



**Off-Base Drinking Water Sample Results,  
Level 4 Laboratory Report, Electronic Data Deliverable,  
Data Validation Report, and the Sample Location Figure,  
SDG 18-0519**

*Naval Air Station Jacksonville  
Jacksonville, Florida*

July 2019

N00207\_004451  
NAS JACKSONVILLE, FL  
SSIC 5000-33c

**LABORATORY DATA PACKAGE 18-0519 NAS JACKSONVILLE FL**  
08/23/2018  
BATTELLE

Approved for public release: distribution unlimited.

**CTO-SE0375: Naval Air Station Jacksonville**  
**Project No 100119154-SE0375**  
**PFAS in drinking water**

*W*

*Batch 18-0519*

*Package DP-18-0233*

Submitted to:

Tetra Tech

661 Anderson Drive Foster Plaza 7

Pittsburgh, PA 15220 USA

Submitted by:

Battelle Norwell Operations

141 Longwater Drive Suite 202

Norwell, MA 02061

***BATTELLE***

**It can be done**

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NELAP Accreditation Number: E87856 (Florida Department of Health)


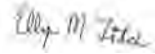

DoD-ELAP Accreditation Number: 91667

Submitted by:

Battelle Norwell Operations

141 Longwater Drive Suite 202

Norwell, MA 02061

Analyst Approval:		<a href="mailto:schumitzd@battelle.org">schumitzd@battelle.org</a> 2018.08.23 12:45:35 -04'00'
QC Chemist Approval:		<a href="mailto:fitche@battelle.org">fitche@battelle.org</a> 2018.08.24 11:56:18 -04'00'
Project Manager Approval:		Digitally signed by Jonathan Thorn Date: 2018.08.27 16:05:12 -04'00'

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# CTO-SE0375: Naval Air Station Jacksonville

## Project No 100119154-SE0375

### PFAS in drinking water

W

*Batch 18-0519*

*Package DP-18-0233*

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### Sample Summary

Client: Tetra Tech Inc.


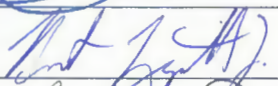



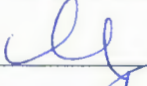
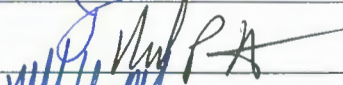

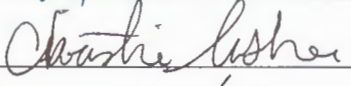
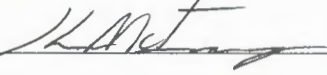
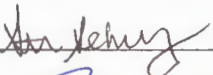

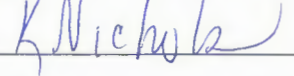

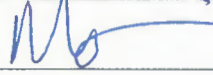
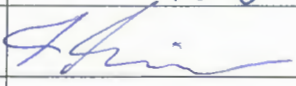
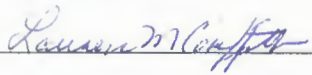
SDG: 18-0519

Project/Site: Naval Air Station (NAS) Jacksonville

CTO: SE0375

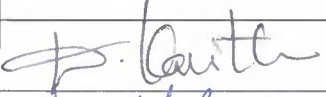
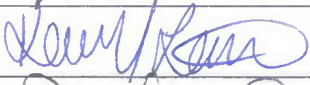
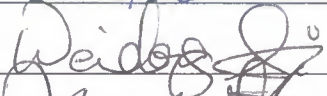
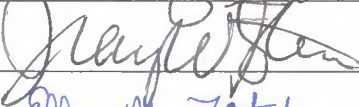

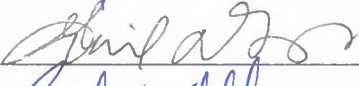
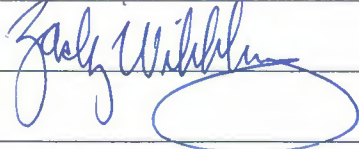
Lab Sample ID	Client Sample ID	Matrix	Collection Date	Receipt Date
CR633PB-FS	Procedural Blank	WATER	8/22/2018	8/22/2018
CR634LCS-FS	Laboratory Control Sample	WATER	8/22/2018	8/22/2018
J7558-FS	JAX-RES-08202018-0945-25	W	8/20/2018	8/21/2018
J7560-FS	JAX-RES-08202018-1100-26	W	8/20/2018	8/21/2018
J7562-FS	JAX-RES-08202018-1310-28	W	8/20/2018	8/21/2018

## Signature Page

Battelle 2018 (1 of 2) Signature Page			
Name (Printed)	Signature	Initials	Date
Jonathan Thorn		JRT	4/4/2018
Robert Lizotte, Jr.		BL	4-4-2018
FRANC PALA		FP	4-4-2018
Carla Devine		CRD	4/4/18
Denise Schmitz		DUS	4/4/18
Carol Ann McManis		CM	4/4/2018
Rich Rostucci		RR	4/4/2018
Michael Mendez		MM	4/4/2018
Christie Usher		CU	4/4/18
Kevin Matrone		KM	4/4/18
Stephanie Schmitz		SAS	4/4/18
Jordan Tower		JT	4/4/18
KRISTEN NICHOLS		KN	4/4/18
Quimico H Brown		CB	4/4/18
Matt Schmitz		MS	4-4-18
Sam Guimaraes		SG	4-4-18
Lauren Griffith		LMG	4.4.18

## Signature Page

Battelle 2018 (2 of 2)  
Signature Page

Name (Printed)	Signature	Initials	Date
KAVITHA DASU		KD	04/04/18
Kayla Lamarre		KAL	04/04/18
Weidong Li		W.L	04/04/18
Tracy W Stender		TWS	04/04/18
Ellyn M Fitch		EF	12-April-2018
Gail DeRuzzo		GD	4/18/18
Zachary Willenberg		Z/W	4/20/18

# Work Plan



It can be done

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** CTO-SE0375: Drinking Water Analysis  
**Project Number:** 100119154-SE0375  
**Client:** Tetra Tech  
 661 Anderson Drive Foster Plaza 7  
 Pittsburgh, PA 15220  
 USA  
  
**Client Contact Information:** Mark Peterson  
 Project Manager  
 (904) 636-6125(V)  
 (904) 636-6165(F)  
 mark.peterson@tetrattech.com  
  
**Effective Date of QAPP:** 8/14/2018  
**Version Number:** 100119154-SE0375(L)-03  
**Project Manager:** Thorn, Jonathan  
**Laboratory Task Manager:** Thorn, Jonathan  
**Deliverable Due Date:** 8/21/2018

### 2.0 SCOPE OF WORK

**Overview:** Analysis of drinking water samples for PFAS.  
**Matrix:** Water

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store refrigerated.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** None  
**Archiving:** Store for six months after delivery of final data.  
**Disposal:** Dispose of samples in the appropriate waste stream.



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## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

Samples to arrive over a period of weeks.

Samples Expected:	Samples Per Batch:	Batches Expected:
50	20	3

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

Type:	Description:	Count:	Rgt:	Reference:	Comment:
PB	Laboratory control reagent blank.	1 per batch	--	NA	
LCS	Laboratory Control Sample	1 per batch	No	NA	
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	MS/MSD identified on COC forms
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	MS/MSD identified on COC forms

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

SOP No.-Rev:	<b>5-371-03</b>
SOP Title:	<i>ANALYSIS OF POLY AND PERFLUOROALKYL SUBSTANCES IN DRINKING WATER SAMPLES BY LIQUID CHROMATOGRAPHY AND TANDEM MASS SPECTROMETRY (LC-MS/MS) FOLLOWING EPA METHOD 537.1</i>
Sample Size:	250 ml
SIS and LCS/MS Compounds:	Defined in Table 2.
Deviations:	None.
Comments:	FRB samples to be extracted after review of the initial results. FRB will only be processed if PFAS analytes are present in the field sample.

**Table 2: SIS and LCS/MS Spiking Level**

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - 537.1 Surrogate Solution	JX76 SIS	~ 0.100 - 0.40 ng	50 uL	NA



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## WORK/QUALITY ASSURANCE PROJECT PLAN

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - 537.1 Second Source LCS/MS Solution	JZ28 LCS/MS	~ 4.0 - 5.0 ng	100 uL	Vary MS/MSD samples at 100, 125, and 150 µL across the batches.
PFAS - 537.1 Second Source LCS/MS Solution	JZ28 LCS/MS	~ 2.00 - 2.50	50 uL	Vary LCS samples at 50, 75, 100 µL spikes across batches

### 2.1.3.2 Cleanup

None.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - 537.1 Internal Standard Solution	JV59 RIS	~ 0.100 - 0.40 ng	50 uL	NA

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- SOP\_No-Rev: **5-371-03**

SOP\_Title: *ANALYSIS OF POLY AND PERFLUOROALKYL SUBSTANCES IN DRINKING WATER SAMPLES BY LIQUID CHROMATOGRAPHY AND TANDEM MASS SPECTROMETRY (LC-MS/MS) FOLLOWING EPA METHOD 537.1*

Deviations: None.

Comments: FRB samples to be extracted after review of the initial results. FRB will only be processed if PFAS analytes are present in the field sample.





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## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.2. DELIVERABLES

<b>Deliverables Due:</b>	8/21/2018
<b>LIMS Reports:</b>	No
<b>Histograms:</b>	No
<b>Excel Tables:</b>	Yes
<b>EICs:</b>	No
<b>Chromatograms:</b>	Yes
<b>EDDs:</b>	Yes
<b>Comments:</b>	<ul style="list-style-type: none"> <li>• Excel data tables due in 7 days, full data package in 14 days</li> <li>• Data package compliant with QSM 5.1 Table B-15</li> <li>• Preliminary data tables will use ND and not the LOD value, tables in full data package will follow QSM reporting criteria</li> <li>• Tetra Tech EDD format</li> </ul>

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

Staff Member	Role	Comment
Jonathan R. Thorn	Project Manager	NA
Stephanie A. Schultz	Sample Preparation	NA
Lauren M. Griffith	LC-MS/MS Analysis	NA
Matt D. Schumitz	Sample Custody	NA
Carla R. Devine	Quality Control Officer	NA
Zachary J. Willenberg	Quality Assurance Officer	NA

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE



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## WORK/QUALITY ASSURANCE PROJECT PLAN

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

<b>Activity:</b>	<b>Start Date:</b>	<b>End Date:</b>	<b>TAT (days):</b>	<b>Comment:</b>
Sample Receipt	08/14/2018	08/14/2018	0	NA
Sample Preparation	08/14/2018	08/16/2018	2	NA
Instrument Analysis	08/16/2018	08/20/2018	4	NA
Quality Control Review	08/20/2018	08/21/2018	1	NA
Final Data Reporting	08/21/2018	08/28/2018	7	NA
Quality Assurance Review	08/21/2018	08/21/2018	0	NA

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

<b>Labor Activity:</b>	<b>Hours/ Batch:</b>	<b>Batches:</b>	<b>Total Hours:</b>	<b>Comment:</b>
Sample Receipt	2	1	2	Hours for each task are based on full batches of 20 samples.
Sample Preparation	8	1	8	NA
Instrument Analysis	8	1	8	NA
Quality Control Review	3	1	3	NA
Final Data Reporting	1	1	1	NA
Quality Assurance Review	1	1	1	NA

### 7.0 STAFF DEVELOPMENT

None anticipated.



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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 1: Target Samples

**Shipment:** SHP-180814-01  
**Status:** Pending  
**Description:** NAS JAX PFAS EVAL  
**Range:** J7403-J7414  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7403	JAX-RES-08132018-0945-27	08/13/2018 9:45 am	W	R0119	(NA)		
2	J7404	JAX-RES-08132018-0945-27-FRB	08/13/2018 9:45 am	W	R0119	(NA)		
3	J7405	JAX-RES-08132018-1100-30	08/13/2018 11:00 am	W	R0119	(NA)		
4	J7406	JAX-RES-08132018-1100-30-FRB	08/13/2018 11:00 am	W	R0119	(NA)		
5	J7407	JAX-RES-08132018-1145-32	08/13/2018 11:45 am	W	R0119	(NA)		
6	J7408	JAX-RES-08132018-1145-32-FRB	08/13/2018 11:45 am	W	R0119	(NA)		
7	J7409	JAX-RES-08132018-1445-16	08/13/2018 2:45 pm	W	R0119	(NA)		
8	J7411	JAX-RES-08132018-1600-13	08/13/2018 4:00 pm	W	R0119	(NA)		
9	J7412	JAX-RES-08132018-1600-13-FRB	08/13/2018 4:00 pm	W	R0119	(NA)		
10	J7413	JAX-RES-08132018-1700-31	08/13/2018 5:00 pm	W	R0119	(NA)		
11	J7414	JAX-RES-08132018-1700-31-FRB	08/13/2018 5:00 pm	W	R0119	(NA)		

**Shipment:** SHP-180815-02  
**Status:** Pending  
**Description:** NAS JAX-PFAS  
**Range:** J7428-J7430  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7428	JAX-RES-08142018-1045-8	08/14/2018 10:45 am	W	R0119	(NA)		
2	J7430	JAX-RES-08142018-1130-9	08/14/2018 11:30 am	W	R0119	(NA)		

**Shipment:** SHP-180816-02  
**Status:** Pending  
**Description:** NAS JAX PFAS  
**Range:** J7445-J7452  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
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## WORK/QUALITY ASSURANCE PROJECT PLAN

**Shipment:** SHP-180816-02  
**Status:** Pending  
**Description:** NAS JAX PFAS  
**Range:** J7445-J7452  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7445	JAX-RES-08152018-0930-18	08/15/2018 9:30 am	W	R0119	(NA)		
2	J7447	JAX-RES-08152018-1015-34	08/15/2018 10:15 am	W	R0119	(NA)		
3	J7448	JAX-RES-08152018-1015-34-FRB	08/15/2018 10:15 am	W	R0119	(NA)		
4	J7449	JAX-RES-08152018-1045-33	08/15/2018 10:45 am	W	R0119	(NA)		
5	J7450	JAX-RES-08152018-1045-33-FRB	08/15/2018 10:45 am	W	R0119	(NA)		
6	J7451	JAX-RES-08152018-1130-15	08/15/2018 11:30 am	W	R0119	(NA)		
7	J7452	JAX-RES-08152018-1130-15-FRB	08/15/2018 11:30 am	W	R0119	(NA)		

**Shipment:** SHP-180821-01  
**Status:** Pending  
**Description:** NAS JAX PFAS  
**Range:** J7558-J7562  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7558	JAX-RES-08202018-0945-25	08/20/2018 9:45 am	W	R0119	(NA)		
2	J7560	JAX-RES-08202018-1100-26	08/20/2018 11:00 am	W	R0119	(NA)		
3	J7562	JAX-RES-08202018-1310-28	08/20/2018 1:10 pm	W	R0119	(NA)		

**Shipment:** SHP-180822-02  
**Status:** Pending  
**Description:** PFAS EVAL  
**Range:** J7566-J7570  
**Comment:** NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7566	JAX-RES-08212018-0945-11	08/21/2018 9:45 am	W	R0119	(NA)		
2	J7568	JAX-RES-08212018-1130-10	08/21/2018 11:30 am	W	R0119	(NA)		
3	J7570	JAX-RES-08212018-1330-36	08/21/2018 1:30 pm	W	R0119	(NA)		



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## WORK/QUALITY ASSURANCE PROJECT PLAN

## Attachment 2: Test Codes

<b>Project Test Code Name:</b>	Master_371
<b>SOP Reference:</b>	5-371 - ANALYSIS OF POLY AND PERFLUOROALKYL SUBSTANCES IN DRINKING WATER SAMPLES BY LIQUID CHROMATOGRAPHY AND TANDEM MASS SPECTROMETRY (LC-MS/MS) FOLLOWING EPA METHOD 537.1
<b>Description:</b>	PFAS in drinking water
<b>Matrix:</b>	L - Liquid Samples, like water or sea water, prepared and analyzed under the same class of detection limits.
<b>Detection Limit Study:</b>	5-371
<b>Instrument:</b>	LC-MS/MS
<b>MQO Criteria</b>	Universal_LC
<b>Standard Report:</b>	Standard Result Report

Method Specific Reporting		Holding Times (days)		Data Flags
<b>Result Units:</b>	ng/L	<b>Unit Conversion:</b>	(none)	<b>Sample:</b> 14 <b>DL_Flag:</b> U
<b>Weight Basis:</b>	Liquid	<b>Result Format:</b>	Fixed Digits	<b>Frozen:</b> 14 <b>RL_Flag:</b> J
<b>Standard Basis:</b>	RIS	<b># of Figures/Digits:</b>	2	<b>Extract:</b> 28 <b>PB_Flag:</b> B
<b>Oil Weight Basis:</b>	No	<b>Oil Weight Source:</b>	Oil Weight	<b>DIL_Flag:</b> D
<b>U-Value Substitution:</b>	U-Flag=MD	<b>Histograms:</b>	No	<b>HT_Flag:</b> T
<b>ECD_Reporting:</b>	No			

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Perfluoro-n-hexanoic acid	PFHxA	T	13C2-PFOA		No	No
2	Perfluoro-n-heptanoic Acid	PFHpA	T	13C2-PFOA		No	No
3	Perfluoro-n-octanoic Acid	PFOA	T	13C2-PFOA		No	No
4	Perfluorononanoic Acid	PFNA	T	13C2-PFOA		No	No
5	Perfluoro-n-decanoic Acid	PFDA	T	13C2-PFOA		No	No
6	Perfluoro-n-undecanoic acid	PFUnA	T	13C2-PFOA		No	No
7	Perfluoro-n-dodecanoic acid	PFDoA	T	13C2-PFOA		No	No
8	Perfluoro-n-tridecanoic acid	PFTTrDA	T	13C2-PFOA		No	No
9	Perfluoro-n-tetradecanoic acid	PFTeDA	T	13C2-PFOA		No	No
10	N-methylperfluoro-1-octanesulfonamidoacetic acid	NMeFOSAA	T	d3-MeFOSAA		No	No
11	N-ethylperfluoro-octanesulfonamidoacetic acid	NEtFOSAA	T	d3-MeFOSAA		No	No
12	Perfluoro-1-butanefulfonate	PFBS	T	13C4-PFOS		No	No
13	Perfluoro-1-octanesulfonate	PFOS	T	13C4-PFOS		No	No
14	Perfluoro-1-hexanesulfonate	PFHxS	T	13C4-PFOS		No	No
1	13C2-PFHxA	13C2-PFHxA	SIS			No	No
2	13C2-PFDA	13C2-PFDA	SIS			No	No



It can be done

## WORK/QUALITY ASSURANCE PROJECT PLAN

## Attachment 2: Test Codes

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**Project Test Code Name:** Master\_371

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No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
3	d5-EtFOSAA	d5-EtFOSAA	SIS			No	No
<b>Total Analytes:</b>		17					

---

**Subtract Peaks:**

None

**Sum Peaks:**

None



It can be done

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_371

**ICAL Acceptance Criteria:**

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	NA
Average RF	15	N	25	N	5	N	NA
Linear (0,0)	NA	NA	0.995	N	5	N	NA
Quadratic	NA	NA	0.995	N	6	N	NA
Quadratic (0,0)	NA	NA	0.995	N	6	N	NA

**Continuing Calibration Verification Criteria:**

CCV Name: Standard							
Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:	
12 (N)	20 (N)	25 (N)	0.07 (N)	-50	100 (N)	Lab Default Continuing Calibration Verification Criteria	

**Independent Calibration Verification:**

ICC Name: Standard							
Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:		
15 (N)	20 (N)	0.07 (N)	-50	100 (N)	Standard laboratory criteria for ICCs		

**Mass Discrimination Criteria:**

*None*

**Degradation Check Criteria:**

*None*



It can be done

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

MQO Application	<i>Universal_LC</i>		
MQO:	Acceptance Criteria	Qual:	Corrective Action:
Procedural Blank	Samples must be greater than five times the blank concentration (>5xPB).	B	Review with Project Manager; re-analyze or justify results in project records.
PB Measurement Quality Objective	Organic results in the Procedural Blank are less than 1/2 times the LOQ (<1/2xLOQ)	N	Review with Project Manager; re-analyze or justify results in project records.
Laboratory Control Sample	Recovery values 70-130%.	N	Review with project manager; re-analyze or justify reporting the results in project records.
Matrix Spike / Matrix Spike Duplicate Recovery	Organics 70-130%. Analyte concentration in MS/MSD must be greater than five times reported background concentration. Organics Results in the Target is less than 5 times the Original	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Matrix Spike/Spike Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration in MS/MSD must be greater than five times reported background concentration. Organics Results in the Target is less than 5 times the Original	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Standard Reference Material Accuracy	Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL). Organics Results in the Target is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration must be > 5x MDL. Organics Results in the Original is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.





It can be done

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

MQO Application	<i>Universal_LC</i>		
MQO:	Acceptance Criteria	Qual:	Corrective Action:
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Analyte concentration must be > 5x MDL.  Organics Results in the Original is less than 5 times the MDL	N  n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Surrogate Compound Recovery	Recovery results between 50% and 150%.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
Control Oil	RPD < 30% for at least 90% of analytes	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Instrument Calibration	5-371-3: R-squared greater than or equal to 0.995 Mean RSD less than or equal to 15%, Individual RSD less than or equal to 25%	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Independent Calibration Check Solution	5-371-3: Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 15%.	N	Review with Project Manager; re-analyze or justify in project records.
Continuing Calibration Verification	5-371-3: Individual PD less than or equal to 25%. Mean Percent Difference less than or equal to 20%.	N	Review with Project Manager; re-analyze or justify in project records.

ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

It can be done

## Sample Receipt Form

Approved:  Authorized Project Number: 112G08005-SE0375Client: Tetra TechReceived by: Schumitz, MattDate/Time Received: Tuesday, August 21, 2018 1:00 PMNo. of Shipping Containers: 1**SHIPMENT**Method of Delivery: Commercial CarrierTracking Number: 7823 8621 8158COC Forms:  Shipped with samples  No Forms**Cooler(s)/Box(es)**

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7823 8621 8158	Custody Seals	Intact	Intact	Therm_1	0.7	6

**Samples**

Sample Labels:

- Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:

- Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:

- Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 0.7 Temperature Blank used  Yes  No*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*Samples Acidified:  Yes  No  UnknownInitial pH 5-9?:  Yes  No  NA*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*Total Residual Chlorine Present?:  Yes  No  NA*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*Head Space <1% in samples for water VOC analysis:  Yes  No  NA*Individual sample deviations noted on sample log*

Samples Containers:

Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnownStorage Location: Custody: Refrigerator - R0119 (NA) BDO IDs Assigned: J7558 - J7563Samples logged in by: Schumitz, Matt Date/Time: 08/21/2018 1:00 PM

Approved By: \_\_\_\_\_

Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_

Authorized On: \_\_\_\_\_



It can be done

ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

Sample Receipt Form Details

Approved:  Authorized

Project Number: 112G08005-SE0375 Client: Tetra Tech

Received by: Schumitz, Matt Date/Time Received: Tuesday, August 21, 2018 1:00 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7558	JAX-RES-08202018-0945-25	08/20/18 9:45	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7559	JAX-RES-08202018-0945-25-FRB	08/20/18 9:45	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7560	JAX-RES-08202018-1100-26	08/20/18 11:00	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7561	JAX-RES-08202018-1100-26-FRB	08/20/18 11:00	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7562	JAX-RES-08202018-1310-28	08/20/18 13:10	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7563	JAX-RES-08202018-1310-28-FRB	08/20/18 13:10	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			

Total Samples: 6





It can be done

### Chain-of-Custody

Client Contact Information <b>Tetra Tech</b>		Project Manager: <u>Mark Peterson</u>		Sampling Site: <u>Potable Wells</u>		Site Information: <u>Various Residente Potable Wells</u>	
Sampler Information (print name): <u>David Siegan</u>		Phone: <u>904-334-7260</u>		Email:		Turnaround Time (TAT) Requested:	
Project Name: <u>NAS JAX PFAS</u>		Normal <input type="checkbox"/>		Priority <input type="checkbox"/>		RUSH <input type="checkbox"/>	
Project No.: <u>112 go 8005- SE0375</u>		Time Zone:		Preservative: <u>Trizma</u>		COC # <u>004</u>	
Sample Identification		2018		Analysis: <u>PFAS - 537</u>		Page# <u>1 of 1</u>	
Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.			
JAX-RES-08202018-0945-25	8/20 0945	G	W	2	2		
JAX-RES-08202018-0945-25-FRB	8/20 0945	G	W	1	1		
JAX-RES-08202018-1100-24	8/20 1100	G	W	2	2		
JAX-RES-08202018-1100-26-FRB	8/20 1100	G	W	1	1		
JAX-RES-08202018-1310-20	8/20 1310	G	W	2	2		
JAX-RES-08202018-1310-28-FRB	8/20 1310	G	W	1	1		
Receipt Temperature: (°C) <u>Therm-1 0.7°</u>		Samples Intact: <u>Yes</u> - No		Samples on Ice: <u>Yes</u> - No		Receipt Comments:	
Relinquished by (Print/Sign) <u>David Siegan</u>	Company: <u>TT</u>	Date/Time <u>8/20/2018 1500</u>	Received by (Print/Sign) <u>F. J. E. V.</u>	Company:	Date/Time:		
Relinquished by (Print/Sign)	Company:	Date/Time:	Received by (Print/Sign) <u>Mark Schwartz</u>	Company: <u>Battelle</u>	Date/Time: <u>8-21-18 1300</u>		
Relinquished by (Print/Sign)	Company:	Date/Time:	Received by (Print/Sign)	Company:	Date/Time:		
Comments: <u>ALL <sup>DS</sup> Potable water samples Cool 4°C Potable</u>							

J7558  
J7559  
J7560  
J7561  
J7562  
J7563

*Therm-1* TUE - 21 AUG 10:30A  
7823 8621 8158 PRIORITY OVERNIGHT

**E XPUA** *0.7°* 02061  
MA-US  
BOS



368136R 20A111 23:31 MEMH 547C2/8532/A17C

*MOS 13.00 8-21-18*

# Data Tables



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-0945-25

Battelle ID J7558-FS  
 Sample Type SA  
 Collection Date 08/20/2018  
 Extraction Date 08/22/2018  
 Analysis Date 08/22/2018  
 Analytical Instrument Sciex 5500 LC/MS/MS  
 % Moisture NA  
 Matrix W  
 Sample Size 0.270  
 Size Unit-Basis L  
 Units ng/L MDL LOD LOQ

	ng/L	MDL	LOD	LOQ
PFHxA	0.46 U	0.20	0.46	2.31
PFHpA	0.93 U	0.31	0.93	2.31
PFOA	0.93 U	0.35	0.93	2.31
PFNA	0.93 U	0.34	0.93	2.31
PFDA	0.93 U	0.36	0.93	2.31
PFUnA	0.93 U	0.35	0.93	2.31
PFDoA	0.93 U	0.39	0.93	2.31
PFTTrDA	0.93 U	0.39	0.93	2.31
PFTeDA	1.39 U	0.68	1.39	2.31
NMeFOSAA	0.93 U	0.39	0.93	2.31
NEtFOSAA	0.93 U	0.41	0.93	2.31
PFBS	0.46 U	0.19	0.46	2.31
PFHxS	0.93 U	0.31	0.93	2.31
PFOS	0.93 U	0.28	0.93	2.31

**Surrogate Recoveries (%)**

13C2-PFHxA	112
13C2-PFDA	99
d5-EtFOSAA	89



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-1100-26

Battelle ID J7560-FS  
 Sample Type SA  
 Collection Date 08/20/2018  
 Extraction Date 08/22/2018  
 Analysis Date 08/22/2018  
 Analytical Instrument Sciex 5500 LC/MS/MS  
 % Moisture NA  
 Matrix W  
 Sample Size 0.285  
 Size Unit-Basis L  
 Units ng/L

	ng/L	MDL	LOD	LOQ
PFHxA	2.15 J	0.19	0.44	2.19
PFHpA	1.09 J	0.30	0.88	2.19
PFOA	2.95	0.33	0.88	2.19
PFNA	0.88 U	0.32	0.88	2.19
PFDA	0.88 U	0.34	0.88	2.19
PFUnA	0.88 U	0.33	0.88	2.19
PFDoA	0.88 U	0.37	0.88	2.19
PFTTrDA	0.88 U	0.37	0.88	2.19
PFTeDA	1.32 U	0.64	1.32	2.19
NMeFOSAA	0.88 U	0.37	0.88	2.19
NEtFOSAA	0.88 U	0.39	0.88	2.19
PFBS	1.27 J	0.18	0.44	2.19
PFHxS	4.61	0.30	0.88	2.19
PFOS	3.89	0.26	0.88	2.19

**Surrogate Recoveries (%)**

13C2-PFHxA	112
13C2-PFDA	94
d5-EtFOSAA	78





Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-1310-28

Battelle ID	J7562-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/22/2018			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.97 J	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.84 J	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	1.05 J	0.20	0.48	2.40
PFHxS	1.36 J	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

**Surrogate Recoveries (%)**

13C2-PFHxA	116
13C2-PFDA	93
d5-EtFOSAA	100



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	KA08 IB			
Battelle ID	KA08 IB_08/22/2018			
Sample Type	IB			
Collection Date	NA			
Extraction Date	NA			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	NA			
Sample Size	0.250			
Size Unit-Basis	NA			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50
<b>Surrogate Recoveries (%)</b>				
13C2-PFHxA	94			
13C2-PFDA	111			
d5-EtFOSAA	109			



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Procedural Blank			
Battelle ID	CR633PB-FS			
Sample Type	PB			
Collection Date	08/22/2018			
Extraction Date	08/22/2018			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

**Surrogate Recoveries (%)**

13C2-PFHxA	99
13C2-PFDA	100
d5-EtFOSAA	94



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Laboratory Control Sample					
Battelle ID	CR634LCS-FS					
Sample Type	LCS					
Collection Date	08/22/2018					
Extraction Date	08/22/2018					
Analysis Date	08/22/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L					
Units	ng/L	Target	Recovery	Qual	Control Limits	
					Lower	Upper
PFHxA	9.31	10.00	93		70	130
PFHpA	9.83	10.00	98		70	130
PFOA	9.22	10.00	92		70	130
PFNA	9.78	10.00	98		70	130
PFDA	8.94	10.00	89		70	130
PFUnA	8.02	10.00	80		70	130
PFDoA	8.29	10.00	83		70	130
PFTTrDA	8.47	10.00	85		70	130
PFTeDA	9.12	10.00	91		70	130
NMeFOSAA	10.71	10.00	107		70	130
NEtFOSAA	10.13	10.00	101		70	130
PFBS	8.28	8.85	94		70	130
PFHxS	8.59	9.45	91		70	130
PFOS	8.18	9.55	86		70	130

**Surrogate Recoveries (%)**

13C2-PFHxA	89
13C2-PFDA	87
d5-EtFOSAA	85



## Glossary of Data Qualifiers

Flag:      Application:

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B	Analyte found in the sample at a concentration <10x the level found in the procedural blank
D	Dilution Run. Initial run outside the initial calibration range of the instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the Limit of Quantitation (LOQ)
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets secondary criteria
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Method detection limit (MDL) value, Limit of Detection (LOD) reported

# Miscellaneous Documentation

**QA/QC Summary  
Batch 18-0519**

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0233
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/20/2018	08/21/2018	0.7

Corrective Actions	None.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The FRB associated with these field samples are reported in SDG 18-0524.

METHOD SUMMARIES	
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	Sample JAX-RES-08202018-0945-25 (J7558) had a sulfurous odor.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500.  J7560 had an ion ratio above 50% RPD for PFOA. All other targets in this and the other samples had no ion ratio above 50% for any analyte detected above the MDL or the LOQ in this SDG.

Holding Times	Extraction Date(s)	Analysis Date(s)
	8/22/2018	8/22/2018

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ 1/3 the MRL	No exceedances noted. No comments.

**QA/QC Summary**  
**Batch 18-0519**

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted. No comments.
Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted. No comments.
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD $\leq$ 20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted. No comments.
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.
R <sup>2</sup> >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted. No comments.
Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted. No comments.
Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted. No comments.





Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project Number: 100119154-SE0375  
 Preparation Batch: 18-0519  
 Data Set: DP-18-0233  
 Test Code: Master\_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	NA
Matrix Spike / Matrix Spike Duplicate Precision	NA	NA
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None



## BATTELLE - NORWELL OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** CTO-SE0375: Naval Air Station Jackson      **Data Set Number:** DP-18-0233  
**Project Number:** 100119154-SE0375      **Prep Batch Number:** 18-0519  
**Entered By:** Denise Schumitz      **Entered On:** 08/23/2018  
**Test Code (Matrix Type):** Master\_371(L)

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Samples that were manually integrated are noted on the quant reports with the comment (TRUE).  
DMS 8/23/2018

JZ86 is not being used for PFTTrDA in this method. There is no impact on the data once this point of the calibration is removed.  
DMS 8/23/2018

J7560 has an ion ratio >50% RPD for PFOA.  
DMS 8/24/2018

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**Task Leader Approval:**

**Supervisor Approval:**

**PM Approval:**

Robert Lizotte, Jr.  
2018.08.23 13:21:49 -04'00'

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## Example Calculation for PFAS

Calculation of final concentration from area:

$$\text{Concentration} = \left[ \frac{PA - b}{m} \right] * C_{IS} * PIV * DF / S$$

Where:

- PA = Area of target / area of internal standard
- b = y intercept from calibration curve
- CIS = concentration of internal standard (ng/L)
- m = slope of calibration
- DF = dilution factor
- S = Sample Size
- PIV = Pre-injection volume (L)

Sample ID: J7562-FS(0)  
 Client Sample ID: JAX-RES-08202018-1310-28  
 Sample Size: 0.26  
 Units: L  
 Dilution Factor: 1.000  
 PIV (L): 0.001  
 Target Analyte: PFHxA  
 MRM Transition: 313.0 / 269.0  
 Data file: 08222018\_DW.wiff  
 Result table: 08232018\_DW  
 Area: 90,058.15  
 IS Name: 13C2-PFOA  
 IS Area: 31,393.68  
 IS Amount (ng/L): 100  
 y-intercept: 0.57581  
 slope: 0.90582

$$\text{Concentration} = \frac{[(90058.15/31393.68) - 0.57581]}{0.90582} * 100 * 0.001 * 1 / 0.26$$

$$\text{ng/L} = 0.97$$



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375  
 Preparation Batch: 18-0519  
 Data Set: DP-18-0233

	CR633PB-FS (Procedural Blank)	CR634LCS-FS (Laboratory Control Sample)	J7558-FS (JAX-RES-08202018-0945-25)	J7560-FS (JAX-RES-08202018-1100-26)	J7562-FS (JAX-RES-08202018-1310-28)
PFHxA	-	L	-	L	L
PFHpA	-	L	-	L	-
PFOA	-	L	-	L	L
PFNA	-	L	-	-	-
PFDA	-	L	-	-	-
PFUnA	-	L	-	-	-
PFDoA	-	L	-	-	-
PFTTrDA	-	L	-	-	-
PFTeDA	-	L	-	-	-
NMeFOSAA	-	L	-	-	-
NEtFOSAA	-	L	-	-	-
PFBS	-	L	-	L	L
PFHxS	-	L	-	L	L
PFOS	-	L	-	L/Br	L/Br

"L" :Linear

"Br" : branched

"L/Br" : Linear/Branched

"-": Not detected

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	13C4-PFOS	146,122.75	-
JZ81	L4	8/22/18 18:36	13C4-PFOS	171,595.72	-
JZ82	L5	8/22/18 18:45	13C4-PFOS	152,521.02	-
JZ83	L6	8/22/18 18:54	13C4-PFOS	140,405.03	-
JZ84	L7	8/22/18 19:03	13C4-PFOS	142,721.38	-
JZ85	L8	8/22/18 19:12	13C4-PFOS	171,988.95	-
JZ86	L9	8/22/18 19:21	13C4-PFOS	141,974.34	2.9

PASS

Average 152,475.60 Lower 76,237.80 Upper 228,713.40

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	13C4-PFOS	146,122.75	76,237.80	228,713.40		106,764.71	213,529.43	
JZ81	L4	8/22/18 18:36	13C4-PFOS	171,595.72	76,237.80	228,713.40		106,764.71	213,529.43	
JZ82	L5	8/22/18 18:45	13C4-PFOS	152,521.02	76,237.80	228,713.40		106,764.71	213,529.43	
JZ83	L6	8/22/18 18:54	13C4-PFOS	140,405.03	76,237.80	228,713.40		106,764.71	213,529.43	
JZ84	L7	8/22/18 19:03	13C4-PFOS	142,721.38	76,237.80	228,713.40		106,764.71	213,529.43	
JZ85	L8	8/22/18 19:12	13C4-PFOS	171,988.95	76,237.80	228,713.40		106,764.71	213,529.43	
JZ86	L9	8/22/18 19:21	13C4-PFOS	141,974.34	76,237.80	228,713.40		106,764.71	213,529.43	
KA08 IB	Instrument Blank	8/22/18 19:30	13C4-PFOS	146,358.02	76,237.80	228,713.40		106,764.71	213,529.43	
JZ77 ICC	ICC	8/22/18 19:38	13C4-PFOS	152,035.64	76,237.80	228,713.40		106,764.71	213,529.43	
JZ82 CCV	CCV	8/22/18 20:41	13C4-PFOS	177,473.29	76,237.80	228,713.40		106,764.71	213,529.43	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	13C4-PFOS	152,603.74	76,237.80	228,713.40		124,231.30	248,462.61	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	13C4-PFOS	166,905.84	76,237.80	228,713.40		124,231.30	248,462.61	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	13C4-PFOS	141,268.12	76,237.80	228,713.40		124,231.30	248,462.61	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	13C4-PFOS	146,921.11	76,237.80	228,713.40		124,231.30	248,462.61	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	13C4-PFOS	133,143.69	76,237.80	228,713.40		124,231.30	248,462.61	
JZ81 CCV	CCV	8/22/18 21:44	13C4-PFOS	197,787.81	76,237.80	228,713.40		124,231.30	248,462.61	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	13C2-PFOA	34,949.15	-
JZ81	L4	8/22/18 18:36	13C2-PFOA	38,410.24	-
JZ82	L5	8/22/18 18:45	13C2-PFOA	33,013.13	-
JZ83	L6	8/22/18 18:54	13C2-PFOA	33,126.31	-
JZ84	L7	8/22/18 19:03	13C2-PFOA	31,909.26	-
JZ85	L8	8/22/18 19:12	13C2-PFOA	40,320.01	-
JZ86	L9	8/22/18 19:21	13C2-PFOA	35,899.15	2.7

PASS

Average      Lower      Upper  
 35,375.32    17,687.66    53,062.98

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	13C2-PFOA	34,949.15	17,687.66	53,062.98		23,109.19	46,218.38	
JZ81	L4	8/22/18 18:36	13C2-PFOA	38,410.24	17,687.66	53,062.98		23,109.19	46,218.38	
JZ82	L5	8/22/18 18:45	13C2-PFOA	33,013.13	17,687.66	53,062.98		23,109.19	46,218.38	
JZ83	L6	8/22/18 18:54	13C2-PFOA	33,126.31	17,687.66	53,062.98		23,109.19	46,218.38	
JZ84	L7	8/22/18 19:03	13C2-PFOA	31,909.26	17,687.66	53,062.98		23,109.19	46,218.38	
JZ85	L8	8/22/18 19:12	13C2-PFOA	40,320.01	17,687.66	53,062.98		23,109.19	46,218.38	
JZ86	L9	8/22/18 19:21	13C2-PFOA	35,899.15	17,687.66	53,062.98		23,109.19	46,218.38	
KA08 IB	Instrument Blank	8/22/18 19:30	13C2-PFOA	33,036.09	17,687.66	53,062.98		23,109.19	46,218.38	
JZ77 ICC	ICC	8/22/18 19:38	13C2-PFOA	35,651.96	17,687.66	53,062.98		23,109.19	46,218.38	
JZ82 CCV	CCV	8/22/18 20:41	13C2-PFOA	40,345.09	17,687.66	53,062.98		23,109.19	46,218.38	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	13C2-PFOA	35,596.60	17,687.66	53,062.98		28,241.56	56,483.13	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	13C2-PFOA	41,213.69	17,687.66	53,062.98		28,241.56	56,483.13	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	13C2-PFOA	35,633.50	17,687.66	53,062.98		28,241.56	56,483.13	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	13C2-PFOA	33,335.59	17,687.66	53,062.98		28,241.56	56,483.13	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	13C2-PFOA	31,393.68	17,687.66	53,062.98		28,241.56	56,483.13	
JZ81 CCV	CCV	8/22/18 21:44	13C2-PFOA	45,891.30	17,687.66	53,062.98		28,241.56	56,483.13	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	d3-MeFOSAA	23,414.41	-
JZ81	L4	8/22/18 18:36	d3-MeFOSAA	25,672.34	-
JZ82	L5	8/22/18 18:45	d3-MeFOSAA	20,943.33	-
JZ83	L6	8/22/18 18:54	d3-MeFOSAA	20,429.95	-
JZ84	L7	8/22/18 19:03	d3-MeFOSAA	20,300.85	-
JZ85	L8	8/22/18 19:12	d3-MeFOSAA	24,008.70	-
JZ86	L9	8/22/18 19:21	d3-MeFOSAA	20,758.80	12

PASS

Average      Lower      Upper  
 22,218.34    11,109.17    33,327.51

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	d3-MeFOSAA	23,414.41	11,109.17	33,327.51		14,660.33	29,320.66	
JZ81	L4	8/22/18 18:36	d3-MeFOSAA	25,672.34	11,109.17	33,327.51		14,660.33	29,320.66	
JZ82	L5	8/22/18 18:45	d3-MeFOSAA	20,943.33	11,109.17	33,327.51		14,660.33	29,320.66	
JZ83	L6	8/22/18 18:54	d3-MeFOSAA	20,429.95	11,109.17	33,327.51		14,660.33	29,320.66	
JZ84	L7	8/22/18 19:03	d3-MeFOSAA	20,300.85	11,109.17	33,327.51		14,660.33	29,320.66	
JZ85	L8	8/22/18 19:12	d3-MeFOSAA	24,008.70	11,109.17	33,327.51		14,660.33	29,320.66	
JZ86	L9	8/22/18 19:21	d3-MeFOSAA	20,758.80	11,109.17	33,327.51		14,660.33	29,320.66	
KA08 IB	Instrument Blank	8/22/18 19:30	d3-MeFOSAA	20,259.48	11,109.17	33,327.51		14,660.33	29,320.66	
JZ77 ICC	ICC	8/22/18 19:38	d3-MeFOSAA	21,274.05	11,109.17	33,327.51		14,660.33	29,320.66	
JZ82 CCV	CCV	8/22/18 20:41	d3-MeFOSAA	26,992.94	11,109.17	33,327.51		14,660.33	29,320.66	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	d3-MeFOSAA	20,738.84	11,109.17	33,327.51		18,895.06	37,790.12	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	d3-MeFOSAA	21,055.79	11,109.17	33,327.51		18,895.06	37,790.12	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	d3-MeFOSAA	21,515.11	11,109.17	33,327.51		18,895.06	37,790.12	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	d3-MeFOSAA	20,330.12	11,109.17	33,327.51		18,895.06	37,790.12	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	d3-MeFOSAA	19,152.60	11,109.17	33,327.51		18,895.06	37,790.12	
JZ81 CCV	CCV	8/22/18 21:44	d3-MeFOSAA	29,075.24	11,109.17	33,327.51		18,895.06	37,790.12	

<b>Sample Name</b>	JZ84	<b>Injection Vial</b>	8
<b>Sample ID</b>	L7	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 7:03:12 PM	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Results Summary

<b>Analyte</b>	<b>MRM Transition</b>	<b>RT</b>	<b>Asymmetry Factor</b>	<b>Passing Range</b>
PFBS_1	298.9 / 80.0	1.56	1.37	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.79	1.46	0.8 – 1.5



Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/22/2018 7:03:12 PM	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.56	37	>10
PFBS_2	298.9 / 99.0	1.56	48	>10
PFHxA_1	313.0 / 269.0	1.79	44	>10
PFHxA_2	313.0 / 119.0	1.79	23	>10
PFHpA_1	363.0 / 319.0	2.05	47	>10
PFHpA_2	363.0 / 169.0	2.05	35	>10
PFHxS_1	399.0 / 80.0	2.06	31	>10
PFHxS_2	399.0 / 99.0	2.06	31	>10
PFOA_1	413.0 / 369.0	2.31	35	>10
PFOA_2	413.0 / 169.0	2.31	30	>10
PFNA_1	463.0 / 419.0	2.58	30	>10
PFNA_2	463.0 / 219.0	2.58	28	>10
PFOS_1	499.0 / 80.0	2.57	53	>10
PFOS_2	499.0 / 99.0	2.57	52	>10
PFDA_1	513.0 / 469.0	2.87	35	>10
PFDA_2	513.0 / 219.0	2.87	20	>10
PFUnA_1	563.0 / 519.0	3.16	39	>10
PFUnA_2	563.0 / 269.0	3.16	37	>10
PFDaA_1	613.0 / 569.0	3.44	31	>10
PFDaA_2	613.0 / 319.0	3.44	35	>10
PFTrDA_1	663.0 / 619.0	3.71	33	>10
PFTrDA_2	663.0 / 169.0	3.70	29	>10
PFTeDA_1	713.0 / 669.0	3.94	51	>10
PFTeDA_2	713.0 / 169.0	3.94	35	>10
NMeFOSAA_1	570.0 / 419.0	3.01	35	>10
NMeFOSAA_2	570.0 / 512.0	3.01	37	>10
NEtFOSAA_1	584.0 / 419.0	3.16	43	>10
NEtFOSAA_2	584.0 / 483.0	3.16	37	>10
13C2-PFHxA	315.0 / 270.0	1.79	45	>10
13C2-PFDA	515.0 / 470.0	2.87	36	>10
d5-EtFOSAA	589.0 / 419.0	3.15	28	>10



## Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.43	1.29	3.87	18
PFHpA	375-85-9	10.59	1.46	4.38	18
PFOA	335-67-1	10.47	1.51	4.53	18
PFNA	375-95-1	10.48	1.32	3.96	18
PFDA	335-76-2	10.37	1.62	4.86	18
PFUnA	2058-94-8	10.06	1.76	5.28	18
PFDoA	307-55-1	9.99	1.68	5.04	18
PFTTrDA	72629-94-8	10.15	1.82	5.46	18
PFTeDA	376-06-7	11.34	2.46	7.38	18
NMeFOSAA	2355-31-9	10.49	1.05	3.15	18
NEtFOSAA	2991-50-6	10.07	1.25	3.75	18
PFBS	375-73-5	8.63	1.30	3.90	18
PFHxS	355-46-4	9.73	1.53	4.59	18
PFOS	1763-23-1	9.36	1.56	4.68	18

# BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

Battelle SOP 5-371 (EPA Method 537 Version 1.1)

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)	MRL (ng/L)
<b>PFHxA</b>	307-24-4	0.22	0.5	2.5	2.5
<b>PFHpA</b>	375-85-9	0.34	1.0	2.5	2.5
<b>PFOA</b>	335-67-1	0.38	1.0	2.5	2.5
<b>PFNA</b>	375-95-1	0.37	1.0	2.5	2.5
<b>PFDA</b>	335-76-2	0.39	1.0	2.5	2.5
<b>PFUnA</b>	2058-94-8	0.38	1.0	2.5	2.5
<b>PFDoA</b>	307-55-1	0.42	1.0	2.5	2.5
<b>PFTrDA</b>	72629-94-8	0.42	1.0	2.5	2.5
<b>PFTeDA</b>	376-06-7	0.73	1.5	2.5	2.5
<b>NMeFOSAA</b>	2355-31-9	0.42	1.0	2.5	2.5
<b>NEtFOSAA</b>	2991-50-6	0.44	1.0	2.5	2.5
<b>PFBS</b>	375-73-5	0.21	0.5	2.5	2.5
<b>PFHxS</b>	3871-99-6	0.34	1.0	2.5	2.5
<b>PFOS</b>	1763-23-1	0.30	1.0	2.5	2.5

*Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation*

## Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
<b>PFHxA</b>	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
<b>PFHpA</b>	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
<b>PFOA</b>	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
<b>PFNA</b>	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
<b>PFDA</b>	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
<b>PFUnA</b>	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
<b>PFDoA</b>	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
<b>PFTTrDA</b>	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
<b>PFTeDA</b>	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
<b>NMeFOSAA</b>	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
<b>NEtFOSAA</b>	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
<b>PFBS</b>	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
<b>PFHxS</b>	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
<b>PFOS</b>	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
<b><sup>13</sup>C<sub>2</sub>-PFHxA</b>	NA	SIS	315.0 / 270.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFDA</b>	NA	SIS	515.0 / 470.0	NA
<b>d<sub>5</sub>-EtFOSAA</b>	NA	SIS	589.0 / 419.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFOA</b>	NA	IS	415.0 / 270.0	NA
<b><sup>13</sup>C<sub>4</sub>-PFOS</b>	NA	IS	503.0 / 80.0	NA
<b>d<sub>3</sub>-MeFOSAA</b>	NA	IS	573.0 / 419.0	NA



## Drinking Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF <sup>1</sup>	Sample Size (L)	Sample Equivalent (ng/L) <sup>2</sup>
25	1	1	0.250	0.1
50	1	1	0.250	0.2
100	1	1	0.250	0.4
250	1	1	0.250	1.0
500	1	1	0.250	2.0
1,000	1	1	0.250	4.0
2,500	1	1	0.250	10.0
5,000	1	1	0.250	20.0
10,000	1	1	0.250	40.0

<sup>1</sup> - base level dilution as part of the extraction procedure

<sup>2</sup> - calculated equivalent of a sample based on the ICAL concentration



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# QTRAP 5500

**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

## QTRAP 5500 Preventive Maintenance Checklist

<b>Preventive Maintenance Date:</b>	22-Feb-2017
<b>Request ID:</b>	3683
<b>Company Name:</b>	Battelle Memorial Institute
<b>Instrument ID:</b>	X60666
<b>Instrument Model:</b>	QTRAP 5500
<b>Instrument Serial Number:</b>	AU23051004

**PASS**       **FAIL**

**Any failure will lead to an automatic Service Call being open to investigate fault.**

Preventive Maintenance is performed twice every year unless specified in the Service Contract. It is designed to help maintain optimum system performance and to help diagnose any system deficiencies.

Engineer is required the assigned Request ID for this PM otherwise making this job invalid.

**Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Performed By:**           Kaustubh Dhayagude                **Date:**           22-Feb-2017          

**Approved By :** \_\_\_\_\_      **Date:** \_\_\_\_\_

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**QTRAP 5500**

**LC/MS/MS Detector System**

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**PRE PM PPG PERFORMANCE EVALUATION:**

- Consult Customer concerning the unit overall performance.
- Check Logbook for Services recently performed.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.5	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	1.9	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.4	Read Only
<input checked="" type="checkbox"/> CAD High	3.4	Read Only
<input checked="" type="checkbox"/> CAD 12	3.4	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop
- Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop

**Pre PM PPG Test:** Perform each of the following tests. Optimize ion source position only. The specifications listed for these Pre PM tests are guidelines only, not required to be met.

- Perform Q1 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 175.133	1.64 e6	Read Only	0.8095	Read Only
Q1 500.380	2.40 e7	Read Only	0.8592	Read Only
Q1 906.673	2.86 e7	Read Only	0.9633	Read Only

- Perform Q3 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 175.133	1.26 e6	Read Only	0.6252	Read Only
Q3 500.380	2.19 e7	Read Only	0.7275	Read Only
Q3 906.673	3.02 e7	Read Only	0.7662	Read Only

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Appendix ZEFPM003-2L

Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: : 19.51% (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3	7.43 e7	Read Only	0.9981	Read Only
MS/MS 195.1	1.45 e7	Read Only	0.6582	Read Only

Perform Q1 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 933.636	1.43 e7	Read Only	0.7330	Read Only

Perform Q3 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 933.636	2.22 e7	Read Only	0.8138	Read Only

Perform Product Ion scan using NEG PPG 3e-5M. Record 10 mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.35 e6	Read Only	0.6495	Read Only



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**PREVENTIVE MAINTENANCE CHECKLIST:**

- Check Cooling Fans for Turbo Pumps while MS is ON.
- Check QJet and QPS tuning voltage for reference.
- Record AC input Voltage while MS is OFF: \_\_\_\_\_(200-240VAC).  
If Out-of-Range, notify customer.
  
- Clean Interface
  - Curtain Plate
  - Orifice Plate
  - QJet
  - Q0 Rods.
  
- Replace Roughing Pump Oil.
- Inspect Oil Exhaust Filter, if Applicable.  N/A
- Clean and inspect built-in divert valve if used.  N/A
- Check Multiplier Voltage, optimize if necessary.
- Replace four Air Filters at the bottom of the mass spectrometer.
  
- Pump down overnight if possible.  N/A
  
- Perform Maintenance on Turbo V source.
  
- Replace Electrode, if necessary.  N/A
- Check Turbo heaters resistances.
- Check if Temperature is reached at 500C with TIS Probe installed.
- Check if Temperature is reached at 500C with APCI Probe installed.  N/A

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Appendix ZEFPM003-2L

**POST PM PPG PERFORMANCE TESTS:**

- Set-up Sample for Infusion.
- Check spray and adjust sprayer's position of the TIS source.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.8	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	2.1	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.6	Read Only
<input checked="" type="checkbox"/> CAD High	3.7	Read Only
<input checked="" type="checkbox"/> CAD 12	3.7	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Perform Q1 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2 <sup>e6</sup>	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0 <sup>e6</sup>	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4 <sup>e7</sup>	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8 <sup>e7</sup>	0.7656	0.6 to 0.8

- Perform Q3 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2 <sup>e6</sup>	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0 <sup>e6</sup>	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4 <sup>e7</sup>	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8 <sup>e7</sup>	0.7118	0.6 to 0.8

- Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.

Transmission Efficiency: 16.93% (≥ 10.0%)

Mass	MSMS Intensity		Width Value	Width Specs
	Value	Spec		
Q1 609.3	5.74 e7	N/A	0.7667	Read Only
MS/MS 195.1	9.72 e6	N/A	0.6751	Read Only

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- Perform Q1 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	$\geq 1.0^{e7}$	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	$\geq 4.0^{e7}$	0.6740	0.6 to 0.8

- Perform Q3 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	$\geq 8.0^{e6}$	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	$\geq 4.0^{e7}$	0.7292	0.6 to 0.8

- Perform Product Ion scan using NEG PPG 3e-5M.

Mass	Scan Rate	Mca	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.33 e6	Read Only	0.6387	Read Only

- Perform ER POS 118.087 and 922.01 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	$\geq 7.2^{e6}$	0.1302	<0.35
ER 922.010	0.05	3.89 e7	$\geq 2.8^{e6}$	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	$\geq 2.4^{e7}$	0.3740	<0.65
ER 922.010	0.05	2.37 e8	$\geq 6.8^{e7}$	0.5407	<0.65

- Perform ER NEG 431.982 and 601.978 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	$\geq 4.4^{e7}$	0.1840	<0.35
ER 601.978	0.05	7.74 e7	$\geq 5.6^{e7}$	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	$\geq 1.2^{e8}$	0.4382	<0.65
ER 601.978	0.05	2.55 e8	$\geq 1.6^{e8}$	0.6205	<0.65

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- Perform EPI POS 397.2 using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000	> 3.5 e6	≥2.0 e6	> 4.0 e7	≥6.4 e6

- Perform MS3 POS full scan Fragmentation ON & OFF using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
<input type="checkbox"/> 236 OR <input checked="" type="checkbox"/> 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10 <sup>e6</sup>

**REVIEW:**

- Attach all spectrums printouts to this procedure.
- If any parameter setting access modes were changed during the PM, ensure they are returned to their normal access mode and that their offsets are adjusted to match optimized values from the post-PM acquisition files.
- Empty tuning cache folder, if necessary.  N/A
- Update Service Work Order status
- Fill and replace PM Label.

**END OF PREVENTIVE MAINTENANCE CHECKLIST****Document history:**

06 OCT 2016: Appendix ZEFPM003-2L: Removed requirements to fit Manufacturer's testing criteria.

Battelle Standard ID	Description	Intermediate Solutions		Battelle Reagent ID (purchased solutions)
JZ87	PFAS - 537.1 Internal Standard Solution	JV35	-	180425-01
JZ90	PFAS - 537.1 Surrogate Solution	JV37	-	180425-02
KA08	PFAS - 537.1 Instrument Blank	JV61	JV35	180425-01
KA08	PFAS - 537.1 Instrument Blank	JV62	JV37	180425-02
JZ28	PFAS - 537.1 Second Source LCS/MS Solution	-	-	180705-01
JZ77	PFAS - 537.1 ICC	JZ28	-	180705-01
JZ77	PFAS - 537.1 ICC	JZ74	JV35	180425-01
JZ77	PFAS - 537.1 ICC	JZ75	JV37	180425-02
JZ80	PFAS - 537.1 ICAL L3	JV43	-	180425-03
JZ80	PFAS - 537.1 ICAL L3	JZ74	JV35	180425-01
JZ80	PFAS - 537.1 ICAL L3	JZ75	JV37	180425-02
JZ81	PFAS - 537.1 ICAL L4	JV43	-	180425-03
JZ81	PFAS - 537.1 ICAL L4	JZ74	JV35	180425-01
JZ81	PFAS - 537.1 ICAL L4	JZ75	JV37	180425-02
JZ82	PFAS - 537.1 ICAL L5	JV43	-	180425-03
JZ82	PFAS - 537.1 ICAL L5	JZ74	JV35	180425-01
JZ82	PFAS - 537.1 ICAL L5	JZ75	JV37	180425-02
JZ83	PFAS - 537.1 ICAL L6	JZ76	-	180425-03
JZ83	PFAS - 537.1 ICAL L6	JZ74	JV35	180425-01
JZ83	PFAS - 537.1 ICAL L6	JZ75	JV37	180425-02
JZ84	PFAS - 537.1 ICAL L7	JZ76	-	180425-03
JZ84	PFAS - 537.1 ICAL L7	JZ74	JV35	180425-01
JZ84	PFAS - 537.1 ICAL L7	JZ75	JV37	180425-02
JZ85	PFAS - 537.1 ICAL L8	JZ76	-	180425-03
JZ85	PFAS - 537.1 ICAL L8	JZ74	JV35	180425-01
JZ85	PFAS - 537.1 ICAL L8	JZ75	JV37	180425-02
JZ86	PFAS - 537.1 ICAL L9	JZ76	-	180425-03
JZ86	PFAS - 537.1 ICAL L9	JZ74	JV35	180425-01
JZ86	PFAS - 537.1 ICAL L9	JZ75	JV37	180425-02

It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JV35**

Description: PFAS - 537.1 Internal Standard Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-01	EPA-537IS	Neat	~2.66666 6	12/13/22	---	---	1000 uL	1	10	~0.3000

Solution Prepared By: Schultz, Stephanie

Date Prepared: 5/2/2018

Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials

Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JV35

Description: PFAS - 537.1 Internal Standard Stock

Stock Id: 180425-01

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	1000	1.00	1	100.000	1	10	0.10000
13C4-PFOS	1000	2.87	1	100.000	1	10	0.28700
d3-MeFOSAA	1000	4.00	1	100.000	1	10	0.40000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFOA	.10000
13C4-PFOS	.28700
d3-MeFOSAA	.40000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180425-01	Pipette	I0793912B

Solution Prepared By: Schultz, Stephanie	Date Prepared: 5/2/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



It can be done

## Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: **JV37**

Description: PFAS - 537.1 Surrogate Standard Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-02	EPA-537SS	Neat	~2.00000 0	11/08/22	---	---	1000 uL	1	10	~0.2000

Solution Prepared By: Schultz, Stephanie

Date Prepared: 5/2/2018

Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials

Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_





It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JV37**

Description: PFAS - 537.1 Surrogate Standard Stock

Stock ID: **180425-02**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	1000	1.00	1	100.000	1	10	0.10000
13C2-PFHxA	1000	1.00	1	100.000	1	10	0.10000
d5-EtFOSAA	1000	4.00	1	100.000	1	10	0.40000

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.10000
13C2-PFHxA	.10000
d5-EtFOSAA	.40000

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180425-02	Pipette	C0982448K

Solution Prepared By: Schultz, Stephanie Date Prepared: 5/2/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JV43**

Description: PFAS - 537.1 Low ICAL Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-03	EPA-537PDS (calibration)	Neat	~2.00000 0	03/05/23	---	---	250 uL	1	100	~0.0050

Solution Prepared By: Schultz, Stephanie

Date Prepared: 5/2/2018

Expiration Date: 5/2/2019

Solution Volume 40 mL X 4 Vials

Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise Date: 5/3/2018 3:21:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JV43**

Description: PFAS - 537.1 Low ICAL Stock

Stock Id: **180425-03**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	100	0.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-1-butanedisulfonate	250	1.77	1	100.000	1	100	0.00443
Perfluoro-1-hexanesulfonate	250	1.82	1	100.000	1	100	0.00456
Perfluoro-1-octanesulfonate	250	1.85	1	100.000	1	100	0.00463
Perfluoro-n-decanoic Acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-dodecanoic acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-heptanoic Acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-hexanoic acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-nonanoic Acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-octanoic Acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-tetradecanoic acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-tridecanoic acid	250	2.00	1	100.000	1	100	0.00500
Perfluoro-n-undecanoic acid	250	2.00	1	100.000	1	100	0.00500

## Final Concentrations:

Analyte:	Conc (ug/mL):
N-ethylperfluoro-octanesulfonamidoacetic acid	.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00500
Perfluoro-1-butanedisulfonate	.00443
Perfluoro-1-hexanesulfonate	.00456
Perfluoro-1-octanesulfonate	.00463
Perfluoro-n-decanoic Acid	.00500
Perfluoro-n-dodecanoic acid	.00500
Perfluoro-n-heptanoic Acid	.00500
Perfluoro-n-hexanoic acid	.00500
Perfluoro-n-nonanoic Acid	.00500
Perfluoro-n-octanoic Acid	.00500
Perfluoro-n-tetradecanoic acid	.00500
Perfluoro-n-tridecanoic acid	.00500
Perfluoro-n-undecanoic acid	.00500

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180425-03	Pipette	B1100330B

Solution Prepared By: Schultz, Stephanie      Date Prepared: 5/2/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 4 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise      Date: 5/3/2018 3:21:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ87**

Description: PFAS - 537.1 Internal Standard Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV35	PFAS - 537.1 Internal Standard Stock	Solution	~0	05/02/19	---	---	500 uL	1	25	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:21:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number:** JZ87

**Description:** PFAS - 537.1 Internal Standard Solution

<b>Stock Id: JV35</b>							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	500	0.10	---	---	1	25	0.00200
13C4-PFOS	500	0.29	---	---	1	25	0.00574

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFOA	.00200
13C4-PFOS	.00574
d3-MeFOSAA	.00800

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JV35	Pipette	C0982448K

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

**Comment:** 96/4 Methanol/Milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:21:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JV61**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV35	PFAS - 537.1 Internal Standard Stock	Solution	~0	05/02/19	---	---	1000 uL	1	5	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 5/2/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise Date: 5/3/2018 3:23:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JV61**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Stock Id: **JV35**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	1000	0.10	---	---	1	5	0.02000
13C4-PFOS	1000	0.29	---	---	1	5	0.05740
d3-MeFOSAA	1000	0.40	---	---	1	5	0.08000

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFOA	.02000
13C4-PFOS	.05740
d3-MeFOSAA	.08000

## Syringes/Pipettes:

Solution Prepared By: Schultz, Stephanie      Date Prepared: 5/2/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise      Date: 5/3/2018 3:23:00 PM

It can be done

## Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: **JV62**

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV37	PFAS - 537.1 Surrogate Standard Stock	Solution	~0	05/02/19	---	---	1000 uL	1	5	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 5/2/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise Date: 5/3/2018 3:23:00 PM





It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: **JV62**

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

Stock Id: **JV37**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	1000	0.10	---	---	1	5	0.02000
13C2-PFHxA	1000	0.10	---	---	1	5	0.02000
d5-EtFOSAA	1000	0.40	---	---	1	5	0.08000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.02000
13C2-PFHxA	.02000
d5-EtFOSAA	.08000

Syringes/Pipettes:

Solution Prepared By: Schultz, Stephanie	Date Prepared: 5/2/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107		

Comment: 96/4 methanol/milli-q (RP-180502-2)

Approved By: Schumitz, Denise Date: 5/3/2018 3:23:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ90**

Description: PFAS - 537.1 Surrogate Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV37	PFAS - 537.1 Surrogate Standard Stock	Solution	~0	05/02/19	---	---	500 uL	1	25	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/21/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Lizotte Jr, Robert Date: 8/22/2018 9:12:00 AM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ90**

Description: PFAS - 537.1 Surrogate Solution

Stock Id: **JV37**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	500	0.10	---	---	1	25	0.00200
13C2-PFHxA	500	0.10	---	---	1	25	0.00200
d5-EtFOSAA	500	0.40	---	---	1	25	0.00800

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00200
13C2-PFHxA	.00200
d5-EtFOSAA	.00800

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV37	Pipette	C0982448K

Solution Prepared By: Schultz, Stephanie      Date Prepared: 8/21/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Lizotte Jr, Robert      Date: 8/22/2018 9:12:00 AM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: KA08

Description: PFAS - 537.1 Instrument Blank

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 8/22/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q water

Approved By: Schumitz, Denise Date: 8/23/2018 10:39:00 AM



It can be done

## Standard Solution Concentrations

Approved: 

Standard Laboratory ID Number: KA08

Description: PFAS - 537.1 Instrument Blank

## Stock Id: JZ74

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

## Stock Id: JZ75

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/22/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q water

Approved By: Schumitz, Denise Date: 8/23/2018 10:39:00 AM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ28**

Description: PFAS - 537.1 Second Source LCS/MS Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180705-01	EPA-537PDS-L	Neat	~2.00000 0	03/05/23	---	---	500 uL	1	20	~0.0500

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 7/25/2018	<b>Expiration Date:</b> 7/25/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q water

Approved By: Schumitz, Denise Date: 7/31/2018 11:39:00 AM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ28**

Description: PFAS - 537.1 Second Source LCS/MS Solution

Stock Id: **180705-01**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	500	2.00	1	100.000	1	20	0.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-1-butanefluoride	500	1.77	1	100.000	1	20	0.04425
Perfluoro-1-hexanesulfonate	500	1.89	1	100.000	1	20	0.04725
Perfluoro-1-octanesulfonate	500	1.91	1	100.000	1	20	0.04775
Perfluoro-n-decanoic Acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-dodecanoic acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-heptanoic Acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-hexanoic acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-octanoic Acid	500	2.00	1	100.000	1	20	0.05000
Perfluorononanoic Acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-tetradecanoic acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-tridecanoic acid	500	2.00	1	100.000	1	20	0.05000
Perfluoro-n-undecanoic acid	500	2.00	1	100.000	1	20	0.05000

## Final Concentrations:

Analyte:	Conc (ug/mL):
N-ethylperfluoro-octanesulfonamidoacetic acid	.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.05000
Perfluoro-1-butanefluoride	.04425
Perfluoro-1-hexanesulfonate	.04725
Perfluoro-1-octanesulfonate	.04775
Perfluoro-n-decanoic Acid	.05000
Perfluoro-n-dodecanoic acid	.05000
Perfluoro-n-heptanoic Acid	.05000
Perfluoro-n-hexanoic acid	.05000
Perfluoro-n-octanoic Acid	.05000
Perfluorononanoic Acid	.05000
Perfluoro-n-tetradecanoic acid	.05000
Perfluoro-n-tridecanoic acid	.05000
Perfluoro-n-undecanoic acid	.05000

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180705-01	Pipette	B820865811

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 7/25/2018	<b>Expiration Date:</b> 7/25/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Comment: 96/4 Methanol/Milli-q water

Approved By: Schumitz, Denise Date: 7/31/2018 11:39:00 AM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ74**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV35	PFAS - 537.1 Internal Standard Stock	Solution	~0	05/02/19	---	---	1000 uL	1	5	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM





It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ74**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Stock Id: **JV35**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	1000	0.10	---	---	1	5	0.02000
13C4-PFOS	1000	0.29	---	---	1	5	0.05740

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFOA	.02000
13C4-PFOS	.05740
d3-MeFOSAA	.08000

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV35	Pipette	C0982448K

Solution Prepared By: Schultz, Stephanie      Date Prepared: 8/20/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise      Date: 8/20/2018 2:19:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ75**

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV37	PFAS - 537.1 Surrogate Standard Stock	Solution	~0	05/02/19	---	---	1000 uL	1	5	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 8/20/2018	Expiration Date: 5/2/2019
Solution Volume 4 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number:** JZ75

**Description:** PFAS - 537.1 Surrogate Calibration Stock Solution

<b>Stock Id: JV37</b>							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	1000	0.10	---	---	1	5	0.02000
13C2-PFHxA	1000	0.10	---	---	1	5	0.02000
d5-EtFOSAA	1000	0.40	---	---	1	5	0.08000

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.02000
13C2-PFHxA	.02000
d5-EtFOSAA	.08000

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JV37	Pipette	C0982448K

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 4 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

**Comment:** 96/4 methanol/milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:19:00 PM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: JZ76

Description: PFAS - 537.1 High ICAL Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-03	EPA-537PDS (calibration)	Neat	~2.00000 0	03/05/23	---	---	250 uL	1	10	~0.0500

Solution Prepared By: Schultz, Stephanie	Date Prepared: 8/20/2018	Expiration Date: 8/20/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ76**

Description: PFAS - 537.1 High ICAL Stock

Stock Id: **180425-03**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	10	0.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-1-butanefluoride	250	1.77	1	100.000	1	10	0.04425
Perfluoro-1-hexanesulfonate	250	1.82	1	100.000	1	10	0.04560
Perfluoro-1-octanesulfonate	250	1.85	1	100.000	1	10	0.04628
Perfluoro-n-decanoic Acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-dodecanoic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-heptanoic Acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-hexanoic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-octanoic Acid	250	2.00	1	100.000	1	10	0.05000
Perfluorononanoic Acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-tetradecanoic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-tridecanoic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-n-undecanoic acid	250	2.00	1	100.000	1	10	0.05000

## Final Concentrations:

Analyte:	Conc (ug/mL):
N-ethylperfluoro-octanesulfonamidoacetic acid	.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.05000
Perfluoro-1-butanefluoride	.04425
Perfluoro-1-hexanesulfonate	.04560
Perfluoro-1-octanesulfonate	.04628
Perfluoro-n-decanoic Acid	.05000
Perfluoro-n-dodecanoic acid	.05000
Perfluoro-n-heptanoic Acid	.05000
Perfluoro-n-hexanoic acid	.05000
Perfluoro-n-octanoic Acid	.05000
Perfluorononanoic Acid	.05000
Perfluoro-n-tetradecanoic acid	.05000
Perfluoro-n-tridecanoic acid	.05000
Perfluoro-n-undecanoic acid	.05000

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180425-03	Pipette	B814657482

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 8/20/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: JZ77

Description: PFAS - 537.1 ICC

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ28	PFAS - 537.1 Second Source LCS/MS Solution	Solution	~0	07/25/19	---	---	200 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ77**

Description: PFAS - 537.1 ICC

**Stock Id: JZ28**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-1-butanefluorobutane	200	0.04	---	---	1	10	0.00089
Perfluoro-1-hexanesulfonate	200	0.05	---	---	1	10	0.00095
Perfluoro-1-octanesulfonate	200	0.05	---	---	1	10	0.00095
Perfluoro-n-decanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-dodecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-heptanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-hexanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-octanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluorononanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-tetradecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-tridecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-undecanoic acid	200	0.05	---	---	1	10	0.00100

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 methanol/milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:19:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number:** JZ77

**Description:** PFAS - 537.1 ICC

N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanefluorobutanoate	.00089
Perfluoro-1-hexanesulfonate	.00095
Perfluoro-1-octanesulfonate	.00095
Perfluoro-n-decanoic Acid	.00100
Perfluoro-n-dodecanoic acid	.00100
Perfluoro-n-heptanoic Acid	.00100
Perfluoro-n-hexanoic acid	.00100
Perfluoro-n-octanoic Acid	.00100
Perfluorononanoic Acid	.00100
Perfluoro-n-tetradecanoic acid	.00100
Perfluoro-n-tridecanoic acid	.00100
Perfluoro-n-undecanoic acid	.00100

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JZ28	Pipette	B814657482
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662

<b>Solution Prepared By:</b> Schultz, Stephanie		<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107		
<b>Comment:</b> 96/4 methanol/milli-q (RP-180820-2)			

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:19:00 PM





It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ80**

Description: PFAS - 537.1 ICAL L3

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	200 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ80**

Description: PFAS - 537.1 ICAL L3

**Stock Id: JV43**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.01	---	---	1	10	0.00010
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-1-butanefluoride	200	0.00	---	---	1	10	0.00009
Perfluoro-1-hexanesulfonate	200	0.00	---	---	1	10	0.00009
Perfluoro-1-octanesulfonate	200	0.00	---	---	1	10	0.00009
Perfluoro-n-decanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-dodecanoic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-heptanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-hexanoic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-nonanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-octanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-tetradecanoic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-tridecanoic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-undecanoic acid	200	0.01	---	---	1	10	0.00010

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number: JZ80**

**Description:** PFAS - 537.1 ICAL L3

N-ethylperfluoro-octanesulfonamidoacetic acid	.00010
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00010
Perfluoro-1-butanefulfonate	.00009
Perfluoro-1-hexanesulfonate	.00009
Perfluoro-1-octanesulfonate	.00009
Perfluoro-n-decanoic Acid	.00010
Perfluoro-n-dodecanoic acid	.00010
Perfluoro-n-heptanoic Acid	.00010
Perfluoro-n-hexanoic acid	.00010
Perfluoro-n-nonanoic Acid	.00010
Perfluoro-n-octanoic Acid	.00010
Perfluoro-n-tetradecanoic acid	.00010
Perfluoro-n-tridecanoic acid	.00010
Perfluoro-n-undecanoic acid	.00010

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JV43	Pipette	B814657482
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

**Comment:** 96/4 Methanol/Milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:20:00 PM



It can be done

Standard Solution Prep Form II Approved:

Standard Laboratory ID Number: JZ81

Description: PFAS - 537.1 ICAL L4

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	500 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ81**

Description: PFAS - 537.1 ICAL L4

**Stock Id: JV43**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-1-butanefluoride	500	0.00	---	---	1	10	0.00022
Perfluoro-1-hexanesulfonate	500	0.00	---	---	1	10	0.00023
Perfluoro-1-octanesulfonate	500	0.00	---	---	1	10	0.00023
Perfluoro-n-decanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-dodecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-heptanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-hexanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-nonanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-octanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-tetradecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-tridecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-undecanoic acid	500	0.01	---	---	1	10	0.00025

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number:** JZ81

**Description:** PFAS - 537.1 ICAL L4

N-ethylperfluoro-octanesulfonamidoacetic acid	.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00025
Perfluoro-1-butanefluorobutanoate	.00022
Perfluoro-1-hexanesulfonate	.00023
Perfluoro-1-octanesulfonate	.00023
Perfluoro-n-decanoic Acid	.00025
Perfluoro-n-dodecanoic acid	.00025
Perfluoro-n-heptanoic Acid	.00025
Perfluoro-n-hexanoic acid	.00025
Perfluoro-n-nonanoic Acid	.00025
Perfluoro-n-octanoic Acid	.00025
Perfluoro-n-tetradecanoic acid	.00025
Perfluoro-n-tridecanoic acid	.00025
Perfluoro-n-undecanoic acid	.00025

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JV43	Pipette	C0982448K
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

**Comment:** 96/4 Methanol/Milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: JZ82

Description: PFAS - 537.1 ICAL L5

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	1000 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 8/20/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ82**

Description: PFAS - 537.1 ICAL L5

**Stock Id: JV43**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.01	---	---	1	10	0.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-1-butanefluorobutane	1000	0.00	---	---	1	10	0.00044
Perfluoro-1-hexanesulfonate	1000	0.00	---	---	1	10	0.00046
Perfluoro-1-octanesulfonate	1000	0.00	---	---	1	10	0.00046
Perfluoro-n-decanoic Acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-dodecanoic acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-heptanoic Acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-hexanoic acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-nonanoic Acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-octanoic Acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-tetradecanoic acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-tridecanoic acid	1000	0.01	---	---	1	10	0.00050
Perfluoro-n-undecanoic acid	1000	0.01	---	---	1	10	0.00050

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM





It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number: JZ82**

**Description:** PFAS - 537.1 ICAL L5

N-ethylperfluoro-octanesulfonamidoacetic acid	.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00050
Perfluoro-1-butanefulfonate	.00044
Perfluoro-1-hexanesulfonate	.00046
Perfluoro-1-octanesulfonate	.00046
Perfluoro-n-decanoic Acid	.00050
Perfluoro-n-dodecanoic acid	.00050
Perfluoro-n-heptanoic Acid	.00050
Perfluoro-n-hexanoic acid	.00050
Perfluoro-n-nonanoic Acid	.00050
Perfluoro-n-octanoic Acid	.00050
Perfluoro-n-tetradecanoic acid	.00050
Perfluoro-n-tridecanoic acid	.00050
Perfluoro-n-undecanoic acid	.00050

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JV43	Pipette	C0982448K
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

**Comment:** 96/4 Methanol/Milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ83**

Description: PFAS - 537.1 ICAL L6

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ76	PFAS - 537.1 High ICAL Stock	Solution	~0	08/20/19	---	---	200 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: 

Standard Laboratory ID Number: JZ83

Description: PFAS - 537.1 ICAL L6

## Stock Id: JZ74

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

## Stock Id: JZ75

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

## Stock Id: JZ76

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-1-butanefulfonate	200	0.04	---	---	1	10	0.00089
Perfluoro-1-hexanesulfonate	200	0.05	---	---	1	10	0.00091
Perfluoro-1-octanesulfonate	200	0.05	---	---	1	10	0.00093
Perfluoro-n-decanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-dodecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-heptanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-hexanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-nonanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-octanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-tetradecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-tridecanoic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-undecanoic acid	200	0.05	---	---	1	10	0.00100

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number: JZ83**

**Description:** PFAS - 537.1 ICAL L6

N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanefluoride	.00089
Perfluoro-1-hexanesulfonate	.00091
Perfluoro-1-octanesulfonate	.00093
Perfluoro-n-decanoic Acid	.00100
Perfluoro-n-dodecanoic acid	.00100
Perfluoro-n-heptanoic Acid	.00100
Perfluoro-n-hexanoic acid	.00100
Perfluoro-n-nonanoic Acid	.00100
Perfluoro-n-octanoic Acid	.00100
Perfluoro-n-tetradecanoic acid	.00100
Perfluoro-n-tridecanoic acid	.00100
Perfluoro-n-undecanoic acid	.00100

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662
JZ76	Pipette	B814657482

<b>Solution Prepared By:</b> Schultz, Stephanie		<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107		
<b>Comment:</b> 96/4 Methanol/Milli-q (RP-180820-2)			

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JZ84**

Description: PFAS - 537.1 ICAL L7

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ76	PFAS - 537.1 High ICAL Stock	Solution	~0	08/20/19	---	---	500 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ84**

Description: PFAS - 537.1 ICAL L7

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

**Stock Id: JZ76**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.05	---	---	1	10	0.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-1-butanefulfonate	500	0.04	---	---	1	10	0.00221
Perfluoro-1-hexanesulfonate	500	0.05	---	---	1	10	0.00228
Perfluoro-1-octanesulfonate	500	0.05	---	---	1	10	0.00231
Perfluoro-n-decanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-dodecanoic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-heptanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-hexanoic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-nonanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-octanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-tetradecanoic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-tridecanoic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-undecanoic acid	500	0.05	---	---	1	10	0.00250

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved:

**Standard Laboratory ID Number:** JZ84

**Description:** PFAS - 537.1 ICAL L7

N-ethylperfluoro-octanesulfonamidoacetic acid	.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00250
Perfluoro-1-butanefulfonate	.00221
Perfluoro-1-hexanesulfonate	.00228
Perfluoro-1-octanesulfonate	.00231
Perfluoro-n-decanoic Acid	.00250
Perfluoro-n-dodecanoic acid	.00250
Perfluoro-n-heptanoic Acid	.00250
Perfluoro-n-hexanoic acid	.00250
Perfluoro-n-nonanoic Acid	.00250
Perfluoro-n-octanoic Acid	.00250
Perfluoro-n-tetradecanoic acid	.00250
Perfluoro-n-tridecanoic acid	.00250
Perfluoro-n-undecanoic acid	.00250

### Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662
JZ76	Pipette	C0982448K

**Solution Prepared By:** Schultz, Stephanie      **Date Prepared:** 8/20/2018      **Expiration Date:** 5/2/2019

**Solution Volume** 40 mL X 1 Vials      **Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107

**Comment:** 96/4 Methanol/Milli-q (RP-180820-2)

**Approved By:** Schumitz, Denise      **Date:** 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: JZ85

Description: PFAS - 537.1 ICAL L8

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ76	PFAS - 537.1 High ICAL Stock	Solution	~0	08/20/19	---	---	1000 uL	1	10	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM





It can be done

## Standard Solution Concentrations

Approved: 

Standard Laboratory ID Number: JZ85

Description: PFAS - 537.1 ICAL L8

## Stock Id: JZ74

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.02	---	---	1	10	0.00010
13C4-PFOS	50	0.06	---	---	1	10	0.00029
d3-MeFOSAA	50	0.08	---	---	1	10	0.00040

## Stock Id: JZ75

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.02	---	---	1	10	0.00010
13C2-PFHxA	50	0.02	---	---	1	10	0.00010
d5-EtFOSAA	50	0.08	---	---	1	10	0.00040

## Stock Id: JZ76

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.05	---	---	1	10	0.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-1-butanefulfonate	1000	0.04	---	---	1	10	0.00443
Perfluoro-1-hexanesulfonate	1000	0.05	---	---	1	10	0.00456
Perfluoro-1-octanesulfonate	1000	0.05	---	---	1	10	0.00463
Perfluoro-n-decanoic Acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-dodecanoic acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-heptanoic Acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-hexanoic acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-nonanoic Acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-octanoic Acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-tetradecanoic acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-tridecanoic acid	1000	0.05	---	---	1	10	0.00500
Perfluoro-n-undecanoic acid	1000	0.05	---	---	1	10	0.00500

## Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie Date Prepared: 8/20/2018 Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ85**

Description: PFAS - 537.1 ICAL L8

N-ethylperfluoro-octanesulfonamidoacetic acid	.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00500
Perfluoro-1-butanefluoride	.00443
Perfluoro-1-hexanesulfonate	.00456
Perfluoro-1-octanesulfonate	.00463
Perfluoro-n-decanoic Acid	.00500
Perfluoro-n-dodecanoic acid	.00500
Perfluoro-n-heptanoic Acid	.00500
Perfluoro-n-hexanoic acid	.00500
Perfluoro-n-nonanoic Acid	.00500
Perfluoro-n-octanoic Acid	.00500
Perfluoro-n-tetradecanoic acid	.00500
Perfluoro-n-tridecanoic acid	.00500
Perfluoro-n-undecanoic acid	.00500

## Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662
JZ76	Pipette	C0982448K

Solution Prepared By: Schultz, Stephanie      Date Prepared: 8/20/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise      Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Prep Form II

Approved: 

Standard Laboratory ID Number: JZ86

Description: PFAS - 537.1 ICAL L9

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JZ76	PFAS - 537.1 High ICAL Stock	Solution	~0	08/20/19	---	---	1000 uL	1	5	~0.0000
JZ74	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	25 uL	1	5	~0.0000
JZ75	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	25 uL	1	5	~0.0000

Solution Prepared By: Schultz, Stephanie	Date Prepared: 8/20/2018	Expiration Date: 5/2/2019
Solution Volume 40 mL X 1 Vials	Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107	

Balance ID: \_\_\_\_\_

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise Date: 8/20/2018 2:20:00 PM



It can be done

## Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **JZ86**

Description: PFAS - 537.1 ICAL L9

**Stock Id: JZ74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	25	0.02	---	---	1	5	0.00010
13C4-PFOS	25	0.06	---	---	1	5	0.00029
d3-MeFOSAA	25	0.08	---	---	1	5	0.00040

**Stock Id: JZ75**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	25	0.02	---	---	1	5	0.00010
13C2-PFHxA	25	0.02	---	---	1	5	0.00010
d5-EtFOSAA	25	0.08	---	---	1	5	0.00040

**Stock Id: JZ76**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.05	---	---	1	5	0.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-1-butanefulfonate	1000	0.04	---	---	1	5	0.00885
Perfluoro-1-hexanesulfonate	1000	0.05	---	---	1	5	0.00912
Perfluoro-1-octanesulfonate	1000	0.05	---	---	1	5	0.00925
Perfluoro-n-decanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-dodecanoic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-heptanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-hexanoic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-nonanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-octanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-tetradecanoic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-tridecanoic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-undecanoic acid	1000	0.05	---	---	1	5	0.01000

**Final Concentrations:**

Analyte:	Conc (ug/mL):
13C2-PFDA	.00010
13C2-PFHxA	.00010
13C2-PFOA	.00010
13C4-PFOS	.00029
d3-MeFOSAA	.00040
d5-EtFOSAA	.00040

Solution Prepared By: Schultz, Stephanie      Date Prepared: 8/20/2018      Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Comment: 96/4 Methanol/Milli-q (RP-180820-2)

Approved By: Schumitz, Denise      Date: 8/20/2018 2:20:00 PM



It can be done

**Standard Solution Concentrations** Approved:

**Standard Laboratory ID Number: JZ86**

**Description:** PFAS - 537.1 ICAL L9

N-ethylperfluoro-octanesulfonamidoacetic acid	.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.01000
Perfluoro-1-butanefluorobutanoate	.00885
Perfluoro-1-hexanesulfonate	.00912
Perfluoro-1-octanesulfonate	.00925
Perfluoro-n-decanoic Acid	.01000
Perfluoro-n-dodecanoic acid	.01000
Perfluoro-n-heptanoic Acid	.01000
Perfluoro-n-hexanoic acid	.01000
Perfluoro-n-nonanoic Acid	.01000
Perfluoro-n-octanoic Acid	.01000
Perfluoro-n-tetradecanoic acid	.01000
Perfluoro-n-tridecanoic acid	.01000
Perfluoro-n-undecanoic acid	.01000

**Syringes/Pipettes:**

Stock ID:	Type:	Battelle ID:
JZ74	Pipette	B814659662
JZ75	Pipette	B814659662
JZ76	Pipette	C0982448K

<b>Solution Prepared By:</b> Schultz, Stephanie	<b>Date Prepared:</b> 8/20/2018	<b>Expiration Date:</b> 5/2/2019
<b>Solution Volume</b> 40 mL X 1 Vials	<b>Refrigerator/Freezer No:</b> LC Laboratory: Refrigerator - R0107	
<b>Comment:</b> 96/4 Methanol/Milli-q (RP-180820-2)		

**Approved By:** Schumitz, Denise **Date:** 8/20/2018 2:20:00 PM

It can be done

BDO Id: 180425-01

## Reagent Receipt Report

Approved:  Authorized 

Name: EPA-537IS Received: 4/25/2018  
Vendor: Wellington Laboratories Custodian: Schumitz, Matt  
Catalogue No: EPA-537IS Expires: 12/13/2022  
Type: Solution Consumed: \_\_\_\_\_  
Lot No: 537IS1217 Stored In: AqChem Laboratory - R0124  
Quantity: 1 ea mL % Moisture: \_\_\_\_\_  
Description: EPA-537IS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
d3-N-MeFOSAA	BDO-1838	4.0000	100.00	--	--	<input type="checkbox"/>			
M2PFOA	BDO-1842	1.0000	100.00	--	--	<input type="checkbox"/>			
MPFOS	BDO-1840	2.8700	100.00	--	--	<input type="checkbox"/>			

Total Analytes: 3

Notes:

Approved by: \_\_\_\_\_ Approved on: \_\_\_\_\_  
Authorized by: \_\_\_\_\_ Authorized on: \_\_\_\_\_

**WELLINGTON  
LABORATORIES****CERTIFICATE OF ANALYSIS  
DOCUMENTATION****EPA-537IS****Internal Standard  
Primary Dilution Standard**

**PRODUCT CODE:** EPA-537IS  
**LOT NUMBER:** 537IS1217  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 12/13/2017  
**LAST TESTED:** (mm/dd/yyyy) 12/13/2017  
**EXPIRY DATE:** (mm/dd/yyyy) 12/13/2022  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

EPA-537IS is a solution/mixture of a mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acid, a mass-labelled (<sup>13</sup>C) perfluoroalkylsulfonate, and a mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoacetic acid. The components and their concentrations are given in Table A.

The mass-labelled perfluoroalkylcarboxylic acid and the mass-labelled perfluoroalkylsulfonate both have chemical purities of >98% and isotopic purities of ≥99%. The mass-labelled perfluorooctanesulfonamidoacetic acid has a chemical purity of >98% and an isotopic purity of ≥98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (TIC)  
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**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



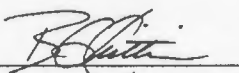
\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

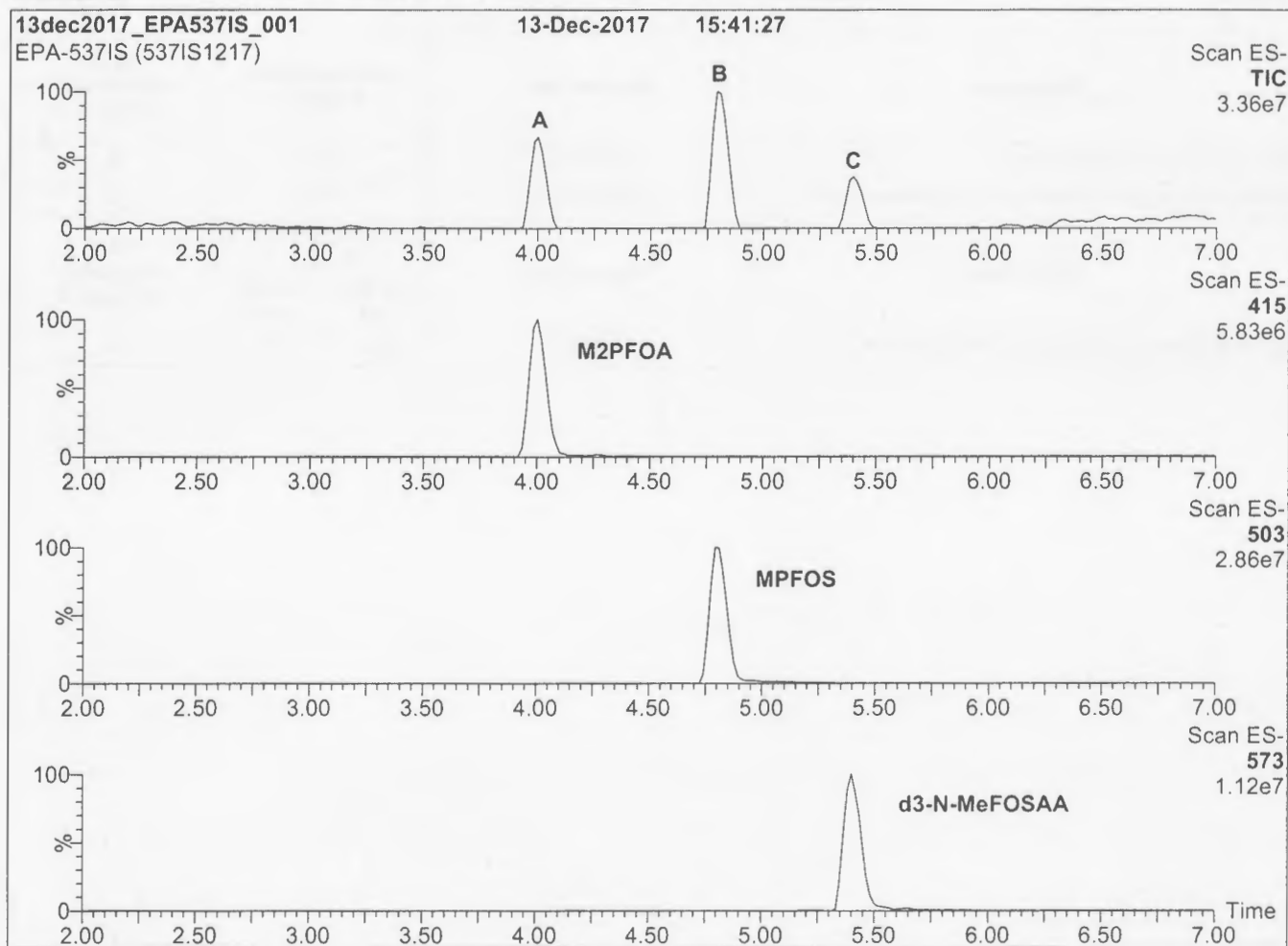


**Table A: EPA-537IS; Components and Concentrations (ng/ml;  $\pm$  5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Perfluoro-n-[1,2- <sup>13</sup> C <sub>2</sub> ]octanoic acid	M2PFOA	1000		A
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	4000		C
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
Sodium perfluoro-1-[1,2,3,4- <sup>13</sup> C <sub>4</sub> ]octanesulfonate	MPFOS	3000	2870	

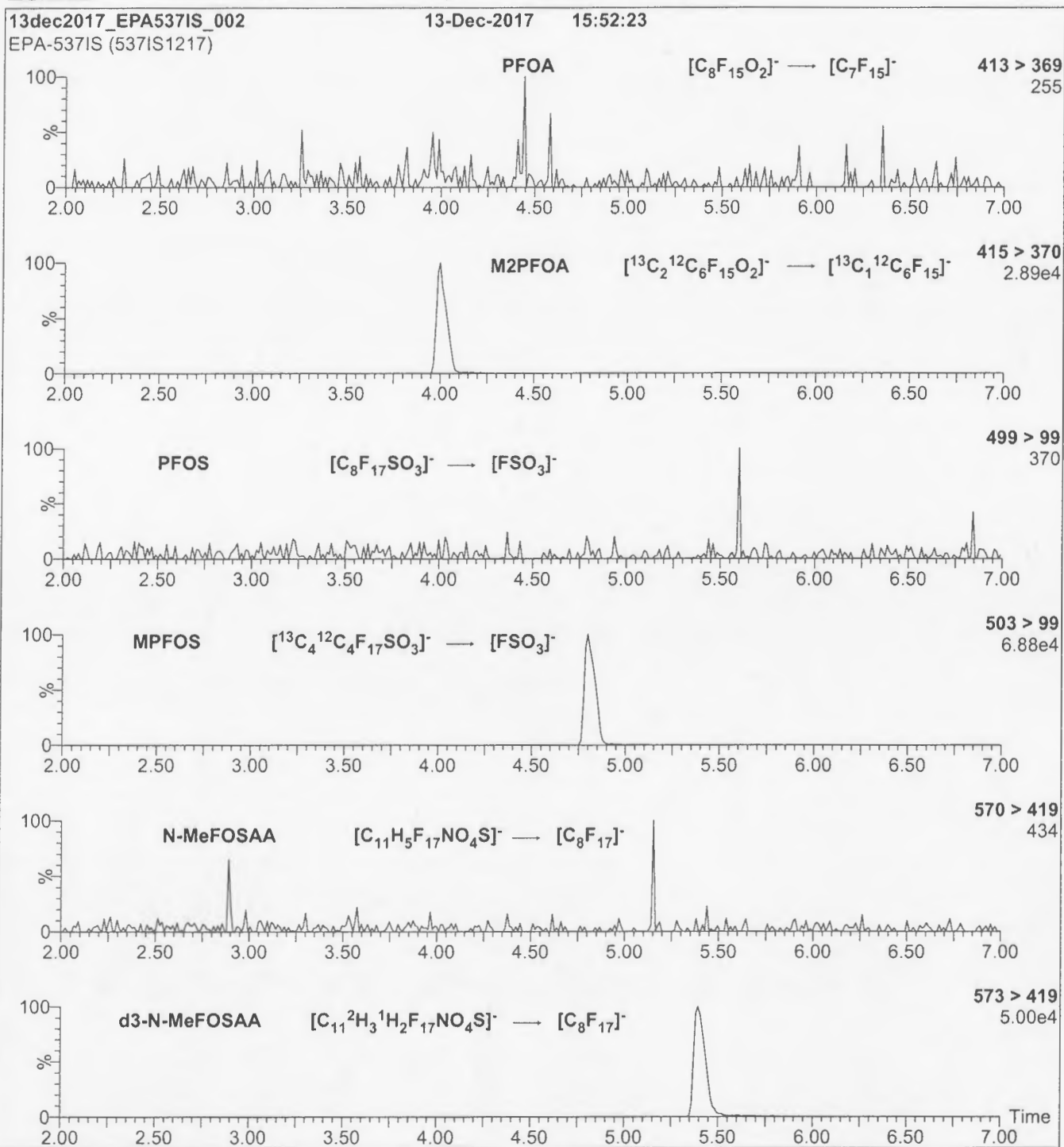
Certified By: \_\_\_\_\_

  
 B.G. Chittim, General Manager
Date: 12/22/2017  
(mm/dd/yyyy)

**Figure 1: EPA-537IS; LC/MS Data (Total Ion Current Chromatogram)****Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mmMobile phase: Gradient  
Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min  
and hold for 2 min before returning  
to initial conditions in 0.5 min.  
Time: 10 minFlow: 300  $\mu$ l/min**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 25.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: EPA-537IS; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (EPA-537IS)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ l/min**MS Parameters**

Collision Gas (mbar) = 3.28e-3

Collision Energy (eV) = 11-40 (variable)

It can be done

BDO Id: 180425-02

## Reagent Receipt Report

Approved:  Authorized

Name: EPA-537SS Received: 4/25/2018  
Vendor: Wellington Laboratories Custodian: Schumitz, Matt  
Catalogue No: EPA-537SS Expires: 11/8/2022  
Type: Solution Consumed: \_\_\_\_\_  
Lot No: 537SS1117 Stored In: AqChem Laboratory - R0124  
Quantity: 1 ea ml % Moisture: \_\_\_\_\_  
Description: EPA-537SS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFDA	BDO-2110	1.0000	100.00	--	--	<input type="checkbox"/>			
13C2-PFHxA	BDO-2106	1.0000	100.00	--	--	<input type="checkbox"/>			
d5-EtFOSAA	BDO-1839	4.0000	100.00	--	--	<input type="checkbox"/>			

Total Analytes: 3

Notes:

Approved by: Thorn, Jonathan Approved on: 5/2/2018 10:00:00 AM  
Authorized by: \_\_\_\_\_ Authorized on: \_\_\_\_\_

**WELLINGTON  
LABORATORIES****CERTIFICATE OF ANALYSIS  
DOCUMENTATION****EPA-537SS****Surrogate Primary Dilution Standard**

**PRODUCT CODE:** EPA-537SS  
**LOT NUMBER:** 537SS1117  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 11/06/2017  
**LAST TESTED:** (mm/dd/yyyy) 11/08/2017  
**EXPIRY DATE:** (mm/dd/yyyy) 11/08/2022  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

EPA-537SS is a solution/mixture of two mass-labelled (<sup>13</sup>C) perfluoroalkylcarboxylic acids and a mass-labelled (<sup>2</sup>H) perfluorooctanesulfonamidoacetic acid. The components and their concentrations are given in Table A.

The mass-labelled perfluoroalkylcarboxylic acids both have chemical purities of >98% and isotopic purities of ≥99%. The mass-labelled perfluorooctanesulfonamidoacetic acid has a chemical purity of >98% and an isotopic purity of ≥98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (TIC)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

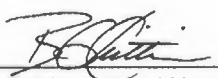


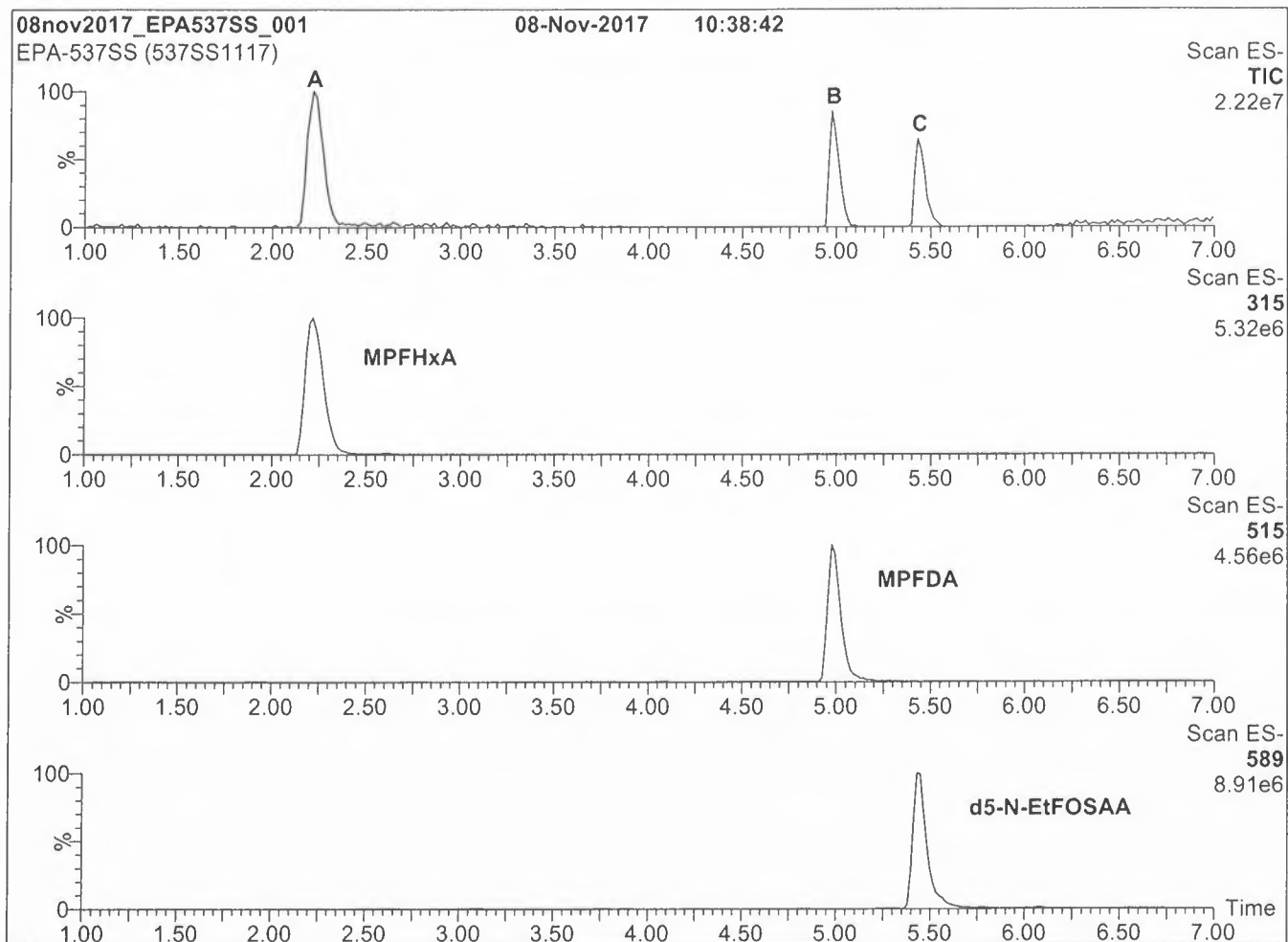
\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-537SS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-[1,2- <sup>13</sup> C <sub>2</sub> ]hexanoic acid	MPFHxA	1000	A
Perfluoro-n-[1,2- <sup>13</sup> C <sub>2</sub> ]decanoic acid	MPFDA	1000	B
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	4000	C

Certified By:

  
B.G. Chittim, General ManagerDate: 11/13/2017  
(mm/dd/yyyy)

**Figure 1: EPA-537SS; LC/MS Data (Total Ion Current Chromatogram)****Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)Ramp to 90% organic over 7 min  
and hold for 2 min before returning  
to initial conditions in 0.5 min.

Time: 10 min

Flow: 300  $\mu$ l/min**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

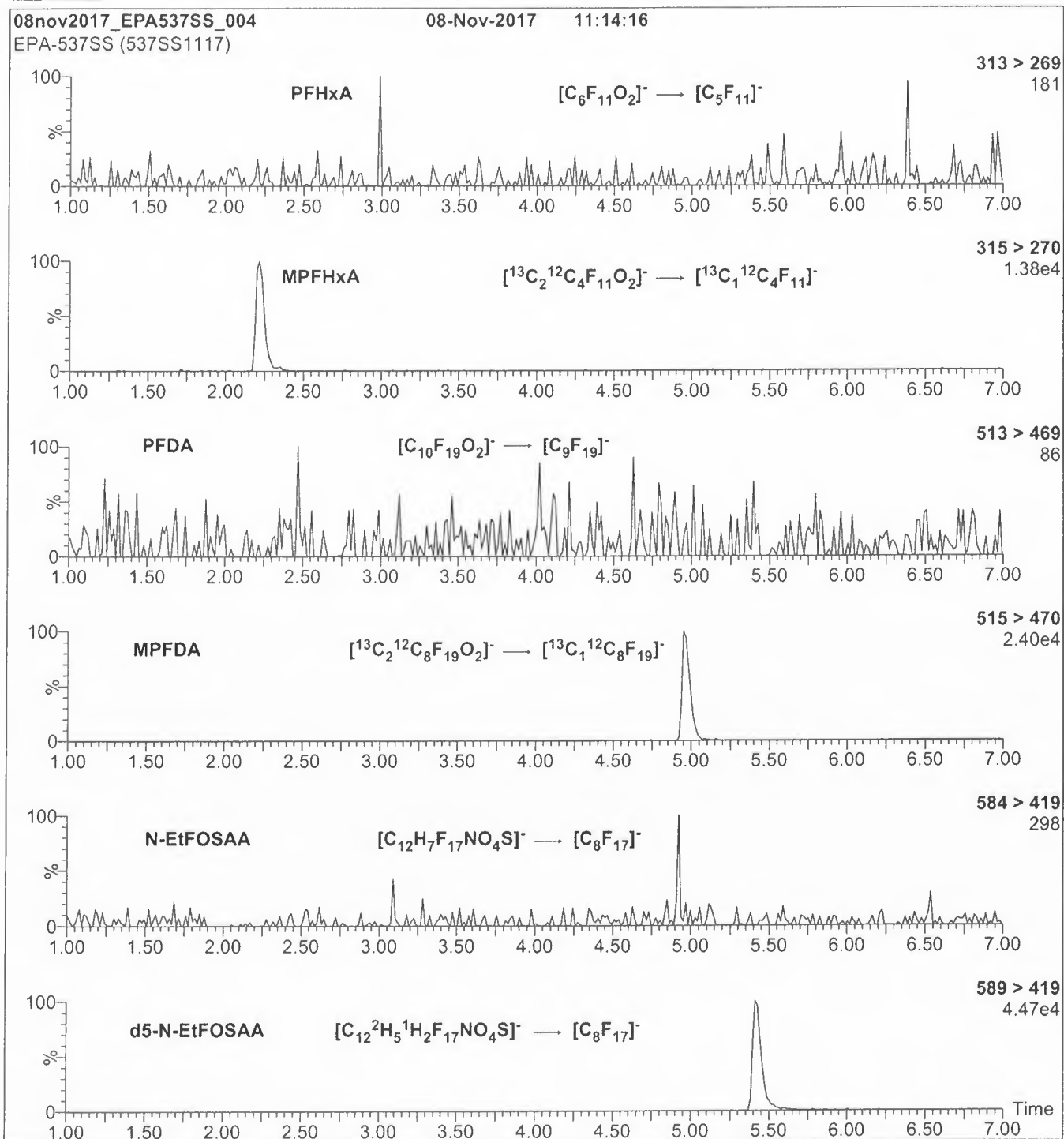
Capillary Voltage (kV) = 3.00

Cone Voltage (V) = 25.00

Cone Gas Flow (l/hr) = 100

Desolvation Gas Flow (l/hr) = 750



**Figure 2: EPA-537SS; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (EPA-537SS)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ l/min**MS Parameters**

Collision Gas (mbar) = 3.50e-3

Collision Energy (eV) = 9-40 (variable)



It can be done

BDO Id: 180425-03

## Reagent Receipt Report

Approved:  Authorized

<b>Name:</b>	<u>EPA-537PDS (calibration)</u>	<b>Received:</b>	<u>4/25/2018</u>
<b>Vendor:</b>	<u>Wellington Laboratories</u>	<b>Custodian:</b>	<u>Schumitz, Matt</u>
<b>Catalogue No:</b>	<u>EPA-537PDS</u>	<b>Expires:</b>	<u>3/5/2023</u>
<b>Type:</b>	<u>Solution</u>	<b>Consumed:</b>	<u></u>
<b>Lot No:</b>	<u>537PDS0318</u>	<b>Stored In:</b>	<u>AqChem Laboratory - R0124</u>
<b>Quantity:</b>	<u>1 ea</u> <u>ml</u>	<b>% Moisture:</b>	<u></u>
<b>Description:</b>	<u>EPA-537PDS</u>		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	2.0000	100.00	--	--	<input type="checkbox"/>			1
N-methylperfluoro-1-octanesulfonami	2355-31-9	2.0000	100.00	--	--	<input type="checkbox"/>			2
Perfluoro-1-butanefulfonate	375-73-5	1.7700	100.00	--	--	<input type="checkbox"/>			3
Perfluoro-1-hexanesulfonate	355-46-4	1.8240	100.00	--	--	<input type="checkbox"/>			4
Perfluoro-1-octanesulfonate	1763-23-1	1.8510	100.00	--	--	<input type="checkbox"/>			5
Perfluoro-n-decanoic Acid	335-76-2	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-dodecanoic acid	307-55-1	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-heptanoic Acid	375-85-9	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-hexanoic acid	307-24-4	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-nonanoic Acid	375-95-1	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-octanoic Acid	335-67-1	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tetradecanoic acid	376-06-7	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tridecanoic acid	72629-94-8	2.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-undecanoic acid	2058-94-8	2.0000	100.00	--	--	<input type="checkbox"/>			

**Total Analytes:** 14

**Notes:**

Analyte:	Comment:
1 N-ethylperfluoro-octanesulfonamidoacetic acid	sum of branched and linear isomers
2 N-methylperfluoro-1-octanesulfonamidoacetic acid	sum of branched and linear isomers
3 Perfluoro-1-butanefulfonate	2000 ng/ml as the salt, 1770 ng/ml as the anion
4 Perfluoro-1-hexanesulfonate	1998 ng/ml as the salt, 1824 ng/ml as the anion. sum of branched and linear isomers.
5 Perfluoro-1-octanesulfonate	2002 ng/ml as the salt, 1851 ng/ml as the anion. sum of branched and linear isomers.

