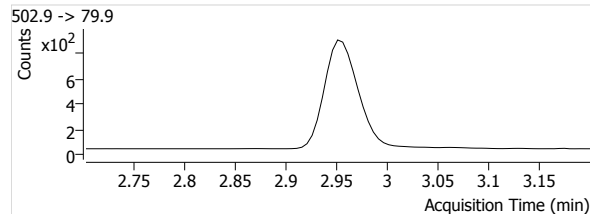
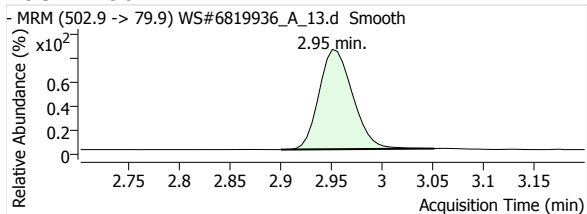


# Quantitative Analysis Report

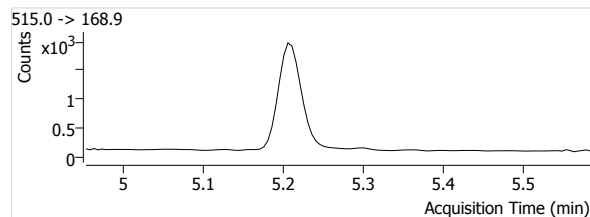
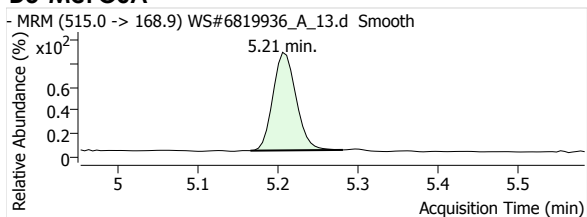
## 18O2-PFHxs



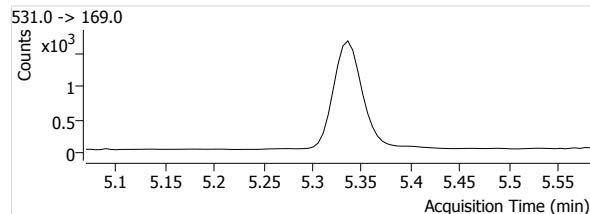
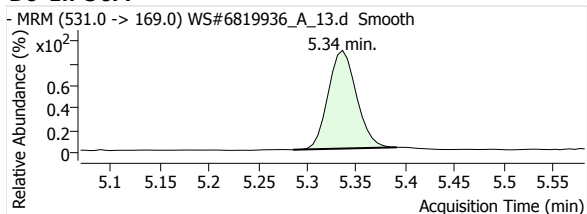
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

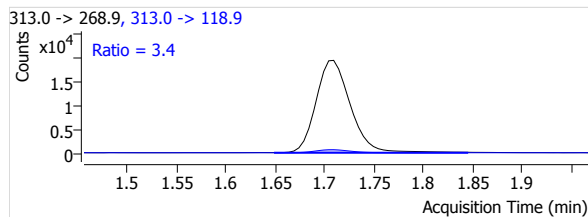
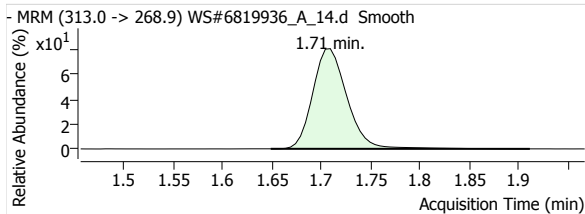
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bin

Sample Name 6819936:MTRX SPK:D1  
Type QC  
Acq. Method File PFAS.m  
Acq. Date-Time 2020/07/08 12:51:00 PM  
Comment NAH702-01  
User Defined MI PFOA

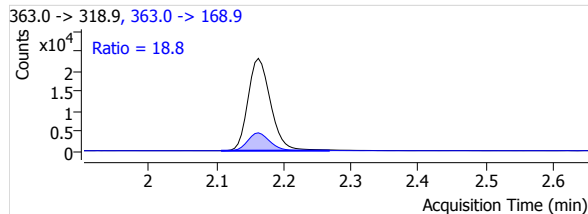
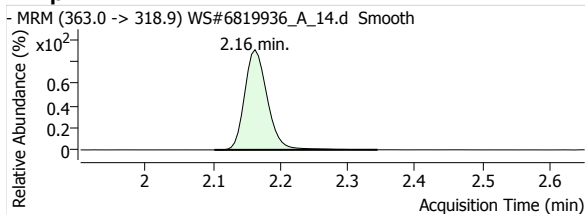
Data File WS#6819936\_A\_14.d  
Instrument LCMS04  
Position P2-B4  
Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	0.4807	100.1	46875	1.71	1025	4.4238	1602	1.71	121	3.4
PFHpA 1	µg/L	20.000	0.4390	91.5	54284	2.16	802	3.6612	10225	2.16	392	18.8
PFOA 1	µg/L	20.000	0.5075	105.7	51093	2.63	676	4.0431	12593	2.63	641	24.6
PFNA 1	µg/L	20.000	0.4903	102.2	36880	3.07	443	3.6490	8161	3.07	382	22.1
PFDA 1	µg/L	20.000	0.5002	104.2	37753	3.47	1103	5.2435	6426	3.46	493	17.0
PFUnA 1	µg/L	20.000	0.4364	90.9	33554	3.81	263	3.4326	5207	3.80	546	15.5
PFDoA 1	µg/L	20.000	0.4615	96.1	39032	4.11	482	3.4039	4679	4.11	191	12.0
PFTeDA 1	µg/L	20.000	0.5117	106.6	42999	4.37	507	2.9099	3635	4.37	232	8.5
PFTeDA 1	µg/L	20.000	0.4865	101.4	47820	4.61	543	3.2361	2344	4.60	180	4.9
PFBS 1	µg/L	20.000	0.4879	101.7	11401	1.37	268	3.3191	5089	1.37	394	44.6
PFHxS 1	µg/L	20.000	0.5203	108.4	8975	2.08	284	3.7726	4708	2.10	349	52.5
PFOS 1	µg/L	20.000	0.5135	107.0	6793	2.89	91	3.5122	3660	2.90	153	53.9
MeFOSA 1	µg/L	20.000	0.5741	119.6	5634	5.20	139	1.7245	4797	5.20	304	85.1
EtFOSA 1	µg/L	20.000	0.5430	113.1	5494	5.33	426	1.9770	4838	5.33	397	88.1
13C2-PFHxA	µg/L	100.000	106.9763	107.0	10596	1.71	326		--	--	--	--
13C4-PFHpA	µg/L	100.000	116.5736	116.6	14827	2.16	699		--	--	--	--
13C4-PFOA	µg/L	100.000	106.7134	106.7	12637	2.63	195		--	--	--	--
13C5-PFNA	µg/L	100.000	108.5374	108.5	10107	3.07	296		--	--	--	--
13C2-PFDA	µg/L	100.000	100.6289	100.6	7200	3.47	309		--	--	--	--
13C2-PFUnA	µg/L	100.000	114.3676	114.4	9775	3.81	1110		--	--	--	--
13C2-PFDoA	µg/L	100.000	109.5224	109.5	11467	4.11	632		--	--	--	--
13C2-PFTeDA	µg/L	100.000	96.5249	96.5	14777	4.61	1050		--	--	--	--
13C3-PFBS	µg/L	100.000	102.0499	102.0	3435	1.36	229		--	--	--	--
18O2-PFHxS	µg/L	100.000	101.8844	101.9	2379	2.11	228		--	--	--	--
13C4-PFOS	µg/L	100.000	106.8508	106.9	1934	2.95	214		--	--	--	--
D3-MeFOSA	µg/L	100.000	72.5194	72.5	3267	5.21	61		--	--	--	--
D5-EtFOSA	µg/L	100.000	75.7427	75.7	2779	5.34	93		--	--	--	--

## PFHxA 1

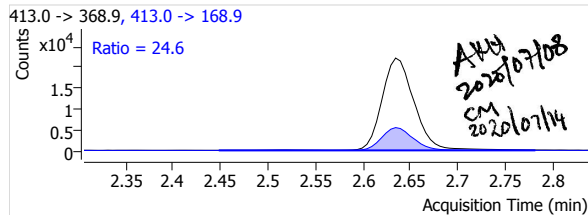
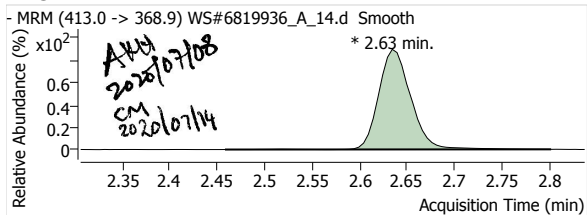


## PFHpA 1

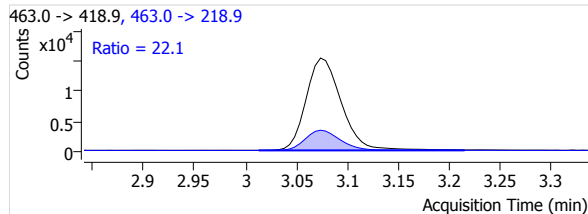
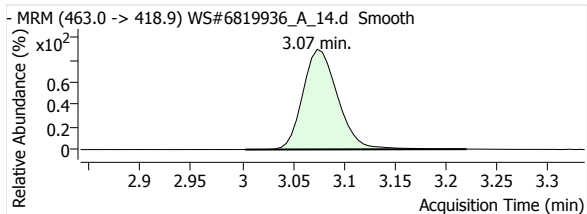


# Quantitative Analysis Report

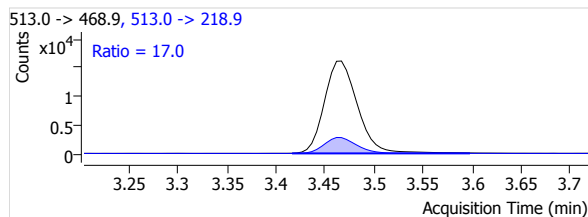
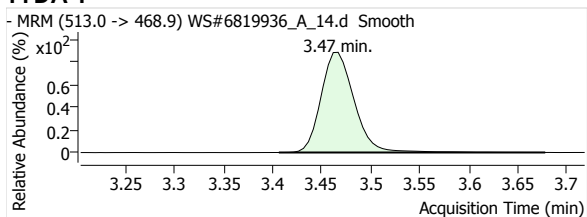
## PFOA 1



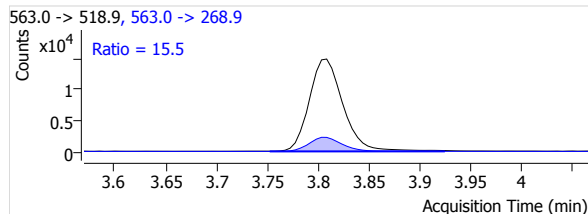
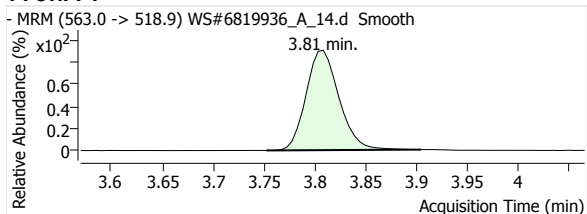
## PFNA 1



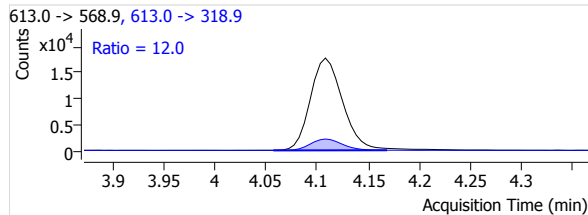
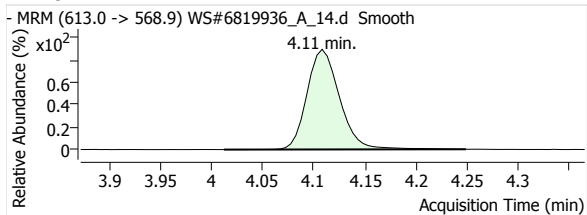
## PFDA 1



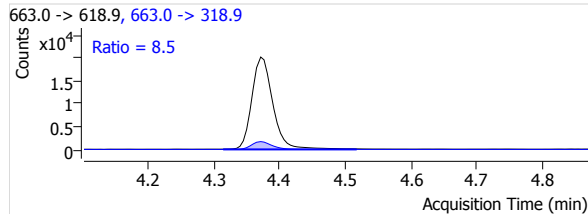
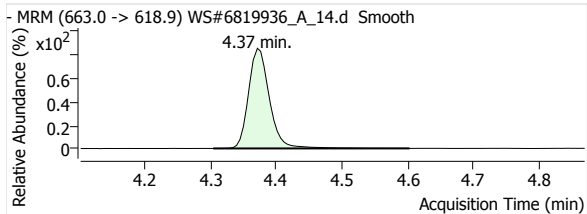
## PFUnA 1



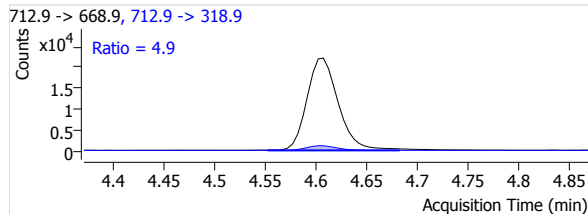
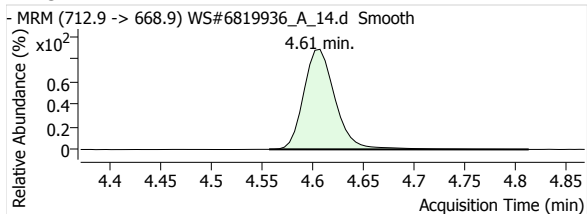
## PFDaA 1



## PFTrDA 1



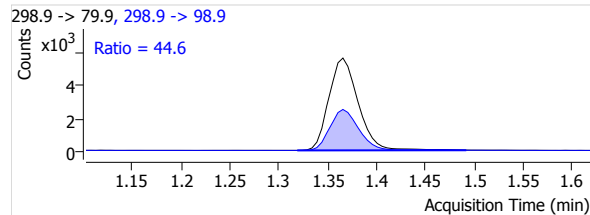
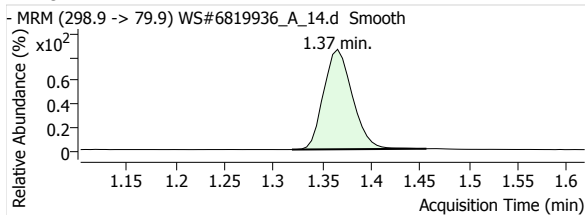
## PFTeDA 1



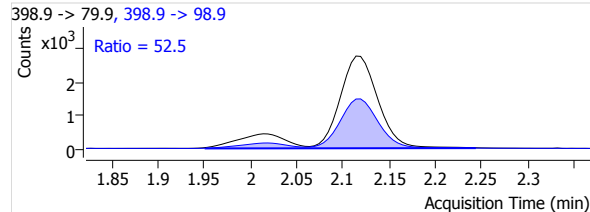
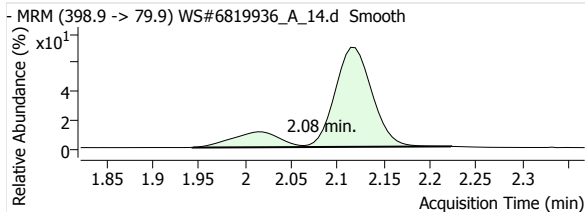


# Quantitative Analysis Report

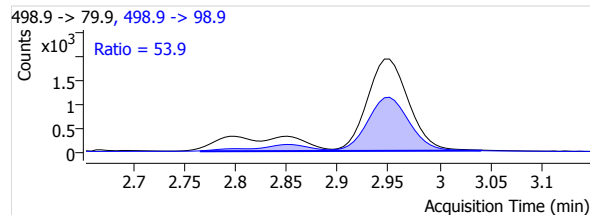
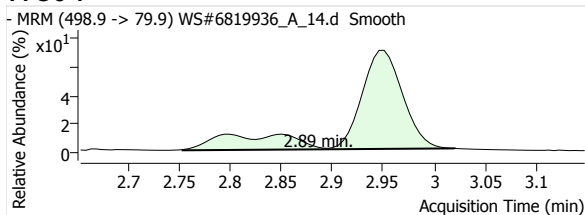
## PFBS 1



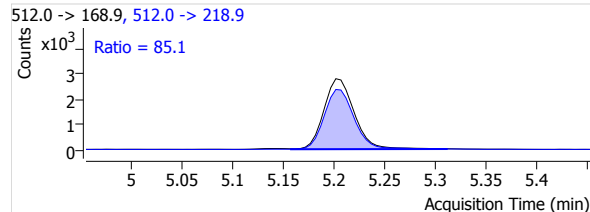
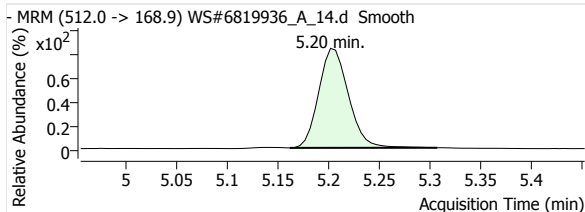
## PFHxS 1



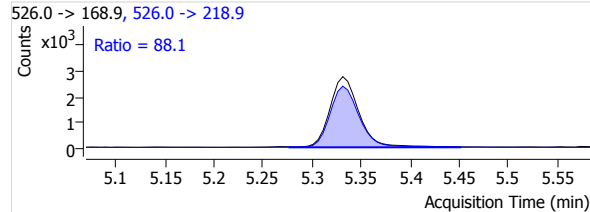
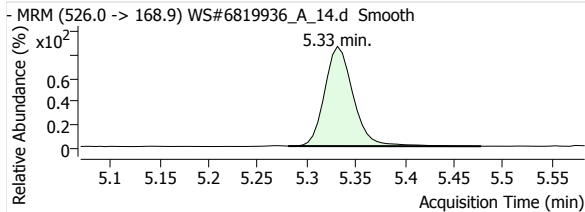
## PFOS 1



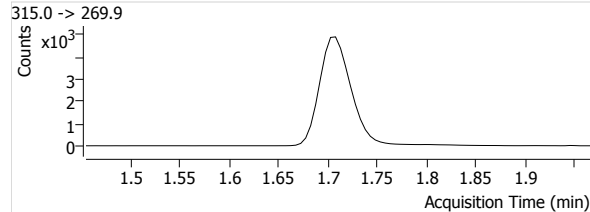
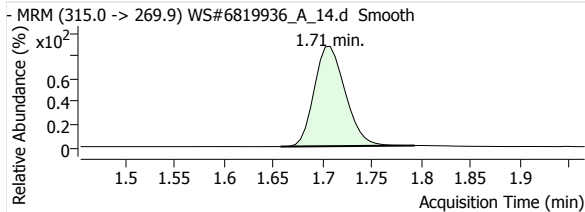
## MeFOSA 1



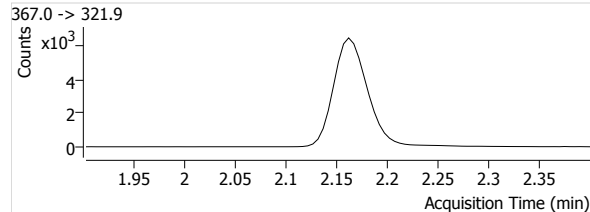
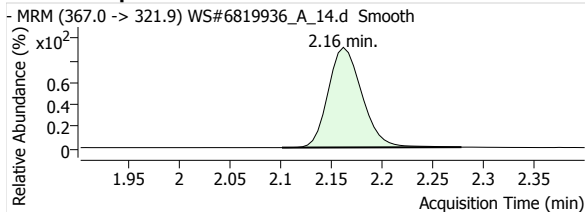
## eFOSA 1



## 13C2-PFHxA

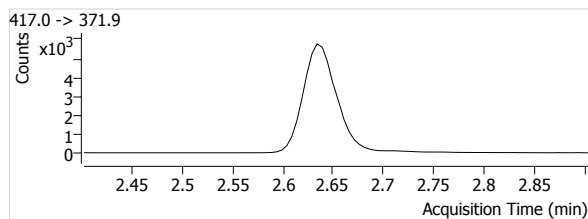
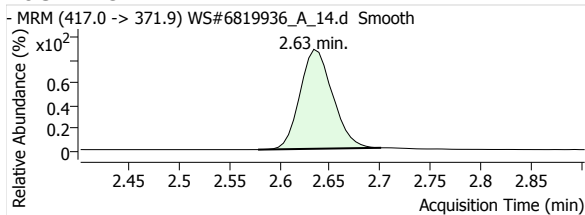


## 13C4-PFHpA

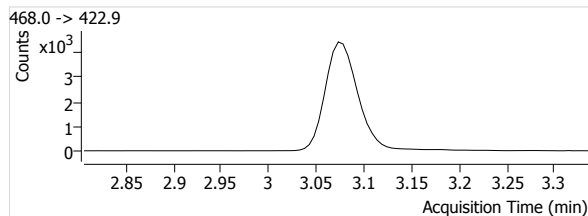
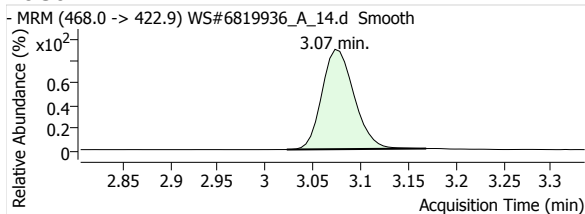


# Quantitative Analysis Report

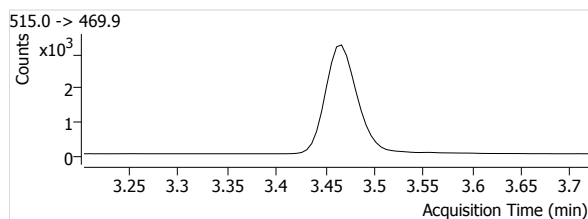
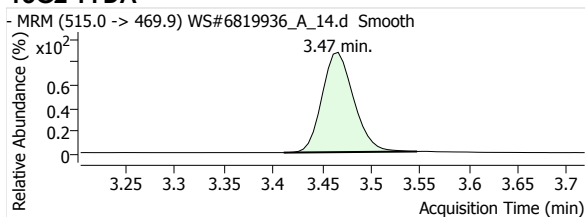
## 13C4-PFOA



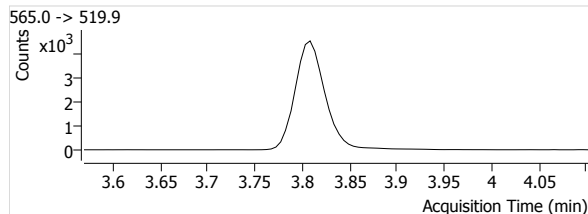
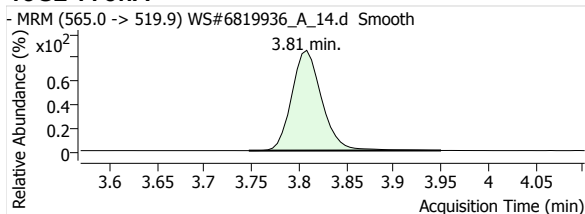
## 13C5-PFNA



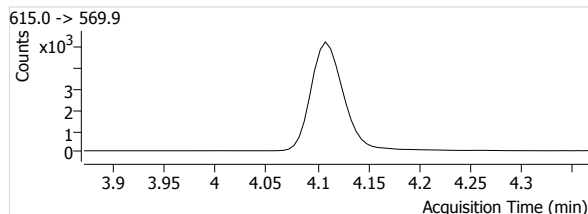
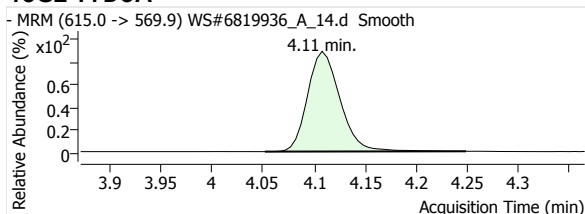
## 13C2-PFDA



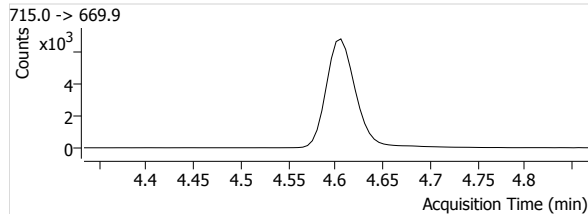
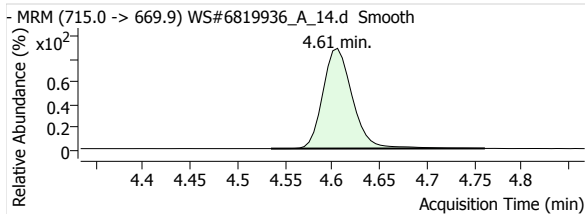
## 13C2-PFUnA



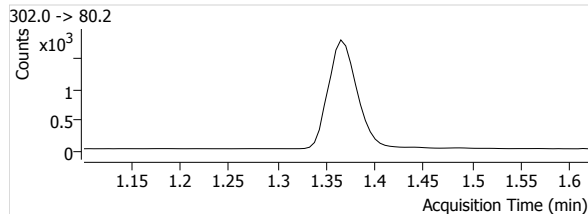
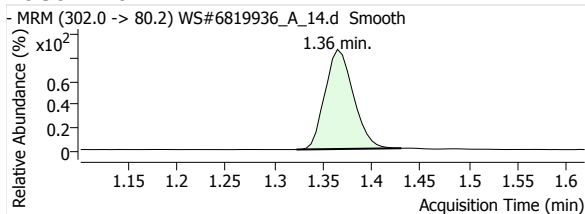
## 13C2-PFDoA



## 13C2-PFTeDA

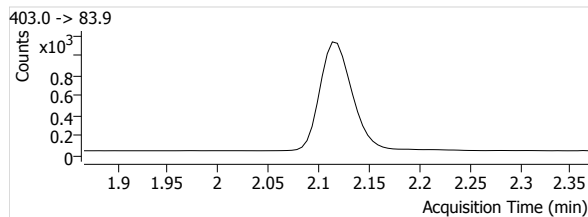
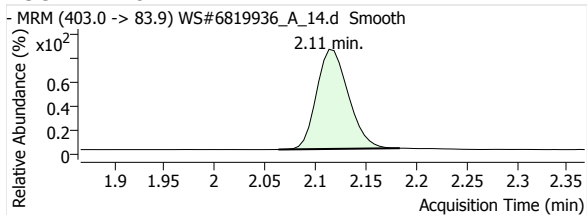


## 13C3-PFBS

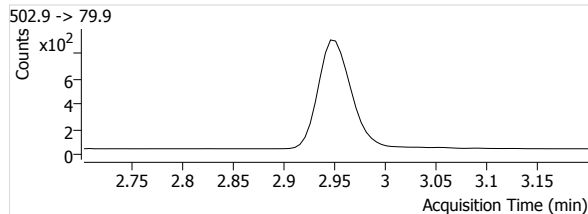
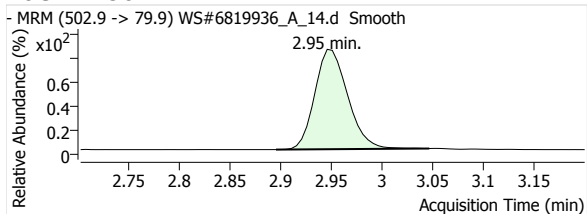


# Quantitative Analysis Report

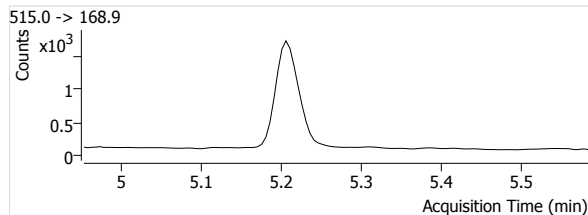
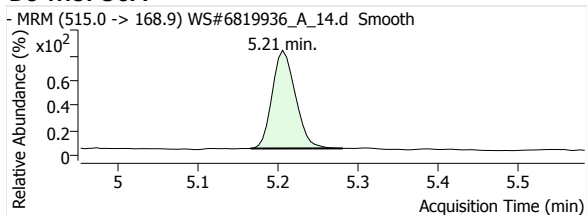
## 18O2-PFHxs



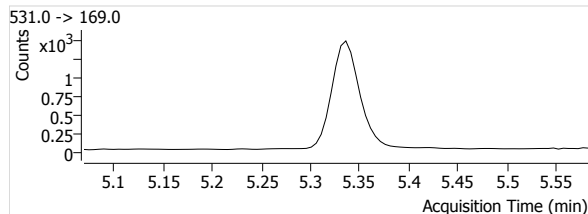
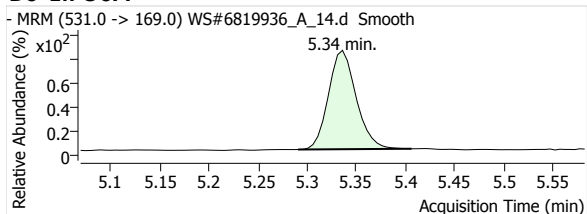
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



# Quantitative Analysis Report

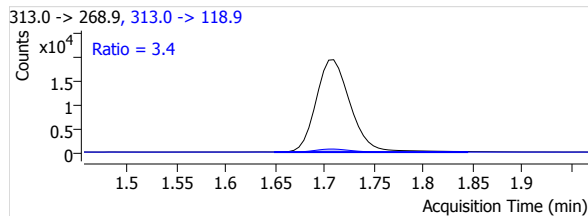
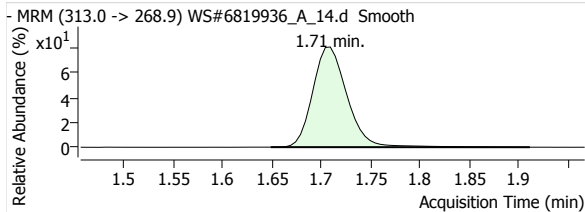
Batch Data Path File Name T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A.batch.bin

Sample Name 6819936:MTRX SPK:D1  
 Type QC  
 Acq. Method File PFAS.m  
 Acq. Date-Time 2020/07/08 12:51:00 PM  
 Comment NAH702-01  
 User Defined MI PFOA

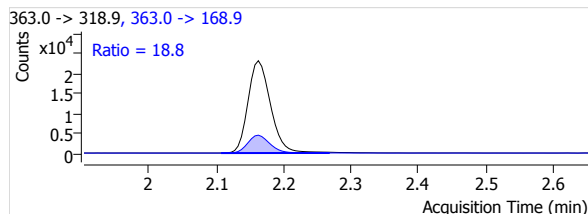
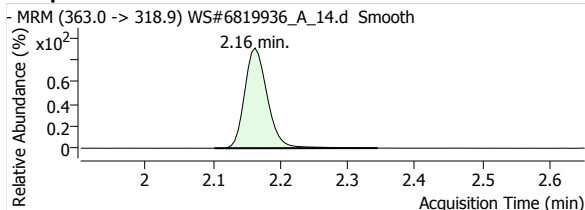
Data File WS#6819936\_A\_14.d  
 Instrument LCMS04  
 Position P2-B4  
 Dil. 0.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	0.4807	100.1	46875	1.71	1025	4.4238	1602	1.71	121	3.4
PFHpA 1	µg/L	20.000	0.4390	91.5	54284	2.16	802	3.6612	10225	2.16	392	18.8
PFOA 1	µg/L	20.000	0.5085	105.9	51197	2.63	677	4.0514	12605	2.63	628	24.6
PFNA 1	µg/L	20.000	0.4903	102.2	36880	3.07	443	3.6490	8161	3.07	382	22.1
PFDA 1	µg/L	20.000	0.5002	104.2	37753	3.47	1103	5.2435	6426	3.46	493	17.0
PFUnA 1	µg/L	20.000	0.4364	90.9	33554	3.81	263	3.4326	5207	3.80	546	15.5
PFDoA 1	µg/L	20.000	0.4615	96.1	39032	4.11	482	3.4039	4679	4.11	191	12.0
PFTTrDA 1	µg/L	20.000	0.5117	106.6	42999	4.37	507	2.9099	3635	4.37	232	8.5
PFTeDA 1	µg/L	20.000	0.4865	101.4	47820	4.61	543	3.2361	2344	4.60	180	4.9
PFBS 1	µg/L	20.000	0.4879	101.7	11401	1.37	268	3.3191	5089	1.37	394	44.6
PFHxS 1	µg/L	20.000	0.5203	108.4	8975	2.08	284	3.7726	4708	2.10	349	52.5
PFOS 1	µg/L	20.000	0.5135	107.0	6793	2.89	91	3.5122	3660	2.90	153	53.9
MeFOSA 1	µg/L	20.000	0.5741	119.6	5634	5.20	139	1.7245	4797	5.20	304	85.1
EtFOSA 1	µg/L	20.000	0.5430	113.1	5494	5.33	426	1.9770	4838	5.33	397	88.1
13C2-PFHxA	µg/L	100.000	106.9763	107.0	10596	1.71	326		--	--	--	--
13C4-PFHpA	µg/L	100.000	116.5736	116.6	14827	2.16	699		--	--	--	--
13C4-PFOA	µg/L	100.000	106.7134	106.7	12637	2.63	195		--	--	--	--
13C5-PFNA	µg/L	100.000	108.5374	108.5	10107	3.07	296		--	--	--	--
13C2-PFDA	µg/L	100.000	100.6289	100.6	7200	3.47	309		--	--	--	--
13C2-PFUnA	µg/L	100.000	114.3676	114.4	9775	3.81	1110		--	--	--	--
13C2-PFDoA	µg/L	100.000	109.5224	109.5	11467	4.11	632		--	--	--	--
13C2-PFTeDA	µg/L	100.000	96.5249	96.5	14777	4.61	1050		--	--	--	--
13C3-PFBS	µg/L	100.000	102.0499	102.0	3435	1.36	229		--	--	--	--
18O2-PFHxS	µg/L	100.000	101.8844	101.9	2379	2.11	228		--	--	--	--
13C4-PFOS	µg/L	100.000	106.8508	106.9	1934	2.95	214		--	--	--	--
D3-MeFOSA	µg/L	100.000	72.5194	72.5	3267	5.21	61		--	--	--	--
D5-EtFOSA	µg/L	100.000	75.7427	75.7	2779	5.34	93		--	--	--	--

## PFHxA 1

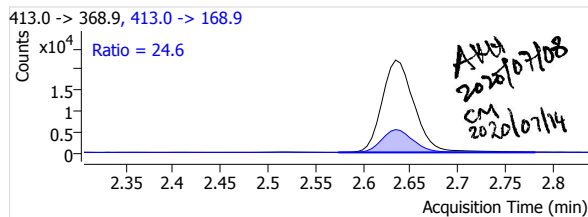
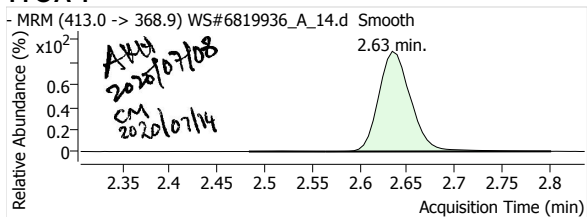


## PFHpA 1

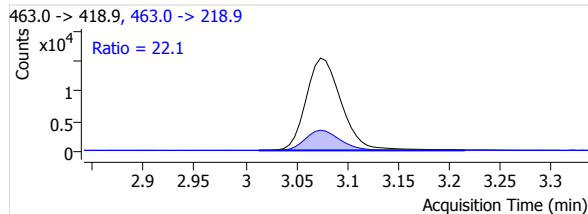
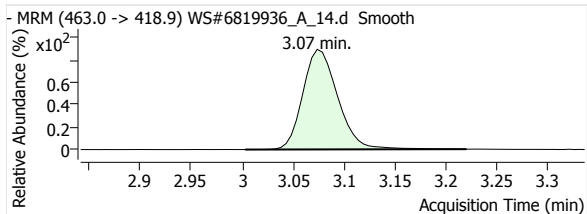


# Quantitative Analysis Report

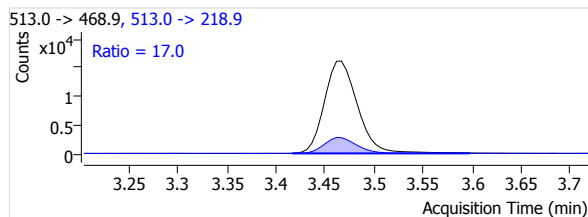
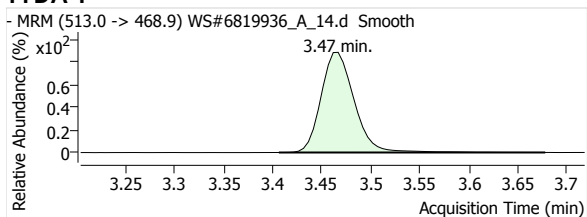
## PFOA 1



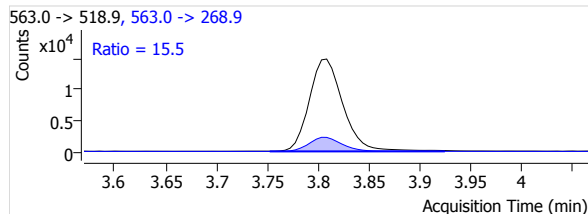
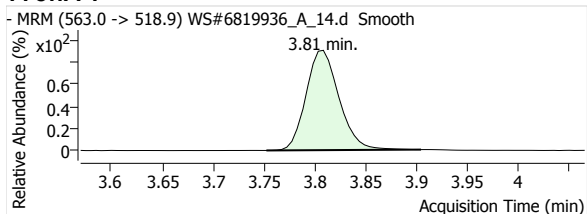
## PFNA 1



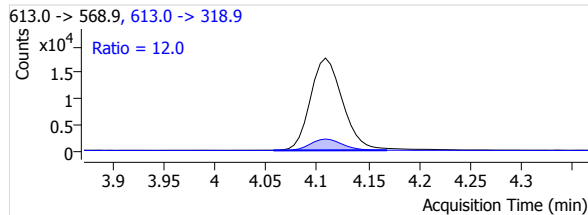
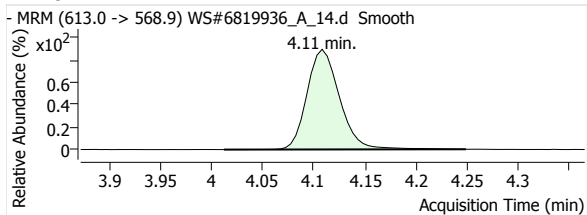
## PFDA 1



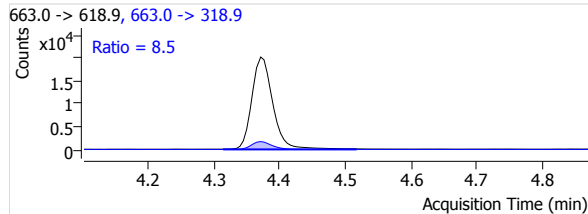
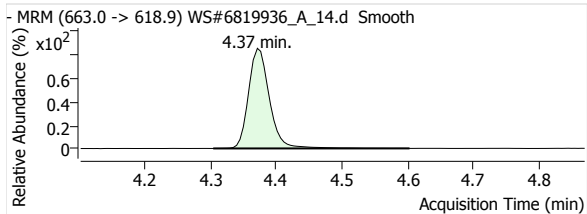
## PFUnA 1



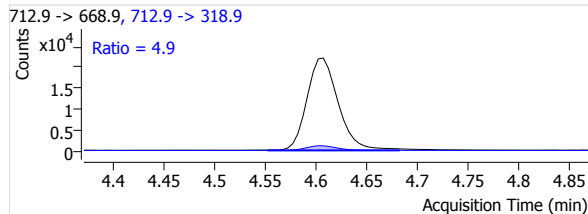
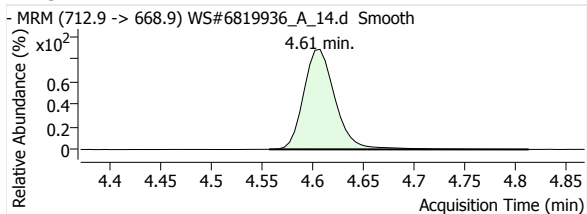
## PFDaA 1



## PFTrDA 1

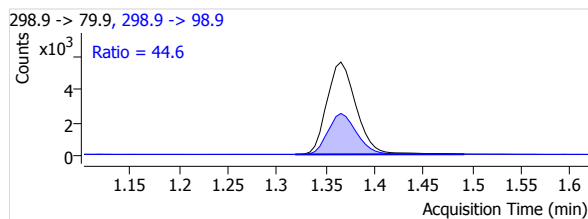
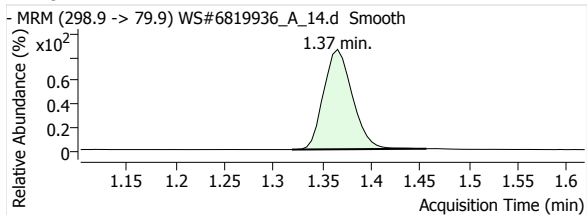


## PFTeDA 1

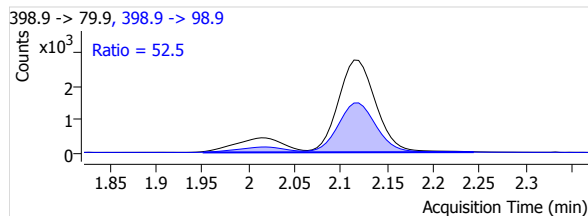
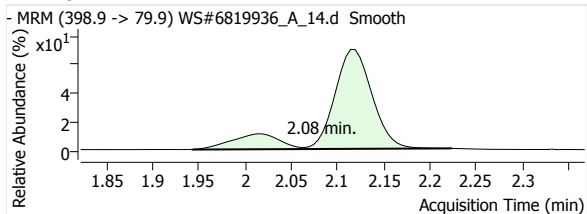


# Quantitative Analysis Report

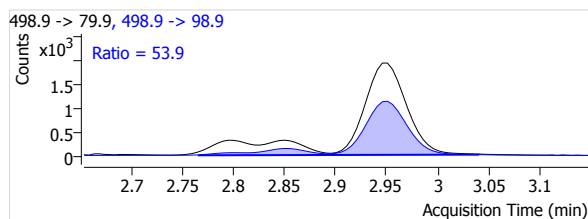
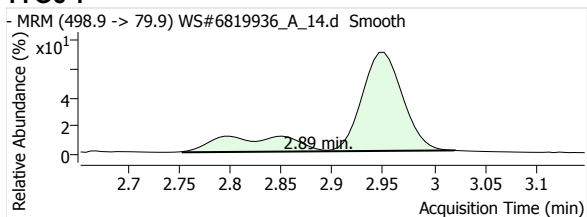
## PFBS 1



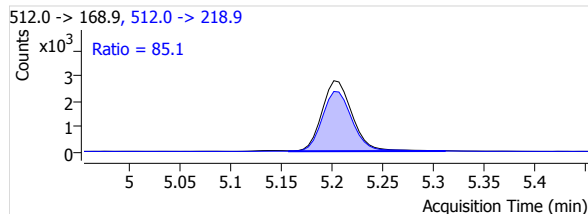
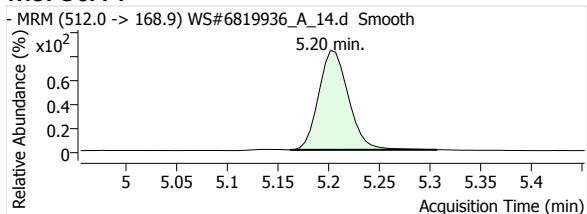
## PFHxS 1



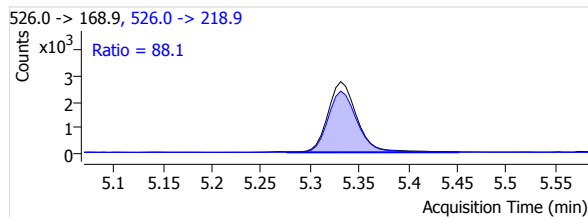
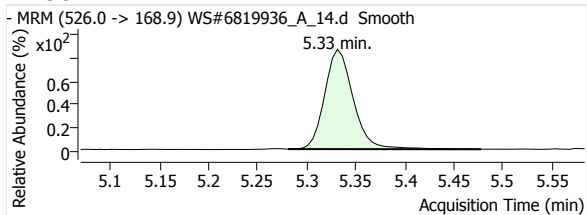
## PFOS 1



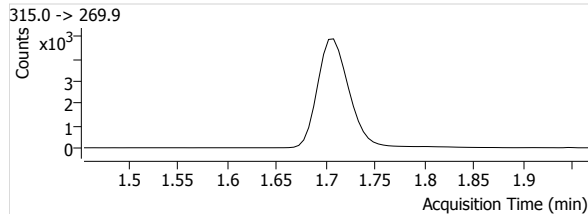
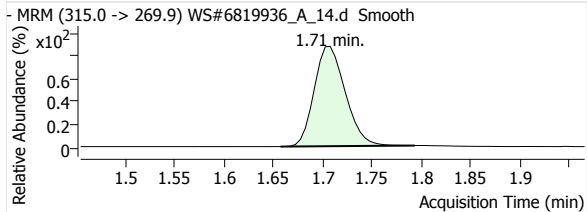
## MeFOSA 1



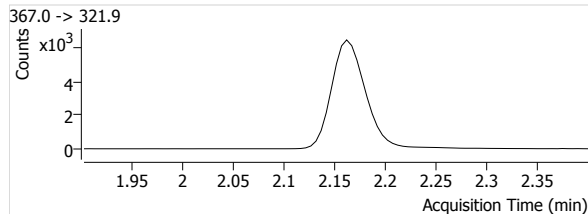
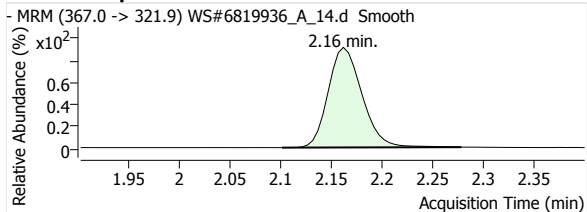
## eFOSA 1



## 13C2-PFHxA

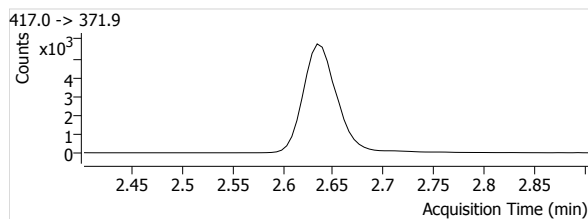
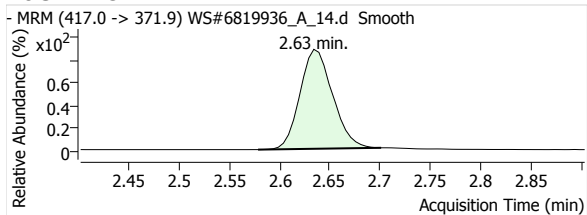


## 13C4-PFHpA

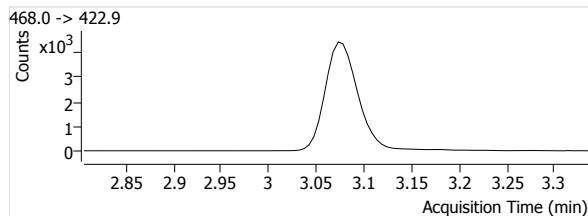
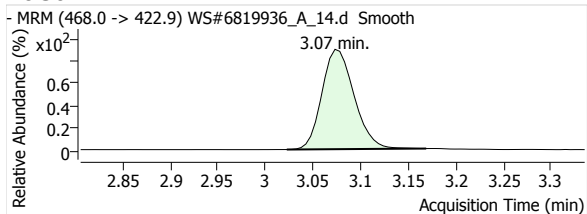


# Quantitative Analysis Report

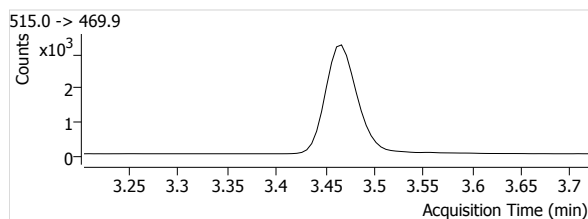
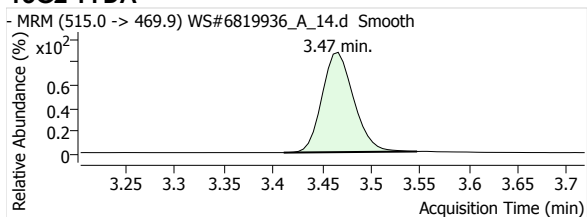
## 13C4-PFOA



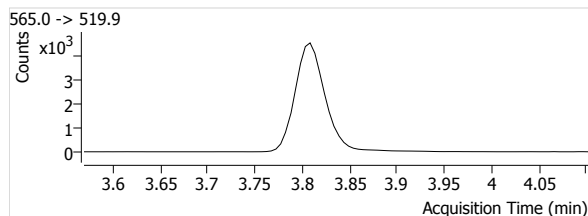
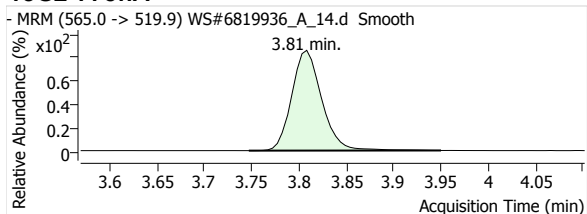
## 13C5-PFNA



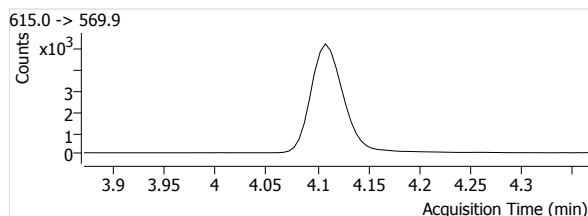
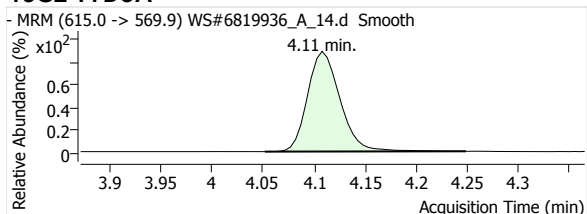
## 13C2-PFDA



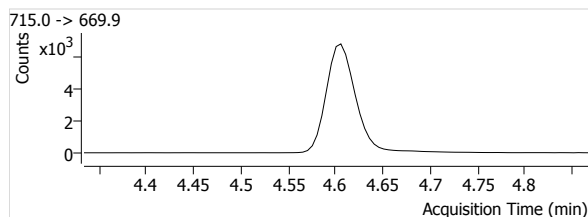
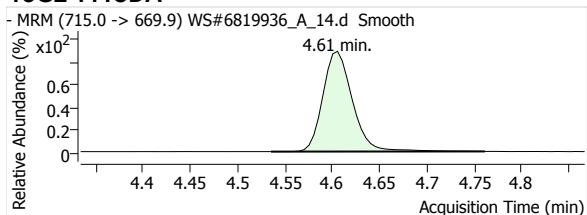
## 13C2-PFUnA



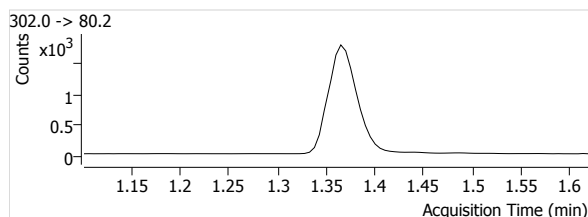
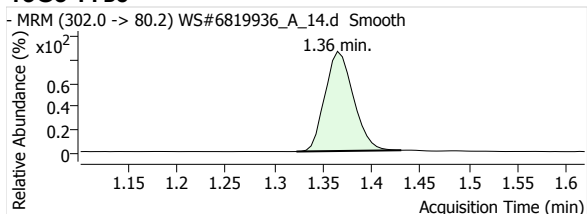
## 13C2-PFDoA



## 13C2-PFTeDA

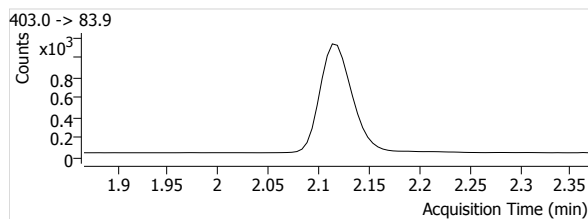
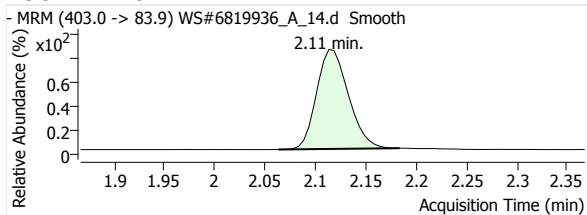


## 13C3-PFBS

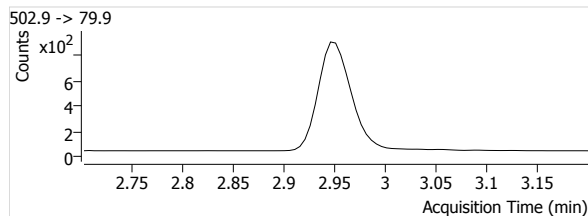
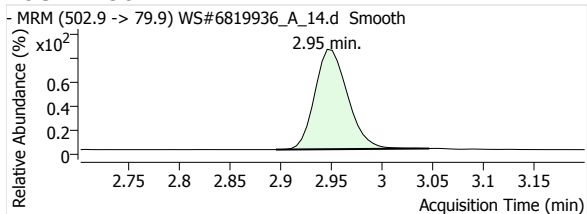


# Quantitative Analysis Report

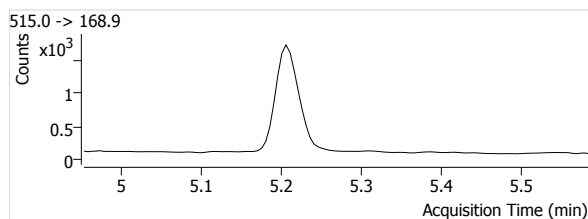
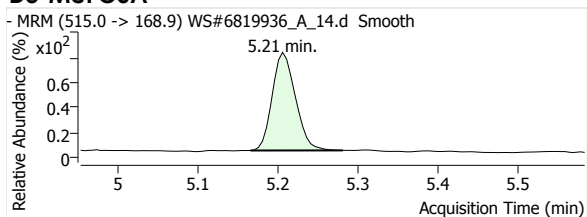
## 18O2-PFHxs



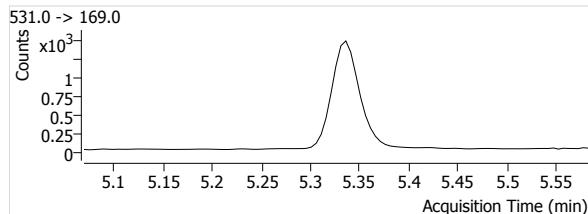
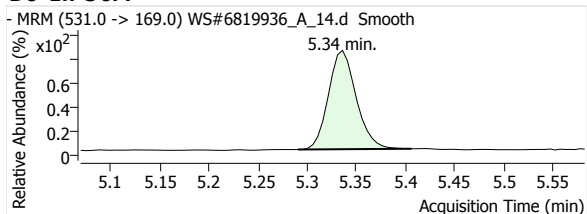
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA





DoD Projects - Internal Data Validation Checklist					
Run date: 2020/07/07					
Worksheet # (s): 6819936					
Analysis: PFC DOD-W			1st 100% review		*2nd 100% review
Primary review by the analyst - 1st 100 % analysis review			yes	no	n/a
1	Sample analyses meet hold time criteria		✓		✓
2	Analysis set-up meets method criteria		✓		✓
3	Tuning and correct calibration used - criteria meets method criteria		✓		✓
4	SQC/Control Charts updated, analysis in statistical/method control		✓		✓
5	Internal area counts checked (if applicable)			✓	✓
6	LCS, SRM are within acceptance criteria		✓		✓
7	Surrogate Recovery(s) is within acceptance criteria		✓		✓
8	Method Blank meets acceptance criteria		✓		✓
9	Matrix Spike recovery(s) meets acceptance criteria		✓		✓
10	Duplicate precision meets acceptance criteria		✓		✓
11	QC is documented on the run logs		✓		✓
12	Runs checked for carryover		✓		✓
13	Prep log / worksheet(s) are present, signed / dated by a prep / instrument analysts		✓		✓
14	Initial weights, splits, imprinter volumes (where applicable) are documented		✓		✓
15	Standards and reagents traceable to Certificates of Analysis		✓		✓
16	Samples above calibration range diluted and reanalyzed		✓		✓
17	Dilution factors (where justified) have been checked for correctness and entered		✓		✓
18	Analytical observations/anomalies documented in LIMS			✓	✓
19	Random calculation checked and in correct units		✓		✓
20	If corrective actions were applied they are documented, initialed & dated			✓	✓
21	Manual integration – before & after data with a reason included, initialed & dated		✓		✓
22	Transferred data is validated in LIMS for correctness		✓		✓
23	Data package assembled (where required)		✓		✓
Reviewed by: AXH			Date: 2020/07/08		
Comments:					
Secondary Supervisor/Qualified Data Review Staff - 2nd 100% verification review			yes	no	n/a
1	Repeats documented and referenced				✓
2	Method and sample deviations noted, anomalies described (if applicable)				✓
3	Data and QC validated in LIMS		✓		
4	Random calculation checked		✓		
5	Benchsheet (s) signed and dated		✓		
6	Data Package (if required) checked for completeness		✓		
Reviewed by: CM			Date: 2020/07/14		
Comments:					

**\*Note: 2nd 100% verification review documented by secondary qualified data review  
 Primary and Secondary Internal Data Review Check must be performed by a different person**

**Worksheet Data Validation Checklist - Extractable Organics**

Worksheet # **6819936** Testcode: **PFCDD-D-W**

Sample Preparation		yes	no	n/a
1	Samples extracted within hold time	✓		
2	Client sample ID verified against Lab ID (waters & oils)	✓		
3	Parameter list and Client comments reviewed, (Spiking solutions matched to parameter list)	✓		
4	Height of sediment or if sample was decanted, recorded on worksheet	✓		
5	Method required QC processed with samples, maximum batch size = 20 client samples.	✓		
6	Sample, duplicate, matrix spike appear similar, initial sample as well as final extract	✓		
7	Sample weight or initial volume and extract final volume, aliquot factor clearly recorded.	✓		
8	If performed any additional dilution clearly recorded	✓		
9	Matrix spike / Duplicate performed on IOL samples if present			
10	Spiking solutions valid (haven't expired), ID and volume used clearly identified on worksheet	✓		✓
11	Spiking process witnessed and signed off	✓		
12	Extraction type recorded (N3A2B = neutral, 3 x acidic, 2 x basic)			✓
13	Sample prep deviations documented within CompliantPro as a Policy Deviation			✓
14	Job Remarks reviewed on 2nd page of worksheet.	✓		
15	Worksheet and reagent tracking record completed and authorized.	✓		

Reviewed by: **TJM** Date: **2020-07-06**  
 Comments:

Worksheet Approval		yes	no	n/a
1	Verified the position of the vials in autosampler against sequence list; signed off sequence list			
2	Calibration and CCV standards valid ( haven't expired)			
3	Initial calibration curve and DFTPP tune (if applicable) acceptable			
4	Continuing and Final CCV and DFTPP tune (if applicable) acceptable			
5	System performance check acceptable (if applicable)			
6	Internal standard responses acceptable			
7	Method blank meets acceptance criteria			
8	Lab Control Samples recoveries meets acceptance criteria			
9	Duplicate RPD meets acceptance criteria			
10	Matrix spike recoveries meets acceptance criteria			
11	Surrogate recoveries meets acceptance criteria			
12	Appropriate control charts updated			
13	Samples above calibration range diluted and reanalyzed			
14	Dilutions clearly documented on tracking record, inst file and verified during data upload			
15	Samples following high level samples checked for carryover.			
16	Mass spectra ion ratios acceptable for positive results, hardcopy in file.			
17	Analytical observations / anomalies documented			
18	DQW comments entered in LIMS, hardcopy in file			
19	Sample Prep section (above) reviewed and verified.			
20	WS Approval performed in LIMS			

APPROVED  
 2020/07/08

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Comments:

Worksheet Validation		yes	no	n/a
1	Calibration, QC and sample results reviewed and determined acceptable			
2	Manual integrations verified			
3	Random calculation checked			
4	Data and QC validated in LIMS			
5	Comments reviewed for appropriateness			
6	Reworks / relogs documented in file			
7	Worksheet signed and dated,			
8	Worksheet approved and validated within LIMS			

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Comments:



Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Monday, July 06, 2020

Assigned to : Thanh Tam Tran

Test Code : PFCODD-W

Instrument Id:

Test Description : Per- and Polyfluoroalkyl Substances (PFAS) in Water by SPE/LC-MS/MS

*sediment (cm) ml ml*

Job Number	Sample Number	D	Sample ID	F	% Moisture	Wt or Vol	Final Vol	DF or AF	# Cont	Expiry Date	Test DeadLine	Criteria	Extract Date
	MTRX SPK	0	LL PFCODD-W NA*		40.1	125	3	1X					2020/07/06
	MTRX SPK	1	LL PFCODD-W NA*		40.1	125	3	1X					2020/07/06
	SPIKE		LL PFCODD-W		0	125	3	1X					2020/07/06
	BLANK				0	125	3	1X					2020/07/06
C0F7895	*MYQ828-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0F7895	*MYQ829-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0F7895	*MYQ830-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0F7895	*MYQ831-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0F7895	*MYQ832-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0F7895	*MYS398-01R		[REDACTED]		40.1	125	3	1X	2	2020/07/06	2020/07/10 18:00	DOD	2020/07/06
C0G5389	*NAH261-01R		[REDACTED]		40.1	125	3	1X	1		2020/07/17 18:00		2020/07/06
C0G5477	*NAH700-01R		06-MW25-0620		40.1	25/25	3	5X/50X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH701-01R		06-MW26-0620		40.1	116/125	3	1X/10X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH702-01R		06-MW30-0620		40.1	125	3	1X	6	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH703-01R		06-MW31-0620		40.1	118/125	3	1X/10X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH705-01R		06-MW31-0620 DUP		40.1	119/125	3	1X/10X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH706-01R		06-MW32-0620		40.1	25/25	3	5X/50X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH707-01R		06-MW33-0620		40.1	62.5/62.5	3	2X/20X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH708-01R		06-MW34-0620		40.1	114/125	3	1X/10X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH709-01R		06-MW35-0620		40.1	117/125	3	1X/10X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH710-01R		06-MW36-0620		40.1	125	3	1X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06
C0G5477	*NAH711-01R		QCFB-0620		40.1	125	3	1X	2	2020/07/06	2020/07/16 23:00	DOD	2020/07/06

*TTM 2020-07-06*

Remarks:

\_\_\_\_\_

\_\_\_\_\_

Samples extracted by: Thanh Tam Tran

Instrumentation performed by: [Signature]

Calculations performed by: AKH

Validated by: [Signature]  
Bureau Veritas Laboratories

Date: 2020/07/07

Date: 2020/07/08

Date: 2020/11/4

Job No.	Rep	Client Name	Contact	Client Tier	National
	Remarks				



GC0G5477 SP8 EMAX Laboratories Inc Richard Beauvil Tier 4 (Enviro.)

DKN, nreg, PFCODD-W MS/MSD required on NAH702 PM Release: PM please check parameter list Level IV Data Package and NEDD EDD and EDF EDD required PM : manually add WO#17023 to EDF (see generation instructions)  
 Project #: TREASURE ISLAND, IR SITE 6

*TTM 2020-07-06*

Job	Sample	Lab Comments
	MTRX SPK	
	MTRX SPK	
	SPIKE	
	BLANK	
C0F7895	MYQ828-01R	
C0F7895	MYQ829-01R	
C0F7895	MYQ830-01R	
C0F7895	MYQ831-01R	
C0F7895	MYQ832-01R	
C0F7895	MYS398-01R	
C0G5389	NAH261-01R	
C0G5477	NAH700-01R	
C0G5477	NAH701-01R	
C0G5477	NAH702-01R	
C0G5477	NAH703-01R	
C0G5477	NAH705-01R	
C0G5477	NAH706-01R	
C0G5477	NAH707-01R	
C0G5477	NAH708-01R	
C0G5477	NAH709-01R	
C0G5477	NAH710-01R	
C0G5477	NAH711-01R	

*20200707-A  
 (LCMSLOW)  
 AKH  
 202007108*

LCMS Calibration Standard Preparation Sheet

Worksheet: **6819936** Initial: **FTM** Date: **2010-07-06** Witnessed by: **TKA**

PFOSALCM-W (SPE)					
Calib. Std.	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard A (uL) 125/250ng/mL
S1	2825	25	100 ng/mL	SK-9770 (1/2)	150
S2	2760	90			150
S3	2826	24	1 ug/mL	E-6033 (1/3)	150
S4	2802	48			150
S5	2760	90			150
S6	2725	125			150
*ICV	2790	60	1 ug/mL	E-6032 (1/3)	150
IB	2850	NA			150

PFOSALCM-W (High)						
Calib. Std.	Volume of MeOH (uL)	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard A (uL) 125/250ng/mL
S1	480	0.75	20	30 ng/mL		100
S2	425	0.75	75			100
S3	477	0.75	23	300 ng/mL		100
S4	452	0.75	48			100
S5	473	0.75	27			100
S6	463	0.75	37.5			100
*ICV	482	0.75	18	1 ug/mL		100
IB	500	0.75	NA			100

PFOSALCM-S					
Calib. Std.	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard A (uL) 125/250ng/mL
S1	1885	15	100 ng/mL		100
S2	1840	60			100
S3	1750	150			100
S4	1870	30			100
S5	1846	54	1 ug/mL		100
S6	1825	75			100
*ICV	1864	36	1 ug/mL		100
IB	1900	NA			100

PFOSLOW-W (SPE)					
Calib. Std.	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard B (uL) 12.5/25ng/mL
S1	1475	25	100 ng/mL		1500
S2	1410	90			1500
S3	1476	24			1500
S4	1452	48			1500
S5	1410	90	1 ug/mL		1500
S6	1375	125			1500
*ICV	1440	60	1 ug/mL		1500
IB	1500	NA			1500

PFC-TI					
Calib. Std.	Volume of MeOH (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	1890	10	100 ng/mL		100
S2	1880	20			100
S3	1840	60			100
S4	1885	15	1 ug/mL		100
S5	1870	30			100
S6	1850	50			100
*ICV	1875	25	1 ug/mL		100

MORPH-L						
Calib. Std.	Volume of DI Water (mL)	Methanol (mL)	Solution Conc.	Solution ID#	Amount Spiked (uL)	Internal Standard (uL)
S1	1	1	200 ug/L		20	50
S2	1	1			50	50
S3	1	1	2500 ug/L		20	50
S4	1	1			80	50
S5	1	1			200	50
S6	1	1			400	50
*ICV	1	1	2500 ug/L		80	50

PFAADW-W						
Calib. Std.	Volume of 96:4 (MeOH : Water) (uL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Surrogate (25/200 ng/mL)	Internal Standard (uL) 50/100/200 ng/mL
S1	780	20	6.25/25/50 ng/mL		100	100
S2	728	72	DWB		100	100
S3	608	192			100	100
S4	762	38.4	62.5/250/500 ng/mL		100	100
S5	728	72			100	100
S6	700	100	DWA		100	100
*ICV	752	48	62.5/250/500 ng/mL DWA		100	100
tPFOA	800	100	50 ng/mL		N/A	100

STERIL-S					
Calib. Std.	Volume of 60:40 Water : MEOH (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#	Internal Standard (uL)
S1	5	20	**		50
S2	5	30	Solution B		50
S3	5	40			50
S4	5	80	50		
S5	5	22	**		50
S6	5	40	Solution A		50
*ICV	5	20	**	50	

CLO4LCMS-W/ CLO4LCMS-S				
Calib. Std.	Volume of Water (mL)	Amount Spiked (uL)	Solution Conc.	Solution ID#
S1	9.95	50	10ug/L	
S2	9.9	100		
S3	9.75	250		
S4	9.5	500		
S5	9	1000		
S6	8	2000		
*ICV	9	1000	10 ug/L	

\* ICV are prepared using second source

\*\* Concentration of Individual Parameters in Solution A & B Varies

PFAS worksheet reagent tracking sheet

Worksheet # 6819936

Date: 2020-07-06

Spiked by: TTM

Spiking Witness checklist

		Yes	Initial
1	Verify that the Solution ID on the bottle matches the documented solution ID in the tracking sheet.	✓	TK4
2	Verify that the syringe ID documented on the tracking sheet matches the syringe ID used for spiking.	✓	
3	Verify the volume spiking solution required matches the documented volume on the tracking sheet.	✓	
4	Observe each spiking event to ensure that the appropriate QC samples are spiked.	✓	
5	Was the spiking information such as solution ID, syringe ID and spike volume recorded before spiking event occurred?	✓	

Test code		Surrogate /Spike/IS solutions	Solution ID#	Conc.	Spike	MS	Sample	Syringe ID	Witness
PFOSALCM-W PFCDOD-W PFASBC-W	SPE	PFAS Second Source Solution A	I-6032013	1ug/mL	60	60	N/A	036588D	TK4
		PFAS Internal Standard Solution A	SI-8099(5)	125/250 ng/mL	150	150	150	040108G	
		PFC Injection IS	—	100 ng/mL	20	20	20	—	
PFOSALCM-W	Dilution	PFAS Second Source Solution A		1ug/mL	18	18	N/A		
		PFAS Internal Standard Solution A		125/250 ng/mL	100	100	100		
		PFAS Second Source Solution D		30 ng/mL	N/A	N/A	10		
		PFC Injection IS		100 ng/mL	20	20	20		
PFOSLOW-W PFASDOD-W PFCODW-W PFASLOBC-W	SPE	PFAS Second Source Solution C		100 ng/mL	60	60	N/A		
		PFAS Internal Standard Solution B		12.5/25 ng/mL	150	150	150		
		PFC Injection IS		100 ng/mL	15	15	15		
PFAADW-W	SPE	Second Source Spiking Solution DWB		6.25/25/50 ng/mL	40	40	N/A		
		Second Source Spiking Solution DWA		62.5/250/500 ng/mL	48/80	48/80	N/A		
		PFAA Internal Standard Solution		50/100/200 ng/mL	100	100	100		
		PFAA Surrogate solution		25/200 ng/mL	100	100	100		
PFOS_OX-W PFOS_OX-S	SPE	PFAS Internal Standard Solution A		125/250 ng/mL	150	150	150		
		PFC Injection IS		100 ng/mL	20	20	20		
PFOSALCM-S PFASDOD-S PFASBC-S	SPE	PFAS Second Source Solution A		1ug/mL	72	72	N/A		
		PFAS Internal Standard Solution A		125/250 ng/mL	200	200	200		
		PFC Injection IS		100 ng/mL	20	20	20		
PFOSLOW-S	SPE	PFAS Second Source Solution C		100 ng/mL	72	72	N/A		
		PFAS Internal Standard Solution A		125/250 ng/mL	20	20	20		
		PFC Injection IS		100 ng/mL	15	15	15		

Solvent/Reagent	✓	Lot No.	Date Opened	Solvent/Reagent	✓	Lot No.	Date Opened/Prepared
0.2% NH <sub>4</sub> OH in Methanol	✓	PRURE - 137 - 419		Blank Mat.			
0.5% NH <sub>4</sub> OH in 70:30 Methanol:Water				Env. Carb.	✓	126480	2020-06-16
1% NH <sub>4</sub> OH in methanol				Leachate Fluid			
10mM KOH in Methanol				Methanol	✓	SHBL8762	2020-07-06
2% Formic Acid	✓	PRURE - 137 - 416		Ottawa Sand			
60:40 Water: Methanol	✓	PRURE - 137 - 406		Reagent Water	✓	<del>600</del> 60122 TTH	2020-07-06
60:40 Water:Acetonitrile				Ref. Mat.			
96:4 Methanol: Water				Trizma			
0.2 % Formic Acid				Acid water	✓	PRURE-137-420	

Equipment & ID	✓	Equipment	✓	ID#	Bottle Tracking	X
Pipettor 0287936 (Mettler) 636164	✓	SPE Cartridge	✓	005239317A	Bottle# 22820	
Thermometer ID & Temp		QC Balance ID			Cap# 22856	
Dispenser EC-1	✓	Centrifuge	✓	42148683	Systems plus Lot# 20-06-25	
Measuring cylinder 250mL 1755	✓	Sonicator				
Shaker						
Comments:						

Worksheet: 6819936

Dilution and Column Cleanup Worksheet

Job Number	Sample ID	Sample: Initial Final Volume	Dilution Required	Sample Added mL	Solvent Added mL	Int Std Added uL	New Effective Final Volume	Initials and Date	Column Cleanup
COG5477 COF7895 TTM	NAH700-01	175	5X	25	-	150	25 mL	TTM 2020-07-06	
11	11	11	50X	2.5	122.5	150	125 mL		
11	NAH701-01	175	10X	12.5	-	150	12.5 mL		
11	NAH707-01	175	2X	62.5	-	150	62.5 mL		
11	11	175	20X	6.25	123.75	150	125 mL		
All samples were diluted the same as above.									
<del>TTM 2020-07-06</del>									



PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	Units	MTRX SPK	MTRX SPK Dup1	SPIKE	BLANK	C0F7895 MYQ828	C0F7895 MYQ829
Perfluorobutanoic acid (PFBA)	ug/L	88.76570	90.00482	89.57410	0	0	0.01485630
Perfluoropentanoic acid (PFPeA)	ug/L	98.03657	98.57605	101.55566	0	0	0.02475087
Perfluorohexanoic acid (PFHxA)	ug/L	96.43197	98.55400	99.47531	0	0	0.02761300
Perfluoroheptanoic acid (PFHpA)	ug/L	91.03344	90.17883	89.86262	0	0	0.00785786
Perfluorooctanoic acid (PFOA)	ug/L	96.56048	100.88474	97.37861	0	0	0.01284563
Perfluorononanoic acid (PFNA)	ug/L	101.37820	102.15540	98.56657	0	0	0
Perfluorodecanoic acid (PFDA)	ug/L	102.40142	104.19947	101.03045	0	0	0
Perfluoroundecanoic acid (PFUnA)	ug/L	97.61246	90.91772	90.65007	0	0	0
Perfluorododecanoic acid (PFDoA)	ug/L	98.06517	96.14154	100.13169	0	0.00435164	0
Perfluorotridecanoic acid (PFTRDA)	ug/L	107.30294	106.60166	105.85587	0	0	0
Perfluorotetradecanoic acid (PFTEDA)	ug/L	100.19047	101.35849	102.38357	0	0	0
Perfluorobutanesulfonic acid (PFBS)	ug/L	101.77736	100.25357	100.52851	0	0	0.02206265
Perfluoropentanesulfonic acid PFPS	ug/L	93.77728	99.11711	98.88213	0	N/A*****	N/A*****
Perfluorohexanesulfonic acid(PFHxS)	ug/L	104.04947	103.54847	99.61022	0	0	0.04378095
Perfluoroheptanesulfonic acid PFHpS	ug/L	89.20408	92.87654	90.38833	0	N/A*****	N/A*****
Perfluorooctanesulfonic acid (PFOS)	ug/L	99.44371	96.58871	95.13068	0	0	0
Perfluorononanesulfonic acid (PFNS)	ug/L	93.45042	95.83500	94.08206	0	N/A*****	N/A*****
Perfluorodecanesulfonic acid (PFDS)	ug/L	95.62094	99.37647	100.21860	0	0	0
Perfluorooctane Sulfonamide (PFOSA)	ug/L	90.15419	87.79051	84.01858	0	0	0
EtFOSA	ug/L	112.15487	113.12604	103.38042	0	N/A*****	N/A*****
MeFOSA	ug/L	120.17609	119.61021	117.04904	0	N/A*****	N/A*****
EtFOSE	ug/L	107.33308	100.72960	97.47153	0	N/A*****	N/A*****
MeFOSE	ug/L	110.38837	108.86290	100.10228	0	N/A*****	N/A*****
EtFOSAA	ug/L	103.69682	104.49790	107.67608	0	N/A*****	N/A*****
MeFOSAA	ug/L	101.59305	111.38190	95.20700	0	N/A*****	N/A*****
4:2 Fluorotelomer sulfonic acid	ug/L	98.65411	104.62417	101.40885	0	N/A*****	N/A*****
6:2 Fluorotelomer sulfonic acid	ug/L	85.88376	82.27142	83.68163	0	0	0
8:2 Fluorotelomer sulfonic acid	ug/L	115.17318	104.36155	100.80106	0	0	0
Hexafluoropropyleneoxide dimer acid	ug/L	102.45400	101.69998	105.07745	0	N/A*****	N/A*****
4,8-Dioxa-3H-perfluorononanoic acid	ug/L	92.29875	91.98384	91.88828	0	N/A*****	N/A*****
9CI-PF3ONS (F-53B Major)	ug/L	94.83622	96.26955	95.50676	0	N/A*****	N/A*****
11CI-PF3OUdS (F-53B Minor)	ug/L	87.72363	83.98383	84.38075	0	N/A*****	N/A*****
13C4-Perfluorobutanoic acid	ug/L	133.107274	123.255240	126.794081	123.785450	131.048088	137.620221
13C5-Perfluoropentanoic acid	ug/L	115.479023	107.651847	110.432060	111.446462	119.611772	127.351283
13C2-Perfluorohexanoic acid	ug/L	115.254921	106.976274	111.519434	116.971226	122.362443	132.579505
13C4-Perfluoroheptanoic acid	ug/L	122.973504	116.573630	123.515999	122.745498	131.370390	137.652331
13C4-Perfluorooctanoic acid	ug/L	118.409052	106.713393	118.755277	114.136125	124.438439	125.536226
13C5-Perfluorononanoic acid	ug/L	114.744415	108.537371	116.398195	107.710481	118.610395	120.532646
13C2-Perfluorodecanoic acid	ug/L	108.595387	100.628930	109.755415	106.652690	115.639412	115.401816
13C2-Perfluoroundecanoic acid	ug/L	115.385515	114.367614	123.657423	109.675909	130.045630	126.769626
13C2-Perfluorododecanoic acid	ug/L	114.021012	109.522445	115.759312	110.057306	125.702005	125.195797
13C2-perfluorotetradecanoic acid	ug/L	103.318309	96.5249199	107.048141	101.417466	105.330197	114.181200
13C3-Perfluorobutanesulfonic acid	ug/L	108.110516	102.049910	111.497326	106.120023	112.329174	119.459298
18O2-Perfluorohexanesulfonic acid	ug/L	106.680942	101.884368	113.533190	102.355460	111.948608	115.117773
13C4-Perfluorooctanesulfonic acid	ug/L	108.618784	106.850828	117.679558	108.397790	115.966850	113.922651
13C8-Perfluorooctane Sulfonamide	ug/L	128.252980	122.602384	133.773976	116.511145	136.677034	140.072576
D5-EtFOSA	ug/L	87.5988007	75.7427091	92.5320250	91.8506405	N/A*****	N/A*****
D3-MeFOSA	ug/L	82.8856825	72.5194228	83.2852386	83.2630410	N/A*****	N/A*****
D9-EtFOSE	ug/L	91.8478260	84.8214285	95.4192546	94.0605590	N/A*****	N/A*****
D7-MeFOSE	ug/L	96.6589327	87.0997679	99.4431554	91.1832946	N/A*****	N/A*****
D5-EtFOSAA	ug/L	106.088407	97.3728106	100.208507	92.7856547	N/A*****	N/A*****
D3-MeFOSAA	ug/L	118.736223	98.6774430	114.915503	107.274063	N/A*****	N/A*****
13C2-4:2-Fluorotelomersulfonic Acid	ug/L	124.237190	113.068508	119.055843	119.401266	N/A*****	N/A*****
13C2-6:2-Fluorotelomersulfonic Acid	ug/L	133.434881	130.616907	134.577303	132.444782	141.584158	143.412033
13C2-8:2-Fluorotelomersulfonic Acid	ug/L	107.390510	111.131386	113.868613	104.197080	122.354014	123.357664
13C3-HFPO-DA	ug/L	108.860759	102.452531	107.041139	114.636075	N/A*****	N/A*****

PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	C0F7895 MYQ830	C0F7895 MYQ831	C0F7895 MYQ832	C0F7895 MYS398	C0G5389 NAH261	DL	C0G5477 NAH700
Perfluorobutanoic acid (PFBA)	0.01184303	0.01213658	0.02698723	0.01052414	0.00516549	0.02	N/A*****
Perfluoropentanoic acid (PFPeA)	0.00909534	0.01117070	0.06755787	0.00900675	0	0.02	N/A*****
Perfluorohexanoic acid (PFHxA)	0.01150291	0.01498298	0.11414990	0.01181821	0	0.02	2.13251470
Perfluoroheptanoic acid (PFHpA)	0.00614843	0.00690955	0.01406922	0.00632373	0	0.02	0.49169906
Perfluorooctanoic acid (PFOA)	0.01273175	0.01228010	0.01290447	0.01202057	0	0.02	1.82644017
Perfluorononanoic acid (PFNA)	0	0	0	0	0	0.02	0.09343658
Perfluorodecanoic acid (PFDA)	0	0	0	0	0	0.02	0.03022601
Perfluoroundecanoic acid (PFUnA)	0	0	0	0	0	0.02	0
Perfluorododecanoic acid (PFDoA)	0	0	0	0	0	0.02	0
Perfluorotridecanoic acid (PFTRDA)	0	0	0	0	0	0.02	0
Perfluorotetradecanoic acid(PFTEDA)	0	0	0	0	0	0.02	0
Perfluorobutanesulfonic acid (PFBS)	0.00937347	0.01183074	0.03734724	0.01093524	0	0.02	0.14122651
Perfluoropentanesulfonic acid PFPes	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
Perfluorohexanesulfonic acid(PFHxS)	0.02784183	0.03269779	0.05709246	0.03030850	0	0.02	1.83005444
Perfluoroheptanesulfonic acid PFHpS	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
Perfluorooctanesulfonic acid (PFOS)	0	0	0	0	0	0.02	14.0259786
Perfluorononanesulfonic acid (PFNS)	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
Perfluorodecanesulfonic acid (PFDS)	0	0	0	0	0	0.02	N/A*****
Perfluorooctane Sulfonamide (PFOSA)	0	0	0	0	0	0.02	N/A*****
EtFOSA	N/A*****	N/A*****	N/A*****	N/A*****	0	0.04	0
MeFOSA	N/A*****	N/A*****	N/A*****	N/A*****	0	0.04	0
EtFOSE	N/A*****	N/A*****	N/A*****	N/A*****	0	0.04	N/A*****
MeFOSE	N/A*****	N/A*****	N/A*****	N/A*****	0	0.04	N/A*****
EtFOSAA	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
MeFOSAA	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
4:2 Fluorotelomer sulfonic acid	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
6:2 Fluorotelomer sulfonic acid	0	0	0	0	0	0.02	N/A*****
8:2 Fluorotelomer sulfonic acid	0	0	0	0	0	0.02	N/A*****
Hexafluoropropyleneoxide dimer acid	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
4,8-Dioxa-3H-perfluorononanoic acid	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
9Cl-PF3ONS (F-53B Major)	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
11Cl-PF3OUdS (F-53B Minor)	N/A*****	N/A*****	N/A*****	N/A*****	0	0.02	N/A*****
13C4-Perfluorobutanoic acid	136.461159	140.493218	137.176325	131.467324	130.184956		N/A*****
13C5-Perfluoropentanoic acid	122.905447	129.492798	122.517219	116.981840	118.659987		N/A*****
13C2-Perfluorohexanoic acid	130.691569	130.035335	130.590610	125.098435	123.382130		111.822311
13C4-Perfluoroheptanoic acid	135.993395	140.066042	136.504442	128.060382	128.304111		119.372592
13C4-Perfluorooctanoic acid	126.786015	129.859820	125.012666	120.511737	121.541969		111.492991
13C5-Perfluorononanoic acid	118.309707	121.273625	118.846649	114.594072	114.894759		106.271477
13C2-Perfluorodecanoic acid	117.246680	121.313766	116.212438	111.278825	115.303983		100.782669
13C2-Perfluoroundecanoic acid	125.880425	132.584532	127.927927	121.469521	123.294723		116.590616
13C2-Perfluorododecanoic acid	125.826170	124.651384	120.955109	119.092645	116.160458		114.966571
13C2-perfluorotetradecanoic acid	112.064798	114.122411	114.945456	106.995884	106.937095		102.952511
13C3-Perfluorobutanesulfonic acid	121.746880	120.915032	117.468805	115.329768	113.071895		101.544860
18O2-Perfluorohexanesulfonic acid	112.890792	119.229122	114.689507	109.978586	112.505353		101.755888
13C4-Perfluorooctanesulfonic acid	118.066298	120.331491	113.591160	115.469613	114.309392		114.198895
13C8-Perfluorooctane Sulfonamide	141.057542	141.498185	138.076723	135.666148	128.123379		N/A*****
D5-EtFOSA	N/A*****	N/A*****	N/A*****	N/A*****	80.1580812		57.1817934
D3-MeFOSA	N/A*****	N/A*****	N/A*****	N/A*****	70.6770255		52.1864594
D9-EtFOSE	N/A*****	N/A*****	N/A*****	N/A*****	88.3928571		N/A*****
D7-MeFOSE	N/A*****	N/A*****	N/A*****	N/A*****	96.2412993		N/A*****
D5-EtFOSAA	N/A*****	N/A*****	N/A*****	N/A*****	100.333611		N/A*****
D3-MeFOSAA	N/A*****	N/A*****	N/A*****	N/A*****	115.282880		N/A*****
13C2-4:2-Fluorotelomersulfonic Acid	N/A*****	N/A*****	N/A*****	N/A*****	128.785261		N/A*****
13C2-6:2-Fluorotelomersulfonic Acid	138.766184	146.839299	149.581111	140.060929	143.412033		N/A*****
13C2-8:2-Fluorotelomersulfonic Acid	118.339416	123.540145	120.894160	111.222627	119.616788		N/A*****
13C3-HFPO-DA	N/A*****	N/A*****	N/A*****	N/A*****	111.787974		N/A*****

PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	DL	C0G5477 NAH701	DL	C0G5477 NAH702	DL	C0G5477 NAH703	DL
Perfluorobutanoic acid (PFBA)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluoropentanoic acid (PFPeA)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluorohexanoic acid (PFHxA)	0.1	0.26378671	0.022	0.00759266	0.02	1.07737535	0.022
Perfluoroheptanoic acid (PFHpA)	0.1	0.14895545	0.022	0.00610804	0.02	0.51446736	0.022
Perfluorooctanoic acid (PFOA)	0.1	0.43768461	0.022	0.02325737	0.02	0.37757487	0.022
Perfluorononanoic acid (PFNA)	0.1	0.02119837	0.022	0	0.02	0.04920275	0.022
Perfluorodecanoic acid (PFDA)	0.1	0.01123144	0.022	0	0.02	0.01033060	0.022
Perfluoroundecanoic acid (PFUnA)	0.1	0	0.022	0	0.02	0	0.022
Perfluorododecanoic acid (PFDoA)	0.1	0	0.022	0	0.02	0	0.022
Perfluorotridecanoic acid (PFTRDA)	0.1	0	0.022	0	0.02	0	0.022
Perfluorotetradecanoic acid (PFTEDA)	0.1	0	0.022	0	0.02	0	0.022
Perfluorobutanesulfonic acid (PFBS)	0.1	0.02692387	0.022	0.00671791	0.02	0.12403410	0.022
Perfluoropentanesulfonic acid PFPes	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluorohexanesulfonic acid (PFHxS)	0.1	0.61949155	0.022	0.02326764	0.02	4.05669915	0.2
Perfluoroheptanesulfonic acid PFHpS	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluorooctanesulfonic acid (PFOS)	1	1.81984434	0.2	0.04989771	0.02	1.89599012	0.2
Perfluorononanesulfonic acid (PFNS)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluorodecanesulfonic acid (PFDS)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Perfluorooctane Sulfonamide (PFOSA)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
EtFOSA	0.2	0	0.043	0	0.04	0	0.043
MeFOSA	0.2	0	0.043	0	0.04	0	0.043
EtFOSE	0.2	N/A*****	0.043	N/A*****	0.04	N/A*****	0.043
MeFOSE	0.2	N/A*****	0.043	N/A*****	0.04	N/A*****	0.043
EtFOSAA	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
MeFOSAA	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
4:2 Fluorotelomer sulfonic acid	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
6:2 Fluorotelomer sulfonic acid	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
8:2 Fluorotelomer sulfonic acid	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
Hexafluoropropyleneoxide dimer acid	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
4,8-Dioxa-3H-perfluorononanoic acid	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
9Cl-PF3ONS (F-53B Major)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
11Cl-PF3OUdS (F-53B Minor)	0.1	N/A*****	0.022	N/A*****	0.02	N/A*****	0.022
13C4-Perfluorobutanoic acid		N/A*****		N/A*****		N/A*****	
13C5-Perfluoropentanoic acid		N/A*****		N/A*****		N/A*****	
13C2-Perfluorohexanoic acid		119.626451		123.402322		133.114588	
13C4-Perfluoroheptanoic acid		124.593128		131.559084		142.542652	
13C4-Perfluorooctanoic acid		115.901030		121.195743		136.454990	
13C5-Perfluorononanoic acid		107.527920		116.140463		128.554553	
13C2-Perfluorodecanoic acid		104.821802		108.525506		119.021663	
13C2-Perfluoroundecanoic acid		118.345618		125.681525		127.951327	
13C2-Perfluorododecanoic acid		111.537726		121.002865		122.702960	
13C2-perfluorotetradecanoic acid		105.813573		105.108106		106.172839	
13C3-Perfluorobutanesulfonic acid		112.388591		112.269756		115.656565	
18O2-Perfluorohexanesulfonic acid		100.599571		110.278372		118.372591	
13C4-Perfluorooctanesulfonic acid		111.049723		113.370165		125.469613	
13C8-Perfluorooctane Sulfonamide		N/A*****		N/A*****		N/A*****	
D5-EtFOSA		86.1815208		88.8525483		85.8544562	
D3-MeFOSA		80.0		80.1775804		80.8213096	
D9-EtFOSE		N/A*****		N/A*****		N/A*****	
D7-MeFOSE		N/A*****		N/A*****		N/A*****	
D5-EtFOSAA		N/A*****		N/A*****		N/A*****	
D3-MeFOSAA		N/A*****		N/A*****		N/A*****	
13C2-4:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****		N/A*****	
13C2-6:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****		N/A*****	
13C2-8:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****		N/A*****	
13C3-HFPO-DA		N/A*****		N/A*****		N/A*****	

PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	C0G5477 NAH705	DL	C0G5477 NAH706	DL	C0G5477 NAH707	DL	C0G5477 NAH708
Perfluorobutanoic acid (PFBA)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluoropentanoic acid (PFPeA)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluorohexanoic acid (PFHxA)	1.12628806	0.2	1.33715377	0.1	1.25899398	0.04	0.18842825
Perfluoroheptanoic acid (PFHpA)	0.53555655	0.021	0.90230946	0.1	0.62072461	0.04	0.07328703
Perfluorooctanoic acid (PFOA)	0.38637875	0.021	0.98765078	0.1	1.50660893	0.04	0.15688352
Perfluorononanoic acid (PFNA)	0.05076217	0.021	0.09778567	0.1	0.05919596	0.04	0.01479346
Perfluorodecanoic acid (PFDA)	0.01059710	0.021	0.02470586	0.1	0.01783711	0.04	0.00536132
Perfluoroundecanoic acid (PFUnA)	0	0.021	0	0.1	0	0.04	0
Perfluorododecanoic acid (PFDoA)	0	0.021	0	0.1	0	0.04	0
Perfluorotridecanoic acid (PFTRDA)	0	0.021	0	0.1	0	0.04	0
Perfluorotetradecanoic acid (PFTEDA)	0	0.021	0	0.1	0	0.04	0
Perfluorobutanesulfonic acid (PFBS)	0.13819081	0.021	0.10902990	0.1	0.09709343	0.04	0.03137854
Perfluoropentanesulfonic acid PFPes	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluorohexanesulfonic acid(PFHxS)	4.06017330	0.2	6.89876504	1	2.73135906	0.4	0.72311246
Perfluoroheptanesulfonic acid PFHpS	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluorooctanesulfonic acid (PFOS)	1.36200554	0.2	17.9279087	1	8.39684296	0.4	1.87012087
Perfluorononanesulfonic acid (PFNS)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluorodecanesulfonic acid (PFDS)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Perfluorooctane Sulfonamide (PFOSA)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
EtFOSA	0	0.042	0	0.2	0	0.08	0
MeFOSA	0	0.042	0	0.2	0	0.08	0
EtFOSE	N/A *****	0.042	N/A *****	0.2	N/A *****	0.08	N/A *****
MeFOSE	N/A *****	0.042	N/A *****	0.2	N/A *****	0.08	N/A *****
EtFOSAA	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
MeFOSAA	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
4:2 Fluorotelomer sulfonic acid	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
6:2 Fluorotelomer sulfonic acid	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
8:2 Fluorotelomer sulfonic acid	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
Hexafluoropropyleneoxide dimer acid	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
4,8-Dioxa-3H-perfluorononanoic acid	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
9Cl-PF3ONS (F-53B Major)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
11Cl-PF3OUdS (F-53B Minor)	N/A *****	0.021	N/A *****	0.1	N/A *****	0.04	N/A *****
13C4-Perfluorobutanoic acid	N/A *****		N/A *****		N/A *****		N/A *****
13C5-Perfluoropentanoic acid	N/A *****		N/A *****		N/A *****		N/A *****
13C2-Perfluorohexanoic acid	91.4588591		87.1378091		88.2584553		90.8833922
13C4-Perfluoroheptanoic acid	87.5461907		92.2635427		94.8659485		94.1976570
13C4-Perfluorooctanoic acid	84.4283060		87.8736699		85.4500928		86.4803242
13C5-Perfluorononanoic acid	77.1585051		86.0073024		88.6168384		84.0206185
13C2-Perfluorodecanoic acid	72.8022361		79.8881900		80.1816911		84.2348008
13C2-Perfluoroundecanoic acid	79.3143793		92.8512928		91.9971919		89.7156897
13C2-Perfluorododecanoic acid	76.5329512		89.2645654		90.6208213		88.1279847
13C2-perfluorotetradecanoic acid	63.7402834		80.2011888		80.5735188		80.7368214
13C3-Perfluorobutanesulfonic acid	73.8265002		85.1455733		84.7890671		81.8478906
18O2-Perfluorohexanesulfonic acid	88.7366167		87.1520342		90.8351177		79.4432548
13C4-Perfluorooctanesulfonic acid	87.9558011		93.6464088		94.5856353		99.2817679
13C8-Perfluorooctane Sulfonamide	N/A *****		N/A *****		N/A *****		N/A *****
D5-EtFOSA	58.3810302		55.9825565		59.8528209		62.3603161
D3-MeFOSA	53.4961154		50.9877913		53.9844617		52.0976692
D9-EtFOSE	N/A *****		N/A *****		N/A *****		N/A *****
D7-MeFOSE	N/A *****		N/A *****		N/A *****		N/A *****
D5-EtFOSAA	N/A *****		N/A *****		N/A *****		N/A *****
D3-MeFOSAA	N/A *****		N/A *****		N/A *****		N/A *****
13C2-4:2-Fluorotelomersulfonic Acid	N/A *****		N/A *****		N/A *****		N/A *****
13C2-6:2-Fluorotelomersulfonic Acid	N/A *****		N/A *****		N/A *****		N/A *****
13C2-8:2-Fluorotelomersulfonic Acid	N/A *****		N/A *****		N/A *****		N/A *****
13C3-HFPO-DA	N/A *****		N/A *****		N/A *****		N/A *****

PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	DL	C0G5477 NAH709	DL	C0G5477 NAH710	C0G5477 NAH711	DL	RDL
Perfluorobutanoic acid (PFBA)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluoropentanoic acid (PFPeA)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluorohexanoic acid (PFHxA)	0.022	0.24149281	0.021	0.14490161	0	0.02	0.02
Perfluoroheptanoic acid (PFHpA)	0.022	0.13299062	0.021	0.08421283	0	0.02	0.02
Perfluorooctanoic acid (PFOA)	0.022	0.17856106	0.021	0.09231351	0	0.02	0.02
Perfluorononanoic acid (PFNA)	0.022	0.03148253	0.021	0.01263200	0	0.02	0.02
Perfluorodecanoic acid (PFDA)	0.022	0.00683085	0.021	0.00465575	0	0.02	0.02
Perfluoroundecanoic acid (PFUnA)	0.022	0	0.021	0	0	0.02	0.02
Perfluorododecanoic acid (PFDoA)	0.022	0	0.021	0	0	0.02	0.02
Perfluorotridecanoic acid (PFTRDA)	0.022	0	0.021	0	0	0.02	0.02
Perfluorotetradecanoic acid (PFTEDA)	0.022	0	0.021	0	0	0.02	0.02
Perfluorobutanesulfonic acid (PFBS)	0.022	0.03673952	0.021	0.02757542	0	0.02	0.02
Perfluoropentanesulfonic acid PFPes	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluorohexanesulfonic acid (PFHxS)	0.022	1.01376820	0.021	0.57445149	0	0.02	0.02
Perfluoroheptanesulfonic acid PFHpS	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluorooctanesulfonic acid (PFOS)	0.2	2.89257778	0.2	0.74487429	0	0.02	0.02
Perfluorononanesulfonic acid (PFNS)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluorodecanesulfonic acid (PFDS)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Perfluorooctane Sulfonamide (PFOSA)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
EtFOSA	0.044	0	0.043	0	0	0.04	0.04
MeFOSA	0.044	0	0.043	0	0	0.04	0.04
EtFOSE	0.044	N/A*****	0.043	N/A*****	N/A*****	0.04	0.04
MeFOSE	0.044	N/A*****	0.043	N/A*****	N/A*****	0.04	0.04
EtFOSAA	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
MeFOSAA	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
4:2 Fluorotelomer sulfonic acid	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
6:2 Fluorotelomer sulfonic acid	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
8:2 Fluorotelomer sulfonic acid	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
Hexafluoropropyleneoxide dimer acid	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
4,8-Dioxa-3H-perfluorononanoic acid	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
9Cl-PF3ONS (F-53B Major)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
11Cl-PF3OUdS (F-53B Minor)	0.022	N/A*****	0.021	N/A*****	N/A*****	0.02	0.02
13C4-Perfluorobutanoic acid		N/A*****		N/A*****	N/A*****		
13C5-Perfluoropentanoic acid		N/A*****		N/A*****	N/A*****		
13C2-Perfluorohexanoic acid		103.301362		101.009591	106.279656		
13C4-Perfluoroheptanoic acid		108.514820		106.399874	108.900070		
13C4-Perfluorooctanoic acid		100.464448		97.8550920	100.016889		
13C5-Perfluorononanoic acid		96.7568728		97.5408075	98.3999140		
13C2-Perfluorodecanoic acid		90.3424178		87.9524807	91.6422082		
13C2-Perfluoroundecanoic acid		101.310401		100.140400	97.5312975		
13C2-Perfluorododecanoic acid		99.5033428		95.1384909	98.0611270		
13C2-perfluorotetradecanoic acid		89.8817688		84.1400483	86.1715330		
13C3-Perfluorobutanesulfonic acid		93.3749257		90.8199643	93.9691027		
18O2-Perfluorohexanesulfonic acid		93.6616702		90.9635974	93.4047109		
13C4-Perfluorooctanesulfonic acid		94.5303867		91.8232044	98.0110497		
13C8-Perfluorooctane Sulfonamide		N/A*****		N/A*****	N/A*****		
D5-EtFOSA		72.1449986		64.7042790	67.7023712		
D3-MeFOSA		65.8601553		58.0022197	60.4661487		
D9-EtFOSE		N/A*****		N/A*****	N/A*****		
D7-MeFOSE		N/A*****		N/A*****	N/A*****		
D5-EtFOSAA		N/A*****		N/A*****	N/A*****		
D3-MeFOSAA		N/A*****		N/A*****	N/A*****		
13C2-4:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****	N/A*****		
13C2-6:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****	N/A*****		
13C2-8:2-Fluorotelomersulfonic Acid		N/A*****		N/A*****	N/A*****		
13C3-HFPO-DA		N/A*****		N/A*****	N/A*****		

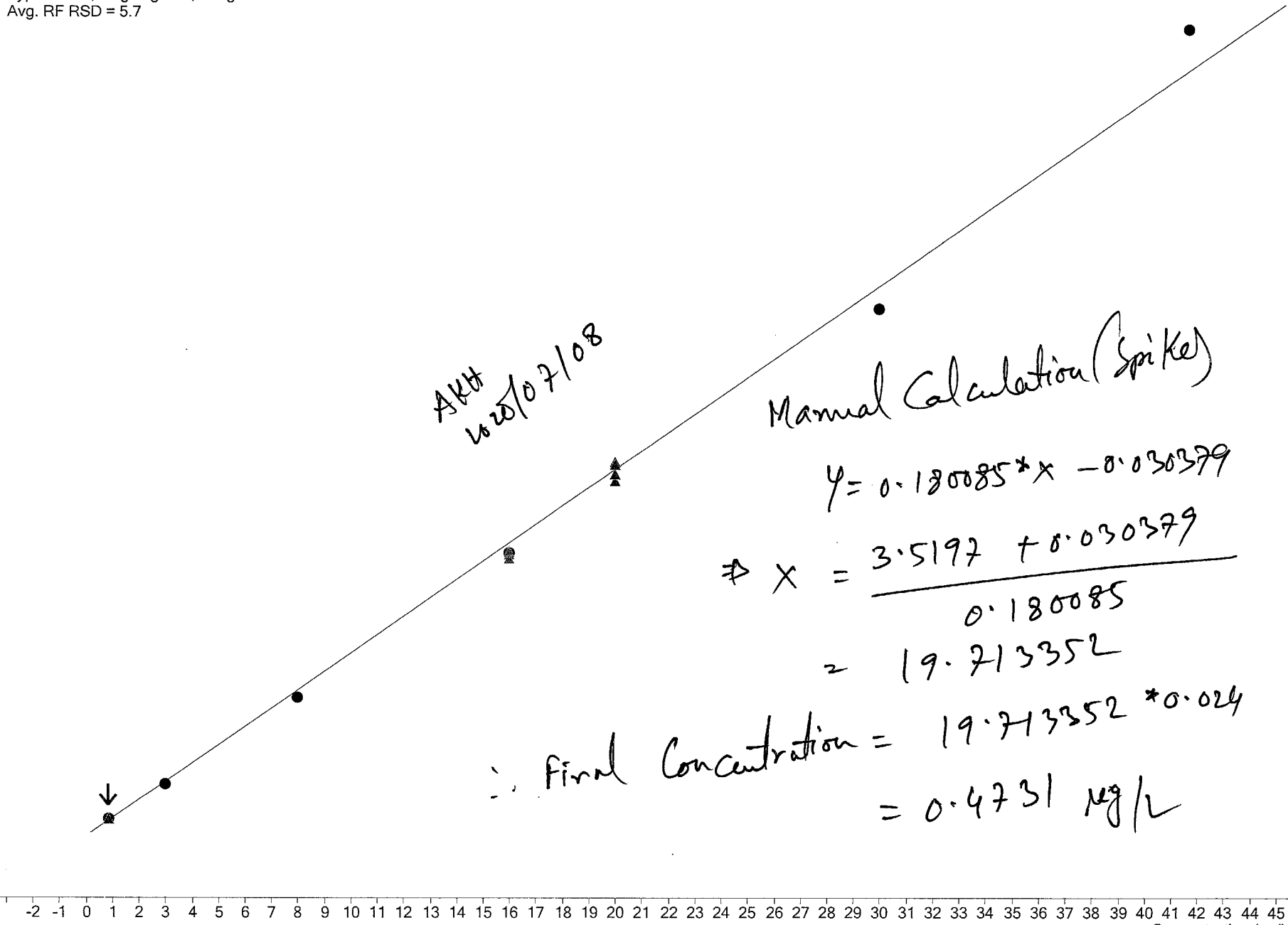
PFAS in water by SPE/LC-MS/MS - Water  
ug/L

Parameter Name	MDL	IDL					
Perfluorobutanoic acid (PFBA)	0.007	0					
Perfluoropentanoic acid (PFPeA)	0.0041	0					
Perfluorohexanoic acid (PFHxA)	0.0064	0					
Perfluoroheptanoic acid (PFHpA)	0.0071	0					
Perfluorooctanoic acid (PFOA)	0.0074	0					
Perfluorononanoic acid (PFNA)	0.0049	0					
Perfluorodecanoic acid (PFDA)	0.0041	0					
Perfluoroundecanoic acid (PFUnA)	0.0043	0					
Perfluorododecanoic acid (PFDoA)	0.0068	0					
Perfluorotridecanoic acid (PFTRDA)	0.0069	0					
Perfluorotetradecanoic acid (PFTEDA)	0.0067	0					
Perfluorobutanesulfonic acid (PFBS)	0.0051	0					
Perfluoropentanesulfonic acid PFPes	0.0074	0					
Perfluorohexanesulfonic acid (PFHxS)	0.0052	0					
Perfluoroheptanesulfonic acid PFHpS	0.0033	0					
Perfluorooctanesulfonic acid (PFOS)	0.0052	0					
Perfluorononanesulfonic acid (PFNS)	0.007	0					
Perfluorodecanesulfonic acid (PFDS)	0.0072	0					
Perfluorooctane Sulfonamide (PFOSA)	0.0076	0					
EtFOSA	0.009	0					
MeFOSA	0.0035	0					
EtFOSE	0.0094	0					
MeFOSE	0.0066	0					
EtFOSAA	0.0081	0					
MeFOSAA	0.007	0					
4:2 Fluorotelomer sulfonic acid	0.0066	0					
6:2 Fluorotelomer sulfonic acid	0.0059	0					
8:2 Fluorotelomer sulfonic acid	0.0073	0					
Hexafluoropropyleneoxide dimer acid	0.0047	0					
4,8-Dioxa-3H-perfluorononanoic acid	0.0048	0					
9Cl-PF3ONS (F-53B Major)	0.0093	0					
11Cl-PF3OUdS (F-53B Minor)	0.0053	0					
13C4-Perfluorobutanoic acid							
13C5-Perfluoropentanoic acid							
13C2-Perfluorohexanoic acid							
13C4-Perfluoroheptanoic acid							
13C4-Perfluorooctanoic acid							
13C5-Perfluorononanoic acid							
13C2-Perfluorodecanoic acid							
13C2-Perfluoroundecanoic acid							
13C2-Perfluorododecanoic acid							
13C2-perfluorotetradecanoic acid							
13C3-Perfluorobutanesulfonic acid							
18O2-Perfluorohexanesulfonic acid							
13C4-Perfluorooctanesulfonic acid							
13C8-Perfluorooctane Sulfonamide							
D5-EtFOSA							
D3-MeFOSA							
D9-EtFOSE							
D7-MeFOSE							
D5-EtFOSAA							
D3-MeFOSAA							
13C2-4:2-Fluorotelomersulfonic Acid							
13C2-6:2-Fluorotelomersulfonic Acid							
13C2-8:2-Fluorotelomersulfonic Acid							
13C3-HFPO-DA							

PFNA 1 - 6 Levels, 6 Levels Used, 6 Points, 6 Points Used, 5 QCs

Relative Responses

$y = 0.180085 * x - 0.030379$   
 $R^2 = 1.00$   
Type: Linear, Origin: Ignore, Weight: 1/x  
Avg. RF RSD = 5.7



AKH  
1620/07/08

Manual Calculation (Spike)

$$y = 0.180085 * x - 0.030379$$

$$\Rightarrow x = \frac{3.5197 + 0.030379}{0.180085}$$

$$= 19.713352$$

$$\therefore \text{Final Concentration} = 19.713352 * 0.024 = 0.4731 \mu\text{g/L}$$

<u>Sample Number</u>	<u>Parameter Code</u>	<u>Parameter</u>
MYQ828-01	PFBA	Perfluorobutanoic acid (PFBA)
MYQ829-01	PFPEA	Perfluoropentanoic acid (PFPeA)
MYQ830-01	PFHXA	Perfluorohexanoic acid (PFHxA)
MYQ831-01	PFHPA	Perfluoroheptanoic acid (PFHpA)
MYQ832-01	PFOA1	Perfluorooctanoic acid (PFOA)
MYS398-01	PFNA	Perfluorononanoic acid (PFNA)
	PFDA	Perfluorodecanoic acid (PFDA)
	PFUNA	Perfluoroundecanoic acid (PFUnA)
	PFDOA	Perfluorododecanoic acid (PFDoA)
	PFTRDA	Perfluorotridecanoic acid (PFTRDA)
	PFTEDA	Perfluorotetradecanoic acid (PFTEDA)
	PFBSA	Perfluorobutanesulfonic acid (PFBS)
	PFHXSA	Perfluorohexanesulfonic acid (PFHxS)
	PFOS2	Perfluorooctanesulfonic acid (PFOS)
	PFDS2	Perfluorodecanesulfonic acid (PFDS)
	PFOSA	Perfluorooctane Sulfonamide (PFOSA)
	6:2FTS2	6:2 Fluorotelomer sulfonic acid
	8:2FTS2	8:2 Fluorotelomer sulfonic acid
NAH261-01	PFBA	Perfluorobutanoic acid (PFBA)
	PFPEA	Perfluoropentanoic acid (PFPeA)
	PFHXA	Perfluorohexanoic acid (PFHxA)
	PFHPA	Perfluoroheptanoic acid (PFHpA)

\* - This parameter is usually off, but will be reported for this group of samples!







<u>Sample Number</u>	<u>Parameter Code</u>	<u>Parameter</u>
	PFOA1	Perfluorooctanoic acid (PFOA)
	PFNA	Perfluorononanoic acid (PFNA)
	PFDA	Perfluorodecanoic acid (PFDA)
	PFUNA	Perfluoroundecanoic acid (PFUnA)
	PFDOA	Perfluorododecanoic acid (PFDoA)
	PFTRDA	Perfluorotridecanoic acid (PFTRDA)
	PFTEDA	Perfluorotetradecanoic acid (PFTEDA)
	PFBSA	Perfluorobutanesulfonic acid (PFBS)
	PFPEs	Perfluoropentanesulfonic acid PFPes
	PFHXSA	Perfluorohexanesulfonic acid (PFHxS)
	PFHPS2	Perfluoroheptanesulfonic acid PFHpS
	PFOS2	Perfluorooctanesulfonic acid (PFOS)
	PFNS	Perfluorononanesulfonic acid (PFNS)
	PFDS2	Perfluorodecanesulfonic acid (PFDS)
	PFOSA	Perfluorooctane Sulfonamide (PFOSA)
	ETFOSA	EtFOSA
	MEFOSA	MeFOSA
	ETFOSE	EtFOSE
	MEFOSE	MeFOSE
	ETFOSAA	EtFOSAA
	MEFOSAA	MeFOSAA
	4:2FTS	4:2 Fluorotelomer sulfonic acid
	6:2FTS2	6:2 Fluorotelomer sulfonic acid
	8:2FTS2	8:2 Fluorotelomer sulfonic acid
	HFPDDA	Hexafluoropropyleneoxide *

\* - This parameter is usually off, but will be reported for this group of samples!

<u>Sample Number</u>	<u>Parameter Code</u>	<u>Parameter</u>	
	48DPFNA	dimer acid 4,8-Dioxa-3H-perfluorononanoic acid	*
	9CL-PF3ONS	9CI-PF3ONS (F-53B Major)	*
	11CLPF3OUD	11CI-PF3OUdS (F-53B Minor)	*
NAH700-01	PFHXA	Perfluorohexanoic acid (PFHxA)	
NAH701-01	PFHPA	Perfluoroheptanoic acid (PFHpA)	
NAH702-01	PFOA1	Perfluorooctanoic acid (PFOA)	
NAH703-01	PFNA	Perfluorononanoic acid (PFNA)	
NAH705-01	PFDA	Perfluorodecanoic acid (PFDA)	
NAH706-01	PFUNA	Perfluoroundecanoic acid (PFUnA)	
NAH707-01	PFDOA	Perfluorododecanoic acid (PFDoA)	
NAH708-01	PFTRDA	Perfluorotridecanoic acid (PFTRDA)	
NAH709-01	PFTEDA	Perfluorotetradecanoic acid (PFTEDA)	
NAH710-01	PFBSA	Perfluorobutanesulfonic acid (PFBS)	
NAH711-01	PFHXSA	Perfluorohexanesulfonic acid (PFHxS)	
	PFOS2	Perfluorooctanesulfonic acid (PFOS)	
	ETFOSA	EtFOSA	
	MEFOSA	MeFOSA	

\* - This parameter is usually off, but will be reported for this group of samples!

WorkSheet 6819936 Instrument Sequences

1.   
6819936:MTRX SPK
2.   
6819936:MTRX SPK:D1
3.   
6819936:SPIKE
4.   
6819936:BLANK
5.   
6819936:MYQ828-01
6.   
6819936:MYQ829-01
7.   
6819936:MYQ830-01
8.   
6819936:MYQ831-01
9.   
6819936:MYQ832-01
10.   
6819936:MYS398-01
11.   
6819936:NAH261-01
12.   
6819936:NAH700-01
13.   
6819936:NAH701-01
14.   
6819936:NAH702-01
15.   
6819936:NAH703-01
16.   
6819936:NAH705-01
17.   
6819936:NAH706-01
18.   
6819936:NAH707-01
19.   
6819936:NAH708-01
20.   
6819936:NAH709-01
21.   
6819936:NAH710-01
22.   
6819936:NAH711-01

MTRX SPK

MTRX SPK :D1

SPIKE

BLANK















06-MW25-0620

06-MW26-0620

06-MW30-0620

06-MW31-0620

06-MW31-0620 DUP

06-MW32-0620

06-MW33-0620

06-MW34-0620

06-MW35-0620

06-MW36-0620

QCFB-0620

# Worklist Report



**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC\_200707\_Water\_DOD.w  
KI

**Operator Name:** ---  
**Run Type:** Standard Start  
**Part of Method to Run:** Acquisition Only  
**Execution of Acquisition-DA:** Synchronous  
**Acquisition Method Path:** D:\MassHunter\Acquisition Method  
**DA Method Path:** D:\MassHunter\methods  
**Data File Path:** D:\MassHunter\data\PFC\20200707\WS#6819936  
**Pre-Worklist Script:** ---  
**Post-Worklist Script:** SCP\_InstrumentStandby(){MH\_Acq\_Scripts.exe}  
**Acquisition Clean Up Script:** ---  
**Overlapped Injection:** No  
**Clear Sample Selection After Run:** Yes  
**Wait Time for Ready(Min):** 10  
**Threshold Disk Value(GB):** 10  
**Comment:** Column #431 MP A1:Solution #114 [FSRE19]  
 MP B1:Methanol, Sigma (SHBL8762)

*2020/07/07*  
*verified*  
*20/07/07*  
*W*

**Plate Barcode:**

Plate	Barcode
P2	

## Worklist Table

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
1	MeOH RINSE	P2-A1	PFAS.m	WS#6819936_01.d	Sample		As Method	-
2	STD 1	P2-A2	PFAS.m	WS#6819936_02.d	Calibration	STD 1	As Method	-
3	STD 2	P2-A3	PFAS.m	WS#6819936_03.d	Calibration	STD 2	As Method	-
4	STD 3	P2-A4	PFAS.m	WS#6819936_04.d	Calibration	STD 3	As Method	-
5	STD 4	P2-A5	PFAS.m	WS#6819936_05.d	Calibration	STD 4	As Method	-
6	STD 5	P2-A6	PFAS.m	WS#6819936_06.d	Calibration	STD 5	As Method	-
7	STD 6	P2-A7	PFAS.m	WS#6819936_07.d	Calibration	STD 6	As Method	-
8	IB	P2-A8	PFAS.m	WS#6819936_08.d	Sample		As Method	-
9	ICV	P2-A9	PFAS.m	WS#6819936_09.d	QC	ICV	As Method	-
10	ISC	P2-A2	PFAS.m	WS#6819936_10.d	QC	STD 1	As Method	-
11	6819936:BLANK	P2-B1	PFAS.m	WS#6819936_11.d	Sample		As Method	-
12	6819936:SPIKE	P2-B2	PFAS.m	WS#6819936_12.d	QC	ICV	As Method	-
13	6819936:MTRX SPK	P2-B3	PFAS.m	WS#6819936_13.d	QC	ICV	As Method	-
14	6819936:MTRX SPK:D1	P2-B4	PFAS.m	WS#6819936_14.d	Sample		As Method	-

D:\MassHunter\Worklists\PFCs\PFC\_200707\_Water\_DOD.wkl

# Worklist Report



	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
15	IB	P2-A8	PFAS.m	WS#6819936_15.d	Sample		As Method	-
16	6819936:MYQ828-01	P2-B5	PFAS.m	WS#6819936_16.d	Sample		As Method	-
17	6819936:MYQ829-01	P2-B6	PFAS.m	WS#6819936_17.d	Sample		As Method	-
18	6819936:MYQ830-01	P2-B7	PFAS.m	WS#6819936_18.d	Sample		As Method	-
19	6819936:MYQ831-01	P2-B8	PFAS.m	WS#6819936_19.d	Sample		As Method	-
20	6819936:MYQ832-01	P2-B9	PFAS.m	WS#6819936_20.d	Sample		As Method	-
21	6819936:MYS398-01	P2-C1	PFAS.m	WS#6819936_21.d	Sample		As Method	-
22	6819936:NAH261-01	P2-C2	PFAS.m	WS#6819936_22.d	Sample		As Method	-
23	IB	P2-A8	PFAS.m	WS#6819936_23.d	Sample		As Method	-
24	6819936:NAH700-01:50x	P2-C3	PFAS.m	WS#6819936_24.d	Sample		As Method	-
25	6819936:NAH700-01:5x	P2-C4	PFAS.m	WS#6819936_25.d	Sample		As Method	-
26	IB	P2-A8	PFAS.m	WS#6819936_26.d	Sample		As Method	-
27	CCV	P2-A5	PFAS.m	WS#6819936_27.d	ConCal	STD 4	As Method	-
28	6819936:NAH701-01:10x	P2-C5	PFAS.m	WS#6819936_28.d	Sample		As Method	-
29	6819936:NAH701-01	P2-C6	PFAS.m	WS#6819936_29.d	Sample		As Method	-
30	IB	P2-A8	PFAS.m	WS#6819936_30.d	Sample		As Method	-
31	6819936:NAH702-01	P2-C7	PFAS.m	WS#6819936_31.d	Sample		As Method	-
32	6819936:NAH703-01:10x	P2-C8	PFAS.m	WS#6819936_32.d	Sample		As Method	-
33	6819936:NAH703-01	P2-C9	PFAS.m	WS#6819936_33.d	Sample		As Method	-
34	IB	P2-A8	PFAS.m	WS#6819936_34.d	Sample		As Method	-
35	6819936:NAH705-01:10x	P2-D1	PFAS.m	WS#6819936_35.d	Sample		As Method	-
36	6819936:NAH705-01	P2-D2	PFAS.m	WS#6819936_36.d	Sample		As Method	-
37	IB	P2-A8	PFAS.m	WS#6819936_37.d	Sample		As Method	-
38	6819936:NAH706-01:50x	P2-D3	PFAS.m	WS#6819936_38.d	Sample		As Method	-
39	6819936:NAH706-01:5x	P2-D4	PFAS.m	WS#6819936_39.d	Sample		As Method	-
40	IB	P2-A8	PFAS.m	WS#6819936_40.d	Sample		As Method	-
41	CCV	P2-A5	PFAS.m	WS#6819936_41.d	ConCal	STD 4	As Method	-
42	6819936:NAH707-01:20x	P2-D5	PFAS.m	WS#6819936_42.d	Sample		As Method	-
43	6819936:NAH707-01:2x	P2-D6	PFAS.m	WS#6819936_43.d	Sample		As Method	-
44	IB	P2-A8	PFAS.m	WS#6819936_44.d	Sample		As Method	-
45	6819936:NAH708-01:10x	P2-D7	PFAS.m	WS#6819936_45.d	Sample		As Method	-
46	6819936:NAH708-01	P2-D8	PFAS.m	WS#6819936_46.d	Sample		As Method	-
47	IB	P2-A8	PFAS.m	WS#6819936_47.d	Sample		As Method	-
48	6819936:NAH709-01:10x	P2-D9	PFAS.m	WS#6819936_48.d	Sample		As Method	-
49	6819936:NAH709-01	P2-E1	PFAS.m	WS#6819936_49.d	Sample		As Method	-

D:\MassHunterWorklists\PFCs\PFC\_200707\_Water\_DOD.wkl

# Worklist Report

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment
50	IB	P2-A8	PFAS.m	WS#6819936_50.d	Sample		As Method	-
51	6819936:NAH710-01	P2-E2	PFAS.m	WS#6819936_51.d	Sample		As Method	-
52	6819936:NAH711-01	P2-E3	PFAS.m	WS#6819936_52.d	Sample		As Method	-
53	CCV	P2-A5	PFAS.m	WS#6819936_53.d	ConCal	STD 4	As Method	-

**FINAL INJECTION SEQUENCE**

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
STD 1	-	2020/07/08 11:27 AM	WS#6819936_A_02.d	PFAS.m	P2-A2
STD 2	-	2020/07/08 11:34 AM	WS#6819936_A_03.d	PFAS.m	P2-A3
STD 3	-	2020/07/08 11:41 AM	WS#6819936_A_04.d	PFAS.m	P2-A4
STD 4	-	2020/07/08 11:48 AM	WS#6819936_A_05.d	PFAS.m	P2-A5
STD 5	-	2020/07/08 11:55 AM	WS#6819936_A_06.d	PFAS.m	P2-A6
STD 6	-	2020/07/08 12:02 PM	WS#6819936_A_07.d	PFAS.m	P2-A7
IB	-	2020/07/08 12:09 PM	WS#6819936_A_08.d	PFAS.m	P2-A8
ICV	-	2020/07/08 12:16 PM	WS#6819936_A_09.d	PFAS.m	P2-A9
ISC	-	2020/07/08 12:23 PM	WS#6819936_A_10.d	PFAS.m	P2-A2
6819936:BLANK	-	2020/07/08 12:30 PM	WS#6819936_A_11.d	PFAS.m	P2-B1
6819936:SPIKE	-	2020/07/08 12:37 PM	WS#6819936_A_12.d	PFAS.m	P2-B2
6819936:MTRX SPK	NAH702-01	2020/07/08 12:44 PM	WS#6819936_A_13.d	PFAS.m	P2-B3
6819936:MTRX SPK:D1	NAH702-01	2020/07/08 12:51 PM	WS#6819936_A_14.d	PFAS.m	P2-B4
IB	-	2020/07/08 12:57 PM	WS#6819936_A_15.d	PFAS.m	P2-A8
6819936:MYQ828-01	-	2020/07/08 1:04 PM	WS#6819936_A_16.d	PFAS.m	P2-B5
6819936:MYQ829-01	-	2020/07/08 1:11 PM	WS#6819936_A_17.d	PFAS.m	P2-B6
6819936:MYQ830-01	-	2020/07/08 1:18 PM	WS#6819936_A_18.d	PFAS.m	P2-B7
6819936:MYQ831-01	-	2020/07/08 1:25 PM	WS#6819936_A_19.d	PFAS.m	P2-B8
6819936:MYQ832-01	-	2020/07/08 1:32 PM	WS#6819936_A_20.d	PFAS.m	P2-B9
6819936:MYS398-01	-	2020/07/08 1:39 PM	WS#6819936_A_21.d	PFAS.m	P2-C1
6819936:NAH261-01	-	2020/07/08 1:46 PM	WS#6819936_A_22.d	PFAS.m	P2-C2
IB	-	2020/07/08 1:53 PM	WS#6819936_A_23.d	PFAS.m	P2-A8
6819936:NAH700-01:50x	Reported PFOS	2020/07/08 2:00 PM	WS#6819936_A_24.d	PFAS.m	P2-C3
6819936:NAH700-01:5x	-	2020/07/08 2:07 PM	WS#6819936_A_25.d	PFAS.m	P2-C4
IB	-	2020/07/08 2:14 PM	WS#6819936_A_26.d	PFAS.m	P2-A8
CCV	-	2020/07/08 2:21 PM	WS#6819936_A_27.d	PFAS.m	P2-A5
6819936:NAH701-01:10x	Reported PFOS	2020/07/08 2:28 PM	WS#6819936_A_28.d	PFAS.m	P2-C5
6819936:NAH701-01	-	2020/07/08 2:35 PM	WS#6819936_A_29.d	PFAS.m	P2-C6
IB	-	2020/07/08 2:42 PM	WS#6819936_A_30.d	PFAS.m	P2-A8
6819936:NAH702-01	-	2020/07/08 2:48 PM	WS#6819936_A_31.d	PFAS.m	P2-C7
6819936:NAH703-01:10x	Reported PFHxS, PFOS	2020/07/08 2:55 PM	WS#6819936_A_32.d	PFAS.m	P2-C8
6819936:NAH703-01	-	2020/07/08 3:02 PM	WS#6819936_A_33.d	PFAS.m	P2-C9

**FINAL INJECTION SEQUENCE**

Sample					
Name	Comment	Acq. Date-Time	Data File	Acq. Method File	Pos.
IB	-	2020/07/08 3:09 PM	WS#6819936_A_34.d	PFAS.m	P2-A8
6819936:NAH705-01:10x	Reported PFHxA, PFHxS, PFOS	2020/07/08 3:16 PM	WS#6819936_A_35.d	PFAS.m	P2-D1
6819936:NAH705-01	-	2020/07/08 3:23 PM	WS#6819936_A_36.d	PFAS.m	P2-D2
IB	-	2020/07/08 3:30 PM	WS#6819936_A_37.d	PFAS.m	P2-A8
6819936:NAH706-01:50x	Reported PFHxS, PFOS	2020/07/08 3:37 PM	WS#6819936_A_38.d	PFAS.m	P2-D3
6819936:NAH706-01:5x	-	2020/07/08 3:44 PM	WS#6819936_A_39.d	PFAS.m	P2-D4
IB	-	2020/07/08 3:51 PM	WS#6819936_A_40.d	PFAS.m	P2-A8
CCV	-	2020/07/08 3:58 PM	WS#6819936_A_41.d	PFAS.m	P2-A5
6819936:NAH707-01:20x	Reported PFHxS, PFOS	2020/07/08 4:05 PM	WS#6819936_A_42.d	PFAS.m	P2-D5
6819936:NAH707-01:2x	-	2020/07/08 4:12 PM	WS#6819936_A_43.d	PFAS.m	P2-D6
IB	-	2020/07/08 4:19 PM	WS#6819936_A_44.d	PFAS.m	P2-A8
6819936:NAH708-01:10x	Reported PFOS	2020/07/08 4:26 PM	WS#6819936_A_45.d	PFAS.m	P2-D7
6819936:NAH708-01	-	2020/07/08 4:33 PM	WS#6819936_A_46.d	PFAS.m	P2-D8
IB	-	2020/07/08 4:39 PM	WS#6819936_A_47.d	PFAS.m	P2-A8
6819936:NAH709-01:10x	Reported PFOS	2020/07/08 4:46 PM	WS#6819936_A_48.d	PFAS.m	P2-D9
6819936:NAH709-01	-	2020/07/08 4:53 PM	WS#6819936_A_49.d	PFAS.m	P2-E1
IB	-	2020/07/08 5:00 PM	WS#6819936_A_50.d	PFAS.m	P2-A8
6819936:NAH710-01	-	2020/07/08 5:07 PM	WS#6819936_A_51.d	PFAS.m	P2-E2
6819936:NAH711-01	-	2020/07/08 5:14 PM	WS#6819936_A_52.d	PFAS.m	P2-E3
CCV	-	2020/07/08 5:21 PM	WS#6819936_A_53.d	PFAS.m	P2-A5



## Certificate of Analysis

## Supelclean™ ENVI-Carb™

Catalog #: 57210-U

Supelco Lot #: 126480

Test Date: 08/14/2019

Received by:  
FD3  
HPLC  
2020/04/01  
1 bottle  
shelf

<u>Test</u>	<u>Specification</u>	<u>Results</u>
Atrazine Recovery	88 - 104%	99.9%
Flow Rate	>10 mL/min	12.3 mL/min
Fines Test	Proprietary	PASS

Lot Approved: \_\_\_\_\_



Quality Manager

T509096(4)

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.



3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH4O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA  
Received: 2020/06/01 (4x4L):KIH  
Received: 2020/06/09 (4x4L):KIH  
Received: 2020/06/15 (4x4L):KIH  
Received: 2020/06/25 (4x4L):KIH  
Received: 2020/06/26 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

REAGENT PREPARATION FORM

Reagent # 337 Replaced Reagent # 302 Analyst: GSZ  
 Reagent Name: 0.3% NH<sub>4</sub>OH in MeOH Preparation date: 2020/06/18 Expiry date: Daily  
 Final Volume: 250 ml Oven No.: - Temp.: - Final Conc.: 0.3% v/v  
 Balance ID: - Pipette/Syringe/Cylinder ID: K26250F/1755 Storage: -

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	249.25 ml	2020/06/15	2020/06/18	Sigma	SHBL8762	2024/12/31
NH <sub>4</sub> OH	0.75 ml	2020/05/01	2020/05/15	Fisher	190762	2022/12/31
<del>GSZ, 2020/06/18</del>						

NOTES:

Reagent # 338 Replaced Reagent # 319 Analyst: ATN  
 Reagent Name: DNPH Preparation date: 2020/06/18 Expiry date: Daily  
 Final Volume: 10 ml Oven No.: - Temp.: - Final Conc.: -  
 Balance ID: FC-1 Pipette/Syringe/Cylinder ID: G38164Z Storage: Dark/shelf

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
DNPH	0.0500g	2016/01/15	2016/01/15	Spectrum	2FK0212	2020/08/31
ACN	10 ml	2020/06/09	2020/06/10	Fisher	198064	2024-12-31
<del>ATN 2020-06-18</del>						

NOTES:

3050 Spruce Street, Saint Louis, MO 63103, USA

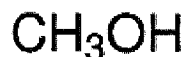
Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH<sub>4</sub>O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA

Received: 2020/06/01 (4x4L):KIH

Received: 2020/06/15 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Received on: 2020-05-01

TK4

1x Bottle

Room Temperature / shelf

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT - 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	12/16/2019
Lot Number	190762	Expiration Date	Dec/2022
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Comment	This product is free from genetically modified substances and is gluten free.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless and free from suspended matter.
ALUMINUM	ppm	<= 0.3	0.029
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.05
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.13
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.080
CARBON DIOXIDE	%	<= 0.002	<0.002
CHLORIDE	ppm	<= 0.5	<0.5
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.015
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.002
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2
PHOSPHATE (PO4)	ppm	<= 0.4	<0.4
POTASSIUM (K)	ppm	<= 0.3	0.008
RESIDUE AFTER IGNITION	ppm	<= 3	<3
SODIUM (Na)	ppm	>= 0	0.014

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

Bureau Veritas Laboratories

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.026



Peter Yang - Quality Control Manager - Bridgewater

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.  
 Bureau Veritas Laboratories



REAGENT PREPARATION FORM

Reagent # 393 Replaced Reagent # 375 Analyst: 652  
 Reagent Name: 0.3% NH<sub>4</sub>OH in MeOH Preparation date: 2020/06/29 Expiry date: Daily  
 Final Volume: 100ml Oven No.: - Temp.: - Final Conc.: 0.3% v/v  
 Balance ID: - Pipette/Syringe/Cylinder ID: K26250F/1755 Storage: -

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	0.3 ml	2020/05/01	2020/05/15	Fisher	190762	2022/12/31
MeOH	99.7ml	2020/06/26	2020/06/29	Sigma	SHBL8762	2024/12/31
<del>652, 2020/06/29</del>						
<del> </del>						
<del> </del>						

NOTES:

Reagent # 394 Replaced Reagent # 392 Analyst: TTM  
 Reagent Name: 0.2% NH<sub>4</sub>OH in MeOH Preparation date: 2020-06-30 Expiry date: Daily  
 Final Volume: 1L Oven No.: - Temp.: - Final Conc.: 0.2%  
 Balance ID: - Pipette/Syringe/Cylinder ID: G36164E Storage: Shelf  
14439

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	2ml	2020-05-01	2020-05-15	Fisher	190762	2022-12-31
MeOH	998ml	2020-06-26	2020-06-30	Sigma TTM	SHBL8762	2024-12-31
<del>TTM 2020-06-30</del>						
<del> </del>						
<del> </del>						

NOTES:

Received on: 2020-05-01

TK4

1x Bottle

Room Temperature / shelf

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT - 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	12/16/2019
Lot Number	190762	Expiration Date	Dec/2022
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Comment	This product is free from genetically modified substances and is gluten free.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless and free from suspended matter.
ALUMINUM	ppm	<= 0.3	0.029
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.05
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.13
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.080
CARBON DIOXIDE	%	<= 0.002	<0.002
CHLORIDE	ppm	<= 0.5	<0.5
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.015
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.002
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2
PHOSPHATE (PO4)	ppm	<= 0.4	<0.4
POTASSIUM (K)	ppm	<= 0.3	0.008
RESIDUE AFTER IGNITION	ppm	<= 3	<3
SODIUM (Na)	ppm	>= 0	0.014

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

Bureau Veritas Laboratories

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.026



Peter Yang - Quality Control Manager - Bridgewater

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.  
 Bureau Veritas Laboratories

3050 Spruce Street, Saint Louis, MO 63103, USA

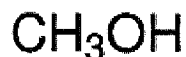
Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH4O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

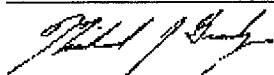
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA

Received: 2020/06/01 (4x4L):KIH

Received: 2020/06/09 (4x4L):KIH

Received: 2020/06/15 (4x4L):KIH

Received: 2020/06/25 (4x4L):KIH

Received: 2020/06/26 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

### REAGENT PREPARATION FORM

Reagent # 397 Replaced Reagent # 393 Analyst: FD3

Reagent Name: 0.3% NH<sub>4</sub>OH in MeOH Preparation date: 2020/06/30 Expiry date: daily

Final Volume: 100ml Oven No. :      Temp. :      Final Conc.: 0.3% v/v

Balance ID:      Pipette/Syringe/Cylinder ID: K26250F Storage:     

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	0.3 ml	2020/05/01	2020/05/15	Fisher	190762	2022/12/31
MeOH	99.7 ml	2020/06/26	2020/06/30	sigma	SHBL8762	2024/12/3
<del>FD3 2020/06/30</del>						

NOTES:

Reagent # 398 Replaced Reagent # 394 Analyst: FD3

Reagent Name: 0.2% NH<sub>4</sub>OH in MeOH Preparation date: 2020/07/01 Expiry date:     

Final Volume: 1L Oven No. :      Temp. :      Final Conc.: 0.2% v/v

Balance ID:      Pipette/Syringe/Cylinder ID: P22740H Storage:     

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	2ml	2020-5-1	2020-5-15	Fisher	190762	2022-12-31
MeOH	996ml	2020-6-26	2020-6-30	sigma	SHBL8762	2024-12-3
<del>FD3 2020/07/01</del>						

NOTES:

Received on: 2020-05-01

TK4

1x Bottle

Room Temperature / shelf

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT - 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	12/16/2019
Lot Number	190762	Expiration Date	Dec/2022
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Comment	This product is free from genetically modified substances and is gluten free.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless and free from suspended matter.
ALUMINUM	ppm	<= 0.3	0.029
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.05
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.13
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.080
CARBON DIOXIDE	%	<= 0.002	<0.002
CHLORIDE	ppm	<= 0.5	<0.5
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.015
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.002
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2
PHOSPHATE (PO4)	ppm	<= 0.4	<0.4
POTASSIUM (K)	ppm	<= 0.3	0.008
RESIDUE AFTER IGNITION	ppm	<= 3	<3
SODIUM (Na)	ppm	>= 0	0.014

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

Bureau Veritas Laboratories

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.026



Peter Yang - Quality Control Manager - Bridgewater

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.  
 Bureau Veritas Laboratories



3050 Spruce Street, Saint Louis, MO 63103, USA

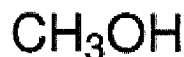
Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH<sub>4</sub>O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

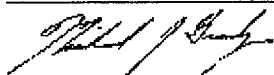
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3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA

Received: 2020/06/01 (4x4L):KIH

Received: 2020/06/09 (4x4L):KIH

Received: 2020/06/15 (4x4L):KIH

Received: 2020/06/25 (4x4L):KIH

Received: 2020/06/26 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

### REAGENT PREPARATION FORM

Reagent # 405 Replaced Reagent # 402 Analyst: [Signature]  
 Reagent Name: 0.2% Methanol MeOH Preparation date: 2020/7/3 Expiry date: Daily  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: 0.2% v/v  
 Balance ID: — Pipette/Syringe/Cylinder ID: K522906 Storage: —

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
MeOH	998 ml	2020/06/25	2020/07/02	Sigma	8762	2024/12/31
Methanol	2 ml	2020/5/1	2020/5/15	Rishee	190762	2022/12/31
<del>[Crossed out entry]</del>						
<del>[Crossed out entry]</del>						

NOTES:

Reagent # 406 Replaced Reagent # 389 Analyst: [Signature]  
 Reagent Name: 60:40 LCMS H<sub>2</sub>O Preparation date: 2020-7-3 Expiry date: 2020-9-03  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: 60:40 v/v  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: [Signature]

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Methanol	998 ml	2020/06/25	2020/7/3	Sigma	8762	2024/12/31
LCMS H <sub>2</sub> O	600 ml	2020/4/06	2020/7/3	Amis Sol	60064	2021/03/31
<del>[Crossed out entry]</del>						
<del>[Crossed out entry]</del>						

NOTES:

3050 Spruce Street, Saint Louis, MO 63103, USA

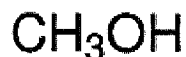
Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)

Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH<sub>4</sub>O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA  
Received: 2020/06/01 (4x4L):KIH  
Received: 2020/06/09 (4x4L):KIH  
Received: 2020/06/15 (4x4L):KIH  
Received: 2020/06/25 (4x4L):KIH  
Received: 2020/06/26 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

# Certificate of Analysis



Date of Release: 3/2/2020  
 Name: Water  
 OmniSolv®, For LC/MS  
 Item No: WX0001 all size codes  
 Lot / Batch No: 60064  
 Country of Origin: USA

*Received by:  
 EG1  
 2020/04/06  
 HPLC  
 shelf  
 12 bottles*

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAR-2021	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 0.1	ppb
Fluorescence as quinine at 365 nm		1	0.2	ppb
Gradient at 210 nm		2	0.25	mAU
Gradient at 254 nm		0.5	0.06	mAU
LC/MS Purity (p-nitrophenol)		50	< 50	ppb
LC/MS Purity (reserpine)		50	< 50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Heather Sinn,  
 \_\_\_\_\_

Quality Control Manager  
 This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany  
 290 Concord Road  
 Billerica, MA 01821  
 U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

REAGENT PREPARATION FORM

Reagent # 415 Replaced Reagent # 408 Analyst: RAK  
 Reagent Name: Acid H<sub>2</sub>O Preparation date: 2020-07-04 Expiry date: Daily  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Formic Acid (2%)	800ul	←	PRR-137	—	401	→
LCMS H <sub>2</sub> O	1L	2020-04-06	2020-07-03	Omni	60064	2021-03-31
<del>RAK 2020-07-04</del>						

NOTES:

Reagent # 416 Replaced Reagent # 401 Analyst: TTM  
 Reagent Name: 20% Formic Acid Preparation date: 2020-07-05 Expiry date: 2020-09-05  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: 2%  
 Balance ID: — Pipette/Syringe/Cylinder ID: 936164E Storage: Shelf

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Formic Acid	20ml	2020-02-04	2020-07-02	Sigma	581617977	2020-12-31
LCMS	980ml	2020-04-06	2020-07-04	Omni	60064	2021-03-31
<del>TTM 2020-07-05</del>						

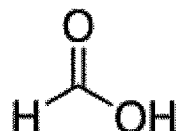
NOTES:

## Certificate of Analysis

Product Name:

Formic acid – reagent grade, ≥95%

Product Number: F0507  
 Batch Number: SHBL7977  
 Brand: SIGALD  
 CAS Number: 64-18-6  
 MDL Number: MFCD00003297  
 Formula: CH2O2  
 Formula Weight: 46.03 g/mol  
 Quality Release Date: 07 JAN 2020  
 Expiration Date: DEC 2020



Test	Specification	Result
Appearance (Turbidity)	Clear	Clear
Appearance (Color)	Colorless to Very Faint Yellow	Colorless
Appearance (Form)	Liquid	Liquid
Proton NMR Spectrum	Conforms to Structure	Conforms
Solvent Content	< 1.0 %	< 0.1 %
Acetic Acid by NMR		
Water (by Karl Fischer)	2.0 - 2.5 %	2.1 %
Titration with NaOH	> 95.0 %	98.2 %
Expiration Date Period	-----	-----
1 Year		

Michael Grady, Manager  
 Quality Control  
 Sheboygan Falls, WI US

1X Stone  
 652 2020/02/04

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



# Certificate of Analysis



Date of Release: 3/2/2020  
 Name: Water  
 OmniSolv®, For LC/MS  
 Item No: WX0001 all size codes  
 Lot / Batch No: 60064  
 Country of Origin: USA

*Received by:  
 EG1  
 2020/04/06  
 HPLC  
 shelf  
 12 bottles*

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAR-2021	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 0.1	ppb
Fluorescence as quinine at 365 nm		1	0.2	ppb
Gradient at 210 nm		2	0.25	mAU
Gradient at 254 nm		0.5	0.06	mAU
LC/MS Purity (p-nitrophenol)		50	< 50	ppb
LC/MS Purity (reserpine)		50	< 50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Heather Sinn,

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany  
 290 Concord Road  
 Billerica, MA 01821  
 U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

REAGENT PREPARATION FORM

Reagent # 419 Replaced Reagent # 417 Analyst: RAK  
 Reagent Name: 0.2% NH<sub>4</sub>OH Preparation date: 2020-07-06 Expiry date: Daily  
 Final Volume: 1L Oven No. : — Temp. : — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —  
036164C

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	2ml	2020-06-25 <sup>05-01</sup>	2020-07-05 <sup>05-15</sup>	Sishu	19 0762	2022-12-31
MeOH	998 ml	2020-06-25	2020-07-05	Sigma	SHB28762	2024-12-31
<del>RAK 2020-07-06</del>						

NOTES:

Reagent # 420 Replaced Reagent # 418 Analyst: RAK  
 Reagent Name: Acid H<sub>2</sub>O Preparation date: 2020-07-06 Expiry date: Daily  
 Final Volume: 1L Oven No. : — Temp. : — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —

K26250F

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
2% formic Acid	800ul	←	—	PRIRE-137-416	—	→
LCMS H <sub>2</sub> O	1L	2020-04-06	2020-07-05	Omni	60064	2021-03-31
<del>RAK 2020-07-06</del>						

NOTES:

Received on: 2020-05-01

TK4

1x Bottle

Room Temperature / shelf

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT - 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	12/16/2019
Lot Number	190762	Expiration Date	Dec/2022
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Comment	This product is free from genetically modified substances and is gluten free.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless and free from suspended matter.
ALUMINUM	ppm	<= 0.3	0.029
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.05
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	29.13
BORON (B)	ppm	<= 0.1	0.001
CALCIUM (Ca)	ppm	<= 0.3	0.080
CARBON DIOXIDE	%	<= 0.002	<0.002
CHLORIDE	ppm	<= 0.5	<0.5
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.015
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.002
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2
PHOSPHATE (PO4)	ppm	<= 0.4	<0.4
POTASSIUM (K)	ppm	<= 0.3	0.008
RESIDUE AFTER IGNITION	ppm	<= 3	<3
SODIUM (Na)	ppm	>= 0	0.014

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

Bureau Veritas Laboratories

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.026



Peter Yang - Quality Control Manager - Bridgewater

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.  
 Bureau Veritas Laboratories

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

Email USA: techserv@sial.com

Outside USA: eurtechserv@sial.com

## Certificate of Analysis

Product Name:  
Methanol - for HPLC, ≥99.9%



Product Number: 34860  
 Batch Number: SHBL8762  
 Brand: SIGALD  
 CAS Number: 67-56-1  
 MDL Number: MFCD00004595  
 Formula: CH4O  
 Formula Weight: 32.04 g/mol  
 Quality Release Date: 14 JAN 2020  
 Expiration Date: DEC 2024

Received:  
652 2020/05/13  
B X 4L  
Shelf

Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
UV Absorbance 400nm	≤ 0.01	< 0.01
UV Absorbance 280nm	≤ 0.01	< 0.01
UV Absorbance 260nm	≤ 0.04	< 0.01
UV Absorbance 240nm	≤ 0.10	0.02
UV Absorbance 235nm	≤ 0.10	0.03
UV Absorbance 230nm	≤ 0.20	0.05
UV Absorbance 220nm	≤ 0.30	0.12
UV Absorbance 210nm	≤ 0.60	0.27
UV Absorbance 205nm	≤ 1.00	0.55
Fluorescence 254nm	≤ 1.0 ppb	< 0.1 ppb
Fluorescence 365nm	≤ 1.0 ppb	< 0.1 ppb
Purity (GC)	≥ 99.90 %	100.00 %
Color Test	≤ 10 APHA	< 5 APHA
Water (by Karl Fischer)	≤ 0.03 %	< 0.01 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %
Expiration Date Period	-----	-----
1800 Days		

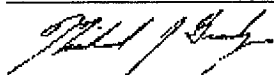
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Number: 34860  
Batch Number: SHBL8762



Michael Grady, Manager  
Quality Control  
Sheboygan Falls, WI US

Received: 2020/05/27 (4x4L):XIN-scanned by LHA

Received: 2020/06/01 (4x4L):KIH

Received: 2020/06/09 (4x4L):KIH

Received: 2020/06/15 (4x4L):KIH

Received: 2020/06/25 (4x4L):KIH

Received: 2020/06/26 (4x4L):KIH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

REAGENT PREPARATION FORM

Reagent # 419 Replaced Reagent # 417 Analyst: RAK  
 Reagent Name: 0.2% NH<sub>4</sub>OH Preparation date: 2020-07-06 Expiry date: Daily  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —  
036164C

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
NH <sub>4</sub> OH	2ml	2020-06-25 <sup>05-01</sup>	2020-07-05 <sup>05-15</sup>	Sishu	19 0762	2022-12-31
MeOH	998 ml	2020-06-25	2020-07-05	Sigma	SHB28762	2024-12-31
<del>RAK 2020-07-06</del>						

NOTES:

Reagent # 420 Replaced Reagent # 418 Analyst: RAK  
 Reagent Name: Acid H<sub>2</sub>O Preparation date: 2020-07-06 Expiry date: Daily  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —

K26250F

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
2% formic Acid	800ul	←	—	PRLRE-137	7-416	→
LCMS H <sub>2</sub> O	1L	2020-04-06	2020-07-05	Omni	60064	2021-03-31
<del>RAK 2020-07-06</del>						

NOTES:

REAGENT PREPARATION FORM

Reagent # 415 Replaced Reagent # 408 Analyst: RAK  
 Reagent Name: Acid H<sub>2</sub>O Preparation date: 2020-07-04 Expiry date: Daily  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: —  
 Balance ID: — Pipette/Syringe/Cylinder ID: 14439 Storage: —

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Formic Acid (2%)	800ul	←	PRR-137	401	←	
LCMS H <sub>2</sub> O	1L	2020-04-06	2020-07-03	Omni	60064	2021-03-31
<del>RAK 2020-07-04</del>						

NOTES:

Reagent # 416 Replaced Reagent # 401 Analyst: TTM  
 Reagent Name: 20% Formic Acid Preparation date: 2020-07-05 Expiry date: 2020-09-05  
 Final Volume: 1L Oven No.: — Temp.: — Final Conc.: 2%  
 Balance ID: — Pipette/Syringe/Cylinder ID: 936164E Storage: Shelf  
14439

CHEMICAL NAME	VOLUME/ WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Formic Acid	20ml	2020-02-04	2020-07-02	Sigma Omni	581617977	2020-12-31
LCMS	980ml	2020-04-06	2020-07-04	Omni	60064	2021-03-31
<del>TTM 2020-07-05</del>						

NOTES:

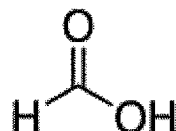


## Certificate of Analysis

Product Name:

Formic acid – reagent grade, ≥95%

Product Number: F0507  
 Batch Number: SHBL7977  
 Brand: SIGALD  
 CAS Number: 64-18-6  
 MDL Number: MFCD00003297  
 Formula: CH2O2  
 Formula Weight: 46.03 g/mol  
 Quality Release Date: 07 JAN 2020  
 Expiration Date: DEC 2020



Test	Specification	Result
Appearance (Turbidity)	Clear	Clear
Appearance (Color)	Colorless to Very Faint Yellow	Colorless
Appearance (Form)	Liquid	Liquid
Proton NMR Spectrum	Conforms to Structure	Conforms
Solvent Content	< 1.0 %	< 0.1 %
Acetic Acid by NMR		
Water (by Karl Fischer)	2.0 - 2.5 %	2.1 %
Titration with NaOH	> 95.0 %	98.2 %
Expiration Date Period	-----	-----
1 Year		

Michael Grady, Manager  
 Quality Control  
 Sheboygan Falls, WI US

1X Stone  
 652 2020/02/04

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

# Certificate of Analysis



Date of Release: 3/2/2020  
 Name: Water  
 OmniSolv®, For LC/MS  
 Item No: WX0001 all size codes  
 Lot / Batch No: 60064  
 Country of Origin: USA

*Received by:*  
 EG1  
 2020/04/06  
 HPLC  
 shelf  
 12 bottles

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAR-2021	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 0.1	ppb
Fluorescence as quinine at 365 nm		1	0.2	ppb
Gradient at 210 nm		2	0.25	mAU
Gradient at 254 nm		0.5	0.06	mAU
LC/MS Purity (p-nitrophenol)		50	< 50	ppb
LC/MS Purity (reserpine)		50	< 50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	0.001	AU
UV Abs. at 210 nm		0.01	< 0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Heather Sinn,

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany  
 290 Concord Road  
 Billerica, MA 01821  
 U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.



REAGENT PREPARATION FORM

SOLUTION # 113 REAGENT NAME: 25mm Ammonium Bicarbonate PH=10  
 ANALYST: lv DATE PREPARED: 2020/06/30 EXPIRY DATE: 2020/07/30  
 STORAGE: RT BALANCE ID: FC-1 PIPET/SYRINGE ID: —

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Ammonium Bicarbonate	3.9628g	2019/11/27	2019/11/28	Sigma	SLBV1392	2021/03/31
RODI H <sub>2</sub> O	2L	—	—	On hand	—	—
Ammonium Hydroxide	Proprietary to PH=10	2020/03/16	2020/05/25	Fisher	7219070	2022/08/15
		lv 2020/06/30				

NOTES: PH meter Accumet APG1

SOLUTION # 114 REAGENT NAME: 20mm Ammonium acetate  
 ANALYST: lv DATE PREPARED: 2020/06/30 EXPIRY DATE: 2020/08/30  
 STORAGE: RT BALANCE ID: FC-1 PIPET/SYRINGE ID: N/A

CHEMICAL NAME	VOLUME/WEIGHT	DATE RECEIVED	DATE OPENED	SUPPLIER	LOT NUMBER	EXPIRY DATE
Ammonium Acetate	6.159g	2019/10/17	2019/11/07	Sigma	BCB25830	2021/10/31
LCMS water	4L	2020/06/30	2020/06/30	Amul Solu	60/22	2021/05/31
		lv 2020/06/30				

NOTES:

## Certificate of Analysis

**Product Name:** AMMONIUM ACETATE  
 reagent grade, >= 98 %  
**Product Number:** A7262  
**Batch Number:** BCBZ5836  
**Brand:** Sigma-Aldrich  
**CAS Number:** 631-61-8  
**Formula:** CH<sub>3</sub>CO<sub>2</sub>NH<sub>4</sub>  
**Formula Weight:** 77.08  
**Storage Temperature:** 2-8 C  
**Quality Release Date:** 06 NOV 2018  
**Recommended Retest Date:** OCT 2020

Date received  
 2019/10/17  
 LG  
 1X500g

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE	WHITE
APPEARANCE (FORM)	MOIST CRYSTALS	MOIST CRYSTALS
TITRATION	≥ 98 %	99.8 %
TITRATION (METHOD)	TITRATION WITH NAOH	TITRATION WITH NAOH
SOLUBILITY (COLOR)	COLORLESS	COLORLESS
SOLUBILITY (TURBIDITY)	CLEAR	CLEAR
SOLUBILITY (METHOD)	1 G/ML, H2O	1 G/ML, H2O

*Dr. R. Schwenger*

Dr. Reinhold Schwenneringer  
 Quality Assurance  
 Buchs, Switzerland



# Certificate of Analysis

Date of Release: 5/11/2020  
 Name: Water  
 OmniSolv®, For LC/MS  
 Item No: WX0001 all size codes  
 Lot / Batch No: 60122  
 Country of Origin: USA

Received on:  
 2020-06-30  
 8 Bottles TK9

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAY-2021	
Evaporation residue		1	0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.45	mAU
Gradient at 254 nm		0.5	< 0.05	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	0.004	AU
UV Abs. at 210 nm		0.01	0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Heather Sinn,  
 \_\_\_\_\_

Quality Control Manager  
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 EMD Millipore Corporation  
 400 Summit Drive,  
 Burlington, MA 01803  
 U.S.A



# Certificate of Analysis

Date of Release: 5/11/2020  
 Name: Water  
 OmniSolv®, For LC/MS  
 Item No: WX0001 all size codes  
 Lot / Batch No: 60122  
 Country of Origin: USA

Received on:  
 2020-06-30  
 8 Bottles TK9

Characteristic	Requirement		Results	Units
	Min.	Max.		
#Expiration date			31-MAY-2021	
Evaporation residue		1	0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence as quinine at 254 nm		1	< 1	ppb
Fluorescence as quinine at 365 nm		1	< 1	ppb
Gradient at 210 nm		2	0.45	mAU
Gradient at 254 nm		0.5	< 0.05	mAU
LC/MS Purity (p-nitrophenol)		50	<50	ppb
LC/MS Purity (reserpine)		50	<50	ppb
Metals, suitable for LC/MS			Conforms	
UV Abs. at 200 nm		0.01	0.004	AU
UV Abs. at 210 nm		0.01	0.001	AU
UV Abs. at 220 nm		0.01	< 0.001	AU
UV Abs. at 230 nm		0.01	< 0.001	AU
UV Abs. at 240 nm		0.01	< 0.001	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 400-280 nm		0.005	< 0.001	AU
UV Cut-off		190	<190	nm

Heather Sinn,  
 \_\_\_\_\_

Quality Control Manager  
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 EMD Millipore Corporation  
 400 Summit Drive,  
 Burlington, MA 01803  
 U.S.A

PREPARATION OF STANDARDS OF INTERMEDIARY CONCENTRATION

Solution No.: I-6032 Date: 2020/06/29 Expiry Date: 2021/06/29 Discard Date: \_\_\_\_\_  
 Replaces Solution No.: I-6015 Replaced by Solution: \_\_\_\_\_ Chemist: 652  
 Compound(s)/Solution Name: PFAS SECOND SOURCE SPIKING SOLN A  
 Number of Parent Solution(s): See attached sheet  
 Concentration of Parent Solution(s): See attached sheet (mg, ug)/mL  
 Aliquot of Parent Solution(s): See attached sheet mL / uL  
 Pipette/Syringe ID: K20250F  
 Dilution Solvent: 0.3% NH4OH in MeOH Dilution Volume: 20 mL  
 Final Concentration(s): 1.0 (mg, ug)/mL  
 Solution derivatized (as methyl ester): - As Other (specify): \_\_\_\_\_  
 Solution Contains Surrogate Compounds: - For mix refer to table on page: \_\_\_\_\_  
 Solution used for: PFAS Volumetric Flask: Class A 20 mL  
 (identify by serial number or other unique ID)  
 Solvent Supplier: PRUKE 137-393 Lot No.: PRUKE 137-393  
 Date Opened: PRUKE 137-393  
 Storage Location: F211 One time Use, Not Stored: -  
 Ampule Supplier: Wellington Date Opened: See attached sheet  
 Mix Name: \_\_\_\_\_  
 Catalogue No.: \_\_\_\_\_ Ampule expiry Date: See attached sheet  
 Lot No.: See attached sheet  
 Date Received: See attached sheet

Notes/Comments:

I-6032 (PRLST 167 p. 26)

Compound Name	ID#	Conc. (ug/mL)	Vol. of Stock standard (uL)	Final Conc. (ug/mL)	Exp. date
PFBA	S4831-1	50	400	1	2024/11/15
L-PFBS	S4831-2	44.4	450	1	2024/11/22
PFPeA	S4831-3	50	400	1	2025/04/03
L-PFPeS	S4831-4	47	426	1	2025/05/13
PFHxA	S4831-5	50	400	1	2024/12/31
br-PFHxSk	S4831-6	45.7	438	1	2024/10/23
PFHpA	S4831-7	50	400	1	2024/10/23
L-PFHpS	S4831-8	47.7	420	1	2025/01/21
PFOA	S4831-9	50	400	1	2025/01/25
brPFOSK	S4831-10	46.5	430	1	2025/01/16
PFNA	S4831-11	50	400	1	2024/12/23
L-PFNS	S4831-12	48.1	416	1	2024/11/14
PFDA	S4831-13	50	400	1	2024/11/14
L-PFDS	S4831-14	48.2	414	1	2024/11/14
PFUdA	S4831-15	50	400	1	2024/10/30
PFDoA	S4831-16	50	400	1	2024/10/23
PFTTrDA	S4831-17	50	400	1	2024/09/26
PFTeDA	S4831-18	50	400	1	2024/11/14
PFOSA (FOSA-I)	S4831-19	50	400	1	2025/04/15
N-MeFOSA-M	S4831-20	50	400	1	2024/12/24
N-EtFOSA-M	S4831-21	50	400	1	2025/02/21
N-MeFOSE-M	S4831-22	50	400	1	2025/01/06
N-EtFOSE-M	S4831-23	50	400	1	2025/01/06
br-NMeFOSAA	S4831-24	50	400	1	2024/12/02
br-NEtFOSAA	S4831-25	50	400	1	2024/08/20
4:2FTS	S4831-26	46.9	426	1	2024/10/29
6:2FTS	S4831-27	47.6	420	1	2025/04/21
8:2FTS	S4831-28	48	416	1	2025/05/08
HFPO-DA	S4831-29	50	400	1	2023/01/23
NaDONA	S4831-30	47.3	422	1	2024/11/18
9Cl-PF3ONS	S4831-31	46.7	428	1	2025/04/21
11Cl-PF3OUdS	S4831-32	47.2	424	1	2025/03/25

No writing on bottom page

652 2020/06/29

**PREPARATION OF CONCENTRATED STOCK STANDARDS**

Solution No.: S-4831 Date: 2020/06/29 Expiry Date: See Below Discard Date: \_\_\_\_\_  
 Replaces Solution: \_\_\_\_\_ Replaced by Solution: \_\_\_\_\_ Chemist: 652

S-4831 (PRLST 151 p. 313)

Solution ID#	Compound Name	Lot#	Received date	Exp. date	Replaces Solution	Replaced by Solution	Conc. (ug/mL)	Solvent	Storage
S4831-1	PFBA	PFBA1119	2020/06/18	2024/11/15	S4815-1		50	MeOH	FZ-11
S4831-2	L-PFBS	LPFBS1119	2020/06/18	2024/11/22	S4815-2		44.4	MeOH	FZ-11
S4831-3	PFPeA	PFPeA0420	2020/06/18	2025/04/03	S4815-3		50	MeOH	FZ-11
S4831-4	L-PFPeS	LPFPeS0520	2020/06/18	2025/05/13	S4815-4		47	MeOH	FZ-11
S4831-5	PFHxA	PFHxA1219	2020/06/18	2024/12/31	S4815-5		50	MeOH	FZ-11
S4831-6	br-PFHxSk	brPFHxSK1019	2020/06/18	2024/10/23	S4815-6		45.7	MeOH	FZ-11
S4831-7	PFHpA	PFHpA1019	2020/06/18	2024/10/23	S4815-7		50	MeOH	FZ-11
S4831-8	L-PFHpS	LPFHpS0120	2020/06/18	2025/01/21	S4815-8		47.7	MeOH	FZ-11
S4831-9	PFOA	PFOA0120	2020/06/18	2025/01/25	S4815-9		50	MeOH	FZ-11
S4831-10	brPFOSK	brPFOSK1119	2020/06/18	2025/01/16	S4815-10		46.5	MeOH	FZ-11
S4831-11	PFNA	PFNA1219	2020/06/18	2024/12/23	S4815-11		50	MeOH	FZ-11
S4831-12	L-PFNS	LPFNS1119	2020/06/18	2024/11/14	S4815-12		48.1	MeOH	FZ-11
S4831-13	PFDA	PFDA1119	2020/06/18	2024/11/14	S4815-13		50	MeOH	FZ-11
S4831-14	L-PFDS	LPFDS1119	2020/06/18	2024/11/14	S4815-14		48.2	MeOH	FZ-11
S4831-15	PFUdA	PFUdA1019	2020/06/18	2024/10/30	S4815-15		50	MeOH	FZ-11
S4831-16	PFDoA	PFDoA1019	2020/06/18	2024/10/23	S4815-16		50	MeOH	FZ-11
S4831-17	PFTrDA	PFTrDA0919	2020/06/18	2024/09/26	S4815-17		50	MeOH	FZ-11
S4831-18	PFTeDA	PFTeDA1119	2020/06/18	2024/11/14	S4815-18		50	MeOH	FZ-11
S4831-19	PFOSA (FOSA-I)	FOSA0420I	2020/06/18	2025/04/15	S4815-19		50	IPA	FD-59
S4831-20	N-MeFOSA-M	NMeFOSA1219M	2020/06/18	2024/12/24	S4815-20		50	MeOH	FZ-11
S4831-21	N-EtFOSA-M	NEtFOSA0220M	2020/06/18	2025/02/21	S4815-21		50	MeOH	FZ-11
S4831-22	N-MeFOSE-M	NMeFOSE1219M	2020/06/18	2025/01/06	S4815-22		50	MeOH	FZ-11
S4831-23	N-EtFOSE-M	NEtFOSE1219M	2020/06/18	2025/01/06	S4815-23		50	MeOH	FZ-11
S4831-24	br-NMeFOSAA	br-NMeFOSAA1119	2020/06/18	2024/12/02	S4815-24		50	MeOH	FD-59
S4831-25	br-NEtFOSAA	br-NEtFOSAA0819	2020/06/18	2024/08/20	S4815-25		50	MeOH	FD-59
S4831-26	4:2FTS	42FTS1019	2020/06/18	2024/10/29	S4815-26		46.9	MeOH	FD-59
S4831-27	6:2FTS	62FTS0420	2020/06/18	2025/04/21	S4815-27		47.6	MeOH	FD-59
S4831-28	8:2FTS	82FTS0520	2020/06/18	2025/05/08	S4815-28		48	MeOH	FD-59
S4831-29	HFPO-DA	HFPODA0120	2020/06/18	2023/01/23	S4815-29		50	MeOH	FD-59
S4831-30	NaDONA	NaDONA1119	2020/06/18	2024/11/18	S4815-30		47.3	MeOH	FZ-11
S4831-31	9CI-PF3ONS	9CIPF3ONS0420	2020/06/18	2025/04/21	S4815-31		46.7	MeOH	FZ-11
S4831-32	11CI-PF3OUdS	11CI-PF3OUdS0320	2020/06/18	2025/03/25	S4815-32		47.2	MeOH	FZ-11

Date Opened (All compounds): 2020/06/29

Supplier (All compounds): Wellington

Chemist: 652

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Notes/Comments





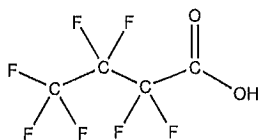
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA  
**COMPOUND:** Perfluoro-n-butanoic acid

**LOT NUMBER:** PFBA1119

**STRUCTURE:**



**CAS #:** 375-22-4

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/15/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/15/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 12/04/2019  
(mm/dd/yyyy)

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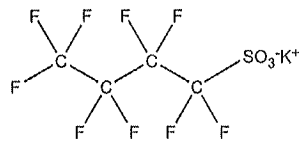
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFBS  
**COMPOUND:** Potassium perfluoro-1-butanesulfonate

**LOT NUMBER:** LPFBS1119

**STRUCTURE:**



**CAS #:** 29420-49-3

Received on: 2020-06-18  
MHS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>K  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K salt)  
44.2 ± 2.2 µg/ml (PFBS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 338.19  
**SOLVENT(S):** Methanol

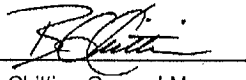
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 11/28/2019  
(mm/dd/yyyy)

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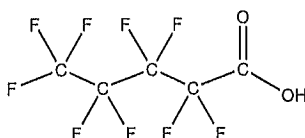
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFPeA  
**COMPOUND:** Perfluoro-n-pentanoic acid

**LOT NUMBER:** PFPeA0420

**STRUCTURE:**



**CAS #:** 2706-90-3

Received on: 2020-06-18  
MLS

2 ampoules

FZ-11

**MOLECULAR FORMULA:** C<sub>5</sub>HF<sub>9</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 264.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/03/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/03/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 05/06/2020  
(mm/dd/yyyy)

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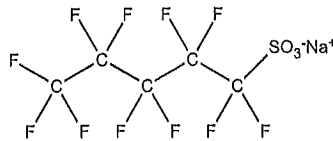
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFPeS  
**COMPOUND:** Sodium perfluoro-1-pentanesulfonate

**LOT NUMBER:** LPFPeS0520

**STRUCTURE:**



**CAS #:** 630402-22-1

Received on: 2020-06-18  
MLs  
& ampoules.  
FZ-11

**MOLECULAR FORMULA:**  $C_5F_{11}SO_3Na$   
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.0 ± 2.3 µg/ml (PFPeS acid)  
46.9 ± 2.3 µg/ml (PFPeS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/13/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/13/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 372.09  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 05/29/2020  
(mm/dd/yyyy)

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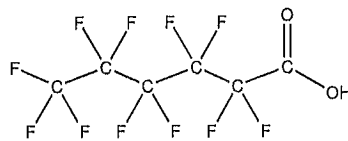
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxA  
**COMPOUND:** Perfluoro-n-hexanoic acid

**LOT NUMBER:** PFHxA1219

**STRUCTURE:**



**CAS #:** 307-24-4

Received on: 2020-06-18  
M.S  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>11</sub>F<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 314.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/31/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/31/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/13/2020  
(mm/dd/yyyy)

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**br-PFHxSK**

**Potassium Perfluorohexanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFHxSK  
**LOT NUMBER:** brPFHxSK1019  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
45.5 ± 2.3 µg/ml (total PFHxS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 10/21/2019  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

Received on: 2020-06-18  
MLS  
2 ampoules  
FX-11

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



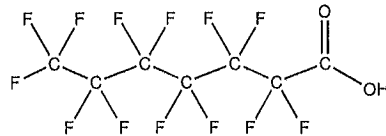
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHpA  
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA1019

**STRUCTURE:**



**CAS #:** 375-85-9

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 364.06  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

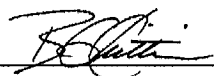
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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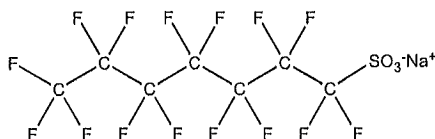
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFHpS  
**COMPOUND:** Sodium perfluoro-1-heptanesulfonate

**LOT NUMBER:** LPFHpS0120

**STRUCTURE:**



**CAS #:** 21934-50-9

Received 02/2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>F<sub>15</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.7 ± 2.4 µg/ml (PFHpS acid)  
47.6 ± 2.4 µg/ml (PFHpS anion)

**MOLECULAR WEIGHT:** 472.10  
**SOLVENT(S):** Methanol

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 02/05/2020  
(mm/dd/yyyy)

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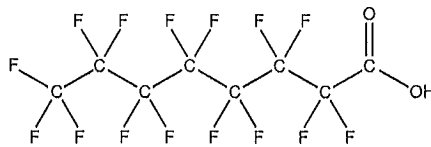
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFOA  
**COMPOUND:** Perfluoro-n-octanoic acid

**LOT NUMBER:** PFOA0120

**STRUCTURE:**



**CAS #:** 335-67-1

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_8H_{16}F_{16}O_2$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 414.07  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 01/27/2020  
(mm/dd/yyyy)

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**br-PFOSK**

**Potassium Perfluorooctanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

Received on: 2020-06-18

MHS

2 ampoules

FZ-11

**PRODUCT CODE:** br-PFOSK  
**LOT NUMBER:** brPFOSK1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
46.5 ± 2.3 µg/ml (total PFOS acid)  
46.4 ± 2.3 µg/ml (total PFOS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 11/25/2019  
**LAST TESTED:** (mm/dd/yyyy) 01/16/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/16/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



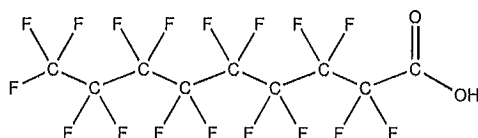
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFNA  
**COMPOUND:** Perfluoro-n-nonanoic acid

**LOT NUMBER:** PFNA1219

**STRUCTURE:**



**CAS #:** 375-95-1

Received on 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 464.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUDA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/06/2020  
(mm/dd/yyyy)

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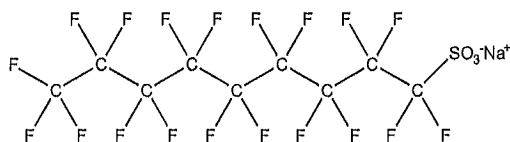
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFNS  
**COMPOUND:** Sodium perfluoro-1-nonanesulfonate

**LOT NUMBER:** LPFNS1119

**STRUCTURE:**



**CAS #:** 98789-57-2

Received on: 2020-06-18

ATN

2 ampoules

FZ-11

**MOLECULAR FORMULA:**  $C_9F_{19}SO_3Na$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$  (Na salt)  
 $48.0 \pm 2.4 \mu\text{g/ml}$  (PFNS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 572.12  
**SOLVENT(S):** Methanol

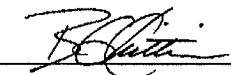
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
B.G. Chittim, General Manager

Date: 11/28/2019  
(mm/dd/yyyy)

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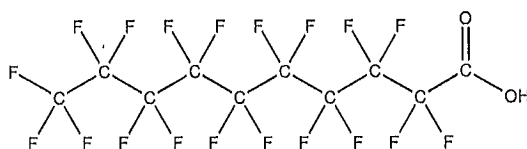
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDA  
**COMPOUND:** Perfluoro-n-decanoic acid

**LOT NUMBER:** PFDA1119

**STRUCTURE:**

**CAS #:** 335-76-2



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>10</sub>HF<sub>19</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 514.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 12/04/2019  
(mm/dd/yyyy)

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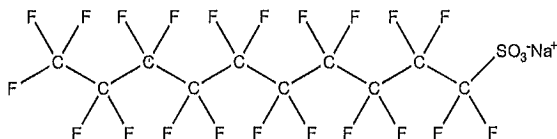
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFDS  
**COMPOUND:** Sodium perfluoro-1-decanesulfonate

**LOT NUMBER:** LPFDS1119

**STRUCTURE:**



**CAS #:** 2806-15-7

Received on: 2020-06-18  
M&S

2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>10</sub>F<sub>21</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
48.2 ± 2.4 µg/ml (PFDS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 622.13  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By:   
B.G. Chittim, General Manager

Date: 11/20/2019  
(mm/dd/yyyy)

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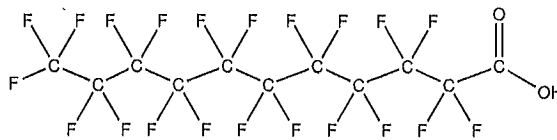
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFUdA  
**COMPOUND:** Perfluoro-n-undecanoic acid

**LOT NUMBER:** PFUdA1019

**STRUCTURE:**



**CAS #:** 2058-94-8

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>F<sub>21</sub></sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 564.09  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/30/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/30/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-dodecanoic acid (PFDoA).

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**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 11/05/2019  
(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

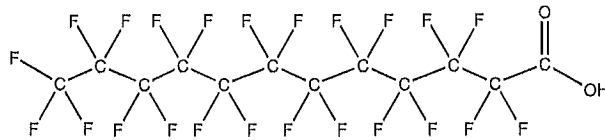
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFD0A  
**COMPOUND:** Perfluoro-n-dodecanoic acid

**LOT NUMBER:** PFD0A1019

**STRUCTURE:**

**CAS #:** 307-55-1



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_{12}HF_{23}O_2$   
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 614.10  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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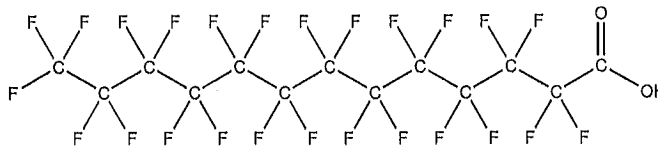
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTTrDA  
**COMPOUND:** Perfluoro-n-tridecanoic acid

**LOT NUMBER:** PFTTrDA0919

**STRUCTURE:**

**CAS #:** 72629-94-8



Received on: 2020-06-18  
MKS  
2 ampoules.  
Fz-11

**MOLECULAR FORMULA:**  $C_{13}HF_{26}O_2$   
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 664.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/26/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 09/26/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ( $C_{11}HF_{21}O_2$ ), ~ 0.4% of PFDa ( $C_{12}HF_{23}O_2$ ), and ~ 0.1% of PFTeDA ( $C_{14}HF_{27}O_2$ ).