<b>Approved by:</b>	<u>Thorn, Jonathan</u>	<b>Approved on:</b>	<u>5/2/2018 10:05:00 AM</u>
<b>Authorized by:</b>	<u></u>	<b>Authorized on:</b>	<u></u>

**WELLINGTON**  
LABORATORIES**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION**EPA-537PDS****Native PFAS Primary Dilution  
Standard Solution/Mixture**

**PRODUCT CODE:** EPA-537PDS  
**LOT NUMBER:** 537PDS0318  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 03/02/2018  
**LAST TESTED:** (mm/dd/yyyy) 03/05/2018  
**EXPIRY DATE:** (mm/dd/yyyy) 03/05/2023  
**RECOMMENDED STORAGE:** Refrigerate ampoule

for calibration  
Jnr 5/2/2018

**DESCRIPTION:**

EPA-537PDS is a solution/mixture of nine native linear perfluoroalkylcarboxylic acids (C<sub>6</sub>-C<sub>14</sub>), three native perfluoroalkylsulfonates (C<sub>4</sub> linear; C<sub>6</sub> and C<sub>8</sub> linear and branched), and two native perfluorooctanesulfonamidoacetic acids (linear and branched). The components and their concentrations are given in Table A.

The native perfluoroalkylcarboxylic acids, native perfluoroalkylsulfonates, and native perfluorooctanesulfonamidoacetic acids have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Table B: Isomeric Components and Percent Composition of N-MeFOSAA  
Table C: Isomeric Components and Percent Composition of N-EtFOSAA  
Table D: Isomeric Components and Percent Composition of PFHxSK  
Table E: Isomeric Components and Percent Composition of PFOSK  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A:** EPA-537PDS; Components and Concentrations (ng/ml;  $\pm$  5% in Methanol / Water (<1%))

Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Perfluoro-n-hexanoic acid ✓	PFHxA	2000		B
Perfluoro-n-heptanoic acid ✓	PFHpA	2000		C
Perfluoro-n-octanoic acid ✓	PFOA	2000		F
Perfluoro-n-nonanoic acid ✓	PFNA	2000		G
Perfluoro-n-decanoic acid ✓	PFDA	2000		J
Perfluoro-n-undecanoic acid ✓	PFUdA	2000		O
Perfluoro-n-dodecanoic acid ✓	PFDoA	2000		P
Perfluoro-n-tridecanoic acid ✓	PFTrDA	2000		Q
Perfluoro-n-tetradecanoic acid ✓	PFTeDA	2000		R
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup> ✓	N-MeFOSAA: linear isomer ✓	1520		L
	N-MeFOSAA: $\Sigma$ branched isomers	480		K
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup> ✓	N-EtFOSAA: linear isomer ✓	1550		N
	N-EtFOSAA: $\Sigma$ branched isomers	450		M
Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate ✓	L-PFBS ✓	2000	1770	A
Potassium perfluorohexanesulfonate <sup>c</sup>	PFHxSK: linear isomer	1620	1480	E
	PFHxSK: $\Sigma$ branched isomers	378	344	D
Potassium perfluorooctanesulfonate <sup>d</sup>	PFOSK: linear isomer	1580	1460	I
	PFOSK: $\Sigma$ branched isomers	422	391	H

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> See Table E for percent composition of linear and branched PFOSK isomers.

\* Concentrations have been rounded to three significant figures.

**Table B: N-MeFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_3$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H} \\   \\ \text{CF}_3 \end{array}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_3$	0.2	
7	Other Unidentified Isomers		1.1	

\* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

**Table C: N-EtFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad  $ $\quad \quad \quad \text{C}_2\text{H}_5$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CF}(\text{CF}_2)_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
9	Other Unidentified Isomers		1.3	

\* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.



**Table D: PFHxSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )K <sup>+</sup>   CF <sub>3</sub>	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
7	Other Unidentified Isomers		0.5	

\* Percent of total perfluorohexanesulfonate isomers only.  
 \*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.

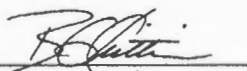
**Table E: PFOSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )K <sup>+</sup>   CF <sub>3</sub>	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> K <sup>+</sup>   CF <sub>3</sub>	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> K <sup>+</sup>   CF <sub>3</sub>	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> K <sup>+</sup>   CF <sub>3</sub>	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> K <sup>+</sup>   CF <sub>3</sub>	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> K <sup>+</sup>   CF <sub>3</sub>	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF <sub>2</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(SO <sub>3</sub> <sup>-</sup> )CF(SO <sub>3</sub> <sup>-</sup> )CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.07	

\* Percent of total perfluorooctanesulfonate isomers only.

\*\* Systematic Name: Potassium perfluorooctane-2-sulfonate.

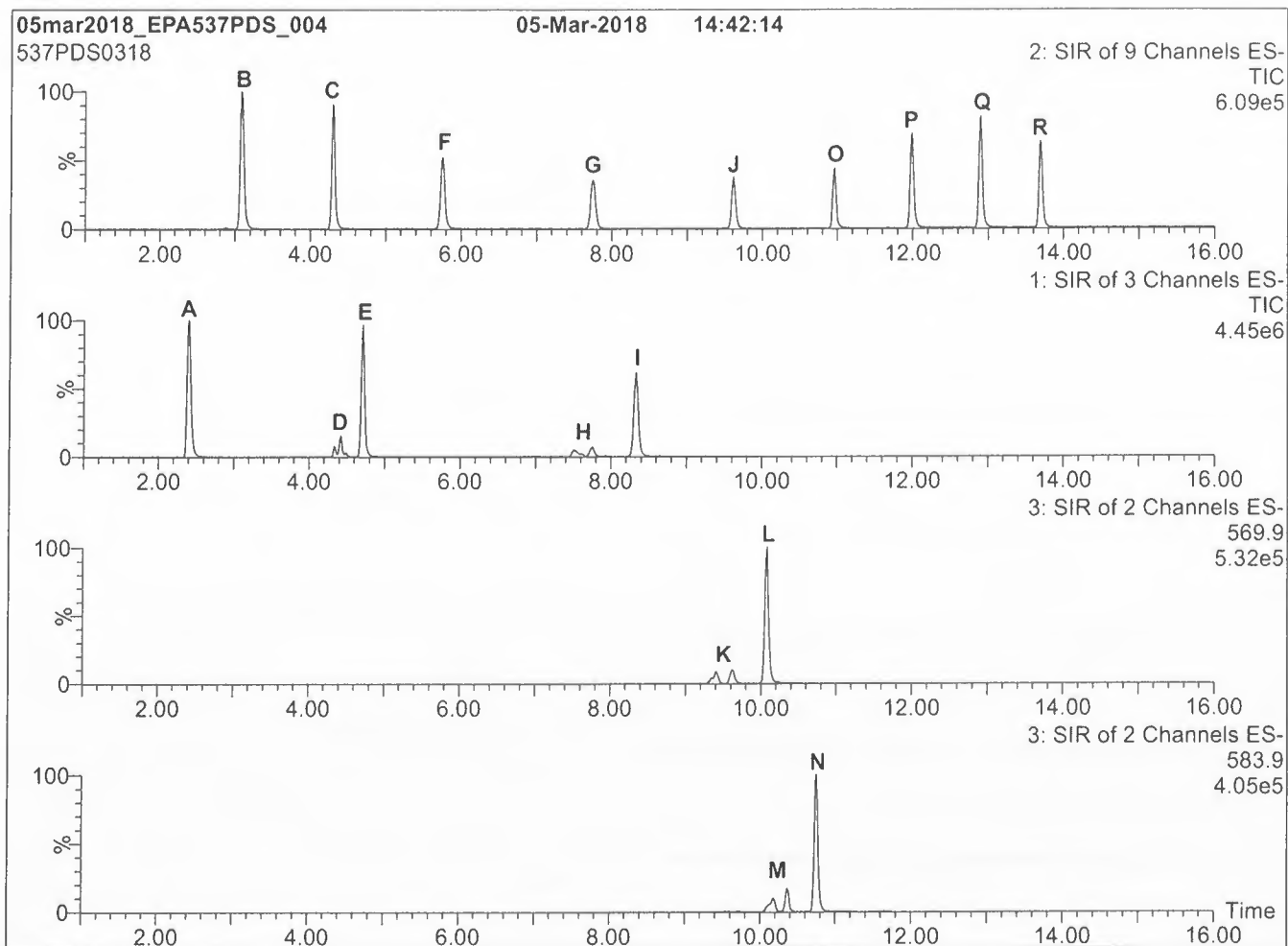
Certified By:



B.G. Chittim, General Manager

Date: 04/02/2018

(mm/dd/yyyy)

**Figure 1: EPA-537PDS; LC/MS Data (SIR)****Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Ramp to 55% organic over 3.5 min.

Ramp to 70% organic over 6.5 min.

Ramp to 85% organic over 5 min and hold for

1 min before returning to initial conditions in 0.5 min.

Time: 17 min

Flow: 300  $\mu$ l/min**MS Parameters**

Experiment: SIR

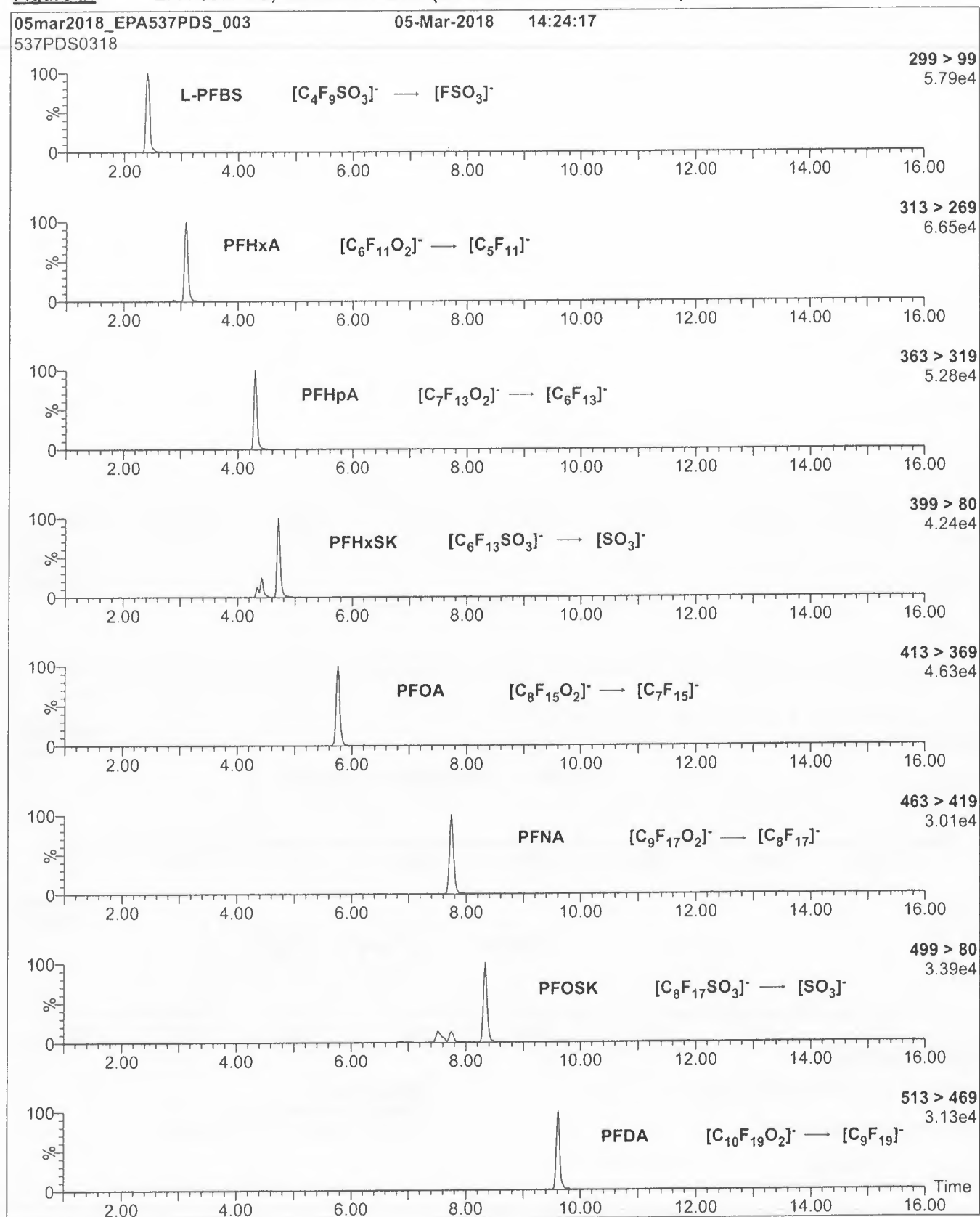
Source: Electrospray (negative)

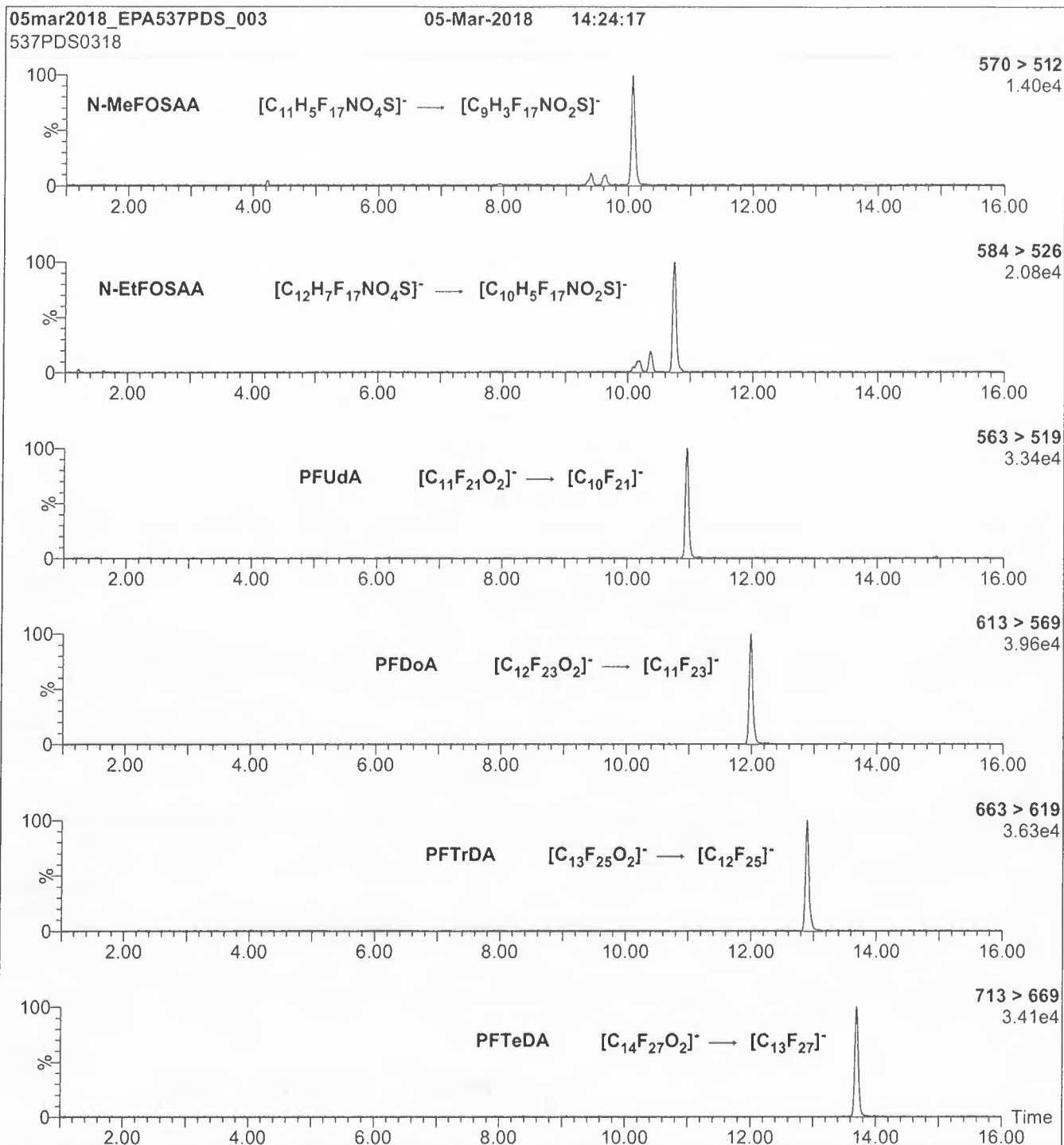
Capillary Voltage (kV) = 3.00

Cone Voltage (V) = variable (15-60)

Cone Gas Flow (l/hr) = 100

Desolvation Gas Flow (l/hr) = 750

**Figure 2: EPA-537PDS; LC/MS/MS Data (Selected MRM Transitions)**

**Figure 2:** EPA-537PDS; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (EPA-537PDS)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ l/min**MS Parameters**

Collision Gas (mbar) = 3.10e-3

Collision Energy (eV) = 10-40 (variable)

**WELLINGTON**  
LABORATORIESCERTIFICATE OF ANALYSIS  
DOCUMENTATION**EPA-537PDS-L**Native PFAS Linear Primary Dilution  
Standard Solution/Mixture

**PRODUCT CODE:** EPA-537PDS-L  
**LOT NUMBER:** 537PDSL0318  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 03/02/2018  
**LAST TESTED:** (mm/dd/yyyy) 03/05/2018  
**EXPIRY DATE:** (mm/dd/yyyy) 03/05/2023  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

EPA-537PDS-L is a solution/mixture of native linear perfluoroalkylcarboxylic acids (C<sub>6</sub>-C<sub>14</sub>), native linear perfluoroalkylsulfonates (C<sub>4</sub>, C<sub>6</sub>, and C<sub>8</sub>), and native linear perfluorooctanesulfonamidoacetic acids. The components and their concentrations are given in Table A.

The native perfluoroalkylcarboxylic acids, native perfluoroalkylsulfonates, and native perfluorooctanesulfonamidoacetic acids have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: EPA-537PDS-L; Components and Concentrations (ng/ml;  $\pm$  5% in Methanol / Water (<1%))**

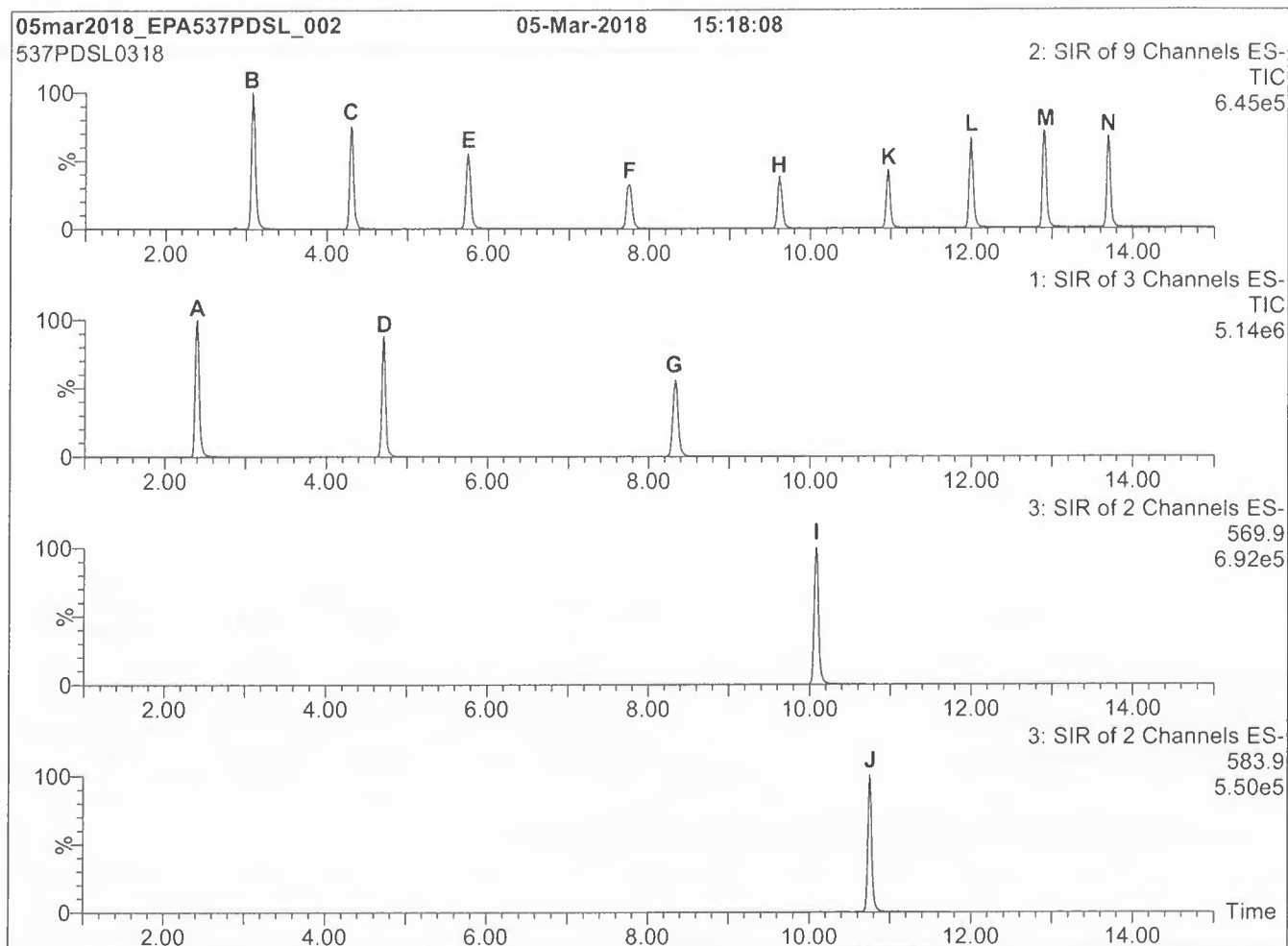
Compound	Abbreviation	Concentration *		Peak Assignment in Figure 1
		(ng/ml)		
Perfluoro-n-hexanoic acid	PFHxA	2000		B
Perfluoro-n-heptanoic acid	PFHpA	2000		C
Perfluoro-n-octanoic acid	PFOA	2000		E
Perfluoro-n-nonanoic acid	PFNA	2000		F
Perfluoro-n-decanoic acid	PFDA	2000		H
Perfluoro-n-undecanoic acid	PFUdA	2000		K
Perfluoro-n-dodecanoic acid	PFDoA	2000		L
Perfluoro-n-tridecanoic acid	PFTTrDA	2000		M
Perfluoro-n-tetradecanoic acid	PFTeDA	2000		N
N-methylperfluoro-1-octanesulfonamidoacetic acid	N-MeFOSAA	2000		I
N-ethylperfluoro-1-octanesulfonamidoacetic acid	N-EtFOSAA	2000		J
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Sodium perfluoro-1-hexanesulfonate	L-PFHxS	2000	1890	D
Sodium perfluoro-1-octanesulfonate	L-PFOS	2000	1910	G

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 04/02/2018  
(mm/dd/yyyy)



**Figure 1: EPA-537PDS-L; LC/MS Data (SIR)****Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

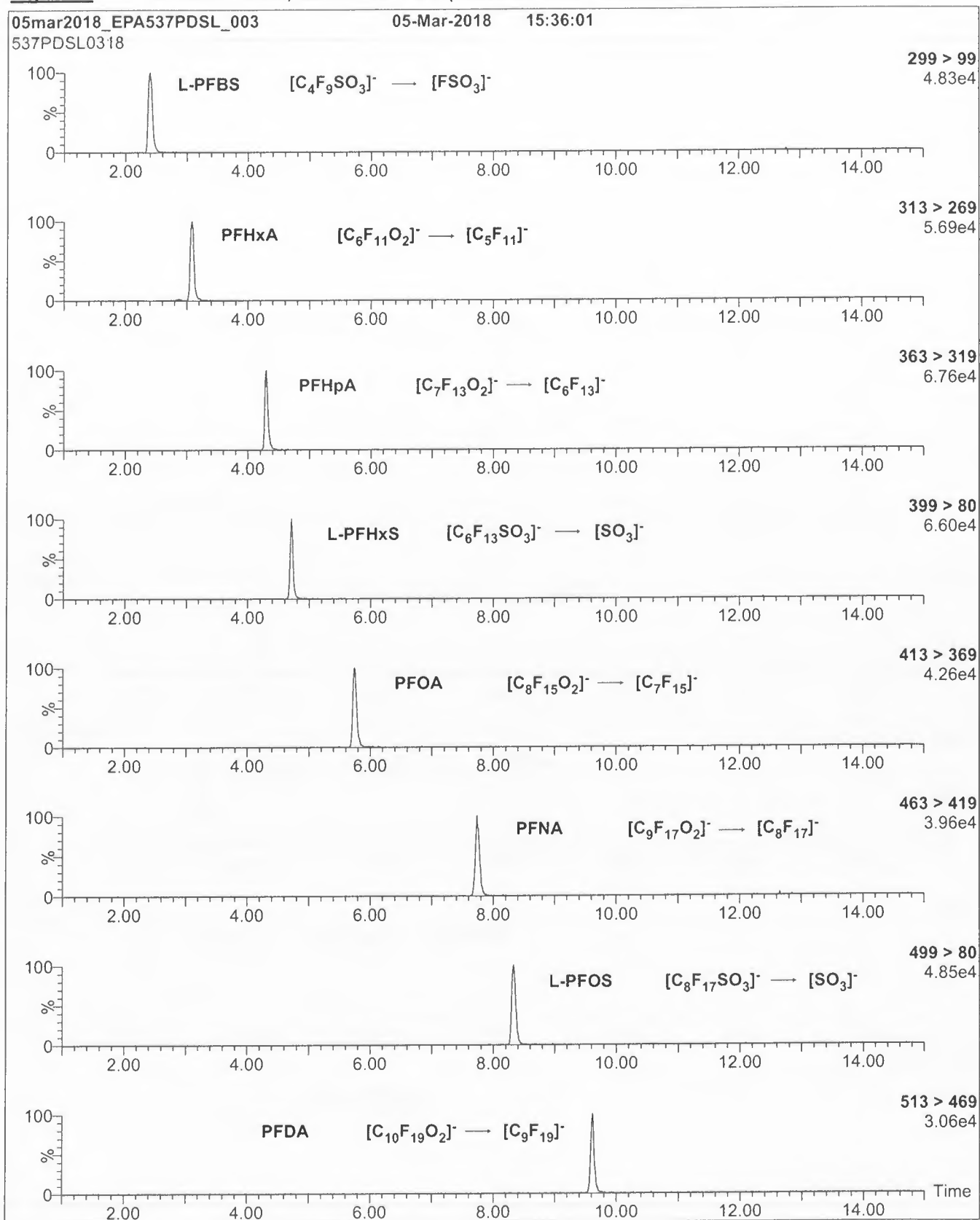
Mobile phase: Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 55% organic over 3.5 min.  
 Ramp to 70% organic over 6.5 min.  
 Ramp to 85% organic over 5 min and hold for  
 1 min before returning to initial conditions in 0.5 min.  
 Time: 17 min

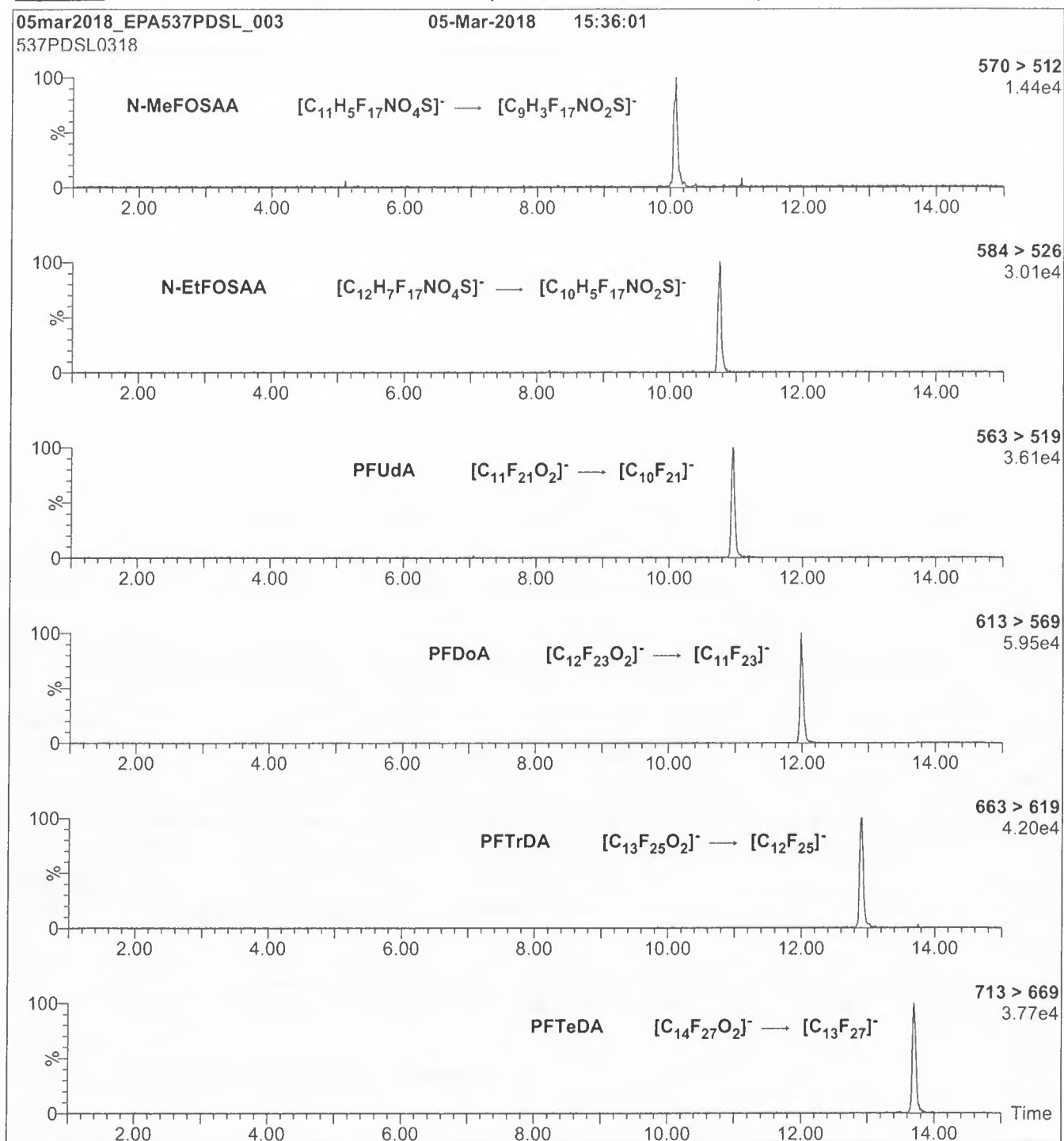
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: SIR

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = variable (15-60)  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: EPA-537PDS-L; LC/MS/MS Data (Selected MRM Transitions)**

**Figure 2: EPA-537PDS-L; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (EPA-537PDS-L)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ l/min**MS Parameters**

Collision Gas (mbar) = 3.17e-3

Collision Energy (eV) = 10-40 (variable)

# Sample Preparation



It can be done

**BATTELLE - NORWELL OPERATIONS  
SAMPLE PREPARATION RECORDS**

<b><u>Project Title(s)</u></b>	<b><u>Project No.(s)</u></b>
CTO-SE0375: Naval Air Station Jacksonville	100119154- SE0375
<b>18-0519</b>	
<b>CTO-SE0375: Drinking Water Analysis</b>	
<b>W</b>	
SOP Numbers (see workplan for modifications)	
VOASOP No.	5-371

<b>This Batch Contains The Following Samples:</b>
CR633PB-FS CR634LCS-FS J7558-FS J7560-FS J7562-FS

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	08/23/2018	DMS



It can be done

**BATTELLE - NORWELL OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

Sample ID	Description
CR633PB-FS	Procedural Blank
CR634LCS-FS	Laboratory Control Sample
J7558-FS	JAX-RES-08202018-0945-25
J7560-FS	JAX-RES-08202018-1100-26
J7562-FS	JAX-RES-08202018-1310-28

Samples Assigned By:

Jonathan Thorn

Date : August 21, 2018

Comments:



It can be done

## BATTELLE - NORWELL OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

<b>Requested On/By:</b> 08/22/2018 SAS	<b>Purpose:</b> Sample Preparation
<b>Relinquished On/By:</b> 08/22/2018 MDS	<b>Last Activity:</b> Transfer
<b>Accepted On/By:</b> 08/22/2018 SAS <b>Stored In Facility:</b> Sample Preparation <b>Stored Until:</b> 08/22/2018 <b>Stored Comment:</b> NA	<b>Returned On/To:</b> <b>Returned To Facility:</b> <b>Returned Comment:</b> NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	J7558	1	C	Consumed	NA
2	J7560	1	C	Consumed	NA
3	J7562	1	C	Consumed	NA
<b>Total Samples</b>		3		* "C" = Consumed Container	



It can be done

**BATTELLE - NORWELL OPERATIONS  
LIQUID SAMPLE ID FORM**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR633PB-FS	Procedural Blank	250.0	NA	--	08/22/18 SAS
CR634LCS-FS	Laboratory Control Sample	250.0	NA	--	08/22/18 SAS
J7558-FS	JAX-RES-08202018-0945-25	270.0	1	C	08/22/18 SAS
J7560-FS	JAX-RES-08202018-1100-26	285.0	1	C	08/22/18 SAS
J7562-FS	JAX-RES-08202018-1310-28	260.0	1	C	08/22/18 SAS

**Comments:**

Sample ID:	Comments:
CR633PB-FS	1.24g Trizma(180502-01) weighed on BAL-009
CR634LCS-FS	1.23g Trizma(180502-01) weighed on BAL-009

Samples Assigned By

Jonathan Thorn

Date : August 21, 2018

\* - "C" = Sample is Consumed





It can be done

## BATTELLE - NORWELL OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR633PB-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
CR634LCS-FS	JZ28	LCS/MS	1	50	08/22/18 SAS	JCT	NA
CR634LCS-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7558-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7560-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7562-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA

## Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ28	Pipette	B814659662
JZ90	Pipette	B814659662



It can be done

## BATTELLE - NORWELL OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
CR633PB-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
CR634LCS-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7558-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7560-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7562-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA

**Solvents/Reagent Preparations:**

Name	ID	Expires	Lot No	Procedure	Comments
Pre-packed SPE Column	RP-180822-2	08/22/18	S214-0075	Pre-packed SPE Column	

**Solvents/Reagents:**

Name	Lot No	Comments
Methanol (HPLC) (180724-02)	181704	



It can be done

## BATTELLE - NORWELL OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W****(N/A Fraction)**

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm . (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution*	Date Spiked/ Spiked By	Witn'd By
CR633PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	DMS
CR634LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	DMS
J7558-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	DMS
J7560-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	DMS
J7562-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	DMS

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



It can be done

## BATTELLE - NORWELL OPERATIONS PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR633PB-FS	0	--	8/22/2018 11:00:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
CR634LCS-FS	0	--	8/22/2018 11:00:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7558-FS	0	--	8/22/2018 11:00:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7560-FS	0	--	8/22/2018 11:00:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7562-FS	0	--	8/22/2018 11:00:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



It can be done

**BATTELLE - NORWELL OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

<b>Purpose:</b> LC-MS/MS TRANSFER		<b>Last Activity:</b> Prep->Inst			
<b>Relinquished On/By:</b> Aug 22 2018 4:40PM SAS		<b>Received On/By:</b> Aug 22 2018 5:41PM DMS			
<b>Relinquished From:</b> Sample Preparation: NA		<b>Received Location:</b> LC Laboratory: NA			
<b>Relinquish Comment:</b> NA		<b>Received Comment:</b> NA			
No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CR633PB-FS(0)	1000	1	Intact	NA
2	CR634LCS-FS(0)	1000	1	Intact	NA
3	J7558-FS(0)	1000	1	Intact	NA
4	J7560-FS(0)	1000	1	Intact	NA
5	J7562-FS(0)	1000	1	Intact	NA
<b>Total Extracts:</b>		5			



It can be done

## BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID:	Comment:	Date/Initials:
CR633PB-FS	Extraction for all samples began at 11:00am	08/22/18 SAS
CR633PB-FS	Sample extraction ended at 11:23am	08/22/18 SAS
CR634LCS-FS	Sample extraction ended at 11:26am	08/22/18 SAS
J7558-FS	Sample had a sulfurous odor	08/22/18 SAS
J7558-FS	Sample extraction ended at 11:28am	08/22/18 SAS
J7560-FS	Sample extraction ended at 11:29am	08/22/18 SAS
J7562-FS	Sample extraction ended at 11:27am	08/22/18 SAS



It can be done

**BATTELLE - NORWELL OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

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Entered By: \_\_\_\_\_ On: \_\_\_\_\_

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Task Leader Approval:

On:

SupervisorApproval:

On:

PM Approval:

On:

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It can be done

**BATTELLE - NORWELL OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

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Task Leader Approval:

On:

SupervisorApproval:

On:

PM Approval:

On:

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# Analytical Calibrations

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		8/22/2018 6:00:37 PM	5-0371.dam	08222018_DW.wiff
4	JZ80	L3	8/22/2018 6:27:27 PM	5-0371.dam	08222018_DW.wiff
5	JZ81	L4	8/22/2018 6:36:23 PM	5-0371.dam	08222018_DW.wiff
6	JZ82	L5	8/22/2018 6:45:19 PM	5-0371.dam	08222018_DW.wiff
7	JZ83	L6	8/22/2018 6:54:15 PM	5-0371.dam	08222018_DW.wiff
8	JZ84	L7	8/22/2018 7:03:12 PM	5-0371.dam	08222018_DW.wiff
9	JZ85	L8	8/22/2018 7:12:08 PM	5-0371.dam	08222018_DW.wiff
10	JZ86	L9	8/22/2018 7:21:04 PM	5-0371.dam	08222018_DW.wiff
11	KA08 IB	Instrument Blank	8/22/2018 7:30:00 PM	5-0371.dam	08222018_DW.wiff
12	JZ77 ICC	ICC	8/22/2018 7:38:57 PM	5-0371.dam	08222018_DW.wiff
13	MeOH		8/22/2018 7:47:54 PM	5-0371.dam	08222018_DW.wiff
44	<del>CR631PB-FS(0)</del>	<del>Procedural Blank</del>	<del>8/22/2018 7:56:50 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
45	<del>CR632LCS-FS(0)</del>	<del>Laboratory Control Sample</del>	<del>8/22/2018 8:05:47 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
46	<del>J7448-FS(0)</del>	<del>JAX-RES-08152018-1015-34-FRB</del>	<del>8/22/2018 8:14:44 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
47	<del>J7450-FS(0)</del>	<del>JAX-RES-08152018-1045-33-FRB</del>	<del>8/22/2018 8:23:42 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
48	<del>J7452-FS(0)</del>	<del>JAX-RES-08152018-1130-15-FRB</del>	<del>8/22/2018 8:32:38 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
19	JZ82 CCV	CCV	8/22/2018 8:41:36 PM	5-0371.dam	08222018_DW.wiff
20	MeOH		8/22/2018 8:50:33 PM	5-0371.dam	08222018_DW.wiff
21	CR633PB-FS(0)	Procedural Blank	8/22/2018 8:59:30 PM	5-0371.dam	08222018_DW.wiff
22	CR634LCS-FS(0)	Laboratory Control Sample	8/22/2018 9:08:27 PM	5-0371.dam	08222018_DW.wiff
23	J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/2018 9:17:24 PM	5-0371.dam	08222018_DW.wiff
24	J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/2018 9:26:19 PM	5-0371.dam	08222018_DW.wiff
25	J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/2018 9:35:15 PM	5-0371.dam	08222018_DW.wiff
26	JZ81 CCV	CCV	8/22/2018 9:44:12 PM	5-0371.dam	08222018_DW.wiff

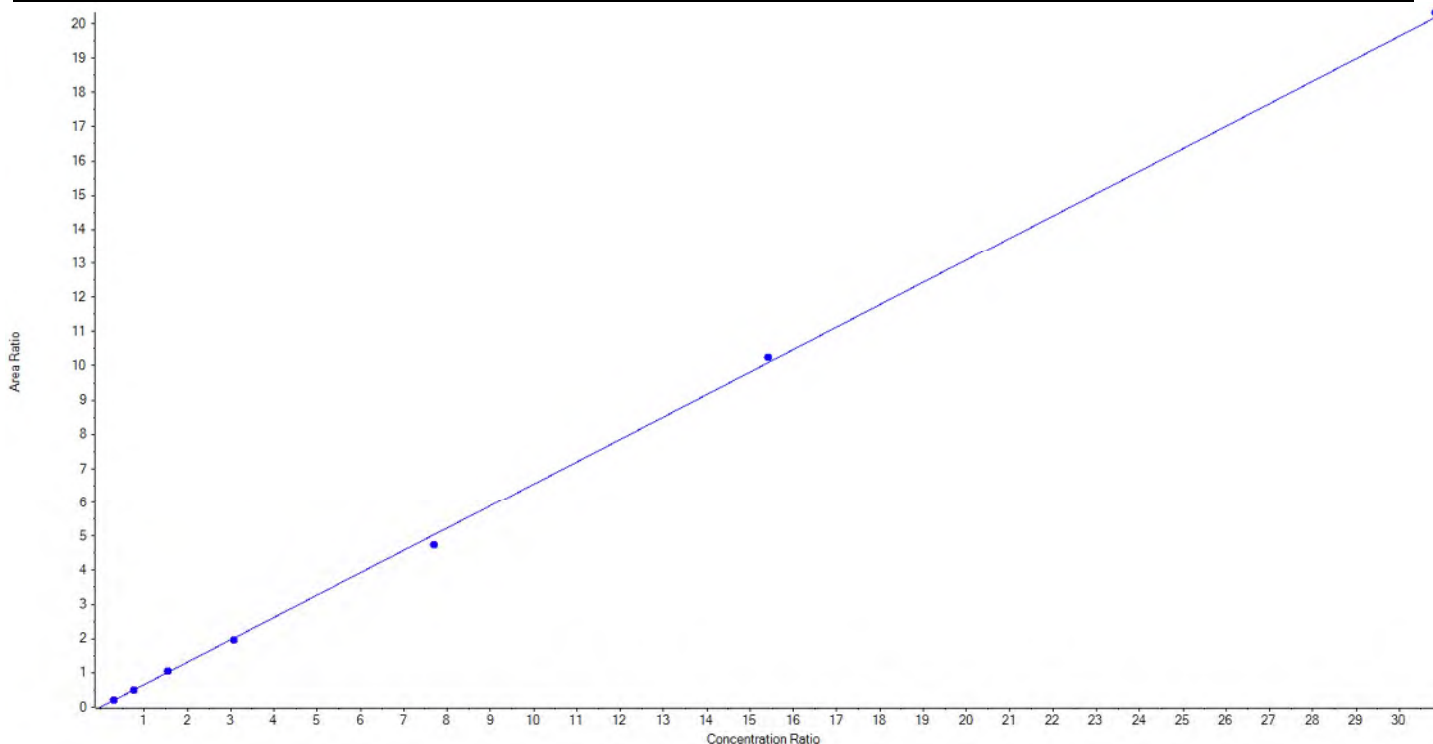
1  
↓

1 Samples not reported with this batch. DMS 8/23/2018

<b>Analyte Name</b>	PFBS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	298.9 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.65429x + 0.00296$  (r = 0.99962) (weighting: 1 / x)

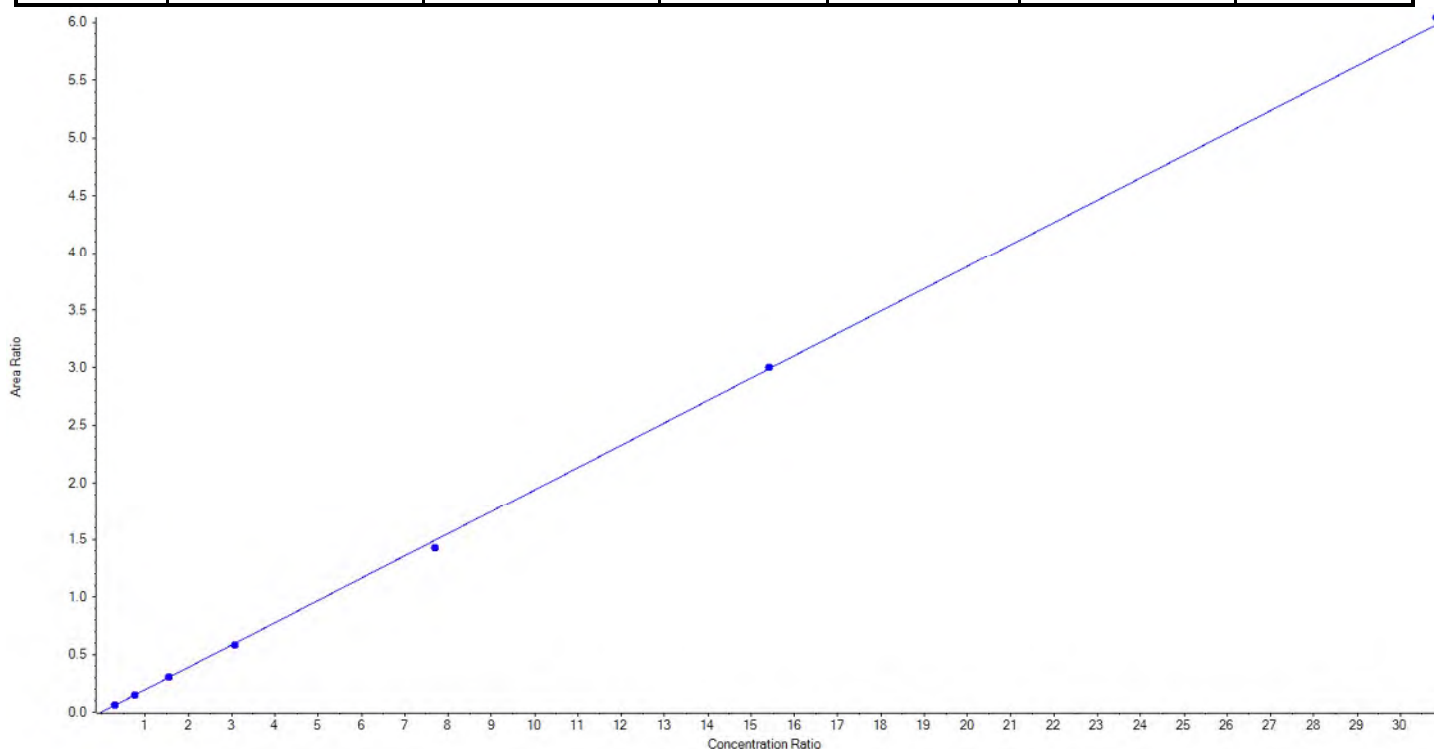
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	88.60	89.961828	101.5
5	JZ81	L4	True	221.50	221.394501	100.0
6	JZ82	L5	True	443.00	463.099525	104.5
7	JZ83	L6	True	885.00	864.778154	97.7
8	JZ84	L7	True	2212.50	2078.867501	94.0
9	JZ85	L8	True	4425.00	4495.899271	101.6
10	JZ86	L9	True	8850.00	8911.599220	100.7



<b>Analyte Name</b>	PFBS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	298.9 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.19394 x + 9.55942e-4$  (r = 0.99978) (weighting: 1 / x)

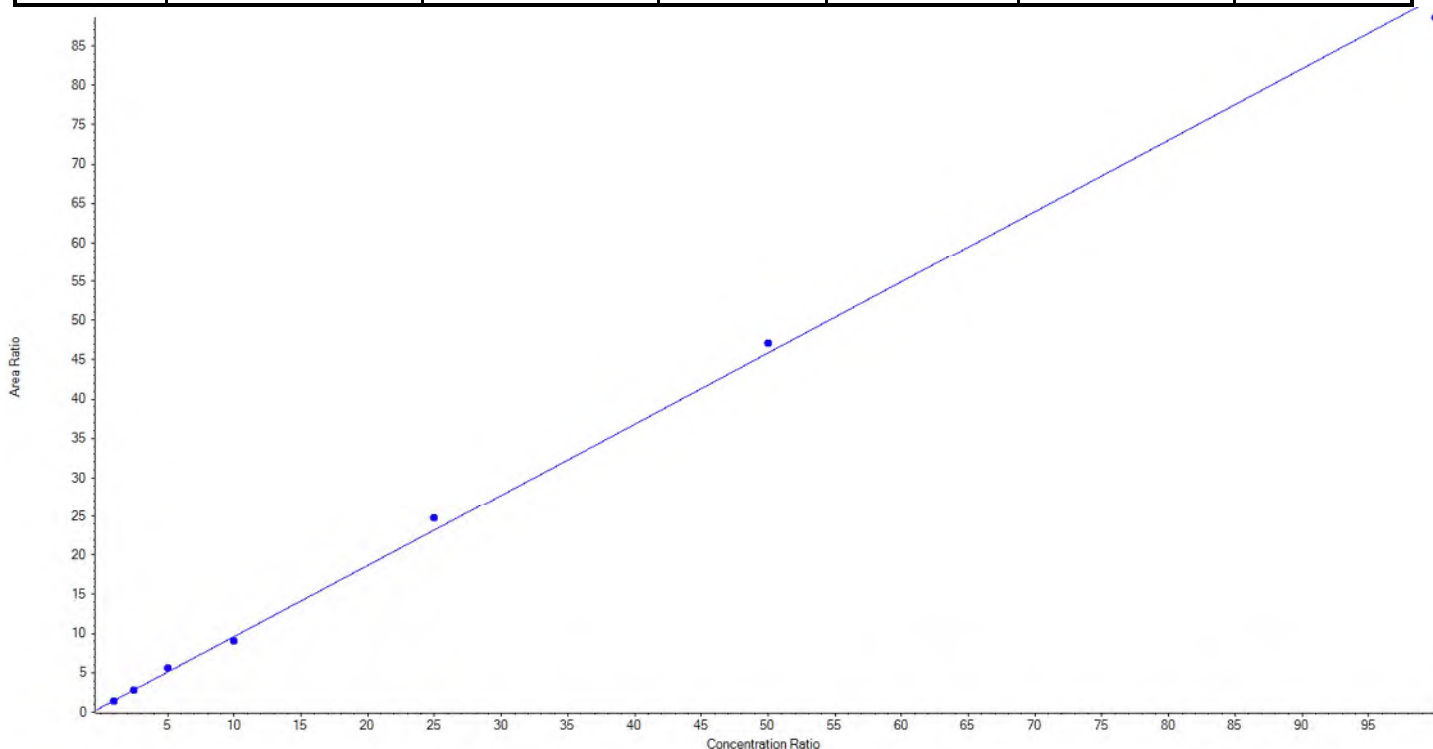
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	88.60	93.488553	105.5
5	JZ81	L4	True	221.50	216.699472	97.8
6	JZ82	L5	True	443.00	450.763581	101.8
7	JZ83	L6	True	885.00	866.500288	97.9
8	JZ84	L7	True	2212.50	2113.511736	95.5
9	JZ85	L8	True	4425.00	4444.718296	100.5
10	JZ86	L9	True	8850.00	8939.918075	101.0



<b>Analyte Name</b>	PFHxA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	313.0 / 269.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.90582x + 0.57581$  (r = 0.99896) (weighting: 1 / x)

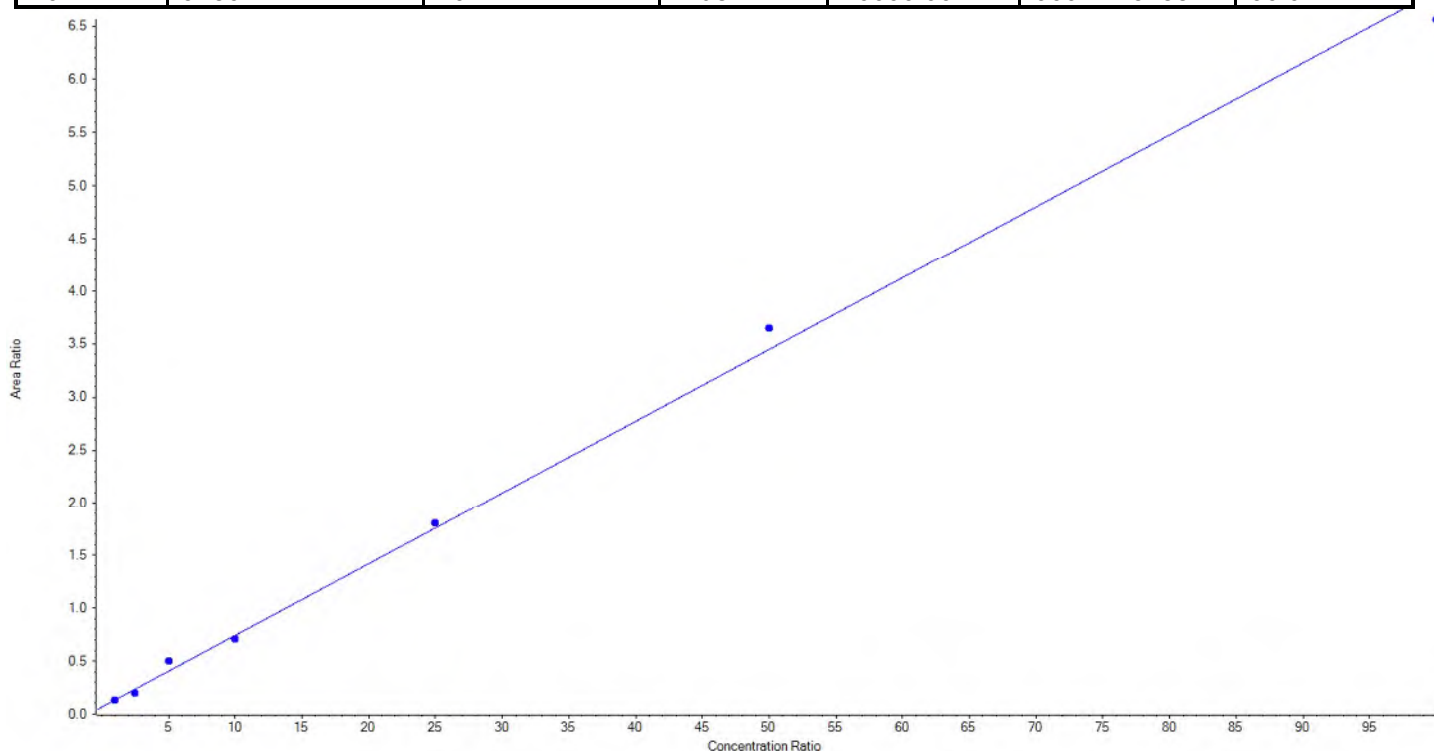
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	89.860105	89.9
5	JZ81	L4	True	250.00	245.927439	98.4
6	JZ82	L5	True	500.00	556.627130	111.3
7	JZ83	L6	True	1000.00	937.829786	93.8
8	JZ84	L7	True	2500.00	2671.604535	106.9
9	JZ85	L8	True	5000.00	5131.482329	102.6
10	JZ86	L9	True	10000.00	9716.668676	97.2



<b>Analyte Name</b>	PFHxA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	313.0 / 119.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06765x + 0.06687$  (r = 0.99741) (weighting: 1 / x)

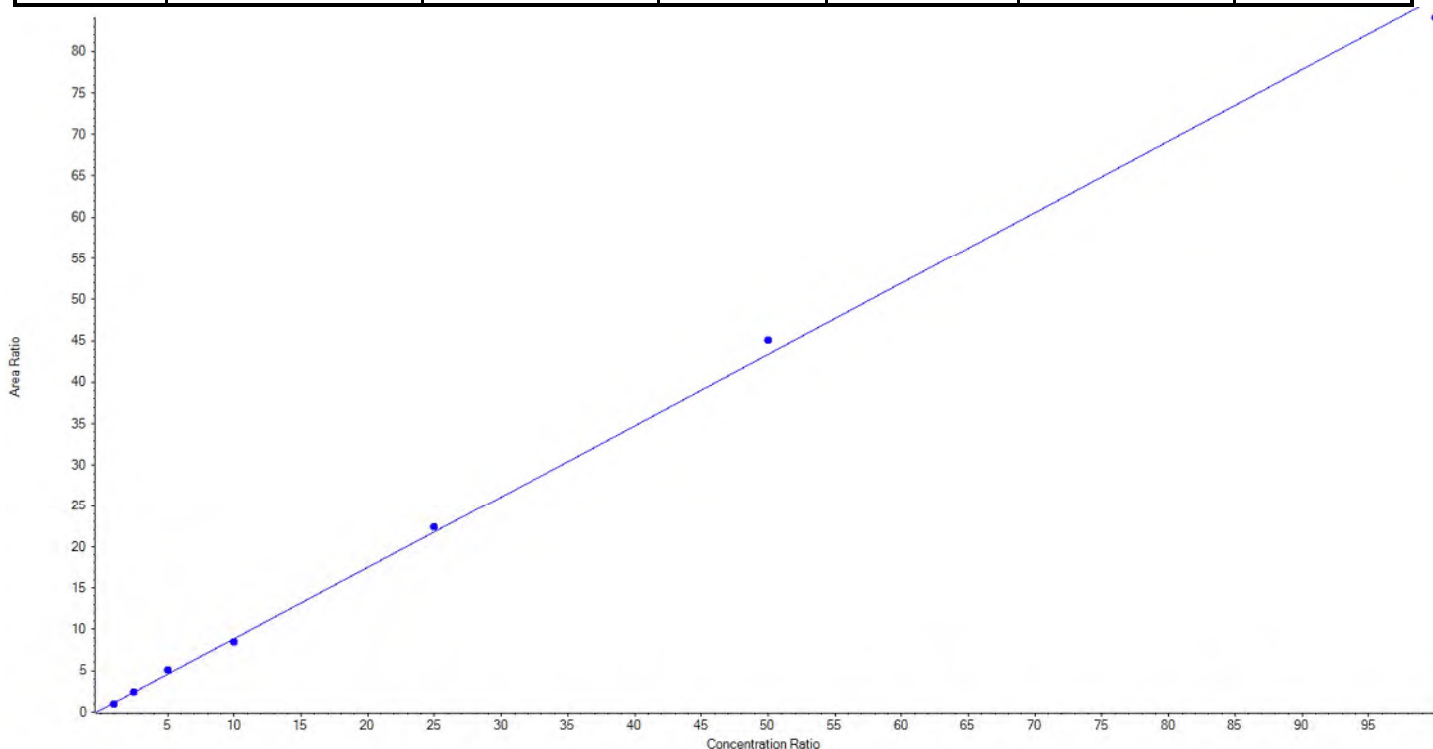
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	92.509378	92.5
5	JZ81	L4	True	250.00	200.973906	80.4
6	JZ82	L5	True	500.00	637.349324	127.5
7	JZ83	L6	True	1000.00	947.917412	94.8
8	JZ84	L7	True	2500.00	2571.780431	102.9
9	JZ85	L8	True	5000.00	5297.354061	106.0
10	JZ86	L9	True	10000.00	9602.115488	96.0



<b>Analyte Name</b>	PFHpA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	363.0 / 319.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.86184x + 0.26618$  (r = 0.99911) (weighting: 1 / x)

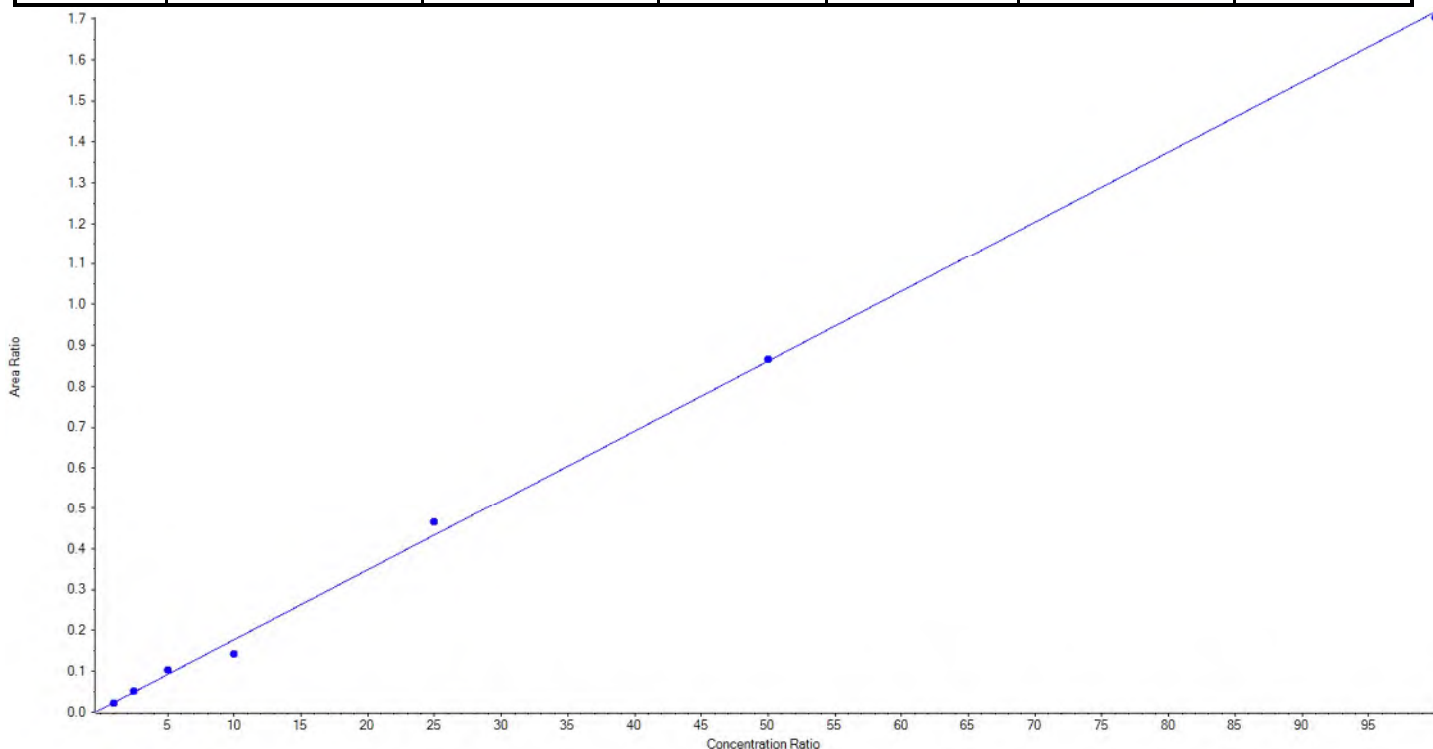
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	86.075433	86.1
5	JZ81	L4	True	250.00	255.124133	102.1
6	JZ82	L5	True	500.00	562.964131	112.6
7	JZ83	L6	True	1000.00	953.838274	95.4
8	JZ84	L7	True	2500.00	2565.464996	102.6
9	JZ85	L8	True	5000.00	5201.432986	104.0
10	JZ86	L9	True	10000.00	9725.100047	97.3



<b>Analyte Name</b>	PFHpA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	363.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.01711 x + 0.00650$  (r = 0.99795) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	95.693721	95.7
5	JZ81	L4	True	250.00	259.994370	104.0
6	JZ82	L5	True	500.00	568.395444	113.7
7	JZ83	L6	True	1000.00	793.302756	79.3
8	JZ84	L7	True	2500.00	2690.915735	107.6
9	JZ85	L8	True	5000.00	5024.555700	100.5
10	JZ86	L9	True	10000.00	9917.142273	99.2

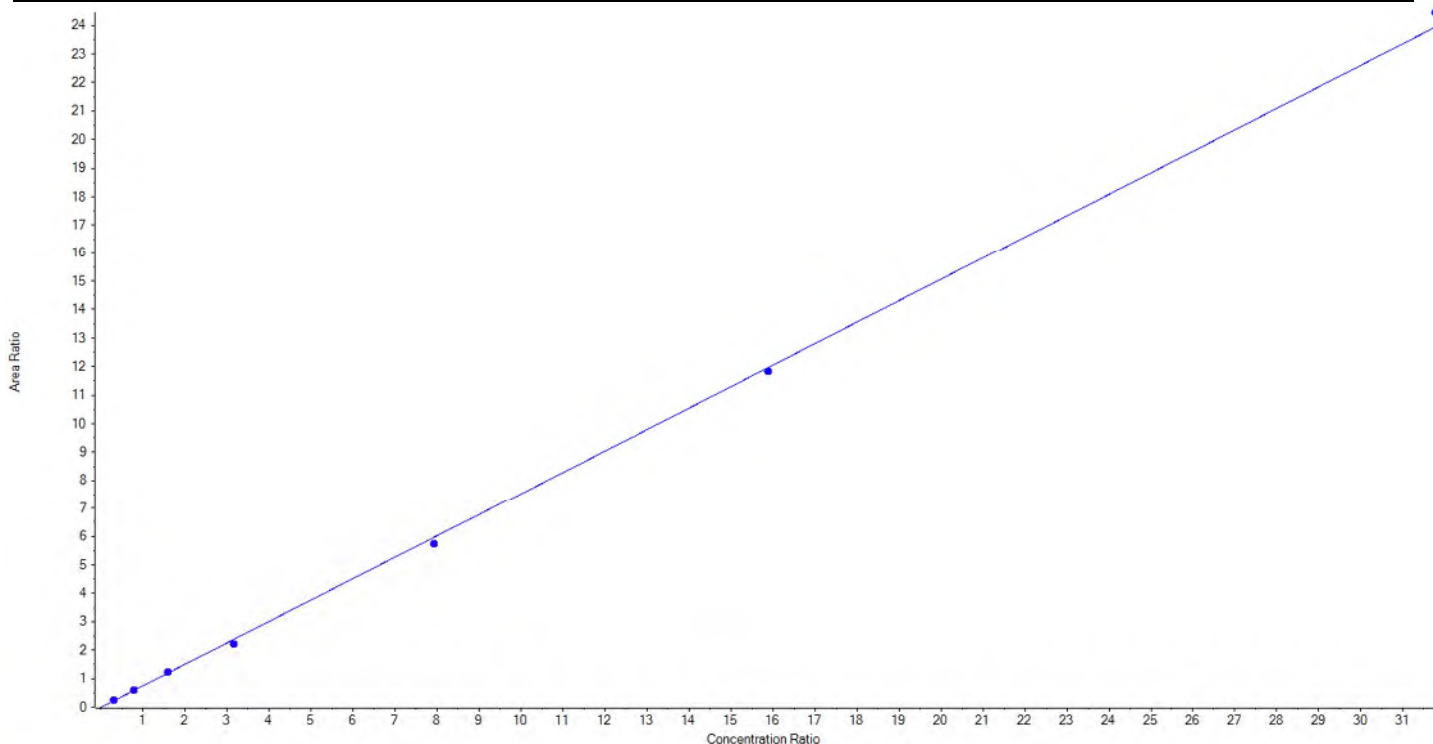




<b>Analyte Name</b>	PFHxS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	399.0 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.75357 x + -0.00733$  (r = 0.99953) (weighting: 1 / x)

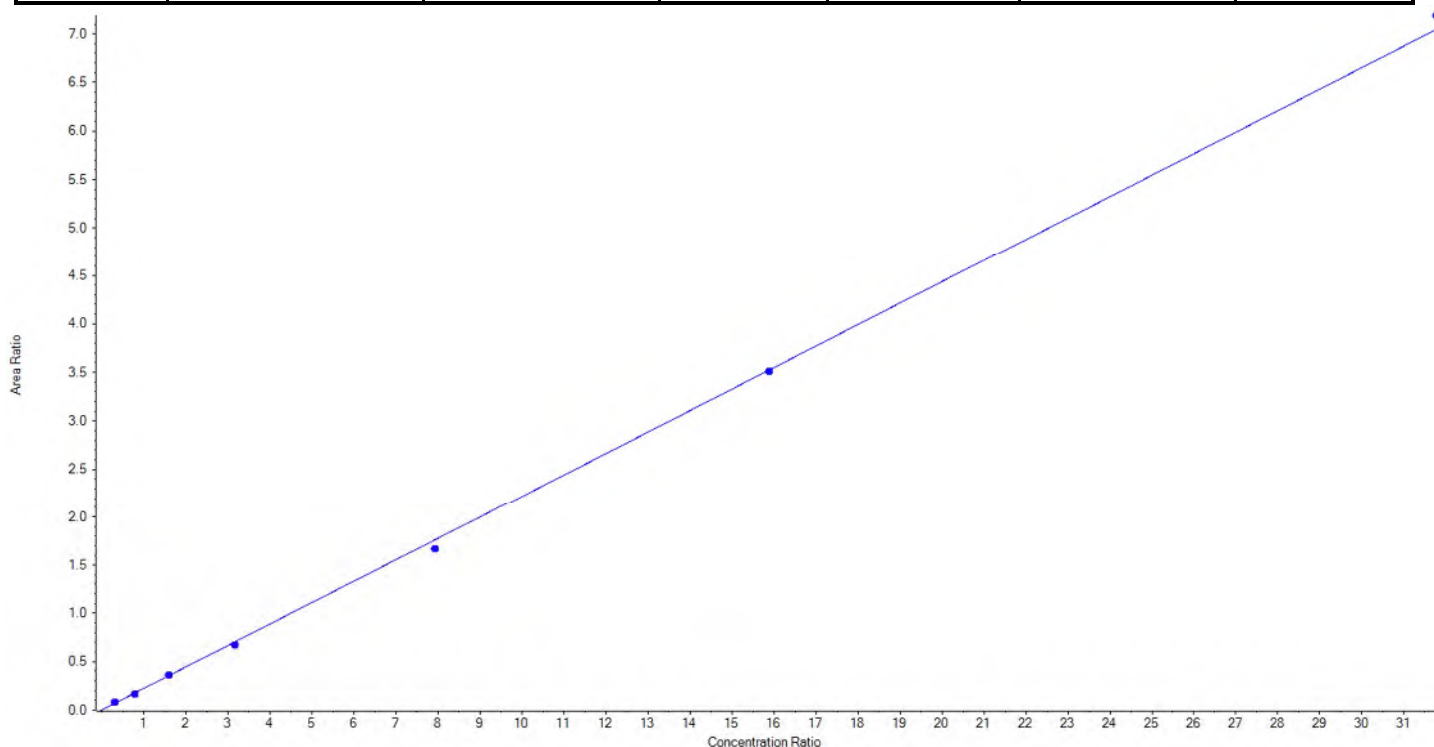
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	91.20	98.697129	108.2
5	JZ81	L4	True	228.00	226.297967	99.3
6	JZ82	L5	True	456.00	469.024236	102.9
7	JZ83	L6	True	912.00	846.884947	92.9
8	JZ84	L7	True	2280.00	2184.148769	95.8
9	JZ85	L8	True	4560.00	4510.292219	98.9
10	JZ86	L9	True	9120.00	9311.854733	102.1



<b>Analyte Name</b>	PFHxS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	399.0 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.22168x + 0.00253$  (r = 0.99950) (weighting: 1 / x)

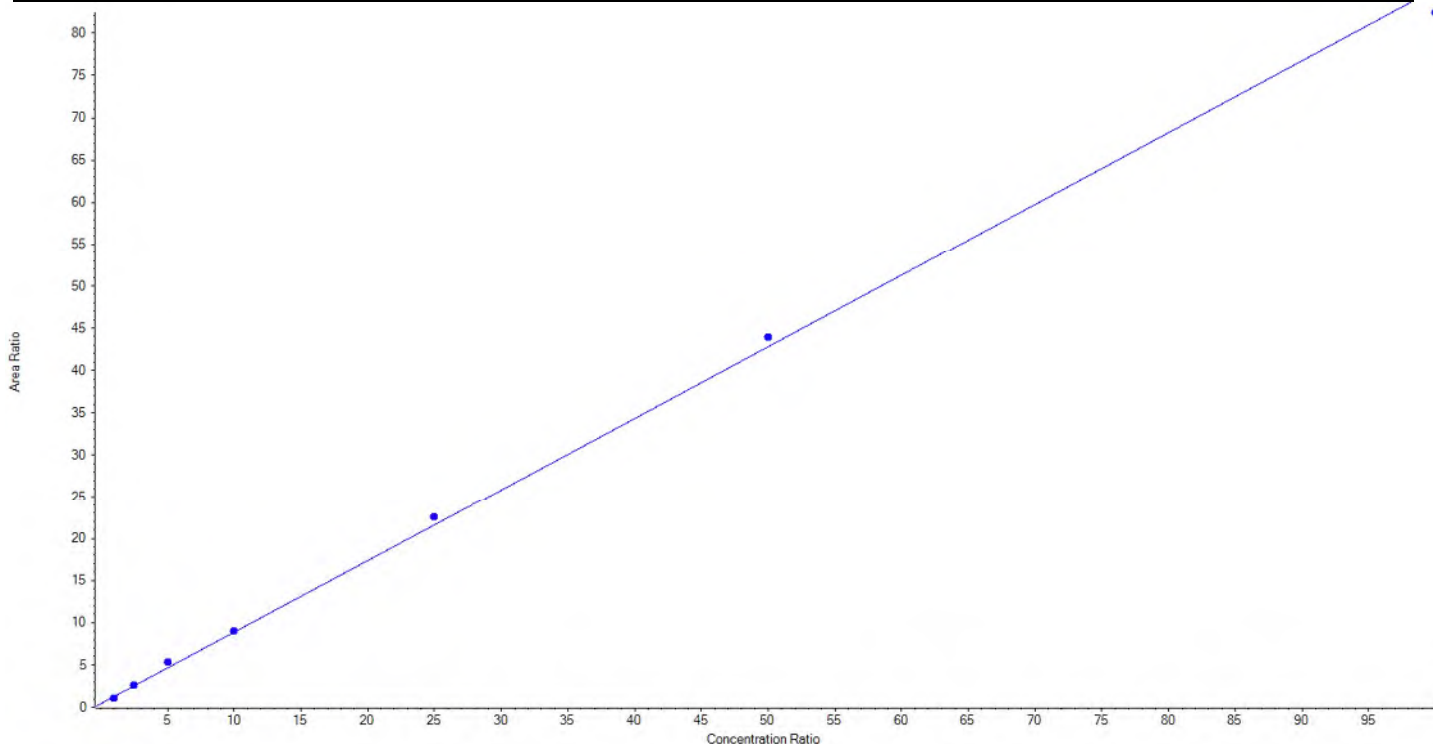
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	91.20	101.822334	111.7
5	JZ81	L4	True	228.00	216.805078	95.1
6	JZ82	L5	True	456.00	467.493762	102.5
7	JZ83	L6	True	912.00	863.193604	94.7
8	JZ84	L7	True	2280.00	2155.318664	94.5
9	JZ85	L8	True	4560.00	4539.911013	99.6
10	JZ86	L9	True	9120.00	9302.655544	102.0



<b>Analyte Name</b>	PFOA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	413.0 / 369.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.84802 x + 0.40737$  (r = 0.99877) (weighting: 1 / x)

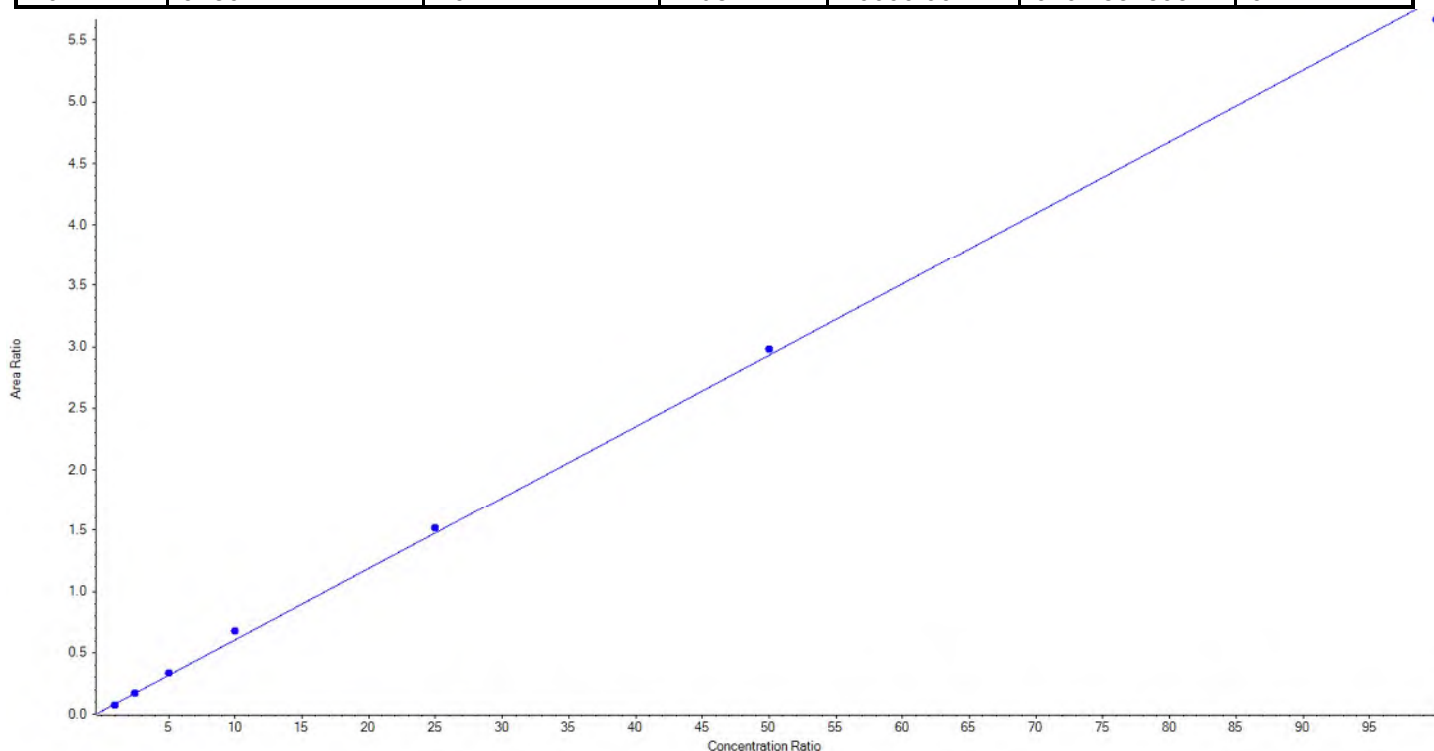
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	74.818314	74.8
5	JZ81	L4	True	250.00	254.818265	101.9
6	JZ82	L5	True	500.00	586.482692	117.3
7	JZ83	L6	True	1000.00	1023.203479	102.3
8	JZ84	L7	True	2500.00	2606.394441	104.3
9	JZ85	L8	True	5000.00	5133.888760	102.7
10	JZ86	L9	True	10000.00	9670.394048	96.7



<b>Analyte Name</b>	PFOA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	413.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.05814 x + 0.02466$  (r = 0.99896) (weighting: 1 / x)

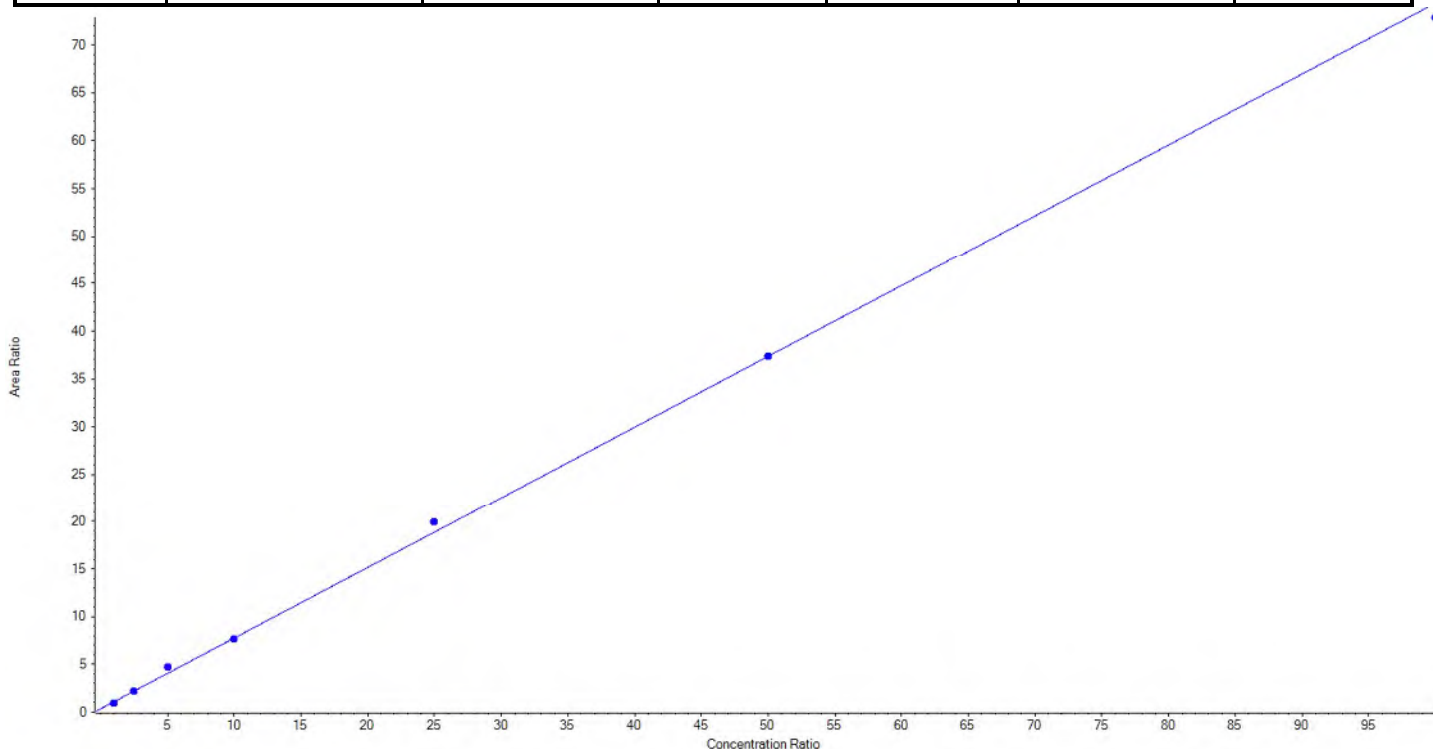
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	77.916434	77.9
5	JZ81	L4	True	250.00	252.502939	101.0
6	JZ82	L5	True	500.00	537.075023	107.4
7	JZ83	L6	True	1000.00	1121.589812	112.2
8	JZ84	L7	True	2500.00	2566.930377	102.7
9	JZ85	L8	True	5000.00	5089.133522	101.8
10	JZ86	L9	True	10000.00	9704.851893	97.1



<b>Analyte Name</b>	PFNA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	463.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.73994 x + 0.36114$  (r = 0.99898) (weighting: 1 / x)

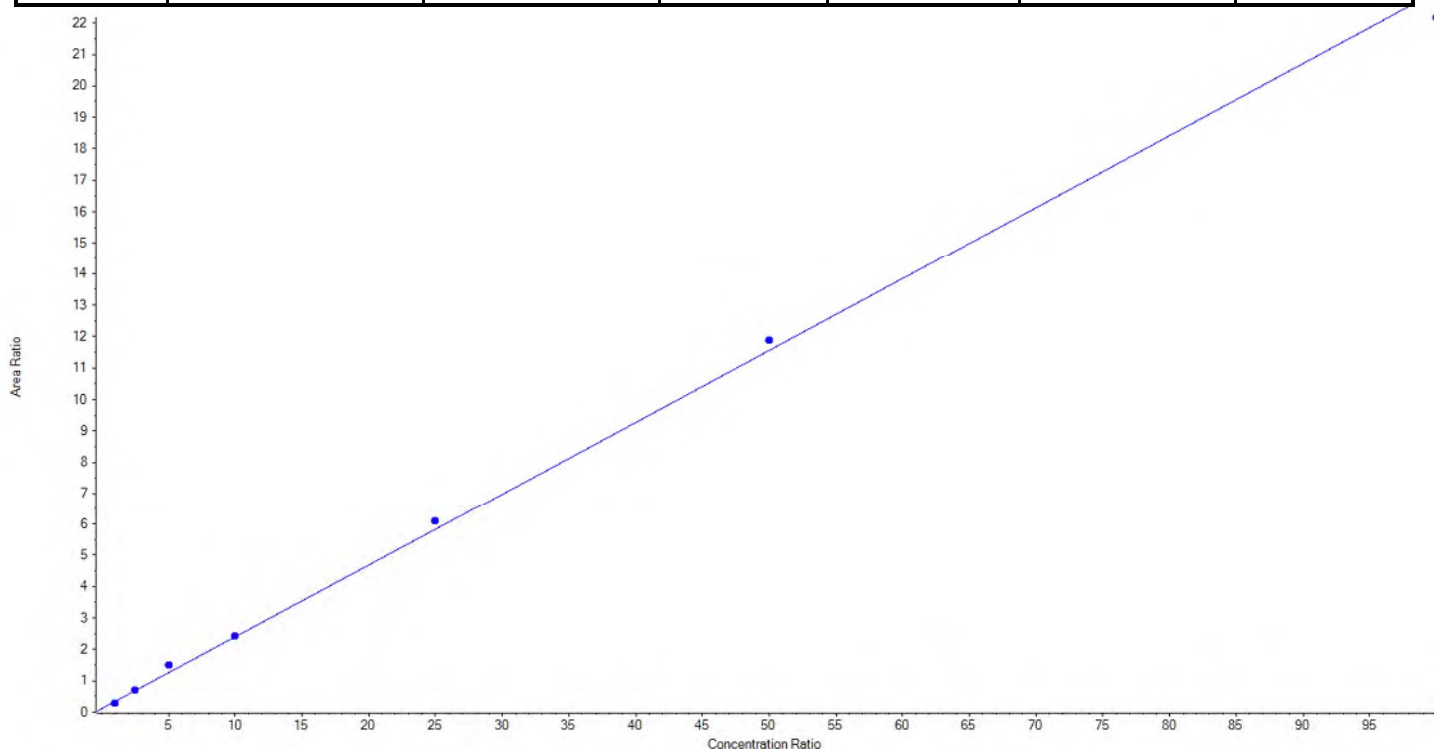
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.042599	81.0
5	JZ81	L4	True	250.00	244.267899	97.7
6	JZ82	L5	True	500.00	590.676198	118.1
7	JZ83	L6	True	1000.00	991.759930	99.2
8	JZ84	L7	True	2500.00	2652.495527	106.1
9	JZ85	L8	True	5000.00	4994.160975	99.9
10	JZ86	L9	True	10000.00	9795.596872	98.0



<b>Analyte Name</b>	PFNA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	463.0 / 219.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.22884 x + 0.11263$  (r = 0.99835) (weighting: 1 / x)

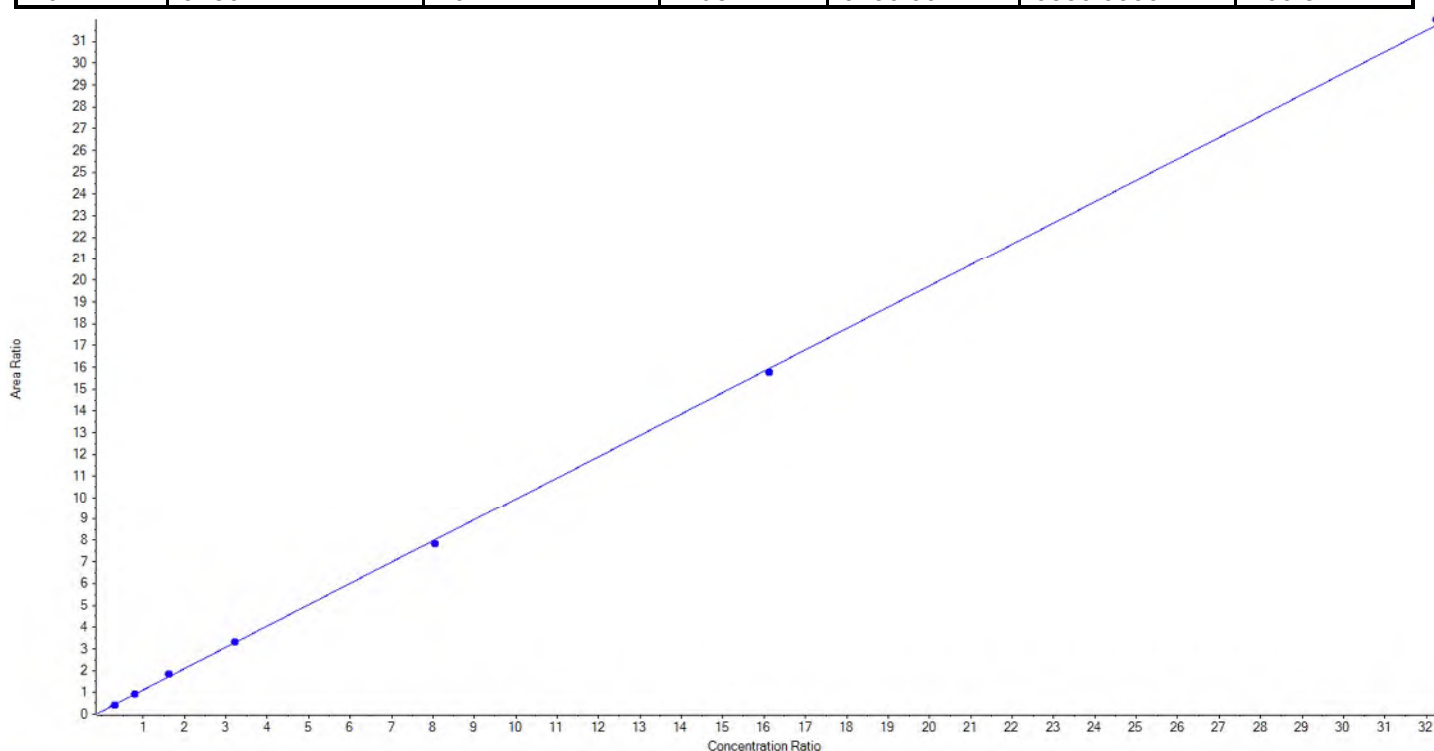
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	70.787614	70.8
5	JZ81	L4	True	250.00	257.454027	103.0
6	JZ82	L5	True	500.00	605.963980	121.2
7	JZ83	L6	True	1000.00	1007.990591	100.8
8	JZ84	L7	True	2500.00	2622.781646	104.9
9	JZ85	L8	True	5000.00	5147.743271	103.0
10	JZ86	L9	True	10000.00	9637.278871	96.4



<b>Analyte Name</b>	PFOS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	499.0 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.98015x + 0.13422$  (r = 0.99979) (weighting: 1 / x)

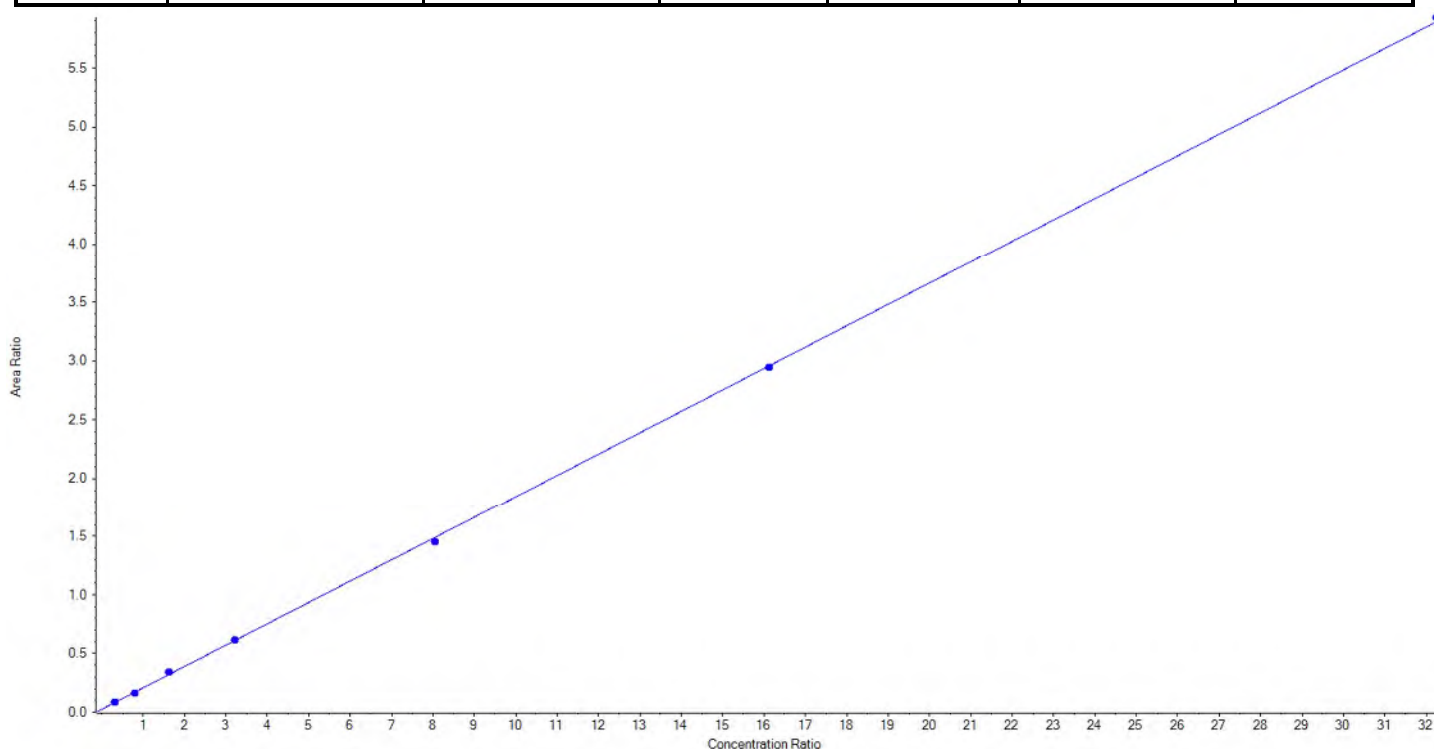
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	92.60	87.283988	94.3
5	JZ81	L4	True	231.50	230.238199	99.5
6	JZ82	L5	True	463.00	501.433229	108.3
7	JZ83	L6	True	925.60	934.329117	100.9
8	JZ84	L7	True	2314.00	2254.710423	97.4
9	JZ85	L8	True	4628.00	4572.651398	98.8
10	JZ86	L9	True	9256.00	9330.053647	100.8



<b>Analyte Name</b>	PFOS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	499.0 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.18192x + 0.02516$  (r = 0.99982) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	92.60	90.827048	98.1
5	JZ81	L4	True	231.50	222.168808	96.0
6	JZ82	L5	True	463.00	498.607348	107.7
7	JZ83	L6	True	925.60	935.211204	101.0
8	JZ84	L7	True	2314.00	2247.041854	97.1
9	JZ85	L8	True	4628.00	4605.342518	99.5
10	JZ86	L9	True	9256.00	9311.501220	100.6

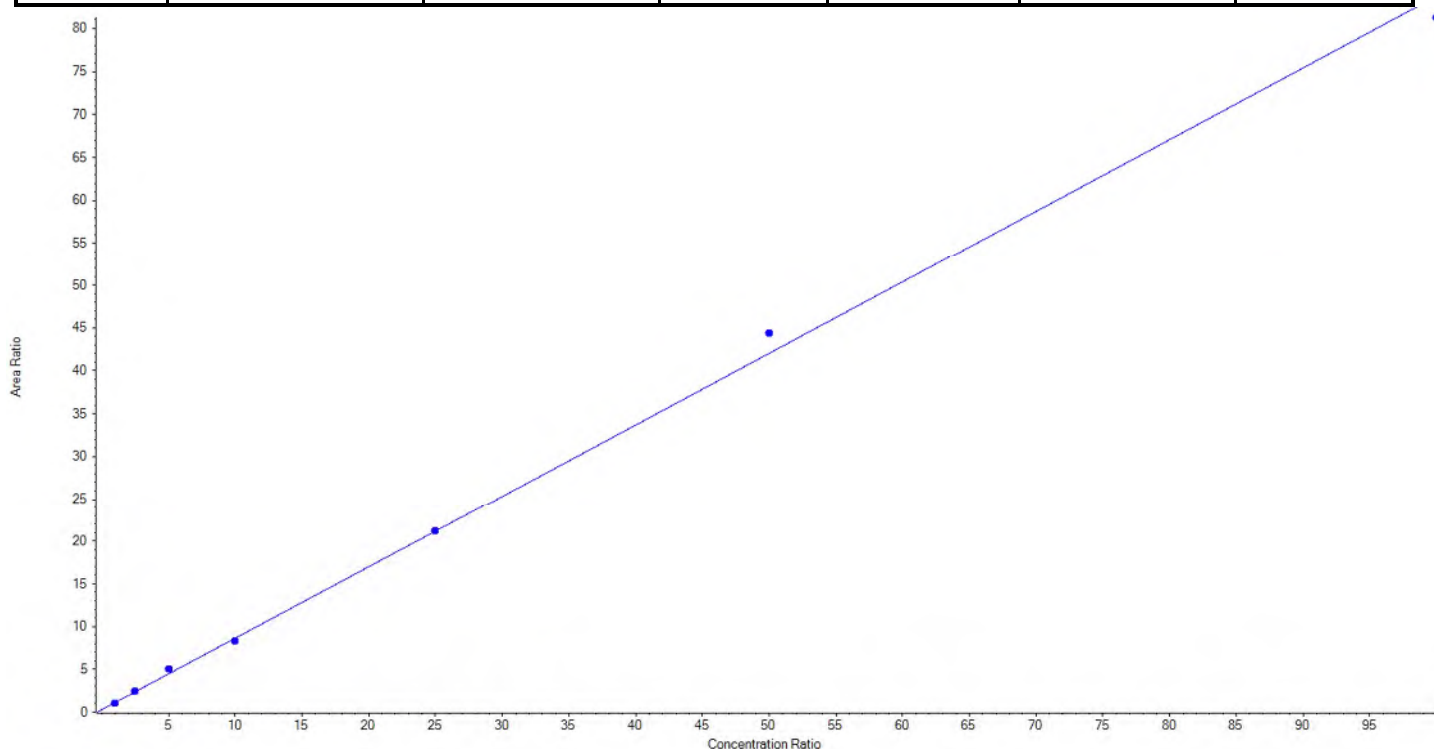




<b>Analyte Name</b>	PFDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	513.0 / 469.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.83461x + 0.29600$  (r = 0.99880) (weighting: 1 / x)

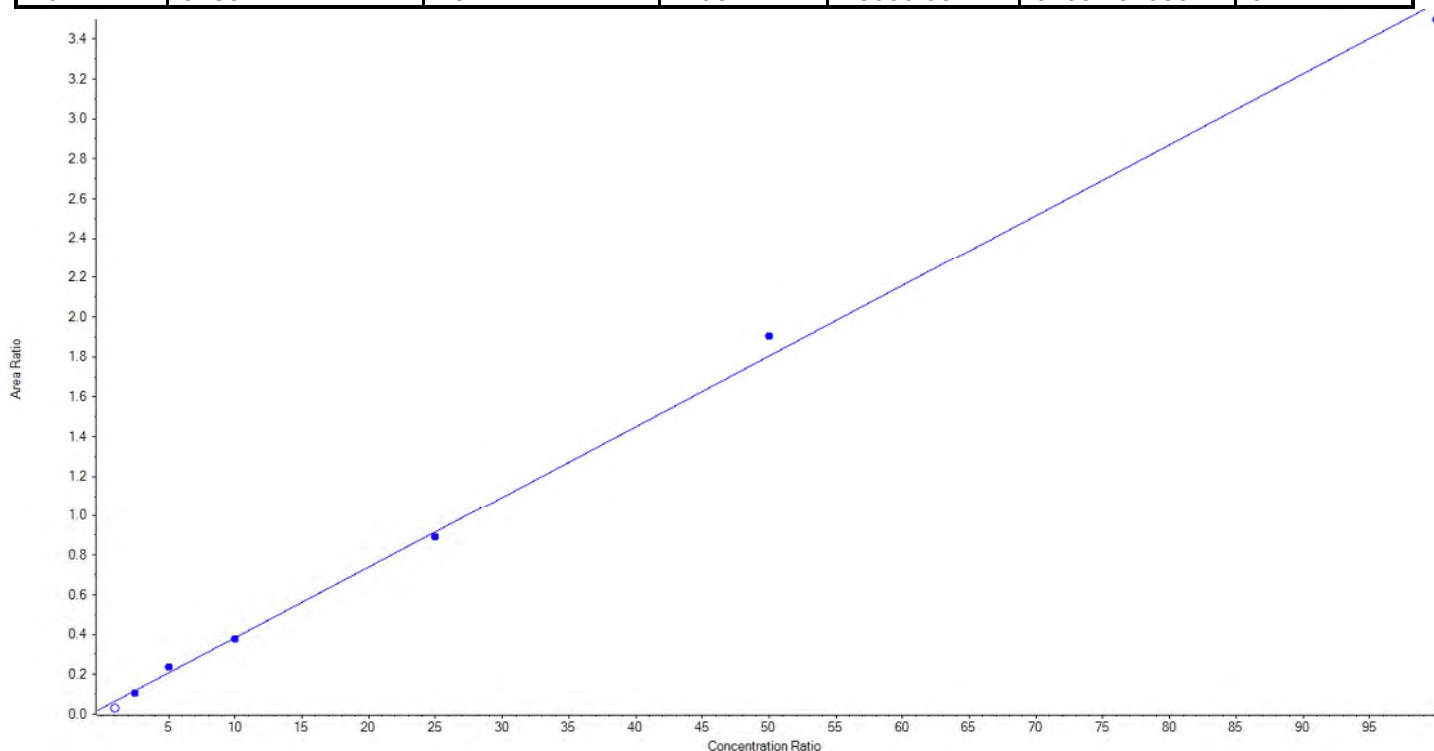
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	85.485806	85.5
5	JZ81	L4	True	250.00	253.767356	101.5
6	JZ82	L5	True	500.00	574.717570	114.9
7	JZ83	L6	True	1000.00	954.052598	95.4
8	JZ84	L7	True	2500.00	2502.120265	100.1
9	JZ85	L8	True	5000.00	5277.510356	105.6
10	JZ86	L9	True	10000.00	9702.346050	97.0



<b>Analyte Name</b>	PFDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	513.0 / 219.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03551 x + 0.02957$  (r = 0.99846) (weighting: 1 / x)

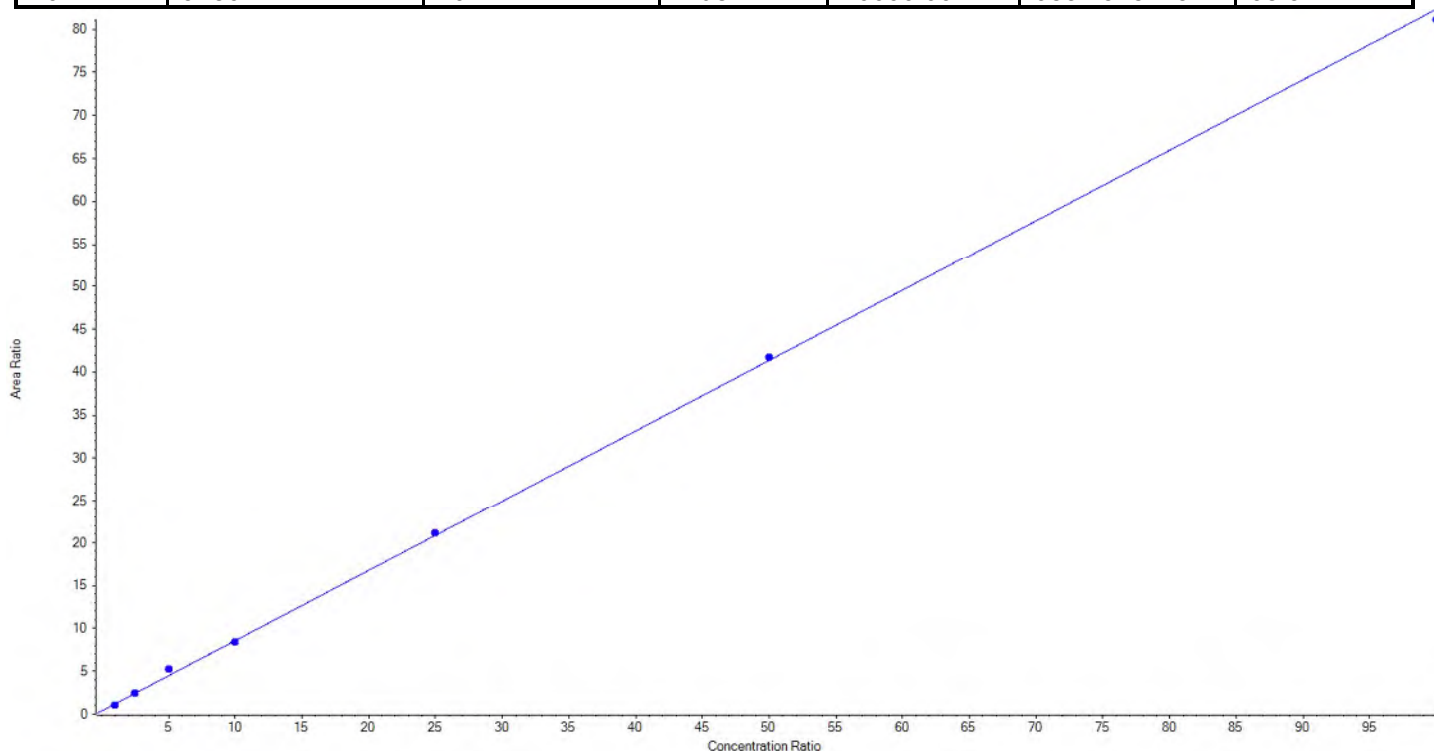
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	False	100.00	7.736438	7.7
5	JZ81	L4	True	250.00	211.136415	84.5
6	JZ82	L5	True	500.00	585.361648	117.1
7	JZ83	L6	True	1000.00	982.498089	98.3
8	JZ84	L7	True	2500.00	2422.727963	96.9
9	JZ85	L8	True	5000.00	5283.141818	105.7
10	JZ86	L9	True	10000.00	9765.134066	97.7



<b>Analyte Name</b>	PFUnA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	563.0 / 519.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.81955x + 0.38205$  (r = 0.99915) (weighting: 1 / x)

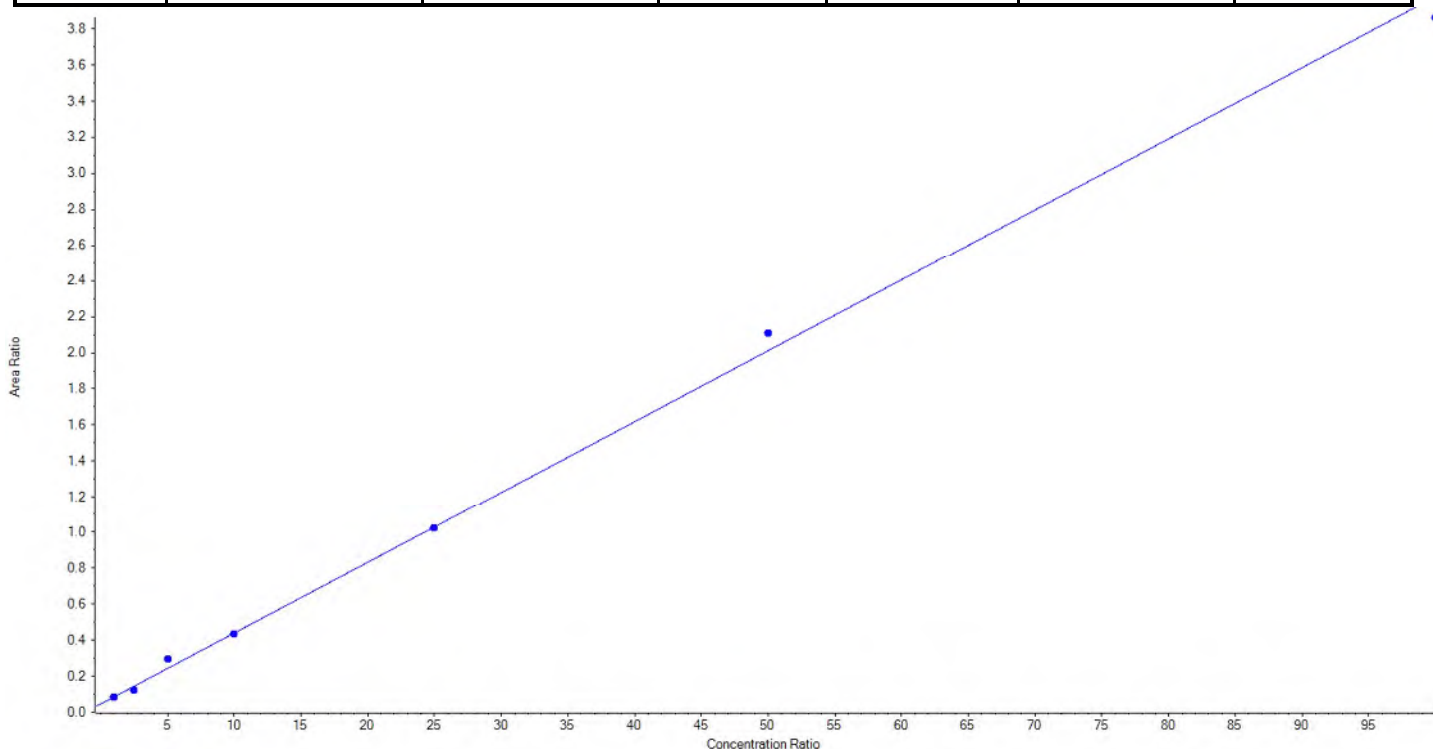
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	78.442830	78.4
5	JZ81	L4	True	250.00	257.733491	103.1
6	JZ82	L5	True	500.00	598.716910	119.7
7	JZ83	L6	True	1000.00	976.917546	97.7
8	JZ84	L7	True	2500.00	2539.406707	101.6
9	JZ85	L8	True	5000.00	5046.454394	100.9
10	JZ86	L9	True	10000.00	9852.328123	98.5