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Certified By:   
B.G. Chittim, General Manager

Date: 10/03/2019  
(mm/dd/yyyy)

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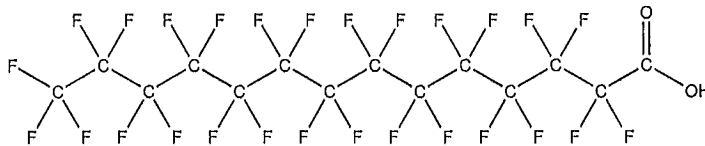
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTeDA  
**COMPOUND:** Perfluoro-n-tetradecanoic acid

**LOT NUMBER:** PFTeDA1119

**STRUCTURE:**

**CAS #:** 376-06-7



Received on - 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_{14}HF_{27}O_2$   
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 714.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of PFDoA ( $C_{12}HF_{23}O_2$ ), ~ 0.1% of PFTrDA ( $C_{13}HF_{25}O_2$ ), and ~ 0.1% of PFHxDA ( $C_{16}HF_{31}O_2$ ).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 12/04/2019  
(mm/dd/yyyy)

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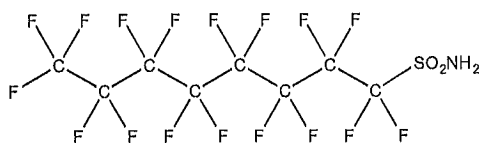
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FOSA-I  
**COMPOUND:** Perfluoro-1-octanesulfonamide

**LOT NUMBER:** FOSA0420I

**STRUCTURE:**

**CAS #:** 754-91-6



Received on: 2020-06-18  
MWS  
& ampoules  
FD-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/15/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/15/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 499.14  
**SOLVENT(S):** Isopropanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 04/28/2020  
(mm/dd/yyyy)

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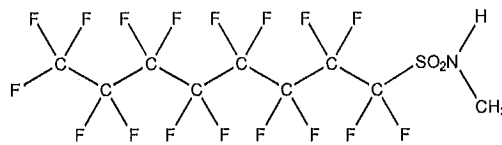
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA1219M

**STRUCTURE:**



**CAS #:** 31506-32-8

Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/24/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/24/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 01/02/2020  
(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

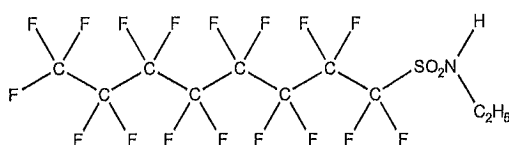
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NETFOSA0220M

**STRUCTURE:**

**CAS #:** 4151-50-2



*Received on: 2020-06-18*  
*MHS*  
*2 ampoules*  
*FX-11*

**MOLECULAR FORMULA:**  $C_{10}H_6F_{17}NO_2S$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$   
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 02/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
B.G. Chittim, General Manager

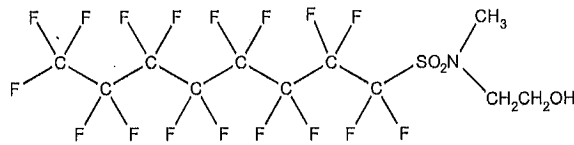
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(mm/dd/yyyy)

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**PRODUCT CODE:** N-MeFOSE-M **LOT NUMBER:** NMeFOSE1219M  
**COMPOUND:** 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

**STRUCTURE:** **CAS #:** 24448-09-7



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 557.22  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/06/2020 (HRGC/LRMS)  
12/27/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/06/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

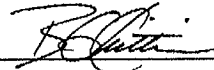
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:  Date: 01/07/2020  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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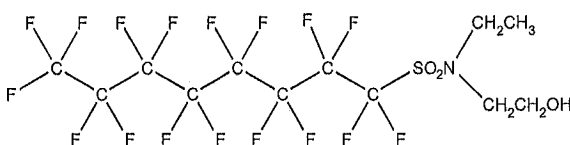


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M **LOT NUMBER:** NEtFOSE1219M  
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

**STRUCTURE:** **CAS #:** 1691-99-2



Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>10</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 571.25  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/06/2020 (HRGC/LRMS)  
12/27/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/06/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

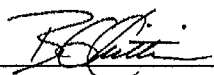
### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:  Date: 01/07/2020  
B.G. Chittim, General Manager (mm/dd/yyyy)

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**br-NMeFOSAA**

**N-Methylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

Received on - 2020-06-18  
MHS  
2 ampoules.  
FD-59

**PRODUCT CODE:** br-NMeFOSAA  
**LOT NUMBER:** brNMeFOSAA1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 11/27/2019  
**LAST TESTED:** (mm/dd/yyyy) 12/02/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/02/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**





**br-NEtFOSAA**

**N-Ethylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-NEtFOSAA  
**LOT NUMBER:** brNEtFOSAA0819  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 08/20/2019  
**LAST TESTED:** (mm/dd/yyyy) 08/20/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 08/20/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

Received on: 2020-06-18  
MLS  
2 ampoules  
FD-59

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

4:2FTS

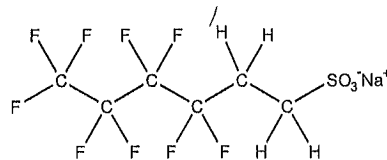
**LOT NUMBER:**

42FTS1019

**COMPOUND:**

Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

**STRUCTURE:**



**CAS #:**

27619-93-8

*Received on 2020-06-18*

*MHS*

*2 ampoules*

*RD-59*

**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>Na

**MOLECULAR WEIGHT:**

350.13

**CONCENTRATION:**

50.0 ± 2.5 µg/ml (Na salt)  
46.7 ± 2.3 µg/ml (4:2FTS anion)

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

10/29/2019

**EXPIRY DATE:** (mm/dd/yyyy)

10/29/2024

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

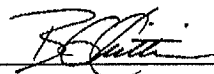
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

  
B.G. Chittim, General Manager

**Date:** 11/14/2019

(mm/dd/yyyy)

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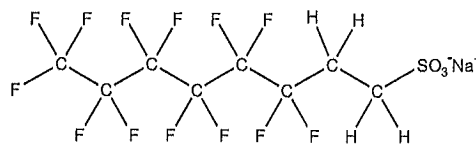


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 6:2FTS **LOT NUMBER:** 62FTS0420  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

**STRUCTURE:**



**CAS #:** 27619-94-9

Received on: 2020-06-18

MLS

2 ampoules

FO-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>13</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 450.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.6 ± 2.4 µg/ml (6:2FTS acid)  
47.4 ± 2.4 µg/ml (6:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
B.G. Chittim, General Manager

Date: 04/27/2020  
(mm/dd/yyyy)

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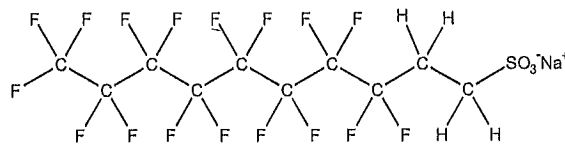


**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS0520  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** 27619-96-1



Received on: 2020-06-18  
 MHS  
 2 ampoules  
 RD-59

**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 550.16  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.9 ± 2.4 µg/ml (8:2FTS anion)  
 48.0 ± 2.4 µg/ml (8:2FTS acid)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/08/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/08/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

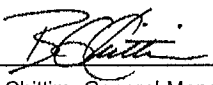
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

HFPO-DA

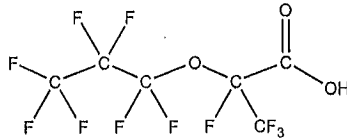
**LOT NUMBER:**

HFPODA0120

**COMPOUND:**

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

**STRUCTURE:**



**CAS #:**

13252-13-6

Received on: 2020-06-18

MLS

2 ampoules

FD-59

**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>11</sub>O<sub>3</sub>

**MOLECULAR WEIGHT:**

330.05

**CONCENTRATION:**

50.0 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

01/23/2020

**EXPIRY DATE:** (mm/dd/yyyy)

01/23/2023

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

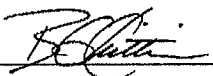
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Product is commercially known as GenX.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
B.G. Chittim, General Manager

Date: 01/24/2020

(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

NaDONA

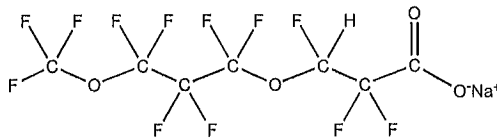
**LOT NUMBER:**

NaDONA1119

**COMPOUND:**

Sodium dodecafluoro-3H-4,8-dioxanonanoate

**STRUCTURE:**



**CAS #:**

958445-44-8  
(ammonium salt)

Received on: 2020-06-18  
MLS  
2 ampoules.  
FZ-11

**MOLECULAR FORMULA:**

C<sub>7</sub>HF<sub>12</sub>O<sub>4</sub>Na

**MOLECULAR WEIGHT:**

400.05

**CONCENTRATION:**

50 ± 2.5 µg/ml (Na Salt)  
47.1 ± 2.4 µg/ml (NaDONA anion)

**SOLVENT(S):**

Methanol  
Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

11/18/2019

**EXPIRY DATE:** (mm/dd/yyyy)

11/18/2024

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Product is commercially known as ADONA.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date:

12/02/2019  
(mm/dd/yyyy)

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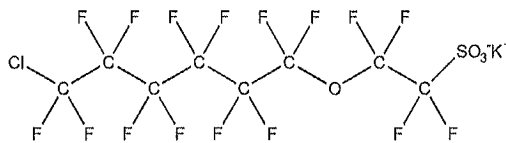


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 9CI-PF3ONS      **LOT NUMBER:** 9CIPF3ONS0420  
**COMPOUND:** Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate

**STRUCTURE:**      **CAS #:** 73606-19-6



Received on: 2020-06-18  
MLS  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>8</sub>F<sub>16</sub>ClSO<sub>4</sub>K      **MOLECULAR WEIGHT:** 570.67  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt)      **SOLVENT(S):** Methanol  
46.7 ± 2.3 µg/ml (9CI-PF3ONS acid)  
46.6 ± 2.3 µg/ml (9CI-PF3ONS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is the major component of the commercial formulation known as F-53B.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 04/24/2020  
B.G. Chittim, General Manager      (mm/dd/yyyy)

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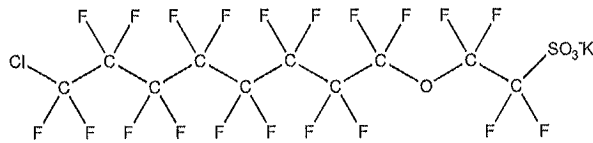


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 11CI-PF3OUdS **LOT NUMBER:** 11CIPF3OUdS0320  
**COMPOUND:** Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

**STRUCTURE:** **CAS #:** 83329-89-9



Received on: 2020-06-18  
MLS  
2 ampoules.  
F2-11

**MOLECULAR FORMULA:** C<sub>10</sub>F<sub>20</sub>ClSO<sub>4</sub>K **MOLECULAR WEIGHT:** 670.69  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt) **SOLVENT(S):** Methanol  
47.2 ± 2.4 µg/ml (11CI-PF3OUdS acid)  
47.1 ± 2.4 µg/ml (11CI-PF3OUdS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 03/25/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 03/25/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is a minor component of the commercial formulation known as F-53B.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 04/15/2020  
B.G. Chittim, General Manager (mm/dd/yyyy)

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PREPARATION OF STANDARDS OF INTERMEDIARY CONCENTRATION

PRLST 167 PG. 27

Solution No.: I-6033 Date: 2021/06/30 Expiry Date: 2021/06/29 Discard Date: \_\_\_\_\_  
 Replaces Solution No.: I-6014 Replaced by Solution: \_\_\_\_\_ Chemist: JOB  
 Compound(s)/Solution Name: Compo. PFAS working sol. A  
 Number of Parent Solution(s): see attached sheet  
 Concentration of Parent Solution(s): see attached sheet (mg, ug)/mL  
 Aliquot of Parent Solution(s): see attached sheet mL / uL  
 Pippette/Syringe ID: KAG250F  
 Dilution Solvent: 0.3% NH<sub>4</sub>OH in MeOH Dilution Volume: 20 mL  
 Final Concentration(s): 1.0 (mg, ug/ml)  
 Solution derivatized (as methyl ester): \_\_\_\_\_ As Other (specify): \_\_\_\_\_  
 Solution Contains Surrogate Compounds: \_\_\_\_\_ For mix refer to table on page: \_\_\_\_\_  
 Solution used for: PRLRG-137 397 Volumetric Flask: CLASS A  
 (identify by serial number or other unique ID)  
 Solvent Supplier: PRLRG 137 397 Lot No.: PRLRG 137 397  
 Date Opened: PRLRG 137 397  
 Storage Location: F2-11 One time Use, Not Stored: \_\_\_\_\_  
 Ampule Supplier: Wellington Date Opened: see attached sheet  
 Mix Name: \_\_\_\_\_  
 Catalogue No.: \_\_\_\_\_ Ampule expiry Date: see attached sheet  
 Lot No.: see attached sheet  
 Date Received: see attached sheet

Notes/Comments:

I-6033 (PRLST 167 pg. 27)

Compound Name	ID#	Conc. (ug/mL)	Vol. of Stock standard (uL)	Final Conc. (ug/mL)	Exp. date
PFBA	S4830-1	50	400	1	2024/11/15
L-PFBS	S4830-2	44.4	450	1	2024/11/22
PFPeA	S4830-3	50	400	1	2025/04/03
L-PFPeS	S4830-4	47	426	1	2025/05/13
PFHxA	S4830-5	50	400	1	2024/12/31
br-PFHxSk	S4830-6	45.7	438	1	2024/10/23
PFHpA	S4830-7	50	400	1	2024/10/23
L-PFHpS	S4830-8	47.7	420	1	2025/01/21
PFOA	S4830-9	50	400	1	2025/01/25
brPFOSK	S4830-10	46.5	430	1	2025/01/16
PFNA	S4830-11	50	400	1	2024/12/23
L-PFNS	S4830-12	48.1	416	1	2024/11/14
PFDA	S4830-13	50	400	1	2024/11/14
L-PFDS	S4830-14	48.2	414	1	2024/11/14
PFUdA	S4830-15	50	400	1	2024/10/30
PFDoA	S4830-16	50	400	1	2024/10/23
PFTrDA	S4830-17	50	400	1	2024/09/26
PFTeDA	S4830-18	50	400	1	2024/11/14
PFOSA (FOSA-I)	S4830-19	50	400	1	2025/04/15
N-MeFOSA-M	S4830-20	50	400	1	2024/12/24
N-EtFOSA-M	S4830-21	50	400	1	2025/02/21
N-MeFOSE-M	S4830-22	50	400	1	2025/01/06
N-EtFOSE-M	S4830-23	50	400	1	2025/01/06
br-NMeFOSAA	S4830-24	50	400	1	2024/12/02
br-NEtFOSAA	S4830-25	50	400	1	2024/08/20
4:2FTS	S4830-26	46.9	426	1	2024/10/29
6:2FTS	S4830-27	47.6	420	1	2025/04/21
8:2FTS	S4830-28	48	416	1	2025/05/08
HFPO-DA	S4830-29	50	400	1	2023/01/23
NaDONA	S4830-30	47.3	422	1	2024/11/18
9Cl-PF3ONS	S4830-31	46.7	428	1	2025/04/21
11Cl-PF3OUdS	S4830-32	47.2	424	1	2025/03/25

NO writing on Bottom page

NO 3 2021 06 130

PRLST 151 PG 312

**PREPARATION OF CONCENTRATED STOCK STANDARDS**

Solution No.: 5-4830 Date: 2020/06/29 Expiry Date: see below Discard Date: \_\_\_\_\_  
 Replaces Solution: 6-4814 Replaced by Solution: \_\_\_\_\_ Chemist: JD3  
 Compound: \_\_\_\_\_ Purity: \_\_\_\_\_

*5-4830 PRLST 151 312 pg. 312*

Solution ID#	Compound Name	Lot#	Received date	Exp. date	Replaces Solution	Replaced by Solution	Conc. (ug/mL)	Solvent	Storage
S4830-1	PFBA	PFBA1119 ✓	2020/06/18	2024/11/15	S4814-1		50	MeOH	FZ-11
S4830-2	L-PFBS	LPFBS1119 ✓	2020/06/18	2024/11/22	S4814-2		44.4	MeOH	FZ-11
S4830-3	PFPeA	PFPeA0420 ✓	2020/06/18	2025/04/03	S4814-3		50	MeOH	FZ-11
S4830-4	L-PFPeS	LFPFPeS0520 ✓	2020/06/18	2025/05/13	S4814-4		47	MeOH	FZ-11
S4830-5	PFHxA	PFHxA1219 ✓	2020/06/18	2024/12/31	S4814-5		50	MeOH	FZ-11
S4830-6	br-PFHxSk	brPFHxSK1019 ✓	2020/06/18	2024/10/23	S4814-6		45.7	MeOH	FZ-11
S4830-7	PFHpA	PFHpA1019 ✓	2020/06/18	2024/10/23	S4814-7		50	MeOH	FZ-11
S4830-8	L-PFHpS	LPFHpS0120 ✓	2020/06/18	2025/01/21	S4814-8		47.7	MeOH	FZ-11
S4830-9	PFOA	PFOA0120 ✓	2020/06/18	2025/01/25	S4814-9		50	MeOH	FZ-11
S4830-10	br-PFOSK	brPFOSK1119 ✓	2020/06/18	2025/01/16	S4814-10		46.5	MeOH	FZ-11
S4830-11	PFNA	PFNA1219 ✓	2020/06/18	2024/12/23	S4814-11		50	MeOH	FZ-11
S4830-12	L-PFNS	LPFNS1119 ✓	2020/06/18	2024/11/14	S4814-12		48.1	MeOH	FZ-11
S4830-13	PFDA	PFDA1119 ✓	2020/06/18	2024/11/14	S4814-13		50	MeOH	FZ-11
S4830-14	L-PFDS	LPFDS1119 ✓	2020/06/18	2024/11/14	S4814-14		48.2	MeOH	FZ-11
S4830-15	PFuDA	PFuDA1019 ✓	2020/06/18	2024/10/30	S4814-15		50	MeOH	FZ-11
S4830-16	PFDoA	PFDoA1019 ✓	2020/06/18	2024/10/23	S4814-16		50	MeOH	FZ-11
S4830-17	PFTrDA	PFTrDA0919 ✓	2020/06/18	2024/09/26	S4814-17		50	MeOH	FZ-11
S4830-18	PFTeDA	PFTeDA1119 ✓	2020/06/18	2024/11/14	S4814-18		50	MeOH	FZ-11
S4830-19	PFOSA (FOSA-I)	FOSA0420I ✓	2020/06/18	2025/04/15	S4814-19		50	IPA	FD-59
S4830-20	N-MeFOSA-M	NMeFOSA1219M ✓	2020/06/18	2024/12/24	S4814-20		50	MeOH	FZ-11
S4830-21	N-EtFOSA-M	NEtFOSA0220M ✓	2020/06/18	2025/02/21	S4814-21		50	MeOH	FZ-11
S4830-22	N-MeFOSE-M	NMeFOSE1219M ✓	2020/06/18	2025/01/06	S4814-22		50	MeOH	FZ-11
S4830-23	N-EtFOSE-M	NEtFOSE1219M ✓	2020/06/18	2025/01/06	S4814-23		50	MeOH	FZ-11
S4830-24	br-NMeFOSAA	br-NMeFOSAA1119 ✓	2020/06/18	2024/12/02	S4814-24		50	MeOH	FD-59
S4830-25	br-NEtFOSAA	br-NEtFOSAA0819 ✓	2020/06/18	2024/08/20	S4814-25		50	MeOH	FD-59
S4830-26	4:2FTS	42FTS1019 ✓	2020/06/18	2024/10/29	S4814-26		46.9	MeOH	FD-59
S4830-27	6:2FTS	62FTS0420 ✓	2020/06/18	2025/04/21	S4814-27		47.6	MeOH	FD-59
S4830-28	8:2FTS	82FTS0520 ✓	2020/06/18	2025/05/08	S4814-28		48	MeOH	FD-59
S4830-29	HFPO-DA	HFPODA0120 ✓	2020/06/18	2023/01/23	S4814-29		50	MeOH	FD-59
S4830-30	NaDONA	NaDONA1119 ✓	2020/06/18	2024/11/18	S4814-30		47.3	MeOH	FZ-11
S4830-31	9Cl-PF3ONS	9ClPF3ONS0420 ✓	2020/06/18	2025/04/21	S4814-31		46.7	MeOH	FZ-11
S4830-32	11Cl-PF3OUs	11Cl-PF3OUs0320 ✓	2020/06/18	2025/03/25	S4814-32		47.2	MeOH	FZ-11
Date Opened (All compounds): 2020/06/30			Supplier (All compounds) : Wellington			Chemist: JD3			

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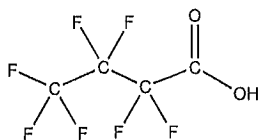
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA  
**COMPOUND:** Perfluoro-n-butanoic acid

**LOT NUMBER:** PFBA1119

**STRUCTURE:**



**CAS #:** 375-22-4

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/15/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/15/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

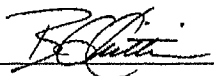
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 12/04/2019  
(mm/dd/yyyy)

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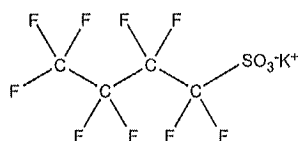
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFBS  
**COMPOUND:** Potassium perfluoro-1-butanesulfonate

**LOT NUMBER:** LPFBS1119

**STRUCTURE:**



**CAS #:** 29420-49-3

Received on: 2020-06-18  
MHS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>K  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K salt)  
44.2 ± 2.2 µg/ml (PFBS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 338.19  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 11/28/2019  
(mm/dd/yyyy)

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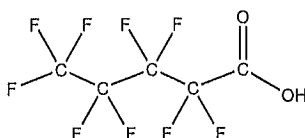
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFPeA  
**COMPOUND:** Perfluoro-n-pentanoic acid

**LOT NUMBER:** PFPeA0420

**STRUCTURE:**



**CAS #:** 2706-90-3

Received on: 2020-06-18  
MLS

2 ampoules

FZ-11

**MOLECULAR FORMULA:** C<sub>5</sub>HF<sub>9</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 264.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/03/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/03/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 05/06/2020  
(mm/dd/yyyy)

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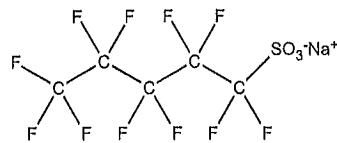
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFPeS  
**COMPOUND:** Sodium perfluoro-1-pentanesulfonate

**LOT NUMBER:** LPFPeS0520

**STRUCTURE:**



**CAS #:** 630402-22-1

Received on: 2020-06-18  
MLs  
& ampoules.  
FZ-11

**MOLECULAR FORMULA:** C<sub>5</sub>F<sub>11</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.0 ± 2.3 µg/ml (PFPeS acid)  
46.9 ± 2.3 µg/ml (PFPeS anion)

**MOLECULAR WEIGHT:** 372.09  
**SOLVENT(S):** Methanol

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/13/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/13/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 05/29/2020  
(mm/dd/yyyy)

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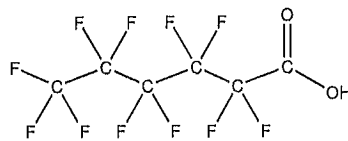
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxA  
**COMPOUND:** Perfluoro-n-hexanoic acid

**LOT NUMBER:** PFHxA1219

**STRUCTURE:**



**CAS #:** 307-24-4

Received on: 2020-06-18  
M/S  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>11</sub>F<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 314.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/31/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/31/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/13/2020  
(mm/dd/yyyy)

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**br-PFHxSK**

**Potassium Perfluorohexanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFHxSK  
**LOT NUMBER:** brPFHxSK1019  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
45.5 ± 2.3 µg/ml (total PFHxS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 10/21/2019  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

Received on: 2020-06-18  
MLS  
2 ampoules  
FX-11

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**





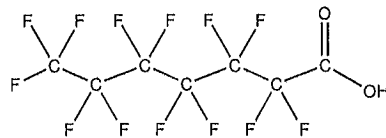
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHpA  
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA1019

**STRUCTURE:**



**CAS #:** 375-85-9

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 364.06  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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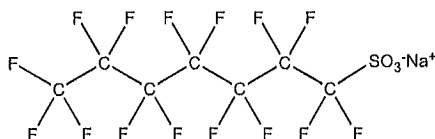
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFHpS  
**COMPOUND:** Sodium perfluoro-1-heptanesulfonate

**LOT NUMBER:** LPFHpS0120

**STRUCTURE:**



**CAS #:** 21934-50-9

Received 02/2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>F<sub>15</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.7 ± 2.4 µg/ml (PFHpS acid)  
47.6 ± 2.4 µg/ml (PFHpS anion)

**MOLECULAR WEIGHT:** 472.10  
**SOLVENT(S):** Methanol

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 02/05/2020  
(mm/dd/yyyy)

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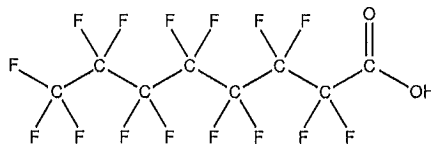
**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** PFOA  
**COMPOUND:** Perfluoro-n-octanoic acid

**LOT NUMBER:** PFOA0120

**STRUCTURE:**



**CAS #:** 335-67-1

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>8</sub>HF<sub>16</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 414.07  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 01/27/2020  
(mm/dd/yyyy)

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**br-PFOSK**

**Potassium Perfluorooctanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

Received on: 2020-06-18

MHS

2 ampoules

FZ-11

**PRODUCT CODE:** br-PFOSK  
**LOT NUMBER:** brPFOSK1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
46.5 ± 2.3 µg/ml (total PFOS acid)  
46.4 ± 2.3 µg/ml (total PFOS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 11/25/2019  
**LAST TESTED:** (mm/dd/yyyy) 01/16/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/16/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

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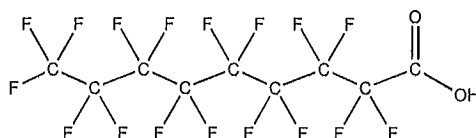
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFNA  
**COMPOUND:** Perfluoro-n-nonanoic acid

**LOT NUMBER:** PFNA1219

**STRUCTURE:**



**CAS #:** 375-95-1

Received on 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 464.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUDA).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/06/2020  
(mm/dd/yyyy)

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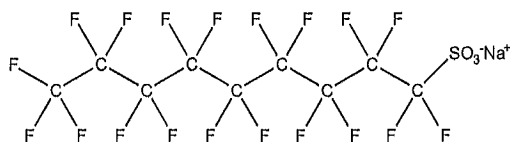
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFNS  
**COMPOUND:** Sodium perfluoro-1-nonanesulfonate

**LOT NUMBER:** LPFNS1119

**STRUCTURE:**



**CAS #:** 98789-57-2

Received on: 2020-06-18

ATN

2 ampoules

FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>F<sub>19</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
48.0 ± 2.4 µg/ml (PFNS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 572.12  
**SOLVENT(S):** Methanol

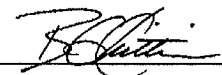
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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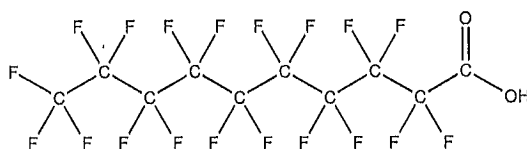
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDA  
**COMPOUND:** Perfluoro-n-decanoic acid

**LOT NUMBER:** PFDA1119

**STRUCTURE:**

**CAS #:** 335-76-2



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>10</sub>HF<sub>19</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 514.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

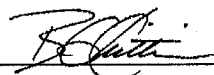
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

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**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 12/04/2019  
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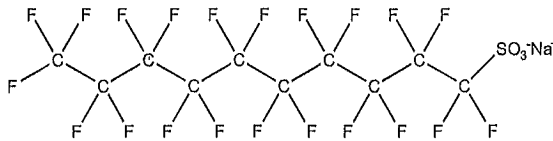
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFDS  
**COMPOUND:** Sodium perfluoro-1-decanesulfonate

**LOT NUMBER:** LPFDS1119

**STRUCTURE:**



**CAS #:** 2806-15-7

Received on: 2020-06-18  
M&S  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>10</sub>F<sub>21</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
48.2 ± 2.4 µg/ml (PFDS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 622.13  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By:   
B.G. Chittim, General Manager

Date: 11/20/2019  
(mm/dd/yyyy)

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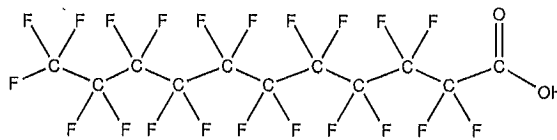
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFUdA  
**COMPOUND:** Perfluoro-n-undecanoic acid

**LOT NUMBER:** PFUdA1019

**STRUCTURE:**



**CAS #:** 2058-94-8

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>F<sub>21</sub></sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 564.09  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/30/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/30/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-dodecanoic acid (PFDoA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 11/05/2019  
(mm/dd/yyyy)

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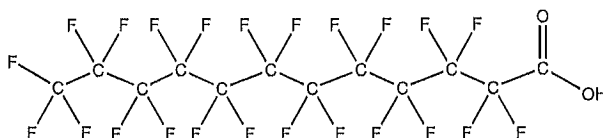
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFD0A  
**COMPOUND:** Perfluoro-n-dodecanoic acid

**LOT NUMBER:** PFD0A1019

**STRUCTURE:**

**CAS #:** 307-55-1



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>23</sub>F<sub>23</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 614.10  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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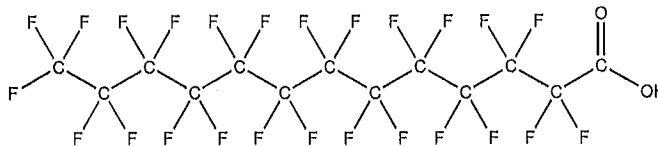
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTTrDA  
**COMPOUND:** Perfluoro-n-tridecanoic acid

**LOT NUMBER:** PFTTrDA0919

**STRUCTURE:**

**CAS #:** 72629-94-8



Received on: 2020-06-18  
MKS  
2 ampoules.  
Fz-11

**MOLECULAR FORMULA:** C<sub>13</sub>HF<sub>26</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 664.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/26/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 09/26/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA (C<sub>11</sub>HF<sub>21</sub>O<sub>2</sub>), ~ 0.4% of PFDaA (C<sub>12</sub>HF<sub>23</sub>O<sub>2</sub>), and ~ 0.1% of PFTeDA (C<sub>14</sub>HF<sub>27</sub>O<sub>2</sub>).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/03/2019  
(mm/dd/yyyy)

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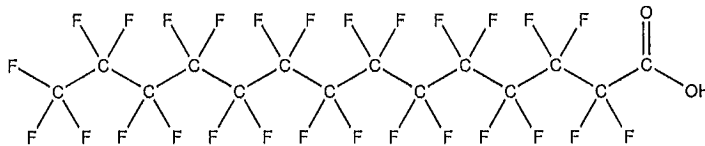
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTeDA  
**COMPOUND:** Perfluoro-n-tetradecanoic acid

**LOT NUMBER:** PFTeDA1119

**STRUCTURE:**

**CAS #:** 376-06-7



Received on - 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_{14}HF_{27}O_2$   
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 714.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of PFDoA ( $C_{12}HF_{23}O_2$ ), ~ 0.1% of PFTrDA ( $C_{13}HF_{25}O_2$ ), and ~ 0.1% of PFHxDA ( $C_{16}HF_{31}O_2$ ).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 12/04/2019  
(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

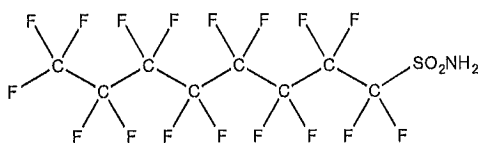
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FOSA-I  
**COMPOUND:** Perfluoro-1-octanesulfonamide

**LOT NUMBER:** FOSA0420I

**STRUCTURE:**

**CAS #:** 754-91-6



Received on: 2020-06-18  
MWS  
& ampoules  
FD-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/15/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/15/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 499.14  
**SOLVENT(S):** Isopropanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 04/28/2020  
(mm/dd/yyyy)

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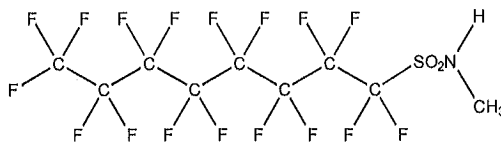
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA1219M

**STRUCTURE:**



**CAS #:** 31506-32-8

Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/24/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/24/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
B.G. Chittim, General Manager

Date: 01/02/2020  
(mm/dd/yyyy)

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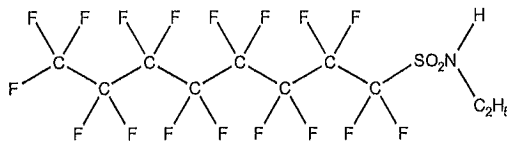
**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**PRODUCT CODE:** N-EtFOSA-M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NetFOSA0220M

**STRUCTURE:**

**CAS #:** 4151-50-2



Received on: 2020-06-18  
MHS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>6</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 02/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20  
**SOLVENT(S):** Methanol

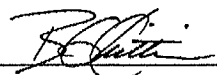
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 02/24/2020  
B.G. Chittim, General Manager (mm/dd/yyyy)

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CERTIFICATE OF ANALYSIS  
DOCUMENTATION

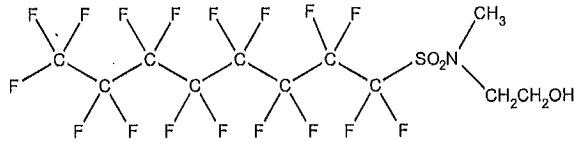
**PRODUCT CODE:**  
**COMPOUND:**

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

**LOT NUMBER:** NMeFOSE1219M

**STRUCTURE:**

**CAS #:** 24448-09-7



**MOLECULAR FORMULA:**

$C_{11}H_8F_{17}NO_3S$

**MOLECULAR WEIGHT:** 557.22

**CONCENTRATION:**

50 ± 2.5 µg/ml

**SOLVENT(S):** Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

01/06/2020 (HRGC/LRMS)  
12/27/2019 (LC/MS)

**EXPIRY DATE:** (mm/dd/yyyy)

01/06/2025

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim, General Manager

**Date:** 01/07/2020

(mm/dd/yyyy)

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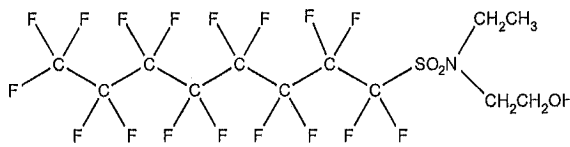


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M **LOT NUMBER:** NEtFOSE1219M  
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

**STRUCTURE:** **CAS #:** 1691-99-2



Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>10</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 571.25  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/06/2020 (HRGC/LRMS)  
12/27/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/06/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

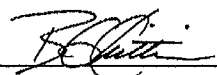
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 01/07/2020  
B.G. Chittim, General Manager (mm/dd/yyyy)

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**br-NMeFOSAA**

**N-Methylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

Received on - 2020-06-18  
MHS  
2 ampoules.  
FD-59

**PRODUCT CODE:** br-NMeFOSAA  
**LOT NUMBER:** brNMeFOSAA1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 11/27/2019  
**LAST TESTED:** (mm/dd/yyyy) 12/02/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/02/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



**br-NEtFOSAA**

**N-Ethylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-NEtFOSAA  
**LOT NUMBER:** brNEtFOSAA0819  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 08/20/2019  
**LAST TESTED:** (mm/dd/yyyy) 08/20/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 08/20/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

Received on: 2020-06-18  
MLS  
2 ampoules  
FD-59

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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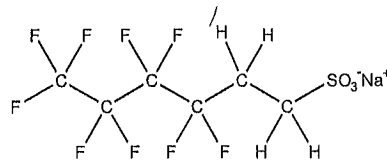


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 4:2FTS **LOT NUMBER:** 42FTS1019  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

**STRUCTURE:**



**CAS #:** 27619-93-8

*Received on 2020-06-18  
 MHS  
 2 ampoules  
 RD-59*

**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 350.13  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 46.7 ± 2.3 µg/ml (4:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/29/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/29/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**  **Date:** 11/14/2019  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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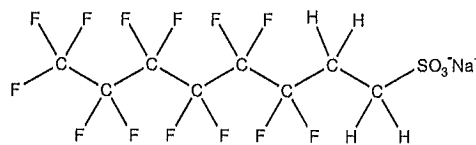


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 6:2FTS **LOT NUMBER:** 62FTS0420  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

**STRUCTURE:** **CAS #:** 27619-94-9



Received on: 2020-06-18  
 MLS  
 2 ampoules  
 FO-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>13</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 450.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.6 ± 2.4 µg/ml (6:2FTS acid)  
 47.4 ± 2.4 µg/ml (6:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By:  Date: 04/27/2020  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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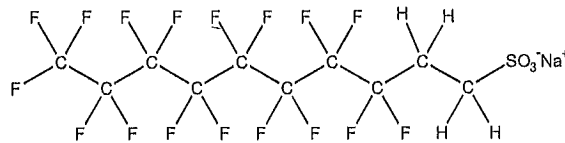


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS0520  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** 27619-96-1



Received on: 2020-06-18  
MHS  
2 ampoules  
RD-59

**MOLECULAR FORMULA:**  $C_{10}H_4F_{17}SO_3Na$  **MOLECULAR WEIGHT:** 550.16  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.9 ± 2.4 µg/ml (8:2FTS anion)  
48.0 ± 2.4 µg/ml (8:2FTS acid)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/08/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/08/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

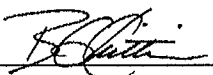
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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

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## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

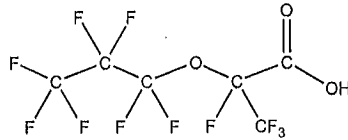
HFPO-DA

**LOT NUMBER:**

HFPODA0120

**COMPOUND:**

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

**STRUCTURE:****CAS #:**

13252-13-6

Received on: 2020-06-18

MLS

2 ampoules

FD-59

**MOLECULAR FORMULA:**C<sub>6</sub>H<sub>11</sub>O<sub>3</sub>**CONCENTRATION:**

50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:**

330.05

**CHEMICAL PURITY:**

&gt;98%

**SOLVENT(S):**

Methanol

**LAST TESTED:** (mm/dd/yyyy)

01/23/2020

**EXPIRY DATE:** (mm/dd/yyyy)

01/23/2023

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Product is commercially known as GenX.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
B.G. Chittim, General Manager

Date: 01/24/2020

(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

NaDONA

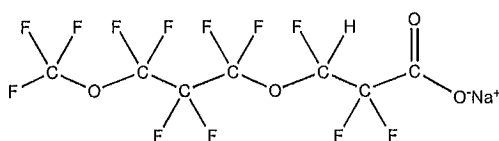
**LOT NUMBER:**

NaDONA1119

**COMPOUND:**

Sodium dodecafluoro-3H-4,8-dioxanonanoate

**STRUCTURE:**



**CAS #:**

958445-44-8

(ammonium salt)

Received on: 2020-06-18

MLS

2 ampoules.

FZ-11

**MOLECULAR FORMULA:**

C<sub>7</sub>HF<sub>12</sub>O<sub>4</sub>Na

**MOLECULAR WEIGHT:**

400.05

**CONCENTRATION:**

50 ± 2.5 µg/ml (Na Salt)  
47.1 ± 2.4 µg/ml (NaDONA anion)

**SOLVENT(S):**

Methanol  
Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

11/18/2019

**EXPIRY DATE:** (mm/dd/yyyy)

11/18/2024

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Product is commercially known as ADONA.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date:

12/02/2019  
(mm/dd/yyyy)

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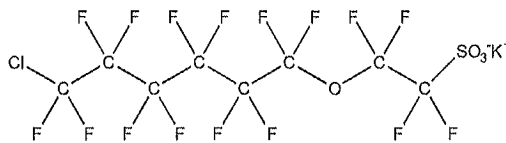


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 9CI-PF3ONS      **LOT NUMBER:** 9CIPF3ONS0420  
**COMPOUND:** Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate

**STRUCTURE:**      **CAS #:** 73606-19-6



Received on: 2020-06-18  
MLS  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>8</sub>F<sub>16</sub>ClSO<sub>4</sub>K      **MOLECULAR WEIGHT:** 570.67  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt)      **SOLVENT(S):** Methanol  
46.7 ± 2.3 µg/ml (9CI-PF3ONS acid)  
46.6 ± 2.3 µg/ml (9CI-PF3ONS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is the major component of the commercial formulation known as F-53B.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 04/24/2020  
B.G. Chittim, General Manager      (mm/dd/yyyy)

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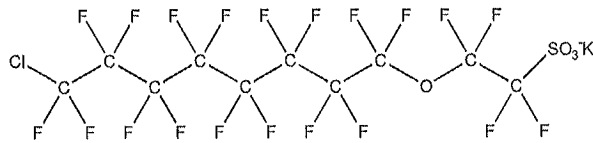


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 11CI-PF3OUdS **LOT NUMBER:** 11CIPF3OUdS0320  
**COMPOUND:** Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

**STRUCTURE:** **CAS #:** 83329-89-9



Received on: 2020-06-18  
MLS  
2 ampoules.  
F2-11

**MOLECULAR FORMULA:**  $C_{10}F_{20}ClSO_4K$  **MOLECULAR WEIGHT:** 670.69  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt) **SOLVENT(S):** Methanol  
47.2 ± 2.4 µg/ml (11CI-PF3OUdS acid)  
47.1 ± 2.4 µg/ml (11CI-PF3OUdS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 03/25/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 03/25/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is a minor component of the commercial formulation known as F-53B.

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**Certified By:**   
B.G. Chittim, General Manager **Date:** 04/15/2020  
(mm/dd/yyyy)

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PREPARATION OF SURROGATE / INTERNAL STANDARD SPIKING SOLUTION

Solution No.: SI-8099 Prep'n Date: 2020/06/18 Expiry Date: 2023/01/08 Discard Date: \_\_\_\_\_  
 Replaces Solution No.: SI-8063 Replaced by Solution: \_\_\_\_\_ Chemist: GSZ  
 Sol'n. Name: PFAS I.S. SPIKING SOLUTION A  
 Solution Used As: Internal Std: / Surrogate Spike: \_\_\_\_\_  
 Spike Volume: \_\_\_\_\_ uL or mL (for I.S. uL per mL) For Instrument/Analysis: LCMS/MS  
 Solvent(s): 0.3% NH<sub>4</sub>OH in MeOH Supplier(s): See PRLRE 137-337 Lot No(s): See PRLRE 137-337 337  
 Date Solvent Opened: See PRLRE 137-337 337 GSZ 2020/06/26 GSZ 2020/06/26  
 Volumetric Flask Used: 200mL Class A (5640) Syringe ID: Pipette K2625CF  
 Storage Location and Conditions: FZ11  
 Ampule supplier; Mix Name; Catalogue No.; Lot No.; Date Rec'd.; Date Opened, Ampule Expiry Date:

SI-8099 (PRLST 166 p. 45)

Compound Name	ID#	Conc. (ug/mL)	Vol. of Stock standard (uL)	Dilution volume (mL)	Final Conc. (ng/mL)	Exp. date
MPFBA	S4820-1	50	500	200	125	2024/11/15
M3PFBS	S4820-2	50	500	200	125	2024/10/29
M5PFPeA	S4820-3	50	500	200	125	2025/01/22
MPFHxA	S4820-4	50	500	200	125	2024/10/11
MPFHxS	S4820-5	50	500	200	125	2024/01/10
M4PFHpA	S4820-6	50	500	200	125	2025/01/08
MPFOA	S4820-7	50	500	200	125	2025/05/08
MPFOS	S4820-8	50	500	200	125	2025/04/15
MPFNA	S4820-9	50	500	200	125	2024/12/02
MPFDA	S4820-10	50	500	200	125	2024/09/05
MPFUdA	S4820-11	50	500	200	125	2024/12/04
MPFDoA	S4820-12	50	500	200	125	2024/11/22
M2PFTeDA	S4820-13	50	500	200	125	2024/11/14
MPFOSA	S4820-14	50	500	200	125	2025/02/28
D3-N-MeFOSAA	S4820-15	50	500	200	125	2024/12/02
D5-N-EtFOSAA	S4820-16	50	500	200	125	2024/07/25
M3HFPO-DA	S4820-17	50	500	200	125	2023/01/08
D-N-MeFOSA-M	S4828-1	50	1000	200	250	2024/11/21
D-N-EtFOSA-M	S4828-2	50	1000	200	250	2025/05/20
D7-N-MeFOSE-M	S4828-3	50	1000	200	250	2024/12/16
D9-N-EtFOSE-M	S4828-4	50	1000	200	250	2024/12/16
M2-4:2FTS	S4828-5	50	1000	200	250	2025/04/16
M2-6:2FTS	S4828-6	50	1000	200	250	2024/11/21
M2-8:2FTS	S4828-7	50	1000	200	250	2025/03/18

No writing on bottom page.

GSZ, 2020/08/18

**PREPARATION OF CONCENTRATED STOCK STANDARDS**

Solution No.: 5-4820 Date: 2020/05/26 Expiry Date: See Below Discard Date: \_\_\_\_\_  
 Replaces Solution: \_\_\_\_\_ Replaced by Solution: \_\_\_\_\_ Chemist: GSZ

5-4820 (PRLST 151 p.306)

Solution ID#	Compound Name	Lot#	Received date	Exp. date	Replaces Solution	Replaced by Solution	Conc (ug/mL)	Solvent	Storage
S4820-1	MPFBA	MPFBA1119	2020/05/25	2024/11/15	S4788-1		50	MeOH	FZ-11
S4820-2	M3PFBS	M3PFBS1019	2019/11/13	2024/10/29	S4788-2		50	MeOH	FZ-11
S4820-3	M5PFPeA	M5PFPeA0120	2020/05/25	2025/01/22	S4788-3		50	MeOH	FZ-11
S4820-4	MPFHxA	MPFHxA1019	2020/03/18	2024/10/11	S4788-4		50	MeOH	FZ-11
S4820-5	MPFHxS	MPFHxS0119	2020/03/18	2024/01/10	S4788-5		50	MeOH	FZ-11
S4820-6	M4PFHpA	M4PFHpA0120	2020/05/25	2025/01/08	S4788-6		50	MeOH	FZ-11
S4820-7	MPFOA	MPFOA0420	2020/05/25	2025/05/08	S4788-7		50	MeOH	FZ-11
S4820-8	MPFOS	MPFOS0420	2020/05/25	2025/04/15	S4788-8		50	MeOH	FZ-11
S4820-9	MPFNA	MPFNA1119	2020/03/18	2024/12/02	S4788-9		50	MeOH	FZ-11
S4820-10	MPFDA	MPFDA0919	2020/03/18	2024/09/05	S4788-10		50	MeOH	FZ-11
S4820-11	MPFUdA	MPFUdA1219	2020/03/18	2024/12/04	S4788-11		50	MeOH	FZ-11
S4820-12	MPFDoA	MPFDoA1119	2020/05/25	2024/11/22	S4788-12		50	MeOH	FZ-11
S4820-13	M2PFTeDA	M2PFTeDA1119	2020/05/25	2024/11/14	S4788-13		50	MeOH	FZ-11
S4820-14	MPFOSA (M8-FOSA-I)	M8FOSA0220I	2020/05/25	2025/02/28	S4788-14		50	IPA	FD-59
S4820-15	D3-N-MeFOSAA	d3NMeFOSAA1119	2020/05/25	2024/12/02	S4788-15		50	MeOH	FD-59
S4820-16	D5-N-EtFOSAA	d5NEtFOSAA0719	2020/05/25	2024/07/25	S4788-16		50	MeOH	FD-59
S4820-17	M3HFPO-DA	M3HFPODA0120	2020/05/25	2023/01/08	S4788-17		50	MeOH	FD-59
S4820-18	D-N-MeFOSA-M	dNMeFOSA1119M	2020/05/25	2024/11/21	S4803-1		50	MeOH	FZ-11
S4820-19	D-N-EtFOSA-M	dNEtFOSA0520M	2020/05/25	2025/05/20	S4803-2		50	MeOH	FZ-11
S4820-20	D7-N-MeFOSE-M	d7NMeFOSE1119M	2020/05/25	2024/12/16	S4803-3		50	MeOH	FZ-11
S4820-21	D9-N-EtFOSE-M	d9NEtFOSE1119M	2020/05/25	2024/12/16	S4803-4		50	MeOH	FZ-11
S4820-22	M2-4:2FTS	M242FTS0420	2020/05/25	2025/04/16	S4803-5		50	MeOH	FD-59
S4820-23	M2-6:2FTS	M262FTS1119	2020/05/25	2024/11/21	S4803-6		50	MeOH	FD-59
S4820-24	M2-8:2FTS	M282FTS0320	2020/05/25	2025/03/18	S4803-7		50	MeOH	FD-59
Date opened (All compounds): <u>2020/05/26</u>			Supplier: Wellington			Chemist: <u>GSZ, 2020/05/26</u>			

*No writing on bottom page.*

Notes/Comments

PRLST 151 PG 311

**PREPARATION OF CONCENTRATED STOCK STANDARDS**

Solution No.: S-4828 Date: 2020/06/18 Expiry Date: See Below Discard Date: \_\_\_\_\_  
 Replaces Solution: \_\_\_\_\_ Replaced by Solution: \_\_\_\_\_ Chemist: GSZ

S-4828 (PRLST 151 g. 311)

Solution ID#	Compound Name	Lot#	Received date	Exp. date	Replaces Solution	Replaced by Solution	Conc (ug/mL)	Solvent	Storage
S4828-1	D-N-MeFOSA-M	dNMeFOSA1119M	2020/05/25	2024/11/21	S4820-18		50	MeOH	FZ-11
S4828-2	D-N-EtFOSA-M	dNEtFOSA0520M	2020/05/25	2025/05/20	S4820-19		50	MeOH	FZ-11
S4828-3	D7-N-MeFOSE-M	d7NMeFOSE1119M	2020/05/25	2024/12/16	S4820-20		50	MeOH	FZ-11
S4828-4	D9-N-EtFOSE-M	d9NEtFOSE1119M	2020/05/25	2024/12/16	S4820-21		50	MeOH	FZ-11
S4828-5	M2-4:2FTS	M242FTS0420	2020/05/25	2025/04/16	S4820-22		50	MeOH	FD-59
S4828-6	M2-6:2FTS	M262FTS1119	2020/05/25	2024/11/21	S4820-23		50	MeOH	FD-59
S4828-7	M2-8:2FTS	M282FTS0320	2020/05/25	2025/03/18	S4820-24		50	MeOH	FD-59
Date opened (All compounds): <u>2020/06/18</u>			Supplier: Wellington			Chemist: <u>GSZ</u>			

Notes/Comments

Solution No.: \_\_\_\_\_ Date: \_\_\_\_\_ Expiry Date: \_\_\_\_\_ Discard Date: \_\_\_\_\_

Replaces Solution: \_\_\_\_\_ Replaced by Solution: \_\_\_\_\_ Chemist: \_\_\_\_\_

Compound: \_\_\_\_\_ Purity: \_\_\_\_\_

Date Received: \_\_\_\_\_ Expiry Date: \_\_\_\_\_ Lot No.: \_\_\_\_\_

Supplier: \_\_\_\_\_

Date Opened: \_\_\_\_\_

Final Gross Weight: \_\_\_\_\_ g/mg Dilution Volume: \_\_\_\_\_ mL

Tare Weight\*: \_\_\_\_\_ g/mg Volumetric Flask: \_\_\_\_\_

Net Weight: \_\_\_\_\_ g/mg Concentration: \_\_\_\_\_ ug/mL

Adjusted Net Weight\*\*: \_\_\_\_\_ mg Solvent(s): \_\_\_\_\_

Balance Used: \_\_\_\_\_  
 (specify model and serial no.)

Solvent Used: \_\_\_\_\_

Solvent Supplier: \_\_\_\_\_ Lot No(s): \_\_\_\_\_

Date Opened: \_\_\_\_\_

Storage Location / Conditions: \_\_\_\_\_

Notes/Comments



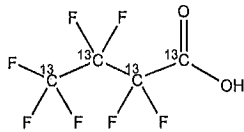
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFBA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]butanoic acid

**LOT NUMBER:** MPFBA1119

**STRUCTURE:**



**CAS #:** Not available

*Received on:  
2020-05-25  
TK4  
1x Ampoule  
FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub>H<sub>7</sub>F<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 218.01  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/15/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/15/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 11/15/2019  
(mm/dd/yyyy)

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

2

**PRODUCT CODE:** M3PFBS **LOT NUMBER:** M3PFBS1019  
**COMPOUND:** Sodium perfluoro-1-[2,3,4-<sup>13</sup>C<sub>3</sub>]butanesulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>3</sub><sup>12</sup>CF<sub>7</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 325.06  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 46.5 ± 2.3 µg/ml (M3PFBS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 10/29/2019 (2,3,4-<sup>13</sup>C<sub>3</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 10/29/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

*TTM 2019-11-13*  
*1 ampoule FZ-11*

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains < 0.1% of perfluoro-1-butanesulfonate.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By: *B.G. Chittim*  
 B.G. Chittim, General Manager

Date: 11/08/2019  
(www.well-labs.com)

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Form 27, (based 2004-11-09)  
 Revision 8, Revised 2018-08-14

M3PFBS1019 (1 of 4)  
 rev1

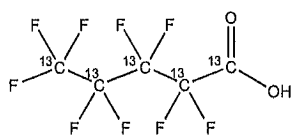


**PRODUCT CODE:** M5PFPeA  
**COMPOUND:** Perfluoro-n-[<sup>13</sup>C<sub>6</sub>]pentanoic acid

**LOT NUMBER:** M5PFPeA0120

**STRUCTURE:**

**CAS #:** Not available



*Received on:  
2020-05-25  
TKA, Ax Ampoule  
FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>6</sub>HF<sub>9</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 269.01  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/22/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/22/2025

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(<sup>13</sup>C<sub>6</sub>)

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

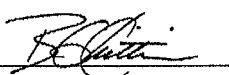
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.25% of perfluoro-n-pentanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/24/2020  
(mm/dd/yyyy)

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**PRODUCT CODE:**

MPFHxA

**LOT NUMBER:**

MPFHxA1019

**COMPOUND:**

Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexanoic acid

**STRUCTURE:**

**CAS #:**

Not available



**MOLECULAR FORMULA:**

<sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub>

**MOLECULAR WEIGHT:**

316.04

**CONCENTRATION:**

50 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol

Water (<1%)

**CHEMICAL PURITY:**

>98%

**ISOTOPIC PURITY:**

≥99%<sup>13</sup>C

**LAST TESTED:** (mm/dd/yyyy)

10/11/2019

(1,2-<sup>13</sup>C<sub>2</sub>)

**EXPIRY DATE:** (mm/dd/yyyy)

10/11/2024

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

*Received by,  
PPS, 2020/01/07*

**DOCUMENTATION/ DATA ATTACHED:**

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

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim, General Manager

Date: 10/22/2019

(mm/dd/yyyy)

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**PRODUCT CODE:** MPFHxS **LOT NUMBER:** MPFHxS0119  
**COMPOUND:** Sodium perfluoro-1-hexane[<sup>18</sup>O<sub>2</sub>]sulfonate

**STRUCTURE:** **CAS #:** 1585941-14-5



**MOLECULAR FORMULA:** C<sub>6</sub>F<sub>12</sub>S<sup>18</sup>O<sub>2</sub>ONa **MOLECULAR WEIGHT:** 426.10  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.3 ± 2.4 µg/ml (MPFHxS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** >94% (<sup>18</sup>O<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 01/10/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 01/10/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*Received by,  
PPS, 2020/01/07*

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- The response factor for MPFHxS (C<sub>6</sub>F<sub>12</sub>S<sup>18</sup>O<sub>2</sub>) has been observed to be up to 10% lower than for PFHxS (C<sub>6</sub>F<sub>12</sub>S<sup>16</sup>O<sub>2</sub>) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 0.6% of sodium perfluoro-1-octane[<sup>18</sup>O<sub>2</sub>]sulfonate (<sup>18</sup>O<sub>2</sub>-PFOS) and ~ 0.2% of sodium perfluoro-1-heptane[<sup>18</sup>O<sub>2</sub>]sulfonate (<sup>18</sup>O<sub>2</sub>-PFHpS).
- Due to the isotopic purity of the starting material (<sup>18</sup>O<sub>2</sub> >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

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**Certified By:**  **Date:** 01/21/2019  
 B.G. Chittim, General Manager

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Date Received: 2020/03/18-1 ampoule-TK4



# WELLINGTON LABORATORIES

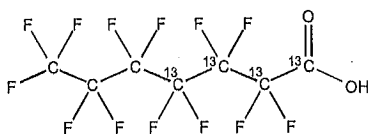
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M4PFHpA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]heptanoic acid

**LOT NUMBER:** M4PFHpA0120

**STRUCTURE:**

**CAS #:** Not available



*Received on  
2020-05-25  
TK4 1x Ampoule  
FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>3</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 368.03  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/08/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/08/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.03% of perfluoro-n-heptanoic acid.

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/24/2020  
(mm/dd/yyyy)

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## CERTIFICATE OF ANALYSIS DOCUMENTATION

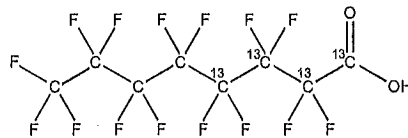
7

**PRODUCT CODE:** MPFOA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanoic acid

**LOT NUMBER:** MPFOA0420

**STRUCTURE:**

**CAS #:** 960315-48-4



*Received on:  
2020-05-25  
T124 1X Ampoule  
FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub> <sup>12</sup>C<sub>4</sub> HF<sub>15</sub> O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 418.04  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/08/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/08/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

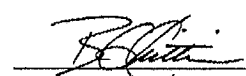
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of native perfluoro-n-octanoic acid (PFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 05/15/2020  
(mm/dd/yyyy)

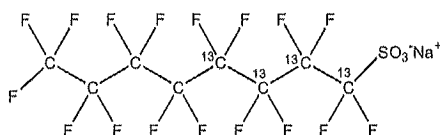
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## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS0420  
**COMPOUND:** Sodium perfluoro-1-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanesulfonate  
**STRUCTURE:** **CAS #:** 960315-53-1



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 526.08  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.9 ± 2.4 µg/ml (MPFOS acid)  
 47.8 ± 2.4 µg/ml (MPFOS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 04/15/2020 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 04/15/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*2020/05/25 65% 2020/05/25*  
*2020/05/25*  
*65% 1 ampoule*  
*FZ-11*

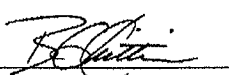
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% Sodium perfluoro-1-[1,2,3-<sup>13</sup>C<sub>3</sub>]heptanesulfonate.

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**Certified By:**  **Date:** 04/20/2020  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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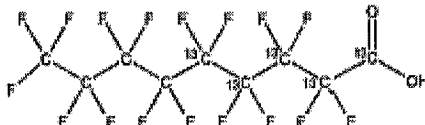
4

**PRODUCT CODE:** MPFNA  
**COMPOUND:** Perfluoro-n-[1,2,3,4,5-<sup>13</sup>C]<sub>9</sub>nonanoic acid

**LOT NUMBER:** MPFNA1119

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>5</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 469.04  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4,5-<sup>13</sup>C)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (12/02/2019) 12/02/2019  
**EXPIRY DATE:** (12/02/2024) 12/02/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*Received by,  
PPS, 2020/01/07*

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-[1,2,3,4-<sup>13</sup>C]<sub>8</sub>octanoic acid (MPFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By: *B.G. Chittim*  
B.G. Chittim, General Manager

Date: 12/05/2019  
(12/05/2019)

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Form#27, Issue# 2004-11-10  
Revision#6, Revised 2018-09-14

MPFNA1119 (1 of 4)  
10/1

Date Received: 2020/03/18-1 ampoule-TK4



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## CERTIFICATE OF ANALYSIS DOCUMENTATION

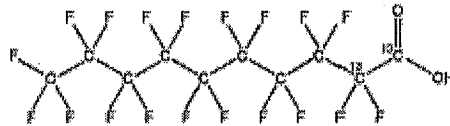
10

**PRODUCT CODE:** MPFDA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid

**LOT NUMBER:** MPFDA0919

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>13</sup>C<sub>8</sub>HF<sub>18</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 516.07  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/05/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 09/05/2024

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*Received by,  
PPS, 2020/01/07*

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 09/09/2019  
(mm/dd/yyyy)

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Form# 27, Issued 2004-11-10  
Revised/0, Revised 2010-09-14

MPFDA0919 (1 of 4)  
mvd

Date Received: 2020/03/18-1 ampoule-TK4

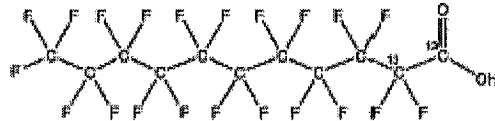


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

11

**PRODUCT CODE:** MPFUdA **LOT NUMBER:** MPFUdA1219  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]undecanoic acid  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>12</sup>C<sub>2</sub><sup>13</sup>C<sub>9</sub>HF<sub>21</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 566.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (YYYYMMDD) 12/04/2019  
**EXPIRY DATE:** (YYYYMMDD) 12/04/2024  
**RECOMMENDED STORAGE:** Store ampoules in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

*Received by,  
 PPS, 2020/01/07*

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-<sup>13</sup>C<sub>1</sub>-PFUdA and 2-<sup>13</sup>C<sub>1</sub>-PFUdA (~0.6% total; see Figure 2) are due to the isotopic purity of the <sup>13</sup>C-precursor.

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**Certified By:**   
 B.G. Chhillim, General Manager **Date:** 12/06/2019  
 (YYYYMMDD)

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Form 037, Issued 2004-11-10  
 Revision 03, Revised 2016-09-14

MPFUdA1219 (1 of 4)  
 rev0

Date Received: 2020/03/18-1 ampoule-TK4





# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

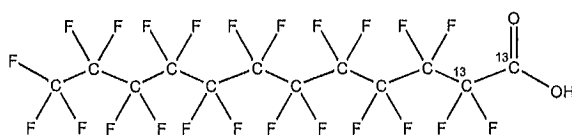
12

**PRODUCT CODE:** MPFDoA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]dodecanoic acid

**LOT NUMBER:** MPFDoA1119

**STRUCTURE:**

**CAS #:** Not available



*Reviewed on:  
2020-05-25  
TKA 1x Ampoule  
FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub> <sup>12</sup>C<sub>10</sub> HF<sub>23</sub> O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 616.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2024

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 11/27/2019  
(mm/dd/yyyy)

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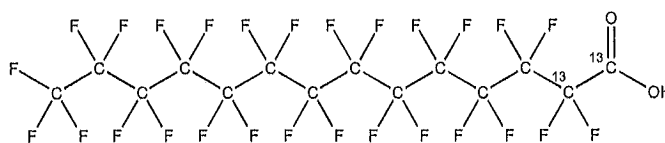
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

13

**PRODUCT CODE:** M2PFTeDA **LOT NUMBER:** M2PFTeDA1119  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]tetradecanoic acid

**STRUCTURE:** **CAS #:** Not available



*Received on:  
2020-05-25  
TKG  
1x Ampoule FZ-11*

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub> <sup>12</sup>C<sub>12</sub> HF<sub>27</sub> O<sub>2</sub> **MOLECULAR WEIGHT:** 716.10  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-tetradecanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 11/26/2019  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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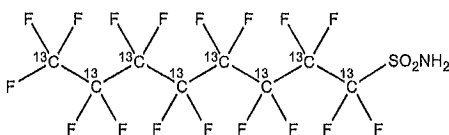
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

124

**PRODUCT CODE:** M8FOSA-I **LOT NUMBER:** M8FOSA0220I  
**COMPOUND:** Perfluoro-1-[<sup>13</sup>C<sub>8</sub>]octanesulfonamide

**STRUCTURE:** **CAS #:** 1365803-60-6



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 507.09  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml **SOLVENT(S):** Isopropanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 02/28/2020 (<sup>13</sup>C<sub>8</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 02/28/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

2020/05/25  
 652 1 ampoule  
 FD 59

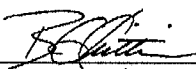
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.2% of perfluoro-1-[<sup>13</sup>C<sub>4</sub>]octanesulfonamide and ~ 0.03% of perfluoro-1-[<sup>13</sup>C<sub>7</sub>]heptanesulfonamide.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager **Date:** 03/03/2020  
 (mm/dd/yyyy)

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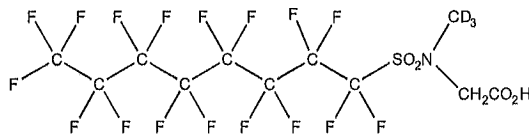
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

15

**PRODUCT CODE:** d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA1119  
**COMPOUND:** N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:** **CAS #:** 1400690-70-1



*Received on  
2020-05-25  
TK4 1X Ampule  
FD-59*

**MOLECULAR FORMULA:** C<sub>11</sub>D<sub>3</sub>H<sub>3</sub>F<sub>17</sub>NO<sub>4</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 574.23  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/02/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/02/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

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

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**Certified By:**   
B.G. Chittim, General Manager **Date:** 12/04/2019  
(mm/dd/yyyy)

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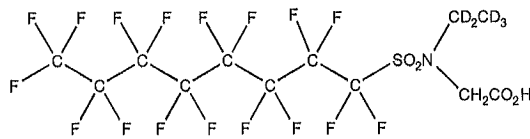


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d5-N-EtFOSAA      **LOT NUMBER:** d5NEtFOSAA0719  
**COMPOUND:** N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**      **CAS #:** Not available



*Received on:  
2020-05-25  
FK9 1x ampoule  
FD-59*

**MOLECULAR FORMULA:** C<sub>12</sub>D<sub>6</sub>H<sub>3</sub>F<sub>17</sub>NO<sub>4</sub>S      **MOLECULAR WEIGHT:** 590.26  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>5</sub>  
**LAST TESTED:** (mm/dd/yyyy) 07/25/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 07/25/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

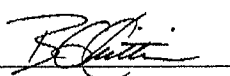
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:  Date: 07/26/2019  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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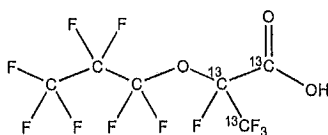
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

v7

**PRODUCT CODE:** M3HFPO-DA **LOT NUMBER:** M3HFPODA0120  
**COMPOUND:** 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-<sup>13</sup>C<sub>3</sub>-propanoic acid

**STRUCTURE:** **CAS #:** Not available



Received on:  
2020-05-25  
TK4, 1x Ampoule  
FD-59

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>3</sub><sup>12</sup>C<sub>3</sub>HF<sub>11</sub>O<sub>3</sub> **MOLECULAR WEIGHT:** 333.03  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 01/08/2020 **(<sup>13</sup>C<sub>3</sub>)**  
**EXPIRY DATE:** (mm/dd/yyyy) 01/08/2023  
**RECOMMENDED STORAGE:** Refrigerate ampoule

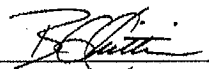
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.9% of the linear M3HFPO-DA isomer.
- Product is commercially known as GenX.

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Certified By:  Date: 01/13/2020  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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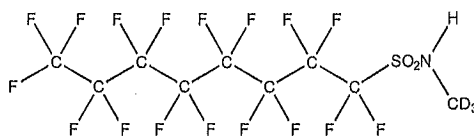
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

18

**PRODUCT CODE:** d-N-MeFOSA-M **LOT NUMBER:** dNMeFOSA1119M  
**COMPOUND:** N-methyl-d<sub>3</sub>-perfluoro-1-octanesulfonamide

**STRUCTURE:** **CAS #:** Not available



*Received on:  
2020-05-25  
TKF  
FZ-11  
2x Ampoules*

**MOLECULAR FORMULA:** C<sub>9</sub>D<sub>3</sub>HF<sub>17</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 516.19  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>  
**LAST TESTED:** (mm/dd/yyyy) 11/21/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/21/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 11/25/2019  
(mm/dd/yyyy)

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**WELLINGTON**  
LABORATORIES

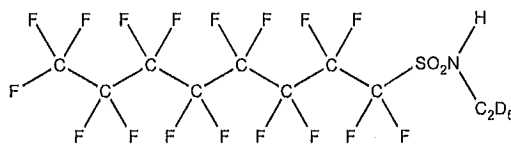
**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** d-N-EtFOSA-M  
**COMPOUND:** N-ethyl-d<sub>5</sub>-perfluoro-1-octanesulfonamide

**LOT NUMBER:** dNEtFOSA0520M

**STRUCTURE:**

**CAS #:** Not available



*Received on:  
2020-05-25  
Tkt, 2x Ampoules  
FZ-11*

**MOLECULAR FORMULA:** C<sub>10</sub>D<sub>5</sub>HF<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/20/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/20/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 532.23  
**SOLVENT(S):** Methanol  
**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>5</sub>


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 05/21/2020  
(mm/dd/yyyy)

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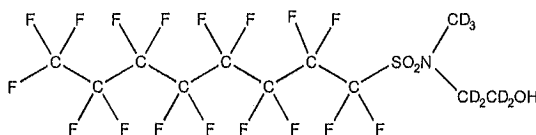
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

20

**PRODUCT CODE:** d7-N-MeFOSE-M **LOT NUMBER:** d7NMeFOSE1119M  
**COMPOUND:** 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

**STRUCTURE:** **CAS #:** 1265205-95-5



**MOLECULAR FORMULA:** C<sub>11</sub>D<sub>7</sub>HF<sub>17</sub>NO<sub>3</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/16/2019 (HRGC/LRMS)  
12/03/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 12/16/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 564.27  
**SOLVENT(S):** Methanol  
**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>7</sub>

2020/05/25  
652 2 ampoules  
FZ 11

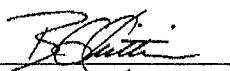
### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

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

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**Certified By:**   
B.G. Chittim, General Manager **Date:** 12/18/2019  
(mm/dd/yyyy)

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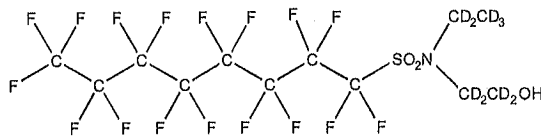
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

24

**PRODUCT CODE:** d9-N-EtFOSE-M **LOT NUMBER:** d9NEtFOSE1119M  
**COMPOUND:** 2-(N-ethyl-d5-perfluoro-1-octanesulfonamido)ethan-d4-ol

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>12</sub>D<sub>9</sub>HF<sub>17</sub>NO<sub>3</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/16/2019 (HRGC/LRMS)  
12/03/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 12/16/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 580.31  
**SOLVENT(S):** Methanol  
**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>9</sub>

2020/05/25  
652 2 ampoules  
F211

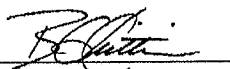
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

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**Certified By:**  **Date:** 12/18/2019  
(mm/dd/yyyy)  
B.G. Chittim, General Manager

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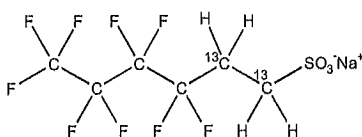
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

22

**PRODUCT CODE:** M2-4:2FTS **LOT NUMBER:** M242FTS0420  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]hexane sulfonate

**STRUCTURE:** **CAS #:** Not available



Received on:  
2020-05-25 TK4  
2x Ampoule  
FD-59

**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>H<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 352.12  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
46.9 ± 2.3 µg/ml (M2-4:2FTS acid)  
46.7 ± 2.3 µg/ml (M2-4:2FTS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 04/16/2020 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 04/16/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of <sup>34</sup>S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

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Certified By:   
B.G. Chittim, General Manager

Date: 04/20/2020  
(mm/dd/yyyy)

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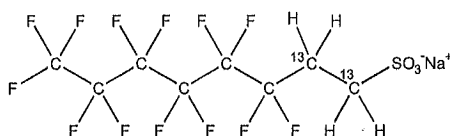
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

23

**PRODUCT CODE:** M2-6:2FTS **LOT NUMBER:** M262FTS1119  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]octane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>6</sub>H<sub>4</sub>F<sub>13</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 452.13  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.5 ± 2.4 µg/ml (M2-6:2FTS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 11/21/2019 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 11/21/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

### DOCUMENTATION/ DATA ATTACHED:

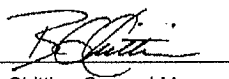
Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

2020/05/25  
 642 2 ampoules  
 FD59

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of <sup>34</sup>S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager **Date:** 11/25/2019  
 (mm/dd/yyyy)

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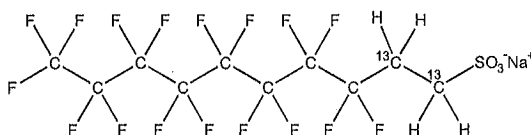


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

2/4

**PRODUCT CODE:** M2-8:2FTS **LOT NUMBER:** M282FTS0320  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]decane sulfonate  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>H<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 552.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 48.0 ± 2.4 µg/ml (M2-8:2FTS acid)  
 47.9 ± 2.4 µg/ml (M2-8:2FTS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 03/18/2020 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 03/18/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

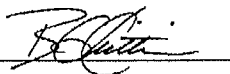
Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

*2020/05/25*  
*052 2 ampoules*  
*FD 59*

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of <sup>34</sup>S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

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**Certified By:**   
 B.G. Chittim, General Manager **Date:** 03/18/2020  
(mm/dd/yyyy)

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PREPARATION OF SPIKING STANDARD SOLUTION

Solution No.: SK-9770 Prep'n Date: 2020/06/30 Expiry Date: 2021/06/29 Discard Date: \_\_\_\_\_  
 Replaces Solution No.: SK-9718 Replaced by Solution: \_\_\_\_\_ Chemist: JDB  
 Solution Name: PFAS compo. working C Solvent(s): 0.3% NH<sub>4</sub>OH in MeOH  
 Solvent Supplier(s): see PRLRG 137 397 Solvent Lot No(s): see PRLRG 137 397  
 Date Opened: See PRLRG 137 397  
 Volumetric Flask Used: CLASS A Volume: 10 mL Spike Volume: \_\_\_\_\_ uL / mL \*  
 Syringe ID: K26250F

Storage Location and Conditions: \_\_\_\_\_

For extended mix of compounds, refer to table on: \_\_\_\_\_

Compound	Parent Solution No.	Parent Solution Conc'n. (ug/mL)	Aliquot Volume (uL (mL) *)	Final Conc'n. (ug/mL)	Absolute Amount Spiked (ug ng) *
<u>Compo. PFAS working sol. A</u>	<u>I-6033</u>	<u>1</u>	<u>1</u>	<u>100 ng/mL</u>	<u>—</u>
<del>JDB 2020/06/30</del>					

Notes: \_\_\_\_\_

Solution No.: SK-9771 Prep'n Date: 2020-07-02 Expiry Date: Daily Discard Date: \_\_\_\_\_  
 Replaces Solution No.: 9756 Replaced by Solution: SK-9781 Chemist: JTM  
 Solution Name: Acrylamide WS A Solvent(s): DI  
 Solvent Supplier(s): In house Solvent Lot No(s): \_\_\_\_\_  
 Date Opened: \_\_\_\_\_  
 Volumetric Flask Used: CLASS A Volume: 10 mL Spike Volume: \_\_\_\_\_ uL / mL \*  
 Syringe ID: D36588D

Storage Location and Conditions: \_\_\_\_\_

For extended mix of compounds, refer to table on: \_\_\_\_\_

Compound	Parent Solution No.	Parent Solution Conc'n. (ug/mL)	Aliquot Volume (uL (mL) *)	Final Conc'n. (ug/mL)	Absolute Amount Spiked (ug ng) *
<u>Acrylamide stock</u>	<u>9-4817</u>	<u>1120.0</u>	<u>89.2</u>	<u>10</u>	<u>—</u>
<del>JTM 2020-07-02</del>					

Notes: \_\_\_\_\_

\* = Specify Units

PREPARATION OF STANDARDS OF INTERMEDIARY CONCENTRATION

PRLST 167 PG. 27

Solution No.: I-6033 Date: 2021/06/30 Expiry Date: 2021/06/29 Discard Date: \_\_\_\_\_  
 Replaces Solution No.: I-6014 Replaced by Solution: \_\_\_\_\_ Chemist: JOB  
 Compound(s)/Solution Name: Compo. PFAS working sol. A  
 Number of Parent Solution(s): see attached sheet  
 Concentration of Parent Solution(s): see attached sheet (mg, ug)/mL  
 Aliquot of Parent Solution(s): see attached sheet mL / uL  
 Pippette/Syringe ID: KAG250F  
 Dilution Solvent: 0.3% NH<sub>4</sub>OH in MeOH Dilution Volume: 20 mL  
 Final Concentration(s): 1.0 (mg, ug/ml)  
 Solution derivatized (as methyl ester): \_\_\_\_\_ As Other (specify): \_\_\_\_\_  
 Solution Contains Surrogate Compounds: \_\_\_\_\_ For mix refer to table on page: \_\_\_\_\_  
 Solution used for: PRLRG-137 397 Volumetric Flask: CLASS A  
 (identify by serial number or other unique ID)  
 Solvent Supplier: PRLRG 137 397 Lot No.: PRLRG 137 397  
 Date Opened: PRLRG 137 397  
 Storage Location: F2-11 One time Use, Not Stored: \_\_\_\_\_  
 Ampule Supplier: Wellington Date Opened: see attached sheet  
 Mix Name: \_\_\_\_\_  
 Catalogue No.: \_\_\_\_\_ Ampule expiry Date: see attached sheet  
 Lot No.: see attached sheet  
 Date Received: see attached sheet

Notes/Comments:

I-6033 (PRLST 167 pg. 27)

Compound Name	ID#	Conc. (ug/mL)	Vol. of Stock standard (uL)	Final Conc. (ug/mL)	Exp. date
PFBA	S4830-1	50	400	1	2024/11/15
L-PFBS	S4830-2	44.4	450	1	2024/11/22
PFPeA	S4830-3	50	400	1	2025/04/03
L-PFPeS	S4830-4	47	426	1	2025/05/13
PFHxA	S4830-5	50	400	1	2024/12/31
br-PFHxSk	S4830-6	45.7	438	1	2024/10/23
PFHpA	S4830-7	50	400	1	2024/10/23
L-PFHpS	S4830-8	47.7	420	1	2025/01/21
PFOA	S4830-9	50	400	1	2025/01/25
brPFOSK	S4830-10	46.5	430	1	2025/01/16
PFNA	S4830-11	50	400	1	2024/12/23
L-PFNs	S4830-12	48.1	416	1	2024/11/14
PFDA	S4830-13	50	400	1	2024/11/14
L-PFDS	S4830-14	48.2	414	1	2024/11/14
PFUdA	S4830-15	50	400	1	2024/10/30
PFDoA	S4830-16	50	400	1	2024/10/23
PFTrDA	S4830-17	50	400	1	2024/09/26
PFTeDA	S4830-18	50	400	1	2024/11/14
PFOSA (FOSA-I)	S4830-19	50	400	1	2025/04/15
N-MeFOSA-M	S4830-20	50	400	1	2024/12/24
N-EtFOSA-M	S4830-21	50	400	1	2025/02/21
N-MeFOSE-M	S4830-22	50	400	1	2025/01/06
N-EtFOSE-M	S4830-23	50	400	1	2025/01/06
br-NMeFOSAA	S4830-24	50	400	1	2024/12/02
br-NEtFOSAA	S4830-25	50	400	1	2024/08/20
4:2FTS	S4830-26	46.9	426	1	2024/10/29
6:2FTS	S4830-27	47.6	420	1	2025/04/21
8:2FTS	S4830-28	48	416	1	2025/05/08
HFPO-DA	S4830-29	50	400	1	2023/01/23
NaDONA	S4830-30	47.3	422	1	2024/11/18
9Cl-PF3ONS	S4830-31	46.7	428	1	2025/04/21
11Cl-PF3OUdS	S4830-32	47.2	424	1	2025/03/25

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JOB 2021 06/30

PRLST 151 PG 312

**PREPARATION OF CONCENTRATED STOCK STANDARDS**

Solution No.: 5-4830 Date: 2020/06/29 Expiry Date: see below Discard Date: \_\_\_\_\_  
 Replaces Solution: 6-4814 Replaced by Solution: \_\_\_\_\_ Chemist: JD3  
 Compound: \_\_\_\_\_ Purity: \_\_\_\_\_

5-4830 PRLST 151 312 pg. 312

Solution ID#	Compound Name	Lot#	Received date	Exp. date	Replaces Solution	Replaced by Solution	Conc. (ug/mL)	Solvent	Storage
S4830-1	PFBA	PFBA1119 ✓	2020/06/18	2024/11/15	S4814-1		50	MeOH	FZ-11
S4830-2	L-PFBS	LPFBS1119 ✓	2020/06/18	2024/11/22	S4814-2		44.4	MeOH	FZ-11
S4830-3	PFPeA	PFPeA0420 ✓	2020/06/18	2025/04/03	S4814-3		50	MeOH	FZ-11
S4830-4	L-PFPeS	LFPFPeS0520 ✓	2020/06/18	2025/05/13	S4814-4		47	MeOH	FZ-11
S4830-5	PFHxA	PFHxA1219 ✓	2020/06/18	2024/12/31	S4814-5		50	MeOH	FZ-11
S4830-6	br-PFHxSk	brPFHxSK1019 ✓	2020/06/18	2024/10/23	S4814-6		45.7	MeOH	FZ-11
S4830-7	PFHpA	PFHpA1019 ✓	2020/06/18	2024/10/23	S4814-7		50	MeOH	FZ-11
S4830-8	L-PFHpS	LPFHpS0120 ✓	2020/06/18	2025/01/21	S4814-8		47.7	MeOH	FZ-11
S4830-9	PFOA	PFOA0120 ✓	2020/06/18	2025/01/25	S4814-9		50	MeOH	FZ-11
S4830-10	br-PFOSK	brPFOSK1119 ✓	2020/06/18	2025/01/16	S4814-10		46.5	MeOH	FZ-11
S4830-11	PFNA	PFNA1219 ✓	2020/06/18	2024/12/23	S4814-11		50	MeOH	FZ-11
S4830-12	L-PFNS	LPFNS1119 ✓	2020/06/18	2024/11/14	S4814-12		48.1	MeOH	FZ-11
S4830-13	PFDA	PFDA1119 ✓	2020/06/18	2024/11/14	S4814-13		50	MeOH	FZ-11
S4830-14	L-PFDS	LPFDS1119 ✓	2020/06/18	2024/11/14	S4814-14		48.2	MeOH	FZ-11
S4830-15	PFuDA	PFuDA1019 ✓	2020/06/18	2024/10/30	S4814-15		50	MeOH	FZ-11
S4830-16	PFDoA	PFDoA1019 ✓	2020/06/18	2024/10/23	S4814-16		50	MeOH	FZ-11
S4830-17	PFTrDA	PFTrDA0919 ✓	2020/06/18	2024/09/26	S4814-17		50	MeOH	FZ-11
S4830-18	PFTeDA	PFTeDA1119 ✓	2020/06/18	2024/11/14	S4814-18		50	MeOH	FZ-11
S4830-19	PFOSA (FOSA-I)	FOSA0420I ✓	2020/06/18	2025/04/15	S4814-19		50	IPA	FD-59
S4830-20	N-MeFOSA-M	NMeFOSA1219M ✓	2020/06/18	2024/12/24	S4814-20		50	MeOH	FZ-11
S4830-21	N-EtFOSA-M	NEtFOSA0220M ✓	2020/06/18	2025/02/21	S4814-21		50	MeOH	FZ-11
S4830-22	N-MeFOSE-M	NMeFOSE1219M ✓	2020/06/18	2025/01/06	S4814-22		50	MeOH	FZ-11
S4830-23	N-EtFOSE-M	NEtFOSE1219M ✓	2020/06/18	2025/01/06	S4814-23		50	MeOH	FZ-11
S4830-24	br-NMeFOSAA	br-NMeFOSAA1119 ✓	2020/06/18	2024/12/02	S4814-24		50	MeOH	FD-59
S4830-25	br-NEtFOSAA	br-NEtFOSAA0819 ✓	2020/06/18	2024/08/20	S4814-25		50	MeOH	FD-59
S4830-26	4:2FTS	42FTS1019 ✓	2020/06/18	2024/10/29	S4814-26		46.9	MeOH	FD-59
S4830-27	6:2FTS	62FTS0420 ✓	2020/06/18	2025/04/21	S4814-27		47.6	MeOH	FD-59
S4830-28	8:2FTS	82FTS0520 ✓	2020/06/18	2025/05/08	S4814-28		48	MeOH	FD-59
S4830-29	HFPO-DA	HFPODA0120 ✓	2020/06/18	2023/01/23	S4814-29		50	MeOH	FD-59
S4830-30	NaDONA	NaDONA1119 ✓	2020/06/18	2024/11/18	S4814-30		47.3	MeOH	FZ-11
S4830-31	9Cl-PF3ONS	9ClPF3ONS0420 ✓	2020/06/18	2025/04/21	S4814-31		46.7	MeOH	FZ-11
S4830-32	11Cl-PF3OUs	11Cl-PF3OUs0320 ✓	2020/06/18	2025/03/25	S4814-32		47.2	MeOH	FZ-11
Date Opened (All compounds): 2020/06/30			Supplier (All compounds) : Wellington			Chemist: JD3			

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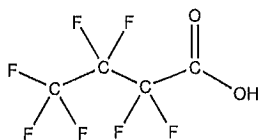
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA  
**COMPOUND:** Perfluoro-n-butanoic acid

**LOT NUMBER:** PFBA1119

**STRUCTURE:**



**CAS #:** 375-22-4

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/15/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/15/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 12/04/2019  
(mm/dd/yyyy)

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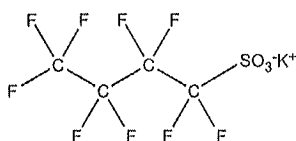
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFBS  
**COMPOUND:** Potassium perfluoro-1-butanesulfonate

**LOT NUMBER:** LPFBS1119

**STRUCTURE:**



**CAS #:** 29420-49-3

Received on: 2020-06-18  
MHS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>K  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K salt)  
44.2 ± 2.2 µg/ml (PFBS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 338.19  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 11/28/2019  
(mm/dd/yyyy)

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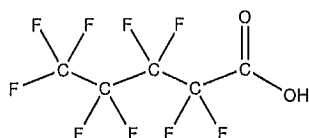
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFPeA  
**COMPOUND:** Perfluoro-n-pentanoic acid

**LOT NUMBER:** PFPeA0420

**STRUCTURE:**



**CAS #:** 2706-90-3

Received on: 2020-06-18  
MLS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>5</sub>HF<sub>9</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 264.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/03/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/03/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

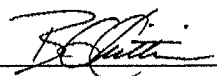
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 05/06/2020  
(mm/dd/yyyy)

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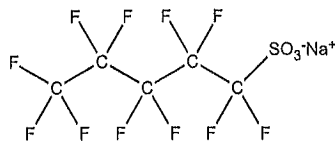
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFPeS  
**COMPOUND:** Sodium perfluoro-1-pentanesulfonate

**LOT NUMBER:** LPFPeS0520

**STRUCTURE:**



**CAS #:** 630402-22-1

Received on: 2020-06-18  
MLs  
& ampoules.  
FZ-11

**MOLECULAR FORMULA:** C<sub>5</sub>F<sub>11</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.0 ± 2.3 µg/ml (PFPeS acid)  
46.9 ± 2.3 µg/ml (PFPeS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/13/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/13/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 372.09  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 05/29/2020  
(mm/dd/yyyy)

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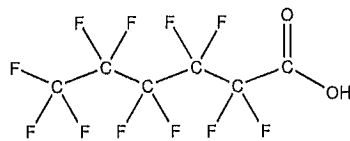
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxA  
**COMPOUND:** Perfluoro-n-hexanoic acid

**LOT NUMBER:** PFHxA1219

**STRUCTURE:**



**CAS #:** 307-24-4

Received on: 2020-06-18  
M/S  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>11</sub>F<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 314.05  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/31/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/31/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/13/2020  
(mm/dd/yyyy)

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**br-PFHxSK**

**Potassium Perfluorohexanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFHxSK  
**LOT NUMBER:** brPFHxSK1019  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
45.5 ± 2.3 µg/ml (total PFHxS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 10/21/2019  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

*Received on: 2020-06-18  
MLS  
2 ampoules  
FX-11*

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



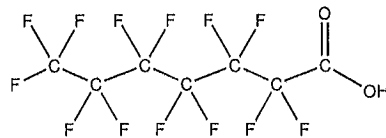
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHpA  
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA1019

**STRUCTURE:**



**CAS #:** 375-85-9

Received on: 2020-06-18  
ML8  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 364.06  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

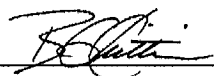
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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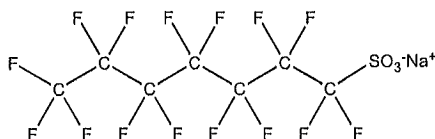
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFHpS  
**COMPOUND:** Sodium perfluoro-1-heptanesulfonate

**LOT NUMBER:** LPFHpS0120

**STRUCTURE:**



**CAS #:** 21934-50-9

Received 02/2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>7</sub>F<sub>15</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.7 ± 2.4 µg/ml (PFHpS acid)  
47.6 ± 2.4 µg/ml (PFHpS anion)

**MOLECULAR WEIGHT:** 472.10  
**SOLVENT(S):** Methanol

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 02/05/2020  
(mm/dd/yyyy)

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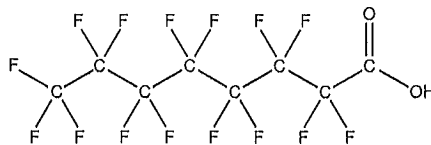
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFOA  
**COMPOUND:** Perfluoro-n-octanoic acid

**LOT NUMBER:** PFOA0120

**STRUCTURE:**



**CAS #:** 335-67-1

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_8H_{16}F_{16}O_2$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 414.07  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 01/27/2020  
(mm/dd/yyyy)

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**br-PFOSK**

**Potassium Perfluorooctanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

Received on: 2020-06-18

MHS

2 ampoules

FZ-11

**PRODUCT CODE:** br-PFOSK  
**LOT NUMBER:** brPFOSK1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (total potassium salt)  
46.5 ± 2.3 µg/ml (total PFOS acid)  
46.4 ± 2.3 µg/ml (total PFOS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 11/25/2019  
**LAST TESTED:** (mm/dd/yyyy) 01/16/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 01/16/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



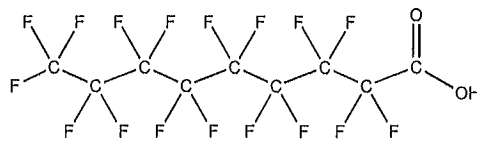
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFNA  
**COMPOUND:** Perfluoro-n-nonanoic acid

**LOT NUMBER:** PFNA1219

**STRUCTURE:**



**CAS #:** 375-95-1

Received on 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 464.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUDA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 01/06/2020  
(mm/dd/yyyy)

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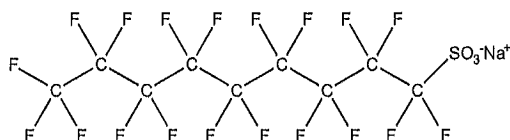
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFNS  
**COMPOUND:** Sodium perfluoro-1-nonanesulfonate

**LOT NUMBER:** LPFNS1119

**STRUCTURE:**



**CAS #:** 98789-57-2

Received on: 2020-06-18

ATN

2 ampoules

FZ-11

**MOLECULAR FORMULA:**  $C_9F_{19}SO_3Na$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$  (Na salt)  
 $48.0 \pm 2.4 \mu\text{g/ml}$  (PFNS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 572.12  
**SOLVENT(S):** Methanol

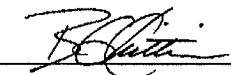
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
B.G. Chittim, General Manager

Date: 11/28/2019  
(mm/dd/yyyy)

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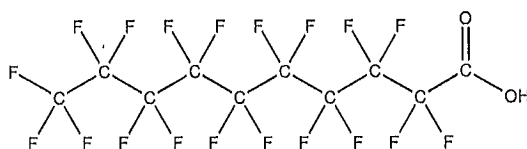
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDA  
**COMPOUND:** Perfluoro-n-decanoic acid

**LOT NUMBER:** PFDA1119

**STRUCTURE:**

**CAS #:** 335-76-2



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>10</sub>HF<sub>19</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 514.08  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

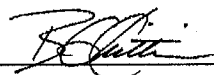
**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

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**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 12/04/2019  
(mm/dd/yyyy)

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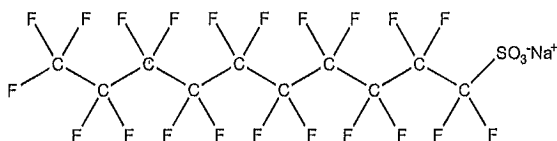
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFDS  
**COMPOUND:** Sodium perfluoro-1-decanesulfonate

**LOT NUMBER:** LPFDS1119

**STRUCTURE:**



**CAS #:** 2806-15-7

Received on: 2020-06-18  
M&S

2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_{10}F_{21}SO_3Na$   
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
48.2 ± 2.4 µg/ml (PFDS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 622.13  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By:   
B.G. Chittim, General Manager

Date: 11/20/2019  
(mm/dd/yyyy)

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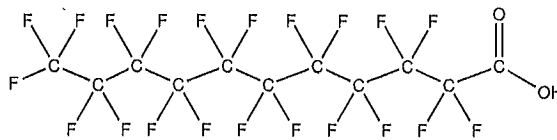
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFUdA  
**COMPOUND:** Perfluoro-n-undecanoic acid

**LOT NUMBER:** PFUdA1019

**STRUCTURE:**



**CAS #:** 2058-94-8

Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>F<sub>21</sub></sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 564.09  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/30/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/30/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-dodecanoic acid (PFDoA).

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**Certified By:**   
B.G. Chittim, General Manager  
**Date:** 11/05/2019  
(mm/dd/yyyy)

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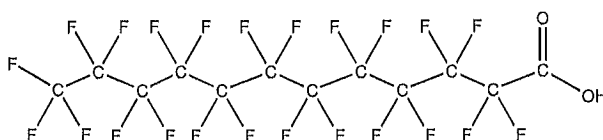
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFD0A  
**COMPOUND:** Perfluoro-n-dodecanoic acid

**LOT NUMBER:** PFD0A1019

**STRUCTURE:**

**CAS #:** 307-55-1



Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>12</sub>HF<sub>23</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 614.10  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/24/2019  
(mm/dd/yyyy)

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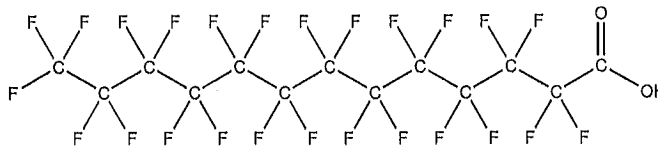
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTTrDA  
**COMPOUND:** Perfluoro-n-tridecanoic acid

**LOT NUMBER:** PFTTrDA0919

**STRUCTURE:**

**CAS #:** 72629-94-8



Received on: 2020-06-18  
MKS  
2 ampoules.  
Fz-11

**MOLECULAR FORMULA:** C<sub>13</sub>HF<sub>26</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 664.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/26/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 09/26/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA (C<sub>11</sub>HF<sub>21</sub>O<sub>2</sub>), ~ 0.4% of PFDaA (C<sub>12</sub>HF<sub>23</sub>O<sub>2</sub>), and ~ 0.1% of PFTeDA (C<sub>14</sub>HF<sub>27</sub>O<sub>2</sub>).

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 10/03/2019  
(mm/dd/yyyy)

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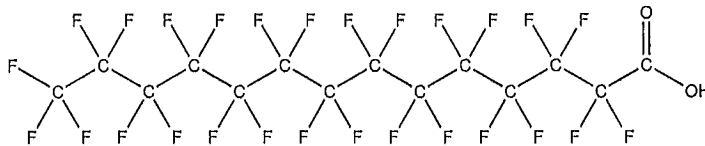
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTeDA  
**COMPOUND:** Perfluoro-n-tetradecanoic acid

**LOT NUMBER:** PFTeDA1119

**STRUCTURE:**

**CAS #:** 376-06-7



Received on - 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:**  $C_{14}HF_{27}O_2$   
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$

**MOLECULAR WEIGHT:** 714.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/14/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/14/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of PFDoA ( $C_{12}HF_{23}O_2$ ), ~ 0.1% of PFTrDA ( $C_{13}HF_{25}O_2$ ), and ~ 0.1% of PFHxDA ( $C_{16}HF_{31}O_2$ ).

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Certified By:   
B.G. Chittim, General Manager

Date: 12/04/2019  
(mm/dd/yyyy)

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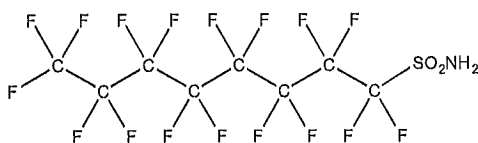
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FOSA-I  
**COMPOUND:** Perfluoro-1-octanesulfonamide

**LOT NUMBER:** FOSA0420I

**STRUCTURE:**

**CAS #:** 754-91-6



Received on: 2020-06-18  
MHS  
& ampoules  
FD-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/15/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/15/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 499.14  
**SOLVENT(S):** Isopropanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 04/28/2020  
(mm/dd/yyyy)

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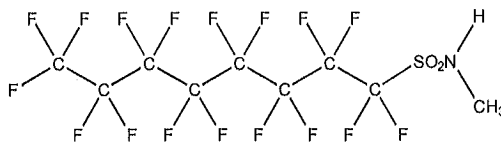
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA1219M

**STRUCTURE:**



**CAS #:** 31506-32-8

Received on: 2020-06-18  
MHS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>9</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/24/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/24/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By:   
B.G. Chittim, General Manager

Date: 01/02/2020  
(mm/dd/yyyy)

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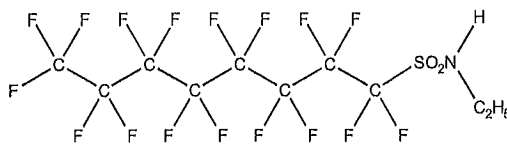
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NETFOSA0220M

**STRUCTURE:**



**CAS #:** 4151-50-2

Received on: 2020-06-18  
MHS  
2 ampoules  
FX-11

**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>6</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 02/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20  
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 02/24/2020  
(mm/dd/yyyy)

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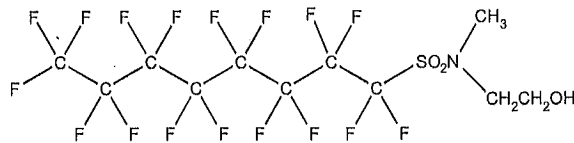


**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** N-MeFOSE-M **LOT NUMBER:** NMeFOSE1219M  
**COMPOUND:** 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

**STRUCTURE:** **CAS #:** 24448-09-7



*Received on: 2020-06-18*  
*MHS*  
*2 ampoules*  
*FZ-11*

**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 557.22  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/06/2020 (HRGC/LRMS)  
 12/27/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/06/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

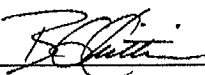
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 01/07/2020  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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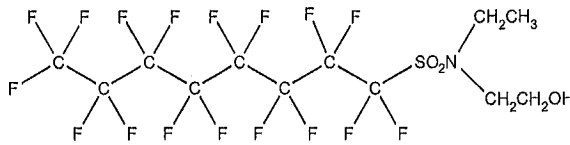


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M **LOT NUMBER:** NEtFOSE1219M  
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

**STRUCTURE:** **CAS #:** 1691-99-2



Received on: 2020-06-18  
MLS  
2 ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>10</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 571.25  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/06/2020 (HRGC/LRMS)  
12/27/2019 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/06/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS Data (TIC and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:** B.G. Chittim **Date:** 01/07/2020  
B.G. Chittim, General Manager (mm/dd/yyyy)

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**br-NMeFOSAA**

**N-Methylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

Received on - 2020-06-18  
MHS  
2 ampoules.  
FD-59

**PRODUCT CODE:** br-NMeFOSAA  
**LOT NUMBER:** brNMeFOSAA1119  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 11/27/2019  
**LAST TESTED:** (mm/dd/yyyy) 12/02/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 12/02/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**





**br-NEtFOSAA**

**N-Ethylperfluorooctanesulfonamidoacetic  
Acid Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-NEtFOSAA  
**LOT NUMBER:** brNEtFOSAA0819  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 08/20/2019  
**LAST TESTED:** (mm/dd/yyyy) 08/20/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 08/20/2024  
**RECOMMENDED STORAGE:** Refrigerate ampoule

Received on: 2020-06-18  
MLS  
2 ampoules  
FD-59

**DESCRIPTION:**

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

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

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

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

4:2FTS

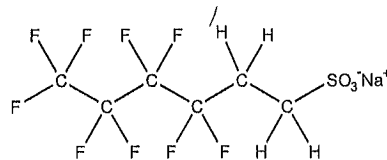
**LOT NUMBER:**

42FTS1019

**COMPOUND:**

Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

**STRUCTURE:**



**CAS #:**

27619-93-8

*Received on 2020-06-18*

*MHS*

*2 ampoules*

*RD-59*

**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>Na

**MOLECULAR WEIGHT:**

350.13

**CONCENTRATION:**

50.0 ± 2.5 µg/ml (Na salt)  
46.7 ± 2.3 µg/ml (4:2FTS anion)

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

10/29/2019

**EXPIRY DATE:** (mm/dd/yyyy)

10/29/2024

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

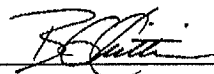
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

  
B.G. Chittim, General Manager

**Date:** 11/14/2019

(mm/dd/yyyy)

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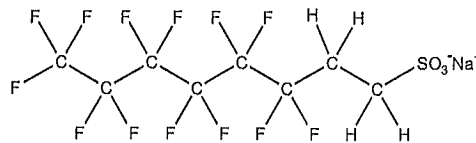


**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** 6:2FTS **LOT NUMBER:** 62FTS0420  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

**STRUCTURE:** **CAS #:** 27619-94-9



Received on: 2020-06-18  
 MLS  
 2 ampoules  
 FO-59

**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>13</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 450.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 47.6 ± 2.4 µg/ml (6:2FTS acid)  
 47.4 ± 2.4 µg/ml (6:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule


**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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**Certified By:**  **Date:** 04/27/2020  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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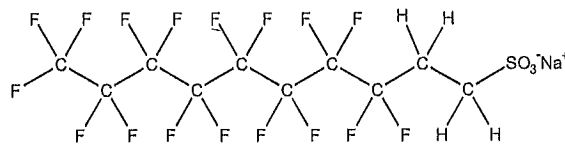


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS0520  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** 27619-96-1



Received on: 2020-06-18  
MHS  
2 ampoules  
RD-59

**MOLECULAR FORMULA:**  $C_{10}H_4F_{17}SO_3Na$  **MOLECULAR WEIGHT:** 550.16  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.9 ± 2.4 µg/ml (8:2FTS anion)  
48.0 ± 2.4 µg/ml (8:2FTS acid)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/08/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 05/08/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

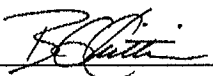
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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

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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

HFPO-DA

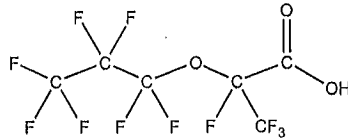
**LOT NUMBER:**

HFPODA0120

**COMPOUND:**

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

**STRUCTURE:**



**CAS #:**

13252-13-6

Received on: 2020-06-18

MLS

2 ampoules

FD-59

**MOLECULAR FORMULA:**

C<sub>6</sub>H<sub>11</sub>O<sub>3</sub>

**MOLECULAR WEIGHT:**

330.05

**CONCENTRATION:**

50.0 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

01/23/2020

**EXPIRY DATE:** (mm/dd/yyyy)

01/23/2023

**RECOMMENDED STORAGE:**

Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

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

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Product is commercially known as GenX.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
B.G. Chittim, General Manager

Date: 01/24/2020

(mm/dd/yyyy)

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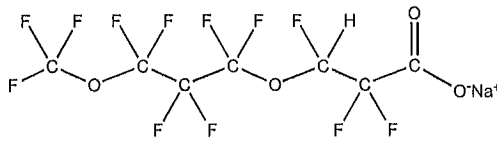


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** NaDONA **LOT NUMBER:** NaDONA1119  
**COMPOUND:** Sodium dodecafluoro-3H-4,8-dioxanonanoate

**STRUCTURE:** **CAS #:** 958445-44-8  
(ammonium salt)



Received on: 2020-06-18  
MLS  
2 ampoules.  
FZ-11

**MOLECULAR FORMULA:**  $C_{12}H_2F_{11}O_4Na$  **MOLECULAR WEIGHT:** 400.05  
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$  (Na Salt) **SOLVENT(S):** Methanol  
 $47.1 \pm 2.4 \mu\text{g/ml}$  (NaDONA anion) Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/18/2019  
**EXPIRY DATE:** (mm/dd/yyyy) 11/18/2024  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

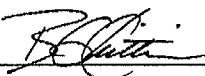
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as ADONA.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:  Date: 12/02/2019  
B.G. Chittim, General Manager (mm/dd/yyyy)

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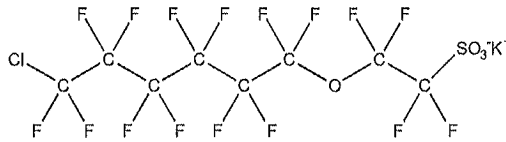


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 9CI-PF3ONS      **LOT NUMBER:** 9CIPF3ONS0420  
**COMPOUND:** Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate

**STRUCTURE:**      **CAS #:** 73606-19-6



Received on: 2020-06-18  
MLS  
& ampoules  
FZ-11

**MOLECULAR FORMULA:** C<sub>8</sub>F<sub>16</sub>ClSO<sub>4</sub>K      **MOLECULAR WEIGHT:** 570.67  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt)      **SOLVENT(S):** Methanol  
46.7 ± 2.3 µg/ml (9CI-PF3ONS acid)  
46.6 ± 2.3 µg/ml (9CI-PF3ONS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/21/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 04/21/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

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

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- This compound is the major component of the commercial formulation known as F-53B.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 04/24/2020  
B.G. Chittim, General Manager      (mm/dd/yyyy)

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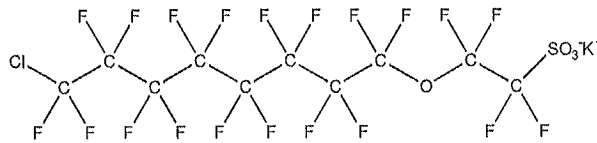


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 11CI-PF3OUdS **LOT NUMBER:** 11CIPF3OUdS0320  
**COMPOUND:** Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

**STRUCTURE:** **CAS #:** 83329-89-9



Received on: 2020-06-18  
MLS  
2 ampoules.  
F2-11

**MOLECULAR FORMULA:**  $C_{10}F_{20}ClSO_4K$  **MOLECULAR WEIGHT:** 670.69  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K Salt) **SOLVENT(S):** Methanol  
47.2 ± 2.4 µg/ml (11CI-PF3OUdS acid)  
47.1 ± 2.4 µg/ml (11CI-PF3OUdS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 03/25/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 03/25/2025  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- This compound is a minor component of the commercial formulation known as F-53B.

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**Certified By:**   
B.G. Chittim, General Manager

**Date:** 04/15/2020  
(mm/dd/yyyy)

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**Instrument Name** LCMS04  
**MS Model** G6470A  
**MS Instrument Serial** SG1611G001  
**Software\_Firmware Version** B.08.00.B8023.5 SP1, FW: A.00.08.24  
**Tune Date & Time** 05:01:20 13:17:27  
**Data Path** D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML  
**Ion Source** AJS ESI  
**Ionization Mode** AJS ESI  
**Tuned Resolution** All  
**Vacuum Pressure** 1.04E+0[R]; 2.63E-5[H]

**Source Parameters**

<b>Parameter</b>	<b>Value</b>
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

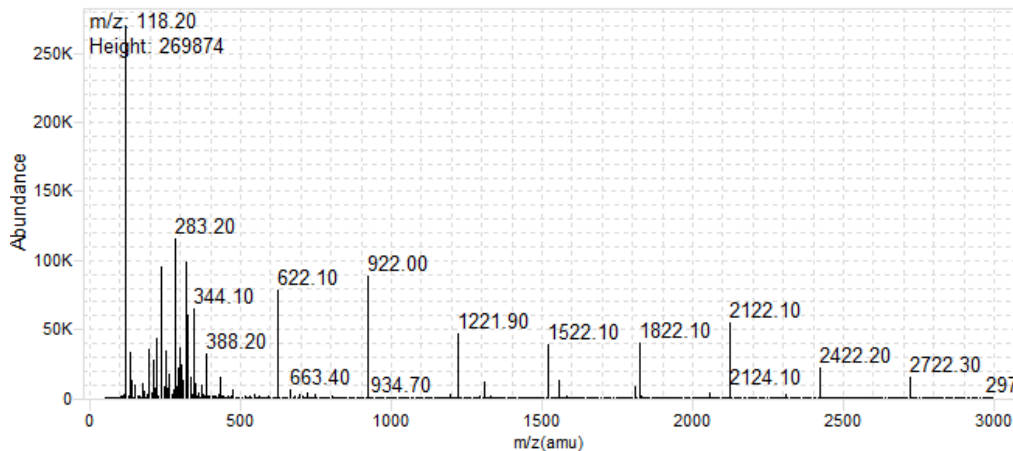
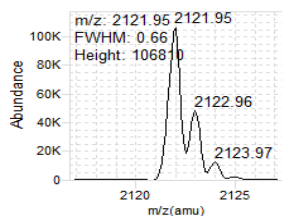
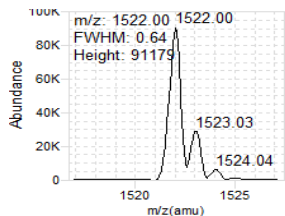
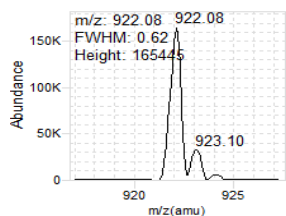
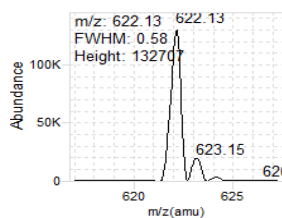
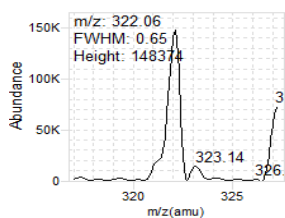
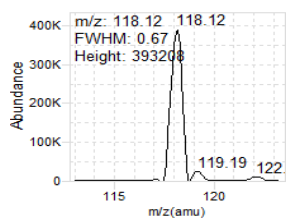
**Positive Results**

---

Analyzer: MS1

Polarity: Positive

Width: Unit

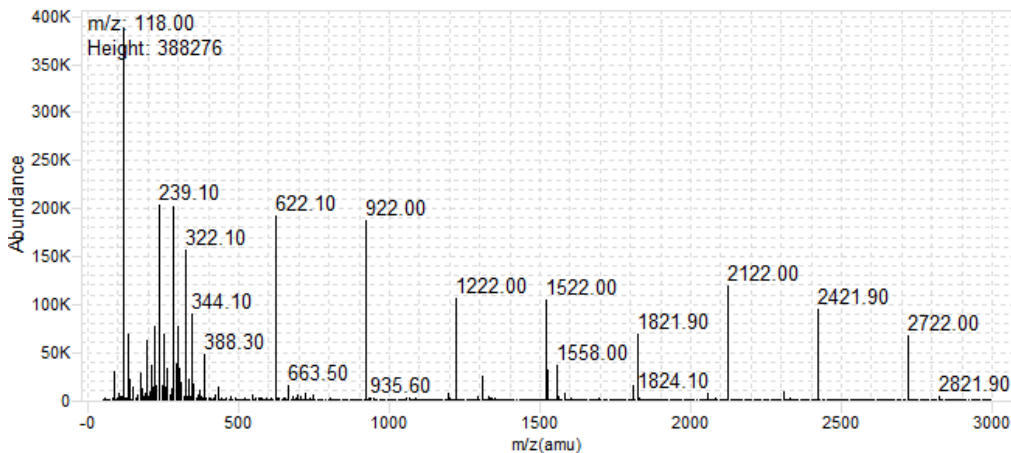
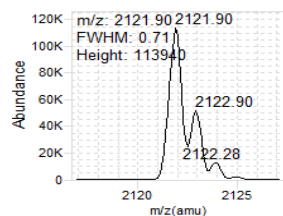
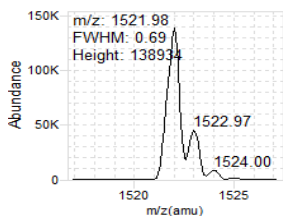
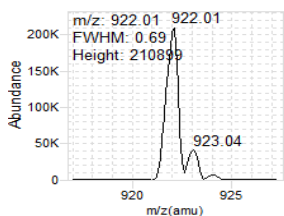
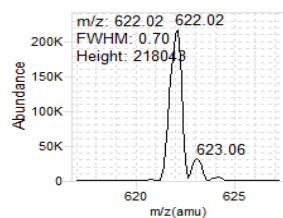
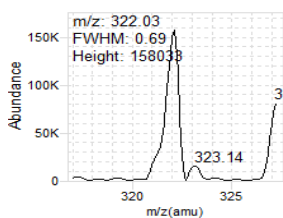
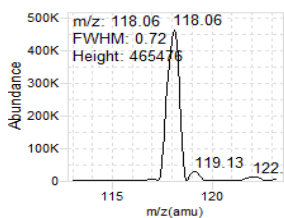


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
118.12	118.09	0.67	0.70	393208
322.06	322.05	0.65	0.70	148374
622.13	622.03	0.58	0.70	132707
922.08	922.01	0.62	0.70	165445
1522.00	1521.97	0.64	0.70	91179
2121.96	2121.93	0.66	0.70	106810

Analyzer: MS2

Polarity: Positive

Width: Unit

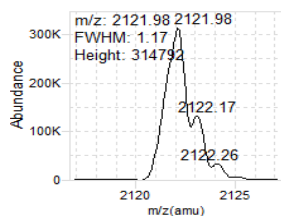
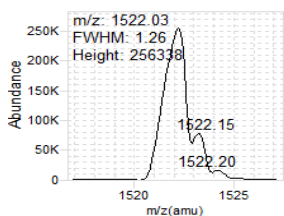
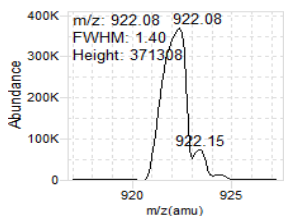
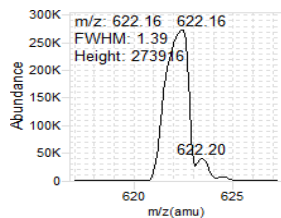
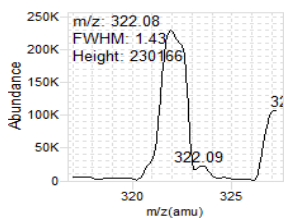
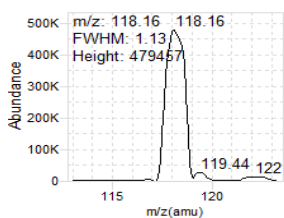


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
58.15	58.07	0.63	0.70	140581
118.06	118.09	0.72	0.70	465476
322.03	322.05	0.69	0.70	158033
622.01	622.03	0.70	0.70	218043
922.01	922.01	0.69	0.70	210899
1521.98	1521.97	0.69	0.70	138934
2121.90	2121.93	0.71	0.70	113940

**Analyzer: MS1**

**Polarity: Positive**

**Width: Wide**

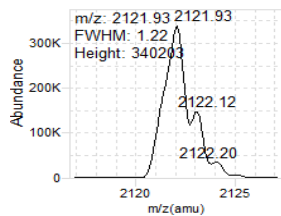
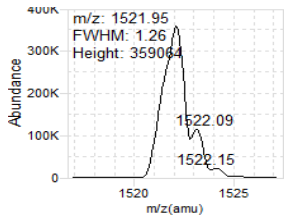
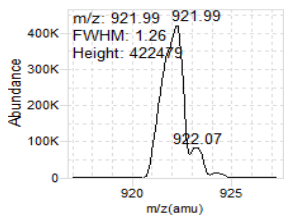
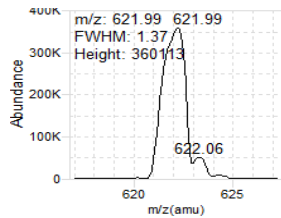
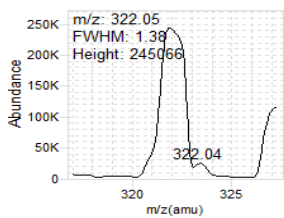
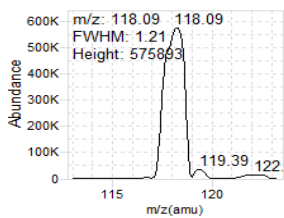


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
118.16	118.09	1.13	1.20	479457
322.08	322.05	1.43	1.20	230166
622.16	622.03	1.39	1.20	273916
922.08	922.01	1.40	1.20	371308
1522.03	1521.97	1.26	1.20	256338
2121.99	2121.93	1.17	1.20	314792

**Analyzer: MS2**

**Polarity: Positive**

**Width: Wide**

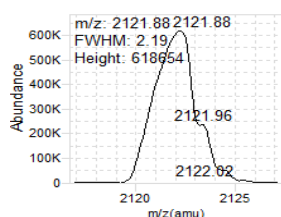
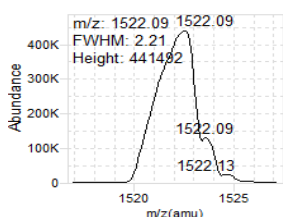
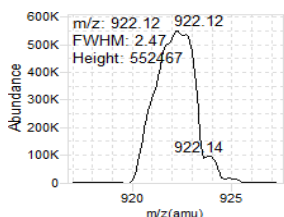
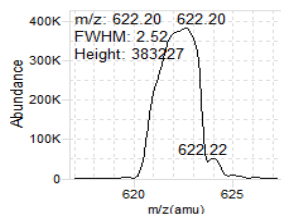
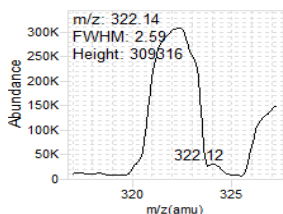
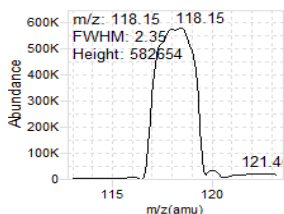


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
58.18	58.07	1.10	1.20	173498
118.09	118.09	1.21	1.20	575893
322.05	322.05	1.38	1.20	245066
621.99	622.03	1.37	1.20	360113
921.99	922.01	1.26	1.20	422479
1521.94	1521.97	1.26	1.20	359064
2121.93	2121.93	1.22	1.20	340203

**Analyzer: MS1**

**Polarity: Positive**

**Width: Widest**

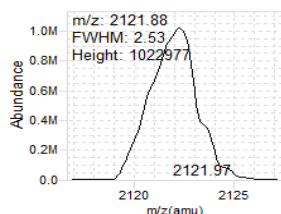
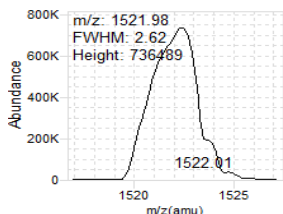
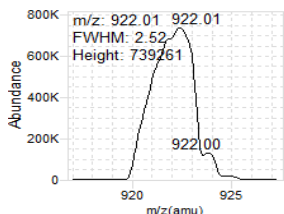
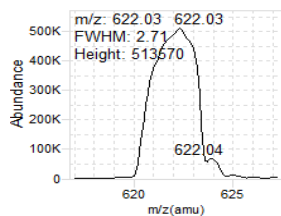
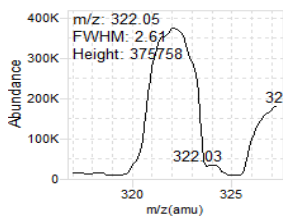
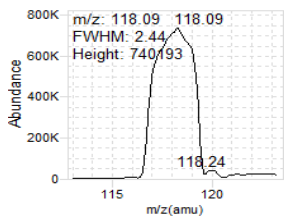


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
118.15	118.09	2.35	2.50	582654
322.14	322.05	2.59	2.50	309316
622.20	622.03	2.52	2.50	383227
922.12	922.01	2.47	2.50	552467
1522.09	1521.97	2.21	2.50	441492
2121.89	2121.93	2.20	2.50	618655

**Analyzer: MS2**

**Polarity: Positive**

**Width: Widest**



m/z	m/z Expected	FWHM	FWHM Expected	Abundance
58.18	58.07	2.31	2.50	228994
118.09	118.09	2.44	2.50	740193
322.05	322.05	2.61	2.50	375758
622.02	622.03	2.71	2.50	513570
922.01	922.01	2.52	2.50	739261
1521.98	1521.97	2.62	2.50	736489
2121.89	2121.93	2.53	2.50	1022977

**Positive Results**

**Tune Parameters**

Parameters	Setting
Fragmentor	135
Skimmer	15
Octopole DC	5
Octopole RF	600
Lens 1	3.50
MS1 PreFilter	-20
MS1 DC	3.00
MS1 PostFilter	2.00
MS1 Axis Offset	0.94
MS1 Axis Gain	-18
MS1 Width Offset	0
MS1 Width Gain	7
MS1 Heater	100
MS2 DC	-10
MS2 PreFilter	-30
MS2 Axis Offset	0.90
MS2 Axis Gain	19
MS2 Width Offset	0.05
MS2 Width Gain	-28
MS2 Heater	100
Cell Entry	1
Hexapole DC	0.00
Hexapole RF	500
Hexapole Accel	5
Cell Exit	-7
Collision Gas	1
Iris	-150
HED	-10
EMV	1255
Collision Energy	0
Lens 1[MS2]	4.00
MS1 PreFilter[MS2]	1.60

**Dynamic Ramp Tables**

**MS1 PreFilter**

m/z	Setting
118.09	-12
322.05	-12.2
622.03	-12
922.01	-19
1521.97	-12.2
2121.93	-19.6

**MS1 Axis Offset**

m/z	Setting
118.09	0.944
322.05	1.071
622.03	1.218
922.01	1.23
1521.97	1.112
2121.93	0.944

**MS1 Width Offset**

m/z	Setting
118.09	0.1
322.05	-0.11
622.03	-0.22
922.01	-0.19
1521.97	-0.09
2121.93	0.1

**MS2 PreFilter**

m/z	Setting
79	-20.6
117.97	-30
118	-12.6
154	-16.2
290	-29.8

**MS2 Axis Offset**

m/z	Setting
118.09	0.904
322.05	0.99
622.03	1.025
922.01	1.013
1521.97	0.972
2121.93	0.904

**MS2 Width Offset**

m/z	Setting
118.09	0.05
322.05	-0.08
622.03	-0.09
922.01	-0.06
1521.97	-0.05
2121.93	0.05

**MS1 Calibrations**

Resolution	Mass Gain	Mass Offset	Width Gain	Width Offset
Unit	-18.1	0.944	7.2	0.1
Wide	-18.25	1.134	7.6	0.47
Widest	-18.75	1.554	7.7	1.47

**MS2 Calibrations**

Resolution	Mass Gain	Mass Offset	Width Gain	Width Offset
Unit	19.1	0.904	-28.1	0.05
Wide	18.95	1.084	-27.7	0.43
Widest	18.6	1.506	-26.8	1.4

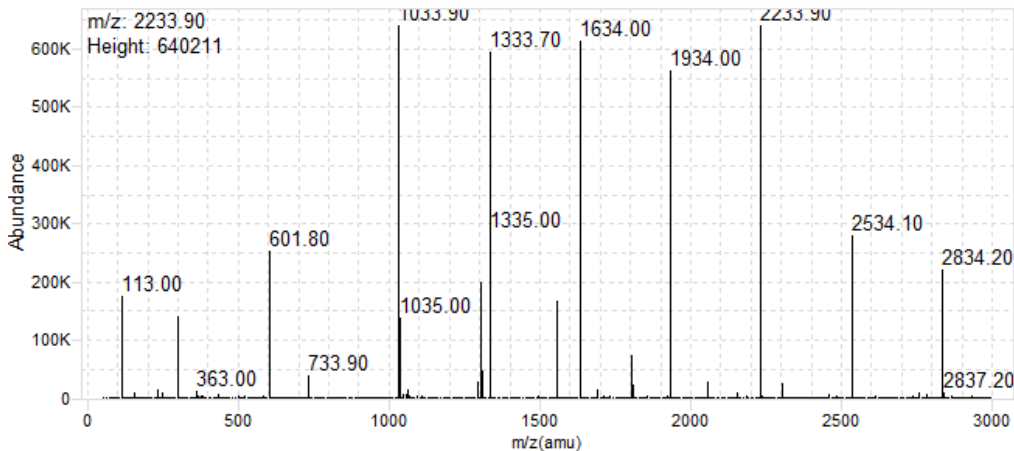
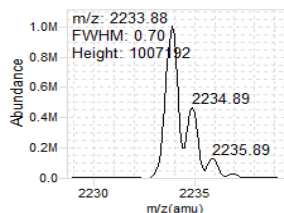
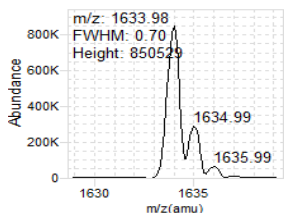
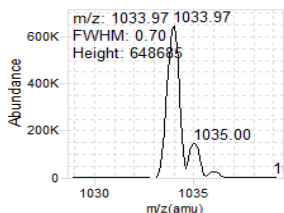
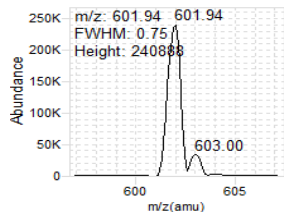
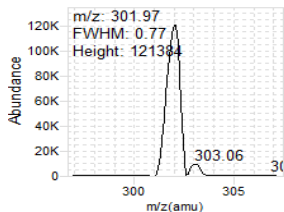
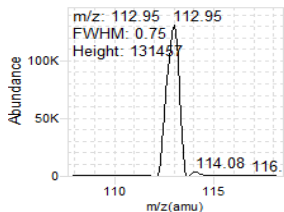
**Negative Results**

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Analyzer: MS1

Polarity: Negative

Width: Unit



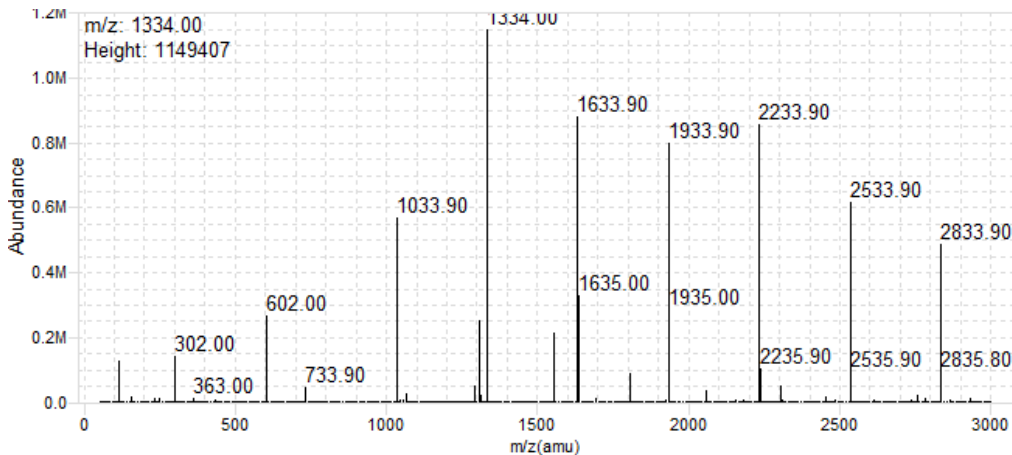
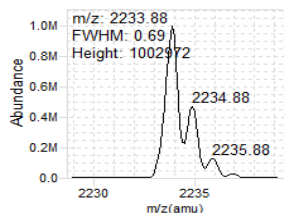
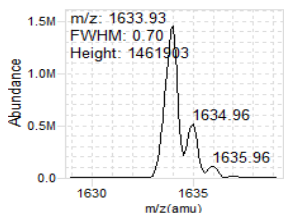
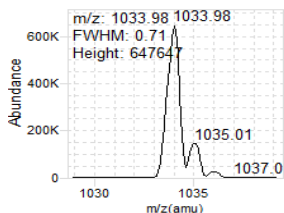
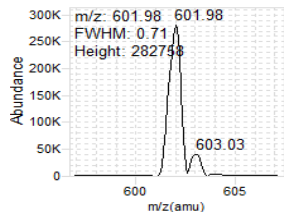
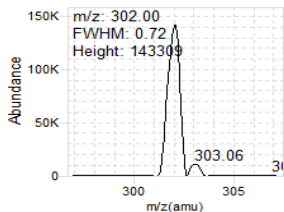
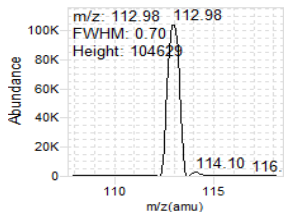
m/z	m/z Expected	FWHM	FWHM Expected	Abundance
112.95	112.99	0.75	0.70	131457
301.97	302.00	0.77	0.70	121384
601.94	601.98	0.75	0.70	240888
1033.97	1033.99	0.70	0.70	648685
1633.97	1633.95	0.70	0.70	850529
2233.89	2233.91	0.70	0.70	1007192



Analyzer: MS2

Polarity: Negative

Width: Unit

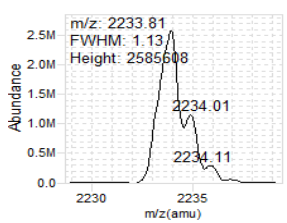
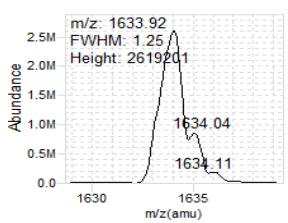
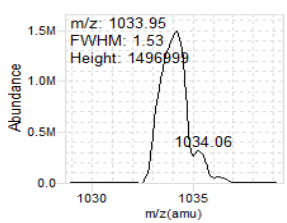
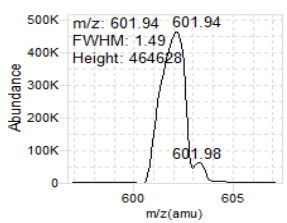
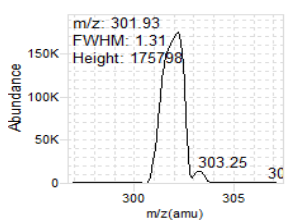
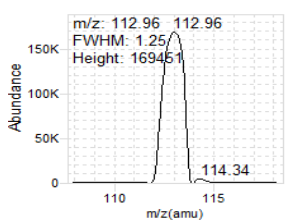


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
69.10	69.00	0.57	0.70	28742
112.98	112.99	0.70	0.70	104629
302.00	302.00	0.72	0.70	143309
601.98	601.98	0.71	0.70	282758
1033.98	1033.99	0.71	0.70	647647
1633.93	1633.95	0.70	0.70	1461903
2233.89	2233.91	0.69	0.70	1002972

**Analyzer: MS1**

**Polarity: Negative**

**Width: Wide**

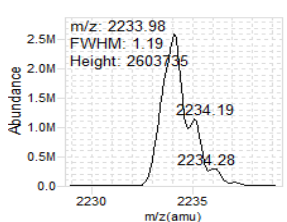
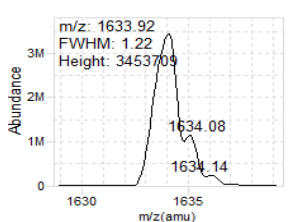
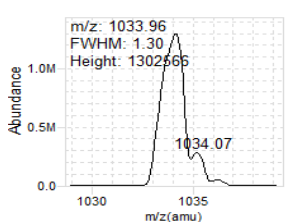
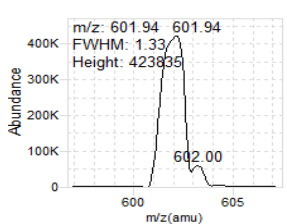
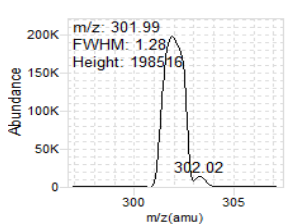
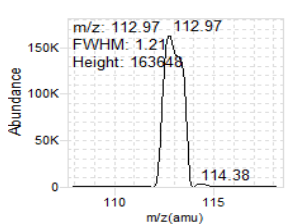


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
112.96	112.99	1.25	1.20	169451
301.93	302.00	1.31	1.20	175798
601.94	601.98	1.49	1.20	464628
1033.95	1033.99	1.53	1.20	1496999
1633.91	1633.95	1.25	1.20	2619201
2233.82	2233.91	1.13	1.20	2585608

**Analyzer: MS2**

**Polarity: Negative**

**Width: Wide**

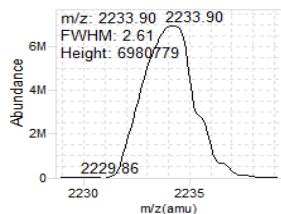
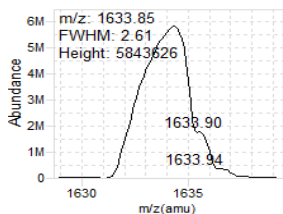
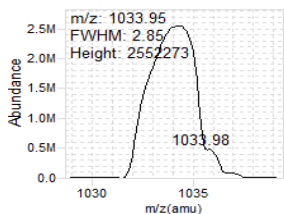
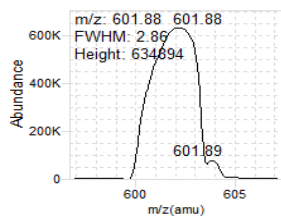
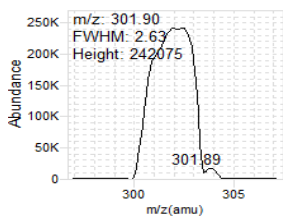
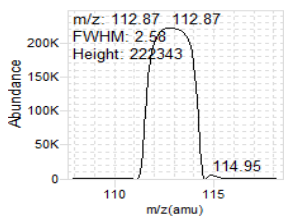


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
69.09	69.00	1.13	1.20	37858
112.97	112.99	1.21	1.20	163648
301.99	302.00	1.28	1.20	198516
601.93	601.98	1.33	1.20	423835
1033.95	1033.99	1.30	1.20	1302666
1633.92	1633.95	1.22	1.20	3453709
2233.98	2233.91	1.19	1.20	2603735

**Analyzer: MS1**

**Polarity: Negative**

**Width: Widest**

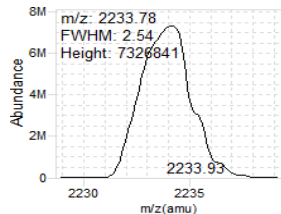
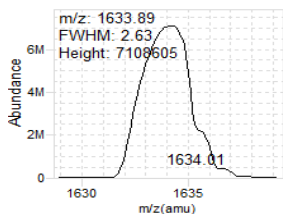
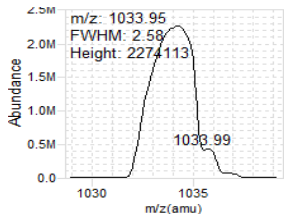
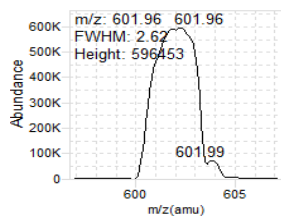
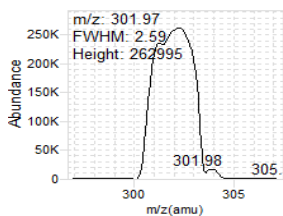
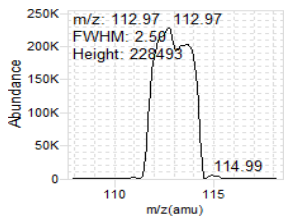


m/z	m/z Expected	FWHM	FWHM Expected	Abundance
112.87	112.99	2.58	2.50	222343
301.90	302.00	2.63	2.50	242075
601.88	601.98	2.86	2.50	634894
1033.95	1033.99	2.85	2.50	2552273
1633.85	1633.95	2.61	2.50	5843626
2233.90	2233.91	2.62	2.50	6980779

**Analyzer: MS2**

**Polarity: Negative**

**Width: Widest**



m/z	m/z Expected	FWHM	FWHM Expected	Abundance
69.05	69.00	2.36	2.50	45784
112.97	112.99	2.50	2.50	228493
301.97	302.00	2.59	2.50	262995
601.96	601.98	2.62	2.50	596453
1033.95	1033.99	2.57	2.50	2274113
1633.89	1633.95	2.63	2.50	7108605
2233.78	2233.91	2.54	2.50	7326841

**Negative Results**

**Tune Parameters**

Parameters	Setting
Fragmentor	115
Skimmer	15
Octopole DC	5
Octopole RF	600
Lens 1	-3.50
MS1 PreFilter	27
MS1 DC	-3.00
MS1 PostFilter	-2.00
MS1 Axis Offset	0.86
MS1 Axis Gain	-18.05
MS1 Width Offset	0.23
MS1 Width Gain	7
MS1 Heater	100
MS2 DC	10
MS2 PreFilter	30
MS2 Axis Offset	0.93
MS2 Axis Gain	19
MS2 Width Offset	-0.09
MS2 Width Gain	-28
MS2 Heater	100
Cell Entry	0
Hexapole DC	0.00
Hexapole RF	500
Hexapole Accel	5
Cell Exit	7.00
Collision Gas	1
Iris	150
HED	18
EMV	1240
Collision Energy	0
Lens 1[MS2]	-3.10
MS1 PreFilter[MS2]	-2.60

**Dynamic Ramp Tables**

**MS1 PreFilter**

m/z	Setting
112.99	9.8
302	10
601.98	10.4
1033.99	21.3
1633.95	12.5
2233.91	27.7

**MS1 Axis Offset**

m/z	Setting
112.99	0.864
302	1.028
601.98	1.153
1033.99	1.184
1633.95	1.087
2233.91	0.864

**MS1 Width Offset**

m/z	Setting
112.99	0.23
302	0.18
601.98	-0.04
1033.99	-0.08
1633.95	0.04
2233.91	0.23

**MS2 PreFilter**

m/z	Setting
69	17.8
112.97	30
113	9.95725
207	21.02406
232	23.96735
302	32.20859

**MS2 Axis Offset**

m/z	Setting
112.99	0.926
302	1.012
601.98	1.044
1033.99	1.027
1633.95	0.985
2233.91	0.926

**MS2 Width Offset**

m/z	Setting
112.99	-0.09
302	-0.1
601.98	-0.15
1033.99	-0.17
1633.95	-0.13
2233.91	-0.09

**MS1 Calibrations**

Resolution	Mass Gain	Mass Offset	Width Gain	Width Offset
Unit	-18.05	0.864	7.1	0.23
Wide	-18.35	1.06	7.3	0.61
Widest	-18.35	1.46	8	1.57