<b>Analyte Name</b>	PFUnA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	563.0 / 269.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03932 x + 0.04583$  (r = 0.99797) (weighting: 1 / x)

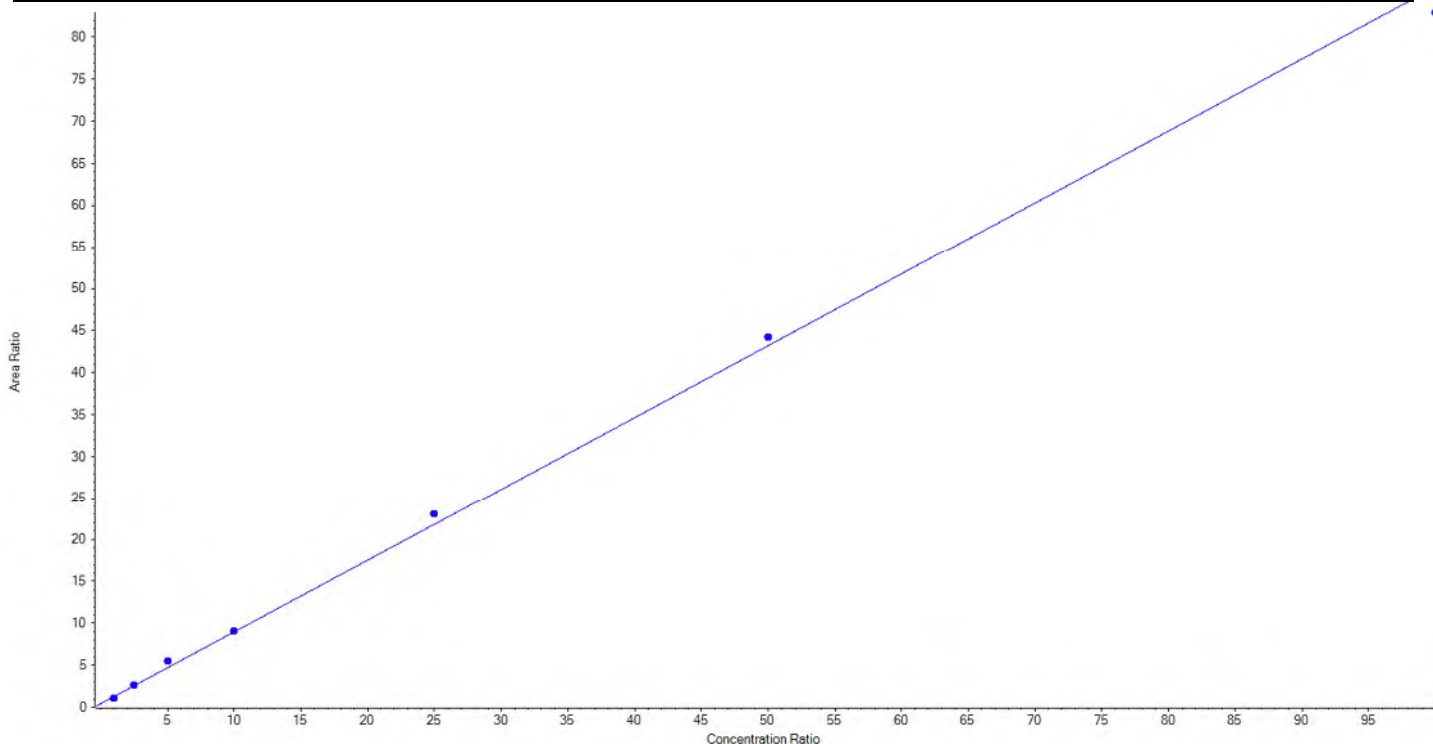
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	94.957655	95.0
5	JZ81	L4	True	250.00	195.418396	78.2
6	JZ82	L5	True	500.00	631.729184	126.4
7	JZ83	L6	True	1000.00	990.253344	99.0
8	JZ84	L7	True	2500.00	2489.843308	99.6
9	JZ85	L8	True	5000.00	5243.210147	104.9
10	JZ86	L9	True	10000.00	9704.587965	97.1



<b>Analyte Name</b>	PFD <sub>o</sub> A_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	613.0 / 569.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.85553x + 0.41999$  (r = 0.99855) (weighting: 1 / x)

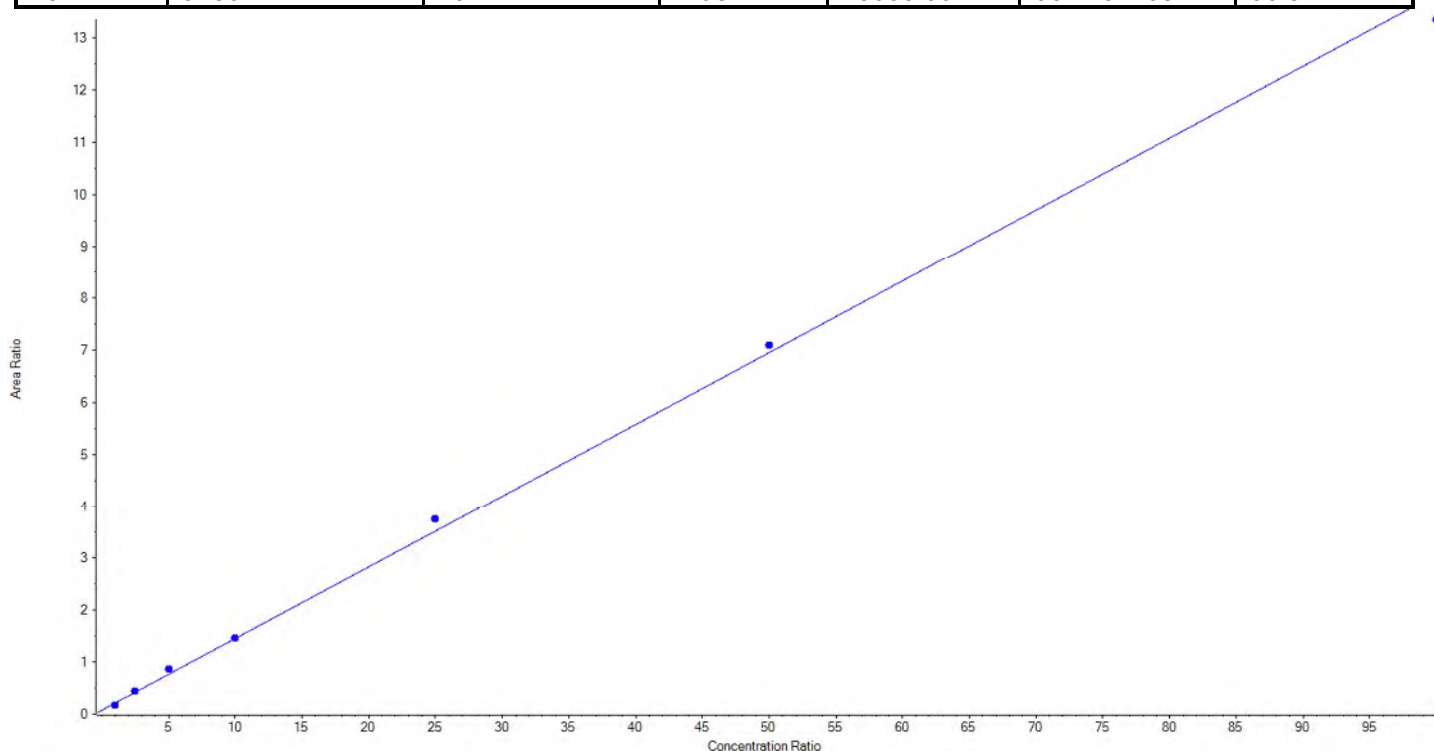
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	72.350069	72.4
5	JZ81	L4	True	250.00	260.050806	104.0
6	JZ82	L5	True	500.00	586.696625	117.3
7	JZ83	L6	True	1000.00	1013.028885	101.3
8	JZ84	L7	True	2500.00	2652.886864	106.1
9	JZ85	L8	True	5000.00	5122.205313	102.4
10	JZ86	L9	True	10000.00	9642.781438	96.4



<b>Analyte Name</b>	PFD <sub>o</sub> A_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	613.0 / 319.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.13761 x + 0.07538$  (r = 0.99861) (weighting: 1 / x)

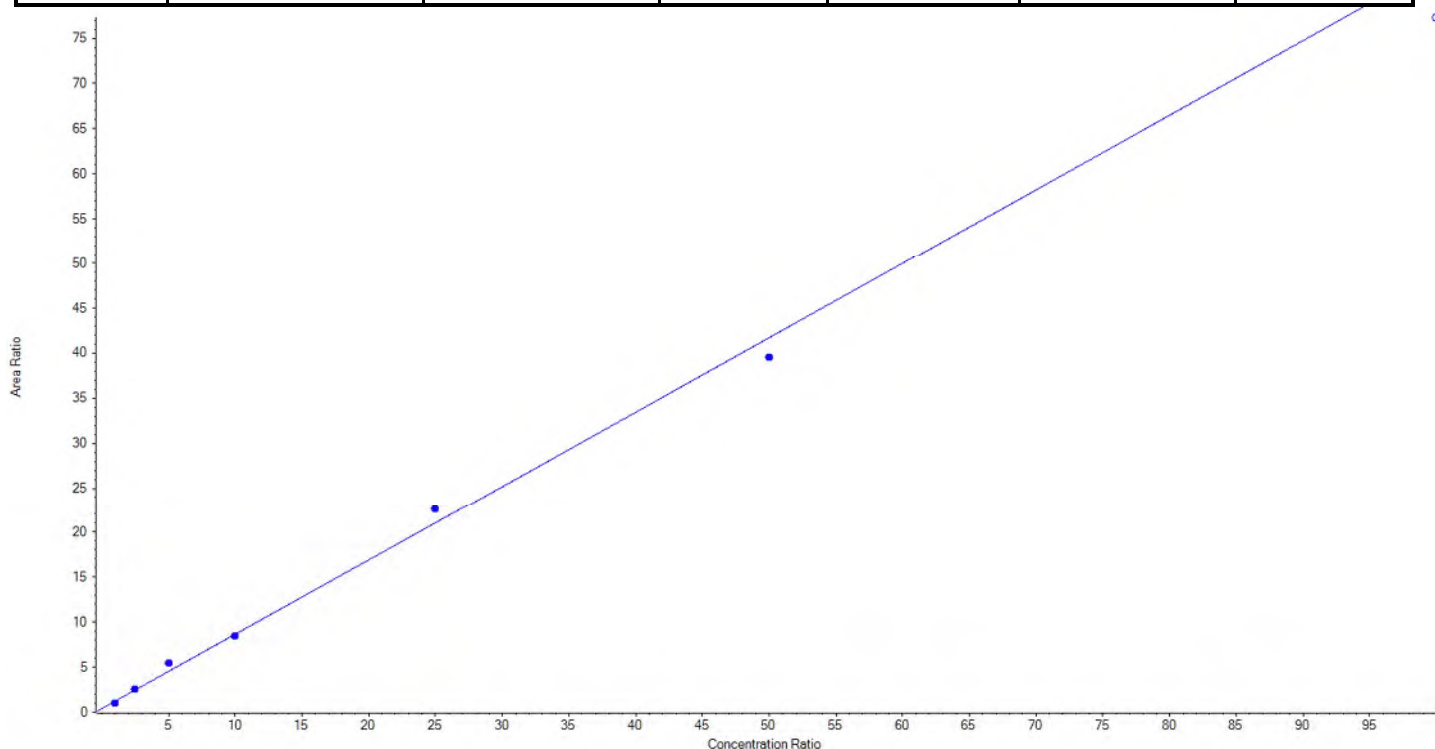
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	72.751052	72.8
5	JZ81	L4	True	250.00	266.125849	106.5
6	JZ82	L5	True	500.00	572.139623	114.4
7	JZ83	L6	True	1000.00	1006.475534	100.7
8	JZ84	L7	True	2500.00	2677.159612	107.1
9	JZ85	L8	True	5000.00	5108.326242	102.2
10	JZ86	L9	True	10000.00	9647.022087	96.5



<b>Analyte Name</b>	PFTrDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	663.0 / 619.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.82600x + 0.39829$  (r = 0.99586) (weighting: 1 / x)

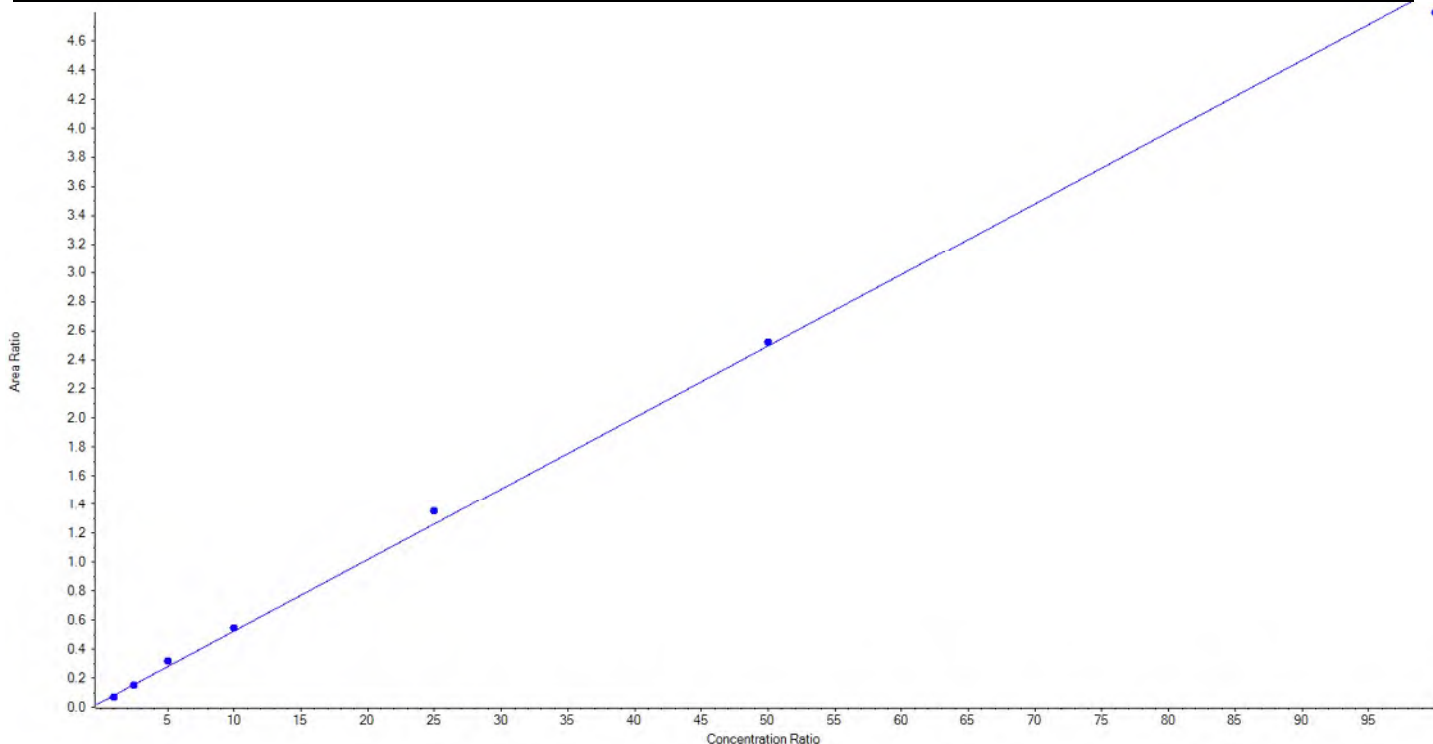
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	73.542184	73.5
5	JZ81	L4	True	250.00	260.728046	104.3
6	JZ82	L5	True	500.00	608.304174	121.7
7	JZ83	L6	True	1000.00	980.781506	98.1
8	JZ84	L7	True	2500.00	2694.736511	107.8
9	JZ85	L8	True	5000.00	4731.907579	94.6
10	JZ86	L9	False	10000.00	9308.369289	93.1



<b>Analyte Name</b>	PFTrDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	663.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.04926 x + 0.03246$  (r = 0.99863) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	76.746649	76.8
5	JZ81	L4	True	250.00	244.888630	98.0
6	JZ82	L5	True	500.00	578.176433	115.6
7	JZ83	L6	True	1000.00	1044.747827	104.5
8	JZ84	L7	True	2500.00	2686.859973	107.5
9	JZ85	L8	True	5000.00	5052.762550	101.1
10	JZ86	L9	True	10000.00	9665.817937	96.7

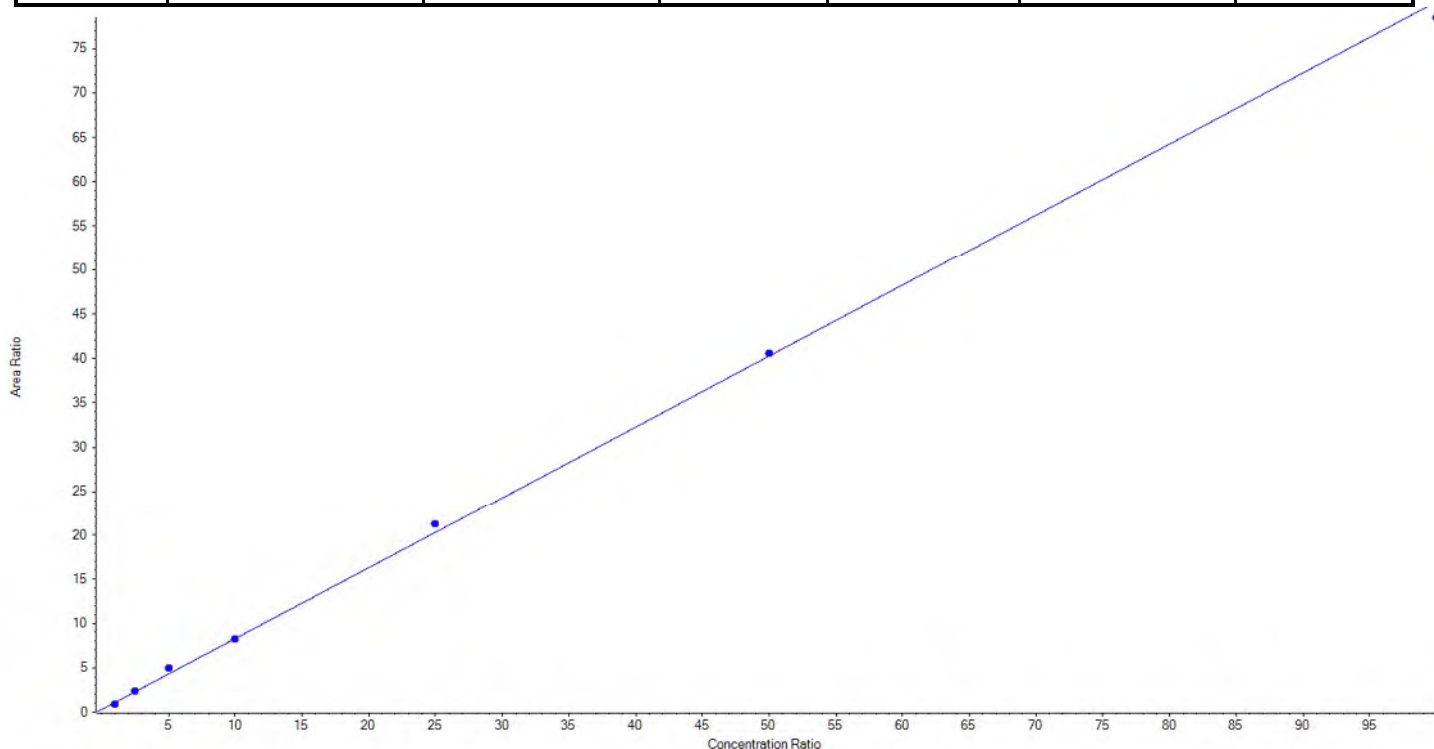




<b>Analyte Name</b>	PFTeDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	713.0 / 669.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.79933 x + 0.30655$  (r = 0.99910) (weighting: 1 / x)

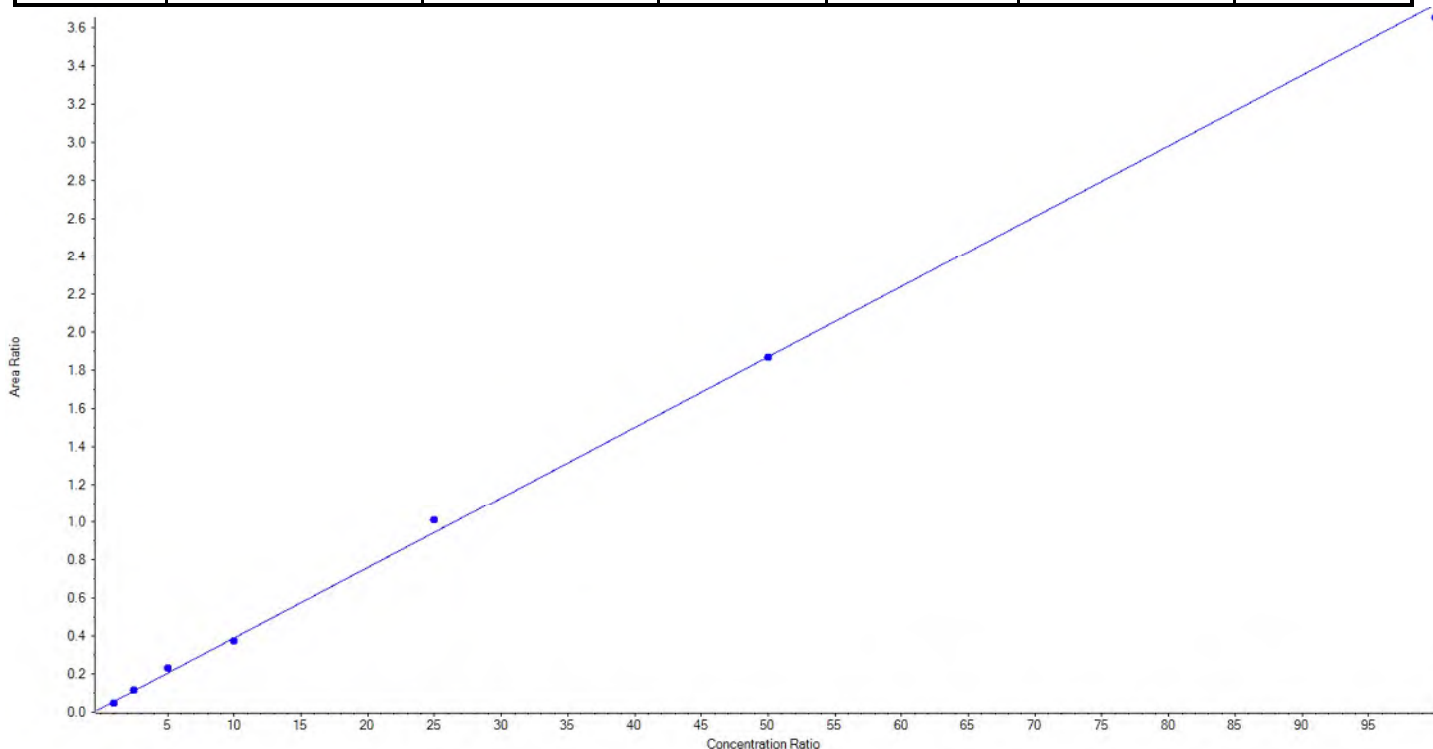
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	78.004883	78.0
5	JZ81	L4	True	250.00	254.536079	101.8
6	JZ82	L5	True	500.00	584.932351	117.0
7	JZ83	L6	True	1000.00	1000.299888	100.0
8	JZ84	L7	True	2500.00	2614.366353	104.6
9	JZ85	L8	True	5000.00	5041.096791	100.8
10	JZ86	L9	True	10000.00	9776.763655	97.8



<b>Analyte Name</b>	PFTeDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	713.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03703 x + 0.01944$  (r = 0.99901) (weighting: 1 / x)

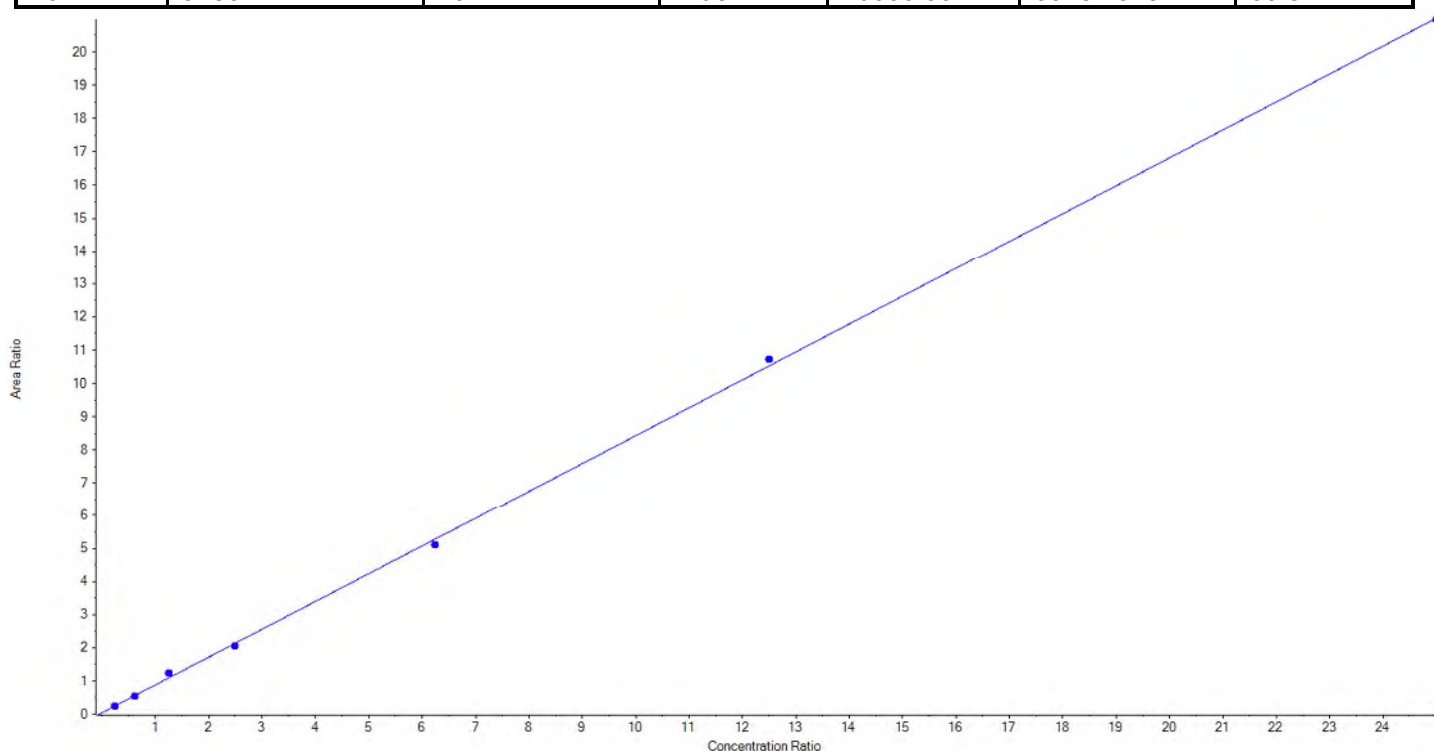
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.402441	81.4
5	JZ81	L4	True	250.00	256.077555	102.4
6	JZ82	L5	True	500.00	577.721625	115.5
7	JZ83	L6	True	1000.00	957.796336	95.8
8	JZ84	L7	True	2500.00	2672.001384	106.9
9	JZ85	L8	True	5000.00	4991.251605	99.8
10	JZ86	L9	True	10000.00	9813.749053	98.1



<b>Analyte Name</b>	NMeFOSAA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	570.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.83899x + 0.03915$  ( $r = 0.99954$ ) (weighting:  $1/x$ )

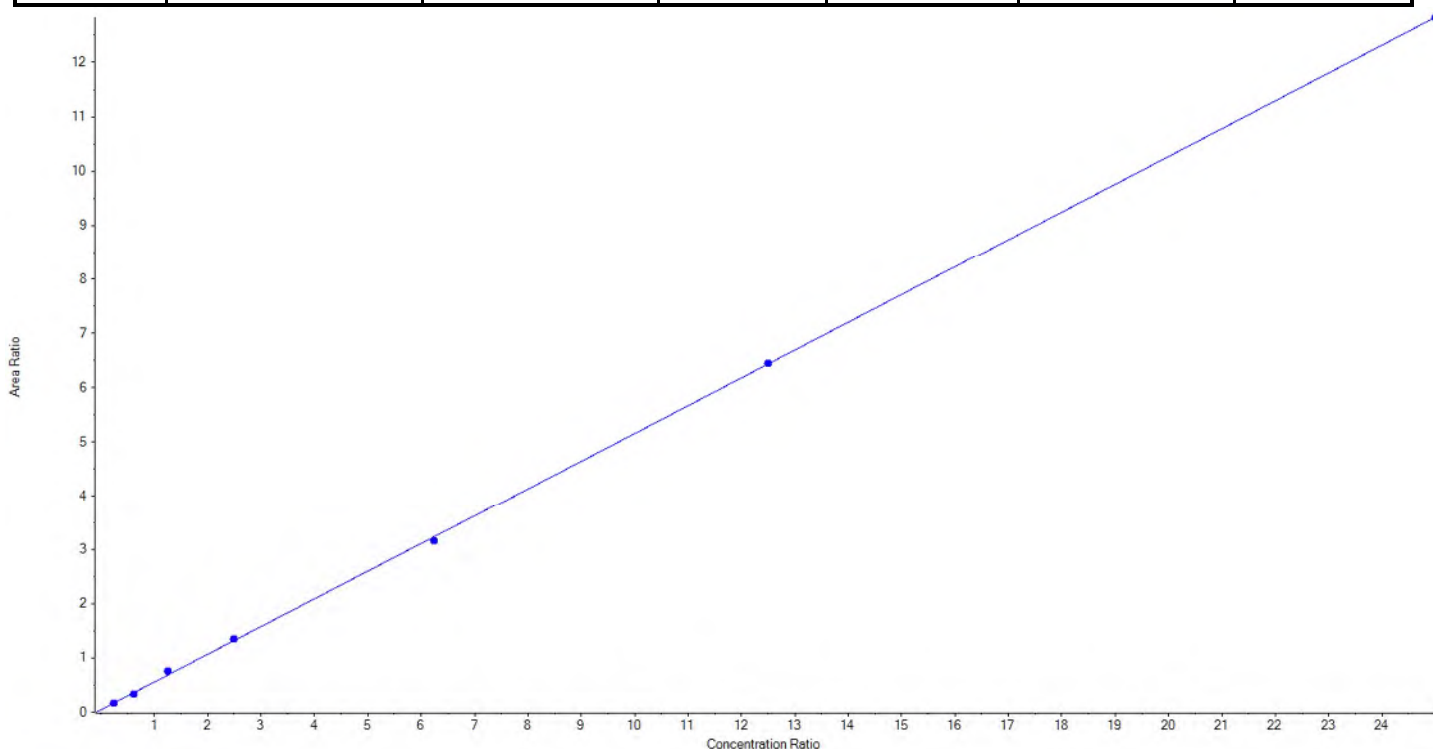
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	94.878468	94.9
5	JZ81	L4	True	250.00	244.077862	97.6
6	JZ82	L5	True	500.00	564.911657	113.0
7	JZ83	L6	True	1000.00	964.836133	96.5
8	JZ84	L7	True	2500.00	2409.042205	96.4
9	JZ85	L8	True	5000.00	5094.021805	101.9
10	JZ86	L9	True	10000.00	9978.231871	99.8



<b>Analyte Name</b>	NMeFOSAA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	570.0 / 512.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.51145x + 0.04207$  (r = 0.99966) (weighting: 1 / x)

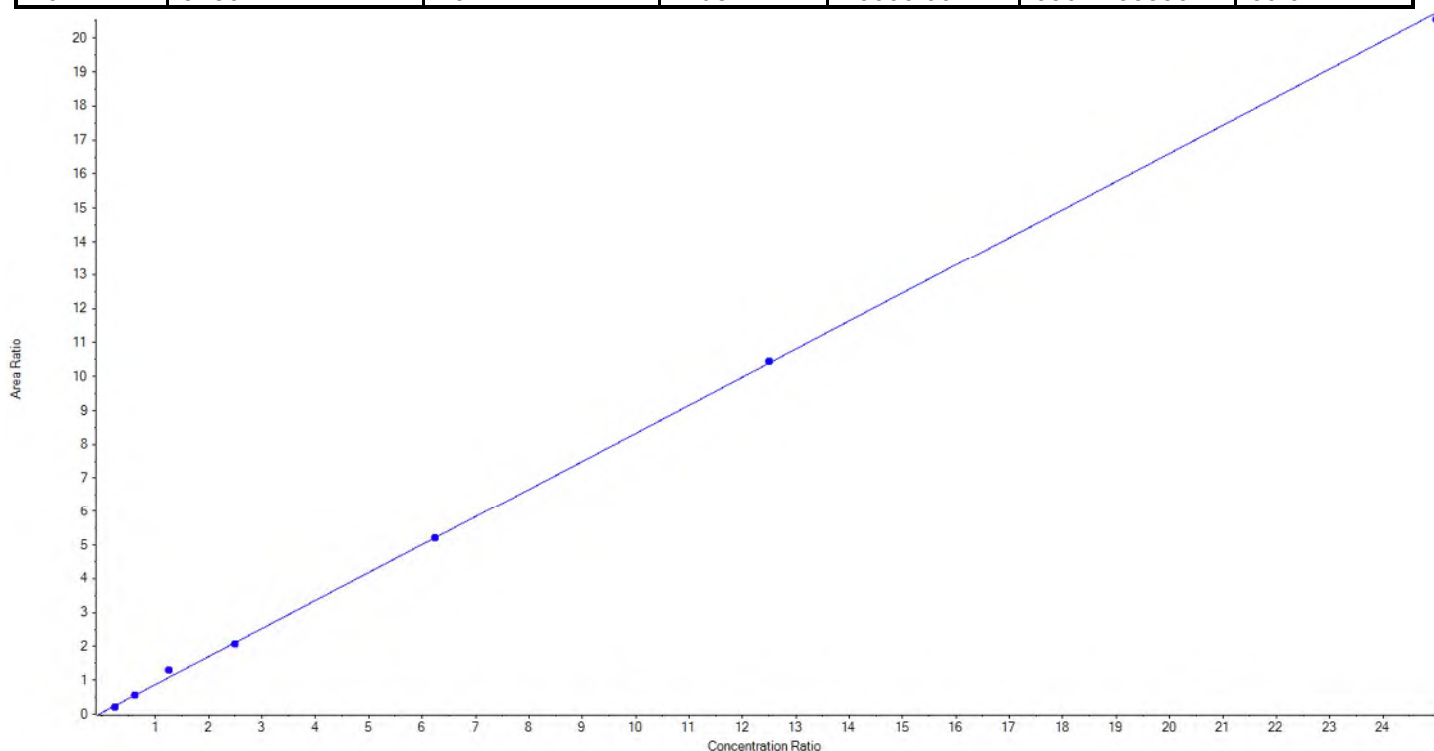
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	97.278831	97.3
5	JZ81	L4	True	250.00	227.087626	90.8
6	JZ82	L5	True	500.00	558.010303	111.6
7	JZ83	L6	True	1000.00	1026.281329	102.6
8	JZ84	L7	True	2500.00	2438.575268	97.5
9	JZ85	L8	True	5000.00	5008.524834	100.2
10	JZ86	L9	True	10000.00	9994.241810	99.9



<b>Analyte Name</b>	NEtFOSAA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	584.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.82809x + 0.04293$  (r = 0.99914) (weighting: 1 / x)

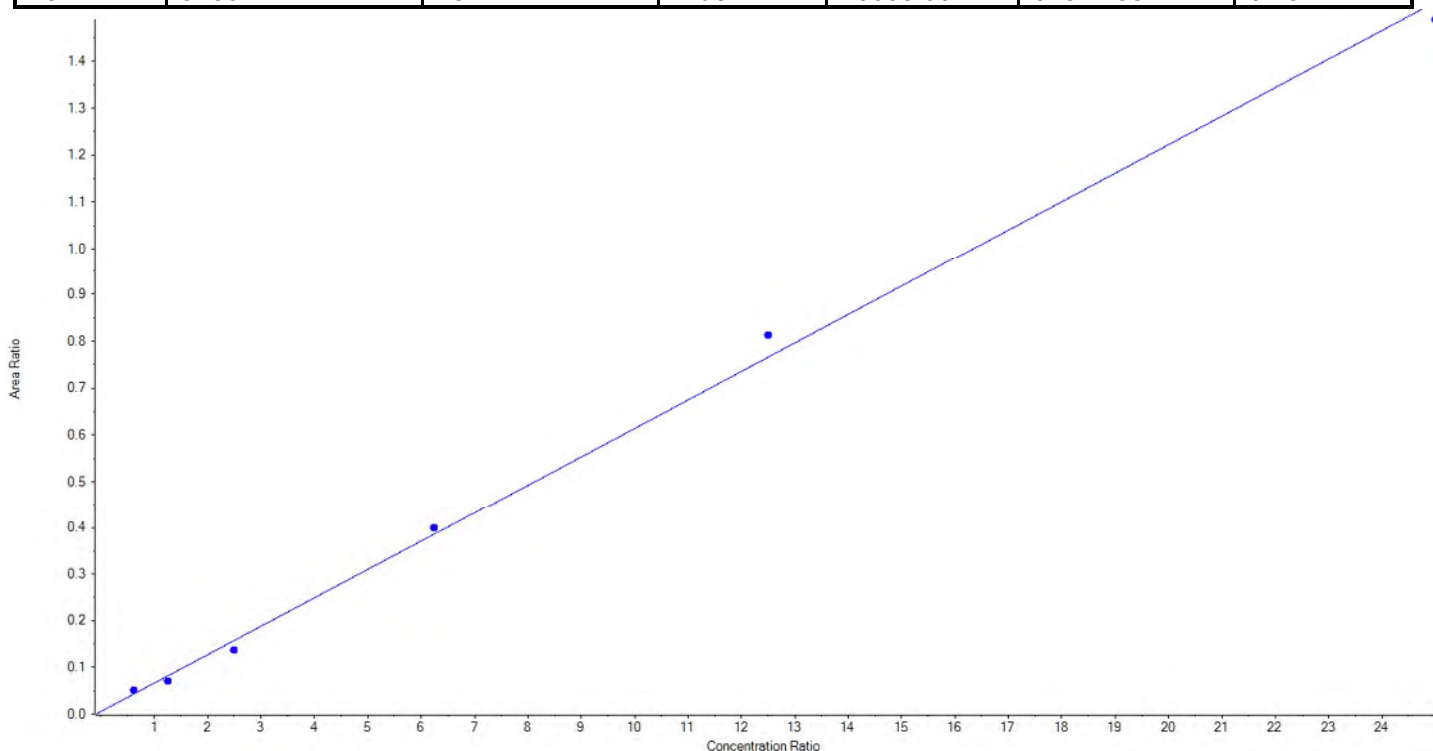
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.752724	81.8
5	JZ81	L4	True	250.00	247.455530	99.0
6	JZ82	L5	True	500.00	608.611130	121.7
7	JZ83	L6	True	1000.00	979.164481	97.9
8	JZ84	L7	True	2500.00	2498.871030	100.0
9	JZ85	L8	True	5000.00	5033.009749	100.7
10	JZ86	L9	True	10000.00	9901.135356	99.0



<b>Analyte Name</b>	NEtFOSAA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	584.0 / 483.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06084 x + 0.00558$  (r = 0.99774) (weighting: 1 / x)

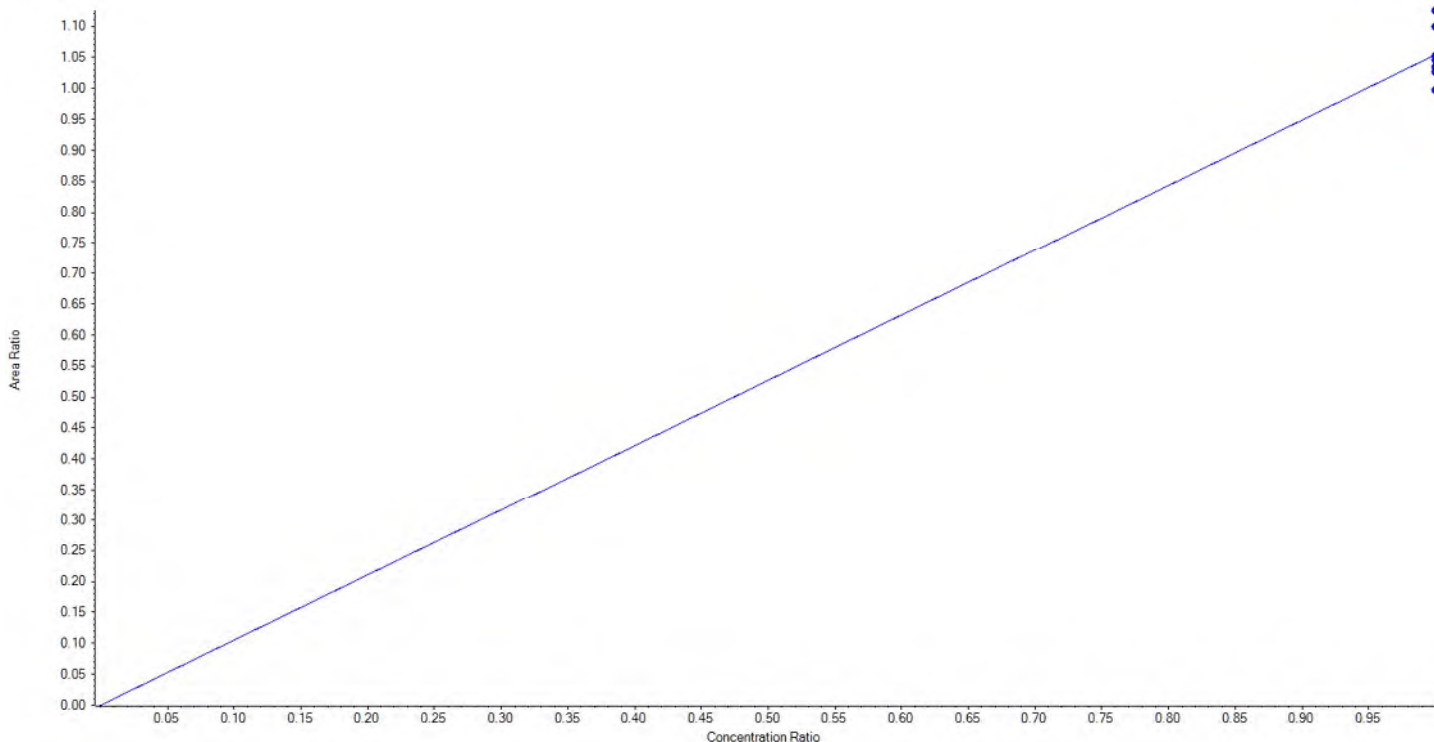
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	False	100.00	N/A	N/A
5	JZ81	L4	True	250.00	298.757309	119.5
6	JZ82	L5	True	500.00	434.634886	86.9
7	JZ83	L6	True	1000.00	861.511129	86.2
8	JZ84	L7	True	2500.00	2591.981690	103.7
9	JZ85	L8	True	5000.00	5310.856861	106.2
10	JZ86	L9	True	10000.00	9752.258124	97.5



<b>Analyte Name</b>	13C2-PFHxA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	315.0 / 270.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.05437 x$  (std. dev. = 0.04369) (weighting: 1 / x)

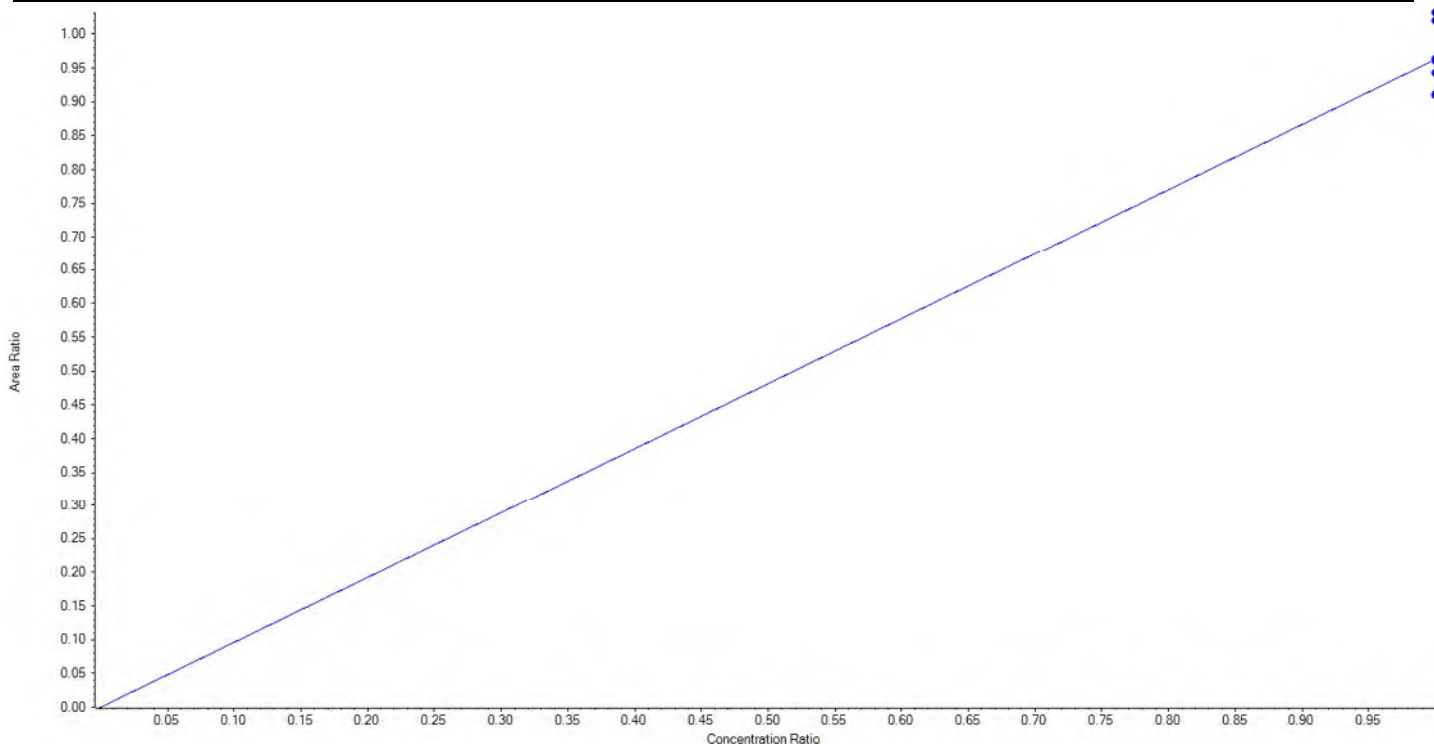
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	99.764104	99.8
5	JZ81	L4	True	100.00	98.150292	98.2
6	JZ82	L5	True	100.00	97.359742	97.4
7	JZ83	L6	True	100.00	99.178186	99.2
8	JZ84	L7	True	100.00	104.204426	104.2
9	JZ85	L8	True	100.00	106.726479	106.7
10	JZ86	L9	True	100.00	94.616771	94.6



<b>Analyte Name</b>	13C2-PFDA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	515.0 / 470.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.96279 x$  (std. dev. = 0.04793) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	99.706994	99.7
5	JZ81	L4	True	100.00	94.706439	94.7
6	JZ82	L5	True	100.00	105.902514	105.9
7	JZ83	L6	True	100.00	97.925238	97.9
8	JZ84	L7	True	100.00	100.061238	100.1
9	JZ85	L8	True	100.00	107.172378	107.2
10	JZ86	L9	True	100.00	94.525199	94.5

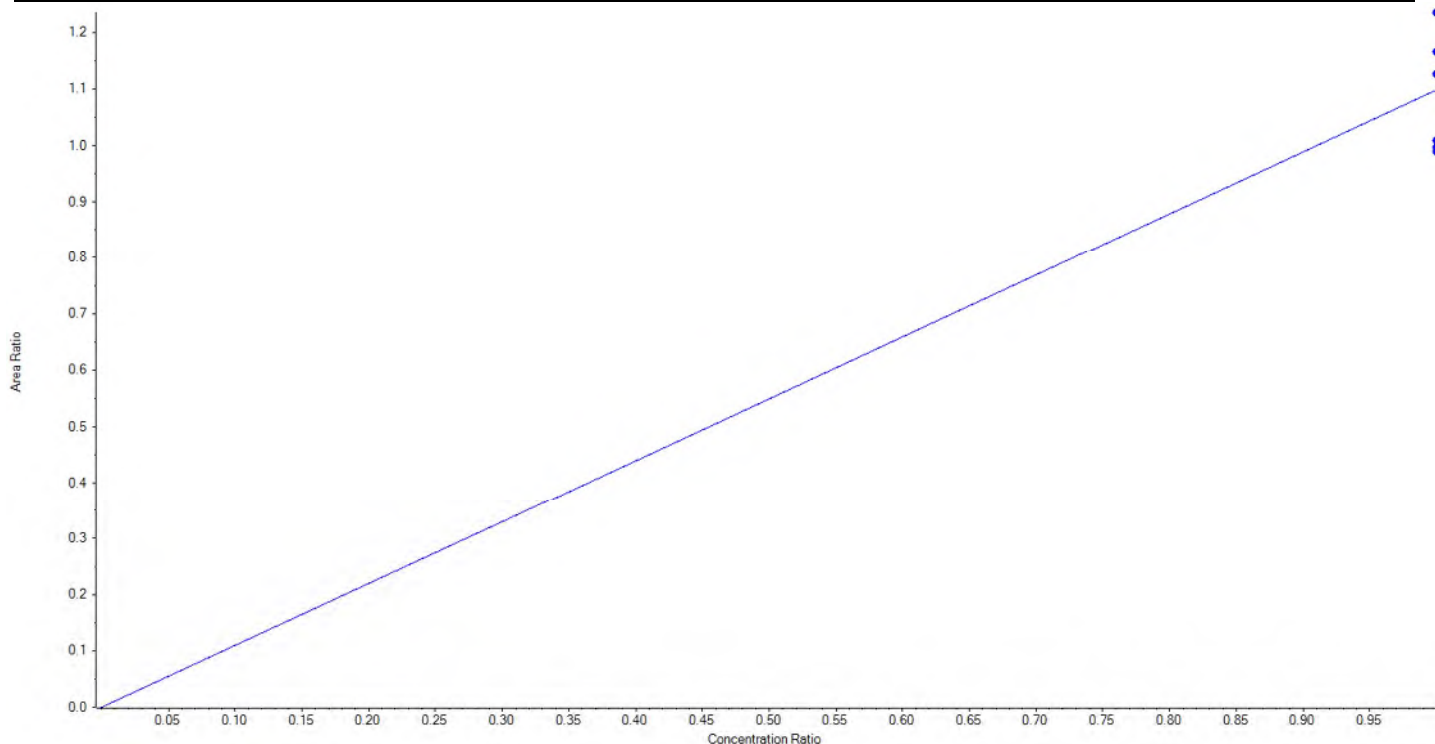




<b>Analyte Name</b>	d5-EtFOSAA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	589.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.09830 x$  (std. dev. = 0.09879) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	400.00	363.088127	90.8
5	JZ81	L4	True	400.00	360.233650	90.1
6	JZ82	L5	True	400.00	424.552651	106.1
7	JZ83	L6	True	400.00	449.756749	112.4
8	JZ84	L7	True	400.00	424.420952	106.1
9	JZ85	L8	True	400.00	410.255273	102.6
10	JZ86	L9	True	400.00	367.692597	91.9





Sample Name	JZ80	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:27:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	30401.67	89.961828	435.7	false
PFBS_2	298.9 / 99.0	1.56	9370.79	93.488553	247.8	false
PFHxA_1	313.0 / 269.0	1.80	48571.54	89.860105	71.0	false
PFHxA_2	313.0 / 119.0	1.80	4524.35	92.509378	50.9	false
PFHpA_1	363.0 / 319.0	2.06	35228.94	86.075433	82.3	false
PFHpA_2	363.0 / 169.0	2.06	799.20	95.693721	44.0	false
PFHxS_1	399.0 / 80.0	2.06	36797.13	98.697129	55.9	false
PFHxS_2	399.0 / 99.0	2.06	11861.90	101.822334	70.4	false
PFOA_1	413.0 / 369.0	2.33	36411.48	74.818314	86.1	false
PFOA_2	413.0 / 169.0	2.33	2445.01	77.916434	51.2	false
PFNA_1	463.0 / 419.0	2.60	33579.40	81.042599	100.9	false
PFNA_2	463.0 / 219.0	2.59	9597.56	70.787614	92.8	false
PFOS_1	499.0 / 80.0	2.59	63169.80	87.283988	72.1	false
PFOS_2	499.0 / 99.0	2.59	12089.19	90.827048	119.9	false
PFDA_1	513.0 / 469.0	2.89	35280.16	85.485806	103.3	false
PFDA_2	513.0 / 219.0	2.90	1129.37	7.736438	19.7	false
PFUnA_1	563.0 / 519.0	3.18	35820.42	78.442830	103.9	false
PFUnA_2	563.0 / 269.0	3.18	2906.47	94.957655	37.1	false
PFDaA_1	613.0 / 569.0	3.46	36310.95	72.350069	140.3	false
PFDaA_2	613.0 / 319.0	3.46	6133.20	72.751052	89.4	false
PFTrDA_1	663.0 / 619.0	3.73	35150.28	73.542184	166.0	false
PFTrDA_2	663.0 / 169.0	3.73	2455.58	76.746649	84.8	false
PFTeDA_1	713.0 / 669.0	3.98	32505.12	78.004883	242.2	false
PFTeDA_2	713.0 / 169.0	3.98	1733.10	81.402441	98.4	false
NMeFOSAA_1	570.0 / 419.0	3.03	5576.27	94.878468	126.5	false
NMeFOSAA_2	570.0 / 512.0	3.02	3897.37	97.278831	62.4	false
NEtFOSAA_1	584.0 / 419.0	3.18	4968.04	81.752724	136.8	false
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.79	36762.34	99.764104	797.5	false
13C2-PFDA	515.0 / 470.0	2.88	33550.25	99.706994	588.1	false
d5-EtFOSAA	589.0 / 419.0	3.17	23342.94	363.088127	178.7	false

Sample Name	JZ81	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:36:23	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	87117.45	221.394501	809.7	false
PFBS_2	298.9 / 99.0	1.56	25291.10	216.699472	466.3	false
PFHxA_1	313.0 / 269.0	1.80	107681.84	245.927439	93.1	false
PFHxA_2	313.0 / 119.0	1.79	7790.72	200.973906	76.4	false
PFHpA_1	363.0 / 319.0	2.06	94678.50	255.124133	124.9	false
PFHpA_2	363.0 / 169.0	2.06	1957.92	259.994370	88.0	false
PFHxS_1	399.0 / 80.0	2.06	100703.43	226.297967	85.3	false
PFHxS_2	399.0 / 99.0	2.06	29170.01	216.805078	123.9	false
PFOA_1	413.0 / 369.0	2.32	98647.82	254.818265	155.8	false
PFOA_2	413.0 / 169.0	2.32	6586.06	252.502939	97.4	false
PFNA_1	463.0 / 419.0	2.59	83295.36	244.267899	141.4	false
PFNA_2	463.0 / 219.0	2.59	26955.37	257.454027	151.8	false
PFOS_1	499.0 / 80.0	2.58	157957.01	230.238199	77.7	false
PFOS_2	499.0 / 99.0	2.58	28482.39	222.168808	170.6	false
PFDA_1	513.0 / 469.0	2.88	92720.88	253.767356	152.4	false
PFDA_2	513.0 / 219.0	2.88	4015.15	211.136415	75.5	false
PFUnA_1	563.0 / 519.0	3.17	95806.96	257.733491	171.6	false
PFUnA_2	563.0 / 269.0	3.16	4711.38	195.418396	64.6	false
PFDoA_1	613.0 / 569.0	3.45	101587.75	260.050806	209.1	false
PFDoA_2	613.0 / 319.0	3.44	16961.78	266.125849	187.1	false
PFTrDA_1	663.0 / 619.0	3.72	98019.79	260.728046	220.5	false
PFTrDA_2	663.0 / 169.0	3.71	5880.07	244.888630	137.6	false
PFTeDA_1	713.0 / 669.0	3.96	89923.55	254.536079	420.3	false
PFTeDA_2	713.0 / 169.0	3.96	4389.39	256.077555	161.1	false
NMeFOSAA_1	570.0 / 419.0	3.02	14147.92	244.077862	226.9	false
NMeFOSAA_2	570.0 / 512.0	3.02	8534.23	227.087626	150.9	false
NEtFOSAA_1	584.0 / 419.0	3.17	14253.84	247.455530	179.0	false
NEtFOSAA_2	584.0 / 483.0	3.16	1309.84	298.757309	51.0	true
13C2-PFHxA	315.0 / 270.0	1.79	39749.42	98.150292	711.4	false
13C2-PFDA	515.0 / 470.0	2.87	35023.54	94.706439	511.7	false
d5-EtFOSAA	589.0 / 419.0	3.16	25392.77	360.233650	258.9	false

Sample Name	JZ82	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:45:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	161476.84	463.099525	1023.8	false
PFBS_2	298.9 / 99.0	1.56	46603.31	450.763581	616.1	false
PFHxA_1	313.0 / 269.0	1.80	185462.74	556.627130	131.8	false
PFHxA_2	313.0 / 119.0	1.80	16441.48	637.349324	104.4	false
PFHpA_1	363.0 / 319.0	2.07	168961.39	562.964131	157.6	false
PFHpA_2	363.0 / 169.0	2.07	3424.50	568.395444	109.2	false
PFHxS_1	399.0 / 80.0	2.08	186714.69	469.024236	117.3	false
PFHxS_2	399.0 / 99.0	2.08	55461.16	467.493762	230.5	false
PFOA_1	413.0 / 369.0	2.34	177638.18	586.482692	179.1	false
PFOA_2	413.0 / 169.0	2.34	11122.80	537.075023	117.4	false
PFNA_1	463.0 / 419.0	2.61	156210.71	590.676198	179.1	false
PFNA_2	463.0 / 219.0	2.61	49496.36	605.963980	194.9	false
PFOS_1	499.0 / 80.0	2.60	281659.59	501.433229	125.8	false
PFOS_2	499.0 / 99.0	2.60	52041.53	498.607348	256.6	false
PFDA_1	513.0 / 469.0	2.91	168123.95	574.717570	208.2	false
PFDA_2	513.0 / 219.0	2.91	7837.49	585.361648	113.4	false
PFUnA_1	563.0 / 519.0	3.19	174601.19	598.716910	207.0	false
PFUnA_2	563.0 / 269.0	3.19	9712.36	631.729184	112.4	false
PFDoA_1	613.0 / 569.0	3.48	179570.81	586.696625	262.7	false
PFDoA_2	613.0 / 319.0	3.48	28480.61	572.139623	206.3	false
PFTrDA_1	663.0 / 619.0	3.75	179027.31	608.304174	308.6	false
PFTrDA_2	663.0 / 169.0	3.74	10473.70	578.176433	188.9	false
PFTeDA_1	713.0 / 669.0	3.99	164474.37	584.932351	471.8	false
PFTeDA_2	713.0 / 169.0	3.99	7704.95	577.721625	234.4	false
NMeFOSAA_1	570.0 / 419.0	3.05	25635.32	564.911657	332.2	false
NMeFOSAA_2	570.0 / 512.0	3.05	15823.86	558.010303	232.9	false
NEtFOSAA_1	584.0 / 419.0	3.19	27286.99	608.611130	470.3	false
NEtFOSAA_2	584.0 / 483.0	3.20	1501.39	434.634886	55.1	false
13C2-PFHxA	315.0 / 270.0	1.79	33888.97	97.359742	853.3	false
13C2-PFDA	515.0 / 470.0	2.90	33660.96	105.902514	606.8	false
d5-EtFOSAA	589.0 / 419.0	3.18	24413.92	424.552651	172.4	false

Sample Name	JZ83	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	277222.40	864.778154	1585.5	false
PFBS_2	298.9 / 99.0	1.56	82345.00	866.500288	832.8	false
PFHxA_1	313.0 / 269.0	1.79	300484.10	937.829786	133.5	false
PFHxA_2	313.0 / 119.0	1.79	23457.46	947.917412	123.2	false
PFHpA_1	363.0 / 319.0	2.06	281133.13	953.838274	196.9	false
PFHpA_2	363.0 / 169.0	2.06	4710.76	793.302756	158.3	false
PFHxS_1	399.0 / 80.0	2.06	311184.90	846.884947	155.4	false
PFHxS_2	399.0 / 99.0	2.06	93969.73	863.193604	295.8	false
PFOA_1	413.0 / 369.0	2.32	300929.16	1023.203479	234.7	false
PFOA_2	413.0 / 169.0	2.31	22418.76	1121.589812	190.2	false
PFNA_1	463.0 / 419.0	2.59	255057.44	991.759930	227.0	false
PFNA_2	463.0 / 219.0	2.59	80141.70	1007.990591	225.1	false
PFOS_1	499.0 / 80.0	2.58	466861.26	934.329117	145.1	false
PFOS_2	499.0 / 99.0	2.58	86763.95	935.211204	355.1	false
PFDA_1	513.0 / 469.0	2.88	273576.96	954.052598	263.3	false
PFDA_2	513.0 / 219.0	2.88	12535.39	982.498089	136.5	false
PFUnA_1	563.0 / 519.0	3.16	277876.35	976.917546	267.6	false
PFUnA_2	563.0 / 269.0	3.16	14414.99	990.253344	128.6	false
PFDaA_1	613.0 / 569.0	3.44	301011.95	1013.028885	339.2	false
PFDaA_2	613.0 / 319.0	3.44	48377.72	1006.475534	252.7	false
PFTrDA_1	663.0 / 619.0	3.71	281560.12	980.781506	396.9	false
PFTrDA_2	663.0 / 169.0	3.71	18122.91	1044.747827	226.8	false
PFTeDA_1	713.0 / 669.0	3.95	275022.76	1000.299888	670.1	false
PFTeDA_2	713.0 / 169.0	3.95	12393.98	957.796336	278.5	false
NMeFOSAA_1	570.0 / 419.0	3.01	42144.11	964.836133	456.5	false
NMeFOSAA_2	570.0 / 512.0	3.01	27668.30	1026.281329	340.3	false
NEtFOSAA_1	584.0 / 419.0	3.16	42290.54	979.164481	346.8	false
NEtFOSAA_2	584.0 / 483.0	3.14	2791.07	861.511129	65.8	false
13C2-PFHxA	315.0 / 270.0	1.79	34640.29	99.178186	852.8	false
13C2-PFDA	515.0 / 470.0	2.87	31232.10	97.925238	596.6	false
d5-EtFOSAA	589.0 / 419.0	3.15	25229.31	449.756749	262.5	false

Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:03:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	676824.07	2078.867501	2540.7	false
PFBS_2	298.9 / 99.0	1.56	203967.85	2113.511736	1333.5	false
PFHxA_1	313.0 / 269.0	1.79	790575.43	2671.604535	201.7	false
PFHxA_2	313.0 / 119.0	1.79	57648.28	2571.780431	188.0	false
PFHpA_1	363.0 / 319.0	2.05	714010.62	2565.464996	276.4	false
PFHpA_2	363.0 / 169.0	2.05	14896.09	2690.915735	192.9	false
PFHxS_1	399.0 / 80.0	2.06	817448.93	2184.148769	220.1	false
PFHxS_2	399.0 / 99.0	2.06	237964.98	2155.318664	484.3	false
PFOA_1	413.0 / 369.0	2.31	718277.20	2606.394441	304.9	false
PFOA_2	413.0 / 169.0	2.31	48409.78	2566.930377	227.0	false
PFNA_1	463.0 / 419.0	2.58	637800.25	2652.495527	386.2	false
PFNA_2	463.0 / 219.0	2.58	195109.29	2622.781646	393.9	false
PFOS_1	499.0 / 80.0	2.57	1118139.36	2254.710423	265.9	false
PFOS_2	499.0 / 99.0	2.57	206870.66	2247.041854	684.2	false
PFDA_1	513.0 / 469.0	2.87	675802.81	2502.120265	348.2	false
PFDA_2	513.0 / 219.0	2.87	28392.15	2422.727963	167.5	false
PFUnA_1	563.0 / 519.0	3.16	676277.77	2539.406707	345.7	false
PFUnA_2	563.0 / 269.0	3.16	32698.13	2489.843308	175.8	false
PFDaA_1	613.0 / 569.0	3.44	737625.07	2652.886864	546.9	false
PFDaA_2	613.0 / 319.0	3.44	119961.41	2677.159612	418.7	false
PFTrDA_1	663.0 / 619.0	3.71	722965.89	2694.736511	670.9	false
PFTrDA_2	663.0 / 169.0	3.70	43267.85	2686.859973	307.5	false
PFTeDA_1	713.0 / 669.0	3.94	676602.34	2614.366353	881.8	false
PFTeDA_2	713.0 / 169.0	3.94	32195.25	2672.001384	444.4	false
NMeFOSAA_1	570.0 / 419.0	3.01	103372.49	2409.042205	874.5	false
NMeFOSAA_2	570.0 / 512.0	3.01	64152.72	2438.575268	520.9	false
NEtFOSAA_1	584.0 / 419.0	3.16	105892.62	2498.871030	484.8	false
NEtFOSAA_2	584.0 / 483.0	3.16	8116.74	2591.981690	147.8	false
13C2-PFHxA	315.0 / 270.0	1.79	35058.64	104.204426	853.2	false
13C2-PFDA	515.0 / 470.0	2.87	30740.86	100.061238	561.1	false
d5-EtFOSAA	589.0 / 419.0	3.15	23657.64	424.420952	232.8	false



Sample Name	JZ85	Injection Vial	9
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:12:08	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	1763319.77	4495.899271	3635.7	false
PFBS_2	298.9 / 99.0	1.56	516726.12	4444.718296	1837.6	false
PFHxA_1	313.0 / 269.0	1.79	1897371.21	5131.482329	337.5	false
PFHxA_2	313.0 / 119.0	1.79	147185.26	5297.354061	247.3	false
PFHpA_1	363.0 / 319.0	2.05	1818190.99	5201.432986	440.8	false
PFHpA_2	363.0 / 169.0	2.05	34918.63	5024.555700	345.8	false
PFHxS_1	399.0 / 80.0	2.05	2035546.22	4510.292219	459.6	false
PFHxS_2	399.0 / 99.0	2.05	603551.58	4539.911013	798.9	false
PFOA_1	413.0 / 369.0	2.30	1771803.62	5133.888760	484.4	false
PFOA_2	413.0 / 169.0	2.30	120296.87	5089.133522	363.5	false
PFNA_1	463.0 / 419.0	2.57	1504532.47	4994.160975	570.7	false
PFNA_2	463.0 / 219.0	2.57	479507.05	5147.743271	542.5	false
PFOS_1	499.0 / 80.0	2.55	2708923.45	4572.651398	384.7	false
PFOS_2	499.0 / 99.0	2.55	506387.98	4605.342518	949.3	false
PFDA_1	513.0 / 469.0	2.85	1787890.84	5277.510356	601.4	false
PFDA_2	513.0 / 219.0	2.84	76825.43	5283.141818	338.8	false
PFUnA_1	563.0 / 519.0	3.13	1682969.66	5046.454394	564.7	false
PFUnA_2	563.0 / 269.0	3.13	84963.12	5243.210147	345.5	false
PFDoA_1	613.0 / 569.0	3.41	1783845.61	5122.205313	691.9	false
PFDoA_2	613.0 / 319.0	3.41	286474.45	5108.326242	612.8	false
PFTrDA_1	663.0 / 619.0	3.68	1591997.34	4731.907579	801.2	false
PFTrDA_2	663.0 / 169.0	3.68	101661.84	5052.762550	455.7	false
PFTeDA_1	713.0 / 669.0	3.93	1637053.65	5041.096791	1277.5	false
PFTeDA_2	713.0 / 169.0	3.92	75311.64	4991.251605	633.0	false
NMeFOSAA_1	570.0 / 419.0	2.98	257461.51	5094.021805	1295.0	false
NMeFOSAA_2	570.0 / 512.0	2.98	154762.80	5008.524834	729.2	false
NEtFOSAA_1	584.0 / 419.0	3.13	251189.03	5033.009749	852.4	false
NEtFOSAA_2	584.0 / 483.0	3.13	19527.87	5310.856861	389.2	false
13C2-PFHxA	315.0 / 270.0	1.79	45371.69	106.726479	991.0	false
13C2-PFDA	515.0 / 470.0	2.84	41604.18	107.172378	922.3	false
d5-EtFOSAA	589.0 / 419.0	3.12	27044.77	410.255273	290.8	false



Sample Name	JZ86	Injection Vial	10
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:21:04	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	2884810.11	8911.599220	4618.5	false
PFBS_2	298.9 / 99.0	1.56	857806.90	8939.918075	2450.6	false
PFHxA_1	313.0 / 269.0	1.80	3180354.44	9716.668676	419.4	false
PFHxA_2	313.0 / 119.0	1.79	235588.60	9602.115488	385.0	false
PFHpA_1	363.0 / 319.0	2.06	3018422.95	9725.100047	524.4	false
PFHpA_2	363.0 / 169.0	2.05	61136.31	9917.142273	406.0	false
PFHxS_1	399.0 / 80.0	2.06	3470246.89	9311.854733	375.8	false
PFHxS_2	399.0 / 99.0	2.06	1020523.70	9302.655544	819.2	false
PFOA_1	413.0 / 369.0	2.31	2958585.33	9670.394048	556.1	false
PFOA_2	413.0 / 169.0	2.31	203447.59	9704.851893	445.4	false
PFNA_1	463.0 / 419.0	2.57	2614979.89	9795.596872	687.3	false
PFNA_2	463.0 / 219.0	2.57	795748.58	9637.278871	655.6	false
PFOS_1	499.0 / 80.0	2.56	4542876.55	9330.053647	378.8	false
PFOS_2	499.0 / 99.0	2.56	841531.96	9311.501220	956.4	false
PFDA_1	513.0 / 469.0	2.85	2917615.81	9702.346050	749.3	false
PFDA_2	513.0 / 219.0	2.85	125530.79	9765.134066	395.2	false
PFUnA_1	563.0 / 519.0	3.13	2912386.60	9852.328123	662.9	false
PFUnA_2	563.0 / 269.0	3.13	138614.86	9704.587965	371.5	false
PFDoA_1	613.0 / 569.0	3.41	2976659.37	9642.781438	909.8	false
PFDoA_2	613.0 / 319.0	3.41	479281.93	9647.022087	727.2	false
PFTrDA_1	663.0 / 619.0	3.67	2774495.59	9308.369289	1059.0	false
PFTrDA_2	663.0 / 169.0	3.67	172089.71	9665.817937	619.2	false
PFTeDA_1	713.0 / 669.0	3.91	2816471.52	9776.763655	1811.8	false
PFTeDA_2	713.0 / 169.0	3.91	131166.79	9813.749053	911.7	false
NMeFOSAA_1	570.0 / 419.0	2.99	435273.04	9978.231871	786.1	false
NMeFOSAA_2	570.0 / 512.0	2.99	266148.42	9994.241810	559.0	false
NEtFOSAA_1	584.0 / 419.0	3.14	426397.15	9901.135356	1415.2	false
NEtFOSAA_2	584.0 / 483.0	3.13	30907.93	9752.258124	404.7	false
13C2-PFHxA	315.0 / 270.0	1.79	35813.31	94.616771	747.3	false
13C2-PFDA	515.0 / 470.0	2.85	32671.21	94.525199	1459.9	false
d5-EtFOSAA	589.0 / 419.0	3.12	20957.89	367.692597	153.6	false

Sample Name	JZ80	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:27:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.308	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.80	PFHxA	0.093	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.023	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.322	0.299	ü
PFOA_1	413.0 / 369.0	2.33	PFOA			
PFOA_2	413.0 / 169.0	2.33	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.60	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.286	0.310	ü
PFOS_1	499.0 / 80.0	2.59	PFOS			
PFOS_2	499.0 / 99.0	2.59	PFOS	0.191	0.186	ü
PFDA_1	513.0 / 469.0	2.89	PFDA			
PFDA_2	513.0 / 219.0	2.90	PFDA	0.032	0.044	ü
PFUnA_1	563.0 / 519.0	3.18	PFUnA			
PFUnA_2	563.0 / 269.0	3.18	PFUnA	0.081	0.055	ü
PFDoA_1	613.0 / 569.0	3.46	PFDoA			
PFDoA_2	613.0 / 319.0	3.46	PFDoA	0.169	0.163	ü
PFTrDA_1	663.0 / 619.0	3.73	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.73	PFTrDA	0.070	0.063	ü
PFTeDA_1	713.0 / 669.0	3.98	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.98	PFTeDA	0.053	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.03	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.02	NMeFOSAA	0.699	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.18	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.88		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.17		N/A	N/A	ü

Sample Name	JZ81	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:36:23	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.290	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.072	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.021	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.290	0.299	ü
PFOA_1	413.0 / 369.0	2.32	PFOA			
PFOA_2	413.0 / 169.0	2.32	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.59	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.324	0.310	ü
PFOS_1	499.0 / 80.0	2.58	PFOS			
PFOS_2	499.0 / 99.0	2.58	PFOS	0.180	0.186	ü
PFDA_1	513.0 / 469.0	2.88	PFDA			
PFDA_2	513.0 / 219.0	2.88	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.17	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.049	0.055	ü
PFDoA_1	613.0 / 569.0	3.45	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.167	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.72	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.71	PFTTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.96	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.96	PFTeDA	0.049	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.02	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.02	NMeFOSAA	0.603	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.17	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.16	NEtFOSAA	0.092	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.16		N/A	N/A	ü

Sample Name	JZ82	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:45:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.289	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.80	PFHxA	0.089	0.080	ü
PFHpA_1	363.0 / 319.0	2.07	PFHpA			
PFHpA_2	363.0 / 169.0	2.07	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.08	PFHxS			
PFHxS_2	399.0 / 99.0	2.08	PFHxS	0.297	0.299	ü
PFOA_1	413.0 / 369.0	2.34	PFOA			
PFOA_2	413.0 / 169.0	2.34	PFOA	0.063	0.068	ü
PFNA_1	463.0 / 419.0	2.61	PFNA			
PFNA_2	463.0 / 219.0	2.61	PFNA	0.317	0.310	ü
PFOS_1	499.0 / 80.0	2.60	PFOS			
PFOS_2	499.0 / 99.0	2.60	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.91	PFDA			
PFDA_2	513.0 / 219.0	2.91	PFDA	0.047	0.044	ü
PFUnA_1	563.0 / 519.0	3.19	PFUnA			
PFUnA_2	563.0 / 269.0	3.19	PFUnA	0.056	0.055	ü
PFDoA_1	613.0 / 569.0	3.48	PFDoA			
PFDoA_2	613.0 / 319.0	3.48	PFDoA	0.159	0.163	ü
PFTrDA_1	663.0 / 619.0	3.75	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.74	PFTrDA	0.059	0.063	ü
PFTeDA_1	713.0 / 669.0	3.99	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.99	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.05	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.05	NMeFOSAA	0.617	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.19	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.20	NEtFOSAA	0.055	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.90		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.18		N/A	N/A	ü

Sample Name	JZ83	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.297	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.017	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.302	0.299	ü
PFOA_1	413.0 / 369.0	2.32	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.075	0.068	ü
PFNA_1	463.0 / 419.0	2.59	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.314	0.310	ü
PFOS_1	499.0 / 80.0	2.58	PFOS			
PFOS_2	499.0 / 99.0	2.58	PFOS	0.186	0.186	ü
PFDA_1	513.0 / 469.0	2.88	PFDA			
PFDA_2	513.0 / 219.0	2.88	PFDA	0.046	0.044	ü
PFUnA_1	563.0 / 519.0	3.16	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.052	0.055	ü
PFDoA_1	613.0 / 569.0	3.44	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.161	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.71	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.71	PFTTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.95	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.95	PFTeDA	0.045	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.01	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.01	NMeFOSAA	0.657	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.16	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.14	NEtFOSAA	0.066	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.15		N/A	N/A	ü

Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:03:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.301	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.073	0.080	ü
PFHpA_1	363.0 / 319.0	2.05	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.021	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.291	0.299	ü
PFOA_1	413.0 / 369.0	2.31	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.58	PFNA			
PFNA_2	463.0 / 219.0	2.58	PFNA	0.306	0.310	ü
PFOS_1	499.0 / 80.0	2.57	PFOS			
PFOS_2	499.0 / 99.0	2.57	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.87	PFDA			
PFDA_2	513.0 / 219.0	2.87	PFDA	0.042	0.044	ü
PFUnA_1	563.0 / 519.0	3.16	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.048	0.055	ü
PFDoA_1	613.0 / 569.0	3.44	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.163	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.71	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.70	PFTTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.94	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.94	PFTeDA	0.048	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.01	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.01	NMeFOSAA	0.621	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.16	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.16	NEtFOSAA	0.077	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.15		N/A	N/A	ü

Sample Name	JZ85	Injection Vial	9
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:12:08	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.293	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.05	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.019	0.020	ü
PFHxS_1	399.0 / 80.0	2.05	PFHxS			
PFHxS_2	399.0 / 99.0	2.05	PFHxS	0.297	0.299	ü
PFOA_1	413.0 / 369.0	2.30	PFOA			
PFOA_2	413.0 / 169.0	2.30	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.319	0.310	ü
PFOS_1	499.0 / 80.0	2.55	PFOS			
PFOS_2	499.0 / 99.0	2.55	PFOS	0.187	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.84	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.051	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.161	0.163	ü
PFTrDA_1	663.0 / 619.0	3.68	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.68	PFTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.93	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.92	PFTeDA	0.046	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.98	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.98	NMeFOSAA	0.601	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.13	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.13	NEtFOSAA	0.078	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü



Sample Name	JZ86	Injection Vial	10
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:21:04	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.297	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.074	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.31	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.069	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.304	0.310	ü
PFOS_1	499.0 / 80.0	2.56	PFOS			
PFOS_2	499.0 / 99.0	2.56	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.85	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.048	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.161	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.67	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.67	PFTTrDA	0.062	0.063	ü
PFTeDA_1	713.0 / 669.0	3.91	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.91	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.99	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.99	NMeFOSAA	0.612	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.14	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.13	NEtFOSAA	0.073	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.85		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü



Sample Name	JZ80	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:27:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFHxA_1	313.0 / 269.0	1.80	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFHxA_2	313.0 / 119.0	1.80	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFHpA_1	363.0 / 319.0	2.06	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFHpA_2	363.0 / 169.0	2.06	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFHxS_1	399.0 / 80.0	2.06	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFHxS_2	399.0 / 99.0	2.06	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFOA_1	413.0 / 369.0	2.33	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFOA_2	413.0 / 169.0	2.33	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFNA_1	463.0 / 419.0	2.60	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFNA_2	463.0 / 219.0	2.59	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFOS_1	499.0 / 80.0	2.59	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFOS_2	499.0 / 99.0	2.59	13C4-PFOS	503.0 / 80.0	146122.75	287.00
PFDA_1	513.0 / 469.0	2.89	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFDA_2	513.0 / 219.0	2.90	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFUnA_1	563.0 / 519.0	3.18	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFUnA_2	563.0 / 269.0	3.18	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFDaA_1	613.0 / 569.0	3.46	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFDaA_2	613.0 / 319.0	3.46	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFTrDA_1	663.0 / 619.0	3.73	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFTrDA_2	663.0 / 169.0	3.73	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFTeDA_1	713.0 / 669.0	3.98	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFTeDA_2	713.0 / 169.0	3.98	13C2-PFOA	415.0 / 370.0	34949.15	100.00
NMeFOSAA_1	570.0 / 419.0	3.03	d3-MeFOSAA	573.0 / 419.0	23414.41	400.00
NMeFOSAA_2	570.0 / 512.0	3.02	d3-MeFOSAA	573.0 / 419.0	23414.41	400.00
NEtFOSAA_1	584.0 / 419.0	3.18	d3-MeFOSAA	573.0 / 419.0	23414.41	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	23414.41	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	34949.15	100.00
13C2-PFDA	515.0 / 470.0	2.88	13C2-PFOA	415.0 / 370.0	34949.15	100.00
d5-EtFOSAA	589.0 / 419.0	3.17	d3-MeFOSAA	573.0 / 419.0	23414.41	400.00

Sample Name	JZ81	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:36:23	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFHxA_1	313.0 / 269.0	1.80	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFHpA_1	363.0 / 319.0	2.06	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFHpA_2	363.0 / 169.0	2.06	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFHxS_1	399.0 / 80.0	2.06	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFHxS_2	399.0 / 99.0	2.06	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFOA_1	413.0 / 369.0	2.32	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFOA_2	413.0 / 169.0	2.32	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFNA_1	463.0 / 419.0	2.59	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFNA_2	463.0 / 219.0	2.59	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFOS_1	499.0 / 80.0	2.58	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFOS_2	499.0 / 99.0	2.58	13C4-PFOS	503.0 / 80.0	171595.72	287.00
PFDA_1	513.0 / 469.0	2.88	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFDA_2	513.0 / 219.0	2.88	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFUnA_1	563.0 / 519.0	3.17	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFUnA_2	563.0 / 269.0	3.16	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFDaA_1	613.0 / 569.0	3.45	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFDaA_2	613.0 / 319.0	3.44	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFTrDA_1	663.0 / 619.0	3.72	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFTrDA_2	663.0 / 169.0	3.71	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFTeDA_1	713.0 / 669.0	3.96	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFTeDA_2	713.0 / 169.0	3.96	13C2-PFOA	415.0 / 370.0	38410.24	100.00
NMeFOSAA_1	570.0 / 419.0	3.02	d3-MeFOSAA	573.0 / 419.0	25672.34	400.00
NMeFOSAA_2	570.0 / 512.0	3.02	d3-MeFOSAA	573.0 / 419.0	25672.34	400.00
NEtFOSAA_1	584.0 / 419.0	3.17	d3-MeFOSAA	573.0 / 419.0	25672.34	400.00
NEtFOSAA_2	584.0 / 483.0	3.16	d3-MeFOSAA	573.0 / 419.0	25672.34	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	38410.24	100.00
13C2-PFDA	515.0 / 470.0	2.87	13C2-PFOA	415.0 / 370.0	38410.24	100.00
d5-EtFOSAA	589.0 / 419.0	3.16	d3-MeFOSAA	573.0 / 419.0	25672.34	400.00

Sample Name	JZ82	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:45:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFHxA_1	313.0 / 269.0	1.80	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFHxA_2	313.0 / 119.0	1.80	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFHpA_1	363.0 / 319.0	2.07	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFHpA_2	363.0 / 169.0	2.07	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFHxS_1	399.0 / 80.0	2.08	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFHxS_2	399.0 / 99.0	2.08	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFOA_1	413.0 / 369.0	2.34	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFOA_2	413.0 / 169.0	2.34	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFNA_1	463.0 / 419.0	2.61	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFNA_2	463.0 / 219.0	2.61	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFOS_1	499.0 / 80.0	2.60	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFOS_2	499.0 / 99.0	2.60	13C4-PFOS	503.0 / 80.0	152521.02	287.00
PFDA_1	513.0 / 469.0	2.91	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFDA_2	513.0 / 219.0	2.91	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFUnA_1	563.0 / 519.0	3.19	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFUnA_2	563.0 / 269.0	3.19	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFDaA_1	613.0 / 569.0	3.48	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFDaA_2	613.0 / 319.0	3.48	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFTrDA_1	663.0 / 619.0	3.75	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFTrDA_2	663.0 / 169.0	3.74	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFTeDA_1	713.0 / 669.0	3.99	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFTeDA_2	713.0 / 169.0	3.99	13C2-PFOA	415.0 / 370.0	33013.13	100.00
NMeFOSAA_1	570.0 / 419.0	3.05	d3-MeFOSAA	573.0 / 419.0	20943.33	400.00
NMeFOSAA_2	570.0 / 512.0	3.05	d3-MeFOSAA	573.0 / 419.0	20943.33	400.00
NEtFOSAA_1	584.0 / 419.0	3.19	d3-MeFOSAA	573.0 / 419.0	20943.33	400.00
NEtFOSAA_2	584.0 / 483.0	3.20	d3-MeFOSAA	573.0 / 419.0	20943.33	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	33013.13	100.00
13C2-PFDA	515.0 / 470.0	2.90	13C2-PFOA	415.0 / 370.0	33013.13	100.00
d5-EtFOSAA	589.0 / 419.0	3.18	d3-MeFOSAA	573.0 / 419.0	20943.33	400.00

Sample Name	JZ83	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFHpA_1	363.0 / 319.0	2.06	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFHpA_2	363.0 / 169.0	2.06	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFHxS_1	399.0 / 80.0	2.06	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFHxS_2	399.0 / 99.0	2.06	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFOA_1	413.0 / 369.0	2.32	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFOA_2	413.0 / 169.0	2.31	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFNA_1	463.0 / 419.0	2.59	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFNA_2	463.0 / 219.0	2.59	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFOS_1	499.0 / 80.0	2.58	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFOS_2	499.0 / 99.0	2.58	13C4-PFOS	503.0 / 80.0	140405.03	287.00
PFDA_1	513.0 / 469.0	2.88	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFDA_2	513.0 / 219.0	2.88	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFUnA_1	563.0 / 519.0	3.16	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFUnA_2	563.0 / 269.0	3.16	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFDaA_1	613.0 / 569.0	3.44	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFDaA_2	613.0 / 319.0	3.44	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTTrDA_1	663.0 / 619.0	3.71	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTTrDA_2	663.0 / 169.0	3.71	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTTeDA_1	713.0 / 669.0	3.95	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTTeDA_2	713.0 / 169.0	3.95	13C2-PFOA	415.0 / 370.0	33126.31	100.00
NMeFOSAA_1	570.0 / 419.0	3.01	d3-MeFOSAA	573.0 / 419.0	20429.95	400.00
NMeFOSAA_2	570.0 / 512.0	3.01	d3-MeFOSAA	573.0 / 419.0	20429.95	400.00
NEtFOSAA_1	584.0 / 419.0	3.16	d3-MeFOSAA	573.0 / 419.0	20429.95	400.00
NEtFOSAA_2	584.0 / 483.0	3.14	d3-MeFOSAA	573.0 / 419.0	20429.95	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	33126.31	100.00
13C2-PFDA	515.0 / 470.0	2.87	13C2-PFOA	415.0 / 370.0	33126.31	100.00
d5-EtFOSAA	589.0 / 419.0	3.15	d3-MeFOSAA	573.0 / 419.0	20429.95	400.00

Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:03:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFHpA_1	363.0 / 319.0	2.05	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFHpA_2	363.0 / 169.0	2.05	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFHxS_1	399.0 / 80.0	2.06	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFHxS_2	399.0 / 99.0	2.06	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFOA_1	413.0 / 369.0	2.31	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFOA_2	413.0 / 169.0	2.31	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFNA_1	463.0 / 419.0	2.58	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFNA_2	463.0 / 219.0	2.58	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFOS_1	499.0 / 80.0	2.57	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFOS_2	499.0 / 99.0	2.57	13C4-PFOS	503.0 / 80.0	142721.38	287.00
PFDA_1	513.0 / 469.0	2.87	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFDA_2	513.0 / 219.0	2.87	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFUnA_1	563.0 / 519.0	3.16	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFUnA_2	563.0 / 269.0	3.16	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFDaA_1	613.0 / 569.0	3.44	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFDaA_2	613.0 / 319.0	3.44	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTTrDA_1	663.0 / 619.0	3.71	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTTrDA_2	663.0 / 169.0	3.70	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTTeDA_1	713.0 / 669.0	3.94	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTTeDA_2	713.0 / 169.0	3.94	13C2-PFOA	415.0 / 370.0	31909.26	100.00
NMeFOSAA_1	570.0 / 419.0	3.01	d3-MeFOSAA	573.0 / 419.0	20300.85	400.00
NMeFOSAA_2	570.0 / 512.0	3.01	d3-MeFOSAA	573.0 / 419.0	20300.85	400.00
NEtFOSAA_1	584.0 / 419.0	3.16	d3-MeFOSAA	573.0 / 419.0	20300.85	400.00
NEtFOSAA_2	584.0 / 483.0	3.16	d3-MeFOSAA	573.0 / 419.0	20300.85	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	31909.26	100.00
13C2-PFDA	515.0 / 470.0	2.87	13C2-PFOA	415.0 / 370.0	31909.26	100.00
d5-EtFOSAA	589.0 / 419.0	3.15	d3-MeFOSAA	573.0 / 419.0	20300.85	400.00

Sample Name	JZ85	Injection Vial	9
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:12:08	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFHpA_1	363.0 / 319.0	2.05	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFHpA_2	363.0 / 169.0	2.05	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFHxS_1	399.0 / 80.0	2.05	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFHxS_2	399.0 / 99.0	2.05	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFOA_1	413.0 / 369.0	2.30	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFOA_2	413.0 / 169.0	2.30	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFNA_1	463.0 / 419.0	2.57	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFNA_2	463.0 / 219.0	2.57	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFOS_1	499.0 / 80.0	2.55	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFOS_2	499.0 / 99.0	2.55	13C4-PFOS	503.0 / 80.0	171988.95	287.00
PFDA_1	513.0 / 469.0	2.85	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFDA_2	513.0 / 219.0	2.84	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFUnA_1	563.0 / 519.0	3.13	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFUnA_2	563.0 / 269.0	3.13	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFDaA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFDaA_2	613.0 / 319.0	3.41	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFTrDA_1	663.0 / 619.0	3.68	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFTrDA_2	663.0 / 169.0	3.68	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFTeDA_1	713.0 / 669.0	3.93	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFTeDA_2	713.0 / 169.0	3.92	13C2-PFOA	415.0 / 370.0	40320.01	100.00
NMeFOSAA_1	570.0 / 419.0	2.98	d3-MeFOSAA	573.0 / 419.0	24008.70	400.00
NMeFOSAA_2	570.0 / 512.0	2.98	d3-MeFOSAA	573.0 / 419.0	24008.70	400.00
NEtFOSAA_1	584.0 / 419.0	3.13	d3-MeFOSAA	573.0 / 419.0	24008.70	400.00
NEtFOSAA_2	584.0 / 483.0	3.13	d3-MeFOSAA	573.0 / 419.0	24008.70	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	40320.01	100.00
13C2-PFDA	515.0 / 470.0	2.84	13C2-PFOA	415.0 / 370.0	40320.01	100.00
d5-EtFOSAA	589.0 / 419.0	3.12	d3-MeFOSAA	573.0 / 419.0	24008.70	400.00



Sample Name	JZ86	Injection Vial	10
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:21:04	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFHxA_1	313.0 / 269.0	1.80	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFHpA_1	363.0 / 319.0	2.06	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFHpA_2	363.0 / 169.0	2.05	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFHxS_1	399.0 / 80.0	2.06	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFHxS_2	399.0 / 99.0	2.06	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFOA_1	413.0 / 369.0	2.31	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFOA_2	413.0 / 169.0	2.31	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFNA_1	463.0 / 419.0	2.57	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFNA_2	463.0 / 219.0	2.57	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFOS_1	499.0 / 80.0	2.56	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFOS_2	499.0 / 99.0	2.56	13C4-PFOS	503.0 / 80.0	141974.34	287.00
PFDA_1	513.0 / 469.0	2.85	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFDA_2	513.0 / 219.0	2.85	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFUnA_1	563.0 / 519.0	3.13	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFUnA_2	563.0 / 269.0	3.13	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFDaA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFDaA_2	613.0 / 319.0	3.41	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFTrDA_1	663.0 / 619.0	3.67	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFTrDA_2	663.0 / 169.0	3.67	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFTeDA_1	713.0 / 669.0	3.91	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFTeDA_2	713.0 / 169.0	3.91	13C2-PFOA	415.0 / 370.0	35899.15	100.00
NMeFOSAA_1	570.0 / 419.0	2.99	d3-MeFOSAA	573.0 / 419.0	20758.80	400.00
NMeFOSAA_2	570.0 / 512.0	2.99	d3-MeFOSAA	573.0 / 419.0	20758.80	400.00
NEtFOSAA_1	584.0 / 419.0	3.14	d3-MeFOSAA	573.0 / 419.0	20758.80	400.00
NEtFOSAA_2	584.0 / 483.0	3.13	d3-MeFOSAA	573.0 / 419.0	20758.80	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	35899.15	100.00
13C2-PFDA	515.0 / 470.0	2.85	13C2-PFOA	415.0 / 370.0	35899.15	100.00
d5-EtFOSAA	589.0 / 419.0	3.12	d3-MeFOSAA	573.0 / 419.0	20758.80	400.00

Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.56	838.949893	885.00	94.80
PFBS_2	298.9 / 99.0	1.55	823.222940	885.00	93.02
PFHxA_1	313.0 / 269.0	1.79	940.692507	1000.00	94.07
PFHxA_2	313.0 / 119.0	1.78	905.693783	1000.00	90.57
PFHpA_1	363.0 / 319.0	2.04	904.433127	1000.00	90.44
PFHpA_2	363.0 / 169.0	2.04	900.167733	1000.00	90.02
PFHxS_1	399.0 / 80.0	2.04	878.507248	912.00	96.33
PFHxS_2	399.0 / 99.0	2.04	854.467878	912.00	93.69
PFOA_1	413.0 / 369.0	2.30	1025.546208	1000.00	102.55
PFOA_2	413.0 / 169.0	2.30	1010.321532	1000.00	101.03
PFNA_1	463.0 / 419.0	2.57	999.289963	1000.00	99.93
PFNA_2	463.0 / 219.0	2.57	972.112818	1000.00	97.21
PFOS_1	499.0 / 80.0	2.56	827.601267	925.60	89.41
PFOS_2	499.0 / 99.0	2.56	984.628390	925.60	106.38
PFDA_1	513.0 / 469.0	2.85	981.100071	1000.00	98.11
PFDA_2	513.0 / 219.0	2.85	900.175136	1000.00	90.02
PFUnA_1	563.0 / 519.0	3.13	1035.449449	1000.00	103.54
PFUnA_2	563.0 / 269.0	3.13	1042.421872	1000.00	104.24
PFDoA_1	613.0 / 569.0	3.41	935.284019	1000.00	93.53
PFDoA_2	613.0 / 319.0	3.41	949.000705	1000.00	94.90
PFTrDA_1	663.0 / 619.0	3.68	934.876488	1000.00	93.49
PFTrDA_2	663.0 / 169.0	3.68	931.510987	1000.00	93.15
PFTeDA_1	713.0 / 669.0	3.92	972.665871	1000.00	97.27
PFTeDA_2	713.0 / 169.0	3.91	974.297434	1000.00	97.43
NMeFOSAA_1	570.0 / 419.0	2.99	1151.191017	1000.00	115.12
NMeFOSAA_2	570.0 / 512.0	2.99	986.689158	1000.00	98.67
NEtFOSAA_1	584.0 / 419.0	3.13	1117.607230	1000.00	111.76
NEtFOSAA_2	584.0 / 483.0	3.14	784.221447	1000.00	78.42
13C2-PFHxA	315.0 / 270.0	1.78	91.340069	100.00	91.34
13C2-PFDA	515.0 / 470.0	2.84	91.636316	100.00	91.64
d5-EtFOSAA	589.0 / 419.0	3.12	406.615098	400.00	101.65



Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.56	466.731060	443.00	105.36
PFBS_2	298.9 / 99.0	1.56	463.426360	443.00	104.61
PFHxA_1	313.0 / 269.0	1.79	522.842360	500.00	104.57
PFHxA_2	313.0 / 119.0	1.78	534.532844	500.00	106.91
PFHpA_1	363.0 / 319.0	2.04	528.251763	500.00	105.65
PFHpA_2	363.0 / 169.0	2.04	644.216307	500.00	128.84
PFHxS_1	399.0 / 80.0	2.04	498.376743	456.00	109.29
PFHxS_2	399.0 / 99.0	2.04	493.893305	456.00	108.31
PFOA_1	413.0 / 369.0	2.28	574.124041	500.00	114.82
PFOA_2	413.0 / 169.0	2.28	603.439382	500.00	120.69
PFNA_1	463.0 / 419.0	2.53	593.953652	500.00	118.79
PFNA_2	463.0 / 219.0	2.53	559.704797	500.00	111.94
PFOS_1	499.0 / 80.0	2.52	510.848914	463.00	110.33
PFOS_2	499.0 / 99.0	2.52	523.657341	463.00	113.10
PFDA_1	513.0 / 469.0	2.79	585.054165	500.00	117.01
PFDA_2	513.0 / 219.0	2.79	552.376692	500.00	110.48
PFUnA_1	563.0 / 519.0	3.06	567.247318	500.00	113.45
PFUnA_2	563.0 / 269.0	3.06	591.382839	500.00	118.28
PFDoA_1	613.0 / 569.0	3.33	563.794181	500.00	112.76
PFDoA_2	613.0 / 319.0	3.33	565.781461	500.00	113.16
PFTTrDA_1	663.0 / 619.0	3.59	547.893142	500.00	109.58
PFTTrDA_2	663.0 / 169.0	3.59	534.236878	500.00	106.85
PFTeDA_1	713.0 / 669.0	3.83	525.501954	500.00	105.10
PFTeDA_2	713.0 / 169.0	3.83	542.577103	500.00	108.52
NMeFOSAA_1	570.0 / 419.0	2.93	523.825208	500.00	104.77
NMeFOSAA_2	570.0 / 512.0	2.93	485.738626	500.00	97.15
NEtFOSAA_1	584.0 / 419.0	3.07	518.317795	500.00	103.66
NEtFOSAA_2	584.0 / 483.0	3.06	491.162902	500.00	98.23
13C2-PFHxA	315.0 / 270.0	1.78	95.461639	100.00	95.46
13C2-PFDA	515.0 / 470.0	2.79	103.558260	100.00	103.56
d5-EtFOSAA	589.0 / 419.0	3.06	356.116744	400.00	89.03

Sample Name	JZ81 CCV	Injection Vial	26
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:44:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.57	213.202804	221.50	96.25
PFBS_2	298.9 / 99.0	1.56	223.741475	221.50	101.01
PFHxA_1	313.0 / 269.0	1.78	232.494759	250.00	93.00
PFHxA_2	313.0 / 119.0	1.78	210.535033	250.00	84.21
PFHpA_1	363.0 / 319.0	2.03	258.089665	250.00	103.24
PFHpA_2	363.0 / 169.0	2.03	294.595515	250.00	117.84
PFHxS_1	399.0 / 80.0	2.03	227.749114	228.00	99.89
PFHxS_2	399.0 / 99.0	2.03	241.108129	228.00	105.75
PFOA_1	413.0 / 369.0	2.27	246.416990	250.00	98.57
PFOA_2	413.0 / 169.0	2.27	259.292330	250.00	103.72
PFNA_1	463.0 / 419.0	2.52	232.036105	250.00	92.81
PFNA_2	463.0 / 219.0	2.52	232.301360	250.00	92.92
PFOS_1	499.0 / 80.0	2.51	201.857324	231.50	87.20
PFOS_2	499.0 / 99.0	2.51	229.523341	231.50	99.15
PFDA_1	513.0 / 469.0	2.80	257.487425	250.00	102.99
PFDA_2	513.0 / 219.0	2.81	264.739845	250.00	105.90
PFUnA_1	563.0 / 519.0	3.08	240.557763	250.00	96.22
PFUnA_2	563.0 / 269.0	3.08	245.731521	250.00	98.29
PFDoA_1	613.0 / 569.0	3.33	242.403147	250.00	96.96
PFDoA_2	613.0 / 319.0	3.33	252.058887	250.00	100.82
PFTTrDA_1	663.0 / 619.0	3.57	247.435298	250.00	98.97
PFTTrDA_2	663.0 / 169.0	3.57	266.661991	250.00	106.66
PFTeDA_1	713.0 / 669.0	3.80	239.896322	250.00	95.96
PFTeDA_2	713.0 / 169.0	3.80	253.889942	250.00	101.56
NMeFOSAA_1	570.0 / 419.0	2.94	248.015155	250.00	99.21
NMeFOSAA_2	570.0 / 512.0	2.94	241.556019	250.00	96.62
NEtFOSAA_1	584.0 / 419.0	3.08	237.077236	250.00	94.83
NEtFOSAA_2	584.0 / 483.0	3.07	300.677784	250.00	120.27
13C2-PFHxA	315.0 / 270.0	1.77	94.553537	100.00	94.55
13C2-PFDA	515.0 / 470.0	2.80	98.310727	100.00	98.31
d5-EtFOSAA	589.0 / 419.0	3.07	393.406226	400.00	98.35

Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	291234.25	838.949893	1484.0	false
PFBS_2	298.9 / 99.0	1.55	84720.00	823.222940	821.3	false
PFHxA_1	313.0 / 269.0	1.79	324318.41	940.692507	155.7	false
PFHxA_2	313.0 / 119.0	1.78	24227.58	905.693783	146.3	false
PFHpA_1	363.0 / 319.0	2.04	287387.26	904.433127	213.9	false
PFHpA_2	363.0 / 169.0	2.04	5721.68	900.167733	169.3	false
PFHxS_1	399.0 / 80.0	2.04	349585.85	878.507248	182.7	false
PFHxS_2	399.0 / 99.0	2.04	100729.11	854.467878	334.9	false
PFOA_1	413.0 / 369.0	2.30	324581.19	1025.546208	215.9	false
PFOA_2	413.0 / 169.0	2.30	21821.60	1010.321532	169.7	false
PFNA_1	463.0 / 419.0	2.57	276490.22	999.289963	270.5	false
PFNA_2	463.0 / 219.0	2.57	83324.87	972.112818	251.1	false
PFOS_1	499.0 / 80.0	2.56	450118.32	827.601267	175.1	false
PFOS_2	499.0 / 99.0	2.56	98713.45	984.628390	399.8	false
PFDA_1	513.0 / 469.0	2.85	302483.37	981.100071	261.7	false
PFDA_2	513.0 / 219.0	2.85	12449.04	900.175136	148.1	false
PFUnA_1	563.0 / 519.0	3.13	316164.68	1035.449449	258.4	false
PFUnA_2	563.0 / 269.0	3.13	16245.26	1042.421872	146.0	false
PFDoA_1	613.0 / 569.0	3.41	300248.68	935.284019	324.4	false
PFDoA_2	613.0 / 319.0	3.41	49246.40	949.000705	303.4	false
PFTrDA_1	663.0 / 619.0	3.68	289508.69	934.876488	397.7	false
PFTrDA_2	663.0 / 169.0	3.68	17516.03	931.510987	213.8	false
PFTeDA_1	713.0 / 669.0	3.92	288116.27	972.665871	724.3	false
PFTeDA_2	713.0 / 169.0	3.91	13556.80	974.297434	339.6	false
NMeFOSAA_1	570.0 / 419.0	2.99	52200.82	1151.191017	384.8	false
NMeFOSAA_2	570.0 / 512.0	2.99	27734.50	986.689158	439.5	false
NEtFOSAA_1	584.0 / 419.0	3.13	50135.17	1117.607230	544.5	false
NEtFOSAA_2	584.0 / 483.0	3.14	2656.30	784.221447	124.3	false
13C2-PFHxA	315.0 / 270.0	1.78	34335.00	91.340069	824.2	false
13C2-PFDA	515.0 / 470.0	2.84	31454.63	91.636316	749.0	false
d5-EtFOSAA	589.0 / 419.0	3.12	23751.66	406.615098	252.3	false

Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	189363.58	466.731060	2013.5	false
PFBS_2	298.9 / 99.0	1.56	55746.15	463.426360	851.8	false
PFHxA_1	313.0 / 269.0	1.79	214305.76	522.842360	108.5	false
PFHxA_2	313.0 / 119.0	1.78	17286.87	534.532844	124.7	false
PFHpA_1	363.0 / 319.0	2.04	194416.59	528.251763	165.4	false
PFHpA_2	363.0 / 169.0	2.04	4708.35	644.216307	134.1	false
PFHxS_1	399.0 / 80.0	2.04	230939.01	498.376743	113.9	false
PFHxS_2	399.0 / 99.0	2.04	68153.49	493.893305	208.3	false
PFOA_1	413.0 / 369.0	2.28	212861.91	574.124041	189.2	false
PFOA_2	413.0 / 169.0	2.28	15149.81	603.439382	167.1	false
PFNA_1	463.0 / 419.0	2.53	191882.28	593.953652	230.7	false
PFNA_2	463.0 / 219.0	2.53	56218.26	559.704797	209.6	false
PFOS_1	499.0 / 80.0	2.52	333445.63	510.848914	132.3	false
PFOS_2	499.0 / 99.0	2.52	63373.42	523.657341	332.9	false
PFDA_1	513.0 / 469.0	2.79	208943.52	585.054165	196.1	false
PFDA_2	513.0 / 219.0	2.79	9105.63	552.376692	105.1	false
PFUnA_1	563.0 / 519.0	3.06	202973.35	567.247318	220.8	true
PFUnA_2	563.0 / 269.0	3.06	11229.43	591.382839	126.7	true
PFDoA_1	613.0 / 569.0	3.33	211546.91	563.794181	329.8	true
PFDoA_2	613.0 / 319.0	3.33	34452.92	565.781461	301.4	true
PFTrDA_1	663.0 / 619.0	3.59	198655.74	547.893142	350.9	true
PFTrDA_2	663.0 / 169.0	3.59	11926.60	534.236878	204.7	true
PFTeDA_1	713.0 / 669.0	3.83	181837.11	525.501954	622.0	false
PFTeDA_2	713.0 / 169.0	3.83	8891.07	542.577103	298.0	true
NMeFOSAA_1	570.0 / 419.0	2.93	30714.07	523.825208	368.1	true
NMeFOSAA_2	570.0 / 512.0	2.93	17900.30	485.738626	255.7	true
NEtFOSAA_1	584.0 / 419.0	3.07	30123.27	518.317795	607.0	true
NEtFOSAA_2	584.0 / 483.0	3.06	2167.16	491.162902	103.8	true
13C2-PFHxA	315.0 / 270.0	1.78	40608.01	95.461639	1029.2	false
13C2-PFDA	515.0 / 470.0	2.79	40226.19	103.558260	743.0	false
d5-EtFOSAA	589.0 / 419.0	3.06	26393.86	356.116744	203.6	true

Sample Name	JZ81 CCV	Injection Vial	26
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:44:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.57	96721.21	213.202804	901.2	false
PFBS_2	298.9 / 99.0	1.56	30092.67	223.741475	536.1	false
PFHxA_1	313.0 / 269.0	1.78	123070.88	232.494759	110.5	false
PFHxA_2	313.0 / 119.0	1.78	9604.92	210.535033	84.1	false
PFHpA_1	363.0 / 319.0	2.03	114291.68	258.089665	145.6	false
PFHpA_2	363.0 / 169.0	2.03	2610.90	294.595515	113.5	false
PFHxS_1	399.0 / 80.0	2.03	116828.26	227.749114	93.8	false
PFHxS_2	399.0 / 99.0	2.03	37335.37	241.108129	154.5	false
PFOA_1	413.0 / 369.0	2.27	114591.72	246.416990	142.7	false
PFOA_2	413.0 / 169.0	2.27	8049.96	259.292330	104.6	false
PFNA_1	463.0 / 419.0	2.52	95365.07	232.036105	152.6	false
PFNA_2	463.0 / 219.0	2.52	29563.97	232.301360	174.2	false
PFOS_1	499.0 / 80.0	2.51	162896.66	201.857324	110.4	false
PFOS_2	499.0 / 99.0	2.51	33751.94	229.523341	199.6	false
PFDA_1	513.0 / 469.0	2.80	112204.72	257.487425	169.0	false
PFDA_2	513.0 / 219.0	2.81	5670.59	264.739845	102.6	false
PFUnA_1	563.0 / 519.0	3.08	108007.20	240.557763	160.2	true
PFUnA_2	563.0 / 269.0	3.08	6536.77	245.731521	102.9	true
PFDoA_1	613.0 / 569.0	3.33	114444.98	242.403147	216.5	true
PFDoA_2	613.0 / 319.0	3.33	19377.03	252.058887	174.3	true
PTrDA_1	663.0 / 619.0	3.57	112072.04	247.435298	273.2	true
PTrDA_2	663.0 / 169.0	3.57	7517.51	266.661991	128.3	true
PFTeDA_1	713.0 / 669.0	3.80	102067.53	239.896322	398.4	true
PFTeDA_2	713.0 / 169.0	3.80	5207.12	253.889942	154.3	true
NMeFOSAA_1	570.0 / 419.0	2.94	16263.36	248.015155	240.1	true
NMeFOSAA_2	570.0 / 512.0	2.94	10203.33	241.556019	166.9	false
NEtFOSAA_1	584.0 / 419.0	3.08	15518.50	237.077236	255.5	true
NEtFOSAA_2	584.0 / 483.0	3.07	1491.95	300.677784	37.8	true
13C2-PFHxA	315.0 / 270.0	1.77	45750.98	94.553537	968.2	false
13C2-PFDA	515.0 / 470.0	2.80	43437.50	98.310727	716.9	false
d5-EtFOSAA	589.0 / 419.0	3.07	31406.88	393.406226	274.9	true

Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.55	PFBS	0.291	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.075	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.288	0.299	ü
PFOA_1	413.0 / 369.0	2.30	PFOA			
PFOA_2	413.0 / 169.0	2.30	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.301	0.310	ü
PFOS_1	499.0 / 80.0	2.56	PFOS			
PFOS_2	499.0 / 99.0	2.56	PFOS	0.219	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.85	PFDA	0.041	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.051	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.164	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.68	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.68	PFTTrDA	0.061	0.063	ü
PFTeDA_1	713.0 / 669.0	3.92	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.91	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.99	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.99	NMeFOSAA	0.531	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.13	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.14	NEtFOSAA	0.053	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü



Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.294	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.081	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.024	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.295	0.299	ü
PFOA_1	413.0 / 369.0	2.28	PFOA			
PFOA_2	413.0 / 169.0	2.28	PFOA	0.071	0.068	ü
PFNA_1	463.0 / 419.0	2.53	PFNA			
PFNA_2	463.0 / 219.0	2.53	PFNA	0.293	0.310	ü
PFOS_1	499.0 / 80.0	2.52	PFOS			
PFOS_2	499.0 / 99.0	2.52	PFOS	0.190	0.186	ü
PFDA_1	513.0 / 469.0	2.79	PFDA			
PFDA_2	513.0 / 219.0	2.79	PFDA	0.044	0.044	ü
PFUnA_1	563.0 / 519.0	3.06	PFUnA			
PFUnA_2	563.0 / 269.0	3.06	PFUnA	0.055	0.055	ü
PFDoA_1	613.0 / 569.0	3.33	PFDoA			
PFDoA_2	613.0 / 319.0	3.33	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.59	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.049	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.93	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.93	NMeFOSAA	0.583	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.07	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.06	NEtFOSAA	0.072	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.79		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.06		N/A	N/A	ü

<b>Sample Name</b>	JZ81 CCV	<b>Injection Vial</b>	26
<b>Sample ID</b>	CCV	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T21:44:12	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.57	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.311	0.297	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.03	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.023	0.020	ü
PFHxS_1	399.0 / 80.0	2.03	PFHxS			
PFHxS_2	399.0 / 99.0	2.03	PFHxS	0.320	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.27	PFOA	0.070	0.068	ü
PFNA_1	463.0 / 419.0	2.52	PFNA			
PFNA_2	463.0 / 219.0	2.52	PFNA	0.310	0.310	ü
PFOS_1	499.0 / 80.0	2.51	PFOS			
PFOS_2	499.0 / 99.0	2.51	PFOS	0.207	0.186	ü
PFDA_1	513.0 / 469.0	2.80	PFDA			
PFDA_2	513.0 / 219.0	2.81	PFDA	0.051	0.044	ü
PFUnA_1	563.0 / 519.0	3.08	PFUnA			
PFUnA_2	563.0 / 269.0	3.08	PFUnA	0.061	0.055	ü
PFDoA_1	613.0 / 569.0	3.33	PFDoA			
PFDoA_2	613.0 / 319.0	3.33	PFDoA	0.169	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.57	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.57	PFTTrDA	0.067	0.063	ü
PFTeDA_1	713.0 / 669.0	3.80	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.80	PFTeDA	0.051	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.94	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.94	NMeFOSAA	0.627	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.08	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.07	NEtFOSAA	0.096	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü



Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFBS_2	298.9 / 99.0	1.55	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFHxA_2	313.0 / 119.0	1.78	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFHpA_2	363.0 / 169.0	2.04	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFOA_1	413.0 / 369.0	2.30	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFOA_2	413.0 / 169.0	2.30	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFNA_1	463.0 / 419.0	2.57	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFNA_2	463.0 / 219.0	2.57	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFOS_1	499.0 / 80.0	2.56	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFOS_2	499.0 / 99.0	2.56	13C4-PFOS	503.0 / 80.0	152035.64	287.00
PFDA_1	513.0 / 469.0	2.85	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFDA_2	513.0 / 219.0	2.85	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFUnA_1	563.0 / 519.0	3.13	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFUnA_2	563.0 / 269.0	3.13	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFDaA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFDaA_2	613.0 / 319.0	3.41	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFTrDA_1	663.0 / 619.0	3.68	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFTrDA_2	663.0 / 169.0	3.68	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFTeDA_1	713.0 / 669.0	3.92	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFTeDA_2	713.0 / 169.0	3.91	13C2-PFOA	415.0 / 370.0	35651.96	100.00
NMeFOSAA_1	570.0 / 419.0	2.99	d3-MeFOSAA	573.0 / 419.0	21274.05	400.00
NMeFOSAA_2	570.0 / 512.0	2.99	d3-MeFOSAA	573.0 / 419.0	21274.05	400.00
NEtFOSAA_1	584.0 / 419.0	3.13	d3-MeFOSAA	573.0 / 419.0	21274.05	400.00
NEtFOSAA_2	584.0 / 483.0	3.14	d3-MeFOSAA	573.0 / 419.0	21274.05	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	35651.96	100.00
13C2-PFDA	515.0 / 470.0	2.84	13C2-PFOA	415.0 / 370.0	35651.96	100.00
d5-EtFOSAA	589.0 / 419.0	3.12	d3-MeFOSAA	573.0 / 419.0	21274.05	400.00

Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFHxA_2	313.0 / 119.0	1.78	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFHpA_2	363.0 / 169.0	2.04	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFOA_1	413.0 / 369.0	2.28	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFOA_2	413.0 / 169.0	2.28	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFNA_1	463.0 / 419.0	2.53	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFNA_2	463.0 / 219.0	2.53	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFOS_1	499.0 / 80.0	2.52	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFOS_2	499.0 / 99.0	2.52	13C4-PFOS	503.0 / 80.0	177473.29	287.00
PFDA_1	513.0 / 469.0	2.79	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFDA_2	513.0 / 219.0	2.79	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFUnA_1	563.0 / 519.0	3.06	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFUnA_2	563.0 / 269.0	3.06	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFDaA_1	613.0 / 569.0	3.33	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFDaA_2	613.0 / 319.0	3.33	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTTrDA_1	663.0 / 619.0	3.59	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTTrDA_2	663.0 / 169.0	3.59	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTeDA_1	713.0 / 669.0	3.83	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTeDA_2	713.0 / 169.0	3.83	13C2-PFOA	415.0 / 370.0	40345.09	100.00
NMeFOSAA_1	570.0 / 419.0	2.93	d3-MeFOSAA	573.0 / 419.0	26992.94	400.00
NMeFOSAA_2	570.0 / 512.0	2.93	d3-MeFOSAA	573.0 / 419.0	26992.94	400.00
NEtFOSAA_1	584.0 / 419.0	3.07	d3-MeFOSAA	573.0 / 419.0	26992.94	400.00
NEtFOSAA_2	584.0 / 483.0	3.06	d3-MeFOSAA	573.0 / 419.0	26992.94	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	40345.09	100.00
13C2-PFDA	515.0 / 470.0	2.79	13C2-PFOA	415.0 / 370.0	40345.09	100.00
d5-EtFOSAA	589.0 / 419.0	3.06	d3-MeFOSAA	573.0 / 419.0	26992.94	400.00

Sample Name	JZ81 CCV	Injection Vial	26
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:44:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.57	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFHxA_1	313.0 / 269.0	1.78	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFHxA_2	313.0 / 119.0	1.78	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFHpA_1	363.0 / 319.0	2.03	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFHpA_2	363.0 / 169.0	2.03	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFHxS_1	399.0 / 80.0	2.03	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFHxS_2	399.0 / 99.0	2.03	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFOA_1	413.0 / 369.0	2.27	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFOA_2	413.0 / 169.0	2.27	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFNA_1	463.0 / 419.0	2.52	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFNA_2	463.0 / 219.0	2.52	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFOS_1	499.0 / 80.0	2.51	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFOS_2	499.0 / 99.0	2.51	13C4-PFOS	503.0 / 80.0	197787.81	287.00
PFDA_1	513.0 / 469.0	2.80	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFDA_2	513.0 / 219.0	2.81	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFUnA_1	563.0 / 519.0	3.08	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFUnA_2	563.0 / 269.0	3.08	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFDaA_1	613.0 / 569.0	3.33	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFDaA_2	613.0 / 319.0	3.33	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFTTrDA_1	663.0 / 619.0	3.57	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFTTrDA_2	663.0 / 169.0	3.57	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFTTeDA_1	713.0 / 669.0	3.80	13C2-PFOA	415.0 / 370.0	45891.30	100.00
PFTTeDA_2	713.0 / 169.0	3.80	13C2-PFOA	415.0 / 370.0	45891.30	100.00
NMeFOSAA_1	570.0 / 419.0	2.94	d3-MeFOSAA	573.0 / 419.0	29075.24	400.00
NMeFOSAA_2	570.0 / 512.0	2.94	d3-MeFOSAA	573.0 / 419.0	29075.24	400.00
NEtFOSAA_1	584.0 / 419.0	3.08	d3-MeFOSAA	573.0 / 419.0	29075.24	400.00
NEtFOSAA_2	584.0 / 483.0	3.07	d3-MeFOSAA	573.0 / 419.0	29075.24	400.00
13C2-PFHxA	315.0 / 270.0	1.77	13C2-PFOA	415.0 / 370.0	45891.30	100.00
13C2-PFDA	515.0 / 470.0	2.80	13C2-PFOA	415.0 / 370.0	45891.30	100.00
d5-EtFOSAA	589.0 / 419.0	3.07	d3-MeFOSAA	573.0 / 419.0	29075.24	400.00

# Raw Analytical Data

Sample Name	KA08 IB	Injection Vial	11
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:30:00	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.79	32753.71	94.032836	707.8	false
13C2-PFDA	515.0 / 470.0	2.82	35417.84	111.352476	709.3	false
d5-EtFOSAA	589.0 / 419.0	3.10	24250.94	435.953136	278.6	false

Sample Name	J7558-FS(0)	Injection Vial	23
Sample ID	JAX-RES-08202018-0945-25	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:17:24	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.77	42257.92	112.475377	489.9	false
13C2-PFDA	515.0 / 470.0	2.80	34047.83	99.242452	511.8	false
d5-EtFOSAA	589.0 / 419.0	3.06	20977.70	355.102554	196.4	true

Sample Name	CR633PB-FS(0)	Injection Vial	21
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:59:30	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	2.94	11091.87	< 0	53.6	false
PFNA_2	463.0 / 219.0	2.92	2653.77	< 0	33.6	false
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.80	37266.47	99.292742	930.7	false
13C2-PFDA	515.0 / 470.0	2.80	34435.38	100.476119	618.0	false
d5-EtFOSAA	589.0 / 419.0	3.07	21335.23	374.673121	228.0	true



Sample Name	CR634LCS-FS(0)	Injection Vial	22
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:08:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.57	788164.54	2070.066320	2819.9	false
PFBS_2	298.9 / 99.0	1.56	235437.27	2086.084266	1390.5	false
PFHxA_1	313.0 / 269.0	1.79	892773.51	2327.863459	225.0	false
PFHxA_2	313.0 / 119.0	1.79	71747.17	2474.550571	195.6	false
PFHpA_1	363.0 / 319.0	2.04	883923.03	2457.675661	273.7	false
PFHpA_2	363.0 / 169.0	2.04	16201.98	2260.063080	234.3	false
PFHxS_1	399.0 / 80.0	2.04	940390.61	2148.604920	337.8	false
PFHxS_2	399.0 / 99.0	2.04	271840.47	2105.302106	573.1	false
PFOA_1	413.0 / 369.0	2.27	822675.24	2305.836116	339.8	false
PFOA_2	413.0 / 169.0	2.27	56150.29	2300.873804	289.3	false
PFNA_1	463.0 / 419.0	2.51	760144.69	2443.835624	392.1	false
PFNA_2	463.0 / 219.0	2.51	228885.93	2377.686949	374.7	false
PFOS_1	499.0 / 80.0	2.50	1187485.31	2043.968271	320.1	false
PFOS_2	499.0 / 99.0	2.50	251881.03	2341.145273	576.1	false
PFDA_1	513.0 / 469.0	2.77	781291.31	2235.910026	405.7	false
PFDA_2	513.0 / 219.0	2.77	31072.53	2040.140796	239.6	false
PFUnA_1	563.0 / 519.0	3.05	692881.78	2004.742336	377.4	true
PFUnA_2	563.0 / 269.0	3.05	36132.35	2113.363490	218.2	true
PFDoA_1	613.0 / 569.0	3.32	748238.32	2072.986774	459.0	true
PFDoA_2	613.0 / 319.0	3.32	121776.00	2092.391390	386.8	true
PFTTrDA_1	663.0 / 619.0	3.59	737116.75	2117.052911	594.5	true
PFTTrDA_2	663.0 / 169.0	3.59	46362.43	2217.829701	322.1	true
PFTeDA_1	713.0 / 669.0	3.83	763824.25	2280.250606	1166.0	true
PFTeDA_2	713.0 / 169.0	3.83	36840.39	2361.262861	579.2	true
NMeFOSAA_1	570.0 / 419.0	2.91	119078.83	2677.637308	730.6	true
NMeFOSAA_2	570.0 / 512.0	2.91	68182.31	2499.635566	644.5	true
NEtFOSAA_1	584.0 / 419.0	3.05	111262.53	2531.722719	879.1	true
NEtFOSAA_2	584.0 / 483.0	3.05	7163.46	2200.074574	280.1	true
13C2-PFHxA	315.0 / 270.0	1.78	38594.12	88.815244	825.7	false
13C2-PFDA	515.0 / 470.0	2.77	34710.69	87.475869	893.9	false
d5-EtFOSAA	589.0 / 419.0	3.04	19619.75	339.360730	185.9	true



Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	121956.49	362.809339	250.0	false
PFBS_2	298.9 / 99.0	1.56	18881.01	188.764788	170.1	false
PFHxA_1	313.0 / 269.0	1.79	204112.13	612.389021	95.8	false
PFHxA_2	313.0 / 119.0	1.79	11998.33	433.200161	101.0	false
PFHpA_1	363.0 / 319.0	2.04	98240.76	311.062238	94.5	false
PFHpA_2	363.0 / 169.0	2.03	2717.85	438.614167	93.5	false
PFHxS_1	399.0 / 80.0	2.04	505489.32	1313.127776	148.0	false
PFHxS_2	399.0 / 99.0	2.04	152459.53	1340.162640	292.0	false
PFOA_1	413.0 / 369.0	2.27	250941.77	839.651504	142.2	false
PFOA_2	413.0 / 169.0	2.24	28717.74	1439.277229	190.1	false
PFNA_1	463.0 / 419.0	2.52	8772.23	< 0	43.6	false
PFNA_2	463.0 / 219.0	2.52	3059.77	< 0	37.4	false
PFOS_1	499.0 / 80.0	2.47	576267.46	1109.192857	110.2	false
PFOS_2	499.0 / 99.0	2.51	77844.16	796.192768	233.7	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.78	39284.01	111.767499	570.9	false
13C2-PFDA	515.0 / 470.0	2.78	30311.86	94.443266	686.2	false
d5-EtFOSAA	589.0 / 419.0	3.05	17321.19	310.296813	219.6	true

Sample Name	J7562-FS(0)	Injection Vial	25
Sample ID	JAX-RES-08202018-1310-28	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:35:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	83595.08	274.104515	113.4	true
PFBS_2	298.9 / 99.0	1.54	18498.53	204.192917	182.1	false
PFHxA_1	313.0 / 269.0	1.75	90058.15	253.125824	74.1	true
PFHxA_2	313.0 / 119.0	1.75	7505.97	254.578757	74.5	false
PFHpA_1	363.0 / 319.0	2.00	30743.15	82.742177	74.5	false
PFHpA_2	363.0 / 169.0	2.00	903.77	130.304473	54.6	false
PFHxS_1	399.0 / 80.0	2.00	122883.59	354.292676	90.7	false
PFHxS_2	399.0 / 99.0	2.00	36143.03	348.166482	135.0	false
PFOA_1	413.0 / 369.0	2.25	71092.38	219.002354	97.1	false
PFOA_2	413.0 / 169.0	2.21	11242.33	573.516100	124.8	false
PFNA_1	463.0 / 419.0	2.97	9870.84	< 0	43.8	false
PFNA_2	463.0 / 219.0	2.98	2613.06	< 0	30.8	false
PFOS_1	499.0 / 80.0	2.47	31298.12	29.530921	26.9	false
PFOS_2	499.0 / 99.0	2.53	4014.31	7.870366	27.2	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.74	38437.06	116.122325	693.1	false
13C2-PFDA	515.0 / 470.0	2.83	28234.45	93.412207	714.3	false
d5-EtFOSAA	589.0 / 419.0	3.12	21102.20	401.272614	246.8	false

Sample Name	KA08 IB	Injection Vial	11
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:30:00	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.82		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.10		N/A	N/A	ü



Sample Name	CR633PB-FS(0)	Injection Vial	21
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:59:30	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	2.94	PFNA			
PFNA_2	463.0 / 219.0	2.92	PFNA	0.239	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü

<b>Sample Name</b>	CR634LCS-FS(0)	<b>Injection Vial</b>	22
<b>Sample ID</b>	Laboratory Control Sample	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T21:08:27	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.57	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.299	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.080	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.018	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.289	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.27	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.51	PFNA			
PFNA_2	463.0 / 219.0	2.51	PFNA	0.301	0.310	ü
PFOS_1	499.0 / 80.0	2.50	PFOS			
PFOS_2	499.0 / 99.0	2.50	PFOS	0.212	0.186	ü
PFDA_1	513.0 / 469.0	2.77	PFDA			
PFDA_2	513.0 / 219.0	2.77	PFDA	0.040	0.044	ü
PFUnA_1	563.0 / 519.0	3.05	PFUnA			
PFUnA_2	563.0 / 269.0	3.05	PFUnA	0.052	0.055	ü
PFDoA_1	613.0 / 569.0	3.32	PFDoA			
PFDoA_2	613.0 / 319.0	3.32	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.59	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.063	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.048	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.91	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.91	NMeFOSAA	0.573	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.05	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.05	NEtFOSAA	0.064	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.77		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.04		N/A	N/A	ü

Sample Name	J7558-FS(0)	Injection Vial	23
Sample ID	JAX-RES-08202018-0945-25	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:17:24	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.92	PFNA	0.279	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.06		N/A	N/A	ü

Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.155	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.059	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.028	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.302	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.24	PFOA	0.114	0.068	
PFNA_1	463.0 / 419.0	2.52	PFNA			
PFNA_2	463.0 / 219.0	2.52	PFNA	0.349	0.310	ü
PFOS_1	499.0 / 80.0	2.47	PFOS			
PFOS_2	499.0 / 99.0	2.51	PFOS	0.135	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.78		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.05		N/A	N/A	ü



Sample Name	J7562-FS(0)	Injection Vial	25
Sample ID	JAX-RES-08202018-1310-28	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:35:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.221	0.297	ü
PFHxA_1	313.0 / 269.0	1.75	PFHxA			
PFHxA_2	313.0 / 119.0	1.75	PFHxA	0.083	0.080	ü
PFHpA_1	363.0 / 319.0	2.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.00	PFHpA	0.029	0.020	ü
PFHxS_1	399.0 / 80.0	2.00	PFHxS			
PFHxS_2	399.0 / 99.0	2.00	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.25	PFOA			
PFOA_2	413.0 / 169.0	2.21	PFOA	0.158	0.068	
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.98	PFNA	0.265	0.310	ü
PFOS_1	499.0 / 80.0	2.47	PFOS			
PFOS_2	499.0 / 99.0	2.53	PFOS	0.128	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.74				
13C2-PFDA	515.0 / 470.0	2.83		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü



Sample Name	KA08 IB	Injection Vial	11
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:30:00	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146358.02	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20259.48	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20259.48	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20259.48	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20259.48	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	33036.09	100.00
13C2-PFDA	515.0 / 470.0	2.82	13C2-PFOA	415.0 / 370.0	33036.09	100.00
d5-EtFOSAA	589.0 / 419.0	3.10	d3-MeFOSAA	573.0 / 419.0	20259.48	400.00

Sample Name	J7558-FS(0)	Injection Vial	23
Sample ID	JAX-RES-08202018-0945-25	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:17:24	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	141268.12	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35633.50	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21515.11	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	21515.11	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21515.11	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	21515.11	400.00
13C2-PFHxA	315.0 / 270.0	1.77	13C2-PFOA	415.0 / 370.0	35633.50	100.00
13C2-PFDA	515.0 / 470.0	2.80	13C2-PFOA	415.0 / 370.0	35633.50	100.00
d5-EtFOSAA	589.0 / 419.0	3.06	d3-MeFOSAA	573.0 / 419.0	21515.11	400.00

Sample Name	CR633PB-FS(0)	Injection Vial	21
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:59:30	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFNA_1	463.0 / 419.0	2.94	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFNA_2	463.0 / 219.0	2.92	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	152603.74	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35596.60	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20738.84	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20738.84	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20738.84	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20738.84	400.00
13C2-PFHxA	315.0 / 270.0	1.80	13C2-PFOA	415.0 / 370.0	35596.60	100.00
13C2-PFDA	515.0 / 470.0	2.80	13C2-PFOA	415.0 / 370.0	35596.60	100.00
d5-EtFOSAA	589.0 / 419.0	3.07	d3-MeFOSAA	573.0 / 419.0	20738.84	400.00

Sample Name	CR634LCS-FS(0)	Injection Vial	22
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:08:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.57	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFHpA_2	363.0 / 169.0	2.04	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFOA_1	413.0 / 369.0	2.27	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFOA_2	413.0 / 169.0	2.27	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFNA_1	463.0 / 419.0	2.51	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFNA_2	463.0 / 219.0	2.51	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFOS_1	499.0 / 80.0	2.50	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFOS_2	499.0 / 99.0	2.50	13C4-PFOS	503.0 / 80.0	166905.84	287.00
PFDA_1	513.0 / 469.0	2.77	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFDA_2	513.0 / 219.0	2.77	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFUnA_1	563.0 / 519.0	3.05	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFUnA_2	563.0 / 269.0	3.05	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFDoA_1	613.0 / 569.0	3.32	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFDoA_2	613.0 / 319.0	3.32	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFTTrDA_1	663.0 / 619.0	3.59	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFTTrDA_2	663.0 / 169.0	3.59	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFTeDA_1	713.0 / 669.0	3.83	13C2-PFOA	415.0 / 370.0	41213.69	100.00
PFTeDA_2	713.0 / 169.0	3.83	13C2-PFOA	415.0 / 370.0	41213.69	100.00
NMeFOSAA_1	570.0 / 419.0	2.91	d3-MeFOSAA	573.0 / 419.0	21055.79	400.00
NMeFOSAA_2	570.0 / 512.0	2.91	d3-MeFOSAA	573.0 / 419.0	21055.79	400.00
NEtFOSAA_1	584.0 / 419.0	3.05	d3-MeFOSAA	573.0 / 419.0	21055.79	400.00
NEtFOSAA_2	584.0 / 483.0	3.05	d3-MeFOSAA	573.0 / 419.0	21055.79	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	41213.69	100.00
13C2-PFDA	515.0 / 470.0	2.77	13C2-PFOA	415.0 / 370.0	41213.69	100.00
d5-EtFOSAA	589.0 / 419.0	3.04	d3-MeFOSAA	573.0 / 419.0	21055.79	400.00

Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHpA_2	363.0 / 169.0	2.03	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFOA_1	413.0 / 369.0	2.27	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFOA_2	413.0 / 169.0	2.24	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFNA_1	463.0 / 419.0	2.52	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFNA_2	463.0 / 219.0	2.52	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFOS_1	499.0 / 80.0	2.47	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFOS_2	499.0 / 99.0	2.51	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	33335.59	100.00
13C2-PFDA	515.0 / 470.0	2.78	13C2-PFOA	415.0 / 370.0	33335.59	100.00
d5-EtFOSAA	589.0 / 419.0	3.05	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00



Sample Name	J7562-FS(0)	Injection Vial	25
Sample ID	JAX-RES-08202018-1310-28	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:35:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

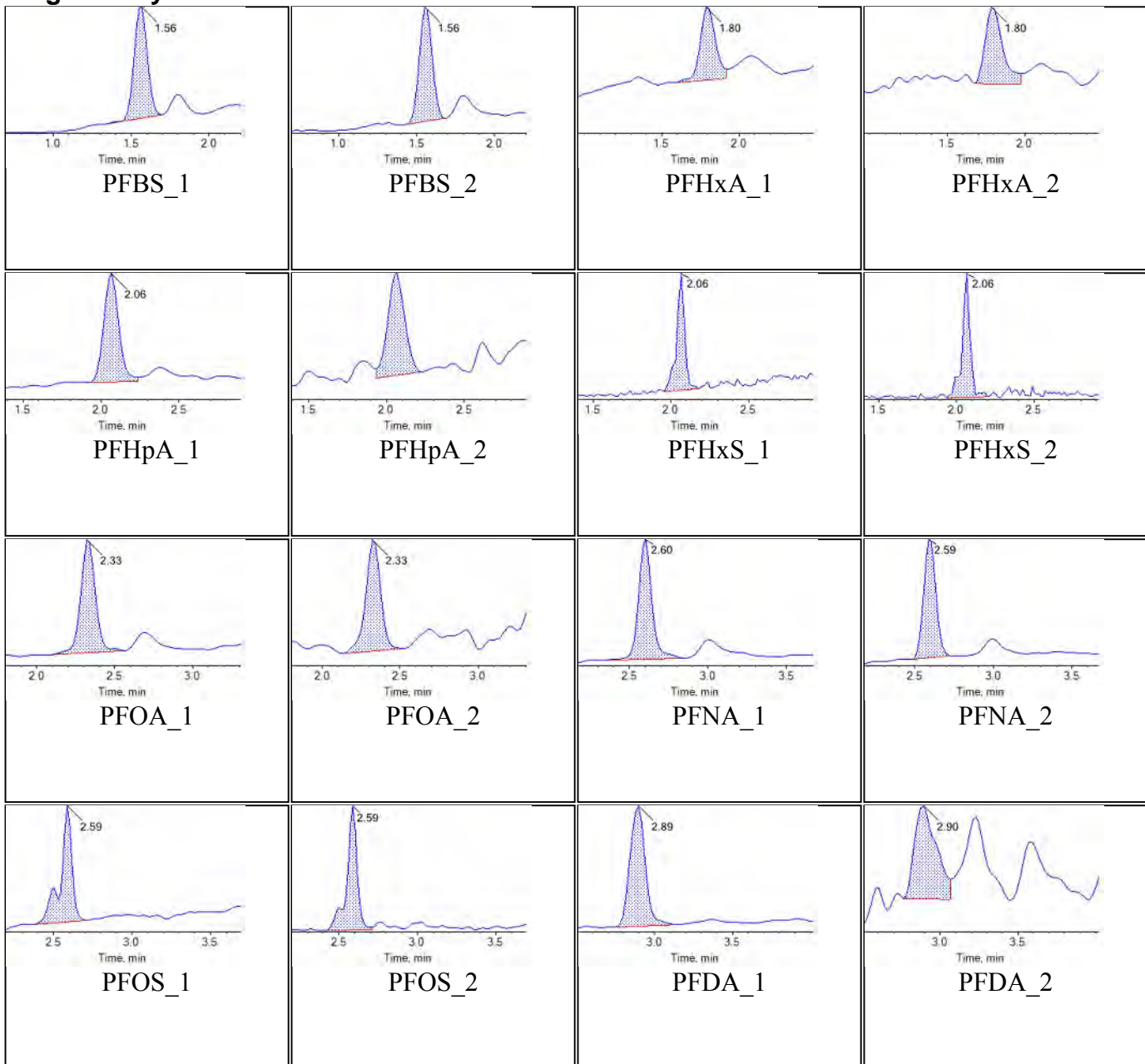
Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFBS_2	298.9 / 99.0	1.54	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFHxA_1	313.0 / 269.0	1.75	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFHxA_2	313.0 / 119.0	1.75	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFHpA_1	363.0 / 319.0	2.00	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFHpA_2	363.0 / 169.0	2.00	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFHxS_1	399.0 / 80.0	2.00	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFHxS_2	399.0 / 99.0	2.00	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFOA_1	413.0 / 369.0	2.25	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFOA_2	413.0 / 169.0	2.21	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFNA_2	463.0 / 219.0	2.98	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFOS_1	499.0 / 80.0	2.47	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFOS_2	499.0 / 99.0	2.53	13C4-PFOS	503.0 / 80.0	133143.69	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31393.68	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19152.60	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	19152.60	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19152.60	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	19152.60	400.00
13C2-PFHxA	315.0 / 270.0	1.74	13C2-PFOA	415.0 / 370.0	31393.68	100.00
13C2-PFDA	515.0 / 470.0	2.83	13C2-PFOA	415.0 / 370.0	31393.68	100.00
d5-EtFOSAA	589.0 / 419.0	3.12	d3-MeFOSAA	573.0 / 419.0	19152.60	400.00

# Chromatograms

<b>Sample Name</b>	JZ80	<b>Injection Vial</b>	4
<b>Sample ID</b>	L3	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T18:27:27	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

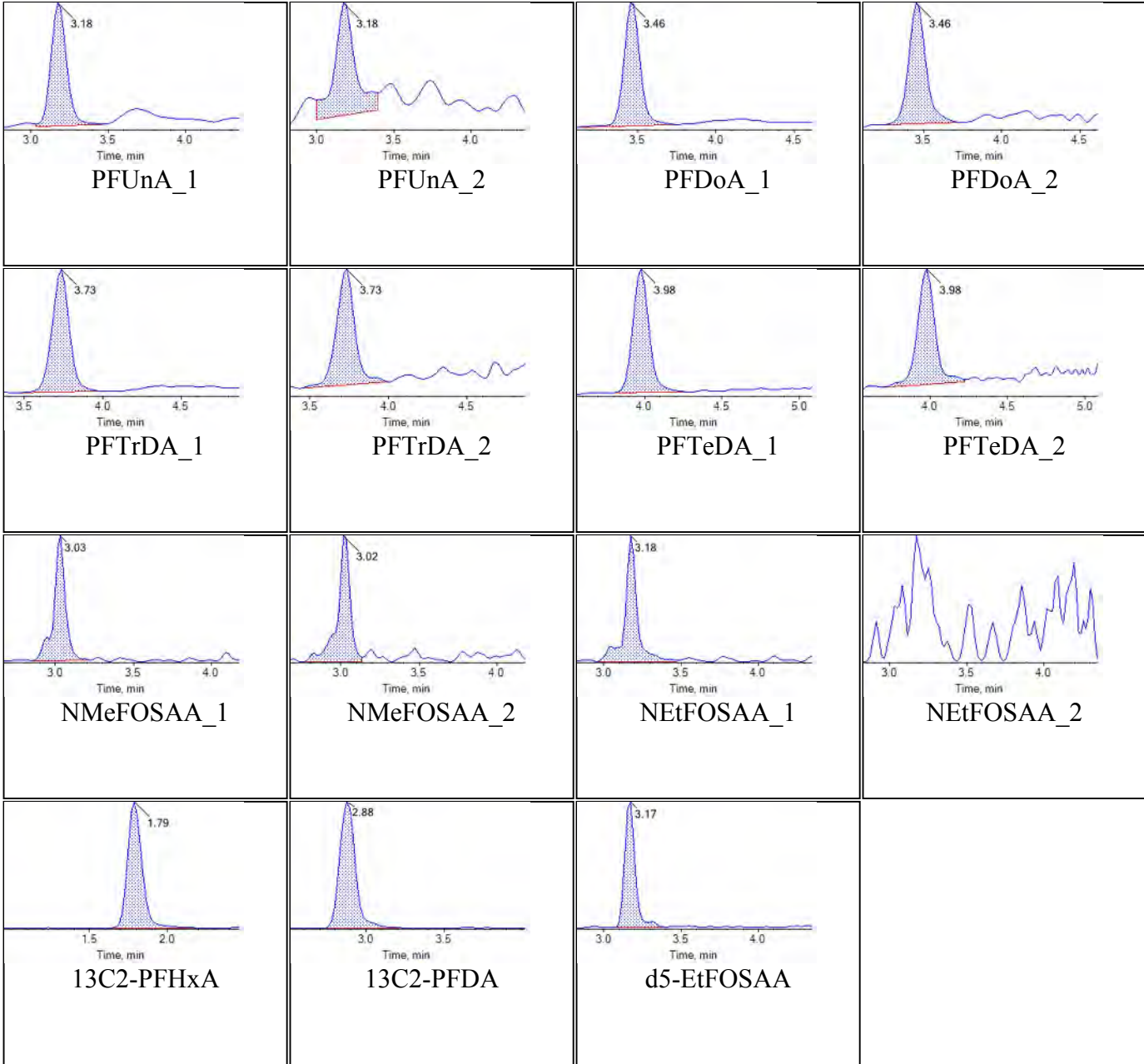




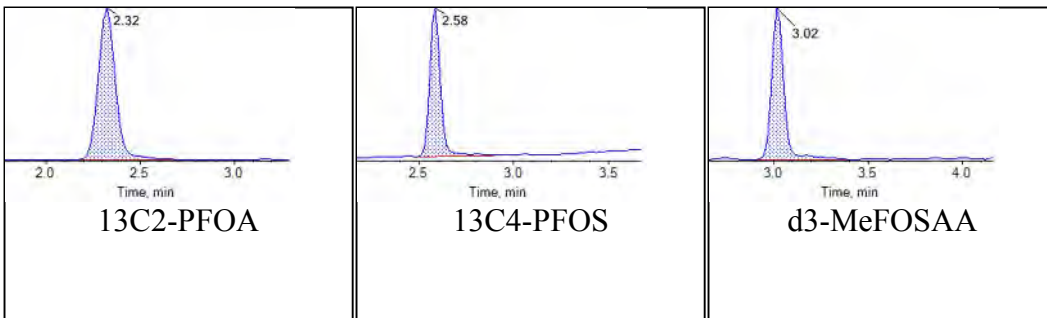


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Printed: 23/08/2018 11:17:40 AM



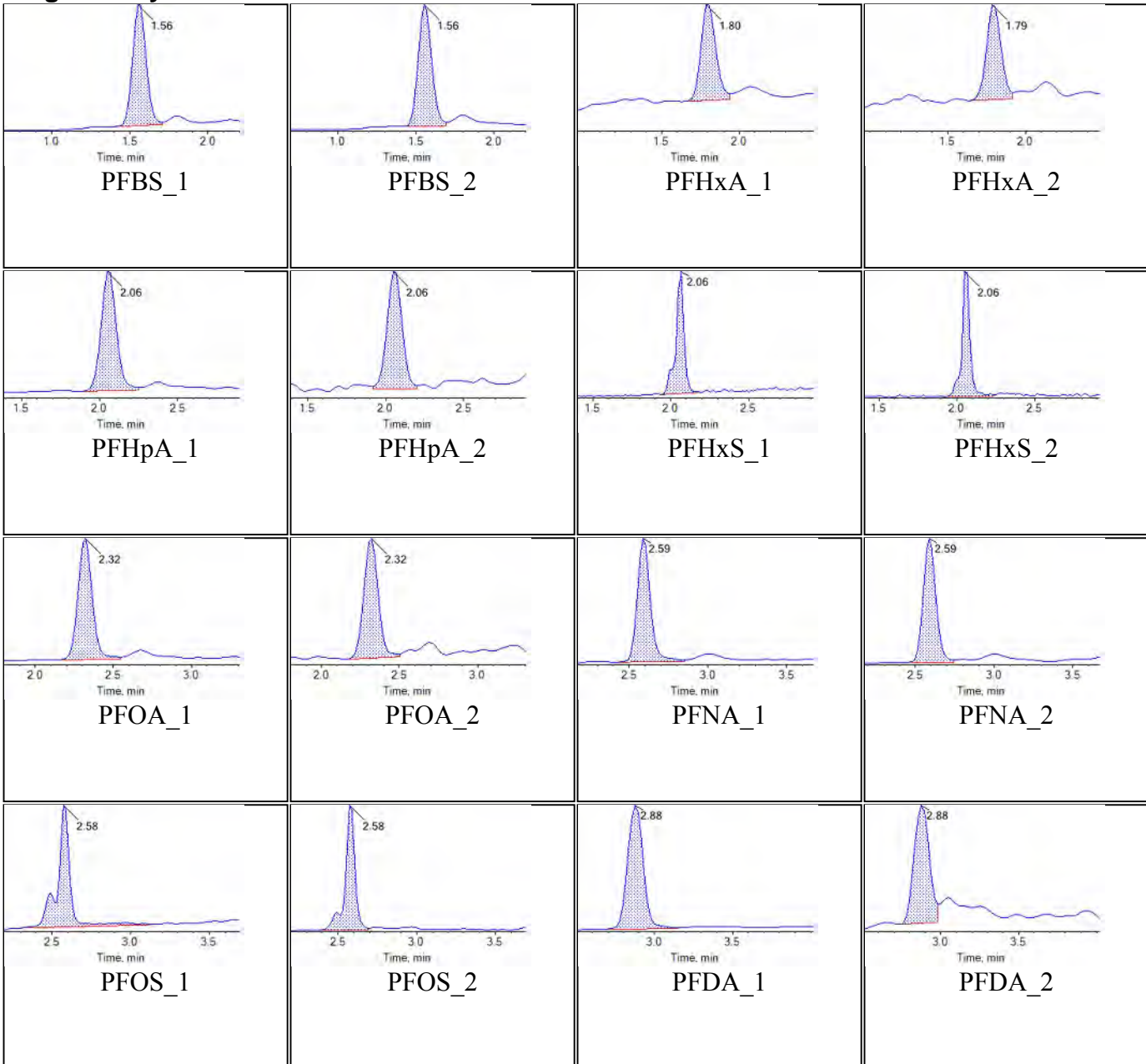
Internal Standards:

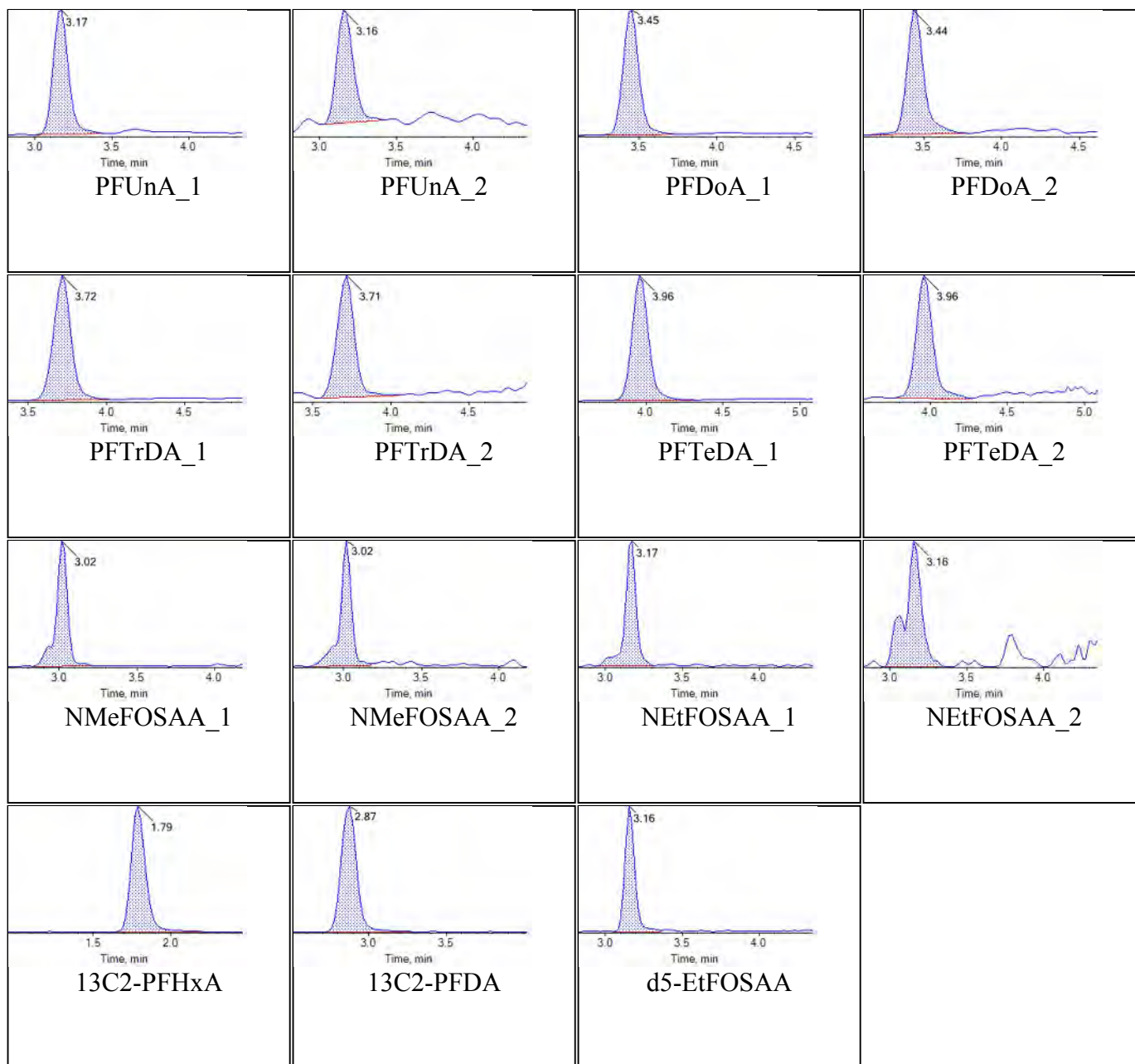
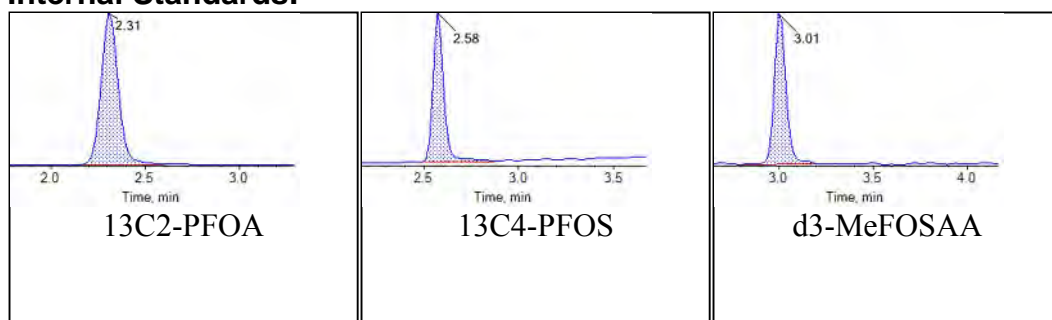


<b>Sample Name</b>	JZ81	<b>Injection Vial</b>	5
<b>Sample ID</b>	L4	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T18:36:23	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

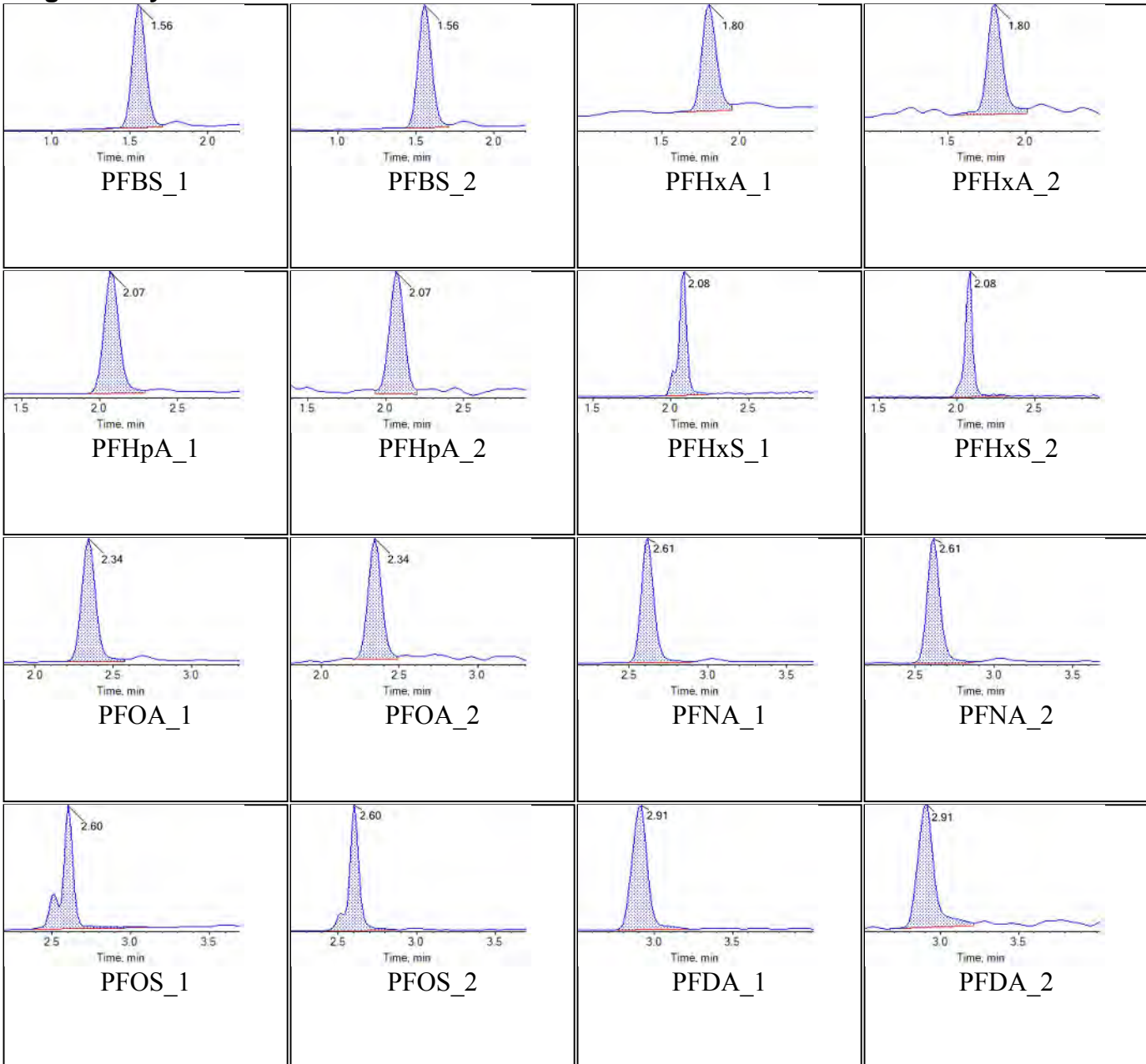


**Internal Standards:**

<b>Sample Name</b>	JZ82	<b>Injection Vial</b>	6
<b>Sample ID</b>	L5	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T18:45:19	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

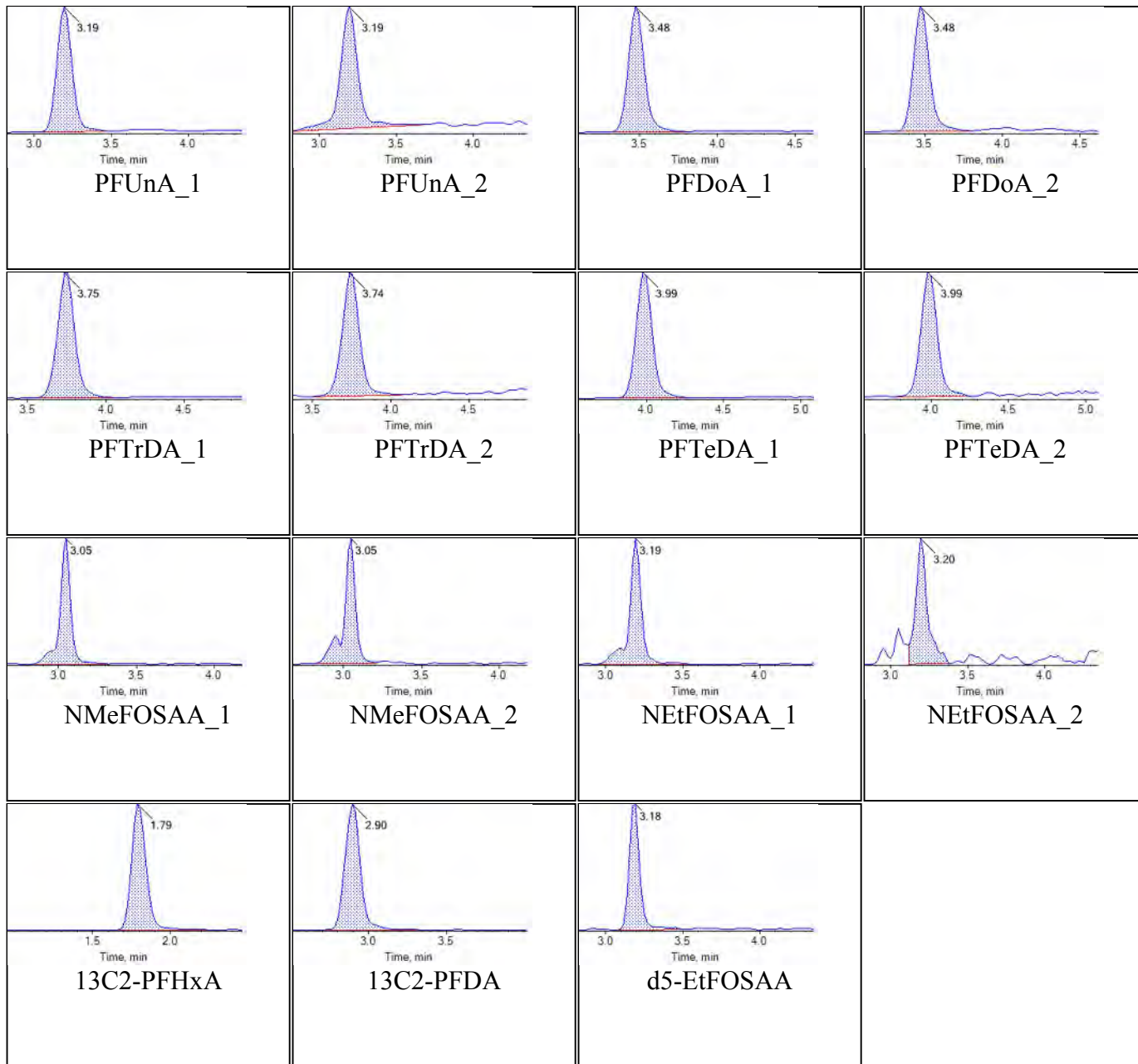




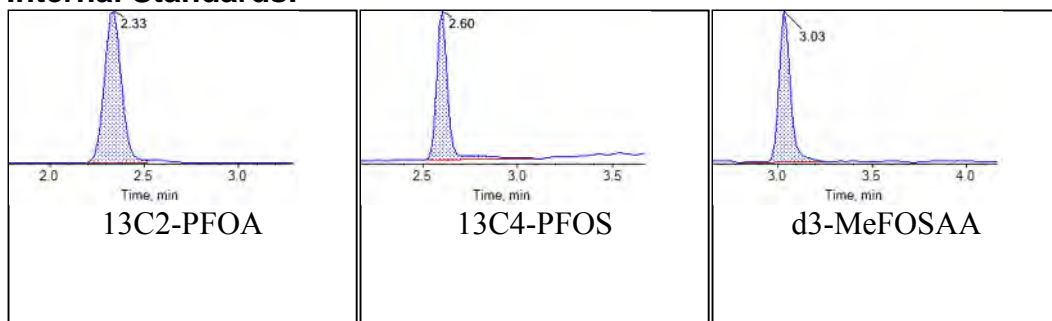


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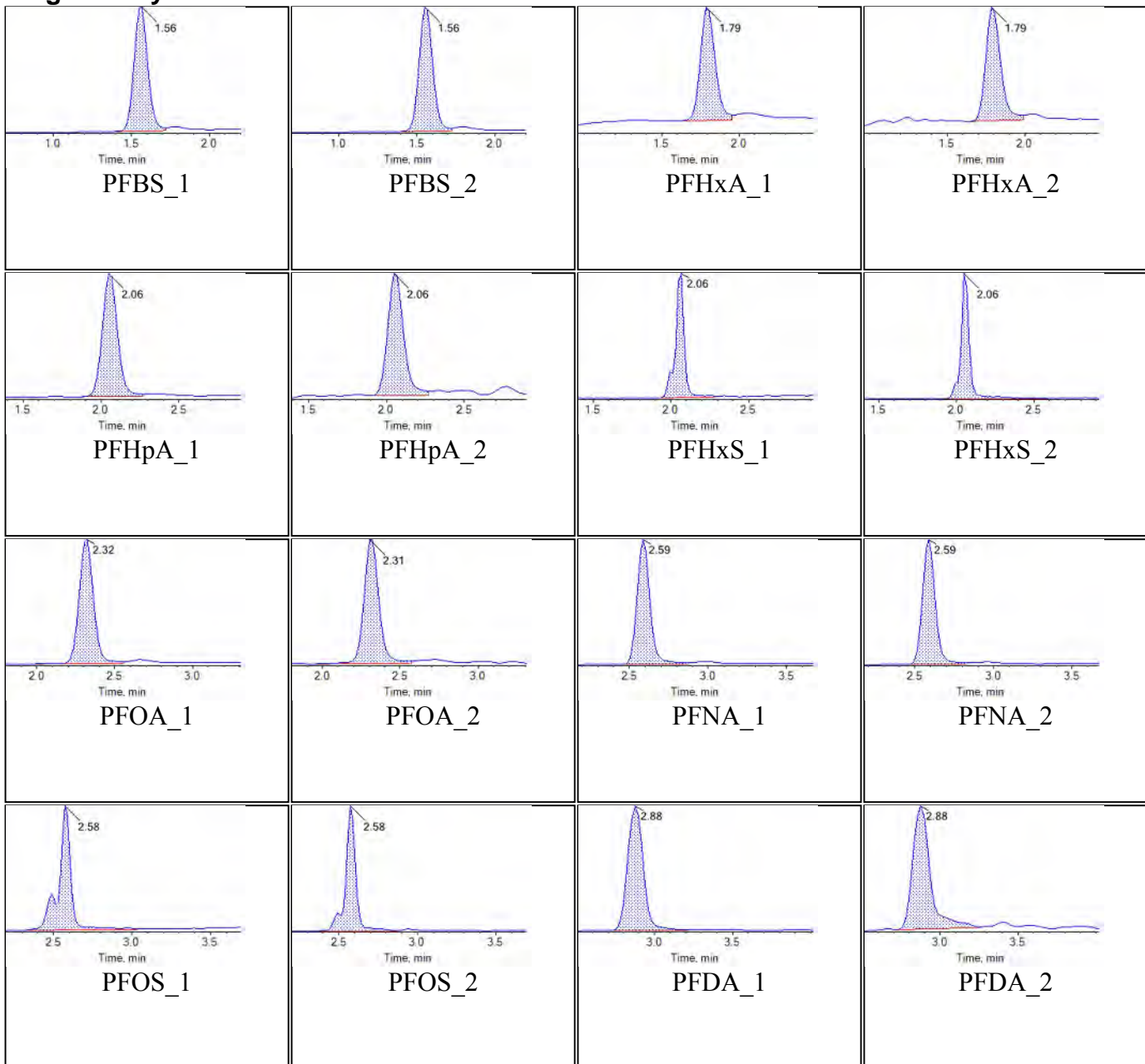
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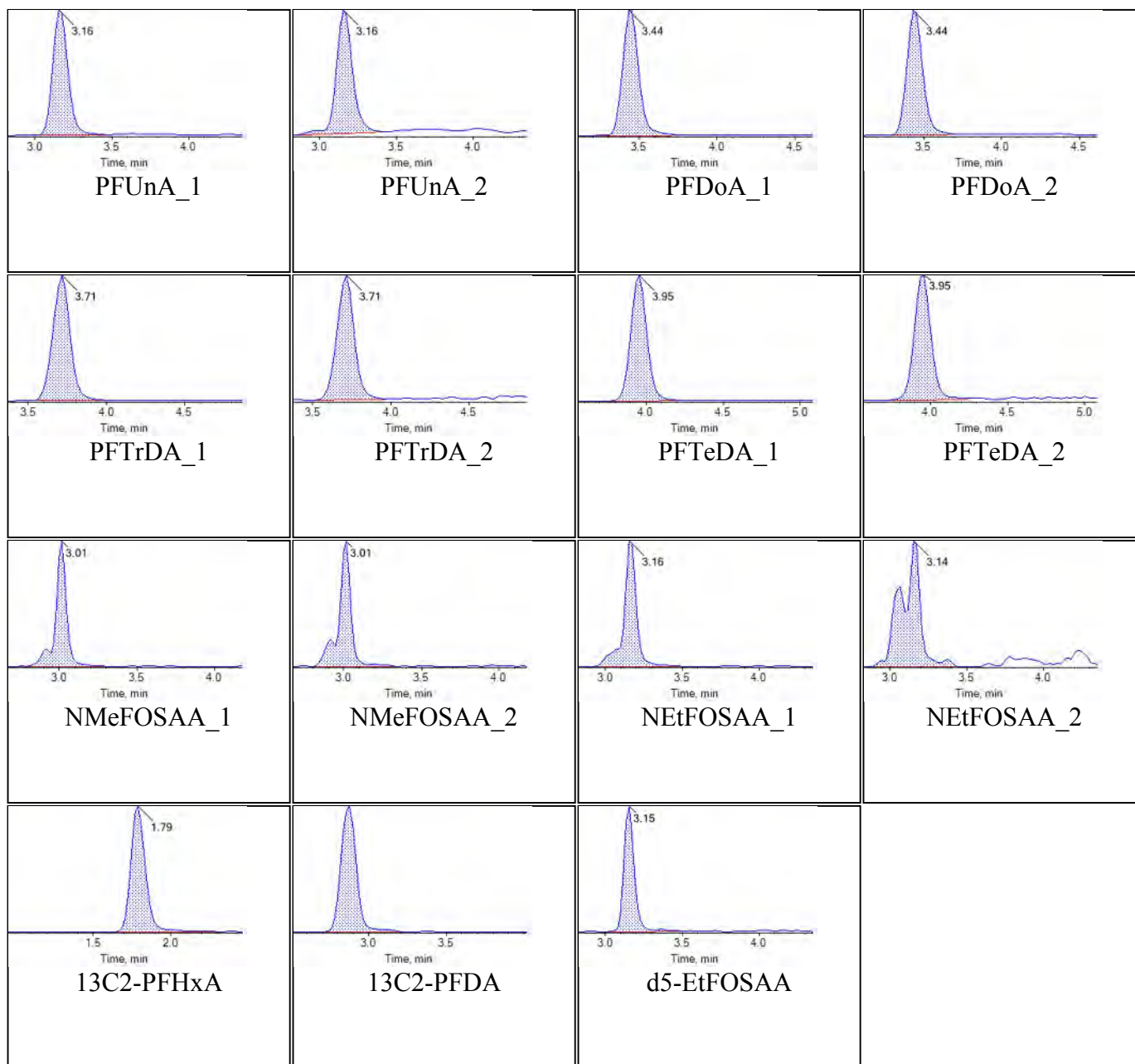
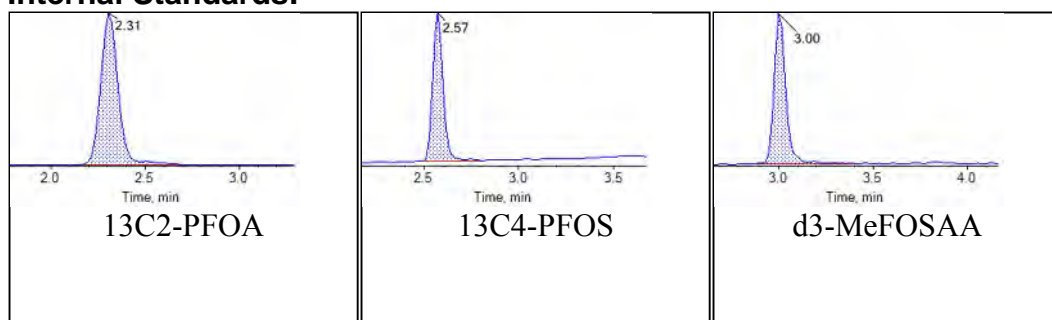


Sample Name	JZ83	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Chromatograms

### Target Analytes:

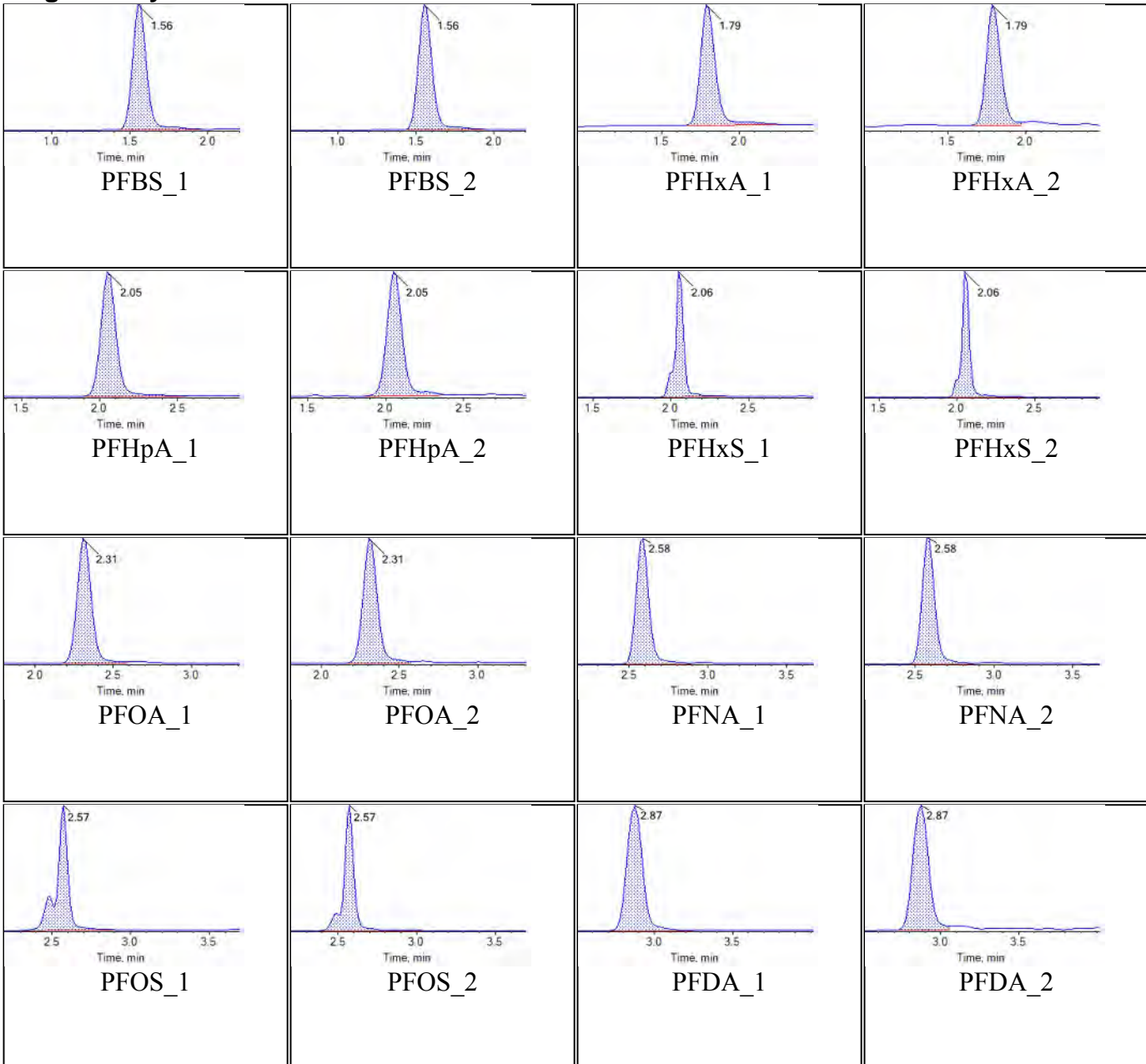


**Internal Standards:**

<b>Sample Name</b>	JZ84	<b>Injection Vial</b>	8
<b>Sample ID</b>	L7	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T19:03:12	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

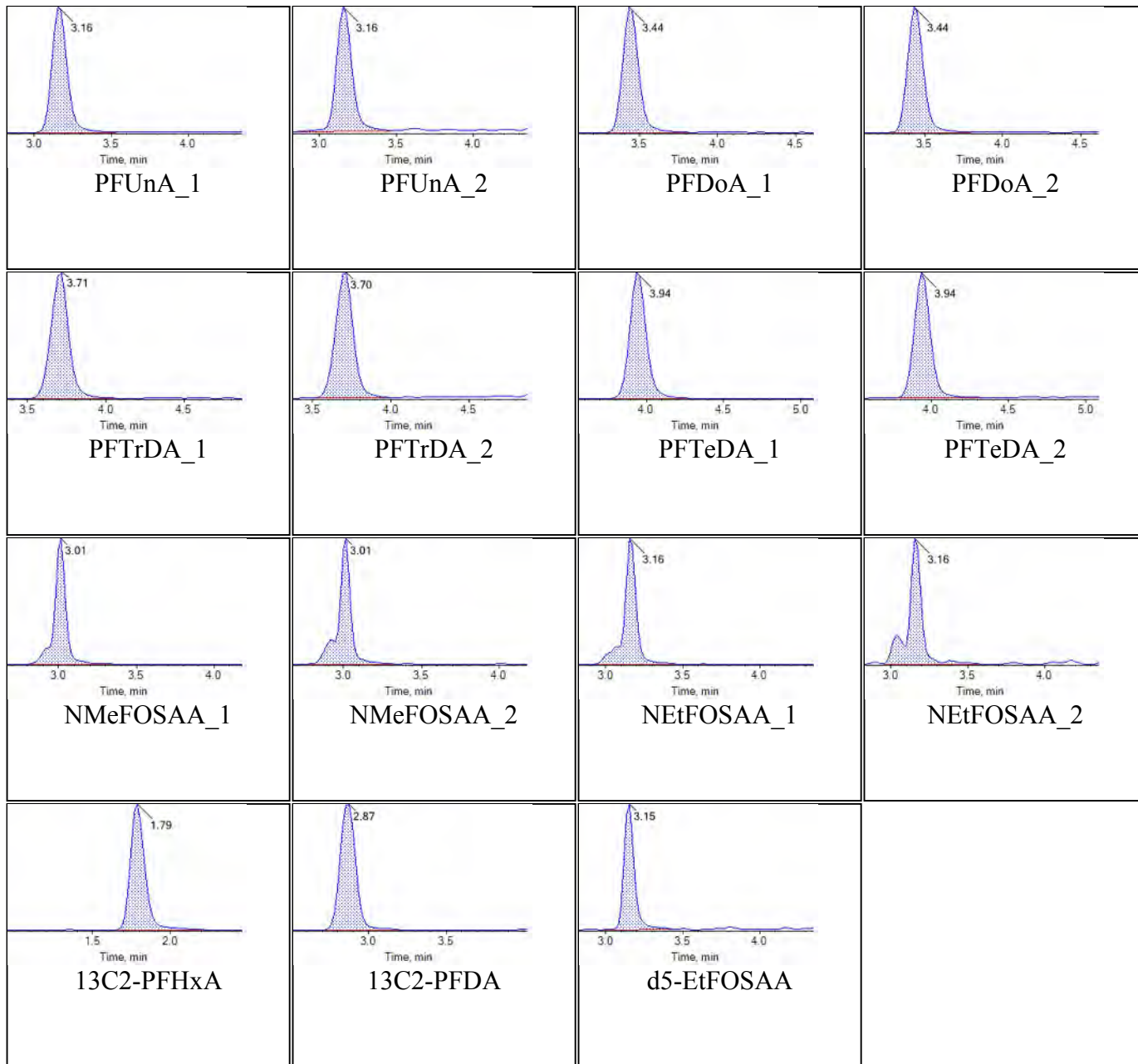




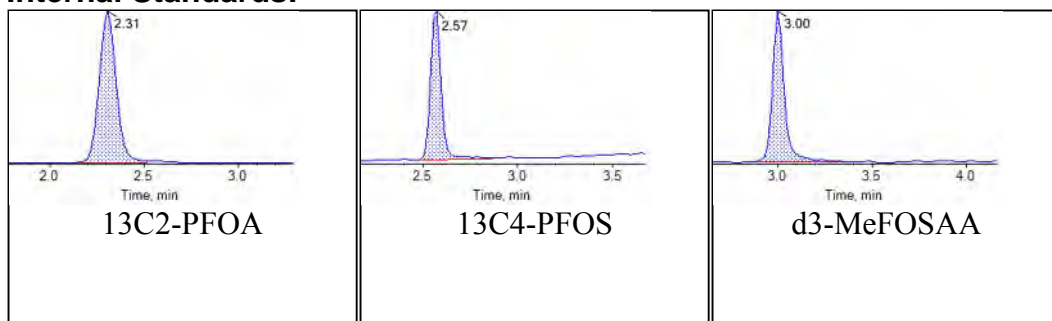


Chromatogram Report

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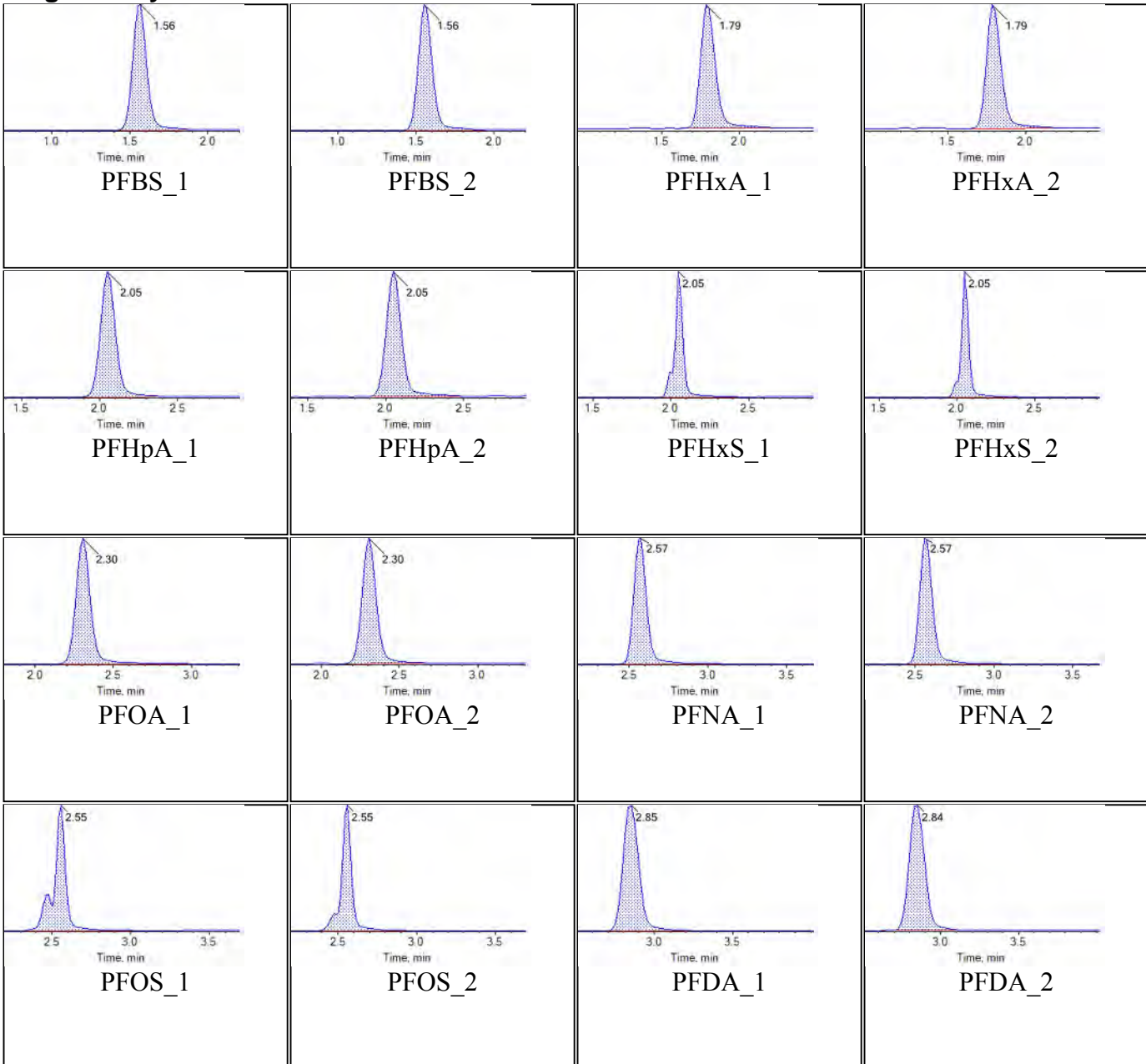
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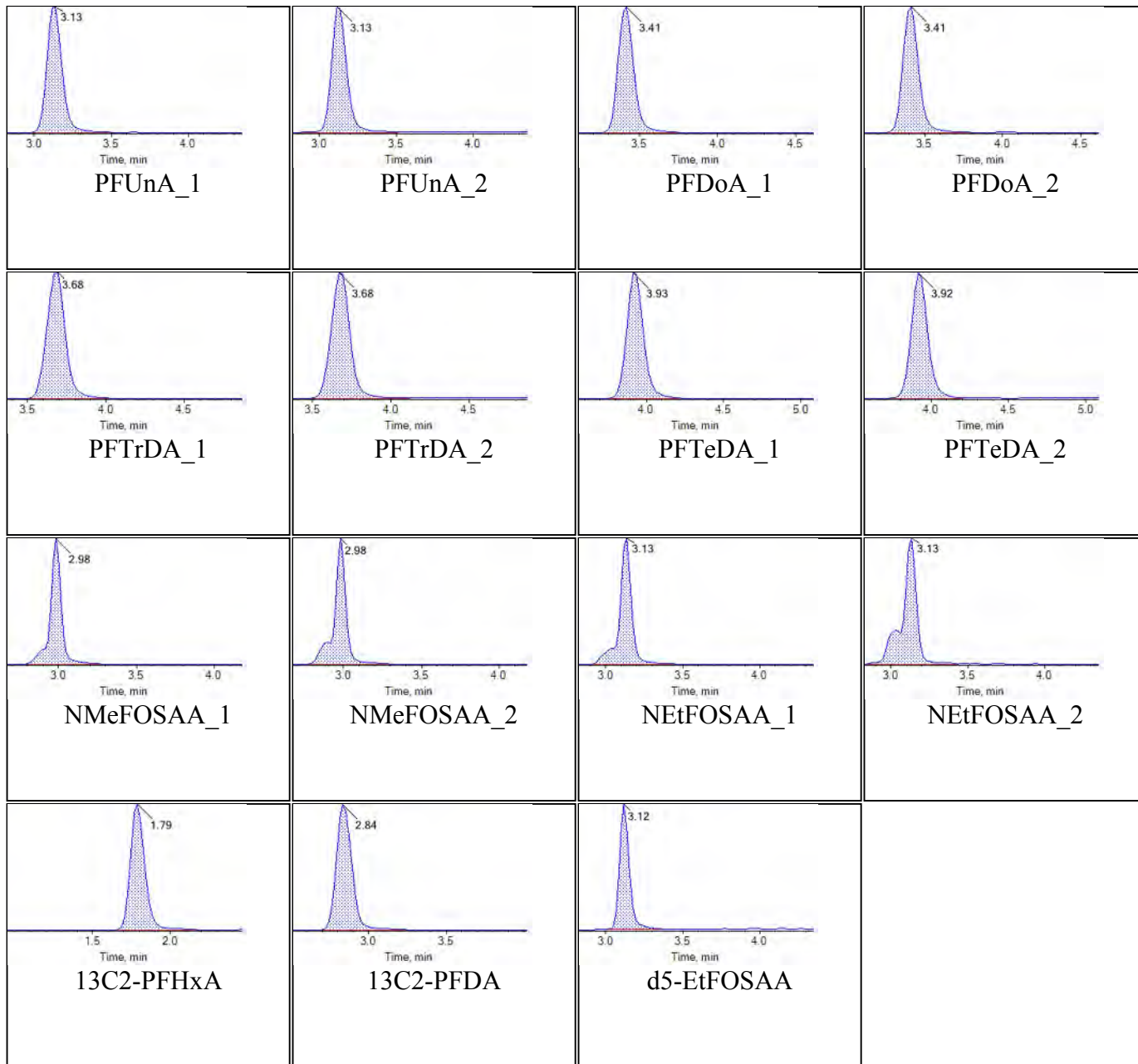


<b>Sample Name</b>	JZ85	<b>Injection Vial</b>	9
<b>Sample ID</b>	L8	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T19:12:08	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

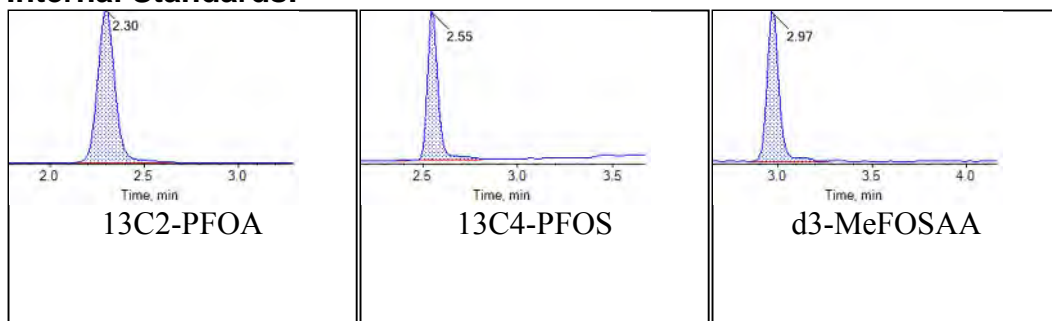
## Chromatograms

### Target Analytes:





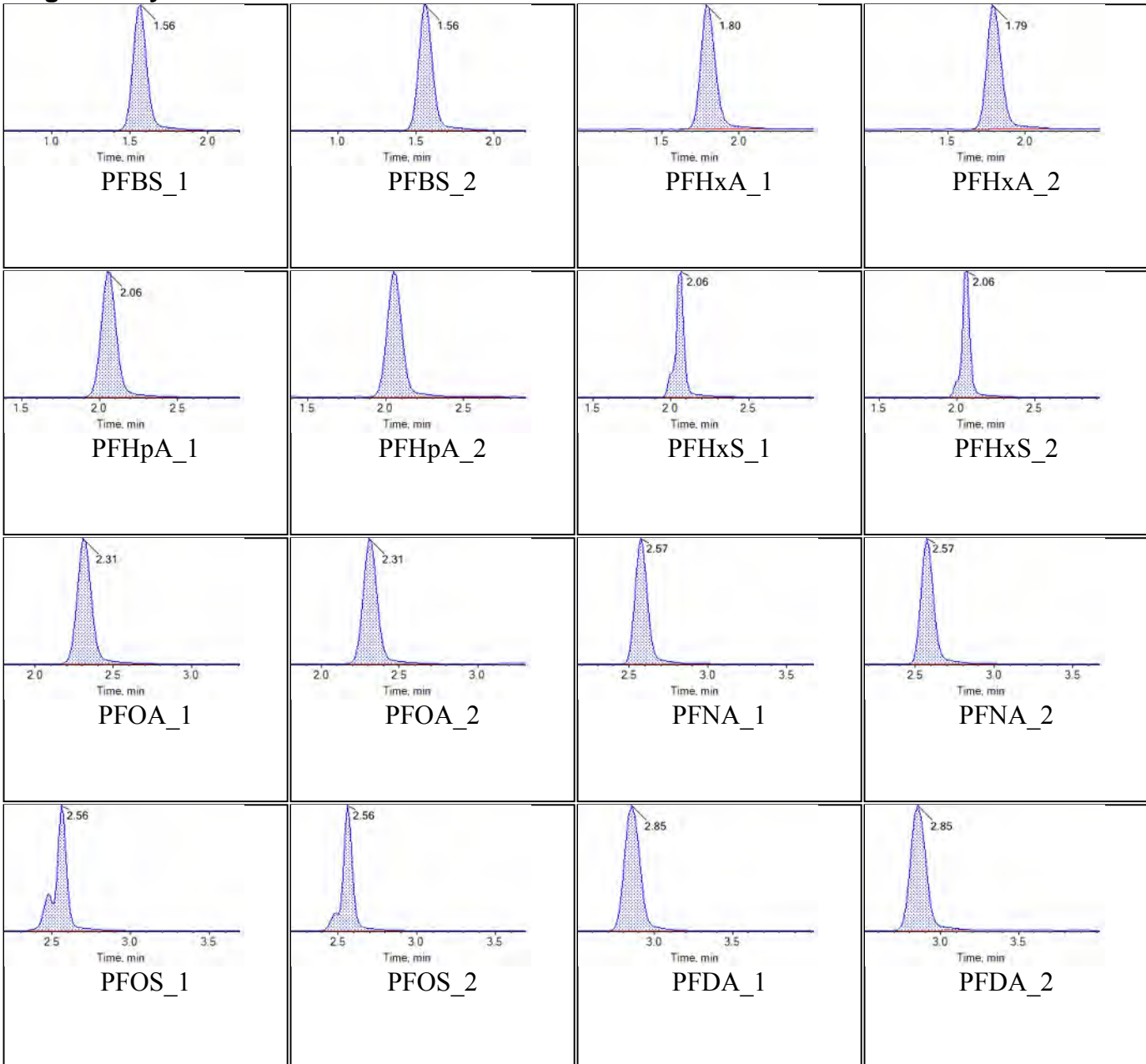
**Internal Standards:**

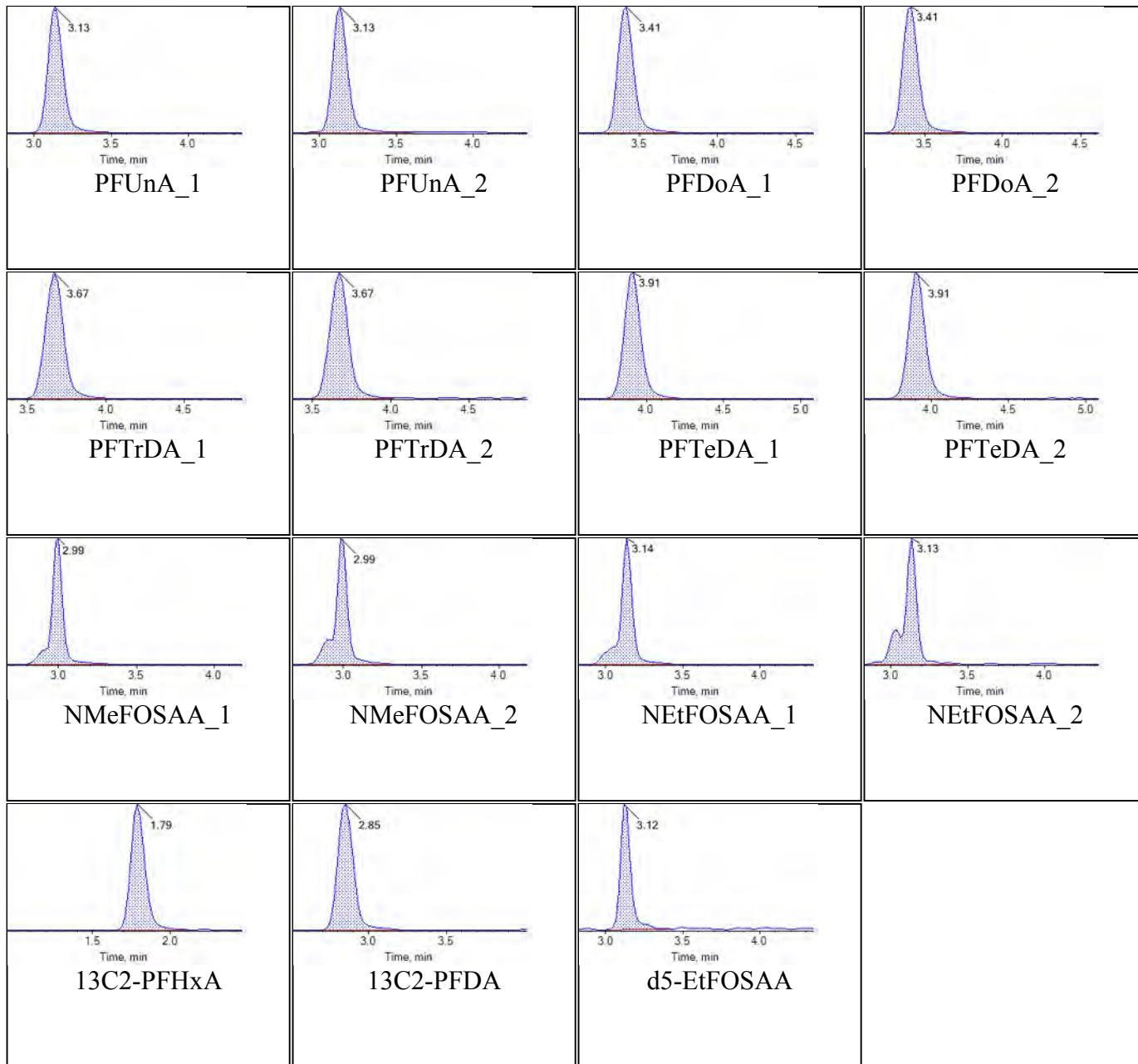


<b>Sample Name</b>	JZ86	<b>Injection Vial</b>	10
<b>Sample ID</b>	L9	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T19:21:04	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

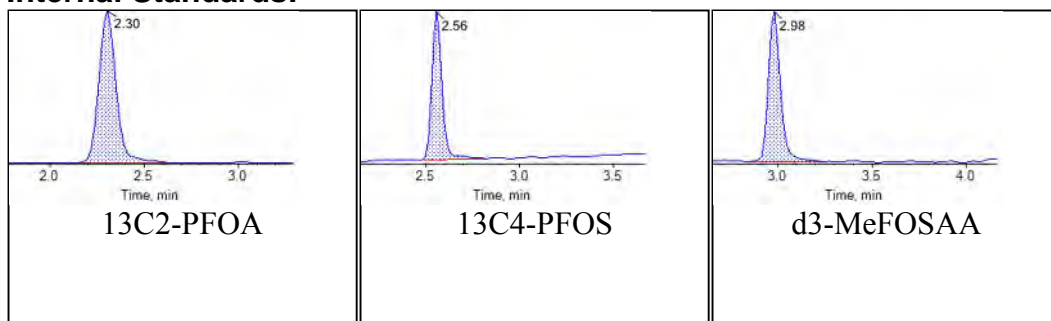
## Chromatograms

### Target Analytes:





**Internal Standards:**

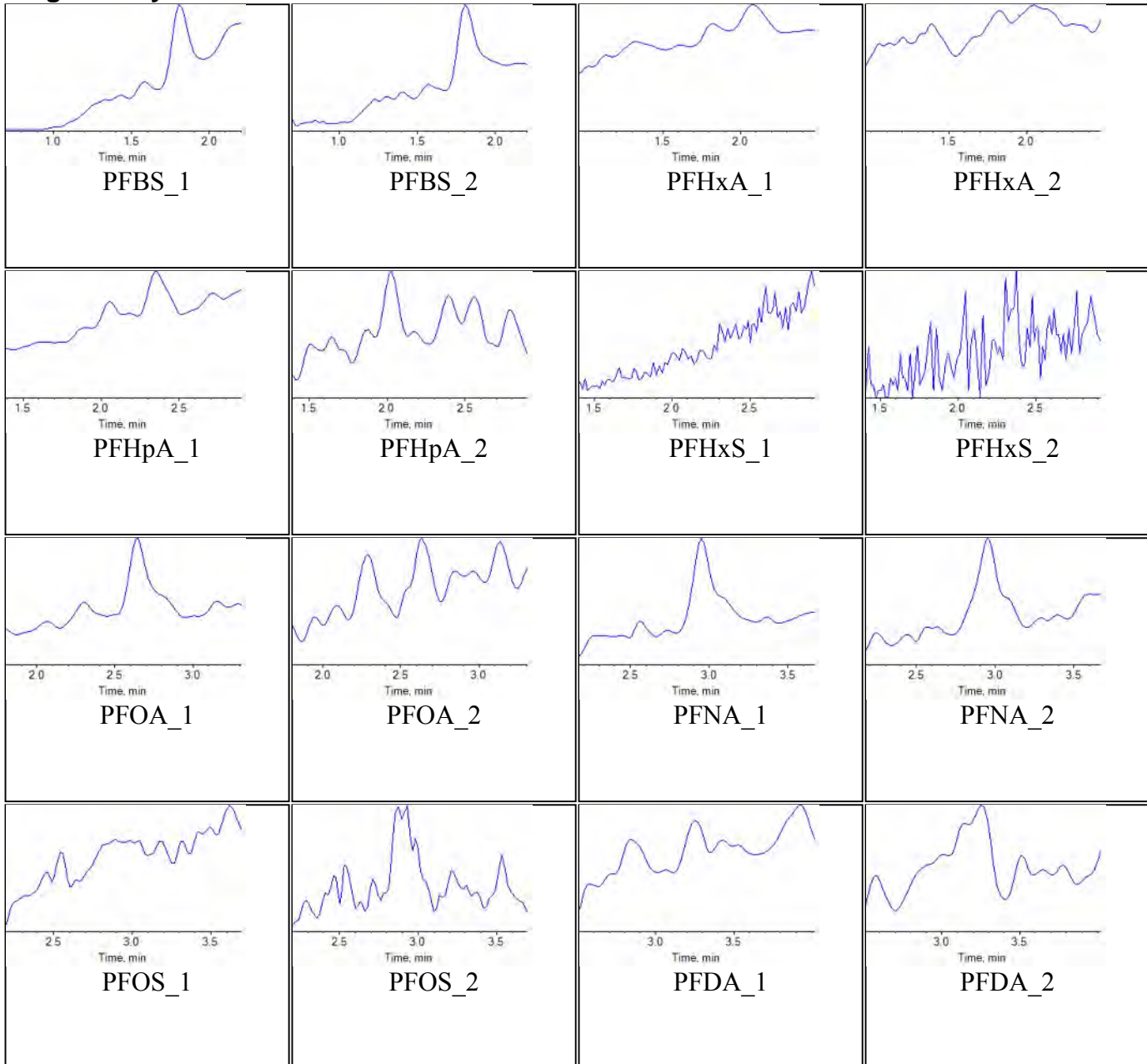


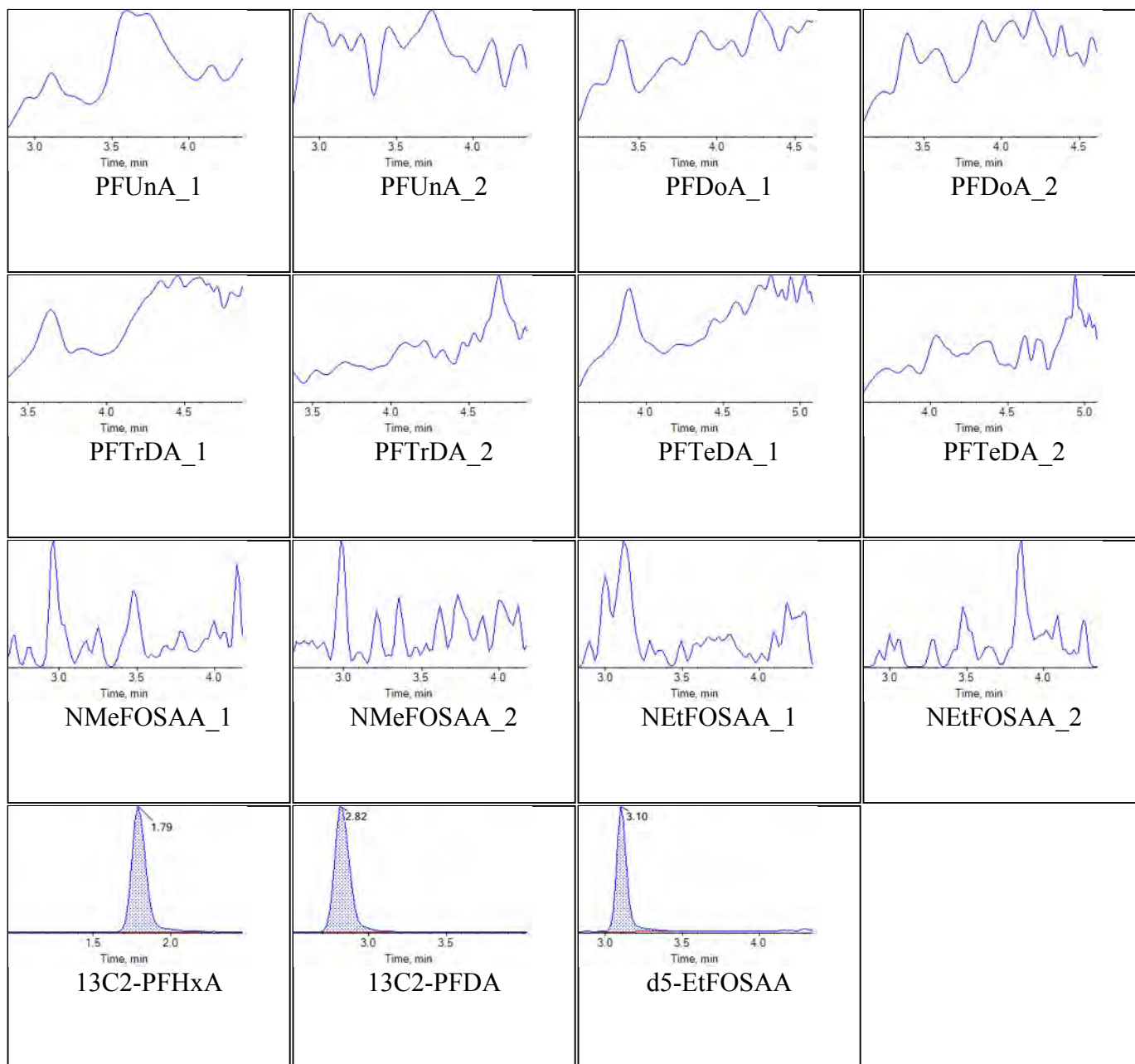
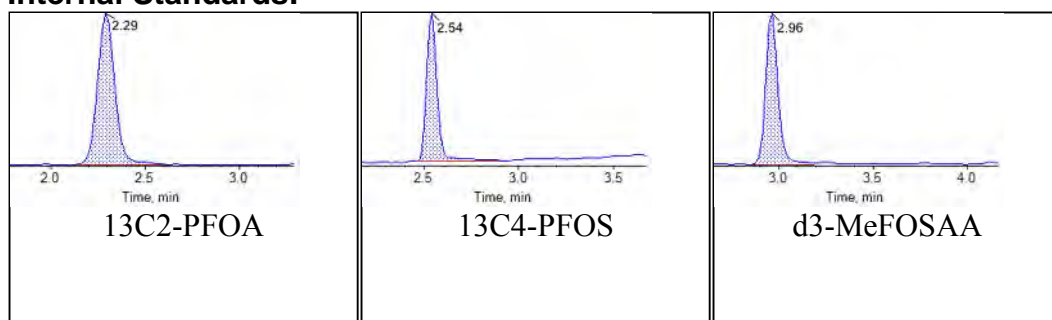


Sample Name	KA08 IB	Injection Vial	11
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:30:00	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Chromatograms

### Target Analytes:

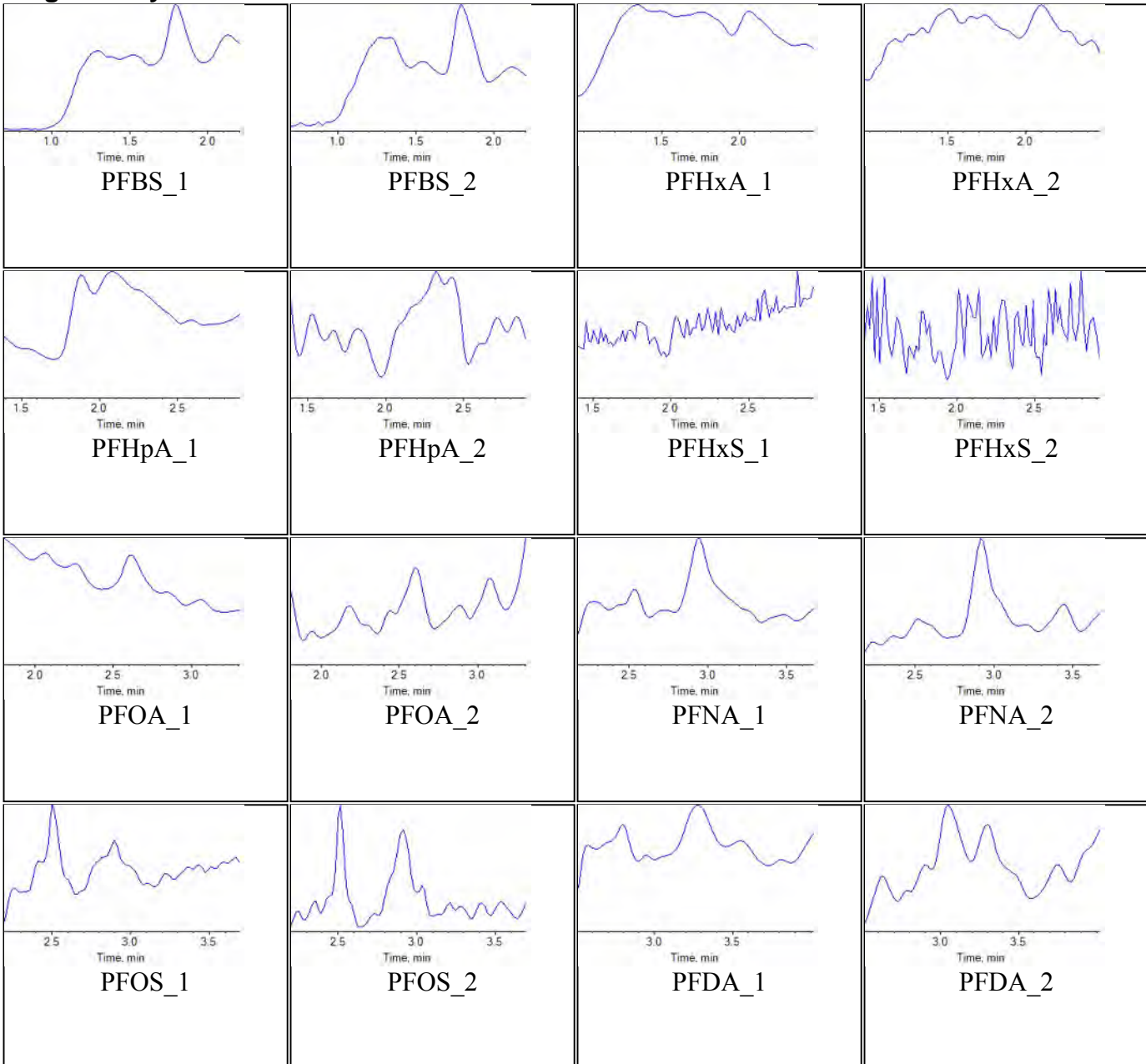


**Internal Standards:**

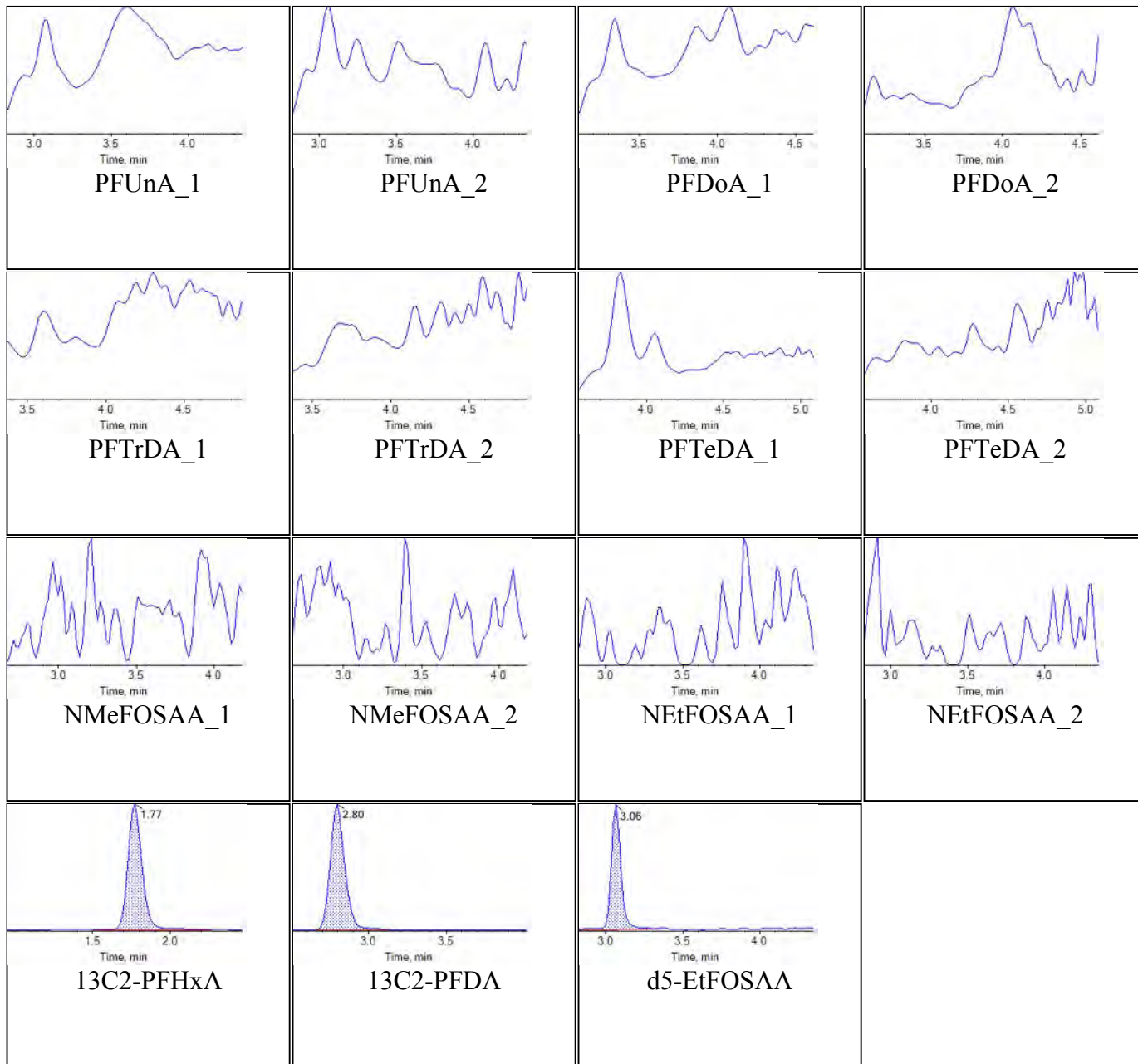
Sample Name	J7558-FS(0)	Injection Vial	23
Sample ID	JAX-RES-08202018-0945-25	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:17:24	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Chromatograms

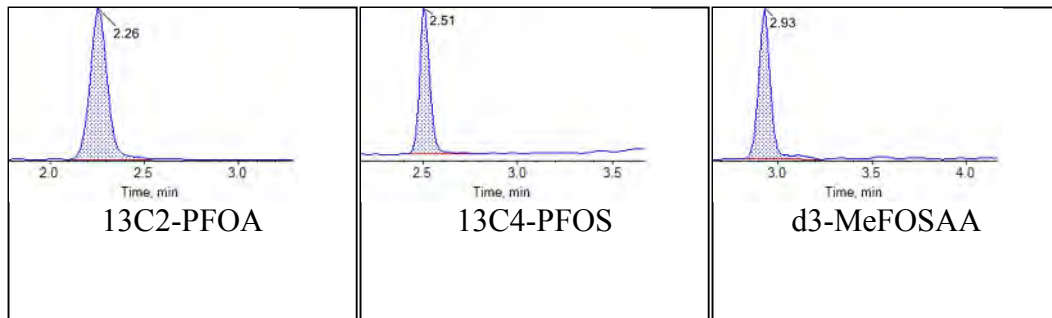
### Target Analytes:







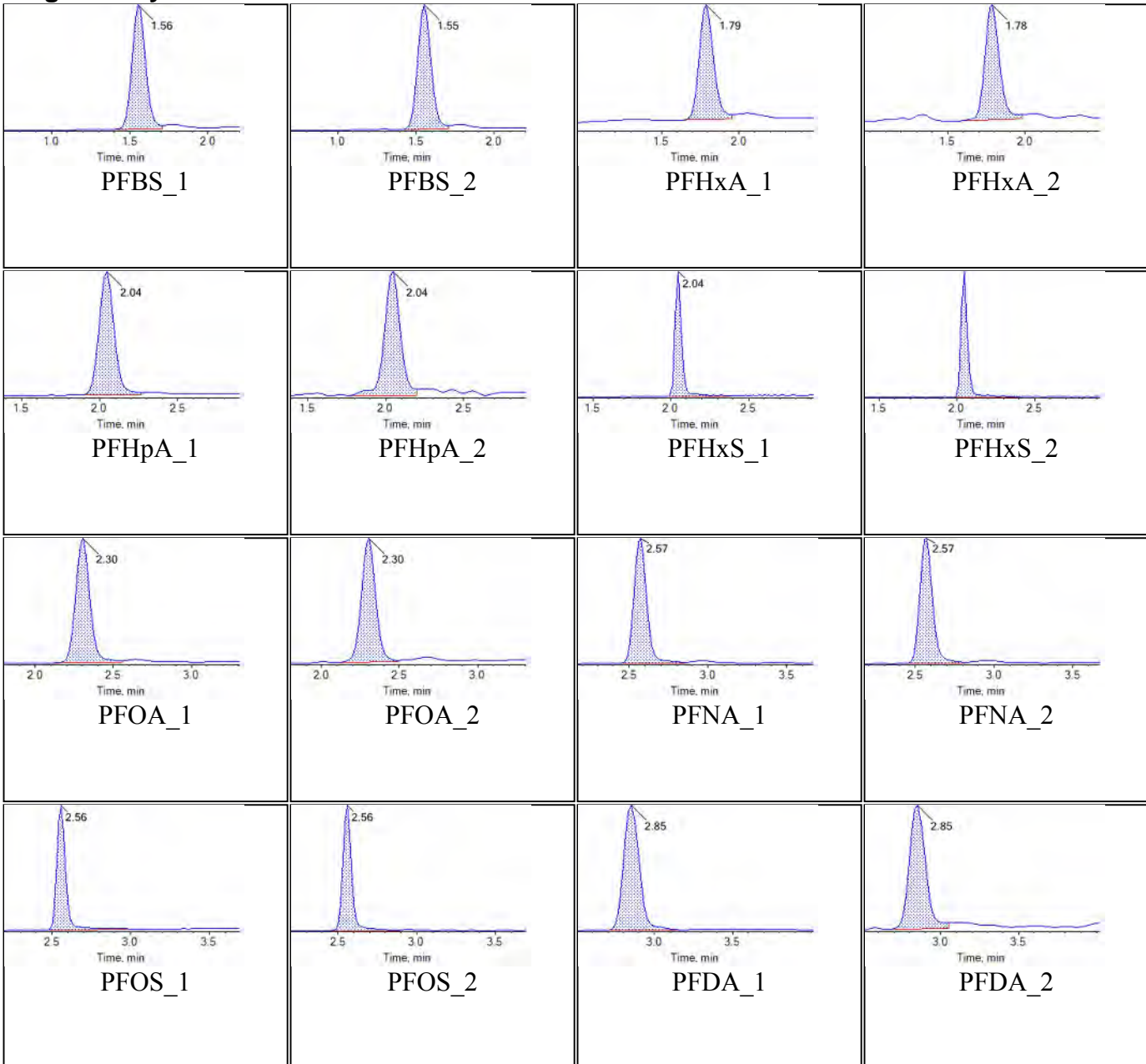
### Internal Standards:

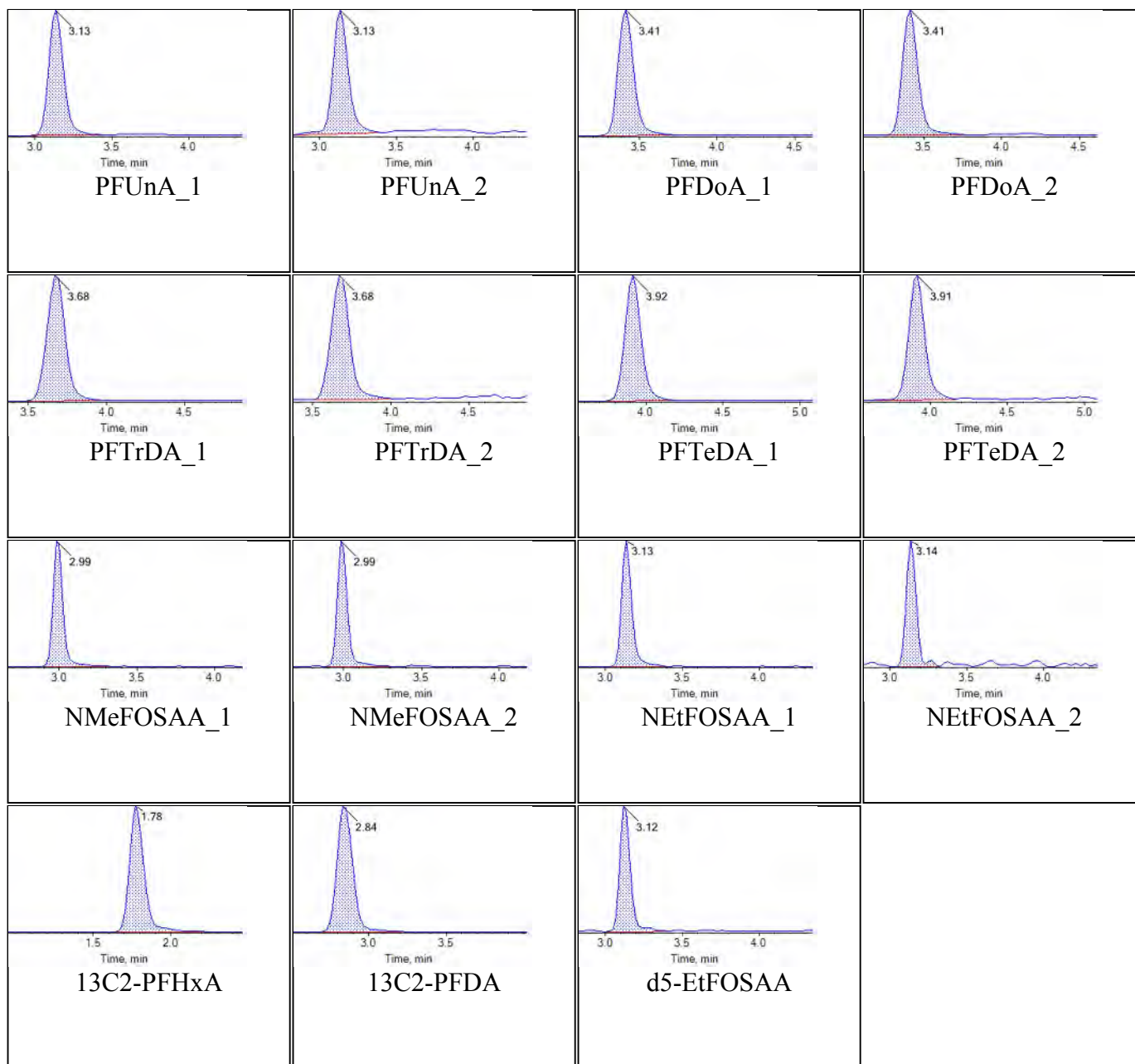
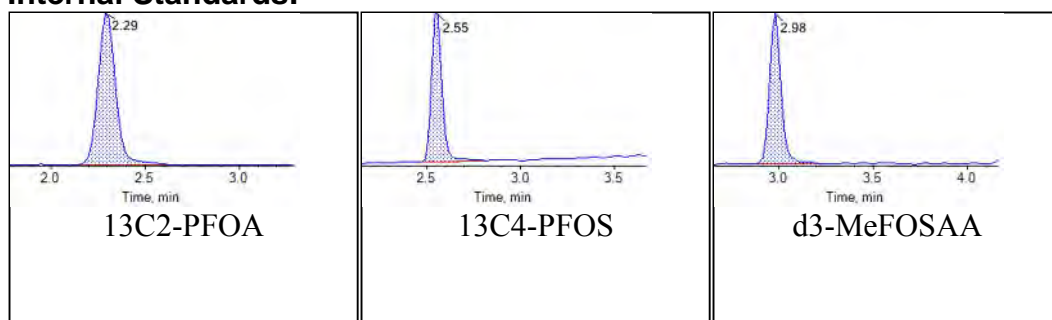