**MS2 Calibrations**

Resolution	Mass Gain	Mass Offset	Width Gain	Width Offset
Unit	19.1	0.926	-27.8	-0.09
Wide	19.05	1.122	-27.7	0.37
Widest	18.55	1.54	-27.1	1.34

```

Instrument Name      LCMS04
MS Model            G6470A
MS Instrument Serial SG1611G001
Software_Firmware  B.08.00.B8023.5 SP1, FW: A.00.08.24
Version
Tune Date & Time   05:01:20 13:17:27
Data Path           D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source          AJS ESI
Ionization Mode     AJS ESI
Tuned Resolution    All
Vacuum Pressure     1.04E+0[R]; 2.63E-5[H]
    
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**Source Parameters**

Parameter	Value
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

**Positive Results**

**Analyzer: MS1 Polarity: Positive Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	118.12	0.03	Pass	0.70	0.67	-0.03	Pass	393208
322.05	322.06	0.01	Pass	0.70	0.65	-0.05	Pass	148374
622.03	622.13	0.10	Pass	0.70	0.58	-0.12	Pass	132707
922.01	922.08	0.07	Pass	0.70	0.62	-0.08	Pass	165445
1521.97	1522.00	0.03	Pass	0.70	0.64	-0.06	Pass	91179
2121.93	2121.96	0.03	Pass	0.70	0.66	-0.04	Pass	106810

**Analyzer: MS2 Polarity: Positive Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	58.15	0.08	Pass	0.70	0.63	-0.07	Pass	140581
118.09	118.06	-0.03	Pass	0.70	0.72	0.02	Pass	465476
322.05	322.03	-0.02	Pass	0.70	0.69	-0.01	Pass	158033
622.03	622.01	-0.02	Pass	0.70	0.70	0.00	Pass	218043
922.01	922.01	0.00	Pass	0.70	0.69	-0.01	Pass	210899
1521.97	1521.98	0.01	Pass	0.70	0.69	-0.01	Pass	138934
2121.93	2121.90	-0.03	Pass	0.70	0.71	0.01	Pass	113940

**Analyzer: MS1 Polarity: Positive Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	118.16	0.07	Pass	1.20	1.13	-0.07	Pass	479457
322.05	322.08	0.03	Pass	1.20	1.43	0.23	Pass	230166
622.03	622.16	0.13	Pass	1.20	1.39	0.19	Pass	273916
922.01	922.08	0.07	Pass	1.20	1.40	0.20	Pass	371308
1521.97	1522.03	0.06	Pass	1.20	1.26	0.06	Pass	256338
2121.93	2121.99	0.06	Pass	1.20	1.17	-0.03	Pass	314792

**Analyzer: MS2 Polarity: Positive Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	58.18	0.11	Pass	1.20	1.10	-0.10	Pass	173498
118.09	118.09	0.00	Pass	1.20	1.21	0.01	Pass	575893
322.05	322.05	0.00	Pass	1.20	1.38	0.18	Pass	245066
622.03	621.99	-0.04	Pass	1.20	1.37	0.17	Pass	360113
922.01	921.99	-0.02	Pass	1.20	1.26	0.06	Pass	422479
1521.97	1521.94	-0.03	Pass	1.20	1.26	0.06	Pass	359064
2121.93	2121.93	0.00	Pass	1.20	1.22	0.02	Pass	340203

**Analyzer: MS1 Polarity: Positive Width: Widest**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
118.09	118.15	0.06	Pass	2.50	2.35	-0.15	Pass	582654
322.05	322.14	0.09	Pass	2.50	2.59	0.09	Pass	309316
622.03	622.20	0.17	Pass	2.50	2.52	0.02	Pass	383227
922.01	922.12	0.11	Pass	2.50	2.47	-0.03	Pass	552467
1521.97	1522.09	0.12	Pass	2.50	2.21	-0.29	Pass	441492
2121.93	2121.89	-0.04	Pass	2.50	2.20	-0.30	Pass	618655

# QQQ Check Tune Report



Analyzer: MS2 Polarity: Positive Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
58.07	58.18	0.11	Pass	2.50	2.31	-0.19	Pass	228994
118.09	118.09	0.00	Pass	2.50	2.44	-0.06	Pass	740193
322.05	322.05	0.00	Pass	2.50	2.61	0.11	Pass	375758
622.03	622.02	-0.01	Pass	2.50	2.71	0.21	Pass	513570
922.01	922.01	0.00	Pass	2.50	2.52	0.02	Pass	739261
1521.97	1521.98	0.01	Pass	2.50	2.62	0.12	Pass	736489
2121.93	2121.89	-0.04	Pass	2.50	2.53	0.03	Pass	1022977

**Negative Results**

**Analyzer: MS1 Polarity: Negative Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	0.70	0.75	0.05	Pass	131457
302.00	301.97	-0.03	Pass	0.70	0.77	0.07	Pass	121384
601.98	601.94	-0.04	Pass	0.70	0.75	0.05	Pass	240888
1033.99	1033.97	-0.02	Pass	0.70	0.70	0.00	Pass	648685
1633.95	1633.97	0.02	Pass	0.70	0.70	0.00	Pass	850529
2233.91	2233.89	-0.02	Pass	0.70	0.70	0.00	Pass	1007192

**Analyzer: MS2 Polarity: Negative Width: Unit**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	0.70	0.57	-0.13	Pass	28742
112.99	112.98	-0.01	Pass	0.70	0.70	0.00	Pass	104629
302.00	302.00	0.00	Pass	0.70	0.72	0.02	Pass	143309
601.98	601.98	0.00	Pass	0.70	0.71	0.01	Pass	282758
1033.99	1033.98	-0.01	Pass	0.70	0.71	0.01	Pass	647647
1633.95	1633.93	-0.02	Pass	0.70	0.70	0.00	Pass	1461903
2233.91	2233.89	-0.02	Pass	0.70	0.69	-0.01	Pass	1002972

**Analyzer: MS1 Polarity: Negative Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.96	-0.03	Pass	1.20	1.25	0.05	Pass	169451
302.00	301.93	-0.07	Pass	1.20	1.31	0.11	Pass	175798
601.98	601.94	-0.04	Pass	1.20	1.49	0.29	Pass	464628
1033.99	1033.95	-0.04	Pass	1.20	1.53	0.33	Pass	1496999
1633.95	1633.91	-0.04	Pass	1.20	1.25	0.05	Pass	2619201
2233.91	2233.82	-0.09	Pass	1.20	1.13	-0.07	Pass	2585608

**Analyzer: MS2 Polarity: Negative Width: Wide**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.09	0.09	Pass	1.20	1.13	-0.07	Pass	37858
112.99	112.97	-0.02	Pass	1.20	1.21	0.01	Pass	163648
302.00	301.99	-0.01	Pass	1.20	1.28	0.08	Pass	198516
601.98	601.93	-0.05	Pass	1.20	1.33	0.13	Pass	423835
1033.99	1033.95	-0.04	Pass	1.20	1.30	0.10	Pass	1302566
1633.95	1633.92	-0.03	Pass	1.20	1.22	0.02	Pass	3453709
2233.91	2233.98	0.07	Pass	1.20	1.19	-0.01	Pass	2603735

**Analyzer: MS1 Polarity: Negative Width: Widest**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.87	-0.12	Pass	2.50	2.58	0.08	Pass	222343
302.00	301.90	-0.10	Pass	2.50	2.63	0.13	Pass	242075
601.98	601.88	-0.10	Pass	2.50	2.86	0.36	Pass	634894
1033.99	1033.95	-0.04	Pass	2.50	2.85	0.35	Pass	2552273
1633.95	1633.85	-0.10	Pass	2.50	2.61	0.11	Pass	5843626
2233.91	2233.90	-0.01	Pass	2.50	2.62	0.12	Pass	6980779

**Analyzer: MS2 Polarity: Negative Width: Widest**

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	2.50	2.36	-0.14	Pass	45784
112.99	112.97	-0.02	Pass	2.50	2.50	0.00	Pass	228493
302.00	301.97	-0.03	Pass	2.50	2.59	0.09	Pass	262995
601.98	601.96	-0.02	Pass	2.50	2.62	0.12	Pass	596453
1033.99	1033.95	-0.04	Pass	2.50	2.57	0.07	Pass	2274113
1633.95	1633.89	-0.06	Pass	2.50	2.63	0.13	Pass	7108605
2233.91	2233.78	-0.13	Pass	2.50	2.54	0.04	Pass	7326841





**BUREAU  
VERITAS**

## **5. Initial Calibration**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**

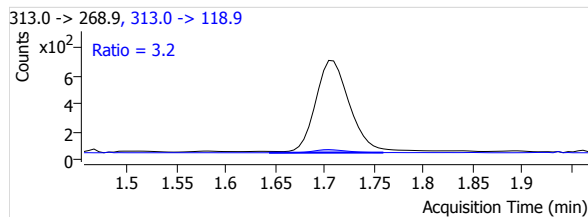
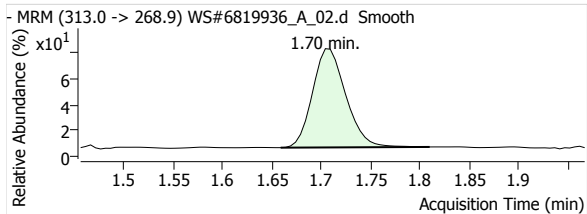
# Quantitative Analysis Report

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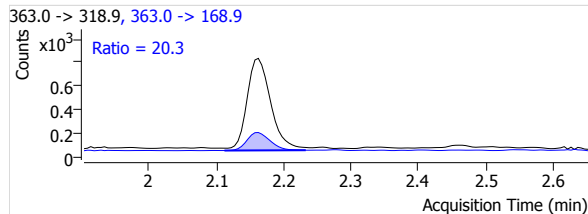
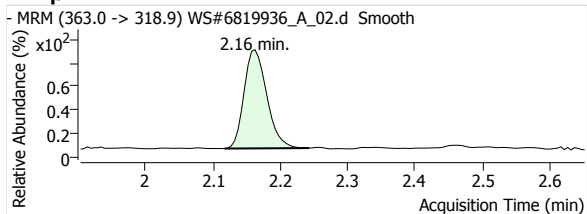
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<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A2
<b>Acq. Date-Time</b>	2020/07/08 11:27:45 AM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	0.830	0.9084	109.4	1534	1.70	29	0.1560	49	1.70	3	3.2
PFHpA 1	µg/L	0.830	0.9069	109.3	1787	2.16	28	0.1446	362	2.16	18	20.3
PFOA 1	µg/L	0.830	0.9088	109.5	1651	2.64	22	0.1416	396	2.64	41	24.0
PFNA 1	µg/L	0.830	0.9337	112.5	1229	3.08	21	0.1378	266	3.08	17	21.6
PFDA 1	µg/L	0.830	0.8724	105.1	1270	3.47	23	0.1927	220	3.47	54	17.3
PFUnA 1	µg/L	0.830	0.8927	107.6	1159	3.80	13	0.1468	189	3.80	131	16.3
PFDoA 1	µg/L	0.830	0.8336	100.4	1241	4.11	11	0.1246	178	4.10	34	14.3
PFTeDA 1	µg/L	0.830	0.8706	104.9	1417	4.37	19	0.1007	125	4.37	13	8.8
PFTeDA 1	µg/L	0.830	0.8958	107.9	1665	4.61	29	0.1183	92	4.61	44	5.5
PFBS 1	µg/L	0.830	0.8555	103.1	405	1.37	65	0.1246	194	1.37	22	47.9
PFHxS 1	µg/L	0.830	0.8698	104.8	323	2.08	227	0.1346	174	2.10	48	53.7
PFOS 1	µg/L	0.830	0.8842	106.5	223	2.89	37	0.1264	134	2.90	17	60.0
MeFOSA 1	µg/L	0.830	0.8814	106.2	239	5.21	17	0.0534	198	5.21	156	82.8
EtFOSA 1	µg/L	0.830	0.8917	107.4	236	5.33	25	0.0628	207	5.33	147	87.7
13C2-PFHxA	µg/L	100.000	99.2933	99.3	9835	1.70	664		--	--	--	--
13C4-PFHpA	µg/L	100.000	97.1775	97.2	12360	2.16	470		--	--	--	--
13C4-PFOA	µg/L	100.000	98.4378	98.4	11657	2.63	522		--	--	--	--
13C5-PFNA	µg/L	100.000	95.8011	95.8	8921	3.08	259		--	--	--	--
13C2-PFDA	µg/L	100.000	92.0894	92.1	6589	3.47	322		--	--	--	--
13C2-PFUnA	µg/L	100.000	92.3950	92.4	7897	3.80	289		--	--	--	--
13C2-PFDoA	µg/L	100.000	95.1576	95.2	9963	4.11	443		--	--	--	--
13C2-PFTeDA	µg/L	100.000	91.9133	91.9	14071	4.61	747		--	--	--	--
13C3-PFBS	µg/L	100.000	96.5835	96.6	3251	1.36	220		--	--	--	--
18O2-PFHxS	µg/L	100.000	102.8694	102.9	2402	2.11	315		--	--	--	--
13C4-PFOS	µg/L	100.000	97.4586	97.5	1764	2.95	339		--	--	--	--
D3-MeFOSA	µg/L	100.000	99.2897	99.3	4473	5.21	85		--	--	--	--
D5-EtFOSA	µg/L	100.000	102.4257	102.4	3758	5.34	126		--	--	--	--

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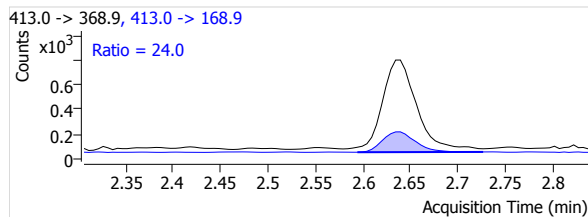
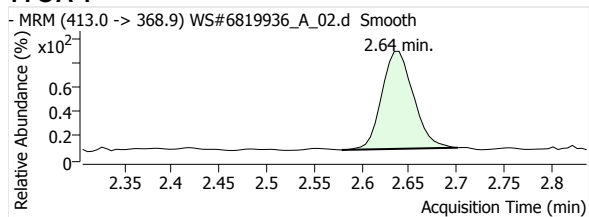


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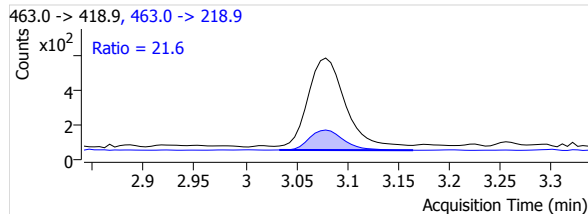
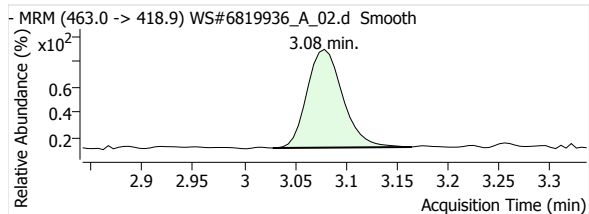


# Quantitative Analysis Report

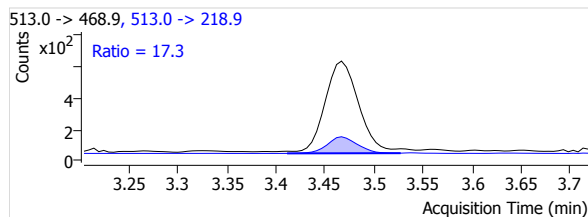
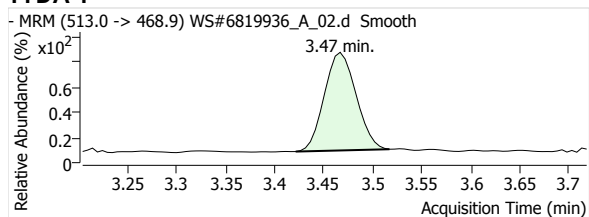
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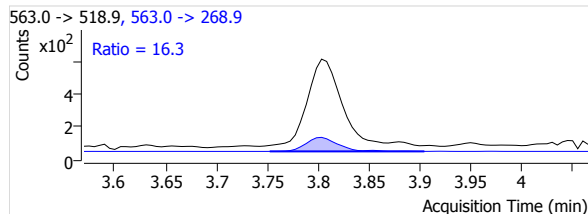
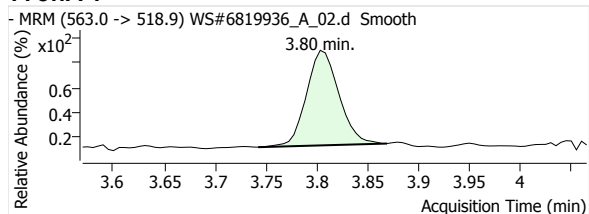
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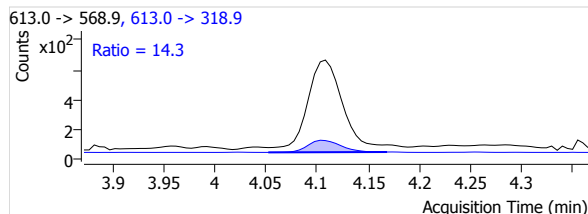
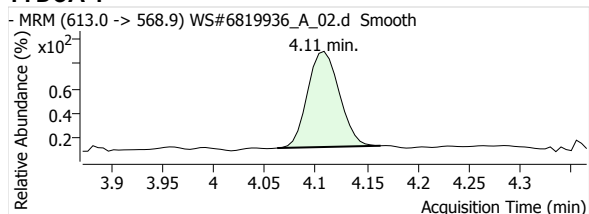
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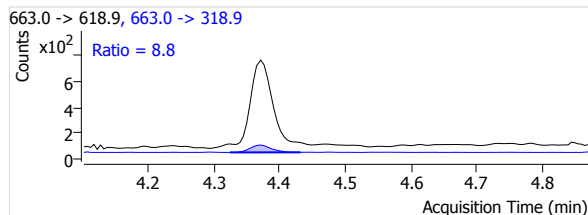
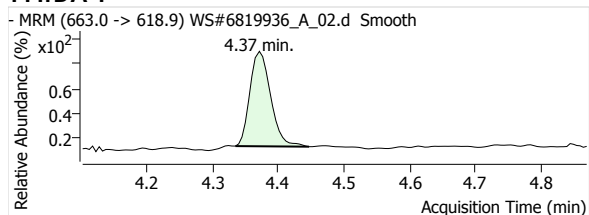
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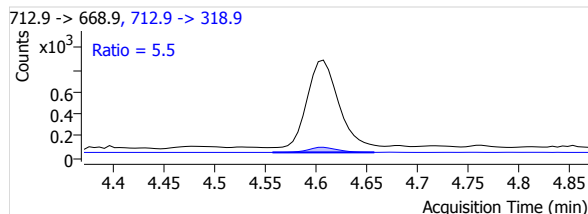
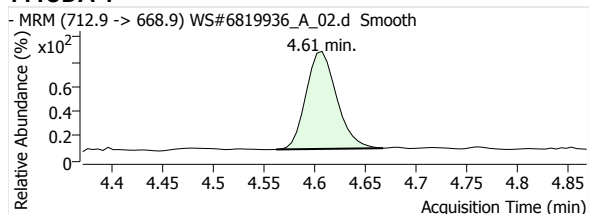
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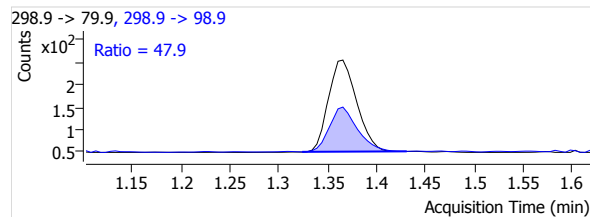
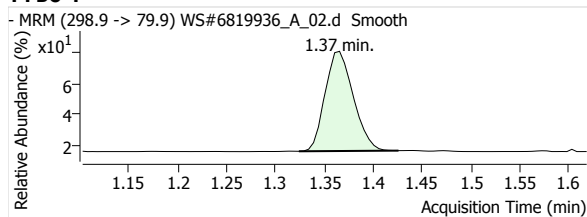


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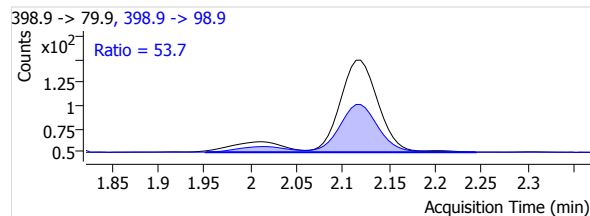
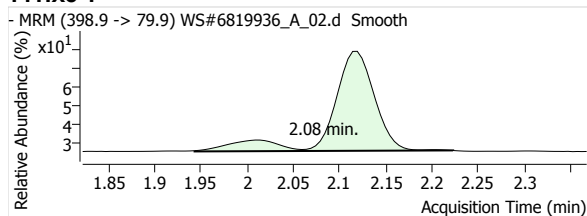


# Quantitative Analysis Report

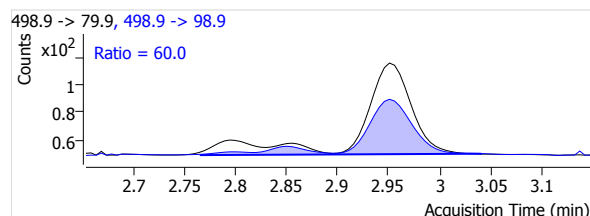
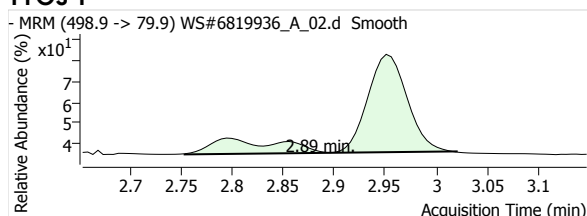
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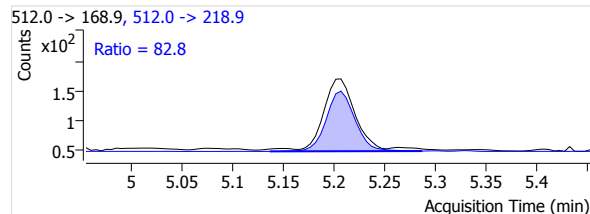
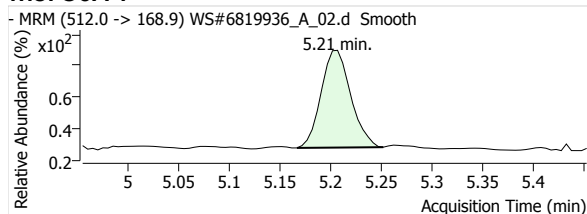
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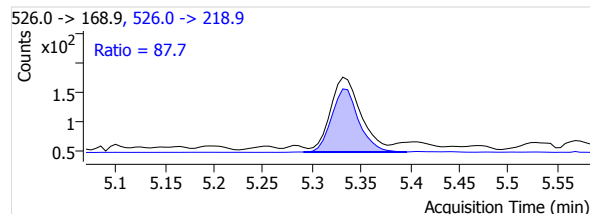
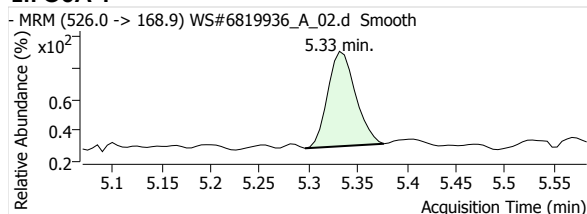
## PFOS 1



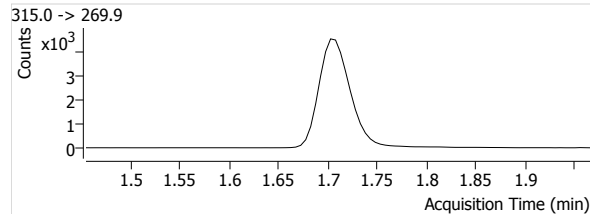
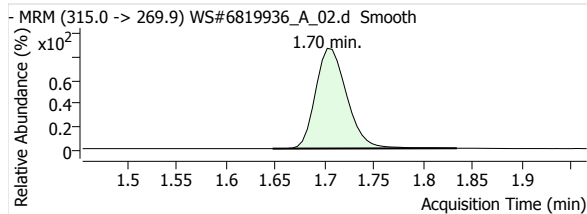
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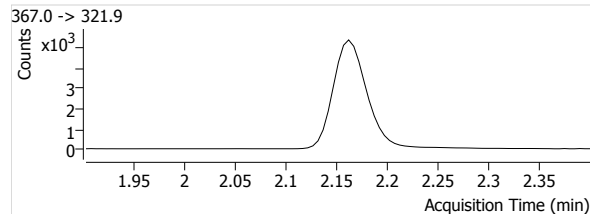
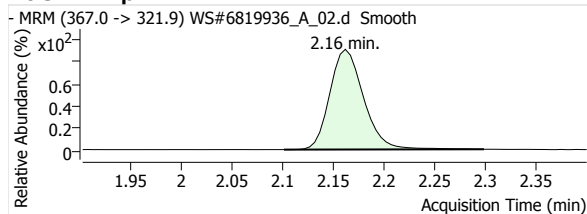
## eFOSA 1



## 13C2-PFHxA

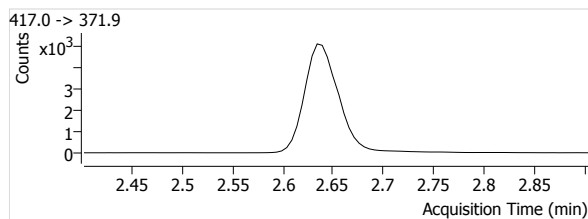
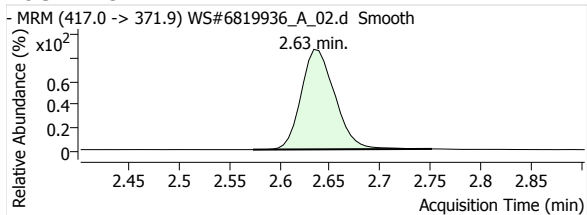


## 13C4-PFHpA

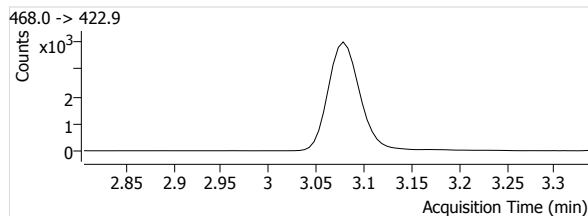
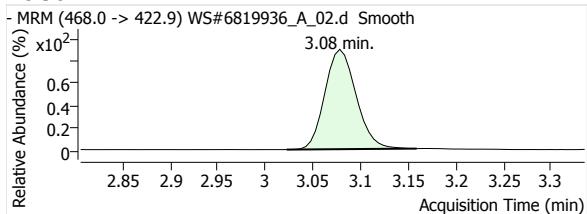


# Quantitative Analysis Report

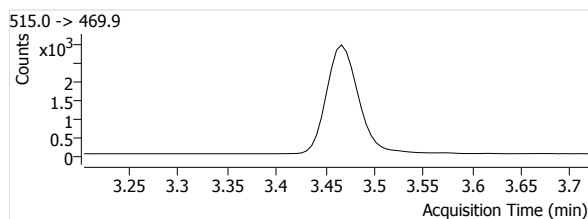
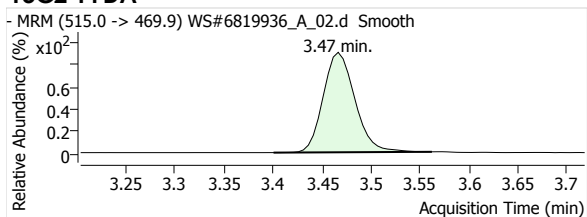
## 13C4-PFOA



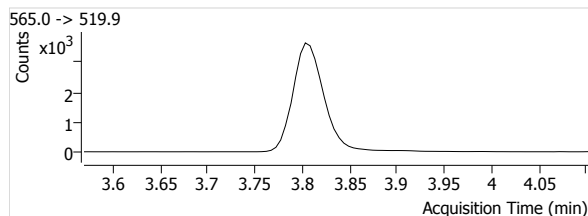
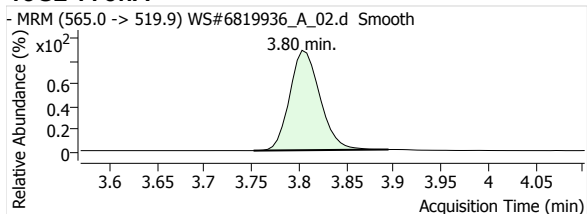
## 13C5-PFNA



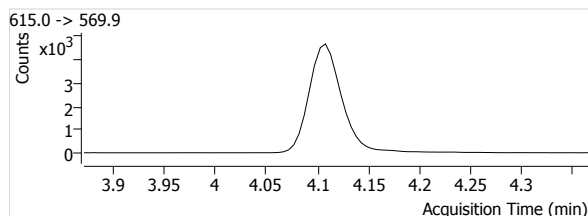
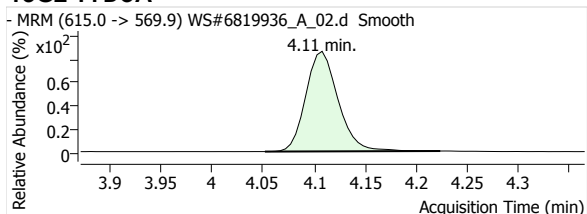
## 13C2-PFDA



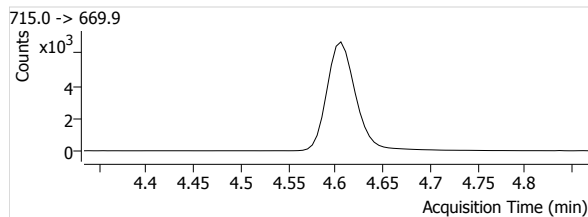
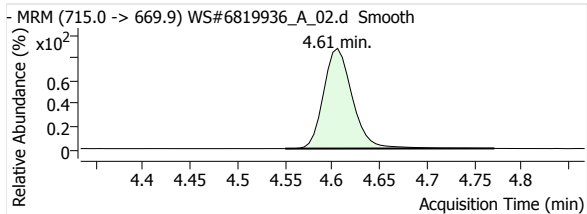
## 13C2-PFUnA



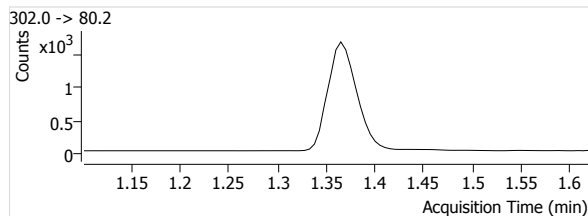
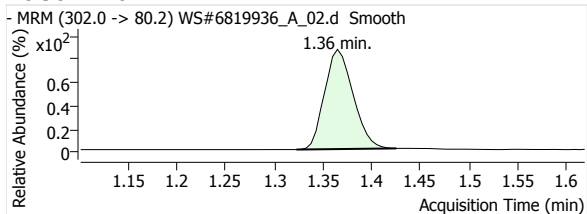
## 13C2-PFDoA



## 13C2-PFTeDA

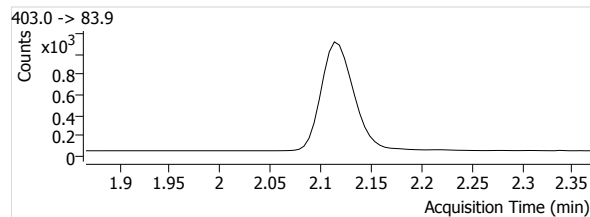
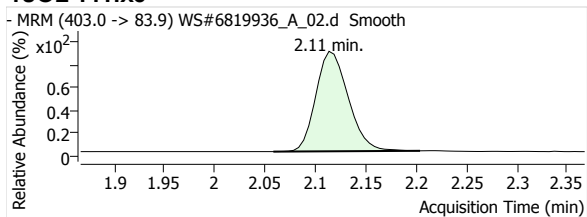


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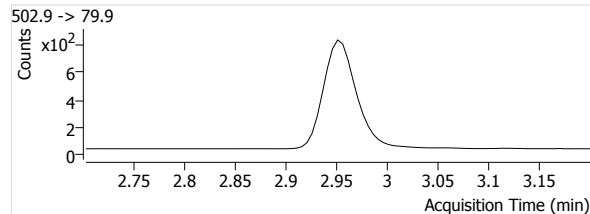
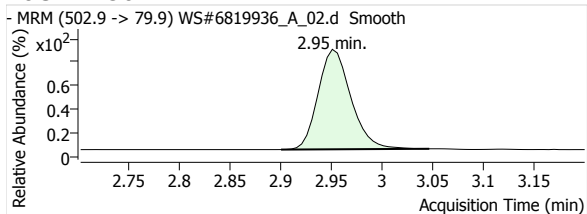


# Quantitative Analysis Report

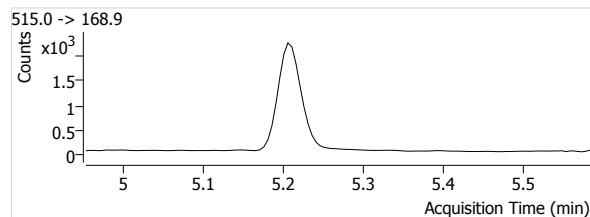
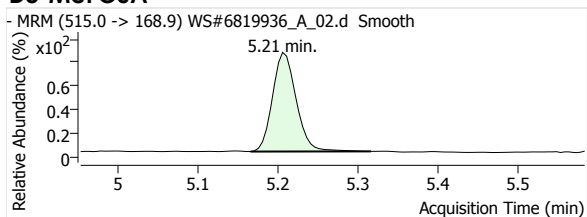
## 18O2-PFHxs



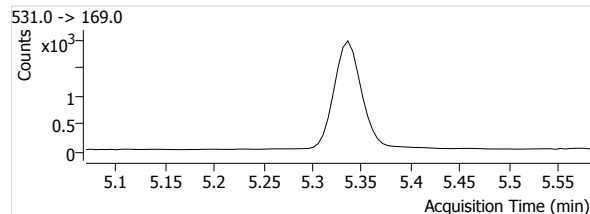
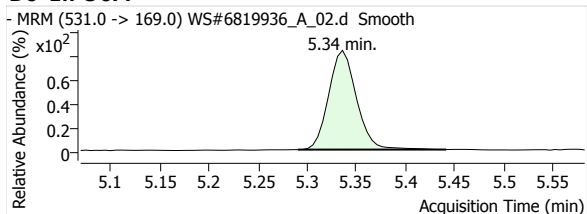
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA

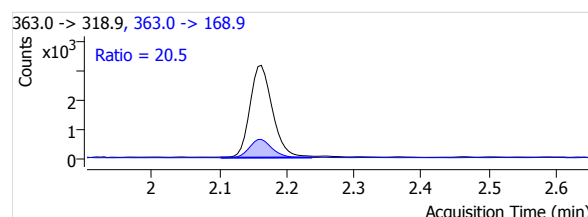
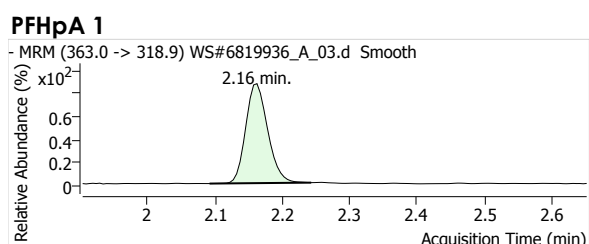
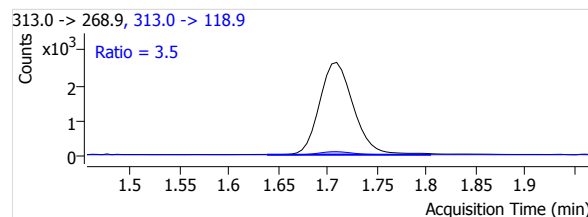
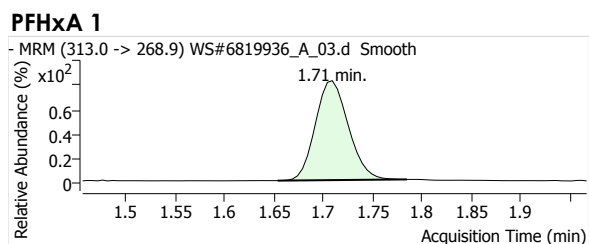


# Quantitative Analysis Report

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bin

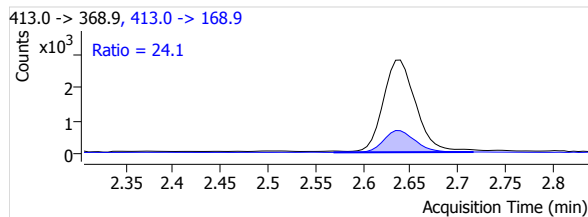
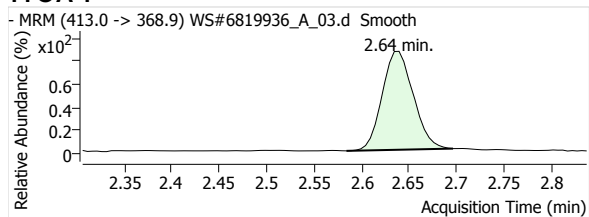
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<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A3
<b>Acq. Date-Time</b>	2020/07/08 11:34:40 AM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	3.000	2.7978	93.3	6023	1.71	120	0.5777	210	1.71	35	3.5
PFHpA 1	µg/L	3.000	2.8598	95.3	7140	2.16	97	0.5396	1461	2.16	57	20.5
PFOA 1	µg/L	3.000	2.8126	93.8	6216	2.64	86	0.5087	1500	2.63	95	24.1
PFNA 1	µg/L	3.000	2.8452	94.8	4499	3.08	77	0.4820	1023	3.08	58	22.7
PFDA 1	µg/L	3.000	2.9813	99.4	4906	3.47	115	0.7262	864	3.46	425	17.6
PFUnA 1	µg/L	3.000	2.9840	99.5	4489	3.81	49	0.5442	664	3.81	114	14.8
PFDoA 1	µg/L	3.000	3.0494	101.6	5214	4.11	58	0.5196	637	4.11	69	12.2
PFTeDA 1	µg/L	3.000	2.9375	97.9	5716	4.37	69	0.3846	463	4.37	105	8.1
PFTeDA 1	µg/L	3.000	2.8485	95.0	6428	4.61	80	0.4325	335	4.60	84	5.2
PFBS 1	µg/L	3.000	3.0261	100.9	1588	1.37	164	0.4806	703	1.37	58	44.3
PFHxS 1	µg/L	3.000	2.9465	98.2	1176	2.08	339	0.4976	636	2.10	166	54.0
PFOS 1	µg/L	3.000	2.9279	97.6	862	2.89	59	0.4638	481	2.90	149	55.8
MeFOSA 1	µg/L	3.000	3.1220	104.1	970	5.20	61	0.2159	881	5.20	115	90.8
EtFOSA 1	µg/L	3.000	2.8153	93.8	898	5.33	100	0.2322	842	5.33	274	93.8
13C2-PFHxA	µg/L	100.000	105.2499	105.2	10425	1.71	827		--	--	--	--
13C4-PFHpA	µg/L	100.000	104.0255	104.0	13231	2.16	979		--	--	--	--
13C4-PFOA	µg/L	100.000	103.1920	103.2	12220	2.64	886		--	--	--	--
13C5-PFNA	µg/L	100.000	100.2363	100.2	9334	3.08	386		--	--	--	--
13C2-PFDA	µg/L	100.000	94.4235	94.4	6756	3.47	449		--	--	--	--
13C2-PFUnA	µg/L	100.000	96.5134	96.5	8249	3.81	289		--	--	--	--
13C2-PFDoA	µg/L	100.000	95.8453	95.8	10035	4.11	1574		--	--	--	--
13C2-PFTeDA	µg/L	100.000	97.0736	97.1	14861	4.61	874		--	--	--	--
13C3-PFBS	µg/L	100.000	98.1581	98.2	3304	1.36	230		--	--	--	--
18O2-PFHxS	µg/L	100.000	101.2420	101.2	2364	2.11	284		--	--	--	--
13C4-PFOS	µg/L	100.000	102.6519	102.7	1858	2.95	207		--	--	--	--
D3-MeFOSA	µg/L	100.000	99.7114	99.7	4492	5.21	63		--	--	--	--
D5-EtFOSA	µg/L	100.000	105.3966	105.4	3867	5.34	110		--	--	--	--

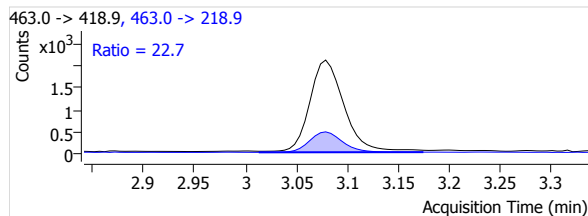
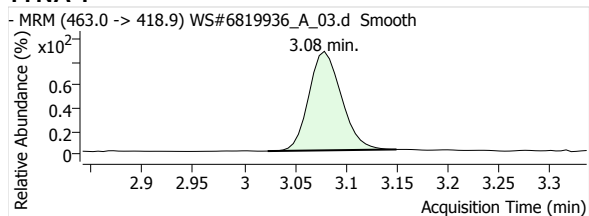


# Quantitative Analysis Report

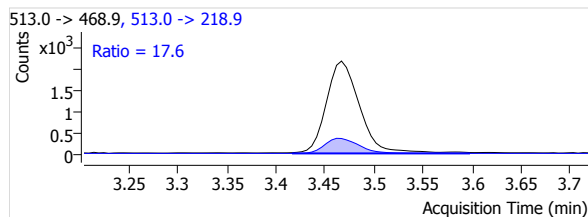
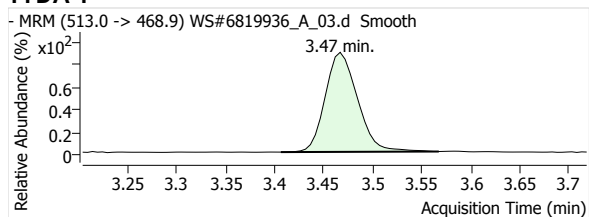
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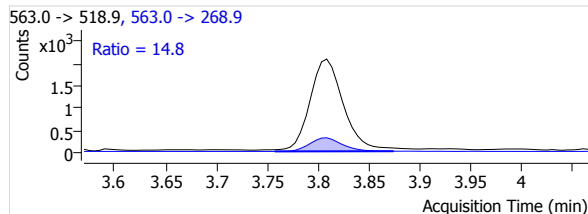
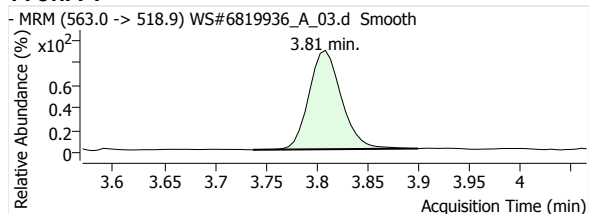
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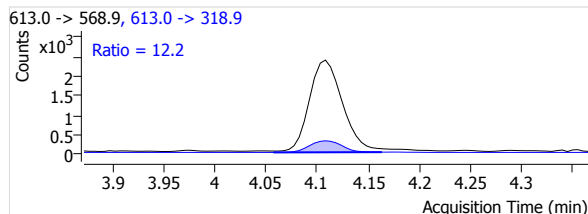
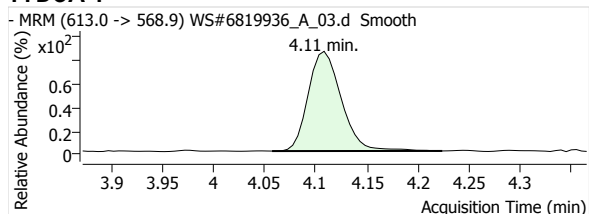
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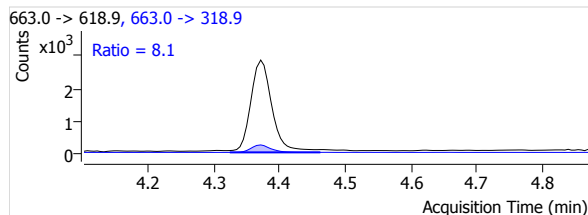
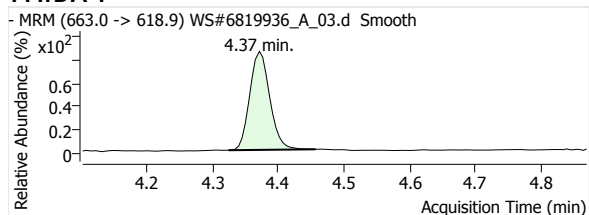
## PFUnA 1



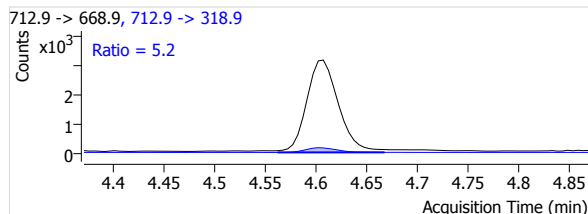
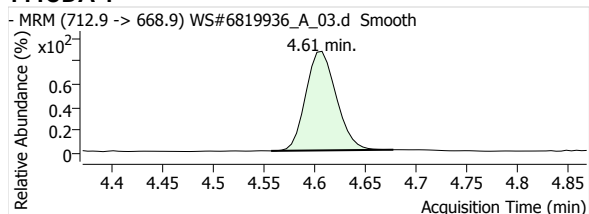
## PFDaA 1



## PFTrDA 1



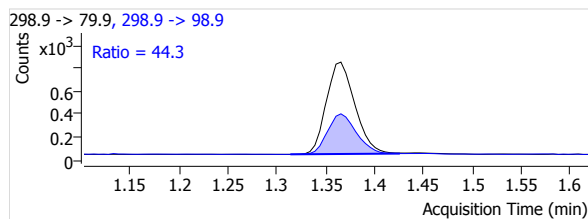
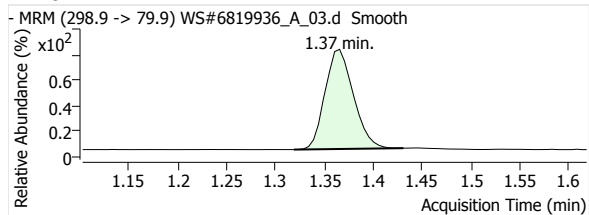
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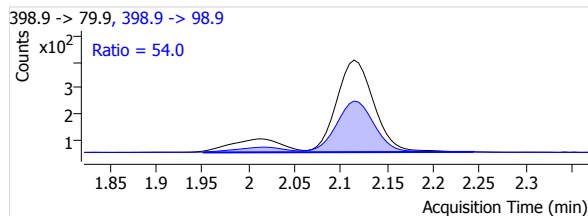
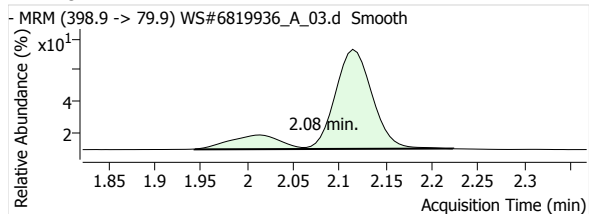


# Quantitative Analysis Report

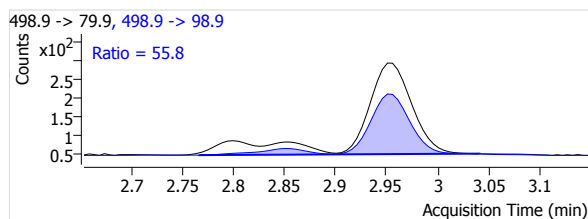
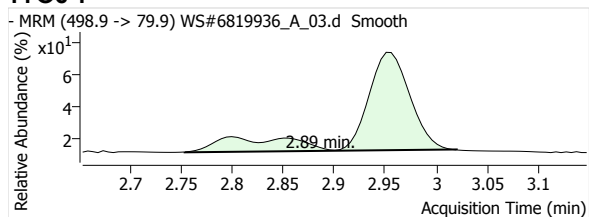
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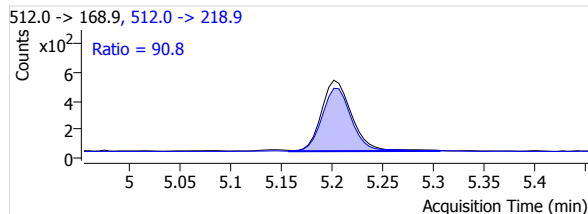
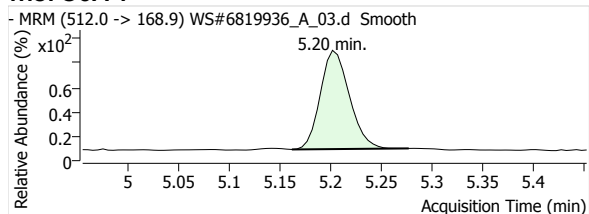
## PFHxS 1



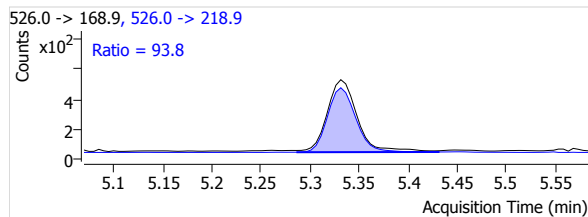
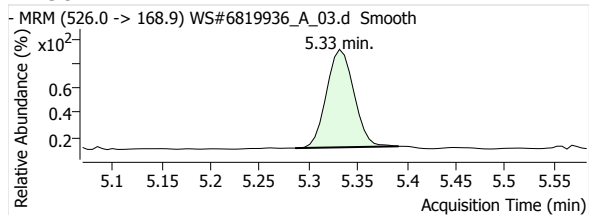
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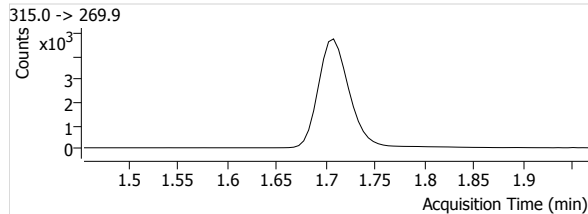
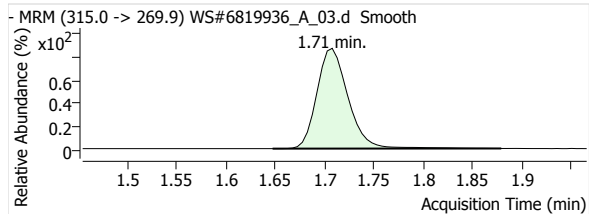
## MeFOSA 1



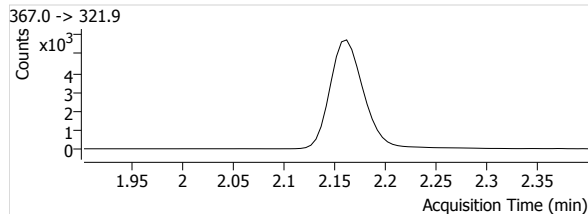
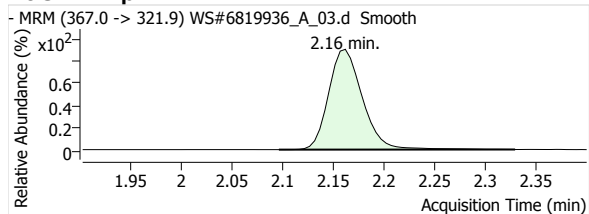
## eFOSA 1



## 13C2-PFHxA

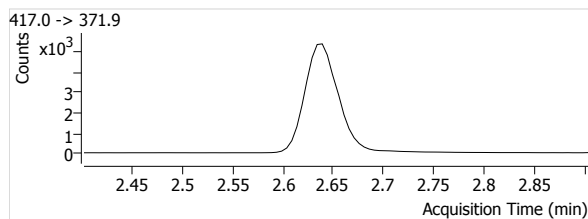
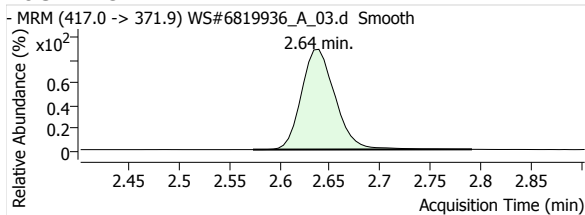


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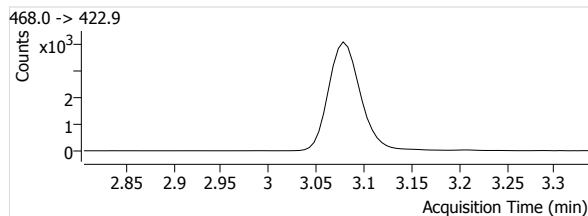
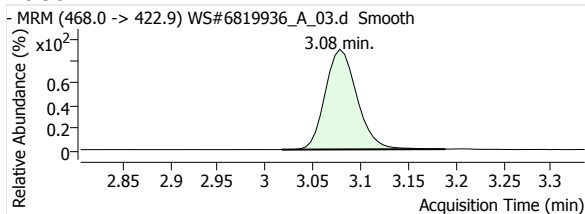


# Quantitative Analysis Report

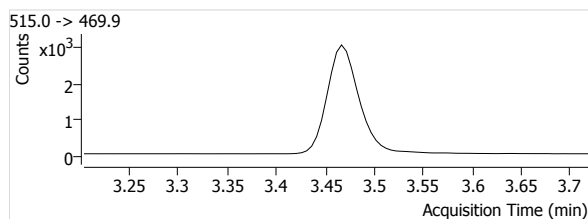
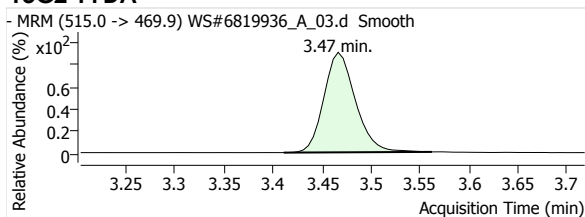
## 13C4-PFOA



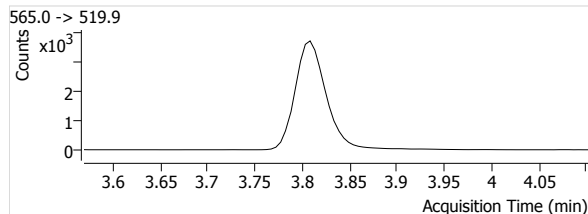
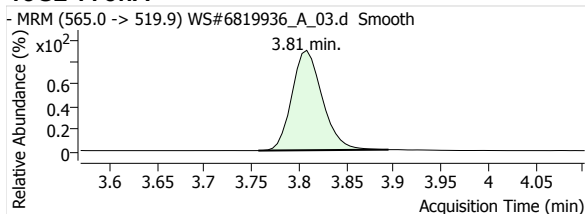
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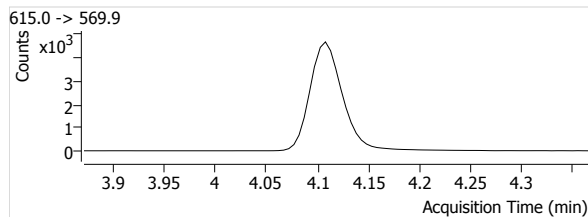
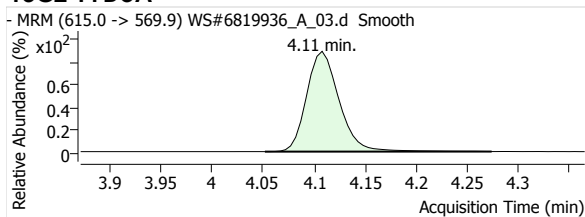
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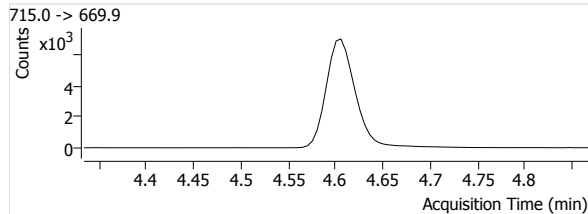
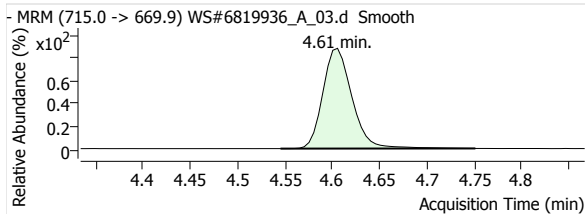
## 13C2-PFUnA



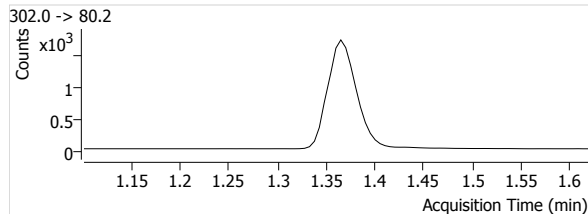
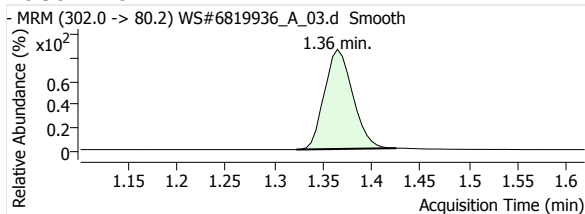
## 13C2-PFDoA



## 13C2-PFTeDA

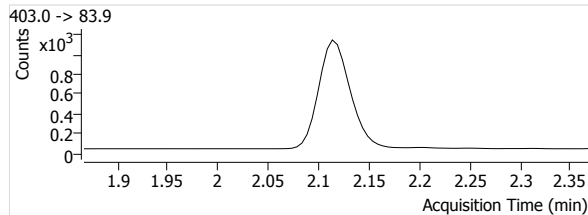
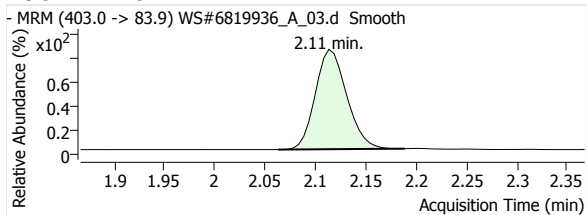


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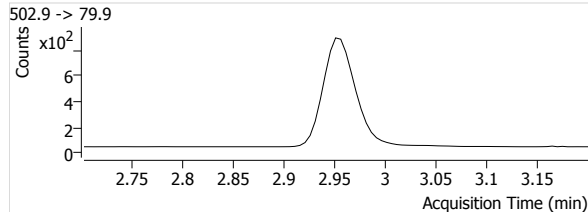
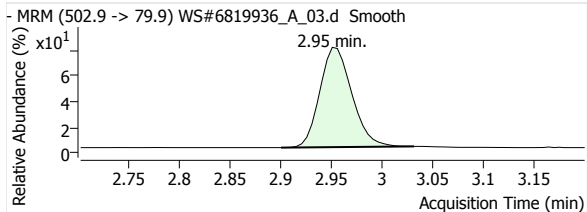


# Quantitative Analysis Report

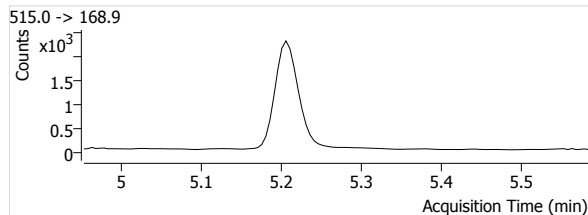
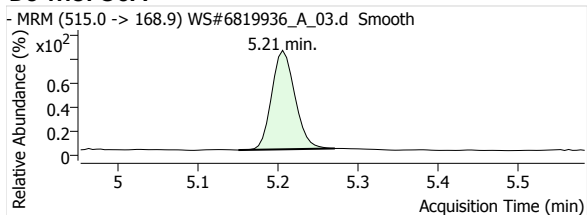
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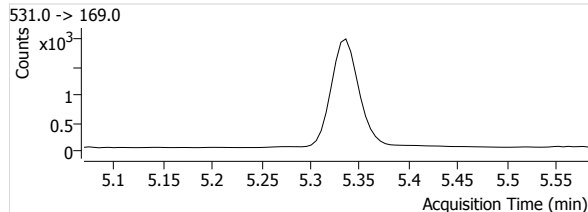
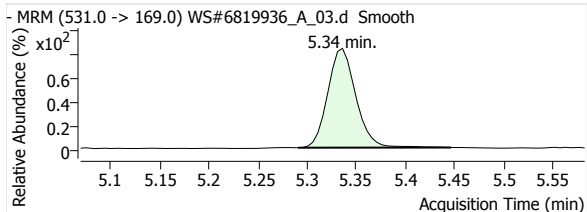
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



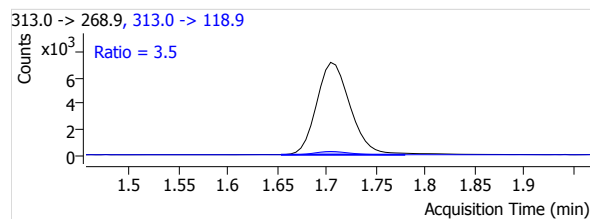
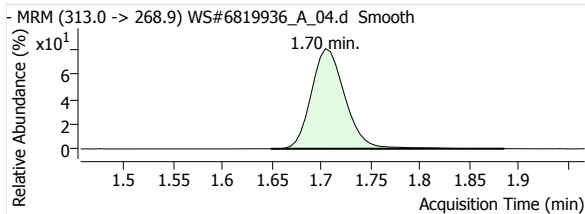
# Quantitative Analysis Report

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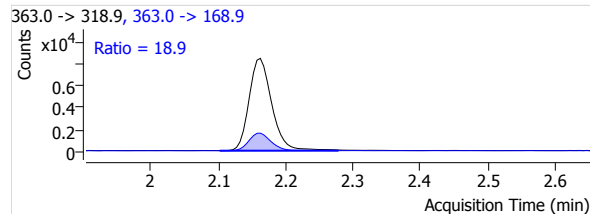
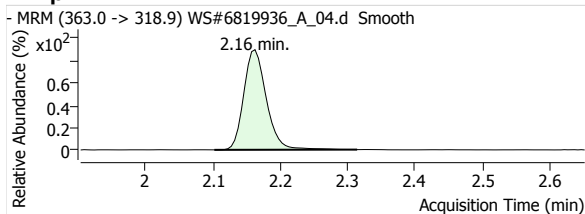
<b>Sample Name</b>	STD 3	<b>Data File</b>	WS#6819936_A_04.d
<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A4
<b>Acq. Date-Time</b>	2020/07/08 11:41:36 AM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	8.000	7.9951	99.9	16943	1.70	378	1.7379	596	1.70	64	3.5
PFHpA 1	µg/L	8.000	7.7654	97.1	19610	2.16	339	1.5320	3713	2.16	240	18.9
PFOA 1	µg/L	8.000	7.8892	98.6	17386	2.64	243	1.4874	4471	2.64	326	25.7
PFNA 1	µg/L	8.000	7.5797	94.7	12201	3.08	161	1.3346	2820	3.08	181	23.1
PFDA 1	µg/L	8.000	7.9573	99.5	13366	3.47	265	1.9849	2274	3.47	188	17.0
PFUnA 1	µg/L	8.000	7.4857	93.6	11662	3.81	92	1.3997	1960	3.81	174	16.8
PFDoA 1	µg/L	8.000	7.9387	99.2	13972	4.11	156	1.3912	1729	4.11	93	12.4
PFTeDA 1	µg/L	8.000	7.9285	99.1	15863	4.37	124	1.0702	1305	4.37	102	8.2
PFTeDA 1	µg/L	8.000	7.8812	98.5	18414	4.60	190	1.2423	961	4.60	195	5.2
PFBS 1	µg/L	8.000	7.8622	98.3	4335	1.37	273	1.2739	1866	1.37	154	43.0
PFHxS 1	µg/L	8.000	7.8341	97.9	3230	2.08	297	1.3521	1665	2.10	197	51.5
PFOS 1	µg/L	8.000	7.8023	97.5	2327	2.89	90	1.2683	1291	2.90	92	55.4
MeFOSA 1	µg/L	8.000	7.4377	93.0	2430	5.20	75	0.5290	2054	5.20	113	84.5
EtFOSA 1	µg/L	8.000	7.8635	98.3	2551	5.33	194	0.6768	2261	5.33	317	88.6
13C2-PFHxA	µg/L	100.000	98.4250	98.4	9749	1.70	541		--	--	--	--
13C4-PFHpA	µg/L	100.000	100.6368	100.6	12800	2.16	657		--	--	--	--
13C4-PFOA	µg/L	100.000	98.7080	98.7	11689	2.64	736		--	--	--	--
13C5-PFNA	µg/L	100.000	98.1744	98.2	9142	3.08	387		--	--	--	--
13C2-PFDA	µg/L	100.000	94.1160	94.1	6734	3.47	510		--	--	--	--
13C2-PFUnA	µg/L	100.000	97.4845	97.5	8332	3.81	866		--	--	--	--
13C2-PFDoA	µg/L	100.000	95.9217	95.9	10043	4.11	1075		--	--	--	--
13C2-PFTeDA	µg/L	100.000	96.8189	96.8	14822	4.60	761		--	--	--	--
13C3-PFBS	µg/L	100.000	101.0992	101.1	3403	1.36	490		--	--	--	--
18O2-PFHxS	µg/L	100.000	102.3126	102.3	2389	2.11	287		--	--	--	--
13C4-PFOS	µg/L	100.000	101.3812	101.4	1835	2.96	295		--	--	--	--
D3-MeFOSA	µg/L	100.000	101.9756	102.0	4594	5.21	104		--	--	--	--
D5-EtFOSA	µg/L	100.000	102.7255	102.7	3769	5.34	68		--	--	--	--

## PFHxA 1

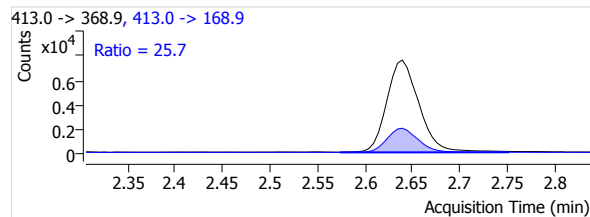
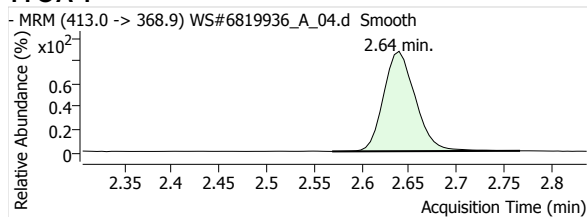


## PFHpA 1

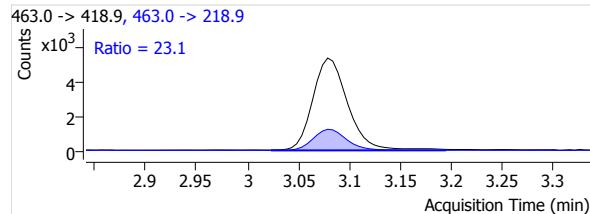
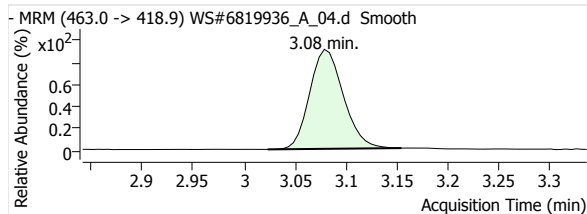


# Quantitative Analysis Report

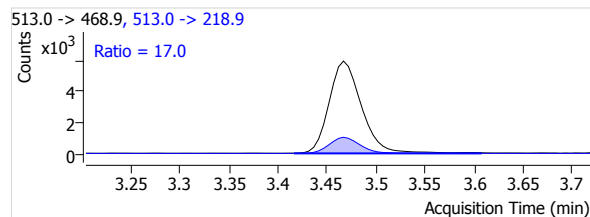
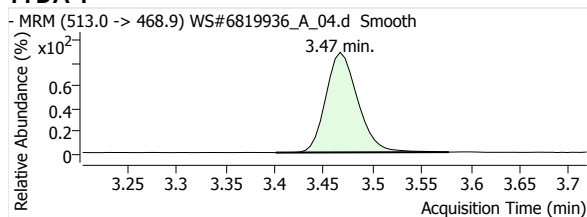
## PFOA 1



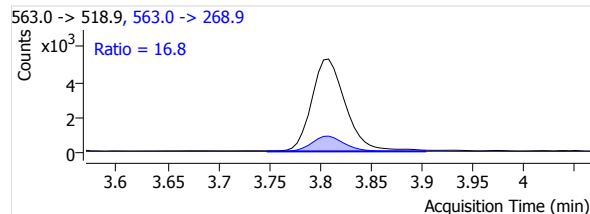
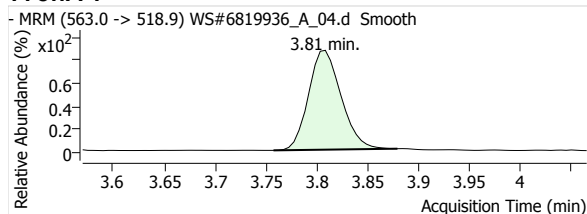
## PFNA 1



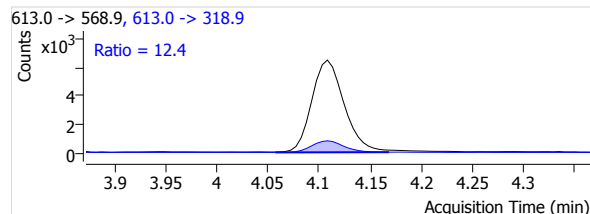
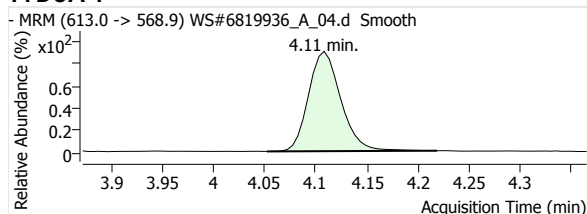
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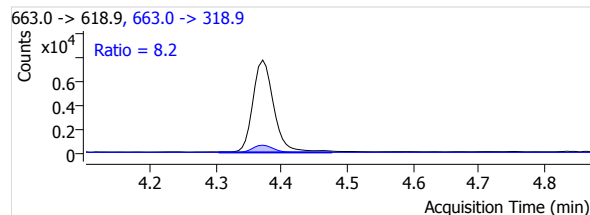
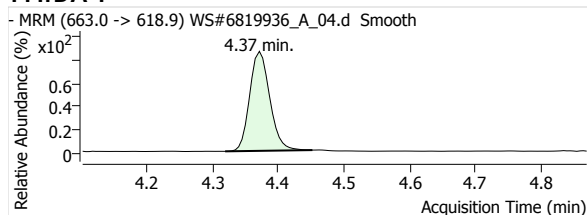
## PFUnA 1



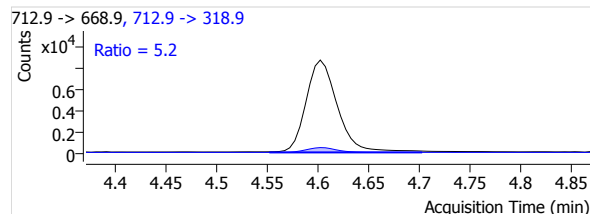
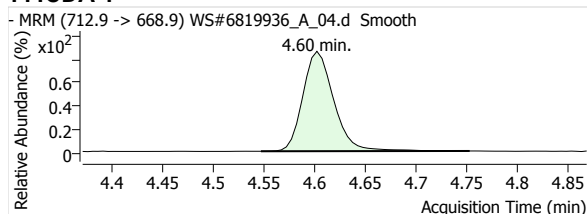
## PFDaA 1



## PFTrDA 1

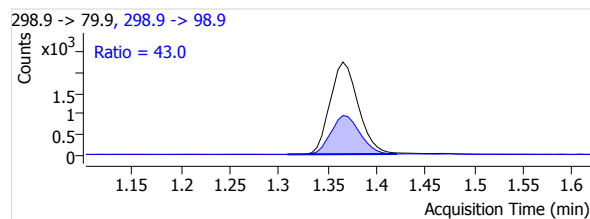
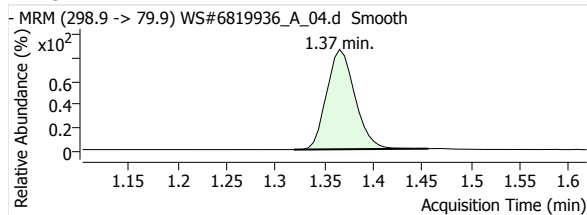


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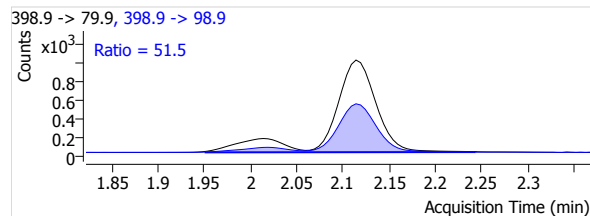
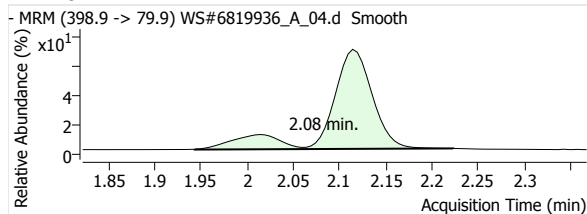


# Quantitative Analysis Report

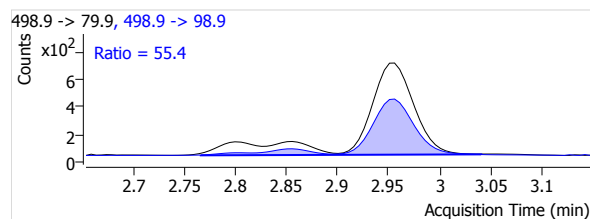
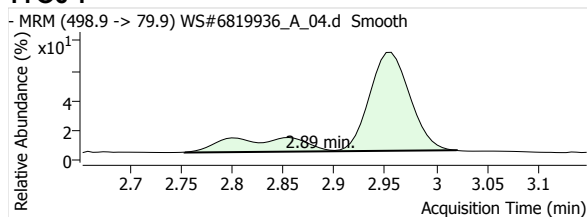
## PFBS 1



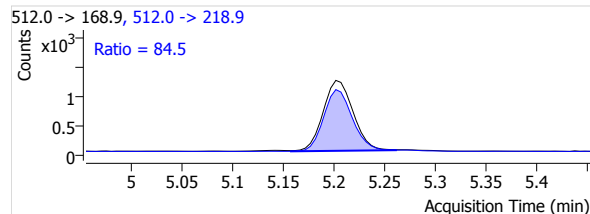
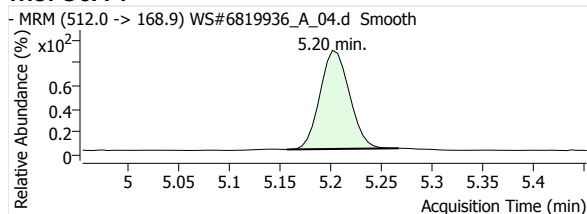
## PFHxS 1



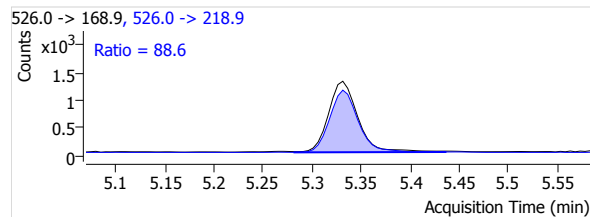
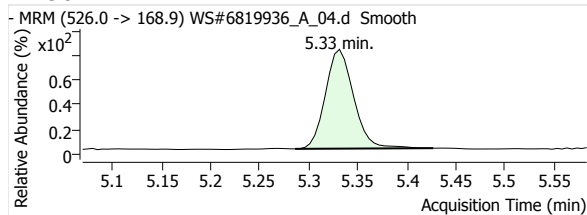
## PFOS 1



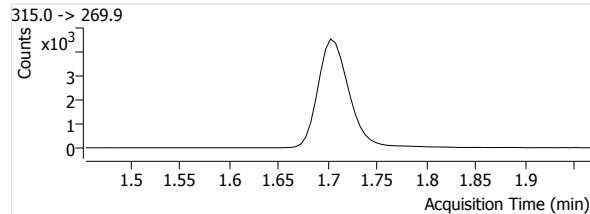
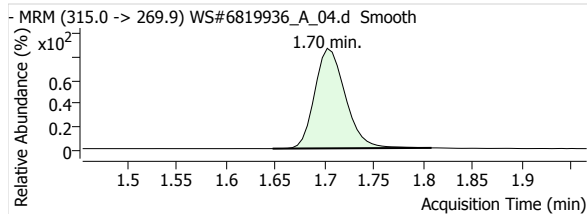
## MeFOSA 1



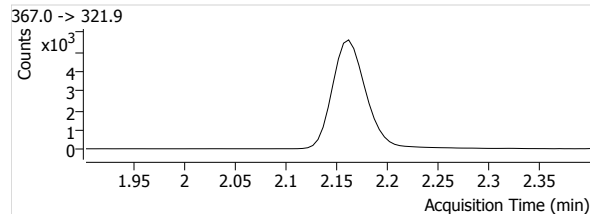
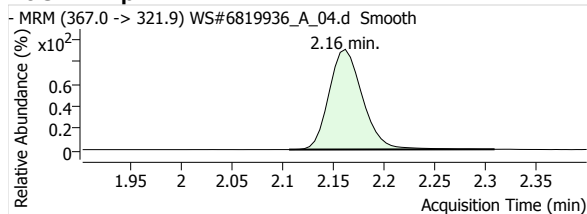
## eFOSA 1



## 13C2-PFHxA

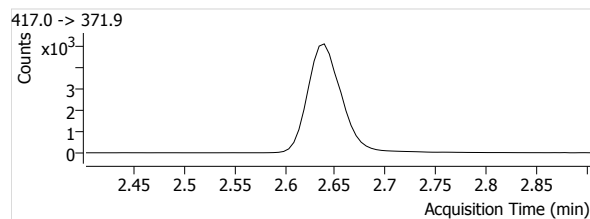
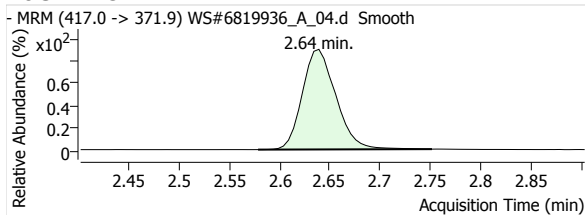


## 13C4-PFHpA

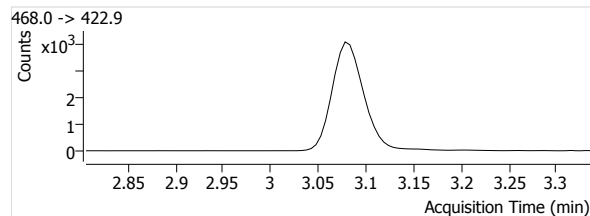
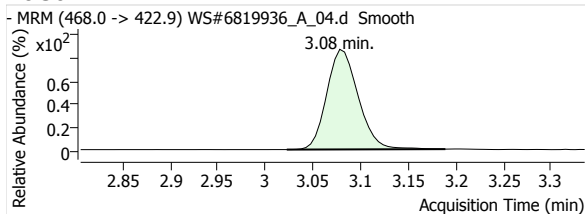


# Quantitative Analysis Report

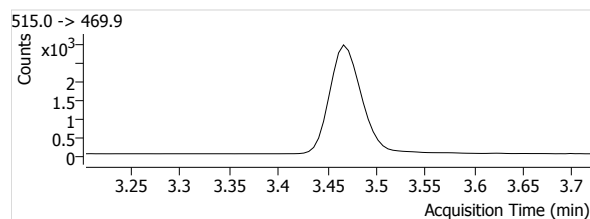
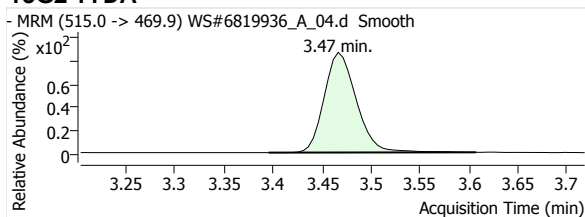
## 13C4-PFOA



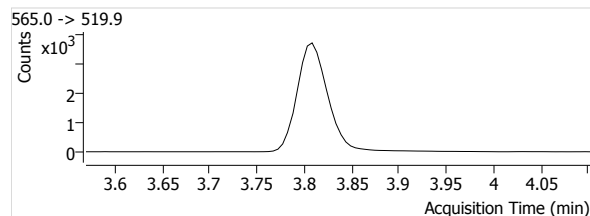
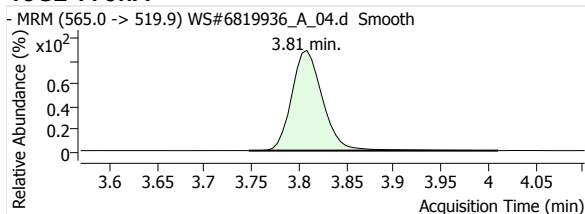
## 13C5-PFNA



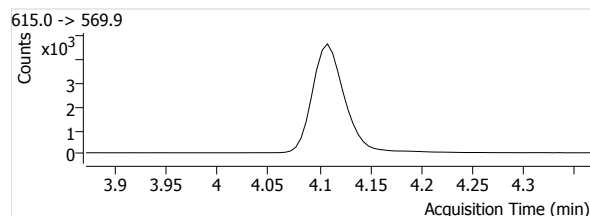
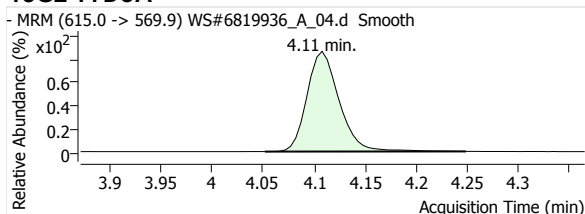
## 13C2-PFDA



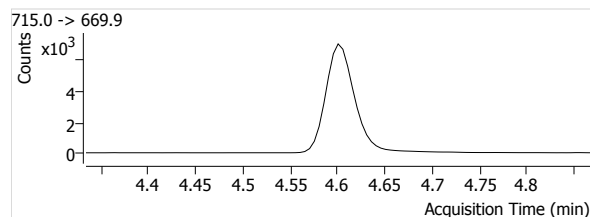
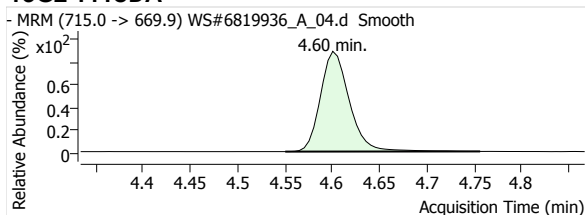
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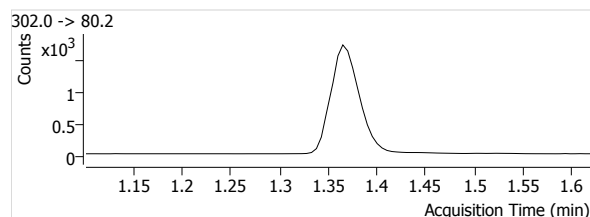
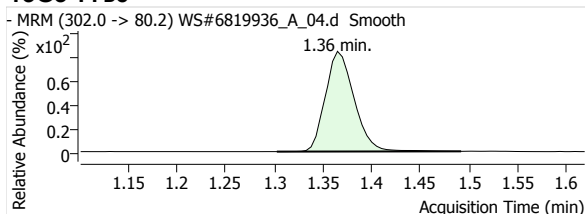
## 13C2-PFDoA



## 13C2-PFTeDA

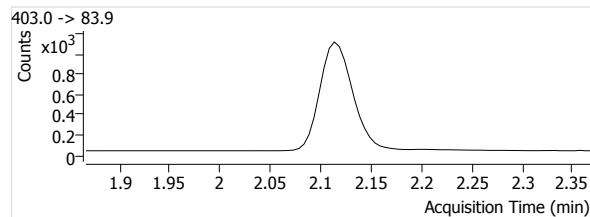
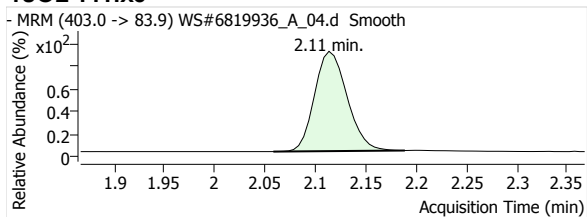


## 13C3-PFBS

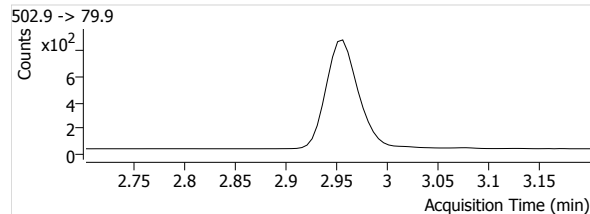
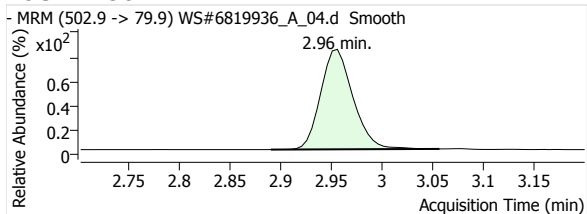


# Quantitative Analysis Report

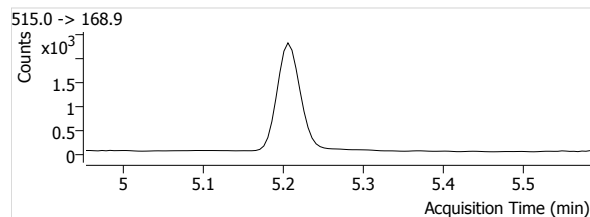
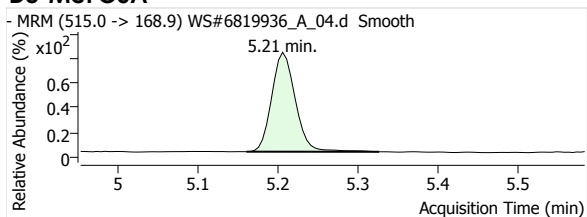
## 18O2-PFHxs



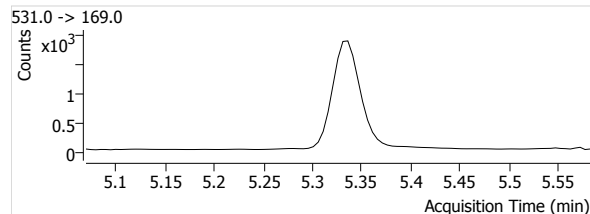
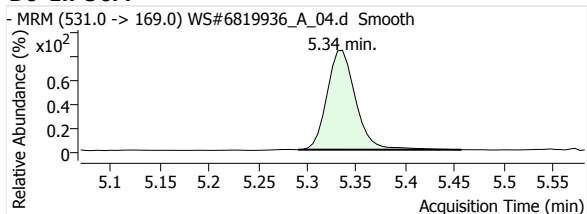
## 13C4-PFOS



## D3-MeFOA



## D5-EtFOA





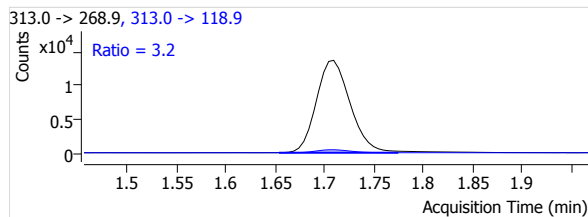
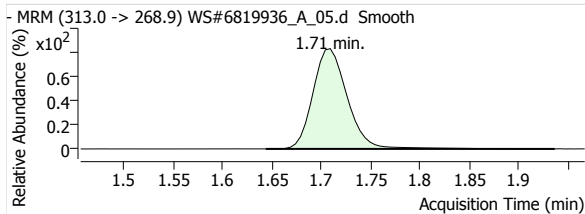
# Quantitative Analysis Report

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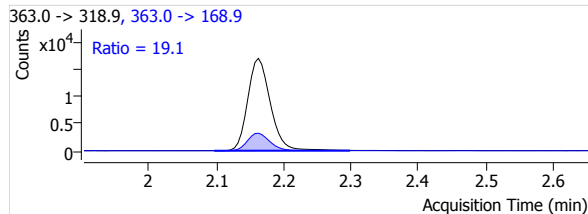
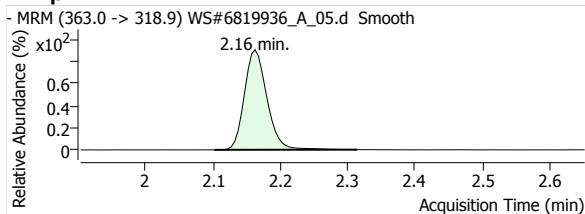
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<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A5
<b>Acq. Date-Time</b>	2020/07/08 11:48:32 AM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	16.000	15.3801	96.1	33543	1.71	910	3.3865	1067	1.71	86	3.2
PFHpA 1	µg/L	16.000	15.4293	96.4	39205	2.16	642	3.0824	7477	2.16	332	19.1
PFOA 1	µg/L	16.000	15.5058	96.9	35002	2.63	450	2.9558	8979	2.63	359	25.7
PFNA 1	µg/L	16.000	15.4697	96.7	25659	3.08	445	2.7555	5687	3.08	333	22.2
PFDA 1	µg/L	16.000	15.0747	94.2	27083	3.47	519	3.7852	4367	3.47	182	16.1
PFUnA 1	µg/L	16.000	15.4126	96.3	24838	3.81	357	2.9060	3878	3.80	650	15.6
PFDoA 1	µg/L	16.000	15.7441	98.4	29135	4.11	424	2.7827	3612	4.11	206	12.4
PFTeDA 1	µg/L	16.000	15.6189	97.6	32557	4.37	343	2.1267	2742	4.37	136	8.4
PFTeDA 1	µg/L	16.000	15.6221	97.6	38088	4.60	433	2.4879	1844	4.60	151	4.8
PFBS 1	µg/L	16.000	15.3843	96.2	8441	1.37	442	2.5077	3718	1.37	193	44.0
PFHxS 1	µg/L	16.000	15.7772	98.6	6400	2.08	401	2.7408	3420	2.10	174	53.4
PFOS 1	µg/L	16.000	15.4454	96.5	4579	2.89	98	2.5299	2433	2.90	207	53.1
MeFOSA 1	µg/L	16.000	15.1292	94.6	4896	5.20	86	1.0868	4286	5.20	349	87.5
EtFOSA 1	µg/L	16.000	16.2581	101.6	5196	5.33	453	1.4162	4546	5.33	592	87.5
13C2-PFHxA	µg/L	100.000	100.0000	100.0	9905	1.71	741		--	--	--	--
13C4-PFHpA	µg/L	100.000	100.0000	100.0	12719	2.16	624		--	--	--	--
13C4-PFOA	µg/L	100.000	100.0000	100.0	11842	2.63	1390		--	--	--	--
13C5-PFNA	µg/L	100.000	100.0000	100.0	9312	3.08	701		--	--	--	--
13C2-PFDA	µg/L	100.000	100.0000	100.0	7155	3.47	586		--	--	--	--
13C2-PFUnA	µg/L	100.000	100.0000	100.0	8547	3.81	699		--	--	--	--
13C2-PFDoA	µg/L	100.000	100.0000	100.0	10470	4.11	382		--	--	--	--
13C2-PFTeDA	µg/L	100.000	100.0000	100.0	15309	4.60	1379		--	--	--	--
13C3-PFBS	µg/L	100.000	100.0000	100.0	3366	1.36	392		--	--	--	--
18O2-PFHxS	µg/L	100.000	100.0000	100.0	2335	2.11	620		--	--	--	--
13C4-PFOS	µg/L	100.000	100.0000	100.0	1810	2.95	388		--	--	--	--
D3-MeFOSA	µg/L	100.000	100.0000	100.0	4505	5.21	68		--	--	--	--
D5-EtFOSA	µg/L	100.000	100.0000	100.0	3669	5.33	99		--	--	--	--

### PFHxA 1

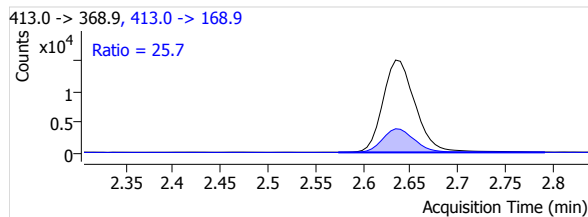
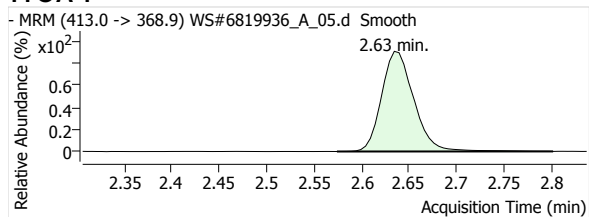


### PFHpA 1

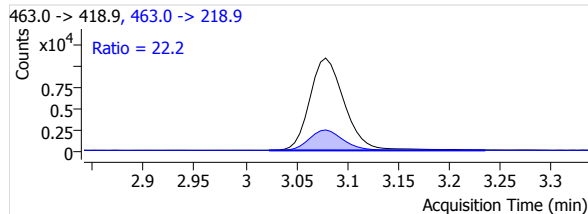
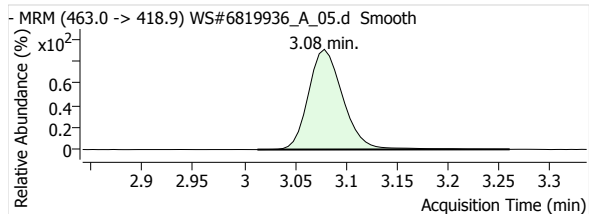


# Quantitative Analysis Report

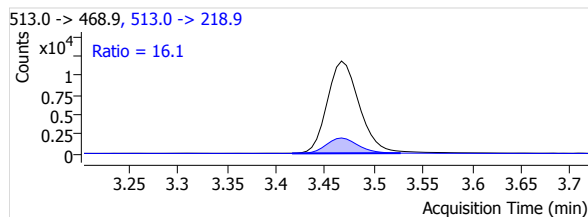
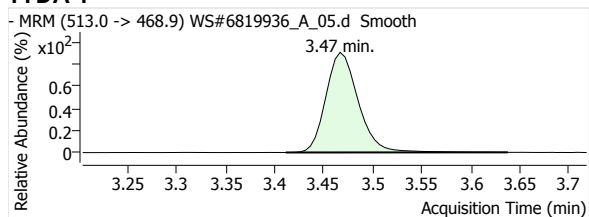
## PFOA 1



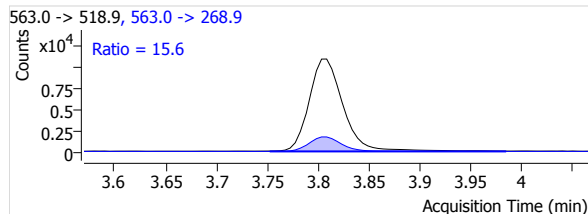
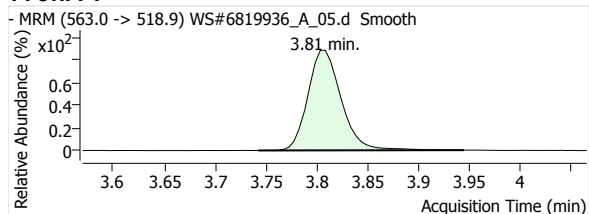
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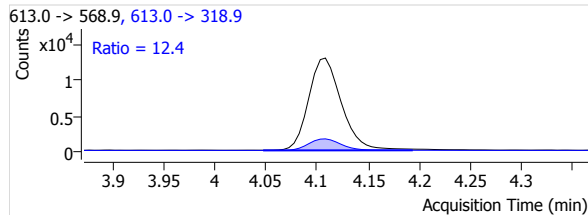
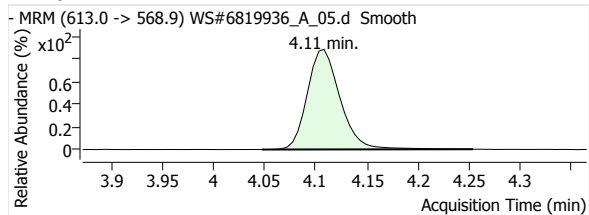
## PFDA 1



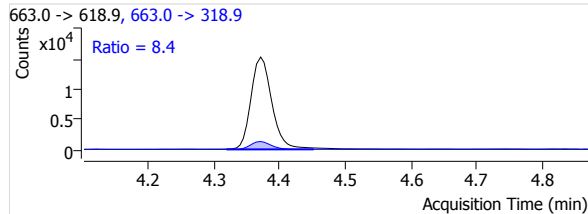
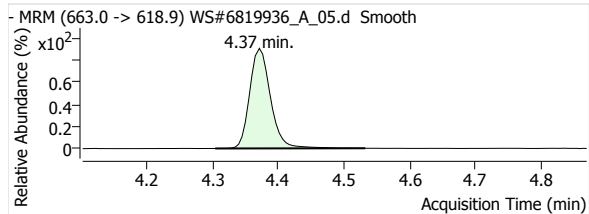
## PFUnA 1



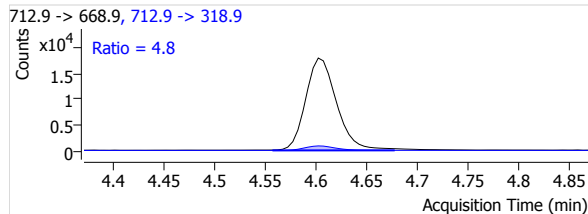
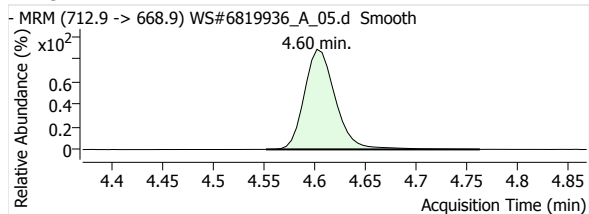
## PFDaA 1



## PFTrDA 1

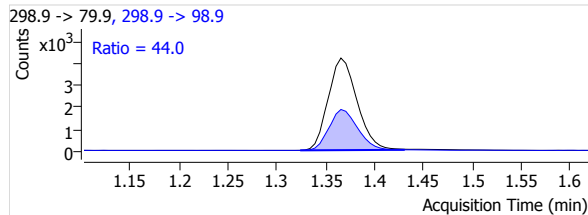
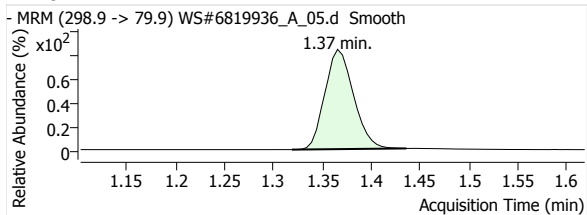


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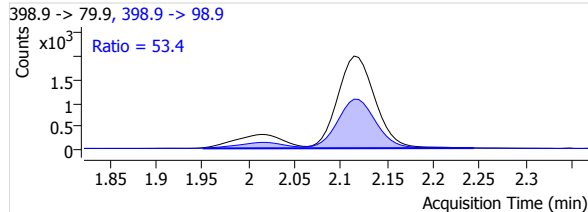
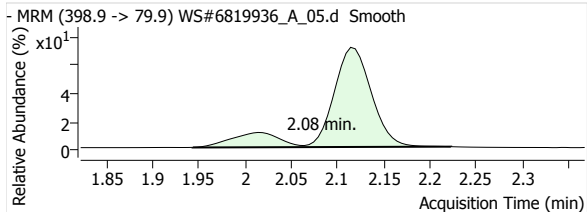


# Quantitative Analysis Report

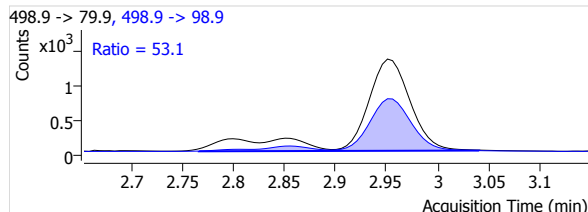
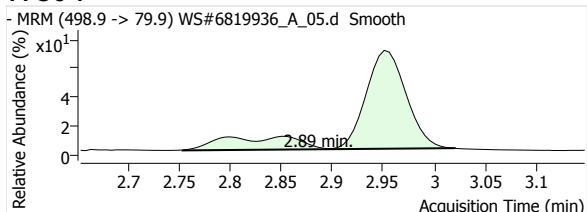
## PFBS 1



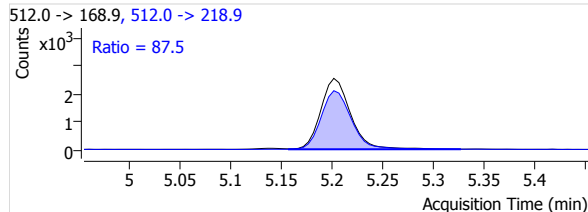
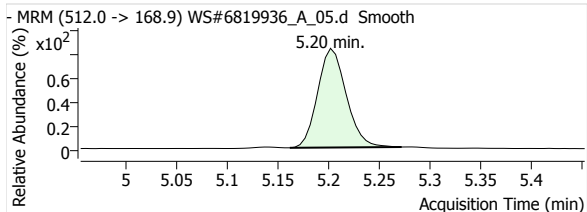
## PFHxS 1



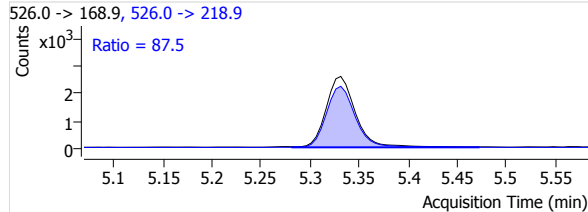
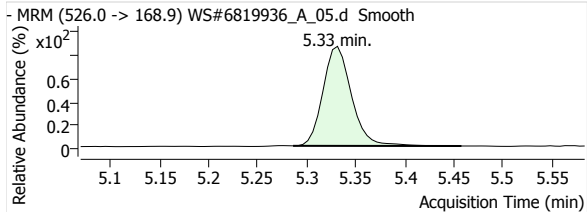
## PFOS 1



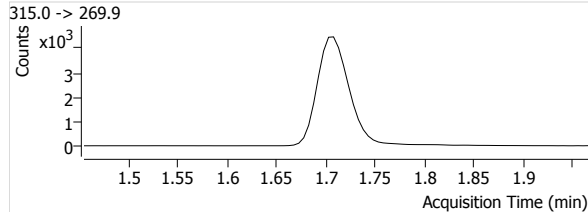
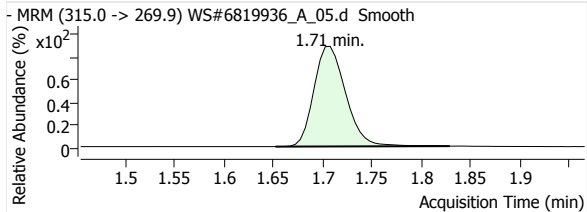
## MeFOSA 1



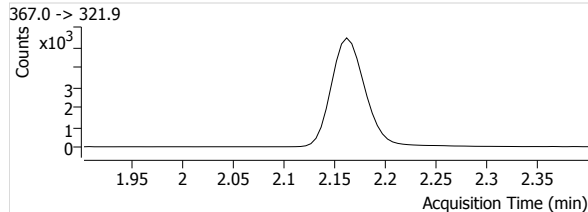
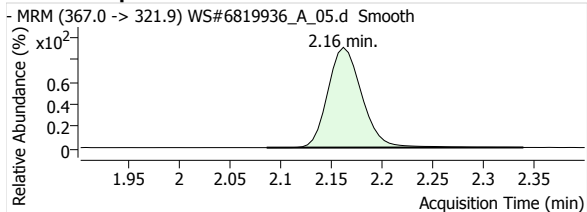
## eFOSA 1



## 13C2-PFHxA

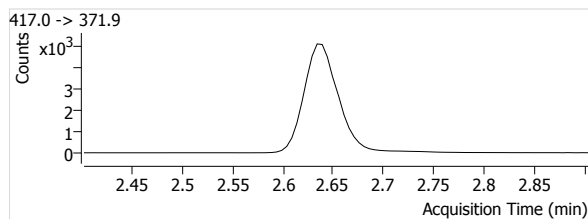
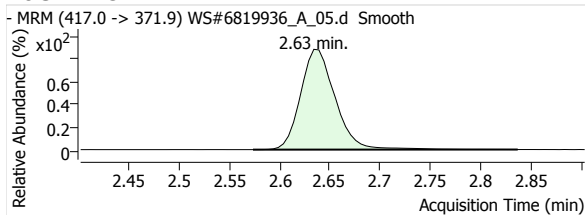


## 13C4-PFHpA

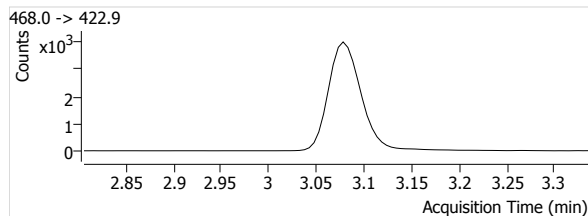
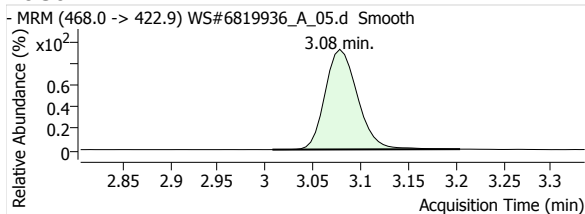


# Quantitative Analysis Report

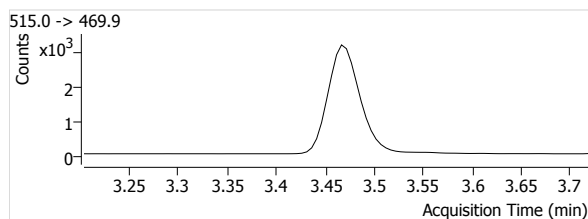
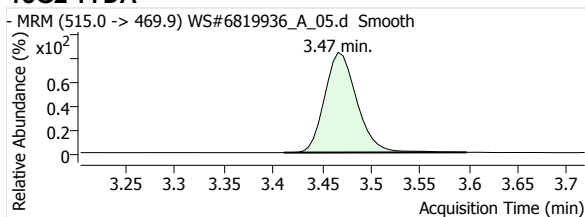
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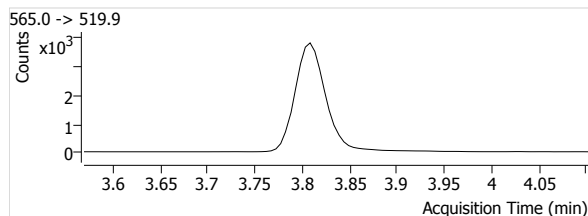
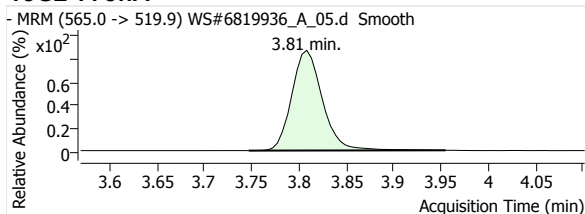
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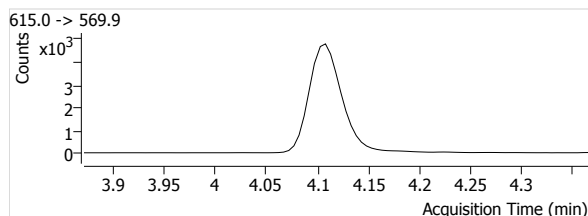
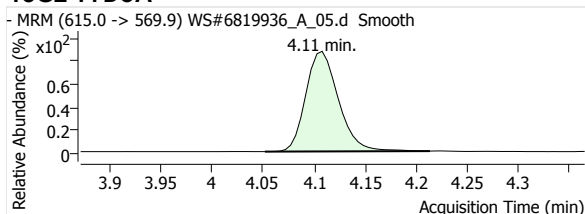
## 13C2-PFDA



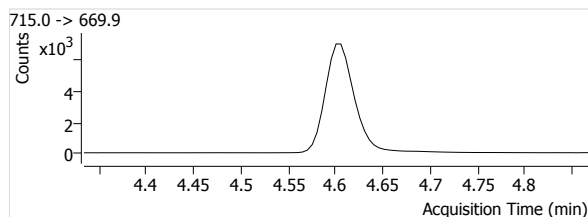
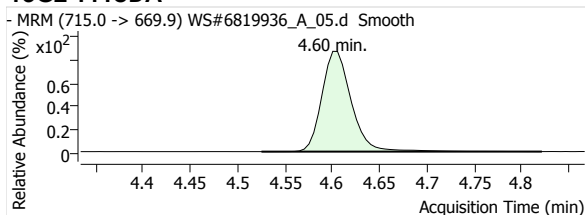
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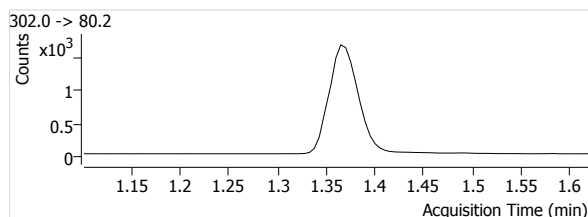
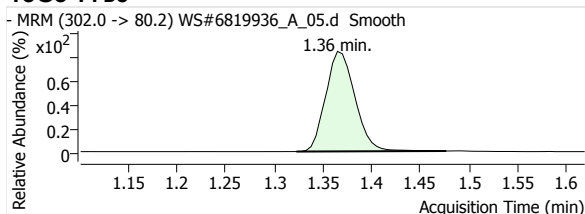
## 13C2-PFDoA



## 13C2-PFTeDA

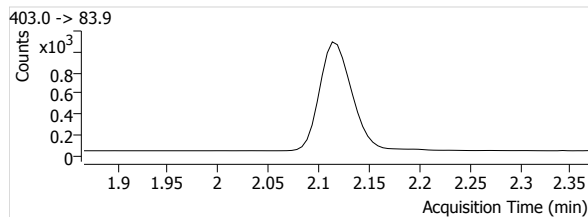
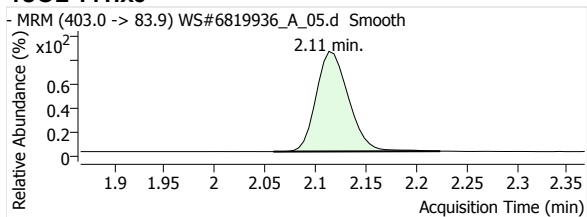


## 13C3-PFBS

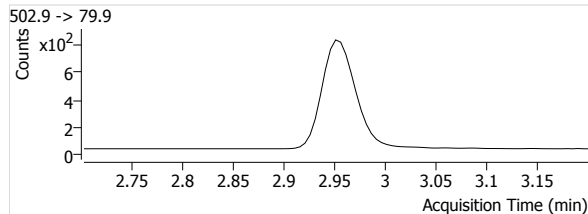
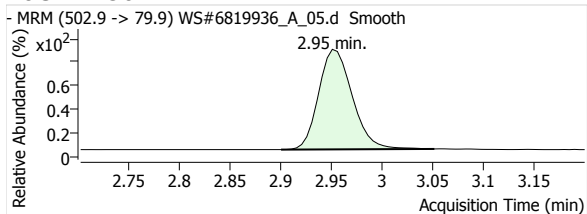


# Quantitative Analysis Report

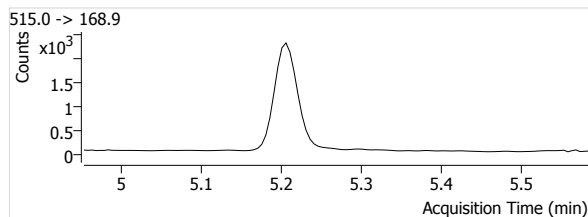
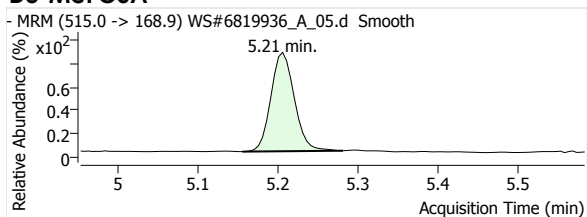
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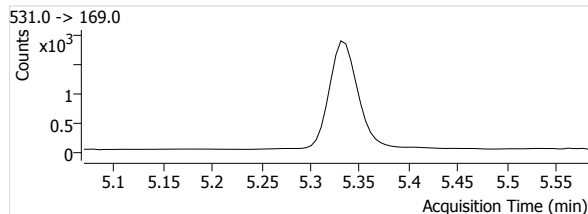
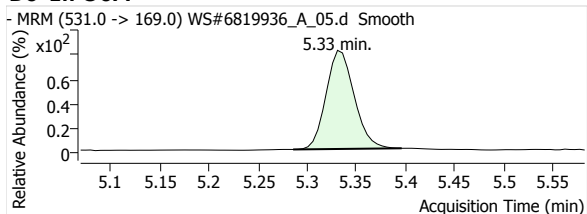
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA

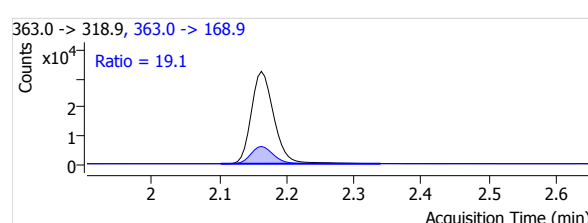
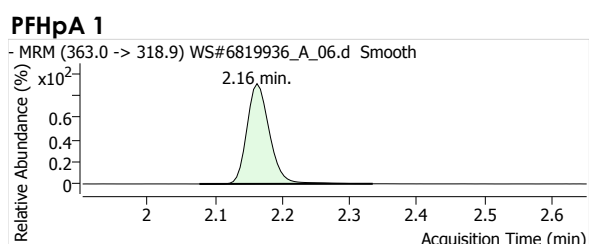
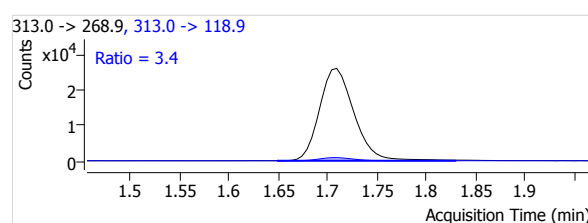
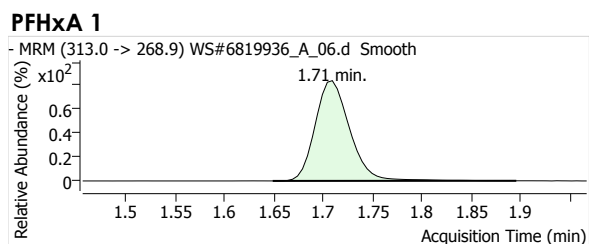


# Quantitative Analysis Report

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bin

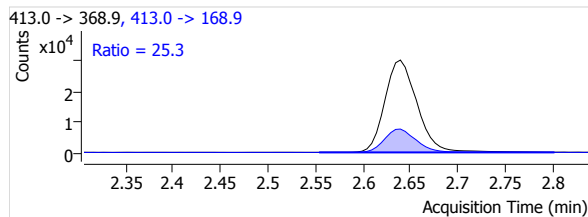
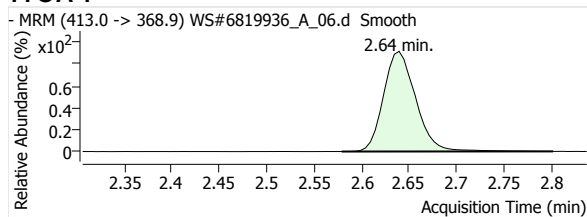
<b>Sample Name</b>	STD 5	<b>Data File</b>	WS#6819936_A_06.d
<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A6
<b>Acq. Date-Time</b>	2020/07/08 11:55:27 AM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	30.000	29.3917	98.0	64335	1.71	793	6.5143	2175	1.71	219	3.4
PFHpA 1	µg/L	30.000	29.8183	99.4	76144	2.16	1161	5.9932	14532	2.16	742	19.1
PFOA 1	µg/L	30.000	29.4851	98.3	69940	2.64	812	5.6508	17716	2.64	690	25.3
PFNA 1	µg/L	30.000	28.7525	95.8	50559	3.08	683	5.1475	11060	3.08	814	21.9
PFDA 1	µg/L	30.000	29.5340	98.4	53051	3.47	1022	7.4426	8981	3.47	712	16.9
PFUnA 1	µg/L	30.000	30.5884	102.0	49736	3.81	576	5.7900	7489	3.81	614	15.1
PFDoA 1	µg/L	30.000	29.6321	98.8	57492	4.11	668	5.2586	7118	4.11	232	12.4
PFTeDA 1	µg/L	30.000	29.2787	97.6	64686	4.37	644	4.0031	5355	4.37	132	8.3
PFTeDA 1	µg/L	30.000	29.5391	98.5	76389	4.60	1042	4.7273	3873	4.60	350	5.1
PFBS 1	µg/L	30.000	29.9422	99.8	16562	1.37	1528	4.8957	7288	1.37	505	44.0
PFHxS 1	µg/L	30.000	29.4507	98.2	12300	2.08	506	5.1313	6400	2.10	374	52.0
PFOS 1	µg/L	30.000	29.9662	99.9	8696	2.89	149	4.9267	4831	2.90	186	55.6
MeFOSA 1	µg/L	30.000	29.1400	97.1	9926	5.21	282	2.1030	8818	5.21	640	88.8
EtFOSA 1	µg/L	30.000	28.7334	95.8	10012	5.33	876	2.5149	8829	5.33	1499	88.2
13C2-PFHxA	µg/L	100.000	99.7072	99.7	9876	1.71	402		--	--	--	--
13C4-PFHpA	µg/L	100.000	99.8899	99.9	12705	2.16	379		--	--	--	--
13C4-PFOA	µg/L	100.000	104.5178	104.5	12377	2.64	413		--	--	--	--
13C5-PFNA	µg/L	100.000	105.4768	105.5	9822	3.08	595		--	--	--	--
13C2-PFDA	µg/L	100.000	99.6226	99.6	7128	3.47	257		--	--	--	--
13C2-PFUnA	µg/L	100.000	100.5031	100.5	8590	3.81	185		--	--	--	--
13C2-PFDoA	µg/L	100.000	104.4222	104.4	10933	4.11	409		--	--	--	--
13C2-PFTeDA	µg/L	100.000	105.5523	105.6	16159	4.61	1296		--	--	--	--
13C3-PFBS	µg/L	100.000	100.5051	100.5	3383	1.36	591		--	--	--	--
18O2-PFHxS	µg/L	100.000	102.6552	102.7	2397	2.12	184		--	--	--	--
13C4-PFOS	µg/L	100.000	97.5138	97.5	1765	2.96	175		--	--	--	--
D3-MeFOSA	µg/L	100.000	104.7725	104.8	4720	5.21	76		--	--	--	--
D5-EtFOSA	µg/L	100.000	108.5037	108.5	3981	5.34	143		--	--	--	--

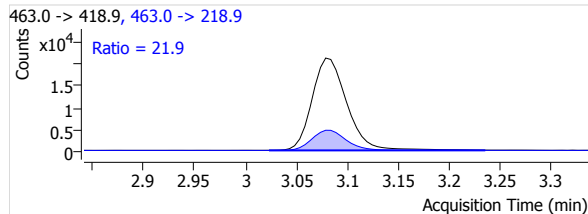