<b>Sample Name</b>	JZ77 ICC	<b>Injection Vial</b>	12
<b>Sample ID</b>	ICC	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T19:38:57	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

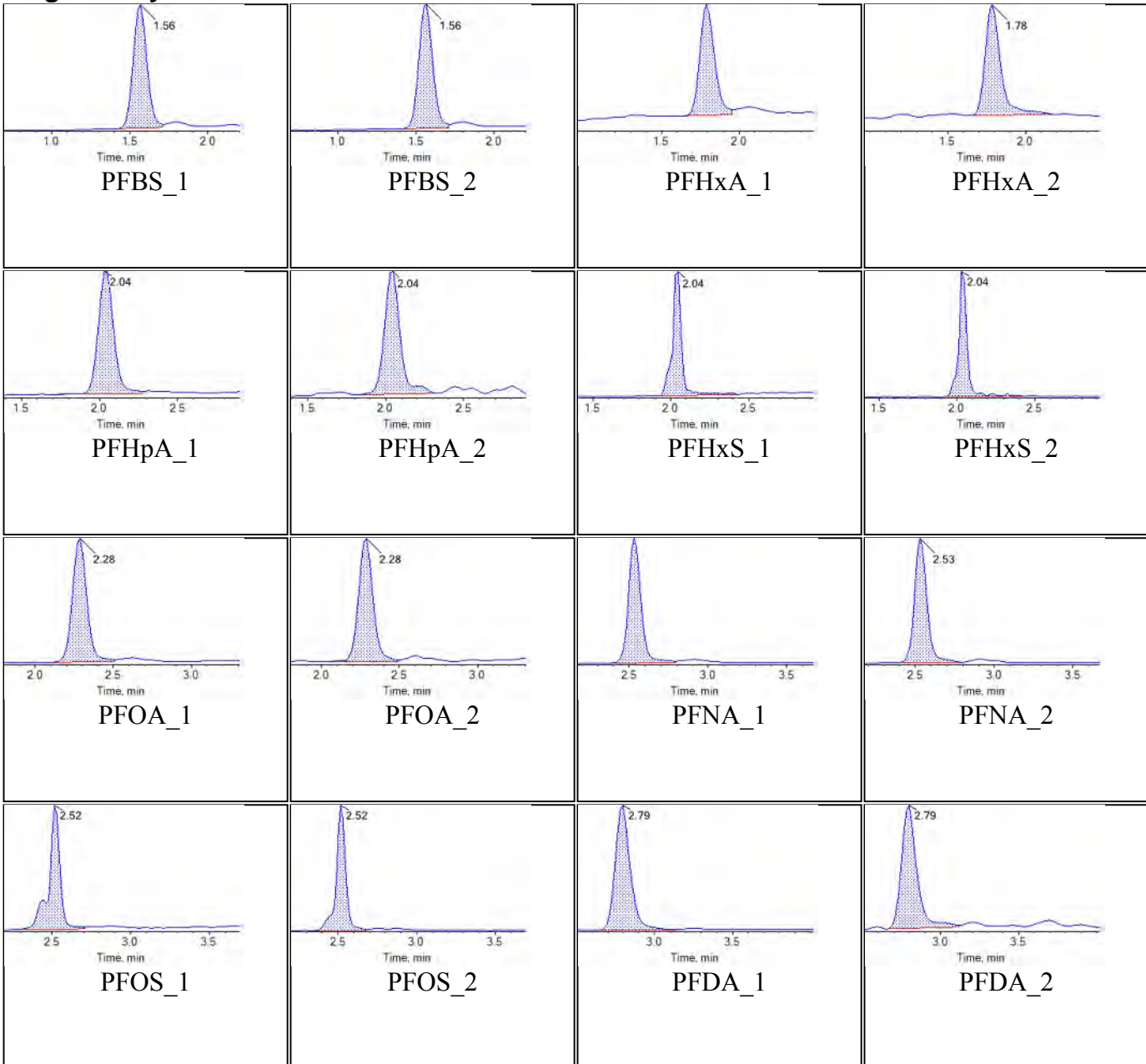


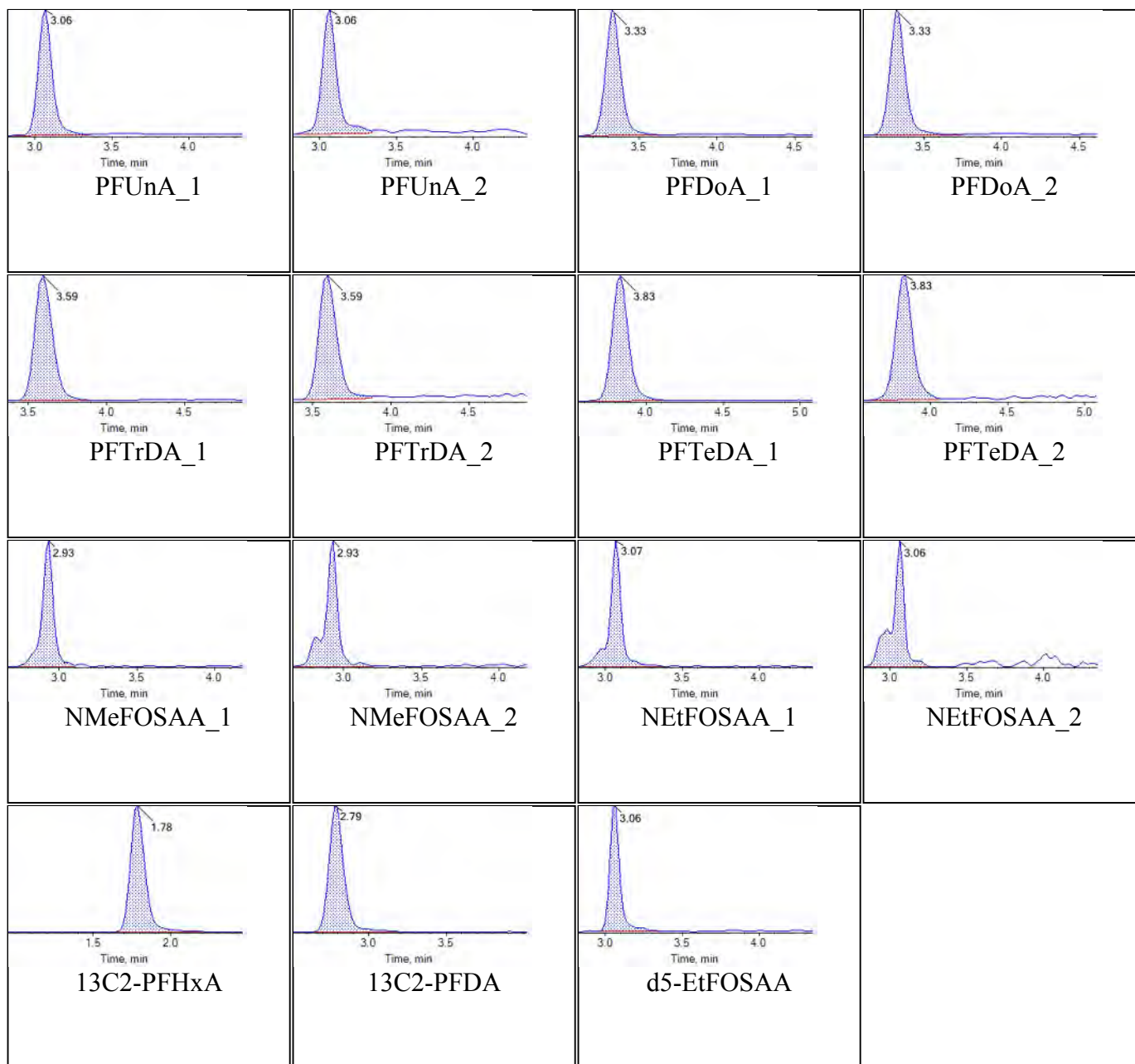
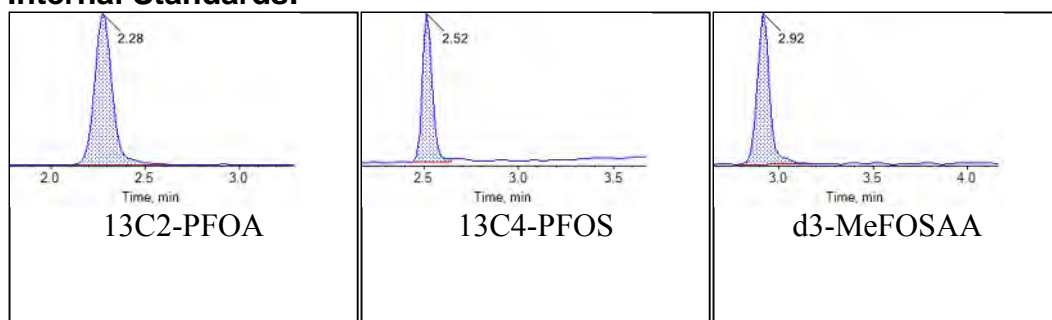
**Internal Standards:**

<b>Sample Name</b>	JZ82 CCV	<b>Injection Vial</b>	19
<b>Sample ID</b>	CCV	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T20:41:36	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:



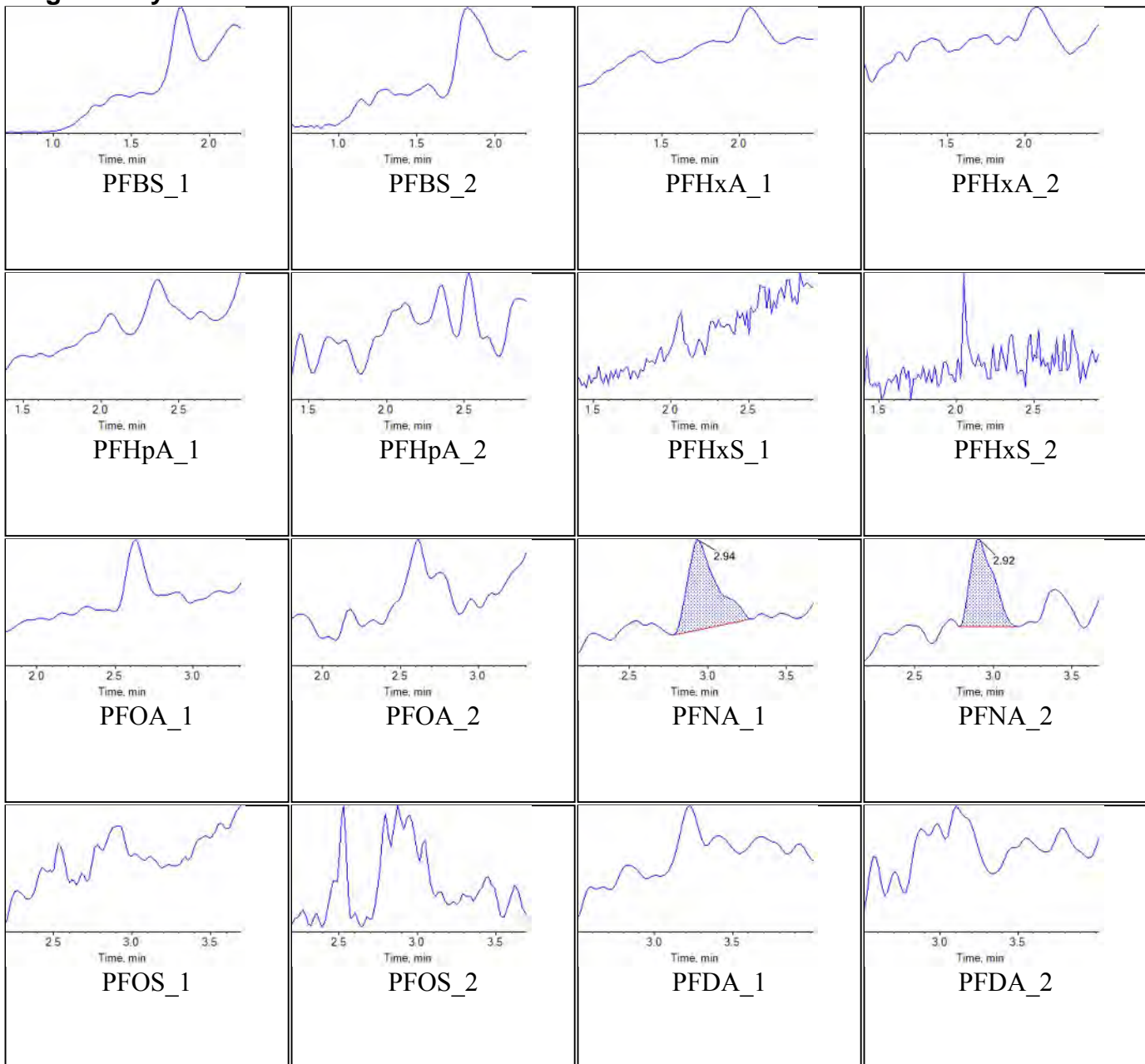
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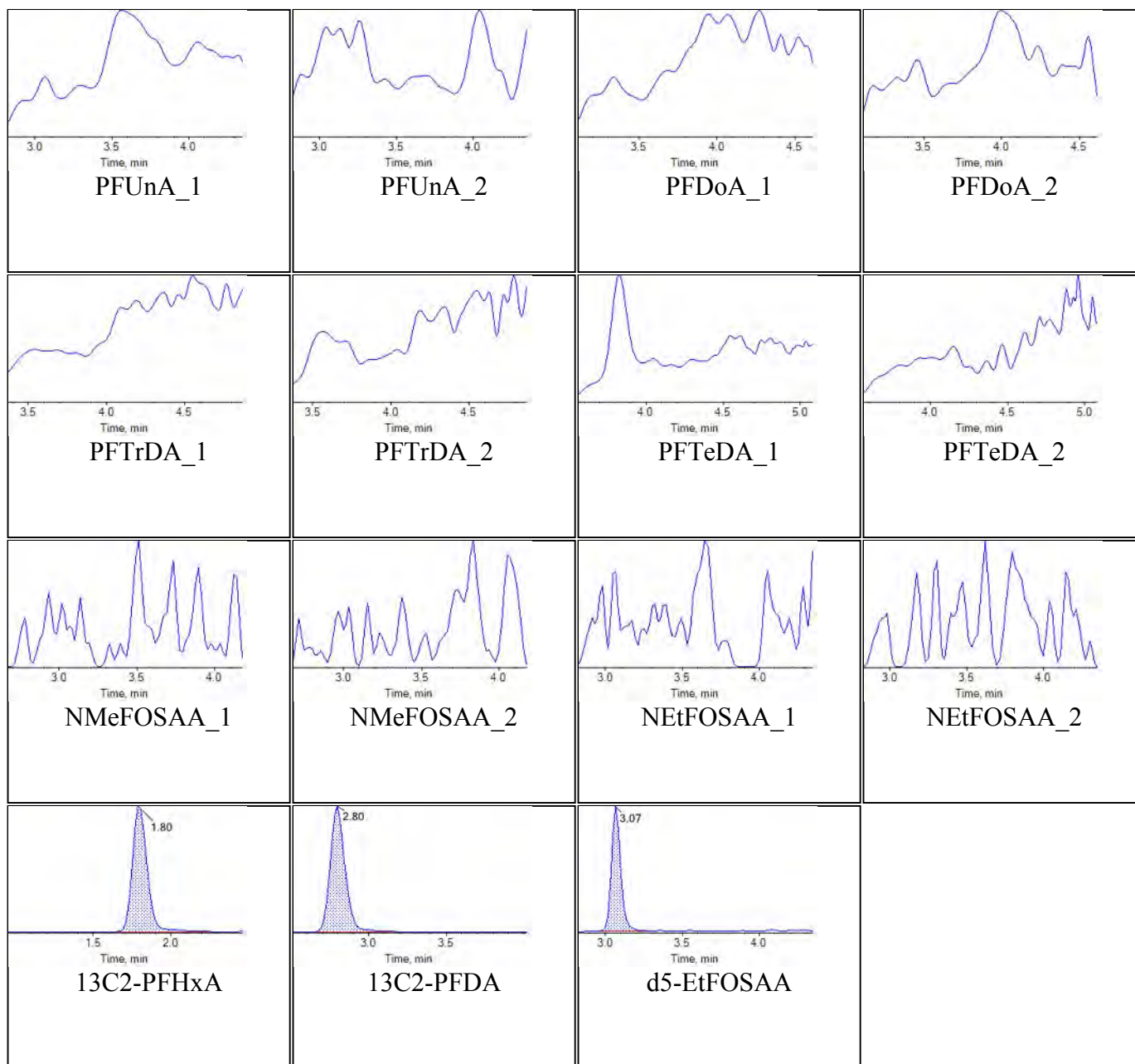
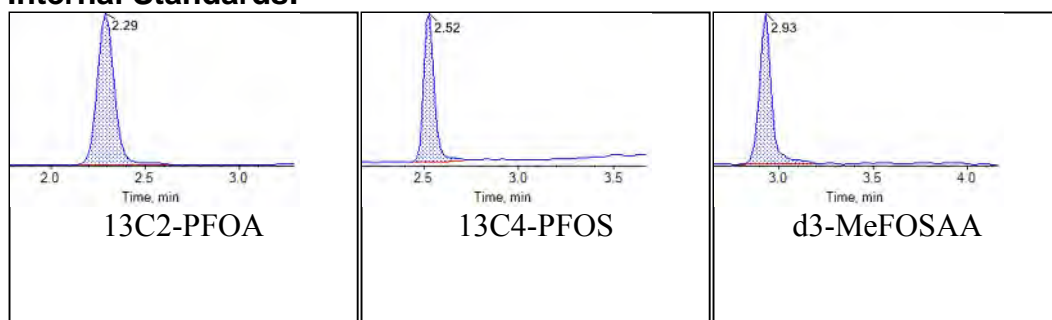


Sample Name	CR633PB-FS(0)	Injection Vial	21
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:59:30	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Chromatograms

### Target Analytes:

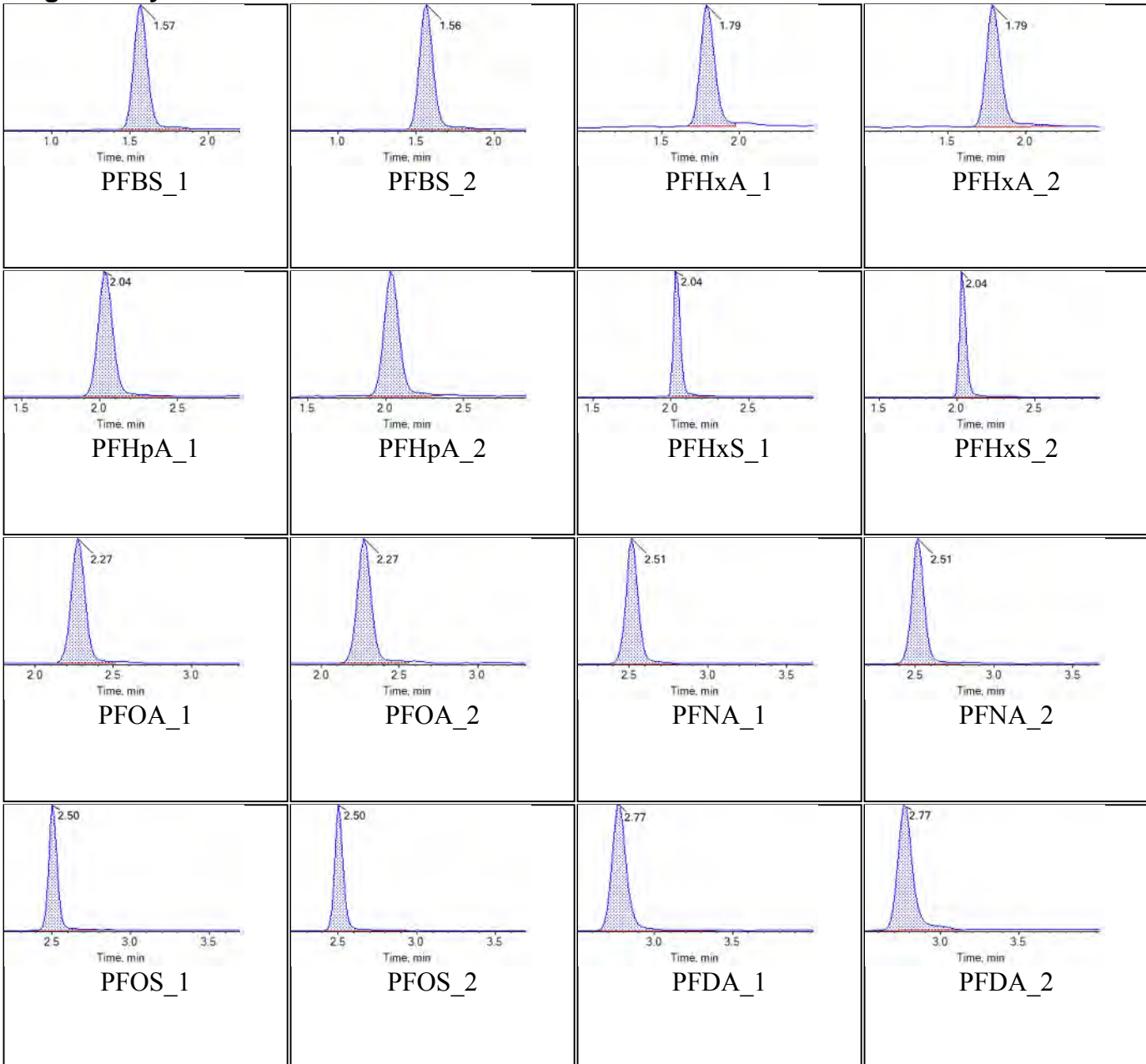


**Internal Standards:**

<b>Sample Name</b>	CR634LCS-FS(0)	<b>Injection Vial</b>	22
<b>Sample ID</b>	Laboratory Control Sample	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T21:08:27	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:

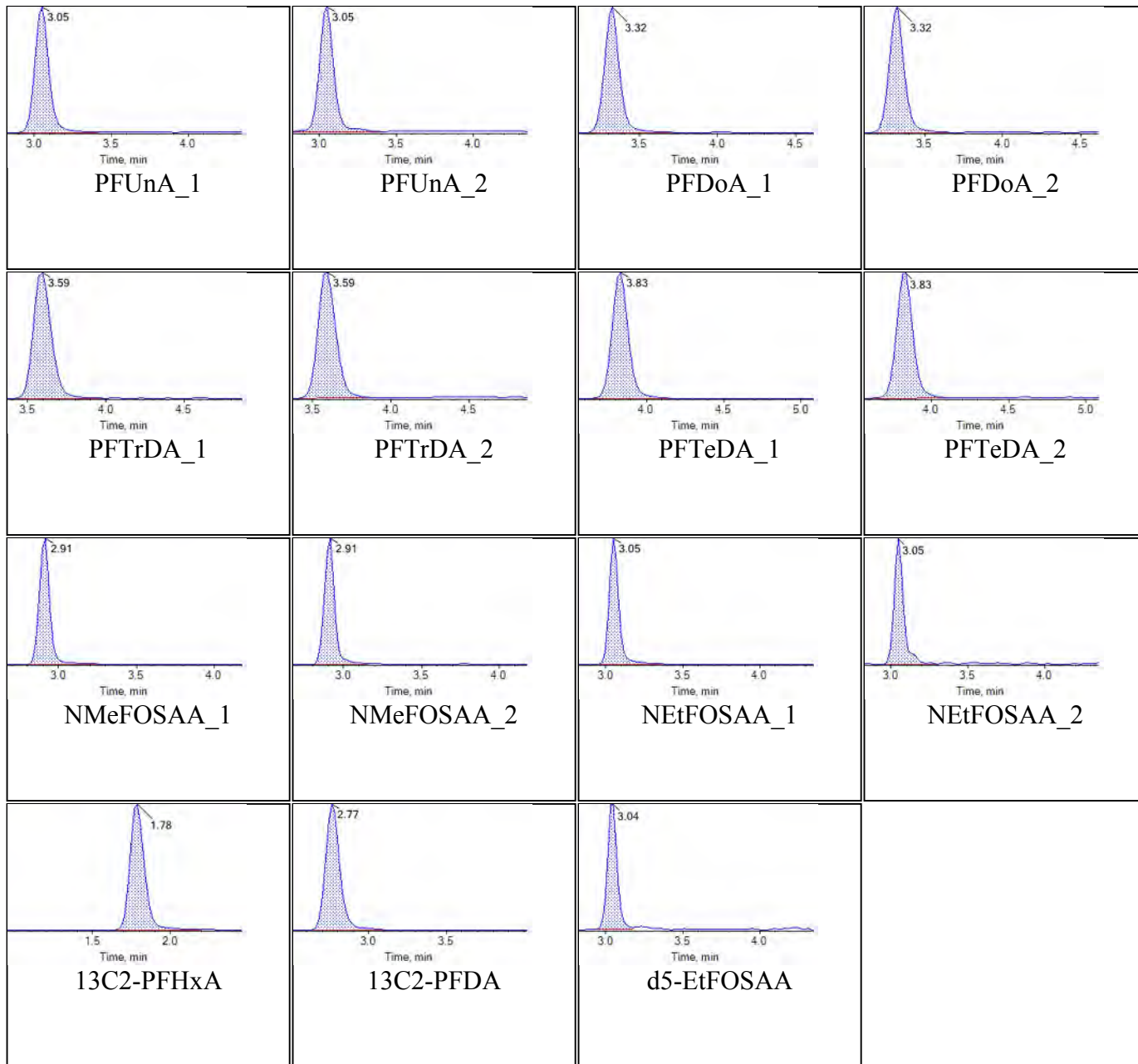




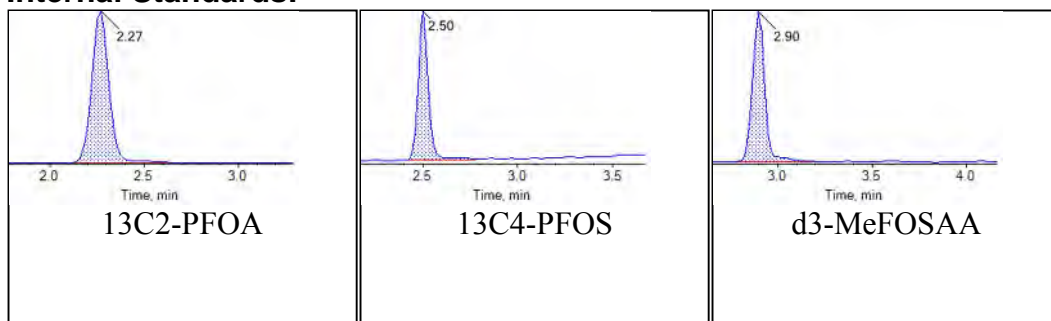


Chromatogram Report

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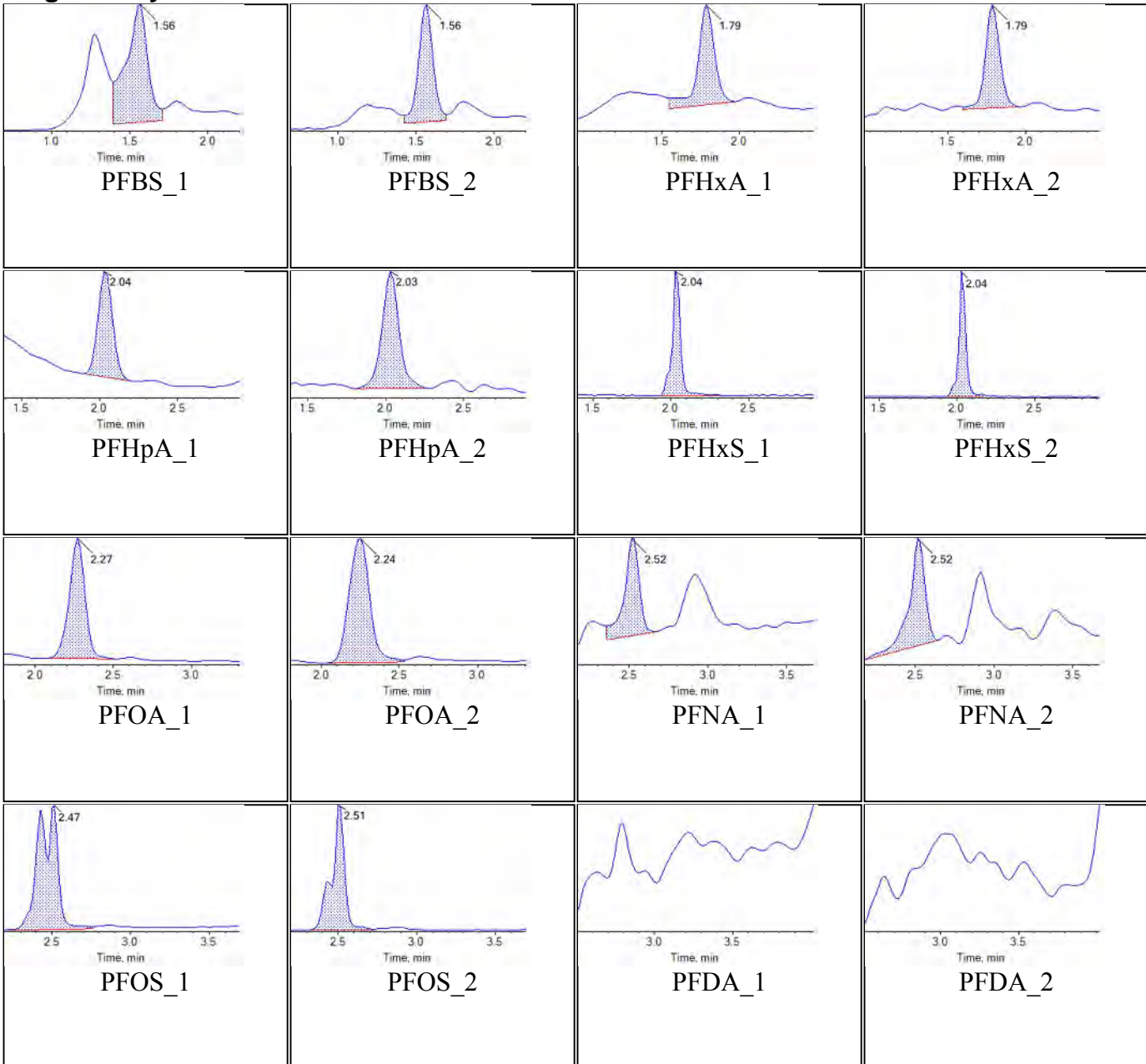
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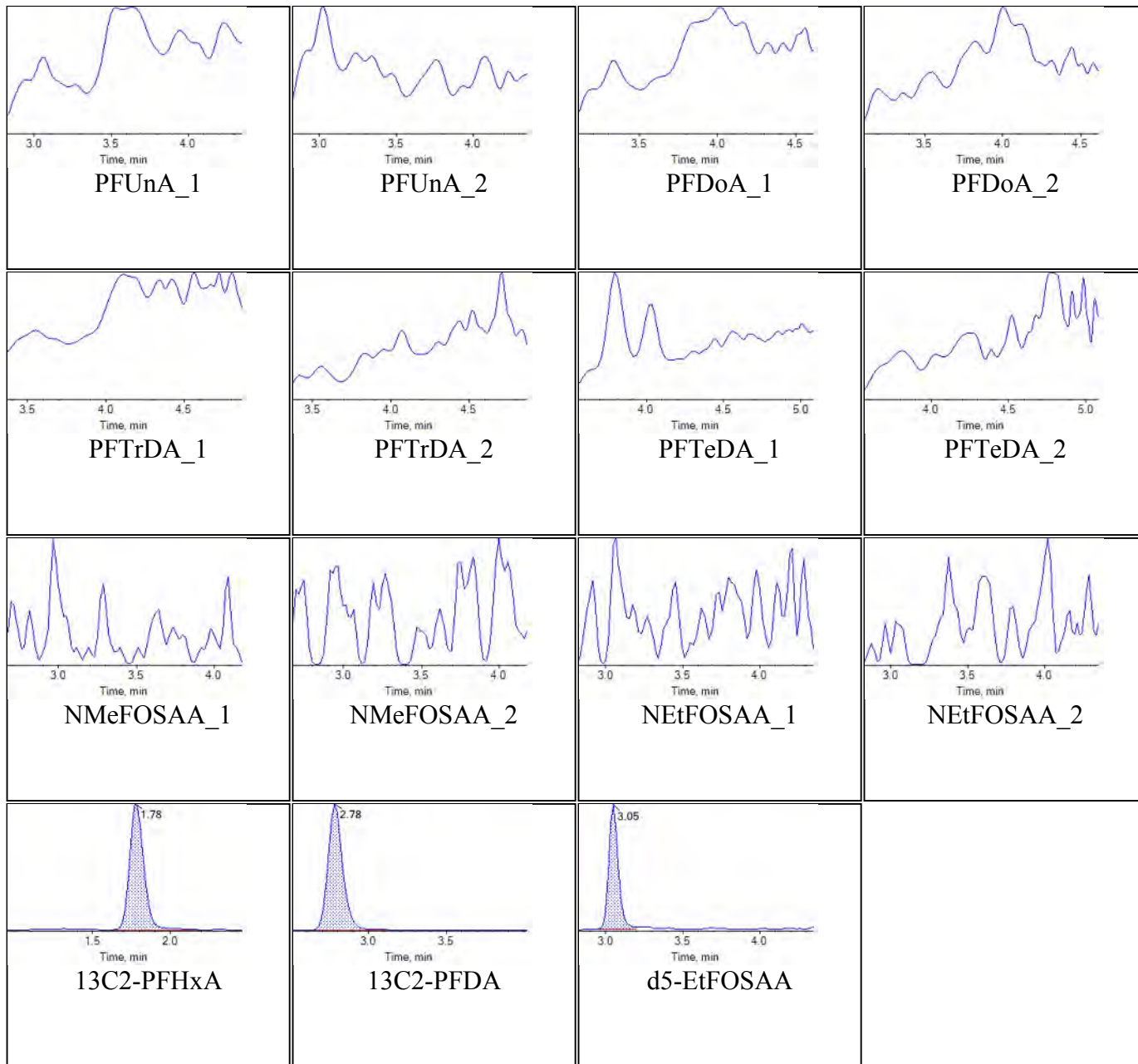


<b>Sample Name</b>	J7560-FS(0)	<b>Injection Vial</b>	24
<b>Sample ID</b>	JAX-RES-08202018-1100-26	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T21:26:19	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

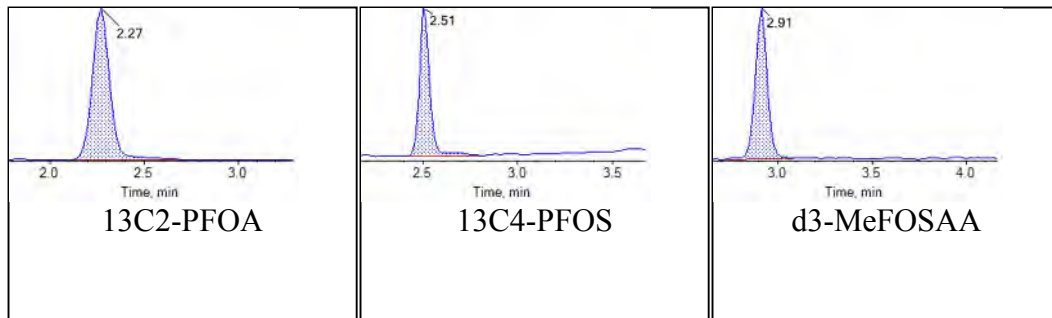
## Chromatograms

### Target Analytes:





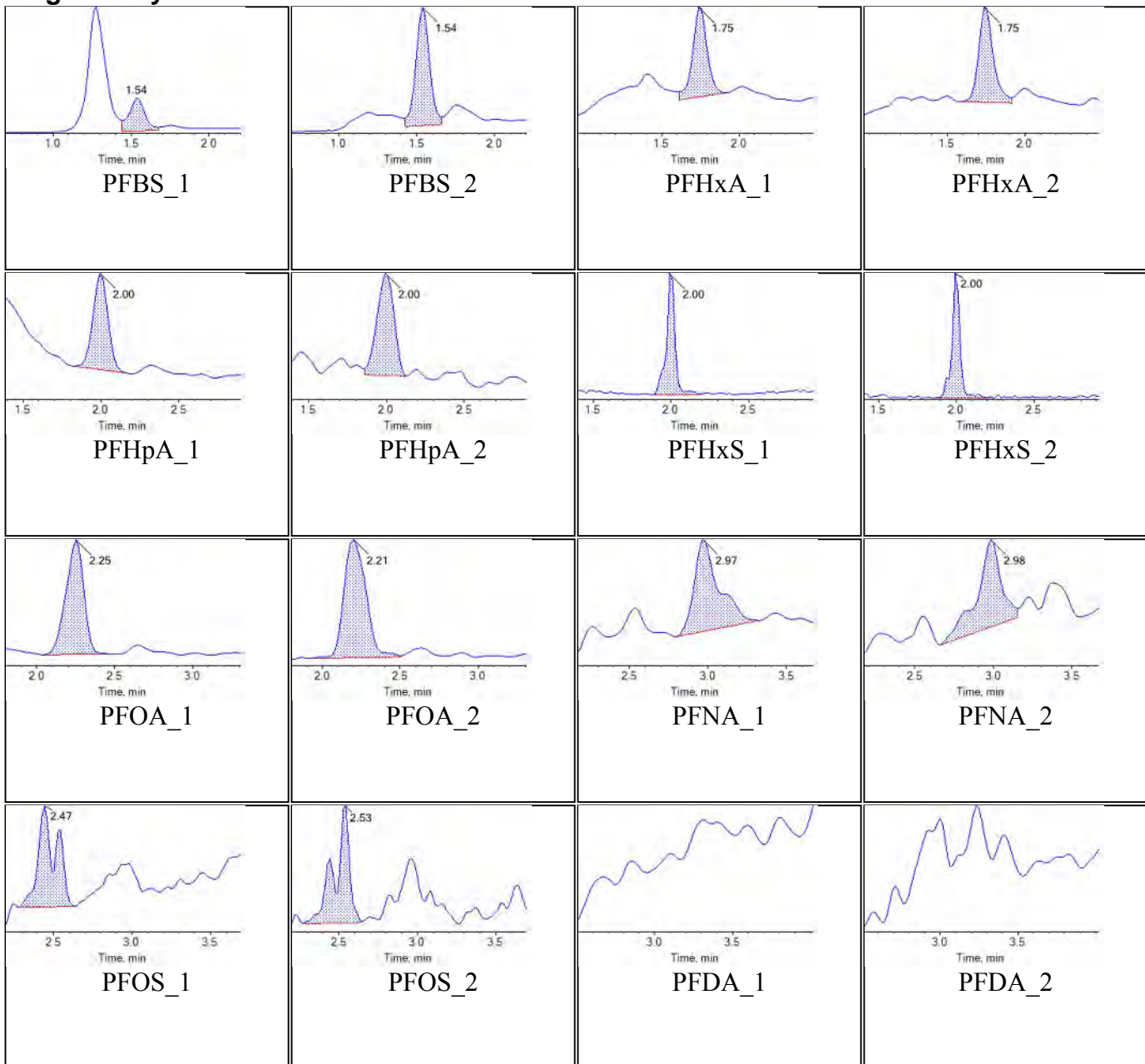
### Internal Standards:



Sample Name	J7562-FS(0)	Injection Vial	25
Sample ID	JAX-RES-08202018-1310-28	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:35:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Chromatograms

### Target Analytes:

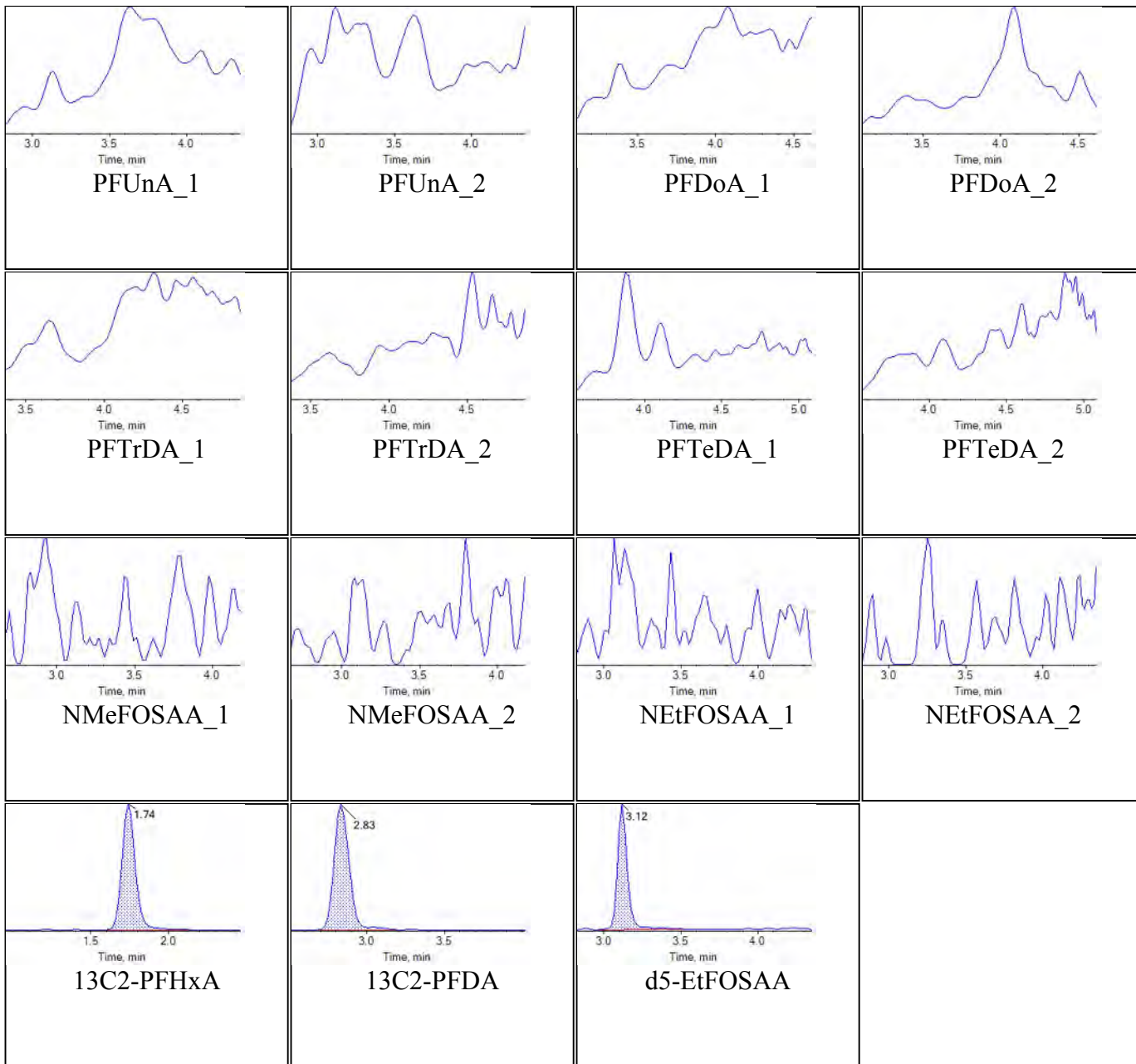




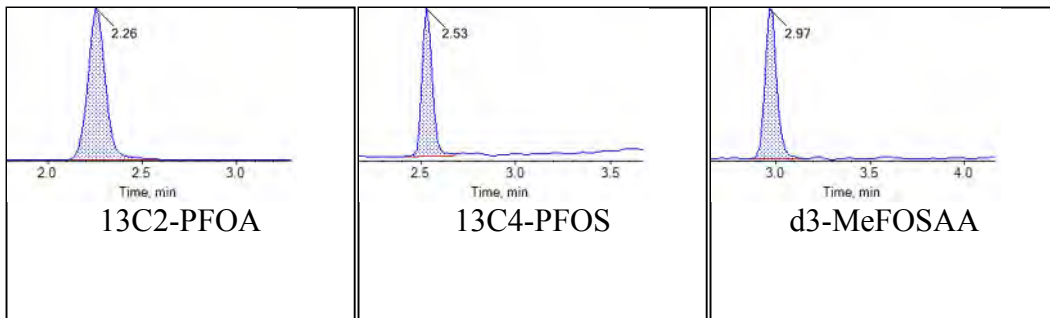


Chromatogram Report

Created with Analyst Reporter  
Printed: 23/08/2018 11:18:58 AM



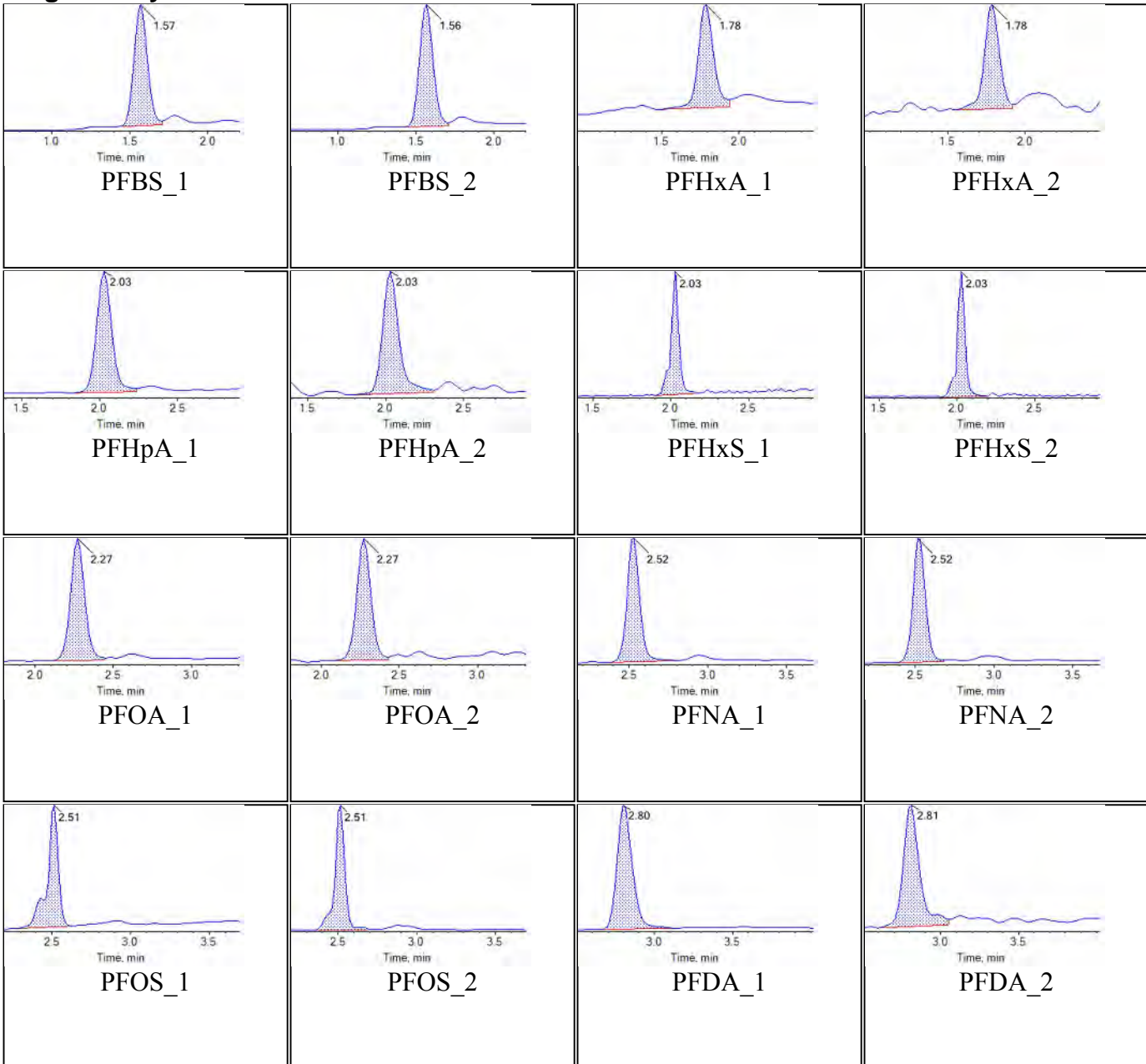
Internal Standards:

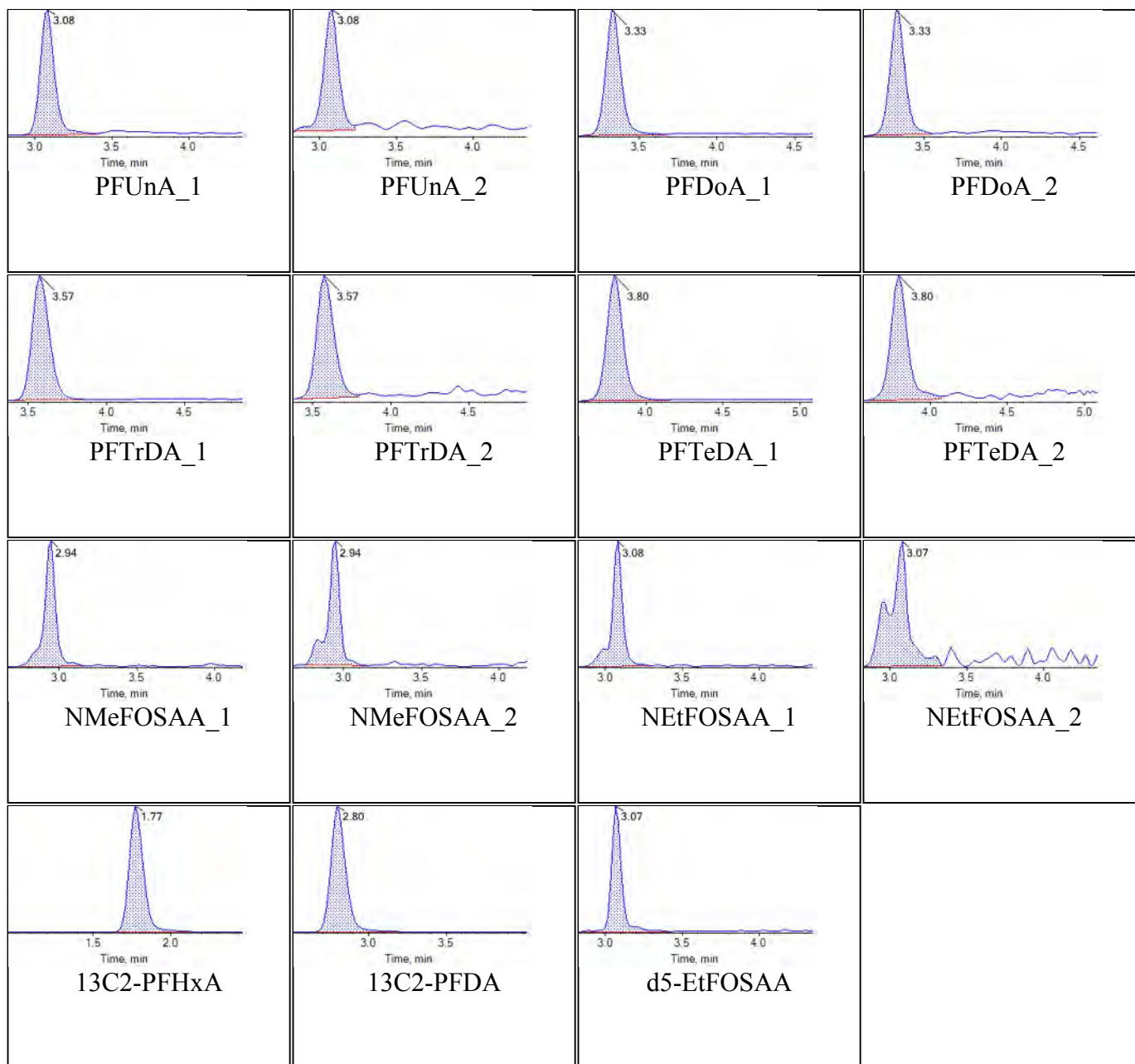
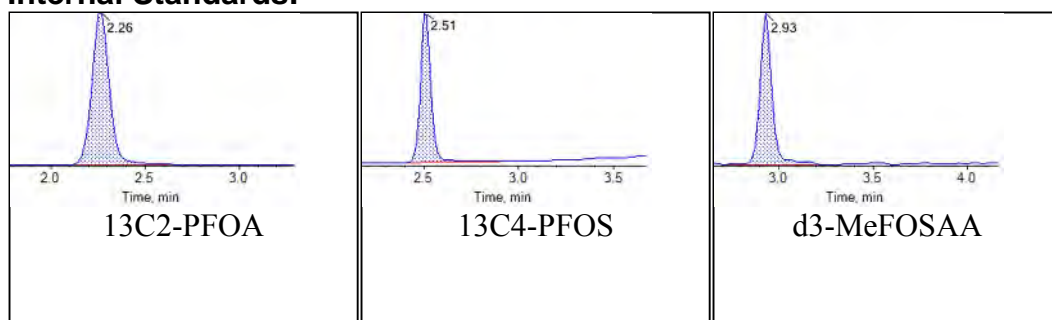


<b>Sample Name</b>	JZ81 CCV	<b>Injection Vial</b>	26
<b>Sample ID</b>	CCV	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-22T21:44:12	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

## Chromatograms

### Target Analytes:



**Internal Standards:**

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","307-24-4","PFHxA",".500000","ng/L","U",".22","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500",".50",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","375-85-9","PFHpA","1.000000","ng/L","U",".34","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","335-67-1","PFOA","1.000000","ng/L","U",".38","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","375-95-1","PFNA","1.000000","ng/L","U",".37","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","335-76-2","PFDA","1.000000","ng/L","U",".39","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","2058-94-8","PFUnA","1.000000","ng/L","U",".38","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","307-55-1","PFDaA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","72629-94-8","PFTrDA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","376-06-7","PFTeDA","1.500000","ng/L","U",".73","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.50",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","2355-31-9","NMeFOSAA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","2991-50-6","NEtFOSAA","1.000000","ng/L","U",".44","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","375-73-5","PFBS",".500000","ng/L","U",".21","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500",".50",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","1763-23-1","PFOS","1.000000","ng/L","U",".30","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","355-46-4","PFHxS","1.000000","ng/L","U",".34","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","BDO-2106","13C2-PFHxA",".400000","ng/L","","-99.00","NA","","SIS","99.00","","-99.00","NA","YES",".400000","",".250000",".000500",".50",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","BDO-2110","13C2-PFDA",".400000","ng/L","","-99.00","NA","","SIS","100.00","","-99.00","NA","YES",".400000","",".250000",".000500",".50",""

"CR633PB-FS","SOP 5-369","Initial","CR633PB-FS","BNO","BDO-1839","d5-EtFOSAA","1.500000","ng/L","","-99.00","NA","","SIS","94.00","","-99.00","NA","YES","1.600000","",".250000",".000500",".50",""

"CR634LCS-FS","SOP 5-369","Initial","CR634LCS-FS","BNO","307-24-4","PFHxA","9.310000","ng/L","",".22","MDL","","T","93.00","","2.50","LOQ","YES","10.000000","",".250000",".000500","9.31",""



0500", ".50", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "375-85-9", "PFHpA", "9.830000", "ng/L", "", ".34", "MDL", "", "T", "98.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "335-67-1", "PFOA", "9.220000", "ng/L", "", ".38", "MDL", "", "T", "92.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "375-95-1", "PFNA", "9.780000", "ng/L", "", ".37", "MDL", "", "T", "98.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "335-76-2", "PFDA", "8.940000", "ng/L", "", ".39", "MDL", "", "T", "89.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "2058-94-8", "PFUnA", "8.020000", "ng/L", "", ".38", "MDL", "", "T", "80.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "307-55-1", "PFDoA", "8.290000", "ng/L", "", ".42", "MDL", "", "T", "83.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "72629-94-8", "PFTTrDA", "8.470000", "ng/L", "", ".42", "MDL", "", "T", "85.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".00500", "1.00", ""  
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"CR634LCS-FS", "SOP 5-369", "Initial", "CR634LCS-FS", "BNO", "2991-50-6", "NEtFOSAA", "10.130000", "ng/L", "", ".44", "MDL", "", "T", "101.00", "", "2.50", "LOQ", "YES", "10.000000", "", ".250000", ".000500", "1.00", ""  
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"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "335-76-2", "PFDA", ".930000", "ng/L", "U", ".36", "MDL", "", "T", "", "", "2.31", "LOQ", "YES", "-99.000000", "", ".270000", ".000500", ".93", ""  
"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "2058-94-8", "PFUnA", ".930000", "ng/L", "U", ".35", "MDL", "", "T", "", "", "2.31", "LOQ", "YES", "-99.000000", "", ".270000", ".000500", ".93", ""  
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"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "2991-50-6", "NEtFOSAA", ".930000", "ng/L", "U", ".41", "MDL", "", "T", "", "", "2.31", "LOQ", "YES", "-99.000000", "", ".270000", ".000500", ".93", ""  
"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "375-73-5", "PFBS", ".460000", "ng/L", "U", ".19", "MDL", "", "T", "", "", "2.31", "LOQ", "YES", "-99.000000", "", ".270000", ".000500", ".46", ""  
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"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "355-46-4", "PFHxS", ".930000", "ng/L", "U", ".31", "MDL", "", "T", "", "", "2.31", "LOQ", "YES", "-99.000000", "", ".270000", ".000500", ".93", ""  
"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "BDO-2106", "13C2-PFHxA", ".420000", "ng/L", "", "-99.00", "NA", "", "SIS", "112.00", "", "-99.00", "NA", "YES", ".370000", "", ".270000", ".000500", ".50", ""  
"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "BDO-2110", "13C2-PFDA", ".370000", "ng/L", "", "-99.00", "NA", "", "SIS", "99.00", "", "-99.00", "NA", "YES", ".370000", "", ".270000", ".000500", ".50", ""  
"JAX-RES-08202018-0945-25", "SOP 5-369", "Initial", "J7558-FS", "BNO", "BDO-1839", "d5-EtFOSAA", "1.320000", "ng/L", "", "-99.00", "NA", "", "SIS", "89.00", "", "-99.00", "NA", "YES", "1.480000", "", ".270000", ".000500", ".50", ""  
"JAX-RES-08202018-1100-26", "SOP 5-369", "Initial", "J7560-FS", "BNO", "307-24-4", "PFHxA", "2.150000", "ng/L", "J", ".19", "MDL", "", "T", "", "", "2.19", "LOQ", "YES", "-99.000000", "", ".285000", ".000500", ".44", ""  
"JAX-RES-08202018-1100-26", "SOP 5-369", "Initial", "J7560-FS", "BNO", "375-85-9", "PFHpA", "1.090000", "ng/L", "J", ".30", "MDL", "", "T", "", "", "2.19", "LOQ", "YES", "-99.000000", "", ".285000", ".000500", ".88", ""  
"JAX-RES-08202018-1100-26", "SOP 5-369", "Initial", "J7560-FS", "BNO", "335-67-1", "PFOA", "2.950000", "ng/L", "", ".33", "MDL", "", "T", "", "", "2.19", "LOQ", "YES", "-99.000000", "", ".285000", ".000500", ""

,".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","375-95-1","PFNA",".880000","ng/L","U",".32","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","335-76-2","PFDA",".880000","ng/L","U",".34","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","2058-94-8","PFUnA",".880000","ng/L","U",".33","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","307-55-1","PFDoA",".880000","ng/L","U",".37","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","72629-94-8","PFTTrDA",".880000","ng/L","U",".37","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","376-06-7","PFTeDA","1.320000","ng/L","U",".64","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", "1.32", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","2355-31-9","NMeFOSAA",".880000","ng/L","U",".37","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","2991-50-6","NEtFOSAA",".880000","ng/L","U",".39","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","375-73-5","PFBS","1.270000","ng/L","J",".18","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".44", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","1763-23-1","PFOS","3.890000","ng/L","",".26","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","355-46-4","PFHxS","4.610000","ng/L","",".30","MDL","","T","","","2.19","LOQ","YES","-99.000000","",".285000",".000500", ".88", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","BDO-2106","13C2-PFHxA",".390000","ng/L","","-99.00","NA","","SIS","112.00","","-99.00","NA","YES",".350000","",".285000",".000500", ".50", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","BDO-2110","13C2-PFDA",".330000","ng/L","","-99.00","NA","","SIS","94.00","","-99.00","NA","YES",".350000","",".285000",".000500", ".50", ""  
"JAX-RES-08202018-1100-26","SOP 5-369","Initial","J7560-FS","BNO","BDO-1839","d5-EtFOSAA","1.090000","ng/L","","-99.00","NA","","SIS","78.00","","-99.00","NA","YES","1.400000","",".285000",".000500", ".50", ""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","307-24-4","PFHxA",".970000","ng/L","J",".21","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500", ".48", ""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","375-85-9","PFHpA",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500", ".96", ""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","335-67-1","PFOA",".840000","ng/L","J",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500", ".96", ""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","375-95-1","PFNA",".960000","ng/L","U",".36","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500

",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","335-76-2","PFDA",".960000","ng/L","U",".38","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","2058-94-8","PFUnA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","307-55-1","PFDoA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","72629-94-8","PFTrDA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","376-06-7","PFTeDA","1.440000","ng/L","U",".70","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500","1.44","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","2355-31-9","NMeFOSAA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","2991-50-6","NEtFOSAA",".960000","ng/L","U",".42","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","375-73-5","PFBS","1.050000","ng/L","J",".20","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","1763-23-1","PFOS",".960000","ng/L","U",".29","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","355-46-4","PFHxS","1.360000","ng/L","J",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","BDO-2106","13C2-PFHxA",".450000","ng/L","","-99.00","NA","","SIS","116.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","BDO-2110","13C2-PFDA",".360000","ng/L","","-99.00","NA","","SIS","93.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50","""  
"JAX-RES-08202018-1310-28","SOP 5-369","Initial","J7562-FS","BNO","BDO-1839","d5-EtFOSAA","1.540000","ng/L","","-99.00","NA","","SIS","100.00","","-99.00","NA","YES","1.540000","",".260000",".000500",".50","""  
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR633PB-FS","","WATER","CR633PB-FS","MB","","-99.000000","SOP 5-369","Gen Prep","Initial","08/22/2018 11:00","08/22/2018 20:59","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0519","18-0519","DP-18-0233","DP-18-0233","18-0519","08/22/2018 11:00","08/27/2018 16:11","""  
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR634LCS-FS","","WATER","CR634LCS-FS","LCS","","-99.000000","SOP 5-369","Gen Prep","Initial","08/22/2018 11:00","08/22/2018 21:08","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0519","18-0519","DP-18-0233","DP-18-0233","18-0519","08/22/2018 11:00","08/27/2018 16:11","""  
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08202018-0945-25","08/20/2018 09:45","W","J7558-FS","NM","SHP-180821-01",".700000","SOP 5-369","Gen Prep","Initial","08/22/2018 11:00","08/22/2018 21:17","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0519","18-0519","DP-18-0233","DP-18-0233","18-0519","08/21/2018 13:00","08/27/2018 16:11","""  
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08202018-1100-26","08/20/2018 11:00","W","J7560-FS","NM","SHP-180821-01",".700000","SOP 5-369","Gen Prep","Initial","08/22/2018 11:00","08/22/2018

21:26","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0519","18-0519","DP-18-0233","DP-18-0233","18-0519","08/21/2018 13:00","08/27/2018 16:11",""  
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08202018-1310-28","08/20/2018 13:10","W","J7562-FS","NM","SHP-180821-01",".700000","SOP 5-369","Gen Prep","Initial","08/22/2018 11:00","08/22/2018 21:35","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0519","18-0519","DP-18-0233","DP-18-0233","18-0519","08/21/2018 13:00","08/27/2018 16:11",""



# TETRA TECH

## INTERNAL CORRESPONDENCE

**TO:** M. PETERSON **DATE:** AUGUST 30, 2018  
**FROM:** MICHELLE L. WOEBER **COPIES:** DV FILE  
**SUBJECT:** ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)  
NAVAL AIR STATION (NAS), JACKSONVILLE  
JACKSONVILLE, FLORIDA  
SAMPLE DELIVERY GROUPS (SDGs) 18-0519 & 18-0524

**SAMPLES:** SDG 18-0519

3/Drinking Water/PFAS

JAX-RES-08202018-0945-25  
JAX-RES-08202018-1310-28

JAX-RES-08202018-1100-26

SDG 18-0524

2/Field Reagent Blanks (FRBs)/PFAS

JAX-RES-08202018-1100-26-FRB

JAX-RES-08202018-1310-28-FRB

### Overview

The sample set for NAS Jacksonville, SDGs 18-0519 & 18-0524 consisted of three (3) drinking water samples and two (2) FRBs. All five (5) samples were analyzed for PFAS. No field duplicate sample pair was included in this SDG.

The samples were collected by Tetra Tech, Inc. on August 20, 2018 and analyzed by Battelle Norwell Operations. All analyses were conducted in accordance with EPA Method 537 version 1.1 analytical and reporting protocols. The data contained in this SDG was validated at EPA Stage 4 with regard to the following parameters:

- \* • Data completeness
- \* • Hold times/Sample Preservation
- \* • Mass Calibration
- \* • LC/MS/MS System Tuning and Performance
- \* • Mass Spectral Acquisition Rate
- \* • Instrument Sensitivity Check
- \* • Ion Transition Check
- \* • Asymmetry Factor Results
- \* • Initial/Continuing Calibrations
- \* • Laboratory Preparation/Method Blank Results
- \* • Field Reagent Blank (FRB) Results
- \* • Surrogate Spike Recoveries
- \* • Injection Internal Standard Recoveries
- \* • Laboratory Control Sample Recoveries
- \* • Compound Identification
- \* • Compound Quantitation

\* • Detection Limits

The symbol (\*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, and documentation supporting these findings is presented in Appendix C.

**PFAS**

No issues were identified.

**Additional Comments**

The laboratory uses a primary transition for the quantitation of a compound and a secondary transition for confirmation.

The FRB was analyzed if the corresponding sample had one or more detections greater than the limit of Quantitation (LOQ) or method reporting limit. No contamination was detected in the FRBs associated with the corresponding samples in SDG 18-0519.

The buffering agent Trizma was added to all drinking water samples and FRBs.

Detected results reported below the LOQ but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the MDL in the database.

**Executive Summary**

**Laboratory Performance Issues:** None.

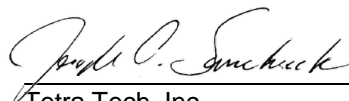
**Other Factors Affecting Data Quality:** Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the Environmental Protection Agency document EPA/600/R-08/092, Method 537, "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)", (September 2009), US EPA National Functional Guidelines for Organic Data Review (January 2017), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories version 5.1" (2017) as applicable. The text of this report has been formulated to address only those areas affecting data quality.



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Tetra Tech, Inc.  
Michelle L. Woeber  
Chemist/Data Validator



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Tetra Tech, Inc.  
Joseph A. Samchuck  
Data Validation Manager

Attachments:

- Appendix A - Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

### Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

<b>U</b>	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted detection limit.
<b>J</b>	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
<b>J+</b>	The result is an estimated quantity, but the result may be biased high.
<b>J-</b>	The result is an estimated quantity, but the result may be biased low.
<b>UJ</b>	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
<b>NJ</b>	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.
<b>R</b>	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
<b>UR</b>	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
<b>X</b>	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team, but exclusion of the data is recommended.



**APPENDIX A**

**QUALIFIED ANALYTICAL RESULTS**

**Qualifier Codes:**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's  $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors  $>40\%$  for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient  $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids  $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

<b>PROJ_NO: 08005-SE03</b> <b>SDG: 18-0519</b> <b>FRACTION: PFAS</b> <b>MEDIA: WATER</b>	NSAMPLE	JAX-RES-08202018-0945-25			JAX-RES-08202018-1100-26			JAX-RES-08202018-1310-28		
	LAB_ID	J7558-FS			J7560-FS			J7562-FS		
	SAMP_DATE	8/20/2018			8/20/2018			8/20/2018		
	QC_TYPE	NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
N-ETHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NEFOSA)	0.41	U		0.39	U		0.42	U		
N-METHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NMFOSA)	0.39	U		0.37	U		0.4	U		
PENTADEC AFLUOROOCCTANOIC ACID (PFOA)	0.35	U		2.95			0.84	J	P	
PERFLUOROBUTANESULFONIC ACID (PFBS)	0.19	U		1.27	J	P	1.05	J	P	
PERFLUORODECANOIC ACID (PFDA)	0.36	U		0.34	U		0.38	U		
PERFLUORODODECANOIC ACID (PFDOA)	0.39	U		0.37	U		0.4	U		
PERFLUOROHEPTANOIC ACID (PFHPA)	0.31	U		1.09	J	P	0.33	U		
PERFLUOROHEXANESULFONIC ACID (PFHXS)	0.31	U		4.61			1.36	J	P	
PERFLUOROHEXANOIC ACID (PFHXA)	0.2	U		2.15	J	P	0.97	J	P	
PERFLUORONONANOIC ACID (PFNA)	0.34	U		0.32	U		0.36	U		
PERFLUOROOCCTANESULFONIC ACID (PFOS)	0.28	U		3.89			0.29	U		
PERFLUOROTETRADECANOIC ACID (PFTEA)	0.68	U		0.64	U		0.7	U		
PERFLUOROTRIDECANOIC ACID (PFTRIA)	0.39	U		0.37	U		0.4	U		
PERFLUOROUNDECANOIC ACID (PFUNA)	0.35	U		0.33	U		0.37	U		

<b>PROJ_NO: 08005-SE03</b> <b>SDG: 18-0524</b> <b>FRACTION: PFAS</b> <b>MEDIA: WATER</b>	NSAMPLE	JAX-RES-08202018-1100-26-FRB			JAX-RES-08202018-1310-28-FRB		
	LAB_ID	J7561-FS			J7563-FS		
	SAMP_DATE	8/20/2018			8/20/2018		
	QC_TYPE	NM			NM		
	UNITS	NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)	0.42	U		0.42	U		
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)	0.4	U		0.4	U		
PENTADECAFLUOROOCTANOIC ACID (PFOA)	0.37	U		0.37	U		
PERFLUOROBUTANESULFONIC ACID (PFBS)	0.2	U		0.2	U		
PERFLUORODECANOIC ACID (PFDA)	0.38	U		0.38	U		
PERFLUORODODECANOIC ACID (PFDOA)	0.4	U		0.4	U		
PERFLUOROHEPTANOIC ACID (PFHPA)	0.33	U		0.33	U		
PERFLUOROHEXANESULFONIC ACID (PFHXS)	0.33	U		0.33	U		
PERFLUOROHEXANOIC ACID (PFHXA)	0.21	U		0.21	U		
PERFLUORONONANOIC ACID (PFNA)	0.36	U		0.36	U		
PERFLUOROOCTANESULFONIC ACID (PFOS)	0.29	U		0.29	U		
PERFLUOROTETRADECANOIC ACID (PFTEA)	0.7	U		0.7	U		
PERFLUOROTRIDECANOIC ACID (PFTRIA)	0.4	U		0.4	U		
PERFLUOROUNDECANOIC ACID (PFUNA)	0.37	U		0.37	U		

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-0945-25

Battelle ID	J7558-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/22/2018			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.46 U	0.20	0.46	2.31
PFHpA	0.93 U	0.31	0.93	2.31
PFOA	0.93 U	0.35	0.93	2.31
PFNA	0.93 U	0.34	0.93	2.31
PFDA	0.93 U	0.36	0.93	2.31
PFUnA	0.93 U	0.35	0.93	2.31
PFDoA	0.93 U	0.39	0.93	2.31
PFTTrDA	0.93 U	0.39	0.93	2.31
PFTeDA	1.39 U	0.68	1.39	2.31
NMeFOSAA	0.93 U	0.39	0.93	2.31
NEtFOSAA	0.93 U	0.41	0.93	2.31
PFBS	0.46 U	0.19	0.46	2.31
PFHxS	0.93 U	0.31	0.93	2.31
PFOS	0.93 U	0.28	0.93	2.31

**Surrogate Recoveries (%)**

13C2-PFHxA	112
13C2-PFDA	99
d5-EtFOSAA	89



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-1100-26

Battelle ID	J7560-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/22/2018			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	2.15 J	0.19	0.44	2.19
PFHpA	1.09 J	0.30	0.88	2.19
PFOA	2.95	0.33	0.88	2.19
PFNA	0.88 U	0.32	0.88	2.19
PFDA	0.88 U	0.34	0.88	2.19
PFUnA	0.88 U	0.33	0.88	2.19
PFDoA	0.88 U	0.37	0.88	2.19
PFTTrDA	0.88 U	0.37	0.88	2.19
PFTeDA	1.32 U	0.64	1.32	2.19
NMeFOSAA	0.88 U	0.37	0.88	2.19
NEtFOSAA	0.88 U	0.39	0.88	2.19
PFBS	1.27 J	0.18	0.44	2.19
PFHxS	4.61	0.30	0.88	2.19
PFOS	3.89	0.26	0.88	2.19

**Surrogate Recoveries (%)**

13C2-PFHxA	112
13C2-PFDA	94
d5-EtFOSAA	78



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID JAX-RES-08202018-1310-28

Battelle ID	J7562-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/22/2018			
Analysis Date	08/22/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.97 J	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.84 J	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	1.05 J	0.20	0.48	2.40
PFHxS	1.36 J	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

**Surrogate Recoveries (%)**

13C2-PFHxA	116
13C2-PFDA	93
d5-EtFOSAA	100





Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	JAX-RES-08202018-1100-26- FRB			
Battelle ID	J7561-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/24/2018			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.48 U	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.96 U	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	0.48 U	0.20	0.48	2.40
PFHxS	0.96 U	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

**Surrogate Recoveries (%)**

13C2-PFHxA	105
13C2-PFDA	104
d5-EtFOSAA	93



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	JAX-RES-08202018-1310-28- FRB			
Battelle ID	J7563-FS			
Sample Type	SA			
Collection Date	08/20/2018			
Extraction Date	08/24/2018			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	W			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.48 U	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.96 U	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	0.48 U	0.20	0.48	2.40
PFHxS	0.96 U	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

**Surrogate Recoveries (%)**

13C2-PFHxA	105
13C2-PFDA	93
d5-EtFOSAA	90

**APPENDIX C**

**SUPPORT DOCUMENTATION**

NAS JACKSONVILLE  
SDG 18-0519

$$PFAS \text{ Concentration} = \frac{[(PA - b)/m] * C_{IS} * PIV * DF}{S}$$

Where:

PA	Area of target analyte/ area of internal standard
b	y Intercept from calibration curve
C <sub>IS</sub>	Concentration of internal standard (ng/L)
m	Slope of calibration
DF	Dilution factor
S	Sample Size
PIV	Pre-injection volume (L)

Target Analyte	PFHxS
Sample ID	JAX-RES-08202018-1100-26
Laboratory Sample ID	J7560-FS
Sample Size (L)	0.285
Dilution Factor	1
PIV (L)	0.001
PFHxS Area	505489.32
IS Area	146921.11
IS Amount (ng/L)	287
Calibration Curve	y = 0.75357 x + -0.00733
Concentration (ng/L)	4.59

$$(((505489.32/146921.11)-0.00733)/0.75357)*287*0.001*1/0.285$$

Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.56	121956.49	362.809339	250.0	false
PFBS_2	298.9 / 99.0	1.56	18881.01	188.764788	170.1	false
PFHxA_1	313.0 / 269.0	1.79	204112.13	612.389021	95.8	false
PFHxA_2	313.0 / 119.0	1.79	11998.33	433.200161	101.0	false
PFHpA_1	363.0 / 319.0	2.04	98240.76	311.062238	94.5	false
PFHpA_2	363.0 / 169.0	2.03	2717.85	438.614167	93.5	false
PFHxS_1	399.0 / 80.0	2.04	505489.32	1313.127776	148.0	false
PFHxS_2	399.0 / 99.0	2.04	152459.53	1340.162640	292.0	false
PFOA_1	413.0 / 369.0	2.27	250941.77	839.651504	142.2	false
PFOA_2	413.0 / 169.0	2.24	28717.74	1439.277229	190.1	false
PFNA_1	463.0 / 419.0	2.52	8772.23	< 0	43.6	false
PFNA_2	463.0 / 219.0	2.52	3059.77	< 0	37.4	false
PFOS_1	499.0 / 80.0	2.47	576267.46	1109.192857	110.2	false
PFOS_2	499.0 / 99.0	2.51	77844.16	796.192768	233.7	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.78	39284.01	111.767499	570.9	false
13C2-PFDA	515.0 / 470.0	2.78	30311.86	94.443266	686.2	false
d5-EtFOSAA	589.0 / 419.0	3.05	17321.19	310.296813	219.6	true

Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.56	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHpA_2	363.0 / 169.0	2.03	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFOA_1	413.0 / 369.0	2.27	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFOA_2	413.0 / 169.0	2.24	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFNA_1	463.0 / 419.0	2.52	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFNA_2	463.0 / 219.0	2.52	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFOS_1	499.0 / 80.0	2.47	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFOS_2	499.0 / 99.0	2.51	13C4-PFOS	503.0 / 80.0	146921.11	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33335.59	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	33335.59	100.00
13C2-PFDA	515.0 / 470.0	2.78	13C2-PFOA	415.0 / 370.0	33335.59	100.00
d5-EtFOSAA	589.0 / 419.0	3.05	d3-MeFOSAA	573.0 / 419.0	20330.12	400.00

NAS JACKSONVILLE  
SDG 18-0519

LABORATORY CONTROL SAMPLE

	Result	Target	Calculation	Recovery	Reported Recovery
PFHxA	9.31 ng/L	10.0 ng/L	$9.31/10*100$	93.1	93



It can be done

### Chain-of-Custody

Client Contact Information <b>Tetra Tech</b>		Project Manager: <u>Mark Peterson</u>		Sampling Site: <u>Potable Wells</u>		Site Information: <u>Various Residential Potable Wells</u>	
Sampler Information (print name): <u>David Siegan</u>		Phone: <u>904-334-7260</u>		Email:		Turnaround Time (TAT) Requested:	
Project Name: <u>NAS JAX PFAS</u>		Normal <input type="checkbox"/>		Priority <input type="checkbox"/>		RUSH <input type="checkbox"/>	
Project No.: <u>112508005-SE0375</u>		Time Zone:		Analysis: <u>PFAS - 537</u>		COC # <u>004</u>	
Sample Identification		2018		Sample Date		Sample Time	
				Sample Type		Matrix	
				Total # of Cont.			
J7558 JAX-RES-08202018-0945-25		8/20		0945		G W 2	
J7559 JAX-RES-08202018-0945-25-FAB		8/20		0945		G W 1	
J7560 JAX-RES-08202018-1100-26		8/20		1100		G W 2	
J7561 JAX-RES-08202018-1100-26-FAB		8/20		1100		G W 1	
J7562 JAX-RES-08202018-1310-28		8/20		1310		G W 2	
J7563 JAX-RES-08202018-1310-28-FAB		8/20		1310		G W 1	
Receipt Temperature: (°C) <u>Therm-1 0.7°</u>		Samples Intact: <u>Yes</u> - No		Samples on Ice: <u>Yes</u> - No		Receipt Comments:	
Relinquished by (Print/Sign) <u>David Siegan</u>		Company: <u>TT</u>		Date/Time: <u>8/20/2018 1500</u>		Received by (Print/Sign): <u>F. J. E. V.</u>	
Relinquished by (Print/Sign)		Company:		Date/Time:		Received by (Print/Sign): <u>Mark Schwartz</u>	
Relinquished by (Print/Sign)		Company:		Date/Time:		Company: <u>Battelle</u>	
Relinquished by (Print/Sign)		Company:		Date/Time:		Date/Time: <u>8-21-18 1300</u>	
Comments: <u>ALL <sup>DS</sup> Potable water samples Cool 4°C</u>							



ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

It can be done

## Sample Receipt Form

Approved:  Authorized Project Number: 112G08005-SE0375Client: Tetra TechReceived by: Schumitz, MattDate/Time Received: Tuesday, August 21, 2018 1:00 PMNo. of Shipping Containers: 1**SHIPMENT**Method of Delivery: Commercial CarrierTracking Number: 7823 8621 8158COC Forms:  Shipped with samples  No Forms**Cooler(s)/Box(es)**

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7823 8621 8158	Custody Seals	Intact	Intact	Therm_1	0.7	6

**Samples**

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 0.7 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
 Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Refrigerator - R0119 (NA) BDO IDs Assigned: J7558 - J7563

Samples logged in by: Schumitz, Matt Date/Time: 08/21/2018 1:00 PM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_



It can be done

ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

Sample Receipt Form Details

Approved:  Authorized

Project Number: 112G08005-SE0375 Client: Tetra Tech

Received by: Schumitz, Matt Date/Time Received: Tuesday, August 21, 2018 1:00 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7558	JAX-RES-08202018-0945-25	08/20/18 9:45	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7559	JAX-RES-08202018-0945-25-FRB	08/20/18 9:45	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7560	JAX-RES-08202018-1100-26	08/20/18 11:00	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7561	JAX-RES-08202018-1100-26-FRB	08/20/18 11:00	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7562	JAX-RES-08202018-1310-28	08/20/18 13:10	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7563	JAX-RES-08202018-1310-28-FRB	08/20/18 13:10	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			

Total Samples: 6

**QA/QC Summary  
Batch 18-0519**

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0233
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/20/2018	08/21/2018	0.7

Corrective Actions	None.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The FRB associated with these field samples are reported in SDG 18-0524.

METHOD SUMMARIES	
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	Sample JAX-RES-08202018-0945-25 (J7558) had a sulfurous odor.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500.  J7560 had an ion ratio above 50% RPD for PFOA. All other targets in this and the other samples had no ion ratio above 50% for any analyte detected above the MDL or the LOQ in this SDG.

Holding Times	Extraction Date(s)	Analysis Date(s)
	8/22/2018	8/22/2018

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ 1/3 the MRL	No exceedances noted. No comments.

**QA/QC Summary**  
**Batch 18-0519**

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted. No comments.
Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted. No comments.
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD $\leq$ 20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted. No comments.
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.
R <sup>2</sup> >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted. No comments.
Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted. No comments.
Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted. No comments.



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project Number: 100119154-SE0375  
 Preparation Batch: 18-0519  
 Data Set: DP-18-0233  
 Test Code: Master\_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	NA
Matrix Spike / Matrix Spike Duplicate Precision	NA	NA
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None



## BATTELLE - NORWELL OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** CTO-SE0375: Naval Air Station Jackson      **Data Set Number:** DP-18-0233  
**Project Number:** 100119154-SE0375      **Prep Batch Number:** 18-0519  
**Entered By:** Denise Schumitz      **Entered On:** 08/23/2018  
**Test Code (Matrix Type):** Master\_371(L)

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Samples that were manually integrated are noted on the quant reports with the comment (TRUE).  
DMS 8/23/2018

JZ86 is not being used for PFTTrDA in this method. There is no impact on the data once this point of the calibration is removed.  
DMS 8/23/2018

J7560 has an ion ratio >50% RPD for PFOA.  
DMS 8/24/2018

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**Task Leader Approval:**

**Supervisor Approval:**

**PM Approval:**

Robert Lizotte, Jr.  
2018.08.23 13:21:49 -04'00'

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## Glossary of Data Qualifiers

Flag:      Application:

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B	Analyte found in the sample at a concentration <10x the level found in the procedural blank
D	Dilution Run. Initial run outside the initial calibration range of the instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the Limit of Quantitation (LOQ)
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets secondary criteria
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Method detection limit (MDL) value, Limit of Detection (LOD) reported



## Example Calculation for PFAS

Calculation of final concentration from area:

$$\text{Concentration} = \left[ \frac{PA - b}{m} \right] * C_{IS} * PIV * DF / S$$

Where:

- PA = Area of target / area of internal standard
- b = y intercept from calibration curve
- CIS = concentration of internal standard (ng/L)
- m = slope of calibration
- DF = dilution factor
- S = Sample Size
- PIV = Pre-injection volume (L)

Sample ID: J7562-FS(0)  
 Client Sample ID: JAX-RES-08202018-1310-28  
 Sample Size: 0.26  
 Units: L  
 Dilution Factor: 1.000  
 PIV (L): 0.001  
 Target Analyte: PFHxA  
 MRM Transition: 313.0 / 269.0  
 Data file: 08222018\_DW.wiff  
 Result table: 08232018\_DW  
 Area: 90,058.15  
 IS Name: 13C2-PFOA  
 IS Area: 31,393.68  
 IS Amount (ng/L): 100  
 y-intercept: 0.57581  
 slope: 0.90582

$$\text{Concentration} = \frac{[(90058.15/31393.68) - 0.57581]}{0.90582} * 100 * 0.001 * 1 / 0.26$$

$$\text{ng/L} = 0.97$$





Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375  
 Preparation Batch: 18-0519  
 Data Set: DP-18-0233

	CR633PB-FS (Procedural Blank)	CR634LCS-FS (Laboratory Control Sample)	J7558-FS (JAX-RES-08202018-0945-25)	J7560-FS (JAX-RES-08202018-1100-26)	J7562-FS (JAX-RES-08202018-1310-28)
PFHxA	-	L	-	L	L
PFHpA	-	L	-	L	-
PFOA	-	L	-	L	L
PFNA	-	L	-	-	-
PFDA	-	L	-	-	-
PFUnA	-	L	-	-	-
PFDoA	-	L	-	-	-
PFTTrDA	-	L	-	-	-
PFTeDA	-	L	-	-	-
NMeFOSAA	-	L	-	-	-
NEtFOSAA	-	L	-	-	-
PFBS	-	L	-	L	L
PFHxS	-	L	-	L	L
PFOS	-	L	-	L/Br	L/Br

"L" :Linear

"Br" : branched

"L/Br" : Linear/Branched

"-": Not detected

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	13C4-PFOS	146,122.75	-
JZ81	L4	8/22/18 18:36	13C4-PFOS	171,595.72	-
JZ82	L5	8/22/18 18:45	13C4-PFOS	152,521.02	-
JZ83	L6	8/22/18 18:54	13C4-PFOS	140,405.03	-
JZ84	L7	8/22/18 19:03	13C4-PFOS	142,721.38	-
JZ85	L8	8/22/18 19:12	13C4-PFOS	171,988.95	-
JZ86	L9	8/22/18 19:21	13C4-PFOS	141,974.34	2.9

PASS

Average 152,475.60 Lower 76,237.80 Upper 228,713.40

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	13C4-PFOS	146,122.75	76,237.80	228,713.40		106,764.71	213,529.43	
JZ81	L4	8/22/18 18:36	13C4-PFOS	171,595.72	76,237.80	228,713.40		106,764.71	213,529.43	
JZ82	L5	8/22/18 18:45	13C4-PFOS	152,521.02	76,237.80	228,713.40		106,764.71	213,529.43	
JZ83	L6	8/22/18 18:54	13C4-PFOS	140,405.03	76,237.80	228,713.40		106,764.71	213,529.43	
JZ84	L7	8/22/18 19:03	13C4-PFOS	142,721.38	76,237.80	228,713.40		106,764.71	213,529.43	
JZ85	L8	8/22/18 19:12	13C4-PFOS	171,988.95	76,237.80	228,713.40		106,764.71	213,529.43	
JZ86	L9	8/22/18 19:21	13C4-PFOS	141,974.34	76,237.80	228,713.40		106,764.71	213,529.43	
KA08 IB	Instrument Blank	8/22/18 19:30	13C4-PFOS	146,358.02	76,237.80	228,713.40		106,764.71	213,529.43	
JZ77 ICC	ICC	8/22/18 19:38	13C4-PFOS	152,035.64	76,237.80	228,713.40		106,764.71	213,529.43	
JZ82 CCV	CCV	8/22/18 20:41	13C4-PFOS	177,473.29	76,237.80	228,713.40		106,764.71	213,529.43	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	13C4-PFOS	152,603.74	76,237.80	228,713.40		124,231.30	248,462.61	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	13C4-PFOS	166,905.84	76,237.80	228,713.40		124,231.30	248,462.61	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	13C4-PFOS	141,268.12	76,237.80	228,713.40		124,231.30	248,462.61	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	13C4-PFOS	146,921.11	76,237.80	228,713.40		124,231.30	248,462.61	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	13C4-PFOS	133,143.69	76,237.80	228,713.40		124,231.30	248,462.61	
JZ81 CCV	CCV	8/22/18 21:44	13C4-PFOS	197,787.81	76,237.80	228,713.40		124,231.30	248,462.61	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	13C2-PFOA	34,949.15	-
JZ81	L4	8/22/18 18:36	13C2-PFOA	38,410.24	-
JZ82	L5	8/22/18 18:45	13C2-PFOA	33,013.13	-
JZ83	L6	8/22/18 18:54	13C2-PFOA	33,126.31	-
JZ84	L7	8/22/18 19:03	13C2-PFOA	31,909.26	-
JZ85	L8	8/22/18 19:12	13C2-PFOA	40,320.01	-
JZ86	L9	8/22/18 19:21	13C2-PFOA	35,899.15	2.7

PASS

Average 35,375.32 Lower 17,687.66 Upper 53,062.98

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	13C2-PFOA	34,949.15	17,687.66	53,062.98		23,109.19	46,218.38	
JZ81	L4	8/22/18 18:36	13C2-PFOA	38,410.24	17,687.66	53,062.98		23,109.19	46,218.38	
JZ82	L5	8/22/18 18:45	13C2-PFOA	33,013.13	17,687.66	53,062.98		23,109.19	46,218.38	
JZ83	L6	8/22/18 18:54	13C2-PFOA	33,126.31	17,687.66	53,062.98		23,109.19	46,218.38	
JZ84	L7	8/22/18 19:03	13C2-PFOA	31,909.26	17,687.66	53,062.98		23,109.19	46,218.38	
JZ85	L8	8/22/18 19:12	13C2-PFOA	40,320.01	17,687.66	53,062.98		23,109.19	46,218.38	
JZ86	L9	8/22/18 19:21	13C2-PFOA	35,899.15	17,687.66	53,062.98		23,109.19	46,218.38	
KA08 IB	Instrument Blank	8/22/18 19:30	13C2-PFOA	33,036.09	17,687.66	53,062.98		23,109.19	46,218.38	
JZ77 ICC	ICC	8/22/18 19:38	13C2-PFOA	35,651.96	17,687.66	53,062.98		23,109.19	46,218.38	
JZ82 CCV	CCV	8/22/18 20:41	13C2-PFOA	40,345.09	17,687.66	53,062.98		23,109.19	46,218.38	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	13C2-PFOA	35,596.60	17,687.66	53,062.98		28,241.56	56,483.13	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	13C2-PFOA	41,213.69	17,687.66	53,062.98		28,241.56	56,483.13	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	13C2-PFOA	35,633.50	17,687.66	53,062.98		28,241.56	56,483.13	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	13C2-PFOA	33,335.59	17,687.66	53,062.98		28,241.56	56,483.13	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	13C2-PFOA	31,393.68	17,687.66	53,062.98		28,241.56	56,483.13	
JZ81 CCV	CCV	8/22/18 21:44	13C2-PFOA	45,891.30	17,687.66	53,062.98		28,241.56	56,483.13	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/22/18 18:27	d3-MeFOSAA	23,414.41	-
JZ81	L4	8/22/18 18:36	d3-MeFOSAA	25,672.34	-
JZ82	L5	8/22/18 18:45	d3-MeFOSAA	20,943.33	-
JZ83	L6	8/22/18 18:54	d3-MeFOSAA	20,429.95	-
JZ84	L7	8/22/18 19:03	d3-MeFOSAA	20,300.85	-
JZ85	L8	8/22/18 19:12	d3-MeFOSAA	24,008.70	-
JZ86	L9	8/22/18 19:21	d3-MeFOSAA	20,758.80	12

PASS

Average      Lower      Upper  
 22,218.34    11,109.17    33,327.51

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/22/18 18:27	d3-MeFOSAA	23,414.41	11,109.17	33,327.51		14,660.33	29,320.66	
JZ81	L4	8/22/18 18:36	d3-MeFOSAA	25,672.34	11,109.17	33,327.51		14,660.33	29,320.66	
JZ82	L5	8/22/18 18:45	d3-MeFOSAA	20,943.33	11,109.17	33,327.51		14,660.33	29,320.66	
JZ83	L6	8/22/18 18:54	d3-MeFOSAA	20,429.95	11,109.17	33,327.51		14,660.33	29,320.66	
JZ84	L7	8/22/18 19:03	d3-MeFOSAA	20,300.85	11,109.17	33,327.51		14,660.33	29,320.66	
JZ85	L8	8/22/18 19:12	d3-MeFOSAA	24,008.70	11,109.17	33,327.51		14,660.33	29,320.66	
JZ86	L9	8/22/18 19:21	d3-MeFOSAA	20,758.80	11,109.17	33,327.51		14,660.33	29,320.66	
KA08 IB	Instrument Blank	8/22/18 19:30	d3-MeFOSAA	20,259.48	11,109.17	33,327.51		14,660.33	29,320.66	
JZ77 ICC	ICC	8/22/18 19:38	d3-MeFOSAA	21,274.05	11,109.17	33,327.51		14,660.33	29,320.66	
JZ82 CCV	CCV	8/22/18 20:41	d3-MeFOSAA	26,992.94	11,109.17	33,327.51		14,660.33	29,320.66	
CR633PB-FS(0)	Procedural Blank	8/22/18 20:59	d3-MeFOSAA	20,738.84	11,109.17	33,327.51		18,895.06	37,790.12	
CR634LCS-FS(0)	Laboratory Control Sample	8/22/18 21:08	d3-MeFOSAA	21,055.79	11,109.17	33,327.51		18,895.06	37,790.12	
J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/18 21:17	d3-MeFOSAA	21,515.11	11,109.17	33,327.51		18,895.06	37,790.12	
J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/18 21:26	d3-MeFOSAA	20,330.12	11,109.17	33,327.51		18,895.06	37,790.12	
J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/18 21:35	d3-MeFOSAA	19,152.60	11,109.17	33,327.51		18,895.06	37,790.12	
JZ81 CCV	CCV	8/22/18 21:44	d3-MeFOSAA	29,075.24	11,109.17	33,327.51		18,895.06	37,790.12	

<b>Sample Name</b>	JZ84	<b>Injection Vial</b>	8
<b>Sample ID</b>	L7	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 7:03:12 PM	<b>Data File</b>	08222018_DW.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	08232018_DW
<b>Sample Comment</b>			

**Results Summary**

<b>Analyte</b>	<b>MRM Transition</b>	<b>RT</b>	<b>Asymmetry Factor</b>	<b>Passing Range</b>
PFBS_1	298.9 / 80.0	1.56	1.37	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.79	1.46	0.8 – 1.5

Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/22/2018 7:03:12 PM	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.56	37	>10
PFBS_2	298.9 / 99.0	1.56	48	>10
PFHxA_1	313.0 / 269.0	1.79	44	>10
PFHxA_2	313.0 / 119.0	1.79	23	>10
PFHpA_1	363.0 / 319.0	2.05	47	>10
PFHpA_2	363.0 / 169.0	2.05	35	>10
PFHxS_1	399.0 / 80.0	2.06	31	>10
PFHxS_2	399.0 / 99.0	2.06	31	>10
PFOA_1	413.0 / 369.0	2.31	35	>10
PFOA_2	413.0 / 169.0	2.31	30	>10
PFNA_1	463.0 / 419.0	2.58	30	>10
PFNA_2	463.0 / 219.0	2.58	28	>10
PFOS_1	499.0 / 80.0	2.57	53	>10
PFOS_2	499.0 / 99.0	2.57	52	>10
PFDA_1	513.0 / 469.0	2.87	35	>10
PFDA_2	513.0 / 219.0	2.87	20	>10
PFUnA_1	563.0 / 519.0	3.16	39	>10
PFUnA_2	563.0 / 269.0	3.16	37	>10
PFDaA_1	613.0 / 569.0	3.44	31	>10
PFDaA_2	613.0 / 319.0	3.44	35	>10
PFTrDA_1	663.0 / 619.0	3.71	33	>10
PFTrDA_2	663.0 / 169.0	3.70	29	>10
PFTeDA_1	713.0 / 669.0	3.94	51	>10
PFTeDA_2	713.0 / 169.0	3.94	35	>10
NMeFOSAA_1	570.0 / 419.0	3.01	35	>10
NMeFOSAA_2	570.0 / 512.0	3.01	37	>10
NEtFOSAA_1	584.0 / 419.0	3.16	43	>10
NEtFOSAA_2	584.0 / 483.0	3.16	37	>10
13C2-PFHxA	315.0 / 270.0	1.79	45	>10
13C2-PFDA	515.0 / 470.0	2.87	36	>10
d5-EtFOSAA	589.0 / 419.0	3.15	28	>10



## Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.43	1.29	3.87	18
PFHpA	375-85-9	10.59	1.46	4.38	18
PFOA	335-67-1	10.47	1.51	4.53	18
PFNA	375-95-1	10.48	1.32	3.96	18
PFDA	335-76-2	10.37	1.62	4.86	18
PFUnA	2058-94-8	10.06	1.76	5.28	18
PFDoA	307-55-1	9.99	1.68	5.04	18
PFTTrDA	72629-94-8	10.15	1.82	5.46	18
PFTeDA	376-06-7	11.34	2.46	7.38	18
NMeFOSAA	2355-31-9	10.49	1.05	3.15	18
NEtFOSAA	2991-50-6	10.07	1.25	3.75	18
PFBS	375-73-5	8.63	1.30	3.90	18
PFHxS	355-46-4	9.73	1.53	4.59	18
PFOS	1763-23-1	9.36	1.56	4.68	18

# BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

Battelle SOP 5-371 (EPA Method 537 Version 1.1)

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)	MRL (ng/L)
<b>PFHxA</b>	307-24-4	0.22	0.5	2.5	2.5
<b>PFHpA</b>	375-85-9	0.34	1.0	2.5	2.5
<b>PFOA</b>	335-67-1	0.38	1.0	2.5	2.5
<b>PFNA</b>	375-95-1	0.37	1.0	2.5	2.5
<b>PFDA</b>	335-76-2	0.39	1.0	2.5	2.5
<b>PFUnA</b>	2058-94-8	0.38	1.0	2.5	2.5
<b>PFDoA</b>	307-55-1	0.42	1.0	2.5	2.5
<b>PFTrDA</b>	72629-94-8	0.42	1.0	2.5	2.5
<b>PFTeDA</b>	376-06-7	0.73	1.5	2.5	2.5
<b>NMeFOSAA</b>	2355-31-9	0.42	1.0	2.5	2.5
<b>NEtFOSAA</b>	2991-50-6	0.44	1.0	2.5	2.5
<b>PFBS</b>	375-73-5	0.21	0.5	2.5	2.5
<b>PFHxS</b>	3871-99-6	0.34	1.0	2.5	2.5
<b>PFOS</b>	1763-23-1	0.30	1.0	2.5	2.5

*Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation*



## Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
<b>PFHxA</b>	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
<b>PFHpA</b>	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
<b>PFOA</b>	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
<b>PFNA</b>	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
<b>PFDA</b>	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
<b>PFUnA</b>	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
<b>PFDoA</b>	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
<b>PFTTrDA</b>	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
<b>PFTeDA</b>	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
<b>NMeFOSAA</b>	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
<b>NEtFOSAA</b>	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
<b>PFBS</b>	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
<b>PFHxS</b>	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
<b>PFOS</b>	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
<b><sup>13</sup>C<sub>2</sub>-PFHxA</b>	NA	SIS	315.0 / 270.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFDA</b>	NA	SIS	515.0 / 470.0	NA
<b>d<sub>5</sub>-EtFOSAA</b>	NA	SIS	589.0 / 419.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFOA</b>	NA	IS	415.0 / 270.0	NA
<b><sup>13</sup>C<sub>4</sub>-PFOS</b>	NA	IS	503.0 / 80.0	NA
<b>d<sub>3</sub>-MeFOSAA</b>	NA	IS	573.0 / 419.0	NA



## Drinking Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF <sup>1</sup>	Sample Size (L)	Sample Equivalent (ng/L) <sup>2</sup>
25	1	1	0.250	0.1
50	1	1	0.250	0.2
100	1	1	0.250	0.4
250	1	1	0.250	1.0
500	1	1	0.250	2.0
1,000	1	1	0.250	4.0
2,500	1	1	0.250	10.0
5,000	1	1	0.250	20.0
10,000	1	1	0.250	40.0

<sup>1</sup> - base level dilution as part of the extraction procedure

<sup>2</sup> - calculated equivalent of a sample based on the ICAL concentration



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# QTRAP 5500

**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

## QTRAP 5500 Preventive Maintenance Checklist

<b>Preventive Maintenance Date:</b>	22-Feb-2017
<b>Request ID:</b>	3683
<b>Company Name:</b>	Battelle Memorial Institute
<b>Instrument ID:</b>	X60666
<b>Instrument Model:</b>	QTRAP 5500
<b>Instrument Serial Number:</b>	AU23051004

**PASS**       **FAIL**

**Any failure will lead to an automatic Service Call being open to investigate fault.**

Preventive Maintenance is performed twice every year unless specified in the Service Contract. It is designed to help maintain optimum system performance and to help diagnose any system deficiencies.

Engineer is required the assigned Request ID for this PM otherwise making this job invalid.

**Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Performed By:**           Kaustubh Dhayagude                **Date:**           22-Feb-2017          

**Approved By :** \_\_\_\_\_      **Date:** \_\_\_\_\_

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**PRE PM PPG PERFORMANCE EVALUATION:**

- Consult Customer concerning the unit overall performance.
- Check Logbook for Services recently performed.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.5	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	1.9	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.4	Read Only
<input checked="" type="checkbox"/> CAD High	3.4	Read Only
<input checked="" type="checkbox"/> CAD 12	3.4	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop
- Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop

**Pre PM PPG Test:** Perform each of the following tests. Optimize ion source position only. The specifications listed for these Pre PM tests are guidelines only, not required to be met.

- Perform Q1 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 175.133	1.64 e6	Read Only	0.8095	Read Only
Q1 500.380	2.40 e7	Read Only	0.8592	Read Only
Q1 906.673	2.86 e7	Read Only	0.9633	Read Only

- Perform Q3 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 175.133	1.26 e6	Read Only	0.6252	Read Only
Q3 500.380	2.19 e7	Read Only	0.7275	Read Only
Q3 906.673	3.02 e7	Read Only	0.7662	Read Only

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: : 19.51% (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3	7.43 e7	Read Only	0.9981	Read Only
MS/MS 195.1	1.45 e7	Read Only	0.6582	Read Only

Perform Q1 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 933.636	1.43 e7	Read Only	0.7330	Read Only

Perform Q3 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 933.636	2.22 e7	Read Only	0.8138	Read Only

Perform Product Ion scan using NEG PPG 3e-5M. Record 10 mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.35 e6	Read Only	0.6495	Read Only

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**PREVENTIVE MAINTENANCE CHECKLIST:**

- Check Cooling Fans for Turbo Pumps while MS is ON.
- Check QJet and QPS tuning voltage for reference.
- Record AC input Voltage while MS is OFF: \_\_\_\_\_(200-240VAC).  
If Out-of-Range, notify customer.
  
- Clean Interface
  - Curtain Plate
  - Orifice Plate
  - QJet
  - Q0 Rods.
  
- Replace Roughing Pump Oil.
- Inspect Oil Exhaust Filter, if Applicable.  N/A
- Clean and inspect built-in divert valve if used.  N/A
- Check Multiplier Voltage, optimize if necessary.
- Replace four Air Filters at the bottom of the mass spectrometer.
  
- Pump down overnight if possible.  N/A
  
- Perform Maintenance on Turbo V source.
  
- Replace Electrode, if necessary.  N/A
- Check Turbo heaters resistances.
- Check if Temperature is reached at 500C with TIS Probe installed.
- Check if Temperature is reached at 500C with APCI Probe installed.  N/A

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**POST PM PPG PERFORMANCE TESTS:**

- Set-up Sample for Infusion.
- Check spray and adjust sprayer's position of the TIS source.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.8	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	2.1	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.6	Read Only
<input checked="" type="checkbox"/> CAD High	3.7	Read Only
<input checked="" type="checkbox"/> CAD 12	3.7	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Perform Q1 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2 <sup>e6</sup>	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0 <sup>e6</sup>	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4 <sup>e7</sup>	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8 <sup>e7</sup>	0.7656	0.6 to 0.8

- Perform Q3 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2 <sup>e6</sup>	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0 <sup>e6</sup>	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4 <sup>e7</sup>	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8 <sup>e7</sup>	0.7118	0.6 to 0.8

- Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.

Transmission Efficiency: 16.93% (≥ 10.0%)

Mass	MSMS Intensity		Width Value	Width Specs
	Value	Spec		
Q1 609.3	5.74 e7	N/A	0.7667	Read Only
MS/MS 195.1	9.72 e6	N/A	0.6751	Read Only

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

- Perform Q1 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	$\geq 1.0^{e7}$	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	$\geq 4.0^{e7}$	0.6740	0.6 to 0.8

- Perform Q3 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	$\geq 8.0^{e6}$	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	$\geq 4.0^{e7}$	0.7292	0.6 to 0.8

- Perform Product Ion scan using NEG PPG 3e-5M.

Mass	Scan Rate	Mca	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.33 e6	Read Only	0.6387	Read Only

- Perform ER POS 118.087 and 922.01 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	$\geq 7.2^{e6}$	0.1302	<0.35
ER 922.010	0.05	3.89 e7	$\geq 2.8^{e6}$	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	$\geq 2.4^{e7}$	0.3740	<0.65
ER 922.010	0.05	2.37 e8	$\geq 6.8^{e7}$	0.5407	<0.65

- Perform ER NEG 431.982 and 601.978 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	$\geq 4.4^{e7}$	0.1840	<0.35
ER 601.978	0.05	7.74 e7	$\geq 5.6^{e7}$	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	$\geq 1.2^{e8}$	0.4382	<0.65
ER 601.978	0.05	2.55 e8	$\geq 1.6^{e8}$	0.6205	<0.65



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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

- Perform EPI POS 397.2 using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000	> 3.5 e6	≥2.0 e6	> 4.0 e7	≥6.4 e6

- Perform MS3 POS full scan Fragmentation ON & OFF using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
<input type="checkbox"/> 236 OR <input checked="" type="checkbox"/> 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10 <sup>e6</sup>

**REVIEW:**

- Attach all spectrums printouts to this procedure.
- If any parameter setting access modes were changed during the PM, ensure they are returned to their normal access mode and that their offsets are adjusted to match optimized values from the post-PM acquisition files.
- Empty tuning cache folder, if necessary.  N/A
- Update Service Work Order status
- Fill and replace PM Label.

**END OF PREVENTIVE MAINTENANCE CHECKLIST****Document history:**

06 OCT 2016: Appendix ZEFPM003-2L: Removed requirements to fit Manufacturer's testing criteria.



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	KA08 IB				
Battelle ID	KA08 IB_08/22/2018				
Sample Type	IB				
Collection Date	NA				
Extraction Date	NA				
Analysis Date	08/22/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	NA				
Sample Size	0.250				
Size Unit-Basis	NA				
Units	ng/L	MDL	LOD	LOQ	
PFHxA	0.50 U	0.22	0.50	2.50	
PFHpA	1.00 U	0.34	1.00	2.50	
PFOA	1.00 U	0.38	1.00	2.50	
PFNA	1.00 U	0.37	1.00	2.50	
PFDA	1.00 U	0.39	1.00	2.50	
PFUnA	1.00 U	0.38	1.00	2.50	
PFDaA	1.00 U	0.42	1.00	2.50	
PFTTrDA	1.00 U	0.42	1.00	2.50	
PFTeDA	1.50 U	0.73	1.50	2.50	
NMeFOSAA	1.00 U	0.42	1.00	2.50	
NEtFOSAA	1.00 U	0.44	1.00	2.50	
PFBS	0.50 U	0.21	0.50	2.50	
PFHxS	1.00 U	0.34	1.00	2.50	
PFOS	1.00 U	0.30	1.00	2.50	

**Surrogate Recoveries (%)**

13C2-PFHxA	94
13C2-PFDA	111
d5-EtFOSAA	109



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Procedural Blank				
Battelle ID	CR633PB-FS				
Sample Type	PB				
Collection Date	08/22/2018				
Extraction Date	08/22/2018				
Analysis Date	08/22/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	WATER				
Sample Size	0.250				
Size Unit-Basis	L				
Units	ng/L	MDL	LOD	LOQ	
PFHxA	0.50 U	0.22	0.50	2.50	
PFHpA	1.00 U	0.34	1.00	2.50	
PFOA	1.00 U	0.38	1.00	2.50	
PFNA	1.00 U	0.37	1.00	2.50	
PFDA	1.00 U	0.39	1.00	2.50	
PFUnA	1.00 U	0.38	1.00	2.50	
PFDaA	1.00 U	0.42	1.00	2.50	
PFTTrDA	1.00 U	0.42	1.00	2.50	
PFTeDA	1.50 U	0.73	1.50	2.50	
NMeFOSAA	1.00 U	0.42	1.00	2.50	
NEtFOSAA	1.00 U	0.44	1.00	2.50	
PFBS	0.50 U	0.21	0.50	2.50	
PFHxS	1.00 U	0.34	1.00	2.50	
PFOS	1.00 U	0.30	1.00	2.50	

**Surrogate Recoveries (%)**

13C2-PFHxA	99
13C2-PFDA	100
d5-EtFOSAA	94



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Laboratory Control Sample					
Battelle ID	CR634LCS-FS					
Sample Type	LCS					
Collection Date	08/22/2018					
Extraction Date	08/22/2018					
Analysis Date	08/22/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L					
Units	ng/L	Target	Recovery	Qual	Control Limits	
					Lower	Upper
PFHxA	9.31	10.00	93		70	130
PFHpA	9.83	10.00	98		70	130
PFOA	9.22	10.00	92		70	130
PFNA	9.78	10.00	98		70	130
PFDA	8.94	10.00	89		70	130
PFUnA	8.02	10.00	80		70	130
PFDoA	8.29	10.00	83		70	130
PFTTrDA	8.47	10.00	85		70	130
PFTeDA	9.12	10.00	91		70	130
NMeFOSAA	10.71	10.00	107		70	130
NEtFOSAA	10.13	10.00	101		70	130
PFBS	8.28	8.85	94		70	130
PFHxS	8.59	9.45	91		70	130
PFOS	8.18	9.55	86		70	130

**Surrogate Recoveries (%)**

13C2-PFHxA	89
13C2-PFDA	87
d5-EtFOSAA	85



It can be done

**BATTELLE - NORWELL OPERATIONS  
SAMPLE PREPARATION RECORDS**

<b><u>Project Title(s)</u></b>	<b><u>Project No.(s)</u></b>
CTO-SE0375: Naval Air Station Jacksonville	100119154- SE0375
<b>18-0519</b>	
<b>CTO-SE0375: Drinking Water Analysis</b>	
<b>W</b>	
SOP Numbers (see workplan for modifications)	
VOASOP No.	5-371

<b>This Batch Contains The Following Samples:</b>
CR633PB-FS
CR634LCS-FS
J7558-FS
J7560-FS
J7562-FS

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	08/23/2018	DMS



It can be done

**BATTELLE - NORWELL OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

Sample ID	Description
CR633PB-FS	Procedural Blank
CR634LCS-FS	Laboratory Control Sample
J7558-FS	JAX-RES-08202018-0945-25
J7560-FS	JAX-RES-08202018-1100-26
J7562-FS	JAX-RES-08202018-1310-28

Samples Assigned By:

Jonathan Thorn

Date : August 21, 2018

Comments:



It can be done

## BATTELLE - NORWELL OPERATIONS LIQUID SAMPLE ID FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR633PB-FS	Procedural Blank	250.0	NA	--	08/22/18 SAS
CR634LCS-FS	Laboratory Control Sample	250.0	NA	--	08/22/18 SAS
J7558-FS	JAX-RES-08202018-0945-25	270.0	1	C	08/22/18 SAS
J7560-FS	JAX-RES-08202018-1100-26	285.0	1	C	08/22/18 SAS
J7562-FS	JAX-RES-08202018-1310-28	260.0	1	C	08/22/18 SAS

**Comments:**

Sample ID:	Comments:
CR633PB-FS	1.24g Trizma(180502-01) weighed on BAL-009
CR634LCS-FS	1.23g Trizma(180502-01) weighed on BAL-009

Samples Assigned By

Jonathan Thorn

Date : August 21, 2018

\* - "C" = Sample is Consumed



It can be done

## BATTELLE - NORWELL OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR633PB-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
CR634LCS-FS	JZ28	LCS/MS	1	50	08/22/18 SAS	JCT	NA
CR634LCS-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7558-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7560-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7562-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA

## Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ28	Pipette	B814659662
JZ90	Pipette	B814659662





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**BATTELLE - NORWELL OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**

100119154-  
SE0375

**18-0519**

**CTO-SE0375: Drinking Water Analysis**

**W**

<b>Purpose:</b> LC-MS/MS TRANSFER		<b>Last Activity:</b> Prep->Inst			
<b>Relinquished On/By:</b> Aug 22 2018 4:40PM SAS		<b>Received On/By:</b> Aug 22 2018 5:41PM DMS			
<b>Relinquished From:</b> Sample Preparation: NA		<b>Received Location:</b> LC Laboratory: NA			
<b>Relinquish Comment:</b> NA		<b>Received Comment:</b> NA			
No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CR633PB-FS(0)	1000	1	Intact	NA
2	CR634LCS-FS(0)	1000	1	Intact	NA
3	J7558-FS(0)	1000	1	Intact	NA
4	J7560-FS(0)	1000	1	Intact	NA
5	J7562-FS(0)	1000	1	Intact	NA
<b>Total Extracts:</b>		5			



It can be done

## BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0519****CTO-SE0375: Drinking Water Analysis****W**

Sample ID:	Comment:	Date/Initials:
CR633PB-FS	Extraction for all samples began at 11:00am	08/22/18 SAS
CR633PB-FS	Sample extraction ended at 11:23am	08/22/18 SAS
CR634LCS-FS	Sample extraction ended at 11:26am	08/22/18 SAS
J7558-FS	Sample had a sulfurous odor	08/22/18 SAS
J7558-FS	Sample extraction ended at 11:28am	08/22/18 SAS
J7560-FS	Sample extraction ended at 11:29am	08/22/18 SAS
J7562-FS	Sample extraction ended at 11:27am	08/22/18 SAS

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		8/22/2018 6:00:37 PM	5-0371.dam	08222018_DW.wiff
4	JZ80	L3	8/22/2018 6:27:27 PM	5-0371.dam	08222018_DW.wiff
5	JZ81	L4	8/22/2018 6:36:23 PM	5-0371.dam	08222018_DW.wiff
6	JZ82	L5	8/22/2018 6:45:19 PM	5-0371.dam	08222018_DW.wiff
7	JZ83	L6	8/22/2018 6:54:15 PM	5-0371.dam	08222018_DW.wiff
8	JZ84	L7	8/22/2018 7:03:12 PM	5-0371.dam	08222018_DW.wiff
9	JZ85	L8	8/22/2018 7:12:08 PM	5-0371.dam	08222018_DW.wiff
10	JZ86	L9	8/22/2018 7:21:04 PM	5-0371.dam	08222018_DW.wiff
11	KA08 IB	Instrument Blank	8/22/2018 7:30:00 PM	5-0371.dam	08222018_DW.wiff
12	JZ77 ICC	ICC	8/22/2018 7:38:57 PM	5-0371.dam	08222018_DW.wiff
13	MeOH		8/22/2018 7:47:54 PM	5-0371.dam	08222018_DW.wiff
44	<del>CR631PB-FS(0)</del>	<del>Procedural Blank</del>	<del>8/22/2018 7:56:50 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
45	<del>CR632LCS-FS(0)</del>	<del>Laboratory Control Sample</del>	<del>8/22/2018 8:05:47 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
46	<del>J7448-FS(0)</del>	<del>JAX-RES-08152018-1015-34-FRB</del>	<del>8/22/2018 8:14:44 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
47	<del>J7450-FS(0)</del>	<del>JAX-RES-08152018-1045-33-FRB</del>	<del>8/22/2018 8:23:42 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
48	<del>J7452-FS(0)</del>	<del>JAX-RES-08152018-1130-15-FRB</del>	<del>8/22/2018 8:32:38 PM</del>	<del>5-0371.dam</del>	<del>08222018_DW.wiff</del>
19	JZ82 CCV	CCV	8/22/2018 8:41:36 PM	5-0371.dam	08222018_DW.wiff
20	MeOH		8/22/2018 8:50:33 PM	5-0371.dam	08222018_DW.wiff
21	CR633PB-FS(0)	Procedural Blank	8/22/2018 8:59:30 PM	5-0371.dam	08222018_DW.wiff
22	CR634LCS-FS(0)	Laboratory Control Sample	8/22/2018 9:08:27 PM	5-0371.dam	08222018_DW.wiff
23	J7558-FS(0)	JAX-RES-08202018-0945-25	8/22/2018 9:17:24 PM	5-0371.dam	08222018_DW.wiff
24	J7560-FS(0)	JAX-RES-08202018-1100-26	8/22/2018 9:26:19 PM	5-0371.dam	08222018_DW.wiff
25	J7562-FS(0)	JAX-RES-08202018-1310-28	8/22/2018 9:35:15 PM	5-0371.dam	08222018_DW.wiff
26	JZ81 CCV	CCV	8/22/2018 9:44:12 PM	5-0371.dam	08222018_DW.wiff

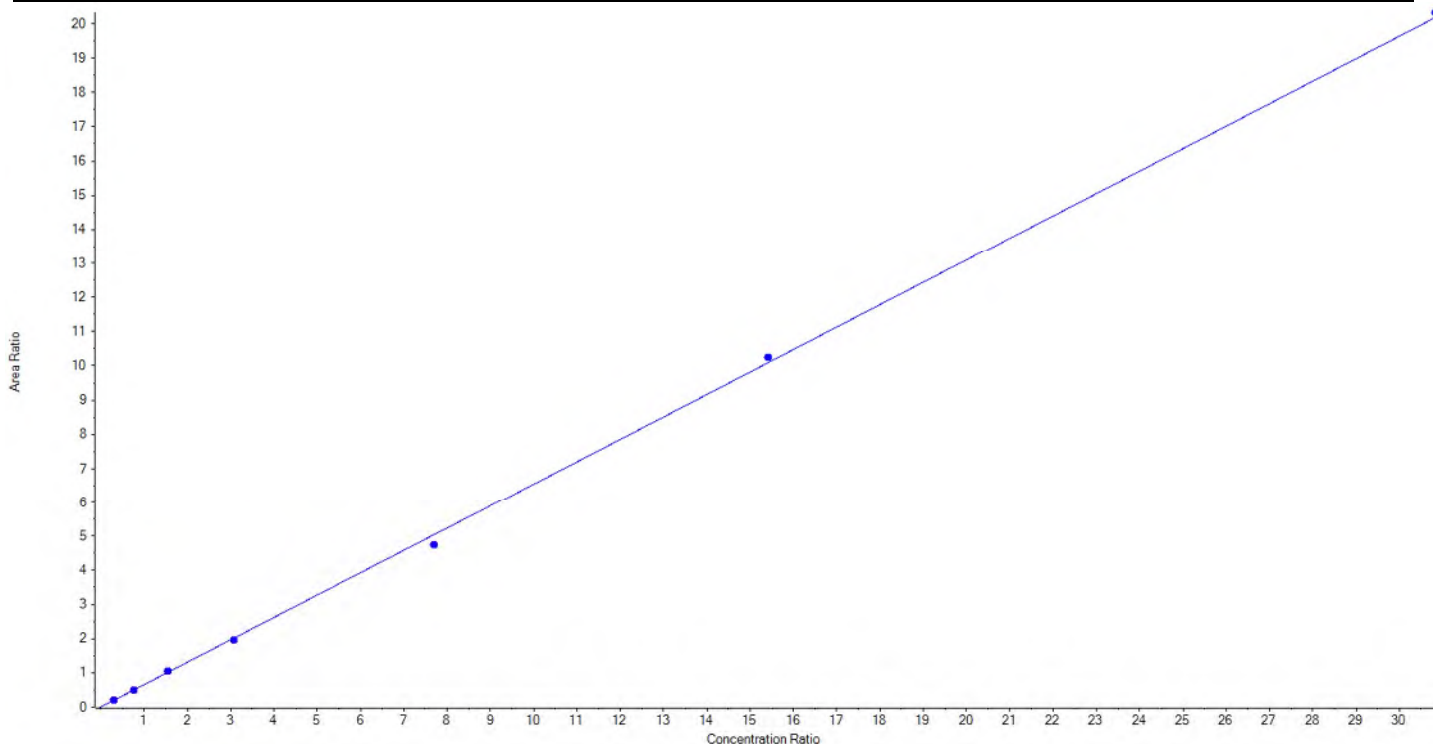
1  
↓

1 Samples not reported with this batch. DMS 8/23/2018

<b>Analyte Name</b>	PFBS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	298.9 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.65429x + 0.00296$  (r = 0.99962) (weighting: 1 / x)

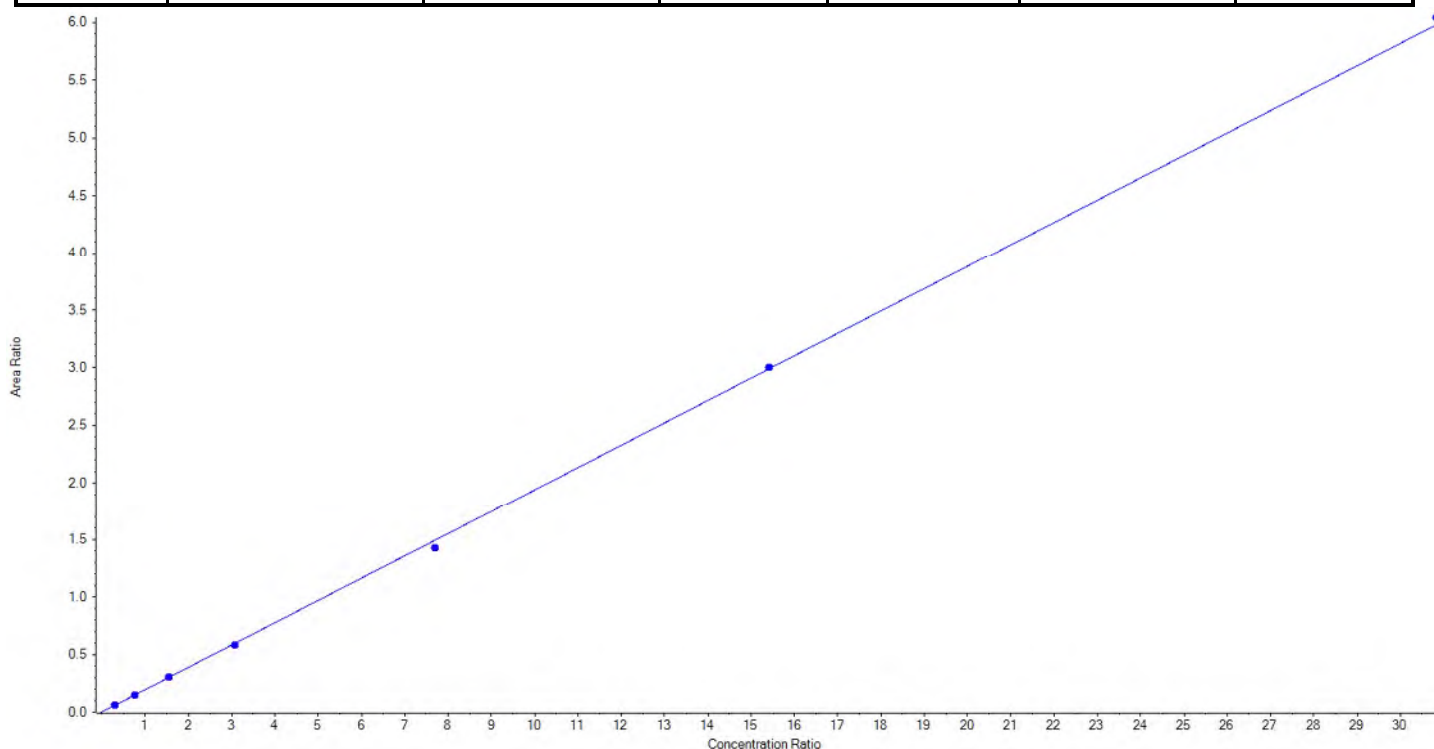
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	88.60	89.961828	101.5
5	JZ81	L4	True	221.50	221.394501	100.0
6	JZ82	L5	True	443.00	463.099525	104.5
7	JZ83	L6	True	885.00	864.778154	97.7
8	JZ84	L7	True	2212.50	2078.867501	94.0
9	JZ85	L8	True	4425.00	4495.899271	101.6
10	JZ86	L9	True	8850.00	8911.599220	100.7



<b>Analyte Name</b>	PFBS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	298.9 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.19394 x + 9.55942e-4$  ( $r = 0.99978$ ) (weighting: 1 / x)

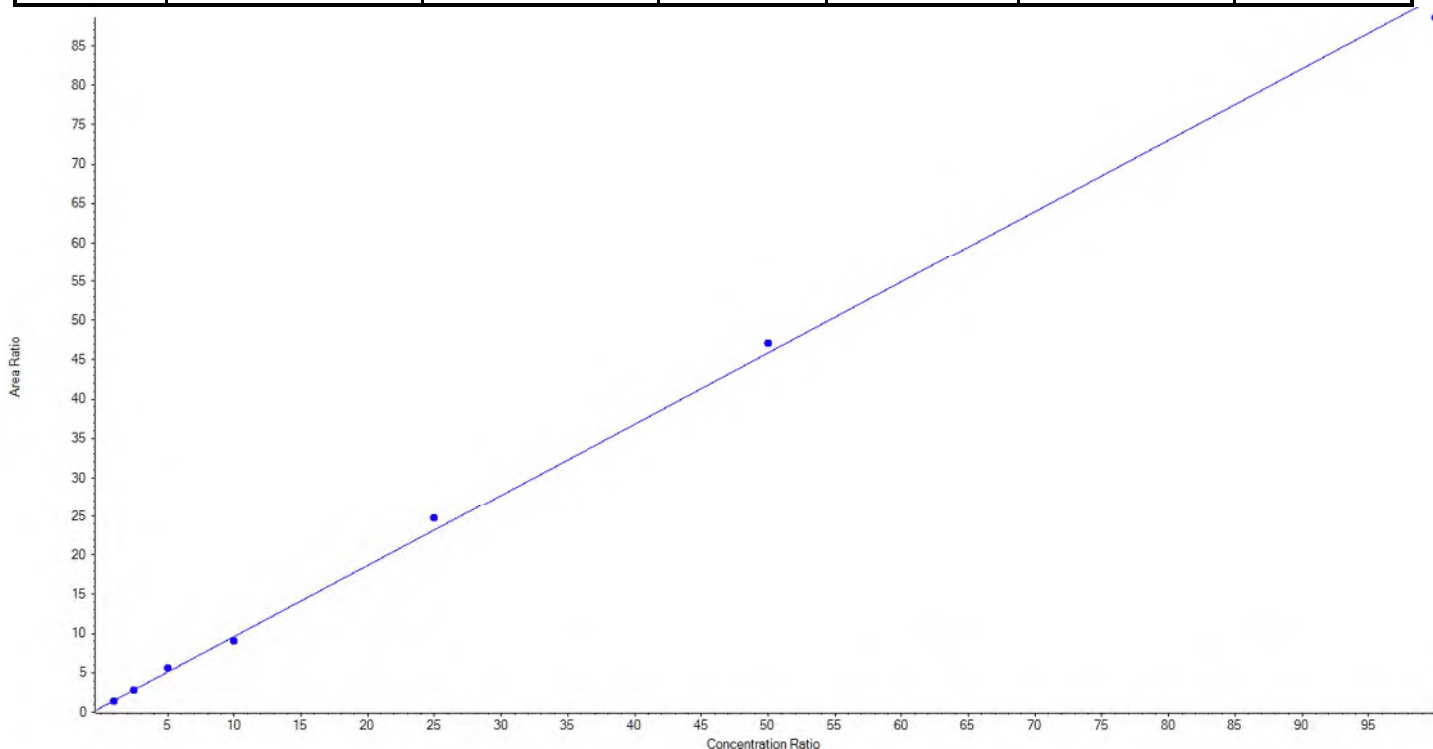
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	88.60	93.488553	105.5
5	JZ81	L4	True	221.50	216.699472	97.8
6	JZ82	L5	True	443.00	450.763581	101.8
7	JZ83	L6	True	885.00	866.500288	97.9
8	JZ84	L7	True	2212.50	2113.511736	95.5
9	JZ85	L8	True	4425.00	4444.718296	100.5
10	JZ86	L9	True	8850.00	8939.918075	101.0



<b>Analyte Name</b>	PFHxA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	313.0 / 269.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.90582x + 0.57581$  (r = 0.99896) (weighting: 1 / x)

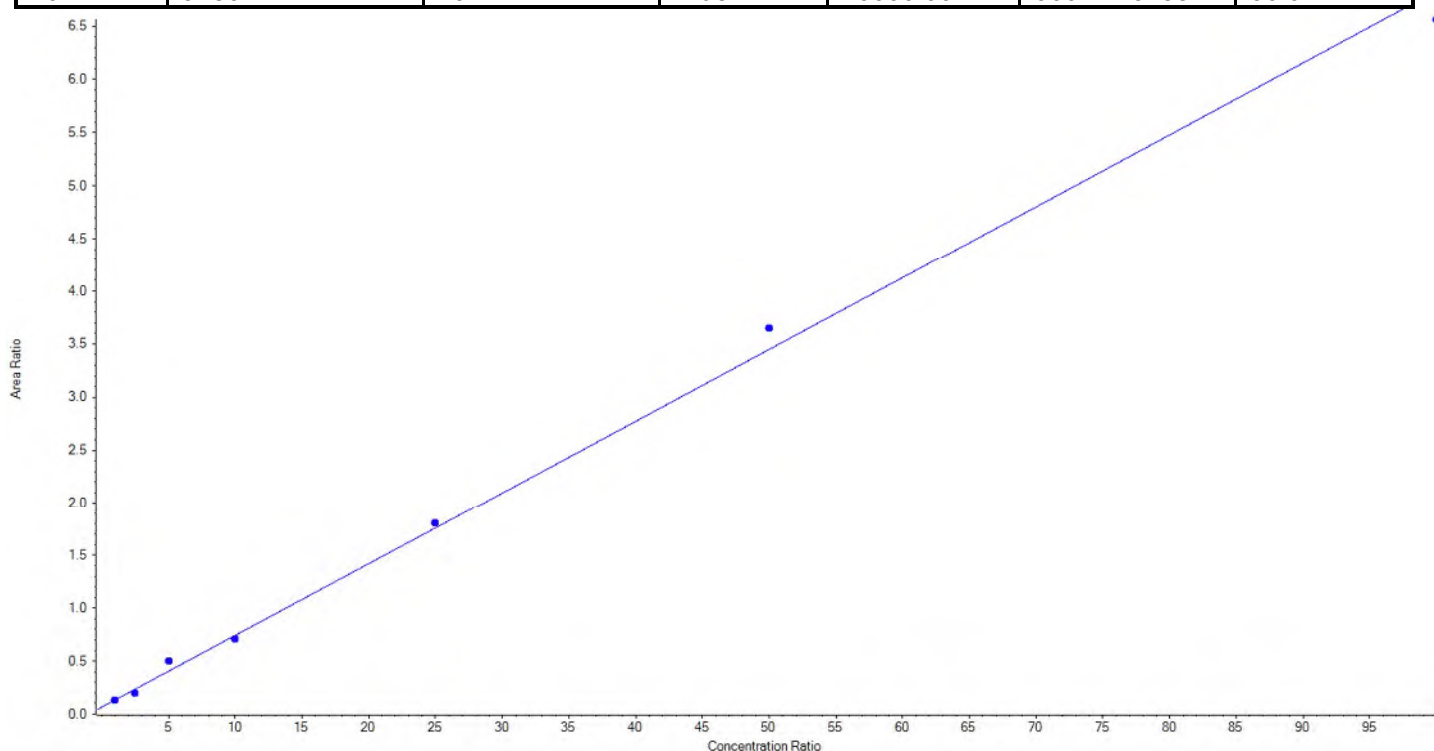
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	89.860105	89.9
5	JZ81	L4	True	250.00	245.927439	98.4
6	JZ82	L5	True	500.00	556.627130	111.3
7	JZ83	L6	True	1000.00	937.829786	93.8
8	JZ84	L7	True	2500.00	2671.604535	106.9
9	JZ85	L8	True	5000.00	5131.482329	102.6
10	JZ86	L9	True	10000.00	9716.668676	97.2



<b>Analyte Name</b>	PFHxA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	313.0 / 119.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06765x + 0.06687$  (r = 0.99741) (weighting: 1 / x)

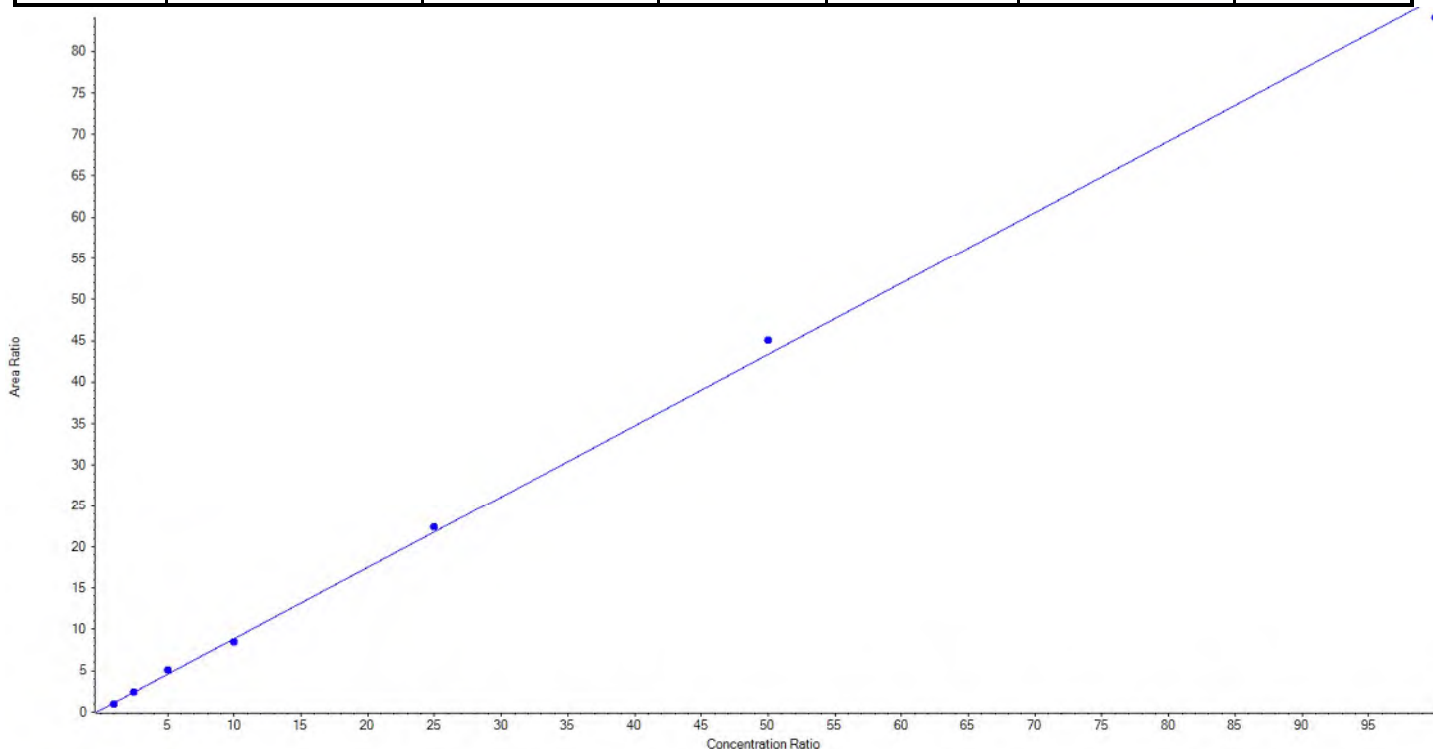
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	92.509378	92.5
5	JZ81	L4	True	250.00	200.973906	80.4
6	JZ82	L5	True	500.00	637.349324	127.5
7	JZ83	L6	True	1000.00	947.917412	94.8
8	JZ84	L7	True	2500.00	2571.780431	102.9
9	JZ85	L8	True	5000.00	5297.354061	106.0
10	JZ86	L9	True	10000.00	9602.115488	96.0



<b>Analyte Name</b>	PFHpA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	363.0 / 319.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.86184x + 0.26618$  (r = 0.99911) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	86.075433	86.1
5	JZ81	L4	True	250.00	255.124133	102.1
6	JZ82	L5	True	500.00	562.964131	112.6
7	JZ83	L6	True	1000.00	953.838274	95.4
8	JZ84	L7	True	2500.00	2565.464996	102.6
9	JZ85	L8	True	5000.00	5201.432986	104.0
10	JZ86	L9	True	10000.00	9725.100047	97.3

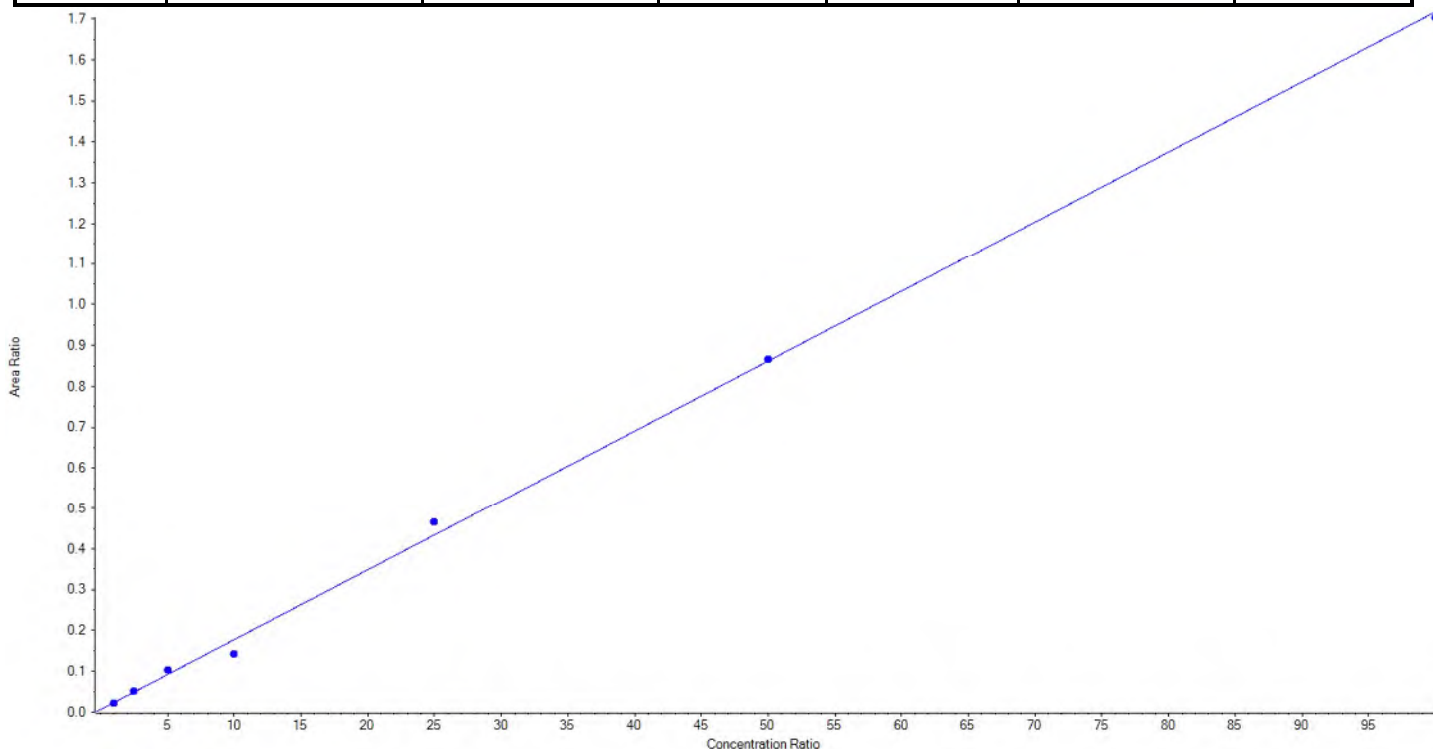




<b>Analyte Name</b>	PFHpA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	363.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.01711 x + 0.00650$  (r = 0.99795) (weighting: 1 / x)

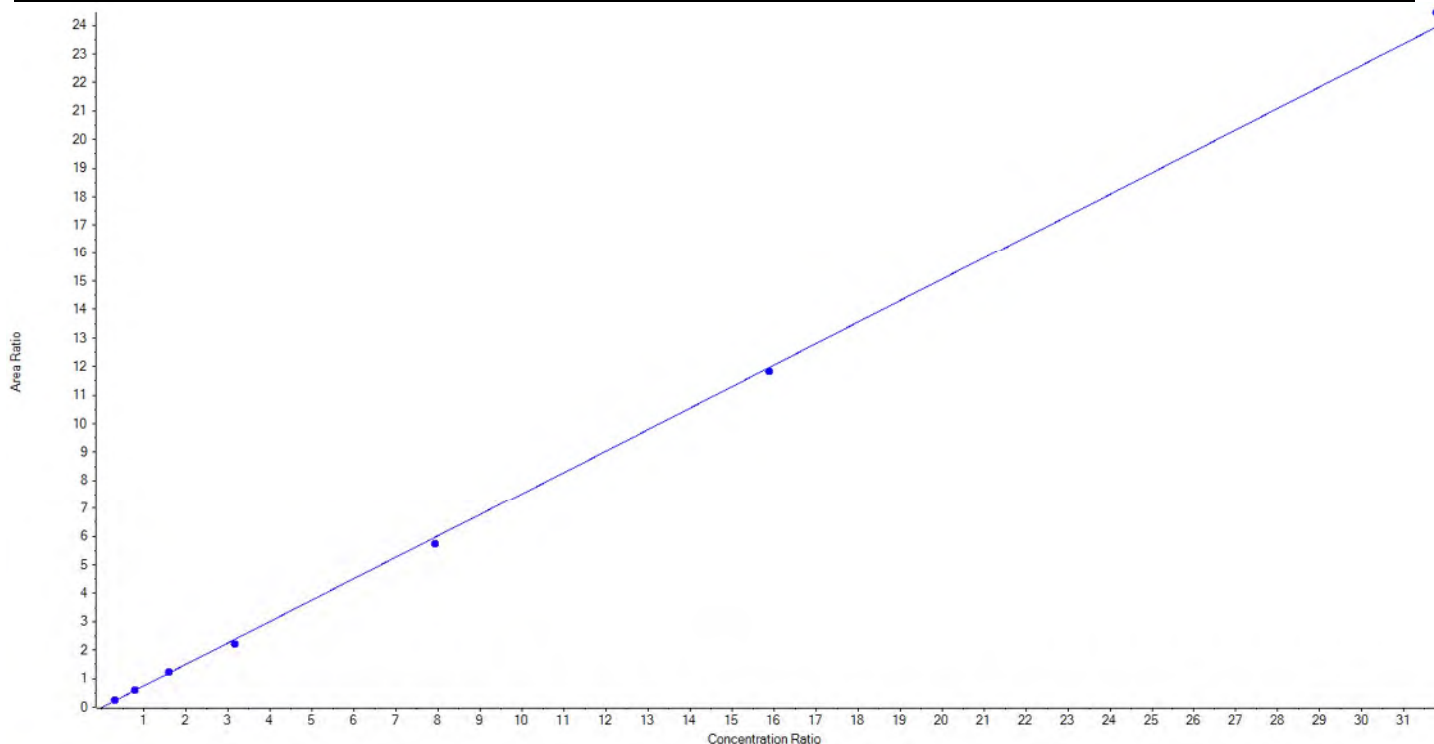
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	95.693721	95.7
5	JZ81	L4	True	250.00	259.994370	104.0
6	JZ82	L5	True	500.00	568.395444	113.7
7	JZ83	L6	True	1000.00	793.302756	79.3
8	JZ84	L7	True	2500.00	2690.915735	107.6
9	JZ85	L8	True	5000.00	5024.555700	100.5
10	JZ86	L9	True	10000.00	9917.142273	99.2



<b>Analyte Name</b>	PFHxS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	399.0 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.75357 x + -0.00733$  (r = 0.99953) (weighting: 1 / x)

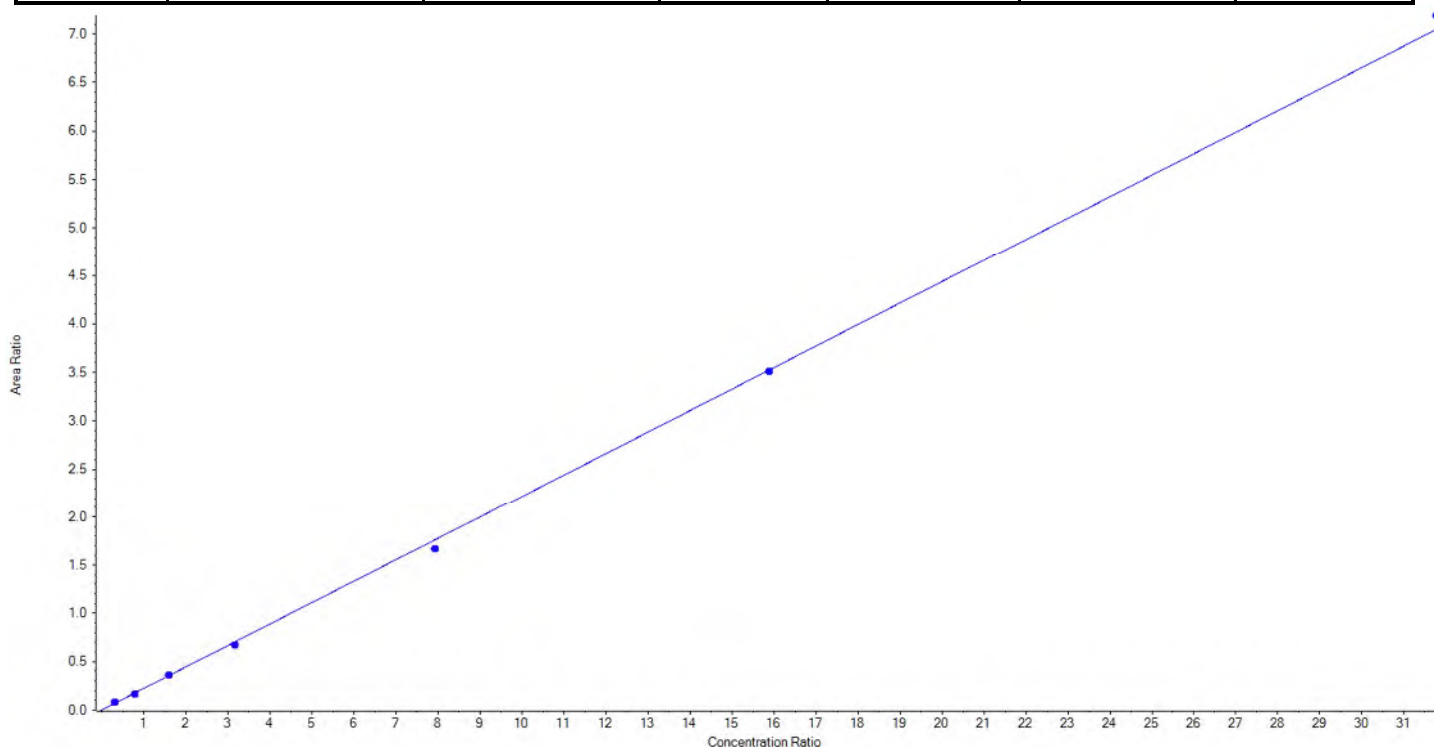
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	91.20	98.697129	108.2
5	JZ81	L4	True	228.00	226.297967	99.3
6	JZ82	L5	True	456.00	469.024236	102.9
7	JZ83	L6	True	912.00	846.884947	92.9
8	JZ84	L7	True	2280.00	2184.148769	95.8
9	JZ85	L8	True	4560.00	4510.292219	98.9
10	JZ86	L9	True	9120.00	9311.854733	102.1



<b>Analyte Name</b>	PFHxS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	399.0 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.22168x + 0.00253$  (r = 0.99950) (weighting: 1 / x)

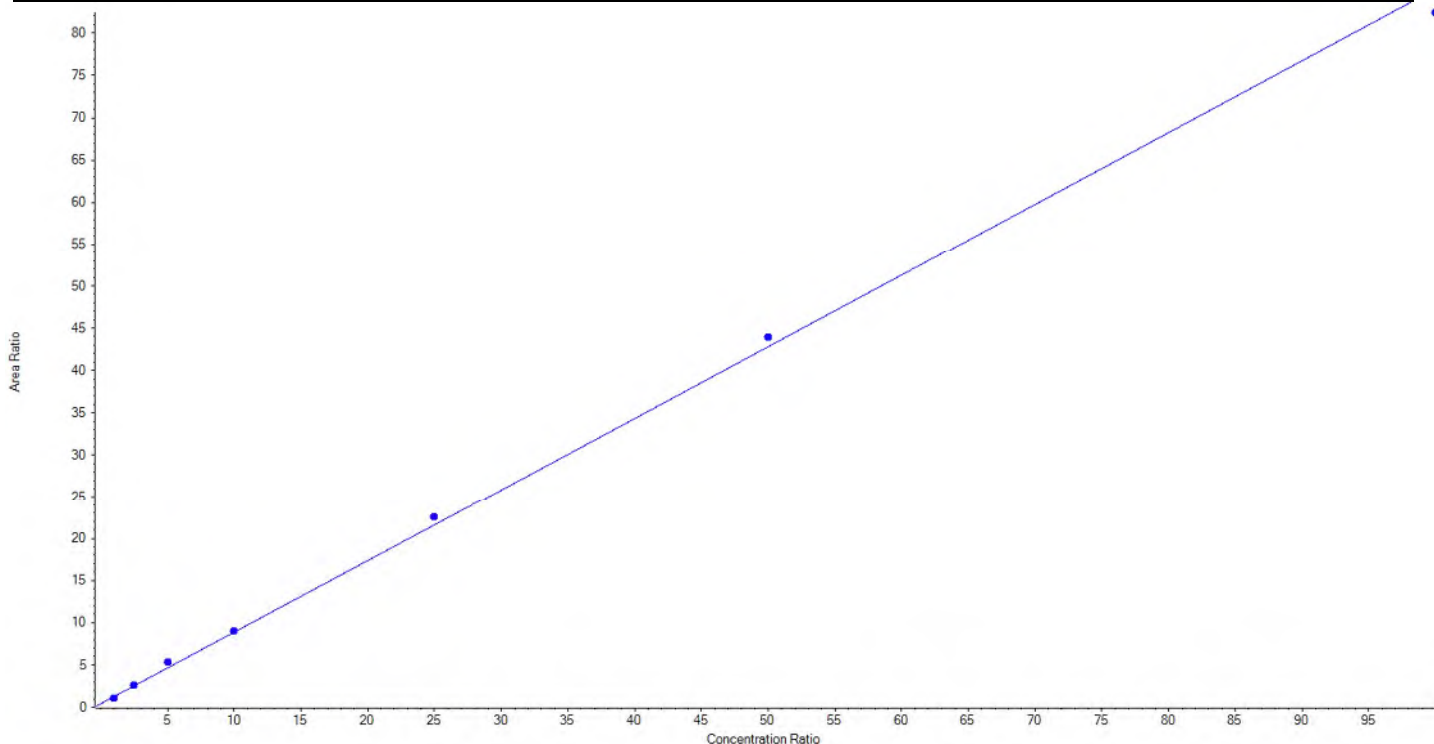
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	91.20	101.822334	111.7
5	JZ81	L4	True	228.00	216.805078	95.1
6	JZ82	L5	True	456.00	467.493762	102.5
7	JZ83	L6	True	912.00	863.193604	94.7
8	JZ84	L7	True	2280.00	2155.318664	94.5
9	JZ85	L8	True	4560.00	4539.911013	99.6
10	JZ86	L9	True	9120.00	9302.655544	102.0



<b>Analyte Name</b>	PFOA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	413.0 / 369.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.84802 x + 0.40737$  (r = 0.99877) (weighting: 1 / x)

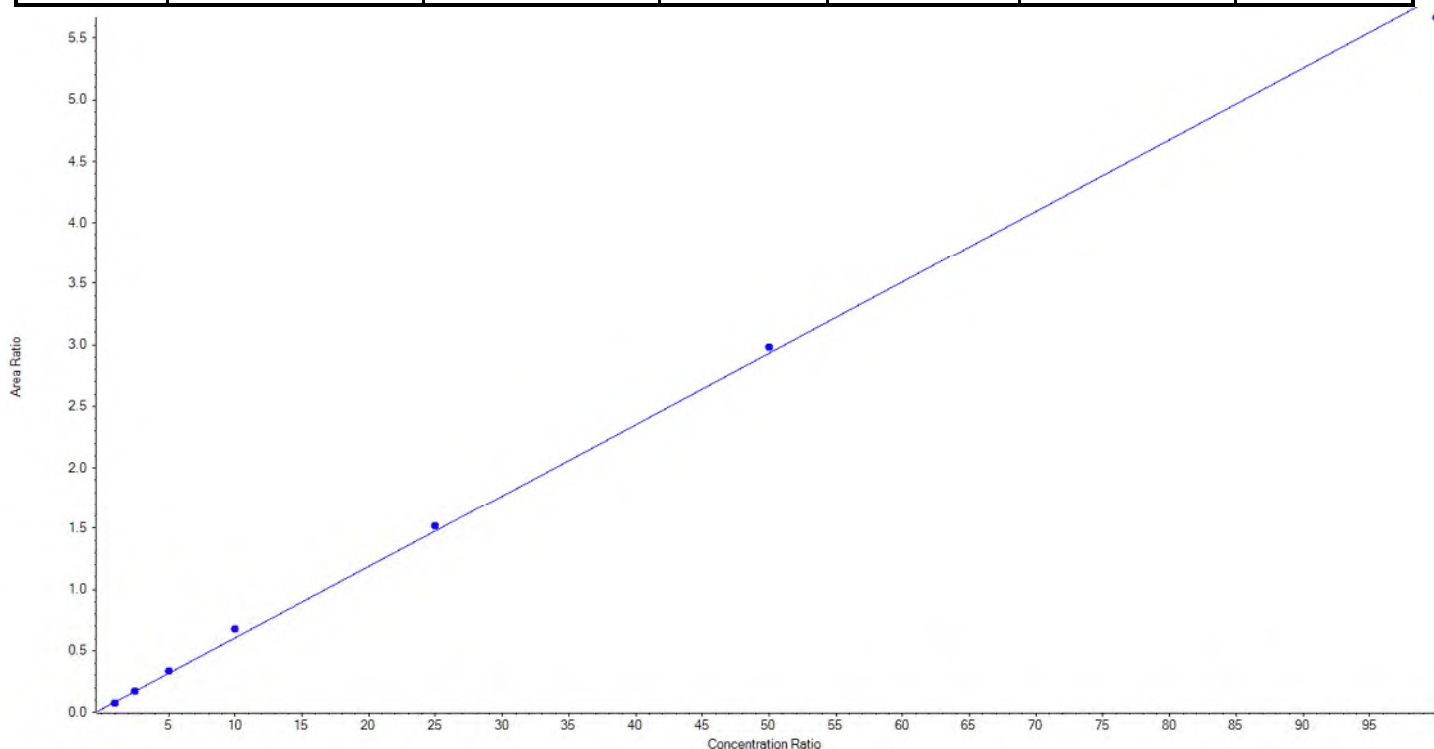
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	74.818314	74.8
5	JZ81	L4	True	250.00	254.818265	101.9
6	JZ82	L5	True	500.00	586.482692	117.3
7	JZ83	L6	True	1000.00	1023.203479	102.3
8	JZ84	L7	True	2500.00	2606.394441	104.3
9	JZ85	L8	True	5000.00	5133.888760	102.7
10	JZ86	L9	True	10000.00	9670.394048	96.7



<b>Analyte Name</b>	PFOA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	413.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.05814 x + 0.02466$  (r = 0.99896) (weighting: 1 / x)

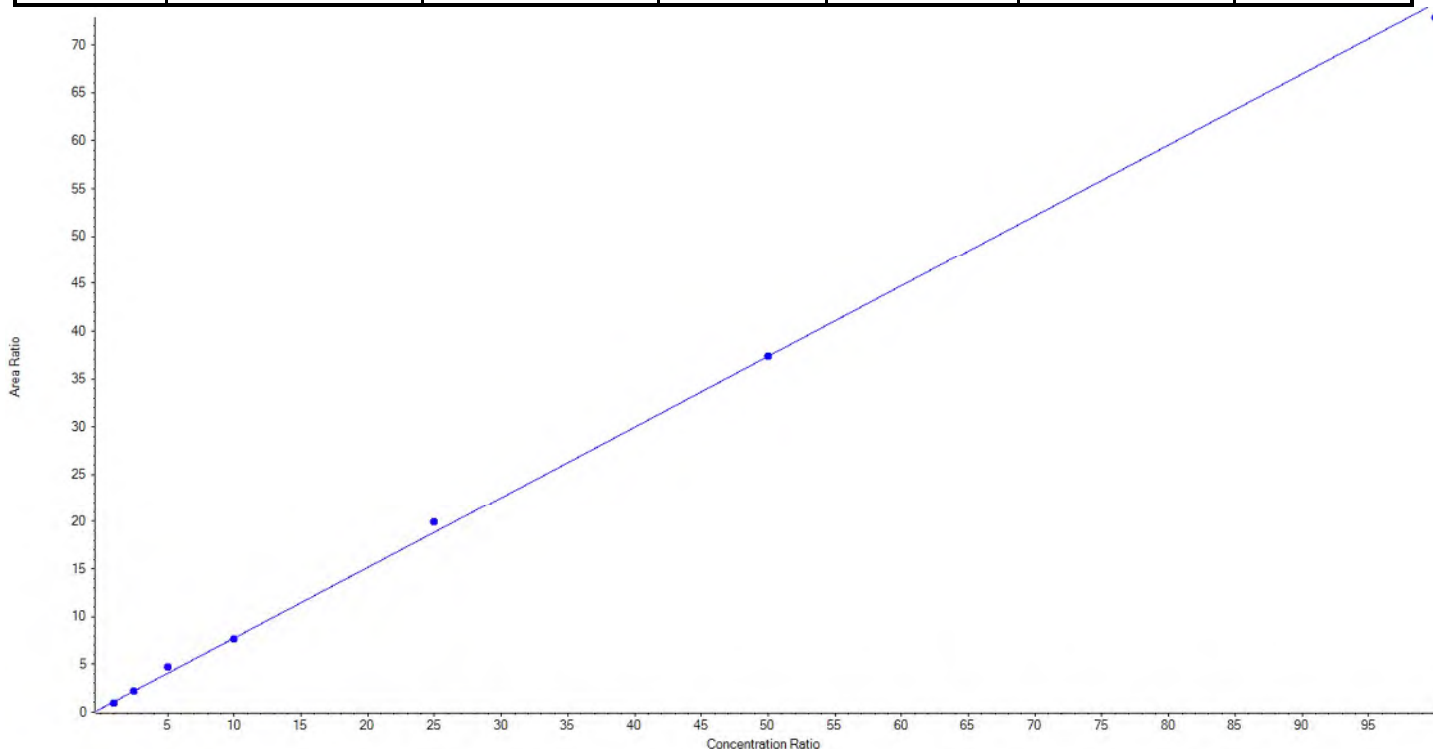
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	77.916434	77.9
5	JZ81	L4	True	250.00	252.502939	101.0
6	JZ82	L5	True	500.00	537.075023	107.4
7	JZ83	L6	True	1000.00	1121.589812	112.2
8	JZ84	L7	True	2500.00	2566.930377	102.7
9	JZ85	L8	True	5000.00	5089.133522	101.8
10	JZ86	L9	True	10000.00	9704.851893	97.1



<b>Analyte Name</b>	PFNA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	463.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.73994 x + 0.36114$  (r = 0.99898) (weighting: 1 / x)

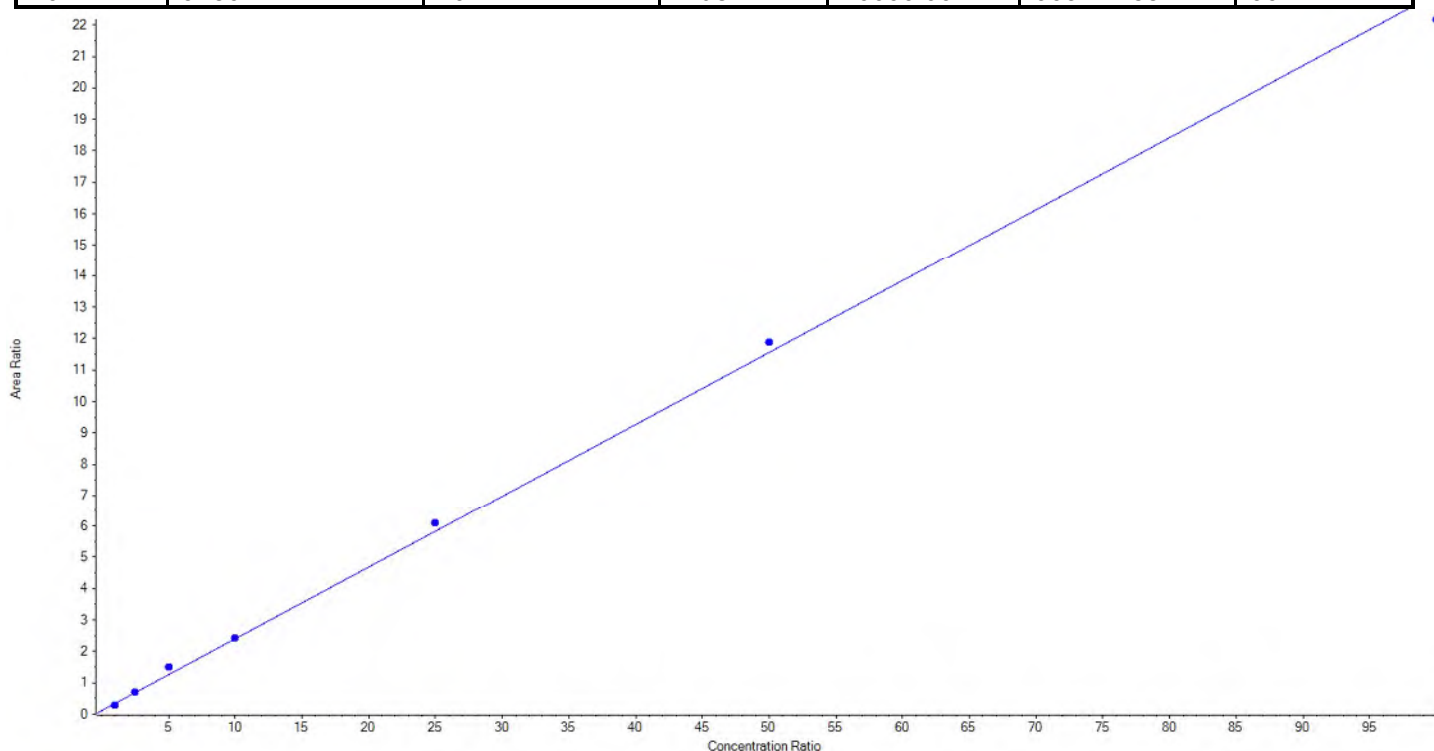
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.042599	81.0
5	JZ81	L4	True	250.00	244.267899	97.7
6	JZ82	L5	True	500.00	590.676198	118.1
7	JZ83	L6	True	1000.00	991.759930	99.2
8	JZ84	L7	True	2500.00	2652.495527	106.1
9	JZ85	L8	True	5000.00	4994.160975	99.9
10	JZ86	L9	True	10000.00	9795.596872	98.0



<b>Analyte Name</b>	PFNA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	463.0 / 219.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.22884 x + 0.11263$  (r = 0.99835) (weighting: 1 / x)

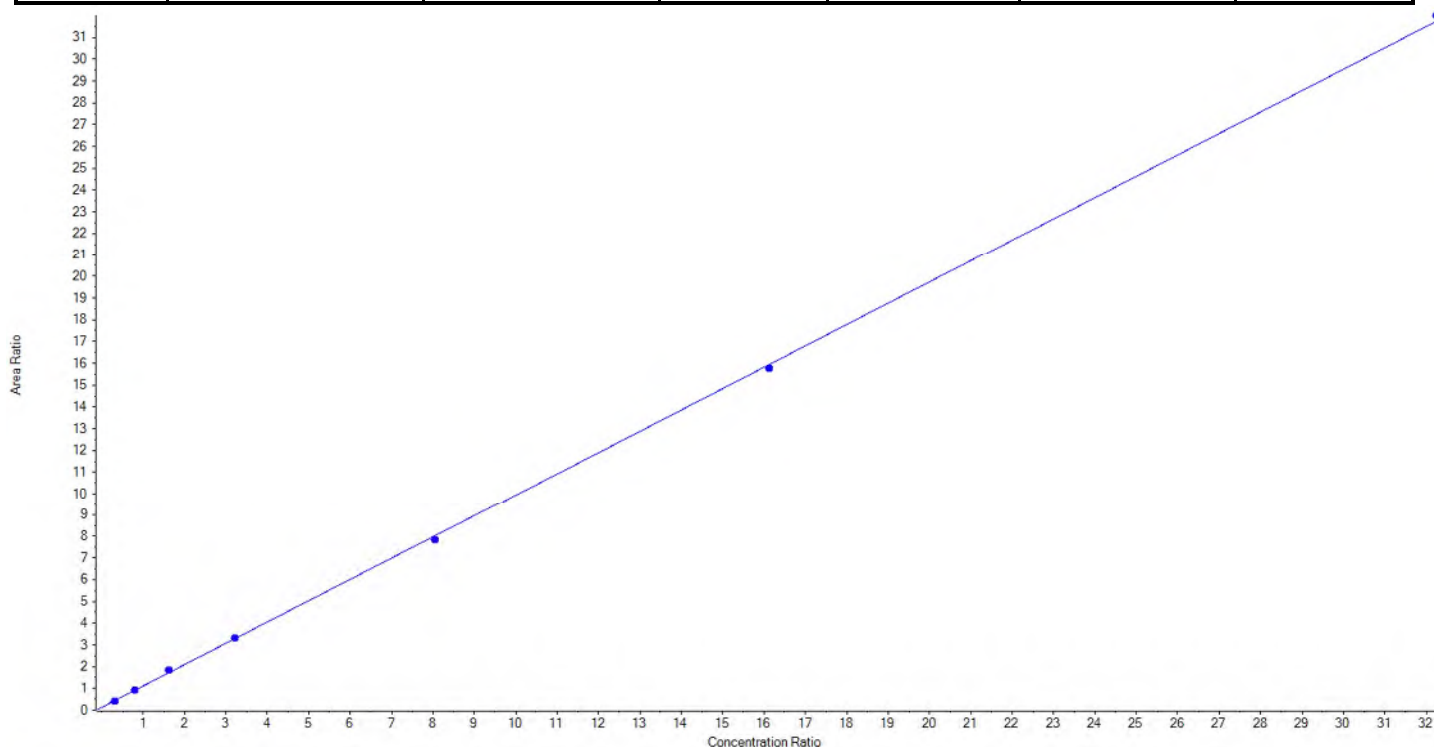
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	70.787614	70.8
5	JZ81	L4	True	250.00	257.454027	103.0
6	JZ82	L5	True	500.00	605.963980	121.2
7	JZ83	L6	True	1000.00	1007.990591	100.8
8	JZ84	L7	True	2500.00	2622.781646	104.9
9	JZ85	L8	True	5000.00	5147.743271	103.0
10	JZ86	L9	True	10000.00	9637.278871	96.4



<b>Analyte Name</b>	PFOS_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	499.0 / 80.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.98015x + 0.13422$  (r = 0.99979) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	92.60	87.283988	94.3
5	JZ81	L4	True	231.50	230.238199	99.5
6	JZ82	L5	True	463.00	501.433229	108.3
7	JZ83	L6	True	925.60	934.329117	100.9
8	JZ84	L7	True	2314.00	2254.710423	97.4
9	JZ85	L8	True	4628.00	4572.651398	98.8
10	JZ86	L9	True	9256.00	9330.053647	100.8

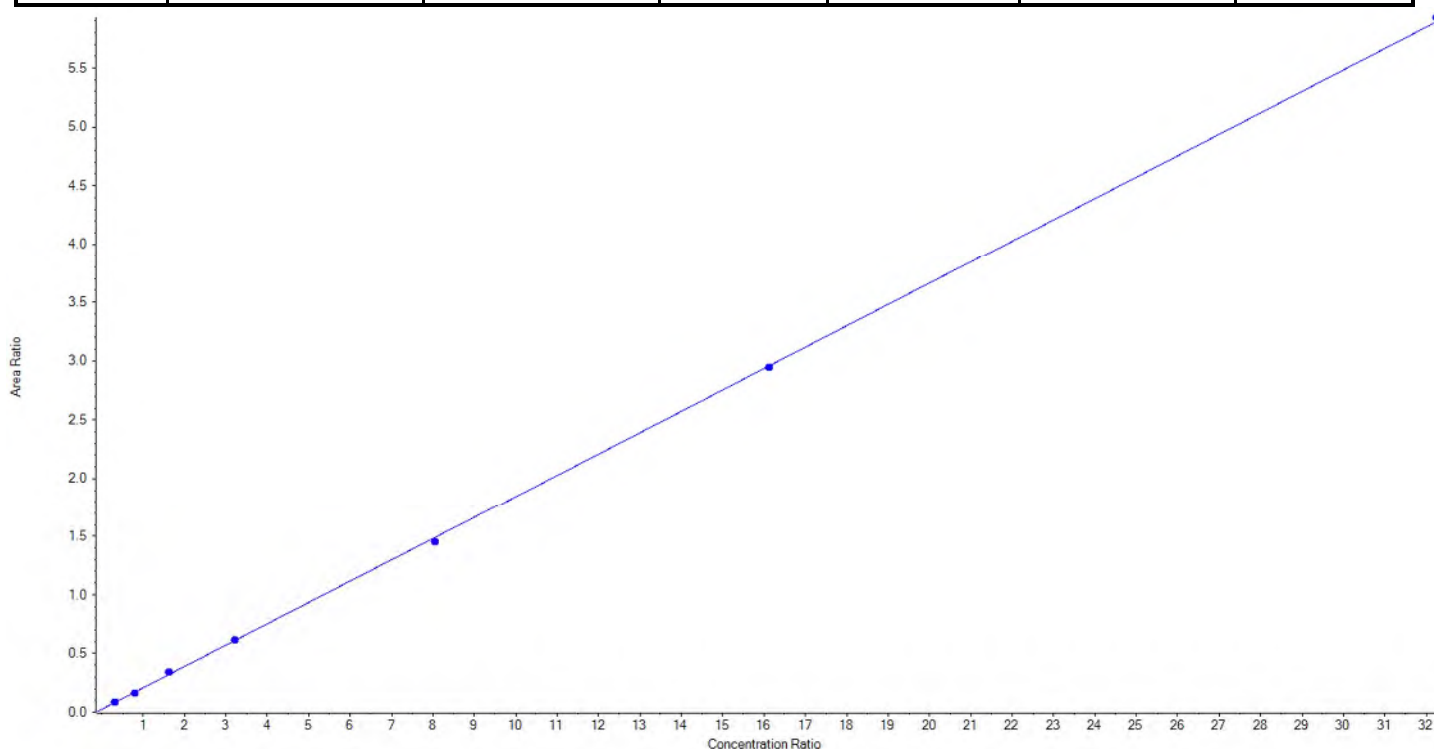




<b>Analyte Name</b>	PFOS_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	499.0 / 99.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.18192x + 0.02516$  (r = 0.99982) (weighting: 1 / x)

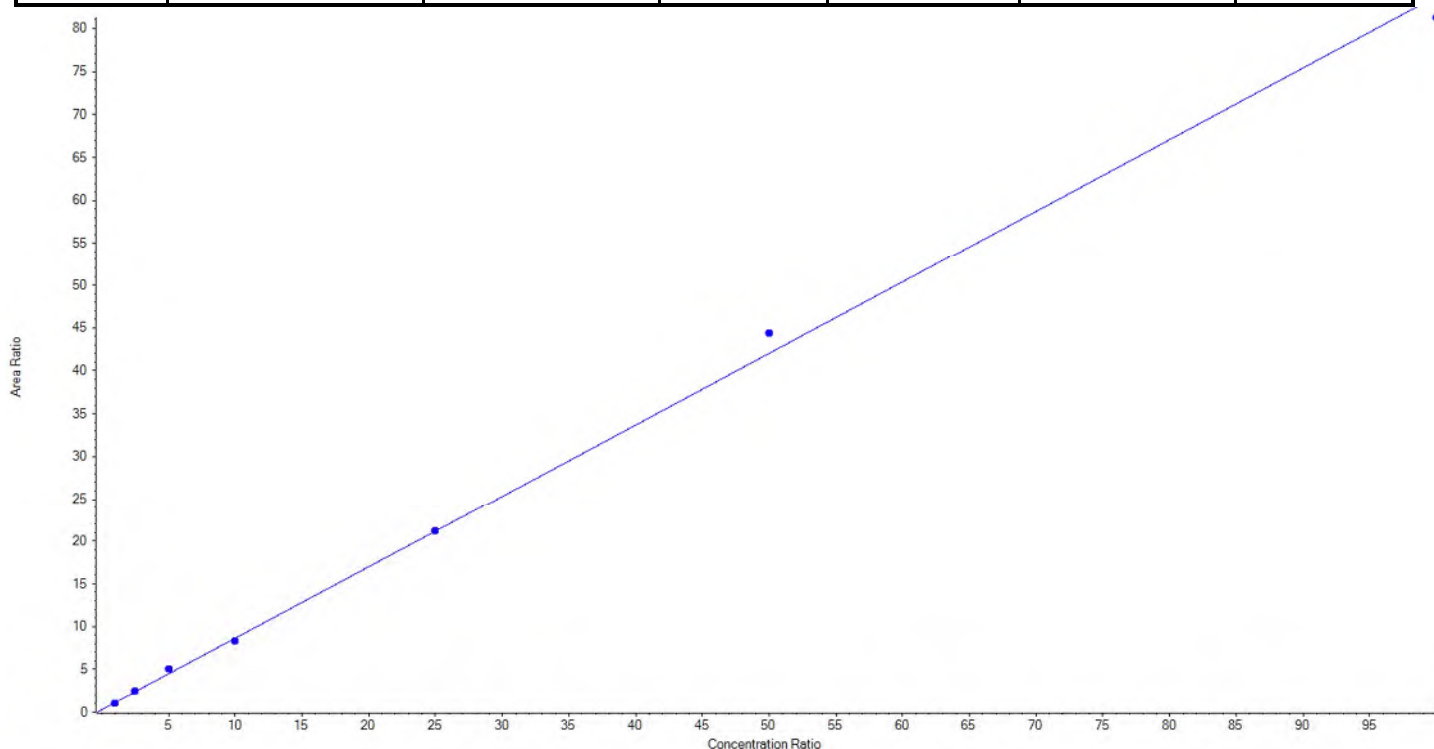
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	92.60	90.827048	98.1
5	JZ81	L4	True	231.50	222.168808	96.0
6	JZ82	L5	True	463.00	498.607348	107.7
7	JZ83	L6	True	925.60	935.211204	101.0
8	JZ84	L7	True	2314.00	2247.041854	97.1
9	JZ85	L8	True	4628.00	4605.342518	99.5
10	JZ86	L9	True	9256.00	9311.501220	100.6



<b>Analyte Name</b>	PFDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	513.0 / 469.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.83461x + 0.29600$  (r = 0.99880) (weighting: 1 / x)

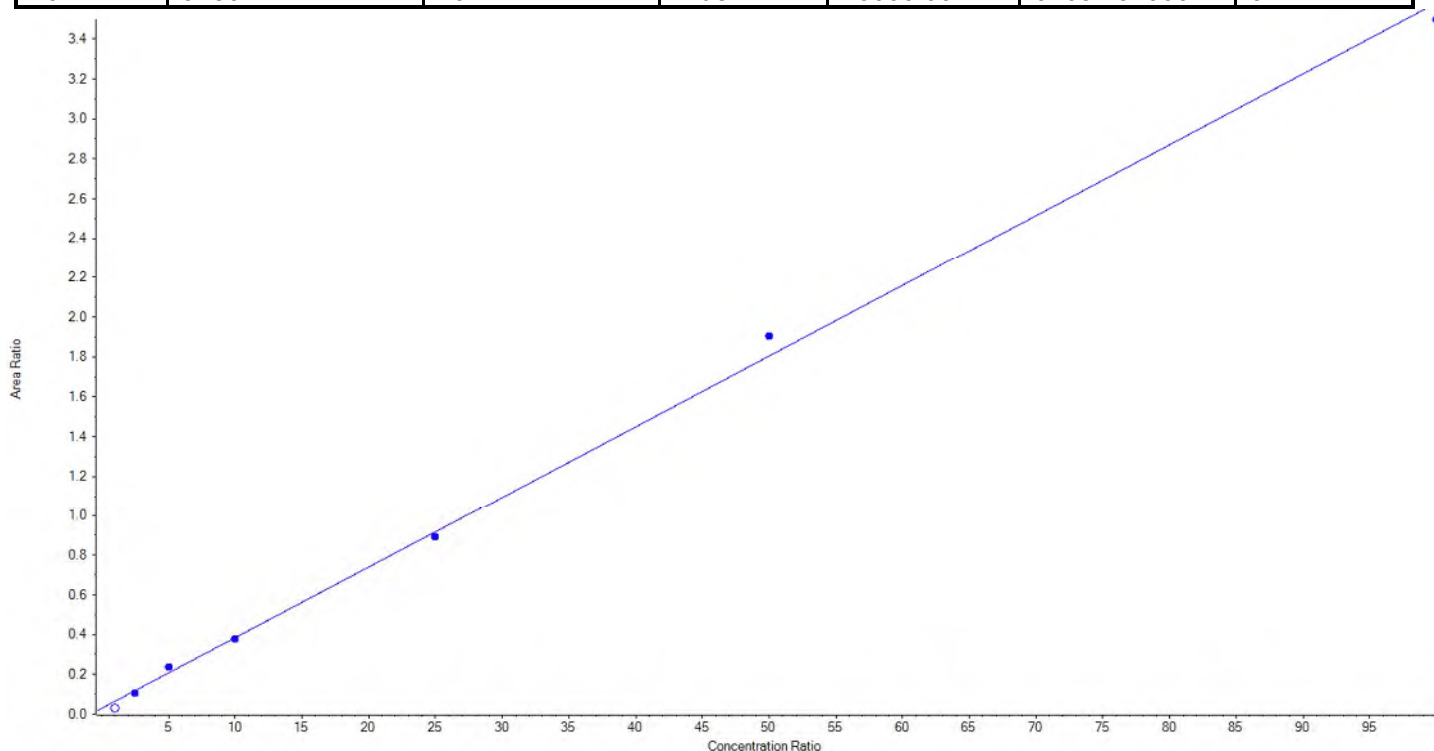
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	85.485806	85.5
5	JZ81	L4	True	250.00	253.767356	101.5
6	JZ82	L5	True	500.00	574.717570	114.9
7	JZ83	L6	True	1000.00	954.052598	95.4
8	JZ84	L7	True	2500.00	2502.120265	100.1
9	JZ85	L8	True	5000.00	5277.510356	105.6
10	JZ86	L9	True	10000.00	9702.346050	97.0



<b>Analyte Name</b>	PFDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	513.0 / 219.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03551 x + 0.02957$  (r = 0.99846) (weighting: 1 / x)

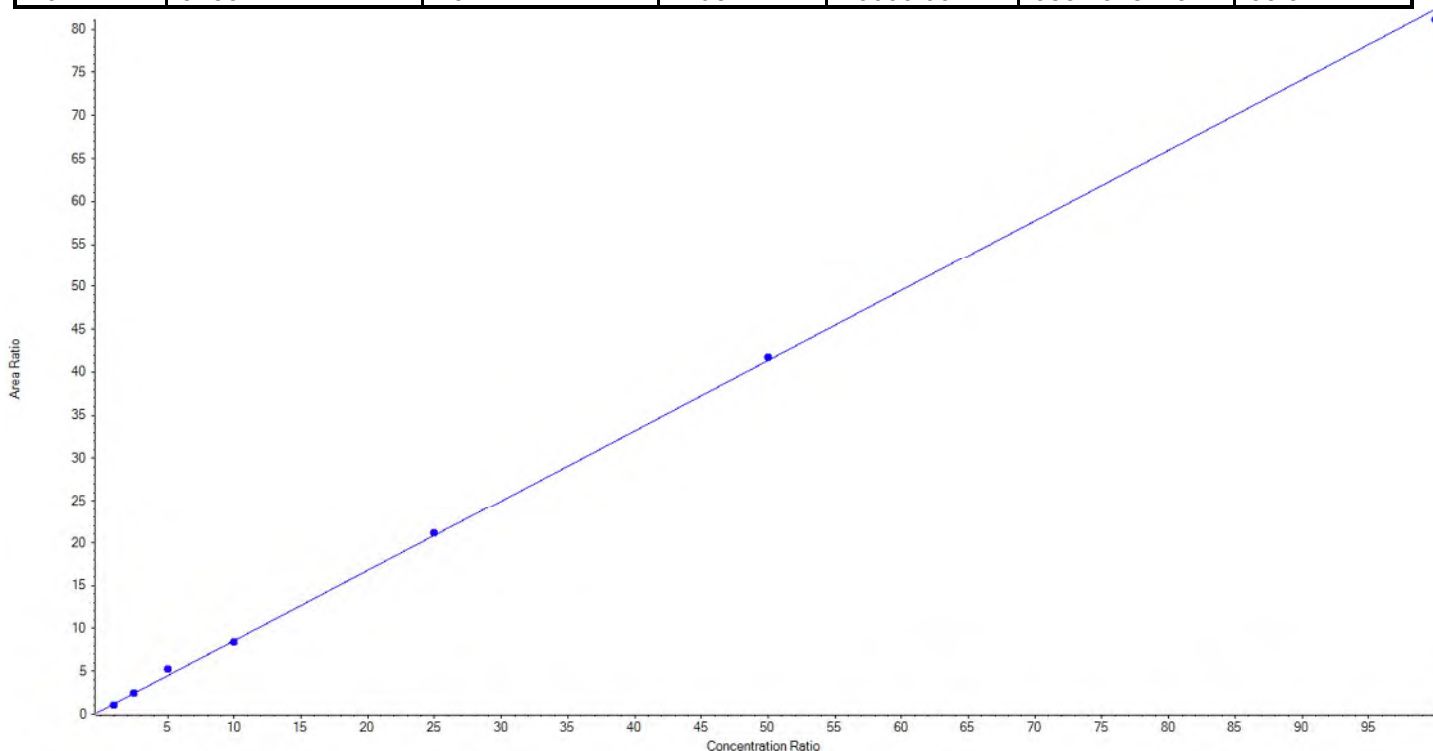
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	False	100.00	7.736438	7.7
5	JZ81	L4	True	250.00	211.136415	84.5
6	JZ82	L5	True	500.00	585.361648	117.1
7	JZ83	L6	True	1000.00	982.498089	98.3
8	JZ84	L7	True	2500.00	2422.727963	96.9
9	JZ85	L8	True	5000.00	5283.141818	105.7
10	JZ86	L9	True	10000.00	9765.134066	97.7



<b>Analyte Name</b>	PFUnA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	563.0 / 519.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.81955x + 0.38205$  ( $r = 0.99915$ ) (weighting:  $1/x$ )

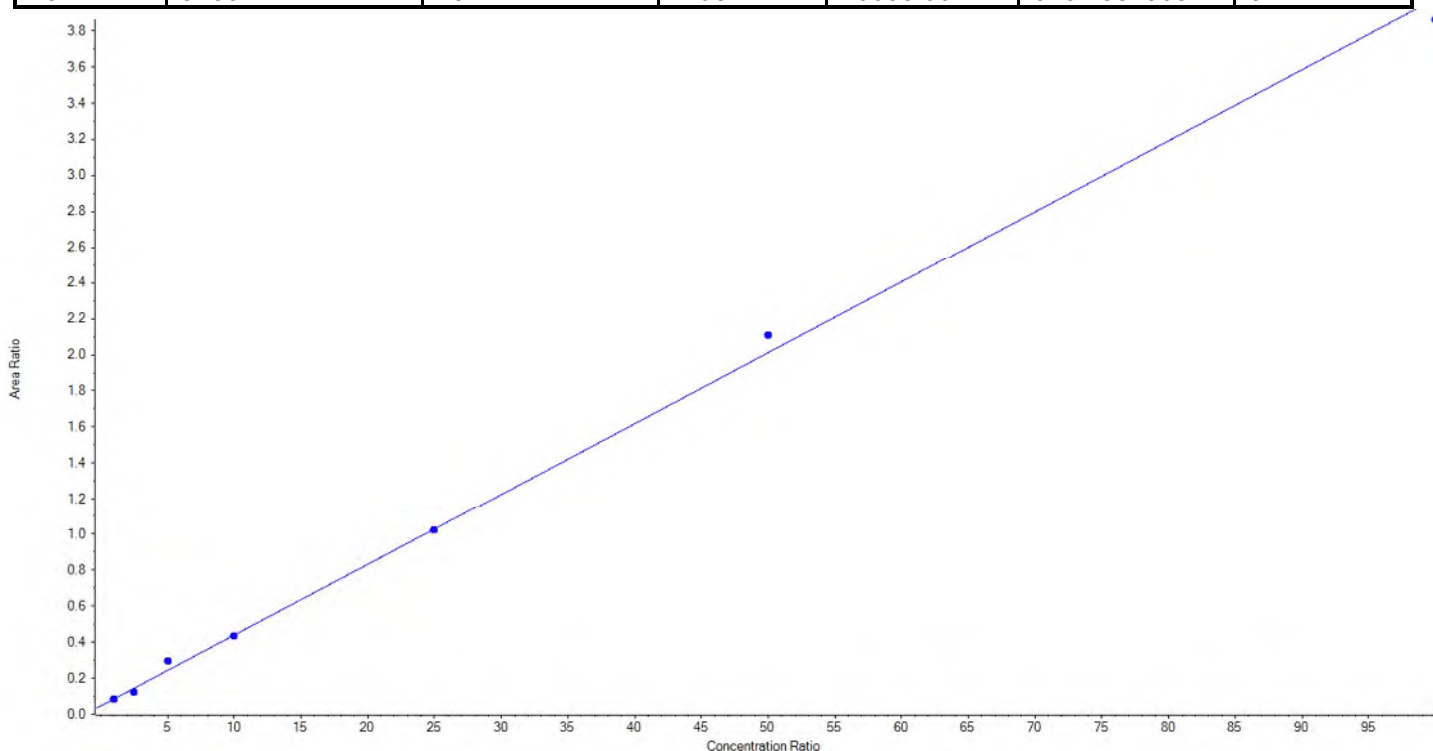
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	78.442830	78.4
5	JZ81	L4	True	250.00	257.733491	103.1
6	JZ82	L5	True	500.00	598.716910	119.7
7	JZ83	L6	True	1000.00	976.917546	97.7
8	JZ84	L7	True	2500.00	2539.406707	101.6
9	JZ85	L8	True	5000.00	5046.454394	100.9
10	JZ86	L9	True	10000.00	9852.328123	98.5



<b>Analyte Name</b>	PFUnA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	563.0 / 269.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03932 x + 0.04583$  (r = 0.99797) (weighting: 1 / x)

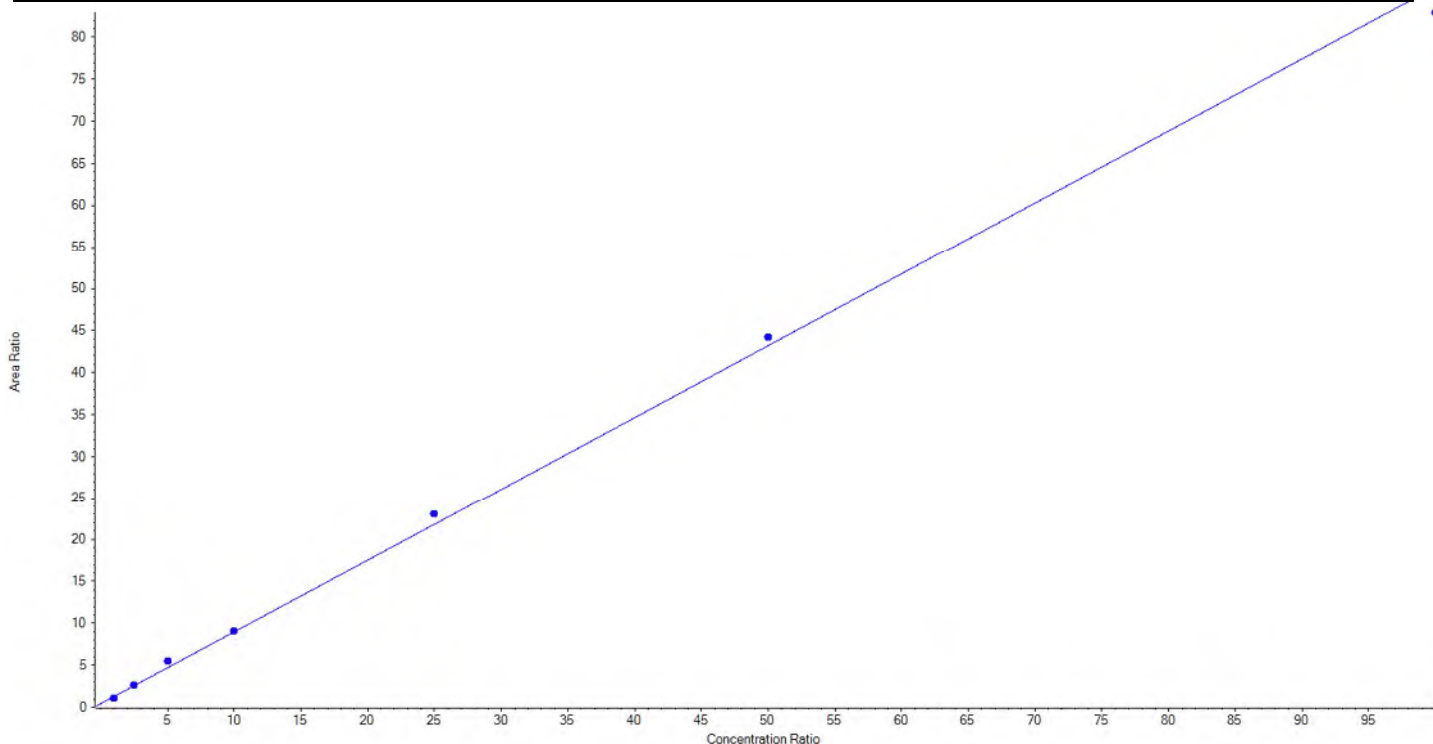
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	94.957655	95.0
5	JZ81	L4	True	250.00	195.418396	78.2
6	JZ82	L5	True	500.00	631.729184	126.4
7	JZ83	L6	True	1000.00	990.253344	99.0
8	JZ84	L7	True	2500.00	2489.843308	99.6
9	JZ85	L8	True	5000.00	5243.210147	104.9
10	JZ86	L9	True	10000.00	9704.587965	97.1



<b>Analyte Name</b>	PFD <sub>o</sub> A_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	613.0 / 569.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.85553x + 0.41999$  (r = 0.99855) (weighting: 1 / x)

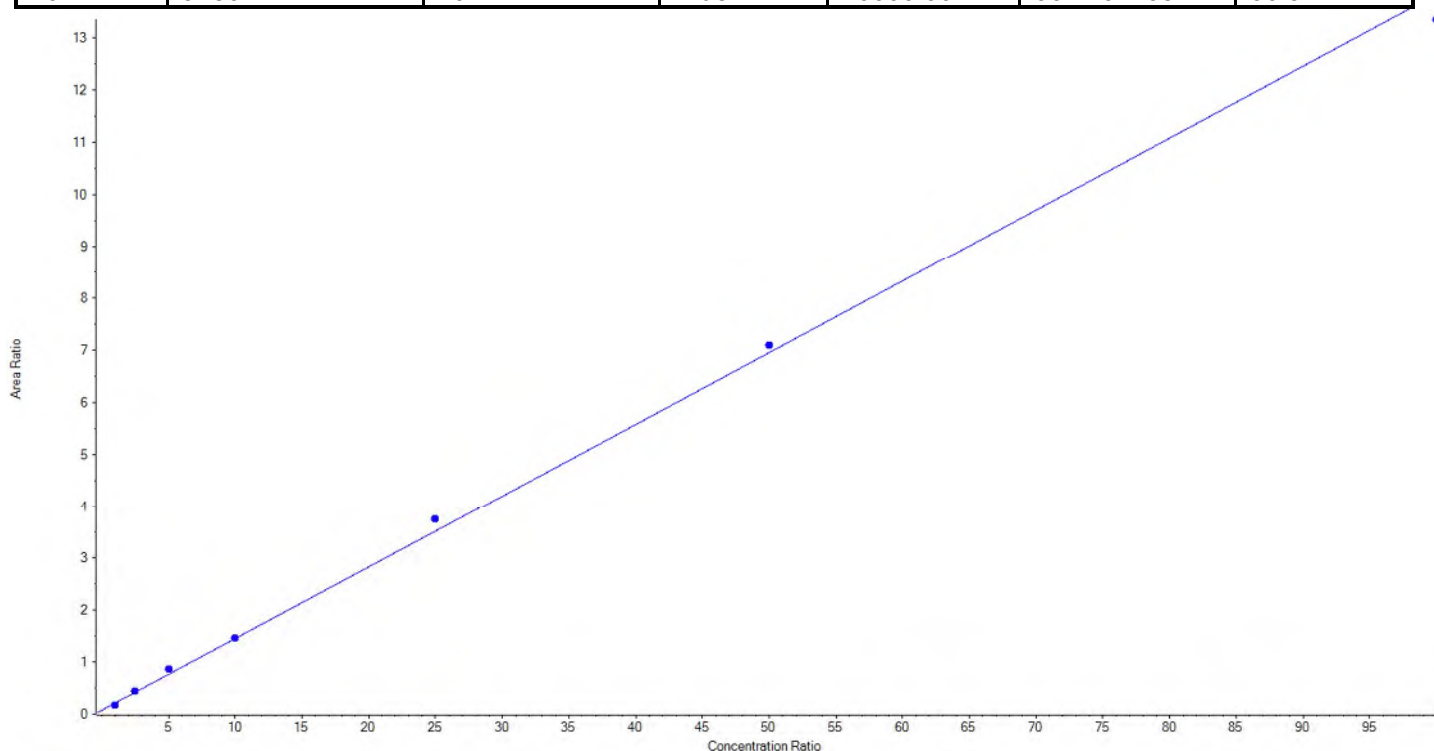
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	72.350069	72.4
5	JZ81	L4	True	250.00	260.050806	104.0
6	JZ82	L5	True	500.00	586.696625	117.3
7	JZ83	L6	True	1000.00	1013.028885	101.3
8	JZ84	L7	True	2500.00	2652.886864	106.1
9	JZ85	L8	True	5000.00	5122.205313	102.4
10	JZ86	L9	True	10000.00	9642.781438	96.4



<b>Analyte Name</b>	PFD <sub>o</sub> A_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	613.0 / 319.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.13761 x + 0.07538$  (r = 0.99861) (weighting: 1 / x)

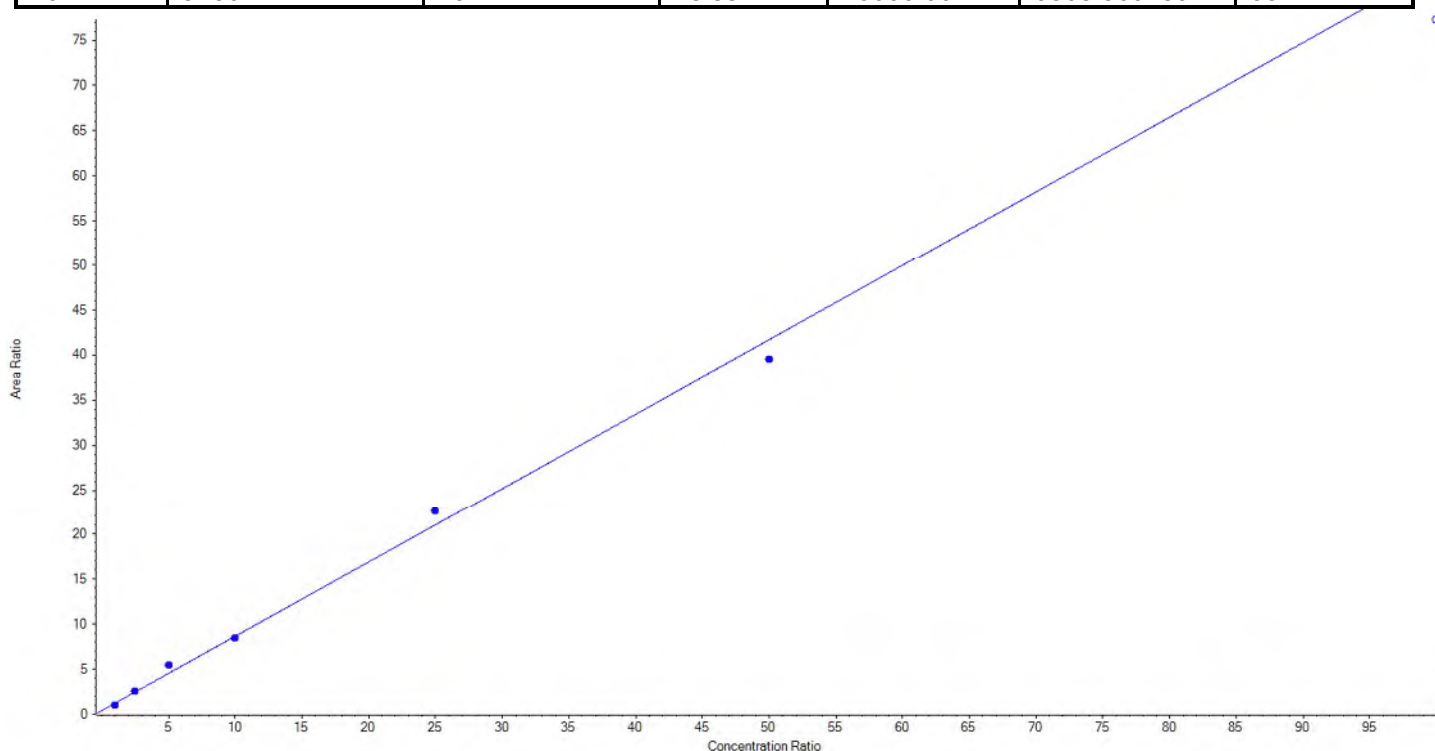
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	72.751052	72.8
5	JZ81	L4	True	250.00	266.125849	106.5
6	JZ82	L5	True	500.00	572.139623	114.4
7	JZ83	L6	True	1000.00	1006.475534	100.7
8	JZ84	L7	True	2500.00	2677.159612	107.1
9	JZ85	L8	True	5000.00	5108.326242	102.2
10	JZ86	L9	True	10000.00	9647.022087	96.5



<b>Analyte Name</b>	PFTTrDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	663.0 / 619.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.82600x + 0.39829$  (r = 0.99586) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	73.542184	73.5
5	JZ81	L4	True	250.00	260.728046	104.3
6	JZ82	L5	True	500.00	608.304174	121.7
7	JZ83	L6	True	1000.00	980.781506	98.1
8	JZ84	L7	True	2500.00	2694.736511	107.8
9	JZ85	L8	True	5000.00	4731.907579	94.6
10	JZ86	L9	False	10000.00	9308.369289	93.1

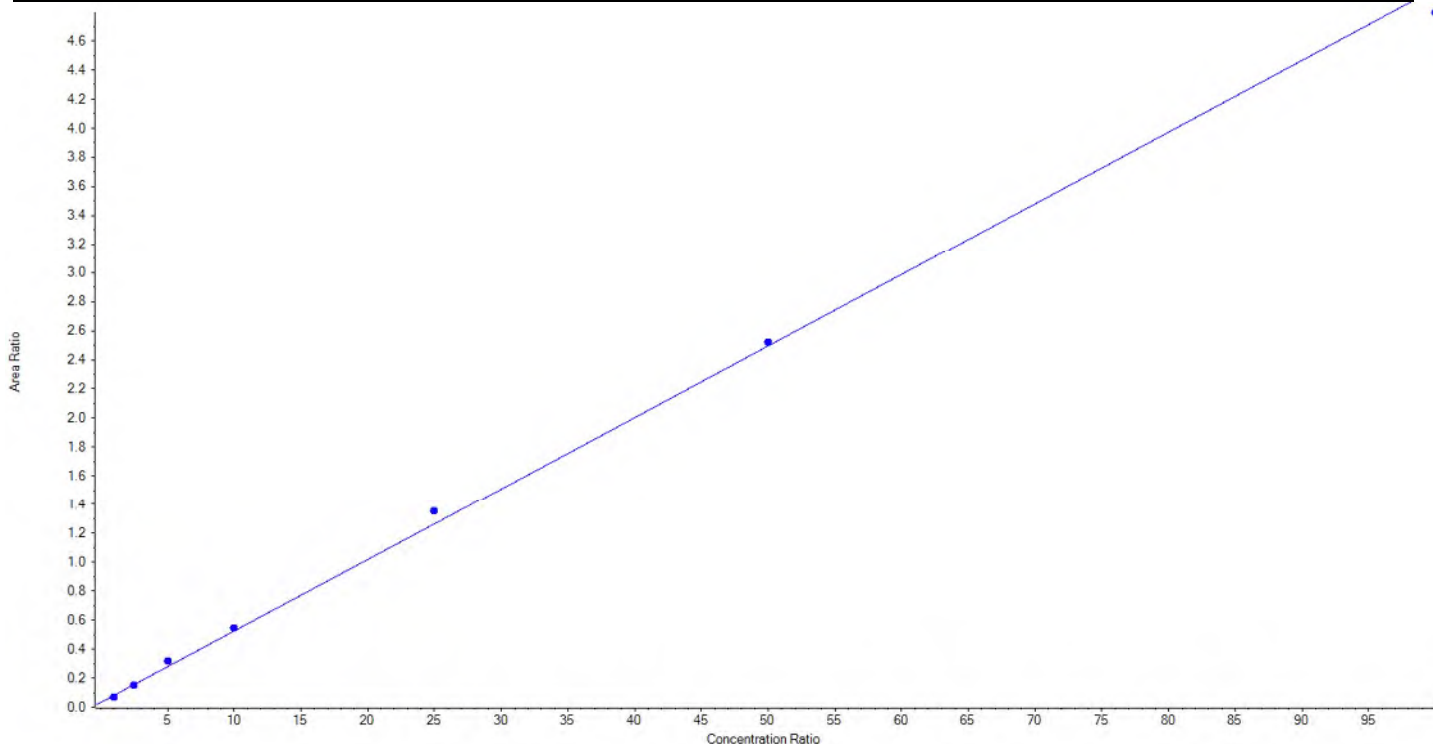




<b>Analyte Name</b>	PFTrDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	663.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.04926 x + 0.03246$  (r = 0.99863) (weighting: 1 / x)

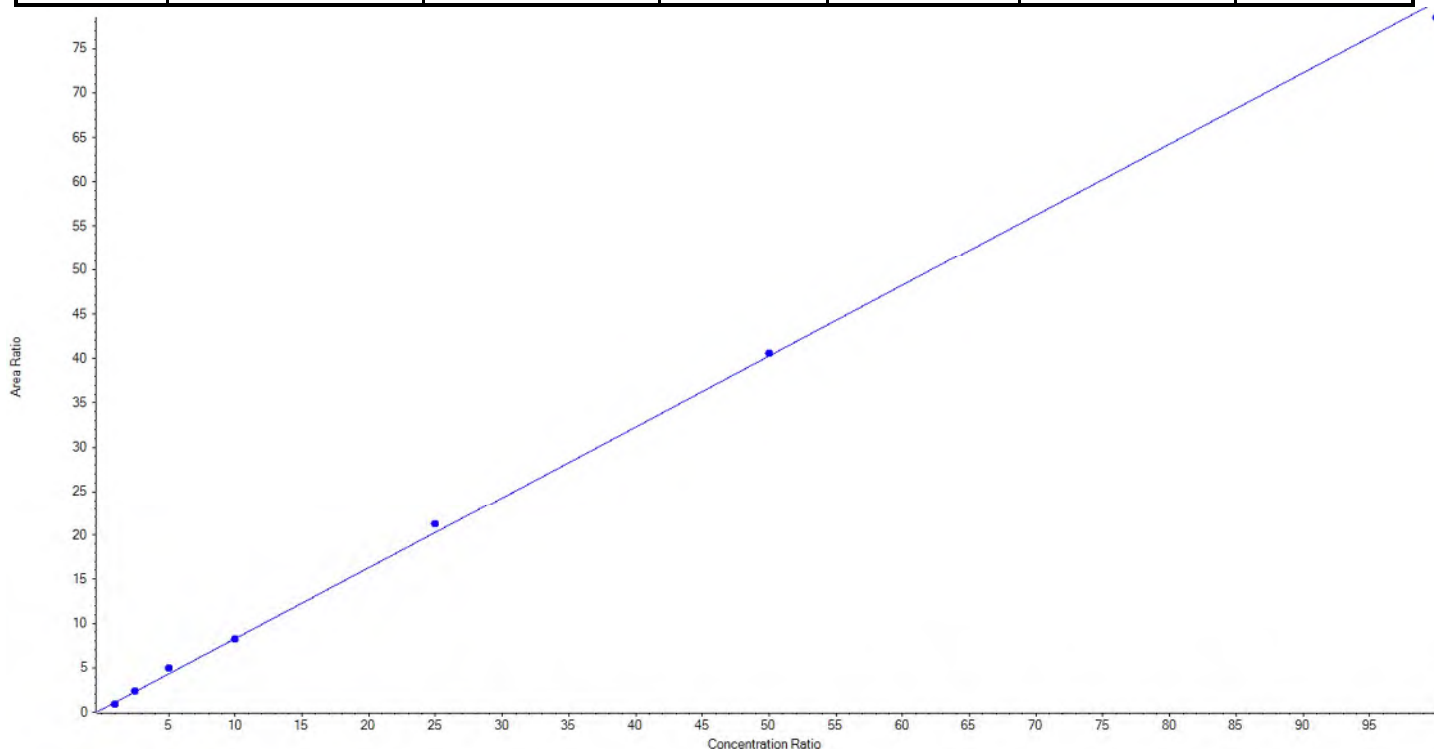
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	76.746649	76.8
5	JZ81	L4	True	250.00	244.888630	98.0
6	JZ82	L5	True	500.00	578.176433	115.6
7	JZ83	L6	True	1000.00	1044.747827	104.5
8	JZ84	L7	True	2500.00	2686.859973	107.5
9	JZ85	L8	True	5000.00	5052.762550	101.1
10	JZ86	L9	True	10000.00	9665.817937	96.7



<b>Analyte Name</b>	PFTeDA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	713.0 / 669.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.79933 x + 0.30655$  (r = 0.99910) (weighting: 1 / x)

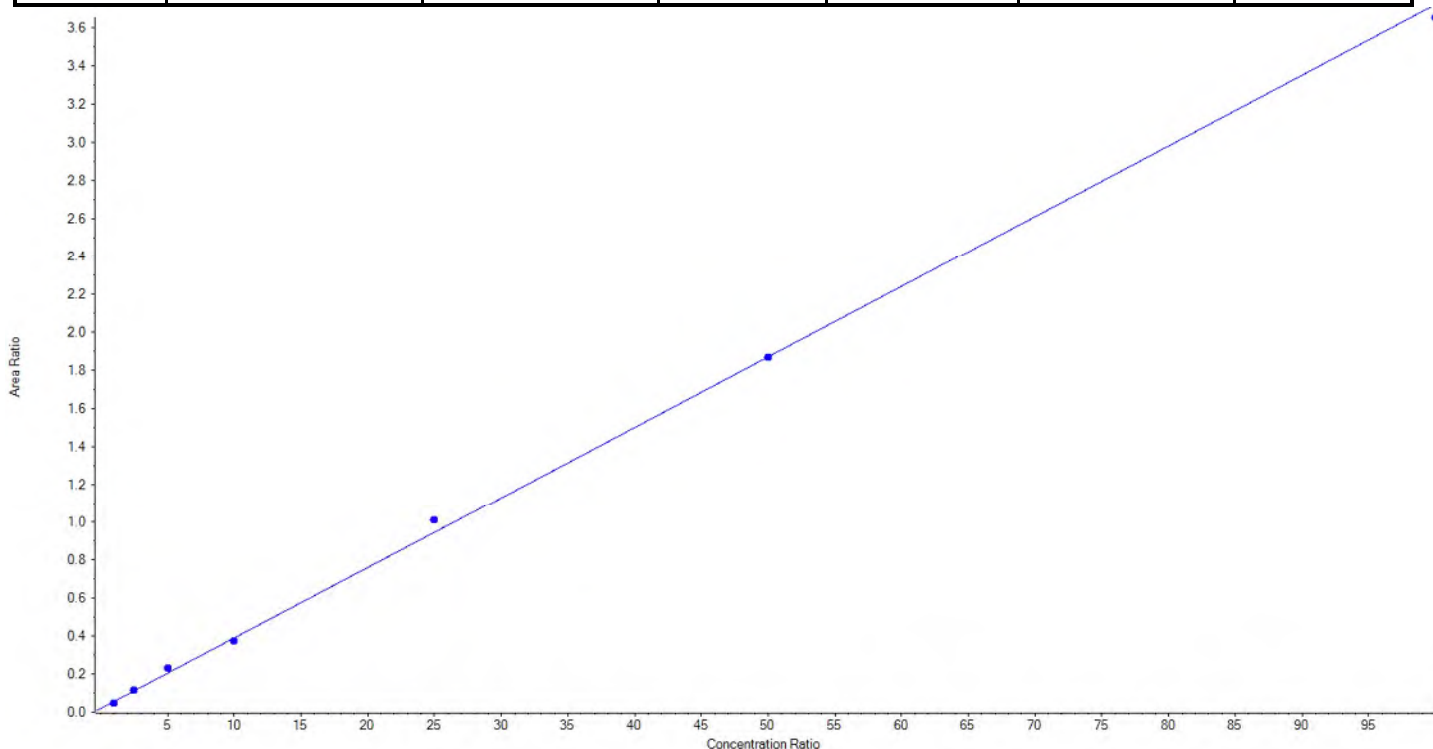
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	78.004883	78.0
5	JZ81	L4	True	250.00	254.536079	101.8
6	JZ82	L5	True	500.00	584.932351	117.0
7	JZ83	L6	True	1000.00	1000.299888	100.0
8	JZ84	L7	True	2500.00	2614.366353	104.6
9	JZ85	L8	True	5000.00	5041.096791	100.8
10	JZ86	L9	True	10000.00	9776.763655	97.8



<b>Analyte Name</b>	PFTeDA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	713.0 / 169.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.03703 x + 0.01944$  (r = 0.99901) (weighting: 1 / x)

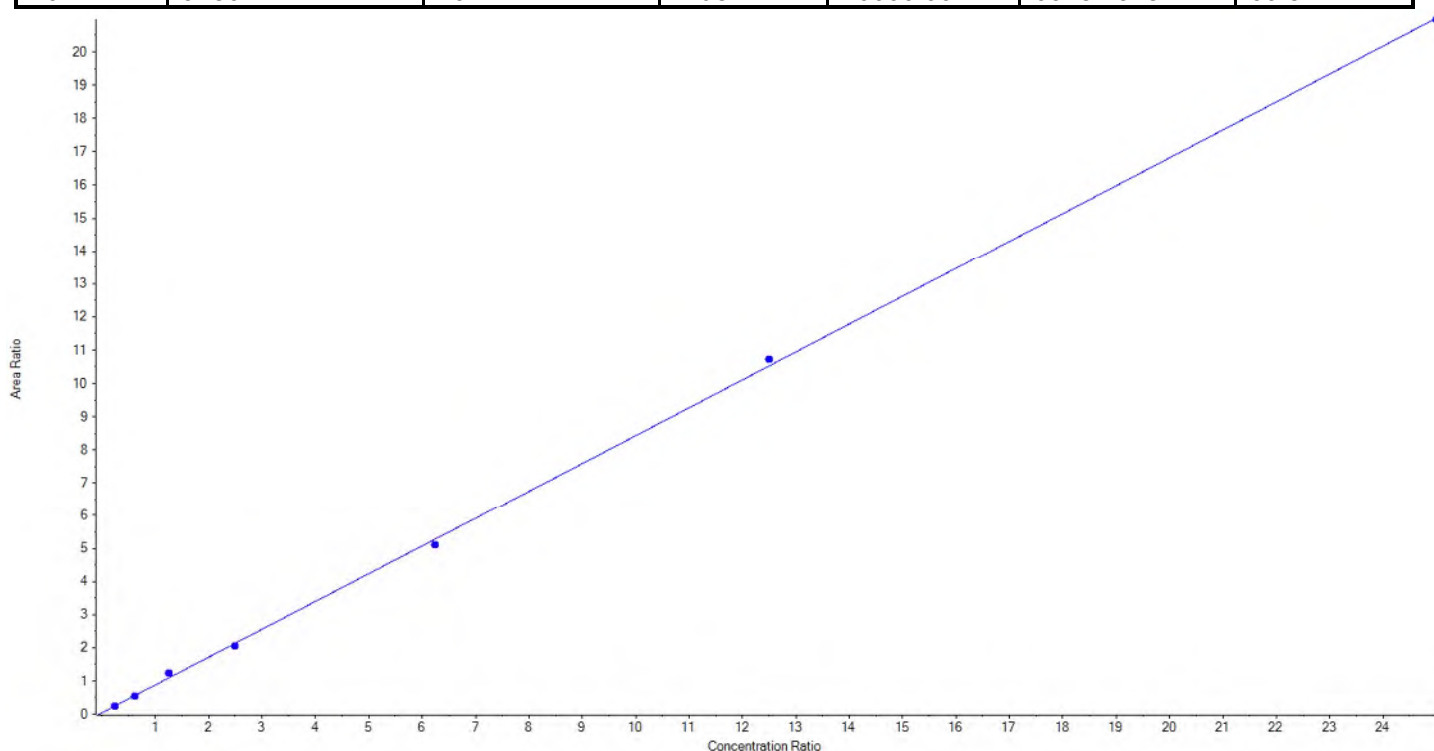
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.402441	81.4
5	JZ81	L4	True	250.00	256.077555	102.4
6	JZ82	L5	True	500.00	577.721625	115.5
7	JZ83	L6	True	1000.00	957.796336	95.8
8	JZ84	L7	True	2500.00	2672.001384	106.9
9	JZ85	L8	True	5000.00	4991.251605	99.8
10	JZ86	L9	True	10000.00	9813.749053	98.1



<b>Analyte Name</b>	NMeFOSAA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	570.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.83899x + 0.03915$  ( $r = 0.99954$ ) (weighting:  $1/x$ )

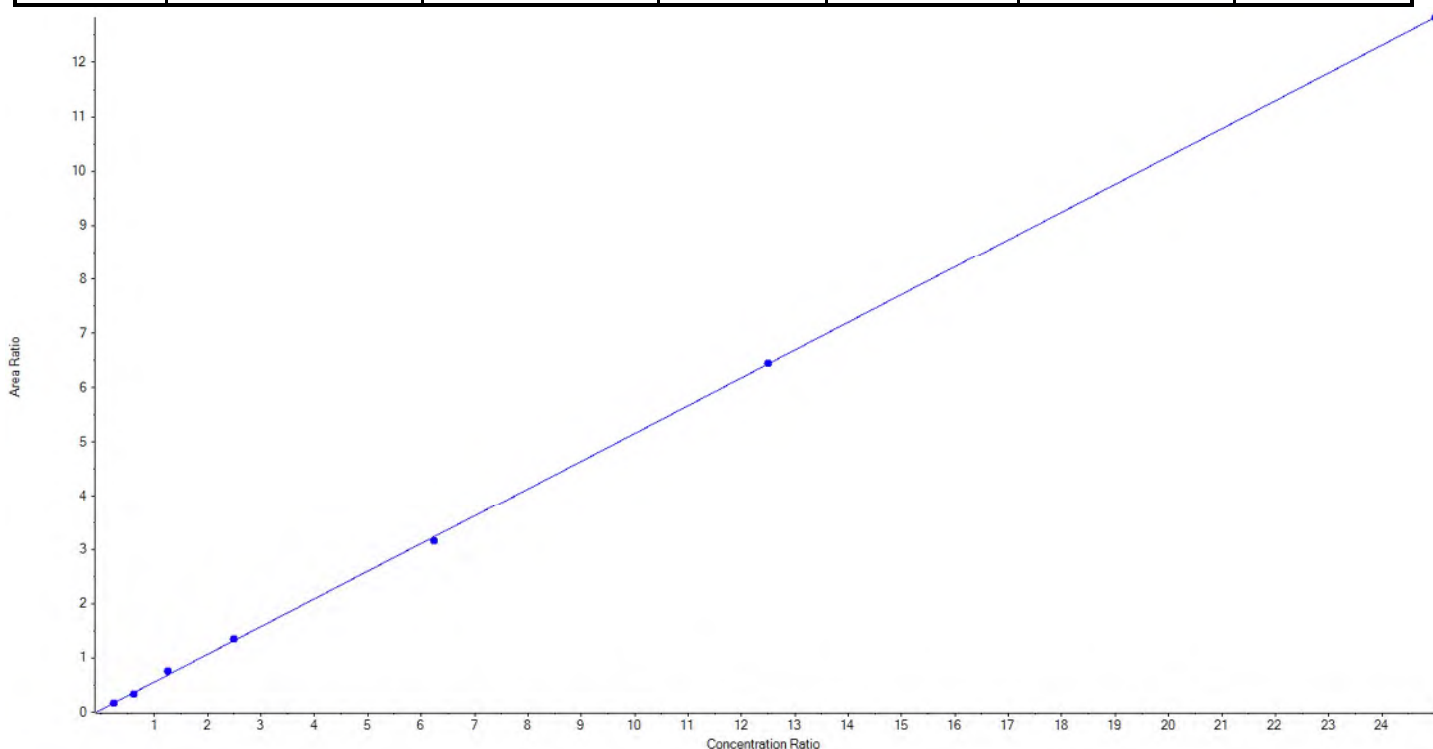
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	94.878468	94.9
5	JZ81	L4	True	250.00	244.077862	97.6
6	JZ82	L5	True	500.00	564.911657	113.0
7	JZ83	L6	True	1000.00	964.836133	96.5
8	JZ84	L7	True	2500.00	2409.042205	96.4
9	JZ85	L8	True	5000.00	5094.021805	101.9
10	JZ86	L9	True	10000.00	9978.231871	99.8