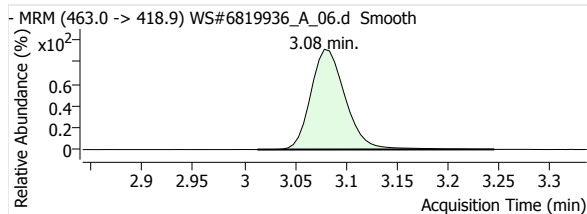


# Quantitative Analysis Report

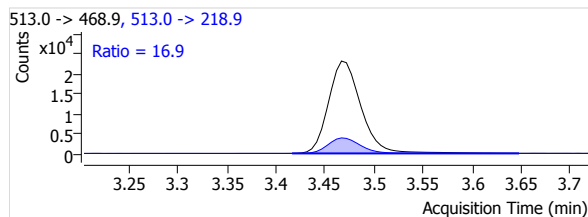
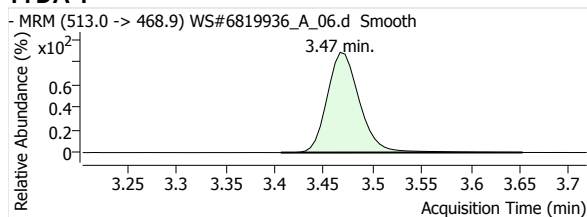
## PFOA 1



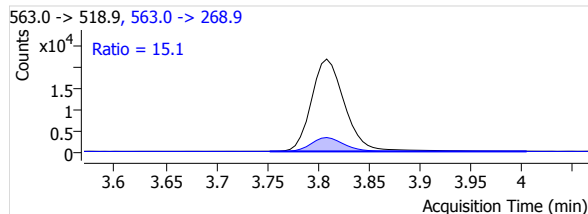
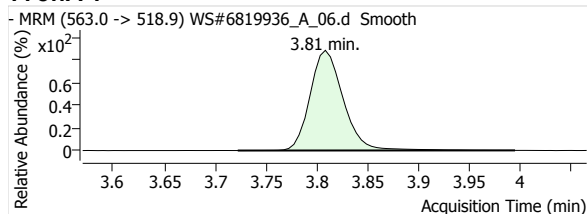
## PFNA 1



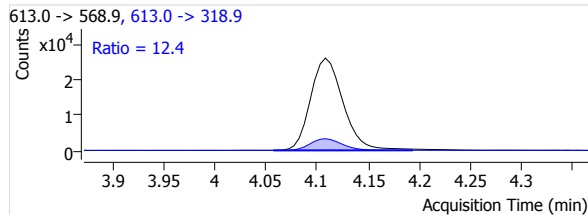
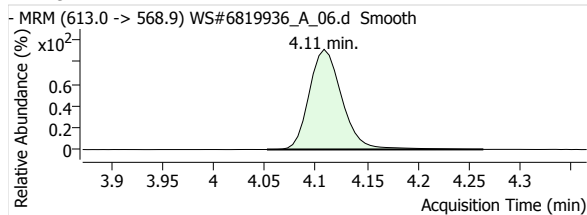
## PFDA 1



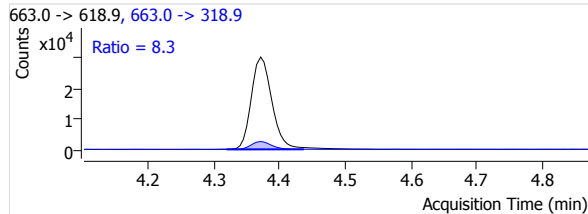
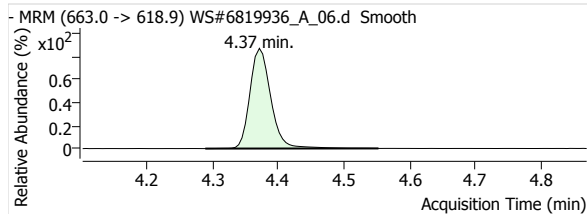
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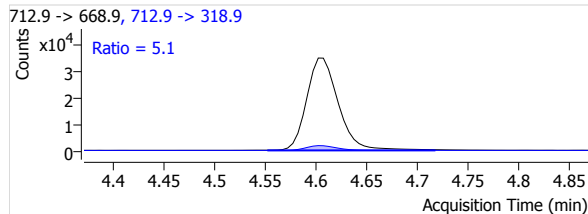
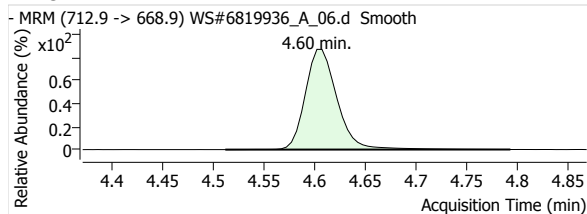
## PFDaA 1



## PFTrDA 1

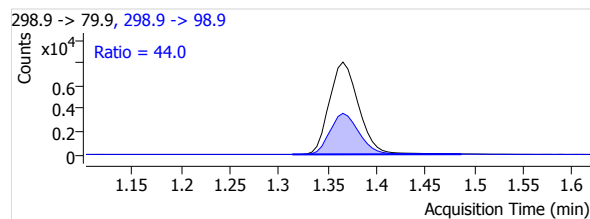
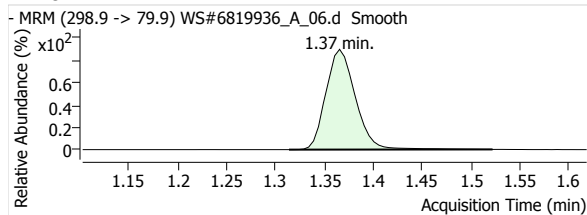


## PFTeDA 1

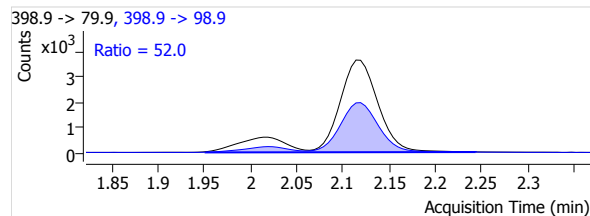
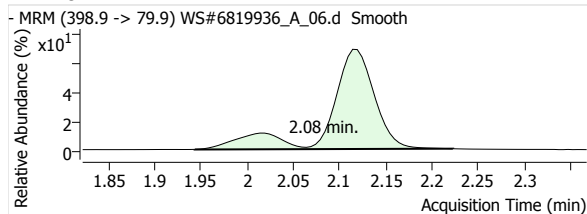


# Quantitative Analysis Report

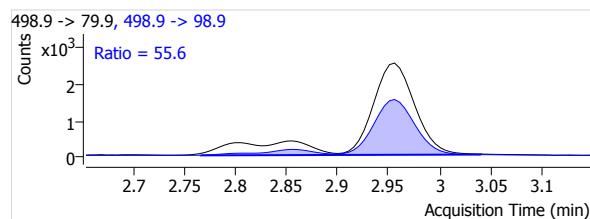
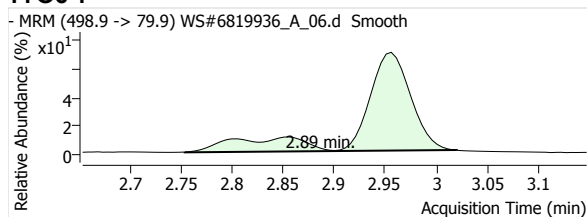
## PFBS 1



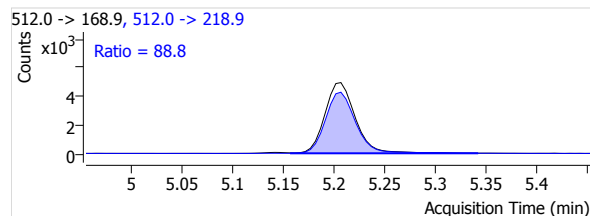
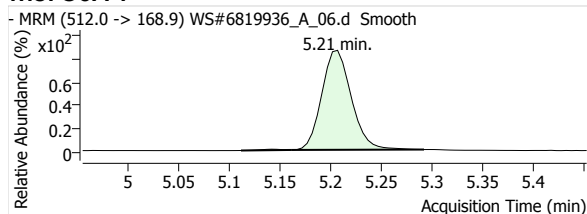
## PFHxS 1



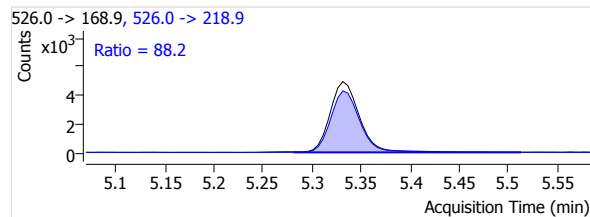
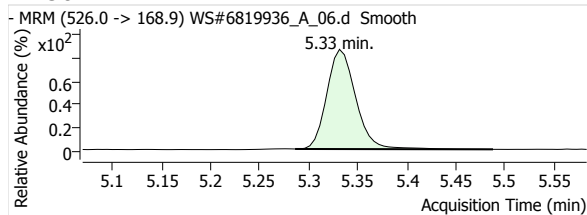
## PFOS 1



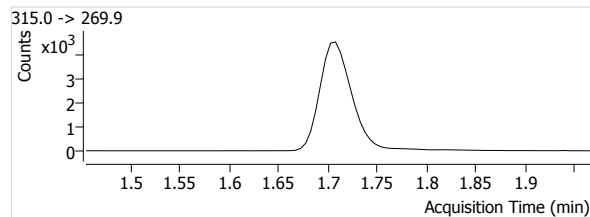
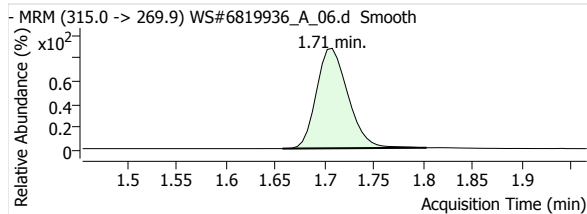
## MeFOSA 1



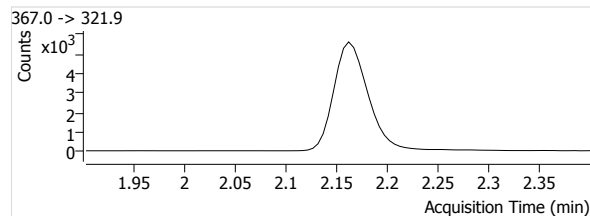
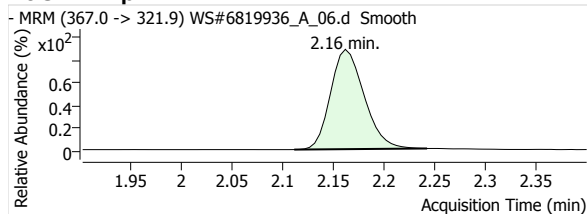
## eFOSA 1



## 13C2-PFHxA



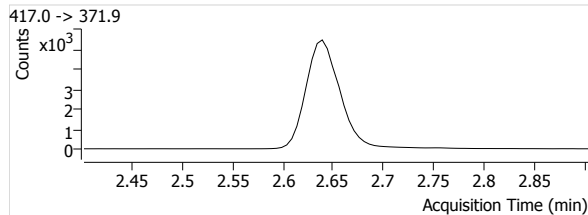
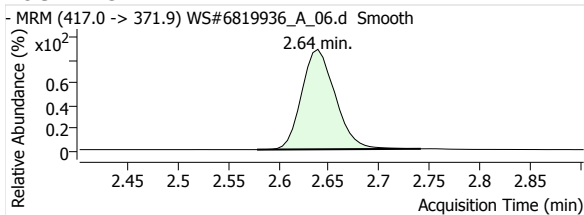
## 13C4-PFHpA



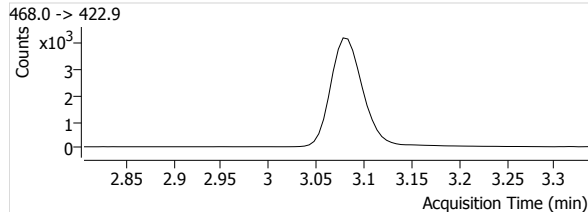
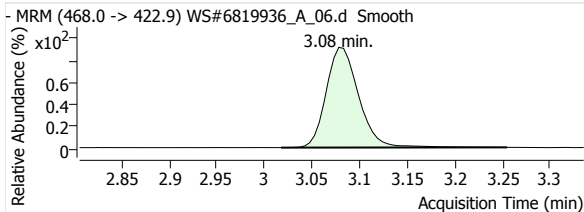


# Quantitative Analysis Report

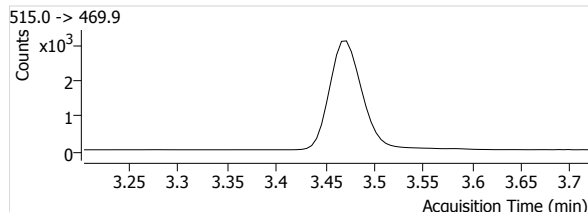
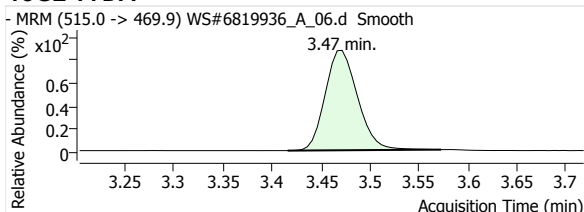
## 13C4-PFOA



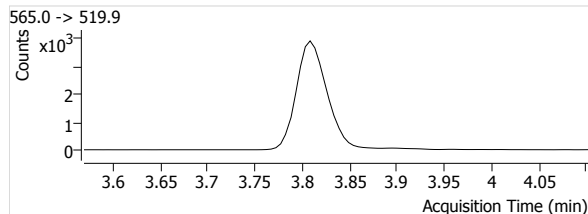
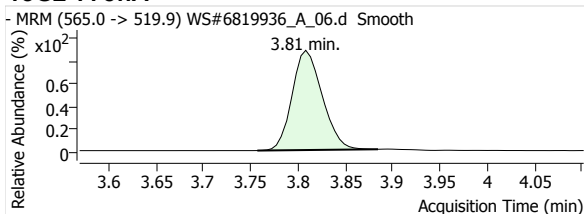
## 13C5-PFNA



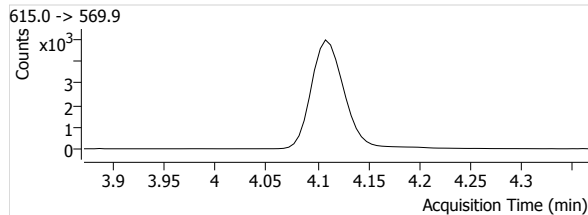
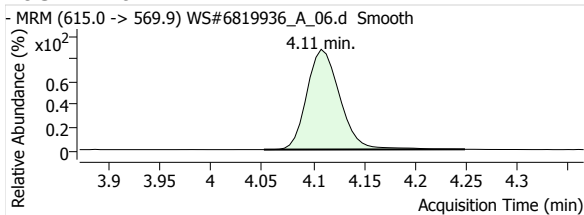
## 13C2-PFDA



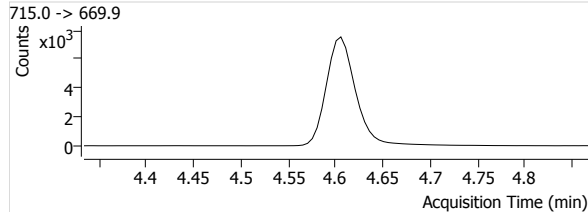
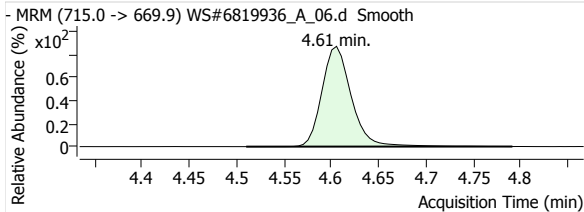
## 13C2-PFUnA



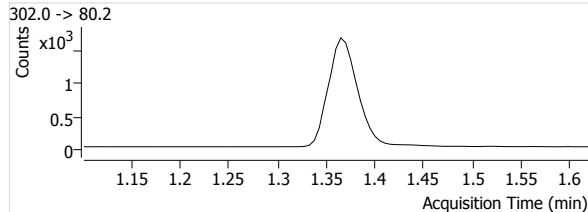
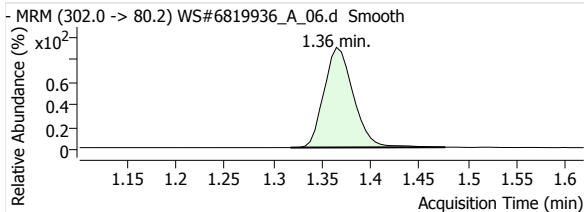
## 13C2-PFDoA



## 13C2-PFTeDA

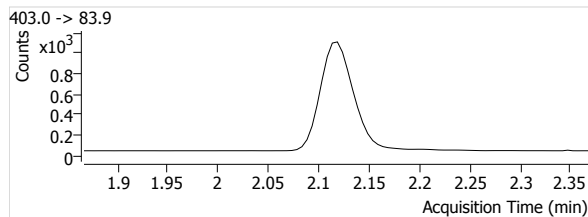
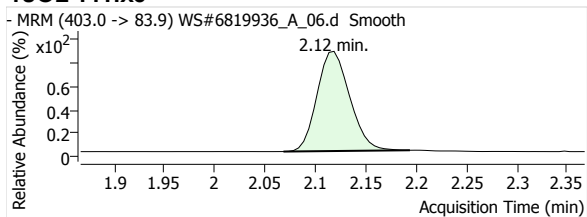


## 13C3-PFBS

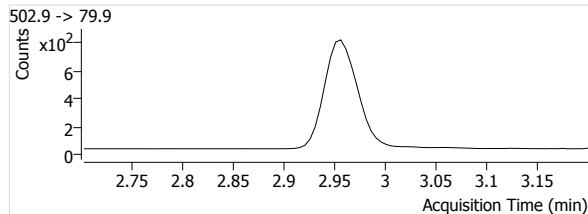
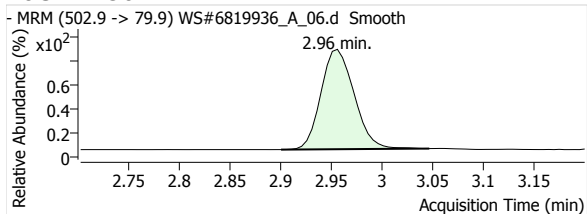


# Quantitative Analysis Report

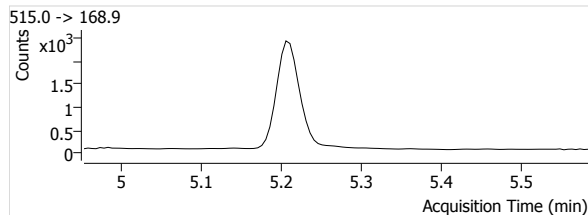
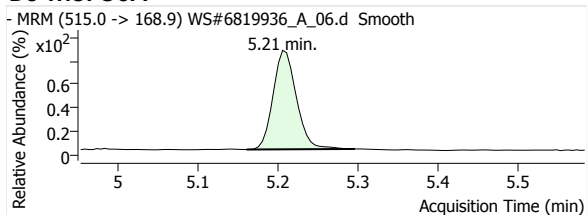
## 18O2-PFHxS



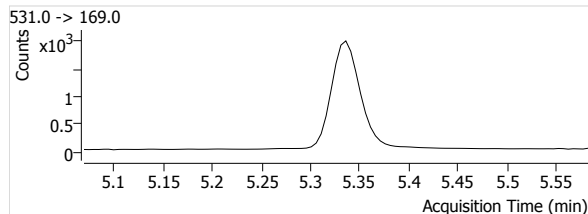
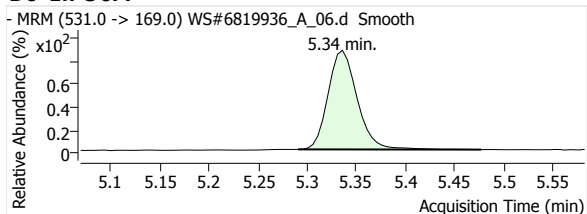
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



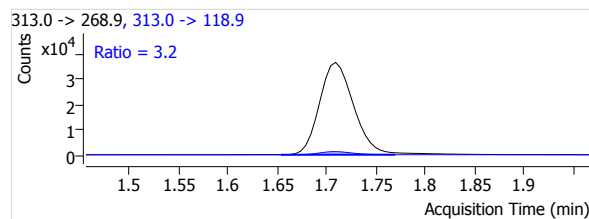
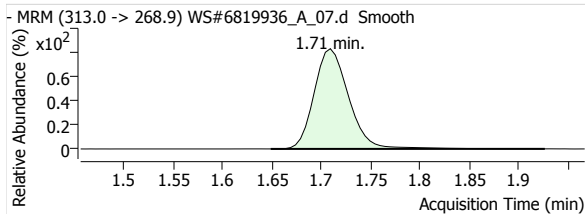
# Quantitative Analysis Report

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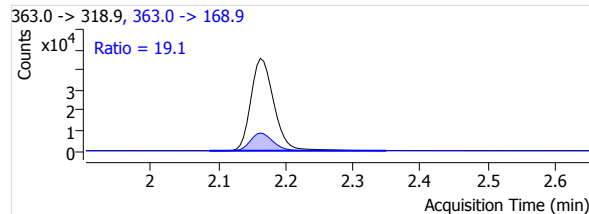
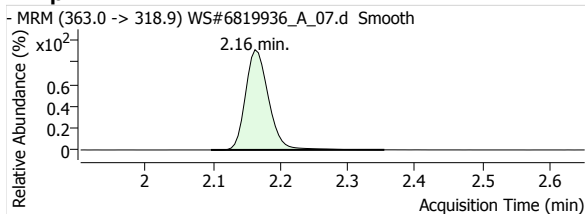
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<b>Type</b>	Calibration	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A7
<b>Acq. Date-Time</b>	2020/07/08 12:02:25 PM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	41.700	43.0569	103.3	89947	1.71	1530	9.5648	2878	1.71	260	3.2
PFHpA 1	µg/L	41.700	42.7503	102.5	108331	2.16	1682	8.6093	20744	2.16	974	19.1
PFOA 1	µg/L	41.700	42.9285	102.9	100196	2.64	1543	8.2425	25236	2.64	1044	25.2
PFNA 1	µg/L	41.700	43.9492	105.4	72937	3.08	893	7.8842	15730	3.08	491	21.6
PFDA 1	µg/L	41.700	43.1103	103.4	75876	3.47	1298	10.8767	12823	3.47	1184	16.9
PFUnA 1	µg/L	41.700	42.1667	101.1	70674	3.80	783	7.9903	10637	3.80	782	15.1
PFDoA 1	µg/L	41.700	42.3321	101.5	83509	4.11	747	7.5227	10225	4.11	459	12.2
PFTeDA 1	µg/L	41.700	42.8958	102.9	93074	4.37	1120	5.8737	7641	4.37	439	8.2
PFTeDA 1	µg/L	41.700	42.7432	102.5	108577	4.60	1600	6.8520	5478	4.60	791	5.0
PFBS 1	µg/L	41.700	42.4597	101.8	23515	1.37	713	6.9489	10366	1.37	423	44.1
PFHxS 1	µg/L	41.700	42.6518	102.3	17586	2.08	435	7.4392	9328	2.10	413	53.0
PFOS 1	µg/L	41.700	42.5041	101.9	12320	2.89	163	6.9962	6988	2.90	244	56.7
MeFOSA 1	µg/L	41.700	43.8197	105.1	14530	5.20	600	3.1676	12502	5.20	522	86.0
EtFOSA 1	µg/L	41.700	42.9681	103.0	14645	5.33	667	3.7687	12375	5.33	934	84.5
13C2-PFHxA	µg/L	100.000	94.9419	94.9	9404	1.71	453		--	--	--	--
13C4-PFHpA	µg/L	100.000	98.9307	98.9	12583	2.16	823		--	--	--	--
13C4-PFOA	µg/L	100.000	102.6516	102.7	12156	2.64	556		--	--	--	--
13C5-PFNA	µg/L	100.000	99.3449	99.3	9251	3.08	466		--	--	--	--
13C2-PFDA	µg/L	100.000	97.4983	97.5	6976	3.47	539		--	--	--	--
13C2-PFUnA	µg/L	100.000	103.4866	103.5	8845	3.81	930		--	--	--	--
13C2-PFDoA	µg/L	100.000	106.0267	106.0	11101	4.11	708		--	--	--	--
13C2-PFTeDA	µg/L	100.000	103.5077	103.5	15846	4.60	1320		--	--	--	--
13C3-PFBS	µg/L	100.000	100.5348	100.5	3384	1.36	483		--	--	--	--
18O2-PFHxS	µg/L	100.000	101.2420	101.2	2364	2.12	299		--	--	--	--
13C4-PFOS	µg/L	100.000	97.2928	97.3	1761	2.96	159		--	--	--	--
D3-MeFOSA	µg/L	100.000	101.8202	101.8	4587	5.21	70		--	--	--	--
D5-EtFOSA	µg/L	100.000	105.9144	105.9	3886	5.33	87		--	--	--	--

### PFHxA 1

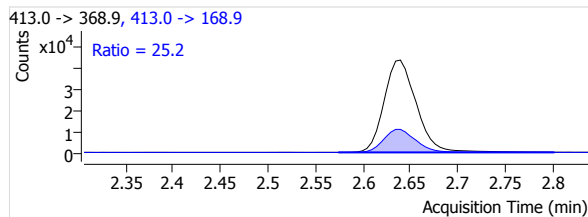
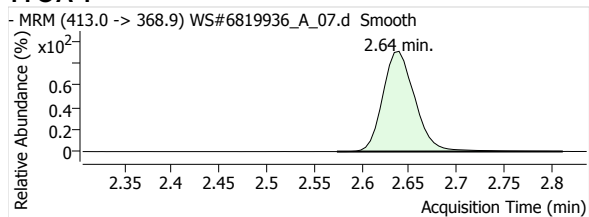


### PFHpA 1

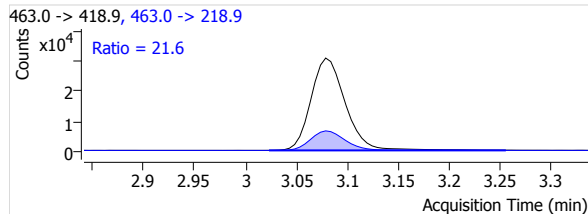
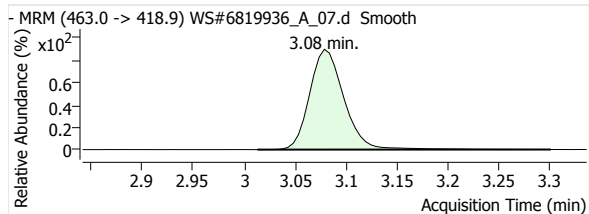


# Quantitative Analysis Report

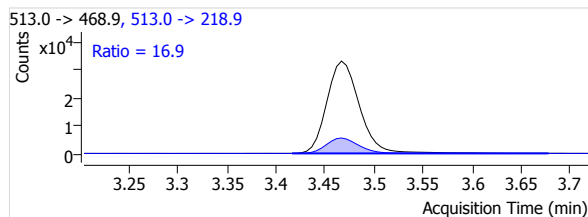
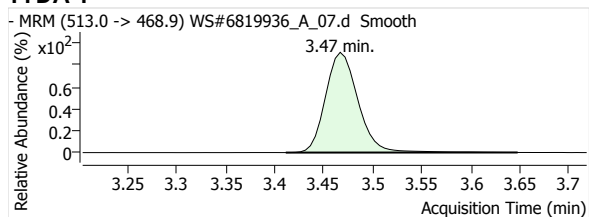
## PFOA 1



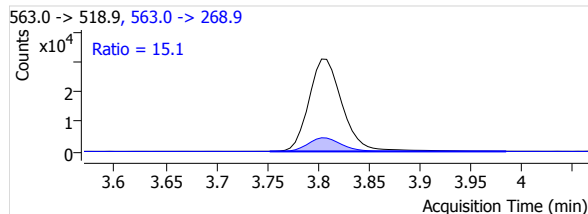
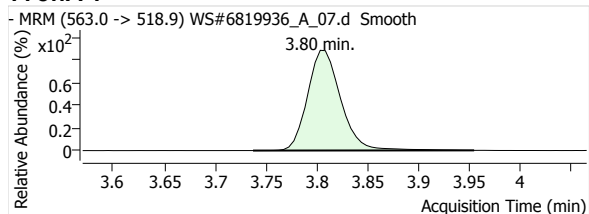
## PFNA 1



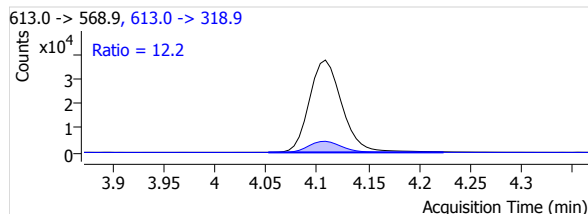
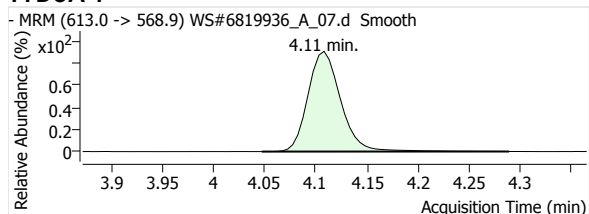
## PFDA 1



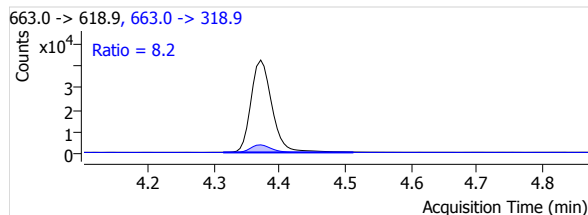
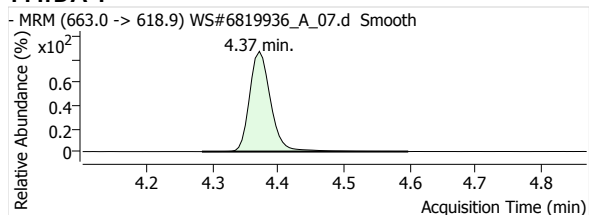
## PFUnA 1



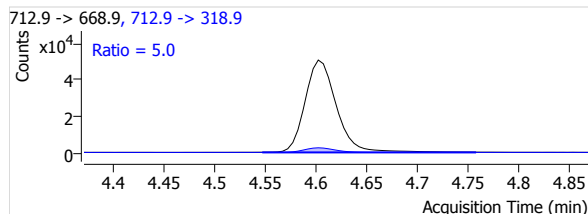
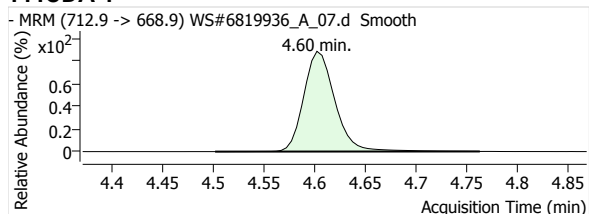
## PFDaA 1



## PFTrDA 1

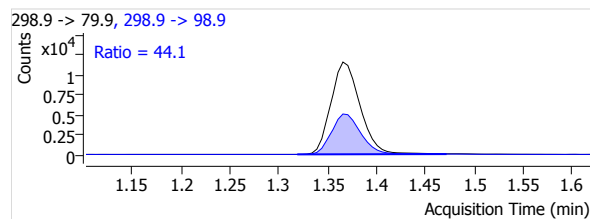
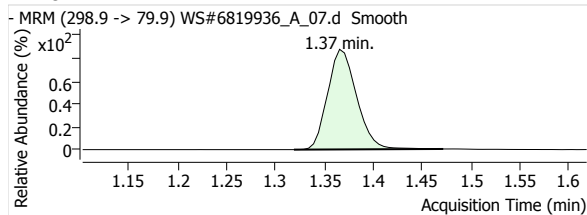


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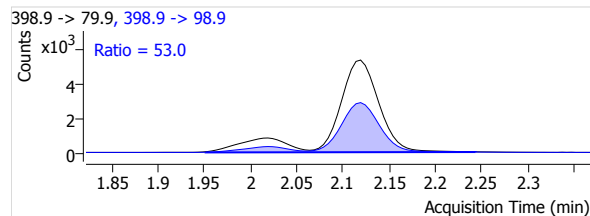
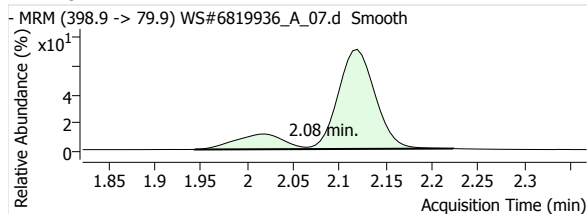


# Quantitative Analysis Report

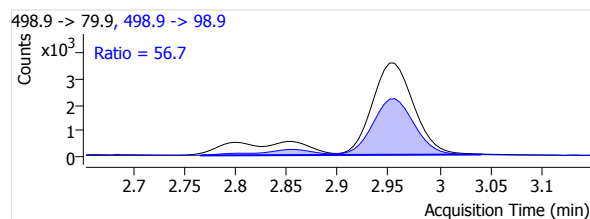
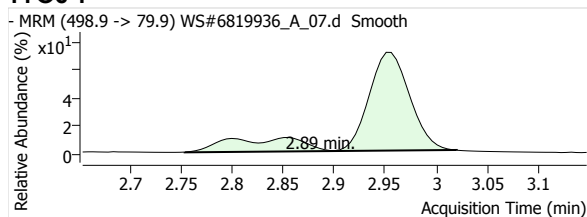
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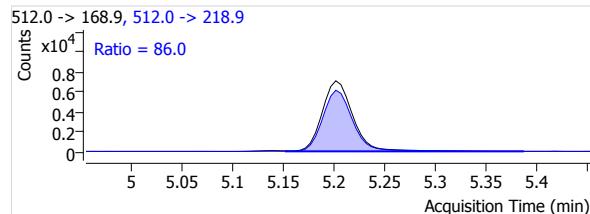
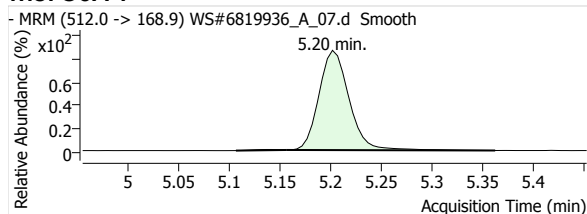
## PFHxS 1



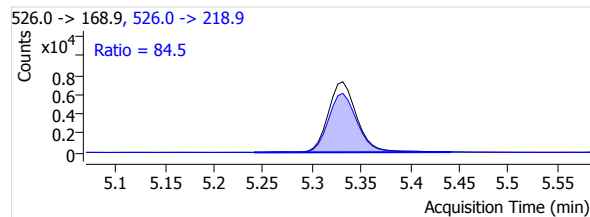
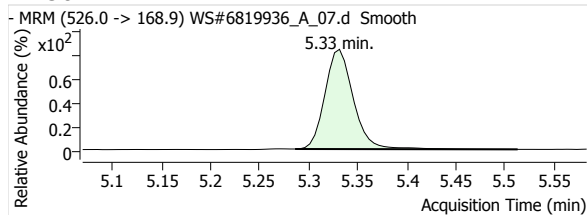
## PFOS 1



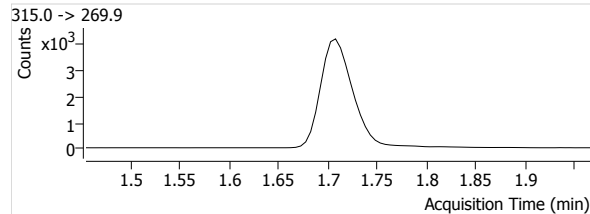
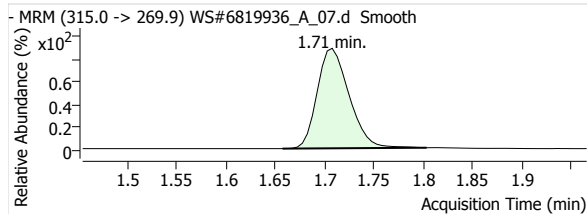
## MeFOSA 1



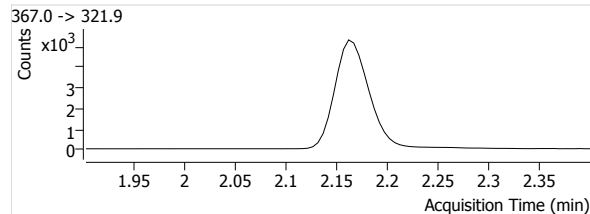
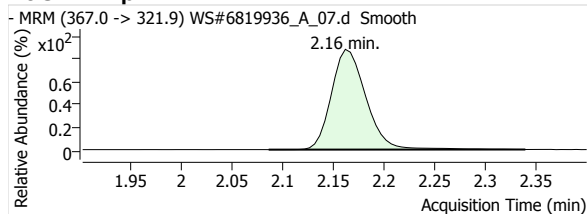
## eFOSA 1



## 13C2-PFHxA

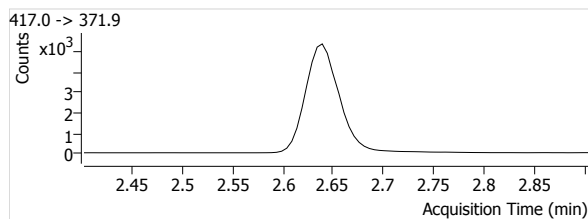
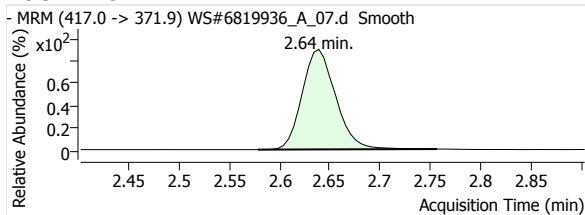


## 13C4-PFHpA

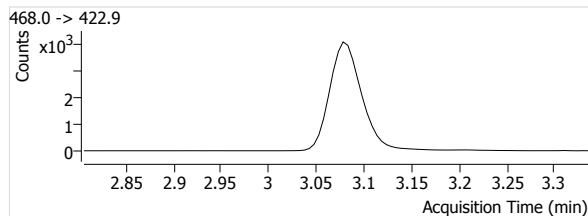
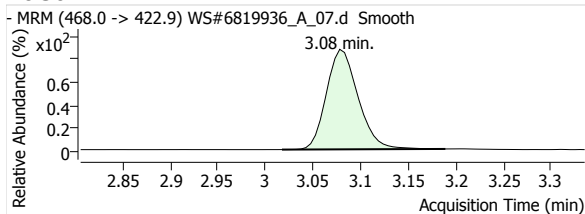


# Quantitative Analysis Report

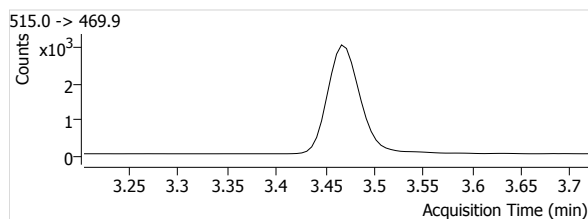
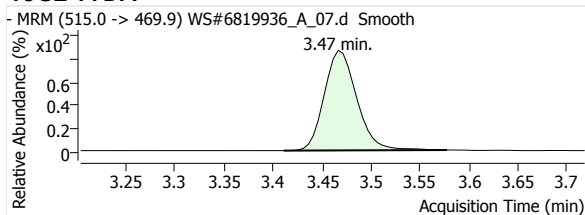
## 13C4-PFOA



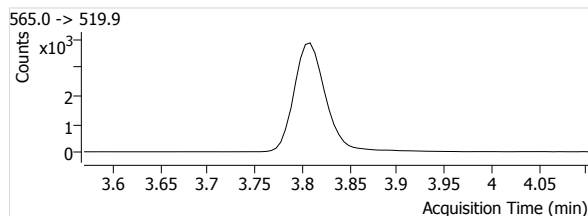
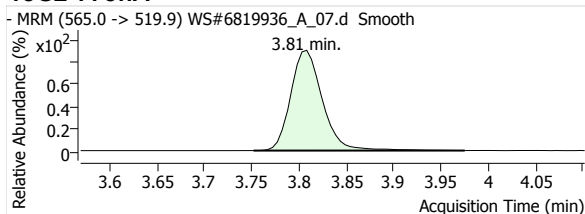
## 13C5-PFNA



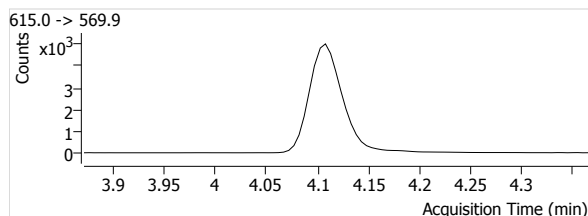
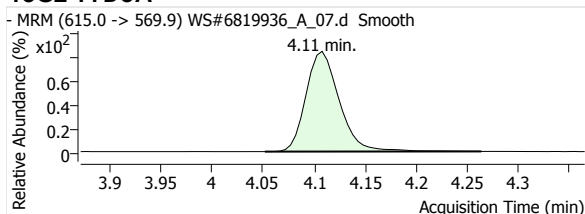
## 13C2-PFDA



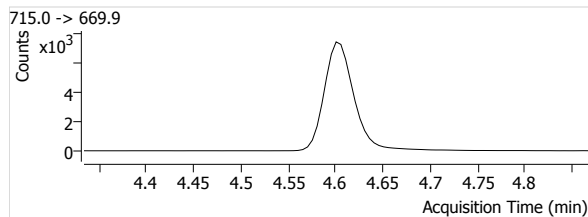
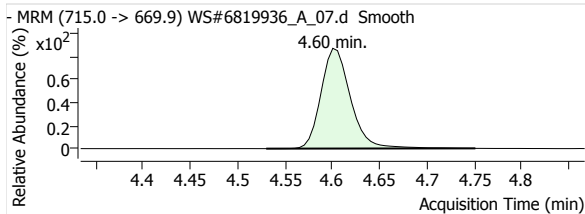
## 13C2-PFUnA



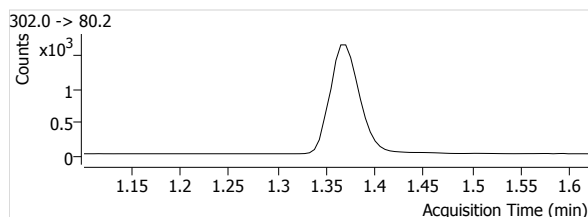
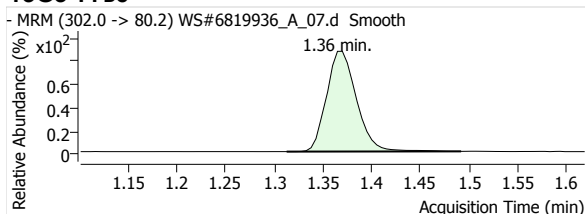
## 13C2-PFDoA



## 13C2-PFTeDA

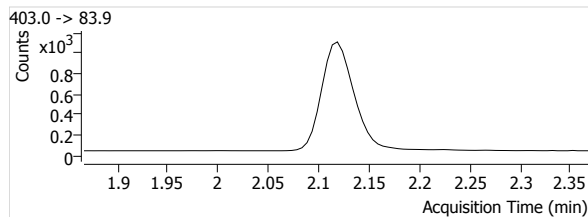
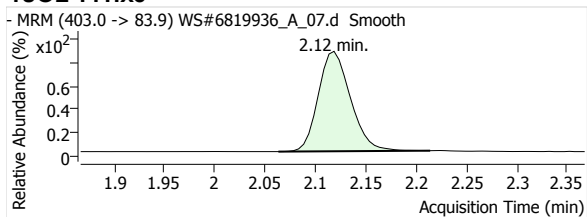


## 13C3-PFBS

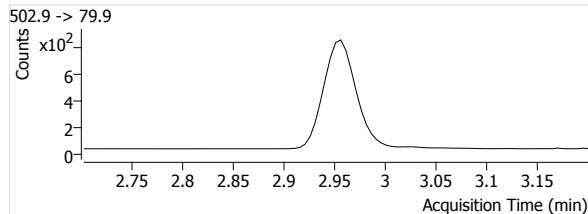
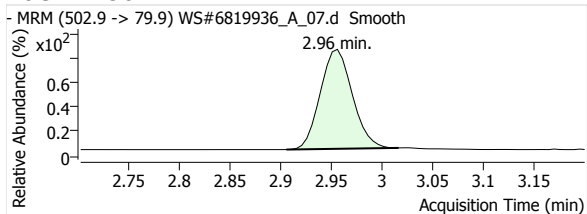


# Quantitative Analysis Report

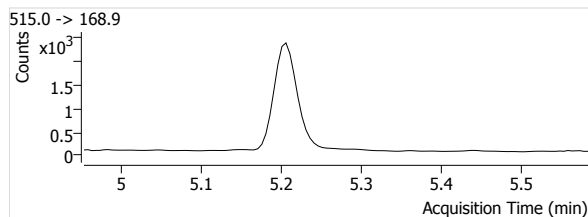
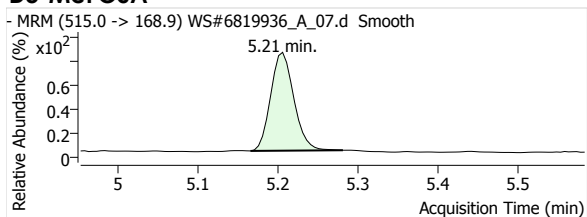
## 18O2-PFHxs



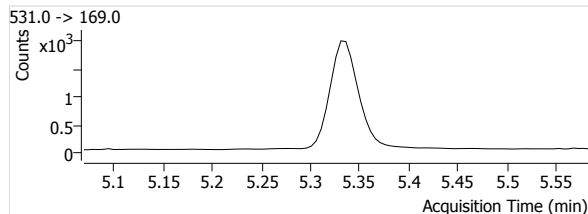
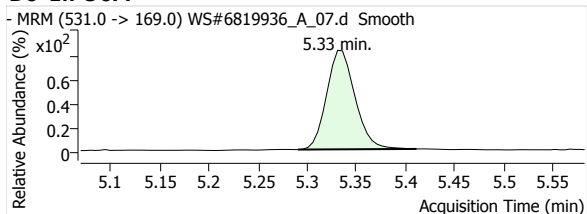
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



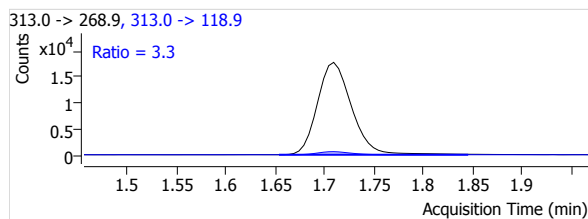
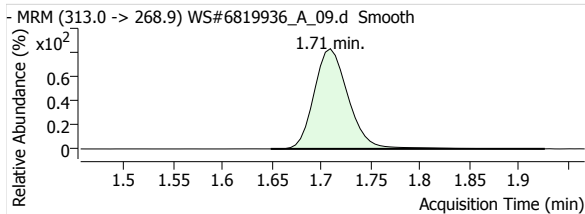
# Quantitative Analysis Report

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bin

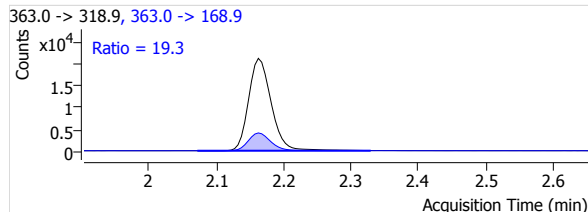
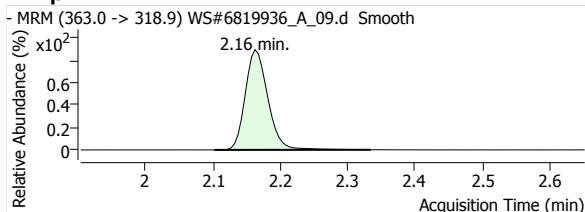
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<b>Type</b>	QC	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A9
<b>Acq. Date-Time</b>	2020/07/08 12:16:20 PM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	20.000	19.0071	95.0	42939	1.71	836	4.1961	1415	1.71	119	3.3
PFHpA 1	µg/L	20.000	18.7317	93.7	50001	2.16	1065	3.7505	9633	2.16	335	19.3
PFOA 1	µg/L	20.000	19.0457	95.2	45816	2.64	708	3.6382	11251	2.63	821	24.6
PFNA 1	µg/L	20.000	19.3431	96.7	32707	3.08	396	3.4530	7366	3.08	324	22.5
PFDA 1	µg/L	20.000	19.5186	97.6	35106	3.47	676	4.9092	5926	3.47	414	16.9
PFUnA 1	µg/L	20.000	18.9788	94.9	32795	3.81	338	3.5838	5094	3.80	457	15.5
PFDoA 1	µg/L	20.000	18.6830	93.4	37732	4.11	383	3.3066	4893	4.11	473	13.0
PFTeDA 1	µg/L	20.000	19.5395	97.7	43827	4.37	472	2.6652	3660	4.37	159	8.4
PFTeDA 1	µg/L	20.000	19.0323	95.2	49935	4.61	691	3.0367	2525	4.60	278	5.1
PFBS 1	µg/L	20.000	18.6700	93.3	10706	1.37	1539	3.0467	4675	1.37	227	43.7
PFHxS 1	µg/L	20.000	19.4373	97.2	8056	2.08	425	3.3807	4343	2.10	290	53.9
PFOS 1	µg/L	20.000	18.7830	93.9	5777	2.89	104	3.0808	3180	2.90	172	55.1
MeFOSA 1	µg/L	20.000	19.9500	99.8	6678	5.20	429	1.4364	5860	5.20	497	87.8
EtFOSA 1	µg/L	20.000	19.3634	96.8	6556	5.33	640	1.6897	5800	5.33	858	88.5
13C2-PFHxA	µg/L	100.000	103.3115	103.3	10233	1.71	513		--	--	--	--
13C4-PFHpA	µg/L	100.000	104.8196	104.8	13332	2.16	874		--	--	--	--
13C4-PFOA	µg/L	100.000	106.3418	106.3	12593	2.64	917		--	--	--	--
13C5-PFNA	µg/L	100.000	101.7182	101.7	9472	3.08	334		--	--	--	--
13C2-PFDA	µg/L	100.000	99.9441	99.9	7151	3.47	226		--	--	--	--
13C2-PFUnA	µg/L	100.000	107.0668	107.1	9151	3.81	778		--	--	--	--
13C2-PFDoA	µg/L	100.000	108.9876	109.0	11411	4.11	1206		--	--	--	--
13C2-PFTeDA	µg/L	100.000	107.4139	107.4	16444	4.61	707		--	--	--	--
13C3-PFBS	µg/L	100.000	104.3969	104.4	3514	1.36	500		--	--	--	--
18O2-PFHxS	µg/L	100.000	102.0557	102.1	2383	2.12	273		--	--	--	--
13C4-PFOS	µg/L	100.000	103.5912	103.6	1875	2.95	233		--	--	--	--
D3-MeFOSA	µg/L	100.000	103.1964	103.2	4649	5.21	78		--	--	--	--
D5-EtFOSA	µg/L	100.000	105.7509	105.8	3880	5.34	98		--	--	--	--

### PFHxA 1



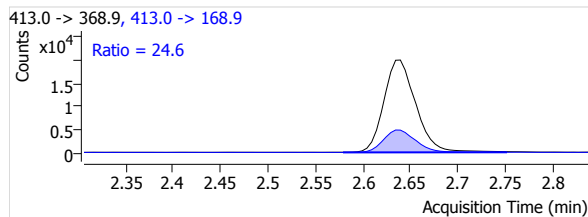
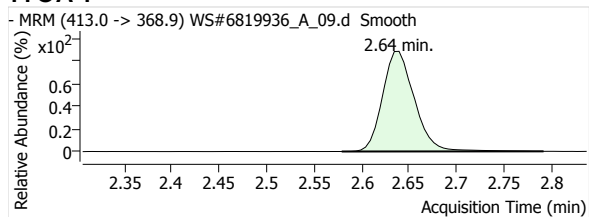
### PFHpA 1



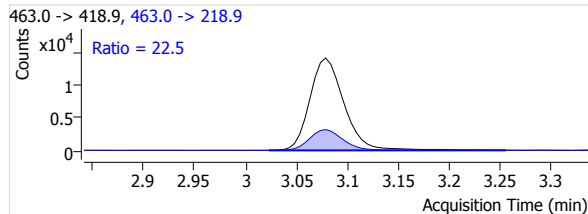
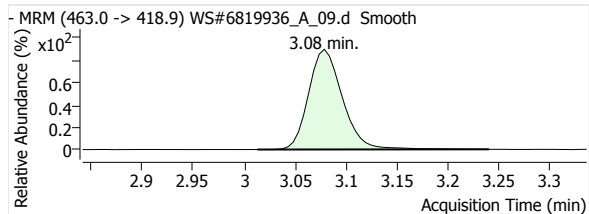


# Quantitative Analysis Report

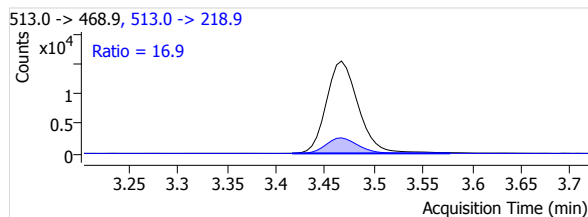
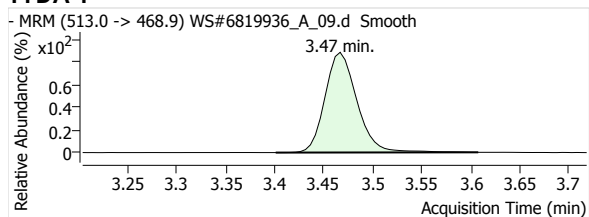
## PFOA 1



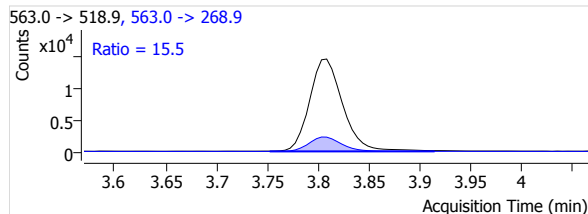
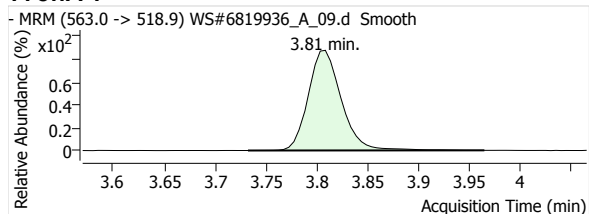
## PFNA 1



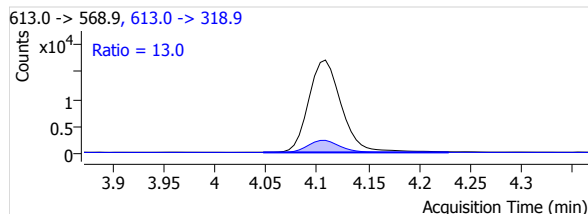
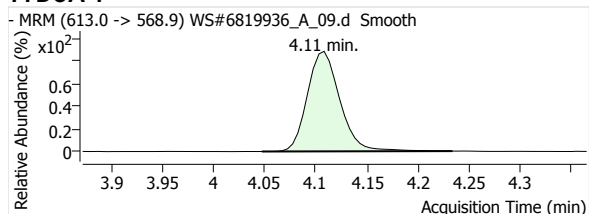
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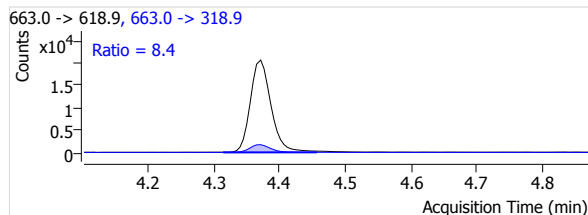
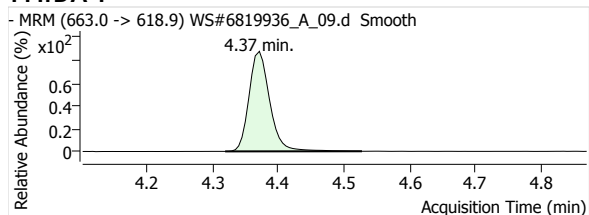
## PFUnA 1



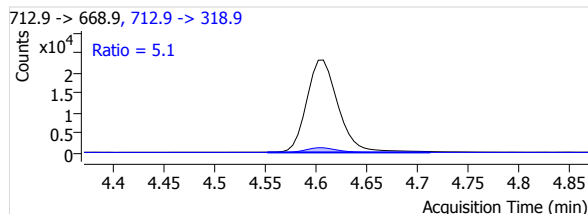
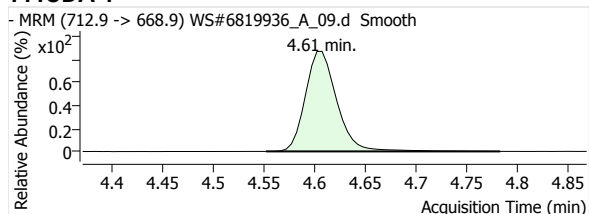
## PFDaA 1



## PFTrDA 1

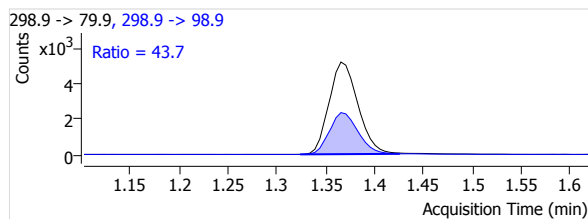
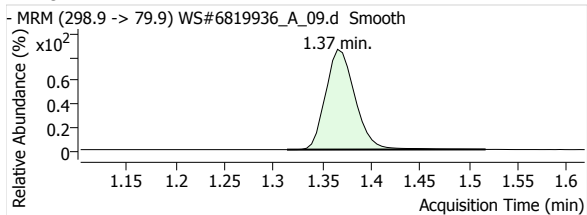


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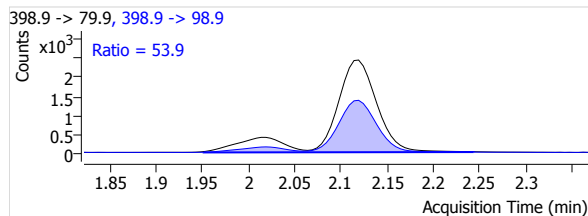
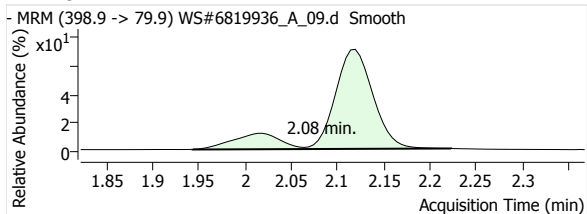


# Quantitative Analysis Report

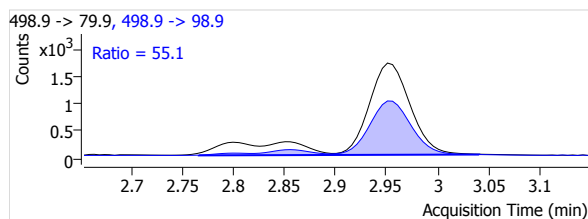
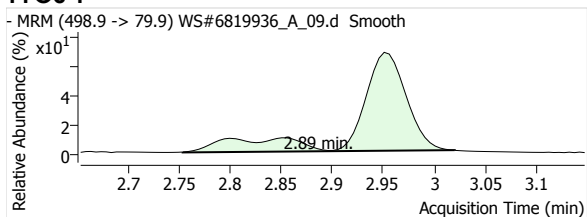
## PFBS 1



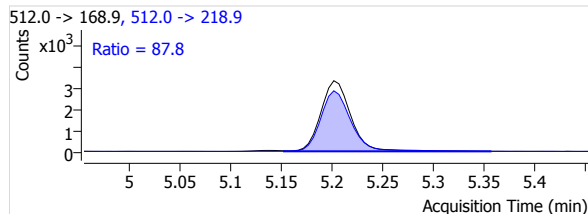
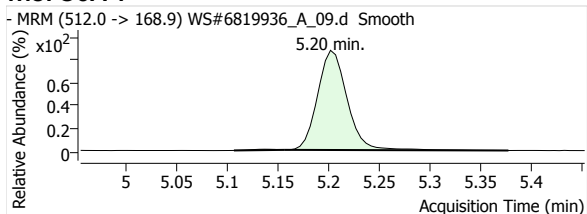
## PFHxS 1



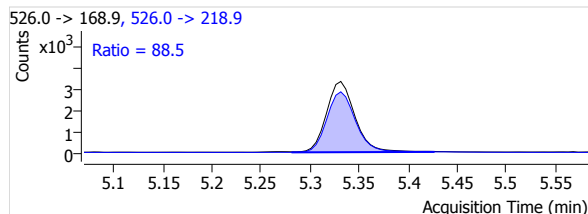
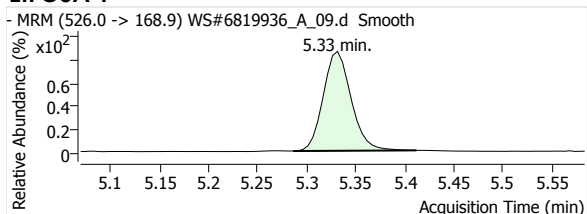
## PFOS 1



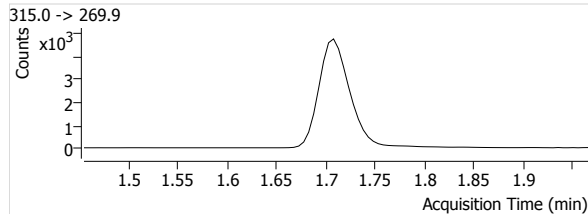
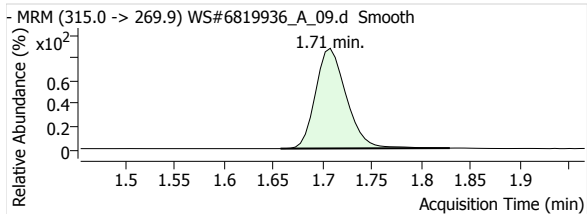
## MeFOSA 1



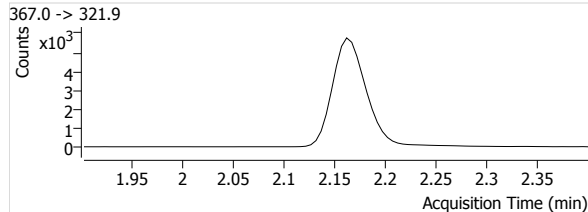
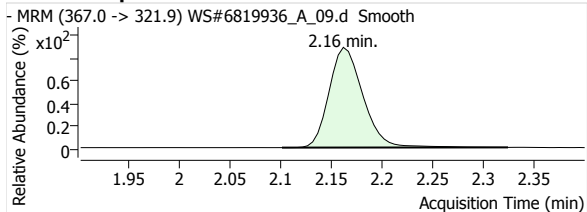
## eFOSA 1



## 13C2-PFHxA

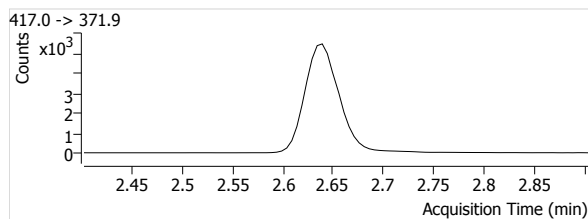
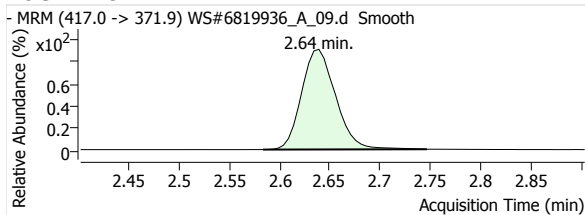


## 13C4-PFHpA

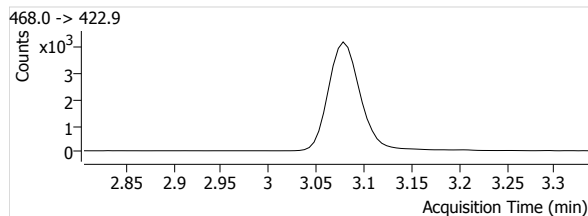
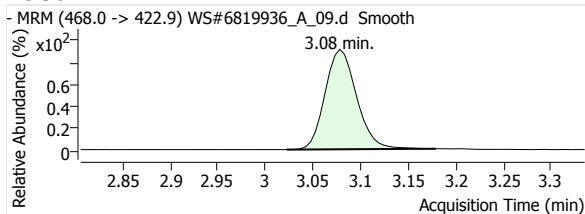


# Quantitative Analysis Report

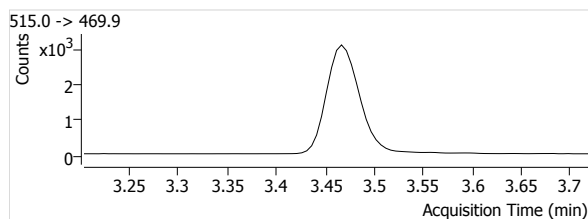
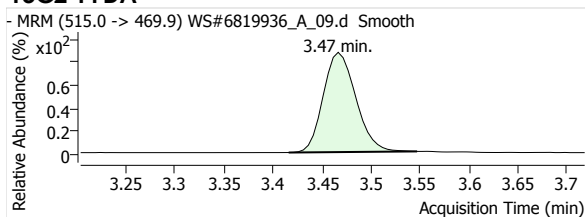
## 13C4-PFOA



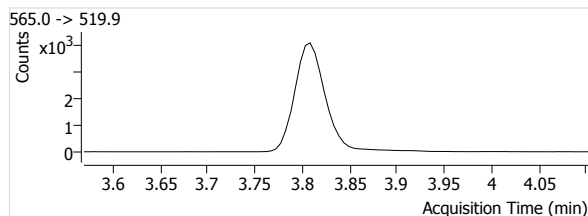
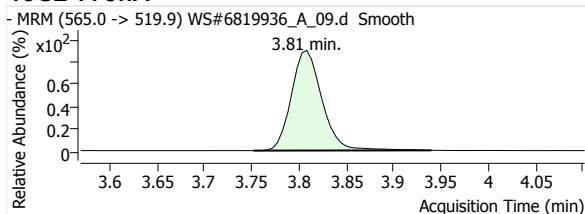
## 13C5-PFNA



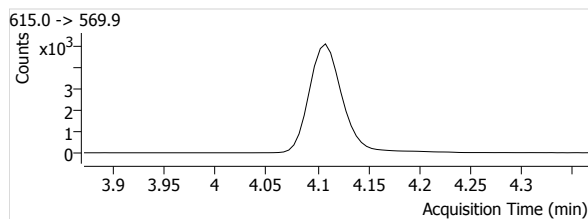
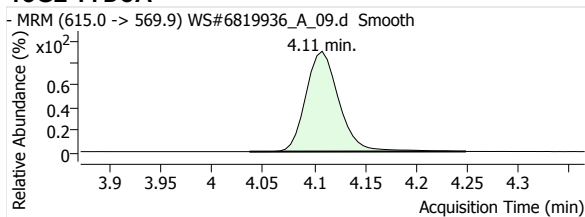
## 13C2-PFDA



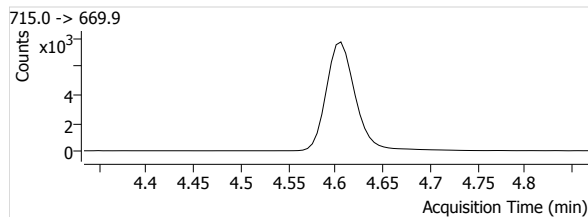
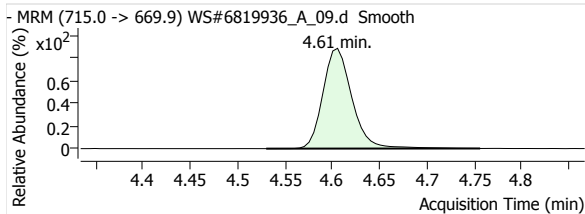
## 13C2-PFUnA



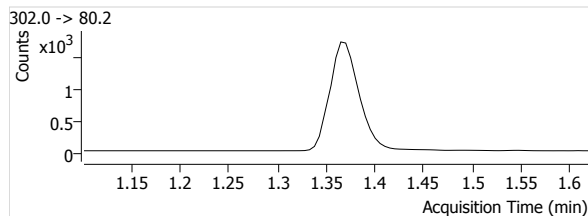
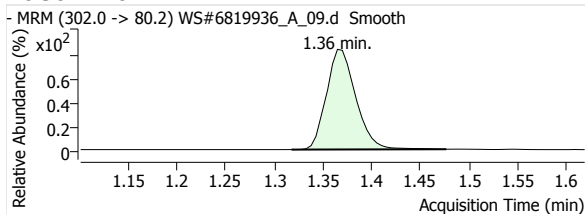
## 13C2-PFDoA



## 13C2-PFTeDA

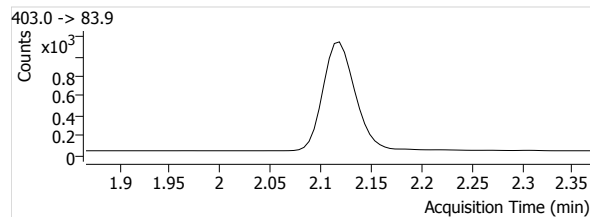
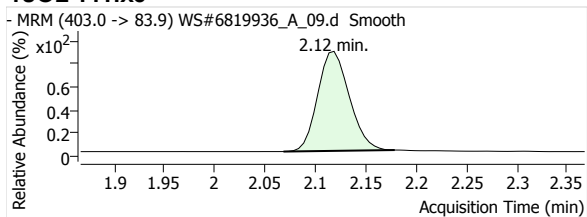


## 13C3-PFBS

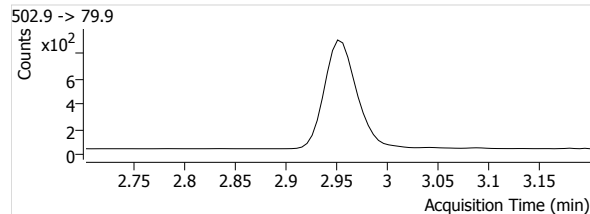
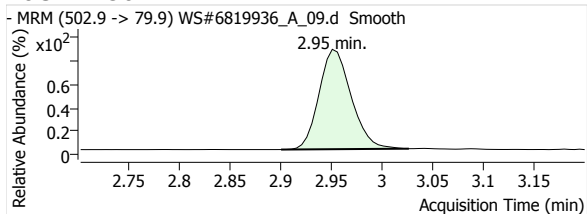


# Quantitative Analysis Report

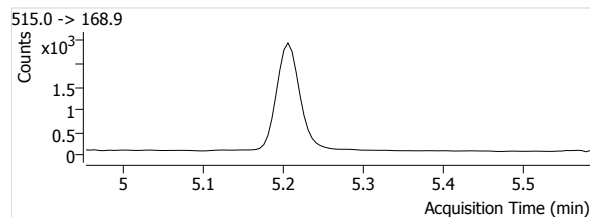
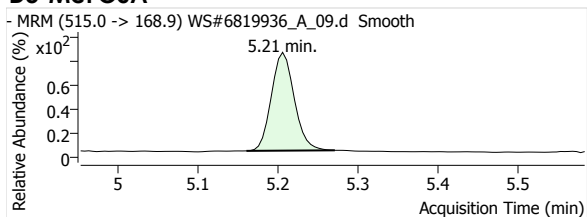
## 18O2-PFHxs



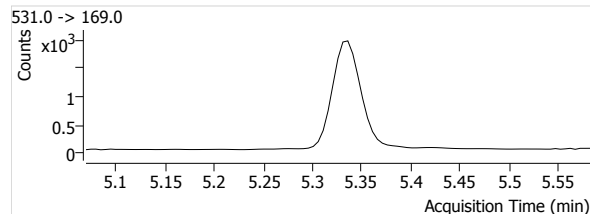
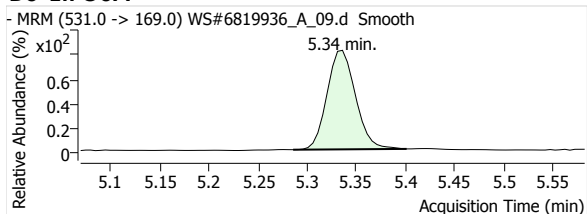
## 13C4-PFOS



## D3-MeFOFA



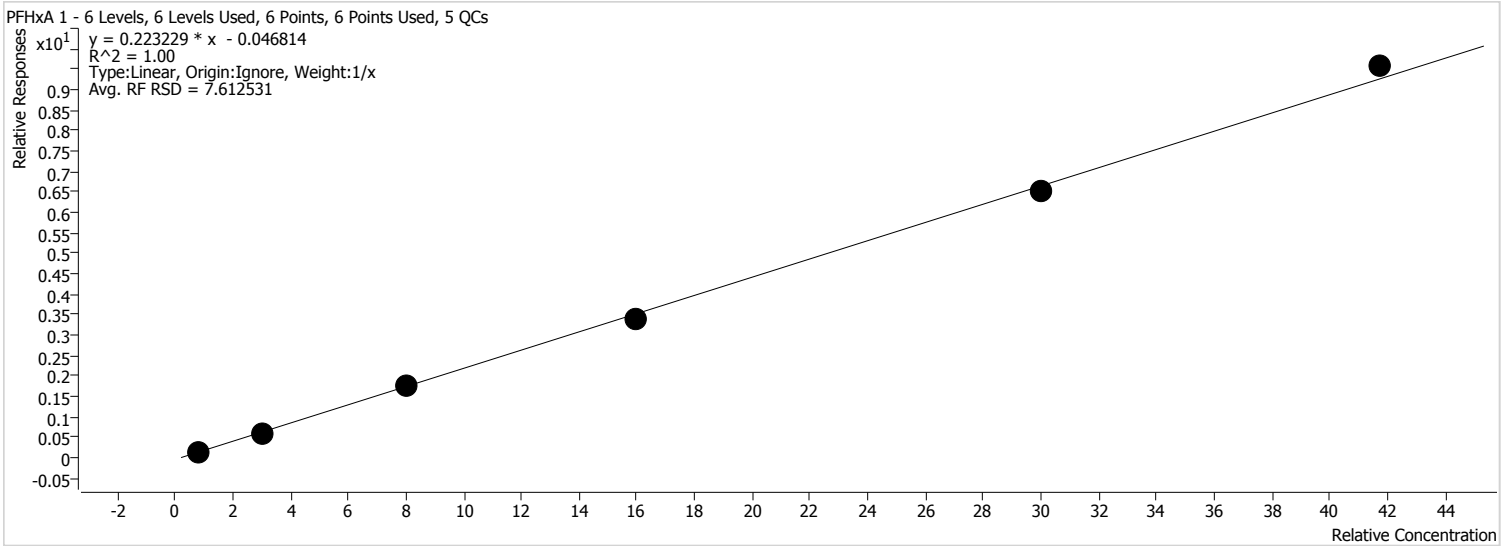
## D5-EtFOFA



# By Compound Report



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**Instrument:** LCMS04  
**Analyte:** PFHxA 1  
**Internal Standard:** 13C2-PFHxA IS

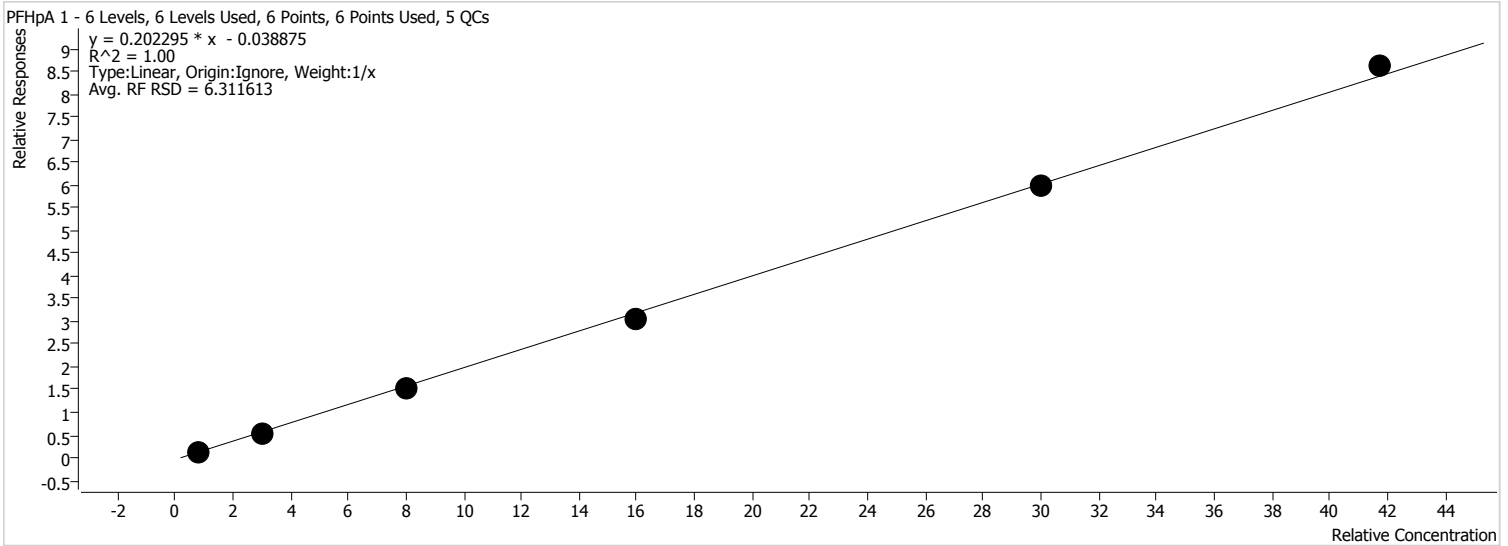


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
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STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.80	6023	0.1926	120	93.3
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	8.00	16943	0.2172	378	99.9
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.38	33543	0.2117	910	96.1
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.39	64335	0.2171	793	98.0
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	43.06	89947	0.2294	1530	103.3

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFHpA 1  
**Internal Standard:** 13C4-PFHpA IS

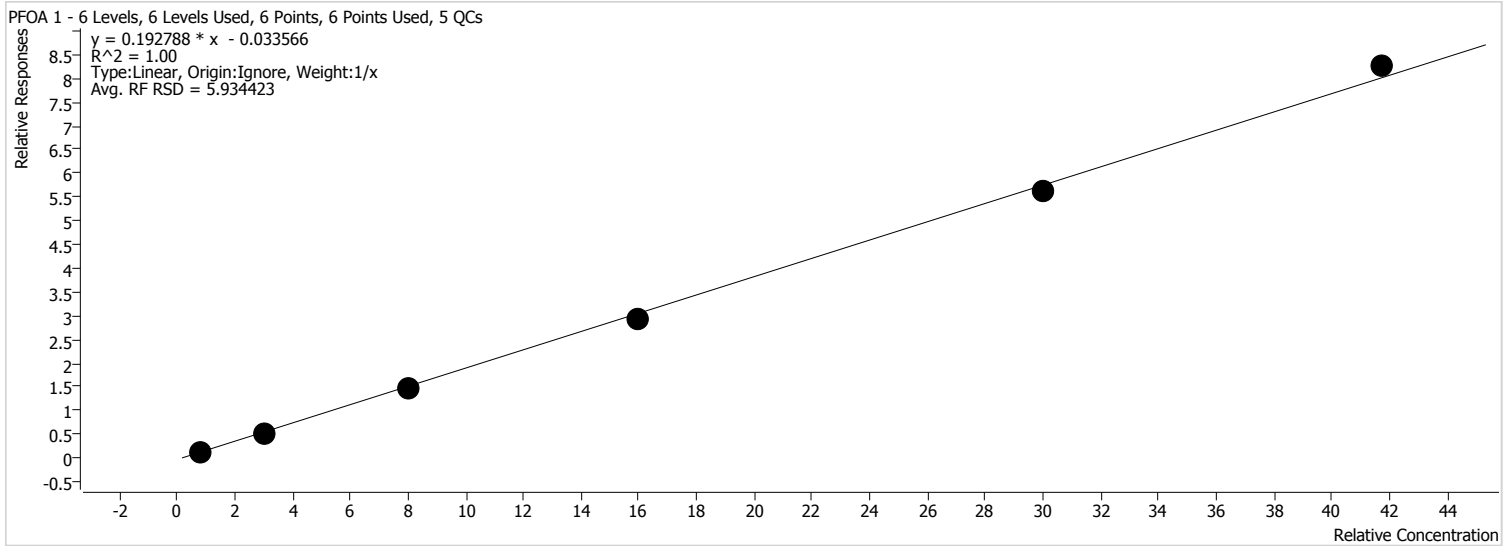


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.91	1787	0.1742	28	109.3
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.86	7140	0.1799	97	95.3
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.77	19610	0.1915	339	97.1
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.43	39205	0.1926	642	96.4
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.82	76144	0.1998	1161	99.4
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.75	108331	0.2065	1682	102.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFOA 1  
**Internal Standard:** 13C4-PFOA IS

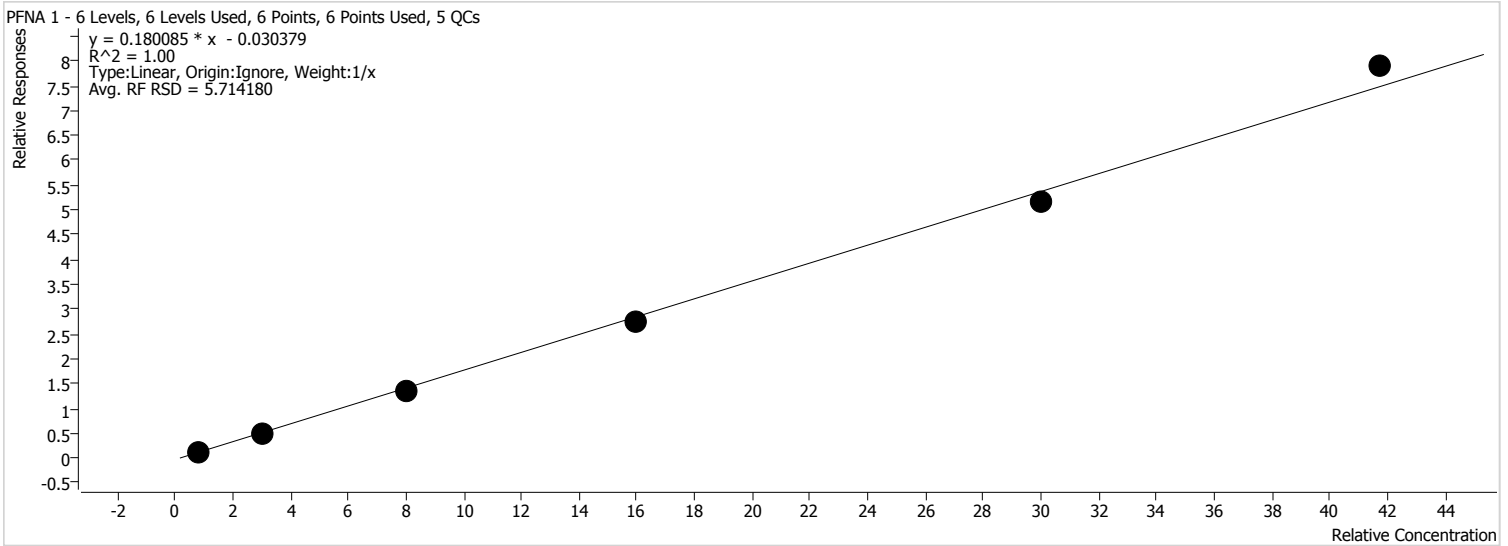


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.91	1651	0.1706	22	109.5
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.81	6216	0.1696	86	93.8
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.89	17386	0.1859	243	98.6
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.51	35002	0.1847	450	96.9
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.49	69940	0.1884	812	98.3
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.93	100196	0.1977	1543	102.9

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFNA 1  
**Internal Standard:** 13C5-PFNA IS



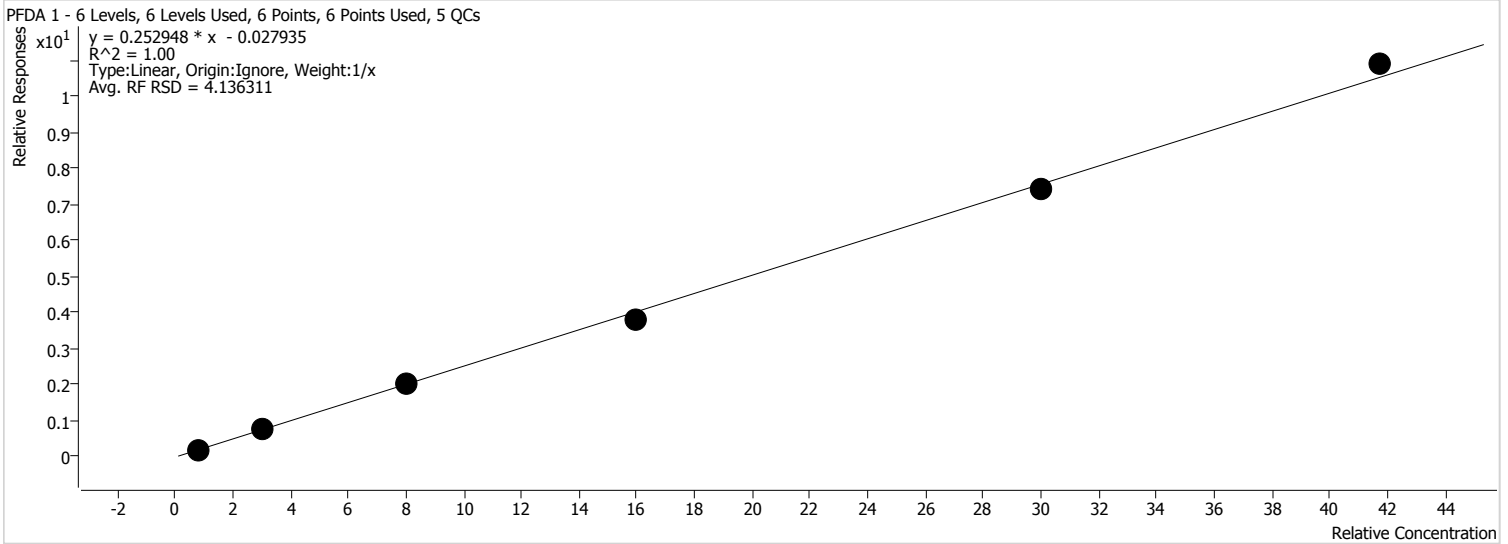
Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.93	1229	0.1660	21	112.5
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.85	4499	0.1607	77	94.8
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.58	12201	0.1668	161	94.7
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.47	25659	0.1722	445	96.7
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	28.75	50559	0.1716	683	95.8
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	43.95	72937	0.1891	893	105.4



# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFDA 1  
**Internal Standard:** 13C2-PFDA IS

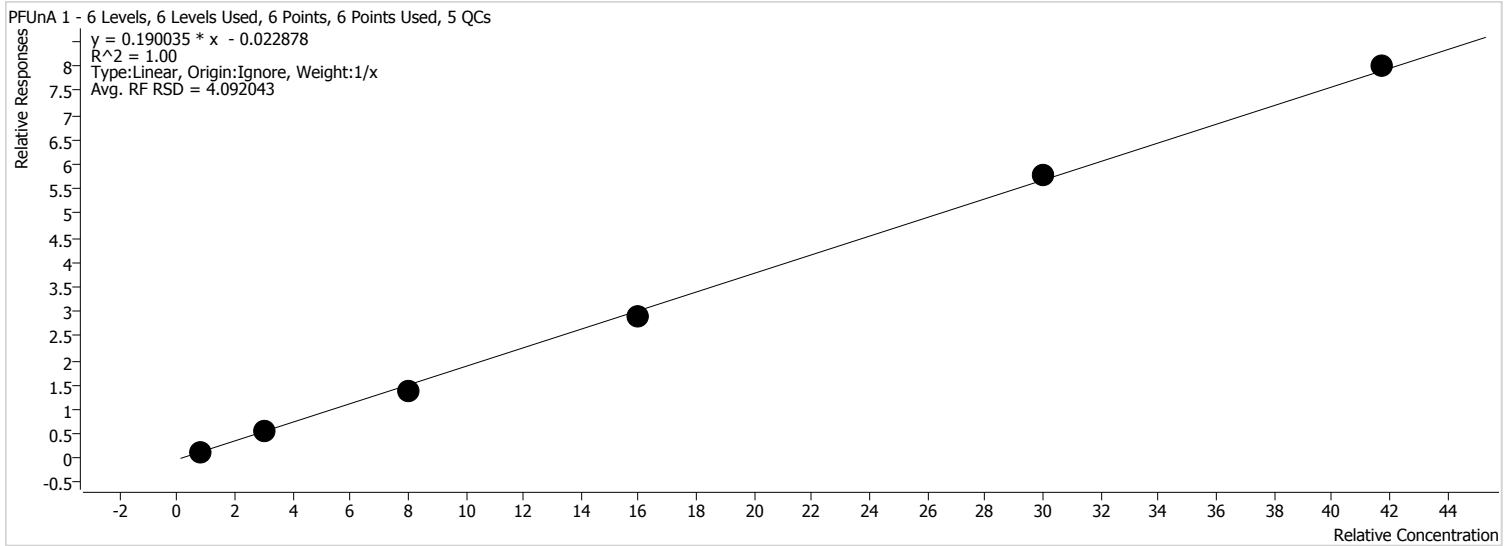


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.87	1270	0.2322	23	105.1
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.98	4906	0.2421	115	99.4
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.96	13366	0.2481	265	99.5
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.07	27083	0.2366	519	94.2
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.53	53051	0.2481	1022	98.4
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	43.11	75876	0.2608	1298	103.4

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFUnA 1  
**Internal Standard:** 13C2-PFUnA IS

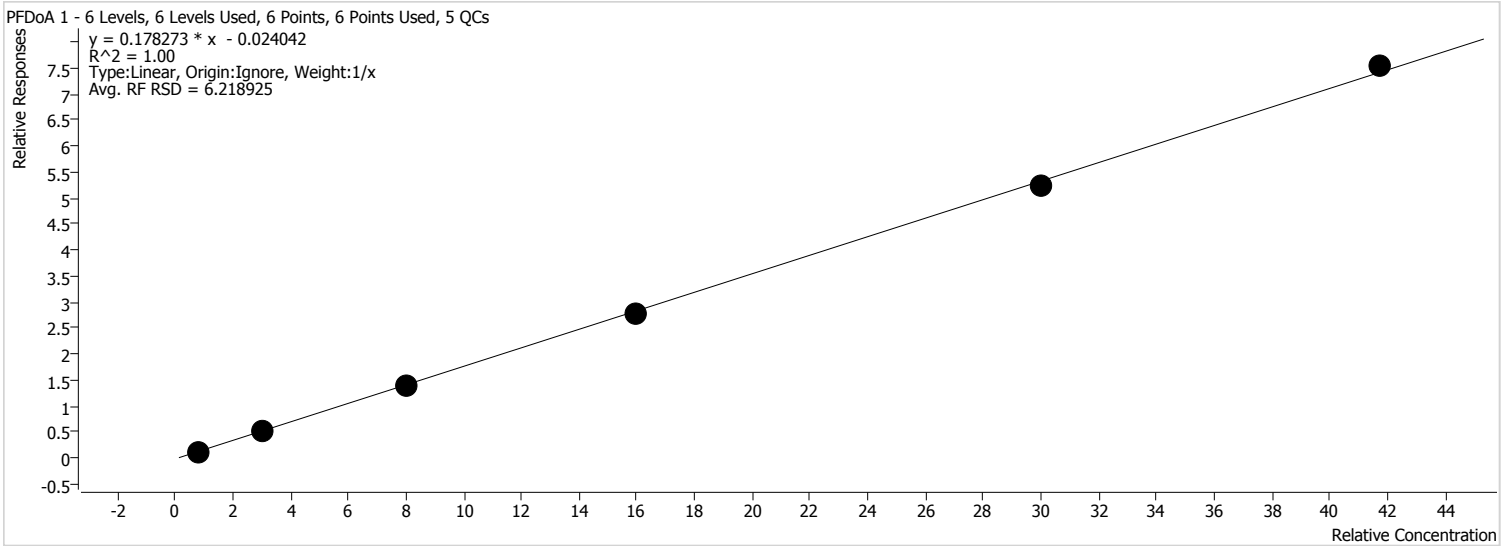


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.89	1159	0.1768	13	107.6
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.98	4489	0.1814	49	99.5
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.49	11662	0.1750	92	93.6
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.41	24838	0.1816	357	96.3
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	30.59	49736	0.1930	576	102.0
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.17	70674	0.1916	783	101.1

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFDa 1  
**Internal Standard:** 13C2-PFDa IS

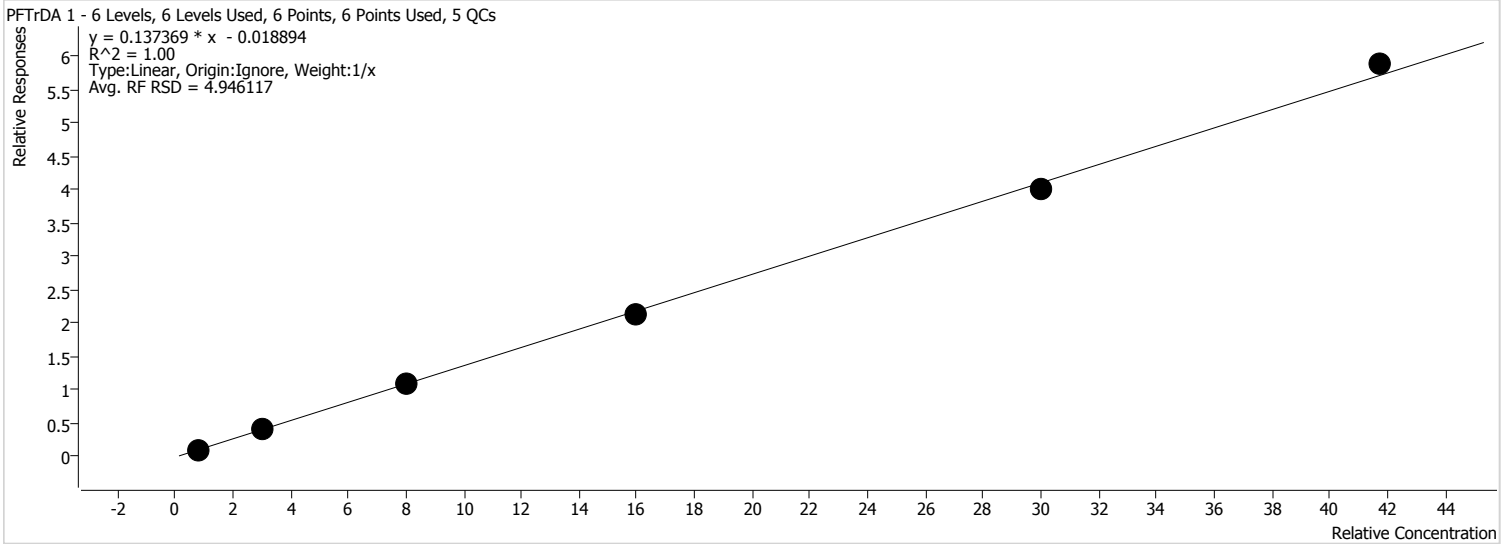


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.83	1241	0.1501	11	100.4
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	3.05	5214	0.1732	58	101.6
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.94	13972	0.1739	156	99.2
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.74	29135	0.1739	424	98.4
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.63	57492	0.1753	668	98.8
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.33	83509	0.1804	747	101.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFTTrDA 1  
**Internal Standard:** 13C2-PFTeDA IS

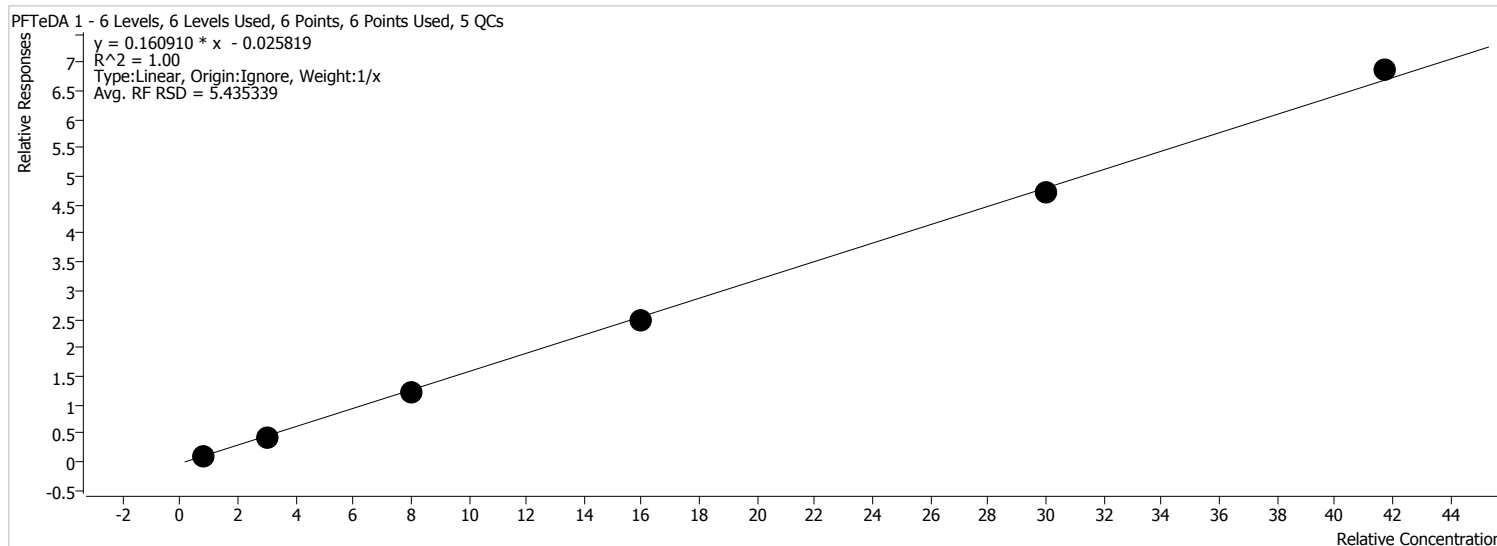


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.87	1417	0.1213	19	104.9
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.94	5716	0.1282	69	97.9
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.93	15863	0.1338	124	99.1
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.62	32557	0.1329	343	97.6
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.28	64686	0.1334	644	97.6
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.90	93074	0.1409	1120	102.9

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFTeDA 1  
**Internal Standard:** 13C2-PFTeDA IS

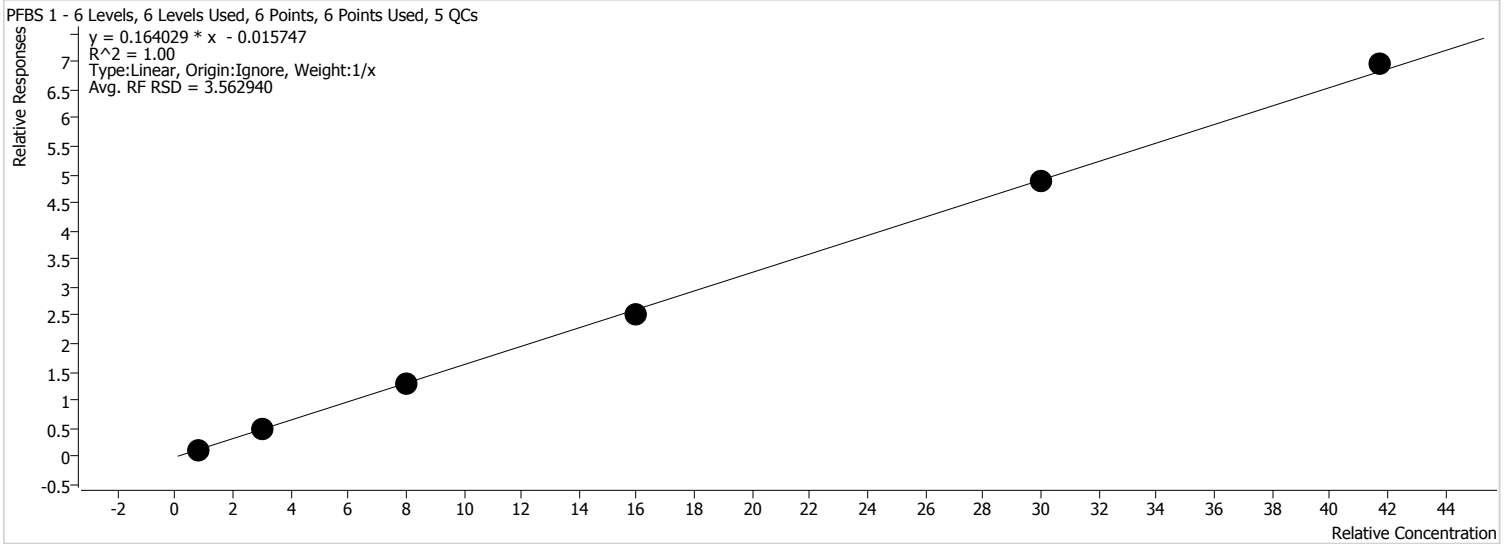


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.90	1665	0.1426	29	107.9
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.85	6428	0.1442	80	95.0
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.88	18414	0.1553	190	98.5
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.62	38088	0.1555	433	97.6
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.54	76389	0.1576	1042	98.5
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.74	108577	0.1643	1600	102.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFBS 1  
**Internal Standard:** 13C3-PFBS IS

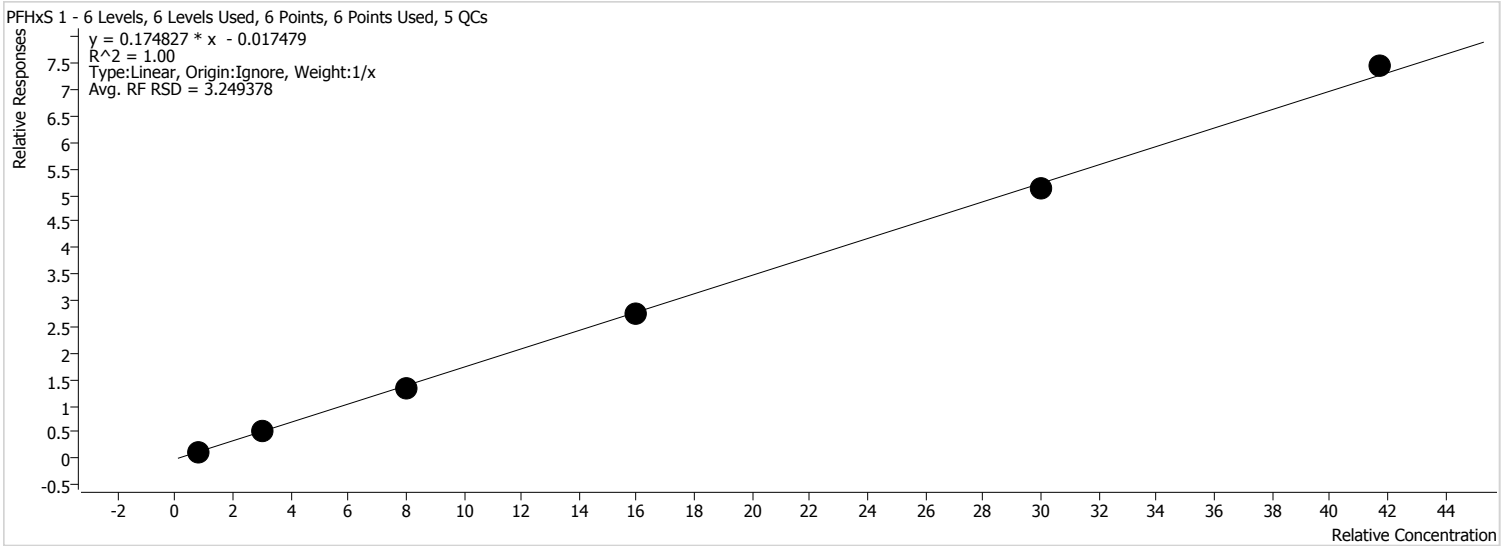


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.86	405	0.1501	65	103.1
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	3.03	1588	0.1602	164	100.9
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.86	4335	0.1592	273	98.3
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.38	8441	0.1567	442	96.2
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.94	16562	0.1632	1528	99.8
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.46	23515	0.1666	713	101.8

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFHxS 1  
**Internal Standard:** 18O2-PFHxS IS

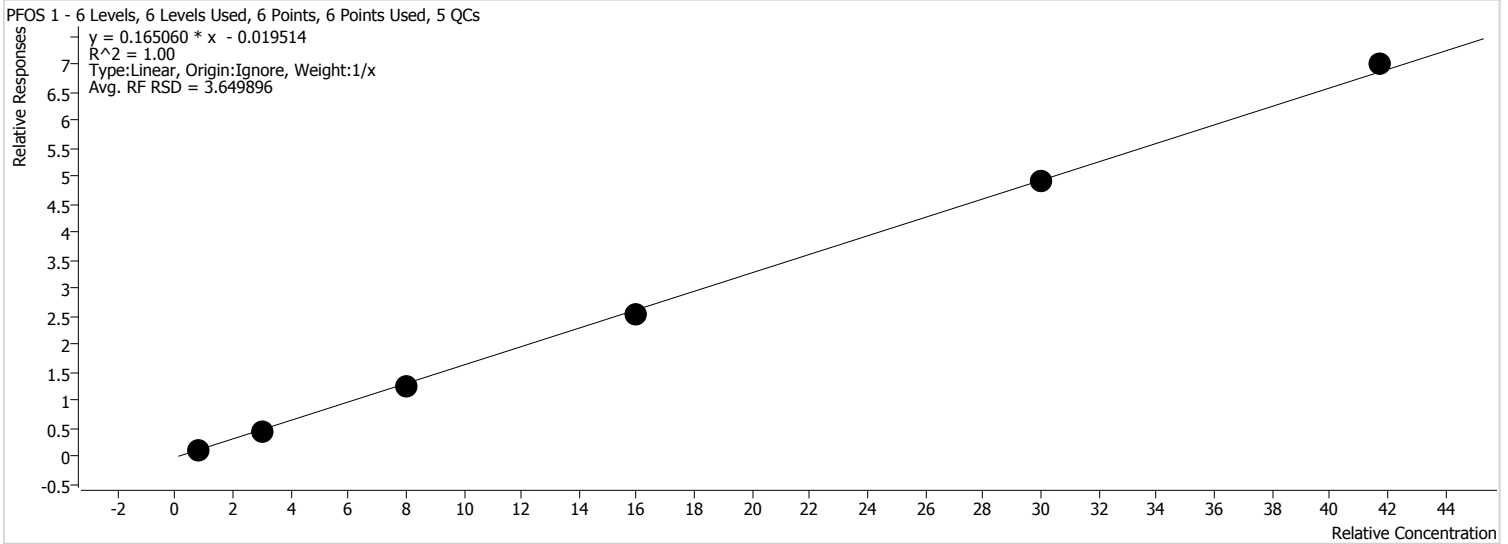


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.87	323	0.1622	227	104.8
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.95	1176	0.1659	339	98.2
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.83	3230	0.1690	297	97.9
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.78	6400	0.1713	401	98.6
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.45	12300	0.1710	506	98.2
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.65	17586	0.1784	435	102.3

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** PFOS 1  
**Internal Standard:** 13C4-PFOS IS



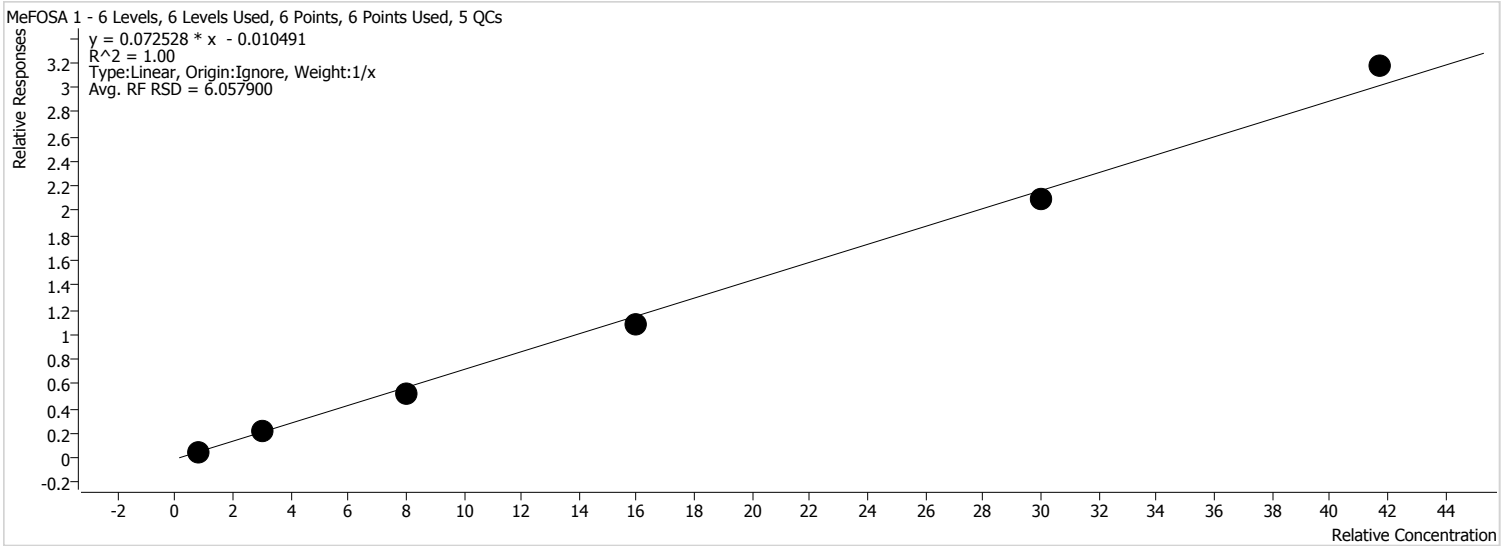
Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.88	223	0.1523	37	106.5
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.93	862	0.1546	59	97.6
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.80	2327	0.1585	90	97.5
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.45	4579	0.1581	98	96.5
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.97	8696	0.1642	149	99.9
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.50	12320	0.1678	163	101.9



# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** MeFOSA 1  
**Internal Standard:** D3-MeFOSA IS

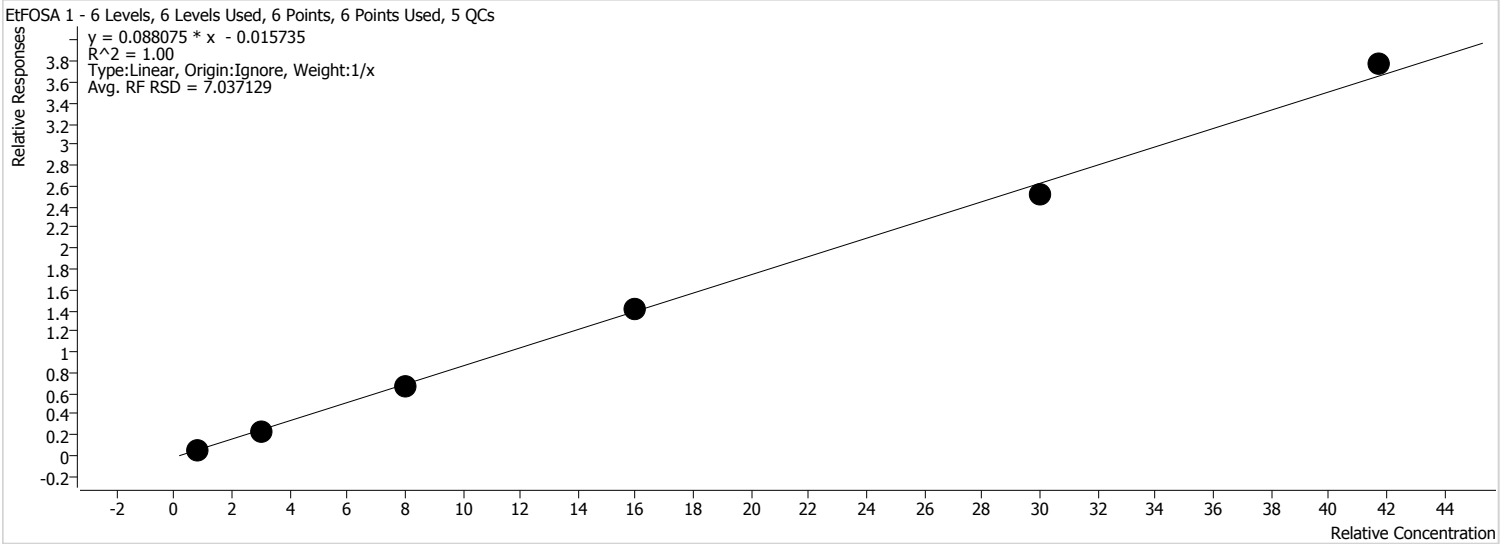


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.88	239	0.0644	17	106.2
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	3.12	970	0.0720	61	104.1
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.44	2430	0.0661	75	93.0
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	15.13	4896	0.0679	86	94.6
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	29.14	9926	0.0701	282	97.1
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	43.82	14530	0.0760	600	105.1

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** EtFOSA 1  
**Internal Standard:** D5-EtFOSA IS

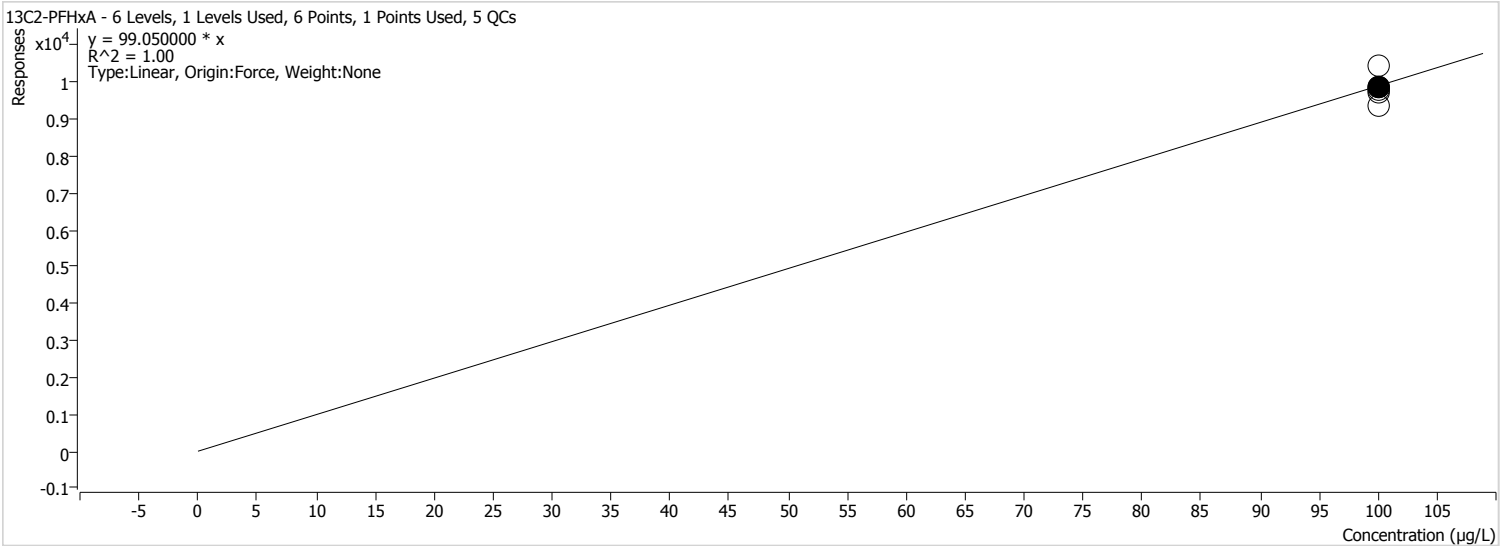


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1	x	2020/07/08 11:27:45 AM	0.83	0.89	236	0.0757	25	107.4
STD 2	STD 2	x	2020/07/08 11:34:40 AM	3.00	2.82	898	0.0774	100	93.8
STD 3	STD 3	x	2020/07/08 11:41:36 AM	8.00	7.86	2551	0.0846	194	98.3
STD 4	STD 4	x	2020/07/08 11:48:32 AM	16.00	16.26	5196	0.0885	453	101.6
STD 5	STD 5	x	2020/07/08 11:55:27 AM	30.00	28.73	10012	0.0838	876	95.8
STD 6	STD 6	x	2020/07/08 12:02:25 PM	41.70	42.97	14645	0.0904	667	103.0

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C2-PFHxA  
**Internal Standard:**

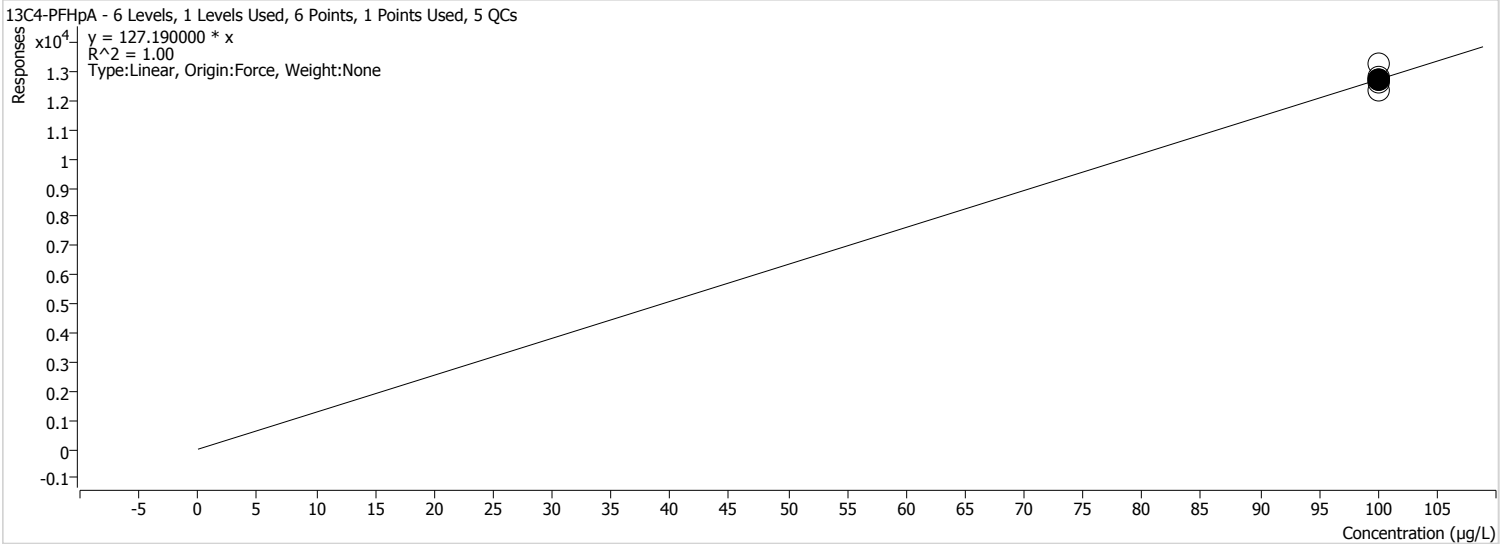


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	99.29	9835	98.3500	664	99.3
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	105.25	10425	104.2500	827	105.2
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	98.43	9749	97.4900	541	98.4
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	9905	99.0500	741	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	99.71	9876	98.7600	402	99.7
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	94.94	9404	94.0400	453	94.9

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C4-PFHpA  
**Internal Standard:**

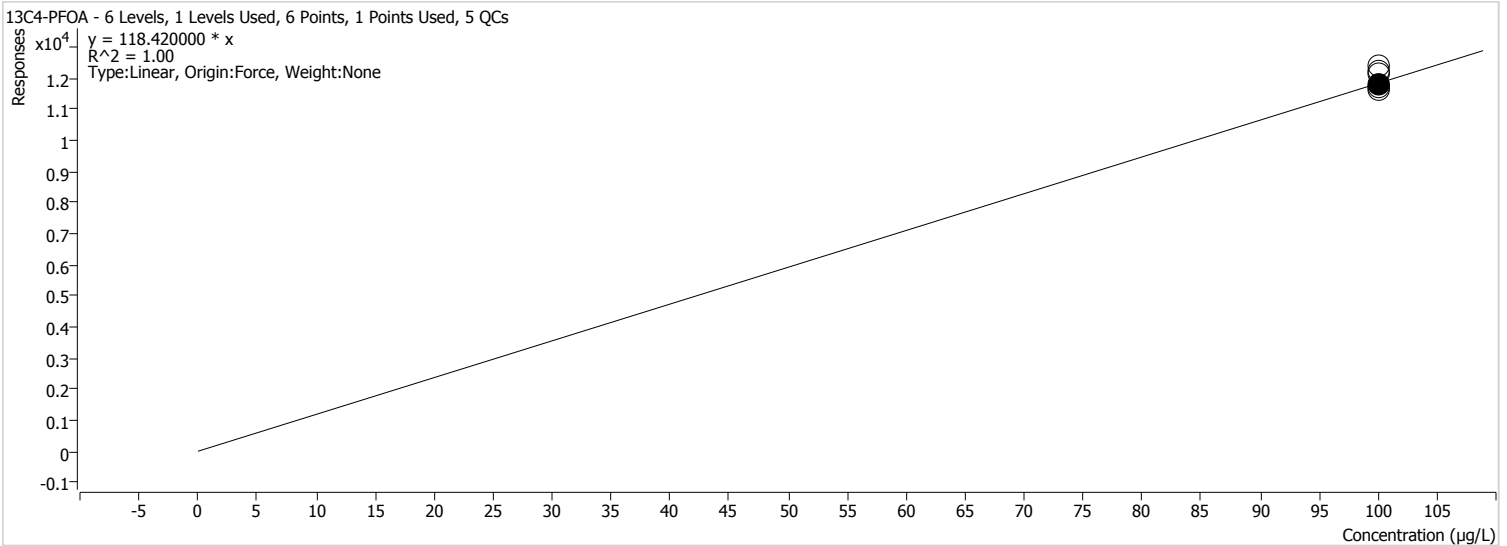


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	97.18	12360	123.6000	470	97.2
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	104.03	13231	132.3100	979	104.0
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	100.64	12800	128.0000	657	100.6
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	12719	127.1900	624	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	99.89	12705	127.0500	379	99.9
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	98.93	12583	125.8300	823	98.9

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C4-PFOA  
**Internal Standard:**

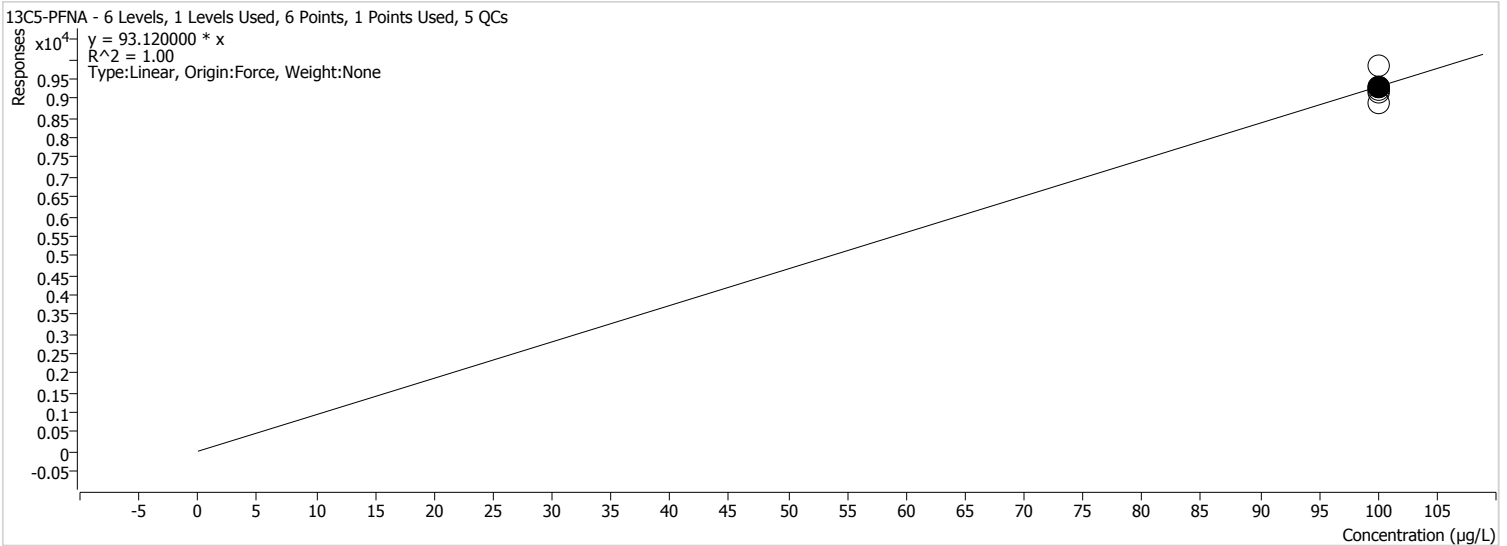


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	98.44	11657	116.5700	522	98.4
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	103.19	12220	122.2000	886	103.2
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	98.71	11689	116.8900	736	98.7
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	11842	118.4200	1390	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	104.52	12377	123.7700	413	104.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	102.65	12156	121.5600	556	102.7

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C5-PFNA  
**Internal Standard:**

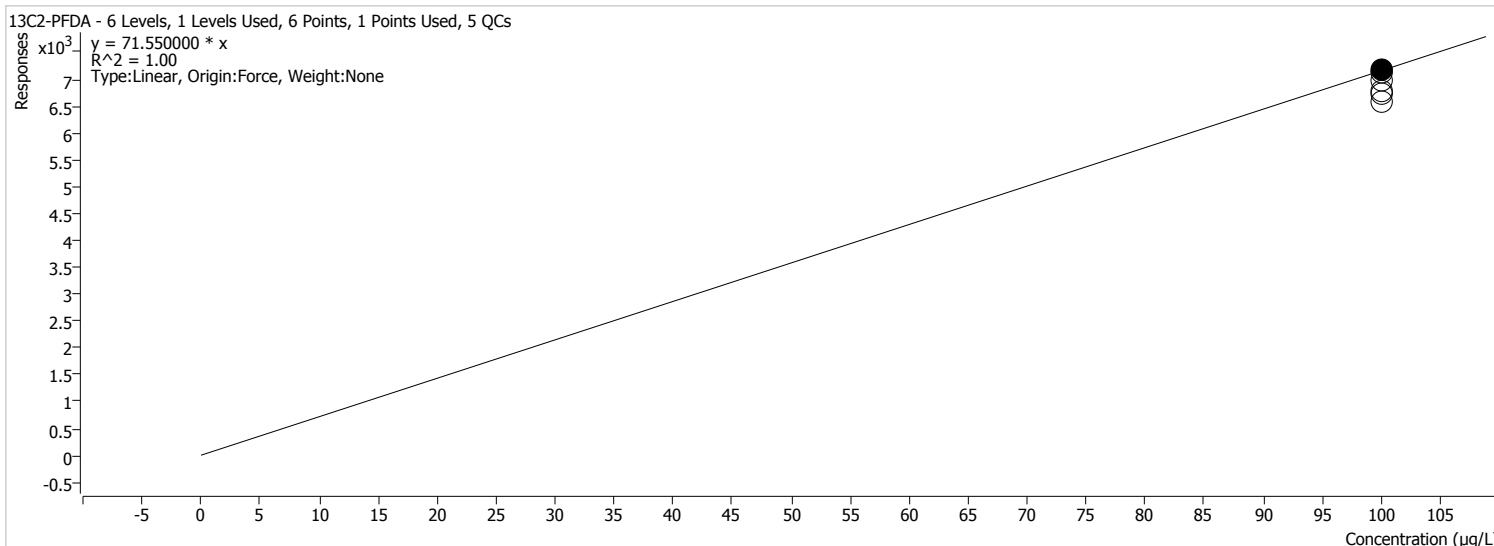


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	95.80	8921	89.2100	259	95.8
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	100.24	9334	93.3400	386	100.2
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	98.17	9142	91.4200	387	98.2
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	9312	93.1200	701	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	105.48	9822	98.2200	595	105.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	99.34	9251	92.5100	466	99.3

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C2-PFDA  
**Internal Standard:**

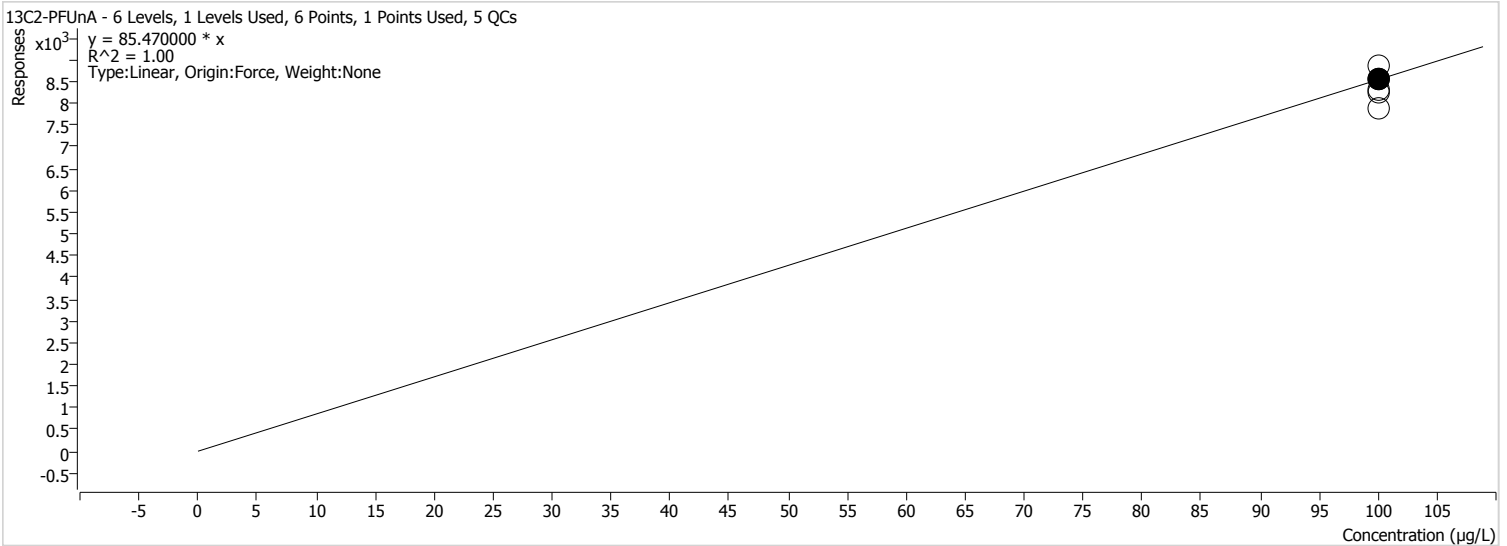


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	92.09	6589	65.8900	322	92.1
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	94.42	6756	67.5600	449	94.4
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	94.12	6734	67.3400	510	94.1
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	7155	71.5500	586	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	99.62	7128	71.2800	257	99.6
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	97.50	6976	69.7600	539	97.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C2-PFUnA  
**Internal Standard:**



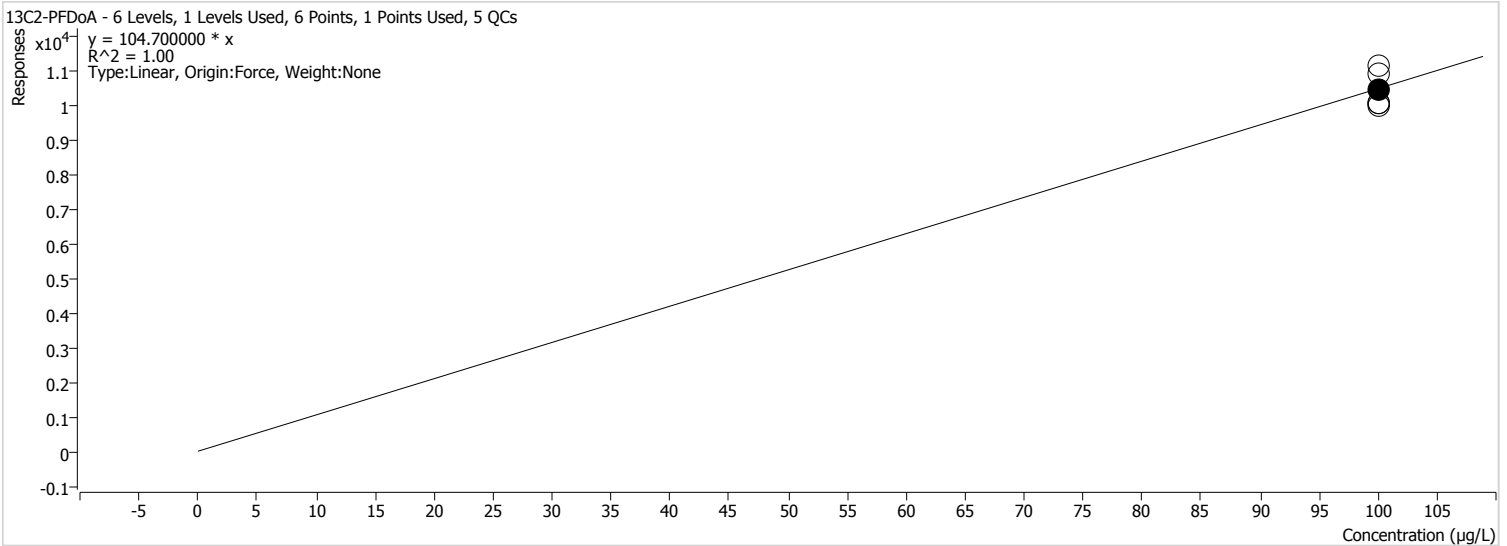
Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	92.39	7897	78.9700	289	92.4
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	96.51	8249	82.4900	289	96.5
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	97.48	8332	83.3200	866	97.5
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	8547	85.4700	699	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	100.50	8590	85.9000	185	100.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	103.49	8845	88.4500	930	103.5



# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C2-PFDoA  
**Internal Standard:**

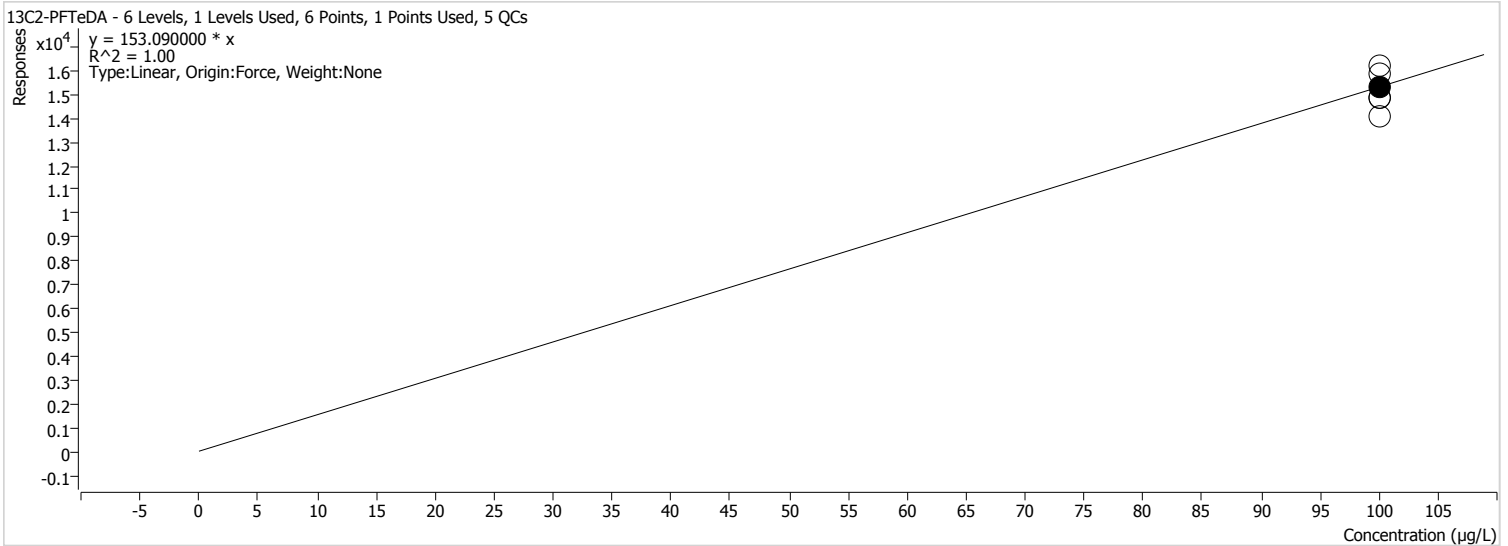


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	95.16	9963	99.6300	443	95.2
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	95.85	10035	100.3500	1574	95.8
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	95.92	10043	100.4300	1075	95.9
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	10470	104.7000	382	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	104.42	10933	109.3300	409	104.4
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	106.03	11101	111.0100	708	106.0

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C2-PFTeDA  
**Internal Standard:**

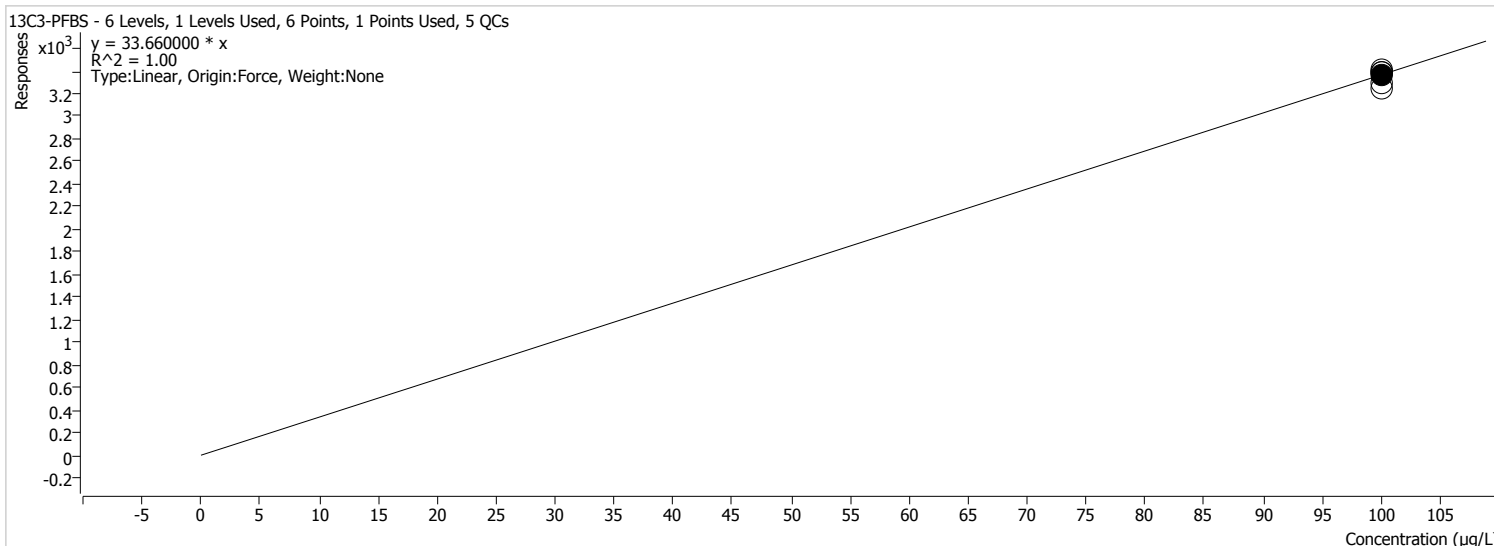


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	91.91	14071	140.7100	747	91.9
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	97.07	14861	148.6100	874	97.1
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	96.82	14822	148.2200	761	96.8
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	15309	153.0900	1379	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	105.55	16159	161.5900	1296	105.6
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	103.51	15846	158.4600	1320	103.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C3-PFBS  
**Internal Standard:**

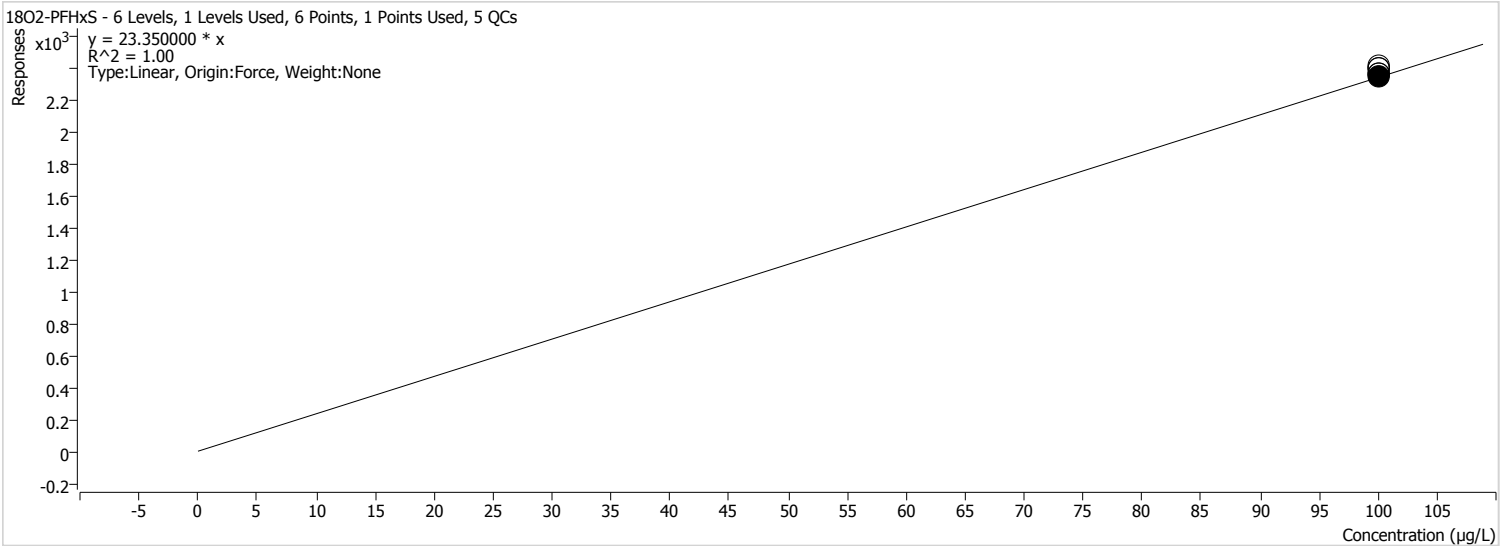


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	96.58	3251	32.5100	220	96.6
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	98.16	3304	33.0400	230	98.2
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	101.10	3403	34.0300	490	101.1
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	3366	33.6600	392	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	100.51	3383	33.8300	591	100.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	100.53	3384	33.8400	483	100.5

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 18O2-PFHxS  
**Internal Standard:**

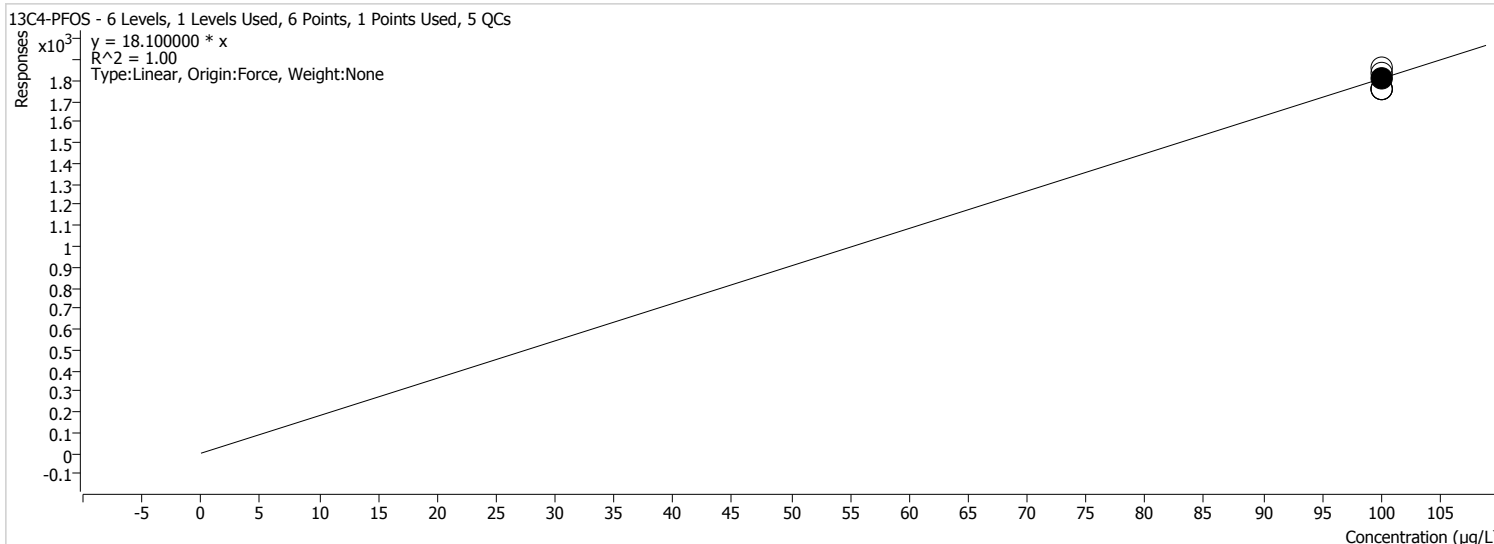


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	102.87	2402	24.0200	315	102.9
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	101.24	2364	23.6400	284	101.2
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	102.31	2389	23.8900	287	102.3
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	2335	23.3500	620	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	102.66	2397	23.9700	184	102.7
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	101.24	2364	23.6400	299	101.2

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** 13C4-PFOS  
**Internal Standard:**

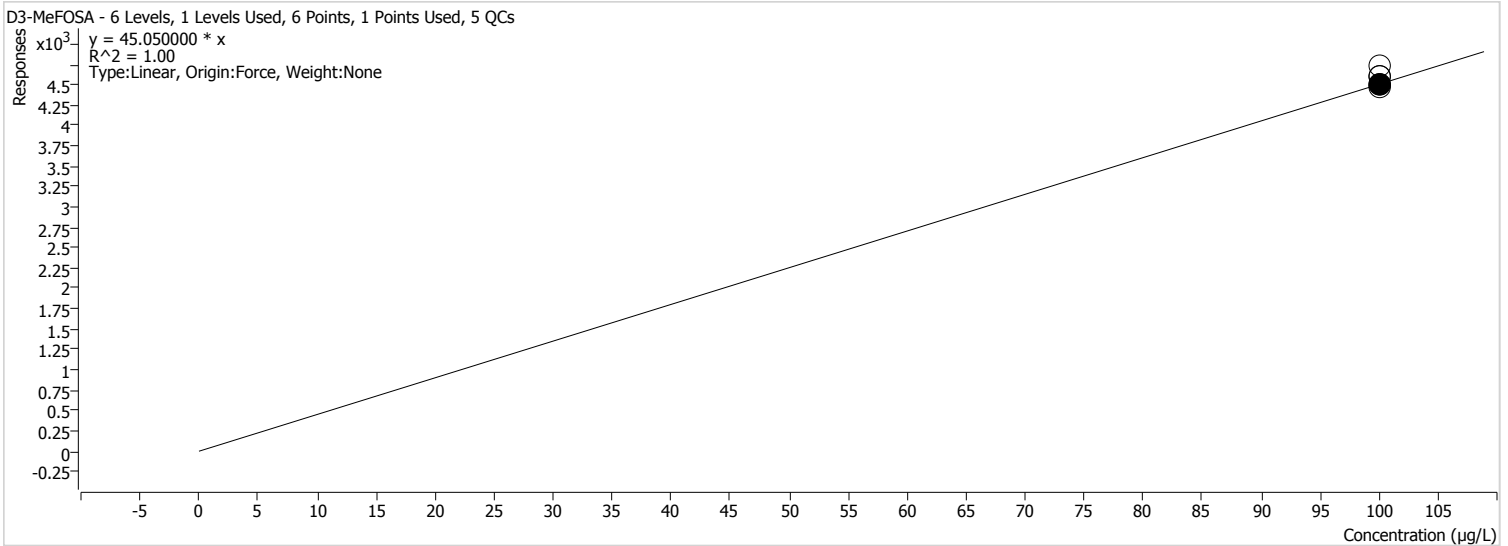


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	97.46	1764	17.6400	339	97.5
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	102.65	1858	18.5800	207	102.7
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	101.38	1835	18.3500	295	101.4
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	1810	18.1000	388	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	97.51	1765	17.6500	175	97.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	97.29	1761	17.6100	159	97.3

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** D3-MeFOSA  
**Internal Standard:**

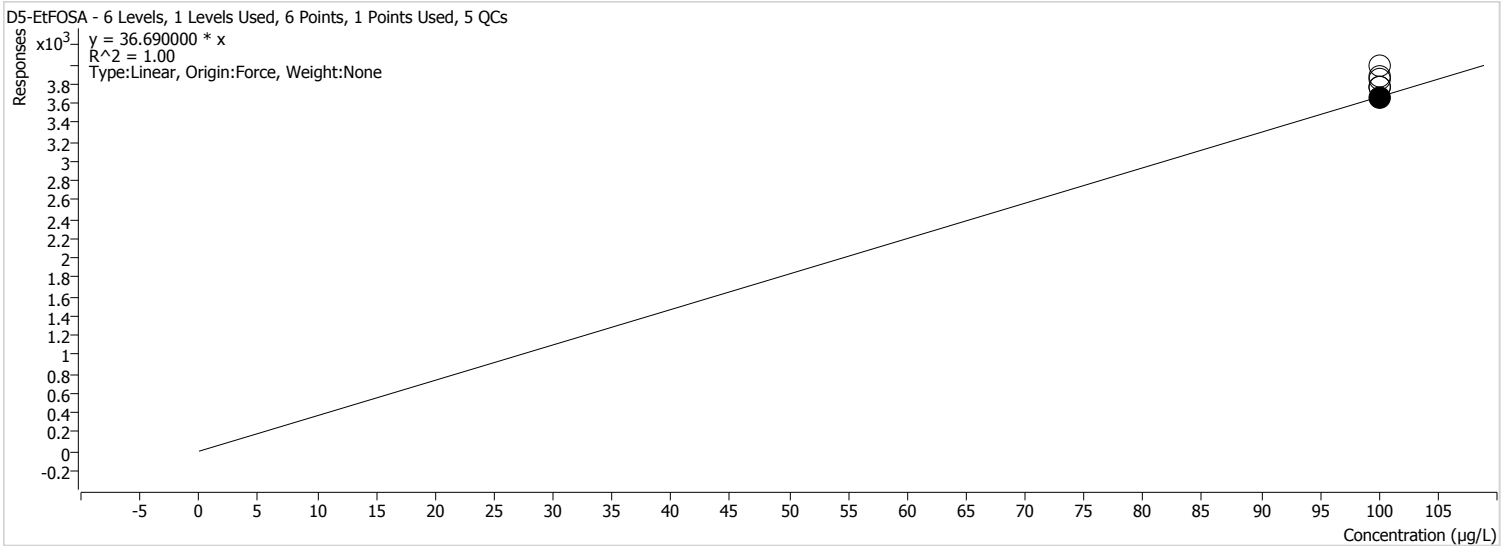


Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	99.29	4473	44.7300	85	99.3
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	99.71	4492	44.9200	63	99.7
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	101.98	4594	45.9400	104	102.0
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	4505	45.0500	68	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	104.77	4720	47.2000	76	104.8
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	101.82	4587	45.8700	70	101.8

# By Compound Report



**Batch Path** T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_MI.batch.bin  
**Last Calib Update** 2020/07/08 7:17:22 PM  
**Instrument:** LCMS04  
**Analyte:** D5-EtFOSA  
**Internal Standard:**



Sample	Level	Enabled	Acquisition Time	Exp. Conc.	Concentration	Response	RF	S/N	Accuracy
STD 1	STD 1		2020/07/08 11:27:45 AM	100.00	102.43	3758	37.5800	126	102.4