<b>Analyte Name</b>	NMeFOSAA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	570.0 / 512.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.51145x + 0.04207$  (r = 0.99966) (weighting: 1 / x)

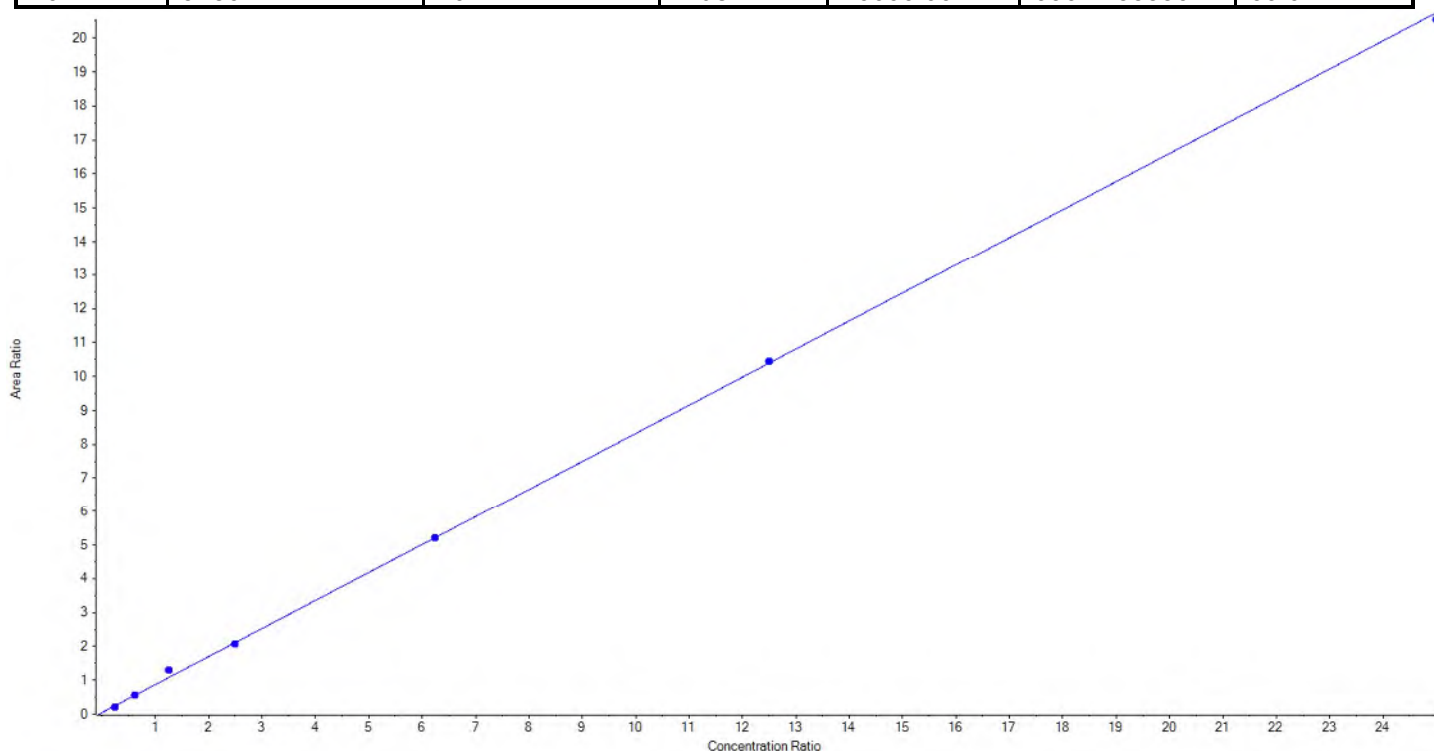
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	97.278831	97.3
5	JZ81	L4	True	250.00	227.087626	90.8
6	JZ82	L5	True	500.00	558.010303	111.6
7	JZ83	L6	True	1000.00	1026.281329	102.6
8	JZ84	L7	True	2500.00	2438.575268	97.5
9	JZ85	L8	True	5000.00	5008.524834	100.2
10	JZ86	L9	True	10000.00	9994.241810	99.9



<b>Analyte Name</b>	NEtFOSAA_1	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	584.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.82809x + 0.04293$  (r = 0.99914) (weighting: 1 / x)

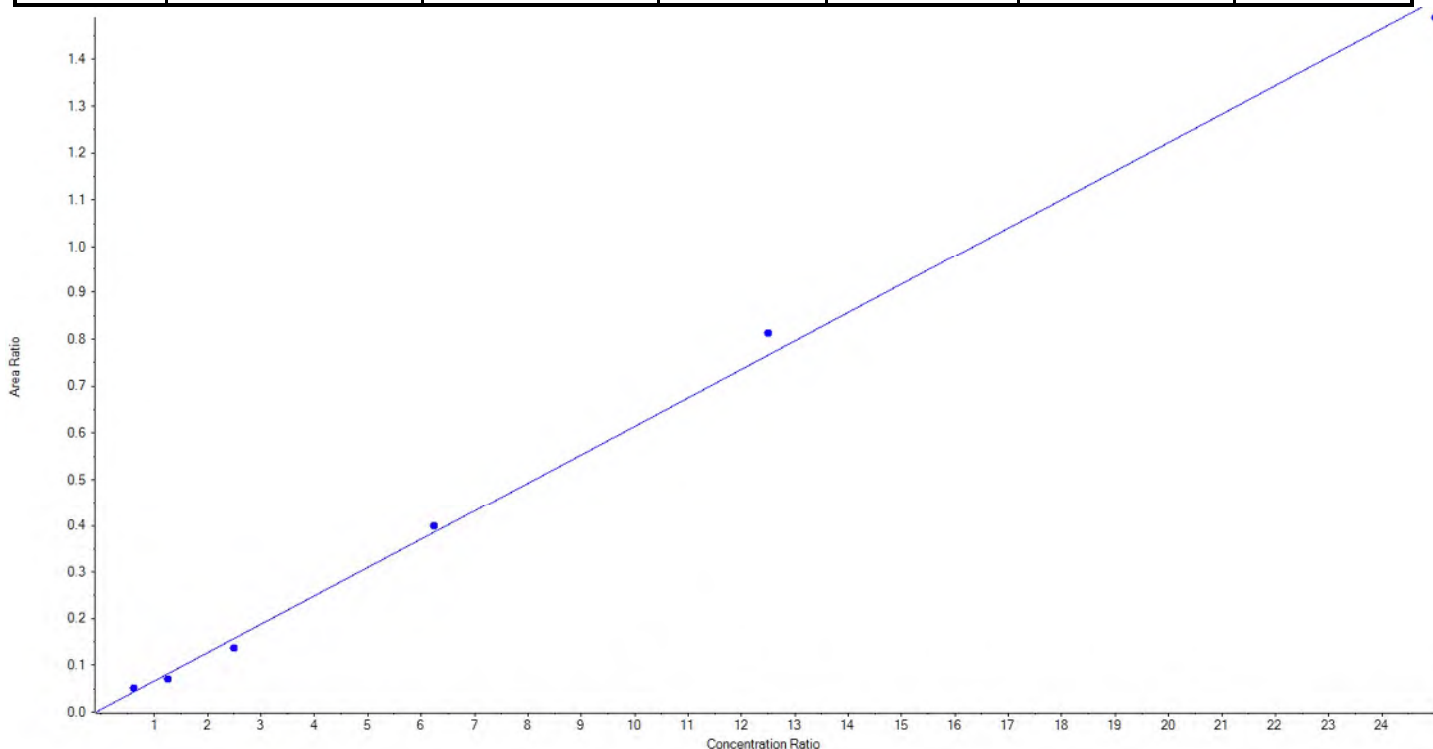
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	81.752724	81.8
5	JZ81	L4	True	250.00	247.455530	99.0
6	JZ82	L5	True	500.00	608.611130	121.7
7	JZ83	L6	True	1000.00	979.164481	97.9
8	JZ84	L7	True	2500.00	2498.871030	100.0
9	JZ85	L8	True	5000.00	5033.009749	100.7
10	JZ86	L9	True	10000.00	9901.135356	99.0



<b>Analyte Name</b>	NEtFOSAA_2	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	584.0 / 483.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06084 x + 0.00558$  (r = 0.99774) (weighting: 1 / x)

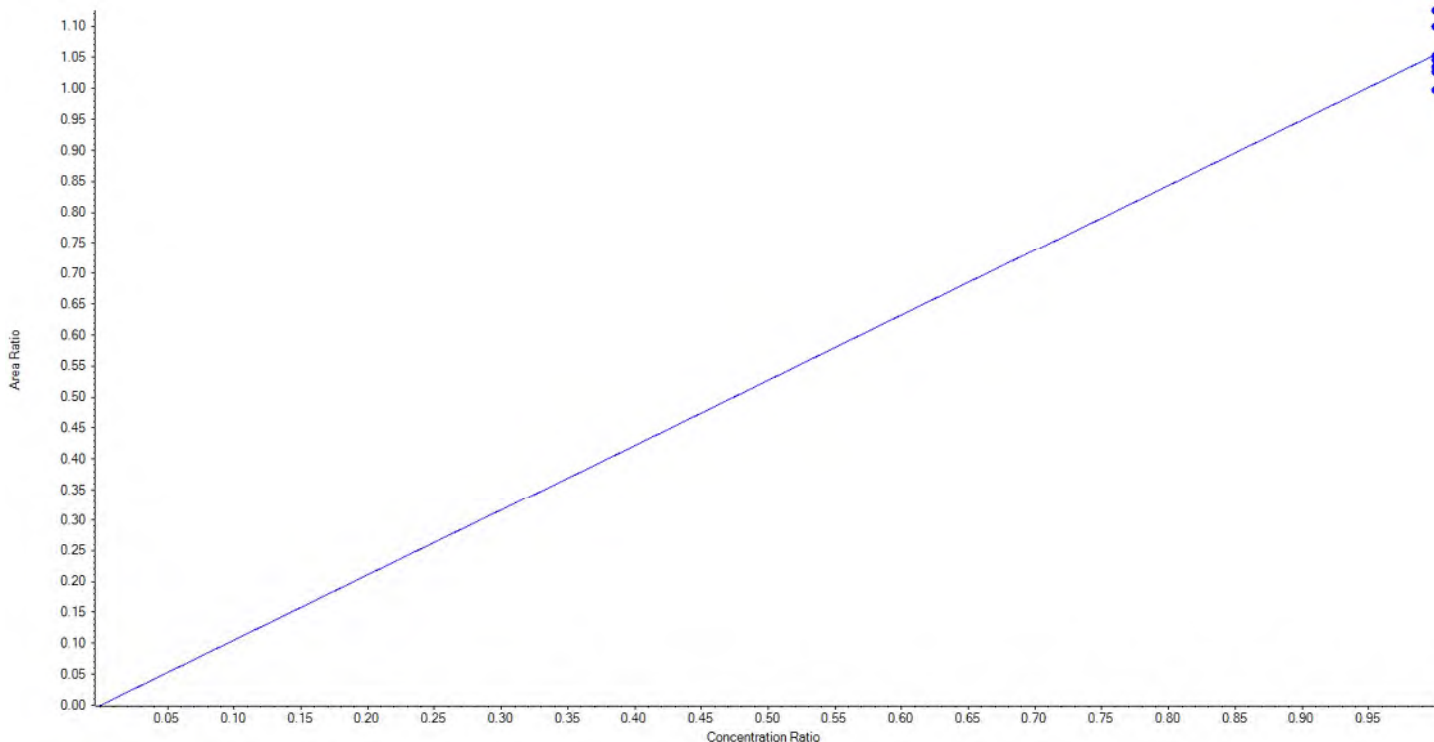
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	False	100.00	N/A	N/A
5	JZ81	L4	True	250.00	298.757309	119.5
6	JZ82	L5	True	500.00	434.634886	86.9
7	JZ83	L6	True	1000.00	861.511129	86.2
8	JZ84	L7	True	2500.00	2591.981690	103.7
9	JZ85	L8	True	5000.00	5310.856861	106.2
10	JZ86	L9	True	10000.00	9752.258124	97.5



<b>Analyte Name</b>	13C2-PFHxA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	315.0 / 270.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.05437 x$  (std. dev. = 0.04369) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	99.764104	99.8
5	JZ81	L4	True	100.00	98.150292	98.2
6	JZ82	L5	True	100.00	97.359742	97.4
7	JZ83	L6	True	100.00	99.178186	99.2
8	JZ84	L7	True	100.00	104.204426	104.2
9	JZ85	L8	True	100.00	106.726479	106.7
10	JZ86	L9	True	100.00	94.616771	94.6

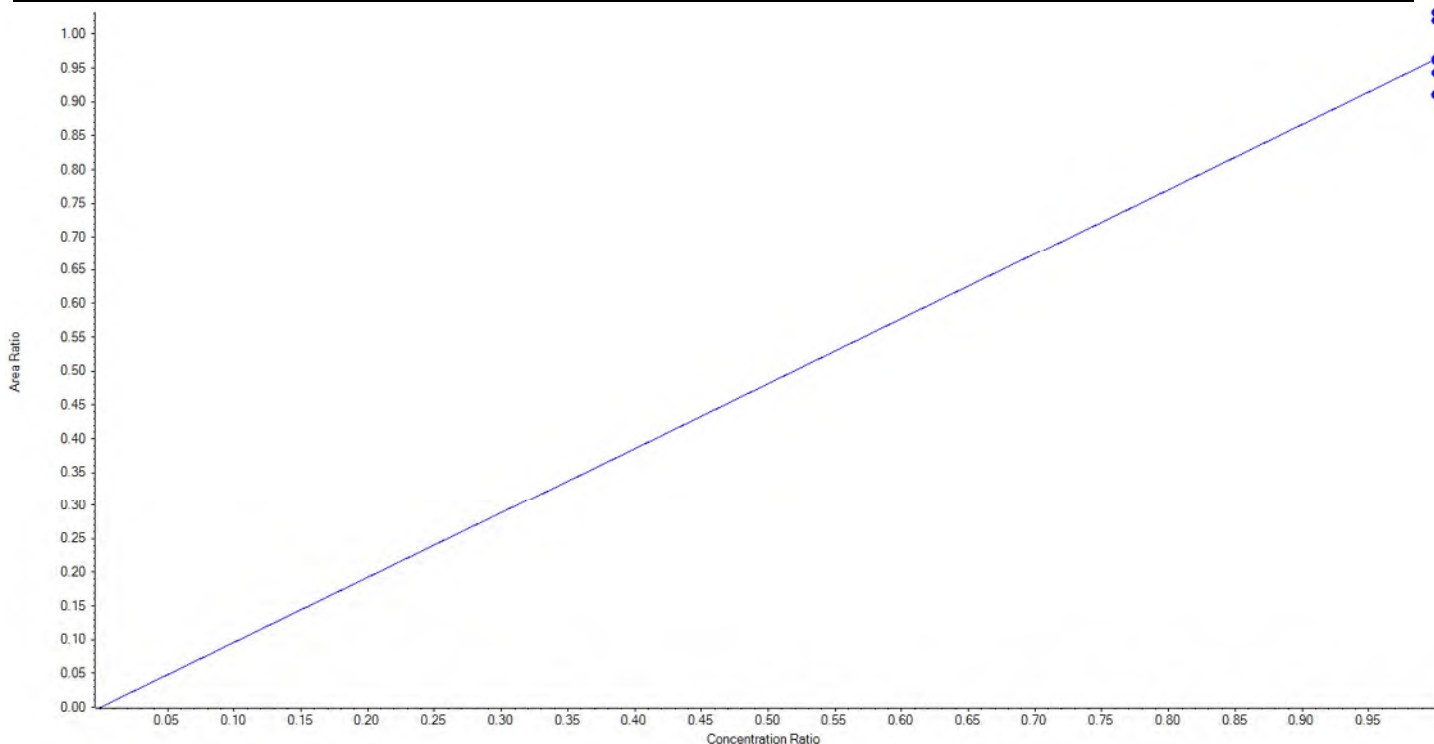




<b>Analyte Name</b>	13C2-PFDA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	515.0 / 470.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.96279 x$  (std. dev. = 0.04793) (weighting: 1 / x)

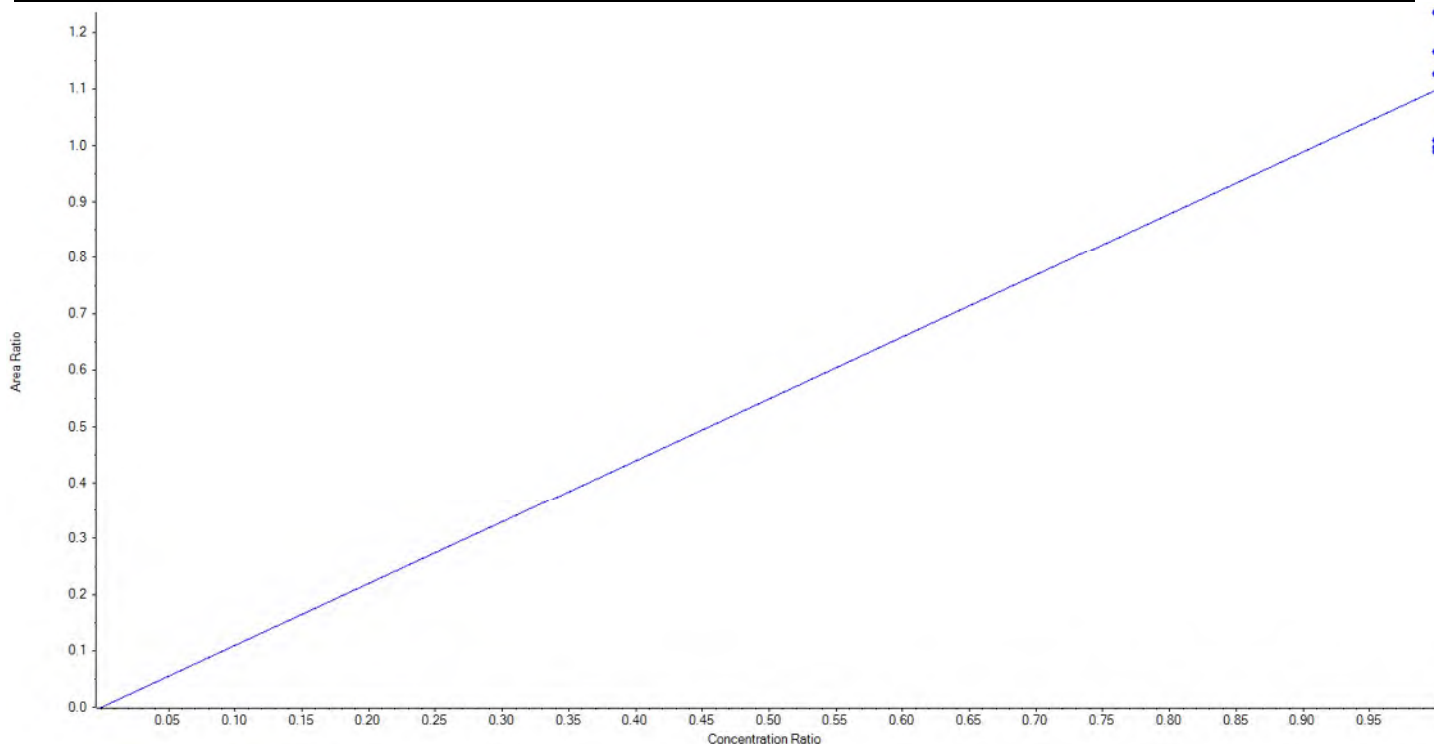
Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	100.00	99.706994	99.7
5	JZ81	L4	True	100.00	94.706439	94.7
6	JZ82	L5	True	100.00	105.902514	105.9
7	JZ83	L6	True	100.00	97.925238	97.9
8	JZ84	L7	True	100.00	100.061238	100.1
9	JZ85	L8	True	100.00	107.172378	107.2
10	JZ86	L9	True	100.00	94.525199	94.5



<b>Analyte Name</b>	d5-EtFOSAA	<b>Data File</b>	08222018_DW.wiff
<b>MRM Transition</b>	589.0 / 419.0	<b>Result Table</b>	08232018_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/22/2018 6:00:37 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.09830 x$  (std. dev. = 0.09879) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
4	JZ80	L3	True	400.00	363.088127	90.8
5	JZ81	L4	True	400.00	360.233650	90.1
6	JZ82	L5	True	400.00	424.552651	106.1
7	JZ83	L6	True	400.00	449.756749	112.4
8	JZ84	L7	True	400.00	424.420952	106.1
9	JZ85	L8	True	400.00	410.255273	102.6
10	JZ86	L9	True	400.00	367.692597	91.9





Sample Name	JZ80	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:27:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.308	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.80	PFHxA	0.093	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.023	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.322	0.299	ü
PFOA_1	413.0 / 369.0	2.33	PFOA			
PFOA_2	413.0 / 169.0	2.33	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.60	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.286	0.310	ü
PFOS_1	499.0 / 80.0	2.59	PFOS			
PFOS_2	499.0 / 99.0	2.59	PFOS	0.191	0.186	ü
PFDA_1	513.0 / 469.0	2.89	PFDA			
PFDA_2	513.0 / 219.0	2.90	PFDA	0.032	0.044	ü
PFUnA_1	563.0 / 519.0	3.18	PFUnA			
PFUnA_2	563.0 / 269.0	3.18	PFUnA	0.081	0.055	ü
PFDoA_1	613.0 / 569.0	3.46	PFDoA			
PFDoA_2	613.0 / 319.0	3.46	PFDoA	0.169	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.73	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.73	PFTTrDA	0.070	0.063	ü
PFTeDA_1	713.0 / 669.0	3.98	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.98	PFTeDA	0.053	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.03	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.02	NMeFOSAA	0.699	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.18	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.88		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.17		N/A	N/A	ü

Sample Name	JZ81	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:36:23	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.290	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.072	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.021	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.290	0.299	ü
PFOA_1	413.0 / 369.0	2.32	PFOA			
PFOA_2	413.0 / 169.0	2.32	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.59	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.324	0.310	ü
PFOS_1	499.0 / 80.0	2.58	PFOS			
PFOS_2	499.0 / 99.0	2.58	PFOS	0.180	0.186	ü
PFDA_1	513.0 / 469.0	2.88	PFDA			
PFDA_2	513.0 / 219.0	2.88	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.17	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.049	0.055	ü
PFDoA_1	613.0 / 569.0	3.45	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.167	0.163	ü
PFTrDA_1	663.0 / 619.0	3.72	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.71	PFTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.96	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.96	PFTeDA	0.049	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.02	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.02	NMeFOSAA	0.603	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.17	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.16	NEtFOSAA	0.092	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.16		N/A	N/A	ü

Sample Name	JZ82	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:45:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.289	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.80	PFHxA	0.089	0.080	ü
PFHpA_1	363.0 / 319.0	2.07	PFHpA			
PFHpA_2	363.0 / 169.0	2.07	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.08	PFHxS			
PFHxS_2	399.0 / 99.0	2.08	PFHxS	0.297	0.299	ü
PFOA_1	413.0 / 369.0	2.34	PFOA			
PFOA_2	413.0 / 169.0	2.34	PFOA	0.063	0.068	ü
PFNA_1	463.0 / 419.0	2.61	PFNA			
PFNA_2	463.0 / 219.0	2.61	PFNA	0.317	0.310	ü
PFOS_1	499.0 / 80.0	2.60	PFOS			
PFOS_2	499.0 / 99.0	2.60	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.91	PFDA			
PFDA_2	513.0 / 219.0	2.91	PFDA	0.047	0.044	ü
PFUnA_1	563.0 / 519.0	3.19	PFUnA			
PFUnA_2	563.0 / 269.0	3.19	PFUnA	0.056	0.055	ü
PFDoA_1	613.0 / 569.0	3.48	PFDoA			
PFDoA_2	613.0 / 319.0	3.48	PFDoA	0.159	0.163	ü
PFTrDA_1	663.0 / 619.0	3.75	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.74	PFTrDA	0.059	0.063	ü
PFTeDA_1	713.0 / 669.0	3.99	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.99	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.05	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.05	NMeFOSAA	0.617	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.19	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.20	NEtFOSAA	0.055	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.90		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.18		N/A	N/A	ü

Sample Name	JZ83	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.297	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.06	PFHpA	0.017	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.302	0.299	ü
PFOA_1	413.0 / 369.0	2.32	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.075	0.068	ü
PFNA_1	463.0 / 419.0	2.59	PFNA			
PFNA_2	463.0 / 219.0	2.59	PFNA	0.314	0.310	ü
PFOS_1	499.0 / 80.0	2.58	PFOS			
PFOS_2	499.0 / 99.0	2.58	PFOS	0.186	0.186	ü
PFDA_1	513.0 / 469.0	2.88	PFDA			
PFDA_2	513.0 / 219.0	2.88	PFDA	0.046	0.044	ü
PFUnA_1	563.0 / 519.0	3.16	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.052	0.055	ü
PFDoA_1	613.0 / 569.0	3.44	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.161	0.163	ü
PFTrDA_1	663.0 / 619.0	3.71	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.71	PFTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.95	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.95	PFTeDA	0.045	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.01	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.01	NMeFOSAA	0.657	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.16	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.14	NEtFOSAA	0.066	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.15		N/A	N/A	ü

Sample Name	JZ84	Injection Vial	8
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:03:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.301	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.073	0.080	ü
PFHpA_1	363.0 / 319.0	2.05	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.021	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.291	0.299	ü
PFOA_1	413.0 / 369.0	2.31	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.58	PFNA			
PFNA_2	463.0 / 219.0	2.58	PFNA	0.306	0.310	ü
PFOS_1	499.0 / 80.0	2.57	PFOS			
PFOS_2	499.0 / 99.0	2.57	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.87	PFDA			
PFDA_2	513.0 / 219.0	2.87	PFDA	0.042	0.044	ü
PFUnA_1	563.0 / 519.0	3.16	PFUnA			
PFUnA_2	563.0 / 269.0	3.16	PFUnA	0.048	0.055	ü
PFDoA_1	613.0 / 569.0	3.44	PFDoA			
PFDoA_2	613.0 / 319.0	3.44	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.71	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.70	PFTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.94	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.94	PFTeDA	0.048	0.048	ü
NMeFOSAA_1	570.0 / 419.0	3.01	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.01	NMeFOSAA	0.621	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.16	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.16	NEtFOSAA	0.077	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.87		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.15		N/A	N/A	ü



Sample Name	JZ85	Injection Vial	9
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:12:08	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.293	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.05	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.019	0.020	ü
PFHxS_1	399.0 / 80.0	2.05	PFHxS			
PFHxS_2	399.0 / 99.0	2.05	PFHxS	0.297	0.299	ü
PFOA_1	413.0 / 369.0	2.30	PFOA			
PFOA_2	413.0 / 169.0	2.30	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.319	0.310	ü
PFOS_1	499.0 / 80.0	2.55	PFOS			
PFOS_2	499.0 / 99.0	2.55	PFOS	0.187	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.84	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.051	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.161	0.163	ü
PFTrDA_1	663.0 / 619.0	3.68	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.68	PFTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.93	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.92	PFTeDA	0.046	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.98	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.98	NMeFOSAA	0.601	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.13	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.13	NEtFOSAA	0.078	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü

Sample Name	JZ86	Injection Vial	10
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:21:04	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.297	0.297	ü
PFHxA_1	313.0 / 269.0	1.80	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.074	0.080	ü
PFHpA_1	363.0 / 319.0	2.06	PFHpA			
PFHpA_2	363.0 / 169.0	2.05	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.06	PFHxS			
PFHxS_2	399.0 / 99.0	2.06	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.31	PFOA			
PFOA_2	413.0 / 169.0	2.31	PFOA	0.069	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.304	0.310	ü
PFOS_1	499.0 / 80.0	2.56	PFOS			
PFOS_2	499.0 / 99.0	2.56	PFOS	0.185	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.85	PFDA	0.043	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.048	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.161	0.163	ü
PFTrDA_1	663.0 / 619.0	3.67	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.67	PFTrDA	0.062	0.063	ü
PFTeDA_1	713.0 / 669.0	3.91	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.91	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.99	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.99	NMeFOSAA	0.612	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.14	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.13	NEtFOSAA	0.073	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.85		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü

Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.55	PFBS	0.291	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.075	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.288	0.299	ü
PFOA_1	413.0 / 369.0	2.30	PFOA			
PFOA_2	413.0 / 169.0	2.30	PFOA	0.067	0.068	ü
PFNA_1	463.0 / 419.0	2.57	PFNA			
PFNA_2	463.0 / 219.0	2.57	PFNA	0.301	0.310	ü
PFOS_1	499.0 / 80.0	2.56	PFOS			
PFOS_2	499.0 / 99.0	2.56	PFOS	0.219	0.186	ü
PFDA_1	513.0 / 469.0	2.85	PFDA			
PFDA_2	513.0 / 219.0	2.85	PFDA	0.041	0.044	ü
PFUnA_1	563.0 / 519.0	3.13	PFUnA			
PFUnA_2	563.0 / 269.0	3.13	PFUnA	0.051	0.055	ü
PFDoA_1	613.0 / 569.0	3.41	PFDoA			
PFDoA_2	613.0 / 319.0	3.41	PFDoA	0.164	0.163	ü
PFTTrDA_1	663.0 / 619.0	3.68	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.68	PFTTrDA	0.061	0.063	ü
PFTeDA_1	713.0 / 669.0	3.92	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.91	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.99	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.99	NMeFOSAA	0.531	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.13	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.14	NEtFOSAA	0.053	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü

Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.294	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.081	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.024	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.295	0.299	ü
PFOA_1	413.0 / 369.0	2.28	PFOA			
PFOA_2	413.0 / 169.0	2.28	PFOA	0.071	0.068	ü
PFNA_1	463.0 / 419.0	2.53	PFNA			
PFNA_2	463.0 / 219.0	2.53	PFNA	0.293	0.310	ü
PFOS_1	499.0 / 80.0	2.52	PFOS			
PFOS_2	499.0 / 99.0	2.52	PFOS	0.190	0.186	ü
PFDA_1	513.0 / 469.0	2.79	PFDA			
PFDA_2	513.0 / 219.0	2.79	PFDA	0.044	0.044	ü
PFUnA_1	563.0 / 519.0	3.06	PFUnA			
PFUnA_2	563.0 / 269.0	3.06	PFUnA	0.055	0.055	ü
PFDoA_1	613.0 / 569.0	3.33	PFDoA			
PFDoA_2	613.0 / 319.0	3.33	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.59	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.060	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.049	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.93	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.93	NMeFOSAA	0.583	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.07	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.06	NEtFOSAA	0.072	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.79		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.06		N/A	N/A	ü

Sample Name	JZ81 CCV	Injection Vial	26
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:44:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.57	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.311	0.297	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.078	0.080	ü
PFHpA_1	363.0 / 319.0	2.03	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.023	0.020	ü
PFHxS_1	399.0 / 80.0	2.03	PFHxS			
PFHxS_2	399.0 / 99.0	2.03	PFHxS	0.320	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.27	PFOA	0.070	0.068	ü
PFNA_1	463.0 / 419.0	2.52	PFNA			
PFNA_2	463.0 / 219.0	2.52	PFNA	0.310	0.310	ü
PFOS_1	499.0 / 80.0	2.51	PFOS			
PFOS_2	499.0 / 99.0	2.51	PFOS	0.207	0.186	ü
PFDA_1	513.0 / 469.0	2.80	PFDA			
PFDA_2	513.0 / 219.0	2.81	PFDA	0.051	0.044	ü
PFUnA_1	563.0 / 519.0	3.08	PFUnA			
PFUnA_2	563.0 / 269.0	3.08	PFUnA	0.061	0.055	ü
PFDoA_1	613.0 / 569.0	3.33	PFDoA			
PFDoA_2	613.0 / 319.0	3.33	PFDoA	0.169	0.163	ü
PFTrDA_1	663.0 / 619.0	3.57	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.57	PFTrDA	0.067	0.063	ü
PFTeDA_1	713.0 / 669.0	3.80	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.80	PFTeDA	0.051	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.94	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.94	NMeFOSAA	0.627	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.08	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.07	NEtFOSAA	0.096	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü

Sample Name	JZ77 ICC	Injection Vial	12
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.56	838.949893	885.00	94.80
PFBS_2	298.9 / 99.0	1.55	823.222940	885.00	93.02
PFHxA_1	313.0 / 269.0	1.79	940.692507	1000.00	94.07
PFHxA_2	313.0 / 119.0	1.78	905.693783	1000.00	90.57
PFHpA_1	363.0 / 319.0	2.04	904.433127	1000.00	90.44
PFHpA_2	363.0 / 169.0	2.04	900.167733	1000.00	90.02
PFHxS_1	399.0 / 80.0	2.04	878.507248	912.00	96.33
PFHxS_2	399.0 / 99.0	2.04	854.467878	912.00	93.69
PFOA_1	413.0 / 369.0	2.30	1025.546208	1000.00	102.55
PFOA_2	413.0 / 169.0	2.30	1010.321532	1000.00	101.03
PFNA_1	463.0 / 419.0	2.57	999.289963	1000.00	99.93
PFNA_2	463.0 / 219.0	2.57	972.112818	1000.00	97.21
PFOS_1	499.0 / 80.0	2.56	827.601267	925.60	89.41
PFOS_2	499.0 / 99.0	2.56	984.628390	925.60	106.38
PFDA_1	513.0 / 469.0	2.85	981.100071	1000.00	98.11
PFDA_2	513.0 / 219.0	2.85	900.175136	1000.00	90.02
PFUnA_1	563.0 / 519.0	3.13	1035.449449	1000.00	103.54
PFUnA_2	563.0 / 269.0	3.13	1042.421872	1000.00	104.24
PFDoA_1	613.0 / 569.0	3.41	935.284019	1000.00	93.53
PFDoA_2	613.0 / 319.0	3.41	949.000705	1000.00	94.90
PFTTrDA_1	663.0 / 619.0	3.68	934.876488	1000.00	93.49
PFTTrDA_2	663.0 / 169.0	3.68	931.510987	1000.00	93.15
PFTeDA_1	713.0 / 669.0	3.92	972.665871	1000.00	97.27
PFTeDA_2	713.0 / 169.0	3.91	974.297434	1000.00	97.43
NMeFOSAA_1	570.0 / 419.0	2.99	1151.191017	1000.00	115.12
NMeFOSAA_2	570.0 / 512.0	2.99	986.689158	1000.00	98.67
NEtFOSAA_1	584.0 / 419.0	3.13	1117.607230	1000.00	111.76
NEtFOSAA_2	584.0 / 483.0	3.14	784.221447	1000.00	78.42
13C2-PFHxA	315.0 / 270.0	1.78	91.340069	100.00	91.34
13C2-PFDA	515.0 / 470.0	2.84	91.636316	100.00	91.64
d5-EtFOSAA	589.0 / 419.0	3.12	406.615098	400.00	101.65

Sample Name	JZ82 CCV	Injection Vial	19
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.56	466.731060	443.00	105.36
PFBS_2	298.9 / 99.0	1.56	463.426360	443.00	104.61
PFHxA_1	313.0 / 269.0	1.79	522.842360	500.00	104.57
PFHxA_2	313.0 / 119.0	1.78	534.532844	500.00	106.91
PFHpA_1	363.0 / 319.0	2.04	528.251763	500.00	105.65
PFHpA_2	363.0 / 169.0	2.04	644.216307	500.00	128.84
PFHxS_1	399.0 / 80.0	2.04	498.376743	456.00	109.29
PFHxS_2	399.0 / 99.0	2.04	493.893305	456.00	108.31
PFOA_1	413.0 / 369.0	2.28	574.124041	500.00	114.82
PFOA_2	413.0 / 169.0	2.28	603.439382	500.00	120.69
PFNA_1	463.0 / 419.0	2.53	593.953652	500.00	118.79
PFNA_2	463.0 / 219.0	2.53	559.704797	500.00	111.94
PFOS_1	499.0 / 80.0	2.52	510.848914	463.00	110.33
PFOS_2	499.0 / 99.0	2.52	523.657341	463.00	113.10
PFDA_1	513.0 / 469.0	2.79	585.054165	500.00	117.01
PFDA_2	513.0 / 219.0	2.79	552.376692	500.00	110.48
PFUnA_1	563.0 / 519.0	3.06	567.247318	500.00	113.45
PFUnA_2	563.0 / 269.0	3.06	591.382839	500.00	118.28
PFDoA_1	613.0 / 569.0	3.33	563.794181	500.00	112.76
PFDoA_2	613.0 / 319.0	3.33	565.781461	500.00	113.16
PFTTrDA_1	663.0 / 619.0	3.59	547.893142	500.00	109.58
PFTTrDA_2	663.0 / 169.0	3.59	534.236878	500.00	106.85
PFTeDA_1	713.0 / 669.0	3.83	525.501954	500.00	105.10
PFTeDA_2	713.0 / 169.0	3.83	542.577103	500.00	108.52
NMeFOSAA_1	570.0 / 419.0	2.93	523.825208	500.00	104.77
NMeFOSAA_2	570.0 / 512.0	2.93	485.738626	500.00	97.15
NEtFOSAA_1	584.0 / 419.0	3.07	518.317795	500.00	103.66
NEtFOSAA_2	584.0 / 483.0	3.06	491.162902	500.00	98.23
13C2-PFHxA	315.0 / 270.0	1.78	95.461639	100.00	95.46
13C2-PFDA	515.0 / 470.0	2.79	103.558260	100.00	103.56
d5-EtFOSAA	589.0 / 419.0	3.06	356.116744	400.00	89.03



Sample Name	JZ81 CCV	Injection Vial	26
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:44:12	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.57	213.202804	221.50	96.25
PFBS_2	298.9 / 99.0	1.56	223.741475	221.50	101.01
PFHxA_1	313.0 / 269.0	1.78	232.494759	250.00	93.00
PFHxA_2	313.0 / 119.0	1.78	210.535033	250.00	84.21
PFHpA_1	363.0 / 319.0	2.03	258.089665	250.00	103.24
PFHpA_2	363.0 / 169.0	2.03	294.595515	250.00	117.84
PFHxS_1	399.0 / 80.0	2.03	227.749114	228.00	99.89
PFHxS_2	399.0 / 99.0	2.03	241.108129	228.00	105.75
PFOA_1	413.0 / 369.0	2.27	246.416990	250.00	98.57
PFOA_2	413.0 / 169.0	2.27	259.292330	250.00	103.72
PFNA_1	463.0 / 419.0	2.52	232.036105	250.00	92.81
PFNA_2	463.0 / 219.0	2.52	232.301360	250.00	92.92
PFOS_1	499.0 / 80.0	2.51	201.857324	231.50	87.20
PFOS_2	499.0 / 99.0	2.51	229.523341	231.50	99.15
PFDA_1	513.0 / 469.0	2.80	257.487425	250.00	102.99
PFDA_2	513.0 / 219.0	2.81	264.739845	250.00	105.90
PFUnA_1	563.0 / 519.0	3.08	240.557763	250.00	96.22
PFUnA_2	563.0 / 269.0	3.08	245.731521	250.00	98.29
PFDoA_1	613.0 / 569.0	3.33	242.403147	250.00	96.96
PFDoA_2	613.0 / 319.0	3.33	252.058887	250.00	100.82
PFTTrDA_1	663.0 / 619.0	3.57	247.435298	250.00	98.97
PFTTrDA_2	663.0 / 169.0	3.57	266.661991	250.00	106.66
PFTeDA_1	713.0 / 669.0	3.80	239.896322	250.00	95.96
PFTeDA_2	713.0 / 169.0	3.80	253.889942	250.00	101.56
NMeFOSAA_1	570.0 / 419.0	2.94	248.015155	250.00	99.21
NMeFOSAA_2	570.0 / 512.0	2.94	241.556019	250.00	96.62
NEtFOSAA_1	584.0 / 419.0	3.08	237.077236	250.00	94.83
NEtFOSAA_2	584.0 / 483.0	3.07	300.677784	250.00	120.27
13C2-PFHxA	315.0 / 270.0	1.77	94.553537	100.00	94.55
13C2-PFDA	515.0 / 470.0	2.80	98.310727	100.00	98.31
d5-EtFOSAA	589.0 / 419.0	3.07	393.406226	400.00	98.35



Sample Name	KA08 IB	Injection Vial	11
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T19:30:00	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.79				
13C2-PFDA	515.0 / 470.0	2.82		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.10		N/A	N/A	ü



Sample Name	CR633PB-FS(0)	Injection Vial	21
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T20:59:30	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	2.94	PFNA			
PFNA_2	463.0 / 219.0	2.92	PFNA	0.239	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü

Sample Name	CR634LCS-FS(0)	Injection Vial	22
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:08:27	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.57	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.299	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.080	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.04	PFHpA	0.018	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.289	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.27	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.51	PFNA			
PFNA_2	463.0 / 219.0	2.51	PFNA	0.301	0.310	ü
PFOS_1	499.0 / 80.0	2.50	PFOS			
PFOS_2	499.0 / 99.0	2.50	PFOS	0.212	0.186	ü
PFDA_1	513.0 / 469.0	2.77	PFDA			
PFDA_2	513.0 / 219.0	2.77	PFDA	0.040	0.044	ü
PFUnA_1	563.0 / 519.0	3.05	PFUnA			
PFUnA_2	563.0 / 269.0	3.05	PFUnA	0.052	0.055	ü
PFDoA_1	613.0 / 569.0	3.32	PFDoA			
PFDoA_2	613.0 / 319.0	3.32	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.59	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.063	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.048	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.91	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.91	NMeFOSAA	0.573	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.05	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.05	NEtFOSAA	0.064	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.77		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.04		N/A	N/A	ü

Sample Name	J7558-FS(0)	Injection Vial	23
Sample ID	JAX-RES-08202018-0945-25	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:17:24	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.297	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.080	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.068	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.92	PFNA	0.279	0.310	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	2.80		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.06		N/A	N/A	ü

Sample Name	J7560-FS(0)	Injection Vial	24
Sample ID	JAX-RES-08202018-1100-26	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:26:19	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.56	PFBS			
PFBS_2	298.9 / 99.0	1.56	PFBS	0.155	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.059	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.028	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.302	0.299	ü
PFOA_1	413.0 / 369.0	2.27	PFOA			
PFOA_2	413.0 / 169.0	2.24	PFOA	0.114	0.068	
PFNA_1	463.0 / 419.0	2.52	PFNA			
PFNA_2	463.0 / 219.0	2.52	PFNA	0.349	0.310	ü
PFOS_1	499.0 / 80.0	2.47	PFOS			
PFOS_2	499.0 / 99.0	2.51	PFOS	0.135	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	2.78		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.05		N/A	N/A	ü

Sample Name	J7562-FS(0)	Injection Vial	25
Sample ID	JAX-RES-08202018-1310-28	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-22T21:35:15	Data File	08222018_DW.wiff
Acquisition Method	5-0371.dam	Result Table	08232018_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.221	0.297	ü
PFHxA_1	313.0 / 269.0	1.75	PFHxA			
PFHxA_2	313.0 / 119.0	1.75	PFHxA	0.083	0.080	ü
PFHpA_1	363.0 / 319.0	2.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.00	PFHpA	0.029	0.020	ü
PFHxS_1	399.0 / 80.0	2.00	PFHxS			
PFHxS_2	399.0 / 99.0	2.00	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.25	PFOA			
PFOA_2	413.0 / 169.0	2.21	PFOA	0.158	0.068	
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.98	PFNA	0.265	0.310	ü
PFOS_1	499.0 / 80.0	2.47	PFOS			
PFOS_2	499.0 / 99.0	2.53	PFOS	0.128	0.186	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.044	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.055	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.163	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.063	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.048	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.630	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.073	ü
13C2-PFHxA	315.0 / 270.0	1.74				
13C2-PFDA	515.0 / 470.0	2.83		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.12		N/A	N/A	ü





It can be done

### Chain-of-Custody

Client Contact Information <b>Tetra Tech</b>		Project Manager: <u>Mark Peterson</u>		Sampling Site: <u>Potable Wells</u>		Site Information: <u>Various Resident Potable Wells</u>	
Sampler Information (print name): <u>David Siegan</u>		Phone: <u>904-334-7260</u>		Email:		Turnaround Time (TAT) Requested:	
Project Name: <u>NAS JAX PFAS</u>		Normal <input type="checkbox"/>		Priority <input type="checkbox"/>		RUSH <input type="checkbox"/>	
Project No.: <u>112508005-SE0375</u>		Time Zone:		Preservative: <u>Microms</u>		COC # <u>004</u>	
Sample Identification		2018		Analysis: <u>PFAS - 537</u>		Page # <u>1 of 1</u>	
Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.			
JAX-RES-08202018-0945-25	8/20 0945	G	W	2	2		
JAX-RES-08202018-0945-25-FAB	8/20 0945	G	W	1	1		
JAX-RES-08202018-1100-24	8/20 1100	G	W	2	2		
JAX-RES-08202018-1100-26-FAB	8/20 1100	G	W	1	1		
JAX-RES-08202018-1310-20	8/20 1310	G	W	2	2		
JAX-RES-08202018-1310-28-FAB	8/20 1310	G	W	1	1		
Receipt Temperature: (°C) <u>Therm-1 0.7°</u>		Samples Intact: <u>Yes</u> - No		Samples on Ice: <u>Yes</u> - No		Receipt Comments:	
Relinquished by (Print/Sign) <u>David Siegan</u>	Company: <u>TT</u>	Date/Time <u>8/20/2018 1500</u>	Received by (Print/Sign) <u>F. J. E. V.</u>	Company:	Date/Time:		
Relinquished by (Print/Sign)	Company:	Date/Time:	Received by (Print/Sign) <u>Mark Schwartz</u>	Company: <u>Battelle</u>	Date/Time: <u>8-21-18 1300</u>		
Relinquished by (Print/Sign)	Company:	Date/Time:	Received by (Print/Sign)	Company:	Date/Time:		
Comments: <u>ALL <sup>DS</sup> Potable water samples Cool 4°C Potable</u>							

J7558  
J7559  
J7560  
J7561  
J7562  
J7563



It can be done

ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

Sample Receipt Form Details

Approved:  Authorized

Project Number: 112G08005-SE0375 Client: Tetra Tech

Received by: Schumitz, Matt Date/Time Received: Tuesday, August 21, 2018 1:00 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7558	JAX-RES-08202018-0945-25	08/20/18 9:45	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7559	JAX-RES-08202018-0945-25-FRB	08/20/18 9:45	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7560	JAX-RES-08202018-1100-26	08/20/18 11:00	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7561	JAX-RES-08202018-1100-26-FRB	08/20/18 11:00	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			
J7562	JAX-RES-08202018-1310-28	08/20/18 13:10	08/21/18 13:21	2	W	0.7	NA	NA	NA	R0119 (NA)			
J7563	JAX-RES-08202018-1310-28-FRB	08/20/18 13:10	08/21/18 13:21	1	W	0.7	NA	NA	NA	R0119 (NA)			

Total Samples: 6





ShpNo SHP-180821-01

Battelle Project No: \_\_\_\_\_

It can be done

Sample Receipt Form

Approved:  Authorized

Project Number: 112G08005-SE0375 Client: Tetra Tech  
 Received by: Schumitz, Matt Date/Time Received: Tuesday, August 21, 2018 1:00 PM  
 No. of Shipping Containers: 1

**SHIPMENT**

Method of Delivery: Commercial Carrier Tracking Number: 7823 8621 8158  
 COC Forms:  Shipped with samples  No Forms

**Cooler(s)/Box(es)**

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7823 8621 8158	Custody Seals	Intact	Intact	Therm_1	0.7	6

**Samples**

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)  
 Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)  
 Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 0.7 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
 Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Refrigerator - R0119 (NA) BDO IDs Assigned: J7558 - J7563

Samples logged in by: Schumitz, Matt Date/Time: 08/21/2018 1:00 PM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

**QA/QC Summary  
Batch 18-0524**

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0236
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/20/2018	08/21/2018	0.7

Corrective Actions	None.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The field samples associated with these FRB samples are reported in SDG 18-0519.

METHOD SUMMARIES	
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	None.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500.

Holding Times	Extraction Date(s)	Analysis Date(s)
	8/24/2018	8/25/2018

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ 1/3 the MRL	No exceedances noted.
	No comments.

**QA/QC Summary**  
**Batch 18-0524**

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted. No comments.
Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted. No comments.
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD $\leq$ 20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted. No comments.
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.
R <sup>2</sup> >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted. No comments.
Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted. No comments.
Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted. No comments.



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project Number: 100119154-SE0375  
 Preparation Batch: 18-0524  
 Data Set: DP-18-0236  
 Test Code: Master\_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	NA
Matrix Spike / Matrix Spike Duplicate Precision	NA	NA
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None



It can be done

**BATTELLE - NORWELL OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title:** CTO-SE0375: Naval Air Station Jackson      **Data Set Number:** DP-18-0236  
**Project Number:** 100119154-SE0375      **Prep Batch Number:** 18-0524  
**Entered By:** Denise Schumitz      **Entered On:** 08/27/2018  
**Test Code (Matrix Type):** Master\_371(L)

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Samples that were manually integrated are noted on the quant reports with the comment (TRUE).  
DMS 8/27/2018

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**Task Leader Approval:**

**Supervisor Approval:**

Digitally signed by Jonathan Thorn

Date: 2018.08.27 11:30:16 -04'00'

**PM Approval:**

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## Glossary of Data Qualifiers

Flag:      Application:

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B	Analyte found in the sample at a concentration <10x the level found in the procedural blank
D	Dilution Run. Initial run outside the initial calibration range of the instrument
E	Estimate, result is greater than the highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the Limit of Quantitation (LOQ)
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets secondary criteria
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Method detection limit (MDL) value, Limit of Detection (LOD) reported



## Example Calculation for PFAS

Calculation of final concentration from area:

$$\text{Concentration} = \left[ \frac{PA - b}{m} \right] * C_{IS} * PIV * DF / S$$

Where:

- PA = Area of target / area of internal standard
- b = y intercept from calibration curve
- CIS = concentration of internal standard (ng/L)
- m = slope of calibration
- DF = dilution factor
- S = Sample Size
- PIV = Pre-injection volume (L)

Sample ID: CR652LCS-FS(0)  
 Client Sample ID: Laboratory Control Sample  
 Sample Size: 0.25  
 Units: L  
 Dilution Factor: 1.000  
 PIV (L): 0.001  
 Target Analyte: NEtFOSAA  
 MRM Transition: 584.0 / 419.0  
 Data file: 18-0523\_18-0524.wiff  
 Result table: 18-0523\_18-0524\_DW  
 Area: 160,557.48  
 IS Name: d3-MeFOSAA  
 IS Area: 27,038.56  
 IS Amount (ng/L): 400  
 y-intercept: 0.12055  
 slope: 0.77845

$$\text{Concentration} = \frac{[(160557.48/27038.56) - 0.12055]}{0.77845} * 400 * 0.001 * 1 / 0.25$$

ng/L = 11.96



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375  
 Preparation Batch: 18-0524  
 Data Set: DP-18-0236

	CR651PB-FS (Procedural Blank)	CR652LCS-FS (Laboratory Control Sample)	J7561-FS (JAX-RES-08202018-1100-26-FRB)	J7563-FS (JAX-RES-08202018-1310-28-FRB)
PFHxA	-	L	-	-
PFHpA	-	L	-	-
PFOA	-	L	-	-
PFNA	-	L	-	-
PFDA	-	L	-	-
PFUnA	-	L	-	-
PFDoA	-	L	-	-
PFTrDA	-	L	-	-
PFTeDA	-	L	-	-
NMeFOSAA	-	L	-	-
NEtFOSAA	-	L	-	-
PFBS	-	L	-	-
PFHxS	-	L	-	-
PFOS	-	L	-	-

"L": Linear

"Br": branched

"L/Br": Linear/Branched

"-": Not detected



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	-
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	-
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	-
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	-
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	-
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	-
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	14.0

PASS

Average      Lower      Upper  
 156,041.31    78,020.66    234,061.97

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	78,020.66	234,061.97		110,406.11	220,812.21	
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	78,020.66	234,061.97		110,406.11	220,812.21	
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	78,020.66	234,061.97		110,406.11	220,812.21	
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	78,020.66	234,061.97		110,406.11	220,812.21	
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	78,020.66	234,061.97		110,406.11	220,812.21	
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	78,020.66	234,061.97		110,406.11	220,812.21	
KA08 IB	Instrument Blank	8/25/18 15:26	13C4-PFOS	161,003.39	78,020.66	234,061.97		110,406.11	220,812.21	
JZ77 ICC	ICC	8/25/18 15:35	13C4-PFOS	157,328.87	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81 CCV	CCV	8/25/18 16:37	13C4-PFOS	160,328.42	78,020.66	234,061.97		110,406.11	220,812.21	
CR651PB-FS(0)	Procedural Blank	8/25/18 16:55	13C4-PFOS	159,992.49	78,020.66	234,061.97		112,229.89	224,459.79	
CR652LCS-FS(0)	Laboratory Control Sample	8/25/18 17:04	13C4-PFOS	146,135.00	78,020.66	234,061.97		112,229.89	224,459.79	
J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/18 17:13	13C4-PFOS	159,592.74	78,020.66	234,061.97		112,229.89	224,459.79	
J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/18 17:22	13C4-PFOS	151,783.89	78,020.66	234,061.97		112,229.89	224,459.79	
JZ82 CCV	CCV	8/25/18 17:31	13C4-PFOS	149,629.04	78,020.66	234,061.97		112,229.89	224,459.79	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	-
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	-
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	-
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	-
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	-
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	-
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	4.2

PASS

Average      Lower      Upper  
 33,397.49    16,698.75    50,096.24

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	16,698.75	50,096.24		24,361.87	48,723.74	
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	16,698.75	50,096.24		24,361.87	48,723.74	
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	16,698.75	50,096.24		24,361.87	48,723.74	
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	16,698.75	50,096.24		24,361.87	48,723.74	
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	16,698.75	50,096.24		24,361.87	48,723.74	
KA08 IB	Instrument Blank	8/25/18 15:26	13C2-PFOA	32,500.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ77 ICC	ICC	8/25/18 15:35	13C2-PFOA	33,842.69	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81 CCV	CCV	8/25/18 16:37	13C2-PFOA	33,793.20	16,698.75	50,096.24		24,361.87	48,723.74	
CR651PB-FS(0)	Procedural Blank	8/25/18 16:55	13C2-PFOA	33,026.97	16,698.75	50,096.24		23,655.24	47,310.48	
CR652LCS-FS(0)	Laboratory Control Sample	8/25/18 17:04	13C2-PFOA	31,537.40	16,698.75	50,096.24		23,655.24	47,310.48	
J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/18 17:13	13C2-PFOA	30,451.43	16,698.75	50,096.24		23,655.24	47,310.48	
J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/18 17:22	13C2-PFOA	32,430.42	16,698.75	50,096.24		23,655.24	47,310.48	
JZ82 CCV	CCV	8/25/18 17:31	13C2-PFOA	31,547.70	16,698.75	50,096.24		23,655.24	47,310.48	

Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L3/L9)
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	-
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	-
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	-
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	-
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	-
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	-
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	13.9

PASS

Average 28,663.82 Lower 14,331.91 Upper 42,995.73

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	14,331.91	42,995.73		20,230.11	40,460.21	
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	14,331.91	42,995.73		20,230.11	40,460.21	
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	14,331.91	42,995.73		20,230.11	40,460.21	
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	14,331.91	42,995.73		20,230.11	40,460.21	
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	14,331.91	42,995.73		20,230.11	40,460.21	
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	14,331.91	42,995.73		20,230.11	40,460.21	
KA08 IB	Instrument Blank	8/25/18 15:26	d3-MeFOSAA	27,868.55	14,331.91	42,995.73		20,230.11	40,460.21	
JZ77 ICC	ICC	8/25/18 15:35	d3-MeFOSAA	26,480.50	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81 CCV	CCV	8/25/18 16:37	d3-MeFOSAA	28,332.68	14,331.91	42,995.73		20,230.11	40,460.21	
CR651PB-FS(0)	Procedural Blank	8/25/18 16:55	d3-MeFOSAA	28,405.02	14,331.91	42,995.73		19,832.88	39,665.75	
CR652LCS-FS(0)	Laboratory Control Sample	8/25/18 17:04	d3-MeFOSAA	27,038.56	14,331.91	42,995.73		19,832.88	39,665.75	
J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/18 17:13	d3-MeFOSAA	27,228.45	14,331.91	42,995.73		19,832.88	39,665.75	
J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/18 17:22	d3-MeFOSAA	26,940.71	14,331.91	42,995.73		19,832.88	39,665.75	
JZ82 CCV	CCV	8/25/18 17:31	d3-MeFOSAA	27,095.24	14,331.91	42,995.73		19,832.88	39,665.75	

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.52	1.19	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.82	1.24	0.8 – 1.5

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.52	36	>10
PFBS_2	298.9 / 99.0	1.52	28	>10
PFHxA_1	313.0 / 269.0	1.82	23	>10
PFHxA_2	313.0 / 119.0	1.82	22	>10
PFHpA_1	363.0 / 319.0	2.23	27	>10
PFHpA_2	363.0 / 169.0	2.23	26	>10
PFHxS_1	399.0 / 80.0	2.25	34	>10
PFHxS_2	399.0 / 99.0	2.25	43	>10
PFOA_1	413.0 / 369.0	2.63	29	>10
PFOA_2	413.0 / 169.0	2.63	32	>10
PFNA_1	463.0 / 419.0	3.02	28	>10
PFNA_2	463.0 / 219.0	3.02	27	>10
PFOS_1	499.0 / 80.0	3.02	37	>10
PFOS_2	499.0 / 99.0	3.02	36	>10
PFDA_1	513.0 / 469.0	3.37	26	>10
PFDA_2	513.0 / 219.0	3.37	29	>10
PFUnA_1	563.0 / 519.0	3.70	23	>10
PFUnA_2	563.0 / 269.0	3.70	29	>10
PFDaA_1	613.0 / 569.0	3.97	26	>10
PFDaA_2	613.0 / 319.0	3.97	26	>10
PFTrDA_1	663.0 / 619.0	4.22	33	>10
PFTrDA_2	663.0 / 169.0	4.22	38	>10
PFTeDA_1	713.0 / 669.0	4.43	55	>10
PFTeDA_2	713.0 / 169.0	4.43	52	>10
NMeFOSAA_1	570.0 / 419.0	3.52	42	>10
NMeFOSAA_2	570.0 / 512.0	3.52	27	>10
NEtFOSAA_1	584.0 / 419.0	3.69	35	>10
NEtFOSAA_2	584.0 / 483.0	3.69	41	>10
13C2-PFHxA	315.0 / 270.0	1.81	50	>10
13C2-PFDA	515.0 / 470.0	3.36	37	>10
d5-EtFOSAA	589.0 / 419.0	3.67	25	>10



## Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.41	1.25	3.75	19
PFHpA	375-85-9	10.59	1.42	4.26	19
PFOA	335-67-1	10.45	1.47	4.41	19
PFNA	375-95-1	10.49	1.28	3.84	19
PFDA	335-76-2	10.39	1.57	4.71	19
PFUnA	2058-94-8	10.05	1.71	5.13	19
PFDoA	307-55-1	9.99	1.63	4.89	19
PFTTrDA	72629-94-8	10.09	1.79	5.37	19
PFTeDA	376-06-7	11.27	2.41	7.23	19
NMeFOSAA	2355-31-9	10.60	1.12	3.36	19
NEtFOSAA	2991-50-6	10.17	1.29	3.87	19
PFBS	375-73-5	8.64	1.26	3.78	19
PFHxS	355-46-4	9.73	1.49	4.47	19
PFOS	1763-23-1	9.32	1.52	4.56	19

# BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

Battelle SOP 5-371 (EPA Method 537 Version 1.1)

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)	MRL (ng/L)
<b>PFHxA</b>	307-24-4	0.22	0.5	2.5	2.5
<b>PFHpA</b>	375-85-9	0.34	1.0	2.5	2.5
<b>PFOA</b>	335-67-1	0.38	1.0	2.5	2.5
<b>PFNA</b>	375-95-1	0.37	1.0	2.5	2.5
<b>PFDA</b>	335-76-2	0.39	1.0	2.5	2.5
<b>PFUnA</b>	2058-94-8	0.38	1.0	2.5	2.5
<b>PFDoA</b>	307-55-1	0.42	1.0	2.5	2.5
<b>PFTTrDA</b>	72629-94-8	0.42	1.0	2.5	2.5
<b>PFTeDA</b>	376-06-7	0.73	1.5	2.5	2.5
<b>NMeFOSAA</b>	2355-31-9	0.42	1.0	2.5	2.5
<b>NEtFOSAA</b>	2991-50-6	0.44	1.0	2.5	2.5
<b>PFBS</b>	375-73-5	0.21	0.5	2.5	2.5
<b>PFHxS</b>	3871-99-6	0.34	1.0	2.5	2.5
<b>PFOS</b>	1763-23-1	0.30	1.0	2.5	2.5

*Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation*

## Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
<b>PFHxA</b>	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
<b>PFHpA</b>	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
<b>PFOA</b>	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
<b>PFNA</b>	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
<b>PFDA</b>	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
<b>PFUnA</b>	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
<b>PFDoA</b>	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
<b>PFTTrDA</b>	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
<b>PFTeDA</b>	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
<b>NMeFOSAA</b>	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
<b>NEtFOSAA</b>	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
<b>PFBS</b>	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
<b>PFHxS</b>	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
<b>PFOS</b>	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
<b><sup>13</sup>C<sub>2</sub>-PFHxA</b>	NA	SIS	315.0 / 270.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFDA</b>	NA	SIS	515.0 / 470.0	NA
<b>d<sub>5</sub>-EtFOSAA</b>	NA	SIS	589.0 / 419.0	NA
<b><sup>13</sup>C<sub>2</sub>-PFOA</b>	NA	IS	415.0 / 270.0	NA
<b><sup>13</sup>C<sub>4</sub>-PFOS</b>	NA	IS	503.0 / 80.0	NA
<b>d<sub>3</sub>-MeFOSAA</b>	NA	IS	573.0 / 419.0	NA





### Drinking Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF <sup>1</sup>	Sample Size (L)	Sample Equivalent (ng/L) <sup>2</sup>
25	1	1	0.250	0.1
50	1	1	0.250	0.2
100	1	1	0.250	0.4
250	1	1	0.250	1.0
500	1	1	0.250	2.0
1,000	1	1	0.250	4.0
2,500	1	1	0.250	10.0
5,000	1	1	0.250	20.0
10,000	1	1	0.250	40.0

<sup>1</sup> - base level dilution as part of the extraction procedure

<sup>2</sup> - calculated equivalent of a sample based on the ICAL concentration



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# QTRAP 5500

**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

## QTRAP 5500 Preventive Maintenance Checklist

<b>Preventive Maintenance Date:</b>	22-Feb-2017
<b>Request ID:</b>	3683
<b>Company Name:</b>	Battelle Memorial Institute
<b>Instrument ID:</b>	X60666
<b>Instrument Model:</b>	QTRAP 5500
<b>Instrument Serial Number:</b>	AU23051004

**PASS**       **FAIL**

**Any failure will lead to an automatic Service Call being open to investigate fault.**

Preventive Maintenance is performed twice every year unless specified in the Service Contract. It is designed to help maintain optimum system performance and to help diagnose any system deficiencies.

Engineer is required the assigned Request ID for this PM otherwise making this job invalid.

**Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Performed By:**           Kaustubh Dhayagude                **Date:**           22-Feb-2017          

**Approved By :** \_\_\_\_\_      **Date:** \_\_\_\_\_

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**PRE PM PPG PERFORMANCE EVALUATION:**

- Consult Customer concerning the unit overall performance.
- Check Logbook for Services recently performed.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.5	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	1.9	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.4	Read Only
<input checked="" type="checkbox"/> CAD High	3.4	Read Only
<input checked="" type="checkbox"/> CAD 12	3.4	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop
- Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification
  - No degradation or Sensitivity drop

**Pre PM PPG Test:** Perform each of the following tests. Optimize ion source position only. The specifications listed for these Pre PM tests are guidelines only, not required to be met.

- Perform Q1 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 175.133	1.64 e6	Read Only	0.8095	Read Only
Q1 500.380	2.40 e7	Read Only	0.8592	Read Only
Q1 906.673	2.86 e7	Read Only	0.9633	Read Only

- Perform Q3 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 175.133	1.26 e6	Read Only	0.6252	Read Only
Q3 500.380	2.19 e7	Read Only	0.7275	Read Only
Q3 906.673	3.02 e7	Read Only	0.7662	Read Only

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: : 19.51% (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3	7.43 e7	Read Only	0.9981	Read Only
MS/MS 195.1	1.45 e7	Read Only	0.6582	Read Only

Perform Q1 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 933.636	1.43 e7	Read Only	0.7330	Read Only

Perform Q3 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 933.636	2.22 e7	Read Only	0.8138	Read Only

Perform Product Ion scan using NEG PPG 3e-5M. Record 10 mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.35 e6	Read Only	0.6495	Read Only

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**PREVENTIVE MAINTENANCE CHECKLIST:**

- Check Cooling Fans for Turbo Pumps while MS is ON.
- Check QJet and QPS tuning voltage for reference.
- Record AC input Voltage while MS is OFF: \_\_\_\_\_(200-240VAC).  
If Out-of-Range, notify customer.
  
- Clean Interface
  - Curtain Plate
  - Orifice Plate
  - QJet
  - Q0 Rods.
  
- Replace Roughing Pump Oil.
- Inspect Oil Exhaust Filter, if Applicable.  N/A
- Clean and inspect built-in divert valve if used.  N/A
- Check Multiplier Voltage, optimize if necessary.
- Replace four Air Filters at the bottom of the mass spectrometer.
  
- Pump down overnight if possible.  N/A
  
- Perform Maintenance on Turbo V source.
  
- Replace Electrode, if necessary.  N/A
- Check Turbo heaters resistances.
- Check if Temperature is reached at 500C with TIS Probe installed.
- Check if Temperature is reached at 500C with APCI Probe installed.  N/A

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

**POST PM PPG PERFORMANCE TESTS:**

- Set-up Sample for Infusion.
- Check spray and adjust sprayer's position of the TIS source.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading ( x 10 <sup>-5</sup> Torr)	Acceptance Criteria
<input checked="" type="checkbox"/> CAD 0	0.8	0.4 to 1.1 x10 <sup>-5</sup> Torr
<input checked="" type="checkbox"/> CAD Low	2.1	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.6	Read Only
<input checked="" type="checkbox"/> CAD High	3.7	Read Only
<input checked="" type="checkbox"/> CAD 12	3.7	2.4 to 4.5 x10 <sup>-5</sup> Torr

- Perform Q1 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2 <sup>e6</sup>	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0 <sup>e6</sup>	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4 <sup>e7</sup>	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8 <sup>e7</sup>	0.7656	0.6 to 0.8

- Perform Q3 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2 <sup>e6</sup>	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0 <sup>e6</sup>	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4 <sup>e7</sup>	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8 <sup>e7</sup>	0.7118	0.6 to 0.8

- Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.

Transmission Efficiency: 16.93% (≥ 10.0%)

Mass	MSMS Intensity		Width Value	Width Specs
	Value	Spec		
Q1 609.3	5.74 e7	N/A	0.7667	Read Only
MS/MS 195.1	9.72 e6	N/A	0.6751	Read Only

**Zef Scientific Inc.**

12707 High Bluff Dr.  
Suite 200  
San Diego, CA  
USA 92130

1975 Hymus Blvd.  
Suite 230  
Dorval, QC  
Canada H9P 1J8

Phone: 1.866.854.7988

**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

Perform Q1 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	$\geq 1.0^{e7}$	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	$\geq 4.0^{e7}$	0.6740	0.6 to 0.8

Perform Q3 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	$\geq 8.0^{e6}$	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	$\geq 4.0^{e7}$	0.7292	0.6 to 0.8

Perform Product Ion scan using NEG PPG 3e-5M.

Mass	Scan Rate	Mca	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.33 e6	Read Only	0.6387	Read Only

Perform ER POS 118.087 and 922.01 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	$\geq 7.2^{e6}$	0.1302	<0.35
ER 922.010	0.05	3.89 e7	$\geq 2.8^{e6}$	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	$\geq 2.4^{e7}$	0.3740	<0.65
ER 922.010	0.05	2.37 e8	$\geq 6.8^{e7}$	0.5407	<0.65

Perform ER NEG 431.982 and 601.978 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	$\geq 4.4^{e7}$	0.1840	<0.35
ER 601.978	0.05	7.74 e7	$\geq 5.6^{e7}$	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	$\geq 1.2^{e8}$	0.4382	<0.65
ER 601.978	0.05	2.55 e8	$\geq 1.6^{e8}$	0.6205	<0.65

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**QTRAP 5500****LC/MS/MS Detector System**

Appendix ZEFPM003-2L

- Perform EPI POS 397.2 using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000	> 3.5 e6	≥2.0 e6	> 4.0 e7	≥6.4 e6

- Perform MS3 POS full scan Fragmentation ON & OFF using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
<input type="checkbox"/> 236 OR <input checked="" type="checkbox"/> 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10 <sup>e6</sup>

**REVIEW:**

- Attach all spectrums printouts to this procedure.
- If any parameter setting access modes were changed during the PM, ensure they are returned to their normal access mode and that their offsets are adjusted to match optimized values from the post-PM acquisition files.
- Empty tuning cache folder, if necessary.  N/A
- Update Service Work Order status
- Fill and replace PM Label.

**END OF PREVENTIVE MAINTENANCE CHECKLIST****Document history:**

06 OCT 2016: Appendix ZEFPM003-2L: Removed requirements to fit Manufacturer's testing criteria.





Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	KA08 IB			
Battelle ID	KA08 IB_08/25/2018			
Sample Type	IB			
Collection Date	NA			
Extraction Date	NA			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	NA			
Sample Size	0.250			
Size Unit-Basis	NA			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDoA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50
<b>Surrogate Recoveries (%)</b>				
13C2-PFHxA	96			
13C2-PFDA	102			
d5-EtFOSAA	100			



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Procedural Blank			
Battelle ID	CR651PB-FS			
Sample Type	PB			
Collection Date	08/24/2018			
Extraction Date	08/24/2018			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDoA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

**Surrogate Recoveries (%)**

13C2-PFHxA	99
13C2-PFDA	103
d5-EtFOSAA	98



Project Client: Tetra Tech  
 Project Name: CTO-SE0375: Naval Air Station Jacksonville  
 Project No.: 100119154-SE0375

Client ID	Laboratory Control Sample					
Battelle ID	CR652LCS-FS					
Sample Type	LCS					
Collection Date	08/24/2018					
Extraction Date	08/24/2018					
Analysis Date	08/25/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L					
Units	ng/L	Target	Recovery	Qual	Control Limits	
					Lower	Upper
PFHxA	10.13	10.00	101		70	130
PFHpA	10.46	10.00	105		70	130
PFOA	10.11	10.00	101		70	130
PFNA	10.63	10.00	106		70	130
PFDA	10.72	10.00	107		70	130
PFUnA	9.92	10.00	99		70	130
PFDoA	9.99	10.00	100		70	130
PFTTrDA	9.15	10.00	92		70	130
PFTeDA	9.89	10.00	99		70	130
NMeFOSAA	12.45	10.00	125		70	130
NEtFOSAA	11.96	10.00	120		70	130
PFBS	8.71	8.85	98		70	130
PFHxS	9.74	9.45	103		70	130
PFOS	8.76	9.55	92		70	130

**Surrogate Recoveries (%)**

13C2-PFHxA	100
13C2-PFDA	105
d5-EtFOSAA	99



It can be done

## BATTELLE - NORWELL OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0524****CTO-SE0375: Drinking Water Analysis****W****(N/A Fraction)**

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm . (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution*	Date Spiked/ Spiked By	Witn'd By
CR651PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	JCT
CR652LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	JCT
J7561-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	JCT
J7563-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	JCT

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

<b>Extract Id:</b>	<b>Comments:</b>
CR651PB-FS	Samples reconstituted in 96/4 Methanol/Milli-q water

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



It can be done

## BATTELLE - NORWELL OPERATIONS PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0524****CTO-SE0375: Drinking Water Analysis****W**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR651PB-FS	0	--	8/24/2018 9:32:00 AM	NA		NA	NA	1.000	1.000	08/24/18 SAS
CR652LCS-FS	0	--	8/24/2018 9:32:00 AM	NA		NA	NA	1.000	1.000	08/24/18 SAS
J7561-FS	0	--	8/24/2018 9:32:00 AM	NA		NA	NA	1.000	1.000	08/24/18 SAS
J7563-FS	0	--	8/24/2018 9:32:00 AM	NA		NA	NA	1.000	1.000	08/24/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



It can be done

## BATTELLE - NORWELL OPERATIONS EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0524****CTO-SE0375: Drinking Water Analysis****W**

<b>Purpose:</b>	LC-MS/MS TRANSFER	<b>Last Activity:</b>	Prep->Inst
<b>Relinquished On/By:</b>	Aug 25 2018 9:11AM DMS	<b>Received On/By:</b>	Aug 25 2018 11:11AM DMS
<b>Relinquished From:</b>	Sample Preparation: NA	<b>Received Location:</b>	LC Laboratory: NA
<b>Relinquish Comment:</b>	NA	<b>Received Comment:</b>	NA

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CR651PB-FS(0)	1000	1	Intact	NA
2	CR652LCS-FS(0)	1000	1	Intact	NA
3	J7561-FS(0)	1000	1	Intact	NA
4	J7563-FS(0)	1000	1	Intact	NA

<b>Total Extracts:</b>	4
------------------------	---



It can be done

## BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

CTO-SE0375: Naval Air Station Jacksonville

**Project No.(s)**100119154-  
SE0375**18-0524****CTO-SE0375: Drinking Water Analysis****W**

Sample ID:	Comment:	Date/Initials:
CR651PB-FS	Extraction for all samples began at 9:32am	08/24/18 SAS
CR651PB-FS	Sample extraction ended at 9:57am	08/24/18 SAS
CR652LCS-FS	Sample extraction ended at 10:01am	08/24/18 SAS
J7561-FS	Sample extraction ended at 9:59am	08/24/18 SAS
J7563-FS	Sample extraction ended at 9:58am	08/24/18 SAS

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
4	MeOH		8/25/2018 1:56:55 PM	5-0371.dam	18-0523_18-0524.wiff
7	JZ80	L3	8/25/2018 2:23:46 PM	5-0371.dam	18-0523_18-0524.wiff
8	JZ81	L4	8/25/2018 2:32:41 PM	5-0371.dam	18-0523_18-0524.wiff
9	JZ82	L5	8/25/2018 2:41:37 PM	5-0371.dam	18-0523_18-0524.wiff
10	JZ83	L6	8/25/2018 2:50:33 PM	5-0371.dam	18-0523_18-0524.wiff
11	JZ84	L7	8/25/2018 2:59:30 PM	5-0371.dam	18-0523_18-0524.wiff
12	JZ85	L8	8/25/2018 3:08:27 PM	5-0371.dam	18-0523_18-0524.wiff
13	JZ86	L9	8/25/2018 3:17:23 PM	5-0371.dam	18-0523_18-0524.wiff
14	KA08 IB	Instrument Blank	8/25/2018 3:26:21 PM	5-0371.dam	18-0523_18-0524.wiff
15	JZ77 ICC	ICC	8/25/2018 3:35:16 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 3:44:13 PM	5-0371.dam	18-0523_18-0524.wiff
17	<del>CR649PB-FS(0)</del>	<del>Procedural Blank</del>	<del>8/25/2018 3:53:09 PM</del>	<del>5-0371.dam</del>	<del>18-0523_18-0524.wiff</del>
18	<del>CR650LCS-FS(0)</del>	<del>Laboratory Control Sample</del>	<del>8/25/2018 4:02:04 PM</del>	<del>5-0371.dam</del>	<del>18-0523_18-0524.wiff</del>
19	<del>J7566-FS(0)</del>	<del>JAX-RES-08212018-0945-11</del>	<del>8/25/2018 4:10:59 PM</del>	<del>5-0371.dam</del>	<del>18-0523_18-0524.wiff</del>
20	<del>J7568-FS(0)</del>	<del>JAX-RES-08212018-1130-10</del>	<del>8/25/2018 4:19:57 PM</del>	<del>5-0371.dam</del>	<del>18-0523_18-0524.wiff</del>
21	<del>J7570-FS(0)</del>	<del>JAX-RES-08212018-1330-36</del>	<del>8/25/2018 4:28:54 PM</del>	<del>5-0371.dam</del>	<del>18-0523_18-0524.wiff</del>
22	JZ81 CCV	CCV	8/25/2018 4:37:51 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 4:46:47 PM	5-0371.dam	18-0523_18-0524.wiff
23	CR651PB-FS(0)	Procedural Blank	8/25/2018 4:55:43 PM	5-0371.dam	18-0523_18-0524.wiff
24	CR652LCS-FS(0)	Laboratory Control Sample	8/25/2018 5:04:39 PM	5-0371.dam	18-0523_18-0524.wiff
25	J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/2018 5:13:36 PM	5-0371.dam	18-0523_18-0524.wiff
26	J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/2018 5:22:32 PM	5-0371.dam	18-0523_18-0524.wiff
27	JZ82 CCV	CCV	8/25/2018 5:31:27 PM	5-0371.dam	18-0523_18-0524.wiff

1 ↓

1 Samples reported with another batch. DMS 8/27/2018





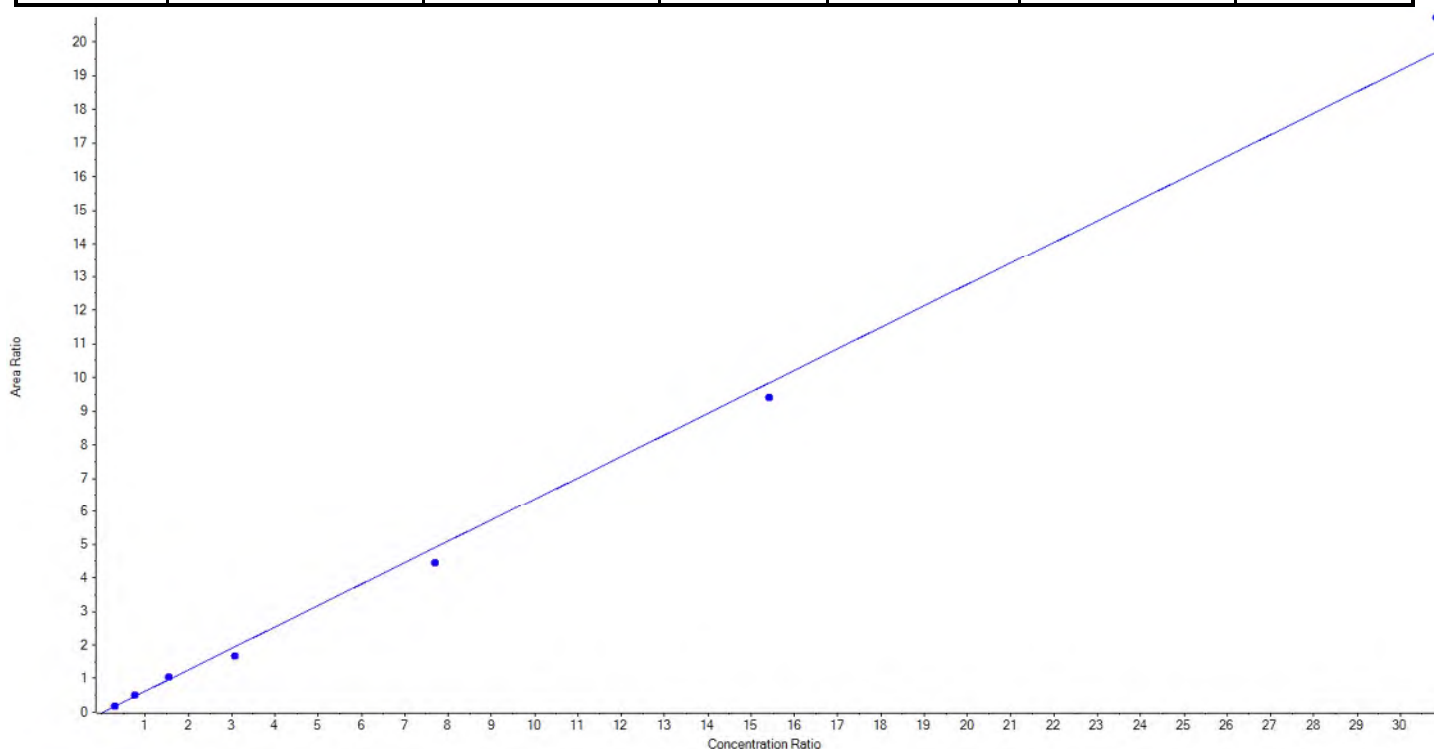
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Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFBS_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	298.9 / 80.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.63929x + -0.02044$  ( $r = 0.99745$ ) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	92.623416	104.5
8	JZ81	L4	True	221.50	242.779569	109.6
9	JZ82	L5	True	443.00	481.387037	108.7
10	JZ83	L6	True	885.00	757.513782	85.6
11	JZ84	L7	True	2212.50	2006.637947	90.7
12	JZ85	L8	True	4425.00	4234.668378	95.7
13	JZ86	L9	True	8850.00	9309.989871	105.2





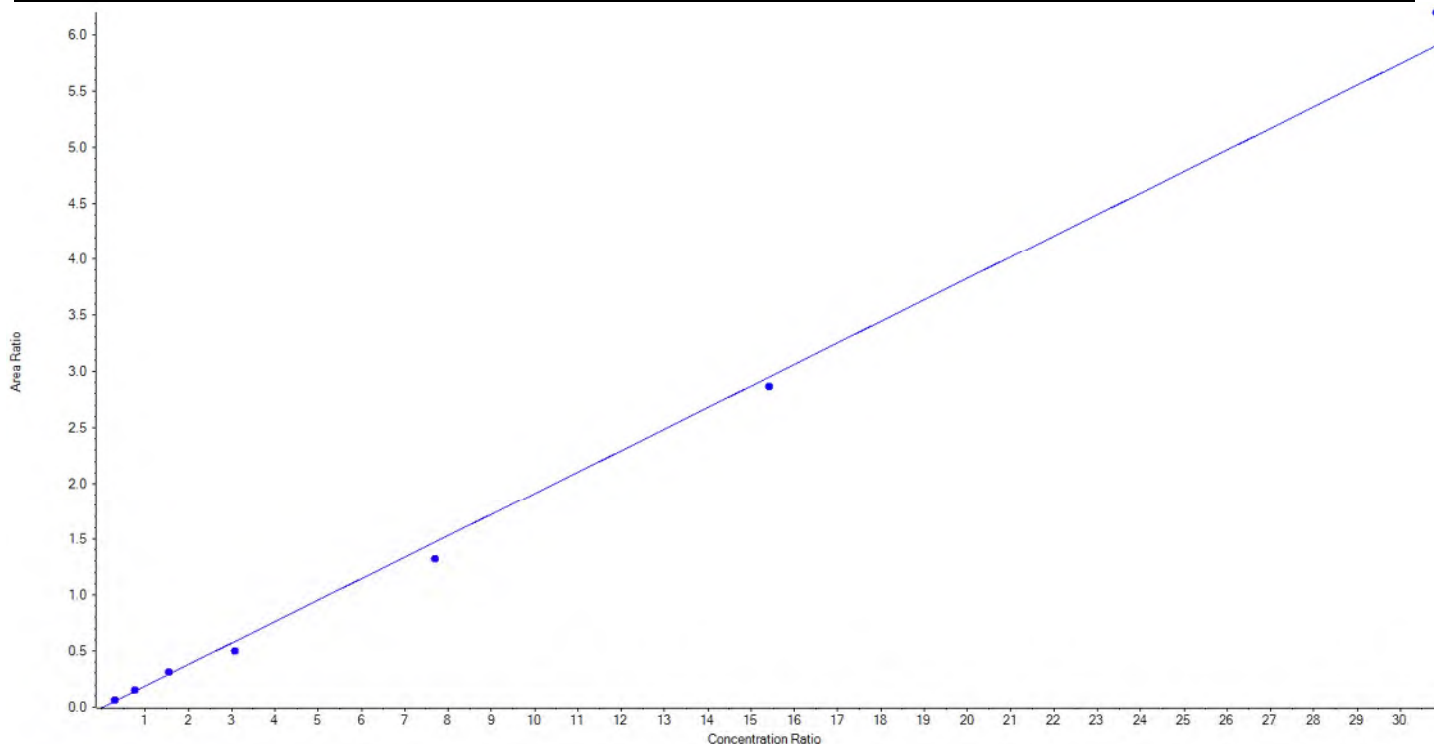
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFBS_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	298.9 / 99.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.19159x + -0.00443$  ( $r = 0.99751$ ) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	99.813968	112.7
8	JZ81	L4	True	221.50	229.053645	103.4
9	JZ82	L5	True	443.00	475.566098	107.4
10	JZ83	L6	True	885.00	750.913541	84.9
11	JZ84	L7	True	2212.50	1982.617976	89.6
12	JZ85	L8	True	4425.00	4300.235188	97.2
13	JZ86	L9	True	8850.00	9287.399584	104.9





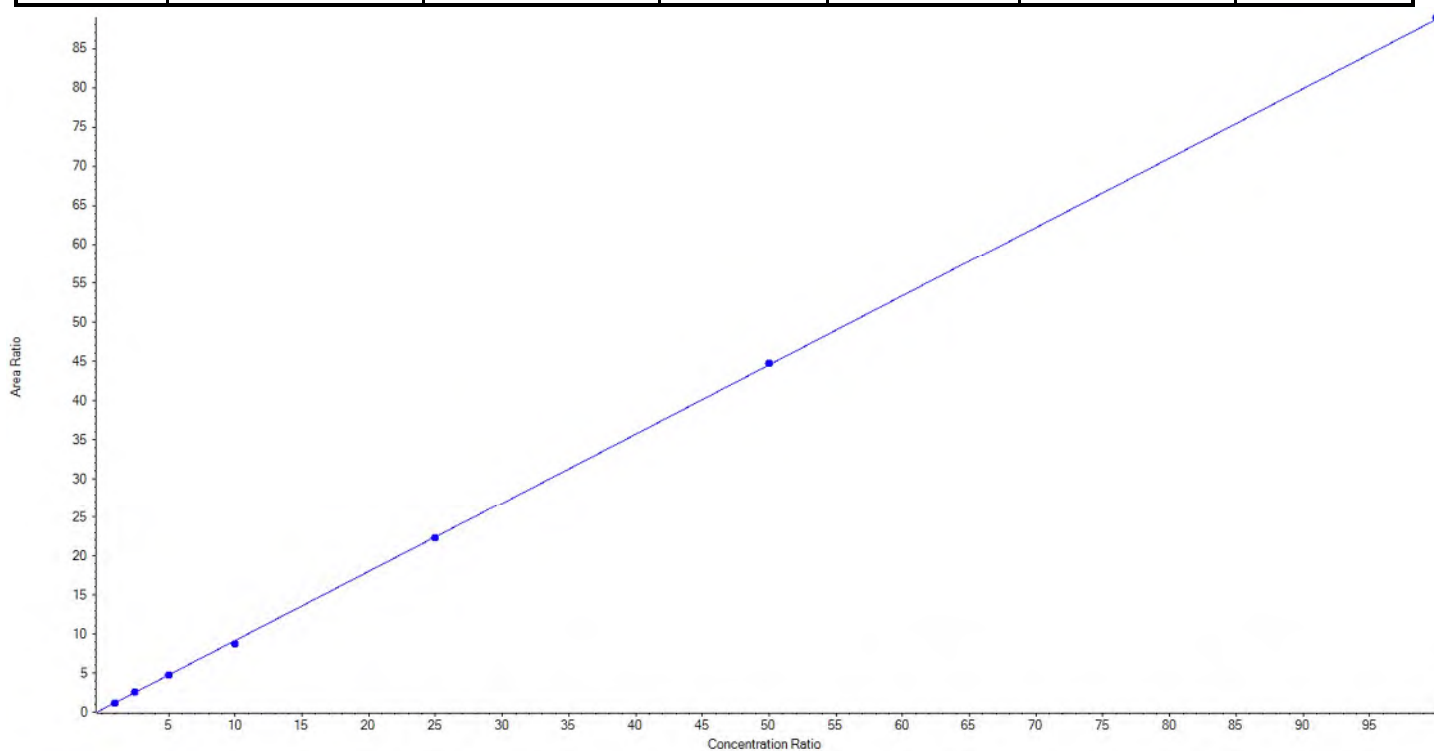
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFHxA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	313.0 / 269.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.88409x + 0.32379$  ( $r = 0.99988$ ) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	100.860031	100.9
8	JZ81	L4	True	250.00	258.019492	103.2
9	JZ82	L5	True	500.00	506.144130	101.2
10	JZ83	L6	True	1000.00	942.865717	94.3
11	JZ84	L7	True	2500.00	2490.992575	99.6
12	JZ85	L8	True	5000.00	5026.589126	100.5
13	JZ86	L9	True	10000.00	10024.528929	100.3





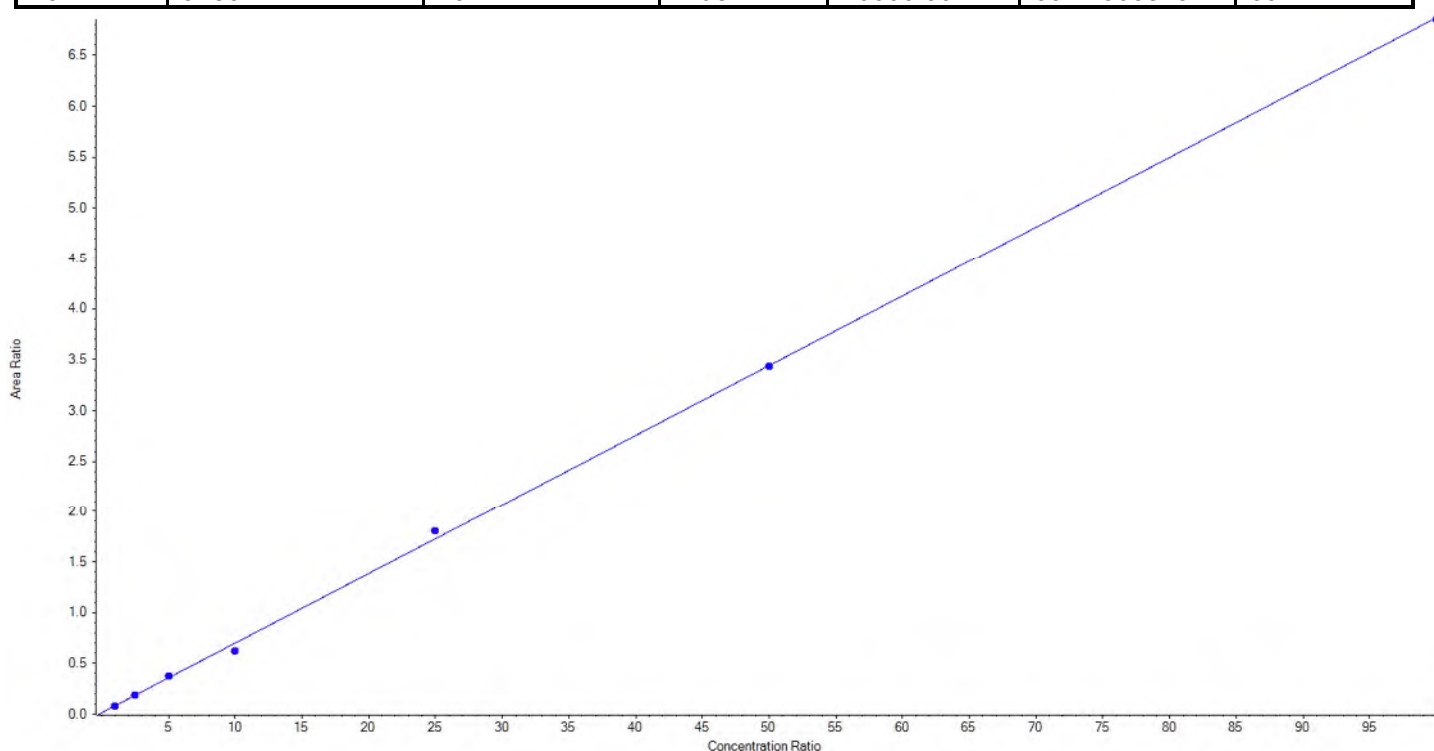
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFHxA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	313.0 / 119.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06854 x + 0.01472$  ( $r = 0.99938$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	99.493988	99.5
8	JZ81	L4	True	250.00	254.937433	102.0
9	JZ82	L5	True	500.00	529.185395	105.8
10	JZ83	L6	True	1000.00	884.440354	88.4
11	JZ84	L7	True	2500.00	2616.806311	104.7
12	JZ85	L8	True	5000.00	4992.630645	99.9
13	JZ86	L9	True	10000.00	9972.505873	99.7





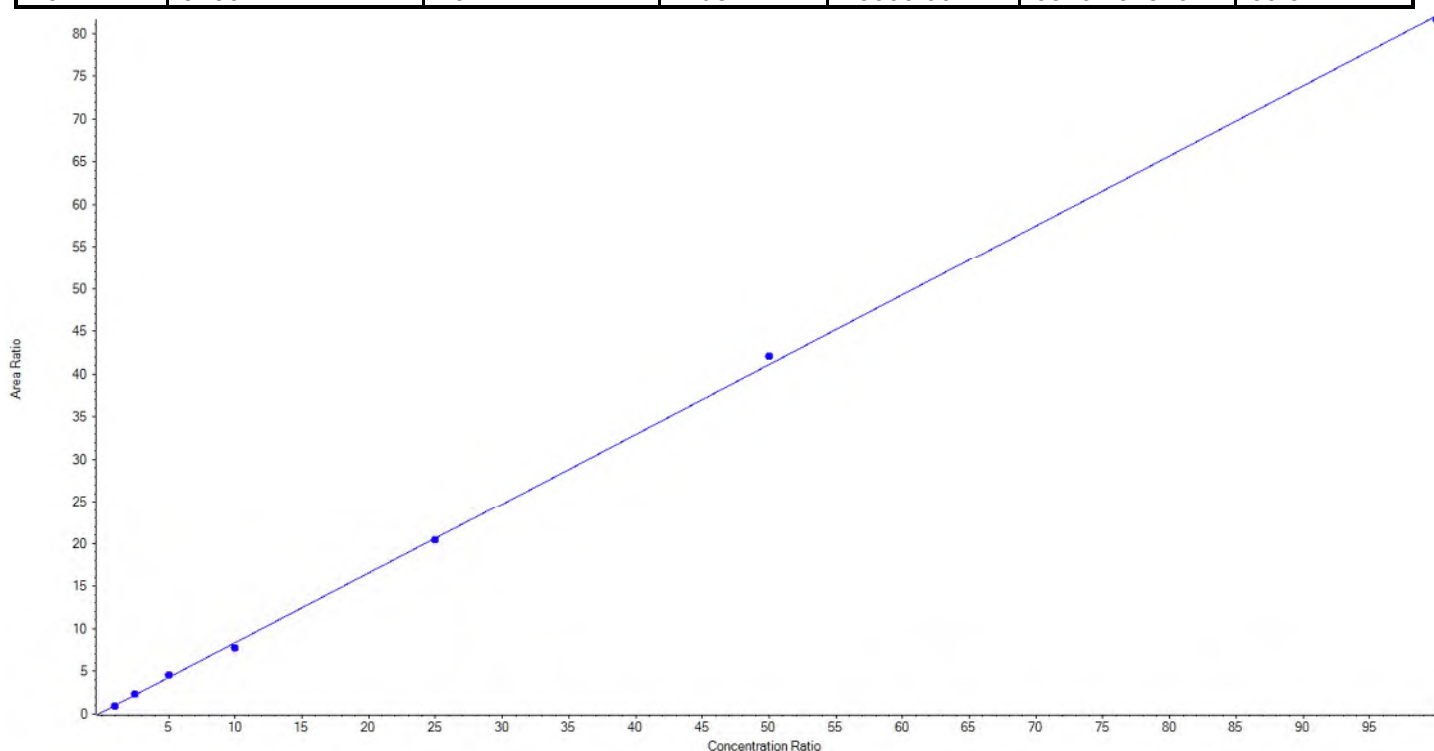
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFHpA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	363.0 / 319.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.81878x + 0.20212$  ( $r = 0.99957$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.591072	92.6
8	JZ81	L4	True	250.00	267.133284	106.9
9	JZ82	L5	True	500.00	539.413778	107.9
10	JZ83	L6	True	1000.00	921.928726	92.2
11	JZ84	L7	True	2500.00	2468.282056	98.7
12	JZ85	L8	True	5000.00	5114.219257	102.3
13	JZ86	L9	True	10000.00	9946.431826	99.5





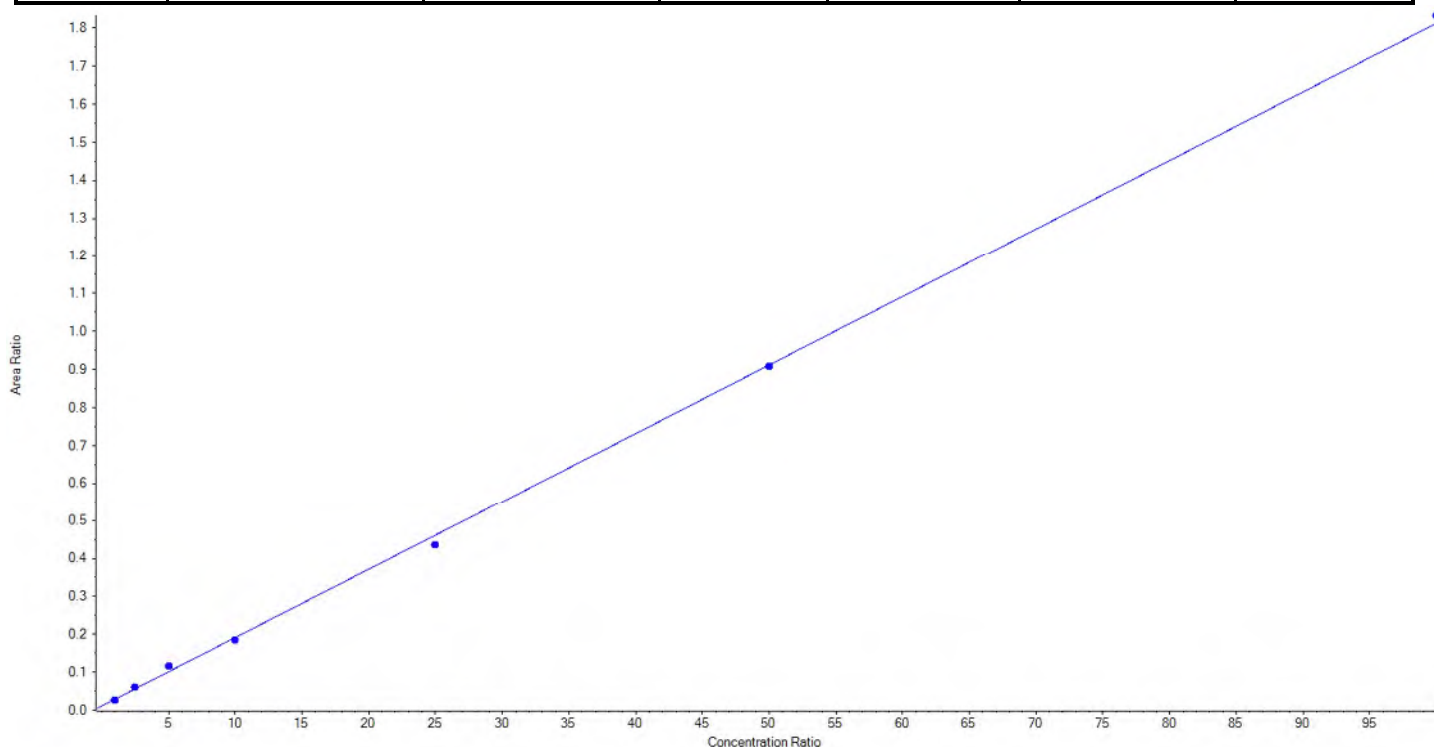
## Calibration Summary Report

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<b>Analyte Name</b>	PFHpA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	363.0 / 169.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.01801 x + 0.01107$  ( $r = 0.99914$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	83.599970	83.6
8	JZ81	L4	True	250.00	271.716540	108.7
9	JZ82	L5	True	500.00	581.392877	116.3
10	JZ83	L6	True	1000.00	964.147793	96.4
11	JZ84	L7	True	2500.00	2357.667898	94.3
12	JZ85	L8	True	5000.00	4979.859362	99.6
13	JZ86	L9	True	10000.00	10111.615559	101.1





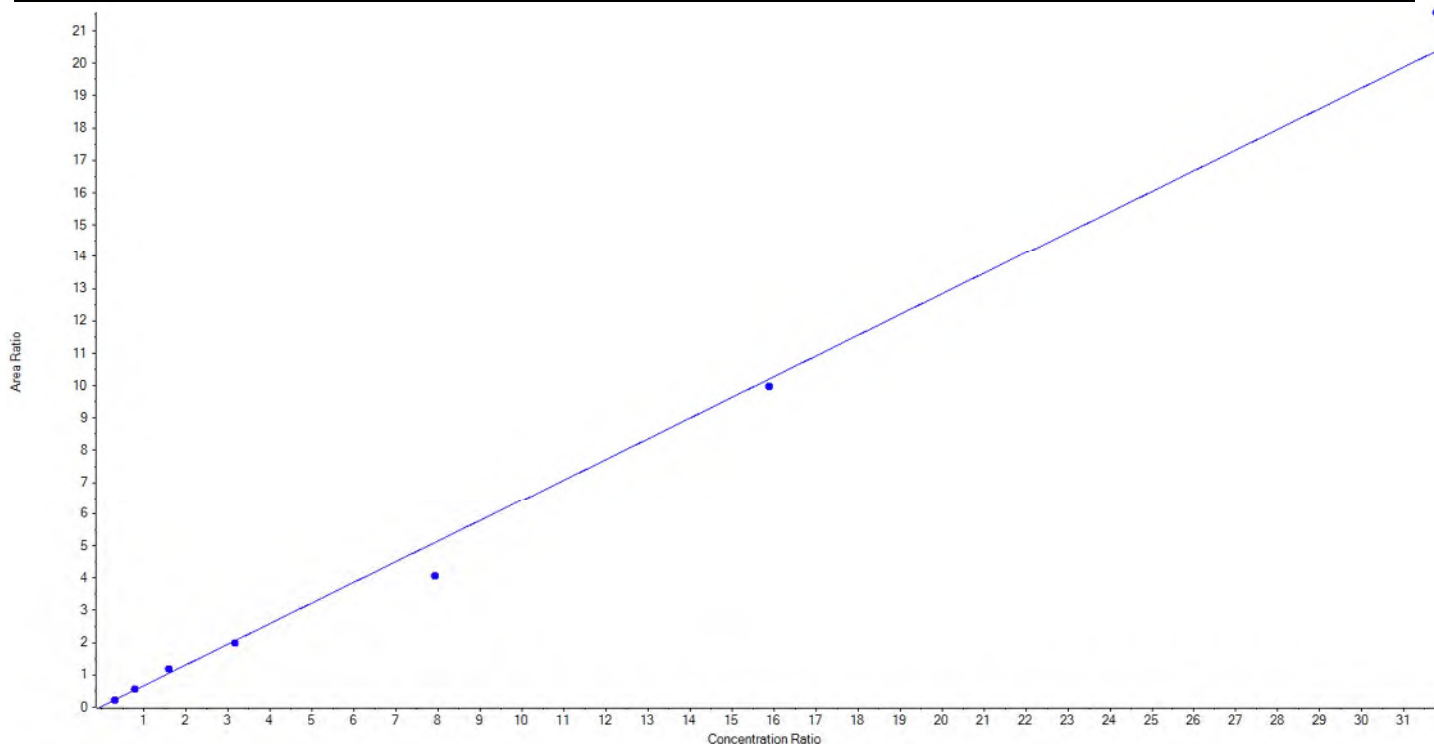
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFHxS_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	399.0 / 80.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.64046 x + 0.02580$  ( $r = 0.99537$ ) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	91.932243	100.8
8	JZ81	L4	True	228.00	244.692862	107.3
9	JZ82	L5	True	456.00	514.827115	112.9
10	JZ83	L6	True	912.00	875.796194	96.0
11	JZ84	L7	True	2280.00	1807.484503	79.3
12	JZ85	L8	True	4560.00	4462.151829	97.9
13	JZ86	L9	True	9120.00	9650.315253	105.8





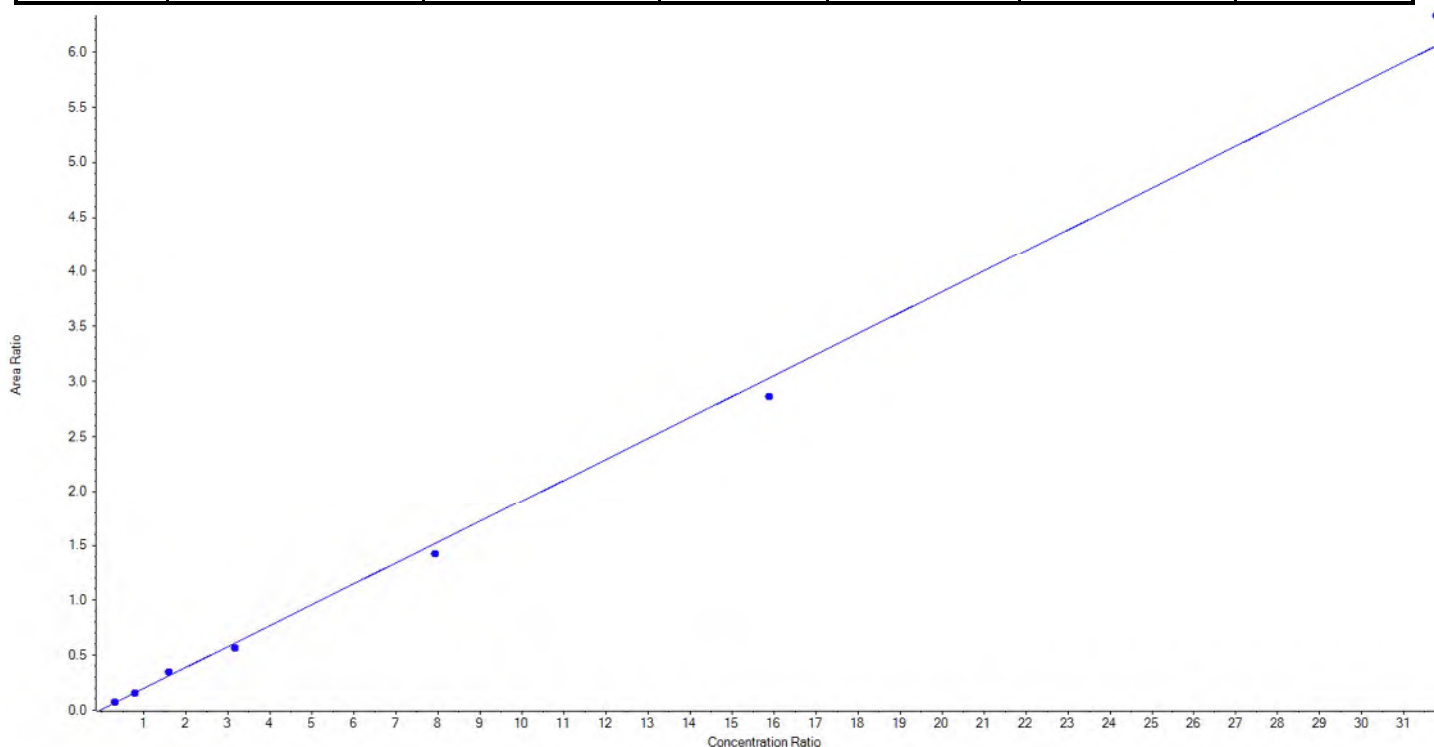
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<b>Analyte Name</b>	PFHxS_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	399.0 / 99.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.19038x + 0.00736$  ( $r = 0.99827$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	95.733820	105.0
8	JZ81	L4	True	228.00	225.396190	98.9
9	JZ82	L5	True	456.00	505.854625	110.9
10	JZ83	L6	True	912.00	843.569800	92.5
11	JZ84	L7	True	2280.00	2138.549468	93.8
12	JZ85	L8	True	4560.00	4305.685887	94.4
13	JZ86	L9	True	9120.00	9532.410210	104.5