STD 2	STD 2		2020/07/08 11:34:40 AM	100.00	105.40	3867	38.6700	110	105.4
STD 3	STD 3		2020/07/08 11:41:36 AM	100.00	102.73	3769	37.6900	68	102.7
STD 4	STD 4	x	2020/07/08 11:48:32 AM	100.00	100.00	3669	36.6900	99	100.0
STD 5	STD 5		2020/07/08 11:55:27 AM	100.00	108.50	3981	39.8100	143	108.5
STD 6	STD 6		2020/07/08 12:02:25 PM	100.00	105.91	3886	38.8600	87	105.9



**BUREAU**  
**VERITAS**

## **6. Continuing Calibration**

**Bureau Veritas Canada (2019)  
Inc.  
6740 Campobello Rd.  
Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**



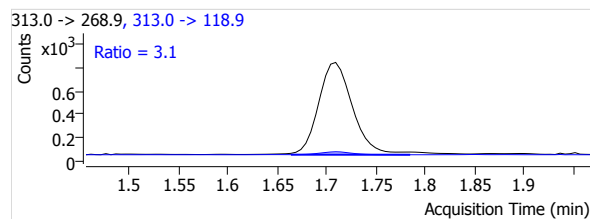
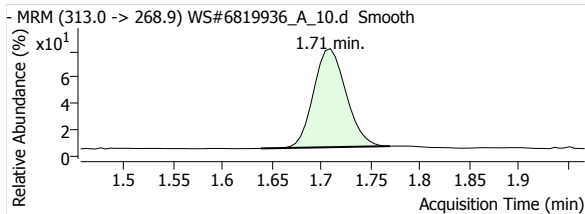
# Quantitative Analysis Report

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bin

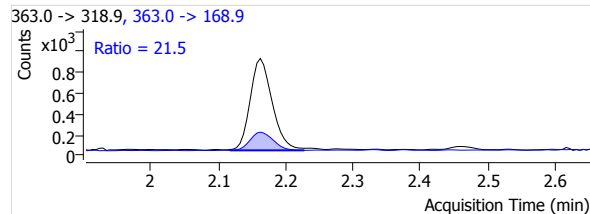
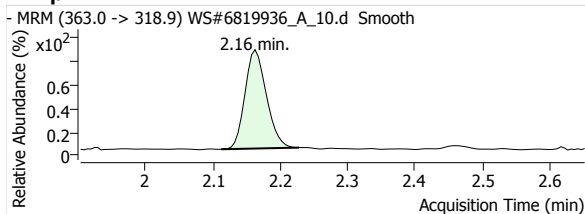
<b>Sample Name</b>	ISC	<b>Data File</b>	WS#6819936_A_10.d
<b>Type</b>	QC	<b>Instrument</b>	LCMS04
<b>Acq. Method File</b>	PFAS.m	<b>Position</b>	P2-A2
<b>Acq. Date-Time</b>	2020/07/08 12:23:17 PM	<b>Dil.</b>	1.0
<b>Comment</b>	-		
<b>User Defined</b>			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	0.830	0.9465	114.0	1792	1.71	54	0.1645	55	1.71	15	3.1
PFHpA 1	µg/L	0.830	0.8857	106.7	1920	2.16	30	0.1403	413	2.16	21	21.5
PFOA 1	µg/L	0.830	0.8651	104.2	1708	2.63	22	0.1332	502	2.63	32	29.4
PFNA 1	µg/L	0.830	0.9298	112.0	1380	3.08	18	0.1371	323	3.08	18	23.4
PFDA 1	µg/L	0.830	0.9393	113.2	1486	3.47	27	0.2097	226	3.47	58	15.2
PFUnA 1	µg/L	0.830	0.8807	106.1	1291	3.81	15	0.1445	223	3.81	45	17.3
PFDaA 1	µg/L	0.830	0.8659	104.3	1498	4.11	14	0.1303	200	4.11	25	13.4
PFTrDA 1	µg/L	0.830	0.8952	107.9	1755	4.37	21	0.1041	140	4.37	22	8.0
PFTeDA 1	µg/L	0.830	0.9108	109.7	2036	4.61	27	0.1207	106	4.61	48	5.2
PFBS 1	µg/L	0.830	0.8351	100.6	431	1.37	115	0.1212	189	1.37	18	43.9
PFHxS 1	µg/L	0.830	0.8994	108.4	351	2.08	55	0.1398	179	2.10	32	51.0
PFOS 1	µg/L	0.830	0.9704	116.9	252	2.89	14	0.1407	132	2.90	71	52.4
MeFOSA 1	µg/L	0.830	1.0078	121.4	300	5.21	23	0.0626	208	5.20	49	69.3
EtFOSA 1	µg/L	0.830	1.0056	121.2	277	5.33	36	0.0728	252	5.33	396	91.0
13C2-PFHxA	µg/L	100.000	110.0050	110.0	10896	1.71	574		--	--	--	--
13C4-PFHpA	µg/L	100.000	107.5949	107.6	13685	2.16	404		--	--	--	--
13C4-PFOA	µg/L	100.000	108.2672	108.3	12821	2.64	1022		--	--	--	--
13C5-PFNA	µg/L	100.000	108.1186	108.1	10068	3.08	921		--	--	--	--
13C2-PFDA	µg/L	100.000	99.0636	99.1	7088	3.47	242		--	--	--	--
13C2-PFUnA	µg/L	100.000	104.5396	104.5	8935	3.81	166		--	--	--	--
13C2-PFDaA	µg/L	100.000	109.7899	109.8	11495	4.11	1013		--	--	--	--
13C2-PFTeDA	µg/L	100.000	110.1444	110.1	16862	4.61	1229		--	--	--	--
13C3-PFBS	µg/L	100.000	105.6150	105.6	3555	1.36	358		--	--	--	--
18O2-PFHxS	µg/L	100.000	107.4518	107.5	2509	2.11	690		--	--	--	--
13C4-PFOS	µg/L	100.000	98.7845	98.8	1788	2.95	142		--	--	--	--
D3-MeFOSA	µg/L	100.000	106.3707	106.4	4792	5.21	79		--	--	--	--
D5-EtFOSA	µg/L	100.000	103.6522	103.7	3803	5.34	94		--	--	--	--

### PFHxA 1

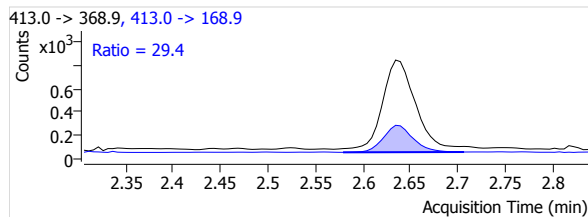
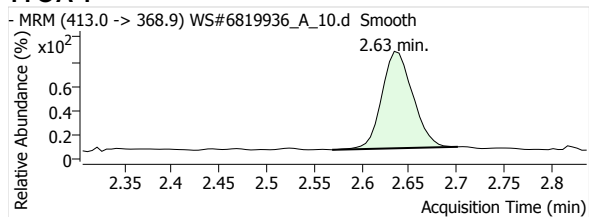


### PFHpA 1

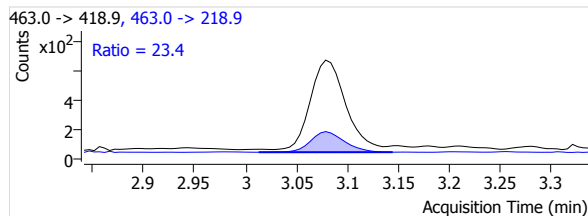
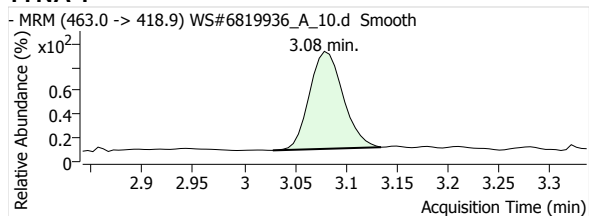


# Quantitative Analysis Report

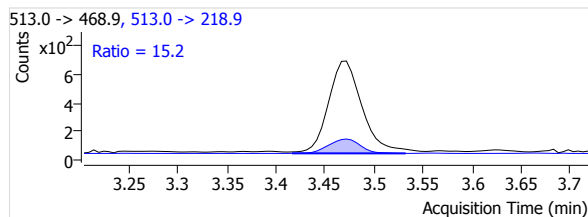
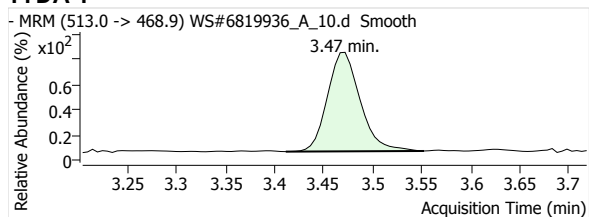
## PFOA 1



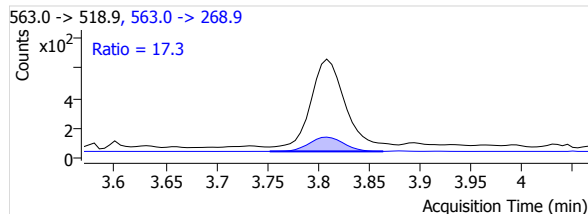
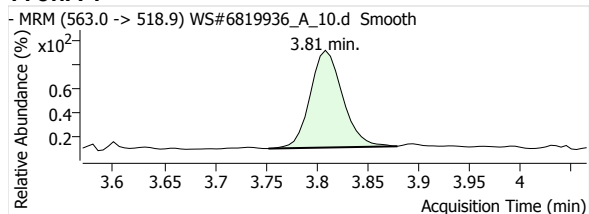
## PFNA 1



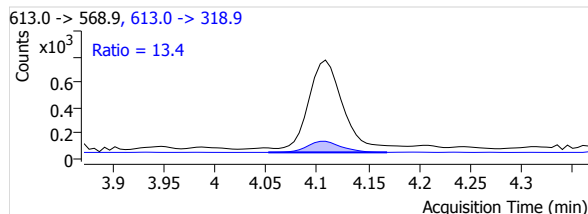
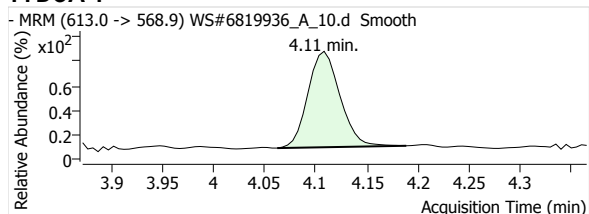
## PFDA 1



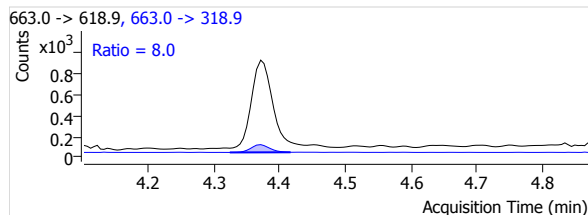
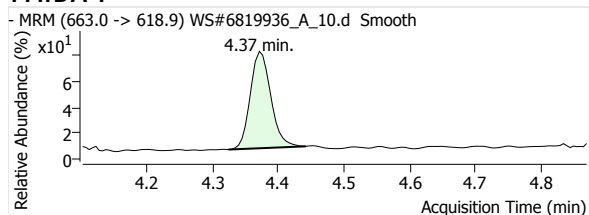
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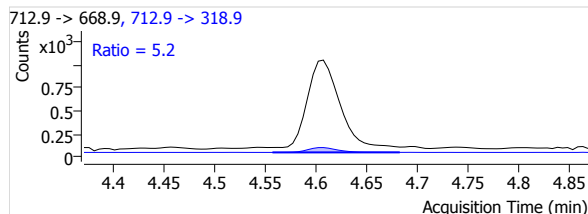
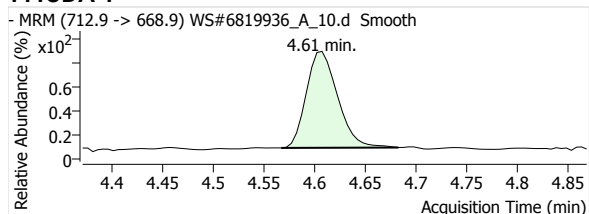
## PFDaA 1



## PFTrDA 1

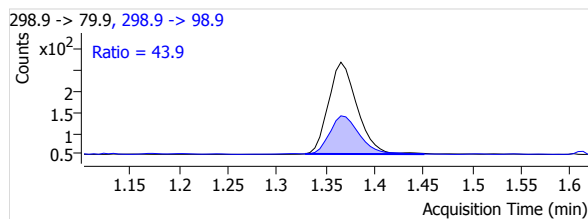
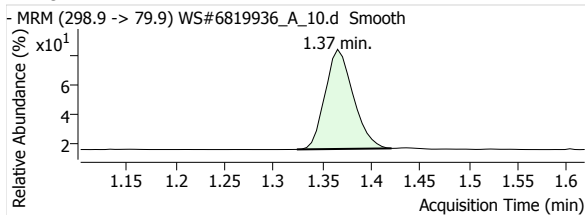


## PFTeDA 1

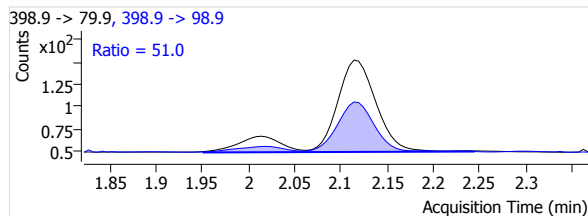
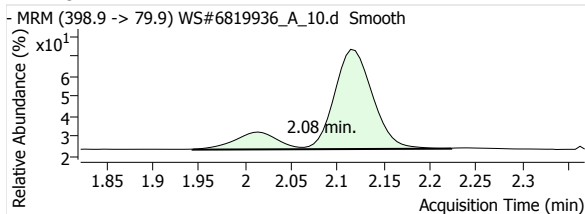


# Quantitative Analysis Report

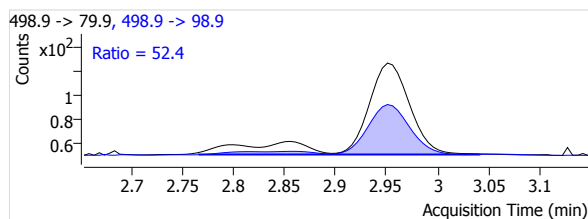
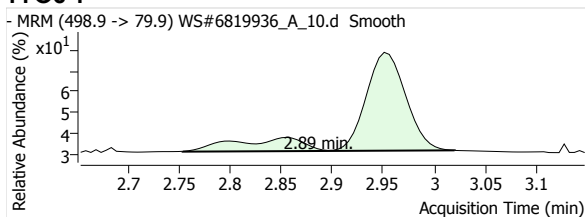
## PFBS 1



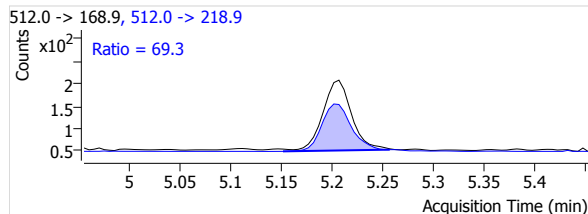
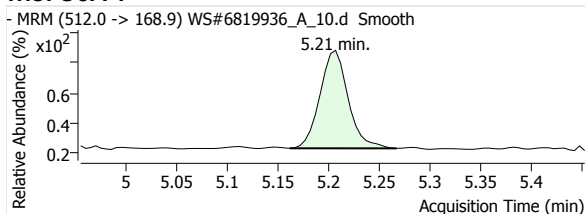
## PFHxS 1



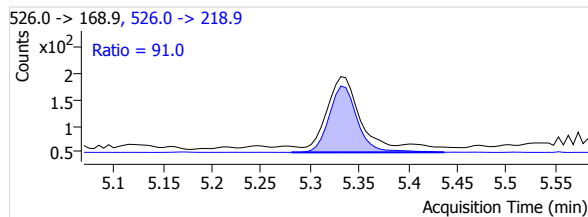
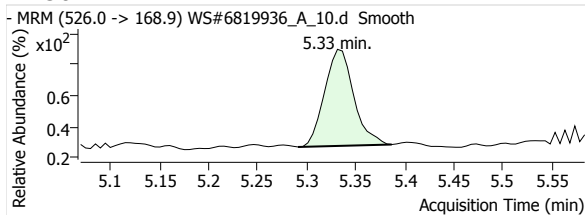
## PFOS 1



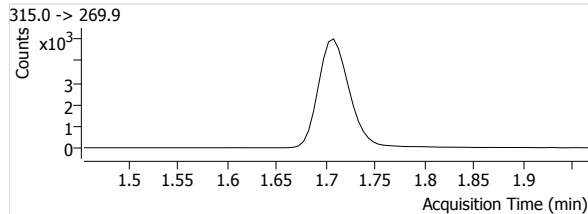
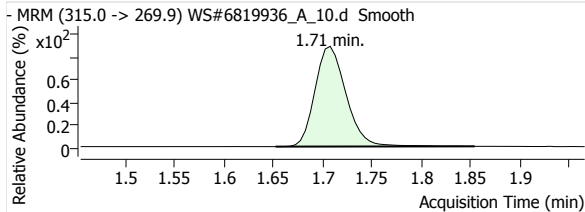
## MeFOSA 1



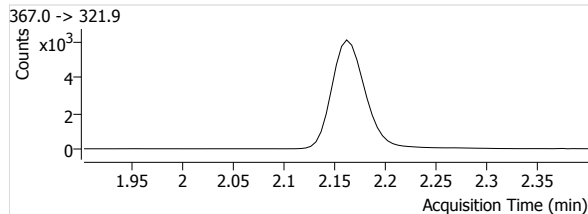
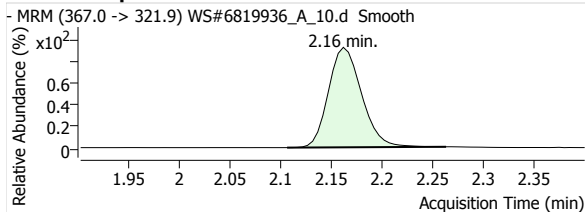
## eFOSA 1



## 13C2-PFHxA

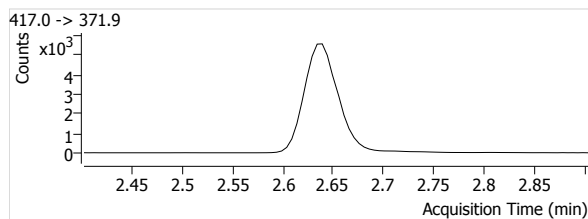
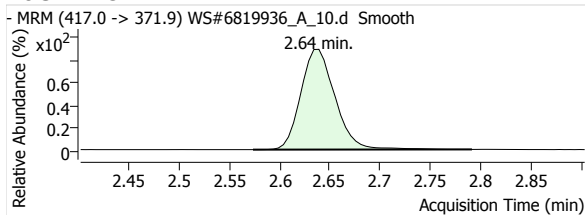


## 13C4-PFHpA

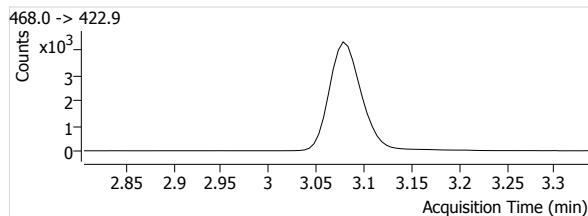
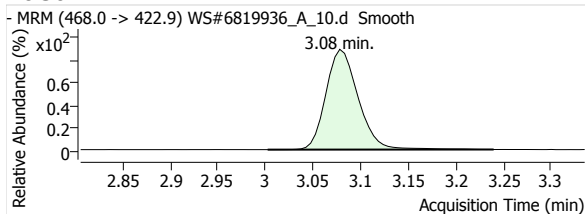


# Quantitative Analysis Report

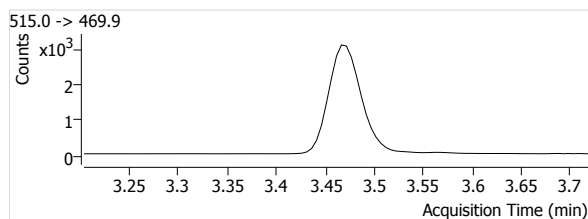
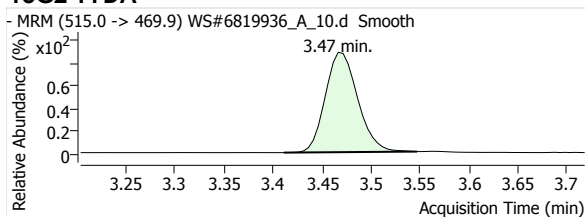
## 13C4-PFOA



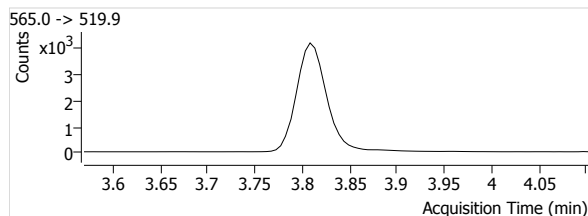
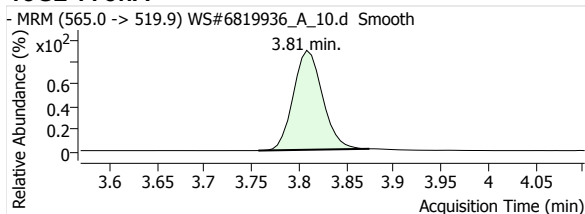
## 13C5-PFNA



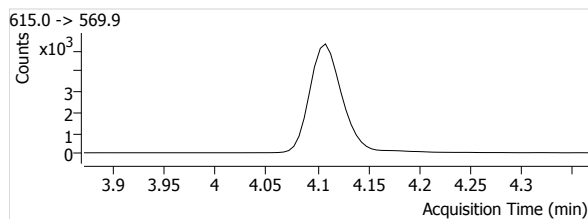
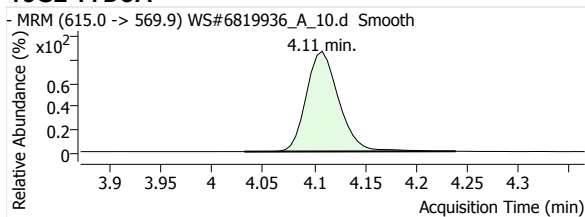
## 13C2-PFDA



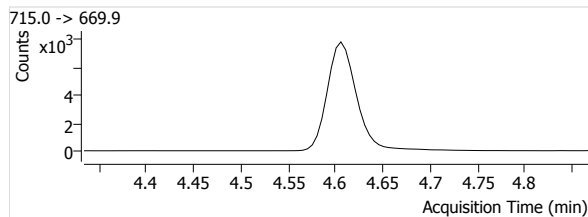
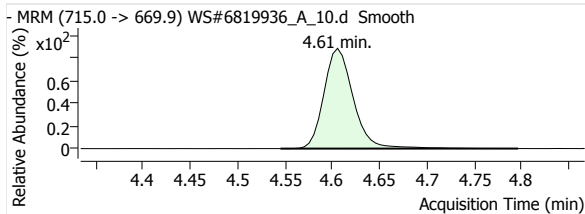
## 13C2-PFUnA



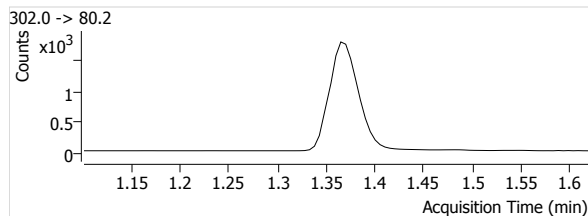
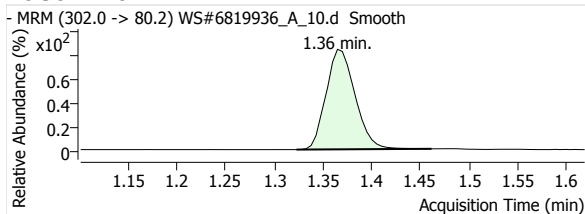
## 13C2-PFDoA



## 13C2-PFTeDA

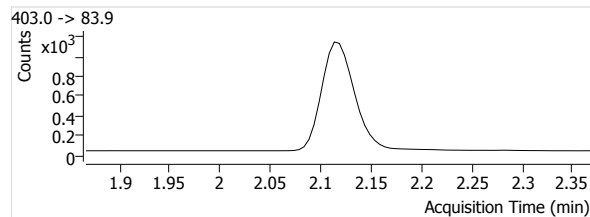
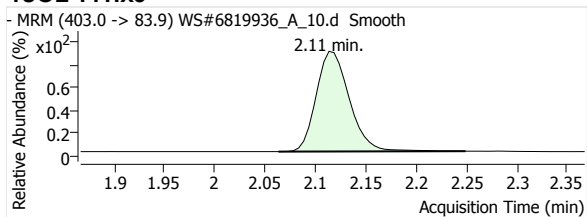


## 13C3-PFBS

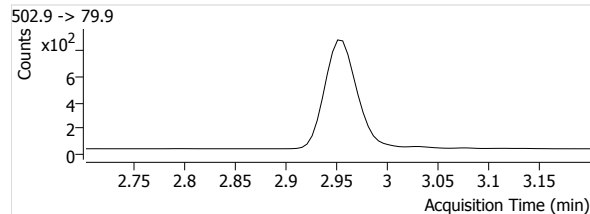
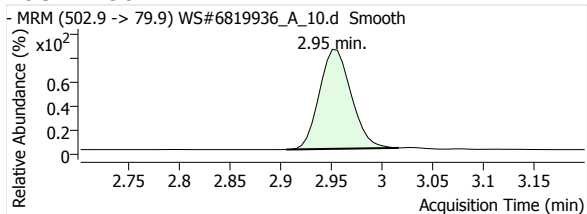


# Quantitative Analysis Report

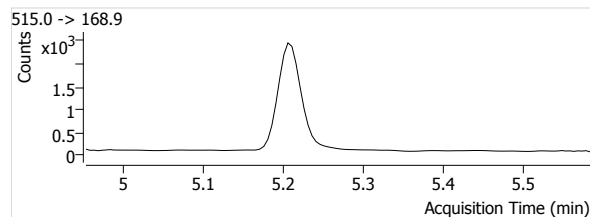
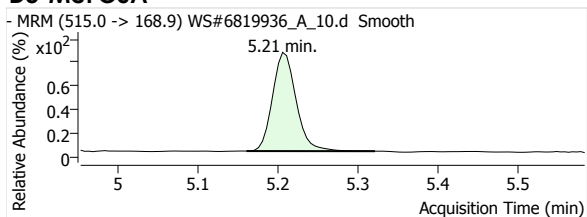
## 18O2-PFHxs



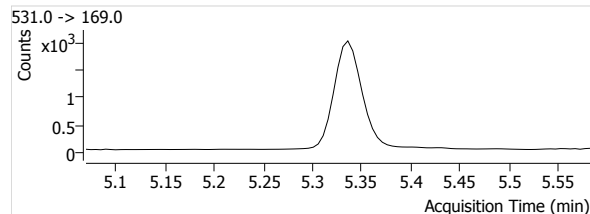
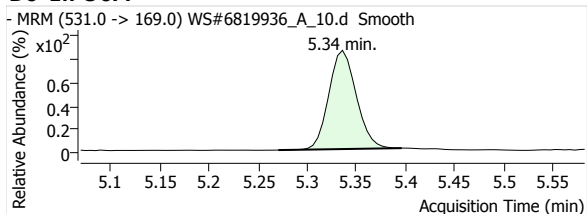
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



# Quantitative Analysis Report

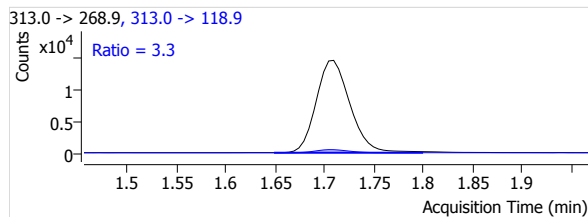
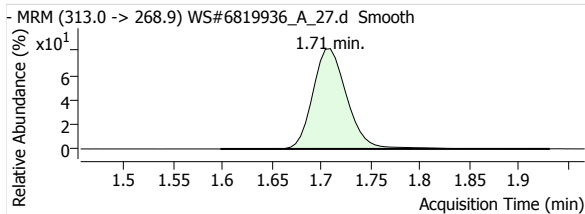
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bin

**Sample Name** CCV  
**Type** CC  
**Acq. Method File** PFAS.m  
**Acq. Date-Time** 2020/07/08 2:21:13 PM  
**Comment** -  
**User Defined**

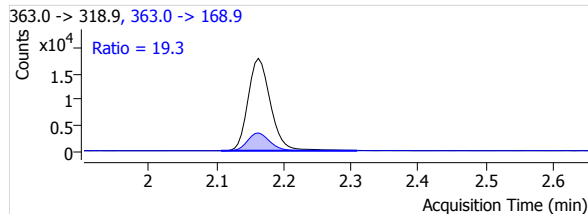
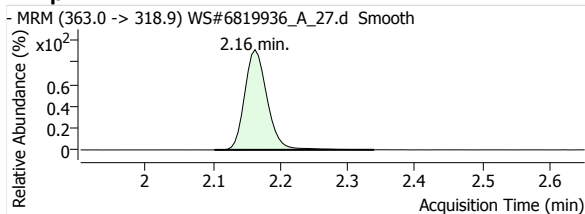
**Data File** WS#6819936\_A\_27.d  
**Instrument** LCMS04  
**Position** P2-A5  
**Dil.** 1.0

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	16.000	15.6203	97.6	35667	1.71	1020	3.4401	1162	1.70	169	3.3
PFHpA 1	µg/L	16.000	15.1594	94.7	41490	2.16	836	3.0278	8004	2.16	310	19.3
PFOA 1	µg/L	16.000	15.0630	94.1	38004	2.63	569	2.8704	9776	2.63	557	25.7
PFNA 1	µg/L	16.000	15.5015	96.9	27452	3.07	299	2.7612	6045	3.07	348	22.0
PFDA 1	µg/L	16.000	16.4386	102.7	29824	3.46	671	4.1302	4907	3.46	121	16.5
PFUnA 1	µg/L	16.000	15.7659	98.5	27838	3.80	381	2.9732	4325	3.80	503	15.5
PFDoA 1	µg/L	16.000	15.2875	95.5	32224	4.10	370	2.7013	4113	4.10	456	12.8
PFTeDA 1	µg/L	16.000	15.5424	97.1	36457	4.37	503	2.1161	2965	4.37	172	8.1
PFTeDA 1	µg/L	16.000	15.1155	94.5	41458	4.60	604	2.4064	2158	4.60	202	5.2
PFBS 1	µg/L	16.000	15.2749	95.5	8774	1.37	1190	2.4898	3926	1.37	490	44.7
PFHxS 1	µg/L	16.000	15.6157	97.6	6480	2.08	346	2.7126	3389	2.10	193	52.3
PFOS 1	µg/L	16.000	15.5680	97.3	4784	2.89	115	2.5501	2561	2.90	172	53.5
MeFOSA 1	µg/L	16.000	16.1511	100.9	5476	5.20	120	1.1609	4413	5.20	183	80.6
EtFOSA 1	µg/L	16.000	15.4805	96.8	5345	5.33	609	1.3477	4676	5.33	737	87.5
13C2-PFHxA	µg/L	100.000	104.6744	104.7	10368	1.71	502		--	--	--	--
13C4-PFHpA	µg/L	100.000	107.7365	107.7	13703	2.16	570		--	--	--	--
13C4-PFOA	µg/L	100.000	111.8054	111.8	13240	2.63	1131		--	--	--	--
13C5-PFNA	µg/L	100.000	106.7655	106.8	9942	3.07	573		--	--	--	--
13C2-PFDA	µg/L	100.000	100.9224	100.9	7221	3.47	226		--	--	--	--
13C2-PFUnA	µg/L	100.000	109.5472	109.5	9363	3.80	1036		--	--	--	--
13C2-PFDoA	µg/L	100.000	113.9351	113.9	11929	4.10	1188		--	--	--	--
13C2-PFTeDA	µg/L	100.000	112.5351	112.5	17228	4.60	1245		--	--	--	--
13C3-PFBS	µg/L	100.000	104.6940	104.7	3524	1.36	397		--	--	--	--
18O2-PFHxS	µg/L	100.000	102.3126	102.3	2389	2.12	394		--	--	--	--
13C4-PFOS	µg/L	100.000	103.6464	103.6	1876	2.95	277		--	--	--	--
D3-MeFOSA	µg/L	100.000	104.7059	104.7	4717	5.21	67		--	--	--	--
D5-EtFOSA	µg/L	100.000	108.0948	108.1	3966	5.34	107		--	--	--	--

### PFHxA 1

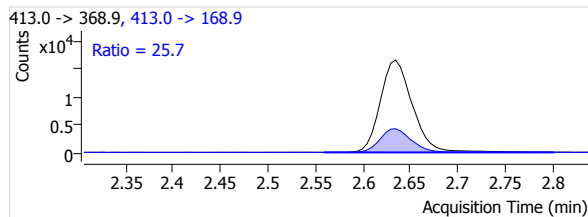
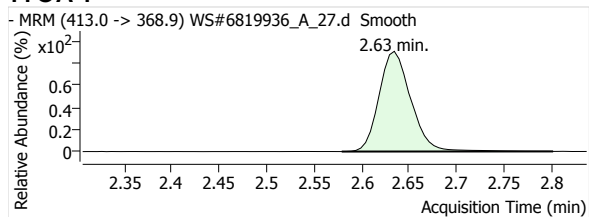


### PFHpA 1

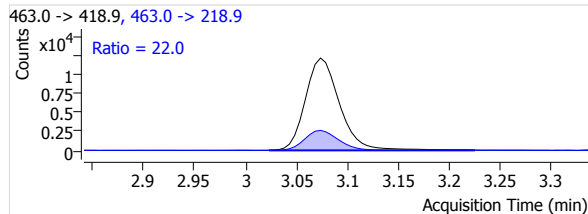
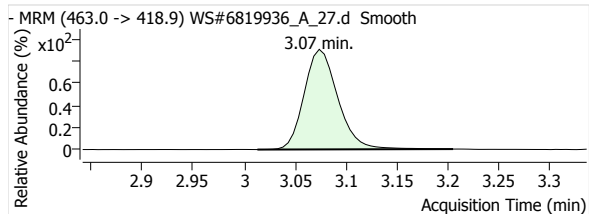


# Quantitative Analysis Report

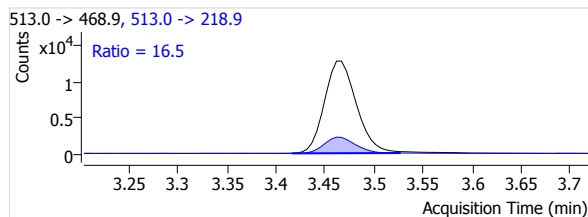
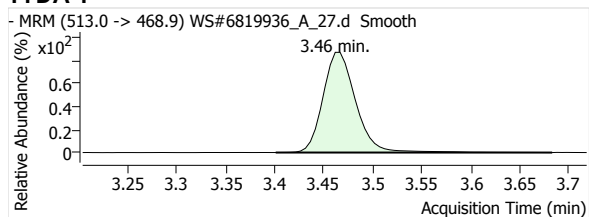
## PFOA 1



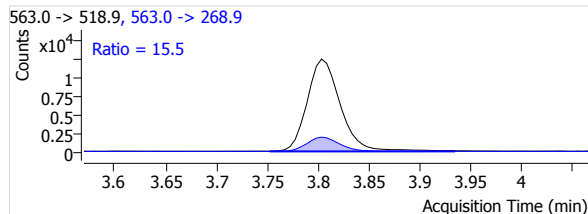
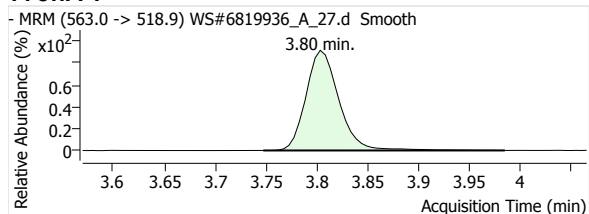
## PFNA 1



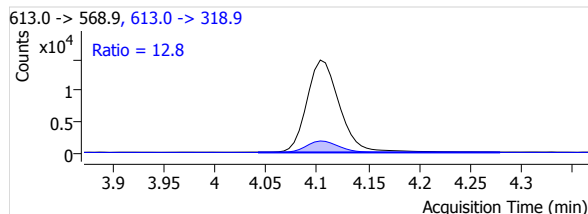
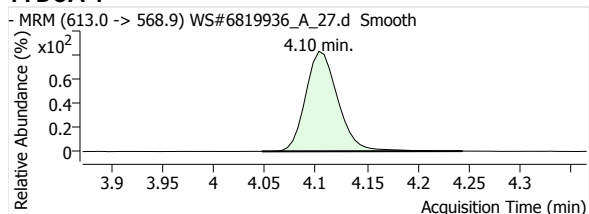
## PFDA 1



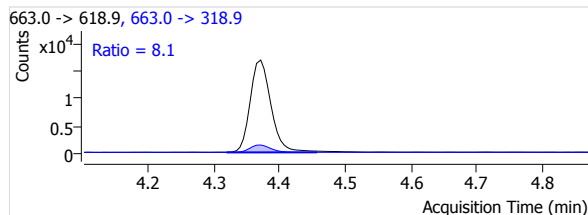
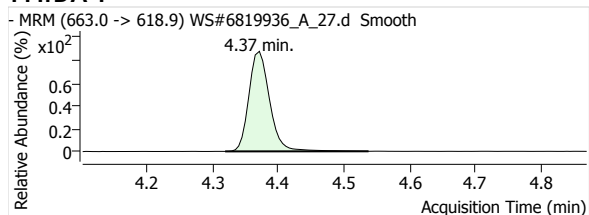
## PFUnA 1



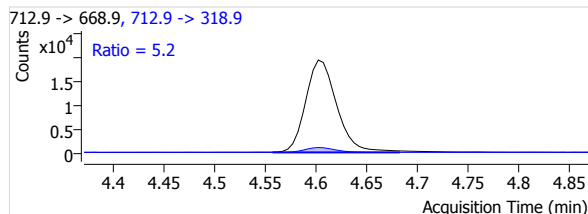
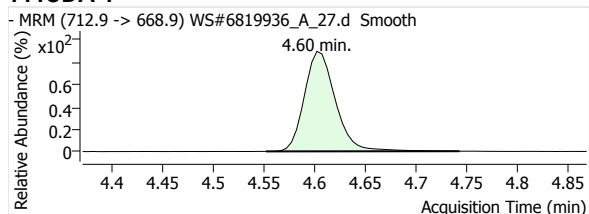
## PFDaA 1



## PFTrDA 1

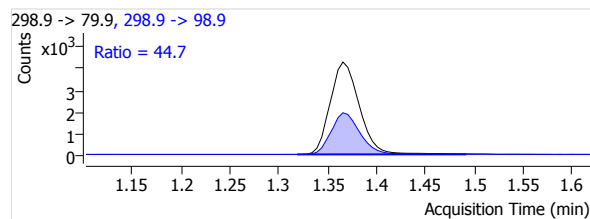
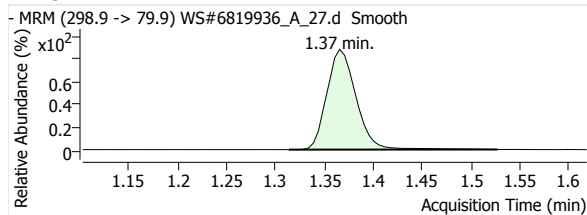


## PFTeDA 1

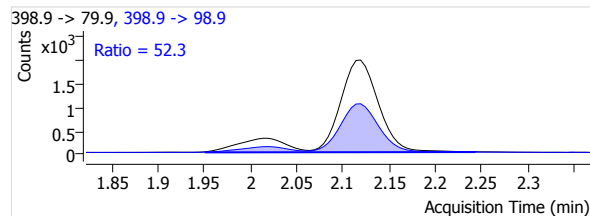
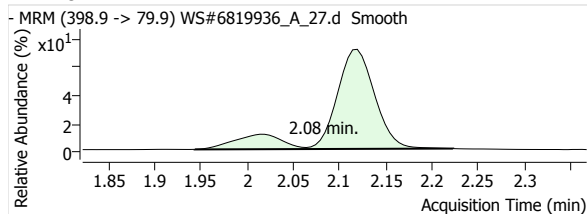


# Quantitative Analysis Report

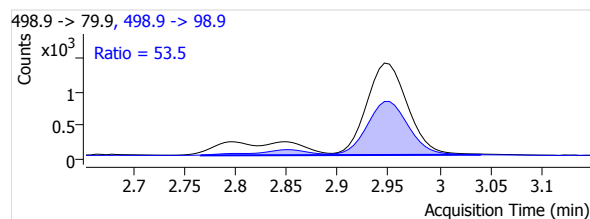
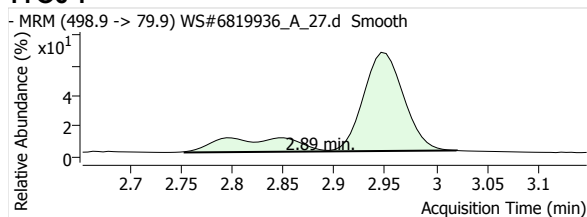
## PFBS 1



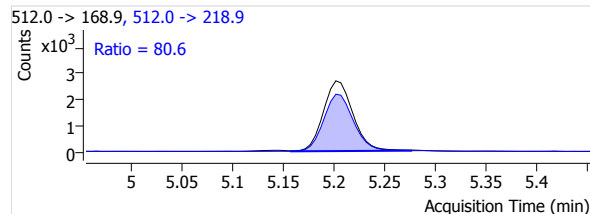
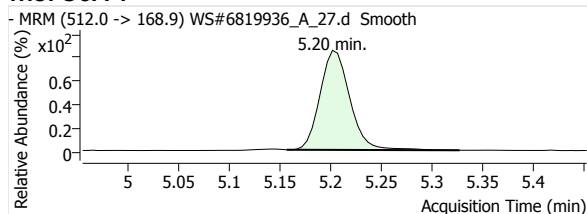
## PFHxS 1



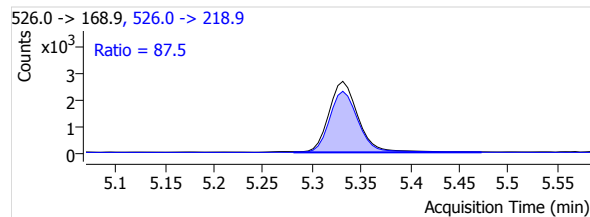
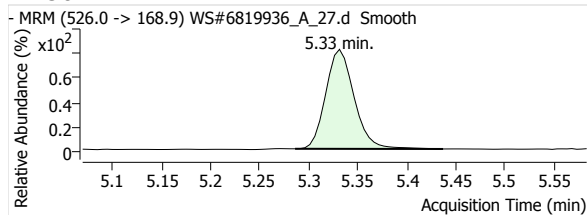
## PFOS 1



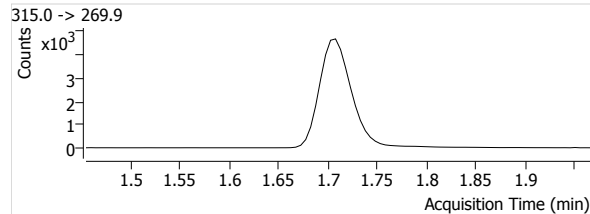
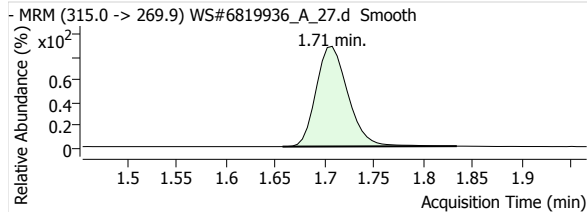
## MeFOSA 1



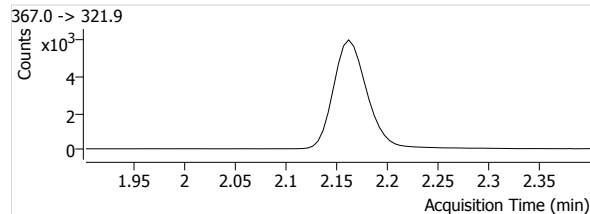
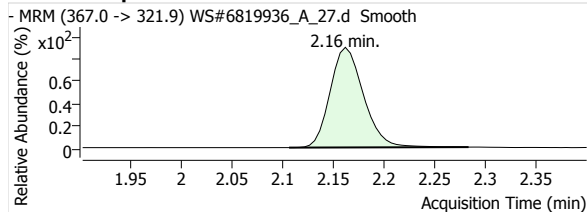
## eFOSA 1



## 13C2-PFHxA



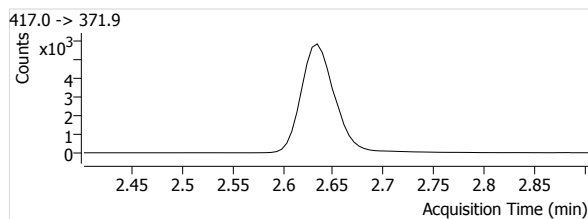
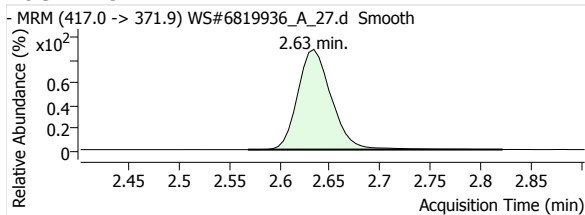
## 13C4-PFHpA



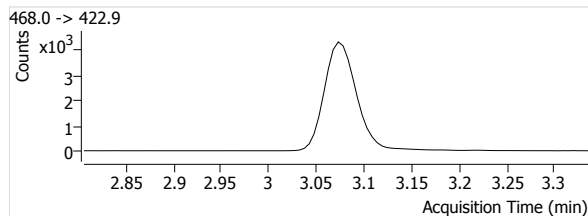
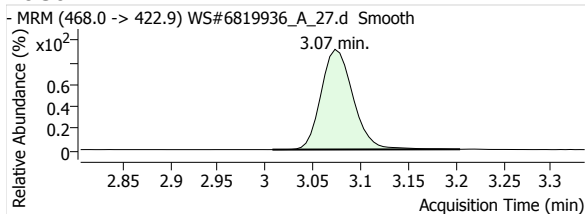


# Quantitative Analysis Report

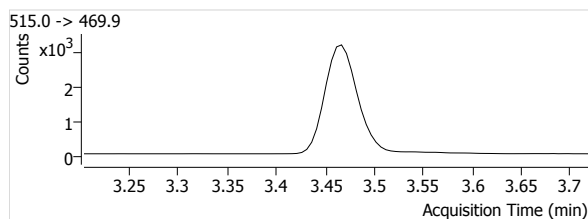
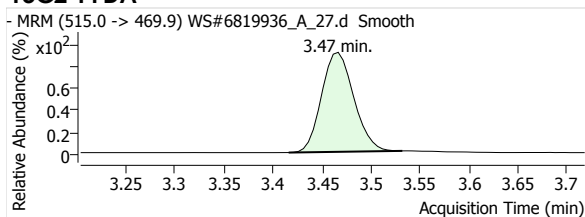
## 13C4-PFOA



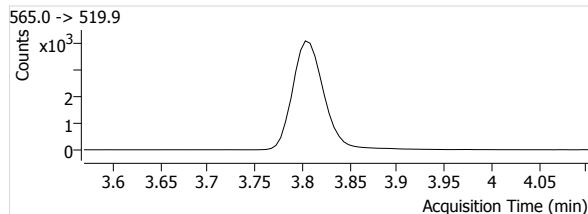
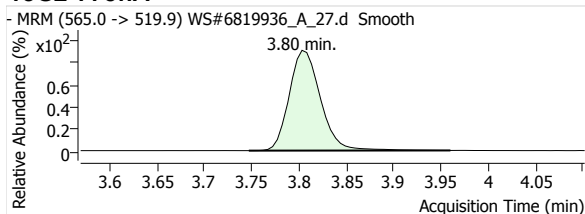
## 13C5-PFNA



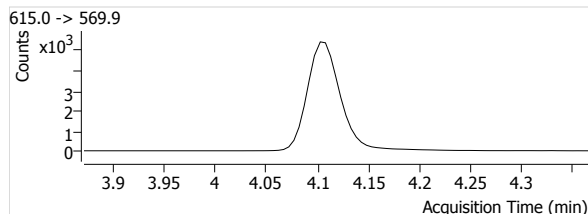
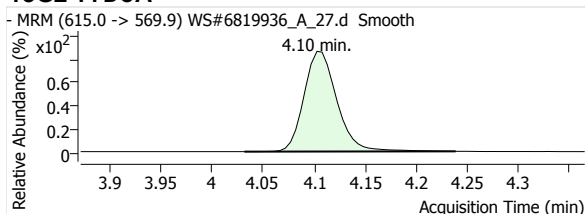
## 13C2-PFDA



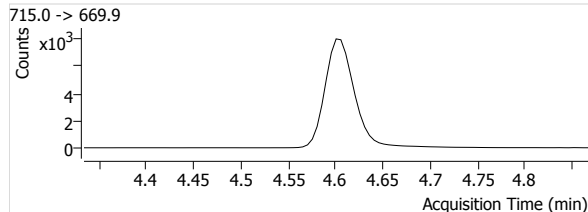
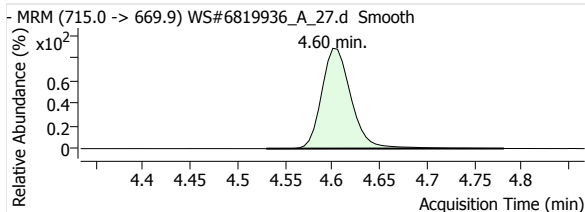
## 13C2-PFUnA



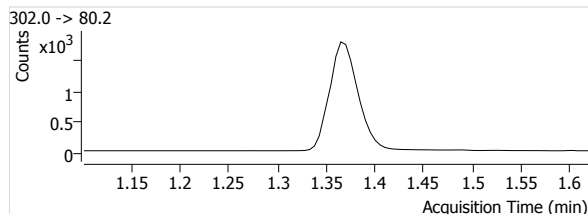
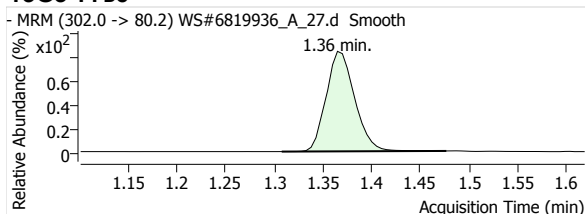
## 13C2-PFDoA



## 13C2-PFTeDA

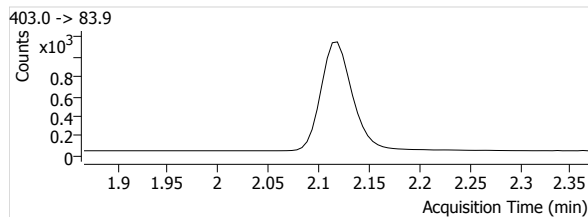
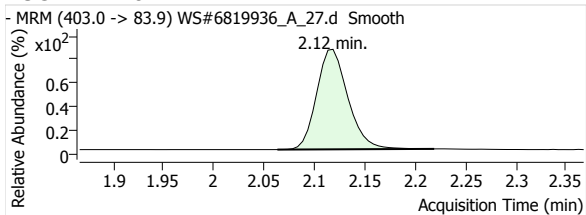


## 13C3-PFBS

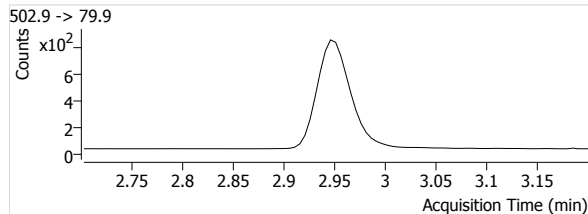
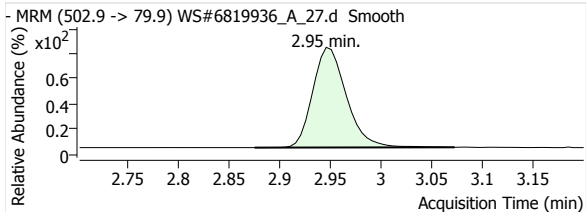


# Quantitative Analysis Report

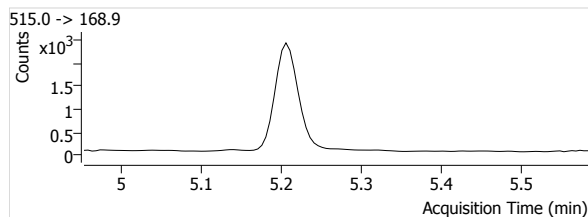
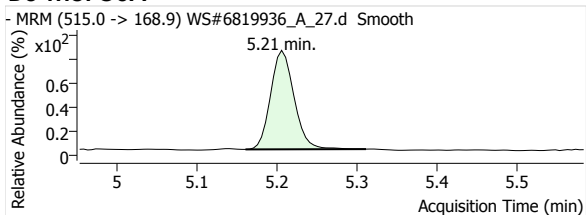
## 18O2-PFHxs



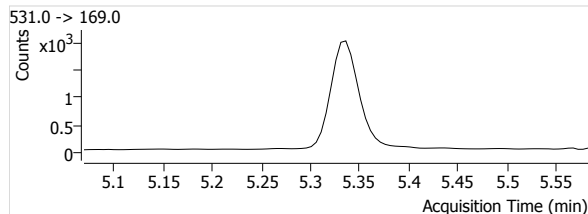
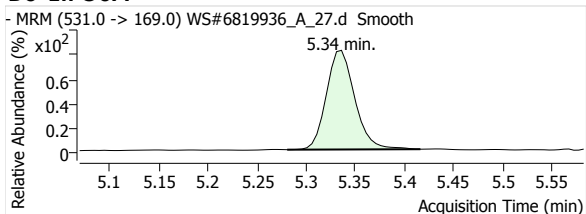
## 13C4-PFOS



## D3-MeFOSA



## D5-EtFOSA



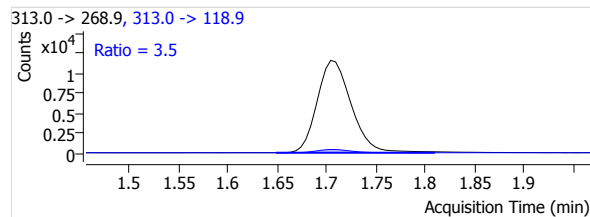
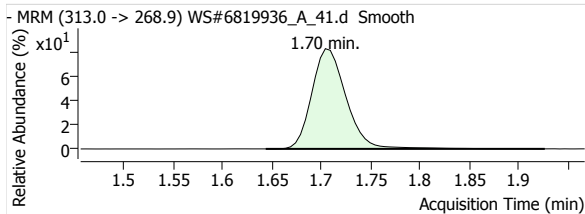
# Quantitative Analysis Report

Batch Data Path File Name T:\LCMS04\PFC\20200707\WS#6819936\_A\QuantResults\PFC\_Water\_DOD\_20200708\_WS#6819936\_A\_ML.batch.  
bin

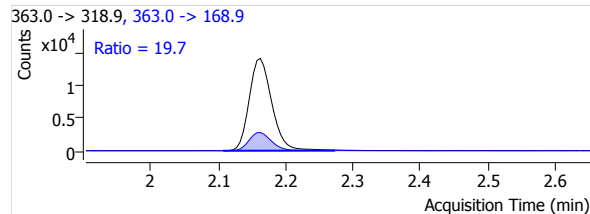
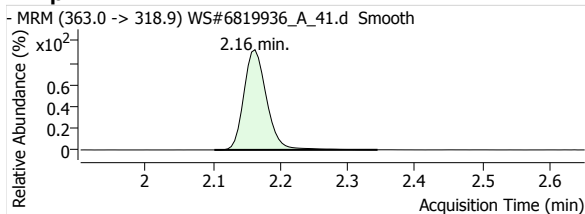
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Type	CC	Instrument	LCMS04
Acq. Method File	PFAS.m	Position	P2-A5
Acq. Date-Time	2020/07/08 3:58:20 PM	Dil.	1.0
Comment	-		
User Defined			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	16.000	15.3348	95.8	28223	1.70	946	3.3764	990	1.70	112	3.5
PFHpA 1	µg/L	16.000	15.6898	98.1	32978	2.16	859	3.1351	6482	2.16	280	19.7
PFOA 1	µg/L	16.000	15.4530	96.6	30092	2.63	717	2.9456	7815	2.63	445	26.0
PFNA 1	µg/L	16.000	15.1655	94.8	21746	3.07	403	2.7007	5005	3.07	268	23.0
PFDA 1	µg/L	16.000	15.4970	96.9	22737	3.46	589	3.8920	3983	3.46	314	17.5
PFUnA 1	µg/L	16.000	15.6471	97.8	21575	3.80	404	2.9506	3288	3.80	189	15.2
PFDoA 1	µg/L	16.000	14.9724	93.6	24851	4.11	345	2.6451	3249	4.11	680	13.1
PFTeDA 1	µg/L	16.000	15.3561	96.0	27978	4.37	332	2.0906	2488	4.37	186	8.9
PFTeDA 1	µg/L	16.000	15.4368	96.5	32897	4.60	691	2.4581	1767	4.60	273	5.4
PFBS 1	µg/L	16.000	16.2129	101.3	7159	1.37	418	2.6436	3163	1.37	437	44.2
PFHxS 1	µg/L	16.000	15.2350	95.2	5371	2.08	321	2.6460	2845	2.10	325	53.0
PFOS 1	µg/L	16.000	15.2082	95.1	3851	2.89	88	2.4908	2119	2.90	112	55.0
MeFOSA 1	µg/L	16.000	15.3227	95.8	4138	5.20	85	1.1008	3597	5.20	238	86.9
EtFOSA 1	µg/L	16.000	15.0470	94.0	4125	5.33	464	1.3095	3724	5.33	534	90.3
13C2-PFHxA	µg/L	100.000	84.3917	84.4	8359	1.70	478		--	--	--	--
13C4-PFHpA	µg/L	100.000	82.7030	82.7	10519	2.16	307		--	--	--	--
13C4-PFOA	µg/L	100.000	86.2692	86.3	10216	2.63	1775		--	--	--	--
13C5-PFNA	µg/L	100.000	86.4691	86.5	8052	3.07	426		--	--	--	--
13C2-PFDA	µg/L	100.000	81.6492	81.6	5842	3.46	303		--	--	--	--
13C2-PFUnA	µg/L	100.000	85.5505	85.6	7312	3.80	549		--	--	--	--
13C2-PFDoA	µg/L	100.000	89.7326	89.7	9395	4.11	810		--	--	--	--
13C2-PFTeDA	µg/L	100.000	87.4192	87.4	13383	4.61	1832		--	--	--	--
13C3-PFBS	µg/L	100.000	80.4516	80.5	2708	1.36	282		--	--	--	--
18O2-PFHxS	µg/L	100.000	86.9379	86.9	2030	2.12	263		--	--	--	--
13C4-PFOS	µg/L	100.000	85.4144	85.4	1546	2.95	189		--	--	--	--
D3-MeFOSA	µg/L	100.000	83.4406	83.4	3759	5.21	67		--	--	--	--
D5-EtFOSA	µg/L	100.000	85.8545	85.9	3150	5.34	104		--	--	--	--

## PFHxA 1

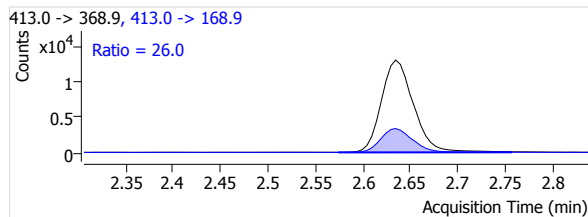
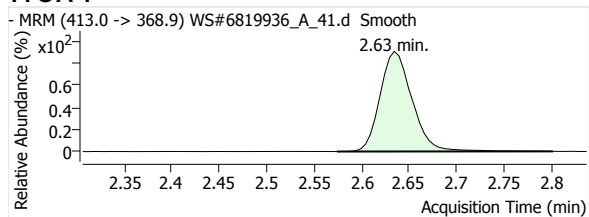


## PFHpA 1

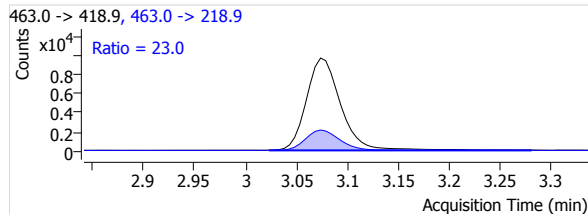
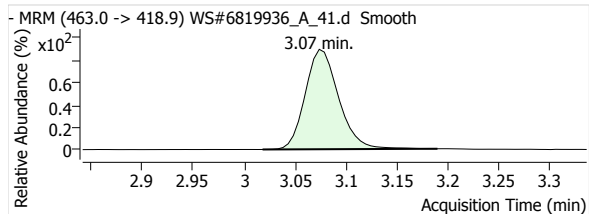


# Quantitative Analysis Report

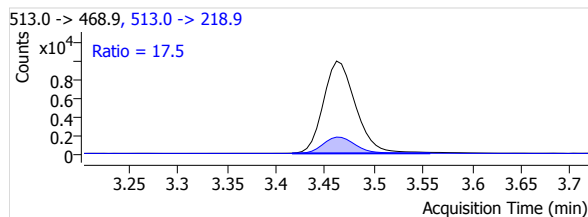
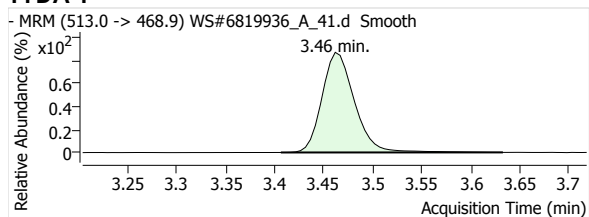
## PFOA 1



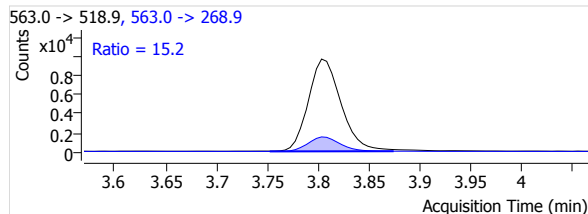
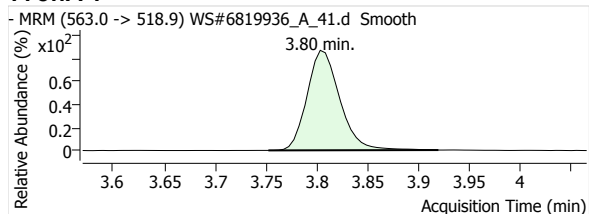
## PFNA 1



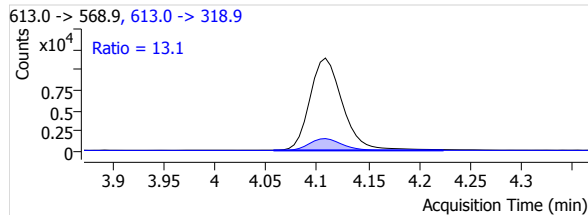
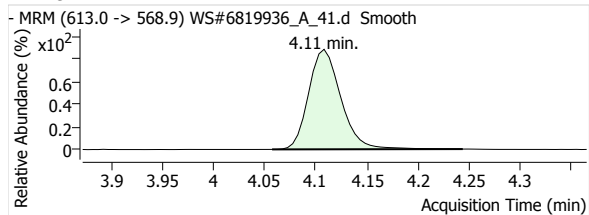
## PFDA 1



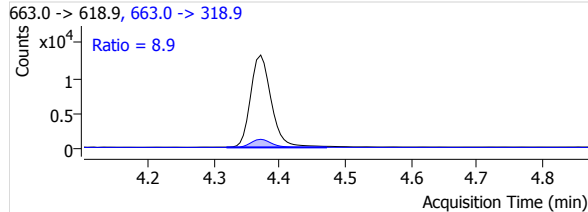
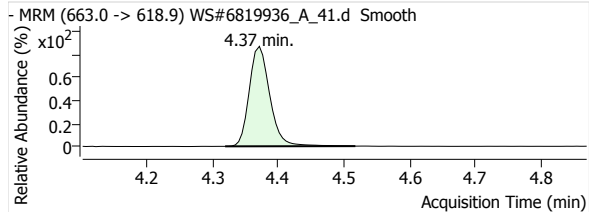
## PFUnA 1



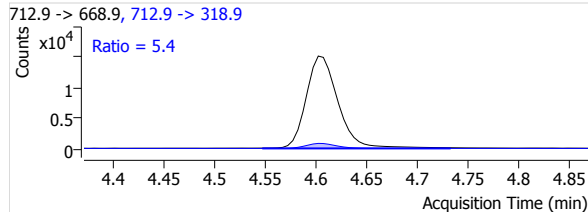
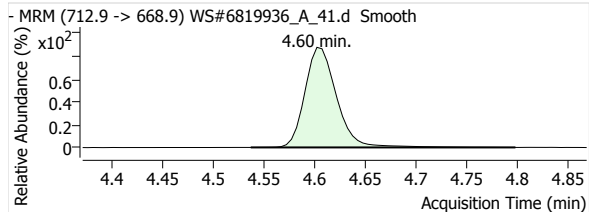
## PFDaA 1



## PFTrDA 1

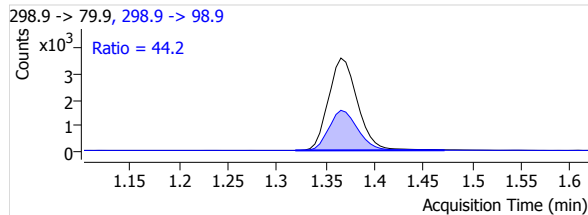
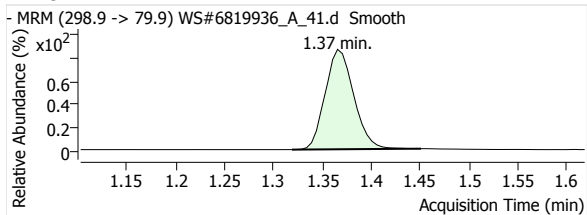


## PFTeDA 1

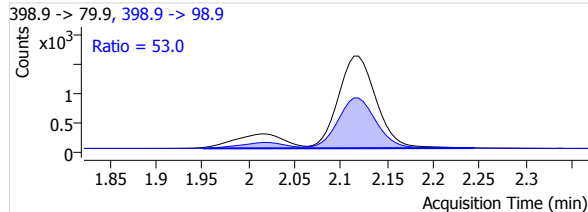
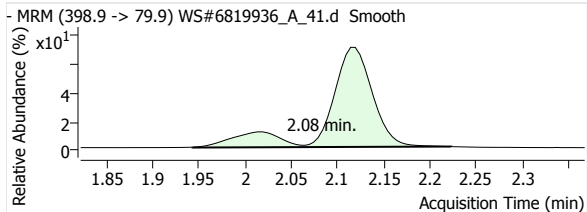


# Quantitative Analysis Report

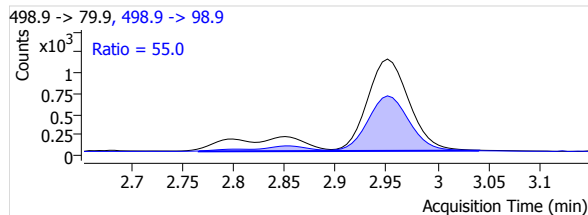
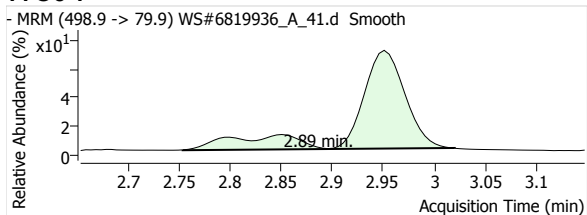
## PFBS 1



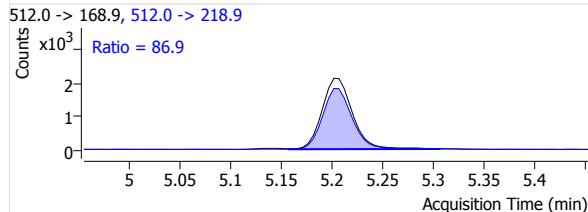
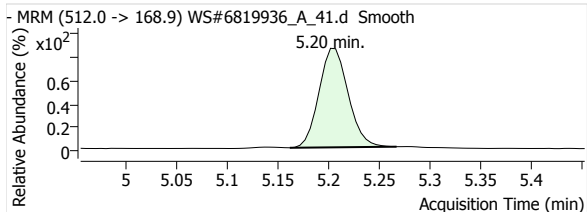
## PFHxS 1



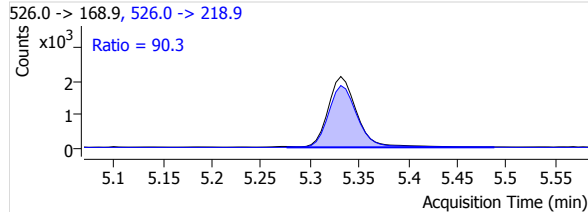
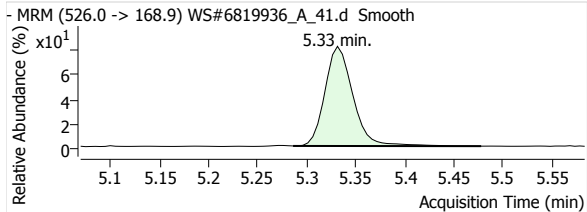
## PFOS 1



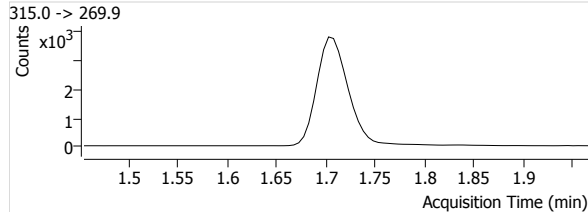
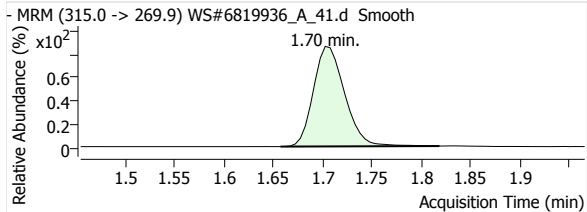
## MeFOSA 1



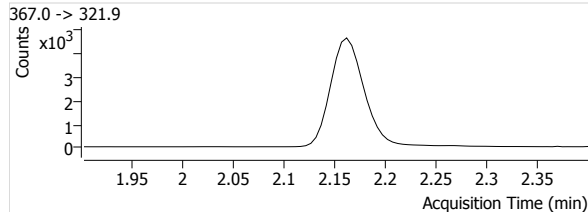
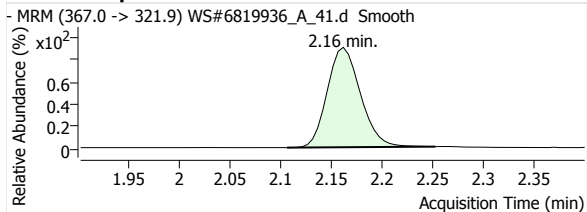
## eFOSA 1



## 13C2-PFHxA

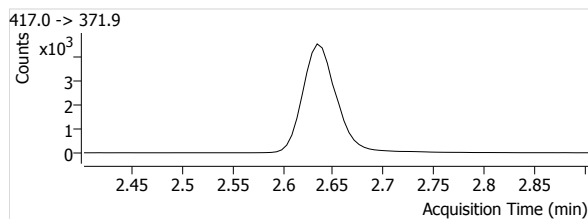
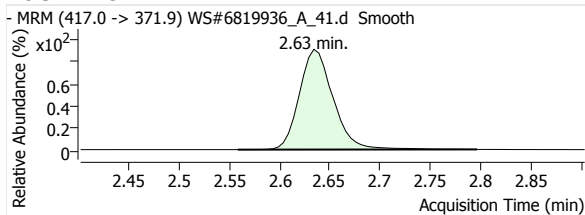


## 13C4-PFHpA

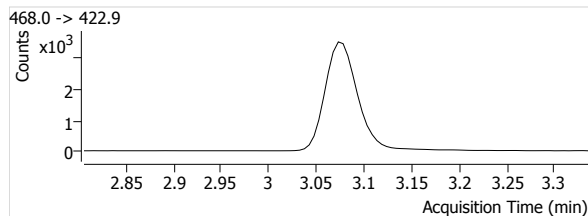
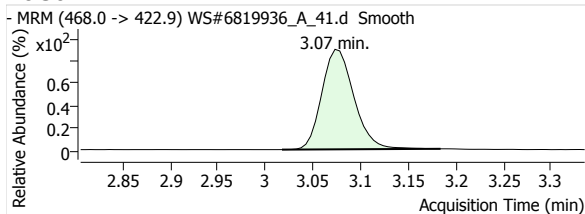


# Quantitative Analysis Report

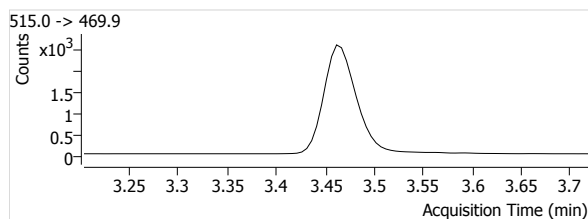
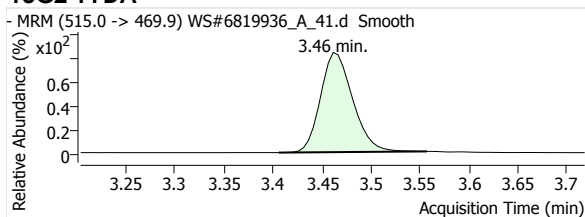
## 13C4-PFOA



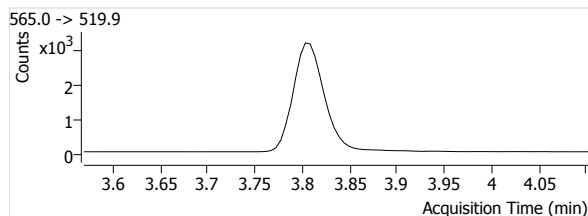
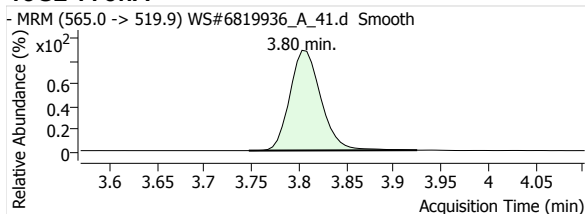
## 13C5-PFNA



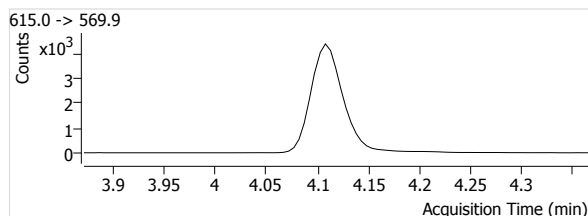
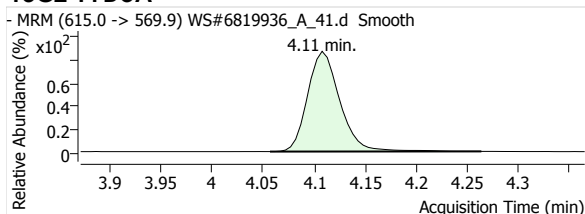
## 13C2-PFDA



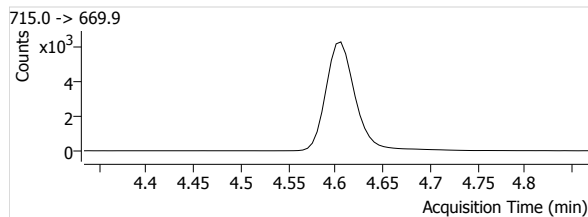
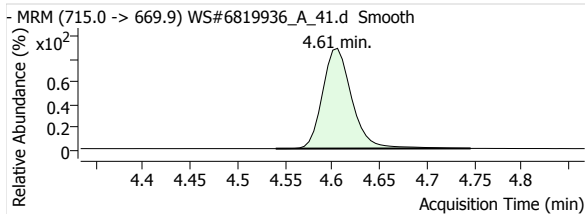
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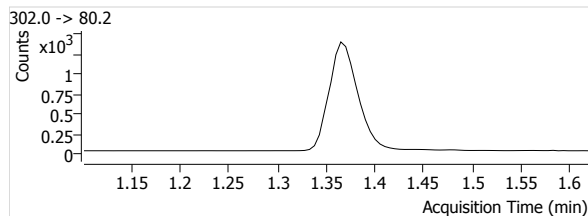
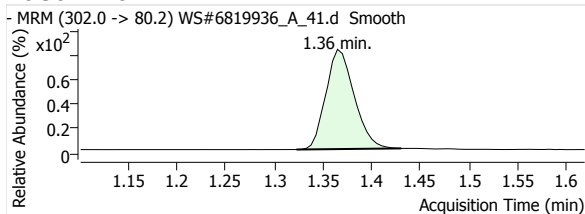
## 13C2-PFDoA



## 13C2-PFTeDA

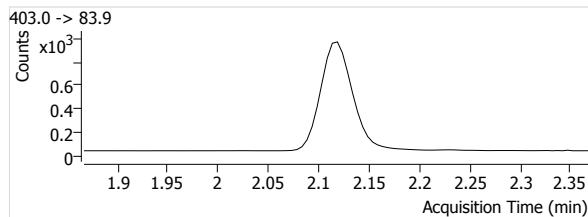
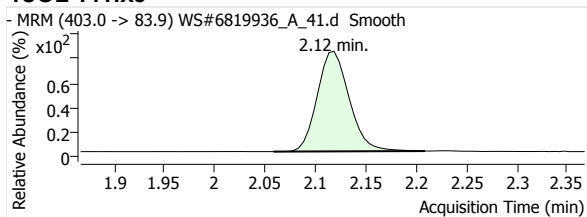


## 13C3-PFBS

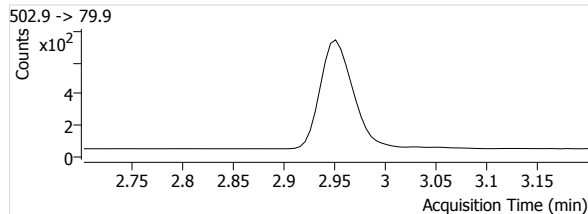
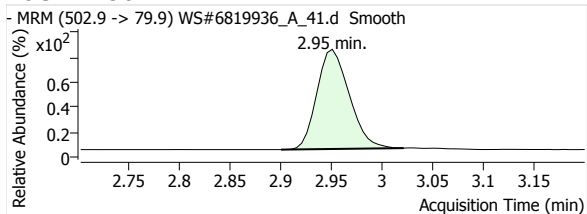


# Quantitative Analysis Report

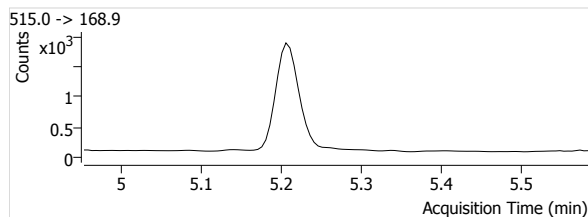
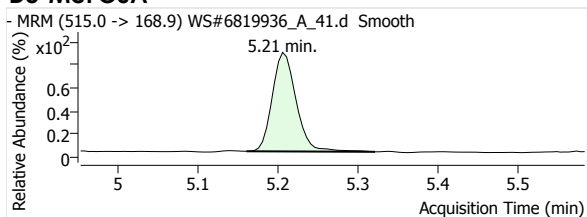
## 18O2-PFHxs



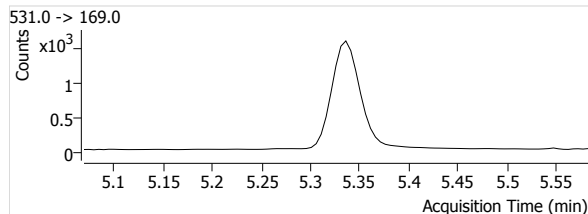
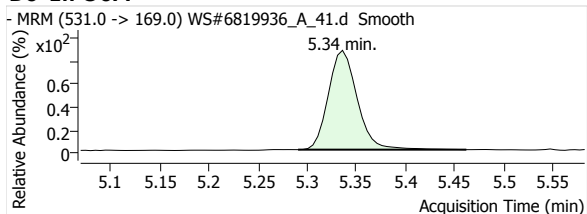
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA



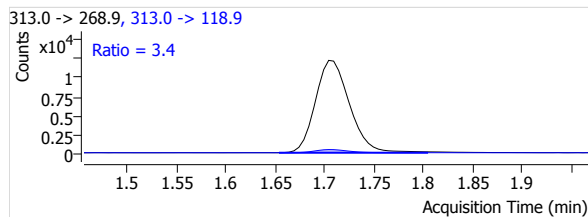
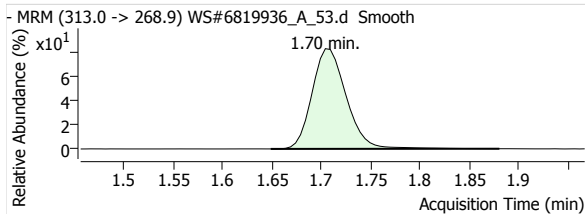
# Quantitative Analysis Report

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bin

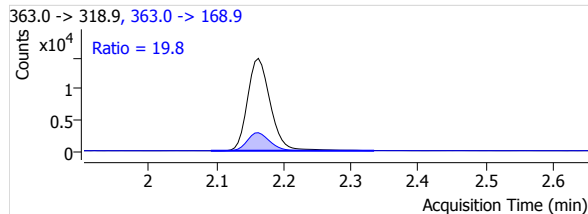
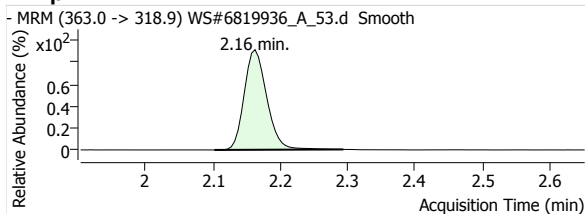
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Type	CC	Instrument	LCMS04
Acq. Method File	PFAS.m	Position	P2-A5
Acq. Date-Time	2020/07/08 5:21:35 PM	Dil.	1.0
Comment	-		
User Defined			

Name	Units	Target Conc.	Final Conc.	Accuracy	Analyte Resp.	Analyte RT	Analyte S/N	Area Ratio	Conf. Resp.	Conf. RT	Conf. S/N	Ion Ratio
PFHxA 1	µg/L	16.000	15.7573	98.5	29657	1.70	835	3.4707	1006	1.70	213	3.4
PFHpA 1	µg/L	16.000	15.1889	94.9	34685	2.16	374	3.0338	6884	2.16	316	19.8
PFOA 1	µg/L	16.000	15.5590	97.2	31938	2.63	491	2.9660	8143	2.63	471	25.5
PFNA 1	µg/L	16.000	15.3895	96.2	23351	3.07	384	2.7410	5198	3.07	233	22.3
PFDA 1	µg/L	16.000	15.7513	98.4	24367	3.47	486	3.9563	4217	3.47	496	17.3
PFUnA 1	µg/L	16.000	15.7308	98.3	22949	3.80	285	2.9665	3613	3.80	205	15.7
PFDoA 1	µg/L	16.000	15.4525	96.6	26996	4.11	386	2.7307	3445	4.11	339	12.8
PFTeDA 1	µg/L	16.000	15.7816	98.6	30632	4.37	357	2.1490	2668	4.37	224	8.7
PFTeDA 1	µg/L	16.000	15.4054	96.3	34966	4.60	582	2.4531	1879	4.60	190	5.4
PFBS 1	µg/L	16.000	15.9674	99.8	7417	1.37	655	2.6034	3264	1.37	550	44.0
PFHxS 1	µg/L	16.000	15.4031	96.3	5605	2.08	551	2.6754	2869	2.10	302	51.2
PFOS 1	µg/L	16.000	15.0274	93.9	4026	2.89	73	2.4609	2207	2.90	139	54.8
MeFOSA 1	µg/L	16.000	15.4034	96.3	4305	5.21	115	1.1067	3790	5.21	333	88.0
EtFOSA 1	µg/L	16.000	15.2348	95.2	4376	5.33	654	1.3261	3716	5.33	270	84.9
13C2-PFHxA	µg/L	100.000	86.2696	86.3	8545	1.70	567		--	--	--	--
13C4-PFHpA	µg/L	100.000	89.8891	89.9	11433	2.16	832		--	--	--	--
13C4-PFOA	µg/L	100.000	90.9306	90.9	10768	2.63	383		--	--	--	--
13C5-PFNA	µg/L	100.000	91.4841	91.5	8519	3.07	882		--	--	--	--
13C2-PFDA	µg/L	100.000	86.0797	86.1	6159	3.47	264		--	--	--	--
13C2-PFUnA	µg/L	100.000	90.5113	90.5	7736	3.81	211		--	--	--	--
13C2-PFDoA	µg/L	100.000	94.4222	94.4	9886	4.11	404		--	--	--	--
13C2-PFTeDA	µg/L	100.000	93.1086	93.1	14254	4.61	1127		--	--	--	--
13C3-PFBS	µg/L	100.000	84.6405	84.6	2849	1.36	363		--	--	--	--
18O2-PFHxS	µg/L	100.000	89.7216	89.7	2095	2.12	257		--	--	--	--
13C4-PFOS	µg/L	100.000	90.3867	90.4	1636	2.95	537		--	--	--	--
D3-MeFOSA	µg/L	100.000	86.3485	86.3	3890	5.21	68		--	--	--	--
D5-EtFOSA	µg/L	100.000	89.9428	89.9	3300	5.34	142		--	--	--	--

### PFHxA 1



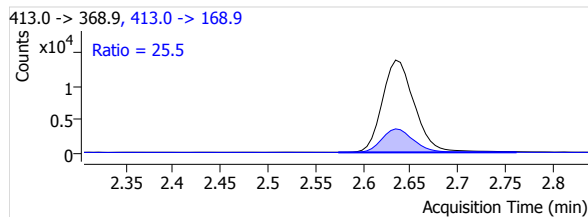
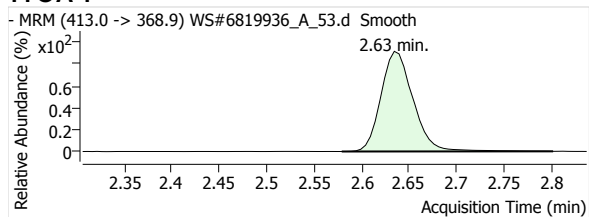
### PFHpA 1



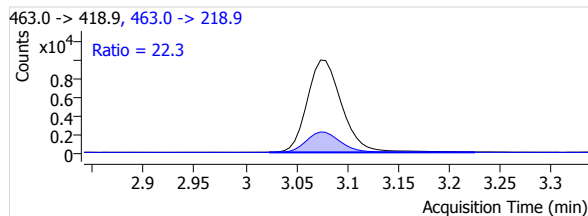
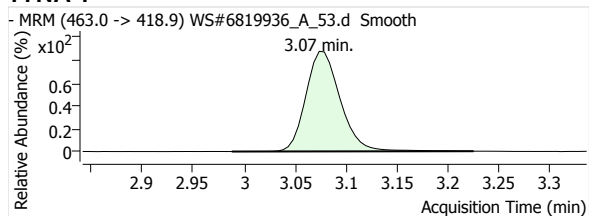


# Quantitative Analysis Report

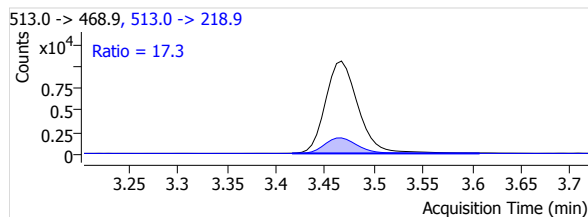
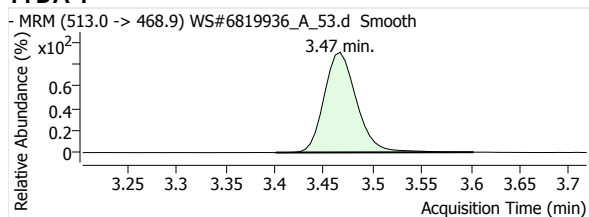
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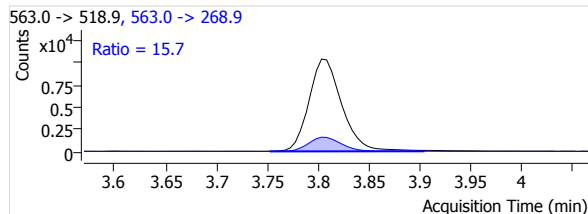
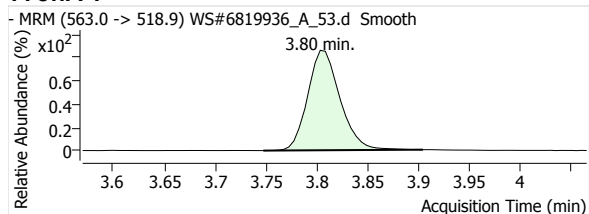
## PFNA 1



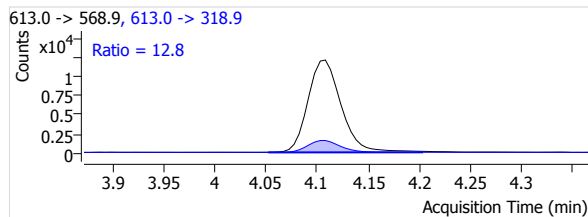
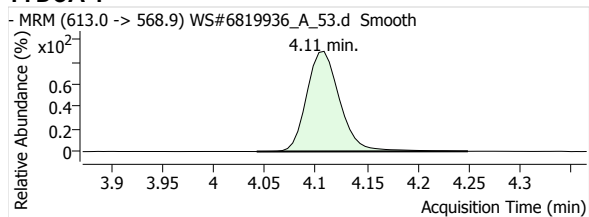
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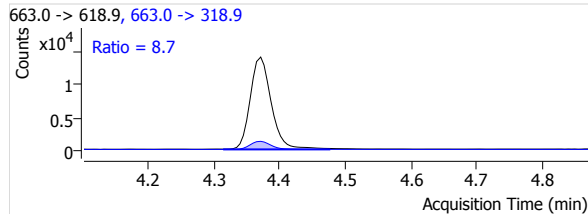
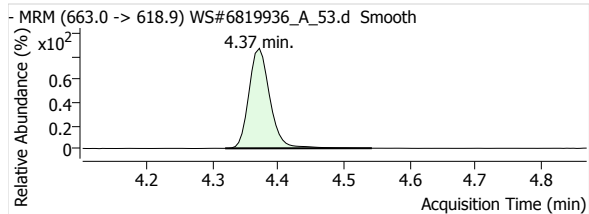
## PFUnA 1



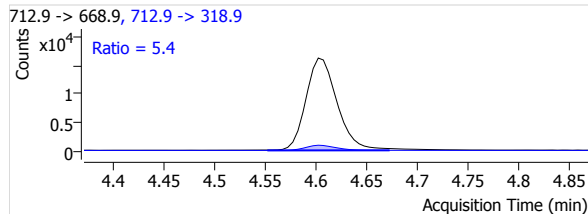
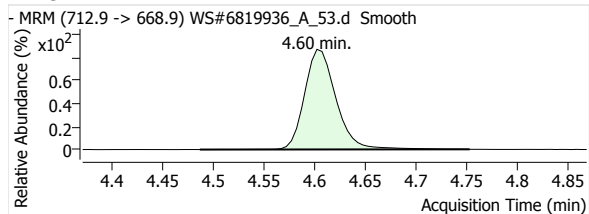
## PFDaA 1



## PFTrDA 1

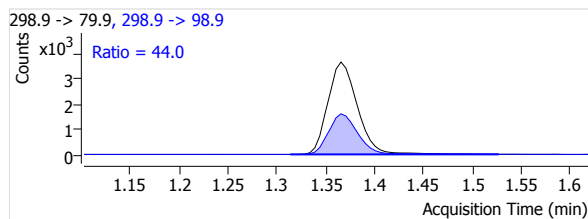
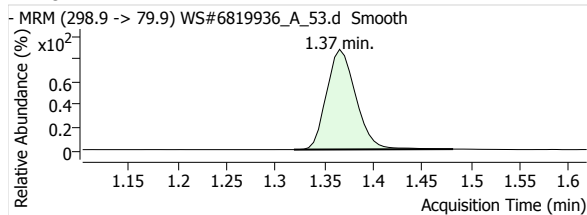


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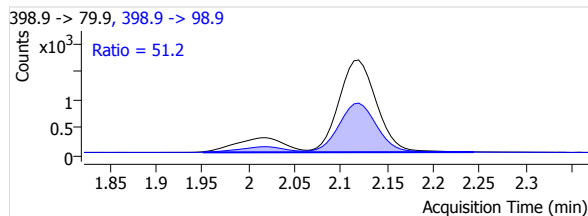
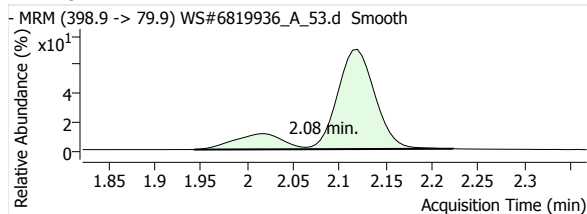


# Quantitative Analysis Report

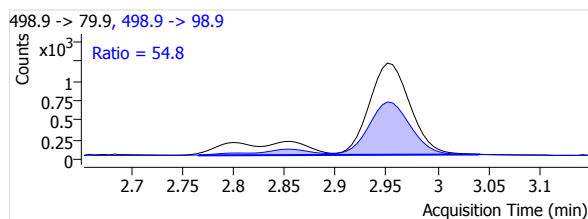
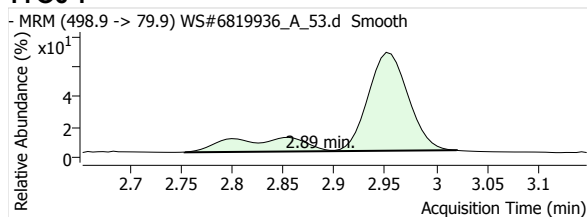
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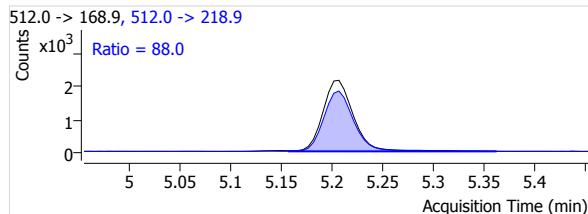
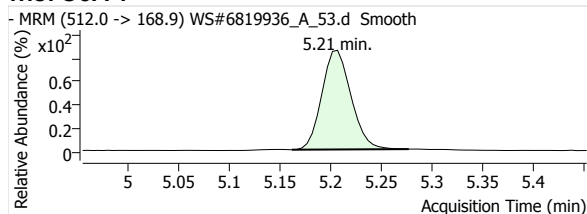
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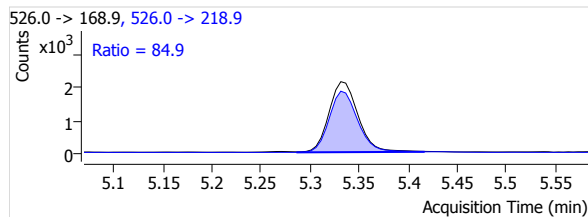
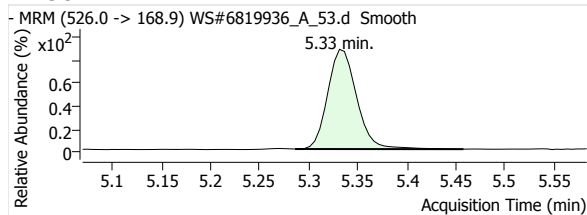
## PFOS 1



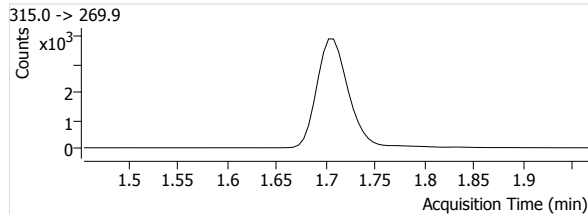
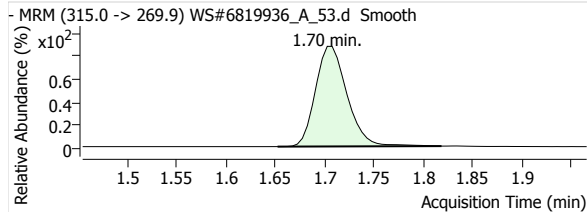
## MeFOSA 1



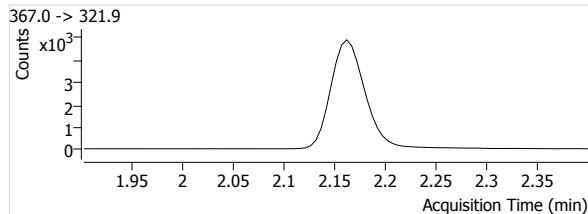
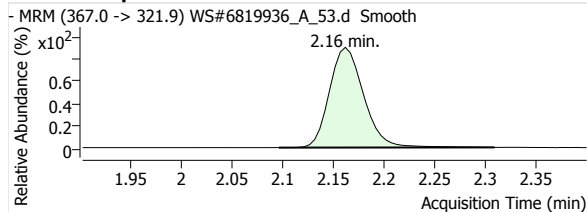
## eFOSA 1



## 13C2-PFHxA

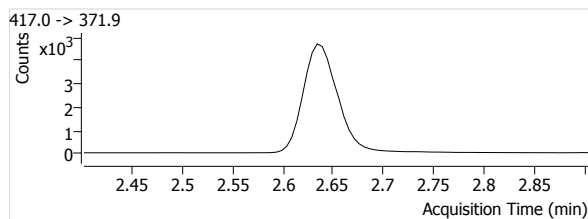
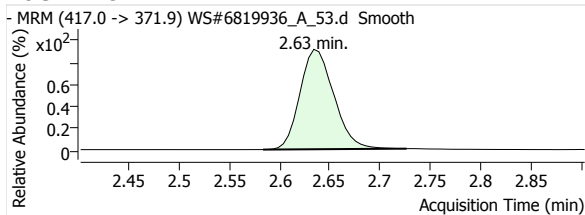


## 13C4-PFHpA

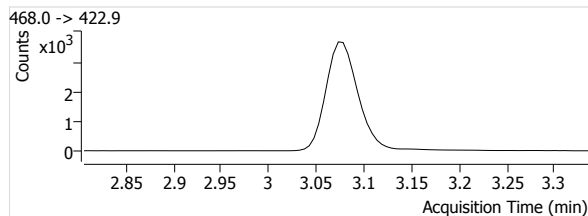
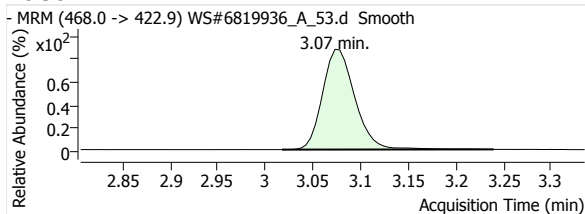


# Quantitative Analysis Report

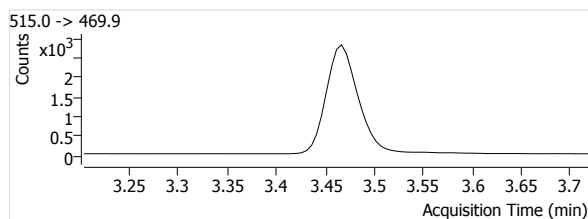
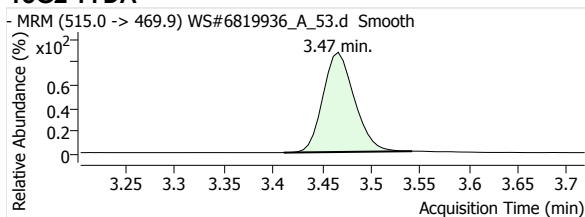
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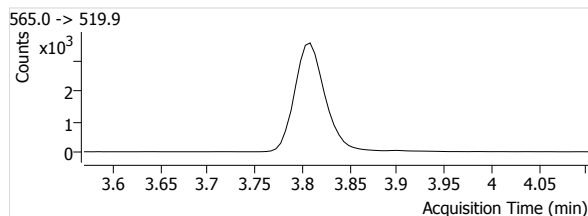
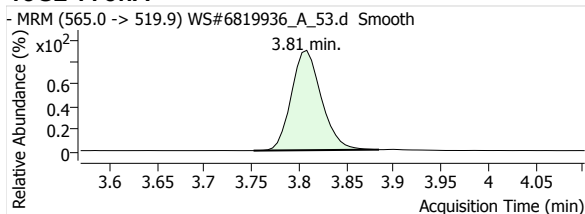
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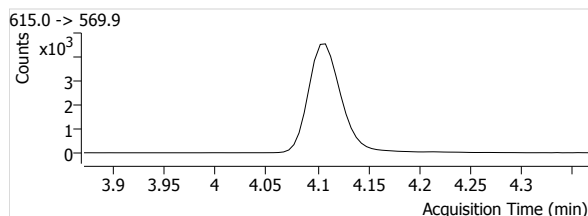
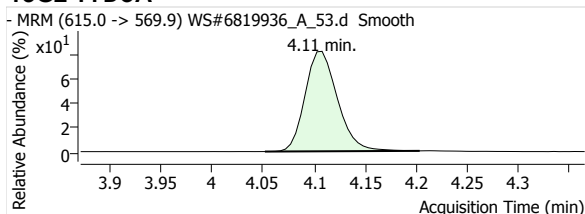
## 13C2-PFDA



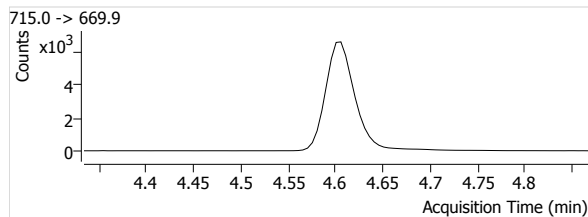
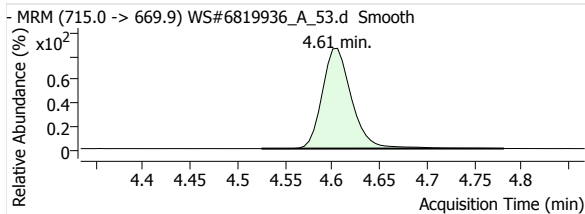
## 13C2-PFUnA



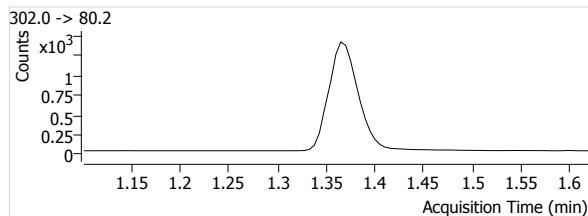
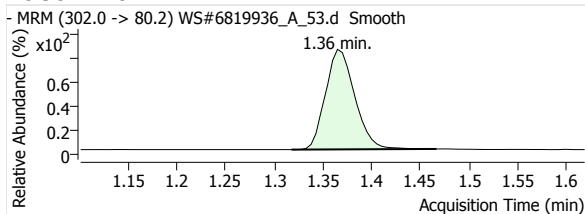
## 13C2-PFDoA



## 13C2-PFTeDA

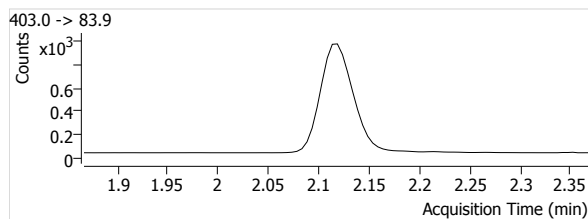
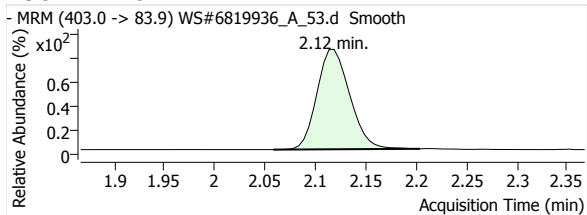


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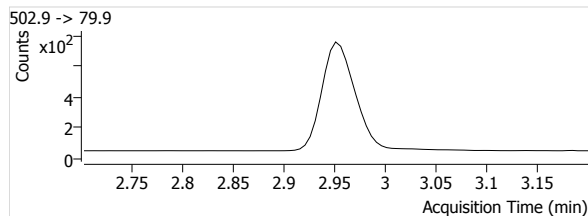
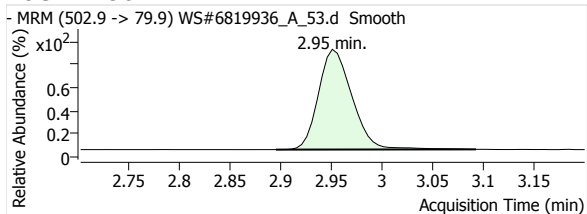


# Quantitative Analysis Report

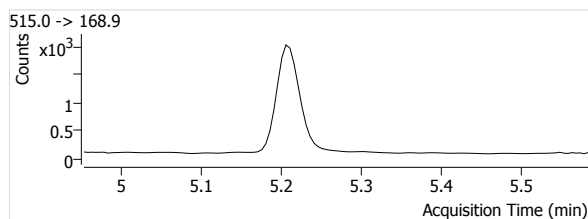
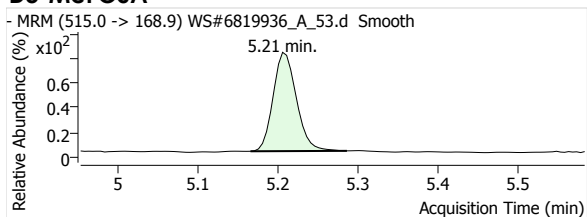
## 18O2-PFHxs



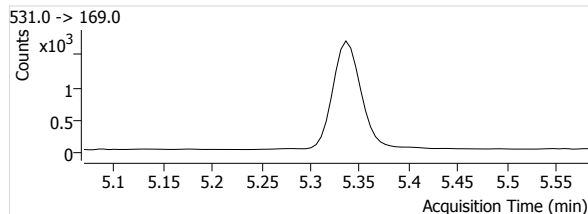
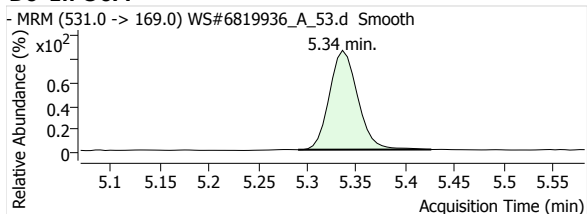
## 13C4-PFOS



## D3-MeFOFA



## D5-EtFOFA





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**Bureau Veritas Canada (2019)  
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Mississauga, Ontario, Canada  
L5N 2L8  
1-800-668-0639  
[www.bvlabs.com](http://www.bvlabs.com)**



N62473-16-C-2|0000|QTR3 20|00006|06-MW25-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:00:00|NAH700|20200720|COG5477||5.00|1||3  
35-67-1|1.8||UG\_L||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.037||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW25-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:00:00|NAH700|20200720|COG5477||5.00|1||1  
763-23-1|14||UG\_L||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.26||||1.0||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW25-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:00:00|NAH700|20200720|COG5477||5.00|1||3  
76-06-7|0.075||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.034||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW25-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:00:00|NAH700|20200720|COG5477||5.00|1||7  
2629-94-8|0.075||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.035||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW25-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:00:00|NAH700|20200720|COG5477||5.00|1||2  
058-94-8|0.050||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.022||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
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151-50-  
2|0.021||UG\_L|U||N|PR|TRG|||||||0.0099||||0.043||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW26-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||3  
1506-32-  
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0039||||0.043||COG5477||6819936|6819936|6819936|6819936||  
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75-73-  
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35-76-  
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20200714|Y  
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Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||3

07-24-  
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Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||3  
75-95-  
1|0.021||UG\_L|J||Y|PR|TRG|||0.0054|||0.022||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
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Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||3  
35-67-  
1|0.44||UG\_L|||Y|PR|TRG|||0.0081|||0.022||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW26-0620||Maxxam  
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763-23-1|1.8||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was|||0.052|||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW26-0620||Maxxam  
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76-06-  
7|0.017||UG\_L|U||N|PR|TRG|||0.0074|||0.022||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW26-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||7  
2629-94-  
8|0.017||UG\_L|U||N|PR|TRG|||0.0076|||0.022||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW26-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|14:28:00|NAH701|20200720|COG5477||1.10|1||2  
058-94-  
8|0.011||UG\_L|U||N|PR|TRG|||0.0047|||0.022||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1||4  
151-50-  
2|0.019||UG\_L|U||N|PR|TRG|||0.0090|||0.040||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1||3  
1506-32-  
8|0.010||UG\_L|U||N|PR|TRG|||0.0035|||0.040||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1||3  
75-73-  
5|0.0067||UG\_L|J||Y|PR|TRG|||0.0051|||0.020||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1||3  
35-76-  
2|0.010||UG\_L|U||N|PR|TRG|||0.0041|||0.020||COG5477||6819936|6819936|6819936|6819936||



20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
07-55-  
1|0.015||UG\_L|U|||N|PR|TRG| |||||0.0068|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
75-85-  
9|0.015||UG\_L|U|||N|PR|TRG| |||||0.0071|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
07-24-  
4|0.0076||UG\_L|J|||Y|PR|TRG| |||||0.0064|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
55-46-  
4|0.023||UG\_L|||Y|PR|TRG| |||||0.0052|||0.020|||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
75-95-  
1|0.010||UG\_L|U|||N|PR|TRG| |||||0.0049|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
35-67-  
1|0.023||UG\_L|||Y|PR|TRG| |||||0.0074|||0.020|||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||1  
763-23-  
1|0.050||UG\_L|||Y|PR|TRG| |||||0.0052|||0.020|||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||3  
76-06-  
7|0.015||UG\_L|U|||N|PR|TRG| |||||0.0067|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||7  
2629-94-  
8|0.015||UG\_L|U|||N|PR|TRG| |||||0.0069|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW30-0620||Maxxam  
Analytics|||NA||000|||4|||20200706|12:32:37|20200708|14:48:00|NAH702|20200720|COG5477||1.00|1|||2  
058-94-  
8|0.010||UG\_L|U|||N|PR|TRG| |||||0.0043|||0.020|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1|||4  
151-50-  
2|0.021||UG\_L|U|||N|PR|TRG| |||||0.0099|||0.043|||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam

Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
1506-32-  
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0039|||0.043||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
75-73-  
5|0.12||UG\_L|||Y|PR|TRG|||||||0.0056|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
35-76-  
2|0.010||UG\_L|J||Y|PR|TRG|||||||0.0045|||0.022||COG5477||6819936|6819936|6819936|6819936||2  
0200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
07-55-  
1|0.017||UG\_L|U||N|PR|TRG|||||||0.0075|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
75-85-  
9|0.51||UG\_L|||Y|PR|TRG|||||||0.0078|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
07-24-  
4|1.1||UG\_L|||Y|PR|TRG|||||||0.0070|||0.022||COG5477||6819936|6819936|6819936|6819936||2020  
0714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
55-46-4|4.1||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.052||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
75-95-  
1|0.049||UG\_L|||Y|PR|TRG|||||||0.0054|||0.022||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
35-67-  
1|0.38||UG\_L|||Y|PR|TRG|||||||0.0081|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||1  
763-23-1|1.9||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample  
volume was extracted and analyzed. Detection limit  
was|||||0.052||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||3  
76-06-  
7|0.017||UG\_L|U||N|PR|TRG|||||||0.0074|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||7  
2629-94-

8|0.017||UG\_L|U||N|PR|TRG|0.0076|0.022|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH703|20200720|COG5477||1.10|1||2  
058-94-  
8|0.011||UG\_L|U||N|PR|TRG|0.0047|0.022|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||4  
151-50-  
2|0.020||UG\_L|U||N|PR|TRG|0.0095|0.042|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
1506-32-  
8|0.011||UG\_L|U||N|PR|TRG|0.0037|0.042|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
75-73-  
5|0.14||UG\_L||Y|PR|TRG|0.0054|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
35-76-  
2|0.011||UG\_L|J||Y|PR|TRG|0.0043|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
07-55-  
1|0.016||UG\_L|U||N|PR|TRG|0.0071|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
75-85-  
9|0.54||UG\_L||Y|PR|TRG|0.0075|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
07-24-  
4|1.1||UG\_L||Y|PR|TRG|0.064|0.20|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
55-46-4|4.1||UG\_L||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was||0.052||0.20||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
75-95-  
1|0.051||UG\_L||Y|PR|TRG|0.0051|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP|Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
35-67-  
1|0.39||UG\_L||Y|PR|TRG|0.0078|0.021|COG5477|6819936|6819936|6819936|6819936||20200714|Y

N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||1  
763-23-1|1.4||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample  
volume was extracted and analyzed. Detection limit  
was|||||0.052||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||3  