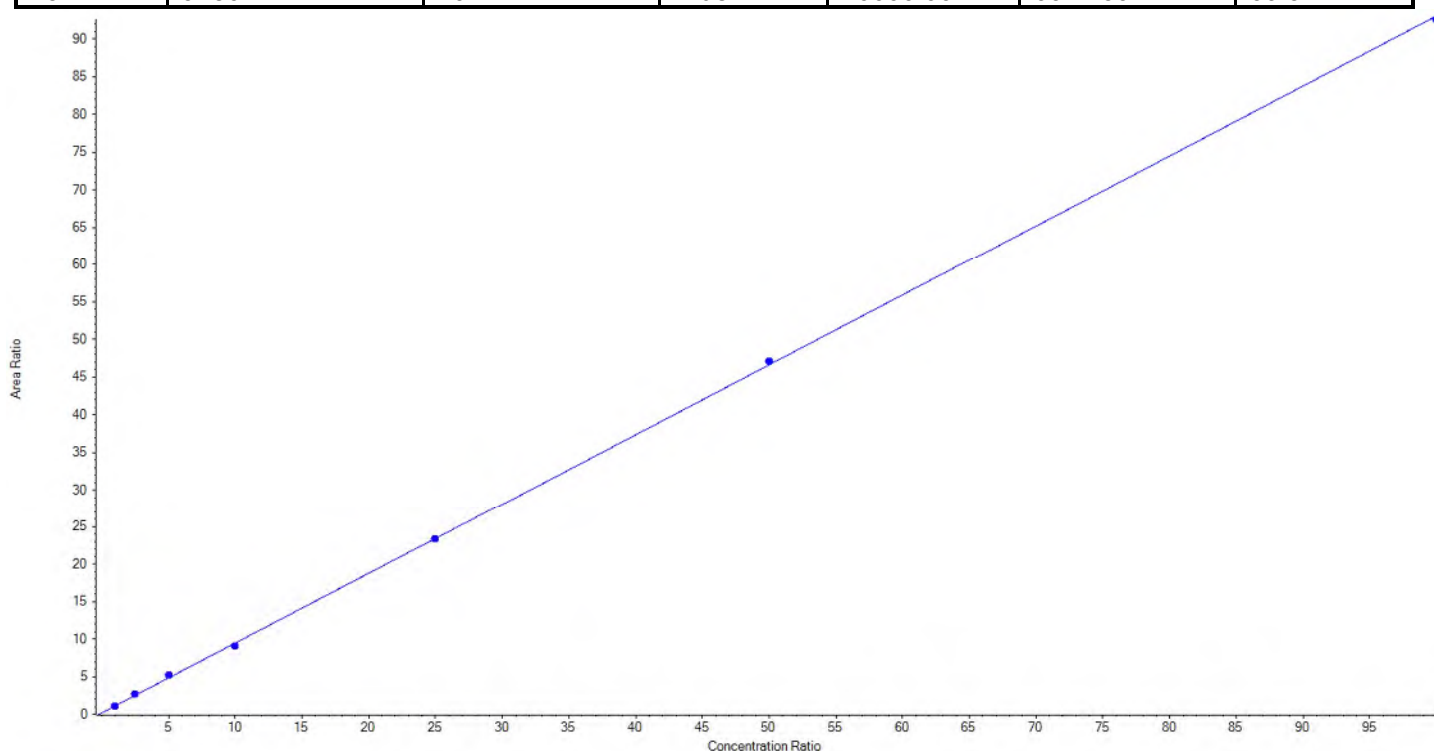
## Calibration Summary Report

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<b>Analyte Name</b>	PFOA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	413.0 / 369.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.92874 x + 0.17528$  (r = 0.99978) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.419829	90.4
8	JZ81	L4	True	250.00	265.217814	106.1
9	JZ82	L5	True	500.00	536.200392	107.2
10	JZ83	L6	True	1000.00	956.983740	95.7
11	JZ84	L7	True	2500.00	2500.350046	100.0
12	JZ85	L8	True	5000.00	5053.230955	101.1
13	JZ86	L9	True	10000.00	9947.597224	99.5





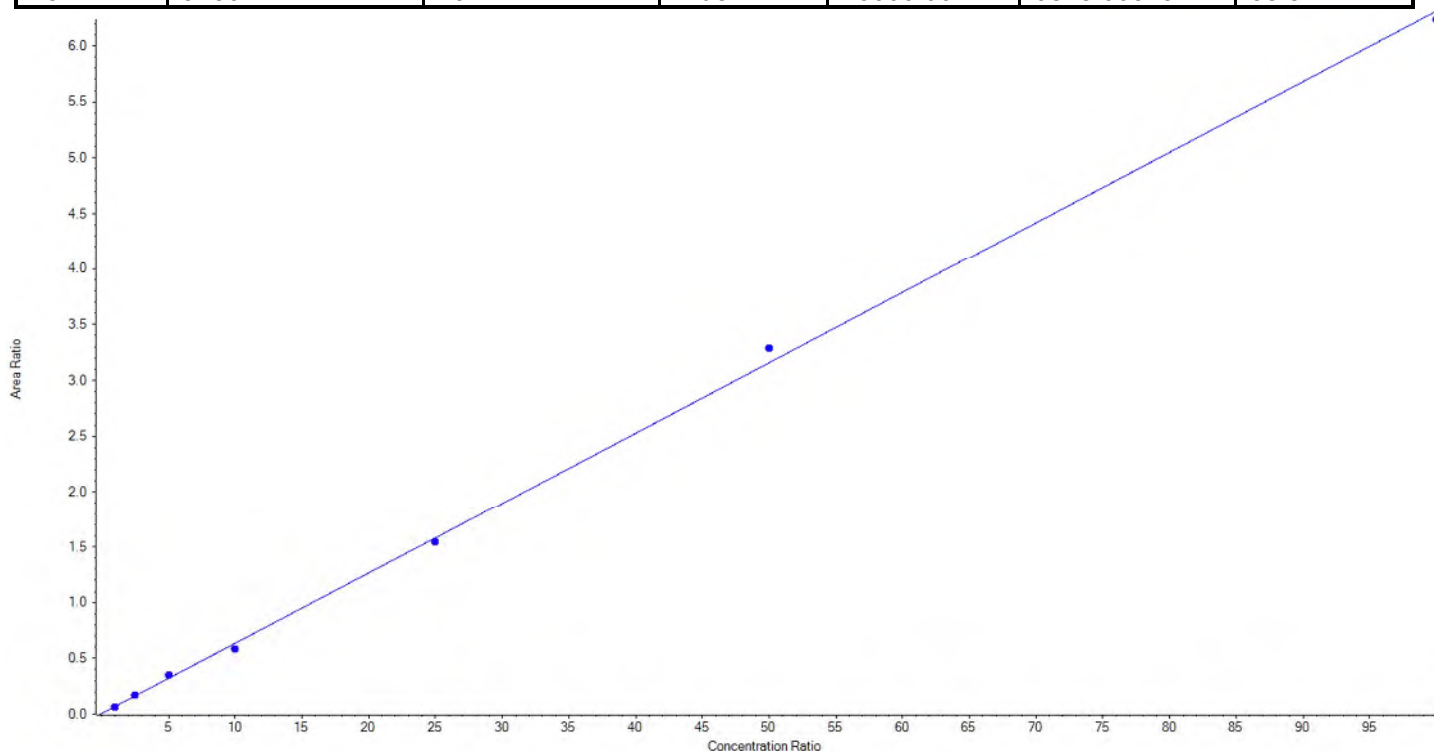
## Calibration Summary Report

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Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFOA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	413.0 / 169.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.06305 x + 0.00510$  ( $r = 0.99923$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.488891	91.5
8	JZ81	L4	True	250.00	263.853603	105.5
9	JZ82	L5	True	500.00	554.473217	110.9
10	JZ83	L6	True	1000.00	914.495818	91.5
11	JZ84	L7	True	2500.00	2444.886244	97.8
12	JZ85	L8	True	5000.00	5202.197074	104.0
13	JZ86	L9	True	10000.00	9878.605154	98.8





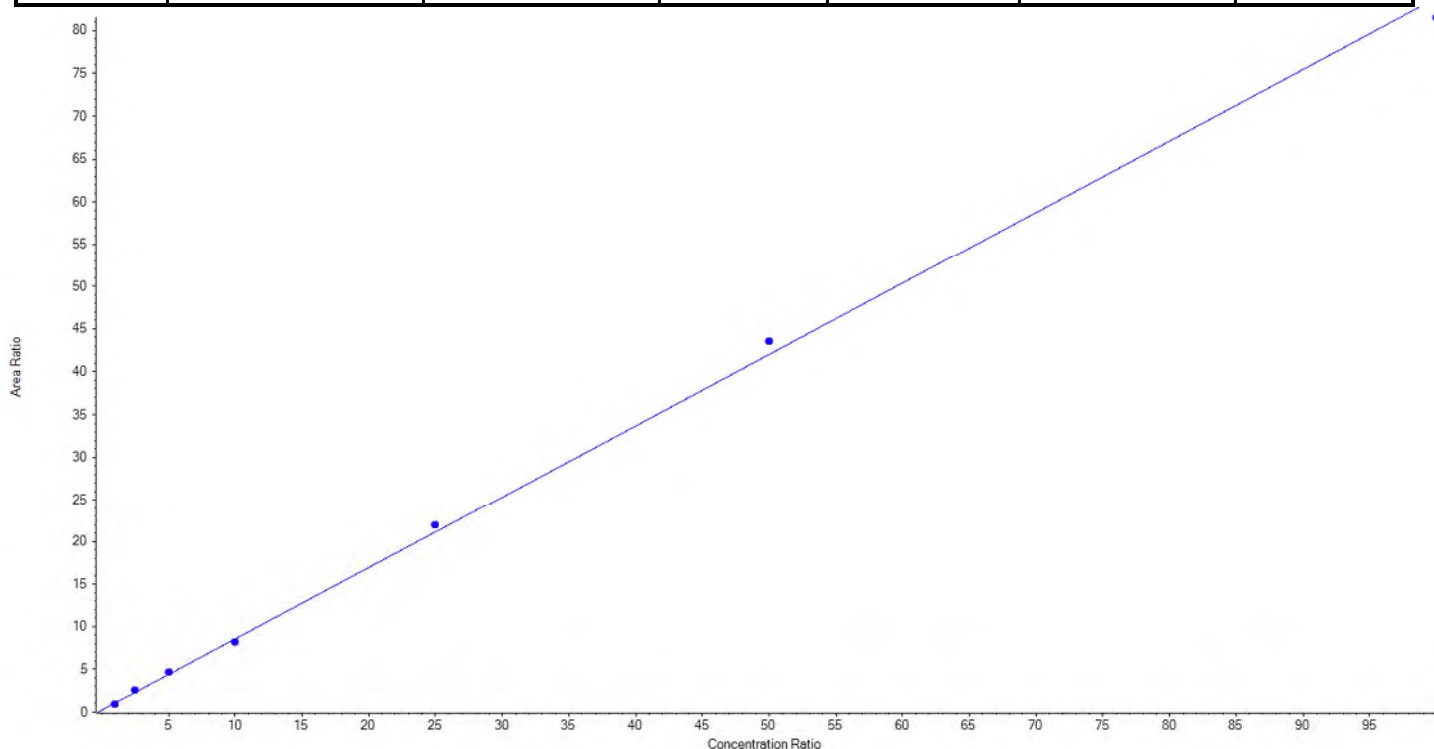
## Calibration Summary Report

Created with Analyst Reporter  
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<b>Analyte Name</b>	PFNA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	463.0 / 419.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.83580x + 0.23553$  ( $r = 0.99913$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	82.476112	82.5
8	JZ81	L4	True	250.00	278.245015	111.3
9	JZ82	L5	True	500.00	531.668423	106.3
10	JZ83	L6	True	1000.00	951.587519	95.2
11	JZ84	L7	True	2500.00	2592.677432	103.7
12	JZ85	L8	True	5000.00	5189.289362	103.8
13	JZ86	L9	True	10000.00	9724.056137	97.2





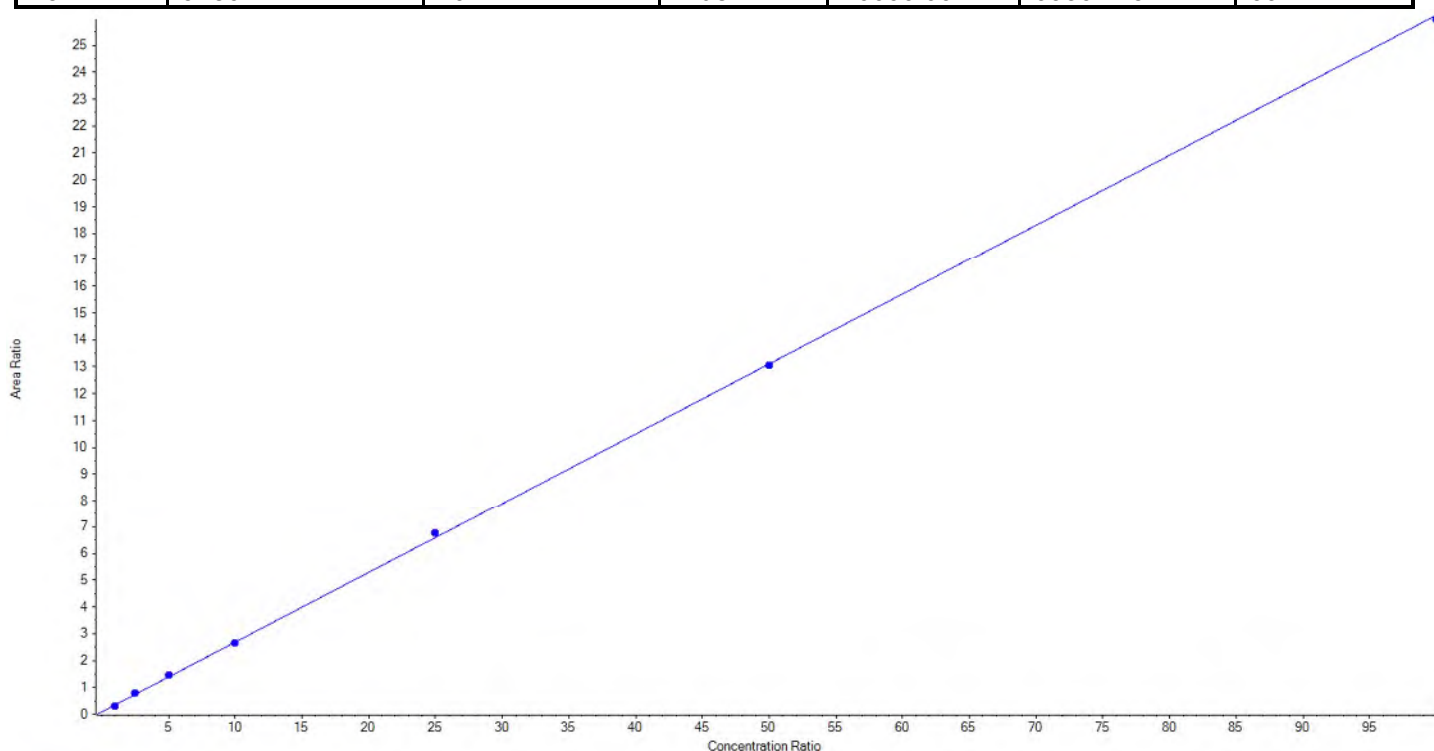
## Calibration Summary Report

Created with Analyst Reporter  
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<b>Analyte Name</b>	PFNA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	463.0 / 219.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.26038x + 0.08356$  ( $r = 0.99978$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.279636	86.3
8	JZ81	L4	True	250.00	273.929049	109.6
9	JZ82	L5	True	500.00	520.946615	104.2
10	JZ83	L6	True	1000.00	983.697300	98.4
11	JZ84	L7	True	2500.00	2562.408880	102.5
12	JZ85	L8	True	5000.00	4986.595092	99.7
13	JZ86	L9	True	10000.00	9936.143427	99.4





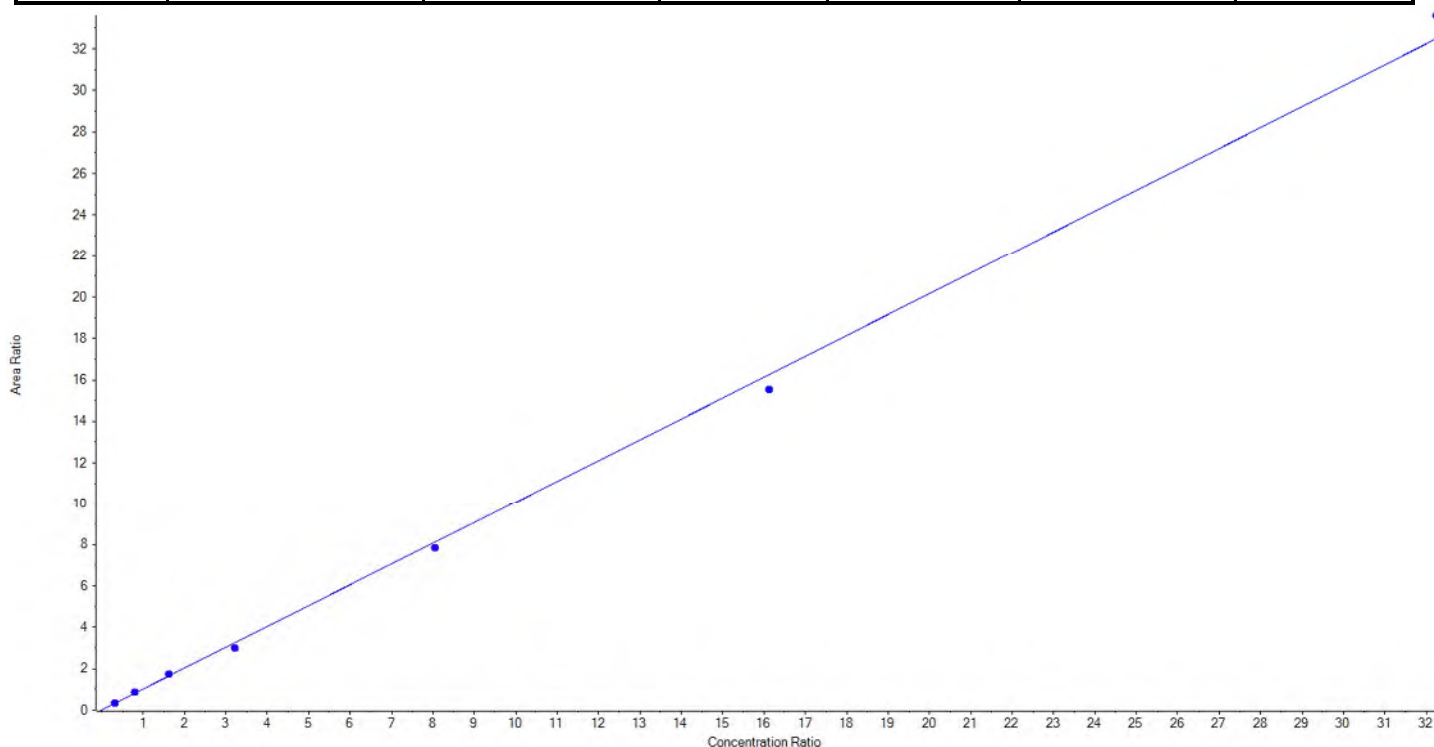
## Calibration Summary Report

Created with Analyst Reporter  
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<b>Analyte Name</b>	PFOS_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	499.0 / 80.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.00691x + 0.01749$  ( $r = 0.99894$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	92.053366	99.4
8	JZ81	L4	True	231.50	245.760890	106.2
9	JZ82	L5	True	463.00	496.934120	107.3
10	JZ83	L6	True	925.60	848.869547	91.7
11	JZ84	L7	True	2314.00	2229.662049	96.4
12	JZ85	L8	True	4628.00	4425.297687	95.6
13	JZ86	L9	True	9256.00	9572.122341	103.4





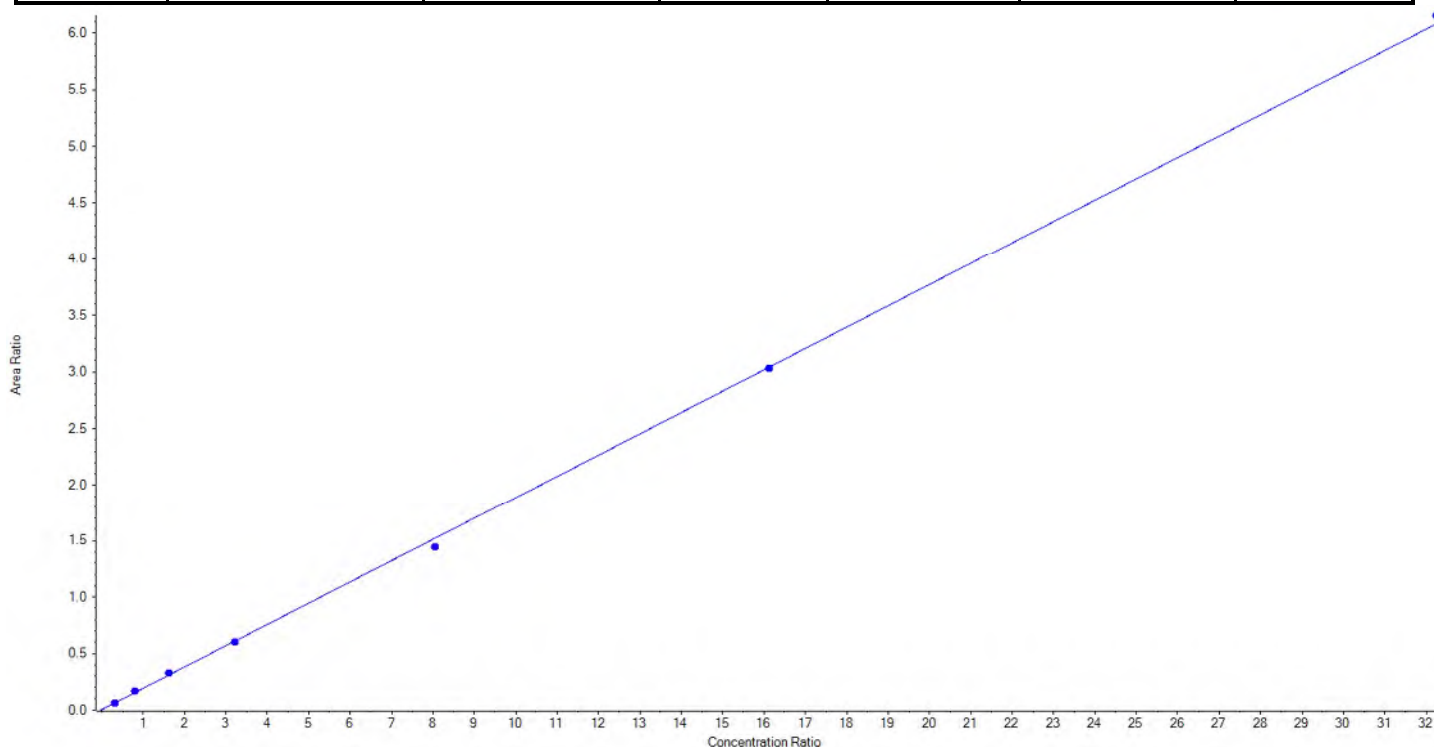
## Calibration Summary Report

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<b>Analyte Name</b>	PFOS_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	499.0 / 99.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C4-PFOS	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.18836 x + 0.00460$  ( $r = 0.99959$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	84.589764	91.4
8	JZ81	L4	True	231.50	249.900249	108.0
9	JZ82	L5	True	463.00	493.823007	106.7
10	JZ83	L6	True	925.60	912.177512	98.6
11	JZ84	L7	True	2314.00	2188.533435	94.6
12	JZ85	L8	True	4628.00	4615.206815	99.7
13	JZ86	L9	True	9256.00	9366.469218	101.2





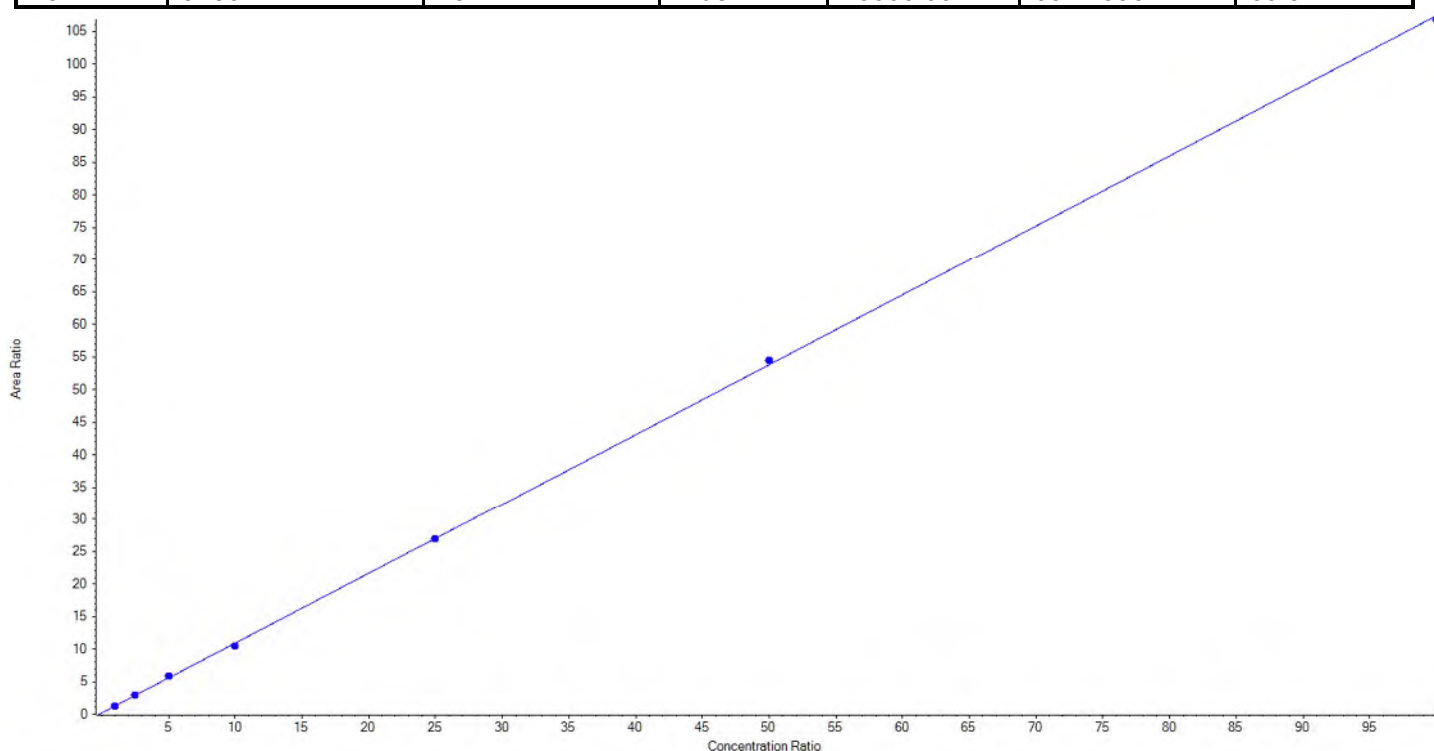
## Calibration Summary Report

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<b>Analyte Name</b>	PFDA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	513.0 / 469.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.07195x + 0.19352$  ( $r = 0.99985$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	93.455449	93.5
8	JZ81	L4	True	250.00	260.370572	104.2
9	JZ82	L5	True	500.00	527.458555	105.5
10	JZ83	L6	True	1000.00	961.920584	96.2
11	JZ84	L7	True	2500.00	2501.130905	100.1
12	JZ85	L8	True	5000.00	5061.067717	101.2
13	JZ86	L9	True	10000.00	9944.596217	99.5





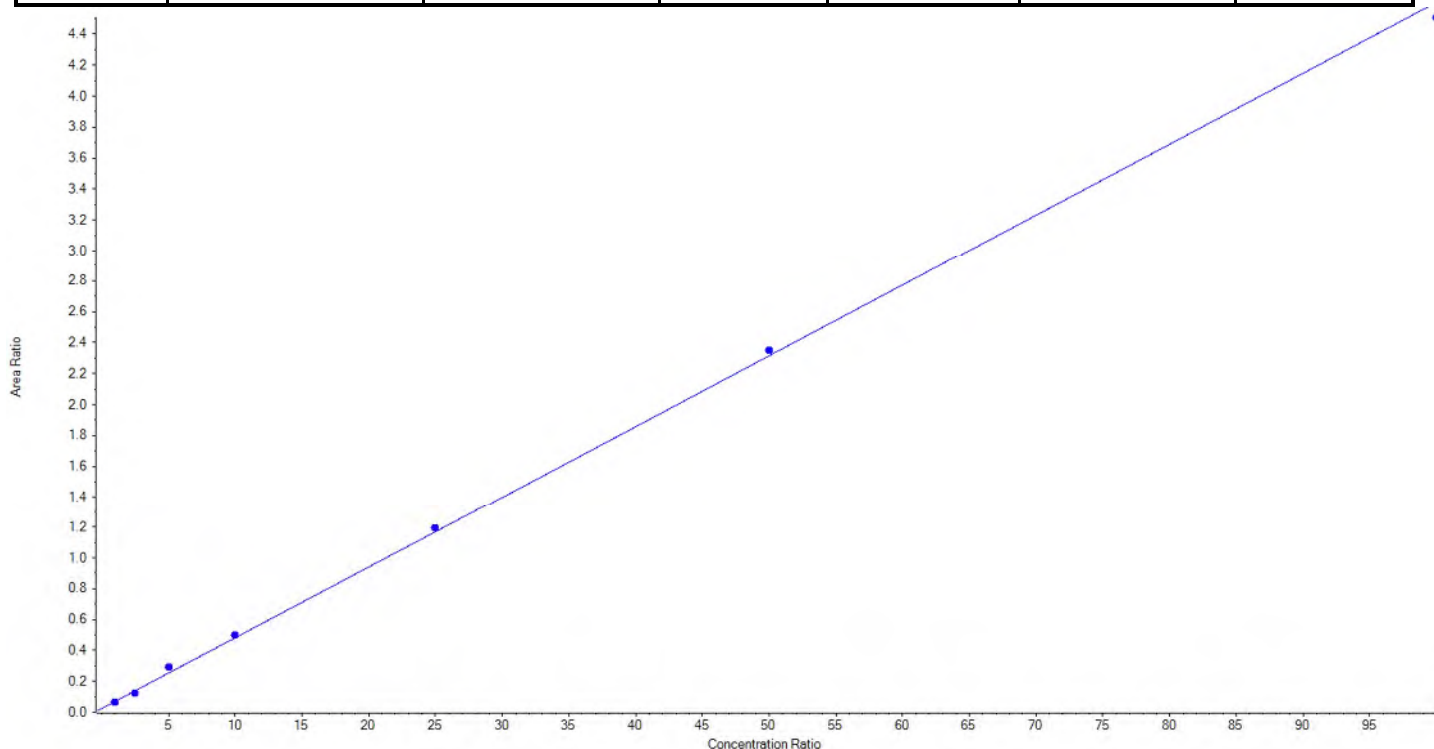
## Calibration Summary Report

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<b>Analyte Name</b>	PFDA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	513.0 / 219.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.04582x + 0.02416$  ( $r = 0.99907$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.140280	91.1
8	JZ81	L4	True	250.00	213.880578	85.6
9	JZ82	L5	True	500.00	590.959868	118.2
10	JZ83	L6	True	1000.00	1035.220526	103.5
11	JZ84	L7	True	2500.00	2552.909954	102.1
12	JZ85	L8	True	5000.00	5081.817658	101.6
13	JZ86	L9	True	10000.00	9784.071135	97.8







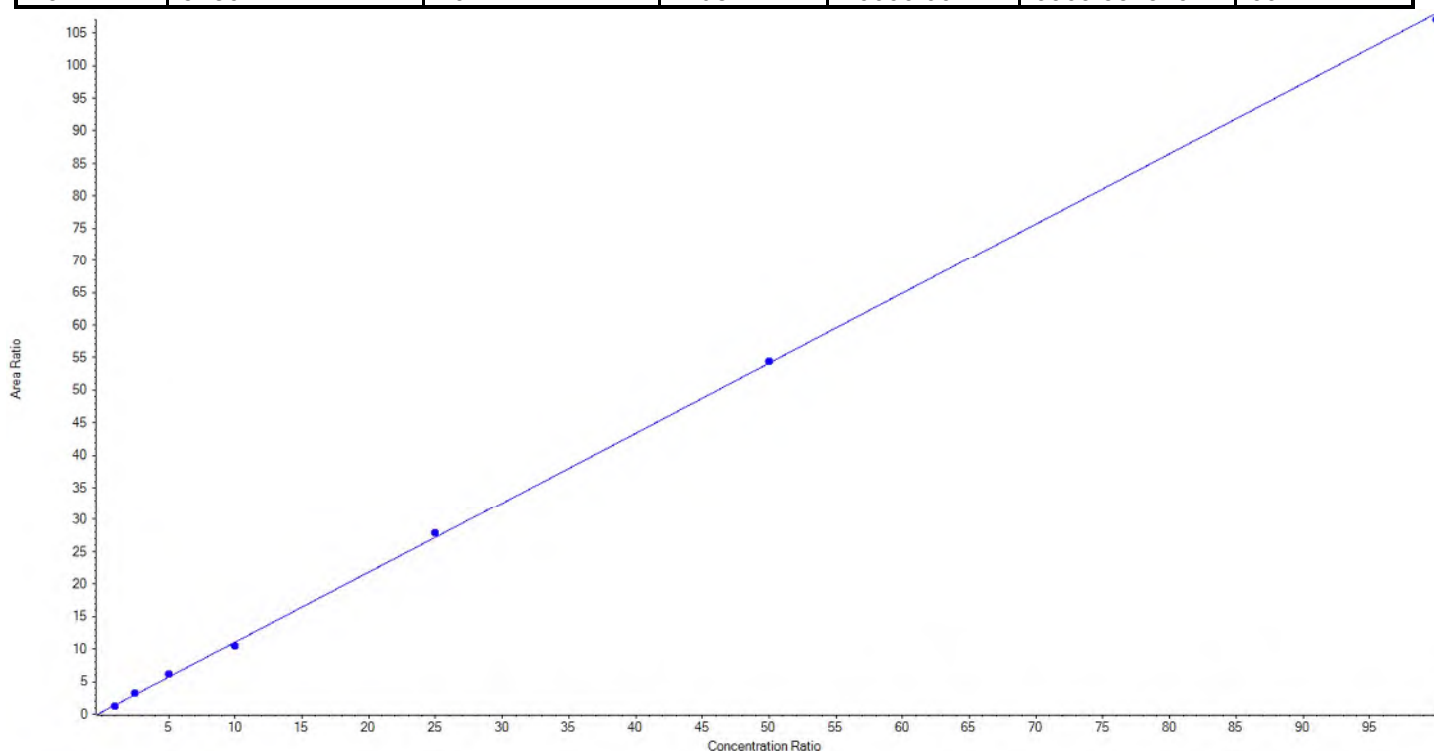
## Calibration Summary Report

Created with Analyst Reporter  
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<b>Analyte Name</b>	PFUnA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	563.0 / 519.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.07699x + 0.31290$  ( $r = 0.99959$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	85.922956	85.9
8	JZ81	L4	True	250.00	268.407545	107.4
9	JZ82	L5	True	500.00	549.872129	110.0
10	JZ83	L6	True	1000.00	946.560479	94.7
11	JZ84	L7	True	2500.00	2559.717863	102.4
12	JZ85	L8	True	5000.00	5029.964712	100.6
13	JZ86	L9	True	10000.00	9909.554316	99.1





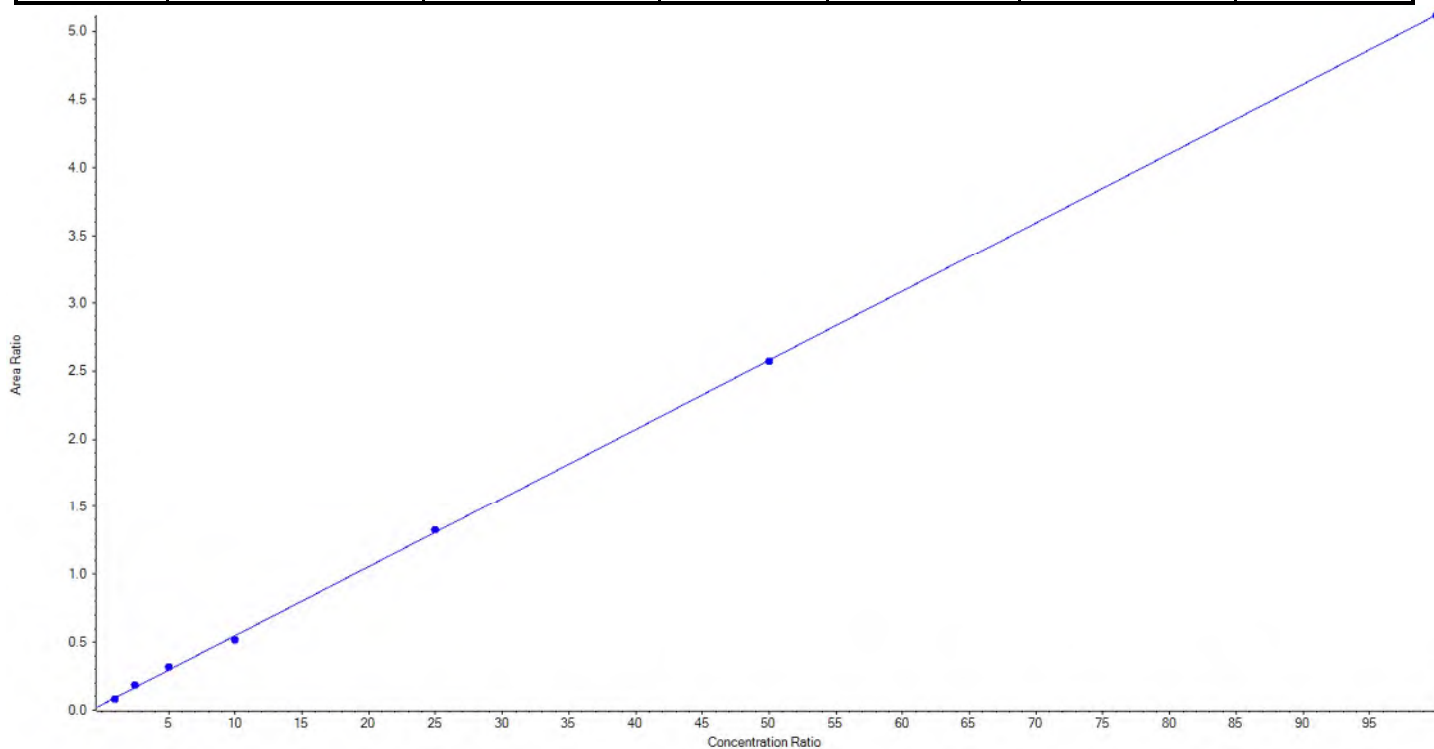
## Calibration Summary Report

Created with Analyst Reporter  
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<b>Analyte Name</b>	PFUnA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	563.0 / 269.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.05079 x + 0.04003$  ( $r = 0.99957$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	84.767359	84.8
8	JZ81	L4	True	250.00	281.972160	112.8
9	JZ82	L5	True	500.00	541.060573	108.2
10	JZ83	L6	True	1000.00	934.412077	93.4
11	JZ84	L7	True	2500.00	2526.652698	101.1
12	JZ85	L8	True	5000.00	4991.299563	99.8
13	JZ86	L9	True	10000.00	9989.835571	99.9





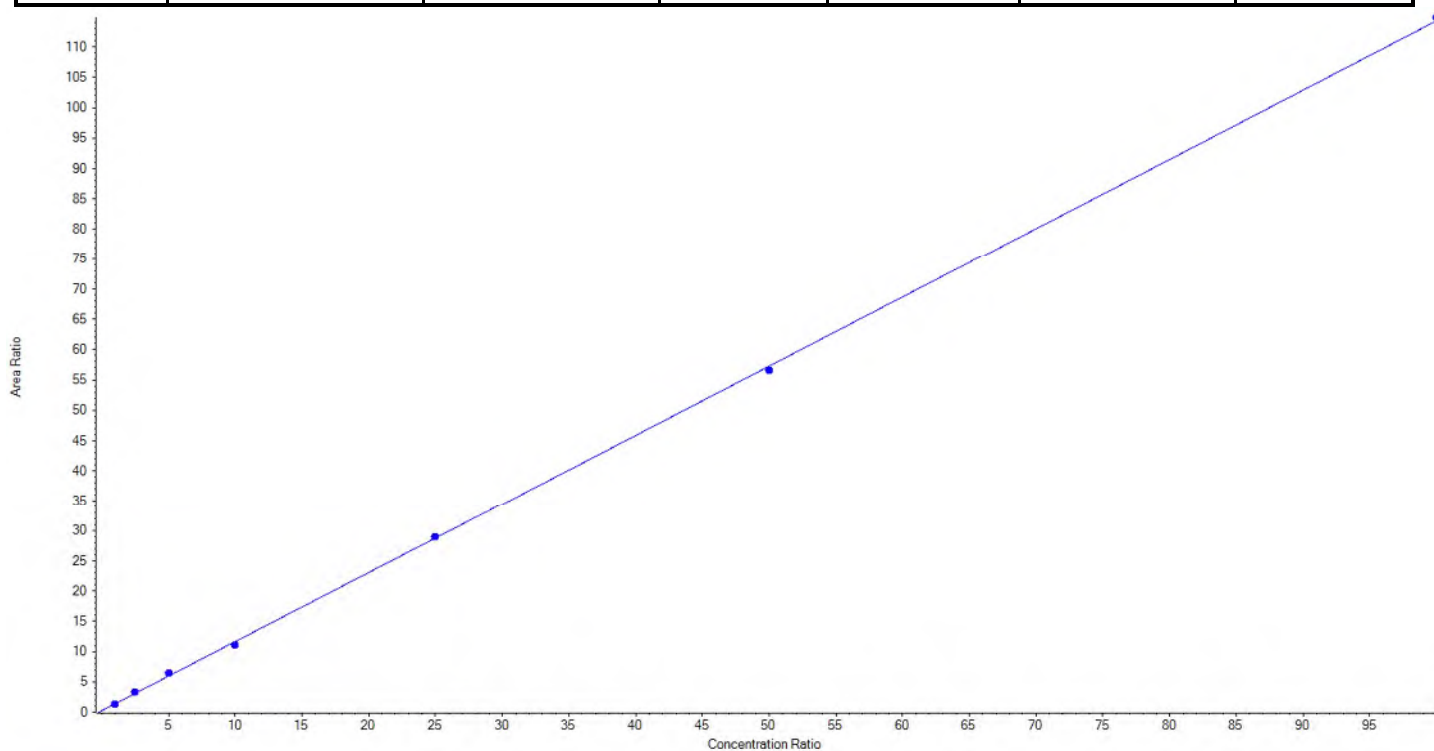
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Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFD <sub>o</sub> A_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	613.0 / 569.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C <sub>2</sub> -PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.14042x + 0.24800$  ( $r = 0.99965$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	89.319676	89.3
8	JZ81	L4	True	250.00	266.201717	106.5
9	JZ82	L5	True	500.00	549.580243	109.9
10	JZ83	L6	True	1000.00	943.232037	94.3
11	JZ84	L7	True	2500.00	2519.527484	100.8
12	JZ85	L8	True	5000.00	4935.789694	98.7
13	JZ86	L9	True	10000.00	10046.349148	100.5





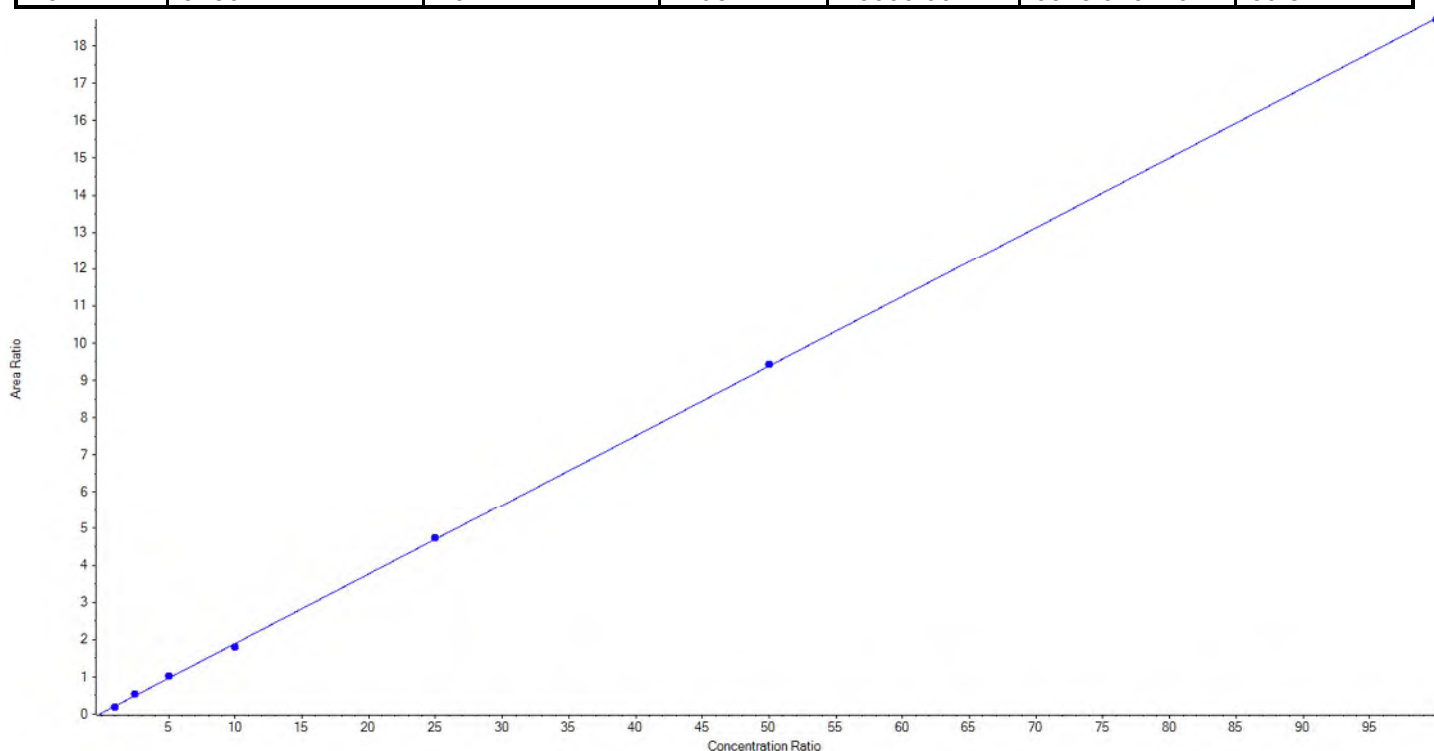
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<b>Analyte Name</b>	PFD <sub>o</sub> A_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	613.0 / 319.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.18715x + 0.02825$  ( $r = 0.99976$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.125534	90.1
8	JZ81	L4	True	250.00	269.682655	107.9
9	JZ82	L5	True	500.00	534.102042	106.8
10	JZ83	L6	True	1000.00	944.935981	94.5
11	JZ84	L7	True	2500.00	2512.673691	100.5
12	JZ85	L8	True	5000.00	5019.564881	100.4
13	JZ86	L9	True	10000.00	9978.915216	99.8





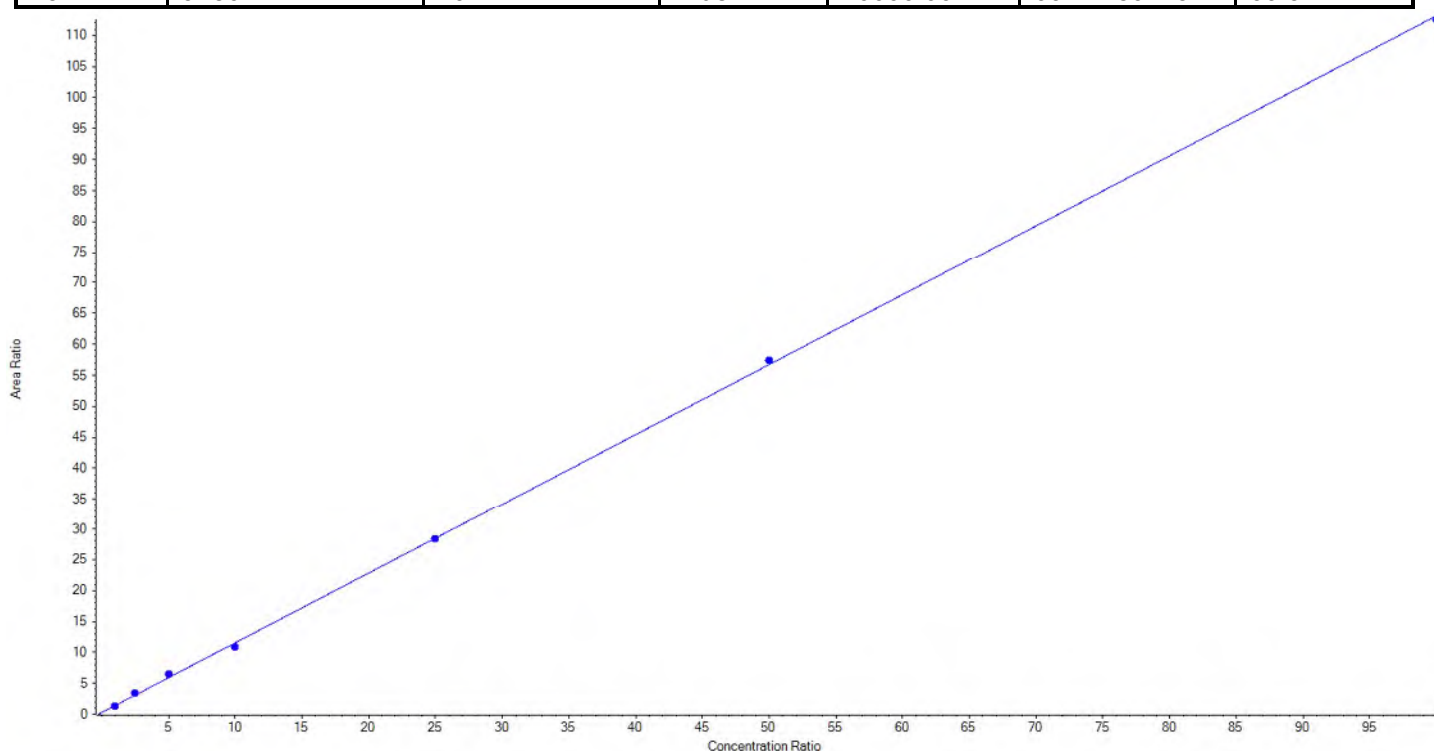
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFTTrDA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	663.0 / 619.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.12933x + 0.25468$  ( $r = 0.99956$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.003197	86.0
8	JZ81	L4	True	250.00	273.527871	109.4
9	JZ82	L5	True	500.00	552.118199	110.4
10	JZ83	L6	True	1000.00	937.995187	93.8
11	JZ84	L7	True	2500.00	2490.163845	99.6
12	JZ85	L8	True	5000.00	5065.402477	101.3
13	JZ86	L9	True	10000.00	9944.789223	99.5





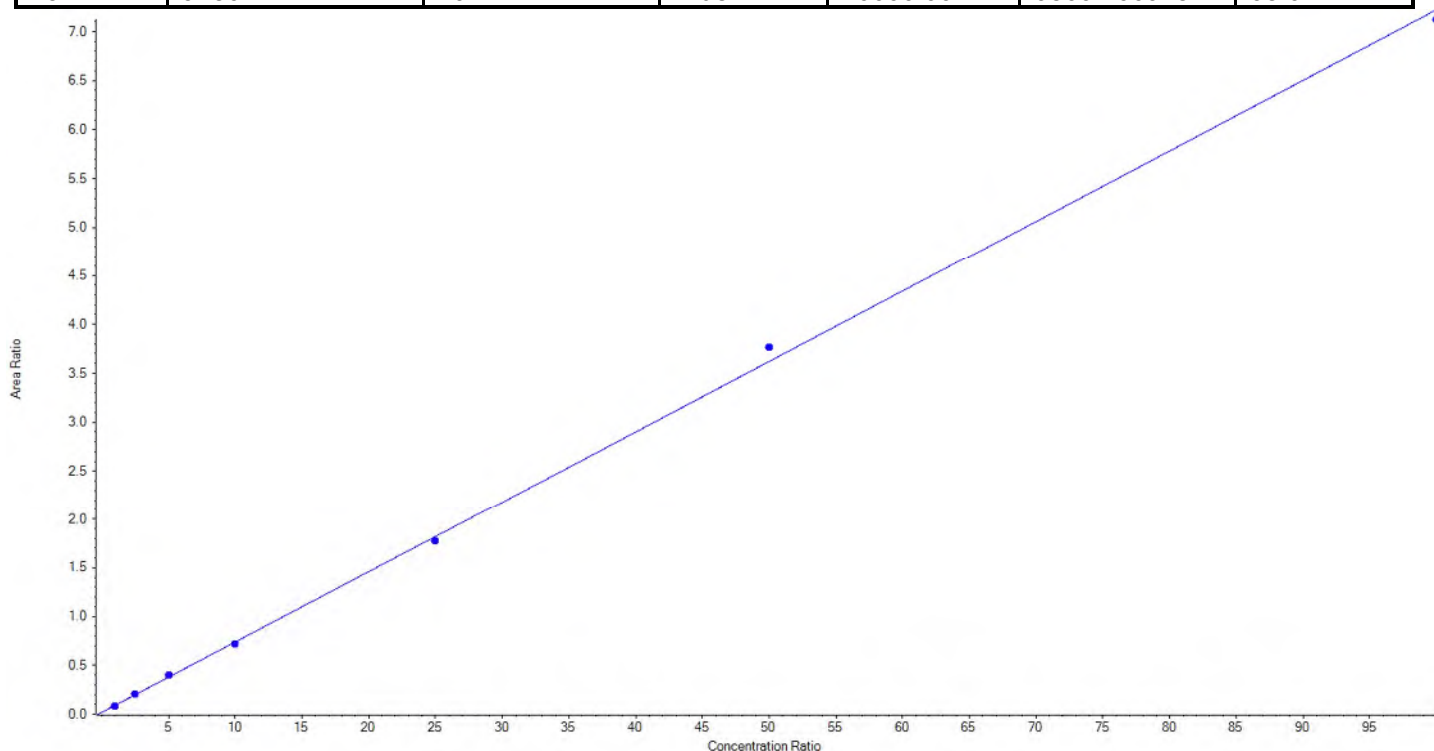
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFTTrDA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	663.0 / 169.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.07204 x + 0.01868$  (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.966029	93.0
8	JZ81	L4	True	250.00	258.583619	103.4
9	JZ82	L5	True	500.00	530.996022	106.2
10	JZ83	L6	True	1000.00	974.563742	97.5
11	JZ84	L7	True	2500.00	2434.490111	97.4
12	JZ85	L8	True	5000.00	5198.133527	104.0
13	JZ86	L9	True	10000.00	9860.266948	98.6





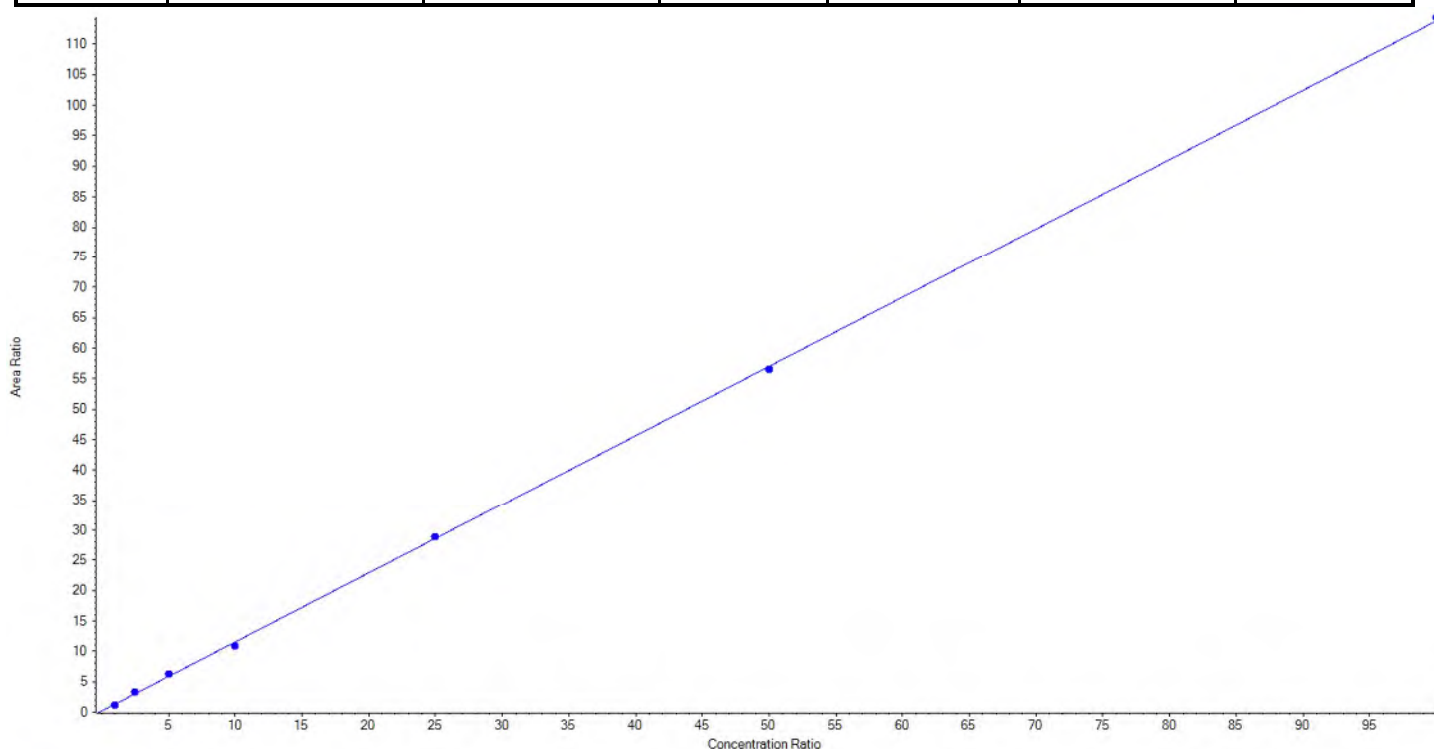
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFTeDA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	713.0 / 669.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.13640x + 0.17890$  ( $r = 0.99973$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.355066	92.4
8	JZ81	L4	True	250.00	269.371525	107.8
9	JZ82	L5	True	500.00	530.325680	106.1
10	JZ83	L6	True	1000.00	934.624759	93.5
11	JZ84	L7	True	2500.00	2518.800863	100.8
12	JZ85	L8	True	5000.00	4957.145646	99.1
13	JZ86	L9	True	10000.00	10047.376461	100.5





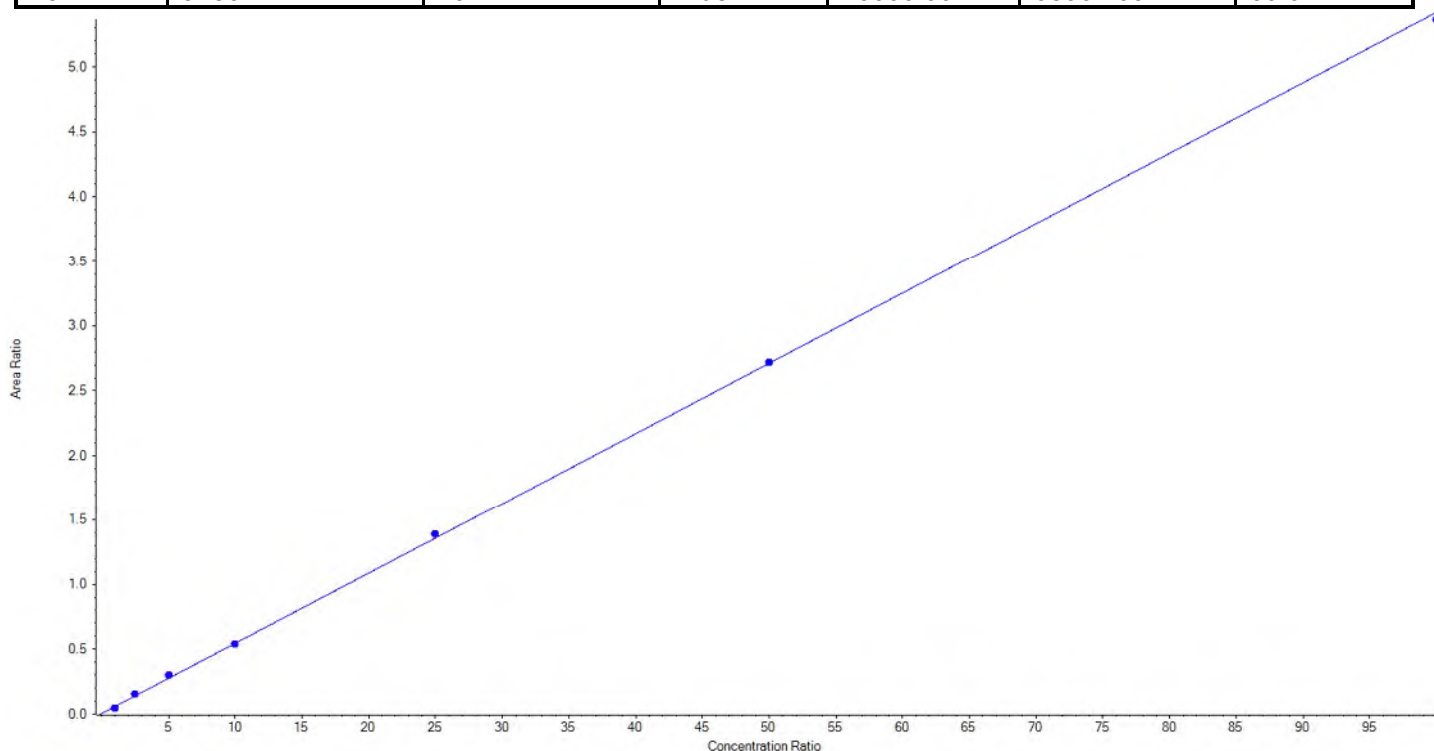
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	PFTeDA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	713.0 / 169.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.05414 x + 0.00509$  ( $r = 0.99959$ ) (weighting:  $1 / x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	79.975639	80.0
8	JZ81	L4	True	250.00	279.709523	111.9
9	JZ82	L5	True	500.00	541.889380	108.4
10	JZ83	L6	True	1000.00	983.544860	98.4
11	JZ84	L7	True	2500.00	2553.610487	102.1
12	JZ85	L8	True	5000.00	5015.106890	100.3
13	JZ86	L9	True	10000.00	9896.163222	99.0







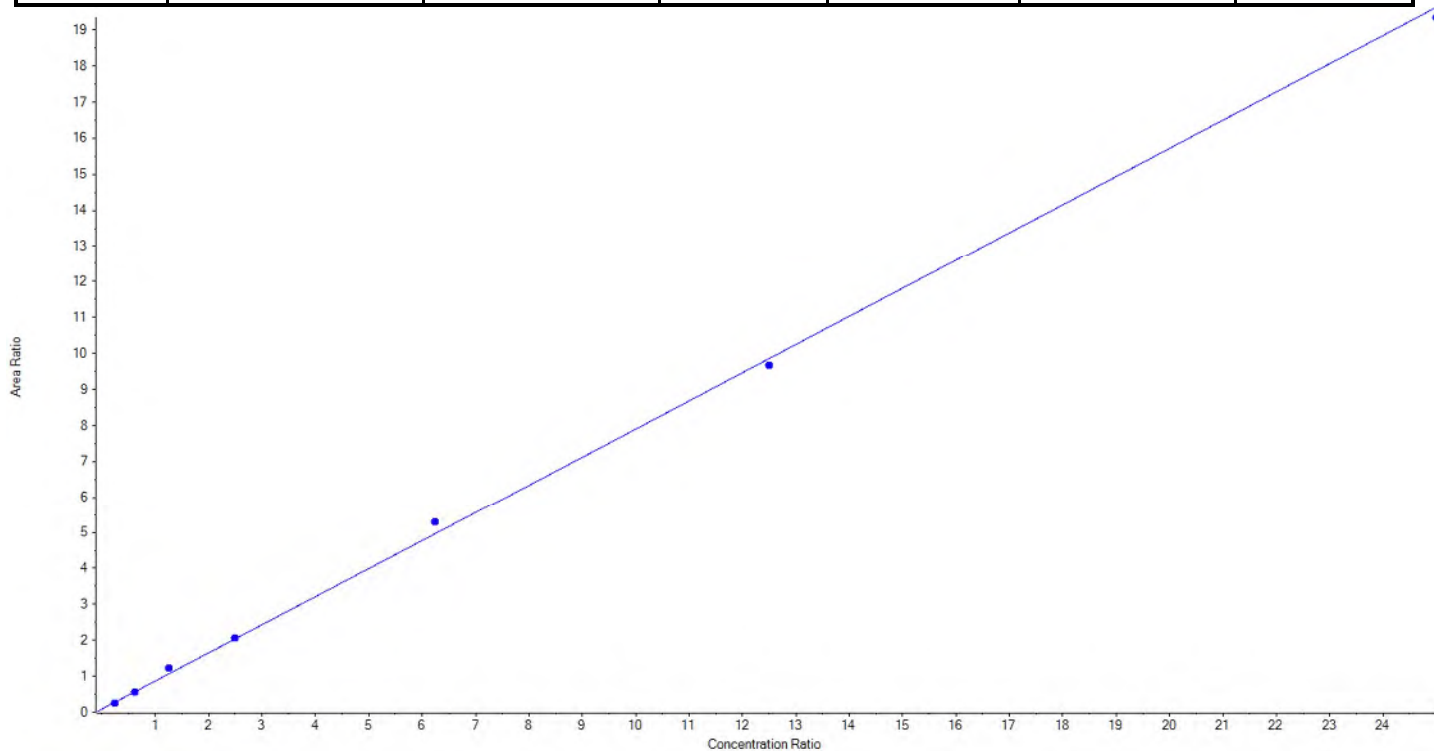
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	NMeFOSAA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	570.0 / 419.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.78176 x + 0.08322$  (r = 0.99894) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	80.154543	80.2
8	JZ81	L4	True	250.00	243.751348	97.5
9	JZ82	L5	True	500.00	589.038442	117.8
10	JZ83	L6	True	1000.00	1012.438421	101.2
11	JZ84	L7	True	2500.00	2666.393934	106.7
12	JZ85	L8	True	5000.00	4905.539694	98.1
13	JZ86	L9	True	10000.00	9852.683617	98.5





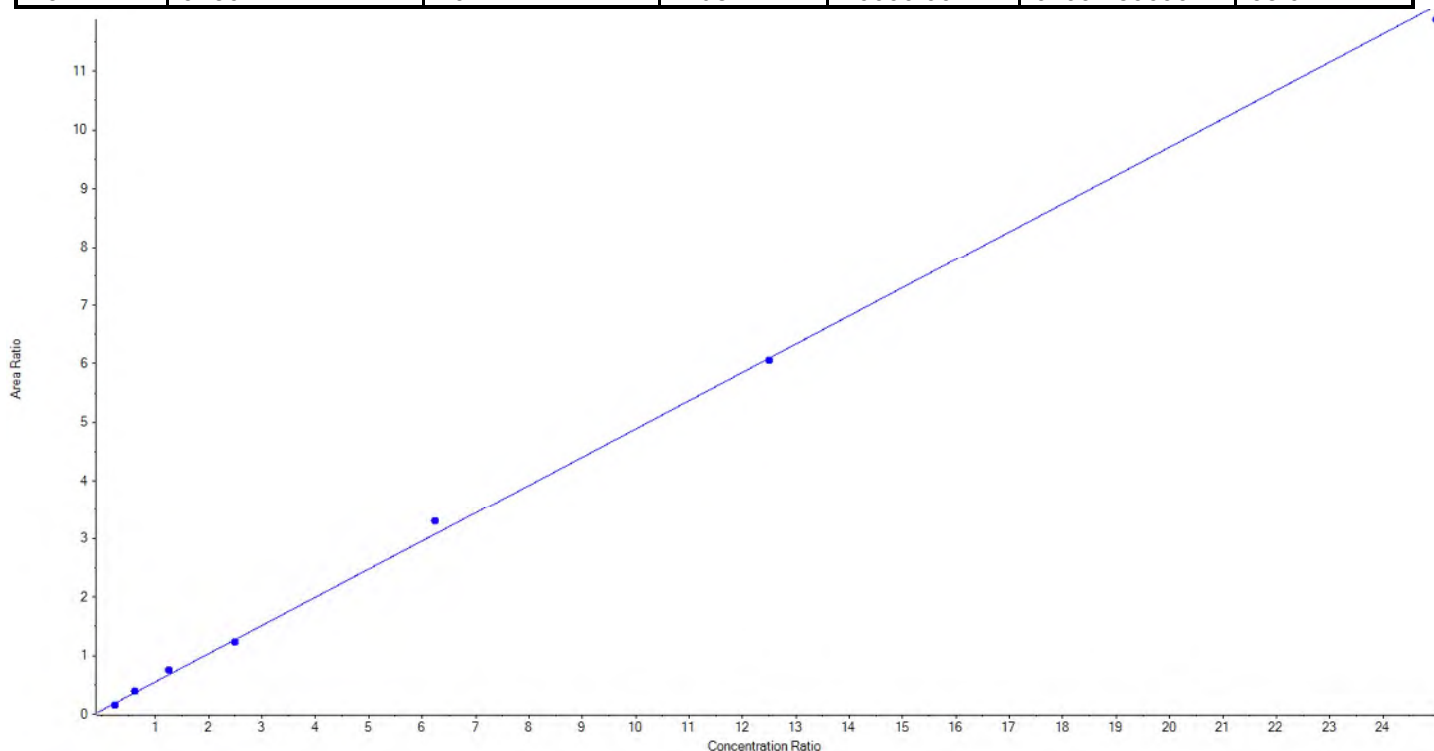
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	NMeFOSAA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	570.0 / 512.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.48199x + 0.06767$  ( $r = 0.99897$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	78.385205	78.4
8	JZ81	L4	True	250.00	263.534247	105.4
9	JZ82	L5	True	500.00	568.791985	113.8
10	JZ83	L6	True	1000.00	972.921249	97.3
11	JZ84	L7	True	2500.00	2691.056234	107.6
12	JZ85	L8	True	5000.00	4975.521389	99.5
13	JZ86	L9	True	10000.00	9799.789690	98.0





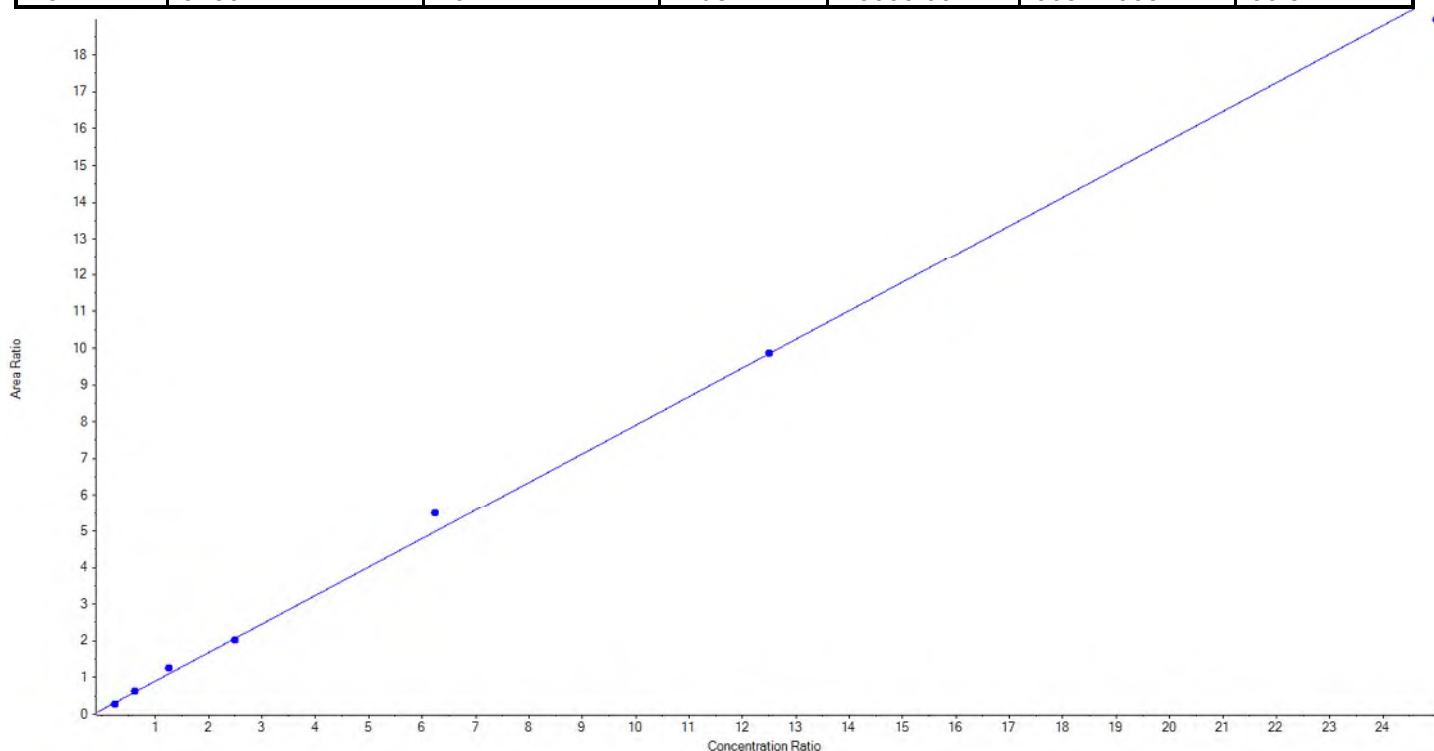
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	NEtFOSAA_1	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	584.0 / 419.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.77845x + 0.12055$  ( $r = 0.99824$ ) (weighting:  $1/x$ )

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	74.556536	74.6
8	JZ81	L4	True	250.00	256.120459	102.5
9	JZ82	L5	True	500.00	586.592707	117.3
10	JZ83	L6	True	1000.00	983.685035	98.4
11	JZ84	L7	True	2500.00	2757.013442	110.3
12	JZ85	L8	True	5000.00	5010.737947	100.2
13	JZ86	L9	True	10000.00	9681.293874	96.8





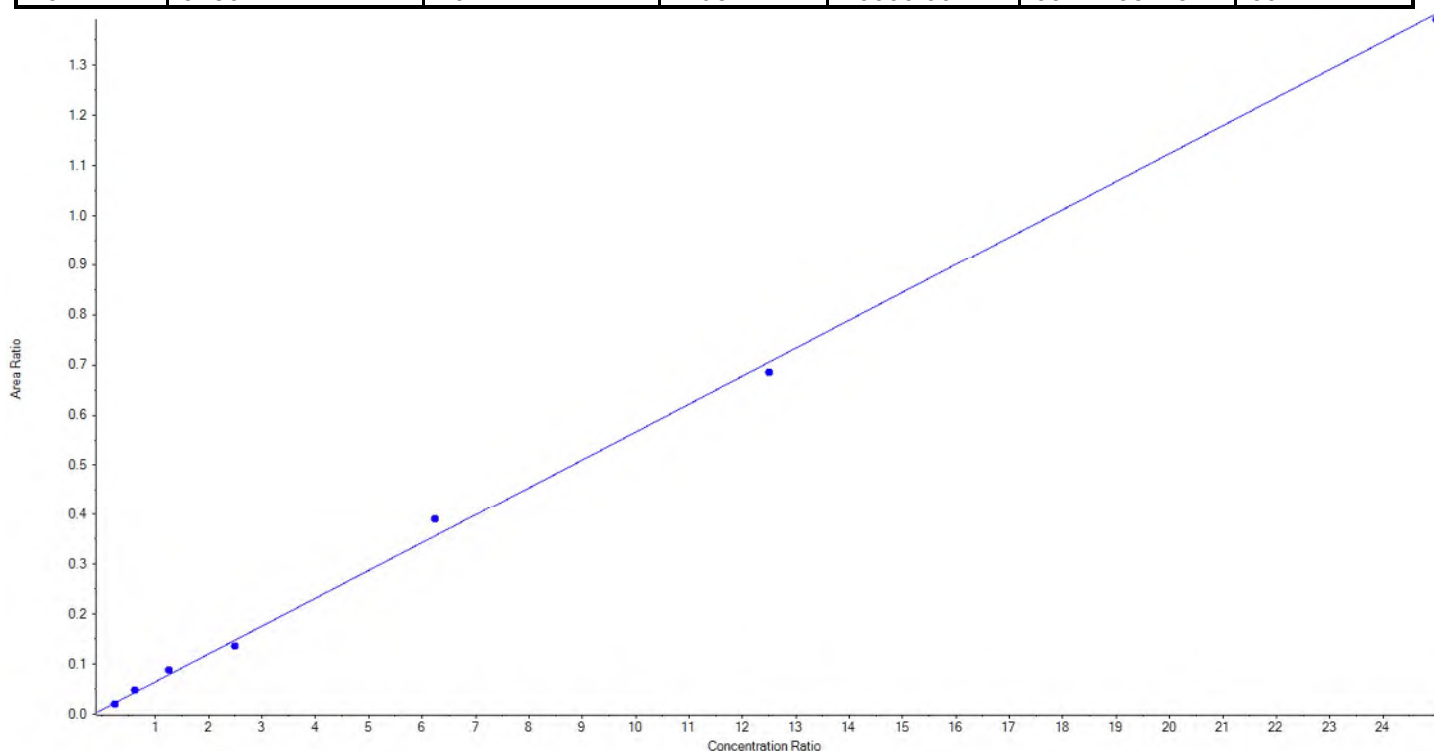
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	NEtFOSAA_2	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	584.0 / 483.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 0.05576 x + 0.00866$  (r = 0.99838) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	77.938829	77.9
8	JZ81	L4	True	250.00	275.764969	110.3
9	JZ82	L5	True	500.00	570.352431	114.1
10	JZ83	L6	True	1000.00	917.201935	91.7
11	JZ84	L7	True	2500.00	2746.562540	109.9
12	JZ85	L8	True	5000.00	4848.020883	97.0
13	JZ86	L9	True	10000.00	9914.158413	99.1





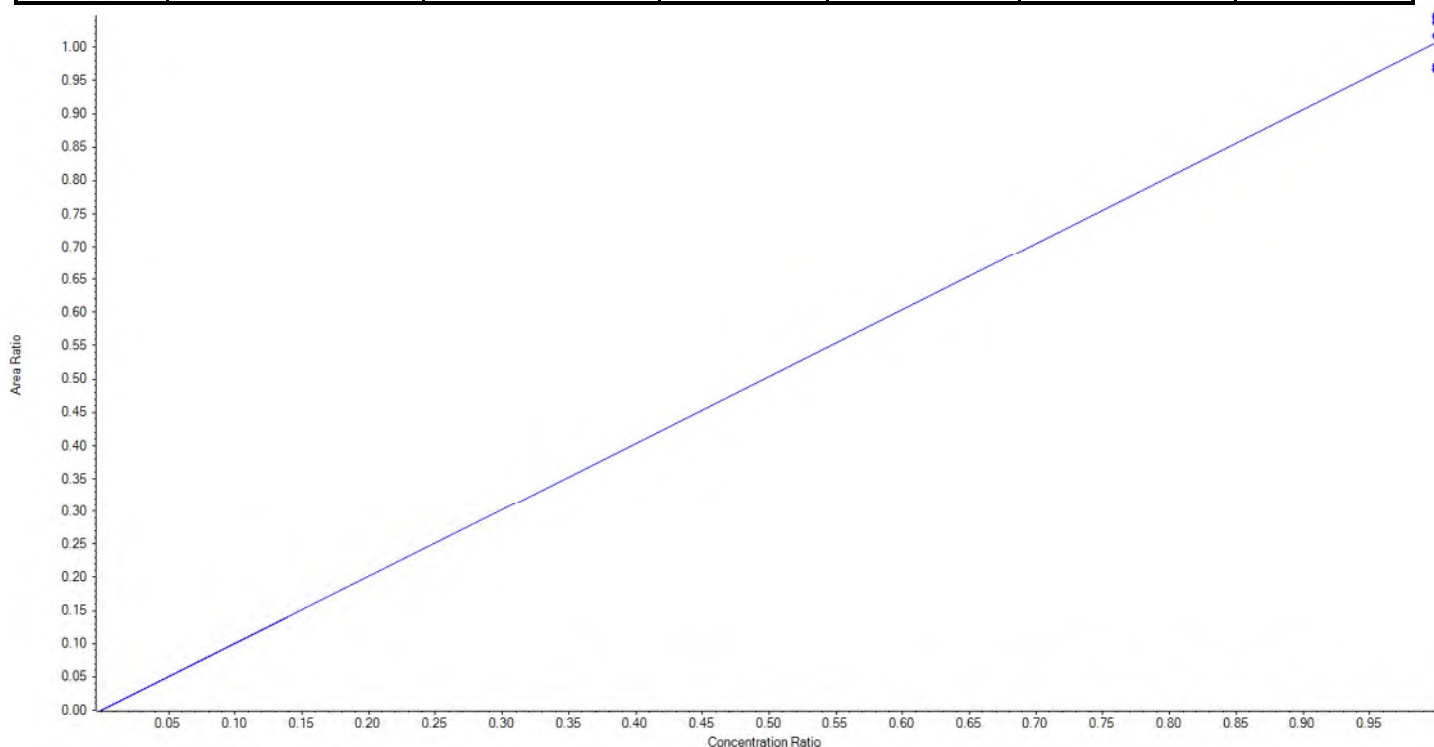
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	13C2-PFHxA	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	315.0 / 270.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.00705 x$  (std. dev. = 0.03756) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	96.013933	96.0
8	JZ81	L4	True	100.00	103.627002	103.6
9	JZ82	L5	True	100.00	96.514953	96.5
10	JZ83	L6	True	100.00	100.958881	101.0
11	JZ84	L7	True	100.00	102.978900	103.0
12	JZ85	L8	True	100.00	103.982015	104.0
13	JZ86	L9	True	100.00	95.924316	95.9





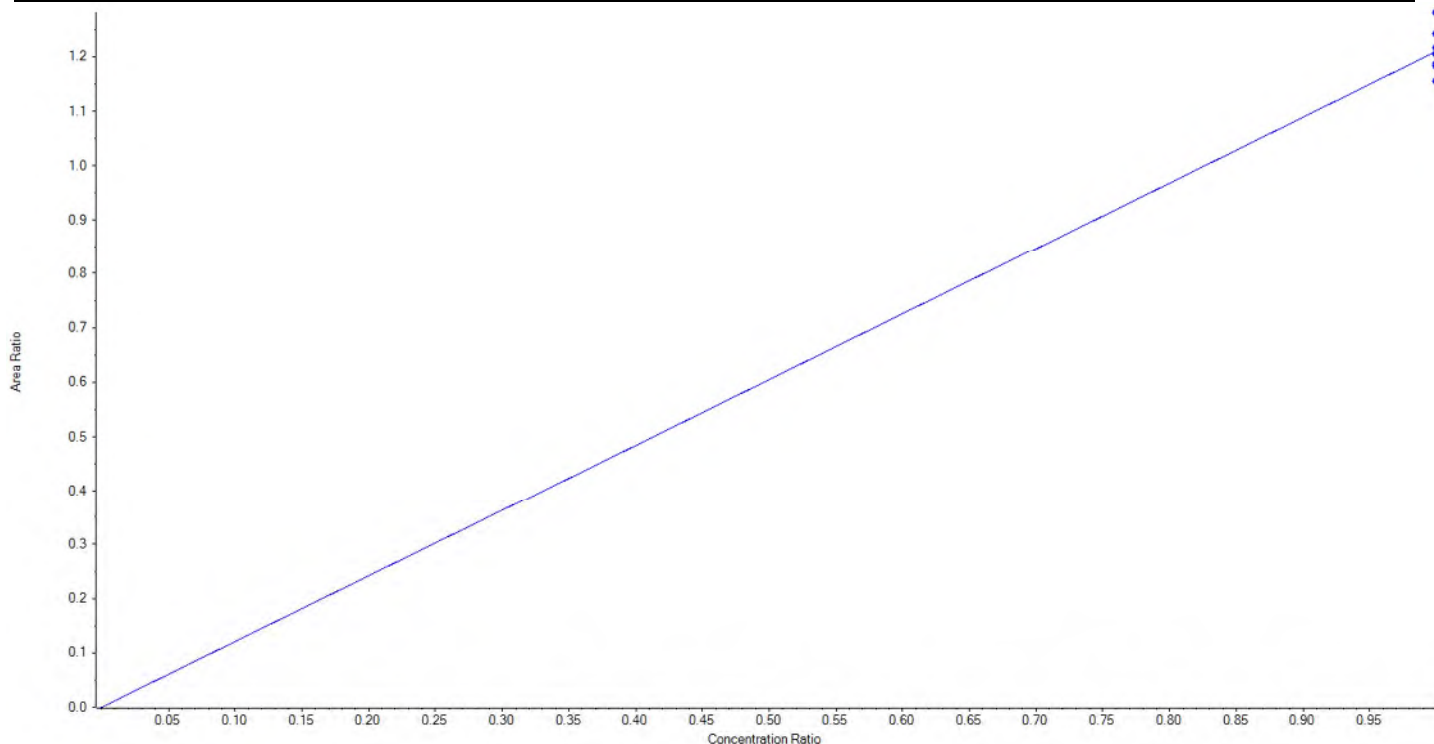
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	13C2-PFDA	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	515.0 / 470.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	13C2-PFOA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.20987 x$  (std. dev. = 0.04118) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	95.538909	95.5
8	JZ81	L4	True	100.00	99.521034	99.5
9	JZ82	L5	True	100.00	98.118355	98.1
10	JZ83	L6	True	100.00	100.549473	100.6
11	JZ84	L7	True	100.00	97.842212	97.8
12	JZ85	L8	True	100.00	105.849909	105.9
13	JZ86	L9	True	100.00	102.580107	102.6





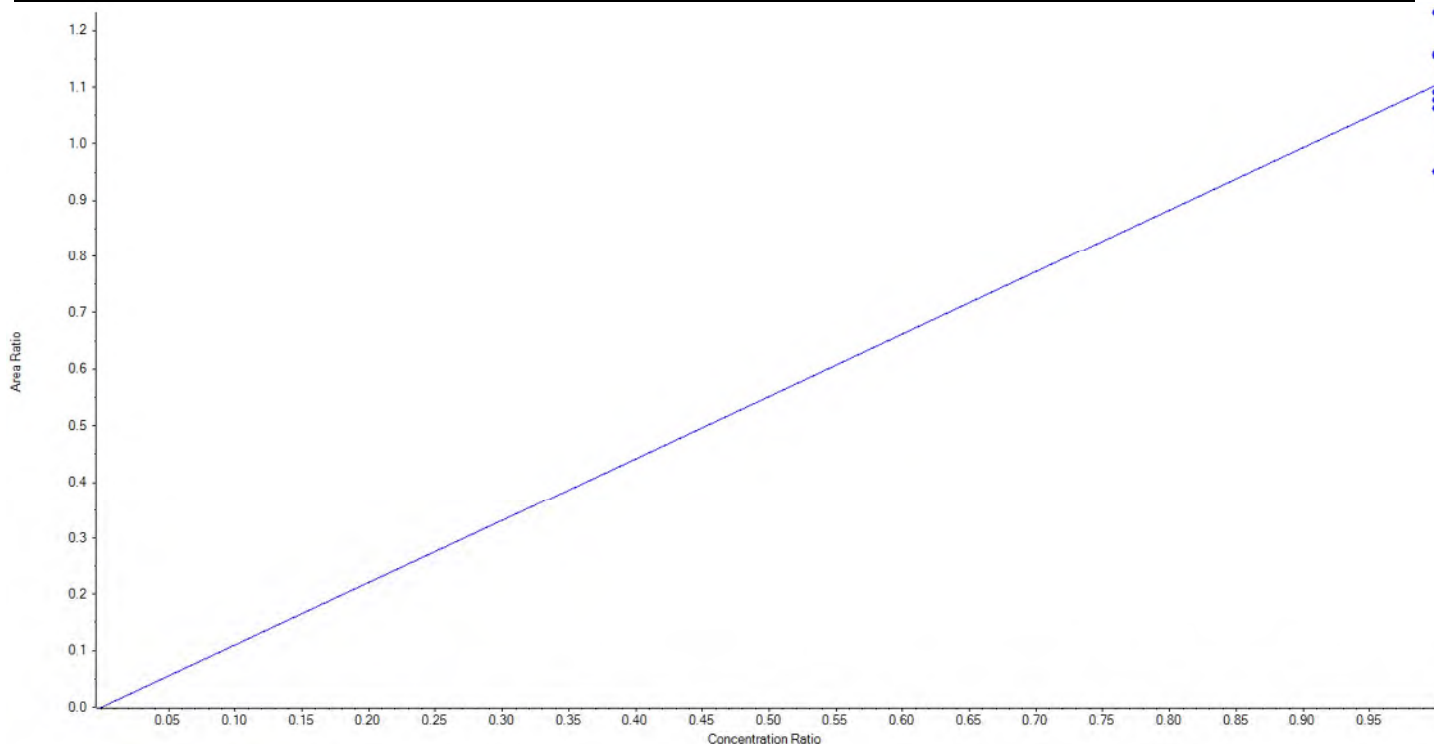
## Calibration Summary Report

Created with Analyst Reporter  
Printed: 27/08/2018 9:29:53 AM

<b>Analyte Name</b>	d5-EtFOSAA	<b>Data File</b>	18-0523_18-0524.wiff
<b>MRM Transition</b>	589.0 / 419.0	<b>Result Table</b>	18-0523_18-0524_DW
<b>Internal Standard</b>	d3-MeFOSAA	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	8/25/2018 1:56:55 PM	<b>Acquisition Method</b>	5-0371.dam

Regression Equation:  $y = 1.10375 x$  (std. dev. = 0.08941) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	400.00	446.271648	111.6
8	JZ81	L4	True	400.00	390.483250	97.6
9	JZ82	L5	True	400.00	420.220929	105.1
10	JZ83	L6	True	400.00	418.323334	104.6
11	JZ84	L7	True	400.00	384.880668	96.2
12	JZ85	L8	True	400.00	395.250915	98.8
13	JZ86	L9	True	400.00	344.569256	86.1







<b>Sample Name</b>	JZ80	<b>Injection Vial</b>	7
<b>Sample ID</b>	L3	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T14:23:46	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.335	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.068	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.027	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.307	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.062	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.333	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.177	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.055	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.067	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.039	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.676	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	NEtFOSAA	0.074	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

<b>Sample Name</b>	JZ81	<b>Injection Vial</b>	8
<b>Sample ID</b>	L4	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T14:32:41	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.285	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.274	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.065	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.311	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.192	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.041	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.057	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.162	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.061	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.688	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.076	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

<b>Sample Name</b>	JZ82	<b>Injection Vial</b>	9
<b>Sample ID</b>	L5	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T14:41:37	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.079	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.292	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.069	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.187	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.046	ü
PfUnA_1	563.0 / 519.0	3.70	PfUnA			
PfUnA_2	563.0 / 269.0	3.70	PfUnA	0.051	0.052	ü
PfDoA_1	613.0 / 569.0	3.98	PfDoA			
PfDoA_2	613.0 / 319.0	3.98	PfDoA	0.158	0.162	ü
PfTrDA_1	663.0 / 619.0	4.22	PfTrDA			
PfTrDA_2	663.0 / 169.0	4.22	PfTrDA	0.062	0.064	ü
PfTeDA_1	713.0 / 669.0	4.44	PfTeDA			
PfTeDA_2	713.0 / 169.0	4.44	PfTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.610	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

<b>Sample Name</b>	JZ83	<b>Injection Vial</b>	10
<b>Sample ID</b>	L6	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T14:50:33	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.072	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.024	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.286	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.064	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.323	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.201	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.049	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.601	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.067	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	JZ84	<b>Injection Vial</b>	11
<b>Sample ID</b>	L7	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T14:59:30	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.297	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.081	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.351	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.066	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.184	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.625	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.071	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	JZ85	<b>Injection Vial</b>	12
<b>Sample ID</b>	L8	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T15:08:27	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.305	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.287	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.300	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.195	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.047	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.167	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.627	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.069	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	JZ86	<b>Injection Vial</b>	13
<b>Sample ID</b>	L9	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Standard	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T15:17:23	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.067	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.318	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.183	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.047	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.614	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.073	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü



Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	797.074022	885.00	90.06
PFBS_2	298.9 / 99.0	1.51	793.065794	885.00	89.61
PFHxA_1	313.0 / 269.0	1.82	940.533648	1000.00	94.05
PFHxA_2	313.0 / 119.0	1.82	966.033599	1000.00	96.60
PFHpA_1	363.0 / 319.0	2.22	959.600146	1000.00	95.96
PFHpA_2	363.0 / 169.0	2.22	870.420290	1000.00	87.04
PFHxS_1	399.0 / 80.0	2.24	884.427438	912.00	96.98
PFHxS_2	399.0 / 99.0	2.24	841.940832	912.00	92.32
PFOA_1	413.0 / 369.0	2.62	952.372855	1000.00	95.24
PFOA_2	413.0 / 169.0	2.62	994.458678	1000.00	99.45
PFNA_1	463.0 / 419.0	3.01	945.616371	1000.00	94.56
PFNA_2	463.0 / 219.0	3.01	955.308722	1000.00	95.53
PFOS_1	499.0 / 80.0	3.01	824.131581	925.60	89.04
PFOS_2	499.0 / 99.0	3.01	975.327902	925.60	105.37
PFDA_1	513.0 / 469.0	3.36	987.499696	1000.00	98.75
PFDA_2	513.0 / 219.0	3.36	1066.460729	1000.00	106.65
PFUnA_1	563.0 / 519.0	3.69	934.093198	1000.00	93.41
PFUnA_2	563.0 / 269.0	3.68	977.131579	1000.00	97.71
PFDoA_1	613.0 / 569.0	3.96	947.037930	1000.00	94.70
PFDoA_2	613.0 / 319.0	3.96	903.988681	1000.00	90.40
PFTTrDA_1	663.0 / 619.0	4.21	904.880875	1000.00	90.49
PFTTrDA_2	663.0 / 169.0	4.21	964.673110	1000.00	96.47
PFTeDA_1	713.0 / 669.0	4.42	915.532982	1000.00	91.55
PFTeDA_2	713.0 / 169.0	4.42	927.497543	1000.00	92.75
NMeFOSAA_1	570.0 / 419.0	3.51	1261.665907	1000.00	126.17
NMeFOSAA_2	570.0 / 512.0	3.51	1165.317395	1000.00	116.53
NEtFOSAA_1	584.0 / 419.0	3.67	1256.811186	1000.00	125.68
NEtFOSAA_2	584.0 / 483.0	3.67	1070.510408	1000.00	107.05
13C2-PFHxA	315.0 / 270.0	1.81	96.761315	100.00	96.76
13C2-PFDA	515.0 / 470.0	3.35	96.636437	100.00	96.64
d5-EtFOSAA	589.0 / 419.0	3.66	417.604484	400.00	104.40



Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	239.950241	221.50	108.33
PFBS_2	298.9 / 99.0	1.51	233.621345	221.50	105.47
PFHxA_1	313.0 / 269.0	1.82	251.646105	250.00	100.66
PFHxA_2	313.0 / 119.0	1.82	242.558748	250.00	97.02
PFHpA_1	363.0 / 319.0	2.22	268.139624	250.00	107.26
PFHpA_2	363.0 / 169.0	2.22	267.930538	250.00	107.17
PFHxS_1	399.0 / 80.0	2.24	243.758596	228.00	106.91
PFHxS_2	399.0 / 99.0	2.24	255.166749	228.00	111.92
PFOA_1	413.0 / 369.0	2.62	270.327682	250.00	108.13
PFOA_2	413.0 / 169.0	2.62	307.836766	250.00	123.13
PFNA_1	463.0 / 419.0	3.01	270.767595	250.00	108.31
PFNA_2	463.0 / 219.0	3.01	279.989383	250.00	112.00
PFOS_1	499.0 / 80.0	3.01	236.999632	231.50	102.38
PFOS_2	499.0 / 99.0	3.01	279.663105	231.50	120.80
PFDA_1	513.0 / 469.0	3.36	274.318272	250.00	109.73
PFDA_2	513.0 / 219.0	3.36	303.504280	250.00	121.40
PFUnA_1	563.0 / 519.0	3.69	261.203998	250.00	104.48
PFUnA_2	563.0 / 269.0	3.69	249.881604	250.00	99.95
PFDoA_1	613.0 / 569.0	3.96	279.847560	250.00	111.94
PFDoA_2	613.0 / 319.0	3.96	270.149649	250.00	108.06
PFTTrDA_1	663.0 / 619.0	4.21	256.739036	250.00	102.70
PFTTrDA_2	663.0 / 169.0	4.21	252.336198	250.00	100.93
PFTeDA_1	713.0 / 669.0	4.42	262.282369	250.00	104.91
PFTeDA_2	713.0 / 169.0	4.42	300.630209	250.00	120.25
NMeFOSAA_1	570.0 / 419.0	3.51	266.708769	250.00	106.68
NMeFOSAA_2	570.0 / 512.0	3.51	191.120599	250.00	76.45
NEtFOSAA_1	584.0 / 419.0	3.67	227.831121	250.00	91.13
NEtFOSAA_2	584.0 / 483.0	3.68	301.995474	250.00	120.80
13C2-PFHxA	315.0 / 270.0	1.81	98.472326	100.00	98.47
13C2-PFDA	515.0 / 470.0	3.35	104.098126	100.00	104.10
d5-EtFOSAA	589.0 / 419.0	3.67	387.803773	400.00	96.95

Sample Name	JZ82 CCV	Injection Vial	27
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T17:31:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

## Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	450.507398	443.00	101.69
PFBS_2	298.9 / 99.0	1.51	450.339058	443.00	101.66
PFHxA_1	313.0 / 269.0	1.82	508.621374	500.00	101.72
PFHxA_2	313.0 / 119.0	1.81	564.416491	500.00	112.88
PFHpA_1	363.0 / 319.0	2.22	544.148734	500.00	108.83
PFHpA_2	363.0 / 169.0	2.22	598.410212	500.00	119.68
PFHxS_1	399.0 / 80.0	2.24	505.372259	456.00	110.83
PFHxS_2	399.0 / 99.0	2.24	496.756980	456.00	108.94
PFOA_1	413.0 / 369.0	2.62	546.048599	500.00	109.21
PFOA_2	413.0 / 169.0	2.62	589.589670	500.00	117.92
PFNA_1	463.0 / 419.0	3.01	567.361964	500.00	113.47
PFNA_2	463.0 / 219.0	3.01	567.120631	500.00	113.42
PFOS_1	499.0 / 80.0	3.01	530.737133	463.00	114.63
PFOS_2	499.0 / 99.0	3.01	532.407924	463.00	114.99
PFDA_1	513.0 / 469.0	3.37	564.272294	500.00	112.85
PFDA_2	513.0 / 219.0	3.37	690.983146	500.00	138.20
PFUnA_1	563.0 / 519.0	3.69	545.512109	500.00	109.10
PFUnA_2	563.0 / 269.0	3.69	630.664088	500.00	126.13
PFDoA_1	613.0 / 569.0	3.97	558.185242	500.00	111.64
PFDoA_2	613.0 / 319.0	3.97	563.120385	500.00	112.62
PFTTrDA_1	663.0 / 619.0	4.21	531.134750	500.00	106.23
PFTTrDA_2	663.0 / 169.0	4.21	542.679110	500.00	108.54
PFTeDA_1	713.0 / 669.0	4.42	540.911611	500.00	108.18
PFTeDA_2	713.0 / 169.0	4.42	567.360951	500.00	113.47
NMeFOSAA_1	570.0 / 419.0	3.52	602.204563	500.00	120.44
NMeFOSAA_2	570.0 / 512.0	3.51	565.082476	500.00	113.02
NEtFOSAA_1	584.0 / 419.0	3.68	578.043477	500.00	115.61
NEtFOSAA_2	584.0 / 483.0	3.67	562.030989	500.00	112.41
13C2-PFHxA	315.0 / 270.0	1.81	91.741140	100.00	91.74
13C2-PFDA	515.0 / 470.0	3.35	102.437637	100.00	102.44
d5-EtFOSAA	589.0 / 419.0	3.67	371.483676	400.00	92.87

<b>Sample Name</b>	JZ77 ICC	<b>Injection Vial</b>	15
<b>Sample ID</b>	ICC	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T15:35:16	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.078	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.283	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.316	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	PFUnA	0.052	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.068	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.577	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.67	NEtFOSAA	0.062	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.66		N/A	N/A	ü

<b>Sample Name</b>	JZ81 CCV	<b>Injection Vial</b>	22
<b>Sample ID</b>	CCV	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T16:37:51	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

## Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.295	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.310	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.074	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.325	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.052	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.053	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.155	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.064	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.053	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.493	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.090	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	JZ82 CCV	<b>Injection Vial</b>	27
<b>Sample ID</b>	CCV	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Quality Control	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T17:31:27	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.301	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.083	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.026	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.292	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.072	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.314	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.188	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.055	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.058	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.164	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.049	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.594	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.68	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.67	NEtFOSAA	0.070	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	KA08 IB	<b>Injection Vial</b>	14
<b>Sample ID</b>	Instrument Blank	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T15:26:21	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

<b>Sample Name</b>	CR651PB-FS(0)	<b>Injection Vial</b>	23
<b>Sample ID</b>	Procedural Blank	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T16:55:43	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü



<b>Sample Name</b>	CR652LCS-FS(0)	<b>Injection Vial</b>	24
<b>Sample ID</b>	Laboratory Control Sample	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T17:04:39	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.293	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.078	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.023	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.289	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.071	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.309	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.212	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.161	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.064	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.533	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.68	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.068	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü



<b>Sample Name</b>	J7561-FS(0)	<b>Injection Vial</b>	25
<b>Sample ID</b>	JAX-RES-08202018-1100-26-FRB	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T17:13:36	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

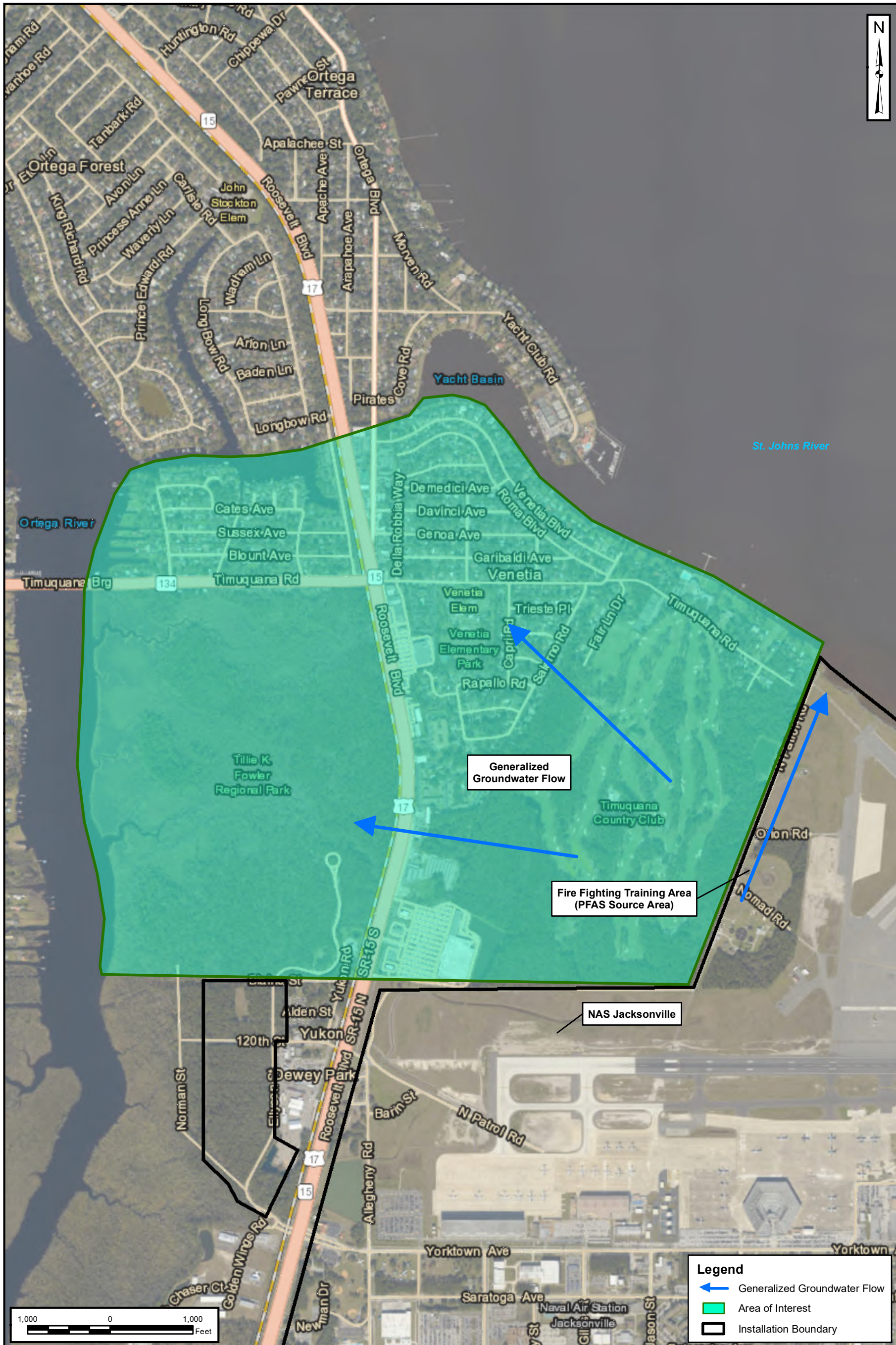
Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.66		N/A	N/A	ü

<b>Sample Name</b>	J7563-FS(0)	<b>Injection Vial</b>	26
<b>Sample ID</b>	JAX-RES-08202018-1310-28-FRB	<b>Injection Volume</b>	10.00
<b>Sample Type</b>	Unknown	<b>Instrument Name</b>	QTRAP 5500
<b>Acquisition Date</b>	2018-08-25T17:22:32	<b>Data File</b>	18-0523_18-0524.wiff
<b>Acquisition Method</b>	5-0371.dam	<b>Result Table</b>	18-0523_18-0524_DW
<b>Sample Comment</b>			

### Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

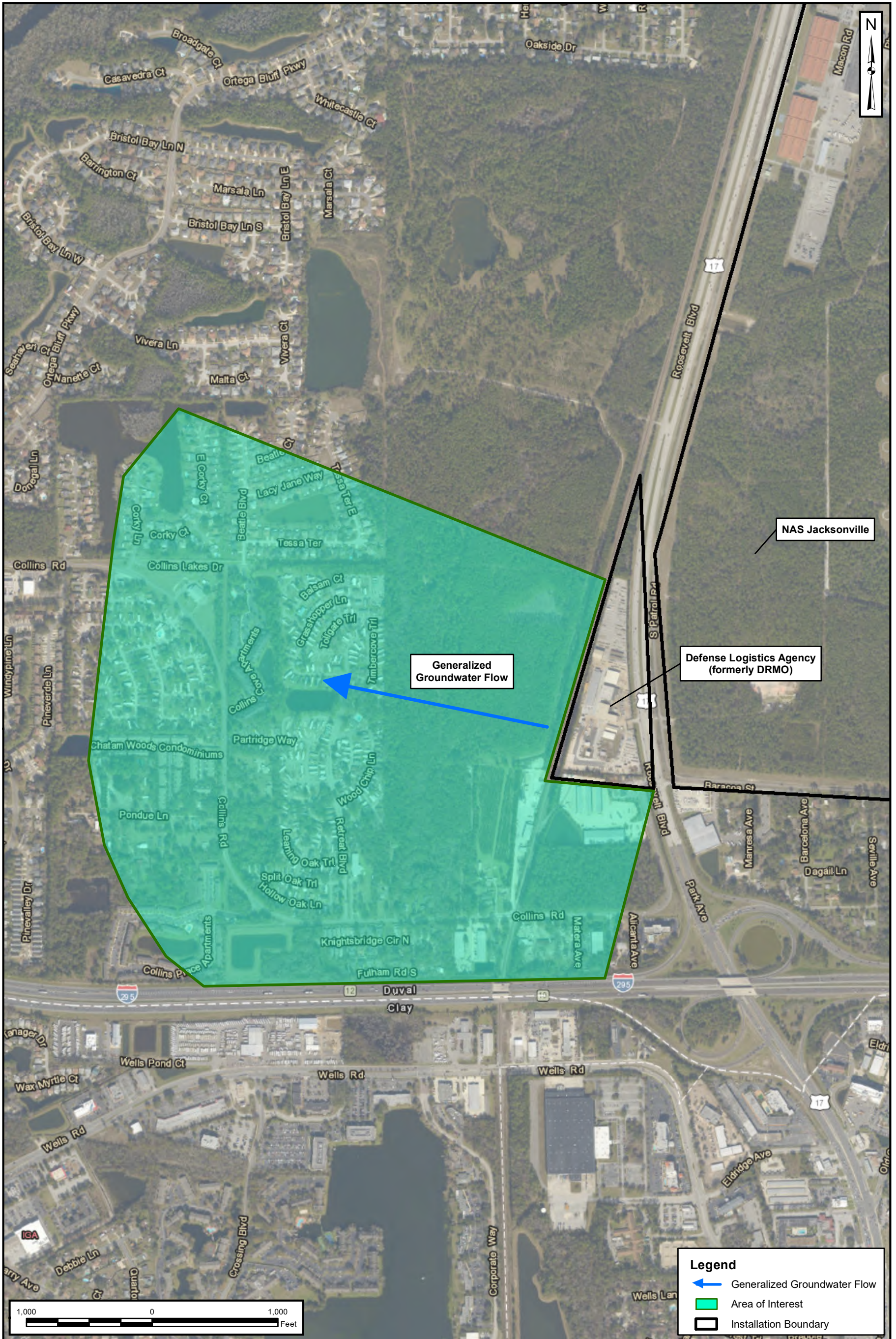




AREA OF INTEREST FOR PUBLIC/PRIVATE SHALLOW DRINKING WATER WELL SAMPLING  
 NAS JACKSONVILLE & SURROUNDING AREA  
 JACKSONVILLE, FLORIDA

CTO	
DRAWN BY	DATE
J.MADDEN	01/16/19
CHECKED BY	DATE
M.GRZEGOREK	01/16/19
FIGURE NUMBER	
1-4	





AREA OF INTEREST FOR PUBLIC/PRIVATE SHALLOW DRINKING WATER WELL SAMPLING  
 NAS JACKSONVILLE & SURROUNDING AREA  
 JACKSONVILLE, FLORIDA

CTO	
DRAWN BY	DATE
J.MADDEN	01/16/19
CHECKED BY	DATE
M.GRZEGOREK	01/16/19
FIGURE NUMBER	
1-5	