76-06-  
7|0.016||UG\_L|U||N|PR|TRG|||||||0.0070||||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||7  
2629-94-  
8|0.016||UG\_L|U||N|PR|TRG|||||||0.0072||||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW31-0620 DUP||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH705|20200720|COG5477||1.05|1||2  
058-94-  
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0045||||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||4  
151-50-2|0.095||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.045||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
1506-32-8|0.050||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.018||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
75-73-5|0.11||UG\_L|||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced  
sample volume was extracted and analyzed.  
Detect|||||0.026||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
35-76-2|0.025||UG\_L|J||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced  
sample volume was extracted and analyzed.  
Detect|||||0.021||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
07-55-1|0.075||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.  
Detect|||||0.034||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
75-85-9|0.90||UG\_L|||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced  
sample volume was extracted and analyzed.  
Detect|||||0.036||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3  
07-24-4|1.3||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.032||||0.10||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1||3

55-46-4|6.9||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was|||0.26|||1.0||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||3  
75-95-1|0.098||UG\_L|J||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.025|||0.10||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||3  
35-67-1|0.99||UG\_L|||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.037|||0.10||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||1  
763-23-1|18||UG\_L|||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was|||0.26|||1.0||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||3  
76-06-7|0.075||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.034|||0.10||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||7  
2629-94-8|0.075||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.035|||0.10||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW32-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH706|20200720|COG5477||5.00|1|||2  
058-94-8|0.050||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.022|||0.10||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1|||4  
151-50-2|0.038||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.018|||0.080||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1|||3  
1506-32-8|0.020||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.0070|||0.080||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1|||3  
75-73-5|0.097||UG\_L|||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.010|||0.040||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1|||3  
35-76-2|0.018||UG\_L|J||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.  
Detect|||0.0082|||0.040||COG5477||6819936|6819936|6819936|6819936|||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1|||3  
07-55-1|0.030||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a reduced sample volume was extracted and analyzed.

Detect|||||0.014||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
75-85-9|0.62||UG\_L||||Y|PR|TRG||Due to high concentrations of the associated target analytes, a reduced  
sample volume was extracted and analyzed.

Detect|||||0.014||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
07-24-4|1.3||UG\_L||||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.013||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
55-46-4|2.7||UG\_L||||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.10||||0.40||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
75-95-  
1|0.059||UG\_L||||Y|PR|TRG||||||0.0098||||0.040||COG5477|6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
35-67-1|1.5||UG\_L||||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample volume  
was extracted and analyzed. Detection limit  
was|||||0.015||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||1  
763-23-1|8.4||UG\_L||||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample  
volume was extracted and analyzed. Detection limit  
was|||||0.10||||0.40||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||3  
76-06-7|0.030||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.

Detect|||||0.013||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||7  
2629-94-8|0.030||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.

Detect|||||0.014||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW33-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|12:30:00|NAH707|20200720|COG5477||2.00|1||2  
058-94-8|0.020||UG\_L|U||N|PR|TRG||Due to high concentrations of the associated target analytes, a  
reduced sample volume was extracted and analyzed.

Detect|||||0.0086||||0.040||COG5477|6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||4  
151-50-  
2|0.021||UG\_L|U||N|PR|TRG||||||0.0099||||0.044||COG5477|6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
1506-32-  
8|0.011||UG\_L|U||N|PR|TRG||||||0.0039||||0.044||COG5477|6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam

Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
75-73-  
5|0.031||UG\_L||Y|PR|TRG|||||||0.0056|||0.022||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
35-76-  
2|0.0054||UG\_L|J||Y|PR|TRG|||||||0.0045|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
07-55-  
1|0.017||UG\_L|U||N|PR|TRG|||||||0.0075|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
75-85-  
9|0.073||UG\_L||Y|PR|TRG|||||||0.0078|||0.022||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
07-24-  
4|0.19||UG\_L||Y|PR|TRG|||||||0.0070|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
55-46-  
4|0.72||UG\_L||Y|PR|TRG|||||||0.0057|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
75-95-  
1|0.015||UG\_L|J||Y|PR|TRG|||||||0.0054|||0.022||COG5477||6819936|6819936|6819936|6819936||2  
0200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
35-67-  
1|0.16||UG\_L||Y|PR|TRG|||||||0.0081|||0.022||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||1  
763-23-1|1.9||UG\_L||Y|PR|TRG||Due to high concentration of the target analyte, a reduced sample  
volume was extracted and analyzed. Detection limit  
was|||||0.052||||0.20||COG5477||6819936|6819936|6819936|6819936||20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||3  
76-06-  
7|0.017||UG\_L|U||N|PR|TRG|||||||0.0074|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||7  
2629-94-  
8|0.017||UG\_L|U||N|PR|TRG|||||||0.0076|||0.022||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW34-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:26:00|NAH708|20200720|COG5477||1.10|1||2  
058-94-

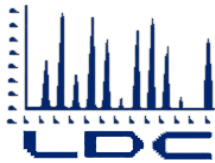
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0047|||||0.022|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||4  
151-50-  
2|0.020||UG\_L|U||N|PR|TRG|||||||0.0095|||||0.043|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
1506-32-  
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0037|||||0.043|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
75-73-  
5|0.037||UG\_L|||Y|PR|TRG|||||||0.0054|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
35-76-  
2|0.0068||UG\_L|J||Y|PR|TRG|||||||0.0043|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
07-55-  
1|0.016||UG\_L|U||N|PR|TRG|||||||0.0071|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
75-85-  
9|0.13||UG\_L|||Y|PR|TRG|||||||0.0075|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
07-24-  
4|0.24||UG\_L|||Y|PR|TRG|||||||0.0067|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
55-46-  
4|1.0||UG\_L|||Y|PR|TRG|||||||0.0055|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||2020  
0714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
75-95-  
1|0.031||UG\_L|||Y|PR|TRG|||||||0.0051|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||3  
35-67-  
1|0.18||UG\_L|||Y|PR|TRG|||||||0.0078|||||0.021|||COG5477||6819936|6819936|6819936|6819936|||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics|||NA||DL1|||4|||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1|||1  
763-23-1|2.9||UG\_L|||Y|PR|TRG|||Due to high concentration of the target analyte, a reduced sample  
volume was extracted and analyzed. Detection limit  
was|||||0.052|||||0.20|||COG5477||6819936|6819936|6819936|6819936|||20200714|Y



N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1||3  
76-06-  
7|0.016||UG\_L|U||N|PR|TRG|||||||0.0070|||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1||7  
2629-94-  
8|0.016||UG\_L|U||N|PR|TRG|||||||0.0072|||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW35-0620||Maxxam  
Analytics||NA|DL1||4||20200706|12:32:37|20200708|16:46:00|NAH709|20200720|COG5477||1.05|1||2  
058-94-  
8|0.011||UG\_L|U||N|PR|TRG|||||||0.0045|||0.021||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||4  
151-50-  
2|0.019||UG\_L|U||N|PR|TRG|||||||0.0090|||0.040||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
1506-32-  
8|0.010||UG\_L|U||N|PR|TRG|||||||0.0035|||0.040||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
75-73-  
5|0.028||UG\_L|||Y|PR|TRG|||||||0.0051|||0.020||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
35-76-  
2|0.0047||UG\_L|J||Y|PR|TRG|||||||0.0041|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
07-55-  
1|0.015||UG\_L|U||N|PR|TRG|||||||0.0068|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
75-85-  
9|0.084||UG\_L|||Y|PR|TRG|||||||0.0071|||0.020||COG5477||6819936|6819936|6819936|6819936||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
07-24-  
4|0.14||UG\_L|||Y|PR|TRG|||||||0.0064|||0.020||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3  
55-46-  
4|0.57||UG\_L|||Y|PR|TRG|||||||0.0052|||0.020||COG5477||6819936|6819936|6819936|6819936||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1||3

75-95-  
1|0.013||UG\_L|J||Y|PR|TRG|||||||0.0049||||0.020|||COG5477||6819936|6819936|6819936|6819936|||2  
0200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1|||3  
35-67-  
1|0.092||UG\_L|||Y|PR|TRG|||||||0.0074||||0.020|||COG5477||6819936|6819936|6819936|6819936|||20  
200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1|||1  
763-23-  
1|0.74||UG\_L|||Y|PR|TRG|||||||0.0052||||0.020|||COG5477||6819936|6819936|6819936|6819936|||202  
00714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1|||3  
76-06-  
7|0.015||UG\_L|U||N|PR|TRG|||||||0.0067||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1|||7  
2629-94-  
8|0.015||UG\_L|U||N|PR|TRG|||||||0.0069||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|06-MW36-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:07:00|NAH710|20200720|COG5477||1.00|1|||2  
058-94-  
8|0.010||UG\_L|U||N|PR|TRG|||||||0.0043||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||4  
151-50-  
2|0.019||UG\_L|U||N|PR|TRG|||||||0.0090||||0.040|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||3  
1506-32-  
8|0.010||UG\_L|U||N|PR|TRG|||||||0.0035||||0.040|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||3  
75-73-  
5|0.015||UG\_L|U||N|PR|TRG|||||||0.0051||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||3  
35-76-  
2|0.010||UG\_L|U||N|PR|TRG|||||||0.0041||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||3  
07-55-  
1|0.015||UG\_L|U||N|PR|TRG|||||||0.0068||||0.020|||COG5477||6819936|6819936|6819936|6819936|||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics|||NA||000||4|||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1|||3  
75-85-  
9|0.015||UG\_L|U||N|PR|TRG|||||||0.0071||||0.020|||COG5477||6819936|6819936|6819936|6819936|||

20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||3  
07-24-  
4|0.015||UG\_L|U||N|PR|TRG|||||||0.0064|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||3  
55-46-  
4|0.015||UG\_L|U||N|PR|TRG|||||||0.0052|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||3  
75-95-  
1|0.010||UG\_L|U||N|PR|TRG|||||||0.0049|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||3  
35-67-  
1|0.015||UG\_L|U||N|PR|TRG|||||||0.0074|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||1  
763-23-  
1|0.015||UG\_L|U||N|PR|TRG|||||||0.0052|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||3  
76-06-  
7|0.015||UG\_L|U||N|PR|TRG|||||||0.0067|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||7  
2629-94-  
8|0.015||UG\_L|U||N|PR|TRG|||||||0.0069|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y  
N62473-16-C-2|0000|QTR3 20|00006|QCFB-0620||Maxxam  
Analytics||NA|000||4||20200706|12:32:37|20200708|17:14:00|NAH711|20200720|COG5477||1.00|1||2  
058-94-  
8|0.010||UG\_L|U||N|PR|TRG|||||||0.0043|||0.020||COG5477||6819936|6819936|6819936|6819936||  
20200714|Y



## LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

NOREAS, Inc.  
16501 Scientific Way  
Irvine, CA 92618  
ATTN: Ms. Sevda Aleckson  
[Sevda.Aleckson@noreasinc.com](mailto:Sevda.Aleckson@noreasinc.com)

September 8, 2020

SUBJECT: Treasure Island, IR Site 6, Data Validation

Dear Ms. Aleckson,

Enclosed is the final validation report for the fraction listed below. This SDG was received on July 30, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

### **LDC Project #48757:**

#### **SDG #**

20F214/C0G5477

#### **Fraction:**

Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan, Field Sampling Plan and Quality Assurance Project Plan, Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California; April 2017
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.3; 2019
- USEPA National Functional Guidelines for Superfund Organic Methods Data Review; August 2014
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng  
[pgeng@lab-data.com](mailto:pgeng@lab-data.com)  
Project Manager/Senior Chemist



## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Treasure Island, IR Site 6

**LDC Report Date:** September 3, 2020

**Parameters:** Perfluoroalkyl & Polyfluoroalkyl Substances

**Validation Level:** Level IV

**Laboratory:** EMAX Laboratories, Inc./Bureau Veritas Canada, Inc.

**Sample Delivery Group (SDG):** 20F214/C0G5477

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
06-MW25-0620	20F214-01/NAH700	Water	06/22/20
06-MW26-0620	20F214-02/NAH701	Water	06/22/20
06-MW30-0620	20F214-03/NAH702	Water	06/22/20
06-MW31-0620	20F214-04/NAH703	Water	06/22/20
06-MW31-0620 DUP	20F214-05/NAH705	Water	06/22/20
06-MW32-0620	20F214-06/NAH706	Water	06/22/20
06-MW33-0620	20F214-07/NAH707	Water	06/22/20
06-MW34-0620	20F214-08/NAH708	Water	06/22/20
06-MW35-0620	20F214-09/NAH709	Water	06/22/20
06-MW36-0620	20F214-10/NAH710	Water	06/22/20
QCFB-0620	20F214-11/NAH711	Water	06/22/20
06-MW30-0620MS	20F214-03/NAH702MS	Water	06/22/20
06-MW30-0620MSD	20F214-03/NAH702MSD	Water	06/22/20

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Basewide Groundwater and Soil Gas Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California (April 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.



## Qualification Codes

- 1 Holding Times Exceeded
- 2 Sample Preservation / Cooler Temperature Exceeded Acceptance Criteria
- 3 Sample Custody Potentially Compromised Sample Integrity
- 4 Missing/Incomplete Deliverables
- 5 Calibration Did Not Meet Method Criteria
- 6 Equipment/Field Blank Contamination
- 7 Laboratory Method or Calibration Blank Contamination
- 8 Matrix Spike % Recovery Exceeded Acceptance Criteria
- 9 Matrix Spike Duplicate (RPD or Duplicate Sample Analysis) Exceeded Acceptance Criteria
- 10A Laboratory Control Sample % Recovery Exceeded Acceptance Criteria
- 10B Laboratory Control Sample Duplicate (RPD) Exceeded Acceptance Criteria
- 11 ICP Interference Check Analysis Exceeded Method Criteria
- 12 RPD Between Two Columns (Pesticides/PCBs only)
- 13 Surrogate Recoveries Exceeded Acceptance Criteria
- 14 Field Duplicates RPD Exceeded Project Criteria
- 15 Peak Resolution did not meet method criteria
- 16 Serial Dilution Analysis Exceeded Method Criteria
- 17 Chemical Recoveries Exceeded Acceptance Criteria
- 18 Trip Blank Contamination
- 19 Internal Standards Did Not Meet Method Criteria
- 20 Calibration Range exceeded Method Criteria
- 21 Potential False Positives
- 22 Do not use, other result more technically sound (overall assessment)
- 23 Estimated Maximum Possible Concentration
- 24 Trace Detection Below the LOQ (RL) and Above the DL (MDL)
- 25 Other

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. LC/MS Instrument Performance Check**

Instrument performance was checked and the requirements were met.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the method.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

All compound concentrations were at the limit of quantitation (LOQ) for the ISC standard.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Sample QCFB-0620 was identified as a field blank. No contaminants were found.

## VII. Surrogates

Surrogates were added to all samples as required by the methods. All surrogate recoveries (%R) were within QC limits.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

## X. Field Duplicates

Samples 06-MW31-0620 and 06-MW31-0620 DUP were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	06-MW31-0620	06-MW31-0620 DUP			
Perfluorohexanoic acid (PFHxA)	1.1	1.1	0 (≤30)	-	-
Perfluoroheptanoic acid (PFHpA)	0.51	0.54	6 (≤30)	-	-
Perfluorooctanoic acid (PFOA)	0.38	0.39	3 (≤30)	-	-
Perfluorononanoic acid (PFNA)	0.049	0.051	4 (≤30)	-	-
Perfluorodecanoic acid (PFDA)	0.010	0.011	10 (≤30)	-	-
Perfluorobutane sulfonate (PFBS)	0.12	0.14	15 (≤30)	-	-
Perfluorohexane sulfonate (PFHxS)	4.1	4.1	0 (≤30)	-	-
Perfluorooctane sulfonate (PFOS)	1.9	1.4	30 (≤30)	-	-

## **XI. Labeled Compounds**

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

## **XII. Compound Quantitation**

All compound quantitations met validation criteria.

## **XIII. Target Compound Identifications**

All target compound identifications met validation criteria.

## **XIV. System Performance**

The system performance was acceptable.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method, DoD QSM version 5.3 and project SAP. This review also included verification of analytes, methods, reporting limits, instrument performance and method QC acceptance limits, which were found to be compliant with the project documents. No results were rejected.

The quality control criteria reviewed were met and are considered acceptable.

**Treasure Island, IR Site 6  
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG  
20F214/C0G5477**

No Sample Data Qualified in this SDG

**Treasure Island, IR Site 6  
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification  
Summary - SDG 20F214/C0G5477**

No Sample Data Qualified in this SDG

**Treasure Island, IR Site 6  
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification  
Summary - SDG 20F214/C0G5477**

No Sample Data Qualified in this SDG

LDC #: 48757A96

**VALIDATION COMPLETENESS WORKSHEET**

Date: 9/2/20

SDG #: 20F214/C0G5477

Level IV Stage 4

Page: 1 of 1

Laboratory: EMAX Laboratories, Inc./Bureau Veritas Canada, Inc.

Reviewer: [Signature]  
2nd Reviewer: [Signature]

**METHOD:** LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M) / DOP & QM 5.3 Table B-15

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	M <sup>2</sup> TV/ICV ≈ 30
IV.	Continuing calibration/ISC	A/A	D ≈ 30
V.	Laboratory Blanks	A	
V.I	Field blanks	ND	FB = 11
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 4 + 5
X.	Labeled Compounds	A	
XI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

SB=Source blank  
OTHER:

	Client ID	Sub Lab ID	Lab ID	Matrix	Date
1	06-MW25-0620	NAH 700	20F214-01	Water	06/22/20
2	06-MW26-0620	01	20F214-02	Water	06/22/20
3	06-MW30-0620	02	20F214-03	Water	06/22/20
4	06-MW31-0620	03	20F214-04	Water	06/22/20
5	06-MW31-0620 DUP	05	20F214-05	Water	06/22/20
6	06-MW32-0620	06	20F214-06	Water	06/22/20
7	06-MW33-0620	07	20F214-07	Water	06/22/20
8	06-MW34-0620	08	20F214-08	Water	06/22/20
9	06-MW35-0620	09	20F214-09	Water	06/22/20
10	06-MW36-0620	10	20F214-10	Water	06/22/20
11	QCFB-0620	11	20F214-11	Water	06/22/20
12	06-MW30-0620MS	02MS	20F214-03MS	Water	06/22/20
13	06-MW30-0620MSD	02MSD	20F214-03MSD	Water	06/22/20
14					
15					

6819936

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
Were all technical holding times met?	/			
Were cooler temperature criteria met?	/			
<b>II. LC/MS Instrument performance check</b>				
Were the instrument performance reviewed and found to be within the validation criteria?	/			
<b>III. Initial calibration and Initial calibration verification</b>				
Did the laboratory perform a 5-point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) $\leq$ 20%?			/	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination ( $r^2$ ) criteria of $\geq$ 0.990?	/			
Were all analytes within 70-130% or percent differences (%D) $\leq$ 30% of their true value for each calibration standard?	/			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	/			
Were the retention time windows properly established?	/			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	/			
Were all ICV percent differences (%D) of the initial calibration verification $\leq$ 30%?	/			
<b>IV. Continuing calibration and Instrument sensitivity check</b>				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	/			
Were all percent differences (%D) of the continuing calibration $\leq$ 30%?	/			
Were all the retention times within the acceptance windows?	/			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	/			
Were all percent differences (%D) of the Instrument Sensitivity Check $\leq$ 30%?	/			
<b>V. Laboratory Blanks</b>				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed for each matrix and concentration?	/			
Was there contamination in the laboratory blanks?		/		
<b>VI. Field blanks</b>				
Were field blanks identified in this SDG?	/			
Were target compounds detected in the field blanks?		/		

Validation Area	Yes	No	NA	Findings/Comments
<b>VII. Matrix spike/Matrix spike duplicates</b>				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			
<b>VIII. Laboratory control samples</b>				
Was an LCS analyzed per extraction batch for this SDG?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
<b>IX. Field duplicates</b>				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?	/			
<b>X. Labeled compounds</b>				
Were labeled compound percent recoveries (%R) within the QC limits?	/			
Were retention times within 0.4 minutes of the associated calibration standard?	/			
<b>XI. Compound quantitation</b>				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	/			
Did reported results include both branched and linear isomers?	/			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	/			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	/			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	/			
<b>XII. Target compound identification</b>				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	/			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	/			
Were ion ratios between 50-150%?	/			
<b>XIII. System performance</b>				
System performance was found to be acceptable.	/			
<b>XIV. Overall assessment of Data</b>				
Overall assessment of data was found to be acceptable.	/			



## TARGET COMPOUND WORKSHEET

### METHOD: PFAS

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N. Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acid (PFPeA)			
R. 6:2 Fluorotelomer sulfonic acid (6:2 FTS)			
S. 8:2 Fluorotelomer sulfonic acid (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates****Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		RPD ( $\leq 30$ )	
	4	5		
A	1.1	1.1	0	
B	0.51	0.54	6	
C	0.38	0.39	3	
D	0.049	0.051	4	
E	0.010	0.011	10	
J	0.12	0.14	15	
K	4.1	4.1	0	
M	1.9	1.4	30	

**VALIDATION FINDINGS WORKSHEET**  
**Initial Calibration Calculation Verification**

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Analyte	Standard	(Y) Response ratio	(X) Concentration ratio
7/8/2020	LCMS04	PFOA	1	0.14163	0.830
			2	0.50867	3.000
			3	1.48738	8.000
			4	2.95575	16.000
			5	5.65080	30.000
			6	8.24251	41.700

**Linear**

	Calculated	Reported
Constant	-0.097867	-0.033566
X Coefficient(s)	0.19666	0.192788
Correlation Coefficient	0.999439	
Coefficient of Determination (r <sup>2</sup> )	0.998878	1.00000

Calibration Date	Instrument	Analyte	Standard	(Y) Response ratio	(X) Concentration ratio
7/8/2020	LCMS04	PFOS	1	0.12642	0.830
			2	0.46394	3.000
			3	1.26812	8.000
			4	2.52983	16.000
			5	4.92691	30.000
			6	6.99602	41.700

**Linear**

	Calculated	Reported
Constant	-0.064989	-0.019514
X Coefficient(s)	0.16780	0.165060
Correlation Coefficient	0.999766	
Coefficient of Determination (r <sup>2</sup> )	0.999532	1.00000

**VALIDATION FINDINGS WORKSHEET**  
**Continuing Calibration Calculation Verification**

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference =  $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$   
 $\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$

Where:

ave. RRF = initial calibration average RRF  
 RRF = continuing calibration RRF  
 Ax = Area of compound

Cx = Concentration of compound,  
 Ais = Area of associated internal standard  
 Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	True Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	6819936_27	7/8/2020	PFOA (13C4-PFOA)	16.000	15.0630	15.0630	94.1	94.1
			PFOS (13C4-PFOS)	16.000	15.5680	15.5678	97.3	97.3
2	6819936_41	7/8/2020	PFOA (13C4-PFOA)	16.000	15.4530	15.4529	96.6	96.6
			PFOS (13C4-PFOS)	16.000	15.2082	15.2094	95.1	95.1
3			PFOA (13C4-PFOA)					
			PFOS (13C4-PFOS)					

**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates Results Verification**

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)

%Recovery = 100 \* (SSC - SC)/SA

Where: SSC = Spiked concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike recovery

MSD = Matrix spike duplicate recovery

RPD = | MS - MSD | \* 2/(MS + MSD)

MS/MSD ID: 12/13

Compound	SA (ug/L)		SC (ug/L)	SSC (ug/L)		MS		MSD		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
			Reported			Recalc.	Reported	Recalc.	Reported	Recalc.	
PFOA	0.4800	0.4800	0.023	0.4867	0.5075	97	97	101	101	4.4	4.2
PFOS	0.4800	0.4800	0.05	0.5272	0.5135	99	99	97	97	2.9	2.6

**VALIDATION FINDINGS WORKSHEET**  
**LCS Results Verification**

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

$SSC = (\text{Area spike}) (\text{Conc IS}) / (\text{Area IS}) (\text{average RRF spike})$

$\% \text{Recovery} = 100 * SSC/SA$

Where:

SSC = Spiked concentration

LCS = Laboratory control spike recovery

SA = Spike added

LCSD = Laboratory control spike duplicate recovery

$RPD = |LCS - LCSD| * 2 / (LCS + LCSD)$

LCS/LCSD ID: 6819936LCS

Compound	SA (ug/L)		SSC (ug/L)		LCS		LCSD		LCS/LCSD	
	LCS	LCSD	LCS	LCSD	Percent Recovery		Percent Recovery		RPD	
					Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.4800		0.4674		97	97				
PFOS	0.4800		0.4566		95	95				

**VALIDATION FINDINGS WORKSHEET**  
**Sample Results Verification**

**Method:** LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax) (Vo) (Df)}{(RRF) (Wt) (\%S)}$$

Where:

- Ax = Area or height of the peak for the compound to be measured
- Ais = Area or height of the peak for the internal standard
- Cis = Concentration of the internal standard
- DF = Dilution factor
- Vt = Volume of extract in milliliters (mL)
- RRF = Average relative response factor
- Vo = Volume of sample in milliliters (mL)
- Wt = Weight of sample in grams (g)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (mL)	%S	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOA	38298	13203	100	5		3	125		1.8	1.8	0
			y = mx + b									
			m	0.192788								
			b	-0.033566								

INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
NAVSTA TI	SITE 00006	06-MW25	Monitoring Well	6021164.38	2130489.47	06-MW25-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW26	Monitoring Well	6021167.06	2130576.16	06-MW26-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW30	Monitoring Well	6021164.04	2130315.21	06-MW30-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW31	Monitoring Well	6021361.5	2130320.31	06-MW31-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW31	Monitoring Well	6021361.5	2130320.31	06-MW31-0620 DUP	Groundwater	Field duplicate	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW32	Monitoring Well	6021359.03	2130646.04	06-MW32-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW33	Monitoring Well	6021251.13	2130701.09	06-MW33-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW34	Monitoring Well	6021541.46	2130591.53	06-MW34-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW35	Monitoring Well	6021429.59	2130616.91	06-MW35-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214
NAVSTA TI	SITE 00006	06-MW36	Monitoring Well	6021421.91	2130432.23	06-MW36-0620	Groundwater	Normal (Regular)	22-Jun-20	Perfluoroalkyl Compounds	20F214